Architectural Testing

AAMA 1503-09 THERMAL PERFORMANCE TEST REPORT

Rendered to:

UNITED STATES ALUMINUM

SERIES/MODEL: 8000

TYPE: Vertical Slider (Single Hung)

Summary of Results	
Thermal Transmittance (U-Factor)	0.48
Condensation Resistance Factor - Frame (CRF_f)	53
Condensation Resistance Factor - Glass (CRF_g)	74

Unit Size	47-1/4" x 59" (1200 mm x 1499 mm)
Layer 1	DS PPG Solarban 70 (e=0.018*, #2)
Gap 1	0.44" Gap, Steel Intercept Spacer (CU-S), 90% Argon-Filled*
Layer 2	DS Clear
Gap 2	0.44" Gap, Steel Intercept Spacer (CU-S), 90% Argon-Filled*
Layer 3	DS Clear

Reference must be made to Report No. A0639.02-301-46, dated 05/19/10 for complete test specimen description and data.

2524 E. Jensen Ave
Fresno, CA 93706
phone: 559-233-8705
fax: 559-233-8360
www.archtest.com

Architectural Testing

AAMA 1503-09 THERMAL PERFORMANCE TEST REPORT

Rendered to:

UNITED STATES ALUMINUM
720 Cel-River Road
Rock Hill, South Carolina 29730

Report Number:	A0639.02-301-46
Test Date:	05/04/10
Report Date:	05/19/10
Test Record Retention Date:	05/04/14

Test Sample Identification:

Series/Model: 8000

Type: Vertical Slider (Single Hung)

Test Sample Submitted by: United States Aluminum - South Gate, California

Test Procedure: The condensation resistance factor (CRF) and thermal transmittance (U) were determined in accordance with AAMA 1503-09, *Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections*

1. Average warm side ambient temperature 69.81 F
2. Average cold side ambient temperature -0.70 F
3. 15 mph dynamic wind applied to test specimen exterior.
4. 0.0" $\pm$0.04" static pressure drop across specimen.

Test Results Summary:

1. Condensation resistance factor - Frame (CRF_f) 53
   Condensation resistance factor - Glass (CRF_g) 74
2. Thermal transmittance due to conduction (U) 0.48
   (U-factors expressed in Btu/hr·ft^2·F)

2524 E. Jensen Ave
Fresno, CA 93706
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Test Sample Description:

CONSTRUCTION	Frame	Interior Sash
Size (in.) Non-Standard	47-1/4 x 59	46-1/4 x 30
Daylight Opening (in.)	43 x 24-3/8	40-1/8 x 24-3/8
CORNERS	Coped	Coped
Fasteners	Screws	Screws
Sealant	Yes	Yes
MATERIAL	AT (0.25") Skip/Debridge 2"/15"	AT (0.25") Skip/Debridge 2"/15"
Color Exterior	Gray	Gray
Finish Exterior	Mill finish	Mill finish
Color Interior	Gray	Gray
Finish Interior	Mill finish	Mill finish
GLAZING METHOD	Exterior	Exterior

Glazing Information:

Layer 1	DS PPG Solarban 70 (e=0.018*, #2)
Gap 1	0.44" Gap, Steel Intercept Spacer (CU-S), 90% Argon-Filled*
Layer 2	DS Clear
Gap 2	0.44" Gap, Steel Intercept Spacer (CU-S), 90% Argon-Filled*
Layer 3	DS Clear
Gas Fill Method	Single-Probe Method*
Desiccant	Yes

**Stated per Client/Manufacturer*
NA Non-Applicable
See Description Table Abbreviations

Test Sample Description: (Continued)

COMPONENTS			
	Type	**Quantity**	**Location**
WEATHERSTRIP			
	Polypile with center & side fins	2 rows	Sill.
	Polypile with center & side fins	1 row	Jambs. Interior meeting rail. Exterior meeting rail.
HARDWARE			
	Block & tackle balance system	1	Jambs.
	Latch lock	2	Bottom rail of the interior sash.
DRAINAGE			
	2" x 3/16" weephole	2	Sill face.

Test Duration:

1. The environmental systems were started at 16:55 hours, 05/03/10.

2. The thermal performance test results were derived from 03:56 hours, 05/04/10 to 07:56 hours, 05/04/10.

Condensation Resistance Factor (CRF):

The following information, condensed from the test data, was used to determine the condensation resistance factor:

T_h	=	Warm side ambient air temperature	69.81 F
T_c	=	Cold side ambient air temperature	-0.70 F
FT_p	=	Average of pre-specified frame temperatures (14)	37.43 F
FT_r	=	Average of roving thermocouples (4)	45.34 F
W	=	$[(FT_p - FT_r) / (FT_p - (T_c + 10))] \times 0.40$	-0.112
FT	=	$FT_p(1-W) + W (FT_r)$ = Frame Temperature	36.54 F
GT	=	Glass Temperature	51.45 F
CRF_g	=	Condensation resistance factor – Glass	74
		$CRF_g = (GT - T_c) / (T_h - T_c) \times 100$	
CRF_f	=	Condensation resistance factor – Frame	53
		$CRF_f = (FT - T_c) / (T_h - T_c) \times 100$	

The CRF number was determined to be 53 (on the size as reported). When reviewing this test data, it should be noted that the frame temperature (FT) was colder than the glass temperature (GT) therefore controlling the CRF number. Refer to the 'CRF Report' page and the 'Thermocouple Location Diagram' page of this report.

Thermal Transmittance (U_c):

T_h	=	Average warm side ambient temperature	69.81	F
T_c	=	Average cold side ambient temperature	-0.70	F
P	=	Static pressure difference across test specimen	0.00	psf
		15 mph dynamic perpendicular wind at exterior		
Nominal sample area			19.36	ft^2
Total measured input to calorimeter			701.94	Btu/hr
Calorimeter correction			50.48	Btu/hr
Net specimen heat loss			651.46	Btu/hr
U	=	Thermal Transmittance	0.48	$Btu/hr \cdot ft^2 \cdot F$

Glazing Deflection (in.):

	Frame Gap 1/Gap 2	**Interior Sash Gap 1/Gap 2**
Edge Gap Width	0.44 / 0.44	0.44 / 0.44
Estimated center gap width upon receipt of specimen in laboratory (after stabilization)	0.44 / 0.44	0.44 / 0.44
Center gap width at laboratory ambient conditions on day of testing	0.44 / 0.44	0.44 / 0.44
Center gap width at test conditions	0.44 / 0.44	0.44 / 0.44

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.

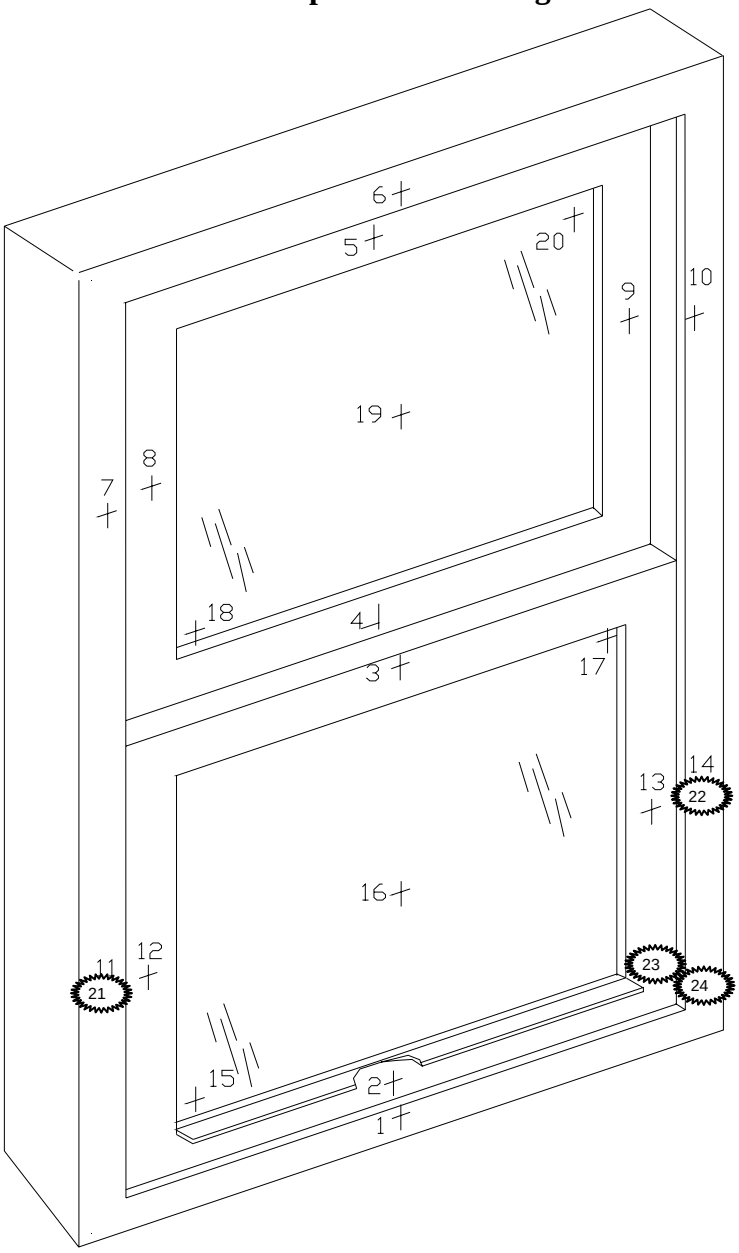
A calibration of the Architectural Testing Inc. 'thermal test chamber' (ICN 004287) in Fresno, California was conducted in April 2010 in accordance with Architectural Testing Inc. calibration procedure.

Prior to testing the specimen was sealed with silicone on the interior side and checked for air infiltration per Section 9.3.4.

CRF Report

Time:	05:56	06:26	06:56	07:26	07:56	AVERAGE
Pre-specified Thermocouples - Frame						
1	31.66	31.66	31.69	31.65	31.63	31.66
2	31.59	31.59	31.60	31.60	31.62	31.60
3	48.34	48.32	48.34	48.35	48.36	48.34
4	48.14	48.19	48.17	48.22	48.21	48.18
5	44.38	44.35	44.39	44.30	44.35	44.35
6	39.38	39.31	39.39	39.34	39.29	39.34
7	40.01	40.06	40.07	40.02	40.04	40.04
8	40.50	40.46	40.52	40.47	40.49	40.49
9	37.41	39.72	35.72	38.00	40.06	38.18
10	40.13	40.16	40.12	40.12	40.14	40.13
11	26.39	26.35	26.38	26.34	26.36	26.36
12	29.76	29.75	29.76	29.75	29.76	29.76
13	36.91	36.90	36.91	36.90	36.92	36.91
14	28.65	28.70	28.71	28.68	28.65	28.68
FT_P	37.38	37.54	37.27	37.41	37.56	37.43
Pre-specified Thermocouples - Glass						
15	43.52	43.54	43.50	43.53	43.51	43.52
16	58.44	58.43	58.44	58.46	58.41	58.44
17	54.98	55.03	55.09	55.05	55.01	55.03
18	42.24	42.26	42.25	42.25	42.26	42.25
19	59.25	59.22	59.25	59.24	59.20	59.23
20	50.20	50.22	50.17	50.25	50.20	50.21
GT	51.44	51.45	51.45	51.46	51.43	51.45
Cold Point (Roving) Thermocouples						
21	40.50	40.46	40.52	40.47	40.49	40.49
22	44.38	44.35	44.39	44.30	44.35	44.35
23	48.14	48.19	48.17	48.22	48.21	48.18
24	48.34	48.32	48.34	48.35	48.36	48.34
FT_R	45.34	45.33	45.35	45.33	45.35	45.34
W	-0.11	-0.11	-0.12	-0.11	-0.11	-0.11
FT	36.47	36.68	36.33	36.52	36.70	36.54
Warm Side - Room Ambient Air Temperature						
	69.79	69.81	69.84	69.81	69.80	69.81
Cold Side - Room Ambient Air Temperature						
	-0.70	-0.70	-0.70	-0.70	-0.70	-0.70
CRF_f	53	53	53	53	53	53
CRF_g	74	74	74	74	74	74

Thermocouple Location Diagram



Cold Point Locations

21. 40.49
22. 44.35
23. 48.18
24. 48.34

Detailed drawings, data sheets, representative samples of test specimens, a copy of this report, or other pertinent project documentation will be retained by Architectural Testing, Inc. for a period of four years from the original test date. At the end of this retention period such materials shall be discarded without notice and the service life of this report by Architectural Testing will expire. Results obtained are tested values and were secured by using the designated test methods. 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(s) tested. This report may not be reproduced, except in full, without the written approval of Architectural Testing, Inc.

For ARCHITECTURAL TESTING, INC.

