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PROJECT TITLE Akwesasne Reserve No. 15
Demolition of Administration Building No. 2
St. Regis, Quebec

PROJECT NUMBER R.111178.001

PROJECT DATE 2020-07-24

Section Title

Division 00 - Procurement and Contracting Requirements

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 BY WSP, MARCH 31, 2020



Structural



Designated Substance Abatement

PART 1 - GENERAL

1.1 SECTION INCLUDES

- .1 Title and description of Work.

1.2 PRECEDENCE

- .1 For Federal Government projects, Division 01 Sections take precedence over technical specification sections in other Divisions of this Project Manual.

1.3 WORK COVERED BY CONTRACT DOCUMENTS

- .1 Work of this Contract comprises the demolition of Administration Building No. 2 located at 92 Third Street in St. Regis, Akwesasne Reserve No. 15, Quebec.

1.4 CONTRACT METHOD

- .1 Construct work under lump sum contract.

1.5 SITE ACCESS FOR OWNER'S REPRESENTATIVE

- .1 Provide site access to owner's representatives as required for the purpose of observation of site and assurance of public safety.

PART 2 - PRODUCTS

2.1 NOT USED

- .1 Not used.

PART 3 - EXECUTION

3.1 NOT USED

- .1 Not used.

PART 1 - GENERAL

1.1 ACCESS AND EGRESS

- .1 Design, construct and maintain temporary "access to" and "egress from" work areas, including stairs, runways, ramps or ladders, independent of finished surfaces and in accordance with relevant municipal, provincial and other regulations.

1.2 USE OF SITE AND FACILITIES

- .1 Execute work with least possible interference or disturbance to normal use of premises. Make arrangements with Departmental Representative to facilitate work as stated.
- .2 Contractor shall provide their own sanitary facilities in accordance with 01 52 00 and place them at locations designated by the Departmental Representative. Keep sanitary facilities clean.

1.3 EXISTING SERVICES

- .1 Notify Departmental Representative and utility companies of intended interruption of services and obtain required permission.
- .2 Construct barriers in accordance with Section 01 56 00.

1.4 SPECIAL REQUIREMENTS

- .1 Carry out Work Monday to Friday from 09:00 to 17:00 hours.
- .2 Submit schedule in accordance with Section 01 32 16.19.
- .3 Ensure Contractor's personnel employed on site become familiar with and obey regulations including safety, fire, traffic and security regulations.
- .4 Keep within limits of work and avenues of ingress and egress.
- .5 Access to site requires the crossing of international borders.
 - .1 Contact border authorities prior to crossing border and indicate equipment or materials required to cross.
 - .2 Ensure all workers have proper clearance to cross border.
 - .3 Follow all municipal, provincial/state, federal and other regulations for current jurisdiction.

1.5 SECURITY

- .1 Where security has been reduced by Work of Contract, provide temporary means to maintain security.
- .2 Security clearances:
 - .1 Personnel employed on this project will be subject to security check. Obtain clearance, as instructed, for each individual who will require

- to enter premises.
- .2 Personnel will be checked daily at start of work shift and provided with pass which must be worn at all times. Pass must be returned at end of work shift and personnel checked out.

1.6 BUILDING SMOKING ENVIRONMENT

- .1 Comply with smoking restrictions. Smoking is not permitted.

PART 2 - PRODUCTS

2.1 NOT USED

- .1 Not Used.

PART 3 - EXECUTION

3.1 NOT USED

- .1 Not Used.

PART 1 - GENERAL

1.1 ADMINISTRATIVE

- .1 Schedule and administer project meetings throughout the progress of the work at the call of Departmental Representative.
- .2 Prepare agenda for meetings.
- .3 Distribute written notice of each meeting 4 days in advance of meeting date to Departmental Representative.
- .4 Provide physical space and make arrangements for meetings.
- .5 Preside at meetings.
- .6 Unless directed otherwise by Departmental Representative, record minutes of meetings. Minutes shall be circulated to attending parties and affected parties not in attendance within 3 days after meeting.
- .7 Representative of Contractor, Subcontractor and suppliers attending meetings will be qualified and authorized to act on behalf of party each represents.

1.2 PRECONSTRUCTION MEETING

- .1 Within 15 days after award of Contract, request a meeting of parties in contract to discuss and resolve administrative procedures and responsibilities.
- .2 Departmental Representative, Contractor, major Subcontractors, field inspectors and supervisors will be in attendance.
- .3 Establish time and location of meeting and notify parties concerned minimum 5 days before meeting.
- .4 Incorporate mutually agreed variations to Contract Documents into Agreement, prior to signing.
- .5 Agenda to include:
 - .1 Appointment of official representative of participants in the Work.
 - .2 Schedule of Work: in accordance with Section 01 32 16.19.
 - .3 Schedule of submission of shop drawings, samples, mock-ups. Submit submittals in accordance with Section 01 33 00.
 - .4 Requirements for temporary facilities, site sign, offices, storage sheds, utilities, fences in accordance with Section 01 52 00.
 - .5 Site security in accordance with Section 01 56 00.
 - .6 Health and safety in accordance with Section 01 35 29.
 - .7 Proposed changes, change orders, procedures, approvals required, mark-up percentages permitted, time extensions, overtime, administrative requirements.
 - .8 Record drawings and specifications in accordance with Sections

- 01 33 00 and 01 78 00.
- .9 Take-over procedures, acceptance, warranties in accordance with Section 01 78 00.
 - .10 Monthly progress claims, administrative procedures, photographs, hold backs.
 - .11 Appointment of inspection and testing agencies or firms.
 - .12 Insurances, transcript of policies.

1.3 PROGRESS MEETINGS

- .1 During course of Work and 2 weeks prior to project completion, schedule progress meetings bi-weekly.
- .2 Contractor, major Subcontractors involved in Work and Departmental Representative are to be in attendance.
- .3 Notify parties minimum 5 days prior to meetings.
- .4 Record minutes of meetings and circulate to attending parties and affected parties not in attendance within 3 days after meeting.
- .5 Agenda to include the following:
 - .1 Review, approval of minutes of previous meeting.
 - .2 Review of Work progress since previous meeting.
 - .3 Field observations, problems, conflicts.
 - .4 Problems which impede construction schedule.
 - .5 Review of off-site fabrication delivery schedules.
 - .6 Corrective measures and procedures to regain projected schedule.
 - .7 Revision to construction schedule.
 - .8 Progress schedule, during succeeding work period.
 - .9 Review submittal schedules: expedite as required.
 - .10 Maintenance of quality standards.
 - .11 Review proposed changes for affect on construction schedule and on completion date.
 - .12 Other business.

PART 2 - PRODUCTS

2.1 NOT USED

- .1 Not Used.

PART 3 - EXECUTION

3.1 NOT USED

- .1 Not Used.

PART 1 - GENERAL

1.1 DEFINITIONS

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

1.2 REQUIREMENTS

- .1 Ensure Master Plan and Detail Schedules are practical and remain within specified Contract duration.
- .2 Plan to complete Work in accordance with prescribed milestones and time frame.
- .3 Limit activity durations to maximum of approximately 10 working days, to allow for progress reporting.

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- .4 Ensure that it is understood that Award of Contract or time of beginning, rate of progress, Certificate of Substantial Performance and Certificate of Completion as defined times of completion are of essence of this contract.

1.3 SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00.
- .2 Submit to Departmental Representative within 5 working days of Award of Contract Bar (GANTT) Chart as Master Plan for planning, monitoring and reporting of project progress.
- .3 Submit Project Schedule to Departmental Representative within 5 working days of receipt of acceptance of Master Plan.

1.4 MASTER PLAN

- .1 Structure schedule to allow orderly planning, organizing and execution of Work as Bar Chart (GANTT).
- .2 Departmental Representative will review and return revised schedules within 5 working days.
- .3 Revise impractical schedule and resubmit within 5 working days.
- .4 Accepted revised schedule will become Master Plan and be used as baseline for updates.

1.5 PROJECT SCHEDULE

- .1 Develop detailed Project Schedule derived from Master Plan.
- .2 Ensure detailed Project Schedule includes as minimum milestone and activity types as follows:
 - .1 Award.
 - .2 Shop Drawings, Samples.
 - .3 Mobilization.
 - .4 Submittal demolition procedures.
 - .5 Asbestos/lead containing materials removal.
 - .6 Demolition.
 - .7 Foundation removals.
 - .8 Backfill.
 - .9 Demobilization.
 - .10 Close out.

1.6 PROJECT SCHEDULE REPORTING

- .1 Update Project Schedule on weekly basis reflecting activity changes and completions, as well as activities in progress.
- .2 Include as part of Project Schedule, narrative report identifying Work status to date, comparing current progress to baseline, presenting current

forecasts, defining problem areas, anticipated delays and impact with possible mitigation.

1.7 PROJECT MEETINGS

- .1 Discuss Project Schedule at regular site meetings specified in Section 01 31 19, identify activities that are behind schedule and provide measures to regain slippage. Activities considered behind schedule are those with projected start or completion dates later than current approved dates shown on baseline schedule.
- .2 Weather related delays with their remedial measures will be discussed and negotiated.

PART 2 - PRODUCTS

2.1 NOT USED

- .1 Not used.

PART 3 - EXECUTION

3.1 NOT USED

- .1 Not used.

PART 1 - GENERAL

1.1 ADMINISTRATIVE

- .1 Submit to Departmental Representative submittals listed for review. Submit promptly and in orderly sequence to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed.
- .2 Do not proceed with Work affected by submittal until review is complete.
- .3 Present shop drawings, product data, samples and mock-ups in SI Metric units.
- .4 Where items or information is not produced in SI Metric units converted values are acceptable.
- .5 Review submittals prior to submission to Departmental Representative. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and co-ordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and considered rejected.
- .6 Notify Departmental Representative, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
- .7 Verify field measurements and affected adjacent Work are co-ordinated.
- .8 Contractor's responsibility for errors and omissions in submission is not relieved by Departmental Representative's review of submittals.
- .9 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Departmental Representative review.
- .10 Keep one reviewed copy of each submission on site.
- .11 Submit number of hard copies specified for each type and format of submittal and also submit in electronic format as pdf files. Forward pdf, MS Word, MS Excel, MS Project and Autocad dwg files on USB compatible with PWGSC encryption requirements or through email or alternate electronic file sharing service such as ftp, as directed by Departmental Representative.

1.2 SHOP DRAWINGS AND PRODUCT DATA

- .1 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by Contractor to illustrate details of a portion of Work.
- .2 Submit drawings stamped and signed by professional engineer registered or licensed in Province of Ontario, Canada.

- .3 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been co-ordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications.
- .4 Allow 5 working days for Departmental Representative's review of each submission.
- .5 Adjustments made on shop drawings by Departmental Representative are not intended to change Contract Amount. If adjustments affect value of Work, state such in writing to Departmental Representative prior to proceeding with Work.
- .6 Make changes in shop drawings as Departmental Representative may require, consistent with Contract Documents. When resubmitting, notify Departmental Representative in writing of revisions other than those requested.
- .7 Accompany submissions with transmittal letter, in duplicate, containing:
 - .1 Date.
 - .2 Project title and number.
 - .3 Contractor's name and address.
 - .4 Identification and quantity of each shop drawing, product data and sample.
 - .5 Other pertinent data.
- .8 Submissions shall include:
 - .1 Date and revision dates.
 - .2 Project title and number.
 - .3 Name and address of:
 - .1 Subcontractor.
 - .2 Supplier.
 - .3 Manufacturer.
 - .4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
 - .5 Details of appropriate portions of Work as applicable:
 - .1 Fabrication.
 - .2 Layout, showing dimensions, including identified field dimensions, and clearances.
 - .3 Setting or erection details.
 - .4 Capacities.
 - .5 Performance characteristics.
 - .6 Standards.
 - .7 Relationship to adjacent work.
- .9 After Departmental Representative's review, distribute copies.
- .10 Submit three hard copies and one electronic copy of shop drawings for each requirement requested in specification Sections and as Departmental

- Representative may reasonably request.
- .11 Submit three hard copies and one electronic copy of product data sheets or brochures for requirements requested in specification Sections and as requested by Departmental Representative where shop drawings will not be prepared due to standardized manufacture of product.
 - .12 Submit three hard copies and one electronic copy of test reports for requirements requested in specification Sections and as requested by Departmental Representative.
 - .1 Report signed by authorized official of testing laboratory that material, product or system identical to material, product or system to be provided has been tested in accord with specified requirements.
 - .2 Testing must have been within 3 years of date of contract award for project.
 - .13 Submit three hard copies and one electronic copy of certificates for requirements requested in specification Sections and as requested by Departmental Representative.
 - .1 Statements printed on manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements.
 - .2 Certificates must be dated after award of project contract complete with project name.
 - .14 Submit three hard copies and one electronic copy of manufacturers instructions for requirements requested in specification Sections and as requested by Departmental Representative.
 - .1 Pre-printed material describing installation of product, system or material, including special notices and Material Safety Data Sheets concerning impedances, hazards and safety precautions.
 - .15 Submit three hard copies and one electronic copy of Manufacturer's Field Reports for requirements requested in specification Sections and as requested by Departmental Representative.
 - .16 Documentation of the testing and verification actions taken by manufacturer's representative to confirm compliance with manufacturer's standards or instructions.
 - .17 Submit three hard copies and one electronic copy of Operation and Maintenance Data for requirements requested in specification Sections and as requested by Departmental Representative.
 - .18 Delete information not applicable to project.
 - .19 Supplement standard information to provide details applicable to project.
 - .20 If upon review by Departmental Representative, no errors or omissions are discovered or if only minor corrections are made, copies will be returned and fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected shop

drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.

- .21 The review of shop drawings by Public Services Procurement Canada (PSPC) is for sole purpose of ascertaining conformance with general concept.
- .1 This review shall not mean that PSPC approves detail design inherent in shop drawings, responsibility for which shall remain with Contractor submitting same, and such review shall not relieve Contractor of responsibility for errors or omissions in shop drawings or of responsibility for meeting requirements of construction and Contract Documents.
- .2 Without restricting generality of foregoing, Contractor is responsible for dimensions to be confirmed and correlated at job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for co-ordination of Work of sub-trades.

1.3 CERTIFICATES AND TRANSCRIPTS

- .1 Immediately after Award of Contract, submit Workplace Safety and Insurance Board Experience Report.

PART 2 - PRODUCTS

2.1 NOT USED

- .1 Not Used.

PART 3 - EXECUTION

3.1 NOT USED

- .1 Not Used.

PART 1 - GENERAL

1.1 REFERENCE STANDARDS

- .1 Canadian Standards Association (CSA): Canada
 - .1 CSA S350-M1980(R2003), Code of Practice for Safety in Demolition of Structures.
- .2 National Building Code 2015 (NBC):
 - .1 NBC 2015, Division B, Part 8 Safety Measures at Construction and Demolition Sites.
- .3 National Fire Code 2015 (NFC):
 - .1 NFC 2015, Division B, Part 5 Hazardous Processes and Operations, subsection 5.6.1.3 Fire Safety Plan.
- .4 Province of Ontario:
 - .1 Occupational Health and Safety Act Revised Statutes of Ontario 1990, Chapter O.1 as amended, and Regulations for Construction Projects, O. Reg. 213/91 as amended.
 - .2 O. Reg. 490/09, Designated Substances.
 - .3 Workplace Safety and Insurance Act, 1997.
 - .4 Municipal statutes and authorities.

1.2 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00.
- .2 Submit site-specific Health and Safety Plan: Within 7 days after date of Notice to Proceed and prior to commencement of Work. Health and Safety Plan must include:
 - .1 Results of site specific safety hazard assessment.
 - .2 Results of safety and health risk or hazard analysis for site tasks and operation found in work plan.
 - .3 Measures and controls to be implemented to address identified safety hazards and risks.
- .3 Provide a Fire Safety Plan, specific to the work location, in accordance with NBC, Division B, Article 8.1.1.1.3 prior to commencement of work. Deliver two copies of the Fire Safety Plan to the Departmental Representative not later than 14 days before commencing work.
- .4 Contractor's and Sub-contractors' Safety Communication Plan.
- .5 Contingency and Emergency Response Plan addressing standard operating procedures specific to the project site to be implemented during emergency situations.
- .6 Departmental Representative will review Contractor's site-specific Health and Safety Plan and provide comments to Contractor within 7 days after receipt of plan. Revise plan as appropriate and resubmit plan to Departmental Representative within 5 days after receipt of comments from Departmental

Representative.

- .7 Departmental Representative's review of Contractor's final Health and Safety plan should not be construed as approval and does not reduce the Contractor's overall responsibility for construction Health and Safety.
- .8 Submit names of personnel and alternates responsible for site safety and health.
- .9 Submit records of Contractor's Health and Safety meetings when requested.
- .10 Submit three copies of Contractor's authorized representative's work site health and safety inspection reports to Departmental Representative weekly.
- .11 Submit copies of orders, directions or reports issued by health and safety inspectors of the authorities having jurisdiction.
- .12 Submit copies of incident and accident reports.
- .13 Submit WHMIS Safety Data Sheets (SDS).
- .14 Submit Workplace Safety and Insurance Board (WSIB)- Experience Rating Report.
- .15 Medical Surveillance: where prescribed by legislation, regulation or safety program, submit certification of medical surveillance for site personnel, in accordance with O. Reg. 490, prior to commencement of Work, and submit additional certifications for any new site personnel to Departmental Representative.

1.3 SAFETY ASSESSMENT

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

1.4 MEETINGS

- .1 Schedule and administer Health and Safety meeting with Departmental Representative prior to commencement of Work.

1.5 REGULATORY REQUIREMENTS

- .1 Comply with the Acts and regulations of the Province of Ontario.
- .2 Comply with specified standards and regulations to ensure safe operations at site.

1.6 PROJECT/SITE CONDITIONS

- .1 Work at site will involve contact with:
 - .1 Silica.
 - .2 Mercury.
 - .3 Asbestos.
 - .4 Lead.

- .5 PCBs.
- .6 Mould.

.2 See Appendix 2 for details for type of materials and locations.

1.7 GENERAL REQUIREMENTS

- .1 Develop written site-specific Health and Safety Plan based on hazard assessment prior to beginning site Work and continue to implement, maintain, and enforce plan until final demobilization from site. Health and Safety Plan must address project specifications.
- .2 Departmental Representative may respond in writing, where deficiencies or concerns are noted and may request re-submission with correction of deficiencies or concerns either accepting or requesting improvements.
- .3 Relief from or substitution for any portion or provision of minimum Health and Safety standards specified herein or reviewed site-specific Health and Safety Plan shall be submitted to Departmental Representative in writing.

1.8 COMPLIANCE REQUIREMENTS

- .1 Comply with Ontario Occupational Health and Safety Act, R.S.O. 1990 Chapter 0.1, as amended.

1.9 RESPONSIBILITY

- .1 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of Work.
- .2 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, provincial, territorial and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.
- .3 Where applicable the Contractor shall be designated "Constructor", as defined by Occupational Health and Safety Act and Regulations for Construction Projects for the Province of Ontario.

1.10 UNFORSEEN HAZARDS

- .1 Should any unforeseen or peculiar safety-related factor, hazard, or condition become evident during performance of Work, immediately stop work and advise Departmental Representative verbally and in writing.
- .2 Follow procedures in place for Employees Right to Refuse Work as specified in the Occupational Health and Safety Act for the Province of Ontario.

1.11 HEALTH AND SAFETY CO-ORDINATOR

- .1 Employ and assign to Work, competent and authorized representative as Health and Safety Co-ordinator. Health and Safety Co-ordinator must:

- .1 Have site-related working experience specific to activities associated with abatement of lead and asbestos containing materials.
- .2 Have working knowledge of occupational safety and health regulations.
- .3 Be responsible for completing Contractor's Health and Safety Training Sessions and ensuring that personnel not successfully completing required training are not permitted to enter site to perform Work.
- .4 Be responsible for implementing, enforcing daily and monitoring site-specific Contractor's Health and Safety Plan.
- .5 Be on site during execution of Work and report directly to and be under direction of site supervisor.

1.12 POSTING OF DOCUMENTS

- .1 Ensure applicable items, articles, notices and orders are posted in conspicuous location on site in accordance with Acts and Regulations of Province of Ontario, and in consultation with Departmental Representative.
 - .1 Contractor's Safety Policy.
 - .2 Constructor's Name.
 - .3 Name, trade, and employer of Health and Safety Representative or Joint Health and Safety Committee members (if applicable).
 - .4 Occupational Health and Safety Act and Regulations for Construction Projects for Province of Ontario.
 - .5 Address and phone number of nearest Ministry of Labour office.
 - .6 Material Safety Data Sheets.
 - .7 Written Emergency Response Plan.
 - .8 Site Specific Safety Plan.
 - .9 Valid certificate of first aider on duty.
 - .10 WSIB "In Case of Injury At Work" poster.
 - .11 Location of toilet and cleanup facilities.

1.13 CORRECTION OF NON-COMPLIANCE

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

1.14 BLASTING

- .1 Blasting or other use of explosives is not permitted.

