DEFENCE CONSTRUCTION CANADA

CONSTRUCTION DE DÉFENSE CANADA

Common Division 1– General Requirements

Project #: KN229958_86879

R13 Elevator Replacement, Barrier Free, Life Safety Upgrade

Package A: R13 Elevator Replacement Barrier Free Upgrade

Package B: R13 Life Safety Upgrade

CFB Kingston, Ontario
July 2026

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Appendices

A1 – Englobe Project Specific Designated Substances and Hazardous Materials Survey – Elevator Replacement and Barrier Free Upgrades Project R13 Massey Hall Library Offices, 7 Prom Valour Drive, Kingston, Ontario Report dated October 1, 2024. Englobe File No.: 02406622.000. 68

A2 – Englobe Project Specific Designated Substances and Hazardous Materials Survey– Component 2, Task 1: Comprehensive Survey for Life Safety Upgrades Throughout R13 –Elevator Replacement and Barrier Free Upgrades Project R13 Massey Hall Library Offices, 7 Prom Valour Drive, Kingston, Ontario - Report dated March 6, 2025. Englobe File No.: 02406622.000. 68

A3 – WSP Geotechnical Investigation – Massey Libray Retrofit RMC Kingstojn, ON., file no:CA0039719.6922-Rev0 dated December 09, 2024.

A4 – BlueMetric Environmental – Comprehensive Designated Substances And Hazardous Materials Assessment – R13 Massey Hall Library Offices, Royal Military College, Kingston, Proj: KN139938, Contract No.: 58597, BlueMetric File: K-B13279-00-00, dated July 14, 2015.

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PART - 1 GENERAL

1.1 WORK COVERED BY CONTRACT DOCUMENTS

.1 Work of this Contract comprises the furnishing of all labour, materials and equipment required for complete elevator system upgrade, barrier-free upgrades, and life safety upgrades to comply with DND accessibility requirements and fire rated requirements of the National Building Code for Building R13 Massey Hall, located at Royal Military College at CFB Kingston, Ontario.

.1 Package A: R13 Elevator System Upgrade, and Barrier-Free Upgrades

.2 Package B: R13 Life Safety Upgrades

1.2 CODES

.1 Perform work in accordance with National Building Code of Canada (NBC), Ministry of Labour guidelines and regulations, applicable codes and standards and any other National Defence standard procedures that may be specified, (all latest editions). In any case of conflict or discrepancy, the more stringent requirement shall apply.

.1 In addition to the NBC, perform work in accordance with requirements for accessibility according to CSA/ASC B651:23 Accessible Design for the Built Environment.

.2 Meet or exceed requirements of:

.1 Contract documents,

.2 Specified standards, codes and referenced documents.

.3 All of the above documents are latest issue, regardless of data shown in the specification.

1.3 DEFINITIONS

.1 DCC Representative is Defence Construction Canada Ltd. DCC, as referenced in DCC General Conditions. DCC is the tendering agency and the Coordinator for the projects. DCC is the sole project authority representing National Defence and the Designer of Record for the project, during and after tender award.

.1 DCC Representative is the sole project authority. The Designer of Record is to have the DCC Representative approval for making any changes to the design or specification.

.2 The Contractor shall cooperate fully with the DCC Representative order that the DCC Representative and the Designer of Record may properly review the progress of the work during its execution.

1.4 SITE CONDITIONS AND INQUIRIES AT TENDER

.1 It is highly recommended that Contractors should attend the site visit where possible to familiarize themselves with existing conditions and project intent during tender. Bidders site briefing, if conducted, is not comprehensive and is not a substitute for a thorough review of the tender package by the Contractor.

1.5 SETTING OUT OF WORK

.1 Assume full responsibility for and execute complete layout of work to locations, lines and elevations indicated.

.2 Provide everything needed to lay out and construct work.

.3 Supply any devices and or templates required to facilitate DCC Representative or authorized testing agencies inspection of work.

.4 Location of non-base controlled services are the responsibility of the contractor to obtain. These are typically natural gas, telephone, cable and local utility controlled electrical. Base will locate services as follows: Base controlled electrical, sewer, steam, water and communications.

.5 Saturday and Sunday work or work on specified Statutory Holidays is NOT permitted unless approved by the DCC Representative.

.6 Contractor is to provide a qualified and competent superintendent and is to be present at the job site when work is being performed.

1.6 **WORK SEQUENCE**

.1 Construct Work in stages to accommodate Owner's continued use of premises during construction, as applicable.

.1 After Hours work required to not disrupt operations.

.2 Work Sequence to account the cumulative requirements of combined Package A & Package B.

.2 Co-ordinate Progress Schedule and co-ordinate with Owner Occupancy during construction.

.3 Maintain fire access/control.

.4 Refer to 1.7 Phasing Plan.

.5 Provide within ten (10) working days after Contract award, a detailed Critical Path Method (CPM) schedule, capable of identifying, scheduling, monitoring, and reporting activities related to progress of work. Provide sufficient detail and degree of control in the CPM schedule to the approval of the DCC Representative and such that the needs and objectives of the Contract are met.

.6 Schedule shall include as a minimum the following:

.1 Identification of work periods on a horizontal time scale, from date of award to completion. Indicate weekend work, if required.

.2 Submission date, review time for shop drawings, product data, and samples.

.3 Anticipated progress of the work for each major activity by discipline. Duration of each task shall be a maximum of ten (10) days.

.4 Identification of the most critical activities throughout the course of the project.

.5 Major equipment/ material deliveries.

.6 Planned shutdowns of existing systems for work requirements.

.7 Proposed date(s) for commissioning, if required.

.8 Training for personnel on new systems.

.9 Submission of as-built and Operations and Maintenance Manuals.

.10 Mobilization and demobilization.

.7 Contractor’s schedule is to clearly indicate the phasing of the demolition and construction work.

.1 The Contractor is to minimize the downtime of the washrooms and disruptions to the building occupants.

.2 The Contractor is to maintain in full operation at all times during the construction period a minimum of 50% of the building's washrooms for each gender.

.8 DCC Representative will review schedule and return review copy with comments or request for clarifications within five (5) working days after receipt.

.9 Submit finalized schedule within five (5) working days after return of review copy. Submit progress update of activities against planned progress on a biweekly basis as requested by the DCC Representative.

1.7 **PHASING PLAN**

.1 Contractor to provide phasing plan to DCC Representative for review and approval.

.2 Phasing strategy to be developed based on the fire alarm panel loops. New fire alarm system is to be migrated to the existing, loop by loop to maintain partial occupancy of the building.

.1 Refer to Section 01 14 00 – 1.5 Special Requirements for additional phasing constraints and requirements.

.2 Package A Implementation Plan indicates Areas of Work for Contractor's use. The Contractor is to determine the sequence of Work for combined Package A & Package B.

.3 Contractor to validate fire alarm system loops on-site and provide updates/changes to the preliminary phasing strategy outlined in 1.07.5.

.4 Contractor to provide a detailed construction schedule detailing impact to building occupants. Schedule is to be developed to minimize disruption to building occupants, and should include:

.1 specific areas of work

.2 Times of work

.3 Duration of work

.5 Phasing strategy to be based on the following Preliminary Phasing Plan.

Preliminary Phasing Plan – Pkg B	
Phase 0	
ELEC	Provide fire alarm verification.
ELEC	Contractor to confirm the location of the fire alarm loops physical wiring and review/update the phasing plan based on what is physically confirmed.
ELEC	Provide updated phasing plan to DCC/DND and end users for review.
Phase 1 (Level 0)	
ARCH	Demolition/removal of ceilings as required for mechanical / electrical work.
ARCH	Provide openings for electrical/mechanical services.
ARCH	Temporary remove or support light fixtures as required.
ARCH	Provide protection/coordination with DCC representative, for protection of contents of the book stacks.
ARCH	Demolish existing FHC to be removed, as required.

ELEC	Install new fire alarm panel (FACP) incl. speaker amplifier cabinet, etc. Connect new FACP to existing FACP such that there is one working fire alarm system building-wide and one call out point.
ELEC	Install conduit for new loops from new FACP to each of the floors sharing the routing with mechanical and up the riser shaft(s).
ELEC	Install all elements associated with sprinkler, pre-action and any other mechanical systems in level 0.
MECH	Install sprinkler drain riser, sprinkler risers, and pre-action sprinkler risers in main chase. Install standpipe risers.
ARCH	Once M&E work is complete, provide new wall infills and mechanical enclosures, as required.
ARCH	Reinstate ceilings and provide bulkheads as required.
ARCH	Provide fire rated sealant around all penetrations through fire rated walls.
MECH	Work within the main electrical room can take place throughout the project. *
MECH	Installation of the new watermain can take place at during any phase of the project. *
Phase 2 (Loop by loop - refer to phasing developed in Phase 0)	
ARCH	Provide openings for electrical/mechanical services.
ARCH	Temporary remove or support light fixtures as required.
ARCH	Demolition/removal of ceilings as required for mechanical / electrical work.
ARCH	Provide protection/coordination with DCC representative, for protection of contents of the book stacks.
ARCH	Demo existing FHC to be removed, as required.
ELEC	Take the floor/phase to be worked on out of service on the existing FACP.
ELEC	Remove the existing smoke detectors and replace with new smoke detectors, reusing existing conduit system as much as possible, disconnect from existing conduit system as close as practicable to the new fire alarm loop riser and extend conduit system to the riser. Disconnect and remove (where practicable) the remainder of the existing conduit system for that loop being made redundant. Run the new fire alarm loop wiring through the revised conduit system. Provide fire alarm zone isolators as required by Code/Standards. Commission and provide fire alarm verification for that loop.
ELEC	Once sprinkler system on the floor is installed, commissioned and it and associated fire alarm elements installed and verified, remove existing heat detectors made redundant by new sprinkler system and any conduit/wiring not involved in the final fire alarm loop associated with them. Ensure ceiling mounted light fixtures are supported and then reinstalled as elements of suspended ceiling systems are removed and reinstated as associated with the sprinkler system installation.
ELEC	Install the speakers and strobes in the same area (floor or and/or shaft/stairwell) as the fire alarm loop/phase being installed above. Run all conduit/wiring. Commission but do not bring speaker/strobe system active yet (until entire building is brought transferred over to the new fire alarm system panel. Existing Bell fire alarm sounding system is to be the sole fire alarm sounding system). Provide fire alarm zone isolators as required by Code/Standards.

ELEC	Replace and install any new emergency lighting and any new exit signs on the same floor being worked on in this phase (as dictated by the fire alarm loop by loop/floor by floor approach). Reuse existing conduit & wiring where new emergency lighting unit replaces existing unit in the same location, and provide new conduit & wiring to local lighting circuit to new where new emergency lighting units are to be provided where there are no existing units in the same location.
MECH	Installation of zone control cabinet, sprinkler and pre-action zone piping, and sprinkler heads to be done one zone at a time or one floor at a time to match other trades to minimize the duration of disruption of each space.
MECH	Zone piping shall connect to the main risers before moving on to the next zone.
ARCH	Once M&E work is complete, provide new wall infills and mechanical enclosures, as required.
ARCH	Provide fire rated sealant around all penetrations through fire rated walls
ARCH	Reinstate ceilings and provide bulkheads as required.
Phase 3 (Closing and Commissioning)	
ELEC	Provide the replacement detectors in elevator machine room and elevator shaft, reusing conduit system where possible, providing new where not possible and extend to new FACP. Provide fire alarm loop wiring. Provide fire alarm zone isolators as required by Code/Standards. Commission and provide fire alarm verification for that loop.
ELEC	Rewire/extend conduit system & wiring from access/door control systems and maglocks (including central maglock release/reset switch), Do Not Enter sign, etc to new FACP. Commission and provide fire alarm verification, include in the same verification.
ELEC	Bring full building speaker/strobe system online, commission and verify and coordinate handshake of removal of entire existing bell system.
ELEC	Connect conduit/wiring from existing fire alarm transmitter to new FACP. Commission and provide fire alarm verification, include in the same verification. Also provide monitoring station verification.
ELEC	Remove existing (previous) FACP and any remaining, redundant, fire alarm components.
ELEC	Provide complete system fire alarm verification (same commissioning and verification step as mentioned previously in this phase).
MECH	Complete installation of main mechanical room equipment and piping.
MECH	Complete watermain installation if still incomplete *
MECH	Commissioning and testing of fire safety systems.

* This work is to be done in reasonable sequencing with other phases as the contractor sees fit to align with project execution, schedule and efficiency.

1.8 **CONTRACTOR USE OF PREMISES**

.1 Use of DND Property:

.1 Contractor, sub-contractor(s) and all personnel of this contract shall not use any tools, equipment, materials, buildings, structures or any other or any other property owned, rented leased by the Department of Nation Defence (DND) unless authorized in writing by the DCC Representative.

.2 Contractor's Use of Site:

.1 Restricted Areas (as identified in Package A, Implementation plan) : exclusive and complete access for execution of work, within the boundaries of the Project denoted areas, unless otherwise stated in writing by the DCC Representative.

.2 All Areas Except Restricted Areas (as identified in Package A, Implementation plan): in accordance with Section 01 74 00 – Cleaning and Waste Management – Part 1.2 Project Cleanliness.

.1 At the end of each shift (before 7:00AM every weekday), where the area is being returned for public usage, the area must be cleaned of debris, all tools, equipment, and surplus materials stored in Restricted Areas, and work area left in a secured and safe condition able to receive occupants/users. This includes, but not limited to:

1. Securing any, and all, overhead ductwork, hanging pipes & sprinkler heads, etc.
2. Securing any, and all, electrical wires and fire alarm devices. There shall be no live wires exposed at any times during the work.

.2 When working in an area that must be returned to public usage by 7:00AM, the Contractor shall only start work in which they will be able to work, clean, store, secure and return to a safe condition prior to turning over the area.

.3 If an isolated area of Work was unable to be rendered safe prior to 7:00AM, the Contractor shall barricade the area and notify the DCC Representative immediately.

.4 Cleaning will consist of daily policing and clean-up for the duration of the work period. On completion of the work requirement, all tools, equipment, surplus materials and debris will be removed from the work area and the site left in a clean and tidy condition.

.3 Zones for exterior storage area are indicated or are as directed by the DCC Representative.

.3 **Work can only to be carried out Monday - Friday 17:00 to 07:00 hours (After regular business hours)**, unless approved by DCC Representative.

.4 Limit use of premises for Work, for storage, and for access, to allow:

.1 Owner occupancy.

.2 Partial owner occupancy.

.3 Public usage.

.4 Co-ordinate use of premises under direction of DCC Representative.

.5 Obtain and pay for use of additional storage or work areas needed for operations under this Contract.

.6 Repair or replace portions of existing work which have been altered during construction operations to match existing or adjoining work, as directed by DCC Representative.

.7 At completion of operations condition of existing work: equal to or better than that which existed before new work started.

1.9 **OWNER FURNISHED ITEMS)**

.1 Contractor Responsibilities:

.1 Receive and unload products at site.

.2 Inspect deliveries jointly with DCC Representative; record shortages, and damaged or defective items. Inform DCC Representative immediately in writing of condition of items received.

.3 Handle products at site, including uncrating and storage.

.4 Protect products from damage, and from exposure to elements.

.5 Assemble, install, connect, adjust, and finish products.

.2 Repair or replace items damaged by Contractor or subcontractor on site (under his control).

1.10 **LOCATION OF EQUIPMENT AND FIXTURES**

.1 Location of equipment, fixtures and outlets indicated or specified are to be considered as approximate.

.2 Locate equipment, fixtures and distribution systems to provide minimum interference and maximum usable space and in accordance with manufacturer's recommendation for safety, assess and maintenance. Advise DCC Representative of conflicts and await clarification.

.3 Inform DCC Representative of impending installation and obtain their approval for actual location.

.4 Submit red line drawings to indicate relative position of various services and equipment.

1.11 **CONCEALMENT**

.1 Conceal pipes, duct and wiring in the floor, wall and ceiling construction of finished areas except where indicated otherwise.

1.12 **CUTTING AND PATCHING**

.1 Cut and patch as required to make work fit. Refer to appropriate sections and details. Where no detail is given advise DCC Representative and wait for direction.

.2 Make cuts with clean, true, smooth edges.

.3 Where new work connects with existing and where existing work is altered, cut, patch and make good to match existing work or as indicated.

1.13 **ADDITIONAL DRAWINGS**

.1 DCC Representative may furnish additional drawings for clarification. These additional drawings have same meaning and intent as if they were included with plans referred to in Contract documents.

1.14 **RELICS AND ANTIQUES**

.1 Protect relics, antiquities, items of historical or scientific interest such as cornerstones and contents, commemorative plaques, inscribed tablets, and similar objects found during course of work.

.2 Give immediate notice to DCC Representative and await DCC Representative written instructions before proceeding with work in this area.

.3 Relics, antiquities and items of historical or scientific interest remain Crown property.

1.15 **ALTERATIONS, ADDITIONS OR REPAIRS TO EXISTING BUILDINGS**

.1 Execute work with least possible interference or disturbance to building operations, occupants, public and normal use of premises. Arrange with DCC Representative to facilitate

execution of work.

.2 Use of elevators, dumbwaiters, or conveyors in building for moving workers and material.

.1 Protect walls of passenger elevators, to approval of DCC Representative prior to use.

.2 Accept liability for damage, safety of equipment and overloading of existing equipment.

.3 Where security has been reduced by work of Contractor, provide temporary means to maintain security.

.4 Provide and maintain temporary dust screens, barriers, hoarding, hazardous abatement enclosures, warning signs, drop cloths etc where work is adjacent to areas used by the public or National Defence personnel

1.16 **EXISTING SERVICES**

.1 Notify, DCC Representative of intended interruption of services and obtain required permission.

.2 Where Work involves breaking into or connecting to existing services, give DCC Representative 5 working days 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 DCC Representative with minimum disturbance to pedestrian, vehicular traffic and tenant operations.

.3 Provide alternative routes for personnel, pedestrian and vehicular traffic.

.4 Submit schedule to and obtain approval from DCC 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 when directed by DCC Representative to maintain critical building and tenant systems.

.6 Provide adequate bridging over trenches which cross sidewalks or roads to permit normal traffic.

.7 Where unknown services are encountered, immediately advise DCC Representative and confirm findings in writing.

.8 Protect, relocate or maintain existing active services. When inactive services are encountered, notify DCC Representative.

.9 Record locations of maintained, re-routed and abandoned service lines on redline drawings.

.10 Construct barriers in accordance with Section 01 56 00 - Temporary Barriers and Enclosures.

1.17 **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.

.12 Utility locate sheets.

1.18 **QUALITY ASSURANCE**

.2 The review of the work by the DCC Representative is to confirm adherence to the intent of the design. It does not release the Contractor from his responsibility for the proper execution of the work in accordance with the drawings and specifications and all governing regulations and good workmanship and established trade practices.

.3 The sampling inspection of material installations by testing agencies will not release the Contractor from his responsibility for the thorough execution of the work in accordance with the drawings and specifications and all governing regulations, good workmanship and established trade practices.

.4 The intermittent site reviews and subsequent reports by the Designer of Records do not constitute thorough inspection, blanket approval or comprehensive deficiency findings of the installations performed by the Contractor. They are limited to what has been witnessed and to establish adherence to the intent of the design. The Contractor is responsible for the proper execution of the work in accordance with the drawings and specifications and all governing regulations, good workmanship and established trade practices.

.5 The Contractor is responsible for securing timely written clarifications where the intent of the design may not be clear.

1.19 **COST BREAKDOWN**

.6 Within 10 working days of award submit breakdown of Contract price in detail as directed by DCC Representative and aggregating contract price. Cost breakdown will be used as basis for progress payment.

.7 Itemized separate line cost for each of the following general cost items as applicable.

.1 Performance and Payment Bonds.

.2 Field supervision and layout.

.3 Temporary Facilities and Controls.

.8 Itemize separate line item cost for work required by each Section of this Specification.

1.20 **PROJECT MEETINGS**

.9 Hold construction project meetings at times and locations approved by DCC Representative.

.1 For bidding purposes, assume Project Meetings to be held bi-weekly.

.10 DCC Representative will advise General Contractor of meetings. General shall be responsible for notifying sub-contractors and any other interested parties whose attendance is required.

.11 DCC Representative will assume responsibility for recording and distributing minutes to all interested parties.

PART - 2 EXECUTION

2.1 NOT USED

PART - 3 EXECUTION

3.1 **NOT USED**

END OF SECTION

PART 1 GENERAL

1.1 RELATED REQUIREMENTS

.1 **Section 02 41 19 – Selective Demolition.**

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 DCC Representative to facilitate work as stated.

.2 Maintain existing services to building and provide access for Contractor's site forces and DCC Representative. Make arrangements with DCC Representative to facilitate work as stated

.3 Maintain existing services to building and provide for personnel and vehicle access.

.4 Where security is reduced by work provide temporary means to maintain security.

.5 DCC Representative may, at their sole discretion assign sanitary facilities for use by Contractor's personnel. Keep facilities clean. For bidding purposes, assume that the Contractor provides sanitary facilities.

.6 Closures: protect work temporarily until permanent enclosures are completed.

.7 Where security is reduced by work provide temporary means to maintain security, in accordance with section 01 35 15 Industrial Security.

1.4 ALTERATIONS, ADDITIONS OR REPAIRS TO EXISTING BUILDING

.1 Execute work with least possible interference or disturbance to building operations, occupants, and normal use of premises. Arrange with DCC Representative to facilitate execution of work.

1.5 SPECIAL REQUIREMENTS

.1 Submit schedule in accordance with Section 01 32 16.19 - Construction Progress Schedule.

.1 Schedule to account for cumulative requirements of combined Package A & Package B.

.2 Interruptions and connections to the CFB Kingston Steam network will only be allowed during the period of June 1st to September 30th, unless directed otherwise by the DCC Representative.

.3 Ensure Contractor's personnel employed on site become familiar with and obey regulations including safety, fire, traffic and security regulations.

.4 Keep within limits of work and avenues of ingress and egress.

.5 Restriction on work hours:

.1 After Hours work required to not disrupt operations. **Work can only be carried out Monday - Friday 17:00 to 07:00 hours**, unless approved by DCC Representative.

.2 No work on statutory holidays and weekends unless approved by DCC Representative.

.6 Restriction and Availability of site for Contractor's Use:

.1 Contractor may, upon having been provided with written approval from the DCC Representative, delineate and isolate additional work areas not identified as 'Restricted Areas' in the implementation plan identified in Package A for the purpose of executing the Work from both Package A and Package B

.1 This additionally approved delineated work area may only be isolated and inaccessible to public access during the day (7:00AM to 5:00PM), for no more than a maximum of 14 calendar days at a time.

.2 Contractor to comply with Section 01 70 12 – 1.4 Site Control and Access for delineated areas. No more than the following area can be taken up by the Contractor at any time during the day (7:00AM to 5:00PM).

.1 Basement/Ground Floor: up to half a floor at one time.

.2 First Floor: up to half a floor at one time.

.3 Second Floor: up to half a floor at one time.

.4 Third Floor: up to quarter a floor at one time.

For example, if 50% of the Basement floor is taken up by the Contractor, no other space in the building may be isolated during the day (7:00AM to 5:00PM).

.3 Work may be completed anywhere in the building during the hours of 5:00PM to 7:00AM; however, the space must be returned to a clean and safe condition able to receive occupants/users.

.4 Lecture Hall Room 07 and Room 15 available for Work during period of April to August, coordinate with DCC Representative for Room Scheduling Coordination as required..

.7 Protection;

.1 Provide protections to Book Stacks per 01 11 00 – 1.9 Owner Furnished Items

.2 Reinstate ceiling tiles in office prior to systems above suspended ceiling being energized for testing purposes.

1.6 **SECURITY**

.1 Where security has been reduced by Work of Contract, provide temporary means to maintain security.

