Architectural Testing

130 Derry Court
York, PA 17406-8405
phone: 717-764-7700
fax: 717-764-4129
www.archtest.com

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:	71967.01-113-11
Test Date:	11/21/07
Report Date:	01/10/08
Expiration Date:	11/21/11

Test Sample Identification:

Series/Model: 420/430/440

Type: Sliding Glass Door

Performance Class: Residential

Overall Size: 72" by 80"

Glazing (Nominal Dimensions): 5/8" IG (1/8" Tempered, 3/8" Air Space, 1/8" Tempered)

Project Scope: Architectural Testing, Inc. was contracted by MI Windows and Doors, Inc. to

130 Derry Court
York, PA 17406-8405
phone: 717-764-7700
fax: 717-764-4129
www.archtest.com

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 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 40" by 86" and 80" by 86" test specimens. The filler wall achieved an STC rating of 64.

The 80" by 86" plug was removed from the filler wall assembly. The sliding glass door was installed into a wood buck with screws and caulk by the client. The sliding glass door was placed on a foam isolation pad in the test opening. Duct seal was used to seal the perimeter of the test specimen to the test opening on both sides. The interior side of the sliding glass door 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 operable panel was 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 the panel.

Air Leakage Test - The sliding glass door was 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 door frame. 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 sliding glass door was also 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:

Sample Descriptions: (Continued)

Panel Construction:

	Interior Panel	Exterior Panel
Size	36-1/2" by 79"	36-1/2" by 79"
Thickness	1-3/4"	1-3/4"

Sample Descriptions: (Continued)

Components:

TYPE	QUANTITY	LOCATION
Weatherstrip		
0.187" by 0.270" Poly pile with center fin	2 Rows	Lock jamb stile and fixed jamb stile
0.187" by 0.270" Poly pile with center fin	1 Row	Both meeting stiles
0.187" by 0.430" Poly pile with center fin	2 Rows	Top and bottom rails of both panels
1" by 1" Poly pile pad	2	Sill at both meeting stile corners
1" by 1/2" Poly pile pad	7	Head corners, meeting stiles corners, and sill corners
Hardware		
Roller assembly	4	Bottom rails
Lock assembly	1	Lock stile

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 420/430/440, sliding glass door is listed below.

ATI Data File No.	Glazing (Nominal Dimensions)	* Operating Force Pass/Fail	** Air Infiltration	STC	OITC
71967.01	5/8" IG (1/8" tempered, 3/8" air space, 1/8" tempered) Glass temperature - 73°F	Pass	Pass	26	23

* *The maximum allowable operating force,*

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 (4)
- Appendix-C: Drawings (16)
- Appendix-D: Photographs (1)

Architectural Testing

Appendix A

Instrumentation:

Appendix B

Complete Test Results

ATI No.	71967.01	**Date**
Client	MI Windows and Doors, Inc.	
Specimen		
Specimen Area	40.00 Sq Ft	
Filler Area	100.00 Sq Ft	
Operator	Kurt A. Golden	

AAMA 1801 Data Sheets

ATI Job Number :	71967.01-113-11
Client Name :	MI Windows and Doors, Inc.
Test Date :	11/21/07
Tests Performed by:	Kurt Golden
Specimen Type :	Sliding Glass Door
Series/Model Number :	420/430/440
Sample Size :	72" by 80"

Air Leakage per ASTM test method ASTM E283

Total Air flow (ft^3/min) :	26.0		
Extraneous Leakage (ft3/min) :	16.75		
Temperature (^oF) at Specimen:	73		
Barometric Pressure at Specimen (in mbar):	1006	(Inches of Hg) :	29.71
Specimen Area in square feet :	40.00		
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.
25.810	16.627	9.182	0.23