Digitally Signed by: William Smeds

Simon Smeds
Technician

Digitally Signed by:Kenny C. White

Kenny C. White
Laboratory Manager
Individual-In-Responsible-Charge

WSS:he
A0639.02-301-46

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

Appendix-A: Description Table Abbreviations (1)

Appendix-B: Drawings (23)

Revision Log

Rev. #	Date	Page(s)	Revision(s)
0	05/19/10	All	Original Report Issue. Work requested by Mr. John Frey of United States Aluminum

Appendix A: Description Table Abbreviations

CODE	Frame / Sash Types
AI	Aluminum w/ Vinyl Inserts (Caps)
AL	Aluminum
AP	Aluminum w/ Thermal Breaks - Partial
AS	Aluminum w/ Steel Reinforcement
AT	Aluminum w/ Thermal Breaks - All Members (≥ 0.21")
AU	Aluminum Thermally Improved - All Members (0.062" - 0.209")
AV	Aluminum / Vinyl Composite
AW	Aluminum-clad Wood
FG	Fiberglass
PA	ABS Plastic w/ All Members Reinforced
PC	ABS Plastic-clad Aluminum
PF	ABS Plastic w/ Foam-filled Insulation
PH	ABS Plastic w/ Horizontal Members Reinforced
PI	ABS Plastic w/ Reinforcement - Interlock
PL	ABS Plastic
PP	ABS Plastic w/ Reinforcement - Partial
PV	ABS Plastic w/ Vertical Members Reinforced
PW	ABS Plastic-clad Wood
ST	Steel
VA	Vinyl w/ All Members Reinforced
VC	Vinyl-clad Aluminum
VF	Vinyl w/ Foam-filled Insulation
VH	Vinyl w/ Horizontal Members Reinforced
VI	Vinyl w/ Reinforcement - Interlock
VP	Vinyl w/ Reinforcement - Partial
VV	Vinyl w/ Vertical Members Reinforced
VW	Vinyl-clad Wood
VY	Vinyl
WA	Aluminum / Wood composite
WD	Wood
WV	Vinyl / Wood composite
WF	Fiberglass/Wood Combination
WC	Composite/Wood Composite (Shaped vinyl/wood composite members)
CW	Copper Clad Wood
CO	Vinyl/Wood Composite Material

CODE	Spacer Types (See sealant)
A1	Aluminum
A2	Aluminum (Thermally-broken)
A3	Aluminum-reinforced Polymer
A4	Aluminum / Wood
A5	Aluminum-reinforced Butyl (Swiggle)
A6	Aluminum / Foam / Aluminum
A7	Aluminum U-shaped
A8	Aluminum-Butyl (Corrugated) (Duraseal)
ER	EPDM Reinforced Butyl
FG	Fiberglass
GL	Glass
OF	Organic Foam
P1	Duralite
PU	Polyurethane Foam
SU	Stainless Steel, U-shaped
CU	Coated Steel, U-shaped (Intercept)
S2	Steel (Thermally-broken)
S3	Steel / Foam / Steel
S5	Steel-reinforced Butyl
S6	Steel U-channel w/ Thermal Cap
SS	Stainless Steel
CS	Coated Steel
TP	Thermo-plastic
WD	Wood
ZE	Elastomeric Silicone Foam
ZF	Silicone Foam
ZS	Silicone / Steel
N	Not Applicable
TS	Thermo-plastic w/ stainless steel substrate

CODE	Tint Codes
AZ	Azurlite
BL	Blue
BZ	Bronze
CL	Clear
EV	Evergreen
GD	Gold
GR	Green
GY	Gray
LE	Low 'e' Coating
OT	Other (use comment field)
RC	Solar or Reflective Coating
RG	Roller Shades between glazing
RS	Silver (reflective coating)
SF	Suspended Polyester Film
SR	Silver
BG	Blinds between the Glazing
DV	Dynamic Glazing-Variable
DY	Dynamic Glazing-NonVariable

CODE	Gap Fill Codes
AIR	Air
AR2	Argon/Krypton Mixture
AR3	Argon / Krypton / Air
ARG	Argon/Air
CO2	Carbon Dioxide
KRY	Krypton/Air
SF6	Sulfur Hexaflouride
XE2	Xenon/Krypton/Air
XE3	Xenon/Argon/Air
XEN	Xenon/Air
N	Not Applicable

DOOR DETAILS	
N	Not Applicable
CODE	Door Type
EM	Embossed
FL	Flush
LF	Full Lite
LH	1/2 - Lite
LQ	1/4 - Lite
LT	3/4 - Lite
RP	Raised Panel
CODE	Skin
AL	Aluminum
FG	Fiberglass
GS	Galvanized Steel
ST	Steel
WD	Wood
VY	Vinyl
CODE	Panel
FG	Fiberglass
PL	Plastic
WP	Wood - Plywood
WS	Wood - Solid
CODE	Sub-Structure
GS	Galvanized Steel
ST	Steel
WD	Wood
VY	Vinyl
CODE	Core Fill
CH	Cellular - Honeycomb
EP	Expanded Polystyrene
PI	Polyisocyanurate
PU	Polyurethane
WP	Wood - Plywood
WS	Wood - Solid
XP	Extruded Polystyrene

CODE	Spacer Sealant
D	Dual Seal Spacer System
S	Single Seal Spacer System

CODE	Grid Description
N	No Muntins
G	Grids between glass
S	Simulated Divided Lites
T	True Muntins

CODE	Grid Size Codes
	Blank for no grids
0.75	Grids < 1"
1.5	Grids >= 1"

CODE	Thermal Breaks
F	Foam
U	Urethane
V	Vinyl
FB	Fiberglass
O	Other
AB	ABS
NE	Neoprene
AI	Air
N	Not Applicable
P	Polyamide

Appendix B: 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: United States Aluminum Date of sample manufacture: 05-13.10

Plant Address where manufactured: IWC 5625 EAST FIRESTONE Blvd

City: South Gate State: CA Zip Code: 90280

Name of IA: ALI Phone: 214.565.0593 Fax:

2. Product Information (complete ALL fields):

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

Series/Model: 8000SH Single hung Vertical slider

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

a. x 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, Don Willard , as the designated agent for IAC / USAC 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.

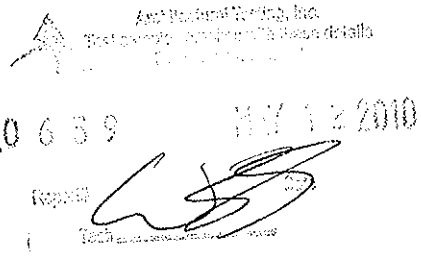
Signature: Date: 05.18.10

FOR LABORATORY USE ONLY

1. Laboratory Architectural Testing, Inc
2. Date Sample Received: 4/29/10 File number ID: A0639.01-301-46
3. Date Sample Tested: 5/4/10 By: William Smeds
4. Modifications made: NONE

5. Reason for non-testing of sample unit: N/A

[*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.]



A0659 MAY 12 2010

PRELIMINARY DRAWING
DATE: APRIL 08, 2010

- ADD SP11
- ADD FA5
- ADD LB5

BILL OF MATERIALS FOR 8000 SERIES SINGLE HUNG WINDOW

ITEM #		EXTRUSION #	PART NO	DESCRIPTION	COMMENTS	VENDOR	VENDOR PART NUMBER	QTY.
F1	FRAME	61592	SH862	4-1/2" FRAME HEAD	COLOR TO MATCH P.O.	INTEX	61592	1
F2		61593	SH863	4-1/2" FRAME SILL	COLOR TO MATCH P.O.	INTEX	61593	1
F3		61594	SH864	4-1/2" FRAME JAMB	COLOR TO MATCH P.O.	INTEX	61594	2
F4		61596	SH866	MULLION	COLOR TO MATCH P.O.	INTEX	61596	1
F5		61595	SH865	GLAZING BEAD (BLAST)	COLOR TO MATCH P.O.	INTEX	61595	4
F6			NP881	INTERIOR GLAZING GASKET	BLACK	TREMCO	TX18058E	4
F7			NP825	EXTERIOR GLAZING GASKET	BLACK	TREMCO	TR-14677E	4
F8			WH808	HEAD PVC ISOLATOR	GRAY H-81414 41 "C" (SEE NOTE# 3)	TEK PARTS/BANDLOCK		1
F9			WH811	SILL PVC ISOLATOR	GRAY H-81414 41 "C" (SEE NOTE# 3)	TEK PARTS/BANDLOCK		1
F10			WH809	JAMB PVC ISOLATOR	GRAY H-81414 41 "C" (SEE NOTE# 3)	TEK PARTS/BANDLOCK		2
S1	SASH	61588	SH854	INTERLOCK	COLOR MATCH TO P.O.	INTEX	61588	1
S2		61587	SH852	BOTTOM RAIL	COLOR MATCH TO P.O.	INTEX	61587	1
S3		61589	SH855	STILE	COLOR MATCH TO P.O.	INTEX	61589	2
S4		61595	SH865	GLAZING BEAD (BLAST)	COLOR MATCH TO P.O.	INTEX	61595	4
S5			NP881	INTERIOR GLAZING GASKET	BLACK	TREMCO	TX18058E	4
S6			NP825	EXTERIOR GLAZING GASKET	BLACK	TREMCO		4
S7								
S8								
S9								
SC1	SCREEN	H-8044	CC676	EXTRUDED SCREEN FRAME	COLOR MATCH TO P.O.	RITE SCREEN	H-8044	4
SC2			WH59100	SCREEN SPLINE	BLACK	RITE SCREEN		4
SC3			WH43616	18 x 16 FIBERGLASS SCREEN MESH	DARK CHARCOAL OR BLACK	RITE SCREEN		1
SC4			WH451	SCREEN TAB		RITE SCREEN		2
SC5			WH452	SCREEN TENSION SPRING		RITE SCREEN		2
SC6			LU802	SCREEN LABEL		RITE SCREEN		1
SC7			WH581	SCREEN CORNER ANGLE		RITE SCREEN		4

NOTE:

1. ALL PARTS MUST BE U.S. MADE.
2. ALL NYLON MOLDED PARTS TO MATCH WITH CLEAR ANODIZING TO BE GR21 (PRESSOUT CHIP IS C58K758N) FROM:
   COLOR SCIENCE
   1230 E GLENWOOD PLACE
   SANTA ANA, CA 92707-3000
   714/434-1033
3. COLOR: L = +71.60
   a = -0.50
   b = -0.66

SYM	REVISION	DATE	BY

International Aluminum Corporation
DIVISION: UNITED STATES ALUMINUM CORP.

DRAWN BY: Willie C.
DATE: 03/01/10

BILL OF MATERIALS FOR 8000 SERIES S/H (SERIES 7300)

DWG NO. 8000-001 1 of 4

BILL OF MATERIALS FOR 8000 SERIES SINGLE HUNG WINDOW

PRELIMINARY DRAWING
DATE: APRIL 09, 2010

ITEM #		EXTRUSION #	PART NO	DESCRIPTION	COMMENTS	VENDOR	VENDOR PART NUMBER	QTY.
SP1	SMALL PARTS		WH805	VENT STOP	MEDIUM GRAY (NOTE 2)	PETERSON MOLD		2
SP2			WH804	SASH CAP	MEDIUM GRAY (NOTE 2)	PETERSON MOLD		2
SP3			WH803	SASH PULL END CAP	MEDIUM GRAY (NOTE 2)	PETERSON MOLD		4
SP4			BL517	SASH CLIP	STAINLESS STEEL	BSI	51700	2
SP5			BL035 BL040 BL045	BSI CLASS 5 SUPER BOOST/BAL. GUIDE 15600	TRAVEL . TUBE LENGTH-3"	BSI		2
SP6			R1125	PVC GUIDE	BLACK	RYKO	VY8920	A/R
SP7			WH278	WEEP HOLE COVER	MEDIUM GRAY (NOTE 2)	ASTRO EXTRUSION MOLDING		2
SP8			SB881	SASH SETTING BLOCK	BLACK	TREMCO	TX18060E	2
SP9			SB882	FIXED SETTING BLOCK	BLACK	TREMCO	TX18059E	2
SP10			WH806	BALANCE RETAINER	MEDIUM GRAY (NOTE 2)	PETERSON MOLD		2
• SP11			WB601	EDGE BLOCK	FIXED AND VENT PANEL	TREMCO		4
W1	WEATHERSTRIP		W-027	.270 x .250 TRI-FIN	GRAY COLOR USED AT JAMBS, SILL (S), MULLION & INTERLOCK	ULTRA FAB		A/R
W2								
W3								
W4								
W5								
W6								
G1	GLASS		GL103115129	1.052 INSULATED GLAST GLASS (.236 + 1/2" + 1/8" + .030 PVB + 1/8")	VENT GLASS			1
G2			GL103115429	1.052 INSULATED GLAST GLASS (.236 + 1/2" + 1/8" + .030 PVB + 1/8")	FIXED GLASS			1
FA1	FASTENERS		ST212	#8 x 1-1/4" PHIL HEX WASHER HD SMS A SS	MULLION (4) BALANCE (2)			6
FA2			ST206	#8 x 1/2" PHIL PAN HD SMS TYPE AB SS	SASH GUIDE (2)			2
FA3			MS121	#8-32 x 1/4" PHIL FLAT HD UNDERCUT SMS SS	LATCH HOUSING (2)			2
FA4			ST191	#8 x 3/4" PHIL FLAT HD SMS SS	BALANCE RETAINER			4
• FA5			ST196(42)	#8 x 1" PHIL HEX WASHER HD SMS TYPE AB SS	FRAME (8) TOP RAIL (4) BOTTOM RAIL (8)			20
H1	HARDWARE	61590	SH857	LATCH HOUSING	DARK GRAY ANODIZED	KENMAR/FABCO		2
H2		81591	SH858	SASH RELEASE LEVER	DARK GRAY ANODIZED	KENMAR/FABCO		2
H3			WH829	SS LATCH SPRING		KELLY TOOL & DIE		2
LB1	LABEL		LU801	USAC LOGO WITH INSTRUCTIONS		USAC PRINTER		1
LB2			LU901	AAMA LABEL	AAMA CERT. + SECURITY TAB + NFRC TAP	ALI		1
LB3			LU911	NFRC TEMPORARY LABEL		USAC/SC		1
LB4			LU921	NFRC PERMIT LABEL		USAC PRINTER		1
• LB5			LB006	THIS SIDE UP LABEL		USAC PRINTER		1

- ADD SP11
- ADD FA5
- ADD LB5

NOTE:

1. ALL PARTS MUST BE U.S. MADE.
2. ALL NYLON MOLDED PARTS TO MATCH WITH CLEAR ANODIZING TO BE CR21 (PRESSOUT CHIP IS CSBK756N) FROM:
   COLOR SCIENCE
   1230 E GLENWOOD PLACE
   SANTA ANA, CA 92707-3000
   714/434-1033

SYM.	REVISION	DATE	BY

International Aluminum Corporation
DIVISION UNITED STATES ALUMINUM CORP.
DRAWN BY: Willie C.
DATE: 03/01/10
SCALE:
BILL OF MATERIALS FOR 8000 SERIES S/H (SERIES 7300)
DWG NO. 8000-001 2 of 4
CHKD. BY

Architectural Testing, Inc.