1.7 **BUILDING SMOKING ENVIRONMENT**

.1 Comply with smoking restrictions and municipal by-laws. Smoking is not permitted.

PART 2 PRODUCTS

2.1 NOT USED

PART 3 EXECUTION

3.1 NOT USED

END OF SECTION

PART 1 GENERAL

1.1 RELATED REQUIREMENTS

.1 Section 21 05 00 – Common Works Results for Fire Suppression.

.2 Section 21 12 01 – Standpipe and Assembly.

.3 Section 21 13 13 – Wet Pipe Sprinkler System.

.4 Section 21 13 16 – Dry Pipe Sprinkler System.

.5 Section 21 22 00 – Clean Agent Fire Extinguishing Systems

.6 Section 26 05 00 – Common Work Results for Electrical

.7 Section 28 46 00 – Fire Detection and Alarm

.8 Particular requirements for inspection and testing to be carried out by testing laboratory designated by DCC Representative are specified under sections as applicable.

1.2 APPOINTMENT AND PAYMENT

.1 DCC Representative will appoint and pay for services of testing laboratory except for the following inspection and testing:

.1 Inspections and tests specified to be carried out by Contractor.

.2 Inspection and testing required by laws, ordinances, rules, regulations or orders of public authorities.

.3 Inspection and testing performed exclusively for Contractor's convenience.

.4 Testing, adjustment, balancing and commissioning of equipment and systems or other similar requirements for quality control that are Contractor's responsibility.

.5 Testing, adjustment and balancing of mechanical and electrical equipment and systems.

.6 Mill tests and certificates of compliance.

.7 Tests specified to be carried out by Contractor under supervision of DCC Representative.

.8 Additional tests specified in paragraph 1.2.2.

.2 Where tests or inspections by designated testing laboratory reveal Work not in accordance with contract requirements, pay costs for additional tests or inspections as required by DCC Representative to verify acceptability of corrected work.

.3 Refer to Section 01 45 00 – Quality Control for additional information and requirements.

1.3 CONTRACTOR'S RESPONSIBILITIES

.1 Provide labour, equipment and facilities to:

.1 Provide access to Work for inspection and testing.

.2 Facilitate inspections and tests.

.3 Make good Work disturbed by inspection and test.

.4 Provide storage on site for laboratory's exclusive use to store equipment and cure test samples.

.2 Notify DCC Representative sufficiently in advance of operations, but not less than 3 (three) working days minimum, to allow for assignment of laboratory personnel and scheduling of test.

.3 Where materials are specified to be tested, deliver representative samples in required quantity to testing laboratory.

.4 Pay costs for uncovering and making good Work that is covered before required inspection or testing is completed and accepted by DCC Representative.

PART 2 PRODUCTS

2.1 NOT USED

.1 Not Used.

PART 3 EXECUTION

3.1 NOT USED

.1 Not Used.

END OF SECTION

PART 1 GENERAL

1.1 ADMINISTRATIVE

.1 This section specifies general requirements and procedures for contractor submissions of shop drawings, product data, samples, mock-ups and certificates to DCC Representative for review. Additional specific requirements for submissions are specified in individual sections of the specification

.2 Submit to DCC 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.

.3 Do not proceed with Work affected by submittal until review is complete and acceptance by the DCC .

.4 Present shop drawings, product data, samples and mock-ups in SI Metric units.

.5 Where items or information is not produced in SI Metric units converted values are acceptable.

.6 Review submittals prior to submission to DCC 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.

.7 Notify DCC Representative, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.

.8 Verify field measurements and affected adjacent Work are co-ordinated.

.9 Contractor's responsibility for errors and omissions in submission is not relieved by DCC Representative or Designer of Record review of submittals.

.10 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by DCC Representative or Designer of Record review.

.11 Submitted shop drawings that do not consider the time requirement for review and or the time required to order, manufacture and deliver does not constitute justification or grounds for requesting an alternate material that is readily available for the project. Contractor shall bear all costs associated to provide the acceptable product to deliver the project on schedule.

.12 Keep one reviewed paper copy of each submission on site.

.13 Make changes or revisions to submissions which the DCC Representative may require, consistent with the Construction Documents and resubmit as directed by the DCC Representative. When resubmitting, identify in writing any revisions other than those requested.

.14 Submittal format can be in electronic format, ie., PDF files.

1.2 SHOP DRAWINGS AND PRODUCT DATA

.1 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by Contractor to illustrate details of a portion of Work.

.2 Within 3 weeks after Contract Award, Contractor shall prepare a schedule fixing the dates for submission and return of shop drawings, and submit to DCC Representative for review.

.3 Submit Engineered drawings stamped and signed by professional engineer registered or licensed in Province of Ontario, Canada.

.4 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.

.5 Delete information not applicable to project on all submittals. Supplement manufacturer's standard drawings and literature with additional information to provide details appropriate and applicable to the Contract. Equipment installation/start up date is to include the manufacturers recommended installation instructions, pre-start and start up checklists for those pieces of equipment and systems designated to be commissioned per section.

.6 Shop Drawings Processing Time: 10 working days for DCC Representative’s review of each submission.

.7 Make changes in shop drawings as DCC Representative may require, consistent with Contract Documents. When resubmitting, notify DCC Representative in writing of revisions other than those requested.

.8 Accompany submissions with transmittal letter, in duplicate, containing:

- .1 Date.
- .2 Project title and Building number.
- .3 DND Drawing Number.
- .4 DND Project Number.
- .5 DCC Project Number.
- .6 Contractor's name and address.
- .7 Identification and quantity of each shop drawing, product data and sample.
- .8 Identify Specification Section that apply to the submission.
- .9 Other pertinent data.

.9 Submissions include:

- .1 Date and revision dates.
- .2 Project title and Building number.
- .3 DND Drawing Number
- .4 DND Project Number
- .5 DCC Project Number
- .6 Name and address of:
  - .1 Subcontractor.
  - .2 Supplier.
  - .3 Manufacturer.

.7 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.

.8 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 Cross reference to particular details of the drawings and specifications section number for which shop drawings are submitted.

.10 After DCC Representative's review, distribute copies.

.11 Submit electronic copy of shop drawings for each requirement requested in specification Sections and as DCC Representative may reasonably request.

.12 Submit electronic copies of product data sheets or brochures for requirements requested in specification Sections and as requested by DCC Representative where shop drawings will not be prepared due to standardized manufacture of product.

.13 Submit electronic copies of test reports for requirements requested in specification Sections and as requested by DCC Representative.

.1 Report signed by authorized official of testing laboratory that material, product or system identical to material, product or system to be provided has been tested in accord with specified requirements.

.2 Testing must have been within 3 years of date of contract award for project.

.14 Submit electronic copies of certificates for requirements requested in specification Sections and as requested by DCC 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.

.15 Submit electronic copies of manufacturers instructions for requirements requested in specification Sections and as requested by DCC Representative.

.1 Pre-printed material describing installation of product, system or material, including special notices and Safety Data Sheets concerning impedances, hazards and safety precautions.

.16 Submit electronic copies of Manufacturer's Field Reports for requirements requested in specification Sections and as requested by DCC Representative.

.17 Documentation of the testing and verification actions taken by manufacturer's representative to confirm compliance with manufacturer's standards or instructions.

.18 Submit electronic copies of Operation and Maintenance Data for requirements requested in specification Sections and as requested by DCC Representative.

.19 Delete information not applicable to project.

.20 Supplement standard information to provide details applicable to project.

.21 If upon review by DCC Representative, no errors or omissions are discovered or if only minor corrections are made, electronic acceptance copy 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.

.22 The review of shop drawings by DCC Representative is for sole purpose of ascertaining conformance with general concept.

.1 This review shall not mean that DCC 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 with Subcontractors.

1.3 ENGINEERED SUBMITTALS

.1 Shop drawings and other submittals for items required to be sealed by professional engineer (engineered) shall be duly prepared, sealed, and signed under the direct control and supervision of a qualified professional engineer registered in the Province of Ontario.

.2 Design includes life safety, sizing of supports, anchors, framing, connections, spans, and as additionally required to meet or exceed requirements of applicable codes, standards, regulations, authorities having jurisdiction, and design requirements of the Contract Documents.

.3 Engineered submittals shall include design calculations, complete with references to codes and standards used in such calculations, supporting the proposed design represented by the submittal. Prepare calculations in a clear and comprehensive manner so that they can be properly reviewed.

.4 Professional engineer responsible for the preparation of engineered submittals shall undertake periodic field review, including review of associated mock-ups where applicable, at locations wherever the work as described by the engineered submittal is in progress, during fabrication and installation of such work, and shall submit a field review report after each visit. Field review reports shall be submitted to the DCC Representative, to authorities having jurisdiction as required, and in accordance with the building code.

.5 Field reviews shall be at intervals as necessary and appropriate to the progress of the work described by the submittal to allow the engineer to be familiar with the progress and quality of such work and to determine if the work is proceeding in general conformity with the Contract Documents, including reviewed shop drawings and design calculations.

.6 Upon completion of the parts of the Work covered by the engineered submittal, the professional engineer responsible for the preparation of the engineered submittal and for undertaking the periodic field reviews described above, shall prepare and submit to the DCC Representative and authorities having jurisdiction, as required, a letter of general conformity for those parts of the Work, certifying that they have been provided in accordance with the requirements both of the Contract Documents and of the authorities having jurisdiction in the Province of Ontario.

.7 Costs for such engineered submittals, field reviews, field review reports, and letters of general conformity are included in the Contract Price.

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 DCC Representative.

.3 Notify DCC Representative in writing, at time of submission of deviations in samples from requirements of Contract Documents.

.4 Where colour, pattern or texture is criterion, submit full range of samples.

.5 Adjustments made on samples by DCC Representative are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to DCC Representative prior to proceeding with Work.

.6 Make changes in samples which DCC 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.

.2 Reviewed and accepted mock-ups will become standard of workmanship and materials against which installed work will be verified.

.3 Erect mock-ups at locations acceptable to DCC Representative.

1.6 PHOTOGRAPHIC DOCUMENTATION

.1 Prior commencement of the Work submit typical photographic sample in digital format to DCC Representative for review.

.2 Photographs of Existing Conditions:

.1 Prior commencement of the Work, supply to DCC Representative, digital photographs in JPEG format of all existing conditions before dismantling and demolition.

.2 Provide photographs in focus, with sufficient views from a minimum of six (6) locations to fully document each existing condition.

.3 Submit Photographs of Existing Conditions prior first application for payment.

.3 When called for inspections, submit electronic copy of colour digital photography in .jpg format, high resolution and as directed by DCC Representative.

.4 Project identification: name and number of project and date of exposure indicated.

.5 Include cost of all photographs in Contract Price.

1.7 COORDINATION OF SUBMITTALS

.1 Prior to submittals for DCC Representative's review, use all means necessary to fully coordinate material, including the following procedures:

.1 Determine and verify field dimensions and conditions, materials, catalogue numbers and similar data.

.2 Coordinate as required with the trades and with public authorities involved.

.3 Secure necessary approvals from public authorities and others and signify by stamp, or other means, that they have been secured.

.4 Clearly indicate deviations from the Contract Documents.

.2 Unless otherwise specifically permitted by the DCC Representative, make submittals in groups containing associated items; the DCC Representative may reject partial submittals as not complying with the provisions of the Contract Documents.

.3 Make submittals far enough in advance of scheduled dates of installation to provide required time for reviews, for securing necessary reviews, for possible revision and re-submittal, and for placing orders and securing delivery so as to cause no delay in the Work or in the work of other contractors.

.4 Do not proceed with Work affected by submittal until review is complete.

.5 Costs of delays occasioned by tardiness of submittals shall be borne by the Contractor.

1.8 CERTIFICATES AND TRANSCRIPTS

.1 Immediately after award of Contract, submit Workers' Compensation Board status.

.2 Submit transcription of insurance immediately after award of Contract as per the General Conditions of the Contract.

PART 2 PRODUCTS

2.1 NOT USED

.1 Not Used.

PART 3 EXECUTION

3.1 NOT USED

.1 Not Used.

END OF SECTION

PART - 1 GENERAL

1.1 **CONSTRUCTION FIRE SAFETY**

.1 The Contractor shall provide construction fire safety in accordance with the National Fire Code of Canada.

1.2 **FIRE DEPARTMENT BRIEFING**

.1 DCC Representative will co-ordinate arrangements for Pre-Commencement Meeting following contract award. Contractors will be briefed on Fire Safety by the Chief Fire Prevention Officer (CFPO) or his designated representative before work starts.

1.3 **REPORTING FIRES**

.1 The Contractor shall inform the DCC Representative and CFPO of all fire incidents at the construction site, regardless of size.

.2 Know location of nearest fire alarm pull station and telephone, including emergency phone number.

.3 Report immediately fire incidents to Fire Department as follows:

.1 Activate nearest fire alarm pull station.

.2 Call 911.

.3 Call DCC Representative & Chief Fire Inspector by contacting 613-541-5010 x 5795 / Cell: 613-484-8166

.4 Person activating fire alarm pull station will remain at the front entrance to direct Fire Department to scene of fire.

.5 When reporting fire by telephone, give location of fire, name or number of building and (must give municipal address) be prepared to verify location.

1.4 **FIRE SAFETY PLAN**

.1 Submit fire safety for the construction site prior to commencement of construction work. The fire safety plan shall conform to the National Fire Code of Canada.

.2 <u>The fire safety plan shall be limited to the area of construction only</u>. Fire safety plan shall contain building-specific details for planned system impairments. Contractor is not responsible for amending fire safety plans in existing buildings.

.3 The fire safety plan shall be submitted to the DCC Representative for review by Chief Fire Inspector. Allow 10 working days for DND review. Any comments by CFB Kingston Chief Fire Inspector shall be implemented by the Contractor.

.4 Post the fire safety plan at entrance to the construction site or near construction site's health and safety board.

.5 The fire safety plan shall conform to the National Fire Code of Canada and shall contain, at minimum:

.1 Emergency procedures to be used in case of fire, including:

.1 Sounding the fire alarm;

.2 Notifying the fire department;

.3 Instructing occupants on procedures to be followed when fire alarm sounds;

.4 Evacuating occupants, including special provisions for persons requiring assistance; and

.5 Confining, controlling and extinguishing fires.

.2 The appointment and organization of designated supervisory staff to carry out fire safety duties.

.3 The training of supervisory staff and other occupants in their responsibilities for fire safety.

.4 Documents including diagrams, showing type, location and operation of building fire emergency systems.

.5 Holding of fire drills (where applicable).

.6 The control of fire hazards in the building.

.7 The inspection and maintenance of building facilities provided for the safety of occupants.

1.5 **FIRE WARNING SYSTEM**

.1 A fire warning shall be provided to notify construction personnel of a fire emergency in the construction area.

.2 The system used shall be capable of being heard throughout building.

1.6 **INTERIOR AND EXTERIOR FIRE PROTECTION AND ALARM SYSTEMS**

.1 Unless authorized by the DCC Representative and the CFPO, Fire protection and alarm system will not be:

.1 Obstructed.

.2 Shut-off.

.3 Left inactive at the end of working day or shift without prior written authorization from the CFPO

.2 Do not use Fire hydrants, standpipes or hose systems for other than fire-fighting purposes unless authorized by the CFPO.

1.7 **FIRE PROTECTION SYSTEM IMPAIRMENT**

.1 Notify the DCC Representative and the CFPO 48 hours prior to shutting down any active fire protection system, including water supply, fire suppression, fire detection and life safety systems.

.2 Where a fire protection system that provides fire alarm monitoring is impaired in an existing building, per the Contractor's fire safety plan a fire watch shall be required and provided by the Contractor.

.3 The quantity of personnel involved in the fire watch is to be adequate such that the Contractor's entire area of construction work is patrolled during the fire watch.

.4 The building shall be patrolled at least once per hour on a 24-hour basis until the fire alarm and or fire protection system has been restored to normal operation condition.

.5 Fire watch personnel are to be familiar with facilities and procedures for sounding an alarm in the event of a fire and have a means of notifying the Emergency Services. The person(s) performing fire watch are not permitted to perform any other duties at the same time.

.6 Fire watch personnel are to have fire-extinguishing equipment readily available and be trained in its use.

.7 Implement all fire protection system impairments in accordance with the National Fire Code of Canada and Base Fire Orders.

1.8 **FIRE EXTINGUISHERS**

.1 In addition to other requirements of this specification, supply fire extinguishers, as scaled by the CFPO, necessary to protect work in progress and contractor's physical plant on site.

.2 Fire extinguishers may be required in the following areas as directed by the CFPO.

.1 Adjacent to hot works;

.2 In areas where combustibles are stored;

.3 Near or on any internal combustion engines;

.4 Adjacent to areas where flammable liquids or gases are stored or handled;

.5 Adjacent to temporary oil fired or gas fired equipment; and

.6 Adjacent to bitumen heating equipment.

.3 Extinguishers shall be sized as 4-A: 40-B: C (20 lbs) unless otherwise directed by the CFPO.

.4 Extinguishers shall be of the dry chemical type unless otherwise required by the hazard being protected.

.5 The Contractor may assume the quantity of extinguishers based on a maximum travel distance between extinguishers of 75 feet.

1.9 **INSTALLATION OR REPAIR OF ROOFS**

.1 Notify the CFPO of location of asphalt kettles and dates that kettles will be in use. Ensure personnel use and take precautions as follows:

.1 Use kettles equipped with thermometers or gauges in good working order.

.2 Locate kettles in safe place outside of building or, if approved by CFPO, on non-combustible roof. Locate to avoid danger of igniting combustible material below.

.3 Maintain continuous supervision while kettles are in operation and provide metal covers for kettles to smother flames in case of fire. Provide fire extinguishers as required in 1.08.

.4 Prior to start of work, demonstrate container capacities to CFPO.

.5 Use only glass fibre roofing mops.

.6 Do not leave used roofing mops unattended on roof. Store mops away from building and combustible materials.

.7 Store roofing materials no closer than 3.0 metres from structures.

.8 Any flammable cylinder shall be secure to prevent accidental tip over.

1.10 **ACCESS FOR FIRE FIGHTING**

.1 Access for firefighting shall be provide in accordance with National Fire Code of Canada.

.2 Advise the CFPO of work that would impede fire apparatus response. This includes violation of minimum horizontal and overhead clearances, as prescribed by the CFPO, erecting of barricades and digging of trenches.

.3 Minimum horizontal clearance: clear width of not less than 5.0 meters or as defined by the CFPO.

.4 Minimum vertical clearance: overhead height of not less then 6.0 meters, or as defined by the CFPO.

1.11 **SMOKING PRECAUTIONS**

.1 Smoking is prohibited in all buildings. Observe posted smoking restrictions near existing buildings. Smoking areas will be IAW Base Fire Orders and will not be within 10 meters of any building entrance.

1.12 **RUBBISH AND WASTE MATERIALS**

.1 Keep rubbish and waste materials at minimum quantities.

.2 Burning of rubbish is prohibited.

.3 Remove rubbish from work site at end of work day or shift as directed.

.4 Store oily waste in approved receptacles to ensure maximum cleanliness and safety.

.5 Deposit greasy or oily rags and materials subject to spontaneous combustion in approved receptacles and remove specified.

1.13 **FLAMMABLE AND COMBUSTIBLE LIQUIDS**

.1 Handle, store and use flammable and combustible liquids in accordance with National Fire Code of Canada.

.2 Keep flammable and combustible liquids such as gasoline, kerosene and naphtha for ready use in quantities not exceeding 45 litres provided they are stored in approved safety cans bearing Underwriters' Laboratory of Canada or Factory Mutual seal of approval. Obtain written authorization from CFPO for storage of quantities of flammable and combustible liquids exceeding 45 litres on site.

.3 Do not transfer flammable or combustible liquids inside buildings or on jetties.

.4 Do not transfer flammable or combustible liquids in vicinity of open flames or any type of heat-producing devices.

.5 Do not use flammable liquids having flash point below 38 degrees C such as naphtha or gasoline as solvents or cleaning agents.

.6 Store flammable and combustible waste liquids, for disposal, in approved containers located in safe ventilated area. Keep quantities to a minimum and notify CFPO when disposal is required.

1.14 **HAZARDOUS SUBSTANCES**

.1 Work entailing use of toxic or hazardous materials, chemicals and/or explosives, or otherwise creating hazard to life, safety or health, shall be in accordance with National Fire Code of Canada.

.2 Provide ventilation where flammable liquids, such as lacquers or urethanes are used. Eliminate all sources of ignition. Inform the CFPO prior to and at completion of such work.

1.15 **HOT WORKS**

.1 The Contractor shall implement a hot works program in accordance with the National Fire Code of Canada and NFPA 51 Standard for Fire Prevention during Welding, Cutting and Other Hot Work.

.2 The Contractor shall obtain through their DCC Representative from the CFPO a "Hot Work" permit for all hot works in the construction area. Frequency of renewal for hot works permits is at the discretion of the CFPO. Request to be submitted 48 hours in advance of any hot work.

.3 When work is carried out in dangerous or hazardous areas involving use of heat, provide fire watchers equipped with sufficient fire extinguishers. Determination of dangerous or hazardous areas along with level of protection necessary for Fire Watch is at discretion of the CFPO.

.4 Provide fire watch service for work on scale established and in conjunction with the CFPO as defined in the Fire Department Briefing. Fire watchers shall be trained in the use of fire extinguishing equipment. The person(s) performing fire watch are not permitted to perform any other duties at the same time.

.5 Area of hot works

.1 Hot works shall be carried out in an area free of combustible and flammable content.

.2 Where not possible,

.1 All flammable and combustible materials within 15m of the hot works shall be protected in accordance with the National Fire Code of Canada.

.2 A fire watch shall be provided during the hot work and for a period of not less than 60 minutes unless otherwise directed by the CFPO.

.3 A final inspection of the hot work area shall be conducted 1 hour after the completion of hot works unless otherwise directed by the CFPO.

.3 Where there is a possibility of sparks leaking onto combustible materials in areas adjacent to the areas where the hot work is carried out:

.1 Openings in walls, floors or ceilings shall be covered or closed to prevent the passage of sparks to such adjacent areas.

.6 Protection of flammable and combustible materials.

.1 Any combustible or flammable material, dust or residue shall be:

.1 Removed from the area where hot works is carried out; or

.2 Protected from ignition by non-combustible materials.

.7 Fire extinguisher

.1 A fire extinguisher shall be provided within 3 m of all hot works. Minimum size shall be 20lbs ABC unless otherwise directed by CFPO.

.8 Temporary heating

.1 No open flame heaters can be used on construction site.

.2 Only forced air heaters ULC or CSA approved and rated for industrial or construction use shall be used.

.3 All electric heaters shall be connected on a proper and individual circuit.

1.16 **PARTIAL OCCUPANCY**

.1 Implement partial occupancy procedures as defined in the drawings and specifications. Partial occupancy is where construction occurs adjacent to work areas occupied by the Departmental or Canadian Forces personal. This includes:

.1 Phased new construction.

.2 Early or partial occupancy of new construction.

.3 New construction being added onto an existing building.

.4 Renovation or recapitalization of an existing building.

.5 Phased renovation or recapitalization of an existing building.

.2 Where partial occupancy occurs, Contractor shall implement requirements as found in the drawings and specifications. This may include construction of a rated fire separation between occupied and construction areas as required by National Fire Code.

.3 A watch, with tours at intervals of not more than one hour, shall be provided throughout demolition sites when there are occupants in the portion of the building not being demolished.

.4 Except where a building is provided with a fire alarm system equipment, a watch, with tours at intervals of not more than one hour, shall be provided when a portion of the building is occupied while construction operations are taking place.

