Architectural Testing

TEST REPORT

Report No.: B4629.01-109-44

Rendered to:

EZ VENT, LLC
Rockford, Michigan

PRODUCT TYPE: Concealed Vent Awing Window
SERIES/MODEL: CVW3700

SPECIFICATION: AAMA/WDMA/CSA 101/I.S.2/A440-08, *NAFS - North American Fenestration Standard/Specification for Windows, Doors, and Skylights*

Title	Summary of Results
Primary Product Designator	Class CW-PG80 1556 x 946 (61 x 37)-AW
Design Pressure	±3840 Pa (±80.20 psf)
Air Infiltration	<0.1 L/s/m^2 (<0.01 cfm/ft^2)
Water Penetration Resistance Test Pressure	580 Pa (12.11 psf)

Test Completion Date: 11/18/2011

Reference must be made to Report No. B4629.01-109-44, dated 02/17/12 for complete test specimen description and detailed test results.

1.0 Report Issued To: EZ Vent, LLC
8235 Belding Road
Rockford, Michigan 49341

2.0 Test Laboratory: Architectural Testing, Inc.
130 Derry Court
York, Pennsylvania 17406-8405
717-764-7700

3.0 Project Summary:

3.1 Product Type: Concealed Vent Awing Window

3.2 Series/Model: CVW3700

3.3 Compliance Statement: Results obtained are tested values and were secured by using the designated test method(s). The specimen tested successfully met the performance requirements for a **Class CW-PG80 1556 x 946 (61 x 37)-AW** rating.

3.4 Test Dates: 11/07/2011 - 11/18/2011

3.5 Test Location: Architectural Testing, Inc. test facility in York, Pennsylvania.

3.6 Test Sample Source: The test specimen was provided by the client. Representative samples of the test specimen(s) will be retained by Architectural Testing for a minimum of four years from the test completion date.

3.7 Drawing Reference: The test specimen drawings have been reviewed by Architectural Testing and are representative of the test specimen(s) reported herein. Test specimen construction was verified by Architectural Testing per the drawings located in Appendix C. Any deviations are documented herein or on the drawings.

3.8 List of Official Observers:

Name	Company
Bob Fortin	EZ Vent, LLC
Aaron M. Shultz	Architectural Testing, Inc.
Michael D. Stremmel, P.E.	Architectural Testing, Inc.
Ken R. Stough	Architectural Testing, Inc.

4.0 Test Specification(s):

AAMA/WDMA/CSA 101/I.S.2/A440-08, *NAFS - North American Fenestration Standard/Specification for Windows, Doors, and Skylights*

5.0 Test Specimen Description:

5.1 Product Sizes:

Overall Area: 1.5 m^2 (15.8 ft^2)	Width		Height	
	millimeters	inches	millimeters	inches
Overall size	1556	61-1/4	946	37-1/4
Vent	1464	57-5/8	857	33-3/4

5.2 Frame Construction:

Frame Member	Material	Description
Head, sill, and jambs	Aluminum	Poured and debridged thermally improved extruded aluminum

	Joinery Type	Detail
All corners	Coped and butted	Sealed with silicone and secured using two #10 x 7/8" long hex head screws per corner

5.3 Vent Construction:

Vent Member	Material	Description
Rails and stiles	Aluminum	Extruded

	Joinery Type	Detail
All corners	Mitered and keyed	Sealed with silicone and secured with two aluminum corner keys and one 1/8" diameter pop rivet per corner. The interior-most corner key was secured to each member with two lanced stakes. The exterior-most corner key was secured to each member with two lanced stakes and two #8 x 1/4" long machine screws.

5.0 Test Specimen Description: (Continued)

5.4 Weatherstripping:

Description	Quantity	Location
Hollow vinyl bulb seal	2 Rows	Vent stiles and rails
Custom single leaf gasket	1 Row	Vent stiles and rails

5.5 Glazing:

Glass Type	Spacer Type	Interior Lite	Exterior Lite	Glazing Method
1" IG	Desiccant-filled aluminum box spacer	3/16" thick clear tempered	3/16" thick clear tempered	The glass was exterior glazed against a bead of structural silicone and utilized a silicone heal bead between the edge of the glass and the vent frame.

