

Argo Building Adaptive Reuse
Baffin Drive, BIO
Dartmouth, NS
Project No. R.069793.001

SIGN-OFF

SECTION 00 01 07

January 2015

REAL PROPERTY SERVICES
PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

DISCIPLINE

SIGNATURE

DATE

Architectural
Specifications:



2015-01-20

Mechanical
Specifications:



2015/01/22

Electrical
Specifications:

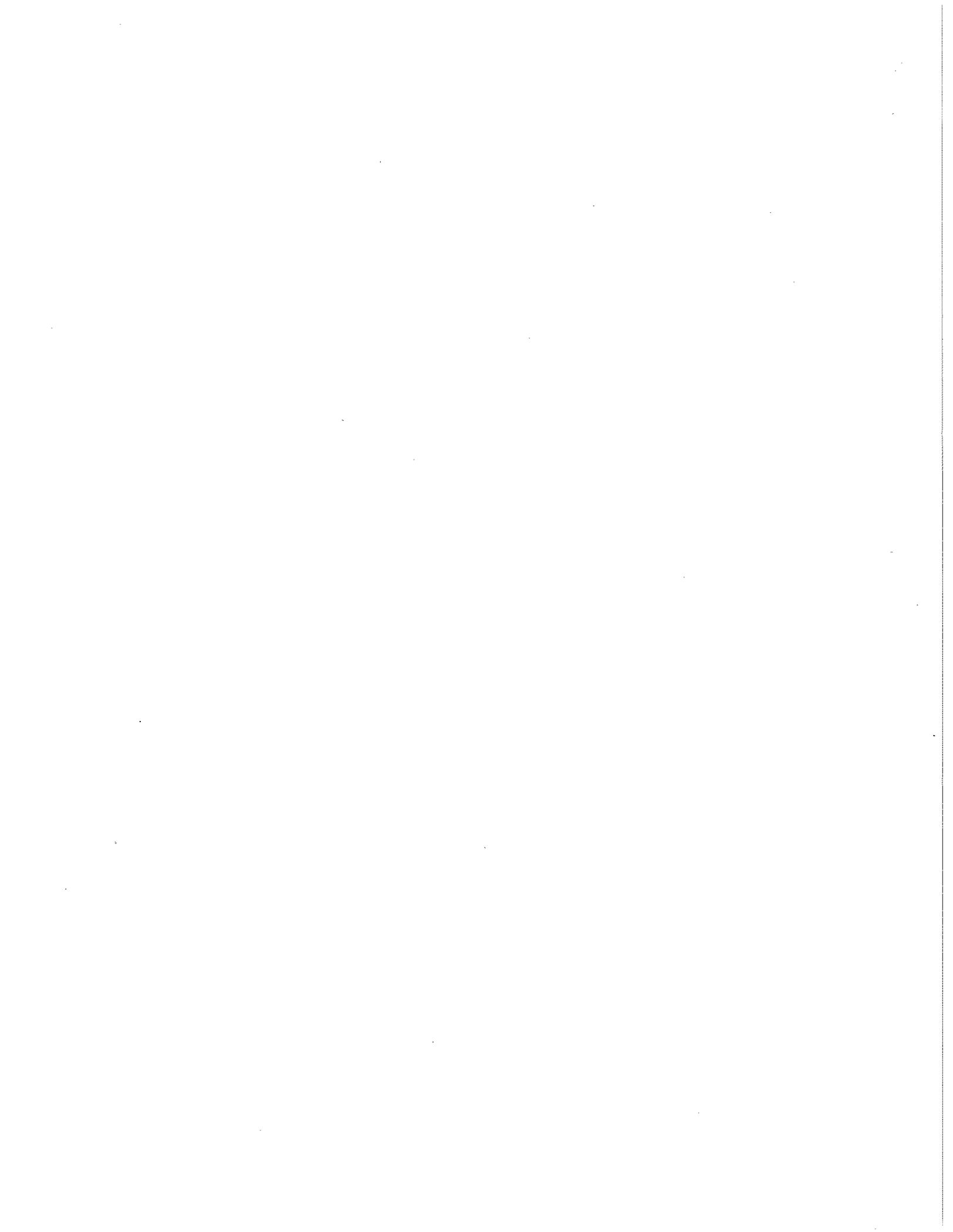
Structural
Specifications:



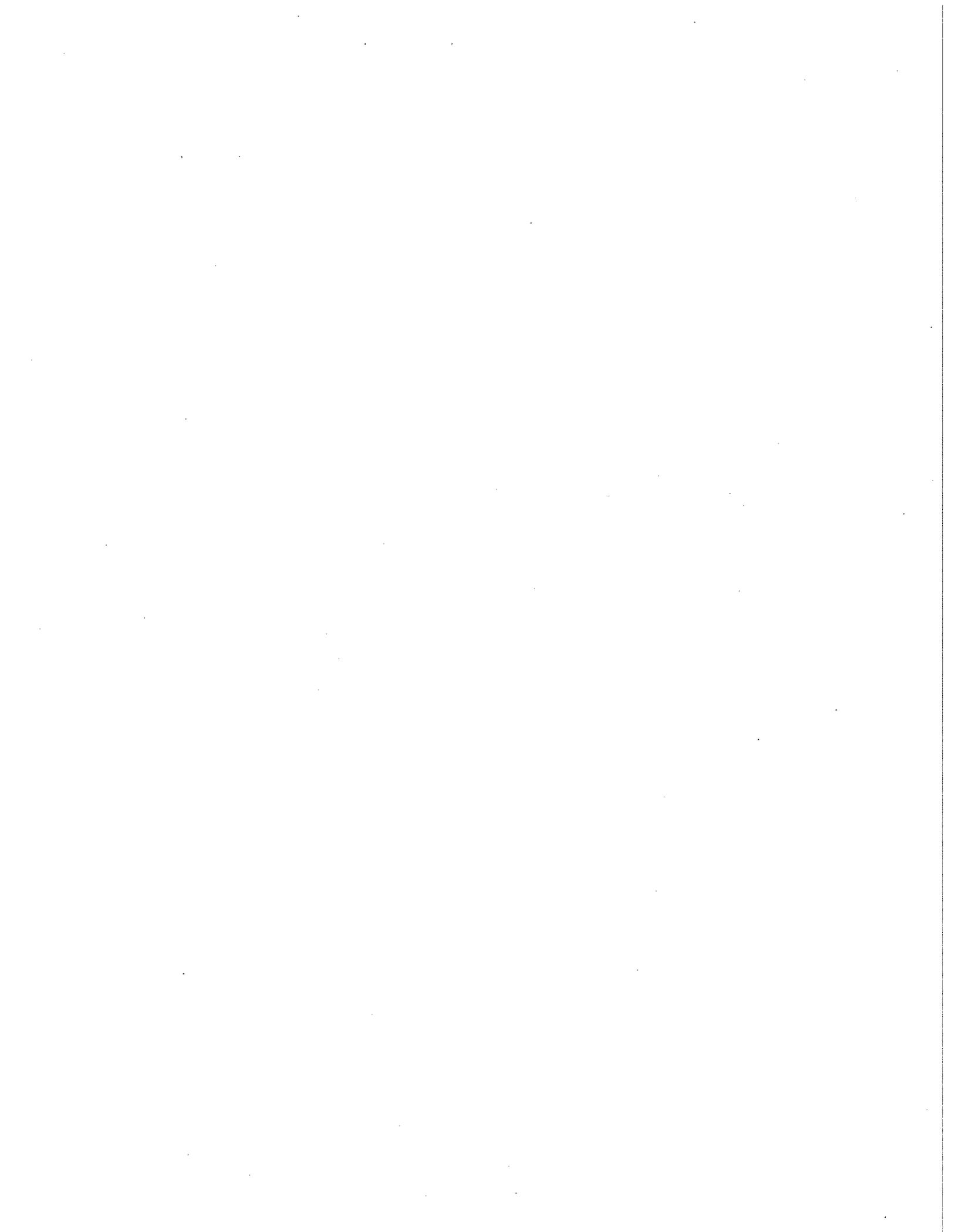
PWGSC Project Mgr:



JAN 23/15



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PART 1 - GENERAL

- 1.1 WORK COVERED BY CONTRACT DOCUMENTS .1 Work of this Contract comprises adaptive reuse of the Argo Building, located at the Bedford Institute of Oceanography, Dartmouth, NS.
- 1.2 WORK BY OTHERS .1 Co-operate with other Contractors in carrying out their respective works and carry out instructions from Departmental Representative.
- 1.3 CONTRACTOR USE OF PREMISES .1 Co-ordinate use of premises under direction of Departmental Representative.
- 1.4 OWNER OCCUPANCY .1 Owner will vacate the premises during construction. Owner will need periodic access to the telecommunication room.
- .2 Co-operate with Departmental Representative in scheduling operations to minimize conflict and to facilitate Owner usage of telecom room.
- 1.5 EXISTING SERVICES .1 Notify Departmental Representative and utility companies of intended interruption of services and obtain required permission.
- .2 Where Work involves breaking into or connecting to existing services, give Departmental Representative 48 hours notice for necessary interruption of mechanical or electrical service throughout course of work. Minimize duration of interruptions. Carry out work at times as directed by governing authorities with minimum disturbance to pedestrian vehicular traffic and tenant operations in other buildings on the site.
- .3 Establish location and extent of service lines in area of work before starting Work.
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- 1.5 EXISTING SERVICES
(Cont'd)
- .3 (Cont'd)
Notify Departmental Representative of findings.
- .4 Submit schedule to and obtain approval from Departmental Representative for any shut-down or closure of active service or facility including power and communications services. Adhere to approved schedule and provide notice to affected parties.
- .5 Provide temporary services to maintain critical building and tenant systems.
- .6 Where unknown services are encountered, immediately advise Departmental Representative and confirm findings in writing.
- .7 Protect, relocate or maintain existing active services. When inactive services are encountered, cap off in manner approved by authorities having jurisdiction.
- .8 Record locations of maintained, re-routed and abandoned service lines.
- .9 Construct barriers in accordance with Section 01 56 00 - Temporary Barriers and Enclosures
- 1.6 DOCUMENTS REQUIRED
- .1 Maintain at job site, one copy each document as follows:
- .1 Contract Drawings.
 - .2 Specifications.
 - .3 Addenda.
 - .4 Reviewed Shop Drawings.
 - .5 List of Outstanding Shop Drawings.
 - .6 Change Orders.
 - .7 Other Modifications to Contract.
 - .8 Field Test Reports.
 - .9 Copy of Approved Work Schedule.
 - .10 Health and Safety Plan and Other Safety Related Documents.
 - .11 Other documents as specified.
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PART 1 - GENERAL

- 1.1 RELATED SECTIONS .1 Section 01 11 00 - Summary of Work.
- 1.2 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.
- 1.3 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 Maintain existing services to building and provide for personnel and vehicle access.
- 1.4 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 - Temporary Barriers and Enclosures
- 1.5 SPECIAL REQUIREMENTS .1 Ensure that Contractor personnel employed on site become familiar with and obey regulations including safety, fire, traffic and security regulations.
- 1.6 SECURITY CLEARANCES .1 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.

PART 2 - PRODUCTS

2.1 NOT USED .1 Not used.

PART 3 - EXECUTION

3.1 NOT USED .1 Not used.

1.7 BUILDING .1 Comply with smoking restrictions. Smoking is
SMOKING ENVIRONMENT not permitted in the building.

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 RELATED SECTIONS .1 Section 01 11 00 - Summary of Work.
.2 Section 01 14 00 - Work Restrictions.
- 1.2 ADMINISTRATIVE .1 Departmental Representative will schedule and administer project meetings throughout the progress of the work and record and distribute minutes for review and comment. If no comments are provided to the Departmental Representative within 5 days of receipt, Contractor is assumed to be in agreement and minutes become official record of meeting.
.2 Provide physical space and make arrangements for meetings.
.3 Preside at meetings.
.4 Representative of Contractor, Subcontractor and suppliers attending meetings will be qualified and authorized to act on behalf of party each represents.
- 1.3 PRECONSTRUCTION MEETING .1 Within 5 days after award of Contract, Departmental Representative will request a meeting of parties in contract to discuss and resolve administrative procedures and responsibilities.
.2 Departmental Representative, Contractor and major Subcontractors will be in attendance.
.3 Incorporate mutually agreed variations to Contract Documents into Agreement, prior to signing.

1.4 PROGRESS
MEETINGS

- .1 During course of Work, Departmental Representative will schedule progress meetings as required. Departmental Representative will record and distribute minutes for review and comment. If no comments are provided to Departmental Representative within 5 days of receipt, Contractor is assumed to be in agreement and minutes become official record of meeting.
- .2 Contractor, major Subcontractors involved in Work and Departmental Representative and Owner are to be in attendance.
- .3 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.

Argo Building Adaptive PROJECT MEETINGS
Reuse
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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 RELATED REQUIREMENTS .1 Section 01 45 00 - Quality Control.
- .2 Section 01 78 00 - Closeout Submittals.
- 1.2 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 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.
- .4 Notify Departmental Representative, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
- .5 Verify field measurements and affected adjacent Work are co-ordinated.
- .6 Contractor's responsibility for errors and omissions in submission is not relieved by Departmental Representative's review of submittals.
- .7 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Departmental Representative review.

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- 1.2 ADMINISTRATIVE .8 Keep one reviewed copy of each submission on
(Cont'd) site.
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- 1.3 SHOP DRAWINGS .1 The term "shop drawings" means drawings,
AND PRODUCT DATA 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 the Province of Nova Scotia, 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 10 days for Departmental
Representative's review of each submission.
- .5 Adjustments made on shop drawings by
Departmental Representative are not intended
to change Contract Price. 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.
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- 1.3 SHOP DRAWINGS .7 (Cont'd)
AND PRODUCT DATA .5 Other pertinent data.
(Cont'd)
- .8 Submissions 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 Operating weight.
 - .8 Wiring diagrams.
 - .9 Single line and schematic diagrams.
 - .10 Relationship to adjacent work.
- .9 After Departmental Representative's review, distribute copies.
- .10 Submit electronic copy of shop drawings for each requirement requested in specification Sections and as Departmental Representative may reasonably request.
- .11 Submit 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 1 electronic copies of test reports for requirements requested in specification

- 1.3 SHOP DRAWINGS .12 (Cont'd)
AND PRODUCT DATA
(Cont'd)
- .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 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 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 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 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.

- 1.3 SHOP DRAWINGS AND PRODUCT DATA
(Cont'd)
- .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 Works and Government Services Canada (PWGSC) is for sole purpose of ascertaining conformance with general concept.
- .1 This review shall not mean that PWGSC 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.
- 1.4 SAMPLES
- .1 Submit for review samples as requested in respective specification Sections. Label samples with origin and intended use.
- .2 Deliver samples prepaid to Departmental Representative's business address site office.
- .3 Notify Departmental Representative in writing, at time of submission of deviations in samples from requirements of Contract Documents.

