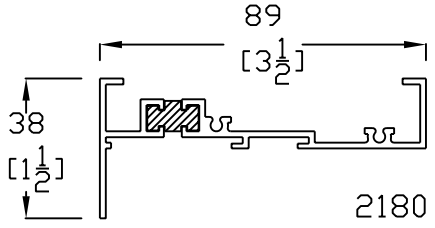
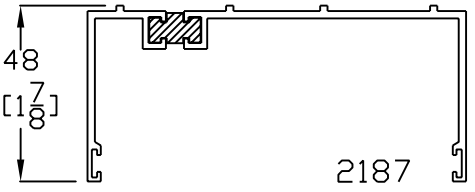
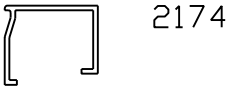
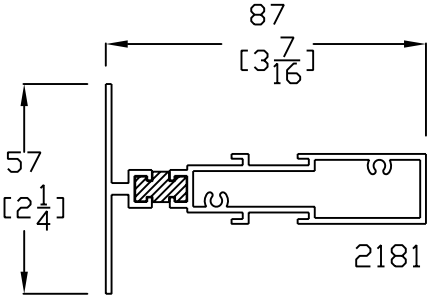
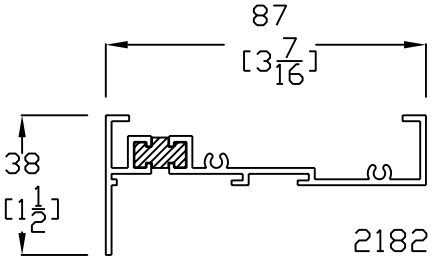
2180 SERIES
INSULATED WINDOW FRAMING
88.9 mm (3.5")

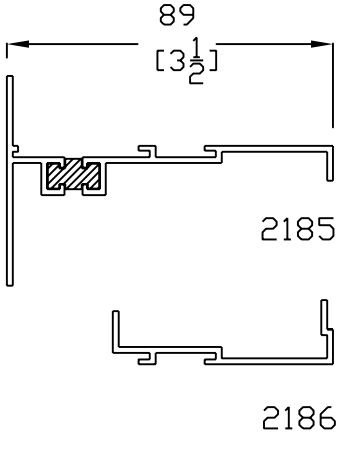








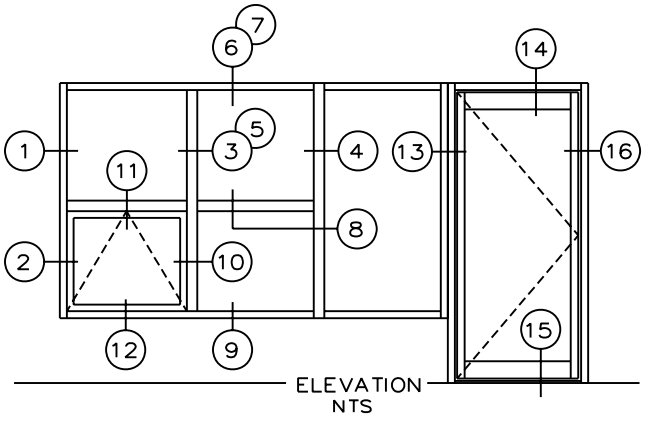


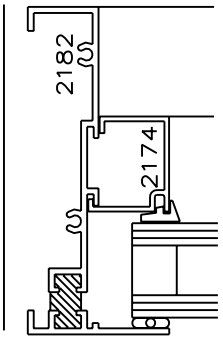


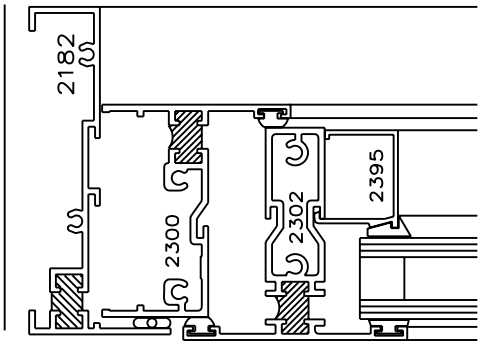
SCALE 1:2

Aluminex™

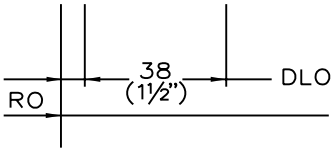
2180 SERIES
INSULATED WINDOW FRAMING
88.9 mm (3.5")



