

**AAMA 1801 SOUND TRANSMISSION LOSS
TEST REPORT**

Rendered to:

MI WINDOWS AND DOORS, INC.

SERIES/MODEL: 3500

TYPE: Fixed Window

Summary of Test Results				
ATI Data File No.	Glazing Option (Nominal Dimensions)	Air Infiltration	STC	OITC
75310.01A	13/16" IG (1/8" annealed exterior, 1/2" air space, 3/16" annealed interior) Glass temperature - 74F	Pass	31	26
75310.01B	27/32" IG (3/32" annealed exterior, 5/8" air space, 1/8" annealed interior) Glass temperature - 74F	Pass	29	24

Reference should be made to ATI Report No. 75310.01-113-01 for complete test specimen description. The complete test results are listed in Appendix B.

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: 75310.01-113-11
Test Date: 10/10/07
Report Date: 11/01/07
Expiration Date: 10/10/11

Test Sample Identification:

Series/Model: 3500

Type: Fixed Window

Performance Class: Residential

Overall Size: 48" by 48"

Glazing Option A (Nominal Dimensions): 13/16" IG (1/8" Annealed Exterior, 1/2" Air Space, 3/16" Annealed Interior)

Glazing Option B (Nominal Dimensions): 27/32" IG (3/32" Annealed Exterior, 5/8" Air Space, 1/8" Annealed Interior)

Project Scope: Architectural Testing, Inc. was contracted by MI Windows and Doors, Inc. to conduct air leakage and sound transmission loss tests on a Series/Model 3500, fixed 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.

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.

Test Equipment: The equipment used to conduct these tests meets the requirements of ASTM E 90. The microphones were calibrated before conducting 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 64.

A filler wall reducing element (STC 64) was used to reduce the test opening size to 48-1/2" wide by 48-1/2" high. The reducing element consisted of a double 2x4 wood stud wall construction with two layers of 5/8" drywall on both sides. The stud cavities in the wall were insulated with two layers of R-13 fiberglass insulation. The window was placed on a foam isolation pad in the new 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.

Test Procedure:

Air Leakage 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 - 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		48" by 48"
Thickness		3-1/4"
Corners		Mitered
	Fasteners	Welds
	Seal Method	None
Material		Vinyl
	Reinforcement	N/A
	Thermal Break Material	N/A
Daylight Opening Size		44-1/8" by 44-1/16"

Sample Descriptions: (Continued)

Glazing Option A:

Measured Overall Insulation Glass Unit Thickness	0.791"
Spacer Type	Reinforced butyl

	Exterior Sheet	Gap	Interior Sheet
Measured Thickness	0.117"	0.499"	0.175"
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

Glazing Option B:

Measured Overall Insulation Glass Unit Thickness	0.835"
Spacer Type	Reinforced butyl

	Exterior Sheet	Gap	Interior Sheet
Measured Thickness	0.082"	0.638"	0.115"
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)

Components:

TYPE	QUANTITY	LOCATION
Weatherstrip		
No weatherstrip		
Hardware		
No hardware		
Drainage		
1" by 1/8" weepslot	4	Sill

Comments: The weight of the sample with glazing option A was 50 lbs. The weight of the sample with glazing option B was 68 lbs. The design drawings (included in Appendix C) supplied by the client, accurately describe the Series/Model 3500, fixed window. The dimensions on the drawings that are circled and/or checked were verified against the test specimen. The fixed window was disassembled, and the components will be retained by ATI 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 air leakage and sound transmission loss test results on the Series/Model 3500, fixed window is listed below.

ATI Data File No.	Glazing Option (Nominal Dimensions)	Air Infiltration	STC	OITC
75310.01A	13/16" IG (1/8" annealed exterior, 1/2" air space, 3/16" annealed interior) Glass temperature - 74F	Pass	31	26
75310.0B	27/32" IG (3/32" annealed exterior, 5/8" air space, 1/8" annealed interior) Glass temperature - 74F	Pass	29	24

* *The maximum allowable air leakage rate, according to AAMA/WDMA/CSA 101/I.S.2/A440, is 0.3 cfm/ft² when the test pressure is 1.57 psf for Residential performance class, fixed 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:


Kurt A. Golden
Senior Technician - Acoustical Testing

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 (6)
- Appendix-C: Drawings (12)
- Appendix-D: Photographs (1)

	Architectural Testing, Inc is accredited by the International Accreditation Service, Inc. (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. This test report applies only to the specimen that was tested.
---	--

Revision Log

<u>Rev. #</u>	<u>Date</u>	<u>Page(s)</u>	<u>Revision(s)</u>
0	11/01/07	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

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.	75310.01A	Date	10/10/07
Client	MI Windows and Doors, Inc.		
Specimen	Series/Model 3500, fixed window with 13/16" IG (1/8" annealed exterior, 1/2" air space, 3/16" annealed interior), Glass temperature 74F		
Specimen Area	16.00 Sq Ft		
Filler Area	124.00 Sq Ft		
Operator	Kurt A. Golden		

	Bkgrd	Absorp	Source	Receive	Filler	Specimen
Temp F	74.4	75.8	74.1	74.8	71.8	74.8
RH %	44.7	42.2	44.7	43.8	62.9	43.8

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 Deficiencies	Trans Coef Diff
80	47.0	49.9	86.3	57.9	36.1	25	1.64	0	3.7
100	41.5	60.7	88.5	64.6	39.3	18	3.72	0	12.3
125	41.6	50.7	94.4	64.4	45.7	25	3.26	0	11.7
160	42.6	49.9	95.6	68.2	45.8	23	1.48	0	14.4
200	41.7	49.3	100.3	74.3	48.9	21	0.92	0	19.0
250	38.5	51.3	101.4	77.3	51.4	19	1.91	5	23.4
315	36.3	57.8	99.8	70.4	54.0	24	0.70	3	21.3
400	33.4	60.7	99.7	70.9	57.4	23	0.65	7	25.5
500	31.9	57.6	100.9	69.1	60.4	26	0.65	5	25.3
630	29.6	60.3	103.2	68.6	65.4	29	0.63	3	27.8
800	26.3	60.9	103.1	64.0	66.4	33	0.64	0	24.2
1000	26.2	63.8	102.4	60.7	72.1	36	0.55	0	27.5
1250	24.7	70.2	106.0	60.9	77.8	39	0.34	0	30.2
1600	19.9	72.2	112.3	66.8	82.9	39	0.35	0	35.0
2000	16.6	76.6	108.2	61.4	82.2	40	0.48	0	33.3
2500	13.9	88.3	106.6	60.7	77.7	39	0.19	0	30.3
3150	11.6	105.2	107.4	64.1	80.1	35	0.39	0	36.1
4000	10.8	130.1	106.0	63.6	82.2	33	0.47	2	39.9
5000	9.6	170.9	104.5	57.5	80.8	37	0.55	0	35.3

STC Rating = 31 *(Sound Transmission Class)*
Deficiencies = 25 *(Number of deficiencies versus contour curve)*
OITC Rating = 26 *(Outdoor/Indoor Transmission Class)*

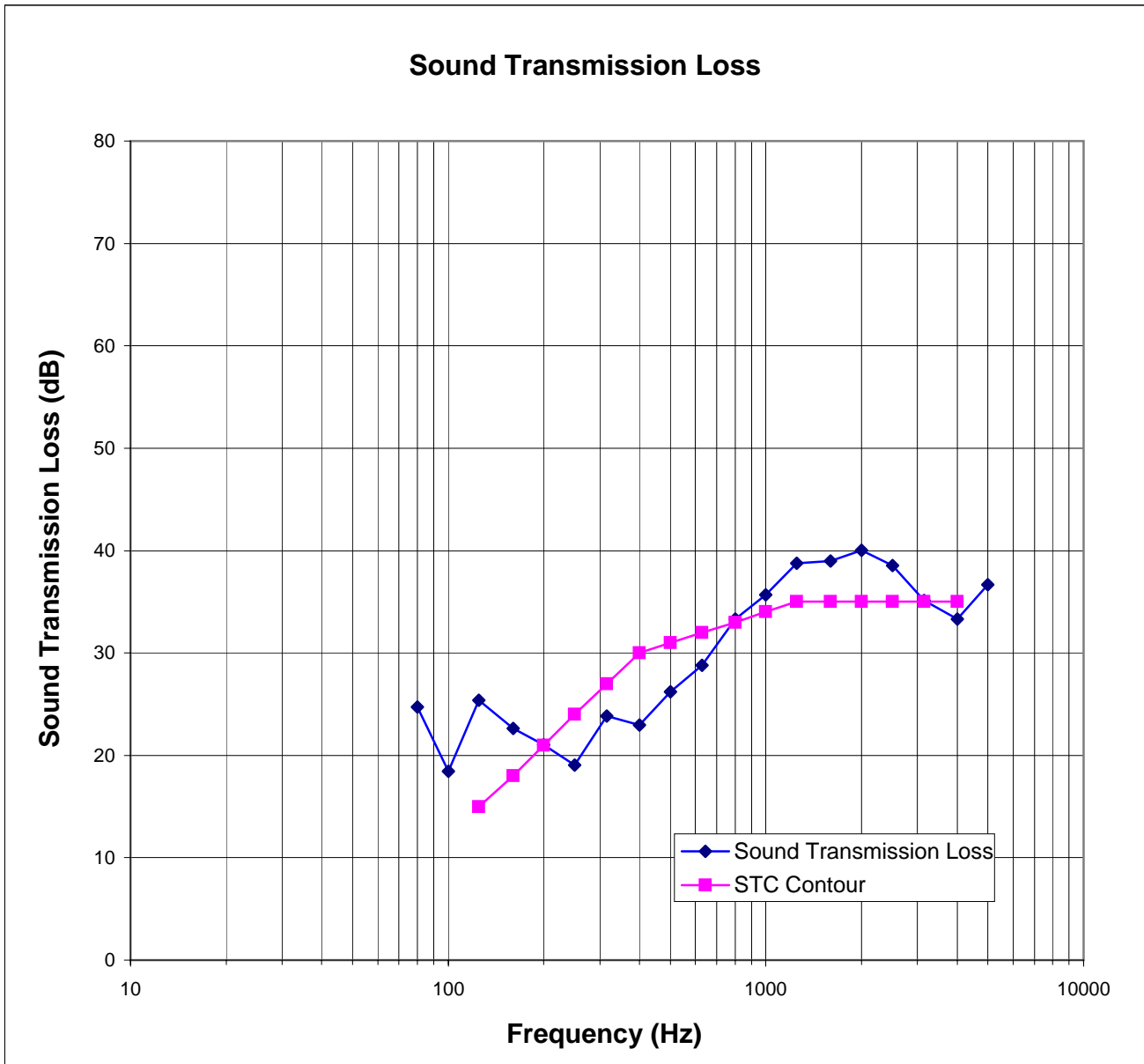
Note: *The acoustical chambers are qualified for measurements down to 80 hertz.
 Data reported below 80 hertz is for reference only.*

	Architectural Testing, Inc is accredited by the International Accreditation Service, Inc. (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. This test report applies only to the specimen that was tested.
---	--



Architectural Testing

ATI No. 75310.01A Date 10/10/07
Client MI Windows and Doors, Inc.
Specimen Series/Model 3500, fixed window with 13/16" IG (1/8" annealed exterior, 1/2" air space, 3/16" annealed interior), Glass temperature 74F
Specimen Area 16.00 Sq Ft
Filler Area 124.00 Sq Ft
Operator Kurt A. Golden



Architectural Testing, Inc is accredited by the International Accreditation Service, Inc. (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. This test report applies only to the specimen that was tested.

