



AAMA 507-07 THERMAL PERFORMANCE REPORT

Rendered to:

TUBELITE, INC.

SERIES/MODEL: Standard 2" Narrow Stile Single Door

TYPE: Swinging Door - Double

Report No: B3772.01-116-45
Report Date: 10/27/11

AAMA 507-07 THERMAL PERFORMANCE REPORT

Rendered to:

TUBELITE, INC.
4878 Mackinaw Trail
Reed City, Michigan 49677

Report No: B3772.01-116-45
Report Date: 10/27/11
Simulation Date: 10/27/11

Project Summary:

Architectural Testing, Inc. was contracted by Tubelite, Inc. to provide U-Factor and Solar Heat Gain Coefficient thermal performance ratings on the Standard 2" Narrow Stile Single Door Swinging Door - Double. The thermal performance ratings were determined in accordance with AAMA 507-07, Standard Practice for Determining the Thermal Performance Characteristics of Fenestration Systems Installed in Commercial Building.

Reference Documents:

AAMA 507-07, Standard Practice for Determining the Thermal Performance Characteristics of Fenestration Systems Installed in Commercial Buildings

NFRC 100-2010, Procedure for Determining Fenestration Product U-Factors

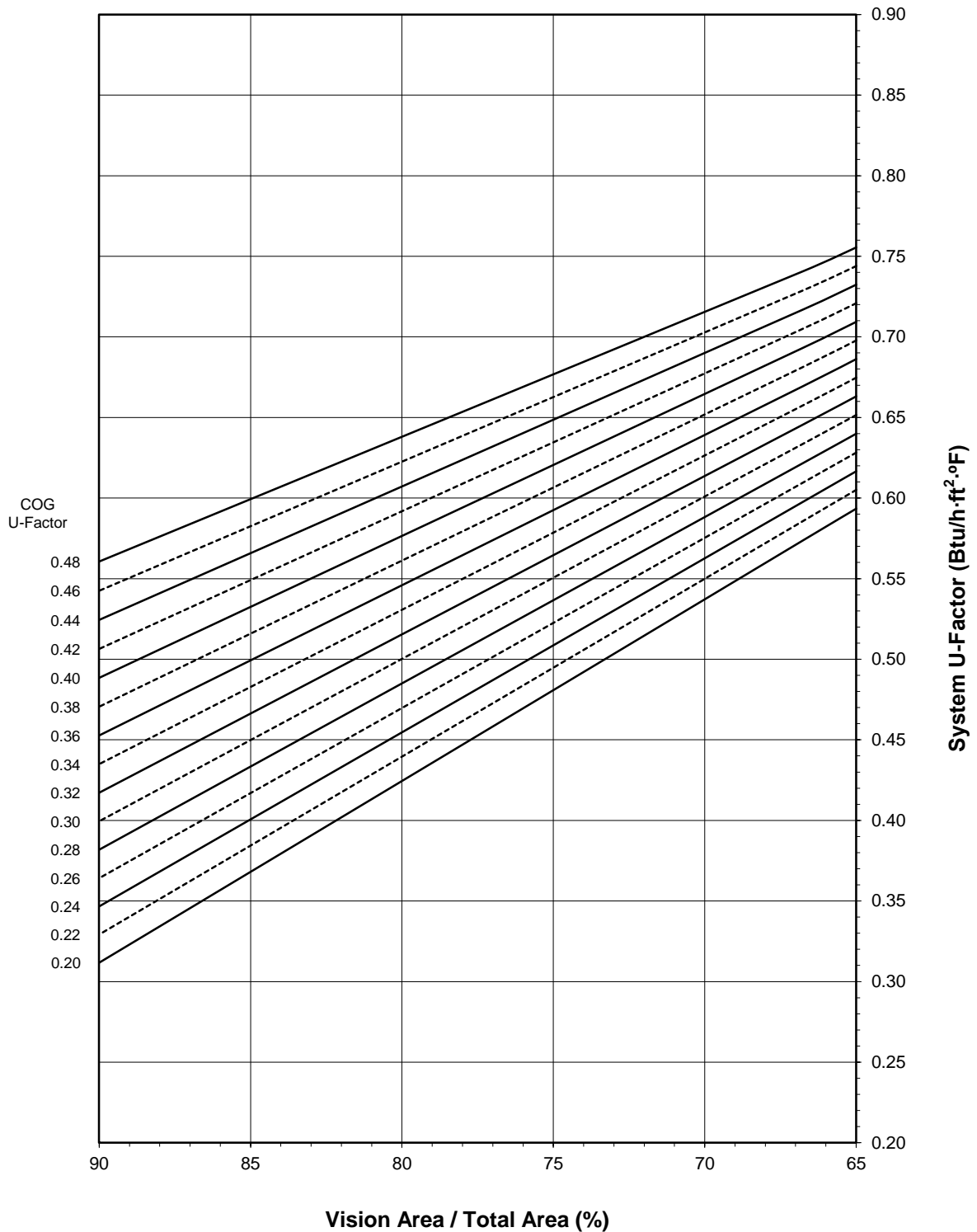
NFRC 200-2010, Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence

Simulation Specimen Description:

Series/Model:	Standard 2" Narrow Stile Single Door
Product Groupings:	2" Narrow w/o sweep grouped with 2" Narrow w/ sweep.
Type:	Swinging Door - Double
Frame Material:	Aluminum Framing System
Material Finish:	Painted Aluminum
Specimen Size:	1920mm wide by 2090mm high (75-1/2" by 82-3/8")
Configuration:	Two vision lites separated by one intermediate vertical
Drawing Reference:	Tubelite Standard Doors - 2" Frame Details

Tubelite, Inc.
Standard 2" Narrow Stile Single Door - Swinging Door - Double

System U-Factor vs. Percentage of Vision Area



Note: 1 inch Overall - Dual Glazed Glass (0.48-0.20 COG) with Aluminum Spacer

Tubelite, Inc.
Standard 2" Narrow Stile Single Door - Swinging Door - Double

Size Specific U-Factor Matrix*

Glazing Option	Center of Glass U-Factor	Overall U-Factor
1	0.48	0.74
2	0.46	0.73
3	0.44	0.72
4	0.42	0.70
5	0.40	0.69
6	0.38	0.68
7	0.36	0.67
8	0.34	0.66
9	0.32	0.65
10	0.30	0.63
11	0.28	0.62
12	0.26	0.61
13	0.24	0.60
14	0.22	0.59
15	0.20	0.57

Note: 1 inch Overall - Dual Glazed Glass (0.48-0.20 COG) with Aluminum Spacer

Size Specific SHGC Matrix*

Center of Glass SHGC	Overall SHGC
0.75	0.53
0.70	0.50
0.65	0.46
0.60	0.43
0.55	0.40
0.50	0.36
0.45	0.33
0.40	0.30
0.35	0.26
0.30	0.23
0.25	0.20
0.20	0.16
0.15	0.13
0.10	0.10
0.05	0.06

Size Specific VT Matrix*

Center of Glass VT	Overall VT
0.75	0.50
0.70	0.47
0.65	0.43
0.60	0.40
0.55	0.37
0.50	0.33
0.45	0.30
0.40	0.27
0.35	0.23
0.30	0.20
0.25	0.17
0.20	0.13
0.15	0.10
0.10	0.07
0.05	0.03

*Size Specific U-Factor, SHGC, and VT Matrices are based on the standard Swinging Door - Double specimen size of 1920mm wide by 2090mm high (75-1/2" by 82-3/8"). This represents 66.8% Vision Area / Total Area.

Vision Area Data

Option No.	COG U-Factor	COG Temperature	Cross Section	Frame Height	Frame U-Factor	Edge U-Factor	Total Product U-Factor		
							65% Vision Area	NFRC 100-2010	90% Vision Area
							71.35" by 77.67"	75.59" by 82.28"	267.72" by 291.42"
1	0.48	43.7	Ext. Head	5.3395	1.2974	0.5689	0.7555	0.7405	0.5606
			Int. Head	5.3395	1.2974	0.5689			
			Ext. Jamb	5.2763	1.2928	0.5709			
			Int. Jamb	5.2763	1.2928	0.5709			
			Mtg. Rail	6.6768	1.1420	0.5814			
			Ext. Sill	5.7770	1.1948	0.5813			
			Int. Sill	5.7770	1.1948	0.5813			
2	0.46	44.8	Ext. Head	5.3395	1.2975	0.5555	0.7440	0.7286	0.5425
			Int. Head	5.3395	1.2975	0.5555			
			Ext. Jamb	5.2763	1.2929	0.5574			
			Int. Jamb	5.2763	1.2929	0.5574			
			Mtg. Rail	6.6768	1.1417	0.5677			
			Ext. Sill	5.7770	1.1946	0.5677			
			Int. Sill	5.7770	1.1946	0.5677			
3	0.44	45.8	Ext. Head	5.3395	1.2975	0.5421	0.7324	0.7168	0.5244
			Int. Head	5.3395	1.2975	0.5421			
			Ext. Jamb	5.2763	1.2930	0.5440			
			Int. Jamb	5.2763	1.2930	0.5440			
			Mtg. Rail	6.6768	1.1414	0.5541			
			Ext. Sill	5.7770	1.1945	0.5541			
			Int. Sill	5.7770	1.1945	0.5541			
4	0.42	46.8	Ext. Head	5.3395	1.2976	0.5288	0.7209	0.7049	0.5064
			Int. Head	5.3395	1.2976	0.5288			
			Ext. Jamb	5.2763	1.2931	0.5307			
			Int. Jamb	5.2763	1.2931	0.5307			
			Mtg. Rail	6.6768	1.1411	0.5406			
			Ext. Sill	5.7770	1.1943	0.5407			
			Int. Sill	5.7770	1.1943	0.5407			
5	0.40	47.9	Ext. Head	5.3395	1.2977	0.5155	0.7094	0.6930	0.4885
			Int. Head	5.3395	1.2977	0.5155			
			Ext. Jamb	5.2763	1.2932	0.5175			
			Int. Jamb	5.2763	1.2932	0.5175			
			Mtg. Rail	6.6768	1.1408	0.5271			
			Ext. Sill	5.7770	1.1942	0.5273			
			Int. Sill	5.7770	1.1942	0.5273			
6	0.38	48.9	Ext. Head	5.3395	1.2977	0.5025	0.6978	0.6811	0.4706
			Int. Head	5.3395	1.2977	0.5025			
			Ext. Jamb	5.2763	1.2932	0.5044			
			Int. Jamb	5.2763	1.2932	0.5044			
			Mtg. Rail	6.6768	1.1405	0.5139			
			Ext. Sill	5.7770	1.1940	0.5141			
			Int. Sill	5.7770	1.1940	0.5141			

Vision Area Data

Option No.	COG U-Factor	COG Temperature	Cross Section	Frame Height	Frame U-Factor	Edge U-Factor	Total Product U-Factor		
							65% Vision Area	NFRC 100-2010	90% Vision Area
							71.35" by 77.67"	75.59" by 82.28"	267.72" by 291.42"
7	0.36	50.0	Ext. Head	5.3395	1.2978	0.4893	0.6863	0.6692	0.4528
			Int. Head	5.3395	1.2978	0.4893			
			Ext. Jamb	5.2763	1.2933	0.4913			
			Int. Jamb	5.2763	1.2933	0.4913			
			Mtg. Rail	6.6768	1.1403	0.5005			
			Ext. Sill	5.7770	1.1939	0.5008			
			Int. Sill	5.7770	1.1939	0.5008			
8	0.34	51.0	Ext. Head	5.3395	1.2979	0.4764	0.6747	0.6573	0.4350
			Int. Head	5.3395	1.2979	0.4764			
			Ext. Jamb	5.2763	1.2934	0.4784			
			Int. Jamb	5.2763	1.2934	0.4784			
			Mtg. Rail	6.6768	1.1400	0.4875			
			Ext. Sill	5.7770	1.1937	0.4877			
			Int. Sill	5.7770	1.1937	0.4877			
9	0.32	52.0	Ext. Head	5.3395	1.2980	0.4634	0.6631	0.6454	0.4172
			Int. Head	5.3395	1.2980	0.4634			
			Ext. Jamb	5.2763	1.2935	0.4654			
			Int. Jamb	5.2763	1.2935	0.4654			
			Mtg. Rail	6.6768	1.1397	0.4743			
			Ext. Sill	5.7770	1.1936	0.4745			
			Int. Sill	5.7770	1.1936	0.4745			
10	0.30	53.1	Ext. Head	5.3395	1.2981	0.4505	0.6516	0.6334	0.3995
			Int. Head	5.3395	1.2981	0.4505			
			Ext. Jamb	5.2763	1.2936	0.4525			
			Int. Jamb	5.2763	1.2936	0.4525			
			Mtg. Rail	6.6768	1.1395	0.4613			
			Ext. Sill	5.7770	1.1935	0.4616			
			Int. Sill	5.7770	1.1935	0.4616			
11	0.28	54.2	Ext. Head	5.3395	1.2982	0.4376	0.6400	0.6215	0.3819
			Int. Head	5.3395	1.2982	0.4376			
			Ext. Jamb	5.2763	1.2938	0.4396			
			Int. Jamb	5.2763	1.2938	0.4396			
			Mtg. Rail	6.6768	1.1393	0.4482			
			Ext. Sill	5.7770	1.1933	0.4485			
			Int. Sill	5.7770	1.1933	0.4485			
12	0.26	55.2	Ext. Head	5.3395	1.2968	0.4240	0.6282	0.6094	0.3642
			Int. Head	5.3395	1.2968	0.4240			
			Ext. Jamb	5.2763	1.2939	0.4268			
			Int. Jamb	5.2763	1.2939	0.4268			
			Mtg. Rail	6.6768	1.1390	0.4353			
			Ext. Sill	5.7770	1.1930	0.4348			
			Int. Sill	5.7770	1.1930	0.4348			