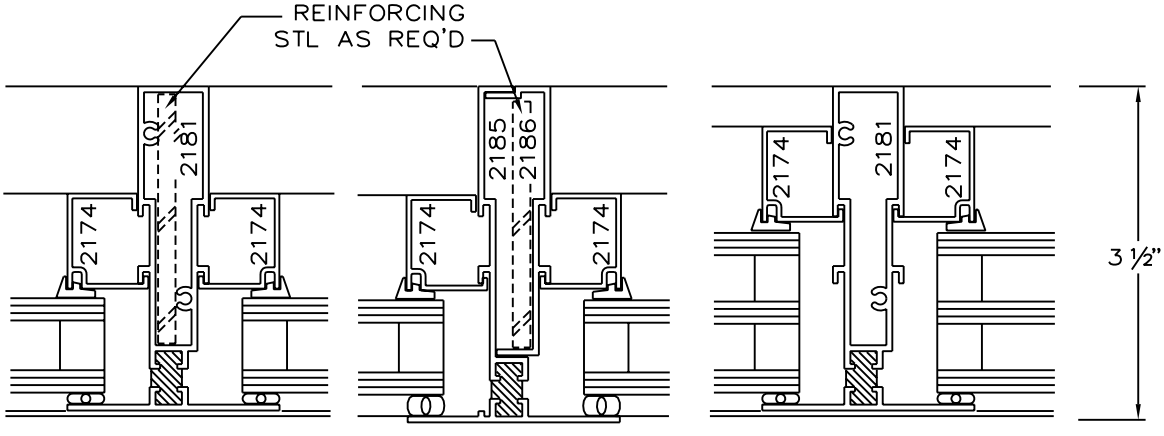


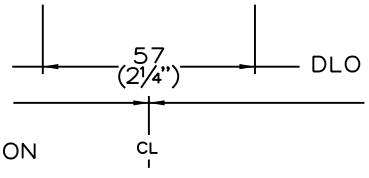


1 JAMB



2 JAMB W/VENT 2300 SERIES





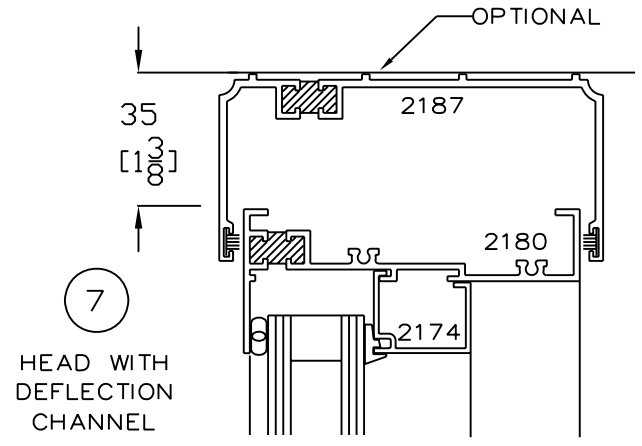
3 V.MULLION

4 COUPLING MULLION

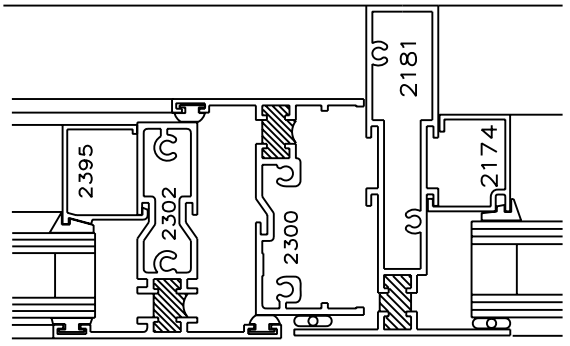
5 V.MULLION TRIPLE GLAZING

SCALE 1:2

2180 SERIES
INSULATED WINDOW FRAMING
88.9 mm (3.5")



7
HEAD WITH DEFLECTION CHANNEL



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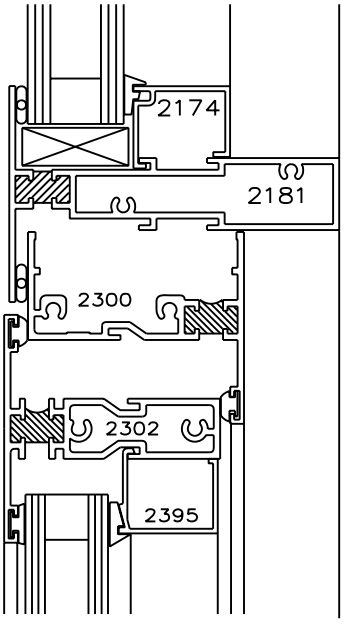

