Architectural Testing

TEST REPORT

Report No.: A8416.01-109-44

Rendered to:

EZ VENT, LLC
Rockford, Michigan

PRODUCT TYPE: Out-Swing Casement Window
SERIES/MODEL: CW3700

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-PG60 914 x 1524 (36 x 60)-C
Design Pressure	±2880 Pa (±60.15 psf)
Air Infiltration	<0.1 L/s/m² (<0.01 cfm/ft²)
Water Penetration Resistance Test Pressure	580 Pa (12.11 psf)

Test Completion Date: 03/24/2011

Reference must be made to Report No. A8416.01-109-44, dated 01/13/12 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: Out-Swing Casement Window

3.2 Series/Model: CW3700

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-PG60 914 x 1524 (36 x 60)-C** rating.

3.4 Test Dates: 03/22/2011 - 03/24/2011

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
Dale Oberlin	EZ Vent, LLC
Scott A. Garner	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: 1.4 m^2 (15.0 ft^2)	Width		Height	
	millimeters	inches	millimeters	inches
Overall size	914	36	1524	60
Vent	870	34-1/4	1480	58-1/4

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 1" long pan head screws per corner

5.3 Vent Construction:

Vent Member	Material	Description
Rails and stiles	Aluminum	Poured and debridged thermally improved extruded aluminum

	Joinery Type	Detail
All corners	Mitered and keyed	Corners were secured with two corner keys with lanced stakes and sealed with silicone.

5.4 Weatherstripping:

Description	Quantity	Location
Hollow vinyl bulb seal	2 Rows	Vent rails and stiles

5.0 Test Specimen Description: (Continued)

5.5 Glazing:

Glass Type	Spacer Type	Interior Lite	Exterior Lite	Glazing Method
1" IG	Aluminum box spacer sealed with butyl	1/8" thick clear tempered	1/8" thick clear tempered	The glass was interior glazed against a bed of butyl and secured with snap-in aluminum glazing beads with a rubber gasket against the glass.

Location	Quantity	Daylight Opening		Glass Bite
		millimeters	inches	
Vent daylight opening	1	737 x 1346	29 x 53	1/2"

5.6 Drainage: No drainage was utilized.

5.7 Hardware:

Description	Quantity	Location
Lever lock	2	Lock jamb, 10-1/2" from each end
Rotary crank operator	1	Sill, 6" from the hinge jamb
Lift block	1	Sill, 5" from lock jamb
Barrel hinge	3	Hinge jamb, 6-1/2" from each end and midspan

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
Jambs	1/4" diameter by 2-1/2" long wood screw	10" from each corner

7.0 Test Results: The temperature during testing was 22°C (72°F). The results are tabulated as follows:

Title of Test	Results	Allowed	Note
Operating Force, per ASTM E 2068	Initiate motion: 18 N (4 lbf) Maintain motion: 4 N (1 lbf) Locks: 37 N (8 lbf)	Report Only 45 N (10 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	3
Forced Entry Resistance, per ASTM F 588 Type: B - Grade: 10	Pass	No entry	
Sash Vertical Deflection 270 N (60 lbf)	8.1 mm (0.32")	17.5 mm (0.69") max.	
Distributed Load 300 Pa (6.27 psf)	Pass	No damage	
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 between the locks +2880 Pa (+60.15 psf) -2880 Pa (-60.15 psf)	 0.3 mm (0.01") 1.0 mm (0.04")	 5.8 mm (0.23") max. 5.8 mm (0.23") max.	4, 5
Uniform Load Structural, per ASTM E 330 taken between the locks +4320 Pa (+90.23 psf) -4320 Pa (-90.23 psf)	 0.5 mm (0.02") 0.3 mm (0.01")	 3.0 mm (0.12") max. 3.0 mm (0.12") max.	4, 5

7.0 Test Results: (Continued)

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 for: Ken R. Stough by Vicki L. McElwain

