

**NFRC U-FACTOR, SHGC, VT, &
CONDENSATION RESISTANCE
COMPUTER SIMULATION REPORT**

**Rendered to:
UNITED STATES ALUMINUM**

**SERIES/MODEL:
TT451/TT601 Top Notch Ribbon Walls SSG**

Report Number: B6092.06-116-45
Report Date: 09/06/12
Test Record Retention Date: 08/06/16

**NFRC U-FACTOR, SHGC, VT, & CONDENSATION RESISTANCE
COMPUTER SIMULATION REPORT**

Rendered to:
UNITED STATES ALUMINUM
200 Singleton Drive
Waxahachie, Texas 75165

Report Number: B6092.06-116-45
Simulation Date: 08/06/12
Report Date: 09/06/12
Test Record Retention Date: 08/06/16

Project Summary:

Architectural Testing, Inc. was contracted to perform U-Factor, Solar Heat Gain Coefficient, Visible Transmittance, and Condensation Resistance* computer simulations in accordance with the National Fenestration Rating Council (NFRC). The products were evaluated in full compliance with NFRC requirements to the standards listed below.

**NFRC's Condensation Resistance rating is NOT equivalent to a Condensation Resistance Factor (CRF) determined in accordance with AAMA 1503.*

Standards:

NFRC 100-2010: Procedure for Determining Fenestration Product U-Factors
NFRC 200-2010: Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence
NFRC 500-2010: Procedure for Determining Fenestration Product Condensation Resistance Values

Software:

Frame and Edge Modeling: THERM 6.3.45
Center-of-Glass Modeling: WINDOW 6.3.62
Total Product Calculations: WINDOW 6.3.62
Spectral Data Library: 25.0

Simulations Specimen Description:

Series/Model: TT451/TT601 Top Notch Ribbon Walls SSG
Type: Glazed Wall System , Window Wall
Frame Material: AT Aluminum w/ Thermal Breaks - All Members
Sash Material: NA Not Applicable
Standard Size: 2000mm x 2000mm

Modeling Assumptions/Technical Interpretations:

- 1) To prevent air infiltration, tape was applied to all interior sash crack locations.
- 2) Material finish grouped per NFRC 100, Section 4.2.1 L

Specialty Products Table:

The specialty products method allow the manufacturer to determine the overall product SHGC and VT for any glazing option. The center of glass SHGC and/or VT must be determined using WINDOW 6.3.62. The method gives overall product SHGC and VT indexed on center of glass properties. All values used in the calculations are truncated to six decimal place precision.

	No Dividers	Dividers < 1	Dividers > 1
SHGC0	0.052246	0.055650	0.058841
SHGC1	0.934554	0.833860	0.739486
VT0	0.000000	0.000000	0.000000
VT1	0.882308	0.778210	0.680645

$$SHGC = SHGC0 + SHGCc (SHGC1 - SHGC0)$$

$$VT = VT0 + VTc (VT1 - VT0)$$

Validation Matrix:

The following products are part of a validation matrix. Only one is required for validation testing.

<i>Product Line</i>	<i>Report Number</i>
None	-

Spacer Option Description

<i>Spacer Type</i>	<i>Sealant</i>		<i>Code</i>
	<i>Primary</i>	<i>Secondary</i>	
Aluminum Spacer	Silicone	Silicone	A1-D

Grid Option Description

<i>Grid Size</i>	<i>Grid Type</i>	<i>Grid Pattern</i>
None	-	-

Reinforcement Option Description

<i>Location</i>	<i>Material</i>
None	-

Gas Filling Technique Description

<i>Fill Type</i>	<i>Method</i>
84.48% Xenon	Dual Probe w/Concentration Sensor
76.09% Argon	Single Probe Timed
85.82% Argon	Single Probe Timed
83.03% Argon	Single Probe Timed
88.65% Argon	Single Probe Timed
87.42% Argon	Single Probe Timed
64.98% Argon	Single Probe Timed
74.70% Argon	Single Probe Timed
60.79% Argon	Single Probe Timed
62.42% Argon	Single Probe Timed
86.02% Argon	Single Probe Timed
81.67% Argon	Single Probe Timed
94.60% Xenon	Evacuated Chamber

Edge-of-Glass Construction

<i>Interior Condition</i>	EPDM Gasket between painted aluminum frame and glazing.
<i>Exterior Condition</i>	EPDM Gasket between painted aluminum frame and glazing.

Weatherstripping

<i>Type</i>	<i>Quantity</i>	<i>Location</i>
None	-	-

Frame/Sash Materials Finish

<i>Interior</i>	Painted Aluminum
<i>Exterior</i>	Painted Aluminum

NFRC 100/200/500 Summary Sheet
TT451/TT601 Top Notch Ribbon Walls SSG

ID	Pane Thickness 1	Gap Width 1	Pane Thickness 2	Gap Width 2	Pane Thickness 3	Gap Width 3	Pane Thickness 4	Gap Fill	Low-e (Surface#)	Tint	Spacer	Grid Type
	U-Factor			Solar Heat Gain Coefficient (SHGC) Grids (None / <1 / >=1)					Visible Transmittance (VT) Grids (None / <1 / >=1)		Condensation Resistance	
1	TT451 Top Notch Ribbon Wall SSG: COG=0.4400											
	0.222	0.500	0.225					XEN84.48		CL	A1-D	N
	U-Factor 0.50			SHGC (N) 0.66					VT (N) 0.65		CR 45	
2	TT451 Top Notch Ribbon Wall SSG: COG=0.4200											
	0.222	0.500	0.225					ARG76.09	0.652(#2)	GY	A1-D	N
	U-Factor 0.48			SHGC (N) 0.28					VT (N) 0.21		CR 45	
3	TT451 Top Notch Ribbon Wall SSG: COG=0.4000											
	0.220	0.500	0.225					ARG85.82	0.566(#2)	GY	A1-D	N
	U-Factor 0.47			SHGC (N) 0.28					VT (N) 0.18		CR 46	
4	TT451 Top Notch Ribbon Wall SSG: COG=0.3800											
	0.226	0.500	0.225					ARG83.03	0.471(#2)	AZ	A1-D	N
	U-Factor 0.45			SHGC (N) 0.21					VT (N) 0.14		CR 47	
5	TT451 Top Notch Ribbon Wall SSG: COG=0.3600											
	0.220	0.500	0.225					ARG88.65	0.395(#2)	GY	A1-D	N
	U-Factor 0.43			SHGC (N) 0.18					VT (N) 0.06		CR 48	
6	TT451 Top Notch Ribbon Wall SSG: COG=0.3400											
	0.232	0.500	0.225					ARG87.42	0.318(#2)	CL	A1-D	N
	U-Factor 0.42			SHGC (N) 0.46					VT (N) 0.50		CR 50	
7	TT451 Top Notch Ribbon Wall SSG: COG=0.3200											
	0.223	0.500	0.225					ARG64.98	0.215(#2)	CL	A1-D	N
	U-Factor 0.40			SHGC (N) 0.60					VT (N) 0.65		CR 51	
8	TT451 Top Notch Ribbon Wall SSG: COG=0.3000											
	0.233	0.500	0.225					ARG74.7	0.166(#2)	CL	A1-D	N
	U-Factor 0.38			SHGC (N) 0.44					VT (N) 0.47		CR 52	
9	TT451 Top Notch Ribbon Wall SSG: COG=0.2800											
	0.223	0.500	0.225					ARG60.79	0.087(#2)	CL	A1-D	N
	U-Factor 0.37			SHGC (N) 0.53					VT (N) 0.67		CR 53	
10	TT451 Top Notch Ribbon Wall SSG: COG=0.2600											
	0.223	0.500	0.225					ARG62.42	0.035(#2)	CL	A1-D	N
	U-Factor 0.35			SHGC (N) 0.39					VT (N) 0.62		CR 54	

**NFRC 100/200/500 Summary Sheet
TT451/TT601 Top Notch Ribbon Walls SSG**

ID	Pane Thickness 1	Gap Width 1	Pane Thickness 2	Gap Width 2	Pane Thickness 3	Gap Width 3	Pane Thickness 4	Gap Fill	Low-e (Surface#)	Tint	Spacer	Grid Type
	U-Factor			Solar Heat Gain Coefficient (SHGC) Grids (None / <1 / >=1)					Visible Transmittance (VT) Grids (None / <1 / >=1)		Condensation Resistance	
11	TT451 Top Notch Ribbon Wall SSG: COG=0.2400											
	0.223	0.500	0.223					ARG86.02	0.035(#2) / 0.035(#3)		CL	A1-D N
	U-Factor 0.34			SHGC (N) 0.37					VT (N) 0.55		CR 55	
12	TT451 Top Notch Ribbon Wall SSG: COG=0.2200											
	0.223	0.500	0.223					XEN81.67	0.018(#2) / 0.018(#3)		CL	A1-D N
	U-Factor 0.32			SHGC (N) 0.28					VT (N) 0.46		CR 55	
13	TT451 Top Notch Ribbon Wall SSG: COG=0.2000											
	0.223	0.500	0.223					XEN94.6	0.018(#2) / 0.018(#3)		CL	A1-D N
	U-Factor 0.30			SHGC (N) 0.28					VT (N) 0.46		CR 55	
14	TT601 Top Notch Ribbon Wall SSG: COG=0.4400											
	0.222	0.500	0.225					XEN84.48			CL	A1-D N
	U-Factor 0.51			SHGC (N) 0.66					VT (N) 0.65		CR 45	
15	TT601 Top Notch Ribbon Wall SSG: COG=0.4200											
	0.222	0.500	0.225					ARG76.09	0.652(#2)		GY	A1-D N
	U-Factor 0.49			SHGC (N) 0.28					VT (N) 0.21		CR 45	
16	TT601 Top Notch Ribbon Wall SSG: COG=0.4000											
	0.220	0.500	0.225					ARG85.82	0.566(#2)		GY	A1-D N
	U-Factor 0.48			SHGC (N) 0.28					VT (N) 0.18		CR 46	
17	TT601 Top Notch Ribbon Wall SSG: COG=0.3800											
	0.226	0.500	0.225					ARG83.03	0.471(#2)		AZ	A1-D N
	U-Factor 0.46			SHGC (N) 0.21					VT (N) 0.14		CR 47	
18	TT601 Top Notch Ribbon Wall SSG: COG=0.3600											
	0.220	0.500	0.225					ARG88.65	0.395(#2)		GY	A1-D N
	U-Factor 0.44			SHGC (N) 0.18					VT (N) 0.06		CR 49	
19	TT601 Top Notch Ribbon Wall SSG: COG=0.3400											
	0.232	0.500	0.225					ARG87.42	0.318(#2)		CL	A1-D N
	U-Factor 0.43			SHGC (N) 0.46					VT (N) 0.50		CR 50	
20	TT601 Top Notch Ribbon Wall SSG: COG=0.3200											
	0.223	0.500	0.225					ARG64.98	0.215(#2)		CL	A1-D N
	U-Factor 0.41			SHGC (N) 0.60					VT (N) 0.65		CR 51	

