TEST REPORT

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EVALUATION CENTER

Intertek Testing Services Ltd.
6225 Kenway Drive
Mississauga, Ontario L5T 2L3

RENDERED TO

Sunview Patio Doors Limited
500 Zenway Blvd,
Vaughan, Ontario L4H 0S7

PRODUCT EVALUATED
Hybrid Patio Door (DP80)

EVALUATION PROPERTY
Physical Tests

Report of Testing on a Hybrid Patio Door (DP80) conducted in accordance with the applicable test methods outlined in the following standard: AAMA/WDMA/CSA 101/I.S.2/A440-11 *"NAFS 2011 – North American Fenestration Standard/Specification for windows, doors, and skylights"* and CSA A440S1-09, Canadian Supplement.

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2 Introduction

Intertek has conducted performance testing for Sunview Patio Door Limited on a Hybrid Patio Door (DP80).

The sliding door was submitted by the client to the Intertek laboratory in Mississauga, Ontario on November 5, 2014. Testing was conducted and evaluated in accordance with AAMA/WDMA/CSA 101/I.S.2/A440-11 *"NAFS 2011 – North American Fenestration Standard/Specification for windows, doors and skylights"* and CSA A440S1-09*, Canadian Supplement"*. This evaluation began November 7, 2014 and was completed December 12, 2014.

Test results reported herein, also comply with the 2008 edition of the NAFS test standard, AAMA/WDMA/CSA 101/I.S.2/A440-08, *"NAFS North American Fenestration Standard Specification for windows, doors, and skylights".*

3 Summary

Manufacturer:	● Sunview Patio Door Limited, 500 Zenway Blvd, Vaughan, Ontario, L4H 0S7
Type:	● Sliding Door
Model:	● Hybrid (DP80)
Primary Designator:	● Class R – PG80– Size Tested: 1875 × 2040 mm – SD
Secondary Designator:	● Positive Design Pressure (DP) = +3840 Pa Negative Design Pressure (DP) = -3840 Pa Water Penetration Test Pressure = 610 Pa Canadian Air Infiltration/Exfiltration Level = A3
Test Completed Date:	● December 12, 2014

(Refer to the information contained herein for complete test specimen description and detailed test report.)

4 Test Samples

4.1. SPECIMEN AND ASSEMBLY DESCRIPTION

Overall Size:

- Width – 1875 mm
  Height – 2040 mm
  The tested size is the largest for which compliance is sought

Installation:

- The sliding door was fastened to the wood buck with fifteen #10×1-3/4" pan head screws.
  Jambs: Four fasteners per jamb spaced approximately 595 mm apart. The fasteners were located in the interior track of the lock jamb and in the exterior track of the fixed jamb.
  Header: Three fasteners; a pair at the mid-span, one in each track and one in the exterior track 90 mm from the lock jamb.
  Sill: Four fasteners spaced approximately 595 mm apart. The fasteners were located in the exterior aluminum extrusion. A 1/4" thick aluminum angle fitted to the interior was fastened to the wood buck with eight #8×1-1/2" pan head screws, space approximately 235 mm apart.
  The frame was sealed to the buck with silicone on the interior and exterior perimeter.

Frame:

- *Header*: Consists of an extruded aluminum section fitted onto a vinyl extrusion section. Three 52 × 25 × 13 mm plywood blocks, each fastened with one #8×1" flat head screw in the exterior track above the operable panel, spaced 330 mm apart and 70 mm from the lock jamb. A track cover was inserted in the header and silicone applied at the ends.
- *Jambs*: Consists of an extruded aluminum section fitted onto a vinyl extrusion section. A plastic bumper was fitted onto the Aluminum leg on the interior face along the entire length,
- ***Sill:*** Consists of an extruded aluminum section fitted onto a vinyl extrusion section. A stainless steel track was crimped over the innermost vinyl leg. An aluminum threshold was fitted onto the exterior sill channel and silicone applied at the ends.
- ***Corners:*** The header-to-jamb frame corners were butt-joined and fastened with four #8×3" pan head screws and one #8×3/4" self-drilling pan head screw per corner fastened into the screw ports. The jamb-to-sill frame corners were butt-joined and fastened with five #8×3" pan head screws and one #8×3/4" self-drilling pan head screw per corner fastened into the screw ports. The head-to-jamb and sill-to-jamb corners were sealed with a closed-cell polypropylene foam pad sandwiched between the members.

Part	Supplier	Section / Part Number
Head Head Frame Exterior	Vision Extrusions Sapa	E107H01 AS-65040
Jamb Jamb Frame Exterior	Vision Extrusions Sapa	E107H02 AS-65041
Sill Sill Frame Exterior	Vision Extrusions Sapa	E107H03 AS-65042
Threshold	Suniview	--

Panel Sizes:

- Stationary Panel — Width – 945 mm; Height – 1954 mm
- Operable Panel — Width – 966 mm; Height – 1954 mm

Panels:

- ***Stationary Panel***

  Top and Bottom Rails: Consists of an extruded aluminum section fitted onto a vinyl extrusion section.

  Jamb and Interlock Stiles: Consists of an extruded aluminum section fitted onto a vinyl extrusion section.
- ***Operating Panel***

  Top and Bottom Rails: Consists of an extruded aluminum section fitted onto a vinyl extrusion section.

  Jamb and Interlock Stiles: Consists of an extruded aluminum section fitted onto a vinyl extrusion section.

- *Corners:* Butt-joined and held with two #8×3" pan head screw per interlock stile corner per jamb stile corner screwed into the screw port. The inside at the corners of the panel were sealed with silicone. The exterior corner faces were also sealed with silicone.
- The stationary panel was retained to the corresponding jamb with six #8×1" flat head, spaced 370 mm apart. The fixed panel was also adhered to the jamb, header, and sill tracks with silicone along the entire lengths.

Part	Supplier	Part Number
Bottom Rail Bottom Rail Exterior	Vision Extrusions Sapa	E107H04 AS-65051
Top Rail Top Rail Exterior	Vision Extrusions Sapa	E107H05 AS-65048
Fixed Panel Sash Fixed Rail Exterior	Vision Extrusions Sapa	E107H06 AS-65036
Fixed Panel Interlock Fixed Meeting Rail 20 DG/TG	Vision Extrusions Sapa	E107H07 AS-65027
Operable Panel Sash Pull Rail Extrusion	Vision Extrusions Sapa	E107H08 AS-65056
Operable Panel Interlock Operable Interlock W/S Insert Operating Meeting Rail Ext.	Vision Extrusions Vision Extrusions Sapa	E107H09 E107H10 AS-65035

Reinforcement:

- *Lock Stile:* A 36 mm by 36 mm 16Ga aluminum stiffener was inserted into the stile cavity.
- *Operable Interlock:* Custom u-shaped 16Ga galvanized steel stiffener was inserted into the interlock cavity.

Part	Supplier	Part Number
Stile Reinforcement	Can Art	EH09440
Sash Interlock Reinforcement	Cargowall	PD1603

Locks and Hardware:

- *Lockset:* Operable panel was fitted with a lock and keeper set affixed to the lock stile at the mid span. The inside pull handle was secured through the stile to an outside pull handle. The locks engaged a corresponding keeper affixed to the jamb using a butyl pad between the keeper and the jamb.
- *Rollers:* Two patio door rollers were affixed to the underside of the operating panel bottom rail.

Part	Supplier	Part Number	Fastening
Lock and Handle	Fasco	9700 Series SP24571857	two #10×3/4" flat head screws
Keeper	Fasco	9057257	two #10×1-3/4" pan head screws
Roller	Fasco	21000	one #8×1/2" pan head screw

Weather-stripping:

- *Header:* Flexible vinyl weather-stripped in kerf of the exterior face of the centre leg.
  Finned pile weather-stripped in kerfs of the interior face of the centre leg and innermost leg (0.350").
- *Sill:* Flexible vinyl weather-stripped in kerf of the exterior face of the centre leg and spanned the length of the stationary panel.
  Finned pile weather-stripped in kerfs of the interior face of the centre leg and innermost leg (0.350").
- *Fixed Jamb:* Flexible vinyl weather-stripped in kerf of the exterior face of the centre leg.
- *Lock Jamb:* Finned pile weather-stripped in kerfs of the centre leg and innermost leg (0.350").
- *Operable Interlock:* Finned pile weather-stripped in kerf of the exterior face (0.350").
- *Stationary Interlock:* Finned pile weather-stripped in kerf of the exterior face (0.210").
- *Storm Deflector:* Finned pile weather-stripped in kerfs of the interior and exterior edge (0.210").

Part	Supplier	Part Number
Vinyl Weather-Strip	Vision Extrusion	3399
Finned Weather-Strip	Ultrafab	187-210
Finned Weather-Strip	Ultrafab	187-350

Dust Plugs:

- Two adhesive-backed pile dust plugs measuring 63 mm by 23 mm with a 15 mm pile height was adhered to the ends of the interlock stile (top and bottom) of the fixed panel facing the exterior.

Drainage:

Drains From	Drains To	Qty	Size	Location	Weepgate
Upper track of interior channel	Lower track of interior channel	Two holes	Ø 4.7 mm	Leg cut back 25.4 mm from sill ends	No
Lower track of interior channel	Centre leg cavity	Two slots	40 mm by 13 mm	Located 115 mm and 815 mm from lock jamb	No
Centre leg cavity	Exterior channel	Two slots	40 mm by 13 mm	Located 115 mm and 815 mm from lock jamb	PVC flaps
Exterior channel	Exterior	Two slots	26 mm by 7 mm	150 mm from each end	PVC flaps

Panel Glazing:

- The panels consisted of an IG unit fitted with a rubber glazing spline and subsequently channel-glazed into the aluminum panel members. The corners of the spline were partially cut and silicone was applied on the interior and exterior corner of the exposed glass.
- Factory sealed glazing unit having three sheets of nominally thick 4 mm tempered glass and foam/butyl spacer with two 11.1 mm gaps. Overall IG thickness was 33.6 mm.

Screen Size

- Width – 965 mm
  Height – 1970 mm

Screen:

- *Frame:* Extruded aluminum screen members, each corner was held in by a #8×1" self-drilling pan head screw. A single plastic wheel roller assembly was inserted into each end of the stile and fastened with a #8×7/8" pan head screw located 95 mm from the end.
- *Mesh:* Fibreglass mesh retained by a plastic T-spline.
- *Lock:* A lock system was located in the jamb stile at mid height and secure with two #8×1/2" flat head screws. A corresponding keeper was installed on the lock jamb with two #8×1/2" pan head screws.
- *Installation:* The screen travelled on the upstanding leg of the aluminum screen track. The screen head is inserted into the frame header track.
- *Weather-strip:* Finned pile weather-stripped in kerfs of the interior face of the interlock stile (9/16").

Part	Supplier	Part Number
Screen Sash Top & Bottom	Can Art	EH-7582
Screen Lock Rail	Can Art	EH-7583
Screen Interlock	Can Art	EH-11582
Screen Lock and Keeper	Vision Extrusion	--
Screen Interlock Weather-Strip	--	--

Drawings:

- *Cross Sections:* Vision Extrusions Limited Drawing No.:

  X107C01, titled "Welded Sash/Welded Frame – Cross Sections", dated 06-08-2010

- *Member Details:* Vision Extrusions Limited Drawing No.:

Member	Drawing Originator	Die/Dwg/Part No.:	Rev	Date
Head Head Frame Exterior	Vision Extrusions Sapa	E107H01 AS-65040	B1 A	03-05-2014 10/09/16
Jamb Jamb Frame Exterior	Vision Extrusions Sapa	E107H02 AS-65041	A1 0	24-10-2013 10/09/10
Sill Sill Frame Exterior	Vision Extrusions Sapa	E107H03 AS-65042	B1 A	03-05-2014 10/09/16
Threshold	Sunview	--	--	Feb 12, 2015
Bottom Rail Bottom Rail Exterior	Vision Extrusions Sapa	E107H04 AS-65051	B1 0	03-05-2014 10/09/16
Top Rail Top Rail Exterior	Vision Extrusions Sapa	E107H05 AS-65048	A1 0	23-10-2013 10/09/24
Fixed Panel Sash Fixed Rail Exterior	Vision Extrusions Sapa	E107H06 AS-65036	A1 0	23-10-2013 10/09/20
Fixed Panel Interlock Fixed Meeting Rail 20 DG/TG	Vision Extrusions Sapa	E107H07 AS-65027	A1 0	23-10-2013 10/09/21
Operable Panel Sash Pull Rail Extrusion Stile Reinforcement	Vision Extrusions Sapa Can Art	E107H08 AS-65056 EH09440	A1 0 1	23-10-2013 10/09/20 10/09/97
Operable Panel Interlock Operable Interlock W/S Insert Operating Meeting Rail Ext. Sash Reinforcement	Vision Extrusions Vision Extrusions Sapa Cargowall	E107H09 E107H10 AS-65035 PD1603	A1 A1 0 2	23-10-2013 23-10-2013 10/09/20 17-AUG-2011
Interior Jamb Pocket Cover	Vision Extrusions	E107H11	A1	23-10-2013
#2920 Patio Door Gasket	Prasad Plastics	FH-3540	0	Nov 15/2012
Screen Sash Top & Bottom	Can Art	EH-7582	--	--
Screen Lock Rail	Can Art	EH-7583	--	--
Screen Interlock	Can Art	EH-11582	--	--
Screen Interlock Weather-Strip	Vision Extrusion	--	--	--
Screen Lock and Keeper	Vision Extrusion	--	--	--
Bottom Rail Strut 20 mm	Tecknoform	829-003	--	--
Handle	Fasco	9700 Series	--	--
Single Point Latch	Fasco	SP24571857	--	--
Keeper	Fasco	9057257	--	--
Patio Door Roller	Fasco	21000	--	--
Vinyl Weather-Strip	Vision Extrusion	3399	--	--
Finned Weather-Strip	Ultrafab	187-210	--	--
Finned Weather-Strip	Ultrafab	187-350	--	--
Dust Pad	--	--	--	--
Stainless Sill Track	Cargowall	26G	--	--

5 Testing and Evaluation Methods

The sliding door (SD) system was tested to the R performance class requirements of AAMA/ WDMA/CSA 101/I.S.2/A440-11 which shows equivalency in test methods of AAMA/WDMA/CSA 101/I.S.2/A440-08.

The sliding door as described in this report was tested to the R Performance Class. The sliding door met the Gateway Performance Requirements by virtue of meeting the higher (optional) performance grades to which it was tested:

- Minimum Gateway Test Size: 1800 mm × 2000 mm
- Maximum Allowable Air Leakage: 1.5 L/s·m²
- Minimum Water Pressure: 140 Pa
- Minimum Design Pressure: 720 Pa
- Minimum Structural Pressure: 1080 Pa

The sliding door system was tested for compliance to the above test criteria in order to achieve the Gateway Performance Designation of Class R-PG15 / Class R-PG720. The sliding door system tested had an overall size of 1875 mm × 2040 mm, which satisfied the minimum Gateway test size. Performance testing was conducted in order to meet the overall Optional Performance requirements as follows:

- Optional Water Pressure: 610 Pa
- Optional Design Pressure: 3840 Pa
- Optional Structural Test Pressure: 5760 Pa
- Canadian Air Infiltration/Exfiltration Level: A3

DEVIATION FROM THE TEST STANDARD

Testing was not initiated at the minimum Gateway grade levels for the R class of sliding doors. The sliding door system was tested to the Optional Performance Grades of AAMA/WDMA/CSA 101/I.S.2/A440-11. By default, the minimum Gateway requirements were met by virtue of meeting the requirements at higher test levels.

5.1 OPERATING FORCE TEST

The Operating Force test was performed on the panel and latch in accordance with Clause 9.3.1 in conjunctions with ASTM E2068-00, *"Standard Test Method for Determination of Operating Force of Sliding Windows and Doors."*

The forces required to initiate motion of the operable panel from both the fully open and fully closed positions, as well as the force required to maintain motion to the opposite limits of travel, were measured. The forces required to open and close the latches were also recorded.

5.2 AIR LEAKAGE RESISTANCE TEST

With the door closed and latched, the Air Leakage Resistance test was performed in accordance with Clause 9.3.2 in conjunction with ASTM E283-04, *"Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen."*

Air infiltration and exfiltration tests were performed using test pressures of 75 Pa (1.57 psf). The air leakage rate was calculated and compared to the allowable air leakage.

5.3 WATER PENETRATION RESISTANCE TEST

With the door closed and latched, a four-cycle Water Penetration Resistance test was performed in accordance with Clause 9.3.3 in conjunction with ASTM E547-00 *"Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Cyclic Static Air Pressure Difference."*

The test was performed using the specified pressure differential and a water spray rate of at least 204 L/m² per hour (5.0 US gal/ft² per hour). Each cycle consisted of five minutes with the pressure applied and one minute with the pressure released, during which the water spray was continuously applied.

5.4 UNIFORM LOAD TESTS

5.4.1 Uniform Load Deflection Test

A Uniform Load Deflection test was conducted in accordance with Clause 9.3.4.2 and ASTM E330-02 *"Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference,"* Procedure A. After a 10 second preload (50% of test load), followed by 1 minute with the pressure released, the Uniform Load Deflection test was conducted at the specified test pressures for a time of 10 seconds. The test was performed in both the positive and negative directions. Deflection measurement, including residual deflection, was taken at the mid-span and at both ends of the interlock. After the test loads were released, the sliding door was inspected for failure or permanent deformation of any part of the sliding door system that would cause any operational malfunction.

5.4.2 Uniform Load Structural Test

A Uniform Load Structural test was conducted in accordance with Clause 9.3.4.3 and ASTM E330-02 *"Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference,"* Procedure A. After a 10 second preload (50% of test load), followed by 1 minute with the pressure released, the sample was subjected to a Uniform Load Structural test using a specified test pressure for a time of 10 seconds. The test was performed in both the positive and negative directions. After the test loads were released, the permanent deflections were recorded as well as the sliding door was inspected for failure or permanent deformation of any part of the sliding door system that would cause any operational malfunction.

5.5 FORCED-ENTRY RESISTANCE TEST

The Forced Entry Resistance Test was conducted and evaluated in accordance with Clause 9.3.5 in conjunction with ASTM F842-04 "*Standard Test Methods for Measuring the Force Entry Resistance of Sliding Door Assemblies, Excluding Glass Impact*".

5.5.1 Disassembly Test

Using the disassembly tools listed below, all members and/or fasteners that could readily be removed from the exterior within a time limit of five minutes were removed carefully so as not to cause collateral damage to the specimen.

