

AAMA/WDMA/CSA 101/I.S.2/A440-05, AND ANSI/AAMA/NWWDA 101/I.S.2-97 TEST REPORT

Rendered to:

AMERICAN WINDOW ALLIANCE, L.L.C.

SERIES/MODEL: Windgate / Belmont / Hawthorne Awning (Rev.Roll) PRODUCT TYPE: PVC Projected Awning Window

	Summary of Results			
Title	Test Specimen #1	Test Specimen #2	Test Specimen #3	
AAMA/WDMA/CSA 101/I.S.2/A440-05	AP-C50 1219 x 914	AP-C65 1219 x 914	AP-C90 914 x 610*	
Rating	(48 x 36)	(48 x 36)	(36 x 24*)	
ANSI/AAMA/NWWDA 101/I.S.2-97 Rating	AP-C50 48 x 36	AP-C65 48 x 36	AP-C90 36 x 24*	
Design Pressure	±2400 Pa (±50.16 psf)	±3120 Pa (±65.20 psf)	±4320 Pa (±90.28 psf)	
Operating Force (in motion)	22 N (5 lbf)	N/A	N/A	
Air Infiltration	0.15 L/s/m^2 (0.03 cfm/ft ²)	N/A	N/A	
Water Penetration Resistance Test Pressure	580 Pa (12.12 psf)	N/A	N/A	
Uniform Load Structural Test Pressure	±3600 Pa (±75.24 psf)	±4680 Pa (±97.81 psf)	±6480 Pa (±135.42 psf)	
Forced Entry Resistance	Grade 10	N/A	N/A	

Test Completion Date: 03/23/09

Reference must be made to Report No. 90175.02-501-47, dated 06/17/09 for complete test specimen description and data.

1140 Lincoln Avenue Springdale, PA 15144 phone: 724-275-7100 fax: 724-275-7102 www.archtest.com



AAMA/WDMA/CSA 101/I.S.2/A440-05, and ANSI/AAMA/NWWDA 101/I.S.2-97 TEST REPORT

Rendered to:

AMERICAN WINDOW ALLIANCE, L.L.C. 1239 Erie Street North Kansas City, Missouri 64116

Report No.:	90175.02-501-47
Test Dates:	03/10/09
Through:	03/23/09
Report Date:	06/17/09
Revision 1:	02/17/10
Expiration Date:	03/23/13

Project Summary: Architectural Testing, Inc. was contracted by Deceuninck North America, LLC to witness testing on three Series/Model: 141.194 AW-003, PVC projected awning windows at the Deceuninck North America, LLC test facility in Monroe, Ohio. Test specimen description and results are reported herein. This report is a reissue of the original Report No. 90175.01-501-47. This report is reissued in the name of American Window Alliance, L.L.C. through written authorization of Deceuninck North America, LLC. The samples were provided by the client. The samples tested successfully met the performance requirements for the following ratings:

Test	AAMA/WDMA/CSA	ANSI/AAMA/NWWDA
Specimen No.	101/I.S.2/A440-05 Rating	101/I.S.2-97 Rating
1	AP-C50 1219 x 914 (48 x 36)	AP-C50 48 x 36
2	AP-C65 1219 x 914 (48 x 36)	AP-C65 48 x 36
3	AP-C90 914 x 610* (36 x 24*)	AP-C90* 36 x 24

General Note: An asterisk (*) next to the size designation indicates that the size tested for optional performance was smaller than the Gateway test size for the product type and class.

Test Specifications: The test specimen were evaluated in accordance with the following:

AAMA/WDMA/CSA 101/I.S.2/A440-05, Standard/Specification for Windows, Doors, and Unit Skylights.

ANSI/AAMA/NWWDA 101/I.S.2-97, Voluntary Specifications for Aluminum, Vinyl (PVC) and Wood Windows and Glass Doors.

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90175.02-501-47 Page 2 of 10 Revision 1: 02/17/10

Test Specimen Description:

Series/Model: Windgate / Belmont / Hawthorne Awning (Rev.Roll.)

Product Type: Poly Vinyl Chloride (PVC) Projected Awning Window

Test Specimen #1: AP-C50 1219 x 914 (48 x 36)

Overall Size: 1219 mm (48") wide by 914 mm (36") high

Vent Size: 1178 mm (46-3/8") wide by 872 mm (34-5/16") high

Screen Size: 1116 mm (43-15/16") wide by 811 mm (31-15/16") high

Overall Area: 1.1 m² (12.0 ft²)

Reinforcement: The sill contained two "U" shaped extruded aluminum reinforcements, reference Drawing No.10202004. The jambs contained one "U" shaped extruded aluminum reinforcement, reference Drawing No. 10202004.

Test Specimen #2: AP-C65 1219 x 914 (48 x 36)

Overall Size: 1219 mm (48") wide by 914 mm (36") high

Vent Size: 1178 mm (46-3/8") wide by 872 mm (34-5/16") high

Screen Size: 1116 mm (43-15/16") wide by 811 mm (31-15/16") high

Overall Area: 1.1 m² (12.0 ft²)

Reinforcement: The bottom rail contained two custom shaped extruded aluminum reinforcements, reference Drawing No. 1050006, and Drawing No. 10300091. The stiles contained an extruded aluminum reinforcement, reference drawing titled; MVW-S-1 (MODIFIED). The sill contained two "U" shaped extruded aluminum reinforcements, reference Drawing No.10202004. The jambs contained one "U" shaped extruded aluminum reinforcement, reference Drawing No. 10202004.