**NFRC 100/200/500 Summary Sheet
TT451/TT601 Top Notch Ribbon Walls SSG**

ID	Pane Thickness 1	Gap Width 1	Pane Thickness 2	Gap Width 2	Pane Thickness 3	Gap Width 3	Pane Thickness 4	Gap Fill	Low-e (Surface#)	Tint	Spacer	Grid Type
	U-Factor			Solar Heat Gain Coefficient (SHGC) Grids (None / <1 / >=1)					Visible Transmittance (VT) Grids (None / <1 / >=1)		Condensation Resistance	
21	TT601 Top Notch Ribbon Wall SSG: COG=0.3000											
	0.233	0.500	0.225					ARG74.7	0.166(#2)	CL	A1-D	N
	U-Factor 0.40			SHGC (N) 0.44					VT (N) 0.47		CR 52	
22	TT601 Top Notch Ribbon Wall SSG: COG=0.2800											
	0.223	0.500	0.225					ARG60.79	0.087(#2)	CL	A1-D	N
	U-Factor 0.38			SHGC (N) 0.53					VT (N) 0.67		CR 53	
23	TT601 Top Notch Ribbon Wall SSG: COG=0.2600											
	0.223	0.500	0.225					ARG62.42	0.035(#2)	CL	A1-D	N
	U-Factor 0.36			SHGC (N) 0.39					VT (N) 0.62		CR 54	
24	TT601 Top Notch Ribbon Wall SSG: COG=0.2400											
	0.223	0.500	0.223					ARG86.02	0.035(#2) / 0.035(#3)	CL	A1-D	N
	U-Factor 0.35			SHGC (N) 0.37					VT (N) 0.55		CR 56	
25	TT601 Top Notch Ribbon Wall SSG: COG=0.2200											
	0.223	0.500	0.223					XEN81.67	0.018(#2) / 0.018(#3)	CL	A1-D	N
	U-Factor 0.33			SHGC (N) 0.28					VT (N) 0.46		CR 58	
26	TT601 Top Notch Ribbon Wall SSG: COG=0.2000											
	0.223	0.500	0.223					XEN94.6	0.018(#2) / 0.018(#3)	CL	A1-D	N
	U-Factor 0.31			SHGC (N) 0.28					VT (N) 0.46		CR 58	

The Condensation Resistance results obtained from this procedure are for controlled laboratory conditions and do not include the effects of air movement through the specimen, solar radiation, and the thermal bridging that may occur due to the specific design and construction of the fenestration system opening.

Ratings values included in this report are for submittals to an NFRC-licensed IA and are not meant to be used directly for labeling purposes. Only those values identified on a valid Certification Authorization Report (CAR) by an NFRC accredited Inspection Agency (IA) are to be used for labeling purposes. The ratings values were rounded in accordance to NFRC 601, NFRC Unit and Measurement Policy.

Architectural Testing, Inc. is an NFRC accredited simulation laboratory and all simulations were conducted in full compliance with NFRC approved procedures and specifications. The NFRC procedure requires that the computational results be verified through actual test results.

Detailed drawings, simulation data files, 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 will expire. Results obtained are simulated 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 product simulated. This report may not be reproduced, except in full, without the written approval of Architectural Testing, Inc.

For ARCHITECTURAL TESTING, INC.:

SIMULATED BY:

REVIEWED BY:

Eric S. Leitner
Simulation Technician

Kristen L. Livelsberger
Senior Simulation Technician
Simulator-In-Responsible-Charge

ESL:esl
B6092.06-116-45

Attachments (pages): This report is complete only when all attachments listed are included.
Appendix A: Drawings and Bills of Material (19)

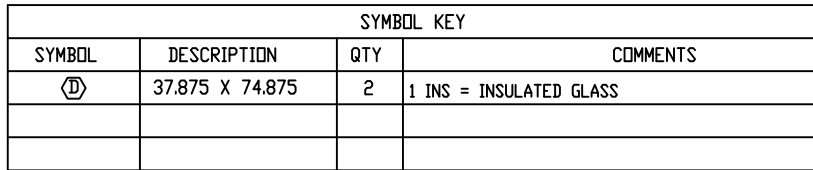
Revision Log

<u>Rev. #</u>	<u>Date</u>	<u>Page(s)</u>	<u>Revision(s)</u>
.06R0	9/6/2012	All	Original Report Issued to US Aluminum

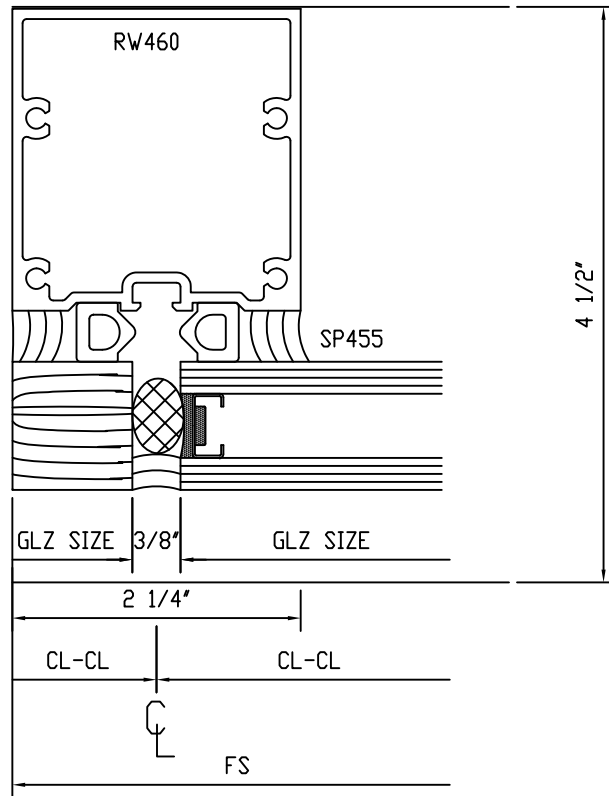
All drawings and Bills of Material used to simulate this product are enclosed in this Appendix

Appendix A

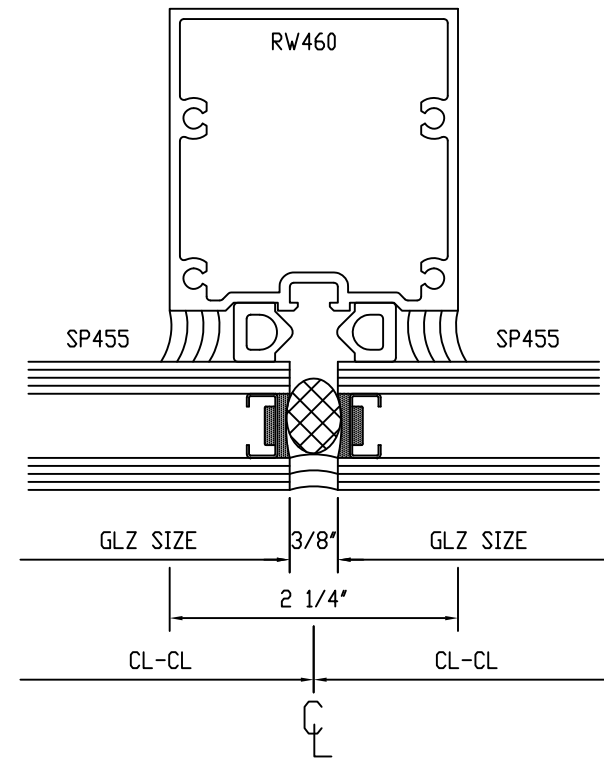
B6092.06-116-45



--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--



5



6

ATI

Report # B6092-116-45

Date 2/3/2012

Simulator *Eric Barthele*



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

DIVISION UNITED STATES ALUMINUM

REV	REV_DESCRIPTION	DATE	XXX	DATE	12/20/2011	THERMAL_TEST_NFRC_AAMA_1503	DWG NO.
SYM	REVISION	DATE	BY	SCALE	FULL	SERIES_TT451_SSG	MU2011-004-03

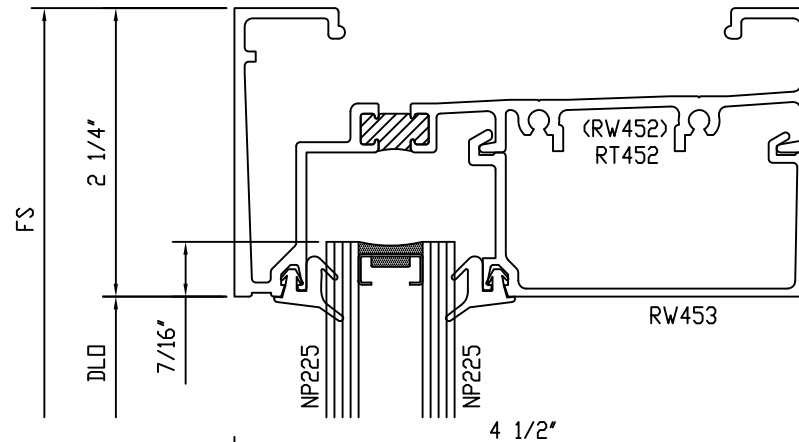
DRAWN BY: DCW

THERMAL_TEST_NFRC_AAMA_1503

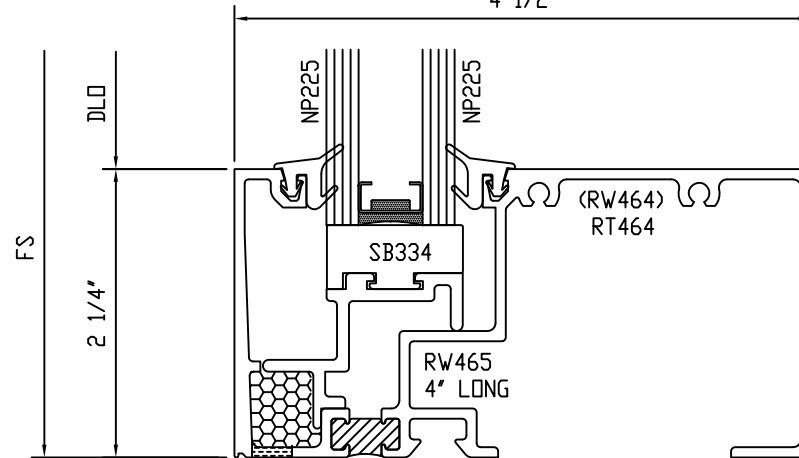
SERIES_TT451_SSG

MU2011-004-03

1



2



5/16" DIA WEEP
W/UB625 BAFFLE

ATI
Report # B6092-116-45
Date 2/3/2012
Simulator Eric Barilau



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

DIVISION UNITED STATES ALUMINUM

REV	REV_DESCRIPTION	DATE	XXX	DATE	12/23/2011	THERMAL_TEST_NFRC_AAMA_1503 SERIES_TT451_SSG	DWG NO. MU2011-004-02
SYM	REVISION	DATE	BY	SCALE	FULL		

