ARCHITECTURAL AND INGINEERING SPECIFICATIONS

FOR TENDER

SECURITY LEVEL 2 - PHASE 1 (WING A) UPGRADING ACCESS CONTROL MAURICE-LAMONTAGNE INSTITUTE

850 Route de la Mer
Sainte-Flavie (Québec) GOJ 2L0
Project : F-3766-190223

Pêches et Océans Canada
Biens Immobiliers de l'Environnement, de la Sécurité et la Santé

Fisheries ar Canada
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EMIS POUR SOUMISSION
DATE: December 3th 2020
GAGNON LETELLIER CYR RICARD MATHIEU & ASSOCIÉS architectes
Note: Ne doit pas servir a la construction.

n/d: R320-19 /19G150-001

December 3th 2020

PROJECT :

SECURITY LEVEL 2 - PHASE 1 (WING A)
UPGRADING ACCESS CONTROL
MAURICE-LAMONTAGNE INSTITUTE
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OWNER :

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N/D : R320-19/19G150-001

December 3th 2020

ARCHITECTURAL SPECIFICATIONS

ARCHITECTURAL DRAWINGS

ENGINEERING SPECIFICATIONS

1 GENERAL

1.01 SUMMARY

.1 The present section includes the following:
- .1 Demolition and removal of selected interior components and interior finishes of the building.
- .2 Required repair procedures as part of selective demolition.

.2 The present section excludes the following:
- .1 Demolition of exterior building components or structural elements.
- .2 Mechanical and Electrical equipment and materials, except for that which is required in order to execute minor modifications and to allow for completion of the Work.

.3 The drawings contain execution details that serve as a guide to the main demolition and removal requirements for the present project; the Contractor shall supplement these execution details with a demolition plan prepared by an Engineer at his own cost.

1.02 RELATED REQUIREMENTS

.1 Section 09 21 16 – Gypsum Board Assemblies

.2 Section 09 51 13 – Acoustical Panel Ceilings

1.03 REFERENCES

- .1 American National Standards Institute (ANSI)
  - .1 ANSI A10.8 2011, Safety Requirements for Scaffolding
- .2 ASTM International (ASTM)
  - .1 ASTM C 475/C 475M-15, Compound and Joint Tape for Finishing Gypsum Board
- .3 Groupe CSA (CSA)
  - .1 CSA S350-M1980 (R2003), Code of Practice for Safety in Demolition of Structures
- .4 Department of Justice Canada (Jus)
  - .1 Canadian Environmental Assessment Act (CEAA),2012
  - .2 Canadian Environmental Protection Act (CEPA), 2012
    - .1 On-Road Vehicle and Engine Emission Regulations, SOR/2003-2
    - .2 Regulations Amending On-Road Vehicle and Engine Emission Regulations, SOR/2006-268
    - .3 Transportation of Dangerous Goods Act,1992 (TDGA), ch. 34.
    - .4 Motor Vehicle Safety Act (S.C. 1993, ch. 16)
    - .5 Hazardous Materials Information Review Act,(R.S.C. (1985))

.5 National Fire Protection Association (NFPA)
.1 <B>NFPA 241(13), Standard for Safeguarding Construction, Alteration, and Demolition Operations

1.04 DEFINITIONS

.1 Demolish : Dismantling of the elements that are part of the existing structure and removal of such elements from the site for elimination in accordance with regulations, except where indicated that such elements and materials be dismantled and kept for recycling or salvage and reuse.

.2 Remove and salvage: Dismantling the elements and materials of the existing construction and deliver them to the Departmental Representative in appropriate condition for reuse.

.3 Remove and reinstall: Dismantling of the elements and materials of the existing construction, clean and prepare them and reinstall them as indicated.

.4 Existing elements to maintain: Elements/materials of the existing construction that are to remain in place and that are not intended for removal and recycling or removal and reinstallation.

.5 Hazardous materials: Substances, materials, goods and products that include, but are not limited to, asbestos, mercury, lead, PCBs, poisons, corrosive agents, inflammable materials, radioactive substances and other materials that, when misused, may have detrimental effects on the health and well-being of persons, or on the environment and that are defined as such under the Federal Hazardous Products Act (R.S”C. 1985), including all recent amendments.

1.05 ADMINISTRATIVE REQUIREMENTS

.1 Coordination: The mandatory provision of the present Section shall be coordinated with the Departmental Representative as concerns the ownership of materials, as follows:
.1 With the exception of those elements and materials intended for reuse, salvage, reinstallation or that are to remain the as property of the Departmental Representative, materials resulting from the demolition work become the property of the Contractor and shall be removed from the Work Site.
.2 Coordinate the selective demolition work in a manner that the esthetic requirements of the present Section as shown on the Drawings are adhered to, and that required dimensions of all elements shown on the Drawings are respected, as well as maintaining the relation of such elements with the other elements of the building; dimensions in accordance with the Drawings.

.3 Historical elements, relics and similar objects, in particular such items as cornerstones, and their contents, commemorative plates and panels, antiques and all other elements that may be of interest or of value to the Departmental Representative shall remain the property of the Departmental Representative:
.1 Carefully dismantle each element or object to be salvaged without damaging it. Deliver it without delay to the Departmental Representative.
.2 Coordinate the directives of the present Section with the directives of the Departmental Representative, who shall establish the methods to be used for dismantling and recovery of such items.

.2 Pre-demolition meeting: Convene a pre-demolition meeting one (1) week prior to commencing the work of the present Section and the execution of the work, with the Contractor and the Departmental Representative in attendance. The purpose of this meeting shall serve to discuss the following:
.1 Confirmation of the quantities of materials to be recovered and materials to be demolished.
.2 To review the Contractor’s Demolition Plan.
.1 Verification of the existing conditions in the proximity of the area where the demolition work is to be executed.
.2 Coordinate the work with that of other trades.

.3 Hold weekly meetings.

.4 Ensure attendance of key personnel.

.5 As necessary, the Departmental Representative shall notify concerned parties in writing, 24 hours in advance, of any changes to the meeting schedule established at Contract Award.

1.06 SUBMITTALS OF DOCUMENTS/ SAMPLES FOR APPROVAL / INFORMATION

.1 Selective Demolition Work Progress Schedule: indicate the following information:
.1 Detailed selective demolition work and removal sequencing, including the commencement and completion dates for each activity.
.2 Coordinate the day-to-day activities on the site with the Departmental Representative and limit the quantity of disruptions during regular opening hours.
.3 Disruption of public utilities.
.4 Coordination of power disruption, disconnection, capping off and maintenance of public utilities.
.5 Use of elevators and stairs.

.6 Locations of temporary partitions and means of evacuation; this requirement applies to other users affected by the selective demolition activities as well.

.7 Coordinate with Departmental Representative the ongoing occupation of parts of the existing building as well as the partial occupation of the completed work by the Departmental Representative.

.2 Demolition Plans: Submit a plan of the demolition zone indicating the temporary facilities and shoring, removal and demolition methods to be used; the Drawings, to be executed by an Engineer in accordance with requirements of the authority having jurisdiction, shall include the following:

.1 Proposed dust and noise control measures: Submit a declaration and a Drawing indicating the proposed measures concerning the use and locations, as well as a proposed operating schedule. The Departmental Representative reserves the right to modify the measures where the operations interfere with the day-to-day activities of the Departmental Representative.

.2 Provide a list of elements removed and recovered upon completion of the Selective Demolition work.

.3 Pre-demolition work photos: Submit photos of the state of adjacent building areas and facilities prior to commencing work. Document surface finishes in order to avoid having existing damages attributed to the Selective Demolition work.

.2 Documents and samples to be submitted for information: Submit the following documents and samples at the request of the Departmental Representative.

.1 Competency information: Provide information on the experience of all contractors and their personnel, as well as their aptitude to execute the work of the present Section, including but not limited to : A list of prior work indicating project name and address, as well as the addresses of the Architects and the Owner for projects of similar scope and complexity.

1.07 QUALITY ASSURANCE

.1 Regulatory requirements: Execute the work in accordance with the more stringent of regulations where there is a discrepancy between the federal, provincial, and municipal regulations.

.1 Provincial and federal regulations: Execute work in accordance with the authority having jurisdiction where environmental regulations are concerned.

.2 Municipal regulations: Waste removal and transportation shall comply with the regulations of the authority having jurisdiction

.2 Qualifications: Provide proof of qualifications upon request by Departmental Representative.
.1 Qualifications of the Demolition Contractor: Specialized Contractor with verifiable experience in demolition work similar in scope and materials to that of the present project.
.1 Compliant with local Health and Safety regulations.
.2 Compliant with Workers Accident Compensation regulations.
.3 Compliant with Municipal regulations governing this type of work.

1.08 SITE CONDITIONS

.1 The Departmental Representative shall occupy parts of the building directly adjacent the selective demolition zone.
.1 Execute the selective demolitions work in a manner that does not interfere the with daily activities of the Departmental Representative.
.2 Provide the Departmental Representative with notice of at least 72 hours prior to execution of activities that may affect the activities of the Departmental Representative.

.2 Maintain existing evacuation routes, pedestrian walkways, hallways, and passages, exits and adjacent areas that are occupied or used:
.1 Obtain written permission from authorities having jurisdiction prior to blocking off or obstructing evacuation routes, pedestrian walkways, hallways, and passages, exits or other installations that are occupied or used.

.3 The Departmental Representative shall bear no responsibility concerning the conditions in the selective demolition work area.
.1 The site conditions observed during the call to tender site visit shall be maintained by the Departmental Representative to the extent possible.

2 PRODUCTS

2.01 TEMPORARY SUPPORT WORK

.1 Temporary support work required for the demolition work, underpinning operations and other foundation support required by the work of the project shall be designed and planned by a Professional Engineer, licensed to practice in the province where the project is located.

2.02 DESCRIPTION

.1 The work of the present Section includes but is not limited to the following:
.1 The demolition, complete removal from the site and elimination of all component, materials, and equipment as well as all debris as indicated.

.2 The selective demolition work intended to integrate the walls, ceilings, partitions, and new materials with the existing construction, as indicated.
.3 All material produced by the demolition work shall be removed from the site without delay. Salvage, recovery, sorting, selling, and burning of materials is prohibited on Site.
.4 Withhold the elements indicated on the Drawings that are intended for reuse in the project.

2.03 WASTE

.1 Take all required measures concerning the removal and transportation of demolition waste from the site.

2.04 EQUIPMENT

.1 Supply all equipment required to accomplish the interior demolition work in the specified buildings in a safe and appropriate manner.

2.05 PATCHING MATERIALS

.1 Use patching materials that are identical to existing materials.
.1 Where identical patching materials cannot be found for restoring exposed surfaces, use materials that visually espouse the adjacent materials as much as possible.
.2 Use materials whose durability after installation is equivalent to or surpasses that of the existing materials.
.3 Meet the requirements of materials and installation indicated under related sections of the present Specifications.

.2 Floor patching and smoothing compounds: Cement based, trowel applied, self-levelling and compatible with the specified floor finishes; gypsum-based compounds are not suitable for work of the present Section.

.3 Concrete masonry elements: Lightweight concrete elements to be joined to mortar, cut, and sized to fit the opening to be filled. Provide standard honeycombed elements, end brackets and masonry beams, as indicated on the Drawings.

.4 Prefinished steel sheet: colour identical to that of the radiator cabinets, folded and shaped to conform to the existing radiator cabinets.

.5 Gypsum board joint compound: in accordance with ASTM C 475/C 475M, backing and finish compound, diluted to obtain a consistency of a sealant coating in order to patch and prepare the existing gypsum board walls to receive a new finish, in accordance with Section 09 21 16 – Gypsum Board Assemblies.

.6 Partitions and dust screens: Refer to Section 01 56 00 – Temporary Enclosures and Barriers for framing materials and interim gypsum board finishes.

2.06 EXISTING MATERIALS

.1 The elements to be preserved for reuse in the construction include in particular, the following:
  .1 Ceiling elements.
  .2 Prior to elimination of any component, confirm with Departmental Representative if he has any reason to salvage it.
  .3 Prior to installing any component destined for re-use whose condition is less than optimal, confirm with Departmental Representative whether it should used.

3 EXECUTION

3.01 INSPECTION

.1 Ensure that public utilities have been disconnected and capped off.

.2 Verify existing conditions and coordinate them with the indicated requirements to establish the surface area to be selectively demolished.

.3 Draw up an inventory of elements to remove and reinstall and of elements to remove and recycle.

.4 Notify the Departmental Representative if existing mechanical, electrical or structural elements are apt to cause conflict with the intended design or function.
  .1 Inspect unforeseen elements in order assess the nature and scope of possible conflict. Immediately submit a written report of such situations to the Departmental Representative.
  .2 The Departmental Representative shall issue additional instructions or amend the Drawing to correct the situation, as necessary.

.5 Carry out periodic inspections as work progresses in order to detect any risks caused by the selective demolition work.

3.02 PUBLIC UTILTIES

.1 Not applicable.

3.03 PREPARATION

.1 Identify and mark all equipment and materials that the Departmental Representative has indicated for salvage or that are intended for reuse in future construction. Sort and store those elements to be preserved in an area distant from the demolition zone and prevent them from accidental elimination.

.2 Install warning signs on equipment and electrical conduits that must remain in use during the demolition work in order to provide power to other work.

.3 Ensure that not all communications and electrical conduits are disconnected.

.4 Do not cut or rupture service conduits that are in use where they pass through the demolition zone.

.5 Supply and erect barricades, warning signals and signs and protective gear for all workers and the public for the duration of the work.

.6 Identify all materials destined for reuse and store them in a secure place until they are to be reinstalled.

.7 Adjust junction switch boxes so that they are flush with the new wall where additional coatings are to be installed on the existing frames is indicated.

.8 Remove permanent marking lines used or present on exposed surfaces that are destined to receive finish materials. Mechanically remove permanent marking lines and related supports and level the surface. It is not permitted to apply a sealant or a base coat over the permanent marking lines.

3.04 SELECTIVE DEMOLITION

.1 Demolish and dismantle work in a careful and orderly fashion and in accordance with regulations.

.2 At the end of each workday, verify the safety and stability of the work in order to avoid collapse or tilting of all and any components.

.3 Execute demolition work in a manner to minimize dust creation and prevent it migration.

.4 The sale and burning of materials on site is prohibited.

.5 Fill all openings in concrete bloc walls with masonry blocs, taking care to match up the courses of the new and existing work and prepare all surfaces to receive new finishes to match the existing finishes.
  .1 Use link beams in the new openings created in the existing concrete masonry walls.
  .2 Use finished edge masonry elements to join and repair jambs in the new openings created in the existing concrete masonry walls.

.6 Block all openings in gypsum board wall with gypsum board and steel framing corresponding to that of the existing work. Apply a thin coat of joint material to that wall surfaces and even and smooth.

.7 As indicated, demolish all framed acoustical panel ceilings.

.8 Remove all wall finishes as indicated for the demolition work. Level and repair all wall surfaces with a thin coat of joint filler to ensure surfaces are smooth and prepared to receive new finishes.

.9 Repair and restore all walls, floors and ceilings damaged by demolition work. Use materials to match adjacent surfaces and prepare them to receive new finishes.

.10 Repair and restore all radiator cabinets, mechanical devices and lighting equipment that have been damaged or exposed during demolition work in a manner to match all adjacent finished surfaces.

3.05 REPAIR AND RESTORATION

.1 Floors and walls:
  .1 In the areas where walls or partitions to be demolished are a continuation of one finished area to another, repair and restore floor and wall surfaces of the new area created.
  .2 Produce a level, smooth surface, with a uniform finish of the identical texture, colour and appearance.
  .3 Remove existing floor and wall finished and replace with new materials as necessary to obtain uniform colour and appearance.
  .4 Refit using durable joints that are as invisible as possible.
  .5 Supply all materials and comply with installation requirements of other Sections that are referenced in the present Specifications.

.6 Painting touch-ups: apply a base coat and an intermediary coat on the area to be touched up, then a finish coat over the entire continuous surface adjacent the touched-up area. Apply additional coats until the touch-up blends with the adjacent surfaces.

.7 Wherever possible, test and inspect the touched-up areas in order to demonstrate the integrity of the work.

.2 Ceilings: restore and repair ceilings, or install new suspended ceilings as necessary, to obtain a level surface of uniform appearance.

3.07 PROTECTION

.1 Take all necessary measures to prevent debris from blocking roof drains and the surface drain network, and to protect all equipment, electrical systems and services that are to remain functional.

.2 Organize demolition work and support work in a manner that least disrupts the use of adjacent building areas by the Departmental Representative and other users.

.3 Ensure safe access and egress at all times in adjacent occupied parts of the building.

.4 Provide and maintain required fire protection equipment and alarm systems and ensure that they remain accessible during demolition work.

3.08 CLEANING

.1 Draw up a Construction Waste Management Plan for the work of the present Section.

.2 Expedite excess materials to a site approved by the Departmental Representative.

.3 Clean site as work progresses and remove all waste and excess materials. Remove waste resulting from demolition work daily.

.4 Ensure exits are not blocked by removal of waste.

.5 Keep neighbouring and adjacent roads, access roads, sidewalks, and municipal rights of way clean and free of debris, earth and waste that may constitute a risk to vehicles and persons.

END OF SECTION

1 GENERAL

1.01 RELATED REQUIREMENTS

.1 Section 02 41 19.16 –Selective Interior Demolition

.2 Section 08 11 00 - Metal Doors and Frames

.3 Section 09 21 16.08 - Gypsum Board Assemblies for Minor Works

1.02 REFERENCES

.1 N/A

.2 CSA (CSA)
- .1 CSA B111-[1974(C2003)], Wire Nails, Spikes and Staples.
- .2 CSA O121-[08], Douglas Fir Plywood.
- .3 CSA O141-[F05(C2009)], Softwood Lumber.
- .4 CSA O151-[F09], Canadian Softwood Plywood.
- .5 CAN/CSA-O325.0-[F07], Construction Sheathing.
- .6 CAN/CSA-Z809-[F08], Sustainable Forest Management.

.3 Canadian National Research Council (CNRC)
- .1 National Building Code - Canada [2015] (NBC).

.4 Forest Stewardship Council (FSC)
- .1 FSC-STD-01-001- [2004], FSC Principle and Criteria for Forest Stewardship.

.5 Green Seal Environmental Standards (GS)
- .1 GS-11- [11], Paints and Coatings.

.6 National Lumber Grades Authority (NLGA)
- .1 Standard Grading Rules for Canadian Lumber [2008].

.7 South Coast Air Quality Management District (SCAQMD), California State, Regulation XI. Source Specific Standards
- .1 SCAQMD Rule 1113-[A2011], Architectural Coatings.

.8 Sustainable Forestry Initiative (SFI)
- .1 Standard SFI- [2010-2014].

1.03 SUBMITTALS FOR APPROVAL/INFORMATION

.1 Data sheets
- .1 Submit manufacturer’s data sheets, instructions and documentation related to carpentry work. Data sheets shall indicate characteristics of the products, performance criteria, sizes, finishes and constraints.

1.04 SUBMITTALS RELATED TO SUSTAINABLE DESIGN

.1 Not applicable

1.05 ADDITONAL AND REMPLACEMENT MATERIALS SUBMITTALS

.1 Additional materials/equipment

.1 Supply and install panels required for mounting electrical apparatus, as indicated. Use 19 mm thick plywood panels on framing composed of 19 mm x 38 mm elements, reinforced with elements of same size placed at maximum 305 mm intervals.

1.06 QUALITY ASSURANCE

.1 Lumber identification: by grade stamp of an agency certified by Canadian Lumber Standards Accreditation Board.

.2 Plywood identification: by grade stamp in accordance with applicable CSA standards.

.3 Plywood, particleboard, OSB and wood based composite panels: in accordance with applicable CSA standards.

.4 Sustainable development Certification

.1 Certified wood: Submit a list of wood products used that comply with CAN/CSA-Z809 or FSC or SFI.

1.07 TRANSPORTATION, STORAGE AND HANDLING

.1 Transport, store and handle materials and equipment in accordance with manufacturer’s written instructions.

.2 Delivery and reception: deliver materials to the site in their original packaging, bearing a label with the manufacturer’s name and address.

.3 Storage and handling

.1 Store materials off the ground, in a clean, dry and well-ventilated enclosure, in accordance with manufacturer’s recommendations.

