Pêches et Océans Canada

Fisheries and Oceans Canada

BUILDING AND STRUCTURE

DEMOLITION WORK

Red island, Tadoussac, Québec

SPECIFICATIONS

Administrative and technical clauses

March 9, 2021

Table of contents

Specifications

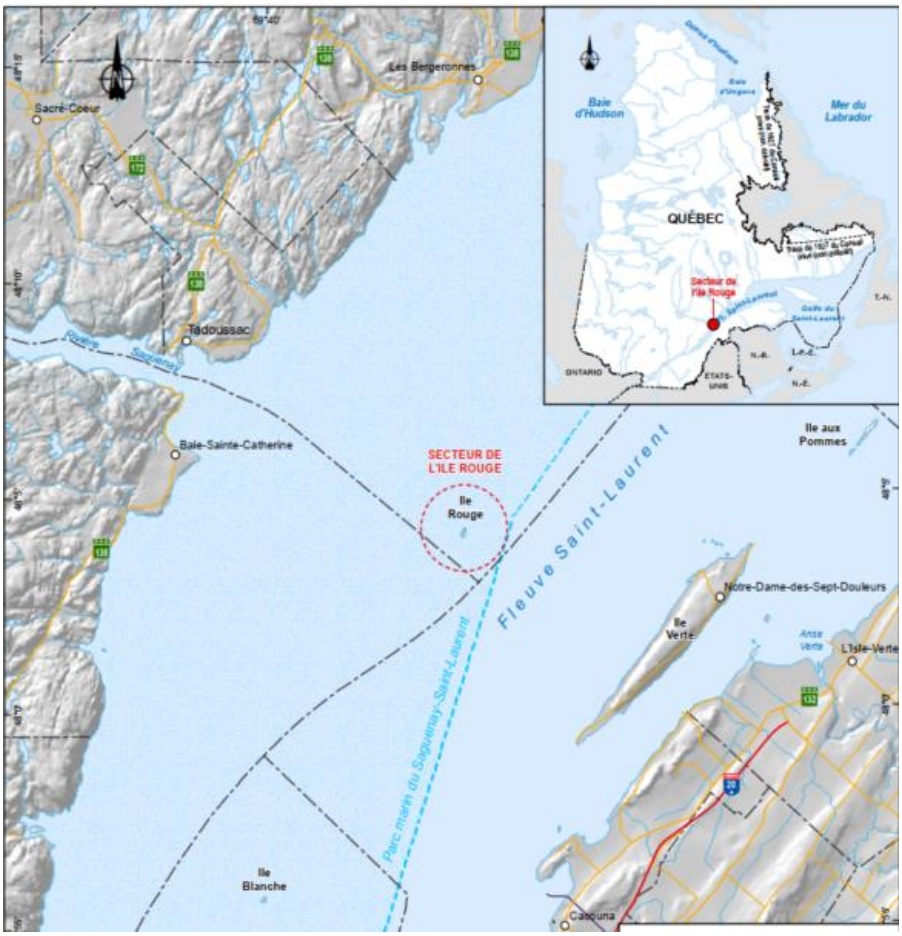
Administrative and technical clauses

ANNEX TO THE CONTRACTUAL DOCUMENTS

Part 1 General

1.1 LOCATION AND SHORT DESCRIPTION OF THE WORK

.1 The deconstruction of buildings and structures will take place on Île Rouge, and will target all the buildings (9) still present, except for the lighthouse and the weather station. The island is located in the middle of the St. Lawrence River at the mouth of the Saguenay Fjord, just east of the village of Tadoussac. These buildings are plagued with mold, lead and asbestos. Various minor works are to be done at the lighthouse. The project also includes the disposal of all debris and hazardous materials in order to reduce the physical and environmental risks present on the site. It should be noted that no concrete foundation demolition is included in this scope of work, but it must be secured with fill for the janitor's house, the assistant's house and the south cabin (toilet). The site, accessible by air or sea, is uninhabited and isolated. This site is in the Saguenay-St. Lawrence Marine Park and is subject to its regulations.



.2 The approximate coordinates of the Island are: coordinates: 48°04'43"N 69°32'27"O.

.3 The Red Island is only accessible by air or sea.

1.2 WORK DESCRIPTION

.1 This list of work is not necessarily complete and does not relieve the Contractor of the responsibility to perform any other work, changes or modifications necessary to satisfactorily complete the work on this project. It is important to consider all contract documents and appendices to the project.

.2 The Contractor will be subject to several restrictions during the work. See Specification Section 01 52 00 - Site Facilities for site constraints and restrictions, marking of authorized traffic areas, etc. See Mitigation Measures, to be implemented by the Contractor, attached to the Contract Documents. See also Specification Section 01 14 00 - Work Restrictions such as Migratory Birds, Fisheries Act, Marine Parks, etc. Some restrictions are listed in this section as well as those listed above. The Contractor shall read the other specification sections and appendices in conjunction with this section.

.3 In general, and without limitation, the work covered by these Specifications includes the equipment, material, services and labour required to complete the following :

.1 Demolition and disposal of all hazardous materials, non-hazardous demolition waste or other debris or equipment on the Red Island site. See Specification Section 02 42 16 for demolition specifics and photographic record in the appendix of the contract documents.

.1 For the following buildings:

- Keeper's House. Approximate size: 32' x 38'.
- Assistant's House. Approximate size: 30' x 42'.
- East cabin. Approximate size: 14' x 18.
- West cabin. Approximate size: 13' x 13.
- South cabin. Approximate size: 17' x 9.
- Foghorn's shelter. Approximate size: 18' x 30'.
- Boat shed. Approximate size: 34' x 16’.
- Two buildings (2 containers - generator building and tank building) housing 3 generators, their equipment and tanks. Approximate size of the containers (2 of them): 20' x 8' x 8'-6.
- Wooden walkways, platforms and stairs to the site. Approximate length 350 meters.

.1 Hazardous materials analyses and characterizations of all buildings except the lighthouse were completed in September 2017. Summaries, tables, and descriptions are presented in specification sections 02 81 01 - hazardous materials, 02 82 00.01 and 02 82 00.02 - asbestos removal - minimum and medium precautions, 02 83 10 - lead-based paint coating removal - minimum precautions, and 02 85 00.02 and 02 85 00.03 - fungal contamination treatment - medium and maximum precautions. They provide an assessment of the hazardous materials present in buildings. It is therefore the Contractor's responsibility to consider the results and information for the demolition and disposal of hazardous materials present in the buildings. The Contractor shall manage debris, materials, and equipment in accordance with the hazardous materials characterization results and information. Specifically:

.1 Furnace (insulated cardboard) shall be handled using the moderate risk method. See Specification Section 02 85 00.02 - Asbestos Abatement - Medium Precautions. Roof shingles and wall joint compound shall be handled using the low risk method. See Specification Section 02 82 00.01 - Asbestos Abatement - Minimum Precautions;

.2 Caretaker's and Assistant's houses shall be managed as per Specification Section 02 85 00.03 - Fungal Contamination Treatment - Maximum Precautions. All other buildings containing mould shall be managed as per Specification Section 02 85 00.02 - Fungal Contamination Treatment - Medium Precautions.

.3 Lead paint was found on the walls, ceilings and floors of the Caretaker's House and the Assistant's House. Lead paint is present on exterior siding of buildings. See specification section 02 83 10 - Removal of Lead-Based Paint Siding Minimum Precaution.

.4 Mercury vapour containing fluorescent tubes (10 uns) and lamp ballasts suspected of containing PCBs (4 uns) to be disposed of. See specification section 02 81 01 - hazardous materials.

.2 All construction waste shall be segregated and disposed of at the site and in accordance with applicable standards and regulations. The Contractor shall conduct a controlled dismantling and sorting of the various building components, structures and debris on site and dispose of same. Any item that could injure a bird shall be removed. No material during dismantling shall be blown away. **Demolition by burning is prohibited.**

.3 Removal, handling and transportation costs shall be included.

.4 Costs related to debris sorting, transportation, environmental protection, health and safety, clean-up, loading and unloading, removal of debris from the island, and any other items necessary to complete this item, shall be considered part of the work. No additional payments will be authorized.

.5 No demolition of foundation or concrete base is included in this scope of work.

.6 Apply and implement all mitigation measures as outlined in the appendix of the contract documents.

.7 The Contractor, in dismantling the buildings, shall take the necessary steps to collect loose paint particles from exterior cladding in the air or on the ground (vacuum, pads, polythene on the ground, etc.) and prevent them from blowing away or leaching out. These paint particles contain lead and some will have to be considered as hazardous materials when they are

disposed of, as they are leachable. Therefore, prior to dismantling the buildings, the Contractor shall remove loose or nearly loose paint from its substrate with an appropriate method (see Specification Section 02 83 10 - Lead-Based Paint Coating Removal - Minimum Precautions).

.8 The Department encourages the Contractor to salvage, reuse/reclaim, reclaim or recycle project demolition debris where possible. See Specification Section 01 74 21 - Construction/Demolition Waste Management and Disposal and Photo Record attached to the Contract Documents.

.9 The Contractor shall demolish the boardwalks first and then demolish the buildings. Pedestrian and machinery traffic shall be restricted to the former right-of-way of the boardwalks at all times in order to minimize the impact of the work and avoid alteration of the surrounding vegetation. Some sections of the boardwalks may be rotten. Identify and mark access routes by choosing routes that minimize environmental effects. All traffic outside of these areas will be prohibited other than to pick up trash or debris.

.10 Delineate and mark the work area for demolition, pedestrian and machinery traffic for each building. All traffic outside of these areas shall be prohibited other than for the purpose of picking up waste or debris.

.11 Delineate areas for sorting and temporary storage of demolition debris on site. Ground protections shall be provided. Means of controlling the elements (wind, rain, etc.) shall be in place to prevent soil contamination and to prevent material from blowing away. Provide storage area by targeting areas with no vegetation or less environmental impact.

.12 All hazardous materials shall be managed at source (within buildings) and shall not be stored outside on the ground or in sorting areas to avoid contamination of the site.

.13 All docking on the island shall be on the beach opposite the boathouse located 50 m northwest of the lighthouse. See map attached to the contract documents. The northern and southern points of the island must be avoided. The Contractor shall confine himself to the area contemplated for berthing.

.14 For all specifics of demolition work, see section 02 41 16 - structural demolition. The following is some information from specification section 02 41 16:

.1 Demolition and disposal of furnaces and their conduits in houses. The furnace (insulated cardboard) shall be handled using the moderate risk method. See

Specification Section 02 85 00.02 - Asbestos Removal - Medium Precautions;

.2 Presence of chimney in houses to be demolished and disposed.

.3 Presence of steel beams and columns to be disposed of in basement of houses.

.4 Presence of a metal structure for hauling boats from the shore to the shed, in the boathouse to be disposed.

.5 Two buildings (2 containers - generator building and tank building) housing 3 generators and their equipment: Take into consideration that the containers are in poor condition during removal or demolition. Depending on the method retained by the Contractor, the demolition of the buildings could be done in sections to carry out their disposal. The contractor must make sure that no contaminant (gasoline, oil, etc.) is spilled on the ground during the dismantling and disposal of the generators and their equipment. A packaging, in a secure manner, of the components that may contain fuel will have to be done by the contractor according to his chosen method. Tanks are present on the site. These must be cleaned of hydrocarbons and disposed of according to provincial and federal regulations. Presence of oil-filled drums in containers where generators are located. Presence of absorbent material on the ground filled with oil to be picked up. Provide for the cleaning and/or packaging of tanks, equipment, materials and piping and dispose of them according to the regulations, standards and laws in force;

.6 Demolish and dispose of fuel oil tank in one of two houses and piping (see Section 02 81 01 - Hazardous Materials and Section 02 65 00 - Storage Tank Removal). Provide for cleaning and/or packaging of tank and piping and dispose of in accordance with applicable regulations, standards and laws;

.7 Boathouse: Shovel soils on concrete slab. Soil characterization will be done at this location by the Minister's representative;

.8 Presence of household appliances in buildings.

.9 etc.

.15 See photographic file attached to the contract documents for more details.

.2 Securing of structures to be retained and miscellaneous work.

.1 For the following buildings :

- Keeper's House :
- Assistant's House :

.1 Secure concrete foundations of buildings to be demolished in this scope of work by backfilling (Class A granular sand; free of invasive species and uncontaminated). Backfill concrete foundations and/or pit equal to the natural terrain on site. See Specification Section 32 92 19.13 - Mechanical Seeding and Section 31 00 00.01 - Earthwork.

.2 Perform mechanical seeding, following backfill in the pit of the cabin (toilet). Provide a standard foundation depth for the volume of backfill. Fill concrete foundation and/or pit evenly with the natural terrain on site. The top of the concrete foundation walls of the houses must be levelled (cut) to the level of the natural ground/interior foundation fill.

.3 Caretaker and Assistant house foundation walls and container concrete base ribs have loose paint. Remove all loose paint from all surfaces of foundation walls or concrete slab ribs using appropriate method (see Section 02 83 10 - Removal of Lead Based Paint Coatings). Perform work in low winds and/or with an appropriate method. Take appropriate measures to collect loose paint particles in the air or on the ground and prevent them from blowing away or leaching (vacuum, pads, polythene on the ground, etc.). The Contractor shall not contaminate the ground in the work area. Any paint residue shall be recovered for proper disposal at an authorized site. Manage such debris in accordance with the hazardous materials characterization results in Section 02 81 01 - Hazardous Materials and other applicable specification sections. Any uncharacterized paint shall be considered hazardous material.

.2 For the following buildings :

- Lighthouse :

.1 Roofing: Re-roof lighthouse section and flashings at lighthouse and lighthouse cupola. See specification sections 075200 - Modified Bitumen Membrane Roofing and 076200 - Sheet Metal Flashings and Accessories.

.2 Lightning Rod: Submit new lightning rod system for lighthouse. See specification section 264113 - Lightning Protection for Buildings.

.3 Door: Change door and put in custom wood door like the existing one. See quote section 06 08 99 - Carpentry - minor work. Paint the door. See quote section 09 91 13 - exterior paint work.

.4 Glazing: Re-glaze lighthouse cupola (allow for 5 replacements) and replace lighthouse window panes (allow for 5 replacements) with polycarbonate. See specification section 088050 - Glazing.

.5 Repair steps leading to crawl space inside Lighthouse (allow for 3 repairs to steps, risers and stringers). See quote section 060899 – Carpentry - minor work.

.6 Repaint lighthouse cupola. The work would consist of removing the peeling paint and then priming and painting it. The color code for the dome will be selected according to DFO/CCG standards. See quote section 09 91 13 - exterior paint work.

.3 For the entire site :

- Seed :

.1 For work sites altered as a result of the work, plan to reseed these areas with seed mix. See specification section 32 92 19.03 - Seeding.

- Toilet :

.2 After demolition of the facility, provide for securing and filling of the pit with backfill (Class A sand) and seeding.

- Collection of all debris at the site

.4 See photographic record attached to contract documents for details.

.3 Post-Construction Soil Characterization (by the Department's hired Site Supervisor).

.1 Provide accompaniment and assistance to the Site Supervisor to conduct post-construction soil sampling. The duration of this procedure is estimated to be approximately 3 to 5 days under favorable weather conditions. This characterization will be done partially or totally during the Contractor's work and during the last days of the work. The Contractor and the Site Supervisor shall jointly define the ideal time to perform the characterization.

.4 Mobilization and demobilization at the site and on site shall be included. No additional payments will be authorized.

.5 Upon completion of the work, the site shall be clean, safe and free of debris.

.6 Site maintenance and snow removal are considered an integral part of this contract. No additional payment will be authorized.

.7 The Department encourages the Contractor to propose alternative methods of work (demolition, transportation of materials), and, if approved by the Departmental Representative, if the Contractor believes these to be advantageous, provided they meet the objectives and applicable regulations. A formal written request must be made to the Department Representative if applicable.

1.3 SITE ACCESS

.1 Provide access to the site to the Site Supervisor, Authorities Having Jurisdiction and the Departmental Representative.

.2 Provide the Site Supervisor, Authorities Having Jurisdiction and Departmental Representative with transportation to the site.

.3 Co-operate with these agencies and take all reasonable steps to provide them with the means of access.

1.4 WORK EXECUTION

.1 The Certificate of Substantial Completion shall be made two weeks prior to the Certificate of Final Completion.

.2 Work Schedule: The Contractor shall perform the Work on a continuous basis without interruption. The Contractor shall work with the supervisory firm and schedule within these constraints. The normal work schedule shall be Monday through Friday, during daylight hours. No weekend, evening or overtime work is permitted. If the contractor wishes to work overtime, it will be at the contractor's expense, including the cost of the site supervisor, and will be subject to the approval of the Departmental Representative. Any indirect costs will be or shall be borne by the Contractor. The Department does not reject the possibility of doing work on weekends to reduce the duration of the work.

.3 The Contractor shall take into account the difficulties of access to the Work, the tidal range and potential climatic problems that may affect the execution of the Work, if any, in order to meet the schedule before submitting his bid.

1.5 CONTRACTOR'S USE OF THE SITE

.1 Buildings and facilities may be used without restriction until completion of the Work. The Contractor is responsible for the health and safety of the use of the premises.

.2 No services (electricity, telephone, potable/saline water supply, sanitary sewer system) are available on the Red island. The Contractor will have to be self-sufficient to ensure all these services in all circumstances.

.3 The Contractor shall work in such a way that no contaminants (e.g. painting of buildings) are released into the environment. For example, tarpaulins may be used during demolition to recover materials while avoiding contact with the ground or vacuum cleaners. Thus, the work must be carried out in such a way as to recover actual or potential contaminants, avoid contact with water, avoid dust and wind dispersal, while taking all appropriate health and safety measures.

.4 Any temporary installation shall be securely fastened to withstand the weather conditions prevailing in the area and the winds and gusts that may be generated by helicopter landings and take-offs accessing the site at any time of the day or night.

1.6 OCCASIONAL ACCESS TO THE PREMISES BY THE MINISTRY REPRESENTATIVE

.1 DFO Canadian Coast Guard (CCG-DFO) personnel must have permanent access to the site for maintenance and repair of aids to navigation equipment. Access to the beacon in

the lighthouse and access to the lighthouse's power supply system will also be required. Such personnel shall be able to access the site by helicopter at all times without prior notice from the Contractor. If a temporary landing site is provided by the Contractor, coordination and logistics will be required between the Contractor, the Departmental Representative and CCG-DFO.

1.7 REQUIRED DOCUMENTS

.1 .1 Keep a copy of each of the following documents on site :

.1 Permits.

.2 Notice of commencement of a construction site.

.3 Work plan.

.4 Environmental Emergency Measures Plan (EEMP).

.5 Health and safety prevention program specific to the work and the site.

.6 Construction waste and other hazardous materials (asbestos, lead, mould, etc.) management plan.

.7 Environmental protection plan.

.8 Specifications and statement of work including addenda.

.9 Documents/technical data sheets/workshop drawings.

.10 Approved work schedule.

.11 Change orders.

.12 All ECCC and DFO documents and authorizations regarding methods to be followed for the protection of birds, nests and mitigation measures to be put in place.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

.1	Section 01 11 01	WORK DESCRIPTION
.2	Section 01 35 43	ENVIRONMENTAL PROCEDURES
.3	Section 01 41 00	REGULATORY REQUIREMENTS
.4	Section 01 51 00	TEMPORARY UTILITIES
.5	Section 01 52 00	CONSTRUCTION FACILITIES
.6	Section 02 41 16	STRUCTURE DEMOLITION
.7	Section 02 65 00	STORAGE TANK REMOVAL
.8	Section 02 81 01	HAZARDOUS MATERIALS
.9	Section 02 82 00.01	ASBESTOS ABATEMENT - MINIMUM PRECAUTIONS
.10	Section 02 82 00.02	ASBESTOS ABATEMENT - INTERMEDIATE PRECAUTIONS
.11	Section 02 83 10	LEAD - BASE PAINT ABATEMENT - MINIMUM PRECAUTIONS
.12	Section 02 85 00.02	MOULD REMIDIATION - INTERMIDIATE PRECAUTIONS
.13	Section 02 85 00.03	MOULD REMIDIATION - MAXIMUM PRECAUTIONS
.14	Section 31 00 00.01	EARTHWORK AND RELATED WORK

1.2 SITE ACCES

.1 The Red Island site is accessible by air or water. The Contractor may choose to perform the work by air and/or sea (for transportation of debris or materials).

.2 The Contractor shall be responsible for all arrangements with all agencies or authorities having jurisdiction for transportation by air and/or sea and/or land.

.3 The Contractor shall provide machinery and equipment in accordance with these access restrictions and limitations. Light machinery may be transported to the site such as an ATV, transport trailer or mini excavator. Conduct an inspection of machinery and equipment prior to their introduction to the site. Provide mechanical certification prior to bringing equipment to the site.

.4 Daily coordination with the Departmental Representative and Site Supervisor shall be maintained throughout the duration of the work.

.5 The Contractor will not have access to the site during the nesting period from April 14th to August 28th and from April to the end of September for beluga and benthic fauna. All work on the site during this period is prohibited in order not to contravene the Migratory Birds Convention Act, 1994 and to promote the protection of beluga and benthic fauna. It

is strongly suggested that the Contractor mobilize quickly at the end of these periods and that the work be of short duration. Access to the site is subject to the approval of the Department Representative. The Contractor shall plan his work accordingly.

.6 All berthing on the island shall be on the beach opposite the boathouse located 50 m northwest of the lighthouse. See map attached to the contract documents. The northern and southern points of the island must be avoided. The Contractor shall restrict himself to the area contemplated for docking.

.7 Any helicopter landings on the island shall be made on the beach

1.3 USE OF SITE AND FACILITIES

.1 Carry out the work with minimal disruption to the normal use of the site. In this regard, make arrangements with the Departmental Representative and the Site Supervisor to facilitate the completion of the required work.

.2 Where security has been reduced as a result of the work, provide alternate temporary means of maintaining and securing the safety of property and persons on the premises.

.3 No utilities are available at the site. See Specification Sections 01 51 00 - Temporary Utility Services and 01 52 00 - Site Facilities.

.4 **Protected Areas**: The work will be carried out within the protected area of the Saguenay-St. Lawrence Marine Park. The Federal and Provincial Governments are responsible for the Park. The Contractor shall comply with the Saguenay-St. Lawrence Marine Park Marine Activities Regulations (http://laws-lois.justice.gc.ca/fra/reglements/DORS-2002-76/), particularly with respect to distances to be respected for beluga whales and other marine mammals and any other regulations of this organization.

.5 The Contractor shall submit a work plan as per Section 01 52 00 - Site Facilities. The work plan prepared by the Contractor shall enable the Department to provide the information necessary to obtain permits for the work in accordance with the Policy on Permitting and Authorization for Prohibited Activities in Protected Areas Designated under the Canada Wildlife Act and the Migratory Birds Convention Act, 1994 and for the application for permits in the Saguenay-St. Lawrence Marine Park. Applications may be refused, for example, if the work plan does not comply with the regulations in force. In this situation, the Contractor would be responsible for modifying his work plan and/or postponing the work for a few weeks. **The work must be done in such a way as to minimize the impact on the site**. The Contractor must plan his work accordingly. Special measures shall be put in place in order to respect these restrictions and contraventions. See specification section 01 11 00 - Description of Work and specification section 01 52 00 - Site Facilities.

.6 The Contractor shall implement all mitigation measures outlined in the appendix of the Contract Documents.

.7 Ensure that all necessary worker facilities (toilets, shelters, etc.) are properly installed on site and in accordance with applicable regulations.

.8 The Contractor shall not be permitted access to the Lighthouse other than for the purpose of the work. The Contractor shall plan his site facilities accordingly.

.9 Proceed as quickly as possible with the restoration of the site after the work, including the levelling of the docking area (beach), the stabilization of soils in the areas of intervention where risks of erosion are present, the collection of waste, the cleaning of the storage area and seeding.

.10 The Contractor shall demolish the boardwalks first and then demolish the buildings. Pedestrian and machinery traffic shall be restricted to the former right-of-way of the boardwalks at all times in order to minimize the impact of the work and to avoid damage to the surrounding vegetation. Some sections of the boardwalks may be rotten. Identify and mark access routes by choosing routes that minimize environmental effects. All traffic outside of these areas will be prohibited other than to pick up trash or debris.

1.4 ALTERATIONS, ADDITIONS OR REPAIRS TO EXISTING BUILDING

.1 Carry out the work with minimal disruption to the operation of the lightstation and normal use of the site. In this regard, make arrangements with the Departmental Representative and the Site Supervisor to facilitate the completion of the prescribed work.

1.5 SPECIAL REQUIREMENTS

.1 The Contractor shall provide methods of transporting hazardous materials/debris/materials in a safe, secure and leak-proof manner to avoid any incident or loss of material to the environment. Scrap material shall be promptly removed from the site and properly managed. The Contractor is responsible for determining the appropriate means and modes of transportation. The methods selected shall be submitted in the Contractor's Work Plan to be submitted in Specification Section 01 52 00 - Site Facilities.

.2 Ensure that the Contractor's personnel and staff working on the job site are aware of and comply with all regulations, including fire and occupational safety regulations.

.3 Remain within the limits of the work, access roads and areas marked by the Contractor. See Specification Section 01 52 00 - Site Facilities for marking of authorized traffic areas. The Contractor is not permitted to drive outside of these areas other than to pick up trash or debris.

.4 Construction Supervision: The Department will assign a Construction Supervisor. The presence of this person on site is mandatory during any intervention by the Contractor or his subcontractors. The Contractor shall be responsible for providing transportation between the north or south shore of the river and Île Rouge and back for the duration of the work. In the event of adverse weather conditions, the Contractor shall be responsible for the health, safety and welfare of the supervisor. The Site Supervisor shall be responsible for providing his own PPE, work tools, food and water. The Contractor shall provide and/or provide access to all other items necessary for the performance of his duties and for his safety (e.g., immersion suit, sanitary facilities, electricity, shelter, etc.). The Site Supervisor's contact information will be provided to the Contractor after the contract is awarded. The Site Supervisor will provide the Department with daily progress reports and environmental monitoring reports, including the nature of the work performed and the mitigation measures implemented by the Contractor. He has the authority to stop the work if he feels that the work is not in accordance with the original work plan and is in violation of regulations and/or presents a safety and environmental hazard.

.5 Daily Work Report: The Contractor shall submit a daily work report as required in Specification Section 01 33 00 - Submittals and Samples.

.6 The Contractor is required to be familiar with the movement of the St. Lawrence Waterway and not interfere with marine traffic.

.7 The Contractor shall be in constant communication with the Marine Communications and Traffic Services Centre (MCTS) to ensure the issuance of Notices to Shipping, which shall be updated as operations progress, describing activities, equipment characteristics and location. Provide the Canadian Coast Guard (by telephone 418-648-5410 or e-mail opsavis@dfo-mpo.gc.ca) at least forty-eight (48) hours prior to the start of the work, with the following information concerning the project for the purpose of issuing Notices to Shipping

.1 Identification of the person responsible for the work (company name, Department Representative name, phone number, email).

.2 Schedule of the work.

.3 Description of vessels and equipment, method of performing the work.

.4 Any changes to the approved plans or conditions that may affect the safety of mariners.

.5 Comply with the requirements of standards relating to marine safety or dealing with the use of watercraft, as well as laws applicable to the seaway, such as the Merchant Shipping Act.

.6 All floating equipment used in the course of this work shall be Canadian registered.

.7 Marine equipment used, and the crews working on it, shall comply with the "Canada Shipping Act, 2001 (2001, c.26)" and its regulations.

.8 Not obstruct or interfere at any time with the effectiveness of any remaining operational aids to navigation and as far as possible keep all marine equipment in use out of the line of lights.

.9 Comply with the Navigable Waters Works Regulations :

.1 No person shall leave any tools, equipment, vehicles, temporary structures or parts thereof in a navigable watercourse after completion of the work.

.10 Boats used in the course of this work shall, among other things, comply with Transport Canada Small Commercial Vessel Regulations and the master of the boat shall also hold the necessary permits.

.11 During the execution of the work, and if applicable in the event that sections of the works are hazardous to navigation safety, mark the work area with four (4) yellow warning buoys equipped with radar reflectors and yellow lights (FL Y 4s) with a nominal range of one (1) nautical mile:

.1 Comply with Transport Canada / Navigable Waters Protection Program requirements.

.2 Comply with the Private Buoy Regulations of the Canada Shipping Act, 2001 (2001, c. 26).

.3 Follow up and amend Notices to Shipping with the Canadian Coast Guard (by phone 418-648-5410 or email opsavis@dfo-mpo.gc.ca).

.12 Daily coordination with the Departmental Representative shall be maintained throughout the duration of the work.

.13 The Departmental Representative is not responsible for loss of time, material or equipment, or any other costs incurred by vessels moving in the waterway.

.14 The Contractor shall consult the water level bulletins published by Fisheries and Oceans Canada (website: www.meds-sdmm.dfo-mpo.gc.ca) to ascertain water level variations.

.15 The Contractor shall be responsible for obtaining up-to-date nautical charts. Consult www.charts.gc.ca.

.8 Implement all mitigation measures outlined in the appendix of the contract documents.

.9 Identify and use suitable isolated storage area(s) on site for equipment and, if required, for storage of petroleum products or any other contaminants in leak proof containers. The site must be located in a place without any risk of contamination of the aquatic environment, more than 30 m from the latter, and in a low slope area.

.10 Delineate and mark the work area for demolition, pedestrian and machinery traffic for each building. All traffic outside of these areas shall be prohibited other than for the purpose of picking up waste or debris.

.11 Delineate areas for sorting and temporary storage of demolition debris. Ground protection shall be provided. Means of controlling the elements (wind, rain, etc.) shall be in place to prevent soil contamination and to prevent material from blowing away. Provide storage area by targeting areas with no vegetation or less environmental impact.

.12 All hazardous materials shall be managed at source (within buildings) and shall not be stored outside on the ground or in sorting areas to avoid site contamination.

1.6 SECURITY

.1 Provide temporary means to maintain safety if safety has been reduced as a result of the work under this contract.

1.7 BUILDING SMOKING ENVIRONMENT

.1 Comply with no-smoking guidelines. Smoking is not permitted on the site.

.2 No eating, drinking or chewing gum is permitted in the work area and where hazardous materials are present on site.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 MEASUREMENT PROCEDURES

.1 The Contractor shall provide, no later than ten (10) days after the Notice of Acceptance of Bid, a list of equipment and their hourly rate for each piece of equipment available to perform the Work. Hourly rates must be submitted prior to the Contractor's first application for payment. Otherwise the Contractor's applications for payment will not be processed.

.2 The Contractor shall provide, no later than ten (10) days after the Notice of Acceptance of Bid, a list of hourly rates for its personnel. Hourly rates must be submitted prior to the Contractor's first request for payment. Otherwise the Contractor's requests for payment will not be processed.

.3 The overall lump sum and unit prices shall include, but not be limited to, all equipment, transportation, rental, installation of equipment, machinery, tools, labour, administration costs, profit, financing, expenses to perform work not specifically described in the specifications and best practice.

.4 The lump sum and unit prices shall include, but not be limited to, all costs related to worker health and safety and environmental protection measures as per the contract documents.

.5 The lump sum and unit prices shall include, but not be limited to, all costs related to the identification of materials deemed hazardous, the handling and transportation of waste and residues by sea, air and land, the treatment of waste and residues and the disposal of waste and residues from the project, such as hazardous materials for disposal (asbestos, lead, mould or other) and other non-hazardous waste and residues (demolition waste, clean-up waste, etc). All wastes and residues from the project shall be reused, recycled, recovered or disposed of in an authorized site(s) according to their nature in accordance with the regulations and laws in force.

.6 All work described in the schedules and specifications or necessary for the completion of the work covered by these documents, but not defined as a separate lump sum or unit payment item, shall be considered directly or indirectly related to the overall subject matter of the contract and no separate payment shall be made for any such work; however, the cost of any work directly, indirectly, or not explicitly specified that is related to the subject matter of this contract shall be included in the unit prices quoted in the bid.

.7 This specification section is to be read in conjunction with all contract documents for the project, but in particular with specification section 01 11 01 - Description of Work, the Tender Schedule or Price Table, the photographic record and other specification sections.

.1 Financial item 1 - Mobilization and Demobilization.

.1 The method of measuring the categories of labour, tools or materials constituting the work will be as follows: Lump sum work: this work is subject to a lump sum arrangement.

.2 This item shall include, but not be limited to, all costs associated with the transportation and handling of all materials, labour, equipment and site facilities.

.2 Financial Item 2 - Site organization.

.1 The method of measuring the categories of labour, tooling or material constituting the Work shall be as follows: Lump Sum Work: This Work is subject to a lump sum arrangement.

.2 This item shall include, but not be limited to :

.1 Bonding and administration fees.

.2 All investigative, planning, management and supervisory work. Including work plans to be submitted and other documentation.

.3 All permits and applications (municipal, provincial and federal).

.4 General waste management not included in other items.

.5 Provision of temporary utilities (electricity, water, internet, satellite phone, heating, survival equipment, food, etc.).

.6 Provision of temporary utilities (electricity, water, internet, telephone, heating, survival equipment, food, etc.).

.7 Temporary site facilities including survival facilities.

.8 Site maintenance and daily cleaning.

.9 The cost of accompanying the Site Supervisor for the characterization of soils towards the end of the work or any other work required to complete the work (see specifications in section 01 11 01 - Description of Work).

.10 All costs for the implementation of the annexed mitigation measures, environmental protection and protection of bird nests at the site.

.11 All costs for marking of authorized traffic areas on the site and securing the site.

.12 All costs for board, lodging, food, bonuses of its workers and/or subcontractors including its own helicopter pilots and/or deckhands or boat captain.

.13 All land, sea and/or air travel costs to transport workers and/or subcontractors to the work site. All air, sea or land costs to transport materials, equipment and tools to the transportation site that will bring the workers and/or subcontractors to the work site.

.14 All health and safety costs related to the work.

.15 All other required site organization elements.

.3 Financial Item 2.1 - Air and/or sea transport: Mobilization and demobilization..

.1 The method of measuring the categories of labour, tools or materials constituting the work will be as follows: Lump sum work: this work is subject to a lump sum arrangement.

.2 This item shall include, but not be limited to :

.1 Costs of mobilization and demobilization of the helicopter and/or barge and/or boat and/or hovercraft.

.2 Any other relevant costs related to the mobilization and demobilization (airport and port charges, float installation, protective equipment related to the use of the helicopter for its workers, visitors or pilots, deckhands, captain, farriers, cranes, rental fees, etc.). All boarding and ground travel costs should be in budget item 2 - Site Organization..

.4 Financial Item 2.2 - Air and/or sea transportation: transportation of labor and materials from shore to site and back for the project

.1 The method of measuring the categories of labor, tools or materials constituting the Work shall be as follows: Lump Sum Work: this work is subject to a lump sum arrangement.

.2 This item shall include, but not be limited to:

.1 Daily transportation service for workers, subcontractors and visitors for access to the site.

.2 Transportation service for the Departmental Representative, if required, and the Site Supervisor (at all times) for access to the site.

.3 All costs for air and/or sea transportation of materials, demolition debris, scrap and/or hazardous materials, from Budget Items 3.0 and 4.0, from the site to the shoreline or to a land-based site for transportation by land and/or sea to a disposal site.

.4 The Contractor shall include all additional costs such as fuel, equipment rental, pilots, deckhands, captains or others. All boarding and land travel costs shall be in budget item 2 - Site Organization.

.5 Financial Item 2.3 – Air and/or sea Transportation : Weather Related Waiting Days (pre-budgeted).

.1 The method of measuring the categories of labour, tooling or materials constituting the work will be as follows : Unit price work per day of waiting: This work is subject to a unit price per day of waiting. This item has already been pre-set at 15 days. The contractor must provide a unit rate and total for this item.

.2 This item will include, but not be limited to :

.1 The Contractor will be paid for air and sea costs related to waiting days due to adverse weather conditions preventing helicopter flight. All costs for boarding, ground travel are to be in budget item 2 - Site Organization.

.2 The costs in budget item 2.3 will be paid for actual days of waiting due to adverse weather conditions preventing helicopter flight. These shall be recorded in conjunction with the Site Supervisor. Waiting days must be approved by the Site

Supervisor. For invoicing purposes, supporting documents signed by the Site Supervisor must be submitted to the Departmental Representative. If weather conditions permit helicopter flight or sea transportation and the Contractor decides to continue the work despite the reduced daily schedule, then these charges will not be applicable and the actual hours flown will be paid as per item 2.2.

.6 **Financial Item 3 - Building Demolition and Miscellaneous Rehabilitation Work.**

.1 The method of measuring the categories of labour, tools or materials constituting the work will be as follows: **Lump sum work**: this work is subject to a lump sum arrangement.

.2 These items will include, but are not limited to :

.1 Demolition of all buildings except the lighthouse and weather station, management, sorting of materials at the site and any other sorting required in the Magdalen Islands or elsewhere for reuse, recycling, recovery or disposal (hazardous materials [asbestos, lead, etc.] or uncontaminated). All collection of debris, materials or waste required on the work site and in the buildings (lighthouse and helicopter base and/or other). See results of analysis, in the section of estimate 02 81 01 - hazardous materials, concerning hazardous materials at the site. **Demolition by burning is prohibited.**

.2 Demolition of concrete foundation and base is excluded from this scope of work.

.3 All paint present contains or is likely to contain lead. See Specification Section 02 83 10 - Removal of Lead-Based Paint Coatings - Minimum Precautions The Contractor shall therefore take health and safety measures to protect workers and the environment in accordance with applicable regulations during demolition and handling operations. See test results in specification section 02 81 01 - Hazardous Materials, regarding hazardous materials on site.

.4 Some materials contain asbestos. See specification section 02 82 00.02 - Asbestos Removal - Medium Precautions. The Contractor shall therefore take health and safety measures to protect workers and the environment in accordance with current regulations during demolition and handling operations. See analysis results in specification section 02 81 01 - Hazardous Materials, regarding hazardous materials on site.

.5 Mould is present throughout the buildings. See specification section 028500_02 - treatment of fungal contamination. See testing results in Specification Section 02 81 01 - Hazardous Materials, regarding hazardous materials at the site.

.6 Any additional work required for the various rehabilitation works to be done on the site and mainly for the lighthouse as

well as for the securing of the structures to be preserved (backfill). See specifications section 01 11 01 - Description of Work.

.7 Costs related to the burning method (if this method is retained by the Contractor).

.1 Item 3.1: Caretaker's House.

.2 Item 3.2: Assistant's House.

.3 Item 3.3: East Cabin.

.4 Station 3.4 : West Cabin

.5 Station 3.5 : South Cabin

.6 Station 3.6 : Foghorn shelter.

.7 Station 3.7: Boathouse.

.8 Station 3.8: Two buildings (2 containers - generator building and tank building) housing 3 generators and their equipment.

.9 Station 3.9: Wooden footbridge and its stairs.

.10 Station 3.10: Lighthouse

.1 3.10.1 – Roofing works

.2 3.10.2 – Lightning conductor work

.3 3.10.3 – Work on the entrance door

.4 3.10.4 – Work on the glazing

.5 3.10.5 – Step repair work

.6 3.10.6 – Painting of the lighthouse dome

.11 Item 3.11 : Leveling (cutting) of the top of the foundation walls of the janitor's and assistant's houses to ground level

.12 Item 3.12 : Backfilling of the foundation of the keeper's and assistant's houses

.13 Item 3.12 : Final cleaning of the site..

.7 Financial item 4 - Disposal of waste and demolition scrap.

.1 The method of measuring the categories of labour, tools or materials constituting the work will be as follows : Unit Price Work: This work is subject to a unit price arrangement.

.2 These items will include, but are not limited to :

.1 Land and/or sea transportation, handling and disposal, off site/on land and/or on the Magdalen Islands, according to current regulations, of waste currently present in the buildings, such as scrap and bird carcasses and other household items.

.2 Land and/or sea transportation, handling, treatment and reuse, recycling, recovery and disposal, off site/on land and/or in the iles de la Madeleine, at authorized sites according to the regulations in force, of all waste or debris from demolition,

excluding air transportation costs for materials defined in item 2.2 from the site to the land.

.3 Although not well defined, mould is ubiquitous throughout the facilities.

.4 The Contractor shall provide all transportation manifests and weigh slips to the Site Supervisor and the Departmental Representative. The Contractor will be paid on the basis of these documents at the unit price as specified in the tender documents.

.5 The Contractor shall provide a Waste Disposal Report as per specifications 01 74 21 - Construction/Demolition Waste Management and Disposal. The total quantities per budget line item shall be respected at the time of tender. Quantities in Article 4.0 will be paid at actual quantities. The Contractor shall provide proof of disposal, transportation manifests and weigh slips of the materials disposed of as a means of payment.

.1 **Financial Item 4.1**: **Uncontaminated** (Example: wood, concrete, cardboard, paper, ferrous and non-ferrous metals, brick and masonry, gypsum board, plastic, glass, etc.).

.2 Financial Item 4.2: Containing lead.

.3 Financial Item 4.3: Asbestos Container.

.4 Financial Item 4.4: Mould Container.

.5 Financial Item 4.5 : Container of lead and asbestos.

END OF SECTION

Part 1 General

1.1 ADMINISTRATIVE

.1 Schedule and attend project meetings throughout the course of the mandate according to the established schedule or at the request of the Departmental Representative.

.2 Contractor, subcontractor and supplier representatives attending project meetings are empowered and authorized to speak on behalf of the parties they represent.

.3 The Departmental Representative shall :

.1 Prepare and circulate the meeting agenda to participants and affected parties at least one (1) day in advance of the meeting.

.2 Chair project meetings.

.3 Prepare minutes of meetings. Include all significant issues and decisions. Identify actions taken by the various parties.

.4 Circulate minutes of meetings to participants, affected parties not present at the meeting, within five (5) days of the meeting.

1.2 PRECONSTRUCTION MEETING

.1 Within 5 days of contract award, convene a meeting of the parties to the contract to discuss administrative procedures and define responsibilities.

.2 The Contractor shall also schedule two (2) working meetings with the Departmental Representative by videoconference or at its premises (Quebec City), during the preparation and presentation of its Work Plan and annexes in order to make the requested changes, to the satisfaction of Departmental Representative. Departmental Representative reserves the right to require amendments to the plan if it considers that the plan is contrary to the objectives defined in the contractual documents or the regulations in force. Acceptance of the documents by Departmental Representative does not represent a transfer of responsibility by the Contractor.

.3 The Contractor shall schedule a start-up meeting with the Site Supervisor and the Departmental Representative 2 weeks prior to the start of the work.

.4 The Departmental Representative, the Contractor, the Site Supervisor and major subcontractors shall be present at this meeting.

.5 The Departmental Representative will determine the timing of the meeting and notify the parties involved at least five (5) days prior to the meeting. The kick-off meeting will be held at the DFO office (Quebec City)or by videoconference. Working meetings for project plans may be held at the DFO office in Quebec City or by videoconference.

.6 Agenda Items :

.1 Designation of official representatives of participants in the work.

.2 Work schedule as per Section 01 32 16.07 - Work Scheduling - Bar Charts (GANTT).

.3 Schedule for submission of documents/technical data sheets/ shop drawings as per Section 01 33 00 - Documents and Samples to be Submitted.

.4 Site Security as per Section 01 56 00 - Temporary Access and Protection Structures.

.5 Proposed changes, change orders, procedures, required approvals, permitted margin percentages, time extensions, overtime and other administrative procedures.

.6 Products supplied by the Contractor.

.7 Delivery and acceptance procedures and warranties as per 01 77 00 - Completion of the Work.

.8 Monthly progress claims, administrative procedures, photos, holdbacks.

.9 Site inspection with site damage report. Report any discrepancies with contract documents to the Departmental Representative.

.10 Insurance, policy statements.

.11 Work plans to be submitted (Prevention Program, Emergency Response Plan and Environmental Emergency Plan, Environmental Protection Plan, Waste Management Plan and other residual materials.

1.3 PROGRESS MEETINGS

.1 No site meetings are scheduled. If necessary and if required, the Departmental Representative and/or the Site Supervisor, with the cooperation of the Contractor, may establish (telephone) meetings during the course of the work.

.2 These meetings are to be attended by the Contractor, the Departmental Representative, the Site Supervisor, major subcontractors involved in the work and the appropriate authorities as required.

.3 Agenda Items :

.1 Reading and approval of the minutes of the previous meeting.

.2 Review of progress since the previous meeting.

.3 Documents/Technical Data Sheets/Workshop Drawings.

.4 Health and Safety.

.5 On-site observations; issues and conflicts.