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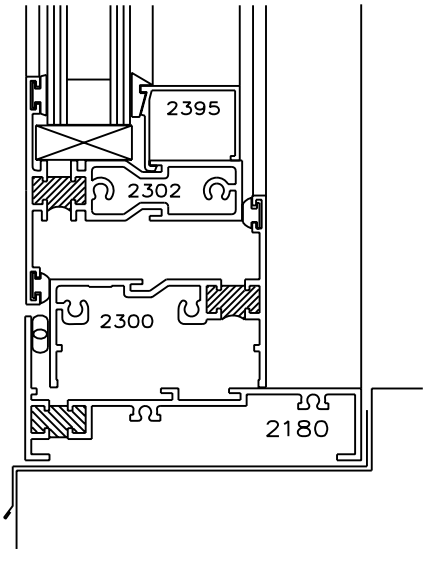

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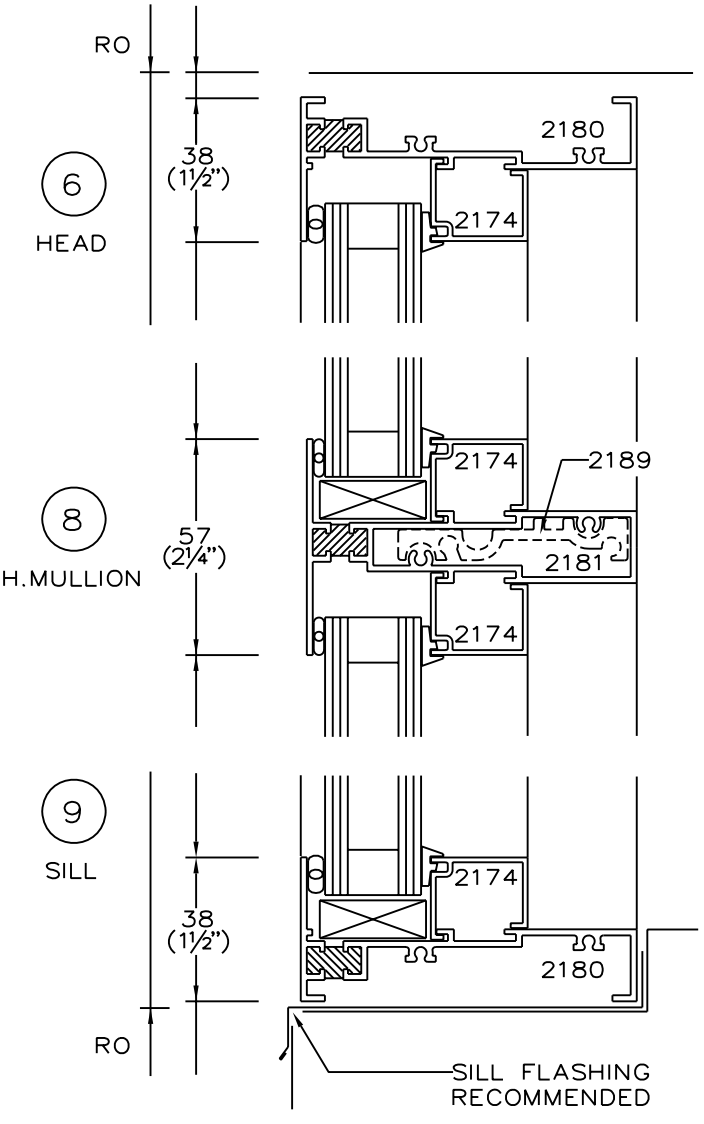
SILL W/VENT 2300 SERIES



