

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Section 01 35 29.06 Health and Safety Requirements
- .2 Section 01 45 00 Quality Control.
- .3 Section 01 73 00 Execution Requirements.
- .4 Section 01 74 11 Cleaning.
- .1 Section 05 50 00 - Metal Fabrications.
- .2 Section 06 08 99 – Rough Carpentry – Short Form.
- .3 Section 02 82 10 – Asbestos Abatement Type 1 Procedures

1.2 REFERENCES

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

1.3 SITE CONDITIONS

- .1 Review "Asbestos Monitoring" report and take precautions to protect environment.
- .2 If material resembling spray or trowel-applied asbestos or other designated substance be encountered, stop work, take preventative measures, and notify Departmental Representative immediately.
 - .1 Proceed only after receipt of written instructions have been received from Departmental Representative.
- .3 Notify Departmental Representative before disrupting building access or services.

Part 2 Products

2.1 NOT USED

- .1 Not used.

Part 3 Execution

3.1 EXAMINATION

- .1 Inspect building with Departmental Representative and verify extent and location of items designated for removal, disposal, alternative disposal, recycling, salvage and items to remain.
- .2 Locate and protect utilities. Preserve active utilities traversing site in operating condition.
- .3 Notify and obtain approval of utility companies before starting demolition.

- .4 Disconnect, cap, plug or divert, as required, existing public utilities within the property where they interfere with the execution of the work, in conformity with the requirements of the authorities having jurisdiction. Mark the location of these and previously capped or plugged services on the site and indicate location (horizontal and vertical) on the record drawings. Support, shore up and maintain pipes and conduits encountered.
 - .1 Immediately notify Departmental Representative and utility company concerned in case of damage to any utility or service, designated to remain in place.
 - .2 Immediately notify the Departmental Representative should uncharted utility or service be encountered, and await instruction in writing regarding remedial action.

3.2 PREPARATION

- .1 Protection of In-Place Conditions:
 - .1 Prevent movement, settlement, or damage to adjacent structures, utilities and parts of building to remain in place. Provide bracing and shoring required.
 - .2 Keep noise, dust, and inconvenience to occupants to minimum.
 - .3 Protect building systems, services and equipment.
 - .4 Provide temporary dust screens, covers, railings, supports and other protection as required.
 - .5 Do Work in accordance with Section 01 35 29.06 - Health and Safety Requirements.
- .2 Demolition/Removal:
 - .1 Remove items as indicated.
 - .2 Remove parts of existing building to permit new construction.
 - .3 Trim edges of partially demolished building elements to tolerances as defined by Departmental Representative and/or Consultant to suit future use.

3.3 SALVAGING OF EXISTING ELEMENTS

- .1 Salvage items as indicated on drawings
- .2 10% of existing coffered ceiling components as identified on demolition drawings are to be salvage and returned to Departmental Representative for future use in other areas of the building. Components to include undamaged grids, plastic trims, ceiling tiles, diffusers and light fixtures.
- .3 All undamaged carpet tiles to be salvage and returned to Departmental Representative for future use in other areas of the building.
- .4 Coordinate with Departmental Representative.

3.4 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
 - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.
- .3 Refer to demolition drawings and specifications for items to be salvaged for reuse.

END OF SECTION

PART 1 GENERAL

1.1 General and Related Work

- .1 Read this section in conjunction with all other sections so as to comply with the requirements of Division 1 and the General Conditions of the Contract.
- .2 The site conditions identify the location and condition of all known asbestos-containing materials (ACM) to be disturbed by the work of this section. The specification fulfils the requirements of the report required by Manitoba Regulation 217/2006.
- .3 Unless otherwise shown or specified it is the intent that work performed as per this section will result in the removal and disposal or decontamination of all ACM and all materials which have been contaminated by ACM either during or prior to work of this section.

1.2 Site Conditions

- .1 Mastic, containing chrysotile asbestos, is present on ducts.

1.3 Outline of Work

- .1 Use Type 1 procedures to remove and dispose of the following:
 - .1 Ducts with asbestos-containing mastic that are scheduled for demolition.