Location	Quantity	Daylight Opening		Glass Bite
		millimeters	inches	
Vent daylight opening	1	1422 x 813	56 x 32	1"

5.6 Drainage: No drainage was utilized.

5.7 Hardware:

Description	Quantity	Location
1/4 turn lever lock with keeper	2	Bottom rail, 10" from each jamb
4-bar friction hinge	2	Top of both vent stiles

5.8 Reinforcement: No reinforcement was utilized.

6.0 Installation:

The specimen was installed into a Spruce-Pine-Fir wood buck. The rough opening allowed for a 1/8" shim space. The exterior perimeter of the window was sealed with silicone.

Location	Anchor Description	Anchor Location
Head, sill and jambs	3/4" by 3/4" continuous blind stop on the interior and exterior secured with #6 x 1-5/8" long drywall screws	Anchors were located 4" from each corner and spaced 12" on center, through the blind stops into the wood buck

7.0 Test Results: The temperature during testing was 20°C (68°F). The results are tabulated as follows:

Title of Test	Results	Allowed	Note
Operating Force, per ASTM E 2068	Initiate motion: 67 N (15 lbf) Maintain motion: 53 N (12 lbf) Latches: 22 N (5 lbf)	Report Only 135 N (30 lbf) 100 N (22.5 lbf)	
Air Leakage, Infiltration per ASTM E 283 at 75 Pa (1.57 psf)	<0.1 L/s/m² (<0.01 cfm/ft²)	1.5 L/s/m² (0.3 cfm/ft²) max.	1
Water Penetration, per ASTM E 547 and ASTM E 331	N/A	N/A	3
Uniform Load Deflection, per ASTM E 330	N/A	N/A	3
Uniform Load Structural, per ASTM E 330	N/A	N/A	
Forced Entry Resistance, per ASTM F 588 Type: B - Grade: 10	Pass	No entry	
Awning, Hopper, Projected Hardware Load Test 140 N (30 lbf)	19.3 mm (0.76")	48.0 mm (1.89")	

7.0 Test Results: (Continued)

Title of Test	Results	Allowed	Note
Optional Performance			
Water Penetration, per ASTM E 547 and ASTM E 331 at 580 Pa (12.11 psf)	Pass	No leakage	2
Uniform Load Deflection, per ASTM E 330 taken at the top rail			
+4320 Pa (+90.23 psf)	2.3 mm (0.09")	8.6 mm (0.34") max.	
-4320 Pa (-90.23 psf)	7.6 mm (0.30")	8.6 mm (0.34") max.	4, 5
Uniform Load Structural, per ASTM E 330 taken at the top rail			
+5760 Pa (+120.30 psf)	0.3 mm (0.01")	4.6 mm (0.18") max.	
-5760 Pa (-120.30 psf)	0.3 mm (0.01")	4.6 mm (0.18") max.	4, 5

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

Note 2: Without insect screen.

Note 3: The client opted to start at a pressure higher than the minimum required. Test results are reported under Optional Performance.

Note 4: Loads were held for 10 seconds.

Note 5: 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.

The service life of this report will expire on the stated Test Record Retention End Date, at which time such materials as drawings, data sheets, samples of test specimens, copies of this report, and any other pertinent project documentation, shall be discarded without notice.

If test specimen contains glazing, no conclusions of any kind regarding the adequacy or inadequacy of the glass in any glazed test specimen(s) 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.

