

1.1 MINIMUM STANDARDS

- .1 Materials shall be new and work shall conform to the minimum applicable standards of the Canadian General Standards Board, the Canadian Standards Association, the National Building Code of Canada 2010 (NBC) and all applicable Provincial and Municipal codes. In the case of conflict or discrepancy the most stringent requirement shall apply.

1.2 SHOP DRAWINGS

- .1 Submit for the Departmental Representative's review, five (5) copies of each shop drawing.
- .2 The review is for the sole purpose of ascertaining conformance with the general design concept, and does not mean approval of the design details inherent in the shop drawings, responsibility for which shall remain with the Contractor. Such review shall not relieve the Contractor of responsibility for errors or omissions in the shop drawings or of his responsibility for meeting all requirements of the Contract Documents.
- .3 Do not commence manufacture or order materials before shop drawings are reviewed.

1.3 SAMPLES

- .1 Samples: examples of materials, equipment, quality, finishes, workmanship.
- .2 Where colour, pattern or texture is criterion, submit full range of samples.
- .3 Reviewed and accepted samples will become standard of workmanship and material against which installed work will be verified.

1.4 PRODUCT DATA

- .1 Product data: manufacturers catalogue sheets, brochures, literature, performance charts and diagrams, used to illustrate standard manufactured products.
- .2 Submit five (5) copies of product data.
- .3 Delete information not applicable to project.
- .4 Cross-reference product data information to applicable portions of Contract Documents.

1.5 TAXES

- .1 Pay all taxes properly levied by law (including Federal, Provincial and Municipal).

1.6 FEES, PERMITS, AND CERTIFICATES

- .1 Pay all fees and obtain all permits. Provide authorities with plans and information for acceptance certificates. Provide inspection certificates as evidence that work conforms to requirements of Authority having jurisdiction.

1.7 FIRE SAFETY REQUIREMENTS

- .1 Comply with the National Building Code of Canada 2010 (NBC) for fire safety in construction and the National Fire Code of Canada 2010 (NFC) for fire prevention, fire fighting and life safety in building in use.

- .2 Comply with Human Resources Development Canada (HRDC), Fire Commissioner of Canada (FCC) standards:
 - .1 No. 301: Standard for Construction Operations
 - .2 No. 302: Standard for Welding and Cutting
 - .3 No. 374: Fire Protection Standard for General Storage (Indoor and Outdoor)
 - .4 Standards are available from Departmental Representative or following internet site: http://info.load-otea.hrdc-drhc.gc.ca/fire_prevention/standards/commissioner.shtml
 - .5 Retain all fire safety documents and standards on site.
- .3 Welding and cutting:
 - .1 Before welding, soldering, grinding and/or cutting work, obtain a permit from the Fire Prevention Unit as directed by the Departmental Representative. Store flammable liquids in approved CSA containers inspected by the Fire Prevention Unit. No open flame shall be used unless authorized by the Fire Prevention Unit.
 - .2 At least 48 hours prior to commencing cutting, welding or soldering procedure, provide to Departmental Representative:
 - .1 Notice of intent, indicating devices affected, time and duration of isolation or bypass.
 - .2 Completed welding permit as defined in FC 302.
 - .3 Return welding permit to Departmental Representative immediately upon completion of procedures for which permit was issued.
 - .3 A fire watcher as described in FC 302 shall be assigned when welding or cutting operations are carried out in areas where combustible materials within 10m may be ignited by conduction or radiation.
- .4 Where work requires interruption of fire alarms or fire suppression, extinguishing or protection systems:
 - .1 Provide watchman service as described in FC 301; In general, watchman service is defined as an individual conversant with Fire Emergency Procedures, performing fire picket duty within an unprotected and unoccupied (no workers) area once per hour.
 - .2 Retain services of manufacturer for fire protection systems on daily basis or as approved by FCC, to isolate and protect all devices relating to:
 - .1 modification of fire alarms, fire suppression, extinguishing or protection systems; and/or
 - .2 cutting, welding, soldering or other construction activities which might activate fire protection systems.
- .5 Immediately upon completion of work, restore fire protection systems to normal operation and verify that all devices are fully operational.
- .6 Inform fire alarm system monitoring agency and local Fire Department immediately prior to isolation and immediately upon restoration of normal operation.

