NFRC 102-2010 THERMAL PERFORMANCE
TEST REPORT

Rendered to:

CR LAURENCE CO., INC.

SERIES/MODEL: 8200 Horizontal Slider
TYPE: Horizontal Slider (Single)

Summary of Results			
Standardized Thermal Transmittance (U-Factor)			0.47
Unit Size:		59" x 47-1/4" (1499 mm x 1200 mm) (Model Size)	
Layer 1:	1/4"	Clear	
Gap 1:	0.50"	A1-D: Aluminum Spacer	100% Air*
Layer 2:	1/4"	PPG Solarban 70XL (e=0.018*, #3)	

Reference must be made to Report No. E0619.01-116-46, dated 01/16/15 for complete test specimen description and data.

NFRC 102-2010 THERMAL PERFORMANCE TEST REPORT

Rendered to:

CR LAURENCE CO., INC.
2100 East 38th Street
Vernon, California 90058

Report Number: E0619.01-116-46
Test Date: 12/18/14
Report Date: 01/16/15

Test Sample Identification:

Series/Model: 8200 Horizontal Slider

Type: Horizontal Slider (Single)

Overall Size: 59" x 47-1/4" (1499 mm x 1200 mm) (Model Size)
NFRC Standard Size: 59.1" x 47.2" (1500 mm wide x 1200 mm high)

Test Sample Submitted by: Client

Test Sample Submitted for: Validation for Initial Certification (Production Line Unit) & Plant Qualification

Test Procedure: U-factor tests were performed in a Guarded Hot Box in accordance with NFRC 102-2010, *Procedure for Measuring the Steady-State Thermal Transmittance of Fenestration Systems* .

Test Results Summary:

Standardized U-factor (U_{st}): 0.47 Btu/hr·ft^2·F (CTS Method)

Test Sample Description:

Frame:

Material:	AT (0.25"): Aluminum with Thermal Breaks - All Members*		
Size:	59" x 47-1/4" (Model Size)		
Daylight Opening:	25-1/2" x 38-3/8"	**Glazing Method:**	Exterior
Exterior Color:	Clear	**Exterior Finish:**	Anodized
Interior Color:	Clear	**Interior Finish:**	Anodized
Corner Joinery:	Coped / Screws / Sealed		

*Fixed meeting stile was AT (0.25"). Head, sill and jambs were AT (0.31")

Active Sash:

Material:	AT (0.25"): Aluminum with Thermal Breaks - All Members		
Size:	30-1/4" x 42-3/4"		
Daylight Opening:	25-1/2" x 38-3/8"	**Glazing Method:**	Exterior
Exterior Color:	Clear	**Exterior Finish:**	Anodized
Interior Color:	Clear	**Interior Finish:**	Anodized
Corner Joinery:	Coped / Screws / Sealed		

Glazing Information:

Layer 1:	1/4"	Clear	
Gap 1:	0.50"	A1-D: Aluminum Spacer	100% Air*
Layer 2:	1/4"	PPG Solarban 70XL (e=0.018*, #3)	
Gas Fill Method:		N/A*	

**Stated per Client/Manufacturer*
N/A Non-Applicable

Test Sample Description: (Continued)

Weatherstripping:

Description	Quantity	Location
EPDM wedge gasket	1 row	Exterior glazing perimeter
Compression gasket	1 row	Interior glazing perimeter
Polypile with center fin	1 row	Head, sill, active jamb, fixed and active meeting stile
Vinyl glide strip	1 row	Head, sill, active jamb

Hardware:

Description	Quantity	Location
Spring-loaded latch	1	Active meeting stile
Metal keeper	1	Fixed meeting stile
Roller assembly	1 set	Bottom corners of active sash
Metal glide track	1	Active sash track sill
Aluminum insert	1	Fixed sash track sill
Aluminum insert	1	Active sash track at fixed jamb
Aluminum insert	1	Fixed sash track at active jamb

Drainage:

Drainage Method	Size	Quantity	Location
Weepslot with cover	1.50" x 0.25"	2	Sill face

Thermal Transmittance (U-factor)

Measured Test Data

Heat Flows

1. Total Measured Input into Metering Box (Q_{total})	805.48	Btu/hr
2. Surround Panel Heat Flow (Q_{sp})	100.71	Btu/hr
3. Surround Panel Thickness	4.00	inches
4. Surround Panel Conductance	0.0461	Btu/hr·ft^2·F
5. Metering Box Wall Heat Flow (Q_{mb})	40.38	Btu/hr
6. EMF vs Heat Flow Equation (equivalent information)	0.0373*EMF + 0.300	
7. Flanking Loss Heat Flow (Q_{fl})	13.42	Btu/hr
8. Net Specimen Heat Loss (Q_s)	650.97	Btu/hr

Areas

1. Test Specimen Projected Area (A_s)	19.36	ft^2
2. Test Specimen Interior Total (3-D) Surface Area (A_h)	22.23	ft^2
3. Test Specimen Exterior Total (3-D) Surface Area (A_c)	23.01	ft^2
4. Metering Box Opening Area (A_{mb})	52.94	ft^2
5. Metering Box Baffle Area (A_{b1})	46.97	ft^2
6. Surround Panel Interior Exposed Area (A_{sp})	33.58	ft^2

Test Conditions

1. Average Metering Room Air Temperature (t_h)	69.80	F
2. Average Cold Side Air Temperature (t_c)	-0.41	F
3. Average Guard/Environmental Air Temperature	71.25	F
4. Metering Room Average Relative Humidity	6.42	%
5. Metering Room Maximum Relative Humidity	6.91	%
6. Metering Room Minimum Relative Humidity	5.91	%
7. Measured Cold Side Wind Velocity (Perpendicular Flow)	12.66	mph
8. Measured Warm Side Wind Velocity (Parallel Flow)	NA	mph
9. Measured Static Pressure Difference Across Test Specimen	0.00" ± 0.04"	H_2O

Average Surface Temperatures

1. Metering Room Surround Panel	65.54	F
2. Cold Side Surround Panel	0.52	F

Results

1. Thermal Transmittance of Test Specimen (U_s)	0.48	Btu/hr·ft^2·F
2. Standardized Thermal Transmittance of Test Specimen (U_{st})	0.47	Btu/hr·ft^2·F

Thermal Transmittance (U-factor)

Calculated Test Data

CTS Method

1.	Warm Side Emittance of Glass (e_1)	0.84	
2.	Cold Side Emittance of Glass	0.84	
3.	Warm Side Frame Emittance*	0.80	
4.	Cold Side Frame Emittance*	0.80	
5.	Warm Side Sash/Panel/Vent Emittance*	0.80	
6.	Cold Side Sash/Panel/Vent Emittance*	0.80	
7.	Warm Side Baffle Emittance (e_{b1})	0.92	
8.	Cold Side Baffle Emittance (e_{b2})	N/A	
9.	Equivalent Warm Side Surface Temperature	44.75	F
10.	Equivalent Cold Side Surface Temperature	6.15	F
11.	Warm Side Baffle Surface Temperature	69.49	F
12.	Cold Side Baffle Surface Temperature	N/A	F
13.	Measured Warm Side Surface Conductance (h_h)	1.34	Btu/hr·ft^2·F
14.	Measured Cold Side Surface Conductance (h_c)	5.13	Btu/hr·ft^2·F
15.	Test Specimen Thermal Conductance (C_s)	0.87	Btu/hr·ft^2·F
16.	Convection Coefficient (K_c)	0.28	Btu/(hr·ft^2·F$^{1.25}$)
17.	Radiative Test Specimen Heat Flow (Q_{r1})	354.55	Btu/hr
18.	Conductive Test Specimen Heat Flow (Q_{c1})	296.42	Btu/hr
19.	Radiative Heat Flux of Test Specimen (q_{r1})	18.31	Btu/hr·ft^2·F
20.	Convective Heat Flux of Test Specimen (q_{c1})	15.31	Btu/hr·ft^2·F
21.	Standardized Warm Side Surface Conductance (h_{sth})	1.27	Btu/hr·ft^2·F
22.	Standardized Cold Side Surface Conductance (h_{stc})	5.28	Btu/hr·ft^2·F
23.	Standardized Thermal Transmittance (U_{st})	0.47	Btu/hr·ft^2·F

Test Duration

1. The environmental systems were started at 17:22 hours, 12/17/14.
2. The test parameters were considered stable for two consecutive four hour test periods from 22:02 hours, 12/17/14 to 06:02 hours, 12/18/14.
3. The thermal performance test results were derived from 02:02 hours, 12/18/14 to 06:02 hours, 12/18/14.

The reported Standardized Thermal Transmittance (Ust) was determined using CTS Method, per Section 8.2(A) of NFRC 102.

**Stated per NFRC 101*

Glazing Deflection:

	Frame	Active Sash
Edge Gap Width	0.50"	0.50"
Estimated center gap width upon receipt of specimen in laboratory (after stabilization)	0.50"	0.50"
Center gap width at laboratory ambient conditions on day of testing	0.50"	0.50"
Center gap width at test conditions	0.41"	0.41"

Glass collapse determined using a digital glass and air space meter

The sample was inspected for the formation of frost or condensation, which may influence the surface temperature measurements. The sample showed no evidence of condensation/frost at the conclusion of the test.

"This test method does not include procedures to determine the heat flow due to either air movement through the specimen or solar radiation effects. As a consequence, the thermal transmittance results obtained do not reflect performances which are expected from field installations due to not accounting for solar radiation, air leakage effects, and the thermal bridge effects that have the potential to occur due to the specific design and construction of the fenestration system opening. The latter can only be determined by in-situ measurements. Therefore, it is important to recognize that the thermal transmittance results obtained from this test method are for ideal laboratory conditions and should only be used for fenestration product comparisons and as input to thermal performance analyses which also include solar, air leakage and thermal bridge effects."

The test sample was installed in a vertical orientation, the exterior of the specimen was exposed to the cold side. The direction of heat transfer was from the interior (warm side) to the exterior (cold side) of the specimen. The ratings were rounded in accordance to NFRC 601, NFRC Unit and Measurement Policy. The data acquisition frequency is 5 minutes.

ANSI/NCSL Z540-2-1997 type B uncertainty for this test was 2.31%.

Required annual calibrations for the Architectural Testing Inc. 'thermal test chamber' (ICN 000001) in York, Pennsylvania were last conducted in May 2014 in accordance with Architectural Testing Inc. calibration procedure. A CTS Calibration verification was performed May 2014. A Metering Box Wall Transducer and Surround Panel Flanking Loss Characterization was performed September 2014.

"Ratings included in this report are for submittal to an NFRC licensed IA for certification purposes and are not meant to be used for labeling purposes. Only those values identified on a valid Certification Authorization Report (CAR) are to be used for labeling purposes."

Architectural Testing, Inc. will service this report for the entire test record retention period. Test records that are retained such as detailed drawings, datasheets, representative samples of test specimens, or other pertinent project documentation will be retained by Architectural Testing, Inc. for the entire test record retention period. The test record retention end date for this report is December 18, 2018.

This report does not constitute certification of this product nor an opinion or endorsement by this laboratory. It is the exclusive property of the client so named herein and relates only to the specimen tested. This report may not be reproduced, except in full, without the written approval of Architectural Testing, Inc.

For ARCHITECTURAL TESTING, INC.

Tested By:

Digitally Signed by: Ryan P. Moser

Ryan P. Moser
Technician

Reviewed By:

Digitally Signed by: Shon W. Einsig

Shon W. Einsig
Senior Technician
Individual-In-Responsible-Charge

RPM:klb
E0619.01-116-46

Attachments (pages): This report is complete only when all attachments listed are included.

- Appendix-A: CTS Calibration Data (1)
- Appendix-B: Surround Panel Wiring Diagram (1)
- Appendix-C: Baffle Wiring Diagram (1)
- Appendix-D: Submittal Form and Drawings (20)

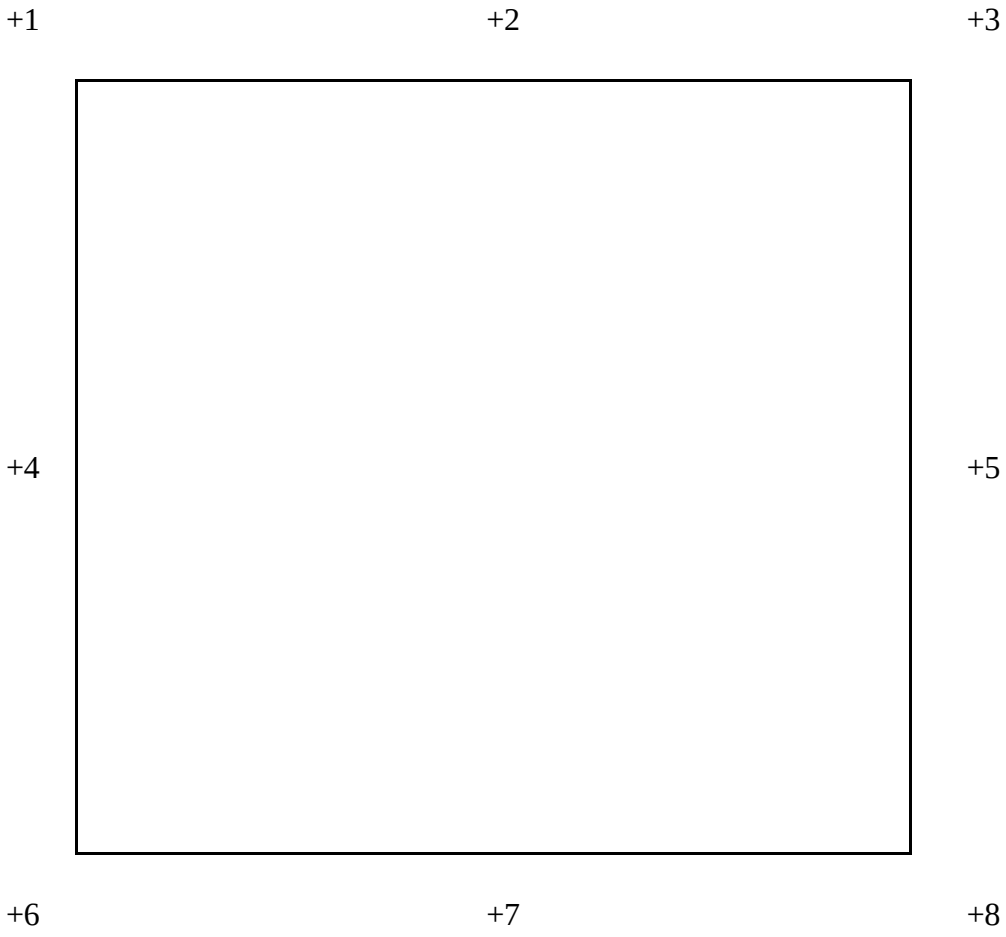
Revision Log

Rev. #	Date	Page(s)	Revision(s)
.01R0	01/16/15	All	Original Report Issue. Work requested by Gyu-Hyeon Kim of CR Laurence Co., Inc.

