

FINAL REPORT NUMBER 225-MGA-05-001

SAFETY COMPLIANCE TESTING FOR FMVSS 225
"Child Restraint Anchorage Systems"

TOYOTA MOTOR CORPORATION
2004 LEXUS RX330
NHTSA No. C45102

MGA RESEARCH CORPORATION
446 Executive Drive
Troy, Michigan 48083



Test Date: January 13, 2005
Report Date: March 10, 2005

FINAL REPORT

PREPARED FOR:

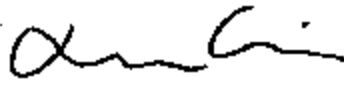
U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
ENFORCEMENT
OFFICE OF VEHICLE SAFETY COMPLIANCE
400 SEVENTH STREET, SW
ROOM 6111 (NVS-220)
WASHINGTON, D.C. 20590

Safety Compliance Testing For FMVSS 225
"Child Restraint Anchorage Systems"

Page 1 of 93
C45102 / DTNH22-02-D-11043

This publication is distributed by the U.S. Department of Transportation, National Highway Traffic Safety Administration in the interest of information exchange. The opinions, findings and conclusions expressed in this publication are those of the author(s) and not necessarily those of the Department of Transportation or the National Highway Traffic Safety Administration. The United States Government assumes no liability for its contents or use thereof. If trade or manufacturers' names or products are mentioned, it is only because they are considered essential to the object of the publication and should not be construed as an endorsement. The United States Government does not endorse products or manufacturers.

Prepared By:


Melanie Schick, Project Engineer

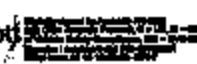

Brad Resume, Test Personnel


Helen A. Kaleto, Laboratory Manager

Approved By:

Approval Date: 3/10/2005

FINAL REPORT ACCEPTANCE BY OVSC:

Amanda Prescott 

Accepted By:

Acceptance Date:

TECHNICAL REPORT STANDARD TITLE PAGE

1. Report No. 225-MGA-05-001	2. Government Accession No.	3. Recipient's Catalog No.	
4. Title and Subtitle Final Report of FMVSS 225 Compliance Testing of a 2004 Lexus RX330, NHTSA No. C45102		5. Report Date March 10, 2005	
		6. Performing Organization Code MGA	
7. Author(s) Helen A. Kaleta, Laboratory Manager Melanie Schick, Project Engineer Brad Reaume, Test Personnel		8. Performing Organization Report No. 225-MGA-05-001	
9. Performing Organization Name and Address MGA Research Corporation 446 Executive Drive Troy, Michigan 48063		10. Work Unit No.	
		11. Contract or Grant No. DTNH22-02-D-11043	
12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Administration Enforcement Office of Vehicle Safety Compliance (NVS-220) 400 Seventh Street, SW Room 6111 Washington, DC 20590		13. Type of Report and Period Covered Final Test Report	
		14. Sponsoring Agency Code NVS-220	
15. Supplementary Notes			
16. Abstract A compliance test was conducted on the subject 2004 Lexus RX330, NHTSA No. C45102, in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-225T & 225L for the determination of FMVSS 225 compliance. The tests were conducted at MGA Research Corporation in Troy, Michigan on January 13, 2005. Test failures identified were as follows: S15.1.2.2 (b)(1): The lower anchor bars were 81 mm behind point Z of the CRF. The data recorded indicates that the 2004 Lexus RX330 tested does not appear to comply with the requirements of FMVSS 225.			
17. Key Words Compliance Testing Safety Engineering FMVSS 225 2004 Lexus RX330		18. Distribution Statement Copies of this report are available From: NHTSA Technical Reference Division, Mail Code: NPO-230 400 Seventh Street, SW, Room PL-403 Washington, D.C. 20590 Telephone No. (202) 365-4946	
19. Security Classif. (of this report) Unclassified	20. Security Classif. (of this page) Unclassified	21. No. of Pages 93	22. Price

Form DOT F 1700.7 (8-70)

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
1.0 PURPOSE AND PROCEDURE	5
2.0 COMPLIANCE TEST AND DATA SUMMARY	5
3.0 TEST VEHICLE INFORMATION	6
4.0 TEST EQUIPMENT LIST AND CALIBRATION INFORMATION	8
5.0 DATA	9
6.0 PHOTOGRAPHS	14
6.1 Front view	
6.2 Rear view	
6.3 ¼ Front left view	
6.4 ¼ Front right view	
6.5 Test vehicle's certification labels	
6.5.1 Certification label	
6.5.2 Tire information label	
6.6 Vehicle tie down at each tie down location	
6.6.1 Front under vehicle	
6.6.2 Left front	
6.6.3 Left rear	
6.6.4 Right front	
6.6.5 Right rear	
6.6.6 Rear	
6.7 2-Dimensional template	
6.7.1 LH position photo #1	
6.7.2 LH position photo #2	
6.7.3 Center position photo #1	
6.7.4 Center position photo #2	
6.7.5 RH position photo #1	
6.7.6 RH position photo #2	
6.8 CRF verification	
6.8.1 LH position photo #1	
6.8.2 LH position photo #2	
6.8.3 RH position photo #1	
6.8.4 RH position photo #2	
6.9 ¼ Front view of test vehicle with test apparatus in place	
6.9.1 ¼ Left view of SFADII test 1 of 2	
6.9.2 ¼ Right view of SFADII test 1 of 2	
6.9.3 ¼ Left view of SFADI test 2 of 2	
6.9.4 ¼ Right view of SFADI test 2 of 2	
6.10 Pre-test views of each child restraint anchorage system installed in the vehicle	
6.10.1 Pre-test photo #1 of SFADII test 1 of 2	
6.10.2 Pre-test photo #2 of SFADII test 1 of 2	
6.10.3 Pre-test photo #3 of SFADII test 1 of 2	
6.10.4 Pre-test photo #1 of SFADI test 2 of 2	
6.10.5 Pre-test photo #2 of SFADI test 2 of 2	
6.10.6 Pre-test photo #3 of SFADI test 2 of 2	

TABLE OF CONTENTS (continued)

	<u>PAGE</u>
6.11 Post-test views of each child restraint anchorage system installed in the vehicle	46
6.11.1 Post-test photo #1 of SFADII test 1 of 2	
6.11.2 Post-test photo #2 of SFADII test 1 of 2	
6.11.3 Post-test photo #3 of SFADII test 1 of 2	
6.11.4 Post-test photo #4 of SFADII test 1 of 2	
6.11.5 Post-test photo #5 of SFADII test 1 of 2	
6.11.6 Post-test photo #6 of SFADII test 1 of 2	
6.11.7 Post-test photo #7 of SFADII test 1 of 2	
6.11.8 Post-test photo #8 of SFADII test 1 of 2	
6.11.9 Post-test photo #9 of SFADII test 1 of 2	
6.11.10 Post-test photo #10 of SFADII test 1 of 2	
6.11.11 Post-test photo #11 of SFADII test 1 of 2	
6.11.12 Post-test photo #1 of SFADI test 2 of 2	
6.11.13 Post-test photo #2 of SFADI test 2 of 2	
6.11.14 Post-test photo #3 of SFADI test 2 of 2	
6.11.15 Post-test photo #4 of SFADI test 2 of 2	
6.11.16 Post-test photo #5 of SFADI test 2 of 2	
6.11.17 Post-test photo #6 of SFADI test 2 of 2	
7.0 PLOTS	63
8.0 REPORT OF VEHICLE CONDITION	66
 <u>SECTION</u>	
APPENDIX A OWNERS MANUAL CHILD RESTRAINT SYSTEMS	68
APPENDIX B MANUFACTURER'S DATA (OVSC Form 14)	82

LIST OF TABLES

<u>TABLE#</u>		
1.	Summary Data for Strength and Displacement	6
2.	General Test and Vehicle Parameter Data	6
3.	Child Restraint Tether Anchorage Configuration (Data Sheet 1)	9
4.	Child Restraint Lower Anchorage Configuration (Data Sheet 2)	10
5.	Tether Location and Dimensional Measurements (Data Sheet 3)	12
6.	Tether Anchorage Static Loading and Displacement (Data Sheet 5)	13

1.0 PURPOSE AND PROCEDURE

PURPOSE

The child restraint anchorage testing results presented in this report are part of the Federal Motor Vehicle Safety Standard (FMVSS) No. 225 compliance test program conducted for the National Highway Traffic Safety Administration (NHTSA) by MGA Research Corporation (MGA) under Contract No. DTNH22-02-D-11043. The purpose of the testing was to determine if the subject vehicle, a 2004 Lexus RX330, NHTSA No. C45102 meets the performance requirements of FMVSS No. 225, "Child Restraint Anchorage Systems."

PROCEDURE

This testing was conducted in accordance with NHTSA's Office of Vehicle Safety Compliance (OVSC) Laboratory Test Procedures, TP-225T (5/3/01) and TP-225L (6/11/01), and MGA's Laboratory Test Procedure, MGATP225GOV (3/20/03).

The front occupant compartment consisted of two (2) adjustable outboard bucket seats and the rear occupant compartment consisted of a 2nd row three-passenger 40/20/40 seat. Each 2nd row outboard occupant seating position was equipped with a child restraint anchorage system (one tether and two lower anchors). The 2nd row center occupant seating position was equipped with a tether anchorage. The center-to-center spacing between the 2nd row outboard lower anchorages was approximately 765 mm. Each 2nd row outboard occupant seating position was tested with the SFADII fixture, and the 2nd row center occupant seating position was tested with the SFADI fixture.

2.0 COMPLIANCE TEST AND DATA SUMMARY

TEST SUMMARY

The testing was conducted at MGA in Troy, Michigan on January 13, 2005.

Based on the test results, the 2004 Lexus RX330 does not appear to comply with S15.1.2.2(b)(1). The lower anchor bars were 81 mm rearward of point Z of the CRF. The maximum distance permitted in S15.1.2.2(b)(1) is 70 mm.

The SFADII at the 2nd row left occupant seating position sustained a maximum force of 8,449 N and held the required load for 2 seconds. The total displacement from point "X" on the SFADII for the 2nd row left occupant seating position was 39 mm. The SFADII at the 2nd row right occupant seating position sustained a maximum force of 8,400 N and held the required load for 2 seconds. The total displacement from point "X" on the SFADII for the 2nd row right occupant seating position was 40 mm. The SFADI at the 2nd row center occupant seating position sustained a maximum force of 15,175 N and held the required load for 1 second.

DATA SUMMARY

Strength and displacement summary data are provided below, and data for the configuration and the location of each child restraint anchorage system are provided in Section 5.0. Photographs are found in Section 6.0 and test plots are found in Section 7.0.

Table 1. Summary Data for Strength and Displacement

MGA Test #	Fixture Type	Test Configuration	Seating Position	Max. Load (N)	Displacement (mm)
SB5011	SFAD II	Lower Anchors Only	2 nd Row Left	8,449	39
			2 nd Row Right	8,400	40
SB5012	SFAD I	Top Tether Only	2 nd Row Center	15,175	N/A

N/A indicates that the displacement criteria does not apply to this test.

3.0 TEST VEHICLE INFORMATION

Table 2. General Test and Vehicle Parameter Data

VEH. MOD YR/MAKE/MODEL/BODY	2004 Lexus RX330
VEH. NHTSA NO.	C45102
VIN	JTJHA31U940045394
COLOR	White
VEH. BUILD DATE	10/03
TEST DATE	January 13, 2005
TEST LABORATORY	MGA Research Corporation
OBSERVERS	Melanie Schick, Brad Reaume, Kenney Godfrey

GENERAL INFORMATION:

DATA FROM VEHICLE'S CERTIFICATION LABEL:

Vehicle Manufactured By: Toyota Motor Corporation

Date of Manufacture: 10/03; VIN: JTJHA31U940045394

GVWR: 2380 kg; GAWR FRONT: 1300 kg

GAWR REAR: 1300 kg

DATA FROM TIRE PLACARD:

Tire Pressure with Maximum Capacity Vehicle Load:

FRONT: 210 kPa REAR: 210 kPa

Recommended Tire Size: P225/65R17

Recommended Cold Tire Pressure:

FRONT: 210 kPa REAR: 210 kPa

Size of Tire on Test Vehicle: P225/65R17

Type of Spare Tire: Standard: P225/65R17

VEHICLE CAPACITY DATA:

Type of Front Seats: Bench ; Bucket X; Split Bench

Number of Occupants: Front 2 ; Middle N/A; Rear 3 ; TOTAL 5

4.0 TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

MGA Research Corporation 446 Executive Drive Troy, Michigan 48063	
Test Equipment Used for Testing	Calibration Due Date
MGA Hydraulic Test Frame	N/A
Three (3) Load Cell 3,000 lb Capability	S/N 251 (04/18/05), S/N 153 (04/18/05), & S/N 112 (04/12/05)
Two (2) String Potentiometer	Calibrated at each use (S/N 20769, 20763)
Hydraulic Pump	N/A
MGA CRF Fixture	N/A
MGA SFADI	N/A
MGA SFADII	N/A
MGA 2-Dimensional Template	N/A
Linear Scale	S/N TPM246 (01/07/05), TPM411 (11/05/05)
MGA Data Acquisition System	N/A
One (1) Hydraulic Cylinder	N/A
Digital Calipers	S/N MGA00074 (02/23/05)
Force Gauge	S/N MGA00113 (05/19/05)
Inclinometer (Digital)	S/N MGA00049 (08/23/05)

5.0 DATA

Table 3. Child Restraint Tether Anchorage Configuration (Data Sheet 1)

Seating Position		Permit the attachment of a tether hook	Accessible without the need for any tool other than a screwdriver or coin	Ready for use without the need for any tools	Sealed to prevent the entry of exhaust fumes
Front Row		N/A	N/A	N/A	N/A
Second Row	LH	Yes	Yes	Yes	Yes
	Ctr.	Yes	Yes	Yes	Yes
	RH	Yes	Yes	Yes	Yes
Third Row		N/A	N/A	N/A	N/A

Note: AS DETERMINED USING THE PROCEDURES SPECIFIED IN TP-225L & 225T.