1.17 **FALSE ALARM FEES**

.1 “False Alarm” is the activation of a Fire Alarm System or emergency system through a mechanical failure, equipment malfunction, improper installation of the system or failure to maintain the system as described by the Ontario Fire Code being O.Reg.388/97, under the Fire Protection and Prevention Act, 1997, S.O. 1997, c.4, as amended.

.2 The Contractor shall not undertake work on any Fire Alarm System that sends an alarm directly to the Kingston Fire & Rescue or a Fire Alarm Monitoring Service without the DCC Representative being notified 48 hours in advance first.

1.18 **QUESTIONS OR CLARIFICATION**

.1 Direct questions or clarification on Fire Safety in addition to above requirements to the DCC Representative.

.2 DCC Representative is responsible to obtain clarification from the CFPO. The Contractor is not to liaise directly with the CFPO for notification, authorization or any requests unless the situation constitutes an immediate emergency.

1.19 **FIRE INSPECTION**

.1 Co-ordinate site inspections by CFPO through DCC Representative.

.2 Allow CFPO unrestricted access to work site.

.3 Co-operate with CFPO during routine fire safety inspection of work site.

.4 Immediately remedy unsafe fire situations observed by CFPO.

PART - 2 PRODUCTS

2.1 **NOT USED**

PART - 3 EXECUTION

3.1 **NOT USED**

END OF SECTION

1 References

FEDERAL

.1 Applicable Base Environmental Administrative Instructions (AI) or Base Standing Orders (BSOs) will be provided to the Contractor after award.

.1 Directorate Contaminated Sites (DCS) Contaminated Sites Instruction (CSI.004.001) - Soil Management. V. 4.3, 22 October 2025.

.2 Directorate Architecture and Engineering Services (DAES) Standard on Asbestos Containing Material (ACM) in Infrastructure. 31 March 2024.

.3 BSO 16.00 – Environmental Protection.

.4 BSO 16.01 – Emergency Environmental Response.

.5 BSO 16.02 – Environmental Impact Assessment.

.6 BSO 16.04 – Halocarbon Management.

.7 BSO 16.06 – Hazmat General Requirements.

.8 BSO 16.07 – Disposal of Hazardous Materials Waste.

.9 BSO 16.10 – Natural Resources.

.10 BSO 16.11 – Archaeological Resources.

.11 BSO 16.12 – Soil Management.

.2 Canadian Council of Ministers of the Environment (CCME). *Canadian Environmental Quality Guidelines, Canadian Water Quality Guidelines*, 2002.

.3 *Canadian Environmental Protection Act 1999*. Statutes of Canada 1999 Chapter 33.

.4 *Canada Labour Code- Canadian Occupational Health and Safety Regulations* (SOR/86-304). 2019.

.5 *Migratory Birds Convention Act, 1994.*

.6 *Migratory Birds Regulations, 2022.*

.7 *Species at Risk Act*, 2003. Chapter 25-29, no.3.

.8 *Transportation of Dangerous Goods Act* and pursuant regulations.

PROVINCIAL

.9 *Ontario Water Resources Act*. Revised Statutes of Ontario 1990, Chapter O.40.

.10 *Environmental Protection Act*. Revised Statutes of Ontario 1990, Chapter E.19.

.1 Ontario Regulation 103/94. *Industrial, Commercial, and Institutional Source Separation Programs*.

.2 Ontario Regulation 153/04. *Records of Site Condition*. Part XV.1 of the Act.

.3 Ontario Regulation 347. *General—Waste Management.* Revised Regulations of Ontario 1990

.4 Ontario Regulation 406/19. *On-site and Excess Soils.*

.5 Ontario Regulation 407/19. *Records of Site Condition*. Part XV.1 of the Act.

.11 *Occupational Health and Safety Act*. Revised Statutes of Ontario 1990, Chapter O.1.

.1 Ontario Regulation 490/09. *Designated Substances.*

.2 Ontario Regulation 278/05. *Designated Substance – Asbestos on Construction Projects and in Buildings and Repair Operations*.

.12 Ontario Ministry of Labour. 2011. *Lead on Construction Projects*.

.13 Ontario Ministry of Labour. 2011. *Silica on Construction Projects.*

.14 Ontario Provincial Standard Specifications. Ontario Ministry of Transportation.

.1 OPSS 518. Construction Specification for Control of Water from Dewatering Operations.

.2 OPSS 801. Construction Specification for the Protection of Trees.

.3 OPSS 805. Construction Specification for Temporary Erosion and Sediment Control Measures.

MUNICIPAL

.15 Corporation of the City of Kingston By-Law No. 2008-192 "*A By-Law to Provide for the Regulation of Waste Water Services and Discharges to Municipal Sewers for the City of Kingston*".

.16 City of Kingston By-Law No. 2004-52 "*A By-Law to Regulate Noise*".

2 Related Sections

.1 01 35 43.01 Soil Management

.2 Package A (KN229958 R13 Elevator and Barrier Free Upgrades)

.1 02 82 00.01 Asbestos Abatement – Low Risk Precautions

.2 02 82 00.02 Asbestos Abatement – Moderate Risk Precautions

.3 02 82 00.03 Asbestos Abatement – High Risk Precautions

.4 02 83 00 Lead Precautionary Measures

.5 02 89 00 Silica Precautionary Measures

.3 Package B (KN229981 R13 Life Safety Upgrades)

.1 02 82 00.01 Asbestos Abatement – Low Risk Precautions

.2 02 82 00.02 Asbestos Abatement – Moderate Risk Precautions

.3 02 82 00.03 Asbestos Abatement – High Risk Precautions

.4 02 83 00 Lead Precautionary Measures

.5 02 89 00 Silica Precautionary Measures

3 Submittals

.1 Submittals in accordance with Section 01 33 00 - Submittal Procedures.

.2 Prior to commencing construction activities submit an Environmental Protection Plan (EPP). The EPP must meet the intent of the contract and must be acknowledged as reviewed by the DCC Representative prior to work commencement.

.3 The Environmental Protection Plan to include the following sub-Plans:

.1 Spill Prevention Response Plan (SPRP).

.2 Erosion and Sediment Control Plan (ESCP).

.3 Soil Management Plan (SMP; see Section 01 35 43.01).

.4 Hazardous Materials Abatement and Management Plan (HMAMP).

.5 Waste Management and Disposal Plan (WMDP).

.4 Submit other data, information and documentation upon request by the DCC Representative and as stipulated elsewhere in this section.

4 Designated Substances

.1 In accordance with Section 30 of Ontario's *Occupational Health and Safety Act*, following is a list of designated substances present at the project site:

.2 Package A (KN229958 R13 Elevator and Barrier Free Upgrades)

.1 Non-friable asbestos-containing materials (ACM) are present throughout the building. These ACMs include beige sealant, cement wall panels, and grey cement board (present in elevator shaft lining and cement board wall finish).

.2 Disturbance to asbestos-containing materials shall be conducted in accordance with Ontario Regulation 278/05 and Canada Labour Code – Canada Occupational Health and Safety Regulations SOR/86-304 (COHSR), and in accordance with,

.1 Section 02 82 00.01 (Asbestos Abatement Low Risk Precautions) and if necessary;

.2 Section 02 82 00.02 (Asbestos Abatement Moderate Risk Precautions); and,

.3 Section 02 82 00.03 (Asbestos Abatement High Risk Precautions).

.3 Lead is present in painted surfaces throughout the building, and include cream, butter yellow, and grey floor and wall paints.

.1 Disturbances to lead painted surfaces shall be conducted in accordance with the Environmental Abatement Council of Canada (EACC) "*Lead Guideline"* (2025) and 02 83 00 Lead Precautionary Measures.

.2 Refer to specification Section 02 83 00 Lead Precautionary Measures for removal and disposal procedures.

.3 Contractor is required to have painted surfaces sampled and analyzed for toxicity characteristic leaching procedure (TCLP) metals analysis in accordance with O. Reg. 347 to define the appropriate waste classification.

.1 For bidding purposes, lead-containing wastes are to be assumed to be leachate toxic, hazardous waste and will be transported and disposed of as hazardous waste.

.4 Silica is present in all concrete materials throughout the project site.

.1 Disturbance of materials containing silica shall be conducted in accordance with the Ministry of Labour Guidelines "*Silica on Construction Projects*" (2011).

.3 <u>Package B (KN229981 R13 Life Safety Upgrades)</u>

.5 Non-friable asbestos-containing materials (ACM) are present throughout the building. These ACMs include beige sealant, cement wall panels, concrete panel mortar, and grey cement board (present in elevator shaft lining and cement board wall finish).

.6 Disturbance to asbestos-containing materials shall be conducted in accordance with Ontario Regulation 278/05 and Canada Labour Code – Canada Occupational Health and Safety Regulations SOR/86-304 (COHSR), and in accordance with,

.1 Section 02 82 00.01 (Asbestos Abatement Low Risk Precautions) and if necessary;

.2 Section 02 82 00.02 (Asbestos Abatement Moderate Risk Precautions); and,

.3 Section 02 82 00.03 (Asbestos Abatement High Risk Precautions).

.7 Lead is present in painted surfaces throughout the building, and includes yellow, red, light grey, cream, butter yellow, and grey floor and wall paints.

.1 Disturbances to lead painted surfaces shall be conducted in accordance with the Environmental Abatement Council of Canada (EACC) "*Lead Guideline"* (2025) and 02 83 00 Lead Precautionary Measures.

.2 Refer to specification Section 02 83 00 Lead Precautionary Measures for removal and disposal procedures.

.3 Contractor is required to have painted surfaces sampled and analyzed for toxicity characteristic leaching procedure (TCLP) metals analysis in accordance with O. Reg. 347 to define the appropriate waste classification.

.1 For bidding purposes, lead-containing wastes are to be assumed to be leachate toxic, hazardous waste and will be transported and disposed of as hazardous waste.

.8 Silica is present in all concrete materials throughout the project site.

.1 Disturbance of materials containing silica shall be conducted in accordance with the Ministry of Labour Guidelines "*Silica on Construction Projects*" (2011).

.4 Inform all workers and sub trades of the presence of designated substances and hazardous materials identified in the contract documents.

.5 Immediately notify the DCC Representative of potential asbestos containing material (ACM) discovered during the work and not apparent from the drawings, specifications, or reports pertaining to the Work. Do not disturb such material.

.6 For additional reference information, refer to the following reports:

1. *Project Specific Designated Substance and Hazardous Materials Survey – Elevator Replacement and Barrier Free Upgrades Project, prepared* by Englobe, dated October 1, 2024.

2. *Project Specific Designated Substance and Hazardous Materials Survey – Component 2, Task 1: Comprehensive Survey for the Life Safety Upgrades Throughout R13,* prepared by Englobe, dated March 6, 2025.

3. *Comprehensive Designated Substances and Hazardous Materials Assessment, R13 Massey Hall Library Offices, Royal Military College, Kingston,* prepared by BluMetric, dated July 14, 2015.

5 General

.1 Comply with all federal, provincial, and municipal regulatory requirements and guidelines for environmental protection and natural resource conservation, including in section 1.0 References, noted above.

.2 The Work site is subject to inspection by the Base Environment Officer, or designate, as well as, the DCC Representative, without prior notice.

.3 Failure to comply with environmental requirements may result in a stop work order or assessment of damages commensurate with repair of damage.

.4 All references to payment referred to in OPSS references are to be disregarded and do not apply to this contract.

.5 The Contractor will be unable to request extra funding to meet environmental requirements that are within the contract.

.6 It is the Contractor's responsibility to be aware of environmental requirements and the best management practices and pollution control measures necessary to meet them.

.7 Blasting is not permitted on DND property.

.8 No fixed or temporary fuel storage tanks used for the purposes of refuelling are permitted.

.9 Fires and burning of rubbish are not permitted on DND property.

.10 In accordance with the City of Kingston Noise By-law, noise due to construction is not permitted from 7 p.m. through 7 a.m., and all day on Sundays and statutory holidays.

6 Spill Prevention and Response Plan

.1 A spill or release is an accidental discharge of a pollutant (solid, liquid or gas) into the environment. After a spill or release, always ensure human health and safety is protected above all else.

.2 Submit to the DCC Representative a project-specific Spill Prevention and Response Plan (SPRP) prior to work on-site.

.1 The SPRP shall include environmental response measures necessary to prevent and to mitigate a pollutant release on National Defence property.

.2 The SPRP is to include:

.1 Contact information for the designated qualified individual to be the Environmental Protection Coordinator (EPC).

.2 Roles and responsibilities including names of those responsible for managing the SPRP.

.3 List of all subcontractors including contact information to support the SPRP.

.4 Notification to the DCC Representative for any spill.

.5 Emergency spill response measures, see 6.6 below.

.6 Project and site-specific clean up measures for spills,

.7 Waste disposal, including disposal procedures for materials used to contain the spill and storage location for these materials.

.8 Procedure to escalate for spills beyond Contractor’s ability to manage the spill.

.9 Refueling operations shall be conducted within a secondary containment area. Refuel equipment no closer than 30 metres from water bodies. SPRP shall identify equipment fueling location, the machinery to be refueled, location of transfer area, methodology and control measures during refueling.

.3 Identify storage locations of materials or wastes that may require emergency spill response. Identify spill control kit inventory and location(s).

.3 The SPRP is to be modified and updated as necessary. On-going assessments shall be performed during the progress of work identifying and documenting new or potential spill hazards and measures not previously known and identified.

.4 Prior to starting work, provide to the DCC Representative an inventory of hazardous material to be brought to the site, including volume or mass, and Safety Data Sheets (SDS).

.5 A CFB Kingston Pollution Incident Report form shall be completed by the Contractor for all spill or release incidents. This form will be provided to the Contractor after award.

.6 Emergency Response:

.1 With respect to liquid spills, contractor shall have on-site equipment to control a liquid spill of 110% of any material brought on to—or handled at—the site for one (1) hour.

.2 The on-site spill control kit required to include absorbent pads, absorbent granular, nitrile gloves, garbage bags and/or pails with lids, and shovels, and applicable to the chemical used.

.1 A spill control kit shall be located wherever quantities of materials or wastes that may require emergency spill response are used or stored.

.3 In the event of a spill, invoke Contractor's SPRP Plan and make immediate notifications to the DCC Representative.

.4 In the event of a spill into the natural environment, do everything practicable to prevent, eliminate, and ameliorate adverse effects, and to restore the natural environment.

.5 Emergency response planning is to include measures to escalate the response in the event of an emergency that exceeds on-site equipment capabilities.

.7 Display an information placard on all such material and equipment containing liquid products that will be located overnight or longer on DND property.

.1 Information placards to include: Contractor's name and address, contact person, emergency telephone numbers, and liquid contents.

.2 Post the information placard either on the exterior of the container, or on the dashboard of the vehicle, where applicable.

7 Erosion and Sediment Control Plan

.1 Establish and submit to the DCC Representative an Erosion and Sediment Control Plan (ESCP) prior to start of work on-site. The ESCP must be updated, modified and resubmitted at the direction of the DCC Representative as necessary if existing sediment and erosion control measures are proving inadequate.

.1 ESCP to include the following information:

.1 Name and contact information for designated qualified individual to be ethe Environmental Protection Coordinator.

.2 Any subcontractors and contact information to support the ESCP.

.3 A drawing showing location of site work that requires erosion and sediment controls and type to be installed. Include location of stockpiles, laydown areas for machinery/materials and dewatering locations.

.4 A schedule of work for installation, monitoring, and removal.

.5 Sample checklist and details of how and when inspections will be performed to ensure control measures follow the contract documents.

.6 All erosion and sediment control measures must ensure that sediment-laden water is not discharged from the site. This shall include but is not limited to sediment and erosion control measures indicated on the contract drawings.

.7 A list of municipal, provincial and federal permits and/or notifications the Contractor must obtain (as per the contract documents) to complete the work.

.8 Emergency procedures in the event of a failed Erosion and Sediment Control measure.

.2 Contractor

.1 Digital photographs of all ESC measures at time of construction, at time of any major repair or alternation and just prior to removal.

.2 Checklists of all ESC measures in place at that time, recording date, time and persons inspecting ESC measures. Required repairs to be indicated on the record for each ESC measure.

.3 Ensure control measures are in compliance with ESCP and Federal, Provincial and Municipal laws and regulations.

.2 Contractor to submit, to the DCC Representative, and maintain a record showing date of construction, repairs or alternations (initialization and completion) and removal of each erosion and sediment control measure.

.1 Digital photographs of all ESC measures at time of construction, at time of any major repair or alternation and just prior to removal.

.2 Checklists of all ESC measures in place at that time, recording date, time and persons inspecting ESC measures. Required repairs to be indicated on the record for each ESC measure.

.3 Ensure control measures are in compliance with ESCP and Federal, Provincial and Municipal laws and regulations.

.3 Dewatering systems must be capable of controlling ingress of water during work, as well as prevent surface runoff into excavation.

.4 Prevent the release of water containing suspended materials into any waterways, storm drains, sanitary sewers, or drainage systems. Control disposal and/or runoff of water containing suspended materials or other harmful substances in accordance with regulatory requirements.

.5 Berm barriers are not permitted.

.6 Store any stockpiles of soil or fill material at least thirty (30) metres from water bodies and protect them with either a heavy duty or light duty sediment barrier.

.7 Have additional sediment control materials readily available in case they are needed promptly for erosion and sediment control.

.8 Maintain sediment controls in good condition until terrestrial vegetation has re-established.

.9 Remove captured sediment before dismantling sediment barriers.

8 Hazardous Materials Abatement and Management Plan

.1 Prior to work onsite contractor to create and submit to the DCC Representative a Hazardous Materials Abatement and Management Plan (HMAMP).

.2 The HMAMP will address the details of how designated substance(s) and hazardous material(s) will be abated and managed. HMAMP to include:

.1 Name and contact information of:

.1 The designated individual to be the Environmental Protection Coordinator (EPC).

.2 All subcontractors who will support the HMAMP.

.2 A list of all municipal, provincial and federal permits and notifications required to complete the Work.

.3 A list of all hazardous materials to be brought to site.

.1 Include volumes and SDS, copy of placards and signage.

.4 Detail the approach to the execution of abatement work, including the equipment, tools, materials and actions to be employed for each type of designated substance or hazardous material.

.5 A drawing identifying existing conditions with the location of proposed enclosure(s), barricades and/or warning signs to restrict access, waste and personal decontamination facilities, and proposed location of waste bins.

.6 Proposed schedule accounting for calendar day(s) projected for enclosure set up, abatement work, cleaning and lockdown, and enclosure tear down.

.7 Identify number of calendar days for the shutdown of any building systems (e.g. HVAC, fire alarms, etc.).

.8 Detailed emergency procedures to be followed in the event of: fire, breach of the enclosure, injury or accident within the enclosure, detection of airborne asbestos fibers outside the enclosure, spilling asbestos debris on route to the waste bin.

.9 If not defined in other Plans, provide details of waste disposal procedures for materials stored, used or abated including locations on the work site.

.3 Contractor shall provide DCC Representative a minimum of 48-hours notice prior to request for pre-contamination inspections, post abatement visual inspections and inspections prior to lockdown application (including both Moderate and High-Risk Abatement activities as defined of COHSR).

.1 Scheduling with the environmental consultant to be coordinated through the DCC Representative.

.4 Contractor shall allow a minimum of 48-hours to receive results from DCC Representative for all visual inspections and clearance air testing results prior to enclosure tear-down (including both Moderate and High-Risk Abatement activities as defined of COHSR).

.5 Inform all workers and sub trades of the presence of designated substances and hazardous materials identified in the contract documents.

.6 Immediately notify the DCC Representative of potentially containing asbestos material discovered during the work and not apparent from the drawings, specifications, or reports pertaining to the Work. Do not disturb such material.

.7 Fire alarm suspension can be coordinated on weekdays between 7:30am and 3:30pm daily.

.1 Notification to DCC Representative, via submission of completed Request for Fire Alarm Shut Down form, is required a minimum of 5 days in advance of temporary fire alarm shut down.

.8 Written notification to DCC Representative required a minimum of 5 days prior to request to disable the mechanical ventilation system servicing the work area.

9 Waste Management and Disposal Plan

.1 Submit a Waste Management and Disposal Plan (WMDP) to the DCC Representative before construction work begins at the site. The WMDP is to comply with legislation, best practices, and with the requirements of the specifications.

.2 The WMDP is to encompass:

.1 Regular waste,

.2 Construction waste,

.3 Hazardous materials used in the course of the work, and

.4 Hazardous materials and designated substance waste.

.5 The WMPD shall include items below in addition to 10.3 through 10.10

.1 Name and contact information for the designated qualified individual to be the Environmental Protection Coordinator (EPC)

.2 A list of all contractors and Receiver Facilities for all waste types.

.1 Waste carriers' business name, address, telephone, email address, and MECP Certificate(s) of Approval listing the hazardous materials approved for transportation.

.3 The anticipated waste shipment frequency for all waste.

.4 Detailed procedures to be used to manage all waste products stored on site (petroleum, oil, lubricants and other hazardous waste to be detailed specifically). Include types of containers, labeling and segregation)

.5 A description of the types of waste materials and expected quantities for storage, transport and disposal. For leachate toxic waste include detailed compliance with O.Reg 347 and Transportation of Dangerous Goods Act (TDGA).

.1 Include procedure for notifying DCC Representative of the transport of hazardous materials and/or designated substances (including asbestos) offsite.

.6 Procedures for storing and release of hazardous materials to be removed from site including manifest procedures.

.7 Procedures that detail requirements for the below Special Substances that detail what is contained in the specification.

.1 Mechanical Flushing Liquids to Sanitary Sewers including lab analysis report, notifications and contacts.

.2 Smoke detectors

.3 Polychlorinated Biphenyls (PCBs)

.3 Waste Handling:

.1 Ensure that staff are properly trained and equipped, in accordance with regulatory requirements.

.2 Minimize handling and exposure to hazardous materials. Use control measures such as PPE and best practice procedures to address potential risks.

.3 All waste products will be placed in suitable containers and labeled clearly.

.1 Waste products are to be segregated by commodity and placed in separate containers based on class.

.2 Similar waste products are not to be mixed together without prior approval from the DCC Representative.

.4 Storage:

.1 Identify location(s) on site where wastes and hazardous materials wastes will be stored.

.2 Store all petroleum, oil, lubricants, and other hazardous materials within secondary containment, or in an appropriate metal clad storage building with containment.

.3 Store incompatible materials separated to prevent reaction.

.4 Access to hazardous waste storage areas must be controlled through appropriate physical barriers and limited to authorized personnel.

.5 Site is to be kept neat and orderly at all times.

.5 Transportation:

.1 Transportation of hazardous material must be in accordance with the *Transportation of Dangerous Goods Act*, by a licensed hauler, and in approved containers.

.2 Hazardous Materials Waste shall **not** be released from a work site to a carrier that is not registered as a carrier for the specific Hazardous Materials Waste, nor shall it be released for delivery to a consignee that is not registered as a receiver for the specific Hazardous Materials Waste.

.6 Disposal:

.1 Identify the proposed waste receiver facilities and the anticipated waste shipment frequency for all wastes.

.2 Contractor is required to have painted waste sampled and analyzed for toxicity characteristic leaching procedure (TCLP) metals analysis in accordance with O. Reg. 347.

.1 Sample(s) are to be taken by a Qualified Person (QP) (as defined in O. Reg. 153).

.2 Results are to be provided to DCC Representative for review prior to disposal off-site.

.3 Disposal of leachate toxic lead-based paint as hazardous materials must comply with legislation on transport and disposal.

.4 Dispose of all materials that are removed as asbestos-containing materials as asbestos waste.

.7 Transport and Disposal of Hazardous Waste and Designated Substances:

.1 Provide DCC Representative written notification of intent to transport of hazardous materials or designated substances off site, including but not limited to hazardous and liquid industrial waste (i.e. oils, solvents, waste fuels, used spill clean-up materials) or designated substance waste (i.e. asbestos, leachate toxic lead paint, mercury vapour in fluorescent light tubes).

