NFRC 102-2014 THERMAL PERFORMANCE
TEST REPORT

Rendered to:

COEUR D'ALENE WINDOW

SERIES/MODEL: 5821
TYPE: Sliding Patio Door

Summary of Results			
Standardized Thermal Transmittance (U-Factor)			0.28
Unit Size:		78-3/4" x 78-3/4" (2000 mm x 2000 mm) (Model Size)	
Layer 1:	5/32"	Cardinal E-366 (e=0.022*, #2)	
Gap:	0.48"	SS-D: Stainless Steel Spacer	90% Argon*
Layer 2:	5/32"	Clear	

Reference must be made to Report No. F0918.01-301-46, dated 09/04/15 for complete test specimen description and data.

NFRC 102-2014 THERMAL PERFORMANCE TEST REPORT

Rendered to:

COEUR D'ALENE WINDOW
3808 N Sullivan Rd, Building 18, Suite I
Spokane Valley, Washington 99216

Report Number:	F0918.01-301-46
Test Date:	09/03/15
Report Date:	09/04/15

Test Sample Identification:

Series/Model: 5821

Type: Sliding Patio Door

Overall Size: 78-3/4" x 78-3/4" (2000 mm x 2000 mm) (Model Size)
NFRC Standard Size: 78.7" x 78.7" (2000 mm wide x 2000 mm high)

Test Sample Submitted by: Client

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

Test Procedure: U-factor tests were performed in a Guarded Hot Box in accordance with NFRC 102-2014, *Procedure for Measuring the Steady-State Thermal Transmittance of Fenestration Systems*.

Test Results Summary:

Standardized U-factor (U_{st}): 0.28 Btu/hr·ft^2·F (CTS Method)

Test Sample Description:

Frame:

Material:	VI: Vinyl with Interlock Reinforced with Steel		
Size:	78-3/4" x 78-3/4" (Model Size)		
Daylight Opening:	28-1/8" x 68"	**Glazing Method:**	Exterior
Exterior Color:	White	**Exterior Finish:**	Vinyl
Interior Color:	White	**Interior Finish:**	Vinyl
Corner Joinery:	Mitered / Welds / Sealed		

Interior Panel:

Material:	VV: Vinyl with Vertical Members Reinforced with Steel		
Size:	40-1/8" x 76"		
Daylight Opening:	32" x 67-7/8"	**Glazing Method:**	Exterior
Exterior Color:	White	**Exterior Finish:**	Vinyl
Interior Color:	White	**Interior Finish:**	Vinyl
Corner Joinery:	Mitered / Welds / Sealed		

Glazing Information:

Layer 1:	5/32"	Cardinal E-366 (e=0.022*, #2)	
Gap:	0.48"	SS-D: Stainless Steel Spacer	90% Argon*
Layer 2:	5/32"	Clear	
Gas Fill Method:		Evacuated Chamber*	

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

Test Sample Description: (Continued)

Weatherstripping:

Description	Quantity	Location
Polypile with center fin	1 Row	Exterior meeting stile. All members of the interior panel.

Hardware:

Description	Quantity	Location
Roller assembly	2	Bottom rail of the interior panel.
Handle with lock mechanism	1	Lock stile.
Keeper	1	Lock jamb.

Drainage:

Drainage Method	Size	Quantity	Location
Weephole	3/4" x 1/4"	2	Sill face.
Weephole	3/4" x 3/16"	2	Internal sill webbing, through two layers. Interior sill track.
Weephole	1/2" x 3/16"	2	Glazing track of the panel, through three layers. Glazing track of the frame, through four layers.
Weephole	1/2" x 1/8"	2	Screen track.

Thermal Transmittance (U-factor)

Measured Test Data

Heat Flows

1. Total Measured Input into Metering Box (Q_{total})	990.22	Btu/hr
2. Surround Panel Heat Flow (Q_{sp})	64.55	Btu/hr
3. Surround Panel Thickness	5.00	inches
4. Surround Panel Conductance	0.0358	Btu/hr·ft^2·F
5. Metering Box Wall Heat Flow (Q_{mb})	13.85	Btu/hr
6. EMF vs Heat Flow Equation (equivalent information)	0.0218*EMF + 0.000	
7. Flanking Loss Heat Flow (Q_{fl})	27.14	Btu/hr
8. Net Specimen Heat Loss (Q_s)	884.67	Btu/hr

Areas

1. Test Specimen Projected Area (A_s)	43.07	ft^2
2. Test Specimen Interior Total (3-D) Surface Area (A_h)	45.83	ft^2
3. Test Specimen Exterior Total (3-D) Surface Area (A_c)	47.33	ft^2
4. Metering Box Opening Area (A_{mb})	69.44	ft^2
5. Metering Box Baffle Area (A_{b1})	60.56	ft^2
6. Surround Panel Interior Exposed Area (A_{sp})	26.37	ft^2

Test Conditions

1. Average Metering Room Air Temperature (t_h)	69.79	F
2. Average Cold Side Air Temperature (t_c)	-0.45	F
3. Average Guard/Environmental Air Temperature	74.00	F
4. Metering Room Average Relative Humidity	11.86	%
5. Metering Room Maximum Relative Humidity	13.03	%
6. Metering Room Minimum Relative Humidity	10.84	%
7. Measured Cold Side Wind Velocity (Perpendicular Flow)	12.66	mph
8. Measured Warm Side Wind Velocity (Parallel Flow)	0.04	mph
9. Measured Static Pressure Difference Across Test Specimen	0.00" ± 0.04"H_2O	

Average Surface Temperatures

1. Metering Room Surround Panel	68.16	F
2. Cold Side Surround Panel	-0.25	F

Results

1. Thermal Transmittance of Test Specimen (U_s)	0.29	Btu/hr·ft^2·F
2. Standardized Thermal Transmittance of Test Specimen (U_{st})	0.28	Btu/hr·ft^2·F

Thermal Transmittance (U-factor)

Calculated Test Data

CTS Method

1.	Warm Side Emittance of Glass (e_1)	0.84	
2.	Cold Side Emittance of Glass	0.84	
3.	Warm Side Frame Emittance*	0.90	
4.	Cold Side Frame Emittance*	0.90	
5.	Warm Side Sash/Panel/Vent Emittance*	N/A	
6.	Cold Side Sash/Panel/Vent Emittance*	N/A	
7.	Warm Side Baffle Emittance (e_{b1})	0.92	
8.	Cold Side Baffle Emittance (e_{b2})	N/A	
9.	Equivalent Warm Side Surface Temperature	54.70	F
10.	Equivalent Cold Side Surface Temperature	3.14	F
11.	Warm Side Baffle Surface Temperature	69.65	F
12.	Cold Side Baffle Surface Temperature	N/A	F
13.	Measured Warm Side Surface Conductance (h_h)	1.36	Btu/hr·ft^2·F
14.	Measured Cold Side Surface Conductance (h_c)	5.71	Btu/hr·ft^2·F
15.	Test Specimen Thermal Conductance (C_s)	0.40	Btu/hr·ft^2·F
16.	Convection Coefficient (K_c)	0.31	Btu/(hr·ft^2·F$^{1.25}$)
17.	Radiative Test Specimen Heat Flow (Q_{r1})	490.70	Btu/hr
18.	Conductive Test Specimen Heat Flow (Q_{c1})	393.96	Btu/hr
19.	Radiative Heat Flux of Test Specimen (q_{r1})	11.39	Btu/hr·ft^2·F
20.	Convective Heat Flux of Test Specimen (q_{c1})	9.15	Btu/hr·ft^2·F
21.	Standardized Warm Side Surface Conductance (h_{sth})	1.19	Btu/hr·ft^2·F
22.	Standardized Cold Side Surface Conductance (h_{stc})	5.28	Btu/hr·ft^2·F
23.	Standardized Thermal Transmittance (U_{st})	0.28	Btu/hr·ft^2·F

Test Duration

1. The environmental systems were started at 11:42 hours, 09/02/15.
2. The test parameters were considered stable for two consecutive four hour test periods from 21:54 hours, 09/02/15 to 05:54 hours, 09/03/15.
3. The thermal performance test results were derived from 01:54 hours, 09/03/15 to 05:54 hours, 09/03/15.

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

**Stated per NFRC 101*

Glazing Deflection:

	Exterior Panel	Interior Panel
Edge Gap Width	0.48"	0.48"
Estimated center gap width upon receipt of specimen in laboratory (after stabilization)	0.44"	0.45"
Center gap width at laboratory ambient conditions on day of testing	0.44"	0.45"
Center gap width at test conditions	0.36"	0.36"

Glass collapse determined using a digital glass and air space meter

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

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

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

ANSI/NCSL Z540-2-1997 type B uncertainty for this test was 1.73%.

Required annual calibrations for the Architectural Testing Inc., an Intertek company ("Intertek-ATI"), 'thermal test chamber' (ICN 004287) in Fresno, California were last conducted in April 2015 in accordance with Intertek-ATI calibration procedure. A CTS Calibration verification was performed August 2015. A Metering Box Wall Transducer and Surround Panel Flanking Loss Characterization was performed June 2015.

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

Intertek-ATI will service this report for the entire test record retention period. Test records that are retained such as detailed drawings, datasheets, representative samples of test specimens, or other pertinent project documentation will be retained by Intertek-ATI for the entire test record retention period. The test record retention end date for this report is September 03, 2019.

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

For INTERTEK-ATI

Tested By:

Digitally Signed by: William Smeds

William Simon Smeds
Technician

Reviewed By:

Digitally Signed by:Kenny C. White

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

WSS:ms
F0918.01-301-46

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

- Appendix-A: CTS Calibration Data (1)
- Appendix-B: Surround Panel Wiring Diagram (1)
- Appendix-C: Baffle Wiring Diagram (1)
- Appendix-D: Submittal Form and Drawings (16)

ACCREDITED

Intertek-ATI is accredited by the International Accreditation Service (IAS) under the specific test methods listed under lab code TL-144, in accordance with the recognized International Standard ISO/IEC 17025:2005. The laboratory's accreditation or test report in no way constitutes or implies product certification, approval, or endorsement by IAS.

