



**RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:**

Public Works and Government Services / Travaux
publics et services gouvernementaux
Kingston Procurement
Des Acquisitions Kingston
86 Clarence Street, 2nd floor
Kingston
Ontario
K7L 1X3
Bid Fax: (613) 545-8067

**REQUEST FOR PROPOSAL
DEMANDE DE PROPOSITION**

**Proposal To: Public Works and Government
Services Canada**

We hereby offer to sell to Her Majesty the Queen in right of Canada, in accordance with the terms and conditions set out herein, referred to herein or attached hereto, the goods, services, and construction listed herein and on any attached sheets at the price(s) set out therefor.

**Proposition aux: Travaux Publics et Services
Gouvernementaux Canada**

Nous offrons par la présente de vendre à Sa Majesté la Reine du chef du Canada, aux conditions énoncées ou incluses par référence dans la présente et aux annexes ci-jointes, les biens, services et construction énumérés ici sur toute feuille ci-annexée, au(x) prix indiqué(s).

Comments - Commentaires

Address all inquiries to Tammy.Weaver@pwgsc.gc.ca

Vendor/Firm Name and Address

Raison sociale et adresse du
fournisseur/de l'entrepreneur

Issuing Office - Bureau de distribution

Public Works and Government Services / Travaux publics et
services gouvernementaux
Kingston Procurement
Des Acquisitions Kingston
86 Clarence Street, 2nd floor
Kingston
Ontario
K7L 1X3

Title - Sujet CURTAIN WALL PANELS&WINDOWS CORCAN		
Solicitation No. - N° de l'invitation 21C11-196563/A	Date 2018-07-13	
Client Reference No. - N° de référence du client 21C11-19-6563		
GETS Reference No. - N° de référence de SEAG PW-\$KIN-508-7535		
File No. - N° de dossier KIN-8-50024 (508)	CCC No./N° CCC - FMS No./N° VME	
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2018-08-27		Time Zone Fuseau horaire Eastern Daylight Saving Time EDT
F.O.B. - F.A.B. Plant-Usine: <input type="checkbox"/> Destination: <input checked="" type="checkbox"/> Other-Autre: <input type="checkbox"/>		
Address Enquiries to: - Adresser toutes questions à: Weaver, Tammy		Buyer Id - Id de l'acheteur kin508
Telephone No. - N° de téléphone (613) 484-1809 ()		FAX No. - N° de FAX (613) 545-8067
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: CORRECTIONAL SERVICE OF CANADA COLINS BAY INSTITUTION 1455 BATH RD PO BOX 190 KINGSTON Ontario K7L4V9 Canada		

Instructions: See Herein

Instructions: Voir aux présentes

Delivery Required - Livraison exigée See Herein	Delivery Offered - Livraison proposée
Vendor/Firm Name and Address Raison sociale et adresse du fournisseur/de l'entrepreneur	
Telephone No. - N° de téléphone Facsimile No. - N° de télécopieur	
Name and title of person authorized to sign on behalf of Vendor/Firm (type or print) Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)	
Signature	Date

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PART 1 - GENERAL INFORMATION

1.1 Statement of Work

CORCAN Construction Ontario is constructing a multipurpose building for Correctional Service Canada consisting of roughly 2,200 m², to be constructed using a combination of CORCAN staff/offender labour and outside contractor services. Construction consists of standard spread footing concrete foundations, supporting a steel frame structure. The ground floor will be slab-on-grade, the mezzanine will be concrete topping on metal deck, single sloped roof. The cladding will be prefinished metal siding with curtain wall and overhead doors. The interior finishes are typical for a facility of this nature, a combination of concrete block and gypsum board over metal studs. The mechanical and electrical systems are standard for a building of this nature and will be housed on the mezzanine level. The site work includes all landscaping.

The jobsite is on the grounds of Collins Bay Institution – Minimum Unit, located in Kingston, Ontario. The property is owned by the Government of Canada and will serve as an offender training facility. The property on which the project is located comprises of approximately 320 hectares.

The objective of this requirement is to Manufacture and deliver all exterior curtain wall panels (including thermo panes) and exterior doors including supporting assembly for multi-purpose building as detailed in attached Standards/Specifications and Drawings.

1.2 Debriefings

Bidders may request a debriefing on the results of the bid solicitation process. Bidders should make the request to the Contracting Authority within 15 working days from receipt of the results of the bid solicitation process. The debriefing may be in writing, by telephone or in person.

1.3 Trade Agreements

"The requirement is subject to the provisions of the North American Free Trade Agreement (NAFTA), the Canada-European Union Comprehensive Economic and Trade Agreement (CETA), and the Canadian Free Trade Agreement (CFTA)."

PART 2 - BIDDER INSTRUCTIONS

2.1 Standard Instructions, Clauses and Conditions

All instructions, clauses and conditions identified in the bid solicitation by number, date and title are set out in the Standard Acquisition Clauses and Conditions Manual (<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>) issued by Public Works and Government Services Canada.

Bidders who submit a bid agree to be bound by the instructions, clauses and conditions of the bid solicitation and accept the clauses and conditions of the resulting contract.

The 2003 (2017-04-27) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

Subsection 5.4 of 2003, Standard Instructions - Goods or Services - Competitive Requirements, is amended as follows:

Delete: 60 days
Insert: 120 days

2.1.1 SACC Manual Clauses

B3000T (2006-06-16) Equivalent Products

2.2 Submission of Bids

Bids must be submitted only to Public Works and Government Services Canada (PWGSC) Bid Receiving Unit by the date, time and place indicated in the bid solicitation.

Due to the nature of the bid solicitation, bids transmitted by facsimile to PWGSC will not be accepted.

2.3 Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than 10 calendar days before the bid closing date. Enquiries received after that time may not be answered.

Bidders should reference as accurately as possible the numbered item of the bid solicitation to which the enquiry relates. Care should be taken by Bidders to explain each question in sufficient detail in order to enable Canada to provide an accurate answer. Technical enquiries that are of a proprietary nature must be clearly marked "proprietary" at each relevant item. Items identified as "proprietary" will be treated as such except where Canada determines that the enquiry is not of a proprietary nature. Canada may edit the question(s) or may request that the Bidder do so, so that the proprietary nature of the question(s) is eliminated, and the enquiry can be answered to all Bidders. Enquiries not submitted in a form that can be distributed to all Bidders may not be answered by Canada.

2.4 Applicable Laws

Any resulting contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in Ontario.

Bidders may, at their discretion, substitute the applicable laws of a Canadian province or territory of their choice without affecting the validity of their bid, by deleting the name of the Canadian province or territory specified and inserting the name of the Canadian province or territory of their choice. If no change is made, it acknowledges that the applicable laws specified are acceptable to the Bidders.

PART 3 - BID PREPARATION INSTRUCTIONS

3.1 Bid Preparation Instructions

Due to the nature of the bid solicitation, bids transmitted by epost Connect service will not be accepted.

Canada requests that bidders provide their bid in separately bound sections as follows:

- Section I: Technical Bid (1 hard copy)
- Section II: Financial Bid (1 hard copy)
- Section III: Certifications (1 hard copy)

Prices must appear in the financial bid only. No prices must be indicated in any other section of the bid.

Canada requests that bidders follow the format instructions described below in the preparation of hard copy of their bid:

- (a) use 8.5 x 11 inch (216 mm x 279 mm) paper;
- (b) use a numbering system that corresponds to the bid solicitation.

In April 2006, Canada issued a policy directing federal departments and agencies to take the necessary steps to incorporate environmental considerations into the procurement process Policy on Green Procurement (<https://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=32573>). To assist Canada in reaching its objectives, bidders should:

- 1) use 8.5 x 11 inch (216 mm x 279 mm) paper containing fibre certified as originating from a sustainably-managed forest and containing minimum 30% recycled content; and
- 2) use an environmentally-preferable format including black and white printing instead of colour printing, printing double sided/duplex, using staples or clips instead of cerlox, duotangs or binders.

Section I: Technical Bid

In their technical bid, Bidders should explain and demonstrate how they propose to meet the requirements and how they will carry out the Work.

Section II: Financial Bid

Bidders must submit their financial bid in accordance with the Basis of Payment.

3.1.1 Electronic Payment of Invoices – Bid

If you are willing to accept payment of invoices by Electronic Payment Instruments, complete Annex “C” Electronic Payment Instruments, to identify which ones are accepted.

If Annex “C” Electronic Payment Instruments is not completed, it will be considered as if Electronic Payment Instruments are not being accepted for payment of invoices.

Acceptance of Electronic Payment Instruments will not be considered as an evaluation criterion.

3.1.2 Exchange Rate Fluctuation

C3011T (2013-11-06), Exchange Rate Fluctuation

Section III: Certifications

Bidders must submit the certifications and additional information required under Part 5.

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

4.1 Evaluation Procedures

- (a) Bids will be assessed in accordance with the entire requirement of the bid solicitation including the technical and financial evaluation criteria.
- (b) An evaluation team composed of representatives of Canada will evaluate the bids.

4.1.1 Technical Evaluation

4.1.1.1 Mandatory Technical Criteria

1. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in Annex "A" must provide proof of (3) three years documented experience.

4.1.2 Financial Evaluation

To be responsive the Bidder must:

- 1) Provide a Firm price for **all** items listed in Annex B – Basis of Payment.
- 2) Not alter the format of the Basis of Payment in Annex B.
- 3) The sum of the lot prices will be the evaluated price
- 4) *SACC Manual* Clause A0220T (2014-06-26), Evaluation of Price

4.2 Basis of Selection - Mandatory Technical Criteria

A bid must comply with the requirements of the bid solicitation and meet all mandatory technical evaluation criteria to be declared responsive. The responsive bid with the lowest evaluated price will be recommended for award of a contract.

PART 5 – CERTIFICATIONS AND ADDITIONAL INFORMATION

Bidders must provide the required certifications and additional information to be awarded a contract.

The certifications provided by Bidders to Canada are subject to verification by Canada at all times. Unless specified otherwise, Canada will declare a bid non-responsive, or will declare a contractor in default if any certification made by the Bidder is found to be untrue whether made knowingly or unknowingly, during the bid evaluation period or during the contract period.

The Contracting Authority will have the right to ask for additional information to verify the Bidder's certifications. Failure to comply and to cooperate with any request or requirement imposed by the Contracting Authority will render the bid non-responsive or constitute a default under the Contract.

5.1 Certifications Required with the Bid

Bidders must submit the following duly completed certifications as part of their bid.

5.1.1 Integrity Provisions - Declaration of Convicted Offences

In accordance with the Integrity Provisions of the Standard Instructions, all bidders must provide with their bid, **if applicable**, the declaration form available on the Forms for the Integrity Regime website (<http://www.tpsgc-pwgsc.gc.ca/ci-if/declaration-eng.html>), to be given further consideration in the procurement process.

5.2 Certifications Precedent to Contract Award and Additional Information

The certifications and additional information listed below should be submitted with the bid, but may be submitted afterwards. If any of these required certifications or additional information is not completed and submitted as requested, the Contracting Authority will inform the Bidder of a time frame within which to provide the information. Failure to provide the certifications or the additional information listed below within the time frame provided will render the bid non-responsive.

5.2.1 Integrity Provisions – Required Documentation

In accordance with the section titled Information to be provided when bidding, contracting or entering into a real procurement agreement of the Ineligibility and Suspension Policy (<http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html>), the Bidder must provide the required documentation, as applicable, to be given further consideration in the procurement process.

5.2.2 Federal Contractors Program for Employment Equity - Bid Certification

By submitting a bid, the Bidder certifies that the Bidder, and any of the Bidder's members if the Bidder is a Joint Venture, is not named on the Federal Contractors Program (FCP) for employment equity "FCP Limited Eligibility to Bid" list available at the bottom of the page of the Employment and Social Development Canada (ESDC) - Labour's website (<https://www.canada.ca/en/employment-social-development/programs/employment-equity/federal-contractor-program.html#>).

Canada will have the right to declare a bid non-responsive if the Bidder, or any member of the Bidder if the Bidder is a Joint Venture, appears on the "FCP Limited Eligibility to Bid" list at the time of contract award.

PART 6 - RESULTING CONTRACT CLAUSES

The following clauses and conditions apply to and form part of any contract resulting from the bid solicitation.

6.1 Security Requirements

6.1.1 There is no security requirement applicable to the Contract.

6.2 Statement Requirement

The Contractor must provide the items detailed under the "Requirement" at Annex "A".

6.3 Standard Clauses and Conditions

All clauses and conditions identified in the Contract by number, date and title are set out in the Standard Acquisition Clauses and Conditions Manual (<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>) issued by Public Works and Government Services Canada.

6.3.1 General Conditions

2010A (2018-06-21), General Conditions - Goods (Medium Complexity), apply to and form part of the Contract.

6.4 Term of Contract

6.4.1 Period of the Contract

The period of the Contract is from date of delivery to 2 months inclusive

6.4.2 Delivery Date

All the deliverables must be received on or before 60 days from date of contract.

6.4.5 Delivery Points

Delivery of the requirement will be made to delivery point(s) specified at Annex "A" of the Contract.

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Amd. No. - N° de la modif.
File No. - N° du dossier
KIN-8-50024

Buyer ID - Id de l'acheteur
KIN508
CCC No./N° CCC - FMS No./N° VME

6.5 Authorities

6.5.1 Contracting Authority

The Contracting Authority for the Contract is:

Tammy Weaver
Supply Specialist
Public Works and Government Services Canada
Acquisitions Branch
86 Clarence St., 2nd Floor
Kingston, Ontario
K7L 1X3

Telephone: 613-484-1809
Facsimile: 613-545-8059
E-mail address: Tammy.Weaver@pwgsc.gc.ca

The Contracting Authority is responsible for the management of the Contract and any changes to the Contract must be authorized in writing by the Contracting Authority. The Contractor must not perform work in excess of or outside the scope of the Contract based on verbal or written requests or instructions from anybody other than the Contracting Authority.

6.5.2 Project Authority

The Project Authority for the Contract is: (To be provided upon contract award)

Name: _____
Title: _____
Organization: _____
Address: _____

Telephone: ____ ____ ____
Facsimile: ____ ____ ____
E-mail address: _____

The Project Authority is the representative of the department or agency for whom the Work is being carried out under the Contract and is responsible for all matters concerning the technical content of the Work under the Contract. Technical matters may be discussed with the Project Authority, however the Project Authority has no authority to authorize changes to the scope of the Work. Changes to the scope of the Work can only be made through a contract amendment issued by the Contracting Authority.

6.5.3 Contractor's Representative

Name: _____

Telephone: ____ ____ ____
Facsimile: ____ ____ ____
E-mail address: _____

6.6 Payment

6.6.1 Basis of Payment

6.6.2 Limitation of Expenditure

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid a *firm Lot Price(s) as specified in Annex "B" for a cost of \$ _____ insert the amount at contract award*). Customs duties are *included* and Applicable Taxes are extra.

Canada will not pay the Contractor for any design changes, modifications or interpretations of the Work, unless they have been approved, in writing, by the Contracting Authority before their incorporation into the Work.

6.6.3 Schedule of Milestones/

The schedule of milestones for which payments will be made in accordance with the Contract is as follows:

Milestone No.	Description or "Deliverable"	Firm Amount	"Delivery Date"
1.	Product Data: Provide component dimensions; describe components within assembly, anchorage and fasteners, glass and infill, internal drainage details and water flow drainage diagrams. Design Data: Provide framing member structural and physical characteristics, calculations, climatic data and dimensional limitations. Design data to be stamped by a Professional Structural Engineer licensed at the place where the Project is located. Shop Drawings: Indicate system dimensions, framed opening requirements and tolerances, anticipated deflection under load, affected related Work, weep drainage network, expansion and	_____	10 days from award of contract
2.	Final delivery of all goods outlined in Annex "A" and "B"	_____	60 days from award of contract

6.6.4 Milestone Payments - Not subject to holdback

Canada will make milestone payments in accordance with the Schedule of Milestones detailed in the Contract and the payment provisions of the Contract if:

- a. an accurate and complete claim for payment using PWGSC-TPSGC 1111, Claim for Progress Payment, and any other document required by the Contract have been submitted in accordance with the invoicing instructions provided in the Contract;
- b. all the certificates appearing on form PWGSC-TPSGC 1111 have been signed by the respective authorized representatives;
- c. all work associated with the milestone and as applicable any deliverable required has been completed and accepted by Canada.

6.6.5 Electronic Payment of Invoices – Contract

The Contractor accepts to be paid using any of the following Electronic Payment Instrument(s):

- a. Visa Acquisition Card;
- b. MasterCard Acquisition Card;
- c. Direct Deposit (Domestic and International);
- d. Electronic Data Interchange (EDI);
- e. Wire Transfer (International Only);
- f. Large Value Transfer System (LVTS) (Over \$25M)

6.7 Invoicing Instructions - Progress Payment Claim - Supporting Documentation not required

1. The Contractor must submit a claim for payment using form PWGSC-TPSGC 1111, Claim for Progress Payment.
Each claim must show:
 - a. all information required on form PWGSC-TPSGC 1111;
 - b. all applicable information detailed under the section entitled "Invoice Submission" of the general conditions;
 - c. the description and value of the milestone claimed as detailed in the Contract.
2. Applicable Taxes, must be calculated on the total amount of the claim.
3. The Contractor must prepare and certify one original and one (1) copy of the claim on form PWGSC-TPSGC 1111, and forward it to the *Project* Authority identified under the section entitled "Authorities" of the Contract for appropriate certification after inspection and acceptance of the Work takes place.
The *Project* Authority will then forward a copy of the claim to the Contracting Authority for certification and onward submission to the Payment Office for the remaining certification and payment action.
4. The Contractor must not submit claims until all work identified in the claim is completed.