1.8 FIELD QUALITY CONTROL

- .1 Carry out Work using qualified licensed workers or apprentices in accordance with Provincial Act respecting manpower vocational training and qualification.
- .2 Permit employees registered in Provincial apprenticeship program to perform specific tasks only if under direct supervision of qualified licensed workers.

- .3 Determine permitted activities and tasks by apprentices, based on level of training attended and demonstration of ability to perform specific duties.

1.9 HAZARDOUS MATERIALS

- .1 Comply with the requirements of the Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials; and regarding labelling and the provision of Material Safety Data Sheets (MSDS) acceptable to Human Resources Development Canada, Labour Program.
- .2 For work in occupied buildings give the Departmental Representative 48 hours notice for work involving designated substances (Ontario Bill 208), hazardous substances (Canada Labour Code Part II Section 10), and before painting, caulking, installing carpet or using adhesives.

1.10 TEMPORARY UTILITIES

- .1 Existing services required for the work, excluding power required for space heating may be used by the Contractor without charge. Ensure capacity is adequate prior to imposing additional loads. Connect and disconnect at own expense and responsibility.
- .2 Give the Departmental Representative 48 hours notice related to each necessary interruption of any mechanical or electrical service throughout the course of the work. Keep duration of these interruptions to a minimum. Carry out all interruptions after normal working hours of the occupants, preferably on weekends.

1.11 REMOVED MATERIALS

- .1 Unless otherwise specified, materials for removal become the Contractor's property and shall be taken from site.

1.12 PROTECTION

- .1 Protect finished work against damage until take-over.
- .2 Protect adjacent work against the spread of dust and dirt beyond the work areas.
- .3 Protect operatives and other users of site from all hazards.

1.13 USE OF SITE AND FACILITIES

- .1 Execute work with least possible interference or disturbance to the normal use of premises. Make arrangements with Departmental Representative to facilitate work as stated. Refer to Scheduling article below for work that must be done during "off hours".
- .2 Maintain existing services to building and provide for personnel and vehicle access.
- .3 Where security is reduced by work provide temporary means to maintain security.
- .4 Where elevators, dumbwaiters, conveyors or escalators exist Contractor may use these at Departmental Representative's discretion. Protect from damage, safety hazards and overloading of existing equipment.
- .5 Sanitary facilities will be assigned for Contractor's personnel. Others shall not be used. Keep facilities clean.

- .6 Closures: Protect work temporarily until permanent enclosures completed.

1.14 SITE STORAGE

- .1 The Departmental Representative will assign storage space which shall be equipped and maintained by the Contractor.
- .2 Do not unreasonably encumber site with materials or equipment.
- .3 Move stored products or equipment which interfere with operations of Departmental Representative or other contractors.
- .4 Obtain and pay for use of additional storage or work areas needed for operations.

1.15 CUT, PATCH AND MAKE GOOD

- .1 Cut existing surfaces as required to accommodate new work.
- .2 Remove all items so shown or specified.
- .3 Patch and make good surfaces cut, damaged or disturbed, to Departmental Representative's approval. Match existing material, colour, finish and texture.
- .4 Install firestops and smoke seals in accordance with ULC-S115-11 around pipe, ductwork, cables, and other objects penetrating fire separations to provide fire resistance not less than the fire resistance rating of surrounding floor, ceiling, and wall assembly.

1.16 SLEEVES, HANGERS AND INSERTS

- .1 Co-ordinate setting and packing of sleeves and supply and installation of hangers and inserts. Obtain Departmental Representative's approval before cutting into structure.

1.17 EXAMINATION

- .1 Examine site and conditions likely to affect work and be familiar and conversant with existing conditions.
- .2 Provide photographs of surrounding properties, objects and structures liable to be damaged or be the subject of subsequent claims.

1.18 SIGNS

- .1 Provide common-use signs related to traffic control, information, instruction, use of equipment, public safety devices, et cetera, in both official languages or by the use of commonly-understood graphic symbols to the Departmental Representative's approval.
- .2 No advertising will be permitted on this project.
- .3 The Departmental Representative will provide three signs describing the project for the information of building users. Install the signs at entrance to roof access hallway, and on both exit door leading onto the roofs.