Vision Area Data

Option No.	COG U-Factor	COG Temperature	Cross Section	Frame Height	Frame U-Factor	Edge U-Factor	Total Product U-Factor		
							65% Vision Area	NFRC 100-2010	90% Vision Area
							71.35" by 77.67"	75.59" by 82.28"	267.72" by 291.42"
13	0.24	56.3	Ext. Head	5.3395	1.2969	0.4112	0.6166	0.5974	0.3467
			Int. Head	5.3395	1.2969	0.4112			
			Ext. Jamb	5.2763	1.2940	0.4140			
			Int. Jamb	5.2763	1.2940	0.4140			
			Mtg. Rail	6.6768	1.1388	0.4223			
			Ext. Sill	5.7770	1.1929	0.4219			
			Int. Sill	5.7770	1.1929	0.4219			
14	0.22	57.3	Ext. Head	5.3395	1.2970	0.3985	0.6051	0.5855	0.3293
			Int. Head	5.3395	1.2970	0.3985			
			Ext. Jamb	5.2763	1.2941	0.4014			
			Int. Jamb	5.2763	1.2941	0.4014			
			Mtg. Rail	6.6768	1.1386	0.4095			
			Ext. Sill	5.7770	1.1928	0.4091			
			Int. Sill	5.7770	1.1928	0.4091			
15	0.20	58.4	Ext. Head	5.3395	1.2971	0.3858	0.5934	0.5735	0.3118
			Int. Head	5.3395	1.2971	0.3858			
			Ext. Jamb	5.2763	1.2942	0.3886			
			Int. Jamb	5.2763	1.2942	0.3886			
			Mtg. Rail	6.6768	1.1384	0.3966			
			Ext. Sill	5.7770	1.1927	0.3962			
			Int. Sill	5.7770	1.1927	0.3962			

Detailed drawings, datasheets, 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 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 named herein and relates only to the specimen(s) 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 Barilar
Simulation Technician

Kevin S. Louder
Project Engineer

EAB:EAB
B3772.01-116-45

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

Appendix A: Drawings and Bills of Material (23)

Revision Log

<u>Rev. #</u>	<u>Date</u>	<u>Page(s)</u>	<u>Revision(s)</u>
.01R0	10/27/2011	All	Original Report Issue

All drawings and Bills of Material used in simulating this product are enclosed in this Appendix.

ATI

Report # B3772-116-45

Date 10/20/2011

Simulator Eric Boriska

STANDARD PAIR DOOR BOM -2" Frame

FRAME:

Description	QTY	Length	Part number	Material
Jamb 2" x 4 1/2"	2		E14144	
Header 2" x 4 1/2"	1		E14124	
Door stops	3		E4531	
Weather pile	30 ft		P1098A	vinyl
closure open back plate	2		E4543	

DOOR:

Description	QTY	Narrow P/N	Medium P/N	Wide P/N	Material
Beveled Door Stiles	2	E0055 - 2 1/8"	E0086- 4"	E0416 - 5"	
Inactive Stile		E0056 - 2 1/8"	E0087 - 4"	E0417 - 5"	
Astragal Stile		E1149 - 2 1/8"	E1150 - 4"	E1151 - 5"	
Adjustable Astragal	1	E1152	E1152	E1152	
Stainless Steel Clip for Adj. Astragal	1	P1539	P1539	P1539	Stainless steel
Adj. Astragal Pile	2	P938	P938	P938	AL
Door Top Rail	1	E0255- 2 1/8"	E0054- 4"	E0318 - 5"	
Top Rail Lug	2	P168	P031	P339	AL
Door Bottom Rail	1	E0054- 4"	E0419- 6 1/2"	E0419- 6 1/2"	
Bottom Rail Lug	2	P031	P341	P341	AL
Top Rail & Bottom Rail Tie Rods	2	P020	P020	P020	steel
Washer for Tie Rods	4	P853	P853	P853	AL
Hex nuts for Tie rods	4	S071A	S071A	S071A	steel
Exterior Glass Stop 1" glass	4	E0927	E0927	E0927	

Interior Glass Stop 1" glass	4	E0928	E0928	E0928	
Gasket	36 ft	P0017	P0017	P0017	vinyl
Adjustable Wedge Setting Blck	2	P1911	P1911	P1911	Polypropylene
Self Adhesive Setting Blck	3	P1912	P1912	P1912	EPDM
Threshold	1	E0019	E0019	E0019	
Threshold clip	2	P679	P679	P679	AL

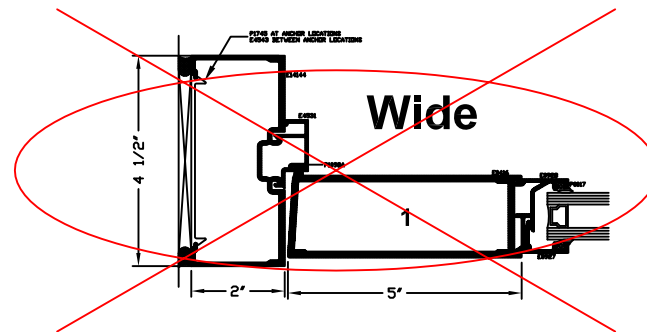
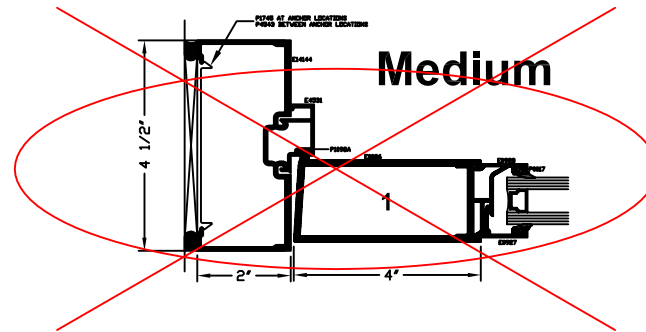
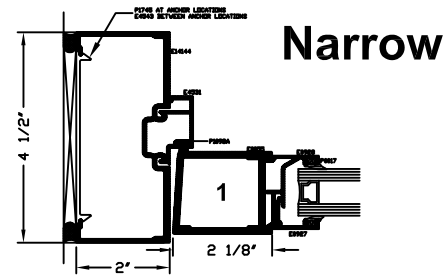
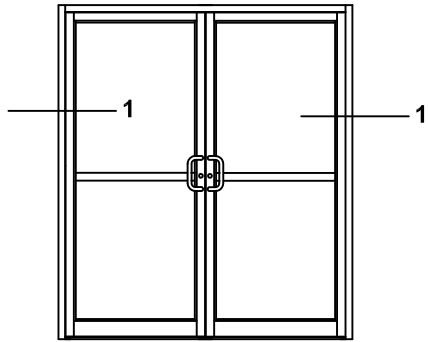
MATERIAL:

E - All E part numbers are AL extrusions

	ATI
Report #	<u>B3772-116-45</u>
Date	<u>10/20/2011</u>
Simulator	<u><i>Eric Basile</i></u>

Standard Doors - Jamb detail 2" Frame

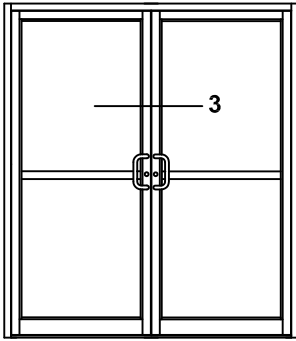
Elevations & 1/4 Size Details



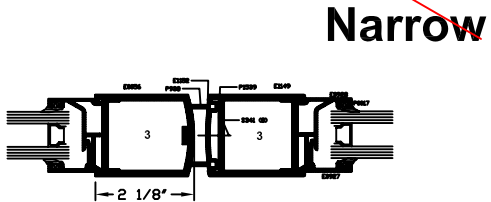
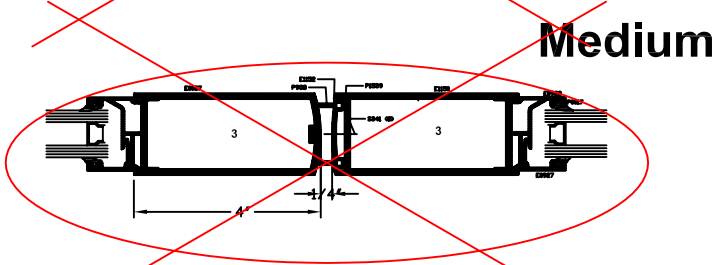
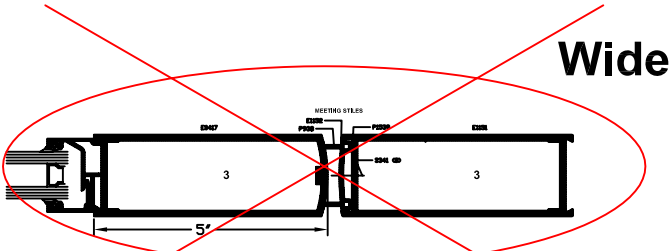
	ATI
Report #	B3772-116-45
Date	10/20/2011
Simulator	<i>Eric Basile</i>

*SEALANT, ROD, & ANCHORS NOT BY TUBELITE

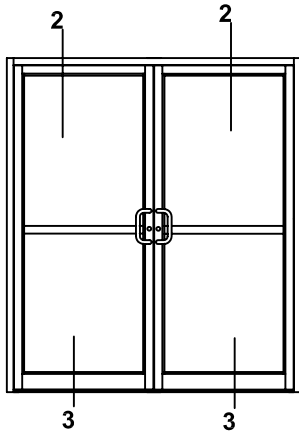
Standard Doors - Pairs 2" Frame Elevations & 1/4 Size Details



	ATI
Report #	<u>B3772-116-45</u>
Date	<u>10/20/2011</u>
Simulator	<u>Eric Bahilla</u>



*SEALANT, ROD, & ANCHORS NOT BY TUBELITE



Standard Doors - Pairs

2" Frame

Elevations & 1/4 Size Details

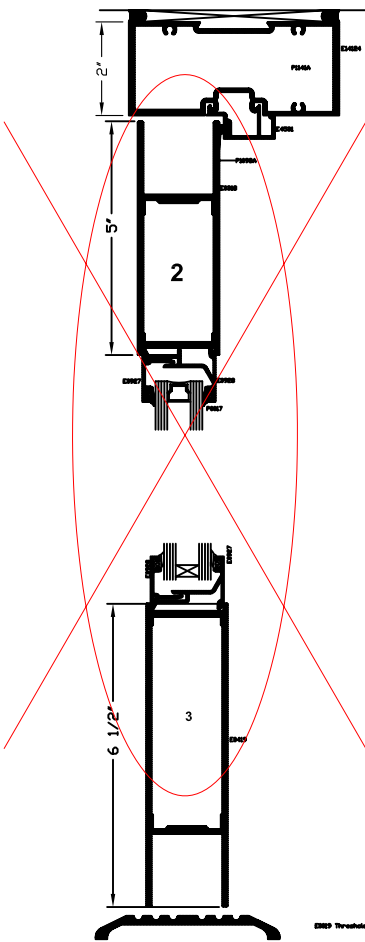
ATI

Report # B3772-116-45

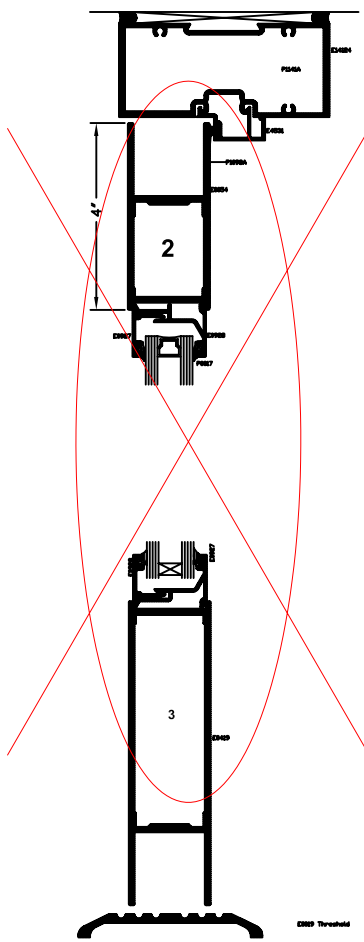
Date 10/20/2011

Simulator *Eric Bahille*

Wide



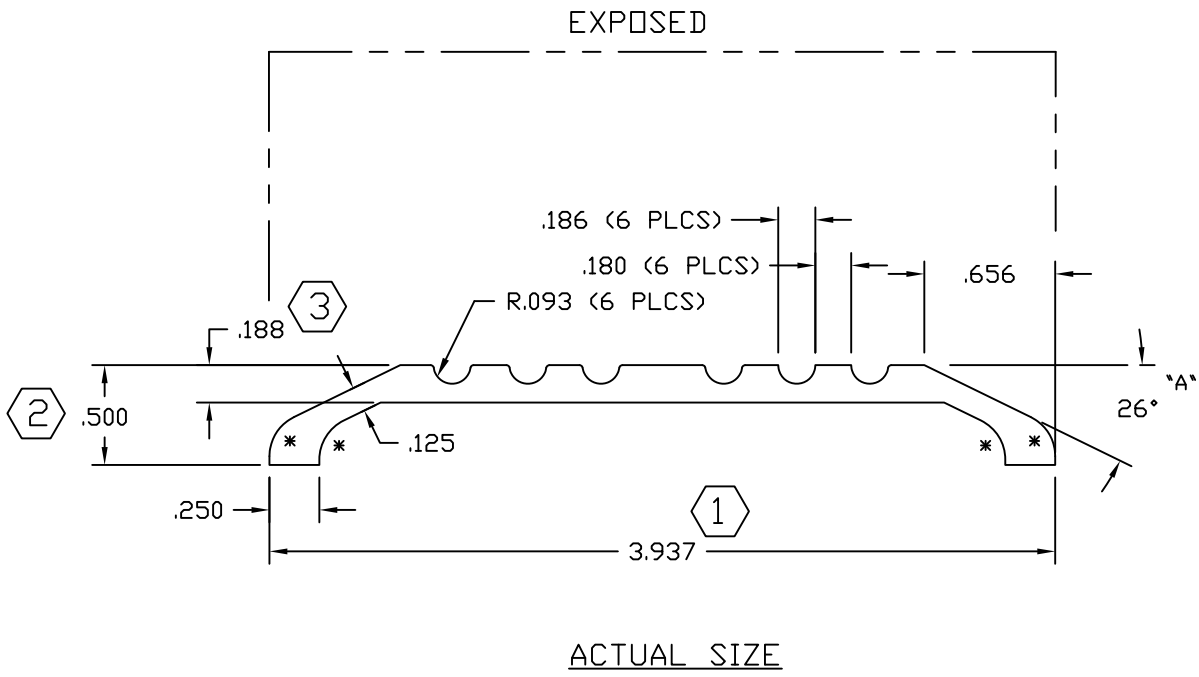
Medium



Narrow



*SEALANT, ROD, & ANCHORS NOT BY TUBELITE



ATI

Report # B3772-116-45

Date 10/20/2011

Simulator Eric Barilko

INDICATES .218 RAD (4 PLCS)