.2 Store wood so as to protect it from marks, gouges and scratches.

.3 Replace damaged materials with new materials.

2 PRODUCTS

2.01 MATERIALS

.1 Lumber: softwood, S4S (bleached on 4 sides), moisture content 19% (S-dry) or less in accordance with the following standards:
.1 CAN/CSA-O141.
.2 NLGA, Standard Grading Rules for Canadian.
.3 Certified wood panels to CAN/CSA-Z809 or FSC or SFI.

.2 Furring, blocking, nailing strips, grounds, rough bucks, fascia backing and sleepers.
.1 S2S is acceptable.
.2 Board sizes: "Standard" or better grade.
.3 Dimension lumber: "Standard" light framing or better grade.

.3 Panels
.1 Douglas Fir plywood (Douglas Fir) : in accordance with CSA O121, «construction» grade, « standard » category.
.1 Urea-formaldehyde free materials.
.2 Canadian Softwood Lumber: in accordance with CSA O151, « construction » grade, « standard » category.
.1 Urea-formaldehyde free materials.
.3 Plywood, particleboard, OSB and wood based composite panels: in accordance with CAN/CSA-O325.
.1 Urea-formaldehyde free materials.

.4 Wood treatment products
.1 Surface applied wood preservative: waterproof preservative [uncoloured][coloured], [copper naphtenate based], or a 5% solution of pentachlorophenolate.
.2 The us of pentachlorophenolate is limited to the wood elements that will be in contact with the ground and are subject to rot or insect infestation. Where necessary, wood treated with pentachlorophenolate shall coated with two coats of an appropriate base coat.
.3 Work constructed with pentachlorophenolate treated wood and inorganic arsenical compounds shall not be used for food storage and such treated wood shall not come into contact with drinking water supply.

2.02 ACCESSORIES

.1 Fasteners : in accordance with CAN/CSA-G164 pour les exterior work and wood work.

.2 Nails, spikes and staples: in accordance with CSA B111.

.3 Bolts: 12.5 mm diameter, unless otherwise indicated, with nuts and washers.

.4 Proprietary fasteners: toggle bolts, expansion shields and lag bolts, screws and lead or inorganic fiber plugs, explosive actuated fastening devices, recommended for purpose by manufacturer.

3 EXECUTION

3.01 EXAMINATON

.1 Verification of conditions: prior to proceeding with installation of carpentry work ensure that surfaces/supports installed beforehand under other sections or contracts are acceptable and allow for proper execution of the work in accordance with the manufacturer's written instructions.

.1 Perform a visual inspection of surfaces/supports in the presence of the Departmental Representative.

.2 Immediately notify the Departmental Representative of any inacceptable conditions detected.

.3 Commence installation work only after inacceptable conditions have been remedied.

3.02 PREPARATION

.1 Treat surfaces of material with wood preservative prior to installation.

3.03 INSTALLATION

.1 Comply with NBC requirements, most recent edition, supplemented with the following parts of this Section.

.2 Install furring and blocking as required to space-out and support wall and ceiling finishes, facings, fascia, soffit, siding and other work as specified.

.3 Align and plumb face of furring and blocking to tolerance of [1:600].

.4 Install rough bucks, nailers and linings to rough openings as required to provide backing for frames and other work.

.5 Install wood cants, fascia backing, nailers, curbs and other wood supports as required and secure using galvanized fasteners.

.6 Plane, reduce and slightly submerge nailers into the roof waterproofing that are destined to receive the roof drains.

.7 Install joists as indicated.

.8 Do not use particleboard panels without taking the necessary precautions. Ensure use of dust collectors and superior quality breathing apparatus.

.9 Assemble, frame, anchor, fasten, tie and brace members to provide required strength and rigidity.

.10 Countersink bolts where necessary to provide clearance for other work.

3.04 CLEANING

.1 Cleaning during the course of work: execute cleaning work.
  .1 Leave the premises in a clean state at the end of each workday.

.2 Final Cleaning: remove all surplus materials and equipment, waste and tools from the site.

END OF SECTION

1 GENERAL

1.01 RELATED REQUIREMENTS

.1 Section 08 11 00 – Metal Doors and Frames.

.2 Section 09 21 16 – Gypsum Board Assemblies for Minor Works.

1.02 REFERENCES

.1 ASTM International
- .1 ASTM C 919-[18], Standard Practice for Use of Sealants in Acoustical Applications.

.2 Non-applicable

.3 Canadian General Standards Board (CGSB)
- .1 CGSB 19-GP-5M-[1984], Sealing Compound, One Component, Acrylic Base, Solvent Curing (Issue of 1976 reaffirmed, incorporating Amendment No. 1).
- .2 CAN/CGSB-19.13-[M87], Sealing Compound, One-component, Elastomeric, Chemical Curing.
- .3 CGSB 19-GP-14M-[76], Sealing Compound, One Component, Butyl-Polyisobutylene Polymer Base, Solvent Curing (Reaffirmation of April 1976).
- .4 CAN/CGSB-19.17-[M90], One-Component Acrylic Emulsion Base Sealing Compound.
- .5 CAN/CGSB-19.24-[M90], Multi-component, Chemical Curing Sealing Compound.

.4 General Services Administration (GSA) - Federal Specifications (FS)
- .1 FS-SS-S-200-[E(2)1993], Sealants, Joint, Two-Component, Jet-Blast-Resistant, Cold Applied, for Portland Cement Concrete Pavement.

.5 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
- .1 Material Safety Data Sheets (MSDS).

.6 South Coast Air Quality Management District (SCAQMD), California State, Regulation XI. Source Specific Standards

1.03 SUBMITTALS FOR APPROVAL/INFORMATION

.1 Product data:
  .1 Submit required data sheets as well as manufacturer's literature and written instructions concerning the joint sealant materials. The product data shall indicate the physical characteristics of the products, the performance criteria, dimensions, limits and finishes.
  .2 Manufacturer's product data shall deal with the following:
    .1 Caulking products.
    .2 Primers.
    .3 Sealing compounds, each type, including compatibility when different sealants are in contact with each other.

.2 Samples
  .1 Submit duplicate samples of each colour and each type of product proposed.
  .2 Submit cured samples of exposed sealants for each color proposed where required to match adjacent material.

.3 Manufacturer's instructions
  .1 Submit manufacturer's instructions concerning each product proposed.

1.04 CLOSEOUT SUBMITTALS

.1 Operating and maintenance data: provide instructions related to operation and maintenance to be incorporated into the Operating Manual.

1.05 DELIVERY, STORAGE AND HANDLING

.1 Transport, store and handle materials in accordance with Section _ _____ and with manufacturer's written instructions.

.2 Delivery and reception: deliver materials to the site in their original packaging, labeled with manufacturer's name and address.

.3 Storage and handling
  .1 Store the materials off the ground, in a dry, clean and well-ventilated enclosure, in accordance with the manufacturer's recommendations.
  .2 Replace damaged material(s) with new material(s).

1.06 PROJECT CONDITIONS

.1 Environmental limitations
  .1 Proceed with installation of joint sealants only under following conditions:
    .1 When ambient and substrate temperature conditions are within limits permitted by joint sealant manufacturer or are above 4.4°C.
    .2 When joint substrates are dry.

.3 When manufacturer's recommendations concerning temperatures, relative humidity, moisture content of the substrates that is appropriate for application and for curing sealant compounds, as well as any special directives related to any of the above, are respected.

.2 Joint-width conditions
.1 Proceed with installation of joint sealants only where joint widths are greater than those allowed by joint sealant manufacturer for applications indicated.

.3 Joint substrate conditions
.1 Proceed with installation of joint sealants only when contaminants capable of interfering with adhesion are removed from joint substrates.

1.07 ENVIRONMENTAL REQUIREMENTS

.1 Comply with Workplace Hazardous Materials Information System (WHMIS) requirements concerning the use, handling, storage and elimination of hazardous materials, as well as those concerning labelling and provision of product safety data sheets recognized by Health Canada.

.2 The Departmental Representative shall ensure that the building's ventilation system is working at maximum for air inflow and exhaust during caulking and jointing operations.

2 PRODUCTS

2.01 SEALANT MATERIALS

.1 Do not use caulking that emits strong odours, contains toxic chemicals or is not certified as mould resistant in air handling units.

.2 When use of low toxicity caulks are not possible, confine usage to areas which off gas to the exterior, are contained behind air barriers, or are applied several months before occupancy to maximize off gas time.

.3 Where sealants are qualified with primers use only these primers.

2.02 SEALANT MATERIAL DESIGNATIONS

.1 Two component sealing compound, polysulfide based:
.1 Non sag in accordance with CAN/CGSB-19.24, Type 2, class B.

.2 Single component sealing compound, polysulfide based:
.1 Non sage, in accordance with CAN/CGSB-19.13, [MC-2-40-B-N][MC-2-25-B- N]

.3 Single component sealing compound, silicone based: in accordance with CAN/CGSB-19.13.

.4 Single component, acrylic based: in accordance with CGSB 19-GP-5M.

.5 Preformed compressible and non-compressible backup materials:
- .1 Polyethylene, Urethane, Neoprene or Vinyl Foam backup material.
  - .1 Extruded closed cell foam backer rod.
  - .2 Size: oversize 30 to 50 %.
- .2 Neoprene or Butyl Rubber backup materials.
  - .1 Round solid rod, Shore A hardness of 70.
- .3 High Density Foam backup materials:
  - .1 Extruded closed cell polyvinyl chloride (PVC), extruded polyethylene, closed cell, Shore A hardness of 20, tensile strength 140 to 200 kPa, extruded polyolefin foam, 32 kg/m3 density, or neoprene foam backer, size as recommended by manufacturer.
- .4 Bond breaker tape.
  - .1 Polyethylene bond breaker tape that will not bond to sealant.

2.03 SEALING COMPOUNDS - LOCATIONS

.1 Visible expansion/dividing joints created in drywall partitions: Single component sealing compound.

2.04 JOINT CLEANER

.1 Non-corrosive and non-staining type, compatible with joint forming materials and sealant as recommended by sealant manufacturer.

.2 Primer: in accordance with manufacturer’s written recommendations.

3 EXECUTION

3.01 INSPECTION

.1 Before proceeding with application of joint sealants, ensure that surfaces/substrates previously installed under work of other sections or contracts are in acceptable condition and permit execution of the work in accordance with manufacturer’s written instructions.
- .1 Carry out a visual inspection of the surfaces /substrates in the presence of the Departmental Representative.
- .2 Immediately inform the Departmental Representative of any unacceptable conditions detected.
- .3 Commence application of compounds only after unacceptable conditions have been remedied.

3.02 SURFACE PREPARATION

.1 Examine joint sizes and conditions to establish correct depth to width relationship for application of backup materials and sealants.

.2 Clean bonding joint surfaces to remove harmful matter and substances including dust, rust, oil grease, and other matter which may impair work.

.3 Do not apply sealants to joint surfaces treated with sealer, curing compound, water repellent, or other coatings unless prior tests have been performed to ensure compatibility of materials. Remove coatings as required.

.4 Ensure joint surfaces are properly dry and free of frost.

.5 Prepare surfaces in accordance with manufacturer’s instructions.

3.03 PRIMER APPLICATION

.1 Where necessary to prevent staining, mask adjacent surfaces prior to priming and caulking.

.2 Prime sides of joints in accordance with sealant manufacturer's instructions immediately prior to caulking.

3.04 BACKUP MATERIAL APPLICATION

.1 Apply bond breaker tape where required in accordance with manufacturer's instructions.

.2 Install joint filler to achieve correct joint depth and shape, with approximately 30% compression.

3.05 DOSAGE

.1 Dose components in strict accordance with sealant manufacturer's instructions.

3.06 APPLICATION

.1 Sealant
- .1 Apply sealant in accordance with manufacturer's written instructions.
- .2 Mask edges of joint where irregular surface or sensitive joint border exists to provide neat joints.
- .3 Apply sealant in continuous bead.
- .4 Apply sealant using gun with proper size nozzle.
- .5 Use sufficient pressure to fill voids and joints solid.
- .6 Form surface of sealant with full bead, smooth, free from ridges, wrinkles, sags, air pockets, embedded impurities.

.7 Tool exposed surfaces before skinning begins to give slightly concave shape.
.8 Remove excess compound promptly as work progresses and upon completion.

.2 Curing
.1 Cure sealants in accordance with sealant manufacturer's instructions.
.2 Do not cover up sealants until proper curing has taken place.

3.07 CLEANING

.1 Cleaning during the course of work: execute cleaning work.
.1 Leave premises in a clean condition at the end of each workday.
.2 Immediately clean all adjacent surfaces.
.3 Remove excess and droppings, using recommended cleaners as work progresses.
.4 Remove masking tape after initial set of sealant.

.2 Final cleaning: remove surplus materials, waste, tools and equipment from the site.

3.08 PROTECTION

.1 Protect installed materials and components from all damage during construction work.

.2 Repair all damages caused to adjacent work and materials by installation of sealants.

END OF SECTION

1 GENERAL

1.01 RELATED REQUIREMENTS

.1 Section 06 08 99 - Rough Carpentry for Minor Works
.2 Section 07 92 00 - Joint Sealants
.3 Section 08 14 16 - Flush Wood Doors
.4 Section 08 71 00 - Door Hardware
.5 Section 09 91 00.08 Painting for Minor Works

1.02 REFERENCES

.1 ASTM International (ASTM)
  .1 ASTM A 653/A 653M-[06a], Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
  .2 ASTM B 29-[03], Standard Specification for Refined Lead.
  .3 ASTM B 749-[03], Standard Specification for Lead and Lead Alloy Strip, Sheet and Plate Products.

.2 Not applicable

.3 Canadian General Standards Board (CGSB)
  .1 CAN/CGSB-1.181-[99], Ready-Mixed Organic Zinc-Rich Coating.
  .2 CGSB 41-GP-19Ma-[84], Rigid Vinyl Extrusions for Windows and Doors.

.4 Groupe CSA (CSA)
  .1 <B>CSA-G40.20-[F04]/G40.21-[F04], General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.
  .2 CSA W59-[F03], Welded Steel Construction (Metal Arc Welding).

.5 Canadian Steel Door Manufacturers' Association, (CSDMA)
  .1 CSDMA, Recommended Specifications for Commercial Steel Doors and Frames, [2000].
  .2 CSDMA, Selection and Usage Guide for Commercial Steel Doors, [1990].

.6 National Fire Protection Association (NFPA)
  .1 NFPA 80-[99], Standard for Fire Doors and Fire Windows.
  .2 NFPA 252-[03], Standard Methods of Fire Tests of Door Assemblies.

.7 South Coast Air Quality Management District (SCAQMD), California State
  .1 SCAQMD Rule 1113-[04], Architectural Coatings.
  .2 SCAQMD Rule 1168-[05], Adhesives and Sealants Applications.

.8 Underwriters Laboratories of Canada (ULC)
.1 CAN/ULC-S701-[01], Thermal Insulation, Polystyrene, Boards and Pipe Covering.
.2 CAN/ULC-S702-[97], Thermal Insulation, Mineral Fibre, for Buildings.
.3 CAN/ULC-S704-[01], Thermal Insulation, Polyurethane and Polyisocyanurate Boards, Faced.
.4 <B>CAN4-S104-[M80], Fire Tests of Door Assemblies.
.5 <B>CAN4-S105M-[M85], Fire Door Frames Meeting the Performance Required by CAN4-S104.

1.03 DESCRIPTION OF WORK

.1 Design requirements
.1 Design exterior frame assembly to accommodate to expansion and contraction when subjected to minimum and maximum surface temperature of -35° Celsius to 35° Celsius.
.2 Maximum deflection for exterior steel entrance screens under wind load of 1.2 kPa not to exceed 1/175th of span.
.3 Fire resistant rated doors and frames: labelled and listed by an organization accredited by Standards Council of Canada in accordance with CAN4-S104 and NFPA 252 for ratings specified or indicated.
.4 Provide fire labelled frame products for those openings requiring fire protection ratings, as scheduled. Test products in strict accordance with CAN4-S104, ASTM E 152 and listed by nationally recognized agency having factory inspection service and constructed as detailed in Follow-Up Service Procedures/Factory Inspection Manuals issued by listing agency to individual manufacturers.

1.04 SUBMITTALS FOR APPROVAL/INFORMATION

.1 Submit required documents and samples.

.2 Submit required product data sheets.

.3 Submit required shop drawings.
.1 Shop drawings submitted shall bear the seal and signature of a Professional Engineer, licensed to practice in the Province, Canada.
.2 Indicate each type of door, material, steel core thicknesses, mortises, reinforcements, location of exposed fasteners, openings for glazing and louvres, positioning of hardware, fire rating and finishes.
.3 Indicate each type frame material, core thickness, reinforcements, glazing stops, location of anchors and exposed fastenings and fire-proofing finishes.
.4 Include schedule identifying each unit, with door marks and numbers relating to numbering on drawings and door schedule.

.5 Submit test and engineering data, and installation instructions.

2 PRODUCTS

2.01 MATERIALS

.1 Hot dipped galvanized steel sheet: to ASTM A 653M, ZF75, minimum base steel thickness in accordance with CSDMA Table 1 - Thickness for Component Parts.

.2 Reinforcement: Steel in accordance with CSA G40.20/G40.21, Type 44W, coating designation to ASTM A 653M, ZF75.

.3 Composite materials: mix of core materials in accordance with the various door manufacturers' proprietary design calculations.

2.02 DOOR CORE MATERIALS

.1 Honeycomb construction
.1 Structural small cell, 24.5mm maximum kraft paper 'honeycomb', weight: 36.3kg per ream minimum, density: 16.5kg/m³ minimum sanded to required thickness.
.1 Recycled material content:[_____] % of post-consumer recycled material [_____] % of post-industrial recycled material.

.2 Reinforced core: panels adhered to honeycomb constructed core.
.1 Fibreglass core: to CAN/ULC-S702, semi-rigid Type [_____] density 24kg/m³.
.1 Expanded polystyrene: CAN/ULC-S701, Type [_____], density 16 to 32kg/m³.

.3 Fire resistance rating (Thermal protection rating): core composition to limit temperature rise on unexposed side of door to 250°C at 60 minutes. Core to be tested as part of a complete door assembly, in accordance with CAN4-S104, ASTM E 152, covering Standard Method of Tests of Door Assemblies and listed by nationally recognized testing agency having factory inspection service.

2.03 ADHESIVES

.1 Honeycomb cores and steel components: heat resistant, spray grade, resin reinforced neoprene/rubber (polychloroprene) based, low viscosity, contact cement.
.1 Adhesives: maximum VOC content of 50 g/L in accordance with rule number 1168 du SCAQMD.

.2 Polystyrene and polyurethane cores: heat resistant, epoxy resin based, low viscosity, contact cement.

.3 Lock-seam doors: fire resistant, resin reinforced polychloroprene, high viscosity, and sealant/adhesive.

2.04 PRIMER

.1 Rust-proof touch-up primer in accordance with CAN/CGSB-1.181.
.1 Maximum VOC content 50 g/L in accordance with GC-03.

2.05 PAINT

.1 Field paint steel doors and frames in accordance with Section 09 91 00.08 – Painting for Minor Works. Protect weather strips from paint. Final finish shall be free of scratches or other blemishes.
.1 Maximum VOC content 50 g/L in accordance with GS-11.

2.06 ACCESSORIES

.1 Door silencers: single stud rubber/neoprene type.

.2 Exterior and interior [top] [bottom] caps: steel.

.3 Fabricate glazing stops as formed channels, minimum 16 mm height, accurately fitted, butted at corners and fastened to frame sections with counter-sunk oval head sheet metal screws.

.4 Metallic paste filler: to manufacturer's specifications.

.5 Fire rating labels: metal riveted.

.6 Glazing: in accordance with Section 08 80 00 0 Glazing.

.7 Make provisions for glazing as indicated and provide necessary glazing stops.
.1 Provide removable stainless steel glazing beads for [use with glazing tapes and compounds and secured with countersunk stainless steel screws] [dry glazing of snap-on type].
.2 Design exterior glazing stops to be tamperproof.

2.07 FRAME CONSTRUCTION - GENERAL

.1 Fabricate frames in accordance with CSDMA specifications.