AAMA 1801 Data Sheet

ATI Job Number : 75310.01-113-11-A
 Client Name : MI Windows and Doors, Inc.
 Test Date : 10/10/07
 Tests Performed by: Kurt Golden
 Specimen Type : Fixed Window
 Series/Model Number : 3500
 Sample Size : 48" x 48"



Air Leakage per ASTM test method ASTM E283

Total Air flow (ft³/min) : 5.00
 Extraneous Leakage (ft³/min) : 4.75
 Temperature (°F) at Specimen: 72
 Barometric Pressure at Specimen (in mbar): 1002 (Inches of Hg) : 29.59
 Specimen Area in square feet : 16.00
 Density of air at reference standard conditions (lb/ft³) 0.075

Total air flow w/ air density correction (ft ³ /min)	Extraneous leakage with air density correction (ft ³ /min)	Air leakage through the specimen with air density correction (ft ³ /min)	Rate of air leakage per unit area (ft ³ /min)/sq.ft.
4.958	4.710	0.248	0.02



SOUND TRANSMISSION LOSS

ASTM E90

Architectural Testing


ATI No.	75310.01B	Date	10/10/07
Client	MI Windows and Doors, Inc.		
Specimen	Series/Model 3500, fixed window with 27/32" IG (3/32" annealed exterior, 5/8" air space, 1/8" annealed interior), Glass temperature 74F		
Specimen Area	16.00 Sq Ft		
Filler Area	124.00 Sq Ft		
Operator	Kurt A. Golden		

	Bkgrd	Absorp	Source	Receive	Filler	Specimen
Temp F	74.4	76.0	74.1	75.0	71.8	74.9
RH %	42.2	41.1	40.8	42.3	62.9	41.6

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 Deficiencies	Trans Coef Diff
80	41.1	54.8	86.8	57.5	36.1	25	2.58	0	3.3
100	39.1	53.8	88.6	65.2	39.3	18	3.27	0	12.4
125	39.6	46.8	94.4	66.6	45.7	23	3.12	0	13.6
160	44.7	49.3	95.7	70.4	45.8	20	1.56	0	16.4
200	43.9	54.2	100.4	76.2	48.9	19	1.09	0	21.1
250	36.8	57.5	101.6	78.5	51.4	18	1.82	4	25.0
315	36.2	62.6	99.7	75.8	54.0	18	0.60	7	27.2
400	35.3	60.3	99.6	73.6	57.4	20	0.62	8	28.2
500	33.6	60.6	100.9	73.2	60.4	22	0.52	7	29.6
630	29.9	59.4	103.3	72.1	65.4	25	0.62	5	31.1
800	27.8	61.0	103.0	67.3	66.4	30	0.61	1	27.6
1000	27.0	65.0	102.5	63.3	72.1	33	0.64	0	30.1
1250	26.4	70.1	106.2	63.3	77.8	37	0.22	0	32.4
1600	21.7	70.2	112.5	68.2	82.9	38	0.24	0	36.2
2000	15.6	76.7	108.2	61.7	82.2	40	0.48	0	33.6
2500	7.9	90.1	106.6	57.6	77.7	42	0.19	0	27.3
3150	7.6	106.4	107.5	57.3	80.1	42	0.34	0	29.3
4000	6.8	132.9	106.1	60.1	82.2	37	0.45	0	36.4
5000	7.1	174.3	104.4	58.5	80.8	36	0.39	0	36.4

STC Rating = 29 *(Sound Transmission Class)*
Deficiencies = 32 *(Number of deficiencies versus contour curve)*
OITC Rating = 24 *(Outdoor/Indoor Transmission Class)*

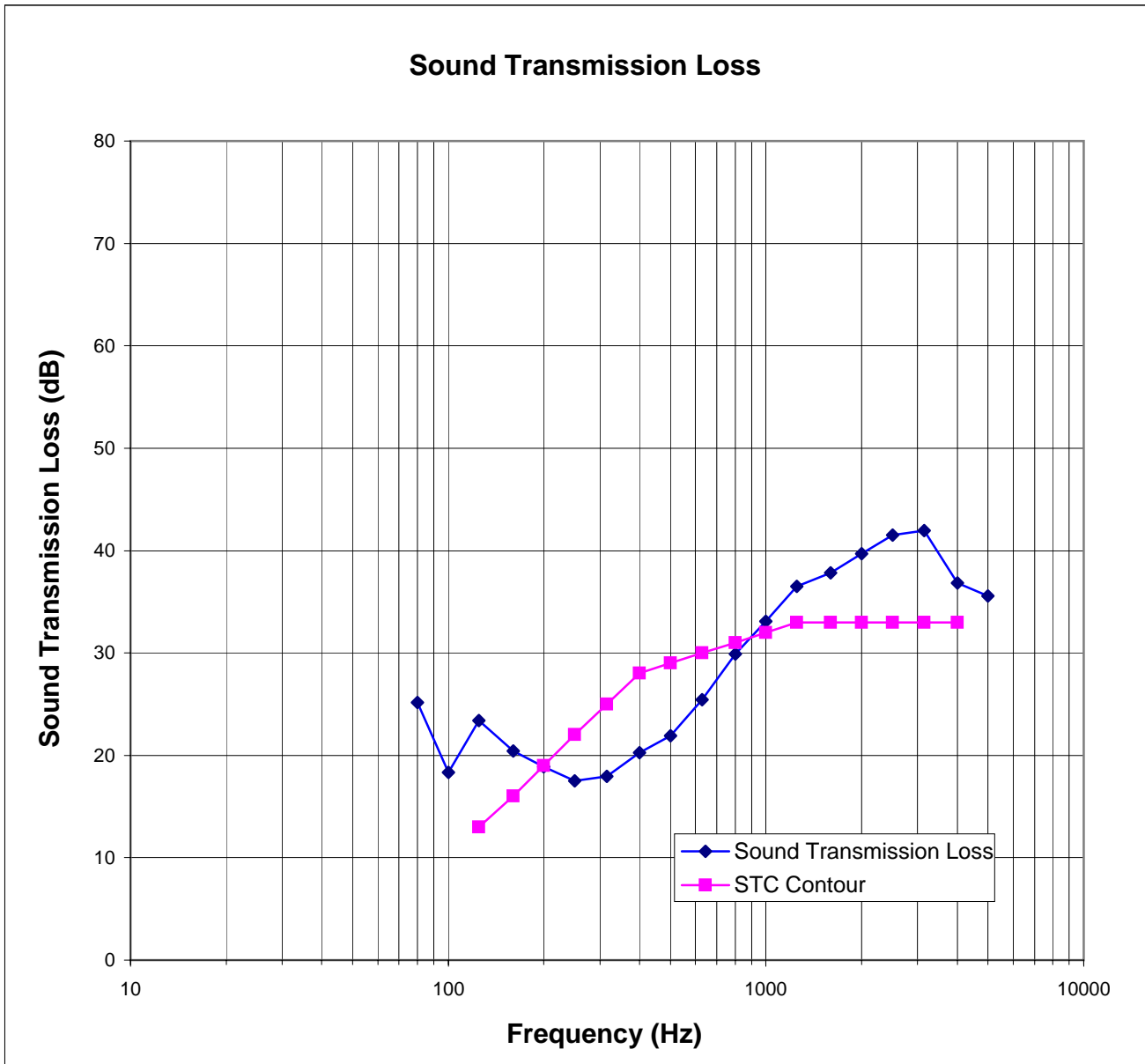
Note: *The acoustical chambers are qualified for measurements down to 80 hertz.
Data reported below 80 hertz is for reference only.*

	Architectural Testing, Inc is accredited by the International Accreditation Service, Inc. (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. This test report applies only to the specimen that was tested.
---	--



Architectural Testing

ATI No. 75310.01B Date 10/10/07
Client MI Windows and Doors, Inc.
Specimen Series/Model 3500, fixed window with 27/32" IG (3/32" annealed exterior, 5/8" air space, 1/8" annealed interior), Glass temperature 74F
Specimen Area 16.00 Sq Ft
Filler Area 124.00 Sq Ft
Operator Kurt A. Golden



Architectural Testing, Inc is accredited by the International Accreditation Service, Inc. (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. This test report applies only to the specimen that was tested.

AAMA 1801 Data Sheet

ATI Job Number : 75310.01-113-11-B
 Client Name : MI Windows and Doors, Inc.
 Test Date : 10/10/07
 Tests Performed by: Kurt Golden
 Specimen Type : Fixed Window
 Series/Model Number : 3500
 Sample Size : 48" x 48"



Air Leakage per ASTM test method ASTM E283

Total Air flow (ft³/min) : 10.25
 Extraneous Leakage (ft³/min) : 10.00
 Temperature (°F) at Specimen: 72
 Barometric Pressure at Specimen (in mbar): 1002 (Inches of Hg) : 29.59
 Specimen Area in square feet : 16.00
 Density of air at reference standard conditions (lb/ft³) 0.075

Total air flow w/ air density correction (ft ³ /min)	Extraneous leakage with air density correction (ft ³ /min)	Air leakage through the specimen with air density correction (ft ³ /min)	Rate of air leakage per unit area (ft ³ /min)/sq.ft.
10.164	9.916	0.248	0.02

Appendix C
Design Drawings

3500/3540 Picture Window Bill of Materials

Description

Part No.