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- 1.4 SAMPLES
(Cont'd)
- .4 Where colour, pattern or texture is criterion, submit full range of samples.
 - .5 Adjustments made on samples by Departmental Representative are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Departmental Representative prior to proceeding with Work.
 - .6 Make changes in samples which Departmental Representative may require, consistent with Contract Documents.
 - .7 Reviewed and accepted samples will become standard of workmanship and material against which installed Work will be verified.
- 1.5 MOCK-UPS
- .1 Erect mock-ups in accordance with 01 45 00 - Quality Control.
- 1.6 PHOTOGRAPHIC DOCUMENTATION
- .1 Submit electronic copy of colour digital photography in jpg format, standard resolution and as directed by Departmental Representative.
 - .2 Project identification: name and number of project and date of exposure indicated.
 - .3 Frequency of photographic documentation: weekly or as directed by Departmental Representative and:
 - .1 Upon completion of: demolition, framing and services before concealment of Work, and as directed by Departmental Representative.
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SUBMITTAL PROCEDURES

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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 Health and safety considerations required to ensure that PWGSC shows due diligence towards health and safety on construction sites, and meets the requirements laid out in PWGSC/RPB Departmental Policy DP 073 - Occupational Health and Safety - Construction.
- 1.2 REFERENCES .1 Canada Labour Code, Part 2, Canada Occupational Safety and Health Regulations
- .2 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
- .1 Material Safety Data Sheets (MSDS).
- .3 Province of Newfoundland and Labrador
- .1 Occupational Health and Safety Act, R.S.N. 1990.
- 1.3 SUBMITTALS .1 Make submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .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.
- .3 Submit electronic copies of Contractor's authorized representative's work site health and safety inspection reports to Departmental Representative and or authority having jurisdiction.
- .4 Submit copies of reports or directions issued by Federal, Provincial and Territorial health and safety inspectors.
- .5 Submit copies of incident and accident reports.

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- 1.3 SUBMITTALS
(Cont'd)
- .6 Submit WHMIS MSDS - Material Safety Data Sheets in accordance with Section 02 81 01 - Hazardous Materials.
 - .7 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.
 - .8 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.
 - .9 Medical Surveillance: where prescribed by legislation, regulation or safety program, submit certification of medical surveillance for site personnel prior to commencement of Work, and submit additional certifications for any new site personnel to Departmental Representative.
 - .10 On-site Contingency and Emergency Response Plan: address standard operating procedures to be implemented during emergency situations.
- 1.4 FILING OF NOTICE
- .1 File Notice of Project with Provincial authorities prior to beginning 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.
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- 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.
- 1.8 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.
- 1.9 COMPLIANCE REQUIREMENTS .1 Comply with Occupational Health and Safety Act, Occupational Health and Safety Regulations, C. Nova Scotia Reg.
- .2 Comply with Canada Labour Code, Canada Occupational Safety and Health Regulations.
- 1.10 UNFORSEEN HAZARDS .1 When unforeseen or peculiar safety-related factor, hazard, or condition occur during performance of Work, follow procedures in place for Employee's Right to Refuse Work in accordance with Acts and Regulations of Province having jurisdiction and advise Departmental Representative verbally and in writing.
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- 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 work.
 - .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, 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 having jurisdiction, and in consultation with Departmental Representative.
- 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.
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HEALTH AND SAFETY
REQUIREMENTS

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1.14 BLASTING .1 Blasting or other use of explosives is not permitted.

PART 1 - GENERAL

1.1 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 will order 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.

1.2 INDEPENDENT
INSPECTION AGENCIES

- .1 Unspecified Independent Inspection/Testing Agencies may be engaged by Departmental Representative for purpose of inspecting and/or testing portions of Work. Cost of such unspecified services will be borne by Contractor.
- .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

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- 1.2 INDEPENDENT INSPECTION AGENCIES (Cont'd) .4 (Cont'd)
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 reinspection.
- 1.3 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.
- 1.4 PROCEDURES .1 Notify appropriate 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 orderly sequence to not cause delays 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.
- 1.5 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
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- 1.5 REJECTED WORK .3 (Cont'd)
(Cont'd) Contract Documents, Owner will deduct from Contract Price difference in value between Work performed and that called for by Contract Documents, amount of which will be determined by Departmental Representative.
- 1.6 REPORTS .1 Submit electronic copy of inspection and test reports to Departmental Representative.
.2 Provide copies to subcontractor of work being inspected or tested and manufacturer or fabricator of material being inspected or tested.
- 1.7 TESTS AND MIX .1 Furnish test results and mix designs as
DESIGNS requested.
.2 Cost of tests and mix designs beyond those called for in Contract Documents or beyond those required by law of Place of Work will be appraised by Departmental Representative and may be authorized as recoverable.
- 1.8 MOCK-UPS .1 Prepare mock-ups for Work specifically
requested in specifications. Include for Work of Sections required to provide mock-ups.
.2 Construct in locations acceptable to Departmental Representative as specified in specific Section.
.3 Prepare mock-ups for Departmental Representative review with reasonable promptness and in orderly sequence, to not cause delays in Work.
.4 Failure to prepare mock-ups 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.
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- 1.8 MOCK-UPS .5 If requested, Departmental Representative
(Cont'd) will assist in preparing schedule fixing dates
for preparation.
- .6 Remove mock-up at conclusion of Work or when
acceptable to Departmental Representative.
- .7 Mock-ups may remain as part of Work.
- .8 Specification section identifies whether
mock-up may remain as part of Work or if it is
to be removed and when.

- 1.9 MILL TESTS .1 Submit mill test certificates as requested
required of specification Sections.

- 1.10 EQUIPMENT AND .1 Submit adjustment and balancing reports for
SYSTEMS mechanical, electrical and building equipment
systems.
- .2 Refer to Section for definitive requirements.

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 Canadian General Standards Board (CGSB)
.1 CAN/CGSB 1.189-00, Exterior Alkyd Primer
for Wood.
.2 CGSB 1.59-97, Alkyd Exterior Gloss
Enamel.
- .2 Canadian Standards Association (CSA
International)
.1 CSA-A23.1/A23.2-04, Concrete Materials
and Methods of Concrete Construction/Methods
of Test and Standard Practices for Concrete.
.2 CSA-0121-M1978(R2003), Douglas Fir
Plywood.
.3 CAN/CSA-S269.2-M1987(R2003), Access
Scaffolding for Construction Purposes.
.4 CAN/CSA-Z321-96(R2001), Signs and
Symbols for the Occupational Environment.
- .3 Public Works Government Services Canada
(PWGSC) Standard Acquisition Clauses and
Conditions (SACC)-ID: R0202D, Title: General
Conditions 'C', In Effect as of: May 14, 2004.
- 1.2 SUBMITTALS .1 Provide submittals in accordance with Section
01 33 00 - Submittal Procedures.
- 1.3 SCAFFOLDING .1 Scaffolding in accordance with
CAN/CSA-S269.2.
- .2 Provide and maintain scaffolding ramps
ladders swing staging platforms temporary
stairs and lifts.
- 1.4 HOISTING .1 Provide, operate and maintain hoists cranes
required for moving of workers, materials and
equipment. Make financial arrangements with
Subcontractors for their use of hoists.
- .2 Hoists cranes to be operated by qualified
operator.

1.5 SITE
STORAGE/LOADING

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

1.6 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.

1.7 OFFICES

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

1.8 EQUIPMENT,
TOOL AND MATERIALS
STORAGE

- .1 Provide and maintain, in clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials.
- .2 Locate materials not required to be stored in weatherproof sheds on site in manner to cause least interference with work activities.

1.9 SANITARY
FACILITIES

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

PART 1 - GENERAL

1.1 REFERENCES

- .1 Canadian General Standards Board (CGSB)
 - .1 CGSB 1.59-97, Alkyd Exterior Gloss Enamel.
 - .2 CAN/CGSB 1.189-00, Exterior Alkyd Primer for Wood.
- .2 Canadian Standards Association (CSA International)
 - .1 CSA-O121-M1978(R2003), Douglas Fir Plywood.
- .3 Public Works Government Services Canada (PWGSC) Standard Acquisition Clauses and Conditions (SACC)-ID: R0202D, Title: General Conditions 'C', In Effect as Of: May 14, 2004.

1.2 INSTALLATION
AND REMOVAL

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

1.3 HOARDING

- .1 Erect temporary site enclosures as directed by the Departmental Representative.
- .2 Erect temporary site enclosure using new 1.2 m high snow fence wired to rolled steel "T" bar fence posts spaced at 2.4 m on centre. Provide one lockable truck gate. Maintain fence in good repair.