A0639 MAY 12 2010

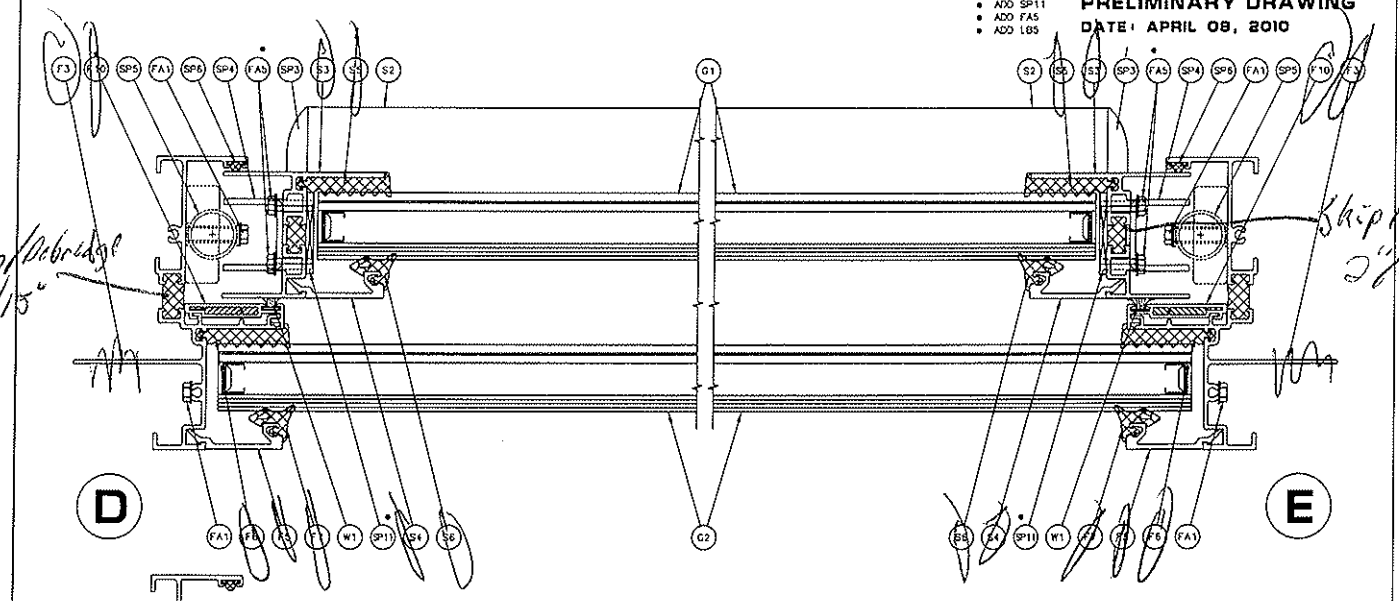
Report # Date

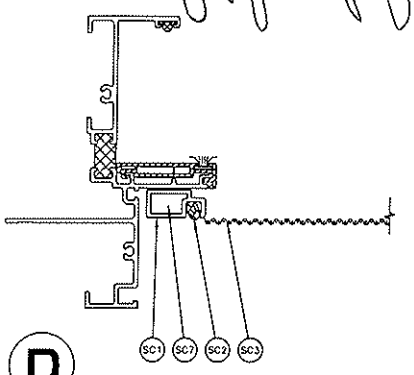
Test

8000SH-001
4 of 4

• ADD SP11
• ADD FA5
• ADD L85

PRELIMINARY DRAWING
DATE: APRIL 09, 2010





D
SHOWING THE SCREEN

SYM	REVISION	DATE	BY

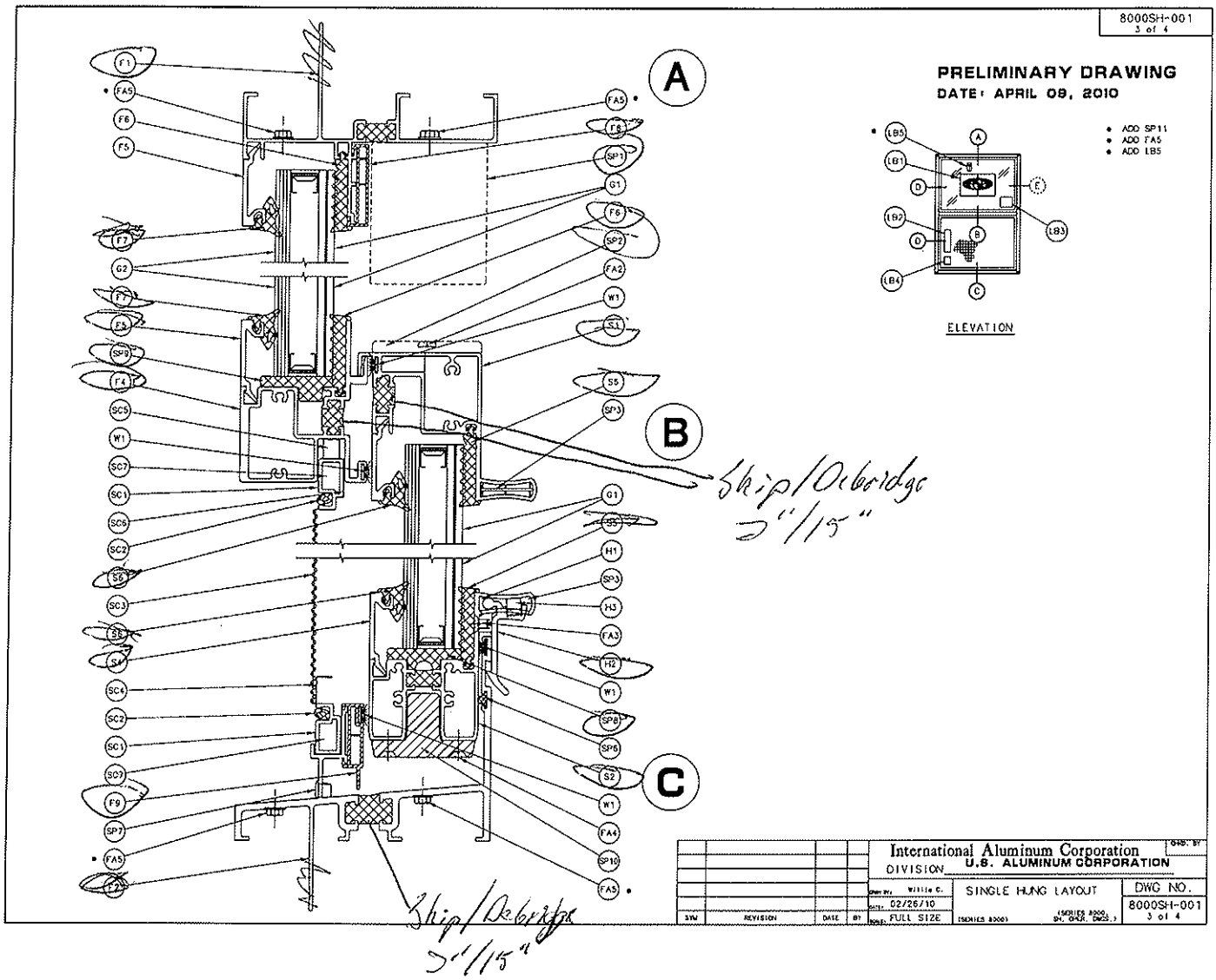
International Aluminum Corporation
DIVISION U.S. ALUMINUM CORPORATION

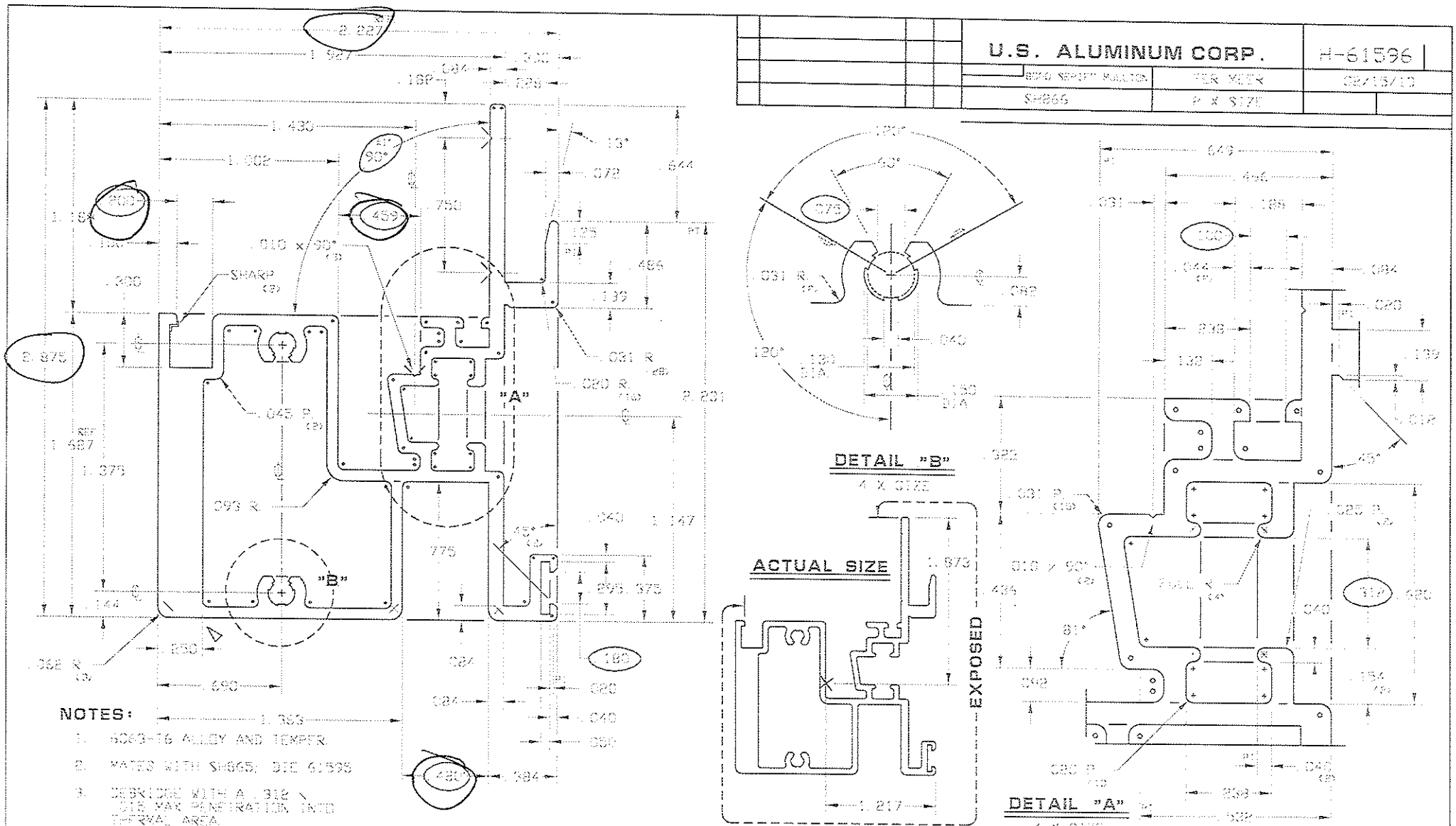
DRAWN BY: Willie C.
DATE: 02/26/10
SCALE: FULL SIZE

SINGLE HUNG LAYOUT

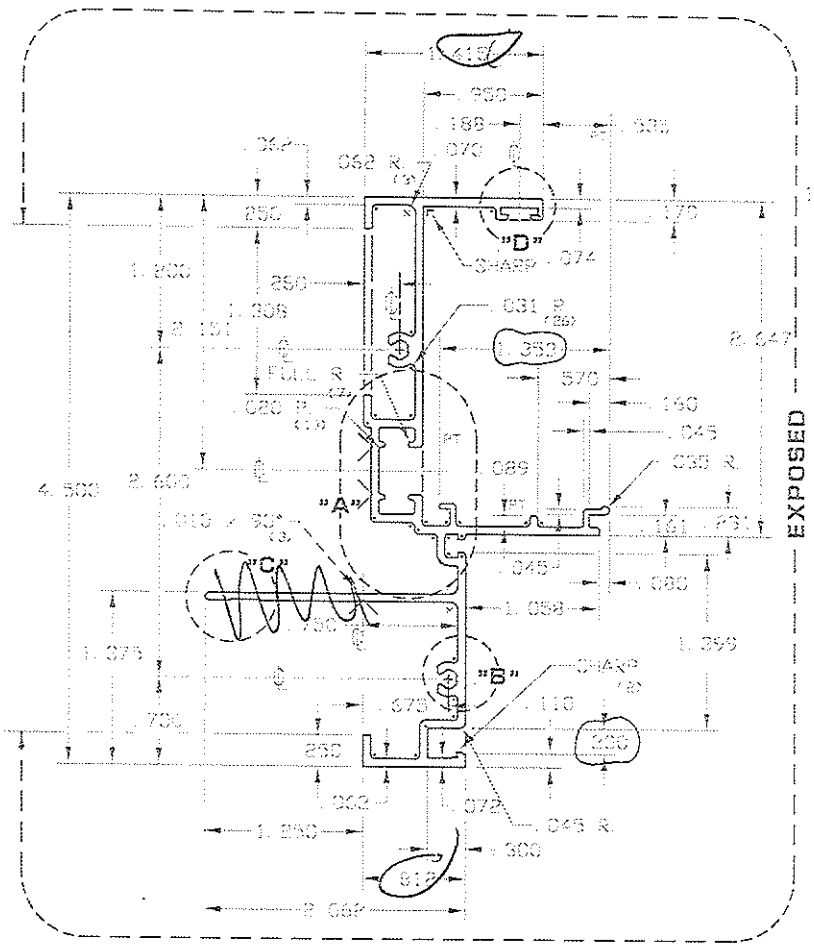
DWG NO. 8000SH-001
4 of 4

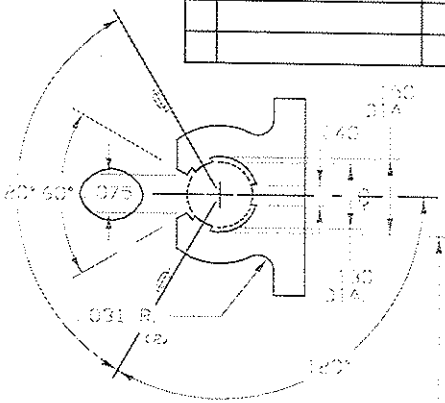
(SERIES 8000)