.6 Issues affecting the schedule of work.

.7 Review of delivery schedules for off-site fabricated products.

.8 Procedures and corrective actions to address delays to ensure schedule adherence.

.9 Review of work schedule.

.10 Review of progress schedule during successive stages of the work.

.11 Maintenance of quality standards.

.12 Review proposed changes and their potential impact on the schedule and completion date.

.13 Miscellaneous.

.4 Daily Work Report: The Contractor shall submit a Daily Work Report as requested in the Specifications section 01 33 00 - Documents and Samples to be Submitted.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

1 GENERAL

1.1 DEFINITIONS

.1 Activity: Specific work performed on a project. An activity normally has an expected duration, an expected cost and an expected resource requirement. Activities may be subdivided into tasks.

.2 Bar Graph (GANTT Chart): A graphical representation of project schedule data. In a typical bar chart, activities or other project elements are presented from top to bottom left and dates are presented from left to right at the top, with the duration of each activity indicated by horizontal segments between the dates. Typically, the bar graph is generated from a commercially available computerized project management system.

.3 Baseline Reference: The initial approved plan (for a project, work package or activity), taking into account approved changes to the project scope.

.4 Work Week: A five (5) day week, Monday to Friday, defining the working days for the purpose of submitting the bar chart (GANTT chart).

.5 Duration: The required number of work periods (excluding holidays and other non-work periods) required to complete an activity or other element of the project. Duration is usually expressed in working days or work weeks.

.6 Overall Plan: A summary program outlining key activities and milestones.

.7 Milestone: A significant event in the completion of the project, most often the completion of a major product (deliverable).

.8 Schedule: Dates set for completion of activities and achievement of milestones. A dynamic and detailed schedule of tasks or activities required to achieve project milestones. The monitoring and control process is based on the schedule for the completion and control of activities and defines the decisions that will be made throughout the life of the project.

.9 Scheduling - Project Planning, Tracking and Control: A comprehensive system managed by the Contractor to track the completion of work against identified milestones or stages.

1.2 REQUIREMENTS

.1 Ensure that the overall plan and schedule is workable and meets the prescribed duration of the contract.

.2 The master plan shall provide for the completion of the work according to the prescribed milestones within the agreed time frame.

.3 Contract award or start date, rate of progress, issuance of Interim Certificate of Substantial and the Final Certificate of Completion are defined stages of the project and are essential terms of the contract.

1.3 DOCUMENTS/ DATA SHEETS/ SHOP DRAWINGS TO BE SUBMITTED FOR APPROVAL/ INFORMATION

.1 Submit required documents, data sheets and shop drawings in accordance with Section 01 33 00 - Submitting Documents and Samples.

.2 Submit to the Departmental Representative, no later than ten (10) working days after contract award, a bar chart (GANTT chart) to be used as an overall plan and for planning, monitoring and progress reporting. This should be done with MS Project. The Contractor shall provide a PDF version as well as a .mpp version to the Departmental Representative with each submission or update.

.3 Submit the schedule to the Departmental Representative no later than five (5) working days after acceptance of the overall plan.

1.4 PROJECT MILESTONES

.1 Project milestones are the intermediate objectives set out in the project schedule.

- .1 The Substantial Certificate Completion of the work.
- .2 The Certificate of Completion.

1.5 GENERAL ARRANGEMENT PLAN

.1 Structure the work schedule to allow for the orderly planning, organization and execution of the work according to the bar chart (GANTT chart).

.2 The Departmental Representative will review the schedule and provide it to the Contractor within five (5) working days.

.3 If the schedule is deemed inoperable, revise and resubmit it no later than five (5) working days after receipt.

.4 The accepted revised Schedule will become the Master Plan, which will serve as the reference for updates.

1.6 DETAILED IMPLEMENTATION SCHEDULE

.1 Develop a detailed implementation schedule based on the overall plan.

.2 The detailed schedule shall include, as a minimum, the following activities.

- .1 Contract Award.
- .2 Kick-off meeting.
- .3 Shop drawings, data sheets and work plans to be submitted including their approval and correction activities.
- .4 Permits.
- .5 Site mobilization and installation.
- .6 Implementation of mitigation measures, delineation of access zones (marking), site security and installation of platform/scaffolding around buildings.
- .7 Demolition by building in stages, by location and according to the recommended method.

.8 Evacuation of scrap, debris, hazardous materials and materials.

.9 Securing of concrete foundations.

.10 Various security work at the lighthouse detailing each activity.

.11 Accompaniment during soil characterization at the end of the work by the Site Supervisor.

.12 Final cleaning.

.13 Correction of deficiencies.

.14 Demobilization.

.3 As a minimum, the detailed execution schedule shall include the following important milestones :

.1 Mobilization.

.2 Mobilization of subcontractors, if applicable.

.3 Certificate of Substantial completion of the project.

.4 Certificate of completion of the project.

.5 Demobilization.

.4 The schedule shall include time contingencies to compensate for weather conditions that may be unfavourable to the work.

1.7 PROGRESS REPORTS ON THE PROGRESS OF THE WORK

.1 **Update the schedule one (1) time per week** to reflect changes to activities, completion of activities, as well as activities in progress. The updated Work Schedule shall be submitted on the Friday of the end of the Contractor's work week.

.2 Provide the Departmental Representative with an updated copy of the schedule two (2) days prior to each meeting or at the request of the Departmental Representative.

1.8 PROJECT MEETINGS

.1 Discuss the implementation schedule during weekly updates with the Departmental Representative and identify activities that are behind schedule and plan ways to make up for these delays. Late activities are considered to be those activities whose start date or end date exceeds the respective approved dates in the baseline schedule.

.2 Also discuss delays due to weather or other factors and negotiate measures to address them.

1.9 DAILY REPORT

.1 Daily Work Report: The Contractor shall submit a Daily Work Report as requested in the specification section 01 33 00 - Documents and Samples to be Submitted.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

.1	Section 01 11 01	WORK DESCRIPTION
.2	Section 01 32 16.07	JOB SCHEDULING BAR CHART (GANTT)
.3	Section 01 35 29.06	HEALTH AND SAFETY
.4	Section 01 35 43	ENVIRONMENTAL PROCEDURES
.5	Section 01 52 00	CONSTRUCTION FACILITIES
.6	Section 01 74 21	CONSTRUCTION/DEMOLITION WASTE MANAGEMENT AND DISPOSAL
.7	Section 02 41 16	STRUCTURE DEMOLITION
.8	Section 02 65 00	STORAGE TANK REMOVAL
.9	Section 02 81 01	HAZARDOUS MATERIALS
.10	Section 02 82 00.01	ASBESTOS ABATEMENT - MINIMUM PRECAUTIONS
.11	Section 02 82 00.02	ASBESTOS ABATEMENT - INTERMEDIATE PRECAUTIONS
.12	Section 02 83 10	LEAD - BASE PAINT ABATEMENT - MINIMUM PRECAUTIONS
.13	Section 02 85 00.02	MOULD REMIDIATION - INTERMIDIATE PRECAUTIONS
.14	Section 02 85 00.03	MOULD REMIDIATION - MAXIMUM PRECAUTIONS
.15	Section 06 08 99	ROUGH CARPENTERY FOR MINOR WORKS
.16	Section 08 80 50	GLAZING
.17	Section 09 91 13	PAINTING FOR MINOR WORKS
.18	Section 26 41 13	LIGHTNING PROTECTION FOR STRUCTURES
.19	Section 31 00 00.01	EARTHWORK AND RELATED WORK – SHORT FORM
.20	Section 32 92 19.13	SEEDING

1.2 ADMINISTRATIVE

.1 As soon as possible and in a pre-determined order so as not to delay the work, submit the required documents/technical sheets/workshop drawings to the Departmental Representative for review. Delay in this regard shall not constitute a sufficient reason for an extension of time to complete the work and no such request will be accepted.

.2 Do not undertake work for which required documents/technical data sheets/ shop drawings are required until all submitted material has been fully reviewed.

.3 Specifications on required product and work product documents/specification sheets/ shop drawings shall be expressed in metric (SI) units.

.4 Where components are not produced or manufactured in metric (SI) units or specifications are not given in metric (SI) units, converted values may be accepted.

.5 Review technical documents/specification sheets/ shop drawings before submitting to the Departmental Representative. By this due diligence, the Contractor confirms that the requirements applicable to the Work have been or will be determined and verified and that each of the submitted documents/specification sheets/ shop drawings has been reviewed and found to be in accordance with the requirements of the Work and the Contract Documents. Documents/Specification Sheets/Workshop Drawings that are not stamped, signed, dated and identified as being relevant to the particular project will be returned without being reviewed and will be considered rejected.

.6 Notify the Departmental Representative in writing, at the time of submission of the documents/specification sheets/workshop drawings, of any deviations from the requirements of the Contract Documents and provide reasons for such deviations.

.7 Ensure accuracy of field measurements taken in relation to adjacent works affected by the work.

.8 Review of submitted documents/technical data sheets/ shop drawings by the Departmental Representative does not relieve the Contractor of responsibility for completeness and accuracy.

.9 The review of submitted documents/specification sheets/ shop drawings by the Departmental Representative does not relieve the Contractor of the responsibility to submit parts that meet the requirements of the contract documents.

.10 Retain a verified copy of each submitted document on site.

1.3 SHOP DRAWINGS AND PRODUCT DATA

.1 "Shop Drawings" means drawings, schematics, illustrations, tables, performance or performance charts, pamphlets and other documentation required to be provided by the Contractor to show in detail a part of the work to be performed.

.2 Drawings shall bear the seal and signature of a Professional Engineer recognized or licensed to practice in Canada, in the Province of Quebec.

.3 Shop drawings shall show the materials to be used and the construction, fastening or anchoring methods to be used, and shall contain erection diagrams, connection details, relevant explanatory notes and any other information necessary for the execution of the work. Where works or components are connected or joined to other works or components, show on the drawings that there has been coordination of requirements, regardless of the section under which the adjacent works or components will be supplied and installed. Cross-reference the specifications and preliminary design drawings.

.4 Allow five (5) days for the Departmental Representative to review each batch of documents submitted.

.5 Changes made to shop drawings by the Departmental Representative are not expected to affect the contract price. If changes are made, however, advise the Departmental Representative in writing prior to commencing work.

.6 Make changes to shop drawings as requested by the Departmental Representative in accordance with the requirements of the contract documents. When resubmitting drawings, advise the Departmental Representative in writing of any changes that have been made in excess of those required.

.7 Submitted documents must be accompanied by a letter of transmittal containing the following information :

.1 Date.

.2 Project designation and number.

.3 Contractor's name and address.

.4 Designation of each document / data sheet / shop drawing and the number submitted.

.5 Any other relevant data.

.8 Submitted documents shall bear or indicate the following :

.1 .1 Date of preparation and revision dates.

.2 .2 Project designation and number.

.3 .3 Names and addresses of the following individuals :

.1 Subcontractor.

.2 Supplier.

.3 Manufacturer.

.4 The Contractor's stamp, signed by the Contractor's authorized representative, certifying that the submitted documents are approved, that the on-site measurements have been verified and that the assembly conforms to the requirements of the Contract Documents.

.5 Relevant details for the relevant portions of the work :

.1 Materials and manufacturing details.

.2 Layout or configuration, with dimensions, including those taken on site, clearances and clearances.

.3 Erection or adjustment details.

.4 Characteristics such as horsepower, flow rate or capacity.

.5 Performance characteristics.

.6 Reference standards.

.7 Operational mass.

.8 Wiring diagrams.

.9 Single line and block diagrams.

.10 Connections to adjacent structures.

.9 Distribute copies of shop drawings and data sheets once the Departmental Representative has completed the audit.

.10 Submit one (1) electronic copy of shop drawings prescribed in the technical sections of the Specifications and as reasonably requested by the Departmental Representative.

.11 If no shop drawings are required due to the use of a standard manufactured product, submit one (1) electronic copy of the data sheets or manufacturer's documentation prescribed in the technical sections of the Specifications and as required by the Departmental Representative.

.12 Submit one (1) electronic copy of the certificates prescribed in the technical sections of the Specifications and required by the Departmental Representative.

.1 The documents, printed on official manufacturer's correspondence paper and signed by a representative of the manufacturer, shall certify that the products, materials, equipment and systems supplied are in accordance with the requirements of the Specifications.

.2 Certificates shall be dated after contract award and shall indicate the project designation.

.13 Submit one (1) electronic copy of the manufacturer's instructions prescribed in the technical sections of the Specifications and required by the Departmental Representative.

.1 Pre-printed documents describing the method of installation of products, equipment and systems, including special instructions and material safety data sheets indicating impedances, hazards and safety measures to be implemented.

.14 Submit one (1) electronic copy of the manufacturer's on-site inspection reports prescribed in the technical sections of the Specifications and required by the Departmental Representative.

.15 Submit one (1) electronic copy of the operation and maintenance records prescribed in the technical sections of the Specifications and required by the Departmental Representative.

.16 Delete information not applicable to the Work.

.17 In addition to the standard information, provide any additional details applicable to the Work.

.18 When shop drawings have been verified by the Departmental Representative and no errors or omissions are found or only minor corrections are made, return, fabrication and installation work can then be undertaken. If shop drawings are rejected, the annotated copy(s) are returned and the corrected shop drawings must be resubmitted as indicated above before fabrication and installation work can be undertaken.

1.4 PHOTOGRAPHIC DOCUMENTATION

.1 Submit, at the end of the project, one (1) copy of the high-resolution digital colour photograph file in jpg format in both electronic and hard copy format. Provide sufficient photographs to view the project completion and milestones.

.2 Project identification: project designation and number and date the photo was taken.

1.5 CERTIFICATES AND TRANSCRIPTS

.1 Submit the documents required by the appropriate occupational health and safety commission immediately after contract award.

.2 Submit copies of insurance policies and bonds immediately upon contract award.

2 PRODUCTS AND DOCUMENTS TO BE SUBMITTED

2.1 Work Plan

.1 See section of estimate 01 52 00 - Site Installations.

2.1 Waste and other residual materials management plan

.1 See section of specifications 01 74 21 - Construction/Demolition Waste Management and Disposal.

2.3 Environmental Emergency Response Plan (EERP)

.1 See specification section 01 35 43 - Environmental protection.

2.4 Health and safety prevention program

.1 See section of estimate 01 35 29.06 - Health and Safety.

2.5 Environmental Protection Plan

.1 See specification section 01 35 43 - Environmental protection.

2.6 Data Sheets and Shop Drawings

.1 Lighthouse entrance door, section 06 08 99 - Carpentry small scale work.

.1 Technical Data Sheets

.1 Manufacturer's data sheets/documentation to include product specifications, performance criteria, dimensions, limitations and finish.

.2 Shop Drawings

.1 Shop drawings shall indicate materials, thicknesses, profile sizes, connections, joints, method and number of anchors and accessories.

.2 Polycarbonate, as replacement for dome and headlight window glazing, section 08 80 50 - Glazing.

.1 Technical data sheets

.1 Manufacturer's data sheet/documentation shall indicate product specifications, performance criteria, dimensions, limitations and finish.

.3 Paint System for Exterior Paint of Lighthouse Dome and Entrance Door, Section 09 91 13 - Exterior Painting.

.1 Technical Data Sheets

.1 Manufacturer's data sheet/documentation shall indicate product characteristics, performance criteria, dimensions, limitations and finish.

.4 Lightning Protection of Buildings, Section 26 41 13 - Lightning Protection of Buildings.

.1 Technical Data Sheets

.1 Manufacturer's data sheet/documentation shall indicate product specifications, performance criteria, dimensions, limits and finish.

.2 Shop Drawings

.1 Shop drawings shall indicate materials, thicknesses, profile sizes, connections, joints, method and number of anchors and accessories.

.3 Drawing

.1 Make calculations and provide signed and sealed plans of work to be performed by a Professional Engineer who is a member of the Engineers of Quebec.

.5 Class A Sand Backfill

.1 Technical Data Sheets

.1 Manufacturer's data sheet/documentation shall indicate product characteristics, performance criteria, dimensions, limits and finish.

.6 Seed

.1 Technical Data Sheets

.1 Manufacturer's data sheet/documentation shall indicate product characteristics, performance criteria, dimensions, limitations and finish.

.2 Provide a professional seed analysis service to provide an acceptable seed mix. Provide development fee for the mixture.

.7 Plan and certification of compliance for lifting, section 01 35 29.06 - health and safety

.1 Technical Data Sheets

.1 Provide all required certifications for lifting work at the site.

.2 Manufacturer's data sheet/documentation shall indicate product characteristics, performance criteria, dimensions, limitations and finish..

2.7 Data Sheets and Shop Drawings

.1 Certification and mechanical inspection.

.1 The Contractor shall provide recent inspection and maintenance reports of equipment, tools or machinery to be brought to the site (incinerator, generator, compressor, ATV, etc.). All equipment to be used on Bird Rock Island shall be in good condition to avoid problems of accidental spillage or environmental contamination.

2.8 Work Schedule

.1 See section of estimate 01 32 16.07 - Work Scheduling - Bar Graph (Gantt Chart).

2.9 Daily Work Report

.1 Daily Work Report: The Contractor shall submit a Daily Work Report.

.2 The daily report shall include and report on the following: weather conditions, number of hours worked, type of work performed, location where work was performed (building), work methods taken to meet constraints and requirements, safety observations, potential delays, tasks completed. It may include photos, observations or comments.

.3 The Contractor shall submit, at the beginning of the project, his daily report template and have it approved by the Departmental Representative.

.4 Daily information in the reports must be simple, clear, complete, accurate and understandable. The Contractor shall provide sufficient detail on the tasks or work performed and the report shall be legible and accessible.

.5 This report is to be sent daily to the Departmental Representative.

3 Execution

3.1 NOT USED

.6 Not Used.

END OF SECTION

Part 1 General

GENERAL NOTE: In this section, the term "site" refers to all facilities located on the site where the work is being carried out (work site itself, buildings, access, infrastructures, etc.).

1.1 RELATED REQUIREMENTS

.1	Section 01 11 01	WORK DESCRIPTION
.2	Section 02 41 16	STRUCTURE DEMOLITION
.3	Section 02 65 00	STORAGE TANK REMOVAL
.4	Section 02 81 01	HAZARDOUS MATERIALS
.5	Section 02 82 00.01	ASBESTOS ABATEMENT - MINIMUM PRECAUTIONS
.6	Section 02 82 00.02	ASBESTOS ABATEMENT - INTERMEDIATE PRECAUTIONS
.7	Section 02 83 10	LEAD - BASE PAINT ABATEMENT - MINIMUM PRECAUTIONS
.8	Section 02 85 00.02	MOULD REMIDIATION - INTERMIDIATE PRECAUTIONS
.9	Section 02 85 00.03	MOULD REMIDIATION - MAXIMUM PRECAUTIONS
.10	Section 06 08 99	ROUGH CARPENTERY FOR MINOR WORKS
.11	Section 08 80 50	GLAZING
.12	Section 09 91 13	PAINTING FOR MINOR WORKS
.13	Section 26 41 13	LIGHTNING PROTECTION FOR STRUCTURES
.14	Section 31 00 00.01	EARTHWORK AND RELATED WORK – SHORT FORM

1.2 REFERENCE STANDARDS

.1 Canada Labour Code, Part 2, Canada Occupational Safety and Health Regulations

.2 Province of Quebec

- .1 An Act Respecting Occupational Health and Safety, R.S.Q., c.S-2.1 (current edition) - Updated [2005].
- .2 Regulation respecting occupational health and safety (S-2.1, r.13).
- .3 Construction Safety Code, c. S-2.1, r.4.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit documents/specification sheets, shop drawings to be submitted for approval/information required as per 01 33 00 - Documents and samples to be submitted.

.2 Submit to the Departmental Representative the prevention program and response plan for emergencies or extended on-site stays (e.g. due to adverse weather conditions or mechanical failure of the helicopter), including at a minimum: contingency planning, roles of responders, chain of communication, temporary places of refuge, evacuation routes and methods, emergency medical care and first aid, alerting and response procedures, emergency equipment, prevailing weather conditions, etc., as required. The Contractor is also responsible for the Site Supervisor in the event of an extended stay on the site as mentioned in 01 51 00 section 1.9 - Temporary Utilities. The Contractor's responsibility includes the provision of sanitary facilities, food, temporary shelter, potable water and heating (when required) for its personnel as well as the Site Supervisor and visitors. Its prevention program must contain any element prescribed by regulation, in addition to being adapted to the particular constraints of Red island. It must present an analysis of the risks and safety hazards specific to the site and the tasks to be carried out. For example, the proximity of cliffs and bird nests in the work zone requires the identification and marking of authorized traffic areas on the site (see section 01 52 00 - Site installation). Submit the information required in this section as described in "GENERAL REQUIREMENTS" section 1.11 of this section.

.3 The Contractor shall submit his prevention program and emergency response plan and extended site stay plan for approval within 10 working days of contract award. The final prevention program and the final response plan shall be approved and corrected within 20 days after contract award. The Departmental Representative reserves 5 working days to review and comment on the prevention program and response plan. Approval of the prevention program and response plan is conditional upon the start of work. The Contractor is responsible for ensuring that the drafting, correction and final approval of the prevention program and response plan do not affect the work schedule. If necessary, the Contractor shall revise its prevention program and response plan and resubmit them to the Departmental Representative no later than 5 days after receiving the Departmental Representative's comments. The Departmental Representative reserves the right not to authorize the start of work on the site until the content of the prevention program and response plan is satisfactory. The Contractor shall subsequently update its prevention program and response plan and submit them to the Departmental Representative if the scope of the work changes, if the Contractor's work methods differ from its initial forecasts or for any other new applicable condition.

.4 Review by the Departmental Representative of the prevention program prepared by the Contractor for the site shall not be construed as an approval of that program and does not limit the Contractor's overall responsibility for health and safety during the construction work.

.5 Submit to the Departmental Representative1 weekly, reports of health and safety inspections carried out on the site by the Contractor's authorized representative.

.6 Submit to the Departmental Representative, within 24 hours, a copy of any inspection reports, corrective notices or recommendations issued by federal, provincial and territorial health and safety inspectors.

.7 Submit to the Departmental Representative, within 24 hours, an investigation report for any accident resulting in injury and for any incident that highlights a potential risk.

.1 The investigation report shall contain, as a minimum, the following elements :

.1 Date, time and location of the accident.

.2 Name of the subcontractor involved in the accident.

.3 Number of persons involved and condition of injured persons.

.4 Identification of witnesses.

.5 Detailed description of tasks performed at the time of the accident.

.6 Equipment used to perform the tasks performed at the time of the accident.

.7 Corrective action taken immediately after the accident.

.8 Causes of the accident.

.9 Preventive measures put in place to avoid a similar accident.

.10 Submit WHMIS Material Safety Data Sheets to the Departmental Representative in accordance with section 01 33 00 - Documentation and Samples to be Submitted and section 02 81 01 - Hazardous Materials. The Contractor shall also keep a copy of these sheets on site.

.11 Provide the Departmental Representative with a copy of the training certificates for workers on the job site, including the following training :

.1 Workplace First Aid and Cardiopulmonary Resuscitation. The Contractor shall have at least one person on site with this training.

.2 Work likely to emit asbestos dust (mandatory for all work in the presence of asbestos). Quotation section 02 82 00.01).

.3 Work in confined spaces (mandatory for all work in confined spaces).

.4 Work in the presence of fungal contamination - average precautions (estimate section 02 85 00.02).

.5 Lead-based paint removal work - minimum precautions (Estimate section 02 83 10).

.6 Any other training required by regulation or prevention program.

.7 In addition, certificates of the General Health and Safety Course for Construction Sites shall be available upon request at the construction site.

.8 Engineer Plans and Engineer Certificates of Compliance: The Contractor shall provide the Departmental Representative and the Commission des normes, de l'équité, de la santé et de la sécurité du travail (CNESST) with a copy signed and sealed by an Engineer of all plans required under the Construction Safety Code (S-2.1, r.4), any other law, regulation or other clause of the Specifications or the contract. He must also submit a certificate of conformity signed by an engineer once the installation for which these plans were designed has been completed and before a person uses this installation. A copy of these documents must be available at all times at the construction site.

1.4 FILING OF NOTICE

.1 Prior to commencement of work, send notice of beginning of work to CNESST. Forward a copy of the notice of commencement and acknowledgement of receipt from CNESST to the Departmental Representative.

.2 Upon completion of the work package, the notice of closure shall be forwarded to CNESST with a copy to the Departmental Representative.

.3 The Contractor shall **assume the role of Prime Contractor** at all times within the site boundaries and wherever else the Contractor is required to perform work under this project. The Contractor shall acknowledge the responsibility of the prime contractor and identify himself as such in the notice of commencement of work that he transmits to CNESST.

.4 The Contractor shall agree to divide and identify the work site properly to define time and space at all times during the project.

1.5 SAFETY ASSESSMENT

.1 Perform site specific safety hazard assessment related to project.

1.6 MEETINGS

.1 Arrange and conduct a health and safety meeting with the Site Supervisor and/or Departmental Representative prior to commencement of work.

.2 A decision making representative of the Contractor shall attend all meetings where health and safety issues are discussed at the work site.

.3 If it is anticipated that there will be 25 or more workers on the site at any time during the work, the Contractor shall establish a site committee and hold meetings as required by the Construction Safety Code (S-2.1, r. 4). A copy of the minutes of the worksite committee meetings shall be forwarded to the Departmental Representative no later than 5 days following the date of the committee meeting.

1.7 REGULATORY REQUIREMENTS

.1 Perform the Work in accordance with Section 01 41 00 - Regulatory Requirements.

.2 Comply with all laws, regulations and standards applicable to the performance of the Work.

.3 Comply with prescribed standards and regulations to ensure the normal course of work on sites contaminated with hazardous or toxic materials.

.4 Always use the most recent version of the standards cited in the Construction Safety Code (S-2.1, r.4), notwithstanding the date indicated in this Code.

1.8 COMPLIANCE REQUIREMENTS

.1 Comply with the Occupational Health and Safety Act (R.S.Q., c. S-2.1) and the Safety Code for Construction Work (S-2.1, r. 4.) in addition to complying with all the requirements of these specifications.

.2 Comply with Canada Labour Code, Part II, Canada Occupational Safety and Health Regulations in addition to meeting all requirements of this Specification.

1.9 RESPONSIBILITY

.1 The **Contractor shall accept and assume all the duties and obligations normally assigned to the Prime Contractor** under the Occupational Health and Safety Act (R.S.Q., chapter S-2.1) and the Safety Code for Construction Work (S-2.1, r.4).

.2 The Contractor shall be responsible for the health and safety of persons present on the site, as well as the protection of property located on the site; also, in areas adjacent to the site, for the protection of persons and the environment insofar as they are affected by the work.

.3 Regardless of the size and location of the work site, the Contractor shall clearly delineate the boundaries of the work site by physical means and comply with specific regulatory requirements. The means chosen to delineate the work site shall be submitted to the Departmental Representative.

.4 Comply with, and ensure that employees comply with, the safety requirements set out in the contract documents, applicable local, territorial, provincial and federal ordinances, laws and regulations, and the prevention program prepared for the work site.

1.10 WORK PERFORMED BY EXTERNAL CONTRACTORS

.1 On this site, it is expected that the following work will be performed by an outside contractor not engaged by the Contractor: Hazardous Materials Characterization and Soil Characterization.

.2 The Contractor shall take the necessary measures to protect the health and safety of external contractors who are not under contract with the Contractor but who are mandated by the Departmental Representative to perform certain work. In return, these external contractors have the obligation to submit to the authority of the Contractor (prime contractor). A subordination agreement must be signed by the Contractor and each external contractor to this effect and submitted to the Departmental Representative prior to the commencement of work by each external contractor (see wording in the OHS SUBORDINATION AGREEMENT section).

1.11 GENERAL REQUIREMENTS

.1 Prior to commencing work, prepare a site-specific prevention program based on the prior risk/hazard assessment in accordance with the section "HAZARD ASSESSMENT" and the section "WORK SITE INHERENT RISKS" of this section. Implement this program and ensure compliance with it in all respects until all site personnel are demobilized. The prevention program must take into account the particularities of the project and must cover all work carried out on the site.

.1 The prevention program shall include at least the following elements :

.1 Company health and safety policy.

.2 Description of the stages of the work.

.3 Total cost of the work, schedule and anticipated workforce curve.

.4 Health and safety responsibility organization chart.

.5 Physical and material organization of the work site.

.6 Identification of risks for each stage of the work, corresponding preventive measures and implementation procedures.

.7 Identification of preventive measures in relation to the specific risks inherent to the work site indicated in the article RISKS INHERENT TO THE WORK SITE.

.8 Identification of preventive measures for the health and safety of employees and/or the public at the work site as indicated in the section SPECIFIC REQUIREMENTS FOR THE HEALTH AND SAFETY OF EMPLOYEES AND THE PUBLIC.

.9 Required Training.

.10 Accident/injury procedure.

.11 Written commitment by all stakeholders to adhere to this prevention program.

.12 Site inspection grid based on preventive measures.

.13 Emergency Response Plan, which shall contain, as a minimum, the following elements :

.1 Site evacuation procedures.

.2 Identification of resources (police, fire, ambulance, etc.).

.3 Identification of responsible persons on site.

.4 Identification of first responders.

.5 Communication flowchart (including Site Manager and Departmental Representative).

.6 Required training for those responsible for its application.

.7 Any other information required, taking into account the characteristics of the work site.

.8 Procedures in the event of containment on site due to weather or other conditions.

.2 The Departmental Representative may provide written comments if there are deficiencies or concerns with the prevention program and may require submission of a revised program that will correct the deficiencies or address the concerns.

.3 In addition to the prevention program, during the course of the work, the Contractor shall develop and forward to the Departmental Representative a specific written procedure for any work with a high risk of accidents (example: demolition procedure, specific installation procedure, lifting plan, confined space entry procedure, etc.) or at the request of the Departmental Representative.

.4 The Contractor shall plan and organize the work in such a way as to promote the elimination of hazards at the source or collective protection and thus minimize the use of personal protective equipment.

.5 Any equipment, tool or means of protection that cannot be installed or used without jeopardizing the health and safety of workers or the public shall be deemed to be inadequate for the work to be performed.

.6 All mechanical equipment (e.g., material or personnel lifting devices, power shovels, concrete pumps, concrete saws, etc.) shall be inspected prior to delivery to the job site. The Contractor shall obtain a certificate of inspection signed by a mechanic and dated within one week prior to arrival of each piece of equipment at the job site and retain it at the job site and shall provide it to the Departmental Representative upon request. See specification section 01 33 00 - documents and samples to be submitted for mechanical certification.

.7 Ensure that all inspections (daily, periodic, annual, etc.) of equipment for lifting persons or materials required by applicable standards are carried out and be able to provide a copy of the inspection certificates upon request by the Departmental Representative.

.8 The Departmental Representative may at any time, if he suspects a defect or risk of accident, order the immediate shutdown of any equipment and require an inspection by a specialist of his choice.

1.12 RISKS INHERENT IN THE WORK SITE

.1 In addition to the risks associated with the tasks to be performed, personnel performing work on the site will be exposed to the following risks inherent in the location where the work will be performed.

.1 At the site where the work will take place, there is the presence of :

.1 Materials containing asbestos.

.2 Materials containing lead.

.3 Signs of suspected mould growth.

.4 Bird droppings.

.5 Confined spaces.

.6 Nearby Water.

.7 Cliffs.

.8 Winds.

.9 Remote and isolated area accessible only by helicopter.

.10 Unstable buildings.

.11 Terrain may have slight irregularities and crevices. However, the terrain is passable and passable outside the nest area.

.2 The Contractor shall conduct a site risk assessment to validate this information and see if other risks are present on the site. He shall include in his prevention program all risks that have been identified.

1.13 UNFORSEEN HAZARDS

.1 Where a source of danger not specified in the contract documents and not identifiable at the preliminary site inspection appears by fact or during the performance of the work, the Contractor shall immediately stop the work, notify the person responsible for health and safety at the site, put in place temporary protective measures for workers and the public and notify the Departmental Representative and/or the Site Supervisor verbally and in writing. The Contractor shall then make the necessary changes to the prevention program and implement the necessary safety measures so that the work can resume.

1.14 HEALTH AND SAFETY CO-ORDINATOR

.1 Where the hiring of a safety officer is not required or where the safety officer is hired by the Departmental Representative, the Contractor shall appoint a competent person as supervisor and health and safety officer regardless of the size of the work site or the number of workers present. This person must be present at all times at the work site and must be able to take all necessary measures to ensure the health and safety of persons and property on the work site and in the immediate environment of the work site that may be affected by the progress of the work. The Contractor shall provide the name of this person to the Departmental Representative prior to the commencement of the Work.

1.15 POSTING OF DOCUMENTS

.1 Ensure that relevant documents, articles, orders and notices are posted in a prominent location on the work site in accordance with provincial and federal legislation and regulations and in consultation with the Departmental Representative.

.2 As a minimum, the following information and documents shall be posted in a location that is easily accessible to workers :

.1 Notice of the commencement of the work site.

.2 Identification of the prime contractor.

.3 Company OHS policy.

.4 Prevention program specific to the worksite.

.5 Response plan in case of emergency or prolonged stay on site.

.6 Minutes of site committee meetings.

.7 Names of site committee representatives.

.8 Names of first-aid attendants.

.9 Response and correction reports issued by CNESST.

1.16 INSPECTIONS AND CORRECTION OF NON-COMPLIANCE

.1 Inspect the work site, complete the site inspection grid and submit it to the Departmental Representative in accordance with the section "DOCUMENTS/ TECHNICAL SHEETS, WORKSHOP DRAWINGS TO BE SUBMITTED FOR APPROVAL/INFORMATION DOCUMENTS" of this section.

.2 Take immediate action to correct situations found to be non-compliant during the inspections referred to in the preceding paragraph or found by the Authority Having Jurisdiction or by the Departmental Representative or Site Supervisor.

.3 Provide the Departmental Representative with a written report of the actions taken to correct the situation where health and safety non-compliance has occurred.

.4 The Contractor shall give the Safety Officer or, where there is no Safety Officer, the person authorized to deal with health and safety, full authority to stop and resume work when the Contractor considers it necessary or desirable for health and safety reasons. It shall ensure that the health and safety of the public and site personnel and the protection of the environment shall always take precedence over issues related to the cost and schedule of the work.

.5 The Departmental Representative or Site Supervisor may order the work to be stopped if the Contractor fails to correct conditions deemed to be non-compliant with health and safety requirements. Without limiting the foregoing, the Departmental Representative or the Site Supervisor may also at any time stop work if, in the Departmental Representative's opinion, there is a perceived danger or risk to the health or safety of site personnel or the public or to the environment.

1.17 VIOLENCE PREVENTION

.1 Health and safety management at Canada worksites includes the implementation of measures to protect the psychological health of all persons accessing the worksite. Thus, in addition to physical violence, verbal abuse, intimidation and harassment are not tolerated on site. Any person who demonstrates such gestures or behaviour will receive a warning and/or could be permanently expelled from the site by the Departmental Representative.

1.18 EXPOSURE TO ASBESTOS

.1 Prior to the commencement of any work likely to emit asbestos dust, the Contractor shall :

.1 Provide a written work procedure identifying the level of risk of the work (low, moderate, high), as defined in section 3.23 of the Construction Safety Code (S-2.1, r-4), and which takes into account all the requirements of that same section.

.2 Transmit certificates demonstrating that all workers involved in the work have received training on asbestos hazards and on the procedure required in the preceding paragraph.

.3 Demonstrate that all materials and equipment required to comply with the procedure and perform the work safely are on hand.

.4 Contractor shall refer to Specification Section 02 82 00.01 - Asbestos Removal - Minimum Precautions.

1.19 MOULD CONTAMINATION

.1 Prior to the commencement of any work where workers are likely to come into contact with mould-contaminated materials, the Contractor shall :

.1 Provide a written work procedure that complies with the requirements of the Safety Code for Construction Work (S-2.1, r.4) as well as the requirements outlined in the document "Mould Guidelines for the Canadian Construction Industry" published by the Canadian Construction Association (http://www.cca-acc.com/documents/electronic/cca82/acc82.pdf).

.2 Demonstrate that all materials and equipment required for the procedure and safe execution of the work are available.

.3 The Contractor shall refer to specification section 02 85 00.2 - Treatment of Fungal Contamination - Medium Precautions.

1.20 LEAD-BASED PAINT REMOVAL

.1 Prior to the commencement of any work where workers are likely to handle materials containing lead paint or other substances containing lead, the Contractor shall :

.1 Provide a written procedure that complies with the requirements of the Construction Safety Code (S-2.1, r.4) and the requirements set out in the document "Guidelines for Lead Exposure on Construction Sites" published by the Ontario Ministry of Labour (http://www.labour.gov.on.ca/french/hs/pdf/gl_lead.pdf). In the event of differences between the Quebec regulations and the Ontario document, the more stringent requirement applies.

.2 Demonstrate that all materials and equipment necessary to follow the procedure and perform the work safely are on hand.

.3 Contractor shall refer to specification section 02 83 10 - Removal of Lead-based Paint Coatings - Minimum Precautions.

1.21 EXPOSURE TO ANIMAL AND BIRD DROPPINGS

.1 Prior to the commencement of any work where workers are likely to come into contact with materials contaminated by animal and bird droppings, the Contractor shall :

.1 Provide a written procedure that complies with the requirements of the Construction Safety Code (S-2.1, r.4) as well as the requirements indicated in the document "Pigeon droppings in your workplace: beware" published by CNESST https://arpac.org/wp-content/uploads/2018/04/fientes-pigeons.pdf.

.2 Demonstrate that he has on hand all the material and equipment necessary to comply with the procedure and to carry out the work safely.

1.22 RESPIRATORY PROTECTION

.1 The Contractor shall ensure that all workers who are required to wear a respirator as part of their duties have been trained in the use of respirators and have had their respirator fit tested in accordance with CSA Z94.4 Selection, Care and Use of Respirators. Fit test certificates must be provided to the Departmental Representative upon request. Refer to each specific specification section and ensure that health and safety standards are met according to risks, hazardous materials, toxic or contaminants.

1.23 PREVENTION OF THE RISK OF FALLS

.1 Plan and organize work to promote elimination of fall hazards at source or collective protection and minimize the use of personal protective equipment. Where personal fall protection is required, workers shall use a safety harness in accordance with CAN - CSA-Z-259.10 - M90. Seat belts shall not be used as fall protection.

.2 Any opening in a floor or roof shall be surrounded by a guardrail or covered with a cover fixed to the floor and resistant to the loads to which it may be subjected, regardless of the dimensions of the opening and the height of fall it represents.

.3 Any person working within 2 metres of a location with a fall hazard of 3 metres or more shall use a safety harness in accordance with the requirements of the regulations unless a guardrail or other element providing equivalent safety is present.

.4 Notwithstanding regulatory requirements, the Departmental Representative may require the installation of guardrails or the use of safety harnesses for specific situations where there is a risk of falling less than 3 metres.

1.24 SCAFFOLDING

.1 See section of estimate 01 52 00 - Site Installations.

.2 In addition to the requirements of the Safety Code for Construction Work (S-2.1, r.4) the Contractor using scaffolding shall comply with the following requirements :

.1 Seating

.1 Scaffolding shall be erected on solid foundations so that it cannot slide or tip over.

.2 Contractors who wish to install scaffolding on a roof, overhang, awning or mansard must submit to the Departmental Representative their load calculations as well as the plans signed and sealed by an engineer and obtain his authorization before beginning the installation.

.3 The Contractor shall avoid placing scaffolding legs on nests.

.2 Assembly, Bracing and Mooring

.1 All scaffolding shall be assembled, braced and secured in accordance with the manufacturer's instructions and the provisions of the Construction Safety Code (S-2.1, r.4).

.2 For any situation where it is necessary to remove certain elements of the scaffolding (e.g., braces), the Contractor shall submit to the Departmental Representative, prior to the assembly of the scaffolding, an assembly procedure signed and sealed by an engineer certifying that the assembled scaffolding will allow the work to be carried out safely, taking into account the loads that will be applied to it.

.3 For any scaffolding structure where the span between two supports is greater than three metres, the Contractor shall provide the Departmental Representative, prior to scaffolding assembly, with an assembly plan signed and sealed by an engineer.

.3 Protection against falls during assembly

.1 At all times during assembly, all workers shall be protected against falls if they are exposed to a risk of falling more than three metres.

.4 Floors

.1 Scaffolding floors shall be designed and installed in accordance with the provisions of the Construction Safety Code (S-2.1, r.4).

.2 If planks are used, they shall be approved and stamped in accordance with the provisions of Section 3.9.8 of the Construction Safety Code (S-2.1, r.4).

.3 Scaffolding of four or more sections (or six metres) in height shall have a solid floor covering the entire surface of the bolts every three metres or fraction of three metres and the elements of these floors shall not be moved at any time to create intermediate landings.

.5 Guardrails

.1 A guardrail shall be installed at all work levels.

.2 Bracing braces shall not be considered as guardrails.

.3 Where floors are not solid, guardrails shall be installed just above the edge of the floor so that there is no horizontal gap between the floor and the guardrail.

.4 For scaffolds of four sections (or six metres) or more in height where solid floors are required, guardrails shall be installed at each of these landings at the start of the work and remain in place until completion of the work.

.6 Means of Access

.1 The Contractor shall ensure that the means of access to the scaffolding does not compromise worker safety.

.2 Where scaffolding floors are made of planks, ladders shall be installed so that protruding planks do not impede ascent or descent.

.3 Notwithstanding the provisions of the Construction Safety Code (S-2.1, r.4), stairs shall be installed on all scaffolds having six or more rows of uprights and six or more sections (or nine metres) in height.

1.25 CONFINED SPACES

.1 Information on confined spaces on the site.

.1 The following is a non-exhaustive list of confined spaces to which the Contractor may need to gain access during the course of this project :

.1 Inside the helicopter base, in the concrete foundation, under the helicopter landing pad.

.2 The Contractor shall consider each of these confined spaces and shall also add to this list any new confined spaces that the Contractor may construct/install during this project.

.2 Person responsible for health and safety of confined space work.

.1 The Contractor shall designate an individual responsible for the health and safety of the confined space work. This person shall be a qualified person as defined in Section 297 of the Occupational Health and Safety Regulation (S-2.1, r.13). The person must be present at all times during work in confined spaces and must ensure that all regulatory requirements and the requirements set out in this section are met. In particular, it must complete and issue the confined space entry permit.

.3 Training.

.1 All persons having access to a confined space, as well as the person in charge and the confined space supervisor, shall have completed confined space entry training.

.2 All persons required to use self-contained breathing apparatus for confined space access shall be trained in the use of self-contained breathing apparatus.

.3 All persons identified as confined space rescuers shall be trained in confined space rescue.

.4 Each of the training required in the preceding paragraphs shall be provided by a health and safety or confined space firm.

.5 Certificates of training for the persons identified above shall be forwarded to the Departmental Representative prior to commencement of confined space work.

.4 Confined Space Risk Assessment

.1 For each of the confined spaces listed at the beginning of this section, the Contractor shall obtain the necessary information from the Departmental Representative and conduct a risk assessment of the risks inherent in and related to each of these confined spaces:

.1 The prevailing internal atmosphere, i.e. the concentration of oxygen, flammable gases and vapours, combustible dusts presenting a fire or explosion hazard, and the categories of contaminants generally likely to be present in or around the confined space.

.2 Insufficient natural or mechanical ventilation.

.3 Materials present that may cause the worker to become bogged down, buried or drowned, such as sand, grain or liquid.

.4 Its interior configuration.

.5 Pipes and ducts entering the confined space.

.6 Energies such as electricity, moving mechanical parts, thermal stress, noise and hydraulic power.

.7 Ignition sources such as open flames, lighting, welding and cutting, static electricity or sparks.

.8 Any other special circumstances such as the presence of vermin, rodents or insects.

.2 These risk assessments shall be conducted by the person responsible for health and safety of confined space work. They shall be forwarded to the Departmental Representative for review at least 10 days prior to the date of the confined space work and shall include the following information:

.1 Location of the confined space.

.2 Description of the confined space.

.3 Confined space dimensions.

.4 Number, location and dimensions of openings.

.5 Confined space contents (equipment, substances, etc.).

.6 Date of assessment.

.7 Name and signature of person who conducted the assessment and name of employer.

.3 The Contractor shall complete the same exercise for each of the confined spaces to be constructed/installed by the Contractor during this project.

.5 Confined Space Entry Permit

.1 The Contractor shall forward to the Departmental Representative for review at least 5 days prior to the scheduled date of the confined space work, a copy of each entry permit specific to the confined spaces to be accessed. Entry permits shall be completed by the person responsible for the health and safety of the confined space work, and shall include at a minimum the following information:

.1 Description of the work to be performed and the method of work, including the equipment and tools required to do the work.