© 2006 TUBELITE INC. ALL RIGHTS RESERVED
ALUMINUM ASSOCIATION STANDARD
TOLERANCES APPLY UNLESS NOTED
ALL UNSPECIFIED RADII .015
* INDICATES .031 RADIUS



3056 WALKER RIDGE NW, SUITE G
WALKER, MICHIGAN 49544

WALL THK.	.125	SECTION CLASS	S	MAT'L	6063-T5	RATIO	85:1
PERIMETER OUT (TOTAL)	9.249	AREA	.649	WGT/FT	.763		
FACTOR	12	CIRCLE SIZE	3.937	INFILL VOLUME	N/A		

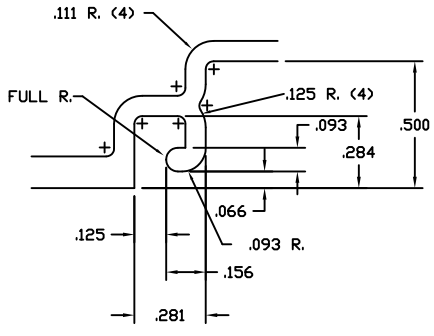
RXX	.119	SXX	.055	IXX	.009	CXX	.333
RYY	1.183	SYY	.461	IYY	.907	CYY	1.969

THRESHOLD 1/2" X 4"
STOCK FRAMES

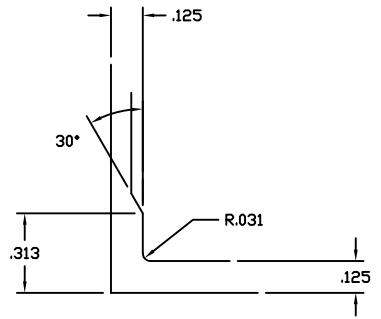
DRAWN BY	DH	DRWG DATE	03/16/84	APPV'D BY		DATE APPV'D	
DWG SCALE	NOTED	PRODUCT CODE	090	E0019		REV	A

REV	DATE	DESCRIPTION	INTL
A	3/4/92	REVISE AND RELEASE TO PROD. WAS 29'38'	KMH

DENOTES CRITICAL DIMENSION
ALL DIES PROPERTY OF TUBELITE



TWO TIMES SIZE



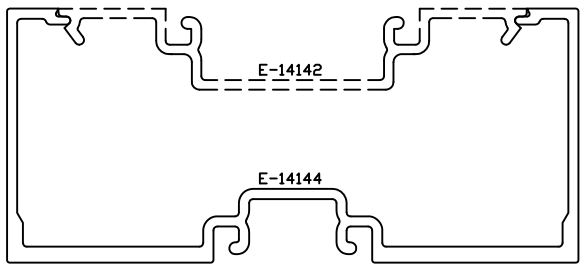
TWO TIMES SIZE

ATI

Report # B3772-116-45

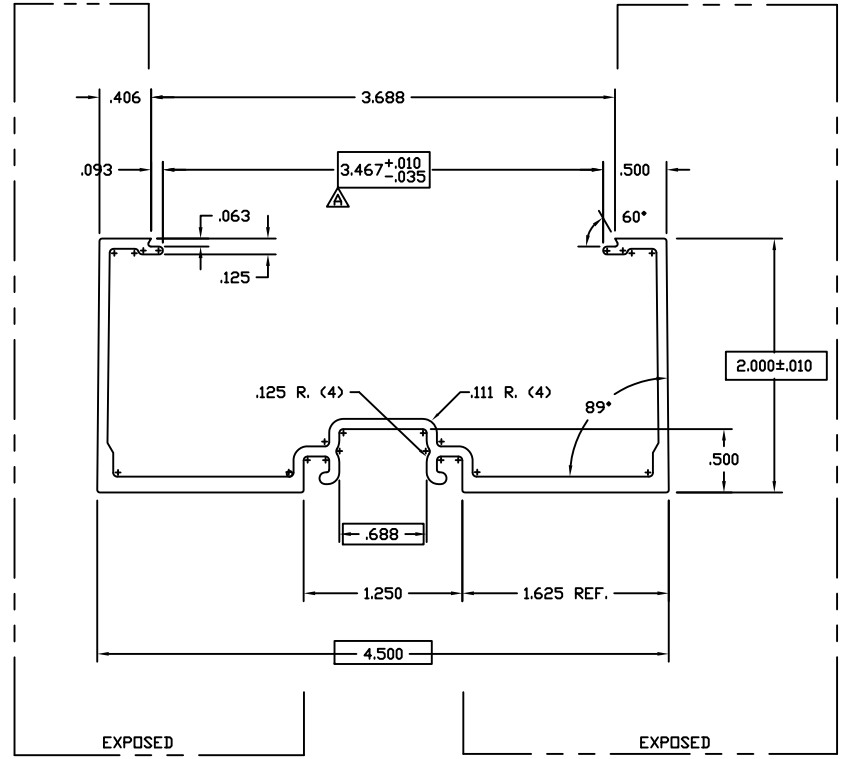
Date 10/20/2011

Simulator Eric Barilla



ASSEMBLY

ALSO MATES WITH E-4543 FLAT CLOSURE



ACTUAL SIZE

©2006 TUBELITE INC. ALL RIGHTS RESERVED
 ALUMINUM ASSOCIATION STANDARD TOLERANCES APPLY UNLESS NOTED

TUBELITE
 DEPENDABLE
 LEADING IN ECO-FRIENDLY OPERATING CURTAINWALL AND ENTRANCE SYSTEMS

3056 WALKER RIDGE NW, SUITE G
 WALKER, MICHIGAN 49544

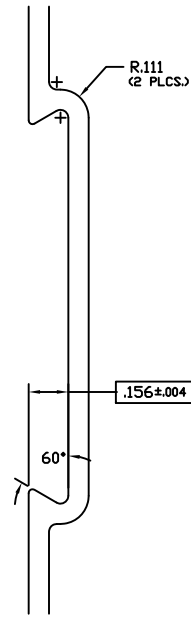
WALL THK. .080	SECTION CLASS S	MAT'L 6063-T5	RATIO 59:1
PERIMETER DUT (TOTAL) 21.100	AREA 1.001	WGT/FT 1.178	
FACTOR 19	CIRCLE SIZE 4.924	INFTLL VOLUME N/A	
RXX 1.672	SXX 1.245	IXX 2.801	CXX 2.250
RYX .643	SYX .287	IYY .414	CYY 1.444

DENOTES CRITICAL DIMENSION
 ALL DIES PROPERTY OF TUBELITE

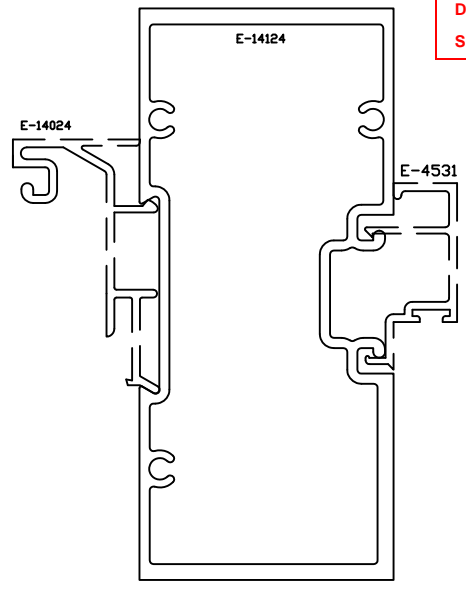
REV	DATE	DESCRIPTION	INTL
	5-13-93	RELEASE TO TOOLING	RHH
	7-7-93	REVISE EXTR. # VAS E-14006	RHH
	7-29-93	RELEASE TO PRODUCTION	RHH
	10-28-96	REVISE EXTR. # E-14144 TO BE SYMMETRICAL	SRK
	12-12-96	RE-RELEASE TO PRODUCTION	SRK
A	03/28/07	REDUCED OPENING FOR BETTER FIT	NIK

DOOR JAMB 2" X 4 1/2"
E14000 NON THERMAL STOREFRONT

DRAWN BY KMH	DRWG DATE 05/13/93	APPV'D BY	DATE APPV'D
DWG SCALE NOTED	PRODUCT CODE 190	E14144	



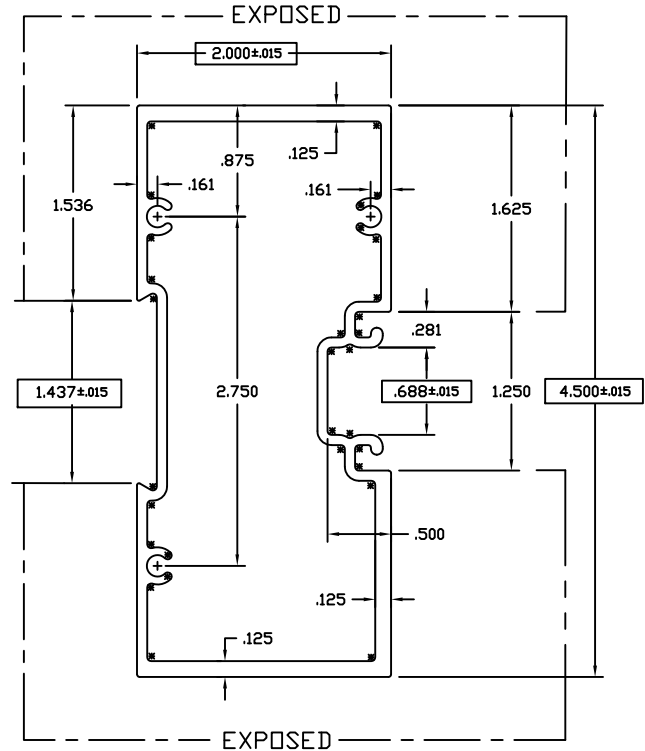
TWO TIMES SIZE



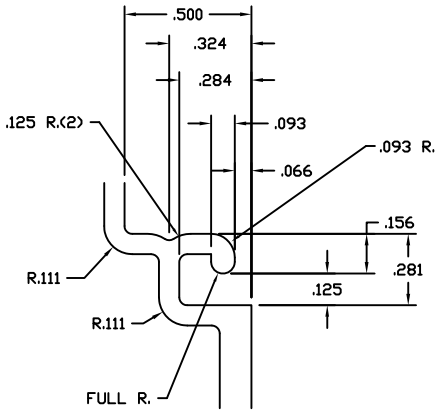
ASSEMBLY

MATES W/ E-4532, E-4026 & E-14024

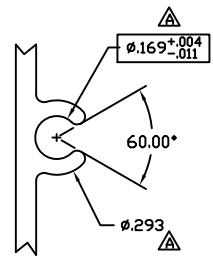
ATI
 Report # B3772-116-45
 Date 10/20/2011
 Simulator Eric Barthe