USA-822 B

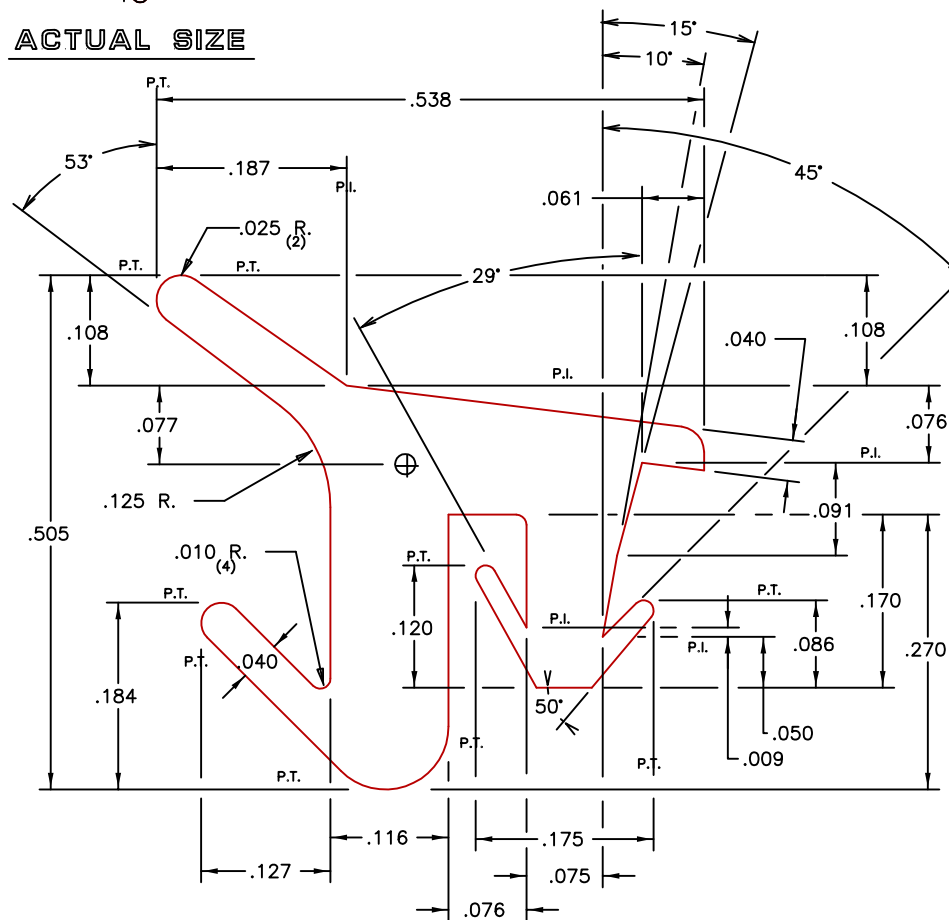
NOTE :

1. MATERIAL: EPDM, BLACK
2. HARDNESS: 70 ±SHORE, "A" SCALE
3. AREA: .101
4. .026 DIA FIBREGLAS CORD(6 STRANDS)
5. UNIVERSAL RUBBER DIE 3765 OR EQUAL
- ⑥ 6. SILICONE BATH REQUIRED.

.187 F.C.



ACTUAL SIZE



ATI

Report # B6092-116-45

Date 2/3/2012

Simulator Eric Bakula

U.S. ALUMINUM CORP.

MAMO

8/16/90

8X SIZE

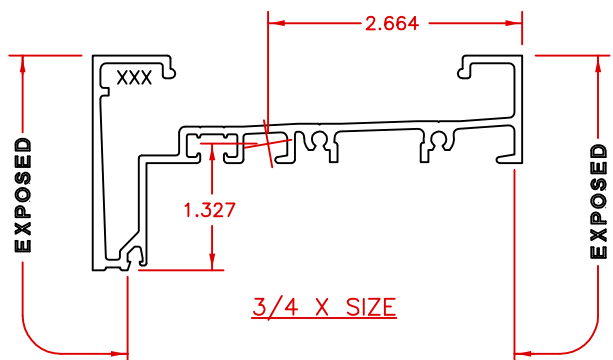
TOP LOAD GASKET

1/4" OR 1" GLASS

PART NO: NP225

USA-822B

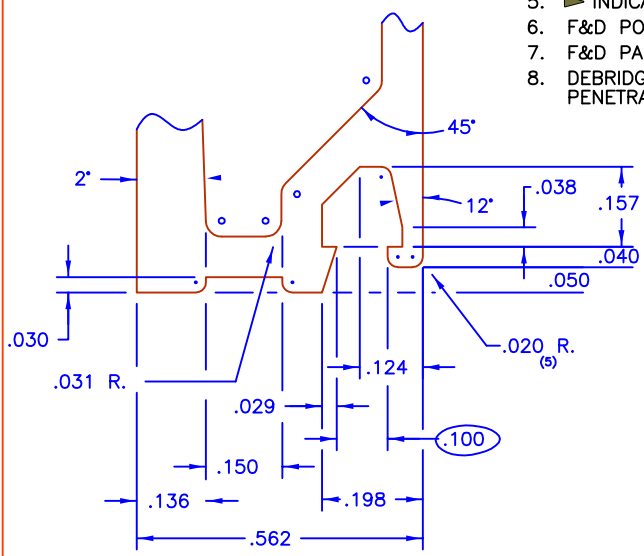
B	NOTE ADDED	6/12/96	MM



ATI
 Report # B6092-116-45
 Date 2/3/2012
 Simulator Eric Baribe

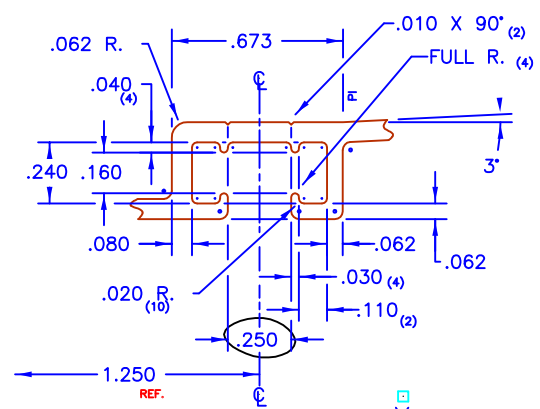
NOTES:

- 6063-T5 ALLOY AND TEMPER
- PAINT PERIMETER = 3.741"
- XXX INDICATES I.D. MARK FOR IEC-TX
- MATES WITH RW443 DIE#
 RW453; DIE#60606
 RW250; DIE#60598
 RW260; DIE#60600
- INDICATES POSSIBLE STREAKING
- F&D POCKET AREA = .130"
- F&D PART NUMBER: RT452
- DEBRIDGE WITH A .218 X .015 MAX PENETRATION INTO THERMAL AREA



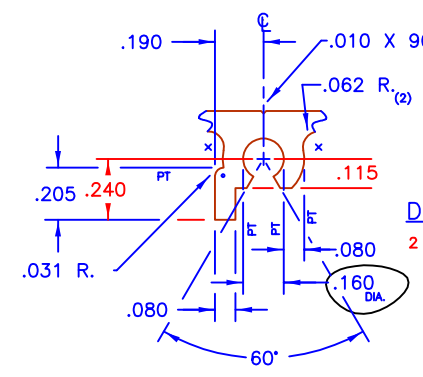
DETAIL "A"

4 X SIZE



DETAIL "B"

2 X SIZE



DETAIL "C"

2 X SIZE (2) PLACES

SECTION PROPERTIES

Ixx = 2.933 in⁴
 Sxx = 1.097 in³
 Iyy = 0.370 in⁴
 Syy = 0.279 in³

UNITED STATES ALUMINUM CORP.

T-60605

HEAD

GLH

10-26-00

RW452

FULL SIZE

1.132

100437

1.358

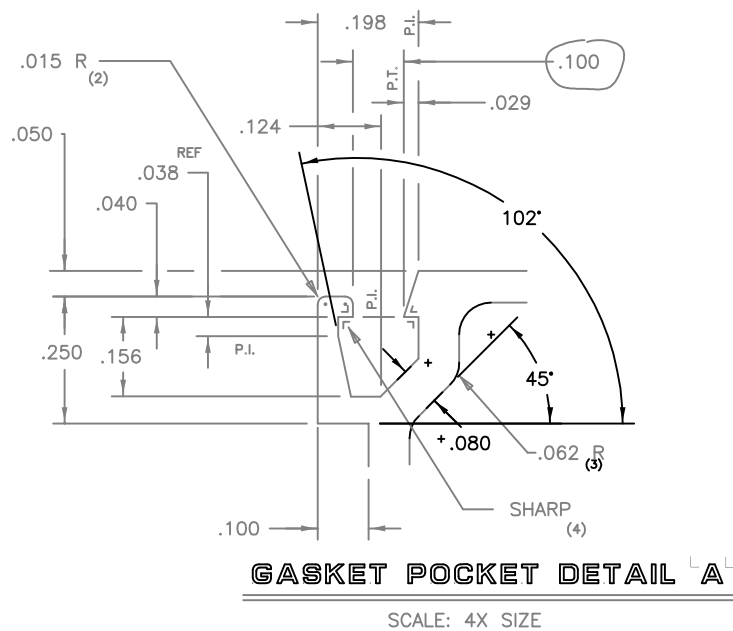
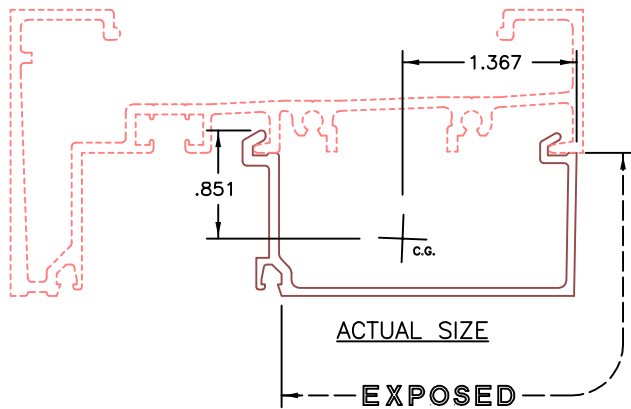
5.031

26.404

SOLID

19

T-60605



RW450/451

NOTES:

- 6063-T5 ALLOY AND TEMPER
- PAINT PERIMETER = 3.623"
- XXX INDICATES I.D. MARK FOR IEC-TX
- MATES WITH RW452; DIE#60605
RW433; DIE#60606
RW463; DIE#60608

UNITED STATES ALUMINUM CORP.