90175.02-501-47 Page 3 of 10 Revision 1: 02/17/10

Test Specimen Description: (Continued)

Test Specimen #3: AP-C85 914 x 610* (36 x 24*)

Overall Size: 914 mm (36") wide by 610 mm (24") high

Vent Size: 873 mm (34-3/8") wide by 565 mm (22-1/4") high

Screen Size: 813 mm (32") wide by 505 mm (19-7/8") high

Overall Area: 0.6 m² (6.0 ft²)

Reinforcement: The sill contained two "U" shaped extruded aluminum reinforcements, reference Drawing No.10202004. The jambs contained one "U" shaped extruded aluminum reinforcement, reference Drawing No. 10202004.

The following descriptions apply to all specimens.

Finish: All PVC finish was white.

Frame Construction: The PVC frame was of mitered and welded corner construction.

Vent Construction: The PVC vent was of mitered and welded corner construction.

Weatherstripping:

<u>Description</u>	<u>Quantity</u>	Location
0.312" high vinyl jacket foam-filled leaf with kerf mount base	1 Row	Vent, exterior perimeter
0.280" high co-extruded flexible vinyl leaf	1 Row	Vent, perimeter
0.290" high co-extruded flexible vinyl bulb	1 Row	Vent, interior perimeter



Test Specimen Description: (Continued)

Glazing Details: The units were exterior glazed with nominal 3/4" thick sealed insulating glass fabricated from two sheets of 1/8" clear annealed glass separated by a butyl spacer system with aluminum substrate, single sealed. The insulated glass was set against a double-sided adhesive tape and secured with rigid vinyl glazing beads.

Drainage:

Description	<u>Quantity</u>	Location
3/8" wide by 3/16" high weepslot	2	Bottom rail bottom surface, one at each end
3/8" wide by 3/16" high weepslot	2	Bottom rail glazing track, one at each end
Hardware:		
Description	Quantity	Location
Multi point lock system with metal keepers (Test specimen #1 & #2)	2	Jamb/stile, with three keepers located on the vent at 3", 16-1/2", and 29" up from bottom
Multi-point lock system with metal keepers (Test specimen #3)	2	Jamb/stile, with two keepers located located on the vent at 3", and 18" up from bottom
Aluminum snubber (Drawing Nos. 10300094 and 10300095)	1 Pair	Head / top rail, at midspan
Single arm concealed hinge	2	One per jamb/stile
Dual arm rotary operator	1	Sill at midspan

Screen Construction: The screen frame was constructed from roll-formed aluminum with square-cut plastic corner keys. The mesh fabric was held in place with a flexible spline.



Test Specimen Description: (Continued)

Installation: The units were installed in wood bucks constructed from Spruce-Pine-Fir construction lumber and secured through the nail fin with $#8 \times 5/8"$ pan head screws spaced approximately 13" on center, and starting in each corner. The nail fin perimeter was sealed with a silicone sealant. A nominal 3/16" gap was maintained at the perimeter between the wood buck and the test frame.

Test Results:	The temperature during testing w follows:	vas 21°C (70°F). The	e results are tabulated as
<u>Paragraph</u>	Title of Test - Test Method	Results	Allowed
<u>Test Spec</u>	imen #1 : AP-C50 1219 x 914 (48 x	x 36)	
5.3.1	Operating Force per ASTM E 2		
2.2.1.6.1	Initiate motion	36 N (8 lbf)	Report only
	Maintain motion	22 N (5 lbf)	45 N (10 lbf)
	Latches	N/A	100 N (22.5 lbf)
	Locks	22 N (5 lbf)	100 N (22.5 lbf)
5.3.2.1	Air Leakage Resistance per AS	TM E 283	
2.1.2	75 Pa (1.6 psf)	0.15 L/s/m^2 (0.03 cfm/ft ²)	1.5 L/s/m^2 (0.3 cfm/ft ²) max.

Note #1: The tested specimen meets (or exceeds) the performance levels specified in AAMA/WDMA/CSA 101/I.S.2/A440-05 and ANSI/AAMA/NWWDA 101/I.S.2-97 for air leakage resistance.

5.3.3.2 2.1.3	Water Penetration Resistance per ASTM E 547	See Note #2
5.3.4.2 2.1.4.1	Uniform Load Deflection per ASTM E 33	See Note #2
5.3.4.3 2.1.4.2	Uniform Load Structural per ASTM E 330	See Note #2

Note #2: The client opted to start at a pressure higher than the minimum required. Those results are listed under "Optional Performance".



90175.02-501-47 Page 6 of 10 Revision 1: 02/17/10

Test Results: (Continued)

<u>Paragraph</u>	Title of Test - Test Method	<u>Results</u>	Allowed		
<u>Test Specim</u>	en #1: AP-C50 1219 x 914 (48 x 3)	6) (Continued)			
5.3.5 2.1.8	Forced Entry Resistance per ASTN	M F 588			
2.1.0	Type: B	Grade: 10			
	Disassembly Test Tests B1 through B3 Sash/Panel Manipulation Test Lock Hardware Manipulation Test	No entry No entry No entry No entry	No entry No entry No entry No entry		
5.3.6.2 2.1.7	Thermoplastic Corner Weld Test	Meets as stated	Meets as stated		
5.3.6.6.7 2.2.4.5.1	Awning, Hopper, Projected Hardw 140 N (30 lbf)	vare Load Test 33.0 mm (1.30")	39.4 mm (1.54")		
Optional Performance					
4.4.2.6 4.3	Water Penetration Resistance per 2 580 Pa (12.12 psf)	ASTM E 547 No leakage	No leakage		
4.4.2.6 4.4.1	Uniform Load Deflection per AST (Deflections were taken on the ext (Loads were held for 52 seconds) 2400 Pa (50.16 psf) (positive) 2400 Pa (50.16 psf) (negative)		See Note #3 See Note #3		

Note #3: The deflections reported are not limited by AAMA/WDMA/CSA 101/I.S.2/A440-05 and ANSI/AAMA/NWWDA 101/I.S.2-97 for this product designation. The deflection data is recorded in this report for special code compliance and information only.