- Putty knife – 0.6 mm thick by 20 mm wide by 90 mm long (0.024" × 0.78" × 3.5")
- Philips or straight non-powered screwdrivers – 150 mm (6") long
- Standard slot-type pliers – 150 mm (6") long to 175 mm (7") long overall

5.5.2 Type A and Type D Sliding Door Assembly Tests

The specimen was tested to a Grade 10 performance level (T_1 = 5 minutes). All test loads were applied at a rate of 45 N/s (10 lbf/s) and held for a period of 60 seconds. The test loads used were as shown in the following table:

Grade 10 Loads		
Load ID	Load (N)	Load (lbf)
L_1	1334	300
L_2	778	175
L_3	133	30
L_4	222 plus panel weight	50 plus panel weight

Test A1 With the panel in the closed position, a concentrated load of L_1 was applied from the exterior to the jamb (lock) stile within 75 mm (3") of the lock in a direction parallel to the plane of the glazing in an opening direction, the load evenly distributed between the interior and exterior sides of the locking device so as to minimize rotation.

Test A2 Test A1 was conducted in conjunction with a load of L_2, applied at the jamb stile at the lock, in a direction perpendicular to the plane of glazing towards the interior side of the door.

Test A3 Test A1 was conducted in conjunction with a load of L_2, applied at the jamb stile at the lock, in a direction perpendicular to the plane of glazing towards the exterior side of the door.

Test A4 Test A2 was conducted in conjunction with a lifting load of L_4, applied at the mid-span of the sill rail, in a direction parallel to the plane of glazing vertically lifting the panel to the uppermost limit within the confines of the frame.

Test A5 Test A3 was conducted in conjunction with a load of L_4, applied at the mid-span of the sill rail, in a direction parallel to the plane of glazing vertically lifting the panel to the uppermost limit within the confines of the frame.

Test A6 (Inside Sliding Panel) Test A4 conducted in conjunction with a load of L_3, applied at the corner of the panel meeting stile at the sill rail, to the sill rail within 75 mm (3") of the corner, in a direction perpendicular to the plane of glazing towards the interior of the door.

Test D1 A concentrated load of L_1 was applied to the fixed panel from the exterior to the jamb (lock) stile within 75 mm (3") of the lock in a direction parallel to the plane of the glazing in an opening direction.

Test D2 Test D1 was conducted in conjunction with a load of L_2, applied at the interlock stile, in a direction perpendicular to the plane of glazing towards the interior side of the door.

Test D3 Test D2 was conducted in conjunction with a lifting load of L_4, applied at the mid-span of the sill rail, in a direction parallel to the plane of glazing vertically lifting the fixed panel to the uppermost limit within the confines of the frame.

5.5.3 Hardware Manipulation Test

Using the tools for hardware manipulation listed below, an attempt was made to gain entry by inserting each tool and tool combination so as to contact the locking device from the exterior. The lock manipulation test was conducted for a time of T_1 by one technician in a manner so as not to cause collateral damage to the specimen.

- Putty knife – 0.6 mm thick by 20 mm wide by 90 mm long (0.024" × 0.78" × 3.5")
- Black annealed 16 ga. wire long enough to reach from point of insertion to locking device

5.5.4 Panel Manipulation Test

An attempt was made to open the door, lift, push, pull or otherwise manipulate by hand from the exterior, the panel to the full confines of the frame. The panel manipulation test was conducted for a time of T_1.

5.6 DEGLAZING TEST

Deglazing test was conducted in accordance with Clause 9.3.6.3 in conjunction with ASTM E987 *"Standard Test Methods for Deglazing Force of Fenestration Products,"* Test Method A. The test sample was supported, with the side to which manual force is normally applied to the operating panel facing upward, on two 2×4 wooden supports, located under the glazing within 25.4 mm (1") of each of the parallel panel members and of sufficient length to extend within 25.4 mm (1") of each perpendicular panel member. A mechanical stop was used at each corner, placed no more than 12.7 mm (0.5"), of the test sample to prevent movement when under load. The hydraulic ram was installed in such a way that it was perpendicular and so the contact shoe of the ram is within 12.7 mm (0.5") to the panel member being tested as well as making sure the centreline of the contact shoe corresponds to the centreline of the panel member. A deflection gauge was placed under the center of the panel and the glazing bite, the contact point of where the shoe ill make contact with the panel member, is marked. The test load is then applied for 30 seconds, making sure the time to apply the required load did not take more than 15 seconds. The deflection was recorded and the test load was released. The panel member that was under the test load was removed and the distance from the glazing bite to the edge of the glazing material, was measured and recorded.

5.7 THERMOPLASTIC CORNER WELD TEST

The sliding door frame and panels were not welded at the corners therefore this test is exempted from the requirements of the Thermoplastic Corner weld test.

5.8 INSECT SCREEN SERVICEABILITY TEST

The Insect Screen test was conducted and evaluated in accordance with Section 5.1 of CSA A440S1-09 *Canadian Supplement*. With the sliding door mounted in a test frame, a S1 force of 60 N (13.5 lbf) was applied to the insect screen (perpendicular to the plane of the screen and in an outward direction) through a 300 mm (12") diameter, rigid, circular platen centered on the insect screen, and held for a period of 60 seconds. After the test load was released, the screen was inspected for deformation or damage

6 Testing and Evaluation Results

6.1. OPERATING FORCE TEST

Operable Panel	***Force applied to handle of sash***
Maximum measured force to initiate opening	108 N
Maximum measured force to initiate closing	56 N
Maximum measured force to maintain motion	36 N

Maximum allowable force to initiate motion:	*135 N*
Maximum allowable force to maintain motion	*90 N*

Latch	***Force applied to latch***
Maximum measured force to operate latch:	9 N

Maximum allowable force required to open/close latch:	*100 N*

The sliding door system **MET** the (Canada and US) performance requirements for Operating Force as specified in AAMA/WDMA/CSA 101/I.S.2/A440-11 for the R performance class.

6.2. AIR LEAKAGE RESISTANCE TEST

Air Infiltration – 75 Pa	
Total Sliding Door Area	3.83 m²
Infiltration rate:	0.3 L/s•m²
Air Exfiltration – 75 Pa	
Total Sliding Door Area	3.83 m²
Exfiltration rate:	0.4 L/s•m²

Maximum allowable air leakage rate:	*0.5 L/s•m²*

The sliding door system **MET** the performance level specified (as well as **A3** Canadian Infiltration/Exfiltration Levels) in AAMA/WDMA/CSA 101/I.S.2/A440-11 for Air Leakage Resistance.

6.3. WATER PENETRATION RESISTANCE TEST

During the 24-minute test period, using a pressure differential of 610 Pa with the screen installed, there was no water leakage observed, nor was there trapped water in the sliding door assembly following completion of the test.

During the 24-minute test period, using a pressure differential of 610 Pa with the screen removed, there was no water leakage observed, nor was there trapped water in the sliding door assembly following completion of the test.

The sliding door system **MET** the minimum Gateway Water Penetration Resistance requirement at 140 Pa, and the Optional Performance requirement for at 610 Pa as specified in AAMA/WDMA/CSA 101/I.S.2/A440-11 and CSA A440S1-09, *Canadian Supplement*.

6.4. UNIFORM LOAD TESTS

Uniform Load Deflection Test		
Member	Interlock Stile	
Span Length	1900 mm	
Allowable Deflection	*Report only*	
Test Pressure	***Positive Load***	***Negative Load***
	+3960 Pa	-3960 Pa
Maximum Net Deflection	21.98 mm	23.84 mm
Note	** Deflections were obtained at ±3960 Pa instead of ±3840 Pa*	
Post-test Details	After the test loads were released, the sliding door was inspected and there was found to be no failure or permanent deformation of any part of the sliding door that would cause any operational malfunction.	

Uniform Load Structural Test		
Member	Interlock Stile	
Span Length	1900 mm	
Allowable Deflection (0.4% × span)	*7.60 mm*	
Test Pressure	***Positive Load***	***Negative Load***
	+5760 Pa	-5760 Pa
Residual Net Deflection	0.90 mm	1.30 mm
Post-test Details	After the test loads were released, the sliding door was inspected and there was found to be no failure or permanent deformation of any part of the sliding door that would cause any operational malfunction.	

The sliding door system **MET** the minimum Gateway Uniform Load Structural Test (150% of Design Pressure) performance requirements at 1080 Pa by virtue of meeting the Uniform Load Structural optional performance requirement at 5760 Pa as specified in AAMA/WDMA/CSA 101/I.S.2/A440-11.

6.5. FORCED ENTRY RESISTANCE TEST

The sliding door was installed into a wood test buck. The test unit was subjected to a Grade 10 measured performance for a Type A and Type D sliding door system in accordance with the procedure outlined in ASTM F842-04.

Disassembly Test	Within 5 minutes, nothing was removed from the sliding door and entry was not gained.	
Type A Sliding Door Assembly Tests	***Test***	***Comments***
	A1	No entry
	A2	No entry
	A3	No entry
	A4	No entry
	A5	No entry
	A6	No entry
Type D Sliding Door Assembly Tests (fixed Panel only)	D1	No entry
	D2	No entry
	D3	No entry
Hardware Manipulation Test	During time T1 entry was not gained.	
Panel Manipulation Test	During time T1 entry was not gained.	

The sliding door achieved met the **Grade 10** measured performance rating for Forced Entry Resistance for Type A and Type D sliding door as specified in ASTM F842-04.

6.6. DEGLAZING TEST

Panel Member	**Load**	**Measured Deglazement**	***Maximum Allowable***
Head Rail	230 N	0.60 mm	*90% of glazing bite 13.50 mm*
Sill Rail	230 N	0.44 mm	
Interlock	320 N	3.98 mm	
Lock Stile	320 N	2.67 mm	
The panel members did not move from its original position, in relation to the glazing material, by more than 90% of the original glazing bite. There was no glazing breakage and the sliding door system was not damaged in any way that it would inhibit its normal operation.			

The sliding door **MET** the Deglazing Test performance requirements specified in AAMA/WDMA/CSA 101/I.S.2/A440-11.

6.7. THERMOPLASTIC CORNER WELD TEST

The sliding door frame and panels were not welded at the corners, nor did they consist of thermoplastic material therefore this test exempted from the requirements of the Thermoplastic Corner weld test.

6.8. INSECT SCREEN SERVICEABILITY TEST

After the test load was released, the screen was inspected and showed no signs of failure or permanent deformation. The window system **PASSED** the performance requirements for Insect Screen Serviceability Test as specified in CSA A440S1-09.

7 Conclusion

The Hybrid Patio Door (DP80) described in this report and tested to the requirements in accordance with AAMA/WDMA/CSA 101/I.S.2/A440-11 *"NAFS 2011 – North American Fenestration Standard/Specification for windows, doors, and skylights"* and CSA A440S1-09, *Canadian Supplement* and achieved the following Performance Designations:

Primary Designator

Class R – PG80 – Size Tested: 1875 × 2040 mm – SD

Secondary Designator

Positive Design Pressure (DP) = +3840 Pa
Negative Design Pressure (DP) = -3840 Pa
Water Penetration Test Pressure = 610 Pa
Canadian Air Infiltration/Exfiltration Level = A3

The sliding door also **MET** the requirements for Forced Entry Resistance (Grade 10).

Test results reported here in also comply with the 2008 edition of the NAFS test standard, AAMA/WDMA/CSA 101/I.S.2/A440-08, "*NAFS North American Fenestration Standard/Specification for windows, doors, and skylights*".

Tested by: Allan Lawrence

INTERTEK TESTING SERVICES NA LTD.

Reported by: _____
Allan Lawrence
Technical Analyst, Building Products

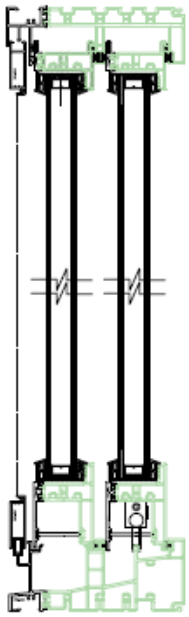
Reviewed by: _____
Claudio Sacilotto, P. Eng.
Senior Project Manager, Building Products

8 Appendix A: Drawings

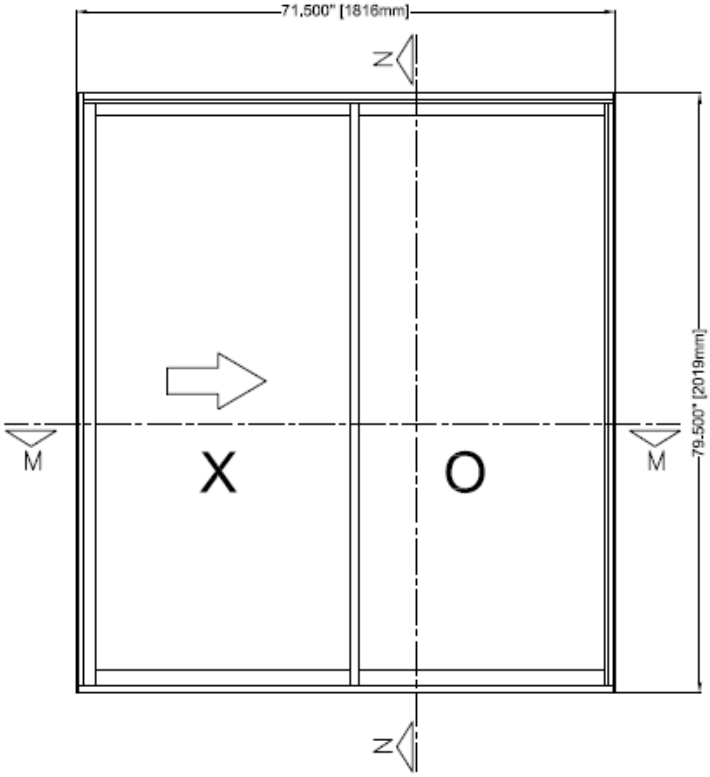
(Drawings – 25 pages)

Hybrid Series-Double Glazing

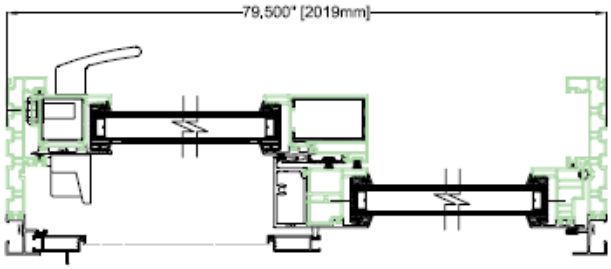
Door Size = 71.50" x 79.50"



SECTION N-N



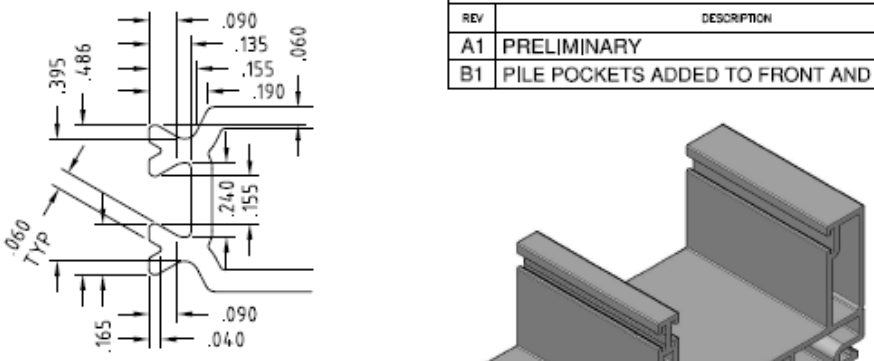
Hybrid Series



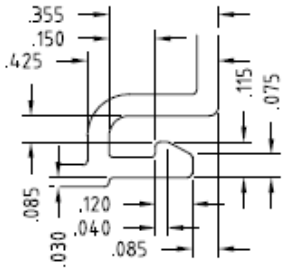
SECTION M-M

TOLERANCES	CUSTOMER:				
X.XX ± 0.015 X.XXX ± 0.010 X.XXXX ± 0.005 DO NOT SCALE DRAWING ALL DIMENSIONS ARE IN INCHES [MM]	PART: Hybrid Series-Cross Section				
SIZE: SIZE	COLOUR: COLOUR	MATERIAL: MATERIAL	AREA: AREA ^{2}	TOOL NO.: TOOL_NO	DATE: APRIL-19-2013
SHEET: of	DRAWN BY: DAVOOD	SCALE: SCALE	VOLUME: WEIGHT/FT	PART NO.: PART_NO.	DWG NO.: S02

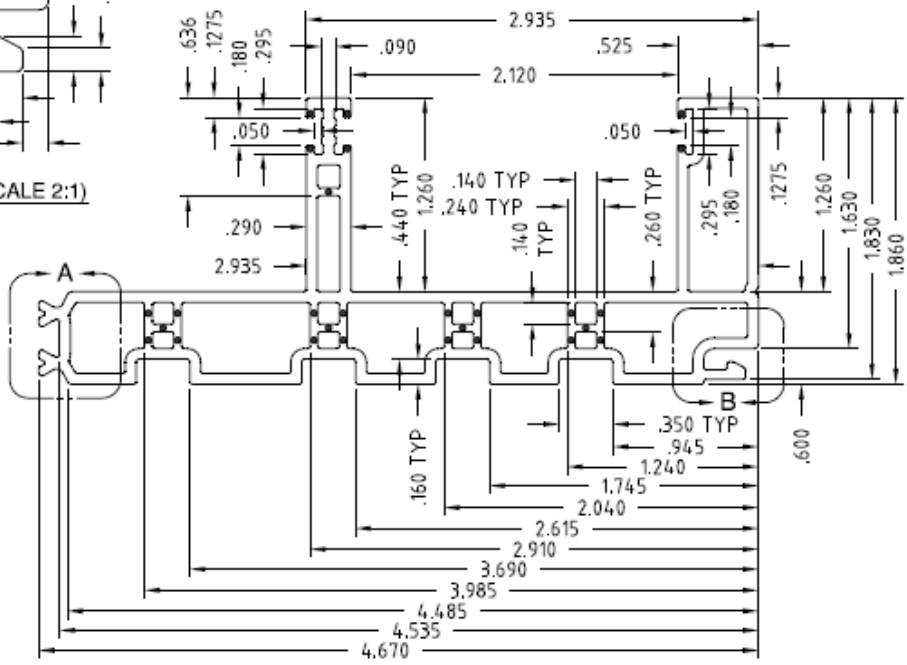
REVISIONS		
REV	DESCRIPTION	APPROVED
A1	PRELIMINARY	
B1	PILE POCKETS ADDED TO FRONT AND REAR TOWERS	



DETAIL "A" (SCALE 2:1)



DETAIL "B" (SCALE 2:1)



RADII:
a = 0.010"
b = 0.020"
c = 0.025"
d = 0.070"
s = sharp
f = full
unmarked = 0.015"