Color

Qty

Vendor

Notes

MAIN FRAME									
Description	Part No.	Color	Qty	Vendor	Notes				
Main Frame - Head	V-538	White/Almond	1	Proplastix					
Head w/ Fin & J Channel	V-634	White/Almond	1	Proplastix					
Head Flange	V-786	White/Almond	1	Proplastix	3540 Only				
Main Frame - Jamb	V-538 / V-634	White/Almond	2	Proplastix					
Jamb w/ Fin & J Channel	V-538	White/Almond	1	Proplastix					
Jamb w/ Fin (No J Channel)	V-634	White/Almond	1	Proplastix	3540 Only				
Jamb Flange	V-786	White/Almond	1	Proplastix					
Main Frame - Sill	V-538 / V-634	White/Almond	1	Proplastix					
Sill w/ Fin & J Channel	V-538	White/Almond	1	Proplastix					
Sill w/ Fin (No J Channel)	V-634	White/Almond	1	Proplastix	3540 Only				
Sill Flange	V-786	White/Almond	1	Proplastix					
Snap-In - Vertical & Horizontal	V-326	White/Almond	2/2	Proplastix					
Intermediate Jamb	V-736	White/Almond	1	Proplastix					
White Pine (1/2" x 1-1/2")	1/2" x 1-1/2"	Brown	1	Jim F asnell	3500 only >59-3/4" HIGH				
3500PAD1	3500PAD1	White	2	Secon					
3500PAD2	3500PAD2	White	2	Secon					
3500PAD3	3500PAD3	White	2	Secon					
Screw - Top - (8" x 1-1/2")	G-8A112	Mill	4	Uneeda					
Screw - Bottom - (8" x 2-1/2")	G-8A212	Mill	4	Uneeda					
Intermediate Jamb Reinforcement	GM-1994	Mill	1	MI Metals	3540 Only All Sizes				
FIXED GLASS									
Insulated Glass (7/8" Overall)									
4th Corner - Screw	G3MM	Mill	1	Uneeda Bolt					
4th Corner - Sealant	GHL5153A-148SSRSE	Black	1	HB Fuller					
Descant	GHL5157-125	Clear	1	HB Fuller					
Glass Panes	N/A	Clear	2	Varies					
Intercept Spacer (19/32") - SSB	G2132RT	Mill	2	TCP Metals, Inc.					
Intercept Spacer (21/32") - DSB	G1932RT	Mill	2	TCP Metals, Inc.					
Sealant	GHL5153B-125	Gray	Varies	HB Fuller					
TremGlaze	S300	Clear	1	Titanco					
Capillary Tubes	G-304	Mill	1		If width <48" and height <18" or if width <18" and height <48"				
Glazing Beads:									
Horizontal	V-324	White/Almond	2	Proplastix					
Vertical	V-324	White/Almond	2	Proplastix					
Setting Block - Rubber (3/16 x 7/8 x 7/8)	G-D6007-018	Black	Varies	Secon					
GRIDS									
5/8" Flat Grids:	G188	White/Almond	Varies	RiteScreen					
Grid Cross Clips	G165	Clear	Varies	All Metal					
Grid End Clips (19/32 .625 x 3/16)	G-11851	White	Varies	All Metal					
Grid End Clips (21/32 .625 x 3/16)	G-11852	White	Varies	All Metal					
7/8" Flat Grids:	G189	White/Almond	Varies	RiteScreen					
Grid Cross Clips	G-CLIP-B	Clear	Varies	All Metal					
Grid End Clips (19/32 13/16 x 3/16)	G-12364	White	Varies	All Metal					
Grid End Clips (21/32 13/16 x 3/16)	G-12811	White	Varies	All Metal					

Architectural Testing

Test sample completed with these details. Deviations are noted.

Description	Part No.	Color	Qty	Vendor	Notes
1 1/16" Sculptured Grids:					
Grid Cross Clips (19/32 18mm x 8mm)	GRF191	White/Almond	Varies	RiteScreen	
Grid End Clips (19/32 18mm x 8mm)	G-12827	Clear	Varies	All Metal	
Grid End Clips (21/32 18mm x 8mm)	G-12811	White	Varies	All Metal	
1 5/16" Sculptured Grids:					
Grid Cross Clips (21/32 25mm x 8mm)	GRF192	White/Almond	Varies	RiteScreen	
Grid End Clips (19/32 25mm x 8mm)	G-12828	Clear	Varies	All Metal	
Grid End Clips (21/32 25mm x 8mm)	G-12404	White	Varies	All Metal	
Grid End Clips (21/32 25mm x 8mm)	G-12405	White	Varies	All Metal	
PACKAGING:					
Labels:					
Face Split Weld Label	3 x 6 Split Face	White/Black	2/wdw	Scranton Label	
NFRC Label (4" x 8")	10317	White/Black	1	Scranton Label	
AAMA	GAAMA	Gold	1	ALI	
Warning Label	G-X7166	White/Black	1	Label-Tek	
Shipping Label	G-X316	White/Black	2	Scranton Label	
Cardboard:					
Side Packs	GCB140	Brown	2	Specialty	
Boots	GCB329	Brown	2	Specialty	
Shipping Blocks:					
2" x 2" x 4"	600009544000	Brown	2	Universal	4/0 wide & smaller; attach to sill/back of
Screws (#6 x 3/8" PH)	G-653	Mill	1/Block	All Star	1 per shipping block; above nailing fin holes
2" x 2" x Unit Width (when over 48")	600009901000	Wood	1	Universal	4/0 wide & larger; attach to sill/back of nailin
Screws (#6 x 3/8" PH)	G-653	Mill	6	All Star	above nailing fin holes
MISCELLANEOUS PARTS/ACCESSORIES:					
J-Channel:					
Snap-In J-Channel	V-553	White/Almond	4	Propolastix	
Clip	3500-J Clip	White/Almond	1	Propolastix	
Field Repair (Integral)	V-689	White/Almond	1	Propolastix	
Extension Jamb:					
4 9/16" Cell	V-20968	White/Almond	4	Propolastix	
6 9/16" Cell	V-20967	White/Almond	4	Propolastix	
4 9/16" Wood - Popular	4 9/16"	Brown	4	Restrations Unlimited	
6 9/16" Wood - Popular	6 9/16"	Brown	4	Restrations Unlimited	
4 9/16" Wood - Finger Jointed Primed White Pine	4 9/16"	Brown	4	Klinger Lumber/Ontario West	
6 9/16" Wood - Finger Jointed Primed White Pine	6 9/16"	Brown	4	Klinger Lumber/Ontario West	
3" Vinyl Strap (3" wide x .065" thick) - 6" Length	V0808AAC	White	Varies	Propolastix	
3" Vinyl Strap (3" wide x .065" thick) - 12" - 6" Length	V080800C	White	Varies	Propolastix	
Brickmold:					
90 Degree Pad (1/8" Thick)	V-652	White/Almond	3	Propolastix	
32702	32702	White/Almond	3	Propolastix	
Cornerkeys	I-264	White/Almond	2	Propolastix	
Filler	V-724	White/Almond	1	Propolastix	
Stack Mull	M-1812	White/Almond	1	MI Metals	
Sill Nose	M-1937	White/Almond	1	MI Metals	
Drywall Adapter (1/2")	V-462	White/Almond	1	Propolastix	
Drywall Adapter (3/4")	V-544	White/Almond	1	Propolastix	
Drywall Extender	V-624	White/Almond	1	Propolastix	
Drywall Extender	V-678	White/Almond	1	Propolastix	
Interior Finish Trim (4")	V-92587	White/Almond	4	Propolastix	
Interior Finish Trim (6")	V-92586	White/Almond	4	Propolastix	
Sill Protector	V-471	White/Almond	1	Propolastix	
Structural Member Cover	V-489	White/Almond	1	Propolastix	
Structural Member Cover	V-493	White/Almond	1	Propolastix	

Propolastix.com/compatibles with these details.

Architectural Testing

Deviations are noted.

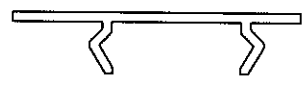
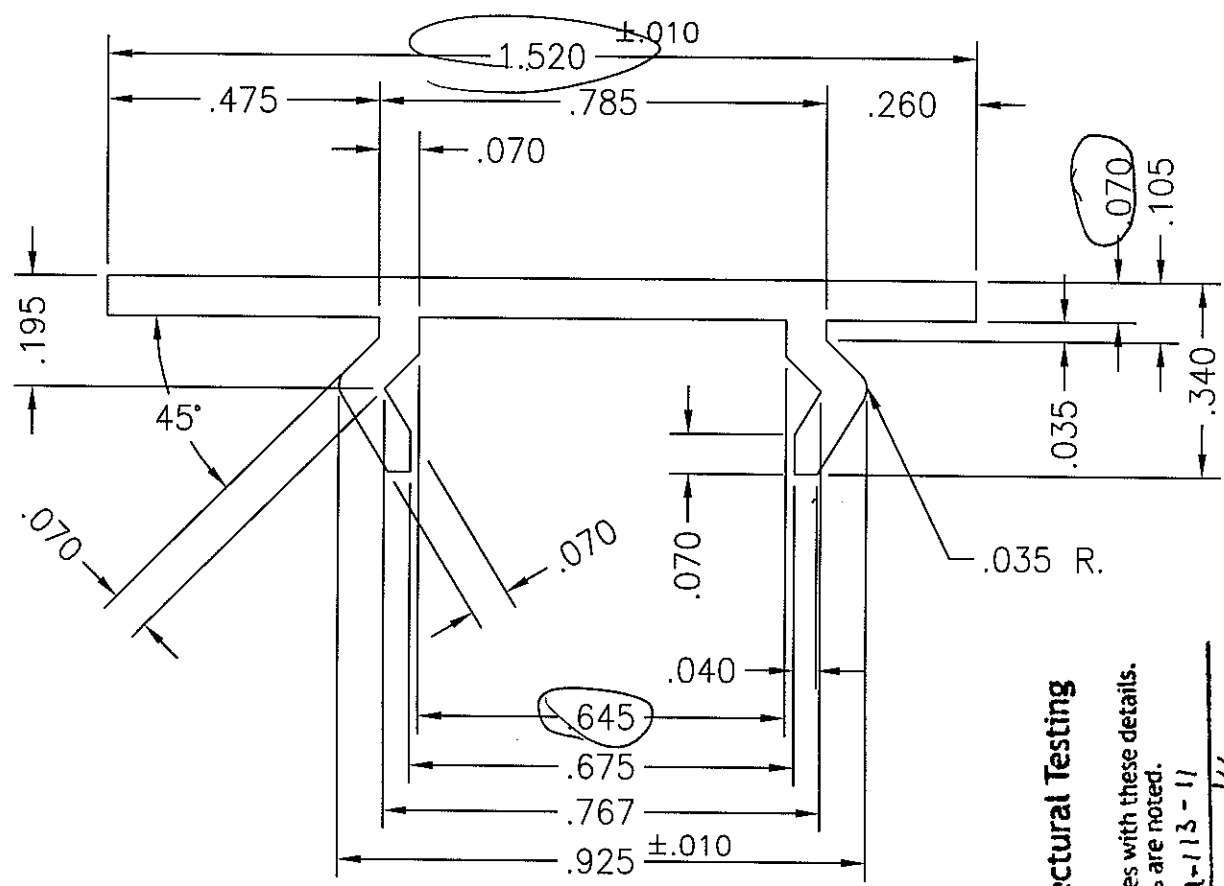
Report# 75310.01-113-11
 Date 10/10/07 Tech K6