.2 For shipments that require a waste generator number pursuant to O. Reg. 347, the Base waste generator number is required prior to removal offsite and will be provided by the DCC Representative.

.3 Submit the following to the DCC Representative for review 5 days prior to transport:

.1 Description and approximate quantity of waste material, including substrate if applicable.

.2 Contractor proposed date and time for hazardous waste material shipment.

.3 Correspondence from the approved hazardous waste receiver, indicating agreement and intent to accept the specified hazardous materials waste on specified date.

.4 Contractor will complete a "Certificate of Content for Waste Disposal" provided in Item #19 of this specification.

.4 Coordinate with the DCC Representative so that the Base Hazardous Materials Officer or designate is present at the time of shipment to review, sign and document hazardous waste transport from the Base.

.5 Submit the following to the DCC Representative for review within 48 hours following transport from the Base:

.1 Landfill weigh scale receipt/ticket for the disposal of waste.

.8 Disposal of Mechanical Flushing Liquids:

.1 Mechanical flushing liquids and mechanical liquids include any mechanical systems (piping, units, etc.) such as HVAC, glycol and includes residual liquid in current systems, cleaning with chemical inhibitors or cleaners, and flushing of new piping.

.2 Mechanical flushing liquids are to be assumed for bidding purposes to be hazardous waste and shall be transported and disposed of at a licensed facility in accordance with O. Reg. 347, and as described in this specification for Shipment and Disposal of Hazardous Waste and Designated Substances.

.3 In the event the contractor wants to discharge to a sanitary sewer the contractor must undertake the following items:

.1 Provide DCC Representative written notification of intent to discharge mechanical flushing liquids to sanitary sewer.

.2 Submit a sample of the liquid for laboratory analysis of all parameters in the City of Kingston Sewer Bylaw Schedule A including pH to a licensed laboratory.

.3 Submit a report to DCC Representative confirming that all materials proposed to be disposed to sewers comply with all legislative requirements, including the City of Kingston Sewer Use Bylaw.

.4 Coordinate with the DCC Representative to involve the Hazardous Materials Officer to authorize results from testing and sanitary discharge. Allow a minimum of 48 hours for review and authorization.

.5 Mechanical flushing liquids and mechanical liquids that are not authorized to be discharged to sanitary sewer shall be transported and disposed of at a licensed facility in accordance with O. Reg. 347, and as described in this specification for Shipment and Disposal of Hazardous Waste and Designated Substances.

.9 Special Wastes:

.1 Smoke Detectors:

.1 Undamaged and intact commercial Canadian Standards Association (CSA) and Underwriters Laboratories (UL) approved smoke detectors containing less than 185 kilo-Becquerel's of Americium-241 may be disposed of using local waste collection systems.

.2 *Photoelectric* smoke detectors are **not** subject to this special procedure.

.3 *Ionization chamber smoke detectors* (ICSDs) contain radioactive sources, and **are** subject to this special procedure.

.4 If surplus ICSDs are not to be re-used, remove the ICSDs from walls, ceilings, etc., without breakage, and, dispose of ICSDs at an approved landfill

.10 Do not bury rubbish or waste materials on DND Property.

.11 Do not dispose of waste into any waterways, storm or sanitary sewers, drainage system, or onto land.

.12 Divert unused asphalt material from landfill to be reused offsite or recycled.

.13 All solid and liquid hazardous waste material generated by work are to be taken off Base and disposed of in a lawful manner and at appropriately accredited facilities.

.14 All expenses incurred for the handling, storage, analysis, transport and disposal/recycling of all wastes will be incurred by the Contractor.

10 Site Clearing and Plant Protection

.1 Protect trees and plants on site and adjacent properties as indicated.

.2 Trees to be protected must have secure enclosures surrounding trees located a minimum of 1.5 metres from the trunk. Comply with standards in OPSS 801 "*Construction Specification for the Protection of Trees*".

.3 Protect roots of designated trees to dripline to prevent disturbance or damage. Avoid unnecessary traffic, dumping and storage of materials over root zones.

.4 Root pruning may be required when working in close proximity to a tree's drip line. Clean saw cuts are required for all root pruning.

.2 Contractor must identify to the DCC Representative prior to excavations where the limit of root cut will be for potentially impacted trees.

.3 If it is determined root pruning is required, work shall be carried out in the presence of the DCC Representative.

.4 Once the limit of the root cut has been defined, the Contractor shall not under any circumstances cut the tree roots a second time without the prior approval of the DCC Representative.

.5 Do not use tree protection areas for storage, stockpiling or any other purpose. Do not dump or flush any contaminants in areas of tree feeder roots.

.6 Obtain DCC Representative's approval where it is necessary to encroach onto protected area, prior to proceeding.

.7 Do not attach rigging cables to trees.

.8 Planting two (2) replacement trees for each tree removed.

.1 Species: a deciduous species native to Ontario. Review the species selections with DCC Representative prior to planting.

.2 Size: not less than 5 cm caliper tree.

.3 Location: as specified by the DCC Representative.

11 Wildlife Protection

.1 Nesting structures for birds of prey are to remain intact without harm to the tree or the nest.

.1 If these features are encountered the Contractor is to stop work and notify the DCC Representative immediately for direction on how to proceed;

.2 Depending on the nest and bird species, setbacks for disturbance zones maybe defined.

.2 The Contractor will comply with the *Migratory Birds Convention Act,* 1994.

.3 Prior to work commencing, conduct ground surveys to ensure that wildlife are not nesting/denning on or immediately adjacent to the project site.

.1 Where found, immediately notify the DCC Representative;

.2 Maintain a minimum setback distance of 3 m from wildlife burrows/dens and maintain markers indicating wildlife burrows/dens.

12 Soil Management

.1 Refer to section 01 35 43.01 Soil Management.

13 Pollution Prevention - Water

.1 Protection of Storm Drains:

.1 Protect storm drains within work site and within roadway that borders work site (which may be outside of work site) against entry by sediment, debris, oil, or chemicals prior to any work on-site and maintain until completion of work.

.2 Discharge of sediment-laden water to storm sewer is not permitted.

.3 Catch basins and catch basin manholes within work site and within roadway that borders work site (which may be outside of work site) to have a double layer of geotextile placed under lids to prevent sedimentation of storm sewer system. The geotextile shall be maintained until the completion of work.

.4 Ditch inlets to be protected by flow check dam immediately upstream of ditch inlet until all areas draining into the ditch inlet have been permanently stabilized.

.2 Protection of Drinking Water:

.1 In the event of a water main break, leak or disruption, Contractor is to stop work and notify the DCC Representative immediately.

.2 Water mains are to be disinfected with a 12% solution of sodium hypochlorite specific for drinking water supplies.

.3 Coordinate with DCC Representative to have the Department of National Defence's water authority; Water, Fuel and Environment (WFE) witness the connection, disinfection and flushing procedures as well as collect residual chlorine and bacteria samples.

.4 Repeat disinfection procedure of water main as required in order to achieve acceptable test results.

.3 Protection of Groundwater Monitoring Wells:

.1 Protect any and all existing groundwater monitoring wells at the site.

.2 The Contractor is responsible to repair any damage to existing monitoring wells.

.3 While not anticipated under this Contract, if monitoring wells are required to be installed, adjusted, or decommissioned, the Contractor is required to submit the O. Reg 903 paperwork (provided after award), as well as borehole logs, a location map, and photos. Work to be completed in compliance with O. Reg. 903 but <u>not</u> registered with the province.

.4 The DCC Representative will, upon request, show the Contractor the location of all known monitoring wells.

.4 Protection of Waterbodies:

.1 Do not operate construction equipment in waterways.

.2 Do not use waterway beds for borrow material.

.3 Do not dump excavated fill, waste material or debris in waterways.

.4 Chlorinated drinking water is considered a deleterious substance by Environment and Climate Change Canada (ECCC).

.5 Contractor is to ensure that hydrant discharge does not enter or is likely to enter fish habitat by direct or indirect discharge with measurable levels of free reactive chlorine (CCME).

.6 Discharging to land is permitted subject to the use of matting to prevent loss of soil or vegetation ensuring that items above are complied with.

.7 Comply with requirements of OPSS 182 "General Specification for Environmental Protection for Construction in Waterbodies and on Waterbody Banks". A written strategy is required by paragraph 182.04 to be submitted to the DCC Representative before commencing work on site. Disregard references to OPSF 182-1.

14 Pollution Prevention - Land

.1 Take all measures necessary to prevent dust and mud tracking on adjacent roads and streets.

.1 Use mechanical sweepers as often as necessary to keep adjacent roads and streets clean of dust and mud that is deposited from this project.

.2 Spray water to minimize the release of dust from paved areas or exposed soils.

.1 Chemical dust suppressants to be used only as approved by the DCC Representative.

.3 Maintain temporary erosion and pollution control features installed under this Contract, and those in place pre-dating the Contract.

.4 If materials are to be transported between sites, prevent any loss of material during transit.

.5 Cover or wet down dry materials or rubbish to prevent blowing dust and debris.

.1 Cover or otherwise contain loose materials that have potential to release airborne particulates during their transport, installation or removal.

.2 Stabilize soil and other material storage piles against wind erosion.

.3 Minimize vehicle traffic on exposed soils and stabilize high traffic areas with clean gravel surface layer or other suitable cover material.

.4 Avoid excavation, or other construction activity with potential to release airborne particulates, during windy and prolonged dry periods.

.5 Restore disturbed areas as soon as possible to minimize the duration of soil exposure.

.6 Lawn care pesticides are prohibited.

.7 Secure covers on waste bins and dumpsters at the end of each working day so as to prevent unauthorized use.

.8 Secure covers on waste bins and dumpsters so as to shed rain.

15 Pollution Prevention - Air

.1 Prevent material from sandblasting, saw-cutting, and other operations from contaminating air beyond application area, by providing temporary enclosures.

.2 Use new or well-maintained heavy equipment and machinery, preferably fitted with muffler/exhaust system baffles, engine covers.

.3 Comply with operating specifications for heavy equipment and machinery.

.4 Minimize the operation and idling of vehicles and avoid operating and idling vehicles and gas-powered equipment during smog advisories.

.5 Control emissions from equipment and plant to conform with federal, provincial, and municipal requirements.

.6 Products and Materials:

.1 Use products and materials that are as free as possible of noxious or toxic volatile emissions or emissions of irritating or toxic particles, so that the interior air of the completed building is as pollution-free as possible. For example, products emitting benzene, mercury, lead, or other known toxic compounds are not acceptable.

.2 Where odourless products are not available, choose products where possible so that odours are minimized. Set ventilation levels during the construction period sufficiently high to encourage the off-gassing of materials to their minimum levels prior to occupancy of the building, where possible.

.3 Choose products for installation within the air-handling and distribution systems to minimize the introduction of pollutants into the fresh air supply to the building.

.4 Remove oily rags and other combustible debris from Site daily. Take every precaution necessary to prevent spontaneous combustion.

16 Archaeology

.1 Artifacts can include broken housewares, garbage, bits of uniforms, ships or boats, timber, ammunition, building materials, building foundations, cut stone, stone drains, animal bones, human bones, coins or tokens, ash pits, fire pits, encampments, Aboriginal materials, pottery, etc.

.2 During excavations, watch for the following: patterns; off-colour soils (either light or dark); any sorts of the artifacts noted above.

.3 Upon discovery of artifacts, stop work in that area and notify the DCC Representative.

17 Halocarbon Management

.1 Halocarbons are ozone-depleting substances that are used as refrigerants, solvents and for fire suppression.

.2 Comply with the:

.1 Federal Halocarbon Regulations (FHR), 2022. SOR/2022-110.

.2 *Environmental Code of Practice for Elimination of Fluorocarbon Emissions from Refrigeration and Air Conditioning Systems* (the Environment and Climate Change Canada "Refrigeration Code of Practice"). April 2015.

.3 Installation, servicing, operation must be completed by a certified person as defined in the FHR 2022.

.1 Provide copies of all technicians' certificates to the DCC Representative.

.4 For the purpose of this contract, the Responsible Person as defined in the FHR 2022 shall be the Contractor.

.5 The following are the only halocarbons that are acceptable as refrigerants (non-halocarbon refrigerants are also acceptable):

.1 HFC R32;

.2 HFC 134A;

.3 HFC 404A; and

.4 HFC/HFO R454B

.6 Document **all** work—installation, maintenance, decommissioning, leak testing on refrigeration and air conditioning systems using CFB Refrigeration and Air Conditioning Service Log form. Obtain forms from DCC Representative after award. Mount forms upon equipment.

.7 Affix bar code tags to the equipment, as provided by the DCC Representative.

.8 Immediately report all releases of halocarbons to the DCC Representative.

.5 Complete CFB Kingston Pollution Incident Report form in subsection 18 and provide to DCC Representative within 24 hours.

.9 Leak-test all halocarbon-containing equipment within 24 hours of arrival at the Base, in accordance with the FHR 2022 and the *Refrigeration Code of Practice.*

.10 Leak-test all nitrogen-charged or "empty" equipment within 24 hours of arrival at the Base, in accordance with the FHR 2022 and the *Refrigeration Code of Practice*.

.11 Leak-test halocarbon-containing equipment during Commissioning in accordance with the FHR 2022 and the *Refrigeration Code of Practice.*

.6 Complete CFB Refrigeration and Air Conditioning Service Log form.

.12 After installation, leak-test factory-charged halocarbon-containing equipment in accordance with the FHR 2022 and the *Refrigeration Code of Practice*.

.7 Complete CFB Refrigeration and Air Conditioning Service Log form.

.13 Comply with the following timelines for service activity log completions,

.8 Factory charged units containing more than 10 kg of halocarbon shall be leak tested within 2 (two) working days of delivery to site.

.9 Commissioning of units requires forms to be submitted to DCC Representative within 48 hours of service;

.10 Leak Test with “no leaks”, submit forms to DCC Representative within 48 hours of service;

.11 Leak Test with “leak detected”, submit forms to DCC Representative within 24 hours of service;

.12 Leak repaired and isolation or emptying of system, submit forms to DCC Representative within 5 days of service;

.13 Release of halocarbons >10 kg and <100 kg, submit forms to DCC Representative within 24 hours of service;

.14 Release or potential release of halocarbons > 100 kg, submit forms to DCC Representative immediately;

.15 Decommissioning of units requires forms to be submitted to DCC Representative within 48 hours of service.

18 Halocarbon Incident Release Form

RELEASE REPORTING FORM FOR HALOCARBON REFRIGERATION, AIR CONDITIONING, FIRE EXTINGUISHING AND SOLVENT SYSTEMS

TO BE COMPLETED WITHIN 24 HOURS OF OCCURRENCE

Owner _____

Building No. _____

Room No. _____

Operator_____

Type of System* _____

Barcode No._____

Serial No._____

Type of Halocarbon Released _____

Estimated Quantity Released_____(kg) (lb) (oz)

Circumstances of Release _____

_____

Date Release Detected_____

Corrective Action Taken _____

_____

_____

Actions to Prevent Subsequent Release_____

_____

Release Reported YES NO

Date And Time Release Reported _____

Release Reported To _____ Phone No._____

Title_____

* Type of system: Refrigeration Air Conditioning Fire Extinguishing Solvent System Other

Name_____

Title_____

Signature_____

Submit form to DCC Representative

19 Certificate of Content for Waste

Date: _____

DCC/CE Project Number: _____

Site Location: _____

Contractor Name: _____

Address: _____

Contact Name: _____

Phone Number: _____

Brief Description of Materials Being Shipped (including quantity):

_____
_____
_____

This document is to certify that the materials being shipped are as described above.

Only materials indicated on this Certificate as described above will be shipped.
For materials requiring manifests a minimum of 48 hours notice is required to coordinate Base Environment sign-off prior to material transport from site.

If applicable indicate,

Manifest #: _____

Waste Classification#: _____

Contractor Signature (print and sign): _____

DCC/CE Contract Authority (print and sign):_____
Ref.
Ontario Regulation 347/558
Transportation of Dangerous Goods Act

Submit form to DCC Representative

END OF SECTION

PART 1 - GENERAL

1.1 REFERENCES

.1 Applicable Base/Wing Instructions or Base Standing Orders:

.1 DND DCS Contaminated Sites Instruction (CSI) – V4.3, 22 October 2025.

.2 BSO 16.07 Disposal of Hazardous Materials Waste.

.3 BSO 16.12 Soil Management.

.2 Canadian Council of Ministers of the Environment (CCME). Canadian Environmental Quality Guidelines (CEQGs) and Canada-Wide Standards.

.3 Health Canada's Updated Soil Screening Values and Interim Toxicological Reference Values for Per- and Polyfluoroalkyl Substances (PFAS) for Use at Federal Contaminated Sites (August 2025).

.4 Ontario Aggregate Resources Act.

.5 Ontario Environmental Protection Act:

.1 Ontario Regulation 347;

.2 Ontario Regulation 406/19.

.6 Ontario Rules for Soil Management and Excess Soil Quality Standards.

.7 Ontario Landscape Standard Chapter 5 Topsoil Standard.

1.2 RELATED SECTIONS

.1 01 35 43 Environmental Protection

1.3 SUBMITTALS

.1 Submittals in accordance with Section 01 33 00 - Submittal Procedures.

.2 Submit to the DCC Representative the following documents:

.1 Sampling and Analysis Plan.

.2 Soil Characterization Report.

.3 Soil Management Plan

.4 Soil Tracking Report.

.3 DCC Representative approval of the Sampling and Analysis Plan, Soil Characterization Report, and Soil Management Plan is required before starting work that involves soil movement.

.4 The Soil Tracking Report is required before contract completion.

.5 Allow up to 10 business days for review of the submittals.

.6 Submit other data, information, and documentation upon request by the DCC Representative and as stipulated elsewhere in this section.

1.4 MINIMUM REQUIREMENTS

.1 The Sampling and Analysis Plan, Soil Characterization Report, and Soil Management Plan must be signed by a Qualified Person (QP) as per O. Reg. 406/19 who will oversee soil management for the contract.

.2 The Soil Management Plan shall describe how soil will be managed for the contract and include a figure showing the location and estimated quantity for all proposed soil movement including the limits of excavation areas, imported fill destinations, reuse and excess soil destinations, and stockpile locations. The plan must be based on the soil characterization results and include disposal options for soil that cannot remain on site, considerations for water table excavations, decontamination procedures.

.3 All soil materials expected to be excavated, regardless of intended final placement, are required to be characterized.

.4 For bidding purposes, until soil characterization has been completed by the Contractor, it is assumed that the existing soil is non-hazardous and meets CCME Commercial use standards as well as MECP Table 2.1 Industrial, Commercial and Community land use types.

It is also assumed for bidding purposes that all excavated materials are environmentally and geotechnically suitable for on-Site sub-grade reuse where required for trench backfill purposes. Any soil generated in excess of re-use requirements shall be appropriately transported to an off-site disposal or reuse facility arranged by the Contractor, at the Contractor's expense.

.5 Name and contact information for sub-contractor or consultant firm(s) providing support.

.6 Soil Characterization

.1 Complete soil characterization in accordance with the DND DCS Contaminated Sites Instruction (CSI) and O. Reg. 406/19.

.2 Submit a Sampling and Analysis Plan based upon soil quantity estimates and identify the number of samples required under applicable federal and provincial regulations and guidelines, including leachate testing. Indicate whether the samples will be in-situ or ex-situ (stockpile), the depth of the samples, and the applicable collection methods. Include confirmation of laboratory accreditation. A Certificate of Accreditation from either (1) the Standards Council of Canada (SCC), or (2) the Canadian Association of Laboratory Accreditation (CALA) Inc. (ISO/IEC 17025), will be acceptable.

.3 Analyze all samples for the following minimum parameters:

.1 Polycyclic Aromatic Hydrocarbons (PAHs),

.2 Volatile Organic Compounds (VOCs),

.3 Petroleum Hydrocarbons (PHCs)

.4 Benzene, toluene, ethylbenzene, xylenes (BTEX)

.5 Metals and Inorganics.

.6 Per- and polyfluoroalkyl substances (PFAS)

.4 Submit a Soil Characterization Report that compares the results of the Sampling and Analysis Plan against each applicable federal and provincial regulation and guideline. Identify exceedances in a table format and on a figure. Include a description of the available options for the characterized soil such as: 1) on-site within project area, 2) on-site elsewhere, 3) off-site disposal at a licensed facility, 4) off-site reuse on federal lands, 5) off-site reuse on provincial lands.

.7 Imported Material

.1 Provide a description of the material (Granular A, stone dust, crusher run, etc.).

.2 Complete soil characterization in accordance with the DND DCS Contaminated Sites Instruction (CSI) for all imported material except for the following material that is exempt from characterization:

.1 Topsoil

.2 Imported fill less than $10m^3$

.3 Gravel/aggregates larger than 2 mm (i.e. do not pass a US #10 sieve)

.4 Fines generated by the mechanical activity of crushing virgin rock (i.e. crusher dust)

.5 Gravel/aggregate material with less than 20% fines (US #10/2 mm sieve) by volume.

.3 For imported material that **is** exempt, provide a letter from the source including:

.1 Name, address and license number of source quarry/pit.

.2 Confirmation that the material is from a virgin source and not recycled.

.4 For imported material that is **not** exempt, the minimum sampling parameters are: PAHs, VOCs, PHCs, BTEX, Metals and Inorganics, and PFAS. Sampling and reporting must be overseen by a Qualified Person (QP) as per O. Reg. 406/19 and ensure representative results. Sampling must be undertaken at the source site and results must meet CCME criteria for commercial land use to be accepted.

.5 Provide confirmation there is no visual/olfactory evidence of contamination.

.8 Importing Topsoil

.1 Topsoil shall be fertile, friable, sandy loam to loam topsoil as defined in Chapter 5 Landscape Guideline: Landscape Ontario Horticultural Trades Association (LOHTA), 2004. A mixture of subsoil and shall be free of stone over 30 mm in diameter, debris, organic or other deleterious contaminants and fragments larger than 75 mm in size, plants or their roots, sticks, noxious weeds, salts, soil sterilants or other materials detrimental to plant growth.

.2 Topsoil shall have a salt conductivity of less than 2 millisiemens/cm.

.3 Soil Amendments shall be free from clay subsoil, sawdust, commercial wood products, stones, lumps, plants, roots, sticks, weed stolons and seeds, high seed content, chemical contaminants and other materials harmful to plant life.

.4 Topsoil and soil amendments should meet the mechanical analysis as set out in Table 5-2 (LOHTA 2004.)

.5 The contractor is required to submit analytical data from an Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) or CALA accredited commercial lab demonstrating requirements are met for low level maintenance, as outlined in Table 5-1 Properties of Growing Medium, LOHTA, 2004, prior to bringing topsoil to site. The contractor is required to provide information 10 business days prior to bringing to site.

Table 5-1

Texture	Canadian System of Soil Classification Diameter (mm)	Sandy Loam to Loam Low Level Maintenance
Coarse Gravel	19-40	0-3%
All Gravel	2-40	0-10%
Sand	0.2-2	0-52%
Silt	0.002-0.5	0-50%
Clay	<0.002	0-27%
Clay and Silt		Max 48%
Organic Matter		5-10%
Acidity pH		6.0-7.0
Conductivity (ms/cm)		0-1.9

.9 Disposal Off-Site

.1 Provide receiver contact information (name, address, email, phone number).

.2 Provide confirmation of valid Environmental Compliance Approval (ECA).

.3 Provide written acceptance from the facility based on the soil characterization results, including PFAS, before transporting soil to the facility.

.4 Submit manifest copies for soil characterized as hazardous waste.

.5 Submit weigh bills and waste hauler license(s).

.10 Reuse On-Site or Off-Site

.1 Reuse soil in accordance with the approved Soil Management Plan.