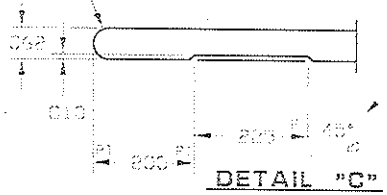

U.S. ALUMINUM CORP.
H-61596
SHAPE
SH665
DIE NUMBER
02/15/10
"A"
"B"
DETAIL "B"
4 X SIZE
ACTUAL SIZE
EXPOSED
DETAIL "A"
4 X SIZE
NOTES:
1. 6063-T6 ALLOY AND TEMPER.
2. MATES WITH SH665, DIE 61595
3. DEBRIDGE WITH A .312 \ DIE MAR PENETRATION INTO DRAIN AREA.
4. REMOVAL DETAIL AREA: .208; ADDITIVE: 0.0
5. PAINT PERIMETER: 6.418"
6. OUTSIDE PERIMETER: 18.960
7. INDICATED POSSIBLE STREAKS
SECTION PROPERTIES
Applied Technical Testing Inc.
Test sample cross-section. See details
1.137
3.127
1.304
3.447
.85 SQ.IN.
.5
H-61596
A0639
MAY 12 2010
Reported
Date
Tech

U.S. ALUMINUM CORP.			T-61594
6000 SERIES ALLOY	1/2" MULLION		08/12/10
S-8854	FULL SCALE		

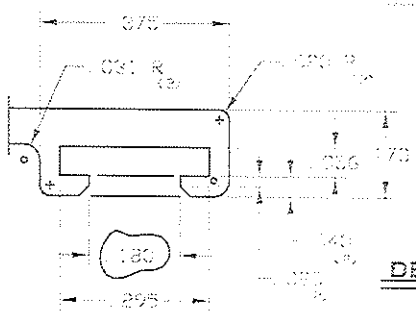




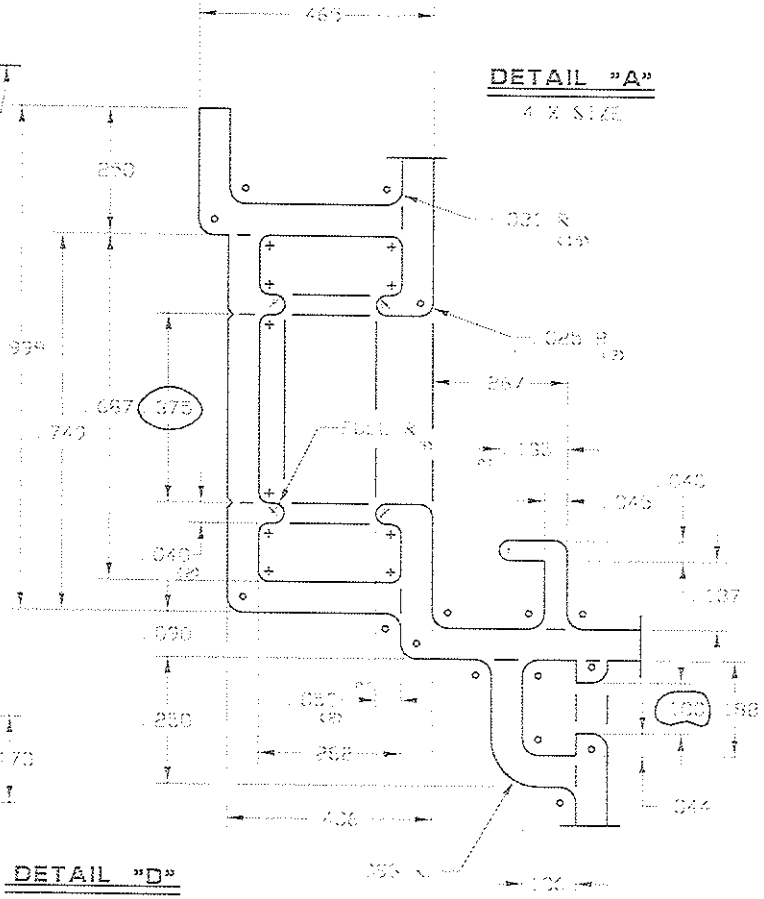
DETAIL "B"
4 X SIZE
(2 PLACES)



DETAIL "C"
4 X SIZE



DETAIL "D"
4 X SIZE



DETAIL "A"
4 X SIZE

NOTES:

1. 6063-T6 ALLOY AND TEMPER.
2. MATES WITH S-8865, DTE 61595
3. ADHERE WITH A .375 x .015 MAX PENETRATION INTO THERMAL AREA.
4. THERMAL DETAIL AREA: .404 SQUARE INCHES
5. PAINT PERIMETER: 15.049"

Architectural Testing, Inc.
Test sample complies with these details
Deviations noted

A0639

MAY 12 2010

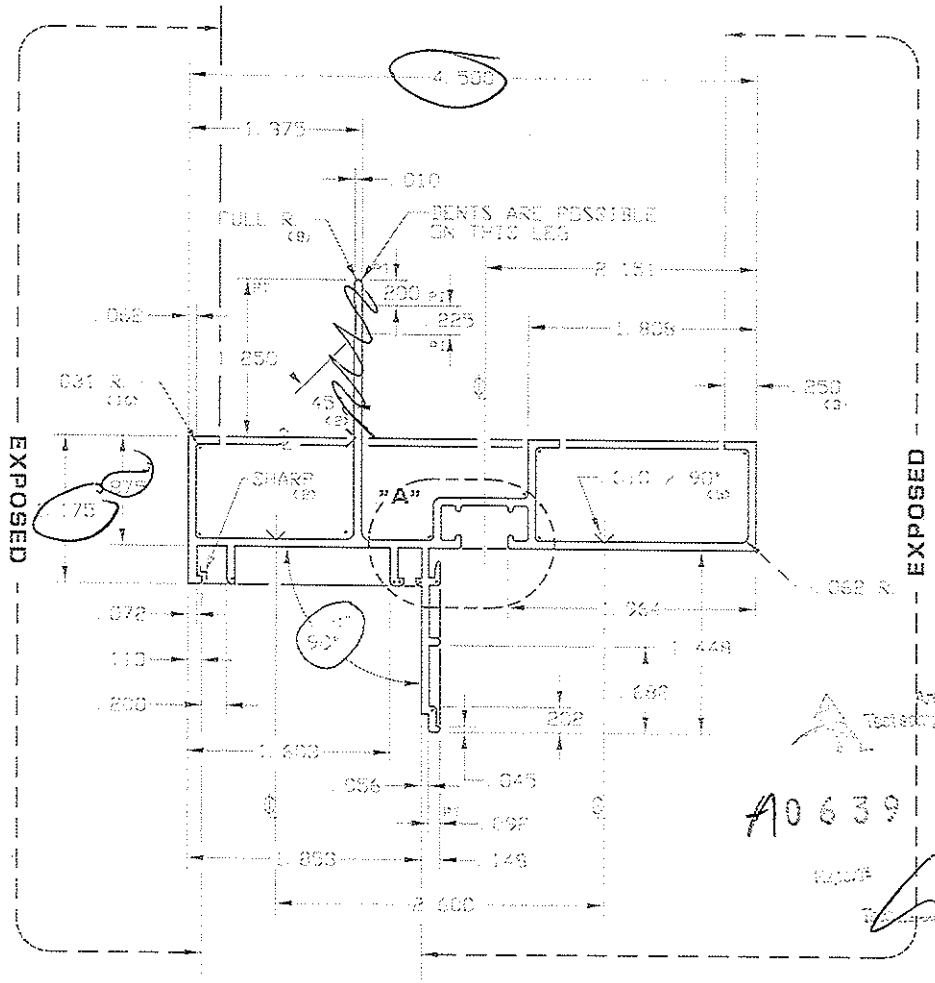
Report

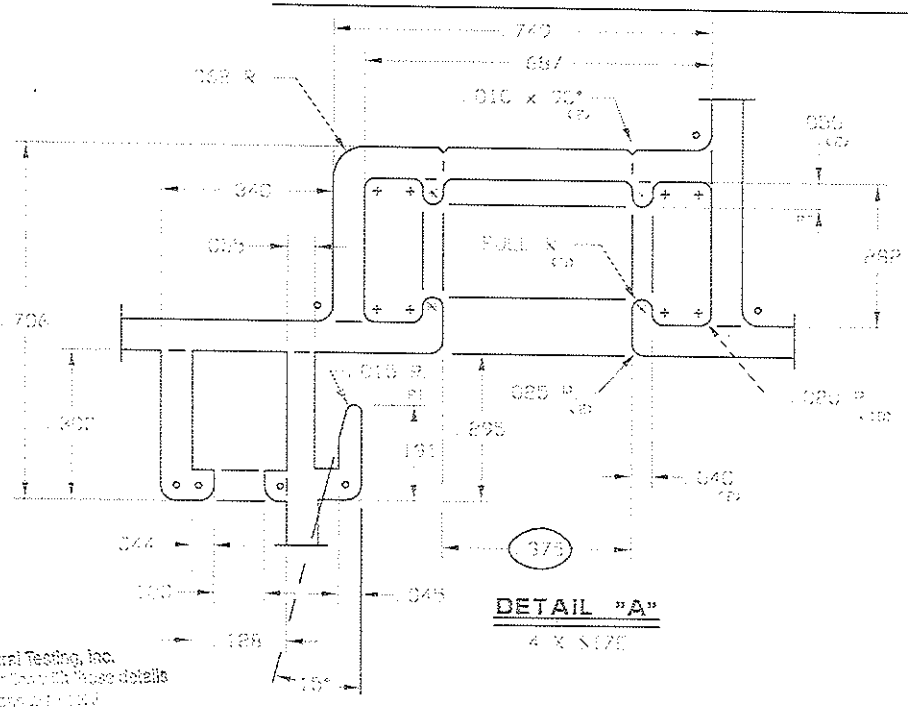
Date

Technician

.875	1.750"	1
1.024	4.500"	4 X SIZE
27.585	08-12	0.7938"
Rb	6063-T6/T66	T-61594

U.S. ALUMINUM CORP.			T-61592
6063 SERIES ALLOY		DIE NUMBER	04/28/10
SH862		DIE STEEL	





DETAIL "A"
4 X SIZE

Architectural Testing, Inc.
Test specimen conforms to these details
Certificate No. 0639

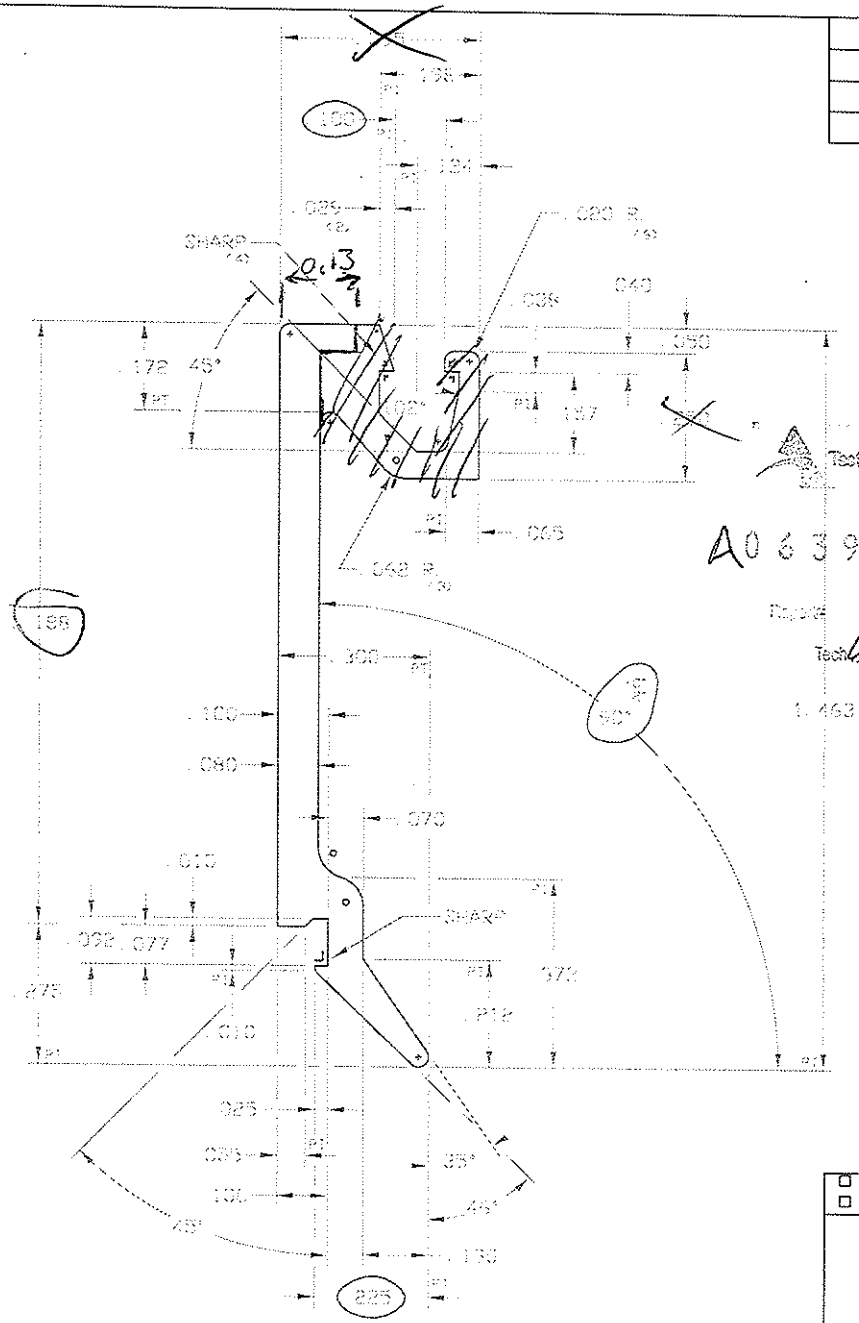
A0639

MAY 12 2010
Date

NOTES:

1. 6063 T5 ALLOY AND TEMPER.
2. MATES WITH CH865, DIE 61089
3. DEMARCATION LINE A-A, R10 x .025 MAX PENETRATION INTO THERMAL AREA
4. TOLERANCE DETAIL AREAS ±.005 (UNLESS NOTED OTHERWISE)
5. PAINT PERIMETER = 9.144"

		C62
6.4	7.785	1
9.47	4.500	2 X 4.500
36.17lb	0.0.1.0	0.47 lb 0.47lb/ft
27	Pt. 63/375T 4	T-61592