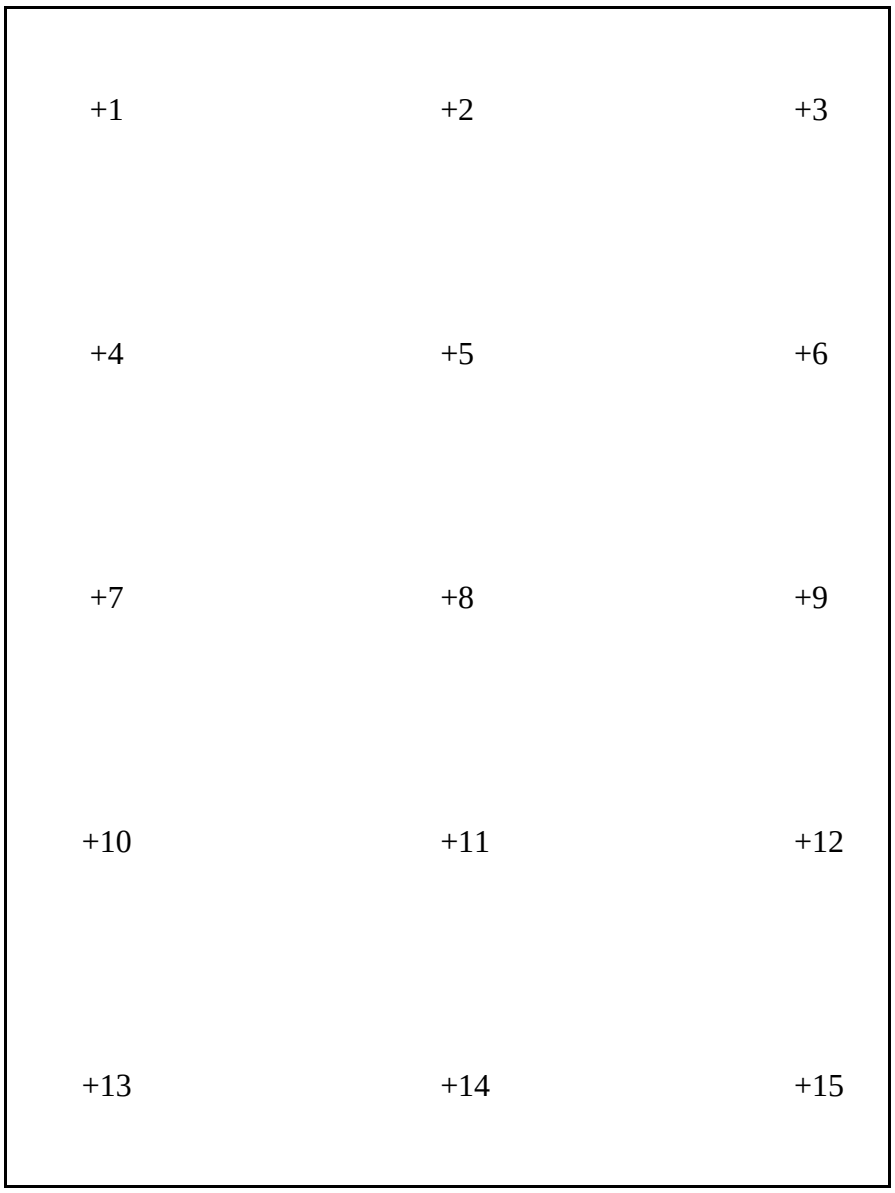
Appendix A: CTS Calibration Data

1.	CTS Test Date	12/03/13	
2.	CTS Size	19.38	ft^2
3.	CTS Glass/Core Conductance	0.42	$Btu/hr \cdot ft^2 \cdot F$
4.	Warm Side Air Temperature	69.80	F
5.	Cold Side Air Temperature	-0.40	F
6.	Warm Side Average Surface Temperature	53.63	F
7.	Cold Side Average Surface Temperature	3.69	F
8.	Convection Coefficient (K_c)	0.28	$Btu/(hr \cdot ft^2 \cdot F^{1.25})$
9.	Measured Cold Side Surface Conductance (h_c)	5.13	$Btu/hr \cdot ft^2 \cdot F$
10.	Measured Thermal Transmittance	0.30	$Btu/hr \cdot ft^2 \cdot F$

Appendix B: Surround Panel Wiring Diagram



Appendix C: Baffle Wiring Diagram



Appendix D: Submittal Form and Drawings

NFRC PRODUCT CERTIFICATION PROGRAM

Submittal Form for Test Samples

For use by manufacturers, lineal suppliers and fabricators

National Fenestration Rating Council®

1. Information on Production of the Test Sample (complete **ALL** fields):

Manufacturer: CRL - US Aluminum Date of sample manufacture: 11/7/2014

Plant Address where manufactured: 2100 E 38th St

City: Los Angeles State: CA Zip Code: 90085-1617

Name of IA: Associated Laboratories, Inc Phone: (214)565-0593 Fax: (214)565-1094

2. Product Information (complete **ALL** fields):

Product Line ID (CPD) No.: 5559 Product/Operator Type (Table 4-3 of NFRC 100): Horizontal Slider

Series/Model: 8200 Horizontal Slider

3. Test sample is being submitted for (select **ONE**):

a. ☐ Validation for Initial Certification (prototype only) no plant qualification

b. ☑ Validation for Initial Certification (production line unit) & plant qualification

c. ☐ Validation for Recertification (production line unit) & plant qualification

d. ☐ Plant Qualification Only (production line unit)

I, Gyu Hyeon Kim, as the designated agent for CRL - US Aluminum do hereby attest that the foregoing information is true to the best of my information, knowledge, and belief. Further, if the unit is identified in Section 3 as a production line unit, I hereby authorize the NFRC-accredited testing laboratory to send a copy of the test report to the IA identified above for plant qualification purposes pursuant to the NFRC Product Certification Program..

Signature: Gyu Hyeon Kim Digitally signed by Gyu Hyeon Kim Date: 2015.01.15 14:39:58 -08'00' Date: 1/15/2015

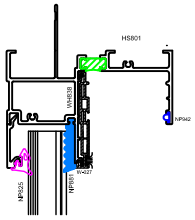
FOR LABORATORY USE ONLY

1. Laboratory: Architectural Testing
2. Date Sample Received: 11/11/14 File number ID: E0619
3. Date Sample Tested: 12/18/14 By: RBM
4. Modifications made:
5. Reason for non-testing of sample unit:

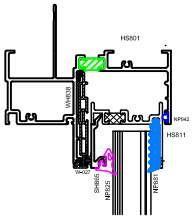
[*Note*: If the sample submitted can not be tested due to damage prior to testing, a new sample and new form shall be submitted to the testing laboratory. Both forms shall be submitted to the IA when the testing is completed.]

8200 SERIES HORIZONTAL SLIDING WINDOW SYSTEM

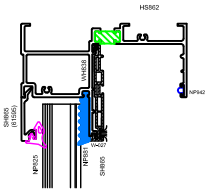
HEADS



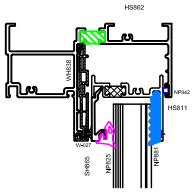
8200 HEAD
HORIZONTAL SLIDING
- FIN - FIXED
HS801 / SH865 / HS811



8200 HEAD
HORIZONTAL SLIDING
- FIN - OPERABLE
HS801 / SH865 / HS811

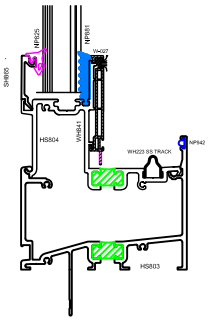


8200 HEAD
HORIZONTAL SLIDING
- BLOCK - FIXED
HS862 / SH865 / HS811

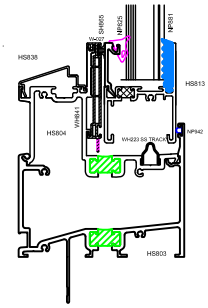


8200 HEAD
HORIZONTAL SLIDING
- BLOCK - OPERABLE
HS862 / SH865 / HS811

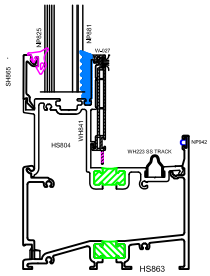
SILLS



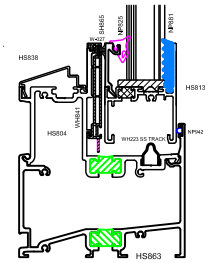
8200 SILL
HORIZONTAL SLIDING
- FIN - FIXED
SH865 / HS804 / HS813 / HS803



8200 SILL
HORIZONTAL SLIDING
- FIN - OPERABLE
HS838 / SH865 / HS813 / HS803 / HS804

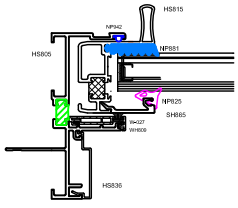


8200 SILL
HORIZONTAL SLIDING
- BLOCK - FIXED
SH865 / HS813 / HS804 / HS863

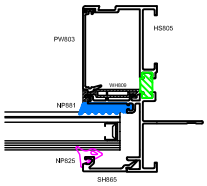


8200 SILL
HORIZONTAL SLIDING
- BLOCK - OPERABLE
HS838 / HS804 / HS813 / HS863 / SH865

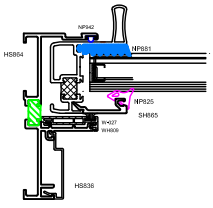
JAMBS



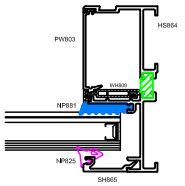
8200 JAMB
HORIZONTAL SLIDING
- FIN - OPERABLE
HS815 / HS805 / HS836 / SH865



8200 JAMB
HORIZONTAL SLIDING
- FIN - FIXED
HS805 / PW803

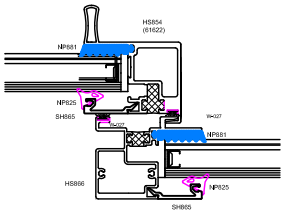


8200 JAMB
HORIZONTAL SLIDING
- BLOCK - OPERABLE
HS864 / HS836 / SH865



8200 JAMB
HORIZONTAL SLIDING
- BLOCK - FIXED
HS864 / PW803 / SH865

INTERLOCK



8200 INTERLOCK
HORIZONTAL SLIDING
HS854 / SH865 / HS866

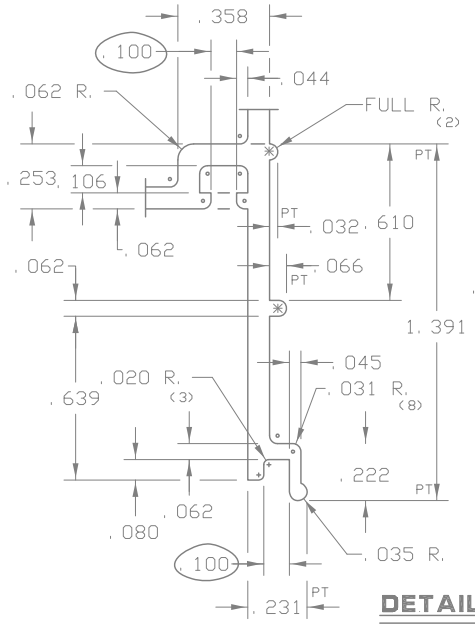
Architectural Testing

Report #: E0619-116-46
Date: 12/18/2014
Verified by: Ryan P. Moser

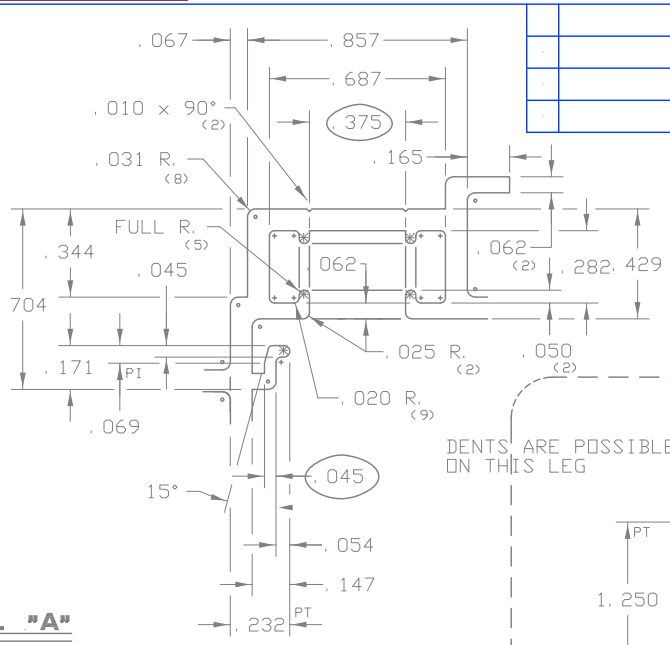
Architectural Testing

Report #: E0619-116-46
Date: 12/18/2014
Verified by: Ryan P. Moser

U.S. ALUMINUM CORP.		H-61616
8200HS HEAD	TER MEER	05/19/10
HS801	FULL SIZE	



DETAIL "A"
2 X SIZE



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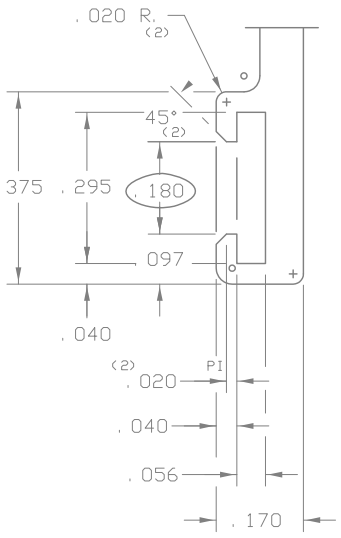
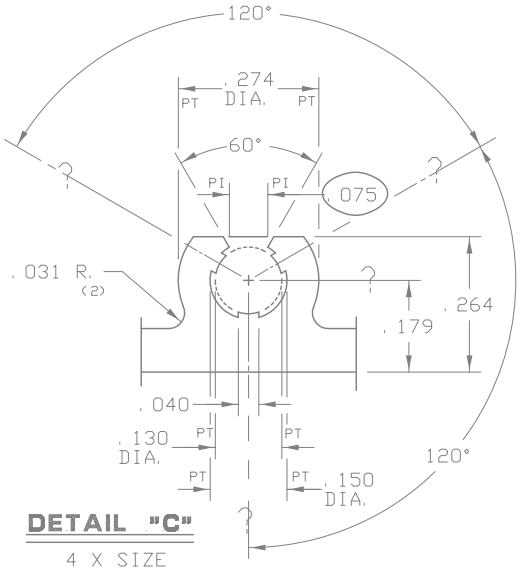