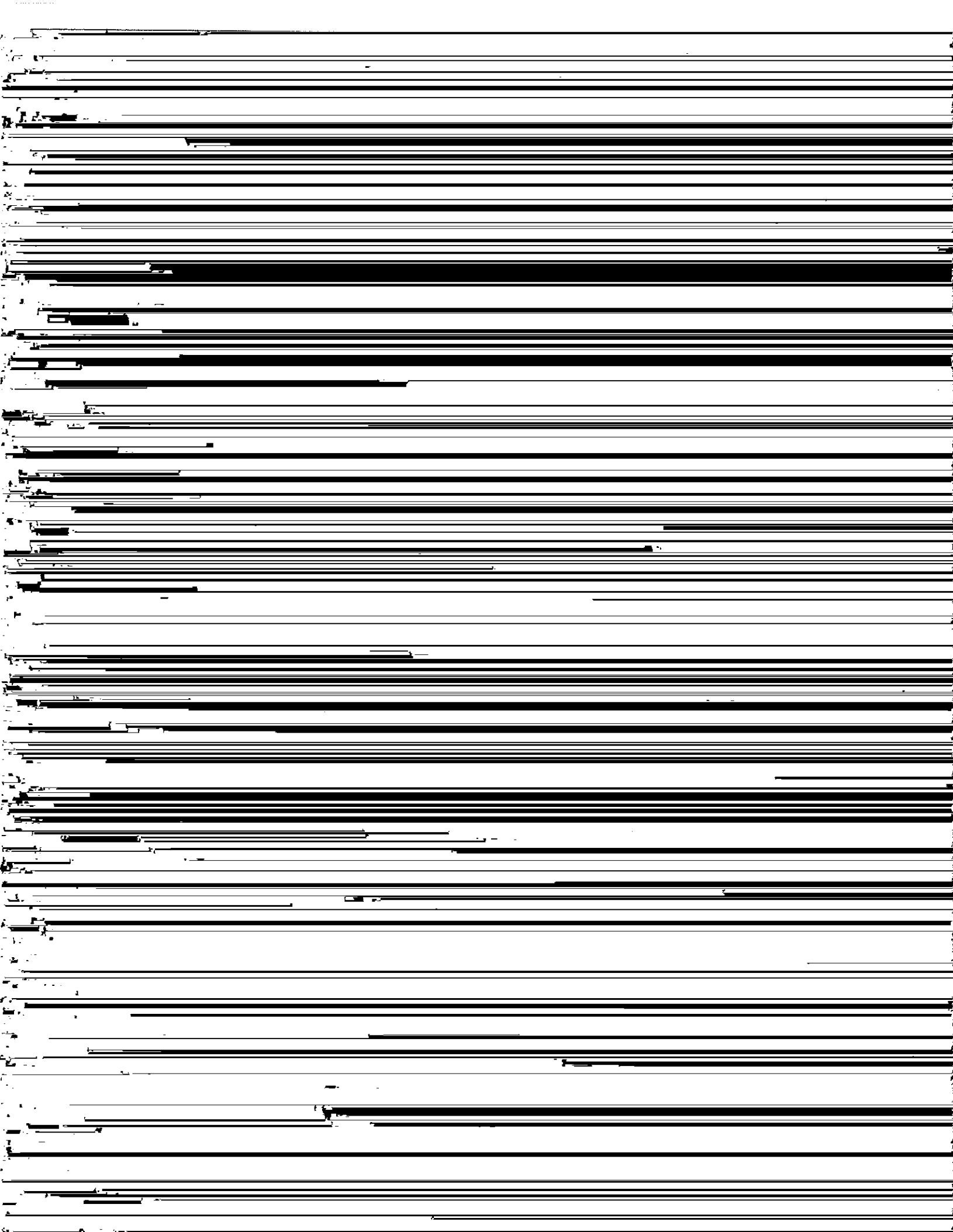
ATI Job Number : 71967.01-113-11
Client Name : MI Windows and Doors, Inc.
Test Date : 11/21/07
Tests Performed by: Kurt Golden
Specimen Type : Sliding Glass Door
Series/Model Number : 420/430/440
Sample Size : 72" by 80"