REMARKS: NONE.

Table 4. Child Restraint Lower Anchorage Configuration (Data Sheet 2)

OBSERVED LOWER ANCHORAGE CONFIGURATION	SEAT POSITION				
		FRONT ROW	SECOND ROW		THIRD ROW
			I/B	O/B	
Above anchorage, permanently marked with a circle not less than 13 mm in Dia.; and whose color contrasts with its background; and its center is not less than 50 mm and not more than 100 mm above the bar, and in the vertical longitudinal plane that passes through the center of the bar.	LH	N/A	No	No*	N/A
	Ctr		N/A		
	RH		No	Yes	
Each of the bars is visible, without the compression of the seat cushion or seat back, when the bar is viewed, in a vertical longitudinal plane passing through the center of the bar, along a line marking an upward 30 degree angle with a horizontal plane.	LH	N/A	No		N/A
	Ctr		N/A		
	RH		No		
Diameter of the bar (mm)	LH	N/A	5.95	5.95	N/A
	Ctr		N/A		
	RH		5.98	5.99	
Inspect if the bars are straight, horizontal and transverse	LH	N/A	Yes		N/A
	Ctr		N/A		
	RH		Yes		
Optional Marking: At least one anchorage bar (when deployed for use, if storable anchorages), one guidance fixture, or one seat marking is visible.	LH	N/A	N/A		N/A
	Ctr				
	RH				
Optional Marking: If guidance fixtures are used, the fixture(s) must be installed.	LH	N/A	N/A		N/A
	Ctr				
	RH				
Measure the distance between Point "Z" of the CRF and the center of the anchorage bar (mm)	LH	N/A	81		N/A
	Ctr		N/A		
	RH		81		
Measure the distance between the SRP to the center of the anchorage bar (mm)	LH	N/A	215		N/A
	Ctr		N/A		
	RH		213		

REMARKS: *Upon receipt of the vehicle, no marking was present (previously removed).

Table 4. Child Restraint Lower Anchorage Configuration (Data Sheet 2) (continued)

OBSERVED LOWER ANCHORAGE CONFIGURATION	SEAT POSITION				
		FRONT ROW	SECOND ROW		THIRD ROW
			I/B	O/B	
Inspect if the centroidal longitudinal axes are collinear within 5 degrees	LH	N/A	Yes		N/A
	Ctr		N/A		
	RH		Yes		
Inspect if the inside surface of the bar that is straight and horizontal section of the bars, and determine they are not less than 25 mm, but not more than 40 mm in length (mm).	LH	N/A	36	36	N/A
	Ctr		N/A		
	RH		37	37	
Inspect if the bars can be connected to, over their entire inside length by the connectors of child restraint system.	LH	N/A	Yes		N/A
	Ctr		N/A		
	RH		Yes		
Measure the distance between the center of the length of one bar to the center of the length of the other bar. The requirement is 280 mm ± 1 mm (mm).	LH	N/A	280		N/A
	Ctr		N/A		
	RH		280		
Inspect if the bars are an integral and permanent part of the vehicle.	LH	N/A	Yes		N/A
	Ctr		N/A		
	RH		Yes		
Inspect if the bars are rigidly attached to the vehicle. If feasible, hold the bar firmly with two fingers and gently pull.	LH	N/A	Yes		N/A
	Ctr		N/A		
	RH		Yes		

PITCH, YAW, & ROLL INFORMATION

SEAT POSITION	PITCH (deg)	YAW (deg)	ROLL (deg)
2 nd Row Left	14	No Data	0
2 nd Row Center	N/A	N/A	N/A
2 nd Row Right	13	No Data	0

N/A indicates that there were no lower anchors in the center seating position.

Note: AS DETERMINED USING THE PROCEDURES SPECIFIED IN TP-225L & 225T.

REMARKS: NONE

Table 5. Tether Location and Dimensional Measurements (Data Sheet 3)

SEAT POSITION FOR TETHER		TETHER ANCHORAGE LOCATION Located in the required zone?
Front Row		N/A
Second Row	LH	Yes
	Chr.	Yes
	RH	Yes
Third Row		N/A

Note: AS DETERMINED USING THE PROCEDURES SPECIFIED IN TP-225L & 225T.

REMARKS: NONE

Table 6. Tether Anchorage Static Loading and Displacement (Data Sheet 5)

SEAT POSITION		Seat, Seat Back, & Head Restraint Positions			Type of SFAD Used	Angle (deg)	Initial Location (mm)	Onset Rate (N/sec.)	Force Applied (N)	Max. Load (N)	Final Location (mm)	Horiz. Displ. (mm)
		Seat	Seat Back	In There a H/R?								
Front Row		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Second Row	LH	Full Rwd	Fixed	Yes	II	9	18	3975	7,950	8,449*	57	39
	Cr.			Yes	I	6	N/A	556	15,000	15,175*	N/A	N/A
	RH			No**	II	9	22	3975	7,950	8,400*	62	40
Third Row		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Note: (1) AS DETERMINED USING THE PROCEDURES SPECIFIED IN TP-225L & 225T.

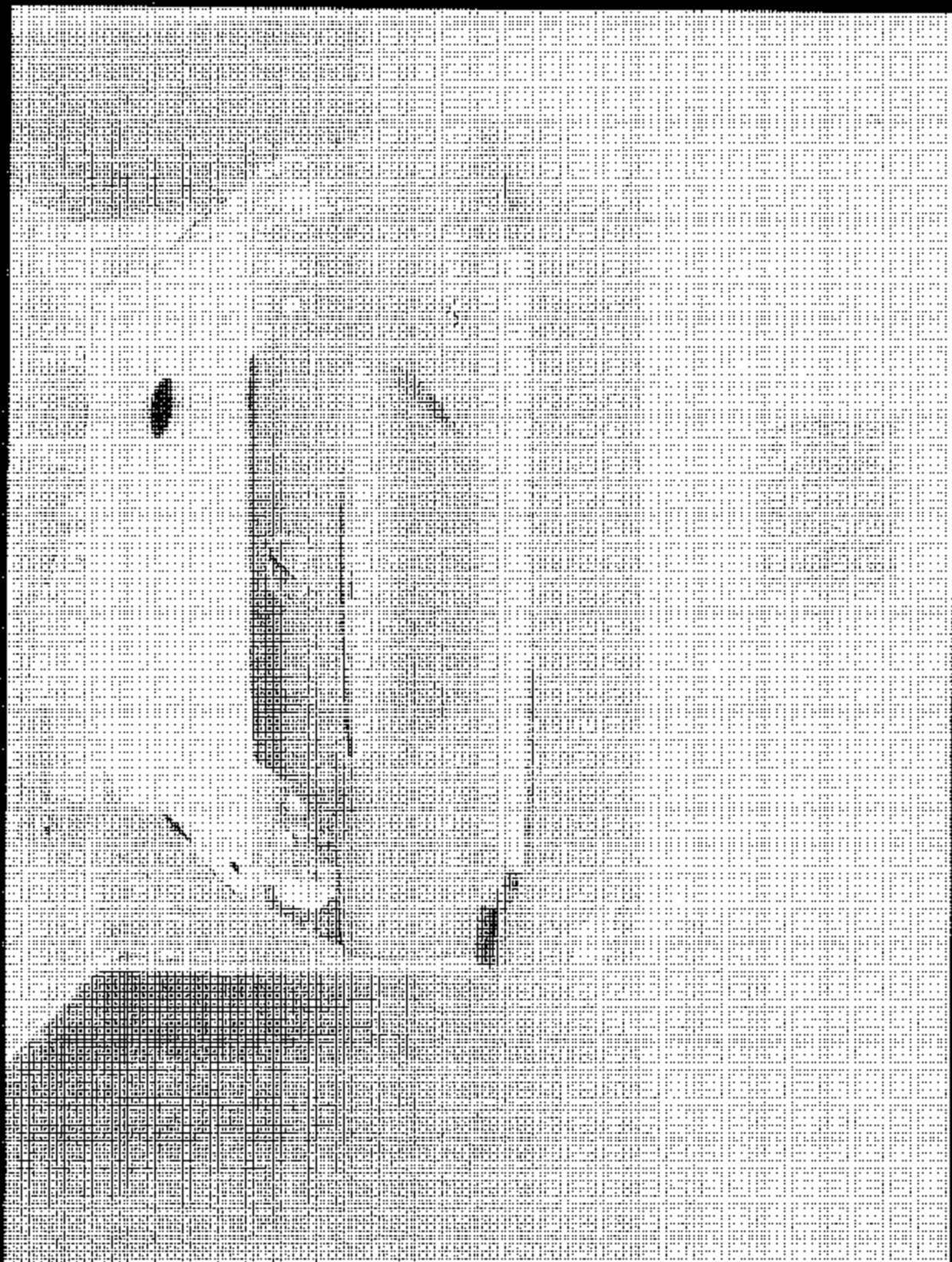
REMARKS: * Applied force exceeded the force specified in the test procedure.
 ** RH seating position head restraint was not present at the time of testing.