Digitally Signed by: Ken R. Stough

Ken R. Stough
Technician

Digitally Signed by: Michael D. Stremmel

Michael D. Stremmel, P.E.
Senior Project Engineer

KRS:dem

Attachments (pages): This report is complete only when all attachments listed are included.
- Appendix-A: Alteration Addendum (1)
- Appendix-B: Photographs (1)
- Appendix-C: Drawings (5)

Appendix A

Alteration Addendum

Note: *No alterations were required.*

Appendix B

Photographs

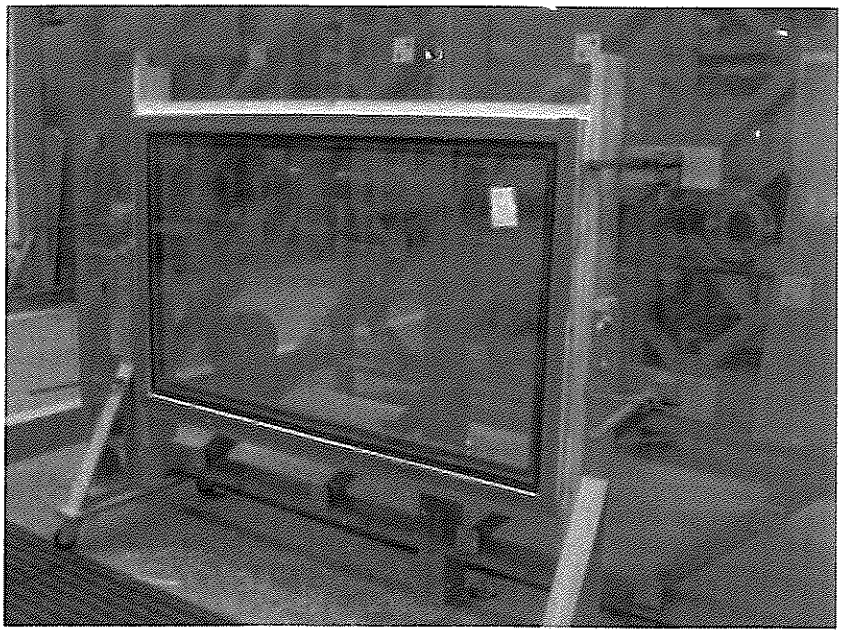


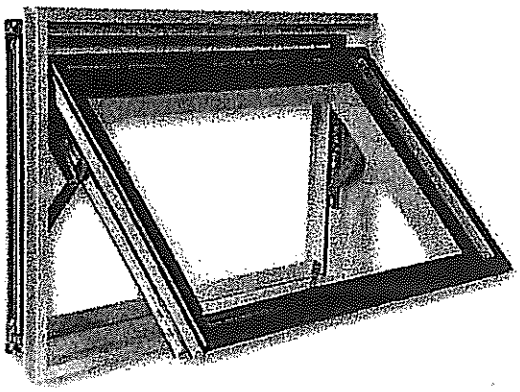
Photo No. 1
CVW Concealed Vent Awning Window

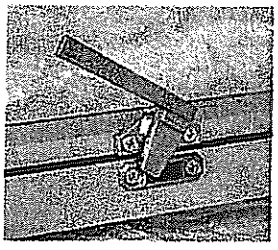
Photo No. 2
Water Penetration Testing

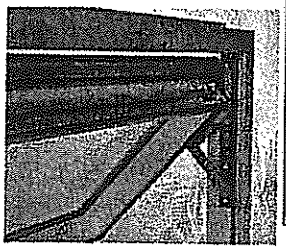
EZ Vent
COMMERCIAL WINDOWS

PRODUCT INFO
CVW 3700
CONCEALED VENT WINDOW

CVW 3700 | HBW 3700 | CW 3700 | EW 3700 | VW 3700 | HW 3200 | FW 3700 | Hardware & Screens







This is a project-out, concealed-style window, which gives it the seamless appearance of an all-glass exterior with no metal frames visible. It is installed in the curtainwall framing system, and is available in manual or rotary operation.