90175.02-501-47 Page 7 of 10 Revision 1: 02/17/10

Test Results: (Continued)

Paragraph	Title of Test - Test Method Results		Allowed		
<u>Test Specim</u>	nen #1 : AP-C50 1219 x 914 (48 x 3	6) (Continued)			
Optional Per	formance				
 4.4.2.6 Uniform Load Structural per ASTM E 330 4.4.2 (Permanent sets were taken on the exterior top rail) (Loads were held for 10 seconds) 3600 Pa (75.24 psf) (positive) <0.3 mm (<0.01") 1.8 mm (0.07") max 3600 Pa (75.24 psf) (negative) 0.3 mm (0.01") 1.8 mm (0.07") max 					
<u>Test Specim</u>	nen #2: AP-C65 1219 x 914 (48 x 3	36)			
Optional Per	formance				
4.4.2.6 4.4.1	Uniform Load Deflection per AS (Deflections were taken on the ex (Loads were held for 52 seconds) 3120 Pa (65.20 psf) (positive) 3120 Pa (65.20 psf) (negative)	sterior top rail)	See Note #3 See Note #3		
4.4.2.6 4.4.2	Uniform Load Structural per AST (Permanent sets were taken on th (Loads were held for 10 seconds) 4680 Pa (97.81 psf) (positive) 4680 Pa (97.81 psf) (negative)	ΓM E 330 e exterior top rail)	1.8 mm (0.07") max. 1.8 mm (0.07") max.		



90175.02-501-47 Page 8 of 10 Revision 1: 02/17/10

Test Results: (Continued)

<u>Paragraph</u>	Title of Test - Test Method	Results	Allowed
<u>Test Specin</u>	nen #3 : AP-C90 914 x 610* (36 x 2	4*)	
Optional Per	rformance		
4.4.2.6 4.4.1	Uniform Load Deflection per AS (Deflections were taken on the ex (Loads were held for 52 seconds) 4320 Pa (90.28 psf) (positive) 4320 Pa (90.28 psf) (negative)	terior top rail)	See Note #3 See Note #3
4.4.2.6 4.4.2	Uniform Load Structural per AST (Permanent sets were taken on th (Loads were held for 10 seconds) 6480 Pa (135.42 psf) (positive) 6480 Pa (135.42 psf) (negative)	e exterior top rail)	1.3 mm (0.05") max. 1.3 mm (0.05") max.

Tape and film were used to seal against air leakage during structural testing. In our opinion, the tape and film did not influence the results of the test.

Drawing Reference: The test specimen drawings have been reviewed by Architectural Testing and are representative of the test specimen reported herein.

List of Official Observers:

Name

Company

Dean Erbaugh James Grippo Deceuninck North America, LLC Architectural Testing, Inc.



90175.02-501-47 Page 9 of 10 Revision 1: 02/17/10

This report is reissued in the name of American Window Alliance, L.L.C. through written authorization of Deceuninck North America, LLC to whom the original report was rendered. The original Deceuninck North America, LLC Report No. is 90175.01-501-47.

Detailed drawings, data sheets, representative samples of test specimens, a copy of this report, or other pertinent project documentation will be retained by Architectural Testing, Inc. for a period of four years from the original test date. At the end of this retention period, such materials shall be discarded without notice and the service life of this report will expire.

Results obtained are tested values and were secured by using the designated test methods. If test specimen contains glazing, no conclusions of any kind regarding the adequacy or inadequacy of the glass in the test specimen can be made. This report does not constitute certification of this product nor an opinion or endorsement by this laboratory. It is the exclusive property of the client so named herein and relates only to the specimen(s) tested. This report may not be reproduced, except in full, without the written approval of Architectural Testing, Inc.

For ARCHITECTURAL TESTING, INC.

James P. Grippo Technician Lynn George Director – Regional Operations

JPG:sld

Attachments (pages): This report is complete only when all attachments listed are included. Appendix-A: Alteration Addendum (1) Appendix-B: Drawings (12)



90175.02-501-47 Page 10 of 10 Revision 1: 02/17/10

Revision Log

<u>Rev. #</u>	Date	Page(s)	Revision(s)
0	06/17/09	N/A	Original report issue
1	02/17/10	Cover Page, Pages 1 through 8,	Changed rating from LC to C; Awning Hardware test (page 3) entered data for "C" rating; Downsized unit DP for '05 changed LC85 to C90; "Permanent Set" allowable changed

This report produced from controlled document template ATI 00247, revised 03/05/09.