1.19 ACCESS AND EGRESS

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

1.20 SCAFFOLDS AND WORK PLATFORMS

- .1 Design, install, and inspect scaffolds and work platforms required for work in accordance with relevant municipal, provincial and other regulations.
- .2 Provide design drawings, signed and sealed by qualified Professional Engineer licensed in the province of Ontario, where prescribed.
- .3 Additions or modifications to scaffolding must be approved by Professional Engineer in writing.

1.21 PUBLIC WAY PROTECTION

- .1 Design, erect and maintain hoarding and covered pedestrian walkways to support all loads including windloads and provide protection, complete with signs and electrical lighting as required by authority having jurisdiction.

1.22 WASTE MANAGEMENT

- .1 Comply with the Environmental Protection Act, Ontario Regulations O.Reg. 102/94 and O.Reg. 103/94 for waste management program on construction and demolition projects.

1.23 OPERATIONS AND MAINTENANCE MANUALS

- .1 Two (2) weeks prior to any scheduled training, submit to Departmental Representative six (6) copies of approved Operations Data and Maintenance Manual in both official languages, compiled as follows:
 - .1 Bind data in vinyl hard cover 3 "D" ring type loose leaf binders for 212 x 275 mm size paper. Binders must not exceed 75 mm thick or be more than 2/3 full.
 - .2 Enclose title sheet labelled "Operation Data and Maintenance Manual," project name, date and list of contents. Project name must appear on binder face and spine.
 - .3 Organize contents into applicable sections of work to parallel project specifications breakdown. Mark each section by labelled tabs protected with celluloid covers fastened to hard paper dividing sheets.
- .2 Include following information plus data specified.
 - .1 Maintenance instruction for finished surface and materials.
 - .2 Description: Operation of the equipment and systems defining start-up, shut-down and emergency procedures, and any fixed or adjustable set points that affect the efficiency of the operation. Include nameplate information such as make, size, capacity and serial number.
 - .3 Maintenance: Use clear drawings, diagrams or manufacturers' literature which specifically apply and detail the following:
 - .1 lubrication products and schedules.
 - .2 trouble shooting procedures.
 - .3 adjustment techniques.
 - .4 operational checks.
 - .5 Suppliers names, addresses and telephone numbers and components supplied by them must be included in this section. Components must be identified by a description and manufacturers part number.
 - .4 Guarantees showing:
 - .1 Name and address of projects.

- .2 Guarantee commencement date (date of Interim Certificate of Completion).
- .3 Duration of guarantee.
- .4 Clear indication of what is being guaranteed and what remedial action will be taken under guarantee.
- .5 Signature and seal of Guarantor.
- .5 Additional material used in project listed under various Sections showing name of manufacturer and source of supply.
- .3 Spare parts: List all recommended spares to be maintained on site to ensure optimum efficiency. List all special tools appropriate to unique application. All parts/tools detailed must be identified as to manufacturer, manufacturer part number and supplier (including address).
- .4 Include one complete set of final shop drawings (bound separately) indicating corrections and changes made during fabrication and installation.

1.24 RECORDS

- .1 As work progresses, maintain accurate records to show deviations from contract drawings. Just prior to Departmental Representative's inspection for issuance of final certificate of completion, supply to the Departmental Representative one (1) set of white prints with all deviations neatly inked in. The Departmental Representative will provide two sets of clean white prints for this purpose.

1.25 GUARANTEES AND WARRANTIES

- .1 Before completion of work collect all manufacturer's guarantees and warranties and deposit with Departmental Representative.

1.26 CLEAN UP

- .1 Clean up work area as work progresses. At the end of each work period, and more often if ordered by the Departmental Representative, remove debris from site, neatly stack material for use, and clean up generally.
- .2 Upon completion remove scaffolding, temporary protection and surplus materials. Make good defects noted at this stage.
- .3 Clean areas under contract to a condition at least equal to that previously existing and to approval of Departmental Representative.

1.27 SECURITY CHECK

- .1 Personnel will be checked daily at start of work shift and given a pass which must be worn at all times. Pass must be returned at end of work shift and personnel checked out.

1.28 BUILDING SMOKING ENVIRONMENT

- .1 Smoking is not permitted in the Building. Obey smoking restrictions on building property.