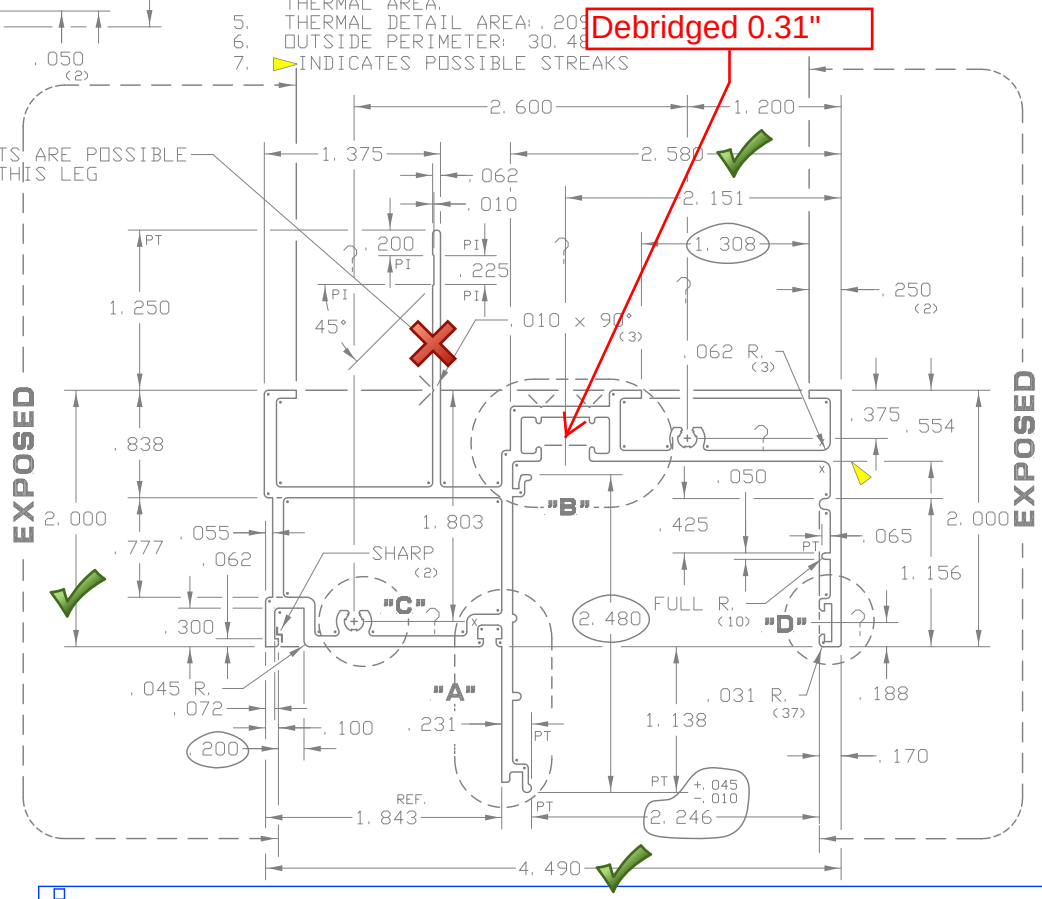
DETAIL "D"
4 X SIZE



DETAIL "C"
4 X SIZE
(SIM 2 PLACES)

NOTES:

1. 6063-T5 ALLOY AND TEMPER.
2. ASSEMBLES WITH SH865; DIE# 61595
3. PAINT PERIMETER: 3.610"
4. DEBRIDGE WITH A .375 x .015 MAX PENETRATION INTO THERMAL AREA.
5. THERMAL DETAIL AREA: .205
6. OUTSIDE PERIMETER: 30.48
7. INDICATES POSSIBLE STREAKS



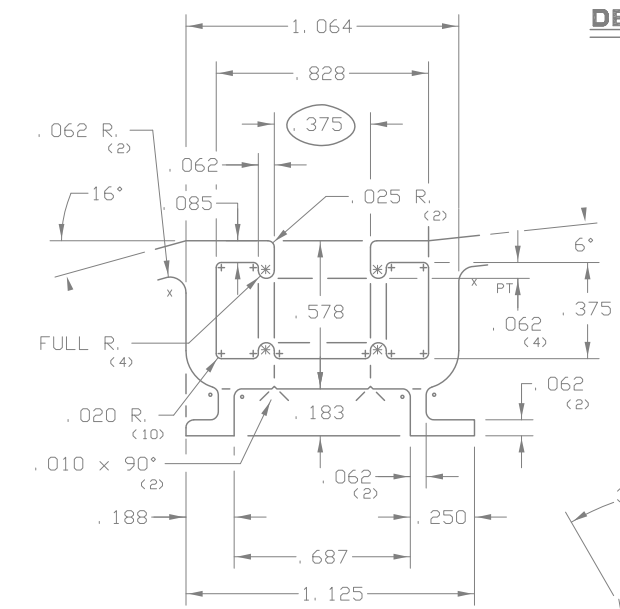
		.085
1.479	C-1817	1
1.775	4.958	PORTHOLE 12X6.5
36.690	HOLLOW II	15X8.5 61616
21	8" 36/PRESS 4	H-61616

Architectural Testing

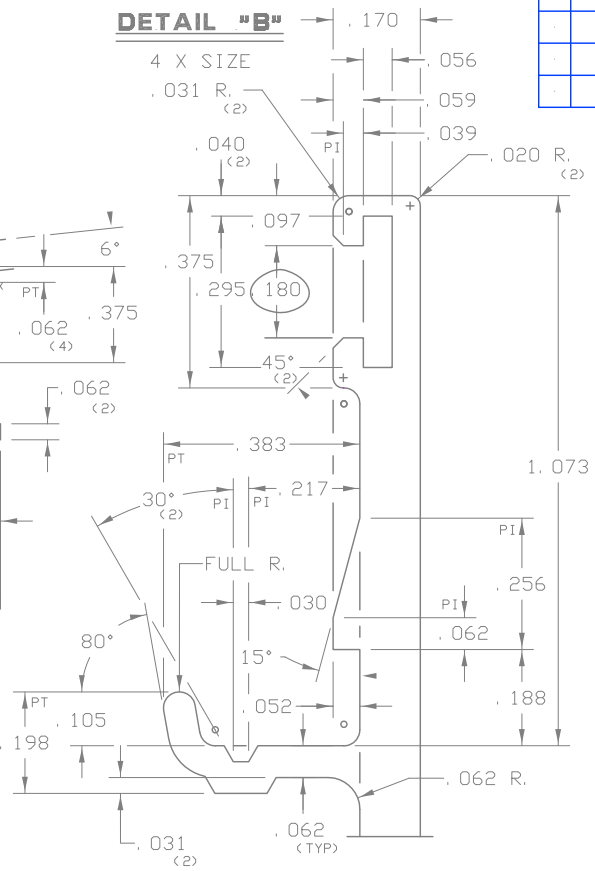
Report #: E0619-116-46
Date: 12/18/2014
Verified by: Ryan P. Moser

U.S. ALUMINUM CORP.		T-61617
8200HS SILL	TER MEER	05/26/10
HS803	FULL SIZE	

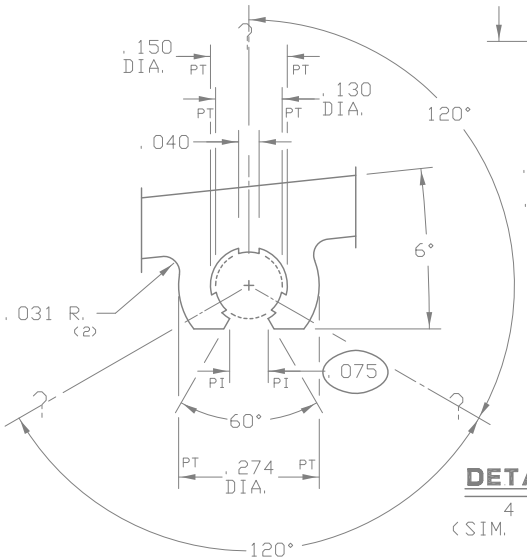
NOTES:
1. 6063-T5 ALLOY AND TEMPER.
2. ASSEMBLES WITH HS804; DIE# 61618
3. PAINT PERIMETER: 6.054"
4. DEBRIDGE WITH A .375 x .015 MAX PENETRATION INTO THERMAL AREA.
5. THERMAL DETAIL AREA: .328, "EE"
6. ▶ INDICATES POSSIBLE STREAKS



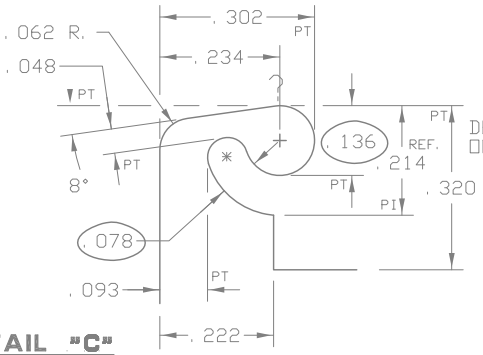
DETAIL "A"
2 X SIZE



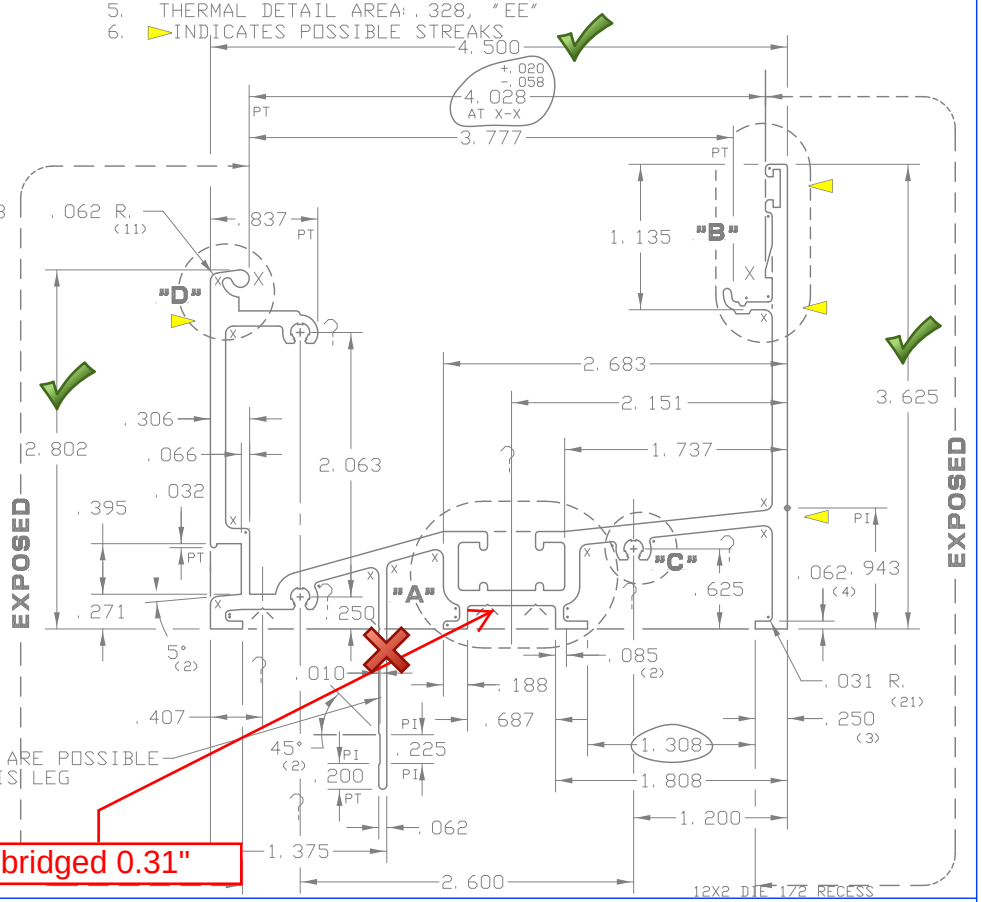
DETAIL "B"
4 X SIZE



DETAIL "C"
4 X SIZE
(SIM. 3 PLACES)



DETAIL "D"
4 X SIZE



1.799	C-1818	1
2.159	5.861	12 X 61617
35.335	SOLID	15X8.5 61617
16	8" 29/PRESS 1	T-61617

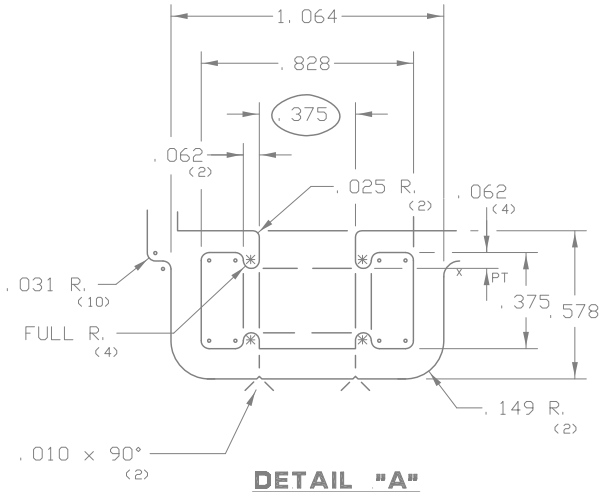
Report #:	E0619-116-46
Date:	12/18/2014
Verified by:	Ryan P. Moser

Architectural Testing

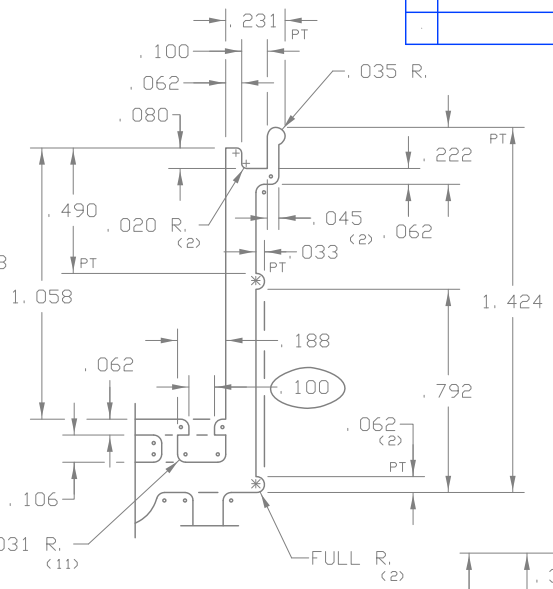
U.S. ALUMINUM CORP.			T-61618
8200HS SILL INSERT		TER MEER	05/26/10
HS804		FULL SIZE	

NOTES:

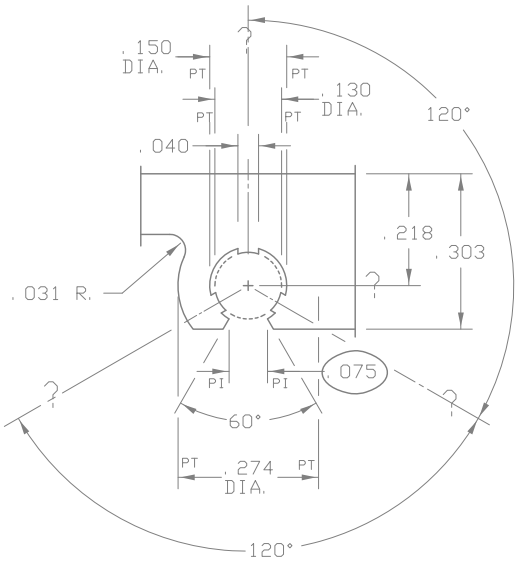
1. 6063-T5 ALLOY AND TEMPER.
2. ASSEMBLES WITH HS803; DIE# 61617
3. PAINT PERIMETER: 2.444"
4. DEBRIDGE WITH A .375 x .015 MAX PENETRATION INTO THERMAL AREA.
5. THERMAL DETAIL AREA: .328, "EE"



