Architectural Testing

AAMA 1801 SOUND TRANSMISSION LOSS TEST REPORT

Rendered to:

MI WINDOWS AND DOORS, INC.

SERIES/MODEL: 3580

TYPE: Horizontal Sliding Window

Summary of Test Results					
ATI Data File No.	**Glazing Option (Nominal Dimensions)**	**Operating Force**	**Air Infiltration**	**STC**	**OITC**
75311.01A	29/32" IG (3/32" annealed exterior, 11/16" air space, 1/8" annealed interior) Glass temperature - 74F	Pass	Pass	32	25
75311.01B	7/8" IG (1/8" annealed exterior, 9/16" air space, 3/16" annealed interior) Glass temperature - 75F	Pass	Pass	29	23

Reference should be made to ATI Report No. 75311.01-113-11 for complete test specimen description. The complete test results are listed in Appendix B.

130 Derry Court
York, PA 17406-8405
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Architectural Testing

ACOUSTICAL PERFORMANCE TEST REPORT

Rendered to:

MI WINDOWS AND DOORS, INC.
P.O. Box 370
650 West Market Street
Gratz, Pennsylvania 17030-0370

Report No:	75311.01-113-11
Test Date:	10/09/07
Report Date:	11/02/07
Expiration Date:	10/09/11

Test Sample Identification:

Series/Model: 3580

Type: Horizontal Sliding Window

Performance Class: Residential

Overall Size: 72" by 48"

Glazing Option A (Nominal Dimensions): 29/32" IG (3/32" Annealed Exterior, 11/16" Air Space, 1/8" Annealed Interior)

Glazing Option B (Nominal Dimensions): 7/8" IG (1/8" Annealed Exterior, 9/16" Air Space, 3/16" Annealed Interior)

Project Scope: Architectural Testing, Inc. was contracted by MI Windows and Doors, Inc. to conduct operating force, air leakage, and sound transmission loss tests on a Series/Model 3580, horizontal sliding window with two glazing options. A summary of the results is listed in the Test Results section and the complete test data is included as Appendix B of this report. The samples were provided by the client.

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Test Methods: The acoustical test was conducted in accordance with the following:

AAMA 1801-07, *Acoustical Rating of Windows, Doors, and Glazed Wall Sections.*

ASTM E 1425-91 (Re-approved 1999), *Standard Practice for Determining the Acoustical Performance of Exterior Windows and Doors.*

ASTM E 90-04, *Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions*.

ASTM E 413-04, *Classification for Rating Sound Insulation*.

ASTM E 1332-90 (Re-approved 2003), *Standard Classification for Determination of Outdoor-Indoor Transmission Class.*

ASTM E 283-04, *Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.*

ASTM E 2235-04, *Standard Test Method for Determination of Decay Rates for Use in Sound Insulation Test Methods*.

ASTM E 2068-00, *Standard Test Method for Determination of Operating Force of Sliding Windows and Doors.*

Test Equipment: The equipment used to conduct these tests meets the requirements of ASTM E 90. The microphones were calibrated before conducting the sound transmission loss tests. The test equipment and test chamber descriptions are listed in Appendix A.

Sample Installation:

Sound transmission loss tests were initially performed on a filler wall that was designed to test 48" by 72" and 72" by 48" specimens. The filler wall achieved an STC rating of 63.

The 72" by 48" plug was removed from the filler wall assembly. The window was placed on a foam isolation pad in the test opening. Duct seal was used to seal the perimeter of the window to the test opening on both sides. The interior side of the window frame, when installed, was approximately 1/4" from being flush with the receiving room side of the filler wall. A stethoscope was used to check for any abnormal air leaks around the test specimen prior to testing. The sash were opened and closed at least five times prior to testing.

Test Procedure:

Operating Force Test - The Type B method, which utilizes a force gage, was used to determine the breakaway and operating forces required to open and close both sash.

Air Leakage Test - The sash were closed and locked for this test. A negative pressure of 1.57 psf was applied inside the chamber that was placed around the interior side of the window. The total air leakage and extraneous air leakage measurements were used to calculate the specimen air leakage. Barometric pressure corrections were applied to the air leakage calculations.

Sound Transmission Loss Test - The sash were closed and locked for this test. One background noise sound pressure level and five sound absorption measurements were conducted at each of the five microphone positions. Two sound pressure level measurements were made simultaneously in both rooms at each of the five microphone positions. The air temperature and relative humidity conditions were monitored and recorded during the background, absorption, source, and receive room measurements.

Sample Descriptions:

Frame Construction:

		Frame
Size		72" by 48"
Thickness		2-7/8"
Corners		Mitered
	Fasteners	Welds
	Seal Method	None
Material		Vinyl
	Reinforcement	Steel / located in keeper stile
	Thermal Break Material	N/A
Daylight Opening Size		32-15/16" by 44-1/8"

Sample Descriptions: (Continued)

Sash Construction:

		Active Sash
Size		36-3/16" by 46-3/16"
Thickness		1-3/8"
Corners		Mitered
	Fasteners	Welds
	Seal Method	None
Material		Vinyl
	Reinforcement	Steel / located in meeting and jamb stile
	Thermal Break Material	N/A
Daylight Opening Size		33-1/16" by 43-3/16"

Glazing Option A:

Measured Overall Insulation Glass Unit Thickness	0.881"
Spacer Type	Reinforced butyl

	Exterior Sheet	Gap	Interior Sheet
Measured Thickness	0.082"	0.682"	0.117"
Muntin Pattern	N/A	N/A	N/A
Material	Annealed	Air*	Annealed
Laminate Material	N/A	N/A	N/A

Glazing Method	Interior
Glazing Material	Double sided adhesive foam tape
Glazing Bead Material	Vinyl

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

Sample Descriptions: (Continued)

Glazing Option B:

Measured Overall Insulation Glass Unit Thickness	0.882"
Spacer Type	Reinforced butyl

	Exterior Sheet	**Gap**	**Interior Sheet**
Measured Thickness	0.116"	0.589"	0.177"
Muntin Pattern	N/A	N/A	N/A
Material	Annealed	Air*	Annealed
Laminate Material	N/A	N/A	N/A

Glazing Method	Interior
Glazing Material	Silicone
Glazing Bead Material	Vinyl

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

Components:

TYPE	**QUANTITY**	**LOCATION**
Weatherstrip		
187" by 0.230" poly pile with center fin	1 Row	Active sash perimeter
1/4" foam lined bulb gasket with dual 1/6" leaf	1 Row	Jamb stile
1/8" co-extruded foam filled bulb gasket	1 Row	Keeper stile
Hardware		
Roller assembly set	2	Bottom rail
Cam lock	2	Lock stile
Keeper	2	Keeper stile

Sample Descriptions: (Continued)

Components: (Continued)

TYPE	QUANTITY	LOCATION
Drainage		
1-1/4" by 1/8" weepslot	2	Sill
1/2" by 1/4"	4	Sill
1/2" by 1/8"	2	Sill

Comments: The total weight of the sample with glazing option A was 78 lbs. The total weight of the sample with glazing option B was 106 lbs. The design drawings (included in Appendix C) supplied by the client, accurately describe the Series/Model 3580, horizontal sliding window. The dimensions on the drawings that are circled and/or checked were verified against the test specimen. The window was disassembled, and the components will be retained by Architectural Testing, Inc. for four years. Photographs of the test specimen are included in Appendix D.

Test Results: The STC (Sound Transmission Class) rating was calculated in accordance with ASTM E 413. The OITC (Outdoor-Indoor Transmission Class) was calculated in accordance with ASTM E 1332. A summary of the operating force, air leakage, and sound transmission loss test results on the Series/Model 3580, horizontal sliding window is listed below.

ATI Data File No.	Glazing Option (Nominal Dimensions)	* Operating Force Pass/Fail	** Air Infiltration	STC	OITC
75311.01A	29/32" IG (3/32" annealed exterior, 11/16" air space, 1/8" annealed interior) Glass temperature - 74F	Pass	Pass	32	25
75311.01B	7/8" IG (1/8" annealed exterior, 9/16" air space, 3/16" annealed interior) Glass temperature - 75F	Pass	Pass	29	23

* *The maximum allowable operating force, according to AAMA/WDMA/CSA 101/I.S.2/A440, is20 lbs for Residential performance class, dual horizontal sliding windows.*

** *The maximum allowable air leakage rate, according to AAMA/WDMA/CSA 101/I.S.2/A440, is 0.3 cfm/ft^2 when the test pressure is 1.57 psf for Residential performance class, dual horizontal sliding windows.*

The complete test results are listed in Appendix B. Flanking limit tests and reference specimen tests are available upon request.

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. 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: Kurt A. Golden

Kurt A. Golden
Senior Technician - Acoustical Testing

Digitally Signed by: Todd D. Kister

Todd D. Kister
Laboratory Supervisor - Acoustical Testing

KAG:crc

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

- Appendix-A: Equipment description (1)
- Appendix-B: Complete test results (8)
- Appendix-C: Drawings (18)
- Appendix-D: Photographs (1)

Revision Log

Rev. #	Date	Page(s)	Revision(s)
0	11/02/07	N/A	Original Report Issue

Appendix A

Instrumentation:

Instrument	Manufacturer	Model	Description	ATI Number
Analyzer	Agilent Technologies	35670A	Dynamic signal analyzer	Y002929
Receive Room Microphone	G.R.A.S.	40AR	1/2", pressure type, condenser microphone	Y003246
Source Room Microphone	G.R.A.S.	40AR	1/2", pressure type, condenser microphone	Y003245
Receive Room Preamp	G.R.A.S.	26AK	1/2" preamplifier	Y003249
Source Room Preamp	G.R.A.S.	26AK	1/2" preamplifier	Y003248
Microphone Calibrator	Bruel & Kjaer	4228	Pistonphone calibrator	Y002816
Noise Source	Delta Electronics	SNG-1	Two, non-coherelated "Pink" noise signals	Y002181
Equalizer	Rane	RPE228	Programmable EQ	Y002180
Power Amplifiers	Renkus-Heinz	P2000	2 - Amplifiers	Y002179 Y001779
Receive Room Loudspeakers	Renkus-Heinz	Trap Jr/9"	2 - Loudspeakers	Y001784 Y001785
Source Room Loudspeakers	Renkus-Heinz	Trap Jr/9"	2 - Loudspeakers	Y002649 Y002650
Lab Pack	ATI	N/A	Air leakage apparatus	Y000370
Force Gauge	Chatillon	LG-050	Force gauge	004774

Test Chamber:

	Volume	Description
Receiving Room	8291.3 ft^3 (234 m^3)	Rotating vane and stationary diffusers. Temperature and humidity controlled. Isolation pads under the floor.
Source Room	7296.3 ft^3 (206.6 m^3)	Stationary diffusers only. Temperature and humidity controlled.

	Maximum Size	Description
TL Test Opening	14 ft wide by 10 ft high	Vibration break between source and receive rooms.

Appendix B

Complete Test Results

SOUND TRANSMISSION LOSS

ASTM E90

Architectural Testing

ATI No.	75311.01A	**Date**	10/09/07
Client	MI Windows and Doors, Inc.		
Specimen	Series Model 3580, horizontal sliding window with 29/32" IG (3/32" annealed exterior, 11/16" air space, 1/8" annealed interior) Glass temperature 74F		
Specimen Area	24.00 Sq Ft		
Filler Area	116.00 Sq Ft		
Operator	Kurt A. Golden		

	Bkgrd	Absorp	Source	Receive	Filler	Specimen
Temp F	74.5	75.9	74.1	74.8	71.8	74.8
RH %	43.0	41.4	44.9	42.8	62.9	43.0

Freq (Hz)	Bkgrd SPL (dB)	Absorp (Sabines /Sq Ft)	Source SPL (dB)	Receive SPL (dB)	Filler TL (dB)	Specimen TL (dB)	95% Conf Limit	No. of Defici-encies	Trans Coef Diff
80	46.8	53.6	86.6	61.2	36.1	23	2.55	0	7.4
100	42.9	51.0	88.9	66.5	39.3	19	3.11	0	13.4
125	42.4	52.0	94.5	66.5	45.7	25	2.99	0	14.2
160	46.5	51.3	95.6	71.9	45.8	20	1.23	0	18.5
200	48.2	53.6	100.2	82.8	48.9	14	0.99	8	28.1
250	43.0	54.1	101.5	78.1	51.4	20	1.65	5	24.7
315	39.8	59.4	99.9	71.7	54.0	24	1.11	4	22.8
400	35.7	61.9	99.8	68.6	57.4	27	0.61	4	23.4
500	33.3	57.9	100.9	67.3	60.4	30	0.68	2	23.8
630	31.9	59.2	103.2	68.3	65.4	31	0.52	2	27.6
800	31.3	62.0	103.1	64.8	66.4	34	0.64	0	25.3
1000	27.8	65.1	102.5	63.6	72.1	35	0.59	0	30.6
1250	26.7	68.7	105.9	66.3	77.8	35	0.17	1	36.0
1600	22.0	73.3	112.2	73.1	82.9	34	0.35	2	41.8
2000	16.1	78.5	108.0	66.0	82.2	37	0.43	0	38.5
2500	10.4	91.6	106.5	64.1	77.7	37	0.26	0	34.3
3150	8.6	109.9	107.6	65.5	80.1	35	0.45	1	37.8
4000	7.4	130.0	106.1	64.2	82.2	35	0.31	1	40.7
5000	7.5	175.0	104.5	58.5	80.8	37	0.33	0	36.6