3700 Series Windows	CVW3700 Series
Application	Concealed Vent
Frame Joints	Screw-spline
Window Joints	Mitered-clip, Epoxy & Stake
Glass Thickness	1"
Face Width	-
Frame Depth	3-1/2"
Hardware	Standard hardware Heavy Duty 4-bar hinge and clear or black cam handle lock
Air Infiltration	0.03CFM/Ft2 @ 6.24psf
Static Water	12 PSF
ANSI/AAMA Testing	AP-AW-70
Life Cycle Tested	1250 Cycles
Screen	Wicket Screen Click here for more information

CVW Concealed Vent

Material Safety Data Sheets (PDF)

CAD File (DWG):	Details:	Installation Instructions:	Test Reports:	Specs:
ZIP File	PDF File E3704 E3705 E3710 E3720	PDF File	PDF File	Text File

EZ VENT LLC • 8235 Belding Road • Rockford, Michigan 49341 • Ph: 616-874-2787 • Fx: 874-9585

Architectural Testing

Test sample complies with these details.
Deviations are noted.

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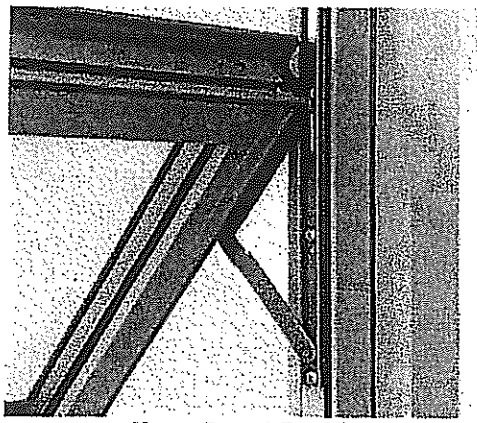
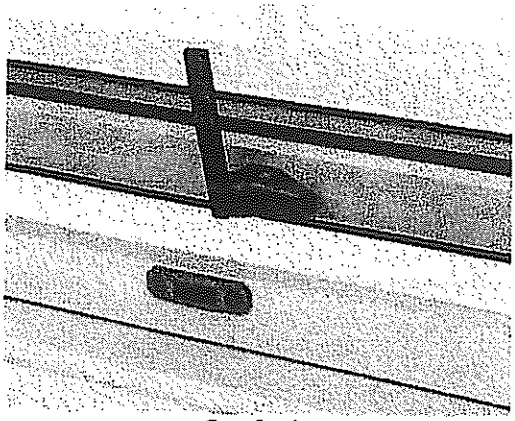
Date 11/23/11 Tech ES



