PART 1 - GENERAL

1.1 RELATED SECTIONS

.1 Section 05 50 00 - Metal Fabrications.
.2 Section 06 10 00 - Rough Carpentry.
.3 Section 07 27 00 - Air Barriers
.4 Section 07 92 00 - Joint Sealing.
.5 Section 08 50 00 - Windows
.6 Section 08 71 00 - Door Hardware - General.
.7 Section 08 80 50 - Glazing
.8 Division 26 - Electrical – connections for security systems and sensors, outlet boxes, conduit boxes and fittings

1.2 REFERENCES

.1 Aluminum Association (AA).
.1 DAF 45-03, Designation System for Aluminum Finishes.

.2 American Architectural Manufacturers Association (AAMA).
.1 AAMA 609/610-09, Cleaning and Maintenance of Architectural Anodized Aluminum.

.3 American Society for Testing and Materials International, (ASTM).
.1 ASTM E 330-02, Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.

.4 Canadian General Standards Board (CGSB).
.1 CGSB 1.40-97, Primer, Structural Steel, Oil Alkyd Type.
.2 CAN/CGSB-12.1-M90, Tempered or Laminated Safety Glass.
.3 CAN/CGSB-12.20-M89, Structural Design of Glass for Buildings.

.5 Canadian Standards Association (CSA International).
.1 CAN/CSA-G40.20/G40.21-04(R2009), General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.
.2 CAN/CSA G164-M92(R2003), Hot Dip Galvanizing of Irregularly Shaped Articles.

1.3 SYSTEM DESCRIPTION

.1 Design Criteria.
.1 Design frames and doors in exterior walls to:
.1 Accommodate expansion and contraction within service temperature range of -35 to 75 degrees C.
.2 Limit deflection of mullions to maximum 1/175th of clear span when tested to ASTM E 330 under wind load of

1.2 kpa submit certificate of tests performed.
.3 Movement within system.
.4 Movement between system and perimeter framing components or substrate.

.2 Size glass thickness and glass unit dimensions to limits in accordance with CAN/CGSB-12.20.

.3 Design door system to provide average thermal resistance of:
.1 Door system (excluding vision glass areas): RSI of 3.8.

.4 Provide continuous air barrier and vapour retarder through door system. Primarily in line with inside pane of glass and heel bead of glazing compound.

1.4 SUBMITTALS

.1 Product Data:
.1 Submit manufacturer's printed product literature, specifications and data sheets in accordance with Section 01 33 00 - Submittal Procedures.
.2 Submit two copies of WHMIS MSDS - Material Safety Data Sheets in accordance with Section 01 33 00 - Submittal Procedures. Indicate VOC's for caulking materials during application and curing.

1.5 SHOP DRAWINGS

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

.2 Indicate materials and profiles and provide full-size, scaled details of components for each type of door and frame. Indicate:
.1 Interior trim and exterior junctions with adjacent construction.
.2 Junctions between combination units.
.3 Elevations of units.
.4 Core thicknesses of components.
.5 Type and location of exposed finishes, method of anchorage, number of anchors, supports, reinforcement, and accessories.
.6 Location of caulking.
.7 Each type of door system including location.
.8 Arrangement of hardware and required clearances.

.3 Submit catalogue details for each type of door and frame illustrating profiles, dimensions and methods of assembly.

1.6 CLOSEOUT

.1 Provide maintenance data for cleaning and maintenance of

SUBMITTALS

aluminum finishes for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.

1.7 QUALITY ASSURANCE

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

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

.3 Pre-installation Meetings: conduct pre-installation meeting to verify project requirements, manufacturer's installation instructions and manufacturer's warranty requirements.

1.8 DELIVERY, STORAGE, AND HANDLING

.1 Storage and Protection:
.1 Apply temporary protective coating to finished surfaces. Remove coating after erection. Do not use coatings that will become hard to remove or leave residue.
.2 Leave protective covering in place until final cleaning of building.

1.9 WASTE MANAGEMENT AND DISPOSAL

.1 Separate and recycle waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management And Disposal.

.2 Remove from site and dispose of packaging materials at appropriate recycling facilities.

.3 Dispose of corrugated cardboard, polystyrene, plastic packaging material in appropriate on-site bin for recycling in accordance with site waste management program.

.4 Divert used metal cut-offs from landfill by disposal into the on-site metals recycling bin.

1.10 WARRANTY

.1 The warranty period stated in General Conditions and relevant supplementary conditions is with respect to this section of work extended from one year to three. Provide a written guarantee.