1.15 POWDER ACTUATED DEVICES

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

1.16 WORK STOPPAGE

- .1 Give precedence to safety and health of public and site personnel and

protection of environment over cost and schedule considerations for Work.

- .2 Assign responsibility and obligation to Health and Safety Coordinator to stop or start Work when, at Health and Safety Coordinator's discretion, it is necessary or advisable for reasons of health or safety. Departmental Representative may also stop Work for health and safety considerations.

PART 2 - PRODUCTS

2.1 NOT USED

- .1 Not used.

PART 3 - EXECUTION

3.1 NOT USED

- .1 Not used.

PART 1 - GENERAL

1.1 DEFINITIONS

- .1 Environmental Pollution and Damage: presence of chemical, physical, biological elements or agents which adversely affect human health and welfare; unfavourably alter ecological balances of importance to human life; affect other species of importance to humans; or degrade environment aesthetically, culturally and/or historically.
- .2 Environmental Protection: prevention/control of pollution and habitat or environment disruption during construction.

1.2 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for approval and include product characteristics, performance criteria, physical size, finish and limitations.
 - .2 Submit 2 copies of WHMIS SDS.
- .3 Before commencing construction activities or delivery of materials to site, submit Environmental Protection Plan for review and approval by Departmental Representative.
- .4 Environmental Protection Plan must include comprehensive overview of known or potential environmental issues to be addressed during construction.
- .5 Address topics at level of detail commensurate with environmental issue and required construction tasks.
- .6 Include in Environmental Protection Plan:
 - .1 Names of persons responsible for ensuring adherence to Environmental Protection Plan.
 - .2 Names and qualifications of persons responsible for manifesting hazardous waste to be removed from site.
 - .3 Names and qualifications of persons responsible for training site personnel.
 - .4 Descriptions of environmental protection personnel training program.
 - .5 Erosion and sediment control plan identifying type and location of erosion and sediment controls to be provided including monitoring and reporting requirements to assure that control measures are in compliance with erosion and sediment control plan, Federal, Provincial, and Municipal laws and regulations.
 - .6 Drawings indicating locations of proposed temporary excavations or embankments for haul roads, material storage areas, structures, sanitary facilities, and stockpiles of excess or spoil materials including methods to control runoff and to contain materials on site.
 - .7 Work area plan showing proposed activity in each portion of area and identifying areas of limited use or non-use.

- .1 Plan to include measures for marking limits of use areas and methods for protection of features to be preserved within authorized work areas.
- .8 Spill Control Plan to include procedures, instructions, and reports to be used in event of unforeseen spill of regulated substance.
- .9 Non-Hazardous solid waste disposal plan identifying methods and locations for solid waste disposal including clearing debris.
- .10 Air pollution control plan detailing provisions to assure that dust, debris, materials, and trash, are contained on project site.
- .11 Contaminant Prevention Plan identifying potentially hazardous substances to be used on job site; intended actions to prevent introduction of such materials into air, water, or ground; and detailing provisions for compliance with Federal, Provincial, and Municipal laws and regulations for storage and handling of these materials.
- .12 Waste Water Management Plan identifying methods and procedures for management and/or discharge of waste waters which are directly derived from construction activities.
- .13 Historical, archaeological, cultural resources biological resource and wetlands plan that defines procedures for identifying and protecting historical, archaeological, cultural resources, biological resources and wetlands.

1.3 FIRES

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

1.4 SITE CLEARING AND PLANT PROTECTION

- .1 Protect trees and plants on site and adjacent properties as indicated.
- .2 Protect trees and shrubs adjacent to construction work, storage areas and trucking lanes, and encase with protective wood framework from grade level to height of 2 m minimum.
- .3 Protect roots of designated trees to dripline during excavation and site grading to prevent disturbance or damage.
 - .1 Avoid unnecessary traffic, dumping and storage of materials over root zones.

1.5 DRAINAGE

- .1 Develop and submit erosion and Sediment Control Plan (ESC) identifying type and location of erosion and sediment controls provided. Plan to include monitoring and reporting requirements to assure that control measures are in compliance with erosion and sediment control plan, Federal, Provincial, and Municipal laws and regulations.
- .2 Storm Water Pollution Prevention Plan (SWPPP) to be substituted for erosion and sediment control plan.
- .3 Provide temporary drainage and pumping required to keep excavations and site free from water.

- .4 Ensure pumped water into waterways, sewer or drainage systems is free of suspended materials.
- .5 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authority requirements.

1.6 POLLUTION CONTROL

- .1 Maintain temporary erosion and pollution control features installed under this Contract.
- .2 Control emissions from equipment and plant in accordance with local authorities' emission requirements.
- .3 Prevent sandblasting and other extraneous materials from contaminating air and waterways beyond application area.
 - .1 Provide temporary enclosures where directed by Departmental Representative.
- .4 Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Provide dust control for temporary roads.

1.7 NOTIFICATION

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

PART 2 - PRODUCTS

2.1 NOT USED

- .1 Not Used.

PART 3 - EXECUTION

3.1 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 00.
- .2 Ensure public waterways, storm and sanitary sewers remain free of waste and volatile materials disposal.
- .3 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 20.

PART 1 - GENERAL

1.1 REFERENCES AND CODES

- .1 Perform Work in accordance with National Building Code of Canada (NBC) 2015, National Fire Code of Canada (NFC) 2015, including all amendments up to bid closing date and other codes of provincial or local application provided that in case of conflict or discrepancy, more stringent requirements apply as directed by the Departmental Representative.
- .2 Meet or exceed requirements of:
 - .1 Contract documents.
 - .2 Specified standards, codes and referenced documents.

1.2 HAZARDOUS MATERIAL DISCOVERY

- .1 Stop work immediately and notify Departmental Representative if materials which may contain designated substances or PCB's, other than those identified in Section 01 35 29 are discovered in course of work.

1.3 BUILDING SMOKING ENVIRONMENT

- .1 Comply with smoking restrictions.

PART 2 - PRODUCTS

2.1 NOT USED

- .1 Not Used.

PART 3 - EXECUTION

3.1 NOT USED

- .1 Not Used.

PART 1 - GENERAL

1.1 SECTION INCLUDES

- .1 Inspection and testing, administrative and enforcement requirements.
- .2 Tests.

1.2 INSPECTION

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

1.3 INDEPENDENT INSPECTION AGENCIES

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

1.4 ACCESS TO WORK

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

and fabrication plants.

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

1.5 PROCEDURES

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

1.6 REJECTED WORK

- .1 Remove defective Work, whether result of poor workmanship, use of defective products or damage and whether incorporated in Work or not, which has been rejected by Departmental Representative as failing to conform to Contract Documents. Replace or re-execute in accordance with Contract Documents.
- .2 Make good other Contractor's work damaged by such removals or replacements promptly.
- .3 If in opinion of Departmental Representative it is not expedient to correct defective Work or Work not performed in accordance with Contract Documents, Departmental Representative may deduct from Contract Amount difference in value between Work performed and that called for by Contract Documents, amount of which shall be determined by Departmental Representative.

1.7 REPORTS

- .1 Submit 4 copies of inspection and test reports to Departmental Representative.
- .2 Provide copies to Subcontractor of work being inspected or tested, manufacturer or fabricator of material being inspected or tested.

1.8 TESTS

- .1 Furnish test results as may be requested.
- .2 The cost of tests beyond those called for in Contract Documents or beyond those required by law of Place of Work shall be appraised by Departmental Representative and may be authorized as recoverable.

PART 2 - PRODUCTS

2.1 NOT USED

.1 Not Used.

PART 3 - EXECUTION

3.1 NOT USED

.1 Not Used.

PART 1 - GENERAL

1.1 ACTION AND INFORMATION SUBMITTALS

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

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 DEWATERING

- .1 Provide temporary drainage and pumping facilities to keep excavations and site free from standing water.

1.4 WATER SUPPLY

- .1 Provide continuous supply of potable water for demolition/restoration use.
- .2 Arrange for connection with appropriate utility company and pay all costs for installation, maintenance and removal.

1.5 TEMPORARY HEATING AND VENTILATION

- .1 Provide temporary heating required during demolition/restoration period, including attendance, maintenance and fuel.
- .2 Construction heaters used inside building must be vented to outside or be non-flameless type. Solid fuel salamanders are not permitted.
- .3 Provide temporary heat and ventilation in enclosed areas as required to:
 - .1 Facilitate progress of Work.
 - .2 Protect Work and products against dampness and cold.
 - .3 Prevent moisture condensation on surfaces.
 - .4 Provide ambient temperatures and humidity levels for storage, installation and curing of materials.
 - .5 Provide adequate ventilation to meet health regulations for safe working environment.
- .4 Maintain temperatures of minimum 10°C in areas where demolition/restoration is in progress.
- .5 Ventilating:
 - .1 Prevent accumulations of dust, fumes, mists, vapours or gases in areas occupied during demolition/restoration.
 - .2 Provide local exhaust ventilation to prevent harmful accumulation of hazardous substances into atmosphere of occupied areas.
 - .3 Dispose of exhaust materials in manner that will not result in harmful exposure to persons.
 - .4 Ventilate storage spaces containing hazardous or volatile materials.

- .5 Ventilate temporary sanitary facilities.
- .6 Continue operation of ventilation and exhaust system for time after cessation of work process to assure removal of harmful contaminants.

- .6 Maintain strict supervision of operation of temporary heating and ventilating equipment to:
 - .1 Conform with applicable codes and standards.
 - .2 Enforce safe practices.
 - .3 Prevent abuse of services.
 - .4 Prevent damage to finishes.
 - .5 Vent direct-fired combustion units to outside.

- .7 Be responsible for damage to Work due to failure in providing adequate heat and protection during demolition/restoration.

1.6 TEMPORARY POWER AND LIGHT

- .1 Provide and pay for temporary power during demolition/restoration for temporary lighting and operating of power tools.

- .2 Provide and maintain temporary lighting throughout project.

1.7 FIRE PROTECTION

- .1 Provide and maintain temporary fire protection equipment during performance of Work required by insurance companies having jurisdiction and governing codes, regulations and bylaws.

- .2 Burning rubbish and demolition/restoration waste materials is not permitted on site.

PART 2 - PRODUCTS

2.1 NOT USED

- .1 Not Used.

PART 3 - EXECUTION

3.1 NOT USED

- .1 Not Used.

PART 1 - GENERAL

1.1 SECTION INCLUDES

- .1 Construction aids.
- .2 Office and sheds.
- .3 Parking.
- .4 Project identification.

1.2 REFERENCE STANDARDS

- .1 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-1.59-97, Alkyd Exterior Gloss Enamel.
 - .2 CAN/CGSB-1.189-2000, Exterior Alkyd Primer for Wood.
- .2 Canadian Standards Association (CSA International)
 - .1 CSA A23.1:19/A23.2:19, Concrete Materials and Methods of Concrete Construction/Test Methods and Standard Practices for Concrete.
 - .2 CSA 0121-17, Douglas Fir Plywood.
 - .3 CAN/CSA-Z797-18, Code of Practice for Access Scaffold.
 - .4 CAN/CSA-Z321-96(R2006), Signs and Symbols for the Occupational Environment, withdrawn but still available from CSA, CCOHS and Techstreet.

1.3 SUBMITTALS

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

1.4 INSTALLATION AND REMOVAL

- .1 Prepare site plan indicating proposed location and dimensions of area to be fenced and used by Contractor, number of trailers to be used, avenues of ingress/egress to fenced area and details of fence installation.
- .2 Identify areas which have to be gravelled to prevent tracking of mud.
- .3 Indicate use of supplemental or other staging area.
- .4 Provide construction facilities in order to execute work expeditiously.
- .5 Remove from site all such work after use.

1.5 SCAFFOLDING

- .1 Scaffolding in accordance with CAN/CSA-Z797.

1.6 HOISTING

- .1 Provide, operate and maintain hoists/cranes required for moving of workers,

materials and equipment. Make financial arrangements with Subcontractors for use thereof.

- .2 Hoists/cranes shall be operated by qualified operator.

1.7 SITE STORAGE/LOADING

- .1 Confine work and operations of employees to areas defined by Contract Documents. Do not unreasonably encumber premises with products.
- .2 Do not load or permit to load any part of Work with a weight or force that will endanger the Work.

1.8 CONSTRUCTION PARKING

- .1 Parking will be permitted on site provided it does not disrupt performance of Work.
- .2 Provide and maintain adequate access to project site.
- .3 If authorized to use existing roads for access to project site, maintain such roads for duration of Contract and make good damage resulting from Contractors' use of roads.
- .4 Clean construction runways and taxi areas where used by Contractor's equipment.

1.9 SECURITY

- .1 Pay for responsible security personnel to guard site and contents of site after working hours and during holidays.

1.10 OFFICES

- .1 Provide office heated to 22°C, lighted 750 lx and ventilated, of sufficient size to accommodate site meetings and furnished with drawing laydown table.
- .2 Provide a clearly marked and fully stocked first-aid case in a readily available location.
- .3 Subcontractors may provide their own offices as necessary. Direct location of these offices.

1.11 EQUIPMENT, TOOL AND MATERIALS STORAGE

- .1 Provide and maintain, in a 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 a manner to cause least interference with work activities.

1.12 SANITARY FACILITIES

- .1 Provide sanitary facilities for work force in accordance with governing regulations and ordinances.
- .2 Post notices and take such precautions as required by local health authorities. Keep area and premises in sanitary condition.

1.13 CONSTRUCTION SIGNAGE

- .1 Provide and erect, within three weeks of signing Contract, a project sign in a location designated by Departmental Representative.
- .2 Indicate on sign, name of Owner, Consultant and Contractor, of a design style established by Departmental Representative.
- .3 No other signs or advertisements, other than warning signs, are permitted on site.
- .4 Signs and notices for safety and instruction shall be in both official languages. Graphic symbols shall conform to CAN/CSA-Z321.
- .5 Maintain approved signs and notices in good condition for duration of project, and dispose of off-site on completion of project or earlier if directed by Departmental Representative.

1.14 PROTECTION AND MAINTENANCE OF TRAFFIC

- .1 Provide access and temporary relocated roads as necessary to maintain traffic.
- .2 Maintain and protect traffic on affected roads during construction period except as otherwise specifically directed by Departmental Representative.
- .3 Provide measures for protection and diversion of traffic, including provision of watch-persons and flag-persons, erection of barricades, placing of lights around and in front of equipment and work, and erection and maintenance of adequate warning, danger, and direction signs.
- .4 Protect travelling public from damage to person and property.
- .5 Contractor's traffic on roads selected for hauling material to and from site to interfere as little as possible with public traffic.
- .6 Verify adequacy of existing roads and allowable load limit on these roads. Contractor: responsible for repair of damage to roads caused by construction operations.
- .7 Provide necessary lighting, signs, barricades, and distinctive markings for safe movement of traffic.
- .8 Provide snow removal during period of Work.

PART 2 - PRODUCTS

2.1 NOT USED

.1 Not Used.

PART 3 - EXECUTION

3.1 NOT USED

.1 Not Used.

PART 1 - GENERAL

1.1 SECTION INCLUDES

- .1 Barriers.
- .2 Environmental Controls.
- .3 Traffic Controls.
- .4 Fire Routes.

1.2 RELATED SECTIONS

- .1 Section 01 51 00 - Temporary Utilities.
- .2 Section 01 52 00 - Construction Facilities.

1.3 REFERENCE STANDARDS

- .1 Canadian General Standards Board (CGSB):
 - .1 CAN/CGSB-1.189-2000, Exterior Alkyd Primer for Wood.
 - .2 CAN/CGSB-1.59-97, Alkyd Exterior Gloss Enamel.
- .2 Canadian Standards Association (CSA):
 - .1 CSA O121-17, Douglas Fir Plywood.

1.4 INSTALLATION AND REMOVAL

- .1 Provide temporary controls in order to execute Work expeditiously.
- .2 Remove from site all such work after use.

1.5 HOARDING

- .1 Erect temporary site enclosures using 38 x 89 mm construction grade lumber framing at 600 mm o.c. and 1200 x 2400 x 13 mm exterior grade fir plywood to CSA O121. Design enclosures to withstand all applicable loading. Submit shop drawings stamped by professional engineer licensed in the Province of Ontario in accordance with section 01 33 00.
- .2 Apply plywood panels vertically.
- .3 Provide two lockable truck entrance gates and at least one pedestrian door as directed and conforming to applicable traffic restrictions on adjacent streets. Equip gates with locks and keys.

1.6 GUARD RAILS AND BARRICADES

- .1 Provide secure, rigid guard rails and barricades around deep excavations, open shafts, open stair wells, open edges of floors and roofs.

- .2 Provide as required by governing authorities.

1.7 ACCESS TO SITE

- .1 Provide and maintain access roads, sidewalk crossings, ramps and construction runways as may be required for access to Work.

1.8 PUBLIC TRAFFIC FLOW

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

1.9 FIRE ROUTES

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

1.10 PROTECTION FOR OFF-SITE AND PUBLIC PROPERTY

- .1 Protect surrounding private and public property from damage during performance of Work.
- .2 Be responsible for damage incurred.

PART 2 - PRODUCTS

2.1 NOT USED

- .1 Not Used.

PART 3 - EXECUTION

3.1 NOT USED

- .1 Not Used.

PART 1 - GENERAL

1.1 SECTION INCLUDES

- .1 Product quality, availability, storage, handling, protection, and transportation.
- .2 Manufacturer's instructions.
- .3 Quality of Work, coordination and fastenings.
- .4 Existing facilities.

1.2 RELATED SECTIONS

- .1 Section 01 45 00 - Quality Control.

1.3 REFERENCE STANDARDS

- .1 Within text of specifications, reference may be made to reference standards.
- .2 Conform to these standards, in whole or in part as specifically requested in specifications.
- .3 If there is question as to whether any product or system is in conformance with applicable standards, Departmental Representative reserves right to have such products or systems tested to prove or disprove conformance.
- .4 The cost for such testing will be borne by Departmental Representative in event of conformance with Contract Documents or by Contractor in event of non-conformance.
- .5 Conform to latest date of issue of referenced standards in effect on date of submission of Bids, except where specific date or issue is specifically noted.
- .6 OPSS Ontario Provincial Standard Specifications and OPSD Ontario Provincial Standard Drawings quoted in these specifications are available online at <https://www.library.mto.gov.on.ca/SydneyPLUS/TechPubs/Portal/tp/opsSplash.aspx>.

1.4 QUALITY

- .1 Products, materials, equipment and articles (referred to as products throughout specifications) incorporated in Work shall be new, not damaged or defective, and of best quality (compatible with specifications) for purpose intended. If requested, furnish evidence as to type, source and quality of Products provided.
- .2 Defective products, whenever identified prior to completion of Work, will be rejected, regardless of previous inspections. Inspection does not relieve responsibility, but is precaution against oversight or error. Remove and

replace defective products at own expense and be responsible for delays and expenses caused by rejection.

- .3 Should any dispute arise as to quality or fitness of products, decision rests strictly with Departmental Representative based upon requirements of Contract Documents.
- .4 Unless otherwise indicated in specifications, maintain uniformity of manufacture for any particular or like item throughout building.
- .5 Permanent labels, trademarks and nameplates on products are not acceptable in prominent locations, except where required for operating instructions, or when located in mechanical or electrical rooms.

1.5 AVAILABILITY

- .1 Immediately upon signing Contract, review product delivery requirements and anticipate foreseeable supply delays for any items. If delays in supply of products are foreseeable, notify Departmental Representative of such, in order that substitutions or other remedial action may be authorized in ample time to prevent delay in performance of Work.
- .2 In event of failure to notify Departmental Representative at commencement of Work and should it subsequently appear that Work may be delayed for such reason, Departmental Representative reserves right to substitute more readily available products of similar character, at no increase in Contract Amount or Contract Time.

1.6 METRIC SIZED MATERIALS

- .1 SI metric units of measurement are used exclusively on the drawings and in the specifications for this project.
- .2 The Contractor is required to provide metric products in the sizes called for in the Contract Documents except where a valid claim can be made that a particular product is not available on the Canadian market.
- .3 Claims for exemptions from use of metric sized products shall be in writing and fully substantiated with supportive documentation. Promptly submit application to Departmental Representative for consideration and ruling. Non-metric sized products may not be used unless Contractor's application has been approved in writing by the Departmental Representative.
- .4 Difficulties caused by the Contractor's lack of planning and effort to obtain modular metric sized products which are available on the Canadian market will not be considered sufficient reasons for claiming that they cannot be provided.
- .5 Claims for additional costs due to provision of specified modular metric sized products will not be considered.

1.7 STORAGE, HANDLING AND PROTECTION

- .1 Handle and store products in manner to prevent damage, adulteration, deterioration and soiling and in accordance with manufacturer's instructions when applicable.
- .2 Store packaged or bundled products in original and undamaged condition with manufacturer's seal and labels intact. Do not remove from packaging or bundling until required in Work.
- .3 Store products subject to damage from weather in weatherproof enclosures.
- .4 Remove and replace damaged products at own expense and to satisfaction of Departmental Representative.