6.8 Certifications and Additional Information

6.8.1 Compliance

Unless specified otherwise, the continuous compliance with the certifications provided by the Contractor in its bid or precedent to contract award, and the ongoing cooperation in providing additional information are conditions of the Contract and failure to comply will constitute the Contractor in default. Certifications are subject to verification by Canada during the entire period of the Contract.

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Buyer ID - Id de l'acheteur
KIN508
CCC No./N° CCC - FMS No./N° VME

6.9 Applicable Laws

The Contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in Ontario.

6.10 Priority of Documents

If there is a discrepancy between the wording of any documents that appear on the list, the wording of the document that first appears on the list has priority over the wording of any document that subsequently appears on the list.

- (a) the Articles of Agreement;
- (b) the general conditions 2010A (2018-06-21), General Conditions - Goods (Medium Complexity);
- (c) Annex A, Statement of Requirement;
- (d) Annex B, Pricing Basis;
- (e) the Contractor's bid dated _____.

ANNEX "A"

STATEMENT OF REQUIREMENT

Project Name: CSC MULTI-PURPOSE BUILDING
Project #: 32789
Required Task: Curtain Wall with Thermo panes & Exterior Doors

Background / Site Description:

CORCAN Construction Ontario is constructing a multipurpose building for Correctional Service Canada consisting of roughly 2,200 m², to be constructed using a combination of CORCAN staff/offender labour and outside contractor services. Construction consists of standard spread footing concrete foundations, supporting a steel frame structure. The ground floor will be slab-on-grade, the mezzanine will be concrete topping on metal deck, single sloped roof. The cladding will be prefinished metal siding with curtain wall and overhead doors. The interior finishes are typical for a facility of this nature, a combination of concrete block and gypsum board over metal studs. The mechanical and electrical systems are standard for a building of this nature and will be housed on the mezzanine level. The site work includes all landscaping.

The jobsite is on the grounds of Collins Bay Institution – Minimum Unit, located in Kingston, Ontario. The property is owned by the Government of Canada and will serve as an offender training facility. The property on which the project is located comprises of approximately 320 hectares. Adjacent properties are as follows:

- **South:** Front Road, Kingston
- **West:** Days Road, Kingston
- **North:** Bath Road, Kingston
- **East:** Cataraqui Region Conservation Authority

Objective:

Manufacture and deliver all exterior curtain wall panels (including thermo panes) and exterior doors including supporting assembly for multi-purpose building as detailed in attached Standards/Specifications and Drawings.

Scope of Requirement:

CURTAIN WALL & DOORS

REFERENCES

Aluminum Association (AA).

- DAF 45 (2003), Designation System For Aluminum Finishes.

American Architectural Manufacturers Association (AAMA)

- AAMA 611-12, Voluntary Specification for Anodized Architectural Aluminum.
- *Metal Curtain Wall, Window, Store Front and Entrance Guide Specifications Manual*, 1976
- AAMA CW 10:2012, Care And Handling Of Architectural Aluminum From Shop To Site
- AAMA 501-05, Methods of Test for Exterior Walls.

ASTM International (ASTM).

- ASTM B209 - Aluminum and Aluminum-Alloy Sheet and Plate.
- ASTM B221 - 13, Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
- ASTM C612 - 14, Standard Specification for Mineral Fiber Block and Board Thermal Insulation.
- ASTM E283-04 (2012), Test Method For Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls and Doors Under Specified Pressure Differences Across the Specimen.

CSA Group (CSA).

- CAN/CSA-A440-00/A440.1-00 (R2005) - CAN/CSA-A440-00, Windows / Special Publication A440.1-00, User Selection Guide to CSA Standard CAN/CSA-A440-00, Windows.
- CSA O151-09 - Canadian Softwood Plywood.

SSPC (The Society for Protective Coatings).

- Steel Structures Painting Manual, Volume 1 and 2.
- SSPC PAINT 25 (1997), Red Iron Oxide Zinc Oxide Raw Linseed Oil and Alkyd Primer (without Lead and Chromate Pigments)

PERFORMANCE REQUIREMENTS

1. System Design: Design and size components to withstand dead loads and live loads caused by positive and negative wind loads acting normal to plane of wall.
2. Seismic Loads: Design and size components to withstand seismic loads and sway displacement.
3. Deflection: Limit mullion deflection to flexure limit of glass with full recovery of glazing materials.
4. System Assembly: Accommodate without damage to system, components or deterioration of seals, movement within system, movement

between system and perimeter framing components, dynamic loading and release of loads, deflection of structural support framing, tolerance of supporting components.

5. Air Infiltration: Limit air infiltration through assembly to 0.03 l/s/sq m of wall area, measured at a reference differential pressure across assembly of 300 Pa as measured in accordance with ASTM E283.
6. Vapour Seal: Limit vapour seal with interior atmospheric pressure of 25 mm, 22 degrees C, 40 percent RH without seal failure.
7. Expansion / Contraction: System to provide for expansion and contraction within system components caused by a cycling temperature range of 95 degrees C over a 12 hour period without causing detrimental effect to system components.
8. System Internal Drainage: Drain water entering joints, condensation occurring in glazing channels, or migrating moisture occurring within system, to the exterior by a weep drainage network.
9. Air and Vapour Seal: Maintain continuous air barrier and vapour retarder throughout assembly, primarily in line with inside pane of glass and heel bead of glazing compound.
10. Not Permitted: Vibration harmonics, wind whistles, noises caused by thermal movement, thermal movement transmitted to other building elements, loosening, weakening, or fracturing of attachments or components of system.

DELIVERY, STORAGE, AND PROTECTION

1. Handle work of this Section in accordance with AAMA CW 10.
2. Protect prefinished aluminum surfaces with wrapping. Do not use adhesive papers or sprayed coatings which bond when exposed to sunlight or weather. Puncture wrappings at ends for ventilation.

WARRANTY

1. Provide a five year warranty to include coverage for complete system for failure to meet specified requirements.

PRODUCTS / MATERIAL

CURTAIN WALL SYSTEM

Acceptable Products or equivalent:

- 1 Alumicor VersaWall 2200.
- 2 Anotec Series 3400.
- 3 Kawneer 1602.

MATERIALS

- 1 Extruded Aluminum: ASTM B221.
- 2 Sheet Aluminum: ASTM B209.
- 3 Fasteners: Stainless steel.

CURTAIN WALL COMPONENTS

1. Size: 50 mm width x minimum 150 mm deep back section
2. Format: 50 mm face x 19 mm deep outside glazed pressure plate format.
3. Rain Screen: Drainage holes, deflector plates and internal flashings to accommodate internal weep drainage system.

4. Provide internal mullion baffles to eliminate "stack effect" air movement within internal spaces.
5. Integral Aluminum Doors and Frames:
 - Manufacturer's standard thermally broken mullion frame intended for gear hinges, pile weatherstripping at meeting stiles.
 - Zero-sightline aluminum door stops secured to curtain wall system, with replaceable pile weatherstripping.
 - Doors (4): Manufacturer's thermally broken door, nominal 145 mm stiles, 140 mm top rail and 175 mm bottom rail:
 - Acceptable Products or equivalent:
 - 1 Alumicor Canadiana Insuldoor Series
 - 2 Anotec Insuldoor Monumental Series 23.
 - 3 Kawneer Insulclad Series.
 - Door Hardware: Refer to Section 08 71 00 - Door Hardware and Door and Frame Schedule.
6. Operable Vents:
 - Casement vents with insect screens.
 - Provide manufacturer's standard hardware, finish matching aluminum framing.
 - Acceptable Products or equivalent:
 - 1 Anotec Series 80.
 - 2 Alumicor UniVent 1350.
 - 3 Kawneer Series 526.

MISCELLANEOUS COMPONENTS

1. Aluminum Infill Panel: fully adhered 3 mm thickness extruded aluminum sheet over 19 mm extrude polystyrene insulation. Infill panels in doors to have aluminum sheet both sides.
2. Aluminum Spandrel Panels: Assembly consisting of extruded aluminum sheet, semi-rigid mineral wool insulation and back pan.
 - Sheet Aluminum: 3 mm aluminum extruded sheet.
 - Semi-rigid insulation: Mineral wool to ASTM C612.
 - Back Pan: Depth as indicated or to match depth of curtain wall framing. Reinforce back pans with stiffeners welded to pan assembly. Clear anodized finish.
3. Column Covers: Custom brake formed extrusion for concealing structural steel and for corner details in curtain wall; 3 mm thick extruded aluminum, full contact pressure bonded ensuring flat surface, anodized finish to match curtain wall mullion sections, custom profile, insulated with semi-rigid insulation as indicated.
4. Flashings: 0.80 mm thick aluminum, finish to match curtain wall mullion sections where exposed, secured with concealed fastening method.
5. Plywood: CSA O151 (CSP), CANPLY Grade SHG; unsanded, exterior use, thicknesses as indicated; Urea-Formaldehyde free.
6. Construction Adhesive: polyurethane construction adhesive, resistant to freezing.
7. Aluminum Trim: For use above curtain walls to roof level (Refer to typical Section Detail 16/A600) and below curtain wall at overhead doors (Refer to typical Section Detail 9/A600):
8. Custom brake formed extrusion, seamless, minimum 3 mm thick extruded aluminum, full contact pressure bonded ensuring flat

surface, anodized finish to match curtain wall mullion sections, profiles as indicated.

GLASS AND GLAZING MATERIALS

1. Glass Materials: Insulating glass units for exterior locations, tempered single pane glazing for interior locations; refer to Section 08 80 50 - Glazing.
2. Glazing Materials: Type to suit application to achieve weather, moisture, and air infiltration requirements.
3. Glazed Insulated Spandrel: Assembly consisting of spandrel glazing to Section 08 80 50 - Glazing, semi-rigid mineral wool insulation, and back pan. Refer to Drawings for locations.
 - Semi-rigid insulation: Mineral wool to ASTM C612.
 - Back Pan: Depth as indicated or to match depth of curtain wall framing. Reinforce back pans with stiffeners welded to pan assembly. Clear anodized finish.

FABRICATION

1. Fabricate system components with minimum clearances and shim spacing around perimeter of assembly, yet enabling installation and dynamic movement of perimeter seal. Utilize deflection track framing where indicated or otherwise required by design.
2. Provide dead load anchors and clips to attach curtain wall assembly to floor slab and supporting structural steel; including suspended assemblies not bearing on foundations or footing.
3. Provide reinforcing steel within tubular extrusions where required by design.
4. Accurately fit and secure joints and corners. Make joints flush, hairline, and weatherproof.
5. Prepare components to receive anchor devices. Fabricate anchors.
6. Arrange fasteners and attachments to ensure concealment from view.
7. Reinforce interior horizontal head rail to receive drapery track brackets and attachments.
8. Reinforce framing members for external imposed loads.
9. Aluminum Panels: Fabricate panels as extruded aluminum sheet laminated to plywood core using construction adhesive.

FINISHES

1. Finish Coatings: Conform to AAMA 611.
2. Exposed Aluminum Surfaces: AAMA AA-M12C22A31, Class II Clear Anodized.
3. Shop Primer for Steel Components: red oxide to SPCC Paint 25.
4. Apply one coat of bituminous paint to concealed aluminum and steel surfaces in contact with cementitious or dissimilar materials.

ALUMINUM WINDOWS

REFERENCES

1. Aluminum Association (AA).
 - DAF 45 (2003), Designation System For Aluminum Finishes.
2. American Architectural Manufacturers Association (AAMA)
 - AAMA 611-12, Voluntary Specification for Anodized Architectural

Aluminum.

3. ASTM International (ASTM).
 - ASTM B221 - 13, Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
4. Canadian General Standards Board (CGSB).
 - CAN/CGSB 79.1-M91 - Insect Screens.
5. CSA Group (CSA)
 - CAN/CSA-A440-00/A440.1-00 (R2005) - CAN/CSA-A440-00, Windows / Special Publication A440.1-00, User Selection Guide to CSA Standard CAN/CSA-A440-00, Windows.
 - CAN/CSA-G164-M92 (R2003), Hot Dip Galvanizing of Irregularly Shaped Articles.

ACCEPTABLE MANUFACTURERS

1. Acceptable Products or equivalent:
 - 1 Alumicor Series 970
 - 2 Anotec Series 80
 - 3 Kawneer Series 516.

MATERIALS

1. Materials: to CAN/CSA-A440-00/A440.1-00 supplemented as follows:
 - Extruded Aluminum: ASTM B221.
 - Sheet and Plate Aluminum: ASTM B209, anodizing quality.
2. All windows by same manufacturer.
3. Sash: thermally broken aluminum.
4. Main frame: thermally broken aluminum, perimeter frame size 127mm, to profiles indicated on drawings.
 - Insulation: Insulate hollow and open-back frame sections. Insulation may be factory applied or site applied using Type 4 extruded polystyrene, Type 2 expanded polystyrene or multi-component sprayed polyurethane foam.
5. Glass: to Section 08 80 50 - Glazing, and as scheduled.
6. Screens: to CAN/CGSB-79.1-M91.
 - Type: 1 - standard duty.
 - Class: C - fixed.
 - Style: manufacturer's standard.
 - Insect screening mesh count: manufacturer's standard.
 - Screen frames: aluminum, colour to match window frames.

WINDOW TYPES AND CLASSIFICATION

1. Types: Fixed units with operable casement vents and insulating glass.
2. Classification rating: to CAN/CSA-A440-00/A440.1-00:
 - Air tightness: Fixed/A3.
 - Water tightness: B7.
 - Wind load resistance: C5.
 - Forced Entry: F2.

FABRICATION

1. Fabricate in accordance with CAN/CSA-A440-00/A440.1-00 supplemented as follows:
2. Fabricate units square and true with maximum tolerance of plus or

minus 1.5 mm for units with a diagonal measurement of 1800 mm or less and plus or minus 3 mm for units with a diagonal measurement over 1800 mm.

3. Face dimensions detailed are maximum permissible sizes.
4. Brace frames to maintain squareness and rigidity during shipment and installation.
5. Finish steel clips and reinforcement with 380 g/m² zinc coating to CAN/CSA-G164.

FINISHES

1. Finish Coatings: Conform to AAMA 611.
2. Exposed Aluminum Surfaces: AAMA AA-M12C22A31, Class II Clear Anodized.

ACCESSORIES

1. Hardware: Manufacturer's standard for operating vents and types specified; finish match window framing.

Annexes/Drawings:

The following Annexes and drawings form part of the requirement and must be used as a reference for the scope of requirement in its entirety.

- Section 08 80 50 - Glazing
- Drawings A001-A1000

The successful bidder must provide the following information and accepted by the project authority within 10 working days of notification.

Product Data: Provide component dimensions; describe components within assembly, anchorage and fasteners, glass and infill, internal drainage details and water flow drainage diagrams.

Design Data: Provide framing member structural and physical characteristics, calculations, climatic data and dimensional limitations. Design data to be stamped by a Professional Structural Engineer licensed at the place where the Project is located.

Shop Drawings: Indicate system dimensions, framed opening requirements and tolerances, anticipated deflection under load, affected related Work, weep drainage network, expansion and contraction joint location and details, and field welding required. Shop drawings to be stamped by a Professional Structural Engineer licensed at the place where the Project is located. Indicate materials and details in scale for head, jamb and sill, profiles of components, interior and exterior trim, junction between combination units, elevations of unit, anchorage details, location of isolation coating, description of related components and exposed finishes, fasteners and caulking.

General Requirements:

- The work shall be executed in a diligent manner in accordance with a negotiated firm fixed price and performance period. The period of performance for all Phases of the project shall be completed in **sixty days** from Contract Award.
- All work to be carried out using current standards for workmanship and where applicable work to be carried out by appropriate certified journeyman or supervised apprentice trades workers.
- Contractors are expected to take their own measurements.

Bidder Qualifications:

Perform Work in accordance with Metal Curtain Wall, Window, Store Front and Entrance Guide Specifications Manual.

Design structural support framing components under direct supervision of a Professional Structural Engineer experienced in design of this Work.

Responsibility of the Contractor:

- The Contractor shall be responsible for the professional quality, technical accuracy, and the coordination of all construction and other services furnished under this contract. The Contractor shall, without additional compensation, correct or revise any errors or deficiencies in its construction and other services.
- Design structural support framing components established by a Professional Structural Engineer experienced in the design of this Work Contractor must provide either written or electronically detailed instructions for product installation including all curtain wall and the inserting of thermo panes.
- Contractor must provide a contact name, telephone number and up to 25 hours of on-site or telephone support relating to troubleshooting inquiries involving the products purchased.
- Delivery trucks must be equipped with an unloading device which will permit unloading at sites with no hydraulic, stationary or other type of unloading facility.
- When making deliveries, sufficient personnel must be provided to permit unloading of any type of vehicle without the assistance of federal government personnel.