1.4 GUARD RAILS AND
BARRICADES

- .1 Provide secure, rigid guard rails and barricades around open mezzanine, open stair wells.
- .2 Provide as required by governing authorities.

-
- 1.5 WEATHER ENCLOSURES .1 Provide weather tight temporary closures to unfinished door and window openings, other openings.
- 1.6 FIRE ROUTES .1 Maintain access to property including overhead clearances for use by emergency response vehicles.
- 1.7 PROTECTION OF BUILDING FINISHES .1 Provide protection for finished and partially finished building finishes and equipment during performance of Work.
- .2 Provide necessary screens, covers, and hoardings.
- .3 Confirm with Departmental Representative locations and installation schedule 3 days prior to installation.
- .4 Be responsible for damage incurred due to lack of or improper protection.
- .5 Protect rooms identified as being retained from dust and impact of demolition work in other areas.
- 1.8 WASTE MANAGEMENT AND DISPOSAL .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management And Disposal.
-

Argo Building Adaptive
Reuse
Baffin Drive, BIO
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TEMPORARY BARRIERS AND
ENCLOSURES

Section 01 56 00
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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 Within text of each specifications section, reference may be made to reference standards.
- .2 Conform to these reference standards, in whole or in part as specifically requested in specifications.
- 1.2 QUALITY .1 Products, materials, equipment and articles incorporated in Work shall be new, not damaged or defective, and of best quality 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 disputes 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.
- 1.3 AVAILABILITY .1 Immediately upon signing Contract, review product delivery requirements and anticipate foreseeable supply delays for 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

-
- 1.3 AVAILABILITY .2 (Cont'd)
(Cont'd)
- 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 Price or Contract Time.
-
- 1.4 STORAGE, .1 Handle and store products in manner to
HANDLING AND prevent damage, adulteration, deterioration
PROTECTION 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 Store cementitious products clear of earth or concrete floors, and away from walls.
- .5 Keep sand, when used for grout or mortar materials, clean and dry. Store sand on wooden platforms and cover with waterproof tarpaulins during inclement weather.
- .6 Store sheet materials, lumber and steel on flat, solid supports and keep clear of ground. Slope to shed moisture.
- .7 Store and mix paints in heated and ventilated room. Remove oily rags and other combustible debris from site daily. Take every precaution necessary to prevent spontaneous combustion.
- .8 Remove and replace damaged products at own expense and to satisfaction of Departmental Representative.
- .9 Touch-up damaged factory finished surfaces to Departmental Representative's satisfaction. Use touch-up materials to match original. Do not paint over name plates.
-

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- 1.5 TRANSPORTATION .1 Pay costs of transportation of products required in performance of Work.
- 1.6 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 will 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 Price or Contract Time.
- 1.7 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.
-

1.8 CO-ORDINATION .1 Ensure co-operation of workers in laying out Work. Maintain efficient and continuous supervision.

.2 Be responsible for coordination and placement of openings, sleeves and accessories.

1.9 PROTECTION OF WORK IN PROGRESS .1 Prevent overloading of parts of building. Do not cut, drill or sleeve load bearing structural member, unless specifically indicated without written approval of Departmental Representative.

1.10 EXISTING UTILITIES .1 When breaking into or connecting to existing services or utilities, execute Work at times directed by local governing authorities, with minimum of disturbance to Work, and/or building occupants.

.2 Protect, relocate or maintain existing active services. When services are encountered, cap off in manner approved by authority having jurisdiction. Stake and record location of capped service.

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, including that caused by Owner or other Contractors.
- .2 Remove waste materials from site at daily 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 marked separate bins for recycling. Refer to Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- .7 Clean interior areas and maintain areas free of dust and other contaminants.
- .8 Store volatile waste in covered metal containers, and remove from premises at end of each working day.
- .9 Provide adequate ventilation during use of volatile or noxious substances.
- .10 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.

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.

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PART 3 - EXECUTION

3.1 NOT USED .1 Not Used.

PART 1 - GENERAL

1.1 WASTE
MANAGEMENT GOALS

- .1 Prior to start of Work conduct meeting with Departmental Representative to review and discuss PWGSC's Waste Management Plan and Goals.
- .2 PWGSC's Waste Management Goal 50 percent of total Project Waste to be diverted from landfill sites. Provide Departmental Representative documentation certifying that waste management, recycling, reuse of recyclable and reusable materials have been extensively practiced. Include for sites that recycle construction materials.
- .3 Accomplish maximum control of solid construction waste.
- .4 Preserve environment and prevent pollution and environment damage.

1.2 DEFINITIONS

- .1 Class III: non-hazardous waste - construction renovation and demolition waste.
 - .2 Cost/Revenue Analysis Workplan (CRAW): based on information from WRW, and intended as financial tracking tool for determining economic status of waste management practices.
 - .3 Inert Fill: inert waste - exclusively asphalt and concrete.
 - .4 Materials Source Separation Program (MSSP): consists of series of ongoing activities to separate reusable and recyclable waste material into material categories from other types of waste at point of generation.
 - .5 Recyclable: ability of product or material to be recovered at end of its life cycle and re-manufactured into new product for reuse.
 - .6 Recycle: process by which waste and recyclable materials are transformed or
-

1.2 DEFINITIONS
(Cont'd)

- .6 Recycle: (Cont'd)
collected for purpose of being transferred into new products.
- .7 Recycling: process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for purpose of using in altered form. Recycling does not include burning, incinerating, or thermally destroying waste.
- .8 Reuse: repeated use of product in same form but not necessarily for same purpose. Reuse includes:
 - .1 Salvaging reusable materials from re-modelling projects, before demolition stage, for resale, reuse on current project or for storage for use on future projects.
 - .2 Returning reusable items including pallets or unused products to vendors.
- .9 Salvage: removal of structural and non-structural materials from deconstruction/disassembly projects for purpose of reuse or recycling.
- .10 Separate Condition: refers to waste sorted into individual types.
- .11 Source Separation: acts of keeping different types of waste materials separate beginning from first time they became waste.
- .12 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. Refer to Schedule A.
- .13 Waste Management Co-ordinator (WMC) : contractor representative responsible for supervising waste management activities as well as coordinating related, required submittal and reporting requirements.
- .14 Waste Reduction Workplan (WRW): written report which addresses opportunities for reduction, reuse, or recycling of materials.

-
- 1.5 WASTE REDUCTION .1 Prepare WRW prior to project start-up.
WORKPLAN (WRW) .2 WRW should include but not limited to:
.1 Destination of materials listed.
.2 Deconstruction/disassembly techniques
and sequencing.
.3 Schedule for deconstruction/disassembly.
.4 Location.
.5 Security.
.6 Protection.
.7 Clear labelling of storage areas.
.8 Details on materials handling and
removal procedures.
.9 Quantities for materials to be salvaged
for reuse or recycled and materials sent to
landfill.
.3 Structure WRW to prioritize actions and
follow 3R's hierarchy, with Reduction as first
priority, followed by Reuse, then Recycle.
.4 Describe management of waste.
.5 Identify opportunities for reduction, reuse,
and recycling of materials. Based on
information acquired from WA.
.6 Post WRW or summary where workers at site are
able to review content.
.7 Set realistic goals for waste reduction,
recognize existing barriers and develop
strategies to overcome these barriers.
.8 Monitor and report on waste reduction by
documenting total volume and cost of actual
waste removed from project.
- 1.6 MATERIALS .1 Prepare MSSP and have ready for use prior to
SOURCE SEPARATION project start-up.
PROGRAM (MSSP) .2 Implement MSSP for waste generated on project
in compliance with approved methods and as
reviewed by Departmental Representative.
.3 Provide on-site facilities for collection,
handling, and storage of anticipated
-

1.6 MATERIALS
SOURCE SEPARATION
PROGRAM (MSSP)
(Cont'd)

- .3 (Cont'd)
quantities of reusable and recyclable materials.
- .4 Provide containers to deposit reusable and recyclable materials.
- .5 Locate containers in locations, to facilitate deposit of materials without hindering daily operations.
- .6 Locate separated materials in areas which minimize material damage.
- .7 Collect, handle, store on-site, and transport off-site, salvaged materials in separate condition.
 - .1 Transport to approved and authorized recycling facility.
- .8 Collect, handle, store on-site, and transport off-site, salvaged materials in combined condition.
 - .1 Ship materials to site operating under Certificate of Approval premises of Owner or as directed by Departmental Representative.
 - .2 Materials must be immediately separated into required categories for reuse or recycling.