WALL THICKNESS:
NOMINAL = 0.070"
● = 0.050"

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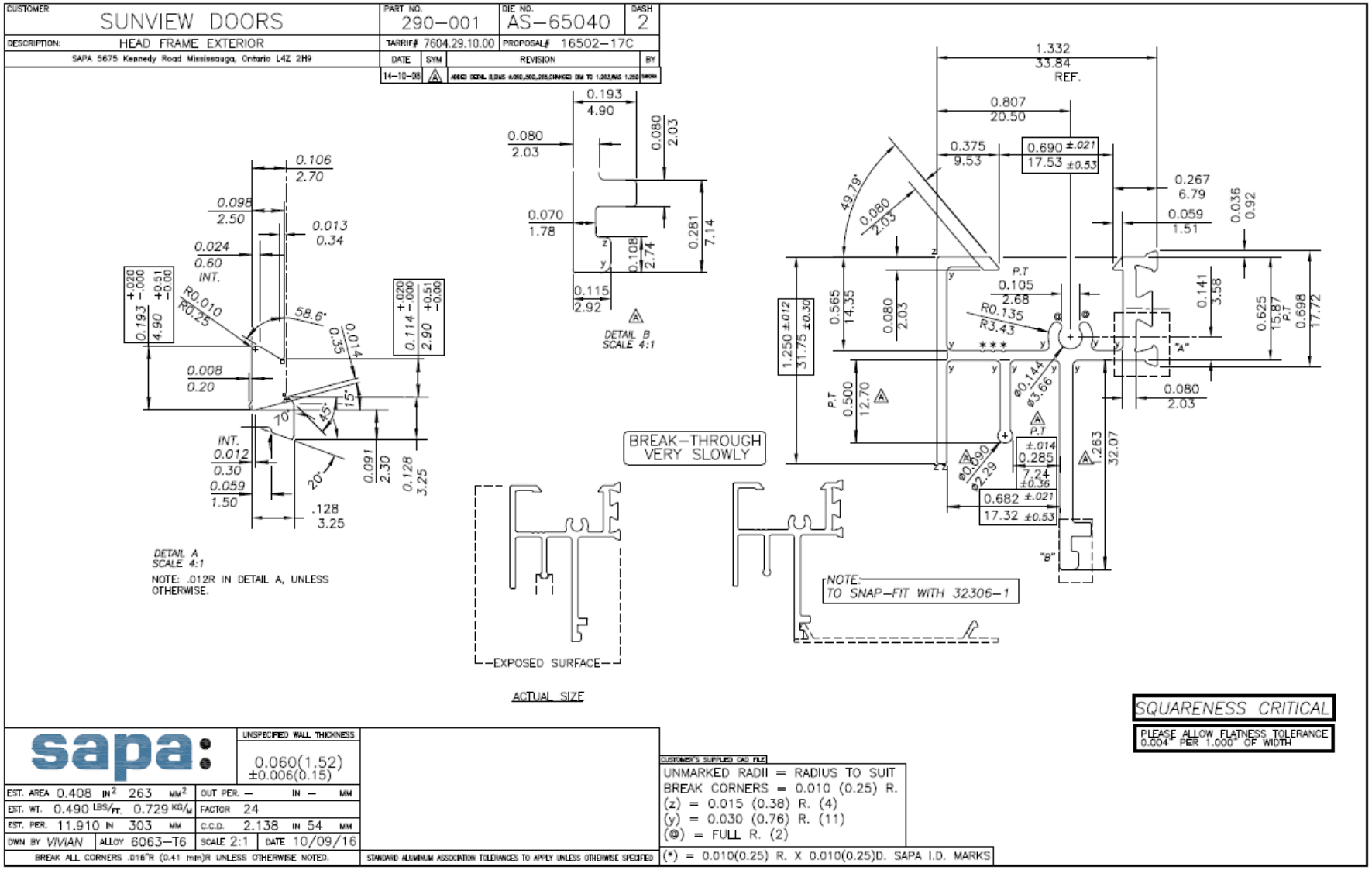
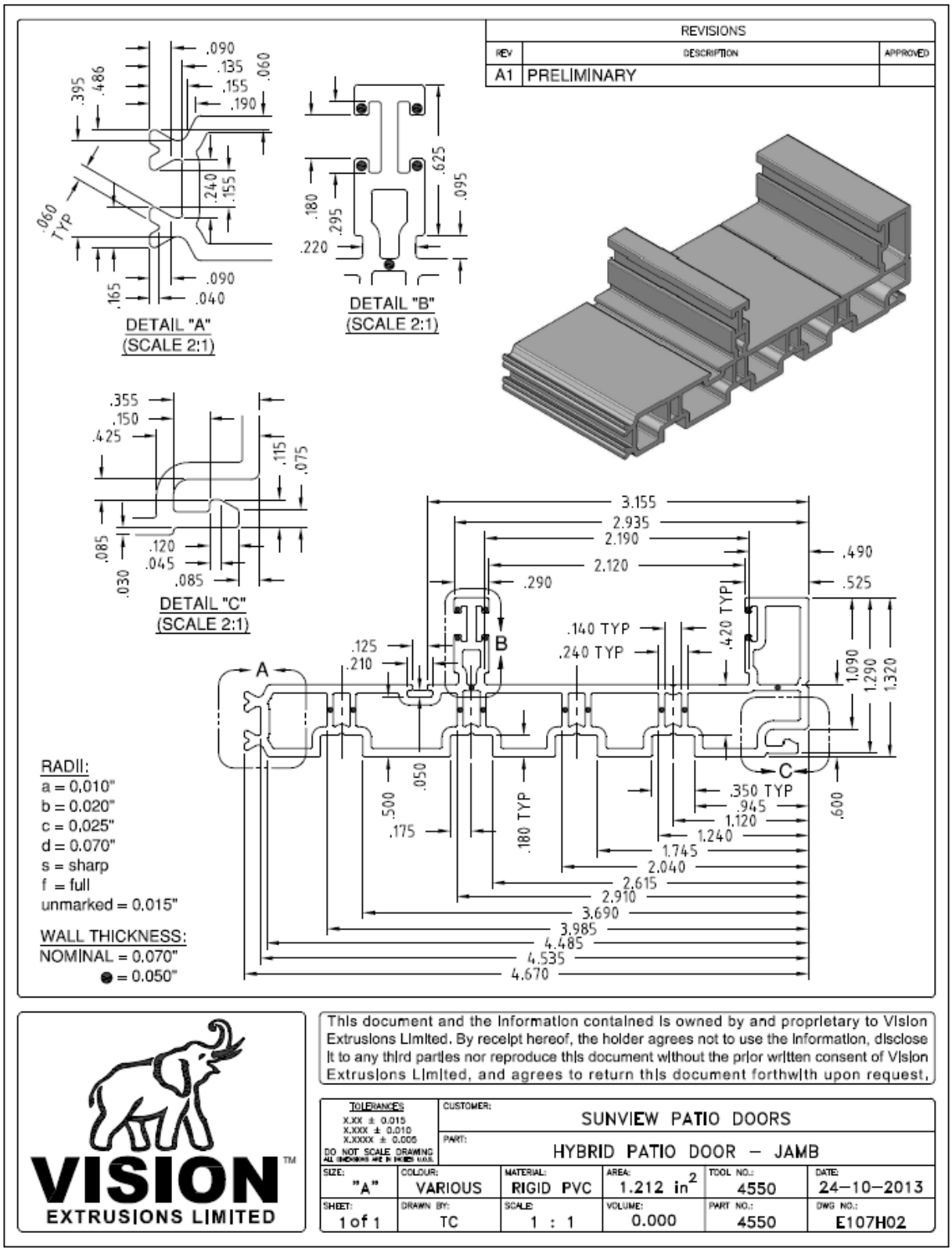
TOLERANCES: X.XX ± 0.015, X.XXX ± 0.010, X.XXXX ± 0.005, DO NOT SCALE DRAWING	CUSTOMER: SUNVIEW PATIO DOORS				
	PART: HYBRID PATIO DOOR – HEAD				
SIZE: "A"	COLOUR: VARIOUS	MATERIAL: RIGID PVC	AREA: 1.384 In^2	TOOL NO.: 4549	DATE: 03–05–2014
SHEET: 1 of 1	DRAWN BY: TC	SCALE: 1 : 1	VOLUME: 0.000	PART NO.: 4549	DWG NO.: E107H01


CUSTOMER
SUNVIEW DOORS
PART NO. 290–001
DIE NO. AS–65040
DASH 2
DESCRIPTION: HEAD FRAME EXTERIOR
TARRIF# 7604.29.10.00
PROPOSAL# 16502–17C
SAPA 5675 Kennedy Road Mississauga, Ontario L4Z 2H9
DATE 14–10–08
SYM A
REVISION
BY
DETAIL A
SCALE 4:1
NOTE: .012R IN DETAIL A, UNLESS OTHERWISE.
DETAIL B
SCALE 4:1
BREAK–THROUGH VERY SLOWLY
EXPOSED SURFACE
ACTUAL SIZE
NOTE: TO SNAP–FIT WITH 32306–1
SQUARENESS CRITICAL
PLEASE ALLOW FLATNESS TOLERANCE 0.004" PER 1.000" OF WIDTH
sapa:
UNSPECIFIED WALL THICKNESS
0.060(1.52) ±0.006(0.15)
EST. AREA 0.408 IN² 263 MM²
OUT PER. — IN — MM
EST. WT. 0.490 LBS/FT. 0.729 KG/M
FACTOR 24
EST. PER. 11.910 IN 303 MM
C.C.D. 2.138 IN 54 MM
DWN BY VIVIAN
ALLOY 6063–T6
SCALE 2:1
DATE 10/09/16
BREAK ALL CORNERS .016"R (0.41 mm)R UNLESS OTHERWISE NOTED.
STANDARD ALUMINUM ASSOCIATION TOLERANCES TO APPLY UNLESS OTHERWISE SPECIFIED
CUSTOMER'S SUPPLIED CAD FILE
UNMARKED RADII = RADIUS TO SUIT
BREAK CORNERS = 0.010 (0.25) R.
(z) = 0.015 (0.38) R. (4)
(y) = 0.030 (0.76) R. (11)
(@) = FULL R. (2)
(*) = 0.010(0.25) R. X 0.010(0.25)D. SAPA I.D. MARKS


REVISIONS
REV
DESCRIPTION
APPROVED
A1
PRELIMINARY
DETAIL "A"
(SCALE 2:1)
DETAIL "B"
(SCALE 2:1)
DETAIL "C"
(SCALE 2:1)
RADII:
a = 0.010"
b = 0.020"
c = 0.025"
d = 0.070"
s = sharp
f = full
unmarked = 0.015"
WALL THICKNESS:
NOMINAL = 0.070"
● = 0.050"
VISION
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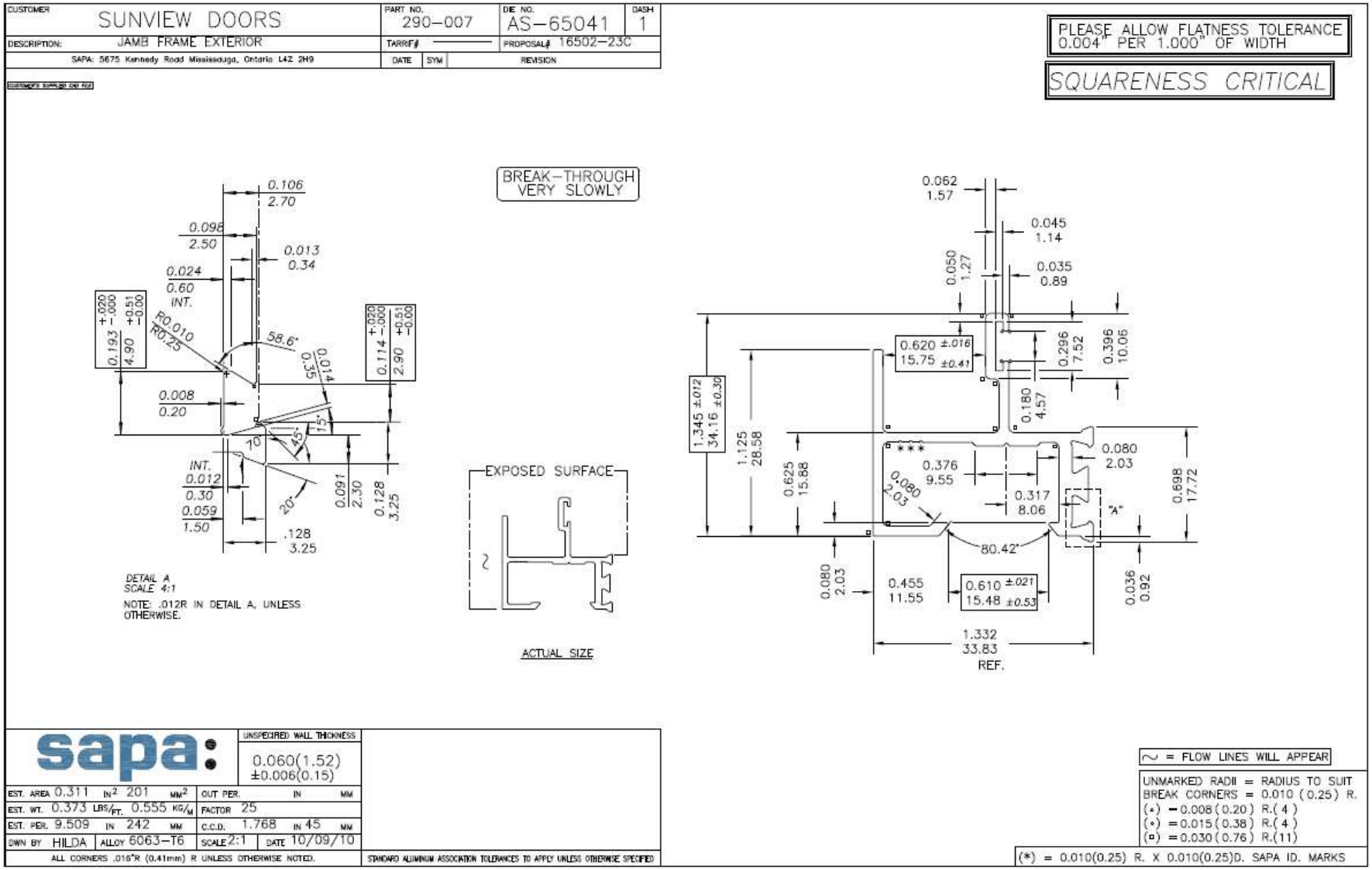
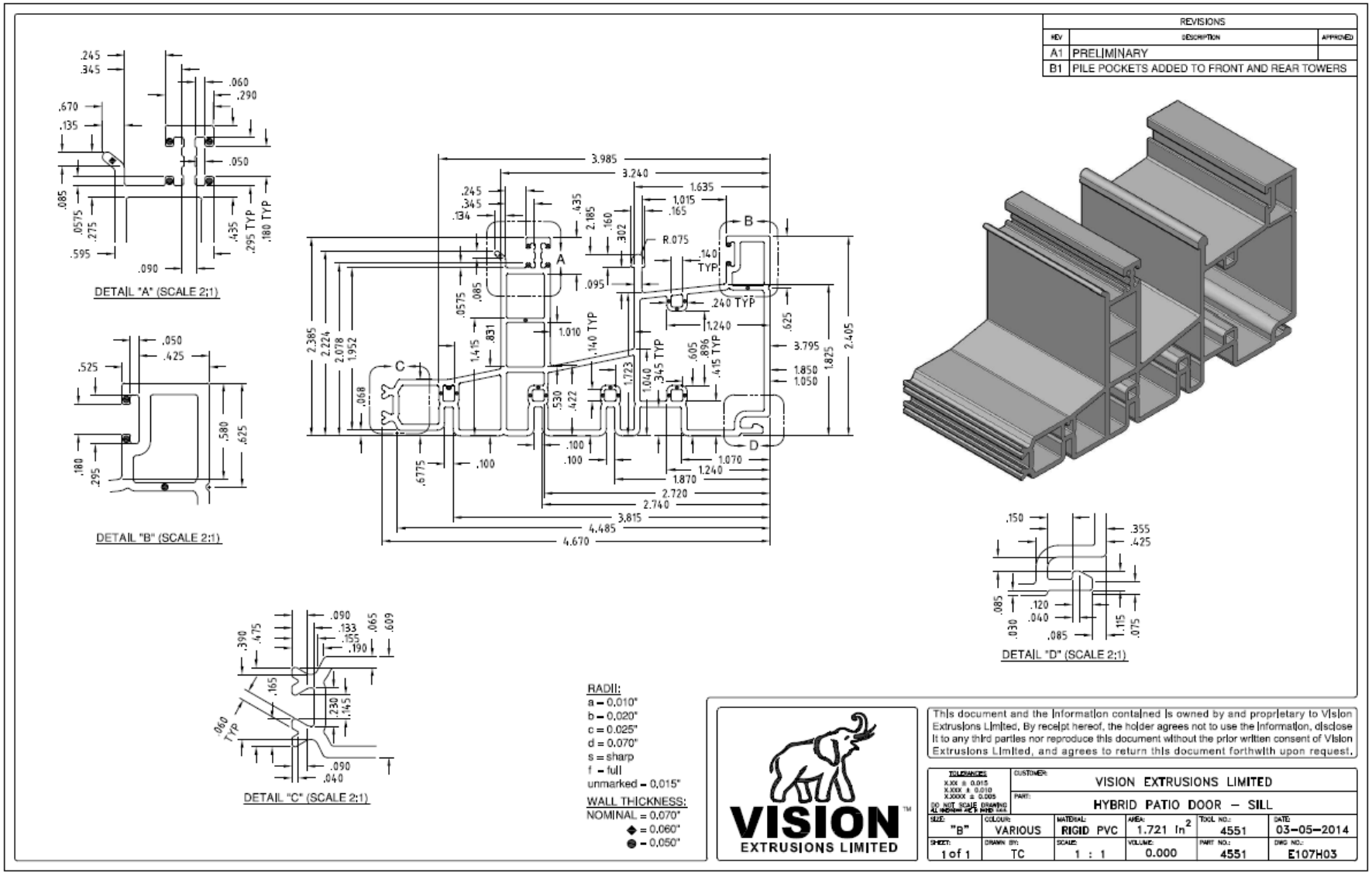
TOLERANCES
X.XX ± 0.015
X.XXX ± 0.010
X.XXXX ± 0.005
DO NOT SCALE DRAWING
CUSTOMER:
SUNVIEW PATIO DOORS
PART:
HYBRID PATIO DOOR – JAMB
SIZE: "A"
COLOUR: VARIOUS
MATERIAL: RIGID PVC
AREA: 1.212 in2
TOOL NO.: 4550
DATE: 24-10-2013
SHEET: 1 of 1
DRAWN BY: TC
SCALE: 1 : 1
VOLUME: 0.000
PART NO.: 4550
DWG NO.: E107H02