T-60606

1" GLASS STOP

GLH

7-21-00

RW453

2 X SIZE

ATI

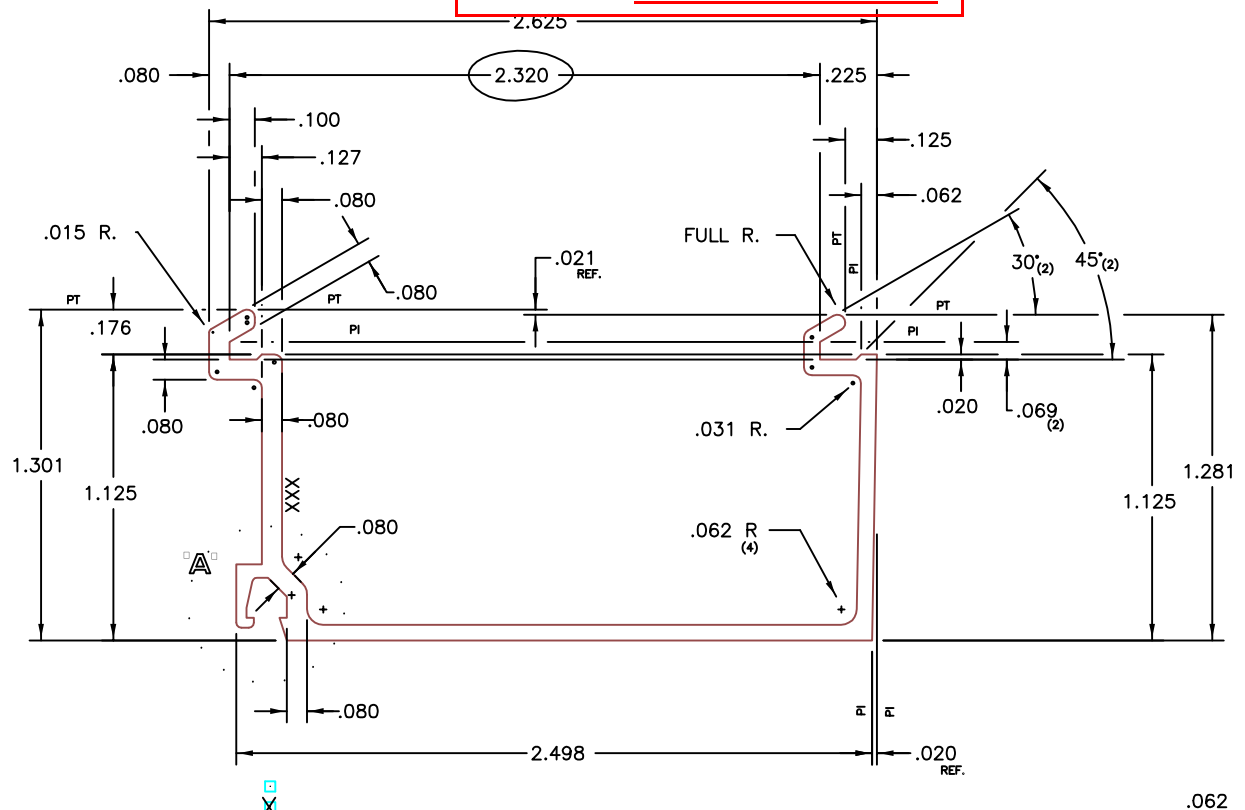
Report # B6092-116-45

Date 2/3/2012

Simulator Eric Barile

SECTION PROPERTIES

Ixx = 0.383 N⁴
Sxx = 0.280 N³
Iyy = 0.745 N⁴
Syy = 0.875 N³



X

.380

US-100374

.456

2.875

11.338

SOLID

25

T-60606

ATI

Report # B6092-116-45

Date 2/3/2012

Simulator *Eric Barile*

UNITED STATES ALUMINUM CORP.

H-60607

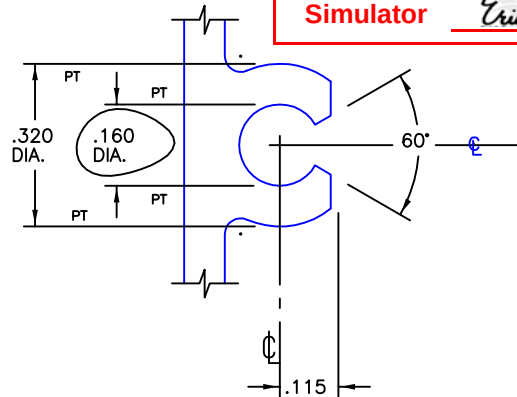
SILICONE GLAZE VERT. MULL
RW460

DWJ

7-24-00

FULL SIZE

ECN



DETAIL "A"

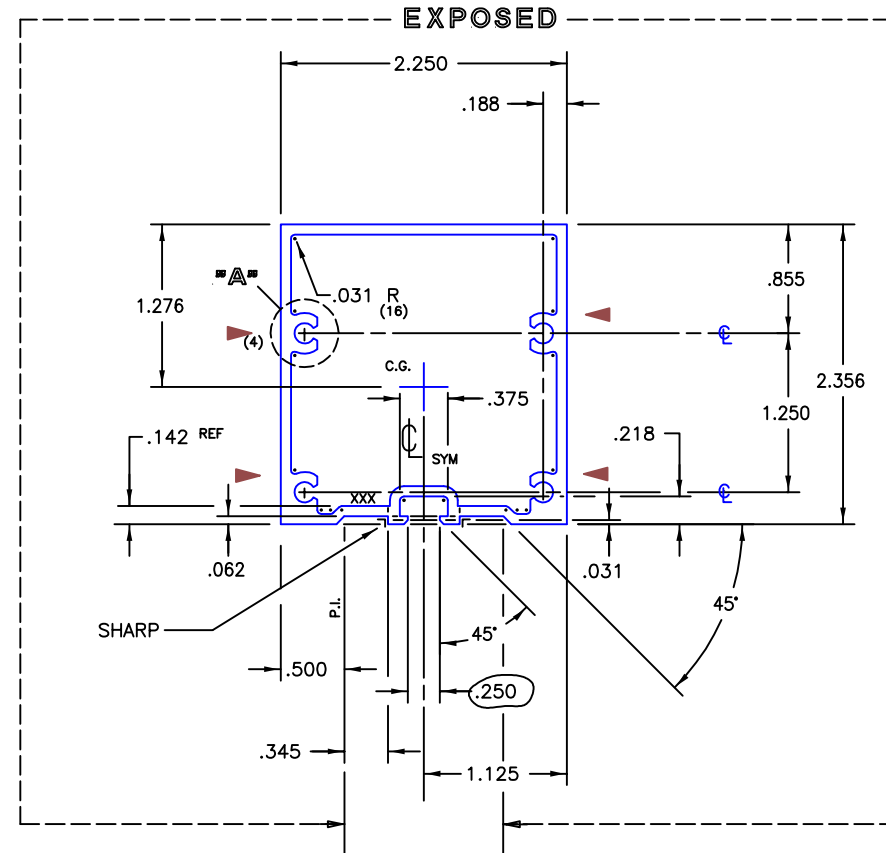
4 X SIZE
(4 PLACES)

**SECTION
PROPERTIES**

$I_{xx} = 0.712 \text{ in}^4$
 $S_{xx} = 0.558 \text{ in}^3$
 $I_{yy} = 0.723 \text{ in}^4$
 $S_{yy} = 0.643 \text{ in}^3$

NOTES:

- 6063-T5 ALLOY AND TEMPER
- XXX INDICATES I.D. MARK FOR IEC-TX
- PAINT PERIMETER = 8.126"
- OUTSIDE PERIMETER = 10.173"
- INDICATES POSSIBLE STREAKING



.080

.924

US-100373

1.109

3.257

20.989

HOLLOW

19

H-60607

RW451

NOTES:

- 6063-T5 ALLOY AND TEMPER.
- DEBRIDGE WITH A .218 x .015 MAX PENETRATION INTO THERMAL AREA.
- ASSEMBLES WITH RW252; DIE# 60599
- THERMAL DETAIL AREA: .138; "AA"
- PAINT PERIMETER: 7.229
- XXX INDICATES ID MARK FOR IEC-TX.
- XXX = STREAKS POSSIBLE
- F&D PART NO. IS RT464

RW465; DIE#60610

UNITED STATES ALUMINUM CORP.

T-60609

SILL

DWJ

7-24-00

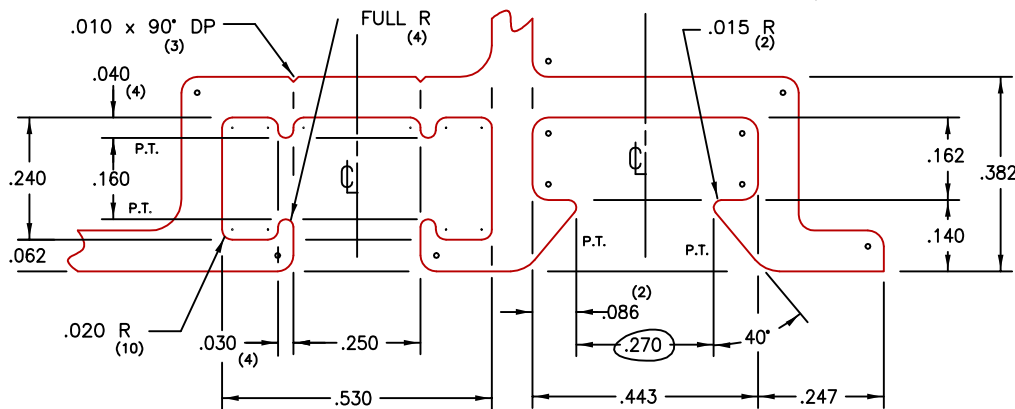
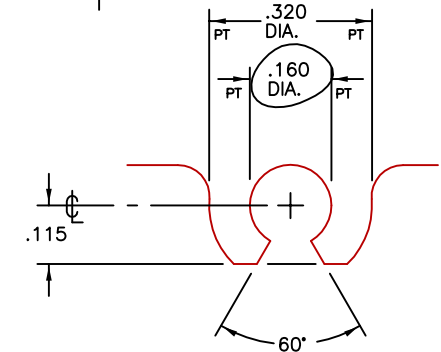
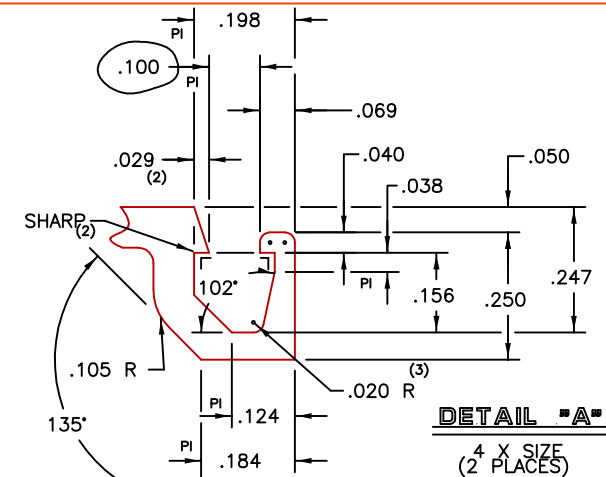
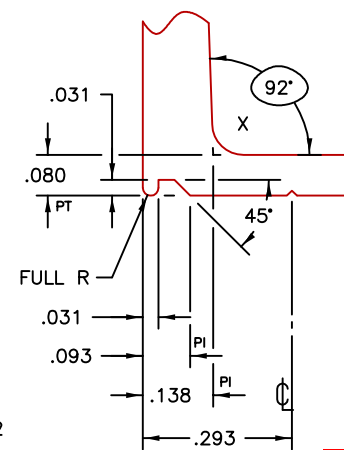
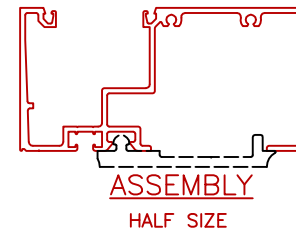
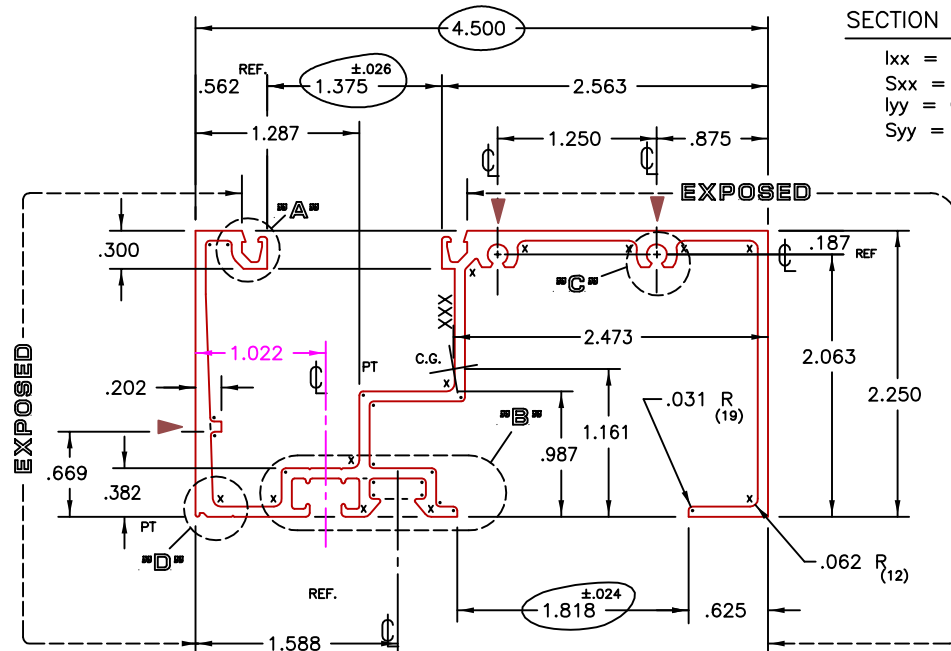
RW464