1.29 DUST CONTROL

- .1 Provide dust control measures to localize dust generating activities, and for protection of workers, finished areas of work, adjacent property and the general public.
- .2 Maintain and relocate protection until such work is complete.

1.30 TESTING LABORATORY SERVICES

- .1 Departmental Representative will appoint and pay for costs of inspection and testing services, unless indicated otherwise.
- .2 Provide safe working areas and assist with testing procedures, including provisions for materials or services and co-ordination, as required by testing agency and as authorized by Departmental Representative.
- .3 Where tests indicate non-compliance with specifications, contractor to pay for initial test and all subsequent testing of work to verify acceptability of corrected work.

1.31 SCHEDULING

- .1 On award of contract submit bar chart construction schedule for work, indicating anticipated progress stages within time of completion. When schedule has been reviewed by the Departmental Representative, take necessary measures to complete work within scheduled time. Do not change schedule without notifying Departmental Representative.
- .2 Carry out work during "regular hour" Monday to Friday from 06:00 to 18:00 hours.
- .3 Give the Departmental Representative 48 hours notice for work to be carried out during "off hours".

1.32 COST BREAKDOWN

- .1 Before submitting first progress claim submit breakdown of Contract Amount in detail as directed by Departmental Representative and aggregating the Contract Amount. After approval by Departmental Representative cost breakdown will be used as the basis of progress payments

1.33 PRECEDENCE

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

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PART 1 – GENERAL

1.1 REFERENCES

1. Federal Legislation
 1. Canada Labour Code, Part II, section 124 and 125. Canada Occupational Health and Safety Regulations
 2. Transportation of Dangerous Goods Act, 1992 (TDGA)
 3. Canada Consumer Product Safety Act
 1. Surface Coating Materials Regulations SOR/2005-109.
 4. Canadian Environmental Protection Act, 1999 (CEPA)
 1. PCB Regulations (SOR/2008-273)
 2. Federal Halocarbon Regulations, 2003 (SOR/2003-289)
2. Provincial Legislation
 1. Ontario Occupational Health and Safety Act, R.S.O. 1990, 2010 edition.
 1. Ontario Regulation 490/09 – Designated Substances (O.Reg. 490/09).
 2. Ontario Regulation 278/05 – Designated Substance - Asbestos on Construction Projects and in Buildings and Repair Operations, (O.Reg. 278/05).
 3. Ontario Regulation 213/91 for Construction Projects (O.Reg. 213/91)
 2. Ontario Environmental Protection Act, R.R.O. 1990,
 1. Ontario Regulation 347/09, General – Waste Management (O.Reg. 347/09).
 2. Ontario Regulations 362/90 – Waste Management, PCBs (O.Reg. 362/90)
 3. Ontario Regulation 463/10, Ozone Depleting Substances and Other Halocarbons (O.Reg. 463/10).
3. Canadian General Standards Board (CGSB).
4. Canadian Standards Association (CSA International). CAN/CSA-Z94.4-11 - Respiratory Protection
5. Underwriters' Laboratories of Canada (ULC).

1.2 DEFINITIONS

Asbestos-Containing Materials (ACMs): means material that contains 0.5 per cent or more asbestos by dry weight as per Ontario Regulation 278/05.

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

Time-weighted average exposure limit (TWAEEL): the time-weighted average airborne concentration of a biological or chemical agent to which a worker may be exposed in a work day or work week as prescribed by Ontario Regulation 490/09 Designated Substances, as amended.

1.3 RELATED SECTIONS

Not used

1.4 DESIGNATED SUBSTANCES

Confirm with the Departmental Representative that no additional designated substances have been brought to the project area prior to beginning work.

Additional designated substances and hazardous materials may exist outside the accessible survey area but are beyond the scope of this project.

Should any additional material, suspected to be a designated substance, be encountered within the project area, any disturbance of such material must be stopped, precautionary measures taken, and the Departmental Representative must be notified immediately. Do not proceed until written instructions have been received.