Description	Part No.	Color	Qty	Vendor	Notes
MULLIONS: Vinyl 2 piece Mullion					
Mullion	V-023	White/Almond	2	Proplastic	
Mull Pad	G-D4586	White	2	Lametek	
Mull Tape	G-D7162	White	Varies	Lametek	
Brickmould Stack Mullion					
Mullion	V-023	White/Almond	1	Proplastic	
Mullion	M-1812	White/Almond	1	MI Metals	
Mull Pad	G-D4586	White	2	Lametek	
Structural Mullion					3540 Only: Vertical/Horizontal Mullions Only
Mullion	M-1926	Mill	1	MI Metals	
Cover	V-698	White/Almond	2	Proplastic	
Mull Bracket	5795A	Mill	2	MI Metals	
Mull Clip "Hi Dry" Stamped Steel	MT000022	Steel	2	Valley Tool & Die Stamping	
3-Piece Structural Mull:					
Exterior Mull	M-1780	White/Almond	1	MI Metals	
Interior Mull	M-1779	White/Almond	1	MI Metals	
Mullion Cover	M-45030	White/Almond	1	MI Metals	
Mull Insulator	V-119DD	White/Almond	1	Proplastic	
Screws (#10 x 3/4" PH Self-Drilling)	10SD06PP52	Mill	Varies	Merchant	
Mull Pad	G-D4586	White	4	Lametek	
3540 Vert Flange Mullion					3540 Only: Vertical/Horizontal Mullions Only
Mullion	CM-65129	White/Almond	1	MI Metals	
Cover	V-698	White/Almond	1	Proplastic	
Mull Bracket	5796B	Mill	1	MI Metals	
Mull Clip "Hi Dry" Stamped Steel	MT000022	Steel	1	Valley Tool & Die Stamping	
3540 Horiz Flange Mullion					3540 Only: Vertical/Horizontal Mullions Only
Mullion	CM-65129	White/Almond	1	MI Metals	
Cover	V-698	White/Almond	1	Proplastic	
Mull Clip "Hi Dry" Stamped Steel	MT000022	Steel	2	Valley Tool & Die Stamping	
Vert Flange Mullion (70 Twins)					3540 Only: Vertical/Horizontal Mullions Only
Mullion	5765 (H83)	White/Almond	1	MI Metals	
Mull Bracket	5768	Mill	2	MI Metals	
End-Caps, Clips, & Pads for Horiz Mulls					
Horiz Mull Pad 3x3	MS001530	White	2	Lametek	
3 Piece Mull End Cap J Channel	I-304	White/Almond	2	Proplastic	
3 Piece Mull End Cap No J Channel	I-307	White/Almond	2	Proplastic	
M-1926 Mull End Cap J Channel	I-310	White/Almond	2	Proplastic	
M-1926 Mull End Cap No J Channel	I-312	White/Almond	2	Proplastic	
M-1926 & 3 pc Brickmould Stack Mull Corner	I-273	White/Almond	2	Proplastic	
M-1926 Horiz Mull Shear Clip	M-1936	Mill	2	MI Metals	
Drip-Caps for Fin Mullied Twins or Triples					
Drip Cap J-Channel	M-1646	White/Almond	1	MI Metals	
Drip Cap No J-Channel	M-1688	White/Almond	1	RiteScreen	



Architectural Testing

Test sample complies with these details.
 Deviations are noted.



ACTUAL SIZE

UNSPECIFIED WALL THICK. - .070

The information, design or data shown on this document or electronic media is the exclusive property of MI WINDOWS AND DOORS, INC. It is considered confidential and proprietary and is made available for limited use only. Its use or reproduction without the expressed written consent of MI WINDOWS AND DOORS, INC., is prohibited.

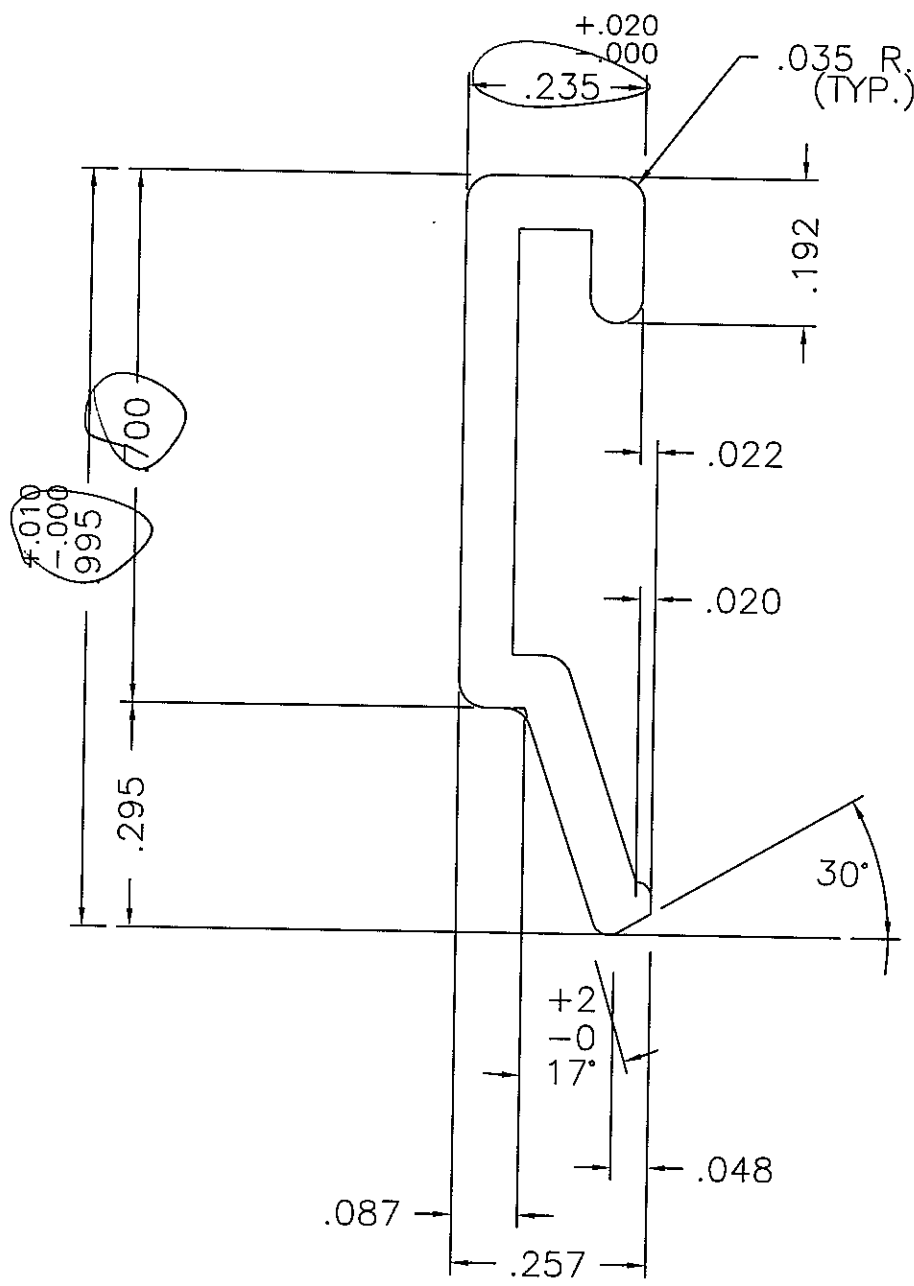


MI WINDOWS AND DOORS
650 WEST MARKET STREET • GRATZ, PA • 17030-0370

F	Decreased wall thickness to .050.	BS	4/1/04
E	REVISED & REDRAWN	VR	6-1-98
D	REVISED & REDRAWN PER PLASTICS	VR	3-21-95
C	CORRECTED PRINT PER PLASTICS	VR	1-10-91
LTR.	DESCRIPTION	BY	DATE
	REVISIONS		

TITLE 8500 PICTURE SNAP-IN

DFTM.	DATE	SCALE	DWG/PART NO.	REV.
V.M.R.	3-21-95	3:1	V-326	F



Test sample complies with these details.
Deviations are noted.