.2 Description of the hazards and corresponding control measures, based on the results of the previous confined space risk assessment and the risks inherent in the work to be performed in the confined space, including the equipment and tools required to perform the work.

.3 Safety equipment that will be used to control confined space hazards (e.g., fan, gas detector, source suction, personal protective equipment, etc.).

.4 Rescue procedure containing at least the following elements :

.1 Means of communication between the confined space supervisor and workers within the confined space.

.2 Life-saving equipment specific to each confined space.

.3 The Contractor shall identify site workers who will act as rescuers in the event that such rescuers require access to the confined space (mandatory lifesaving training).

.4 Location of satellite phone and telephone number of municipal emergency response service (if applicable).

.1 Date of entry permit.

.2 Name of person issuing permit and name of employer.

.3 Supervisor's name and employer's name.

.4 Names of workers to enter the confined space and their employers.

.2 Where the Departmental Representative requires the use of the confined space entry permit specific to his site, the Contractor shall comply with the requirements of that permit.

.6 Medical Surveillance

.1 The Contractor shall provide the Departmental Representative with a medical certificate less than two years old for all persons required to use an air supplied respirator. This certificate shall confirm the suitability of each person to use such equipment.

.7 Confined Space Work Requirements

.1 Prior to each entry into a confined space, the person in charge shall take readings of the concentration of oxygen, flammable gases and any toxic gases likely to be

present and record the results of these readings on the previously required entry permit.

.2 No worker shall have access to the confined space unless the following requirements are met :

.1 Oxygen concentration shall be greater than or equal to 19.5% and less than or equal to 23%.

.2 The concentration of flammable gases or vapours shall be less than or equal to 10% of the Lower Explosion Limit.

.3 The concentration of other gases shall not exceed the standards prescribed in Schedule I of the Regulation respecting occupational health and safety (S-2.1, r.13).

.3 If the concentrations of oxygen and gases measured meet the regulatory values, the person in charge shall ensure that all preventive measures indicated on the permit are in place and shall complete the entry permit (date, time, signatures, etc.) before issuing the permit and allowing access to the confined space.

.4 An entry permit shall cover one shift only; the Contractor shall issue a new permit for each additional shift.

.5 During work within the confined space, gas concentration shall be measured continuously and the detector shall be installed at the level of the workers breathing zone. If conditions within the confined space are such that workers may not hear/see the detector alarm, the Contractor shall provide a means for the Confined Space Supervisor to monitor the concentration measurements while maintaining measurements at the workers breathing zone.

.6 If the work is organized in such a way that workers may be separated from each other in a large confined space, the Contractor shall provide additional gas detectors.

.7 The Contractor shall provide gas detectors and maintain them in good condition. He shall be able to demonstrate that the gas detectors used have been calibrated and adjusted by the person in charge or by a qualified person and according to the manufacturer's recommendations. At any time, the Departmental Representative may have the accuracy of the Contractor's equipment verified. In the event of a failure of a detection device, work must immediately be suspended and all workers must leave the confined space.

.8 The gas detector manufacturer's manual shall be available at the job site.

.9 The Contractor shall provide a ventilation system of sufficient capacity to maintain contaminant concentrations below regulatory concentration limits.

.10 If work generating airborne contaminants is performed (welding, use of products, etc.), the Contractor shall, if necessary, install a contaminant exhaust system so as to be able to comply at all times with regulatory air quality values.

.11 If a gas detector alarm goes off, all workers shall exit the confined space. Concentration readings shall be recorded on the entry permit. The Contractor shall then identify the source of contamination, neutralize it, ventilate the confined space to remove residual contaminants and only allow access to the confined space when oxygen and gas concentrations have returned to normal.

.12 No compressed gas cylinders or welding equipment shall be brought into confined spaces: such equipment shall remain outside and shall not block access or egress; all cylinders shall be properly secured.

.13 Electrical tools and appliances used for work in confined spaces shall be grounded and, where necessary, explosion proof. All equipment shall be connected to a ground fault circuit interrupter or step-down transformer. The Contractor shall, at his own expense, have a qualified electrician modify the power outlets and/or circuit breakers he intends to use that do not meet these criteria.

.14 If confined space work requires hot work, the Contractor shall obtain a hot work permit and shall comply with the requirements to that effect.

.15 The Contractor shall assign a qualified person to perform the duties of a supervisor. The supervisor shall be assigned exclusively to these duties and shall remain outside the confined space at all times as long as there is a worker inside. In addition, the supervisor shall :

.1 Verify that the entry permit is completed, signed and posted next to the confined space.

.2 Be familiar with the work procedure specific to the confined space and ensure that it is followed.

.3 Ensure ongoing communication with all workers in the confined space. Ensure emergency equipment is in place.

.4 Be familiar with and ensure proper operation of supplemental ventilation systems for the duration of the work.

.5 Prevent access by unauthorized persons.

.6 Ensure that conditions in the area surrounding the confined space do not adversely affect the health and safety of workers within the confined space.

.7 Initiate emergency procedures as required.

.16 The same person may perform the duties of Supervisor and Person in Charge of Health and Safety of Confined Space Work, provided that all the requirements of both duties can be met.

1.26 LIFTING LOADS USING A CRANE OR TRUCK CRANE OR OTHER EQUIPMENT

.1 Unless otherwise specified, the Contractor shall prepare a lifting plan and forward it to the Departmental Representative for any lifting operation using a crane or truck crane or other equipment at least 5 days prior to the commencement of the lifting operations covered by the plan. This lifting plan must contain at least the information listed at the end of this section.

.2 In addition to the above requirements, the Contractor shall plan the lifting operations so as to prevent loads from passing over occupied areas on a site.

.3 Upon commencement of site work, the Contractor shall provide the Departmental Representative with a list of the planned lifting plans for the duration of the site. This list shall be updated as required if changes are made during the course of the work.

.4 In addition to the Mechanical Inspection Certificate, all cranes or crane trucks or other equipment shall have the Annual Inspection Certificate and Crane Log Book on board the cab.

.5 The entire lifting area shall be delineated to prevent unauthorized entry.

.6 The Contractor shall carefully inspect all slings and lifting accessories to ensure that those in poor condition are destroyed and discarded.

.1 MINIMUM CONTENTS OF A LIFTING PLAN

.1 Sketches showing at least the location of the crane or equipment, surrounding facilities, area covered by lifting operations, pedestrian and vehicular traffic routes, security perimeter, etc., as a minimum.

.2 Weight of loads.

.3 Load dimensions.

.4 List of lifting accessories and weights of each.

.5 Total weight lifted.

.6 Maximum height of obstacles to be cleared.

.7 Use of guide cables.

.8 Type of equipment used.

.9 Equipment capacity.

.10 Boom length.

.11 Boom Angle.

.12 Working radius.

.13 Lifting equipment verification confirmation.

.14 Identification of the person in charge of lifting operations with signatures and date.

1.27 HOT WORK

Hot work refers to all work using an open flame or that may produce heat or sparks such as riveting, welding, cutting, brazing, grinding, burning, heating, etc.

.1 At the beginning of each shift and for each area, the Contractor shall obtain a "Hot Work Permit" issued by the Site Manager.

.2 A working portable fire extinguisher, adequate for the fire hazard, shall be available and readily accessible within 5 m of all flames and sources of sparks or intense heat.

.3 The Contractor shall designate a person to provide continuous fire hazard monitoring for a minimum period of one (1) hour after completion of each hot work. This person shall sign the appropriate section of the permit and submit it to the Site Manager after the one hour period.

.4 Where hot work is performed in areas where combustible materials are present or where walls, ceilings or floors are made of or covered with combustible materials, a final inspection of the work area shall be scheduled four (4) hours after completion of the work. Unless otherwise directed by the Department Representative, the Contractor shall designate a person to perform this supervision.

Welding and Cutting

In addition to the requirements set forth in the preceding paragraphs, the Contractor shall comply with the following requirements:

.1 Welding and cutting shall be performed in accordance with the requirements of the Safety Code for Construction Work, S-2.1,r.4 and CSA W117.2 Safety in Welding, Cutting and Allied Processes.

.2 Use an air exhaust system with filters for all indoor welding and cutting.

.3 Discontinue all activities that produce flammable or combustible gases, vapours or dusts in the vicinity of welding or cutting operations.

.4 Store compressed gas cylinders on a fireproof surface and ensure the room is well ventilated.

.5 Store all oxygen cylinders a minimum of 6 meters away from flammable gas cylinders (e.g. acetylene) or combustible material such as oil or grease, unless separated by a partition made of non-combustible material as specified in section 3.13.4. of the Safety Code for the Construction Industry, S-2.1,r.4.

.6 Store cylinders away from all sources of heat.

.7 Do not store cylinders near stairs, exits, hallways and elevators.

.8 Do not allow acetylene to come into contact with metals such as silver, mercury, copper and brass alloys with more than 65% copper to avoid the possibility of an explosive reaction.

.9 Ensure arc welding equipment has the required voltage and is grounded.

.10 Ensure electric welding equipment leads are not damaged.

.11 Place welding equipment on level ground protected from the elements.

.12 Use flame retardant covers when welding is overlapping and sparks are likely to fall.

.13 Remove or protect flammable or combustible materials within 50 feet of welding operations.

.14 Never weld or cut on closed containers.

.15 Do not cut, weld or do any open flame work on containers, tanks, pipes or other receptacles that have contained any flammable or explosive substance or residue unless:

.1 they have been cleaned and air samples have been taken indicating the absence of explosive vapors; and

.2 arrangements have been made for the safety of workers.

1.28 ROOFING WORK

Protection against falls from height

.1 The installation of guardrails is mandatory at all times; however, the installation of a warning line is permitted to delineate work areas provided all requirements of Sections 2.9.4.0 and 2.9.4.1 of the Safety Code for Construction Work are met.

.2 Guardrails shall remain in place until the very end of the project. The department representative will authorize their removal when he/she can confirm that all required work, inspections and corrections have been completed.

.3 Safety harnesses must be worn when installing guardrails.

.4 Safety harnesses must be worn during the installation and modification of parapets or flashings, if it is necessary to temporarily relocate the guardrails.

.5 The wearing of a safety harness is mandatory for the reception of material and signals to the crane at the edge of the void.

.6 Safety harnesses must be worn when working at the edge of the void where collective protection does not provide adequate safety.

.7 The Contractor shall provide a method of attachment and emergency rope system in accordance with Section 2.10.12 of the Safety Code for the Construction Industry (R.S.Q.,S-2.1, r.4) for each different area or work site.

Lifting of materials

.1 For all hoist installations, the contractor shall forward to the departmental representative the installation procedure recommended by the manufacturer or, failing that, an installation procedure signed and sealed by an engineer. The installation procedure shall include consideration of maximum allowable loads, number, weight and location of counterweights and any other details that may affect the capacity and stability of the device.

.2 The Contractor shall carefully inspect all slings and lifting accessories and ensure that those in poor condition are destroyed and discarded.

.3 Lifting of compressed gas cylinders shall be done with a specially designed basket.

.4 For any use of a crane or truck crane, the Contractor shall comply with the requirements of the "Lifting Loads with a Crane or Truck Crane" paragraph of this section.

Burn Protection

.1 Persons assigned to hot water bottles shall wear long sleeves and safety glasses and a face shield when loading the hot water bottle.

.2 Persons working with asphalt or other hot liquids must wear gloves, long sleeves and safety glasses.

Protection against fire

.1 Storage and use of propane cylinders shall be in accordance with CAN/CSA-B149.2 Propane Storage and Handling Code. Cylinders shall be stored outdoors in a secure area, free from unauthorized handling, in an area where there is no movement of vehicles or equipment unless protected by barriers or equivalent protection.

.2 The amount of propane cylinders on the roof shall not exceed that required for one day's work and the cylinders shall at all times be secured upright or held upright in a cart designed for that purpose.

.3 All hot work (burning, heating, riveting, welding, cutting, grinding, etc.) shall be performed in accordance with the "Hot Work" paragraph of this section.

Materials and Waste Management

.1 On the roof, light and sheet materials shall be kept in containers or securely fastened. In the event of a variance, the Department Representative may prohibit the storage of materials on the roof.

.2 Trash shall be disposed of as it is collected by a trash chute or in appropriate containers; the Contractor shall provide means to prevent trash from blowing away.

.3 All trash shall be removed from the roof at the end of each shift.

.4 Unless specifically authorized by the Department Representative, all dumpsters shall be placed at least 10 feet from any structure or building.

Protection of occupants and the public

.1 The Contractor shall install walkways, netting or other devices to protect workers, the public and occupants from falling objects from building entrances and exits. The selected means of protection shall be approved by the Department Representative.

.2 A ground safety perimeter shall be provided under the work area to protect workers, the public and occupants.

.3 The ground work area, material handling area and hot water tank area must be clearly barricaded so that occupants and the public cannot gain access.

.4 Before installing any equipment that may emit gases or fumes, the Contractor shall obtain permission from the site manager. The site manager will ensure that there is no risk of infiltration into the building's ventilation systems.

1.29 WORK IN THE VICINITY OF A WATER BODY

.1 For all work carried out near a body of water (including work over water, work on a wharf, work along a watercourse, etc.), the Contractor shall comply with the requirements of the following paragraphs in addition to complying with section 2.10.13 of the Safety Code for Construction Work (S-2.1, r.4).

.2 The Contractor shall plan his work in such a way as to put in place safety measures to prevent any worker from falling into the water. The use of these safety measures shall be given priority when wearing lifejackets.

.3 Provide the Departmental Representative, prior to the commencement of the work, with the following documents :

.1 Description of the body of water.

.2 Description of the work in the vicinity of this body of water.

.3 Water transportation plan adapted to the work and characteristics of the body of water.

.4 Salvage plan adapted to the work and characteristics of the body of water.

Each of the documents listed above shall contain as a minimum the information required by Section 11 of the Construction Safety Code (S-2.1, r.4).

If it is possible that all or part of the work may take place during the winter period, the safety measures included in the documents required above must be adapted accordingly.

.4 The Contractor shall provide the Departmental Representative with the training certificate required in section 11.2 of the Safety Code for Construction Work (S-2.1, r.4), for the following persons :

.1 The person designated to prepare the documents required in the preceding paragraph.

.2 Each person in charge of transport or rescue operations.

.5 If the salvage plan calls for the use of a lifeboat, the Contractor shall forward to the Departmental Representative the Lifeboat Operator Competency Card or Certificate of Competency for his work, issued by Transport Canada.

.6 The Contractor shall include in his weekly inspection schedule the devices required by sections 11.4 and 11.5 of the Construction Safety Code (S-2.1, r.4).

1.30 TEMPORARY HEATING

.1 In addition to complying with section 3.11 of the Construction Safety Code (S-2.1, r.4), the Contractor shall comply with the requirements set out in the following paragraphs.

.2 A portable fire extinguisher shall be available at all times in the vicinity of the heating appliances, regardless of the type of heating used.

.3 Appliances shall always be used according to the manufacturer's specifications.

.4 Where applicable, covers and tarpaulins used in the vicinity of heaters shall be securely fastened so that they cannot be projected onto the heaters, the piping connected to the heaters or any other heat source.

.5 Gas cylinders shall be installed so as to be protected from vehicular traffic and other equipment.

.6 For any use of non-electric heaters, the Contractor shall install a carbon monoxide detector in the work area, in close proximity to the heaters and/or workers, for the duration of the heating period. The Contractor shall immediately make the necessary corrections to the heating systems if the detector alarm sounds.

.7 The Contractor shall provide minimum monitoring of heating equipment outside of working hours (evenings and weekends). The Contractor shall submit a monitoring plan to the Departmental Representative prior to the use of the heaters.

1.31 OHS SUBORDINATION AGREEMENT

Project: Address :

EXTERNAL CONTRACTOR

I hereby agree to submit to the authority of (name of the prime contractor) _____, who is the prime contractor for the above project, for the duration of our work on the site. Therefore, I confirm that I have read the contractor's prevention program and I undertake to :

- Inform my employees of the content of the project manager's prevention program and ensure that its content is respected at all times.

- Provide the prevention program specific to our activities carried out as part of this project.

- Inform the project manager of my interventions on the construction site and obtain his agreement before proceeding with the work.

- Follow the health and safety directives given by the project manager's representative on the job site and attend, as needed, the training activities and health and safety meetings he organizes.

Name of the representative:

Name of the company :

Description of the work to be carried out on the site :

Approximate dates of the work (start-finish) :

Signature: _____ Date :

PRIME CONTRACTOR

I hereby undertake to allow the company (name of external contractor) _____ to carry out work on the project indicated above and, as the prime contractor, to take the necessary measures to protect the health and safety of the workers on the site. In the event that the contractor repeatedly refuses or fails to comply with my instructions, I undertake to inform the Department of Fisheries and Oceans Canada Representative and to provide documentary evidence of my dealings with the contractor.

Name of Representative:

Name of the Prime Contractor :

Signature: _____ Date :

Submit the completed and signed copy to the Department of Fisheries and Oceans Canada Representative.

Part 2 Products

2.1 NOT USED

.1 Not used.

Part 3 Execution

3.1 NOT USED

.1 Not used.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

.1	Section 01 11 01	WORK DESCRIPTION
.2	Section 02 41 16	STRUCTURE DEMOLITION
.3	Section 02 81 01	HAZARDOUS MATERIALS
.4	Section 02 82 00.01	ASBESTOS ABATEMENT - MINIMUM PRECAUTIONS
.5	Section 02 82 00.02	ASBESTOS ABATEMENT - INTERMEDIATE PRECAUTIONS
.6	Section 02 83 10	LEAD - BASE PAINT ABATEMENT - MINIMUM PRECAUTIONS
.7	Section 02 85 00.02	MOULD REMIDIATION - INTERMIDIATE PRECAUTIONS
.8	Section 02 85 00.03	MOULD REMIDIATION - MAXIMUM PRECAUTIONS
.9	Section 09 91 13	PAINTING FOR MINOR WORKS
.10	Section 31 00 00.01	EARTHWORK AND RELATED WORK – SHORT FORM

1.2 DEFINITIONS

.1 Pollution and Environmental Damage: The presence of chemical, physical or biological elements or agents that adversely affect human health and well-being, alter ecological balances important to humans and constitute an impairment of species important to humans or degrade the aesthetic, cultural or historical character of the environment.

.2 Environmental Protection: prevention/control of pollution and disturbance to habitat and the environment during construction.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit required documents, data sheets and shop drawings as per Section 01 33 00 - Submitting Documents/Samples.

.2 Data Sheets.

.1 Submit one (1) copy of the Material Safety Data Sheets required under WHMIS in accordance with section 01 35 29.06 - Health and Safety and 02 81 01 - Hazardous Materials.

.3 Work plans to be provided by Contractor prior to work.

.1 The Contractor shall submit Work Plans for approval within 10 working days of contract award. Final plans shall be approved and corrected within 20 days of contract award. The Departmental Representative reserves 5 working days to review and comment on the plans. Approval of the plans is conditional upon the beginning of work. The Contractor is responsible for ensuring that the drafting, correction and final approval of the plans do not affect the work schedule.

.2 The plans shall provide a comprehensive overview of known or potential environmental problems to be addressed during construction.

.3.1 Environmental Protection Plan.

.1 The Contractor shall provide an Environmental Protection Plan (EPP) outlining how the Contractor plans and implements environmental mitigation measures required for the performance of the work. **Apply all mitigation measures as an appendix to the contract documents**. This should include any actions that may pose a risk to the environment and need not be limited to the mitigation measures in the appendix. The Contractor must comply with the mitigation measures and describe how in its work these measures will be implemented. He must, among other things, consider the immediate proximity of the work site to the Gulf of St. Lawrence, the winds and the presence of nests. The Contractor must also agree to comply with any additional requirements formulated by the competent authorities when granting permits. Any access to the Migratory Bird Sanctuary during the nesting period is strictly prohibited. A request for access to the MBS must be previously transmitted to ECCC. Requests for access could be refused if birds remain on the site. In addition, the Migratory Bird Sanctuary Regulations prohibit at all times the carrying out of "any activity harmful to migratory birds, their eggs, nests or habitat". Work must be carried out with minimal impact to birds and their nests and in accordance with ECCC approval. Destroying nests is prohibited.

.2 In addition to demonstrating how mitigation measures will be implemented, the EPP shall identify, but not be limited to, the following elements:

.1 Identification of an Environmental Officer: This person will be responsible for, among other things, ensuring the monitoring of protection and mitigation measures, all applicable laws and regulations. He will also be responsible for making workers and subcontractors aware of the importance of respecting the environment, the importance of mitigation measures, the procedure to follow in the event of a spill, and measures to protect birds, eggs, nests or their habitat. The person in charge must present, implement and verify these elements throughout the work site.

.2 Layout plan for site facilities (including worker rest areas, washrooms, storage areas, sorting area, containers, restricted use areas, no-go areas, nesting area, etc.). Drawings showing the location of materials, structures, sanitary facilities, surplus or soiled material storage areas; drawings illustrating the methods that will be used to control runoff and to contain materials on the job site and protect nests. Should circumstances at the site change, the plan will have to be resubmitted according to the new criteria.

.3 Petroleum product storage and handling procedures.

.4 Procedures in case of accidental spillage of petroleum products found in the Contractor's ERAP. Provide an environmental incident report template. Provide contents and location of spill response kit.

.5 Names and qualifications of persons responsible for exit manifests and weighing slips for hazardous materials, debris and waste to be removed from the work site.

.6 Names and qualifications of persons responsible for training site personnel.

.7 A description of the training program for environmental protection personnel.

.3.2 Environmental Emergency Response Plan (EERP).

.1 The Contractor shall provide an Environmental Emergency Response Plan (EERP), the objectives of which are to reduce the risks and limit the environmental impacts of a spill. It must identify the sensitive areas of the site in the work plan and the activities at risk, as well as define the necessary tools (response equipment, training, exercises, communications, etc.) and provide a framework for responding to an emergency so that it is rapid and effective. The Contractor is responsible for ensuring that workers are informed of the precautions to be taken and are trained in spill response methods. The Contractor shall distribute the SPEP to all, and keep at least one copy on site. The spill contingency plan should include procedures to be implemented, instructions to be followed, location and contents of spill response kits and reporting requirements in the event of an unexpected spill of a regulated substance. It is mandatory that the SPEP include the following contact information:

.1 Canadian Coast Guard (CCG) Alert and Warning Network: 1-800-363-4735.

.2 ECCC National Environmental Emergencies Centre: 1-866-283-2333.

.3 Ministry of Environment and Climate Change (MELCC) Environmental Emergency Response Team (EERT): 1-866-694-5454.

.4 Procedures for the management and transportation of waste (including contaminated, potentially contaminated and non-contaminated debris and domestic waste) found in the Contractor's Construction Waste and Other Residual Materials Management Plan. See specification section 01 74 21 - Construction/Demolition Waste Management and Disposal.

.5 The actions included in the Environmental Protection Plan and the Environmental Emergency Plan shall be presented at a level of detail that is consistent with the environmental issues and the construction, demolition and rehabilitation work to be carried out.

.6 A non-hazardous solid waste disposal plan, including methods and locations for disposal of non-hazardous solid waste and debris from the clearance work. Refer to specification section 01 74 21 - Construction/Demolition Waste Management and Disposal.

.7 An Air Pollution Prevention Plan, specifying measures to contain dust, debris, materials and waste within the work site.

.8 A Contamination Prevention Plan, identifying potentially hazardous substances to be used on the site, the measures to prevent these substances from becoming airborne or being introduced into the soil or discharged into the water, and details of the measures that will be taken to ensure that the storage and handling of these substances is in compliance with federal, provincial and municipal laws and regulations.

.9 A Wastewater Management Plan, outlining the methods and procedures to be implemented for the management and disposal of wastewater arising directly from construction activities, such as water used, washing/cleaning and disinfection water and on-site toilets.

.10 A plan for the protection of bird nests on the site including the areas to be protected and the measures that will be taken to protect these areas during construction activities and any risks of transporting debris, materials, hazardous materials, etc. into these areas.

1.4 FIRES

.1 Provide supervision, attendance and fire protection measures as directed.

1.5 WASTE DISPOSAL

.1 Burial of waste and scrap materials on the job site is prohibited.

.2 Disposal of waste or volatile materials such as mineral spirits, oils or paint thinners by dumping them into the river or the environment is prohibited.

.3 Place all volatile wastes in covered, clearly identified metal containers and remove from the work site daily.

.4 All waste and scrap materials will be transported to previously authorized sites to comply with applicable regulations or any relevant provincial legalization. The Contractor shall provide written proof to the Ministry Representative and the Site Supervisor that the waste and scrap materials have been sent to a site authorized by the MELCC.

1.6 WORK ADJACENT TO WATERWAYS

.1 Watercourses shall be kept free of cuttings, waste material or debris.

.2 Do not slide or throw construction materials down the Bird Rock site into the water.

.3 Blasting is not permitted.

1.7 POLLUTION CONTROL

.1 Maintain the temporary erosion and pollution prevention facilities put in place under this contract.

.2 Control emissions from machinery and equipment in accordance with local authority requirements.

.3 Prevent sandblasting, scraping and other foreign matter from contaminating the air, soil and waterways beyond the application area.

.1 Provide temporary shelter if required.

.4 Sprinkle dry material and cover waste to prevent wind to lift dust or debris.

1.8 NOTIFICATION

.1 A written notice of non-compliance will be issued to the Contractor by the Departmental Representative and/or the Site Supervisor whenever non-compliance with any federal, provincial or municipal law, regulation, permit or any other element of the environmental protection plan implemented by the Contractor is observed.

.2 Upon receipt of a notice of non-compliance, the Contractor shall propose corrective measures to the Departmental Representative and the Site Supervisor as soon as possible and shall implement them with the approval of the Departmental Representative and the Site Supervisor.

.1 The Contractor shall await the written approval of the Departmental Representative and the Site Supervisor before proceeding with the implementation of the proposed measures.

.3 The Departmental Representative and the Site Supervisor will order a stop work order until satisfactory corrective action is taken.

.4 No additional time or adjustments will be granted for the work stoppage.

1.9 PETROLEUM, OIL AND LUBRICANTS

.1 Comply with federal and provincial legislation, regulations, codes and guidelines for on-site storage of fuel and petroleum products.

.2 Provide an enclosure for the storage of fuel and other petroleum products. Obtain approval from the Departmental Representative and Site Supervisor to designate an acceptable location on site for the storage of fuel or refuelling of equipment.

.3 Do not dispose of any petroleum products or toxic substances on land or in water.

.4 Exercise due diligence and take all necessary precautions to avoid spills to contaminate soil and surface water when handling petroleum products on site and refuelling vehicles, equipment and materials.

.5 Arrange for access to appropriate spill response equipment, consisting of at least one spill response kit for all situations that may arise at the site and for the containment and clean-up of spills.

.6 Maintain equipment, tools, machinery and materials in good condition to prevent leakage from the site.

.7 In the event of an oil spill, immediately notify the Departmental Representative, Site Supervisor and Environmental Emergency Service at 1-866-283-2333 (24 hour hotline). Conduct clean-up in accordance with all regulations and procedures stipulated by the authority having jurisdiction.

1.10 ENVIRONMENTAL SPILL KIT

.1 The Contractor shall have an environmental spill kit at the work site.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 CLEANING

.1 Clean-up during work: Perform clean-up work in accordance with Section 01 74 11 - Cleaning.

.1 Leave the premises clean at the end of each work day.

.2 Final Cleaning: Remove excess material/equipment, waste, tools and equipment from the job site as per 01 74 11 - Cleaning.

.3 Waste Management: sort waste for reuse/reuse, recycling or disposal as per Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

.1 Remove containers for recycling such as bins, skips, containers, carrying bags, barrels, tarps and slings from job site and dispose of materials at appropriate facilities.

END OF SECTION

Part 1 General

1.1 REFERENCES AND CODES

.1 Meet or exceed requirements of:

.1 Contract documents.

.2 Specified standards, codes and referenced documents.

1.2 HAZARDOUS MATERIAL DISCOVERY

.1 Asbestos : Demolition of structures made of or covered with asbestos-containing materials presents health hazards. Refer to Section 02 82 00.01 - Asbestos Removal - Minimum Precautions.

.2 Mould: Demolition of structures contaminated with mould may present health hazards. Refer to Section 02 85 00.02 - Treatment of Fungal Contamination - Medium Precautions.

.3 Lead: Demolition of structures where the presence of lead has been identified may present health or environmental hazards. Refer to Section 02 83 10 - Removal of Lead-based Paint Coating - Minimum Precautions.

.4 Bird Droppings: Bird droppings are a health hazard. Take appropriate measures and dispositions and comply with standards, codes and regulatory requirements of relevant authorities or agencies.

1.3 BUILDING SMOKING ENVIRONMENT

.1 Smoking restrictions must be respected. Respect smoking ban instructions. Smoking is not permitted on site.

.2 Eating, drinking, chewing gum and smoking is not permitted in the work area.

1.4 MIGRATORY BIRDS CONVENTION ACT (MBCA)

.1 Work shall be carried out in accordance with standards, guidelines and parameters established by regulatory agencies, including the Migratory Birds Convention Act, 1994 (MBCA). The purpose of the MBCA is to protect and conserve migratory birds - individuals and populations - and their nests through the Migratory Birds Regulations and the Migratory Bird Sanctuary Regulations. The MBCA and both regulations are available on the Internet at https://laws-lois.justice.gc.ca and https://laws-lois.justice.gc.ca/fra/lois/m-7.01/.

.1 Prior to commencing the work, the Contractor shall assist DFO in the preparation of applications for the following permits by providing the required information on the methodology, work schedule, etc., and shall provide the DFO with the necessary information to support the application. :

.1 Permit to carry out a project in a National Wildlife Area or Migratory Bird Sanctuary under the Migratory Bird Sanctuary Regulations.

.2 Nuisance or dangerous bird permit (regarding the risk of damage to nests during the work), under the Migratory Birds Regulations.

.2 The Contractor is liable to offences, tickets and penalties for failure to comply with the Migratory Bird Regulations. Refer to Section 13 and Section 18 of the MBCA. ECCC may also issue warnings and enforcement orders (e.g. stop work or change methodology).

1.5 ACT AND REGULATIONS GOVERNING ACTIVITIES IN THE SAGUENAY MARINE PARK

.1 The work must be carried out in accordance with the standards, directives and parameters established by the Saguenay Marine Park, in particular the Regulations respecting marine activities in the Saguenay-St. Lawrence Marine Park SOR/2002-76.

.2 Prior to conducting any activity in the Marine Park other than boating, the contractor must apply for a permit. Permits are mandatory in the Marine Park. Obtaining a permit is not automatic. Each application is evaluated based on the objectives and regulatory obligations of the Marine Park. Allow 30 working days between receipt and issuance of a permit. For special activity permits, the time frame is 10 working days.

.3 The Contractor shall comply with the Saguenay-St. Lawrence Marine Park Act (S.C. 1997, c. 37)

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit the required documents/technical data sheets/ shop drawings required in accordance with Section 01 33 00 - Submitting Documents and Samples.

1.2 INSTALLATION AND REMOVAL

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

.2 Remove from site all such work after use.

1.3 WATER SUPPLY

.1 Provide and pay for the temporary supply of potable water required for the execution of the work, including the Site Supervisor and the Departmental Representative.

.2 No potable water supply is available at the site.

1.4 TEMPORARY POWER AND LIGHT

.1 Provide and pay for the temporary power supply required to perform the work, including the Site Supervisor and the Departmental Representative.

.2 No source of electricity is available at the site.

1.5 TEMPORARY HEATING AND VENTILATION

.1 Provide temporary heating and ventilation equipment, if required, for the period of the work, including the Site Supervisor and the Departmental Representative to operate and maintain the equipment and provide the necessary fuel.

.2 Provide temporary heating and ventilation, if required.

1.6 TEMPORARY COMMUNICATION FACILITIES

.1 The Contractor shall provide temporary telecommunications facilities, including telephones, for his own use. The Contractor shall be responsible for the costs of all such services.

.2 At all times, a satellite phone shall be available on site in the event of poor cellular network coverage. The Contractor shall provide the satellite phone for his own use, but shall also make it available for use by the Site Supervisor and the Departmental Representative. The Contractor is responsible for the cost of all these services.

1.7 FIRE PROTECTION

.1 Provide and maintain fire protection equipment required by applicable codes and regulations.

1.8 SANITARY INSTALLATION

.1 Provide and pay for temporary plumbing service required to perform the work.

.2 No sanitary facility source is available at the site.

1.9 ISOLATED ENVIRONMENT

.1 The Contractor must take into account that the site is isolated and in the middle of the Gulf of St. Lawrence. The site is relatively windy. Weather constraints may have a significant impact on the possibility of accessing or leaving Red Island by helicopter or by boat (fog, ice). The Contractor shall provide, in his site organization for all persons on site, survival equipment and all essential services such as water, food, shelter, survival shelters, supplemental heat, lighting, sleeping bags, stoves, etc., in the event of adverse weather conditions necessary for the performance of the work and assume the costs thereof. Provide these services for an adequate period of time.

.2 No survival equipment or supplies are available on site.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 REFERENCE STANDARDS

.1 Canadian Standards Association (CSA International).

.1 CAN/CSA-S269.2- [FM1987(C2003)], Scaffolding.

.2 CAN/CSA-Z321-[F96(C2001)], Signals and Symbols in the Workplace.

1.2 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit required documents, data sheets and shop drawings in accordance with Section 01 33 00 - Documents and Samples to be Submitted.

.2 Work plan to be provided by the Contractor prior to work.

.1 The Contractor shall submit his Work Plan for approval within 10 working days of contract award. The final plan must be approved and final corrected within 20 working days after contract award. The Departmental Representative reserves 5 working days to review and comment on the plan. Approval of the work plan is conditional upon the commencement of work. The Contractor is responsible for ensuring that the drafting, correction and approval of the final plan does not affect the work schedule.

.2 The Contractor is responsible for planning all work in accordance with the requirements of DFO, the Saguenay Marine Park and other regulatory bodies. The Contractor must present a clear work plan to the Departmental Representative, specifying all planned interventions, equipment, procedures, mitigation measures, etc. The work plan must describe each step of the mandate, including but not limited to mobilization/demobilization on the site, method of transportation, securing the site, marking of authorized traffic areas on the site, methods of dismantling, sorting and disposing of waste, precautions during work in the presence of hazardous materials or asbestos, precautions during work with fungal contamination, health and safety precautions including work in the presence of bird droppings during the work methods to protect bird nests, training, identification of engineered landfill sites, ecocentres, residual hazardous materials disposal sites, site signage and identification of storage areas for materials, tools, generators, tanks, waste, hazardous materials, **and shall include the application of mitigation measures described in the Schedule to the Contract Documents.**

.3 Proposed methods of dismantling shall be controllable: items shall be carefully removed and lowered using appropriate tools and equipment. The Contractor shall be able to predict the effect of his actions on the element being dismantled and on the remaining parts.

.4 Works and site facilities shall be carried out with minimal impact to migratory birds and their nests and as approved by ECCC. As stated in Section 3 of the Migratory Birds Regulations, "No person shall hunt migratory birds, disturb, destroy or take nests of migratory birds, or have in his possession a live migratory bird, or the body, skin, nest or egg of a migratory bird in a Migratory

Bird Sanctuary except under the authority of a permit issued for that purpose", the Contractor shall plan his work accordingly. Work and site installations must be done with minimal impact to migratory birds and their nests and in accordance with ECCC approval.

.5 The Contractor is responsible for obtaining final approval of the Work Plan from Departmental Representative.

1.3 INSTALLATION AND REMOVAL

.1 Prepare a site plan linked to the work plan to be provided.

.2 Traffic patterns on and off the site shall be specified in the work plans and approved prior to the work. The Contractor will find the site plan attached. Prior to dismantling work, the Contractor **shall mark the authorized traffic areas** in accordance with the approved work plan and site conditions. Perform simple marking using rope and metal stakes. No equipment or vehicle traffic is permitted at any time outside the marked areas. Pedestrian traffic is also prohibited or restricted outside of these areas..

.3 Provide, set up or arrange the necessary site facilities to allow the work to be carried out in the shortest possible time.

.4 Dismantle equipment and remove it from the work site when no longer required.

1.4 SCAFFOLDING

.1 Scaffolding: conform to CAN/CSA-S269.2.

.2 Provide and maintain scaffolding, ramps, ladders, temporary stairs required for work.

1.5 SITE STORAGE/LOADING

.1 Confine work and operations of employees by Contract Documents. Do not unreasonably encumber premises with products.

.2 Do not load or permit to load any part of Work with weight or force that will endanger Work.

1.6 EQUIPMENT, TOOL AND MATERIALS STORAGE

.1 Provide and maintain, in clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials.

.2 Locate materials not required to be stored in weatherproof sheds on site in manner to cause least interference with work activities.

1.7 SANITARY FACILITIES

.1 Provide sanitary facilities for workers, the Site Supervisor and the Departmental Representative in accordance with relevant orders and regulations.

.2 Post required notices and take all precautions required by local health authorities. Keep the premises and area clean.

1.8 CLEAN-UP

.1 Remove construction debris, waste materials, packaging material from work site daily.

.2 Store materials resulting from demolition activities that are salvageable.

1.9 BURNING OF MATERIALS

.1 Burning of materials is prohibited.

1.10 MITIGATION MEASURE

.1 implement all mitigation measures as an annex to the Contract Documents.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 REFERENCE STANDARDS

.1 Canadian Standards Association (CSA International)

.1 CSA-O121-[M1978(R2003)], Douglas Fir Plywood.

1.2 INSTALLATION AND REMOVAL

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

.2 Remove from site all such work after use.

1.3 GUARD RAILS AND BARRICADES

.1 Provide rigid and safe guardrails and barriers and install them around required areas.

.2 Provide and install in accordance with the requirements of the authorities having jurisdiction.

1.4 SCAFFOLDING

.1 Scaffolding: conform to CAN/CSA-S269.2.

.2 Provide and maintain scaffolding, ramps, ladders, temporary stairs required for work.

1.5 MARKING OF TRAFFIC AREAS

.1 The Contractor is responsible for properly marking the site and work areas with adequate equipment.

.2 Traffic patterns on and off the site shall be specified in the work plans and approved prior to the work. The Contractor will find the site plan attached. Prior to dismantling work, the Contractor **shall mark the authorized traffic areas** in accordance with the approved work plan and site conditions. Perform simple marking using rope and metal stakes. No equipment or vehicle traffic is permitted at any time outside the marked areas. Pedestrian traffic is also prohibited or restricted outside of these areas.

.3 Provide, set up or arrange the necessary site facilities to allow the work to be carried out in the shortest possible time .

1.6 PROTECTION OF ADJACENT PUBLIC AND PRIVATE PROPERTY

.1 Protect neighbouring public and private property from damage resulting from the work.

.2 Where applicable, assume full responsibility for damage caused.

1.7 WASTE MANAGEMENT AND DISPOSAL

.1 Sort waste for recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

.1	Section 01 11 01	WORK DESCRIPTION
.2	Section 02 41 16	STRUCTURE DEMOLITION
.3	Section 02 65 00	STORAGE TANK REMOVAL
.4	Section 02 81 01	HAZARDOUS MATERIALS
.5	Section 02 82 00.01	ASBESTOS ABATEMENT - MINIMUM PRECAUTIONS
.6	Section 02 82 00.02	ASBESTOS ABATEMENT - INTERMEDIATE PRECAUTIONS
.7	Section 02 83 10	LEAD - BASE PAINT ABATEMENT - MINIMUM PRECAUTIONS
.8	Section 02 85 00.02	MOULD REMIDIATION - INTERMIDIATE PRECAUTIONS
.9	Section 02 85 00.03	MOULD REMIDIATION - MAXIMUM PRECAUTIONS
.10	Section 06 08 99	ROUGH CARPENTERY FOR MINOR WORKS
.11	Section 08 80 50	GLAZING
.12	Section 26 41 13	LIGHTNING PROTECTION FOR STRUCTURES
.13	Section 31 00 00.01	EARTHWORK AND RELATED WORK – SHORT FORM

1.2 PROJECT CLEANLINESS

.1 Keep the work site clean and free of any accumulation of debris and scrap materials, including those generated by the Contractor, the Site Supervisor or other contractors. The Contractor shall ensure that debris and materials cannot move into the nest area by wind or other action.

.2 Remove debris and waste material from the site daily at predetermined times or dispose of it as directed by the Departmental Representative and/or Site Supervisor.

.3 Arrange and obtain permits from appropriate authorities for disposal of debris and waste material.

.4 Provide at the job site, appropriate containers, totes, carrying bags, barrels, tarps and slings for the disposal of debris and waste materials in accordance with the contractor's proposed method of disposal of debris/waste. Submit method as per specification section 01 52 00 - Site Facilities: Work Plan to be provided.

.5 Provide and use separate and identified containers or other means for recycling, reuse/reuse, recovery or reclamation. Refer to Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

.6 Dispose of debris and waste materials off-site.

.7 Store volatile wastes in closed metal containers and dispose of off-site at the end of each work shift.

.8 Provide good ventilation of rooms during the use of volatile or toxic substances.

1.3 FINAL CLEANING

.1 Upon substantial completion of the work, remove excess materials, tools and construction/demolition equipment and materials no longer required for the remainder of the work.

.2 Remove debris and scrap materials and keep the site clean.

.3 Prior to final inspection, remove excess materials, tools, equipment and construction materials.

.4 Remove debris and waste materials including those generated by the Contractor, Site Supervisor or other contractors or visitors.

.5 Evacuate waste materials off site daily or dispose of them as directed by the Departmental Representative and/or Site Supervisor.

.6 Arrange and obtain permits from appropriate authorities for disposal of debris and waste material.

.7 The Contractor is responsible for leaving the site clean and safe at the end of the work.

.8 All other debris of any kind shall be collected on site. The Contractor shall eliminate physical and environmental hazards on the Red island. Therefore, he shall ensure that no such debris remains on the site.

1.4 WASTE MANAGEMENT AND DISPOSAL

.1 Sorting waste for recycling, reuse/reuse, recovery, recycling or disposal in accordance with 01 74 21 - Construction/demolition waste management and disposal and 02 81 01 - Hazardous materials..

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 WASTE MANAGEMENT GOALS

.1 Minimize the amount of non-hazardous solid waste generated by the work; maximize reuse/reuse, recovery and recycling of solid waste.

.2 Protect the environment and prevent damage from environmental pollution in accordance with Section 01 35 43 - Environmental Protection.

1.2 RELATED REQUIREMENTS

.1	Section 01 11 01	WORK DESCRIPTION
.2	Section 02 41 16	STRUCTURE DEMOLITION
.3	Section 02 65 00	STORAGE TANK REMOVAL
.4	Section 02 81 01	HAZARDOUS MATERIALS
.5	Section 02 82 00.01	ASBESTOS ABATEMENT - MINIMUM PRECAUTIONS
.6	Section 02 82 00.02	ASBESTOS ABATEMENT - INTERMEDIATE PRECAUTIONS
.7	Section 02 83 10	LEAD - BASE PAINT ABATEMENT - MINIMUM PRECAUTIONS
.8	Section 02 85 00.02	MOULD REMIDIATION - INTERMIDIATE PRECAUTIONS
.9	Section 02 85 00.03	MOULD REMIDIATION - MAXIMUM PRECAUTIONS
.10	Section 06 08 99	ROUGH CARPENTERY FOR MINOR WORKS
.11	Section 08 80 50	GLAZING
.12	Section 26 41 13	LIGHTNING PROTECTION FOR STRUCTURES
.13	Section 31 00 00.01	EARTHWORK AND RELATED WORK – SHORT FORM

1.3 DEFINITIONS

.1 Approved/Authorized Recycling Facility: Recycler approved by an applicable provincial authority, or other material recycler approved by the Departmental Representative.

.2 Class III Non-Hazardous Materials: Construction, renovation and demolition waste.

.3 Construction, Renovation and/or Demolition (CRD) Waste: Class III non-hazardous solid waste generated by construction, renovation and/or demolition activities.

.4 Landfill - Inert Waste : Bituminous materials and concrete only.

.5 Waste Source Separation Program (WSP): Implementation and coordination of activities on an ongoing basis to ensure that designated wastes will be sorted into pre-defined categories and directed for recycling and reuse/reuse, maximizing recovery and potential to reduce disposal costs.

.6 Recyclability: The character of a product or material that can be recovered at the end of its life cycle and transformed into a new product for reuse or re-use.