ACTUAL SIZE



TWO TIMES SIZE



TWO TIMES SIZE

©2006 TUBELITE INC. ALL RIGHTS RESERVED
 ALUMINUM ASSOCIATION STANDARD
 TOLERANCES APPLY UNLESS NOTED

TUBELITE
 LEADING IN ECO-FRIENDLY OPERATING
 CURTAINWALL AND ENTRANCE SYSTEMS

3056 WALKER RIDGE NW, SUITE G
 WALKER, MICHIGAN 49544

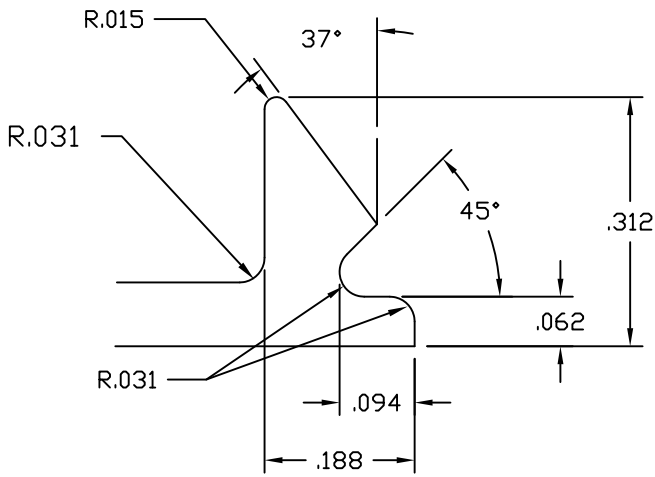
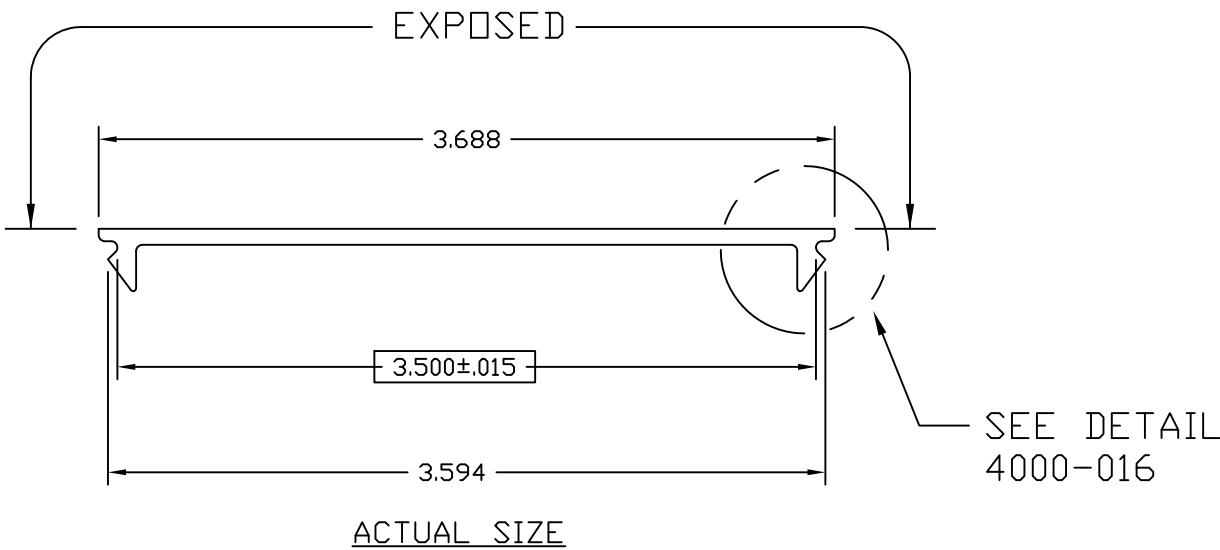
WALL THK.	.080	SECTION H		MAT'L	6063-T5	RATIO	38:1
PERIMETER OUT (TOTAL)	15.371(29.969)		AREA	1.464	WGT/FT	1.722	
FACTOR	17	CIRCLE SIZE	4.924	INFILL VOLUME	N/A		
RXX	1.601	SXX	1.640	IXX	3.751	CXX	2.287
RYY	.780	SYY	.849	IYY	.890	CYY	1.049

DENOTES CRITICAL DIMENSION
 ALL DIES PROPERTY OF TUBELITE

REV	DATE	DESCRIPTION	INTL
	9-11-93	RELEASE TO TOOLING	KHM
	7-7-93	REVISE EXTR. # WAS E-14023	KHM
	7-28-93	RELEASE TO PRODUCTION	KHM
A	1/17/2011	J69 +.004/-0.011 was .162+/-0.004, .293 WAS .322	CRH

DOOR HEADER 2" X 4 1/2"
 E14000 NON THERMAL STOREFRONT

DRAWN BY	SMH	DRWG DATE	05/11/93	APPV'D BY		DATE APPV'D	
DWG SCALE	NOTED	PRODUCT CODE	190		E14124		REV
							A



4000-016
FOUR TIMES SIZE

ATI

Report # B3772-116-45

Date 10/20/2011

Simulator Eric Barila

© 2006 TUBELITE INC. ALL RIGHTS RESERVED
ALUMINUM ASSOCIATION STANDARD
TOLERANCES APPLY UNLESS NOTED
ALL UNSPECIFIED RADII .015
* INDICATES .031 RADIUS

TUBELITE
DEPENDABLE
LEADERS IN ECO-EFFICIENT STOREFRONT,
CURTAINWALL AND ENTRANCE SYSTEMS

3056 WALKER RIDGE NW, SUITE G
WALKER, MICHIGAN 49544

WALL THK.	.080	SECTION CLASS	S	MAT'L	6063-T5	RATIO	165:1
PERIMETER OUT (TOTAL)	8.341	AREA	.334	WGT/FT	.393		
FACTOR	21	CIRCLE SIZE	3.688	INFILL VOLUME	N/A		

RXX	1.156	SXX	.242	IXX	.447	CXX	1.844
RYY	.054	SYY	.004	IYY	.001	CYY	.255

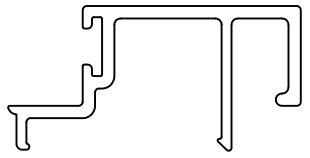
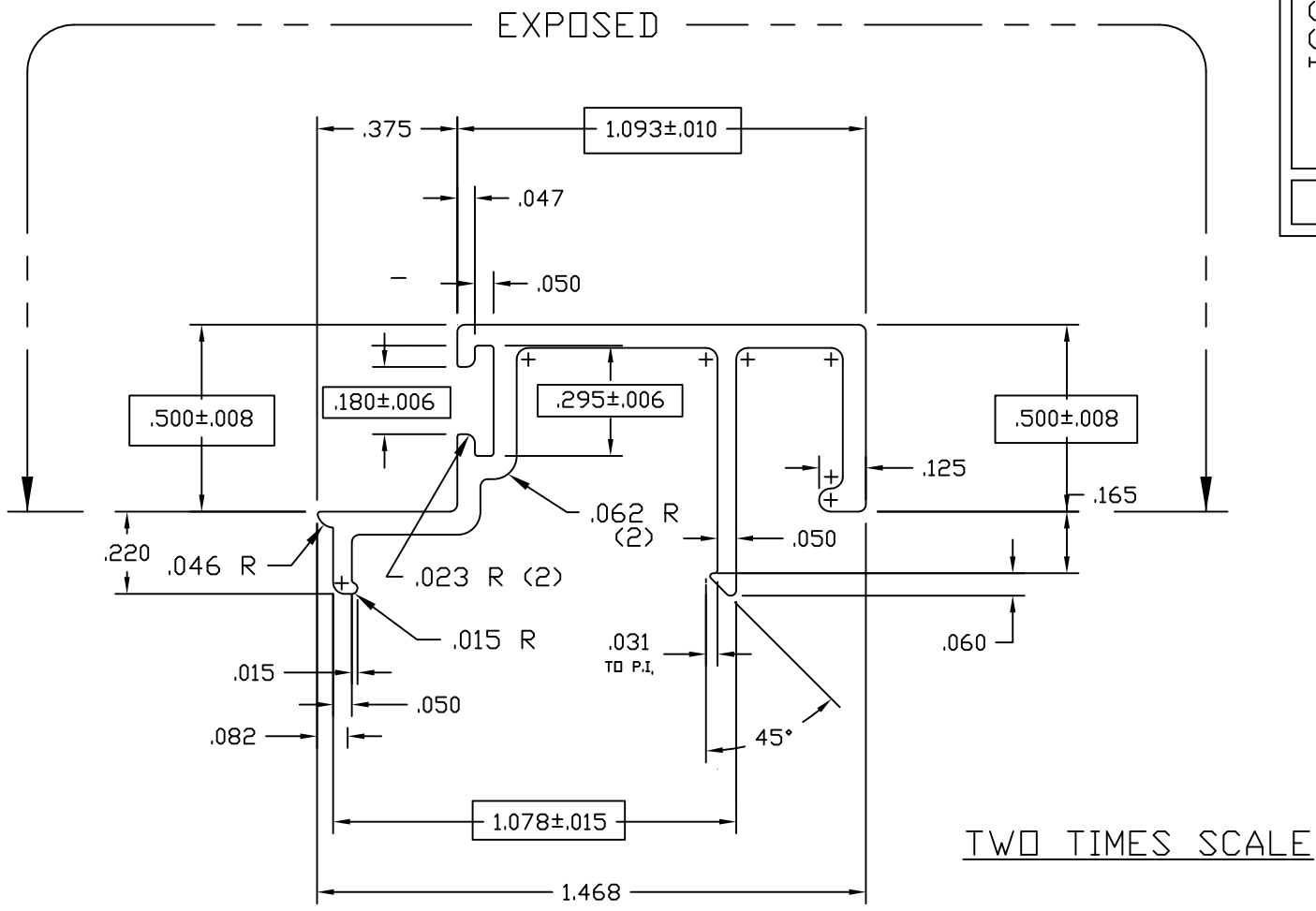
FLAT SNAP-IN FILLER
E4500 STOREFRONT

DRAWN BY	LS	DRWG DATE	10/22/85	APPV'D BY		DATE APPV'D	
DWG SCALE	FULL	PRODUCT CODE	160	E4543		REV	

REV	DATE	DESCRIPTION	INTL
		RELEASE TO TOOLING	
	6/26/86	RELEASE TO PRODUCTION	

DENOTES CRITICAL DIMENSION
ALL DIES PROPERTY OF TUBELITE

E4531



ACTUAL SIZE

ATI

Report # B3772-116-45

Date 10/20/2011

Simulator Eric Bertha

USED WITH 4500 SERIES
REPLACES E-4510
USE WITH P-1098A WEATHERING

© 2006 TUBELITE INC. ALL RIGHTS RESERVED
ALUMINUM ASSOCIATION STANDARD
TOLERANCES APPLY UNLESS NOTED
ALL UNSPECIFIED RADII .015
* INDICATES .031 RADIUS

TUBELITE®
DEPENDABLE
LEADERS IN ECO-EFFICIENT STOREFRONT,
CURTAINWALL AND ENTRANCE SYSTEMS

3056 WALKER RIDGE NW, SUITE G
WALKER, MICHIGAN 49544

WALL THK.	.062	SECTION CLASS	S	MAT'L	6063-T5	RATIO	90
PERIMETER OUT (TOTAL)	6.966	AREA	.203	WGT/FT	.238		
FACTOR	29	CIRCLE SIZE	1.58	INFILL VOLUME	N/A		

RXX	.446	SXX	.049	IXX	.040	CXX	.824
RYY	.218	SYX	.021	IYY	.010	CYY	.461

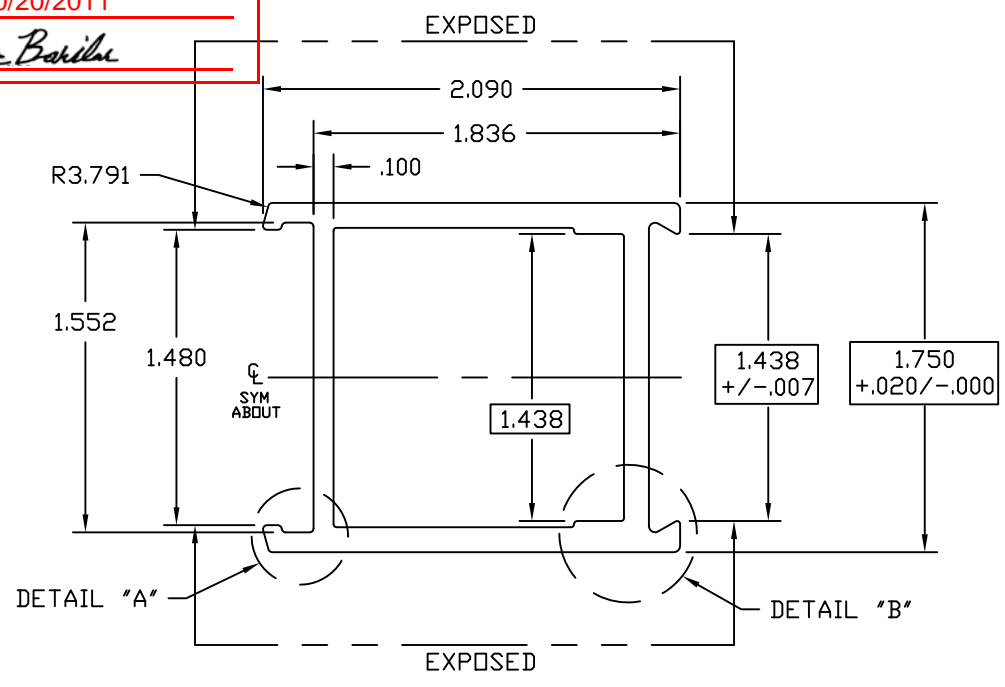
DOOR STOP 1/2" X 1 3/32"
E4500 STOREFRONT

DRAWN BY	LS	DRWG DATE	02/07/85	APPV'D BY		DATE APPV'D	
DWG SCALE	NOTED	PRODUCT CODE	160	E4531		REV	

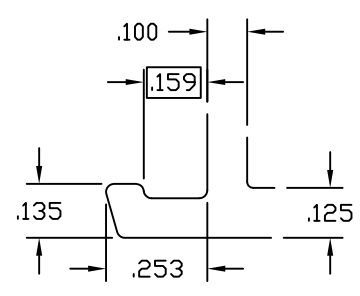
REV	DATE	DESCRIPTION	INTL
	3/28/94	UPDATED SECTION PROPERTIES	TPB
	4/12/99	UPDATED EXPOSED	JEK

☐ DENOTES CRITICAL DIMENSION
ALL DIES PROPERTY OF TUBELITE

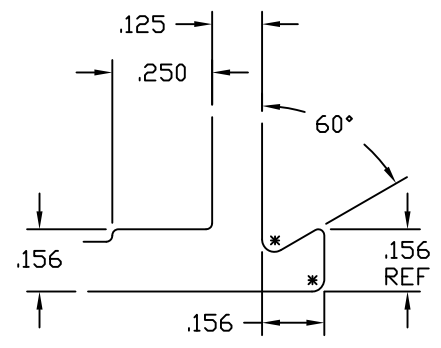
ATI
Report # B3772-116-45
Date 10/20/2011
Simulator Eric Basile