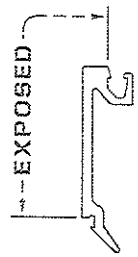


Architectural Testing Inc.
Test sample complies with these details

A0639 MAY 12 2010

Approved Date

Technician



ACTUAL SIZE

			U.S. ALUMINUM CORP.		T-61595
			GLAZING BEAD	YEAR MADE	02/12/10
			SH863	4 X SIZE	

NOTES:

1. 6063-T5 ALLOY AND TEMPER.
2. MATES WITH SH862, SH862W, SH863, SH864, SH865: DIE # 61532, 61536, 61537, 61594, 61595
3. PAINT PERIMETER: 1.561"

WT.	1.1705	4
SQIN	1.481	9 X 46089
4.007	2.012	49472
PP	PP 39/PAINT 3	T-61595

				U.S. ALUMINUM CORP.	T-61590
				S-8057	4 X SIZE

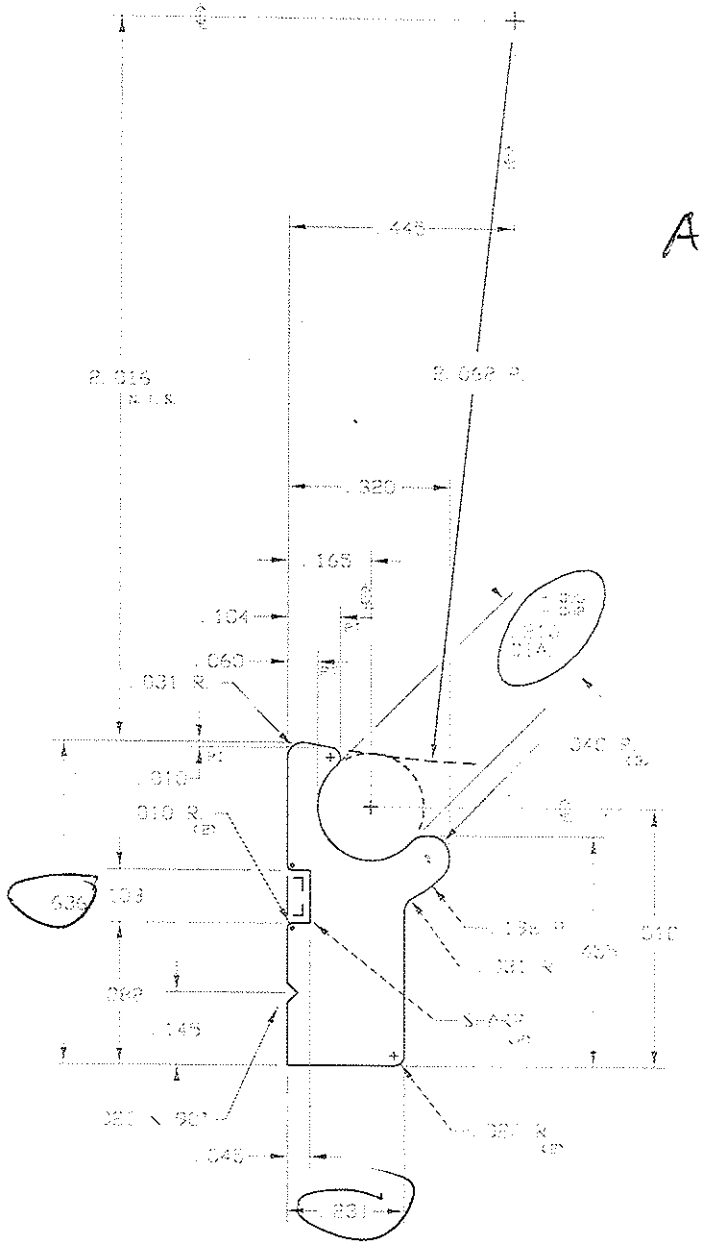
Architectural Testing, Inc.
Test sample conforms to these details
Report No. [illegible]

A0639 MAY 12 2010

Reviewed Date

Tech

ACTUAL SIZE



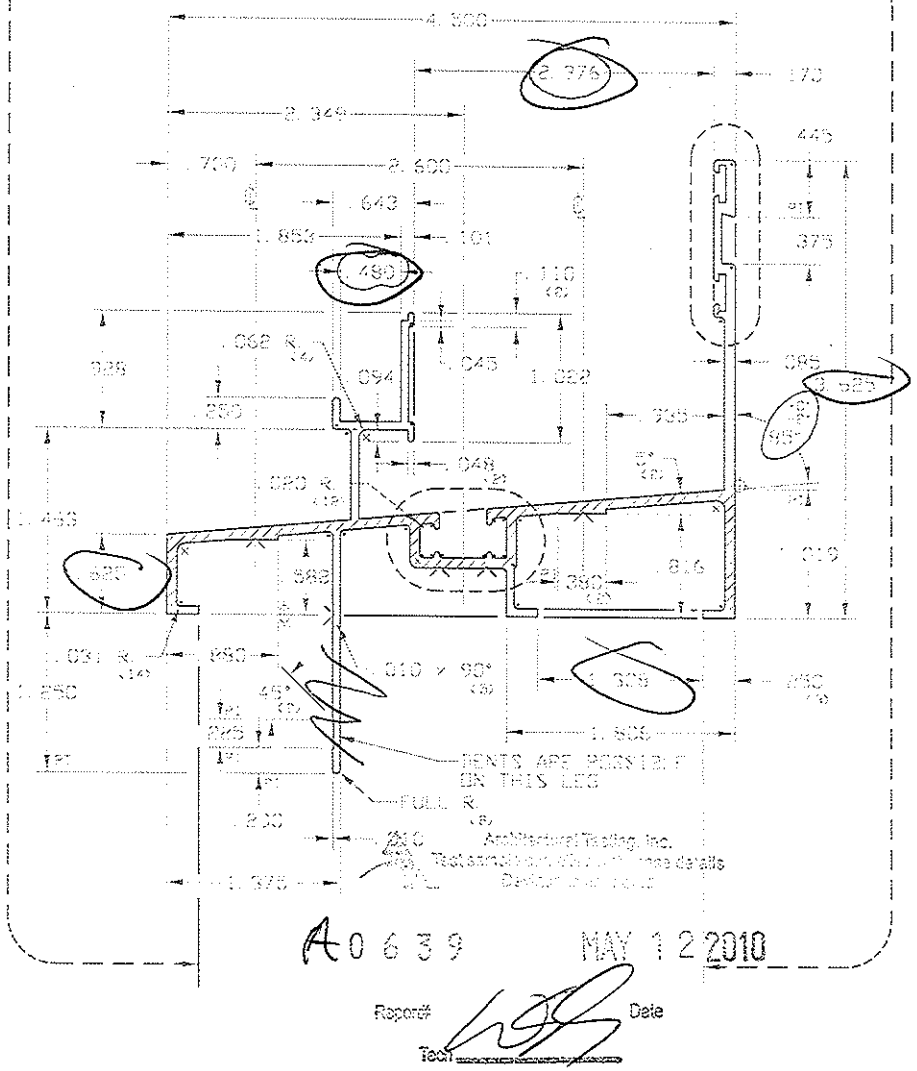
NOTES:

1. 6063-T6 ALLOY AND TEMPER
2. [illegible]
3. ALL EXPOSED SURFACE

.116	1.1794	6
.139	.674	9 X 40360
1.994	60.13	39407
14	[illegible]	T-61590

			U.S. ALUMINUM CORP.		T-61593
			6000 SERIES ALLOY	TEMPER	DRAWING DATE
			S-6063	T6	02/28/10

EXPOSED

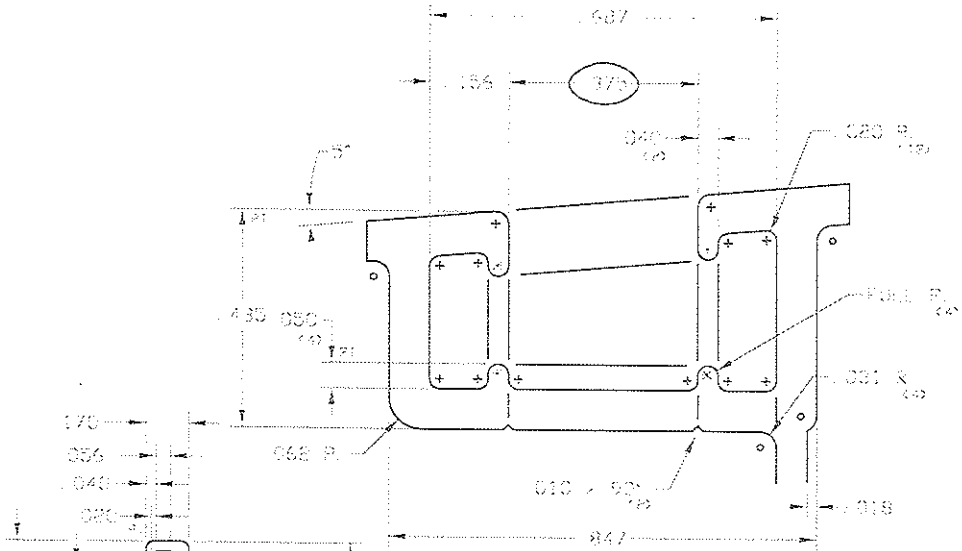


Architectural Testing, Inc.
Test arrangement and construction details
Report #

A0639 MAY 12 2010

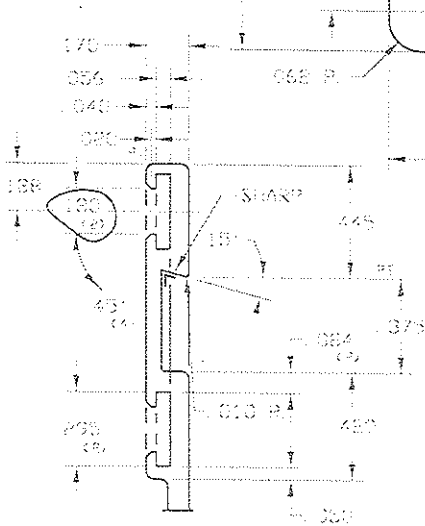
Report # Date

Tech



DETAIL "A"

4 X SIZE



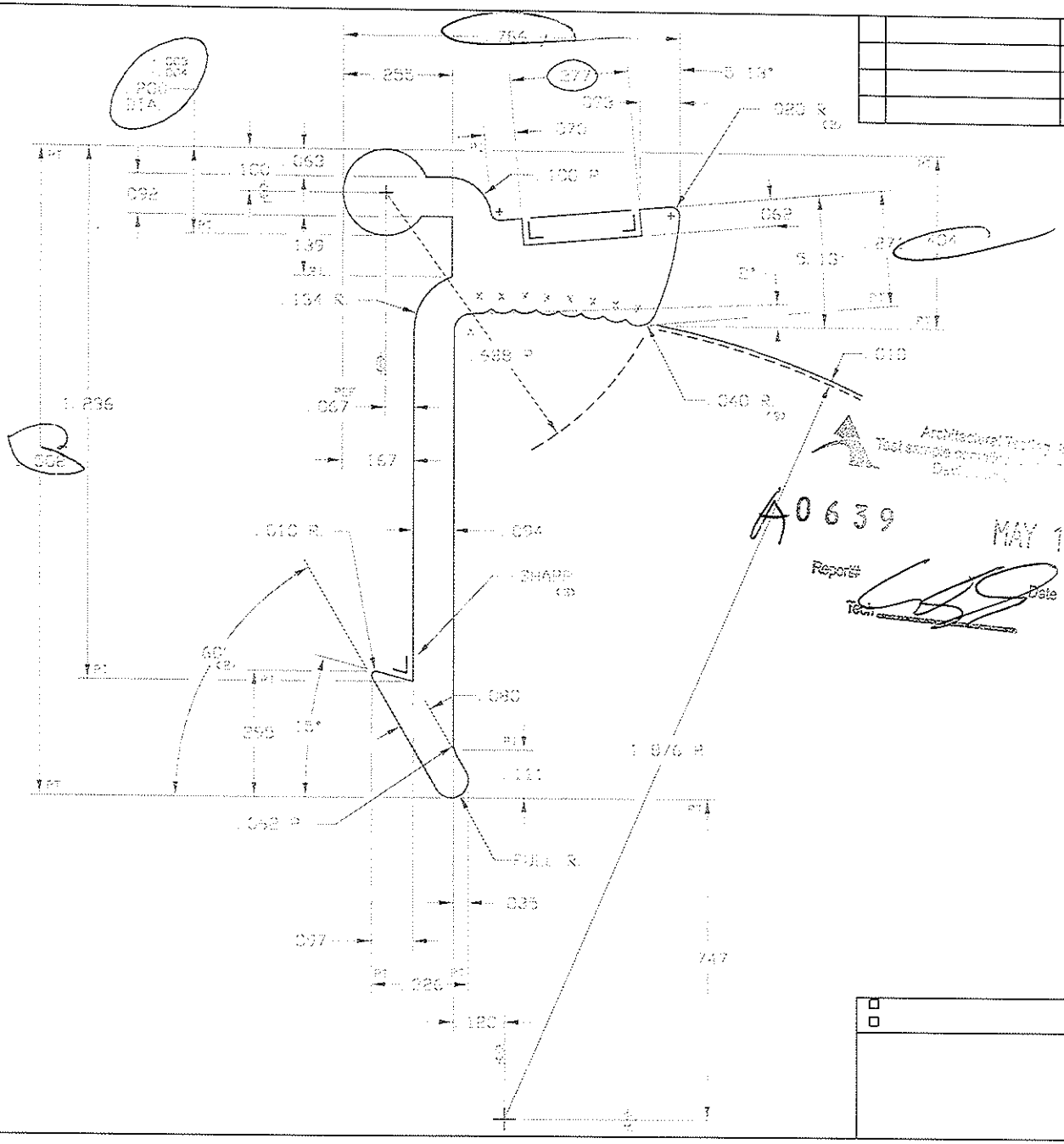
DETAIL "B"

8 X SIZE

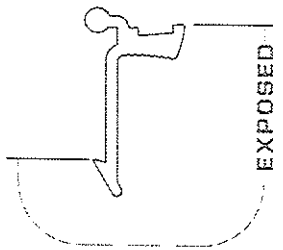
NOTES:

1. 6063-T6 ALLOY AND TEMPER
2. DEBRIDGE WITH A .640 x .010 MAX PENETRATION INTO REMOVAL AREA
3. TOTAL DETAIL AREA = 204 SQUARE INCHES
4. PAINT PERIMETER = 19.893"
5. [hatched] = .040 WALL THICKNESS