STC Rating =	**32**	*(Sound Transmission Class)*
Deficiencies =	**30**	*(Number of deficiencies versus contour curve)*
OITC Rating =	**25**	*(Outdoor/Indoor Transmission Class)*

Note: *The acoustical chambers are qualified for measurements down to 80 hertz. Data reported below 80 hertz is for reference only.*

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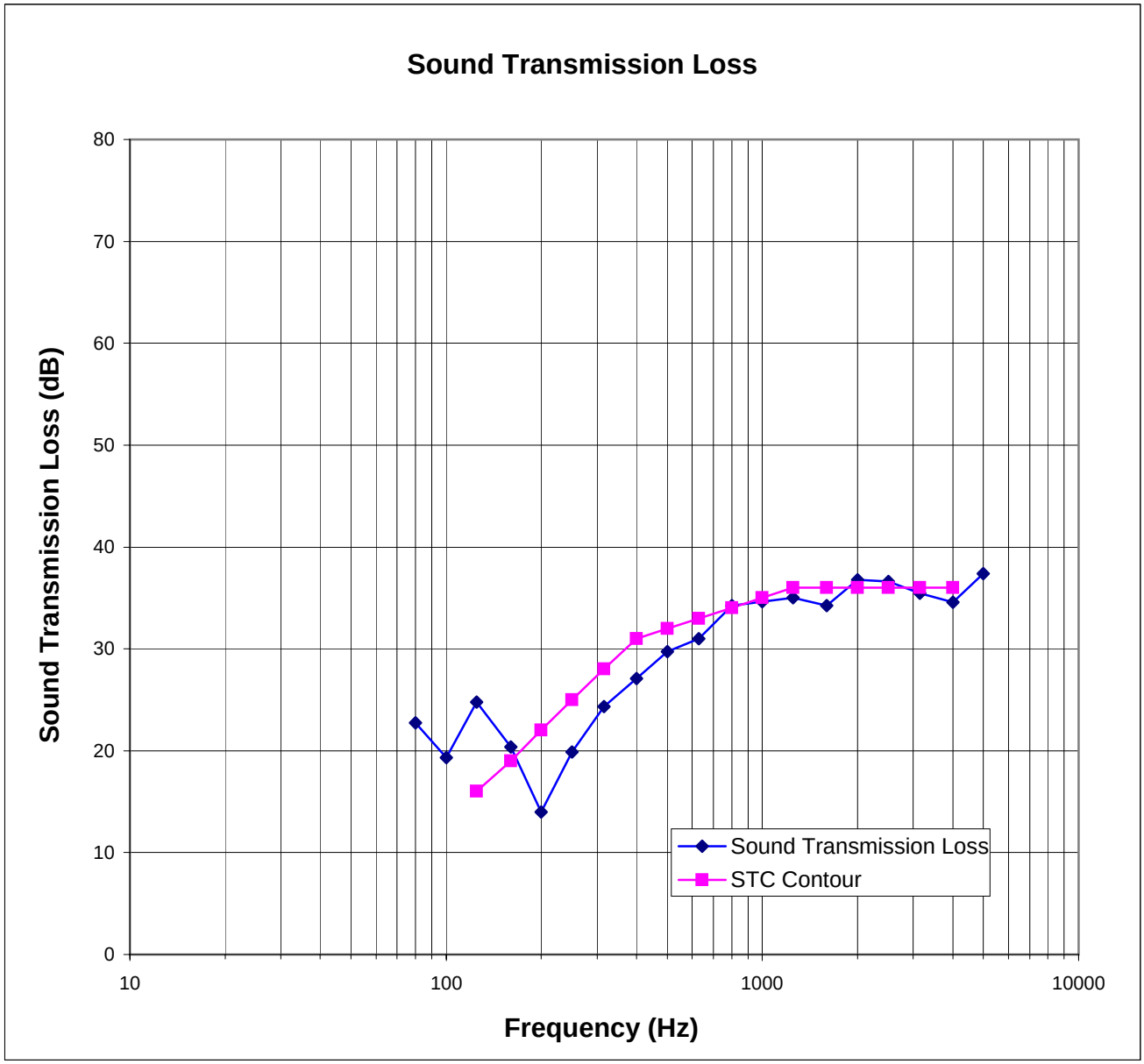
Architectural Testing

ATI No.	75311.01A	**Date**	10/09/07
Client	MI Windows and Doors, Inc.		
Specimen	Series Model 3580, horizontal sliding window with 29/32" IG (3/32" annealed exterior, 11/16" air space, 1/8" annealed interior) Glass temperature 74F		
Specimen Area	24.00 Sq Ft		
Filler Area	116.00 Sq Ft		
Operator	Kurt A. Golden		



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AAMA 1801 Data Sheets

ATI Job Number :	75311.01A
Client Name :	MI Windows and Doors, Inc.
Test Date :	10/9/2007
Tests Performed by:	Kurt Golden
Specimen Type :	Horizontal Sliding Window
Series/Model Number :	3580
Sample Size :	48" x 72"

Air Leakage per ASTM test method ASTM E283

Total Air flow (ft^3/min) :	9.25		
Extraneous Leakage (ft3/min) :	7.00		
Temperature (^oF) at Specimen:	74		
Barometric Pressure at Specimen (in mbar):	1003	(Inches of Hg) :	29.62
Specimen Area in square feet :	24.00		
Density of air at reference standard conditions (lb/ft^3)	0.075		

Total air flow w/ air density correction (ft3/min)	Extraneous leakage with air density correction (ft3/min)	Air leakage through the specimen with air density correction (ft3/min)	Rate of air leakage per unit area (ft3/min)/sq.ft.
9.160	6.932	2.228	0.09

ATI Job Number : 75311.01A
Client Name : MI Windows and Doors, Inc.
Test Date : 10/09/07
Tests Performed by: Kurt Golden
Specimen Type : Horizontal Sliding Window
Series/Model Number : 3580
Sample Size : 48" x 72"

Operating Force per ASTM test method E2068 Method B - Force Gauge Y004774

Top Sash

Trial No.	Opening Breakaway	Opening In-Motion	Closing Breakaway	Closing In-Motion
1	11	11	9	10
2	11	12	10	10
3	11	11	10	11

3 Trial Ave.	11.00	11.33	9.67	10.33
10% of 3 trial avg	1.1	1.1	1.0	1.0
8 Trial Average w/o high & low	11.0	11.3	9.7	10.3

SOUND TRANSMISSION LOSS

ASTM E90

Architectural Testing

ATI No.	75311.01B	**Date**	10/09/07
Client	MI Windows and Doors, Inc.		
Specimen	Series Model 3580, horizontal sliding window with 7/8" IG (1/8" annealed exterior, 9/16" air space, 3/16" annealed interior) Glass temperature 75F		
Specimen Area	24.00 Sq Ft		
Filler Area	116.00 Sq Ft		
Operator	Kurt A. Golden		

	Bkgrd	Absorp	Source	Receive	Filler	Specimen
Temp F	74.7	75.8	74.1	75.1	71.8	75.0
RH %	44.7	42.9	45.2	43.9	62.9	44.2

Freq (Hz)	Bkgrd SPL (dB)	Absorp (Sabines /Sq Ft)	Source SPL (dB)	Receive SPL (dB)	Filler TL (dB)	Specimen TL (dB)	95% Conf Limit	No. of Defici-encies	Trans Coef Diff
80	45.3	55.6	86.8	62.4	36.1	21	1.80	0	8.5
100	44.0	53.5	88.7	69.2	39.3	16	2.71	0	16.4
125	42.4	50.7	94.6	69.1	45.7	22	3.29	0	16.6
160	45.8	51.3	95.7	73.7	45.8	19	1.14	0	20.2
200	46.4	53.7	100.5	79.7	48.9	17	1.05	2	24.8
250	41.1	58.1	101.3	83.3	51.4	14	1.73	8	30.4
315	39.4	62.6	99.7	77.2	54.0	18	1.06	7	28.7
400	37.5	64.8	99.7	73.5	57.4	22	0.49	6	28.7
500	34.0	63.7	100.7	72.2	60.4	24	0.70	5	29.2
630	27.2	58.5	103.1	71.2	65.4	28	0.61	2	30.6
800	28.1	60.6	103.2	68.5	66.4	31	0.61	0	28.9
1000	26.1	63.4	102.5	66.7	72.1	32	0.53	0	33.6
1250	26.2	70.8	105.8	68.1	77.8	33	0.32	0	38.0
1600	21.6	74.2	112.3	74.1	82.9	33	0.37	0	42.7
2000	15.8	78.7	107.9	66.7	82.2	36	0.33	0	39.3
2500	11.2	90.4	106.5	61.1	77.7	40	0.24	0	31.2
3150	10.7	106.3	107.5	60.8	80.1	40	0.30	0	33.0
4000	9.5	130.9	106.2	61.5	82.2	37	0.31	0	38.0
5000	8.5	171.2	104.6	62.2	80.8	34	0.41	0	40.1

STC Rating = **29** *(Sound Transmission Class)*
Deficiencies = **30** *(Number of deficiencies versus contour curve)*
OITC Rating = **23** *(Outdoor/Indoor Transmission Class)*

Note: *The acoustical chambers are qualified for measurements down to 80 hertz. Data reported below 80 hertz is for reference only.*

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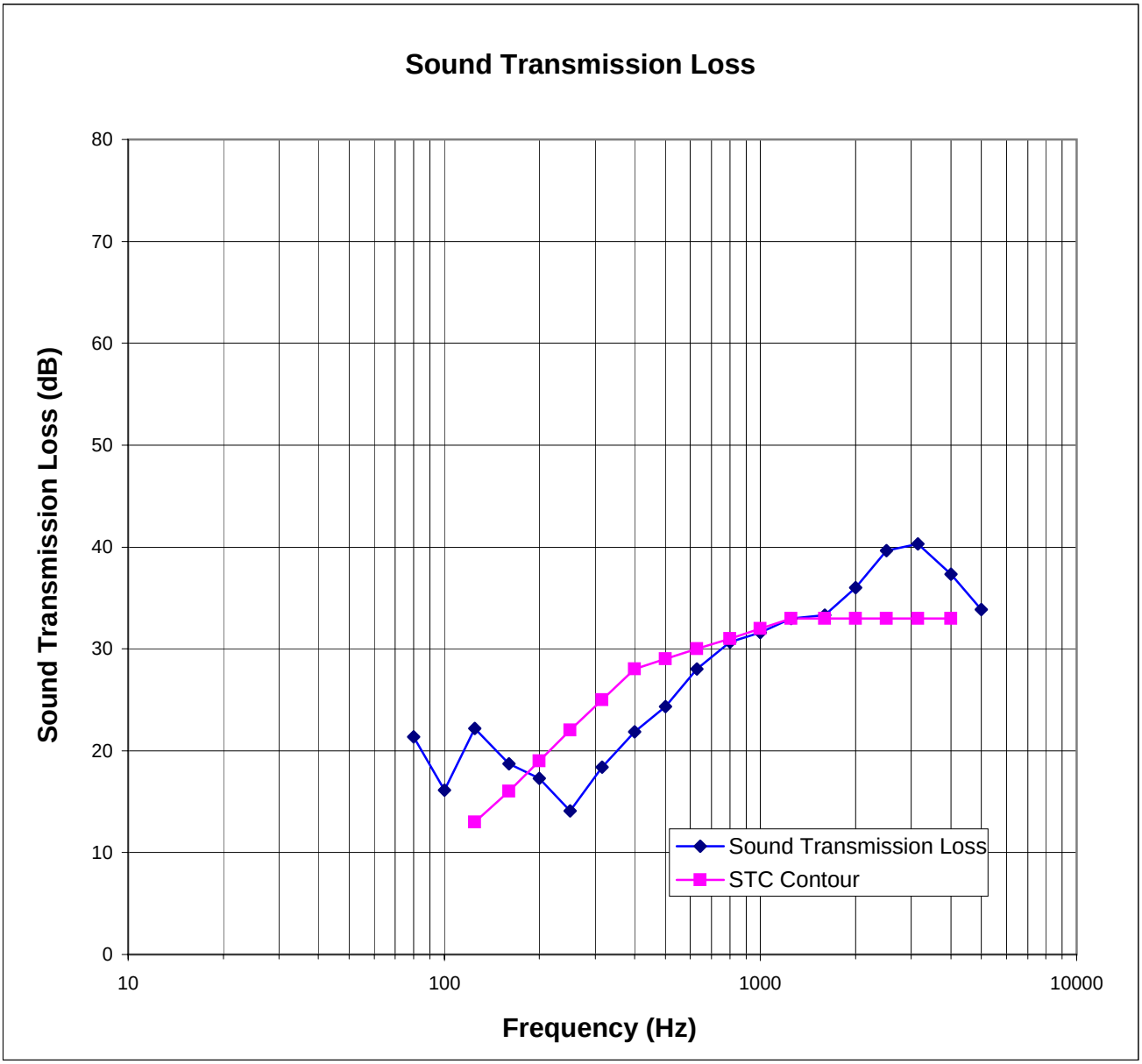
Architectural Testing

ATI No.	75311.01B	**Date**	10/09/07
Client	MI Windows and Doors, Inc.		
Specimen	Series Model 3580, horizontal sliding window with 7/8" IG (1/8" annealed exterior, 9/16" air space, 3/16" annealed interior) Glass temperature 75F		
Specimen Area	24.00 Sq Ft		
Filler Area	116.00 Sq Ft		
Operator	Kurt A. Golden		