CUSTOMER
SUNVIEW DOORS
PART NO.
290–007
DIE NO.
AS–65041
DASH
1
DESCRIPTION:
JAMB FRAME EXTERIOR
TARRIF#
PROPOSAL# 16502–23C
SAPA: 5675 Kennedy Road Mississauga, Ontario L4Z 2H9
DATE
SYM
REVISION
PLEASE ALLOW FLATNESS TOLERANCE 0.004" PER 1.000" OF WIDTH
SQUARENESS CRITICAL
BREAK–THROUGH VERY SLOWLY
EXPOSED SURFACE
ACTUAL SIZE
DETAIL A
SCALE 4:1
NOTE: .012R IN DETAIL A, UNLESS OTHERWISE.
sapa:
UNSPECIFIED WALL THICKNESS
0.060(1.52)
±0.006(0.15)
EST. AREA 0.311 IN² 201 MM²
EST. WT. 0.373 LBS/FT. 0.555 KG/M
EST. PER. 9.509 IN 242 MM
DWN BY HILDA
ALLOY 6063–T6
OUT PER. IN MM
FACTOR 25
C.C.D. 1.768 IN 45 MM
SCALE 2:1
DATE 10/09/10
ALL CORNERS .016"R (0.41mm) R UNLESS OTHERWISE NOTED.
STANDARD ALUMINUM ASSOCIATION TOLERANCES TO APPLY UNLESS OTHERWISE SPECIFIED
~ = FLOW LINES WILL APPEAR
UNMARKED RADII = RADIUS TO SUIT
BREAK CORNERS = 0.010 (0.25) R.
(•) = 0.008 (0.20) R.(4)
(•) = 0.015 (0.38) R.(4)
(▫) = 0.030 (0.76) R.(11)
(*) = 0.010(0.25) R. X 0.010(0.25)D. SAPA ID. MARKS


REVISIONS
REV | DESCRIPTION | APPROVED
A1 | PRELIMINARY
B1 | PILE POCKETS ADDED TO FRONT AND REAR TOWERS
DETAIL "A" (SCALE 2:1)
DETAIL "B" (SCALE 2:1)
DETAIL "C" (SCALE 2:1)
DETAIL "D" (SCALE 2:1)
RADII:
a = 0.010"
b = 0.020"
c = 0.025"
d = 0.070"
s = sharp
f = full
unmarked = 0.015"
WALL THICKNESS:
NOMINAL = 0.070"
◆ = 0.060"
● = 0.050"
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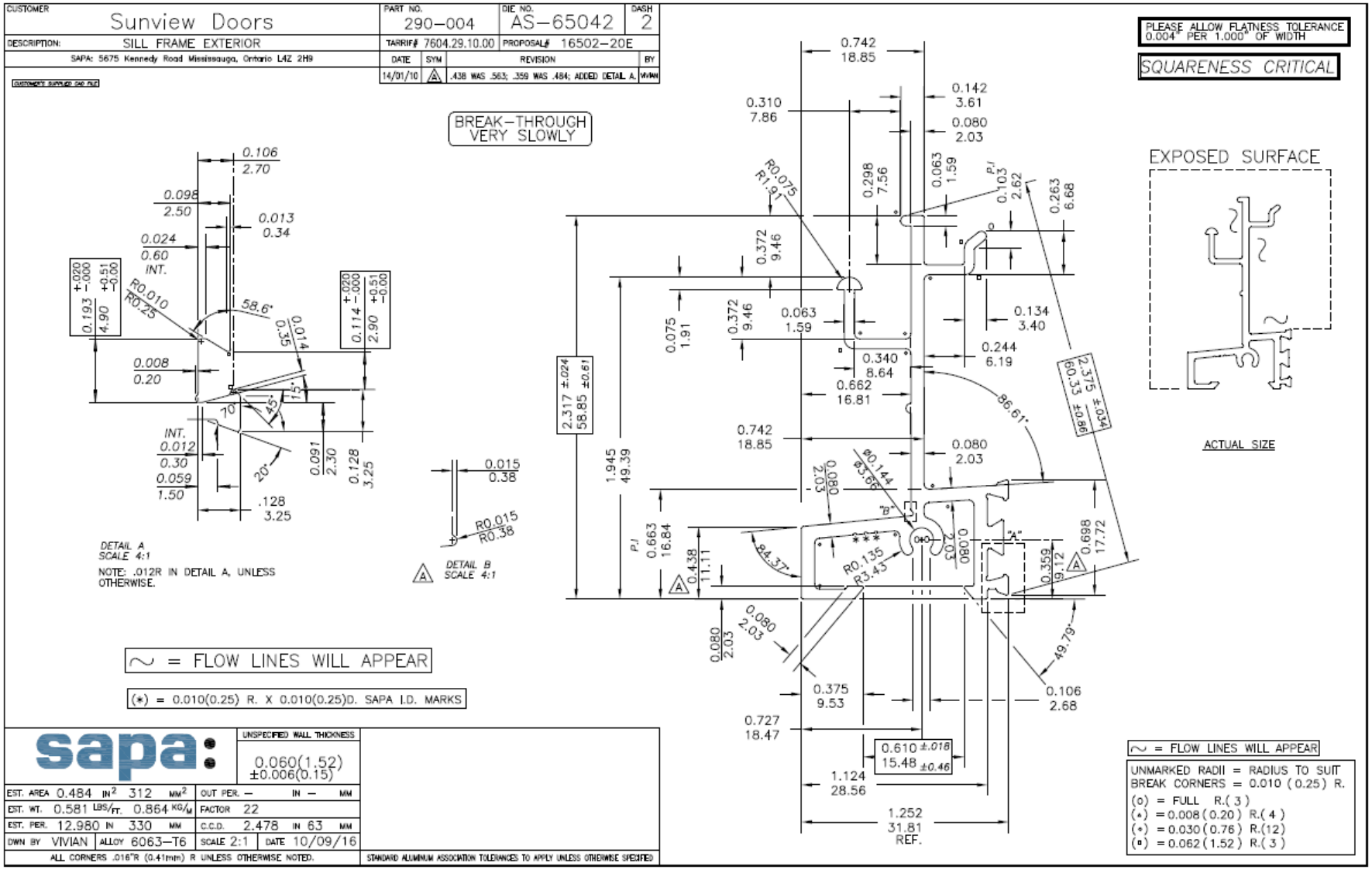
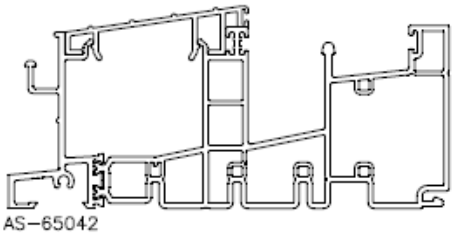
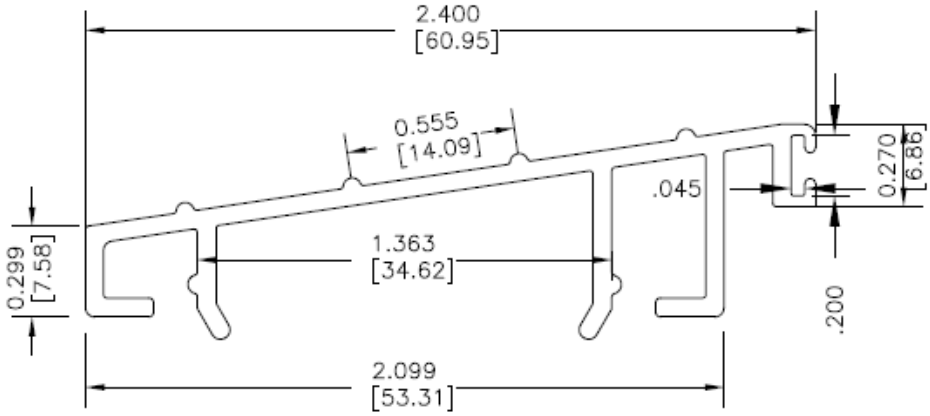
CUSTOMER: VISION EXTRUSIONS LIMITED
PART: HYBRID PATIO DOOR – SILL
SIZE: "B" | COLOUR: VARIOUS | MATERIAL: RIGID PVC | AREA: 1.721 In2 | TOOL NO.: 4551 | DATE: 03-05-2014
SHEET: 1 of 1 | DRAWN BY: TC | SCALE: 1 : 1 | VOLUME: 0.000 | PART NO.: 4551 | DWG NO.: E107H03


CUSTOMER
Sunview Doors
PART NO. 290–004
DIE NO. AS–65042
DASH 2
DESCRIPTION: SILL FRAME EXTERIOR
TARRIF# 7604.29.10.00
PROPOSAL# 16502–20E
SAPA: 5675 Kennedy Road Mississauga, Ontario L4Z 2H9
DATE 14/01/10
SYM A
REVISION .438 WAS .563; .359 WAS .484; ADDED DETAIL A.
BY VIVIAN
CUSTOMER SUPPLIED DXF FILE
BREAK–THROUGH VERY SLOWLY
PLEASE ALLOW FLATNESS TOLERANCE 0.004" PER 1.000" OF WIDTH
SQUARENESS CRITICAL
EXPOSED SURFACE
ACTUAL SIZE
DETAIL A SCALE 4:1
NOTE: .012R IN DETAIL A, UNLESS OTHERWISE.
DETAIL B SCALE 4:1
~ = FLOW LINES WILL APPEAR
(*) = 0.010(0.25) R. X 0.010(0.25)D. SAPA I.D. MARKS
sapa:
UNSPECIFIED WALL THICKNESS
0.060(1.52) ±0.006(0.15)
EST. AREA 0.484 IN² 312 MM²
EST. WT. 0.581 LBS/FT. 0.864 KG/M
EST. PER. 12.980 IN 330 MM
OUT PER. — IN — MM
FACTOR 22
C.C.D. 2.478 IN 63 MM
DWN BY VIVIAN
ALLOY 6063–T6
SCALE 2:1
DATE 10/09/16
ALL CORNERS .016"R (0.41mm) R UNLESS OTHERWISE NOTED.
STANDARD ALUMINUM ASSOCIATION TOLERANCES TO APPLY UNLESS OTHERWISE SPECIFIED
~ = FLOW LINES WILL APPEAR
UNMARKED RADII = RADIUS TO SUIT
BREAK CORNERS = 0.010 (0.25) R.
(o) = FULL R.(3)
(•) = 0.008 (0.20) R.(4)
(•) = 0.030 (0.76) R.(12)
(▫) = 0.062 (1.52) R.(3)

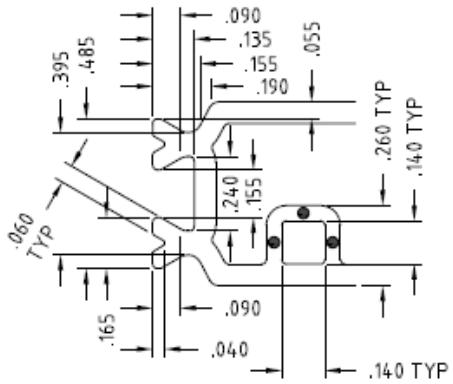




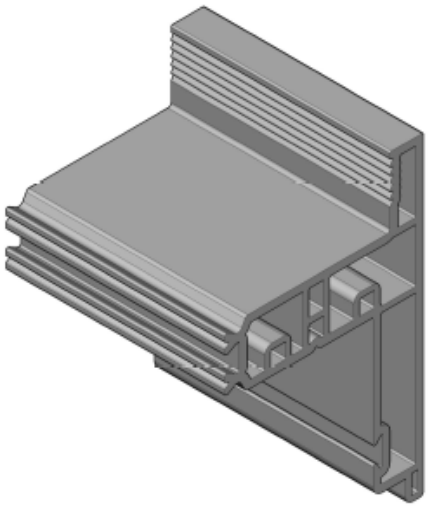
Threshold

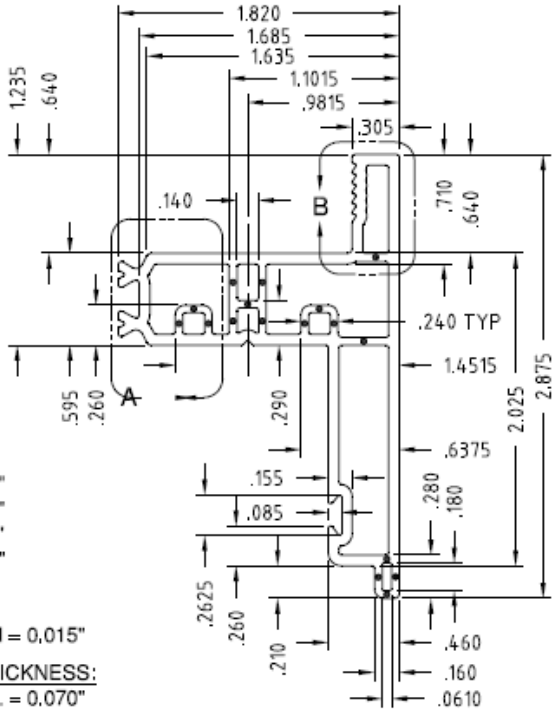
TYPE : Hybrid Patio Door				
Drawing :Threshold				
SIZE:	COLOUR: VARIOUS		TOOL NO.: N/A	DATE: Feb 12, 2015
SHEET: 1 of 1	DRAWN BY: David		PART NO.: N/A	DWG NO.:

REVISIONS		
REV	DESCRIPTION	APPROVED
A1	PRELIMINARY	
B1	PILE POCKET REMOVED	



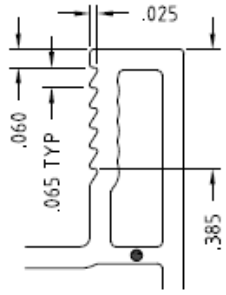
DETAIL "A" (SCALE 2:1)





RADII:
a = 0.010"
b = 0.020"
c = 0.025"
d = 0.070"
s = sharp
f = full
unmarked = 0.015"

WALL THICKNESS:
NOMINAL = 0.070"
● = 0.050"



DETAIL "B" (SCALE 2:1)

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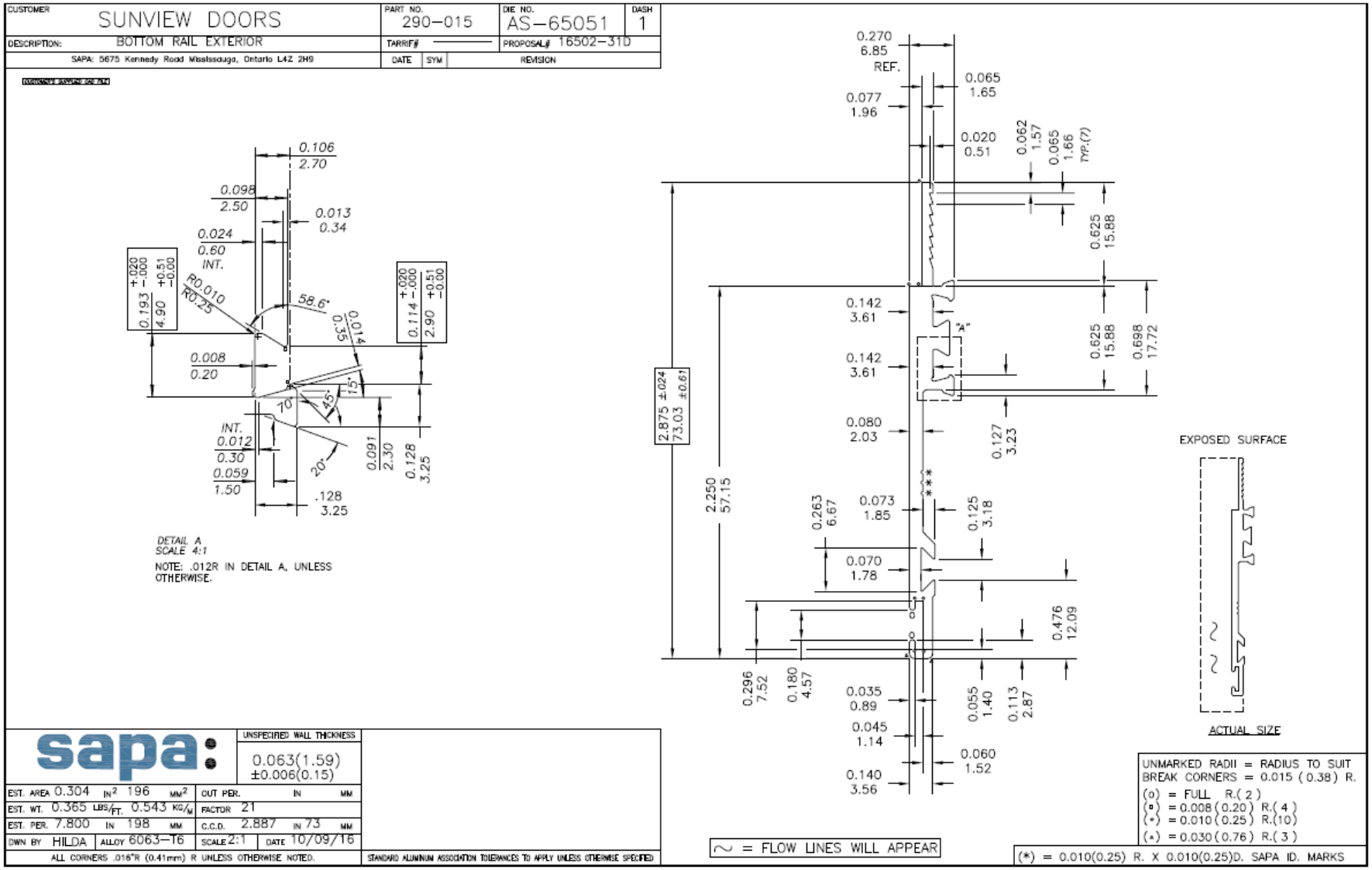
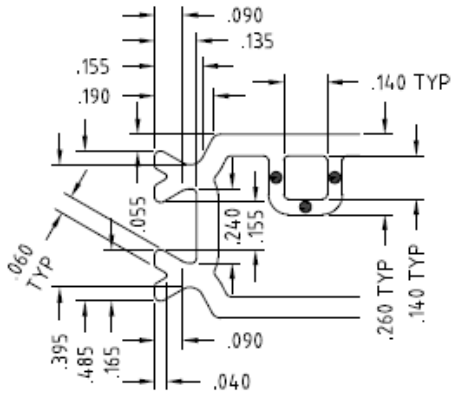
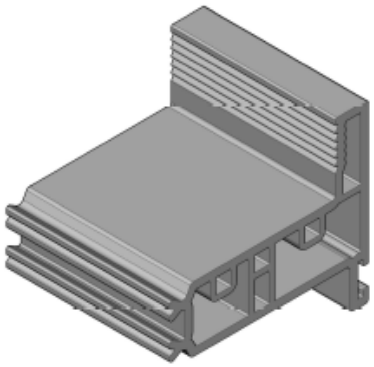
TOLERANCES: X.XX ± 0.015, X.XXX ± 0.010, X.XXXX ± 0.005. DO NOT SCALE DRAWING. ALL DIMENSIONS ARE IN INCHES UNLESS	CUSTOMER: SUNVIEW PATIO DOORS				
	PART: HYBRID PATIO DOOR – BOTTOM RAIL				
SIZE: "A"	COLOUR: VARIOUS	MATERIAL: RIGID PVC	AREA: 0.780 in^2	TOOL NO.: 4552	DATE: 03–05–2014
SHEET: 1 of 1	DRAWN BY: TC	SCALE: 1 : 1	VOLUME: 0.000	PART NO.: 4552	DWG NO.: E107H04