			DRAWN
	1.152	2.1792	1
	1.382	4.5824	12 X 0.0375
	31.324	65.10	DWG # T-61593
	PA	PA 45/PC 52	T-61593



U.S. ALUMINUM CORP.			T-61591
SHEET SIZE SHOP DRAWING PAPER		TOOL YIELD	08/15/10
SHEET		4 X SIZE	



ACTUAL SIZE

A0639

MAY 12 2010

Reporter

Team

Date

NOTES:

1. 6063-T5 ALLOY AND TEMPER.
2. [illegible] PER T-61591
3. PAINT PERIMETER @ 2.97"

PCS	2 1/2	2
SIZE	1.375	3" X 1.50"
4.954	22.12	Scale
12	PART NO.	T-61591

Architectural Testing, Inc.
Test sample complies with these details
Deviations noted

A0639 MAY 12 2010

Reject Date
Tech

U.S. ALUMINUM CORP.			H-61588
6063 SERIES INTERLOCKING		DIE NUMBER	CP4134/5
SH854		P x SIZE	

EXPOSED

ACTUAL SIZE

DETAIL "B"

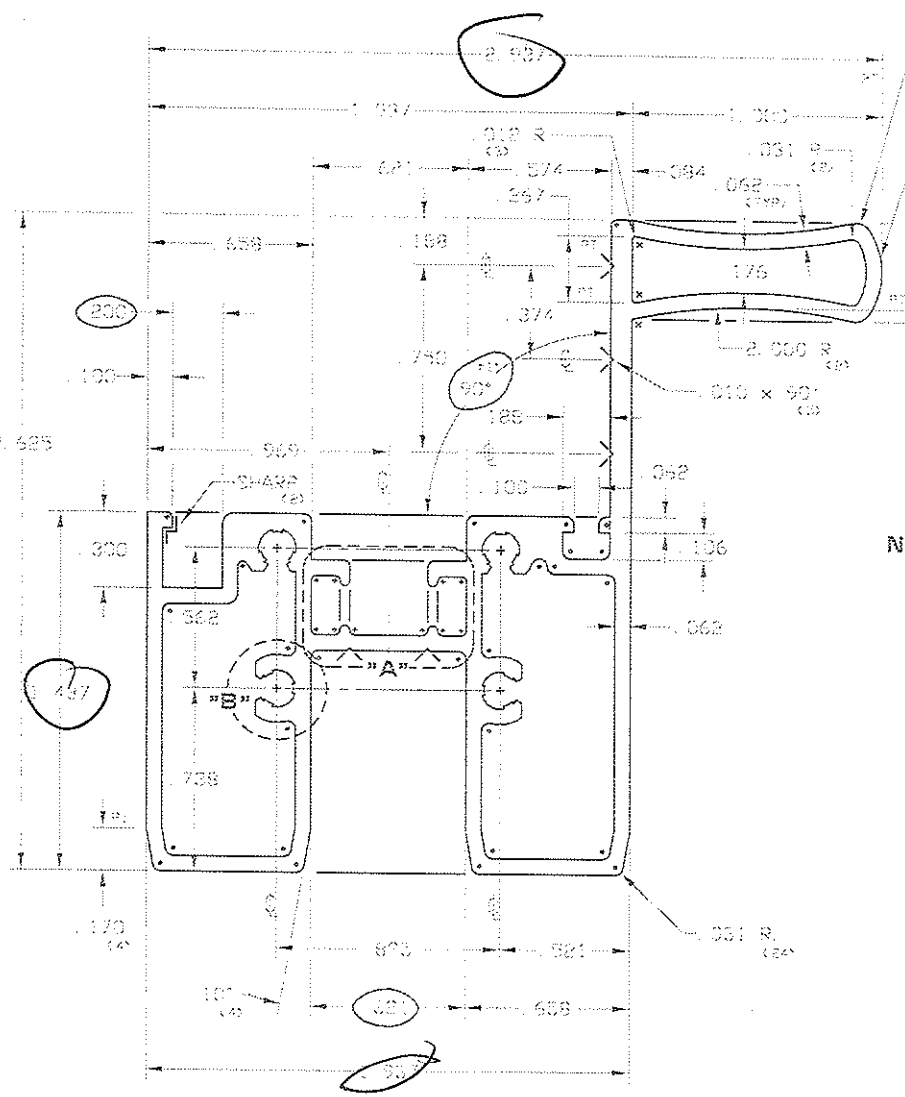
DETAIL "A"

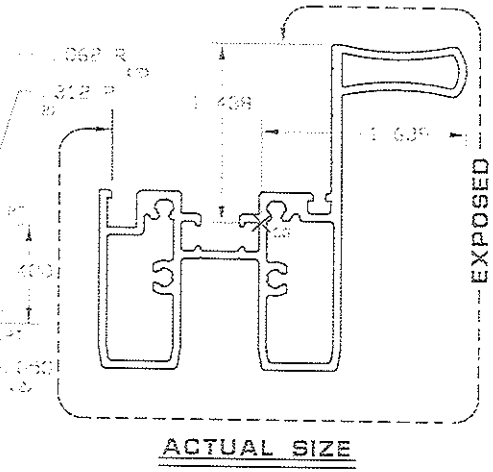
NOTES:

1. 6063-T5 ALLOY AND TEMPER.
2. MATED WITH SH855, DIE 61595
3. REINFORCE WITH A .312 x .050 WALL REINFORCEMENT INTO THERMAL AREA
4. THERMAL BREAK AREA .206, WIDTH 1.250
5. PAINT PERIMETER 10.341"
6. GLAZING PERIMETER 17.013

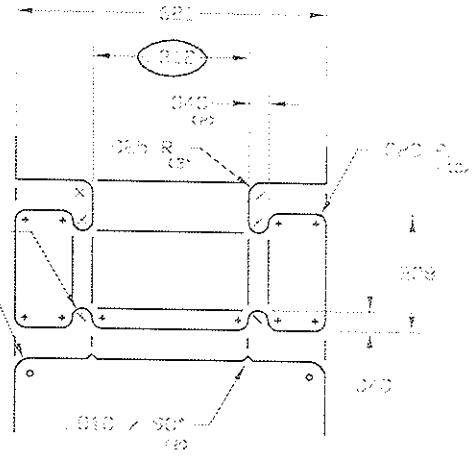
SECTION PROPERTIES	
Ixx = 3.672	in⁴
Sxx = 3.202	in³
Iyy = 3.852	in⁴
Sxx = 3.416	in³

AREA	2.1798	
WEIGHT	7.542	
SHAPE FACTOR		
PS		H-61588

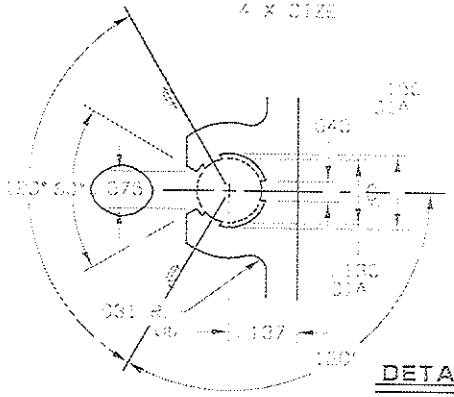




ACTUAL SIZE



DETAIL "A"



DETAIL "B"

NOTES:

1. 6063-T5 ALLOY AND TEMPER.
2. MATES WITH SHGCS, DIE 61589
3. BERRIDGE WITH A .312 [8] DIA MAX PENETRATION [NOT] THERMAL AREA
4. THERMAL DETAIL AREA = .80 SQ. IN. (MODIFIED PER)
5. PAINT PERIMETER = 9 IN.
6. OUTSIDE PERIMETER = 15.47 IN.

.312	[illegible]	
.394	4.500	[illegible]
Pg 647	[illegible]	[illegible]
PA	8" SHGC/PREP NO. 4	61587

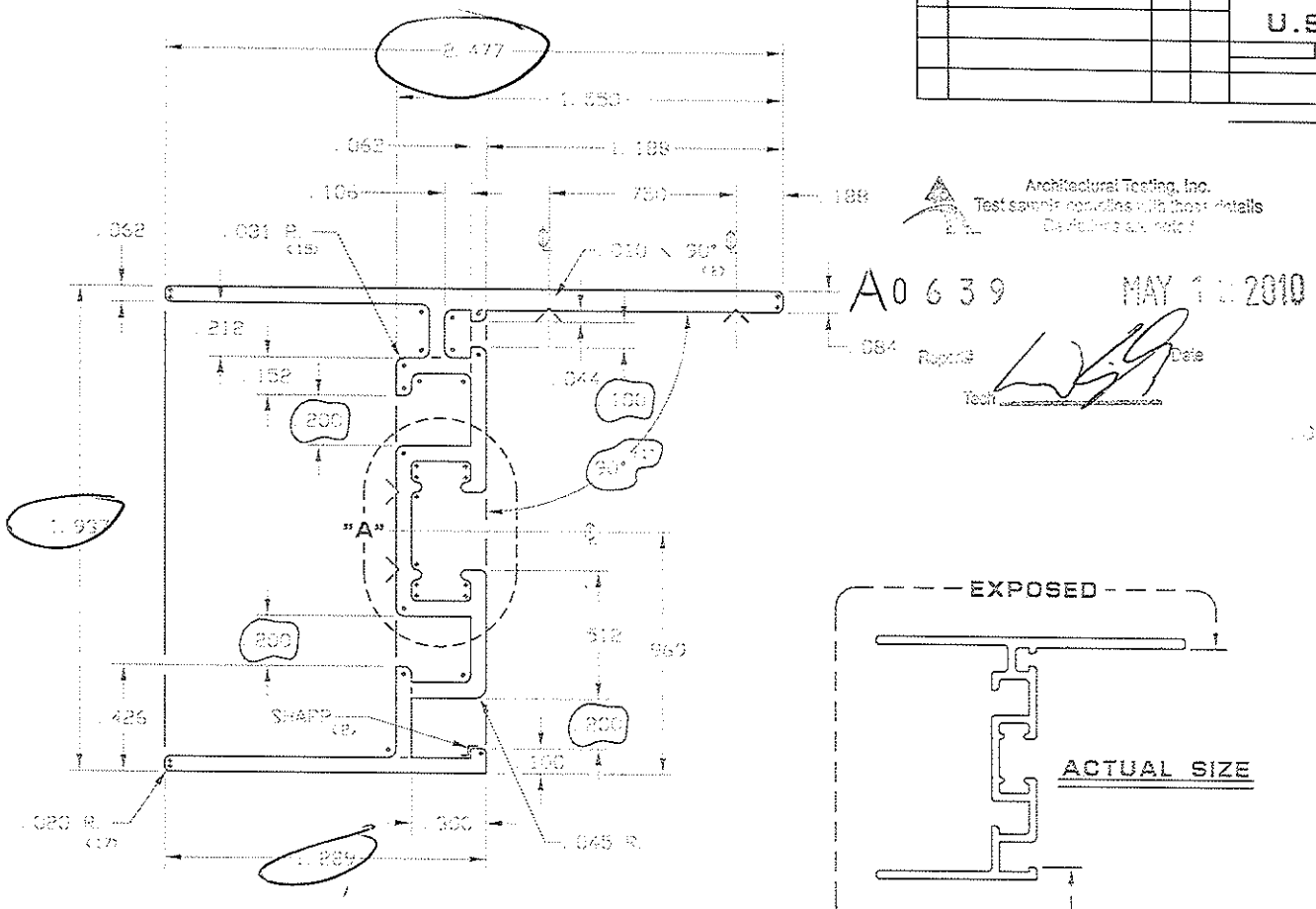
Architectural Testing, Inc.
Test sample complies with these details
Deviations are noted

A0639 MAY 12 2010

Reported Date

Tested

			U.S. ALUMINUM CORP.		T-61589
			DRAWING SCALE	PER PIECE	SECTION
			SH855	2" X SIZE	

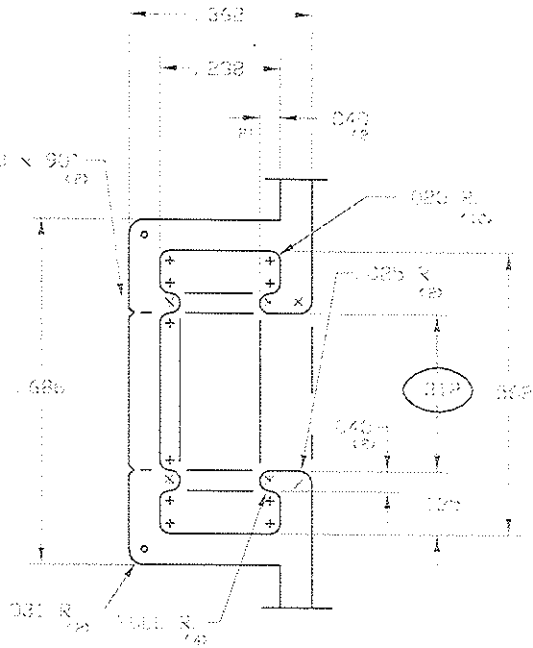


Architectural Testing, Inc.
Test sample complies with these details
Deficiencies noted