1.4 Definitions

- .1 Asbestos: Any of the fibrous silicates including: actinolite, amosite, anthophyllite, chrysotile, crocidolite and tremolite.
- .2 Asbestos Abatement Consultant: Owner's Representative providing inspection and air monitoring.
- .3 Asbestos Abatement Contractor: Contractor or sub-contractor performing work of this section.
- .4 Asbestos-Containing Material(s) (ACM): Material(s) identified under Site Conditions including debris, fallen material and settled dust.
- .5 Asbestos Work Area: Area where work takes place which will, or may, disturb ACM.
- .6 Authorized Visitors: Prime Contractor, Building Owner or Representatives, Asbestos Abatement Consultant, and persons representing regulatory agencies.

- .7 Competent Worker: A worker who is qualified because of knowledge, training and experience to perform the work, is familiar with Regulation 217/2006 and has knowledge of the potential or actual danger to health and safety in the work.
- .8 Friable Material: Means a material when dry can be crumbled, pulverized or powdered by hand pressure or is crumbled, pulverized or powdered.
- .9 HEPA Filter: High Efficiency Particulate Arresting filter that is at least 99.97 percent efficient in collecting a 0.3 micrometre aerosol.
- .10 PCM: Phase Contrast Microscopy.
- .11 Polyethylene: Either polyethylene sheeting or rip-proof polyethylene sheeting (as specified) with tape along edges, around penetrating objects, over cuts and tears, and elsewhere as required to provide a continuous polyethylene membrane to protect underlying surfaces from damage, and to prevent escape of asbestos fibres through sheeting into Occupied Areas.
- .12 Occupied Area: Any area of the building outside the Asbestos Work Area.
- .13 Personnel: All contractor's employees, sub-contractors employees, supervisors.
- .14 Remove: Remove means remove and dispose of (as applicable type of waste) unless followed by other instruction (e.g. remove and turn over to Owner).

1.5 Submittals

- .1 Submit prior to starting work:
 - .1 Copy of notification to governing authorities of commencement of work.
 - .2 Insurance certificates.
 - .3 Copy of Company Health and Safety Policy and applicable Programs.
 - .4 Pre-removal survey of damage in all areas where asbestos abatement will take place or waste will be transported.
- .2 Submit the following information regarding personnel prior to starting work:
 - .1 Resumes of the supervisory personnel.
 - .2 Proof in the form of a certificate that supervisory personnel have attended a training course on asbestos removal (2 day minimum duration).
 - .3 WHMIS 2015 training certificates for all personnel.

- .4 Written statement that personnel have had instruction on hazards of asbestos exposure, the use of respirator, protective clothing, worker and waste decontamination procedures, and all aspects of work procedures and protective measures.
- .5 Certificate proving that each worker on site has been fit tested for the respirator appropriate for the work being performed.
- .3 Submit performance data on HEPA filtered vacuums including HEPA challenge integrity leak tests no more than 3 months old prior to isolating the work area or commencing asbestos abatement.
- .4 Submit the following prior to isolating the work area:
 - .1 Material Safety Data Sheets for chemicals or material used in the course of the Asbestos Abatement Project.
- .5 Submit the following upon completion of the work.
 - .1 Manifests, waybills, bills of lading, etc. as applicable for each type of waste.

1.6 Regulations

- .1 Comply with Federal, provincial, and local requirements, provided that in any case of conflict among those requirements or with these Specifications the more stringent requirements shall apply. Work shall be performed under regulations in effect at the time work is performed.

1.7 Supervision

- .1 Provide on site, a supervisor, with authority to oversee all aspects of the work, including but not limited to, health and safety, methods, scheduling, labour and equipment requirements.
- .2 The supervisor must be on site at all times during work at risk of disturbing ACM. Failure to comply with this requirement may result in a stoppage of work, at no cost to the Owner.
- .3 Provide a minimum of one supervisor for every 10 workers.
- .4 Replace supervisory personnel, with approved replacements, within 3 working days of a written request from the Asbestos Abatement Consultant. Asbestos Abatement Consultant reserves the right to request replacement of supervisory personnel without explanation.

- .5 Do not replace supervisory personnel without written approval from the Asbestos Abatement Consultant.