.2 Disclose the results of the soil characterization to the owners of any off-site reuse site and obtain their written acceptance to proceed.

.3 Reuse off-site is not permitted for soils containing PFAS.

.11 Management On-Site

.1 Place all stockpiled soil on an impermeable surface and cover with an impermeable, properly secured tarp.

.2 Place materials at least 30 meters away from sensitive receptors (e.g. waterbodies) and property boundaries.

.3 Inspect and maintain stockpiles on a regular schedule.

.4 Avoid water accumulation in stockpiled soil or within excavation areas and provide ongoing management to prevent run-off.

.5 Prevent disturbance and compaction of topsoil and underlying soil from vehicles and heavy equipment using load dispersion materials.

.12 Slurry

.1 To limit slurry production, air vacuum excavation and/or hand digging should be used whenever possible.

.2 Soils to be removed from site by hydrovac must be characterized prior to removal in accordance with O. Reg 347 including a TCLP. Provide DCC Representative written notification of intent to transport of materials.

.3 For shipments that require a waste generator number pursuant to O. Reg. 347, the Base waste generator number is required prior to removal offsite and will be provided by the DCC Representative.

.4 Submit the following to the DCC Representative for review 5 business days prior to transport:

.1 Description and approximate quantity of waste material, including substrate if applicable.

.2 Contractor proposed date and time for liquid slurry waste material shipment.

.3 Correspondence from the approved hazardous waste receiver, indicating agreement and intent to accept the specified liquid waste on specified date.

.5 Coordinate with the DCC Representative so that the Base Hazardous Materials Officer or designate is present at the time of shipment to review, sign and document hazardous waste transport from the Base.

.6 Submit the following to the DCC Representative for review within 48 hours following transport from the Base:

.1 Landfill weigh scale receipt/ticket for the disposal of waste.

.7 If the soils in question contain (or are assumed to contain) PFAS, then hydrovac methods cannot be used unless a disposal option is determined in advance.

.8 If the slurry cannot be tested until after it’s generated, then it must be temporarily stored in containers, tested, then disposed of according.

.13 Tracking

.1 All soil movement under this contract must be tracked on an ongoing basis.

.2 The Soil Tracking Report shall summarize the quantity of soil moved, reused, or disposed, the source and receiver site locations, and soil movement dates.

.3 The Soil Tracking Report shall include a populated Soil Tracking Sheet (Appendix E of the DND Contaminated Sites Instruction).

END OF SECTION

PART 1 GENERAL

1.1 SUMMARY

.1 This Section references to laws, by laws, ordinances, rules, regulations, codes, orders of Authority Having Jurisdiction, and other legally enforceable requirements applicable to Work and that are; or become, in force during performance of Work.

1.2 REFERENCES TO REGULATORY REQUIREMENTS

.1 Perform Work in accordance with the most up to date version of National Building Code of Canada (NBC) and National Fire Code of Canada, including amendments up to tender closing date and other codes of provincial or local application provided that in case of conflict or discrepancy, more stringent requirements apply.

.2 Specific design and performance requirements listed in specifications or indicated on Drawings may exceed minimum requirements established by referenced Building Codes; these requirements will govern over the minimum requirements listed in Building Codes.

.1 Meet or exceed requirements of:

.1 Contract documents.

.2 Specified standards, codes and referenced documents.

1.3 HAZARDOUS MATERIALS

.1 Safely remove and dispose of designated substances and hazardous materials in accordance with governing legislation and the requirements of authorities having jurisdiction.

.2 Prepare the Site for safe construction operations prior to engaging in any other work, as required by governing legislation.

1.4 QUALITY ASSURANCE

.1 Regulatory Requirements: Except as otherwise specified, Contractor shall apply for, obtain, and pay fees associated with, permits, licenses, certificates, and approvals required by regulatory requirements and Contract Documents, based on General Conditions of Contract and the following:

.1 Regulatory requirements and fees in force on date of Bid submission, and

.2 A change in regulatory requirements or fees scheduled to become effective after date of tender submission and of which public notice has been given before date of tender submission.

1.5 BUILDING SMOKING ENVIRONMENT

.1 No smoking is permitted on site.

1.6 EASEMENTS AND NOTICES

.1 Contractor to confirm with DCC Representative that surrounding infrastructure is owned and operated by DND.

.1 DCC Representative to notify DND PM to contact Property Officer for their comments

.2 Contractor is not permitted to work on any infrastructure owned by municipality, other government departments, or a third-party owner (for example, utility companies).

.3 Contractor is to get written permission from DCC Representative through DND PM and Base Property Officer if work is required on DND owned utilities that cross an easement.

PART 2 PRODUCTS

2.1 NOT USED

.1 Not Used.

PART 3 EXECUTION

3.1 NOT USED

.1 Not Used.

END OF SECTION

PART 1 GENERAL

1.1 GENERAL

.1 Quality control remains the responsibility of the contractor. DCC Representative provides Quality Assurance.

.2 Contractor shall provide a contract specific Quality Control Plan to the DCC Representative for review and acceptance prior to first progress payment. The contract specific Quality Control Plan shall include specific and detailed responsibilities of the Contractor's staff to demonstrate how they will ensure that the Work meets the specifications and drawings of the Contract.

1.2 INSPECTION

.1 Allow DCC 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 DCC 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 DCC 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. If such Work is found in accordance with Contract Documents, DCC Representative will pay cost of examination and replacement.

1.3 INDEPENDENT INSPECTION AGENCIES

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

.2 Provide equipment required for executing inspection and testing by appointed agencies.

.3 Employment of inspection/testing agencies does not relax responsibility to perform Work in accordance with Contract Documents.

.4 If defects are revealed during inspection and/or testing, appointed agency will request additional inspection and/or testing to ascertain full degree of defect. Correct defect and irregularities as advised by DCC Representative at no cost to DCC Representative. Pay costs for retesting and reinspection.

1.4 ACCESS TO WORK

.1 Allow inspection/testing agencies access to Work, off site manufacturing and fabrication plants.

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

1.5 PROCEDURES

.1 Notify appropriate agency and DCC Representative 3 (three) business days 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.

1.6 REJECTED WORK

.1 Remove defective Work, whether result of poor workmanship, use of defective products or damage and whether incorporated in Work or not, which has been rejected by DCC 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 DCC Representative, it is not expedient to correct defective Work or Work not performed in accordance with Contract Documents, DCC Representative 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 DCC Representative.

1.7 REPORTS

.1 Submit 1 electronic copy of inspection and test reports to DCC Representative.

.2 Provide copies to Subcontractor of work being inspected or tested or manufacturer or fabricator of material being inspected or tested.

1.8 TESTS AND MIX DESIGNS

.1 Furnish test results and mix designs as requested.

1.9 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 as specified and acceptable to DCC Representative.

.3 Prepare mock-ups for DCC Representative’s 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.

.5 If requested, DCC Representative will assist in preparing schedule fixing dates for preparation.

.6 Specification section identifies whether mock-up may remain as part of Work or if it is to be removed and when.

1.10 MILL TESTS

.1 Submit mill test certificates as requested.

1.11 EQUIPMENT AND SYSTEMS

.1 Submit adjustment and balancing reports for mechanical, electrical and building equipment systems.

.2 Refer to relevant technical specification Sections for definitive requirements.

PART 2 PRODUCTS

2.1 NOT USED

.1 Not Used.

PART 3 EXECUTION

3.1 NOT USED

.1 Not Used.

END OF SECTION

PART 1 GENERAL

1.1 REFERENCES

.1 Occupational Health and Safety Act (OHSA)

.1 Ontario Regulation 213/91 for Construction Projects.

1.2 INSTALLATION REMOVAL

.1 Provide construction facilities in order to execute work expeditiously.

.2 Coordinate with governing authorities and obtain required permits.

.3 Remove from site all such work after use.

1.3 FUNCTIONAL REQUIREMENTS

.1 Provide all necessary hoists for work.

.2 Locate hoists where directed by DCC Representative.

1.4 DESIGN CRITERIA

.1 Scaffolding and scaffold enclosures shall be designed and certified by a Professional engineer, retained by contractor and licensed in the Province of Ontario. The same Professional engineer must approve, in writing, additions or modifications to scaffolding.

.1 Scaffold and enclosure must be built to withstand, and all wind, rain and snow loads applicable to construction site in accordance with NBC and OBC.

.2 Scaffold may be loaded up to 2.40 kPa. No more than 5 (five) working levels shall be loaded at one time.

.2 Where scaffolding must be supported by existing structures, DCC Representative shall provide, on request, information from the Owner on the condition and capacity of the existing structure in sufficient detail to allow the Contractor to complete scaffolding design.

1.5 GENERAL REQUIREMENTS FOR SCAFFOLDING

.1 Power elevated platforms may be used as part of the access system for the work if suitable to complete the work and provide access for inspection. Use of elevated work platforms shall be subject to remaining within the load lifting limits of such machines, accommodating traffic required for operations (delivery, garbage, recycling trucks etc.) and providing ready access to both the DCC Representative and designated inspectors such that the work can be inspected while in progress and once complete.

.2 Design scaffolds as follows:

.1 Platforms shall be prefabricated clip platforms, planks are not permitted.

.2 Scaffolds shall have proper stairs; ladders and trap doors are not permitted.

.3 Scaffolds shall be built of modular parts whenever possible.

.4 Scaffold accessories including braces and jackscrews shall be compatible with the capacity of frames.

.5 Provide internal horizontal x-bracing at all planking levels.

.6 Platforms shall be wide enough to circulate and temporarily store materials.

.7 Platforms shall be designed to support extra loads of removed materials.

.8 Provide steel guardrails, including toe boards, intermediate rails and handrails, at perimeter and around openings of all work platforms.

.9 Scaffold design and erection shall be in accordance with the "Occupational Health And Safety Act" and "Regulations For Construction Projects", and relevant municipal, provincial and federal regulations.

.3 Scaffolding shall be tied back to the masonry using push-pull ties. Scaffolding shall be isolated from walls or surfaces with 12 mm thick rubber or neoprene pads. Show all anchor locations and ties on shop drawings. DCC Representative shall review anchor locations prior to installation.

.4 Scaffold roofs shall be waterproof and meet Design Criteria.

1.6 **SHOP DRAWINGS**

.1 Submit shop drawings in accordance with Section 01 33 00.

.2 Submit for review shop drawings of scaffold and weather enclosure system including:

.1 Scaffold assembly drawings.

.2 Scaffold anchoring.

.3 Enclosure fabric with fastening and support system if applicable.

.4 Waterproofing details for scaffold roof.

.5 Indicate on drawings distance from platforms to wall surface to be worked on.

PART 2 PRODUCTS

2.1 TUBULAR SCAFFOLD

.1 Tubular scaffold, scaffold bridge, stair, side brackets, work platforms, guardrails, barricades, and other accessories shall be an engineered type modular tubular scaffold system.

.2 Complementary 50 mm diameter tube and clamp assemblies may be used where structural reinforcement is required and/or irregular geometry prevents use of modular parts.

.3 All components shall be hot dip galvanized steel.

.4 Platforms shall be clip type prefabricated platforms; wood planks are not permitted.

2.2 ACCESSORIES

.1 Spacers and protection pads: rubber or neoprene spacers: 12 mm thick min.

.2 Pipe fasteners: 3 mm thick min. galvanized steel fasteners designed for 25 mm and for 50 mm exterior diameter tubing.

PART 3 EXECUTION

3.1 INSTALLATION

.1 The erection of the scaffold cannot commence prior to review of the shop drawings.

.2 A competent worker shall supervise erection of the scaffold.

.3 Professional engineer that prepared shop drawings shall inspect the scaffold before it is used to ensure that it is erected in accordance with design drawings.

.4 Scaffolds:

.1 Install engineered scaffold, stairs and aluminum track system in accordance with approved shop drawings and mock-ups.

.5 Enclosure and netting:

.1 Use plastic wrap ties to fasten netting securely to scaffolding where applicable.

3.2 REMOVAL

.1 Remove temporary scaffolding and enclosures when directed by DCC Representative.

.2 Coordinate removal work DCC Representative.

END OF SECTION

PART 1 GENERAL

1.1 ACTION AND INFORMATIONAL SUBMITTALS

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

1.2 INSTALLATION AND REMOVAL

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

.2 Remove from site all such work after use.

1.3 DEWATERING

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

1.4 WATER SUPPLY

.1 Existing water supply may be used free of charge, for construction requirements with prior approval of DCC Representative. Make good any damage.

.2 DCC Representative will determine delivery points and quantitative limits. Written permission is required before any connection is made. All connections to be completed by licensed trade as required by regulatory and approval authorities.

.3 Provide at no cost to DND, all equipment and temporary lines to bring these services to project site.

.4 Supply of temporary services by DND is subject to DND requirements and may be discontinued by DND site representative at any time without notice, without acceptance of any liability for damage or delay, caused by such withdrawal of temporary services..

1.5 TEMPORARY HEATING AND VENTILATION

.1 Provide temporary heating required during construction period, including attendance, maintenance and fuel. Pay all costs for maintaining temporary heat.

.2 All equipment shall be in good working order and approved by a recognized certification agency.

.3 Prior to the use of any heating equipment the Chief Fire Inspector of the Base shall be notified and the equipment and installation inspected before any use.

.4 No temporary heating equipment utilizing an open flame will be allowed.

.5 Unless explicitly stated elsewhere in the specifications, the contractor is responsible for all heating cost, including equipment, fuel, electricity and maintenance personnel as required for the duration of the project.

.6 Construction heaters used inside building must be vented to outside or be flameless (vent free) type. Solid fuel salamanders are not permitted.

.7 Provide temporary heat, and ventilation in enclosed areas as required to:

.1 Facilitate progress of Work.

.2 Protect Work and products against dampness and cold.

.3 Prevent moisture condensation on surfaces.

.4 Provide ambient temperatures and humidity levels for storage, installation and curing of materials.

.5 Provide adequate ventilation to meet health regulations for safe working environment.

.8 Maintain temperatures of minimum 10 degrees Celsius in areas where construction is in progress.

.9 Ventilating:

.1 Prevent accumulations of dust, fumes, mists, vapours or gases in areas occupied during construction.

.2 Provide local exhaust ventilation to prevent harmful accumulation of hazardous substances into atmosphere of occupied areas.

.3 Dispose of exhaust materials in manner that will not result in harmful exposure to persons.

.4 Ventilate storage spaces containing hazardous or volatile materials.

.5 Ventilate temporary sanitary facilities.

.6 Continue operation of ventilation and exhaust system for time after cessation of work process to assure removal of harmful contaminants.

.10 Use of new and existing permanent heating and ventilating systems for supplying temporary heat or ventilation may be permitted if approved in writing by DCC Representative.

.11 Be responsible for damage to new and existing permanent heating and ventilating systems.

.12 Maintain strict supervision of operation of temporary heating and ventilating equipment to:

.1 Conform with applicable codes and standards.

.2 Enforce safe practices.

.3 Prevent abuse of services.

.4 Prevent damage to finishes.

.5 Vent direct-fired combustion units to outside.

.13 Be responsible for damage to Work due to failure in providing adequate heat and protection during construction.

1.6 TEMPORARY POWER AND LIGHT

.1 Arrange and maintain temporary electrical power supply in accordance with governing regulations and ordinances.

.2 DND may provide, free of charge, temporary electrical power for construction purposes. Electrical power provided by DND is not to be utilized for temporary heating.

.3 DCC Representative will determine delivery points and quantitative limits. Written permission is required by DCC Representative before any connection is made. Connect to existing power supply in accordance with the Canadian Electrical Code. All connections to be completed by licenced trade as required by regulatory and approval authorities.

.4 Provide, at no cost to DND, all equipment and temporary lines to bring these services to project site.

.5 Supply of temporary services by DND is subject to DND requirements and may be

discontinued by DND site representative at any time without notice, without acceptance of any liability for damage or delay, caused by such withdrawal of temporary services.

.6 Temporary power for electric cranes, temporary elevators and lifts, and other equipment required for performance of the Work in excess of above, is responsibility of Contractor.

.7 Contractor is to determine available power on site and to determine own overall power requirements. Contractor is to supplement power if there is insufficient or incompatible power available on site.

.8 Provide and maintain temporary lighting throughout project. Ensure level of illumination on all floors and stairs is not less than 162 lx.

.9 Electrical power and lighting systems installed under this Contract may be used for construction requirements only with prior written approval of DCC Representative provided that guarantees are not affected.

.1 Repair damage to electrical system caused by use under this Contract.

.2 Replace lamps which have been used for more than 3 months.

1.7 FIRE PROTECTION

.1 Provide fire protection. Follow National Fire Code 2020, and specifically provisions for construction site fire safety, to ensure the existing building is adequately protected during performance of Work.

.2 Provide and maintain temporary fire protection equipment during performance of Work required by governing codes, regulations and bylaws, and local authorities having jurisdiction.

1.8 TEMPORARY COMMUNICATION FACILITIES

.1 Provide and pay for temporary telephone, fax, data hook up, lines necessary for own use and use of DCC Representative.

PART 2 PRODUCTS

2.1 NOT USED

.1 Not Used.

PART 3 EXECUTION

.1 Not Used.

END OF SECTION

PART 1 GENERAL

1.1 REFERENCE STANDARDS

.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 CSA Group (CSA)

.1 CSA-A23.1/A23.2-04, Concrete Materials and Methods of Concrete Construction/Methods of Test and Standard Practices for Concrete.

.2 CSA-O121-17, Douglas Fir Plywood.

.3 CSA-S269.2-16(R2021), Access scaffolding for construction purposes.

.4 CAN/CSA-Z321-96(R2006), Signs and Symbols for the Workplace.

.3 .U.S. Environmental Protection Agency (EPA) / Office of Water

.1 EPA 832R92005, Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices.

1.2 ACTION AND INFORMATION SUBMITTAL

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

1.3 INSTALLATION AND REMOVAL

.1 Prepare site plan indicating proposed location and dimensions of area to be fenced and used by Contractor, number of trailers to be used, avenues of ingress/egress to fenced area and details of fence installation. Indicate traffic routes for moving materials on and off site, etc.

.2 Identify areas which have to be gravelled to prevent tracking of mud.

.3 Indicate use of supplemental or other staging area.

.4 Provide construction facilities in order to execute work expeditiously.

.5 Remove from site all such work after use.

1.4 SCAFFOLDING

.1 Scaffolding in accordance with CAN/CSA-S269.2 and, or Section 01 50 01.

.2 Coordinate with governing authorities and obtain required permits.

.3 When required by code, scaffolding and scaffold enclosures shall be designed and certified by a Professional engineer, retained by contractor and licensed in the Province of Ontario. The same Professional engineer must approve, in writing, additions or modifications to scaffolding.

.4 Where scaffolding must be supported by existing structures, DCC Representative shall provide on request, information from the Owner on the condition and capacity of the existing structure in sufficient detail to allow the Contractor to complete scaffolding design.

.5 Provide and maintain scaffolding, ramps, ladders, swing staging, platforms, and temporary stairs as required for safe and proper execution of the Work.

1.5 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 and cranes to be operated by qualified operator.

1.6 SITE REINSTATEMENT

.1 Contractor is responsible to reinstate the site back to original conditions prior to construction completion.

1.7 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.

1.8 CONSTRUCTION PARKING

.1 DCC Representative will determine where Parking will be permitted on site. Maintain and administer these spaces as directed.

.2 Provide and maintain adequate access to project site.

1.9 FIRST AID KIT

.1 Provide marked and fully stocked first-aid case in a readily available location.

1.10 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.

.3 Storage location to be approved by DCC Representative.

1.11 SANITARIES FACILITIES

.1 Provide sanitary facilities for work force in accordance with governing regulations and ordinances.

.2 Permanent facilities may be used on approval of DCC Representative.

.3 Post notices and take precautions as required by local health authorities. Keep area and premises in sanitary condition.

.4 Maintain supply of paper towel, toilet tissue, hand soap and hand sanitizer.

1.12 CONSTRUCTION SIGNAGE

.1 Provide and erect project sign, upon Contractor's mobilization to site, in a location designated by DCC Representative

.2 No other signs or advertisements, other than safety, warning and directional signage, are permitted on site.

.3 Direct requests for approval to erect Contractor signboard to DCC Representative. General appearance of Contractor signboard must conform to project identification site sign. Wording in both official languages.

.4 Provide temporary safety and warning signage, and directional signage, as required by governing legislation and by authorities having jurisdiction.

.1 Provide signs and notices for safety and instruction in both official languages.

.2 Graphic symbols to CAN/CSA-Z321.

.5 Maintain signs and notices in good condition for duration of project and dispose of off-site

upon completion of Work, or earlier if directed by DCC Representative.

1.13 PROTECTION AND MAINTENANCE OF TRAFFIC

.1 Provide access and temporary relocated roads as necessary to maintain traffic.

.2 Maintain and protect traffic on affected roads during construction period except as otherwise specifically directed by DCC Representative.

.3 Provide measures for protection and diversion of traffic, including provision of watch-persons and flag-persons, erection of barricades, enclosed hoardings, placing of lights around and in front of equipment and work, and erection and maintenance of adequate warning, danger, and direction signs.

.4 Protect travelling public from damage to person and property.

.5 Contractor's traffic on roads selected for hauling material to and from site to interfere as little as possible with public traffic.

.6 Verify adequacy of existing roads and allowable load limit on these roads. Contractor: responsible for repair of damage to roads caused by construction operations.

.7 Provide necessary lighting, signs, barricades, and distinctive markings for safe movement of traffic.

.8 Construct access and haul roads necessary.

.9 Haul roads: constructed with suitable grades and widths; sharp curves, blind corners, and dangerous cross traffic shall be avoided.

.10 Dust control: adequate to ensure safe operation at all times.

.11 Provide snow removal during period of Work.

.12 Location, grade, width, and alignment of construction and hauling roads: subject to approval by DCC Representative.

.13 Lighting: to assure full and clear visibility for full width of haul road and work areas during night work operations.

.14 Provide snow removal during period of Work for Contractor's Roads.

.15 Remove, upon completion of work, haul roads designated by DCC Representative.

1.14 REMOVAL OF TEMPORARY FACILITIES

.1 Remove temporary construction facilities from site at the completion of the Work or as directed by DCC Representative

1.15 CLEAN-UP

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

.2 Clean dirt or mud tracked onto paved or surfaced roadways.

1.16 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 kit in a readily available location.

PART 2 PRODUCTS

2.1 NOT USED

.1 Not Used.

PART 3 EXECUTION

.1 Not Used.

END OF SECTION

Part 1 GENERAL

1.1 PROTECTION OF PUBLIC TRAFFIC

.1 Comply with requirements of Acts, Regulations and By-Laws in force for regulation of traffic or use of roadways upon or over which it is necessary to carry out Work or haul materials or equipment.

.2 When working on travelled way:

.1 Place equipment in position to minimize interference and hazard to travelling public.

.2 Keep equipment units as close together as working conditions permit and preferably on same side of travelled way.

.3 Do not leave equipment on travelled way overnight.

.3 Close lanes of road only after receipt of written approval from DCC Representative.

.1 Before re-routing traffic erect suitable signs and devices to Ontario Traffic Manual, Book 7: Temporary Conditions.

.4 Keep travelled way graded, free from pot holes and of sufficient width for required number of lanes of traffic.

.1 Provide 7 m wide minimum temporary roadway for traffic in two-way sections through Work and on detours.

.2 Provide 5 m wide minimum temporary roadway for traffic in one-way sections through Work and on detours.

.5 Provide detours or temporary roads as indicated, and as approved by DCC Representative to facilitate passage of traffic around restricted construction area:

.6 Provide and maintain road access and egress to property fronting along Work under Contract and in other areas as indicated, except where other means of road access exist that meet approval of DCC Representative.