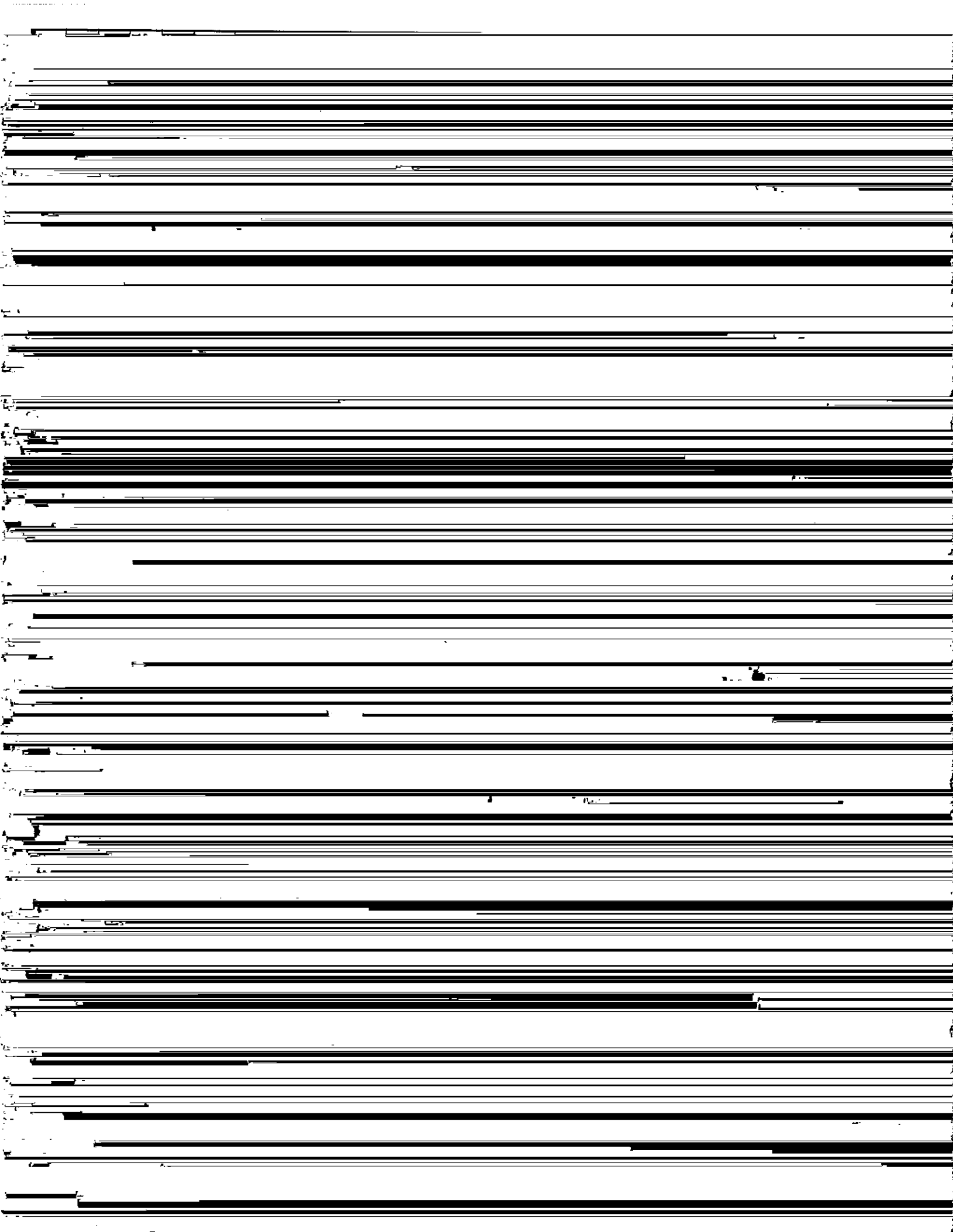
Operating Force per ASTM test method E2068 Method B - Force Gauge