1.8 TRANSPORTATION

- .1 Pay costs of transportation of products required in performance of Work.

1.9 MANUFACTURER'S INSTRUCTIONS

- .1 Unless otherwise indicated in specifications, install or erect products in accordance with manufacturer's instructions. Do not rely on labels or enclosures provided with products. Obtain written instructions directly from manufacturers.
- .2 Notify Departmental Representative in writing, of conflicts between specifications and manufacturer's instructions, so that Departmental Representative may establish course of action.
- .3 Improper installation or erection of products, due to failure in complying with these requirements, authorizes Departmental Representative to require removal and re-installation at no increase in Contract Amount or Contract Time.

1.10 QUALITY OF WORK

- .1 Ensure Quality of Work is of highest standard, executed by workers experienced and skilled in respective duties for which they are employed. Immediately notify Departmental Representative if required Work is such as to make it impractical to produce required results.
- .2 Do not employ anyone unskilled in their required duties. Departmental Representative reserves right to require dismissal from site, workers deemed incompetent or careless.
- .3 Decisions as to standard or fitness of Quality of Work in cases of dispute rest solely with Departmental Representative, whose decision is final.

1.11 CO-ORDINATION

- .1 Ensure cooperation of workers in laying out Work. Maintain efficient and continuous supervision.

1.12 REMEDIAL WORK

- .1 Perform remedial work required to repair or replace parts or portions of Work identified as defective or unacceptable. Coordinate adjacent affected Work as required.
- .2 Perform remedial work by specialists familiar with materials affected. Perform in a manner to neither damage nor put at risk any portion of Work.

PART 2 - PRODUCTS

2.1 NOT USED

- .1 Not Used.

PART 3 - EXECUTION

3.1 NOT USED

- .1 Not Used.

PART 1 - GENERAL

1.1 PROJECT CLEANLINESS

- .1 Maintain Work in tidy condition, free from accumulation of waste products and debris, other than that caused by Departmental Representative.
- .2 Remove waste materials from site at regularly scheduled times or dispose of as directed by Departmental Representative. Do not burn waste materials on site.
- .3 Clear snow and ice from access to building, bank/pile snow in designated areas only.
- .4 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .5 Provide on-site containers for collection of waste materials and debris.
- .6 Provide and use clearly marked separate bins for recycling. Refer to Section 01 74 20.
- .7 Dispose of waste materials and debris off site.

1.2 FINAL CLEANING

- .1 When Work is Substantially Performed, remove surplus products, tools, construction machinery and equipment not required for performance of remaining Work.
- .2 Remove waste products and debris other than that caused by others.
- .3 Prior to final review, remove surplus products, tools, construction machinery and equipment.
- .4 Remove waste materials from site at regularly scheduled times or dispose of as directed by Departmental Representative. Do not burn waste materials on site.
- .5 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.

1.3 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 20.

PART 2 - PRODUCTS

2.1 NOT USED

.1 Not Used.

PART 3 - EXECUTION

3.1 NOT USED

.1 Not Used.

PART 1 - GENERAL

1.1 CONSTRUCTION & DEMOLITION WASTE

- .1 Carefully deconstruct and source separate materials/equipment and divert, from waste destined for landfill to maximum extent possible. Target for this project is 75% diversion from landfill. Reuse, recycle, compost, anaerobic digest or sell material for reuse except where indicated otherwise. On site sales are not permitted.
- .2 Source separate waste and maintain waste audits in accordance with the Environmental Protection Act, Ontario Regulation 102/94 and Ontario Regulation 103/94.
 - .1 Provide facilities for collection, handling and storage of source separated wastes.
 - .2 Source separate the following waste for recycling where possible:
 - .1 Brick and portland cement concrete.
 - .2 Corrugated cardboard.
 - .3 Wood, not including painted or treated wood or laminated wood.
 - .4 Gypsum board, unpainted.
 - .5 Steel.
 - .6 Concrete Masonry.
- .3 Submit a waste reduction workplan indicating the materials and quantities of material that will be recycled and diverted from landfill.
 - .1 Indicate how material being removed from the site will be reused, recycled, composted or anaerobically digested.
- .4 Submit proof that all waste is being disposed of at a licensed land fill site or waste transfer site. A copy of the disposal/waste transfer site's license and a letter verifying that said landfill site will accept the waste must be supplied to Departmental Representative prior to removal of waste from the demolition site.

1.2 WASTE PROCESSING SITES

- .1 Province of: Ontario.
 - .1 Ministry of Environment, Conservation and Parks, 135 St. Clair Avenue West, Toronto, ON, M4V 1P5.
 - .2 Telephone: 1-800-565-4923 or 416-323-4321.
 - .3 Fax: 416-314-6713.
- .2 Recycling Council of Ontario: 55 University Avenue, #1500, Toronto, ON, M5J 2H7.
 - .1 Telephone: 416-657-2797 or 1-888-501-9637.
 - .2 Fax: 416-960-8053.
 - .3 Email: rco@rco.on.ca.
 - .4 Internet: <http://www.rco.on.ca/>.

PART 2 - PRODUCTS

2.1 NOT USED

.1 Not Used.

PART 3 - EXECUTION

3.1 NOT USED

.1 Not Used.

PART 1 - GENERAL

1.1 INSPECTION AND DECLARATION

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

1.2 CLEANING

- .1 In accordance with Section 01 74 00.
- .2 Remove waste and surplus materials, rubbish and construction facilities from the site in accordance with Section 01 74 20.

PART 2 - PRODUCTS

2.1 NOT USED

- .1 Not Used.

PART 3 - EXECUTION

3.1 NOT USED

- .1 Not Used.

PART 1 - GENERAL

1.1 SECTION INCLUDES

- .1 As-built, samples, and specifications.
- .2 Equipment and systems.
- .3 Product data, materials and finishes, and related information.
- .4 Operation and maintenance data.
- .5 Spare parts, special tools and maintenance materials.
- .6 Warranties and bonds.
- .7 Final site survey.

1.2 FORMAT

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

1.3 CONTENTS - EACH VOLUME

- .1 Table of Contents: provide title of project;
 - .1 Date of submission; names,
 - .2 Addresses, and telephone numbers of Contractor with name of responsible parties;
 - .3 Schedule of products and systems, indexed to content of volume.
- .2 For each product or system:
 - .1 List names, addresses and telephone numbers of subcontractors and

suppliers, including local source of supplies and replacement parts.

- .3 Product Data: mark each sheet to clearly identify specific products and component parts, and data applicable to installation; delete inapplicable information.
- .4 Drawings: supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams.

1.4 AS-BUILTS AND SAMPLES

- .1 In addition to requirements in General Conditions, maintain at the site for Departmental Representative one record copy of:
 - .1 Contract Drawings.
 - .2 Specifications.
 - .3 Amendments and addenda.
 - .4 Change Orders and other modifications to the Contract.
 - .5 Reviewed shop drawings, product data, and samples.
 - .6 Field test records.
 - .7 Inspection certificates.
 - .8 Manufacturer's certificates.
- .2 Store record documents and samples in field office apart from documents used for construction. Provide files, racks, and secure storage.
- .3 Label record documents and file in accordance with Section number listings in List of Contents of this Project Manual. Label each document "PROJECT RECORD" in neat, large, printed letters.
- .4 Maintain record documents in clean, dry and legible condition. Do not use record documents for construction purposes.
- .5 Keep record documents and samples available for inspection by Departmental Representative.
- .6 Turn one set, paper copy and electronic copy, of AS-BUILT drawings and specifications over to Departmental Representative on completion of work. Submit files on USB compatible with PSPC encryption requirements or through email or alternate electronic file sharing service such as ftp, as directed by Departmental Representative.
- .7 If project is completed without significant deviations from Contract drawings and specifications submit to Departmental Representative one set of drawings and specifications marked "AS-BUILT".

1.5 RECORDING ACTUAL SITE CONDITIONS

- .1 Record information on set of black line opaque drawings, provided by Departmental Representative.
- .2 Provide felt tip marking pens, maintaining separate colours for each major system, for recording information.

- .3 Record information concurrently with construction progress. Do not conceal Work until required information is recorded.
- .4 Contract Drawings and shop drawings: legibly mark each item to record actual construction, including:
 - .1 Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 - .2 Field changes of dimension and detail.
 - .3 Changes made by change orders.
 - .4 Details not on original Contract Drawings.
 - .5 References to related shop drawings and modifications.
- .5 Specifications: legibly mark each item to record actual construction, including:
 - .1 Manufacturer, trade name, and catalogue number of each product actually installed, particularly optional items and substitute items.
 - .2 Changes made by Amendments and change orders.
- .6 Other Documents: maintain manufacturer's certifications, inspection certifications, and field test records, required by individual specifications sections.

PART 2 - PRODUCTS

2.1 NOT USED

- .1 Not Used.

PART 3 - EXECUTION

3.1 NOT USED

- .1 Not Used.

PART 1 - GENERAL

1.1 REFERENCES

- .1 Definitions:
 - .1 Hazardous Materials: dangerous substances, dangerous goods, hazardous commodities and hazardous products, include but not limited to: poisons, corrosive agents, flammable substances, ammunition, explosives, radioactive substances, or materials that endanger human health or environment if handled improperly.
 - .2 Waste Management Co-ordinator (WMC): contractor representative responsible for supervising waste management activities as well as co-ordinating related, required submittal and reporting requirements.
 - .3 Waste Audit (WA): detailed inventory of materials in building. Involves quantifying by volume/weight amounts of materials and wastes generated during construction, demolition, deconstruction, or renovation project. Indicates quantities of reuse, recycling and landfill.
 - .4 Waste Reduction Workplan (WRW): written report which addresses opportunities for reduction, reuse, or recycling of materials. WRW is based on information acquired from WA.
- .2 Reference Standards:
 - .1 CSA International
 - .1 CSA S350-M1980(R2003), Code of Practice for Safety in Demolition of Structures.
 - .2 Department of Justice Canada (Jus)
 - .1 Canadian Environmental Assessment Act (CEAA), 1995, c. 37.
 - .2 Canadian Environmental Protection Act (CEPA), 1999, c. 33.
 - .1 SOR/2003-2, On-Road Vehicle and Engine Emission Regulations.
 - .2 SOR/2006-268, Regulations Amending the On-Road Vehicle and Engine Emission Regulations.
 - .3 Transportation of Dangerous Goods Act (TDGA), 1992, c. 34.

1.2 ADMINISTRATIVE REQUIREMENTS

- .1 Pre-Installation Meetings:
 - .1 Convene pre-installation meeting 1 week prior to beginning work of this Section with Contractor's Representative and Departmental Representative in accordance with Section 01 31 19 to:
 - .1 Verify project requirements.
 - .2 Verify existing site conditions adjacent to demolition work.
 - .3 Co-ordination with other construction subtrades.
 - .2 Hold project meetings every bi-weekly/as requested.
 - .3 Ensure site supervisor, project manager, subcontractor representatives and WMC attend.
 - .4 WMC must provide written report on status of waste diversion activity at each meeting.
 - .5 Departmental Representative will provide written notification of

change to meeting schedule established upon contract award 24 hours prior to scheduled meeting.

- .2 Scheduling:
 - .1 Employ necessary means to meet project time lines without compromising specified minimum rates of material diversion.
 - .1 In event of unforeseen delay notify Departmental Representative in writing.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Sections 01 33 00 and Section 01 74 20.
- .2 WMC is responsible for fulfilment of reporting requirements.
- .3 Prior to beginning of Work on site submit detailed Waste Reduction Workplan in accordance with Section 01 74 20 and indicate:
 - .1 Descriptions of and anticipated quantities in percentages of materials to be salvaged reused, recycled and landfilled.
 - .2 Schedule of selective demolition.
 - .3 Number and location of dumpsters.
 - .4 Anticipated frequency of tipping.
 - .5 Name and address of haulers, waste facilities and waste receiving organizations.
- .4 Submit copies of certified weigh bills, bills of lading and receipts from authorized disposal sites and reuse and recycling facilities for material removed from site on a weekly basis and upon request of Departmental Representative.
 - .1 Written authorization from Departmental Representative is required to deviate from haulers, facilities and receiving organizations listed in Waste Reduction Workplan.
- .5 Shop Drawings:
 - .1 Submit for review and approval demolition drawings, diagrams or details showing sequence of demolition work and supporting structures and underpinning.
 - .2 Submit demolition drawings stamped and signed by professional engineer registered or licensed in Province of Ontario, Canada.
 - .3 Construction Waste Management:
 - .1 Submit project Waste Management Plan highlighting recycling and salvage requirements.
 - .2 Submit calculations on end-of-project recycling rates, salvage rates, and landfill rates demonstrating that 75% of construction wastes were recycled or salvaged.

1.4 QUALITY ASSURANCE

- .1 Regulatory Requirements: Ensure Work is performed in compliance with CEPA, CEAA, TDGA and applicable Provincial/Territorial and Municipal regulations.

1.5 SITE CONDITIONS

- .1 Environmental protection:
 - .1 Ensure Work is done in accordance with Section 01 35 43.
 - .2 Ensure Work does not adversely affect adjacent watercourses, groundwater and wildlife, or contribute to excess air and noise pollution.
 - .3 Fires and burning of waste or materials is not permitted on site.
 - .4 Do not bury rubbish waste materials.
 - .5 Do not dispose of waste or volatile materials including but not limited to: mineral spirits, oil, petroleum based lubricants, or toxic cleaning solutions into watercourses, storm or sanitary sewers.
 - .1 Ensure proper disposal procedures are maintained throughout project.
 - .6 Do not pump water containing suspended materials into watercourses, storm or sanitary sewers, or onto adjacent properties.
 - .7 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with authorities having jurisdiction.
 - .8 Protect trees, plants and foliage on site and adjacent properties where indicated.
 - .9 Prevent extraneous materials from contaminating air beyond application area, by providing temporary enclosures during demolition work.
 - .10 Cover or wet down dry materials and waste to prevent blowing dust and debris. Control dust on all temporary roads.

1.6 EXISTING CONDITIONS

- .1 Structures to be demolished are based on their condition at time of examination prior to tendering.
 - .1 Remove, protect and store salvaged items as directed by Departmental Representative. Salvage items as identified by Departmental Representative. Deliver to Departmental Representative as directed.

PART 2 - PRODUCTS

2.1 EQUIPMENT

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

PART 3 - EXECUTION

3.1 PREPARATION

- .1 Temporary Erosion and Sedimentation Control:
 - .1 Provide temporary erosion and sedimentation control measures to

- prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to: requirements of authorities having jurisdiction.
- .2 Inspect, repair, and maintain erosion and sedimentation control measures during demolition.
- .3 Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal after completion of demolition work.
- .2 Protection of in-place conditions:
 - .1 Prevent movement, settlement or damage of adjacent structures, services, walks, paving, trees, landscaping, and properties.
 - .1 Provide bracing, and shoring as required.
 - .2 Repair damage caused by demolition as directed by Departmental Representative.
 - .3 Support affected structures and, if safety of structure being demolished or adjacent structures or services appears to be endangered, take preventative measures, stop Work and immediately notify Departmental Representative.
 - .4 Prevent debris from blocking surface drainage system.
- .3 Surface Preparation:
 - .1 Disconnect and re-route electrical and telephone/internet service lines entering buildings to be demolished.
 - .1 Post warning signs on electrical lines and equipment which must remain energized to serve other properties during period of demolition.
 - .2 Disconnect and cap designated mechanical services.
 - .1 Sewer and water lines: remove to property line as directed by Departmental Representative.

3.2 DEMOLITION

- .1 Do demolition work in accordance with Section 01 56 00.
- .2 Blasting operations not permitted during demolition.
- .3 Remove contaminated or dangerous materials as defined by authorities having jurisdiction, relating to environmental protection, from site and dispose of in safe manner to minimize danger at site or during disposal.
- .4 Prior to start of Work remove contaminated or hazardous materials from site and dispose of in safe manner and in accordance with Section 02 70 00.
- .5 Demolish structure.
- .6 Crush concrete generated due to demolition of foundations to size suitable for recycling.
 - .1 Where possible identify markets which will accept crushed material as aggregate.
- .7 At end of each day's work, leave Work in safe and stable condition.
- .8 Demolish to minimize dusting. Keep materials wetted as directed by

Departmental Representative.

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

3.3 CLEANING

- .1 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 20.

PART 1 - GENERAL

1.1 DEFINITIONS

- .1 Designated Substances Information: Information prepared by a specialist consultant hired directly by Public Services and Procurement Canada (PSPC) and is included as information documents related to a Project and identified in the Appendices.
- .2 Contract Documents: All documents and information, of any type and in any form, specifically prepared for use in a Contract and as defined in the Contractor's Agreement Form.
- .3 Authorized Visitors: Departmental Representative or designated representatives.
- .4 Competent person: Departmental Representative capable of identifying existing lead hazards in workplace taking corrective measures to eliminate them.
- .5 TCLP Leachate Analysis: Reg. 347 Schedule 4 Leachate Quality Criteria, including but not limited to metals, inorganics, volatile organic compounds and PCBs.

1.2 ADMINISTRATIVE REQUIREMENTS

- .1 Status of Designated Substances Information: Designated Substances information identified in the Appendices; or any part thereof, are not part of Contract Documents prepared by the Departmental Representative and are made available to Bidder for the purpose of providing the Bidder with access to information available to Departmental Representative under the following conditions:
 - .1 Designated Substances Information shall not be considered a representation or warranty that information contained therein is accurate, complete, or appropriate.
 - .2 Information contained in Designated Substances Information may be time sensitive and dates shall be considered when interpreting Hazardous Materials Report.
 - .3 Bidder may rely upon data contained in the Designated Substances Report; or parts thereof, which are specifically incorporated into Contract Documents by means of copying, transcribing or referencing, but shall draw their own conclusions from such data and shall not rely on opinions or interpretations contained therein.
 - .4 Any quantities referenced in the specifications and appended report are to be used as reference only. Quantities for bidding purposes are to be confirmed by the contractors.
- .2 Designated Substances Survey: A Designated Substances and Hazardous Materials Assessment was prepared for this project and is attached as an Appendix:
Title: Designated Substances and Hazardous Materials Assessment Report,

- Administrative Building #2, Saint-Regis, Akwesasne.
- .1 Preparation Date: March 31, 2020
 - .2 Prepared By: WSP Canada Inc.

- .3 Direct inquiries during Bid period to persons identified within the Contracting Authority to receive inquiries; the Departmental Representative will not accept direct enquiries with regards to hazardous materials removal.

1.3 SUBMITTALS

- .1 Provide submittals in accordance with applicable Sections.
- .2 Provide proof of Contractor's General and Environmental Liability Insurance.
- .3 Quality Control:
 - .1 Provide Departmental Representative necessary permits for transportation and disposal of waste and proof that waste has been received and properly disposed.
 - .2 Provide proof satisfactory to Departmental Representative that employees have had instruction on hazards of lead exposure, asbestos exposure, respirator use, dress, and aspects of work procedures and protective measures.