1.8 Quality Assurance

- .1 Ensure the removal and handling of ACM or asbestos contaminated materials is performed by persons experienced in the methods, procedures and industry practices of asbestos abatement.
- .2 Complete work so that at no time airborne asbestos, visible solid residue, or water runoff contaminates areas outside Asbestos Work Area. Asbestos Abatement Consultant is empowered to order a shutdown of work when a leak has occurred or is likely to occur. Cost of additional work by Asbestos Abatement Contractor and/or Asbestos Abatement Consultant to rectify unsatisfactory conditions shall be charged to the Asbestos Abatement Contractor.
- .3 Perform all work involving other trades such as electrical, mechanical, carpentry, glazing, etc. using licensed persons experienced and qualified for the work required.
- .4 The Asbestos Abatement Consultant will not be responsible for and will not have control or charge of construction means, methods, techniques, sequences or procedures, or for safety precautions and programs required for the Work in accordance with the applicable construction safety legislation, other regulations or general construction practice. The Asbestos Abatement Consultant will not be responsible for or have control or charge over the acts or omissions of the Asbestos Abatement Contractor, his Subcontractors or their agents, employees or other persons performing any of the Work.

1.9 Notification

- .1 Notify Sanitary Landfill site as per local requirements.
- .2 Inform all sub trades of the presence of ACM identified in the contract documents.
- .3 Not later than five (5) days before commencing work on this project, notify in writing the local office of the Manitoba Labour and Immigration, Workplace Safety and Health Division. Provide telephone notification again immediately prior to start of work.

1.10 Insurance

- .1 Maintain a Commercial General Liability Policy with an insurance company acceptable to THE OWNER. The intent of this policy is to hold THE OWNER harmless as it relates to claims for Bodily Injury or Property Damage or both, relating to the contract. Commercial General Liability insurance shall be provided on an "occurrence" basis to cover injury or damage (whether detected or not during the policy period) which happens during the policy period.
- .2 Maintain an Automobile or Fleet Policy, and Non-owned Automobile Policy with an insurance company acceptable to THE OWNER. The intent of these policies is to hold THE OWNER harmless as it relates to claims for Bodily Injury or Property Damage or both, relating to the contract.
- .3 Maintain a Pollution Liability Policy (or asbestos liability policy or specific coverage under the CGL for asbestos abatement) with an insurance company acceptable to THE OWNER. The intent of this policy is to hold THE OWNER harmless as it relates to claims for Bodily Injury or Property Damage or both, relating to the contract. Pollution Liability shall be provided on an "occurrence" basis to cover injury or damage (whether detected or not during the policy period) which happens during the policy period. Without limiting the generality of the foregoing, the policy shall insure the operations of asbestos abatement and shall not contain any environmental and/or health hazard exclusions relating to remediation operations including asbestos abatement.
- .4 Forward all certificates to THE OWNER before work is commenced, showing THE OWNER as additional insured as their interest may appear.
- .5 THE OWNER may request a certified true copy of the policies.
- .6 The limits will not be less than:
 - .1 Commercial General Liability \$5,000,000.00
 - .2 Automobile \$2,000,000.00
 - .3 Pollution Policy (Asbestos Liability) \$5,000,000.00

1.11 Instruction and Training

- .1 Provide instruction and training to all workers including the following:
 - .1 Hazards of asbestos.
 - .2 Use, care and disposal of protective equipment (including but not limited to respirators and filters) and clothing that would be used and worn during abatement work, including:
 - .1 Limitations of equipment.
 - .2 Inspection and maintenance of equipment.
 - .3 Proper fitting of equipment.
 - .4 Disinfecting and cleaning of equipment.
 - .3 Personal hygiene to be observed when performing the work.
 - .4 The measures and procedures prescribed by this section.
- .2 Instruction and training must be provided by a competent person.