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

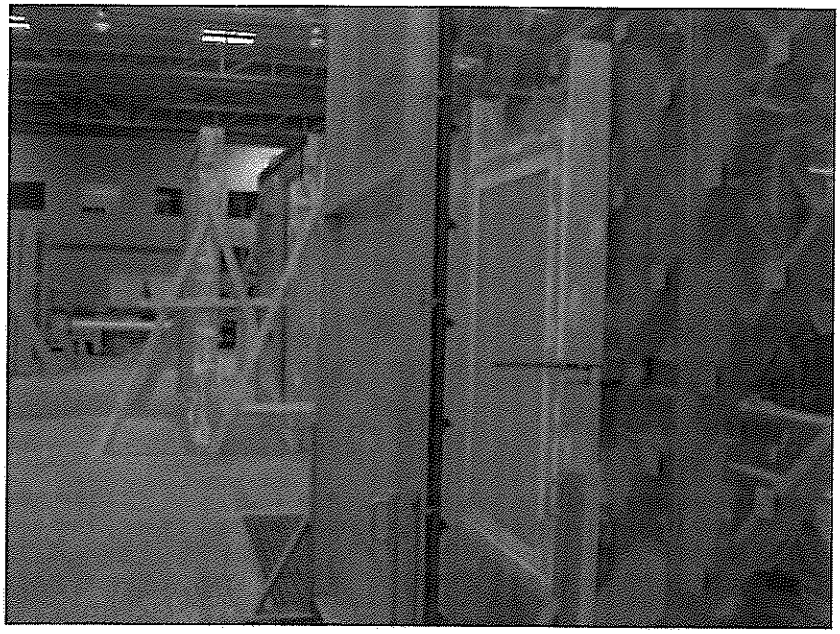


Photo No. 1
CW 3700 Out-Swing Casement Window During Water Test

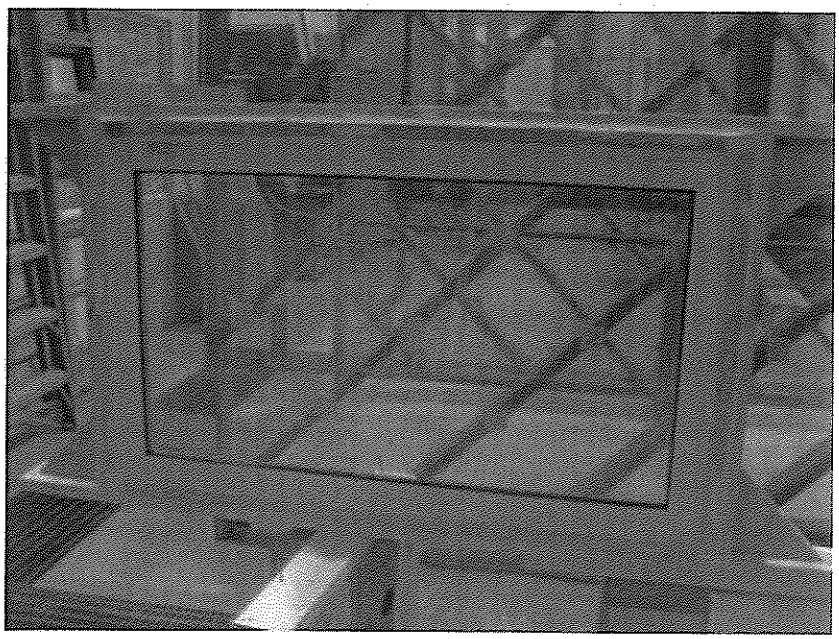
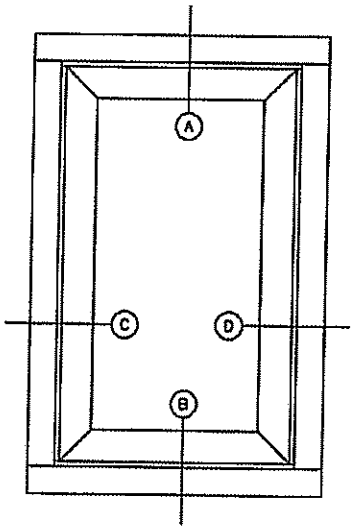


Photo No. 2
CW 3700 Out-Swing Casement Window

TYPICAL DETAILS

GLASS SIZE = WINDOW FRAME DIM - 4 1/2"



Architectural Testing

Test sample complies with these details.
Deviations are noted.