ACTUAL SIZE



DETAIL "A"
TWO TIMES SIZE



DETAIL "B"
TWO TIMES SIZE

DENOTES CRITICAL DIMENSION

© 2006 TUBELITE INC. ALL RIGHTS RESERVED
 ALUMINUM ASSOCIATION STANDARD
 TOLERANCES APPLY UNLESS NOTED
 ALL UNSPECIFIED RADII .015
 * INDICATES .031 RADIUS



3056 WALKER RIDGE NW, SUITE G
 WALKER, MICHIGAN 49544

WALL THK.	NOTED	SECTION CLASS	H	MAT'L	6063-T5	RATIO	64:1
PERIMETER OUT (TOTAL)	8.586(14.445)	AREA	.865	WGT/FT	1.018		
FACTOR	15	CIRCLE SIZE	2.684	INFILL VOLUME	N/A		

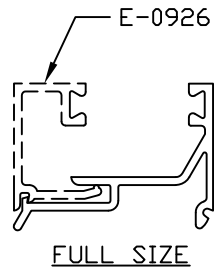
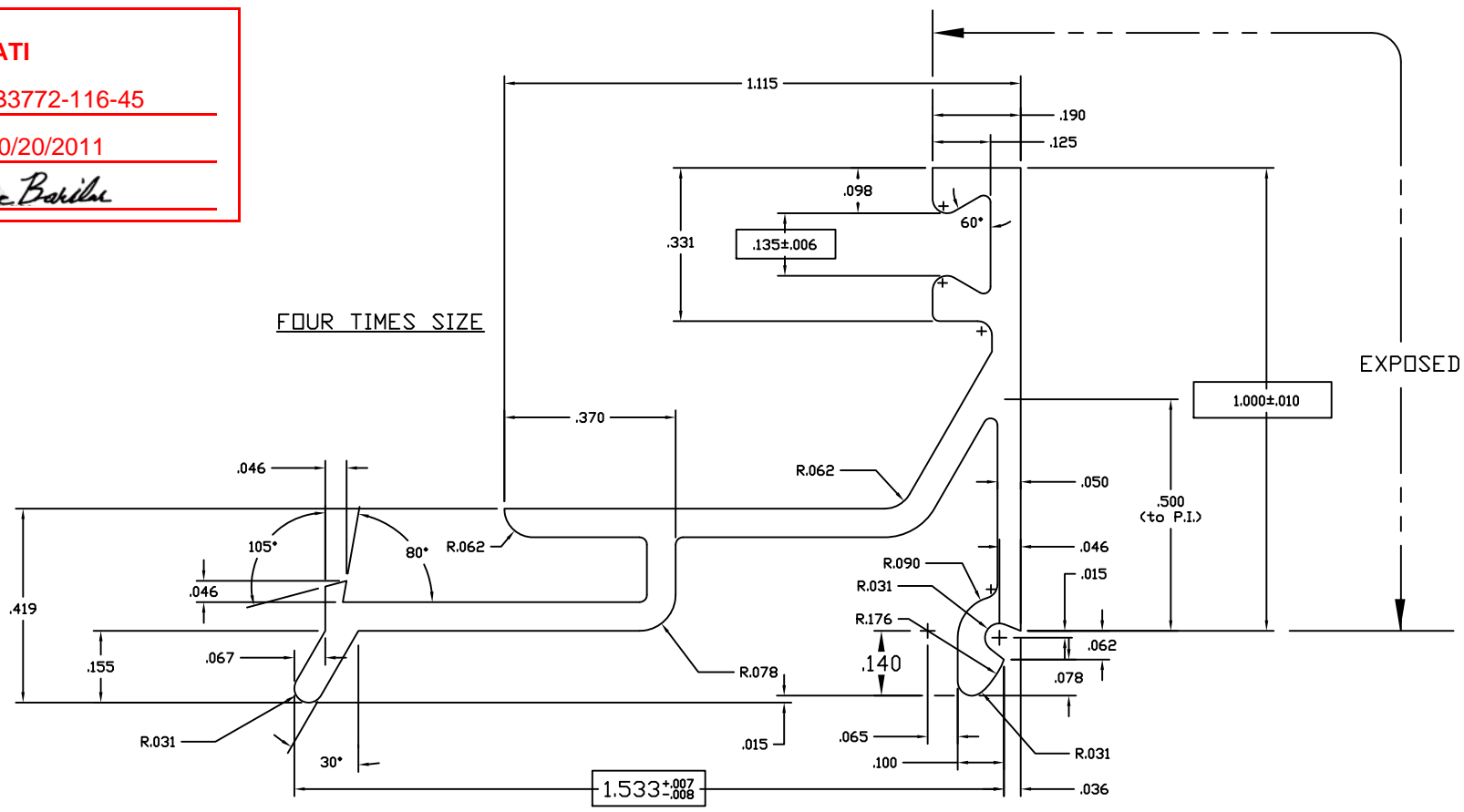
RXX	.689	SXX	.469	IXX	.411	CXX	.875
RYY	.675	SYX	.406	IYY	.395	CYY	1.117

ADJ. ASTRAGAL STILE 1 3/4" X 2 1/8"
 STOCK DOORS

REV	DATE	DESCRIPTION	INTL
X	XXXXXX	RELEASED FOR PRODUCTION - WAS E902H05 - ER-080702	LDD

DRAWN BY	LDD	DRWG DATE	02/08/07	APPV'D BY		DATE APPV'D	
DWG SCALE	NOTED	PRODUCT CODE	100	E1149			

ATI
Report # B3772-116-45
Date 10/20/2011
Simulator Eric Boriska



NOTES:

- 1) USE E-0927/0928 FOR 1" MAT'L
- 2) USE E-0926/0928 FOR 5/8" MAT'L
- 3) USE GLAZING BEAD P-302 FOR BOTH SIDES OF GLASS OR PANEL

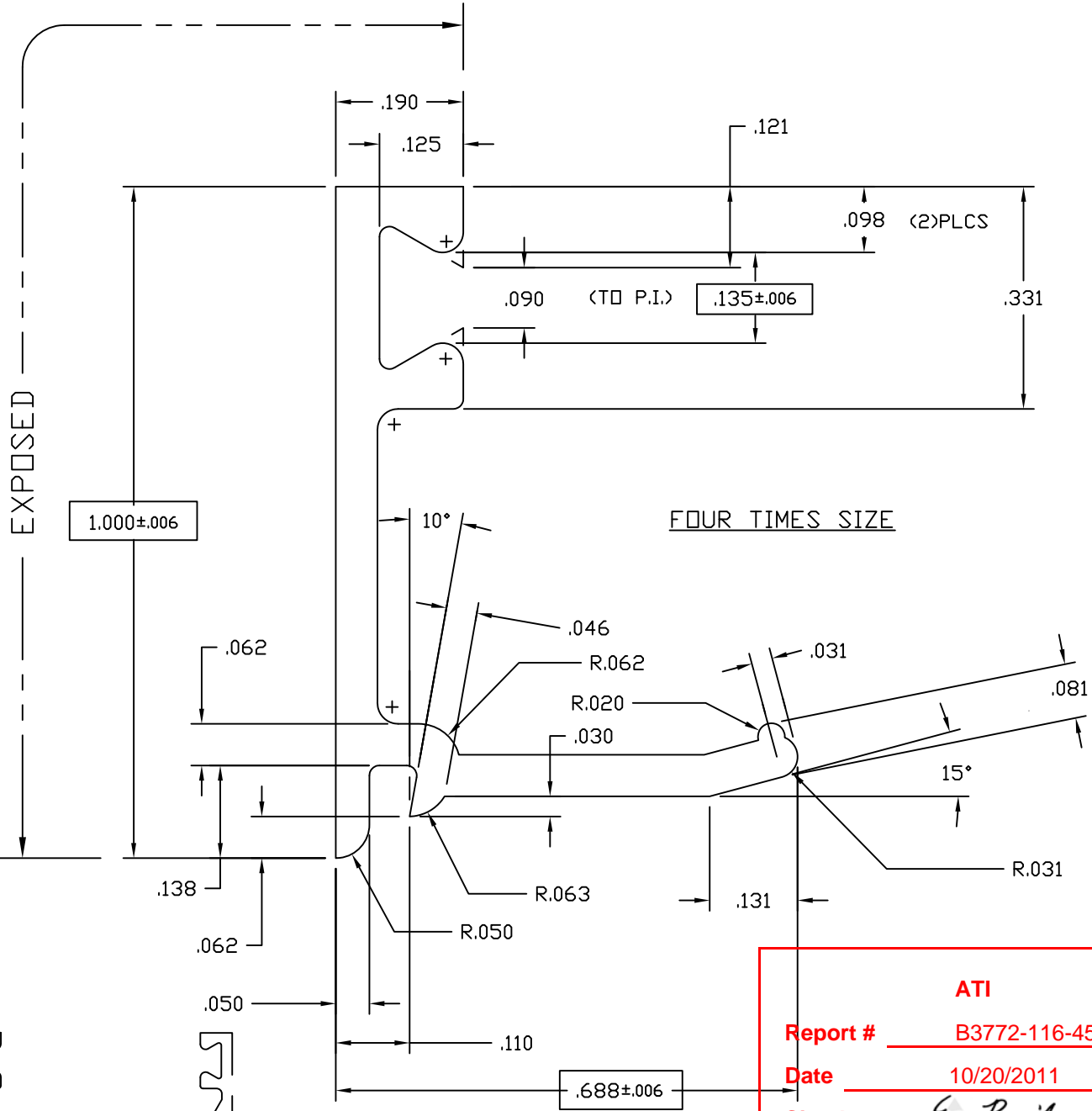
©2006 TUBELITE INC. ALL RIGHTS RESERVED
 ALUMINUM ASSOCIATION STANDARD TOLERANCES APPLY UNLESS NOTED
 ALL UNSPECIFIED RADII .015
 * INDICATES .031 RADIUS
 □ DENOTES CRITICAL DIMENSION
 ALL DIES PROPERTY OF TUBELITE

TUBELITE
 LEADING IN ECO-FRIENDLY OPERATING CURTAINWALL AND ENTRANCE SYSTEMS
 3056 WALKER RIDGE NW, SUITE G
 WALKER, MICHIGAN 49544

WALL THK	.062	SECTION CLASS	S	MAT'L	6063-T5	RATIO	59:1
PERIMETER OUT (TOTAL)	7.540	AREA	.234	WGT/FT	.275		
FACTOR	27	CIRCLE SIZE	1.938	INFILL VOLUME	N/A		
RXX	.302	SXX	.030	IXX	.021	CXX	.701
RYY	.501	SYY	.113	IYY	.059	CYY	1.049

GLASS STOP, 1" HIGH FOR 1" GLASS STOCK DOORS

DRAWN BY	DWG DATE	07/03/84	APPV'D BY	DATE APPV'D
DWG SCALE	NOTED	PRODUCT CODE	100	E0928



ATI

Report # B3772-116-45

Date 10/20/2011

Simulator Eric Barilko

- NOTES:
- 1) USE WITH 1" INSULATED GLASS OR 1" PANEL
 - 2) USE GLAZING BEAD P-302 BOTH SIDES
 - 3) USE WITH E-0928 OR E-0929

© 2006 TUBELITE INC. ALL RIGHTS RESERVED
 ALUMINUM ASSOCIATION STANDARD TOLERANCES APPLY UNLESS NOTED
 ALL UNSPECIFIED RADII .015
 * INDICATES .031 RADIUS



3056 WALKER RIDGE NW, SUITE G
 WALKER, MICHIGAN 49544

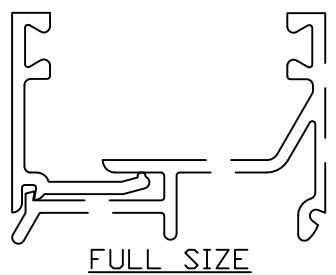
WALL THK.	.062	SECTION CLASS	S	MAT'L	6063-T5	RATIO	74:1
PERIMETER OUT (TOTAL)	4.001	AREA	.124	WGT/FT	.146		
FACTOR	27	CIRCLE SIZE	1.120	INFILL VOLUME	N/A		