FULL SIZE

ECN

SECTION PROPERTIES:

$I_{xx} = 3.148 \text{ in}^4$
 $S_{xx} = 1.273 \text{ in}^3$
 $I_{yy} = 0.877 \text{ in}^4$
 $S_{yy} = 0.755 \text{ in}^3$



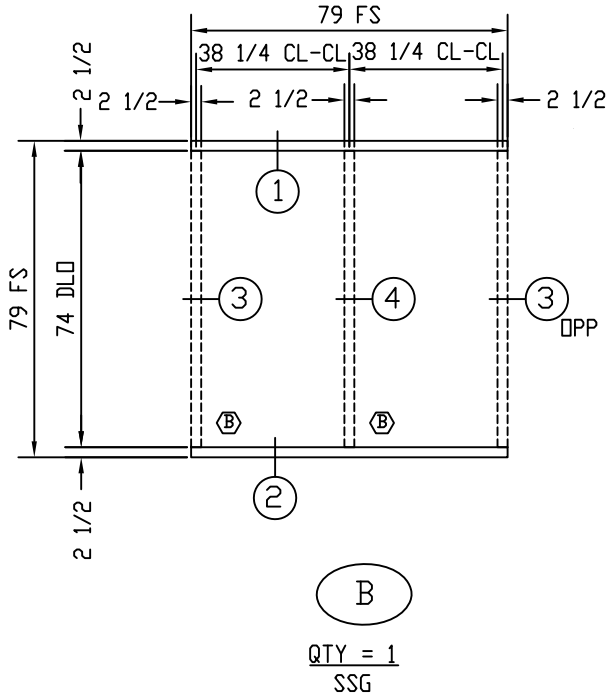
ATI
 Report # B6092-116-45
 Date 2/3/2012
 Simulator Eric Barthe

DETAIL "C"
 4 X SIZE
 (2 PLACES)

RW451

DETAIL "B"
 4 X SIZE

	1.279	US-100372	
	1.534	5.030	
	29.971	SOLID	
	20		T-60609



SYMBOL KEY			
SYMBOL	DESCRIPTION	QTY	COMMENTS
ⓑ	37.875 X 74.875	2	1 INS = INSULATED GLASS

REV	REV_DESCRIPTION	DATE	XXX
SYM	REVISION	DATE	BY



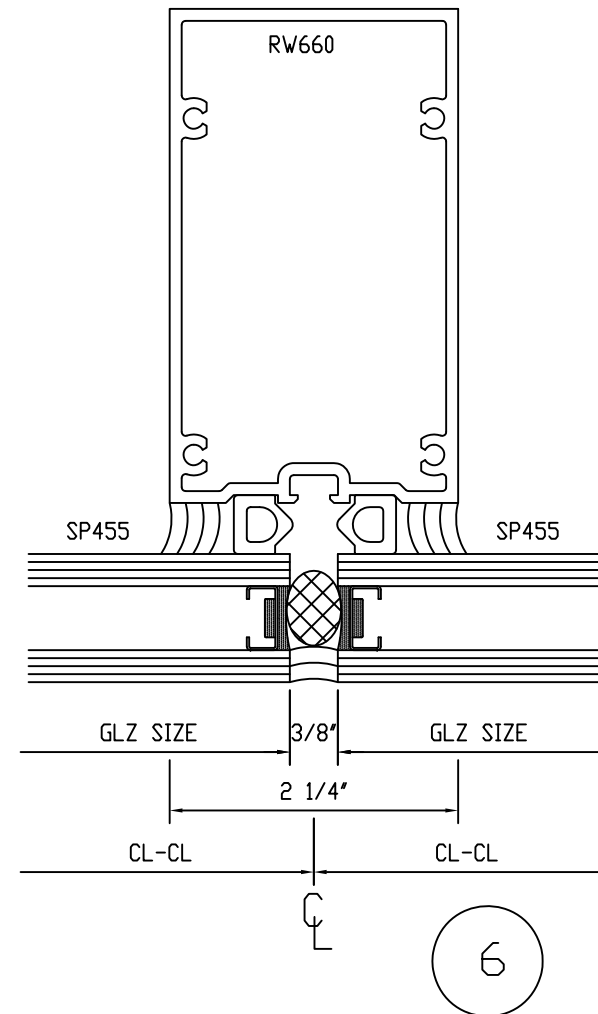
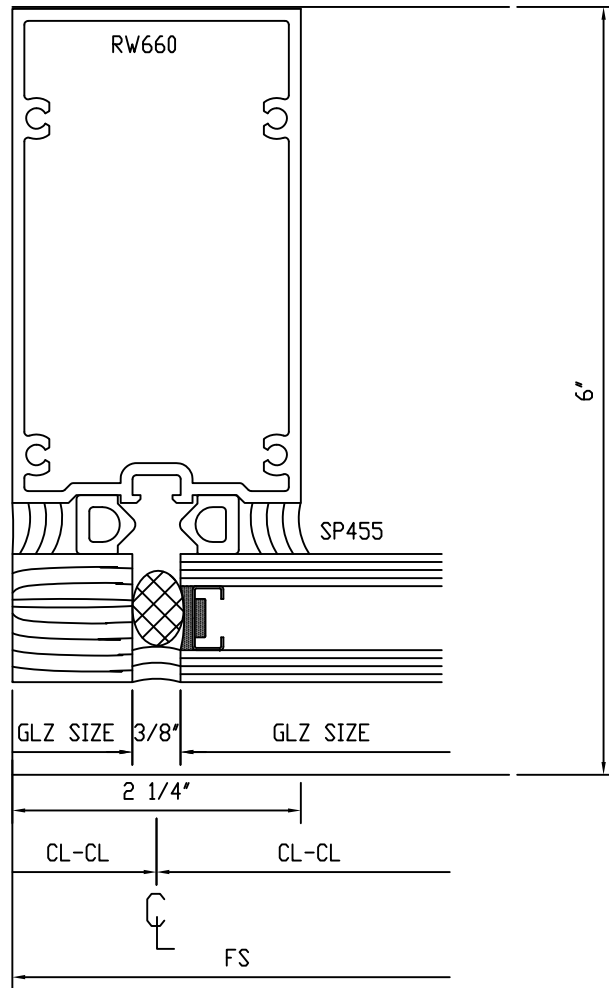
2100 E. 38TH STREET VERNON, CA 90058
PHONE: (323) 588-1281 FAX: (323) 232-2523

DIVISION UNITED STATES ALUMINUM

DRAWN BY: DCW
DATE: 12/20/2011
SCALE: 3/8"=1'

THERMAL_TEST_NFRC_AAMA_1503
SERIES_TT601_SSG

DWG NO.
MU2011-002-01



ATI

Report # B6092-116-45

Date 2/3/2012

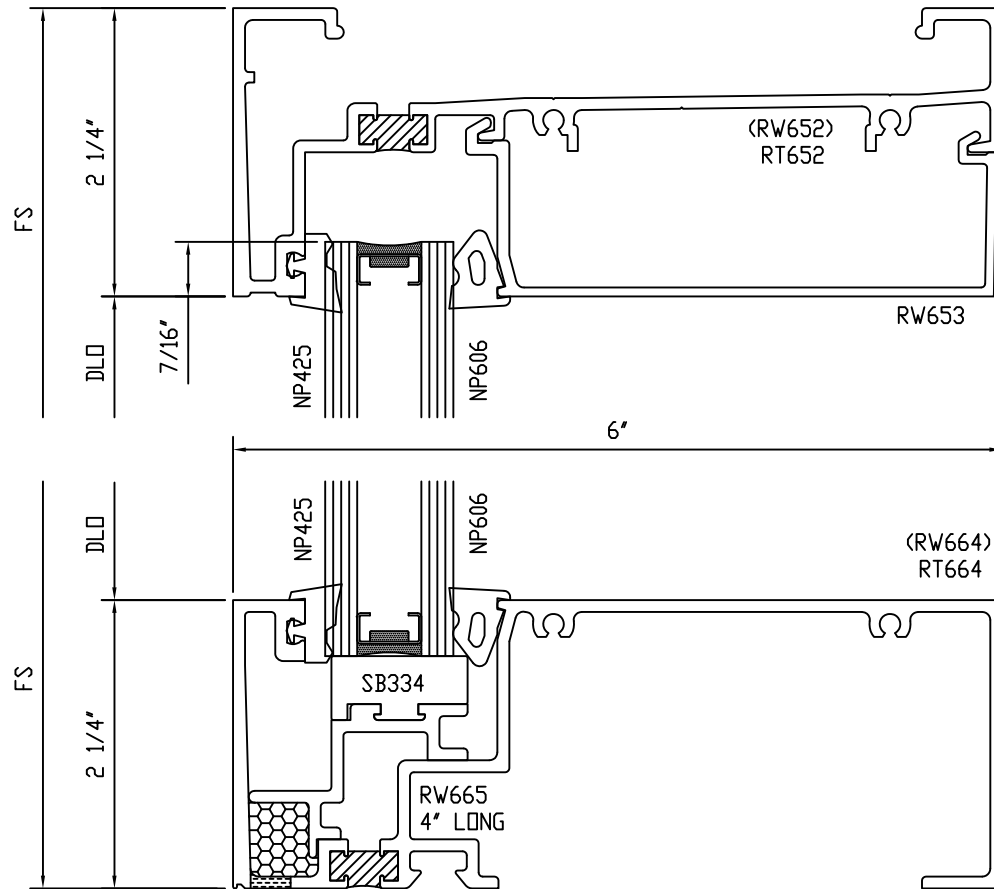
Simulator *Eric Bordeau*

5

								2100 E. 38TH STREET VERNON, CA 90058 PHONE: (323) 588-1281 FAX: (323) 232-2523	
				DIVISION UNITED STATES ALUMINUM					
				DRAWN BY: DCW				THERMAL_TEST_NFRC_AAMA_1503	
				DATE: 12/20/2011				DWG NO.	
				SCALE: FULL				SERIES_TT601_SSG	
REV	REV_DESCRIPTION	DATE	XXX					MU2011-002-03	
SYM	REVISION	DATE	BY						