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AAMA 1801 Data Sheets

ATI Job Number :	75311.01B
Client Name :	MI Windows and Doors, Inc.
Test Date :	10/9/2007
Tests Performed by:	Kurt Golden
Specimen Type :	Horizontal Sliding Window
Series/Model Number :	3580
Sample Size :	48" x 72"

Architectural Testing

Air Leakage per ASTM test method ASTM E283

Total Air flow (ft^3/min) :	6.75		
Extraneous Leakage (ft3/min) :	5.00		
Temperature (^oF) at Specimen:	74		
Barometric Pressure at Specimen (in mbar):	1000	(Inches of Hg) :	29.53
Specimen Area in square feet :	24.00		
Density of air at reference standard conditions (lb/ft^3)	0.075		

Total air flow w/ air density correction (ft3/min)	Extraneous leakage with air density correction (ft3/min)	Air leakage through the specimen with air density correction (ft3/min)	Rate of air leakage per unit area (ft3/min)/sq.ft.
6.674	4.944	1.730	0.07

ATI Job Number : 75311.01B
Client Name : MI Windows and Doors, Inc.
Test Date : 10/09/07
Tests Performed by: Kurt Golden
Specimen Type : Horizontal Sliding Window
Series/Model Number : 3580
Sample Size : 48" x 72"

Operating Force per ASTM test method E2068 Method B - Force Gauge Y004774

Active Sash

Trial No.	Opening Breakaway	Opening In-Motion	Closing Breakaway	Closing In-Motion
1	16	18	19	18
2	16	17	19	18
3	17	17	18	18

3 Trial Ave.	16.33	17.33	18.67	18.00
10% of 3 trial avg	1.6	1.7	1.9	1.8
8 Trial Average w/o high & low	16.3	17.3	18.7	18.0

Appendix C

Design Drawings

BILL OF MATERIAL

3580 Horizontal Slider – Insulated

No.	PART DESCRIPTION	PART No.	REQ'D	VENDOR	FINISH	COST or WT/FT
	---------- VINYL EXTRUSIONS ----------					
1	Frame	V-735	4	PROPLASTIX	–	–
2	Roller Track Snap-In	V-569	1	PROPLASTIX	–	–
3	Fixed Meeting Rail	V-321	1	PROPLASTIX	–	–
4	Fixed Glazing Bead	V-324	4	PROPLASTIX	–	–
5	Sash Glazing Bead	V-782	2	PROPLASTIX	–	–
6	Glazing Bead w/Lift Rail	V-702	2	PROPLASTIX	–	–
7	Sash	V-451	4	PROPLASTIX	–	–
8	Mullion	V-023	–	PROPLASTIX	–	–
	---------- STEEL ROLL-FORMS ----------					
9	Sash Liner	GVL-451	2	RiteScreen	–	–
10	Meeting Rail Liner	RF-104	1	RiteScreen	–	–
	---------- HARDWARE ----------					
11	Sweep Lock	A30590402 A30590403	2	Truth/Stevens	–	–
12	Keeper	C30643	2	Truth/Stevens	–	–
13	Roller Housing – Single	GI-301-1	2	ProPlastix	–	–
	Roller Housing – Tandem (Optional)	GI-301-2	2	ProPlastix	–	–
	---------- SCREEN COMPONENTS ----------					
14	Aluminum Screen Frame	RF-105	2/2	RiteScreen	–	–
15	Screen Frame Corner	205-P	4	PROPLASTIX	–	–
16	Fiberglass Mesh	18 x 16	1	Phifer	–	–
17	Vinyl Screen Spline	800-.145	1	PROPLASTIX	–	–
18	Screen Plunger	315	2	Jaysix	–	–
19	Screen Plunger Cap	I-174	2	PROPLASTIX	–	–
20	Screen Plunger Spring	411	2	PROPLASTIX	–	–
	---------- MISCELLANEOUS COMPONENTS ----------					
21	Meeting Rail End Clip	I-175	2	PROPLASTIX	–	–
	---------- SCREWS ----------					
22	Lock Screws	#6x1 F.H.	4	Various	–	–
23	Keeper Screws	#6x1 F.H.	4	Various	–	–
24	Sash Liner Screws	#6x5/8 T.H.	–	Various	–	–
25	End Clip to Meeting Rail Screws	#6x1 1/4	6	Various	–	–
26	Meeting Rail to Mainframe Screws	#6x5/8	4	Various	–	–
	---------- WEATHERSEALS ----------					
27	Fin Weatherstrip	.187x.230	AR	Amesbury	–	–
28	Bulb	32668	1	Amesbury	–	–
29	Q-Lon Meeting Rail Bulb	XC-1421	1	Amesbury	–	–
	---------- GLAZING COMPONENTS ----------					
–	7/8" Insulated	SS,DS	2	–	–	–
–	11/16" Intercept	For SS	AR	–	–	–
–	5/8" Intercept	For DS	AR	–	–	–
–	Glazing Tape (Fixed)	1/16x1/4 DBL	AR	Tom Brown	–	–
–	Sash Glazing Tape	1/16x1/4 DBL	AR	Tom Brown	–	–
–	Glass Setting Block	–	2	Secon	–	–

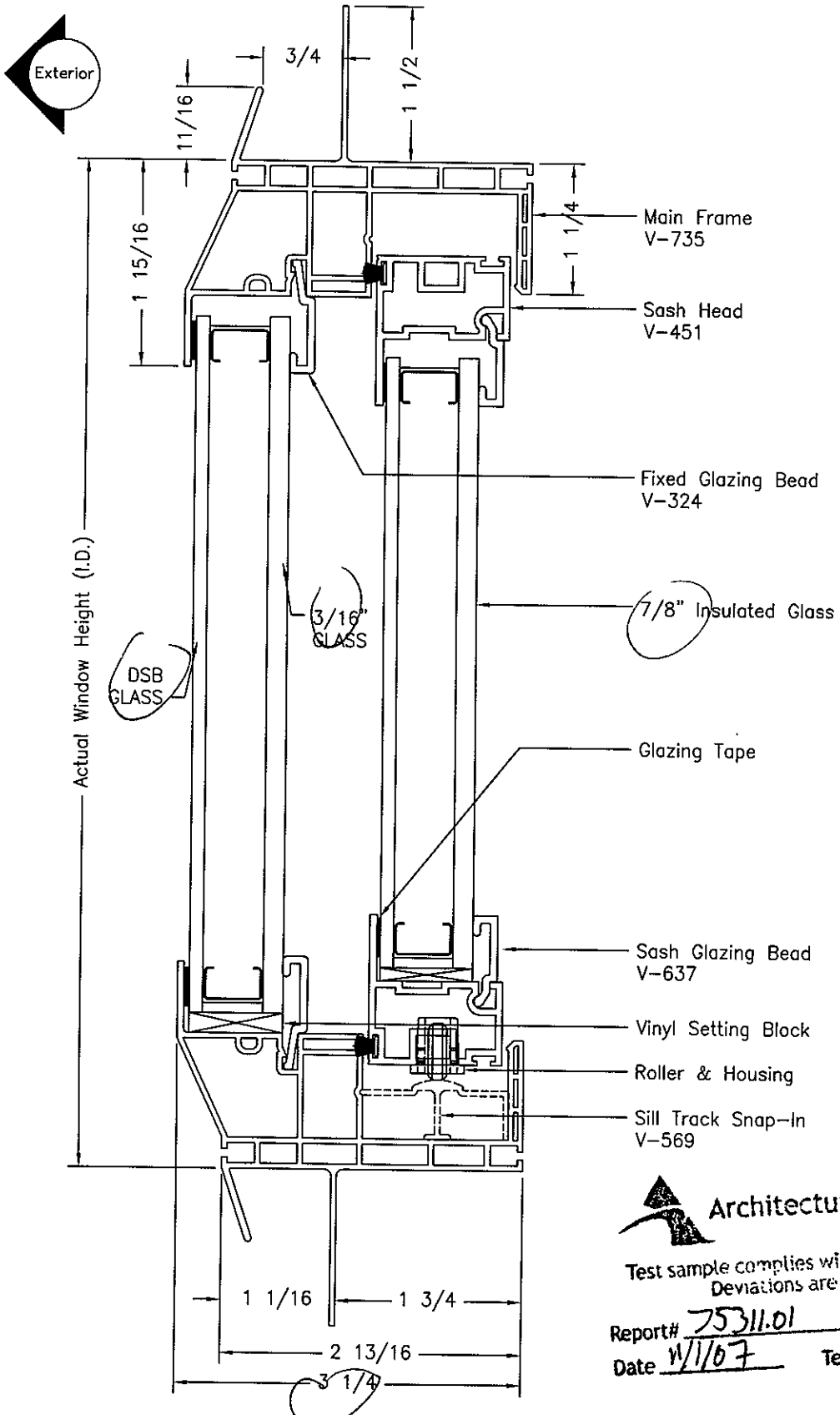
Report# 7531 Tech [illegible] Date 11/2/07

Test sample complies with these details. Deviations are noted.

Architectural Testing

Rev 10/25/06

3580-AS1a | –



Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 75311.01

Date 11/1/07 Tech JMS

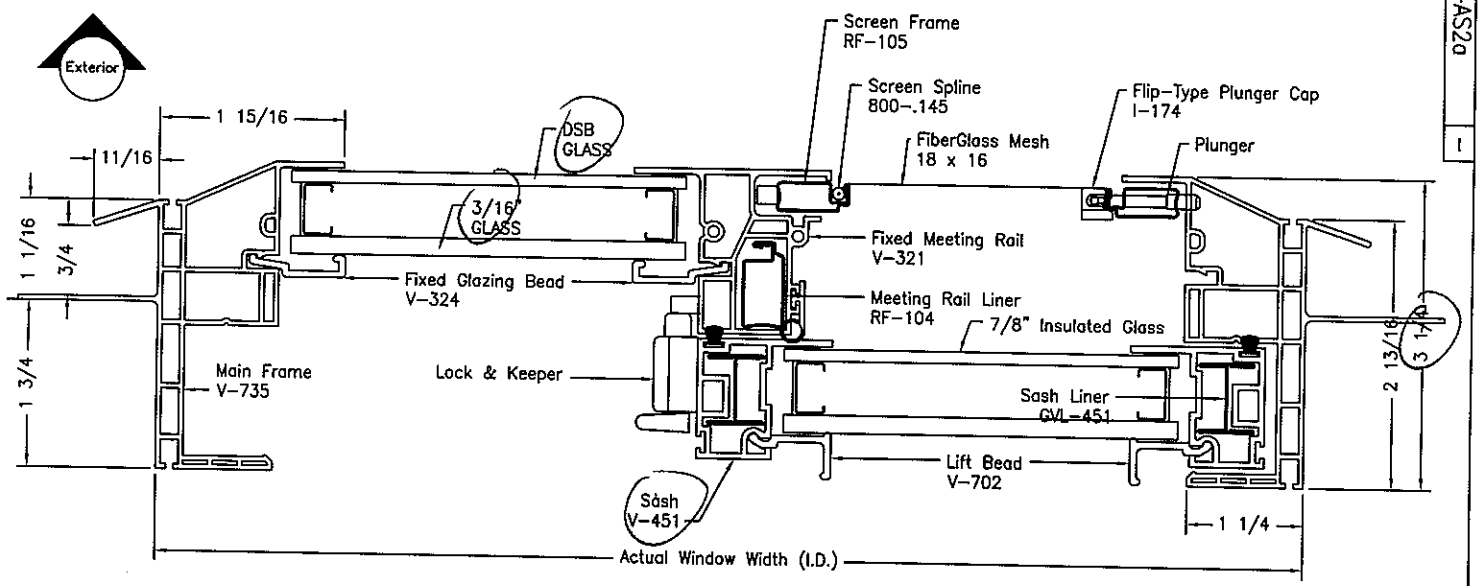
LTR	DESCRIPTION REVISIONS	BY	DATE
–	–	–	–
–	–	–	–
–	–	–	–
–	–	–	–

MI WINDOWS AND DOORS
650 WEST MARKET STREET • GRATZ, PA • 17030-0370

TITLE 3580 Vinyl Single Slider
Vertical Cross-Section (1" Fin Set-Back)

DFTM	DATE	SCALE	DWG/PART NO.	REV.
BRS	3/2/2005	Full	3580-AS1a	–

3580-AS2a



NO.	DESCRIPTION	BY	DATE
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-

MI WINDOWS AND DOORS
639 WEST MARKET STREET • ORITZ, PA • 17030-6270

TITLE: 3580 Vinyl Single Slider Horizontal Cross-Section (1" Fin Set-Back)