Revision Log

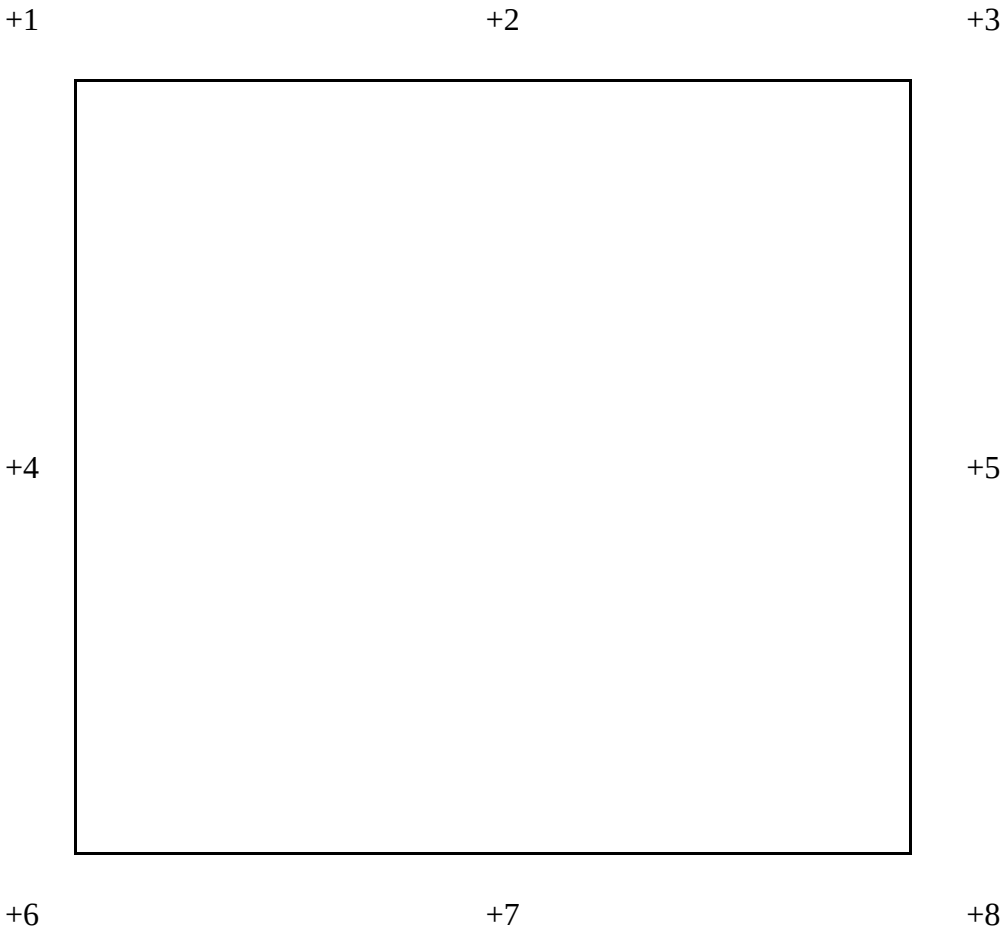
Rev. #	Date	Page(s)	Revision(s)
0	09/04/15	All	Original Report Issue. Work requested by Mr. Blake Doll of Coeur d'Alene Window

This report produced from controlled document template ATI 00025(a), revised 03/14/2013.

Appendix A: CTS Calibration Data

1.	CTS Test Date	07/16/15	
2.	CTS Size	43.06	ft^2
3.	CTS Glass/Core Conductance	0.40	$Btu/hr \cdot ft^2 \cdot F$
4.	Warm Side Air Temperature	69.78	F
5.	Cold Side Air Temperature	-0.37	F
6.	Warm Side Average Surface Temperature	54.68	F
7.	Cold Side Average Surface Temperature	3.23	F
8.	Convection Coefficient (K_c)	0.31	$Btu/(hr \cdot ft^2 \cdot F^{1.25})$
9.	Measured Cold Side Surface Conductance (h_c)	5.71	$Btu/hr \cdot ft^2 \cdot F$
10.	Measured Thermal Transmittance	0.31	$Btu/hr \cdot ft^2 \cdot F$

Appendix B: Surround Panel Wiring Diagram



Appendix C: Baffle Wiring Diagram

+1	+2	+3	+4	+5	+6
+7	+8	+9	+10	+11	+12
+13	+14	+15	+16	+17	+18
+19	+20	+21	+22	+23	+24
+25	+26	+27	+28	+29	+30

Appendix D: Submittal Form and Drawings

NFRC PRODUCT CERTIFICATION PROGRAM

Submittal Form for Test Samples

National Fenestration Rating Council®

For use by Manufacturers, Lineal Suppliers and Fabricators

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

Manufacturer: Coeur d'Alene Window Co Date of sample manufacture: 08/12/2015

Plant Address where manufactured: 3808 N Sullivan Rd Building 18I

City: Spokane Valley State: WA Zip Code: 99216

Name of IA: NAMI Phone: 5093400705 Fax: 5092790186

2. Product Information (complete APPLICABLE fields):

Existing Product Line ID (CPD) No.: n/a Product/Operator Type (Table 4-3 of NFRC 100): Sliding Patio Door

Series/Model: 5821

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

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

b. ☒ Validation for Initial Certification or Recertification (production line unit) & plant qualification

c. ☐ Plant Qualification Only (production line unit)

d. ☐ Test Only Alternative (production line unit) & plant qualification

I, Blake Doll, as the designated agent for Coeur d'Alene Window Co. 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: [signature] Date: 9/04/2015

For Laboratory Use Only

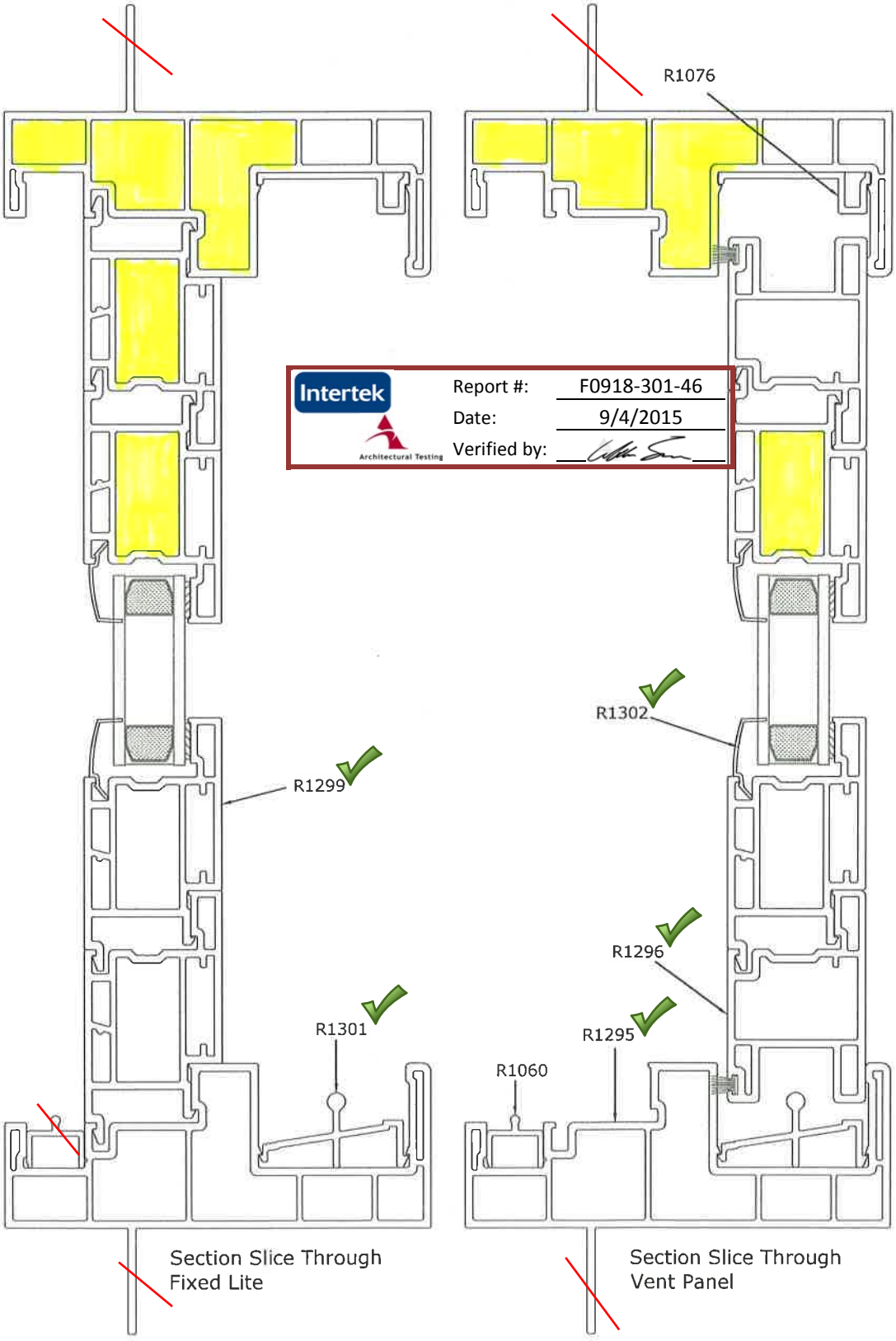
1. Laboratory: INTERTEK-ATI
2. Date Sample Received: 8/17/15 Test Report #: F0918.01-301-46
3. Date Sample Tested: 9/3/15 By: William Smith
4. Modifications made: NONE

Part	Part #
Main Frame	RS1295
Fixed Interlock	R1300
Vent Interlock	RS1298
Vent Common	RS1297
Vent Sill	RS1296
Screen Track	RS1060
Slider Track	RS1301
XOP Bar	RS1306
Anti Lift	RS1076
Bead	RS1994
Filler Bar	RS1307
OXXO Bar (astragal)	RS1304
Equal Site	RS1299
Fixed Interlock Metal	U150205
Vent Interlock Metal	U960550
XOP Bar Metal	U150220
Slider Track Metal	U780011
Handle (Interior & Exterior)	97BDFG01
Roller Wheel	21000
Mortise Lock	DR05-7601
Keeper	DR05-2510-00
Fixed Interlock Screw	08A20PT4HUHLDNEO
Bumper	R112-2602
Bumper Screw	#8 x 5/8