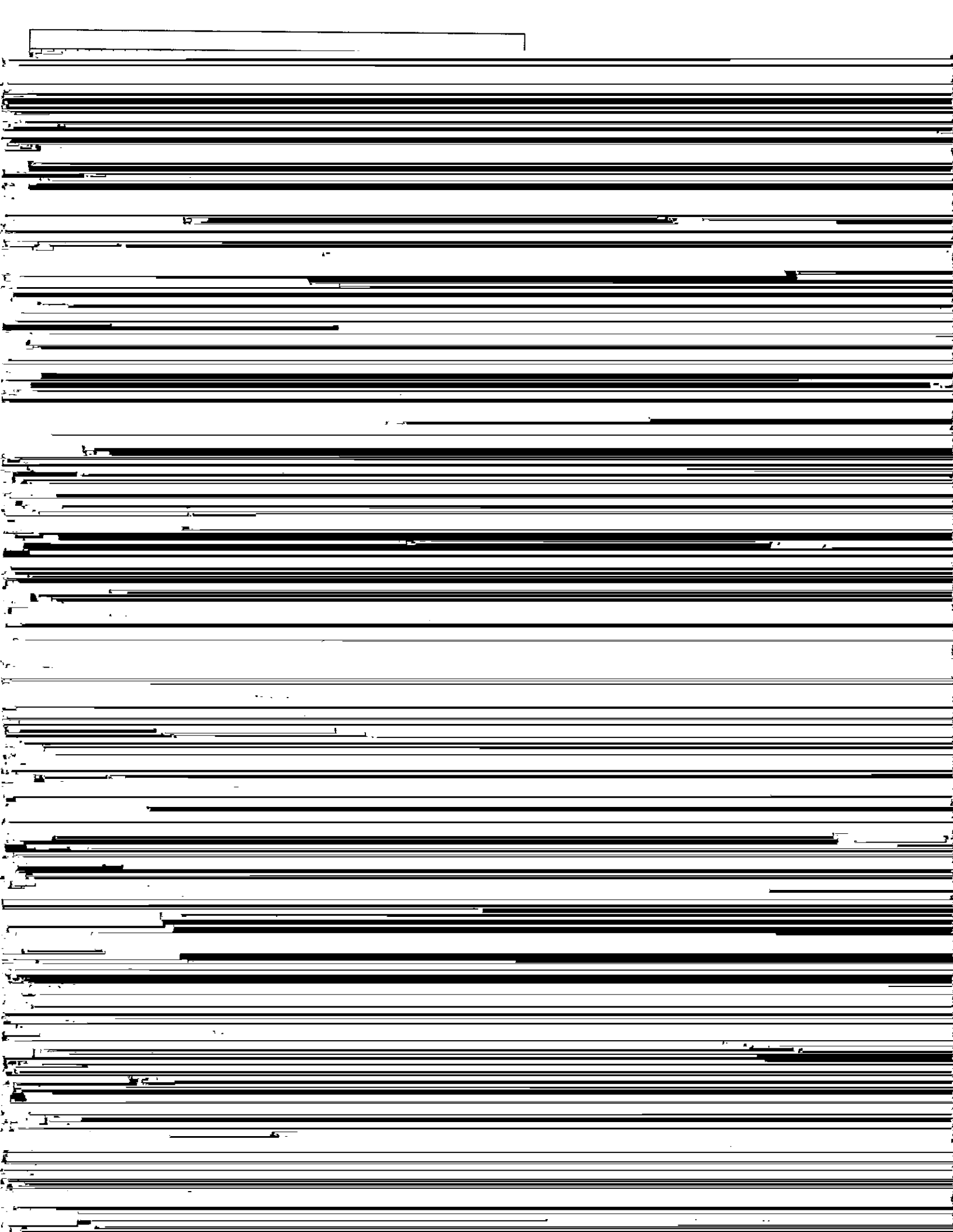
Top Sash

Trial No.	Opening Breakaway	Opening In-Motion	Closing Breakaway	Closing In-Motion
1	3	3	4	3
2	3	4	3	4
3	3	4	3	3

3 Trial Ave.	3.00	3.67	3.33	3.33
10% of 3 trial avg	0.3	0.4	0.3	0.3
8 Trial Average w/o high & low	3.0	3.7	3.3	3.3



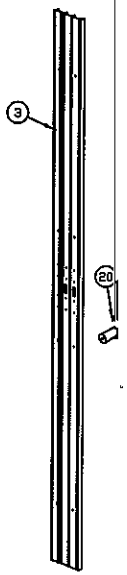




REV.	DATE	ECN	DI
–	04/03/98	028-98	RE
A	10/02/00	040-00	PA
E	07/23/01	027-01	RE
F	07/30/04	101-04	99

Dwg. No. BOM044

ITEM NO.	PART NO
A 1.	4211
	4233
A 2.	4212
A 3.	4213
	4234
4.	4200
	4201
5.	4202
	4203
6.	4204
	4205
7.	4206
	4207
8.	4200
	4201
9.	4202
	4203
10.	4204
	4205
11.	80-02-42
	80-02-42
	80-02-42
12.	–
13.	99-04-14
	99-04-14
14.	99-04-151
	99-04-15
15.	
16.	99-17-195
	99-17-194
17.	99-10-252
F 18.	99-10-260