1.7 STORAGE,
HANDLING AND
PROTECTION

- .1 Store, materials to be reused, recycled and salvaged in locations as directed by Departmental Representative.
- .2 Unless specified otherwise, materials for removal become Contractor's property.
- .3 Protect, stockpile, store and catalogue salvaged items.
- .4 Separate non-salvageable materials from salvaged items. Transport and deliver non-salvageable items to licensed disposal facility.
- .5 Protect structural components not removed for demolition from movement or damage.

1.7 STORAGE,
HANDLING AND
PROTECTION
(Cont'd)

- .6 Support affected structures. If safety of building is endangered, cease operations and immediately notify Departmental Representative.
- .7 Protect surface drainage, mechanical and electrical from damage and blockage.
- .8 Separate and store materials produced during dismantling of structures in designated areas.
- .9 Prevent contamination of materials to be salvaged and recycled and handle materials in accordance with requirements for acceptance by designated facilities.
 - .1 On-site source separation is recommended.
 - .2 Remove co-mingled materials to off-site processing facility for separation.
 - .3 Provide waybills for separated materials.

1.8 DISPOSAL OF
WASTES

- .1 Do not bury rubbish or waste materials.
- .2 Do not dispose of waste volatile materials mineral spirits oil paint thinner into waterways, storm, or sanitary sewers.
- .3 Keep records of construction waste including:
 - .1 Number and size of bins.
 - .2 Waste type of each bin.
 - .3 Total tonnage generated.
 - .4 Tonnage reused or recycled.
 - .5 Reused or recycled waste destination.
 - .6.
- .4 Remove materials from deconstruction as deconstruction/disassembly Work progresses.
- .5 Prepare project summary to verify destination and quantities on a material-by-material basis as identified in pre-demolition material audit.

1.9 USE OF SITE AND FACILITIES .1 Execute work with least possible interference or disturbance to normal use of premises.

.2 Maintain security measures established by existing facility, approved by Departmental Representative.

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

PART 2 - PRODUCTS

2.1 NOT USED .1 Not Used.

PART 3 - EXECUTION

3.1 SELECTIVE DEMOLITION .1 Reuse of Building Elements: this project has been designed to result in end of project rates for reuse of building elements as follows: do not demolish building elements beyond what is indicated on Drawings without approval by Departmental Representative's.

3.2 APPLICATION .1 Do Work in compliance with WRW.
.2 Handle waste materials not reused, salvaged, or recycled in accordance with appropriate regulations and codes.

3.3 CLEANING .1 Remove tools and waste materials on completion of Work, and leave work area in clean and orderly condition.
.2 Clean-up work area as work progresses.
.3 Source separate materials to be reused/recycled into specified sort areas.

3.4 WASTE REDUCTION .1 Schedule B:
WORKPLAN (WRW)

(1)	(2)	(3)	(4)	Actual	(5)	Actual	(6)
Material Category	Person(s) Responsible	Total Quantity of Waste (unit)	Reused Amount (units) Projected		Recycled Amount (unit) Projected		Material(s) Destination

Wood
Plastics
Pallets
Plastic
Packaging
Cardboard
Packaging
Doors
and
Windows
Painted
Frames
Glass
Metal
Other

PART 1 - GENERAL

- 1.1 REFERENCES .1 Canadian Environmental Protection Act (CEPA)
.1 SOR/2008-197, Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations.
- 1.2 ADMINISTRATIVE REQUIREMENTS .1 Acceptance of Work Procedures:
.1 Contractor's Inspection: Contractor: conduct 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 submit verification that corrections have been made.
.2 Request Departmental Representative inspection.
.2 Departmental Representative Inspection:
.1 Departmental Representative and Contractor to inspect Work and identify defects and deficiencies.
.2 Contractor to correct Work as directed.
.3 Completion Tasks: submit written certificates in English that tasks have been performed as follows:
.1 Work: completed and inspected for compliance with Contract Documents.
.2 Defects: corrected and deficiencies completed.
.4 Final Inspection:
.1 When completion tasks are done, request final inspection of Work by Departmental Representative, Owner and Contractor.
.2 When Work incomplete according to Owner and Departmental Representative, complete outstanding items and request re-inspection.

- 1.3 FINAL CLEANING .1 Clean in accordance with Section 01 74 11 -
Cleaning.
.1 Remove surplus materials, excess
materials, rubbish, tools and equipment.
- .2 Waste Management: separate waste materials
for reuse and recycling in accordance with
Section 01 74 21.

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 AS-BUILT DOCUMENTS AND SAMPLES .1 Keep record documents and samples available for inspection by Departmental Representative.
- 1.2 DELIVERY, STORAGE AND HANDLING .1 Store spare parts, maintenance materials, and special tools in manner to prevent damage or deterioration.
- .2 Store in original and undamaged condition with manufacturer's seal and labels intact.
- .3 Store components subject to damage from weather in weatherproof enclosures.
- .4 Store paints and freezable materials in a heated and ventilated room.
- .5 Remove and replace damaged products at own expense and for review by Departmental Representative.

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 RELATED SECTIONS
- .1 Section 01 33 00 - Submittal Procedures.
 - .2 Section 01 74 21 - Construction/Demolition Waste Management And Disposal.
 - .3 Section 02 81 01 - Hazardous Materials.
 - .4 Section 01 56 00 - Temporary Barriers and Enclosures.
 - .5 Section 01 35 29.06 - Health and Safety Requirements.
- 1.2 REFERENCES
- .1 Canadian Standards Association (CSA International).
 - .1 CSA S350-M1980(R1998), Code of Practice for Safety in Demolition of Structures.
 - .2 Department of Justice Canada (Jus).
 - .1 Canadian Environmental Assessment Act (CEAA), most recent.
 - .2 Transportation of Dangerous Goods Act (TDGA), most recent.
- 1.3 DEFINITIONS
- .1 Hazardous Materials: dangerous substances, dangerous goods, hazardous commodities and hazardous products, may include but not limited to: poisons, corrosive agents, flammable substances, ammunition, explosives, radioactive substances, or other material that can endanger human health or well being 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
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- 1.3 DEFINITIONS (Cont'd)
- .3 Waste Audit (WA): (Cont'd)
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.
- 1.4 SUBMITTALS
- .1 Submittals in accordance with Section 01 33 00 - Submittal Procedures.
 - .2 The 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 21 - Construction/Demolition Waste Management And Disposal 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 tippage.
 - .5 Name and address of haulers and waste facilities.
 - .4 Submit copies of certified 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 and waste facilities listed in Waste Reduction Workplan.
 - .5 Where required by authorities having jurisdiction, submit for approval drawings, diagrams or details showing sequence of demolition work and supporting structures and underpinning.
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- 1.4 SUBMITTALS
(Cont'd)
- .6 Submit drawings stamped and signed by qualified professional engineer registered or licensed in Province of Newfoundland and Labrador, Canada.
- 1.5 QUALITY ASSURANCE
- .1 Regulatory Requirements: Ensure Work is performed in compliance with CEAA, TDGA, and applicable Provincial and Municipal regulations.
- .2 Meetings:
.1 Hold project meetings every 2 weeks.
.2 Ensure key personnel attend.
.3 WMC must provide written report on status of waste diversion activity at each meeting.
- 1.6 WASTE MANAGEMENT AND DISPOSAL
- .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management And Disposal.
- .2 Divert excess materials from landfill to site approved by Departmental Representative.
- 1.7 ENVIRONMENTAL PROTECTION
- .1 Ensure that demolition work does not adversely affect adjacent watercourses, groundwater and wildlife, or contribute to excess air and noise pollution.
- .2 Fires and burning of waste or materials is not permitted on site.
- .3 Do not bury rubbish waste materials.
- .4 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.
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- 1.7 ENVIRONMENTAL PROTECTION
(Cont'd)
- .5 Do not pump water containing suspended materials into watercourses, storm or sanitary sewers, or onto adjacent properties.
 - .6 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with authorities having jurisdiction.
 - .7 Cover or wet down dry materials and waste to prevent blowing dust and debris. Control dust on all temporary roads.
- 1.8 EXISTING CONDITIONS
-
- .1 Removal of hazardous materials is part of the work.
 - .2 Should material resembling spray or trowel applied asbestos or other designated substance be encountered in course of demolition, stop work, take preventative measures, and notify Departmental Representative immediately. Do not proceed until written instructions have been received.
 - .3 List items to be salvaged for reuse:
 - .1 Doors and Frames.
 - .2 Ceiling tile.
 - .3 Tracks & Blinds.
 - .4 Wood & Glass partitions.
 - .5 Tagged light fixtures.
 - .6 Tagged equipment.
 - .7 Tagged mill work.
 - .4 Structures to be demolished to be based on their condition on date that tender is accepted.
 - .1 Remove, protect and store salvaged items as directed by Departmental Representative. Salvage items for return to owner as identified by Departmental Representative. Deliver to Departmental Representative as directed.
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- 1.9 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.