Heavy Duty 4-Bar Hinge



Cam Lock

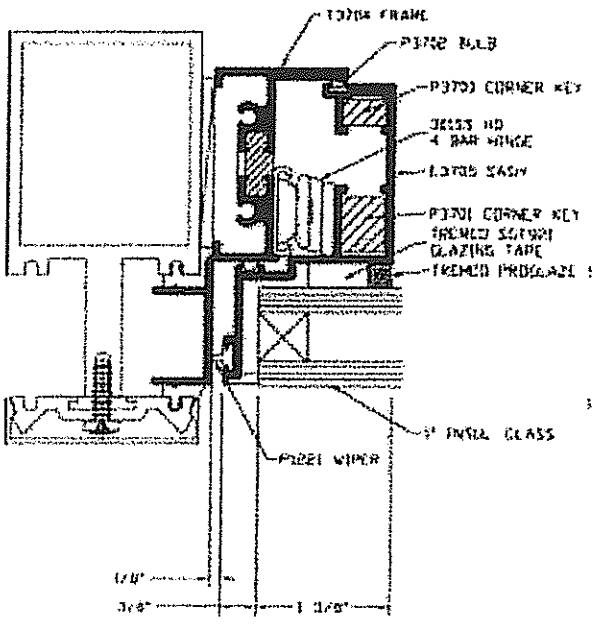
½ Size Details

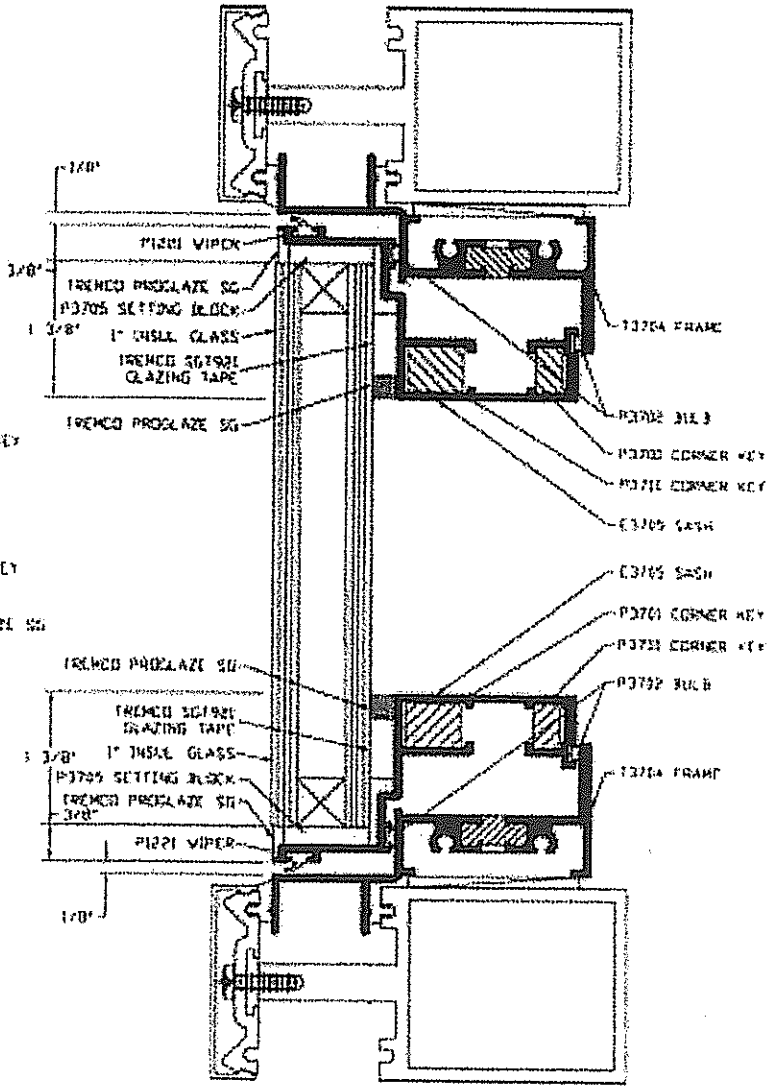
Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# B4629.01-109-44