BetterBilt
704 12th. Ave.
Smyrna, TN 37167
(615) 459-4161

BetterBilt

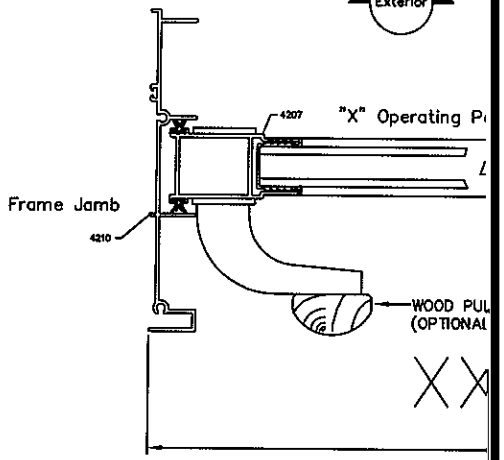
Performan

ROME PRODUCTS

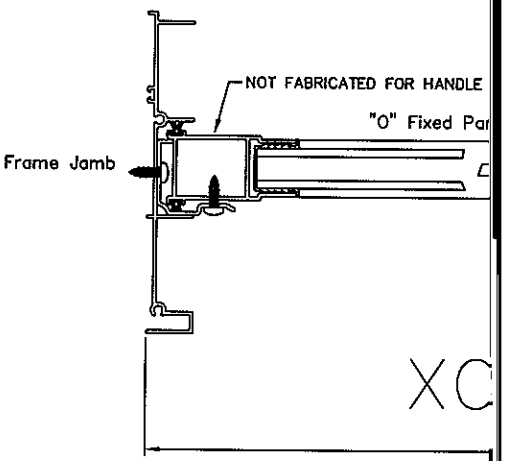
Series

2–Panel Sliding

Exterior



XX



XO

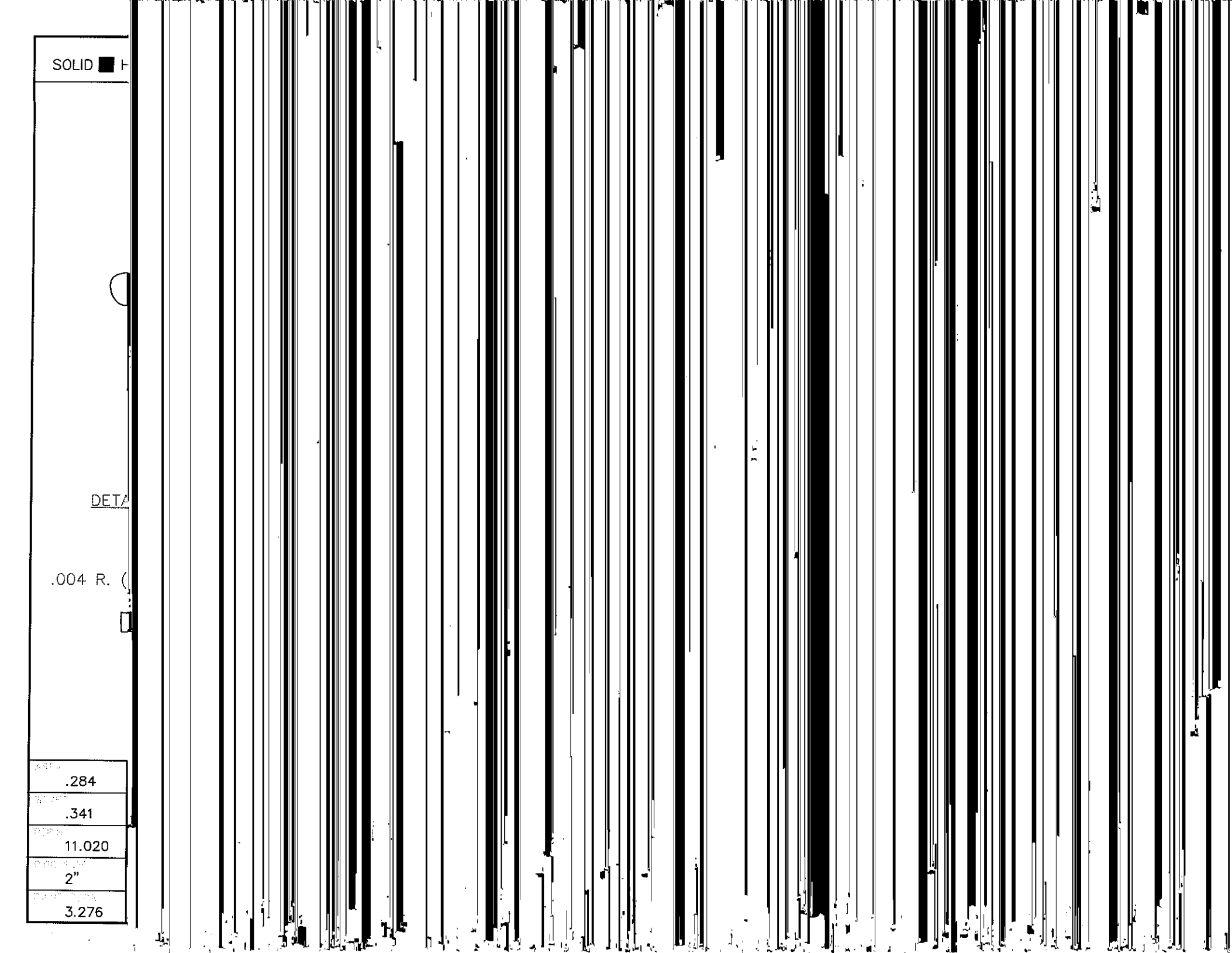
Hor

BetterBilt