Report# 75310.01-113-11
Date 10/06/07 Tech KLB



ACTUAL SIZE

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

AREA - $.099$ PERIM - 2.924 WT./FT. - $.056$

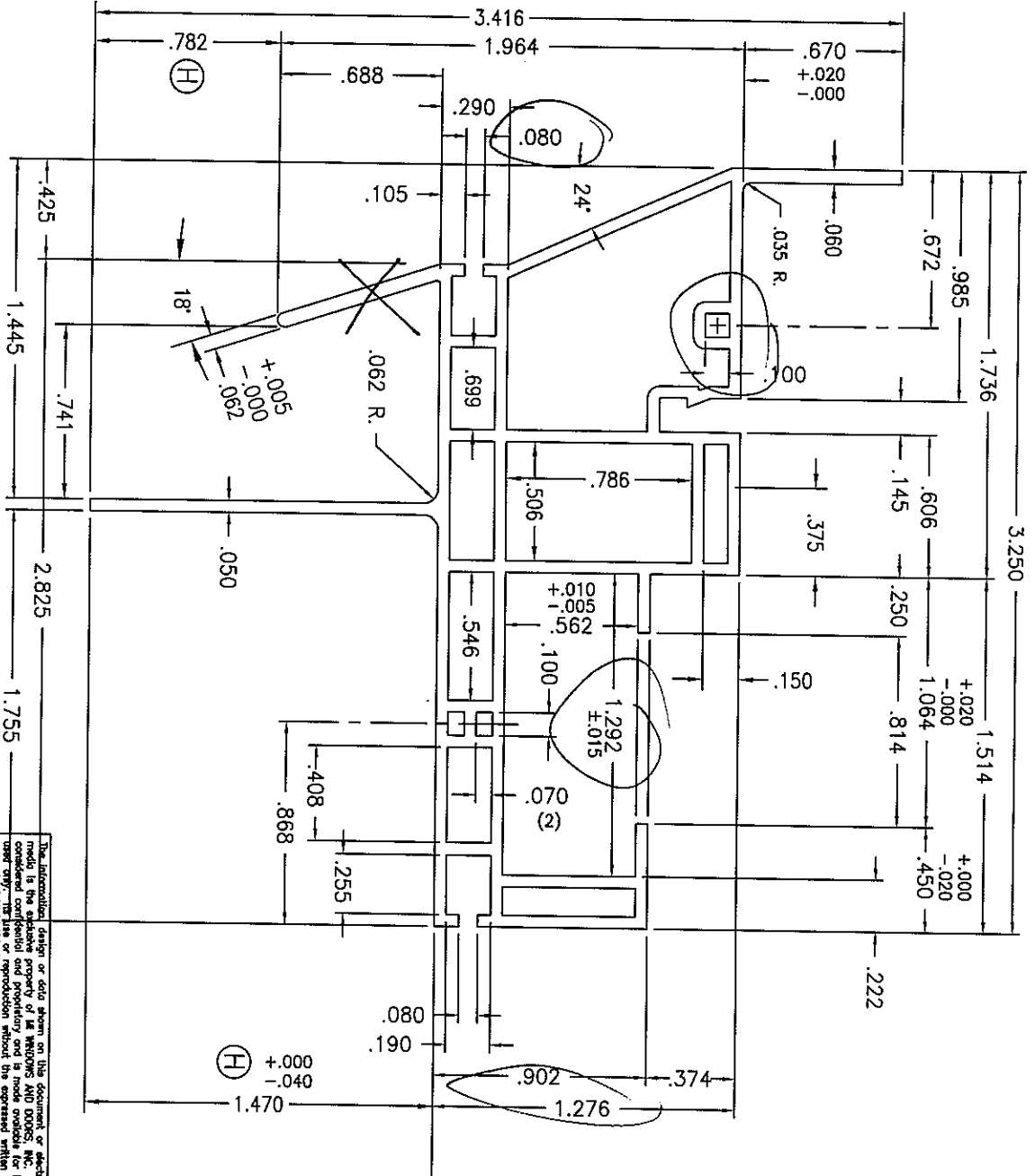
The information, design or data shown on this document or electronic media is the exclusive property of MI WINDOWS AND DOORS, INC. It is considered confidential and proprietary and is made available for limited use only. Its use or reproduction without the expressed written consent of MI WINDOWS AND DOORS, INC., is prohibited.



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

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
LTR.	DESCRIPTION	BY	DATE
	REVISIONS		

TITLE		3500/3540/TX3250/8500/8540/8880	
		FIXED PANEL GLAZING BEAD	
DFTM.	DATE	SCALE	DWG/PART NO.
V.M.R.	4-18-89	4:1	V-324
			REV. D



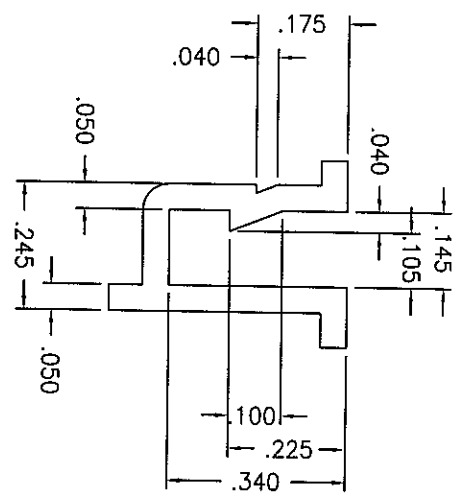
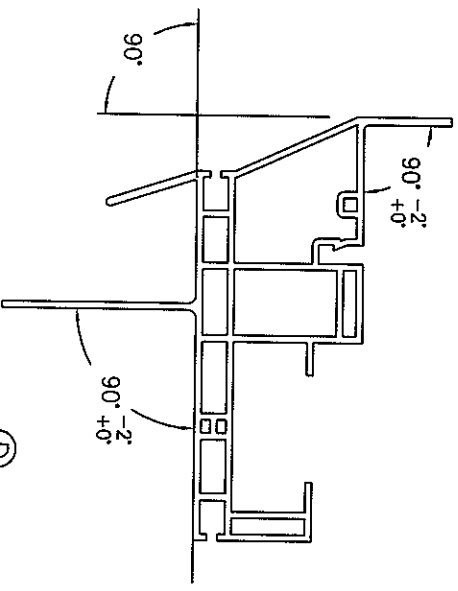
Architectural Testing

Test sample complies with these details.
 Deviations are noted.

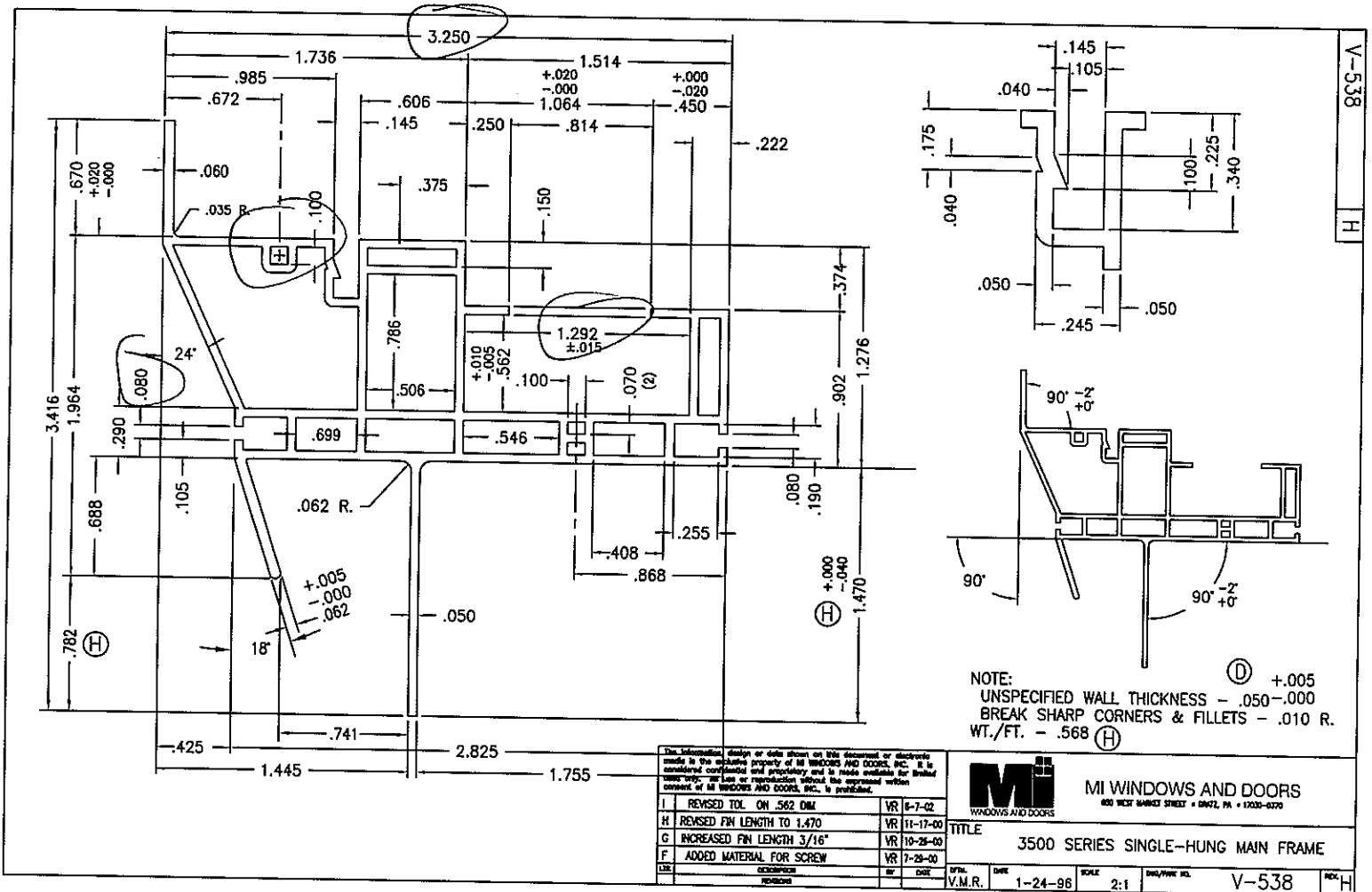
The information, design or data shown on this document or electronic media is the sole property of M WINDOWS AND DOORS, INC. It is considered confidential and proprietary and is made available for limited use only for sales or reproduction without the expressed written consent of M WINDOWS AND DOORS, INC. as provided.			
I	REVISED TOL. ON .562 DIA.	VR	6-1-02
H	REVISED FIN LENGTH TO 1.470	VR	11-17-00
G	INCREASED FIN LENGTH 3/16"	VR	10-26-00
F	ADDED MATERIAL FOR SCREW	VR	7-29-00
INT		BR	
		DATE	

M WINDOWS AND DOORS 630 WEST MARKET STREET • GRANZ, PA • 17039-0370	
TITLE	3500 SERIES SINGLE-HUNG MAIN FRAME
DATE	1-24-96
SCALE	2:1
DWG/PART NO.	V-538
REV.	H

NOTE:
 UNSPECIFIED WALL THICKNESS - .050-.000
 BREAK SHARP CORNERS & FILLETS - .010 R.
 WT./FT. - .568



Report# 75310.01-113-11
 Date 10/10/07 Tech Kk.



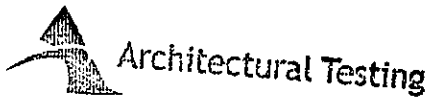
The information, design or data shown on this document or electronic media is the exclusive property of MI WINDOWS AND DOORS, INC. It is considered confidential and proprietary and is made available for limited use only. Reproduction or distribution without the expressed written consent of MI WINDOWS AND DOORS, INC. is prohibited.