.2 Fabricate frames to profiles and maximum face sizes as indicated.

.3 Exterior frames: 1.6 mm thick, welded type construction.

.4 Interior frames: [1.6] [1.2] mm thick, welded type construction.

.5 Blank, reinforce, drill and tap frames for mortised, templated hardware, [and][electronic hardware] using templates provided by finish hardware supplier. Reinforce frames for surface mounted hardware.

.6 Protect mortised cut-outs with steel guard boxes.

.7 Prepare frame for door silencers, 3 for single door, 2 at head for double doors.

.8 Manufacturer's nameplates on frames and screens are not permitted.

.9 Conceal fastenings except where exposed fastenings are indicated.

.10 Provide factory-applied touch up primer at areas where zinc coating has been removed during fabrication.

.11 Insulate exterior frame components with polyurethane insulation.

2.08 FRAME ANCHORING

.1 Provide appropriate anchorage to floor and wall construction.

.2 Locate each wall anchor immediately above or below each hinge reinforcement on hinge jamb and directly opposite on strike jamb.

.3 Provide 2 anchors for rebate opening heights up to 1520mm and 1 additional anchor for each additional 760mm of height or fraction thereof.

.4 Locate anchors for frames in existing openings not more than 150mm from top and bottom of each jambs and intermediate at 660mm o.c. maximum.

2.09 WELDED FRAME TYPE

.1 Welding in accordance with CSA W59.

.2 Accurately mitre or mechanically assemble frame and securely weld on inside of profile.

.3 Cope accurately and securely weld butt joints of mullions, transom bars, centre rails and sills.

.4 Grind welded joints and corners to a flat plane, fill with metallic paste and sand to uniform smooth finish.

.5 Securely fasten floor anchors to inside of each jamb.

.6 Weld in two (2) temporary jamb spreaders per frame to maintain proper alignment during shipping.

.7 Fabricate frame products for openings [_____] in sections, [_____] x [_____] mm, splice joints for field assembly.

.8 Securely fasten lead liner to inside of frame profile from return to jamb soffit (inclusive) on door side of frame only.

2.10 KNOCK-DOWN FRAME TYPE

.1 Not applicable.

2.11 SLIDING FRAME TYPE

.1 Not applicable.

2.12 DOOR FABRICATION - GENERAL

.1 Doors: swing type, flush, with provision for glass and/or louvre openings as indicated.

.2 Exterior steel doors: honeycomb construction. Interior doors: honeycomb construction.

.3 Fabricate doors with longitudinal edges locked seamed, adhesive assisted. Seams shall be visible.

.4 Doors: manufacturers' proprietary construction tested and/or engineered as part of a fully operable assembly, including door, frame, gasketing and hardware in accordance with ASTM E 330.

.5 Blank, reinforce, drill and tap doors for mortised, templated hardware and required electronic hardware.

.6 Factory prepare holes 12.7mm diameter and larger except those to receive mounting and through-bolt holes which shall be field drilled, at time of hardware installation.

.7 Reinforce doors where required, for surface mounted hardware. Provide flush PVC top caps to exterior doors. Provide inverted, recessed, spot welded channels to top and bottom of interior doors.

.8 Provide factory-applied touch-up primer at areas where zinc coating has been removed during fabrication.

.9 Provide fire labelled doors for those openings requiring fire protection ratings, as scheduled. Test such products in strict conformance with CAN4-S104 ASTM E 152 and listed by nationally recognized agency having factory inspection service and construct as detailed in Follow-Up Service Procedures/Factory Inspection Manuals issued by listing agency to individual manufacturers.

.10 Manufacturer's nameplates on doors are not permitted.

2.13 HONEYCOMB CORE DOORS

.1 Form each face sheet for exterior doors from [1.6] [1.2] [1.0] mm sheet steel with honeycomb [polystyrene] [polyurethane] core laminated under pressure to face sheets.

.2 Form each face sheet for interior doors from [1.6] [1.2] [1.0] mm sheet steel with honeycomb [temperature rise rated] core laminated under pressure to face sheets.

2.14 HOLLOW CORE STEEL DOORS

.1 Not applicable.

2.15 THERMALLY BROKEN DOORS AND FRAMES

.1 Fabricate thermally broken doors by using insulated core and separating exterior parts from interior parts with continuous interlocking thermal break.

.2 Thermal break: rigid polyvinylchloride (PVC) extrusion in accordance with CGSB 41-GP-19Ma.

.3 Fabricate thermally broken frames separating exterior parts from interior parts with continuous interlocking thermal break.

.4 Doors and frames shall be insulated.

3 EXECUTION

3.01 MANUFACTURERS' INSTRUCTIONS

.1 Compliance: comply with all manufacturers' written requirements, recommendations and specifications, including all available amendments and technical bulletins, instructions concerning storage and handling, product installation as well as indications on product data sheets.

3.02 INSTALLATION - GENERAL

.1 Install labelled steel fire rated doors and frames in accordance with NFPA 80 except where specified otherwise.

.2 Install doors and frames in accordance with CSDMA Installation Guide.

3.03 FRAME INSTALLATION

.1 Set frames plumb, square, level and at correct elevation.

.2 Secure anchors and connections to adjacent construction.

.3 Brace frames rigidly in position while building-in. Install temporary horizontal wood spreader at third points of door opening to maintain frame width. Provide vertical support at centre of head for openings over 1200mm wide. Remove temporary spreaders after frames are built in.

.4 Make allowances for deflection of structure to ensure structural loads are not transmitted to frames.

.5 Caulk perimeter of frames [between frame and adjacent material].

.6 Maintain continuity of [air barrier] [and] [vapour retarder].

3.04 DOOR INSTALLATION

.1 Install doors and hardware in accordance with hardware templates and manufacturer's instructions and Section 08 71 10 - Door Hardware - General.

.2 Provide even margins between doors and jambs and doors and finished floor and thresholds as follows:
.1 Hinge side: 1.0 mm;
.2 Latch side and head: 1.5 mm;
.3 Finished floor,[top of carpet] [non-combustible sill] [and thresholds]: 13 mm.

.3 Adjust moving parts for correct function.

3.05 FINISH REPAIRS

.1 Touch up with primer finishes damaged during installation.

.2 Fill exposed frame anchors [and surfaces with imperfections] with metallic paste filler and sand to a uniform smooth finish.

3.06 GLAZING

.1 Install glazing for doors in accordance with Section 08 80 50 – Glazing.

END OF SECTION

1 GENERAL

1.01 RELATED REQUIREMENTS

.1 Section 09 92 00 – Metal Doors and Frames

.2 Section 08 71 00 – Door Hardware

.3 Section 09 91 00.08 Painting for Minor Works

1.02 REFERENCES

.1 Architectural Woodwork Manufacturers Association of Canada (AWMAC).
  .1 Quality Standards for Architectural Woodwork [1998].

.2 Canadian General Standards Board (CGSB).
  .1 CAN/CGSB-71.19-[M88], Adhesive, Contact, Sprayable.
  .2 CAN/CGSB-71.20-[M88], Adhesive, Contact, Brush Applied.

.3 Groupe CSA (CSA)
  .1 <B>CSA A440.2-CSA A440.2-[98(R2003)], Energy Performance of Windows and Other Fenestration Systems.
  .2 CSA O115-[M1982(R2001)], Hardwood and Decorative Plywood.
  .3 CAN/CSA O132.2-[F90(C1998)]Series, Flush Wood Doors.
  .4 CAN/CSA-O132.5-[M1992(R1998)], Stile and Rail Wood Doors.
  .5 CAN/CSA-Z808-[F96], A Sustainable Forest Management System: Guidance Document.
  .6 CSA, Certification Program for Windows and Doors [2000].

.4 Environmental Choice Program (ECP).
  .1 DCC-045-[92], Sealants and Caulking Compounds.
  .2 DCC-046-[92], Adhesives.

.5 National Fire Protection Association (NFPA).
  .1 NFPA 80-[1999], Standard for Fire Doors and Fire Windows.
  .2 NFPA 252-[1999], Standard Method of Fire Tests of Door Assemblies.

.6 Underwriters Laboratories of Canada (ULC).
  .1 <B>CAN4-S104M-[80(C1985)], Fire Tests of Door Assemblies.
  .2 <B>CAN4-S105-[1985(C1992)], Fire Door Frames Meeting the Performance Required by CAN4-S104.

.7 Forest Stewardship Council (FSC)
  .1 FSC-STD-01-001-[2004], FSC Principle and Criteria for Forest Stewardship.

.8 Sustainable Forestry Initiative (SFI)
.1 Standard SFI-[2010-2014].

.9 Green Seal Environmental Standards (GS)
.1 GS-03-[97], Environmental Criteria for Anti-Corrosive Paints.
.2 GS-11-[11], Standard for Paints and Coatings.

.10 South Coast Air Quality Management District (SCAQMD), California State, Regulation XI. Source Specific Standards
.1 SCAQMD Rule 1113-[A2011], Architectural Coatings.
.2 SCAQMD Rule 1168-[A2005], Adhesives and Sealants Applications.

.11 California Air Resources Board (CARB) 93120 Airborne Toxic Control Measure

1.03 SUBMITTALS FOR APPROVAL/INFORMATION

.1 Product Data
.1 Submit required manufacturer's printed product literature, specifications and data sheet.

.2 Shop Drawings
.1 Submit required Shop Drawings.
.2 Indicate door types and cut-outs for sizes, core construction, transom panel construction and cut-outs for the preceding.

1.04 SAMPLES

.1 Not applicable.

1.05 QUALITY ASSURANCE

.1 Requirements of regulatory agencies.
.1 Fire resistant rated wood doors: labelled and listed by an organization accredited by Standards Council of Canada.

.2 Test Reports: submit certified test reports showing compliance with specified performance characteristics and physical properties.

.3 Certificates: product certificates signed by manufacturer certifying product and materials comply with specified performance criteria and physical properties.

1.06 DELIVERY, STORAGE AND HANDLING

.1 Storage and Protection of Doors:
.1 Protect doors from dampness. Arrange for delivery after work causing abnormal humidity has been completed.
.2 Store doors in well ventilated room, off the ground, in accordance with manufacturer's recommendations.

.3 Protect doors from scratches, handling marks and other damage. Keep wrapped.
.4 Store doors away from direct sunlight.

2 PRODUCTS

2.01 FLUSH WOOD DOORS

.1 Solid Core: in accordance with CAN/CSA-O132.2.1.
.1 Fabrication
.1 Solid particleboard core: 100 mm stile and 57 mm rail frame bonded to particleboard core with central rail of 133 mm, with wood lock blocks, 7-ply construction.
.2 Face panels
.1 Hardwood; veneer grades: Grade II (Good quality) paintable cherrywood species.
.3 Adhesive: type II (water resistant), for interior doors.

2.02 GLAZING

.1 Glass: in accordance with section 08 80 00 – Glazing.

2.03 FABRICATION

.1 Vertical edge strips to match face veneer.

.2 Prepare doors for glazing. Provide hardwood species glazing stops with mitred corners.

.3 Bevel vertical edges of single acting doors 3mm in 50mm on lock side and 1.5mm in 50mm on hinge side.

3 EXECUTION

3.01 MANUFACTURER'S INSTRUCTIONS

.1 Compliance: comply with all manufacturers' written requirements, recommendations and specifications, including all available amendments and technical bulletins, instructions concerning storage and handling, product installation as well as indications on product data sheets.

3.02 INSTALLATION

.1 Unwrap and protect doors in accordance with CAN/CSA-O132.2 Series, Appendix A.

.2 Install labeled fire rated doors to NFPA 80.

.3 Install doors and hardware in accordance with manufacturer's printed instructions and CAN/CSA-O132.2 Series, Appendix A.

.4 Adjust hardware for correct function.

.5 Install glazing in accordance with Section 08 80 50 – Glazing.

.6 Install glazing stops.

3.03 DOOR ADJUSTMENT

.1 Re-adjust doors and hardware just prior to completion of building to function correctly and freely.

3.04 CLEANING

.1 Cleaning during the course of work: Execute cleaning tasks.
.1 Leave the premises in clean condition at the end of each workday.

.2 Perform cleaning as soon as possible after installation to remove construction and accumulated environmental dirt.

.3 Remove traces of primer, caulking, clean doors and frames.

.4 Clean glass and glazing materials with approved non-abrasive cleaner.

.5 On completion of installation, remove surplus materials, rubbish, tools and equipment and barriers from the site.

FIN DE SECTION

1 GENERAL

1.01 RELATED REQUIREMENTS

.1 Section 08 11 00 – Metal Doors and Frames

.2 Section 08 14 16 – Flush Wood Doors

.3 Section 28 13 00 – Access Control (engineer)

1.02 NORMES DE RÉFÉRENCE

.1 American National Standards Institute (ANSI) / Builders Hardware Manufacturers Association (BHMA)
- .1 ANSI/BHMA A156.1-[2000], American National Standard for Butts and Hinges.
- .2 ANSI/BHMA A156.2-[2003], Bored and Preassembled Locks and Latches.
- .3 ANSI/BHMA A156.3-[2001], Exit Devices.
- .4 ANSI/BHMA A156.4-[2000], Door Controls - Closers.
- .5 ANSI/BHMA A156.5-[2001], Auxiliary Locks and Associated Products.
- .6 ANSI/BHMA A156.6-[2005], Architectural Door Trim.
- .7 ANSI/BHMA A156.8-[2005], Door Controls - Overhead Stops and Holders.
- .8 ANSI/BHMA A156.10-[1999], Power Operated Pedestrian Doors.
- .9 ANSI/BHMA A156.12-[2005], Interconnected Locks and Latches.
- .10 ANSI/BHMA A156.13-[2002], Mortise Locks and Latches Series 1000.
- .11 ANSI/BHMA A156.14-[2002], Sliding and Folding Door Hardware.
- .12 ANSI/BHMA A156.15-[2006], Release Devices - Closer Holder, Electromagnetic and Electromechanical.
- .13 ANSI/BHMA A156.16-[2002], Auxiliary Hardware.
- .14 ANSI/BHMA A156.17-[2004], Self-closing Hinges and Pivots.
- .15 ANSI/BHMA A156.18-[2006], Materials and Finishes.
- .16 ANSI/BHMA A156.19-[2002], Power Assist and Low Energy Power - Operated Doors.
- .17 ANSI/BHMA A156.20-[2006], Strap and Tee Hinges and Hasps.

.3 Canadian Steel Door and Frame Manufacturers' Association (CSDMA)/Association canadienne des fabricants de portes d'acier (ACFPA)
- .1 CSDMA/ACFPA, Recommended Dimensional Standards for Commercial Steel Doors and Frames - 2009.

1.03 SUBMITALLS FOR APPROVAL/INFORMATION

.1 Product Data
- .1 Submit required manufacturer's printed product literature, specifications and data sheet for door hardware. Product data shall indicate the product characteristics, performance criteria, sizes, limits and finishes.

.2 Samples
  .1 Submit a sample for each type of hardware proposed for review and approval.
  .2 Once approved, the sample will be returned to the Contractor for incorporation in the work.
  .3 Label each sample indicating the corresponding specification paragraph, le model number and trademark, the finish and the lot number.
  .4 Once approved, the sample will be returned to the Contractor for incorporation in the work.

.3 Hardware List
  .1 Submit required contract door hardware list.
  .2 The list shall indicate specified hardware, including make, model, material, function, size, finish and other pertinent information.

.4 Test Reports: submit test reports certifying that products and materials comply with physical characteristics and performance criteria as specified.

.5 Manufacturers' Instructions: submit manufacturers' installation instructions.

1.04 CLOSEOUT SUBMITTALS

.1 Submit required closeout submittals upon completion of work.

.2 Provide required operation and maintenance data for door hardware for incorporation into Maintenance and Operation manual.

1.05 REPLACEMENT HARDWARE AND PARTS

  .1 Submit spare hardware and parts.
  .1 Provide required replacement and maintenance materials and products upon completion of work.
  .2 Tools
    .1 Provide two (2) sets of keys/tools required for the maintenance of door closers, locks and accessories for exit doors.

1.06 QUALITY ASSURANCE

.1 Regulatory Requirements
  .1 Hardware for doors in fire separations and exit doors certified by a Canadian Certification Organization accredited by Standards Council of Canada.

.2 Certificates: product certificates signed by manufacturer certifying materials comply with specified performance criteria and required physical characteristics.

1.07 DELIVERY, STORAGE AND HANDLING

.1 Deliver, store and handle products and materials in accordance with manufacturer's written instructions.

.2 Delivery and reception: Deliver products and materials to the site in their original packaging, bearing the name and address of the manufacturer.

.3 Package each item of hardware including fastenings, separately or in like groups of hardware, label each package as to item definition and location.

.4 Storage and Handling
- .1 Store door hardware in a manner to protect it from marks, scratches and gouges.
- .3 Protect finish surfaces using a protective wrapping.
- .4 Replace damaged products and materials with new products and materials.

2 PRODUCTS

2.01 GENERAL

.1 All like articles to be sourced from the manufacturer.

2.02 DOOR HARDWARE

.1 Locks and latches
- .1 Bored and pre-assembled cylinder locks and latches in accordance with ANSI/BHMA A156.2, 4000 series, cylinder locks, class 1, as described on Hardware Schedule.
- .2 Interconnected Locks and latches: in accordance with ANSI/BHMA A156.12, 5000 series, class 1, as described on Hardware Schedule.
- .3 Mortise Locks and Latches: in accordance with ANSI/BHMA A156.13, 1000 Series, class 1, as described on Hardware Schedule.
- .4 Handles: SPA type plain model.
- .5 Rivet Washers: round.
- .6 Ordinary Strikes: box type, latch tongue flush with jamb.

.7 Cylinder barrels: supplied by the Department and installed by the Contractor.
IMPORTANT : Contractor shall ensure installation of the correct cylinders in the corresponding doors as identified on Drawings.
.8 Finish: refer to Door, Frame and Hardware Chart.

.2 Butts and Hinges
.1 Butts and Hinges: in accordance with ANSI/BHMA A156.1, designated by a numerical code preceded by the letter A followed by the indications related to size and finish, and as appears on the Hardware Schedule.

.3 Exit devices: in accordance with ANSI/BHMA A156.3, type and use: refer to Door, Frame and Hardware Chart, class 1, model and finish: refer to Chart.

.4 Door closers and accessories
.1 Door accessories (door closers) : in accordance with ANSI/BHMA A156.4, designated by a numerical code preceded by the letter C, and as appears on the Hardware Schedule.
.2 Door accessories – Door holders affixed to the top of the doors: in accordance with ANSI/BHMA A156.8, designated by a numerical code preceded by the letter C, and as appears on the Hardware Schedule.
.3 Release device for door closers and holders: in accordance with ANSI/BHMA A156.15, designated by a numerical code preceded by the letter C, and as appears on the Hardware Schedule.
.4 Panel selectors: surface mounted, for double doors with overlapping panels.

.5 Door operating devices
.1 Power operated pedestrian doors: in accordance with ANSI/BHMA A156.10.
.2 Power Assist and Low Energy Power - Operated Doors: in accordance with ANSI/BHMA A156.19.

.6 Decorative (Architectural) door trim: in accordance with ANSI/BHMA A156.6, designated by a numerical code preceded by the letter J, as appears on the Hardware Schedule.
.1 Protection plates for doors:
.2 Push plates:
.3 Push and Pull bars :

.7 Auxiliary hardware: in accordance with ANSI /BHMA A156.16
.1 Door stops and holders.
.2 Toggle notch locks.
.3 Silencers.

.8 Door bottom weatherstripping: heavy duty weatherstripping composed of an extruded aluminum frame with closed cell neoprene sealing strip.

.9 Thresholds: extruded aluminum profiles, factory finished with grooved surface.

.10 Weatherstripping
- .1 Jambs and lintels
  - .1 Extruded aluminum frame, with added sealing strip, of closed cell neoprene, clear anodized finish.
  - .2 Neoprene trim with adhesive backing.
- .2 Door bottoms
  - .1 Extruded aluminum frame, with closed cell neoprene sealing strip, clear anodized finish.

.11 Panels: extruded aluminum frame, with vinyl insert, finish to match that of the door.