RXX	.321	SXX	.023	IXX	.013	CXX	.321
RYY	.185	SYY	.008	IYY	.004	CYY	.185

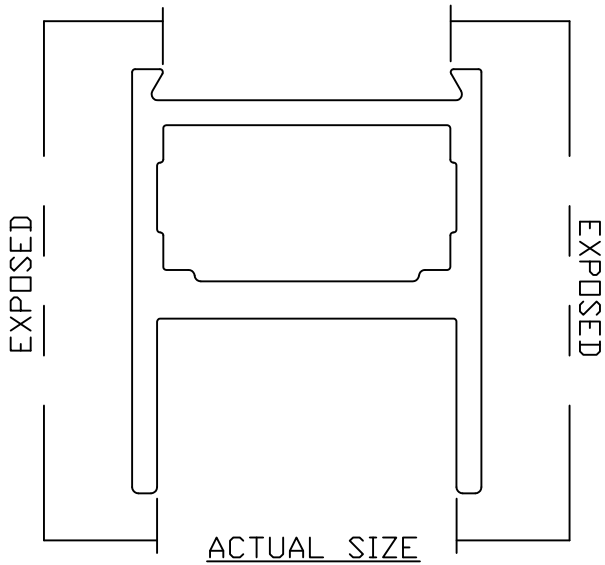
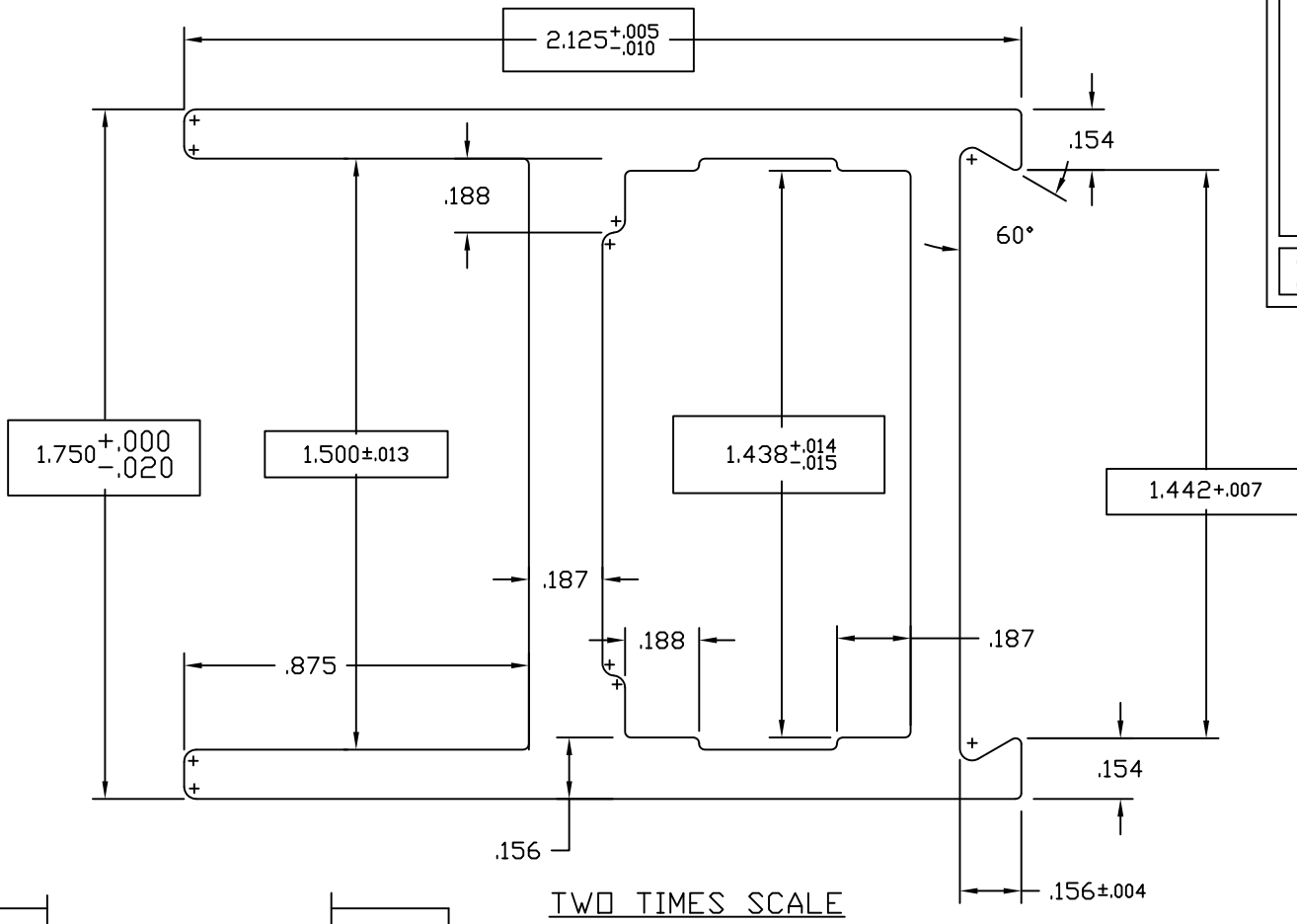
GLASS STOP, 1" HIGH FOR 1" GLASS STOCK DOORS

DRAWN BY	CRH	DRWG DATE	04/21/99	APPV'D BY		DATE APPV'D	
DWG SCALE	NOTED	PRODUCT CODE	100	E0927		REV	

REV	DATE	DESCRIPTION	INTL
X	xx/xx/xx	xxxxxxxxxxxxxx	xxx



E0255
A



ATI
Report # B3772-116-45
Date 10/20/2011
Simulator Eric Barilla

.125 +.003/-0.011 TYP WALL THICKNESS
 INDICATES CRITICAL DIMENSION
 SNAP FIT W/E-0437
 + INDICATES .031 RAD (10 PLCS)

© 2006 TUBELITE INC. ALL RIGHTS RESERVED
 ALUMINUM ASSOCIATION STANDARD
 TOLERANCES APPLY UNLESS NOTED
 ALL UNSPECIFIED RADII .015
 * INDICATES .031 RADIUS
 DENOTES CRITICAL DIMENSION
 ALL DIES PROPERTY OF TUBELITE

TUBELITE
 DEPENDABLE
 LEADERS IN ECO-EFFICIENT STOREFRONT,
 CURTAINWALL AND ENTRANCE SYSTEMS
 3056 WALKER RIDGE NW, SUITE G
 WALKER, MICHIGAN 49544

WALL THK.	NOTED	SECTION CLASS	H	MAT'L	6063-T5	RATIO	53:1
PERIMETER OUT (TOTAL)	9.848	(14.282)		AREA	1.043	WGT/FT	1.227
FACTOR	12	CIRCLE SIZE	1.367	INFILL VOLUME	N/A		

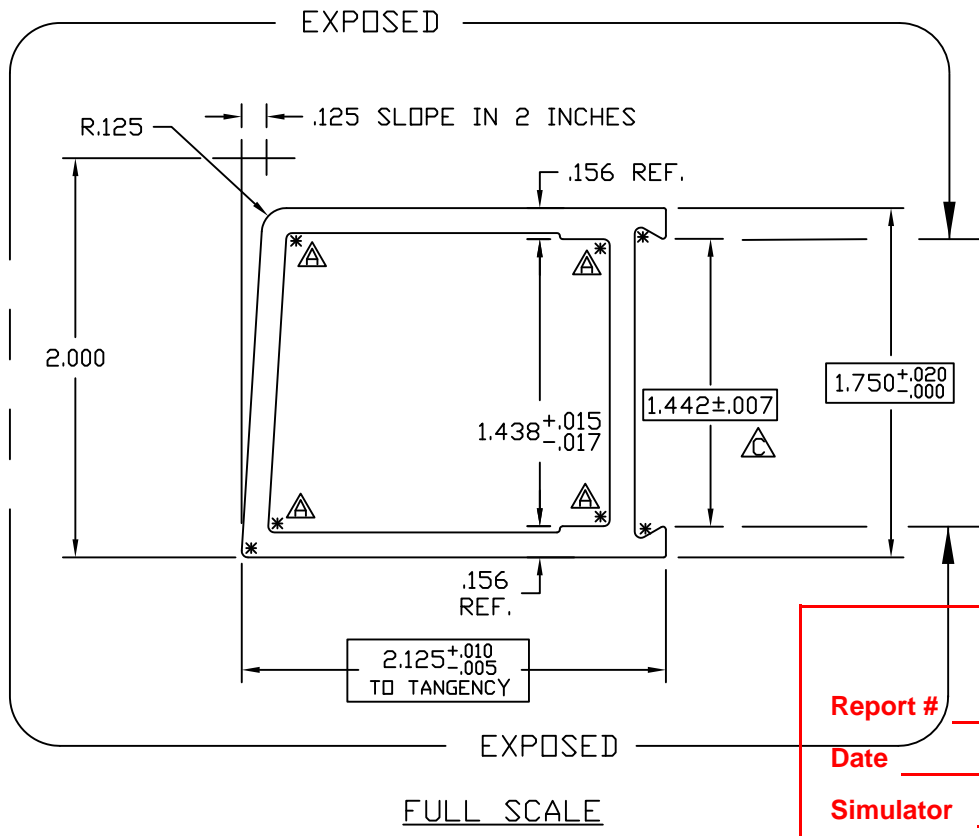
RXX	.664	SXX	.526	IXX	.460	CXX	.875
RYY	.556	SYX	.269	IYY	.323	CYY	1.200

HORIZONTAL RAIL 2 1/8" X 1 3/4"
 STOCK DOORS

REV	DATE	DESCRIPTION	INTL
A	08/23/04	1.442 WAS 1.438	CRH

DRAWN BY	DH	DRWG DATE	04/24/84	APPV'D BY		DATE APPV'D	
DWG SCALE	NOTED	PRODUCT CODE	100	E0255	REV	A	

E0055
C

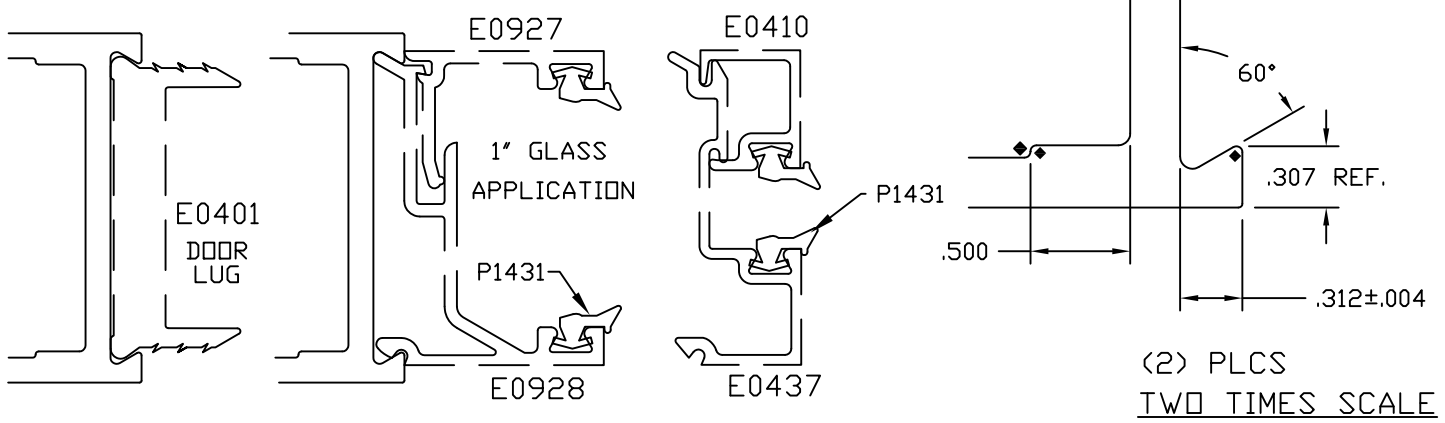


ATI

Report # B3772-116-45

Date 10/20/2011

Simulator Eric Barber



$.125 \begin{smallmatrix} +.003 \\ -.011 \end{smallmatrix}$ TYP WALL

INDICATES CRITICAL DIMENSION
SNAP FIT W/E0437(1/4"GLASS) AND E0928(1"GLASS)

© 2006 TUBELITE INC. ALL RIGHTS RESERVED
ALUMINUM ASSOCIATION STANDARD TOLERANCES APPLY UNLESS NOTED
ALL UNSPECIFIED RADII .015
* INDICATES .031 RADIUS

TUBELITE
DEPENDABLE
LEADERS IN ECO-EFFICIENT STOREFRONT, CURTAINWALL AND ENTRANCE SYSTEMS

3056 WALKER RIDGE NW, SUITE G
WALKER, MICHIGAN 49544

WALL THK.	NOTED	SECTION CLASS	H	MAT'L	6063-T5	RATIO	61:1
PERIMETER OUT (TOTAL)	8.001(14.257)	AREA	.905	WGT/FT	1.064		
FACTOR	13	CIRCLE SIZE	2.753	INFILL VOLUME	N/A		

RXX	.680	SXX	.471	IXX	.418	CXX	.889
RYY	.738	SYX	.461	IYY	.493	CYY	1.068

DOOR STILE 2 1/8" X 2"
STOCK DOORS

REV	DATE	DESCRIPTION	INTL
A	08/23/00	1.449 WAS 1.438, ADDED .031R, UPDATED TITLE BLK	CRH
B	09/27/00	+0.005/-0.010 WAS +.015/-0.000	CRH
C	10/2/01	1.442+/-0.007 WAS 1.449+0.005/-0.010	CRH