6.0 PHOTOGRAPHS

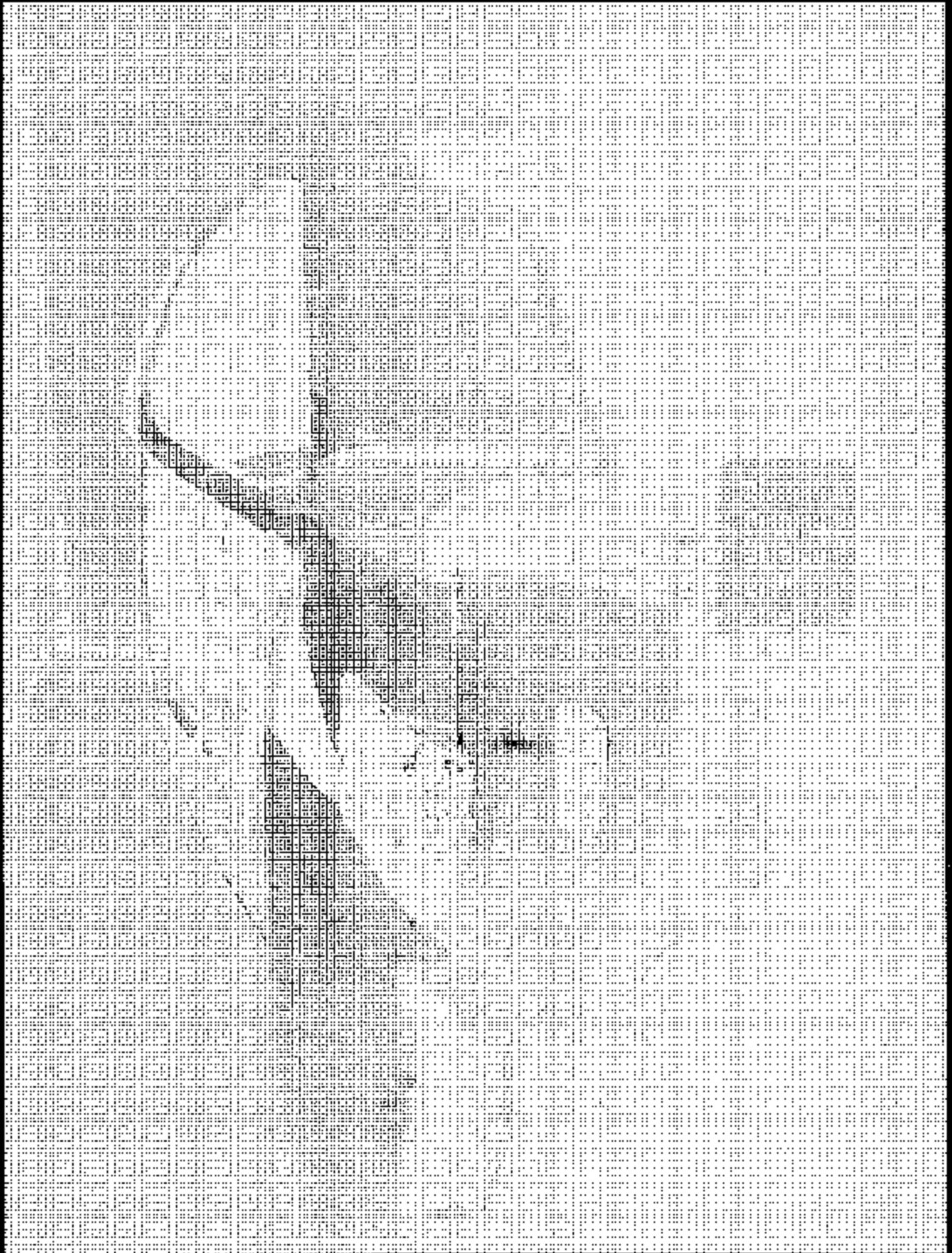
6.1 Front view



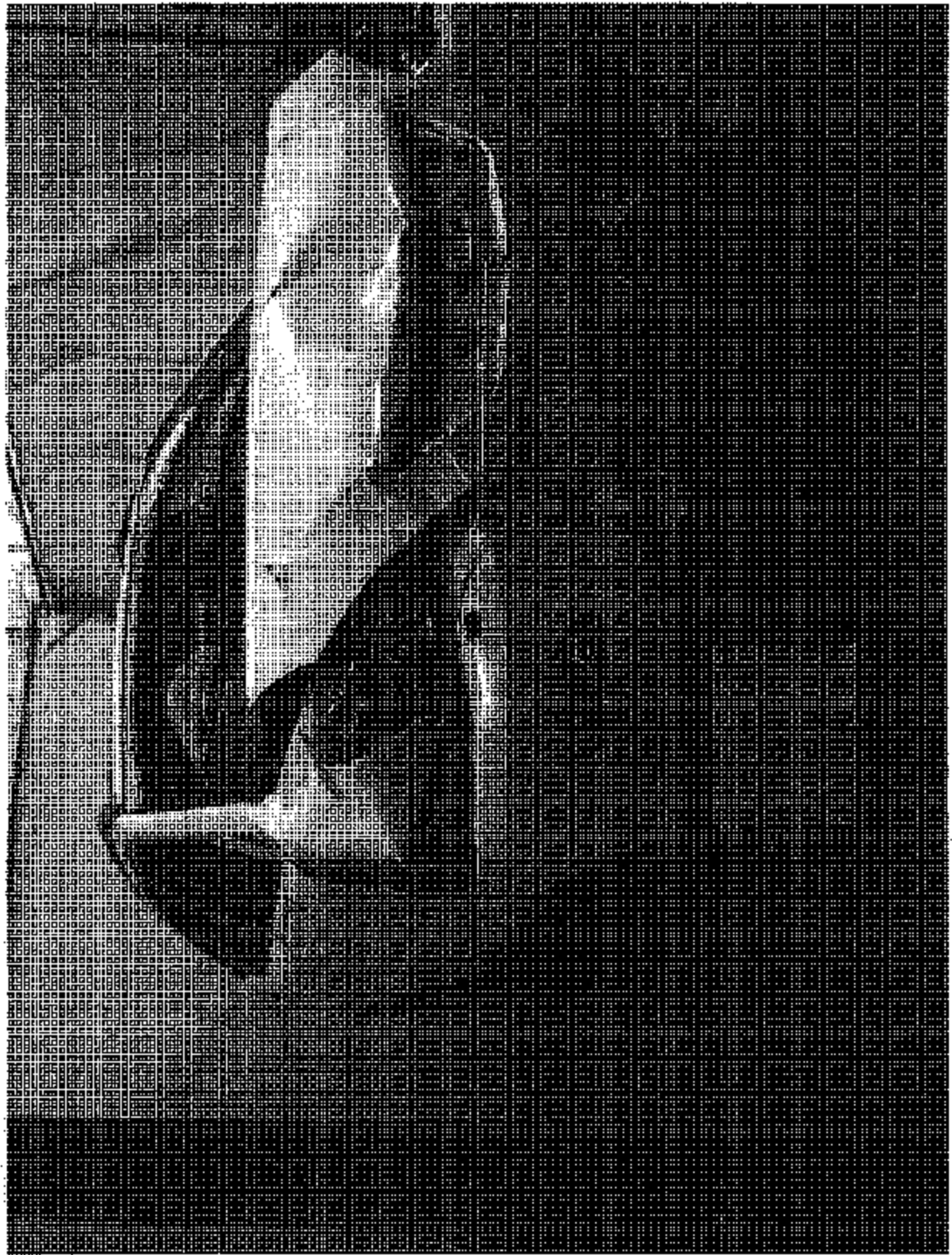
6.2 Rear view



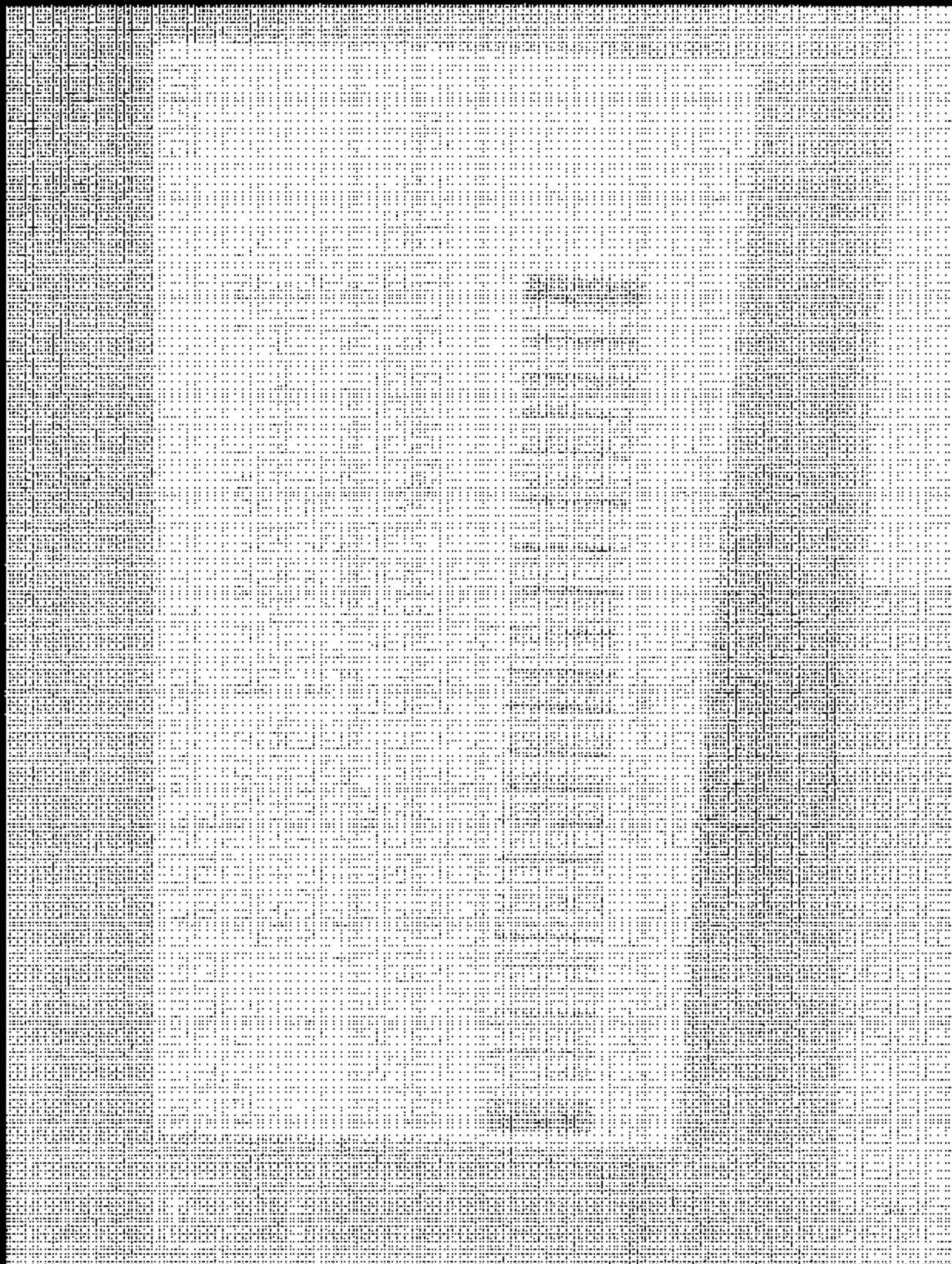
6.3 $\frac{3}{4}$ Front left view



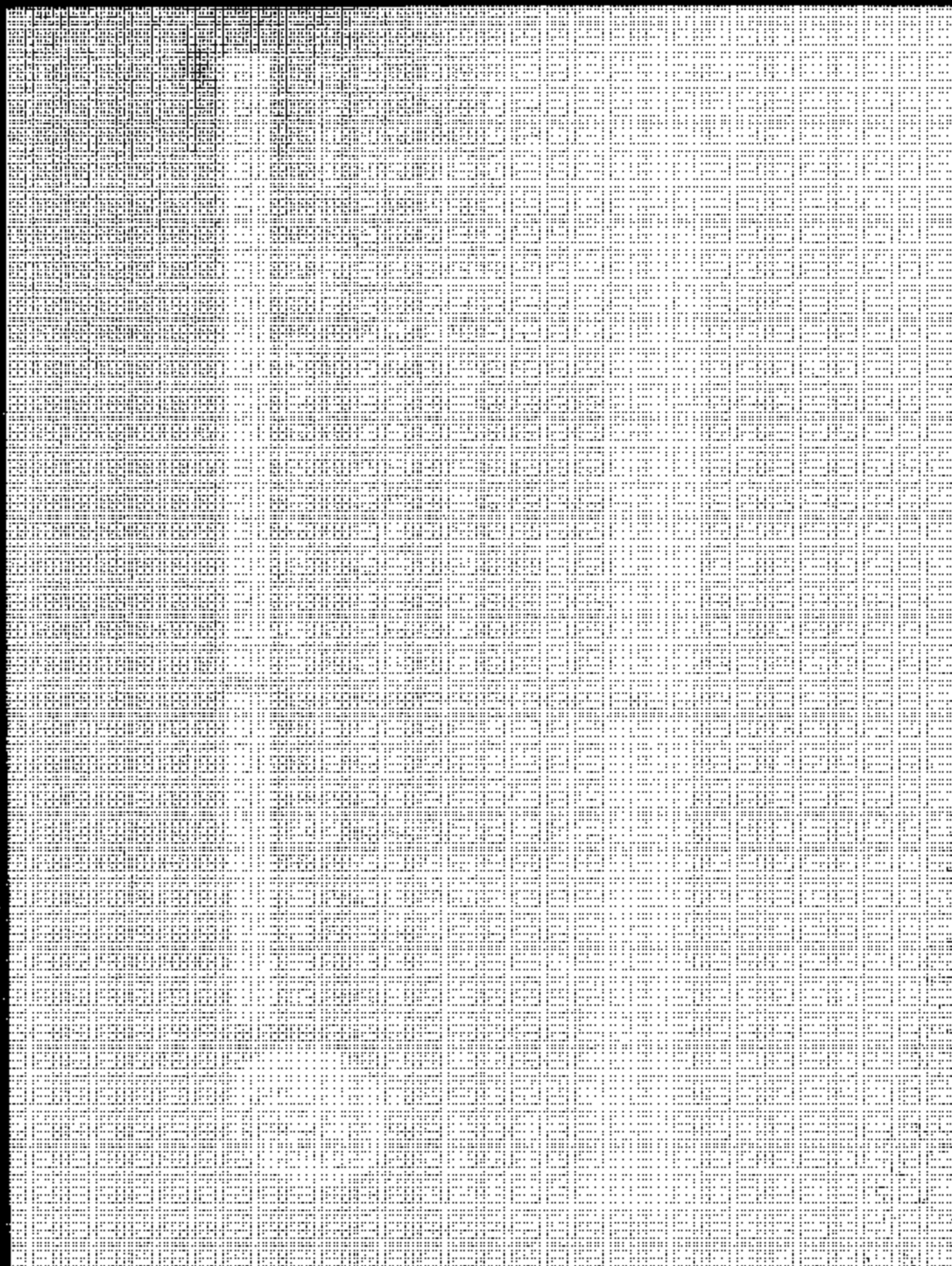
6.4 1/2 Front right view