Construction/Safety Standards:

All applicable Federal, Provincial and Municipal Codes and legislation must be followed and the strictest of each shall be adhered to. Not limited to the following:

- Canadian Standards Association (CSA)
- National Fire Code (NFC)
- Canadian General Standard Board (CGSB)
- Underwriters' Laboratories of Canada (ULC)
- Canada Labour Code (CLC)

Solicitation No. - N° de l'invitation
21C11-196563/A
Client Ref. No. - N° de réf. du client
21C11-19-6563

Amd. No. - N° de la modif.
File No. - N° du dossier
KIN-8-50024

Buyer ID - Id de l'acheteur
KIN508
CCC No./N° CCC - FMS No./N° VME

- Occupational Health and Safety Act 1990
- Canada Labour Code, part 2, Canada Occupational Safety and Health Regs.
- Workplace Safety and Insurance Act, 1997
- Workplace Hazardous Materials Information System (WHMIS)
- Workplace Safety and Insurance Board (WSIB)
- Health & Safety Ontario
- Infrastructure Health and Safety Association (IHSA)
- CSA Standards

Terminology:

CSC – Correctional Service Canada
MPB – Multi-Purpose Building
CO – Contracting Officer

Physical Site Address:

Collins Bay Institution
1455 Bath Road
P.O. Box 190
Kingston ,Ontario K7L 4V9

ANNEX "B"

Pricing Basis

	Description or "Deliverable"	Unit of Issue	Firm Unit Price FOB Destination
1	<p>Product Data: Provide component dimensions; describe components within assembly, anchorage and fasteners, glass and infill, internal drainage details and water flow drainage diagrams.</p> <p>Design Data: Provide framing member structural and physical characteristics, calculations, climatic data and dimensional limitations. Design data to be stamped by a Professional Structural Engineer licensed at the place where the Project is located.</p> <p>Shop Drawings: Indicate system dimensions, framed opening requirements and tolerances, anticipated deflection under load, affected related Work, weep drainage network, expansion and</p>	Lot	\$ _____
2	<p>Final delivery of all items listed below</p> <p>4 Exterior Aluminum Entrance Doors C/W glazing and Hdwr.</p> <p>1 Curtain Wall Frame CW3 C/W Glass/Panels</p> <p>1 Curtain Wall Frame CW4 C/W Glass/Panels</p> <p>2 Curtain Wall Frame CW2 C/W Glass/Panels</p> <p>1 Curtain Wall CW1 C/W Glass/Panels</p> <p>1 Curtain Wall Frame CW5 C/W Vents/Glass/Panels</p> <p>3 Curtain Wall Frame CW6 C/W Vents/Glass/Panels</p> <p>1 Curtain Wall Frame CW8 C/W Vents/Glass/Panels</p> <p>1 Curtain Wall Frame CW7 C/W Vents/Glass/Panels</p> <p>8 Curtain Wall Frame C/W Glass</p> <p>10 Alum Window Frames C/W Glass)</p> <p>1 Curtain Wall Frame CW10 C/W Glass/Panels</p> <p>All installation hardware, sealant and glazing</p>	Lot	\$ _____

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KIN-8-50024

Buyer ID - Id de l'acheteur
KIN508
CCC No./N° CCC - FMS No./N° VME

ANNEX “C” to PART 3 OF THE BID SOLICITATION

ELECTRONIC PAYMENT INSTRUMENTS

The Bidder accepts any of the following Electronic Payment Instrument(s):

- ☐ () VISA Acquisition Card;
- ☐ () MasterCard Acquisition Card;
- ☐ () Direct Deposit (Domestic and International);
- ☐ () Electronic Data Interchange (EDI);
- ☐ () Wire Transfer (International Only);
- ☐ () Large Value Transfer System (LVTS) (Over \$25M)

Annex “D” – Door Hardware and Door and Frame Schedule

Annex “E” - Standard METAL DOORS AND FRAMES Specification

Annex “F” - Curtain Wall Drawings and Picture

Annex “G” – Floor Plan

Part 1 General**1.1 SECTION INCLUDES**

- .1 Hardware for doors and frames.
- .2 Thresholds.
- .3 Weather-stripping, seals and door gaskets.

1.2 RELATED SECTIONS

- .1 Section 08 11 13 - Standard Metal Doors and Frames.
- .2 Section 08 44 13 - Glazed Aluminum Curtain Walls.
- .3 Section 26 29 10 - Motor Starters.
- .4 Section 28 16 00 - Security Systems.
- .5 Section 28 31 02 - Fire Alarm System.
- .6 Section 28 33 00 - Emergency Assistance System.

1.3 REFERENCES

- .1 American National Standards Institute (ANSI) / Builders Hardware Manufacturers Association (BHMA)
 - .1 ANSI/BHMA A156.10-2011, Power Operated Pedestrian Doors.
 - .2 ANSI/BHMA A156.19-2013, Power Assist and Low Energy Power - Operated Doors.
- .2 BHMA (Builders Hardware Manufacturers Association) - A156 series.
- .3 CSA B651-12, Accessible Design for the Built Environment.
- .4 CSDMA (Canadian Steel Door Manufacturers Association).
- .5 DHI (Door and Hardware Institute Canada) - AHC and EHC certification programs.
- .6 DHI (Door and Hardware Institute Canada) - A115 series.
- .7 DHI (Door and Hardware Institute Canada) - WDHS.3.
- .8 NFPA (Fire) 80 - Standard for Fire Doors and Other Opening Protectives, 2013 Edition.
- .9 NFPA (Fire) 252 - Fire Tests of Door Assemblies, 2012 Edition.
- .10 UL 10B - Fire Tests of Doors Assemblies.
- .11 UL 305 - Panic Hardware.
- .12 CAN/ULC S104-10 - Standard Method for Fire Tests of Door Assemblies.

- .13 CAN/ULC S132-07 - Standard for Emergency Exit and Emergency Fire Exit Hardware.

1.4 ADMINISTRATIVE REQUIREMENTS

- .1 Coordination: Coordinate with other work having a direct bearing on work of this Section.
 - .1 Coordinate the work with other directly affected Sections involving manufacture or fabrication of internal reinforcement for door hardware and recessed items.
 - .2 Coordinate Owner's keying requirements during the course of the work.
- .2 Sequencing: Sequence installation to ensure utility connection are achieved in an orderly and expeditious manner.

1.5 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for door hardware and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Samples:
 - .1 Submit for review and acceptance of each unit.
 - .2 Samples will be returned for inclusion into work.
 - .3 Identify each sample by label indicating applicable specification paragraph number, brand name and number, finish and hardware package number.
 - .4 After approval samples will be returned for incorporation in Work.
- .4 Shop Drawings:
 - .1 Indicate locations and mounting heights of each type of hardware, schedules, catalogue cuts, electrical characteristics and connection requirements.
 - .2 Submit manufacturer's parts list and templates.
- .5 Hardware Schedule:
 - .1 Submit contract Hardware Schedule, prepared by and AHC.
 - .2 Finish Hardware Schedule is to be submitted as per DHI vertical format.
- .6 Manufacturer's Instructions: submit manufacturer's installation instructions.

1.6 CLOSEOUT SUBMITTALS

- .1 Submit in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Operation and Maintenance Data: submit operation and maintenance data for door hardware, lubrication requirements and inspection procedures related to preventative maintenance for incorporation into manual.

.3 Record Documentation:

- .1 Record actual locations of installed cylinders and their master key code.
- .2 Keys: Deliver with identifying tags to Departmental Representative by security shipment direct from hardware supplier.

1.7 QUALITY ASSURANCE

- .1 Regulatory Requirement: Conform to applicable code for Products requiring electrical connection. Listed and classified by UL, ULC, testing firm acceptable to the authority having jurisdiction as suitable for the purpose specified and indicated.
- .2 Perform Work in accordance with the following requirements:
 - .1 BHMA - A156 series.
 - .2 CSDMA, DHI - A115 series.
 - .3 CSDMA, DHI - WDHS.3.
 - .4 NFPA (Fire) 80.
 - .5 NFPA (Fire) 252.
 - .6 UL 10B.
 - .7 UL 305.
 - .8 CAN/ULC S104-10.
 - .9 CAN/ULC S132-07.
- .3 Certificates: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
- .4 Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three (3) years documented experience.
- .5 Installer Qualifications: Company specializing in performing the work specified in this section with minimum three (3) years documented experience and approved by the manufacturer.
- .6 Hardware Supplier Personnel: Employ and Architectural Hardware Consultant (AHC) to assist in the work of this section.
- .7 Inspection: The hardware supplier to provide the following services:
 - .1 Perform a site visit when hardware installation is 75% complete. Verify installed hardware for correct installation, functionality and adjustment. Report deficiencies to contractor.
 - .2 Perform a site visit at Interim Inspection. Verify installed hardware for correct keying, installation, functionality and adjustment. Report deficiencies to Departmental Representative. Train end user in proper operation and maintenance of key control system.

1.8 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.

- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Package hardware items individually; label and identify each package with door opening code to match Hardware Schedule.
- .4 Storage and Handling Requirements:
 - .1 Store materials in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect door hardware from nicks, scratches, and blemishes.
 - .3 Protect prefinished surfaces with wrapping .
 - .4 Replace defective or damaged materials with new.

Part 2 Products**2.1 DOOR HARDWARE**

- .1 Refer to Hardware Schedule at end of Section.

2.2 KEYING

- .1 Contact Departmental Representative for Keying Strategy.

2.3 DOOR OPERATOR

- .1 Power-operated pedestrian doors: to ANSI/BHMA A156.10.
- .2 Power assist and low energy power operated doors: to ANSI/BHMA A156.19

2.4 FINISHES

- .1 Finishes: Identified in Hardware Schedule at end of Section.

Part 3 Execution**3.1 PREPARATION**

- .1 Furnish steel door and frame manufacturers with complete instructions and templates for preparation of their work to receive hardware.
- .2 Furnish aluminum door and frame manufacturers with complete instructions and templates for preparation of their work to receive hardware.
- .3 Furnish wood door manufacturers with complete instructions and templates for preparation of their work to receive hardware.
- .4 Furnish manufacturers' instructions for proper installation of each hardware component.

3.2 EXAMINATION

- .1 Verify that doors and frames are ready to receive work and dimensions are as indicated on shop drawings.
- .2 Verify that electric power is available to power operated devices and is of the correct characteristics.

3.3 INSTALLATION

- .1 Manufacturer's Instructions: comply with manufacturer's written recommendations, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.
- .2 Use templates provided by hardware item manufacturer.
- .3 Mounting heights for hardware from finished floor to centre-line of hardware item, refer to:
 - .1 DHI WDMS.3.
 - .2 DHI A115 series.
- .4 Installation of card reader and electric strike door hardware by Qualified Low Voltage Technician.

3.4 FIELD QUALITY CONTROL

- .1 Architectural Hardware Consultant will inspect installation and certify that hardware and installation has been furnished and installed in accordance with manufacturer's written instructions and as specified.

3.5 ADJUSTING

- .1 Adjust door hardware, operators, and controls for optimum, smooth operating condition, safety and for weather tight closure.
- .2 Lubricate hardware, operating equipment and other moving parts.
- .3 Adjust door hardware to ensure tight fit at contact points with frames.

3.6 PROTECTION

- .1 Protect installed products and components from damage during construction.
- .2 Repair damage to adjacent materials caused by door hardware installation.

3.7 DOOR HARDWARE GROUPS

- .1 Hardware group No. 1: (100A/100D/102A-2)
 - .1 3 heavy weight hinges Mont-Hinge BB1099 115x102mm C26D - NRP.
 - .2 1 best lever handle cylindrical lockset 93K-7D-14D-S3-626.
 - .3 1 door closer LCN 4041 x 4040-18G - Alum.

- .4 1 weather-stripping KNC-W23.
- .5 1 door sweep KNC-W24S.
- .6 1 threshold Unique AT6 x door opening width - AL.
- .7 1 floor stop Gallery 209 - C26D.

Balance of hardware by aluminum door supplier.

.2 Hardware group No. 2: (100B, 100C, 200)

- .1 3 heavy weight hinges Mont-Hinge BB1099 115x102mm
C26D - NRP.
- .2 1 best lever handle cylindrical lockset
93K-7D-14D-S3-626.
- .3 1 door closer LCN 4041 x 4040-18G - Alum.
- .4 1 weather-stripping KNC-W23.
- .5 1 door sweep KNC-W24S.
- .6 1 kick plate Gallery 80A-200x890 - C32D.
- .7 1 threshold Unique AT4 x door opening width - AL.
- .8 1 floor stop Gallery 209 - C26D.

.3 Hardware group No. 3: (102A-1)

- .1 3 heavy weight hinges Mont-Hinge BB1099 115x102mm
C26D - NRP.
- .2 1 best lever handle cylindrical lockset
93K-7D-14D-S3-626.
- .3 1 electric strike Trine EN400 24 volt DC [LC]
- .4 1 barrier free pneumatic door operator Stanley
Magic-force 521-626.
- .5 1 actuator Stanley Square Press Switch - Logo Stainless
Steel 115x115mm [HC] mounted to exterior of building.
- .6 1 actuator Stanley Frame Mounted Press Switch - Logo
Stainless Steel 102x57mm [HC] mounted to interior
side of door frame.
- .7 1 weather-stripping KNC-W23.
- .8 1 door sweep KNC-W24S.
- .9 1 threshold Unique AT6 x door opening width - AL.
- .10 1 floor stop Gallery 209 - C26D.

Balance of hardware by aluminum door supplier.

Fixed centre mullion by aluminum door supplier.

.4 Hardware group No. 4: (102B)

- .1 3 heavy weight hinges Mont-Hinge BB1068 115x102mm
C26D - NRP.
- .2 1 best lever handle cylindrical lockset
93K-7AB-14D-S3-626.
- .3 1 barrier free pneumatic door operator Stanley
Magic-force 521-626.
- .4 2 actuators Stanley Square Press Switch - Logo
Stainless Steel 115x115mm [HC]
- .5 1 weather-stripping KNC-W15.

-
- .6 1 door sweep KNC-W24S.
 - .7 2 kick plates Gallery 80A-200x890 - C32D.
 - .8 1 floor stop Gallery 209 - C26D.
 - .5 Hardware group No. 5: (103A, 105A)
 - .1 3 heavy weight hinges Mont-Hinge BB1068 115x102mm
C26D - NRP.
 - .2 1 best lever handle cylindrical lock set
93K 7D 14D S3 626.
 - .3 1 weather-stripping KNC-W15.
 - .4 1 door sweep KNC-W24S.
 - .5 3 silencers Grainger 4JG85.
 - .6 2 kick plates Gallery 80A-200x890 - C32D.
 - .7 1 door closer LCN 4041 x 4040-18G - Alum.
 - .8 1 floor stop Gallery 209 - C26D.
 - .6 Hardware group No. 6: (103B)
 - .1 3 heavy weight hinges Mont-Hinge BB1068 115x102mm
C26D - NRP.
 - .2 1 best lever handle cylindrical lock set
93K 7D 14D S3 626.
 - .3 1 barrier free pneumatic door operator Stanley
Magic-force 521-626.
 - .4 2 actuators Stanley Square Press Switch - Logo
Stainless Steel 115x115mm [HC]
 - .5 1 weather-stripping KNC-W15.
 - .6 1 door sweep KNC-W24S.
 - .7 3 silencers Grainger 4JG85.
 - .8 2 kick plates Gallery 80A-200x890 - C32D.
 - .9 1 floor stop Gallery 209 - C26D.
 - .7 Hardware group No. 7: (105B, 106, 107, 108, 109, 113)
 - .1 3 standard weight hinges Mont-Hinge BB1079 115x102mm
NRP - C26D.
 - .2 1 best lever handle cylindrical lock set
93K 7D 14D S3 626.
 - .3 3 silencers Grainger 4JG85.
 - .4 1 floor stop Gallery 209 - C26D.
 - .8 Hardware group No. 8: (114)
 - .1 3 heavy weight hinges Mont-Hinge BB1068 115x102mm
NRP - C26D.
 - .2 1 best lever handle cylindrical lock set
93K 7D 14D S3 626.
 - .3 3 silencers Grainger 4JG85.
 - .4 1 door closer LCN 4041 x 4040-18G - Alum.
 - .5 1 floor stop Gallery 209 - C26D.
 - .9 Hardware group No. 9: (lunch 112)
 - .1 3 heavy weight hinges Mont-Hinge BB1068 115x102mm
NRP - C26D.

-
- .2 1 best lever handle cylindrical lock set
93K 7AB 14D S3 626.
 - .3 3 silencers Grainger 4JG85.
 - .4 2 kick plates Gallery 80A-200x890 - C32D.
 - .5 1 door closer LCN 4041 x 4040-18G - Alum.
 - .6 1 floor stop Gallery 209 - C26D.
 - .10 Hardware group No. 10: (staff w/c 115/116)
 - .1 3 standard weight hinges Mont-Hinge BB1079 115x102mm
C26D - NRP.
 - .2 1 best lever handle cylindrical privacy set
93K 0L 14D S3 626.
 - .3 3 silencers Grainger 4JG85.
 - .4 2 kick plates Gallery 80A-200x890-C32D.
 - .5 1 door closer LCN 4041 x 4040-18G - Alum.
 - .6 1 floor stop Gallery 209 - C26D.
 - .11 Hardware group No. 11: (120)
 - .1 3 heavy weight hinges Mont-Hinge BB1068 115x102mm
C26D - NRP.
 - .2 1 push plate Gallery 81A-125x500-C32D.
 - .3 1 best deadbolt keyed both sides B6 2N 619.
 - .4 1 door pull Gallery 1000-40x305-C32D.
 - .5 3 silencers Grainger 4JG85.
 - .6 2 kick plates Gallery 80A-200x890 - C32D.
 - .7 1 door closer LCN 4041 x 4040-18G - Alum.
 - .8 1 floor stop Gallery 209 - C26D.
 - .12 Hardware group No. 12: (119)
 - .1 3 heavy weight hinges Mont-Hinge BB1068 115x102mm
C26D - NRP.
 - .2 1 push plate Gallery 81A-125x500-C32D.
 - .3 1 best deadbolt keyed both sides B6 2N 619.
 - .4 1 door pull Gallery 1000-40x305-C32D.
 - .5 3 silencers Grainger 4JG85.
 - .6 2 kick plates Gallery 80A-200x890 - C32D.
 - .7 1 door grille as per mechanical.
 - .8 1 door closer LCN 4041 x 4040-18G - Alum.
 - .9 1 floor stop Gallery 209 - C26D.
 - .13 Hardware group No. 13: (classrooms 121A/121B)
 - .1 3 heavy weight hinges Mont-Hinge BB1068 115x102mm
C26D - NRP.
 - .2 1 best lever handle cylindrical privacy set
93K-7AB-14D-S3-626.
 - .3 1 weather-stripping KNC-W15.
 - .4 1 door sweep KNC-W24S.
 - .5 3 silencers.
 - .6 2 kick plates Gallery 80A-200x890 - C32D.
 - .7 1 door closer LCN 4041 x 4040-18G - Alum.