1.4 HAZARDOUS MATERIALS INFORMATION

- .1 A copy of the Hazardous Materials Information documents is included in the Appendix.
- .2 A summary of Hazardous Materials to be abated and disposed during project is provided in the table below:

Asbestos-Containing Materials

Material	Description	Location	Condition	Approx. Quantity	Minimum ACM Abatement Level
Vinyl Floor Tile	12" x 12" white with black streaks	Location 2	Good	195ft ²	Type 1
Vinyl Floor Tile	12" x 12" white with black streaks	Location 7	Good	145ft ²	Type 1
Vinyl Floor Tile	12" x 12" white with black streaks	Location 10	Good	60ft ²	Type 1
Vinyl Floor Tile	12" x 12" white with black streaks	Location 13	Good	100ft ²	Type 1
Vinyl Floor Tile	12" x 12" white with black streaks	Location 18	Good	145ft ²	Type 1
Vinyl Floor Tile	12" x 12" white with black streaks	Location 19	Good	100ft ²	Type 1
Vinyl Floor Tile	12" x 12" white with black streaks	Location 23	Good	145ft ²	Type 1
Vinyl Floor Tile	12" x 12" white with black streaks	Location 24	Good	120ft ²	Type 1
Vinyl Floor Tile	12" x 12" white with black streaks	Location 25	Good	120ft ²	Type 1

Vinyl Floor Tile	12" x 12" white with black streaks	Location 26	Good	120ft ²	Type 1
Vinyl Floor Tile	12" x 12" white with black streaks	Location 30	Good	145ft ²	Type 1
Vinyl Floor Tile	12" x 12" white with black streaks	Location 31	Good	145ft ²	Type 1
Vinyl Floor Tile	12" x 12" white with black streaks	Location 32	Good	195ft ²	Type 1
Acoustic Ceiling Tile	24" x 48" pinhole and lengthwise fissure	Location 1	Good	265ft ²	Type 2
Acoustic Ceiling Tile	24" x 48" pinhole and lengthwise fissure	Location 2	Good	435ft ²	Type 2
Acoustic Ceiling Tile	24" x 48" pinhole and lengthwise fissure	Location 3	Good	50ft ²	Type 2
Acoustic Ceiling Tile	24" x 48" pinhole and lengthwise fissure	Location 6	Good	8ft ²	Type 2
Acoustic Ceiling Tile	24" x 48" pinhole and lengthwise fissure	Location 7	Good	145ft ²	Type 2
Acoustic Ceiling Tile	24" x 48" pinhole and lengthwise fissure	Location 8	Good	145ft ²	Type 2
Acoustic Ceiling Tile	24" x 48" pinhole and lengthwise fissure	Location 9	Good	145ft ²	Type 2
Acoustic Ceiling Tile	24" x 48" pinhole and lengthwise fissure	Location 10	Good	60ft ²	Type 2
Acoustic Ceiling Tile	24" x 48" pinhole and lengthwise fissure	Location 11	Good	705ft ²	Type 2
Acoustic Ceiling Tile	24" x 48" pinhole and lengthwise fissure	Location 12	Good	625ft ²	Type 2
Acoustic Ceiling Tile	24" x 48" pinhole and lengthwise fissure	Location 14	Good	290ft ²	Type 2
Acoustic Ceiling Tile	24" x 48" pinhole and lengthwise fissure	Location 15	Good	145ft ²	Type 2
Acoustic Ceiling Tile	24" x 48" pinhole and lengthwise fissure	Location 16	Good	36ft ²	Type 2
Acoustic Ceiling Tile	24" x 48" pinhole and lengthwise fissure	Location 17	Good	440ft ²	Type 2
Acoustic Ceiling Tile	24" x 48" pinhole and lengthwise fissure	Location 18	Good	145ft ²	Type 2
Acoustic Ceiling Tile	24" x 48" pinhole and lengthwise fissure	Location 19	Good	195ft ²	Type 2
Acoustic Ceiling Tile	24" x 48" pinhole and lengthwise fissure	Location 20	Good	435ft ²	Type 2
Acoustic Ceiling Tile	24" x 48" pinhole and lengthwise fissure	Location 21	Good	625ft ²	Type 2
Acoustic Ceiling Tile	24" x 48" pinhole and lengthwise fissure	Location 23	Good	145ft ²	Type 2

Acoustic Ceiling Tile	24" x 48" pinhole and lengthwise fissure	Location 24	Good	120ft ²	Type 2
Acoustic Ceiling Tile	24" x 48" pinhole and lengthwise fissure	Location 25	Good	120ft ²	Type 2
Acoustic Ceiling Tile	24" x 48" pinhole and lengthwise fissure	Location 26	Good	120ft ²	Type 2
Acoustic Ceiling Tile	24" x 48" pinhole and lengthwise fissure	Location 27	Good	40ft ²	Type 2
Acoustic Ceiling Tile	24" x 48" pinhole and lengthwise fissure	Location 29	Good	120ft ²	Type 2
Acoustic Ceiling Tile	24" x 48" pinhole and lengthwise fissure	Location 30	Good	145ft ²	Type 2
Acoustic Ceiling Tile	24" x 48" pinhole and lengthwise fissure	Location 31	Good	145ft ²	Type 2
Acoustic Ceiling Tile	24" x 48" pinhole and lengthwise fissure	Location 32	Good	195ft ²	Type 2
Acoustic Ceiling Tile	24" x 48" pinhole and lengthwise fissure	Location 33	Good	220ft ²	Type 2
Vinyl Floor Tile	12" x 12" white with blue flecks	Location 4	Good	145ft ²	Type 1
Vinyl Floor Tile	12" x 12" white with blue flecks	Location 11	Good	705ft ²	Type 1
Vinyl Floor Tile	12" x 12" white with black flecks	Location 3	Good	40ft ²	Type 1
Vinyl Floor Tile	12" x 12" white with black flecks	Location 8	Good	145ft ²	Type 1
Vinyl Floor Tile	12" x 12" white with black flecks	Location 9	Good	145ft ²	Type 1
Vermiculite and contaminated cinder block	Loose-Fill	Perimeter and Exterior block wall	Good	N/A	Type 3
Vermiculite	Loose-Fill	3 rd Floor Ceiling Space	Good	N/A	Type 3
Vermiculite	Loose-Fill	Location 18	Good	Ten (10) bags of ACM waste from a previous Vermiculite spill	Type 3
Transite	Cement pipe	Sanitary sewer lines throughout site (presumed)	Good	N/A	Type 1

Lead-Containing Painted Surfaces

Paint Colour	Location	Lead Conc. (%)	Quantity (m ²)	Removal Scope	Minimum Abatement Level
Grey	Location 5	21,000ppm	65ft ²	Remove all	Class 1 or 2 precautions
Grey	Location 16	21,000ppm	40ft ²	Remove all	Class 1 or 2 precautions
Grey	Location 22	21,000ppm	65ft ²	Remove all	Class 1 or 2 precautions
Grey	Location 27	21,000ppm	40ft ²	Remove all	Class 1 or 2 precautions
Black	Location 11	8,400ppm	20ft ²	Remove all	Class 1 or 2 precautions

Black	Doors throughout	8,400ppm	20ft ² per door	Remove all	Class 1 or 2 precautions
Brown	Steel overhang on the exterior	8,400ppm	100ft ²	Remove all	Class 1 or 2 precautions

Other Designated Substances / Hazardous Materials

Material	Description	Location	Comment
Mould	Present asbestos-containing acoustic ceiling tiles	Location 26 - 20ft ² Location 27 - 10ft ²	Removal following Level 1 procedures
Mercury	Fluorescent lamps/lighting tubes	Observed throughout the building.	Dispose of lighting tubes/bulbs following O.Reg 490/09

Note: All quantities are an estimate only and not for pricing purposes. The Contractor is responsible for removing all materials.

PART 2 - PREPARATION

2.1 NOT USED

- .1 Not used.

PART 3 - EXECUTION

3.1 SCOPE OF WORK

- .1 The following abatement sequence is anticipated, but may be altered depending on the contractor's proposed approach, pending review and approval:
 - .1 Removal of "clean" materials and equipment (i.e. carpet, drywall, furniture, equipment, etc.).
 - .2 Removal of known indoor asbestos-containing materials following Type 1 and 2 procedures (i.e. ceiling panels, vinyl floor tile, bagged vermiculite).
 - .3 Removal of vermiculite from cinder block walls via Type 3 abatement by making penetrations at the base of walls and using HEPA vacuums. If amended water can be passed through the wall cavities and collected at the base, that would also be beneficial. This work can be completed from the inside or outside of the building. If indoors, enclosures must be set up.
 - .4 Demolition of the cinder block walls using heavy equipment via Type 3 outdoor abatement. The operator and any workers in the vicinity must wear PPE, including Tyvek suits and respirators. A decontamination (shower) area must also be utilized by the workers. During this work, amended water should be sprayed/misted throughout the area to control dust. Water runoff would need containment and filtering prior to disposal or disposed of as hazardous waste.
 - .5 The site must be cleaned continuously to control dust using amended water spray/mist and HEPA vacuums.
 - .6 Once waste is separated and removed from site, the area will be inspected for cleanliness.

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- .7 Collection and submission of representative TCLP samples for analysis and characterization of all non-ACM waste for disposal purposes.
- .2 Minimum of Type 1 removal/disposal of all ACM vinyl floor tile in accordance with O.Reg. 278/05.
- .3 Minimum of Type 2 removal/disposal of all acoustic ceiling tiles in accordance with O.Reg. 278/05.
- .4 Minimum of Type 1 removal/disposal of all Transite cement products in accordance with O.Reg. 278/05.
- .5 Removal and disposal of all mercury-containing thermostats and all fluorescent light tubes in accordance with O.Reg 490/09.
- .6 Removal of mould-impacted building materials in accordance with EACO Mould Abatement Guideline.
- .7 Removal and disposal of all lead-containing paint on doors and door frames, and exterior structural material in accordance with the Ontario Ministry of Labour Guideline - Lead on Construction Projects, April 2011, and the Environmental Abatement Council of Ontario (EACO) Lead Guideline for Construction, Renovation, Maintenance or Repair, October 2014.

PART 1 - GENERAL

1.1 SUMMARY

- .1 Comply with requirements of this Section when performing the following work in compliance with Ontario Regulation 278/05 - Designated Substance - Asbestos on Construction Projects and in Buildings and Repair Operations:
 - .1 Removing non-friable asbestos-containing materials, other than ceiling tiles, if the material is removed without being broken, cut, drilled, abraded, ground, sanded or vibrated.
 - .2 Break, cut, grind, sand, drill, scrape, vibrate or abrade non-friable asbestos-containing materials using non-powered hand-held tools, and the material is wetted to control the spread of dust or fibres.
 - .3 Removing ceiling tiles that are asbestos-containing material, if the tiles cover an area less than 7.5 square metres and are removed without being broken, cut, drilled, abraded, ground, sanded or vibrated.

1.2 SECTIONS INCLUDE

- .1 Requirements and procedures for asbestos abatement of non-friable asbestos-containing materials.

1.3 REFERENCES

- .1 O.Reg. 278/05, Designated Substance - Asbestos on Construction Projects and in Buildings and Repair Operations. A Guide to the Regulations respecting Asbestos on Construction Projects and in Buildings and Repair Operations, 2007.
- .2 A Guide to the Regulations respecting Asbestos on Construction Projects and in Buildings and Repair Operations released in November 2007, <http://www.labour.gov.on.ca/english/hs/asbestos/index.html>.
- .3 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-1.205-94, Sealer for Application of Asbestos Fibre Releasing Materials.
- .4 Department of Justice Canada (Jus)
 - .1 Canadian Environmental Protection Act, 1999 (CEPA).
- .5 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Safety Data Sheets (SDS).
- .6 Transport Canada (TC)
 - .1 Transportation of Dangerous Goods Act, 1992 (TDGA).
- .7 Underwriters' Laboratories of Canada (ULC).
- .8 O. Reg. 490/09, Designated Substances. Occupational Health and Safety Act.
- .9 Ontario Environmental Protection Act, General - Waste Management, R.R.O.

1990, Regulation 347

- .10 Canada Labour Code, Part II.
- .11 Canada Occupational Health and Safety Regulations (COHSR, SOR/86-304).
- .12 Public Services and Procurement Canada (PSPC) Asbestos Management Standard
 - .1 <https://www.tpsgc-pwgsc.gc.ca/biens-property/ami-asb/nga-ams-eng.html>

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 Representatives or designated representatives, and representatives of 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 and 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 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 SUBMITTALS

- .1 Submittals in accordance with Section 01 11 00 and 01 33 00.
- .2 Submit proof satisfactory to Departmental Representative that suitable arrangements have been made to dispose of asbestos-containing waste in accordance with requirements of authority having jurisdiction.
- .3 Submit Provincial/Territorial and/or local requirements for Notice of Project Form.
- .4 Submit proof of Contractor's Asbestos Liability Insurance.
- .5 Submit to Departmental Representative necessary permits for transportation and disposal of asbestos-containing waste and proof that asbestos-containing waste has been received and properly disposed.
- .6 Submit proof that all asbestos workers and/or supervisor have received appropriate training and education by a competent person in the hazards of asbestos exposure, good personal hygiene and work practices while working in Asbestos Work Areas, and the use, cleaning and disposal of respirators and protective clothing.
- .7 Submit proof satisfactory to Departmental Representative that employees have respirator fitting and testing. Workers must be fit tested (irritant smoke test) with respirator that is personally issued.

1.6 QUALITY ASSURANCE

- .1 Regulatory Requirements: comply with Federal, Provincial (Ontario), and local requirements pertaining to asbestos, provided that in case of conflict among these requirements or with these specifications, more stringent requirement applies. Comply with regulations in effect at time Work is performed.
- .2 Health and Safety:
 - .1 Perform construction occupational health and safety in accordance with Section 01 35 29.
 - .2 Safety Requirements: worker protection.
 - .3 Protective equipment and clothing to be worn by workers while in Asbestos Work Area include:
 - .1 Air purifying half-mask respirator 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.
- .3 Eating, drinking, chewing, and smoking are not permitted in Asbestos Work Area.
- .4 Before leaving Asbestos Work Area, the worker can decontaminate his or her protective clothing by using a vacuum equipped with a HEPA filter, or by damp wiping, before removing the protective clothing, or, if the protective clothing will not be reused, place it in a container for dust and waste. The container to be dust tight, suitable for asbestos waste, impervious to asbestos, identified as asbestos waste, cleaned with a damp cloth or a vacuum equipped with a HEPA filter immediately before removal from the work area, and removed from the work area frequently and at regular intervals.
- .5 Facilities for washing hands and face shall be provided within or close to the Asbestos Work Area.
- .6 Ensure workers wash hands and face when leaving Asbestos Work Area.
- .7 Ensure that no person required to enter an Asbestos Work Area has facial hair that affects seal between respirator and face.

1.7 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 20.
- .2 Remove from site and dispose of packaging materials at appropriate recycling facilities.
- .3 Collect and separate for disposal paper, plastic, polystyrene, corrugated cardboard, packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan.
- .4 Separate for reuse and recycling and place in designated waste containers in accordance with Waste Management Plan.
- .5 Place materials defined as hazardous or toxic in designated containers.

- .6 Handle and dispose of hazardous materials in accordance with the Ontario Provincial, CEPA, TDGA, Regional and Municipal regulations.
- .7 Fold up metal banding, flatten and place in designated area for recycling.
- .8 Disposal of asbestos waste generated by removal activities must comply with Federal, Provincial, Territorial and Municipal regulations. Dispose of asbestos waste in sealed double thickness 0.15 mm thick (6 mil) bags or leak proof drums. Label containers with appropriate warning labels.
- .9 Provide manifests describing and listing waste created. Transport containers by approved means to licensed landfill for burial.

1.8 EXISTING CONDITIONS

- .1 Information pertaining to ACM to be handled, removed, or otherwise disturbed and disposed of during this project, including the report entitled "Designated Substance and Hazardous Materials Assessment Report Administrative Building #2, Saint-Regis, Akwesasne - WSP Canada Inc. (WSP Project 181-09302-15), March 31, 2020", shall be made available upon request.
- .2 Notify Departmental Representative of friable material discovered during Work and not apparent from drawings, specifications, or report pertaining to Work. Do not disturb such material pending instructions from Departmental Representative.

1.9 SCHEDULING

- .1 Hours of Work: perform work involving abatement as per agreement with Departmental Representative.

1.8 OWNER'S INSTRUCTIONS

- .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 Drop Sheets:
 - .1 Polyethylene: 0.15 mm thick.
 - .2 FR polyethylene: 0.15 mm thick woven fibre reinforced fabric bonded both sides with polyethylene.
- .2 Wetting Agent: 50% polyoxyethylene ester and 50% polyoxyethylene ether mixed with water in a concentration to provide thorough wetting of asbestos-containing material.
- .3 Waste Containers: contain waste in two separate containers.
 - .1 Inner container: 0.15 mm thick sealable polyethylene waste bag.
 - .2 Outer container: sealable metal or fibre type where there are sharp objects included in waste material; otherwise outer container may be sealable metal or fibre type or second 0.15 mm thick sealable polyethylene bag.
 - .3 Labelling requirements: affix pre-printed cautionary asbestos warning in both official languages that is visible when ready for removal to disposal site.
- .4 Slow-drying sealer: non-staining, clear, water-dispersible type that remains tacky on surface for at least 8 hours and designed for purpose of trapping residual asbestos fibres.
- .5 Tape: fibreglass-reinforced duct tape suitable for sealing polyethylene under both dry conditions and wet conditions using amended water.

PART 3 - EXECUTION

3.1 PROCEDURES

- .1 Do construction occupational health and safety in accordance with Section 01 35 29.
- .2 Before beginning Work, isolate Asbestos Work Area using, minimum, preprinted cautionary asbestos warning signs in both official languages that are visible at access routes to Asbestos Work Area.
 - .1 Remove visible dust from surfaces in the work area where dust is likely to be disturbed during course of work.
 - .2 Use HEPA vacuum or damp cloths where damp cleaning does not create a hazard and is otherwise appropriate.
 - .3 Do not use compressed air to clean up or remove dust from any surface.
- .3 Prevent spread of dust from Asbestos Work Area using measures appropriate to work to be done.
 - .1 Use FR polyethylene drop sheets over flooring such as carpeting that absorbs dust and over flooring in Asbestos Work Area where dust and contamination cannot otherwise be safely contained. Drop sheets are not to be reused.

- .4 Wet materials containing asbestos to be cut, ground, abraded, scraped, drilled, or otherwise disturbed unless wetting creates hazard or causes damage.
 - .1 Use garden reservoir type low-velocity fine-mist sprayer.
 - .2 Perform Work to reduce dust creation to lowest levels practicable.
 - .3 Work will be subject to visual inspection and air monitoring.
 - .4 Contamination of surrounding areas indicated by visual inspection or air monitoring will require complete enclosure and clean-up of affected areas.

- .5 Frequently and at regular intervals during Work and immediately on completion of work:
 - .1 Dust and waste to be cleaned up and removed using a vacuum equipped with a HEPA filter, or by damp mopping or wet sweeping, and placed in a waste container.
 - .2 Drop sheets to be wetted and placed in a waste container as soon as practicable.

- .6 Cleanup:
 - .1 Place dust and asbestos-containing waste in sealed dust-tight waste bags. Treat drop sheets and disposable protective clothing as asbestos waste; wet and fold these items to contain dust, and then place in plastic bags.
 - .2 Clean exterior of each waste-filled bag using damp cloths or HEPA vacuum and place in second clean waste bag immediately prior to removal from Asbestos Work Area.
 - .3 Seal waste bags and remove from site. Dispose of in accordance with requirements of Provincial (Ontario) and Federal Authority having jurisdiction. Supervise dumping and ensure that dump operator is fully aware of hazardous nature of material to be dumped and that the appropriate guidelines and regulations for asbestos disposal are followed.
 - .4 Perform final thorough clean-up of Work areas and adjacent areas affected by Work using HEPA vacuum.

PART 1 - GENERAL

1.1 SUMMARY

- .1 Comply with requirements of this Section when performing the following work in compliance with Ontario Regulation 278/05 - Designated Substance - Asbestos on Construction Projects and in Buildings and Repair Operations:
 - .1 Removing all or part of a false ceiling to obtain access to a work area, if asbestos-containing material is likely lying on the surface of the false ceiling.
 - .2 Removal or disturbance of one square metre or less of friable asbestos-containing material during the repair, alteration, maintenance or demolition of all or part of machinery or equipment, or of a building.
 - .3 Removing non-friable asbestos-containing materials by breaking, cutting, drilling, abrading, grounding, sanding or vibrating if:
 - .1 The material is not wetted to control the spread of dust or fibres, and
 - .2 The work is done only by means of non-powered hand-held tools.
 - .4 Removing non-friable asbestos-containing materials by breaking, cutting, drilling, abrading, grounding, sanding or vibrating if the work is done by means of power tools that are attached to dust-collecting devices equipped with HEPA filters.
 - .5 Removing of asbestos-containing material from a pipe, duct or similar structure using a glove bag.
 - .6 Removing more than 7.5 square metres of asbestos-containing suspended ceiling tiles.
 - .7 Enclosure of friable asbestos-containing material.
 - .8 Application of tape or sealant or other covering to insulation containing asbestos.

1.2 SECTIONS INCLUDE

- .1 Requirements and procedures for asbestos abatement of asbestos containing materials of the type described within.

1.3 REFERENCES

- .1 O.Reg. 278/05, Designated Substance - Asbestos on Construction Projects and in Buildings and Repair Operations. A Guide to the Regulations respecting Asbestos on Construction Projects and in Buildings and Repair Operations, 2007.
- .2 A Guide to the Regulations respecting Asbestos on Construction Projects and in Buildings and Repair Operations released in November 2007, <http://www.labour.gov.on.ca/english/hs/asbestos/index.html>.
- .3 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-1.205-94, Sealer for Application of Asbestos Fibre Releasing Materials.
- .4 Department of Justice Canada (Jus)

- .1 Canadian Environmental Protection Act, 1999 (CEPA).
- .5 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Safety Data Sheets (SDS).
- .6 Transport Canada (TC)
 - .1 Transportation of Dangerous Goods Act, 1992 (TDGA).
- .7 Underwriters' Laboratories of Canada (ULC).
- .8 O. Reg. 490/09, Designated Substances. Occupational Health and Safety Act.
- .9 Ontario Environmental Protection Act, General - Waste Management, R.R.O. 1990, Regulation 347.
- .10 Canada Labour Code, Part II.
- .11 Canada Occupational Health and Safety Regulations (COHSR, SOR/86-304).
- .12 Public Services and Procurement Canada (PSPC) Asbestos Management Standard
 - .1 <https://www.tpsgc-pwgsc.gc.ca/biens-property/ami-asb/nga-ams-eng.html>

1.4 DEFINITIONS

- .1 Amended Water: water with non-ionic surfactant wetting agent added to reduce water tension to allow wetting of fibres.
- .2 Asbestos-Containing Materials (ACMs): materials that contain 0.5 percent or more asbestos by dry weight and are identified under Existing Conditions including fallen materials and settled dust.
- .3 Asbestos Work Area: area where work takes place which will or may disturb ACMs.
- .4 Authorized Visitors: Departmental Representatives or designated representatives, and representatives of regulatory agencies.
- .5 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 and 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.
- .6 Friable Materials: material that when dry can be crumbled, pulverized or powdered by hand pressure and includes such material that is crumbled, pulverized or powdered.
- .7 Glove Bag: prefabricated glove bag as follows:
 - .1 Minimum thickness 0.25 mm (10 mil) polyvinyl-chloride bag.
 - .2 Integral 0.25 mm (10 mil) thick polyvinyl-chloride gloves and elastic ports.