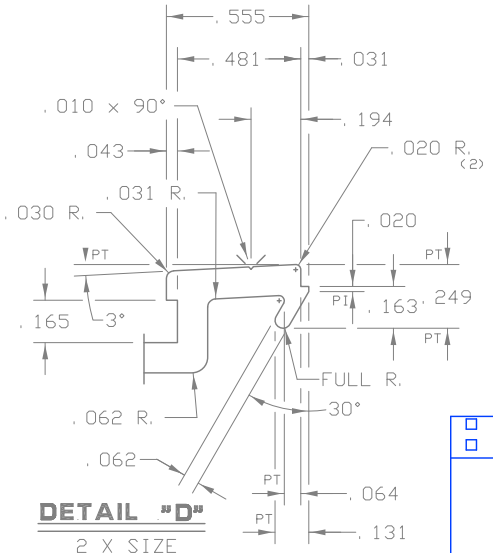
DETAIL "A"
2 X SIZE



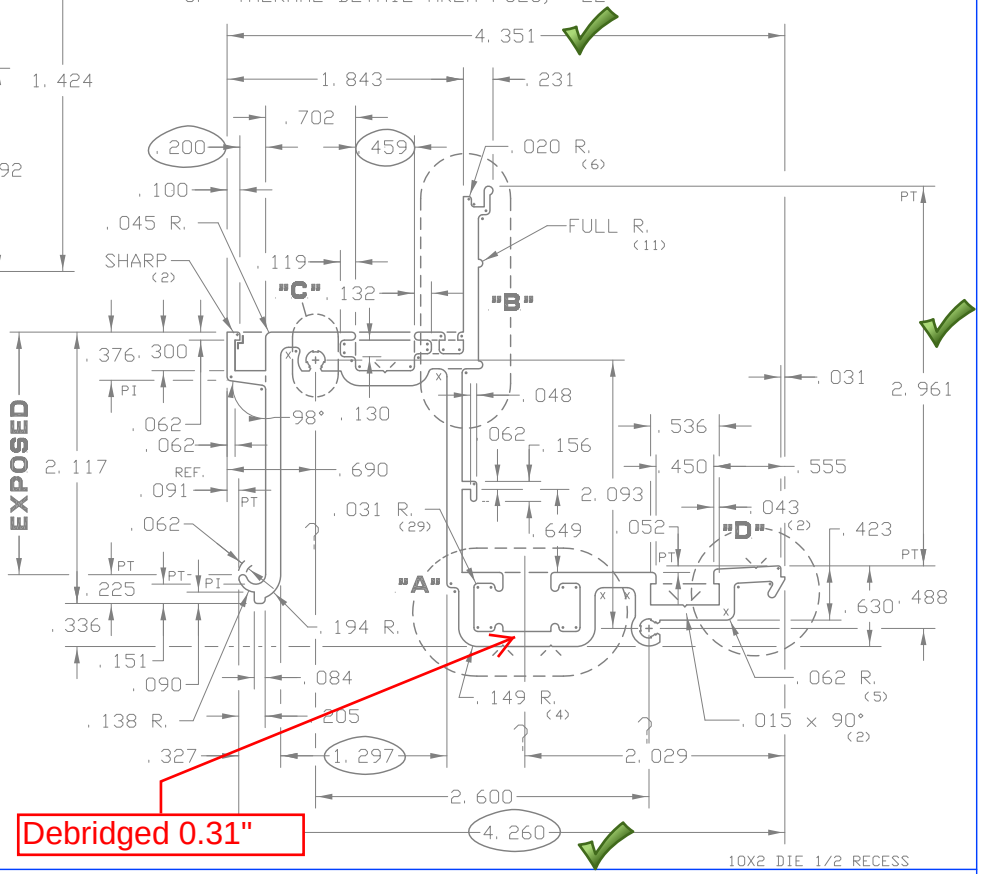
DETAIL "B"
2 X SIZE



DETAIL "C"
4 X SIZE
(SIM. 2 PLACES)



DETAIL "D"
2 X SIZE



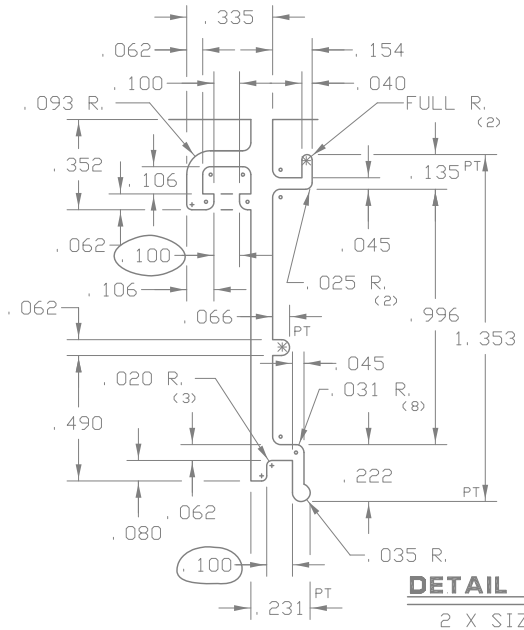
Debridged 0.31"

1.507	C-1819	1
1.808	4.804	10 X 61618
27.761	SOLID	15X8.5 61618
15	8" 35/PRESS 4	T-61618

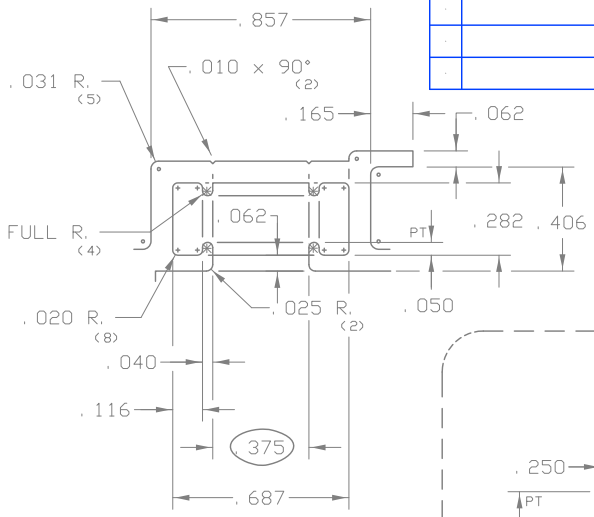
Architectural Testing

Report #: E0619-116-46
Date: 12/18/2014
Verified by: Ryan P. Moser

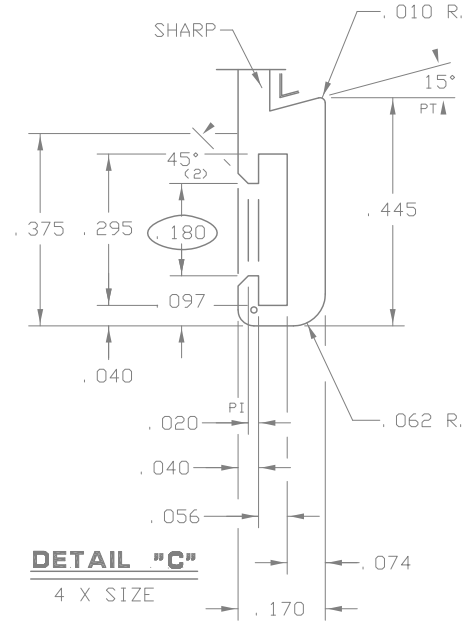
U.S. ALUMINUM CORP.		T-61619
8200HS JAMB	TER MEER	05/18/10
HS805	FULL SIZE	



DETAIL "A"
2 X SIZE



DETAIL "B"
2 X SIZE

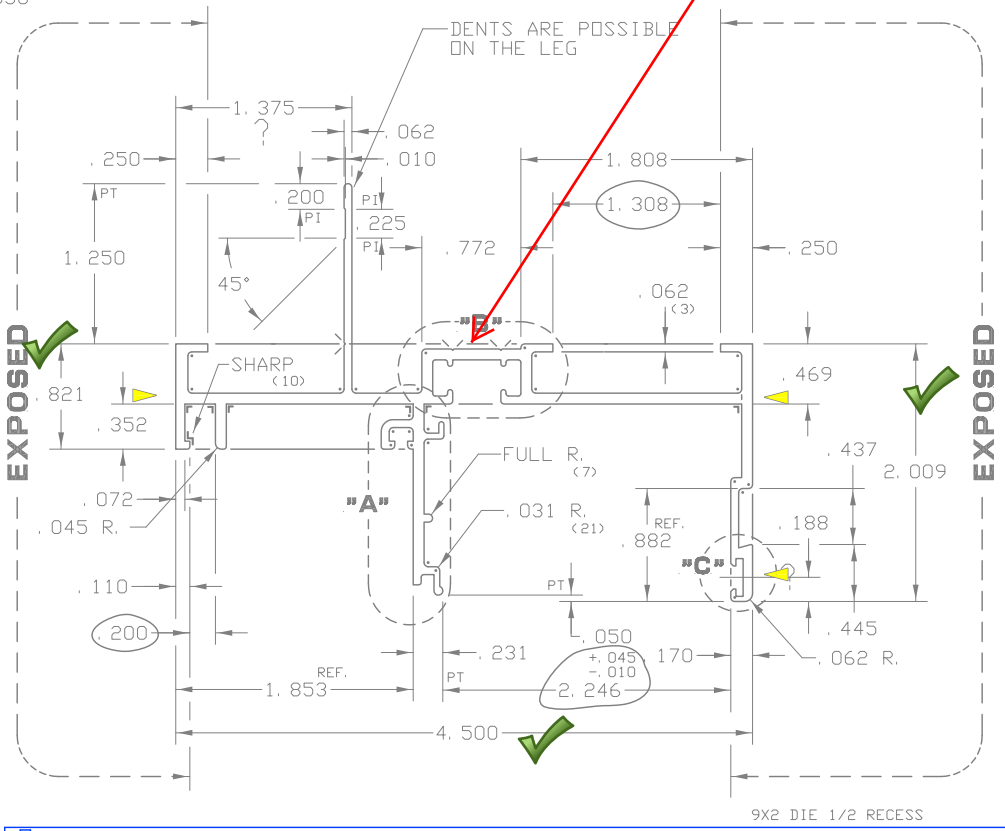


DETAIL "C"
4 X SIZE

NOTES:

1. 6063-T5 ALLOY AND TEMPER.
2. ASSEMBLES WITH SH865; DIE# 61595
3. PAINT PERIMETER: 3.828"
4. DEBRIDGE WITH A .375 × .015 MAX PENETRATION INTO THERMAL AREA.
5. THERMAL DETAIL AREA: .209, "EE"
6. ▶INDICATES POSSIBLE STREAKS

Debridged 0.31"



9X2 DIE 1/2 RECESS

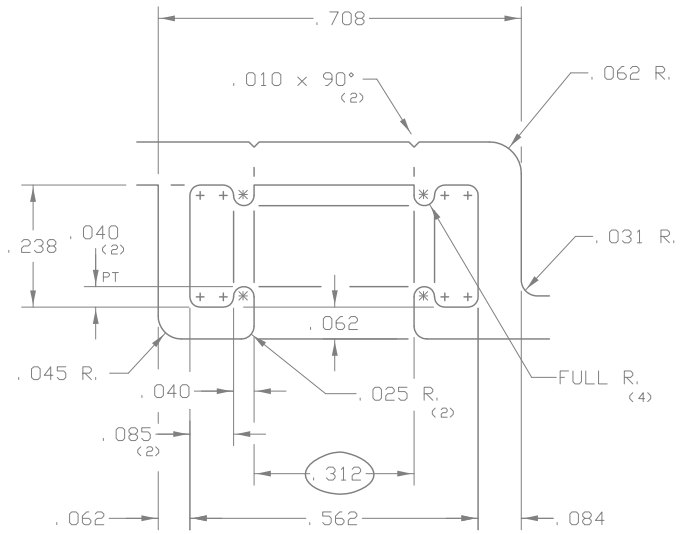
.085

1.044	C-1822	1
1.253	4.909	9 X 61619
27.169	SOLID	61607
22	8" 51/PRESS 4	T-61619

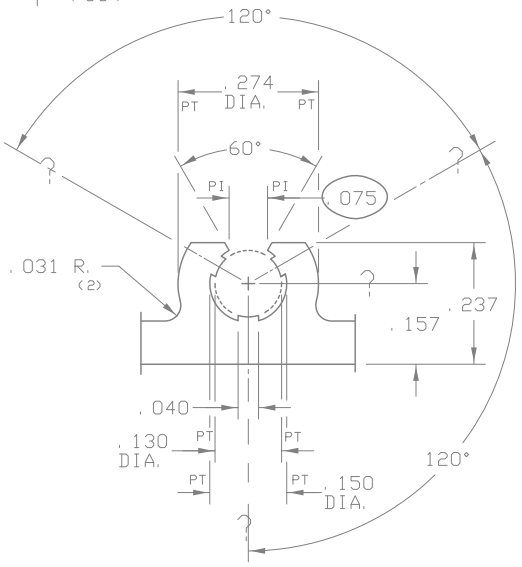
Architectural Testing

Report #: E0619-116-46
Date: 12/18/2014
Verified by: Ryan P. Moser

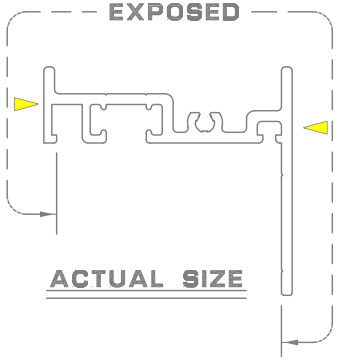
U.S. ALUMINUM CORP.			T-61620
8000HS TOP RAIL	TER MEER		04/18/10
HS811	2 X SIZE		



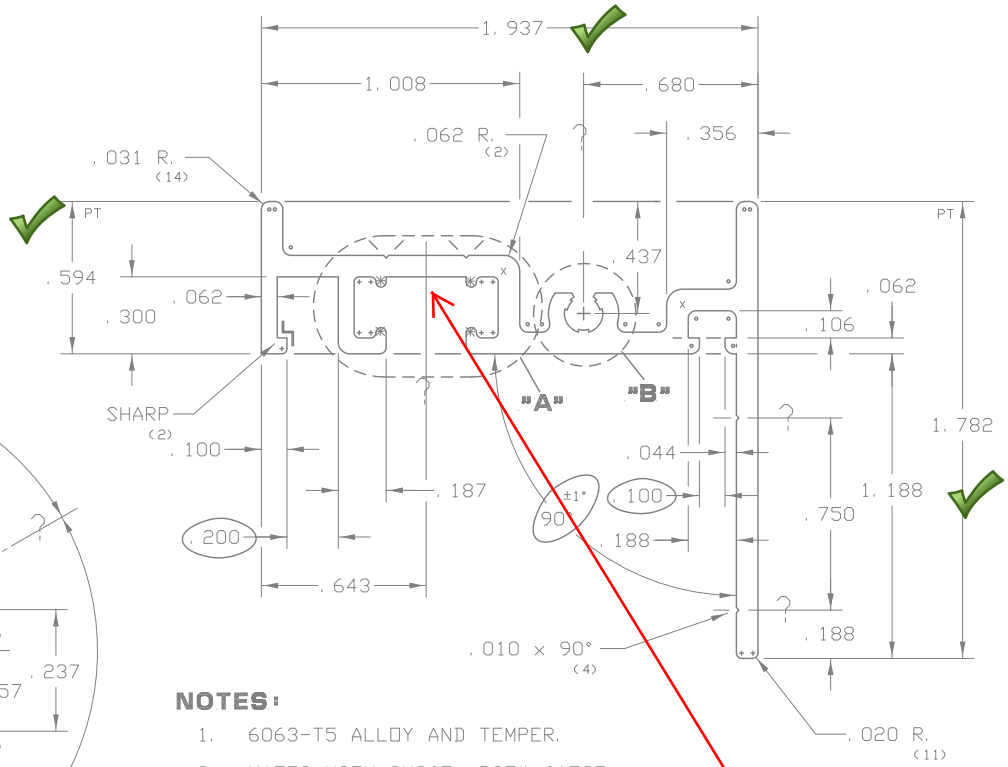
DETAIL "A"
4 X SIZE



DETAIL "B"
4 X SIZE



ACTUAL SIZE



NOTES:

1. 6063-T5 ALLOY AND TEMPER.
2. MATES WITH SH865; DIE# 61595
3. DEBRIDGE WITH A .312 x .015 MAX PENETRATION INTO THERMAL AREA.
4. THERMAL DETAIL AREA: .147; (MODIFIED "DD")
5. PAINT PERIMETER: 5.240"
6. ▶ INDICATES POSSIBLE STREAKS

9X2 DIE 1/2 RECESS

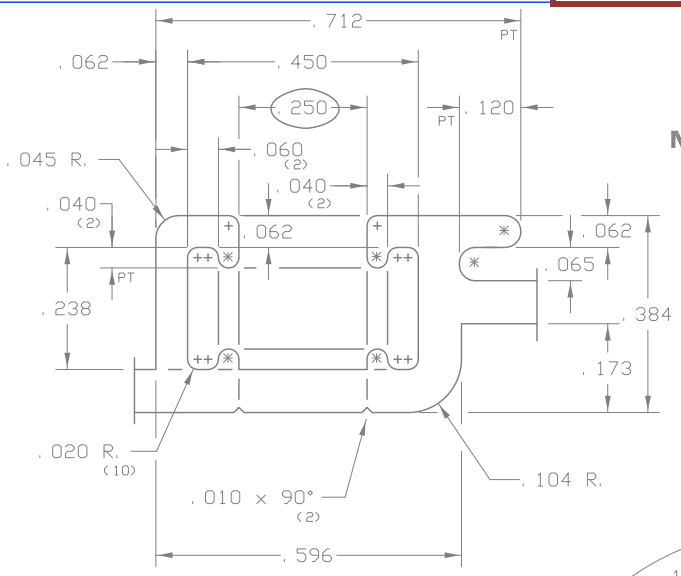
.084

.450	C-1820	2
.540	2.611	9 X 61620
11.331	SOLID	2-1
21	7" 45/PRESS 3	T-61620

Architectural Testing

Report #: E0619-116-46
Date: 12/18/2014
Verified by: Ryan P. Moser

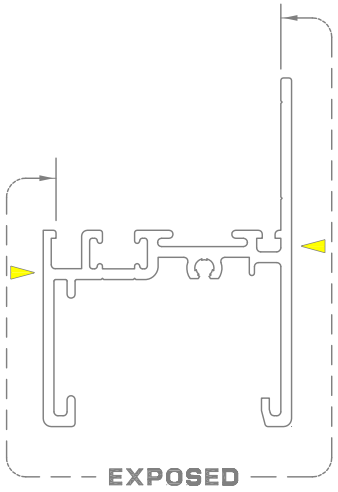
U.S. ALUMINUM CORP.		T-61621
8000HS BOTTOM RAIL	TER MEER	04/18/10
HS813	2 X SIZE	



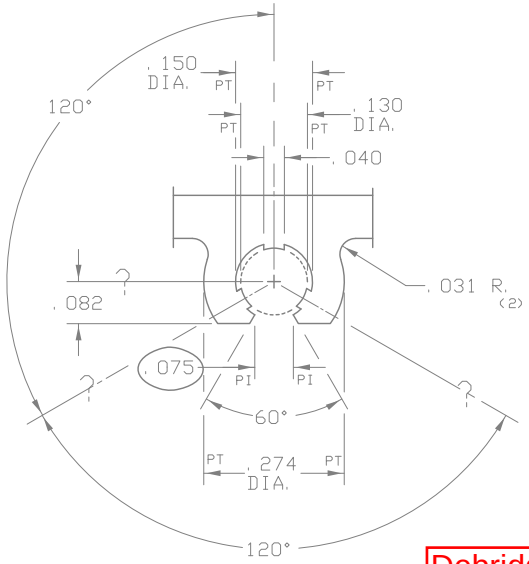
NOTES:

1. 6063-T5 ALLOY AND TEMPER.
2. MATES WITH SH865; DIE# 61595
3. DEBRIDGE WITH A .250 x .015 MAX PENETRATION INTO THERMAL AREA.
4. THERMAL DETAIL AREA: .116; (MODIFIED "CC")
5. PAINT PERIMETER: 11.270"
6. ▶ INDICATES POSSIBLE STREAKS

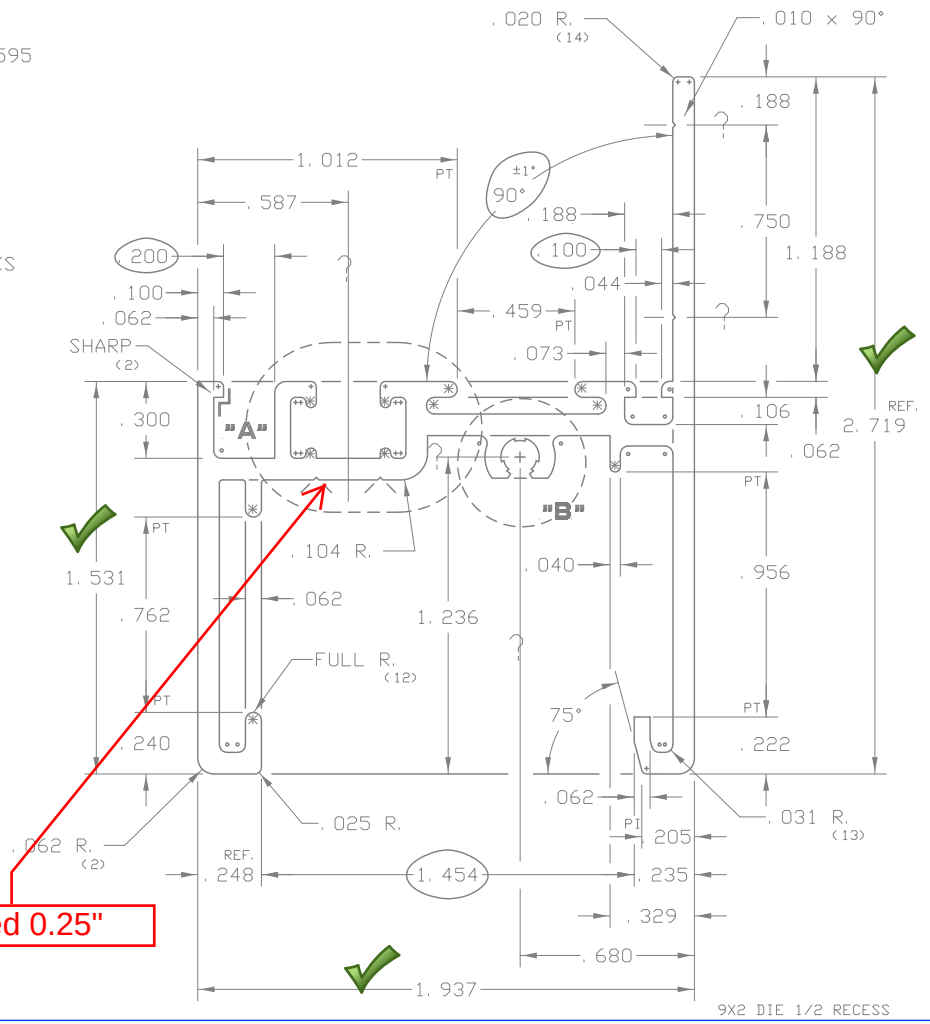
DETAIL "A"
4 X SIZE



ACTUAL SIZE



DETAIL "B"
4 X SIZE



Debridged 0.25"

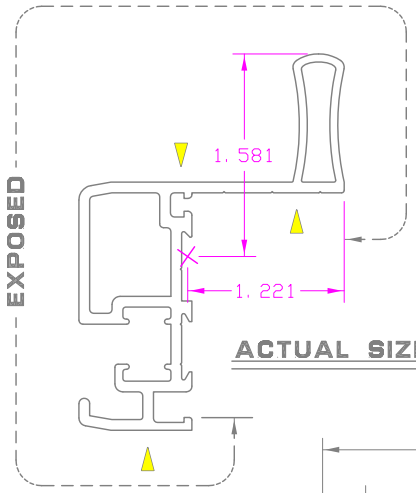
		.084
.673	C-1821	1
.808	3.306	9 X 61621
16.937	SOLID	32121
21	7" 61/PRESS 3	T-61621

Architectural Testing

Report #: E0619-116-46
Date: 12/18/2014
Verified by: Ryan P. Moser

U.S. ALUMINUM CORP.		H-61632
8200HS SERIES VENT STILE	TER MEER	04/17/10
HS815	2 X SIZE	

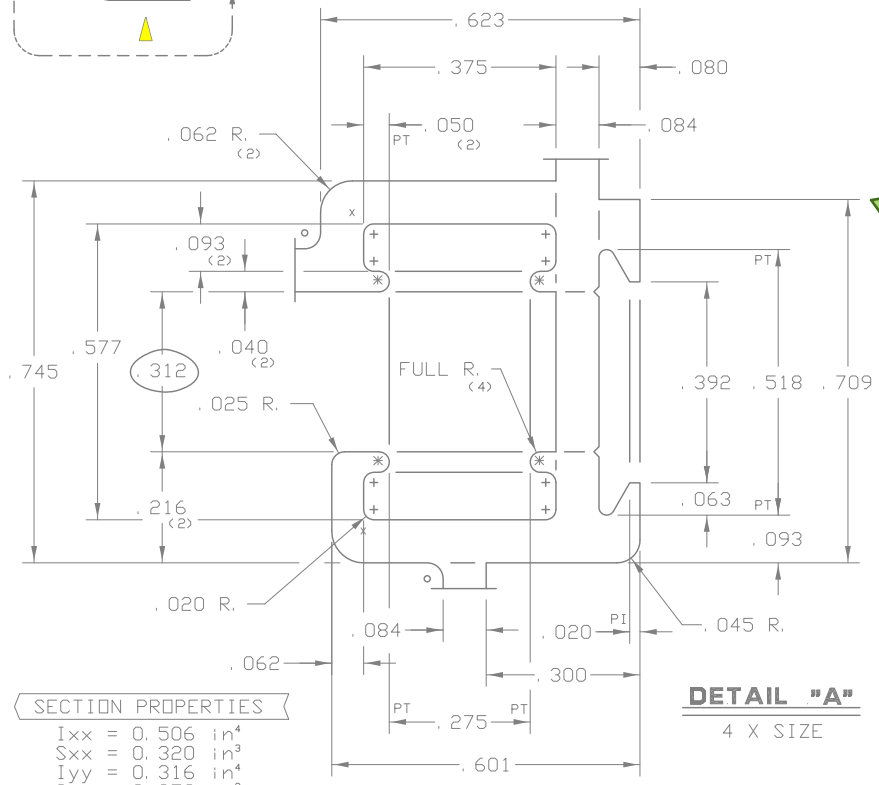
EXPOSED



ACTUAL SIZE

NOTES:

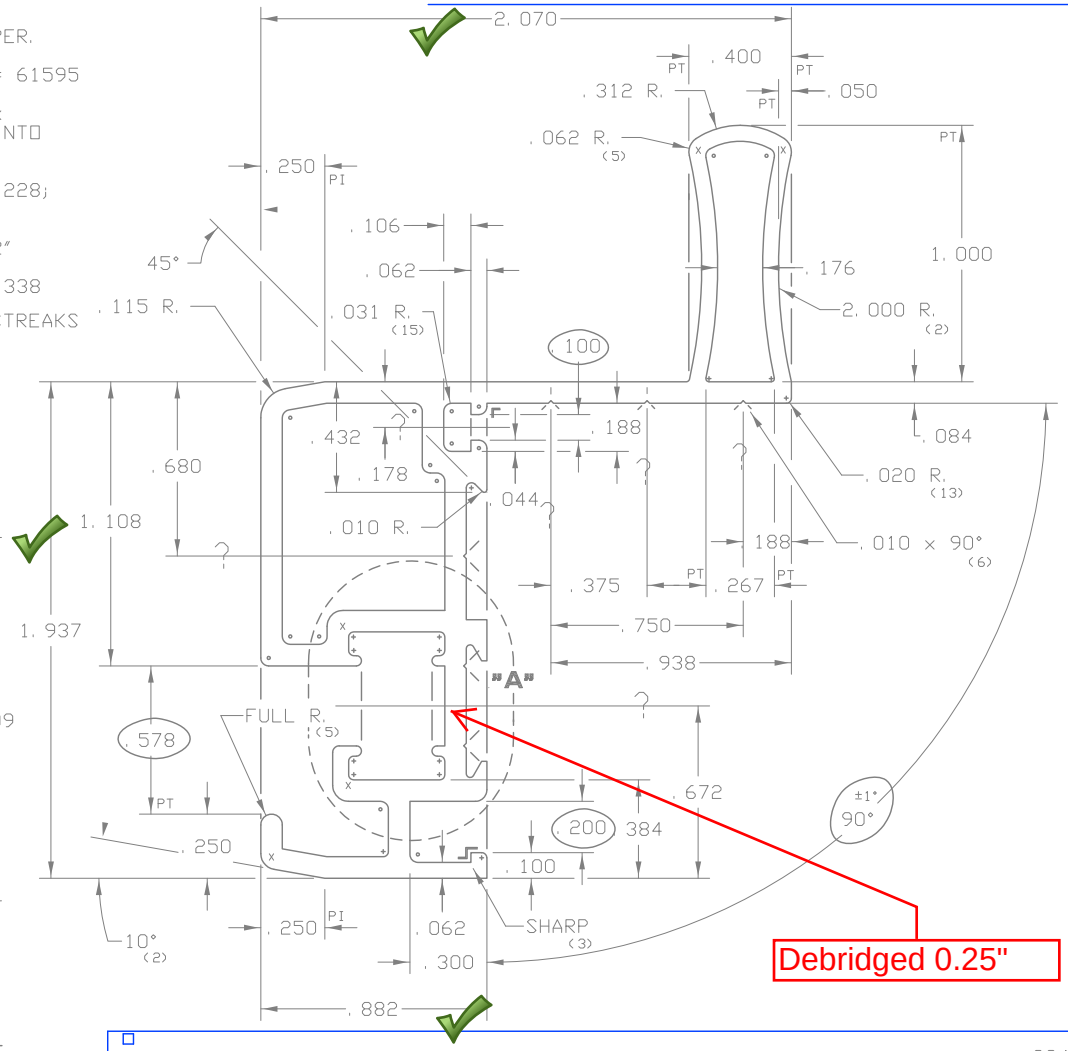
1. 6063-T6 ALLOY AND TEMPER.
2. MATES WITH SH865; DIE# 61595
3. DEBRIDGE WITH A .312 x .015 MAX PENETRATION INTO THERMAL AREA.
4. THERMAL DETAIL AREA: .228; (MODIFIED "DD")
5. PAINT PERIMETER: 9.732"
6. OUTSIDE PERIMETER: 14.338
7. ▶ INDICATES POSSIBLE STREAKS