-
- .8 1 floor stop Gallery 209 - C26D.
 - .14 Hardware group No. 14: (FR 203)
 - .1 3 heavy weight hinges Mont-Hinge BB1068 115x102mm
C26D - NRP.
 - .2 1 ULC listed best lever cylindrical lockset
93K-7D-14D-S3-626.
 - .3 1 weather-stripping KNC-W15.
 - .4 1 door sweep KNC-W24S.
 - .5 2 kick plates Gallery 80A-200x890 - C32D.
 - .6 1 ULC listed door closer LCN 4041 x 4040-18G - Alum.
 - .7 1 floor stop Gallery 209 - C26D.
 - .15 Hardware group No. 15: (202)
 - .1 3 heavy weight hinges Mont-Hinge BB1068 115x102mm
C26D - NRP.
 - .2 1 best lever handle cylindrical lock set
93K 7D 14D S3 626.
 - .3 1 weather-stripping KNC-W15.
 - .4 1 door sweep KNC-W24S.
 - .5 2 kick plates Gallery 80A-200x890 - C32D.
 - .6 1 floor stop Gallery 209 - C26D.
 - .16 Hardware group No. 16: (201A, 201B)
 - .1 6 heavy weight hinges Mont-Hinge BB1068 115x102mm
C26D - NRP.
 - .2 1 ULC listed best lever handle cylindrical privacy set
93K-7D-14D-S3-626 LHR.
 - .3 2 sets ULC listed surface bolts Gallery GSH 70 T/B.
 - .4 1 set ULC listed astragal Unique 100A x
door height - AL.
 - .5 1 weather-stripping KNC-W15.
 - .6 1 door sweep KNC-W24S.
 - .7 4 kick plates Gallery 80A-200x890 - C32D.
 - .8 2 ULC listed door closers LCN 4041 x 4040-18G - Alum.
 - .9 1 floor stop Gallery 209 - C26D.
 - .17 Door Schedule: at end of Section.

END OF SECTION

DOOR AND FRAME SCHEDULE

1. ABBREVIATIONS

AL	Aluminum
AL1	Aluminum Frame
AL2	Aluminum Curtainwall Frame System - refer to Window, Door and Frame Schedule A1000
ANOD	Anodized
AO	Automatic Operatot
CL	Closer
CR	Card Reader
DCG	Double Clear Glass
DC	Door Contact
HM	Hollow Metal
NAT	Natural
PT	Paint
SCG	Single Clear Glass
WD	Wood
TG	Tempered Glass

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100A	100	EXTERIOR	D4	2390	915	45	AL	ANOD	DCG	AL2	AL1	ANOD			DC	CL	1
100B	100	EXTERIOR	D2	2070	915	45	HM	PT	TG	F1	HM	PT			DC	CL	2
100C	100	EXTERIOR	D2	2070	915	45	HM	PT	TG	F1	HM	PT			DC	CL	2
100D	100	EXTERIOR	D4	2390	915	45	AL	ANOD	DCG	AL2	AL1	ANOD			DC	CL	1
102A-1	102	EXTERIOR	D4	2390	915	45	AL	ANOD	DCG	AL2	AL1	ANOD			DC	AO, CR	3
102A-2	102	EXTERIOR	D4	2390	915	45	AL	ANOD	DCG	AL2	AL1	ANOD			DC	CL	1
102B	100	102	D2	2070	915	45	HM	PT	TG	F1	HM	PT			DC	AO	4
103A	100	103	D2	2070	915	45	HM	PT	TG	F1	HM	PT				CL	5
103B	102	103	D2	2070	915	45	HM	PT	TG	F1	HM	PT				AO	6
105A	100	105	D2	2070	915	45	HM	PT	TG	F1	HM	PT				CL	5
105B	103	105	D2	2070	915	45	WD	NAT	TG	F1	HM	PT					7
106	103	106	D2	2070	915	45	WD	NAT	TG	F1	HM	PT					7
107	103	107	D2	2070	915	45	WD	NAT	TG	F1	HM	PT					7
108	103	108	D2	2070	915	45	WD	NAT	TG	F1	HM	PT					7
109	103	109	D2	2070	915	45	WD	NAT	TG	F1	HM	PT					7
112	103	112	D3	2070	915	45	WD	NAT	TG	F1	HM	PT				CL	9
113	103	113	D3	2070	915	45	WD	NAT	TG	F1	HM	PT					7
114	103	114	D3	2070	915	45	WD	NAT	TG	F1	HM	PT				undercut 25mm, CL	8
115	103	115	D1	2070	915	45	WD	NAT		F1	HM	PT				undercut 25mm, CL	10

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Annex “D”

DOORS											FRAMES					REMARKS	
DOOR NO	FROM	INTO	TYPE	HEIGHT	WIDTH	THICKNESS	MATERIAL	FINISH	GLAZING	TYPE	MATERIAL	FINISH	GLAZING	FIRE RATING(minutes)	SECURITY		
116	103	116	D1	2070	915	45	WD	NAT		F1	HM	PT				undercut 25mm, CL	
119	102	119	D1	2070	915	45	HM	PT		F1	HM	PT				CL	
120	102	120	D3	2070	915	45	HM	PT	TG	F1	HM	PT				CL	
121A	100	121A	D2	2070	915	45	HM	PT	TG	F1	HM	PT			DC	CL	
121B	100	121B	D2	2070	915	45	HM	PT	TG	F1	HM	PT			DC	CL	
B-1	100	EXTERIOR	OD1	5130	4840										DC	see MFR's literature for hardware	
B-2	100	EXTERIOR	OD1	5130	4840										DC	see MFR's literature for hardware	
B-4	100	EXTERIOR	OD1	5130	4840										DC	see MFR's literature for hardware	
B-5	100	EXTERIOR	OD1	5130	4840										DC	see MFR's literature for hardware	
B-6	100	EXTERIOR	OD1	5130	4840										DC	see MFR's literature for hardware	
B-7	100	EXTERIOR	OD1	5130	4840										DC	see MFR's literature for hardware	
B-9	100	EXTERIOR	OD1	5130	4840										DC	see MFR's literature for hardware	
B-10	100	EXTERIOR	OD1	5130	4840										DC	see MFR's literature for hardware	
200	200	EXTERIOR	D2	2070	915	45	HM	PT	TG	F1	HM	PT			DC	CL	
201A	200	201	D1	2070	915	45	HM	PT		F2	HM	PT		45		CL, double door	
201B	200	201	D1	2070	915	45	HM	PT		F2	HM	PT		45		CL, double door	
202	200	202	D1	2070	915	45	HM	PT		F2	HM	PT			DC	undercut 25mm, CL	
203	204	203	D1	2070	915	45	HM	PT		F1	HM	PT		45		CL	
Mackay-Lyons Sweetapple Architects Ltd.							CSC MULTI-PURPOSE BUILDING									Project: R.055776.001	

Annex “D”

2188 Gottingen Street, Halifax, NS, B3K 3B4	CBI MINIMUM INSTITUTION (FRONTENAC)	
TEL: 902-429-1867	DOOR SCHEDULE	Page 3

Part 1 General

1.1 SECTION INCLUDES

- .1 Non-rated and fire rated steel frames and doors.
- .2 Non-rated thermally insulated steel doors.
- .3 Glazed interior lights and screens.

1.2 RELATED SECTIONS

- .1 Section 07 92 00 - Joint Sealants.
- .2 Section 08 80 50 - Glazing.
- .3 Section 08 71 00 - Door Hardware and Door and Frame Schedule.
- .4 Section 09 91 13 - Exterior Painting
- .5 Section 09 91 23 - Interior Painting

1.3 REFERENCES

- .1 ASTM International (ASTM).
 - .1 ASTM A653/A653M - 13, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- .2 CGSB
 - .1 CGSB 41-GP-19Ma (1984) - Rigid Vinyl Extrusions for Windows and Doors.
- .3 CSA Group (CSA).
 - .1 CSA G40.20-04/G40.21-13 - General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.
 - .2 CSA O151-09 - Canadian Softwood Plywood.
- .4 Canadian Steel Door Manufacturers Association (CSDMA).
 - .1 Recommended Dimensional Standards - 2000 - July 17-2009.
 - .2 Recommended Selection and Usage Guide - Section 08 11 00, 2009.
- .5 National Fire Protection Association (NFPA).
 - .1 NFPA 80 - 2013, Standard for Fire Doors and Other Opening Protectives
- .6 Standards Council of Canada (SCC).
 - .1 CAN/ULC-S104-10, Standard Method for Fire Tests of Door Assemblies
 - .2 CAN/ULC-S701-11 - Standard for Thermal Insulation, Polystyrene, Boards and Pipe Covering.

1.4 SUBMITTALS FOR REVIEW

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data: Indicate door and frame configurations and finishes, location of cut-outs for hardware reinforcement.
- .3 Shop Drawings:
 - .1 Indicate frame elevations, reinforcement, anchor types and spacing, location of cut-outs for hardware, and finish.
 - .2 Indicate door elevations, internal reinforcement, closure method, and cut-outs for glazing, and finishes.

1.5 QUALITY ASSURANCE

- .1 Conform to requirements of Canadian Steel Door and Frame Manufacturers Association standards.

1.6 REGULATORY REQUIREMENTS

- .1 Fire Rated Door and Frame Construction: Labelled and listed to CAN4-S104M.
- .2 Installed Door and Frame Assembly: Conform to NFPA 80 for fire rated class as indicated.

1.7 DELIVERY, STORAGE, AND PROTECTION

- .1 Remove doors and frames from wrappings or coverings upon receipt on site and inspect for damage.
- .2 Store in vertical position, spaced with blocking to permit air circulation between components.
- .3 Store materials on planks or dunnage, out of water and covered to protect from damage.
- .4 Clean and touch up scratches or disfigurement caused by shipping or handling with zinc-rich primer.

1.8 COORDINATION

- .1 Coordinate the work with frame opening construction, door, and hardware installation.
- .2 Sequence installation to ensure wire connections are achieved in an orderly and expeditious manner.

Part 2 Products

2.1 MATERIALS

- .1 Sheet Steel: Galvanized steel to ASTM A653/A653M, commercial grade (CS), Type B:
 - .1 Coating designation Z275 for exterior doors and frames,
 - .2 Coating designation ZF001 for interior doors and frames.

- .2 Reinforcement Channel: To CSA G40.20/G40.21, Type 44W, coating designation to ASTM A653M, ZF75.
- .3 Plywood: CSA O151 (CSP), CANPLY Grade SHG; unsanded, exterior use, thicknesses as indicated; Urea-Formaldehyde free.

2.2 DOOR CORE MATERIALS

- .1 Honeycomb Core: Structural small cell 25.4 mm maximum kraft paper honeycomb, sanded to required thickness.
- .2 Polystyrene Core: Rigid extruded fire retardant, closed cell board, density 16 to 32 kg/m³, thermal values RSI 1.0 minimum, Type 1, in accordance with CAN/ULC-S701.

2.3 ADHESIVES

- .1 Cores and Steel Components: Manufacturer's standard adhesive.
- .2 Lock Seam: Manufacturer's standard sealant.
- .3 Construction Adhesive: polyurethane construction adhesive, resistant to freezing.

2.4 ACCESSORIES

- .1 Expanding Foam Sealant: to Section 07 92 00 - Joint Sealants.
- .2 Joint Sealers - Interior: Acrylic latex, to Section 07 92 00 - Joint Sealants.
- .3 Joint Sealers - Exterior: Silicone type, to Section 07 92 00 - Joint Sealants; colour to match adjacent wall finish.
- .4 Door Silencers: Single stud rubber/neoprene.
- .5 Exterior Top Caps: Rigid polyvinylchloride extrusion conforming to CGSB 41-GP-19MA.
- .6 Frame Thermal Breaks: Rigid polyvinylchloride extrusion conforming to CGSB 41-GP-19MA.
- .7 Glazing Stops: Formed galvanized steel channel, minimum 16 mm high, accurately fitted, butted at corners and fastened to frame sections with counter-sunk tamper proof sheet metal screws.
- .8 Glass: In accordance with Section 08 80 50 - Glazing; Types as indicated.
- .9 Louvres: Non-fire rated steel louvres, sightless chevron style blades, continuous channel frame with mitred corners, shop primed finish for painting out with door finish. Refer to Drawings for sizes.
- .10 Paste Filler: Automotive type, sandable.

2.5 FABRICATION - DOORS

- .1 Interior Doors - Laminated honeycomb core construction: 16 gauge face sheet thickness, honeycomb core, laminated under pressure to face sheets.
- .2 Exterior Doors - Polystyrene insulated and stiffened construction: 16 gauge face sheet thickness.
- .3 Longitudinal Edges: Mechanically interlocked, tack welded.
- .4 Size doors to have 19 mm gap between bottom of door and finished floor.
- .5 Mortised, blanked, reinforced, drilled and tapped for templated hardware, in accordance with templates provided by hardware supplier.
- .6 Reinforce for surface mounted hardware, anchor hinges, thrust pivots, pivot reinforced hinges, or non-templated hardware.
- .7 Top and Bottom Channels: Inverted, recessed, welded steel channels.
- .8 Provide factory-applied touch-up primer at areas where zinc coating has been removed during fabrication.
- .9 Attach fire rated label to each fire rated door unit. Fire labels to be riveted tags; embossed labeling not acceptable.

2.6 FABRICATION - FRAMES

- .1 Interior Frames: 16 gauge face sheet thickness, welded type construction.
- .2 Exterior Frames: 16 gauge face sheet thickness, welded type construction, thermally broken.
- .3 Mortised, blanked, reinforced, drilled and tapped for templated hardware, in accordance with templates provided by hardware supplier.
- .4 Reinforce frames wider than 1200 mm with roll formed steel channels fitted tightly into frame head, flush with top.
- .5 Prepare frames for silencers. Provide three single silencers for single doors and mullions of double doors on strike side. Provide two silencers on frame head at double doors without mullions.
- .6 Attach fire rated label to each fire rated frame unit. Fire labels to be riveted tags; embossed labeling not acceptable.
- .7 Type "MP" Infill Panels: Fabricate infill panels as metal sheet laminated to plywood core using construction adhesive. Field paint to match frames.
- .8 Frames assemblies joined in field to be tack welded, ground and sanded, and all seams to be filled and sanded smooth.

2.7 FINISH

- .1 Finish: Field painted in accordance with Section 09 91 23 - Interior Painting.

Part 3 Execution

3.1 EXAMINATION

- .1 Verify that opening sizes and tolerances are acceptable; check floor area within path of door swing for flatness.
- .2 Verify doors and frames are correct size, swing, rating and opening number.
- .3 Remove temporary shipping spreaders.

3.2 INSTALLATION

- .1 Install doors and frames to CSDMA.
- .2 Install fire-rated doors and frames in accordance with NFPA 80, and local authority having jurisdiction.
- .3 Coordinate with wall construction for anchor placement.
- .4 Install glazing and louvres.
- .5 Coordinate installation of doors and frames with installation of hardware specified in Section 08 71 00 - Door Hardware and Door and Frame Schedule.
- .6 Set frames plumb, square, level and at correct elevation.
- .7 Secure anchorages and connections to adjacent construction.
- .8 Foam fill shim space at perimeter of frame and open back sections to maintain continuity of thermal envelope.
- .9 Brace frames rigidly in position while building-in. Install wood spreaders at third points of frame rebate height to maintain frame width. Provide vertical support at centre of head for openings exceeding 1200 mm in width.
- .10 Remove wood spreaders after frames have been built-in.
- .11 Make allowance for deflection to ensure structural loads are not transmitted to frame product.
- .12 Install doors, and hardware in accordance with hardware templates and manufacturer's instructions.
- .13 Adjust operable parts for correct clearances and function.
- .14 Install door silencers and glazing.
- .15 Finish paint in accordance with Section 09 91 23 - Interior Painting. Do not paint out fire labels or weather-stripping.

- .16 Install roll formed steel reinforcement channels between two abutting frames. Anchor to structure and floor.

3.3 ERECTION TOLERANCES

- .1 Maximum Diagonal Distortion: 3 mm measured with straight edges, crossed corner to corner.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

- .1 Flush wood doors; non-rated.

1.2 RELATED SECTIONS

- .1 Section 08 11 13 - Standard Metal Doors and Frames: Frames for Wood Doors.
- .2 Section 08 71 00 - Door Hardware and Door and Frame Schedule.
- .3 Section 08 80 50 - Glazing.

1.3 REFERENCES

- .1 Architectural Woodwork Manufacturers Association of Canada (AWMAC).
 - .1 AWMAC QS, Architectural Woodwork Quality Standards Illustrated, 2003, Eight Edition.