Intertek
Architectural Testing

Report #: F0918-301-46
Date: 9/4/2015
Verified by:

Polyurethane Foam Insulation (Spray Applied)



Intertek
Architectural Testing

Report #: F0918-301-46
Date: 9/4/2015
Verified by:

ROYAL Building Products

111 Royal Group Crescent
Woodbridge, Ontario
Canada L4H 1X9

Die#
Sys No. 308- L300_V
CUSTOMER CdA
TITLE 308 SPD Vertical Sections – Stacked

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PROJECT: 308
DATE: April 28, 2014

Layout Name: Vertical Sections
Drawn by: gmc
SCALE 0.625:1
AREA .000
WT/FT .000

ACAD#: 308-L300_R1299 Stacked

LINEAR TOLERANCES:	
0.000–0.999	±0.010
1.000–1.999	±0.015
2.000–3.999	±0.020

WALL TOLERANCES:	
0.000–0.099	±0.006
WALL THICKNESS:	
Exterior	.000
Interior	.000
■	.xxx
▲	.xxx

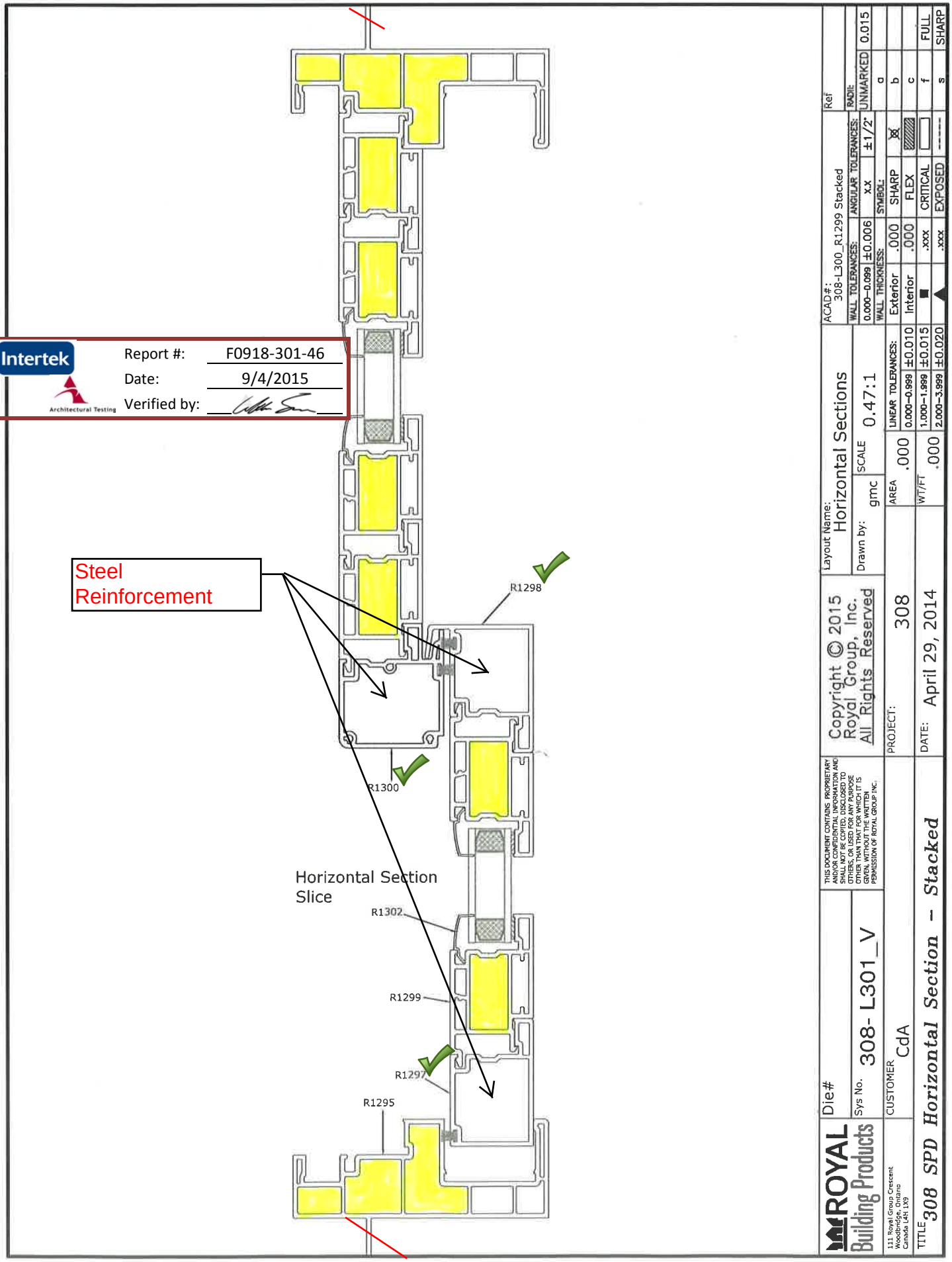
ANGULAR TOLERANCES:	
XX	±1/2°
SYMBOL:	
SHARP	
FLEX	
CRITICAL	
EXPOSED	

Ref
RADII:

UNMARKED	0.015
a	
b	
c	
f	FULL
s	SHARP

4/29/2015 9:30:02 AM

Polyurethane Foam Insulation (Spray Applied)



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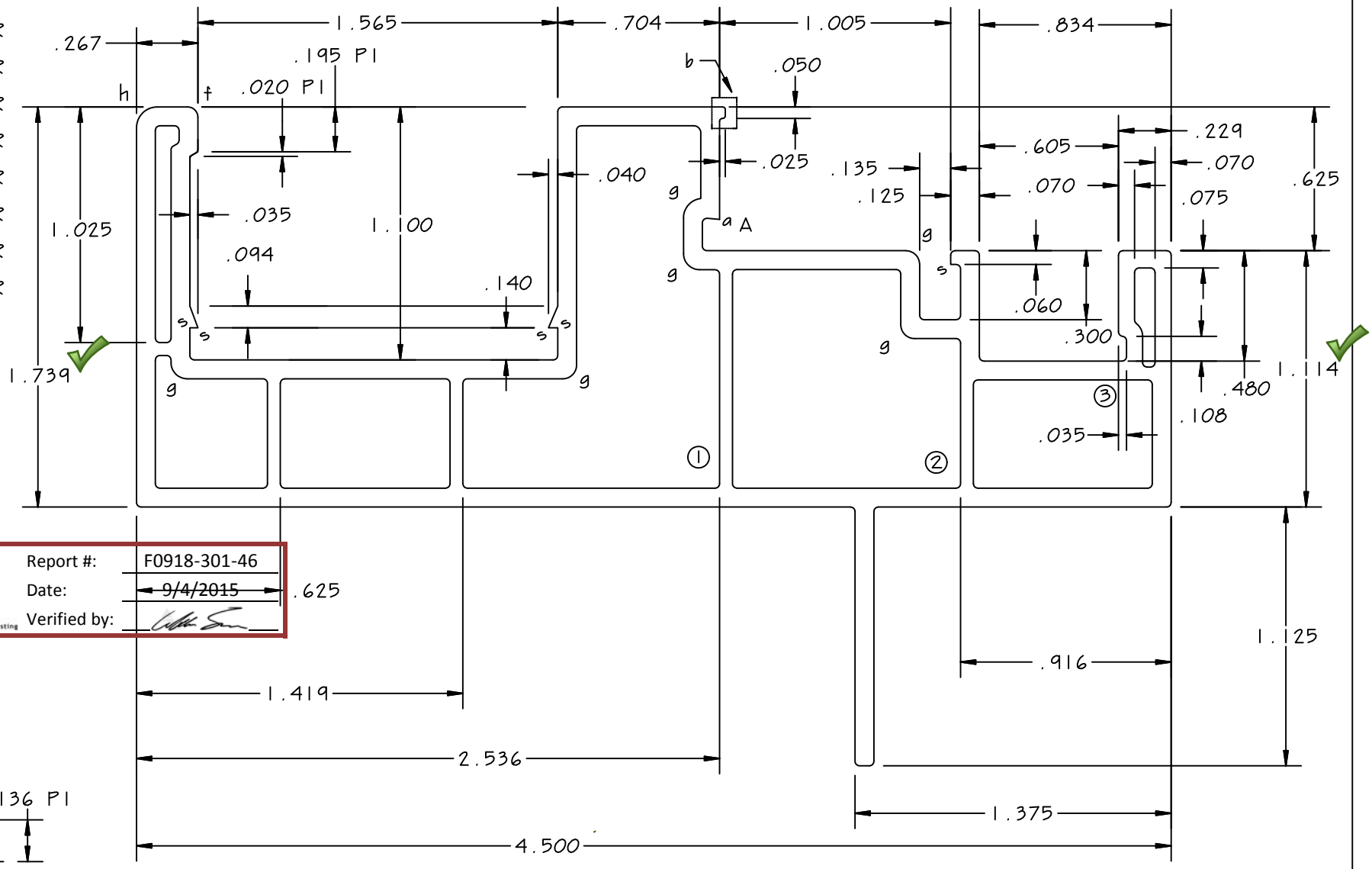

Intertek Architectural Testing

Report #: F0918-301-46
Date: ~~9/4/2015~~
Verified by:

DETAIL A
SCALE: 2:1

APPROVED
16-FEB-98
CYCLOID DESIGNS

REV	DATE	REMARKS
3	01-18-98	RETAINER DETAL ADDED; WT WAS .954
2	01-18-98	WALL MOVED; DIM WAS 0.954
1	01-18-98	WALL MOVED; DIM WAS 2.716

FAB REF							
308-F2A	308-F5A	FIT TO	305-D35	308-D18	181-D8	308-D19	
308-F2	308-F3		308-D13	308-D15	308-D20	181-D15	291-D7