90175.02-501-47

Appendix A

Alteration Addendum

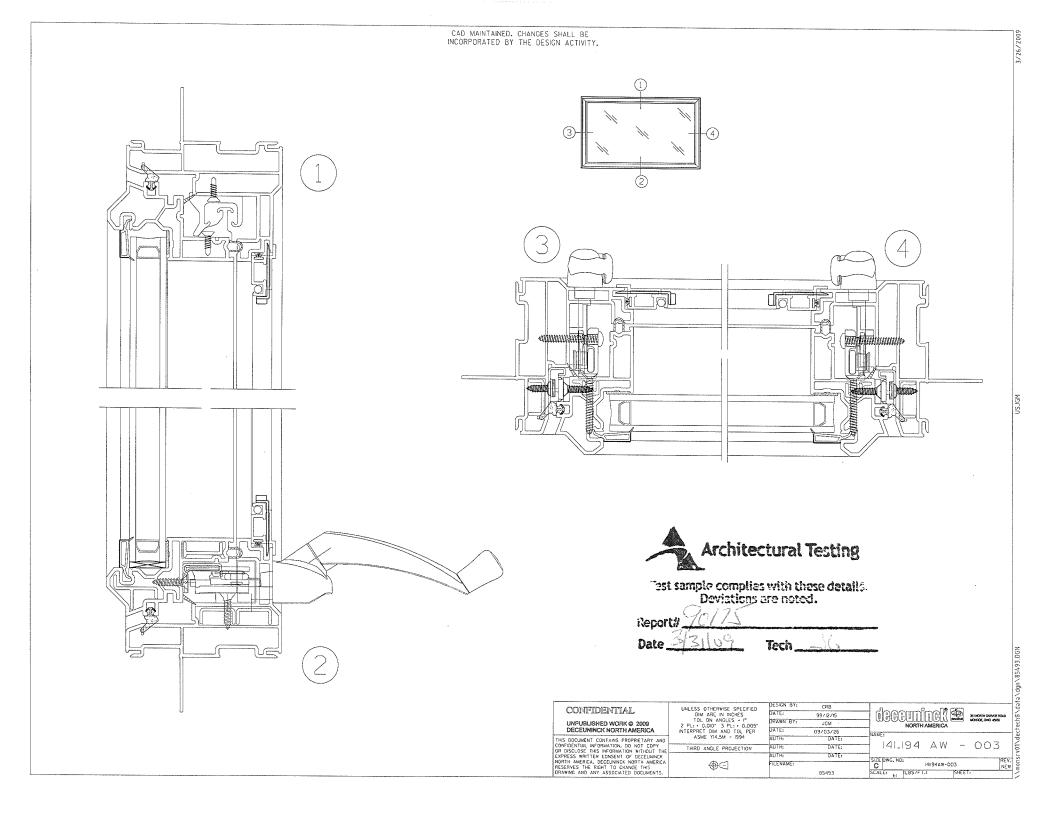
Note: No alterations were required.



90175.02-501-47

Appendix B

Drawings



Architectural Testing

Test sample complies with these details. Deviations are noted.