DRAWN BY	DAT	DRWG DATE	03/31/84	APPV'D BY		DATE APPV'D	
DWG SCALE	NOTED	PRODUCT CODE	100	E0055		REV	C

E0054

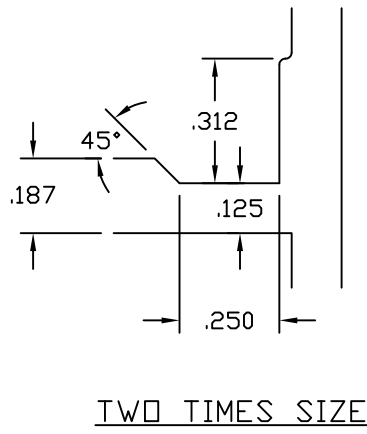
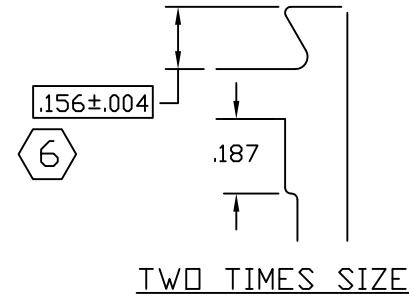
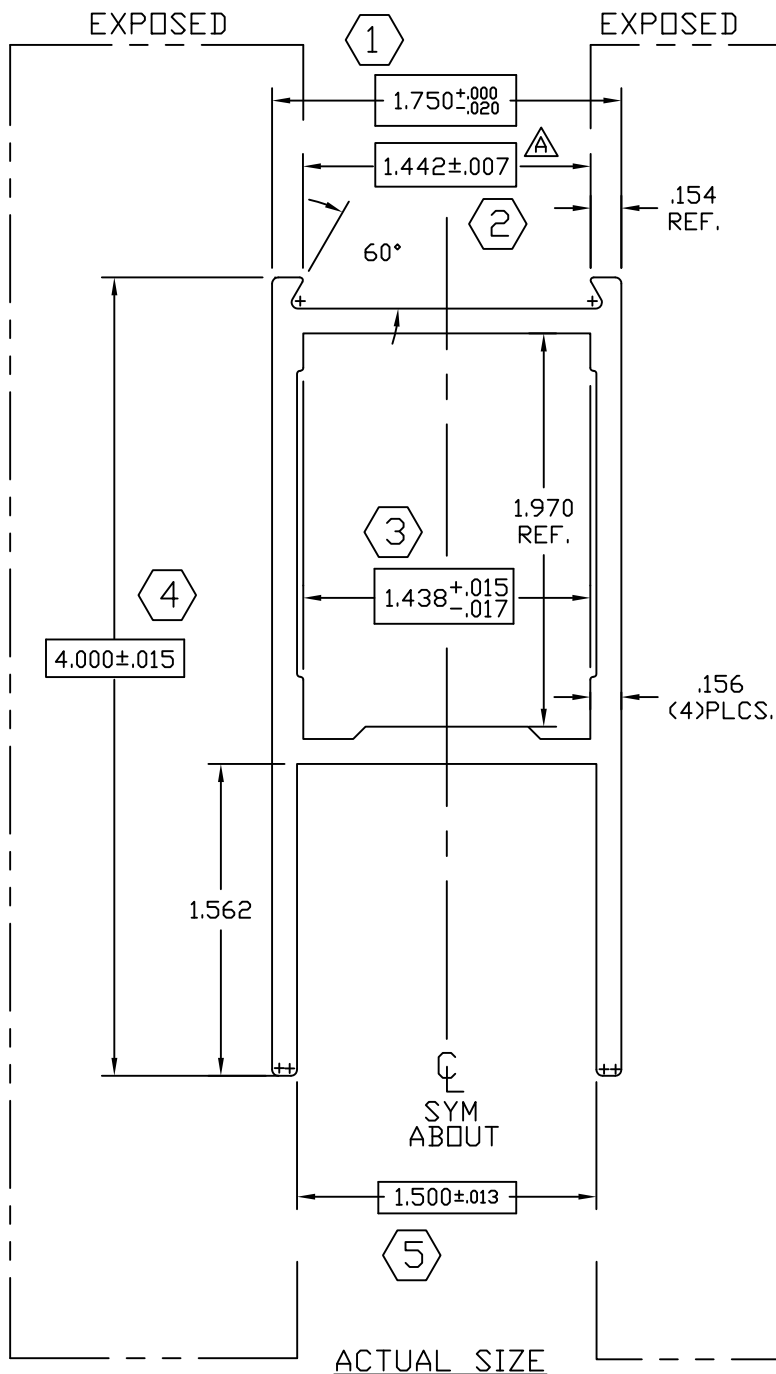
C

ATI

Report # B3772-116-45

Date 10/20/2011

Simulator Eric Barthele



7 SNAP FIT WITH E-0437

$.125 \begin{smallmatrix} +.003 \\ -.011 \end{smallmatrix}$ TYP WALL UNLESS NOTED

© 2006 TUBELITE INC. ALL RIGHTS RESERVED
 ALUMINUM ASSOCIATION STANDARD
 TOLERANCES APPLY UNLESS NOTED
 ALL UNSPECIFIED RADII .015
 * INDICATES .031 RADIUS

TUBELITE
 DEPENDABLE
 LEADERS IN ECO-EFFICIENT STOREFRONT,
 CURTAINWALL AND ENTRANCE SYSTEMS

3056 WALKER RIDGE NW, SUITE G
 WALKER, MICHIGAN 49544

WALL THK.	NOTED	SECTION CLASS	H	MAT'L	6063-T5	RATIO	38:1
PERIMETER OUT (TOTAL)	14.972	(22.036)	AREA	1.460	WGT/FT	1.715	
FACTOR	13	CIRCLE SIZE	4.352	INFILL VOLUME	N/A		

RXX	1.153	SXX	.890	IXX	1.941	CXX	2.182
RYY	.717	SYX	.858	IYY	.751	CYY	.875

HORIZONTAL RAIL 4" X 1 3/4"
 STOCK DOORS

DRAWN BY	DAT	DRWG DATE	03/31/84	APPV'D BY	DATE APPV'D	REV	
DWG SCALE	NOTED	PRODUCT CODE	100	E0054		C	

REV	DATE	DESCRIPTION	INTL
A	11/22/91	REVISED CALCULATIONS	KMH
B	12/10/91	REVISED CALCULATIONS	KMH
C	4/2/02	WAS 1.438 +.01/-0.013	CRH

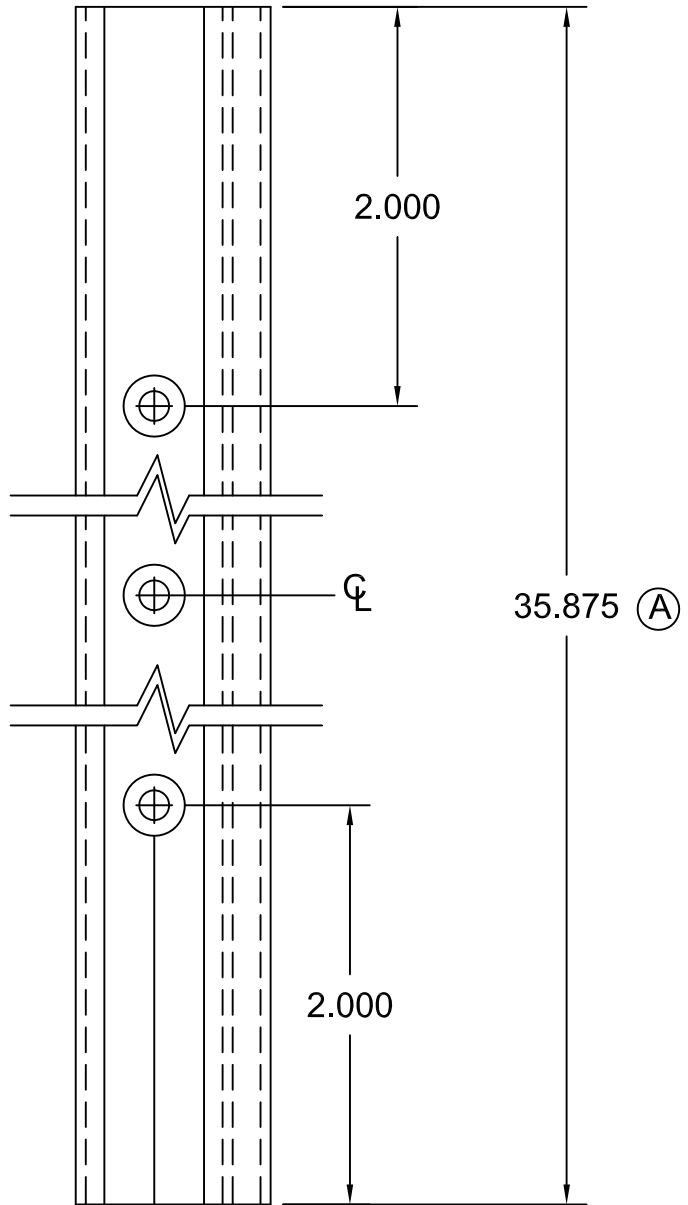
☐ DENOTES CRITICAL DIMENSION
 ALL DIES PROPERTY OF TUBELITE

ATI

Report # B3772-116-45

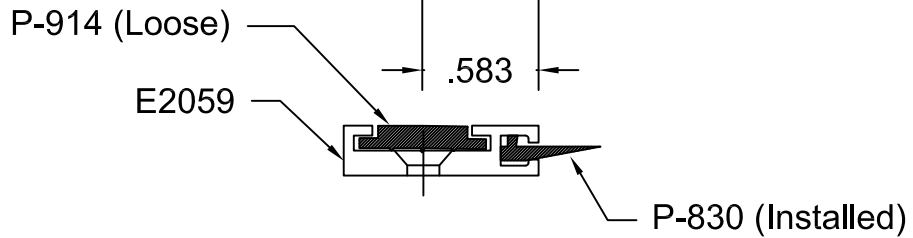
Date 10/20/2011

Simulator Eric Barilko



Operations:

1. Cut to length as required from E2059
2. Drill 3 holes with #25 Drl & Ctsk for S-064 (#6 FHCS)
3. Cut P-830 to length, Install, & Crimp ends
4. Cut P-914 to length, and install.
5. Paint ends as required
6. Ship with three (3) S064 Screws.



© 2006 TUBELITE INC. ALL RIGHTS RESERVED

ALL UNSPECIFIED RADII .015

* INDICATES .031 RADIUS

DENOTES CRITICAL DIMENSION

TUBELITE®
 DEPENDABLE
 LEADERS IN ECO-EFFICIENT STOREFRONT,
 CURTAINWALL AND ENTRANCE SYSTEMS

3056 WALKER RIDGE NW, SUITE G
 WALKER, MICHIGAN 49544

REV	DATE	DESCRIPTION	INTL
	7/29/83	Released Part per ED 128	PJ
A	05/17/90	ED #1222 Dim was 34.875	KMH
B	8/24/01	Redrawn for CAD	DMT
C	06/19/03	OUTSOURCE - ADD S064 SCREWS	SRD

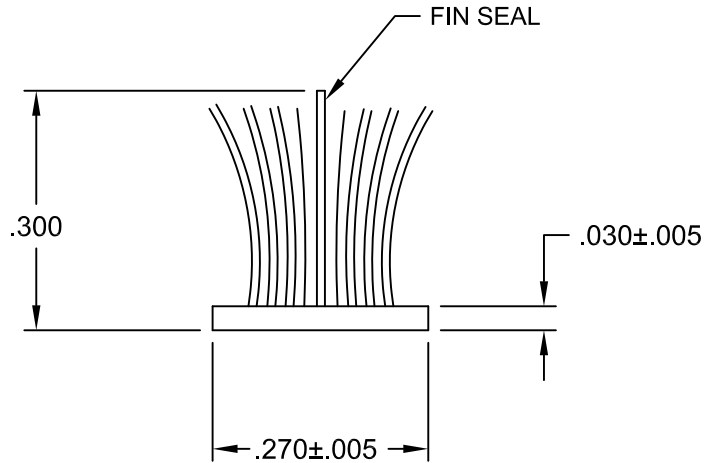
Door Seal to use with E2058 Threshold			
DRAWN BY PJ	DRWG DATE 05/09/83	APPV,D BY	DATE APPV'D
DRWG SCALE Full	PRODUCT CODE 380	P1275	
			REV C

ATI

Report # B3772-116-45

Date 10/20/2011

Simulator Eric Borilla



Actual Size

© 2006 TUBELITE INC. ALL RIGHTS RESERVED

ALL UNSPECIFIED RADII .015

* INDICATES .031 RADIUS

DENOTES CRITICAL DIMENSION

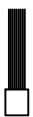
TUBELITE
 DEPENDABLE
 LEADERS IN ECO-EFFICIENT STOREFRONT,
 CURTAINWALL AND ENTRANCE SYSTEMS

3056 WALKER RIDGE NW, SUITE G
 WALKER, MICHIGAN 49544

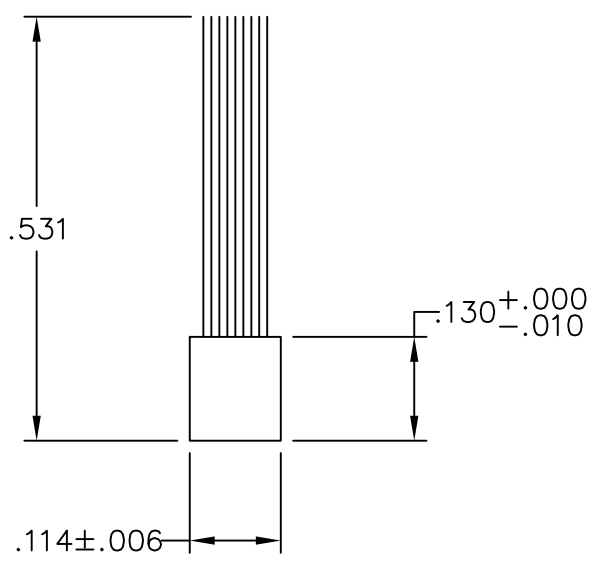
REV	DATE	DESCRIPTION	INTL
A	03/08/83	Release Part per ED 109	
B	05/29/02	Redrawn for CAD	DMT

Poly Bond Fin-Seal Weathering use with Door Stop E1377			
DRAWN BY	Don H	DRWG DATE	06/03/83
APPV,D BY		DATE APPV'D	
DRWG SCALE	Noted	PRODUCT CODE	380
P1098A			REV B

ATI
Report # B3772-116-45
Date 10/20/2011
Simulator Eric Basilak



Actual Size



Four Times Size

Purchased Part
 Schlege Pile Weathering
 Part Number 364-1006-5101

© 2006 TUBELITE INC. ALL RIGHTS RESERVED
 ALL UNSPECIFIED RADII .015
 * INDICATES .031 RADIUS
 □ DENOTES CRITICAL DIMENSION

TUBELITE®
 DEPENDABLE
 LEADERS IN ECO-EFFICIENT STOREFRONT,
 CURTAINWALL AND ENTRANCE SYSTEMS

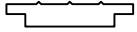
3056 WALKER RIDGE NW, SUITE G
 WALKER, MICHIGAN 49544