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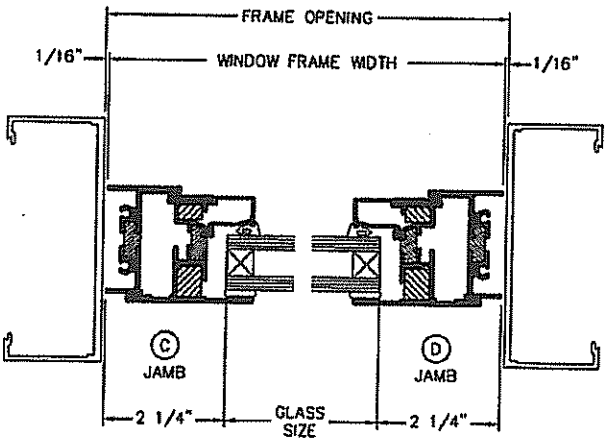
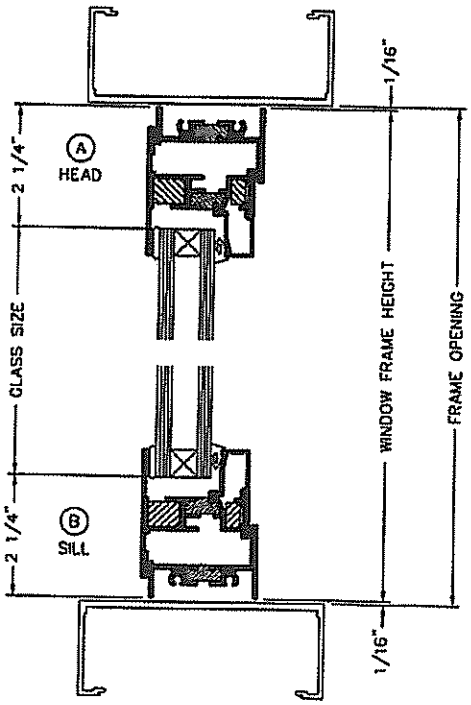
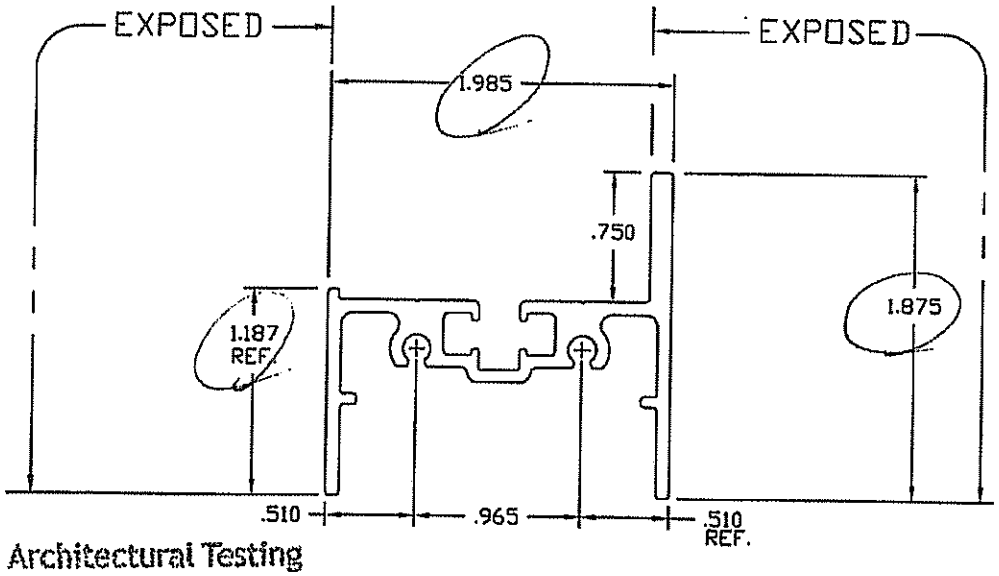




E3709



Architectural Testing

Test sample complies with these details.
Deviations are noted.