SECTION PROPERTIES

Ixx = 0.506 in⁴
Sxx = 0.320 in³
Iyy = 0.316 in⁴
Sxx = 0.259 in³

DETAIL "A"
4 X SIZE

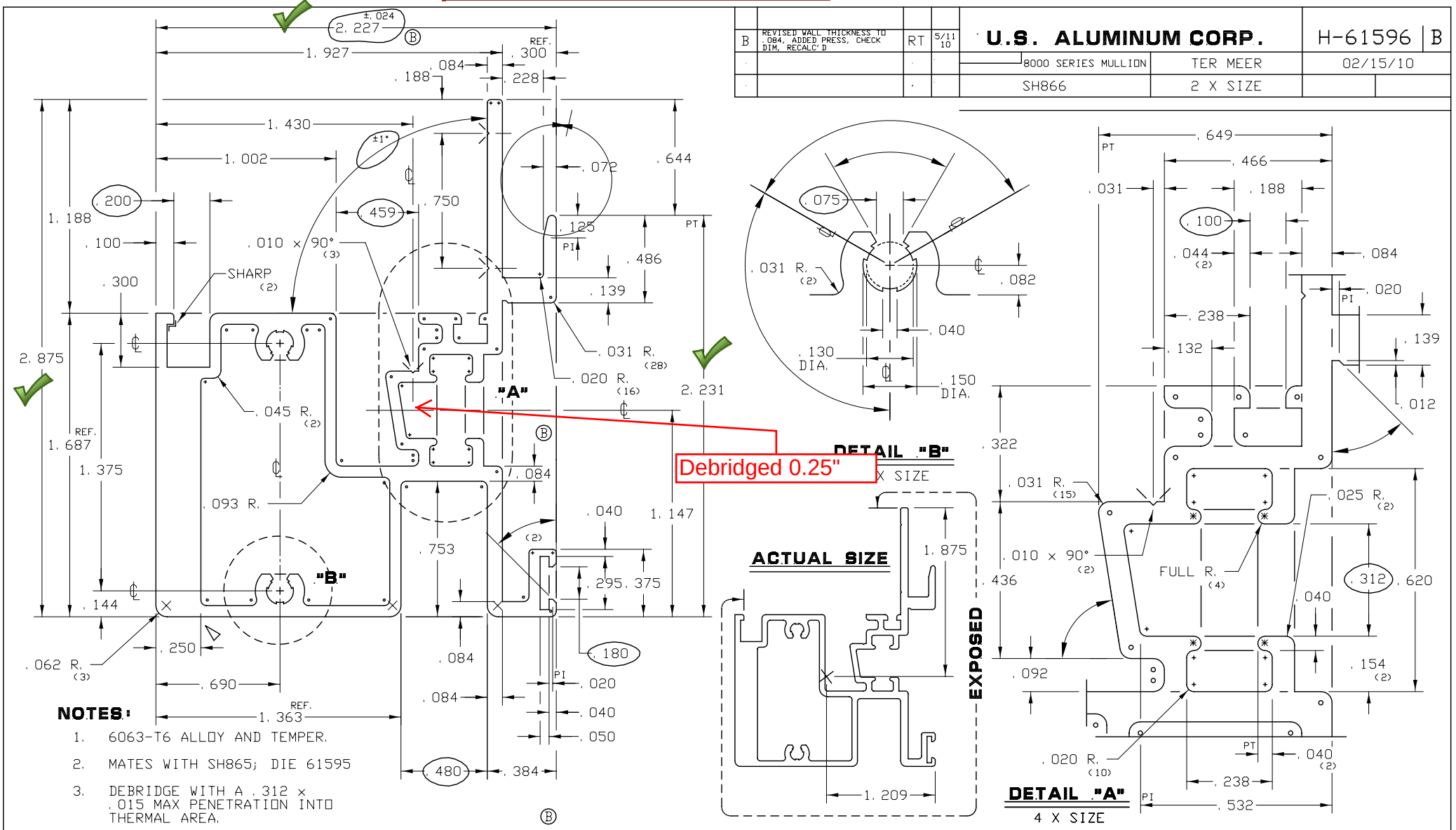


		.084
.780	C-1823	1
.936	3.482	PORTHOLE 10X5.5
19.701	HOLLOW III	61588
21	8" 68/PRESS 4	H-61632

Architectural Testing

Report #: E0619-116-46
Date: 12/18/2014
Verified by: Ryan P. Moser

B	REVISED WALL THICKNESS TO .084, ADDED PRESS, CHECK DIM, RECALC'D	RT	5/11 10	U.S. ALUMINUM CORP.	H-61596 | B
				8000 SERIES MULLION / TER MEER	02/15/10
				SH866 / 2 X SIZE	



NOTES:

1. 6063-T6 ALLOY AND TEMPER.
2. MATES WITH SH865; DIE 61595
3. DEBRIDGE WITH A .312 × .015 MAX PENETRATION INTO THERMAL AREA.
4. THERMAL DETAIL AREA: .208; (MODIFIED "DD")
5. PAINT PERIMETER: 6.418"
6. Ⓑ OUTSIDE PERIMETER: 18.969
7. ▷ INDICATES POSSIBLE STREAKS

Ⓑ

SECTION PROPERTIES
Ixx = 0.552 in⁴
Sxx = 0.294 in³
Iyy = 0.669 in⁴
Sxx = 0.553 in³

.062

1.148 Ⓑ	C-1787	1
1.378 Ⓑ	3.447	PORTHOLE 10X5.5
25.465 Ⓑ	HOLLOW II	42293
18 Ⓑ	8" 47/PRESS 4	H-61596 | B

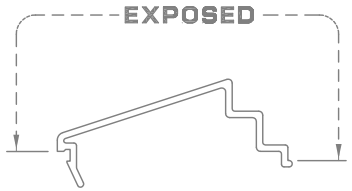
Architectural Testing

Report #: E0619-116-46
Date: 12/18/2014
Verified by: Ryan P. Moser

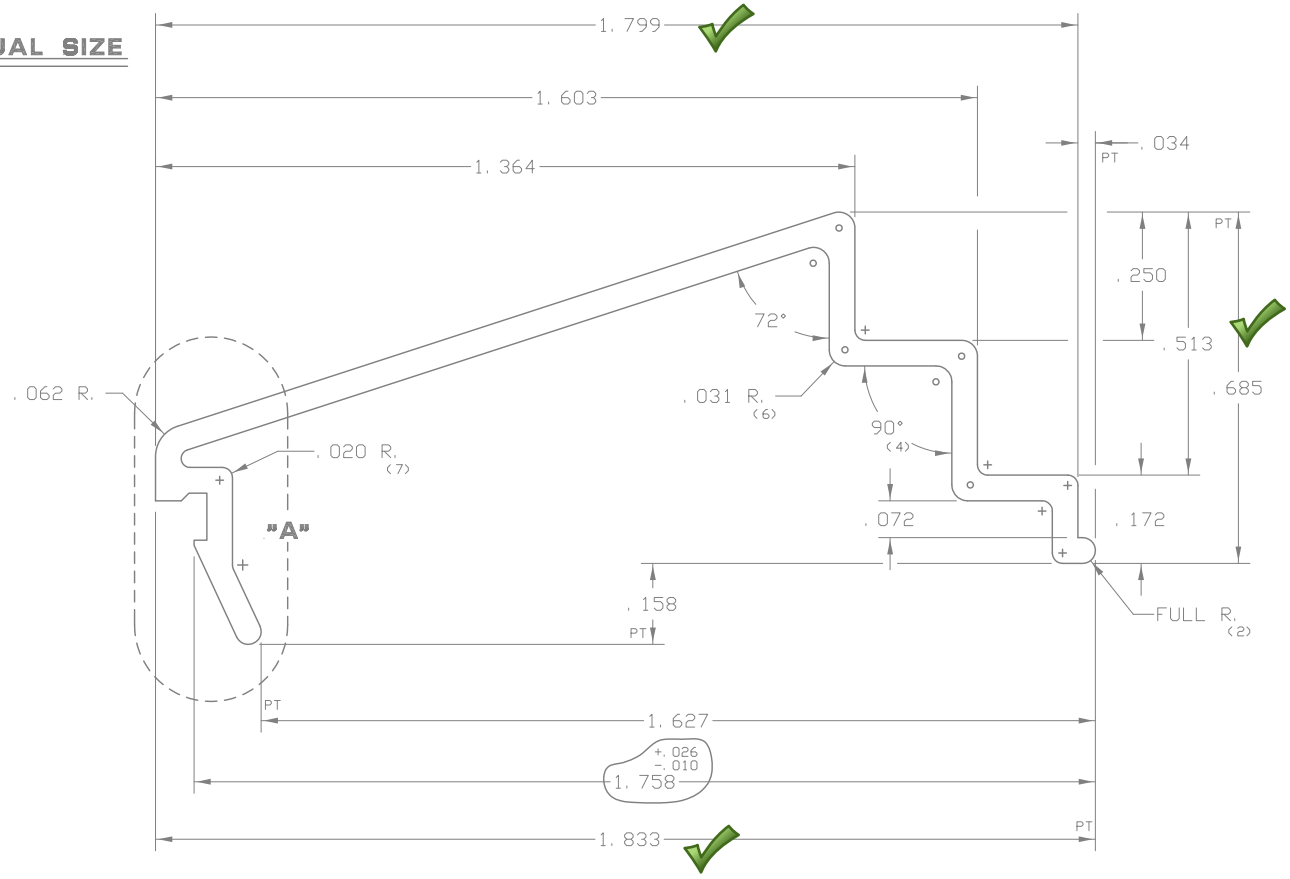
U.S. ALUMINUM CORP.		T-61634
SCREEN FRAME AT SILL	TER MEER	08/13/10
HS835	4 X SIZE	

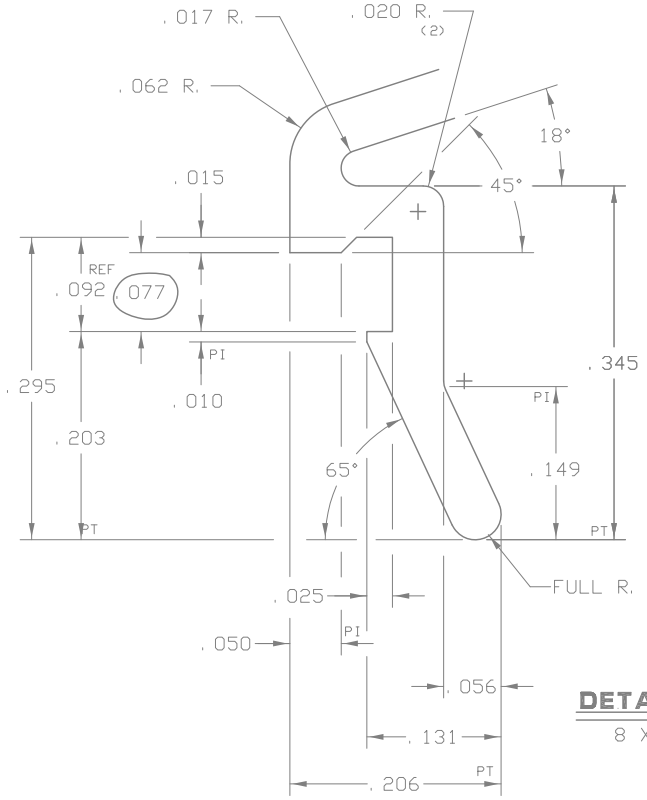
NOTES:

1. 6063-T5 ALLOY AND TEMPER.
2. SNAP FITS WITH HS804; DIE #61618
3. PAINT PERIMETER: 2.578"



ACTUAL SIZE





DETAIL "A"
8 X SIZE

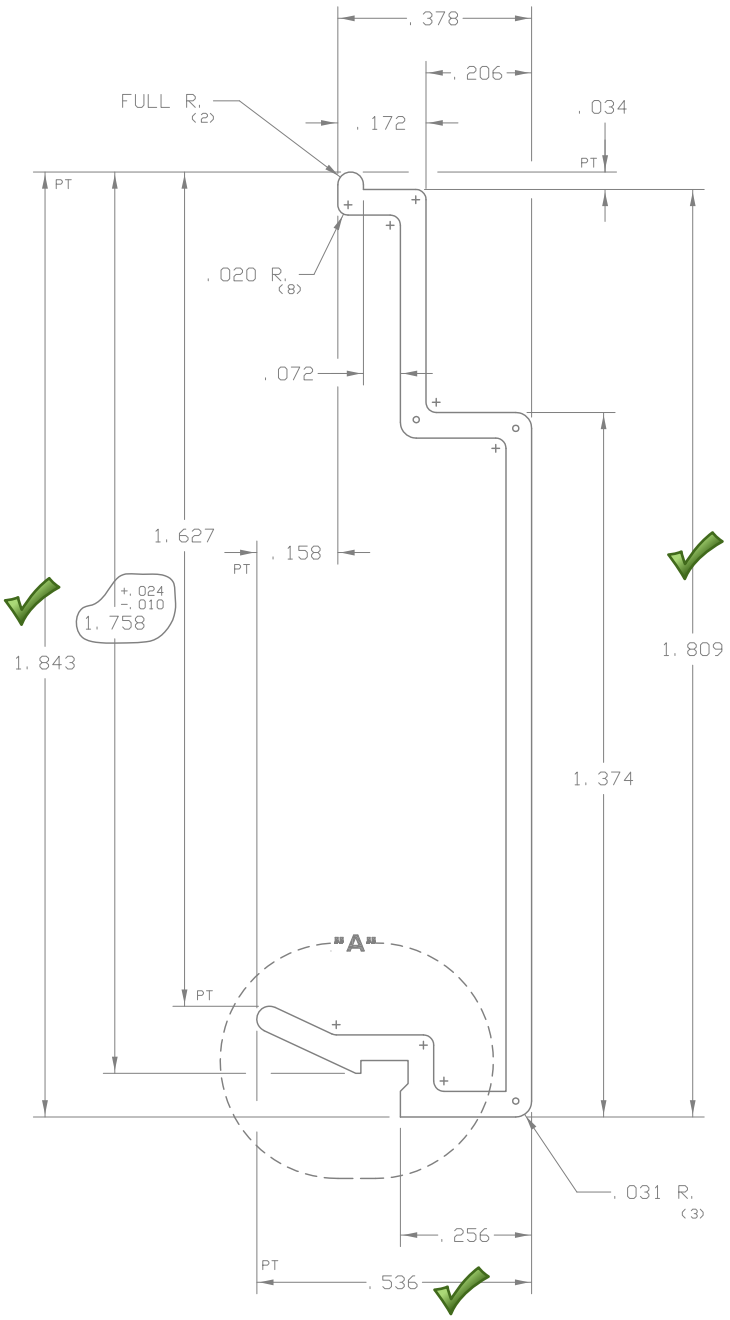
9X2 DIE 1/2 RECESS

.050		
.151	C-1855	4
.181	1.845	9 X 61634
5.964	SOLID	42772
33	7" 68/PRESS 3	T-61634

Architectural Testing

Report #: E0619-116-46
Date: 12/18/2014
Verified by: Ryan P. Moser

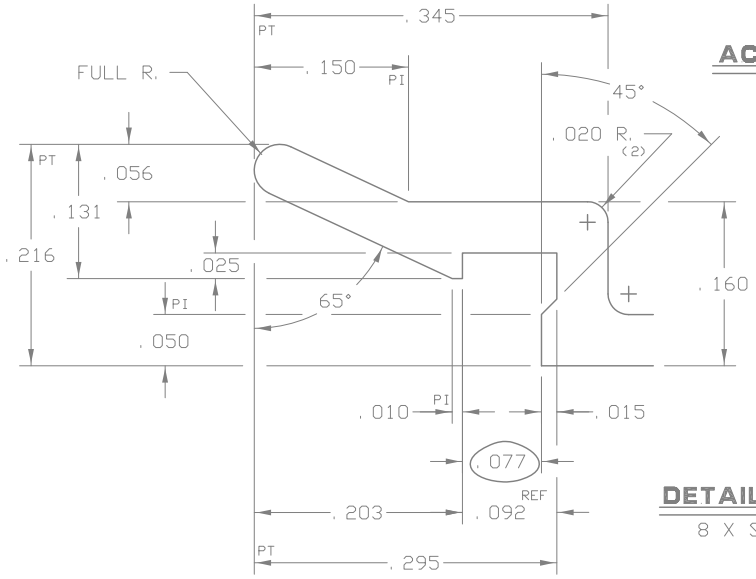
U.S. ALUMINUM CORP.			T-61635
SCREEN FRAME AT JAMB	TER MEER		08/13/10
HS836	4 X SIZE		