- .3 Equipped with reversible double pull double throw zipper on top and at approximately mid-section of the bag.
- .4 Straps for sealing ends around pipe.

- .8 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 dimension at 99.97% efficiency.

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

- .10 Occupied Area: any area of building or work site that is outside Asbestos Work Area.

- .11 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.

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

1.5 SUBMITTALS

- .1 Submittals in accordance with Sections 01 11 00 and 01 33 00.

- .2 Submit proof satisfactory to Departmental Representative that suitable arrangements have been made to dispose of asbestos containing waste in accordance with requirements of authority having jurisdiction.

- .3 Submit Provincial (Ontario) and/or local requirements for Notice of Project Form.

- .4 Submit proof of Contractor's Asbestos Liability Insurance.

- .5 Submit to Departmental Representative necessary permits for transportation and disposal of asbestos containing waste and proof that asbestos containing waste has been received and properly disposed.

- .6 Submit proof satisfactory to Departmental Representative that all asbestos workers have received appropriate training and education by a competent person in the hazards of asbestos exposure, good personal hygiene, entry and exit from Asbestos Work Area, aspects of work procedures and protective measures while working in Asbestos Work Areas, and the use, cleaning and disposal of respirators and protective clothing.

- .7 Submit proof that supervisory personnel have attended asbestos abatement course, of not less than two days duration, approved by Departmental Representative. Minimum of one supervisor for every ten workers.

- .8 Submit WSIB status and transcription of insurance.

- .9 Submit documentation including test results, fire and flammability data,

and Material Safety Data Sheets (MSDS) for chemicals or materials including:

- .1 Encapsulants.
 - .2 Amended water.
 - .3 Slow drying sealer.
- .10 Submit proof satisfactory to Departmental Representative that employees have respirator fitting and testing. Workers must be fit tested (irritant smoke test) with respirator that is personally issued.

1.6 QUALITY ASSURANCE

- .1 Regulatory Requirements: comply with Federal, Provincial (Ontario) and local requirements pertaining to asbestos, provided that in case of conflict among these requirements or with these specifications more stringent requirement applies. Comply with regulations in effect at the time work is performed.
- .2 Health and Safety:
 - .1 Do construction occupational health and safety in accordance with Section 01 35 29.
 - .2 Safety Requirements: worker and visitor protection.
 - .1 Protective equipment and clothing to be worn by workers while in Asbestos Work Area include:
 - .1 Air purifying half-mask respirator with N-100, R-100 or P-100 particulate filter, personally issued to worker and marked as to efficiency and purpose, suitable for protection against asbestos and acceptable to Provincial Authority having jurisdiction. The respirator to be fitted so that there is an effective seal between the respirator and the worker's face, unless the respirator is equipped with a hood or helmet. The respirator to be cleaned, disinfected and inspected after use on each shift, or more often if necessary, when issued for the exclusive use of one worker, or after each use when used by more than one worker. The respirator to have damaged or deteriorated parts replaced prior to being used by a worker; and, when not in use, to be stored in a convenient, clean and sanitary location. The employer to establish written procedures regarding the selection, use and care of respirators, and a copy of the procedures to be provided to and reviewed with each worker who is required to wear a respirator. A worker not to be assigned to an operation requiring the use of a respirator unless he or she is physically able to perform the operation while using the respirator.
 - .2 Disposable type protective clothing that does not readily retain or permit penetration of asbestos fibres. Protective clothing to be provided by the employer and worn by every worker who enters the work area, and the protective clothing to consist of a head covering and full body covering that fits snugly at the ankles, wrists and neck, in order to prevent asbestos fibres from

- reaching the garments and skin under the protective clothing. It includes suitable footwear, and it to be repaired or replaced if torn.
- .3 Eating, drinking, chewing, and smoking are not permitted in Asbestos Work Area.
 - .4 Before leaving Asbestos Work Area, the worker can decontaminate his or her protective clothing by using a vacuum equipped with a HEPA filter, or by damp wiping, before removing the protective clothing, or, if the protective clothing will not be reused, place it in a container for dust and waste. The container to be dust tight, suitable for asbestos waste, impervious to asbestos, identified as asbestos waste, cleaned with a damp cloth or a vacuum equipped with a HEPA filter immediately before removal from the work area, and removed from the work area frequently and at regular intervals.
 - .5 Ensure workers wash hands and face when leaving Asbestos Work Area.
 - .6 Ensure that no person required to enter an Asbestos Work Area has facial hair that affects seal between respirator and face.
 - .7 Visitor Protection:
 - .1 Provide protective clothing and approved respirators to Authorized Visitors to work areas.
 - .2 Instruct Authorized Visitors in the use of protective clothing, respirators and procedures.
 - .3 Instruct Authorized Visitors in proper procedures to be followed in entering into and exiting from Asbestos Work Area.

1.7 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate waste materials for reuse and recycling in accordance with 01 74 20.
- .2 Remove from site and dispose of packaging materials at appropriate recycling facilities.
- .3 Collect and separate for disposal paper, plastic, polystyrene, corrugated cardboard, packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan.
- .4 Separate for reuse and recycling and place in designated containers in accordance with Waste Management Plan.
- .5 Place materials defined as hazardous or toxic in designated containers.
- .6 Handle and dispose of hazardous materials in accordance with the CEPA, TDGA, Regional and Municipal regulations.
- .7 Fold up metal banding, flatten and place in designated area for recycling.
- .8 Disposal of asbestos waste generated by removal activities must comply with Federal, Provincial (Ontario) and Municipal regulations. Dispose of asbestos waste in sealed double thickness 0.15 mm thick (6 mil) bags or

leak proof drums. Label containers with appropriate warning labels.

- .9 Provide manifests describing and listing waste created. Transport containers by approved means to licensed landfill for burial.

1.8 EXISTING CONDITIONS

- .1 Information pertaining to ACM to be handled, removed, or otherwise disturbed and disposed of during this project, including the report entitled "Designated Substance and Hazardous Materials Assessment Report Administrative Building #2, Saint-Regis, Akwesasne - WSP Canada Inc. (WSP Project 181-09302-15), March 31, 2020", shall be made available upon request.
- .2 Notify Departmental Representative of friable material discovered during Work and not apparent from drawings, specifications, or report pertaining to Work. Do not disturb such material until instructed by Departmental Representative.

1.9 SCHEDULING

- .1 Hours of Work: perform work involving abatement as per agreement with Departmental Representative.

1.10 OWNER'S INSTRUCTIONS

- .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, in use of glove bag procedures, and in use, cleaning, and disposal of respirators and protective clothing.
- .2 Instruction and training related to respirators includes, at minimum:
 - .1 Fitting of equipment.
 - .2 Inspection and maintenance of equipment.
 - .3 Disinfecting of equipment.
 - .4 Limitations of equipment.
- .3 Instruction and training must be provided by competent, qualified person.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Drop and Enclosure Sheets:
 - .1 Polyethylene: 0.15 mm thick.
 - .2 FR polyethylene: 0.15 mm thick woven fibre reinforced fabric bonded both sides with polyethylene.
- .2 Wetting Agent: 50% polyoxyethylene ester and 50% polyoxyethylene ether mixed with water in concentration to provide thorough wetting of asbestos containing material.

- .3 Waste Containers: contain waste in two separate containers.
 - .1 Inner container: 0.15 mm thick sealable polyethylene bag, or where glove bag method is used, glove bag itself.
 - .2 Outer container: sealable metal or fibre type where there are sharp objects included in waste material; otherwise outer container may be sealable metal or fibre type or second 0.15 mm thick sealable polyethylene bag.
 - .3 Labelling requirements: affix preprinted cautionary asbestos warning, in both official languages, that is visible when ready for removal to disposal site.

- .4 Glove bag:
 - .1 Acceptable materials: Safe-T-Strip products in configuration suitable for Work, or Alternative material approved by addendum during tendering period in accordance with Instructions to Tenderers.
 - .2 The glove bag to be equipped with:
 - .1 Sleeves and gloves that are permanently sealed to the body of the bag to allow the worker to access and deal with the insulation and maintain a sealed enclosure throughout the work period.
 - .2 Valves or openings to allow insertion of a vacuum hose and the nozzle of a water sprayer while maintaining the seal to the pipe, duct or similar structure.
 - .3 A tool pouch with a drain.
 - .4 A seamless bottom and a means of sealing off the lower portion of the bag.
 - .5 A high strength double throw zipper and removable straps, if the bag is to be moved during the removal operation.

- .5 Tape: tape suitable for sealing polyethylene to surfaces under both dry and wet conditions using amended water.

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

- .7 Encapsulant: type conforming to CAN/CGSB-1.205.

PART 3 - EXECUTION

3.1 SUPERVISION

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

3.2 PROCEDURES

- .1 Do construction occupational health and safety in accordance with Section 01 35 29.

- .2 Before beginning Work, at each access to Asbestos Work Area, install warning signs in both official languages in upper case 'Helvetica Medium' letters reading as follows, where number in parentheses indicates font size to be used: 'CAUTION ASBESTOS HAZARD AREA (25 mm) / NO UNAUTHORIZED ENTRY (19 mm) / WEAR ASSIGNED PROTECTIVE EQUIPMENT (19 mm) / BREATHING ASBESTOS DUST MAY CAUSE SERIOUS BODILY HARM (7 mm)'.
 - .1 Use HEPA vacuum or damp cloths where damp cleaning does not create hazard and is otherwise appropriate.
 - .2 Do not use compressed air to clean up or remove dust from any surface.
- .3 Before beginning Work remove visible dust from surfaces in work area where dust is likely to be disturbed during course of work.
 - .1 Use HEPA vacuum or damp cloths where damp cleaning does not create hazard and is otherwise appropriate.
 - .2 Do not use compressed air to clean up or remove dust from any surface.
- .4 Prevent spread of dust from Asbestos Work Area using measures appropriate to work to be done.
 - .1 Use FR polyethylene drop sheets over flooring such as carpeting that absorbs dust and over flooring in work areas where dust or contamination cannot otherwise be safely contained.
 - .2 When removing suspended ceilings and walls themselves do not enclose work area and when removing asbestos-containing material from piping or equipment and "glove bag" method is not used, erect enclosure of polyethylene sheeting around work area, shut off mechanical ventilation system serving work area and seal ventilation ducts to and from work area.
- .5 Before removing suspended ceilings, remove friable material on upper surfaces using HEPA vacuum equipment.
 - .1 Remove and clean surfaces of ceiling panels using HEPA vacuum, wrap clean panels in 0.10 mm thick polyethylene, and store in building as directed by Departmental Representative.
 - .2 Clean "T" grid suspension system, disconnect, wrap in 0.10 mm thick polyethylene, and store in building as directed by Engineer.
- .6 Remove loose material by HEPA vacuum; thoroughly wet friable material containing asbestos to be removed or disturbed before and during Work unless wetting creates hazard or causes damage.
 - .1 Use garden reservoir type low-velocity sprayer or airless spray equipment capable of producing mist or fine spray.
 - .2 Perform Work in a manner to reduce dust creation to lowest levels practicable.
- .7 Pipe Insulation Removal Using Glove Bag:
 - .1 A glove bag not to be used to remove insulation from a pipe, duct or similar structure if:
 - .1 It may not be possible to maintain a proper seal for any reason including, without limitation:
 - .1 The condition of the insulation.
 - .2 The temperature of the pipe, duct or similar structure.
 - .2 The bag could become damaged for any reason including, without limitation.
 - .1 The type of jacketing.
 - .2 The temperature of the pipe, duct or similar structure.
 - .2 Upon installation of the glove bag, inspect bag for any damage or

defects. If any damage or defects are found, the glove bag is to be repaired or replaced. The glove bag to be inspected at regular intervals for damage and defects, and repair or replaced, as appropriately. The asbestos containing contents of the damaged or defective glove bag found during removal are to be wetted and the glove bag and its contents are to be removed and disposed of in an appropriate waste disposal container. Any damaged or defective glove bags are not be reused.

- .3 Place tools necessary to remove insulation in tool pouch. Wrap bag around pipe and close zippers. Seal bag to pipe with cloth straps.
- .4 Place hands in gloves and use necessary tools to remove insulation. Arrange insulation in bag to obtain full capacity of bag.
- .5 Insert nozzle of garden reservoir type sprayer into bag through valve and wash down pipe and interior of bag thoroughly. Wet surface of insulation in lower section of bag.
- .6 To remove bag after completion of stripping, wash top section and tools thoroughly. Remove air from top section through elasticized valve using a HEPA vacuum. Pull polyethylene waste container over glove bag before removing from pipe. Release one strap and remove freshly washed tools. Place tools in water. Remove second strap and zipper. Fold over into waste container and seal.
- .7 After removal of bag ensure that pipe is free of residue. Remove residue using HEPA vacuum or wet cloths. Ensure that surfaces are free of sludge which after drying could release asbestos dust into atmosphere. Seal exposed surfaces of pipe and ends of insulation with slow drying sealer to seal in any residual fibres.
- .8 Upon completion of Work shift, cover exposed ends of remaining pipe insulation with polyethylene taped in place.

- .8 Work is subject to visual inspection and air monitoring. Contamination of surrounding areas indicated by visual inspection or air monitoring will require complete enclosure and clean-up of affected areas.

- .9 Cleanup:
 - .1 Frequently during Work and immediately after completion of work, clean up dust and asbestos containing waste using HEPA vacuum or by damp mopping.
 - .2 Place dust and asbestos-containing waste in sealed dust tight waste bags. Treat drop sheets and disposable protective clothing as asbestos waste and wet and fold to contain dust and then place in waste bags.
 - .3 Immediately before their removal from Asbestos Work Area and disposal, clean each filled waste bag using damp cloths or HEPA vacuum and place in second clean waste bag.
 - .4 Seal and remove double bagged waste from site. Dispose of in accordance with requirements of Provincial (Ontario) and Federal authority having jurisdiction. Supervise dumping and ensure that dump operator is fully aware of hazardous nature of material to be dumped and that guidelines and regulations for asbestos disposal are followed.
 - .5 Perform final thorough clean-up of Asbestos Work Areas and adjacent areas affected by Work using HEPA vacuum.

3.3 AIR MONITORING

- .1 From beginning of Work until completion of cleaning operations, Departmental Representative will take air samples on daily basis outside of Asbestos Work Area enclosures in accordance with Provincial (Ontario) Occupational Health and Safety Regulations and COHSR requirements.
 - .1 Contractor will be responsible for monitoring inside enclosure in accordance with applicable Occupational Health and Safety Regulations.
- .2 If air monitoring shows that areas outside Asbestos Work Area enclosures are contaminated, enclose, maintain and clean these areas in same manner as that applicable to Asbestos Work Area.
- .3 Ensure that respiratory safety factors are not exceeded.
- .4 During the course of Work, Departmental Representative shall measure fibre content of air outside Work areas by means of air samples analyzed by Phase Contrast Microscopy (PCM).
 - .1 Stop Work when PCM measurements exceed 0.05 f/cc and correct procedures.
- .5 During the course of Work, Departmental Representative shall measure fibre content of air outside Work areas by means of fibrous aerosol monitors (FAM).
 - .1 When FAM readings exceed 0.25 f/cc, adopt more stringent Work procedures immediately and perform PCM test.
 - .2 Stop Work when PCM measurements exceed 0.01 f/cc and correct procedures.
- .6 Final air monitoring to be conducted as follows: After Asbestos Work Area has passed visual inspection and acceptable coat of lock-down agent has been applied to surfaces within enclosure, and appropriate setting period has passed, Departmental Representative will perform air monitoring within Asbestos Work Area by aggressive methods, where provincial regulations require.
 - .1 Final air monitoring results must show fibre levels of less than 0.01 f/cc.
 - .2 If air monitoring results show fibre levels in excess of 0.01 f/cc, re-clean work area and apply another acceptable coat of lock-down agent to surfaces.
 - .3 Repeat as necessary until fibre levels are less than 0.01 f/cc.

3.4 INSPECTION

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

- .2 Final cleanliness and completion.
- .3 No additional costs will be allowed by Contractor for additional labour or materials required to provide specified performance level.

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

PART 1 - GENERAL

1.1 SUMMARY

- .1 Comply with requirements of this Section when performing the following work in compliance with Ontario Regulation 278/05 - Designated Substance - Asbestos on Construction Projects and in Buildings and Repair Operations:
 - .1 Operations involving the removal and/or disturbance of materials that are not classified as Type 1 or Type 2 operations.
 - .2 Removal or disturbance as specified of more than one square metre of friable asbestos-containing (or asbestos-contaminated) material during the repair, alteration, maintenance or demolition of a building or any machinery or equipment.
 - .3 Breaking, cutting, drilling, abrading, grinding, sanding or vibrating non-friable asbestos-containing material, if the work is done by means of power tools that are not attached to dust-collecting devices equipped with HEPA filters.
 - .4 The spray application of a sealant to friable asbestos-containing material.

1.2 SECTIONS INCLUDE

- .1 Requirements and procedures for asbestos abatement of asbestos containing materials of the type described within.

1.3 REFERENCES

- .1 O.Reg. 278/05, Designated Substance - Asbestos on Construction Projects and in Buildings and Repair Operations. A Guide to the Regulations respecting Asbestos on Construction Projects and in Buildings and Repair Operations, 2007.
- .2 A Guide to the Regulations respecting Asbestos on Construction Projects and in Buildings and Repair Operations released in November 2007, <http://www.labour.gov.on.ca/english/hs/asbestos/index.html>.
- .3 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-1.205-94, Sealer for Application of Asbestos Fibre Releasing Materials.
- .4 Department of Justice Canada (Jus)
 - .1 Canadian Environmental Protection Act, 1999 (CEPA).
- .5 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Safety Data Sheets (SDS).
- .6 Transport Canada (TC)
 - .1 Transportation of Dangerous Goods Act, 1992 (TDGA).
- .7 Underwriters' Laboratories of Canada (ULC).
- .8 O. Reg. 490/09, Designated Substances. Occupational Health and Safety Act.

- .9 Ontario Environmental Protection Act, General - Waste Management, R.R.O. 1990, Regulation 347.
- .10 Canada Labour Code, Part II.
- .11 Canada Occupational Health and Safety Regulations (COHSR, SOR/86-304).
- .12 Public Services and Procurement Canada (PSPC) Asbestos Management Standard
.1 <https://www.tpsgc-pwgsc.gc.ca/biens-property/ami-asb/nga-ams-eng.html>
- .13 Environmental Abatement Council of Ontario (EACO) Vermiculite Guideline, January 2015.

1.4 DEFINITIONS

- .1 Airlock: system for permitting ingress or egress without permitting air movement between contaminated area and uncontaminated area, typically consisting of two curtained doorways at least 2 m apart.
- .2 Amended Water: water with a non-ionic surfactant wetting agent added to reduce water tension to allow wetting of fibres.
- .3 Asbestos-Containing 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 Areas: area where work takes place which will or may disturb ACMs.
- .5 Authorized Visitors: Departmental Representatives or designated representatives, and representatives of 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 and 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 Curtained doorway: arrangement of closures to allow ingress and egress from one room to another while permitting minimal air movement between rooms, typically constructed as follows:
 - .1 Place two overlapping sheets of polyethylene over existing or temporarily framed doorway, secure each along top of doorway, secure vertical edge of one sheet along one vertical side of doorway, and secure vertical edge of other sheet along opposite vertical side of doorway.
 - .2 Reinforce free edges of polyethylene with duct tape and weight bottom edge to ensure proper closing.
 - .3 Overlap each polyethylene sheet at openings not less than 1.5 m on each side.