1

2



5/16\" DIA WEEP
W/UB625 BAFFLE

ATI
Report # B6092-116-45
Date 2/3/2012
Simulator *Eric Barilko*



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

DIVISION UNITED STATES ALUMINUM

REV	REV_DESCRIPTION	DATE	XXX	DATE	12/20/2011	THERMAL_TEST_NFRC_AAMA_1503 SERIES_TT601_SSG	DWG NO. MU2011-002-02
SYM	REVISION	DATE	BY	SCALE	FULL		



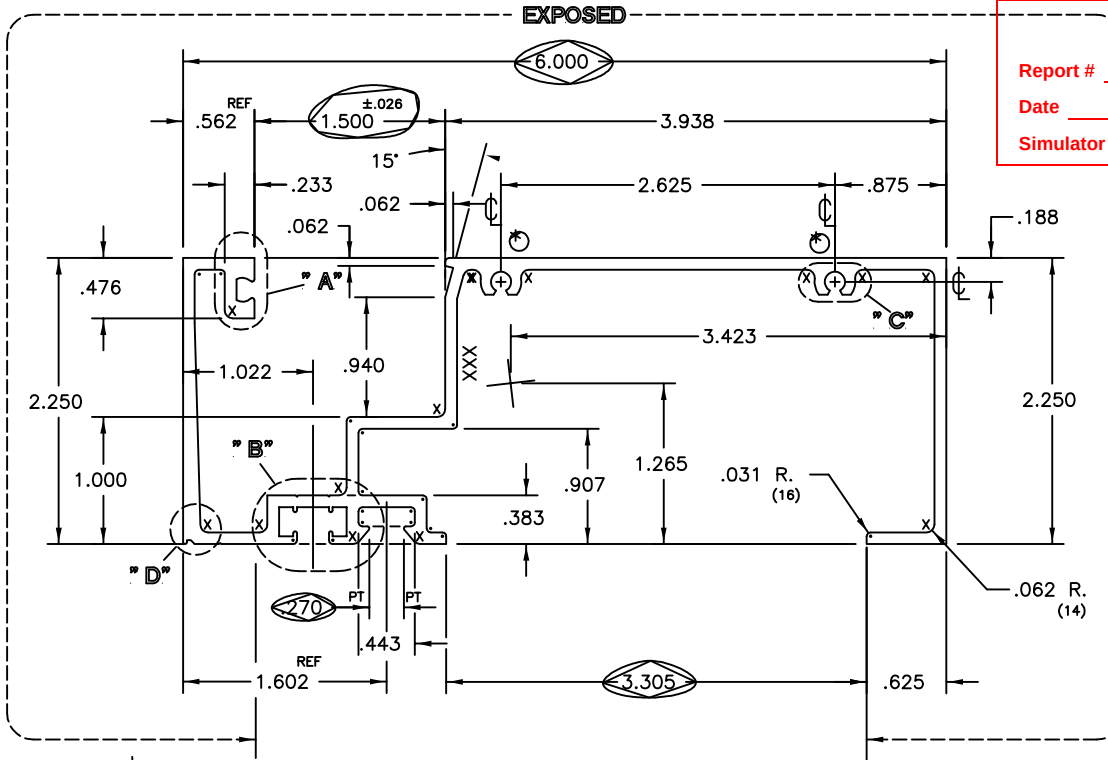
$l_{xx} = 6.745$	in	4
$S_{xx} = 2.048$	in	3
$l_{yy} = 0.570$	in	4
$S_{yy} = 0.369$	in	3

EST. AREA:	.529	US-NO.	C-273	PORTS	
EST. WT/FT:	.635	CIRCLE SIZE	4.318 IN.	BACKER	
EST. PERI:	14.007	CLASS.	SOLID	BOLSTER.	
FACTOR :	22	ER- =		DIE NO.	T-60574

NOTES:

- 6063-T5 ALLOY AND TEMPER.
- HOOKS WITH DIE# 60582 & 60579
- DEBRIDGE WITH A .218 x .015 MAX PENETRATION INTO THERMAL AREA.
- THERMAL DETAIL AREA: .107; "AA"
- PAINT PERIMETER: 5.657
- XXX INDICATES ID MARK FOR IEC-TX.
- SLIDE FITS WITH DIE#
- STREAKS POSSIBLE

SYM	REVISION	BY	DATE	CUSTOMER	DIE NO.
				U.S. ALUMINUM CORP.	T-60576
				PART NAME	DATE
				6" SILL FOR TOPNOTCH SYSTEM	9/27/00
				PART NO.	CHKD.
				RW664	APP.
				SCALE	
				FULL SIZE	
				STANDARD TOLERANCES FOR EXTRUDED SHAPES APPLY UNLESS SPECIFICALLY SHOWN OTHERWISE	



ATI

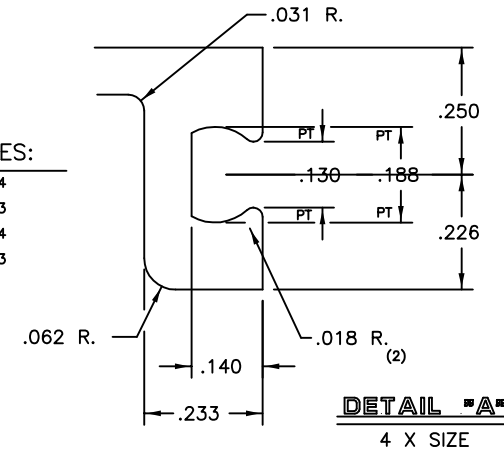
Report # B6092-116-45

Date 2/3/2012

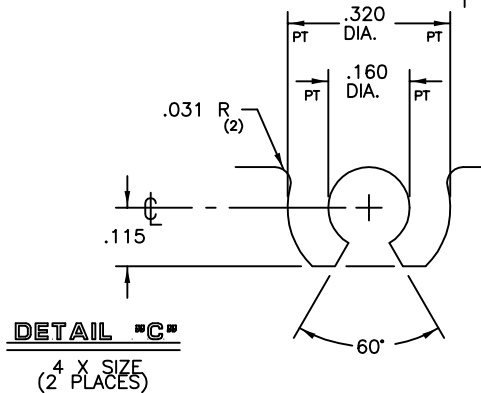
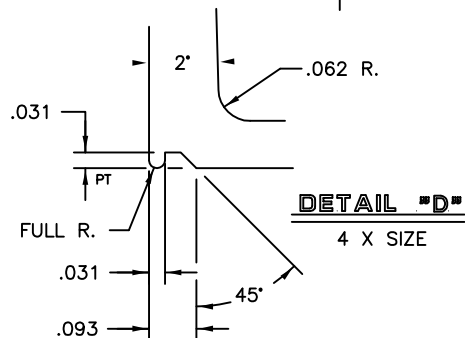
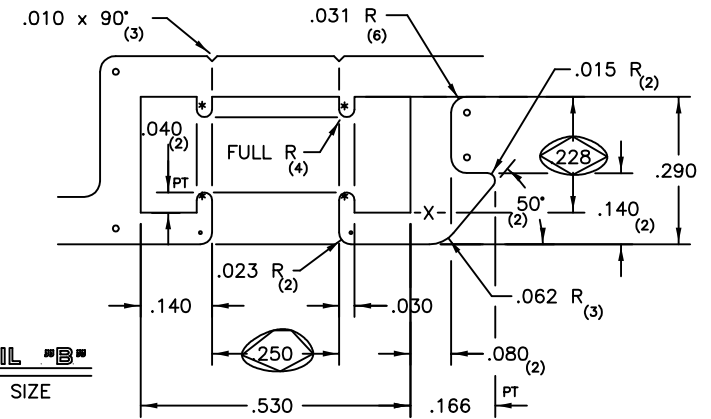
Simulator Eric Barila

SECTION PROPERTIES:

Ixx = 7.207 in⁴
 Sxx = 2.105 in³
 Iyy = 1.118 in⁴
 Syy = 0.884 in³



DETAIL 'B' 4 X SIZE



PRODUCT: RW600
 PROJECT: ----

CA
 TX
International Extrusion Corporation
 202 SINGLETON DRIVE
 (972) 937-7032
 WAXAHACHIE
 TEXAS 75165