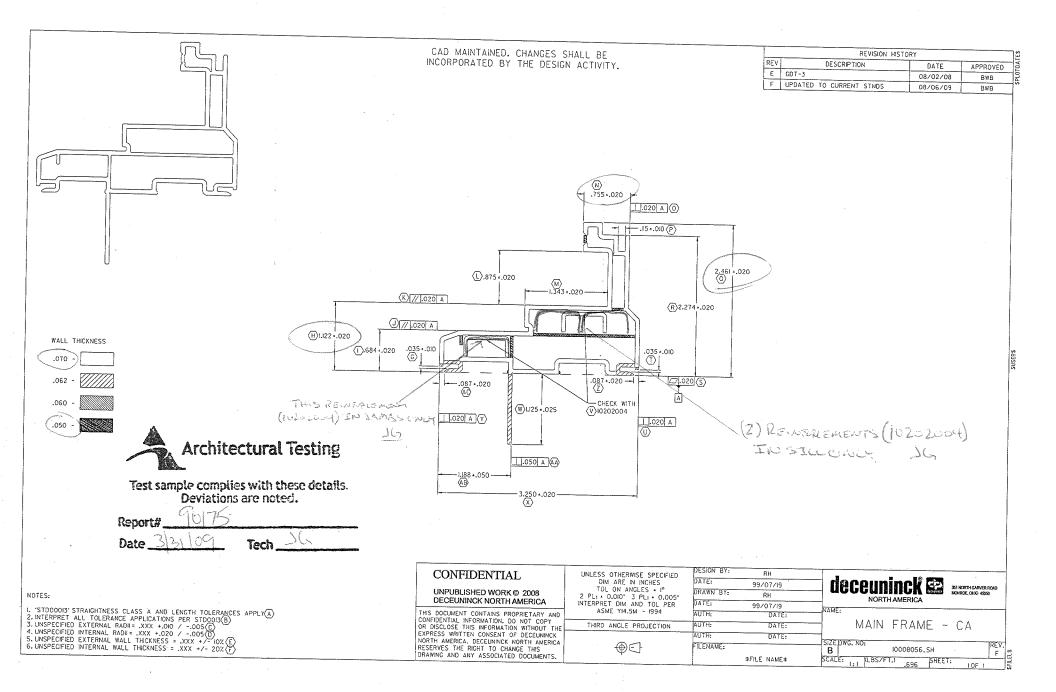
141.194 AW - 002 - BILL OF MATERIALSeport# 90175	. V ^r -5
	. \
ITEM DECONDUCTION	h 101
NO. DESCRIPTION QUANTITY PART NO. FAB DWG	G. NO SOURCE
1 HEAD 1 P8056 P8056F	-07 A
2 SILL 1 P8056 P8056-F	
3 JAMB 2 P8056 P8056F	
4	-04 A
5 TOP RAIL 1 P5484 P5484F	07
6 BOTTOM RAIL 1 P5484 P5484F	
7 STILE 2 P5484 P5484F	
8	-00 A
9 GLAZING BEAD 4 P5473 P5473F	01
10 T T T T T T T T T T T T T T T T T T T	-01 A
11 SASH REINFORCEMENT - EXTERIOR HOLLOW 1 10500006 STRAIGHT	тсит о
14 FRAME REINFORCEMENT 4 10202004 STRAIGHT	TCUT O
16 3/4" INSULATED GLASS 1 REFER TO APPLICABLE TEST REPORT	
17 GLAZING TAPE AS REQ'D REFER TO APPLICABLE TEST REPORT	R
ACREED REPORT	EE
18 SETTING BLOCKS(REFER TO IG SUPPLIER GUIDELINES) AS REQ'D REFER TO APPLICABLE TEST REPORT 19	W
	Α
	A