- .8 DOP Test: testing method used to determine integrity of Negative Pressure unit using dioctyl phthalate (DOP) HEPA-filter leak test.
- .9 Friable Materials: material that when dry can be crumbled, pulverized or powdered by hand pressure and includes such material that is crumbled, pulverized or powdered.
- .10 Glove Bag: prefabricated glove bag as follows:
 - .1 Minimum thickness 0.25 mm (10 mil) polyvinyl-chloride bag.
 - .2 Integral 0.25 mm (10 mil) thick polyvinyl-chloride gloves and elastic ports.
 - .3 Equipped with reversible double pull double throw zipper on top and at approximately mid-section of the bag.
 - .4 Straps for sealing ends around pipe.
- .11 HEPA vacuum: High Efficiency Particulate Air filtered vacuum equipment with a filter system capable of collecting and retaining fibres greater than 0.3 microns in any direction at 99.97% efficiency.
- .12 Negative pressure: system that extracts air directly from work area, filters such extracted air through High Efficiency Particulate Air filtering system, and discharges this air directly outside work area to exterior of building.
 - .1 System to maintain minimum pressure differential of 5 Pa relative to adjacent areas outside of work areas, be equipped with alarm to warn of system breakdown, and be equipped with instrument to continuously monitor and automatically record pressure differences.
- .13 Non-Friable Materials: material that when dry cannot be crumbled, pulverized or powdered by hand pressure.
- .14 Occupied Areas: any area of building or work site that is outside Asbestos Work Area.
- .15 Polyethylene sheeting sealed with tape: polyethylene sheeting of type and thickness specified sealed with tape along edges, around penetrating objects, over cuts and tears, and elsewhere as required to provide continuous polyethylene membrane to protect underlying surfaces from water damage or damage by sealants, and to prevent escape of asbestos fibres through sheeting into clean area.
- .16 Sprayer: garden reservoir type sprayer or airless spray equipment capable of producing mist or fine spray. Must be appropriate capacity for scope of work.

1.5 SUBMITTALS

- .1 Submittals in accordance with applicable Sections, including 01 33 00.
- .2 Before beginning work:
 - .1 Obtain from appropriate agency and submit to Departmental Representative necessary permits for transportation and disposal of asbestos waste. Ensure that dump operator is fully aware of hazardous

- nature of material being dumped, and proper methods of disposal. Submit proof satisfactory to Departmental Representative that suitable arrangements have been made to receive and properly dispose of asbestos waste.
- .2 Submit proof satisfactory to Departmental Representative that all asbestos workers have received appropriate training and education by a competent person on hazards of asbestos exposure, good personal hygiene, entry and exit from Asbestos Work Area, aspects of work procedures and protective measures while working in Asbestos Work Areas, and the use, cleaning and disposal of respirators and protective clothing. Submit proof of attendance in form of certificate.
 - .3 Ensure supervisory personnel have attended asbestos abatement course, of not less than two days duration, approved by Departmental Representative. Submit proof of attendance in form of certificate. Minimum of one Supervisor for every ten workers.
 - .4 Submit layout of proposed enclosures and decontamination facilities to Departmental Representative for review.
 - .5 Submit documentation including test results for sealer proposed for use.
 - .6 Submit Provincial/Territorial and/or local requirements for Notice of Project form.
 - .7 Submit proof of Contractor's Asbestos Liability Insurance.
 - .8 Submit proof satisfactory to Departmental Representative that employees have respirator fitting and testing. Workers must be fit tested (irritant smoke test) with respirator that is personally issued.
 - .9 Submit Workplace Safety and Insurance Board status and transcription of insurance.
 - .10 Submit documentation including test results, fire and flammability data, and Safety Data Sheets (SDS) for chemicals or materials including but not limited to following:
 - .1 Encapsulants.
 - .2 Amended water.
 - .3 Slow-drying sealer.

1.6 QUALITY ASSURANCE

- .1 Regulatory Requirements: comply with Federal, Provincial (Ontario) and local requirements pertaining to asbestos, provided that in case of conflict among those requirements or with these specifications more stringent requirement applies. Comply with regulations in effect at time work is performed.
- .2 Health and Safety:
 - .1 Do construction occupational health and safety in accordance with Section 01 35 29.
 - .2 Safety Requirements: worker and visitor protection.
 - .1 Protective equipment and clothing to be worn by workers while in Asbestos Work Area includes:
 - .1 Air purifying full face-mask respirator, powered air purifying respirator (PAPR), or supplied air respirator with N-100, R-100 or P-100 particulate filter, personally

issued to worker and marked as to efficiency and purpose, suitable for protection against asbestos and acceptable to Provincial Authority having jurisdiction. The respirator to be fitted so that there is an effective seal between the respirator and the worker's face, unless the respirator is equipped with a hood or helmet. The respirator to be cleaned, disinfected and inspected after use on each shift, or more often if necessary, when issued for the exclusive use of one worker, or after each use when used by more than one worker. The respirator to have damaged or deteriorated parts replaced prior to being used by a worker; and, when not in use, to be stored in a convenient, clean and sanitary location. The employer to establish written procedures regarding the selection, use and care of respirators, and a copy of the procedures to be provided to and reviewed with each worker who is required to wear a respirator. A worker not to be assigned to an operation requiring the use of a respirator unless he or she is physically able to perform the operation while using the respirator.

- .2 Disposable type protective clothing that does not readily retain or permit penetration of asbestos fibres. Protective clothing to be provided by the employer and worn by every worker who enters the work area, and the protective clothing to consist of a head covering and full body covering that fits snugly at the ankles, wrists and neck, in order to prevent asbestos fibres from reaching the garments and skin under the protective clothing. It includes suitable footwear, and it to be repaired or replaced if torn. Requirements for each worker:
 - .1 Remove street clothes in clean change room and put on respirator with new filters or reusable filters that have been tested as satisfactory, clean coveralls and head covers before entering Equipment and Access Rooms or Asbestos Work Area. Store street clothes, uncontaminated footwear, towels, and similar uncontaminated articles in clean change room.
 - .2 Remove gross contamination from clothing before leaving work area then proceed to Equipment and Access Room and remove clothing except respirators. Place contaminated work suits in receptacles for disposal with other asbestos - contaminated materials. Leave reusable items except respirator in Equipment and Access Room. Still wearing the respirator proceed naked to showers. Using soap and water wash body and hair thoroughly. Clean outside of respirator with soap and water while showering; remove respirator; remove filters and wet them and dispose of filters in container provided for purpose; and wash and rinse inside of respirator. When not in use in work

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

1.7 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate waste materials for reuse and recycling in accordance with 01 74 20.
- .2 Remove from site and dispose of packaging materials at appropriate recycling facilities.
- .3 Collect and separate for disposal paper, plastic, polystyrene, corrugated cardboard, packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan.
- .4 Separate for reuse and recycling and place in designated containers in accordance with Waste Management Plan.
- .5 Place materials defined as hazardous or toxic in designated containers.

- .6 Handle and dispose of hazardous materials in accordance with the CEPA, TDGA, Regional and Municipal regulations.
- .7 Fold up metal banding, flatten and place in designated area for recycling.
- .8 Disposal of asbestos waste generated by removal activities must comply with Federal, Provincial (Ontario) and Municipal regulations. Dispose of asbestos waste in sealed double thickness 0.15 mm thick (6 mil) bags or leak proof drums. Label containers with appropriate warning labels.
- .9 Provide manifests describing and listing waste created. Transport containers by approved means to licensed landfill for burial.

1.8 EXISTING CONDITIONS

- .1 Information pertaining to ACM to be handled, removed, or otherwise disturbed and disposed of during this project, including the report entitled "Designated Substance and Hazardous Materials Assessment Report Administrative Building #2, Saint-Regis, Akwesasne - WSP Canada Inc. (WSP Project 181-09302-15), March 31, 2020", shall be made available upon request.
- .2 Notify Departmental Representative of friable material discovered during Work and not apparent from drawings, specifications, or report pertaining to Work. Do not disturb such material until instructed by Departmental Representative.

1.9 SCHEDULING

- .1 Not later than ten (10) days before beginning Work on this Project notify following in writing:
 - .1 Appropriate Regional or Zone Director of Medical Services Branch, Health Canada.
 - .2 Regional Office of Labour Canada.
 - .3 Provincial/Territorial, Department of Labour.
 - .4 Disposal Authority.
- .2 Inform sub-trades of presence of asbestos containing materials identified in Existing Conditions.
- .3 Submit to Departmental Representative copy of notifications prior to start of Work.
- .4 Hours of Work: perform work involving abatement as per agreement with Departmental Representative.

1.10 OWNER'S INSTRUCTIONS

- .1 Before beginning Work, provide to Departmental Representative satisfactory proof that every worker has had instruction and training in hazards of asbestos exposure, in personal hygiene including dress and showers, in entry and exit from Asbestos Work Area, in aspects of work procedures including

glove bag procedures, and in use, cleaning, and disposal of respirators and protective clothing.

- .2 Instruction and training related to respirators includes, at minimum:
 - .1 Proper fitting of equipment.
 - .2 Inspection and maintenance of equipment.
 - .3 Disinfecting of equipment.
 - .4 Limitations of equipment.
- .3 Instruction and training must be provided by competent, qualified person.
- .4 Supervisory personnel to complete required training.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Polyethylene: minimum 0.15 mm thick unless otherwise specified; in sheet size to minimize joints.
- .2 FR polyethylene: minimum 0.15 mm thick, woven fibre reinforced fabric bonded both sides with polyethylene.
- .3 Tape: fibreglass-reinforced duct tape suitable for sealing polyethylene under both dry conditions and wet conditions using amended water.
- .4 Wetting agent: 50% polyoxyethylene ester and 50% polyoxyethylene ether, or other material approved by Departmental Representative, mixed with water in concentration to provide adequate penetration and wetting of asbestos-containing material.
- .5 Waste Containers: contain waste in two separate containers.
 - .1 Inner container: 0.15 mm thick sealable polyethylene bag, or where glove bag method is used, glove bag itself.
 - .2 Outer container: sealable metal or fibre type where there are sharp objects included in waste material; otherwise outer container may be sealable metal or fibre type or second 0.15 mm thick sealable polyethylene bag.
 - .3 Labelling requirements: affix preprinted cautionary asbestos warning, in both official languages, that is visible when ready for removal to disposal site. Label containers in accordance with Asbestos Regulations. Label in both official languages.
- .6 Glove bag:
 - .1 Acceptable materials: Safe-T-Strip products in configuration suitable for Work, or Alternative material approved by addendum during tendering period in accordance with Instructions to Tenderers.
 - .2 The glove bag to be equipped with:
 - .1 Sleeves and gloves that are permanently sealed to the body of the bag to allow the worker to access and deal with the insulation and maintain a sealed enclosure throughout the work period.
 - .2 Valves or openings to allow insertion of a vacuum hose and the

- nozzle of a water sprayer while maintaining the seal to the pipe, duct or similar structure.
- .3 A tool pouch with a drain.
- .4 A seamless bottom and a means of sealing off the lower portion of the bag.
- .5 A high strength double throw zipper and removable straps, if the bag is to be moved during the removal operation.
- .7 Tape: tape suitable for sealing polyethylene to surfaces under both dry and wet conditions using amended water.
- .8 Slow-drying sealer: non-staining, clear, water-dispersible type that remains tacky on surface for at least 8 hours and designed for purpose of trapping residual asbestos fibres.
- .9 Sealer: flame spread and smoke developed rating less than 50.
- .10 Encapsulants: Type conforming to CAN/CGSB-1.205 and approved by the Fire Commissioner of Canada.
- .11 Sprayed fireproofing: ULC labelled and listed asbestos-free to provide degree of fire or thermal protection required in accordance with applicable Sections.

PART 3 - EXECUTION

3.1 PREPARATION

- .1 Do construction occupational health and safety in accordance with Section 01 35 29.
- .2 Work Areas:
 - .1 Shut off and isolate air handling and ventilation systems to prevent fibre dispersal to other building areas during work phase. Conduct smoke tests to ensure that duct work is airtight. Seal and caulk joints and seams of active return air ducts within Asbestos Work Area.
 - .2 Preclean moveable furniture within proposed work areas using HEPA vacuum and remove from work areas.
 - .3 Preclean fixed casework, plant, and equipment within proposed work areas, using HEPA vacuum and cover with polyethylene sheeting sealed with tape.
 - .4 Clean proposed work areas using, where practicable, HEPA vacuum cleaning equipment. If not practicable, use wet cleaning method. Do not use methods that raise dust, such as dry sweeping, or vacuuming using other than HEPA vacuum equipment.
 - .5 The spread of dust from the work area to be prevented by:
 - .1 Using enclosures of polyethylene or other suitable material that is impervious to asbestos (including, if the enclosure material is opaque, one or more transparent window areas to allow observation of the entire work area from outside the enclosure), if the work area is not enclosed by walls.
 - .2 Using curtains of polyethylene sheeting or other suitable material that is impervious to asbestos, fitted on each side

- of each entrance or exit from the work area.
- .6 Put negative pressure system in operation and operate continuously from time first polyethylene is installed to seal openings until final completion of work including final cleanup. Provide continuous monitoring of pressure difference using automatic recording instrument. The system to maintain a negative air pressure of 5 Pa (0.02 inches) of water, relative to the area outside the enclosed area. The system to be inspected and maintained by a competent person prior each use to ensure that there is no air leakage, and if the filter is found to be damaged or defective, it to be replaced before the ventilation system is used.
 - .7 Seal off openings such as corridors, doorways, windows, skylights, ducts, grilles, and diffusers, with polyethylene sheeting sealed with tape.
 - .8 Cover floor and wall surfaces with polyethylene sheeting sealed with tape. Use one layer of FR polyethylene on floors. Cover floors first so that polyethylene extends at least 300 mm up walls then cover walls to overlap floor sheeting.
 - .9 Build airlocks at entrances to and exits from work areas so that work areas are always closed off by one curtained doorway when workers enter or exit.
 - .10 At each access to work areas install warning signs in both official languages in upper case "Helvetica Medium" letters reading as follows where number in parentheses indicates font size to be used: "CAUTION ASBESTOS HAZARD AREA (25 mm) NO UNAUTHORIZED ENTRY (19 mm) WEAR ASSIGNED PROTECTIVE EQUIPMENT (19 mm) BREATHING ASBESTOS DUST MAY CAUSE SERIOUS BODILY HARM (7 mm)".
 - .11 After work area isolation, remove heating, ventilating, and air conditioning filters, pack in sealed plastic bags 0.15 mm minimum thick and treat as contaminated asbestos waste. Remove ceiling - mounted objects such as lights, partitions, other fixtures not previously sealed off, and other objects that interfere with asbestos removal, as directed by Departmental Representative. Use localized water spraying during fixture removal to reduce fibre dispersal.
 - .12 Maintain emergency and fire exits from work areas, or establish alternative exits satisfactory to PWGSC/PSPC Fire Protection Engineer and Provincial/Territorial Fire Marshall Authority having jurisdiction.
 - .13 Where application of water is required for wetting asbestos containing materials, shut off electrical power, provide 24-volt safety lighting and ground fault interrupter circuits on power source for electrical tools, in accordance with applicable CSA Standard. Ensure safe installation of electrical lines and equipment.
 - .14 After preparation of work areas and Decontamination Enclosure Systems, remove designated asbestos containing ceiling tiles within work areas progressively and carefully, clean using HEPA vacuum and damp sponge, wrap clean panels in 0.10 mm minimum thick polyethylene, and dispose of as contaminated waste. Clean "T" grid suspension system within work areas using wet sponge, disconnect grid from hangers, wrap grid members in 0.10 mm minimum thick polyethylene and store in building as directed by Departmental Representative.
 - .15 After preparation of work areas and Decontamination Enclosure Systems, remove plaster ceilings, including lath, furring, channels,

hangers, wires, clips, and dispose of as contaminated waste in specified containers. Spray asbestos debris and immediate work area with amended water to reduce dust, as work progresses.

- .16 After preparation of work areas and Decontamination Enclosure Systems, for the removal of all other asbestos containing materials, remove within work area and dispose of as contaminated waste in specified containers. Spray asbestos debris and immediate work area with amended water to reduce dust, as work progresses.

- .3 Worker Decontamination Enclosure System:
 - .1 Worker Decontamination Enclosure System includes Equipment and Access Room, Shower Room, and Clean Room, as follows:
 - .1 Equipment and Access Room: build Equipment and Access Room between Shower Room and work areas, with two curtained doorways, one to Shower Room and one to work areas. Install portable toilet, waste receptor, and storage facilities for workers' shoes and protective clothing to be reworn in work areas. Build Equipment and Access Room large enough to accommodate specified facilities, other equipment needed, and at least one worker allowing him /her sufficient space to undress comfortably.
 - .2 Shower Room: build Shower Room between Clean Room and Equipment and Access Room, with two curtained doorways, one to Clean Room and one to Equipment and Access Room. Provide one shower for every five workers. Provide constant supply of hot and cold or warm water. Provide piping and connect to water sources and drains. Pump waste water through 5 micrometre filter system acceptable to Departmental Representative before directing into drains. Provide soap, clean towels, and appropriate containers for disposal of used respirator filters.
 - .3 Clean Room: build Clean Room between Shower Room and clean areas outside of enclosures, with two curtained doorways, one to outside of enclosures and one to Shower Room. Provide lockers or hangers and hooks for workers' street clothes and personal belongings. Provide storage for clean protective clothing and respiratory equipment. Install mirror to permit workers to fit respiratory equipment properly.

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

- through 5 micrometre filter system before directing into drains. Provide piping and connect to water sources and drains.
- .3 Holding Room: build Holding Room between Washroom and Unloading Room, with two curtained doorways, one to Washroom and one to Unloading Room. Build Holding Room sized to accommodate at least two waste containers and largest item of equipment used.
 - .4 Unloading Room: build Unloading Room between Holding Room and outside, with two curtained doorways, one to Holding Room and one to outside.
- .5 Construction of Decontamination Enclosures:
- .1 Build suitable framing for enclosures, or use existing rooms where convenient, and line with polyethylene sheeting sealed with tape. Use two layers of FR polyethylene on floors.
 - .2 Build curtained doorways between enclosures so that when people move through or when waste containers and equipment are moved through doorway, one of two closures comprising doorway always remains closed.
- .6 Separation of Work Areas from Occupied Areas:
- .1 Separate parts of building required to remain in use from parts of building used for asbestos abatement by means of airtight barrier system constructed as follows:
 - .1 Build suitable floor to ceiling lumber or metal stud framing, cover with polyethylene sheeting sealed with tape, and apply 9 mm minimum thick plywood. Seal joints between plywood sheets and between plywood and adjacent materials with surface film forming type sealer, to create airtight barrier.
 - .2 Cover plywood barrier with polyethylene sealed with tape, as specified for work areas.
- .7 Maintenance of Enclosures:
- .1 Maintain enclosures in tidy condition.
 - .2 Ensure that barriers and polyethylene linings are effectively sealed and taped. Repair damaged barriers and remedy defects immediately upon discovery.
 - .3 Visually inspect enclosures at beginning of each working period.
 - .4 Use smoke methods to test effectiveness of barriers when directed by Departmental Representative.
- .8 Do not begin Asbestos Abatement work until:
- .1 Arrangements have been made for disposal of waste.
 - .2 For wet stripping techniques, arrangements have been made for containing, filtering, and disposal of waste water.
 - .3 Work areas and decontamination enclosures and parts of building required to remain in use are effectively segregated.
 - .4 Tools, equipment, and materials waste containers are on hand.
 - .5 Arrangements have been made for building security.
 - .6 Warning signs are displayed where access to contaminated areas is possible.
 - .7 Notifications have been completed and other preparatory steps have been taken.

3.2 OUTDOOR TYPE 3 ABATEMENT

- .1 Where Type 3 operations involving friable ACM are carried on outdoors the work area must be separated from the surrounding area by barricades, fencing or other means, with all necessary hazard signage.
- .2 Steps must be taken to ensure that dust and waste cannot fall freely from one level to another, or leave the immediate work area. This may include the use of drop sheets made of polyethylene or other material that is impervious to asbestos on work surfaces. Care should be taken to ensure that the material used does not create a slipping hazard that may put workers at risk of falling.
- .3 All materials must be wetted continuously before and during removal. The work areas shall be kept free of debris and washed down with amended water after completion of the clean-up and removal.
- .4 A decontamination facility must be located as close as practicable to the work area. The decontamination facility must consist of:
 - .1 A room suitable for changing into protective clothing and for storing contaminated protective clothing and equipment.
 - .2 A shower room.
 - .3 A room suitable for changing into street clothes and for storing clean clothes and equipment.
- .5 The decontamination facility must be constructed so that anyone entering or leaving the work area must pass through each room. Customized trailers outfitted with three room decontamination facilities are available for use as decontamination facilities. These units can be moved from one work site to the next and are commonly used for outdoor work.

3.3 SUPERVISION

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

3.4 ASBESTOS REMOVAL

- .1 Before removing asbestos:
 - .1 Prepare site.
 - .2 Spray asbestos material with water containing specified wetting agent, using airless spray equipment capable of providing "mist" application to prevent release of fibres. Saturate asbestos material sufficiently to wet it to substrate without causing excess dripping. Spray asbestos material repeatedly during work process to maintain saturation and to minimize asbestos fibre dispersion.
- .2 Remove saturated asbestos material in small sections. Do not allow saturated asbestos to dry out. As it is being removed pack material in sealable plastic bags 0.15 mm minimum thick and place in labelled containers for transport.