6
HEAD

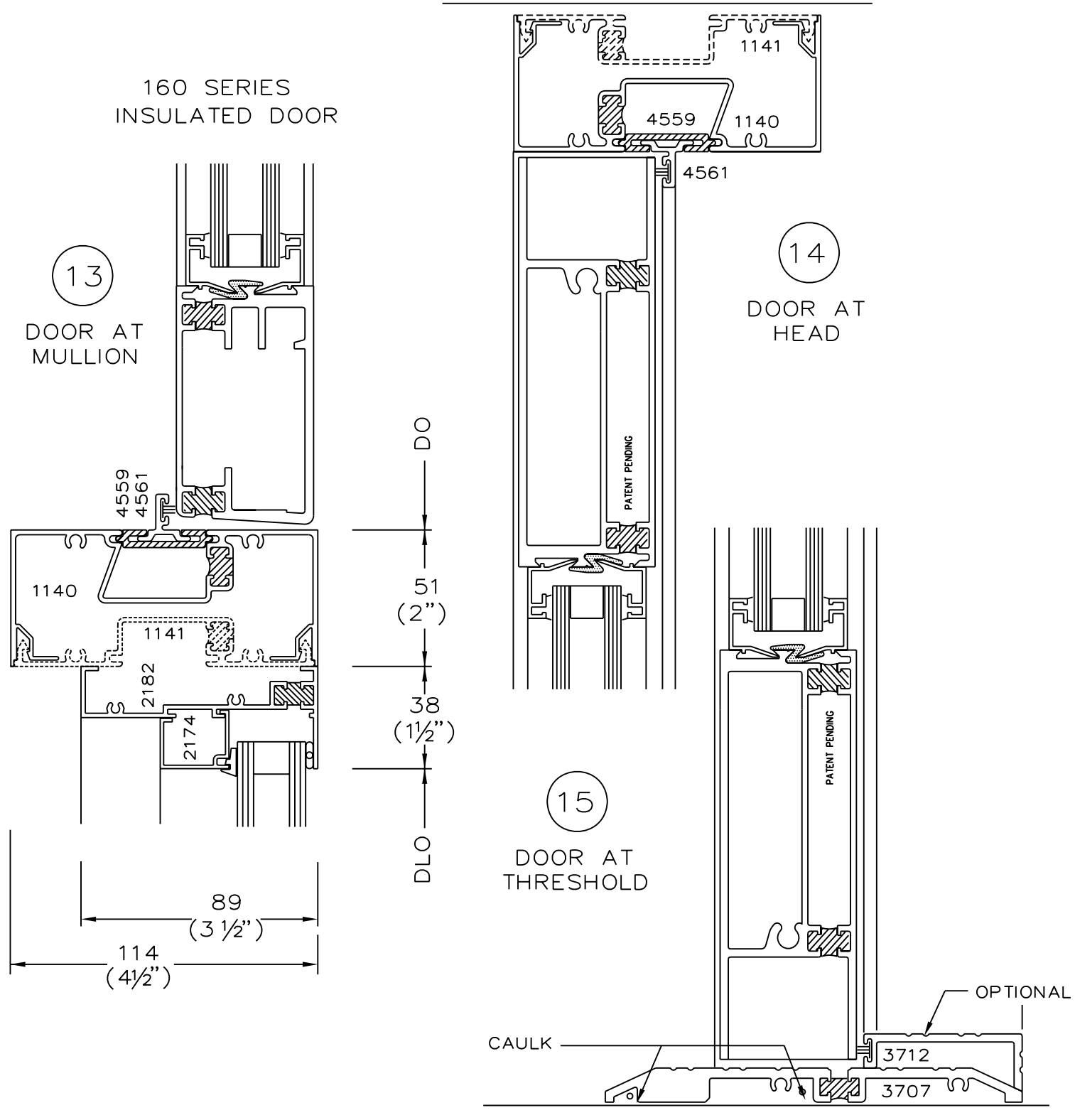
8
H.MULLION

9
SILL

SCALE 1:2

Aluminex™

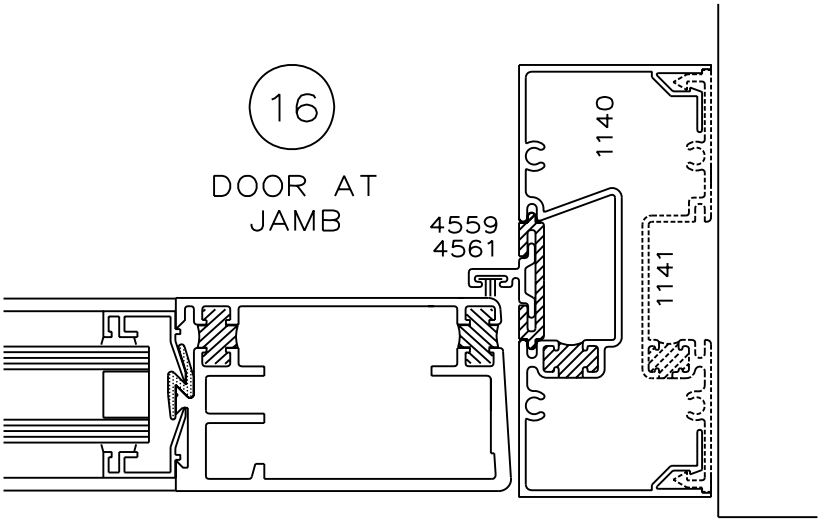
2180 SERIES
INSULATED WINDOW FRAMING
88.9 mm (3.5")