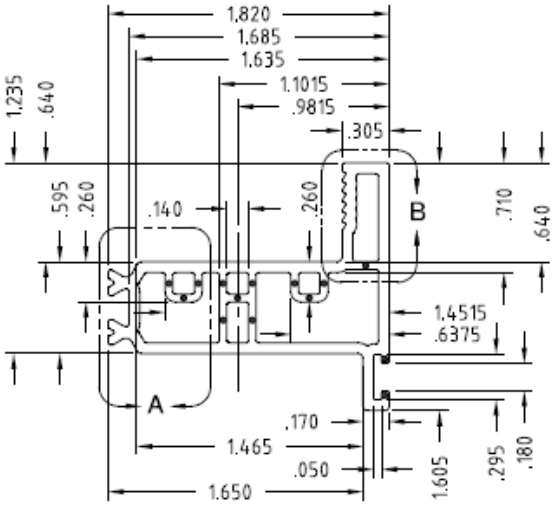

CUSTOMER
SUNVIEW DOORS
PART NO.
290–015
DIE NO.
AS–65051
DASH
1
DESCRIPTION:
BOTTOM RAIL EXTERIOR
TARRIF#
PROPOSAL# 16502–310
SAPA: 5675 Kennedy Road Mississauga, Ontario L4Z 2H9
DATE
SYM
REVISION
0.106
2.70
0.098
2.50
0.013
0.34
0.024
0.60
INT.
R0.010
R0.25
58.6°
0.014
0.35
0.008
0.20
45°
15°
70°
INT.
0.012
0.30
0.059
1.50
20°
.128
3.25
0.091
2.30
0.128
3.25
0.193 +.020 −.000
4.90 +0.51 −0.00
0.114 +.020 −.000
2.90 +0.51 −0.00
DETAIL A
SCALE 4:1
NOTE: .012R IN DETAIL A, UNLESS OTHERWISE.
0.270
6.85
REF.
0.077
1.96
0.065
1.65
0.020
0.51
0.062
1.57
0.065
1.66
TYP.(7)
0.625
15.88
0.142
3.61
0.142
3.61
0.625
15.88
0.698
17.72
2.875 ±.024
73.03 ±0.61
0.080
2.03
0.127
3.23
2.250
57.15
0.263
6.67
0.073
1.85
0.125
3.18
0.070
1.78
0.476
12.09
0.296
7.52
0.180
4.57
0.035
0.89
0.055
1.40
0.113
2.87
0.045
1.14
0.060
1.52
0.140
3.56
EXPOSED SURFACE
ACTUAL SIZE
sapa:
UNSPECIFIED WALL THICKNESS
0.063(1.59)
±0.006(0.15)
EST. AREA 0.304 IN² 196 MM²
EST. WT. 0.365 LBS/FT. 0.543 KG/M
EST. PER. 7.800 IN 198 MM
OWN BY HILDA
ALLOY 6063–T6
OUT PER. IN MM
FACTOR 21
C.C.D. 2.887 IN 73 MM
SCALE 2:1
DATE 10/09/16
ALL CORNERS .016"R (0.41mm) R UNLESS OTHERWISE NOTED.
STANDARD ALUMINUM ASSOCIATION TOLERANCES TO APPLY UNLESS OTHERWISE SPECIFIED
= FLOW LINES WILL APPEAR
UNMARKED RADII = RADIUS TO SUIT
BREAK CORNERS = 0.015 (0.38) R.
(o) = FULL R.(2)
(▫) = 0.008 (0.20) R.(4)
(•) = 0.010 (0.25) R.(10)
(▪) = 0.030 (0.76) R.(3)
(*) = 0.010(0.25) R. X 0.010(0.25)D. SAPA ID. MARKS

REVISIONS		
REV	DESCRIPTION	APPROVED
A1	PRELIMINARY	



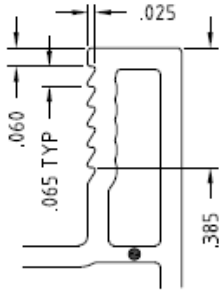
DETAIL "A" (SCALE 2:1)





RADII:
a = 0.010"
b = 0.020"
c = 0.025"
d = 0.070"
s = sharp
f = full
unmarked = 0.015"

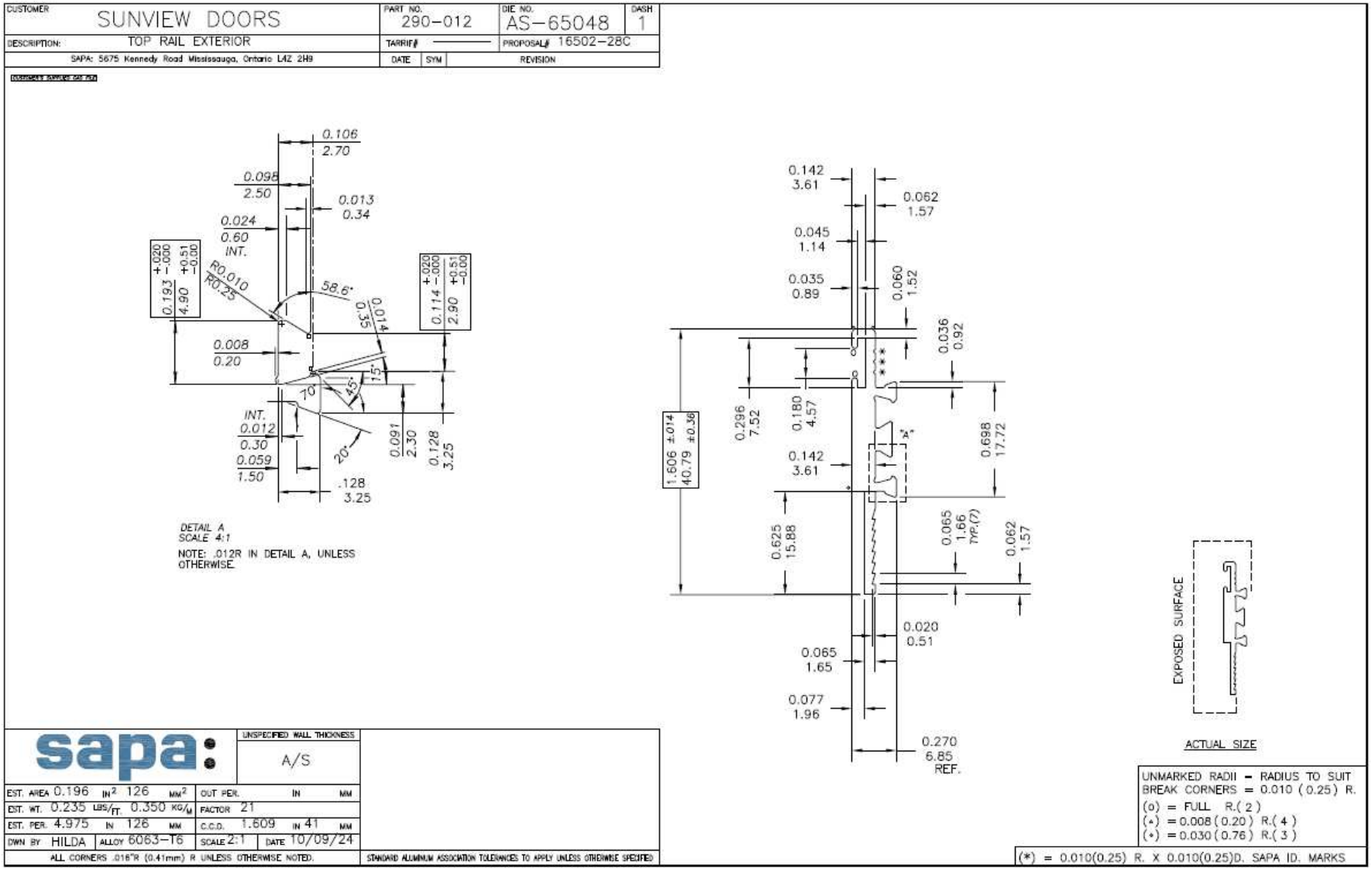
WALL THICKNESS:
NOMINAL = 0.070"
● = 0.050"



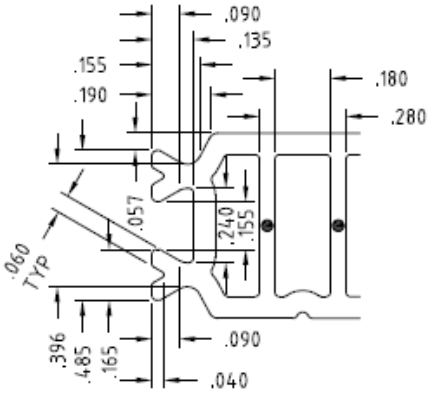
DETAIL "B" (SCALE 2:1)

VISION EXTRUSIONS LIMITED

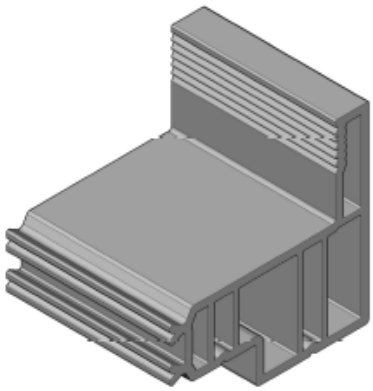
TOLERANCES: X.XX ± 0.015, X.XXX ± 0.010, X.XXXX ± 0.005. DO NOT SCALE DRAWING. ALL DIMENSIONS ARE IN INCHES UNLESS	CUSTOMER: SUNVIEW PATIO DOORS				
	PART: HYBRID PATIO DOOR – TOP RAIL				
SIZE: "A"	COLOUR: VARIOUS	MATERIAL: RIGID PVC	AREA: 0.564 in^2	TOOL NO.: 4553	DATE: 23–10–2013
SHEET: 1 of 1	DRAWN BY: TC	SCALE: 1 : 1	VOLUME: 0.000	PART NO.: 4553	DWG NO.: E107H05

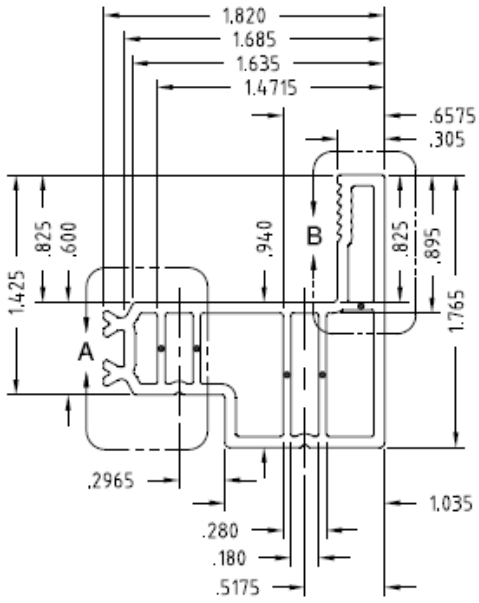

CUSTOMER
SUNVIEW DOORS
PART NO.
290-012
DIE NO.
AS-65048
DASH
1
DESCRIPTION:
TOP RAIL EXTERIOR
TARRIF#
PROPOSAL# 16502-28C
SAPA: 5675 Kennedy Road Mississauga, Ontario L4Z 2H9
DATE
SYM
REVISION
0.106
2.70
0.098
2.50
0.013
0.34
0.024
0.60
INT.
R0.010
R0.25
58.6°
0.014
0.35
0.008
0.20
1.5°
45°
70°
20°
INT.
0.012
0.30
0.059
1.50
0.091
2.30
0.128
3.25
.128
3.25
0.193
4.90
0.114
2.90
DETAIL A
SCALE 4:1
NOTE: .012R IN DETAIL A, UNLESS OTHERWISE.
0.142
3.61
0.062
1.57
0.045
1.14
0.035
0.89
0.060
1.52
0.036
0.92
1.606 ±.014
40.79 ±0.36
0.296
7.52
0.180
4.57
0.142
3.61
0.698
17.72
0.625
15.88
0.065
1.66
TYP.(7)
0.062
1.57
0.020
0.51
0.065
1.65
0.077
1.96
0.270
6.85
REF.
EXPOSED SURFACE
ACTUAL SIZE
UNMARKED RADII = RADIUS TO SUIT
BREAK CORNERS = 0.010 (0.25) R.
(o) = FULL R.(2)
(▲) = 0.008 (0.20) R.(4)
(•) = 0.030 (0.76) R.(3)
(*) = 0.010(0.25) R. X 0.010(0.25)D. SAPA ID. MARKS
sapa:
UNSPECIFIED WALL THICKNESS
A/S
EST. AREA 0.196 IN² 126 MM²
OUT PER. IN MM
EST. WT. 0.235 LBS/FT. 0.350 KG/M
FACTOR 21
EST. PER. 4.975 IN 126 MM
C.C.D. 1.609 IN 41 MM
DWN BY HILDA
ALLOY 6063-T6
SCALE 2:1
DATE 10/09/24
ALL CORNERS .016"R (0.41mm) R UNLESS OTHERWISE NOTED.
STANDARD ALUMINUM ASSOCIATION TOLERANCES TO APPLY UNLESS OTHERWISE SPECIFIED

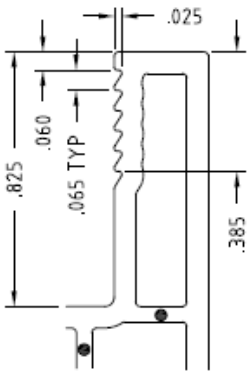
REVISIONS		
REV	DESCRIPTION	APPROVED
A1	PRELIMINARY	



DETAIL "A" (SCALE 2:1)







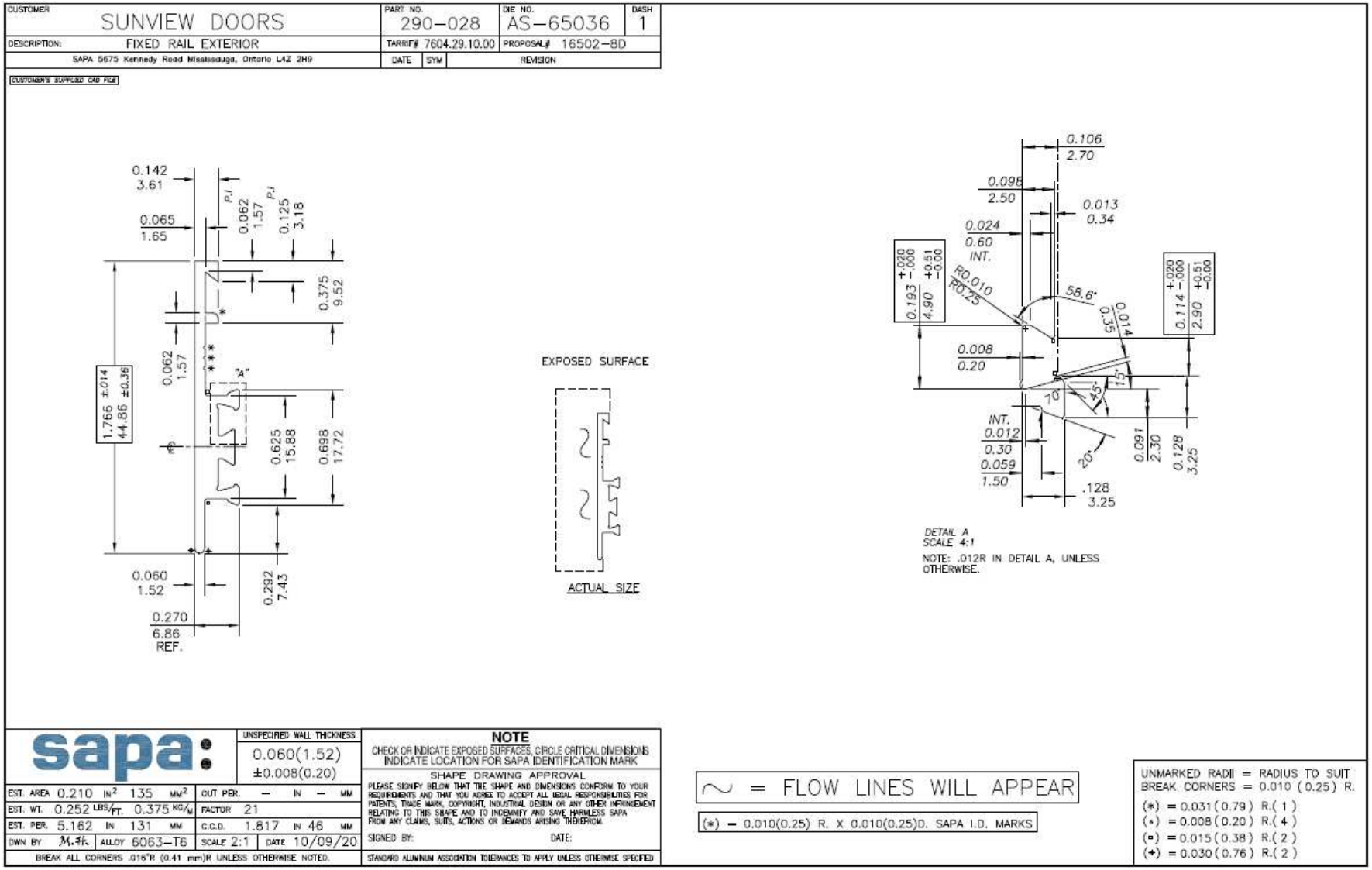
DETAIL "B" (SCALE 2:1)