6.5 Test vehicle's certification label
6.5.1 Certification label



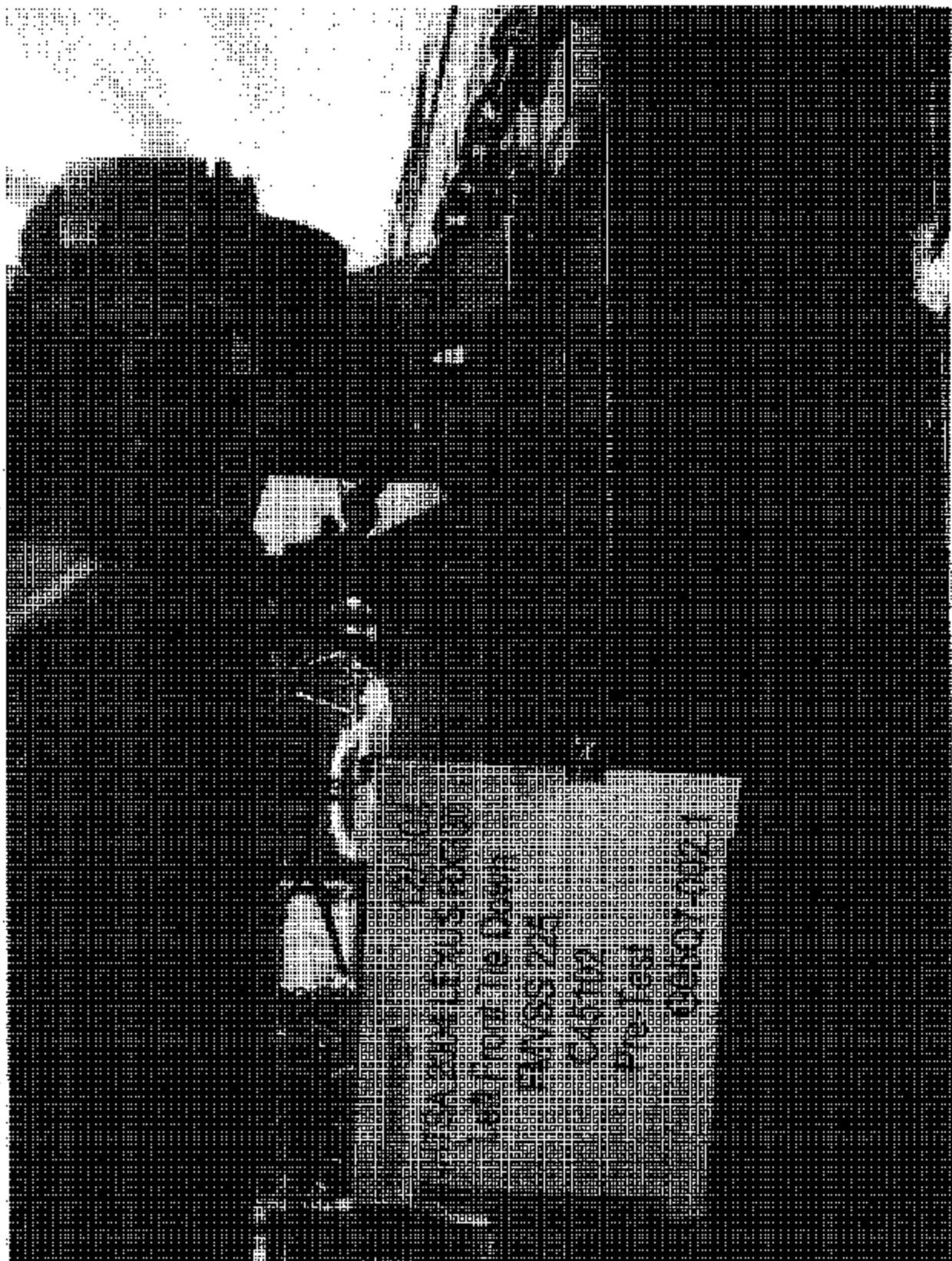
6.3.2 Tire information label



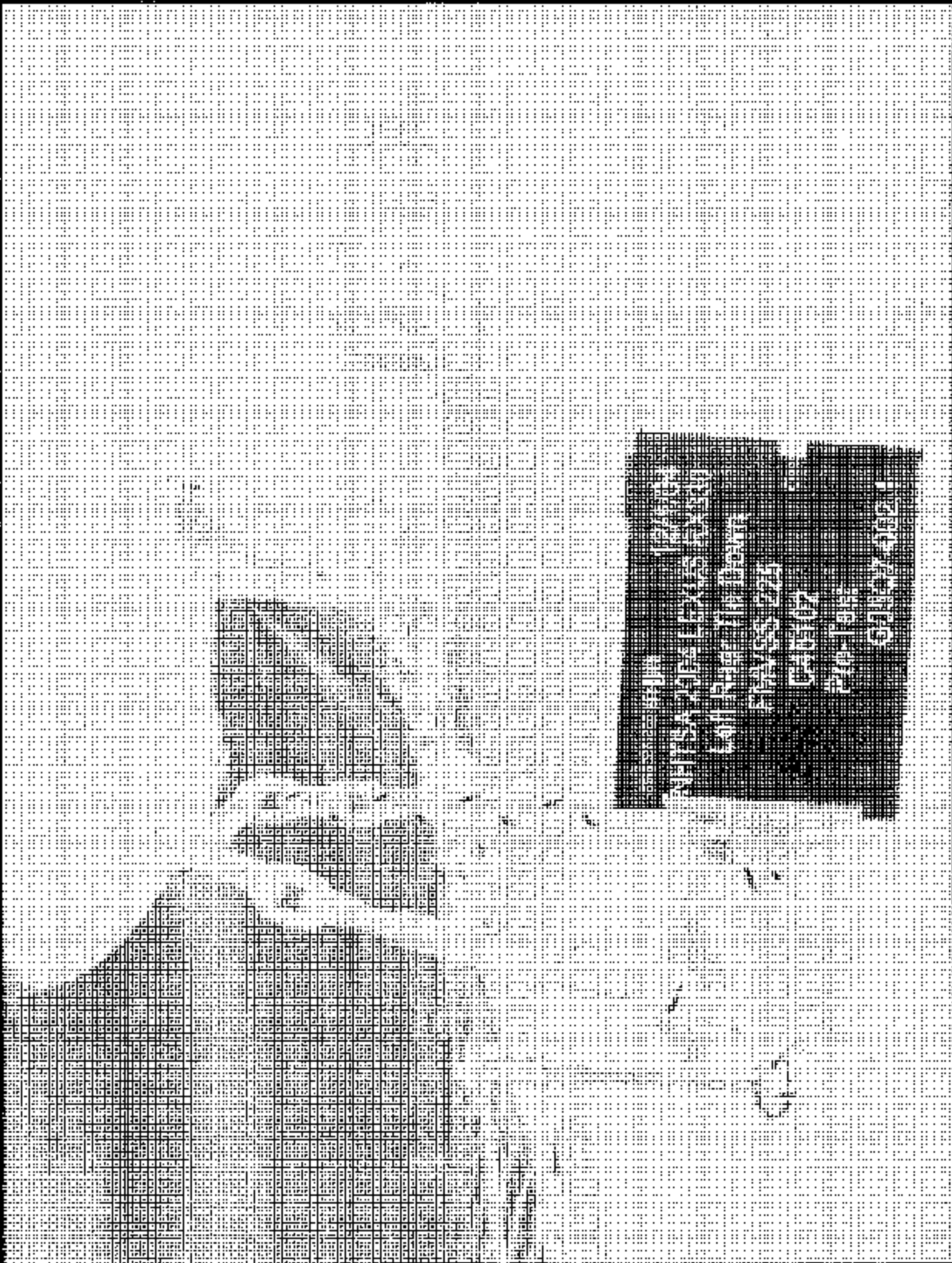
6.6 Vehicle tie down at each tie down location
6.6.1 Front under vehicle