1.12 Personal Protection

- .1 Provide non-powered half-face respirators with P100 high efficiency (HEPA) cartridge filters to personnel.
- .2 Respirators shall be:
 - .1 Certified by the National Institute of Occupational Safety and Health (NIOSH).
 - .2 Fitted so that there is an effective seal between the respirator and the worker's face. Ensure that no person required to enter an Asbestos Work Area has facial hair which affects the seal between respirator and face.
 - .3 Assigned to a worker for their exclusive use.
 - .4 Maintained in accordance with manufacturer's specifications.
 - .5 Cleaned, disinfected and inspected by a competent person after use on each shift, or more often if required.
 - .6 Repaired or have damaged or deteriorated parts replaced.
 - .7 Stored in a clean and sanitary location.
 - .8 Provided with new filters as necessary, according to manufacturer's instructions.

- .3 Personnel must have respirators fit checked by qualitative or quantitative fit-testing. Instruction must be provided by a competent person.
 - .1 Personnel shall wear and use the respirator provided.
- .4 As per the requirements of Regulation 217/2006, provide protective clothing which:
 - .1 Is made of a material that does not readily retain nor permit penetration of asbestos fibres.
 - .2 Consists of head covering and full body covering that fits snugly at the ankles, wrists and neck.
 - .3 Is replaced or repaired if torn or ripped.
- .5 Decontaminate clothing or protective clothing by using a HEPA Vacuum, or by damp wiping prior to leaving the Asbestos Work Area:
 - .1 Dispose of as ACM.
- .6 Provide soap, towels and facilities for washing of hands and face, which shall be used by all personnel when leaving the Asbestos Work Area.
- .7 Prohibit smoking, eating, drinking, chewing in the Asbestos Work Area.
- .8 Use hard hats, safety shoes and other personal protective equipment required by applicable construction safety regulations.

1.13 Authorized Visitor Protection

- .1 Provide clean protective clothing to Authorized Visitors.
- .2 Ensure Authorized Visitors have received required training prior to granting entry into Asbestos Work Area.

1.14 Air Monitoring

- .1 Air monitoring may be performed following the National Institute for Occupational Safety and Health method 7400, Asbestos and other fibres by PCM (Phase Contrast Microscopy).

- .2 Co-operate with the Asbestos Abatement Consultant in collection of air samples. Asbestos Abatement Contractor to exercise care with Asbestos Abatement Consultant's equipment. The Owner reserves the right to back-charge the Asbestos Abatement Contractor for further collection of samples damaged by tampering or abuse. In addition, the Asbestos Abatement Contractor will be responsible for the cost of testing equipment repairs resulting from the actions of the Asbestos Abatement Contractor's forces.
- .3 Results of air monitoring of 0.05 fibres per millilitre of air (fibre/mL) or greater, outside of Asbestos Work Area, will indicate asbestos contamination of these areas and result in the following actions:
 - .1 Suspend Work within the adjoining Asbestos Work Area until written authorization to resume Work has been received from the Asbestos Abatement Consultant.
 - .2 Isolate and clean area in the same manner applicable to the Asbestos Work Area.
 - .3 Maintain Work area isolation, and repeat clean-up operations until visual inspection and air monitoring results are at a level equal to that specified.
- .4 Cost of additional inspection and sampling performed as a result of elevated fibre levels may be charged to the Asbestos Abatement Contractor at the Owner's discretion.

1.15 **Inspection**

- .1 From commencement of work until completion of clean-up operations, the Asbestos Abatement Consultant may be present periodically on site both inside and outside the Asbestos Work Area.
- .2 Inspection of the Asbestos Work Area will be performed to confirm the Asbestos Abatement Contractor's compliance with the requirements of the contract documents and governing authorities. Any deviations from these requirements, that have not been approved in writing, may result in a stoppage of work at no additional cost to the Owner.
- .3 If the Asbestos Work Area is found unacceptable by the standards specified or required by governing authorities, the remedial work required to meet these standards and obtain consent to proceed from the Asbestos Abatement Consultant, shall be performed at no additional cost to the Owner.

- .4 The following Milestone Inspections may take place, at the Owner's cost:
 - .1 Milestone Inspection D – Dismantlement Inspection
 - .1 Inspection and air monitoring of Asbestos Work Area after removal of all asbestos.
- .5 The Asbestos Abatement Consultant is empowered by the Owner to inspect for final cleanliness at completion. Additional labour or materials expended by the Asbestos Abatement Contractor to provide satisfactory performance to the level specified shall be at no additional cost.