I	REVISED TOL. ON .562 DIM	VR	6-7-02
H	REVISED FIN LENGTH TO 1.470	VR	11-17-00
G	INCREASED FIN LENGTH 3/16"	VR	10-26-00
F	ADDED MATERIAL FOR SCREW	VR	7-29-00
REV	REVISION	BY	DATE

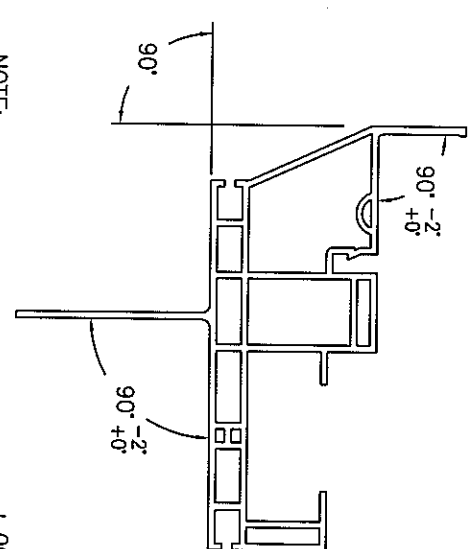
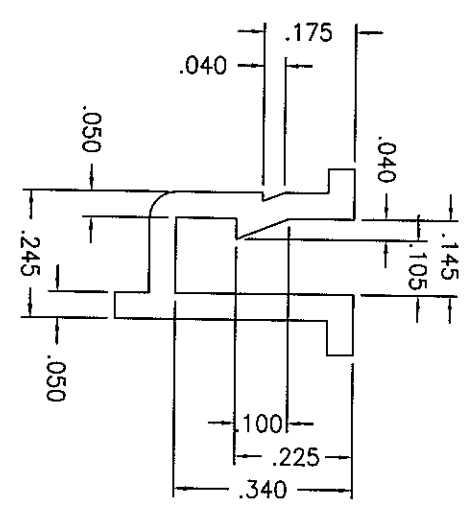
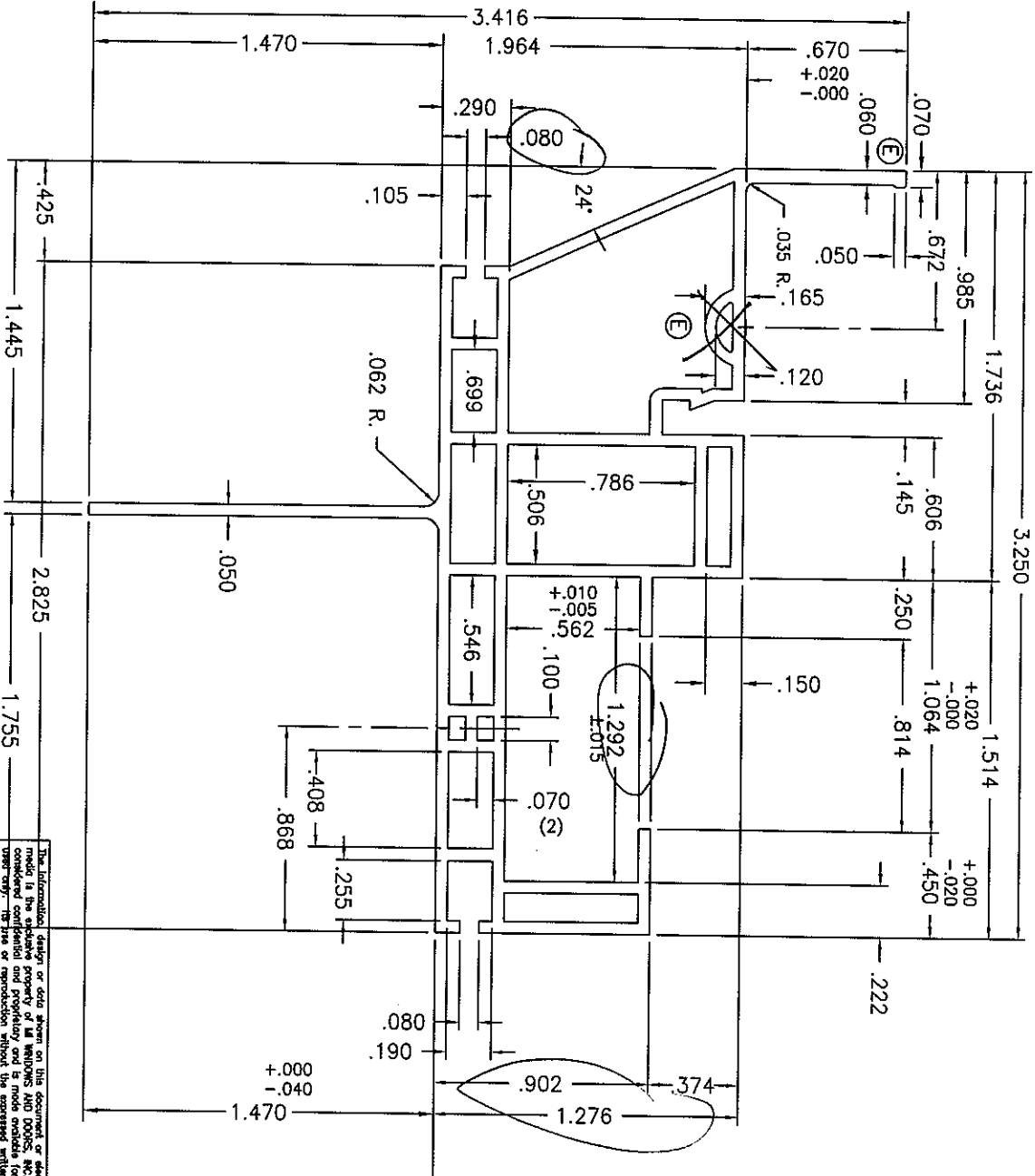
MI WINDOWS AND DOORS
 630 WEST BARRETT STREET • EMERY, PA • 19026-0770

TITLE
 3500 SERIES SINGLE-HUNG MAIN FRAME

DATE 1-24-98 SCALE 2:1 Dwg./Pwg. No. V-538



Architectural Testing
 Test sample complies with these details.
 Deviations are noted.
 Report# 75310.01-113-11
 Date 10/10/07 Tech KK



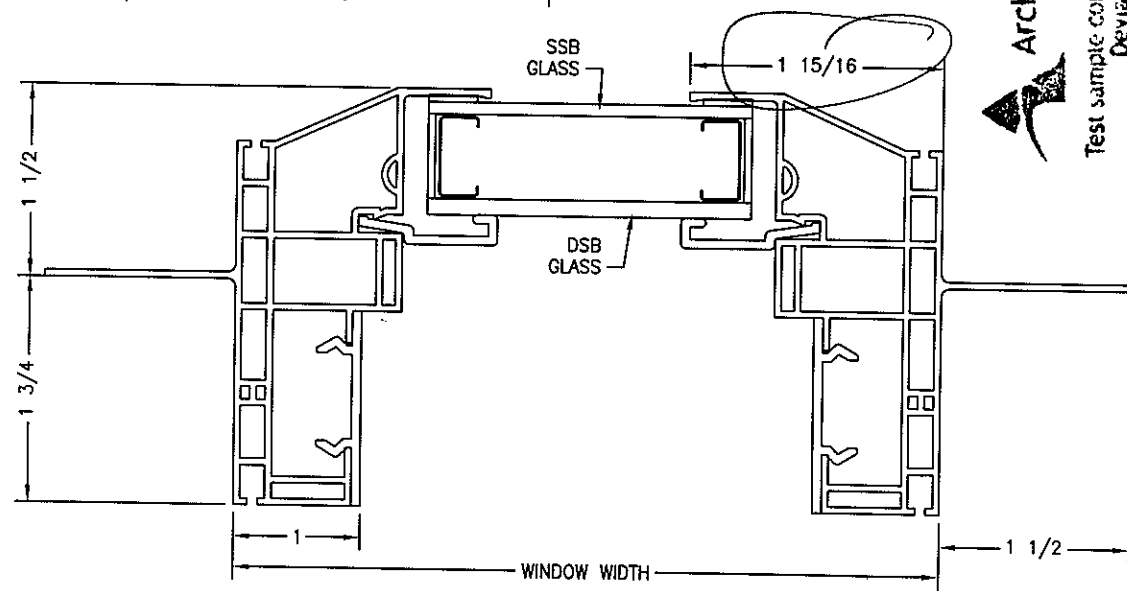
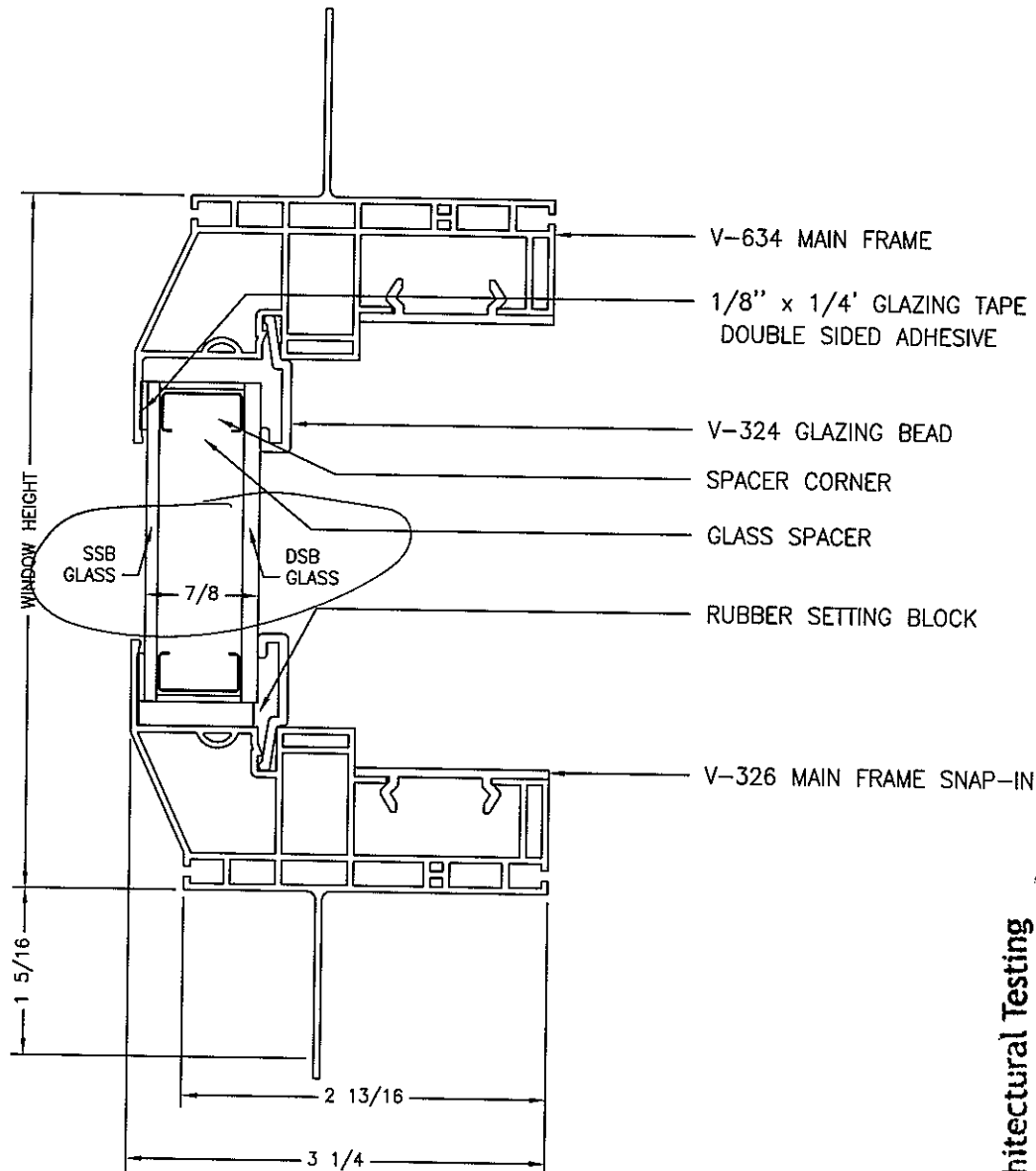
NOTE:
 UNSPECIFIED WALL THICKNESS - .050-.000
 BREAK SHARP CORNERS & FILLETS - .010 R.
 WT./FT. - .543