.7 Recycle: The process of collecting or transforming waste and used materials to allow them to be reintroduced into a consumer cycle as new products.

.8 Recycling: Operations involving the sorting, cleaning, treatment and reconstitution of solid waste and other discarded materials or materials, intended to promote their use in a form different from their original state. Recycling does not include combustion, incineration or thermal destruction of waste.

.9 Reuse/Reuse: Repeated use of a product or material in its original form for a different use in the case of reuse and similar use in the case of re-use. Reuse/reuse includes the following.

.1 The recovery of reusable/reusable products and materials generated by upgrading a structure or work prior to demolition for resale, reuse, reuse within the same project or storage for future use.

.2 Returning products and materials to suppliers that can be reused/reuse, such as pallets and unused products.

.10 Salvage: Removal of load-bearing and non-load-bearing building components and materials during deconstruction or dismantling of industrial, commercial or institutional structures for reuse/reuse or recycling.

.11 Sorted Waste: Waste already classified by type.

.12 Source Separation: Separation of different types of products and waste materials from the time they become waste.

.13 Waste Audit (DA) or Waste Disposal Report: Detailed inventory with estimated quantities of waste that will be generated by construction, demolition, deconstruction and/or renovation work. The DA includes the assessment, in volume and mass, of the quantities of waste materials and waste materials that will be reused/reused, recycled or landfilled. See Appendix A of this section.

.14 Waste Reclamation Report: A detailed report of final results quantifying the cumulative weights and percentages of waste reused/reused, recycled and landfilled throughout the work. Measures achievement of Waste Reduction Plan (WRP) targets and notes lessons learned The Contractor shall promote the reuse/reuse, reclamation or recycling of construction debris from the project where possible.

.15 Waste Management Coordinator (WMC): The Contractor's representative responsible for overseeing waste management activities and coordinating requirements for reports, documents, data sheets and shop drawings to be submitted.

.16 Waste Reduction Plan (WRP): A written document in which opportunities to reduce, reuse/reuse or recycle waste generated by the Project are investigated. Specifies recovery goals, implementation and reporting procedures, deliverables and responsibilities. Information from the waste reduction plan (Annex B of this section) from the waste audit. The Contractor shall promote the reuse/reuse, recovery or recycling of construction debris from the Project where possible.

1.4 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit required documents, data sheets and shop drawings as per Section 01 33 00 - Submitting Documents/Samples.

.2 Waste and Other Residual Materials Management Plan :

.1 The Contractor shall submit his plan for approval within 10 working days after contract award. The final plan shall be approved and final corrected within 20 days of contract award. The Departmental Representative reserves 5 working days to analyze and comment on the plan. Approval of the plans is conditional upon the commencement of the work. The Contractor is responsible for ensuring that the drafting, correction and final approval of the plan does not affect the work schedule.

.2 The Contractor shall provide a plan detailing the method of waste management according to its nature from dismantling to final disposal in an appropriate and approved site. The Contractor shall define the work methods to be applied for the following steps, but not limited to: removal, handling, storage, sorting, burning (if applicable), packaging, transportation and disposal (identification of landfill sites). The Contractor shall promote the recovery of materials whenever possible.

.3 The plan shall include, but not be limited to, the following information :

.1 Material flow: define and analyze the waste that will be generated on the site and estimate the various volumes.

.2 Sorting: define whether waste will be sorted on site and transported to designated centres, or whether some mixed materials will be collected by a carrier and sorted off site. Define the temporary storage conditions to be put in place according to the nature of the waste.

.3 Transportation: Describe the modes of transportation of the waste and specify the landfill sites where it will be disposed of.

.4 Waste Handling Procedures: Describe the means used to protect the waste from cross-contamination and prevent loss during transportation.

.5 Alternate Landfill Sites: if applicable, identify materials proposed for recovery, reuse, recycling or composting and specify the proposed local market for each material.

.4 The Contractor shall be responsible for providing the Departmental Representative and Site Supervisor, during the course of the work, duplicate copies of transportation documents and manifests and weigh slips indicating the weight of materials and other evidence of disposal including the final destination of recovered waste and waste sent to a landfill site.

.5 The Contractor shall be responsible for the implementation of the Waste and Other Residual Materials Management Plan and the designation of those responsible for the supervision of workers on site in relation to it. The Contractor shall be responsible for sorting, handling, recycling and recovering waste at each stage of the project. In the case of delegation to subcontractors, the Contractor shall also provide them with instructions on appropriate methods in accordance with the waste management plan. Subcontractors must cooperate fully with the Contractor in the implementation of the plan.

.6 The Contractor shall maintain the site clean throughout the work and ensure that the site is free of debris after completion of the work. This plan shall also include the management of domestic and human waste, debris already present on the site and hazardous materials.

.3 Prior to final payment, submit the following.

.1 A **Waste Disposal Report** indicating the final quantities (in tonnes) by type of material recovered for reuse/reuse, recycling or disposal at landfills, recycling centres, reuse depots and other waste treatment facilities. This should be clear and detailed.

.2 Evidence of disposal of hazardous materials such as asbestos, lead and mould.

.3 The Contractor shall provide all transportation manifests and weigh tickets for all materials and debris to the Departmental Representative and Site Supervisor. The Contractor will be paid on the basis of these documents at a unit price such as the tender slip.

.4 Ensure that quantities are reconciled and that weekly manifests and weigh tickets are submitted to the Site Supervisor and the Departmental Representative.

1.5 USE OF SITE AND FACILITIES

.1 Perform the work with minimal disruption to normal operations.

.2 Maintain security measures established for the installation. Implement interim security measures approved by the Departmental Representative.

.3 Work shall be performed with minimal impact to birds and their nests and as approved by ECCC. Nest destruction is not permitted. The Contractor shall schedule his work accordingly.

1.6 WASTE PROCESSING SITES

.1 The Contractor is responsible for identifying waste recovery, recycling and reclamation resources and service providers. Recovered waste materials shall be transported to approved and/or authorized recycling facilities or material recyclers.

.2 Provide documentation confirming the disposal of waste materials at authorized sites.

1.7 STORAGE, HANDLING AND PROTECTION

.1 Unless otherwise specified, waste material to be disposed of shall become the property of the Contractor.

.2 Protect, heap, store and catalogue recovered items.

.3 Separate non-recoverable from recoverable items. Transport and deliver non-recoverable items to the authorized disposal facility.

.4 Protect structural elements left in place and recovered waste materials from movement and damage.

.5 Support structures affected by the work. If the safety of the building may be compromised, stop work and immediately notify the Site Supervisor and Departmental Representative.

.6 Provide on-site facilities and containers for the collection and storage of recoverable, reusable and recyclable materials.

.7 Sort and store waste materials generated by the Project in designated areas.

.8 Prevent contamination of waste materials destined for recovery, reclamation and recycling in accordance with the acceptance conditions of the designated processing facilities.

.1 Source separation of waste materials is recommended.

.2 Dispose of scrap materials collected in a jumble to an off-site processing facility for sorting. Perform preliminary or complete on-site sorting and/or complete off-site sorting.

.3 Obtain waybills, receipts and/or weigh tickets for sorted waste material removed from the site.

1.8 DISPOSAL OF WASTES

.1 No waste or garbage, volatile matter, mineral spirits, hydrocarbons or paint thinner shall be buried in a watercourse or in a storm or sanitary sewer.

.2 Recover materials from the site as work progresses.

1.9 SCHEDULING

.1 Co-ordinate Work with other activities at site to ensure timely and orderly progress of Work.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 APPLICATION

.1 Handle waste materials not reused, salvaged, or recycled in accordance with appropriate regulations and codes.

3.2 CLEANING

.1 Clean-up during work: Perform clean-up work in accordance with Section 01 74 11 - Cleaning.

.1 Leave the premises clean at the end of each work day.

.2 Final Cleaning: Remove excess material/equipment, waste, tools and equipment from the job site as per 01 74 11 - Cleaning.

.3 Waste Management: Separate waste materials for reuse/reuse, recycling or disposal as per 01 74 21 - Construction/Demolition Waste Management and Disposal.

.1 Remove appropriate bins, skips, containers, totes, carrying bags, barrels, tarps and recycling slings from job site or and dispose of materials at appropriate facilities.

.2 Sort at source waste materials that are to be reused/reused or recycled and place them where indicated.

.4 Keep the work site clean and free of any accumulation of debris and waste materials, including those generated by the Contractor, Site Supervisor or other contractors. The Contractor shall ensure that debris and materials cannot move into the nest area or into the water by wind or other action.

3.3 WASTE RECYCLING

.1 We strongly encourage the Contractor to reuse/reuse, reclaim or recycle construction debris from the project where possible.

.2 Based on the following list, segregate scrap materials from the general waste stream and place them in separate piles or in separate containers, with the permission of the Site Supervisor and in accordance with applicable fire safety regulations.

.1 Identify containers or disposal areas.

.2 Provide instructions for disposal practices.

3.4 WASTE RECOVERY REPORT AND WASTE DISPOSAL REPORT

.1 At the end of the project, prepare a written Waste Recovery and Disposal Report indicating the quantities of materials reused/reused, recycled or disposed of, as well as the following.

.1 Indicate the final recovery results and measure the achievement of the waste reduction plan targets.

.2 Compare the final quantities/percentages of materials recovered with the initial waste audit and waste reduction plan projections. Explain variations.

.3 Report the results of the final waste disposal quantities and measure each material disposed.

3.5 WASTE AUDIT (WA) OR WASTE DISPOSAL REPORT

.1 Schedule A - Waste Audit (WA)

(1) Material Category	(2) Material Quantity Unit	(3) Estimated Waste %	(4) Total Quantity of Waste (unit)	(5) Generation Point	(6) % Recycled	(7) % Reused
Wood and Plastics Material Description						
Off-cuts						
Warped Pallet Forms						
Plastic						

Packaging						
Cardboard Packaging						
Other						
Doors and Windows Material Description						
Painted Frames						
Glass						
Wood						
Metal						
Other						

3.6 WASTE REDUCTION WORKPLAN (WRW) AND WASTE RECOVERY REPORT

.1 Schedule B

(1) Material Category	(2) Person(s) Respon-sible	(3) Total Quantity of Waste (unit)	(4) Reused Amount (units) Projected	Actual	(5) Recycled Amount (unit) Projected	Actual	(6) Material(s) Destina-tion
Wood and Plastics Material Description							
Chutes							
Warped Pallet Forms							
Plastic Packag ing							
Card-board Packag ing							
Other							
Doors and Windows Material Description							
Painted Frames							
Glass							

Wood							
Metal							
Other							

END OF SECTION

Part 1 General

1.1 ADMINISTRATIVE REQUIREMENTS

.1 Acceptance of Work Procedure.

.1 Inspection by Contractor: The Contractor shall inspect the work, identify defects and deficiencies and make corrections as necessary to ensure compliance with the requirements of the Contract Documents.

.1 Notify the Departmental Representative in writing upon completion of the Contractor's inspection and submit documentation that the corrections have been made.

.2 Submit a request for the work to be inspected by the Departmental Representative and/or Site Supervisor. Notify the Departmental Representative and/or Site Supervisor 5 days in advance, if possible, prior to inspection. The Contractor shall allow sufficient time for the Site Supervisor to inspect and prepare a deficiency list of the Work based on the Contractor's work schedule. The Contractor shall allow sufficient time for the completion of the remedial work in accordance with the Contractor's work schedule.

.2 Inspection by Departmental Representative and/or Site Supervisor.

.1 The Departmental Representative and/or Site Supervisor will work with the Contractor to inspect the work for defects and deficiencies.

.2 The Contractor shall make the required corrections.

.3 Completion of Tasks: Submit a document in French certifying that the tasks listed below have been completed.

.1 The work is complete and has been inspected and found to be in accordance with the requirements of the Contract Documents.

.2 Malfunctions and defects found during inspections have been corrected.

.3 The work is complete and ready for final inspection.

.4 Final inspection.

.1 Upon completion of all the above tasks, request that the work be submitted for final inspection, to be performed jointly by the Departmental Representative and/or Site Supervisor and the Contractor.

.2 If the work is deemed incomplete by the Departmental Representative and/or Site Supervisor, complete the outstanding items and reapply for inspection.

.5 Declaration of Substantial Completion: When the Site Supervisor and the Departmental Representative consider that the deficiencies and defects have been corrected and the contractual requirements appear to be substantially met, the Contractor shall apply for a Certificate of Substantial Completion.

.6 Declaration of Final Completion: When the Contractor, the Site Supervisor and the Departmental Representative consider that the deficiencies and defects have been corrected and the contractual requirements have been met, the Departmental

Representative will issue the Certificate of Final Completion under the following conditions :

.1 The Contractor shall certify and provide the list of deficiencies corrected and validated by the Departmental Representative that 100% of the deficiencies have been corrected.

.2 The Contractor shall submit the required and relevant completion documentation and obtain the Client's approval.

.7 Final payment.

.1 When the Departmental Representative considers that the deficiencies and defaults have been corrected and the contractual requirements have been fully met, submit a request for final payment.

.2 If the work is deemed incomplete by the Departmental Representative, complete the outstanding items and reapply for inspection.

1.2 FINAL CLEANING

.1 Perform clean-up work as per Section 01 74 11 - Cleaning.

.1 Remove excess material/materials, waste, tools and equipment from site.

.2 Waste Management: Depending on the nature of waste, sort waste for recycling and/or reuse/reuse, recovery, recycling or disposal as per 01 74 21 - Construction/Demolition Waste Management and Disposal or disposal as per 02 81 01 - Hazardous Materials.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

.1	Section 01 11 01	WORK DESCRIPTION
.2	Section 02 65 00	STORAGE TANK REMOVAL
.3	Section 02 81 01	HAZARDOUS MATERIALS
.4	Section 02 82 00.01	ASBESTOS ABATEMENT - MINIMUM PRECAUTIONS
.5	Section 02 82 00.02	ASBESTOS ABATEMENT - INTERMEDIATE PRECAUTIONS
.6	Section 02 83 10	LEAD - BASE PAINT ABATEMENT - MINIMUM PRECAUTIONS
.7	Section 02 85 00.02	MOULD REMIDIATION - INTERMIDIATE PRECAUTIONS
.8	Section 02 85 00.03	MOULD REMIDIATION - MAXIMUM PRECAUTIONS

1.2 REFERENCE STANDARDS

.1 CSA International

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

1.3 DEFINITIONS

.1 Hazardous Materials: Hazardous substances, goods, property and products including, but not limited to, poisons, corrosive agents, flammable materials, ammunition, explosives, radioactive substances and all other materials which, if improperly used, may adversely affect the health or welfare of persons or the environment.

.2 Waste Management Coordinator (WMC): Representative of the Contractor, responsible for overseeing waste management activities and coordinating requirements for reports, documents, data sheets and shop drawings to be submitted.

.3 Waste Audit (DA) or Waste Disposal Report: A detailed statement of the products and materials of which a building consists. Waste audit includes the assessment, in volume and mass, of the quantities of materials and waste generated by deconstruction. The quantities of materials reused/reused, recycled and landfilled must be reported separately. See specification section 01 74 21 - Construction/Demolition Waste Management and Disposal.

.4 Waste Reduction Plan (WRP): A written document in which opportunities to reduce, reuse/reuse or recycle waste generated by the Project are explored. Specifies recovery goals, implementation and reporting procedures, deliverables and responsibilities. See specification section 01 74 21 - Construction/Demolition Waste Management and Disposal.

.5 Waste Reclamation Report: A detailed report of final results quantifying the cumulative weights and percentages of waste reused/reuse, recycled and landfilled throughout the

work. Measures the achievement of Waste Reduction Plan (WRP) targets and notes lessons learned The Contractor shall promote the reuse/reuse, reclamation or recycling of construction debris from the Project where possible.

1.4 ADMINISTRATIVE REQUIREMENTS

.1 Pre-installation Meetings

.1 Refer to Section 01 31 19 - Project Meeting.

.2 Hold meetings as determined with the Departmental Representative.

.3 Ensure attendance of all key personnel and subcontractor representatives.

.4 If the meeting dates and/or times established at the time of contract award are changed, the Departmental Representative will advise in writing 24 hours prior to the announced meeting time.

.2 Scheduling of Work.

.1 Take the necessary steps to ensure that the work schedule is adhered to.

.1 Advise the Departmental Representative in writing of any delays.

.2 Refer to Section 01 32 16.07 - Work Scheduling.

1.5 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit required documents, data sheets and shop drawings in accordance with Section 01 33 00 - Documents/Samples to be Submitted and Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

.2 Provide upon completion of work :

.1 A **Waste Disposal Report** indicating final quantities by type of material disposed of, at landfills, recycling centres, reuse, recovery and other waste treatment facilities. This shall be submitted in the **Waste Audit (WA) or Waste Disposal Report format** and in accordance with the **Waste Reduction Plan (WRP)** in Specification Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

.2 Evidence of disposal of hazardous materials such as asbestos and lead.

1.6 SITE CONDITIONS

.1 Environmental Protection.

.1 Perform work in accordance with Section 01 35 43 - Environmental Protection.

.2 Apply all mitigation measures as outlined in the appendix to the contract documents.

.3 Ensure that the Work does not adversely affect wildlife, bird nests and adjacent watercourses and does not generate excessive levels of air or noise pollution.

.4 No waste or waste material shall be buried on the work site.

.5 No waste or volatile materials such as mineral spirits, oils, petroleum-based lubricants or toxic cleaning solutions shall be discharged into waterways.

.1 Ensure that proper methods of disposal of such wastes are followed throughout the duration of the work.

.6 Do not discharge water containing suspended solids into watercourses or adjacent lands by pumping or otherwise.

.7 Provide for drainage and containment of run-off containing suspended solids or other deleterious substances as required by the Authorities Having Jurisdiction.

.8 Protect vegetation (trees, plants, shrubs and their foliage) on the property and adjacent properties as indicated.

.9 During demolition work, erect temporary protective enclosures to prevent airborne contamination of off-site air with foreign substances or materials. Submit method of controlling dust or air contaminant in work plan section 01 52 00 site installation.

.10 Cover dry materials and waste materials or wet felling to prevent the raising of dust and debris.

.11 Protect bird nests on site as specified in contract documents.

.12 Perform the Work in accordance with Section 01 14 00 - Restrictions on the Work.

1.7 EXISTING CONDITIONS

.1 A Hazardous Materials Characterization Report for asbestos, lead and other hazardous materials is appended to the contract documents 02 81 01-HAZARDOUS MATERIALS .

.2 Refer to the photographic file for existing conditions in the appendix to the contract documents.

Part 2 Products

2.1 MATERIAL AND EQUIPMENT

.1 Heavy equipment and machinery

.1 All-terrain vehicles shall meet the requirements of EPA CFR 86.098-10 and EPA CFR 86.098-11.

.2 Shut down machinery immediately upon completion of use unless extreme temperature conditions require uninterrupted operation.

Part 3 Execution

3.1 DEMOLITION

.1 Perform demolition work in accordance with Section 01 56 00 - Temporary Access and Protection Structures.

.2 No blasting shall be used in the execution of demolition work.

.3 The Contractor shall take into account in the planning of his work and in his demolition work that additional characterization is to be carried out by the Site Supervisor at the beginning of the project. See section of specifications 01 11 01 - Description of work.

.4 Remove materials identified as contaminated or hazardous by the appropriate environmental protection authorities and dispose of them from the work site by taking all necessary safety measures to minimize hazards during their removal and disposal.

.5 Prior to continuing demolition work, remove contaminated or hazardous materials listed in the Hazardous Materials Characterization Report from the site and dispose of them by safe methods at designated facilities in accordance with section 02 81 01 - Hazardous Materials. Refer to Existing Conditions in PART 1.

.6 Demolish structures, buildings and walkways.

.7 Special Features :

- Demolition and disposal of chimneys;

- Demolish and dispose of fuel oil tank in one of the two houses and piping (see section 02 81 01 - hazardous materials). Provide for the cleaning and/or packaging of the tank and its piping and carry out the disposal according to the regulations, standards and laws in force;

- Two buildings (2 containers - generator building and tank building) housing 3 generators and their equipment: Take into consideration that the containers are in poor condition during removal or demolition. Depending on the method retained by the Contractor, the demolition of these buildings could be done in sections to carry out their disposal. The contractor must ensure that no contaminant (gasoline, oil, etc.) is spilled on the ground during the dismantling and disposal of generators, their equipment, pipes and tanks. A packaging, in a safe way, of the components that may contain fuel will have to be done by the contractor according to his chosen method. Tanks are present at the site. These must be cleaned of hydrocarbons and disposed of in accordance with provincial and federal regulations. Presence of oil-filled drums in containers where generators are located. Presence of absorbent material on the ground filled with oil to be picked up. Provide for the cleaning and/or packaging of tanks, generators, equipment, materials and piping and dispose of according to regulations, standards and laws in force;

- Demolition and disposal of steel or wood beams and columns in the basements of houses;

- Demolition and disposal of furnaces and their conduits in the houses. The furnace (insulated cardboard) will have to be handled according to the moderate risk method. See specification section 02 85 00.02 - Asbestos Removal - Medium Precautions;

- Demolition and disposal of the boat hauling structure in the Boathouse. Concrete base, if any, may remain in place;

- Demolition and disposal of generator power lines, including structures if any, that are not buried in the ground. Pick up, cut and dispose of.

- Demolition of roof and flashing, glazing, entrance door and lightning rod from the lighthouse. For reconstruction, see relevant specification sections;

- Mercury fluorescent tube to be disposed of. See Section 02 81 01 - Hazardous Materials;

- Lamp ballasts contain PCBs. See Section 02 81 01 - Hazardous Materials;

- Disposition of materials, equipment and debris to be collected between the two containers (generator building and tank building);

- Disposition of various materials, debris and waste to be collected throughout the site;

- There may be the presence of some appliances at the site and in the buildings.

- See photographic record and section 01 11 01 - description of work.

- Demolish and dispose of frames and windows in foundation walls of houses.

- Demolish and dispose of roof shingles and wall joint compound using the low risk method. See Specification Section 02 82 00.01 - Asbestos Removal - Minimum Precautions;

- Demolition and disposal of materials containing lead-based paint as per Specification Section 02 83 10 - Removal of Lead-Based Paint Coatings - Minimum Precautions.

- Demolition and disposal of materials containing mold per specification section 02 85 00.03 - treatment of fungal contamination - maximum precautions for janitor's house and assistant's house.

- Demolition and disposal of mold containing materials per specification section 02 85 00.02 - treatment of fungal contamination - medium precautions for all other buildings.

.8 Do not demolish concrete foundations. Only the foundation shall remain at the end of the work. However, the top of the foundation walls of the houses must be levelled (cut) to the natural ground level.

.9 Do not demolish the weather station.

.10 At the end of each day's work, ensure that the structure is safe and stable.

.11 Conduct demolition work in a manner that will minimize dust generation.

.12 Ensure that no debris is allowed to blow away.

.13 Unless otherwise specified, remove and dispose of demolition materials from the site in accordance with the requirements of the authorities having jurisdiction.

.14 Work shall be done in a manner that minimizes impacts to birds and flora. Destruction of nests is prohibited. The Contractor shall plan his work accordingly.

.15 The Contractor shall take into consideration specification section 01 14 00 - Work Restrictions regarding site traffic, work marking, storage areas, demolition waste management and disposal as work proceeds, soil protection for temporary storage areas, etc.

3.2 CLEANING

.1 Develop a Waste Reduction Plan and a Construction Waste Management Plan for the work under this section in accordance with section 01 74 21 - Construction/Demolition Waste Management and Disposal. The Contractor shall promote the reuse/reuse, recovery or recycling of construction debris from the Project where possible.

.2 Waste Management: Sort waste for reuse/reuse, recovery or recycling or disposal in accordance with section 01 74 21 - Construction/Demolition Waste Management and Disposal.

.3 Dispose of excess waste to a site approved by the Departmental Representative.

.4 Provide appropriate security measures and sufficient resources to prevent deterioration of materials.

.5 Provide separate and clearly marked waste containers, tarpaulins, tarps or other containers for each category of waste material. Do not remove materials from the job site until they have been inspected and approved by the Departmental Representative or Site Supervisor prior to transporting materials off the job site.

.6 Store reusable materials on site for reuse/reuse, reclamation or recycling.

.7 Transport materials for reuse/reuse, reclamation or recycling or disposal using trucking companies, waste accepting organizations and approved treatment facilities identified in the waste reduction plan and in accordance with applicable regulations.

.8 Dispose of products and materials that are not destined for environmentally sound disposal in accordance with applicable regulations.

END OF SECTION

Part 1 General

1.1 SUMMARY

.1 Tanks are present at the site and must be removed and disposed of :

- .1 Caretaker's House
- .2 Generator building
- .3 Tank Building

.2 The Contractor shall submit his method to the Department Representative for approval.

.3 The Contractor shall ensure that no contaminants (gasoline, oil, etc.) are released to the ground during the dismantling and disposal of generators, tanks and/or their equipment.

1.2 RELATED REQUIREMENTS

.1	Section 01 11 01	WORK DESCRIPTION
.2	Section 01 74 21	CONSTRUCTION-DEMOLITION WASTE MANAGEMENT AND DISPOSAL
.3	Section 02 41 16	STRUCTURE DEMOLITION
.4	Section 02 81 01	HAZARDOUS MATERIALS

1.3 REFERENCE STANDARDS

.1 Canadian Council of Ministers of the Environment (CCME)

- .1 PN 1327-[2003], Environmental Code of Practice for Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products.
- .2 PN 1300-[2006], Canadian Environmental Quality Guidelines.
  - .1 Chapter 7-[2006], Canadian Soil Quality Guidelines for the Environment and Health.

.2 Canadian Federal Legislation

- .1 Canadian Environmental Protection Act (CEPA), 1999, c. 33.
- .2 Canadian Environmental Assessment Act (CEAA), 1995, c. 37.
- .3 Canada Labour Code (R.S. 1985, c. L-2).
  - .1 Part II (September 2000) - Occupational Health and Safety.
- .4 Transportation of Dangerous Goods Act, 1992 (TDGA), c. 34.

.3 Underwriters Laboratories of Canada (ULC)

- .1 ULC-S603-[2000], Standard for Steel Underground Tanks for Flammable and Combustible Liquids.
- .2 ULC-S615-[1998], Standard for Reinforced Plastic Underground Tanks for Flammable and Combustible Liquids.

1.4 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit required documentation in accordance with Section 01 33 00 - Submittal Documentation and Samples.

.2 Submit a written description of the storage tanks to be removed in accordance with Section 01 33 00 - Submittal Documents and Samples.

.3 Provide the following information for each tank.

.1 Type of product that was stored in the tank.

.2 Location.

.3 Reasons for removal.

.4 Provide the Department Representative with a copy of the vapor concentration measurement results.

.5 Submit a sworn statement to the appropriate authority certifying the destruction of the storage tanks.

1.5 QUALITY ASSURANCE

.1 The Contractor shall be licensed/certified by the appropriate provincial/territorial authorities for the removal of underground storage tanks.

.1 License/accreditation number and title to be provided with tender documents.

.2 Regulatory Requirements: Ensure work is performed in accordance with applicable provincial regulations.

1.6 TRANSPORTATION, STORAGE AND HANDLING

.1 Waste Management and Disposal

.1 Sort waste materials for recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

.2 Route unused metal components to a metal recycling facility approved by the Departmental Representative.

.3 Segregate non-recoverable or non-recyclable materials, including liquid residues and sludge and dispose of to a provincially/territorially approved treatment facility.

Part 2 Products

2.1 NOT APPLICABLE

.1 Not applicable.

Part 3 Execution

3.1 SAFETY PREPARATORY WORK

.1 Comply with or exceed the requirements of provincial, federal and territorial codes, municipal by-laws, acts, regulations and utility codes of authorities having jurisdiction.

.2 Take appropriate measures for occupational health and safety in construction in accordance with Section 01 35 29.06 - Health and Safety.

.3 Protection

.1 Comply with the requirements of the Occupational Safety and Health Regulations under Part II of the Canada Labour Code and the requirements of the Construction Regulations.

.2 Disconnect and remove all sources of ignition in the vicinity of a tank.

.3 Provide temporary protective measures to ensure safe movement of workers and vehicles.

.4 Cutting, brazing and welding of metal work shall be performed only in supervised areas known to be free of flammable vapour concentrations.

.5 Ground or bond metal materials and equipment, including tanks and transfer lines, prior to use or transfer of flammable materials.

.6 Use non-sparking tools and intrinsically safe electrical equipment and appliances.

.7 Smoking is not permitted while performing this work.

3.2 DRAINING PIPING AND TANKS

.1 Drain and flush piping, draining liquids into tanks.

.2 Drain all liquids from tanks.

.1 Use explosion proof air or hand pump.

.3 Remove sludge from bottom of tanks.

.1 Dispose of stored product and deposited sludge in accordance with local, provincial and territorial laws and regulations using a carrier licensed by the appropriate provincial/territorial environmental protection authority.

3.3 TANK REMOVAL

.1 If signs of contamination are discovered during tank removal activities, contact the Departmental Representative immediately and suspend work until further notice.

3.4 VAPOUR VENTING

.1 Vapour Purge

.1 Purge detected vapours to within 10% of the lower explosive limit (LEL).

.2 Check residual concentration with a combustible gas detector.

3.5 SEALING OF TANKS

.1 Plug tank openings after purging operations but before removing tanks from site.

.1 Leave vents open.

.2 Seal all corrosion openings with threaded (boiler) plugs.

.3 Provide a 3mm vent in one of the plugs to prevent tanks from being subjected to excessive differential pressure during large temperature changes.

3.6 SECURING AND EVACUATING TANKS

.1 Check vapour concentrations prior to transport.

.1 Perform vapour venting if required.

.2 Evacuate tanks in accordance with applicable local, provincial, territorial and federal laws and regulations.

.3 Truck Evacuation

.1 Securely tie tanks to trucks used to transport them to the landfill.

.2 Cut openings in the walls to render the tanks unusable.

.3 Ensure that the [3] mm vent is at the highest point of the tank.

3.7 SITE DECONTAMINATION

.1 Prepare a tank plugging report. This report shall contain the results of soil testing to determine the level and extent of hydrocarbon contamination.

3.8 TANK DISPOSAL

.1 Tanks to be disposed of

.1 Dismantle tanks, cut numerous openings in tanks, or otherwise render tanks unusable.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

.1	Section 01 11 01	WORK DESCRIPTION
.2	Section 02 65 00	STORAGE TANK REMOVAL
.3	Section 02 81 01	HAZARDOUS MATERIALS
.4	Section 02 82 00.01	ASBESTOS ABATEMENT - MINIMUM PRECAUTIONS
.5	Section 02 82 00.02	ASBESTOS ABATEMENT - INTERMEDIATE PRECAUTIONS
.6	Section 02 83 10	LEAD - BASE PAINT ABATEMENT - MINIMUM PRECAUTIONS
.7	Section 02 85 00.02	MOULD REMIDIATION - INTERMIDIATE PRECAUTIONS
.8	Section 02 85 00.03	MOULD REMIDIATION - MAXIMUM PRECAUTIONS

1.2 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 Green Seal Environmental Standards (GS)

- .1 GS-11-[2008, 2nd Edition], Paints and Coatings.
- .2 GS-36-[00], Commercial Adhesives.

.4 Health Canada / Workplace Hazardous Materials Information System (WHMIS)

- .1 Material Safety Data Sheets (MSDS).

.5 National Research Council Canada (NRC)

- .1 National Fire Code of Canada [2015] (NFC).

1.3 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.

1.4 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit required documents, data sheets and shop drawings in accordance with Section 01 33 00 - Documents and Samples to be Submitted.

.2 Data Sheets.

.1 Submit required data sheets and manufacturer's instructions and documentation for the hazardous materials involved. Data sheets shall include product characteristics, performance criteria, dimensions, stresses and finish.

.2 In accordance with Section 01 35 29.06 - Health and Safety 01 35 43 and Environmental Protection, submit to the Departmental Representative, prior to bringing any hazardous materials to the work site, one (1) copy of the WHMIS required safety data sheets for the hazardous materials in question.

.3 Provide the Departmental Representative with a Hazardous Materials Management Plan indicating the name of all hazardous materials, their use, location, personal protective equipment required and disposal arrangements.

.3 Submit documents, data sheets and shop drawings related to design requirements for sustainable development.

.1 Construction Waste Management.

.1 Submit construction waste management plan for the project.

1.5 FIELD/IMPLEMENTATION CONDITIONS

.1 Personnel working on the job site may be exposed to, but not limited to, the following:

.1 Mold contaminated materials.

.2 Lead containing building materials (paint).

.3 Asbestos containing building materials.

.4 Fluorescent tubes containing mercury vapour (10 uns).

.5 Lamp ballasts presumed to contain PCBs (4 ones)

.6 Equipment and tanks containing hydrocarbons and oils.

.2 See relevant specification sections for asbestos, lead and mould for details of characterization analysis results and associated specifics.

.3 Refer to photographic record for existing conditions as an appendix to contract documents.

1.6 DELIVERY, STORAGE AND HANDLING

.1 Transport, store and handle materials and equipment in accordance with the manufacturer's written instructions.

.2 Deliver materials and equipment to the job site in their original packaging, which shall be labelled with the name and address of the fabricator.

.3 Transport hazardous materials and wastes in accordance with the Transportation of Dangerous Goods Act, Transportation of Dangerous Goods Regulations and applicable provincial regulations.

.4 Store and handle.

.1 Coordinate storage of hazardous materials with the Departmental Representative and Site Supervisor and comply with local requirements for labelling and storage of hazardous materials and wastes.

.2 Store and handle hazardous materials and wastes in accordance with applicable federal and provincial legislation, regulations, codes and guidelines.

.3 Store and handle flammable and combustible materials in accordance with the requirements of the National Fire Code of Canada (NFC).

.4 Up to 45 litres of gasoline, kerosene, naphtha or other flammable or combustible liquids may be kept on site provided the following conditions are met.

.1 Flammable or combustible liquids shall be stored in approved containers bearing the Underwriters' Laboratories of Canada or Factory Mutual certification mark.

.2 Storage of more than 45 litres of flammable or combustible liquids shall be approved by the Departmental Representative.

.5 Flammable or combustible liquids shall not be transferred within buildings.

.6 Flammable or combustible liquids shall be decanted away from open flames or heat generating devices where applicable.

.7 Thinners and cleaning materials used shall be non-flammable and have a flash point greater than 38 degrees Celsius.

.8 Flammable or combustible waste liquids shall be kept to a minimum at the worksite and shall be stored in approved containers in a safe and ventilated area.

.9 Comply with smoking regulations. Smoking is not permitted on the Red island site. Smoking is not permitted in areas where hazardous materials are stored, used or handled.

.10 Observe the following requirements for the storage of hazardous materials and wastes in quantities exceeding 5 kg for solid substances and exceeding 5 L for liquid substances.

.1 Store hazardous materials and wastes in closed and sealed containers.

.2 Label containers of hazardous materials and wastes in accordance with WHMIS requirements.

.3 Store hazardous materials and wastes in containers compatible with the material or waste in question.

.4 Segregate incompatible materials and wastes.

.5 Store different hazardous materials and wastes in separate containers.

.6 Store hazardous materials and wastes in a secure location with controlled access.

.7 Maintain a well defined evacuation route from the storage area.

.8 Store hazardous materials and wastes in a location that will prevent their release to the environment.

.9 Provide spill response equipment, including personal protective equipment, in close proximity to the storage area. See specification section 01 35 43 - Environmental Protection.

.10 Maintain an inventory of hazardous materials and wastes, which will record the name of the products, quantity and date of commencement of storage.

.11 Observe the following requirements if hazardous wastes are generated on site.

.1 Coordinate the transportation and disposal of hazardous waste with the Departmental Representative and Site Supervisor.

.2 Comply with all applicable federal, provincial and municipal laws and regulations pertaining to hazardous waste generators.

.3 Use the services of a carrier authorized by provincial authorities to take the material.

.4 Prior to shipping hazardous materials, obtain written notification from the intended hazardous waste treatment/disposal facility confirming that the facility will accept the hazardous materials and is authorized to do so.

.5 Affix visible hazard markings on containers as required by applicable provincial and federal regulations.

.6 Ensure that persons handling, offering for transport or transporting dangerous goods have received adequate training.

.7 Provide the Departmental Representative and Site Supervisor with photocopies of all shipping documents and waste manifests and weigh bills.

.8 Follow the path of the manifest completed by the consignee of the dangerous goods being shipped. Provide the Departmental Representative and Site Supervisor with a photocopy of the completed manifest.

.9 Immediately report any loss, release or leakage of dangerous goods to the Departmental Representative, the Site Supervisor and the appropriate provincial authority, if applicable. Take reasonable steps to prevent the release of hazardous material.

.12 Ensure personnel are properly trained in accordance with WHMIS (Workplace Hazardous Materials Information System) requirements.

.13 Report spills or accidents immediately to the Departmental Representative and Site Supervisor. Submit a written report to the Departmental Representative within 24 hours of the incident.

.5 Develop a construction waste management plan for the work in this section. Refer to Specifications Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

Part 2 Products

2.1 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.

Part 3 Execution

3.1 CLEANING

.1 Clean-up during work: Perform clean-up work in accordance with Section 01 74 11 - Cleaning.

.1 Leave the premises clean at the end of each work day.

.2 Final Cleaning: Upon completion of work, remove excess material/materials, waste, tools and equipment from the job site as per 01 74 11 - Cleaning.

.3 Waste Management: sort waste for reuse/reuse or disposal as per 01 74 21 - Construction/Demolition Waste Management and Disposal.

.1 Dispose of hazardous waste in accordance with applicable federal and provincial legislation, guidelines and regulations.

.2 Recycle hazardous wastes for which a cost effective recycling process exists.

.3 Ship hazardous waste to authorized hazardous waste treatment and disposal facilities.

.4 Burning, diluting or mixing hazardous waste for disposal is prohibited.

.5 No discharge of hazardous materials into a watercourse, storm sewer, sanitary sewer or controlled municipal landfill.

.6 Dispose of hazardous waste in a timely manner in accordance with applicable provincial regulations.

.7 Reduce the generation of waste and hazardous waste to the extent practicable. Take necessary measures to avoid mixing clean waste with contaminated waste.

.8 Identify and evaluate options for recycling, reuse and recovery as alternatives to landfill:

.1 Recycling of hazardous waste in a manner that constitutes disposal.

.2 Burning of hazardous waste.

END OF SECTION

Part 1 General

1.1 SUMMARY

.1 Comply with the requirements of this section when performing the following work.

.1 Caretaker's House and Assistant's House : The presence of asbestos has been confirmed in the following materials:

.1 Drywall panel joint cement on walls and ceilings of houses. Asbestos containing materials shall be handled using the low risk method.

.2 Building Roofing: Asbestos has been found in the following materials:

.1 Asphalt shingles on building roofs. Asbestos containing materials are to be handled by the low risk method.

BUILDING	MATERIAL DESCRIPTION	SAMPLING LOCATION	ASBESTOS CONTAINING MATERIAL (YES/NO)	TYPE OF ASBESTOS FIBER
Assistants' House	Gypsum and joint compound	Ground floor - Ceiling	YES	Chrysotile
Assistants' House	Gypsum and joint compound	Ground floor - Dividing wall	NO	None
Assistants' House	Tarred insulating membrane	Ground floor - Ceiling	NO	None
Assistants' House	Tarred insulating membrane	EXT - Perimeter wall	NO	None
Shed	Asphalt shingles	Roofing	YES	Chrysotile
Guardian's house	Gypsum and joint compound	BASEMENT - Ceiling	YES	Chrysotile
Guardian's house	Gypsum and joint compound	BASEMENT- Dividing wall	YES	Chrysotile
Guardian's house	Gypsum and joint compound	Ground floor - Ceiling	OUI	Chrysotile
Guardian's house	Gypsum and joint compound	Ground floor - Dividing wall	NO	None

Guardian's house	Gypsum and joint compound	FLOOR - Ceiling	NO	None
Guardian's house	Gypsum and joint compound	FLOOR - Dividing wall	YES	Chrysotile
Guardian's house	Fiber cement panel	BASEMENT - Dividing wall	NO	None

.3 Removal of non-friable asbestos materials other than ceiling tiles, if the materials are removed without being fragmented, cut, drilled, abraded, ground, sanded or vibrated at the locations indicated on the report.

.4 Fragmentation, cutting, drilling, grinding, sanding, scraping, vibrating or abrading of non-friable asbestos materials, using non-powered hand tools, if it is not necessary to wet the materials to limit dust and fibre dispersion.

.5 Removal of less than one square meter of drywall finished with joint compound containing asbestos material.

.6 For detailed description of work, see Specification Section 01 11 01 - Description of Work.

1.2 RELATED REQUIREMENTS

.1 Section 01 11 01 WORK DESCRIPTION

.2 Section 01 74 21 CONSTRUCTION-DEMOLITION WASTE MANAGEMENT AND DISPOSAL

.3 Section 02 41 16 STRUCTURE DEMOLITION

.4 Section 02 81 01 HAZARDOUS MATERIALS

.5 Section 02 82 00.02 ASBESTOS ABATEMENT - INTERMEDIATE PRECAUTIONS

1.3 REFERENCE STANDARDS

.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).

1.4 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 Amended Water: water with nonionic surfactant wetting agent added to reduce water tension to allow thorough wetting of fibres.

.3 Asbestos-Containing Materials (ACMs): materials that contain 0.5 per cent or more asbestos by dry weight and are identified under Existing Conditions including fallen materials and settled dust.

.4 Asbestos Work Area: area where work takes place which will, or may, disturb ACMs.

.5 Authorized Visitors: Departmental Representative, Site Supervisor, Engineers, Consultants or their designated representatives, and representatives of appropriate regulatory agencies

.6 Competent worker [person]: in relation to specific work, means a worker who:

.1 Is qualified because of knowledge, training and experience to perform the work.

.2 Is familiar with the [provincial] [federal] laws and with the provisions of the regulations that apply to the work.

.3 Has knowledge of all potential or actual danger to health or safety in the work.

.7 Friable material: means material that:

.1 When dry, can be crumbled, pulverized or powdered by hand pressure, or

.2 is crumbled, pulverized or powdered.

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

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

.10 Polyethylene: polyethylene sheeting or rip-proof polyethylene sheeting with tape along edges, around penetrating objects, over cuts and tears, and elsewhere as required to provide protection and isolation.

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

1.5 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit required documents, data sheets and shop drawings in accordance with Section 01 33 00 - Submitting Documents and Samples.

.2 Submit documentation demonstrating to the satisfaction of the Departmental Representative that appropriate measures have been taken for the disposal of asbestos waste in accordance with the requirements of the appropriate authorities.

.3 Submit documentation outlining local and/or provincial/territorial requirements for the preparation of the Notice of Commencement and Closure of Construction.

.4 Submit documentation demonstrating that the Contractor has asbestos removal liability insurance.

.5 Submit to the Departmental Representative and the Site Supervisor all required permits for the transportation and disposal of asbestos waste as well as follow-up weigh slips and vouchers confirming that asbestos waste has been received and disposed of properly.

.6 Submit documentation demonstrating that all workers have received adequate training and education regarding the risks of asbestos exposure, personal hygiene, techniques and

protective measures to be followed when working in an asbestos removal area, use, cleaning and disposal of respirators and protective clothing.

.7 Submit documentation demonstrating, to the satisfaction of the Departmental Representative and the Site Supervisor, that the operation and fit of the respirators provided to each worker has been verified and tested using an irritant smoke test.

1.6 QUALITY ASSURANCE

.1 Regulatory Agency Requirements: Comply with local, federal and provincial/territorial government requirements for asbestos protection. In the event of any discrepancy between these requirements and those contained in these Specifications, the more stringent requirements shall prevail. Comply with the regulations in effect on the date the work is performed.

.2 Health and Safety.

.1 Provide for health and safety during construction in accordance with Section 01 35 29.06 - Health and Safety.

.2 Safety Requirements: Protection of Workers and Visitors.

.1 Protective clothing and equipment to be used by workers and visitors when entering the asbestos removal area shall include the following.

.1 Air purifying half-maskrespirator 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 shall 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 to include suitable footwear, and to be repaired or replaced if torn.

.2 Eating, drinking, chewing gum and smoking are not permitted in the asbestos removal area.

.3 Before leaving the asbestos removal area, the worker may decontaminate protective clothing, without removing it, using a HEPA vacuum or wet cloth, or, if not reused, place it in dust and waste containers. These containers must be dust- and asbestos-tight, suitable for asbestos waste, marked as containing asbestos waste, and cleaned with a damp cloth or HEPA vacuum immediately before removal from the work area. These containers should be removed frequently at regular intervals.

.4 Provide hand and face washing facilities in or near work areas.