CYCLOID DESIGNS

DWG: 308-D1

DATE: 11-FEB-98

TITLE: FRAME WITH FIN

RS1295

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EXTERNAL WALL: 0.082
INTERNAL WALL: 0.056
CORNER TYP: 0.020R
WEIGHT: 0.953 LB/FT

C:\Users\E12397\Documents\AAA DRAFTING\Master Systems - Cycloid\GCD--COMPREHENSIVE\308\308-D1.GCD -- 11/04/2014 -- 03:01 PM -- Scale 1 : .955

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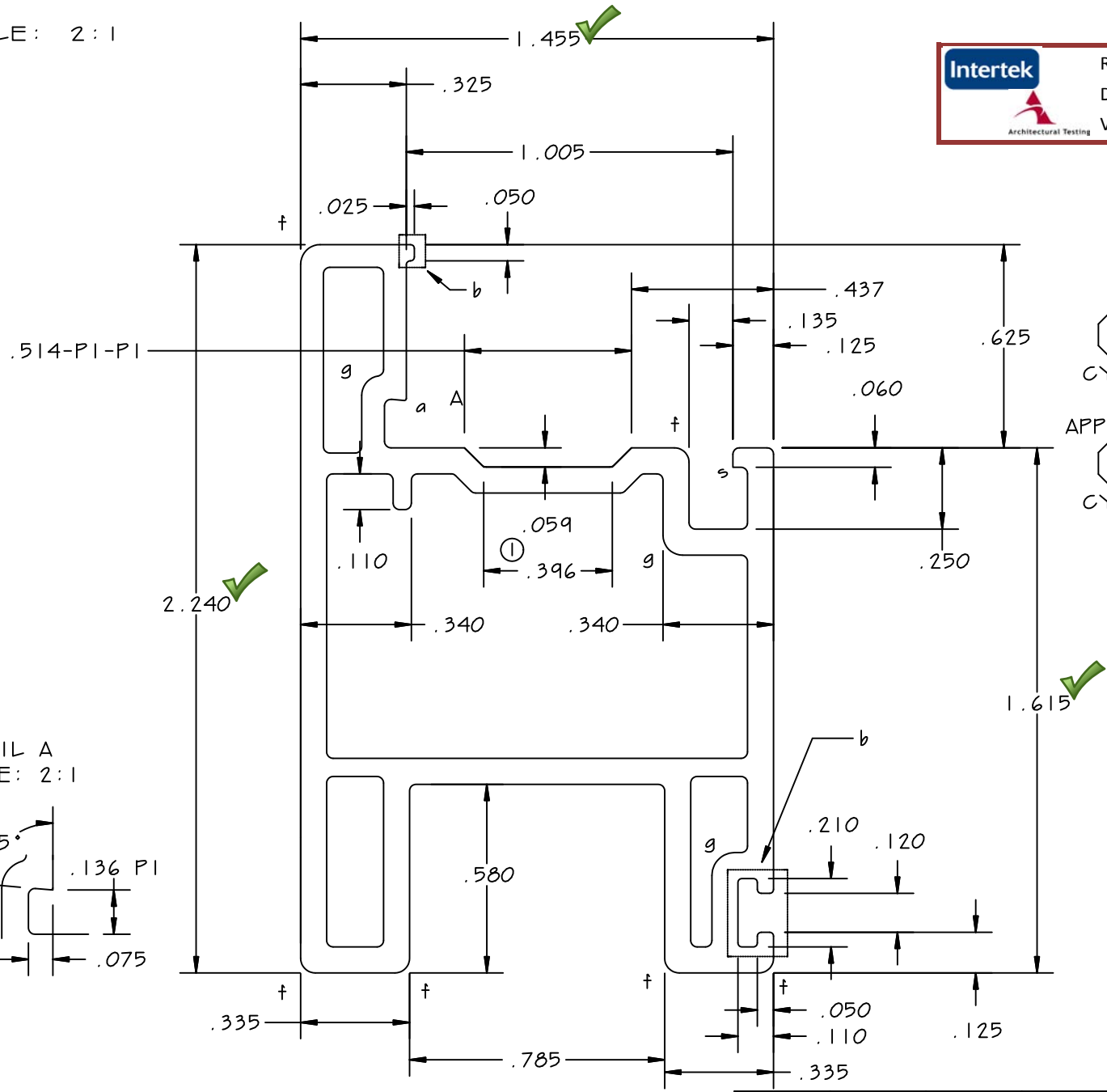

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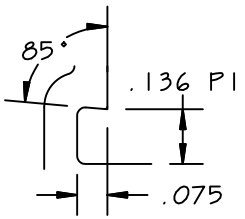

Intertek Architectural Testing
Report #: F0918-301-46
Date: 9/4/2015
Verified by:

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b = 0.012R
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e = 0.030R
f = 0.045R
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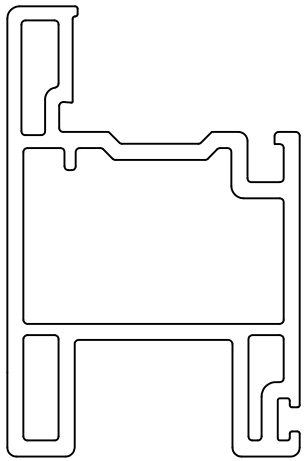
s = sharp

APPROVED
16-FEB-98
CYCLOID DESIGNS

APPROVED AS CORRECTED
28-APR-98
CYCLOID DESIGNS



ACTUAL SIZE

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308-F4				308-D15	291-D7		

CYCLOID DESIGNS

DWG: 308-D10

DATE: 13-FEB-98

TITLE: SASH BOTTOM

RS1296

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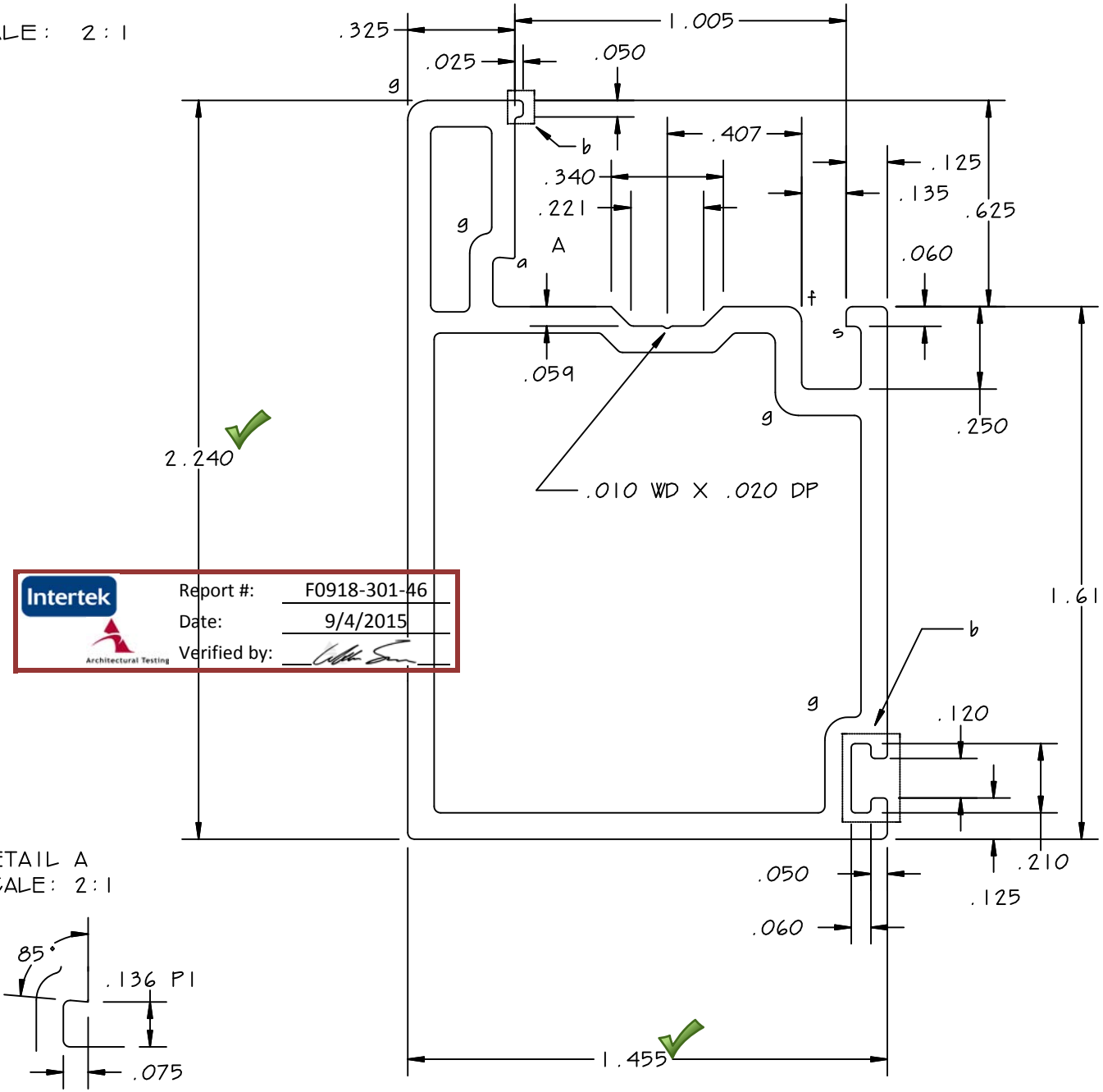
INTERNAL WALL: 0.064
CORNER TYP: 0.020R
WEIGHT: 0.453 LB/FT

SCALE: 2:1



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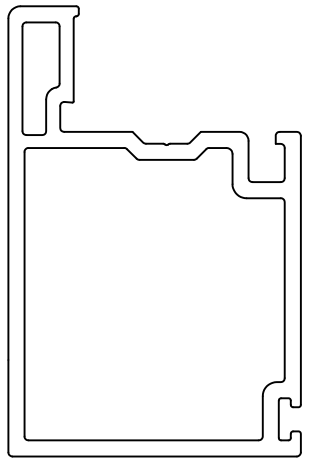
c=0.015R
d=0.020R
e=0.030R
f=0.045R
g=0.060R
s=sharp