PART 2 - PRODUCTS

- 2.1 EQUIPMENT .1 Leave machinery running only while in use.

PART 3 - EXECUTION

- 3.1 PROTECTION .1 Prevent movement, settlement or damage of adjacent structures, services, and parts of existing building to remain.
.1 Provide bracing and shoring as required.
.2 Repair damage caused by demolition as directed by Departmental Representative.
.2 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.
.3 Prevent debris from blocking surface drainage system, and mechanical and electrical systems which must remain in operation.
- 3.2 PREPARATION .1 Do Work in accordance with Section 0. 35 29.06 - Health and Safety Requirements
.2 Disconnect and cap designated mechanical services.
.3 Do not disrupt active or energized utilities designated to remain undisturbed.

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- 3.3 SAFETY CODE .1 Do demolition work in accordance with Section 01 56 00 - Temporary Barriers and Enclosures
- .2 Blasting operations not permitted during demolition.
- 3.4 REMOVAL OF HAZARDOUS WASTES .1 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.
- .2 Prior to start of demolition work remove contaminated or hazardous materials from site and dispose of at designated disposal facilities in safe manner and in accordance with TDGA and other applicable requirements and Section 02 81 01 - Hazardous Materials.
- 3.5 PARTIAL DEMOLITION OF STRUCTURES .1 Do not demolish load bearing structures.
- 3.6 DEMOLITION .1 Demolish parts of structure.
- .2 To permit future construction.
- .3 At end of each day's work, leave Work in safe and stable condition.
- .1 Protect interiors of parts not to be demolished from exterior elements at all times.
- .2 Ensure fire alarm system is in good working order.
- .4 Demolish to minimize dusting.
- .5 Contain fibrous materials (e.g. Insulation) to minimize release of airborne fibres while being transported within facility.
- .6 Remove and dispose of demolished materials except where noted otherwise and in accordance with authorities having jurisdiction.
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- 3.6 DEMOLITION .7 Trim edges of partially demolished building
(Cont'd) elements to tolerances as defined by
Departmental Representative to suit future
use.
- 3.7 STOCKPILING .1 Label stockpiles, indicating material type
and quantity.
- .2 Designate appropriate security
resources/measures to prevent vandalism,
damage and theft.
- .3 Locate stockpiled materials convenient for
use in new construction. Eliminate double
handling wherever possible.
- .4 Separate from general waste stream each of
following materials. Stockpile materials in
neat and orderly fashion in location and as
directed by Departmental Representative for
alternate disposal. Stockpile materials in
accordance with applicable fire and safety
regulations.
- .1 Glass fibre ceiling tiles.
- .2 Wiring and conduit.
- .3 Outlets/switches.
- .4 Floor receptacles.
- .5 Metal duct work, baffles, HVAC
equipment.
- .6 Insulation batts.
- .7 Miscellaneous metals.
- .5 Supply separate, clearly marked disposal bins
for categories of waste material.
- .6 Stockpile on site insulation Batt's, steel
studs and clips in good condition for reuse in
new construction.
- 3.8 REMOVAL FROM .1 Remove stockpiled material as directed by
SITE Departmental Representative, when it
interferes with operations of project
construction.
-

- 3.8 REMOVAL FROM .2 Remove stockpiles of like materials by
SITE alternate disposal option once collection of
(Cont'd) materials is complete.
- .3 Transport material designated for alternate
disposal using approved haulers and waste
facilities listed in Waste Reduction Workplan
and in accordance with applicable regulations.
.1 Written authorization from Departmental
Representative is required to deviate from
haulers and waste facilities listed in Waste
Reduction Workplan.
- .4 Dispose of materials not designated for
alternate disposal in accordance with
applicable regulations.
.1 Disposal facilities must be those
approved of and listed in Waste Reduction
Workplan.
.2 Written authorization from Departmental
Representative is required to deviate from
disposal facilities listed in Waste Reduction
Workplan.

PART 1 - GENERAL

1.1 RELATED REQUIREMENTS .1 Structure Demolition Section 02 41 16.

1.2 REFERENCES .1 Definitions:
.1 Dangerous Goods: product, substance, or organism specifically listed or meets hazard criteria established in Transportation of Dangerous Goods Regulations.
.2 Hazardous Material: product, substance, or organism used for its original purpose; and is either dangerous goods or material that will cause adverse impact to environment or adversely affect health of persons, animals, or plant life when released into the environment.
.3 Hazardous Waste: hazardous material no longer used for its original purpose and that is intended for recycling, treatment or disposal.

.2 Reference Standards:
.1 Canadian Environmental Protection Act, 1999 (CEPA 1999)
.1 Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations (SOR/2005-149).
.2 Department of Justice Canada (Jus)
.1 Transportation of Dangerous Goods Act, 1992 (TDG Act) 1992, (c. 34).
.2 Transportation of Dangerous Goods Regulations (T-19.01-SOR/2001-286).
.3 Green Seal Environmental Standards (GS)
.1 GS-11-2008, 2nd Edition, Paints and Coatings.
.2 GS-36-00, Commercial Adhesives.
.4 Health Canada / Workplace Hazardous Materials Information System (WHMIS)
.1 Material Safety Data Sheets (MSDS).
.5 National Research Council Canada Institute for Research in Construction (NRC-IRC)
.1 National Fire Code of Canada-2005.