1.2 INFORMATIONAL AND WARNING DEVICES

.1 Provide and maintain signs, flashing warning lights and other devices required to indicate construction activities or other temporary and unusual conditions resulting from Project Work which requires road user response, as approved on traffic control plan by DCC Representative.

.2 Supply and erect signs, delineators, barricades and miscellaneous warning devices to Ontario Traffic Manual, Book 7: Temporary Conditions.

.3 Place signs and other devices in locations recommended in Ontario Traffic Manual, Book 7: Temporary Conditions.

.4 Meet with DCC Representative prior to commencement of Work to prepare list of signs and other devices required for project. If situation on site changes, revise list to approval of DCC Representative.

.5 Continually maintain traffic control devices in use:

.1 Check signs daily for legibility, damage, suitability and location. Clean, repair or replace to ensure clarity and reflectance.

.2 Remove or cover signs which do not apply to conditions existing from day to day.

1.3 CONTROL OF PUBLIC TRAFFIC

.1 Provide competent flag personnel, trained in accordance with, and properly equipped to Ontario Traffic Manual, Book 7: Temporary Conditions for situations as follows:

.1 When public traffic is required to pass working vehicles or equipment that block all or part of travelled roadway.

.2 When it is necessary to institute one-way traffic system through construction area or other blockage where traffic volumes are heavy, approach speeds are high and traffic signal system is not in use.

.3 When workmen or equipment are employed on travelled way over brow of hills, around sharp curves or at other locations where oncoming traffic would not otherwise have adequate warning.

.4 For emergency protection when other traffic control devices are not readily available.

.5 In situations where complete protection for workers, working equipment and public traffic is not provided by other traffic control devices.

.6 At each end of restricted sections where pilot cars are required.

.7 Delays to public traffic due to contractor's operators:15 minutes minimum.

.2 Where roadway, carrying two-way traffic, is restricted to one lane, for 24 hours each day, provide portable traffic signal system.

.1 Adjust, as necessary, and regularly maintain system during period of restriction.

.2 Ensure signal system meets requirements Ontario Traffic Manual, Book 7: Temporary Conditions.

1.4 OPERATIONAL REQUIREMENTS

.1 Maintain existing conditions for traffic throughout period of contract except that, when required for construction under contract and when measures have been taken as specified and approved by DCC Representative to protect and control public traffic.

Part 2 PRODUCTS

2.1 NOT USED

.1 Not Used.

Part 3 EXECUTION

3.1 NOT USED

.1 Not Used.

END OF SECTION

PART 1 GENERAL

1.1 REFERENCE STANDARDS

.1 Canadian 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 **CSA Group (CSA)**

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

1.2 INSTALLATION AND REMOVAL

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

.2 Remove from site all such work after use.

1.3 HOARDING

.1 Erect temporary site enclosures using 38 x 89 mm construction grade lumber framing at 600 mm centres and 1200 x 2400 x 13 mm exterior grade fir plywood to CSA O121 as a minimum.

.2 Apply plywood panels vertically, flush and butt jointed.

.3 Provide a minimum of one lockable truck entrance gate and at least one pedestrian door as directed and conforming to applicable traffic restrictions on adjacent streets as required to complete the Work of this Contract. Equip gates with locks and keys.

.4 Erect and maintain pedestrian walkways including roof and side covers, complete with signs and electrical lighting as required by law.

.5 Paint public side of site enclosure in selected colours with one coat primer to CAN/CGSB 1.189 and one coat exterior paint to CGSB 1.59. Maintain public side of enclosure in clean condition.

.6 Provide barriers around trees and plants designated to remain. Protect from damage by equipment and construction procedures.

1.4 GUARD RAILS AND BARRICADES

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

.2 Provide as required by governing authorities.

1.5 WEATHER ENCLOSURES

.1 Provide weather tight closures to unfinished door and window openings, tops of shafts and other openings in floors, walls, and roofs.

.2 Close off floor areas where walls are not finished; seal off other openings; enclose building interior work for temporary heat.

.3 Design enclosures to withstand wind pressure and snow loading.

1.6 DUST TIGHT SCREENS

.1 Provide dust tight screens or partitions to localize dust generating activities, and for protection of workers, finished areas of Work and public.

.2 Maintain and relocate protection until such work is complete.

1.7 ACCESS TO SITE

.1 Provide and maintain access roads, sidewalk crossings, ramps and construction runways as

may be required for access to Work.

1.8 PUBLIC TRAFFIC FLOW

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

1.9 FIRE ROUTES

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

1.10 PROTECTION FOR OFF-SITE AND PUBLIC PROPERTY

.1 Protect surrounding private and public property from damage during performance of Work.

.2 Be responsible for damage incurred by Work, to previous or better condition.

1.11 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 DCC Representative locations and installation schedule at least 10 working days prior to installation.

.4 Be responsible for damage incurred due to lack of or improper protection.

1.12 WASTE MANAGEMENT AND DISPOSAL

.1 Separate waste materials for reuse and recycling in accordance with Section 01 35 43, Environmental Protection.

.2 Confirm with DCC Representative locations and installation schedule at least 10 working days prior to installation.

PART 2 EXECUTION

2.1 NOT USED

.1 Not Used.

PART 3 EXECUTION

3.1 NOT USED

.1 Not Used.

END OF SECTION

PART 1 GENERAL

1.1 REFERENCE STANDARDS

.1 Within text of each specifications section, reference are made to reference standards.

.2 Conform to latest date of issue of referenced standards in effect on date of submission of Tender, except where specific date or issue is specifically noted.

.3 If there is question as to whether material, products, system, or their installation are in conformance with applicable standards, DCC Representative reserves right to have such material, products, system, or their installation tested to prove conformance.

.4 Cost for such testing will be born by DCC Representative in event of conformance with Contract Documents or by Contractor in event of non-conformance.

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 Within 5 working days of written request by DCC Representative, submit following information for any materials and products proposed for supply:

.1 Name and address of manufacturer.

.2 Trade name, model and catalogue number.

.3 Performance, descriptive and test data.

.4 Compliance to specified standards.

.5 Manufacturer's installation or application instructions.

.6 Evidence of arrangements to procure.

.7 Evidence of manufacturer delivery problems or unforeseen delays.

.3 Provide material and equipment to meet or exceed specified design and quality, performing to published ratings and for which replacement parts are readily available.

.4 Use products of one manufacturer for equipment or material of same type or classification unless otherwise specified.

.5 Permanent labels, trademarks and nameplates on products are not acceptable in prominent locations, except where required by regulatory requirements for safety or for operating instructions, or when located in mechanical or electrical rooms.

.6 Contractor shall be solely responsible for submitting relevant technical data and independent test reports to confirm whether a product or system proposed for use meets contract requirements and specified standards.

.7 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.

.8 Should disputes arise as to quality or fitness of products, decision rests strictly with DCC Representative based upon requirements of Contract Documents.

.9 Unless otherwise indicated in specifications, maintain uniformity of manufacture for any particular or like item throughout building.

.10 Final decision as to whether a product or system meets contract requirements rest solely with the DCC Representative in accordance with the requirements of Contract Documents.

1.3 CONTRACTOR'S OPTIONS FOR SELECTING MATERIALS FOR TENDERING

.1 Products specified by naming three or more, select any product named. Materials listed as "Acceptable Products" within the contents of this specification identify products known to meet the specified criteria. Other products may exist which meet the requirements specified but have not been listed as "Acceptable Products".

.2 Where 3 products are listed, the Contractor will choose one of the listed products. If Contractor desires to use alternate products in lieu of the listed acceptable products, the Contractor will follow specified procedures for requesting the use of alternate products - DCL242. The term "Acceptable Product" is deemed to be a complete and working commodity as described by a manufacturer's name, catalogue number, trade name or any combination thereof.

1.4 SUBSTITUTION

.1 No substitutions will be permitted after tender award except under special circumstances described herein.

.2 A substitution request must include statements of respective costs of items originally specified and the proposed substitution and itemize any differences in quality, performance and warranty.

.3 A substitution request may be considered by the DCC Representative if:

.1 materials selected from those specified are not available, discontinued; or

.2 delivery date of materials selected from those specified would unduly delay completion of contract; and

.3 alternative material to those specified is equivalent in quality, performance and warranty to the material specified and will result in a credit to the Contract amount.

.4 Should substitution be accepted either in part or in whole, assume full responsibility and cost when substitution affects other work on project. Pay for design or drawing changes required as result of substitution.

.5 Amounts of all credits arising from approval of substitution will be determined by DCC Representative and Contract Price will be reduced accordingly.

1.5 DELIVERY, STORAGE, HANDLING AND PROTECTION

.1 Handle and store products in manner to prevent damage, adulteration, deterioration and soiling and in accordance with manufacturer's instructions when applicable.

.2 Delivery and Handling:

.1 Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.

.2 Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, and other losses.

.3 Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.

.4 Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products arrived undamaged.

.3 Storage:

.1 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. Provide additional cover where manufacturer's packaging is insufficient to provide adequate protection.

.2 Store products subject to damage from weather in weatherproof enclosures.

.3 Store cementitious products clear of earth or concrete floors, and away from walls.

.4 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.

.5 Store sheet materials, lumber and other panels on flat, solid supports and keep clear of ground. Slope to shed moisture.

.6 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.

.4 Immediately remove from site and replace damaged or rejected products from site. Remove and replace damaged or rejected products at own expense and to satisfaction of DCC Representative.

.5 Touch-up damaged factory finished surfaces to DCC Representative's satisfaction. Use touch-up materials to match original. Do not paint over name plates.

1.6 TRANSPORTATION

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

.2 Products supplied by DND will be coordinated by DCC Representative, unless otherwise noted in Contract Documents.

1.7 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 DCC Representative in writing, of conflicts between specifications and manufacturer's instructions, so that DCC Representative will establish course of action.

.3 Improper installation or erection of products, due to failure in complying with these requirements, authorizes DCC Representative to require removal and re-installation at no increase in Contract Price or Contract Time.

1.8 ACCEPTABLE MATERIALS AND ALTERNATIVES

.1 Acceptable Materials: When a material specified include trade names or trademarks or manufacturer's or supplier's name as part of the description, select and only use one of the names listed for incorporation into the Work.

.2 Alternative Materials: Submission of alternative material to trade names or manufacturer's names specified must be done during the bidding period following procedures indicated in the Instructions to Bidders.

.3 Substitutions: After contract award, substitution of a specified material will be dealt with as a change to the Work in accordance with the General Conditions of the Contract.

.4 When a material, product, or system is specified by reference to a standard only, the Contractor may select any material, product or system that meets or exceeds the specified standard.

.1 Follow submittal procedures described in Section 01 33 00 and provide shop drawings and product data to DCC Representative for review.

.2 Obtain from the manufacturer an independent testing laboratory report, showing

that the material product, or system meets or exceeds the specified requirements. Provide copy to DCC Representative as part of the Submittals' package.

.5 Where a product is indicated with a particular colour, texture, or pattern, that product is the basis for matching the colour, texture, or pattern in the Work.

.6 Proposed product that in the opinion of the DCC Representative is not equal or better in all respects to the item specified will be rejected and the Contractor shall be required to supply items equal to the one specified at no extra cost.

1.9 NUMBER OF ITEMS

.1 In cases where an item or part of materials or equipment is referred to in the singular number, it is intended that such reference shall apply to as many items or parts as are required to complete the Work.

1.10 WORKMANSHIP

.1 Ensure Quality of Work and workmanship is of highest standard, executed by workers experienced and skilled in respective duties for which they are employed. Immediately notify DCC 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. DCC 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 DCC Representative, whose decision is final.

1.11 CO-ORDINATION

.1 Ensure co-operation of workers in laying out Work. Maintain efficient and continuous supervision on site at all times.

.2 Coordinate work between trades and subcontractors.

.3 Coordinate placement of openings, sleeves and accessories.

1.12 CONCEALMENT

.1 In finished areas conceal pipes, ducts and wiring in floors, walls and ceilings, except where indicated otherwise.

.2 Before installation inform DCC Representative if there is interference. Install as directed by DCC Representative.

1.13 REMEDIAL WORK

.1 Perform remedial work required to repair or replace parts or portions of Work identified as defective or unacceptable. Co-ordinate adjacent affected Work as required.

.2 Perform remedial work by specialists familiar with materials affected. Perform in a manner to neither damage nor put at risk any portion of Work.

1.14 LOCATION OF FIXTURES

.1 Consider location of fixtures, outlets, and mechanical and electrical items indicated as approximate.

.2 Inform DCC Representative of conflicting installation. Install as directed.

1.15 FASTENINGS - GENERAL

.1 Provide metal fastenings and accessories in same texture, colour and finish as adjacent materials, unless indicated otherwise.

.2 Prevent electrolytic action between dissimilar metals and materials.

.3 Use non-corrosive hot dip galvanized steel fasteners and anchors for securing exterior work and in humid areas, unless stainless steel or other material is specifically requested in affected specification Section.

.4 Space anchors within individual load limit or shear capacity and ensure they provide positive permanent anchorage. Wood, or any other organic material plugs are not acceptable.

.5 Keep exposed fastenings to a minimum, space evenly and install neatly.

.6 Fastenings which cause spalling or cracking of material to which anchorage is made are not acceptable.

.7 Do not use explosive actuated fastening devices unless approved by DCC Representative.

1.16 FASTENINGS - EQUIPMENT

.1 Use fastenings of standard commercial sizes and patterns with material and finish suitable for service.

.2 Use heavy hexagon heads, semi-finished unless otherwise specified. Use No. 304 stainless steel for exterior areas.

.3 Bolts may not project more than one diameter beyond nuts.

.4 Use plain type washers on equipment, sheet metal and soft gasket lock type washers where vibrations occur. Use resilient washers with stainless steel.

1.17 STAINLESS STEEL WORK

.1 Stainless steel used in the Work shall be type as specified in each perspective Section and shall be high quality and manufactured of non-rusting, virgin, and non-recycled materials.

.2 Use tools that are free of contaminants that will cause corrosion and rusting of stainless steel in the fabrication and finishing of stainless steel work.

.3 When requested by DCC Representative, identify the names of the stainless steel manufacturers, fabricators and the finishing subcontractors.

.4 DCC Representative may appoint an inspection and testing agency to test the stainless steel work.

1.18 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 DCC Representative.

1.19 EXISTING UTILITIES

.1 When breaking into or connecting to existing services or utilities, execute Work at times directed by DCC Representative, with minimum of disturbance to Work, building occupants, pedestrian and vehicular traffic.

.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.

END OF SECTION

NOTE: The application / location for the materials indicated is not limited to the list below and is to be used in conjunction with and may be supplemented by, the Specifications, Schedules and Drawings. Refer to Specifications, Schedules and Drawings for full extent of material application and additional material types.

CODE	ITEM	DESCRIPTION	APPLICATION / LOCATION	SAMPLE IMAGE

DIVISION 03 - CONCRETE

AS-1	Contrasting Strip - Accessibility	Cast in Place Extruded aluminum base with abrasive non-slip filler inserts Size 50mm wide Colour Black	Exterior- New Ramp Landings and Steps	

DIVISION 04 - MASONRY

CMU-1	Concrete Masonry Unit	Product: Standard Concrete Block Size: 190mm nominal Fire Rating: 2 Hour Min. Stack Bond Coursing to match Existing Block	Throughout	
CMU-2	Concrete Masonry Unit	Product: Standard Concrete Block Size: 240mm nominal Fire Rating: 2 Hour Min. Stack Bond Coursing to match Existing	Elevator Shaft Walls	

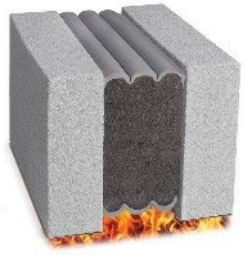
DIVISION 05 – METALS

LDR-1	Roof Access Ladder	Product: Aluminum Roof Access Ladder with retractable stiles. Brackets anchored to existing structure. Offset to be coordinated with roof hatch location. See Spec.	Roof Access ladder	

NOTE: The application / location for the materials indicated is not limited to the list below and is to be used in conjunction with and may be supplemented by, the Specifications, Schedules and Drawings. Refer to Specifications, Schedules and Drawings for full extent of material application and additional material types.

CODE	ITEM	DESCRIPTION	APPLICATION / LOCATION	SAMPLE IMAGE
MET-A1	Prefinished Aluminum	Shop Applied Anodized Coating for Aluminum Finish: Clear Satin Anodized	Entrance storefront aluminum frames, and Fire rated glass partition frames	
MET-S1	Prefinished Sheet Metal Flashing	Exterior Flashing: Min 22Ga Colour: To match PNL-1	Exposed Exterior Flashing, Parapet, Sills	 Deep Grey 55174 22GA

DIVISION 07 - THERMAL AND MOISTURE PROTECTION

JT-1	Control Joint	Manufacturer: Emseal, WillSeal, Watson Bowman, MM Systems Product: Preformed, pre-compressed, expanding foam joint seals for expansion joints in fire rated floors. Double-sided silicone-faced movement joints, fire-retardant-impregnated foam Complete with Prefabricated transition between floor and wall 1HR FRR Size: Thickness per Physical Gap 25mm Colour: To match FLR-1		

NOTE: The application / location for the materials indicated is not limited to the list below and is to be used in conjunction with and may be supplemented by, the Specifications, Schedules and Drawings. Refer to Specifications, Schedules and Drawings for full extent of material application and additional material types.

CODE	ITEM	DESCRIPTION	APPLICATION / LOCATION	SAMPLE IMAGE
PNL-1	Prefinished Metal Cladding	Product: Prefinished metal wall panel, 25mm reveal, Hidden fasteners Installation Direction: Vertical Dimensions: 38mm D X 300mm W Colour: Deep Grey #55174 Matching trim systems for all transitions. Thickness: 22ga	Exterior Cladding Elevator shaft	  Deep Grey 55174 22GA
RF-1	Roof Membrane	2-Ply Modified Bituminous Membrane Roofing See spec.	Roofing	

DIVISION 08 – OPENINGS

CW-1	Storefront System	Product: Thermally broken Aluminum glazed storefront system Basis of design Frame Size: 44.5mm x 114.3mm Finish: MET-A1	Entrance Vestibule Exterior doors	
CW-2	Storefront System	Product: Aluminum Glazed Storefront system Basis of design Frame Size: 44.5mm x 114.3mm Finish: MET-A1	Entrance Vestibule Interior doors	
CW-3	Fire Rated Glazed Screen System	Product: Aluminum Framed Fire rated- 60 Minute FRR Full Vision, Interior Application Glass Type: GL-FR1 Finish: MET-A1	Library atrium	

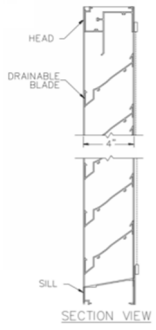
NOTE: The application / location for the materials indicated is not limited to the list below and is to be used in conjunction with and may be supplemented by, the Specifications, Schedules and Drawings. Refer to Specifications, Schedules and Drawings for full extent of material application and additional material types.

CODE	ITEM	DESCRIPTION	APPLICATION / LOCATION	SAMPLE IMAGE
FLM-1	Glazing Film Opaque Strip -Accessibility	Product: Interior window and glass surface film Style: Translucent effect Privacy: Semi-Private Finish: Matte White Visible Light Transmittance 43 % Application size: 50mm wide x length of glass as indicated in drawings. Thickness: 2 mil To be mounted 1300mm-1500mm AFF.	All fully glazed/ floor height screens	
GL-FR1	Fire Rated Glass	Product: Aluminum Framed Fire rated, Full Vision, Interior Application Thickness: 23mm Finish: Anodized- Clear	Library Atrium CW1	
GL-FR2	Fire Rated Glass	Product: Aluminum Framed Fire rated, Full Vision, Interior Application Thickness: 19mm Finish: Anodized- Clear	Fire rated doors with lites	
GL-L1	Laminated Tempered Glass	Product: Tempered Laminated Glass Double pane laminate. Thickness to be engineered to account for size, application and location.	Interior Vestibule Doors	
GL-T1	Tempered Safety Glass	Product: Tempered Laminated Glass Thickness to be engineered	All non-Rated Interior Glass	

NOTE: The application / location for the materials indicated is not limited to the list below and is to be used in conjunction with and may be supplemented by, the Specifications, Schedules and Drawings. Refer to Specifications, Schedules and Drawings for full extent of material application and additional material types.

CODE	ITEM	DESCRIPTION	APPLICATION / LOCATION	SAMPLE IMAGE
		to account for size, application and location.		
IGU-1	Insulated Glass Vision Glazing	Product: Double Glazed Insulating glass unit: Outer lite- 6 mm clear tempered glass, Low-E coating on second surface (2) 13mm air space Inner Lite- Clear tempered glass	Building Entrance Exterior Storefront door lites	
HTCH-1	Roof Hatch -Locking	Product: Lockable Roof Hatch Type E with prefab insulated curb Steel Cover/ Steel Frame Size: 914mm x 914mm Finish: To match MET-S1	Roof Hatch	
HTCH-2	Floor Hatch	Product: Flood tight floor access door Steel Cover/ Steel Frame w. 316 SSTL Hardware Size 914mm x 914mm	Basement Level- Sump pit access	

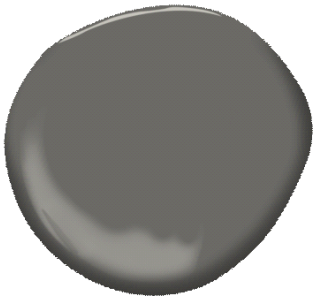
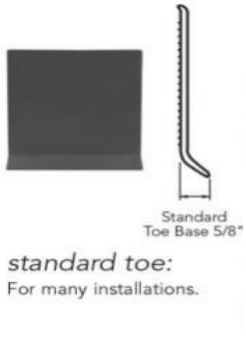
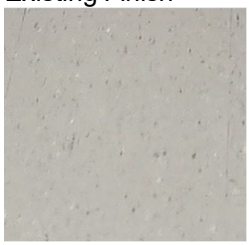
NOTE: The application / location for the materials indicated is not limited to the list below and is to be used in conjunction with and may be supplemented by, the Specifications, Schedules and Drawings. Refer to Specifications, Schedules and Drawings for full extent of material application and additional material types.

CODE	ITEM	DESCRIPTION	APPLICATION / LOCATION	SAMPLE IMAGE
LVR-1	Prefinished Metal Louver	Product: 101.6mm High Performance Drainable Fixed Mullion Louver Dimensions:1500mm x 1650mm to suit existing window opening Furnished with Insect screen Percent Free Area: ±50%. Material & Finish: 6063-T6 Alum Alloy, Powder coated #549 Charcoal grey	Stair1 at Basement level replacing lowest Ext Glazing unit	 

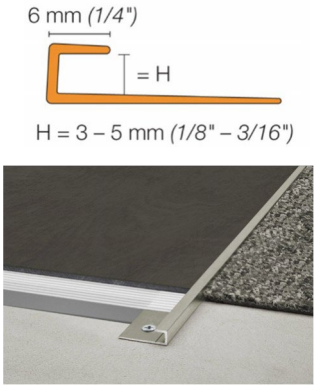
DIVISION 09 – FINISHES

PT-1	Paint	Colour: Off-White RGB Code: (229,227,220) Finish: Varies based on application	General/Ceiling Paint	

NOTE: The application / location for the materials indicated is not limited to the list below and is to be used in conjunction with and may be supplemented by, the Specifications, Schedules and Drawings. Refer to Specifications, Schedules and Drawings for full extent of material application and additional material types.