.5 Ensure that workers wash hands and face when leaving an asbestos removal area.

.6 The Contractor shall verify and ensure that the tightness of the respirator mask of any worker and visitor entering an asbestos removal area is not compromised by facial hair or hair.

1.7 WASTE MANAGEMENT AND DISPOSAL

.1 Sort waste for reuse/reuse, recovery or recycling or disposal in accordance with section 01 74 21 - Construction/Demolition Waste Management and Disposal.

.2 Remove all packaging materials from the job site to appropriate recycling facilities.

.3 Collect and segregate corrugated cardboard, polystyrene, plastic, paper packaging and place in appropriate locations or containers on site for recycling in accordance with the Waste Management Plan.

.4 Sort scrap plastic from metal for reuse/reuse recycling and place in designated containers in accordance with the Waste Management Plan.

.5 Place substances that meet the definition of toxic or hazardous waste in designated containers.

.6 Containers of asbestos waste shall be labelled as asbestos waste and stored in a designated secure area.

.7 Handle and dispose of hazardous materials in accordance with CEPA, TDGA and applicable regional and municipal regulations.

.8 Bend steel strapping, flatten and place in designated areas for recycling.

.9 Also ensure that asbestos waste from asbestos removal operations is disposed of in accordance with applicable federal, provincial, territorial and municipal regulations.

.10 Dispose of asbestos waste in lined and sealed [6] mils bags or in airtight drums. Carefully mark waste bags or drums with appropriate warning labels.

.11 Provide manifests and weigh slips to Departmental Representative and Site Supervisor containing list and description of waste generated during the work and ensure transportation of waste containers by approved means to approved landfills for burial.

.12 In the event of several contaminants on the same material, the Contractor is responsible for taking appropriate measures according to the most restrictive standards, regulations and laws.

1.8 EXISTING CONDITIONS

.1 The report and the various information relating to asbestos materials to be treated, removed or otherwise moved and disposed of during the course of this work shall be attached to the contract documents.

.2 Advise the Departmental Representative and Site Supervisor of any friable material discovered during the course of the work, but which was not identified in the contract documents or the report for this work. Do not move these materials until instructed to do so by the Departmental Representative and/or Site Supervisor.

.3 Refer to photo file for existing conditions.

1.9 PERSONNEL TRAINING

.1 Before beginning Work, provide Departmental Representative satisfactory proof that every worker has had instruction and training in hazards of asbestos exposure, in personal hygiene and work practices, and in use, cleaning, and disposal of respirators and protective clothing.

.2 Instruction and training related to respirators includes, following minimum requirements:

.1 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 a competent, qualified person.

.4 Training/certifications and/or attestations must be valid and not expired.

Part 2 Products

2.1 MATERIALS

.1 Cover Sheets

.1 Polyethylene sheets: 0.15 mm thick.

.2 Reinforced Polyethylene Sheets: 0.15 mm thick fibre reinforced woven fabric bonded on each side to a polyethylene sheet.

.2 Wetting agent: solution of 50 % polyoxyethylene ester and 50 % polyoxyethylene ether, mixed with water in sufficient concentration to ensure good impregnation of asbestos materials.

.3 Asbestos Waste Containers: place waste in double-walled containers.

.1 Inner envelope shall be a 0.15 mm thick sealable polyethylene bag.

.2 The outer shell, into which the inner shell will be inserted, shall be a sealable fibre or metal container where the waste contains sharp-edged components; otherwise, the outer shell may be a single sealable fibre or metal bag or a second 0.15 mm thick sealable polyethylene bag.

.3 Labelling Requirements: Place a printed warning label on asbestos waste containers indicating, in both official languages, the asbestos hazard, so that it is clearly visible once the container is sealed and ready for disposal.

.4 Slow Drying Filler: a clear, non-staining, water dispersible, transparent product that remains tacky to the touch for at least eight (8) hours after application and is designed to trap residual asbestos fibres.

.5 Tape: glass fibre reinforced duct tape, air duct type, capable of sealing polyethylene sheets in both dry and treated water dampened environments.

Part 3 Execution

3.1 PROCEDURES

.1 Provide for construction health and safety in accordance with section 01 35 29.06 - Health and Safety.

.2 Prior to commencing work, await results of additional characterization as referred to in section 1.1.4 of this specification section.

.3 Prior to commencing work, clearly delineate the asbestos removal area by marking all access routes to the asbestos removal area, using, at a minimum, printed warning labels indicating, in both official languages, asbestos hazards.

.1 Remove visible dust from all surfaces in the asbestos removal area where the work can reasonably be expected to displace asbestos.

.2 Use a HEPA vacuum or wet cloths where wet cleaning is safe and otherwise appropriate.

.3 Do not use compressed air to clean or remove dust from surfaces.

.4 Prevent the dispersion of dust from the asbestos removal area by measures appropriate to the work to be performed.

.1 Cover dust-absorbent floor coverings such as carpets and all floor coverings in the asbestos removal area where dust and asbestos fibres cannot otherwise be safely contained with reinforced polyethylene sheeting. Do not reuse the reinforced polyethylene sheets.

.5 Moisten asbestos materials to be cut, ground, abraded, scraped, drilled or otherwise moved unless impregnation presents a hazard or may cause damage.

.1 Use low flow, fine mist garden sprayer.

.2 Perform work in a manner that produces the least amount of dust possible.

.3 All work will be subject to visual inspection and air analysis.

.4 If visual inspection or air analysis reveals adjacent areas have been contaminated, these areas shall be confined and thoroughly cleaned.

.6 At short, regular intervals during and upon completion of the work, remove asbestos dust and asbestos waste using HEPA vacuuming or wet cloths.

.1 Dust and waste shall be removed and disposed of by HEPA vacuuming, damp mopping or wiping the floor before sweeping, and shall be placed in a suitable container.

.2 Polyethylene sheets shall be wetted and placed in a suitable container.

.7 Cleaning

.1 Place asbestos dust and asbestos waste in sealable waste bags. Treat polyethylene sheeting and disposable protective clothing as asbestos waste, wet and fold to confine dust and place in plastic bags.

.2 Clean the outside of each waste bag with damp cloths or HEPA vacuum and place each bag in a second uncontaminated waste bag immediately prior to removal from the asbestos removal area.

.3 Seal waste bags and remove from job site. Dispose of waste in accordance with federal and provincial/territorial requirements. Supervise the disposal of waste materials and ensure that the landfill operator is fully informed of the risks associated with the materials being brought to the landfill and that the relevant guidelines and regulations for the disposal of asbestos-containing materials are followed.

.4 Complete a thorough clean-up of work areas and adjacent areas affected by the work with a HEPA vacuum cleaner, if required. if required.

3.2 WORK SUPERVISION

.1 At least one (1) supervisor shall be designated for each group of ten (10) workers.

.2 An authorized supervisor shall remain in the work area at all times during the removal or other handling of asbestos-containing materials.

END OF SECTION

Part 1 General

1.1 SUMMARY

.1 .1 Comply with the requirements of this section when performing the following work.

.1 Removal of furnace in janitor's house where insulation board contains asbestos. Asbestos containing materials on site shall be handled using the Moderate Risk Method.

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BUILDING	MATERIAL DESCRIPTION	SAMPLING LOCATION	ASBESTOS CONTAINING MATERIAL (YES/NO)	TYPE OF ASBESTOS FIBER
Guardian's house	Insulating cardboard	BASEMENT - Furnace	YES	Chrysotile

.2 For detailed description of work, see Specification Section 01 11 01 - Description of Work.

1.2 RELATED REQUIREMENTS

.1 Section 01 11 01 WORK DESCRIPTION

.2 Section 01 74 21 CONSTRUCTION-DEMOLITION WASTE MANAGEMENT AND DISPOSAL

.3 Section 02 41 16 STRUCTURE DEMOLITION

.4 Section 02 81 01 HAZARDOUS MATERIALS

.5 Section 02 82 00.01 ASBESTOS ABATEMENT - MINIMUM PRECAUTIONS

1.3 REFERENCE STANDARDS

.1 Canadian General Standards Board (CGSB)

.1 CAN/CGSB-1.205-[94], Sealing Paint for Asbestos Fibre Materials.

.2 Department of Justice Canada.

.1 Canadian Environmental Protection Act, 1999 (CEPA).

.3 Workplace Hazardous Materials Information System (WHMIS)/Health Canada

.1 Material Safety Data Sheets (MSDS).

.4 Transport Canada (TC)

.1 Transportation of Dangerous Goods Act, 1992 (TDGA).

.5 Underwriters Laboratories of Canada (ULC)

1.4 DEFINITIONS

.1 Treated water: water with a non-ionic, surfactant wetting agent added to reduce its surface tension to promote proper impregnation of asbestos fibres.

.2 Asbestos-containing materials: materials containing 0.1 percent or more asbestos by weight of dry material as defined in Existing Conditions, including loose material and settled dust.

.3 Asbestos Abatement Area: Location where work is being performed that results or may result in the movement of asbestos containing materials.

.4 Authorized Visitors: Engineers or their designated representatives, and representatives of regulatory agencies having jurisdiction.

.5 Competent Worker: in the case of a specific job, means a worker :

.1 who, by reason of knowledge, training, and experience, is qualified to perform the work;

.2 who is familiar with the provincial and federal legislation and regulatory provisions applicable to the work

.3 has knowledge of all potential or actual occupational health and safety hazards associated with the work.

.6 Friable Materials: materials that, when dry, can be crumbled, pulverized or reduced to dust with bare hands, including materials so crumbled, pulverized or reduced to dust.

.7 Glove Bag: Prefabricated glove bag conforming to the following.

.1 Polyvinyl chloride (PVC) bag at least 0.25 mm (10 mils) thick.

.2 Polyvinyl chloride (PVC) gloves 0.25 mm (10 mils) thick with integral elastic entry holes.

.3 Bag with reversible, double zipper pulls located at the top and approximately in the center of the bag.

.4 Straps to seal bag at various locations around piping.

.8 HEPA Vacuum: A vacuum cleaner with a very high efficiency filtration system designed to collect and retain 99.97% of fibers larger than 0.3 microns in any dimension.

.9 Non-friable materials: materials that, in their dry state, cannot be crumbled, powdered or pulverized by hand pressure.

.10 Occupied Area: any part of the building or work site that is outside the asbestos removal area.

.11 Polyethylene: Polyethylene sheet or tear-resistant polyethylene sheet with edges, penetrations, nicks, tears and other interruptions in continuity sealed with tape to provide adequate protection and containment.

.12 Sprayer: Garden sprayer or airless spray equipment capable of producing a mist or fine droplets. The rate of flow of the sprayer used shall be appropriate for the work to be performed.

1.5 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit the required documentation and samples in accordance with Section 01 33 00 - Documentation and Sample Submission.

.2 Submit documentation demonstrating, to the satisfaction of the Departmental Representative, that appropriate measures have been taken for the disposal of asbestos waste in accordance with the requirements of the authorities having jurisdiction.

.3 Submit documentation outlining local and/or provincial/territorial requirements for the preparation of a Notice of Project.

.4 Submit documentation demonstrating that the Contractor has liability insurance covering the asbestos removal work.

.5 Submit to the Departmental Representative all required permits for the transportation and disposal of asbestos waste and tracking slips confirming that the asbestos waste has been received and properly disposed of.

.6 Submit documentation demonstrating to the satisfaction of the Departmental Representative that all workers have received adequate training and education regarding the hazards of asbestos exposure, personal hygiene, respirator use, required protective clothing, entry/exit procedures for asbestos abatement areas, techniques and safeguards to be followed when working in an asbestos abatement area, use, cleaning and disposal of respirators and protective clothing.

.7 Submit documentation demonstrating that supervisory personnel have completed an asbestos removal course of at least two (2) days duration and approved by the Departmental Representative. At least one supervisor shall be designated for each ten workers.

.8 Submit documentation containing information required by the Workers' Compensation Board and confirming insurance coverage.

.9 Submit appropriate documentation including test results, fire hazard and material flammability data, and Material Safety Data Sheets (MSDS) for materials and chemicals used including:

- .1 encapsulation products;
- .2 treated water;
- .3 slow drying sealants;

.10 Submit documentation demonstrating, to the satisfaction of the Department Representative, that the function and fit of each worker's personal respirator has been verified and tested by means of an irritant smoke test.

1.6 QUALITY ASSURANCE

.1 Regulatory Authority Requirements: Comply with local, federal and provincial/territorial government requirements for asbestos protection. In the event of any discrepancy between these requirements and those contained in these specifications, the more stringent requirements shall prevail. Comply with regulations in effect at the time the Work is performed.

.2 Health and Safety

.1 Provide necessary construction health and safety measures in accordance with Section 01 35 29.06 - Health and Safety.

.2 Safety Requirements: Protection of Workers and Visitors

.1 Protective clothing and equipment to be used by workers and visitors when entering the asbestos removal area shall include the following

.1 Half-facepiece air-supplied respirator with N-100, R-100 or P-100 particulate filter, properly issued to the employee and marked to indicate its effectiveness and use, providing adequate protection against asbestos and acceptable to the appropriate provincial authorities. The respirator shall provide a tight fit over the face of the person unless equipped with a hood or helmet. The respirator shall be cleaned, disinfected and inspected after each work shift, or more frequently if necessary, when issued for use by a single worker, or after each use when used by more than one worker. Any part of the respirator that is damaged or deteriorated shall be replaced before the respirator is used by a worker. When not in use, the respirator shall be stored in a convenient, clean and sanitary location. The employer shall establish procedures for the selection, use and maintenance of respirators and a copy of these procedures shall be given and explained to each worker required to wear a respirator. No worker shall be assigned to a task requiring the use of a respirator unless the worker is physically capable of performing the task while wearing a respirator.

.2 Disposable protective clothing that does not retain or allow penetration of asbestos fibres. Protective clothing shall be provided by the employer and worn by each worker entering the work area. This clothing shall include full body coveralls with hoods and bands that provide a tight fit at the wrists, ankles and neck to prevent asbestos fibers from reaching the clothing and skin under the protective clothing, and appropriate footwear. Torn protective clothing shall be repaired or replaced.

.3 Eating, drinking, gum chewing and smoking are prohibited in the asbestos removal area.

.4 Before leaving the asbestos removal area, the worker may decontaminate protective clothing, without removing it, using a HEPA vacuum or damp cloth, or, if the clothing will not be reused, place it in dust and waste containers. These containers must be dust and asbestos tight, suitable for this type of waste, marked as containing asbestos waste, and cleaned with a damp cloth or HEPA vacuum immediately before removal from the work area. These containers shall be removed frequently at regular intervals.

.5 Ensure that workers wash their hands and face when leaving an asbestos removal area. Wash stations shall be located [where indicated].

.6 Ensure that the respirator facepiece of any worker entering the asbestos removal area is not compromised by facial hair or hair.

.7 Visitor Protection

.1 Provide protective clothing and approved respirator to authorized visitors who are required to enter the asbestos removal area.

.2 Instruct authorized visitors on the use of protective clothing and respirators and procedures to be followed.

.3 Instruct authorized visitors on procedures for entering and exiting an asbestos removal area.

1.7 WASTE MANAGEMENT AND DISPOSAL

.1 Segregate waste materials for reuse/recycling or disposal in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

.2 Remove all packaging materials from site and direct to appropriate recycling facilities.

.3 Separate recyclable waste and place in designated containers as per the Waste Management Plan.

.4 Place substances that meet the definition of toxic or hazardous waste in designated containers.

.5 Handle and dispose of hazardous materials in accordance with CEPA, TDGA and applicable regional and municipal regulations.

.6 Bend and flatten steel strapping and place in designated areas for recycling.

.7 Also ensure that asbestos waste from asbestos removal work is disposed of in accordance with federal, provincial, territorial and municipal regulations. Dispose of asbestos waste in lined and sealed 6 mil bags or leak proof drums. Carefully mark waste bags or drums with appropriate warning labels.

.8 Provide manifests listing and describing waste generated during the course of the work and arrange for transportation of waste containers by approved means to accredited landfills for disposal.

1.8 EXISTING CONDITIONS

.1 The report and the various information relating to asbestos materials to be treated, removed or otherwise moved and disposed of during the course of this work shall be attached to the contract documents.

.2 Advise the Departmental Representative and Site Supervisor of any friable material discovered during the course of the work, but which was not identified in the contract documents or the report for this work. Do not move these materials until instructed to do so by the Departmental Representative and/or Site Supervisor.

1.9 PERSONNEL TRAINING

.1 Before beginning Work, provide Departmental Representative satisfactory proof that every worker has had instruction and training in hazards of asbestos exposure, in personal hygiene and work practices, and in use, cleaning, and disposal of respirators and protective clothing.

.2 Instruction and training related to respirators includes, following minimum requirements:

.1 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 a competent, qualified person.

Part 2 Products

2.1 MATERIALS

.1 Cover Sheets

.1 Polyethylene sheets: 0.15 mm thick.

.2 Reinforced Polyethylene Sheets: 0.15 mm thick fibre reinforced woven fabric bonded on each side to a polyethylene sheet.

.2 Wetting agent: solution of 50 % polyoxyethylene ester and 50 % polyoxyethylene ether, mixed with water in sufficient concentration to ensure good impregnation of asbestos materials.

.3 Asbestos Waste Containers: Place waste in double-wrapped containers.

.1 Inner liner shall be a 0.15 mm thick sealable polyethylene bag or glove bag when glove bag method is used.

.2 The outer casing, into which the inner casing will be inserted, shall be a sealable fibre or metal container when the waste contains sharp-edged components; otherwise, the outer casing may be a single sealable fibre or metal bag or a second 0.15 mm thick sealable polyethylene bag.

.3 Labelling Requirements: Apply a printed warning label, in both official languages, indicating asbestos hazards to all asbestos waste containers in a manner that is clearly visible once the container is sealed and ready for disposal.

.4 Glove Bag

.1 Acceptable products: Safe-T-Strip brand products, appropriate for the work to be performed, or equivalent products approved in an addendum during the bidding period, in accordance with the Instructions to Bidders.

.2 The glove bag shall be equipped with the following:

.1 sleeves and gloves permanently sealed to the body of the bag so that the worker can access and handle the insulation;

.2 valves or openings to allow for the insertion of a suction hose and water spray nozzle while maintaining a seal to the hose, duct or other similar component;

.3 tool holder with a drain;

.4 seamless bottom and means to seal the bottom of the bag;

.5 Heavy duty two-way zipper and removable straps if the bag is to be moved during operations.

.5 Tape: of a type capable of sealing polyethylene sheeting to various surfaces in both dry and wet environments.

.6 Slow drying sealant: clear, non-staining, water dispersible, tacky to the touch for at least eight (8) hours after application and designed to trap residual asbestos fibres.

.1 Sealant shall have a flame spread rating and smoke developed rating of less than 50.

.7 Encapsulant: Penetrating type, conforming to CAN/CGSB-1.205, ULC listed..

Part 3 Execution

3.1 SUPERVISION

.1 At least one supervisor shall be designated for every ten workers.

.2 An authorized supervisor shall remain in the asbestos removal area at all times during the movement, removal or other handling of asbestos materials.

3.2 PROCEDURES

.1 Take appropriate construction health and safety measures in accordance with Section 01 35 29.06 - Health and Safety.

.2 Prior to the commencement of work, post warning signs at each access to an asbestos removal area indicating, in both official languages, in "Helvetica Medium" upper case type, with the number in parentheses corresponding to the font size to be used: "CAUTION - ASBESTOS FIBRES - DANGER (25 mm)/ AUTHORIZED PERSONNEL ONLY (19 mm)/ Wearing of marked protective equipment is mandatory (19 mm)/ INHALATION OF ASBESTOS DUST CAN CAUSE SERIOUS BODILY INJURY (7 mm)".

.3 Prior to commencing work, clear visible dust from all surfaces in the work area where the work is likely to cause dust movement.

.1 Use HEPA vacuuming or wet wipes where wet cleaning is safe and otherwise appropriate.

.2 Do not use compressed air to clean or remove dust from surfaces.

.4 Prevent the dispersion of dust from the asbestos removal area by measures appropriate to the work being performed.

.1 Cover dust-absorbing floor coverings, such as carpeting, and all floor coverings in the work area where dust and asbestos fibres cannot otherwise be safely contained with reinforced polyethylene sheets.

.2 where the work involves the removal of suspended ceilings in a work area that is not fully enclosed by existing walls, and the removal of asbestos material from piping or equipment without the use of the glove bag method, enclose the work area with polyethylene sheeting, shut down mechanical ventilation serving the work area, and seal ventilation ducts to and from the work area.

.5 Prior to dismantling suspended ceilings, remove friable materials from upper surfaces using a HEPA vacuum.

.1 Remove ceiling panels and clean all surfaces with a HEPA vacuum, wrap clean panels in 0.10 mm thick polyethylene sheet and store in another area of the building as directed by the Departmental Representative.

.2 Clean ceiling T-frame members, disassemble and wrap in 0.10 mm polyethylene sheet and store in another area of the building as directed by the Engineer.

.6 Remove loose material with a HEPA vacuum cleaner and thoroughly dampen friable asbestos materials to be moved or removed before and during the execution of the work, except where impregnation is hazardous or may cause damage.

.1 Use a low volume garden sprayer or airless device capable of producing a mist or fine droplets.

.2 Perform work in a manner that produces as little dust as possible.

.7 Removal of lagging from piping using glove bags

.1 Glove bags shall not be used to remove lagging from pipe, duct or similar items.

.1 It may not be possible to maintain a good seal for any reason, including:

.1 condition of the lagging;

.2 Temperature of the pipe, conduit or similar item.

.2 Glove bag may be damaged for any reason including

.1 type of liner;

.2 temperature of the pipe, conduit or similar item.

.2 When installing the glove bag, inspect for damage or defects and repair or replace as necessary. Glove bag shall be inspected at regular intervals and repaired or replaced as required. The asbestos-containing contents of a damaged or defective glove bag shall be wetted and the bag, together with its wetted contents, shall be removed and disposed of in a designated container. No damaged or defective glove bag shall be re-used.

.3 Place tools required for lagging removal in tool holder. Wrap bag around pipe and seal with zippers and fabric straps.

.4 Slip hands into gloves and use necessary tools to remove lagging. Distribute the removed lagging into the bag to fill it to the maximum.

.5 Insert Garden Sprayer nozzle into bag through valve and wash pipe section and interior of bag thoroughly. Proceed in such a way as to wet the surface of the lagging on the bottom of the bag.

.6 Prior to removing the bag after the pipe has been stripped, thoroughly wash the top of the bag and tools. Evacuate air from top of bag through flexible valve using HEPA vacuum. Thread the polyethylene waste container over the glove bag before removing the bag. Release one of the straps and remove the freshly washed tools from the bag. Place the tools in a container filled with water, then remove the second strap and open the zipper. Fold the polyethylene bag into the waste container and seal the container.

.7 After removing the bag, check the piping for any residue. Remove any residual particles using HEPA vacuum or damp cloths. Ensure that no mud remains on the surfaces to prevent asbestos dust from being suspended from the dried mud. Seal

exposed pipe surfaces and lagging ends with slow drying sealant to encapsulate any residual fibres.

.8 At the end of each shift, cover exposed ends of any undecontaminated pipe lagging sections with polyethylene sheeting taped in place.

.8 All work shall be visually inspected and air tested. If visual inspection or air analysis reveals that areas adjacent to the work have been contaminated, these areas shall be fully contained and thoroughly cleaned.

.9 Cleaning

.1 Remove asbestos-containing dust and debris at frequent intervals during the course of the work and immediately upon completion of the work, using HEPA vacuum or damp cloths.

.2 Place asbestos dust and waste in sealable waste bags. Treat polyethylene sheeting and disposable protective clothing as asbestos waste; wet and fold to contain dust and place in waste bags.

.3 Clean each waste bag with wet cloths or HEPA vacuum immediately prior to removal from asbestos abatement area and place in a second uncontaminated waste bag.

.4 Seal waste bags and remove from site. Dispose of asbestos waste in accordance with federal and provincial/territorial authorities having jurisdiction. Supervise disposal and ensure that the landfill operator is aware of the hazards associated with the material being brought to the landfill and that guidelines and regulations for the disposal of asbestos materials are followed.

.5 Complete a thorough HEPA vacuuming of the asbestos removal areas and adjacent areas affected by the work.

3.3 AIR TESTING

.1 From the start of the work until the completion of the clean-up, the Contractor shall perform daily air testing outside the asbestos removal areas in accordance with applicable provincial occupational health and safety regulations.

.2 From the start of the work until the completion of the clean-up, the Contractor shall be responsible for testing the air quality inside the enclosures in accordance with applicable provincial occupational health and safety regulations.

.3 If air testing of areas outside of asbestos abatement areas demonstrates that the air is contaminated, these areas shall be fully contained, maintained and cleaned in the same manner as the asbestos abatement areas.

.4 Verify compliance with the range of protection provided by the respirators used.

.5 During the course of the work, the Contractor shall measure the concentration of fibres in the air outside the work areas using a Phase Contrast Microscopy (PCM) machine.

.1 If the measured concentration exceeds 0.05 fibers per cubic centimeter of air, the work shall be stopped until the work methods have been corrected.

END OF SECTION

Part 1 General

1.1 SUMMARY

.1 Perform the following work in accordance with the requirements of this section. Comply with the requirements of this section when performing the work indicated below. The Contractor shall refer to Specification Section 01 11 01 - Description of Work for details of the work to be done in relation to lead.

.1 Removal of lead containing or potentially lead containing coatings or materials using a mechanical tool equipped with a high efficiency filter and an effective dust collection system.

.2 Removal of coatings and materials containing or likely to contain lead using all hand tools, other than scraping and sanding.

.3 Removal, by HEPA vacuuming, of loose and flaking coatings and materials containing or likely to contain applied lead.

.4 Demolition of siding and materials containing or likely to contain lead.

.5 **Demolition of guardian's house, demolition of assistant's house**: Six (6) lead containing paints were observed inside the house. One (1) paint is considered hazardous material for disposal as it is leachable. The Contractor shall consider the exterior paint and painted exterior siding as containing lead and as hazardous material. See Section 9 for any other uncharacterized paint.

COLOR	BUILDING	SAMPLING LOCATION	TOTAL LEAD (mg/kg)	COATING CONTAINING LEAD (YES/NO)	LEACHED LEAD (mg/L)	LEACHABLE HAZARDOUS MATERIAL (YES/NO)
White	guardian's house	basement walls	483	YES	0,18	NO
Grey	guardian's house	Basement floor	4030	YES	3,88	NO
Yellow	guardian's house	Ground floor walls and ceilings	233	YES	< 0,05	NO
Pink	Assistants' House	Ground floor walls	< 30	NO	N/A	NO
Red and grey	Assistants' House	Walls	1760	YES	0,12	NO
White	Assistants' House	Walls	6240	YES	34,5	YES

.6 **Demolition of Other Buildings and Exterior Siding**: Paint is considered a hazardous material and the Contractor shall make provision for it in his demolition work. See Section 9 for any other uncharacterized paint.

.7 **Removal of peeling paint from exterior concrete foundations of Caretaker's House, Assistant's House and sides of both concrete bases of generator and tank buildings**: These paints are considered hazardous materials. Remove all loose paint from all surfaces of the foundation walls or concrete slab ribs using an appropriate method. Perform work in low winds and/or with an appropriate method. Take appropriate measures to collect loose paint particles in the air or on the ground and prevent them from blowing away or leaching (vacuum, pads, polythene on the ground, etc.). The Contractor shall not contaminate the ground in the work area. Any paint residue shall be recovered for proper disposal at an authorized site. See Section 9 for any other uncharacterized paint.

.8 **Lighthouse Dome Work**: Repaint the lighthouse dome. The work would consist of removing the peeling paint and then priming and painting it. The color code for the dome will be selected based on DFO/CCG standards. Existing paint is considered hazardous material for disposal and the Contractor shall provide for this in his work. See Section 09 91 13 - painting exterior work. See Section 9 for any other non-characterized paint.

.9 The Departmental Representative cannot assure the Contractor that all paint on buildings and structures has been tested. It is therefore the Contractor's responsibility to consider any paint not identified in the attached report as lead containing paint and a hazardous material for disposal as it could potentially be leachable.

.10 Ensure compliance with laws, standards and regulations of the CNESST. The contractor is responsible for validating his work methods with this organization.

1.2 RELATED REQUIREMENTS

.1	Section 01 11 01	WORK DESCRIPTION
.2	Section 01 74 21	CONSTRUCTION-DEMOLITION WASTE MANAGEMENT AND DISPOSAL
.3	Section 02 41 16	STRUCTURE DEMOLITION
.4	Section 02 81 01	HAZARDOUS MATERIALS

1.3 REFERENCE STANDARDS

.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)

.1 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. Environmental Protection Agency (EPA)

.1 EPA 747-R-95-007-[1995], Sampling House Dust for Lead.

.6 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).

.7 U.S. Department of Labour - Occupational Safety and Health Administration (OSHA) - Toxic and Hazardous Substances

.1 Lead in Construction Regulation - 29 CFR 1926.62-[1993].

.8 Underwriters' Laboratories of Canada (ULC)

.9 Acts, standards and regulations of the CNESST

1.4 DEFINITIONS

.1 HEPA vacuum cleaner: a vacuum cleaner equipped with a very high efficiency filter, called absolute, designed to collect and retain 99.97% of fibres of any size greater than 0.3 micrometer.

.2 Authorized Visitors: Departmental Representative, Site Supervisor, Engineers, Consultants or their designated representatives, and representatives of appropriate regulatory agencies.

.3 Polyethylene: polyethylene sheet or tear-resistant polyethylene sheet with edges, penetrations, cuts, tears and other interruptions of continuity sealed with tape to provide adequate protection and containment; material used to protect underlying surfaces and to prevent lead-bearing dust from entering a clean area.

.4 Sprayer: garden sprayer or airless spraying equipment capable of producing a mist or fine droplets; the capacity of the sprayer used shall be appropriate for the work to be performed.

.5 Action Level: Exposure of an employee, excluding the use of respiratory protection, to an airborne lead concentration of 50 micrograms per cubic meter (50 $\mu g/m^3$) based on an eight (8) hour time weighted average (TWA). Lead paint removal work using the methods described in 1.1 requires minimum precautions when the lead concentration in air is less than 0.05 milligram per cubic meter (mg/m^3).

.6 Competent Person : Departmental Representative and/or the Site Supervisor and/or the appropriate regulatory agency representative capable of identifying lead exposure hazards and taking corrective action to eliminate them.

.7 Qualified Worker : A person who, because of knowledge, training and experience, is qualified to perform the work. A person who is familiar with the laws (provincial and federal) and regulations that apply to the work. A person who has knowledge of all potential or actual occupational health and safety hazards associated with the work.

.8 Lead containing dust: Any dust or debris sample taken by wiping on vertical or horizontal surfaces is considered lead contaminated if it contains more than 40 micrograms of lead per square foot.

1.5 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit required documents/technical data sheets/ shop drawings as per Section 01 33 00 - Submitting Documents and Samples.

.2 Submit documentation demonstrating, to the satisfaction of the Departmental Representative, that appropriate measures have been taken for the disposal of waste lead-containing paint in accordance with the requirements of the authority having jurisdiction.

.3 Submit documentation outlining local and/or provincial/territorial requirements for the preparation of the Notice of Commencement and Closure of Construction.

.4 Quality Control.

.1 Submit to the Departmental Representative all permits required for the transportation and disposal of waste paint containing or likely to contain lead, along with tracking slips and weigh slips confirming that such waste has been received and disposed of properly.

.2 Submit documentation demonstrating, to the satisfaction of the Departmental Representative, that all workers have received appropriate training on the risks associated with lead exposure and on the use of a respirator, the required protective clothing, the procedures to be followed in performing the work and on all aspects of the technical rules and protective measures with which they must comply.

1.6 QUALITY ASSURANCE

.1 Regulatory Agency Requirements: Comply with local, federal and provincial/territorial government requirements for lead-based paint. In the event of any discrepancy between these requirements and those of this Specification, the more stringent requirements will prevail. Comply with the regulations in effect on the date the work is performed.

.2 Health and Safety

.1 Provide for construction health and safety in accordance with section 01 35 29.06 - Health and Safety.

.2 Safety requirements: protection of workers and visitors.

.1 Protective clothing and equipment to be used by workers and visitors when entering the work area shall include the following.

.1 An approved respirator conforming to CAN/CSA-Z94.4-11.

.2 Eating, drinking, chewing gum and smoking are prohibited in the work area where lead contamination is present or likely to be present.

.3 Ensure that workers wash their hands and face when leaving the work area.

.4 Protection of Visitors

.1 Provide approved respiratory protection and protective equipment to authorized visitors entering a work area.

.2 Inform authorized visitors of the procedures to be followed when entering and exiting a work zone.

.5 All work on paints containing or likely to contain lead that may result in significant exposure of workers to lead dust or fumes shall be carried out wearing appropriate clothing and respiratory protection ensuring that the clothing and respiratory protection protects the worker from both lead dust and fumes and from the risks associated with the work itself.

1.7 WASTE MANAGEMENT AND DISPOSAL

.1 Sort waste for reuse/reuse, recovery or recycling or disposal in accordance with section 01 74 21 - Construction/Demolition Waste Management and Disposal.

.2 Handle and dispose of hazardous materials in accordance with CEPA, TDGA and applicable regional and municipal regulations.

.3 Also ensure that waste paints containing or suspected to contain lead generated during the removal of old coatings or other debris for disposal are disposed of in accordance with applicable federal, provincial, territorial and municipal regulations. Dispose of these wastes in lined and sealed 6 ml bags or in leak-proof containers. Mark waste containers with appropriate warning labels. If two contaminants are present on the same material (asbestos/lead or lead/mould, etc.), manage according to the most stringent criteria and/or regulations. Validate with the competent authorities.

.4 Provide manifests and weighing slips to the Site Supervisor and the Departmental Representative containing the list and description of waste generated during the work and ensure transportation of waste containers, by approved means, to accredited landfills for burial.

.5 in the event of several contaminants on the same material, the Contractor is responsible for taking the appropriate measures according to the most restrictive standards, regulations and laws.

1.8 1.8 EXISTING CONDITIONS

.1 See Section 1.1 - Summary of this section and Specification Section 01 11 01 - Description of Work for existing conditions.

.2 Inform the Departmental Representative and the Site Supervisor of the presence of any paint coatings discovered during the work but which were not indicated in the Gesfor (2020) characterization report, in order to be considered likely to contain lead.

.3 Refer to the photographic file, appended to the contract documents, for existing conditions.

1.9 WORK SCHEDULE

.1 No later than two (2) days prior to the commencement of the work under this section, notify the departments and agencies listed below.

.1 Appropriate Regional Director or Area Director, Medical Services Branch, Health Canada.

.2 Provincial Minister of Labour.

.3 Waste Disposal Authority.

.4 CNESST

.2 Advise subcontractors of the presence of lead-containing or potentially lead-containing materials identified in the Existing Conditions section.

.3 Provide a copy of the notification to the Departmental Representative prior to commencement of work.

1.10 PERSONNEL TRAINING

.1 Provide the Departmental Representative with documentation to demonstrate that all workers who will be involved in this project have received training and relevant information regarding potential health risks associated with lead exposure, personal hygiene measures, procedures for performing the work, and the use, cleaning and disposal of respiratory protective equipment.

.2 Respiratory protection training and information provided shall include, as a minimum, the following:

.1 Fitting of equipment.

.2 Equipment inspection and maintenance.

.3 Decontamination of equipment.

.4 Equipment characteristics and range of protection provided.

.3 Training shall be provided by a qualified and competent person.

.4 Personnel supervising the work shall have completed the required training.

.5 Training/certifications and/or certificates shall be valid and not expired.

Part 2 Products

2.1 MATERIALS

.1 Polyethylene 0.15 mm thick unless otherwise specified; in sheet size to minimize joints.

.2 Tape: fibreglass - reinforced duct tape suitable for sealing polyethylene under dry conditions and wet conditions using amended water.

.3 Slow - drying sealer: non-staining, clear, water - dispersible type that remains tacky on surface for at least 8 hours and designed for purpose of trapping residual lead paint residue.

.4 Lead waste containers: fibre or metal type acceptable to dump operator with tightly fitting covers and 0.15 mm thickness sealable polyethylene liners.

.1 Label containers with pre-printed bilingual cautionary Warning Lead clearly visible when ready for removal to disposal site.

Part 3 Execution

3.1 SUPERVISION

.1 One Supervisor for every ten workers is required.

.2 An authorized supervisor must remain in the work area at all times during the removal or other handling of paint coatings containing or likely to contain lead.

3.2 PREPARATION

.1 Remove from the work area and store materials and equipment for recovery or reuse/reuse.

.1 Protect and cover these materials and equipment, transport and store them in locations predefined in the Contractor's Work Plan.

.2 Work Area

.1 Keep emergency exits and exits in good condition and free from obstruction, if not provided, to the satisfaction of the competent authority.

.2 If the procedure requires the wetting of lead-containing materials, provide an adequate temporary water supply for this purpose.

.3 Work shall not commence until :

.1 Arrangements have been made for the removal and disposal of waste.

.2 Received on site the tools, equipment, materials and waste containers required for the performance of the work.

.3 Arranged for the safety of the building.

.4 Send out required notices and perform all required preparatory work.

3.3 REMOVAL OF LEAD-CONTAINING COATINGS

.1 Removal of paint coatings containing or likely to contain lead by demolition or an appropriate method.

.2 Work shall be carried out in such a way as to ensure that no dispersion of airborne lead paint dust or shavings, or contact with water or leakage of water, ever contaminates the areas outside the worksite under its responsibility.

3.4 INSPECTION

.1 Inspect the work to confirm compliance with the requirements of the Specifications and the requirements of the Authority Having Jurisdiction. Deviations from these requirements, which are not approved in writing by the Departmental Representative, will result in suspension of the work at no additional cost to the Departmental Representative.

.2 The Departmental Representative will inspect the work to verify the following.

.1 Compliance with the requirements with respect to procedures and materials/equipment used.

.2 Completion of the work and cleanliness of surfaces and premises.

.3 Additional labour and materials/supplies required to achieve the prescribed level of performance shall not result in additional costs to the Departmental Representative.

3.5 RESTORATION OF DAMAGED OBJECTS/SYSTEMS

.1 Repair, replace or restore to original condition items that have been damaged during the course of the work as directed by the Departmental Representative.

END OF SECTION

Part 1 General

1.1 SUMMARY

.1 Perform the following work in accordance with the requirements of this section. Comply with the requirements of this section when performing the following work.

.2 Mould: Evidence of mould growth has been observed in buildings.

.3 This section of the specifications is applicable to all buildings excluding the Caretaker's House and Assistant's House. For Caretaker's House and Assistant's House, refer to Specification Section 02 385 00.03 - Treatment of Fungal Contamination - Maximum Precautions.

1.2 RELATED REQUIREMENTS

.1	Section 01 11 01	WORK DESCRIPTION
.2	Section 01 74 21	CONSTRUCTION-DEMOLITION WASTE MANAGEMENT AND DISPOSAL
.3	Section 02 41 16	STRUCTURE DEMOLITION
.4	Section 02 81 01	HAZARDOUS MATERIALS
.5	Section 02 85 00.03	MOULD REMEDIATION –MAXIMUM PRECAUTIONS

1.3 REFERENCE STANDARDS

.1 American Conference of Governmental Industrial Hygienists (ACGIH), Bioaerosols Assessment and Control [1999].

.2 Health Canada/Workplace Hazardous Materials Information System (WHMIS)

.1 Material Safety Data Sheets (MSDS).

.3 New York City Department of Health - Bureau of Environmental and Occupational Disease Epidemiology's Guidelines on the Assessment and Remediation of Fungi in Indoor Environment [2000]

.4 United States Department of Labor Occupational Safety and Health Administration (OSHA)

.1 29 CFR 1910.134 - Respiratory Protection.

.2 29 CFR 1910.1200 - Hazard Communication.

.5 United States Environmental Protection Agency (EPA), Mould Remediation in Schools and Commercial Buildings, [2001].

1.4 DEFINITIONS

.1 Authorized Visitors: Departmental Representative, Site Supervisor, Engineers, Consultants or their designated representatives, and representatives of appropriate regulatory agencies.

.2 Cleaning Agent: Detergent solution.

.3 Competent Person: Departmental Representative and/or Site Supervisor and/or appropriate regulatory agency representative who is trained in the treatment of fungal contamination and is able to identify the risks associated with microbial growth in the specified workplace and determine the appropriate treatment method based on the type of exposure identified.

.4 Contractor: Fungal Contamination Treatment Contractor to perform demolition and removal of attacked material as outlined in this section.

.5 Reinforced polyethylene: fibre-reinforced polyethylene sheet that is tear-resistant and whose edges have been sealed with fibre-reinforced adhesive tape.

.6 High efficiency vacuum cleaner: a vacuum cleaner equipped with a very high efficiency filter, called absolute filter, designed to collect and retain 99.97% of the fibres of which either dimension exceeds 0.3 micrometer. Another name: HEPA vacuum cleaner.

.7 Contaminated Work Area: A specific area or site where decontamination work is performed, or any other part of the building or facility, which may pose a risk to human health as a result of treatment undertaken to control fungal contamination.

.8 Occupied Area: any section of the building or work site that is not part of the contaminated work area.

.9 PPE: personal protective equipment.

.10 Sprayer: garden sprayer or airless spray equipment capable of producing a mist or fine droplets. The sprayer used must have a capacity of at least six (6) litres.

1.5 REGULATORY REQUIREMENTS

.1 Comply with regulations in effect at time work is performed. In case of conflict among these requirements or with these specifications the more stringent requirement applies. If no regulations exist, follow guidelines most widely accepted by recognized professional organizations such as occupational hygienists, health professionals or environmental engineers as listed in paragraph 1.2 Referenced Standards.

1.6 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit documents defining local and/or provincial requirements for the preparation of the Notice of Commencement and Closure of Construction.

.2 Submit documentation confirming compliance with Workers' Compensation Board requirements and a copy of insurance coverage.

.3 Submit certificates demonstrating that personnel supervising the Contractor have completed a course approved by the Departmental Representative on the treatment of fungal contamination. At least one (1) supervisor per group of ten (10) equally trained workers must have completed this course. Certificates must be valid and not expired.

1.7 CLOSEOUT SUBMITTALS

.1 The General Registry is a permanent record of the project. Record relevant information and retain required documents and other items in the permanent project file.

.2 The daily log shall remain available for inspection by the Departmental Representative and the Site Supervisor at any time.

.3 The visitor logbook shall remain available for inspection by the Departmental Representative and the Site Supervisor at any time.

1.8 RELEVANT INFORMATION AND TRAINING

.1 Provide the Departmental Representative, prior to the commencement of work, with documentation to show that the workers involved in this project have received training and relevant information regarding potential health risks associated with exposure to fungi and moulds and handling of hazardous materials, personal hygiene measures including protective clothing, entry and exit procedures for the contaminated work area, and appropriate disposal methods including construction materials. This training may be provided as part of a program to comply with the requirements of OSHA's Hazard Communication Strategy (HCS) under 29 CFR 1910.1200 or an equivalent standard document. Documentation showing the training taken must be valid and not expired.

.2 The training and information provided for respiratory protective devices shall include, as a minimum, the following :

.1 Fitting of respiratory protective devices.

.2 Inspection and maintenance of respiratory protective devices.

.3 Decontamination of respiratory protective devices.

.4 Respiratory protection device characteristics and range of protection provided.

.3 Training and information shall be provided by a designated consultant with the necessary construction safety knowledge.

1.9 WORKER PROTECTION

.1 Apparatus providing adequate respiratory protection against fungi and mould, and approved by provincial authorities having jurisdiction, manual and disposable cartridge filter, type N95 OSHA 29CFR 1910.134 half mask and disposable HEPA filter cartridges, with full face mask and disposable HEPA filter cartridges, with air supply, assigned specifically to each worker, and bearing the relevant indications for its use and effectiveness.

.2 Gloves and eye protection.

.3 Disposable paper coveralls with hood.

.4 Respirators used by workers shall not be compromised by hair or facial hair from the mask.

.5 Workers shall not eat, drink or chew gum in the work area where fungal contamination is present.

.6 Before leaving the contaminated area, workers shall treat their protective clothing in the same manner as contaminated waste.

.7 Workers shall wash hands and face when leaving the contaminated work area.

1.10 VISITOR PROTECTION

.1 Approved protective clothing and hand held, disposable, N95 OSHA 29CFR 1910.134, full face mask, half mask and eye protection respirators shall be used by authorized visitors entering the contaminated area.