DRN.	DATE	SCALE	DWG/PART NO.	REV.
BRS	3/2/2005	Full	3580-AS2a	-

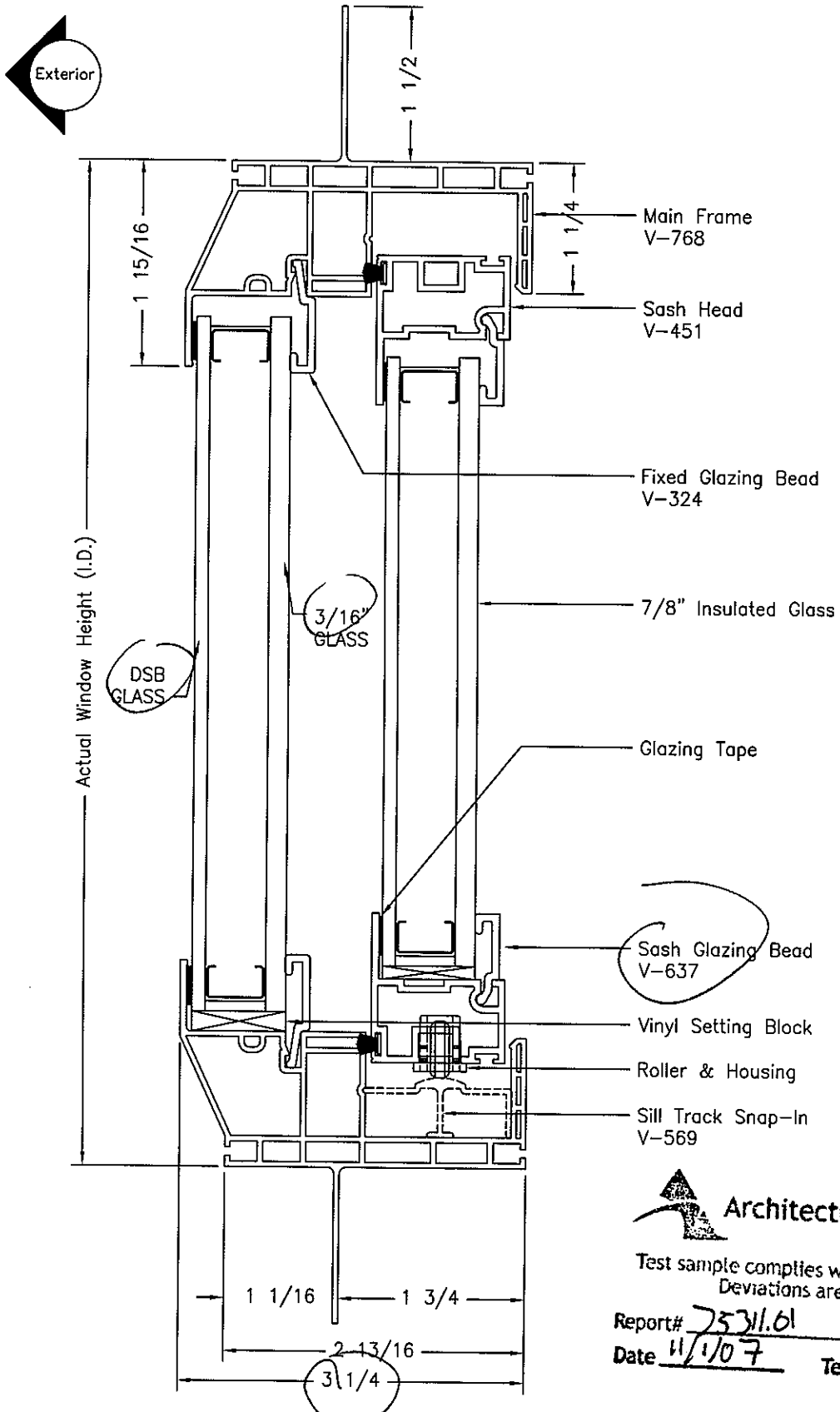
Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 25311.01

Date 11/1/07 Tech JMS

3580-AS1b | –



Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 25311.01

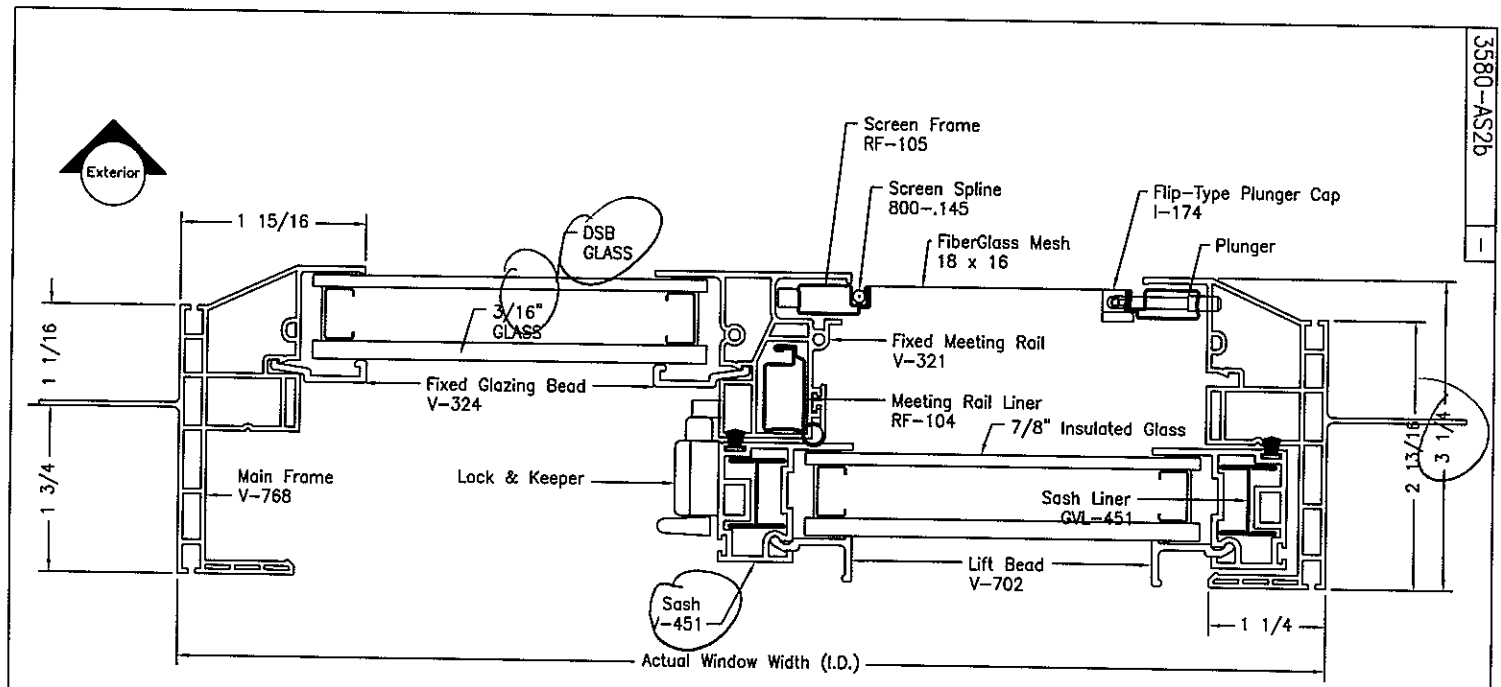
Date 11/1/07 Tech JMS

LTR	DESCRIPTION REVISIONS	BY	DATE
–	–	–	–
–	–	–	–
–	–	–	–
–	–	–	–

MI WINDOWS AND DOORS
650 WEST MARKET STREET • GRATZ, PA • 17030-0370

TITLE 3580 Vinyl Single Slider
Vertical Cross-Section (1" Fin Set-Back)

DFTM	DATE	SCALE	DWG/PART NO.	REV.
BRS	3/2/2005	Full	3580-AS1b	–



MI WINDOWS AND DOORS

TITLE: 3580 Vinyl Single Slider Horizontal Cross-Section (1" Fin Set-Back)

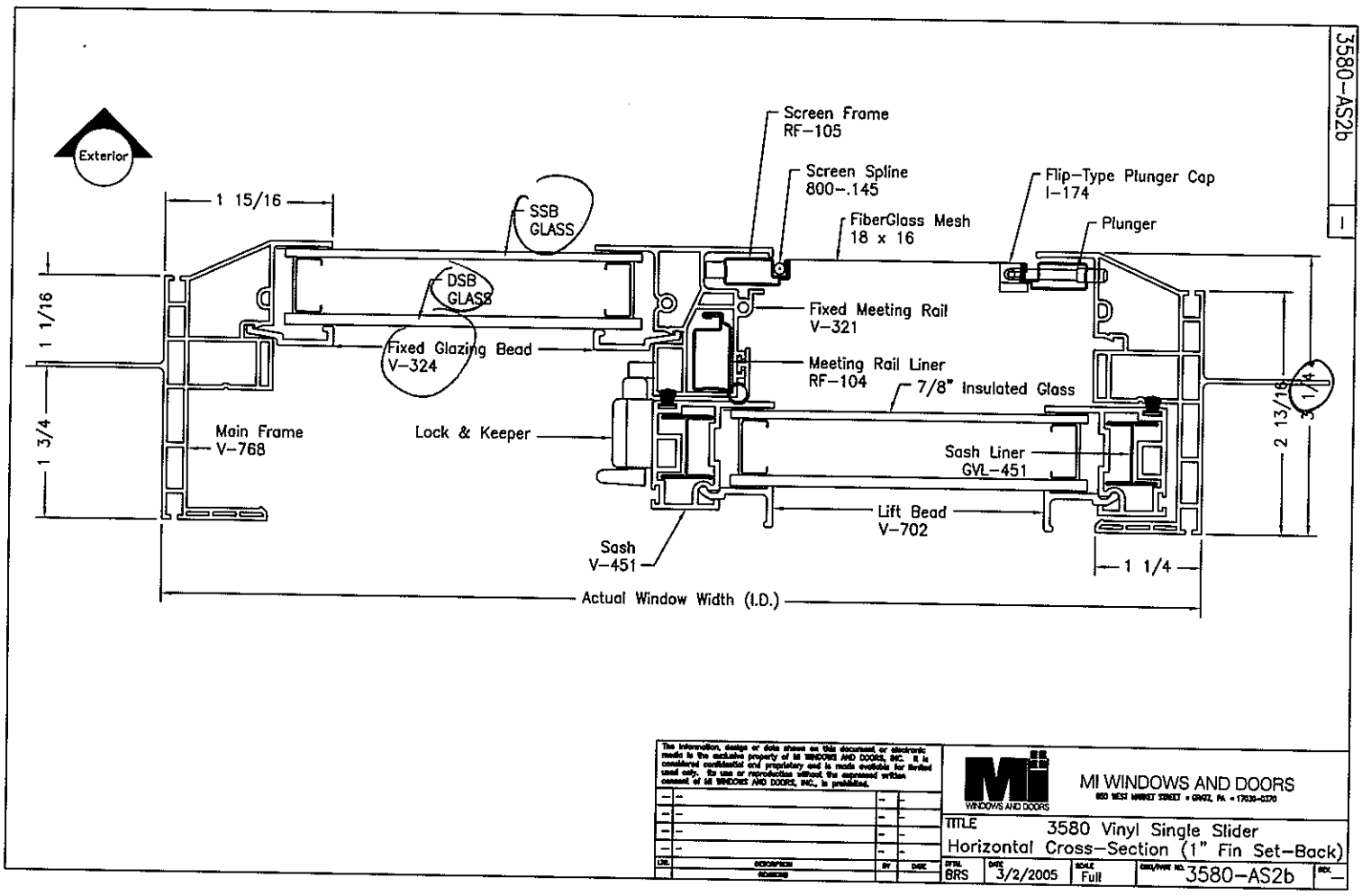
DRWN	DATE	SCALE	DWG/PART NO.	REV
BRS	3/2/2005	Full	3580-AS2b	-

Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 75311.01

Date 11/1/07 Tech BMS



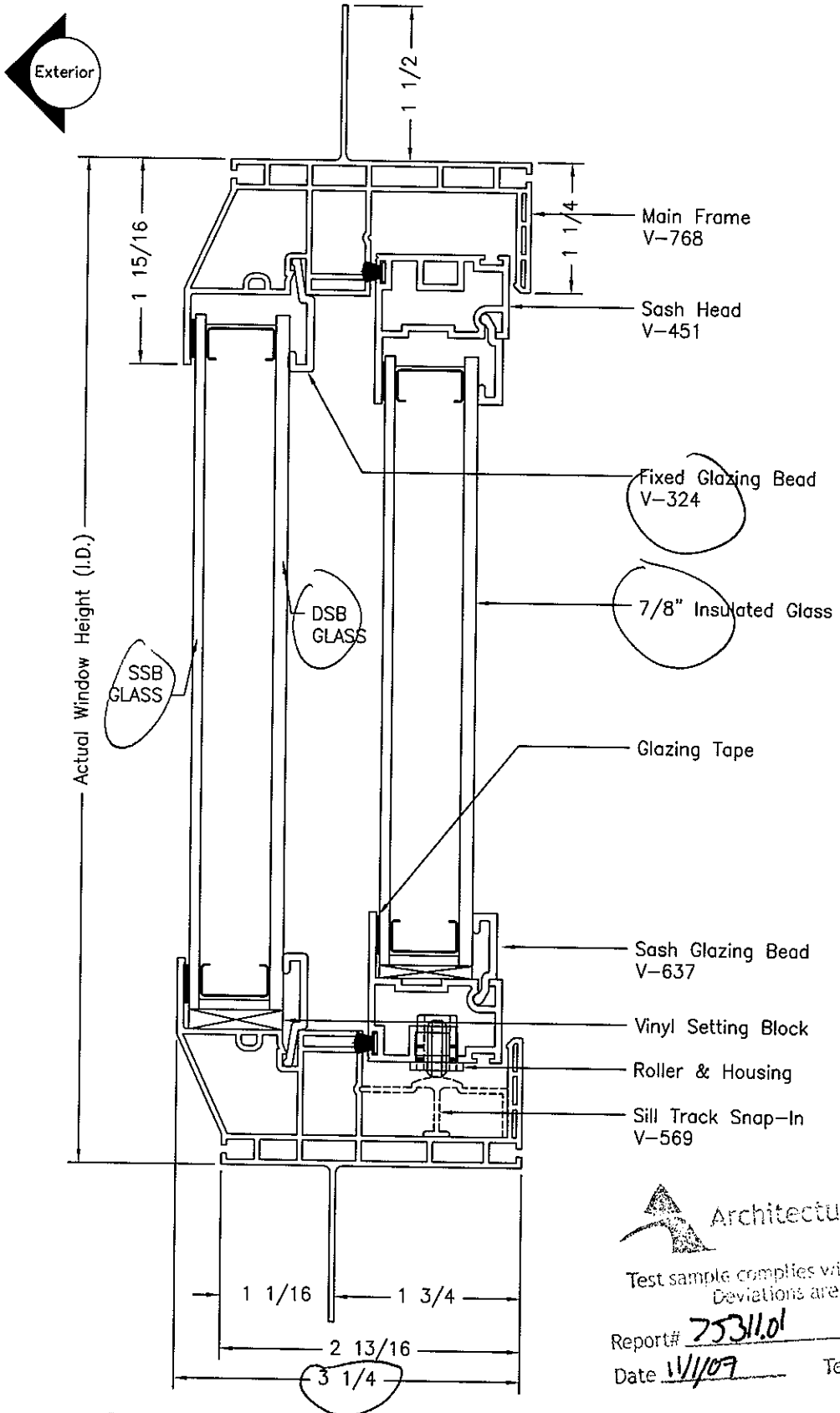
Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 233101