.14 Pneumatic operating devices for ease of access.
- .1 Heavy duty pneumatic power-operated door closer, suitable for multiple door operation, with actuator, control box, compressed air supply and related piping.
- .2 Autonomous combination unit consisting of a control box and a compressor for the separate operation of the wings of two-winged doors.
- .3 Control box: with relay for electric strike.
- .4 Operating devices mounted on the appropriate side of the doors to be pulled or pushed, so as to be located inside the room.
- .5 Actuation of operating devices by means of card readers and motion detectors.
- .6 Electrical boxes and actuators: single electrical boxes, 51 mm wide x 102 mm height x 50 mm depth, recessed in a wall, locations as indicated; actuators with low-voltage wiring, mounting a 114 mm diameter stainless steel plate, bearing the «handicapped» pictogram, engraved in blue.
- .7 Main voltage supply to the control boxes with switch mounted near each box.
- .8 Low voltage wiring connected to each actuator and 6 mm diameter compressed air line connected to each operating device.
- .9 Control boxes mounted at locations as directed by Departmental Representative.

2.03 MISCELLANEOUS HARDWARE

.1 ¨Padlock: refer to chart.

2.04 FASTENERS

.1 Only fasteners provided by the manufacturer may be used. Failure to comply with this requirement may jeopardize warranties and invalidate the registration labels, where applicable.

.2 Supply screws, bolts, expansion shields and other fastening devices required for satisfactory installation and operation of hardware.

.3 Exposed fastening devices to match finish of installed hardware.

.4 Where a door pull is scheduled on one side of door and a push plate on other side, supply fastening devices, and install so pull can be secured through door from reverse side. Install push plate to conceal fasteners.

.5 Use fasteners compatible with material through which they pass.

2.05 KEYS

.1 Provided by the Departmental Representative.

3 EXECUTION

3.01 INSTALLATION

.1 Manufacturers' instructions: Comply with manufacturer's written requirements, recommendations and specifications, including product technical bulletins, product catalogue, installation instructions found both in manufacturers' catalogues, literature and product packaging, as well as product data sheets.

.2 Provide manufacturers of doors and metal frames installation templates and complete instructions that will enable them to prepare their products to receive the hardware specified the present Section.

.3 Provide manufacturer's installation instructions with each item of hardware.

.4 Install hardware items in standard positions in accordance with requirements of Canadian Metric Guide for Steel Doors and Frames (Modular Construction), developed by the CSDMA.

.5 Where door stop contacts door pulls, mount stop to strike bottom of pull.

.6 Install a key control cabinet.

.7 Use only fastening devices provided by the manufacturer.
.1 Quick release fasteners, unless specifically provided by the manufacturer are not acceptable.

.8 When the Departmental Representative requests it, remove the temporary rotors.
.1 Replace the temporary rotors with permanent rotors and check the operation of all locks.

3.02 ADJUSTING

.1 Adjust and regulate hardware, operating and control devices and door closers so that they operate smoothly, safely and ensure a perfect seal when closed.

.2 Lubricate hardware, operating and control devices and all related moving parts.

.3 Adjust door hardware so as to ensure perfect contact between doors and frames.

3.03 CLEANING

.1 Cleaning during the course of work: carry out cleaning tasks.
.1 Leave premises in clean condition at the end of each workday.
.2 Clean hardware with damp rag and approved non-abrasive cleaner, and polish hardware in accordance with manufacturer’s instructions.
.3 Remove protective material from hardware items where present.
.4 Final cleaning: Upon completion of installation, remove surplus materials, waste, tools, equipment and barriers from the site.

3.04 DEMONSTRATION

.1 Maintenance staff briefing
.1 Brief maintenance staff regarding:
.1 Proper care, cleaning, and general maintenance of all hardware items.
.2 Description, use, handling, and storage of keys.
.3 Use, application and storage of wrenches for door closers locksets and fire exit hardware.

.2 Demonstrate operation, operating components, adjustment features, and lubrication requirements.

3.05 PROTECTION

.1 Protect installed products and components against damage during construction.

.2 Repair damage to adjacent materials and equipment caused by the installation of door hardware.

3.06 HARDWARE SCHEDULE

.1 Refer to Frame, Door and Hardware Schedule.

.2 In the schedule, the term ″MPO″ is used to designate the Departmental Representative.

END OF SECTION

Pos.	#porte MPO	Local	Description	QTE.	Quincaillerie
			PHASE 1		
			All required lock cylinders shall be provided by the Departmental		
			Representative designated as "MPO" in the following schedule.		
			The lock cylinders shall be installed by the Contractor; make sure		
			to install the correct lock cylinder for corresponding door		
			identified on the drawings		
E10	A-501-2	A-501	Main Door (left on the exterior)		
			Existing double door 2X34"X111" glazed, with aluminum frame		
			This exterior door is equipped with a double door-opener to be salvaged		
			and installed on the neighbouring door A-501-1 including the tubular		
			supports for opening plates and signage		
			Replace cylinder on panic bar with cylinder provided by MPO	1	
			Provide two (2) new door-closers as the existing door-closers A501-1	2	LCN4040 HO
			are at the end of their useful life.		
			Provide two (2) door contacts - Engineer		
			Install a sign provided by MPO indicating		
			"USE OTHER DOOR"		
			Provide for drilling and patching the aluminum frame		
E11	A-501-1	A-501	Main Door (right on the exterior)		
			Existing double door 2X34"X111" glazed, with aluminum frame		
			This exterior door to be equipped with door-opener salvaged from		
			neighbouring door A-501-2 including the tubular supports for opening		
			plates and access signage		
			Replace existing panic par with an identical panic bar but with a cylinder	1	E-3P16 countersunk stem 8600
			to activate 'dogging' function		
			Install cylinder provided by MPO on panic bar	1	
			Provide for card reader to be installed on the exterior side on the		
			tubular aluminum support- Engineer		
			Provide two (2) door contacts- Engineer		
			Provide trenching and patching in gypsum and aluminum frames		
E12	A-501-4	A-501	Main Door (left on the interior)		
			Existing double door 2X34"X111" glazed, with aluminum frame		
			This exterior door is equipped with a double door-opener to be salvaged		
			and installed on the neighbouring door A-501-3 including the tubular		
			supports for opening plates and signage		
			Provide two (2) new door-closers as the existing door-closers A501-3		
			are at the end of their useful life.	2	LCN4040 HO
			Provide two (2) door contacts- Engineer		
			Provide trenching and patching in gypsum head		
E13	A-501-3	A-501	Main Door (right on the interior)		
			Existing double door 2X34"X111" glazed, with aluminum frame		
			This exterior door to be equipped with door-opener salvaged from		
			neighbouring doo rA-501-4 including the tubular supports for opening		
			plates and access signage		
			Provide two (2) door contacts- Engineer		
E14	A-531-1	A-531	Exterior door (cafeteria)		
			Existing double door 2X29"X84" glazed with aluminum frame		
			This double door is used to pass between exterior and interior.		
			Access control is required for persons going to or returning from the		
			exterior		
			3-15 panic locks would have been ideal, but the existing hardware		
			configuration does not allow for this		
			Two (2) delay solenoids 3-15 shall be installed and connected to the	2	M490DEP 628 SCE
			card readers and fire alarm system		
			Install cylinders provided by MPO on panic bar	2	
			Provide card readers both on the interior and exterior - Engineer		
			Provide two (2) door contacts- Engineer		
			Provide drilling, trenching and patching in gypsum and aluminum frames		
E15	A-529A-1	A-529A	Exterior door (stairways AE-4 and A-E5)		
			Existing double door 2X29"X84" glazed with aluminum frame		

			This double exit door shall be monitored by new door contacts		
			Panic lock type does not allow for monitoring of bolts or stems		
			Two (2) delay solenoids 3-15 shall be installed on doors with a by-pass	2	MA90DEP 628 SCE
			switch on the interior side	1	6531415 LZ 630 SCE
			Install cylinders provided by MPO on lock	1	
			Install cylinder provided by MPO on switch	1	
			Provide two (2) door contacts- Engineer		
			Provide drilling, trenching and patching in gypsum and aluminum frames		
E16	A-581-1	A-581	Exterior door (corridor A-581)		
			Existing door 36"X84" glazed with aluminum frame		
			This single door shall be monitored by the new door contact.		
			Panic lock type does not allow for monitoring of bolts or stems		
			Two (2) delay solenoids 3-15 shall be installed on doors with a keyed	1	MA90DEP 628 SCE
			by-pass switch, wall mounted on the interior side	1	6531415 LZ 630 SCE
			Install cylinders provided by MPO on lock	1	
			Install cylinder provided by MPO on switch	1	
			Provide door contact - Engineer		
			Provide interior and exterior card readers - Engineer		
			Provide drilling, trenching and patching in gypsum and aluminum frames		
			Provide drilling, trenching and patching in concrete block wall		
			for card reader		
E17	A-571-1	A-571	Existing Roll-up door		
			Provide door contact - Engineer		
E17.1	A-571-2	A-571	Exterior door (shipping/receiving)		
			Existing door 36"X84" unglazed with aluminum frame		
			Replace upper door panel ±27"X27" with tempered double glazed		
			reflective glass		
			This single door shall be monitored by the new door contact.		
			Panic lock type does not allow for monitoring of bolts		
			One (1) delay solenoid 3-15 shall be installed on door with a keyed	1	MA90DEP 628 SCE
			by-pass switch	1	6531415 LZ 630 SCE
			Replace cylinder with lock cylinder provided by MPO	1	
			Install cylinder provided by MPO on switch	1	
			Provide door contact - Engineer		
			Provide exterior card readers - Engineer		
			Provide RX exit request from interior - Engineer		
			Conduits and equipment surface mounted on concrete block		
			Provide doorbell on masonry wall-Engineer		
			Provide drilling in concrete block wall		
E17.2	A-571-3	A-571	Existing Roll-up door		
			Provide door contact - Engineer		
E17.3	A-571-4	A-571	Exterior door (shipping/receiving)		
			Existing aluminum door 36"X84" unglazed with aluminum frame		
			This single door shall be monitored by the new door contact.		
			Panic lock type does not allow for monitoring of bolts		
			One (1) delay solenoid 3-15 shall be installed on door with a keyed	1	M490DEP 628-SCE
			by-pass switch	1	6531415 LZ 630 SCE
			Replace cylinder with lock cylinder provided by MPO	1	
			Provide door contact - Engineer		
			Provide RX exit request from interior - Engineer		
			Conduits and equipment surface mounted on concrete block		
			Install cylinder provided by MPO on switch	1	
E18	A-557-1	A-557	Exterior door (corridor A-514)		
			Existing double door 2X29"X84" glazed with aluminum frame		
			This double exit door shall be monitored by the new door contacts		
			Panic lock type does not allow for monitoring of bolts or stems		

			Two (2) delay solenoids 3-15 shall be installed on door with a keyed	2	M490DEP 628 SCE
			by-pass switch on the interior side	1	6531415 LZ 630 SCE
			Replace cylinder with lock cylinder provided by MPO	1	
			Provide two (2) door contacts - Engineer		
			Provide RX exit request from interior - Engineer		
			Provide trenching and patching on the ceiling gypsum board		
			Install cylinder provided by MPO on switch	1	
E19	A-AM1-1	AM-1	Exterior door (mechanical room)		
			Existing aluminum door 36"X84" unglazed with aluminum frame		
			This single door shall be monitored by new door contact		
			Panic lock type does not allow for monitoring of bolts		
			One (1) delay solenoids 3-15 shall be installed on door with a keyed	1	M490DEP 628 SCE
			by-pass switch	1	6531415 LZ 630 SCE
			Replace cylinder with lock cylinder provided by MPO	1	
			Provide door contact - Engineer		
			Provide RX exit request from interior - Engineer		
			Provide trenching and patching on gypsum board wall		
			Install cylinder provided by MPO on switch	1	
E19.1	A-AM1-2	AM-1	Existing Roll-up door		
			Provide door contact - Engineer		
100	A-E2-1	AE-2	Stairwell (level 5)		
			Existing door 35"X82" with ULC rated steel frame		
			Replace existing cylinder lock storeroom function with lever lock (SPA)		
			having exit function only	1	SPA-ND25D-626
			Provide door contact - Engineer		
			Provide trenching and patching on gypsum board wall		
			Replace cylinder with lock cylinder provided by MPO	1	
101	A-TT-1	A-545	Existing roof hatch		
			Replace existing padlock with cylindered padlock	1	PL330-50
			Replace padlock cylinder with lock cylinder provided by MPO	1	
102	A-545-1	A-545	Cloakroom		
			Existing wood door 35"X82" with steel frame		
			Remove push plate and pull handle		
			Remove mortise type deadbolt lock		
			Replace wood door with new steel door 35"X82"		
			Install levered lock (SPA) storeroom function	1	SPA-ND80PD-626
			Install cylinder provided by MPO	1	
			Provide electric strike with bolt detector	1	4212-12VDC-FSE
			Provide door-closer	1	LCN4040
			Provide card reader - Engineer		
			Provide RX exit request above door - Engineer		
			Provide door contact - Engineer		
			Provide trenching and patching on gypsum board wall		
			Provide patching of wood door and steel frame		
			Provide cutting of steel frame to accommodate strike		
102 A	A-545A-1	A-545A	Infirmary		
			Existing wood door 35"X82" with steel frame		
			Existing lock		
			Replace cylinder with lock cylinder provided by MPO	1	
102 B	A-545B-1	A-545B	Washroom - infirmary		
			Existing wood door 35"X82" with steel frame		
			Existing lock		
			Replace cylinder with lock cylinder provided by MPO	1	
103	A-554-1	A-554	Conference room		
			Existing wood door 35"X82" with steel frame		
			Existing angular levered lock office function		
			Replace cylinder with lock cylinder provided by MPO	1	
104	A-553-1	A-553	MPO room		
			Existing wood door 35"X82" with steel frame		
			Existing angular levered lock office function to be replaced with levered		

			lock (SPA) storeroom function	1	SPA-ND 80PD-626
			Replace cylinder with lock cylinder provided by MPO	1	
			Provide electric strike with bolt detector	1	4212-12VDC-FSE
			Provide door-closer	1	LCN4040
			Provide card reader - Engineer		
			Provide trenching and patching on gypsum board wall		
			Provide patching of wood door and steel frame		
			Provide cutting of steel frame to accommodate strike		
105	A-549-1	A-549	Maintenance room		
			Existing wood door 35"X82" with steel frame		
			Existing button lock storeroom function		
			Replace cylinder with lock cylinder provided by MPO	1	
106.1	A-E1-1	AE-1	Stairway AE-1		
			Existing wood door 36"X82" with steel frame		
			Existing surface mounted panic bar		
			Replace cylinder with lock cylinder provided by MPO	1	
			Existing electric strike		
			Existing door-opener		
			Provide card reader - see Engineer		
			Provide trenching and patching on gypsum board wall		
106	A-553-2	A-553	MPO Room		
			Existing wood door 35"X82" with steel frame		
			Existing angular levered lock, office function		
			Replace cylinder with lock cylinder provided by MPO	1	
107	A-553A-1	A-553A	MPO room (office)		
			Existing wood door 35"X82" with steel frame		
			Existing angular levered lock, office function		
			Replace cylinder with lock cylinder provided by MPO	1	
108	A-534-2	A-534	Kitchen		
			Existing sliding grill lockable door		
			Replace the 4 lock cylinders with those provided by MPO	4	
109	A-534-3	A-534	Kitchen		
			Existing sliding grill lockable door		
			Replace the 5 lock cylinders with those provided by MPO	5	
110	A-534-1	A-534	Kitchen		
			Existing double wood doors 14" and 36"X82" with steel frame		
			Existing button type lock, office function		
			Replace cylinder with lock cylinder provided by MPO	1	
111	A-534-4	A-534	Kitchen office		
			Existing wood door 35"X82" with steel frame		
			Existing button type lock, office function		
			Replace cylinder with lock cylinder provided by MPO	1	
111.1	A-536	A-536	Kitchen storeroom		
			Refrigerator door		
112	A-529A-2	A-529A	Exit via stairway landings 4 and 5		
			Existing double door 2X29"X82" with steel frame ULC rated		
			Existing panic bolt lock on active door and panic pin lock on passive door		
			Replace cylinder with lock cylinder provided by MPO	2	
			The panic lock does not allow monitoring of the bolts or pins		
			Two (2) delay solenoids 3-15 shall be installed on door with a keyed	2	M490DEP 628 SCE
			by-pass switch installed on the corridor side	1	6531415 LZ 630 SCE
			Install cylinders provided by MPO on switch	1	
			Provide two (2) door contacts - Engineer		
			Provide trenching and patching on gypsum board wall		
113	A-507-2	A-507	Corridor (to be corrected when updated list is provided)		
			Existing double wood doors 2X36"X84" with steel frame		

			Existing lock on active door, existing latches on passive door		
			replace existing electric strike with electric bolt detector strike on		
			passive door	1	4212-12VDC FS
			Replace cylinder with lock cylinder provided by MPO	1	
			Two (2) existing door-closers		
			Existing current conductors on passive door		EPT10-12V
			Existing card reader		
			Two (2) existing door contacts		
			Patch wood door		
114	A-537-1	A-537	Kitchen stockroom		
			Existing double wood doors 2X35"X82" with steel frame		
			Replace existing doors with solid wood doors 2X35"X82"		
			Salvage the six (6) existing hinges		
			Replace the two (2) panic locks with a curved levered lock, storeroom		
			function	1	SPA-ND80PD-626
			Install cylinder provided by MPO	1	
			and two (2) countersunk latches on passive door	2	3917-300 626
			Replace existing door-closers and install them on the room side as		
			opposed to the corridor side	2	LCN1460-DEL
			Provide a continuous astragal on active door	1	A3
			Provide door coordinator	1	3093-PL-TRIMCO
			Provide two (2) door contacts - see Engineer		
115	A-537A-1	A-537A	Kitchen stockroom		
			Existing wood door 35"X82" with steel frame		
			Existing button type lock, office function		
			Replace cylinder with lock cylinder provided by MPO	1	
116	A-539-1	A-539	Videoconference room		
			Existing wood door 35"X82" with steel frame		
			Replace existing button type lock, office function with levered lock ,		
			storeroom function	1	SPA-ND80PD-626
			Install cylinder provided by MPO	1	
			Provide door-closer	1	LCN1460-DEL
			Provide electric strike with bolt detector	1	4212-12VDC-FS
			Provide card reader - Engineer		
			Provide RX exit request - Engineer		
			Provide door contact - Engineer		
			Provide trenching and patching in gypsum board wall		
			Provide cutting steel frame to accommodate the strike		
117A	A-540-5	A-540	Auditorium		
			Existing wood door 35"X82" with steel frame		
			Angular lever lock, classroom function		
			Replace cylinder with cylinder provided by MPO	1	
118	A-540-4	A-540	Auditorium		
			Existing wood door 35"X82" with steel frame		
			Angular lever lock, classroom function		
			Replace cylinder with cylinder provided by MPO	1	
119	A-540-3	A-540	Auditorium		
			Existing double wood doors 2X35"X82" with steel frame		
			Mortise deadlock with DL turnstile		
			Replace cylinder with cylinder provided by MPO	1	
120	A-541-1	A-541	Auditorium projection room		
			Existing wood door 29"X77" with steel frame		
			Existing angular lever lock, office function		
121	A-540-2	A-540	Auditorium		
			Existing double wood doors 2X35"X82" with steel frame		
			Existing mortise deadlock with DL turnstile		
			Replace cylinder with cylinder provided by MPO	1	
122	A-540-1	A-540	Auditorium		
			Existing wood door 35"X82" with steel frame		
			Existing angular lever lock, classroom function		