22 SNUBBER (SCREW) 4 #6 x 1/2" PFH	TBD
24	
25 SCREEN ASSEMBLY 1 TBD TBD 26 1 1 1 1 1	TBD
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	COPYRIGHT 2009
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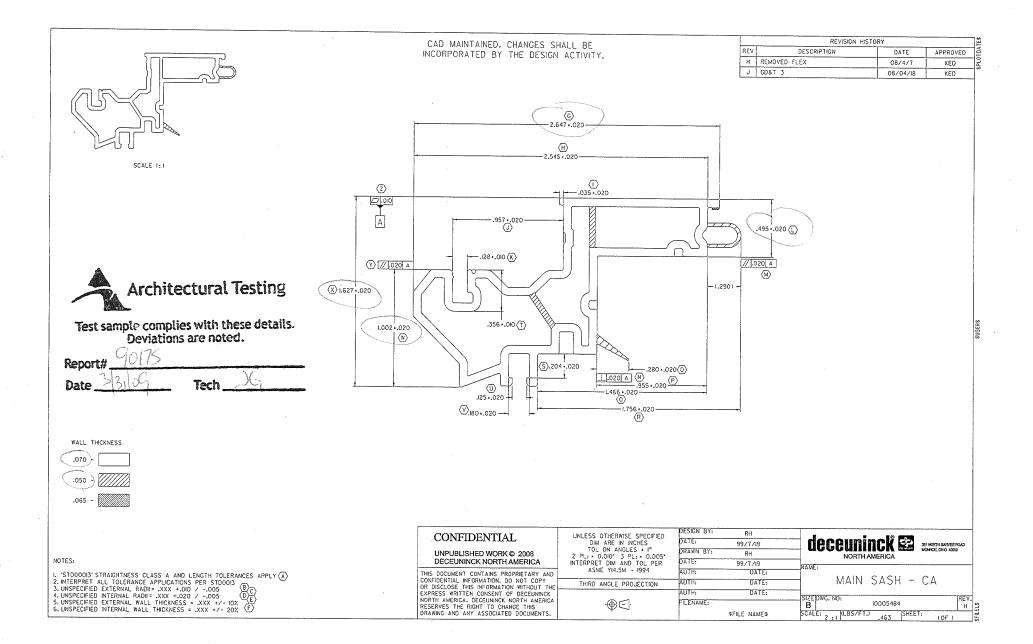
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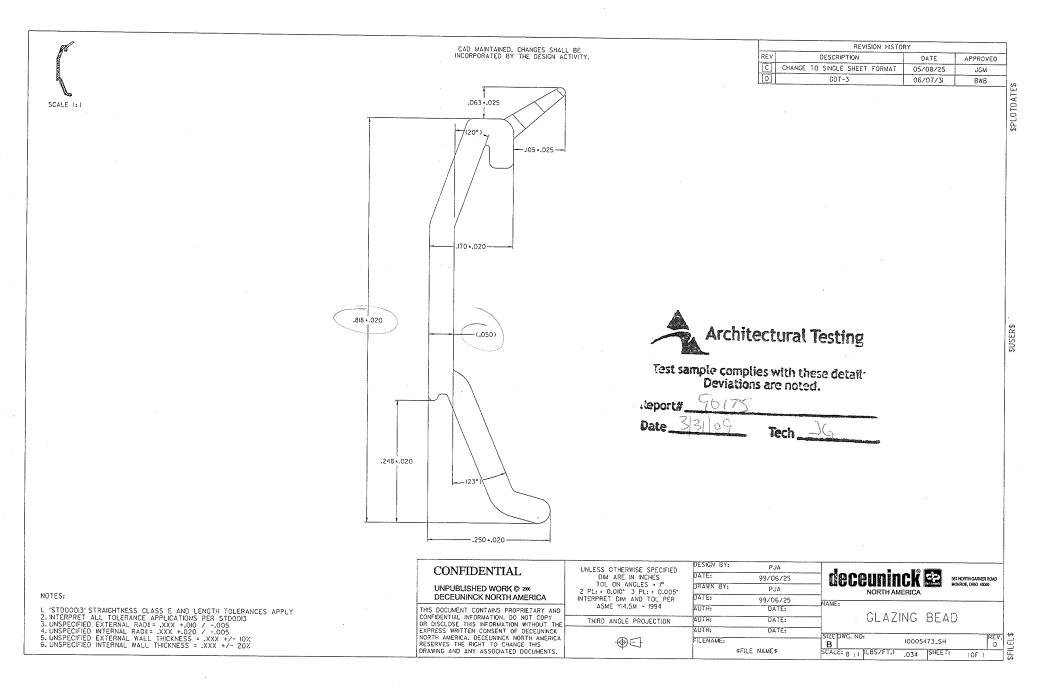
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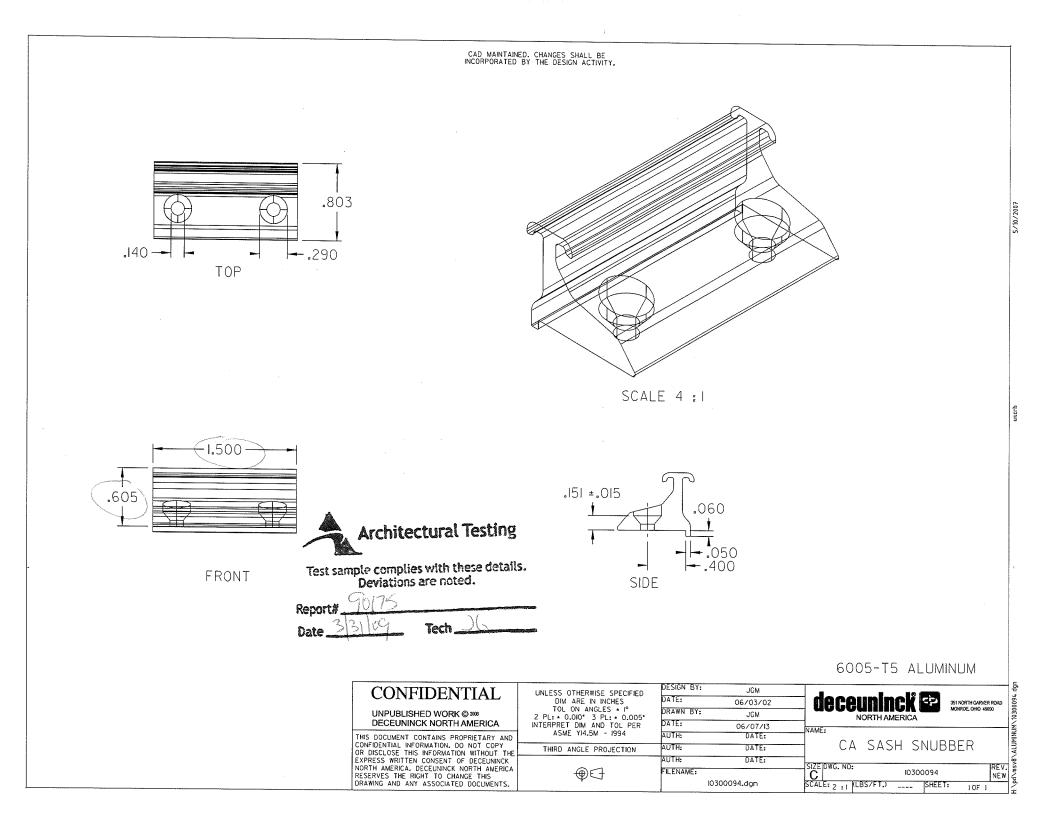
141.194 AW - 002 - BILL OF MATERIALS							
ITEM	DESCRIPTION	QUANTITY	Bak	e 331	Tech De		
NO.		QUANTIT	PART NO.		FAB DWG. NO	SOURCE	
	OPERATOR						
28	MAXIM OPERATOR	1	51.00.xx.xxx			G	
29	#8 x 3/4 PFH (Operator)	6	19218			G	
30	GASKET	1	31882			G	
31	TRACK & SLIDER ASSY	1	11577.92			G	
32	#8 x 3/4 PFH (Track & Slider)	4	19218			G	
33	HANDLE KNOB S/A	1	11454			G	