SCALE 1:2

Aluminex™

2180 SERIES
INSULATED WINDOW FRAMING
88.9 mm (3.5")



SCALE 1:2

A.T.MARCK & ASSOCIATES
BUILDING SYSTEMS ENGINEERING LTD.
TEL/FAX (604) 469-6566

	PROFILE 2181				AA 6063 T5 STL 250 W	
	A= 475 mm^2		I= 401663 mm^4		S= 8076 mm^3	
	MAX. ALLOWABLE MULLION LENGTH (m/ft) FOR SPECIFIED WIND LOAD					
SPACING	0.72 kPa 15 PSF	0.96 kPa 20 PSF	1.20 kPa 25 PSF	1.44 kPa 30 PSF	1.68 kPa 35 PSF	1.91 kPa 40 PSF
.45 m	3.35	3.05	2.80	2.55	2.35	2.20 m
1.5′	11.0	10.0	9.2	8.4	7.7	7.2 ft
.60 m	3.05	2.70	2.45	2.20	2.05	1.90
2.0′	10.0	8.9	8.0	7.2	6.7	6.2
.75 m	2.80	2.45	2.15	2.00	1.85	1.70
2.5′	9.2	8.0	7.1	6.6	6.1	5.6
.90 m	2.55	2.20	2.00	1.80	1.65	1.55
3.0′	8.4	7.2	6.6	5.9	5.4	5.1
1.05 m	2.35	2.05	1.85	1.65	1.55	1.45
3.5′	7.7	6.7	6.1	5.4	5.1	4.8
1.20 m	2.20	1.90	1.70	1.55	1.45	1.35
4.0′	7.2	6.2	5.6	5.1	4.8	4.4
1.35 m	2.10	1.80	1.60	1.50	1.35	1.30
4.5′	6.9	5.9	5.2	4.9	4.4	4.3
1.50 m	2.00	1.70	1.55	1.40	1.30	1.20
5.0′	6.6	5.6	5.1	4.6	4.3	3.9
1.65 m	1.90	1.65	1.45	1.35	1.25	1.15
5.5′	6.2	5.4	4.8	4.4	4.1	3.8
1.80 m	1.80	1.55	1.40	1.30	1.20	1.10
6.0′	5.9	5.1	4.6	4.3	3.9	3.6
1.95 m	1.75	1.50	1.35	1.25	1.15	1.05
6.5′	5.7	4.9	4.4	4.1	3.8	3.4
2.10 m	1.65	1.45	1.30	1.20	1.10	1.05
7.0′	5.4	4.8	4.3	3.9	3.6	3.4
2.25 m	1.60	1.40	1.25	1.15	1.05	1.00
7.5′	5.2	4.6	4.1	3.8	3.4	3.3
2.40 m	1.55	1.35	1.20	1.10	1.00	0.95
8.0′	5.1	4.4	3.9	3.6	3.3	3.1