1. ACRYLONITRILE: Not Identified

2. ARSENIC: Not Identified

3. ASBESTOS: **Identified**

1. Bulk sampling and subsequent laboratory analysis has determined that the following materials contain regulated concentrations of asbestos:

- Transit wall panels in the project area contain 15% Chrysotile asbestos,
- Grey tar, applied overtop of fiberglass ductwork on the lower roof area contains 16.64% Chrysotile asbestos,
- Although select samples of beige and white caulking applied to the joints of metal roof flashing were confirmed to not contain asbestos, an additional sample collected for QA/QC purposes revealed beige flashing caulking as containing 2.47% Chrysotile asbestos. As such, due to the uncertainty associated with the installation of caulking materials, all caulking applications should be assumed to contain 2.74% Chrysotile asbestos, unless extensive delineation proves otherwise.

2. Bulk sampling, subsequent laboratory analysis, and/or limited visual observations has determined that the following materials do not contain regulated concentrations of asbestos:

- Roofing material layers associated with the lower roof (white vinyl covered);
- Roof material layers associated with the upper roof section;
- Grey caulking applied to the seams of metal sheathed glycol piping;
- Tar material applied to wall; and
- Glycol piping insulation was comprised of non-asbestos fiberglass materials.

4. BENZENE: Not Identified
5. COKE OVEN EMISSIONS: Not identified
6. ETHYLENE OXIDE: Not Identified
7. ISOCYANATES: Not Identified
8. LEAD: **Identified**
 1. Detectable concentrations of lead (in paint) were identified in the following:
 - Beige paint applied to perimeter brick walls throughout the project area contain 619 ppm lead. This paint was peeling in select areas; and
 - White paint applied to steel beams contains 5,580 ppm lead. This paint was peeling in minor areas.
9. MERCURY: Not Identified
10. SILICA: **Identified**
 1. Free crystalline silica is expected to be present in concrete and cement materials, roofing materials and associated layers, asbestos cement/Transite panels, and tar and caulking.
11. VINYL CHLORIDE MONOMER: Not Identified
12. Halocarbons: **Identified**
 1. Halocarbons are suspected to be present in rooftop cooling units.
13. Polychlorinated Biphenyls (PCBs): Not Identified
14. Other hazardous materials: Not Identified

1.5 RECOMMENDATIONS

1. ASBESTOS
 1. All work must be done in accordance with O.Reg 278/05 (as amended).
 2. The disturbance of ACMs on construction and demolition projects in the province of Ontario is governed by O.Reg 278/05, as amended. This regulation classifies all asbestos disturbances as Low Risk (Type 1), Moderate Risk (Type 2), or High Risk (Type 3), each of which has defined precautionary measures. All asbestos materials are subject to

specific handling and disposal precautions, and must be removed prior to demolition. The Ontario Ministry of Labour (MoL) must be notified of any project involving removal of more than a minor amount (e.g. typically 1 square metre) of friable asbestos material.

3. Type 1 work procedures can be used for the removal of non-friable ACMs (e.g. caulking materials, tar, transite/cement board), provided that the material can be wetted and removed intact using only non-powered hand tools. If these conditions cannot be met, then more stringent (e.g., Type 2 or Type 3) procedures are necessary.
4. Disposal of asbestos waste must be done in accordance with "General – Waste Management" O.Reg 347/90 (as amended) under the Ontario Environmental Protection Act and the federal Transportation of Dangerous Goods Act. The waste must be disposed at a licensed waste disposal site. Proper notification must be issued to the Departmental Representative prior to transportation of waste.

2. LEAD

1. Follow recommendations provided in the Ontario Ministry of Labour (MoL) Guideline entitled "Guideline: Lead on Construction Projects". This guideline classifies all lead disturbances as Type 1, Type 2a, Type 2b, Type 3a or Type 3b work, and assigns different levels of respiratory protection and work procedures for each classification.
2. Work procedures and personal protective equipment must be used to ensure that workers are not exposed to airborne lead levels that exceed the TWAEL of 0.05 milligram per cubic metre (mg/m³) prescribed by O.Reg 490/09.
3. The use of mechanically-powered tools or torches on lead-containing materials increases the concentration of airborne lead dust or fumes requiring more stringent respiratory protection and controlled work procedures.
4. Even at low concentrations, there may be potential for exposure to very high concentrations of lead depending on the activities performed that disturb the lead-containing materials. At low lead concentrations, conducting a risk assessment to assess the potential for exposure is required to determine the need to follow precautionary measures.
5. Disposal of construction waste containing lead must be done in accordance with "General – Waste Management" O.Reg 347/90 (as amended) under the Ontario Environmental Protection Act and the federal Transportation of Dangerous Goods Act. The classification of the waste is dependent upon the result(s) of leachate test(s). The waste can be classified as "hazardous", "non-hazardous" or "registerable solid waste", depending on the results of the leachate test.