CODE	ITEM	DESCRIPTION	APPLICATION / LOCATION	SAMPLE IMAGE
PT-2	Paint	Colour: Charcoal Grey RGB Code: (101,101,98) Finish: Varies based on application	Door Frames, Library Bulkheads (Hollow Metal)	
PT-3	Paint	Colour: Product: Concrete Wall Paint Colour match to PT-1 Finish: Sealed and epoxy gloss finish	Elevator Shaft CMU walls, Finish side	
RB-1	Rubber Base	Product: 102mm Standard resilient wall base Colour: Match to Wall	Perimeter of all new CMU and GWB partitions	
RTF-1	Resilient Tile Flooring	Product: Linoleum Colour to match existing resilient flooring adjacent in library.	New 2nd Floor Bridge & Elevator Cab	Existing Finish 

NOTE: The application / location for the materials indicated is not limited to the list below and is to be used in conjunction with and may be supplemented by, the Specifications, Schedules and Drawings. Refer to Specifications, Schedules and Drawings for full extent of material application and additional material types.

CODE	ITEM	DESCRIPTION	APPLICATION / LOCATION	SAMPLE IMAGE
WB-1	Stone Wall Base (Salvaged)	Salvaged marble base from 2nd floor atrium opening.	New 2nd Floor Bridge Wall base – interior bridge side	Existing Finish 
WB-2	Coved Epoxy Base	Epoxy resin coved skirting applied on epoxy mortar to match existing profile.	Ground floor, extent of new wall finishes	Existing Finish 
TS-1	Transition Strip	Product: Retrofit edge-protection profile for same-height transitions. Minimal reveal, Finish: Brushed Anodized aluminum	Linoleum to existing linoleum transitions at bridge on 2nd floor. (See RTF-1)	

NOTE: The application / location for the materials indicated is not limited to the list below and is to be used in conjunction with and may be supplemented by, the Specifications, Schedules and Drawings. Refer to Specifications, Schedules and Drawings for full extent of material application and additional material types.

CODE	ITEM	DESCRIPTION	APPLICATION / LOCATION	SAMPLE IMAGE
TS-2	Transition Strip	Product: Minimal profile transition strip with stainless steel finish. Height: Match existing terrazzo finish (~25mm) to be verified on site.	Marble to marble transitions. Ground/ Bsmt floor	

End of Section

PART 1 GENERAL

1.1 SUBMITTALS

.1 Submit to the DCC representative copies of the following documents, including updates issued:

- .1 Health and Safety Policy & Program as indicated in paragraph 1.9, prior to commencement of work on the work site.
- .2 Reports or directions issued by authorities having jurisdiction, immediately upon issuance from that authority.
- .3 Accident or Incident Reports, within 24 hrs of occurrence.

.2 Submit other data, information and documentation upon request by the DCC representative as stipulated elsewhere in this section.

1.2 COMPLIANCE REQUIREMENTS

.1 Comply with the latest edition of the Ontario Occupational Health and Safety Act, and the Regulations made pursuant to the Act.

.2 Observe and enforce construction safety measures required by:

- .1 National Building Code of Canada (latest edition).
- .2 The Ontario Workplace Safety & Insurance Board (WSIB).
- .3 Municipal statutes and ordinances.

.3 In event of conflict between any provisions of above authorities the most stringent provision shall apply.

.4 Provide and maintain WSIB worker's compensation coverage for all employees for the duration of the contract. Prior to commencement of the work, at the time of Interim Completion and prior to final payment, provide to the DCC representative a clearance certificate from the WSIB indicating that the Contractor's account is in good standing.

1.3 RESPONSIBILITY

.1 The Contractor is responsible for safety of persons and property on the work site and for protection of federal employees and the general public circulating adjacent to work site operations to extent that they may be affected by conduct of work.

.2 The Contractor is to enforce compliance by workers and other persons granted access to work site with safety requirements of Contract Documents, applicable federal, provincial, and local statues, regulations, and ordinances, and with the Contractor's Health and Safety Program.

.3 Should an unforeseen or peculiar safety related hazard or condition become evident during performance of work, immediately take measures to rectify the situation and prevent damage or harm. Advise the DCC representative verbally and in writing of the hazard or condition.

1.4 SITE CONTROL AND ACCESS

.1 Delineate and isolate the work areas from adjacent and surrounding areas 1.8 metre rigid fence (or interior equivalent) to maintain control of all work area access points so that access to the project site work areas is restricted to authorized (construction) personnel only. The public way site delineation requirements shall meet or exceed the prescribed requirements specified in the Ontario Occupational Health and Safety Act & Regulations, specifically Section 64-65 (O. Reg. 213/91).

.2 Make provisions for granting permission to access onto work site to all persons who require access. Procedures for granting permission to access are to be in accordance with the Ontario Occupational Health and Safety Act, and the Regulations made pursuant to the Act and the Contractor's Health and Safety Program.

.3 Ensure persons granted access to the work site are in possession of and wear the minimum personal protective equipment (PPE) designated by the Contractor's Health and Safety Program. Ensure persons granted access to the work site are provided with, trained in the use of, and wear, appropriate PPE that are required above and beyond the designated minimums previously noted and as specifically related to the work site activity that they are involved in. Be responsible for the efficacy of the PPE that is provided above and beyond the designated minimums.

.4 For the purpose of this contract, the following are activities that will be required to be performed on the work site by DND forces and other Contractor(s). Control of the work site access and activities remain the responsibility of the Contractor as detailed within this specification section.

.1 Real Property Operations Detachment Kingston, throughout the project where required (for example, base issued permits, service shut-downs, locates, etc.)

.2 Shared Services Canada (SSC) will require access to the project site to perform contract related work.

.5 Erect signage at access points and at other strategic locations around the work site clearly identifying the work site area(s) as being "off-limits" to non-authorized persons. Signage must be professionally made with well understood graphic symbols and is not to be used as advertising but for the specific use as related to site safety and key contact information.

.1 Information to be provided on the signage is as follows:

Project Name/Description:

Contractor Company Name:

Project Superintendent's Name/Phone No.:

DCC Point of Contact Name/Phone No.:

.6 Secure the work site at all times to protect against un-authorized access.

1.5 FILING OF NOTICE

.1 File Notice of Project and any other required Notices with the Ontario Ministry of Labour prior to commencement of the work. Provide the DCC representative with a copy of the filed Notice(s) prior to commencement of the work.

1.6 PERMITS

.1 Obtain permits, licenses and compliance certificates at appropriate times and frequencies as required by the authorities having jurisdiction, for example CFB Kingston Hot Work Permit.

.2 Post all permits, licenses and compliance certificates on work site and provide copies to the DCC representative.

1.7 PROJECT/SITE CONDITIONS

.1 DND has provided the following list of known hazardous substances and/or hazardous conditions at the work site which should be considered for inclusion on the Constructor's hazard assessment, as health or environmental hazards and shall be properly managed should they be encountered as part of the work:

.1 General construction type hazards;

.2 Public safety hazards;

.3 Working at heights hazards;

.4 Power Mobile Equipment hazards;

.5 Confined space hazards – entry into underground service vaults shall be by confined space precautions that meet or exceed the prescribed requirements of the Confined Space Regulation O. Reg. 632/05

.6 Electrical hazards;

.7 Mechanical hazards;

.8 Contractors are required to be aware of the known hazardous substances and/or hazardous conditions and are to include in their tender price all work associated in working with, in and around the hazards.

.2 The above lists shall not be construed as being complete and inclusive of all safety and health hazards encountered as a result of Contractor's operations during the course of work. Include above items into the hazard assessment program specified herein.

1.8 MEETINGS

.1 Prior to commencement of work attend a pre-commencement meeting conducted by the DCC representative. Ensure minimum attendance by contractor's site superintendent. The DCC representative will advise of time, date and location of the meeting and will be responsible for recording and distributing the minutes.

.2 Conduct site specific occupational health and safety meetings as required by the Ontario Occupational Health and Safety Act, and the Regulations made pursuant to the Act.

.3 Record and post minutes of all meetings in plain view on the work site. Make copies available to the DCC representative upon request.

1.9 HEALTH AND SAFETY POLICY & PROGRAM

.1 Contractors are required under the Ontario Occupational Health and Safety Act, and the Regulations made pursuant to the Act to have in place a Health and Safety policy and program to support the policy. Compliance requirements for the content, detail and implementation of the policy and program resides with the Ontario Ministry of Labour. For the purpose of this contract the Health and Safety policy & program shall include, a signed / dated (current) safety policy statement and a program to support the policy (safe work procedures & practices, etc.) a site-specific hazard assessment that acknowledges, assesses and addresses the hazardous substances and/or hazardous conditions known and identified in paragraph 1.7 above, and on-going hazard assessment(s) shall be performed during the progress of work identifying and documenting new or known & potential health risks and safety hazards not previously known and identified.

.2 Provide a copy of the Health and Safety Policy & Program to the DCC representative prior to commencement of work on the work site. The copy provided to the DCC representative is for the purpose of review against the contract requirements related to the known hazardous substances and/or hazardous conditions. The review is not to be construed to imply approval by the DCC representative that the program is complete, accurate and legislatively compliant with the Ontario Occupational Health and Safety Act, and the Regulations made pursuant to the Act, and shall not relieve the Contractor of their legal obligations under such legislation.

1.10 ACCIDENT REPORTING

.1 Investigate and report incidents and accidents as required by the Ontario Occupational Safety and Health Act, and the Regulations made pursuant to the Act.

.2 For the purpose of this contract immediately notify DCC representative, investigate and provide a report within 24 hours to the DCC representative on incidents and accidents that involve:

.1 A resulting injury that may or may not require medical aid but involves lost time at work by the injured person(s).

.2 Exposure to toxic chemicals or substances.

.3 Property damage.

.4 Interruption to adjacent and/or integral infrastructure operations with potential loss implications.

.3 In the investigation and reporting of incidents and accidents, the Contractor is required to respond in a timely fashion to correct the action that was deemed to have caused the incident and/or accident and advise in writing on the action taken to prevent a re-occurrence of the incident and/or accident.

1.11 RECORDS ON SITE

.1 Maintain on site a copy of the safety documentation as specified in this section and any other safety related reports and documents issued to or received from the authorities having jurisdiction.

.2 Upon request, make copies available to the DCC representative.

END OF SECTION

PART 1 GENERAL

1.1 REFERENCE STANDARDS

.1 Owner's identification of existing survey control points and property limits.

1.2 QUALIFICATIONS OF SURVEYOR

.1 Qualified registered land surveyor, licensed to practise in Place of Work, acceptable to DCC Representative.

1.3 SURVEY REFERENCE POINTS

.1 Use when applicable.

.2 Existing base horizontal and vertical control points are designated on drawings.

.3 Locate, confirm and protect control points prior to starting site work. Preserve permanent reference points during construction.

.4 Make no changes or relocations without prior written notice to DCC Representative.

.5 Report to DCC Representative when reference point is lost or destroyed, or requires relocation because of necessary changes in grades or locations.

.6 Require surveyor to replace control points in accordance with original survey control.

1.4 SURVEY REQUIREMENTS

.1 Use when applicable.

.2 Establish two permanent bench marks on site, referenced to established bench marks by survey control points. Record locations, with horizontal and vertical data in Project Record Documents.

.3 Establish lines and levels, locate and lay out, by instrumentation.

.4 Stake for grading, fill and topsoil placement, and landscaping features.

.5 Stake slopes.

.6 Establish pipe invert elevations.

.7 Stake batter boards for foundations.

.8 Establish foundation, column locations and floor elevations.

.9 Establish lines and levels for mechanical and electrical work.

1.5 EXISTING SERVICES

.1 Before commencing work, establish location and extent of service lines in area of Work, all Base and Provincial Locate must be in hand before work may commence.

.2 Remove abandoned service lines within 2m of structures. Cap or otherwise seal lines at cut-off points as directed by DCC Representative.

.3 Notify DCC Representative 1 week prior to backfill or capping of any utilities below grade."

1.6 LOCATION OF EQUIPMENT AND FIXTURES

.1 Locate equipment, fixtures, and distribution systems to provide minimum interference and maximum usable space and in accordance with manufacturer's recommendations for safety, access and maintenance.

.2 Consider indicated location of fixtures, outlets, access panels, mechanical, electrical and security items as approximate. Obtain DCC Representative’s acceptance for their precise

locations.

.3 Inform DCC Representative of impending installation and obtain approval for actual location.

.4 Submit field drawings to indicate relative position of various services and equipment when required by DCC Representative.

.5 Relocation caused by failure to determine the actual locations and to obtain DCC Representative's acceptance shall be executed without charge to the Contract.

1.7 RECORDS

.1 Maintain a complete, accurate log of control and survey work as it progresses.

.2 On completion of foundations and major site improvements, prepare a certified survey showing dimensions, locations, angles and elevations of Work.

.3 Record locations of maintained, re-routed and abandoned service lines.

1.8 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit name and address of Surveyor to DCC Representative.

.2 On request of DCC Representative, submit documentation to verify accuracy of field engineering work.

.3 Submit certificate signed by surveyor certifying and noting those elevations and locations of completed Work that conform and do not conform with Contract Documents.

1.9 SUBSURFACE CONDITIONS

.1 Investigate and promptly notify DCC Representative in writing if subsurface conditions at Place of Work differ materially from those indicated in Contract Documents, or a reasonable assumption of probable conditions based thereon.

PART 2 PRODUCTS

2.1 NOT USED

.1 Not Used.

PART 3 EXECUTION

3.1 NOT USED

.1 Not Used.

END OF SECTION

PART 1 GENERAL

1.1 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submittals: in accordance with Section 01 33 00 - Submittal Procedures.

.2 Submit written request in advance of cutting or alteration which affects:

- .1 Structural integrity of elements of project.
- .2 Integrity of weather-exposed or moisture-resistant elements.
- .3 Efficiency, maintenance, or safety of operational elements.
- .4 Visual qualities of sight-exposed elements.
- .5 Work of Owner or separate contractor.

.3 Include in request:

- .1 Identification of project.
- .2 Location and description of affected Work.
- .3 Statement on necessity for cutting or alteration.
- .4 Description of proposed Work, and products to be used.
- .5 Alternatives to cutting and patching.
- .6 Effect on Work of Owner or separate contractor.
- .7 Written permission of affected separate contractor (if applicable).
- .8 Date and time work will be executed.

1.2 MATERIALS

.1 Required for original installation.

1.3 PREPARATION

.1 Inspect existing conditions, including elements subject to damage or movement during cutting and patching.

.2 After uncovering, inspect conditions affecting performance of Work.

.3 Beginning of cutting or patching means acceptance of existing conditions.

.4 Provide supports to assure structural integrity of surroundings; provide devices and methods to protect other portions of project from damage.

.5 Provide protection from elements for areas which are to be exposed by uncovering work; maintain excavations free of water.

1.4 EXECUTION

.1 Execute cutting, fitting, and patching including excavation and fill, to complete Work.

.2 Fit several parts together, to integrate with other Work.

.3 Uncover Work to install ill-timed Work.

.4 Remove and replace defective and non-conforming Work.

.5 Remove samples of installed Work for testing, as required.

.6 Provide openings in non-structural elements of Work for penetrations of mechanical and electrical Work.

.7 Execute Work by methods to avoid damage to other Work, and which will provide proper surfaces to receive patching and finishing.

.8 Cut rigid materials using masonry saw or core drill. Pneumatic or impact tools not allowed on masonry work without prior approval.

.9 Restore work with new products in accordance with requirements of Contract Documents.

.10 Fit Work airtight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.

.11 Provide firestopping in accordance with Section 07 84 00 - Firestopping to maintain the integrity of fire separations, including:

.1 Protecting penetrations at fire-resistance rated wall, ceiling or floor construction.

.2 Using construction joint fire stops and building perimeter fire stops to protect gaps at fire separations and between fire separations and other construction assemblies.

.12 Refinish surfaces to match adjacent finishes: Refinish continuous surfaces to nearest intersection. Refinish assemblies by refinishing entire unit.

.13 Conceal pipes, ducts and wiring in floor, wall and ceiling construction of finished areas except where indicated otherwise.

1.5 WASTE MANAGEMENT AND DISPOSAL

.1 Adhere to the requirements of the Waste Management. Separate wastematerials for reuse and recycling in accordance with Section 01 74 00 – Cleaning and Waste Management.

1.6 PENETRATIONS IN EXISTING STRUCTURE

.1 Perform core drilling, cutting, and patching to cause minimum interference with activities in existing premises and maintain maximum safety to occupants. Take reasonable measures to minimize and control noise, dirt and dust during Work.

.2 Follow established communication protocols and existing Work Permit System. Obtain DCC Representative's approval before proceeding.

.3 Where necessary to penetrate existing floors, walls, ceiling, roof or structural members provide sleeve and follow DCC Representative's instructions.

.4 Restore surfaces to same finish and condition as existed prior to penetration unless indicated otherwise on Contract Documents.

.5 Confine drilling operation to time-of-day as stipulated by DCC Representative.

.6 Core Drilling Procedure

.1 Examine locations to be core drilled where:

.1 Diameter is greater than 25 mm

.2 Multiple drillings required and where the distance between centres is less than 10 times the diameter of the hole

.2 Examine by most suitable method including:

.1 Ground Penetrating Radar (GPR)

.2 Ferro scan

.3 X-ray

.4 Cable detection

.3 Where coring is proposed through hollow core beams/slabs, the diameter of the coring is not to exceed the diameter of the void space within the hollow core beam/slab. Locate the void inside the beam/slab by non-destructive means and ensure that no reinforcing steel is cut or damaged.

.4 Examine from both sides of the structure to be drilled.

.5 Examine proposed core drilling locations to determine:

.1 Possible interference with services.

.2 Possible interference with structural components.

.3 Possible presence of asbestos based material. Report any occurrence or suspected occurrence to the DCC Representative immediately.

.6 Select locations as suitable for core drilling and label them as follows:

.1 Uniquely number each drilling location and core so that markings will be legible after drilling.

.2 Mark each core with a north pointing arrow where drilling a slab or upward pointing arrow where drilling a wall.

.7 Without interfering with or damaging any services or structural elements, drill pilot holes sufficient to verify location of potential obstructions or for alignment purposes.

.8 Use impact drill when drilling holes of 25 mm diameter or less. For holes of greater diameter use core drill.

.9 Prepare report showing intended core drill locations including printouts, X-ray images. Submit the report for approval prior to drilling to DCC Representative.

.10 Proceed with core drilling only after approval has been received from DCC Representative.

.11 Place in both official languages suitable warning notices of a type acceptable to DCC Representative and exercise caution to ensure safety and protection of personnel and property during drilling especially from effects of water, dust damage, or falling objects below the slab or behind the wall being drilled.

.12 Stop drilling immediately, and report to DCC Representative, if contact is made with foreign objects such as reinforcing steel (rebar), electrical conduit, water pipes, drainage pipes.

.13 Coring in reinforced concrete suspended slabs to avoid all in-situ reinforcing steel:

.1 No coring is to be undertaken through reinforced concrete beams and columns.

.2 Any proposed coring through reinforced concrete shear walls to be submitted for review and comment by the DCC Representative.

.14 Provide necessary firestopping, temporary or otherwise, sufficient to firestop holes that would be otherwise open during hours that the location is unattended. Coordinate placement of firestopping with DCC Representative.

.15 Store all cores or core fragments on site and make them available for inspection by DCC Representative. Dispose of the cores or core fragments after permission is received from DCC Representative in writing.

.7 Except where indicated, cover open holes in floor slabs with secured covers to guard against fall through of objects. Clearly identify all covers of openings with highly visible spray paint or other suitable markings.

.1 Openings larger than 450 mm x 450 mm shall be framed with structural framing to support a load of 2.4 kPa.

.2 Survey and record every covered opening. Provide a copy with Closeout Submittals, as specified in Section 01 78 00.

.3 Openings in slab-on-grade shall be closed to match adjacent finishes.

.8 Refer to Section 20 00 19 Basic Materials and Methods, for additional requirements.

.9 Survey and record every covered opening. Refer to Section 01 78 00 Closeout Submittals,

Article titled “Recording Actual Site Conditions”.

PART 2 PRODUCTS

2.1 NOT USED

PART 3 EXECUTION

3.1 NOT USED

END OF SECTION

PART 1 GENERAL

1.1 REFERENCE STANDARDS

.1 Conduct **cleaning** and disposal operations in accordance with all Federal, Provincial or Municipal regulatory requirements and guidelines for environmental protection.

.2 Provide adequate ventilation during use of volatile or noxious substances. Use of building ventilation system is not permitted.

.3 This section does not apply to cleaning associated with hazardous material removal and disposal operations. Cleaning of these areas is covered in other sections. Once certified as safe by DCC Representative cleaning methods specified herein are applicable.

1.2 PROJECT CLEANLINESS

.1 Progressive Cleaning:

.1 Maintain Work in tidy condition, free from accumulation of waste products and debris.

.2 Remove waste materials from site at daily regularly scheduled times or dispose of as directed by DCC Representative. Do not burn waste materials on site.

.2 Clear snow and ice from access to building, bank/pile snow in designated areas only.

.3 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.

.4 Provide on-site clearly marked containers for collection of waste materials and debris.

.5 Clean interior areas prior to start of finishing work, and maintain areas free of dust and other contaminants during finishing operations.

.6 Store volatile waste in covered metal containers, and remove from premises at end of each working day.

.7 Provide adequate ventilation during use of volatile or noxious substances. Use of building ventilation systems is not permitted.

.8 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.

.9 Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly painted surfaces nor contaminate building systems.

.10 Dispose of waste materials and debris at regulated waste facility off site.

1.3 FINAL CLEANING

.1 Lock or otherwise restrict access to each room or area after completing final cleaning in that area.

.2 Re-clean as necessary areas that have been accessed by Contractor’s workers prior to occupancy.

.3 When Work is Substantially Completed remove surplus products, tools, construction machinery and equipment not required for performance of remaining Work.

.4 Remove waste products and debris other than that caused by others, and leave Work clean and suitable for occupancy.

.5 In preparation for acceptance of the completed Work, remove surplus products, tools, construction machinery and equipment.

.6 Remove waste products and debris.

.7 Do not burn waste materials on site.

.8 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.

.9 Clean and polish glass, mirrors, hardware, wall tile, stainless steel, chrome, porcelain enamel, baked enamel, plastic laminate, and mechanical and electrical fixtures.

Replace broken, scratched or disfigured glass if damaged by the Work.

.10 Remove stains, spots, marks and dirt from decorative work, electrical and mechanical fixtures, furniture fitments, walls, floors and ceilings if caused by the Work.

.11 Clean lighting reflectors, lenses, and other lighting surfaces.

.12 Vacuum clean and dust building interiors, behind grilles, louvres and screens.

.13 Remove debris, clean and vacuum above suspended ceiling tiles.

.14 Wax, seal, shampoo or prepare floor finishes, as recommended by manufacturer.

.15 Inspect finishes, fitments and equipment and ensure specified workmanship and operation.

.16 Clean equipment and fixtures to sanitary condition; clean or replace filters of mechanical equipment.

.17 Remove stains, spots, marks, dirt and other disfiguration from exterior surfaces and facades.

.18 Clean exterior and interior window glass and frames

.19 Remove dirt and other disfiguration from exterior surfaces.

.20 Clean and sweep roofs, gutters, areaways, and sunken wells.

.21 Clean downspouts and drainage systems.

.22 Broom clean and wash exterior walks and steps; rake clean other surfaces of grounds. Use leaf blowers to clean landscaped surfaces.

.23 Sweep and wash clean paved areas, driveways, parking lots and sidewalks.

.24 Remove debris and surplus materials from crawl areas and other accessible concealed spaces.

.25 Remove snow and ice from access to building.

1.4 WASTE MANAGEMENT AND DISPOSAL

.1 Complete in accordance with Section 01 35 43 - Environmental Protection.

PART 2 PRODUCTS

2.1 NOT USED

.1 Not Used.

PART 3 EXECUTION

3.1 NOT USED

.1 Not Used.