			Replace cylinder with cylinder provided by MPO	1	
125	A-558-1	A-558	Telecommunications room		
			Existing double wood doors 2X20"X82" with steel frame		
			Existing button type DL lock, storeroom function		
			Replace cylinder with cylinder provided by MPO	1	
			Provide door contact - Engineer		
			Provide trenching and patching in gypsum board wall		
126	A-507-1	A-507	Corridor A506 to area A507		
			Existing door (to be completed when information received)		
128	A-515-1	A-515	Computer server room		
			Existing steel 35"X82" door and frame ULC rated with armoured glazing		
			Replace existing lock, office function with lever lock (SPA),		
			storeroom function	1	SPA-ND80PD-626
			Install lock cylinder provided by MPO	1	
			Replace existing FOLGER ADAMS (FA310) electric strike		
			that has no bolt detector with an electric strike		
			having a bolt detector	1	6222-12VDC-FS
			Replace existing card reader - Engineer		
			Replace existing door contacts - Engineer		
129	A-515-2	A-515	Computer server room		
			Existing double 2X35"X82" steel doors and frame		
			Existing mortise deadbolt type lock and latches on passive door		
			Replace cylinder with cylinder provided by MPO	1	
			Provide two (2) electro-magnets	2	M490DEP 628 SCE
			Provide trenching and patching in gypsum board wall		
130	A-517-1	A-517	Computer server room		
			Existing double 17" and 36"X84" aluminum doors and frames		
			Existing panic lock with pull handle		
			Replace cylinder with cylinder provided by MPO	1	
			Existing door closers		
			Existing electric strike on passive door		
			with surface current conductors		
131	A-517-2	A-517	Computer server room		
			Existing double 17" et 36"X84" aluminum doors and frame		
			Existing panic lock with pull handle		
			Replace cylinder with cylinder provided by MPO	1	
			Existing door closers with 'hold open' function		
			Existing electric strike on passive door		
			with surface current conductors		
			Existing card reader to be replaced with new card reader - Engineer		
132	A-565-1	A-565	Computer server room		
			Existing 36"X84" steel door and frame		
			Provide automatic door bottom	1	5041
			Provide a set of sound insulators	1	CF-12
			Existing curved lever lock, storeroom function		
			Replace cylinder with cylinder provided by MPO	1	
			Existing electric strike to be replaced with bolt detecting electric strike		
			bolt detecting electric strike		2212-RDVC-TE
			Existing door closer		
			Provide RX exit request - Engineer		
			Provide door contact- Engineer		
			Existing card reader - Engineer		
			Provide trenching and patching in gypsum board wall		
132.1	A-565-2	A-565	Computer server room		
			Existing steel roll-up door (75"LX102"H)		
			Provide door contact- Engineer		
			Provide bolt contact - Engineer		
			The door is equipped with manual latches located at the door bottom		
			Provide trenching and patching in gypsum board wall		

133	A-522-1	A-522	Archives		
			Existing double 2X35"X82" steel doors and frame ULC rated		
			Existing curved lever lock on passive door		
			(SPA) storeroom function		
			Replace cylinder with cylinder provided by MPO	1	
			Existing latch on passive door		
			Existing "Folger Adams" electric strike on passive door to be replaced		
			with a bolt detecting electric strike	1	4212-12VDC-FS
			Replace existing poor current conductor with new conductor	1	EPT10-24
			Provide trenching and patching in gypsum board wall		
			Replace existing card reader - Engineer		
			Provide RX exit request device above the door - Engineer		
			Provide two (2) door contacts - Engineer		
			This door is equipped with the magnetic door holder on the floor for		
			of the active door only		
			Provide trenching and patching in gypsum board wall		
134	A-580-1	A-580	Presentation area		
			Existing 36"X84" wood door with glazing and steel frame		
			Replace lever lock, classroom function with lever lock (SPA),		
			storeroom function	1	SPA-ND/0PD-626
			Install cylinder with cylinder provided by MPO	1	
			Provide electric strike with bolt detection	1	4212-12VDC-FS
			Provide cutting of steel frame to accommodate the strike		
			Provide door-closer	1	LCN4040
			Provide card reader - Engineer		
			Provide RX exit request device above the door - Engineer		
			Provide door contact - Engineer		
			Provide trenching and patching in gypsum board wall		
135	A-579-1	A-579	Training room		
			Existing 36"X84" wood door with glazing and steel frame		
			Replace lever lock, classroom function with lever lock (SPA),		
			storeroom function	1	SPA-ND/0PD-626
			Install cylinder with cylinder provided by MPO	1	
			Provide electric strike with bolt detection	1	4212-12VDC-FS
			Provide cutting of steel frame to accommodate the strike		
			Provide door-closer	1	LCN4040
			Provide card reader - Engineer		
			Provide RX exit request device above the door - Engineer		
			Provide door contact - Engineer		
			Provide trenching and patching in gypsum board wall		
136	A-581-2	A-581	Corridor		
			Existing inverted double wood doors 2X±34"X±82" with glazing		
			and steel frame		
			Existing panic locks with electric 3-15 solenoids for automatic		
			retraction of bolt upon activation of door opener		
			Existing double door opener with wall-mounted push-button operators		
			located on both sides of the doors		
			Replace push-button activators with card reader activation		
			on the side of A-583 - Engineer		
			Provide yellow/black striped strip on the upper frame		
			over both sides of the doors		
137	A-575-1	A-575	Locker room - Women		
			Existing wood door 36"X84" glazed, with steel frame		
			Existing lever lock, classroom function		
			Install cylinder provided by MPO	1	
138	A-574-1	A-574	Locker room - Men		
			Existing wood door 36"X84" glazed, with steel frame		
			Existing lever lock, classroom function		
			Install cylinder provided by MPO	1	
139	A-582-1	A-582	Conference room		
			Existing wood door 36"X84" glazed, with steel frame		
			Existing curved lever lock, classroom function		

			Install cylinder provided by MPO	1	
			Existing door closer		
			Provide door contact - Engineer		
			Provide trenching and patching in gypsum board wall		
140	A-582A-1	A-582A	Conference room		
			Existing wood door 36"X84" glazed, with steel frame		
			Existing curved lever lock, classroom function		
			Install cylinder provided by MPO	1	
			Existing door closer		
			Provide door contact - Engineer		
			Provide trenching and patching in gypsum board wall		
141	A-526-1	A-526	Mechanical/Electrical room entry		
			Existing double steel door and frame 2X35"X82" ULC rated		
			Existing button type lock, storeroom function		
			Replace cylinder with cylinder provided by MPO	1	
142	A-573-1	A-573	Exercise room		
			Existing wood door 36 X 84 with glazing and steel frame		
			Existing curved lever lock, classroom function		
			Install cylinder provided by MPO	1	
143	A-571-5	A-571	Shipping and Receiving		
			Replace existing double steel door and frame 2X36"X84" ULC 1,5 hrs		
			Provide double adjustable door bottom with fire resistant rating of 100A-626	1	
			Existing deadlock type lock (not compliant)		
			Provide electrified panic lock with high shaft only on		
			each door	2	EL9847-EO-F-WDC-626
			Provide two (2) current conductors	2	EPT10-24
			Install cylinder provided by MPO on each lock	2	
			Existing salvaged door opener to be reinstalled with presence detector		
			located on the side of room A-571		
			Provide card reader on corridor side - Engineer		
			Provide two (2) actuator buttons ; one in room A-571		
			and the other in room A572 - Engineer		
			Provide trenching and patching in gypsum board wall		
144	A-572-1	A-572	Office		
			Existing wood door 35"X82" with steel frame		
			Existing button type lock, office function		
			Replace cylinder with cylinder provided by MPO	1	
145	A-567-2	A-567	CAI Warehouse		
			Existing double steel door and frame 2X36"X84" ULC rated 1,5 hrs		
			Replace existing curved lever lock, classroom function		
			with lever lock (SPA) hallway function	1	SPA ND105-626
			Provide two (2) deadlock, one with the key on the A567 side and the other		
			on the A-571 side of the active door	2	B864P
			Install two (2) cylinders provided by MPO	2	
			Provide one (1) wall mounted magnetic door holder	1	SEM7840 24V-689
			Provide trenching and patching in gypsum board wall		
146	A-564A-1	A-564A	Storeroom (mailroom)		
			Existing wood door 36"X84" with steel frame		
			Replace existing lever lock, classroom function with		
			lever lock (SPA) storeroom function	1	SPA-ND80DD
			Install cylinder provided by MPO	1	
147	A564-1	A-564	Mail cubicle		
			Existing wood door 36 X 84 with steel frame		
			Replace existing lever lock, classroom function with		
			lever lock (SPA) storeroom function	1	SPA-ND80PD
			Install cylinder provided by MPO	1	
			Provide a wall mounted doorbell - Engineer		
148	A-567-1	A-567	CAI Warehouse		
			Existing double door 18" et 36"X84" was modified during renovation		
			work		

			Existing curved lever lock, storeroom function		
			Replace cylinder with cylinder provided by PMO	1	
			Condition of door modified in 2019 to be confirmed		
149	A-566-1	A-566	CSTI		
			Existing double wood doors 35"et 17"X82" with steel frame		
			Existing button type lock, office function		
			Replace cylinder with cylinder provided by PMO	1	
			Provide two (2) door contacts - Engineer		
			Provide card reader - Engineer		
			Provide trenching and patching in gypsum board wall		
150	A-513-1	A-513	Meeting room		
			Existing wood door 35"X82" with steel frame		
			Replace existing button type lock, office function with		
			lever lock, classroom function	1	SPA ND70 PD-626
			Replace cylinder with cylinder provided by PMO	1	
151	A-512-1	A-512	Meeting room		
			Existing wood door 35"X82" with steel frame		
			Replace existing button type lock, office function with		
			lever lock, classroom function	1	SPA ND70PD-626
			Replace cylinder with cylinder provided by PMO	1	
152	A-511-1	A-511	Meeting room		
			Existing wood door 35"X82" with steel frame		
			Replace existing button type lock, office function with		
			lever lock, classroom function	1	SPA ND70PD-626
			Replace cylinder with cylinder provided by PMO	1	
153	A-505-1	A-505	Conference room		
			Existing wood door 35"X82" with steel frame, laterally glazed		
			Existing angular level lock, office function to be replaced with		
			level lock (SPA) storeroom function		SPA-ND80PD-626
			Install cylinder provided by MPO	1	
			Provide electric strike with bolt detection		4212-12VDC FSE
			Provide cutting of frame on façade to accommodate strike		
			Provide door closer	1	LCN1460 DEL
			Provide card reader - Engineer		
			Provide exit request device above door - Engineer		
			Provide door contact - Engineer		
			Provide trenching and patching in gypsum board wall		
154	A-504-1	A-504	Conference room		
			Existing wood door 35"X82" with steel frame, laterally glazed		
			Existing angular level lock, office function to be replaced with		
			level lock (SPA) storeroom function		SPA-ND80PD-626
			Install cylinder provided by MPO	1	
			Provide electric strike with bolt detection		4212-12VDC FSE
			Provide cutting of frame on façade to accommodate strike		
			Provide door closer		LCN1460 DEL
			Provide card reader - Engineer		
			Provide exit request device above door - Engineer		
			Provide door contact - Engineer		
			Provide trenching and patching in gypsum board wall		
155	A-502-1	A-502	Conference room		
			Existing wood door 35"X82" with steel frame, laterally glazed		
			Existing angular level lock, office function to be replaced with		
			level lock (SPA) storeroom function		SPA-ND80PD-626
			Install cylinder provided by MPO	1	
			Provide electric strike with bolt detection		4212-12VDC FSE
			Provide cutting of frame on façade to accommodate strike		
			Provide door closer		LCN1460 DEL
			Provide card reader - Engineer		
			Provide exit request device above door - Engineer		
			Provide door contact - Engineer		
			Provide trenching and patching in gypsum board wall		

156	A-502-2	A-502	Conference room		
			Existing wood door 35"X82" with steel frame, laterally glazed		
			Replace existing lock with single knob lock	1	JUP AL25D
			on side of room A-502		
			Provide door closer	1	LCN1460
			Provide door contact - Engineer		
			Provide trenching and patching in gypsum board wall		
157	A-E5-1	AE5	Stairway (level 6)		
			The existing door was relocated during 6th floor renovation work		
			to be validated by survey		
			Existing steel door 35"X82" and frame ULC rated		
			Existing angular level lock, hallway function		
			Existing door closer		
158	A-606-1	A-606	Office		
			Existing wood door 35"X82" with steel frame		
			Existing button type lock, office function		
			Replace cylinder with cylinder provided by PMO	1	
159	A-607-1	A-607	Office		
			Existing wood door 35"X82" with steel frame		
			Existing button type lock, office function		
			Replace cylinder with cylinder provided by PMO	1	
160	A-608-1	A-608	Office		
			Existing wood door 35"X82" with steel frame		
			Existing button type lock, office function		
			Replace cylinder with cylinder provided by PMO	1	
161	A-609-1	A-609	Office		
			Existing wood door 35"X82" with steel frame		
			Existing button type lock, office function		
			Replace cylinder with cylinder provided by PMO	1	
162	A-610-1	A-610	Office		
			Existing wood door 35"X82" with steel frame		
			Existing button type lock, office function		
			Replace cylinder with cylinder provided by PMO	1	
163	A-611-1	A-611	This room is an open space without a door		
164	A-612-1	A-612	Office		
			Existing wood door 35"X82" with steel frame		
			Existing button type lock, office function		
			Replace cylinder with cylinder provided by PMO	1	
165	A-626-1	A-626	Telecommunications		
			Existing double wood door 2 X19"X82" with steel frame		
			Existing button type lock, storeroom function on passive door		
			and latch on passive door		
			Replace cylinder with cylinder provided by PMO	1	
166	A-604-1	A-604	Janitor		
			Existing double wood door 2 X24"X82" with steel frame		
			Existing button type lock, storeroom function on passive door		
			and latch on passive door		
			Replace cylinder with cylinder provided by PMO	1	
167	A-614-1	A-614	Men's washroom		
			Existing wood door 35"X82" with steel frame		
			Existing deadlock		
			Replace cylinder with cylinder provided by PMO	1	
168	A-615-1	A-615	Women's Washroom		
			Existing wood door 35"X82" with steel frame		
			Existing deadlock		
			Replace cylinder with cylinder provided by PMO	1	

169	A-616-1	A-616	Office		
			Existing wood door 35"X82" with steel frame		
			Existing button type lock, office function		
			Replace cylinder with cylinder provided by PMO	1	
170	A-617-1	A-617	Archives		
			Existing wood door 35"X82" with steel frame		
			Existing button type lock, storeroom function		
			Replace cylinder with cylinder provided by PMO	1	
171	A-TT-2	A-6	Roof hatch		
			Replace existing padlock with cylindered padlock	1	PL330-50
			Install cylinder provided by MPO in padlock	1	
172	A-AM5-1	AM-5	Mechanical room		
			Existing double steel doors 2X35"X82" and frame ULC rated		
			Existing button type lock, storeroom function on active door ;		
			two (2) countersunk latches on passive door		
			Replace cylinder with cylinder provided by PMO	1	
173	A-AM4-1	AM-4	Elevator mechanical room		
			Existing steel door 35"X82" and frame ULC rated		
			Existing button type lock, storeroom function		
			Replace cylinder with cylinder provided by PMO	1	
			Existing door closer		
174	A-AM3-1	AM-3	Electrical room		
			Existing steel door 35"X82" and frame ULC rated		
			Existing button type lock, storeroom function		
			Replace cylinder with cylinder provided by PMO	1	
			Existing door closer		
175	A-AM2-1	AM-2	Electrical room		
			Existing steel door 35"X82" and frame ULC rated		
			Existing button type lock, storeroom function		
			Replace cylinder with cylinder provided by PMO	1	
			Existing door closer		
176	A-E4-1		Stairway #4		
			Existing steel door 35"X82" and frame ULC rated		
			Existing angular lever lock, storeroom function		
			Replace cylinder with cylinder provided by PMO	1	
			Existing door closer		
177	B-500-1	B-500	Walkway access to B wing		
			Existing double glass door 2x36"x94" with steel frame ULC rated		
			This double shall be equipped with a door opener as it is located in an		
			obstacle free pathway and at the entrance to a "quasi"-suite		
			greater than 500 sq. m.		
			Double door-opener device shall be recess mounted in gypsum board	1	Swingmaster 900
			above the doors.		
			Existing angular lever lock on the active door, classroom function to be		
			replaced by an electrified panic lock		
			equipped with an RX exit request device, the lock shall activate the door ope	1	EL 9847EO-F-WDC-626
			The passive door is equipped with an automatic latch that releases with		
			opening of the active door.		
			Also replace the panic lock equipped with an exit request	1	EL 9847E0-F-WDL-626
			and only high shaft		
			Provide current conductors for each door	1	EPT10-24
			Install cylinder provided by MPO for each lock	2	
			Provide card reader on the walkway side only - Engineer		
			Provide handicapped activation button on the hallway side of B wing		
			Provide two (2) door contacts - Engineer		
			Provide trenching and patching in gypsum board wall and ceiling		
			Provide drilling in each door		
191	B-500-2	B-500	Walkway access to B wing		
			Existing double glass door 2x36"x94" with steel frame ULC rated		
			This double door shall be equipped with electro magnetic 3-5 solenoids		

			that will limit access except in emergency situations (fire-alarm) or	2	
			by way of the card reader		
			The existing countersunk lock and latch are to be kept on both the		
			active and passive doors.		
			Replace cylinder with cylinder provided by MPO	2	
			Provide card readers on both sides of the door to deactivate electro		
			magnets momentarily and allow door to open - Engineer		
			Provide two (2) door contacts - Engineer		
			Provide trenching and patching in gypsum board wall and ceiling		

1 GENERAL

1.01 RELATED REQUIREMENTS

.1 Section 06 08 99 – Rough carpentry/Minor Works

.2 Section 09 91 00.08 Painting/Minor Works

1.02 NORMES DE RÉFÉRENCE

.1 ASTM International (ASTM)

.1 ASTM C 1396/C 1396M-[09a], Standard Specification for Gypsum Wallboard.

.2 ASTM C 475/C 475M-[02(2007)], Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.

.3 ASTM C 514-[04(2009)e1], Standard Specification for Nails for the Application of Gypsum Board.

.4 ASTM C 645-[09a], Standard Specification for Non-structural Steel Framing Members.

.5 ASTM C 754-[09a], Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products.

.6 ASTM C 840-[08], Standard Specification for Application and Finishing of Gypsum Board.

.7 ASTM C 954-[10], Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs from 0.033 in. (0.84 mm) to 0.122 in. (2.84 mm) in Thickness.

.8 ASTM C 1002-[07], Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.

.9 ASTM C 1047-[10], Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base.

.10 ASTM C 1178/C 1178M-[08], Standard Specification for Glass Mat Water-Resistant Gypsum Backing Board.

.2 South Coast Air Quality Management District (SCAQMD), California State, Regulation XI. Source Specific Standards

.1 SCAQMD Rule 1168-[A2005], Adhesives and Sealants Applications.

.3 Underwriters Laboratories of Canada (ULC)

.1 CAN/ULC-S102-[07], Standard Method of Test – Surface Burning Characteristics of Building Materials and Assemblies.

1.03 SUBMITTALS FOR APPROVAL/INFORMATION

.1 Product data
- .1 Submit required data sheets as well as manufacturer's literature and written instructions concerning gypsum board assemblies. The product data shall indicate the physical characteristics of the products, performance criteria, dimensions, limits and finishes.

.2 Samples
- .1 Submit samples of each proposed product for review and approval.
- .2 Approved samples shall be returned to the Contractor who shall incorporate them in the work.

.3 Test reports and evaluations: submit test reports produced by recognized, independent testing laboratories, certifying that the gypsum board assemblies comply with specified requirements as concerns sound transmission and degree of fire resistance.

1.04 DELIVERY, STORAGE AND HANDLING

.1 Deliver, store and handle materials in accordance with manufacturer's written instructions.

.2 Delivery and reception: deliver materials in original packaging bearing the manufacturer's label indicating manufacturer's name and address.

.3 Storage and handling
- .1 Store gypsum board off the ground, in clean, dry and well-ventilated enclosure, in accordance with manufacturer's recommendations.
- .2 Store materials inside, level, and covered using appropriate methods. Keep dry. Protect from weather, other elements and damage from construction operations and other causes in accordance with manufacturer's written instructions.
- .3 Handle gypsum boards to prevent damage to edges, ends or surfaces. Protect metal accessories and trim from being bent or damaged.
- .4 Store gypsum board to protect from marking, scratches and gouges.
- .5 Replace any defective or damaged materials with new materials.

2 PRODUCTS

2.01 MATÉRIAUX/MATÉRIELS

.1 Performance requirements
  .1 Walls/partitions: non-combustible construction offering a degree of fire resistance.
  .