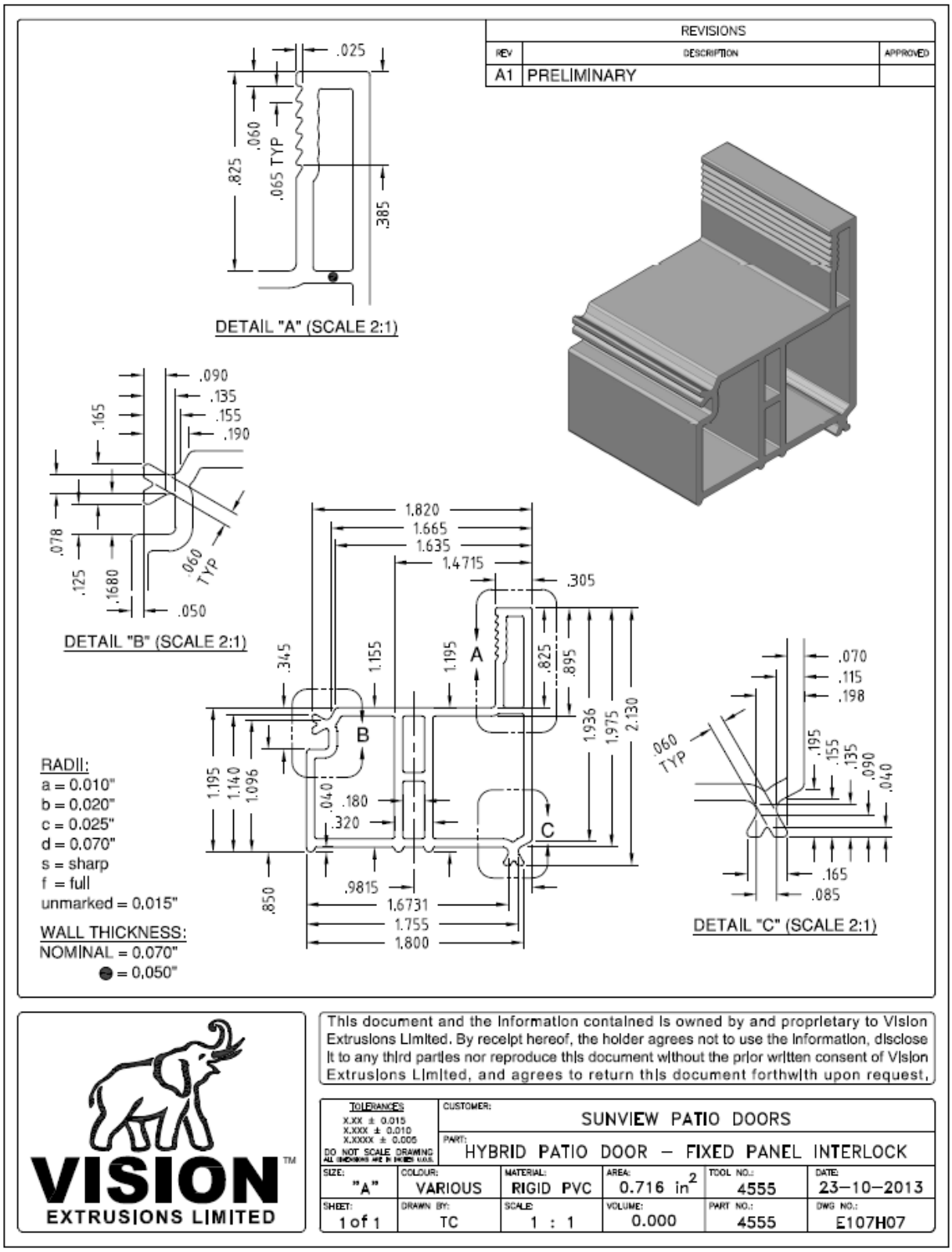
RADII:
a = 0.010"
b = 0.020"
c = 0.025"
d = 0.070"
s = sharp
f = full
unmarked = 0.015"

WALL THICKNESS:
NOMINAL = 0.070"
● = 0.050"

VISION EXTRUSIONS LIMITED

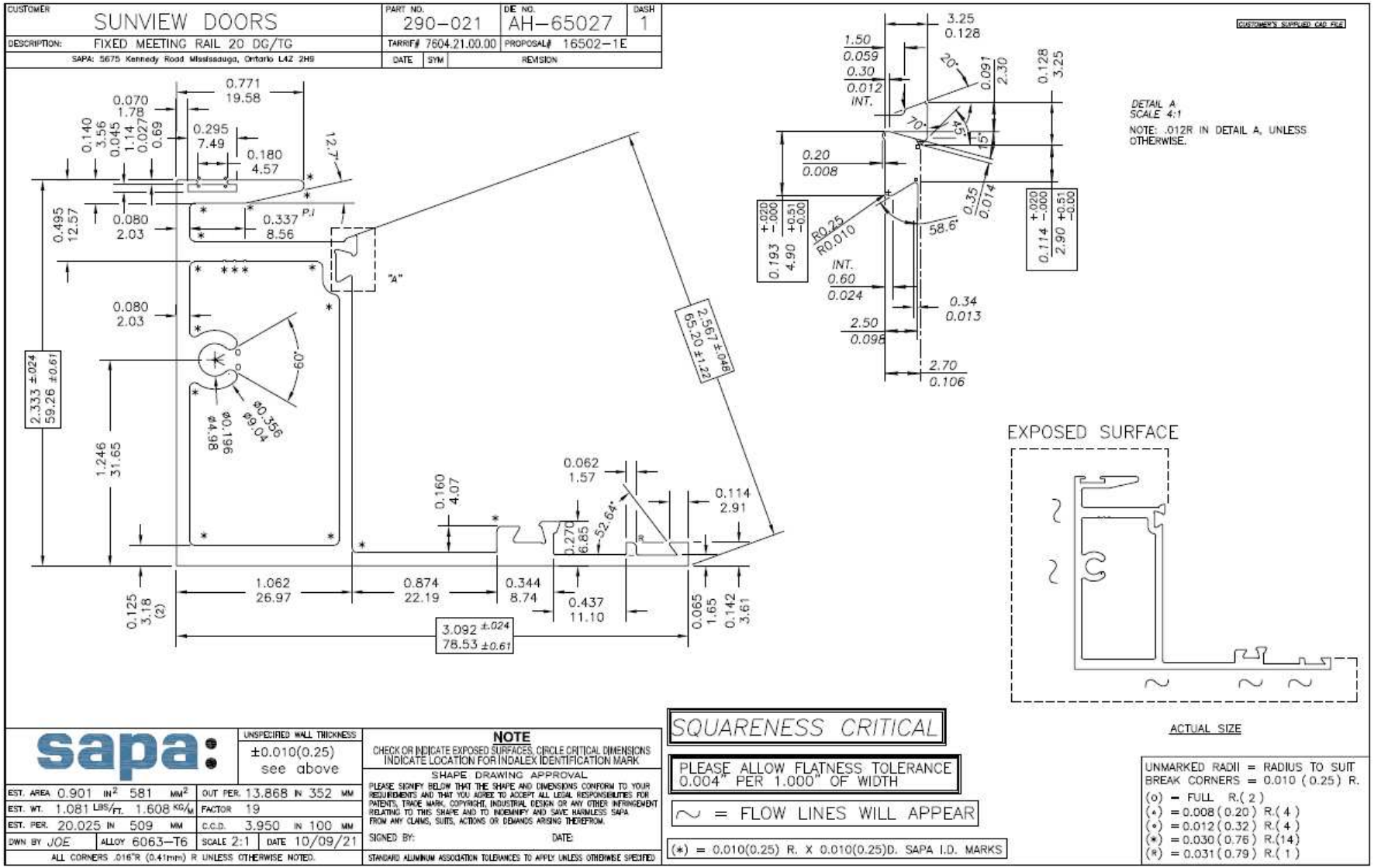
TOLERANCES: X.XX ± 0.015, X.XXX ± 0.010, X.XXXX ± 0.005. DO NOT SCALE DRAWING. ALL DIMENSIONS ARE IN INCHES (UNLESS OTHERWISE NOTED)	CUSTOMER: SUNVIEW PATIO DOORS				
	PART: HYBRID PATIO DOOR – FIXED PANEL SASH				
SIZE: "A"	COLOUR: VARIOUS	MATERIAL: RIGID PVC	AREA: 0.625 in^2	TOOL NO.: 4554	DATE: 23–10–2013
SHEET: 1 of 1	DRAWN BY: TC	SCALE: 1 : 1	VOLUME: 0.000	PART NO.: 4554	DWG NO.: E107H06


CUSTOMER
SUNVIEW DOORS
PART NO.
290-028
DIE NO.
AS-65036
DASH
1
DESCRIPTION:
FIXED RAIL EXTERIOR
TARRIF# 7604.29.10.00
PROPOSAL# 16502-8D
SAPA 5675 Kennedy Road Mississauga, Ontario L4Z 2H9
DATE
SYM
REVISION
CUSTOMER'S SUPPLIED CAD FILE
0.142
3.61
0.065
1.65
P.I
0.062
1.57
P.I
0.125
3.18
0.375
9.52
0.062
1.57
1.766 ±.014
44.86 ±0.36
"A"
0.625
15.88
0.698
17.72
0.060
1.52
0.292
7.43
0.270
6.86
REF.
EXPOSED SURFACE
ACTUAL SIZE
0.106
2.70
0.098
2.50
0.013
0.34
0.024
0.60
INT.
0.193 +.020 -.000
4.90 +0.51 -0.00
R0.010
R0.25
56.6°
0.35
10.0
0.114 +.020 -.000
2.90 +0.51 -0.00
0.008
0.20
70°
45°
15°
INT.
0.012
0.30
0.059
1.50
20°
.128
3.25
0.091
2.30
0.128
3.25
DETAIL A
SCALE 4:1
NOTE: .012R IN DETAIL A, UNLESS OTHERWISE.
sapa:
UNSPECIFIED WALL THICKNESS
0.060(1.52)
±0.008(0.20)
EST. AREA 0.210 IN² 135 MM²
OUT PER. — IN — MM
EST. WT. 0.252 LBS/FT. 0.375 KG/M
FACTOR 21
EST. PER. 5.162 IN 131 MM
C.C.D. 1.817 IN 46 MM
DWN BY M.H.
ALLOY 6063-T6
SCALE 2:1
DATE 10/09/20
BREAK ALL CORNERS .016"R (0.41 mm)R UNLESS OTHERWISE NOTED.
NOTE
CHECK OR INDICATE EXPOSED SURFACES. CIRCLE CRITICAL DIMENSIONS
INDICATE LOCATION FOR SAPA IDENTIFICATION MARK
SHAPE DRAWING APPROVAL
PLEASE SIGNIFY BELOW THAT THE SHAPE AND DIMENSIONS CONFORM TO YOUR REQUIREMENTS AND THAT YOU AGREE TO ACCEPT ALL LEGAL RESPONSIBILITIES FOR PATENTS, TRADE MARK, COPYRIGHT, INDUSTRIAL DESIGN OR ANY OTHER INFRINGEMENT RELATING TO THIS SHAPE AND TO INDEMNIFY AND SAVE HARMLESS SAPA FROM ANY CLAIMS, SUITS, ACTIONS OR DEMANDS ARISING THEREFROM.
SIGNED BY:
DATE:
STANDARD ALUMINUM ASSOCIATION TOLERANCES TO APPLY UNLESS OTHERWISE SPECIFIED
~ = FLOW LINES WILL APPEAR
(*) = 0.010(0.25) R. X 0.010(0.25)D. SAPA I.D. MARKS
UNMARKED RADII = RADIUS TO SUIT
BREAK CORNERS = 0.010 (0.25) R.
(*) = 0.031 (0.79) R.(1)
(▲) = 0.008 (0.20) R.(4)
(■) = 0.015 (0.38) R.(2)
(+) = 0.030 (0.76) R.(2)

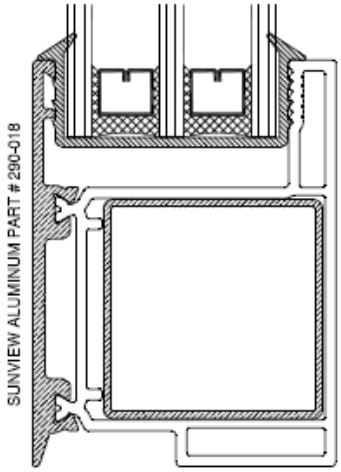


VISION™
EXTRUSIONS LIMITED

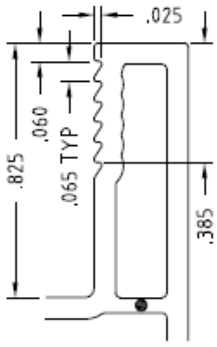
TOLERANCES: X.XX ± 0.015, X.XXX ± 0.010, X.XXXX ± 0.005, DO NOT SCALE DRAWING, ALL DIMENSIONS ARE IN INCHES (UNLESS OTHERWISE NOTED)	CUSTOMER: SUNVIEW PATIO DOORS				
	PART: HYBRID PATIO DOOR – FIXED PANEL INTERLOCK				
SIZE: "A"	COLOUR: VARIOUS	MATERIAL: RIGID PVC	AREA: 0.716 in^2	TOOL NO.: 4555	DATE: 23–10–2013
SHEET: 1 of 1	DRAWN BY: TC	SCALE: 1 : 1	VOLUME: 0.000	PART NO.: 4555	DWG NO.: E107H07


CUSTOMER
SUNVIEW DOORS
PART NO. 290-021
DIE NO. AH-65027
DASH 1
DESCRIPTION: FIXED MEETING RAIL 20 DG/TG
TARRIF# 7604.21.00.00
PROPOSAL# 16502-1E
SAPA: 5675 Kennedy Road Mississauga, Ontario L4Z 2H9
DATE
SYM
REVISION
CUSTOMER'S SUPPLIED CAD FILE
DETAIL A
SCALE 4:1
NOTE: .012R IN DETAIL A, UNLESS OTHERWISE.
EXPOSED SURFACE
ACTUAL SIZE
SQUARENESS CRITICAL
PLEASE ALLOW FLATNESS TOLERANCE 0.004" PER 1.000" OF WIDTH
~ = FLOW LINES WILL APPEAR
(*) = 0.010(0.25) R. X 0.010(0.25)D. SAPA I.D. MARKS
UNMARKED RADII = RADIUS TO SUIT
BREAK CORNERS = 0.010 (0.25) R.
(o) = FULL R.(2)
(•) = 0.008 (0.20) R.(4)
(•) = 0.012 (0.32) R.(4)
(*) = 0.030 (0.76) R.(14)
(R) = 0.031 (0.79) R.(1)
sapa:
UNSPECIFIED WALL THICKNESS
±0.010(0.25)
see above
EST. AREA 0.901 IN² 581 MM²
OUT PER. 13.868 IN 352 MM
EST. WT. 1.081 LBS/FT. 1.608 KG/M
FACTOR 19
EST. PER. 20.025 IN 509 MM
C.C.D. 3.950 IN 100 MM
DWN BY JOE
ALLOY 6063-T6
SCALE 2:1
DATE 10/09/21
ALL CORNERS .016"R (0.41mm) R UNLESS OTHERWISE NOTED.
NOTE
CHECK OR INDICATE EXPOSED SURFACES, CIRCLE CRITICAL DIMENSIONS
INDICATE LOCATION FOR INDALEX IDENTIFICATION MARK
SHAPE DRAWING APPROVAL
PLEASE SIGNIFY BELOW THAT THE SHAPE AND DIMENSIONS CONFORM TO YOUR REQUIREMENTS AND THAT YOU AGREE TO ACCEPT ALL LEGAL RESPONSIBILITIES FOR PATENTS, TRADE MARK, COPYRIGHT, INDUSTRIAL DESIGN OR ANY OTHER INFRINGEMENT RELATING TO THIS SHAPE AND TO INDEMNIFY AND SAVE HARMLESS SAPA FROM ANY CLAIMS, SUITS, ACTIONS OR DEMANDS ARISING THEREFROM.
SIGNED BY:
DATE:
STANDARD ALUMINUM ASSOCIATION TOLERANCES TO APPLY UNLESS OTHERWISE SPECIFIED

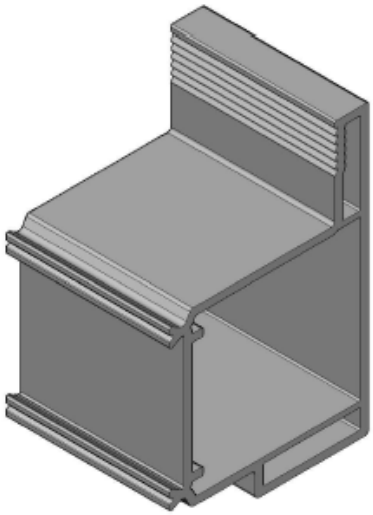
REVISIONS		
REV	DESCRIPTION	APPROVED
A1	PRELIMINARY	

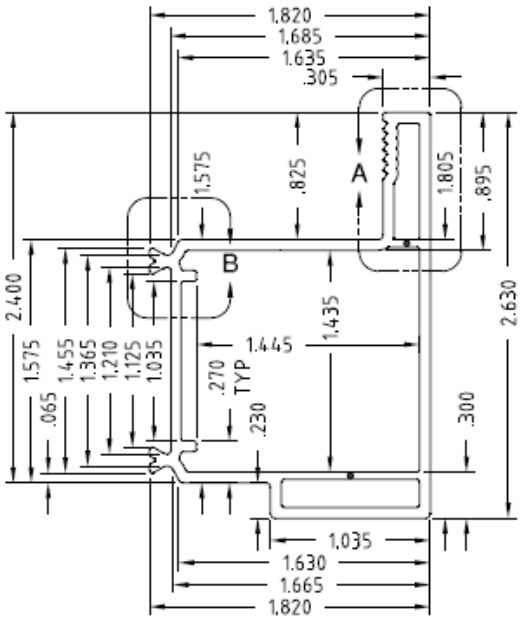


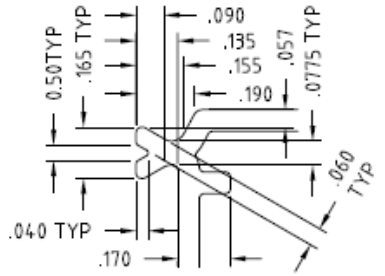
TYPICAL ASSEMBLY VIEW
(SCALE 1:1)



DETAIL "A" (SCALE 2:1)