PART - 1 GENERAL

1.1 **DEFINITIONS**

.1 Redline Drawings are those prepared by the Contractor as it constructs the project and upon which it documents the actual locations of the building components and site components and changes to the original contract.

.2 Record Drawings are prepared by Consultant or Designer of Work based on information taken from the Contractors Redline Drawings, and are not included in the scope of work unless stated in the contract documents.

1.2 **GENERAL**

.1 The following shall be submitted in the close out package for approval in folders described in this divisional section.

.1 Scanned Redline Drawings

.2 Field Survey Data

.3 O&M Manual

.4 Approved Shop Drawings

.5 Warranty Information and if available;

.6 Reports

.7 Photos

.8 Spare parts, special tools and maintenance materials, as indicated in contract documents.

1.3 **FORMAT**

.1 The main folder structure for the closeout package submittal is to be organized as follows;

.1 910 - Redline Drawings

.2 920 - Record Drawings

.1 921 - Field Survey Data

.3 930 - O&M Manual

.4 940 - Approved Shop Drawings

.5 950 - Warranty Information

.6 960 - Reports

.7 970 – Photos

.8 980 - Spare parts, special tools and maintenance materials, as indicated in contract documents.

.2 Only electronic format is to be submitted.

.3 Allow 10 working days for closeout package to be reviewed by DCC Representative and DND Project Manager.

.4 All Cover Sheets: Project Title, Building Number, Drawing Number, Project Number, DCC KN Number and identify subject matter of contents.

.5 Arrange content by Specification Section numbers and sequence of Table of Contents.

.6 Provide separate sections for each separate product and system, with typed description of product and major component parts of equipment.

.7 Submission should be provided using DCC Representative’s electronic file transfer

platform.

1.4 **ACTION AND INFORMATIONAL SUBMITTALS**

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

.2 Two weeks prior to Substantial Completion of the Work, submit to the DCC Representative, a draft electronic copy of operating and maintenance manuals in English.

.3 Provide spare parts, maintenance materials and special tools of same quality and manufacture as products provided in Work.

.4 Provide evidence, if requested, for type, source and quality of products supplied.

1.5 **REDLINE DRAWINGS**

.1 As-Builts, Field Record Drawings and Redlines are interchangeable terms meaning Redlines.

.2 Contractor is to provide a printed copy of the drawing set for the intended purpose of creating redline drawings with the words "Redlines" in red written on each page.

.3 Contractor to record changes in red as made and authorized on one set of prints referred to as "Redline Drawings" and at substantial completion of project and prior to final inspection scan and submit drawings to DCC Representative. DCC Representative will review and initial to concur with the content of the final markups.

.4 All Site Instruction Numbers and Change Order Numbers are to be annotated on the Redline Drawing set.

.5 Contractor to maintain information on project site drawings and record accurately, deviations of newly installed or existing plant works from Contract documents during construction.

.6 Contractor will submit for record drawings purposes the original set of redline drawings from construction site used for keeping track of contract design and site condition changes.

.7 The Contractor shall ensure but not limit to the recording of the following information on the original Redline drawings:

.1 Depths of various elements of foundation in relation to first floor level or finished grade elevation.

.2 Horizontal and vertical locations of existing and new underground utilities and appurtenances as well as the alignment, bend and curves of buried utilities such as communication, power, water, sewer, storm and natural gas ducts, pipes and lines shall be surveyed and be geographically referenced to the coordinate system of the drawing or accurately dimensioned to surfaces features shown in the drawing.

.3 Locations of internal utilities and appurtenance concealed in construction, referenced to visible and accessible features of structure.

.4 Field changes of dimension and detail, such as but not limited to:

.1 For Buildings: Door locations, duct sizes, piping valve, and equipment layout, cable tray alignment.

.2 For Civil/Utilities: road widths, curve radii, alignment, curb radii, sidewalk extents, conduit/pipe sizes.

.5 Changes made by Change Order.

.6 Utilities shall be identified as abandoned, existing or new.

1.6 **RECORD DRAWINGS**

.1 Record Drawings are to be created in AutoCAD using version 2014 or later.

.2 **W**here contract drawings are created in BIM, the BIM model shall be submitted.

.3 All Redlines markups are to be displayed on a new layer in AutoCAD called '_ANNO_REDLINES' which will print in black and white.

.4 Contractor shall ensure the information from the original redline drawings is accurately transferred to AutoCAD drawings using the latest DND CAD/BIM Standards. Standards are available online or on CD from DND PM.

.5 Each drawing should be saved as one individual AutoCAD file.

.6 Once record drawings have been created, each CAD file is to be saved as an individual PDF file in the same sheet size as the AutoCAD drawing. DCC Representative will review the submitted PDF files to confirm accuracy of the transfer of redlines to record drawings.

.7 PDF versions of AutoCAD Record Drawing tiles shall have the same name as the source AutoCAD file. (ie. K-B35-9302_2-301.dwg & K-B35-9302_2-301.pdf)

.8 All AutoCAD drawings are to be 'bound', no external references will be accepted. Drawings are to be 'purged', 'audited' and saved 'zoom extents' in 'paper space'. Model space view shall be at zoom extents as well.

.9 AutoCAD record drawings shall have "RECORD DRAWINGS" stamped in the title block.

1.7 **FIELD SURVEYING & DATA FILE**

.1 Contractor to notify the DCC Representative with 2 working days' notice if any buried utility or infrastructure is being exposed to allow DND Surveyor to survey.

.2 DND surveyor is allowed access to site to survey.

.3 Should DND surveyor require special site safety training, the Contractor will notify DCC Representative prior to allow time to be trained.

.4 Should the Contractor have their own Surveyor, and data is collected, it will be submitted with the closeout package.

.5 Field survey data file for service structures, manholes, catch basins, vaults, valves, hydrants etc shall be submitted in excel sheet file format. DCC Representative will get an excel template to be populated from DND. File will contain preset fields to be populated.

.6 Field survey performed for Municipal/Civil/Marine Works forming Part of Project shall:

.1 Be collected in ASCii format and shape file.

.2 ASCii file (Test File) shall contain point ID, Northing, Easting, Elevation and Descriptor.

.3 Shape files (.shp, ESR1 format) shall include point ID, Northing, Easting, Elevation and Descriptor.

1.8 **RECORDING ACTUAL SITE CONDITIONS**

.1 Concrete slab elevations and slab edge condition:

.1 Conduct an as-built survey at Contract completion of concrete slab elevations, of slab edges, all openings, and all steel columns/concrete encased columns.

.2 Spot slab elevations shall be recorded on a 3m grid basis.

.3 Submit all data in electronic format acceptable to the DCC Representative.

.2 Notwithstanding the above concrete slab conditions, record information of actual site conditions on a set of drawings, provided by DCC Representative.

.3 Request one set of documents for this purpose.

.4 Provide felt tip marking pens, maintaining separate colours for each major system, for recording information.

.5 Record information concurrently with construction progress. Do not conceal Work until required information is recorded.

.6 Contract Drawings and shop drawings: mark each item to record actual construction, including:

.1 Measured depths of elements of foundation in relation to finish first floor datum.

.2 Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.

.3 Measured locations of internal utilities and appurtenances, referenced to visible and accessible features of construction.

.4 Field changes of dimension and detail.

.5 Changes made by change orders.

.6 Details not on original Contract Drawings.

.7 References to related shop drawings and modifications.

.7 Specifications: mark each item to record actual construction, including:

.1 Manufacturer, trade name, and catalogue number of each product actually installed, particularly optional items and substitute items.

.2 Changes made by Addenda and change orders.

.8 Photographic Documentation: as described in Section 01 33 00 – Submittal Procedures.

.9 Existing services: provide complete and accurate log of locations of maintained, re-routed and abandoned service lines.

.10 Other Documents: maintain manufacturer's certifications, inspection certifications, field test records, required by individual specifications sections.

1.9 **O&M MANUALS**

.1 Electronic files are to be arranged and indexes into the same numerical order as the contract Specification Section. A maximum of 300 pages per file.

.2 The use of Bookmarks within PDF is an acceptable practice.

.3 Warranties are to remain in the Manual under each section.

.4 Table of Contents for Each Volume: provide Project Title, Building Number, Drawing Number, DND Project Number, DCC KN Number;

.1 Date of submission; names.

.2 Addresses, and telephone numbers of Contractor with name of responsible parties.

.3 List of products and systems, indexed to content of volume.

.5 For each product or system:

.1 List names, addresses and telephone numbers of subcontractors and suppliers, including local source of supplies and replacement parts.

.6 Product Data: mark each sheet to identify specific products and component parts, and data applicable to installation; delete inapplicable information.

.7 Drawings: supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams.

.8 Text: as required to supplement product data.

.1 Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions specified in Section 01 45 00 - Quality Control.

.9 Training: refer to Section 01 79 00 - Demonstration and Training.

1.10 **APPROVED SHOP DRAWINGS**

.1 Only copies of approved shop drawings and product data are to be submitted. Rejected and non-approved shop drawings and product data are not to be included.

.2 Approved shop drawings for temporary works required to facilitate construction and that will be removed during or at the completion of construction are not required to be submitted in the closeout package.

1.11 **WARRANTY**

.1 A Cover Sheet and Table of Contents containing all project related warranties with each item’s expiry date is to be created.

.2 All project related warranties are to be copied into this folder listed by specification section.

.3 Submit a summary of warranty information to DCC Representative for any warranties.

.1 Name of item.

.2 Model and serial numbers.

.3 Location where installed.

.4 Name and phone numbers of manufacturers or suppliers.

.5 Names, addresses and telephone numbers of sources of spare parts.

.6 Warranties and terms of warranty: include one-year overall warranty of construction. Indicate items that have extended warranties and show separate warranty expiration dates.

.7 Cross-reference to warranty certificates as applicable.

.8 Duration of warranty period.

.9 Summary of maintenance procedures required to continue warranty in force.

.10 Cross-Reference to specific pertinent Operation and Maintenance manuals.

.11 Organization, names and phone numbers of persons to call for warranty service.

.4 Respond in timely manner to oral or written notification of required construction warranty in the closeout package.

1.12 **EQUIPMENT AND SYSTEMS**

.1 For each item of equipment and each system include description of unit or system, and component parts.

.1 Give function, normal operation characteristics and limiting conditions.

.2 Include performance curves, with engineering data and tests, and complete nomenclature and commercial number of replaceable parts.

.2 Panel board circuit directories: provide electrical service characteristics, controls, and communications.

.3 Include installed colour coded wiring diagrams.

.4 Operating Procedures: include start-up, break-in, and routine normal operating instructions and sequences.

.1 Include regulation, control, stopping, shut-down, and emergency instructions.

.2 Include summer, winter, and any special operating instructions.

.5 Maintenance Requirements: include routine procedures and guide for trouble-shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.

.6 Provide servicing and lubrication schedule, and list of lubricants required.

.7 Include manufacturer's printed operation and maintenance instructions.

.8 Include sequence of operation by controls manufacturer.

.9 Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.

.10 Provide installed control diagrams by controls manufacturer.

.11 Provide Contractor's co-ordination drawings, with installed colour coded piping diagrams.

.12 Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.

.13 Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.

.14 Include test and balancing reports as specified in Section 01 45 00 - Quality Control and 01 91 13 - General Commissioning Requirements.

1.13 **MATERIALS AND FINISHES**

.1 Building products, applied materials, and finishes: include product data, with catalogue number, size, composition, and colour and texture designations.

.1 Provide information for re-ordering custom manufactured products.

.2 Instructions for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.

.3 Moisture-protection and weather-exposed products: include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.

.4 Additional requirements: as specified in individual specifications sections.

1.14 **MAINTENANCE MATERIALS**

.1 Spare Parts:

.1 Provide spare parts, in quantities specified in individual specification sections to DCC Representative.

.2 Provide items of same manufacture and quality as items in Work.

.3 Deliver to location as directed by DCC Representative; place and store.

.4 Receive and catalogue items.

.1 Submit inventory listing to DCC Representative.

.2 Include approved listings in Maintenance Manual.

.2 Extra Stock Materials:

.1 Provide maintenance and extra materials, in quantities specified in individual specification sections to DCC Representative.

.2 Provide items of same manufacture and quality as items in Work.

.3 Deliver to location as directed by DCC Representative; place and store.

.4 Receive and catalogue items.

.1 Submit inventory listing to DCC Representative.

.2 Include approved listings in Maintenance Manual.

.3 Special Tools:

.1 Provide special tools, in quantities specified in individual specification section to DCC Representative.

.2 Provide items with tags identifying their associated function and equipment.

.3 Deliver to location as directed by DCC Representative; place and store.

.4 Receive and catalogue items.

.1 Submit inventory listing to DCC Representative.

.2 Include approved listings in Maintenance Manual.

1.15 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 DCC Representative.

PART - 2 PRODUCTS

2.1 **NOT USED**

PART - 3 EXECUTION

3.1 **NOT USED**

END OF SECTION

PART - 1 GENERAL

1.1 **ADMINISTRATIVE REQUIREMENTS**

.1 Demonstrate scheduled operation and maintenance of equipment and systems to Owner's personnel as scheduled with the DCC Representative .

.2 Preparation:

.1 Verify conditions for demonstration and instructions comply with requirements.

.2 Verify designated personnel are present.

.3 Ensure equipment has been inspected and put into operation

.4 Ensure testing, adjusting, and balancing has been performed in accordance with Section 01 91 13 and equipment and systems are fully operational.

.3 Demonstration and Instructions:

.1 Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, and maintenance of each item of equipment.

.2 Instruct personnel in phases of operation and maintenance using operation and maintenance manuals as basis of instruction.

.3 Review contents of manual in detail to explain aspects of operation and maintenance.

.4 Prepare and insert additional data in operations and maintenance manuals when needed during instructions.

1.2 **ACTION AND INFORMATIONAL SUBMITTALS**

.1 Submit schedule of time and date for demonstration of each item of equipment and each system two weeks prior to designated dates, for DCC Representative's approval.

.2 Provide electronic copy of completed operation and maintenance manuals for use in demonstrations and instructions.

.3 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.

1.3 **QUALITY ASSURANCE**

.1 When specified in individual Sections requiring manufacturer to provide authorized representative to demonstrate operation of equipment and systems:

.1 Instruct personnel as designated by the DCC Representative.

.2 Provide written report that demonstration and instructions have been completed.

PART - 2 PRODUCTS

2.1 **NOT USED**

PART - 3 EXECUTION

3.1 **NOT USED**

END OF SECTION

Part 1 GENERAL

1.1 SUMMARY

.1 Section Includes:

.1 This Section specifies roles and responsibilities of Commissioning Training.

1.2 TRAINEES

.1 Trainees: personnel selected for operating and maintaining this facility. Includes Property, Facility Manager, building operators, maintenance staff, security staff, and technical specialists as required.

.2 Trainees will be available for training during later stages of construction for purposes of familiarization with systems.

1.3 INSTRUCTORS

.1 Contractor and certified factory-trained manufacturers' personnel to provide instruction on the following:

.1 Start-Up, operation, shut-down of equipment, components and systems.

.2 Control features, reasons for, results of, implications on associated systems of, adjustment of set points of control and safety devices.

.3 Instructions on servicing, maintenance and adjustment of systems, equipment and components.

.2 Contractor and equipment manufacturer to provide instruction on:

.1 Start-up, operation, maintenance and shut-down of equipment they have certified installation, started up and carried out PV tests.

1.4 TRAINING OBJECTIVES

.1 Training to be detailed and sufficient in duration to ensure:

.1 Safe, reliable, cost-effective, energy-efficient operation of systems in normal and emergency modes under all conditions.

.2 Effective on-going inspection, measurements of system performance.

.3 Proper preventive maintenance, diagnosis and trouble-shooting.

.4 Ability to update documentation.

.5 Ability to operate equipment and systems under emergency conditions until appropriate qualified assistance arrives.

1.5 TRAINING MATERIALS

.1 Instructors to be responsible for content and quality.

.2 Training to consist of demonstration of use and maintenance of equipment and systems.

.3 DCC Representative and DND Project Manager will review training manuals.

.4 Training materials to be in a format that permits future training procedures to same degree of detail.

1.6 SCHEDULING

.1 Include in Commissioning Schedule time for training.

.2 Deliver training during regular working hours, training sessions to be 3 hours in length.

.3 Training to be completed prior to acceptance of facility.

1.7 RESPONSIBILITIES

.1 Contractor will be responsible for:

.1 Implementation of training activities,

.2 Coordination among instructors,

.3 Quality of training, training materials,

.4 Handouts including all necessary information (ie. flow charts, schematics, function / operations / interconnection information)

1.8 TRAINING CONTENT

.1 Training to include demonstrations by Instructors using the installed equipment and systems.

.2 Content includes:

.1 Equipment and system start-up, operation, monitoring, servicing, maintenance and shut-down procedures.

.2 System operating sequences, including step-by-step directions for starting up, shut-down, operation of valves, dampers, switches, adjustment of control settings and emergency procedures.

.3 Maintenance and servicing, including spare parts recommended to be stored as site.

.4 Trouble-shooting diagnosis.

.5 Inter-Action among systems during integrated operation.

.3 Provide specialized training as specified in relevant Technical Sections of the construction specifications.

Part 2 PRODUCTS

2.1 NOT USED

.1 Not Used.

Part 3 EXECUTION

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

.1 Includes general requirements for commissioning facilities and facility systems.

1.2 QUALITY ASSURANCE

.1 Provide testing organization services under provisions specified in Section 01 45 00 - Quality Control.

.2 Comply with applicable procedures and standards of the certification sponsoring association.

.3 Perform services under direction of supervisor qualified under certification requirements of sponsoring association.

1.3 METHODOLOGY

.1 Verification of performance of building systems will be performed by means of a commissioning process.

.2 Commissioning plan and testing activities shall be performed by Contractor and witnessed by Commissioning Agent.

.3 Retain an independent Cx Agent for this facility to conduct all activities outlined within this section and related technical sections. Interface, cooperate and coordinate with DCC Representative. Submit copies of submittals such as shop drawings/product data sheets, schedules, O&M manuals, and test reports to DCC Representative as required.

.4 Contractor shall prepare and submit a completed commissioning plan and schedule for approval by Commissioning Agent.

.5 Contractor's commissioning plan shall be submitted 12 weeks after award of contract.

1.4 COMMISSIONING OBJECTIVES

.1 To bring mechanical and electrical systems and components from a state of static completion to a state of dynamic operation.

.2 To verify conformance to contract requirements.

.3 To confirm installations, meet requirements of performance specification and design intent of contract drawings and specifications.

.4 To provide all testing documents and records.

.5 To ensure completed facility meets user stated requirements.

.6 To provide a documented operator training program.

.7 To verify accuracy of project record drawings and operating and maintenance manuals.

1.5 CONTRACTOR'S COMMISSIONING PLAN

.1 Provide a commissioning plan consisting of:

.1 Details regarding roles and responsibilities during all phases of commissioning

.2 Documentation defining design assumptions and performance standards of proposed systems

.3 Description of systems, intended operation and performance details

.4 Static testing and verification procedures

.5 Performance testing procedures

.6 Contractors and manufacturers start-up reports

.7 Check sheet documentation for recording testing procedures and recording test results prepared by the Contractor for mechanical, electrical and building architectural systems and components

.8 Seasonal or deferred commissioning

.9 Training plan for building operators and

.10 Final commissioning report.

.2 To consist of four sections, described as follows:

.1 Part 1: commissioning activities directed by commissioning agent and carried out by contractor.

.2 Part 2: descriptions of building mechanical and electrical systems as they appear in building manual prepared under Section 01 78 00 – Closeout Submittals.

.3 Part 3: testing procedures and documentation of test results prepared by contractor for mechanical, electrical and building architectural components.

.4 Part 4: test procedures and documentation of seasonal commissioning.

1.6 COMMISSIONING AGENT'S RESPONSIBILITIES

.1 For ensuring that commissioning activities are carried out in accordance with the Contractor’s Commissioning Plan.

.2 Commissioning agent will:

.1 Assemble commissioning team and ensure coordination of activities with team in carrying out the Contractor’s Commissioning Plan.

.2 Chair and arrange commissioning meetings.

.3 Witness all equipment start-up and collect all manufacturer's start-up reports.

.4 Witness testing and balancing measurements and procedures.

.5 Witness all tests and initial all test documents at time of test.

.6 Co-sign off, as witness, all systems verification and test forms.

.7 Coordinate building operators training.

.8 Arrange for provision of additional training were required.

.9 Turn over completed interim and final commissioning reports to DCC Representative.

1.7 CONTRACTOR'S SUBMITTALS

.1 Prior to start of Work, submit name of organization and Contractor personnel proposed to perform services. Designate who has managerial responsibilities for coordination of entire testing, adjusting and balancing.

.2 Submit documentation to confirm organization or personnel compliance with quality assurance provision.

.3 Submit digital copies of each of report forms proposed for use.

.4 Contractor shall prepare & submit a completed Commissioning Plan and Commissioning Schedule for review by the Commissioning Agent eight (8) weeks after award.

.5 Submit an updated Commissioning Schedule as directed by the Commissioning Agent.

.6 Prior to the Issuance of the Final Certificate of Completion, and within 10 working days after the issuance of the Interim Certificate of Completion, submit 3 copies of the FINAL commissioning report in D-ring binders, complete with index tabs.

.7 Submit reports of testing, adjusting, and balancing postponed due to seasonal, climatic, occupancy, or other reasons beyond Contractor's control, promptly after execution of those services.

1.8 PROCEDURES - GENERAL

.1 Comply with procedural standards of certifying association under whose standard services will be performed.

.2 Notify DCC Representative 14 days prior to beginning of operations.

.3 Accurately record data for each step on check sheets prepared by the Contractor.

.4 Report to DCC Representative any deficiencies or defects noted during performance of services.

1.9 FINAL REPORTS

.1 Organization having managerial responsibility shall make reports.

.2 Ensure each form bears signature of recorder, and that of supervisor of reporting organization.

.3 Identify each instrument used, and latest date of calibration of each.

1.10 CONTRACTOR'S RESPONSIBILITIES

.1 Prepare each system for testing and balancing.

.2 Cooperate fully with commissioning agent in execution of commissioning plan. At completion of commissioning, provide a written statement affirming that building systems are operating properly in accordance with requirements of performance specification and design intent of contract drawings and specifications.

.3 Provide personnel and operate systems at designated times, and under conditions required for proper testing, adjusting, and balancing.

.4 Notify testing organization 7 days prior to time project will be ready for testing, adjusting, and balancing.

1.11 CONTRACTOR'S PREPARATION

.1 Provide instruments required for testing, adjusting, and balancing operations.

.2 Make instruments available to DCC Representative to facilitate spot checks during testing.

.3 Retain possession of instruments and remove at completion of services.

.4 Verify systems installation is complete and in continuous operation.

.5 Verify lighting is turned on when lighting is included in cooling load.

.6 Verify equipment such as computers, laboratory and electronic equipment are in full operation.

.7 A commissioning plan and commissioning schedule.

.8 All testing procedures and data recording forms (examples of acceptable documents will be provided by DCC Representative)

.9 Schematics and flow diagrams necessary for commissioning.

.10 Start-up reports.

.11 An interim commissioning report which contains all required commissioning information except for that remaining to be done as seasonal or deferred commissioning work.

.12 Seasonal commissioning requirements.

.13 Submit final commissioning report to commissioning agent.

1.12 BUILDING SYSTEMS TO BE COMMISSIONED

.1 The Contractor shall provide commissioning services for:

.1 All life-safety systems and components.

.1 Test, adjust and operate the following systems and components after start-up but before functional performance testing, to confirm operations are in accordance with requirements of Contract Documents.

.1 Life safety, plumbing, etc.

.2 All electrical distribution, fire alarm, communication, security and lighting systems.

.1 Independent testing shall be carried out for high voltage distribution and load balance.

END OF SECTION