Date 11/1/07 Tech JMS

3580-AS1b



Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 75311.01

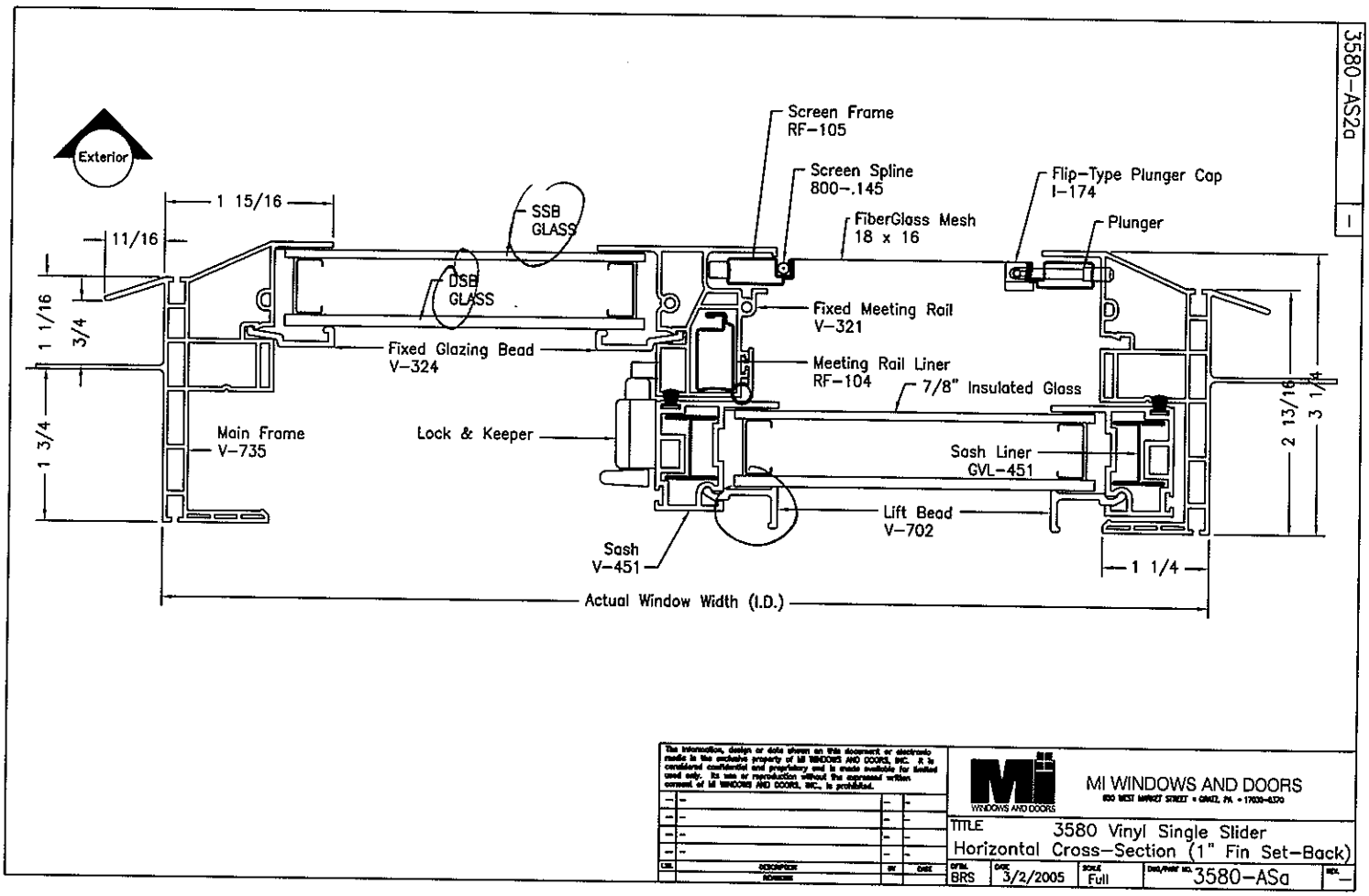
Date 11/1/09 Tech JMS

LTR	DESCRIPTION	BY	DATE
	REVISIONS		

MI WINDOWS AND DOORS
650 WEST MARKET STREET • GRATZ, PA • 17030-0370

TITLE 3580 Vinyl Single Slider
Vertical Cross-Section (1" Fin Set-Back)

DFTM	DATE	SCALE	DWG/PART NO.	REV.
BRS	3/2/2005	Full	3580-AS1b	-



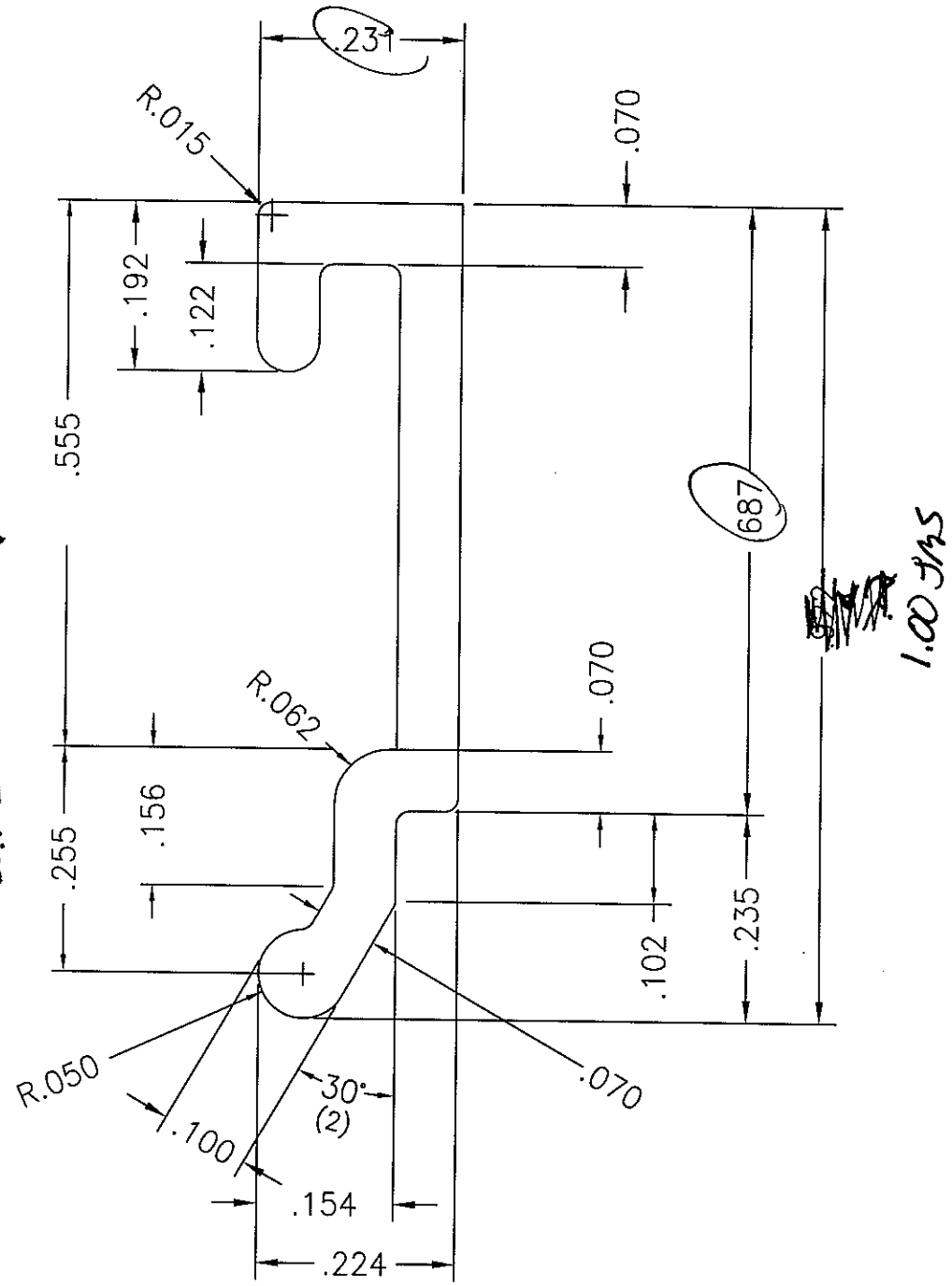
Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 753161

Date 11/1/07 Tech JMS

V-782 | B



1.00 JMS

Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 75311.01
Date 4/11/07
Tech JMJ

ACTUAL SIZE

NOTE:

MATERIAL – RIGID PVC
UNSPECIFIED WALL THICK. – .070
AREA – .091
WT/FT .058

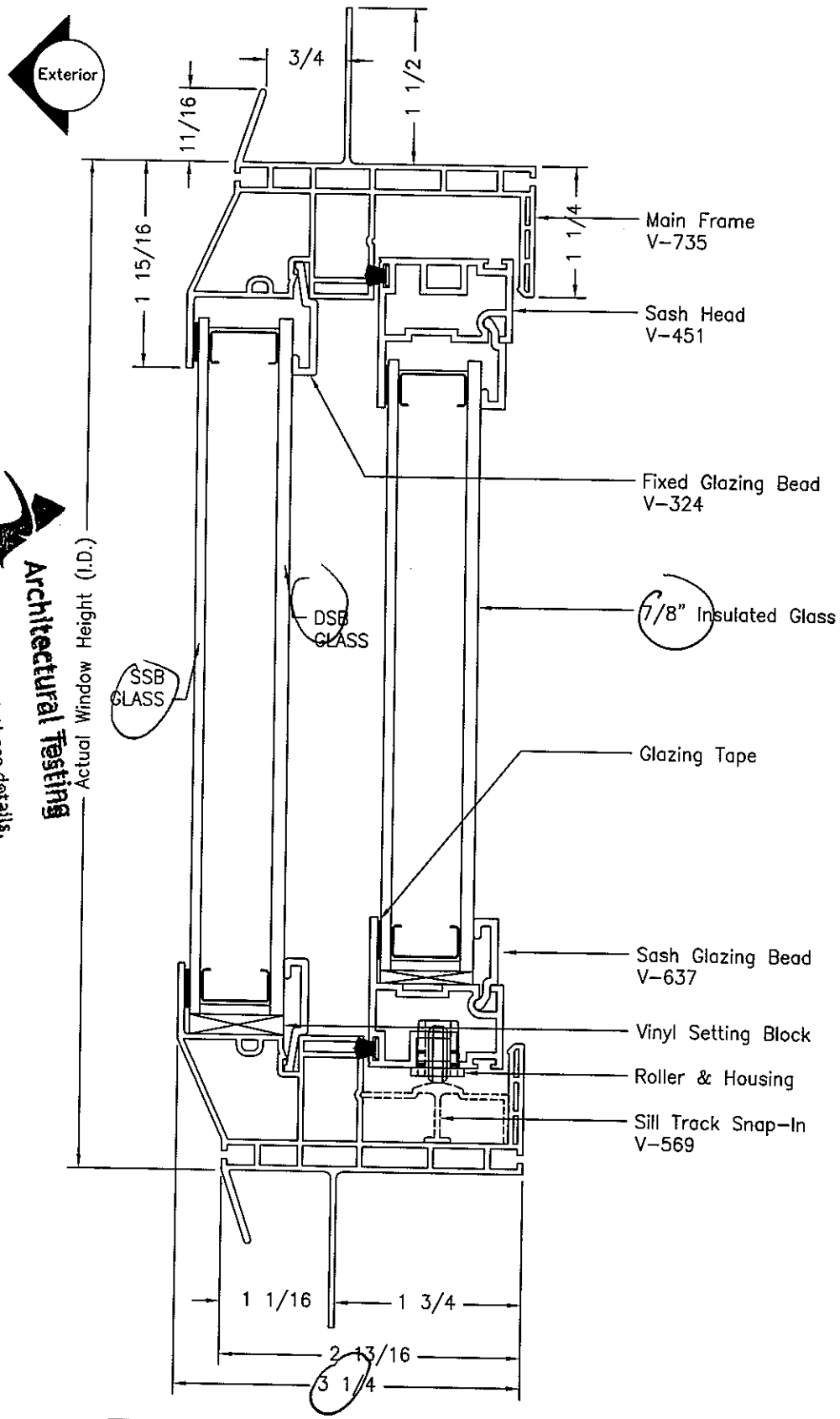
LTR.	DESCRIPTION	BY	DATE
	REVISIONS		

MI WINDOWS AND DOORS
650 WEST MARKET STREET • GRATZ, PA • 17030-0370

TITLE 3580 JMS ~~4500~~ SERIES SINGLE HUNG
PLAIN GLAZING BEAD

DFTM.	DATE	SCALE	DWG/PART NO.	REV.
V.M.R.	3-3-05	5:1	V-782	

3580-AS1a | -



Architectural Testing

Test sample complies with these details:
Deviations are noted:

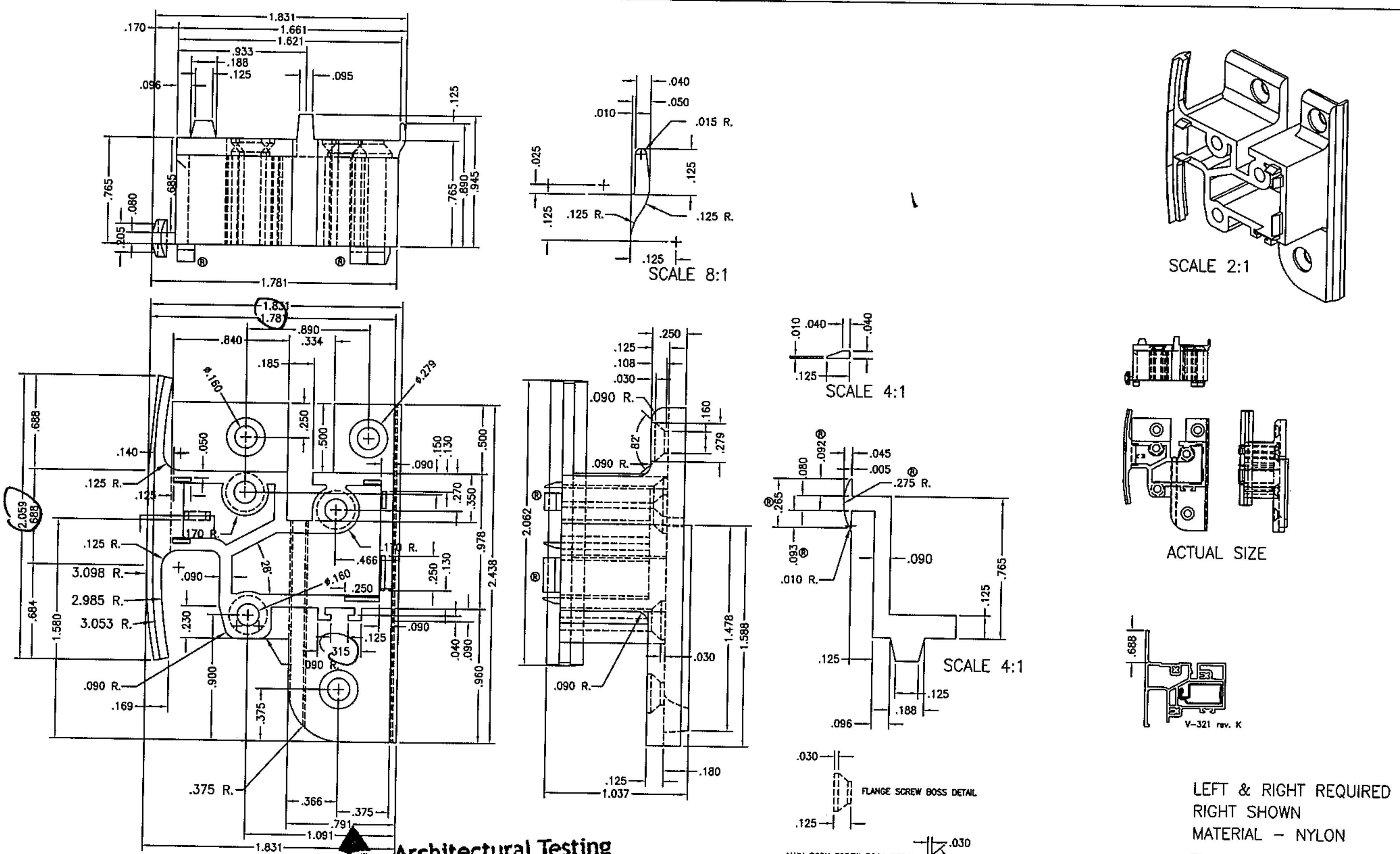
Report# 35301.01
Date 11/16/1
Tech JMS

LTR	DESCRIPTION REVISIONS	BY	DATE
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-

MI WINDOWS AND DOORS
650 WEST MARKET STREET • GRATZ, PA • 17030-0370

TITLE 3580 Vinyl Single Slider
Vertical Cross-Section (1" Fin Set-Back)

DFTM	DATE	SCALE	DWG/PART NO.	REV.
BRS	3/2/2005	Full	3580-AS1a	-



LEFT & RIGHT REQUIRED
RIGHT SHOWN
MATERIAL – NYLON

Architectural Testing

Test sample complies with these details.
~~Deviations are noted.~~

Report# 73311.01
Date 11/1/07 Tech JMS

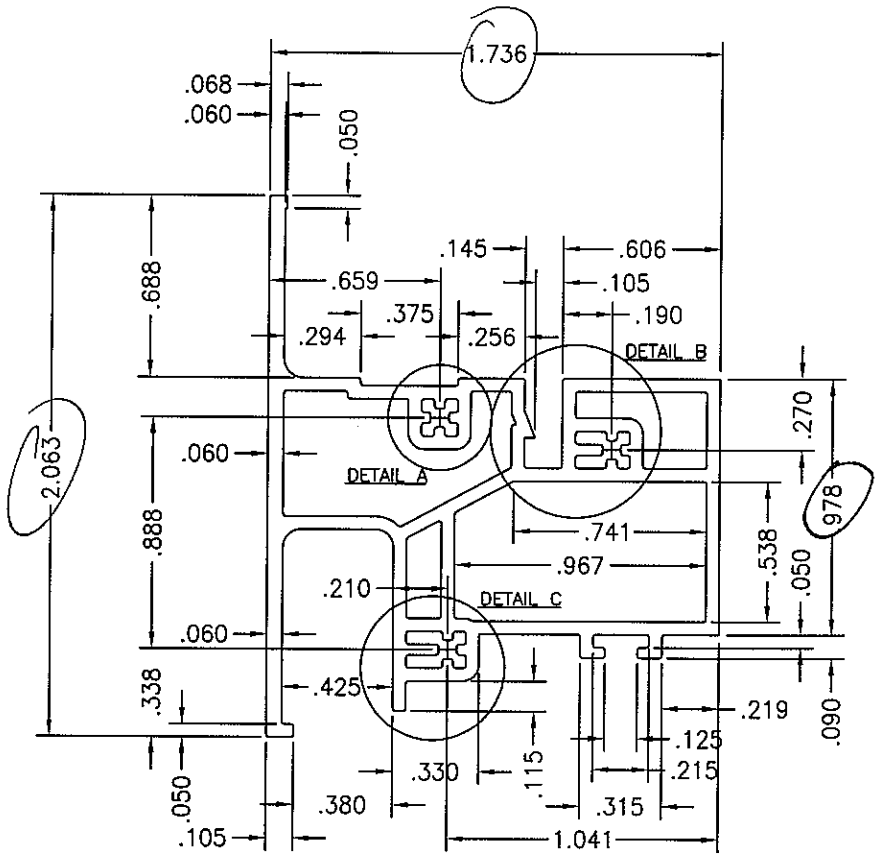
MI HOME PRODUCTS
650 WEST MARKET STREET • GRATZ, PA • 17030-0370

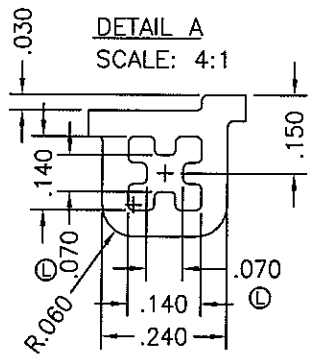
TITLE: ~~8500 & 8800~~ MEETING RAIL END PLUG

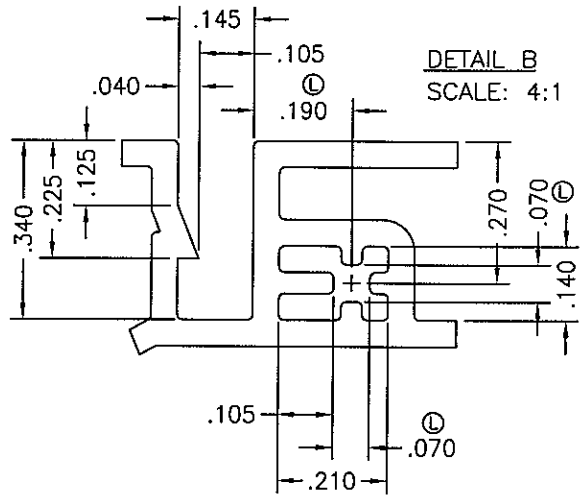
V.M.R. 12-13-94 | 3:1 | I-175 | R

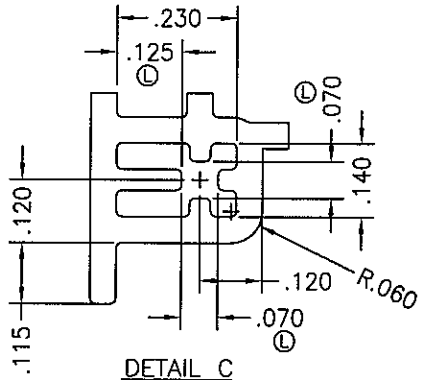
3580
JMS

V-321 L

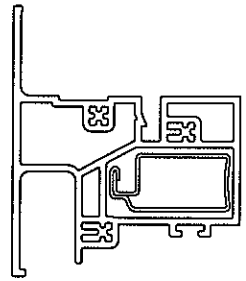






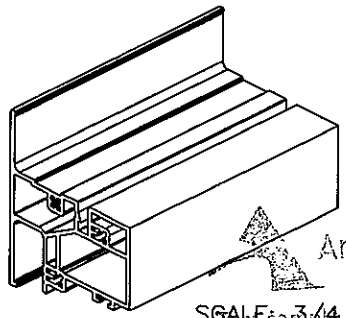


DETAIL C
SCALE: 4:1



ACTUAL SIZE

UNSPECIFIED WALL THICKNESS – .050
AREA – .572
WT./FT. – .362



SCALE: 3/4

Architectural Testing
Test sample complies with these details.
Deviations are noted.

Report# 75311.01
Date 11/1/07 Tech JMS

LTR.	DESCRIPTION / REVISIONS	BY	DATE
L	.070 WAS .100, ALL NUBS INCREASED .015	VR	6-4-04
K	REDSIGNED FOR HIGH SPEED TOOLING-3rd BOSS	VR	3-10-04
J	ADDED LEG AT SCREEN POCKET	VR	10/10/01