3. SILICA

1. Comply with Ontario Regulations O.Reg 490/09 when performing works that may disturb silica-containing materials. The regulation provides requirements for allowable exposure levels.

2. Silica dust can be generated through such processes as blasting, grinding, crushing, and sandblasting silica-containing material. Since silica is present in select materials within the project area, appropriate respiratory protection and ventilation must be donned during the demolition and modifications of these structures.
3. Follow recommendations provided in the MoL Guideline entitled "Guideline: Silica on Construction Projects". This document classifies all silica disturbances as Type 1, Type 2 or Type 3 work, and assigns different levels of respiratory protection and work procedures for each classification. These work procedures should be followed when performing work involving the disturbance of silica-containing materials.

4. HALOCARBONS

1. The handling, transport and disposal of halocarbons is governed by the following:
 - Ozone-depleting Substances Regulations, 1998, as amended;
 - O.Reg 463/10, Ozone Depleting Substances and Other Halocarbons;
 - O.Reg 238/01, Refrigerants; and
 - Federal Halocarbon Regulations, 2003 (FHR).
2. When suspected halocarbon-containing equipment is taken out of service, the halocarbon refrigerants must be captured and reclaimed by a licensed technician. The presence of halocarbon refrigerants within unit's no longer in service should be verified. If halocarbon refrigerants are found to be present, they must be captured and reclaimed by a licensed technician. Appropriate records of equipment decommissioning must be maintained in accordance with requirements of the FHR.

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Part 1 General

1.1 RELATED WORK

- .1 Refer to facility services subgroup specifications and drawings for relocation, removal, capping, and alterations to the work of Divisions 22, 23 and 26 such as conduit, wiring, fixtures, ducts, piping and associated components.
 - .1 Protect active services that are intended to remain and which pass through spaces involved in alterations and repairs.
 - .2 Conceal piping, duct, conduit and other service alterations in ceilings, walls and furred spaces.
- .2 Refer to site and infrastructure subgroup specifications for technical requirements for relocation, removal, capping, and alterations of specific materials, components and assemblies.

1.2 SUBMITTALS

- .1 Include sequence of operations for selective demolition work and removals. Indicate coordination for shutoff, capping, and continuation of utility services as required, together with details for dust and noise control protection.
 - .1 Provide detailed sequence of demolition and removal work to ensure uninterrupted progress of Departmental Representative's on-site operations.
 - .2 Coordinate with Departmental Representative's continuing occupation of portions of existing building.
- .2 Submit photographs of existing conditions of structures, surfaces equipment and adjacent improvements that might be misconstrued as damage related to removal operations prior to start of the work.

1.3 EXISTING CONDITIONS

- .1 Departmental Representative will occupy portions of the building immediately adjacent to areas of selective demolition. Conduct selective demolition work in a manner that will minimize need for disruption of Departmental Representative's normal operations. Provide minimum 72 hours advance notice to Departmental Representative of demolition activities that will affect Departmental Representative's normal operations.
- .2 Take over areas and materials to be demolished based on their condition at time of examination prior to bidding. Minor variations within structure may occur.
- .3 Prior to commencing work, examine the site to determine the nature and extent of materials to be removed and site conditions affecting operations. Advise Departmental Representative in writing of problems affecting execution of the Work prior to start of work.

1.4 ASBESTOS AND HAZARDOUS MATERIALS

- .1 Demolition of spray or trowel applied asbestos can be hazardous to health. Should material resembling spray or trowel-applied asbestos be encountered, stop work and notify Departmental Representative immediately.
- .2 Hazardous Materials include dangerous substances, dangerous goods, hazardous commodities and hazardous products, including but not limited to: corrosive agents, flammable substances, ammunition, explosives, radioactive substances, or other material that can endanger human health, well being or environment if handled improperly.