PART 2 PRODUCTS AND FACILITIES

2.1 Materials and Equipment

- .1 All materials and equipment brought to work site must be in good condition and free of asbestos, asbestos debris, and fibrous materials.
- .2 Asbestos Waste Container: An impermeable container acceptable to disposal site and Manitoba Sustainable Development. Labelled as required, comprised of one of the following:
 - .1 A 6 mil (0.15 mm) labelled yellow sealed polyethylene bag, inside a second clear 6 mil (0.15 mm) sealed polyethylene bag.
 - .2 A 6 mil (0.15 mm) sealed polyethylene bag, positioned inside or outside a rigid sealed container of sufficient strength to prevent perforation of the container during filling, transportation and disposal.
- .3 HEPA Vacuum: High Efficiency Particulate Arresting (HEPA) filtered vacuum equipment with a filter system capable of collecting and retaining spherical particles greater than 0.3 microns at 99.97% efficiency.
- .4 Polyethylene Sheeting: 6 mil (0.15 mm) minimum thickness unless otherwise specified in sheet size to minimize joints. New materials only.
- .5 Protective Clothing: Disposable full body coveralls complete with hoods manufactured of a material which does not permit penetration of asbestos fibres. Coveralls to fit snugly at ankles, wrists and neck. Acceptable materials: Dupont Tyvek or Kimberly Clark Kleenguard.

- .6 Rip-Proof Polyethylene Sheeting: Minimum requirements 8 mil (0.20 mm) fabric made up from 5 mil (0.13 mm) weave and 2 layers of 1.5 mil (0.05 mm) poly laminate or approved equal. In sheet size to minimize on-site seams and overlaps. New materials only.
- .7 Tape: Duct tape or tape suitable for sealing polyethylene to surfaces under both dry and wet conditions in the presence of Amended Water.

2.2 Signage

- .1 Work Area Signs: Post signs in both official languages at access points to the Asbestos Work Area and on hoarding walls as follows:
 - .1 CAUTION.
 - .2 Asbestos Dust Hazard Area.
 - .3 Unauthorized Entry Prohibited.
 - .4 Wear Assigned Protective Equipment.
 - .5 Breathing Asbestos Dust May Cause Serious Bodily Harm.
- .2 Asbestos Waste Containers: Post signs on both sides of every asbestos waste container. Signs must display thereon in large, easily legible letters that contrast in colour with the background the word "CAUTION" in letters not less than ten centimetres in height and the words:
 - .1 CONTAINS ASBESTOS FIBRES.
 - .2 Avoid Creating Dust and Spillage.
 - .3 Asbestos May be Harmful To Your Health.
 - .4 Wear Approved Protective Equipment.
- .3 Place placards in accordance with Transportation of Dangerous Goods Act.

PART 3 EXECUTION

3.1 Site Preparation

- .1 Perform pre-removal damage survey and submit to Asbestos Abatement Consultant.
- .2 Remove stored or non-fixed items from the Asbestos Work Area including but not limited to equipment, furniture, waste, etc. Store in area provided by Owner.
- .3 Moving of equipment, tools, supplies, and stored materials that can be performed without disturbing ACM will be performed by others.

- .4 Remove visible dust and friable material from all surfaces in the work area including those to be worked on, using HEPA Vacuums or wet wiping.
- .5 Isolate the work area by closing doors or placement of barricades.
- .6 Install polyethylene drop sheets below areas of work.
- .7 Install signage in clearly visible locations and in sufficient numbers to adequately warn of an asbestos dust hazard.
- .8 Shut down HVAC systems serving the Asbestos Work Area.
 - .1 Install polyethylene sheeting over openings in ducts and diffusers and seal.
 - .2 HVAC to remaining areas of building must not be disrupted during work of this section.
 - .3 System shall remain inoperative until completion of work, unless ducts can be effectively capped.
 - .4 Perform work at scheduled times after shutting down HVAC systems affecting the Asbestos Work Area.

3.2 Maintenance of Asbestos Work Area

- .1 Maintain Asbestos Work Area in tidy condition.