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- 1.3 ACTION AND
INFORMATIONAL
SUBMITTALS
- .1 Submit in accordance with Section 01 33 00 -
Submittal Procedures.
- .2 Product Data:
.1 Submit manufacturer's instructions,
printed product literature and data sheets for
hazardous materials and include product
characteristics, performance criteria,
physical size, finish and limitations.
.2 Submit two copies of WHMIS MSDS in
accordance with Section 01 35 29.06 - Health
and Safety Requirements 01 35 43 -
Environmental Procedures to Departmental
Representative for each hazardous material
required prior to bringing hazardous material
on site.
.3 Submit hazardous materials management
plan to Departmental Representative that
identifies hazardous materials, usage,
location, personal protective equipment
requirements, and disposal arrangements.
- .3 Sustainable Design Submittals:
.1 Construction Waste Management:
.1 Submit project Waste Management
Plan highlighting recycling and salvage
requirements.
- 1.4 DELIVERY,
STORAGE AND
HANDLING
- .1 Deliver, store and handle materials in
accordance with Section 01 61 00 - Common
Product Requirements and with manufacturer's
written instructions.
- .2 Delivery and Acceptance Requirements: deliver
materials to site in original factory
packaging, labelled with manufacturer's name
and address.
- .3 Transport hazardous materials and wastes in
accordance with Transportation of Dangerous
Goods Act, Transportation of Dangerous Goods
Regulations, and applicable provincial
regulations:
- .4 Storage and Handling Requirements:
.1 Co-ordinate storage of hazardous
materials with Departmental Representative and
-

1.4 DELIVERY,
STORAGE AND
HANDLING
(Cont'd)

- .4 Storage and Handling Requirements:(Cont'd)
- .1 (Cont'd)
abide by internal requirements for labelling and storage of materials and wastes.
 - .2 Store and handle hazardous materials and wastes in accordance with applicable federal and provincial laws, regulations, codes, and guidelines.
 - .3 Store and handle flammable and combustible materials in accordance with National Fire Code of Canada requirements.
 - .4 Keep no more than 45 litres of flammable and combustible liquids such as gasoline, kerosene and naphtha for ready use.
 - .1 Store flammable and combustible liquids in approved safety cans bearing the Underwriters' Laboratory of Canada or Factory Mutual seal of approval.
 - .2 Storage of quantities of flammable and combustible liquids exceeding 45 litres for work purposes requires the written approval of the Departmental Representative.
 - .5 Transfer of flammable and combustible liquids is prohibited within buildings.
 - .6 Transfer flammable and combustible liquids away from open flames or heat-producing devices.
 - .7 Solvents or cleaning agents must be non-flammable or have flash point above 38 degrees C.
 - .8 Store flammable and combustible waste liquids for disposal in approved containers located in safe, ventilated area. Keep quantities to minimum.
 - .9 Observe smoking regulations, smoking is prohibited in areas where hazardous materials are stored, used, or handled.
 - .10 Storage requirements for quantities of hazardous materials and wastes in excess of 5 kg for solids, and 5 litres for liquids:
 - .1 Store hazardous materials and wastes in closed and sealed containers.
 - .2 Label containers of hazardous materials and wastes in accordance with WHMIS.
 - .3 Store hazardous materials and wastes in containers compatible with that material or waste.

1.4 DELIVERY,
STORAGE AND
HANDLING
(Cont'd)

- .4 Storage and Handling Requirements: (Cont'd)
 - .10 (Cont'd)
 - .4 Segregate incompatible materials and wastes.
 - .5 Ensure that different hazardous materials or hazardous wastes are stored in separate containers.
 - .6 Store hazardous materials and wastes in secure storage area with controlled access.
 - .7 Maintain clear egress from storage area.
 - .8 Store hazardous materials and wastes in location that will prevent them from spilling into environment.
 - .9 Have appropriate emergency spill response equipment available near storage area, including personal protective equipment.
 - .10 Maintain inventory of hazardous materials and wastes, including product name, quantity, and date when storage began.
 - .11 When hazardous waste is generated on site:
 - .1 Co-ordinate transportation and disposal with Departmental Representative.
 - .2 Comply with applicable federal, provincial and municipal laws and regulations for generators of hazardous waste.
 - .3 Use licensed carrier authorized by provincial authorities to accept subject material.
 - .4 Before shipping material obtain written notice from intended hazardous waste treatment or disposal facility it will accept material and it is licensed to accept this material.
 - .5 Label containers with legible, visible safety marks as prescribed by federal and provincial regulations.
 - .6 Only trained personnel handle, offer for transport, or transport dangerous goods.

- 1.4 DELIVERY,
STORAGE AND
HANDLING
(Cont'd)
- .4 Storage and Handling Requirements: (Cont'd)
- .10 (Cont'd)
- .11 (Cont'd)
- .7 Provide photocopy of shipping documents and waste manifests to Departmental Representative.
- .8 Track receipt of completed manifest from consignee after shipping dangerous goods. Provide photocopy of completed manifest to Departmental Representative.
- .9 Report discharge, emission, or escape of hazardous materials immediately to Departmental Representative and appropriate provincial authority. Take reasonable measures to control release.
- .12 Ensure personnel have been trained in accordance with Workplace Hazardous Materials Information System (WHMIS) requirements.
- .13 Report spills or accidents immediately to Departmental Representative. Submit a written spill report to Departmental Representative within 24 hours of incident.

PART 2 - PRODUCTS

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

PART 3 - EXECUTION

3.1 CLEANING

- .1 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 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and:
 - .1 Dispose of hazardous waste materials in accordance with applicable federal and provincial acts, regulations, and guidelines.
 - .2 Recycle hazardous wastes for which there is approved, cost effective recycling process available.
 - .3 Send hazardous wastes to authorized hazardous waste disposal or treatment facilities.
 - .4 Burning, diluting, or mixing hazardous wastes for purpose of disposal is prohibited.
 - .5 Disposal of hazardous materials in waterways, storm or sanitary sewers, or in municipal solid waste landfills is prohibited.
 - .6 Dispose of hazardous wastes in timely fashion in accordance with applicable provincial regulations.
 - .7 Minimize generation of hazardous waste to maximum extent practicable. Take necessary precautions to avoid mixing clean and contaminated wastes.
 - .8 Identify and evaluate recycling and reclamation options as alternatives to land disposal, such as:
 - .1 Hazardous wastes recycled in manner constituting disposal.
 - .2 Hazardous waste burned for energy recovery.
 - .3 Lead-acid battery recycling.
 - .4 Hazardous wastes with economically recoverable precious metals.

PART 1 - GENERAL

1.1 SUMMARY

- .1 Comply with requirements of this Section when performing following Work:
 - .1 Removal or disturbance as specified of more than one square metre of friable asbestos containing material during the repair, alteration, maintenance or demolition of a building or any machinery or equipment located as indicated at site.
 - .2 The spray application of a sealant to friable asbestos containing material.
 - .3 Cleaning or removing air handling equipment, including rigid ducting but not including filters, in a building that has asbestos containing sprayed fireproofing.
 - .4 Repairing, altering or demolishing all or part of a kiln, metallurgical furnace or similar structure that is made in part of refractory materials that are asbestos containing materials.
 - .5 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.
 - .6 Repairing, altering or demolishing all or part of any building in which asbestos is or was used in the manufacture of products.

1.2 RELATED REQUIREMENTS

- .1 Requirements and procedures for asbestos abatement of asbestos containing materials of the type described within.
- .2 N.B. The work may be able to be completed without disturbing asbestos-containing materials. If they do have to be disturbed, the requirements of this section come into force.

- 1.3 REFERENCES
- .1 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-1.205-94, Sealer for Application to Asbestos-Fibre-Releasing Materials.
 - .2 Canadian Standards Association (CSA International)
 - .3 Department of Justice Canada
 - .1 Canadian Environmental Protection Act (CEPA), 1999.
 - .4 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).
 - .5 Transport Canada (TC)
 - .1 Transportation of Dangerous Goods Act, 1992 (TDGA).
 - .6 Underwriters' Laboratories of Canada (ULC)
 - .7 U.S. Department of Health and Human Services/Centers for Disease Control and Prevention (CDC)/National Institute for Occupational Safety and Health (NIOSH)
 - .1 NIOSH 94-113-August 1994, NIOSH Manual of Analytical Methods (NMAM), 4th Edition.
 - .8 U.S. Department of Labour - Occupational Safety and Health Administration - Toxic and Hazardous Substances
 - .1 29 CFR 1910.1001-2001, Asbestos Regulations.
- 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 0.1 provincial regulated amount per cent or more asbestos by
-

1.4 DEFINITIONS
(Cont'd)

- .3 (Cont'd)
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 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.