1.4 SUBMITTALS FOR REVIEW

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data: Indicate door core materials and construction; veneer species, type and characteristics.
- .3 Shop Drawings: Illustrate door opening criteria, elevations, sizes, types, swings, undercuts required, special beveling, special blocking for hardware, factory machining criteria, factory finishing criteria.
- .4 Samples:
 - .1 Samples full range of factory finished colours available for selection by Departmental Representative.
 - .2 Submit one full corner section, minimum 300 mm x 300 mm legs, representative of completed and finished doors specified. Sample will be retained by Departmental Representative for verification of installed doors.

1.5 SUBMITTALS FOR INFORMATION

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Manufacturer's Installation Instructions: Indicate special installation instructions.

1.6 QUALITY ASSURANCE

- .1 Perform work in accordance with AWMAC QS, Premium Grade.
- .2 Finish doors in accordance with AWMAC QS.

- .3 Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum ten years' experience.

1.7 DELIVERY, STORAGE, AND PROTECTION

- .1 Protect doors with resilient packaging sealed with heat shrunk plastic. Do not store in damp or wet areas; or in areas where sunlight might bleach veneer. Seal top and bottom edges with tinted sealer if stored more than one week. Break seal on site to permit ventilation.

1.8 PROJECT CONDITIONS

- .1 Coordinate the work with door opening construction, door frame and door hardware installation.

Part 2 Products

2.1 NON-RATED FLUSH DOORS

- .1 Flush Interior Doors: 45 mm thick;
 - .1 Face: Veneer Facing to AWMAC QS Grade AA face veneer, Uniform White Birch or Uniform White Maple, plain sliced, for clear factory finish.
 - .2 Particleboard Core: Manufacturer's standard density urea-formaldehyde free particleboard.
 - .3 Stiles and Rails: Manufacturer's optional lifetime anti-warping warranty.

2.2 ACCESSORIES

- .1 Glass and Glazing: Types as scheduled; to Section
- .2 08 80 50 - Glazing.
- .3 Glazing Beads: Rolled steel, mitred corners; prepared for countersink style tamper proof screws. Factory painted, colour by Departmental Representative.

2.3 FABRICATION

- .1 Fabricate non-rated doors in accordance with AWMAC QS requirements.
- .2 Size doors to have 19 mm gap between bottom of door and finished floor unless noted otherwise.
- .3 Factory Preparation for Light Openings: Cut and trim openings through doors where indicated; maintain door manufacturer's warranty.
- .4 Provide lock blocks at lock edge and top of door for closer and for hardware reinforcement.
- .5 Vertical Exposed Edge of Stiles: Matching wood veneer.

- .6 Factory machine doors for finish hardware in accordance with hardware requirements and dimensions. Do not machine for surface hardware.
- .7 Provide solid blocking for through bolted hardware.
- .8 Factory fit and bevel doors for frame opening dimensions identified on shop drawings.
- .9 Provide edge clearances in accordance with AWMAC unless noted otherwise.

2.4 FINISHING

- .1 Factory finish veneer doors in accordance with AWMAC QS Section 1500 to the following finish designations:
 - .1 Premium Finish: Conversion Varnish system, sheen selected by Departmental Representative.
 - .2 Factory pre-finished doors to be individually protected with either transparent or opaque poly-wrap at the factory.

Part 3 Execution

3.1 EXAMINATION

- .1 Verify that opening sizes and tolerances are acceptable.
- .2 Do not install doors in frame openings that are not plumb or are out-of-tolerance for size or alignment.

3.2 INSTALLATION

- .1 Install doors in accordance with AWMAC QS requirements.
- .2 Coordinate installation of doors with installation of frames specified in Section 08 11 13 - Standard Metal Doors and Frames, and hardware specified in Section 08 71 00 - Door Hardware and Door and Frame Schedule.
- .3 Coordinate installation of glass and glazing.

3.3 INSTALLATION TOLERANCES

- .1 Conform to AWMAC QS requirements for fit and clearance tolerances.
- .2 Conform to AWMAC QS Section 1300 requirements for maximum diagonal distortion.

3.4 ADJUSTING

- .1 Adjust door for smooth and balanced door movement.
- .2 Adjust closer for full closure.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

- .1 Division 26 - Electrical: Supply and connection of operator power.

1.2 REFERENCES

- .1 American National Standards Institute (ANSI).
 - .1 ANSI A216.1 - 1977 - Specifications for Sectional Overhead Type Doors.

1.3 QUALITY ASSURANCE

- .1 Sectional overhead doors and all accessories and components required for a complete operable installation manufactured as a system from one manufacturer.

1.4 SUBMITTALS

- .1 Submit shop drawings and product data in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Shop Drawings: Indicate opening dimensions and required tolerances, operating mechanisms, connection details, anchorage spacing, hardware locations, support bracket and installation details.
- .3 Product Data: Provide component construction, anchorage method, hardware.
- .4 Manufacturer's Installation Instructions: Indicate special procedures, perimeter conditions requiring special attention.
- .5 Maintenance Data: Include data for shaft and gearing, lubrication frequency, spare part sources.
- .6 Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

1.5 QUALITY ASSURANCE

- .1 Perform Work in accordance with ANSI A216.1, Application Type Commercial.
- .2 Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum ten (10) years documented experience.
- .3 Installer: Company specializing in performing the work of this section with minimum ten (10) years documented commercial experience and approved by manufacturer.

Part 2 Products

2.1 ACCEPTABLE MANUFACTURER

- .1 Motor-operated insulated steel doors: Overhead Door Company
Thermacore 592, Richards-Wilcox Thermanite ADV200, Wayne-Dalton
Thermospan 200, Upwardor Thermanex TX500.

2.2 MATERIALS

- .1 Door sections: 51 mm thickness thermally broken steel-
polyurethane-steel sandwich construction.
- .2 Steel skins: nominal 0.41 mm galvanized steel sheet, factory
primed finish.
- .3 End caps: 16 gauge, hot-dipped galvanized steel.
- .4 Insulation: foamed-in-place polyurethane core, minimum RSI 3.1.
- .5 Finish: Factory painted finish, white colour.
- .6 Track: commercial duty hardware, low headroom design, 75 mm track
size with graduated wedge type closing, fabricated with hot-dipped
galvanized steel components. Provide continuous galvanized steel
angle track supports welded to jambs. Secure track assemblies for
back-to-back doors as a single unit.
- .7 Hinge and roller assembly: full floating, grease packed, hardened
steel, ball bearing minimum 75 mm diameter, fabricated with hot-
dipped galvanized steel components.
- .8 Counterbalance: helically wound torsion springs with 50,000 heavy
duty cycle rating, aluminum drums with galvanized steel aircraft
cables, solid steel shaft, cast steel pulleys.
- .9 Weatherstripping: factory installed top seal at header, continuous
joint seals between sections, site installed aluminum extrusions
with flap seal at jambs.
- .10 Locking: Provide manufacturer's standard throw-bolt interior
locking assembly to engage each track; equip for padlock supplied
by others.

2.3 ELECTRIC OPERATOR

- .1 Electrical jack shaft side mounted operator.
 - .1 Motor: 115/230 V, single phase, 1/2 HP. Verify electrical
characteristics with Division 26.
- .2 Operation:
 - .1 Hard wired pushbutton stations: 24 VAC control voltage,
surface mounted, with "OPEN-STOP-CLOSE" designations on
pushbuttons. Mount adjacent to doors, height as directed by
Departmental Representative.
 - .2 Emergency operation by chain during power interruption.

- .3 Bottom Safety Bar: electro-mechanical reversing edge, to reverse door to open position when coming in contact with object on closing cycle, integral weatherstripping.
- .4 Infrared Safety Sensors: low-voltage system consisting of infrared transmitter/receiver designed to reverse door closing upon interruption of IR beam. Mount on door jambs to either side of door opening, mounting height maximum 300 mm above finished floor. All wiring to be run in conduit.
- .5 Mounting brackets: designed and fabricated by door installer to support operator, mounted as directed by Departmental Representative. Fabricate from hot dipped galvanized steel angles, size and gauge to suit conditions.

Part 3 Execution

3.1 INSTALLATION

- .1 Install doors and hardware in accordance with manufacturer's instructions.
- .2 Rigidly support rail and operator and secure to supporting structure.
- .3 Install operator including electrical motors, controller units, pushbutton stations, relays and other electrical equipment required for door operation.
- .4 Install infrared safety system.
- .5 Lubricate and adjust door operating components to ensure smooth opening and closing of doors.
- .6 Adjust weatherstripping to form a weathertight seal.

3.2 ERECTION TOLERANCES

- .1 Maximum Variation from Plumb: 1.5 mm.
- .2 Maximum Variation from Level: 1.5 mm.
- .3 Longitudinal or Diagonal Warp: Plus or minus 3 mm from 3 m straight edge.
- .4 Maintain dimensional tolerances and alignment with adjacent work.

3.3 ADJUSTING

- .1 Adjust door assembly to smooth operation and in full contact with weatherstripping.

3.4 CLEANING

- .1 Clean doors and frames.
- .2 Remove temporary labels and visible markings.

3.5 DEMONSTRATION AND TRAINING

- .1 Test each door for proper operation using manual chain hoists, push button stations and remote controls.
- .2 Instruct Departmental Representative and Owner's representative in proper operation of systems, including safety features. Provide instructions for Owner-performed maintenance, if any.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

- .1 Aluminum tube framing system; glazed as scheduled, with operable vents.
- .2 Entrance framing with integral door openings.
- .3 Integral air barrier and vapour retarder.
- .4 Perimeter sealant.

1.2 RELATED SECTIONS

- .1 Section 07 92 00 - Joint Sealants: System perimeter sealant and back-up materials.
- .2 Section 08 71 00 - Door Hardware and Door and Frame Schedule.
- .3 Section 08 80 50 - Glazing.

1.3 REFERENCES

- .1 Aluminum Association (AA).
 - .1 DAF 45 (2003), Designation System For Aluminum Finishes.
- .2 American Architectural Manufacturers Association (AAMA)
 - .1 AAMA 611-12, Voluntary Specification for Anodized Architectural Aluminum.
 - .2 *Metal Curtain Wall, Window, Store Front and Entrance Guide Specifications Manual*, 1976
 - .3 AAMA CW 10:2012, Care And Handling Of Architectural Aluminum From Shop To Site
 - .4 AAMA 501-05, Methods of Test for Exterior Walls.
- .3 ASTM International (ASTM).
 - .1 ASTM B209 - Aluminum and Aluminum-Alloy Sheet and Plate.
 - .2 ASTM B221 - 13, Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
 - .3 ASTM C612 - 14, Standard Specification for Mineral Fiber Block and Board Thermal Insulation.
 - .4 ASTM E283-04 (2012), Test Method For Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls and Doors Under Specified Pressure Differences Across the Specimen.

- .4 CSA Group (CSA).
 - .1 CAN/CSA-A440-00/A440.1-00 (R2005) - CAN/CSA-A440-00, Windows / Special Publication A440.1-00, User Selection Guide to CSA Standard CAN/CSA-A440-00, Windows.
 - .2 CSA 0151-09 - Canadian Softwood Plywood.
- .5 SSPC (The Society for Protective Coatings).
 - .1 Steel Structures Painting Manual, Volume 1 and 2.
 - .2 SSPC PAINT 25 (1997), Red Iron Oxide Zinc Oxide Raw Linseed Oil and Alkyd Primer (without Lead and Chromate Pigments)

1.4 PERFORMANCE REQUIREMENTS

- .1 System Design: Design and size components to withstand dead loads and live loads caused by positive and negative wind loads acting normal to plane of wall.
- .2 Seismic Loads: Design and size components to withstand seismic loads and sway displacement.
- .3 Deflection: Limit mullion deflection to flexure limit of glass with full recovery of glazing materials.
- .4 System Assembly: Accommodate without damage to system, components or deterioration of seals, movement within system, movement between system and perimeter framing components, dynamic loading and release of loads, deflection of structural support framing, tolerance of supporting components.
- .5 Air Infiltration: Limit air infiltration through assembly to 0.03 l/s/sq m of wall area, measured at a reference differential pressure across assembly of 300 Pa as measured in accordance with ASTM E283.
- .6 Vapour Seal: Limit vapour seal with interior atmospheric pressure of 25 mm, 22 degrees C, 40 percent RH without seal failure.
- .7 Expansion / Contraction: System to provide for expansion and contraction within system components caused by a cycling temperature range of 95 degrees C over a 12 hour period without causing detrimental affect to system components.
- .8 System Internal Drainage: Drain water entering joints, condensation occurring in glazing channels, or migrating moisture occurring within system, to the exterior by a weep drainage network.
- .9 Air and Vapour Seal: Maintain continuous air barrier and vapour retarder throughout assembly, primarily in line with inside pane of glass and heel bead of glazing compound.
- .10 Not Permitted: Vibration harmonics, wind whistles, noises caused by thermal movement, thermal movement transmitted to other building elements, loosening, weakening, or fracturing of attachments or components of system.

1.5 SUBMITTALS FOR REVIEW

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data: Provide component dimensions, describe components within assembly, anchorage and fasteners, glass and infill, internal drainage details and water flow drainage diagrams.
- .3 Design Data: Provide framing member structural and physical characteristics, calculations, climatic data and dimensional limitations. Design data to be stamped by a Professional Structural Engineer licensed at the place where the Project is located.
- .4 Shop Drawings: Indicate system dimensions, framed opening requirements and tolerances, anticipated deflection under load, affected related Work, weep drainage network, expansion and contraction joint location and details, and field welding required. Shop drawings to be stamped by a Professional Structural Engineer licensed at the place where the Project is located.

1.6 QUALITY ASSURANCE

- .1 Perform Work in accordance with Metal Curtain Wall, Window, Store Front and Entrance Guide Specifications Manual.
- .2 Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.
- .3 Installer Qualifications: Company specializing in performing the work of this section with minimum five years documented experience and approved by manufacturer.
- .4 Design structural support framing components under direct supervision of a Professional Structural Engineer experienced in design of this Work and licensed at the place where the Project is located.

1.7 PRE-INSTALLATION MEETING

- .1 Convene one week before starting work of this section.

1.8 DELIVERY, STORAGE, AND PROTECTION

- .1 Handle work of this Section in accordance with AAMA CW 10.
- .2 Protect prefinished aluminum surfaces with wrapping. Do not use adhesive papers or sprayed coatings which bond when exposed to sunlight or weather. Puncture wrappings at ends for ventilation.

1.9 ENVIRONMENTAL REQUIREMENTS

- .1 Do not install sealants when ambient temperature is less than 5 degrees C.
- .2 Maintain this minimum temperature during and after installation of sealants.

1.10 COORDINATION

- .1 Coordinate with other work having a direct bearing on work of this section.
- .2 Coordinate the Work with installation of air barrier placement and vapour retarder placement.

1.11 WARRANTY

- .1 Provide a five year warranty to include coverage for complete system for failure to meet specified requirements.

Part 2 Products

2.1 CURTAIN WALL SYSTEM

- .1 Acceptable Products:
 - .1 Alumicor VersaWall 2200.
 - .2 Anotec Series 3400.
 - .3 Kawneer 1602.

2.2 MATERIALS

- .1 Extruded Aluminum: ASTM B221.
- .2 Sheet Aluminum: ASTM B209.
- .3 Fasteners: Stainless steel.

2.3 CURTAIN WALL COMPONENTS

- .1 Size: 50 mm width x minimum 150 mm deep back section
- .2 Format: 50 mm face x 19 mm deep outside glazed pressure plate format.
- .3 Rain Screen: Drainage holes, deflector plates and internal flashings to accommodate internal weep drainage system.
- .4 Provide internal mullion baffles to eliminate "stack effect" air movement within internal spaces.
- .5 Integral Aluminum Doors and Frames:
 - .1 Manufacturer's standard thermally broken mullion frame intended for gear hinges, pile weatherstripping at meeting stiles.
 - .2 Zero-sightline aluminum door stops secured to curtain wall system, with replaceable pile weatherstripping.
 - .3 Doors: Manufacturer's thermally broken door, nominal 145 mm stiles, 140 mm top rail and 175 mm bottom rail:

- .1 Acceptable Products:
 - .1 Alumicor Canadiana Insuldoor Series
 - .2 Anotec Insuldoor Monumental Series 23.
 - .3 Kawneer Insulclad Series.
- .4 Door Hardware: Refer to Section 08 71 00 - Door Hardware and Door and Frame Schedule.
- .6 Operable Vents:
 - .1 Casment vents with insect screens.
 - .2 Provide manufacturer's standard hardware, finish to match aluminum framing.
 - .3 Acceptable Products:
 - .1 Anotec Series 80.
 - .2 Alumicor UniVent 1350.
 - .3 Kawneer Series 526.

2.4 MISCELLANEOUS COMPONENTS

- .1 Aluminum Infill Panel: fully adhered 3 mm thickness extruded aluminum sheet over 19 mm extrude polystyrene insulation. Infill panels in doors to have aluminum sheet both sides.
- .2 Aluminum Spandrel Panels: Assembly consisting of extruded aluminum sheet, semi-rigid mineral wool insulation and back pan.
 - .1 Sheet Aluminum: 3 mm aluminum extruded sheet.
 - .2 Semi-rigid insulation: Mineral wool to ASTM C612.
 - .3 Back Pan: Depth as indicated or to match depth of curtain wall framing. Reinforce back pans with stiffeners welded to pan assembly. Clear anodized finish.
- .3 Column Covers: Custom brake formed extrusion for concealing structural steel and for corner details in curtain wall; 3 mm thick extruded aluminum, full contact pressure bonded ensuring flat surface, anodized finish to match curtain wall mullion sections, custom profile, insulated with semi-rigid insulation as indicated.
- .4 Flashings: 0.80 mm thick aluminum, finish to match curtain wall mullion sections where exposed, secured with concealed fastening method.
- .5 Plywood: CSA O151 (CSP), CANPLY Grade SHG; unsanded, exterior use, thicknesses as indicated; Urea-Formaldehyde free.