34	HINGE AWNING (Left Hand)	1	13.xx.xx.xxx			G	
35	HINGE AWNING (Right Hand)	1	13.xx.xx.xxx	,, , , , , , , , , , , , , , , , , , ,		G	
36	#7 x 1/2 PFH(Undercut) (Hinge Track)	8	19081			G	
37	#7 x 5/8 PFH (Hinge Sæh Arm)	8	19060			G	
38	SPLINE CAP	1	21306			G	
39							
40							
41	LOCK ACCESSORIES						
42	LOCKASSEMBLY	2	24.33			G	
43	SUPPORT PLATE	2	21600			G	
44	#8 - 32 x 3/8 PPH (Self Threading)	4	19545			G	
45					······································		
46	KEEPER	4	32687.92 Left Hand / 32684.92 Right Hand			G	
47	#6 X 1.25 PFH (Keeper)	8	TBD			G	
48	TIE BAR GUIDE	7	32933.00.0001			G	
49	#8 X 1.25 PPH (Tie Bar Guide)	14	TBD			G	
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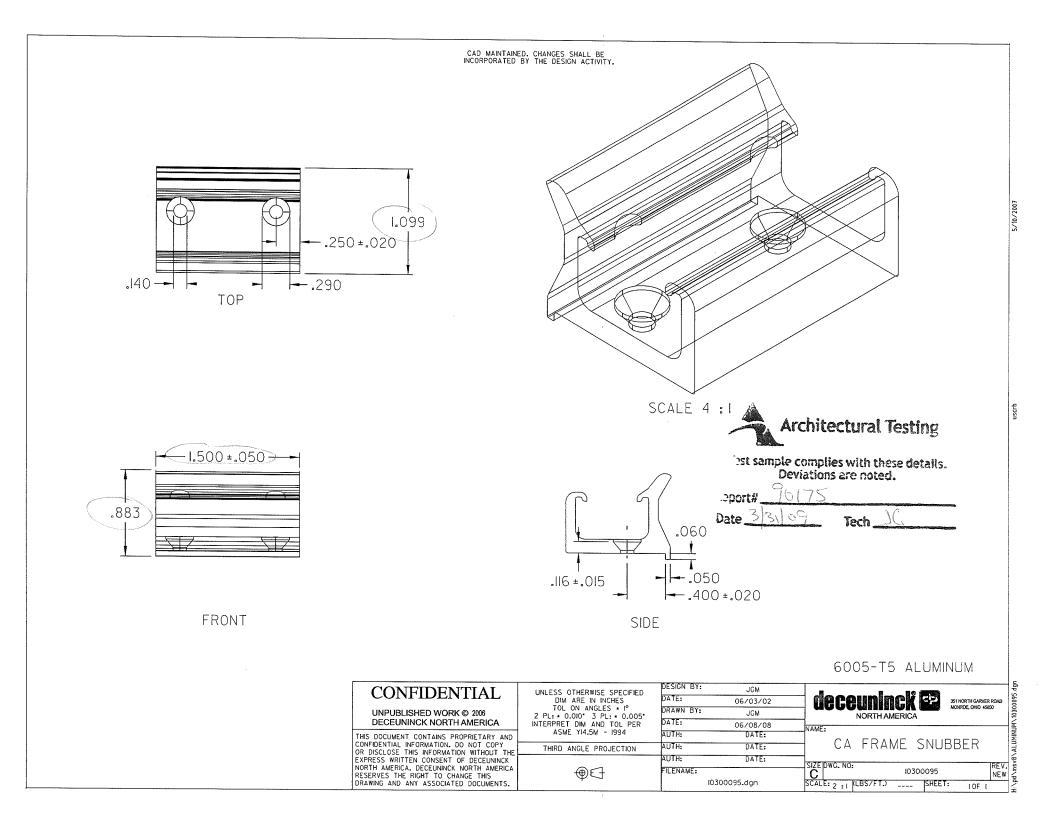
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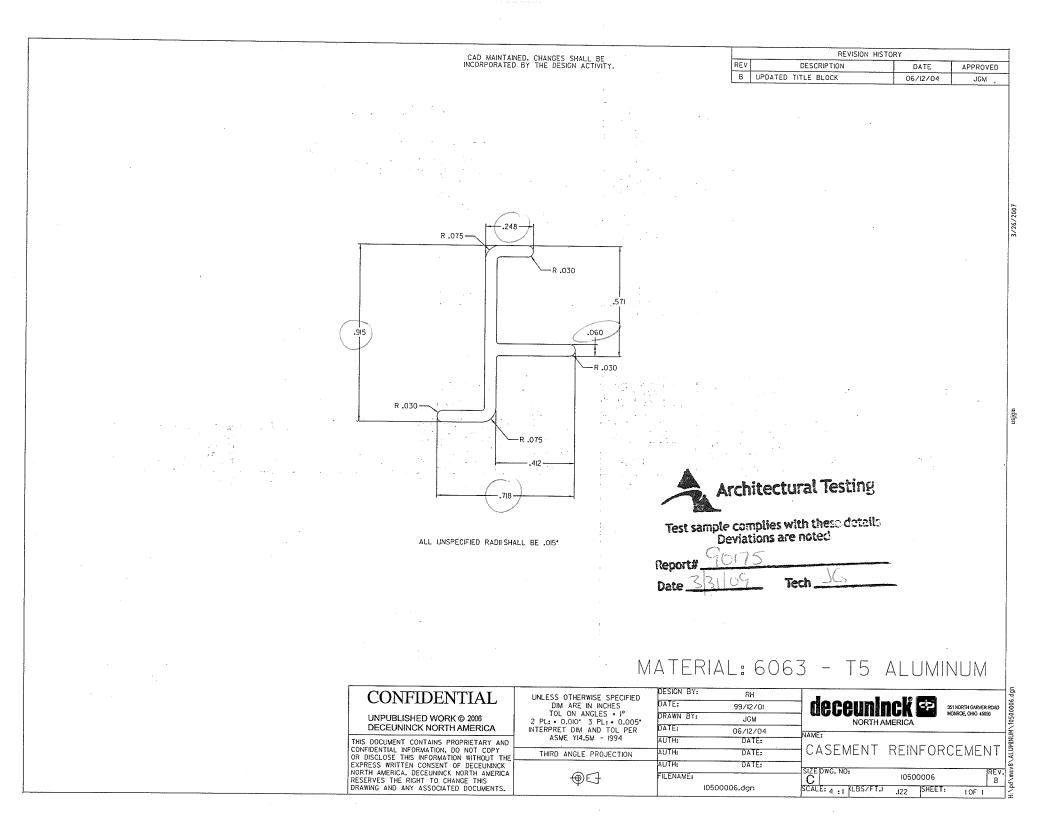