- .3 If hazardous materials are encountered during demolition operations, comply with applicable regulations, laws and ordinances concerning removal, handling, and protection against exposure or environmental pollution.
- .4 Departmental Representative will arrange for removal of asbestos and other hazardous materials.
- .5 Do not proceed until written instructions have been received from Departmental Representative.

1.5 COORDINATION

- .1 Coordinate alteration work to maintain access to and minimize disruption of operations of existing occupied areas.
- .2 Coordinate selective demolition to ensure continued access to and use of building.

1.6 PROTECTION

- .1 Provide temporary barricades and other forms of protection as necessary to protect Departmental Representative's personnel and general public from injury due to selective demolition work.
- .2 Provide protective measures as necessary to provide free and safe passage of Departmental Representative's personnel and general public to occupied portions of the building.
- .3 Provide temporary, covers, railings, supports and other protection as required.
- .4 Protect from damage existing finish work that is to remain in place and becomes exposed during alteration operations.
- .5 Keep noise, dust, and inconvenience to occupants to minimum.
- .6 Take precautions to ensure that dust and debris do not contaminate adjacent corridors, offices, occupied areas or services.
- .7 Protect building systems, services and equipment.
- .8 Provide temporary weather protection during interval between demolition and removal of existing construction on exterior surfaces and installation of new construction to ensure that no water leakage or damage occurs to structure or interior areas of existing building.
- .9 Prevent debris from blocking or otherwise contaminating drainage systems, ventilation systems, mechanical and electrical systems which must remain in operation.
- .10 Remove protections at completion of work.
- .11 Promptly repair damages caused to adjacent facilities by demolition work at no cost to Departmental Representative.

1.7 STRUCTURAL ALTERATIONS

- .1 Prior to demolishing, removing or cutting through concrete, structural masonry, steel framing and other load bearing members, including floors, ceilings, columns, beams and walls, obtain written acceptance from project design structural engineer.

1.8 DAMAGE

- .1 Promptly repair damages caused to adjacent facilities by demolition work.

Part 2 Products (Not Applicable)

Part 3 Execution

3.1 PREPARATION

- .1 Provide interior and exterior shoring, bracing and support to prevent movement, settlement, or collapse of areas to be demolished and adjacent facilities to remain.
- .2 Cease operations and notify Departmental Representative immediately if safety of structure appears to be endangered. Take precautions to support structure until determination is made for continuing operations.
- .3 Provide weather-proof closures for exterior openings resulting from alteration work.
- .4 Disconnect and cap mechanical services and distribution systems entering area of work and piping and ductwork serving fixtures to be removed, in accordance with utility requirements and requirements of authority having jurisdiction.
- .5 Provide bypass connections as necessary to maintain continuity of service to occupied areas of building.

3.2 ALTERATIONS TO EXISTING ASSEMBLIES

- .1 Remove parts of existing building to permit new construction and alterations.
- .2 Perform work in a systematic manner. Use such methods as necessary to complete the work indicated on the drawings in accordance with the schedule and governing regulations.
- .3 Promptly remove debris to avoid imposing excessive loads on supporting walls, floors or framing.
- .4 Demolish back to structural members, decks and slabs, unless specified otherwise.
- .5 Remove existing equipment, services, and obstacles where required for demolition, remodeling, refinishing or making good existing surfaces, and replace as work progresses.
- .6 At end of each day's work, leave work in safe condition so that no part is in danger of toppling or falling or otherwise creates a hazard for building occupants.
- .7 Protect interiors of parts not to be demolished from exterior elements at all times.
- .8 Lower demolition materials and debris to ground through enclosed chutes. Do not create a falling materials hazard.
- .9 Control dust at all times and prevent the spread of dust beyond area where Work is being performed.
- .10 Demolished and removed products, materials, fixtures, equipment become the property of the Contractor at the time of their removal from their original location in the existing structure, unless specified otherwise.

3.3 DISPOSAL OF DEMOLITION AND CONSTRUCTION WASTE MATERIALS

- .1 Unless specified otherwise, materials for removal become Contractor's property.
- .2 Clear away demolished materials, debris, dirt, rubbish, and loose litter resulting from Work of this Section, minimum daily.