- .6 Construction Adhesive: polyurethane construction adhesive, resistant to freezing.
- .7 Aluminum Trim: For use above curtain walls to roof level (Refer to typical Section Detail 16/A600) and below curtain wall at overhead doors (Refer to typical Section Detail 9/A600):
- .8 .1 Custom brake formed extrusion, seamless, minimum 3 mm thick extruded aluminum, full contact pressure bonded ensuring flat surface, anodized finish to match curtain wall mullion sections, profiles as indicated.

2.5 GLASS AND GLAZING MATERIALS

- .1 Glass Materials: Insulating glass units for exterior locations, tempered single pane glazing for interior locations; refer to Section 08 80 50 - Glazing.
- .2 Glazing Materials: Type to suit application to achieve weather, moisture, and air infiltration requirements.
- .3 Glazed Insulated Spandrel: Assembly consisting of spandrel glazing to Section 08 80 50 - Glazing, semi-rigid mineral wool insulation, and back pan. Refer to Drawings for locations.
 - .1 Semi-rigid insulation: Mineral wool to ASTM C612.
 - .2 Back Pan: Depth as indicated or to match depth of curtain wall framing. Reinforce back pans with stiffeners welded to pan assembly. Clear anodized finish.

2.6 SEALANT MATERIALS

- .1 Sealant and Backing Materials: as specified in Section 07 92 00 - Joint Sealants; of types described below.
- .2 Perimeter Sealant: Silicone; colour to match aluminum framing.
- .3 Expanding Foam Insulation and Sealant: to Section 07 92 00 - Joint Sealant.

2.7 FABRICATION

- .1 Fabricate system components with minimum clearances and shim spacing around perimeter of assembly, yet enabling installation and dynamic movement of perimeter seal. Utilize deflection track framing where indicated or otherwise required by design.
- .2 Provide dead load anchors and clips to attach curtain wall assembly to floor slab and supporting structural steel; including suspended assemblies not bearing on foundations or footing.
- .3 Provide reinforcing steel within tubular extrusions where required by design.
- .4 Accurately fit and secure joints and corners. Make joints flush, hairline, and weatherproof.
- .5 Prepare components to receive anchor devices. Fabricate anchors.

- .6 Arrange fasteners and attachments to ensure concealment from view.
- .7 Reinforce interior horizontal head rail to receive drapery track brackets and attachments.
- .8 Reinforce framing members for external imposed loads.
- .9 Aluminum Panels: Fabricate panels as extruded aluminum sheet laminated to plywood core using construction adhesive.

2.8 FINISHES

- .1 Finish Coatings: Conform to AAMA 611.
- .2 Exposed Aluminum Surfaces: AAMA AA-M12C22A31, Class II Clear Anodized.
- .3 Shop Primer for Steel Components: red oxide to SPCC Paint 25.
- .4 Apply one coat of bituminous paint to concealed aluminum and steel surfaces in contact with cementitious or dissimilar materials.

Part 3 Execution

3.1 EXAMINATION

- .1 Verification of existing conditions before starting work.
- .2 Verify dimensions, tolerances, and method of attachment with other work.
- .3 Verify wall openings and adjoining air barrier and vapour retarder materials are ready to receive work of this section.

3.2 INSTALLATION

- .1 Install curtain wall system in accordance with manufacturer's written instructions.
- .2 Attach to structure to permit sufficient adjustment to accommodate construction tolerances and other irregularities.
- .3 Install structural clip attaching curtain wall to building structure as required by curtain wall design and as shown on shop drawings.
- .4 Provide alignment attachments and shims to permanently fasten system to building structure.
- .5 Align assembly plumb and level, free of warp or twist. Maintain assembly dimensional tolerances and align with adjacent work.
- .6 Provide thermal isolation where components penetrate or disrupt building insulation.
- .7 Coordinate attachment and seal of perimeter air barrier and vapour retarder materials.

- .8 Foam fill shim spaces at perimeter of assembly to maintain continuity of thermal barrier.
- .9 Install glass in accordance with Section 08 80 50 - Glazing, to glazing method required to achieve performance criteria.
- .10 Install perimeter sealant to method required to achieve performance criteria.

3.3 ERECTION TOLERANCES

- .1 Maximum Variation from Plumb: 1.5 mm/m non-cumulative or 12 mm/30 m, whichever is less.
- .2 Maximum Misalignment of Two Adjoining Members Abutting in Plane: 0.8 mm.
- .3 Sealant Space Between Curtain Wall Mullions and Adjacent Construction: Maximum of 19 mm and minimum of 6 mm.

3.4 CLEANING

- .1 Remove protective material from prefinished aluminum surfaces.
- .2 Wash down surfaces with a solution of mild detergent in warm water, applied with soft, clean wiping cloths. Take care to remove dirt from corners. Wipe surfaces clean.
- .3 Remove excess sealant by moderate use of mineral spirits or other solvent acceptable to sealant manufacturer.

3.5 PROTECTION OF FINISHED WORK

- .1 Protect finished Work from damage.

END OF SECTION

Part 1 General

1.1 RELATED SECTIONS

- .1 Section 07 92 00 - Joint Sealants.
- .2 Section 08 80 50 - Glazing.

1.2 REFERENCES

- .1 Aluminum Association (AA).
 - .1 DAF 45 (2003), Designation System For Aluminum Finishes.
- .2 American Architectural Manufacturers Association (AAMA)
 - .1 AAMA 611-12, Voluntary Specification for Anodized Architectural Aluminum.
- .3 ASTM International (ASTM).
 - .1 ASTM B221 - 13, Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
- .4 Canadian General Standards Board (CGSB).
 - .1 CAN/CGSB 79.1-M91 - Insect Screens.
- .5 CSA Group (CSA)
 - .1 CAN/CSA-A440-00/A440.1-00 (R2005) - CAN/CSA-A440-00, Windows / Special Publication A440.1-00, User Selection Guide to CSA Standard CAN/CSA-A440-00, Windows.
 - .2 CAN/CSA-G164-M92 (R2003), Hot Dip Galvanizing of Irregularly Shaped Articles.

1.3 SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit shop drawings: Indicate materials and details in scale for head, jamb and sill, profiles of components, interior and exterior trim, junction between combination units, elevations of unit, anchorage details, location of isolation coating, description of related components and exposed finishes, fasteners and caulking.
- .3 Submit test reports from approved independent testing laboratories, certifying compliance with specifications, for:
 - .1 Windows classifications.
 - .2 Anodized finish, weathering characteristics.
 - .3 Insect screens.
 - .4 Air tightness.
 - .5 Water tightness.
 - .6 Wind load resistance.
 - .7 Sash strength and stiffness.

- .8 Ease of operation - windows with operable lights.
- .9 Forced entry resistance.
- .10 Mullion deflection - combination and composite windows.

1.4 MOCK-UPS

- .1 Provide mock-ups in accordance with Section 01 45 00 - Quality Control.
- .2 Install where directed. Mock-up to illustrate typical installation method; thermal continuity; continuation of air/vapour barrier; anchorage.
- .3 Approved mock-ups may remain as part of finished Work.

Part 2 Products

2.1 ACCEPTABLE MANUFACTURERS

- .1 Acceptable Products: Alumicor Series 970, Anotec Series 80, Kawneer Series 516.

2.2 MATERIALS

- .1 Materials: to CAN/CSA-A440-00/A440.1-00 supplemented as follows:
 - .1 Extruded Aluminum: ASTM B221.
 - .2 Sheet and Plate Aluminum: ASTM B209, anodizing quality.
- .2 All windows by same manufacturer.
- .3 Sash: thermally broken aluminum.
- .4 Main frame: thermally broken aluminum, perimeter frame size 127 mm, to profiles indicated on drawings.
 - .1 Insulation: Insulate hollow and open-back frame sections. Insulation may be factory applied or site applied using Type 4 extruded polystyrene, Type 2 expanded polystyrene or multi-component sprayed polyurethane foam.
- .5 Glass: to Section 08 80 50 - Glazing, and as scheduled.
- .6 Screens: to CAN/CGSB-79.1-M91.
 - .1 Type: 1 - standard duty.
 - .2 Class: C - fixed.
 - .3 Style: manufacturer's standard.
 - .4 Insect screening mesh count: manufacturer's standard.
 - .5 Screen frames: aluminum, colour to match window frames.

2.3 WINDOW TYPES AND CLASSIFICATION

- .1 Types: Fixed units with operable casement vents and insulating glass.
- .2 Classification rating: to CAN/CSA-A440-00/A440.1-00:
 - .1 Air tightness: Fixed/A3.

- .2 Water tightness: B7.
- .3 Wind load resistance: C5.
- .4 Forced Entry: F2.

2.4 FABRICATION

- .1 Fabricate in accordance with CAN/CSA-A440-00/A440.1-00 supplemented as follows:
- .2 Fabricate units square and true with maximum tolerance of plus or minus 1.5 mm for units with a diagonal measurement of 1800 mm or less and plus or minus 3 mm for units with a diagonal measurement over 1800 mm.
- .3 Face dimensions detailed are maximum permissible sizes.
- .4 Brace frames to maintain squareness and rigidity during shipment and installation.
- .5 Finish steel clips and reinforcement with 380 g/m² zinc coating to CAN/CSA-G164.

2.5 FINISHES

- .1 Finish Coatings: Conform to AAMA 611.
- .2 Exposed Aluminum Surfaces: AAMA AA-M12C22A31, Class II Clear Anodized.

2.6 ACCESSORIES

- .1 Hardware: Manufacturer's standard for operating vents and types specified; finish match window framing.
- .2 Perimeter Sealant: Silicone to Section 07 92 00 - Joint Sealants; colour to match aluminum framing.
- .3 Expanding Foam Insulation and Sealant: to Section 07 21 29.03 - Sprayed Insulation - Polyurethane Foam, VOC compliant.

Part 3 Execution

3.1 WINDOW INSTALLATION

- .1 Install in accordance with CSA PKG.A440-00.
- .2 Fabricate and install sill and jamb covers as indicated.
- .3 Arrange components to prevent abrupt variation in colour.
- .4 Foam fill perimeter of window framing to seal air/vapour barrier.

3.2 CAULKING

- .1 Seal joints between windows and adjacent assemblies with sealant over foam backer rod.

-
- .2 Apply sealant in accordance with Section 07 92 00 - Joint Sealants. Conceal sealant within window units except where exposed use is permitted by Departmental Representative.
 - .3 Seal exterior joints between windows and masonry and flashings using silicone sealant.
 - .4 Seal interior joints around window using paintable latex sealant.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

- .1 Hardware for doors and frames.
- .2 Thresholds.
- .3 Weather-stripping, seals and door gaskets.

1.2 RELATED SECTIONS

- .1 Section 08 11 13 - Standard Metal Doors and Frames.
- .2 Section 08 44 13 - Glazed Aluminum Curtain Walls.
- .3 Section 26 29 10 - Motor Starters.
- .4 Section 28 16 00 - Security Systems.
- .5 Section 28 31 02 - Fire Alarm System.
- .6 Section 28 33 00 - Emergency Assistance System.

1.3 REFERENCES

- .1 American National Standards Institute (ANSI) / Builders Hardware Manufacturers Association (BHMA)
 - .1 ANSI/BHMA A156.10-2011, Power Operated Pedestrian Doors.
 - .2 ANSI/BHMA A156.19-2013, Power Assist and Low Energy Power - Operated Doors.
- .2 BHMA (Builders Hardware Manufacturers Association) - A156 series.
- .3 CSA B651-12, Accessible Design for the Built Environment.
- .4 CSDMA (Canadian Steel Door Manufacturers Association).
- .5 DHI (Door and Hardware Institute Canada) - AHC and EHC certification programs.
- .6 DHI (Door and Hardware Institute Canada) - A115 series.
- .7 DHI (Door and Hardware Institute Canada) - WDHS.3.
- .8 NFPA (Fire) 80 - Standard for Fire Doors and Other Opening Protectives, 2013 Edition.
- .9 NFPA (Fire) 252 - Fire Tests of Door Assemblies, 2012 Edition.
- .10 UL 10B - Fire Tests of Doors Assemblies.
- .11 UL 305 - Panic Hardware.
- .12 CAN/ULC S104-10 - Standard Method for Fire Tests of Door Assemblies.

- .13 CAN/ULC S132-07 - Standard for Emergency Exit and Emergency Fire Exit Hardware.

1.4 ADMINISTRATIVE REQUIREMENTS

- .1 Coordination: Coordinate with other work having a direct bearing on work of this Section.
 - .1 Coordinate the work with other directly affected Sections involving manufacture or fabrication of internal reinforcement for door hardware and recessed items.
 - .2 Coordinate Owner's keying requirements during the course of the work.
- .2 Sequencing: Sequence installation to ensure utility connection are achieved in an orderly and expeditious manner.

1.5 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for door hardware and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Samples:
 - .1 Submit for review and acceptance of each unit.
 - .2 Samples will be returned for inclusion into work.
 - .3 Identify each sample by label indicating applicable specification paragraph number, brand name and number, finish and hardware package number.
 - .4 After approval samples will be returned for incorporation in Work.
- .4 Shop Drawings:
 - .1 Indicate locations and mounting heights of each type of hardware, schedules, catalogue cuts, electrical characteristics and connection requirements.
 - .2 Submit manufacturer's parts list and templates.
- .5 Hardware Schedule:
 - .1 Submit contract Hardware Schedule, prepared by and AHC.
 - .2 Finish Hardware Schedule is to be submitted as per DHI vertical format.
- .6 Manufacturer's Instructions: submit manufacturer's installation instructions.

1.6 CLOSEOUT SUBMITTALS

- .1 Submit in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Operation and Maintenance Data: submit operation and maintenance data for door hardware, lubrication requirements and inspection procedures related to preventative maintenance for incorporation into manual.

.3 Record Documentation:

- .1 Record actual locations of installed cylinders and their master key code.
- .2 Keys: Deliver with identifying tags to Departmental Representative by security shipment direct from hardware supplier.

1.7 QUALITY ASSURANCE

- .1 Regulatory Requirement: Conform to applicable code for Products requiring electrical connection. Listed and classified by UL, ULC, testing firm acceptable to the authority having jurisdiction as suitable for the purpose specified and indicated.
- .2 Perform Work in accordance with the following requirements:
 - .1 BHMA - A156 series.
 - .2 CSDMA, DHI - A115 series.
 - .3 CSDMA, DHI - WDHS.3.
 - .4 NFPA (Fire) 80.
 - .5 NFPA (Fire) 252.
 - .6 UL 10B.
 - .7 UL 305.
 - .8 CAN/ULC S104-10.
 - .9 CAN/ULC S132-07.
- .3 Certificates: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
- .4 Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three (3) years documented experience.
- .5 Installer Qualifications: Company specializing in performing the work specified in this section with minimum three (3) years documented experience and approved by the manufacturer.
- .6 Hardware Supplier Personnel: Employ and Architectural Hardware Consultant (AHC) to assist in the work of this section.
- .7 Inspection: The hardware supplier to provide the following services:
 - .1 Perform a site visit when hardware installation is 75% complete. Verify installed hardware for correct installation, functionality and adjustment. Report deficiencies to contractor.
 - .2 Perform a site visit at Interim Inspection. Verify installed hardware for correct keying, installation, functionality and adjustment. Report deficiencies to Departmental Representative. Train end user in proper operation and maintenance of key control system.

1.8 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.

- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Package hardware items individually; label and identify each package with door opening code to match Hardware Schedule.
- .4 Storage and Handling Requirements:
 - .1 Store materials in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect door hardware from nicks, scratches, and blemishes.
 - .3 Protect prefinished surfaces with wrapping .
 - .4 Replace defective or damaged materials with new.

Part 2 Products

2.1 DOOR HARDWARE

- .1 Refer to Hardware Schedule at end of Section.

2.2 KEYING

- .1 Contact Departmental Representative for Keying Strategy.

2.3 DOOR OPERATOR

- .1 Power-operated pedestrian doors: to ANSI/BHMA A156.10.
- .2 Power assist and low energy power operated doors: to ANSI/BHMA A156.19

2.4 FINISHES

- .1 Finishes: Identified in Hardware Schedule at end of Section.

Part 3 Execution

3.1 PREPARATION

- .1 Furnish steel door and frame manufacturers with complete instructions and templates for preparation of their work to receive hardware.
- .2 Furnish aluminum door and frame manufacturers with complete instructions and templates for preparation of their work to receive hardware.
- .3 Furnish wood door manufacturers with complete instructions and templates for preparation of their work to receive hardware.
- .4 Furnish manufacturers' instructions for proper installation of each hardware component.

3.2 EXAMINATION

- .1 Verify that doors and frames are ready to receive work and dimensions are as indicated on shop drawings.
- .2 Verify that electric power is available to power operated devices and is of the correct characteristics.

3.3 INSTALLATION

- .1 Manufacturer's Instructions: comply with manufacturer's written recommendations, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.
- .2 Use templates provided by hardware item manufacturer.
- .3 Mounting heights for hardware from finished floor to centre-line of hardware item, refer to:
 - .1 DHI WDMS.3.
 - .2 DHI A115 series.
- .4 Installation of card reader and electric strike door hardware by Qualified Low Voltage Technician.