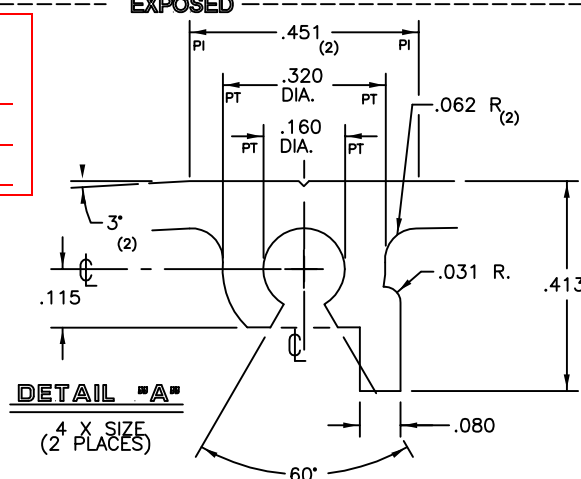
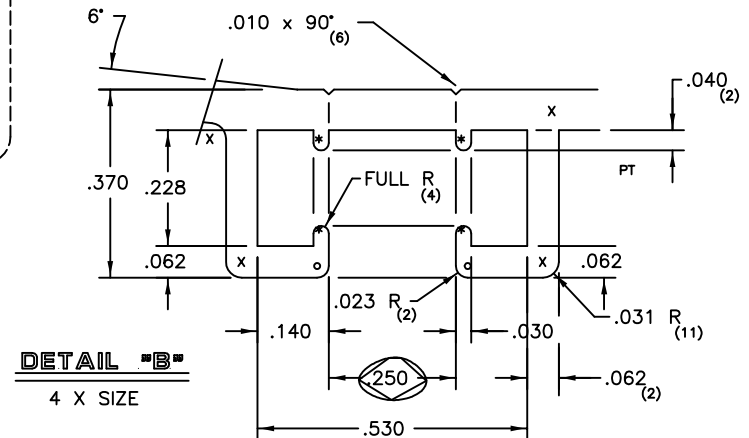
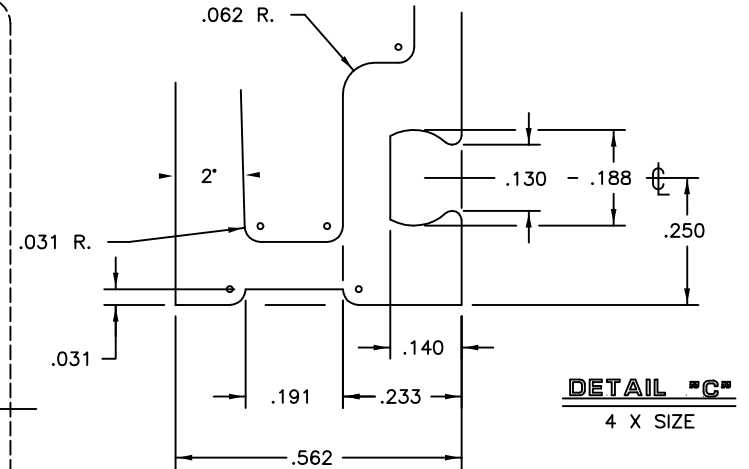
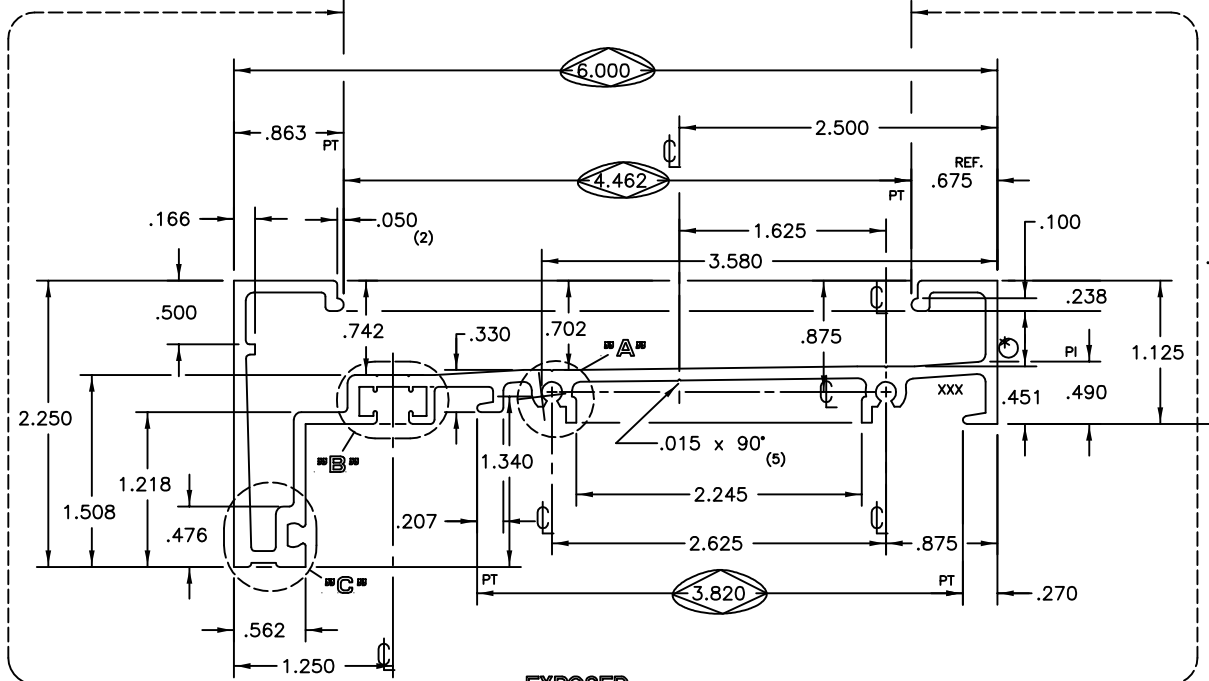
UNLESS OTHERWISE NOTED, ALL CORNERS ARE .015 R, AND TYPICAL WALL THICKNESS IS .093		12X1.5 WPL 12X1.5 DIE
EST. AREA: 1.588	US-NO. C-275	PORIS WPL 60576
EST. WT/FT: 1.906	CIRCLE SIZE 6.408 IN.	BACKER 12 x 60576
EST. PERI: 32.692	CLASS. SOLID	BOLSTER. 42821
FACTOR : 17	ER 8" 34/SHIRLEY	DIE NO. T-60576

NOTES:

- 6063-T5 ALLOY AND TEMPER.
- HOOKS WITH DIE# 60578 & 60583
- DEBRIDGE WITH A .218 x .015 MAX PENETRATION INTO THERMAL AREA.
- THERMAL DETAIL AREA: .107; "AA"
- PAINT PERIMETER: 3.657
- XXX INDICATES ID MARK FOR IEC-TX.
- SLIDE FITS WITH DIE#
- STREAKS POSSIBLE

SYM	REVISION	BY	DATE	CUSTOMER		DIE NO.	
				U.S. ALUMINUM CORP.		T-60577	
				PART NAME	6" HEAD FOR TOPNOTCH SYSTEM	DRAWN	R. TER MEER
				PART NO.	RW652	SCALE	FULL SIZE
				DATE		9/27/00	
				CHKD.		APP.	

STANDARD TOLERANCES FOR EXTRUDED SHAPES APPLY UNLESS SPECIFICALLY SHOWN OTHERWISE



☐ CA
☒ TX

International Extrusion Corporation
 202 SINGLETON DRIVE
 (972) 937-7032
 WAXAHACHIE TEXAS 75165

UNLESS OTHERWISE NOTED, ALL CORNERS ARE .015 R, AND TYPICAL WALL THICKNESS IS .093		12X1.5 WPL 12X1.5 DIE	
EST. AREA:	1.403	US-NO.	C-277
EST. WT/FT:	1.684	CIRCLE SIZE	6.408 IN.
EST. PERI:	28.987	CLASS.	SOLID
FACTOR	17	ER#	38/SHIRLEY
PORTS WPL		60577	
BACKER		12 X 60577	
BOLSTER		60577	
DIE NO.		T-60577	

SECTION PROPERTIES:

Ixx = 6.597 in⁴
 Sxx = 1.843 in³
 Iyy = 0.435 in⁴
 Syy = 0.325 in³

PRODUCT: RW600
 PROJECT: ---

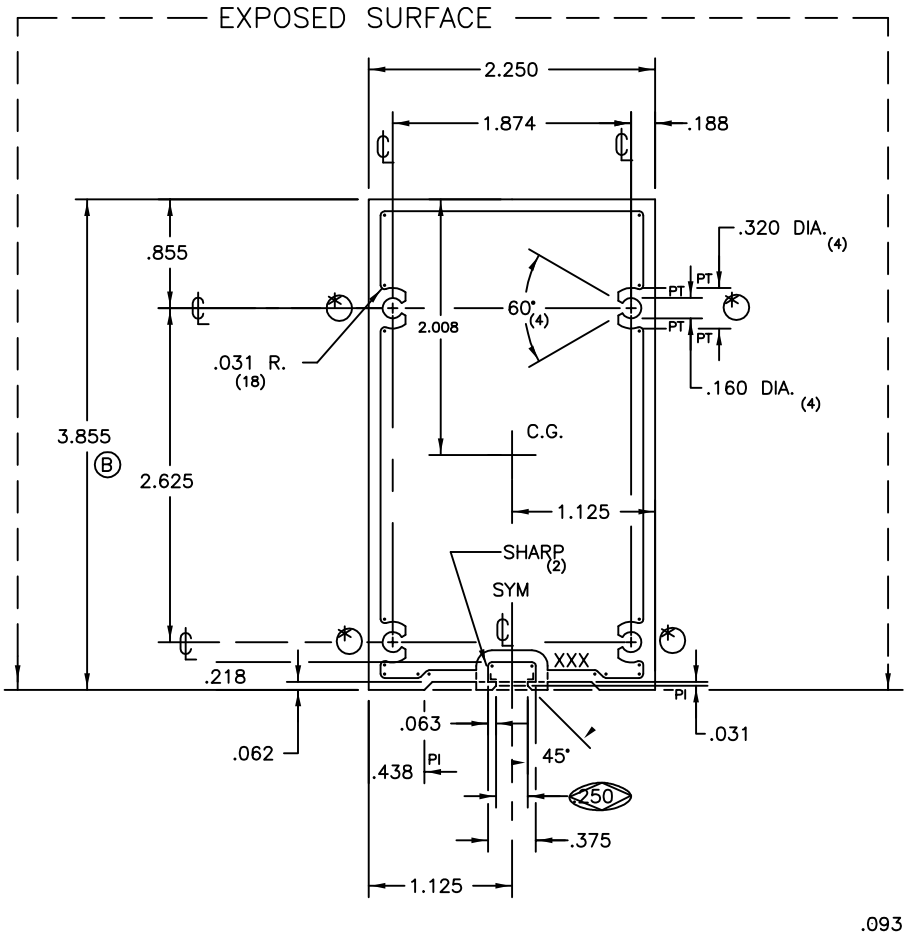
B	DEPTH 3.855 WAS 3.793 GASKET USE CHANGED REV 2001-02	GLH	03-06 01	U. S. ALUMINUM CORP.	H-60592	B
				SSG VERTICAL FOR 1" GLASS	TER MEER	10/12/00
				RW660	FULL SIZE	

NOTES:

1. 6063-T5 ALLOY AND TEMPER
- ② 2. OUTSIDE PERIMETER: 13.009
3. XXX INDICATES I.D. MARK FOR IEC-TX
4. * INDICATES STREAKS
- ② 5. PAINT PERIMETER = 9.960"

SECTION PROPERTIES:

②	Ixx = 2.606 in	4
	Sxx = 1.298 in	3
	Iyy = 1.107 in	4
	Syy = 0.984 in	3



ATI

Report # B6092-116-45

Date 2/3/2012

Simulator Eric Bahille

RW600

	1.295	②	C-294	1
	1.554	②	4.464	② PORTHOLE 10X5.5
	27.507	②	HOLLOW II	1-3-46
	18	②	8" 41/SHIRLEY	H-60592
				B

ATI

Report # B6092-116-45

Date 2/3/2012

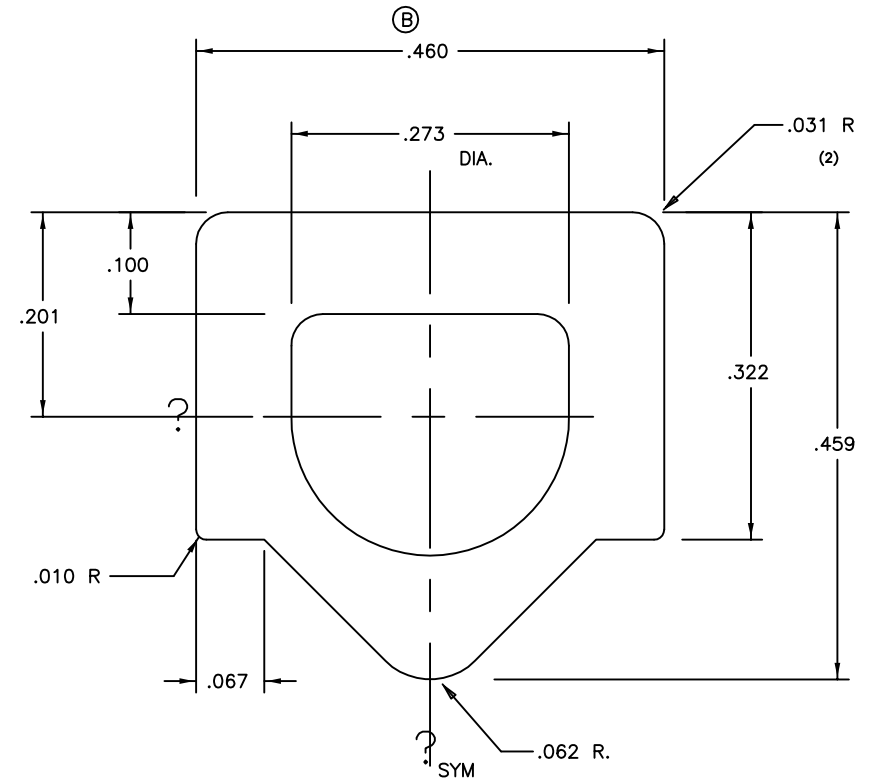
Simulator Eric Bakula

NOTE:

1. MATERIAL: EPDM, SCR-900 (silicone compatible)
2. HARDNESS: 70 ± 5 SHORE
3. AREA: .117



ACTUAL SIZE



				U.S. ALUMINUM CORP.		
				MAMO	SILICONE SPACER	
				4/25/95	BG SYSTEMS	
B	.460 WAS .438; AREA WAS .110	2/8/96	MM	8X SIZE	PART NUMBER: SP455	USA-1084 B

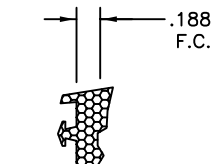
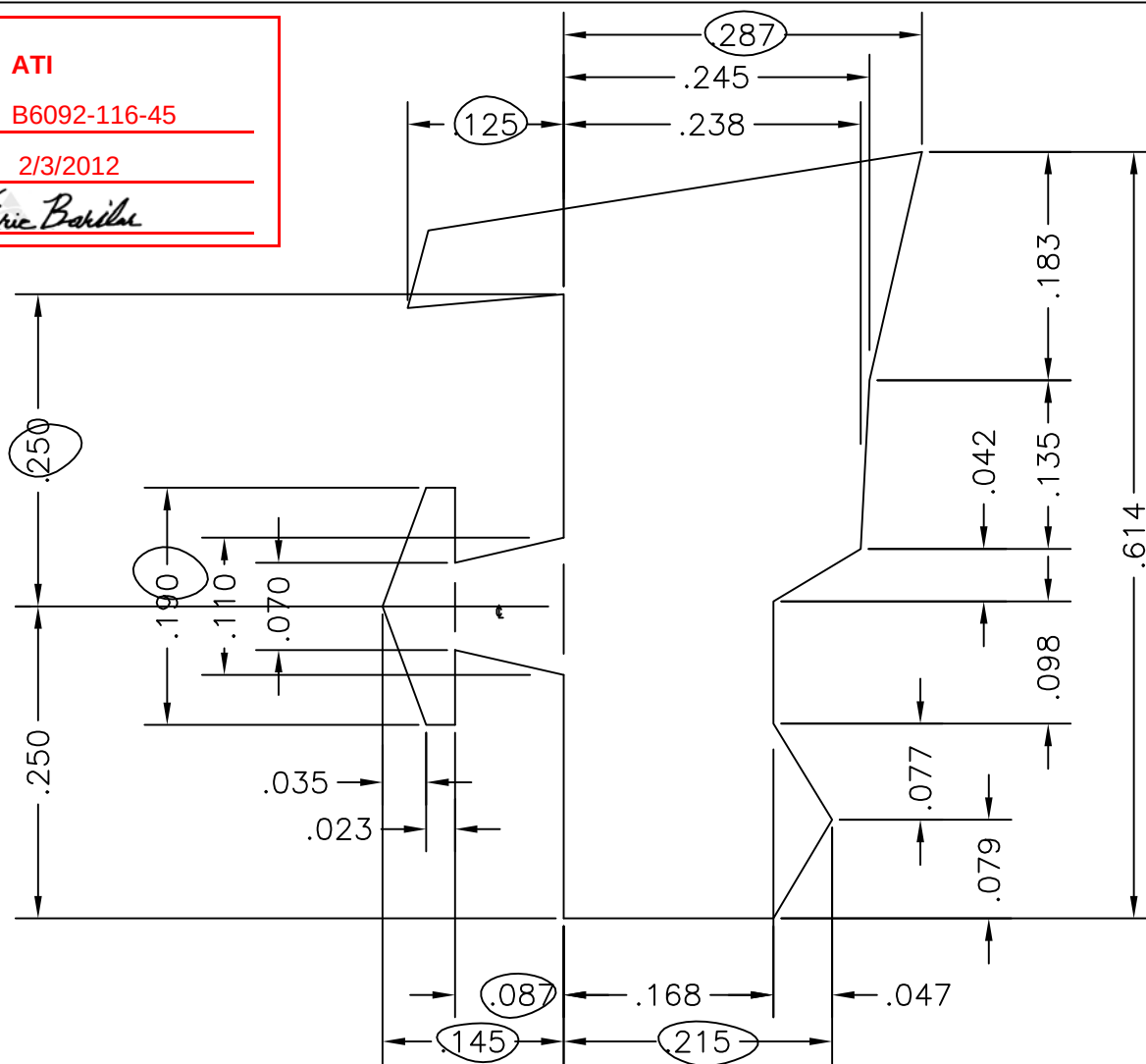
USA-2095

ATI

Report # B6092-116-45

Date 2/3/2012

Simulator *Eric Barile*



ACTUAL SIZE

NOTES:

1. MATERIAL: EPDM SPONGE
2. COLOR: BLACK
3. AREA: .153
4. VENDOR TREMCO TR-2205E OR EQUAL

ECN 2000-159

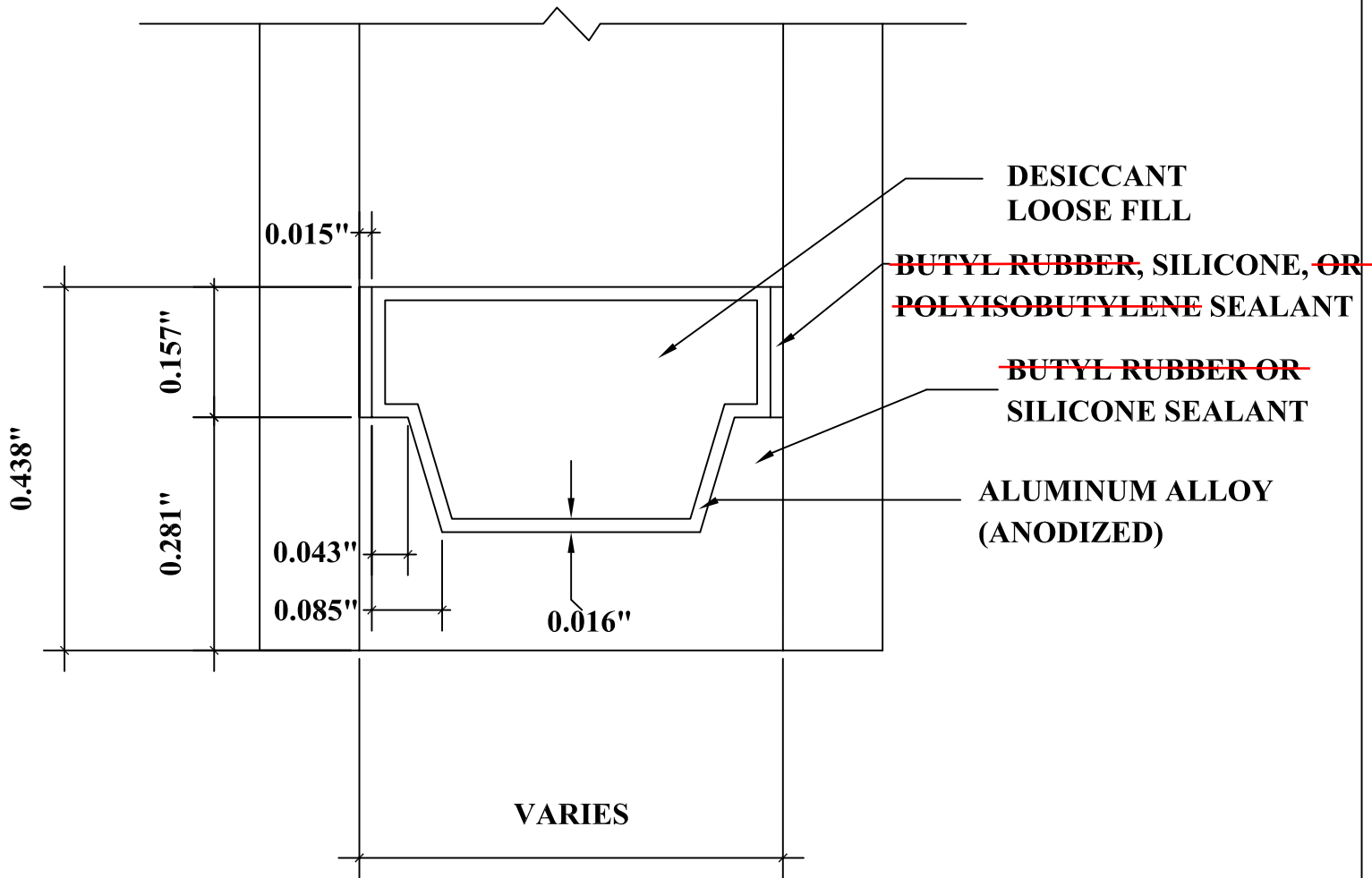
				U.S. ALUMINUM CORP.		
				GAH	SERIES 4250 & RW600	
				10/27/00	EXTERIOR SPONGE GASKET	
				10 X SIZE	PART NUMBER: NP425	USA-2095

ATI

Report # B6092-116-45

Date 2/3/2012

Simulator *Eric Baril*



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