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

REVISION	DESCRIPTION	BY	DATE
E	REMOVED NUB ON GLAZING LEG, RENEGED SCREENS.	VR	3-30-04
D	1.470 FIN LENGTH WAS 1.312	VR	12-19-00
C	ADDED MATERIAL FOR SCREEN	VR	7-29-00
B	THICKENED GLAZING LEG & ADDED NUB	TS	10-14-98

		MI WINDOWS AND DOORS 650 WEST MARKET STREET • GAITHERSBURG, MD • 7700-0370	
TITLE	3550 SERIES SINGLE-HUNG MAIN FRAME (J-CHANNEL REMOVED)	DATE	1-24-96
SCALE	2:1	DWG/PWYR NO.	V-634
DATE	1-24-96	SCALE	2:1
DATE	1-24-96	SCALE	2:1
DATE	1-24-96	SCALE	2:1

Report# 75310-01-113-17
 Date 10/10/07
 Tech VB.



Architectural Testing

Test sample complies with these details. Deviations are noted.

Report# 75310.01-113-11

Date 10/14/97 Tech K6

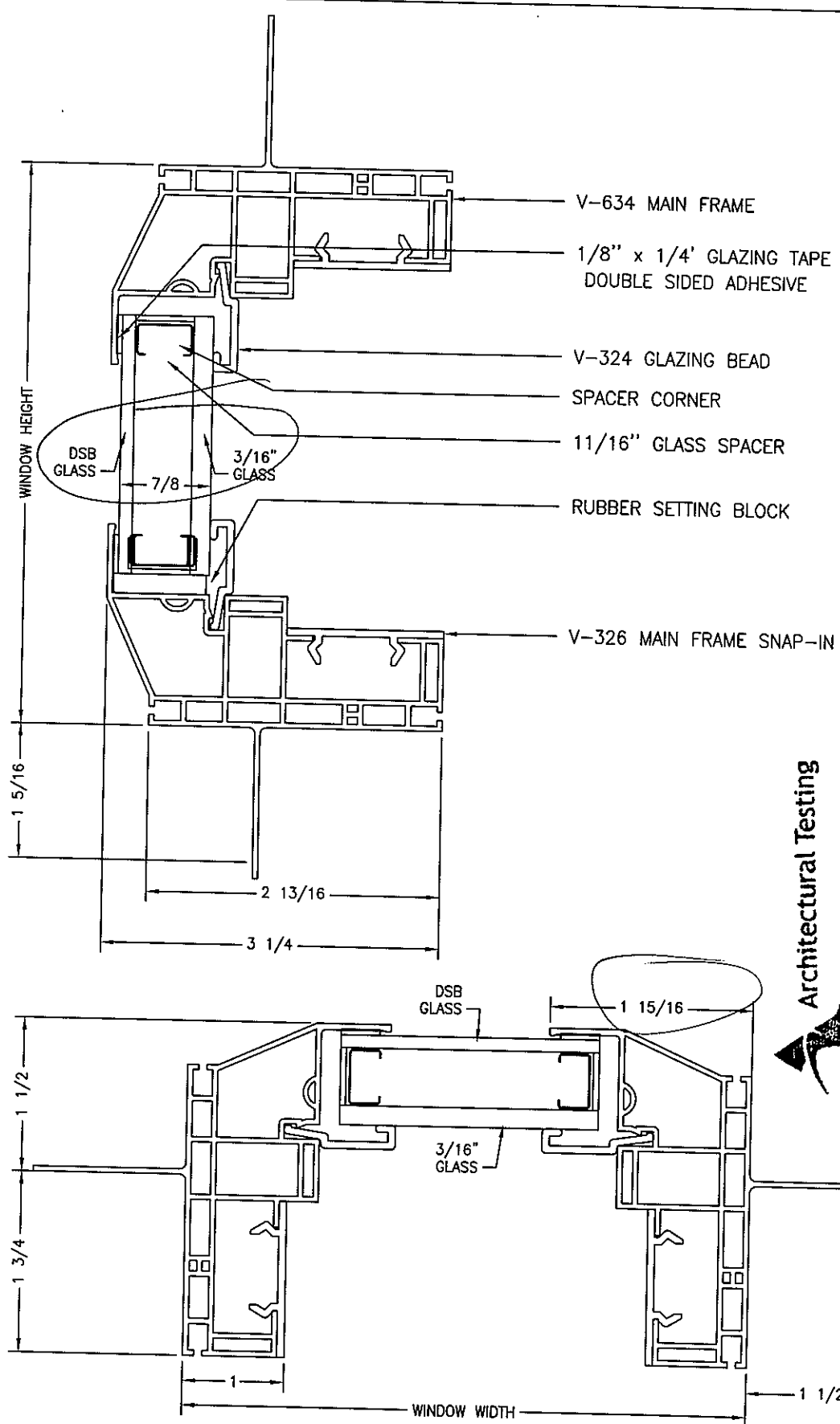
The information, design or data shown on this document or electronic media is the exclusive property of MI WINDOWS AND DOORS, INC. It is considered confidential and proprietary and is made available for limited use only. Its use or reproduction without the expressed written consent of MI WINDOWS AND DOORS, INC., is prohibited.

B	UPDATED EXTRUSIONS/PART NOS.	TS	5-27-04
LTR	DESCRIPTION	BY	DATE
	REVISIONS		

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

TITLE 3500/3540 VINYL PICTURE WINDOW WITHOUT J-CHANNEL

DFTM	DATE	SCALE	DWG/PART NO.	REV
V.M.R.	4-27-98	FULL	3500P-AS2	B



Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# 75310.01-113-11

Date 10/10/07 Tech K6.

The information, design or data shown on this document or electronic media is the exclusive property of MI WINDOWS AND DOORS, INC. It is considered confidential and proprietary and is made available for limited use only. Its use or reproduction without the expressed written consent of MI WINDOWS AND DOORS, INC., is prohibited.