APPROVED
16-FEB-98
CYCLOID DESIGNS

Intertek Architectural Testing
Report #: F0918-301-46
Date: 9/4/2015
Verified by:



ACTUAL SIZE

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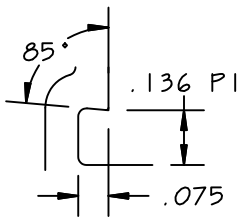

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308-F5	308-F6			308-D15	291-D7		

CYCLOID DESIGNS

DWG: 308-D11

DATE: 11-FEB-98

TITLE: SASH

RS1297

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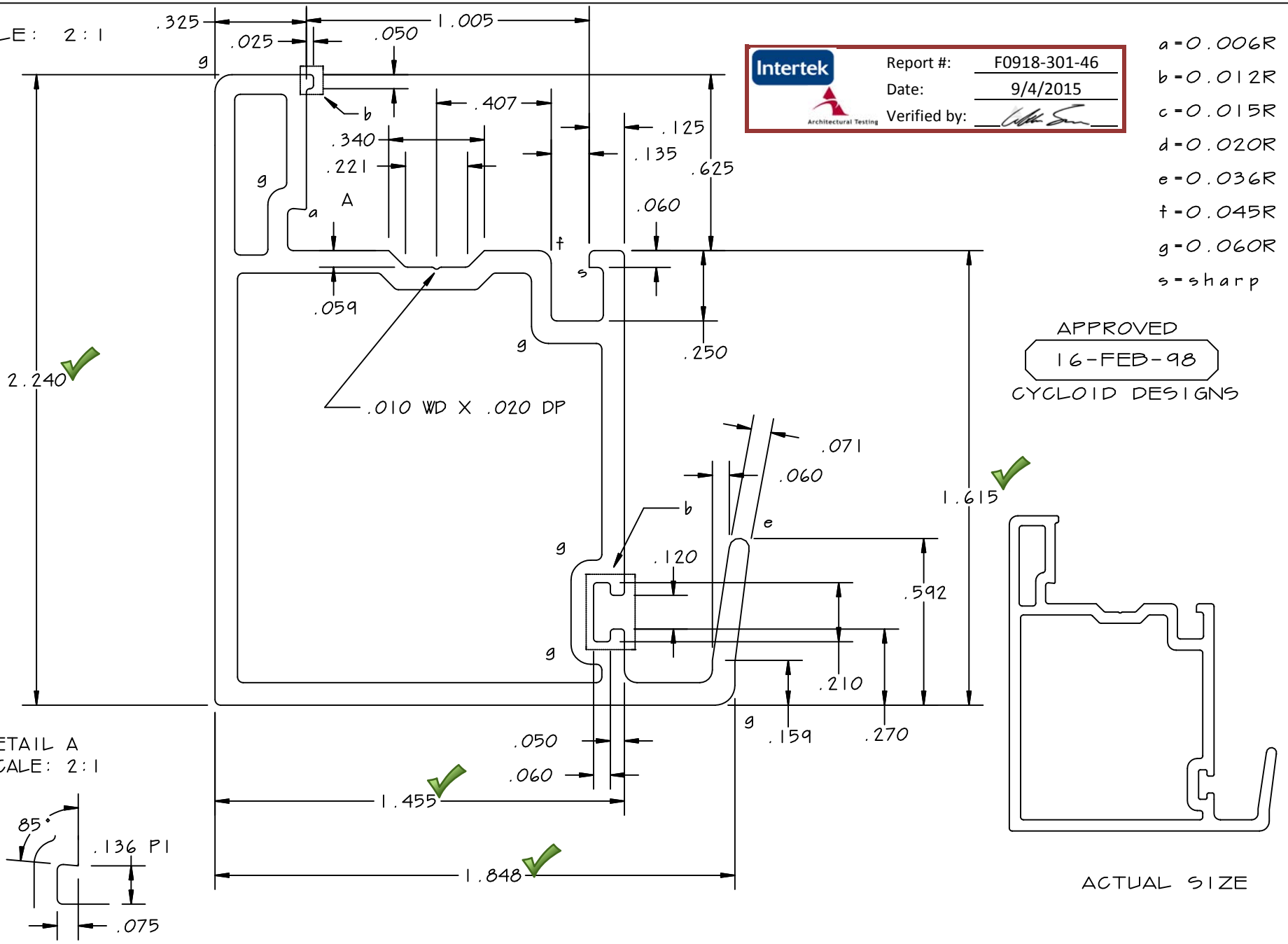
EXTERNAL WALL: 0.080
INTERNAL WALL: 0.064
CORNER TYP: 0.020R
WEIGHT: 0.381 LB/FT

SCALE: 2 : 1



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c = 0.015R
d = 0.020R
e = 0.036R
f = 0.045R
g = 0.060R
s = sharp

Intertek Architectural Testing
Report #: F0918-301-46
Date: 9/4/2015
Verified by:

APPROVED
16-FEB-98
CYCLOID DESIGNS

DETAIL A
SCALE: 2 : 1

ACTUAL SIZE

FAB REF				FIT TO	305-D35	308-D13	308-D18
308-F6				308-D15	291-D7		

CYCLOID DESIGNS

DWG: 308-D12

DATE: 11-FEB-98

TITLE: INTERLOCK

RS1298

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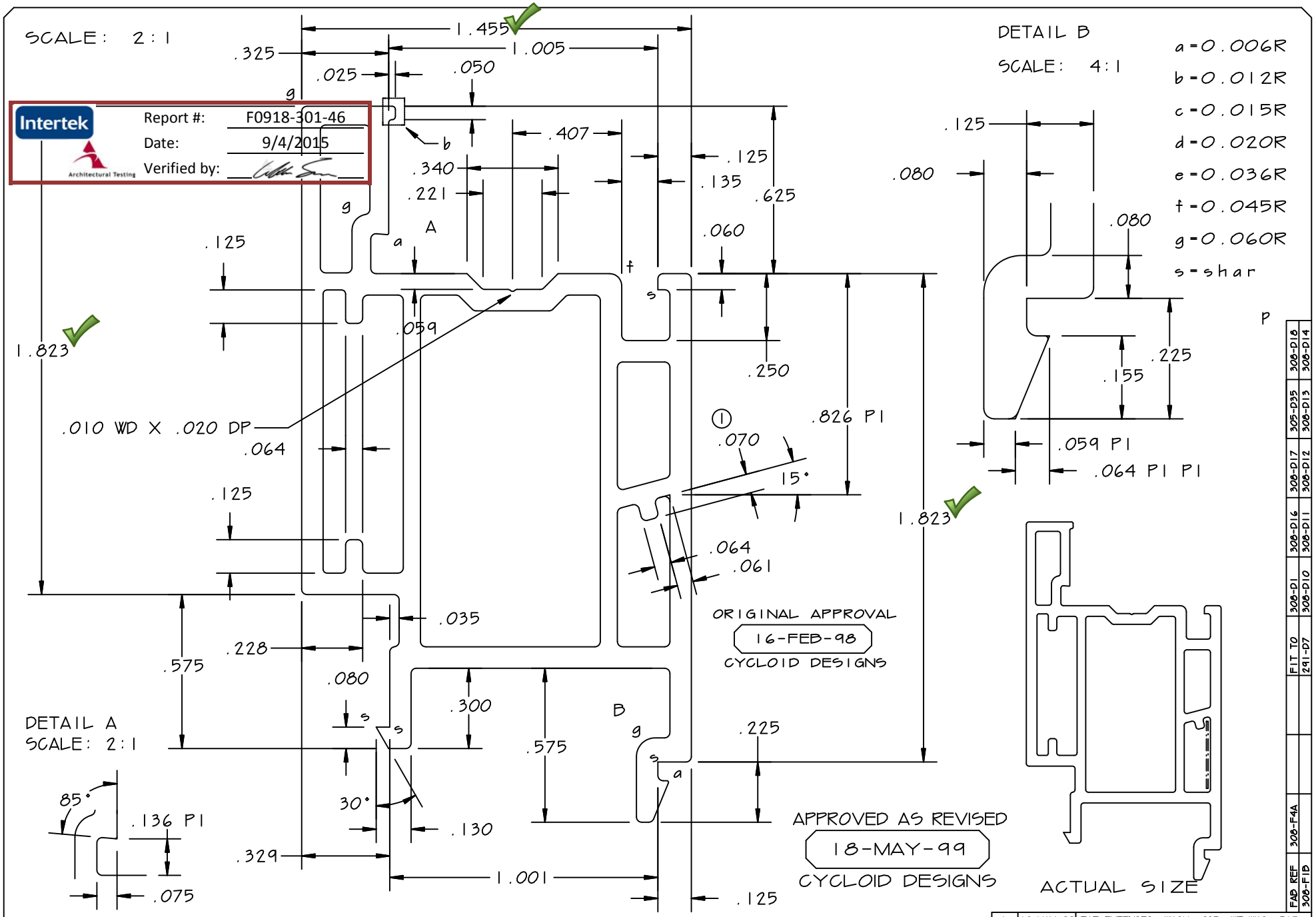
EXTERNAL WALL: 0.080
INTERNAL WALL: 0.064
CORNER TYP: 0.020R
WEIGHT: 0.426 LB/FT