- .3 Seal filled containers. Clean external surfaces thoroughly by wet sponging. Remove from immediate working area to Staging Area. Clean external surfaces thoroughly again by wet sponging before moving containers to decontamination Washroom. Wash containers thoroughly in decontamination Washroom, and store in Holding Room pending removal to Unloading Room and outside. Ensure that containers are removed from Holding Room by workers who have entered from uncontaminated areas dressed in clean coveralls.
- .4 After completion of stripping work, wire brushed and wet sponged surfaces from which asbestos has been removed to remove visible material. During this work keep surfaces wet.
- .5 Where Departmental Representative decides complete removal of asbestos-containing material is impossible due to obstructions such as structural members or major service elements, and provides written direction, encapsulate material as follows:
 - .1 Apply surface film forming type sealer to provide dry film thickness over sprayed asbestos surfaces. Apply using airless spray equipment to avoid blowing off fibres. Apply penetrating type sealer to penetrate existing sprayed asbestos surfaces uniformly to substrate.
- .6 After wire brushing and wet sponging to remove visible asbestos, and after encapsulating asbestos containing material impossible to remove, wet clean entire work area including Equipment and Access Room, and equipment used in process. After 24-hour period to allow for dust settling, wet clean these areas and objects again. During this settling period no entry, activity, or ventilation will be permitted. After second 24-hour period under same conditions, clean these areas and objects again using HEPA vacuum followed by wet cleaning. After inspection by Departmental Representative apply continuous coat of slow drying sealer to surfaces of work area. Allow at least 16 hours with no entry, activity, ventilation, or disturbance other than operation of negative pressure units during this period.
- .7 Work is subject to visual inspection and air monitoring. Contamination of surrounding areas indicated by visual inspection or air monitoring will require complete enclosure and clean-up of affected areas.
- .8 Cleanup:
 - .1 Frequently during Work and immediately after completion of work, clean up dust and asbestos containing waste using HEPA vacuum or by damp mopping.
 - .2 Place dust and asbestos containing waste in sealed dust tight waste bags. Treat drop sheets and disposable protective clothing as asbestos waste and wet and fold to contain dust and then place in waste bags.
 - .3 Immediately before their removal from Asbestos Work Area and disposal, clean each filled waste bag using damp cloths or HEPA vacuum and place in second clean waste bag.
 - .4 Seal and remove double bagged waste from site. Dispose of in accordance with requirements of Provincial (Ontario) and Federal authority having jurisdiction. Supervise dumping and ensure that dump operator is fully aware of hazardous nature of material to be dumped and that guidelines and regulations for asbestos disposal are followed.

- .5 Perform final thorough clean-up of Asbestos Work Areas and adjacent areas affected by Work using HEPA vacuum.

3.5 FINAL CLEANUP

- .1 Following cleaning specified above, and when air sampling shows that asbestos levels on both sides of seals do not exceed 0.01 fibres/cc as determined by membrane filter method at 400-500X magnification phase contrast illumination, as described in NIOSH Method 94-113 or equivalent, proceed with final cleanup.
- .2 Remove polyethylene sheet by rolling it away from walls to centre of work area. Vacuum visible asbestos containing particles observed during cleanup, immediately, using HEPA vacuum equipment.
- .3 Place polyethylene seals, tape, cleaning material, clothing, and other contaminated waste in plastic bags and sealed labelled waste containers for transport.
- .4 Include in clean-up Work areas, Equipment and Access Room, Washroom, Shower Room, and other contaminated enclosures.
- .5 Include in clean-up sealed waste containers and equipment used in Work and remove from work areas, via Container and Equipment Decontamination Enclosure System, at appropriate time in cleaning sequence.
- .6 Conduct final check to ensure that no dust or debris remains on surfaces as result of dismantling operations and carry out air monitoring again to ensure that asbestos levels in building do not exceed 0.01 fibres/cc. Repeat cleaning using HEPA vacuum equipment, or wet cleaning methods where feasible, in conjunction with sampling until levels meet the criteria.
- .7 As work progresses, and to prevent exceeding available storage capacity on site, remove sealed and labelled containers containing asbestos waste and dispose of to authorized disposal area in accordance with requirements of disposal authority. Ensure that each shipment of containers transported to dump is accompanied by Contractor's representative to ensure that dumping is done in accordance with governing regulations.

3.6 RE-ESTABLISHMENT OF OBJECTS AND SYSTEMS

- .1 When cleanup is complete:
 - .1 Re-establish objects and furniture moved to temporary locations in course of Work, in their proper positions.
 - .2 Re-secure mounted objects removed in course of Work in their former positions.
 - .3 Re-establish mechanical and electrical systems in proper working order. Install new filters.
 - .4 Repair or replace objects damaged in the course of Work, as directed by Departmental Representative.

3.7 AIR MONITORING

- .1 From beginning of Work until completion of cleaning operations, Departmental Representative to take air samples on daily basis outside of work area enclosure in accordance with Health Canada recommendations.
 - .1 Contractor will be responsible for monitoring inside enclosure in accordance with applicable Provincial (Ontario) Occupational Health and Safety Regulations.

- .2 Use results of air monitoring inside work area to establish type of respirators to be used. Workers may be required to wear sample pumps for up to full-shift periods.
 - .1 If fibre levels are above safety factor of respirators in use, stop abatement, apply means of dust suppression, and use higher safety factor in respiratory protection for persons inside enclosure.
 - .2 If air monitoring shows that areas outside work area enclosures are contaminated, enclose, maintain and clean these areas, in same manner as that applicable to work areas.

- .3 During course of Work, Departmental Representative to measure fibre content of air outside work areas by means air samples analyzed by Phase Contrast Microscopy (PCM).
 - .1 Stop Work when PCM measurements exceed 0.05 f/cc and correct procedures.

- .4 Final air monitoring to be conducted as follows: After Asbestos Work Area has passed visual inspection and acceptable coat of lock-down agent has been applied to surfaces within enclosure, and appropriate setting period has passed, Departmental Representative will perform air monitoring within Asbestos Work Area by aggressive methods, where provincial regulations require.
 - .1 Final air monitoring results must show fibre levels below 0.01 f/cc.
 - .2 If air monitoring results show fibre levels in excess of 0.01 f/cc, re-clean work area and apply another acceptable coat of lock-down agent to surfaces.
 - .3 Repeat as necessary until fibre levels are less than 0.01 f/cc.

3.8 INSPECTION

- .1 Perform inspection of Asbestos Work Area to confirm compliance with specification and governing authority requirements. Deviations from these requirements that have not been approved in writing by Departmental Representative may result in Work stoppage, at no cost to Departmental Representative.

- .2 Departmental Representative will inspect Work for:
 - .1 Adherence to specific procedures and materials.
 - .2 Final cleanliness and completion.
 - .3 No additional costs will be allowed by Contractor for additional labour or materials required to provide specified performance level.

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

PART 1 - GENERAL

1.1 SUMMARY

- .1 Comply with requirements of this Section, in compliance with the Ontario Ministry of Labour Guideline - Lead on Construction Projects, April 2011, and the Environmental Abatement Council of Ontario (EACO) Lead Guideline for Construction, Renovation, Maintenance or Repair, October 2014, when disturbing and/or removing lead-containing paints and materials providing that operations are limited to:
 - .1 Demolition of entire structure without scraping, grinding or cutting through lead-containing paint applications or materials.
 - .2 Operating demolition equipment (e.g. excavator, bulldozer) during demolition where lead-based paints are present on building materials and are being disturbed.
 - .3 Removal of lead-containing coatings with a chemical gel or paste and fibrous laminated cloth wrap.
 - .4 Removal of lead-containing coatings or materials using a power tool with an effective dust collection system equipped with a HEPA filter.
 - .5 Removal of lead-containing coatings or materials with non-powered hand tool, other than manual scraping and sanding.
 - .6 Work operations that generate an airborne lead concentration of less than 0.05 mg/m3.

1.2 REFERENCES

- .1 Ontario Ministry of Labour
 - .1 Occupational Health and Safety Branch, Guideline Lead On Construction Projects, September 2004, and O. Reg. 490/09 respecting Designated Substances - Lead made under the Occupational Health and Safety Act as amended by O. Reg. 148/12 and O. Reg. 149/12.
- .2 Environmental Abatement Council of Ontario (EACO) - Lead Guideline for Construction, Renovation, Maintenance or Repair, October 2014.
- .3 Department of Justice Canada
 - .1 Canadian Environmental Protection Act, 1999 (CEPA).
- .4 Health Canada
 - .1 Workplace Hazardous Materials Information System (WHMIS), Safety Data Sheets (SDS).
- .5 Human Resources and Social Development Canada (HRSDC)
 - .1 Canada Labour Code Part II, - SOR 86-304 - Occupational Health and Safety Regulations.
- .6 Transport Canada (TC)
 - .1 Transportation of Dangerous Goods Act, 1992 (TDGA).
- .7 U.S. Environmental Protection Agency (EPA)
 - .1 EPA 747-R-95-007-1995, Sampling House Dust for Lead.

- .8 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).
- .9 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.
- .10 Underwriters' Laboratories of Canada (ULC)

1.3 DEFINITIONS

- .1 Authorized Visitors: Departmental Representative or designated representatives.
- .2 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. For protection of underlying surfaces from damage and to prevent lead dust entering in clean area.
- .3 Sprayer: garden reservoir type sprayer or airless spray equipment capable of producing mist or fine spray. Must be appropriate capacity for scope of work.
- .4 Action level: employee exposure, without regard to use of respirators, to airborne concentration of lead of 50 micrograms per cubic meter of air (50 ug/m³) calculated as 8-hour time-weighted average (TWA). Minimum precautions for lead abatement are based on airborne lead concentrations less than 0.05 milligrams per cubic meter of air for removal of lead-based paint by methods noted in paragraph 1.1.
- .5 Competent person: Departmental Representative capable of identifying existing lead hazards in workplace taking corrective measures to eliminate them.
- .6 HEPA vacuum: High Efficiency Particulate Air filtered vacuum equipment with a filter system capable of collecting and retaining fibres greater than 0.3 microns in any direction at 99.97% efficiency.
- .7 Lead dust: wipe sampling on vertical surfaces and/or horizontal surfaces, dust and debris is considered to be lead-contaminated if it contains more than 40 micrograms of lead in dust per square foot.

1.4 SUBMITTALS

- .1 Provide submittals in accordance with Sections 01 11 00 and 01 33 00.
- .2 Provide proof satisfactory to Departmental Representative that suitable arrangements have been made to dispose of lead-based paint waste in accordance with requirements of authority having jurisdiction.

- .3 Provide proof of Contractor's General and Environmental Liability Insurance.
- .4 Quality Control:
 - .1 Provide Departmental Representative necessary permits for transportation and disposal of lead-based paint waste and proof that lead-based paint waste has been received and properly disposed.
 - .2 Provide proof satisfactory to Departmental Representative that employees have had instruction on hazards of lead exposure, respirator use, dress, and aspects of work procedures and protective measures.

1.5 QUALITY ASSURANCE

- .1 Regulatory Requirements: comply with Federal, Provincial (Ontario) and local requirements pertaining to lead paint, provided that in case of conflict among those requirements or with these specifications more stringent requirement applies. Comply with regulations in effect at time work is performed.
- .2 Health and Safety:
 - .1 Do construction occupational health and safety in accordance with Section 01 35 29.
 - .2 Safety Requirements: worker and visitor protection.
 - .1 Protective equipment and clothing to be worn by workers and visitors in work Area include:
 - .1 Respirator NIOSH approved and equipped with replaceable HEPA filter cartridges with an assigned protection factor of 10, acceptable to Authority having jurisdiction. Suitable for type of lead and level of lead dust exposure. Provide sufficient amount of filters.
 - .2 Half mask respirator: half-mask particulate respirator with P-series filter, and 100% efficiency could be provided.
 - .2 Eating, drinking, chewing, and smoking are not permitted in work area.
 - .3 Ensure workers wash hands and face when leaving work area.
 - .4 Visitor Protection:
 - .1 Provide approved respirators to Authorized Visitors to work areas.
- .3 Instruct Authorized Visitors procedures to be followed in entering and exiting work area.

1.6 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 20.
- .2 Handle and dispose of hazardous materials in accordance with CEPA, TDGA, Regional and Municipal regulations.
- .3 Disposal of lead waste generated by removal activities must comply with Federal, Provincial (Ontario) and Municipal regulations. Dispose of lead waste in sealed double thickness 0.152 mm thick bags or leak proof drums.

Label containers with appropriate warning labels.

- .4 Provide manifests describing and listing waste created. Transport containers by approved means to licensed landfill for burial.

1.7 EXISTING CONDITIONS

- .1 Information pertaining to lead-based paints to be handled, removed, or otherwise disturbed and disposed of during this project, including the report entitled "Designated Substance and Hazardous Materials Assessment Report Administrative Building #2, Saint-Regis, Akwesasne - WSP Canada Inc. (WSP Project 181-09302-15), March 31, 2020", shall be made available upon request.
- .2 Notify Departmental Representative of lead-based paint discovered during Work and not apparent from drawings, specifications, or report pertaining to Work. Do not disturb such material until instructed by Departmental Representative.

1.8 SCHEDULING

- .1 Not later than two days before beginning Work on this Project notify following in writing:
 - .1 Appropriate Regional or Zone Director of Medical Services Branch, Health Canada.
 - .2 Provincial Ministry of Labour.
 - .3 Disposal Authority.
- .2 Inform sub trades of presence of lead-containing materials identified in Existing Conditions.
- .3 Provide Departmental Representative copy of notifications prior to start of Work.

1.9 OWNER'S INSTRUCTIONS

- .1 Provide Departmental Representative satisfactory proof that every worker has had instruction and training in hazards of lead exposure, in personal hygiene, in aspects of work procedures, and in use, cleaning, and disposal of respirators.
- .2 Instruction and training related to respirators includes, at minimum:
 - .1 Proper fitting of equipment.
 - .2 Inspection and maintenance of equipment.
 - .3 Disinfecting of equipment.
 - .4 Limitations of equipment.
- .3 Instruction and training must be provided by competent, qualified person.
- .4 Supervisory personnel to complete required training.

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: metal or fibre 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 Supervisor must remain within work area during disturbance, removal, or handling of lead-based paints.

3.2 PREPARATION

- .1 Remove and store items to be salvaged or reused.
 - .1 Protect and wrap items and transport and store in area specified by Departmental Representative.
- .2 Work Area:
 - .1 Shut off and isolate HVAC system to prevent dust dispersal into other building areas. Conduct smoke tests to ensure duct work is airtight.
 - .2 Pre-clean fixed casework and equipment within work area, using HEPA vacuum and cover and seal with polyethylene sheeting and tape.
 - .3 Clean work area using HEPA vacuum. If not practicable, use wet cleaning method. Do not raise dust.
 - .4 Seal off openings with polyethylene sheeting and seal with tape.
 - .5 Protect floor surfaces covered from wall to wall with polyethylene sheets.
 - .6 Maintain emergency fire exits or establish alternatives satisfactory to Authority having jurisdiction.
 - .7 Where water application is required for wetting lead-containing materials, provide temporary water supply appropriately sized for application of water as required.
 - .8 Provide electrical power and shut off for operation of powered tools and equipment. Provide 24-volt safety lighting and ground fault interrupter circuits on power source for electrical tools, in

accordance with applicable CSA Standard. Ensure safe installation of electrical cables and equipment.

- .3 Do not start work until:
 - .1 Arrangements have been made for disposal of waste.
 - .2 Tools, equipment, and materials waste containers are on site.
 - .3 Arrangements have been made for building security.
 - .4 Notifications have been completed and preparatory steps have been taken.

3.3 LEAD ABATEMENT

- .1 Removal of lead-containing coatings using non-powered hand tools, other than manual scraping and sanding.
- .2 Remove lead-based paint in small sections and pack as it is being removed in sealable 0.15 mm plastic bags and place in labelled containers for transport.
- .3 Seal filled containers. Clean external surfaces thoroughly by wet sponging. Remove from immediate working area to staging area. Clean external surfaces thoroughly again by wet sponging. Wash containers thoroughly pending removal to outside. Ensure containers are removed by workers who have entered from uncontaminated areas dressed in clean coveralls.
- .4 After completion of stripping work, wire brush and wet sponge surface from which lead-based paint has been removed to remove visible material. During this work keep surfaces wet.
- .5 After wire brushing and wet sponging to remove visible lead-based paint, and after encapsulating lead-containing material impossible to remove, wet clean entire work area, and equipment used in process. After inspection by Departmental Representative apply continuous coat of slow drying sealer to surfaces of work area. Do not disturb work area for 8 hours no entry, activity, ventilation, or disturbance during this period.

3.4 INSPECTION

- .1 Perform inspection to confirm compliance with specification and governing authority requirements. Deviations from these requirements not approved in writing by Departmental Representative will result in work stoppage, at no cost to Departmental Representative.
- .2 Departmental Representative will inspect work for:
 - .1 Adherence to specific procedures and materials.
 - .2 Final cleanliness and completion.
 - .3 No additional costs will be allowed by Contractor for additional labour or materials required to provide specified performance level.

3.5 FINAL CLEANUP

- .1 Following cleaning and when lead wipe surfaces sampling are below acceptable concentrations, proceed with final cleanup.

- .2 Remove polyethylene sheet by rolling it away from walls to centre of work area. Vacuum visible lead-containing particles observed during cleanup, immediately, using HEPA vacuum.
- .3 Place polyethylene sheets, tape, cleaning material, clothing, and contaminated waste in plastic bags and sealed labelled waste containers for transport.
- .4 Conduct final check to ensure no dust or debris remains on surfaces as result of dismantling operations.

3.6 RE-ESTABLISHMENT OF OBJECTS AND SYSTEMS

- .1 Repair or replace objects damaged in course of work to their original state or better, as directed by Departmental Representative.

PART 1 - GENERAL

1.1 SUMMARY

- .1 Comply with requirements of this Section, in compliance with the Canadian Construction Association (CCA) 82 - 2004 Mould Guidelines for the Canadian Construction Industry, and the Environmental Abatement Council of Ontario (EACO) Mould Abatement Guidelines - Edition 3, 2015, when disturbing and/or removing mould-contaminated materials providing that operations are limited to small, isolated areas:
 - .1 Less than 10 ft² (1 m²) of building materials
 - .2 Less than 10 ft² (1 m²) in HVAC systems in non-occupied areas

1.2 REFERENCES

- .1 American Conference of Governmental Industrial Hygienists (ACGIH), Bioaerosols Assessment and Control, 1999.
- .2 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Safety Data Sheets (SDS).
- .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, 2008.
- .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.
- .6 Canadian Standards Association (CSA)
 - .1 CSA Z94.4-02(R2007), Selection, Use and Care of Respirators.
- .7 Canadian Construction Association (CCA), Mould Guidelines for the Canadian Construction Industry, 2004.
- .8 Environmental Abatement Council of Ontario (EACO) Mould Abatement Guidelines, Edition 3, 2015.
- .9 Ontario Ministry of Labour (MOL) Occupational Health and Safety Act (OHSA).

1.3 DEFINITIONS

- .1 Authorized Visitors: Departmental Representatives, Engineers, Consultants or designated representatives, and representatives of regulatory agencies.
- .2 Cleaning solution: detergent solution.

- .3 Competent person: Departmental Representative who can demonstrate that mould remediation training has been obtained, is capable of identifying existing microbial hazards in workplace and selecting appropriate control strategy for microbial exposure.
- .4 Contractor: remediation contractor providing demolition and removal services as defined in specification.
- .5 Fibre-reinforced polyethylene sheet (FRPS): rip-proof fibre-reinforced polyethylene sheet sheeting with added fibre-reinforced adhesive tape along edges.
- .6 HEPA vacuum: High Efficiency Particulate Air filtered vacuum equipment with filter system capable of collecting and retaining particles greater than 0.3 microns in any direction at 99.97% efficiency.
- .7 HVAC: heating ventilating and air-conditioning systems which serve occupied areas. Includes but is not limited to air handling units, duct work, terminal boxes and vents.
- .8 Mould Contaminated Work Area: specific area or location where actual work is being performed or such other areas of a facility where it has been determined that it may be hazardous to public health as result of mould remediation.
- .9 Occupied Area: areas of building or work site that is outside of Mould Contaminated Work Area.
- .10 PPE: Personnel Protection Equipment.
- .11 Sprayer: garden reservoir type sprayer or airless spray equipment capable of producing mist or fine spray. Must have a minimum of six litres capacity for work.

1.4 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.

1.5 SUBMITTALS

- .1 Maintain general log to provide permanent record of project. Maintain logs and other required documentation as part of permanent project file.
- .2 Daily log must be available for inspection upon request by Departmental Representative.

1.6 INSTRUCTION AND TRAINING

- .1 Before commencing work, provide to Departmental Representative satisfactory

proof that every worker has had instruction and training in potential health hazards of mould exposure, handling of hazardous materials, and in use of disposable respirators and protective clothing. This training can be performed as part of program to comply with applicable municipal, provincial and/or federal requirements.