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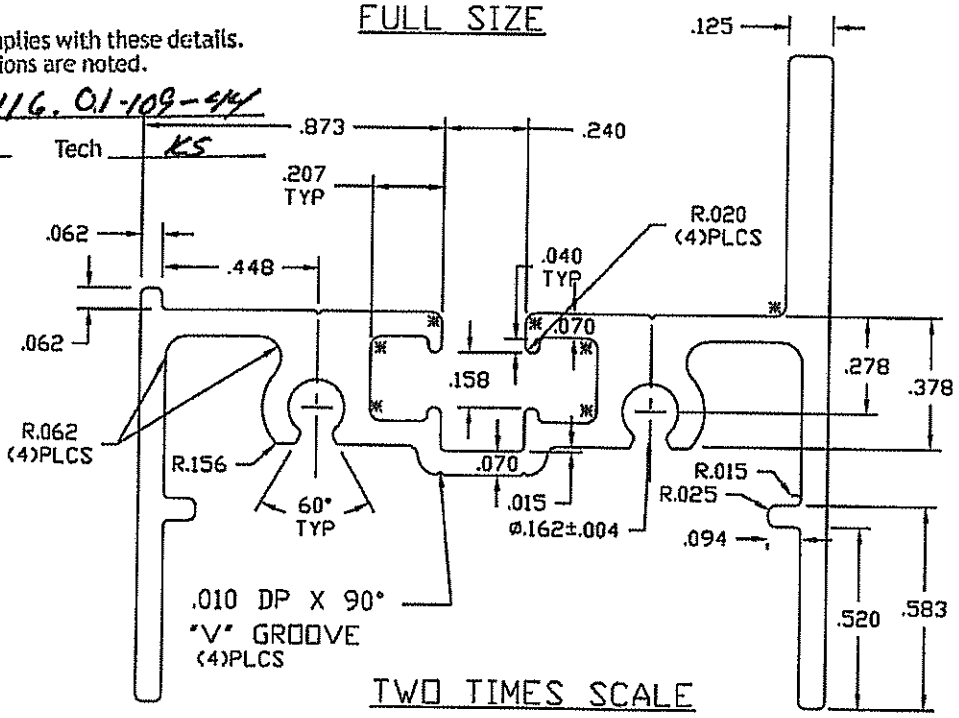
Date 5/11/11 Tech KS