3.3 Asbestos Removal - General

- .1 Do not use powered tools or non-hand held tools on asbestos-containing materials.
- .2 Do not use compressed air to clean or remove dust or debris.
- .3 Frequently and at regular intervals during the work, clean up dust and waste using HEPA vacuums and/or wet sweeping or mopping.
- .4 Frequently and at regular intervals, place all waste in asbestos waste containers.
- .5 Immediately upon completion of work, clean area with HEPA vacuum and/or wet sweeping or mopping.

3.4 Asbestos Removal - Removal of Ducts

- .1 Remove ducts scheduled for demolition that have asbestos-containing mastic in sections.
- .2 Ducts are to be removed in sections without breaking mastic by cutting a minimum of 6 inches away from the joints. If breaking or cutting through mastic is unavoidable use tools with HEPA filtered dust collection devices.

- .3 Wrap removed sections of ducts with rip proof polyethylene and dispose of as asbestos waste.

3.5 **Waste and Material Handling**

- .1 Waste bins must be placed on grade or in receiving.
- .2 All bins must be locked and covered when waste transfer is not being performed.
- .3 Ensure redundant non-ACM, rubble, debris, etc. removed during contaminated work are treated, packaged, transported and disposed of as asbestos waste.
- .4 Clean and wash equipment prior to removal from Asbestos Work Area if removed prior to completion.
- .5 Place all equipment, tools and unused materials that cannot be cleaned in Asbestos Waste Containers.
- .6 As work progresses, and at regular intervals, transport the sealed and labelled asbestos waste containers from the Asbestos Work Area to waste bin.
- .7 Place items in bins according to waste classification. Place asbestos waste, metals, non-asbestos waste, etc. in separate bins.
- .8 Removal of waste containers and decontaminated tools and materials from the Asbestos Work Area shall be performed as follows:
 - .1 Remove any visible contamination from the surface of the non-porous or sealable item being removed from the Asbestos Work Area. If the item can be cleaned, remove it from the site. If it cannot be cleaned thoroughly, place it in an Asbestos Waste Container.
 - .2 Place waste or item in Asbestos Waste Container and seal closed.
 - .3 Wet wipe outside of Asbestos Waste Container.
 - .4 At entrance to Asbestos Work Area, place in second Asbestos Waste Container. Seal closed.
 - .5 Remove the item from the Asbestos Work Area.
- .9 Transport waste and materials via the predetermined routes and exits. Arrange waste transfer route with Owner. Use a closed, covered cart to transport through Occupied Areas.

- .10 Provide workers transporting waste with means to access full personal protective equipment and all tools required to properly clean up spilled ACM in the case of a rupture of an Asbestos Waste Container.
- .11 Pick-up and drop off of garbage bin shall be at pre-approved times, and must not interfere with the Owners operations.
- .12 Transport asbestos contaminated waste to licensed landfill.
- .13 Co-operate with Manitoba Sustainable Development inspectors and immediately carry out instructions for remedial work at dump to maintain environment, at no additional cost to the Owner.

3.6 Asbestos Work Area Dismantling

- .1 Wash or HEPA vacuum equipment used in Asbestos Work Area, seal vacuum hoses and fittings.
- .2 Place tools and equipment used in contaminated work site but not cleaned in 6 mil polyethylene bags prior to removal from Asbestos Work Area.
- .3 Clean drop sheets with HEPA vacuum or wet cleaning methods at completion of work.
- .4 Carefully roll drop sheets toward the work area. As drop sheet is rolled away, immediately remove visible debris beneath with a HEPA vacuum.
- .5 Remove seals, tape, signage, etc.
- .6 Seal openings in HEPA vacuums.
- .7 Place drop sheets, seals, tape, clothing and other contaminated waste in asbestos waste containers, wet wipe and place in second asbestos waste container.
- .8 Rigid barriers that are to be reused shall be cleaned thoroughly.

3.7 Re-Establishment of Items

- .1 Upon completion of work:
 - .1 Move items that were removed from Asbestos Work Area prior to work, back into same location within Asbestos Work Area.
 - .2 Clean, mop and vacuum Asbestos Work Area.
 - .3 Enable building air handling systems.

End of Section 02 82 10

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