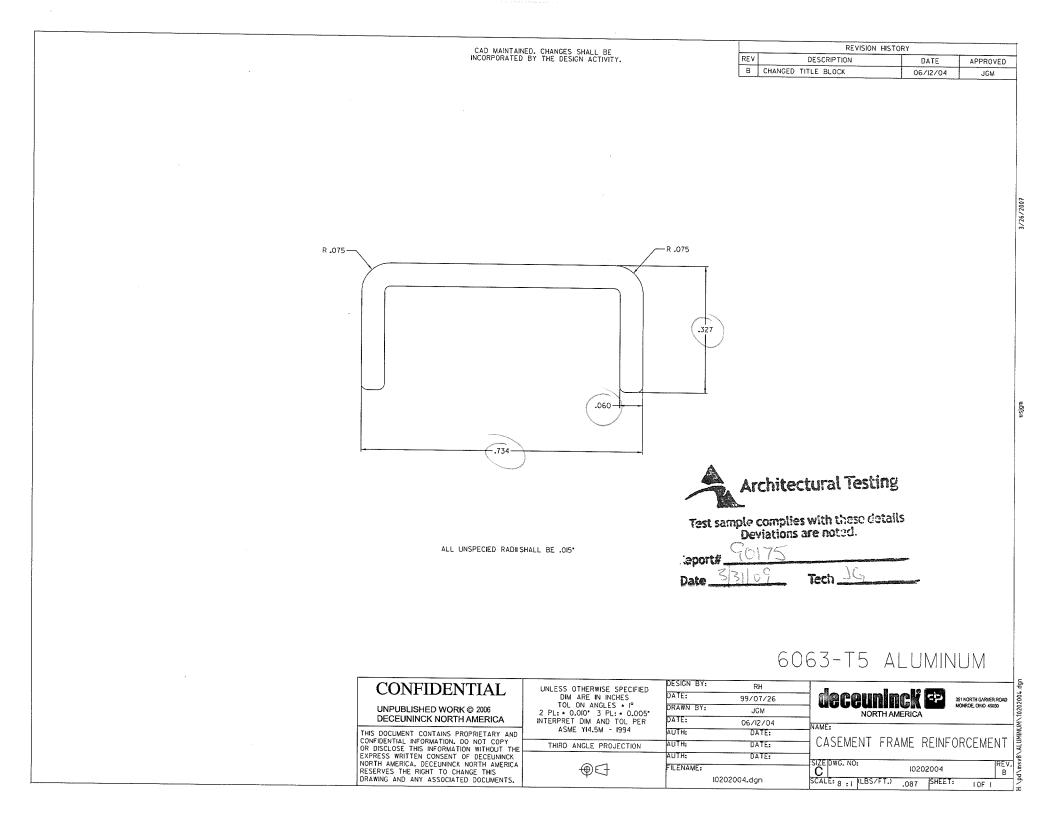






CAD MAINTAINED. CHANGES SHALL BE INCORPORATED BY THE DESIGN ACTIVITY. 3/8/2007 .820 .060 .320 .260 15Cl .060 R .020 TYP 10 PLACES Architectural Testing and sample complies with these details Deviations are noted. ::::::: Jate_3 2 NC Tec:: 6005-T5 ALUMINUM CONFIDENTIAL UNLESS OTHERWISE SPECIFIED DIM ARE IN INCHES TOL ON ANGLES * 1° 2 PL: • 0.010' 3 PL: • 0.005' INTERRET DIM AND TOL PER ASME Y14.5M - 1994 DESIGN BY: ALUMINUM\10300091.dgn JGM DATE: deceuninck 🕾 06/03/02 351 NORTH GARVER ROAD MONROE, DHIO 45050 DRAWN BY: UNPUBLISHED WORK © 2006 JGM NORTH AMERICA DECEUNINCK NORTH AMERICA DATE: 06/07/19 THIS DOCUMENT CONTAINS PROPRIETARY AND CONFIDENTIAL INFORMATION. DO NOT COPY OR DISCLOSE THIS INFORMATION WITHOUT THE EXPRESS WRITTEN CONSENT OF DECEMINICK NORTH AMERICA. DECEMINICK NORTH AMERICA DESEDVES THE DIGHT TO CONVEY THE AMERICA NAME: AUTH: DATE: CA SASH REINFORCEMENT THIRD ANGLE PROJECTION AUTH: DATE: AUTH: DATE: SIZE DWG. NO: /pd/msv8 ⊕€] FILENAME: REV. RESERVES THE RIGHT TO CHANGE THIS DRAWING AND ANY ASSOCIATED DOCUMENTS. 10300091 С NEW 10300091.dgn SCALE: 4 : | KLBS/FT.) ____ SHEET: 10F 1





03/26/2009 10:18 856-456-2920 ALLIANCE VINYL WIN PAGE 01/01 585-346-6301 p.2 Jul 27.04 10:29a Diane Addante PAGE 01 SILVERCITY 07/27/2004 09:56 15088248598 · . · . TO: JONATHAN MORTON MVW-S-1 DIE NUMBER MODIFIED ACTUAL SIZE .353 R.031 .286 - '553 Architectural Testing Test sample complies with these details. Deviations are noted. 90175 Report# $\backslash \langle$ Date 19C Tech UNSPECIFIED WALLS SILVER CITY ALUMINUM Q62 CIRCLE SIZE 0 - 1UNSPECIFIED RADII ,031 CORPORATION .010R BREAK CORNERS EST. AREA EST. PERIMETER Custom Alumenum Extrusions .067 2,251 704 WEST WATER STREET TAUNTON, MA. 02780 EST. WT. PER FT. FACTOR 58 .080 CUSTOMER: MVP VINYL WINDOWS STANDARD TOLERANCES FOR EXTRUDED PRODUCTS APPLY UNLESS SPECIFICALLY SHOWN OTHERWISC CITY: Belfast STATE: ME DRAWN REVISIONS DATE SCALE APPLICATION: 117 4 : 1DIE DATA BILLET DATA DATE TRACED TYPE SOLID 8-56-05 TYPE NOTES: MAT'L CK'D SIZE 9x2w3/4"pooke 6D63-T5 517E SEMI HOLLOW BACKER 05-94-4333 HOLLOW SOLID CUST. NO. RUNOUT 8 ~ TUBE BOLSTER BAR ROD #,1268 PT # 1, 585 POUNS