Date 2-17-12 Tech KS





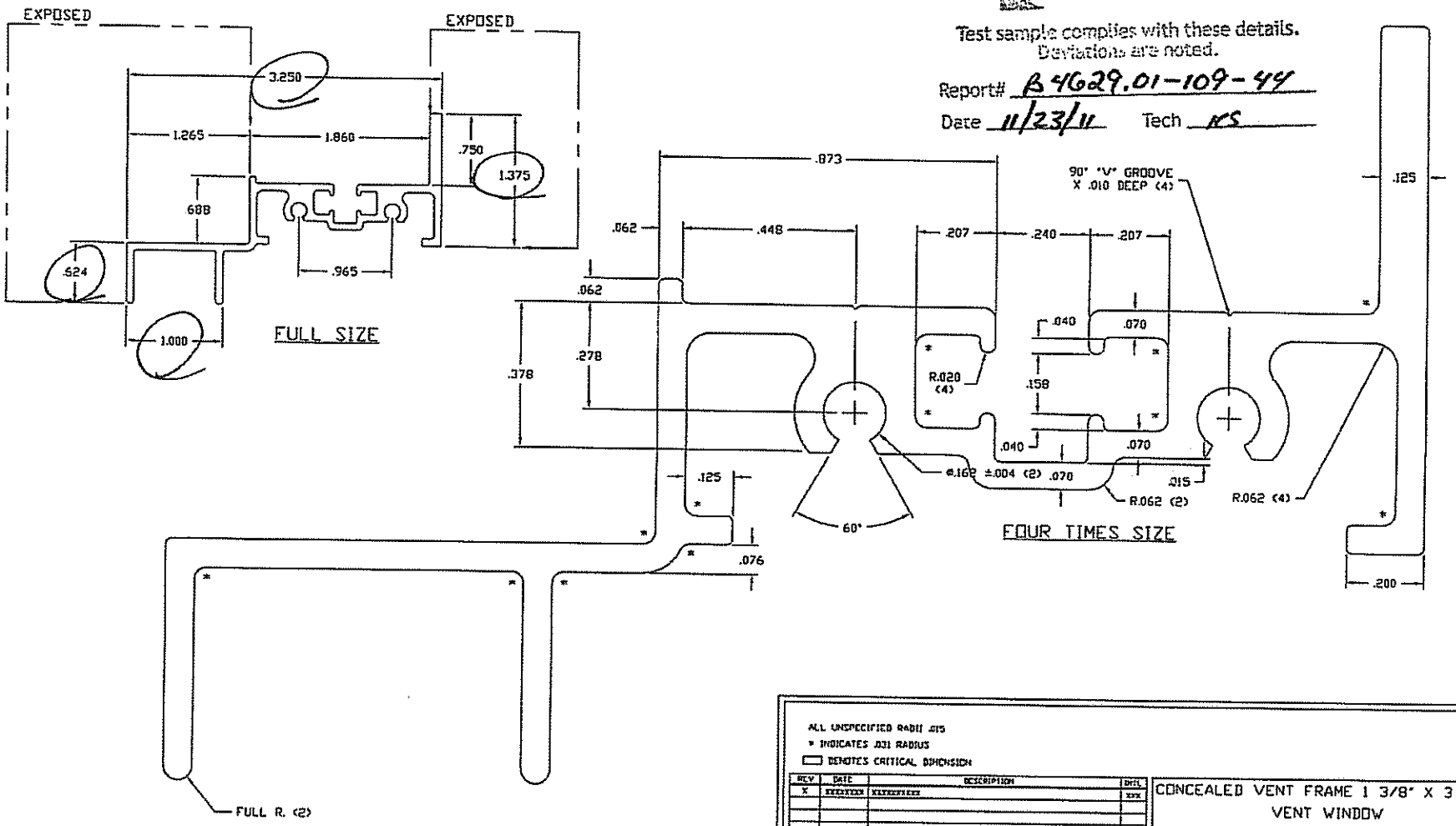
E3704

Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# B4629.01-109-44

Date 11/23/11 Tech RS



ALL UNSPECIFIED RADII .015
* INDICATES .031 RADIUS
DENOTES CRITICAL DIMENSION

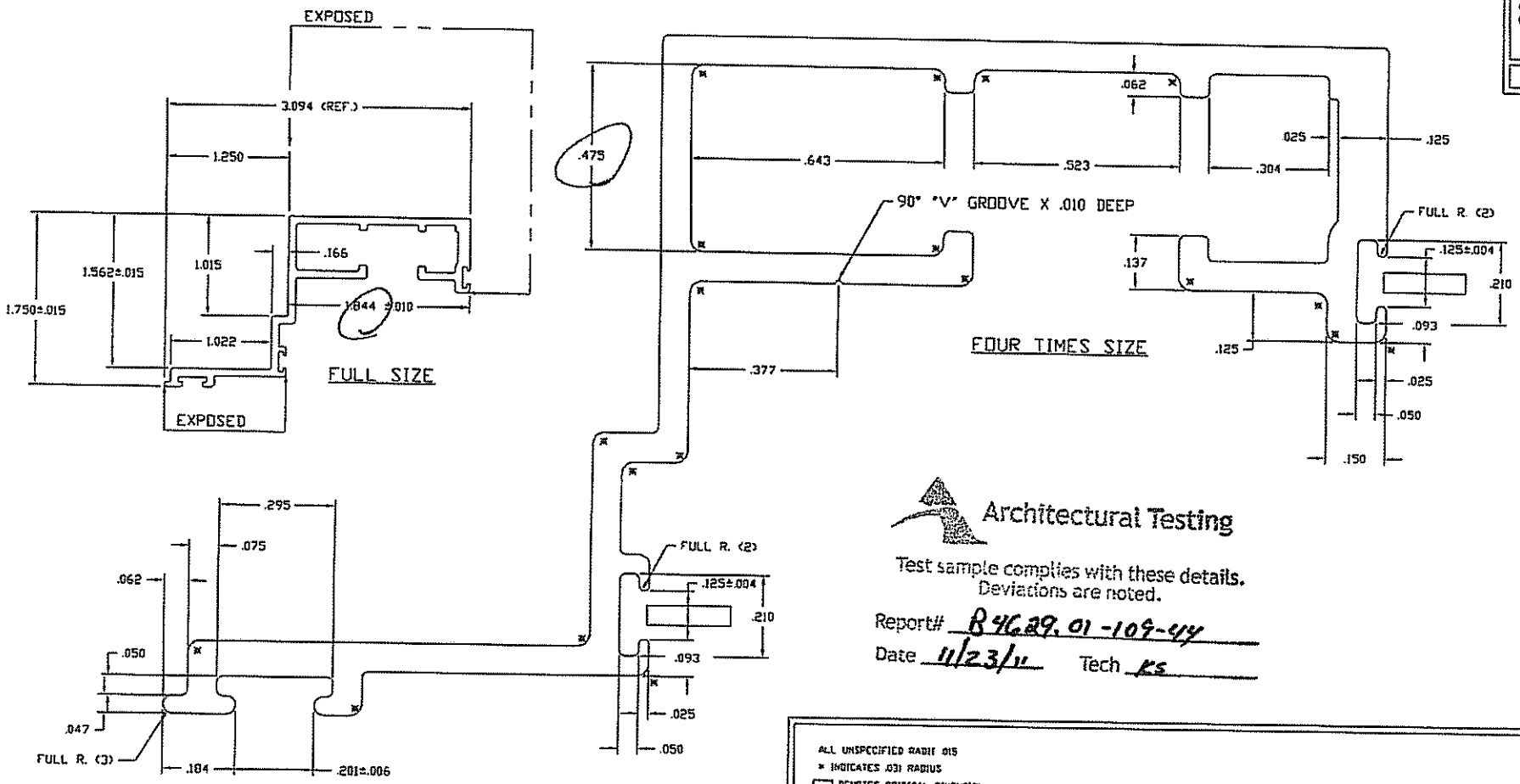
REV	DATE	DESCRIPTION	APPD
X	XXXXXXX	XXXXXXXXX	XXX

CONCEALED VENT FRAME 1 3/8" X 3 1/4"
VENT WINDOW

DRAWN BY	DRVG DATE	APPV'D BY	DATE APPV'D
SRD	07/11/01		

DRVG SCALE	PROJECT CODE		REV
NOTED	120	E3704	

E3705



Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# B4629.01-109-44

Date 11/23/11 Tech KS

ALL UNSPECIFIED RADII .015
* INDICATES .031 RADIUS
DENOTES CRITICAL DIMENSION

REV	DATE	DESCRIPTION	INTL
X	XXXXXXX	XXXXXXXXX	XXX

CONCEALED VENT SASH 1 3/4" X 3 3/32"
VENT WINDOW

DRAWN BY	DRWG DATE	APPV'D BY	DATE APPV'D
SRD	07/11/01		

DRWG SCALE	PRODUCT CODE		REV
NOTED	120	E3705	