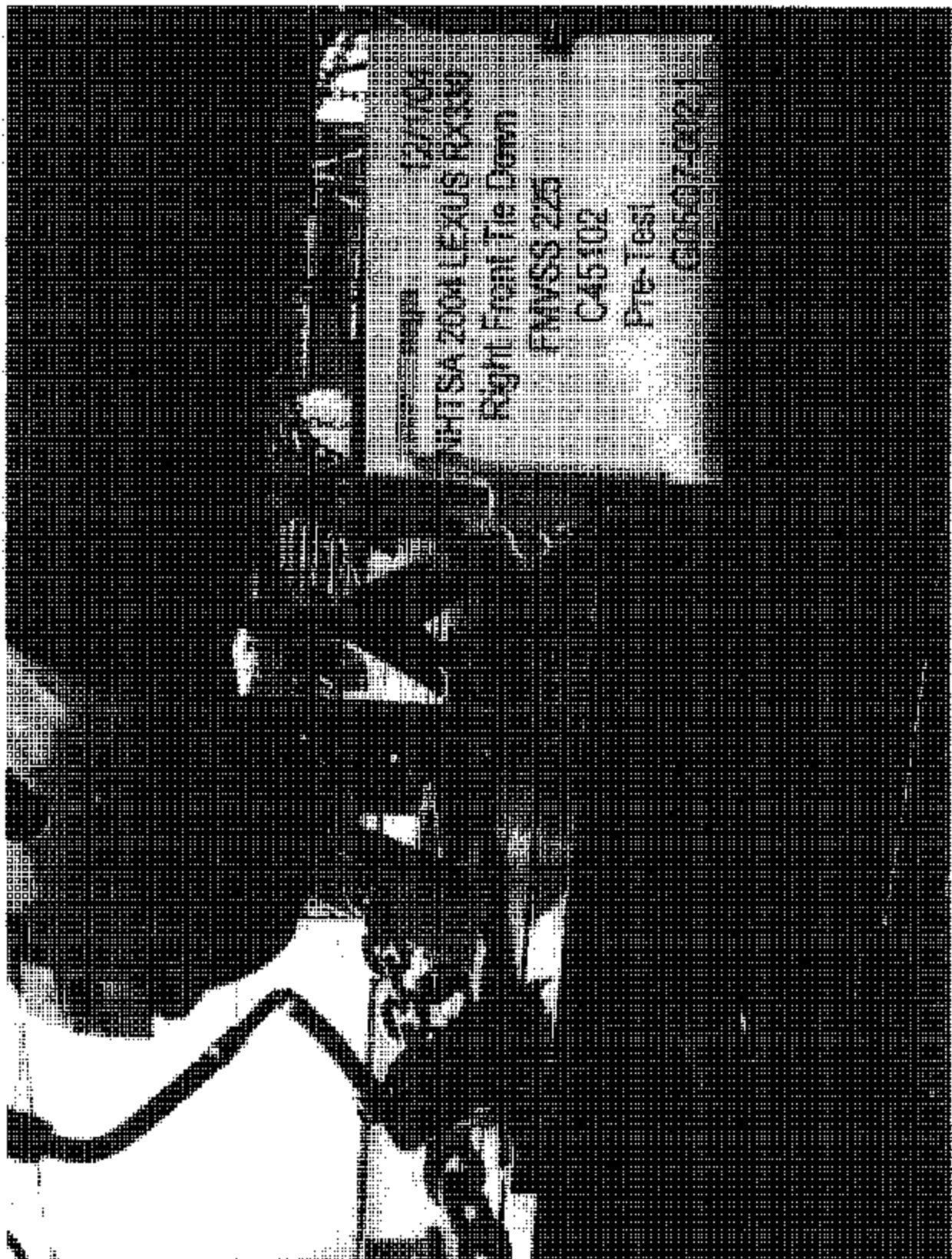
6.6.2 Left front



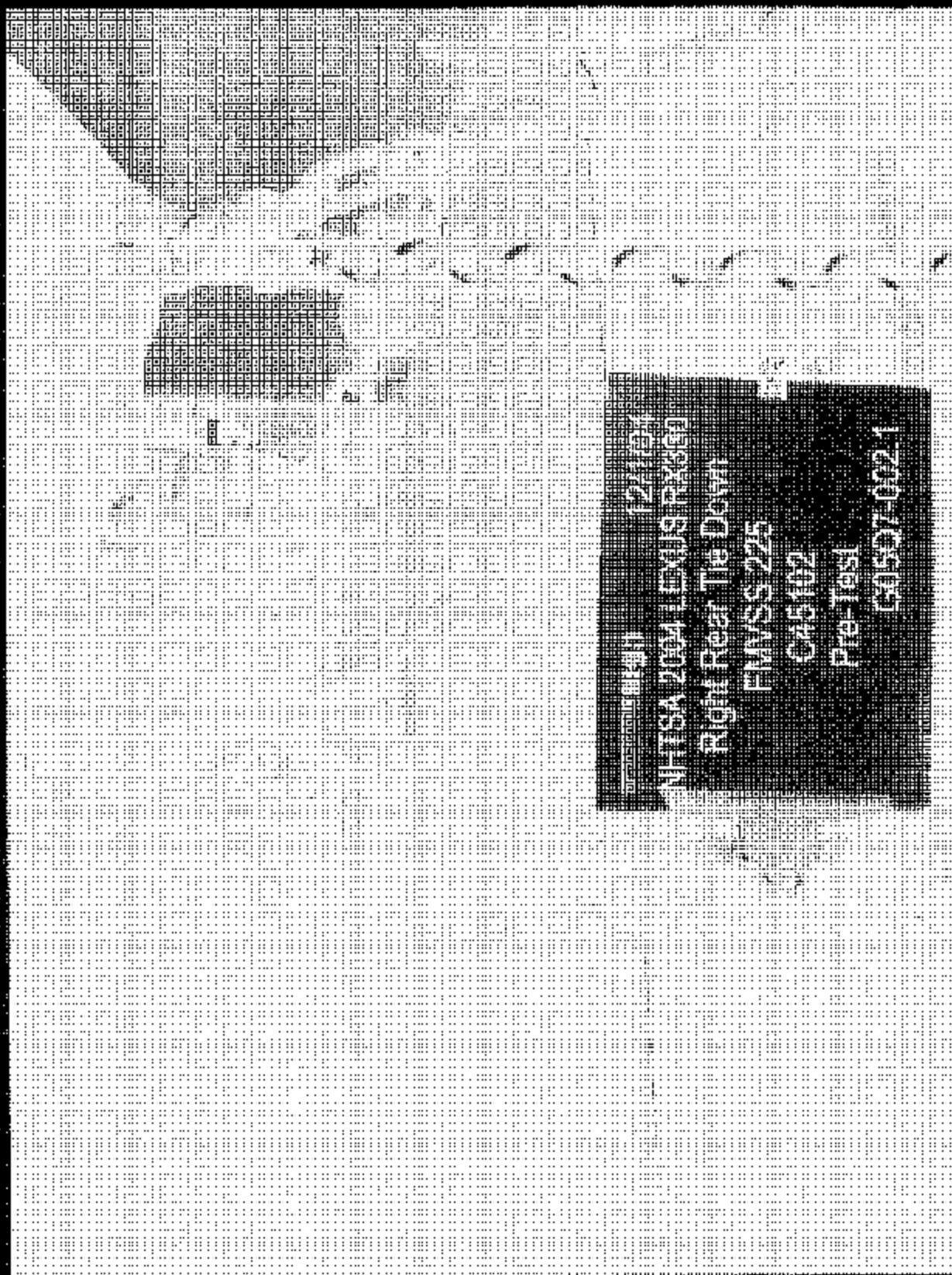
6.6.1 Left rear



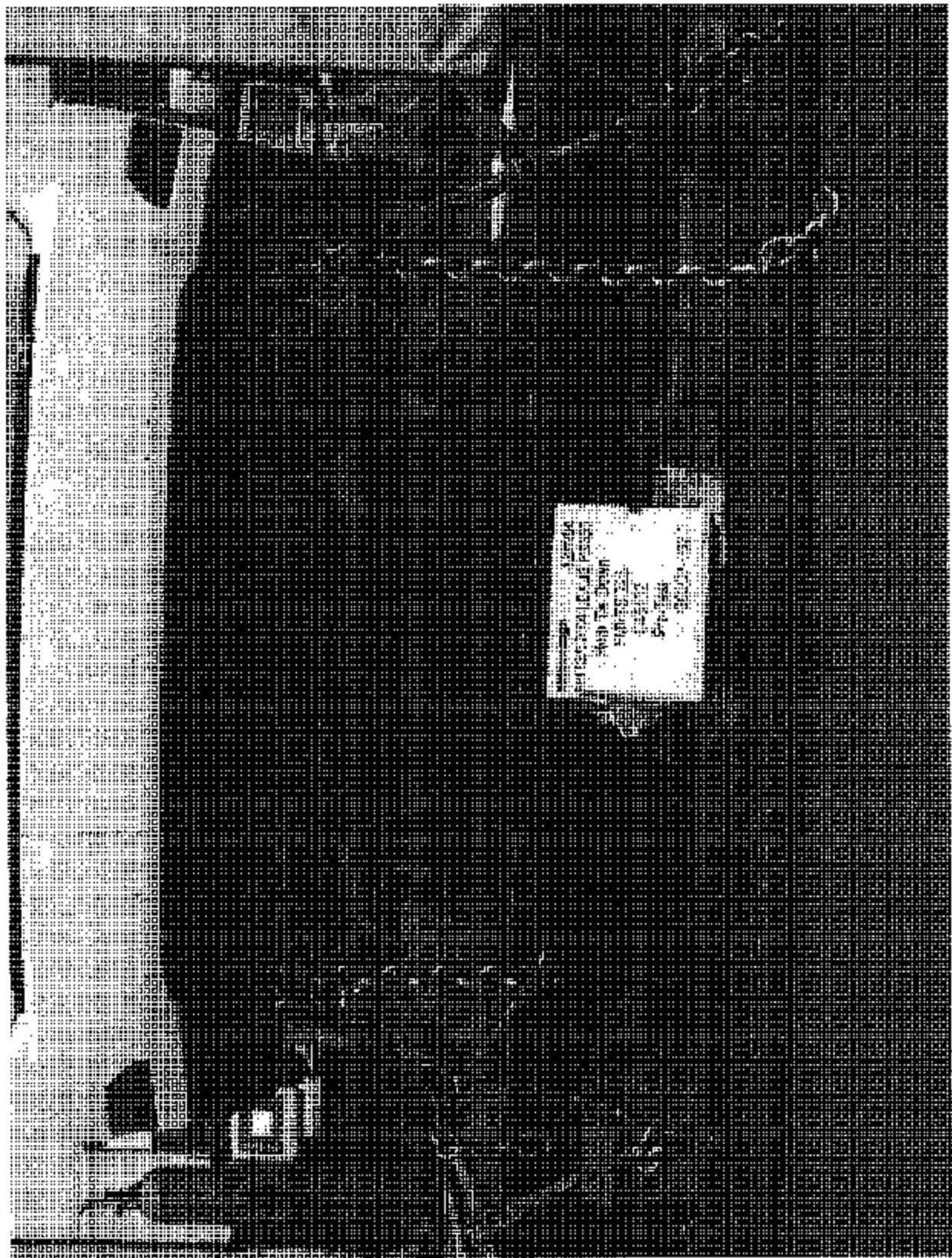
6.6.4 Right front



4.6.5 Right rear



6.6.6 Rear



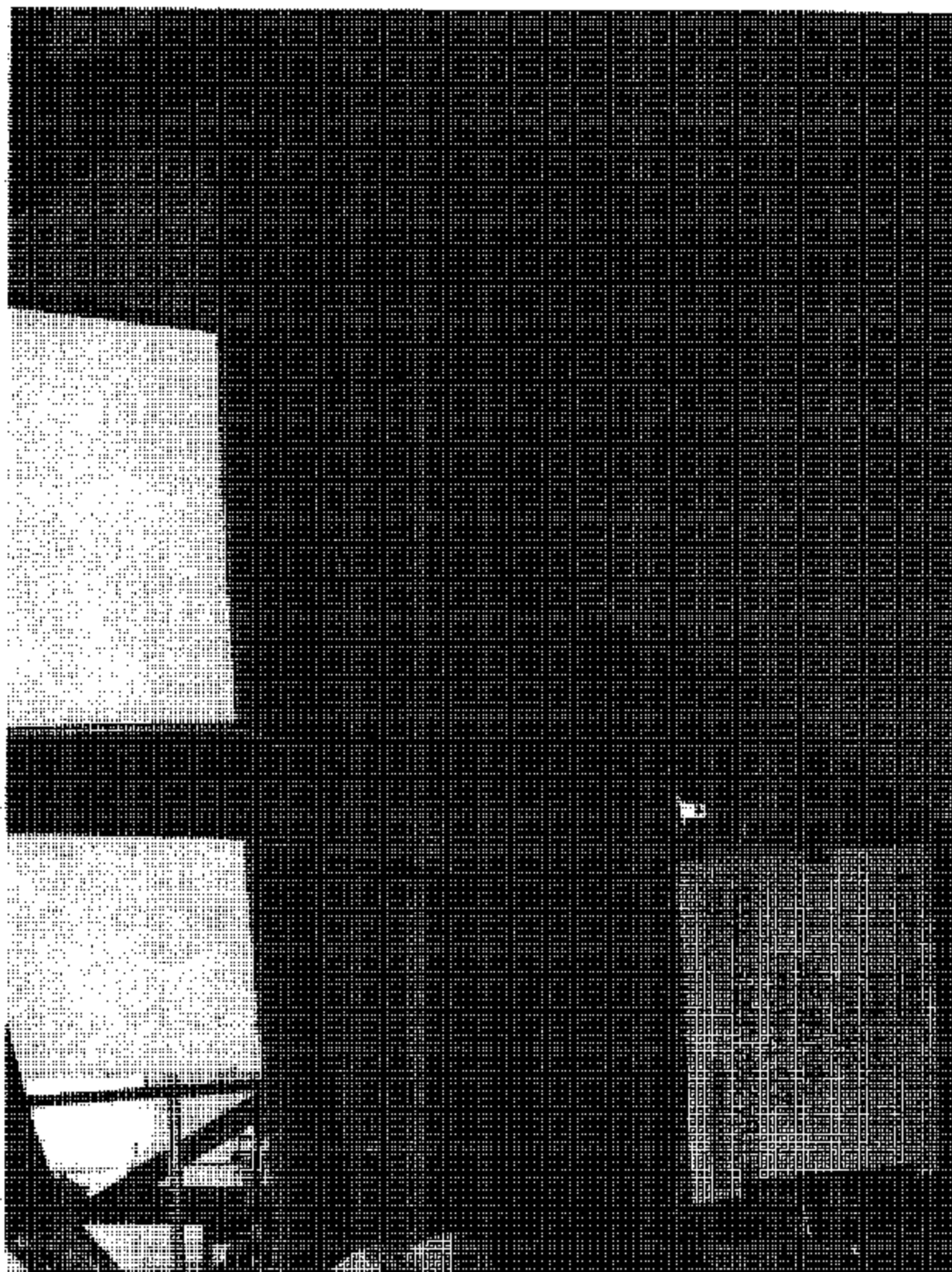
6.7 2-Dimensional template
6.7.1 LH position photo #1