	PROFILE 2181 WITH 3/16"x 23/8" STL BAR				AA 6063 T5 STL 250 W	
	A= 475 mm^2		I_c= 650593 mm^4		S_c= 14641 mm^3	
	MAX. ALLOWABLE MULLION LENGTH (m/ft) FOR SPECIFIED WIND LOAD					
SPACING	0.72 kPa 15 PSF	0.96 kPa 20 PSF	1.20 kPa 25 PSF	1.44 kPa 30 PSF	1.68 kPa 35 PSF	1.91 kPa 40 PSF
.45 m	3.95	3.60	3.35	3.15	3.00	2.85 m
1.5′	13.0	11.8	11.0	10.3	9.8	9.4 ft
.60 m	3.60	3.25	3.00	2.85	2.70	2.60
2.0′	11.8	10.7	9.8	9.4	8.9	8.5
.75 m	3.35	3.00	2.80	2.65	2.45	2.30
2.5′	11.0	9.8	9.2	8.7	8.0	7.5
.90 m	3.15	2.85	2.65	2.45	2.25	2.10
3.0′	10.3	9.4	8.7	8.0	7.4	6.9
1.05 m	3.00	2.70	2.45	2.25	2.10	1.95
3.5′	9.8	8.9	8.0	7.4	6.9	6.4
1.20 m	2.85	2.60	2.30	2.10	1.95	1.85
4.0′	9.4	8.5	7.5	6.9	6.4	6.1
1.35 m	2.75	2.45	2.20	2.00	1.85	1.75
4.5′	9.0	8.0	7.2	6.6	6.1	5.7
1.50 m	2.65	2.30	2.05	1.90	1.75	1.65
5.0′	8.7	7.5	6.7	6.2	5.7	5.4
1.65 m	2.55	2.20	1.95	1.80	1.65	1.55
5.5′	8.4	7.2	6.4	5.9	5.4	5.1
1.80 m	2.45	2.10	1.90	1.70	1.60	1.50
6.0′	8.0	6.9	6.2	5.6	5.2	4.9
1.95 m	2.35	2.05	1.80	1.65	1.55	1.45
6.5′	7.7	6.7	5.9	5.4	5.1	4.8
2.10 m	2.25	1.95	1.75	1.60	1.50	1.40
7.0′	7.4	6.4	5.7	5.2	4.9	4.6
2.25 m	2.20	1.90	1.70	1.55	1.45	1.35
7.5′	7.2	6.2	5.6	5.1	4.8	4.4
2.40 m	2.10	1.85	1.65	1.50	1.40	1.30
8.0′	6.9	6.1	5.4	4.9	4.6	4.3

1/ BASED ON L/175 MAX ALLOWABLE DEFLECTION OR Fy = 110 MPa FOR AA 6063 T5 – WHICHEVER IS LESS – CONFORMING TO CAN3-S157-M83

2/ FOR ESTIMATING PURPOSES ONLY

DEAD LOAD CAPACITY FOR 25mm (1") UNITS WITH TWO 6mm (1/4") GLASS PANES
MAXIMUM DEFLECTION 3.2mm (1/8")

HORIZONTAL MULLION PROFILE: 2181		I= 49560 mm^4 (0.119 IN^4)		S= 2050 mm^3 (0.125 IN^3)					
VERTICAL MULLION SPACING	0.60m 2.0′	0.75m 2.5′	0.90m 3.0′	1.05 m 3.5′	1.20 m 4.0′	1.35 m 4.5′	1.50 m 5.0′	1.65 m 5.5′	1.80 m 6.0′
1 GLASS HEIGHT SUPPORT @ 1/4	3.65	3.64	1.76	0.95	0.55	0.35	0.23		m
	12.0	11.95	5.76	3.11	1.82	1.14	0.75		ft
2 GLASS HEIGHT SUPPORT @ 1/8	3.65	3.65	3.29	1.77	1.04	0.65	0.43	0.29	0.21 m
	12.00	12.00	10.79	5.82	3.41	2.13	1.40	0.96	0.70 ft

1 SETTING BLOCKS CENTERED AT GLASS WIDTH QUARTER POINTS
2 SETTING BLOCKS CENTERED AT GLASS WIDTH ONE-EIGHT POINTS

SETTING BLOCKS ARE EQUIDISTANT FROM THE GLASS CENTER LINE

Aluminex™

2180 SERIES
INSULATED WINDOW FRAMING
88.9mm (3.5")

I. GENERAL

Scope of Work
Furnish materials, labour, plant, equipment, related items and services necessary for the supply, complete fabrication and installation of glazed window aluminum framing as shown on the drawings, required by job conditions and specified herein.

Work Not Included
Structural support for the system, wood-liner, interior moulding, closure or trim as well as flashing unless specifically detailed and called out as such. (Specifier List of Other Exclusions)

Related Work Specified Elsewhere
(Specifier List)

Submittals

Shop Drawings
Prior to fabrication submit shop drawings showing frame elevations, full size details as far as practical, all dimensions, coordination with related work, provision for thermal expansion and main structure deformations and tolerances, sealing and caulking joints and their sizes, material and installation notes as well as all necessary references to local Building Code requirements.

Samples
Before any work is fabricated, all requested representative and properly labeled samples, including specified products with their finishes, shall be submitted to the Architect for his approval.