NOTES:

1. 6063-T5 ALLOY AND TEMPER.
2. SNAP FITS WITH HS805; DIE #61619
   HS864; DIE #61626
3. PAINT PERIMETER: 2.358"

ACTUAL SIZE



DETAIL "A"
8 X SIZE

9X2 DIE 1/2 RECESS

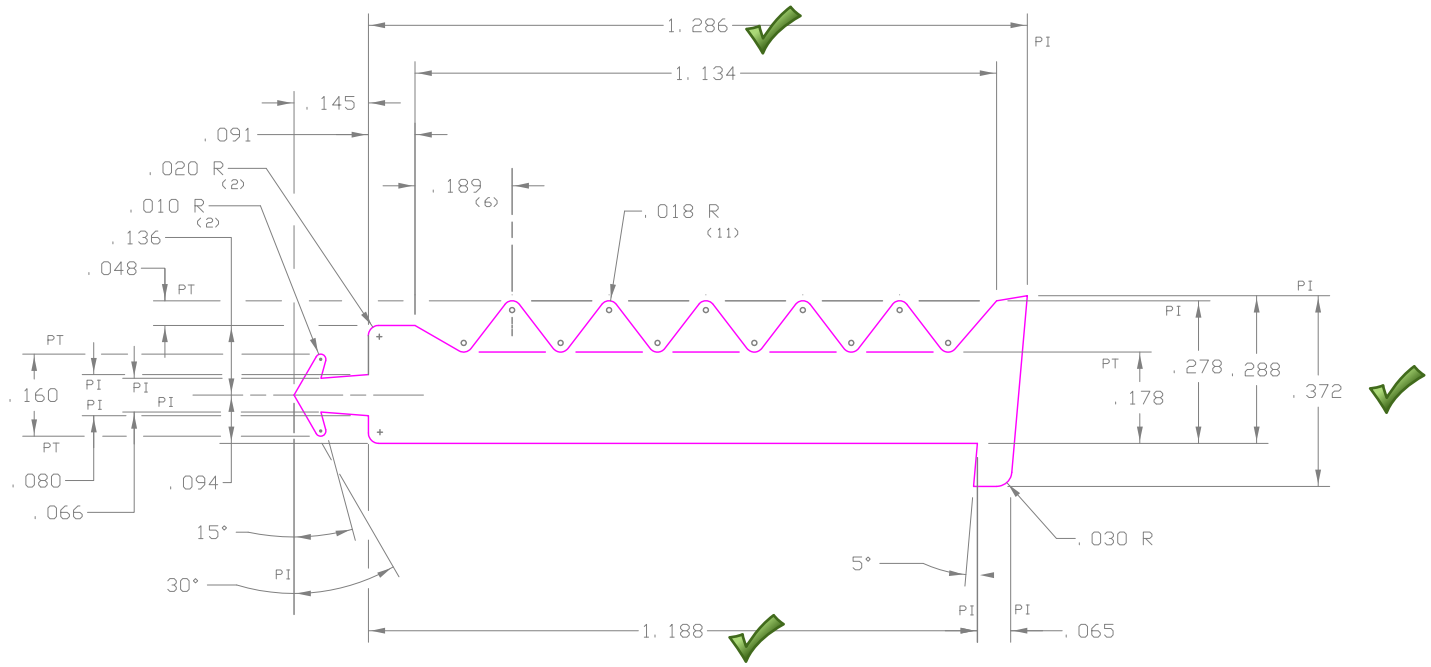
.050

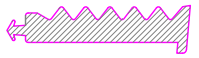
.140	C-1856	4
.168	1.874	9 X 45769
5.567	SOLID	42772
33	7" 73/PRESS 3	T-61635

Architectural Testing

Report #: E0619-116-46
Date: 12/18/2014
Verified by: Ryan P. Moser

8000SH-011





ACTUAL SIZE

NOTES:

1. AREA: .308 IN^2
2. MATERIAL: EPDM SPONGE
3. PART NO. NP881

UNITED STATES ALUMINUM CORP.

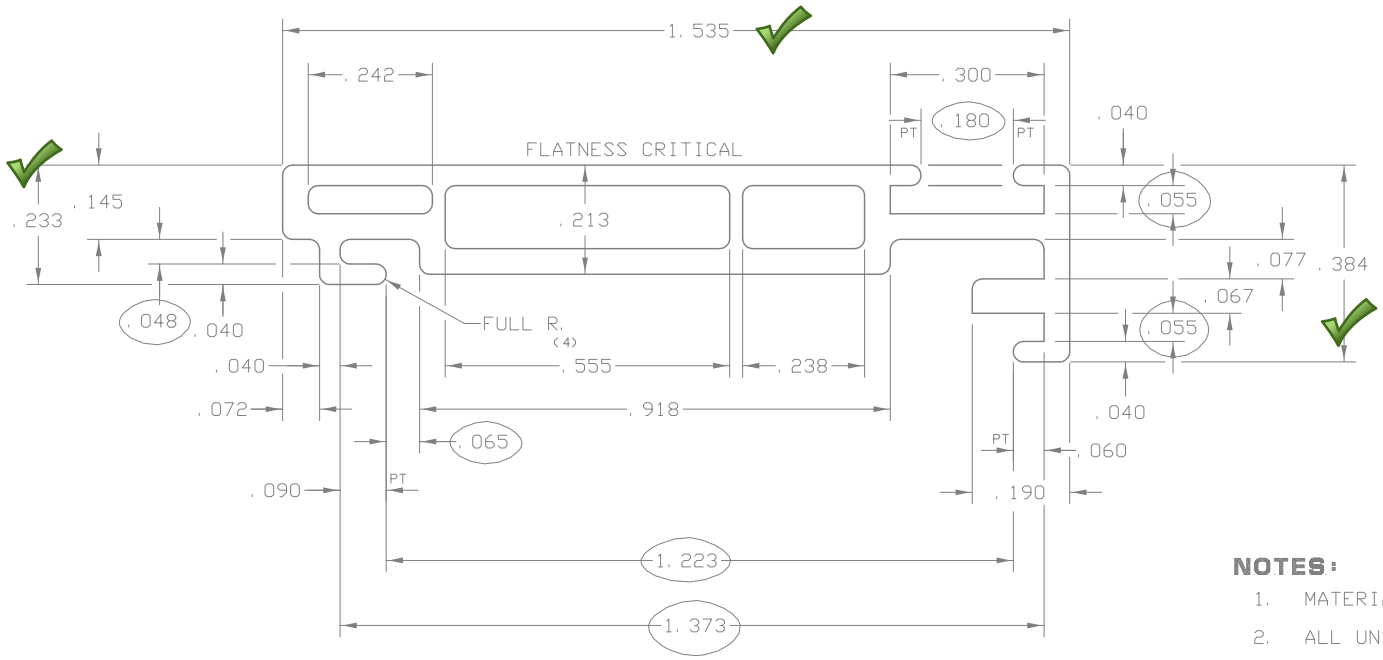
Willie C.	INTERIOR GLAZING GASKET (8000 SH WINDOW)	
02/05/10	PART# NP881	8000SH-011
4 X SIZE		

Architectural Testing

Report #: E0619-116-46
Date: 12/18/2014
Verified by: Ryan P. Moser

8000SH-038B

REF. DRAWING: IW1841



ACTUAL SIZE

RADIUS SCHEDULE

s - SHARP
a - .006 R.
b - .012 R.
c - .015 R.
d - .020 R.
e - .030 R.
f - .045 R.
g - .060 R.

RELEASE FOR PRODUCTION
DATE: MARCH 9, 2010
APPRV'D BY JOHN FREY

NOTES:

1. MATERIAL: RIGID PVC TO MEET AAMA 303-07
2. ALL UNSPECIFIED RADII = .020
3. TYPICAL EXTERIOR WALL THICKNESS: .050
   TYPICAL INTERIOR WALL THICKNESS: .025
4. AREA: .181
5. MINIMUM SHEEN ALLOWED 56.0 USING A GARDNER MICRO-GLOSS 60° GLOSS METER.
- (B) 6. TOLERANCE UNLESS OTHERWISE NOTED ±.012
- (B) 7. WALL THICKNESS TOLERANCE TO BE: ±.006

IWC TOLERANCES FOR PVC EXTRUDED SHAPES APPLY UNLESS SPECIFICALLY SHOWN OTHERWISE

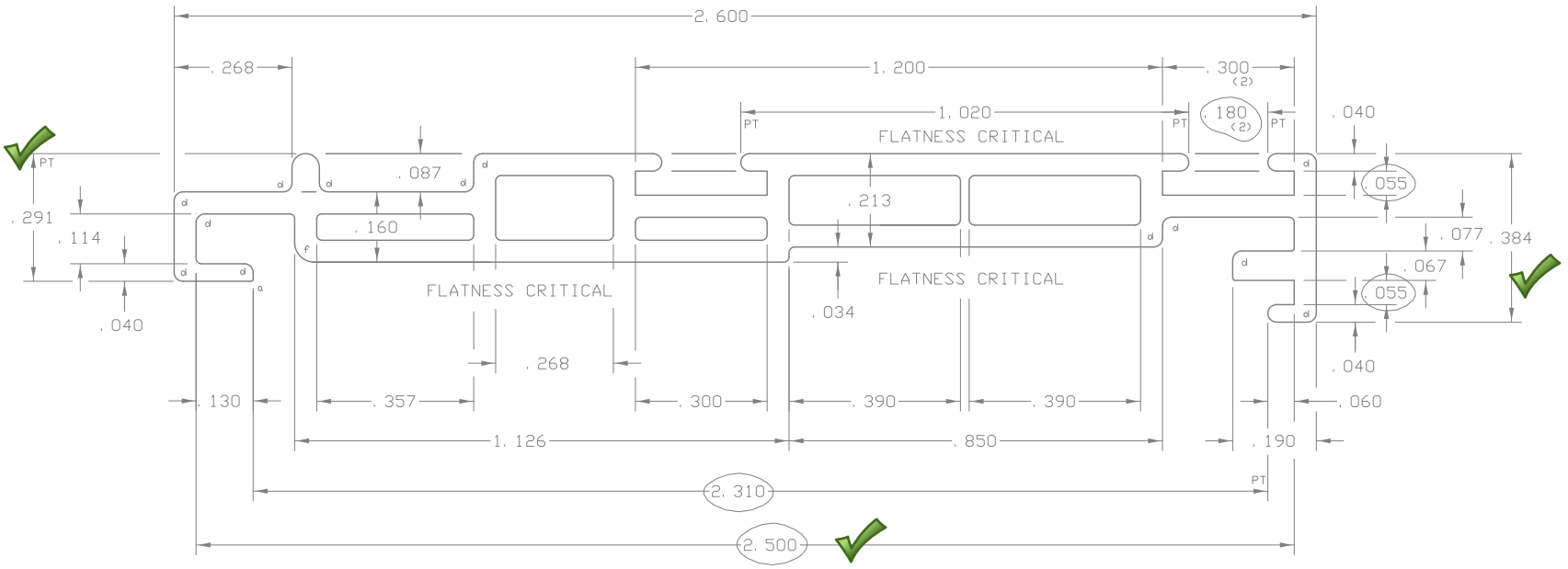
				INTERNATIONAL WINDOW CORP.	
				Willie C.	JAMB THERMO ISOLATOR
(B)	ADDED NOTES 6 & 7	03/10/10	RT	02/05/08	
				4 X SIZE	SERIES 8900 (WH809)

8000SH-038B

Architectural Testing

Report #: E0619-116-46
Date: 12/18/2014
Verified by: Ryan P. Moser

8200HS-051



RELEASE FOR PRODUCTION
DATE: SEPTEMBER 27, 2010
APPRV'D BY: JOHN FREY

NOTES:

1. MATERIAL: RIGID PVC TO MEET AAMA 303-07
2. ALL UNSPECIFIED RADII = . 012
3. TYPICAL EXTERIOR WALL THICKNESS: . 050
   TYPICAL INTERIOR WALL THICKNESS: . 020
4. AREA: . 317
5. MINIMUM SHEEN ALLOWED 56. 0 USING A GARDNER MICRO-GLOSS 60° GLOSS METER.
6. TOLERANCE UNLESS OTHERWISE NOTED ±. 012
7. WALL THICKNESS TOLERANCE TO BE: ±. 006

ACTUAL SIZE

RADIUS SCHEDULE

s - SHARP
a - . 006 R.
b - . 012 R.
c - . 015 R.
d - . 020 R.
e - . 030 R.
f - . 045 R.
g - . 060 R.

IWC TOLERANCES FOR PVC EXTRUDED SHAPES APPLY UNLESS SPECIFICALLY SHOWN OTHERWISE

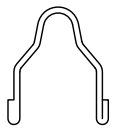
INTERNATIONAL WINDOW CORP.