1.4 DEFINITIONS
(Cont'd)

- .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

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- 1.4 DEFINITIONS (Cont'd) .16 Sprayer: (Cont'd)
mist or fine spray. Must be appropriate
capacity for scope of work.
- 1.5 SUBMITTALS .1 Submittals in accordance with Section 01 33
00 - Submittal Procedures.
- .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
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1.5 SUBMITTALS
(Cont'd)

- .2 Before beginning work: (Cont'd)
 - .8 (Cont'd)
must be fit tested (irritant smoke test) with respirator that is personally issued.
 - .9 Submit Worker's Compensation Board status and transcription of insurance.
 - .10 Submit documentation including test results, fire and flammability data, and Material Safety Data Sheets (MSDS) for chemicals or materials including but not limited to following:
 - .1 Encapsulants.
 - .2 Amended water.
 - .3 Slow drying sealer.

1.6 QUALITY
ASSURANCE

- .1 Regulatory Requirements: comply with Federal, Provincial/Territorial and local requirements pertaining to asbestos, provided that in case of conflict among those requirements or with these specifications more stringent requirement applies. Comply with regulations in effect at time work is performed.
- .2 Health and Safety:
 - .1 Do construction occupational health and safety in accordance with Section 01 35 29.06 - Health and Safety Requirements.
 - .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) 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,

- 1.6 QUALITY .2 Health and Safety: (Cont'd)
ASSURANCE .2 Safety Requirements: (Cont'd)
(Cont'd) .1 (Cont'd)

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

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1.6 QUALITY ASSURANCE (Cont'd) .2 Health and Safety: (Cont'd)
.2 Safety Requirements: (Cont'd)
.1 (Cont'd)

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

- 1.6 QUALITY .2 Health and Safety: (Cont'd)
ASSURANCE .2 Safety Requirements: (Cont'd)
(Cont'd) .1 (Cont'd)

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 Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- .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 steel metal plastic waste 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, Territorial and Municipal regulations. Dispose of asbestos waste in sealed double thickness 6 ml bags or leak proof drums. Label containers with appropriate warning labels.
- .9 Provide manifests describing and listing waste created. Transport containers by approved means to licenced landfill for burial.

1.8 EXISTING
CONDITIONS

- .1 Results of tests of asbestos containing materials to be handled, removed, or otherwise disturbed and disposed of during this Project are available for inspection at bound into this specification at end of this Section. These are for general information only and are

1.8 EXISTING
CONDITIONS
(Cont'd)

- .1 (Cont'd)
not necessarily representative of asbestos
containing materials covered within scope of
this Project.
- .2 Notify Departmental Representative of suspect
asbestos containing material discovered during
Work and not apparent from drawings,
specifications, or report pertaining to Work.
Do not disturb such material until instructed
by Departmental Representative.

1.9 PERSONNEL
TRAINING

- .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 29 CFR 1910.1001. 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

2.1 MATERIALS
(Cont'd)

- .6 Glove bag: (Cont'd)
.2 (Cont'd)

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 and be compatible with new fireproofing.
- .10 Encapsulants: Type 2 surface film forming Type 1 penetrating type Class A water based conforming to CAN/CGSB-1.205 and approved by the Fire Commissioner of Canada having following characteristics:
- .11 Sprayed fireproofing: ULC labelled and listed asbestos-free cementitious mineral fibre to provide degree of fire or thermal protection required in accordance with Section 07 84 00 - Fire Stopping.

PART 3 - EXECUTION

- 3.1 PREPARATION
- .1 Do construction occupational health and safety in accordance with Section 01 35 29.06 - Health and Safety Requirements.
 - .2 Work Areas:
 - .1 Preclean fixed casework, plant, and equipment within proposed work areas, using HEPA vacuum and cover with polyethylene sheeting sealed with tape.
 - .2 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.
 - .3 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.
 - .4 Put negative pressure system in operation and operate continuously from time first polyethylene is installed to seal openings until final completion of work including final cleanup. Provide continuous monitoring of pressure difference using automatic recording instrument. The system to maintain a negative air pressure of 0.02 inches 5 Pa of water, relative to the area outside the enclosed area. The system to be inspected and maintained by a competent person prior each use to ensure that there is no air leakage, and if the filter is found to be damaged or defective, it to be replaced before the ventilation system is used.
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3.1 PREPARATION
(Cont'd)

.2

Work Areas: (Cont'd)

.5 Seal off openings such as corridors, doorways, windows, skylights, ducts, grilles, and diffusers, with polyethylene sheeting sealed with tape.

.6 Cover floor and wall surfaces with polyethylene sheeting sealed with tape. Use one two layer s of FR polyethylene on floors. Cover floors first so that polyethylene extends at least 300 mm up walls then cover walls to overlap floor sheeting.

.7 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.

.8 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)".

.9 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.

.10 Maintain emergency and fire exits from work areas, or establish alternative exits satisfactory to Authority having jurisdiction.

.11 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.

.12 After preparation of work areas and Decontamination Enclosure Systems, remove contaminated materials and dispose of as contaminated waste in specified containers.

3.1 PREPARATION
(Cont'd)

- .2 Work Areas: (Cont'd)
 - .12 (Cont'd)

Spray asbestos debris and immediate work area with amended water to reduce dust, as work progresses.
 - .13 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 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.

- 3.1 PREPARATION .3 (Cont'd)
(Cont'd) .1 (Cont'd)
- .4 Unloading Room: build Unloading Room between Holding Room and outside, with two curtained doorways, one to Holding Room and one to outside.
 - .4 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 one two layer s 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.
 - .5 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.
 - .6 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 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.
- 3.3 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.
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3.3 ASBESTOS
REMOVAL
(Cont'd)

- .5 Where Departmental Representative decides complete removal of asbestos containing material is impossible due to obstructions such as structural members or major service elements, or because asbestos containing material was originally applied to asphaltic coating, and provides written direction, encapsulate material as follows:
- .1 Apply surface film forming type sealer to provide 0.635 mm minimum dry film thickness over sprayed asbestos surfaces. Apply using airless spray equipment to avoid blowing off fibres. Use different colour for each coat. Use colour for final coat. Apply penetrating type sealer to penetrate existing sprayed asbestos surfaces to uniform depth of 25mm minimum. 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. Air monitoring will be provided by the Departmental Representative.

3.3 ASBESTOS .8
REMOVAL
(Cont'd)

Cleanup:

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

3.4 FINAL CLEANUP .1

- .1 Following cleaning specified in 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.

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- 3.4 FINAL CLEANUP (Cont'd)
- .4 Include in clean-up Work areas, Equipment and Access Room, Washroom, Shower Room, and other contaminated enclosures.
 - .5 Include in clean-up sealed waste containers and equipment used in Work and remove from work areas, via Container and Equipment Decontamination Enclosure System, at appropriate time in cleaning sequence.
 - .6 Conduct final check to ensure that no dust or debris remains on surfaces as result of dismantling operations and carry out air monitoring again to ensure that asbestos levels in building do not exceed 0.01 fibres/cc. Repeat cleaning using HEPA vacuum equipment, or wet cleaning methods where feasible, in conjunction with sampling until levels meet this criteria.
 - .7 As work progresses, and to prevent exceeding available storage capacity on site, remove sealed and labelled containers containing asbestos waste and dispose of to authorized disposal area in accordance with requirements of disposal authority. Ensure that each shipment of containers transported to dump is accompanied by Contractor's representative to ensure that dumping is done in accordance with governing regulations.
- 3.5 AIR MONITORING
- .1 To be provided by the Departmental Representative and all abatement work to be coordinated so that Departmental Representative has ample time to arrange the work.
 - .2 A minimum of 48 hours notice required prior to abatement to allow the proper notifications to go out to the building.
- 3.6 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
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- 3.6 INSPECTION .1 (Cont'd)
(Cont'd)
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- .1 Representative may result in Work stoppage, at no cost to Owner.
- .2 Departmental Representative will inspect Work for:
- .1 Adherence to specific procedures and materials.
 - .2 Final cleanliness and completion.
 - .3 No additional costs will be allowed by Contractor for additional labour or materials required to provide specified performance level.
- .3 When asbestos leakage from Asbestos Work Area has occurred or is likely to occur Departmental Representative may order Work shutdown.
- .1 No additional costs will be allowed by Contractor for additional labour or materials required to provide specified performance level.