II. PRODUCTS

Glazing System
° The system must allow for full integration with the building envelope, and utilize, at least, Prime Seal Method.
° The alternative glazing method shall be: - Vented Glazing Cavity, or - Rain-screen. (Specifier Selection).
° Aluminum framing shall be **2180 Series**, thermally broken - with high strength casting resin and mechanical debridging, as manufactured by **Aluminex**
° The system shall be inside-glazed by the prime seal method, able to accommodate single glass or double or triple glass units, with full ability to accept project-in or out shallow vent framing such as **2300 Series** system by **Aluminex**, and furnished with deflection header where required, as specified and shown on architectural drawings.
° The nominal profile dimensions shall be 57.15 mm/ 2.25" wide and 88.9 mm/ 3.5" deep appropriate for load and span conditions.
If required, steel reinforcing shall contribute to the glazing system structural capacity.
° Glass retention shall be achieved by extruded aluminum interior glazing stop as for wet-dry gasketing method.
° Three weep/venting holes placed at sill should be 6 mm/ 0.25" min at any of their dimensions. Their locations shall not allow for direct rain water entry.
° Whenever substitute systems and/or products are considered, supporting data must be submitted ten (10) days prior to bid date to allow for valid comparison.

Performance
° The minimum requirements shall be based on CMH specifications and CSA/CAN3-A440-M90 "Windows"
° The applicable ASTM test standards are as follows:
E-283 Air Infiltration, E-331 Water Penetration, and
E-330 Structural Performance with L/175 or 19mm / 0.75" (whichever is less) deflection limitations.
° Temperature Index, depended upon glass selection, shall remain in the range of I = 54 to 64.
U-value of the assembly shall remain in 1.49 to 2.88 W/m2K (0.265 to 0.500 Btu/ft2h*°F) range dependent upon glass selection. NFRC 100-2010 & AAMA 1502.7-1981 standard is applicable
° Seismic movement minimum allowances shall be referred to and follow structural design and requirements of the main structure.

Materials
° Extruded aluminum shall be AA 6063 T6, Fy = 170 MPa / 25 KSI, alloy and temper minimum, or other as required by the Standards, able to meet or exceed structural and finishing criteria as specified.
° Any defects impairing strength, durability or appearance are not acceptable.
° Sufficient strength and size fasteners shall be made of corrosion-resistant and compatible material such as cadmium or zinc plated carbon steel type 400, stainless steel type 300. or aluminum.
° Anchoring fastener minimum penetration and location in the main structure materials shall follow manufacturer's specifications.
° Dissimilar materials shall be separated with approved bituminous paint or spacers, to prevent any galvanic action (corrosion).
° Glazing shall utilize shimmed butyl tape on exterior and dense wedge or spline extruded Neoprene. EPDM, or equal material, interior gasket. Tape & gasket profiles shall be designed and sized to work with the system and properly serve glazing rabbet assembly.
° Setting blocks must be properly sized (L mm = 25 mm/ 1" per each 1 m2/ 10 sqft of glass, but not less than 100 mm), placed at 1/4 points, and compatible with the insulating glass sealant.

Finish
All exposed surfaces shall be free from defects, scratches and serious blemishes.
Aluminum shall receive one of the following available finishes specified by the Architect:
i) Standard commercial clear anodic coating integral colour (02).
ii) Standard commercial Dark Bronze and Black hard-colour anodic coating (04, 05).
iii) Standard baked enamel paint in white & black colour.
iv) Other paint qualities and colours in baked enamel.

III. EXECUTION

Fabrication
° Fabricate and assemble in strict accordance with the approved shop drawings and manufacturer's published recommendations.
° The System shall allow for conventional inside glazing, with glass hard bite not less than 12mm (0.5").
° Aluminum profiles shall be connected accurately to each other by anti-corrosive fasteners and sealed properly, presenting air and water tight joints, and providing for resilient glass setting and for thermal expansion.

Installation
° Framing shall be installed, secured and glazed by an experienced crew.
° Set framing level, plumb, square and aligned with other work, in accordance with approved shop drawings and manufacturer's installation instructions and published glazing standards.
° All perimeter joints shall be sealed and caulked with approved sealant materials to ensure a weather-tight installation.

Protection and Cleaning
° All work shall be protected against damage during and after installation.
° After installation all exposed surfaces shall be cleaned of all contaminants. -
° The General Contractor is responsible for protection and final cleaning.