.2 Instruct authorized visitors on the use of protective clothing and respirators and inform them of the procedures to be followed.

.3 Instruct authorized visitors on procedures for entering and exiting the contaminated area.

Part 2 PRODUCTS

2.1 MATERIALS/MATERIALS

.1 Cover Sheets: 0.15 mm thick fibre reinforced woven fabric bonded on each side to a sheet of polyethylene also fibre reinforced.

.2 Garbage bags: 0.15 mm thick, clear polyethylene bags that do not allow dust to escape.

.3 Wetting agent: water sprayed on mould-contaminated materials.

.4 Cleaning Agent: detergent solution used to clean contaminated surfaces with a damp cloth and/or mop or brush.

.5 Adhesive Tape: fibre reinforced tape, adhesive type, used to seal joints between two fibre reinforced polyethylene sheets and to attach these sheets to finished or unfinished surfaces. Fibre-reinforced tape shall adhere to both dry and wet surfaces.

.6 Materials and Supplies: Provide materials and supplies such as fibre-reinforced polyethylene sheets, wood, nails and hardware necessary to assemble and disassemble a containment system around the contaminated work area.

2.2 TOOLS AND EQUIPMENT

.1 Tools and Materials: suitable for mould and fungus removal and resistant to post-use decontamination methods.

.2 Personal Protective Equipment (including protective clothing, respirators with filter cartridges and HEPA air filters): to be provided in sufficient quantities for the duration of the work.

.3 Vacuum cleaners: equipped with HEPA filters.

.4 Ladders and/or scaffolding: of appropriate length and strength and in sufficient quantities to facilitate proper progress of work.

.5 Exhaust fans: equipped with HEPA filters and capable of extracting a volume of stale air sufficient to create a pressure differential of at least 5 to 7 Pa while ensuring adequate air circulation in the areas served.

Part 3 Execution

3.1 PREPARATION OF MOULD CONTAMINATED WORK AREA

.1 One supervisor shall be provided for every 10 trained workers.

.2 The authorized supervisor shall at all times remain in the contaminated work area during the removal, treatment and any other handling of substances or materials contaminated with fungi and moulds.

.3 Remove visible dust from all surfaces in the contaminated work area where it is likely to be displaced as a result of the work being performed. Use a high efficiency vacuum cleaner and wipe surfaces with a damp cloth.

.4 Do not use a compressed air jet to clean surfaces or to remove deposited dust.

.5 Prior to commencing work, post warning signs at each access to a contaminated work area indicating, in both official languages, in upper case letters "Helvetica Medium", the number in brackets corresponding to the size of the font to be used : "WARNING - RISK OF EXPOSURE TO MOISTURE (25 mm) / AUTHORIZED PERSONNEL ONLY (19 mm) / PORT OF ASSIGNED PROTECTIVE EQUIPMENT IS MANDATORY (19 mm) / INHALATION OF MOISTURE AND MUSHROOMS MAY BE VERY DAMAGING TO HEALTH (7 mm).

3.2 3.2 WASTE DISPOSAL

.1 Place debris and mould-contaminated waste in two 0,15 mm thick transparent reinforced polyethylene waste bags, inserted one inside the other and capable of being sealed tightly. Treat polyethylene cover sheets and disposable protective clothing as waste, fold them to contain dust and place them in plastic bags that can be sealed tightly.

.2 Prior to disposal outside the containment perimeter, cover large objects or items showing advanced contamination with reinforced polyethylene sheeting sealed with reinforced tape.

.3 Remove garbage bags from job site. There are no special provisions for the disposal of waste and mould contaminated materials, therefore such waste may be disposed of in a landfill.

.4 In the event of multiple contaminants on the same material, the Contractor is responsible for taking appropriate measures according to the most restrictive standards, regulations and laws.

END OF SECTION

Part 1 General

1.1 SUMMARY

.1 Perform the following work in accordance with the requirements of this section. Comply with the requirements of this section when performing the following work.

.2 Mould: Signs of mould growth have been observed in the buildings.

.3 This section of the specifications is applicable to the Caretaker's House and Assistant's House buildings. For other buildings, refer to Specification Section 02 385 00.02 - Fungal Contamination Treatment - Medium Precaution.

1.2 RELATED REQUIREMENTS

.1	Section 01 11 01	WORK DESCRIPTION
.2	Section 01 74 21	CONSTRUCTION-DEMOLITION WASTE MANAGEMENT AND DISPOSAL
.3	Section 02 41 16	STRUCTURE DEMOLITION
.4	Section 02 81 01	HAZARDOUS MATERIALS
.5	Section 02 85 00.02	MOULD REMEDIATION –INTERMEDIATE PRECAUTIONS

1.3 REFERENCE STANDARDS

.1 American Conference of Governmental Industrial Hygienists (ACGIH), Bioaerosols Assessment and Control [1999].

.2 Health Canada/Workplace Hazardous Materials Information System (WHMIS)

.1 Material Safety Data Sheets (MSDS).

.3 New York City Department of Health - Bureau of Environmental and Occupational Disease Epidemiology's Guidelines on the Assessment and Remediation of Fungi in Indoor Environment [2000]

.4 United States Department of Labor Occupational Safety and Health Administration (OSHA)

.1 29 CFR 1910.134 - Respiratory Protection.

.2 29 CFR 1910.1200 - Hazard Communication.

.5 United States Environmental Protection Agency (EPA), Mould Remediation in Schools and Commercial Buildings, [2001].

1.4 DEFINITIONS

.1 Authorized Visitors: Departmental Representative, Site Supervisor, Engineers, Consultants or their designates, and representatives of regulatory agencies having jurisdiction.

.2 Cleaning Agent: detergent solution.

.3 Competent Person: Departmental Representative and/or Site Supervisor and/or appropriate regulatory authority representative, who is trained in the treatment of fungal contamination and is able to identify the hazards associated with microbial growth in the identified work area and determine the appropriate treatment method based on the type of exposure identified.

.4 Contractor: Contractor responsible for the treatment of fungal contamination, performing the demolition work and removal of the affected materials as specified in this section.

.5 Containment or waterproof barrier: at least two separate rows of 0.15 mm thick sheeting securely and separately attached to windows, doorways, diffusers, grills and any other openings between the contaminated work area and clean areas, including the exterior of the building.

.6 Curtain Door: A closing device to allow passage between two areas, typically consisting of two side-by-side sheets overlapping in the middle (at least 1 meter or door width), attached to the top of the existing or temporarily installed doorway and secured laterally to one jamb of the frame and the other to the opposite jamb. The free edges of the tarpaulins shall be lined with reinforced tape and the bottom edge shall be weighted to ensure a tight seal. Curtain doors in an enclosure shall be spaced at least two (2) meters apart.

.7 Decontamination enclosure: an enclosure between the contaminated work area and a clean area for the decontamination of workers and equipment, usually consisting of two (2) curtain doors spaced at least two (2) meters apart.

.8 Reinforced Polyethylene: Fiber reinforced polyethylene sheeting that is tear resistant and has been sealed at the edges with fiber reinforced tape.

.9 High Efficiency Vacuum Cleaner: A vacuum cleaner equipped with a very high efficiency filter, called an absolute filter, designed to collect and retain 99.97% of fibers larger than 0.3 micrometers. Also known as HEPA vacuum cleaner.

.10 HVAC: Heating, ventilation and air conditioning system[s] serving occupied areas. An HVAC system includes, but is not limited to, air handlers, air ducts, terminal units and grilles.

.11 Contaminated Work Area: a specific space or location where decontamination work is being performed, or any other part of a facility, that may pose a risk to human health due to the treatment being undertaken to control fungal contamination.

.12 Vacuum: A lower pressure than adjacent areas, referred to as negative pressure, maintained in the contaminated work area by an exhaust fan equipped with a HEPA filter, to prevent migration of contaminants from the area being treated. A pressure differential of 5 to 7 Pa should be maintained at all times between the contaminated area and adjacent areas. Airflow may be verified with a smoke pencil.

.13 Occupied Area: any section of the building or workplace that is not part of the contaminated work area.

.14 PPE: Personal protective equipment.

.15 Sprayer: Garden sprayer or airless spray equipment capable of producing a mist or fine droplets. The sprayer used shall have a capacity of at least six (6) liters..

1.5 REGULATORY REQUIREMENTS

.1 Comply with all applicable regulations while performing the Work. In the event of a discrepancy between the requirements of these regulations and those set out in this section, the more stringent requirements shall prevail. If the proposed work is not subject to any regulations, follow the most widely used guidelines of recognized professional groups such as occupational hygienists, health professionals, or environmental engineers as outlined in Section 1.2 - Reference Standards.

1.6 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit the required documents and samples in accordance with Section 01 33 00 - Documents and Samples to be Submitted.

.2 Submit documentation to the Departmental Representative showing that all workers who will be involved in this project have been provided with appropriate information regarding potential health hazards associated with exposure to fungi and moulds, the use of respiratory protection and protective clothing, procedures for entering and exiting contaminated work areas, the specifics of the work to be performed, and the necessary precautions to be taken.

.3 Submit certificates demonstrating that supervisory personnel have completed a course approved by the Departmental Representative on the treatment of fungal contamination. At least one (1) supervisor per ten (10) equally trained workers must have completed this course.

.4 Submit documentation demonstrating the qualifications of the supervisor and subcontractors performing the work, and further specifying work experience relevant to this project.

.5 Submit for approval by the Departmental Representative the design of the proposed containment and decontamination facilities.

.6 Submit documentation defining local and/or provincial requirements for the preparation of a Notice of Project.

.7 Submit documentation demonstrating that the Contractor has liability insurance covering the handling of hazardous materials.

.8 Submit to the Departmental Representative the fit report prepared by the Construction Safety Advisor confirming that the operation and fit of each worker's own assigned respirator has been verified and tested using an irritant smoke test.

.9 Submit documentation confirming compliance with Workers Compensation requirements and a copy of insurance coverage..

1.7 CLOSEOUT SUBMITTALS

.1 The General Registry is a permanent record of the project. Record relevant information and retain required documents and other items in the permanent project file.

.2 The daily log shall remain available for inspection by the Departmental Representative and the Site Supervisor at any time.

.3 The visitor logbook shall remain available for inspection by the Departmental Representative and the Site Supervisor at any time.

1.8 RELEVANT INFORMATION AND TRAINING

.1 Provide the Departmental Representative, prior to the commencement of work, with documentation to show that the workers involved in this project have received training and relevant information regarding potential health risks associated with exposure to fungi and moulds and handling of hazardous materials, personal hygiene measures including protective clothing, entry and exit procedures for the contaminated work area, and appropriate disposal methods including construction materials. This training may be provided as part of a program to comply with the requirements of OSHA's Hazard Communication Strategy (HCS) under 29 CFR 1910.1200 or an equivalent standard document. Documentation showing the training taken must be valid and not expired.

.2 The training and information provided for respiratory protective devices shall include, as a minimum, the following :

.1 Fitting of respiratory protective devices.

.2 Inspection and maintenance of respiratory protective devices.

.3 Decontamination of respiratory protective devices.

.4 Respiratory protection device characteristics and range of protection provided.

.3 Training and information shall be provided by a designated consultant with the necessary construction safety knowledge.

.4 Supervisory personnel shall obtain the required training in the treatment of fungal contamination.

1.9 WORKER PROTECTION

.1 Workers shall use an air purifying respirator (negative pressure on demand mode) with a full facepiece and two HEPA filter cartridges. Disposable respirators are not permitted.

.2 Gloves covering half of the forearms shall be worn.

.3 Wear disposable hoods and shoe covers covered with mould proof polyethylene and coveralls made of breathable fabric. The ends of clothing, such as wrists and ankles, shall be sealed with reinforced tape.

.4 Procedures for Entering a Contaminated Area

.1 Before entering a contaminated work area, workers shall undress in the decontamination area and don their respirator with new or recyclable filters, followed by a hood and clean disposable protective clothing. They shall store their street clothes, uncontaminated footwear and towels in the decontamination area.

.2 Workers shall check their respirator facepiece for any hair or facial hair that may compromise the seal.

.3 Workers shall not eat, drink or chew gum in a contaminated work area. However, they may drink in the decontamination area.

.5 Exit Procedures from Contaminated Area

.1 Upon exiting the contaminated area, workers shall remove contaminated material from their clothing and proceed to the decontamination area and remove their disposable protective clothing without removing their respiratory protective equipment. Contaminated coveralls shall be placed in closed containers for disposal with contaminated materials.

.2 Workers shall clean the exterior of their respirator with a detergent solution prior to removal. Workers shall then remove the filters from the respirator and place them in the container provided and wash and rinse the inside of the respirator.

.3 If protective footwear is not worn in the contaminated area, workers shall store it in the decontamination enclosure. Upon completion of treatment, workers shall thoroughly clean the inside and outside of their protective footwear with a detergent solution before removing from the contaminated area or decontamination chamber.

.4 At the end of the work day, workers shall enter the decontamination area and change into street clothes.

.5 If workers are required to return to the contaminated area, they shall comply with entry and exit procedures.

.6 Workers shall be fully protected with respiratory protection and protective clothing from the time construction of the containment begins, even before decontamination work begins.

.7 Post instructions in decontamination enclosures in both official languages..

1.10 VISITOR PROTECTION

.1 Approved protective clothing and full-face respirators shall be used by authorized visitors entering the contaminated area.

.2 Instruct authorized visitors on the use of protective clothing and respirators and procedures to be followed.

.3 Instruct authorized visitors on procedures for entering and exiting the contaminated area.

1.11 IMPLEMENTATION CONDITIONS

.1 Notify other trades of the presence of mould contaminated materials and the potential health risks associated with exposure to fungal contamination.

.2 Submit to the Departmental Representative a copy of the notices provided prior to commencement of work.

Part 2 PRODUCTS

2.1 MATERIALS/MATERIALS

.1 Cover Sheets: 0.15 mm thick fibre reinforced woven fabric bonded on each side to a sheet of polyethylene also fibre reinforced.

.2 Garbage bags: 0.15 mm thick, clear polyethylene bags that do not allow dust to escape.

.3 Wetting agent: water sprayed on mould-contaminated materials.

.4 Cleaning Agent: detergent solution used to clean contaminated surfaces with a damp cloth and/or mop or brush.

.5 Adhesive Tape: fibre reinforced tape, adhesive type, used to seal joints between two fibre reinforced polyethylene sheets and to attach these sheets to finished or unfinished surfaces. Fibre-reinforced tape shall adhere to both dry and wet surfaces.

.6 Materials and Supplies: Provide materials and supplies such as fibre-reinforced polyethylene sheets, wood, nails and hardware necessary to assemble and disassemble a containment system around the contaminated work area.

2.2 TOOLS AND EQUIPMENT

.1 Tools and equipment: suitable for mold and fungus removal and resistant to post use decontamination methods.

.2 Personal protective equipment (including protective clothing, respirator cartridges and HEPA air filters): Provide sufficient quantities throughout the duration of the work.

.3 Exhaust fans: equipped with HEPA filters and capable of extracting sufficient exhaust air to create a pressure differential of at least 5-7 Pa while providing adequate airflow in the areas served.

.4 Automatic pressure differential recording device: provided to ensure that the exhaust air devices maintain the minimum required pressure differential between the contaminated work area and clean areas. This device shall be installed in the containment area between the contaminated and clean areas and the penetrations shall be sealed with reinforced tape.

.5 Vacuum cleaners: equipped with HEPA filters.

.6 Ladders and/or scaffolding: of appropriate length and strength and provided in sufficient quantities to facilitate proper work progress.

Part 3 Execution

3.1 PREPARATION OF CONTAMINATED WORK AREAS (CONTAMINATED AREA GREATER THAN 10 SQUARE METERS)

.1 A designated construction safety advisor with expertise in microbial analysis and consideration shall be consulted prior to commencement of work.

.2 Containment and decontamination areas shall be indicated on the drawings.

.3 Contaminated work area and adjacent or surrounding areas shall be evacuated. Evacuation of occupants is required for infants less than 12 months of age, the elderly, persons who have recently undergone surgery, immunocompromised persons or persons with chronic inflammatory lung disease.

.4 One (1) supervisor shall be provided for each ten (10) trained workers.

.5 The authorized supervisor shall remain in the contaminated work area during the removal, treatment and other handling of fungal and mould contaminated materials.

.6 Shut down HVAC systems serving contaminated areas prior to the start of work to prevent dust dispersal and contamination of other parts of the building.

.7 Clean movable objects in contaminated work areas with a HEPA filtered vacuum cleaner, wipe with a damp cloth and transfer to a clean area free of contamination.

.8 Clean stationary objects in contaminated work areas with a HEPA filtered vacuum cleaner, wipe with a damp cloth and cover with two rows of 0.15mm thick reinforced polyethylene sheeting securely taped with reinforced tape.

.9 Remove visible dust from all surfaces in contaminated work areas where the work is likely to result in the movement of dust. Use a high efficiency vacuum cleaner and wipe surfaces with a damp cloth.

.10 Do not use compressed air to clean surfaces or to remove settled dust.

.11 Seal windows, doorways, skylights, air ducts, grilles, diffusers and air distribution chambers, outlets and any other openings separating contaminated and clean work areas with two rows of 0.15 mm thick reinforced polyethylene sheeting securely taped with reinforced tape to minimize the spread of dust and spores. Doorways and corridors where there will be no traffic during the work shall be sealed with a securely fastened containment system.

.12 To contain dust and debris in the treated area, isolate the area with a watertight barrier, called a containment enclosure, consisting of two rows of 0.15 mm thick reinforced polyethylene sheeting attached to the floor slab and as close as possible to the underside of the floor slab on the upper floor. Air and other duct crossings shall be sealed with two rows of 0.15 mm thick reinforced polyethylene sheet. Where the area to be treated is larger, the reinforced polyethylene sheets may be attached to a purpose-built wood or steel pole frame. Openings larger than 3 square metres should be framed with 38 mm x 89 mm studs installed at 400 mm centres. Contaminated materials shall not be moved during construction of containment.

.13 Uncontaminated floor and wall surfaces within containment walls shall be sealed with a minimum of two rows of 0.15mm thick reinforced polyethylene sheeting. Cover the floor first, taking care to raise the polyethylene sheets against the walls to a height of at least 300 mm, then overlap the sheets laid vertically on the walls on the raised edge of the sheets covering the floor.

.14 Construct a decontamination enclosure at each exit from contaminated work areas.

.15 Turn on and operate the depressurization system continuously from the time the first polyethylene sheets are installed to seal openings and penetrations until completion of the work, including final clean-up. An automatic recording device shall be used to

continuously monitor the pressure differential between the contaminated work area and the rest of the building.

.16 Upon completion of the contaminated area containment, remove filters from the HVAC system and place in plastic bags at least 0.15 mm thick, which will then be sealed and disposed of in the same manner as the contaminated waste. Remove objects or items that may interfere with the treatment of fungal contamination. While removing the filters, reduce the spread of dust using a high efficiency vacuum cleaner.

.17 Prior to the start of work, post warning signs at each access to a contaminated work area stating, in both official languages, in "Helvetica Medium" high-case type, with the number in parentheses corresponding to the font size to be used: "CAUTION - RISK OF EXPOSURE TO FOLDING (25 mm) / AUTHORIZED PERSONNEL ONLY (19 mm) / Wearing of ASSIGNED PROTECTIVE EQUIPMENT IS MANDATORY (19 mm) / INHALATION OF FOLDING AND CHAMPIONS CAN BE VERY DAMAGING TO HEALTH (7 mm).

3.2 CONSTRUCTING A DECONTAMINATION CHAMBER

.1 Establish a decontamination chamber between each contaminated work area and a clean area. Any person wishing to enter a contaminated area must pass through this enclosure.

.2 Decontamination enclosure shall be equipped with double flap curtain doors.

.3 Decontamination Enclosure: Provide a decontamination enclosure at the entrance to contaminated work areas with two curtain doors, one to the contaminated area and the other to a clean area. Install waste receptacles and cabinets where workers can store protective footwear and clothing that must be returned to the contaminated area. The decontamination enclosure should be large enough to accommodate the specified materials and equipment, and allow at least one worker to comfortably change out of his or her clothing. Storage space shall be provided for uncontaminated protective clothing and respirators and a mirror shall be provided to assist workers in properly adjusting their respirators.

.4 No person shall be permitted to leave the decontamination enclosure without completing the decontamination procedures which include a change of clothing and removal of dust, fungal and mould spores by cleaning with a detergent solution or a high efficiency vacuum cleaner. No exposed persons or contaminated materials should enter a clean area.

3.3 MAINTENANCE OF CONTAINMENT AND DECONTAMINATION FACILITIES

.1 Keep decontamination and containment areas clean and tidy.

.2 At the beginning of each shift, ensure that reinforced polyethylene sheets forming the enclosures are effectively sealed with tape. Repair damaged partitions and promptly correct any defects found.

.3 At the request of the Departmental Representative, verify the quality of containment using smoke devices.

3.4 CONTAINMENT OF HVAC SYSTEMS (CONTAMINATED AREA GREATER THAN 1 SQUARE METER)

.1 Containment and decontamination enclosures as specified may also be used to treat microbial growth on interior and exterior surfaces of HVAC systems.

.2 Shut down HVAC systems prior to commencing work.

.3 Take appropriate precautions to prevent contamination of HVAC components, especially porous materials such as filters, during the course of work.

.4 Decontamination enclosures shall be constructed for contaminated areas greater than 3 square meters.

3.5 ANTIMICROBIAL TREATMENT OF CONTAMINATED WORK AREAS

.1 Treatment of fungal contamination shall not commence until the following conditions have been met.

.1 Contaminated work areas and decontamination enclosures are effectively isolated from areas of the building that are to remain in use. Enclosures in place shall be inspected by the Departmental Representative.

.2 Required tools, equipment, facilities and waste containers are effectively on site.

.3 Appropriate safety precautions have been taken with respect to the building.

.4 Specified warning signs are posted at access points to contaminated areas.

.5 Appropriate notices have been issued and other preparations have been completed.

.2 An authorized supervisor with sufficient experience in the treatment of fungal contamination and retained by the Contractor shall be present on site to ensure that the containment vessel is depressurized, that the required pressure differential is maintained and that proper work practices are followed throughout the duration of the work.

.3 Do not commence decontamination treatment until authorized by the Departmental Representative.

.4 Use a low flow, fine mist sprayer to dampen contaminated materials to be cut. Perform work in a manner that minimizes dust generation.

.5 Remove materials affected by microbial growth, i.e. wallpaper, ceiling tiles/panels, insulation on and between framing members, carpeting, wall covering, etc. Other visibly contaminated items shall also be removed as directed by the Departmental Representative.

.6 Remove contaminated materials in small segments and pack into 0.15mm thick plastic bags, which will be sealed and placed in containers for transfer out of the enclosure and disposal.

.7 Non-porous and semi-porous materials may be cleaned with a high efficiency vacuum and detergent solution and wiped with a damp cloth and reused, depending on the depth of microbial growth. Wooden components shall be discarded if their strength has been compromised by this microbial growth.

.8 If the intended waste containers are not used, remove the sealed containers where the contaminated waste was deposited and dispose of as required.

.9 During processing, if the Departmental Representative is concerned that areas outside of the treated area may be contaminated, stop work and immediately decontaminate the areas in question. The cause of the contamination must also be eliminated. Access to contaminated areas shall be denied to any person not wearing the required protective clothing and equipment until a visual inspection and analysis of air and swab samples establishes that the areas are free of contamination.

3.6 ANTIMICROBIAL TREATMENT OF HVAC SYSTEMS

.1 Remove porous materials from HVAC systems, such as filters, fibrous insulation and duct linings, to expose metal surfaces and dispose of as directed.

.2 Provide Material Safety Data Sheets (MSDS) for biocides recommended by HVAC manufacturers for treatment of their system components.

.3 During the course of treatment, if the Departmental Representative is concerned that areas outside of the treated area may be contaminated, stop work and immediately decontaminate the areas in question. The cause of the contamination must also be eliminated. Access to contaminated areas shall be prohibited to any person not wearing the required protective clothing and equipment until visual inspection, air and surface sample testing establishes that the areas are free of contamination.

3.7 RECLAMATION AND CLEANUP

.1 During the execution of the work and upon completion of the work, clean the contaminated area starting at the top of the containment and working down to the floor. Interior surfaces of both containment and decontamination enclosures shall be cleaned with a high efficiency vacuum and/or detergent solution applied with a mop or brush.

.2 Clean polyethylene sheets forming the inner wall of the containment with a high efficiency vacuum cleaner, wipe with a damp cloth prior to removal, to be done after contaminated materials have been removed and treated, and the work area has been inspected by the Departmental Representative.

.3 Perform work necessary to restore contaminated work area as directed.

.4 Remove polyethylene sheets forming the inner wall of the containment by rolling them towards the center of the work area. Immediately vacuum with a high efficiency vacuum cleaner to remove visible debris and particles.

.5 Wait at least 12 hours after removal of inner liner polyethylene sheets, then clean second row of sheets with a high efficiency vacuum and wipe with a damp cloth.

.6 The decontamination enclosure shall be cleaned in the same manner.

.7 Remove polyethylene sheets no longer essential for containment of contaminants and visible deposits of debris and materials.

.8 Dispose of used polyethylene sheeting, tape, cleaning materials, clothing and contaminated waste.

.9 Clean sealed waste containers and all materials used in contaminated work areas and remove from work areas through decontamination enclosures.

.10 Perform a final visual inspection to ensure surfaces are free of dust and debris that may have settled during enclosure removal. Conduct air testing to the satisfaction of the Departmental Representative prior to final acceptance of the work and return of occupants. Re-clean surfaces with a high efficiency vacuum or damp cloth and detergent solution and repeat air testing until measured mold and fungi levels are deemed acceptable.

.11 When final testing confirms acceptable levels, dismantle remaining enclosures. Clean surfaces that were protected by the containment enclosures including walls, floors, ceiling panels, windows and doors with a high efficiency vacuum. Also vacuum interior spaces that were within three (3) meters of a containment building during the work.

3.8 WASTE DISPOSAL

.1 Place mold contaminated debris and waste in two clear 0.15 mm thick polyethylene waste bags, inserted one inside the other, which can be sealed tightly. Treat cover sheets and disposable protective clothing as waste, fold them to contain dust, and place in plastic bags which are then tightly sealed and placed in dumpsters for transport.

.2 Cover large objects or items showing advanced contamination with two rows of polyethylene sheeting sealed with reinforced tape prior to removal from decontaminated area.

.3 Clean the exterior of each bag and/or waste container with a damp cloth and detergent solution or a high efficiency vacuum cleaner before transferring to an uncontaminated area of the building.

.4 Remove waste bags and/or containers from the work site. There are no special provisions for disposal of mould contaminated waste and materials and may be disposed of in landfill.

3.9 RETURN OBJECTS AND SYSTEMS TO THEIR ORIGINAL LOCATION AND USE

.1 Return temporarily relocated objects to their original location. Ensure that all such items are cleaned before returning them to the decontaminated areas.

.2 Return or reassemble displaced items to their original position.

.3 Advise the Building Operator to return HVAC systems, mechanical and electrical equipment to working order. Place new filters in HVAC systems serving areas affected by the work.

3.10 AIR TESTING AND FINAL ACCEPTANCE

.1 Prior to and after the work, collect air samples from within the work areas as directed.

.2 The Departmental Representative will perform a detailed visual inspection to identify any dust or material accumulation still present in the work area. Resume cleaning if dust, debris, fungus, mould or any type of residue is found during this inspection.

.3 Allow suspended particulate matter to settle for a minimum of twelve (12) hours, conduct a visual inspection of the treated work area and, if no contamination is found, conduct a final air analysis. If the results of this analysis are deemed unacceptable by the Departmental Representative, resume cleaning the affected areas with a high efficiency vacuum and damp cloth until the measured mold and fungus levels are deemed acceptable by the Departmental Representative..

END OF SECTION

Part 1 General

1.1 SUMMARY

.1 The main entrance door to the building is a wood door with wood frame and steel hinges. Replace the entrance door to the lighthouse in the same materials and construction principles as the existing door.

.2 Existing hardware can be reused. Significant corrosion noted on hinges. Sandblast, repaint hardware.

.3 Provide and install hasp with padlock.

.4 Paint new door with exterior paint. See quote section 09 00 00.

.5 Some of the wooden stairs to the crawl space have broken. Proceed with their repair. Provide 3 repairs to treads, risers and stringers.

.6 Provide material data sheets to the Departmental Representative for approval.

1.2 RELATED REQUIREMENTS

.1 Section 01 11 01 WORK DESCRIPTION

1.3 REFERENCE STANDARDS

.1 CSA International

- .1 CSA B111-[1974(C2003)], Wire Nails, Spikes and Staples.
- .2 CSA O121-[08], Douglas Fir Plywood.
- .3 CSA O141-[F05(C2009)], Softwood Lumber.
- .4 CSA O151-[F09], Canadian Softwood Plywood.
- .5 CAN/CSA-O325.0-[F07], Construction Sheathing.
- .6 CAN/CSA-Z809-[F08], Sustainable Forest Management.

.2 National Research Council Canada (NRC)

- .1 National Building Code of Canada [2015] (NBC).

.3 Forest Stewardship Council (FSC)

- .1 FSC-STD-01-001-[2004], FSC Principle and Criteria for Forest Stewardship.

.4 Green Seal Environmental Standards (GS)

- .1 GS-11-[11], Paints and Coatings.

.5 National Lumber Grading Board (NLGA)

- .1 Canadian Lumber Grading Rules [2008].

.6 South Coast Air Quality Management District (SCAQMD), California State, Regulation XI. Source Specific Standards

- .1 SCAQMD Rule 1113-[A2011], Architectural Coatings.

.7 Sustainable Forestry Initiative (SFI)

.1 SFI Standard-[2010-2014].

1.4 DOCUMENTS/SAMPLES TO BE SUBMITTED FOR APPROVAL/INFORMATION

.1 Submit required documents and samples as per Section 01 33 00 - Documents/Samples to be Submitted.

.2 Data Sheets

.1 Submit required data sheets and manufacturer's instructions and documentation for carpentry work. Data sheets shall include product specifications, performance criteria, dimensions, limitations and finish.

1.5 QUALITY ASSURANCE

.1 Marking of wood: Stamp of classification from an organization recognized by the Canadian Lumber Standards Board Accreditation Council.

.2 Plywood marking: Classification mark in accordance with applicable CSA standards.

.3 Marking of plywood, OSB and wood composite panel building sheathing: Classification mark in accordance with applicable CSA standards.

.4

1.6 1.6 TRANSPORTATION, STORAGE AND HANDLING

.1 Transport, store and handle materials and equipment in accordance with the manufacturer's written instructions.

.2 Delivery and Acceptance: Deliver materials and equipment to the job site in original packaging, which shall be labeled with the manufacturer's name and address.

.3 Storage and Handling

.1 Store materials and equipment off the ground, indoors, dry, in a clean, dry, well-ventilated area as per manufacturer's recommendations.

.2 Store wood in a manner that protects it from marks, scratches and scuffs.

.3 Replace defective or damaged materials and equipment with new materials and equipment.

.4 Waste Packaging Management: Recover waste packaging for reuse/recycling as directed by the Construction Waste Management Plan as per Section 01 74 21 - Construction/Demolition Waste Management and Disposal...

Part 2 Products

2.1 MATERIALS/MATERIAL

.1 Lumber: unless otherwise specified, softwood lumber, S4S finish (4-sided bleached), with a moisture content not exceeding 19%, and conforming to the following standards and regulations:

.1 CAN/CSA-O141.

.2 NLGA, Grading Rules for Canadian Lumber.

.3 CAN/CSA-Z809 or FSC or SFI certified wood panels.

.2 Furring, wedges, nailing strips, nailing bottoms, standoffs, cleats and battens, members, nailing bottoms for roof edges and joists.

.1 S2S finish elements are acceptable for

.2 Boards: "standard" grade or better.

.3 Dimensional lumber: "light (clear) framing" classification, "standard" grade or higher.

.4 Posts and lumber (square): "standard" grade or better.

.3 Panels

.1 Douglas Fir plywood (Douglas Fir): to CSA O121, Construction Grade, Standard.

.1 Urea formaldehyde free materials.

.2 Canadian softwood plywood: to CSA O151, Construction Grade, Standard.

.1 Urea formaldehyde free materials.

.3 Plywood, OSB and composite wood panels: to CAN/CSA-O325.

.1 Urea formaldehyde free materials.

.4 Wood treatment product

.1 Surface applied preservative: water repellent, copper naphthenate based or 5% pentachlorophenol solution.

.2 Use of pentachlorophenol is limited to wood components that are in contact with the ground and are subject to decay or insect attack. Where applicable, pentachlorophenol treated wood shall be coated with two coats of an appropriate primer.

.3 Structures constructed of pentachlorophenol and inorganic arsenical treated wood shall not be used for food storage and shall not come in contact with potable water.

.5 Primers, Paints, Coatings: as recommended by the manufacturer based on the condition of the surfaces.

.1 Primer: maximum VOC content of [100] g/L, according to [GS-11 standard] [SCAQMD regulation number 1113].

.2 Paint: maximum VOC content of [150] [50] g/L, according to [GS-11 standard] [SCAQMD regulation number 1113].

.3 Coating: maximum VOC content of [100] [275] [650] [350] g/L, according to [SCAQMD regulation number 1113] [standard GS-11].

2.2 ACCESSORIES

.1 Fasteners: in accordance with CAN/CSA-G164 for exterior works.

.2 Nails, plugs and jumpers: in accordance with CSA B111 standard.

.3 Bolts: 12.5 mm diameter, unless otherwise specified, with nuts and washers.

.4 Proprietary fasteners: toggle bolts, expansion plugs with lag bolts, screws with lead or inorganic fiber sockets, explosive cartridge fasteners, recommended by the manufacturer..

Part 3 Execution

3.1 EXAMINATION

.1 Verification of Conditions: Prior to installation of carpentry, ensure that the condition of surfaces/substrates previously installed under other sections or contracts is acceptable and allows the work to be performed in accordance with the manufacturer's written instructions.

.1 Visually inspect surfaces/substrates in the presence of the Departmental Representative.

.2 Immediately notify the Departmental Representative of any unacceptable conditions found.

.3 Begin installation work only after unacceptable conditions have been corrected.

3.2 PREPARATORY WORK

.1 Apply preservative to wood components prior to installation.

.2 Apply preservative by dipping or brushing. Coat surfaces until saturated and allow product to soak in for a minimum of three (3) minutes for solid wood parts and one (1) minute for plywood panels.

.3 Prior to installation, liberally brush preservative on all surfaces exposed by cutting, straightening and drilling in the field.

.4 Treat the following items as indicated.

.1 Cleats and battens, nailing bottoms for fascia, members, nailing rods and joists for roof decking.

.2 Wood Furring

.3 Wood joists used to support a wood subfloor (flooring support) installed on a concrete slab on grade or on fill.

3.3 INSTALLATION

.1 Install in accordance with the National Building Code of Canada (NBC) and as specified below.

.2 Install furring and shims to space and support cabinets, wall and ceiling finishes, siding, trim, soffits, exterior finishes and other specified work.

.3 Install furring and blocking to ensure flatness and verticality of work, with an allowable deviation of 1:600.

.4 Install holding frames, nailing strips and trim around openings to support frames and other work.

.5 Install cleats and battens, fascia nailing bottoms, nailing rods, chords and other required wood supports and secure with galvanized steel fasteners.

.6 Plane, trim and lightly embed nailing rods to receive roof gutters into roofing membrane.

.7 Install joists as indicated.

.8 Do not work with particleboard without taking the necessary precautions. Use dust collectors and wear a high quality respirator.

.9 Assemble, anchor, fasten, bind and brace components to ensure strength and rigidity.

.10 If necessary, countersink holes so that bolt heads do not protrude.

3.4 CLEANING

.1 Clean-up during construction: perform clean-up in accordance with Section 01 74 11 - Clean-up.

.1 Leave premises clean at the end of each work day.

.2 Final Clean-up: Remove excess materials/materials, waste materials, tools and equipment from the job site in accordance with Section 01 74 11 - Clean-up.

.3 Waste Management: sort waste for reuse/recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

.1 Remove recycling bins and dumpsters from site and dispose of materials at appropriate facilities..

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

.1 Section 01 11 01 Description of Work.

.2 Section 07 62 00 Sheet Metal Flashing and Accessories

1.2 REFERENCE STANDARDS

.1 ASTM International Inc.

- .1 ASTM C726, Standard Specification for Mineral Fiber Roof Insulation Board.
- .2 ASTM D6162, Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fibre Reinforcements.
- .3 ASTM D6163, Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Glass Fibre Reinforcements.

.2 Canadian Roofing Contractors Association (CRCA)

- .1 CACC Roofing Specifications, 1997.

.3 Canadian Standards Association (CSA)/CSA International

- .1 CSA A123.21-14, Standard Test Method for the Dynamic Wind Uplift Resistance of Mechanically Attached Membrane Roofing Systems.
- .2 CSA123.23, Product Specification for Prefabricated and Reinforced Polymer Modified Bitumen Sheets.
- .3 CSA-A123.3-05, Bitumen Impregnated Organic Roofing Felt.
- .4 CSA-A123.4-F04, Bitumen for Waterproofing and Built-Up Roofing.
- .5 CSA O121-08, Douglas Fir Plywood.

.4 Factory Mutual (FM Global)

- .1 FM Approvals - Roofing Products.

.5 Health Canada - Workplace Hazardous Materials Information System (WHMIS)

- .1 Material Safety Data Sheets (MSDS).

.6 Underwriters Laboratories of Canada (ULC)

- .1 CAN/ULC-S701-11, Polystyrene Thermal Insulation, Boards and Sheathing for Piping.
- .2 CAN/ULC S-704-11, Polyurethane and Polyisocyanurate Thermal Insulation: Faced Boards
- .3 CAN/ULC-S107-10, Fire Resistance Testing of Roofing Materials, Class A.

1.3 DOCUMENTS/SAMPLES TO BE SUBMITTED FOR APPROVAL/INFORMATION

.1 Submit required documents and samples as per Section 01 33 00 - Documents and Samples to be Submitted.

.2 Data Sheets

.1 Submit two (2) copies of the most recent data sheets for roofing materials specifying product characteristics, performance criteria, dimensions, limitations and finish.

.2 Submit two (2) copies of Material Safety Data Sheets (MSDS) required under WHMIS as per Section 01 35 29.06 - Health and Safety.

.3 Submit required shop drawings.

.1 Shop drawings shall indicate or show flashing details.

1.4 QUALITY ASSURANCE

.1 Installer Qualification :

.1 Roofing Contractor and subcontractors shall have expertise in modified bitumen membrane roofing and be approved by the manufacturer.

.2 Roofing Contractor and subcontractors shall have a minimum of five (5) years experience with references.

.3 The Roofing Contractor and subcontractors, at the time of bidding and during the course of the work, shall possess a Roofing Contractor's License.

1.5 FIRE PROTECTION

.1 Prior to commencement of the Work, conduct a site safety check to minimize fire hazards and risks.

.2 Follow safety procedures recommended by appropriate local authorities.

.3 At the end of each work day, use a heat gun to detect smouldering fires and bulkhead fires. The work site shall be organized so that workers are present at least 1 hour after the end of the welding work. An inspection shall be made at the end of the work by an employee of the Roofing Contractor who is specialized in this type of work.

.4 Never weld directly to combustible materials.

.5 Pay close attention to the cleanliness of the work site at all times. During all operations, ensure that a fully charged and working ULC Class A, B and C listed fire extinguisher is available within 6 m (20 ft) of each flashlight. Follow the safety instructions that accompany the sealant data sheets. Ensure that the flashlight is not placed near flammable or combustible materials. Under no circumstances should the flashlight flame enter an area where it is not visible or cannot be easily controlled.

1.6 TRANSPORTATION, STORAGE AND HANDLING

.1 Transport, store and handle materials and equipment in accordance with manufacturer's written instructions.

.2 Storage and Handling

.1 Safety: Comply with Workplace Hazardous Materials Information System (WHMIS) safety requirements for the use, handling, storage and disposal of bitumen, sealants and caulking.

.2 All materials will be delivered and stored in their original packaging in accordance with the requirements outlined in the manufacturer's technical documentation.

.3 Materials will be adequately protected, stored at all times in a dry, ventilated area, away from open flames or welding sparks, and protected from the weather and any harmful substances.

.4 Store adhesives and emulsion sealants at a minimum temperature of 5°C (41°F).

.5 Materials delivered in rolls shall be carefully stored upright; flashings shall be stored in a manner that prevents wrinkling, twisting, scratching and other damage.

.6 Avoid accumulation of materials on roofs, which could, in specific locations, compromise the strength of the structures by imposing loads in excess of those permitted.

1.7 INSTALLATION CONDITIONS

.1 Environmental Conditions :

.1 Do not install roofing materials when the temperature is lower than recommended by the manufacturer.

.2 Roofing substrate must be dry, free of snow and ice. Use only dry materials, and apply only when weather conditions will not allow moisture infiltration into the roofing system.

1.8 WARRANTY

.1 For work covered in this section, i.e. Section 07 52 00 - Modified Bitumen Membrane Roofing, the 12 month warranty period is extended to 60 months.

Part 2 Product

2.1 PERFORMANCE CRITERIA

.1 It is essential that the various materials in the roofing system are compatible with each other. Provide the Departmental Representative with a written statement certifying that the materials and components of the roofing system, as installed, are compatible. As such, all roofing materials will be supplied by the same manufacturer.

.2 Roofing system: Conform to CSA A123.21 standard for dynamic wind uplift resistance.

2.2 SYSTEM SUPPORT PANELS - INTERMEDIATE SHEATHING

.1 Plywood

.1 Conform to CSA O121 standard, 12 mm thick.

2.3 MEMBRANES

.1 Underlayment membrane for the main part :

.1 Description: Membrane composed of SBS modified bitumen designed to be flexible at low temperature and a composite reinforcement. The surface is covered with a heat sealable plastic film, the underside is sanded. Surface shall be marked with three (3) lines to facilitate alignment of rollers.

.2 Underlayment is equipped with Gallon DUO technology or approved equivalent.

.3 Specified product: SOPRAFIX Base 630 by SOPREMA or equivalent BAKOR INC product or equivalent IKO Industrie Ltée product or approved equivalent.

.2 Underlayment membrane for upstands and parapets :

.1 Description: Membrane composed of SBS modified bitumen designed to be flexible at low temperature and a composite reinforcement. The surface is covered by a heat-sealable plastic film, the underside is self-adhesive. Surface shall be marked with three (3) lines to facilitate alignment of rolls.

.2 Specified product : SOPRAPLY FLAM STICK by SOPREMA or equivalent BAKOR INC product or equivalent IKO Industrie Ltée product or approved equivalent.

.3 Choice of colors for granules of finishing membranes :

.4 For standard surfaces: black.

.3 Finishing membrane for running surface and for upstands and parapets

.1 Description: Membrane composed of SBS modified bitumen designed to be flexible at low temperature and a non-woven polyester reinforcement. Surface is protected by colored granules, underside is covered by a heat-sealable plastic film.

.2 Specified product : SOPRALENE FLAM 250 GR by SOPREMA or equivalent BAKOR INC product or equivalent IKO Industrie Ltée product or approved equivalent.

2.4 ACCESSORY MEMBRANES

.1 Cover strip :

.1 Description: 240 mm (9.45 in) membrane strip composed of SBS modified bitumen and composite reinforcement. Both sides are covered with a heat-sealable plastic film. The strip is used to ensure the watertightness of the transverse overlaps.

.2 Specified product : SOPRALAP from SOPREMA or equivalent BAKOR INC product or equivalent IKO Industrie Ltée product or approved equivalent.

2.5 PRIMERS

.1 Primer for self-adhesive membrane :

.1 Description: Primer composed of SBS synthetic rubbers, resins known for their adhesion power and volatile solvents. Used as a primer to improve adhesion of self-adhesive waterproofing membranes.

.2 Specified product : ELASTOCOL STICK from SOPREMA or equivalent BAKOR INC product or equivalent IKO Industrie Ltée product or approved equivalent.

2.6 FLAME RETARDANT MEMBRANE

.1 Description: Asphalt impregnated felt type flame retardant membrane. Both sides are impregnated with asphalt. The perforated felt is composed of a flexible and robust reinforcement and organic fibers impregnated with asphalt. It is used as a waterproofing membrane in a multi-layer system (B.U.R.). It is provided with surface reference lines to facilitate the installation of membranes.

.2 Specified product : SOPRAFELT NO.15 from SOPREMA or equivalent BAKOR INC product or equivalent IKO Industrie Ltée product or approved equivalent.