.2 Warrant that aluminium finishes will not develop excessive fading, non-uniformity of colour and will not crack, peel, delaminate or otherwise corrode and that hardware fastening points will not wear excessively allowing hardware to work loose.

.3 Warrant that stainless steel cladding will not crack, peel, delaminate from aluminium frames and doors.

PART 2 - PRODUCTS

2.1 MATERIALS

.1 Materials and resources in accordance with CSA A440.

.2 Aluminum extrusions: Aluminum Association alloy AA 6063-T5 or T6 anodizing quality.

.3 Sheet aluminum: Aluminum Association alloy AA 1100 - H14 or AA 5005 - H32 or H34 anodizing quality. Break formed aluminum sheet interior 2mm thick and exterior 3mm thick

.4 Steel reinforcement: to CAN/CSA-G40.20/G40.21, grade 300 W.

.5 Anchors: 3-way adjustable hot-dip galvanized cast iron.

.6 Fasteners: stainless steel or cadmium plated, corrosion resistant steel of adequate strength for the purpose, finished to match adjacent material.

.7 Weatherstrip: replaceable mohair backed wool pile.

.8 Door bumpers: black neoprene.

.9 Door bottom seal: adjustable door seal of anodized extruded aluminum frame and vinyl weather seal, surface mounted with drip cap, closed ends,.

.10 Isolation coating: alkali resistant bituminous paint.

.11 Glazing materials: as per Section 08 80 50.

.12 Sealants: as per Section 07 92 00 colour selected by Consultant.

.13 Plastic shims: Glazelock Shims, High impact polystyrene horseshoe shaped purpose made glazing shims. (wood shims

are NOT PERMITTED on this project.)

.12 Backpans: 24GA, galvanized steel.

.13 Insulation: Mineral fiber block and board insulation to ASTM C612, Type IVB, thickness minimum 75mm thick, RSI 0.74/25.4 mm c/w insulation clips and self locking washers.

.14 Air Vapour Barrier Perimeter Seal: in accordance with Section 07 27 00.

2.2 ALUMINUM SWING DOORS .1 Construct doors of porthole extrusions with minimum wall thickness of 2.4 mm.

.2 Door stiles nominal 127 mm wide plus or minus 6 mm.

.3 Top rail nominal 127 mm wide plus or minus 6 mm.

.4 Bottom rail nominal 165 mm wide plus or minus 6 mm.

.5 Mid rail nominal 127mm wide plus or minus 6mm.

.6 Reinforce mechanically-joined corners of doors to produce sturdy door unit.

.7 Glazing stops: interlocking snap-in type for dry glazing. Exterior stops: tamperproof type.

.8 Provide thermally broken doors for exterior.

.9 Hardware:as per Hardware Schedule.

.10 Door swing: See Drawings.

.11 Acceptable Manufacturers:
- .1 Quest Window Systems
- .2 Kawneer
- .3 Alumico
- .4 Prevost
- .5 Alumicor
- .6 Oldcastle
- .7 Lessard
- .8 Allan
- .9 Alternative Products not listed above which have been approved prior to tender closing.

2.3 EXTERIOR ALUMINUM .1 Exterior framing to be Curtainwall Framing

FRAMES

.2 Mullion profile:
.1 Vertical members: 63 x 101 mm nominal dimension back section tubes.
.2 Horizontal members: 63 x 101 mm nominal dimension back section tubes.
.3 Thermally broken with interior tubular section insulated from exterior pressure plate.
.4 Matching stops and pressure plate of sufficient size and strength to provide adequate bite on glass and infill panels. 19mm on horizontal and vertical mullions.
.5 Structural silicone glazed vertical joints.
.6 Drainage holes, deflector plates and internal flashings to accommodate internal weep drainage system.
.7 Internal mullion baffles to eliminate "stack effect" air movement within internal spaces. Spray foam where indicated.
.8 Acceptable manufactuers
.1 Quest
.2 Kawneer
.3 Alumico
.4 Prevost
.5 Alumicor
.6 Oldcastle
.7 Lessard
.8 Allan
.9 Alternative Products not listed above which have been approved prior to tender closing.
All manufacturers must confirm proposed systems comply with project specifications and System Classification performance requirements listed under 2.7 of this section.

.3 Reinforced mullion: internal reinforcement of shaped steel structural section as required to meet load requirements.

.4 Infill panel: internally reinforced, glazing edge sealed unsealed permitting internal air movement to glazing space, outside air barrier line , structurally sufficient to support wall fin radiation saddles:
.1 Outer face: GL6.
.2 Core: Mineral wool fibre insulation, RSI of
.3 /25.4mm, total RSI value of 2.22
.4 Inner face: galvanized steel formed pan.