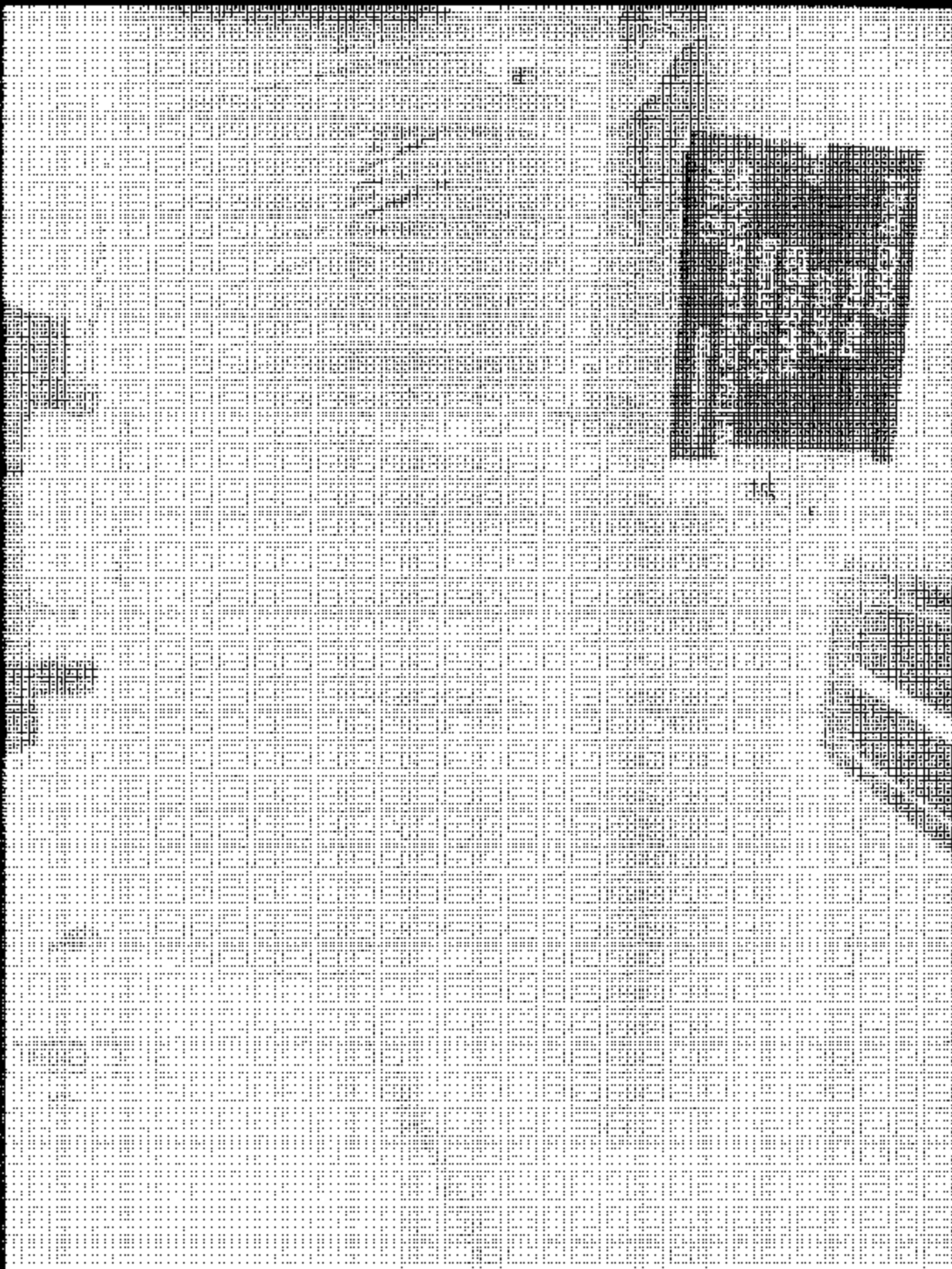
6.7.2 LH position photo #2



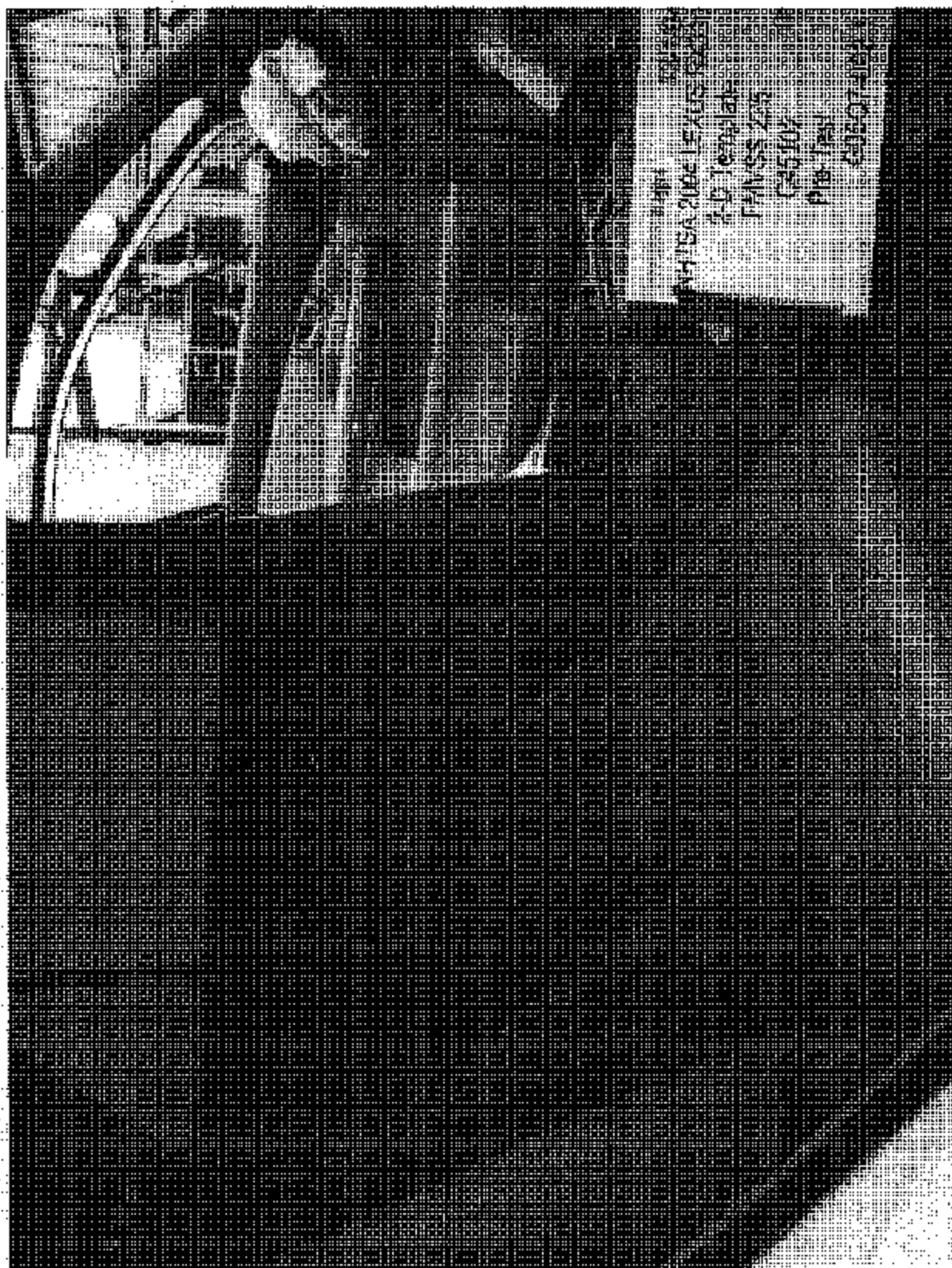
6.7.3 Center position photo #1



6.7.4 Center position photo #2



6.7.5 RH position photo #1



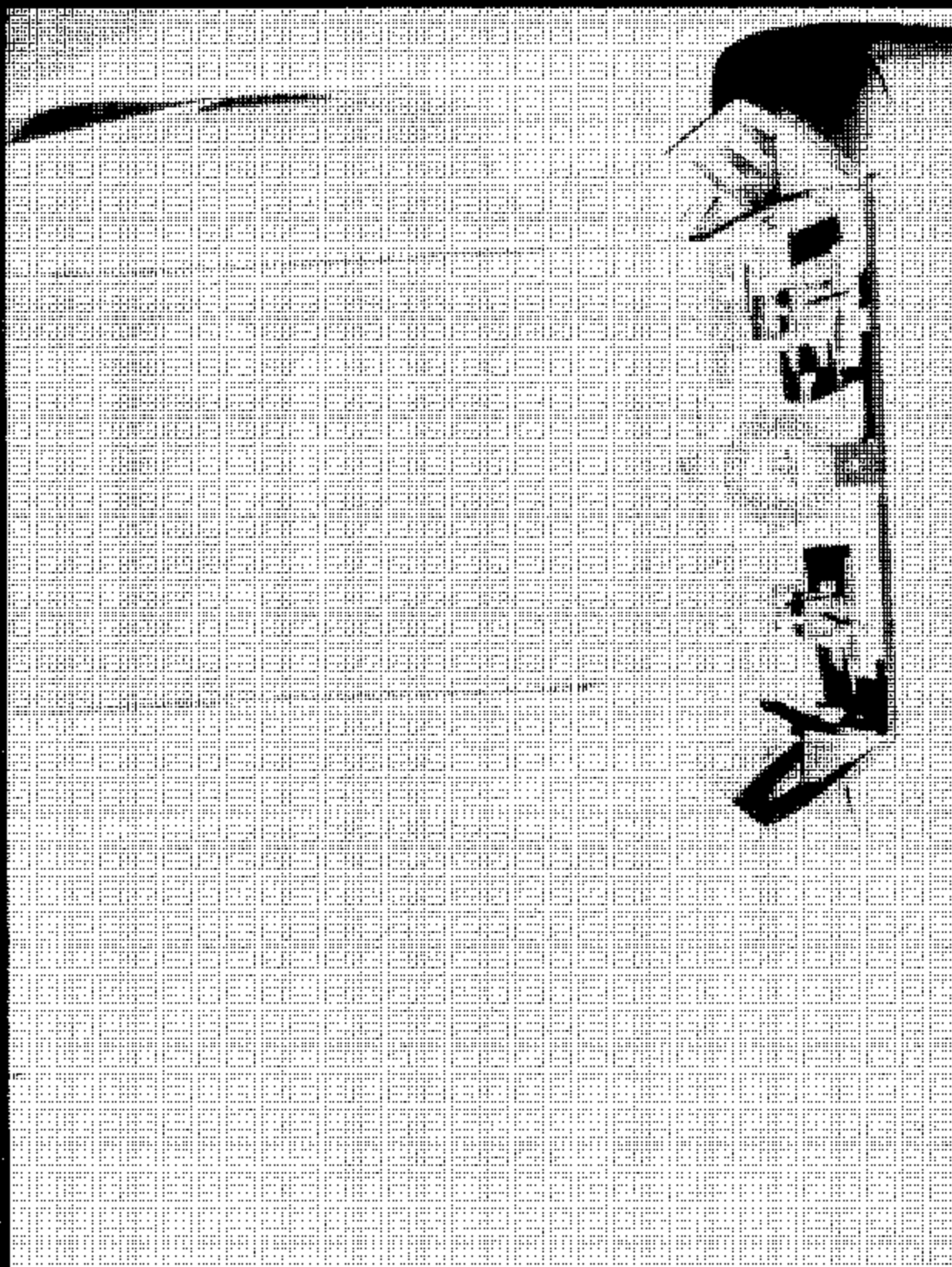
6.7.6 RH position photo #2



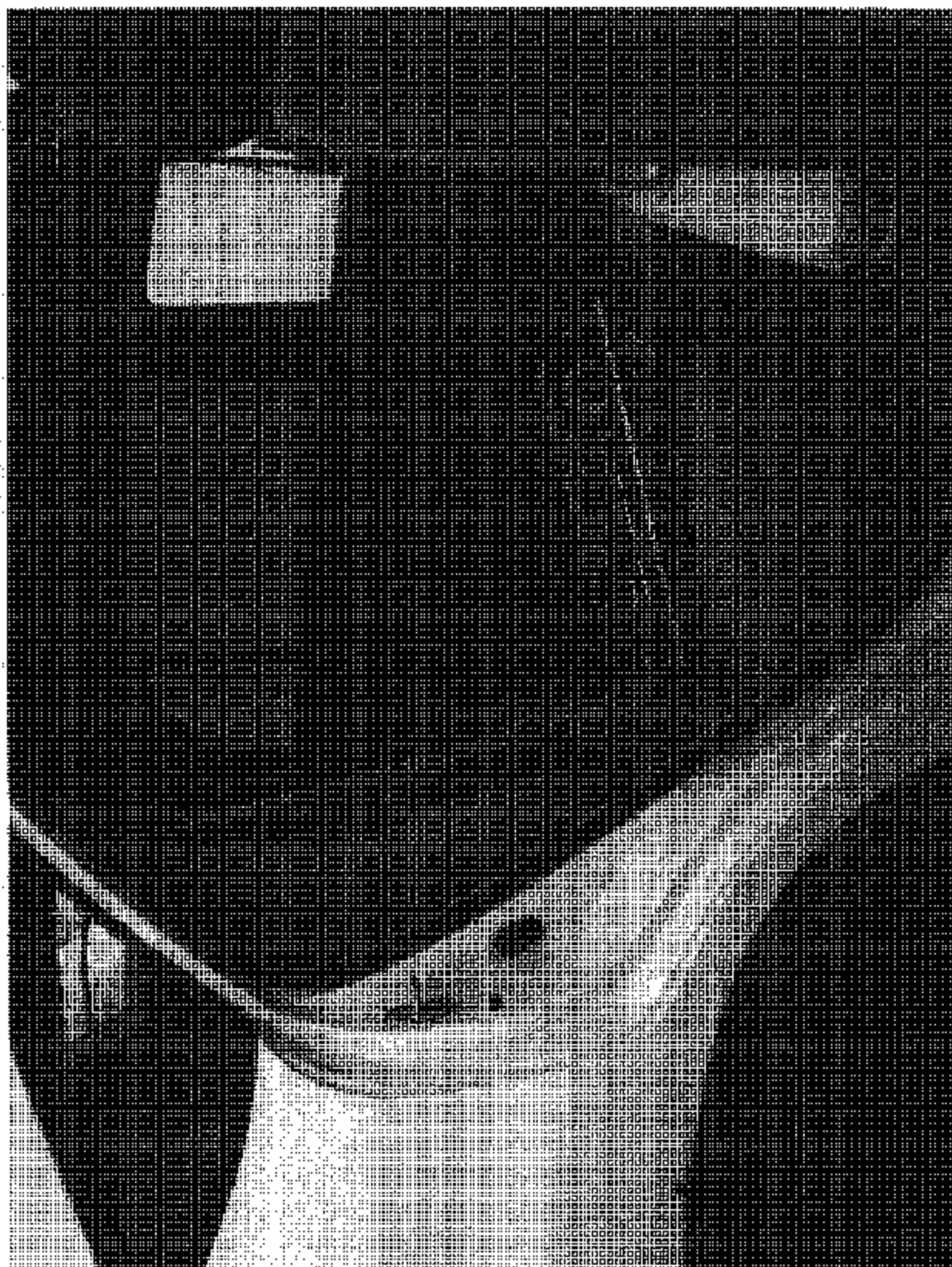
6.8 CRF verification
6.8.1 LH position photo #1