TER MEER	HEAD ISOLATOR	
05/14/10	PART NO: WH838	8200HS-051
4 X SIZE	SERIES: 8200HS	

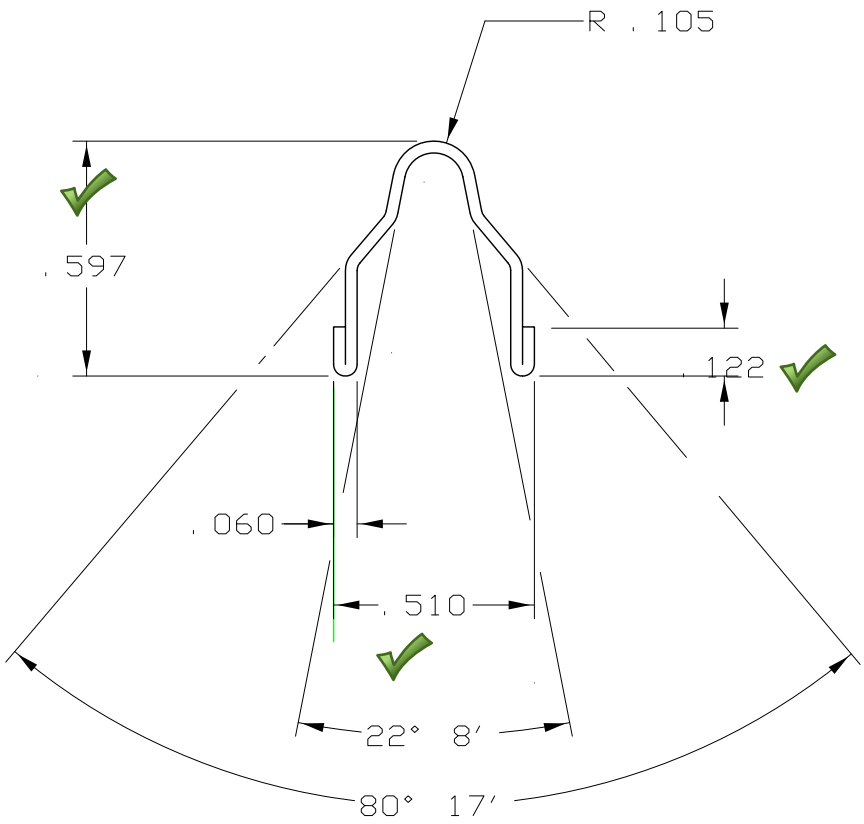
SYM	REVISION	DATE	BY

Architectural Testing

Report #: E0619-116-46
Date: 12/18/2014
Verified by: Ryan P. Moser



FULL SIZE



NOTES:
1. MATERIAL .032 STAINLESS STEEL
2. AS SUPPLIED BY:
   STEVE HAAG & ASSOC. OR EQUAL
3. VPN: SSTI-HD-SS-032-24

2100 E. 38TH STREET VERNON, CA 90058
PHONE: (323) 588-1281 FAX: (323) 232-2523

DIVISION UNITED STATES ALUMINUM

DRWN BY:	SS TRACK PART# WH22342.0024 8200 HORIZONTAL SLIDER	DWG NO.
DATE:		
SCALE: 4 X SIZE		

Architectural Testing

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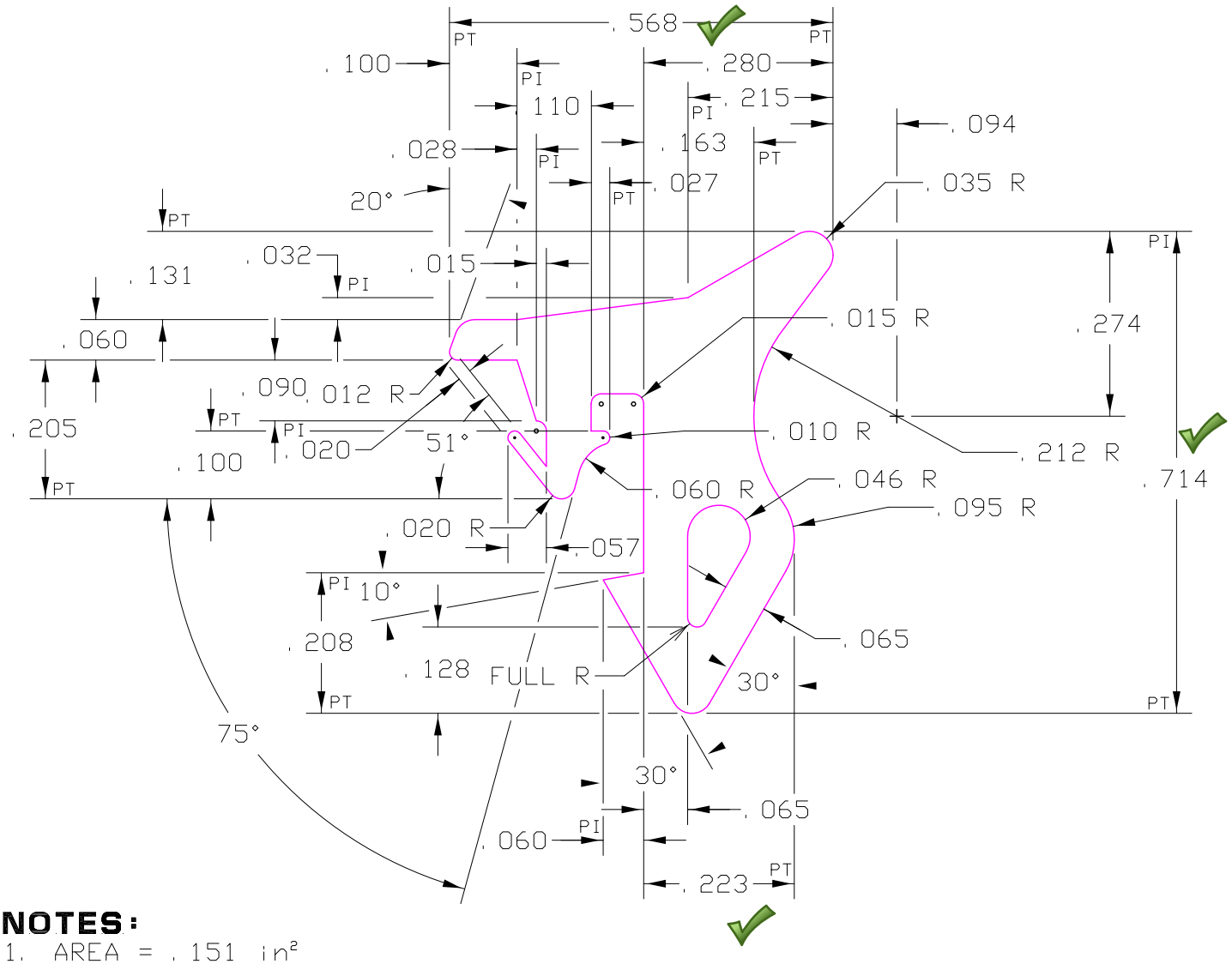
USA-2957

ACTUAL SIZE



NOTES:

1. AREA = .151 in²
2. MATERIAL: EPDM DENSE
3. DUROMETER: 70 ±5 SHORE
4. PART NO. NP825

U.S. ALUMINUM CORP.

PRESTON	EXTERIOR GLAZING GASKET FOR IG500/IG600 SYSTEM	
05/16/06		USA-2957
4 X SIZE	PART# : NP825	

Architectural Testing

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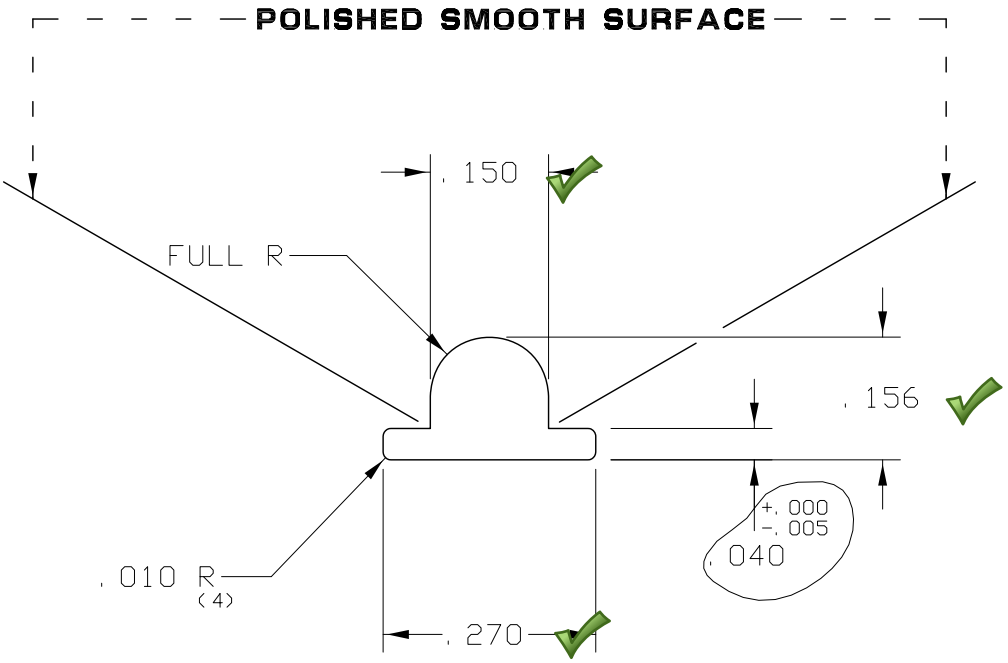
USA-3180

ACTUAL SIZE

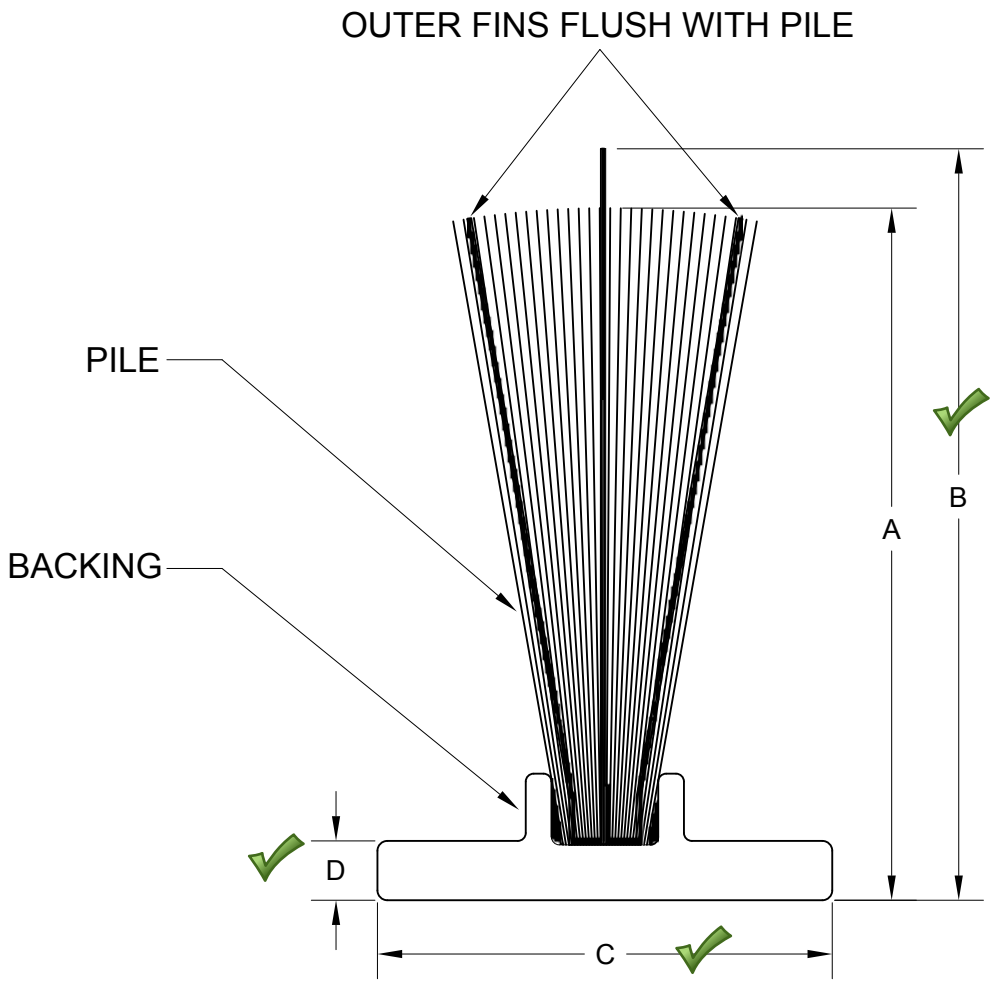


NOTES:

1. MATERIAL: POLYPROPYLENE
2. COLOR: BLACK
3. RYKO NO: R-11125

	INTERNATIONAL WINDOW CORP.	
BRIAN R.	VENT GUIDE STRIP	
09/06/12	PART NO: NP942	USA-3180
4 X SIZE		

G2 FLATBACK TRIPLE FIN



Ref	Description	Dimension	Tolerance
A	Pile Height	.250	+.010 -.005
B	Center Fin Height	.280	+/-.010
C	Backing Width	.270	+/-.005
D	Backing Thickness	.030	+/-.003

Architectural Testing

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REV	DATE	MODIFICATION
B	9/11/13	Added information for 2022M

TITLE: G2 FLATBACK TRIPLE FIN

DRAWN: GMS

CHECKED:

DATE: 4/17/14

SCALE: 10 : 1

DIMENSIONS ARE IN INCHES UNLESS INDICATED OTHERWISE

TOLERANCES - UNLESS INDICATED OTHERWISE

Fractions ±1/64" Angles ±0.5°

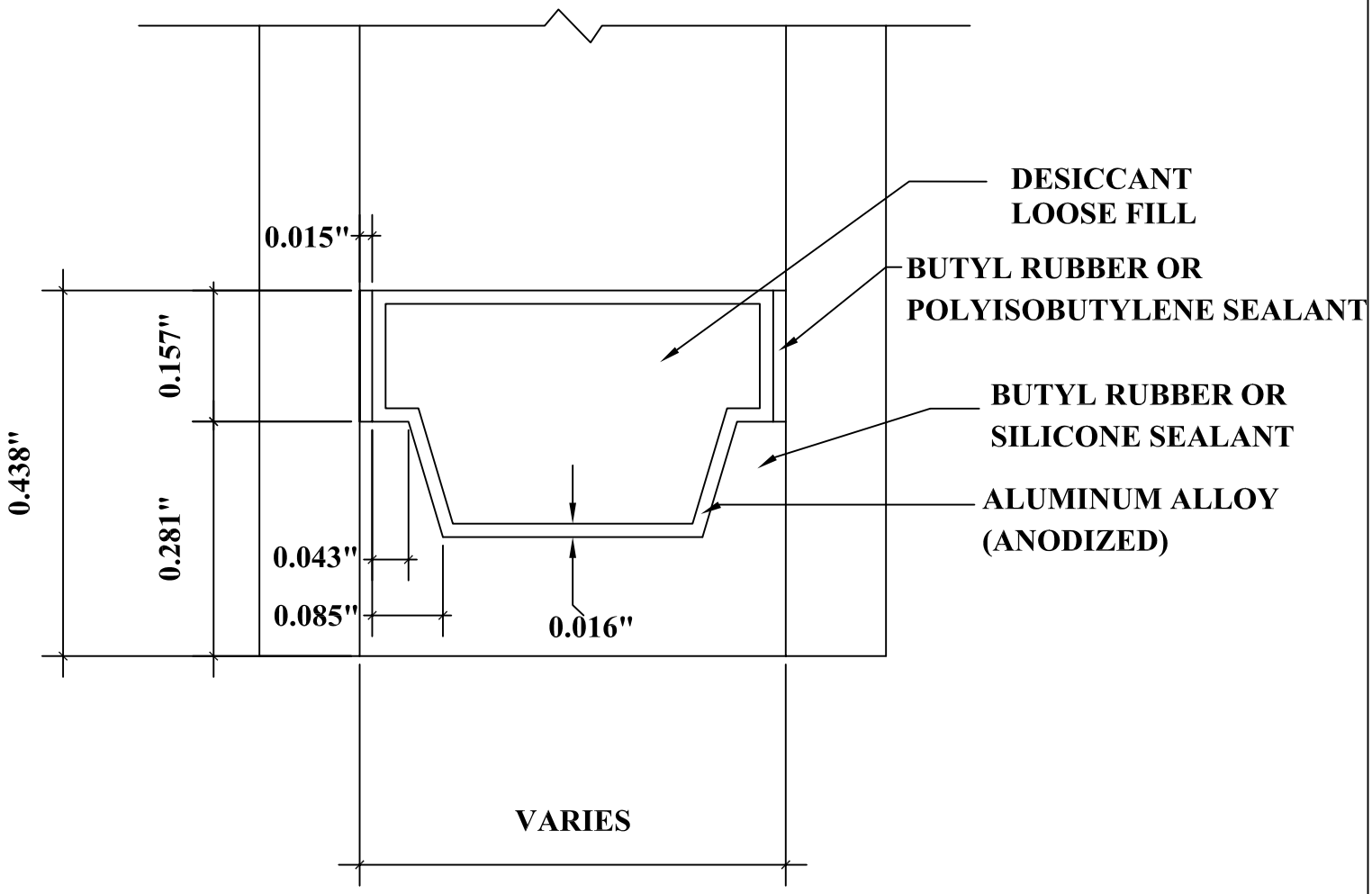
Decimals .X ±.020" .XX ±.010" .XXX ±.005"

AMESBURY GROUP INC.
TEXTILE DIVISION
159 WALKER RD.
STATESVILLE NC 28625

MATERIAL: POLYPROPYLENE

PART NO. 25027045BKGBT

REV. B



DETAIL FOR THERMAL MODELING OF
ALUMINUM SPACER (A1-D)