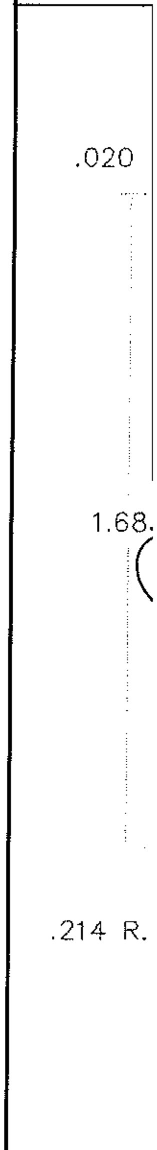
Bet
704
Sm
(61

SE

[illegible]


SOLID
DETA
.004 R.
.284
.341
11.020
2"
3.276

SOLID ☐



AREA
.635

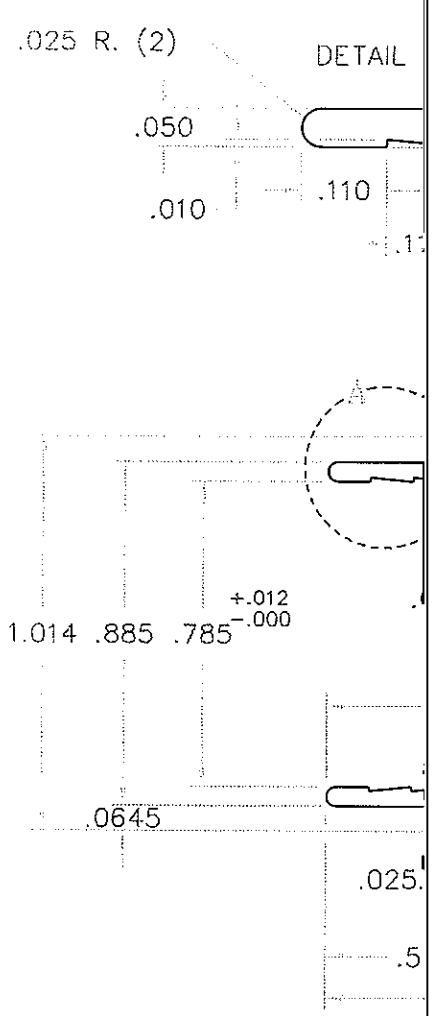
.762

1.3537

2 1/4"

6.283

SOLID ☐ HOLLOW ☒ SEMI HOLLOW ☐



.337
.404
8.906
2 1/2"
5.576

SOLID ■ H

TWO
(I.D.