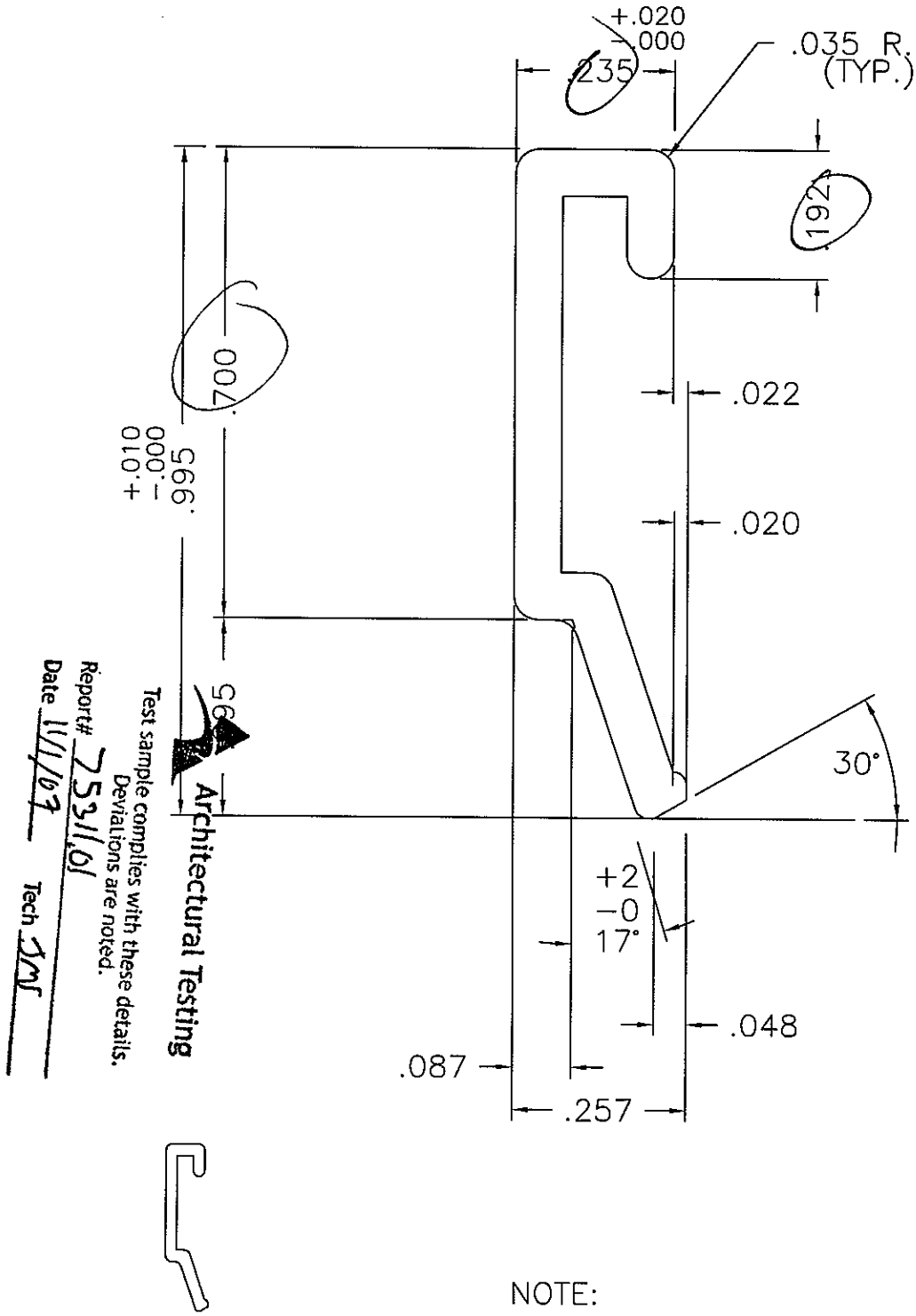
MI WINDOWS AND DOORS
650 WEST MARKET STREET • GRATZ, PA • 17030-0370

TITLE ~~3500/3540/~~TX3250/8500/8540/8880 3580 MEETING RAIL

DFTM	DATE	SCALE	DWG/PART NO.	REV.
V.M.R.	4-17-89	2:1	V-321	L

SMY

V-324 D



Test sample complies with these details.
Deviations are noted.
Report# 7531.01
Date 11/4/97
Tech JNS

Architectural Testing

ACTUAL SIZE

NOTE:
UNSPECIFIED WALL THICKNESS – .070
BREAK SHARP CORNERS & FILLETS– .015 R.

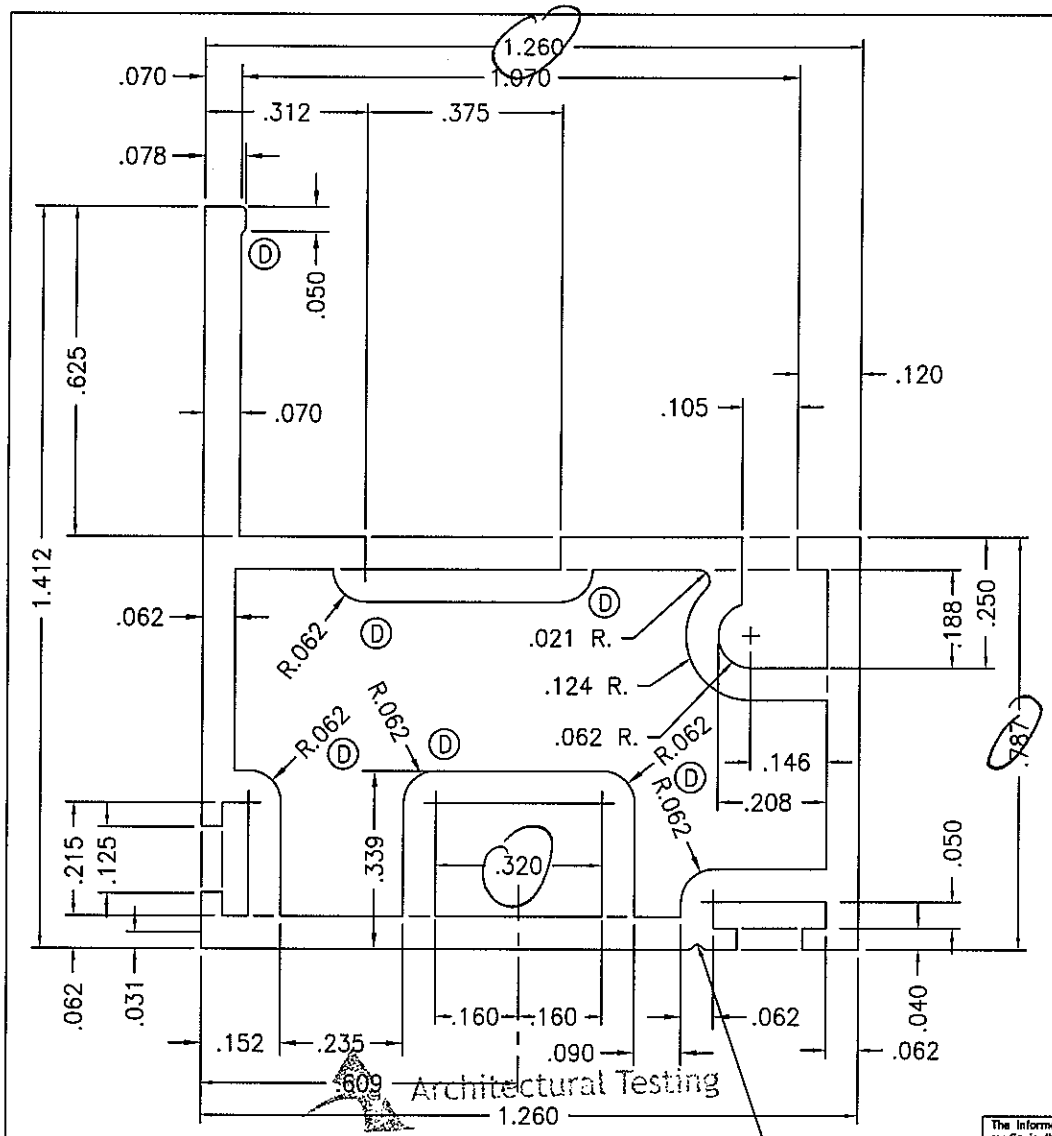
AREA – .099 PERIM – 2.924 WT./FT. – .056

LTR.	DESCRIPTION	BY	DATE
	REVISIONS		
D	.295 WAS .330 ADDED +2 –0	BE	5-29-97
C	UPDATED PRINT PER PLASTICS	VR	7-25-95
B	CHG'D NUB & REMOVED MASS	VR	1-8-91
A	ADDED TOL. & ADDED .062 AT TOP	VR	2-13-90

MI WINDOWS AND DOORS
650 WEST MARKET STREET • GRATZ, PA • 17030-0370

TITLE ~~3500/3540/TX3250/8500/8540/8880~~
3580 JNS FIXED PANEL GLAZING BEAD

DFTM.	DATE	SCALE	DWG/PART NO.	REV.
V.M.R.	4-18-89	4:1	V-324	D



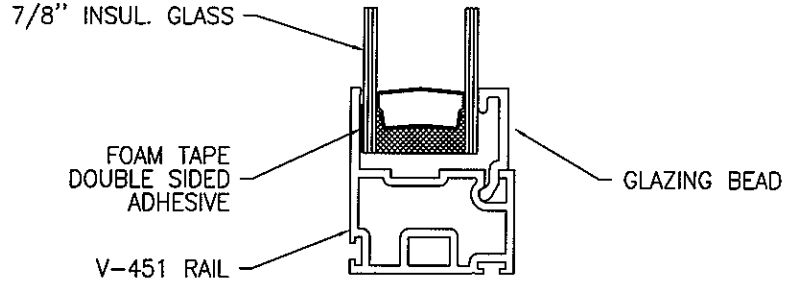
609 Architectural Testing

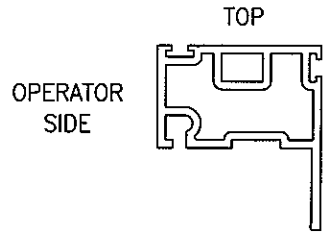
.010 R. x .011 DEEP Dimple MARK

Test sample complied with these test requirements.
Deviations are noted.

Report# 75311.01

Date 11/1/07 Tech JMS





UNSPECIFIED WALL THICKNESS – .062
MATERIAL – RIGID P.V.C.
COLOR – WHITE & ALMOND
AREA – .378
WT./FT. – .239

LTR.	DESCRIPTION	BY	DATE
	REVISIONS		
D	ADDED .008 X .050 NUB	VR	3-11-04
C	REMOVED NUB	VR	11-8-96
B	REVISION A NEVER MADE	VR	7-22-96
A	ADDED WALL TO HOLD PIVOT BAR AREA	VR	11-7-95

MI WINDOWS AND DOORS
650 WEST MARKET STREET • ORATZ, PA • 17030-0370

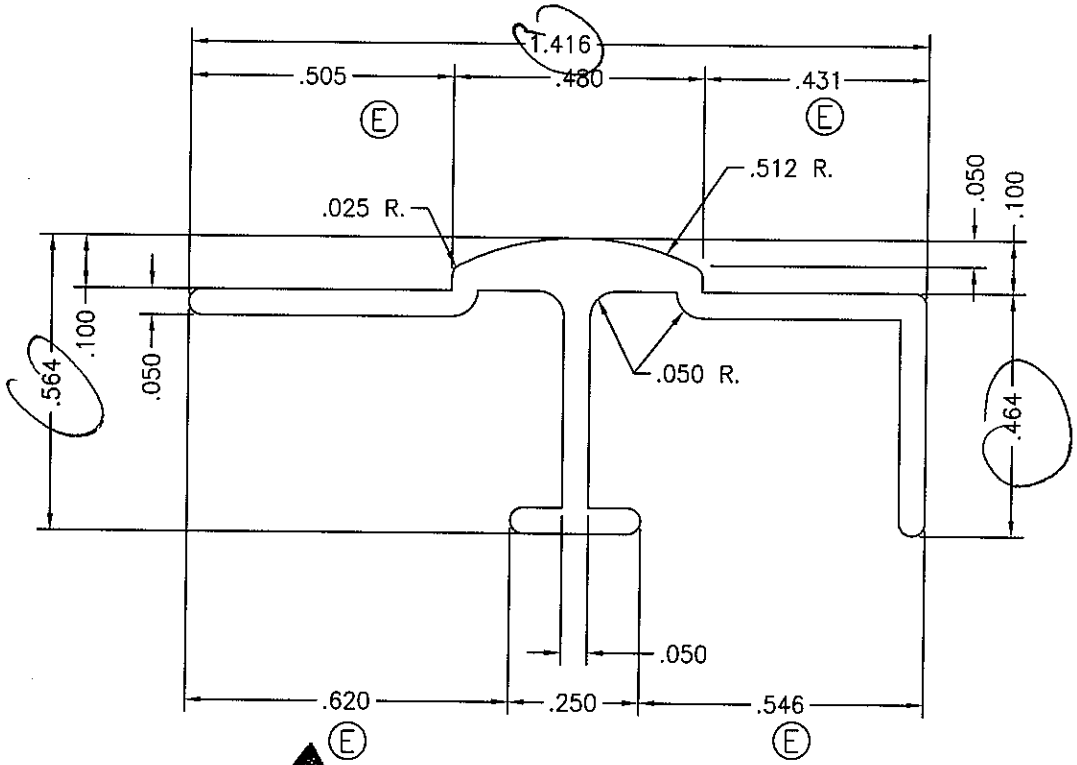
TITLE 3500/3540/TX3250/8500/8540/8880/9555 SASH
SINGLE HUNG STILE & RAIL / DOUBLE HUNG RAIL

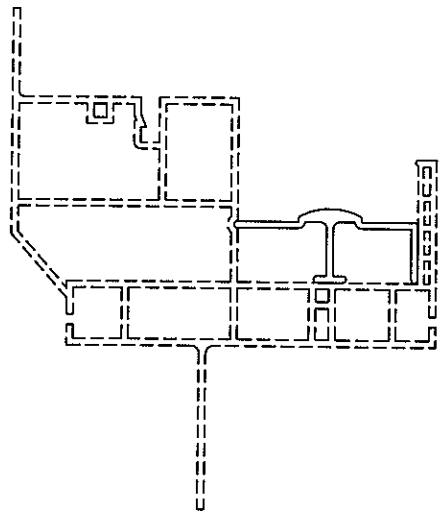
DFTM.	DATE	SCALE	DWG/PART NO.	REV.
V.M.R.	2-14-94	4:1	V-451	D

V-451 D

3580 JMS

V-569 E





Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 7531.01

Date 11/1/07 Tech JMS

WT./FT. – .090
MATERIAL – RIGID P.V.C.