FULL SIZE



TWO TIMES SCALE

ALL UNSPECIFIED RADII .015

* INDICATES .031 RADIUS

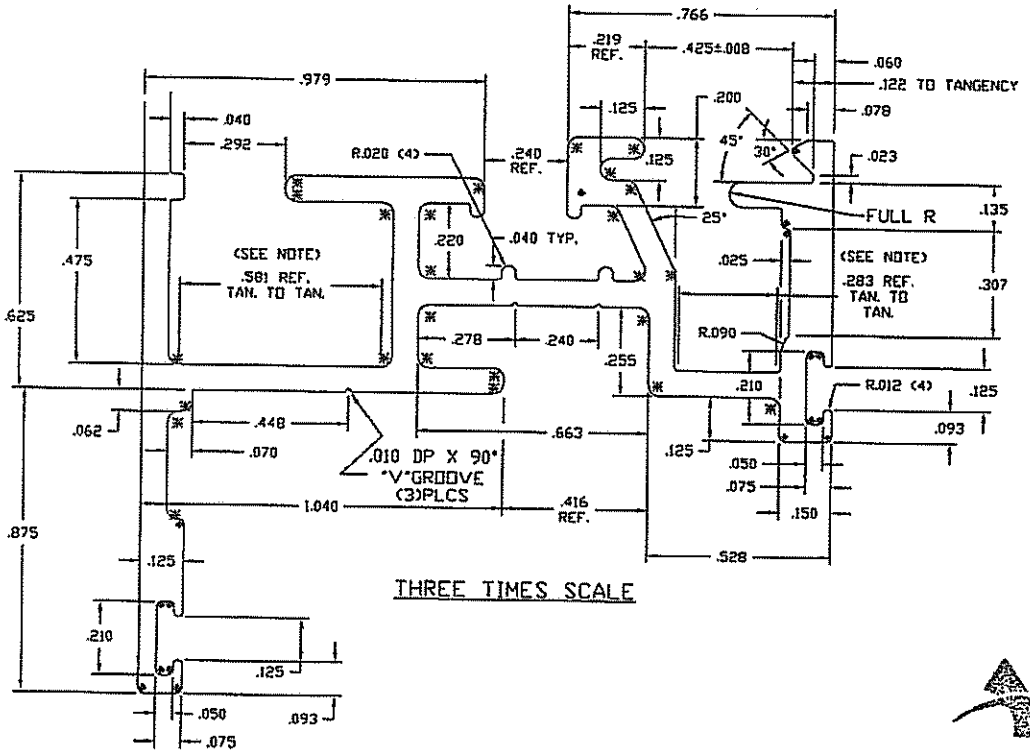
☐ DENOTES CRITICAL DIMENSION

REV	DATE	DESCRIPTION	INTL
X	XXXXXXXX	XXXXXX	XXX

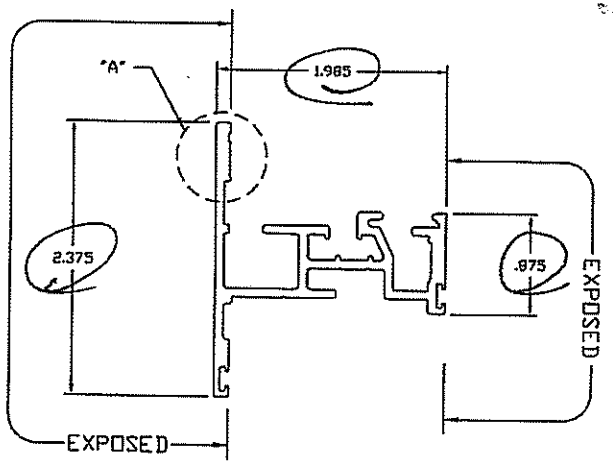
CASEMENT VENT FRAME 1 7/8" X 2"
VENT WINDOW

DRAWN BY	DRWG DATE	APPV'D BY	DATE APPV'D
DWS	01/23/09		
DRWG SCALE NOTED	PRODUCT CODE 120	E3709	REV

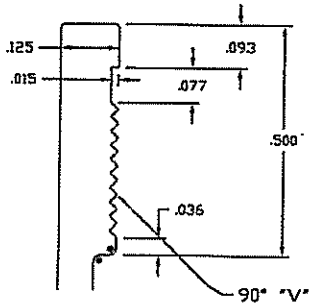
E3701



THREE TIMES SCALE



FULL SIZE



DETAIL "A"
FOUR TIMES SCALE

Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# A8416.01-109-CA

Date 5-11-11 Tech KS

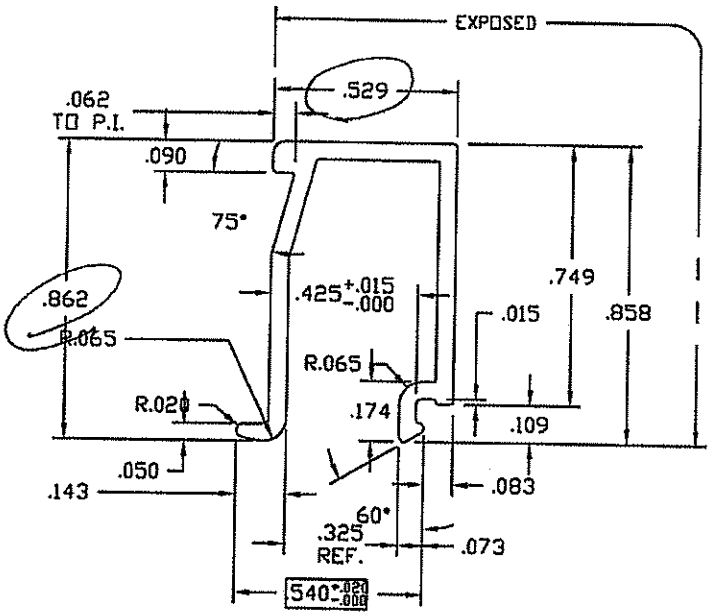
ALL UNSPECIFIED RADII .015
* INDICATES .031 RADIUS
DENOTES CRITICAL DIMENSION

REV	DATE	DESCRIPTION	INITL
X	XXXXXXXX	XXXXXXXXX	XXX

CONVENTIONAL VENT SASH 2 3/8" X 2" VENT WINDOW

DRAWN BY	DRWG DATE	APPVD BY	DATE APPVD
CRH	08/17/00		
DRWG SCALE NOTED	PRODUCT CODE 120	E3701	REV

E3702



TWO TIMES SCALE

FULL SCALE

Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# A8416.01-709-14

Date 5-16-11 Tech KS

ALL UNSPECIFIED RADII .015

* INDICATES .031 RADIUS

▭ DENOTES CRITICAL DIMENSION

REV	DATE	DESCRIPTION	INTL
X	XXXXXXXX	XXXXXX	XXX

GLASS STOP FOR 1" GLASS
VENT WINDOWS

DRAWN BY	DRVG DATE	APPV'D BY	DATE APPV'D
CRH	08/17/00		
DRVG SCALE	PRODUCT CODE		REV
NOTED	120	E3702	