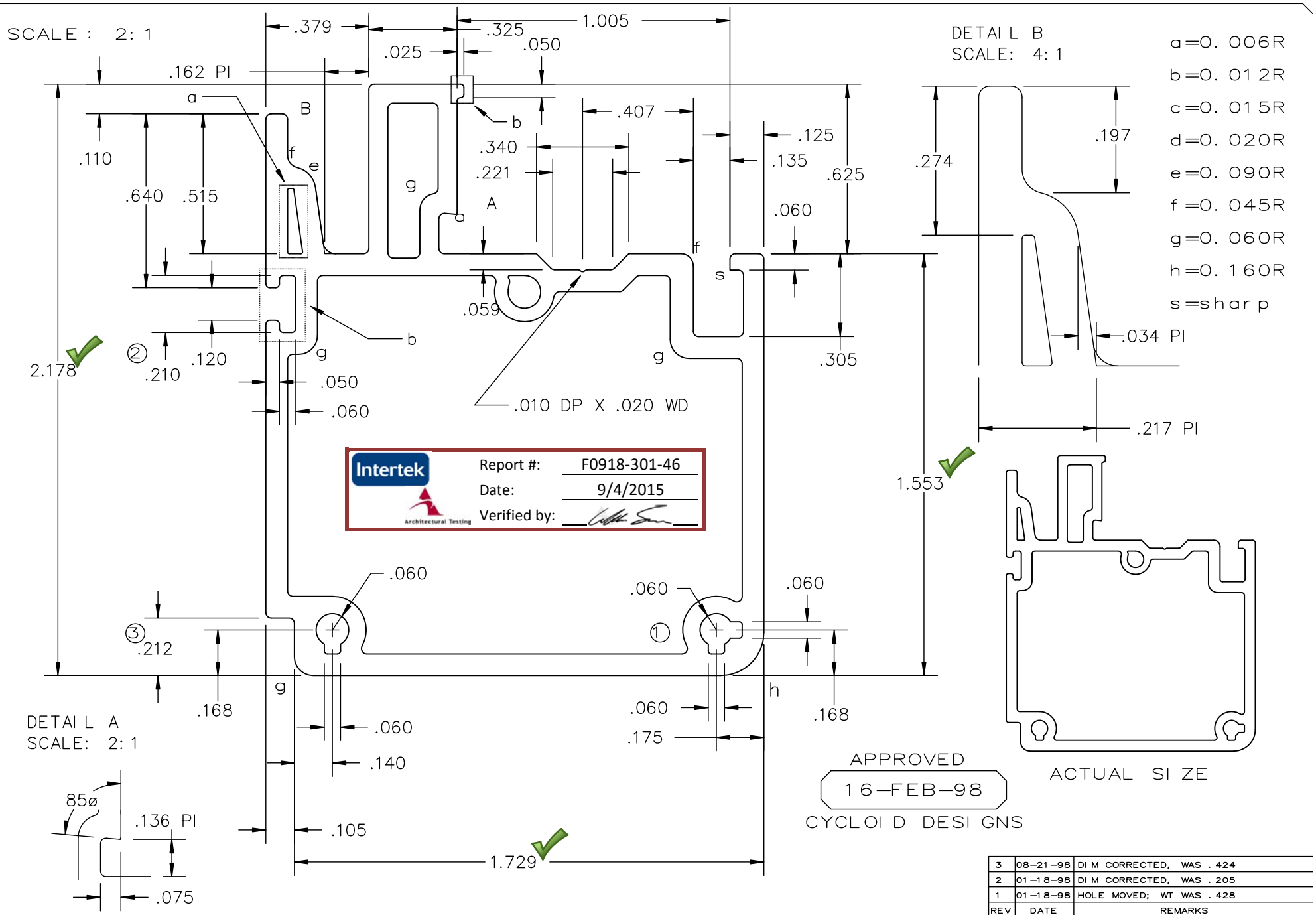
C:\Users\E12397\Documents\AAA DRAFTING\Master Systems - Cycloid\GCD--COMPREHENSIVE\308\308-D12.GCD -- 11/04/2014 -- 03:06 PM -- Scale 1 : .955



REV	DATE	REMARKS
1	18-MAY-99	TIT EXTENDED, WASH .035; WT WAS .517

CYCLOID DESIGNS	DWG: 308-D13	DATE: 11-FEB-98	© 1998 COPYRIGHT ROYAL SIERRA INC SPARKS, NEVADA ALL RIGHTS RESERVED
TITLE: VENTILATOR	RS1299		EXTERNAL WALL: 0.080 INTERNAL WALL: 0.064 CORNER TYP: 0.020R WEIGHT: 0.518 LB/FT

C:\Users\E12397\Documents\AAA DRAFTING\Master Systems - Cycloid\GCD--COMPREHENSIVE\308\308-D13.GCD -- 11/04/2014 -- 03:06 PM -- Scale 1 : .955



REV	DATE	REMARKS
3	08–21–98	DI M CORRECTED, WAS . 424
2	01–18–98	DI M CORRECTED, WAS . 205
1	01–18–98	HOLE MOVED; WT WAS . 428

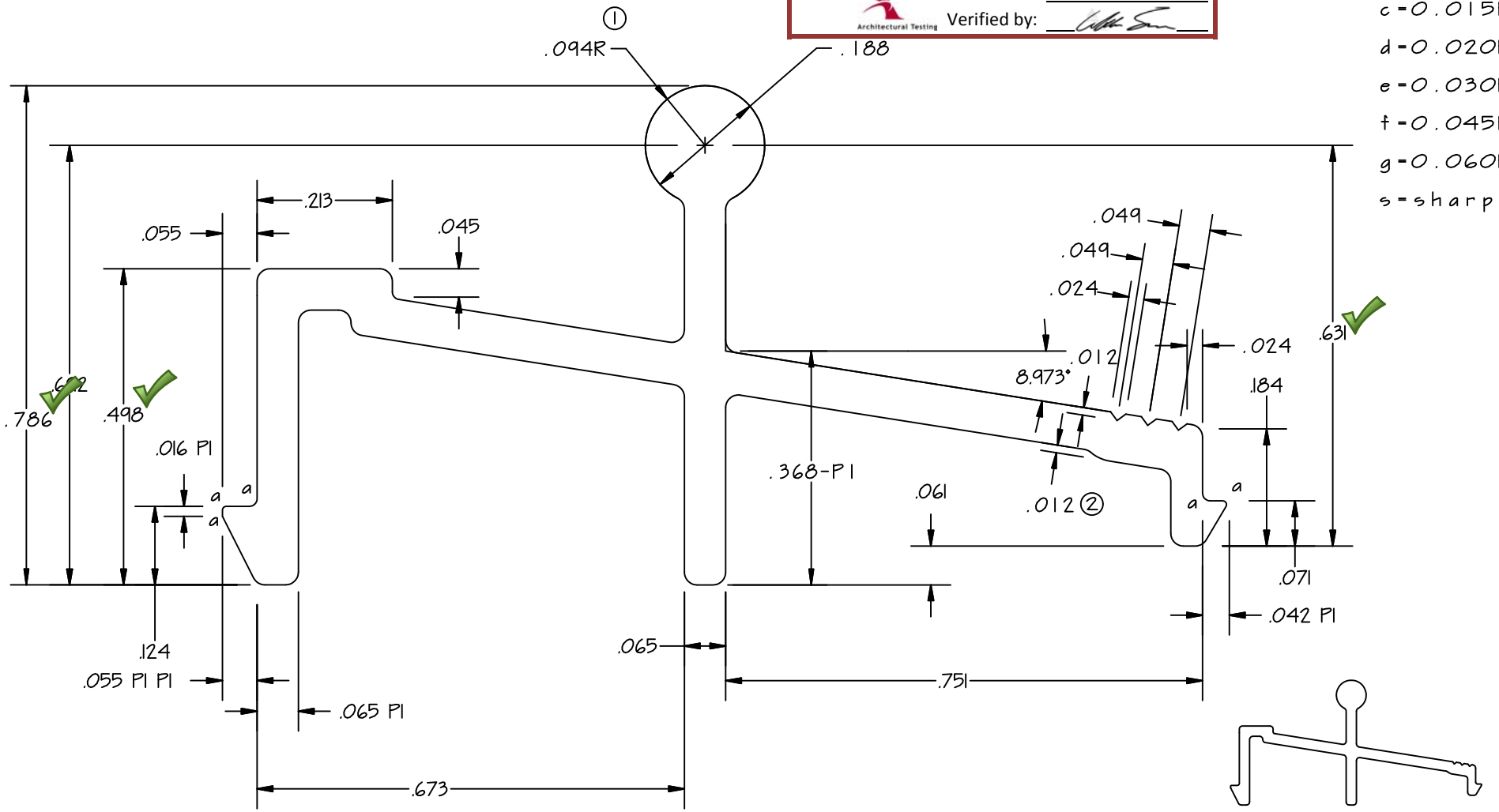
FAB REF				FI T TO	305–D35	308–D18	308–D13
308–F1				308–D15	291–D7		

CYCLOI D DESI GNS	DWG: 308–D14	DATE: 11–FEB–98	© 1998 COPYRI GHT ROYAL SI ERRA I NC SPARKS, NEVADA ALL RI GHTS RESERVED
TI TLE: MULLI ON	RS1300		EXTERNAL WALL: 0. 080 I NTERNAL WALL: 0. 064 CORNER TYP: 0. 020R WEI GHT: 0. 483 LB/FT

SCALE: 4:1

a=0.006R
b=0.012R
c=0.015R
d=0.020R
e=0.030R
f=0.045R
g=0.060R
s=sharp

Intertek Architectural Testing
Report #: F0918-301-46
Date: 9/4/2015
Verified by:



ACTUAL SIZE

APPROVED
23-APR-98
CYCLOID DESIGNS

REV	DATE	REMARKS
2	08-25-98	CORRECTED NOMINAL WALL; ADDED DIM
1	04-23-98	DIA CHANGED; WAS .210,WT WAS .132

FAB REF				FIT TO	308-D1	308-D16	
XXX-XXX				308-D17			

CYCLOID DESIGNS

DWG: 308-D19

DATE: 11-FEB-98

TITLE: TRACK

RS1301

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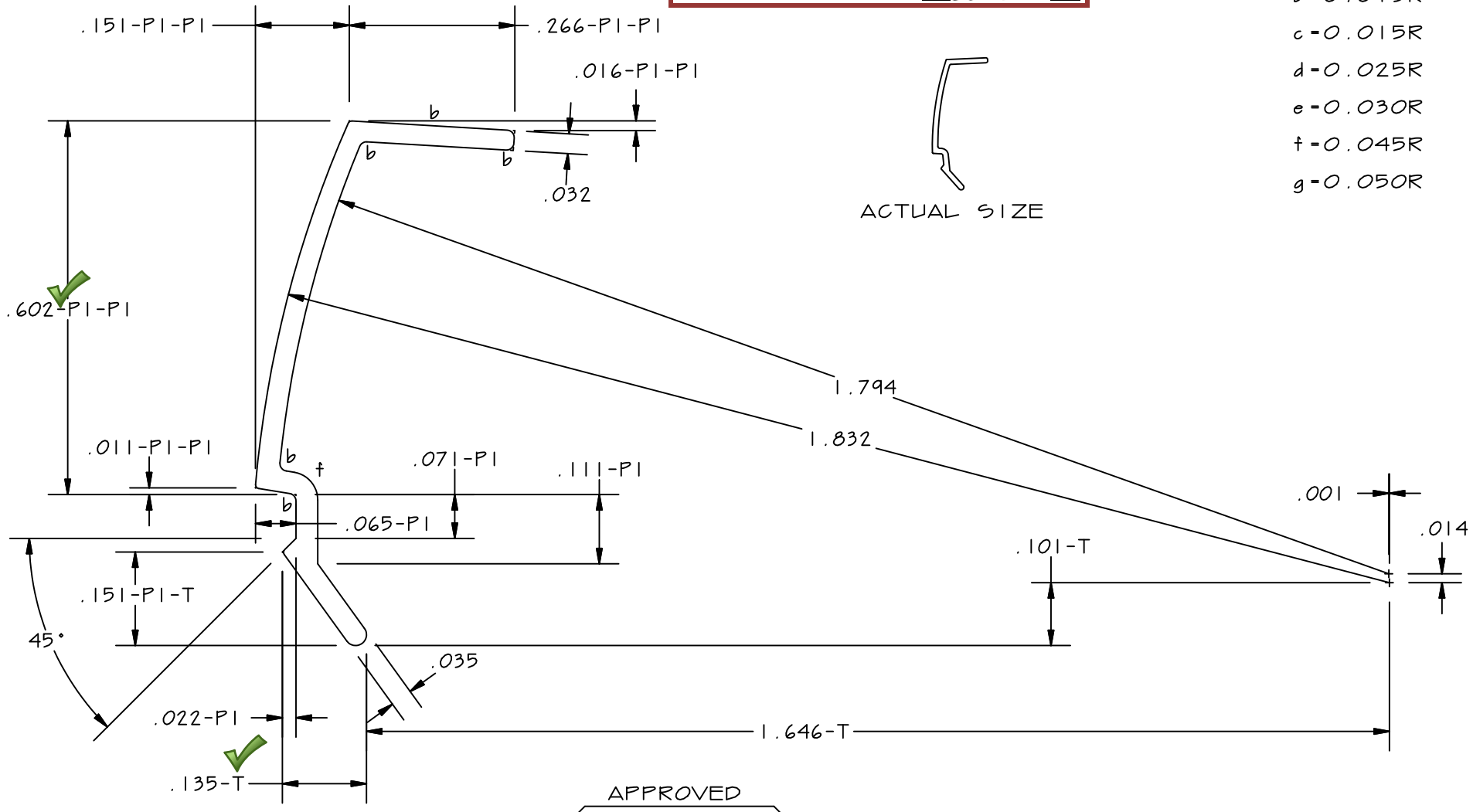
EXTERNAL WALL: ②0.065
INTERNAL WALL: 0.XXX
CORNER TYP: 0.020R
WEIGHT: 0.128 LB/FT

SCALE: 4:1

Intertek Architectural Testing

Report #: F0918-301-46
Date: 9/4/2015
Verified by:

a = 0.006R
b = 0.013R
c = 0.015R
d = 0.025R
e = 0.030R
f = 0.045R
g = 0.050R



ACTUAL SIZE

APPROVED
16-FEB-98
CYCLOID DESIGNS

FIT TO	308-D1	308-D10	308-D11	308-D12	308-D13	308-D14	308-D15
308-D16	308-D17						

CYCLOID DESIGNS	DWG: 308-D18	DATE: 02-JAN-97	© 1998 COPYRIGHT ROYAL SIERRA INC SPARKS, NEVADA ALL RIGHTS RESERVED	EXTERNAL WALL: 0.035 INTERNAL WALL: X.XXX CORNER TYP: 0.006R WEIGHT: 0.025 LB/FT
TITLE: GLAZING BEAD: 3/4" GLASS		RS1302		

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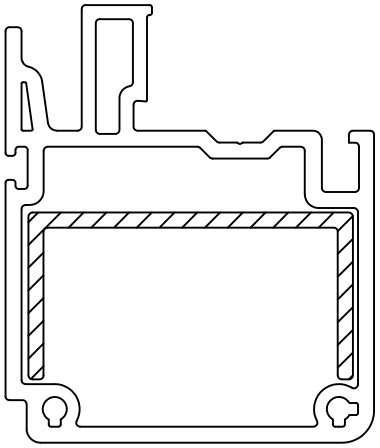
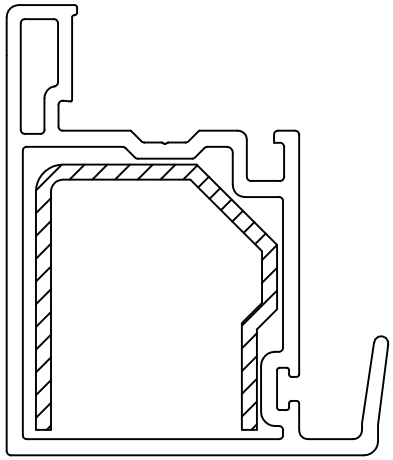
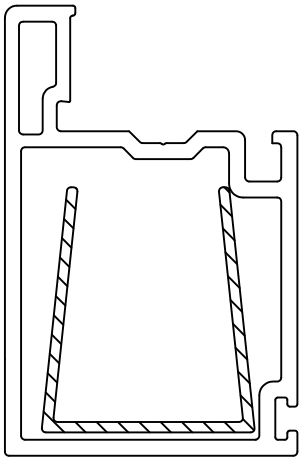
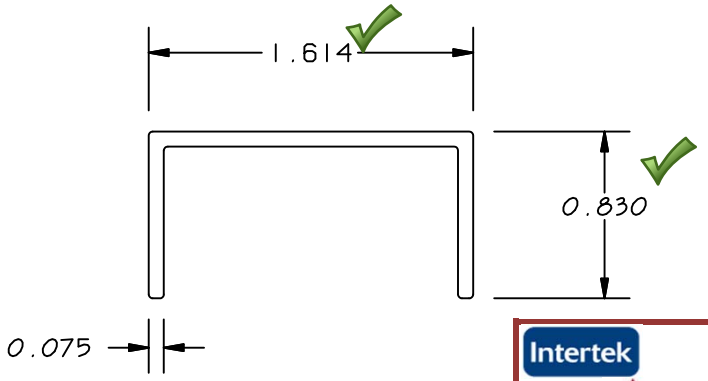








Iy-y=0.093in4

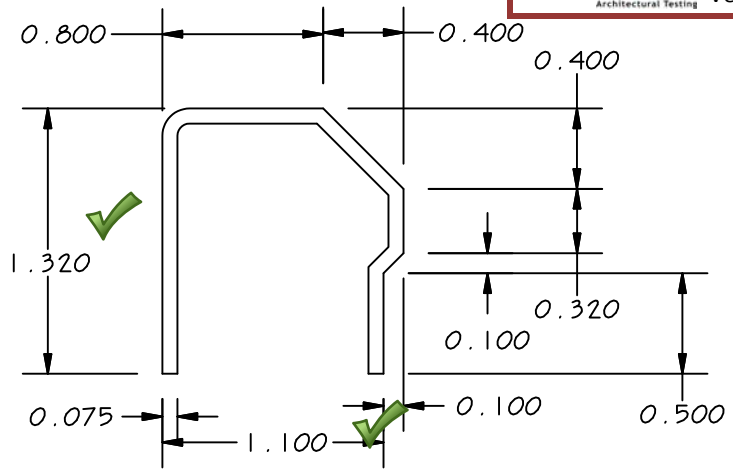
NS1042

Intertek Architectural Testing

Report #: F0918-301-46

Date: 9/4/2015

Verified by:



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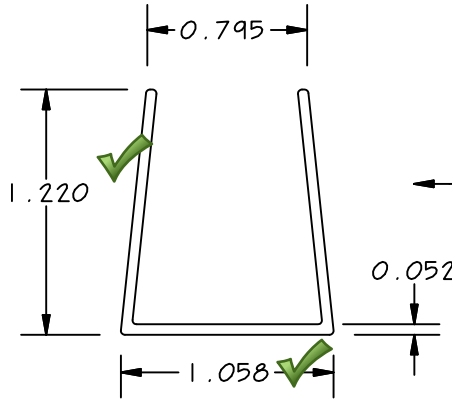
NS1011-2



NOTE: STEEL FOR AAMA STRUCTURAL TEST AND NFRC SIMULATIONS

← PROCESS FOR MOTRISE AND HANDLE HOLES

NS788 PUNCHED

Iy-y=0.029in4

Steel (rolled, ground)

CYCLOID DESIGNS	DWG: 308-R1	DATE: 14-APR-98	© 1998 COPYRIGHT ROYAL SIERRA EXTRUSIONS INC RENO, NEVADA ALL RIGHTS RESERVED	EXTERNAL WALL: X.XXX INTERNAL WALL: X.XXX CORNER TYP. 0.XXXR WEIGHT: X.XXX LB/FT
TITLE: PROPOSED STEEL REINFORCING				