.2 Metal non-load bearing framing
  .1 Non-load bearing channel metal stud framing: to ASTM C 645, 0.53 mm thick hot dipped galvanized and laminate steel sheet, designed for screw attachment of gypsum board. Knock-out service holes at 460 mm centers for passage of utilities piping.
  .2 Floor and ceiling tracks: to ASTM C 645, in widths to suit stud sizes, 32 mm flange height.
  .3 Metal stiffeners: 19 mm x 1.4 mm thick cold rolled steel profiles, coated with anticorrosive coating.

.3 Gypsum Board
  .1 Regular Gypsum Board: in accordance with ASTM C 1396/C 1396M, regular type, of required thickness and Type X, of required thickness, de 1200 mm wide and of greatest practical length, with squared edges at extremities and beveled edges at sides.
  .2 Metal furring runners, hangers, tie wires, inserts, and anchors.
  .3 Drywall furring channels: 0.5 mm core thickness galvanized steel channels for screw attachment of gypsum board.
  .4 Steel drill screws: in accordance with ASTM C 514.
  .5 Casing beads, corner beads, control joints and edge trim: to ASTM C 1047, galvanized metal 0.5 mm base thickness, perforated flanges, one-piece length per location.

2.02 ACCESSORIES

.1 Acoustic insulation: of type recommended by manufacturer, to achieve required sound transmission indicator.

.2 Sealants in accordance with Section 07 92 00 – Joint Sealants.

3 EXECUTION

3.01 EXAMINATON

.1 Verification of conditions: prior to installation of gypsum board assemblies, ensure the condition of surfaces/substrates previously installed under other sections or contracts is acceptable and permits the execution of the work in accordance with manufacturer’s written instructions.
  .1 Perform a visual inspection of the surfaces/substrates accompanied by the Departmental Representative.

.2 Immediately inform the Departmental Representative immediately of any unacceptable condition detected.

.3 Begin the work only after unacceptable conditions have been remedied.

3.02 ERECTION OF FRAMING

.1 Unless indicated otherwise, install framing members to permit installation of gypsum board using screws, in accordance with ASTM C 754.

3.03 GYPSUM BOARD AND ACCESSORIES INSTALLATION

.1 Execute application and finishing of gypsum board in accordance with ASTM C 840 except where specified otherwise.

.2 Erect hangers and runner channels for suspended gypsum board ceilings in accordance with ASTM C 840 except where specified otherwise.

.3 Install wall furring for affixing gypsum board wall finishes.

.4 Install wall furring for gypsum board wall finishes in accordance with ASTM C 840, except where specified otherwise

.5 Install acoustic insulation in soundproof walls, in a manner that will achieve soundproofing that corresponds with that of the test mock-up.

.6 Erect gypsum boards either horizontally or vertically, whichever manner will reduce the number of joints to a minimum. Stagger end joints by at least 250 mm.

3.04 APPLICATION

.1 Do not apply gypsum board until bucks, anchors, blocking, sound attenuation, electrical and mechanical work have been approved.

.2 Apply one (1) layers of gypsum board to furring or to metal framing with screw anchors. Maximum spacing of screws 300 mm on centre.

3.05 INSTALLATION

.1 Erect accessories straight, plumb or level, rigid and at proper plane. Use full length pieces where practical. Make joints tight, accurately aligned and rigidly secured. Mitre and fit corners accurately, free from rough edges. Secure at 150 mm on centre using contact adhesive for full length.

.2 Install casing beads where gypsum board butts against surfaces having no trim concealing junction and where indicated. Seal joints with sealant.

.3 Finish face panel joints and internal angles with joint system consisting of joint compound, joint tape and taping compound installed according to manufacturer's directions and feathered out onto panel faces.

.4 Finish corner beads, control joints and trim as required with two (2) coats of joint compound and one coat of taping compound, feathered out onto panel faces.

.5 Fill screw head depressions with joint and taping compounds to bring flush with adjacent surface of gypsum board so as to be invisible after surface finish is completed.

.6 Completed installation to be smooth, level or plumb, free from waves and other defects and ready for surface finish.

3.06 CLEANING

.1 Cleaning during the course of work: carry out cleaning tasks.
  .1 Leave the premises in clean condition at the end of each workday.

.2 Final cleaning: remove surplus materials, waste, tools and equipment from the site.

3.07 PROTECTION

.1 Protect installed materials and elements from all damage during construction.

.2 Repair damages caused to materials and adjacent finishes by the gypsum board installation work.

END OF SECTION

1 GENERAL

1.01 RELATED REQUIREMENTS

.1 Section 07 92 00 – Joint Sealants

.2 Section 08 11 00 – Steel Doors and Frames

1.02 REFERENCES

.1 Green Seal Environmental Standards (GS)
  .1 GS-11-[2008, 2nd Edition], Paints and Coatings.

.2 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
  .1 Material Safety Data Sheets (MSDS).

.3 The Master Painters Institute (MPI)
  .1 Architectural Painting Specification Manual- [current edition].
  .2 Maintenance Repainting Manual - [current edition].

.4 Canadian National Research Council (CNRC)
  .1 National Building Code - Canada [2015] (NBC).

.5 South Coast Air Quality Management District (SCAQMD), California State, Regulation XI. Source Specific Standards
  .1 SCAQMD Rule 1113-[A2007], Architectural Coatings.

1.03 SUBMITTALs FOR APPROVAL/INFORMATION

.1 Submit required documents/samples.

.2 Product Data
  .1 Submit required data sheets as well as manufacturer’s literature and written instructions concerning gypsum board assemblies. The product data shall indicate the physical characteristics of the products, performance criteria, dimensions, limits and finishes.
  .2 Submit two (2) copies of compliant Workplace Hazardous Materials Information System (WHMIS) Material Safety Data Sheets (MSDS).

.3 Certificates: submit documents signed by the manufacturer certifying that the products and materials comply with specified requirements as concerns physical characteristics and performance criteria.

1.04 DELIVERY, STORAGE AND HANDLING

.1 Deliver, store and handle products and materials in accordance with manufacturer’s written instructions.

.2 Delivery and reception: deliver materials in original packaging bearing the manufacturer’s label indicating manufacturer’s name and address.

.3 Storage and handling
.1 Provide and maintain dry, temperature controlled, secure storage.
.2 Store products and materials away from heat generating devices.
.3 Store products and materials in well-ventilated area with temperature range within that recommended by the manufacturer.

.4 Fire safety requirements
.1 Provide one 9 kg, Type ABC dry chemical fire extinguisher adjacent to storage area.
.2 Store oily rags, waste products, empty containers and materials subject to spontaneous combustion in ULC approved, sealed containers and remove from site on a daily basis.
.3 Handle, store, use and dispose of flammable and combustible materials in accordance with National Fire Code of Canada requirements.

1.05 SITE CONDITIONS

.1 Heating, ventilation and lighting
.1 Coordinate use of existing ventilation system with Departmental Representative and ensure its operation during and after application of paint as required.
.2 Provide minimum lighting level of 323 Lux on surfaces to be painted.

.2 Temperature, Humidity and Substrate Moisture Content Levels
.1 Apply paint when ambient temperatures and substrate surface temperatures at the site can be maintained within the required limits as specified by the MPI and the manufacturer, for the duration of paint application work and during the curing period.
.2 Perform test patches on plaster-coated, concrete and masonry surfaces in order to determine their level of alkalinity.
.3 Apply paint to adequately prepared surfaces and to surfaces within moisture limits specified by the manufacturer.

.3 Additional application requirements
.1 Apply paint finish in areas where dust is no longer being generated by related construction operations or when wind or ventilation conditions are such that airborne particles will not affect quality of finished surface.
.2 Apply paint in occupied facilities during silent hours only. Schedule operations to approval of Departmental Representative such that painted surfaces will have dried and cured sufficiently before occupants are affected.

2 PRODUCTS

2.01 MATERIALS

.1 Provide paint materials for selected paint systems from single manufacturer.

.2 Comply with to latest MPI requirements for painting work including preparation and priming.

.3 Materials (primers, paints, coatings, varnishes, stains, lacquers, fillers, thinners, solvents, etc.) in accordance with MPI Architectural Painting Specification Manual "Approved Product" listing.
.1 Use MPI listed materials having minimum E2, rating where indoor air quality (odour) requirements exist.

.4 Colours
.1 Submit schedule of proposed colours to the Departmental Representative for review.
.2 The colour schedule shall be established from manufacturer’s existing colour range.

.5 Mixing and Colouring
.1 Carry out colouring of paint products prior to deliver to the site, in accordance with Manufacturer’s written instructions. Colour mixing shall be approved beforehand by the Departmental Representative.
.2 A certain quantity of thinner may, as required, be added to paint, in accordance with Manufacturer’s recommendations.
.1 Kerosene or any similar organic solvents may not be used to dilute water-based paints.
.3 Dilute paint to be applied with paint gun in accordance with Manufacturer’s written instructions.
.4 Prior to and during application of paint, carefully shake paint in its container to break down any lumping materials, to ensure thorough dispersion of pigments and to preserve uniformity of colour and sheen of applied paint.

.6 Gloss (sheen)
.1 The level of gloss in newly painted surfaces shall be equivalent to that of existing painted surfaces.

.7 Paint – interior refurbishing work
.1 Galvanized metal – in intense traffic areas/high contact areas (doors, frames, bannisters, handrails, etc.)
.1 RIN 5.3C – Alkyd resin product, finish as existing.
.2 Gypsum board and coatings – gypsum board wall assemblies, drywalls, « Sheetrock » panels, etc.
.1 RIN 9.2A – Latex product, finish as existing.
.2 RIN 9.2C – Alkyd Resin product, finish as existing.

3 EXECUTION

3.01 GENERAL

.1 Compliance: comply with manufacturer's written recommendations and specifications, including product technical bulletins, handling, storage and installation instructions, and data sheet.

.2 Unless specified otherwise, prepare interior surfaces and execute painting work in accordance with requirements of MPI Architectural Painting Specifications Manual and MPI - Maintenance Repainting Manual.

3.02 INSPECTION

.1 Examine existing substrates for problems related to proper and complete preparation of surfaces to be painted. Immediately report any damages, defects, unsatisfactory or unfavourable conditions detected to Departmental Representative.

.2 Conduct moisture testing of surfaces to be painted using properly calibrated electronic moisture meter, except test concrete floors for moisture using simple "cover patch test". Do not proceed with work until conditions fall within acceptable range as recommended by manufacturer.

3.03 PREPARATION

.1 Protection of existing site work
- .1 Protect existing building surfaces and adjacent structures from paint spatters, markings and other damage by suitable non-staining covers or masking. If damaged, clean and restore surfaces as directed by Departmental Representative.
- .2 Protect items that are permanently attached such as Fire Labels on doors and frames.
- .3 Protect factory finished products and equipment.

.2 Surface preparation
- .1 Remove electrical cover plates, light fixtures, surface hardware on doors, bath accessories and other surface mounted equipment, fittings and fastenings prior to undertaking painting operations. Identify and store items in secure location and reinstall after painting is completed.
- .2 Move and cover furniture and portable equipment as necessary to carry out painting operations. Replace as painting operations progress.
- .3 Place "WET PAINT" signs in occupied areas as painting operations progress. Signs to approval of Departmental Representative.
- .4 Clean and prepare interior surfaces in accordance with requirements specified in MPI - Architectural Painting Specification Manual and MPI - Maintenance Repainting Manual and Manufacturer’s recommendations.
- .5 Prevent contamination of cleaned surfaces by salts, acids, alkalis, other corrosive chemicals, grease, oil and solvents before prime coat is applied and between applications of remaining coats. Apply primer, paint, or pre-treatment as soon as possible after cleaning and before deterioration occurs.

.6 Where possible, prime non-exposed surfaces of new wood surfaces before installation. Use same primers as specified for exposed surfaces.
  .1 Apply vinyl sealer to MPI #36 over knots, pitch, sap and resinous areas.
  .2 Apply wood filler to nail holes and cracks.
  .3 Tint filler to match stains for stained woodwork.
.7 Sand and dust between coats as required to provide adequate adhesion for next coat and to remove defects visible from a distance up to 1000 mm.
.8 Clean metal surfaces to be painted by removing rust, loose mill scale, welding slag, dirt, oil, grease and other foreign substances in accordance with MPI requirements.
.9 Touch up of shop primers with primer as specified.

3.04 APPLICATION

.1 Do not apply paint until prepared surfaces have been approved by the Departmental Representative.

.2 Method of application to be approved by Departmental Representative.
  .1 Apply product in accordance with manufacturer’s recommendations.

.3 Apply coats of paint continuous film of uniform thickness.
  .1 Repaint thin spots or bare areas before next coat of paint is applied.

.4 Allow surfaces to dry and properly cure after cleaning and between subsequent coats for minimum time period as recommended by manufacturer.

.5 Sand and dust between coats to remove visible defects.

.6 Finish surfaces both above and below sight lines as specified for surrounding surfaces, including such surfaces as tops of interior cupboards and cabinets and projecting ledges.

.7 Finish top, bottom, edges and cut-outs of doors after fitting as specified for door surfaces, after they have had final adjustment.

.8 Mechanical/electrical equipment
  .1 Paint finished area exposed conduits, piping, hangers, ductwork and other mechanical and electrical equipment with colour and finish to match adjacent surfaces, except if otherwise indicated.
  .2 Do not paint over nameplates.
  .3 Keep sprinkler heads free of paint.
  .4 Paint fire protection piping red.
  .5 Apply red enamel paint on fire alarm system switches and those of the emergency lighting system.
  .6 Paint all natural gas piping yellow.

.7 Paint both sides and edges of backboards for telephone and electrical equipment before installation.
.1 Leave equipment in original finish except for touch-up as required, and paint conduits, mounting accessories and other unfinished items.

3.05 CLEANING

.1 Cleaning during the course of work: carry out cleaning tasks.
.1 Leave premises in clean condition at the end of each workday.

.2 Final cleaning: remove surplus materials, waste, tools and equipment from the site.

END OF SECTION

1 GENERAL

1.01 RELATED REQUIREMENTS

.1 Section 09 91 00.08 Painting for Minor Works.

1.02 TRANSPORTATION, STORAGE AND HANDLING

.1 Transport, handle and store the equipment and materials supplied the Owner.

.2 Storage and handling
- .1 Store materials off the ground, inside, in a dry, clean and well-ventilated enclosure in accordance with manufacturer's recommendations.
- .2 Store designated materials in a manner to protect them from scratches, marks and gouges.

2 PRODUCTS

2.01 MATERIAL AND EQUIPMENT

.1 All signage materials shall be provided by the Departmental Representative.

2.02 WALL PLATES

.1 Wall plates shall be provided by the Departmental Representative.

2.03 DOOR PLATES

.1 All door plates shall be provided by the Departmental Representative.

3 EXECUTION

3.01 INSPECTION

.1 Examination of existing conditions : prior to installation of signage, ensure the condition of surfaces to receive the signage that were provided by the work of other Sections or contracts is acceptable and allows for installation of signage in accordance with manufacturer's written instructions.
- .1 Carry out a visual inspection of the surfaces/supports in the presence of the Departmental Representative.
- .2 Immediately notify the Departmental Representative of any inacceptable conditions detected.
- .3 Commence installation work only after inacceptable conditions have been remedied.

3.02 INSTALLATION

.1 Manufacturer's instructions – compliance: comply with manufacturer' written requirements, recommendations and specifications, including all available technical bulletins, maintenance, handling and storage as well as product implementation instructions, and to data sheets.

.2 Install and secure signage plumb and true, at heights as indicated by the Departmental Representative.

.3 Comply with manufacturer's installation instructions and as indicated on approved Shop Drawings.
- .1 Mechanical fasteners and methods of fastening shall be provided by the Departmental Representative.

.5 Adhesive fastening
- .1 Use adhesive foam tape in accordance with manufacturers' instructions to affix the plates and prevent them from moving around.
- .2 Adhesive tape should not be applied more than 1.6 mm from the edges of the plate.

3.03 CLEANING

.1 Cleaning during the course of work: execute cleaning work.
- .1 Leave the premises in clean condition at the end of each workday.

.2 Final cleaning: remove surplus materials and equipment, waste and tools from the Site.
- .1 Once work is completed, signage plates, panels and other devices shall be left in good repair.
- .2 Remove accumulated dirt from inside the signage housings.
- .3 Repair all damaged finishes.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

.1 The current section applies to the following divisions :

1. Division 26 : Electricity;
2. Division 28 : Security and electronic protections;
3. Annex 1 : Identification sheet and shop drawings list;

.2 The following related documents apply the the current section :

4. The specification sections of Division 01;
5. The architecture and/or Ministerial Representative general documents related to waste management, worki schedule, allowed time for drilling, shutdowns, Ministerial Representative and/or tenant constraints, etc… The contractor shall include in his tender price, all material, labor, etc.. of requirements related to these documents.
6. General conditions of contract, including General clauses and Specific clauses.

1.2 REFERENCE STANDARDS

.1 The applicable codes and standards are part of contractual documents. Construction shall meet or exceed standard requirements, codes or other listed documents.

.2 Unless otherwise specified, perform work in accordance with Quebec construction Code and any other federal, provincial or municipal code in its current edition.

.3 The whole installation shall meet the Quebec Construction Code, Chapter V, electricity (Canadian Electrical Code, first part), CSA C22.1-18, and the National Building Code - Canada 2015.

.1 CSA Group

.1 CSA C22.1-18, Canadian Electrical Code, Part 1 (22nd Edition), Safety Standard for Electrical Installations.

.2 CSA-Z462-F12, Workplace Electrical Safety.

.3 CAN/CSA-C22.3 No.1-10, Overhead Systems.

.4 CAN3-C235-83(R2010), Preferred Voltage Levels for AC Systems, 0 to 50,000 V.

1.3 DEFINITIONS

.1 Electrical and electronic terms: unless otherwise specified or indicated, terms used in these specifications, and on drawings, are those defined by IEEE SP1122.

.2 In this project, the word «contractor» means the specialized contractor acting as a subcontractor to the general contractor.

.3 The contractors listed in the table of content of the current document shall provide their tender price to the general contractor and therefore be under his responsibility.

.4 Otherwise, the contractor shall act as a subcontractor to another contractor according to the indications found in the table of content and therefore, provide his price to the latter.

.5 Despite the organisation described in the table of content, the general contractor is responsible to ensure receiving, from all contractors, complete bids covering all required work to be performed. Any work not included in a contractor's bid shall be performed by the general contractor to his own expense. The engineer does not assume any responsibility for incomplete, redundant or missing bids.

1.4 PLANS AND SPECIFICATIONS

.1 In case of contradictions between plans and specification documents, the engineer shall be informed during the preparation of the quote. If an addendum can not be published to fix the issue, the bidder shall use the most expensive solution because the engineer keeps the right to choose the most appropriate solution even if this solution is the most expensive one.

.2 Any modification to the plans and specification documents, during the bid period, is provided in writing. Neither the Ministerial Representative or the engineer can be held accountable for information being provided verbally.

1.5 SOUMISSION ET TAXES

.1 The contractor shall include in his bid all applicable taxes to material, labor and services required to perform the work.

.2 The contractor does not benefit from tax credits the Ministerial Representative may receive.

1.6 PERMIS, CERTIFICATS ET LICENCES

.1 In order to present a bid and during the entire work period, the contractor shall hold a valid license, in accordance to the building law or any applicable law. If this license expires during the owrk period, the contractor shall provide proof of renewal.

1.7 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit in accordance with this section.

.2 Lists of shop drawings are presented in Appendix 1 of the specifications.

.3 Each drawing must be accompanied by a presentation page containing the name of the project, the discipline and the item number corresponding to our list of workshop drawings and the description thereof. See Annex 1.

.4 Each contractor must validate, at the very start of the mandate, the delivery time for each device or equipment that may affect the work schedule. Priority must be given to ordering equipment requiring a longer delivery time in order to have the shop drawings approved by the Engineer as soon as possible. A delay in this regard cannot constitute sufficient reason to obtain an extension of the time limit for carrying out the work and no request to

this effect is accepted. The Contractor must allocate, in the planning of his work, a minimum of ten working days for the verification of shop drawings by the Engineer.

.5 Before placing material orders, submit shop drawings by email in "PDF" format to Engineer for verification. Following the analysis, the recommended drawings must be sent to the duly identified general contractor. The Contractor can then order the material submitted and proceed with the work.