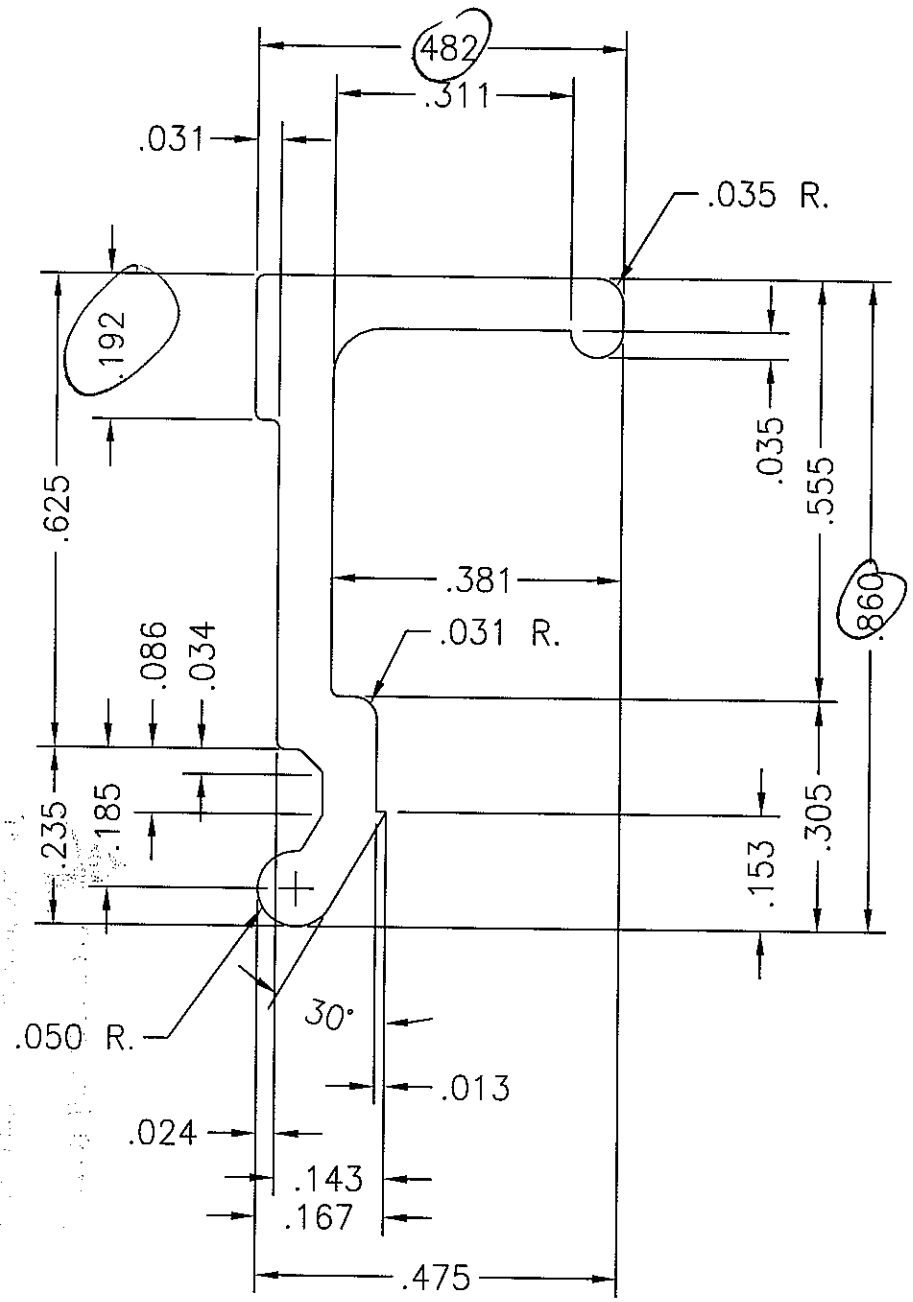
LTR.	DESCRIPTION (REVISIONS)	BY	DATE
E	RELOCATED ROLLER BUMP	VR	4-11-00
D	SHORTENED LEG FOR REV.D V-589	VR	7-2-99
C	REDESIGNED ROLLER BUMP	VR	1-5-99
B	REDESIGNED WITH ROLLER BUMP	VR	9-30-97

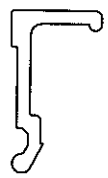
MI WINDOWS AND DOORS
650 WEST MARKET STREET • GRATZ, PA • 17030-0370

TITLE 3580 SMS ~~8880~~ SERIES SLIDER
SILL SNAP-IN ROLLER TRACK

DFTL	DATE	SCALE	DWG/PART NO.	REV.
V.M.R.	5-19-97	4:1	V-569	E

V-702





ACTUAL SIZE

NOTE:

MATERIAL – RIGID PVC
UNSPECIFIED WALL THICK. – .070
AREA – .099
WT/FT – .063

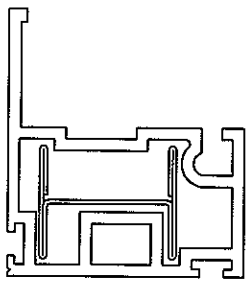
LTR.	DESCRIPTION	BY	DATE
	REVISIONS		

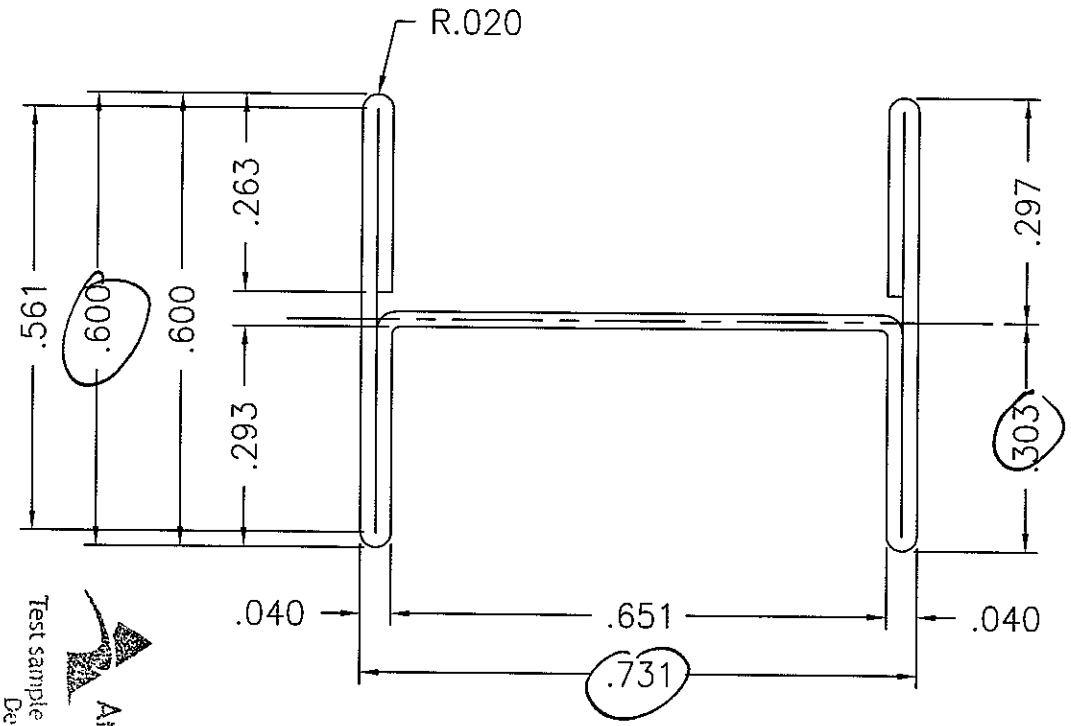
MI WINDOWS AND DOORS
650 WEST MARKET STREET • GRATZ, PA • 17030-0370

TITLE ~~8500/8540/3500/3540/TX3250/9555~~ 3580 SMS LIFT GLAZING BEAD

DFTM.	DATE	SCALE	DWG/PART NO.	REV.
V.M.R.	6-25-02	4:1	V-702	

GVL-451-020 | A





Architectural Testing

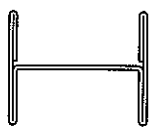
Test sample complies with these details.
Deviations are noted.

Report# 25311.01

Date 11/4/02 Tech JMJ

ALSO KNOWN AS #RF-1575

SLIT WIDTH – 2.890 x .020 STEEL
UNSPECIFIED RADII – .020 R.
MATERIAL: – STEEL – .020 THICK.



ACTUAL SIZE

RITE SCREEN™

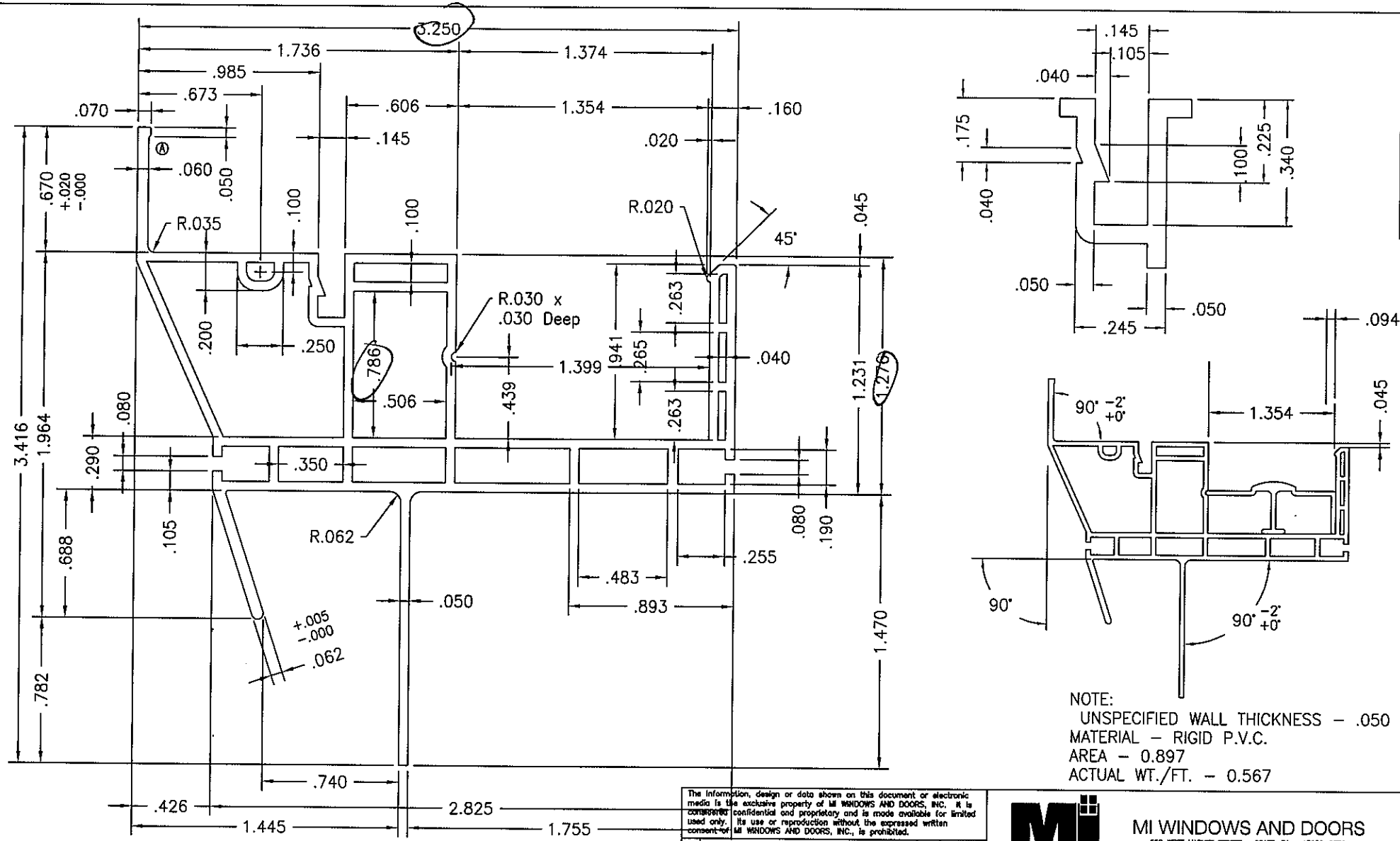
RITE SCREEN
4314 ROUTE 209
ELIZABETHVILLE, PA 17023

TITLE 3580 Ins ~~8500/8880 HEAVY DUTY SASH LINER~~
ROLLFORMED I-BEAM

DFTM.	DATE	SCALE	DRAWING NO.	REV.
TAS	10-9-02	4:1	GVL-451-020	A

LTR.	DESCRIPTION	BY	DATE
A	SLIT WIDTH CORRECTED	SEU	10-17-02

REVISIONS



NOTE:
UNSPECIFIED WALL THICKNESS – .050
MATERIAL – RIGID P.V.C.
AREA – 0.897
ACTUAL WT./FT. – 0.567

**NOTE: Need to be run with and without J-channel.
Add knife to cut off J-channel.

Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 75311.01
Date 11/1/07 Tech JMS

BY	DESCRIPTION	BY	DATE
A	ADDED .050 x .010 NUB ON GLAZING LEG	VR	9-30-03

REVISIONS

MI WINDOWS AND DOORS
650 WEST MARKET STREET • GRATZ, PA • 17030-0370

TITLE 3580 Welded Main Frame Slider ~~3880~~ with J-Channel

DFTSL	DATE	SCALE	DWG/PART NO.	REV.
BRS	6/9/03	2:1	V-735	A

V-735 A

Appendix D

Photographs

Receive Room View of Installed Specimen