A0639 MAY 1 2010

Report Date

Tech

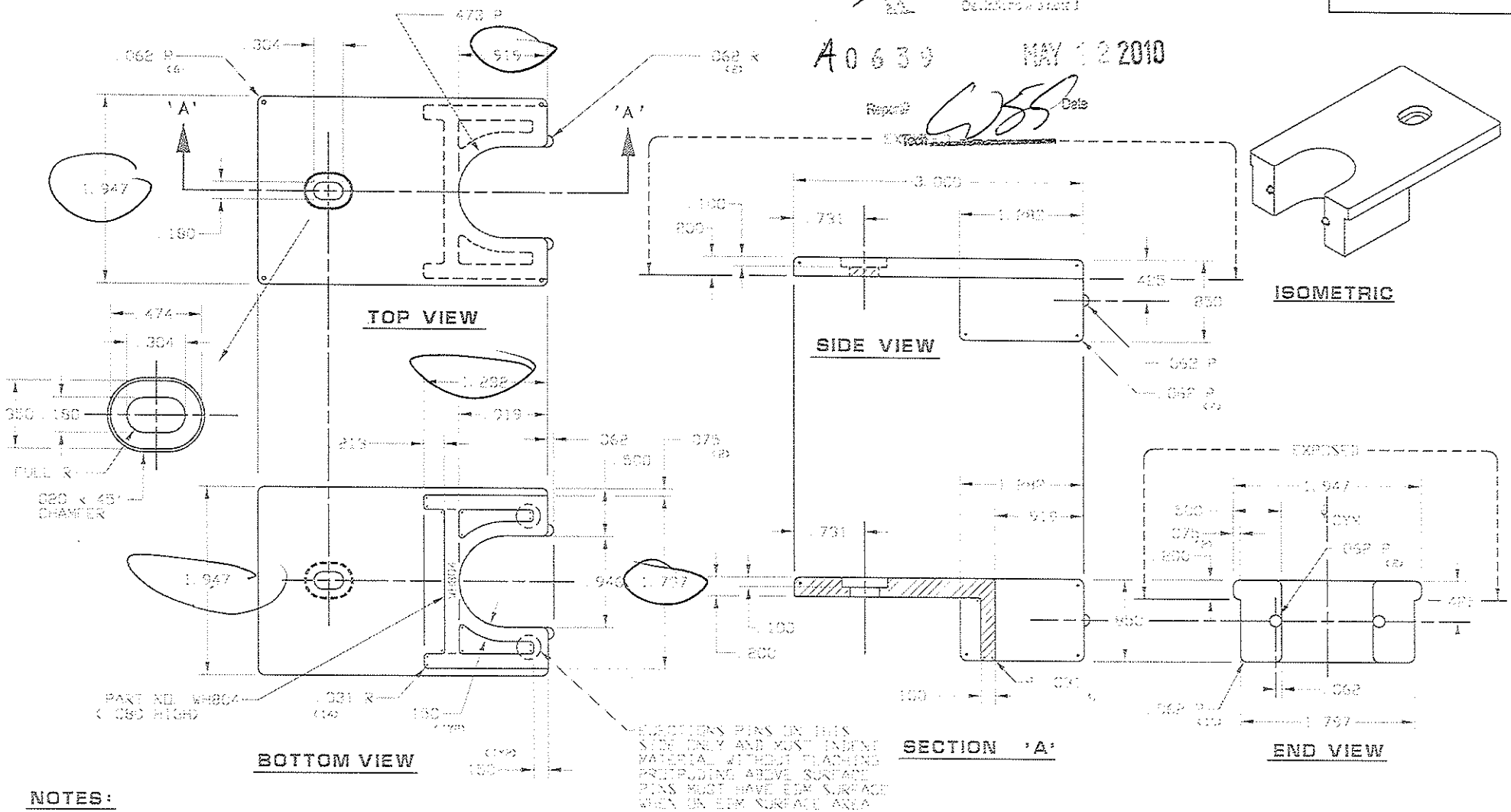


DETAIL "A"
4 X SIZE

NOTES:

1. 6063-T5 ALLOY AND TEMPER.
2. MATES WITH SH865, DIE 61548
3. DESIGNED WITH A .328 X .015 MAX PENETRATION INTO THERMAL AREA
4. THERMAL DETAIL AREA = .147, (MODIFIED = .057)
5. PAINT PERIMETER = 6.418"

		SHT
ASS	2.1792	-
SEC	3.128	2" X 3.128"
12.640	SEC LB	40.07
PS	2" POLYAMIDE 3	T-61589



A0639 MAY 12 2010

NOTES:

1. MATERIAL: ACETAL
2. COLOR: TO BE SPECIFIED ON P.O.
3. NO EJECTOR PINS ON EXPOSED SURFACE
4. EXPOSED SURFACE TO BE HIGH POLISHED ALL OTHER SURFACES TO BE EDM FINISH

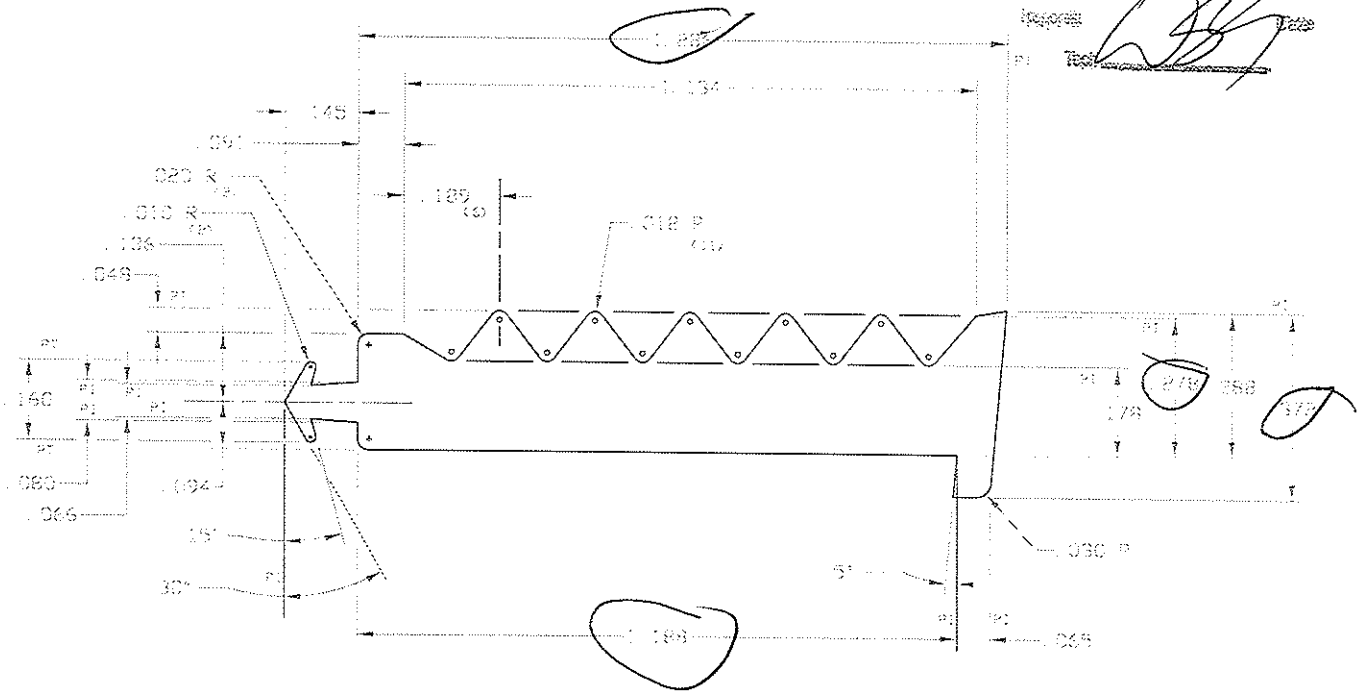
UNITED STATES ALUMINUM CORP.

Architectural Testing, Inc.
Test sample complies with these details
Drawing accurately

A0639 MAY 12 2010

Inspector Date
Test

ACTUAL SIZE



NOTES:

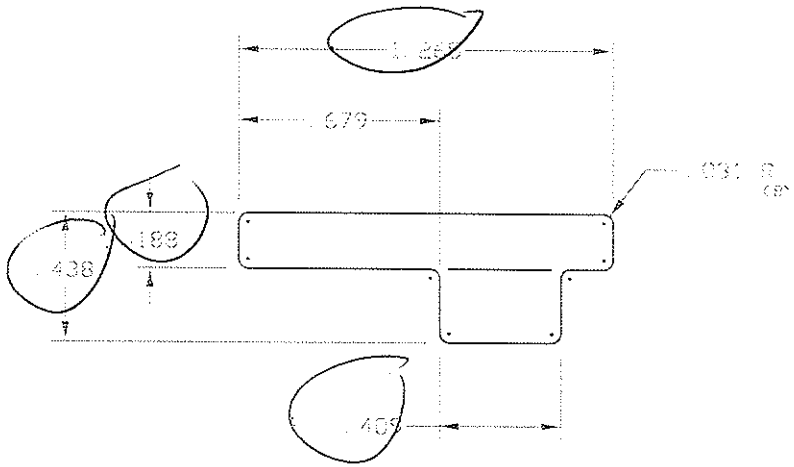
1. AREA = .308 IN.²
2. MATERIAL: EPDM DURACE
3. PART NO. NP-9861

				UNITED STATES ALUMINUM CORP.
				INTERIOR GLAZING GASKET (4636 SH. XTRUSN.)
				PART # NP9861

ACTUAL SIZE

NOTES:

1. MATERIAL: EPDM
2. HARDNESS: 65 +5 SHORE "A"
3. CUT LENGTH: 4" MINIMUM
4. AREA: .339
5. PART NO.: S8662



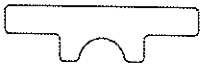
Architectural Testing, Inc.
Test sample constructed with these details
Deviations are noted

AO 639 MAY 12 2010

Report # Date

Tech

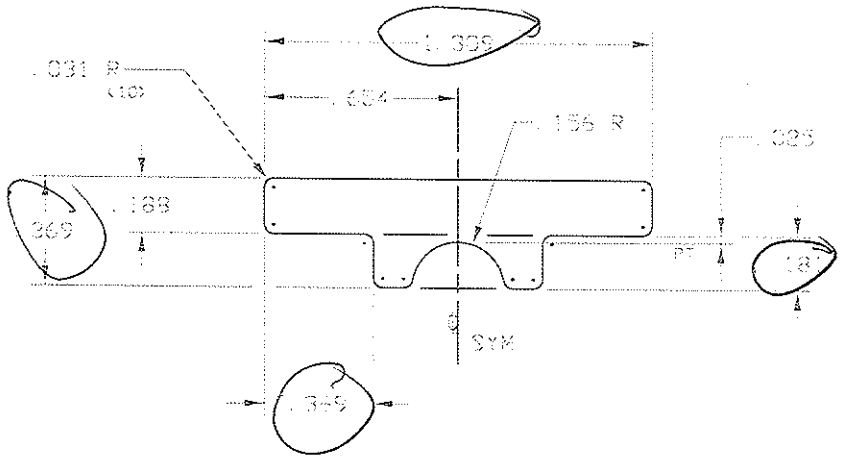
UNITED STATES ALUMINUM CORP.		
[illegible]	SETTING BLOCK (SERIES 8000S/9)	
02/08/10		8000S---013
2 X SIZE	PART NO. S8662	



ACTUAL SIZE

NOTES:

1. MATERIAL: EPDM
2. HARDNESS: 65 ±5 SHORE "A"
3. CUT LENGTH: 4" MINIMUM
4. AREA: .310
5. PART NO.: SS881



Architectural Testing, Inc.
Test sample complies with these details
Details are noted

A0639 MAY 12 2010

Tested By Date

Witness

	UNITED STATES ALUMINUM CORP.	
02/08/10	SETTING BLOCK (SERIES SGGCS-H)	SGGCS-C14
2 x SIZE	PART NO. SS881	

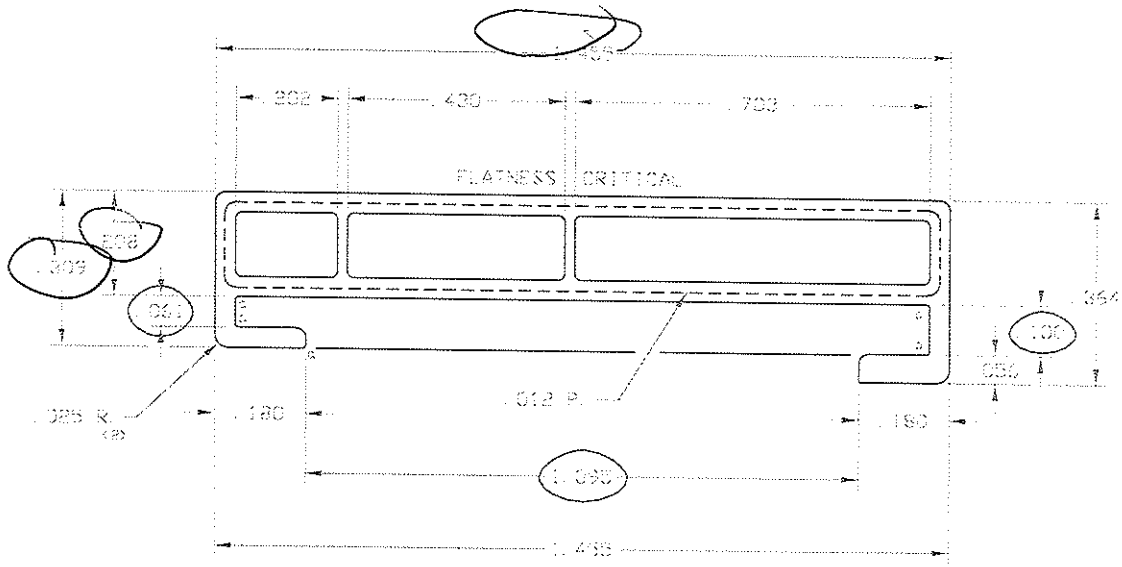
Architectural Testing, Inc.
Test sample complies with these details
Deviations as noted

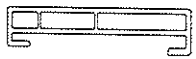
A0639 MAY 12 2010

Report# Date

Tech

3000S-0363





ACTUAL SIZE

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

RADIUS SCHEDULE

S	SHARP
A	.060 R.
B	.125 R.
C	.250 R.
D	.325 R.
E	.612 R.
F	.750 R.
G	.875 R.