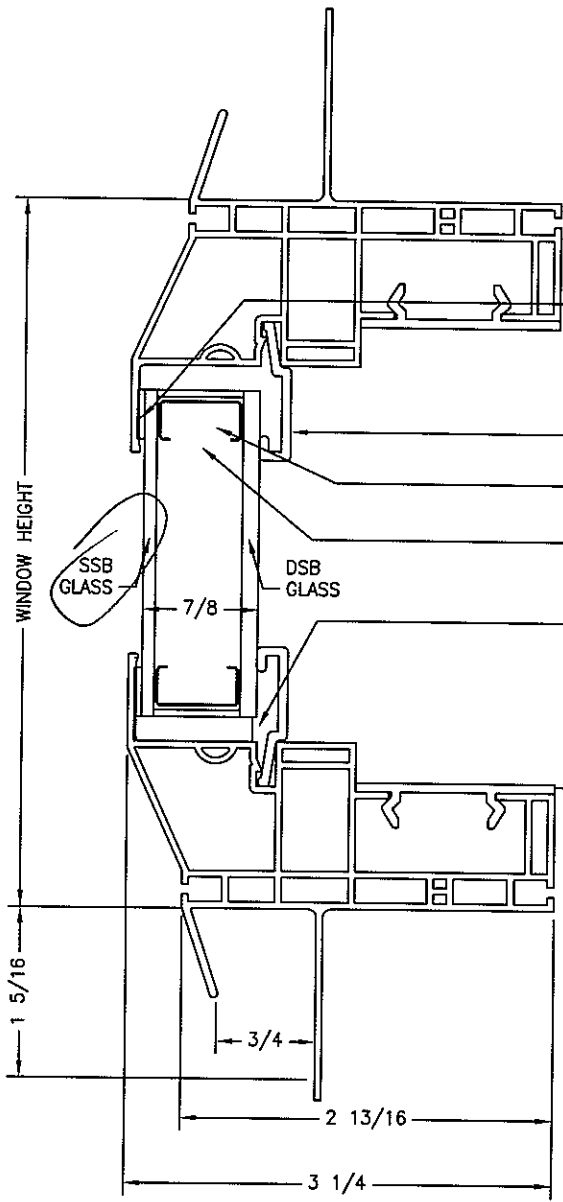
B	UPDATED EXTRUSIONS/PART NOS.	TS	5-27-04
LTR	DESCRIPTION REVISIONS	BY	DATE



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

TITLE 3500/3540 VINYL PICTURE WINDOW WITHOUT J-CHANNEL

DFTM	DATE	SCALE	DWG/PART-NO.	REV
V.M.R.	4-27-98	FULL	3500P-AS2	B

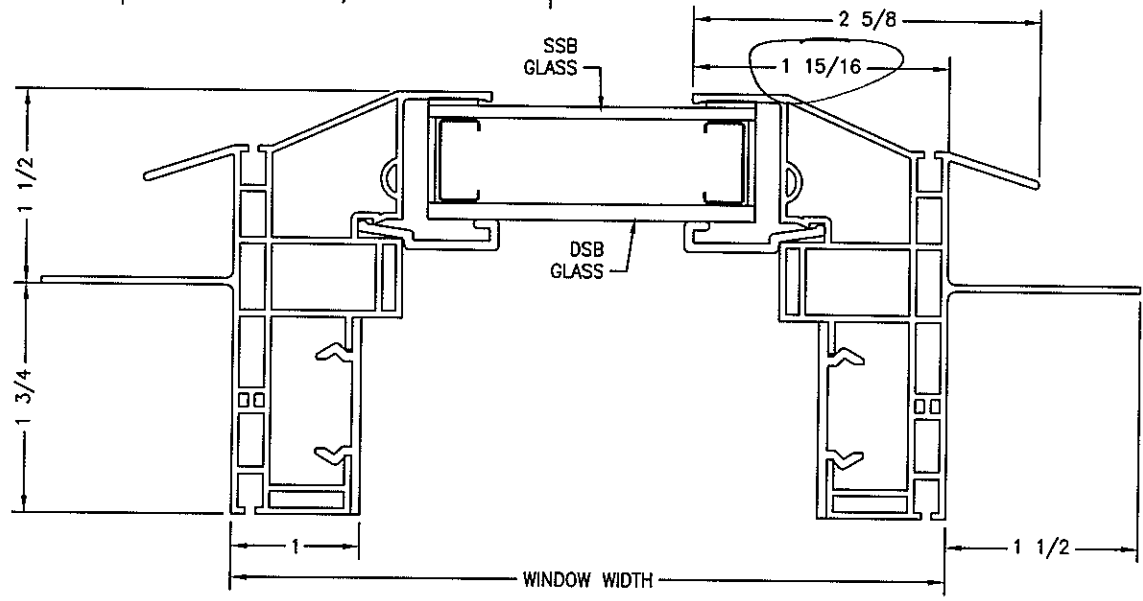


- V-538 MAIN FRAME
- 1/8" x 1/4" GLAZING TAPE
DOUBLE SIDED ADHESIVE
- V-324 GLAZING BEAD
- SPACER CORNER
- GLASS SPACER
- RUBBER SETTING BLOCK
- V-326 MAIN FRAME SNAP-IN



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

Report# 75310.01-113-11
 Date 10/10/07 Tech K6.



The information, design or data shown on this document or electronic media is the exclusive property of MI WINDOWS AND DOORS, INC. It is considered confidential and proprietary and is made available for limited use only. Its use or reproduction without the expressed written consent of MI WINDOWS AND DOORS, INC., is prohibited.

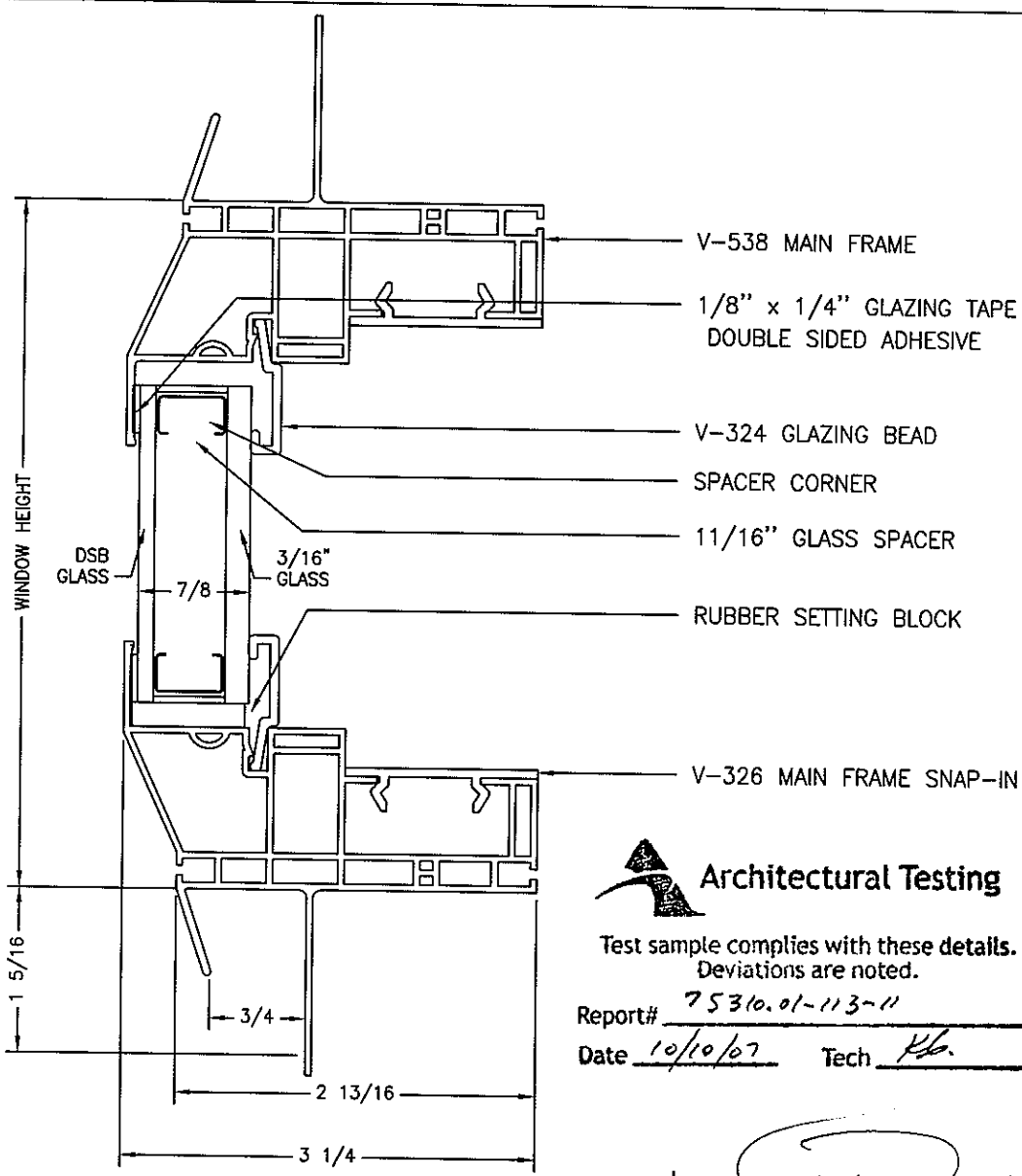


MI WINDOWS AND DOORS
 650 WEST MARKET STREET • GRATZ, PA • 17030-0370

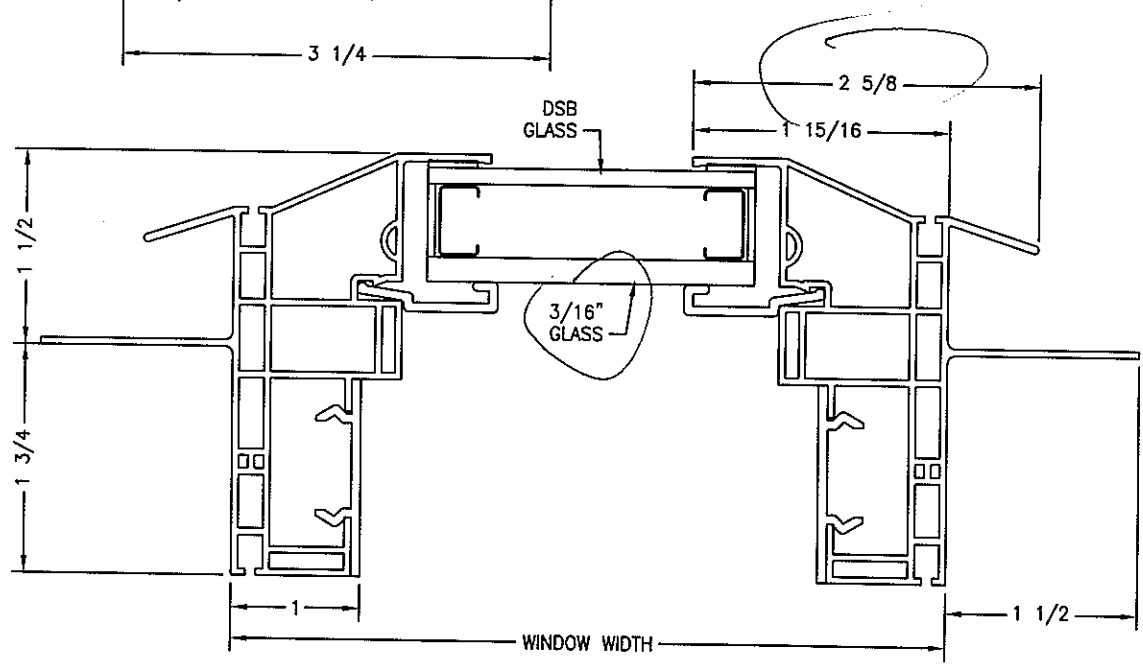
TITLE 3500/3540 VINYL PICTURE WINDOW
 WITH J-CHANNEL

B	UPDATED EXTRUSIONS/PART NOS.	TS	5-27-04
LTR	DESCRIPTION	BY	DATE
	REVISIONS		

DFTM	DATE	SCALE	DWG/PART-NO.	REV
V.M.R.	4-27-98	FULL	3500P-AS1	B



Architectural Testing
 Test sample complies with these details.
 Deviations are noted.
 Report# 75310.01-113-11
 Date 10/10/07 Tech Klb.



The information, design or data shown on this document or electronic media is the exclusive property of MI WINDOWS AND DOORS, INC. It is considered confidential and proprietary and is made available for limited use only. Its use or reproduction without the expressed written consent of MI WINDOWS AND DOORS, INC. is prohibited.

B	UPDATED EXTRUSIONS/PART NOS.	TS	5-27-04
LTR	DESCRIPTION REVISIONS	BY	DATE

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

TITLE **3500/3540 VINYL PICTURE WINDOW WITH J-CHANNEL**

DFTM	DATE	SCALE	DWG/PART-NO.	REV
V.M.R.	4-27-98	FULL	3500P-AS1	B

Appendix D

Photographs



Receive Room View of Installed Specimen



Source Room View of Installed Specimen