.6 Keep a copy of the verified shop drawings and technical files at the work site and ensure that they can always be accessed for reference purposes.

.7 The drawings submitted must be identified for the current project. They must indicate the name of the project, the name of the Engineer, the name and contact details of the Contractor and the manufacturer, the date of preparation and revision and refer to an item number corresponding to the list of drawings d 'workshop. The shop drawings must also indicate the following:

.1 The reference standards as well as the required certificates of conformity, including the approval seal.

.2 Materials and manufacturing details, dimensions, arrangement or configuration, capacities, weights and characteristics of electrical performance.

.3 Details regarding mounting or adjustment.

.4 Detail drawings of pedestals, supports and anchor bolts.

.5 Clearances required to allow operation and maintenance of equipment, such as space required to maneuver access doors.

.6 Wiring diagrams and diagrams showing interconnections with works in other sections (links with adjacent works).

.7 Data specifying the sound power of systems and devices.

.8 Technical details for judging the performance of the equipment submitted, including performance curves.

.9 Wiring diagrams, one-line diagrams and block diagrams.

.10 Accompany the drawings of any diagram, graph, detail, description, sample (if required by the Engineer), making it possible to verify the appearance, quality, performance and durability of the equipment chosen.

.11 Material Safety Data Sheets.

.12 The characteristics indicated on the shop drawings and technical sheets must be expressed in the units used in the plans and specifications.

.13 Shop drawings must be complete and not superficial. Shop drawings that are not correctly identified with the relevant project information (project name, contractor, date, drawing numbers, etc.) will be returned without examination and will be considered rejected.

.8 Pre-check these drawings before submitting them to the Engineer. Corrections or comments made by the Engineer during the analysis of shop drawings do not release the Contractor from the obligation to comply with the requirements of plans and specifications. Before issuing a shop drawing, the Contractor must therefore ensure that all the options prescribed in the plans and specifications are included in the drawings, and that coordination with related trades (piping, ventilation, etc.) was carried out to avoid any conflict on site. The operating voltage of the equipment, the location of the connection point, the dimensions and catalog numbers of the equipment are the sole responsibility of the Contractor and the supplier of the equipment. The Contractor is not relieved of its responsibility for errors, omissions or discrepancies between the drawings submitted and the contractual documents, even if these drawings have been checked by the Engineer.

.9 Clearly notify the Engineer in writing, when submitting the documents, of any deviations from the requirements of the contractual documents and explain the reasons.

.10 All quantities on shop drawings are the responsibility of the electrical contractor and are not to be verified by the Engineer. This includes circuit breakers in the distribution panels.

.11 Changes made to the shop drawings by the Engineer are not intended to vary the contract price. However, if this is the case, notify the Engineer in writing before ordering the equipment.

.12 Distribute copies of drawings submitted only after receipt of the Engineer's written notice of verification.

.13 The Ministerial Representative or the Engineer reserves the right to have replaced, at the Contractor's expense, all materials or products which have not been officially presented in the form of shop drawings and which have not been checked by the Engineer.

.14 If the tenderer wishes to present alternatives, he must enclose with his tender the list of equivalents, indicating for each product the brand, model number, technical characteristics and amount of credit. Any equivalent presented after the entry of tenders will be rejected.

.15 In the event that an equivalent or alternative is accepted, the contractor who has presented this equivalent or alternative is required to make or have performed at his expense all modifications to the original concept required by this equivalent or alternative and this, for all specialties.

.16 The Contractor is required to have his equivalences approved by the Engineer who is the only judge to accept or reject the proposed equivalences. In case of refusal by the Engineer, the Contractor is required to provide the specified materials without additional remuneration, including the costs incurred. This may go as far as defraying the cost of the Engineer’s analysis of these equivalency requests.

1.8 CLOSEOUT SUBMITTALS

.1 Provide verified, commented and corrected shop drawings, including all the information required with shop drawings in this specification and incorporate them into the "Operation and maintenance manual"

.2 Operation and Maintenance Data: submit operation and maintenance data for incorporation into manual.

.1 Provide for each system and principal item of equipment as specified in technical sections for use by operation and maintenance personnel.

.2 Operating instructions to include following:

.1 Wiring diagrams, control diagrams, and control sequence for each principal system and item of equipment.

.2 Start up, proper adjustment, operating, lubrication, and shutdown procedures.

.3 Safety precautions.

.4 Procedures to be followed in event of equipment failure.

.5 Other items of instruction as recommended by manufacturer of each system or item of equipment.

.3 Print or engrave operating instructions and frame under glass or in approved laminated plastic.

.4 Post instructions where directed.

.5 For operating instructions exposed to weather, provide weather-resistant materials or weatherproof enclosures.

.6 Ensure operating instructions will not fade when exposed to sunlight and are secured to prevent easy removal or peeling.

.3 The Operations and Maintenance Manual must include the Contractor's letter of guarantee, dated the date of provisional acceptance of the work.

.4 Approval:

.1 For approval, submit a preliminary draft of the Operations and Maintenance Manual to the Engineer. Unless the Engineer requires it, it is not allowed to submit the files individually.

.2 When required, make the annotated modifications to the Operation and Maintenance Manual and submit it again to the Engineer.

.3 Submit three final copies of the Operations and Maintenance Manual.

1.9 DELIVERY, STORAGE AND HANDLING

.1 Deliver, store and handle materials in accordance with manufacturer’s written instructions.

.2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.

.4 If required, determine, with the Ministerial Representative, access roads to the construction site, storage areas, locations where it is possible to pile-up material and physical location of installations. Storage on the construction site is possible only if the Ministerial Representative autorizes it.

.5 The contractor is responsible for any damage to the building, the site or existing installations during the construction period related to the current project, the latter ending upon final acceptance by the engineer. Consequently, he shall put back in its original state any damged part.

.3 Storage and Handling Requirements:

.1 Store materials indoors and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.

.2 Replace defective or damaged materials with new.

Part 2 Products

2.1 DESIGN REQUIREMENTS

.1 Operating voltages: to CAN3-C235.

.2 Motors, electric heating, control and distribution devices and equipment to operate satisfactorily at 60 Hz within normal operating limits established by above standard.

.1 Equipment to operate in extreme operating conditions established in above standard without damage to equipment.

.3 Language operating requirements: provide identification nameplates and labels for control items in English and French.

.4 Use one nameplate or label for both languages.

2.2 MATERIALS AND EQUIPMENT

.1 Material and equipment to be CSA certified and new. Where CSA certified material and equipment are not available, obtain special approval from authority having jurisdiction before delivery to site and submit such approval as described in PART 1 - ACTION AND INFORMATIONAL SUBMITTALS.

.2 Once the equipment is installed, the labels of the manufacturers and the certification company must be clearly visible and legible.

.3 Factory assemble control panels and component assemblies.

2.3 ELECTRIC MOTORS, EQUIPMENT AND CONTROLS

.1 Verify installation and co-ordination responsibilities related to motors, equipment and controls, as indicated.

2.4 WIRING TERMINATIONS

.1 Ensure lugs, terminals, screws used for termination of wiring are suitable for either copper or aluminum conductors.

2.5 EQUIPMENT IDENTIFICATION

.1 Identify electrical equipment with nameplates as follows:

.1 Nameplates: plastic lamicoid 3 mm thick plastic engraving sheet, black face, white core (for quipement powered on normal), red face and white writing (for those on emergency).

.2 Sizes as follows:

NAMEPLATE SIZES			
Size 1	10 x 50 mm	1 line	3 mm high letters
Size 2	12 x 70 mm	1 line	5 mm high letters
Size 3	12 x 70 mm	2 lines	3 mm high letters
Size 4	20 x 90 mm	1 line	8 mm high letters
Size 5	20 x 90 mm	2 lines	5 mm high letters
Size 6	25 x 100 mm	1 line	12 mm high letters
Size 7	25 x 100 mm	2 lines	6 mm high letters

.2 Labels: embossed plastic labels with 6 mm high letters unless specified otherwise.

.3 Wording on nameplates to be approved by Consultant prior to manufacture.

.4 Allow for minimum of twenty-five (25) letters per nameplate.

.5 Nameplates for terminal cabinets and junction boxes to indicate system and/or voltage characteristics.

.6 Disconnects, starters and contactors: indicate equipment being controlled and voltage.

.7 Terminal cabinets and pull boxes: indicate system and voltage.

.8 Transformers: indicate capacity, primary and secondary voltages.

2.6 WIRING IDENTIFICATION

.1 Identify wiring with permanent indelible identifying markings, numbered coloured plastic tapes, on both ends of phase conductors of feeders and branch circuit wiring.

.2 Maintain phase sequence and colour coding throughout.

.3 Colour coding: to CSA C22.1.

.4 Use colour coded wires in communication cables, matched throughout system.

2.7 CONDUIT AND CABLE IDENTIFICATION

.1 Colour code conduits, boxes and metallic sheathed cables.

.2 Code with plastic tape or paint at points where conduit or cable enters wall, ceiling, or floor, and at 15 m intervals.

.3 Colours: 25 mm wide prime colour and 20 mm wide auxiliary colour.

Type	Prime	Auxiliary
up to 250 V	Yellow	
Telephone	Green	
Other Communication Systems	Green	Blue
Fire Alarm	Red	
Emergency Voice	Red	Blue
Other Security Systems	Red	Yellow

2.8 FINISHES

.1 Shop finish metal enclosure surfaces by application of rust resistant primer inside and outside, and at least two coats of finish enamel.

.1 Clean and touch up shop painted surfaces that were scratched or damaged during shipping and installation; use a paint that matches the original paint.

.2 Clean and prepare hooks, supports, fasteners and other visible fixing devices, not galvanized, to protect them against rust.

Part 3 Execution

3.1 INSTALLATION

.1 Do complete installation in accordance with CSA C22.1 except where specified otherwise.

.2 Do overhead and underground systems in accordance with CAN/CSA-C22.3 No.1 except where specified otherwise.

3.2 NAMEPLATES AND LABELS

.1 Ensure manufacturer's nameplates, CSA labels and identification nameplates are visible and legible after equipment is installed.

3.3 CONDUIT AND CABLE INSTALLATION

.1 If plastic sleeves are used in fire rated walls or floors, remove before conduit installation.

3.4 CO-ORDINATION OF PROTECTIVE DEVICES

.1 Ensure circuit protective devices such as overcurrent trips, relays and fuses are installed to required values and settings.

3.5 FIELD QUALITY CONTROL

.1 Load Balance:

.1 Measure phase current to panelboards with normal loads (lighting) operating at time of acceptance; adjust branch circuit connections as required to obtain best balance of current between phases and record changes.

.2 Measure phase voltages at loads and adjust transformer taps to within 2% of rated voltage of equipment.

.3 Provide upon completion of work, load balance report as directed in PART 1 - ACTION AND INFORMATIONAL SUBMITTALS, phase and neutral currents on panelboards, dry-core transformers and motor control centres, operating under normal load, as well as hour and date on which each load was measured, and voltage at time of test.

.2 Conduct following tests in accordance with Section 01 45 00 - Quality Control.

.1 Circuits originating from branch distribution panels.

.2 Lighting and its control.

.3 Motors, heaters and associated control equipment including sequenced operation of systems where applicable.

.4 Systems: fire alarm.

.5 Insulation resistance testing:

.1 Megger circuits, feeders and equipment up to 350 V with a 500 V instrument.

.2 Megger 350-600 V circuits, feeders and equipment with a 1000 V instrument.

.3 Check resistance to ground before energizing.

.3 Carry out tests in presence of Consultant.

.4 Provide instruments, meters, equipment and personnel required to conduct tests during and at conclusion of project.

.5 Manufacturer's Field Services:

.1 Obtain written report from manufacturer verifying compliance of Work, in handling, installing, applying, protecting and cleaning of product and submit Manufacturer's Field Reports as described in PART 1 - ACTION AND INFORMATIONAL SUBMITTALS.

.2 Provide manufacturer's field services consisting of product use recommendations and periodic site visits for inspection of product installation in accordance with manufacturer's instructions.

3.6 TEMPORARY WORK

.1 In case equipment are not delivered on time, the electrician shall take required temporary measures to accomodate the Ministerial Representative at the date of taking possession of premises. All this temporary work shall be at the electrician expenses.

.2 All the necessary temporary work (water or power supply, etc…) to allow work being done on the construction site along with phasing work shall be part of the contractor bid even if they are not included or shown on the plans. This temporary work includes all material and labor required.

3.7 MODIFICATIONS TO PLANNED WORK

.1 During construction work, modifications may be performed. These modifications shall not affect nor cancel conditions of this contract. If they generate an increase or a reduction of the construction costs, an ajustment shall be made to the contract following a cost estimate.

.2 No modification to the original plans and specification documents can be performed if not requested by writting by the engineer and if a cost estimate has not first been approved by the engineer. If the latter requests a modification that does not generate a cost adjustment, the contractor shall perform the work witout other notice.

.3 In all cases, the engineer shall be made aware and only him can provide autorisation to perform any modification to the plan and specification documents. Any non-compliant work perfomed shall be redone by the contractor to his own expense.

.4 Adjustment costs generated by a modification shall be accepted in writting before work can be performed. These costs shall be broken down by listing material, labor, taxes, profit, administration, etc...

.5 The hourly rate recommended for the different construction trades shall be presented in a spreadsheet at the kick-off meeting on the construction site. These rates shall be base on the ACQ.

.6 All additionnal work are governed by the terms and conditions of the contract.

3.8 WARRANTY

.1 Guarantee the work and equipment proper functionning as described in the contract.

.2 Provide the guarantees stating work was performed with care, using first-quality material and comply with accepted shop drawings.

.3 Unless specified otherwise, the whole work, including all equipment, is guaranteed for a period of one (1) year starting at the work provisory aceptance day.

.4 This guarantee shall cover material and labor costs to fix defective equipment.

.5 Guarantee correction work for any defect found in the exécution of the contract during the garantee period, should this defect be caused by defective material, by work execution or any other cause which falls under the responsibility of the contractor.

.6 Defective work shall be corrected in a prompt manner and at contractor’s expense by replacement, repair or resumption of work depending on context, everything being at the Ministerial Representative’s satisfaction. All damages being done during corrective work (examples : cutting, painting, equipment disassembly or others) are also under the contractor’s expense.

.7 The contractor garantee that corrective work corresponds to operational and performance standards described in the plans and sepcification document.

3.9 SYSTEM STARTUP

.1 Instruct operating personnel in operation, care and maintenance of systems, system equipment and components.

.2 Provide tools, materials and services of qualified instructors by the equipment manufacturer to provide training for operating and maintenance personnel on operation, control, adjustment, diagnosis of problems and maintenance of all systems and equipment, during normal working hours and before final acceptance of the work.

.3 At the end of the work, put the equipment and systems into operation, check their proper functioning, test them, adjust them, ensure that they meet all the requirements of the plans and specifications and submit the reports relating to these activities.

.4 Subsequently, systematically demonstrate in the presence of the Engineer, that all the equipment and all the systems work as expected in the plans and specifications. Following these tests, submit a report to the Ministerial Representative.

.5 Perform tests and provide all required equipment. Notify the Ministerial Representative a week in advance so that they can delegate their operating and maintenance staff to attend the tests, if they wish.

.6 For all specialized system equipment or at the request of the Engineer, the manufacturer must verify the conformity of the installation of his equipment at the site, draw up (if applicable) a list of deficiencies and issue a certificate. once the deficiencies have been corrected. The equipment manufacturer must also be present when starting up on the site and will give all the necessary instructions to the maintenance personnel.

3.10 CLEANING

.1 Progress Cleaning: clean.

.1 Leave Work area clean at end of each day.

.2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment.

.3 Waste Management: separate waste materials for reuse and recycling.

.1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

.1 Sections 26 05 00 et 26 05 21.

1.2 REFERENCE STANDARDS

.1 CSA Group (CSA)

.1 CAN/CSA-C22.2 No.18-[98(R2003)], Outlet Boxes, Conduit Boxes and Fittings.

.2 CAN/CSA-C22.2 No.65-[03(R2008)], Wire Connectors (Tri-National Standard with UL 486A-486B and NMX-J-543-ANCE-03).

.2 National Electrical Manufacturers Association (NEMA)

Part 2 Products

2.1 MATERIALS

.1 Pressure type wire connectors to: CAN/CSA-C22.2 No.65, with current carrying parts of copper sized to fit copper conductors as required.

.2 Fixture type splicing connectors to: CAN/CSA-C22.2 No.65, with current carrying parts of copper sized to fit copper conductors 10 AWG or less.

.3 Bushing stud connectors: to [EEMAC 1Y-2] [NEMA] to consist of:

.1 Connector body and stud clamp for stranded copper conductors.

.2 Clamp for stranded copper conductors.

.3 Bolts for copper conductors.

.4 Sized for conductors as indicated.

.4 Clamps or connectors for armoured cable, TECK cable, flexible conduit, non-metallic sheathed cable as required to: CAN/CSA-C22.2 No.18.

Part 3 Execution

3.1 INSTALLATION

.1 Remove insulation carefully from ends of conductors and cables and:

.1 Apply coat of zinc joint compound on aluminum conductors prior to installation of connectors.

.2 Install mechanical pressure type connectors and tighten screws with appropriate compression tool recommended by manufacturer. Installation shall meet secureness tests in accordance with CAN/CSA-C22.2 No.65.

.3 Install fixture type connectors and tighten to CAN/CSA-C22.2 No.65. Replace insulating cap.

.4 Install bushing stud connectors in accordance with NEMA.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

.1 Sections 26 05 00, 26 05 20, 26 05 29 and 26 05 34.

1.2 REFERENCE STANDARDS

.1 CSA Group (CSA)

.1 CSA C22.1-[06], Canadian Electrical Code, Part 1, 20th Edition.

Part 2 Products

2.1 BUILDING WIRES

.1 Unless otherwise specified in the plans, the use of NUAL aluminum alloy conductors is not permitted.

.2 Conductors: stranded for 10 AWG and larger. Minimum size: 12 AWG.

.3 Copperconductors: size as indicated, with 600V insulation of cross-linked thermosetting polyethylene material rated RW90 XLPE, Non Jacketted.

.4 Each EMT must have a ground continuity wire (green wire). An EMT conduit cannot serve as a ground continuity.

2.2 FIRE ALARME CABLES

.1 FT-4 / FAS-105 type conductors, with non-metallic sheath when installed under EMT conduit or metallic sheath (armored cables) when installed directly in the ceiling.

.2 Conductors: copper gauge as indicated, twisted and shielded, designed for a nominal voltage of 300V.

.3 Detection circuits: conductors of # 16 AWG minimum gauge and according to the system manufacturer's requirements.

.4 Signaling circuits: conductors of # 14 AWG minimum gauge and according to the system manufacturer's requirements.

Part 3 Execution

3.1 FIELD QUALITY CONTROL

.1 Perform tests in accordance with Section 26 05 00 - Common Work Results for Electrical.

.2 Perform tests using method appropriate to site conditions and to approval of Consultant and local authority having jurisdiction over installation.

.3 Perform tests before energizing electrical system.

3.2 GENERAL CABLE INSTALLATION

.1 Terminate cables in accordance with Section 26 05 20 - Wire and Box Connectors - (0-1000 V).

.2 Cable Colour Coding: to Section 26 05 00 - Common Work Results for Electrical.

.3 Bundle cables wherever possible.

.4 Conductor length for parallel feeders to be identical.

.5 Lace or clip groups of feeder cables at distribution centres, pull boxes, and termination points.

.6 Wiring in walls: typically drop or loop vertically from above to better facilitate future renovations. Generally wiring from below and horizontal wiring in walls to be avoided unless indicated.

.7 Use only two-wire circuits for branches to sockets with suppression of overvoltage as well as for permanently connected electronic and computer equipment. Common neutral circuits are prohibited. With the exception of the splices shown in the plans, no splices will be accepted between the connection points of the conductors.

.8 The splices will be made by means of pressure connectors in bakelite of appropriate size. For larger sizes, pressure sockets will be used, coated with a suitable water-repellent electrical tape.

.9 Connect cables to end sleeves.

.10 No cable must run over, or be attached to, the metal deck (bridging, decking).