3.4 FIELD QUALITY CONTROL

- .1 Architectural Hardware Consultant will inspect installation and certify that hardware and installation has been furnished and installed in accordance with manufacturer's written instructions and as specified.

3.5 ADJUSTING

- .1 Adjust door hardware, operators, and controls for optimum, smooth operating condition, safety and for weather tight closure.
- .2 Lubricate hardware, operating equipment and other moving parts.
- .3 Adjust door hardware to ensure tight fit at contact points with frames.

3.6 PROTECTION

- .1 Protect installed products and components from damage during construction.
- .2 Repair damage to adjacent materials caused by door hardware installation.

3.7 DOOR HARDWARE GROUPS

- .1 Hardware group No. 1: (100A/100D/102A-2)
 - .1 3 heavy weight hinges Mont-Hinge BB1099 115x102mm C26D - NRP.
 - .2 1 best lever handle cylindrical lockset 93K-7D-14D-S3-626.
 - .3 1 door closer LCN 4041 x 4040-18G - Alum.

- .4 1 weather-stripping KNC-W23.
- .5 1 door sweep KNC-W24S.
- .6 1 threshold Unique AT6 x door opening width - AL.
- .7 1 floor stop Gallery 209 - C26D.

Balance of hardware by aluminum door supplier.

.2 Hardware group No. 2: (100B, 100C, 200)

- .1 3 heavy weight hinges Mont-Hinge BB1099 115x102mm
C26D - NRP.
- .2 1 best lever handle cylindrical lockset
93K-7D-14D-S3-626.
- .3 1 door closer LCN 4041 x 4040-18G - Alum.
- .4 1 weather-stripping KNC-W23.
- .5 1 door sweep KNC-W24S.
- .6 1 kick plate Gallery 80A-200x890 - C32D.
- .7 1 threshold Unique AT4 x door opening width - AL.
- .8 1 floor stop Gallery 209 - C26D.

.3 Hardware group No. 3: (102A-1)

- .1 3 heavy weight hinges Mont-Hinge BB1099 115x102mm
C26D - NRP.
- .2 1 best lever handle cylindrical lockset
93K-7D-14D-S3-626.
- .3 1 electric strike Trine EN400 24 volt DC [LC]
- .4 1 barrier free pneumatic door operator Stanley
Magic-force 521-626.
- .5 1 actuator Stanley Square Press Switch - Logo Stainless
Steel 115x115mm [HC] mounted to exterior of building.
- .6 1 actuator Stanley Frame Mounted Press Switch - Logo
Stainless Steel 102x57mm [HC] mounted to interior
side of door frame.
- .7 1 weather-stripping KNC-W23.
- .8 1 door sweep KNC-W24S.
- .9 1 threshold Unique AT6 x door opening width - AL.
- .10 1 floor stop Gallery 209 - C26D.

Balance of hardware by aluminum door supplier.

Fixed centre mullion by aluminum door supplier.

.4 Hardware group No. 4: (102B)

- .1 3 heavy weight hinges Mont-Hinge BB1068 115x102mm
C26D - NRP.
- .2 1 best lever handle cylindrical lockset
93K-7AB-14D-S3-626.
- .3 1 barrier free pneumatic door operator Stanley
Magic-force 521-626.
- .4 2 actuators Stanley Square Press Switch - Logo
Stainless Steel 115x115mm [HC]
- .5 1 weather-stripping KNC-W15.

- .6 1 door sweep KNC-W24S.
- .7 2 kick plates Gallery 80A-200x890 - C32D.
- .8 1 floor stop Gallery 209 - C26D.
- .5 Hardware group No. 5: (103A, 105A)
 - .1 3 heavy weight hinges Mont-Hinge BB1068 115x102mm
C26D - NRP.
 - .2 1 best lever handle cylindrical lock set
93K 7D 14D S3 626.
 - .3 1 weather-stripping KNC-W15.
 - .4 1 door sweep KNC-W24S.
 - .5 3 silencers Grainger 4JG85.
 - .6 2 kick plates Gallery 80A-200x890 - C32D.
 - .7 1 door closer LCN 4041 x 4040-18G - Alum.
 - .8 1 floor stop Gallery 209 - C26D.
- .6 Hardware group No. 6: (103B)
 - .1 3 heavy weight hinges Mont-Hinge BB1068 115x102mm
C26D - NRP.
 - .2 1 best lever handle cylindrical lock set
93K 7D 14D S3 626.
 - .3 1 barrier free pneumatic door operator Stanley
Magic-force 521-626.
 - .4 2 actuators Stanley Square Press Switch - Logo
Stainless Steel 115x115mm [HC]
 - .5 1 weather-stripping KNC-W15.
 - .6 1 door sweep KNC-W24S.
 - .7 3 silencers Grainger 4JG85.
 - .8 2 kick plates Gallery 80A-200x890 - C32D.
 - .9 1 floor stop Gallery 209 - C26D.
- .7 Hardware group No. 7: (105B, 106, 107, 108, 109, 113)
 - .1 3 standard weight hinges Mont-Hinge BB1079 115x102mm
NRP - C26D.
 - .2 1 best lever handle cylindrical lock set
93K 7D 14D S3 626.
 - .3 3 silencers Grainger 4JG85.
 - .4 1 floor stop Gallery 209 - C26D.
- .8 Hardware group No. 8: (114)
 - .1 3 heavy weight hinges Mont-Hinge BB1068 115x102mm
NRP - C26D.
 - .2 1 best lever handle cylindrical lock set
93K 7D 14D S3 626.
 - .3 3 silencers Grainger 4JG85.
 - .4 1 door closer LCN 4041 x 4040-18G - Alum.
 - .5 1 floor stop Gallery 209 - C26D.
- .9 Hardware group No. 9: (lunch 112)
 - .1 3 heavy weight hinges Mont-Hinge BB1068 115x102mm
NRP - C26D.

- .2 1 best lever handle cylindrical lock set
93K 7AB 14D S3 626.
- .3 3 silencers Grainger 4JG85.
- .4 2 kick plates Gallery 80A-200x890 - C32D.
- .5 1 door closer LCN 4041 x 4040-18G - Alum.
- .6 1 floor stop Gallery 209 - C26D.
- .10 Hardware group No. 10: (staff w/c 115/116)
 - .1 3 standard weight hinges Mont-Hinge BB1079 115x102mm
C26D - NRP.
 - .2 1 best lever handle cylindrical privacy set
93K 0L 14D S3 626.
 - .3 3 silencers Grainger 4JG85.
 - .4 2 kick plates Gallery 80A-200x890-C32D.
 - .5 1 door closer LCN 4041 x 4040-18G - Alum.
 - .6 1 floor stop Gallery 209 - C26D.
- .11 Hardware group No. 11: (120)
 - .1 3 heavy weight hinges Mont-Hinge BB1068 115x102mm
C26D - NRP.
 - .2 1 push plate Gallery 81A-125x500-C32D.
 - .3 1 best deadbolt keyed both sides B6 2N 619.
 - .4 1 door pull Gallery 1000-40x305-C32D.
 - .5 3 silencers Grainger 4JG85.
 - .6 2 kick plates Gallery 80A-200x890 - C32D.
 - .7 1 door closer LCN 4041 x 4040-18G - Alum.
 - .8 1 floor stop Gallery 209 - C26D.
- .12 Hardware group No. 12: (119)
 - .1 3 heavy weight hinges Mont-Hinge BB1068 115x102mm
C26D - NRP.
 - .2 1 push plate Gallery 81A-125x500-C32D.
 - .3 1 best deadbolt keyed both sides B6 2N 619.
 - .4 1 door pull Gallery 1000-40x305-C32D.
 - .5 3 silencers Grainger 4JG85.
 - .6 2 kick plates Gallery 80A-200x890 - C32D.
 - .7 1 door grille as per mechanical.
 - .8 1 door closer LCN 4041 x 4040-18G - Alum.
 - .9 1 floor stop Gallery 209 - C26D.
- .13 Hardware group No. 13: (classrooms 121A/121B)
 - .1 3 heavy weight hinges Mont-Hinge BB1068 115x102mm
C26D - NRP.
 - .2 1 best lever handle cylindrical privacy set
93K-7AB-14D-S3-626.
 - .3 1 weather-stripping KNC-W15.
 - .4 1 door sweep KNC-W24S.
 - .5 3 silencers.
 - .6 2 kick plates Gallery 80A-200x890 - C32D.
 - .7 1 door closer LCN 4041 x 4040-18G - Alum.

- .8 1 floor stop Gallery 209 - C26D.
- .14 Hardware group No. 14: (FR 203)
 - .1 3 heavy weight hinges Mont-Hinge BB1068 115x102mm
C26D - NRP.
 - .2 1 ULC listed best lever cylindrical lockset
93K-7D-14D-S3-626.
 - .3 1 weather-stripping KNC-W15.
 - .4 1 door sweep KNC-W24S.
 - .5 2 kick plates Gallery 80A-200x890 - C32D.
 - .6 1 ULC listed door closer LCN 4041 x 4040-18G - Alum.
 - .7 1 floor stop Gallery 209 - C26D.
- .15 Hardware group No. 15: (202)
 - .1 3 heavy weight hinges Mont-Hinge BB1068 115x102mm
C26D - NRP.
 - .2 1 best lever handle cylindrical lock set
93K 7D 14D S3 626.
 - .3 1 weather-stripping KNC-W15.
 - .4 1 door sweep KNC-W24S.
 - .5 2 kick plates Gallery 80A-200x890 - C32D.
 - .6 1 floor stop Gallery 209 - C26D.
- .16 Hardware group No. 16: (201A, 201B)
 - .1 6 heavy weight hinges Mont-Hinge BB1068 115x102mm
C26D - NRP.
 - .2 1 ULC listed best lever handle cylindrical privacy set
93K-7D-14D-S3-626 LHR.
 - .3 2 sets ULC listed surface bolts Gallery GSH 70 T/B.
 - .4 1 set ULC listed astragal Unique 100A x
door height - AL.
 - .5 1 weather-stripping KNC-W15.
 - .6 1 door sweep KNC-W24S.
 - .7 4 kick plates Gallery 80A-200x890 - C32D.
 - .8 2 ULC listed door closers LCN 4041 x 4040-18G - Alum.
 - .9 1 floor stop Gallery 209 - C26D.
- .17 Door Schedule: at end of Section.

END OF SECTION

DOOR AND FRAME SCHEDULE

1. ABBREVIATIONS

AL	Aluminum
AL1	Aluminum Frame
AL2	Aluminum Curtainwall Frame System - refer to Window, Door and Frame Schedule A1000
ANOD	Anodized
AO	Automatic Operatot
CL	Closer
CR	Card Reader
DCG	Double Clear Glass
DC	Door Contact
HM	Hollow Metal
NAT	Natural
PT	Paint
SCG	Single Clear Glass
WD	Wood
TG	Tempered Glass

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DOORS										FRAMES						REMARKS	HARDWARE SFT No
DOOR No	FROM	INTO	TYPE	HEIGHT	WIDTH	THICKNESS	MATERIAL	FINISH	GLAZING	TYPE	MATERIAL	FINISH	GLAZING	FIRE RATING (minutes)	SECURITY		
100A	100	EXTERIOR	D4	2390	915	45	AL	ANOD	DCG	AL2	AL1	ANOD			DC	CL	1
100B	100	EXTERIOR	D2	2070	915	45	HM	PT	TG	F1	HM	PT			DC	CL	2
100C	100	EXTERIOR	D2	2070	915	45	HM	PT	TG	F1	HM	PT			DC	CL	2
100D	100	EXTERIOR	D4	2390	915	45	AL	ANOD	DCG	AL2	AL1	ANOD			DC	CL	1
102A-1	102	EXTERIOR	D4	2390	915	45	AL	ANOD	DCG	AL2	AL1	ANOD			DC	AO, CR	3
102A-2	102	EXTERIOR	D4	2390	915	45	AL	ANOD	DCG	AL2	AL1	ANOD			DC	CL	1
102B	100	102	D2	2070	915	45	HM	PT	TG	F1	HM	PT			DC	AO	4
103A	100	103	D2	2070	915	45	HM	PT	TG	F1	HM	PT				CL	5
103B	102	103	D2	2070	915	45	HM	PT	TG	F1	HM	PT				AO	6
105A	100	105	D2	2070	915	45	HM	PT	TG	F1	HM	PT				CL	5
105B	103	105	D2	2070	915	45	WD	NAT	TG	F1	HM	PT					7
106	103	106	D2	2070	915	45	WD	NAT	TG	F1	HM	PT					7
107	103	107	D2	2070	915	45	WD	NAT	TG	F1	HM	PT					7
108	103	108	D2	2070	915	45	WD	NAT	TG	F1	HM	PT					7
109	103	109	D2	2070	915	45	WD	NAT	TG	F1	HM	PT					7
112	103	112	D3	2070	915	45	WD	NAT	TG	F1	HM	PT				CL	9
113	103	113	D3	2070	915	45	WD	NAT	TG	F1	HM	PT					7
114	103	114	D3	2070	915	45	WD	NAT	TG	F1	HM	PT				undercut 25mm, CL	8
115	103	115	D1	2070	915	45	WD	NAT		F1	HM	PT				undercut 25mm, CL	10

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	DOOR SCHEDULE	Page 2 of 3

DOORS										FRAMES						REMARKS	HARDWARE SET NO
DOOR NO	FROM	INTO	TYPE	HEIGHT	WIDTH	THICKNESS	MATERIAL	FINISH	GLAZING	TYPE	MATERIAL	FINISH	GLAZING	FIRE RATING (minutes)	SECURITY		
116	103	116	D1	2070	915	45	WD	NAT		F1	HM	PT				undercut 25mm, CL	10
119	102	119	D1	2070	915	45	HM	PT		F1	HM	PT				CL	12
120	102	120	D3	2070	915	45	HM	PT	TG	F1	HM	PT				CL	11
121A	100	121A	D2	2070	915	45	HM	PT	TG	F1	HM	PT			DC	CL	13
121B	100	121B	D2	2070	915	45	HM	PT	TG	F1	HM	PT			DC	CL	13
B-1	100	EXTERIOR	OD1	5130	4840										DC	see MFR's literature for hardware	
B-2	100	EXTERIOR	OD1	5130	4840										DC	see MFR's literature for hardware	
B-4	100	EXTERIOR	OD1	5130	4840										DC	see MFR's literature for hardware	
B-5	100	EXTERIOR	OD1	5130	4840										DC	see MFR's literature for hardware	
B-6	100	EXTERIOR	OD1	5130	4840										DC	see MFR's literature for hardware	
B-7	100	EXTERIOR	OD1	5130	4840										DC	see MFR's literature for hardware	
B-9	100	EXTERIOR	OD1	5130	4840										DC	see MFR's literature for hardware	
B-10	100	EXTERIOR	OD1	5130	4840										DC	see MFR's literature for hardware	
200	200	EXTERIOR	D2	2070	915	45	HM	PT	TG	F1	HM	PT			DC	CL	2
201A	200	201	D1	2070	915	45	HM	PT		F2	HM	PT		45		CL, double door	16
201B	200	201	D1	2070	915	45	HM	PT		F2	HM	PT		45		CL, double door	16
202	200	202	D1	2070	915	45	HM	PT		F2	HM	PT			DC	undercut 25mm, CL	15
203	204	203	D1	2070	915	45	HM	PT		F1	HM	PT		45		CL	14

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Part 1 General

1.1 REFERENCES

- .1 ASTM International
 - .1 ASTM C542-05 (2011), Standard Specification for Lock-Strip Gaskets.
 - .2 ASTM D2240-05 (2010), Standard Test Method for Rubber Property - Durometer Hardness.
- .2 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-12.1-M90, Tempered or Laminated Safety Glass.
 - .2 CAN/CGSB-12.8-97, Insulating Glass Units.
 - .3 CAN/CGSB-12.8-97 AMEND (2001), Insulating Glass Units.
 - .4 CAN/CGSB-12.9-M91, Spandrel Glass.

1.2 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for glass, sealants, and glazing accessories and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Samples:
 - .1 Submit for review and acceptance of each unit.
 - .2 Samples will be returned for inclusion into work.
 - .3 Submit duplicate mm size samples of and sealant material.
- .4 Certificates: submit product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
- .5 Test Reports: certified test reports showing compliance with specified performance characteristics and physical properties.
 - .1 Submit testing and analysis of glass under provisions of Section 01 45 00 - Quality Control.
 - .2 Submit shop inspection and testing for glass.

1.3 CLOSEOUT SUBMITTALS

- .1 Submit in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Operation and Maintenance Data: submit operation and maintenance data for glazing for incorporation into manual.

1.4 QUALITY ASSURANCE

- .1 Certificates: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

1.5 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
 - .1 Store materials in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect glazing and frames from nicks, scratches, and blemishes.
 - .3 Protect prefinished aluminum surfaces with wrapping .
 - .4 Replace defective or damaged materials with new.

1.6 AMBIENT CONDITIONS

- .1 Ambient Requirements:
 - .1 Install glazing when ambient temperature is 10 degrees C minimum. Maintain ventilated environment for 24 hours after application.
 - .2 Maintain minimum ambient temperature before, during and 24 hours after installation of glazing compounds.