2.7 FIXINGS

.1 Description: Pre-assembled anchors with #14 self-tapping screws, with 50 mm (2 in.) diameter washers.

.2 Conforms to Factory Mutual FM 4470.

.3 Specified product: SOPREMA SCREWS AND PLATES from SOPREMA or equivalent BAKOR INC product or equivalent IKO Industrie Ltée product or approved equivalent.

2.8 COMPLEMENTARY SEALING PRODUCTS

.1 Sealing compounds :

.1 Description: Sealing compound and one-component water-reactive elastomeric adhesive based on polyether resin.

.2 Specified product: SOPRAMASTIC SP2 from SOPREMA or equivalent BAKOR INC product or equivalent IKO Industrie Ltée product or approved equivalent.

.2 Sealing products :

.1 Description: Single component bitumen/polyurethane waterproofing resin and polyester reinforcement.

.2 Specified products: ALSAN FLASHING and ARMATURE FLASHING from SOPREMA or equivalent BAKOR INC product or equivalent or approved IKO Industrie Ltée product.

Part 3 Execution

3.1 QUALITY OF WORKMANSHIP

.1 Examination and preparation of surfaces shall be done according to the instructions contained in the technical documentation of the membrane manufacturer.

.2 Roofing work shall be performed in a continuous manner as surfaces are ready and weather conditions permit.

.3 Seal all joints in underlayments that are not covered with a finishing membrane the same day. Under no circumstances should there be any moisture trapped in joints prior to the installation of a second membrane.

.4 Maintain watertightness of roofs at all times, including during the performance of work by other trades and as the work is completed.

.5 Provide a durable rigid interface between walls and roof, such as plywood, to ensure continuity of the air sealing system.

.6 Connect the assembly, components and materials taking into account the design loads of the elements considered, using reversible mechanical fasteners.

3.2 EXAMINATION OF THE COVERING SUPPORT

.1 Verify existing conditions :

.1 With the Departmental Representative, verify the condition of the substrate, parapets, break joints, to determine if work can commence.

.2 Assessment :

.1 Prior to commencing work, ensure:

.1 Roofing substrate is sound, level, even, dry and free of snow, ice and frost, and has been swept clean of dust and debris; no calcium or de-icing salt is to be used to remove ice and snow;

.2 Ensure that plumbing, carpentry and other work has been properly completed.

.3 Do not install roofing materials during rain or snow.

3.3 PROTECTION OF EXISTING WORK

.1 Protect walls and adjacent structures from locations when performing roofing work.

.2 When transporting materials on roofs and performing roofing work, protect exposed surfaces of finished work from damage. Take full responsibility for any damage.

.3 Provide and erect safety signs and barriers and keep them in good repair until work is completed.

.4 Remove asphalt drips and spills without delay.

.5 Ensure rainwater is drained to the periphery of the roof as far away from the building face as possible until work is completed.

.6 Protect roofing from damage by traffic and other sources. Take precautions as deemed necessary by the Departmental Representative.

.7 At the end of each work day or when work is interrupted due to inclement weather, protect finished surfaces and materials that have been removed from the room or storage area.

.8 Where metal connectors are used, metal connectors and supporting metal components shall be galvanized or rust proofed.

3.4 INSTALLATION OF INTERLAYER

.1 Mechanically fasten plywood to wood bearing substrate with reversible mechanical fasteners driven into top of substrate ribs at 400 mm centers in both directions.

.2 Place cladding lengthwise, perpendicular to support ribs, so that end joints are staggered and fully supported on ribs.

3.5 INSTALLATION OF MECHANICALLY ATTACHED UNDERLAYMENT

.1 Unroll the flame retardant membrane dry on the plywood taking care to overlap it so that the flame does not penetrate to the substrate.

.2 Unroll the underlayment dry on the substrate taking care to align the edge of the first edge with the center of the drain (parallel to the edge of the roof).

.3 At the transverse overlaps, cut at an angle the corner of the zone that will be covered by the next membrane roll.

.4 Mechanically fasten membranes with screws and membrane inserts. Mechanical fasteners are to be installed in the center of the longitudinal braids of the membranes at the rate of fasteners for the running surface, 300 mm (12 in.) on the perimeters and 300 mm (12 in.) in the corners. Perimeter and corner areas shall be installed in accordance with FM requirements as specified in PLPDS 1-29.

.5 Each selvage shall overlap the previous one laterally along the alignment provided. Align all transverse joints (without offsets) to facilitate the installation of the reinforcing strip.

.6 Adhere the first part of the self-adhesive longitudinal overlaps with a roller and then weld the last part with a flashlight (self-adhesive and heat-welded longitudinal joints).

.7 Seal transverse joints with a 240 mm (9.45 in.) heat-sealable covering strip centered on the joint.

.8 Avoid formation of folds, swelling or fishmouths.

3.6 INSTALLATION OF SELF-ADHESIVE UNDERLAYMENT ON UPSTANDS AND PARAPETS

.1 Prior to application of membranes, always burn off plastic film from area to be covered where there is overlap (inside and outside corners and running surface). In case of sanded underlayment, apply primer for self-adhesive membrane on area to be covered at foot of parapets.

.2 Primer must be dry at the time of application of the underlayment.

.3 Lay out the underlayment membrane by 1 m (3.25 ft) wide strips.

.4 Each strip will overlap the previous one laterally following the line provided for this purpose, and will overlap the current surface by 100 mm (4 in.). Underlayment membranes must be offset at least 100 mm (4 in.) from the underlayment membranes of the running surface to avoid any overthickness.

.5 At transverse overlaps, cut at an angle the corner of the membrane that is on top of the transverse joint which will then be covered by the adjacent roll.

.6 Position the previously cut membrane. Loosen 150 mm (6 in.) of the siliconized paper going on the top of the parapet to hold the membrane in place.

.7 Gradually remove the rest of the siliconized paper while pressing on the membrane with an aluminum applicator to promote adhesion. Use the same applicator to obtain a perfect transition between the upstand and the running surface. Roll the entire membrane with a roller to obtain a complete and uniform adhesion.

.8 Install reinforcing gusset on all interior and exterior corners.

.9 Always seal overlaps before the end of the work day.

.10 Avoid the formation of folds, swellings or fishmouths.

3.7 INSTALLATION OF REINFORCEMENT GUSSETS

.1 Install reinforcing gussets at all interior and exterior corners.

.2 Install gussets by heat welding after installation of underlayment.

3.8 INSTALLATION OF HEAT-WELDED AND/OR SELF-ADHESIVE REINFORCING MEMBRANES

.1 Install reinforcing membranes according to typical details shown in membrane manufacturer's technical documentation.

3.9 INSTALLATION OF FLASHINGS AND SHEET METAL ACCESSORIES

.1 Nail base layer membrane flashing strips to substrate prior to installation of finish coat.

.2 Overlap the base coat membrane flashing on the base coat for a minimum width of 150 mm, then flashlight weld or glue with mop bitumen.

.3 Install finishing membrane.

.4 Install flashings as per manufacturer's recommendations and in accordance with Section 07 62 00 - Sheet Metal Flashings and Accessories.

3.10 APPLICATION OF HEAT-SEALABLE TOPCOAT ON THE RUNNING PART

.1 Use double-gallon starter rolls for first edge. If a starter roll is not used, the longitudinal overlap covered with granules must be degranulated by pressing the granules into the bitumen heated with a flashlight, over a width of 75 mm (3 in).

.2 Unroll waterproofing membrane dry on the underlayment taking care to align the edge of the first selvage with the edge of the roof.

.3 At transverse laps, cut at an angle the corner of the membrane on top of the transverse joint which will then be covered by the adjacent roll.

.4 Each selvage will overlap the previous one laterally following the alignment provided for this purpose, and will overlap by 150 mm (6 in.) at the transverse laps (degranulated). Space transverse joints at least 300 mm (12") apart.

.5 Weld the top coat with a flashlight on the underlayment to create a slight overhang of bitumen (3 to 6 mm) (1/8 in. to 1/4 in.).

.6 Be sure to proceed without overheating the membranes and their reinforcements.

.7 Avoid formation of folds, swellings or fishmouths.

.8 Avoid driving on finished surfaces; use rigid protectors if necessary.

3.11 INSTALLATION OF HEAT SEALABLE TOPCOAT ON UPSTANDS AND PARAPETS

.1 This finish coat will be laid out in 1 m (3.25 ft) wide elements.

.2 Each edge will overlap the previous one laterally following the line provided for this purpose, and will overlap the current surface by 150 mm (6 in.). Upstand finish membranes must be offset at least 100 mm (4 in.) from the finish layer of the running surface to avoid any overthickness.

.3 At cross laps, cut corner of area to be covered by next roll of membrane at an angle.

.4 With a line, draw a straight line on the running surface, 150 mm (6 in.) from the upstands and parapets.

.5 Using a flashlight and a trowel with rounded end, embed surface granules in hot bitumen layer from the line drawn on the running surface to the edge of the upstand or parapet, as well as on the vertical granulated parts to be overlapped.

.6 This top coat shall be flashlight welded directly to the underlayment from bottom to top.

.7 Avoid the formation of folds, swellings or fish mouths.

.8 Be sure to proceed without overheating the membranes and their reinforcements.

3.12 CLEANING

.1 Remove bitumen marks from finished surfaces.

.2 Where finished surfaces become soiled as a result of the work covered in this section, contact the manufacturer of the affected surface for cleaning advice and follow and document their instructions.

.3 Repair or replace finished surfaces that have been altered or otherwise damaged as a result of work covered in this section.

.4 Waste Management: Separate waste materials for recycling, reuse/repurposing in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

.1 Place substances that meet the definition of toxic or hazardous waste in designated containers.

.2 Properly identify storage areas for recovered materials and mark them with barriers and other safety devices.

.3 Ensure empty containers are sealed and stored properly.

.4 Route unused granular materials to a local recycling facility authorized by the Departmental Representative.

.5 Direct unused coatings to an approved hazardous materials collection site authorized by the Departmental Representative.

.6 Do not discharge unused adhesives, sealants and asphalt into a sewer, stream, lake, on the ground or in any other location where it may pose a health or environmental hazard.

.7 Direct unused adhesives to an approved hazardous materials collection site authorized by the Departmental Representative.

.8 Dispose of unused sealant to an approved hazardous material collection site as authorized by the Departmental Representative.

.9 Route unused asphalt materials to an approved hazardous material collection site authorized by the Departmental Representative.

.10 Direct unused gypsum board to a recycling facility authorized by the Departmental Representative.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

.1 Section 01 11 01 Description of Work.

.2 Section 07 52 00 Modified Bitumen Membrane Roofing

1.2 REFERENCE STANDARDS

.1 The Aluminum Association Inc. (AAI)

.1 AAI-Aluminum Sheet Metal Work in Building Construction-[2002].

.2 AAI DAF45-03, Designation System for Aluminum Finishes.

.2 American Society for Testing and Materials International (ASTM)

.1 ASTM A167-99(2004), Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.

.2 ASTM A240/A240M-07e1, Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.

.3 ASTM A606-04, Standard Specification for Steel, Sheet and Strip, High-Strength, Low-Alloy, Hot-Rolled and Cold-Rolled, with Improved Atmospheric Corrosion Resistance.

.4 ASTM A653/A653M-07, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

.5 ASTM A792/A792M-06a, Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.

.6 ASTM B32-04, Standard Specification for Solder Metal.

.7 ASTM B370-03, Standard Specification for Copper Sheet and Strip for Building Construction.

.8 ASTM D523-89(1999), Standard Test Method for Specular Gloss.

.9 ASTM D822-01(2006), Standard Practice for Filtered Open-Flame Carbon-Arc Exposures of Paint and Related Coatings.

.3 Canadian Roofing Contractors Association (CRCA)

.1 Specification, Roofing 1997.

.4 Canadian General Standards Board (CGSB)

.1 CAN/CGSB-51.32-M77, Sheathing Membrane, Vapor Permeable.

.2 CAN/CGSB-93.1-M85, Prefinished Aluminum Alloy Sheet for Residential Buildings.

.5 Canadian Standards Association (CSA)/CSA International

.1 CSA A123.3-05, Bitumen Impregnated Organic Roofing Felt.

.2 AAMA/WDMA/CSA 101/I.S.2/A440-2008, Standard/Specification for windows, Doors, and Unit Skylights.

.3 CSA B111-1974(R2003), Wire Nails, Spikes and Staples.

.6 Health Canada/Workplace Hazardous Materials Information System (WHMIS)

.1 Material Safety Data Sheets (MSDS).

.7 South Coast Air Quality Management District (SCAQMD), California State

.1 SCAQMD Rule #1113-04, Architectural Coatings.

.2 SCAQMD Rule #1168-05, Adhesives and Sealants.

1.3 DOCUMENTS/SAMPLES TO BE SUBMITTED FOR APPROVAL/INFORMATION

.1 Submit required documents and samples as per Section 01 33 00 - Documents and Samples to be Submitted.

.2 Data Sheets

.1 Submit required data sheets for flashing materials, manufacturer's specifications and documentation. Data sheets shall include product characteristics, performance criteria, dimensions, limitations and finish.

.2 Submit two (2) copies of Material Safety Data Sheets (MSDS) required under WHMIS (Workplace Hazardous Materials Information System), as per Section 01 35 43 - Environmental Protection and 01 35 29.06 - Health and Safety.

.3 Shop Drawings

.1 Submit required shop drawings, which shall bear the seal and signature of a qualified Professional Engineer recognized or licensed to practice in the Province, Canada.

.4 Samples

.1 Submit two (2) 50mm x 50mm samples of each color, finish and type of sheet metal proposed.

1.4 TRANSPORTATION, STORAGE AND HANDLING

.1 Waste Management and Disposal

.1 Segregate waste materials for recycling/reuse in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

Part 2 Products

2.1 STEEL SHEETS

.1 Non exposed sheet: commercial grade hot dipped galvanized steel sheet conforming to ASTM A526, with Z275 zinc plating, minimum 24 gauge or as indicated on drawings.

.2 Exposed sheet metal: commercial grade hot dipped galvanized steel sheet, pre-painted with baked enamel, conforming to ASTM A526 standard, with Z275 zinc plating, minimum gauge 24.

2.2 ACCESSORIES

.1 Protective coating: anti-base bituminous paint.

.2 Plastic sealant: conform to CAN/CGSB 37.5 standard.

.3 Sealants: provide required sealants.

.4 Fasteners: in the same material and of the same hardness as the sheet used, at least 50 mm wide and of the same thickness as the sheet to be fastened.

.5 Fasteners: same material as the sheet metal used, in accordance with CSA B111 standard, flat head cover nails with corrugated shank, of appropriate length and thickness for metal Flashings.

.6 Washers: same material as the sheet metal used, 1 mm thick, with rubber gaskets.

2.3 FABRICATION

.1 Metal flashings and other sheet metal components shall be formed in accordance with the details of the Canadian Roofing Contractors Association (CRCA) FL series drawings.

.2 Aluminum flashings and other sheet metal components shall be fabricated in accordance with the requirements of the Aluminum Association, AAI - Aluminum Sheet Metal Work in Building Construction.

.3 Parts shall be fabricated in lengths not exceeding 2400mm.

.1 It is important to provide the necessary clearance at the joints to allow for expansion of the elements.

.4 Visible edges must be folded back 12 mm on their lower face.

.1 Corners must be mitred and sealed with a sealant.

.5 Components shall be shaped square, level and accurately to the intended dimensions so that they are free from distortion or other defects that may affect their appearance or performance.

.6 Metal surfaces to be embedded in concrete or mortar shall be coated with a protective coating.

2.4 METAL FLASHINGS

.1 Flashings, caps and fascia shall be formed to specified profiles using galvanized steel sheet.

Part 3 Execution

3.1 MANUFACTURER'S INSTRUCTIONS

.1 Compliance: Comply with the manufacturer's requirements, written recommendations, including any available technical bulletins, instructions for handling, storage and application of products, and data sheets.

3.2 INSTALLATION

.1 Install sheet metal work in accordance with instructions published in "AAI-Aluminum Sheet Metal Work in Building Construction" and as indicated on ACEC FL series drawings.

.2 Conceal fasteners except where the Departmental Representative has agreed to leave them exposed.

.3 Install underlayment prior to installation of sheet metal components.

.1 Secure underlayment and provide 100mm overlap joints.

.4 Counterflash bituminous flashings where roofing meets low walls, mounting frames or other vertical surfaces.

.1 Provide single staple standing seams and secure to fastening strips.

.5 Close end joints and seal with sealant.

.6 Install sealing sleeves at specified locations around elements passing through the roofing membrane.

3.3 CLEANING

.1 Perform cleaning in accordance with Section 01 74 11 - Cleaning.

.2 Upon completion of installation and performance testing, remove excess materials, waste, tools and equipment from job site.

.3 Leave work area clean and free of grease, stains and fingerprints.

END OF SECTION

Part 1 General

1.1 SUMMARY

.1 Perform replacement of broken window panes in the lighthouse. The windows observed are pane windows consisting of single glazing in wood frames. They date from the construction of the building. Several deficiencies were observed such as missing or cracked glass panes. Provide 5 replacements.

.2 Replace broken window panes in the lighthouse cupola. A cupola is present at the top of the lighthouse, this one is made of single glass panes and painted steel mullions. Several deficiencies were observed such as missing or cracked glass panes. Reinstall existing mullions or glazing beads or provide new glazing beads. Provide 5 replacements.

.3 Provide material data sheets to Departmental Representative for approval.

1.2 RELATED REQUIREMENTS

.1 Section 01 11 01 Description of Work

1.3 REFERENCE STANDARDS

.1 ASTM International

.1 ASTM C542-[05], Standard Specification for Lock-Strip Gaskets.

.2 ASTM D790-[07e1], Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.

.3 ASTM D1003-[07e1], Standard Test Method for Haze and Luminous Transmittance of Plastics.

.4 ASTM D1929-[96(R2001)e1], Standard Test Method for Determining Ignition Temperature of Plastics.

.5 ASTM D2240-[05], Standard Test Method for Rubber Property - Durometer Hardness.

.6 ASTM E84-[10], Standard Test Method for Surface Burning Characteristics of Building Materials.

.7 ASTM E330-[02], Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.

.8 ASTM F1233-[08], Standard Test Method for Security Glazing Materials and Systems.

.2 Canadian General Standards Board (CGSB)

.1 CAN/CGSB-12.12-[M90], Plastic Safety Glazing Sheets.

.3 Environmental Choice Program (ECP)

.1 CCD-045-[95(R2005)], Sealants and Caulking Compounds.

.4 Glass Association of North American (GANA)

.1 GANA Glazing Manual - [2008].

.2 GANA Laminated Glazing Reference Manual - [2009].

.5 South Coast Air Quality Management District (SCAQMD), California State, Regulation XI. Source Specific Standards

.1 SCAQMD Rule 1168-[A2005], Adhesives and Sealants Applications.

1.4 ACTION AND INFORMATIONAL SUBMITTALS

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

.2 Product Data:

.1 Submit required data sheets and manufacturer's instructions and documentation for glazing, plastics, sealants and glazing accessories. The data sheets shall include product specifications, performance criteria, dimensions, limitations and finish.

1.5 DELIVERY, STORAGE AND HANDLING

.1 Transport, store and handle materials and equipment in accordance with the manufacturer's written instructions.

.2 Delivery and Acceptance: Deliver materials and equipment to the job site in their original packaging, which shall be labelled with the name and address of the fabricator.

.3 Storage and Handling

.1 Store materials and equipment off the ground in a clean, dry and well-ventilated area, as far as possible, in accordance with the manufacturer's recommendations.

.2 Store glazing, plastics and sashes in such a manner as to protect them from marks, scratches and scrapes.

.3 Replace damaged or defective materials and equipment with new materials and equipment.

.4 Packaging waste management: Recover packaging waste for reuse/reuse of other packaging materials by manufacturer as directed in the Construction Waste and Other Residual Materials Management Plan and Waste Reduction Plan as per Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

Part 2 Products

2.1 MATERIALS

.1 Polycarbonate safety glazing

.1 Single polycarbonate panel, 6.35 mm thick, clear.

.2 Projectile protection: as per ASTM F1233.

.3 Flexural strength: as per ASTM D790.

.4 Makrolon GP, Lexan, Palsun, Monogal or accepted equivalent.

2.2 ACCESSORIES

.1 Glazing beads: made of metal or resistant plastic in extruded form to fit plastics, glazing and openings.

Part 3 Execution

3.1 EXAMINATION

.1 Checking conditions: before proceeding with installation of glazing, ensure that the condition of surfaces/supports previously installed under other sections or contracts is acceptable and allows the work to be carried out in accordance with the manufacturer's written instructions.

.1 Ensure glazing openings are properly sized and within allowable tolerances.

.2 Ensure that the surfaces of rabbets and other recesses are clean and free of obstructions and are ready to receive glazing.

.3 Immediately notify the Departmental Representative of any unacceptable conditions identified.

.4 Begin installation work only after unacceptable conditions have been corrected Departmental Representative.

3.2 EXTERIOR GLAZING OR POLYCARBONATE

.1 Manufacturer's instructions: comply with the manufacturer's written requirements, recommendations and specifications, including technical bulletins and installation instructions specified in product catalogues and on packing cartons, as well as with the indications in the data sheets.

.2 Cut adhesive and glazing bead strips to the appropriate length and place them on the glass. Seal corners by abutting beads.

.3 Remove remaining existing glazing and frames. Frames are steel plates that hold existing glass in place with screws. Provide a new adequate and adjustable frame or glazing bead system or reuse existing system for installation of new polycarbonate panels. Install 8 polycarbonate panels in a new frame, with approximate dimensions of 30x48" each (measurements to be validated on site by the Contractor).

3.3 CLEANING

.1 Clean-up during work: Perform clean-up work in accordance with Section 01 74 11 - Cleaning.

.1 Leave the premises clean at the end of each work day.

.1 Remove all traces of primer, sealant, caulking and sealant.

.2 Remove all mastic and glazing materials from finished surfaces.

.3 Remove all labels upon completion of work.

.4 Clean glazing or polycarbonate units with a non-abrasive product in accordance with manufacturer's instructions.

.2 Final Cleaning: Remove excess material/materials, waste, tools and equipment from job site as per 01 74 11 - Cleaning.

.2 Waste Management: Separate waste materials for reuse/reuse, recycling or disposal in accordance with section 01 74 21 - Construction/Demolition Waste Management and Disposal.

3.4 PROTECTION

.1 Protect installed equipment and components from damage during construction.

.2 Repair damage to materials and adjacent equipment caused by the installation of glazing or polycarbonate

END OF SECTION

Part 1 General

1.1 SUMMARY

.1 Exterior walls and roof of lighthouse cupola have loose paint. Remove all loose paint from all wall and roof surfaces using appropriate method (see Section 02 83 10 - Removal of Lead Based Paint Coatings).

.2 Paint exterior walls and roof of light house cupola.

.3 Paint new lighthouse entrance door. See Section 060899 - Carpentry - Minor Work.

.4 Shelter and Heating: . The Contractor shall take measurements and methods according to the weather conditions at the site.

1.2 RELATED REQUIREMENTS

.1 Section 01 11 01 Description of Work

.2 Section 02 83 10 Lead Paint Removal

1.3 REFERENCE STANDARDS

.1 Agence de protection de l'environnement (EPA)

- .1 Test Method for Measuring Total Volatile Organic Compound Content of Consumer Products, EPA Method 24 - Surface Coatings.
- .2 SW-846, Test Method for Evaluating Solid Waste, Physical/Chemical Methods.

.2 Santé Canada/Système d'information sur les matières dangereuses utilisées au travail (SIMDUT)

- .1 Fiches signalétiques (FS).

.3 Institut des maîtres peintres (MPI)

- .1 Architectural Painting Specification Manual - [édition courante].
- .2 Standard GPS-1-[12], MPI Green Performance Standard.
- .3 Norme GPS-2-[12], MPI Green Performance Standard.

.4 Conseil national de recherches Canada (CNRC)

- .1 Code national de prévention des incendies du Canada [2015] (CNPI).

.5 Société des revêtements de protection (SSPC)

- .1 Systèmes et spécifications, Manuel de peinture de la SSPC [2011]..

1.4 DOCUMENTS/SAMPLES TO BE SUBMITTED FOR APPROVAL/INFORMATION

.1 Submit required documents and samples as per Section 01 33 00 - Documents/Samples to be Submitted.

.2 Data Sheets

.1 Submit required data sheets and manufacturer's documentation for paint and paint related products. Data sheets shall include product specifications, performance criteria, dimensions, limitations and finish.

.2 Submit one (1) copy of Material Safety Data Sheets (MSDS) required under Workplace Hazardous Materials Information System (WHMIS), as per Section 01 35 43 - Environmental Protection and 01 35 29.06 - Health and Safety.

.3 Confirm that the products selected are on the MPI approved product list.

.4 Submit a complete file for all products used. Include all products in each system with the following information for each product.

.1 Name, type and use of product.

.2 Manufacturer's product number.

.3 Color numbers].

.4 MPI Environmental Choice Program classification of the product.

.5 Manufacturer's Material Safety Data Sheets (MSDS) for each product.

.6 IPM number

1.5 DOCUMENTS/ITEMS TO BE SUBMITTED UPON COMPLETION OF WORK

.1 Submit required documents/items.

.2 Include:

.1 Product name, type, and use pattern.

.2 Manufacturer's product number.

.3 Color number(s).

.4 Product designation according to MPI Environmental Choice Program classification.

1.6 QUALITY ASSURANCE

.1 Comply with the latest MPI requirements for exterior painting, including surface preparation and priming/priming.

.2 Products to be used must be listed on the Approved Products List in the MPI Painting Specification Manual and all products in the selected paint system must be from the same manufacturer.

.3 Retain purchase slips, invoices and documentation to establish, upon request by the Departmental Representative, that the work meets the specified MPI requirements.

.4 Quality Standard

.1 Walls: No visible defects at a distance of 1000mm at a 90 degree angle to the surface being examined.

.2 Soffits: no defects visible to an observer on the floor at a 45 degree angle to the surface being examined under the intended final lighting.

.3 Color and gloss of topcoat shall be uniform over the entire surface being examined.

1.7 TRANSPORTATION, STORAGE AND HANDLING

.1 Transport, store and handle materials and equipment in accordance with the manufacturer's written instructions.

.2 Delivery and Acceptance: Deliver materials and equipment to job site in original packaging, which shall be labeled with manufacturer's name and address.

.1 Labels shall indicate:

.1 type of paint or coating;

.2 Compliance with applicable standards or requirements;

.3 color number as per specified color list.

.3 Storage and Handling

.1 Store materials and equipment in a clean, dry, well-ventilated area in accordance with manufacturer's recommendations.

.2 Handle and store products according to manufacturer's recommendations.

.3 Store products and materials away from heat sources.

.4 Store products and materials in a well-ventilated area between 7 and 30 degrees Celsius.

.5 Maintain storage, cleaning and preparation areas in a clean and orderly fashion to the satisfaction of the Departmental Representative. Upon completion of the work, restore these areas to their original condition to the satisfaction of the Departmental Representative.

.6 Remove from the storage area only those quantities of product that will be used on the same day.

.7 Meet WHMIS requirements for the use, storage, handling and disposal of hazardous materials.

.8 Fire Safety Requirements

.1 Provide one (1) 9 kg dry chemical fire extinguisher for ABC fires and place near storage area.

.2 Place oily rags, garbage, empty containers and materials subject to spontaneous combustion in ULC approved sealed containers and remove these containers from the work site daily.

.3 Handle, store, use and dispose of flammable and combustible products and materials in accordance with the requirements of the National Fire Code of Canada (NFC).

.9 Replace damaged materials and equipment with new materials and equipment.

1.8 APPLICATION CONDITIONS

.1 Environmental conditions

.1 Heating, ventilation and lighting

.1 Prior to commencing painting, verify that adequate and continuous ventilation can be provided and that adequate heating facilities are available to raise ambient and substrate temperatures above 10 degrees

Celsius 24 hours prior to commencing work and to maintain these temperatures throughout the application and after completion of the work until the paint is sufficiently cured.

.2 If required, provide continuous ventilation for seven (7) days after completion of work.

.3 Provide and install temporary heating and ventilation equipment if permanent systems cannot be used; if permanent building systems cannot meet minimum requirements, provide and install additional equipment required to meet minimum requirements.

.2 Ambient Temperature, Relative Humidity and Substrate Moisture Content

.1 Unless specifically authorized in advance by the specifying contracting authority, the paint inspection agency and the manufacturer of the product being applied, do not proceed with painting when the following conditions exist:

.1 Ambient air temperature and substrate temperature are below 10 degrees Celsius;

.2 Substrate temperature is above 32 degrees Celsius unless the paint to be applied is specifically formulated for high temperature application;

.3 Ambient air and substrate temperatures are expected to drop below the MPI or paint manufacturer's recommended limit;

.4 Relative humidity is greater than 85% or dew point is within 3 degrees Celsius of air and substrate temperature;

.5 Snow or rain is expected to fall before the paint has had time to fully cure, or there is fog, drizzle, rain or snow on the job site.

.2 Do not proceed with painting if the maximum moisture content of the substrate exceeds the following values:

.1 12% for concrete and masonry (brick and concrete/clay block);

.2 15% for wood;

.3 17% for softwood.

.4 12% for gypsum board and plaster.

.3 Test substrates for moisture content using a properly calibrated electronic moisture meter, except for concrete floors where moisture content is to be determined by simple "coverage test".

.4 Test plaster, concrete and masonry surfaces for alkalinity.

.3 Work Requirements :

.1 Paint in areas where the ambient air is free of airborne dust generated by construction activities or particles blown in by the wind or ventilation system that may affect the finished surfaces.

.2 Apply paint to properly prepared surfaces with moisture content within the range specified in this section.

.3 Apply paint when previous coat is dry or sufficiently cured.

.4 Apply paint products when weather conditions for the duration of the application are in accordance with manufacturer's recommendations.

.5 Do not apply paint under the following conditions:

.1 Ambient temperature is expected to drop below 10 degrees Celsius before the paint is fully cured;

.2 Ambient and substrate temperatures are expected to drop below the MPI or paint manufacturer's recommended limit;

.3 surfaces to be painted are damp, wet or frosted.

.6 Provide shelter when painting in cold or wet weather and maintain as required. Heat substrates and ambient air to meet manufacturer's recommended temperature and humidity conditions. Protect surfaces until paint is dry or weather conditions are adequate.

.7 Arrange painting so that surfaces exposed to direct sunlight are fully painted in the early morning.

.8 Remove paint from surfaces that have been exposed to frost, excessive moisture, rain, snow or condensation. Re-prepare these surfaces and resume painting.

Part 2 Products

2.1 PERFORMANCE REQUIREMENTS

.1 Environmental Performance Requirements :

.1 Paint products used shall comply with the requirements for MPI Environmental Choice Award based on Volatile Organic Compound (VOC) content as determined by Environmental Protection Agency (EPA) Method Number 24.

.2 Green Performance in accordance with MPI standard [GPS-2] [GPS-1].

2.2 MATERIALS

.1 Only paint products listed on the latest edition of the MPI Approved Products List may be used in this work.

.2 All products used in the paint system shall be from the same manufacturer.

.3 Paints, coatings, adhesives, solvents, cleaners, lubricants and other products used shall have the following characteristics:

.1 products manufactured without any compounds that contribute to the depletion of ozone in the upper atmosphere];

.2 products manufactured without any smog-forming compounds in the lower atmosphere;

.3 Products that do not contain dichloromethane (methylene chloride), chlorinated hydrocarbons, toxic metallic pigments;

.4 Waterborne coating products shall be manufactured and transported in such a manner that all stages of the process, including the disposal of wastes generated during the course of the work, are in compliance with the requirements of relevant government acts, orders

and regulations including, for facilities located in Canada, the Fisheries Act and the Canadian Environmental Protection Act (CEPA).

.5 Water based coating products shall not contain aromatic solvents, formaldehyde, halogenated solvents, mercury, lead, cadmium, hexavalent chromium or any of their compounds.

.6 New or recycled water based coating products shall have a flash point of 61.0 degrees Celsius or greater.

.7 New and recycled waterborne coating products shall be manufactured in a process that does not result in the release of undiluted plant effluent:

.1 materials that may generate a biochemical oxygen demand (BOD) greater than [15] mg/L to a natural watercourse or to a wastewater treatment facility where no secondary treatment is provided;

.2 material with total suspended solids (TSS) greater than 15 mg/L in a natural watercourse or in a wastewater treatment facility where no secondary treatment is provided.

.8 Water based paints, stains, varnishes and recycled water based coatings shall, as a minimum, meet the requirements of the Environmental Choice Program for E2.

.9 Recycled waterborne coating products shall contain a minimum of 50% post-consumer recycled content.

.10 The following measurements shall be taken for each batch of post-consumer recycled material before the coating products are re-mixed and boxed. These tests shall be performed at a facility or laboratory accredited by the Standards Council of Canada (SCC).

.1 Lead, cadmium and chromium shall be measured using Inductively Coupled Plasma Emission Spectroscopy (ICPES) technique number 6010 as defined in EPA document SW-846.

.2 Mercury shall be measured using the Cold Vapor Atomic Absorption Spectrometry technique number 7471, as defined in EPA document SW-846.

.3 Organochlorines and polychlorinated biphenyls (PCBs) shall be measured by gas chromatography technique number 8081, as defined in EPA document SW-846.

2.3 COLORS

.1 Color codes.

TABLE 1: CCG APPROVED IALA COLOUR
TABLEAU 1: COULEURS AISM APPROUVÉES PAR LA GCC
(colours displayed do not represent actual colours / les couleurs de cet exemple ne sont pas représentatives)

CCG Color / *Couleur CCG*	RAL ID/ *Ident. RAL*
Yellow / *jaune*	1023
Fluorescent Red / *rouge fluorescent*	2005
Red / *rouge*	3020
Green / *vert*	6024
Dark Green / *vert fonce*	6026
Fluorescent Green / vert fluorescent	6038
Black / *noir*	9017
White / *blanc*	9016

.2 Where specific products are available in a limited range of colors, the colors of the actual products used will be selected from that limited range.

.3 Four coats may be required for dark and very dark colors.

2.4 MIXING AND COLORING

.1 Mixing and colouring of products shall be performed prior to delivery of products to the job site. This shall not be done on site without written approval of the Departmental Representative.

.2 Mix paste, powder and catalytic curing paints according to manufacturer's written instructions.

.3 Add the amount of thinner recommended by the manufacturer. Kerosene or any other organic solvent shall not be used to thin waterborne paints.

.4 Thin paint to be sprayed in accordance with manufacturer's instructions. If necessary instructions are not on the container, obtain written instructions from the manufacturer and forward a copy to the Departmental Representative.

.5 Before and during application, thoroughly agitate paint in container to break up clumps, to ensure complete dispersion of deposited pigments, and to ensure uniformity of color and gloss of applied paint.

.6 Four coats may be required for dark and very dark colors.

2.5 GLOSS LEVEL

.1 Gloss is defined as the degree of gloss of the paint applied as shown in the following table:

Degrees of gloss	Units at a 60 degree angle	Units at 85 degree angle
G1 - matte finish	from 0 to 5	at most 10
G2 - velvet finish	from 0 to10	from 10 to 35
G3 - eggshell finish	from 10 to 25	from 10 to 35
G4 - satin finish	from 20 to 35	At least 35
G5 - semi-gloss finish	from 35 to 70	
G6 - glossy finish	from 70 to 85	
G7 - high gloss finish	More than 85	

.2 Gloss levels of painted surfaces and finish nomenclature shall be as specified.

2.6 PAINT SYSTEMS FOR NEW EXTERIOR WORK

.1 Provide a suitable primer and paint system for work and surfaces.

.2 Structural steel and other metal assemblies

.1 EXT 5.1A - Fast drying enamel paint, gloss or semi-gloss finish (over fast drying primer).

.2 EXT 5.1B - Light industrial water based coating, (over inorganic zinc).

.3 EXT 5.1C - Water based light industrial coating, (over alkyd resin primer).

.4 EXT 5.1D - Alkyd resin product, (over alkyd resin metal primer).

.5 EXT 5.1F - Epoxy resin product, (over epoxy and high build epoxy resins).

.6 EXT 5.1G - Pigmented polyurethane product (over high zinc epoxy resins and high build epoxy resins).

.7 EXT 5.1H - Pigmented polyurethane based product (over epoxy resins primer and over epoxy resins).

.8 EXT 5.1J - Pigmented polyurethane based product (over epoxy resins and high build epoxy resins).

.9 EXT 5.1K - Aluminum paint (over alkyd resin metal primer).

.10 EXT 5.1L - Pigmented polyurethane based product (over inorganic zinc primer and high build epoxy resins).

.11 EXT 5.1M - Light industrial water based coating (over water based primer).

.12 EXT 5.1N - Light industrial water based coating, (over epoxy resin primer).

.13 EXT 5.1P - Pigmented polyurethane based product (over high zinc epoxy primer).

.14 EXT 5.1Q - Alkyd resin product (on surface tolerant primer) finishing.

.3 Aluminum: sills, thresholds and frames, flashings, railings and posts, downspouts, etc.

.1 EXT 5.4A - Alkyd resin product, (over reactive vinyl primer and fast drying sealer).

.2 EXT 5.4B - Pigmented polyurethane based product (over reactive vinyl primer and quick drying primer).

.3 EXT 5.4C - Aluminum paint (over reactive vinyl primer and quick drying primer).

.4 EXT 5.4D - Bituminous product.

.5 EXT 5.4E - Epoxy resin product (over reactive vinyl primer).

.6 EXT 5.4F - Alkyd resin product (on fast drying primer for metal).

.7 EXT 5.4G - Light industrial water based coating.

.4 Planed lumber: doors, door and window frames, sashes, trim, casements, plain trim, etc.

.1 EXT 6.3A - Latex product,

.2 EXT 6.3B - Alkyd resin product.

.3 EXT 6.3G - Clear two-component polyurethane product.

.4 EXT 6.3H - Pigmented polyurethane product.

.5 EXT 6.3J - Light industrial water based coating,

Part 3 Execution

3.1 MANUFACTURER'S INSTRUCTIONS

.1 Compliance: Comply with manufacturer's written requirements, recommendations and specifications, including technical bulletins, instructions for handling, storage and application of products, and data sheets.

3.2 GENERAL

.1 Unless otherwise specified, prepare interior surfaces and perform painting in accordance with requirements outlined in MPI Architectural Painting Specifications Manual.

.2 Apply paint products in accordance with manufacturer's written instructions.

3.3 EXAMINATION

.1 Verification of Conditions: Prior to painting, ensure that the condition of the substrate previously installed under other sections or contracts is acceptable and allows the work to be completed in accordance with the manufacturer's written instructions.

.1 Visually inspect substrate in the presence of the Departmental Representative.

.2 Immediately notify the Departmental Representative of any unacceptable conditions found.

.3 Begin installation work only after unacceptable conditions have been corrected and written approval has been received from the Departmental Representative.

3.4 PREPARATORY WORK

.1 Unless otherwise specified, prepare exterior surfaces and perform painting in accordance with requirements outlined in the MPI Maintenance Repainting Manual.

.2 Exterior walls and roof of lighthouse cupola have loose paint. Remove all loose paint from all wall and roof surfaces using appropriate method (see Section 02 83 10 - Lead Based Paint Removal). Perform work in light winds and/or with an appropriate method. Take necessary measures to collect loose paint particles in the air or on the ground and prevent them from blowing away or leaching (vacuum, pads, polythene on the ground, etc.). The Contractor shall not contaminate the ground in the work area. Any paint residue shall be recovered for proper disposal at an authorized site. Manage this debris according to the Gesfor (2020) hazardous material characterization report, attached to the contract documents.

.3 Apply paint products in accordance with manufacturer's written instructions.

.4 Clean and prepare exterior surfaces to be repainted in accordance with requirements outlined in MPI Maintenance Repainting Manual. Refer to this document for specific requirements in addition to the following instructions.

.1 Remove dust, dirt and foreign matter by wiping surfaces with clean, dry cloths or vacuuming.

.2 Use water-based cleaners rather than organic solvents for surfaces refurbished with water-based paints.

.3 Many water-based paints, once dry, cannot be removed with water. The use of kerosene or other similar organic solvents for cleaning these paints should be minimized.

.5 Clean metal substrates to be recoated of rust, dirt, oil, grease and foreign matter in accordance with IPM requirements. Remove contaminants from surfaces to be refurbished and from corners and recesses of these surfaces by using clean brushes, a clean dry compressed air stream or by brushing followed by vacuuming.

.6 Prior to priming or painting and before applying each subsequent coat, prevent contamination of cleaned surfaces with salts, acids, alkalis, corrosive chemicals, grease, oil and solvents. Touch up and spot apply primer or primer paint and apply primer or primer paint or other pre-treatment products as soon as possible after cleaning before surface deterioration occurs.

.7 Do not apply paint until prepared surfaces are accepted by the Departmental Representative.

.8 Sand and dust surfaces between coats as required to ensure proper adhesion of the next coat and to remove any visible defects at a distance of 1000 mm or less.

3.5 PROTECTION

.1 Protect exterior building surfaces and adjacent structures that are not to be painted from spotting, marking and other damage with non-smearing covers or stains. If damaged, clean and restore such surfaces as directed by the Department Representative.

.2 Protect factory coated materials and components with a finish.

.3 Remove lighting fixtures, visible door hardware and all other surface mounted fixtures, fasteners and hardware prior to painting. Store and reinstall these items after painting is complete.

.4 As work progresses, post "FRESH PAINT" signs in pedestrian and vehicular traffic areas to the satisfaction of the Departmental Representative.

3.6 APPLICATION

.1 Method of application to be approved by the Departmental Representative. Apply paint by brush or roller. Unless otherwise specified, apply product according to manufacturer's instructions.

.2 Brush and Roller Application

.1 Apply a uniform coat of paint with a brush and/or roller of appropriate type.

.2 Penetrate paint into cracks, crevices and corners of elements.

.3 Apply paint with spray gun, pad or sheepskin to surfaces and corners inaccessible to brush. Use brush, pad or sheepskin when certain surfaces or corners cannot be painted with a roller.

.4 Remove scallops and drips with a brush or roller and iron over the marks left. Roller painted surfaces shall be free of roller marks and excess paint unless approved by [DCC Representative] [Departmental Representative] [Consultant].

.5 Remove scallops, drips and brush marks from finished surfaces and recoat these surfaces.

.3 Apply each coat of paint in a continuous film of uniform thickness. Pick up bare or thinly coated surfaces before applying next coat.

.4 Allow surfaces to dry and harden properly after cleaning and between each successive coat, waiting the minimum time recommended by the manufacturer.

.5 Sand and dust surfaces between each coat to eliminate apparent defects.

.6 Finish surfaces above and below sight lines in accordance with requirements for adjacent surfaces, including protruding elements.

.7 Finish tops, bottoms, edges and openings of doors in accordance with requirements for door faces after doors have been adjusted.

3.7 ELECTRICAL AND MECHANICAL EQUIPMENT

.1 Unless otherwise specified, paint piping, electrical conduits, air ducts, brackets/suspensions and other exposed exterior electrical and mechanical components to match the color and finish of the painted surfaces to those of adjacent surfaces.

.2 Do not paint nameplates.

3.8 ON-SITE QUALITY CONTROL

.1 Quality Standard :

.1 Walls: no defects visible within 1000 mm at a 90 degree angle to the surface being examined.

.2 Ceilings: no defects visible to an observer on the floor at a 45 degree angle to the surface being examined under the intended final lighting.

.3 Color and gloss of topcoat shall be uniform over the entire surface being examined.

.2 Notify Departmental Representative when a surface and its coating are ready for inspection. Do not apply the next coat until the previous coat has been approved.

.3 Cooperate with the Construction Supervisor and provide access to all areas of the work.

3.9 CLEANUP

.1 Clean-up during the course of the Work: Perform clean-up in accordance with Section 01 74 11 - Clean-up.

.1 Leave premises clean at the end of each work day.

.2 Final Clean-up: Remove excess materials/equipment, waste, tools and equipment from the job site in accordance with Section 01 74 11 - Clean-up.

.3 Waste Management: segregate waste in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

.1 Remove recycling bins and dumpsters from site and dispose of materials at appropriate facilities.

3.10 SITE RESTORATION

.1 Clean and reinstall removed hardware to facilitate painting.

.2 Remove guards and warning signs as soon as possible after completion of work.

.3 Remove spatter from exposed unpainted surfaces. Remove smudges and flecks as work progresses, using a compatible solvent.

.4 Protect freshly painted surfaces from drips and dust to the satisfaction of the Departmental Representative and avoid scratching new coatings.