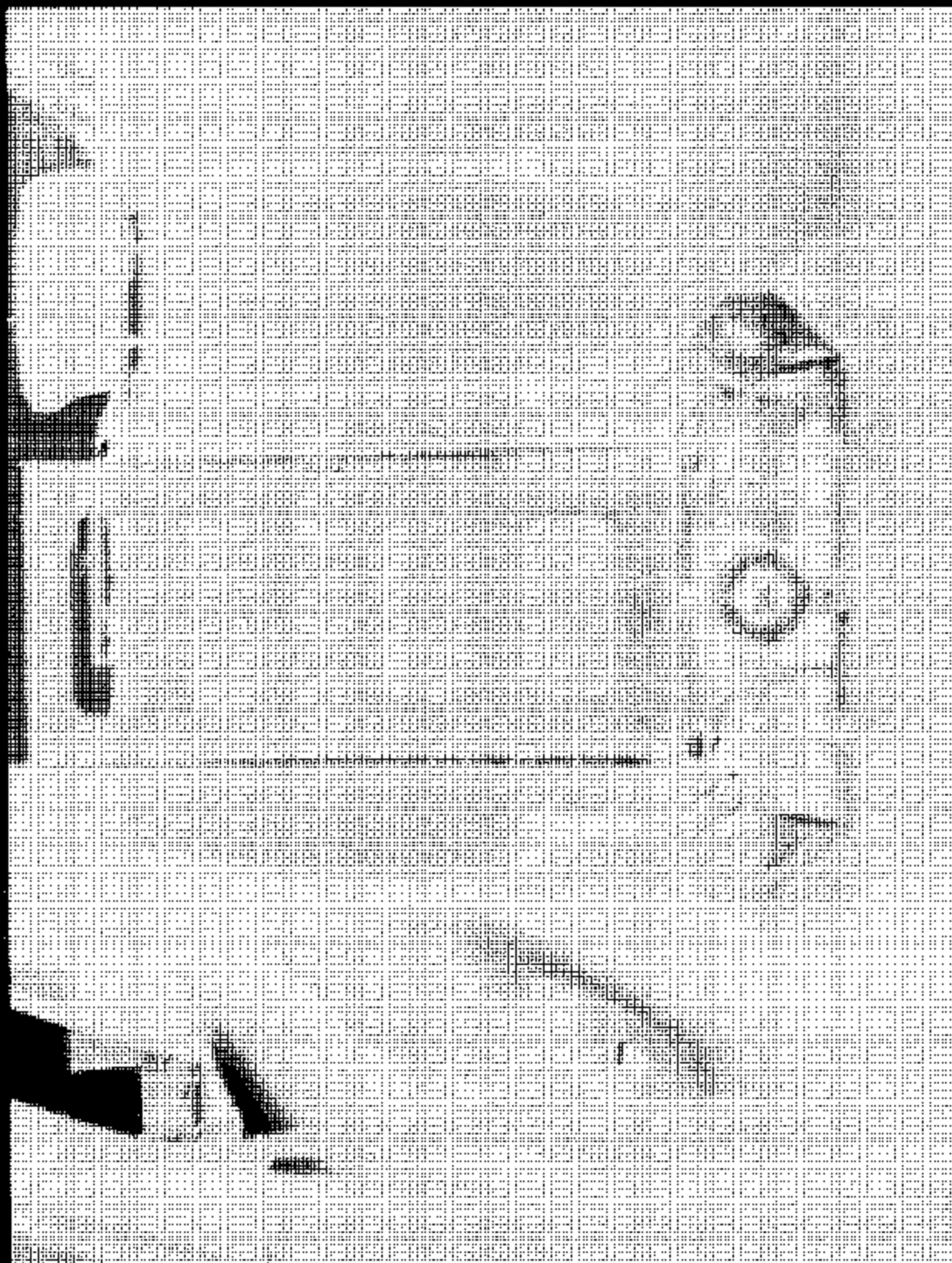
6.5.2 LFI position photo #2



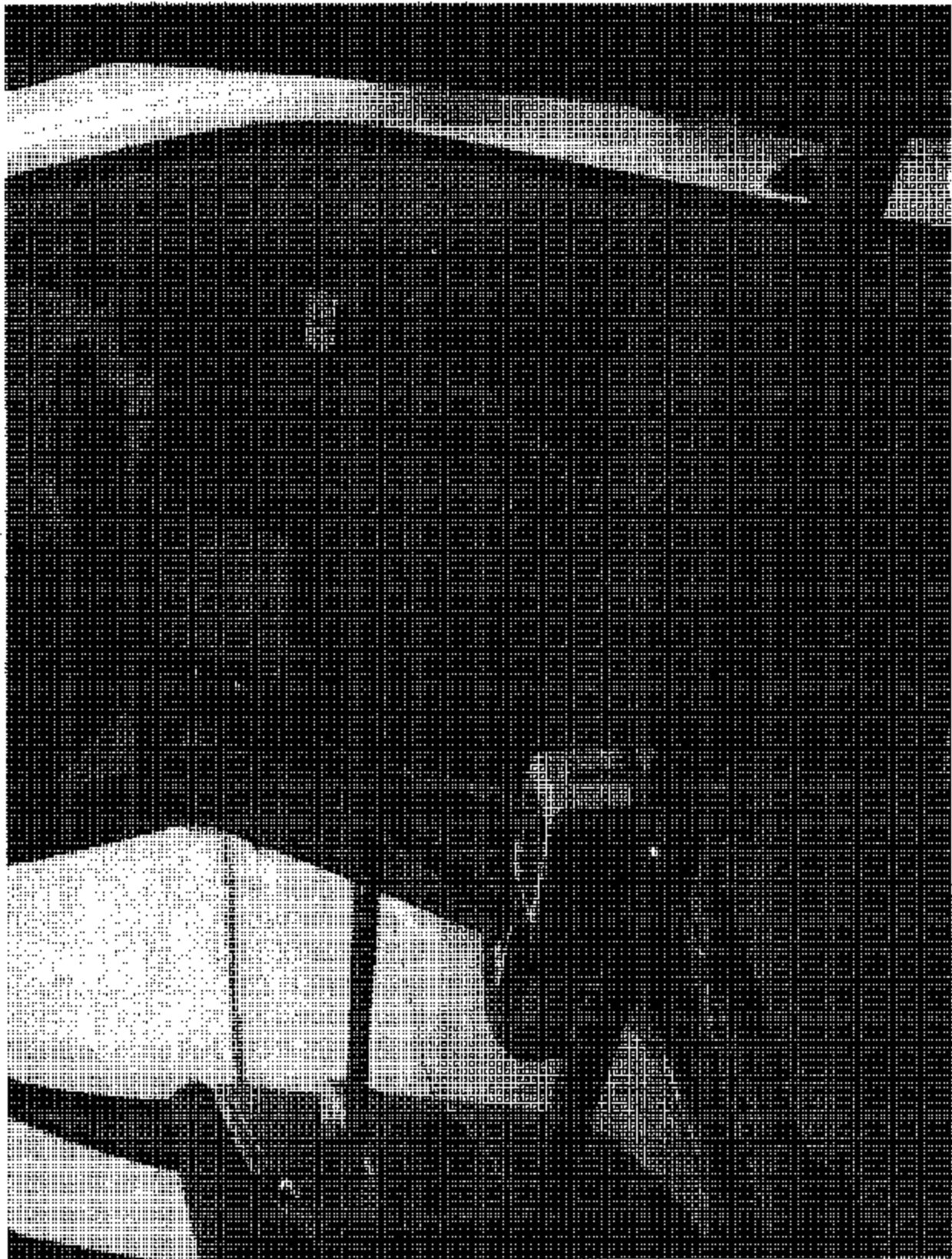
6.8.3 RH position photo #1



6.8.4 RH position photo #2



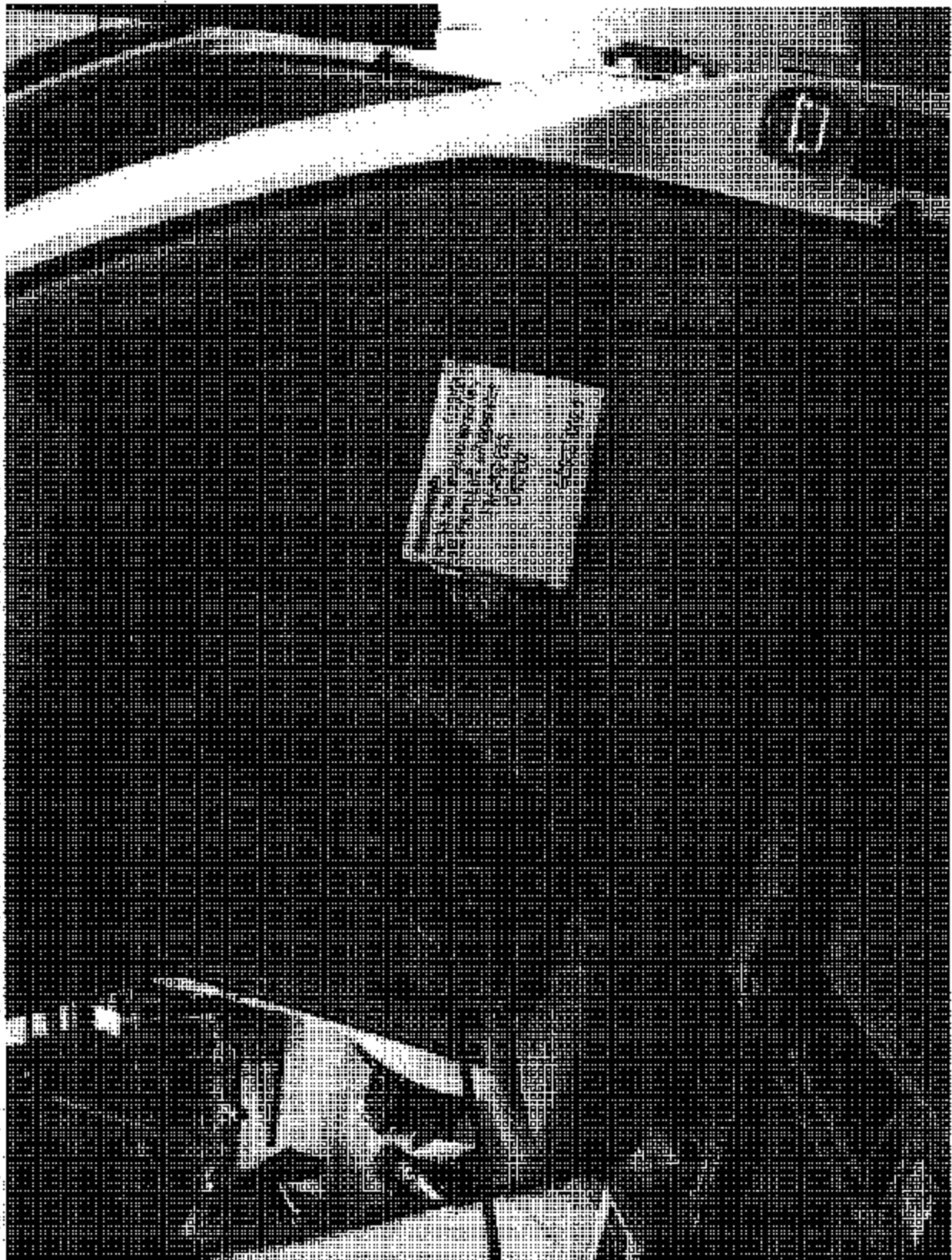
- 6.9 ¼ Front view of test vehicle with test apparatus in place
6.9.1 ¼ Front left view of SFADII test 1 of 2



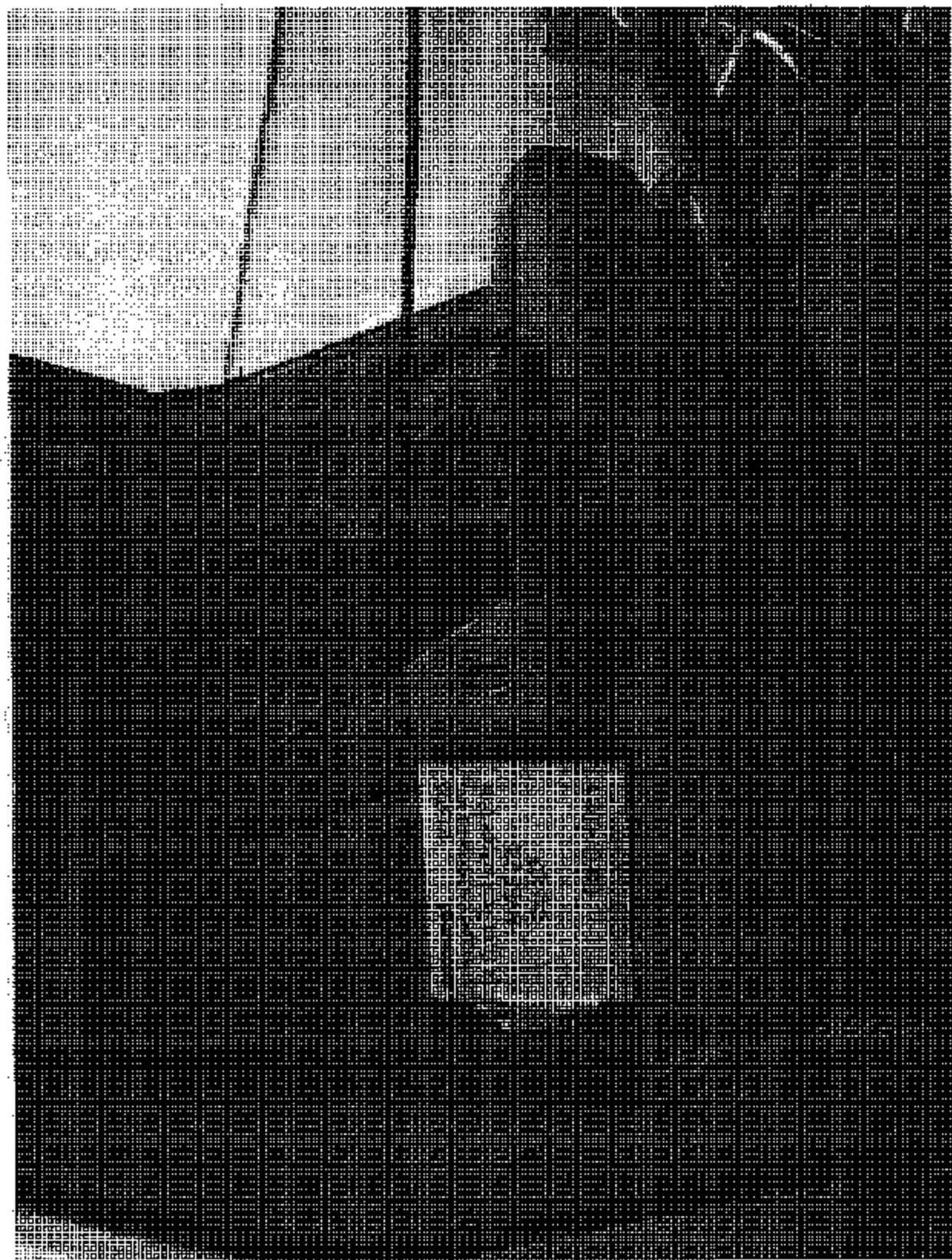
6.9.2 ¼ Front right view of SFADH test 1 of 2



6.5.3 ¾ Front left view of SFADI test 2 of 2



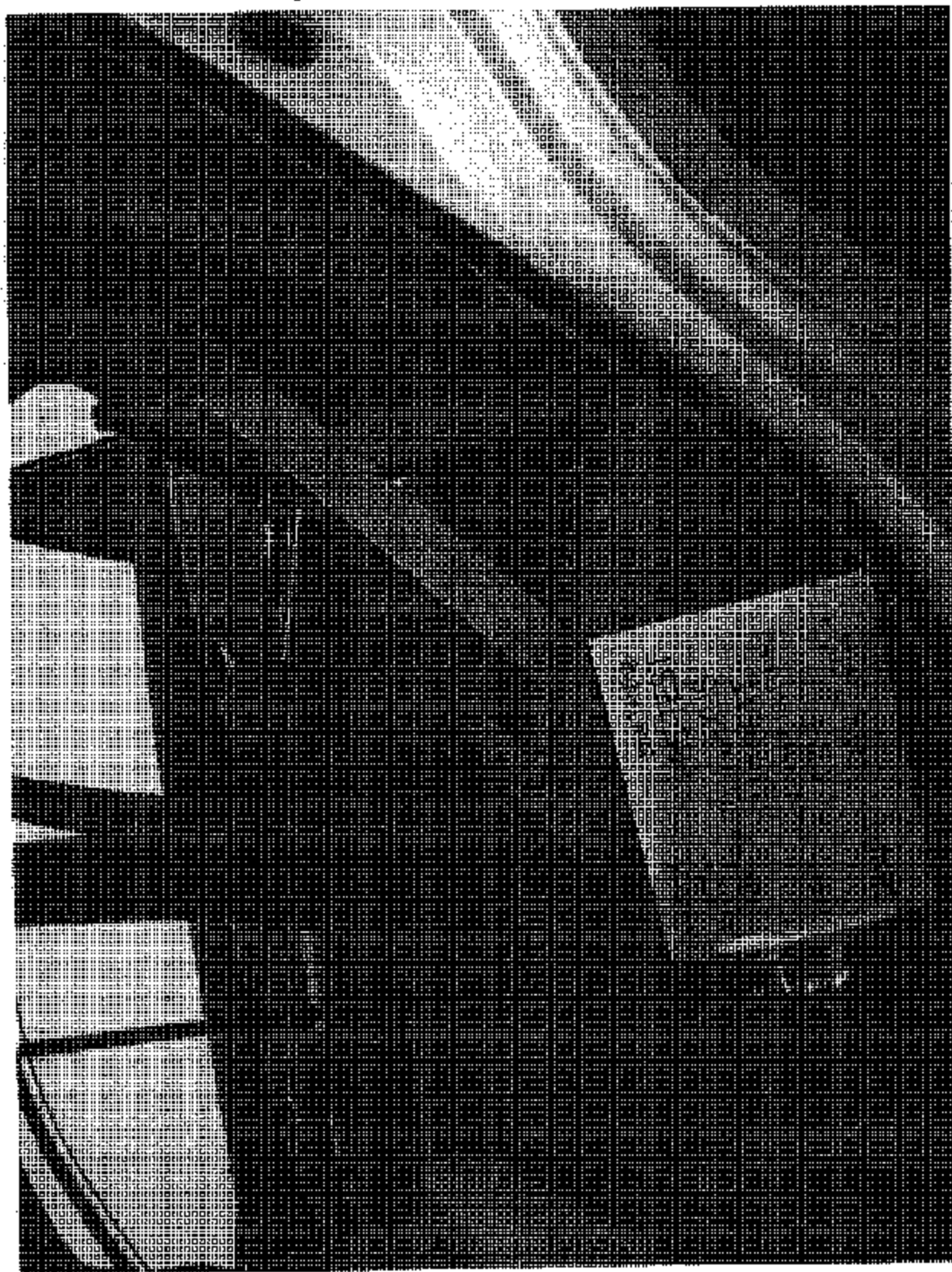
6.9.4 ¼ Front right view of NFAD1 test 2 of 2