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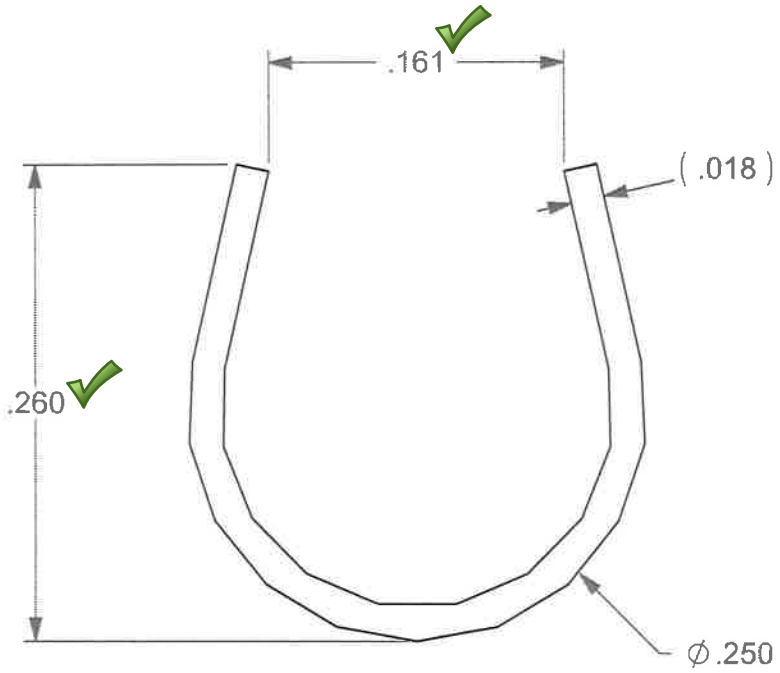
Report #:	F0918-301-46
Date:	9/4/2015
Verified by:	



Steel - Stainless [Oxidized]

REV	INITIALS	DATE	DESCRIPTION
03	AB	OCT 29/10	DRAWING UPDATE
02	DS	JAN 12/10	MATERIAL TYPE UPDATED
01	EK	JULY 14/06	CHANGED OPENING WIDTH FROM .171 TO .161

	NAME	DATE
DRAWN	AB	OCT 29/10

UNLESS OTHERWISE SPECIFIED ALL UNITS ARE IN INCHES.

UNLESS OTHERWISE SPECIFIED TOLERANCES

HOLE SIZE	± .005 "
HOLE LOCATION	± .005"
BEND ANGLE	± 1°
FORMING (BEND TO BEND)	± .015"
HOLE TO HOLE	± .010"
FRACTION [1/X]	± 1/32
ANGULAR [X-ALIGNED]	± 0.1°
TWO DECIMAL [0.XX]	± .030"
DECIMAL [0.XXX]	± .015"
DECIMAL [0.XXX]	± .010"

HELTON INDUSTRIES LTD.
30840 Peardonville Road
Abbotsford, BC V2T 6K2
PH 604.854.3660 / FAX 604.854.3576

COIL STRAND

CS-018-0064SS

U-7800

26GA SS PATIO TRACK

SIZE	DWG. NO.	REV.
A	F082-001	03

SCALE	WEIGHT	SHEET
10:1		1 OF 1

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Ultrafab INC.

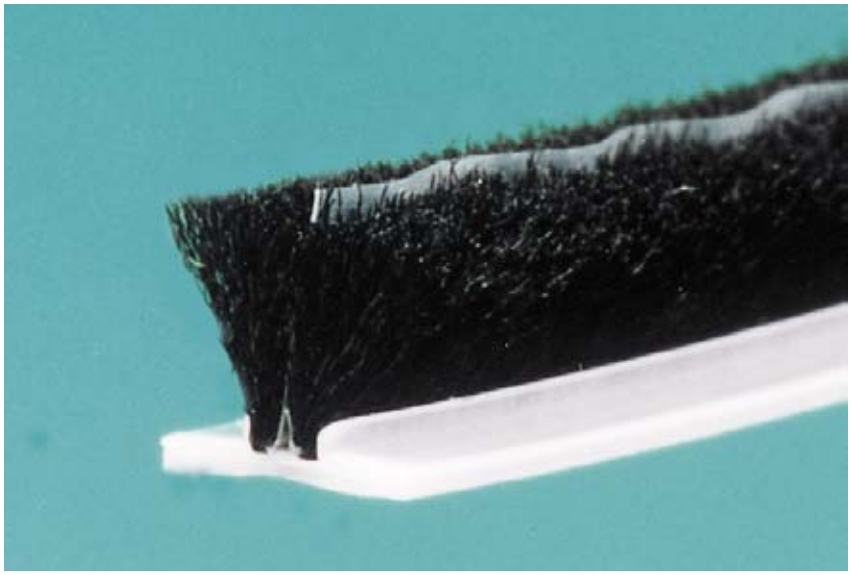
Intertek Architectural Testing

Report #: F0918-301-46
Date: 9/4/2015
Verified by:

ULTRA FIN®

Our most popular fin product provides an excellent seal with low opening force and friction

Ultrafab's unique ultrasonic welding assembles the fin, fibers, and backing into an integrated, unified assembly that won't break apart during fabrication or while in use

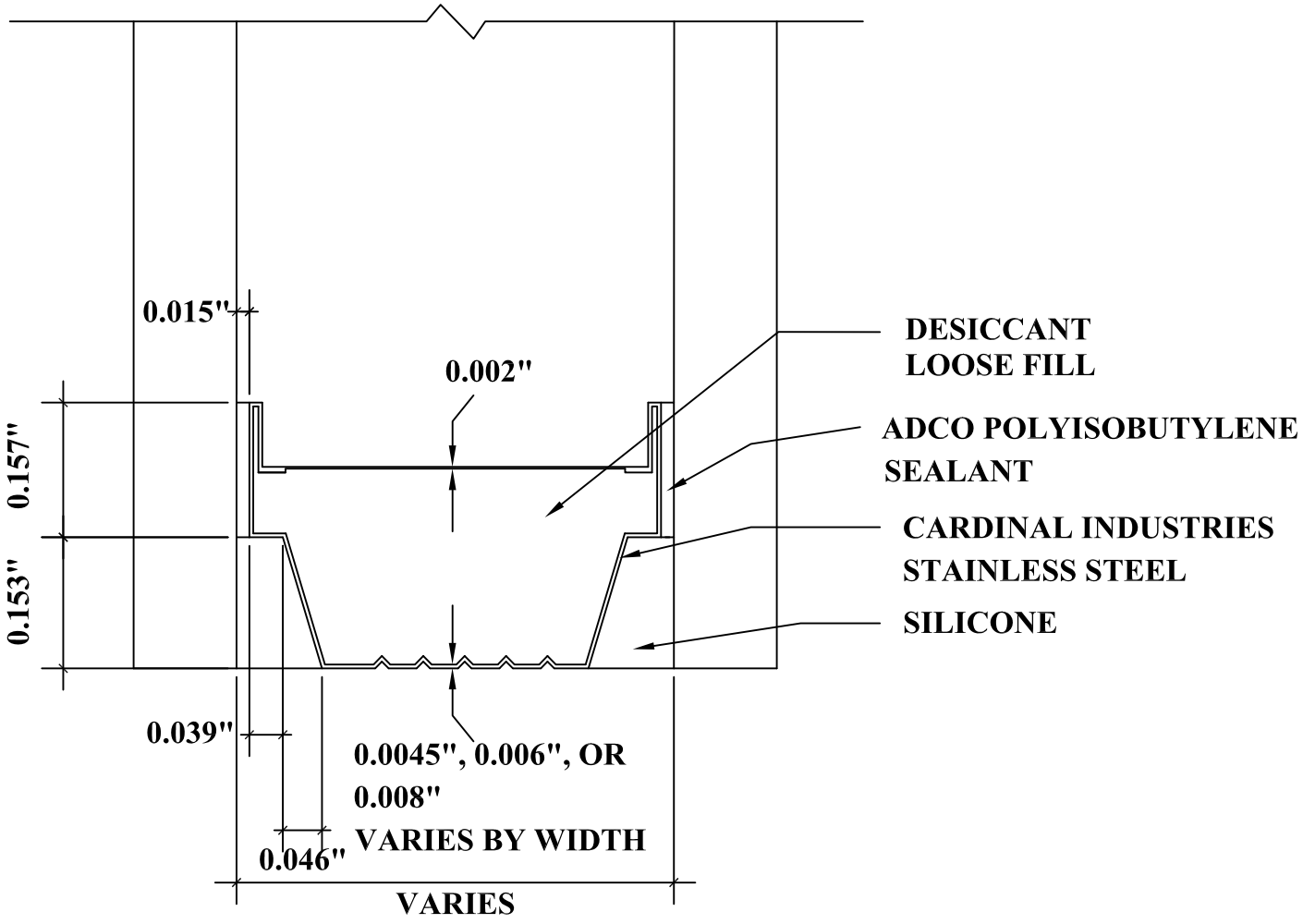


ULTRA FIN WEATHERSEAL FEATURES:

- Ultra Fin weatherseals have a structural integrity and consistency which assures a tight seal and barrier against air and water infiltration
- No possibility of off-center pile that binds, breaks or stretches in an extrusion
- Pile height and backing widths are always uniform because of Ultrafab's unique ultrasonically welded manufacturing system
- **Pile Heights:** .130″ (3.30mm) to .750″ (19.05mm)
- **Pile Densities:** Light, medium, high or very high
- **Backing Widths:** .180″ (4.57mm), .187″ (4.75mm), .200″ (5.08mm), .210″ (5.33mm), .229″ (5.82mm), .250″ (6.35mm), .270″ (6.86mm), .310″ (7.87mm)
- **Backing Options:** Standard: all backing widths
  Ultra-Loc®: S7 – .180″ (4.57mm), .187″ (4.75mm), .200″ (5.08mm), .210″ (5.33mm), .270″ (6.86mm), .310″ (7.87mm)
  S9 – .180″ (4.57mm), .187″ (4.75mm), .200″ (5.08mm), .210″ (5.33mm), .229″ (5.82mm), .270″ (6.86mm), .310″ (7.87mm)
  Ultra Grip®: .180″ (4.57mm), .187″ (4.75mm), .200″ (5.08mm), .229″ (5.82mm), .255″ (6.48mm), .270″ (6.86mm)
- **Adhesive:** Available on .187″, .270″ and .310″
- **Colors:** Black, white, grey, beige, and brown

Need more fins or a softer fin? *Ask about our Soft Touch Fin®, Tri-Fin®, Ultra Reach® Fin or Multi-Fin®*

Report #: F0918-301-46
Date: 9/4/2015
Verified by:



DETAIL FOR THERMAL MODELING OF
CARDINAL ENDUR SPACER (SS-D)