.11 Conductor sizes are determined based on a maximum voltage drop of 2% by following the probable path of the power supply. Check that the rule of 2% of maximum voltage drop remains respected for any load of the electrical distribution network by considering the actual route (under construction) of the power supply

3.3 INSTALLATION OF BUILDING WIRES

.1 Install wiring as follows:

.1 In conduit systems in accordance with Section 26 05 34 - Conduits, Conduit Fastenings and Conduit Fittings.

.2 Unless otherwise indicated in the plans, all installation of building wiring must be done in conduits for the entire electrical network.

.3 Install a dedicated neutral conductor for each 120 V single phase circuit.

.4 Building wiring conductors must be lubricated for drawing, according to the manufacturer's recommendations, with a lubricant specially designed for this purpose.

3.4 INSTALLATION OF FIRE ALARME CABLES

.1 As much as possible, group the cables on U-shaped supports. In general, the entire electrical installation is under EMT conduit in red color. Wiring for the entire fire alarm network must be carried out using non-metallic sheathed cables of type FT-4 / FAS-105 in a red EMT conduit or in a metallic sheath (armored cables) when installed directly in the mezzanine.

.2 The entire installation must meet all the requirements of the manufacturer of the fire alarm system

3.5 USE OF WIRES AND CONDUITS

.1 Unless otherwise indicated in the plans or later in the Specifications, all other wiring inside the building will be of the RW90 type and installed in thin-walled conduits with screw-type fittings.

.2 There must be a green conductor for earth continuity in all conduits.

.3 Unless otherwise indicated in the plans or later in the Specifications, all the wiring for security or communication systems or other, will be installed in thin-walled conduits (E.M.T.) with screw type fittings.

3.6 MATERIAL IDENTIFICATION

.1 The two ends of the phase conductors of each artery and each branch circuit must be permanently and indelibly marked using a numbered plastic tape, including neutral.

.2 Keep the order of the phases and the same color code for the entire installation.

.3 The color code must comply with CSA C22.10 standard.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

.1 Sections 26 05 00 and 26 05 21.

1.2 REFERENCE STANDARDS

.1 American National Standards Institute /Institute of Electrical and Electronics Engineers (ANSI/IEEE)

.1 ANSI/IEEE 837-[02], IEEE Standard for Qualifying Permanent Connections Used in Substation Grounding.

.2 CSA Group (CSA)

.1 CSA Z32-[09], Electrical Safety and Essential Electrical Systems in Health Care Facilities.

Part 2 Products

2.1 EQUIPMENT

.1 Insulated grounding conductors: green, copper conductors, RW90.

Part 3 Execution

3.1 INSTALLATION GENERAL

.1 Where EMT is used, run ground wire in conduit.

.2 Install connectors in accordance with manufacturer's instructions.

.3 Protect exposed grounding conductors from mechanical injury.

.4 Use mechanical connectors for grounding connections to equipment provided with lugs.

.5 Soldered joints not permitted.

.6 Install bonding wire for flexible conduit, connected at[both ends to grounding bushing, solderless lug, clamp or cup washer and screw. Neatly cleat bonding wire to exterior of flexible conduit.

.7 Make grounding connections in radial configuration only, with connections terminating at single grounding point. Avoid loop connections.

.8 Bond single conductor, metallic armoured cables to cabinet at supply end, [and provide non-metallic entry plate at load end] [and load end].

3.2 FIELD QUALITY CONTROL

.1 Perform ground continuity and resistance tests using method appropriate to site conditions and to approval of Consultant and local authority having jurisdiction over installation.

.2 Perform tests before energizing electrical system.

.3 Disconnect ground fault indicator during tests.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

.1 Sections 26 05 00, 26 05 21 et 26 05 34.

Part 2 Products

2.1 SUPPORT CHANNELS

.1 U shape, size 4 x 41 mm, 2.5 mm thick, galvanized steel, surface mounted and suspended.

.2 Fastening material, supports and conductors/cables shall be metallic. Plastic fasteners are prohibited.

Part 3 Execution

3.1 INSTALLATION

.1 Secure equipment to masonry, tile and plaster surfaces with lead anchors or nylon shields.

.2 Secure equipment to poured concrete with expandable inserts.

.3 Secure equipment to hollow masonry walls or suspended ceilings with toggle bolts.

.4 Secure surface mounted equipment with twist clip fasteners to inverted T bar ceilings. Ensure that T bars are adequately supported to carry weight of equipment specified before installation.

.5 Support equipment, conduit or cables using clips, spring loaded bolts, cable clamps designed as accessories to basic channel members.

.6 Fasten exposed conduit or cables to building construction or support system using straps.

.1 One-hole steel straps to secure surface conduits and cables 53 mm and smaller.

.2 Two-hole steel straps for conduits and cables larger than 53 mm.

.3 Beam clamps to secure conduit to exposed steel work.

.7 Suspended support systems.

.1 Support individual cable or conduit runs with 6 mm diameter threaded rods and spring clips.

.2 Support 2 or more cables or conduits on channels supported by 6 mm diameter threaded rod hangers where direct fastening to building construction is impractical.

.8 For surface mounting of two or more conduits use channels at 1.5 m on centre spacing.

.9 Provide metal brackets, frames, hangers, clamps and related types of support structures where indicated or as required to support conduit and cable runs.

.10 Ensure adequate support for raceways and cables dropped vertically to equipment where there is no wall support.

.11 Do not use wire lashing or perforated strap to support or secure raceways or cables.

.12 Do not use supports or equipment installed for other trades for conduit or cable support except with permission of other trade and approval of [Departmental Representative] [DCC Representative] [Consultant].

.13 Install fastenings and supports as required for each type of equipment cables and conduits, and in accordance with manufacturer's installation recommendations.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

.1 Section 26 05 00.

1.2 REFERENCE STANDARDS

.1 CSA Group (CSA)

.1 CSA C22.1-[06], Canadian Electrical Code, Part 1, 20th Edition.

Part 2 Products

2.1 JUNCTION AND PULL BOXES

.1 Construction:welded steel enclosure.

.2 Covers Flush Mounted: 25 mm minimum extension all around.

.3 Covers Surface Mounted: screw-on flat covers.

2.2 ACCEPTABLE PRODUCTS

.1 Acceptable product : Commander (Iberville), Bel Products, Hammond, Hoffman or approved equivalent.

Part 3 Execution

3.1 JUNCTION AND PULL BOXES INSTALLATION

.1 Install pull boxes in inconspicuous but accessible locations.

.2 Install junction boxes so that conduits installed between two junction boxes be no more than 30cm long and so there are no more than three (3) 90 degree bends or the equivalent between two junction boxes.

.3 Only main junction and pull boxes are indicated. Install additional pull boxes as required by CSA C22.1.

3.2 IDENTIFICATION

.1 Equipment Identification: to Section 26 05 00 - Common Work Results for Electrical.

.2 Identification Labels: size 2 indicating system name, voltage and phase or as indicated.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

.1 Sections 26 05 00 and 26 05 34.

1.2 REFERENCE STANDARDS

.1 CSA Group (CSA)

.1 CSA C22.1-18, Canadian Electrical Code, Part 1, 20th Edition.

Part 2 Products

2.1 OUTLET AND CONDUIT BOXES GENERAL

.1 Size boxes in accordance with CSA C22.1.

.2 102 mm square or larger outlet boxes as required.

.3 Gang boxes where wiring devices are grouped.

.4 Blank cover plates for boxes without wiring devices.

.5 Combination boxes with barriers where outlets for more than one system are grouped.

2.2 GALVANIZED STEEL OUTLET BOXES

.1 One-piece electro-galvanized construction.

.2 Single and multi gang flush device boxes for flush installation, minimum size 76 x 50 x 38 mm or as indicated. 102 mm square outlet boxes when more than one conduit enters one side with extension and plaster rings as required.

.3 Utility boxes for outlets connected to surface-mounted EMT conduit, minimum size 102 x 54 x 48 mm.

.4 102 mm square or octagonal outlet boxes for lighting fixture outlets.

2.3 MASONRY BOXES

.1 Electro-galvanized steel masonry single and multi gang boxes for devices flush mounted in exposed block walls.

2.4 CONCRETE BOXES

.1 Electro-galvanized sheet steel concrete type boxes for flush mount in concrete with matching extension and plaster rings as required.

2.5 CONDUIT BOXES

.1 Cast FS or FD aluminum boxes with factory-threaded hubs and mounting feet for surface wiring of devices.

2.6 FITTINGS - GENERAL

.1 Bushing and connectors with nylon insulated throats.

.2 Knock-out fillers to prevent entry of debris.

.3 Conduit outlet bodies for conduit up to 35mm and pull boxes for larger conduits.

.4 Double locknuts and insulated bushings on sheet metal boxes.

2.7 ACCEPTABLE PRODUCTS

.1 Acceptable products : Commander (Iberville), Thomas&Betts, Appleton, Crouse-Hinds or approved equivalent.

Part 3 Execution

3.1 INSTALLATION

.1 Support boxes independently of connecting conduits.

.2 Fill boxes with paper, sponges or foam or similar approved material to prevent entry of debris during construction. Remove upon completion of work.

.3 For flush installations mount outlets flush with finished wall using plaster rings to permit wall finish to come within 6 mm of opening.

.4 Provide correct size of openings in boxes for conduit, mineral insulated and armoured cable connections. Do not install reducing washers.

.5 Vacuum clean interior of outlet boxes before installation of wiring devices.

.6 Identify systems for outlet boxes as required.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

.1 Sections 26 05 00, 26 05 21, 26 05 29 et 26 05 32.

1.2 REFERENCE STANDARDS

.1 CSA Group (CSA)

.1 CAN/CSA C22.2 No. 18-98(R2003), Outlet Boxes, Conduit Boxes, Fittings and Associated Hardware, A National Standard of Canada.

.2 CSA C22.2 No. 45-M1981(R2003), Rigid Metal Conduit.

.3 CSA C22.2 No. 56-04, Flexible Metal Conduit and Liquid-Tight Flexible Metal Conduit.

.4 CSA C22.2 No. 83-M1985(R2003), Electrical Metallic Tubing.

.5 CSA C22.2 No. 211.2-M1984(R2003), Rigid PVC (Unplasticized) Conduit.

.6 CAN/CSA C22.2 No. 227.3-05, Nonmetallic Mechanical Protection Tubing (NMPT), A National Standard of Canada (February 2006).

Part 2 Products

2.1 CONDUITS

.1 Electrical metallic tubing (EMT): to CSA C22.2 No. 83.

.2 Flexible metal conduit: to CSA C22.2 No. 56, liquid-tight flexible metal.

2.2 CONDUIT FASTENINGS

.1 One hole steel straps to secure surface conduits 50 mm and smaller.

.1 Two hole steel straps for conduits larger than 50 mm.

.2 Beam clamps to secure conduits to exposed steel work.

.3 Channel type supports for two or more conduits at 1,5 m on centre.

.4 Threaded rods, 6 mm diameter, to support suspended channels.

2.3 CONDUIT FITTINGS

.1 Fittings: to CAN/CSA C22.2 No. 18, manufactured for use with conduit specified. Coating: same as conduit.

.2 Ensure factory "ells" where 90 degrees bends for 25 mm and larger conduits.

.3 Pressure screw type fittings and sleeves for EMT conduits for standard installations.

.4 Watertight connectors and couplings for EMT.

.1 Set-screws are not acceptable.

2.4 FISH CORD

.1 Polypropylene.

Part 3 Execution

3.1 MANUFACTURER'S INSTRUCTIONS

.1 Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheets.

3.2 INSTALLATION

.1 Install conduits to conserve headroom in exposed locations and cause minimum interference in spaces through which they pass.

.2 Conceal conduits except in mechanical and electrical service rooms and in unfinished areas.

.3 Use electrical metallic tubing (EMT) not subject to mechanical injury.

.4 Minimum conduit size for lighting and power circuits: 21 mm.

.5 Bend conduit cold:

.1 Replace conduit if kinked or flattened more than 1/10th of its original diameter.

.6 Mechanically bend steel conduit over [19 mm] diameter.

.7 Field threads on rigid conduit must be of sufficient length to draw conduits up tight.

.8 Install fish cord in empty conduits.

.9 Remove and replace blocked conduit sections.

.1 Do not use liquids to clean out conduits.

.10 Dry conduits out before installing wire.

.11 Power cables and conduits shall be installed at a minimum distance of 300mm from telecommunication/control/automation cables and conduits (including existing conduits or conduits from other disciplins. Les conduits et câbles de puissance doivent être installés à au moins 300 mm des conduits et câbles de télécommunication ou de contrôle/automatisation (including existing conduits or other type of conduits).

.12 Install an isolated bonding conductor inside every conduit, without exception.

3.3 SURFACE CONDUITS

.1 Run parallel or perpendicular to building lines.

.2 Locate conduits behind infrared or gas fired heaters with 1.5 m clearance.

.3 Run conduits in flanged portion of structural steel.

.4 Group conduits wherever possible on suspended channels.

.5 Do not pass conduits through structural members except as indicated.

.6 Do not locate conduits less than 75 mm parallel to steam or hot water lines with minimum of 25 mm at crossovers.

3.4 CONCEALED CONDUITS

.1 Run parallel or perpendicular to building lines.

.2 Do not install conduits in terrazzo or concrete toppings.

END OF SECTION

Part 1 General

1.1 REFERENCE STANDARDS

.1 CSA Group (CSA)

.1 CSA C22.2 No. 5-[09], Molded-Case Circuit Breakers, Molded-Case Switches and Circuit-Breaker Enclosures (Tri-national standard with UL 489, and NMX-J-266-ANCE-2010).

1.2 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit in accordance with Section 26 05 00.

.2 Product Data:

.1 Submit manufacturer's instructions, printed product literature and data sheets for circuit breakers and include product characteristics, performance criteria, physical size, finish and limitations.

Part 2 Products

2.1 BREAKERS GENERAL

.1 Bolt-on moulded case circuit breaker: quick- make, quick-break type, for manual and automatic operation with temperature compensation for 40 degrees C ambient.

.2 Plug-in moulded case circuit breakers: quick- make, quick-break type, for manual and automatic operation with temperature compensation for 40 degrees C ambient.

.3 Common-trip breakers: with single handle for multi-pole applications.

.4 Magnetic instantaneous trip elements in circuit breakers to operate only when value of current reaches setting.

.1 Trip settings on breakers with adjustable trips.

.5 Same brands as distribution panels.

Part 3 Execution

3.1 INSTALLATION

.1 Install circuit breakers as indicated.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

.1 Section 26 05 00.

1.2 REFERENCE STANDARDS

.1 Underwriters Laboratories of Canada (ULC)

.1 CAN/ULC-S301-[09], Standard for Signal Receiving Centre Burglar Alarm System and Operations

.2 CAN/ULC-S302-[M91(R1999)], Standard for Installation and Classification of Burglar Alarm Systems for Financial and Commercial Premises, Safes and Vaults.

.3 CAN/ULC-S304-[06], Signal Receiving Centre and Premise Burglar Alarm Control Units.

.4 CAN/ULC-S310-[M91(R1999)], Installation and Classification of Residential Burglar Alarm Systems.

.5 ULC-S318-[96], Standard for Power Supplies for Burglar Alarm Systems.

.6 ULC-C634-[86], Guide for the Investigation of Connectors and Switches for Use with Burglar Alarm Systems.

1.3 ABBREVIATIONS

.1 Electronic Access Control (EAC): control of people through entrances and exits of controlled area. Security utilizing hardware systems and specialized procedures to control and monitor movements within a controlled area.

.2 CPVX: Central Station Burglar Alarm Systems.

.3 CVSG: Mercantile Burglar Alarm Systems.

.4 CVWX: Proprietary Burglar Alarm Systems.

.5 DRS:. Door Release System.

.6 PIN: Personal Identification Number.

1.4 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit in accordance with Section 26 05 00.

.2 Product Data:

.1 Submit manufacturer's instructions, printed product literature and data sheets for access controls and equipment and include product characteristics, performance criteria, physical size, finish and limitations.

.2 Submit:

.1 Functional description of equipment.

.2 Technical data for all devices.

.3 Device location plans and cable lists.

.4 Devices mounting location detail drawings.

.5 Typical devices connection detail drawings.

.3 Shop Drawings:

.1 Submit drawings stamped and signed by professional engineer registered or licensed in [Province] [Territory], Canada.

.2 Shop drawings to indicate project layout, including details.

.1 Shop drawings to indicate, mounting heights and locations, wiring diagrams.

.2 Submit zone layout drawing indicating number and location of zones and areas covered.

.3 Submit wiring diagrams.

.4 Submit complete equipement list.

.4 Certificates: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.

.3 Submit ULC/UL Product Safety Certificates.

.4 Submit verification Certificate that service company is ULC/UL List alarm service company.

.5 Submit verification Certificate that monitoring facility is ULC/UL "Listed central station".

.6 Submit verification Certificate that security access system is "Certified alarm system".

1.5 CLOSEOUT SUBMITTALS

.1 Operation and Maintenance Data: submit operation and maintenance data for access controls and equipment for incorporation into manual.

.1 Include:

.1 System configuration and equipment physical layout.

.2 Functional description of equipment.

.3 Instructions of operation of equipment.

.4 Illustrations and diagrams to supplement procedures.

.5 Operation instructions provided by manufacturer.

.6 Cleaning instructions.

1.6 WARRANTY

.1 The warranty period must be 12 months, material and labor, from the date of acceptance of the work.

Part 2 Products

2.1 MATERIALS

.1 Design Criteria:

- .1 Design access control and security access systems using only ULC listed products.
- .2 Design security access system using ULC listed alarm service company, company specializing in security access systems.
- .3 Design security access system for ULC listed central station an alarm monitoring facility having capability to provide specified service.
- .4 Design security access system as a ULC certified alarm system.
- .5 Design system to provide door manual and automatic control functions from locations indicated to central monitoring system.
- .6 Design system to allow for addition of future Door Release System (DRS) controls and activation units by adding appropriate transmission lines and equipment at each location.
- .7 Design system to consist of homed run control to activation unit connections.
- .8 Each activation unit must have door panel control function/equipment item located as indicated.
- .9 Design system to provide ease of operation, servicing, maintenance, testing and expansion of additional services.

.2 Door controls items and panels:

- .1 Include standard "off the shelf" equipment items to form a complete and operating DRS system.
- .2 Electronic microprocessor access control system (with software that can be managed by a computer), electric strikes, magnetic card readers, door monitoring contacts, emergency unlocking devices, access card, wiring, etc. for a complete and functional set (includin programming and start-up_.

.3 Provide system cables including coaxial cable, multiconductor control cable, audio and AC power cable required.

Part 3 Execution

3.1 INSTALLATION: SECURITY ACCESS

.1 Install components in accordance with manufacturer's written installation instructions to locations, heights and surfaces shown on reviewed shop drawings.

.2 Install components secure to walls, ceilings or other substrates.

.3 Install required boxes in inconspicuous accessible locations.

.4 Conceal conduit and wiring.

.5 Perform all connections, programming, start-up, tests, etc.

.6 **Include eight (8) hours on-site training with the Ministerial Representative**.

3.2 CLEANING

.1 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment.

.1 Remove protective coverings from accessories and components.

.2 Clean housings and system components, free from marks, packing tape, and finger prints, in accordance with manufacturer's written cleaning recommendations.

.3 Clean components free from dirt and fingerprints.

.2 Waste Management: separate waste materials for reuse and recycling.

.1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

3.3 PROTECTION

.1 Protect installed products and components from damage during construction.

.2 Repair damage to adjacent materials caused by access controls and equipment installation.

END OF SECTION

APPENDIX 1

Technical drawings listing

IDENTIFICATION SHEET

Project name : Security Level 2 - Phase 1 (Wing A) - Upgrading Acces Control - Maurice-Lamontagne Institute
Project number : 19G0150-001

PROJECT INFORMATION

Function	Company	Resource contact	Mailing adress
Contractor			
Sub-contractor			

SHOP DRAWING IDENTIFICATION

Works : ☐ Fire protection ☐ Plumbing ☐ Heating/cooling ☐ Ventilation ☐ Insulation
☐ Control ☐ Electricity ☐ Structural works ☐ Civil works ☐ Others

Shop drawing description	
Identification number / LGT list	
Model	
Manufacturier	
Shipping delay	
Product	☐ As spec ☐ Alternative

PROFESSIONAL COMMENTS

Remarks	Professionnal approuval / stamp