.5 Restore areas used for storage, mixing and handling of paints and cleaning of tools and equipment used to their original cleanliness to the satisfaction of the Departmental Representative.

END OF SECTION

Part 1 General

1.1 SUMMARY

.1 Engage the services of an engineer, member of the Order of Engineers of Quebec, specialized in lightning protection systems.

.2 Make the calculations and provide signed and sealed plans of the work to be done.

.3 Remove and dismantle existing lightning protection system.

.4 Provide replacement of complete lightning protection system as existing or equivalent system as proposed by an Engineer.

.5 Provide data sheets to the Departmental Representative approved by the Contractor's Engineer.

1.2 RELATED REQUIREMENTS

.1 Section 01 11 01 Description of Work

1.3 REFERENCE STANDARDS

.1 Institute of Electrical and Electronics Engineers, Inc. (IEEE)

.1 IEEE 837-[2002], Standard for Qualifying Permanent Connections Used in Substation Grounding.

.2 CSA International

.1 CAN/CSA-B72-[M87(C2008)], Installation Code for Lightning Protection Systems.

1.4 DOCUMENTS/SAMPLES TO BE SUBMITTED FOR APPROVAL/INFORMATION

.1 Submit required documents and samples as per Section 01 33 00 - Documents/Samples to be Submitted.

.2 Shop Drawings and Plans

.1 Shop drawings and plans submitted shall bear the seal and signature of a qualified Professional Engineer recognized or licensed to practice in Quebec, Canada.

.2 Drawings shall indicate the material used and the method of attachment of conductors to lightning rods and ground connections.

1.5 TRANSPORTATION, STORAGE AND HANDLING

.1 Transport, store and handle materials and equipment in accordance with the manufacturer's written instructions.

.2 Delivery and Acceptance: Deliver materials and equipment to the job site in their original packaging, which shall be labelled with the manufacturer's name and address.

.3 Storage and Handling

.1 Store materials and equipment in a clean, dry, well-ventilated area in accordance with manufacturer's recommendations.

.2 Store lightning protection components in a manner that protects them from marks, scratches and scuffs.

.3 Replace damaged materials and equipment with new materials and equipment.

Part 2 Products

2.1 MATERIALS

.1 Equipment to be defined by the Engineer appointed by the Contractor.

.2 Example of material :

.1 Lightning rods: [solid rods] [tubes] of [aluminum] [copper].

.2 Conductors: [solid circular] [in flat ribbons] [stranded], size [_____].[copper] [aluminum]

.3 Flanges, clips and clamps: in [copper] [aluminum].

.4 Grounding electrodes: [_____].

.5 Installation with [two (2)] [one (1)] [four (4)] [three (3)] masts of [formed steel] [wood], as indicated, interconnected by a stranded cable, size [_____]; with down conductors and cable clamps, as indicated, to constitute a complete overhead conductor protection assembly stretched over the structure. [copper] [steel reinforced aluminum]

.6 [Aluminum conductors, terminals, connectors and fasteners for aluminum clad buildings] [Copper conductors, terminals, connectors and fasteners for non-aluminum clad buildings].

.7 Connections: [mechanical connectors or compression fittings accessible for inspection, conforming to IEEE 837] connections made by thermite welding] [using [bronze] [copper] fittings].

2.2 DESCRIPTION

.1 System consisting of metal lightning rods, roof/ceiling conductors connecting the lightning rods, and ground connections consisting of a set of grounding electrodes or conductors.

.2 Network of wires stretched over the structure to be protected, but without direct electrical connection to lightning rods connected to grounding stations.

2.3 REGULATORY REQUIREMENTS

.1 Lightning protection system shall be subject to approval by the authority having jurisdiction.

Part 3 Execution

3.1 EXAMINATION

.1 Verification of Conditions: Prior to installation of lightning protection elements, ensure that the condition of surfaces/surfaces previously implemented under other sections or contracts is acceptable and allows the work to be performed in accordance with the manufacturer's written instructions.

- .1 Visually inspect surfaces/surfaces in the presence of the Departmental Representative.
- .2 Immediately notify the Departmental Representative of any unacceptable conditions found.
- .3 Begin installation work only after unacceptable conditions have been corrected and written approval has been received from the Departmental Representative.

3.2 INSTALLATION

.1 Install lightning protection system in accordance with CAN/CSA-B72.

.2 Connect discharge conductors to service mast or other non-current carrying electrical parts.

.3 Submit installation certificate to Departmental Representative.

3.3 INSPECTION

.1 Obtain a certificate of inspection from the Departmental Representative when a discharge conductor passes through a fire barrier.

3.4 CLEANING

.1 Clean-up during construction: Perform clean-up in accordance with Section 01 74 11 - Clean-up.

- .1 Leave premises clean at the end of each work day.

.2 Final Clean-up: Remove excess materials/materials, waste materials, tools and equipment from the job site in accordance with Section 01 74 11 - Clean-up.

.3 Waste Management: Segregate waste in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

3.5 PROTECTION

.1 Protect installed equipment and components from damage during construction.

.2 Repair damage to adjacent materials and equipment caused by the installation of lightning protection elements.

END OF SECTION

Part 1 General

1.1 SUMMARY

.1 Secure the concrete foundations of the janitor's house and the assistant's house by filling them with fill. Secure the pit of the shack (toilet), following its demolition, by filling it with fill:

.1 Class A granular sand.

.2 Hand-seed following backfill of shack (toilet) pit only. See specification section 32 92 19.13 - Seeding.

.3 Provide backfill material that is free of invasive and uncontaminated species.

.4 Provide a standard foundation depth for the volume of backfill. .5 Fill concrete foundations and/or pit equal to the natural terrain on site. The top of the concrete foundation walls of the houses must be levelled (cut) to the natural ground level

.5 Provide Material Data Sheets to Departmental Representative for approval..

1.2 RELATED REQUIREMENTS

.1 Section 01 11 01 Description of Work

.2 Section 32 92 19.13 Seeding

1.3 REFERENCE STANDARDS

.1 ASTM International

.1 ASTM D698-[07e1], Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400ft-lbf/ft3) (600kN-m/m3).

.2 CSA International

.1 CSA A23.1/A23.2-[F09], Concrete - Constituents and Workmanship/Tests and Standard Practices for Concrete.

.2 CSA A3000-[F08], Compendium of Binding Materials.

.3 Ministère des Transports du Québec

.1 CGCC 14.02, General Specifications and Requirements.

.4 U.S. Environmental Protection Agency (EPA)/Office of Water

.1 EPA 832/R-92-005, Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices.

1.4 DOCUMENTS/SAMPLES TO BE SUBMITTED FOR APPROVAL/INFORMATION

.1 Submit required documents and samples in accordance with Section 01 33 00 - Documents/Samples to be Submitted..

Part 2 Products

2.1 MATERIALS

.1 Class A sand conforming to CGCC requirements and Section 14.02

Part 3 Execution

3.1 PREPARATORY WORK

.1 Erosion and Sediment Control

.1 Establish temporary erosion and sediment controls to prevent soil loss that may result from the work.

.2 Inspect, maintain and repair control devices until permanent vegetation is well established.

.3 Remove control devices at the appropriate time and restore and stabilize areas disturbed during this work.

.2 Protection of In-Place Works

.1 Protect excavations from freezing.

.2 Keep excavations clean, free of standing water and friable soil.

.3 Protect natural and man-made features that are to remain in place. Unless otherwise specified or unless located in a building zone, protect existing trees from damage.

.4 Protect local flora by restricting travel to the site and by defining a clear traffic zone for backfilling operations. Contractor shall submit a work plan. The Contractor shall mark the authorized traffic areas at the site. Work shall be performed with minimal impact to the site. See Specification Section 01 14 00 - Work Restrictions, Specification Section 01 35 43 - Environmental Protection and Specification Section 01 52 00 - Site Installation.

.5 The Contractor shall demolish the boardwalks first and then demolish the buildings. Pedestrian and machinery traffic shall be restricted to the former right-of-way of the boardwalks at all times in order to minimize the impact of the work and avoid alteration of the surrounding vegetation. Identify and mark access routes by choosing routes that minimize environmental effects. All traffic outside of these areas will be prohibited other than to pick up trash or debris.

.6 Apply and implement all mitigation measures as outlined in the appendix of the contract documents.

.7 Restore the beach and cobbles displaced by machinery to their original condition.

.8 Restore all other earth displacement as a result of the work.

.3 Removal Work

.1 Clear areas of dead wood, dead trees, stumps, logs, brush, vines, vegetation, exposed boulders and debris.

3.2 ON-SITE QUALITY CONTROL

.1 Do not commence backfilling or filling work until materials have been approved for use for that purpose by the Department Representative.

3.3 BACKFILL

.1 Deleterious materials: Clear areas to be backfilled of snow and ice, construction debris, organic material and standing water.

.2 Lateral Support: Place backfill evenly on both sides of structures as work progresses to equalize soil pressure.

.3 Placement

.1 Spread backfill, fill and base course materials in 150 mm thick layers. Add water as required to achieve specified density.

.4 Compacting: Compact each layer of material.

3.4 CLEANING

.1 Clean-up during construction: perform clean-up in accordance with Section 01 74 11 - Clean-up.

.1 Leave site clean at the end of each work day.

.2 Remove excavated material from site daily.

.2 Final Clean-up: Upon completion of work, remove excess materials/materials, waste materials, tools and equipment from site as per Section 01 74 11 - Clean-up.

.3 Waste Management: Separate waste materials for recycling and reuse/repurposing in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

END OF SECTION

Part 1 General

1.1 SUMMARY

.1 Provide seed for a 4a or 4b hardiness zone for the Work.

.1 Perform mechanical seeding of altered areas following the work.

.2 Perform mechanical seeding, following backfill in the shack pit (toilet). See specification section 31 00 00.01 - Earthwork.

.3 Seeding shall be done at the completion of the Contractor's work.

.2 Provide professional seed analysis service to provide an acceptable seed mix for the site. Provide a development fee for the mix.

.3 Provide fertilizer to the mix.

.4 Submit the seed mixture for approval to the Department. Seed mixture shall be free of invasive seed..

1.2 RELATED REQUIREMENTS

.1 Section 01 11 01 Description of Work

.2 Section 31 00 00.01 Earthworks

1.3 REFERENCE STANDARDS

.1 Canada Green Building Council (CaGBC)

.1 LEED Canada-NC, Version 1.0-[2004], LEED (Leadership in Energy and Environmental Design): Green Building Rating System for New Construction and Major Renovations (Reference Kit) (including Addendum [2007]).

.2 LEED Canada-CI, Version 1.0-[2007], LEED (Leadership in Energy and Environmental Design): Green Building Rating System for Commercial Interiors..

1.4 DOCUMENTS/SAMPLES TO BE SUBMITTED FOR APPROVAL/INFORMATION

.1 Submit required documents and samples as per Section [01 33 00 - Documents/Samples to be Submitted].

.2 Technical Data Sheets

.1 Submit required data sheets and manufacturer's instructions and documentation for seed and fertilizer.

.2 Submit [two (2)] copy(ies) of MSDSs required under WHMIS as per [01 35 43 - Environmental Protection] [01 35 29.06 - Health and Safety].

.3 Certificates: Submit documents signed by the manufacturer certifying that the products, materials and equipment meet the physical and performance requirements.

.4 Test Reports: submit test reports certifying that products, materials and equipment meet physical and performance criteria.

1.5 TRANSPORTATION, STORAGE AND HANDLING

.1 Transport, store and handle materials and equipment in accordance with manufacturer's written instructions.

.2 Delivery and Acceptance

.1 Bag of fertilizer labeled with mass in kg, blend components and percentages, date packed, supplier name and lot number.

.2 Fertilizer shall be dry.

.3 Storage and Handling

.1 Store fertilizer in a clean, dry, well-ventilated area as recommended by the manufacturer.

1.6 WARRANTY

.1 For seeding, the 12 month warranty period is extended to [one (1) full growing season] [24 months].

Part 2 Products

2.1 GRASS SEED AND FERTILIZER

.1 The Contractor shall be responsible for providing a professionally prepared and compliant seed mixture.

Part 3 Execution

3.1 EXAMINATION

.1 Verification of Conditions: Prior to mechanical seeding, ensure that the condition of surfaces/substrates previously implemented under other sections or contracts is acceptable and allows the work to be performed in accordance with the manufacturer's written instructions.

.1 Visually inspect surfaces/substrates in the presence of the Departmental Representative.

.2 Immediately notify the Departmental Representative of any unacceptable conditions found.

.3 Begin installation work only after unacceptable conditions have been corrected.

3.2 SEEDBED PREPARATION

.1 Do not proceed with work when conditions are unfavourable in the judgment of the Departmental Representative.

.2 Immediately prior to seeding, loosen the graded areas approved by the Departmental Representative to a depth of [25] mm.

3.3 SEEDING

.1 Hand seeding

.1 Use a manual gravity seeder of the Cyclone type or equivalent.

.2 Equipment and method to be approved by the Departmental Representative.

.2 To ensure uniform coverage of areas, extend application by 150 mm over areas seeded in previous passes.

.3 Apply half of the mixture in one direction and then apply the other half perpendicularly as required.

.4 Work the seed into the soil gently with a rake in one direction and then across.

3.4 CLEANING

.1 Clean up during construction: Clean up in accordance with Section 01 74 11 - Clean Up.

.1 Leave site clean at the end of each work day.

.2 Keep pavements and adjacent site surfaces clean and free of mud, soil and debris at all times.

.2 Final clean-up: remove excess materials/equipment, waste materials, tools and equipment from site in accordance with Section 01 74 11 - Clean-up.

.1 Clean and restore areas affected by the work.

.3 Waste Management: sort waste for recycling and reuse/repurpose in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

END OF SECTION

Photographic file

General views of the site

Note: The photographic file is complementary to the specifications. It must be considered in conjunction with the specifications, but the specifications take precedence over the photographic file.

General views of the site

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Site cleanup

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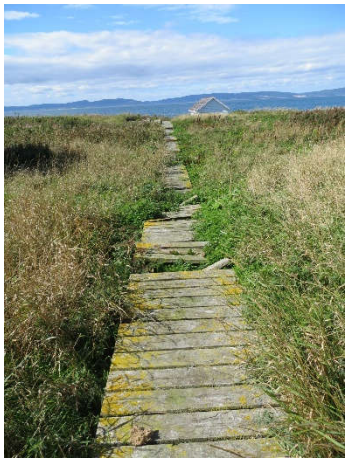
Wooden walkways, platforms and stairs to the site



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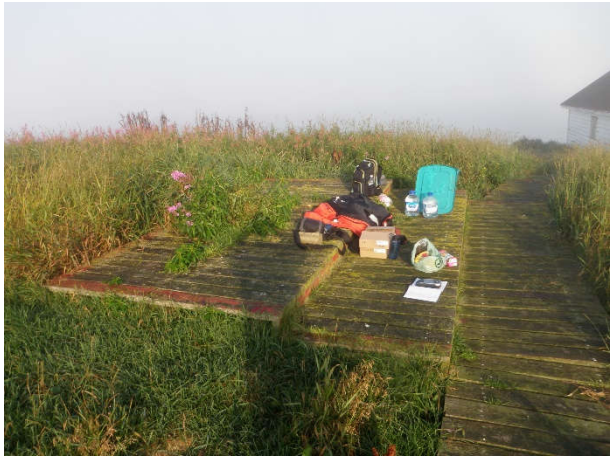


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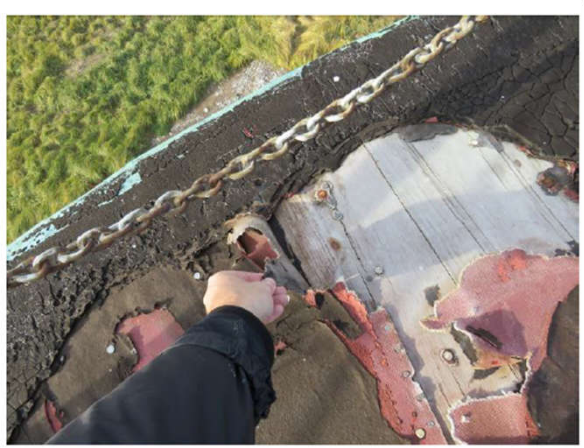
Lighthouse



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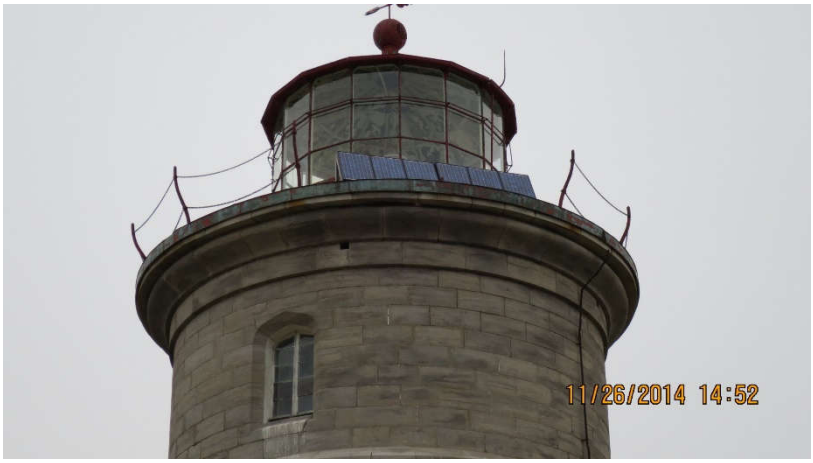
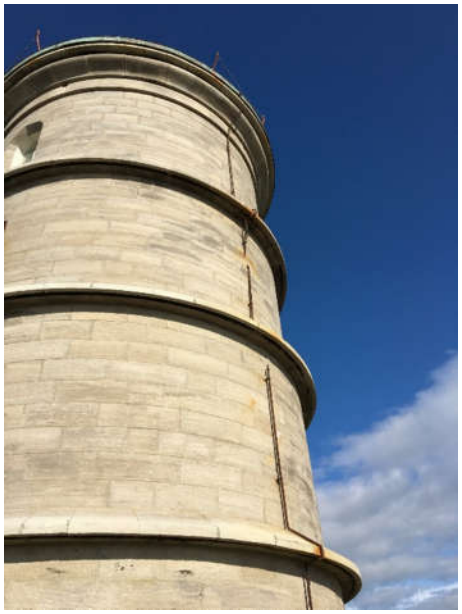
DECONSTRUCTION OF BUILDINGS AND STRUCTURES - PHOTOGRAPHIC FILE - Red Island

Lighthouse





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Assistant's house

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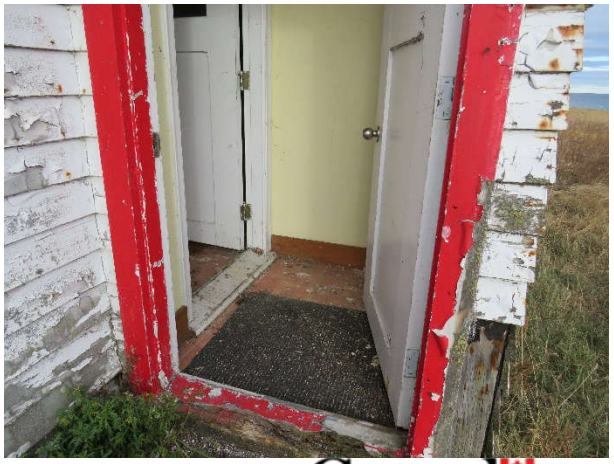

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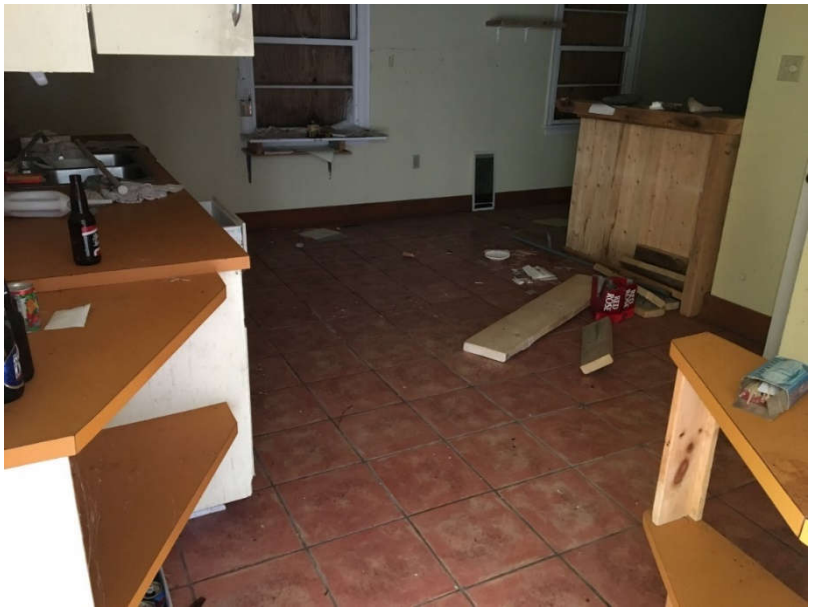

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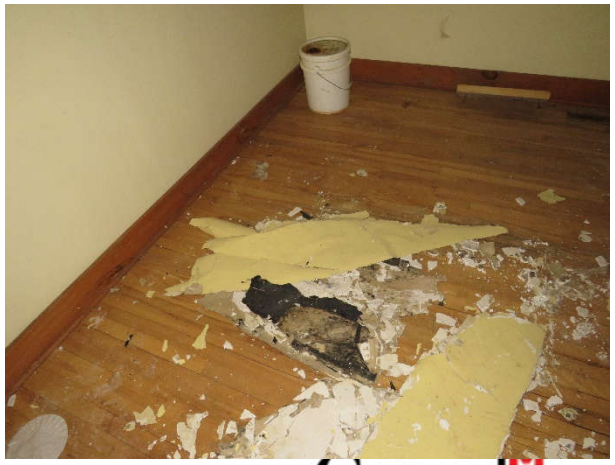

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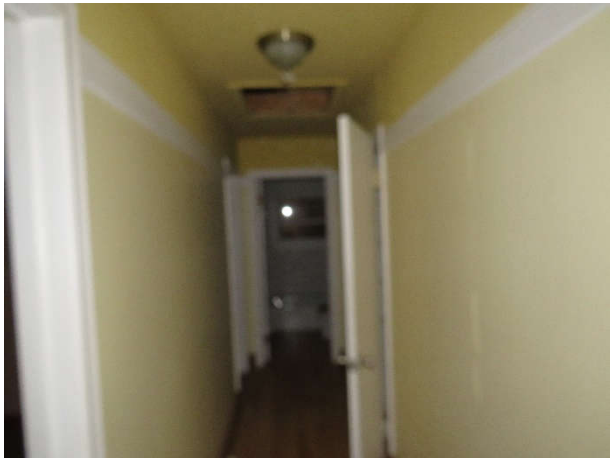

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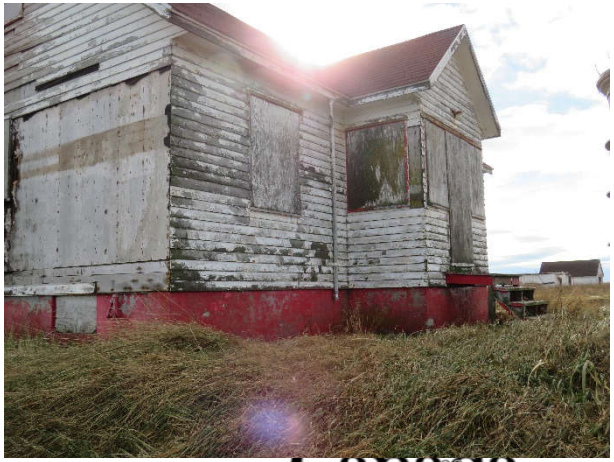
Guardian's house



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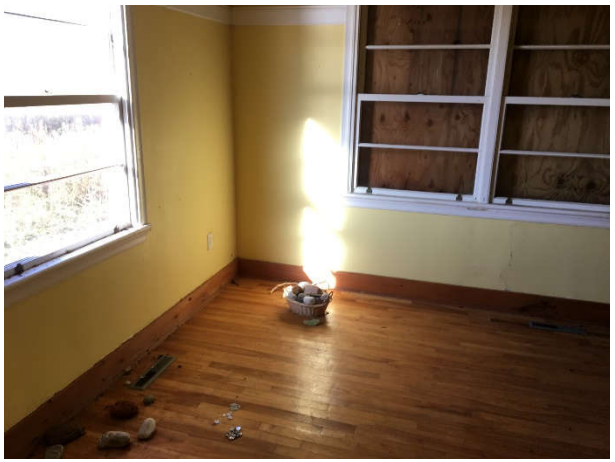

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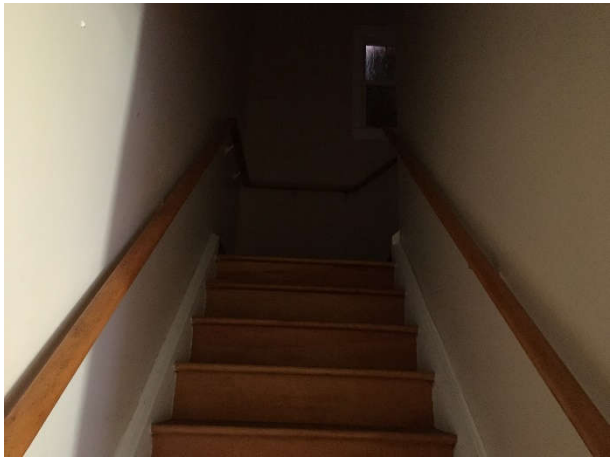
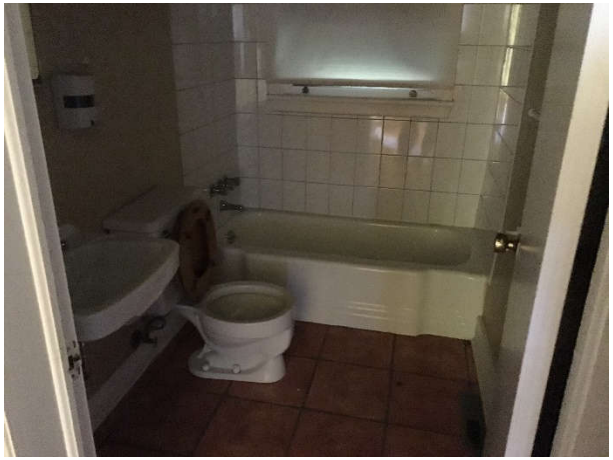
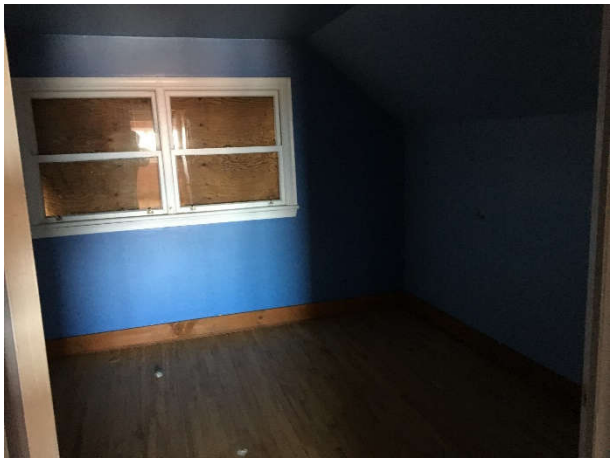
Guardian's house







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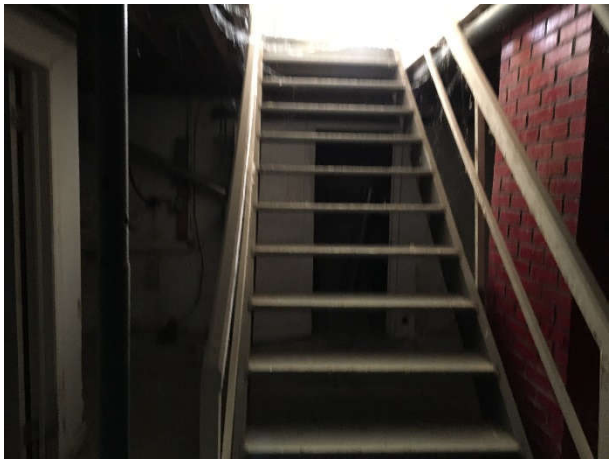



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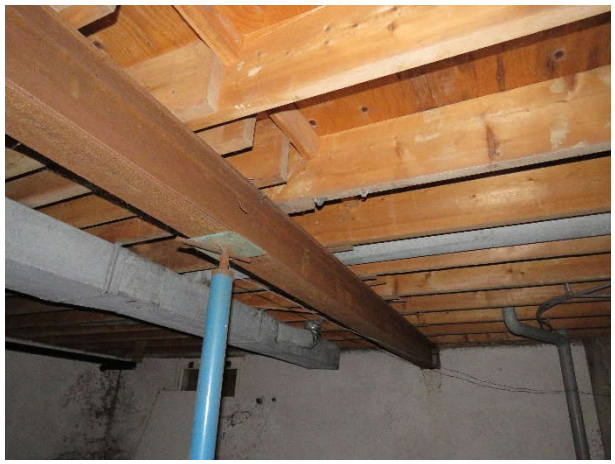




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DECONSTRUCTION OF BUILDINGS AND STRUCTURES - PHOTOGRAPHIC FILE - Red Island

Cabin east

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Cabin east






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Cabin east





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Boathouse

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Cabin west

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Cabin west






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foghorn shelter

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foghorn shelter

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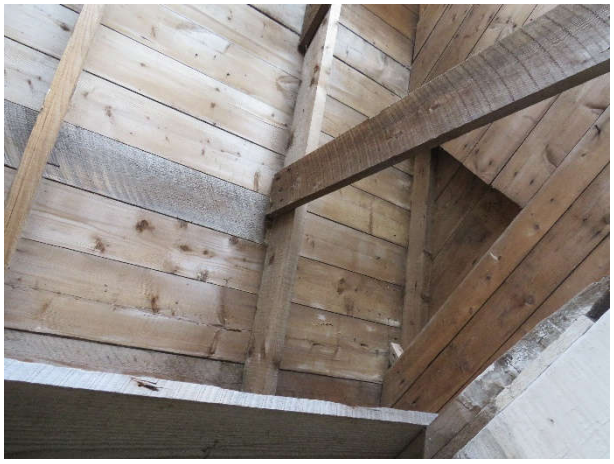
foghorn shelter



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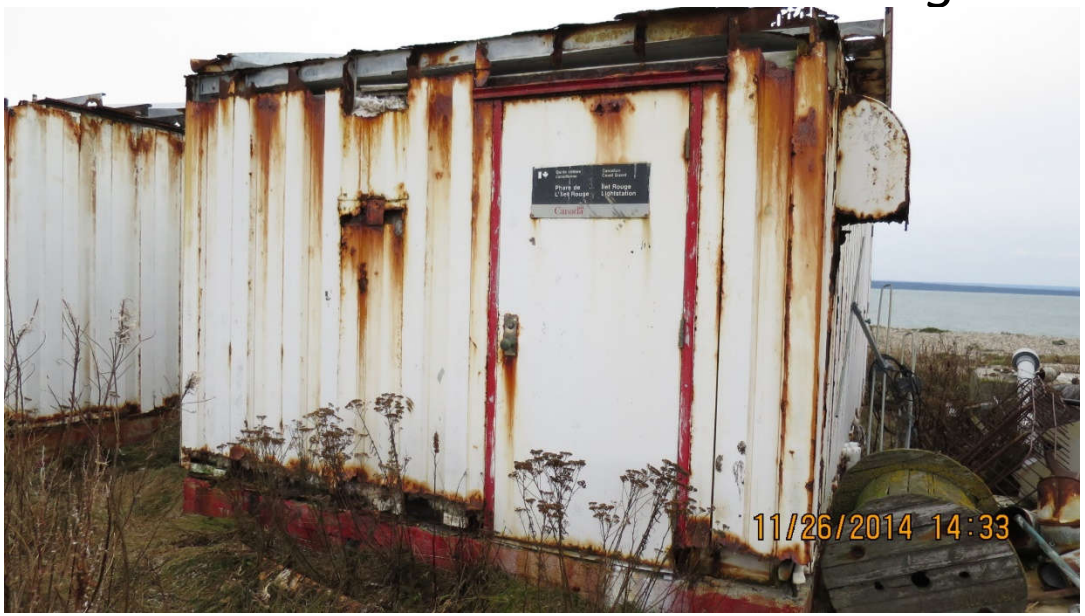
Generator building and tank building



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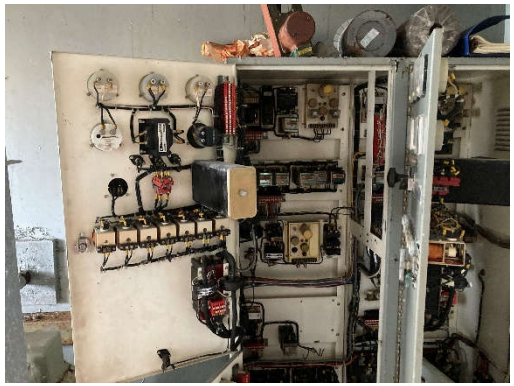

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South cabin - toilet

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South cabin - toilet

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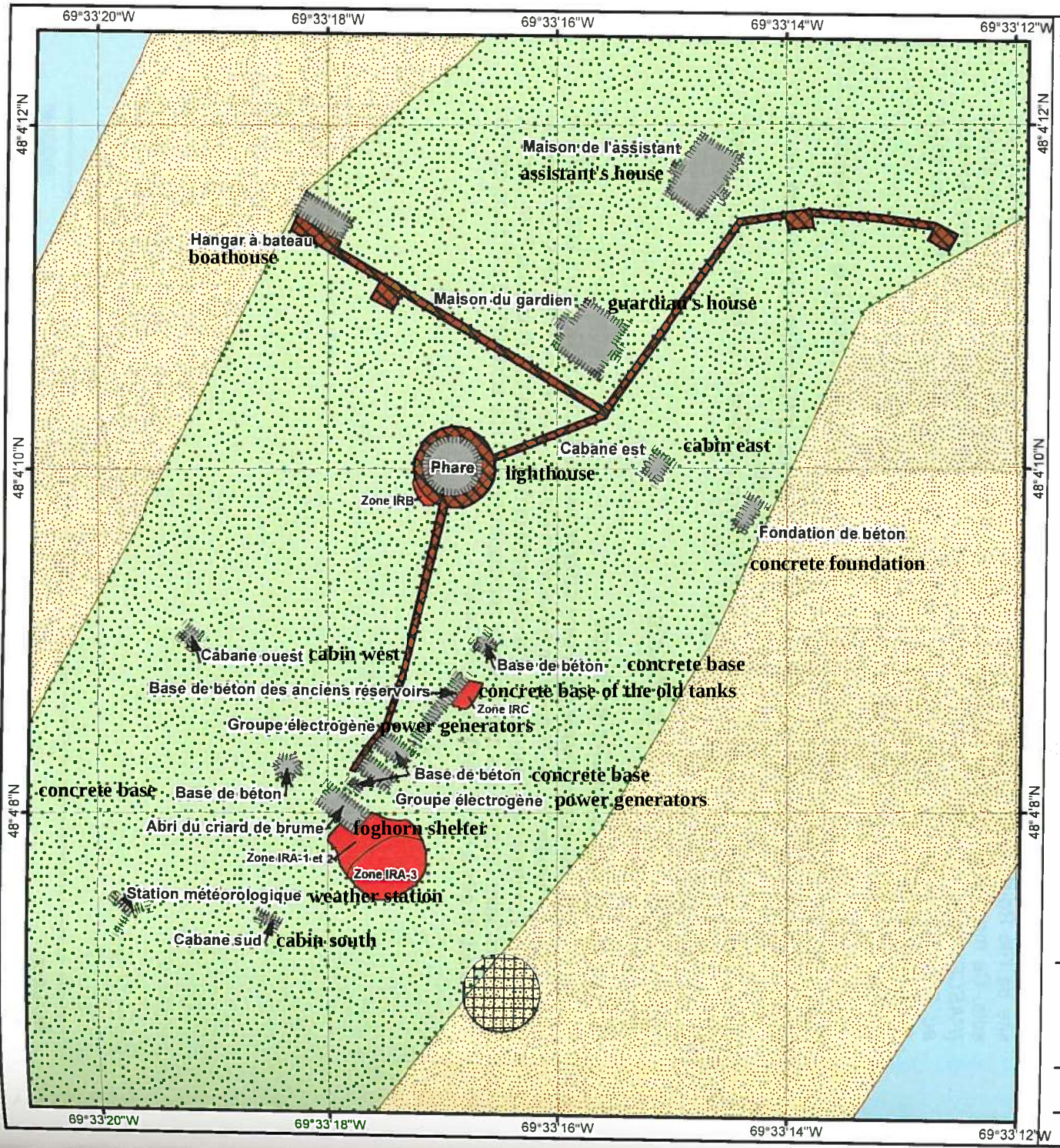
SITE PLAN



Location of the study site. Red island, Quebec

N
O E
S

1: 1000

0 25 50

mètres
meter

Site description

- Ancienne biopile **Old biopile** (emplacement approximatif) **(approximate location)**
- Zone d'excavation **Excavation zones** (emplacement approximatif) **(approximate location)**
- Infrastructures **infrastructures**
- Trottoir **sidewalk**
- Végétation **vegetation**
- Plage **beach**

Réalisation:
CJB Environnement inc.
Février 2014

Projection: NAD83 MTM zone 7

Sources:
- Carte de base: couche d'imagerie, Esri

Figure 1.1

MITIGATION MEASURES

Mitigation measures – Checklist	Measures realized			If no or N/A, reason:
	Yes	No	N/A	
Preliminary work				
1.-Identify and characterize hazardous materials (lead paint, asbestos, petroleum (lead paint, asbestos, petroleum products, generators) and residual materials (waste piles) potentially potentially present on the site (inside and outside the buildings as well as outside buildings as well as outside buildings) and ensure their management according to obligations in terms of containment, collection, classification documentation, storage, transportation and disposal provincial legislation (Environment Quality Act and regulation and Regulation respecting hazardous materials) and (Environmental Quality Act and Dangerous Goods Regulations) and federal legislation (Transportation of Dangerous Goods Act and Regulations). Transportation of Dangerous Goods Act and Regulations). The presence and management of these materials require the intervention of specialized personnel, the use of specific equipment and the and the application of strict measures, in accordance with the regulations in force.				
2.- Inspect machinery and equipment before they are brought onto the site and maintain them in perfect working order.				
3.- Carry out the work in such a way as to optimize and minimize the circulation and use of machinery and equipment.				
4.- Do not leave the motors running unnecessarily.				
5.- Use leak-proof containers to avoid losses during transport. Use tarps or other impervious materials for storage of particulate materials that may be carried by transported by wind or rain.				
6.- Use vegetable oil powered equipment and machinery whenever possible that runs on vegetable oil.				
7.- Check daily for petroleum product leaks on machinery and equipment, which must be repaired immediately or excluded from the work site.				
8.- Confining machinery traffic to identified access roads and preferred routes within work zones; prohibiting traffic outside these zones.				
9.- Identify and use a suitable, isolated storage area on the site for equipment and, if necessary, for storage of petroleum products or any other contaminants in leak-proof containers. The site must be located in a place without any risk of contamination of the aquatic environment, at more than 30 m from the latter, and in a low slope area.				
10.- Perform general equipment maintenance and transshipment of petroleum products or any other contaminant under constant supervision to avoid accidental				

spills and losses. These operations will be carried out in areas designated for this purpose, where there is no risk of contamination of an aquatic environment and at a distance of more than 30 m from the latter.				
11.- Provide complete spill kits at the work site and storage area at all times in case of accidental spills or loss of petroleum products or any other contaminants. Workers must be trained to respond to environmental emergencies.				
12.- Provide for the establishment and implementation of an emergency response plan in the event of an accidental spill or loss of petroleum products or any other contaminant. Clearly identify the persons and authorities responsible, as well as the procedure to follow in the event of an environmental emergency, including calls to the Environment and Climate Change Canada (1-866-283-2333), Canadian Coast Guard (1-800-363-4735) and MDDELCC (1-866-694-5454) alert networks.				
13.- In the event of a spill or loss of petroleum products or any other contaminant, all necessary means to stop the source and contain the contamination shall be taken. The proponent must then proceed with the recovery of the contaminants and restore the site.				
14.- Following excavation (Option 2 only), replace contaminated soils so that they do not become a new source of contamination for the environment.				
15.- In the event of temporary or prolonged storage, bad weather or the impossibility of proceeding quickly with the excavation of potentially contaminated soils (option 2 only), cover the excavated areas and soils with waterproof tarpaulins to avoid the risk of erosion and to respect the requirements of the MDDELCC.				
16.- Minimize the spread of contamination by proper cleaning of equipment.				
17.- Ensure that all necessary equipment for workers (chemical toilets, etc.) is properly installed on the site, according to the regulations in force.				
18.- Plan work outside of periods of high water, wind, and rain that may contribute to increased erosion and sedimentation.				
19.- Proceed as quickly as possible with the restoration of the site after the work, including the levelling of the docking area (beach), the stabilization of the soils in the intervention zones where there is a risk of erosion, the collection of waste and the cleaning of the storage area.				
20.- Limit clearing and excavation areas to what is strictly necessary, clearing and excavation areas according to the needs of the project.				
21.- Utilize existing accesses (boardwalk rights-of-way following dismantling); otherwise, identify and mark access routes by selecting routes that minimize environmental effects.				
22.- Do not alter the vegetation surrounding the work areas.				

23.- Provide a storage area by targeting areas with no vegetation or less environmental impact.				
24.- If soils are to be imported to the site, they must be uncontaminated and free of invasive species seeds.				
25.- In order not to contravene the Migratory Birds Convention Act, 1994, work should avoid the nesting period of April 14 to August 28 and sensitive locations where possible to reduce the risk of incidental harm (disturbance, destruction or collection) to birds, their nests and eggs.				
26.- If work is to begin during the nesting season or in sensitive locations, it is recommended that a specialist in the field visually inspect the work area for the presence of individuals or nests prior to beginning work. of individuals or nests prior to the start of work. In this In this case, mitigation measures would be developed to limit disturbance and disturbance and avoid disrupting nesting, even going so far as to postpone even postponing the work. The project proponent will be responsible for implementing incidental take avoidance measures.				
27.- The walkways on the island are used by Common Eiders as cover for their nests. Their removal could have an effect on this species, which would be more vulnerable to predation. Leave these walkways in place or consider replacing them with eider nest boxes.				
28.- If access to the site is by waterway, landings should be made in a single area where the shoreline exposed at low tide is the narrowest and of least interest for shorebird feeding. The west shore appears to have these characteristics. If movement is concentrated in this area, it is possible that shorebirds will acclimate and move to use other quieter areas of the island. The northern and southern tips of the island are used more by these species and should be avoided. should be avoided.				
29.- Comply with the Saguenay-St. Lawrence Marine Park Marine Activities Regulations (http://lawslois. justice.gc.ca/eng/regulations/DORS-2002-76/), particularly with respect to distances to be respected for beluga and other marine mammals.				
30.- If possible, avoid work between April and the end of September to protect beluga and benthic fauna.				
31.- Restrict yourself to the area intended for docking.				
32.- Ensure that containers are watertight and avoid overloading them, especially in difficult navigational conditions, in order to avoid spillage and loss of petroleum products or any other contaminant.				
33.- Apply for a special activity permit for marine access to Red Island. Access to the integral protection zone of the Saguenay-St. Lawrence Marine Park surrounding the island may be authorized under the conditions of the special activity permit.				

34.- Apply for a special activity permit for helicopter access to Red Island, if required, as pilots are not permitted to fly over the park at an altitude of less than 609.6 m (2,000 ft.) from the water surface.				
35.- Prior to the commencement of work, provide a brief description and rationale for the work to industries operating in the Saguenay-St. Lawrence Marine Park so that they may adapt their interpretive messages and activities as required.				
36.- Conduct a photographic and descriptive survey of the buildings prior to their dismantling.				
37.- Carry out an archaeological potential study to find out if ancient buildings, now disappeared, were erected on the site.				
38.- Conduct archaeological monitoring of mechanical excavations, if Option 2 is selected (concrete base excavation).				
39.- Respect safety measures to protect workers against the risks of accidents, contamination and degradation of the air quality and sound climate.				
40.- Provide workers with adequate training and protective equipment.				
41.- Adopt applicable safety measures for the management of petroleum products or any other contaminant.				
Comments				
Items other than those mentioned in the list of mitigation measures				
(Observations in the field, work carried out not taken into account in the work plan and resulting in environmental impacts, etc.).				