Part 2 Products

2.1 MATERIALS

- .1 Flat Glass:
 - .1 Tempered glass: to CAN/CGSB-12.1; glazing quality, clear, 6 mm thick.
 - .2 Silvered mirror glass: 6 mm thick.
 - .1 Type 3A-tempered.
 - .3 Spandrel Glass: CAN/CGSB 12.9, clear tempered, organic coating; 6 mm thick.
 - .1 Colour: Selected by Departmental Representative.
- .2 Insulating Glass Units: to CAN/CGSB-12.8
 - .1 25 mm total thickness insulating glass unit:
 - .1 Outer light 6 mm tempered solar grey tinted glass.
 - .2 13 mm air space, argon gas filled, warm edge spacer technology.
 - .3 Inner light 6 mm clear float with low-E coating on third surface.
- .3 Sealant: in accordance with Section 07 92 00 - Joint Sealants.

2.2 ACCESSORIES

- .1 Setting blocks: neoprene, EPDM or silicone, 80-90 Shore A durometer hardness to ASTM D2240, length of 25 mm for each square meter of glazing, minimum 100 mm x width of glazing rabbet space

minus 1.5 mm x height, to suit glazing method, glass light weight and area.

- .2 Spacer shims: neoprene or silicone, 50-60 Shore A durometer hardness to ASTM D2240, 75 mm long x one half height of glazing stop x thickness to suit application. Self adhesive on one face.
- .3 Glazing tape:
 - .1 Preformed butyl compound with integral resilient tube spacing device, 10-15 Shore A durometer hardness to ASTM D2240; coiled on release paper; black colour.
 - .2 Closed cell polyvinyl chloride foam, coiled on release paper over adhesive on two sides, maximum water absorption by volume 2 %, designed for compression of 25 %, to effect an air and vapour seal.
- .4 Glazing splines: resilient silicone, extruded shape to suit glazing channel retaining slot, colour as selected.
- .5 Glazing clips: manufacturer's standard type.
- .6 Lock-strip gaskets: to ASTM C542.
- .7 Mirror attachment accessories:
 - .1 Stainless steel clips.
 - .2 Plastic rosettes.
 - .3 Mirror adhesive, chemically compatible with mirror coating and wall substrate.

Part 3 Execution

3.1 EXAMINATION

- .1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for glazing installation in accordance with manufacturer's written instructions.
 - .1 Verify that openings for glazing are correctly sized and within tolerance.
 - .2 Verify that surfaces of glazing channels or recesses are clean, free of obstructions, and ready to receive glazing.
 - .3 Visually inspect substrate in presence of Departmental Representative.
 - .4 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
 - .5 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Departmental Representative.

3.2 PREPARATION

- .1 Clean contact surfaces with solvent and wipe dry.
- .2 Seal porous glazing channels or recesses with substrate compatible primer or sealer.
- .3 Prime surfaces scheduled to receive sealant.

3.3 GLAZING METHODS

- .1 Verify that selected sealants and glazing tapes are compatible.
- .2 Perform glazing as required by frame manufacturer to achieve specified performance criteria.
- .3 Completed exterior glazed assemblies to provide full perimeter air and vapour seal to the glazed frames and be pressure equalized.

3.4 INSTALLATION: MIRRORS

- .1 Set mirrors with adhesive, applied in accordance with adhesive manufacturer's instructions.
- .2 Set in frame.
- .3 Place plumb and level.

3.5 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
 - .1 Leave Work area clean at end of each day.
 - .1 Remove traces of primer, caulking.
 - .2 Remove glazing materials from finish surfaces.
 - .3 Remove labels.
 - .4 Clean glass and mirrors using approved non-abrasive cleaner in accordance with manufacturer's instructions.
 - .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.

3.6 PROTECTION

- .1 Protect installed products and components from damage during construction.
- .2 After installation, mark each light with an "X" by using removable plastic tape or paste.
 - .1 Do not mark heat absorbing or reflective glass units.
- .3 Repair damage to adjacent materials caused by glazing installation.

END OF SECTION

Part 1 General

1.1 SECTION INCLUDES

- .1 Louvers, intakes, vents, and reinforcement and bracing for air vents, intakes and exhausts.

1.2 RELATED SECTIONS

- .1 Section 07 92 00 - Joint Sealants.

1.3 PERFORMANCE REQUIREMENTS

- .1 Catalogued or published ratings for manufactured items: obtained from tests carried out by manufacturer or those ordered by manufacturer from independent testing agency signifying adherence to codes and standards.

1.4 SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data: indicate the following.
 - .1 Air flow and water entrainment performance test results.
 - .2 Material types and thickness.
- .3 Shop Drawings: indicate the following.
 - .1 Include elevations, sections and specific details for each louvre.
 - .2 Show anchorage details and connections for all component parts.
 - .3 Schedule of insulated blank-offs.

Part 2 Products

2.1 FIXED LOUVRES - ALUMINUM

- .1 Construction: welded with exposed joints ground flush and smooth.
- .2 Material: extruded aluminum alloy 6063-T5.
- .3 Performance:
 - .1 100 mm depth unit:
 - .1 Free Area - 4 ft. x 4 ft. Unit: 8.35 sq. ft. (0.78 sq m)
 - .2 Percent Free Area: 52.2%
 - .2 150 mm depth unit:
 - .1 Free Area - 4 ft. x 4 ft. Unit: 8.56 sq. ft. (0.80 sq m)
 - .2 Percent Free Area: 53.5%
- .4 Blade: stormproof pattern with centre watershed in blade, reinforcing bosses and maximum blade length of 1500 mm.

- .5 Frame, head, sill and jamb: 100 mm and 150 mm deep one piece extruded aluminum, minimum 3 mm thick with approved caulking slot, integral to unit.
- .6 Mullions: at 1500 mm maximum centres.
- .7 Fastenings: stainless steel SAE-194-8F with SAE-194-SFB nuts and resilient neoprene washers between aluminum and head of bolt, or between nut, washer and aluminum body.
- .8 Screen: 12 mm mesh, 2 mm diameter wire aluminum birdscreen on inside face of louvres in formed U-frame.
- .9 Provide 100 mm deep insulated blankoff panels with 22 gauge metal skin.
- .10 Finish: Prepainted PVDF Finish: Colour selected by Consultant to match adjacent composite metal panel finish or curtain wall framing.
- .11 Sizes as shown on drawings.

Part 3 Execution

3.1 EXAMINATION

- .1 Examine openings to receive the work. Do not proceed until any unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- .1 Install in accordance with manufacturer's and SMACNA recommendations.
- .2 Reinforce and brace as indicated.
- .3 Anchor securely into opening. Seal with caulking to ensure weather tightness.
- .4 Provide blank-offs to locations indicated and to reverse of all non-ducted louver openings.
- .5 Repair damage to louvres to match original finish.
- .6 Caulk perimeter of frames in accordance with Section 07 92 00 - Joint Sealants.

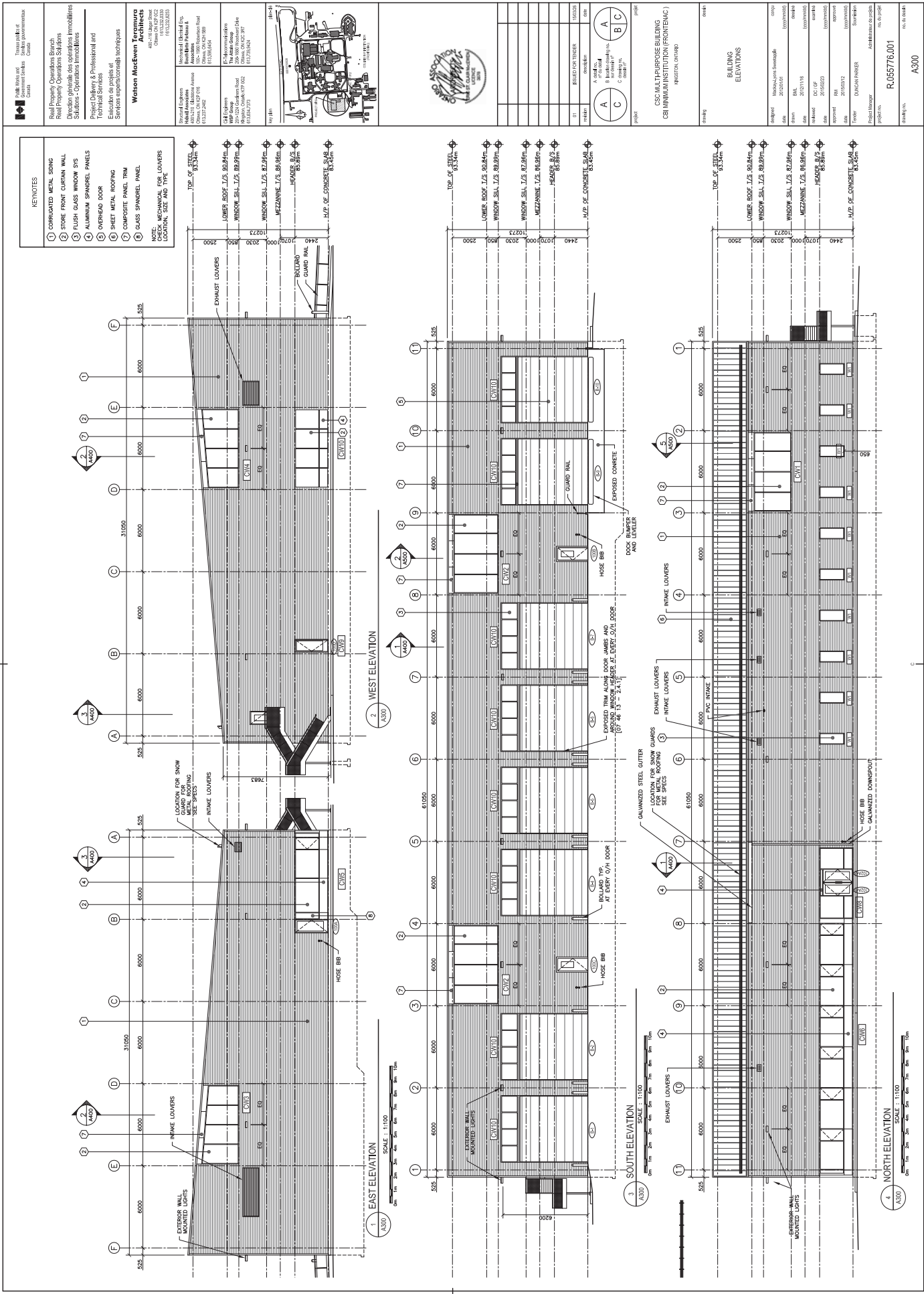
3.3 CLEANING

- .1 Upon completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment.

END OF SECTION

Annex "F"





100-A300 Elevations-005.dwg

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100-A300 Elevations-005.dwg

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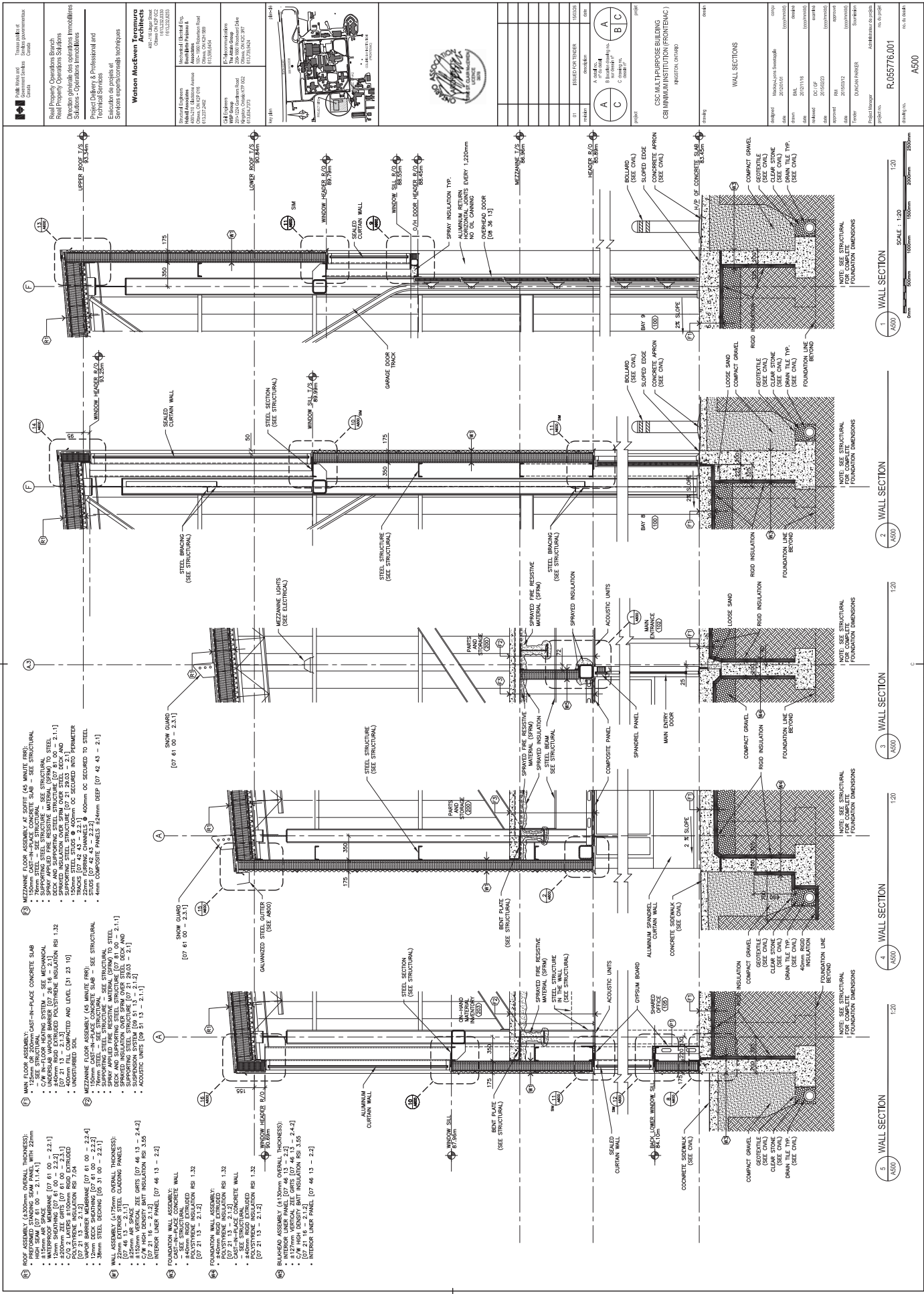
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08.07.2014



- 1. MEZZANINE FLOOR ASSEMBLY (45 MINUTE FIRE):**
- 150mm CAST-IN-PLACE CONCRETE SLAB - SEE STRUCTURAL
 - SUPPORTING STEEL STRUCTURE - SEE STRUCTURAL
 - DECK AND SUPPORTING STEEL STRUCTURE (07 61 00 - 2.1.1)
 - 22mm FLOORING CHANNELS @ 400mm OC SECURED INTO PERIMETER
 - 4mm COMPOSITE PANELS 24mm DEEP (07 42 43 - 2.1)
- 2. MEZZANINE FLOOR ASSEMBLY (45 MINUTE FIRE):**
- 150mm CAST-IN-PLACE CONCRETE SLAB - SEE STRUCTURAL
 - SUPPORTING STEEL STRUCTURE - SEE STRUCTURAL
 - DECK AND SUPPORTING STEEL STRUCTURE (07 61 00 - 2.1.1)
 - 22mm FLOORING CHANNELS @ 400mm OC SECURED INTO PERIMETER
 - 4mm COMPOSITE PANELS 24mm DEEP (07 42 43 - 2.1)
- 3. MEZZANINE FLOOR ASSEMBLY (45 MINUTE FIRE):**
- 150mm CAST-IN-PLACE CONCRETE SLAB - SEE STRUCTURAL
 - SUPPORTING STEEL STRUCTURE - SEE STRUCTURAL
 - DECK AND SUPPORTING STEEL STRUCTURE (07 61 00 - 2.1.1)
 - 22mm FLOORING CHANNELS @ 400mm OC SECURED INTO PERIMETER
 - 4mm COMPOSITE PANELS 24mm DEEP (07 42 43 - 2.1)
- 4. MEZZANINE FLOOR ASSEMBLY (45 MINUTE FIRE):**
- 150mm CAST-IN-PLACE CONCRETE SLAB - SEE STRUCTURAL
 - SUPPORTING STEEL STRUCTURE - SEE STRUCTURAL
 - DECK AND SUPPORTING STEEL STRUCTURE (07 61 00 - 2.1.1)
 - 22mm FLOORING CHANNELS @ 400mm OC SECURED INTO PERIMETER
 - 4mm COMPOSITE PANELS 24mm DEEP (07 42 43 - 2.1)
- 5. MEZZANINE FLOOR ASSEMBLY (45 MINUTE FIRE):**
- 150mm CAST-IN-PLACE CONCRETE SLAB - SEE STRUCTURAL
 - SUPPORTING STEEL STRUCTURE - SEE STRUCTURAL
 - DECK AND SUPPORTING STEEL STRUCTURE (07 61 00 - 2.1.1)
 - 22mm FLOORING CHANNELS @ 400mm OC SECURED INTO PERIMETER
 - 4mm COMPOSITE PANELS 24mm DEEP (07 42 43 - 2.1)

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Project Manager: [Name]
Architect: [Name]
Engineer: [Name]
Inspector: [Name]

Project Name: CSC MULTIPURPOSE BUILDING
Location: [Address]
Address: [Address]

Project No.: R.055776.001
Scale: 1:20
Sheet No.: A500