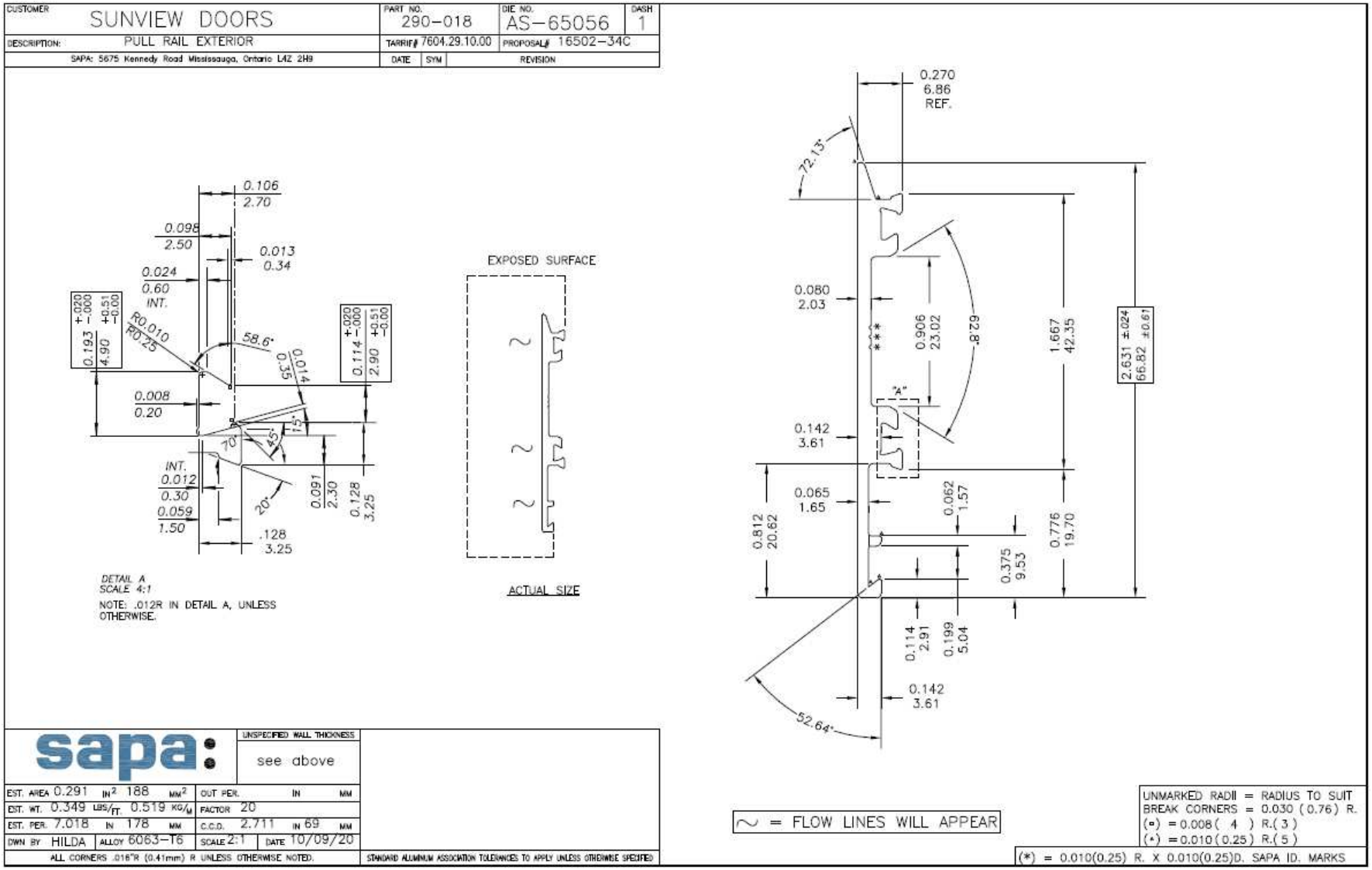
DETAIL "B" (SCALE 2:1)

RADII:
a = 0.010"
b = 0.020"
c = 0.025"
d = 0.070"
s = sharp
f = full
unmarked = 0.015"

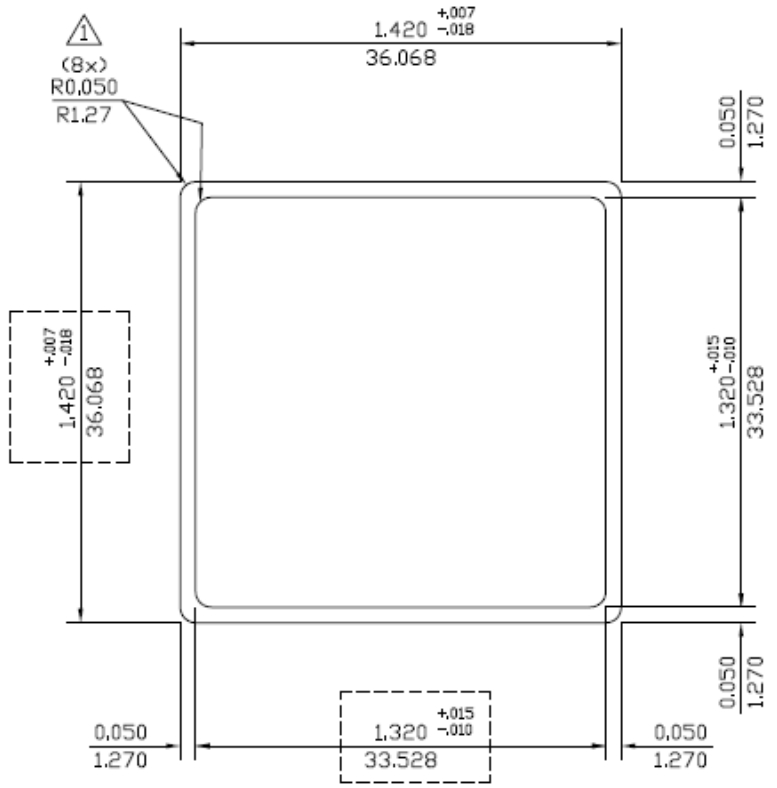
WALL THICKNESS:
NOMINAL = 0.070"
● = 0.050"

VISION EXTRUSIONS LIMITED

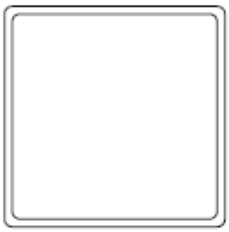
TOLERANCES: X.XX ± 0.015, X.XXX ± 0.010, X.XXXX ± 0.005, DO NOT SCALE DRAWING	CUSTOMER: SUNVIEW PATIO DOORS				
	PART: HYBRID PATIO DOOR – OPERABLE PANEL SASH				
SIZE: "A"	COLOUR: VARIOUS	MATERIAL: RIGID PVC	AREA: 0.677 in^2	TOOL NO.: 4556	DATE: 23–10–2013
SHEET: 1 of 1	DRAWN BY: TC	SCALE: 1 : 1	VOLUME: 0.000	PART NO.: 4556	DWG NO.: E107H08


CUSTOMER
SUNVIEW DOORS
PART NO. 290-018
DIE NO. AS-65056
DASH 1
DESCRIPTION: PULL RAIL EXTERIOR
TARRIF# 7604.29.10.00
PROPOSAL# 16502-34C
SAPA: 5675 Kennedy Road Mississauga, Ontario L4Z 2H9
DATE
SYM
REVISION
0.106
2.70
0.098
2.50
0.013
0.34
0.024
0.60
INT.
R0.010
R0.25
58.6°
0.193 +.020 -.000
4.90 +0.51 -0.00
0.114 +.020 -.000
2.90 +0.51 -0.00
0.008
0.20
INT.
0.012
0.30
0.059
1.50
.128
3.25
0.091
2.30
0.128
3.25
70°
45°
15°
20°
DETAIL A
SCALE 4:1
NOTE: .012R IN DETAIL A, UNLESS OTHERWISE.
EXPOSED SURFACE
ACTUAL SIZE
0.270
6.86
REF.
72.13°
0.080
2.03
0.906
23.02
62.8°
1.667
42.35
2.631 ±.024
66.82 ±0.61
"A"
0.142
3.61
0.065
1.65
0.812
20.62
0.062
1.57
0.776
19.70
0.375
9.53
0.114
2.91
0.199
5.04
0.142
3.61
52.64°
sapa:
UNSPECIFIED WALL THICKNESS
see above
EST. AREA 0.291 IN² 188 MM²
OUT PER. IN MM
EST. WT. 0.349 LBS/FT 0.519 KG/M
FACTOR 20
EST. PER. 7.018 IN 178 MM
C.C.D. 2.711 IN 69 MM
DWN BY HILDA
ALLOY 6063-T6
SCALE 2:1
DATE 10/09/20
ALL CORNERS .016"R (0.41mm) R UNLESS OTHERWISE NOTED.
STANDARD ALUMINUM ASSOCIATION TOLERANCES TO APPLY UNLESS OTHERWISE SPECIFIED
~ = FLOW LINES WILL APPEAR
UNMARKED RADII = RADIUS TO SUIT
BREAK CORNERS = 0.030 (0.76) R.
(•) = 0.008 (4) R.(3)
(•) = 0.010 (0.25) R.(5)
(*) = 0.010(0.25) R. X 0.010(0.25)D. SAPA ID. MARKS

CUSTOMER PART No.	CUSTOMER	DIE No.
	CAN ART OPEN	EH09440
DESCRIPTION	STILE REINFORCEMENT	PROPOSAL No. H-6971



NO EXPOSED SURFACE



ACTUAL SIZE

WALL THICKNESS 0.050(1.27) EXCEPT AS SHOWN

DATE	REV	DESCRIPTION	BY
6-28-01	1	INSIDE/OUTSIDE CORNER RAD REVISED FROM .015 TO .050.	TINO'
		REVISED WTS. & MEASURE.	

EST.AREA	0.274	IN.^{2}	EST.AREA	176.775	MM.^{2}
EST.WT.	0.323	LBS/FT.	EST.WT.	0.481	KG/M.
EST.PER.	10.788	IN.	EST.PER.	274.023	MM.
OUT PER.	5.594	IN.	OUT PER.	142.1	MM.
C.C.D.	1.967	IN.	C.C.D.	49.956	MM.
FACTOR 33	FINISH M/F		ALLOY & TEMP. 6063		
CKD BY	SCALE 2:1		DWN BY C.P.	DATE 10/09/97	

CAN ART
ALUMINUM EXTRUSION INC.

85 PARKSHORE DRIVE
BRAMPTON, ONT L6T 5M1
TEL. NO. (905) 791-1464
FAX NO. (905) 791-9151
E-MAIL: canart@canart.com

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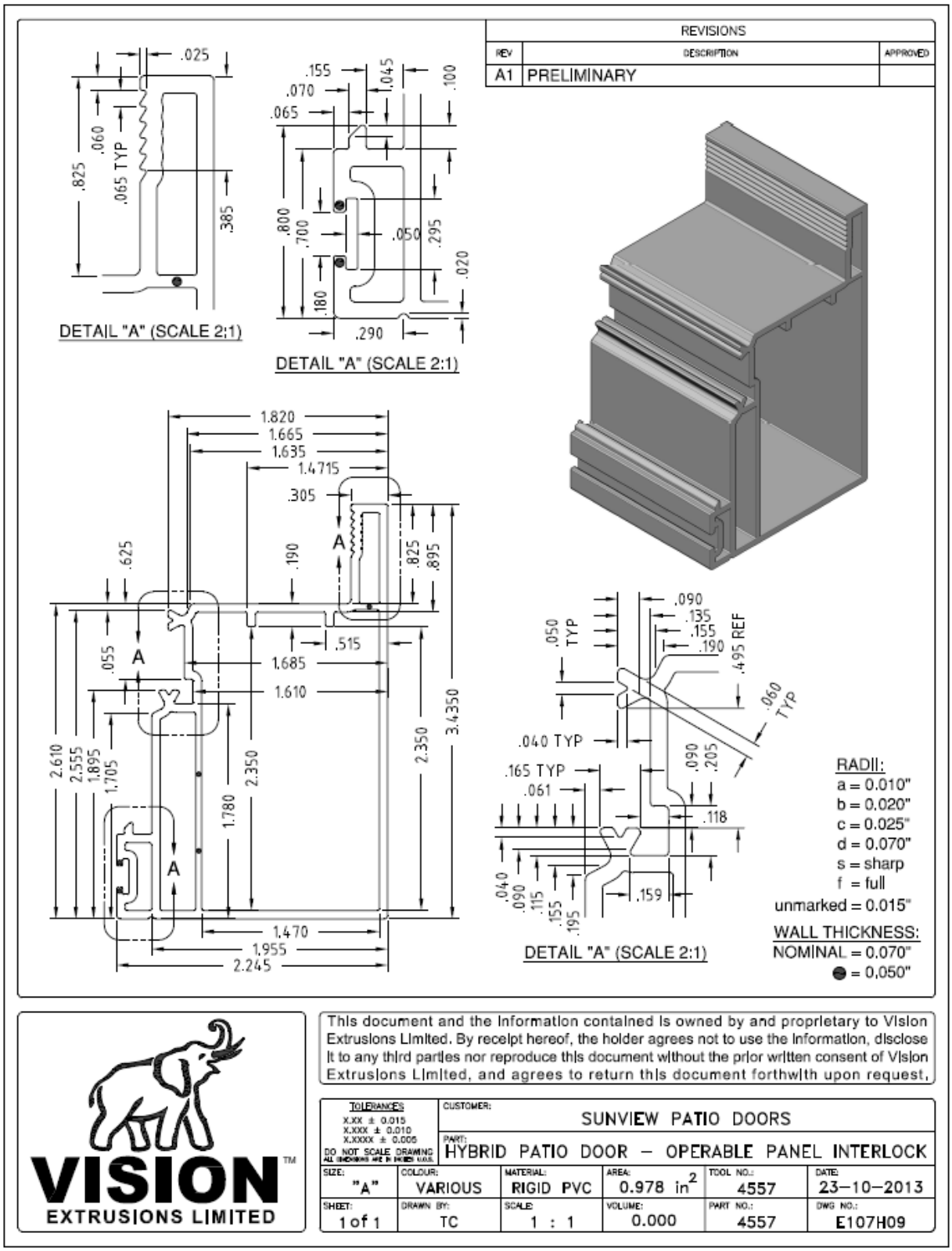
SIGNED: _____ DATE: _____


REVISIONS
REV
DESCRIPTION
APPROVED
A1
PRELIMINARY
DETAIL "A" (SCALE 2:1)
DETAIL "A" (SCALE 2:1)
DETAIL "A" (SCALE 2:1)
RADII:
a = 0.010"
b = 0.020"
c = 0.025"
d = 0.070"
s = sharp
f = full
unmarked = 0.015"
WALL THICKNESS:
NOMINAL = 0.070"
= 0.050"
VISION
EXTRUSIONS LIMITED
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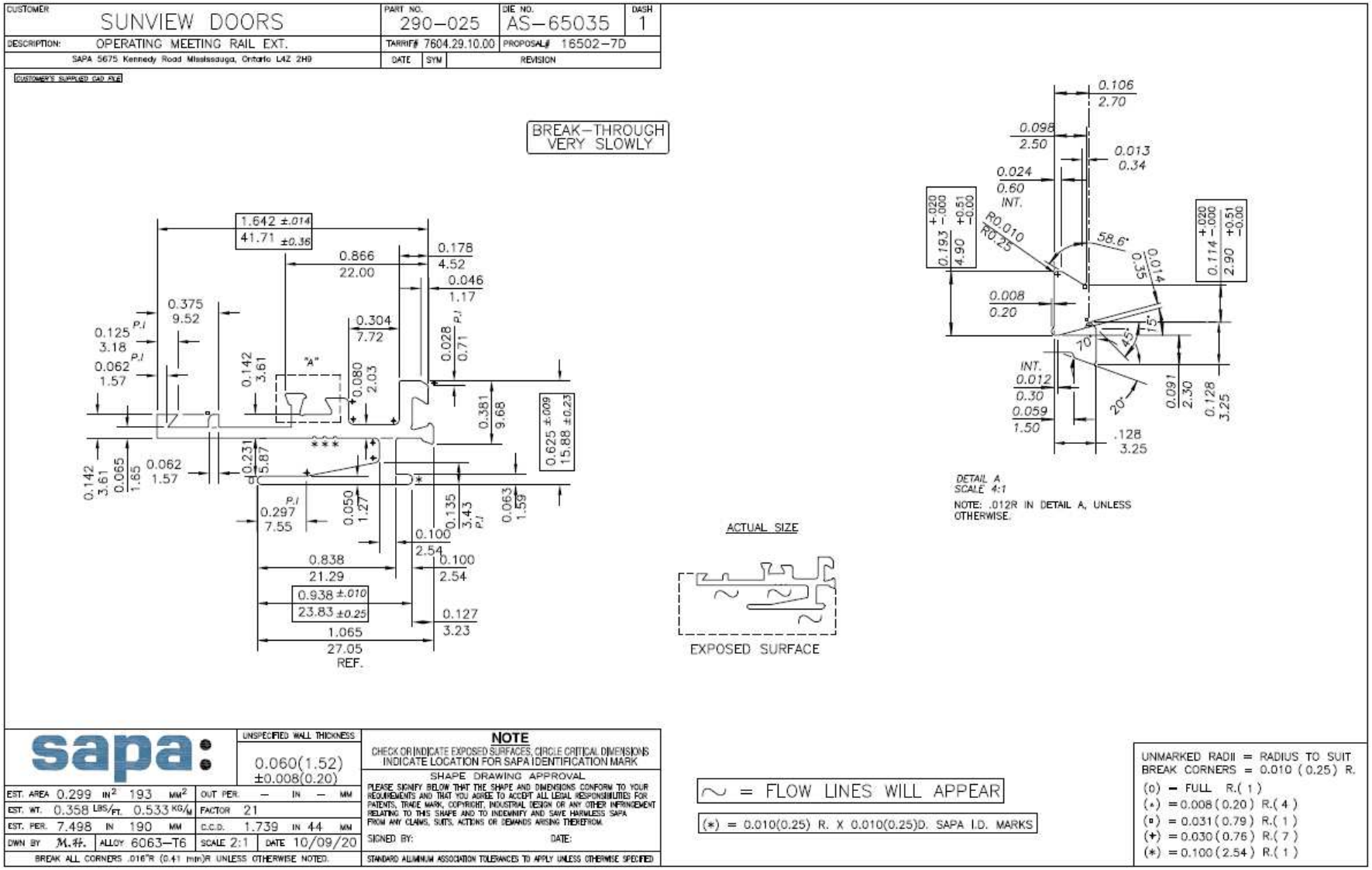
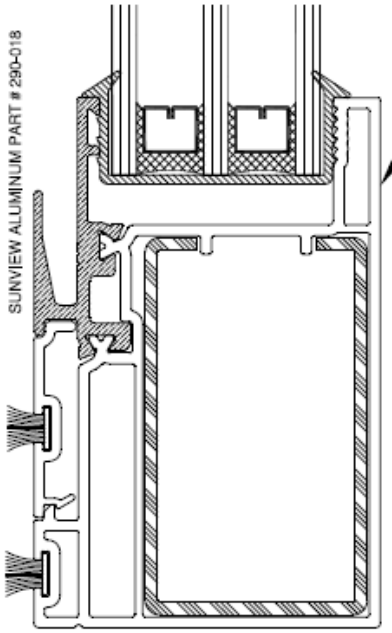
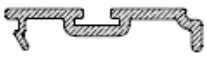
TOLERANCES
X.XX ± 0.015
X.XXX ± 0.010
X.XXXX ± 0.005
DO NOT SCALE DRAWING
CUSTOMER:
SUNVIEW PATIO DOORS
PART:
HYBRID PATIO DOOR – OPERABLE PANEL INTERLOCK
SIZE: "A"
COLOUR: VARIOUS
MATERIAL: RIGID PVC
AREA: 0.978 in2
TOOL NO.: 4557
DATE: 23–10–2013
SHEET: 1 of 1
DRAWN BY: TC
SCALE: 1 : 1
VOLUME: 0.000
PART NO.: 4557
DWG NO.: E107H09