- .2 Workers shall complete respirator pre-screening in accordance with applicable standards.
- .3 Instruction and training must be provided by designated construction safety advisor.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Drop Sheets: 0.15 mm thick woven fibre-reinforced fabric bonded both sides with fibre-reinforced polyethylene sheet.
- .2 Disposal bags: dust-tight 0.15 mm clear polyethylene waste bags.
- .3 Wetting Agent: water to mist mould-containing material.
- .4 Cleaning solution: detergent solution for damp wipe and/or mop.
- .5 Fibre-reinforced adhesive tape: used in sealing joints of fibre-reinforced polyethylene sheets and for attachment of fibre-reinforced polyethylene sheet to finished and unfinished surfaces. Fibre-reinforced adhesive tape must be capable of adhering under both dry and wet conditions.
- .6 Materials: provide materials such as fibre-reinforced polyethylene sheeting, lumber, nails, and hardware necessary to construct and dismantle barriers that isolate Mould Contaminated Work Area.

2.2 TOOLS AND EQUIPMENT

- .1 Tools and equipment: suitable for use with microbial contamination and must be able to withstand de-contamination.
- .2 Personnel protective equipment (protective clothing, disposable respirators): provided in sufficient quantities for duration of project. Respirators shall be NIOSH approved and fit-tested for each worker.
- .3 Vacuum cleaners: equipped with HEPA filters.
- .4 Ladders and/or scaffolds: adequate length, strength and sufficient quantity to support work schedule.

PART 3 - EXECUTION

3.1 PREPARATION OF MOULD WORK AREA (UP TO 1 SQUARE METRE IN OCCUPIED SPACE)

- .1 Mould Contaminated Work Area and adjacent areas to be unoccupied. Vacating people from spaces adjacent to Mould Work Area is not necessary but is recommended in case of infants (less than 12 months old), elderly people, persons having undergone recent surgery, immune suppressed people or people with chronic inflammatory lung diseases.
- .2 Clean movable objects within proposed Mould Contaminated Work Area using HEPA filtered vacuum equipment, damp wipe surfaces and remove such objects from Mould Contaminated Work Area to secure and clean area.
- .3 Remove visible dust from surfaces in Mould Contaminated Work Area where dust is likely to be disturbed during course of work. Use HEPA vacuum and damp wipe area.
- .4 Do not use compressed air to clean up or remove dust from surfaces.
- .5 Seal off return air grills in Mould Contaminated Work Area with fibre-reinforced polyethylene sheeting and fibre-reinforced adhesive tape to minimize migration of contaminants to other parts of building. HVAC systems to be shut down prior to remedial activities.
- .6 Use 0.15 mm fibre-reinforced polyethylene drop sheets tightly sealed with fibre-reinforced adhesive tape over flooring in Mould Contaminated Work Areas.

3.2 PREPARATION OF MOULD WORK AREA (UP TO 1 SQUARE METRE IN HVAC SYSTEM IN NON-OCCUPIED SPACE)

- .1 HVAC systems to be shut down prior to remedial activities.
- .2 Take necessary precautions to ensure that components of HVAC systems are not contaminated during remediation. Remove and bag filters.
- .3 Barriers: to be erected around Mould Contaminated Work Area before remediation using a single layer of 0.15 mm fibre-reinforced polyethylene sheeting affixed to floor and ceiling with fibre-reinforced adhesive tape, with slit entry and covering flap, to contain dust and debris.
- .4 Use 0.15 mm fibre-reinforced polyethylene drop sheets tightly sealed to floor with fibre-reinforced adhesive tape to minimize dust and contamination.

3.3 MICROBIAL REMEDIATION MOULD WORK AREA (UP TO 1 SQUARE METRE IN OCCUPIED SPACE)

- .1 Workers shall wear full-body dust-impervious coveralls with attached hoods. Secure the coveralls tight at the ankles and wrists.
- .2 Workers shall wear a half face piece air-purifying Respirator fitted with replaceable filters (N95 minimum) or a Filtering Facepiece Respirator (N95 minimum) plus appropriate gloves.
- .3 Use sprayer (low-velocity, fine-mist) to mist (not wet) materials containing

- mould to be cut or scraped. Perform work in a manner to reduce dust creation to lowest levels practicable.
- .4 Non-porous and semi-porous materials can be cleaned using detergent solution and reused depending on depth to which microbial growth has penetrated substrate. Wood to be discarded if fungal growth has affected its soundness.
 - .5 Porous materials such as ceiling tiles insulation or wallboards with more than small area of mould contamination and/or dampness to be removed, discarded and replaced.
 - .6 Porous materials identified as lightly contaminated that can be cleaned by HEPA vacuuming, and washing or damp wiped can be reused, but to be discarded and replaced if possible.
 - .7 Dispose of contaminated building materials as specified.
 - .8 During remediation, should Departmental Representative suspect contamination of areas outside Mould Contaminated Work Area, contractor to stop remediation work and immediately decontaminate these affected areas. Eliminate causes of such contamination. Unprotected individuals are prohibited from entering contaminated areas until a visual inspection determines areas are free from contamination.
 - .9 Notify Departmental Representative of mould contaminated material discovered during work and not apparent from drawings, specifications or report pertaining to work. Do not disturb such material pending instructions from Departmental Representative.

3.4 MICROBIAL REMEDIATION MOULD WORK AREA (UP TO 1 SQUARE METRE IN HVAC SYSTEM IN NON-OCCUPIED SPACE)

- .1 Workers shall wear full-body dust-impervious coveralls with attached hoods. Secure the coveralls tight at the ankles and wrists.
- .2 Workers shall wear a half face piece air-purifying Respirator fitted with replaceable filters (N95 minimum) or a Filtering Face-piece Respirator (N95 minimum) plus appropriate gloves.
- .3 Use sprayer (low-velocity, fine-mist) to mist (not wet) materials containing mould to be cut scraped. Perform work in a manner to reduce dust creation to lowest levels practicable.
- .4 Porous materials in HVAC systems such as insulation of interior lined ducts and filters must be removed to bare (underlying) metal and materials properly discarded.
- .5 Dispose of contaminated building materials as specified.
- .6 During remediation, should Departmental Representative suspect contamination of areas outside Mould Work Area, contractor to stop remediation work and immediately decontaminate these affected areas. Eliminate causes of such contamination. Unprotected individuals shall be

prohibited from entering contaminated areas until visual inspection determines the areas are free from contamination.

- .7 Notify Departmental Representative of mould contaminated material discovered during work and not apparent from drawings, specifications, or report pertaining to work. Do not disturb such material pending instructions from Departmental Representative.
- .8 Submit Safety Data Sheet for biocides and use as recommended by HVAC manufacturer with HVAC components.

3.5 REPAIR AND CLEANUP

- .1 Clean, frequently during work and immediately after completion of work, Mould Contaminated Work Area using a HEPA vacuum and/or by damp mopping with cleaning solution.
- .2 Perform restoration of designated Mould Contaminated Work Area as specifies.
- .3 Leave areas dry and visibly free from contamination, debris and dust.
- .4 Perform final thorough clean-up of work areas and adjacent areas affected by work using HEPA vacuum and/or damp mopping with detergent solution.

3.6 WASTE DISPOSAL

- .1 Place dust and mould-containing waste in doubled-bagged dust-tight 0.15 mm clear polyethylene waste bags. Treat drop sheets and disposable protective clothing as waste; fold these items to contain dust, and place in plastic bags. Securely seal bags.
- .2 Clean exterior of each waste-filled bag using damp cloths and cleaning solution or HEPA vacuum prior to removal from Mould Contaminated Work Area.
- .3 Remove waste bags from site and dispose. There is no special requirements for disposal of mouldy materials, as such they can be disposed of in landfill.

3.7 RE-ESTABLISHMENT OF OBJECTS AND SYSTEMS

- .1 Relocate objects moved to temporary locations to their proper positions. Ensure objects are cleaned before been moved into cleaned areas.

3.8 FINAL CLEARANCE

- .1 Departmental Representative to conduct thorough visual inspection to detect visible accumulations of dust or bulk materials remaining in work area. Should dust, debris, microbial contamination, or residue be detected, repeat cleaning until area meets approval.
- .2 The contractor shall be responsible for all deficiencies at no additional cost.

PART 1 - GENERAL

1.1 SECTION INCLUDES

- .1 Procedures and materials required for the safe handling, management and decommissioning of mercury-containing equipment.
- .2 Comply with requirements of this Section when performing the following Work:
 - .1 Decommissioning, removal, and disposal of mercury-containing equipment, including thermostats, thermometers, switches, and lamps (fluorescent light tubes).
- .3 The report identified in the site conditions identifies the locations and condition of all known materials and equipment containing mercury.
- .4 Unless otherwise shown or specified it is the intent that work performed under this Section will result in the removal and disposal of mercury.

1.2 REFERENCES

- .1 Occupational Health and Safety and Act, R.S.O. 1990, c. O.1.
- .2 Ontario Regulation 490/09, Designated Substances
- .3 Canadian Council of Ministers of the Environment (CCME) "Canada-Wide Standard for Mercury Containing Lamps", 2001
- .4 Ontario Environmental Protection Act, General - Waste Management, R.R.O. 1990, Regulation 347.

1.3 DEFINITIONS

- .1 Authorized Visitors: Departmental Representatives, Engineers, Consultants or designated representatives, and representatives of regulatory agencies.
- .2 Disposal: transportation of specified disposal facility for temporary storage and subsequent transportation to the specified permanent disposal facility.
- .3 Recycling: collection of materials or equipment for processing by an approved system without loss to the environment. System may be used on or off-site with collected materials recycled or disposed of according to Provincial and Federal regulations.
- .4 Removal: detachment or removal of equipment from applicable fixtures, including preparation for disposal as described in this Section.

1.4 SUBMITTALS

- .1 Submit proof satisfactory to Departmental Representative that suitable arrangements have been made to dispose of mercury waste in accordance with requirements of authority having jurisdiction.

- .2 Provide proof of Contractor's General and Environmental Liability Insurance.
- .3 Submit proof satisfactory to Departmental Representative that the Certified Technician have received appropriate training and education by a competent person in the hazards of mercury exposure, good personal hygiene, aspects of work procedures and protective measures while working with mercury-containing equipment.
- .4 Submit WSIB status and transcript of insurance.

1.5 QUALITY ASSURANCE

- .1 Instruct personnel on dangers of mercury exposure, respirator use, decontamination and applicable Federal, Provincial and Municipal Regulations.

1.6 SUPERVISION

- .1 Provide a minimum of one Supervisor for every ten workers is required.

1.7 EXISTING CONDITIONS

- .1 Information pertaining to mercury-containing equipment to be handled, removed, or otherwise disturbed and disposed of during this project, including the report entitled "Designated Substance and Hazardous Materials Assessment Report Administrative Building #2, Saint-Regis, Akwesasne - WSP Canada Inc. (WSP Project 181-09302-15), March 31, 2020", shall be made available upon request.
- .2 Notify Departmental Representative of material discovered during Work and not apparent from drawings, specifications, or report pertaining to Work. Do not disturb such material until instructed by Departmental Representative.

1.8 DELIVERY, STORAGE AND HANDLING

- .1 Place mercury-containing materials/products in designated impervious containers.
- .2 Handle and dispose of hazardous materials in accordance with the CEPA, TDGA, Regional and Municipal regulations.
- .3 Ensure personnel are familiar with and understand current mercury waste management procedures and use of personal protection equipment and clean-up techniques.
- .4 Disposal of mercury waste generated by removal activities must comply with Federal, Provincial (Ontario) and Municipal regulations.
 - .1 Dispose of mercury waste in impervious containers.
 - .2 Containers must be labelled with appropriate warning labels.

1.9 PERSONAL PROTECTION

- .1 Before handling mercury-containing materials, instruct workers and visitors in all aspects of prescribed work procedures and protective measures including appropriate awareness and/or abatement training. A competent person, as defined by Ontario Occupational Health and Safety Act (OHSA), shall provide instruction.
- .2 Require workers to wear mercury-impervious gloves in addition to normal work clothing where exposure risk is low.
- .3 Provide workers with additional protective clothing and equipment where contact with liquid mercury or mercury vapour may occur. Provide clothing and equipment appropriate for the potential level of exposure.
- .4 Establish a spill response plan to mitigate the release of mercury should any breakage of mercury-containing equipment occur.
- .5 Persons employed for the removal of mercury-containing electrical equipment, including thermostats and fluorescent lighting, shall be overseen by a qualified electrician.
- .6 Do not eat, drink, smoke or chew gum or tobacco in designated work areas.
- .7 Personnel must be fully protected at all times when possibility of disturbance of hazardous materials exists.
- .8 Use hard hats, safety shoes and other personal protective equipment required by applicable construction safety regulations.

PART 2 - PRODUCTS

2.1 MATERIALS AND EQUIPMENT

- .1 Absorbent Material: Mercury absorbent material. Proof of suitability of the absorbent material as a mercury absorbent must be provided to Departmental Representative upon request.
- .2 Impervious Container: An airtight, leak proof container suitable for the storage and transportation of mercury-containing materials/equipment, which meets Transportation of Dangerous Goods Regulations and applicable Provincial (Ontario) requirements.

PART 3 - EXECUTION

3.1 PREPARATION

- .1 Before commencing any work involving mechanical or electrical equipment, ensure that the power supply to the designated work area has been isolated and locked out to prevent re-energizing of electrical circuits.

- .2 Inspect all suspect equipment to identify possible mercury content. All suspect mercury-containing equipment shall be considered as hazardous material unless proven otherwise.
- .3 All fluorescent lamps or bulbs shall be considered mercury-containing unless proven otherwise.
- .4 Erect appropriate worker and waste decontamination facilities, as appropriate, at locations approved by the Departmental Representative.
- .5 Provide emergency spill containment supplies in work area in accordance with approved emergency spill response plan.
- .6 Establish a storage area for all mercury-containing equipment until the materials can be safely transported off-site, recycled or decommissioned.

3.2 MERCURY REMOVAL OR RECYCLING

- .1 Do not commence work until:
 - .1 Arrangements have been made for disposal of waste.
 - .2 Tools, equipment and waste material receptors are on hand.
- .2 Locate all mercury-containing equipment.
- .3 Wear personal protection at all times when disturbing lamps, equipment and items that contain mercury.
- .4 Place all mercury-containing equipment into an impervious container packed with absorbent material.
- .5 Place mercury-contaminated materials, if any, into plastic bags. Close bags securely using ties. Handle bags containing contaminated materials carefully to prevent bag puncture.
- .6 Place absorbent material in bottom of container.
- .7 Package any mercury-contaminated gloves, work clothes and rags in plastic bags and place in container.
- .8 Fill voids between mercury waste with absorbent material. Once container is full, cover materials with absorbent material.
- .9 Seal container and store in designated storage area pending transportation and disposal.
- .10 Each container must be marked in accordance with the Dangerous Goods Transportation and Handling Act, showing the shipping name (mercury), the product identification number and proper waste class and hazard labels.
- .11 Fluorescent lamps and bulbs shall be collected for disposal in accordance with disposal site requirements or recycled by a means approved by the Departmental Representative.

- .12 Dispose of non-hazardous materials as construction waste.
- .13 Any re-use or re-sale of mercury-containing equipment must be in compliance with all appropriate regulations.
- .14 In the event of a spill or release, isolate the work area, absorb any liquid materials with an appropriate absorbent material and ventilate area immediately.
- .15 Handle, store, transport and recycle mercury in accordance with Ontario and Federal legislative requirements.
- .16 The facility used to process and recycle mercury shall be approved by the Ministry of Environment, Conservation and Parks, or local the jurisdiction having authority, and shall have valid Certificates of Approval to carry out the work outlined herein.

PART 4 - INSPECTION

4.1 INSPECTION

- .1 From commencement of work until completion of clean-up operations, the Departmental Representative to inspect for compliance with the requirements of the governing authorities, adherence to specifications and to inspect for cleanliness and completion both inside and outside work areas.
- .2 The Departmental Representative is empowered to shut down all work activities when leakage of mercury from the work area has occurred or is likely to occur. The Contractor shall provide access for the Departmental Representative and make good on any work disturbed by the inspections at no cost to the Departmental Representative.
- .3 If work is found unacceptable in accordance with standards specified or required by authorities having jurisdiction, such deficiencies shall be corrected at no cost to the Departmental Representative.

PART 1 - GENERAL

1.1 REFERENCES

- .1 American Society for Testing and Materials International (ASTM)
 - .1 ASTM C117-17, Standard Test Method for Material Finer than 0.075 mm (No.200) Sieve in Mineral Aggregates by Washing.
 - .2 ASTM C136/C136M-19, Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
 - .3 ASTM D422-63(2007)e2, Standard Test Method for Particle-Size Analysis of Soils.
 - .4 ASTM D698-12e2, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³) (600 kN-m/m³).
 - .5 ASTM D1557-12e1, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³) (2,700 kN-m/m³).
- .2 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-8.2-M88, Sieves, Testing, Woven Wire, Metric.
- .3 Ontario Provincial Standard Specifications (OPSS)/Ontario Ministry of Transportation
 - .1 OPSS.PROV 1004 November 2012, Ontario Provincial Standard Specification, Material Specification for Aggregates - Miscellaneous.
 - .2 OPSS.PROV 1010 April 2013, Ontario Provincial Standard Specification, Material Specification for Aggregates - Base, Subbase, Select Subgrade, and Backfill Material.

1.2 DEFINITIONS

- .1 Waste material: excavated material unsuitable for use in Work or surplus to requirements.
- .2 Borrow material: material obtained from locations outside area to be graded, and required for construction of fill areas or for other portions of Work.
- .3 Recycled fill material: material, considered inert, obtained from alternate sources and engineered to meet requirements of fill areas.

1.3 SUBMITTALS

- .1 Make submittals in accordance with Section 01 33 00.
- .2 Quality Control: in accordance with Section 01 45 00:
 - .1 Submit condition survey of existing conditions as described in EXISTING CONDITIONS article of this Section.
 - .2 Submit for review by Departmental Representative proposed dewatering methods as described in PART 3 of this Section.
 - .3 Submit to Departmental Representative written notice at least 7 days

- prior to excavation work, to ensure cross sections are taken.
- .4 Submit to Departmental Representative written notice when bottom of excavation is reached.
 - .5 Submit to Departmental Representative testing results as described in PART 3 of this Section.
- .3 Preconstruction Submittals:
- .1 Submit construction equipment list for major equipment to be used in this section prior to start of Work.
 - .2 Submit records of underground utility locates, indicating: location plan of existing utilities as found in field.

1.4 QUALITY ASSURANCE

- .1 Engage services of qualified professional Engineer who is registered or licensed in Province of Ontario, Canada in which Work is to be carried out to design and inspect shoring, bracing and underpinning required for Work.
- .2 Health and Safety Requirements:
 - .1 Do construction occupational health and safety in accordance with Section 01 35 29.

1.5 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 20.

1.6 EXISTING CONDITIONS

- .1 Buried services:
 - .1 Before commencing work verify location of buried services on and adjacent to site.
 - .2 Size, depth and location of existing utilities and structures as indicated are for guidance only. Completeness and accuracy are not guaranteed.
 - .3 Where utility lines or structures exist in area of excavation, obtain direction of Departmental Representative before removing or re-routing.
 - .4 Record location of maintained, re-routed and abandoned underground lines.
- .2 Existing buildings and surface features:
 - .1 Conduct, with Departmental Representative, condition survey of existing buildings, trees and other plants, lawns, fencing, service poles, wires, pavement, and monuments which may be affected by Work.
 - .2 Protect existing buildings and surface features from damage while Work is in progress. In event of damage, immediately make repair as directed by Departmental Representative.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Granular material: to OPSS.PROV 1010 for:
 - .1 Granular A, maximum size 19.0 mm.

PART 3 - EXECUTION

3.1 TEMPORARY EROSION AND SEDIMENTATION CONTROL

- .1 Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to requirements of authorities having jurisdiction.
- .2 Inspect, repair, and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established.
- .3 Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

3.2 SITE PREPARATION

- .1 Remove obstructions, ice and snow, from surfaces to be excavated within limits indicated.
- .2 Cut pavement or sidewalk neatly along limits of proposed excavation in order that surface may break evenly and cleanly.

3.3 PREPARATION/PROTECTION

- .1 Protect existing features in accordance with Section 01 56 00 and applicable local regulations.
- .2 Keep excavations clean, free of standing water, and loose soil.
- .3 Protect natural and man-made features required to remain undisturbed. Unless otherwise indicated or located in an area to be occupied by new construction, protect existing trees from damage.
- .4 Protect buried services that are required to remain undisturbed.

3.4 SHORING, BRACING AND UNDERPINNING

- .1 Maintain sides and slopes of excavations in safe condition by appropriate methods and in accordance with Section 01 35 29 & the Health and Safety Act for the Province of Ontario.

3.5 DEWATERING AND HEAVE PREVENTION

- .1 Keep excavations free of water while Work is in progress.
- .2 Dispose of water in accordance with Section 01 35 43 to approved collection and in manner not detrimental to public and private property, or portion of Work completed or under construction.

3.6 EXCAVATION

- .1 Advise Departmental Representative at least 7 days in advance of excavation operations for initial cross sections to be taken.
- .2 Restrict vehicle operations directly adjacent to open trenches.
- .3 Dispose of surplus and unsuitable excavated material off site.
- .4 Notify Departmental Representative when bottom of excavation is reached.