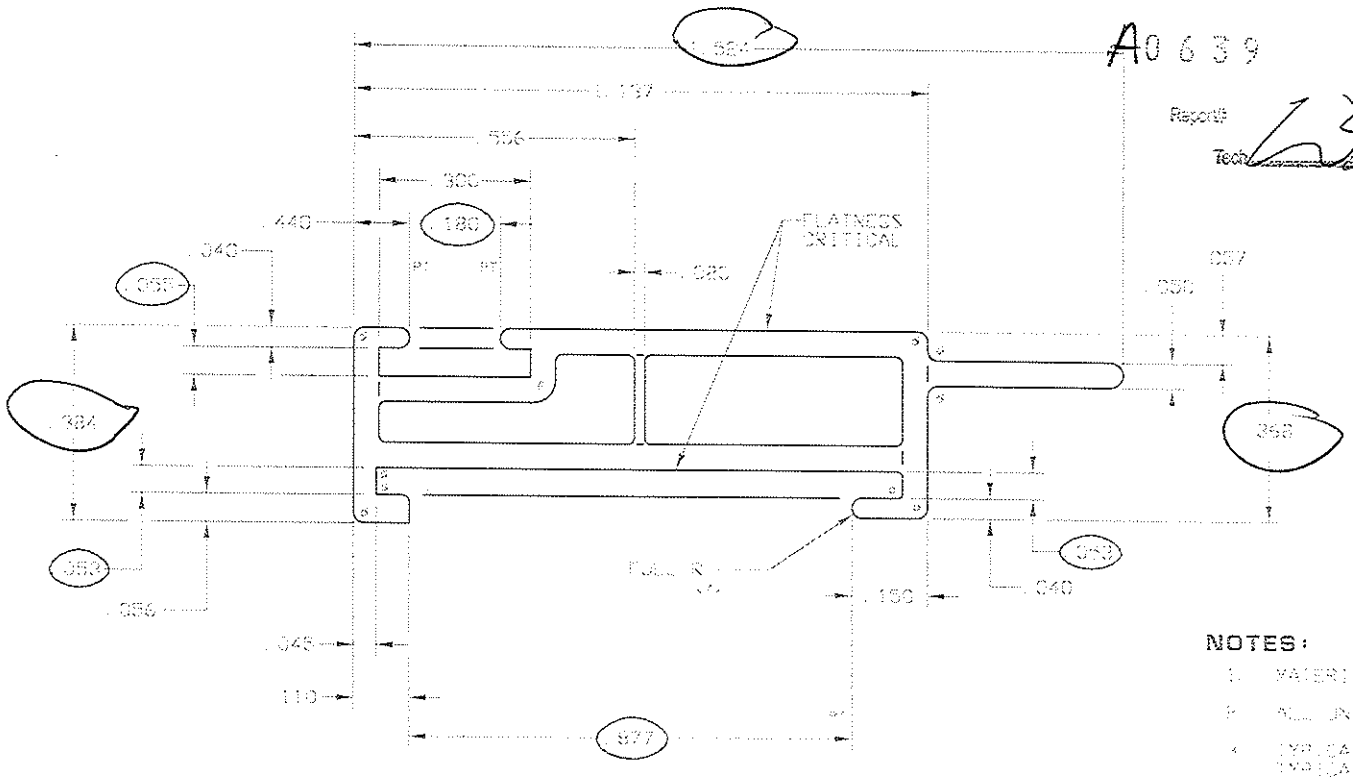
NOTES:

1. MATERIAL: RIGID PVC TO MEET AAMA 303-07
2. ALL UNSPECIFIED RADII = .125
3. TYPICAL EXTERIOR WALL THICKNESS: .242
   TYPICAL INTERIOR WALL THICKNESS: .252
4. AREA: .159
5. MAXIMUM GLASS ALLOWED IN GLAZING AREA: 1" INSULATING GLASS 60# GLASS MAX.
6. TOLERANCE UNLESS OTHERWISE NOTED ± .010
7. WALL THICKNESS TOLERANCE TO BE ± .010

1	ADDED NOTES 6 & 7	03/09/10	KT	

INTERNATIONAL WINDOW CORP.

TOP MEMBER	VINYL THERMAL ISOLATOR	
DRAWN BY		
APPROVED BY	DUPLEX BASE (W1802)	SCALE: 1:1



Architectural Testing, Inc.
Test sample complies with these details

A0639 MAY 12 2010

Report# Date

Tech

ACTUAL SIZE

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

RADIUS SCHEDULE

S	SHARP
A	.006 R.
B	.012 R.
C	.031 R.
D	.062 R.
E	.093 R.
F	.125 R.
G	.250 R.

NOTES:

1. MATERIAL: RIGID PVC TO MEET ASTM D1784
2. ALL UNSPECIFIED RADII = .012
3. TYPICAL EXTERIOR WALL THICKNESS: .050
   TYPICAL INTERIOR WALL THICKNESS: .045
4. ASTM RIGID PVC: 13B
5. VINYLEX CHEM-ALIGNED 5610 USING A CAPSHER VITRO-GLASS 804 GLASS METER
6. TOLERANCE UNLESS OTHERWISE NOTED ± .010
7. WALL THICKNESS TOLERANCE TO BE ± .006

* TOLERANCE FOR PVC EXTRUDED SHAPES MADE USING DIMENSIONALLY STABLE TOOLING

4	ADDED NOTE #7	[illegible]	[illegible]

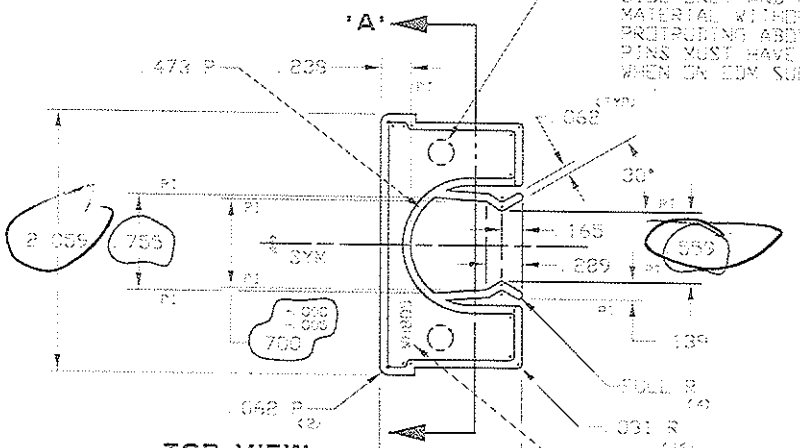
UNITED STATES ALUMINUM CORP.

[illegible]	STEEL THERMO INSULATOR	
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	

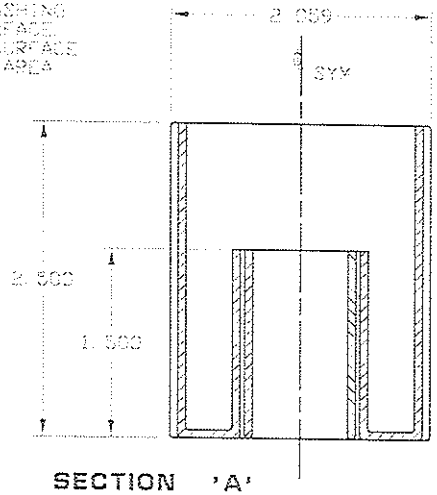
Architectural Testing, Inc.
Test sample complies with these details
Deviations are noted

A0639 MAY 12 2010

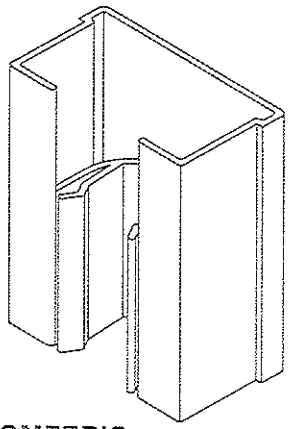
Signature Date



TOP VIEW



SECTION 'A'



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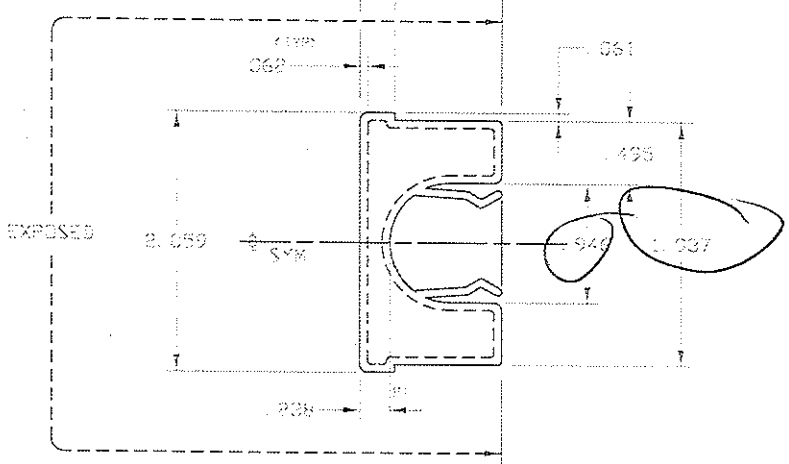
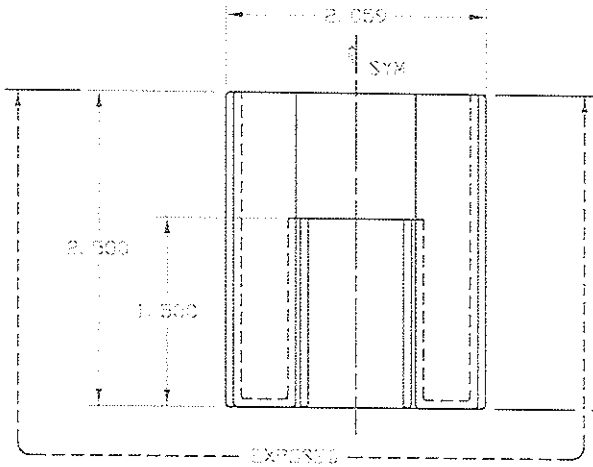
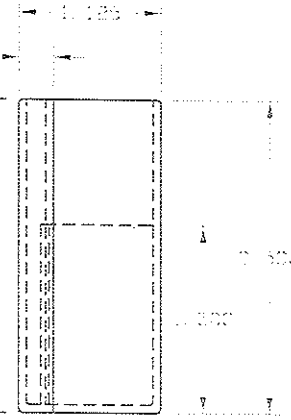


BOTTOM VIEW



FRONT VIEW



SIDE VIEW

NOTES:

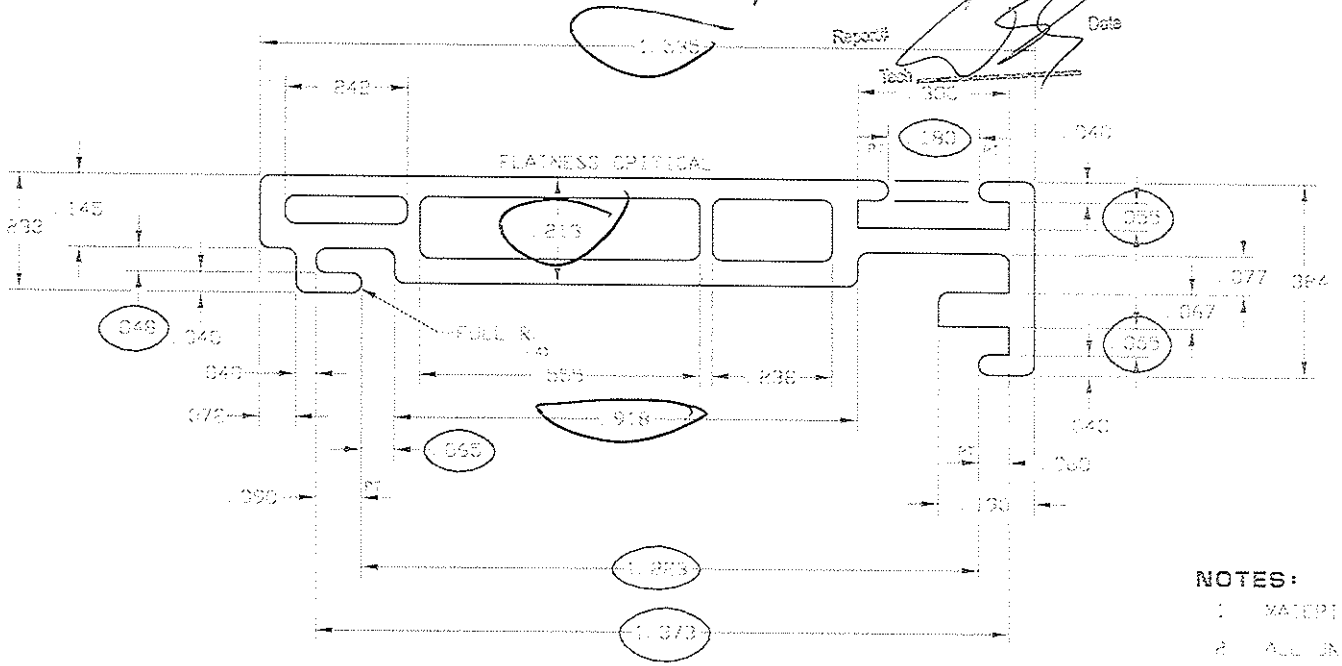
1. MATERIAL: ALLOY
2. DESIGN TO BE SPECIFIED ON P.O.
3. NO EJECTION PINS ON EXPOSED SURFACE
4. ALL UNSPECIFIED RADII = .015
5. EXPOSED SURFACE TO BE A-16m POLISHED FINISH
   ALL OTHER SURFACES TO BE MILL FINISH

UNITED STATES ALUMINUM CORP.

[illegible]	VENT STOP (BOSC SH WINDOW)	
SCALE: [illegible]	PART # WH605	DRAWING # [illegible]
DATE: [illegible]		

Architectural Testing, Inc.
Test sample complies with these details
Report # 10-27100.01

A0639 MAY 12 2010
Report # Date
Tech



ACTUAL SIZE

RADIUS SCHEDULE

	SHAPE	

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

NOTES:

1. MATERIAL: RIGID PVC TO MEET AAMA 303-92
2. ALL UNSPECIFIED RADII = .020
3. TYPICAL EXTERIOR WALL THICKNESS = .062
   TYPICAL INTERIOR WALL THICKNESS = .125
4. AREA = 1.181
5. MINIMUM SHEEN ACCORDING TO ASTM D-523
   HARDNESS MICRO-KNOOP 50 = 17 KNOOP NUMBER
6. TOLERANCE UNLESS OTHERWISE NOTED = ± .010
7. WALL THICKNESS TOLERANCE TO BE = ± .005

ALL DIMENSIONS FOR PVC EXTRUDED SHAPES ARE AS MEASURED IMMEDIATELY AFTER EXTRUSION.

1	ADDED NOTES 6 & 7	5/6/10	KC

INTERNATIONAL WINDOW CORP.

FINISH	.040 THERMAL INSULATION
DRAWING	
APPROVED SIZE (WINDOW)	