CUSTOMER
SUNVIEW DOORS
PART NO. 290–025
DIE NO. AS–65035
DASH 1
DESCRIPTION: OPERATING MEETING RAIL EXT.
TARRIF# 7604.29.10.00
PROPOSAL# 16502–7D
SAPA 5675 Kennedy Road Mississauga, Ontario L4Z 2H9
DATE SYM REVISION
CUSTOMER'S SUPPLIED CAD FILE
BREAK–THROUGH VERY SLOWLY
1.642 ±.014
41.71 ±0.36
0.866
22.00
0.178
4.52
0.046
1.17
0.375
9.52
0.125 P.I
3.18
0.062 P.I
1.57
0.304
7.72
0.028 P.I
0.71
0.142
3.61
"A"
0.080
2.03
0.381
9.68
0.625 ±.009
15.88 ±0.23
0.231
5.87
0.142
3.61
0.065
1.65
0.062
1.57
0.297 P.I
7.55
0.050
1.27
0.135
3.43 P.I
0.063
1.59
0.100
2.54
0.838
21.29
0.100
2.54
0.938 ±.010
23.83 ±0.25
0.127
3.23
1.065
27.05
REF.
0.106
2.70
0.098
2.50
0.013
0.34
0.024
0.60
INT.
R0.010
R0.25
58.6°
0.193 +.020 −.000
4.90 +0.51 −0.00
0.114 +.020 −.000
2.90 +0.51 −0.00
0.014
0.35
0.008
0.20
15°
45°
70°
INT.
0.012
0.30
0.059
1.50
20°
0.091
2.30
0.128
3.25
.128
3.25
DETAIL A
SCALE 4:1
NOTE: .012R IN DETAIL A, UNLESS OTHERWISE.
ACTUAL SIZE
EXPOSED SURFACE
sapa:
UNSPECIFIED WALL THICKNESS
0.060(1.52)
±0.008(0.20)
EST. AREA 0.299 IN² 193 MM² OUT PER. — IN — MM
EST. WT. 0.358 LBS/FT. 0.533 KG/M FACTOR 21
EST. PER. 7.498 IN 190 MM C.C.D. 1.739 IN 44 MM
DWN BY M.H. ALLOY 6063–T6 SCALE 2:1 DATE 10/09/20
BREAK ALL CORNERS .016"R (0.41 mm)R UNLESS OTHERWISE NOTED.
NOTE
CHECK OR INDICATE EXPOSED SURFACES, CIRCLE CRITICAL DIMENSIONS
INDICATE LOCATION FOR SAPA IDENTIFICATION MARK
SHAPE DRAWING APPROVAL
PLEASE SIGNIFY BELOW THAT THE SHAPE AND DIMENSIONS CONFORM TO YOUR REQUIREMENTS AND THAT YOU AGREE TO ACCEPT ALL LEGAL RESPONSIBILITIES FOR PATENTS, TRADE MARK, COPYRIGHT, INDUSTRIAL DESIGN OR ANY OTHER INFRINGEMENT RELATING TO THIS SHAPE AND TO INDEMNIFY AND SAVE HARMLESS SAPA FROM ANY CLAIMS, SUITS, ACTIONS OR DEMANDS ARISING THEREFROM.
SIGNED BY: DATE:
STANDARD ALUMINUM ASSOCIATION TOLERANCES TO APPLY UNLESS OTHERWISE SPECIFIED
~ = FLOW LINES WILL APPEAR
(*) = 0.010(0.25) R. X 0.010(0.25)D. SAPA I.D. MARKS
UNMARKED RADII = RADIUS TO SUIT
BREAK CORNERS = 0.010 (0.25) R.
(0) — FULL R.(1)
(▲) = 0.008 (0.20) R.(4)
(□) = 0.031 (0.79) R.(1)
(+) = 0.030 (0.76) R.(7)
(*) = 0.100 (2.54) R.(1)

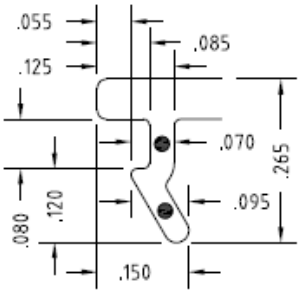
REVISIONS		
REV	DESCRIPTION	APPROVED
A1	PRELIMINARY	



TYPICAL ASSEMBLY VIEW
(SCALE 1;1)



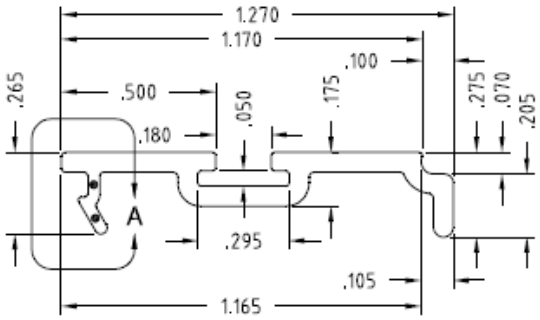
PROFILE SECTION
(SCALE 1;1)



DETAIL "A" (SCALE 2;1)

RADII:
a = 0.010"
b = 0.020"
c = 0.025"
d = 0.070"
s = sharp
f = full
unmarked = 0.015"

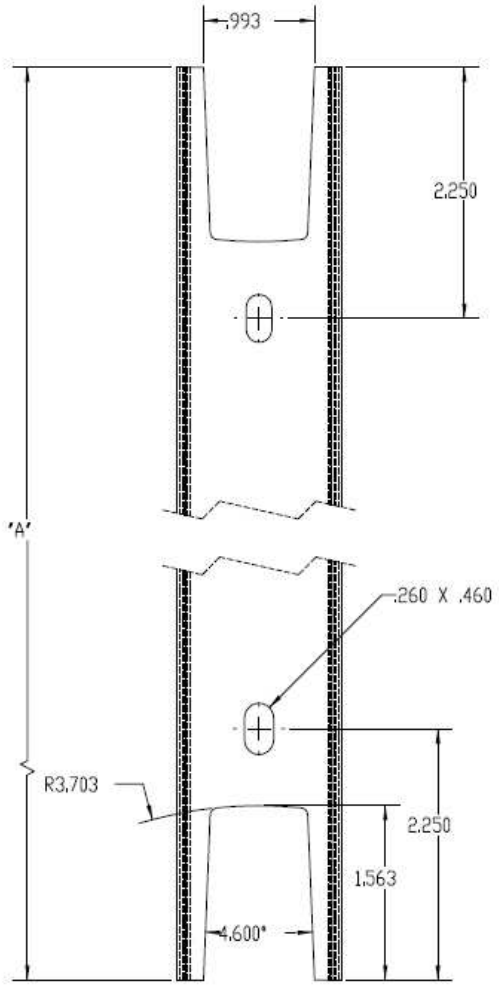
WALL THICKNESS:
NOMINAL = 0.065"
● = 0,040"

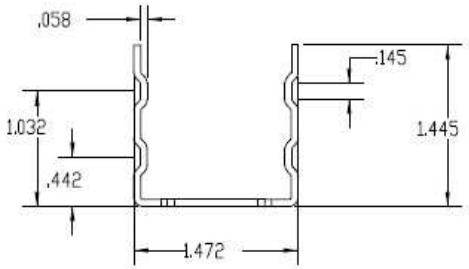


VISION EXTRUSIONS LIMITED

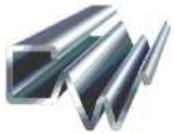
TOLERANCES	CUSTOMER:				
X.XX ± 0.015 X.XXX ± 0.010 X.XXXX ± 0.005 DO NOT SCALE DRAWING ALL DIMENSIONS ARE IN INCHES (UNLESS OTHERWISE NOTED)	SUNVIEW PATIO DOORS				
	PART: HYBRID PATIO DOOR – OPERABLE INTERLOCK W/S INSERT				
SIZE: "A"	COLOUR: VARIOUS	MATERIAL: RIGID PVC	AREA: 0.121 in^2	TOOL NO.: 4558	DATE: 23–10–2013
SHEET: 1 of 1	DRAWN BY: TC	SCALE: 1 : 1	VOLUME: 0.000	PART NO.: 4558	DWG NO.: E107H10

PART NUMBER	DIM. 'A'
PD1603G0603750	75.75 -/+ 1/16
PD1603G0605750	77.75 +/-1/16
PD1603G0707750	91.75 +/-1/16





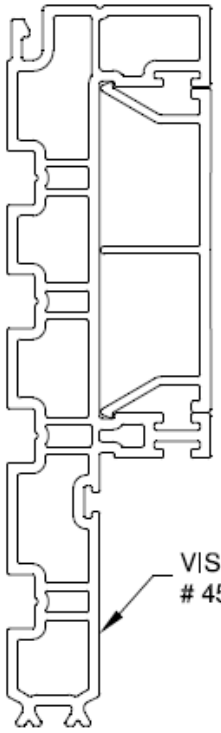
HEIGHT OF LEG WAS 1.475"
BY: RR 17-AUG-2011

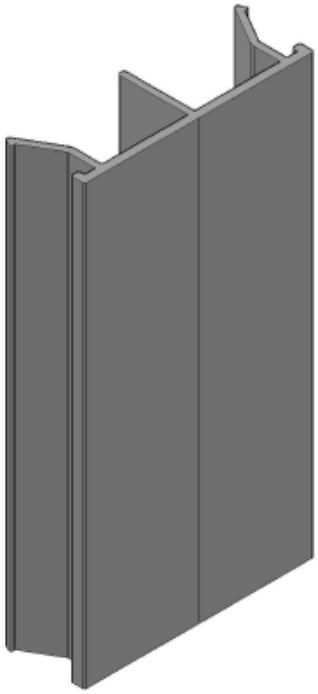


CARGOWALL LTD.
138 LAKE ROAD, BOWMANVILLE, ONT.
CANADA, L1C 4P8

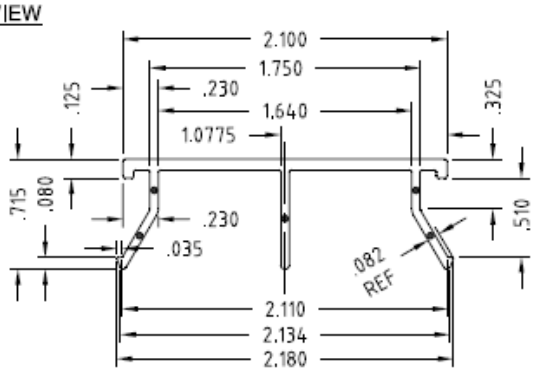
DRAWING NAME: SASH REINF.		DWG NO: PD1603	REV. NO: 2
DRAWN BY:	DATE DRAWN: Wednesday, August 17, 2011	DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/32 ANGULAR: MACH ± 0.06 BEND ± 1/2° TWIST 1/2° STRAIGHT/FT ± 1/64 TWO PLACE DECIMAL ± 0.03 THREE PLACE DECIMAL ± 0.010	
APPROVED BY: -	DATE APPROVED: -		
MATR'L: 16GA 50KSI MIN 90G	WEIGHT: -		
SCALE: 10	SIZE B		
FILE PATH: -			SHEET 1 OF 1

REVISIONS		
REV	DESCRIPTION	APPROVED
A1	PRELIMINARY	





TYPICAL ASSEMBLY VIEW
(SCALE 1;1)



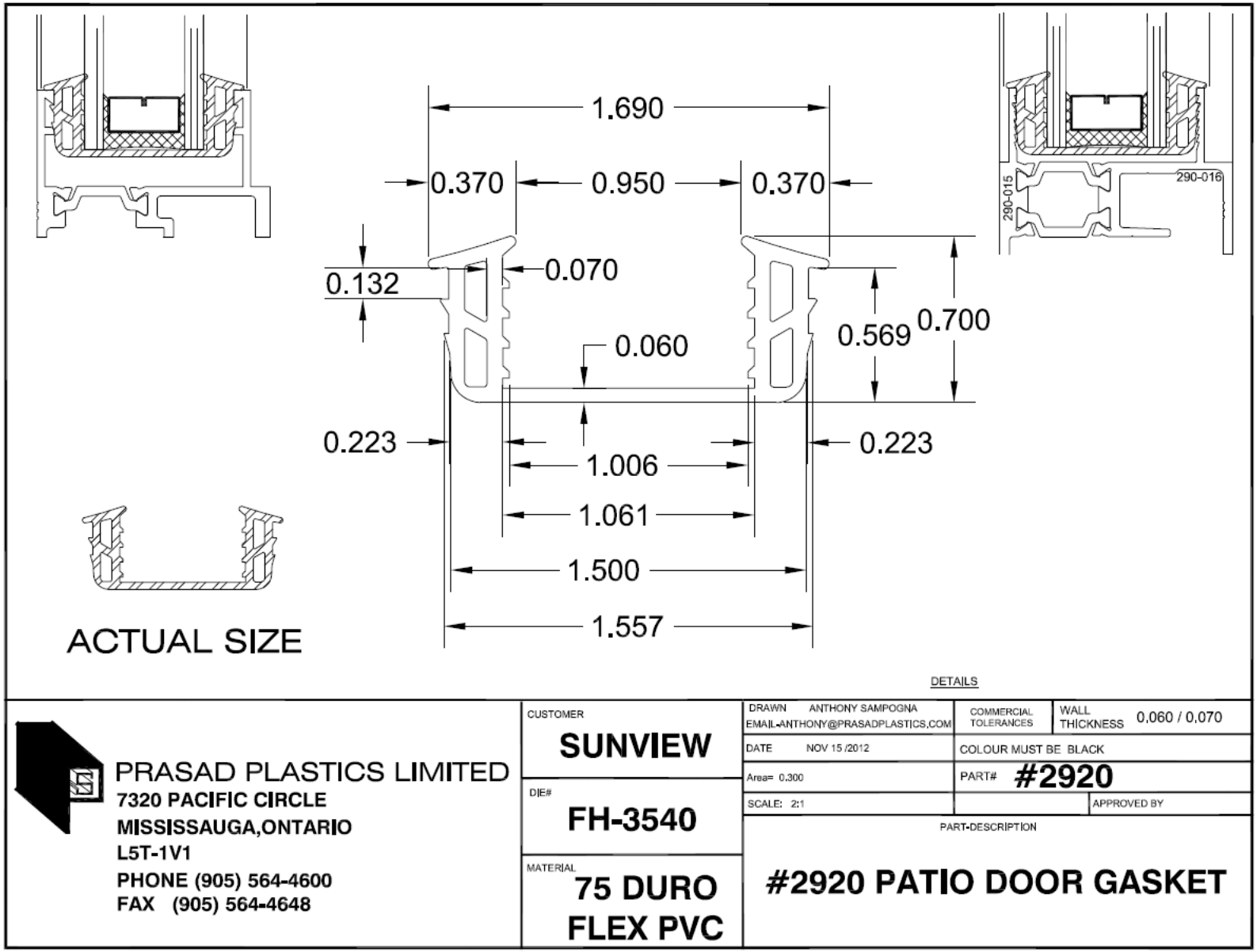
RADII:
a = 0.010"
b = 0.020"
c = 0.025"
d = 0.070"
s = sharp
f = full
unmarked = 0,015"

WALL THICKNESS:
NOMINAL = 0.070"
● = 0,055"

NOTE: PART SYMMETRICAL ABOUT CENTRELINE

VISION EXTRUSIONS LIMITED

TOLERANCES	CUSTOMER:				
X.XX ± 0.015 X.XXX ± 0.010 X.XXXX ± 0.005 DO NOT SCALE DRAWING ALL DIMENSIONS ARE IN INCHES (UNLESS OTHERWISE NOTED)	SUNVIEW PATIO DOORS				
	PART: HYBRID PATIO DOOR – INTERIOR JAMB POCKET COVER				
SIZE: "A"	COLOUR: VARIOUS	MATERIAL: RIGID PVC	AREA: 0.267 in^2	TOOL NO.: 4559	DATE: 23–10–2013
SHEET: 1 of 1	DRAWN BY: TC	SCALE: 1 : 1	VOLUME: 0.000	PART NO.: 4559	DWG NO.: E107H11


1.690
0.370
0.950
0.370
0.132
0.070
0.060
0.569
0.700
0.223
0.223
1.006
1.061
1.500
1.557
290-015
290-016
ACTUAL SIZE
DETAILS
PRASAD PLASTICS LIMITED
7320 PACIFIC CIRCLE
MISSISSAUGA,ONTARIO
L5T-1V1
PHONE (905) 564-4600
FAX (905) 564-4648
CUSTOMER
SUNVIEW
DIE#
FH-3540
MATERIAL
75 DURO
FLEX PVC
DRAWN ANTHONY SAMPOGNA
EMAIL-ANTHONY@PRASADPLASTICS,COM
COMMERCIAL TOLERANCES
WALL THICKNESS 0,060 / 0,070
DATE NOV 15 /2012
COLOUR MUST BE BLACK
Area= 0.300
PART# #2920
SCALE: 2:1
APPROVED BY
PART-DESCRIPTION
#2920 PATIO DOOR GASKET

9 Revision Page

Revision No.	Date	Changes	Author	Reviewer
0	February 27, 2015	First Issue	Allan Lawrence	Claudio Sacilotto

END OF DOCUMENT