- .3 Remove from building site debris, rubbish and other materials resulting from demolition operations. Transport from site.
- .4 Dispose of removed materials off site, except where specified otherwise, legally and in accordance with requirements of authority having jurisdiction.
- .5 Handle and dispose of hazardous materials in accordance with applicable legislation and requirements of authorities having jurisdiction.
- .6 Burning of removed materials is not permitted on project site.

3.4 CLEANUP AND REPAIR

- .1 Upon completion of demolition work remove tools, equipment, and demolished materials from site. Remove protections and leave interior areas broom clean.
- .2 Repair demolition performed in excess of that required. Return elements of construction and surfaces to remain to condition existing prior to start of operations of this section. Repair adjacent construction and surfaces soiled or damaged by selective demolition, alterations or removals.

END OF SECTION

Part 1 General

1.1 PRECEDENCE

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

1.2 REFERENCES

- .1 Canada Labour Code, Canada Occupational Safety and Health Regulations.
- .2 National Building Code of Canada (NBC) 2010
 - .1 Part 8 Safety Measures at Construction and Demolition Sites
- .3 Province of Ontario
 - .1 Occupational Health and Safety Act and Regulations for Construction Projects.

1.3 SUBMITALLS

- .1 Make submittals in accordance with Section 01 00 10.
- .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 Site specific safety hazard assessment.
 - .2 Safety and health risk or hazard analysis for site tasks and operation found in work plan.
 - .3 Site specific fire safety plan.
- .3 Submit Construction Safety Checklists after completion.
- .4 Submit Contractor's authorized representative's work site health and safety inspection reports to Departmental Representative weekly.
- .5 Submit copies of reports or directions issued by Federal and Provincial health and safety inspector.
- .6 Submit copies of incident and accident reports.
- .7 Submit Material Safety Data Sheets (MSDS) to Departmental Representative.
- .8 Personnel training requirements including as follows:
 - .1 Names of personnel and alternates responsible for site safety and health, hazards present on site, and use of personal protective equipment.
- .9 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.
- .10 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.

- .11 On-site Contingency and Emergency Response Plan: Address standard operating procedures to be implemented during emergency situations, including but not necessarily limited to:
 - .1 Fire.
 - .2 Physical injury.
- 1.4 FILING OF NOTICE**
 - .1 File Notice with Provincial authorities prior to commencement of Work.
- 1.5 SAFETY ASSESSMENT**
 - .1 Perform site specific safety hazard assessment related to project.
- 1.6 MEETINGS**
 - .1 Schedule and administer Health and Safety meeting with Departmental Representative prior to commencement of Work.
 - .2 Pre-Construction Meetings: Attend health and safety pre-construction meeting.
- 1.7 REGULATORY REQUIREMENTS**
 - .1 Comply with specified standards and regulations to ensure safe operations at site containing hazardous or toxic materials.
- 1.8 PROJECT AND SITE CONDITIONS**
 - .1 Access to site, location of waste containers, materials storage, hoisting equipment shall be as indicated by Departmental Representative.
- 1.9 GENERAL REQUIREMENTS**
 - .1 Develop written site-specific Health and Safety Plan based on hazard assessment prior to commencing any site Work and continue to implement, maintain, and enforce plan until final demobilization from site. Health and Safety Plan must address project specifications.
 - .2 Relief from or substitution for any portion or provision of minimum Health and Safety Guidelines specified herein or reviewed site-specific Health and Safety Plan must be submitted to Departmental Representative in writing. Departmental Representative will respond in writing, either accepting or requesting improvements.
- 1.10 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.
- 1.11 COMPLIANCE REQUIREMENTS**
 - .1 Comply with Ontario Health and Safety Act and Regulations for Construction Projects.

1.12 UNFORESEEN HAZARDS

- .1 Should any unforeseen or peculiar safety-related factor, hazard, or condition become evident during performance of Work, and follow procedures in place for Employee's Right to Refuse Work in accordance with Acts and Regulations of Province having jurisdiction. Advise Departmental Representative verbally and in writing.

1.13 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 minimum 2 years' site-related working experience specific to activities associated with roof demolition and roof replacement.
 - .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.

1.14 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 having jurisdiction, and in consultation with Departmental Representative.

1.15 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.

1.16 POWDER ACTUATED DEVICES

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

1.17 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.

Part 2 Products

2.1 NOT USED

Part 3 Execution

3.1 NOT USED

END OF SECTION