.5 Flashings: 2 mm thick aluminum, finish to match curtain wall mullion sections where exposed, secured with concealed fastening method.

2.4 INTERIOR ALUMINUM FRAMES

.1 Interior framing at entry vestibule to be aluminum extrusions with minimum wall thickness of 2mm.

.1 Frame members 44mmx 115mm nominal size for flush glazing.
.2 Refer to window schedule drawings for interior frame elevations:
.3 Acceptable products:
.1 Kawneer Trifab VG 450
.2 Alumico 4500 Series
.3 Prevost 65 Series
.4 Alumicor 800 series.
.5 Equivalent frames to the above from Allan Window Technologies and Lessard

2.5 ALUMINUM FINISHES

.1 Finish exposed surfaces of aluminum components in accordance with Aluminum Association Designation System for Aluminum Finishes.
.1 Exterior Surfaces: Duranar Charcoal UC109852
.2 Interior Surfaces: Duranar Charcoal UC109852.

2.6 STEEL FINISHES

.1 Finish steel clips and reinforcing steel with zinc coating to CSA G164.

2.7 FABRICATION

.1 Doors and framing to be by same manufacturer.

.2 Fabricate doors and frames to profiles and maximum face sizes as shown. Provide minimum 22 mm bite for insulating glazed units.

.3 Provide structural steel reinforcement as required.

.4 Fit joints tightly and secure mechanically.

.5 Conceal fastenings.

.6 Mortise, reinforce, drill and tap doors, frames and reinforcements to receive hardware using templates provided under Section 08 71 00 - Door Hardware - General.

.7 Isolate aluminum from direct contact with dissimilar metals, concrete and masonry.

PART 3 - EXECUTION

3.1 MANUFACTURER'S

.1 Compliance: comply with manufacturer's written data, including

INSTRUCTIONS

product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.

3.2 EXAMINATION

.1 Verify dimensions, tolerances, and method of attachment with other work.

.2 Verify wall openings and adjoining air barrier and air vapour materials are ready to receive work of this section.

3.3 INSTALLATION

.1 Set frames plumb, square, level at correct elevation in alignment with adjacent work.

.2 Anchor securely.

.3 Install doors and hardware in accordance with hardware templates and manufacturer's instructions.

.4 Adjust operable parts for correct function.

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

.6 Install sill flashings complete with under sill membrane specified in Section 07 27 00 and end dams to sills

3.4 SITE 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 Maximum sealant space between curtain wall and adjacent construction: 13 mm.

3.5 GLAZING

.1 Glaze aluminum doors and frames in accordance with Section 08 80 50 - Glazing.

.2 Place sealant on the up-slope side of the pressure plate cover caps; finish the surface with a slope to encourage drainage over the cap Cover caps to conceal screws and provide continuous sightline

3.5 PERIMETER SEALING

.1 Provide and install continuous strip of air barrier membrane as per Section 07 27 00 to all perimeter frames. Provide sufficient

material to allow minimum 150mm lap onto wall membrane.

.2 Air barrier membrane to be sealed into glazing spline of perimeter frames and securely adhered.

.3 All perimeter frames shall have shim space sealed with spray applied polyurethane insulation. Install in multiple passes to ensure application full depth of shim space.

3.6 CAULKING

.1 Seal joints to provide weather tight seal at outside and air, vapour seal at inside.

.2 Apply sealant in accordance with Section 07 92 00 - Joint Sealants. Conceal sealant within the aluminum work except where exposed use is permitted by Consultant.

3.5 FIELD QUALITY CONTROL

.1 Have manufacturer of products supplied under this Section review Work involved in handling, installation/application, protection and cleaning of its products, and submit written reports in acceptable format to verify compliance of Work with Contract.

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

.3 Schedule site visits to review Work at stages listed:
.1 After delivery and storage of products, and when preparatory Work on which Work of this Section depends is complete, but before installation begins.
.2 Twice during progress of Work at 25% and 60% complete.
.3 Upon completion of Work, after cleaning is carried out.

.4 Obtain reports within three days of review and submit.

3.6 CLEANING

.1 Perform cleaning of aluminum components in accordance with AAMA 609.1 - Voluntary Guide Specification for Cleaning and Maintenance of Architectural Anodized Aluminum.

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

.3 Clean aluminum with damp rag and approved non-abrasive cleaner.

.4 Remove traces of primer, caulking, epoxy and filler materials; clean doors and frames.

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

.6 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

3.7 PROTECTION

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

.2 Repair damage to adjacent materials caused by aluminum door and frame installation.

END OF SECTION