	.496
	.595
	18.492
	5 1/2"
	12.109

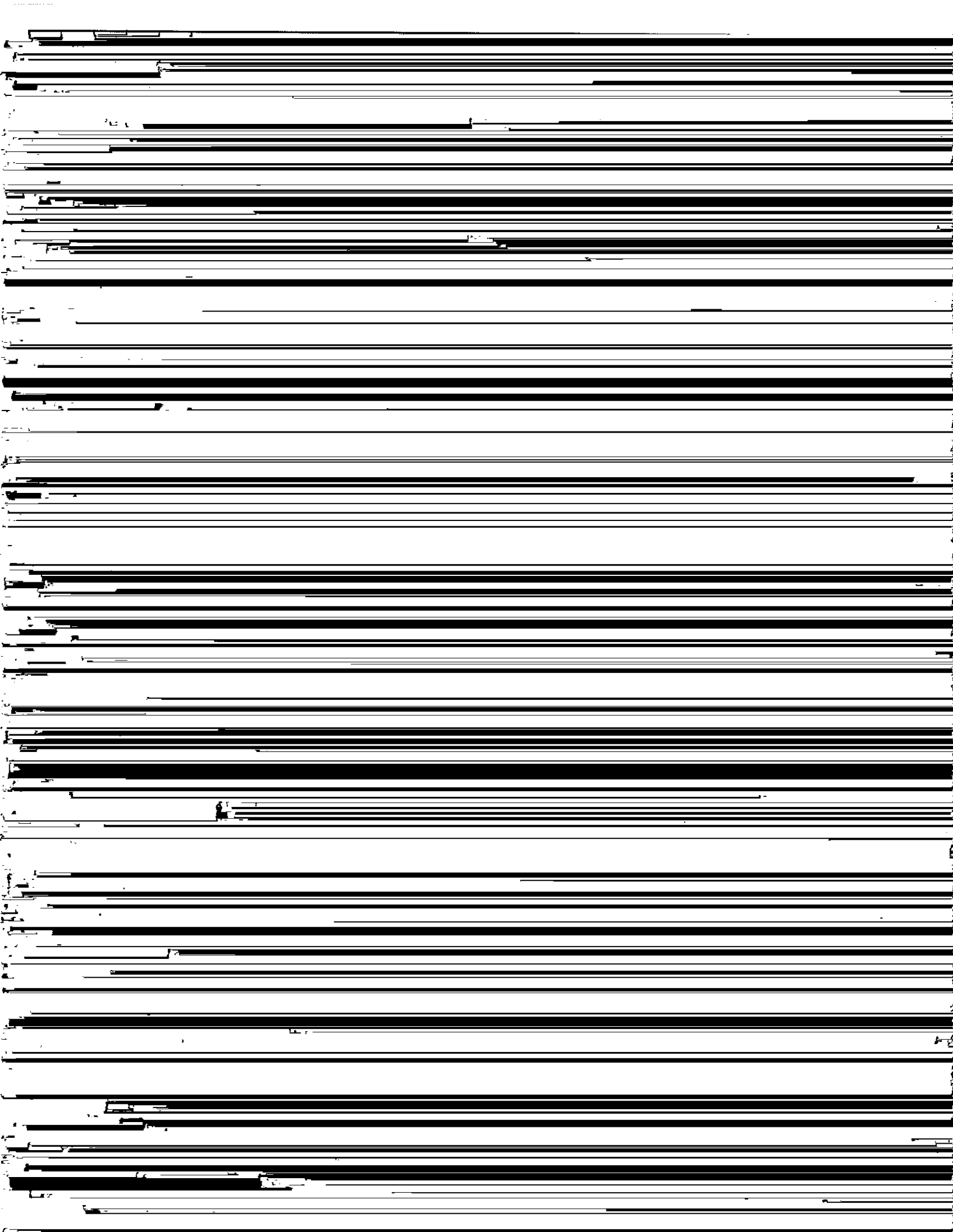
SOLID ■ HOLLOW □

.031 R.

A
1.53

Re
Da

	.582
	.698
	20.322
	5 3/4"
	NONE



Architectural Testing