REV	DATE	DESCRIPTION	INTL
A	05/03/02	Redrawn for CAD	DMT

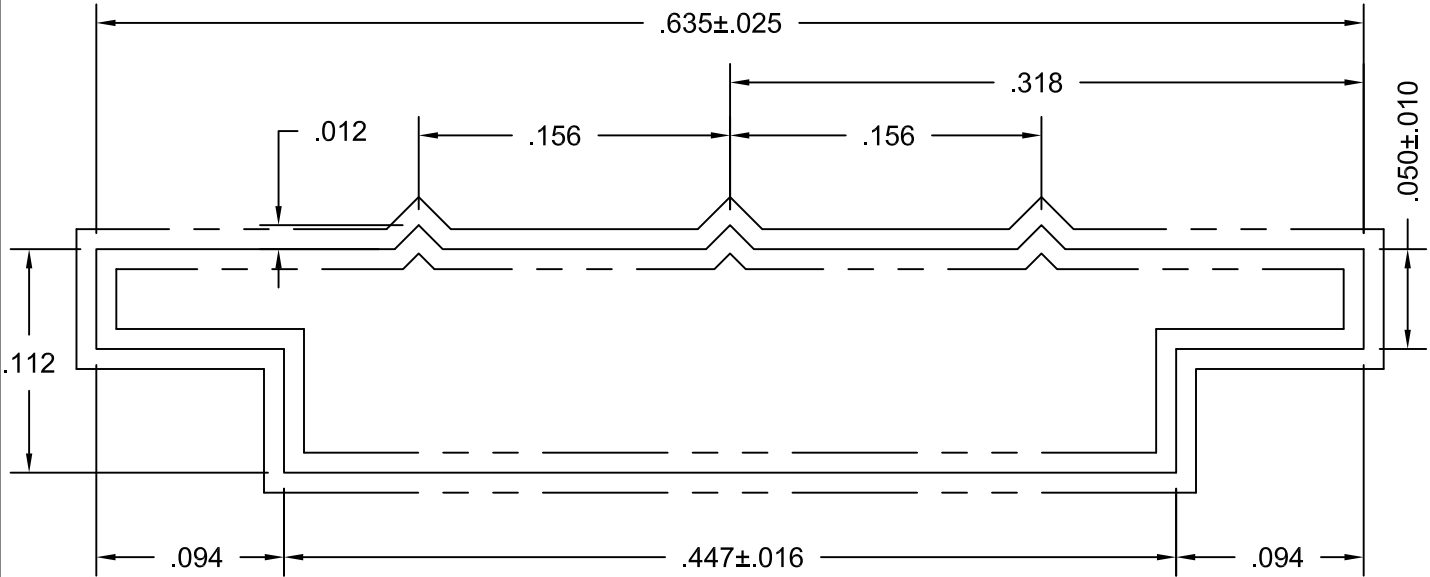
Pile Weathering to use
 with E1195 and E1152

DRAWN BY PJ	DRWG DATE 10/03/75	APPV,D BY	DATE APPV'D	REV
DRWG SCALE Noted	PRODUCT CODE 110	P938		A

ATI
 Report # B3772-116-45
 Date 10/20/2011
 Simulator Eric Bakula



ACTUAL SIZE



Ten Times Size

NOTE: Part to receive Silicone Bath after Extruding

Purchased Part
 Avon Rubber
 90 Durometer
 250' Rolls

© 2006 TUBELITE INC. ALL RIGHTS RESERVED

ALL UNSPECIFIED RADII .015

* INDICATES .031 RADIUS

□ DENOTES CRITICAL DIMENSION

TUBELITE®
 DEPENDABLE
 LEADERS IN ECO-EFFICIENT STOREFRONT,
 CURTAINWALL AND ENTRANCE SYSTEMS

3056 WALKER RIDGE NW, SUITE G
 WALKER, MICHIGAN 49544

REV	DATE	DESCRIPTION	INTL
A	01/19/96	Redrawn for AutoCAD	DMT

<p>EPDM Rubber Glazing Use with M1061, M1063, M1202</p>			
DRAWN BY	KMH	DRWG DATE	01/19/96
APPV,D BY		DATE APPV'D	
DRWG SCALE	Noted	PRODUCT CODE	380
<p>P914</p>			<p>REV A</p>

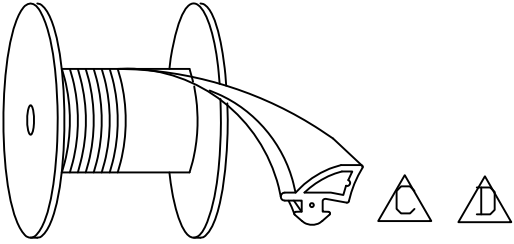
P0017
E

ATI

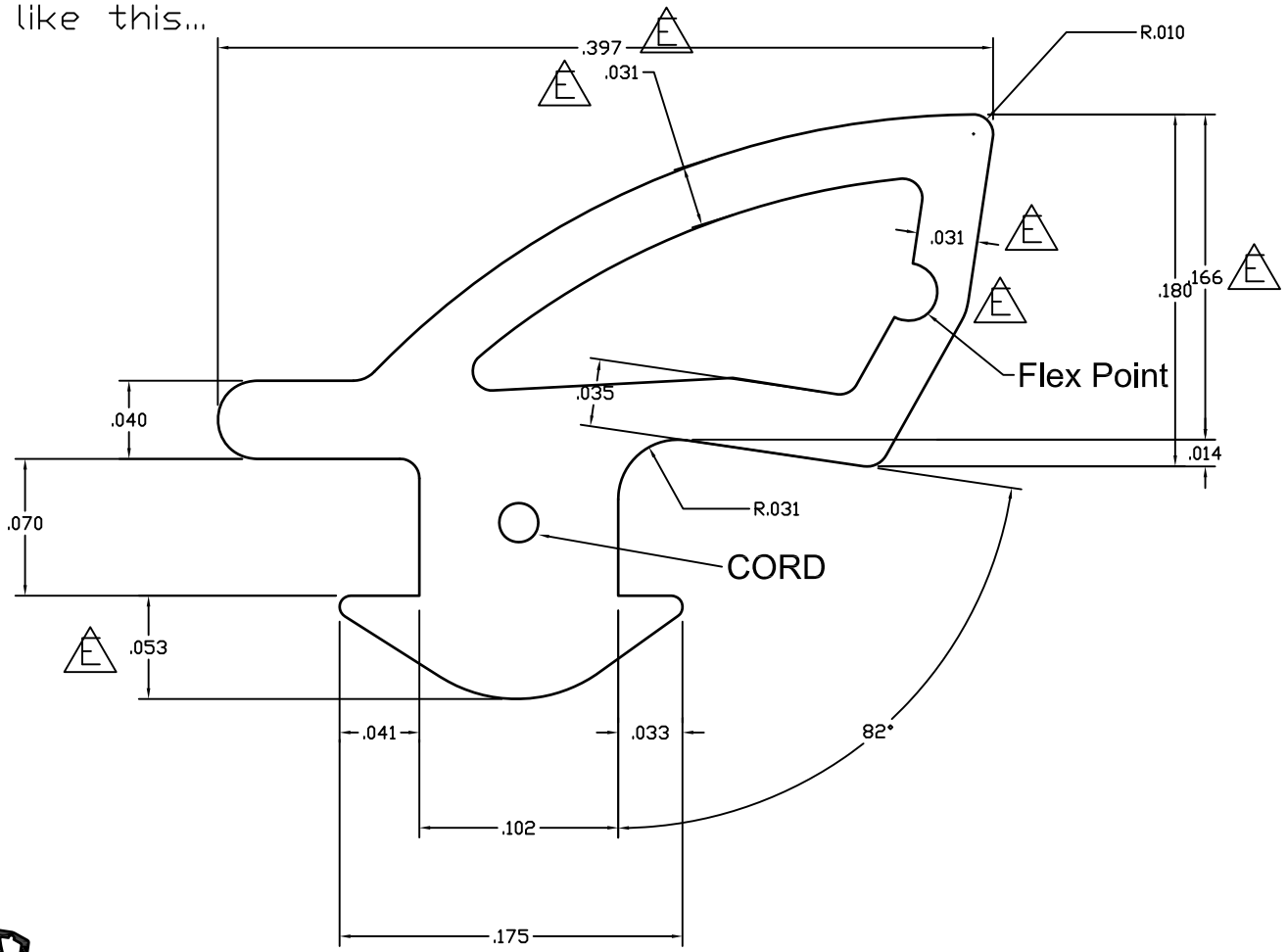
Report # B3772-116-45

Date 10/20/2011

Simulator Eric Borish



Material must UNREEL like this...



ACTUAL SIZE

MATERIAL: EPDM 60 DUROMETER WITH CORD

©2006 TUBELITE INC. ALL RIGHTS RESERVED
 ALL UNSPECIFIED RADII .015
 * INDICATES .031 RADIUS
 □ DENOTES CRITICAL DIMENSION

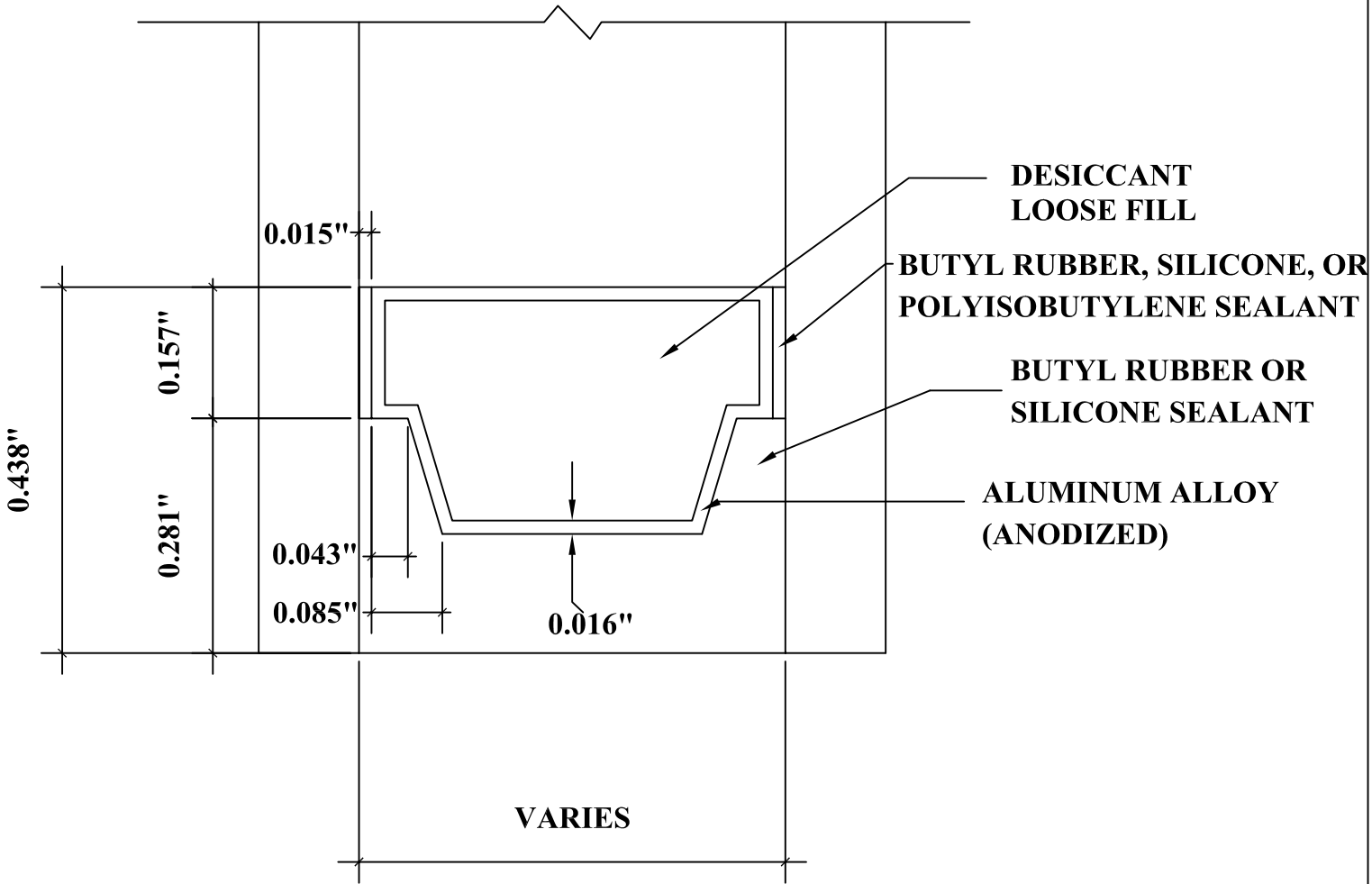
TUBELITE®
 DEPENDABLE
 LEADERS IN ECO-EFFICIENT STOREFRONT,
 CURTAINWALL AND ENTRANCE SYSTEMS

3056 WALKER RIDGE NW, SUITE G
 WALKER, MICHIGAN 49544

REV	DATE	DESCRIPTION	INTL
A	08/20/07	MODIFIED DART: .070 WAS .060 AND .051 WAS .061 ADDED CORD	NIK
B	10/16/08	ADDED MANUFACTURER'S TOLERANCES FOR REFERENCE	SRD
C	10/22/10	Modified gasket position of how the reel should roll	TT
D	12/16/10	Modified gasket position of how the reel should roll	TT
E	02/15/11	Rev flex pt, thickness was .032, .180 was .188	TT

1/4"-1" DOOR GLAZING GASKET
 500' ROLLS

DRAWN BY NIK	DRWG DATE 4-17-07	APPV.D BY	DATE APPV'D	REV E
DRWG SCALE 10X	PRODUCT CODE 100	P0017		



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