6.10 Pre-test views of each child restraint anchorage system installed in the vehicle
6.10.1 Pre-test photo #1 of SPADII test 1 of 2



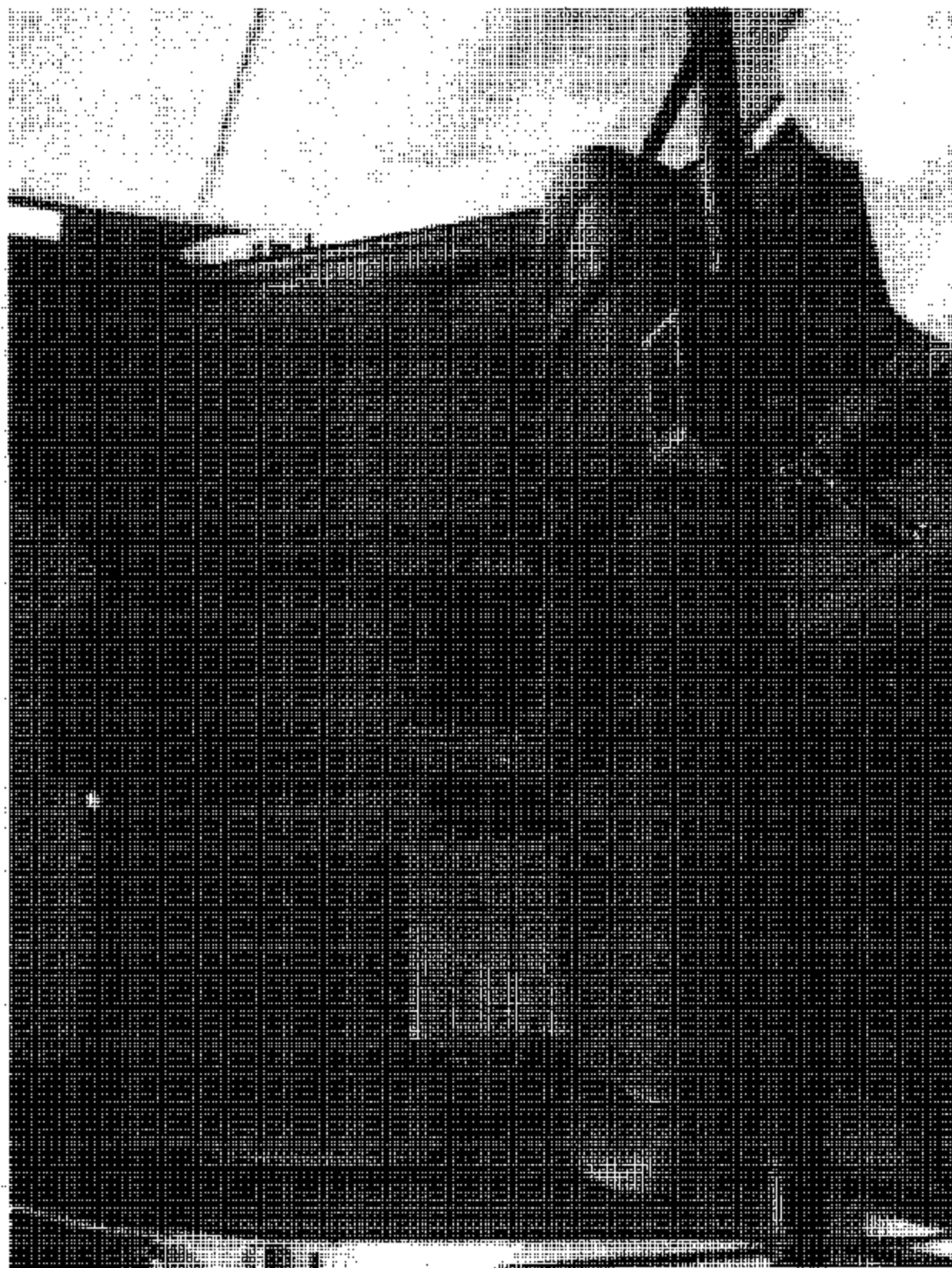
6.10.2 Pre-test photo #2 of SFADH test 1 of 2



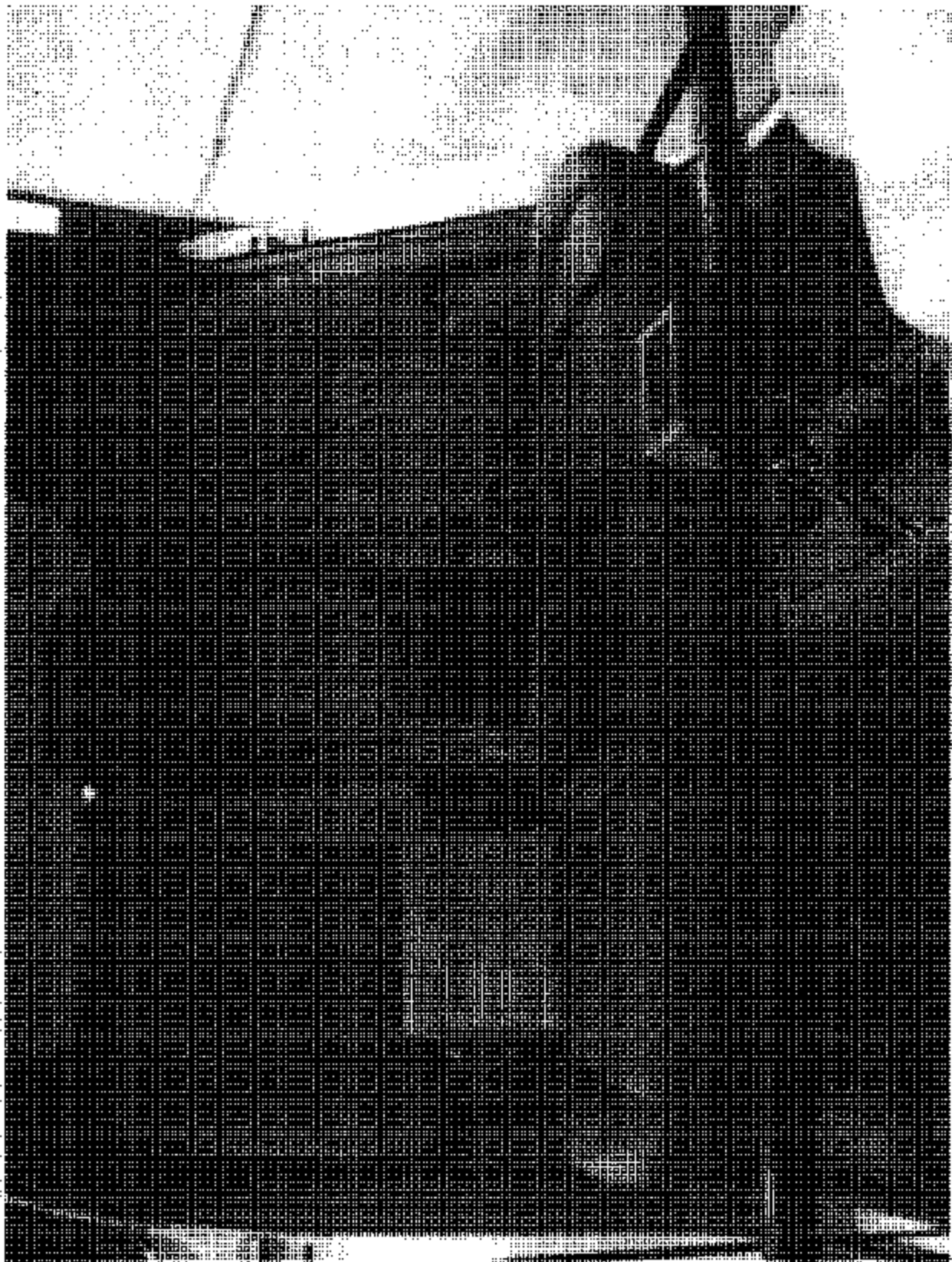
6.10.3 Pre-test photo #3 of SFADH test 1 of 2



6.10.4 Pre-test photo #1 of SPADI test 2 of 2



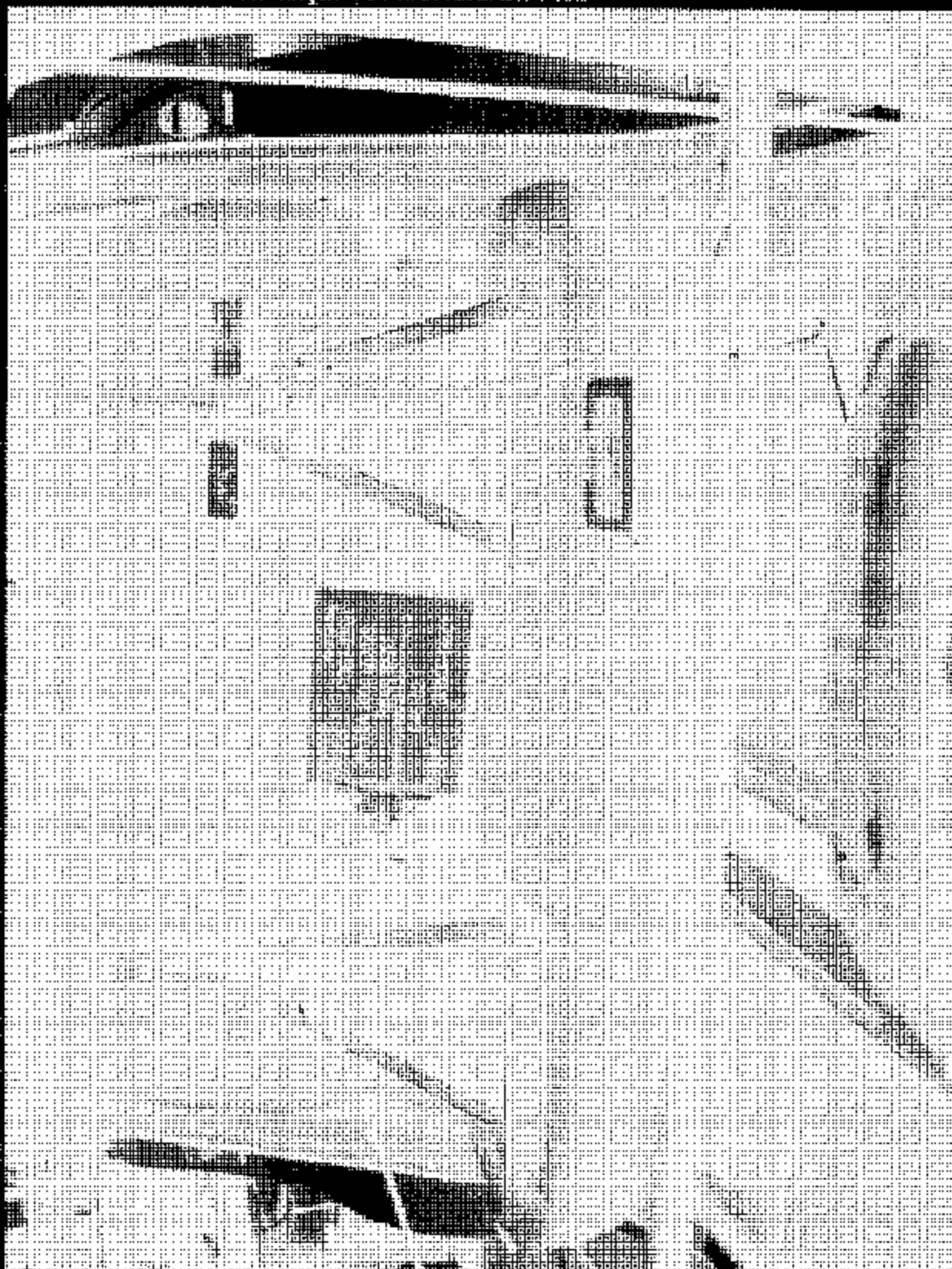
6.10.5 Pre-test photo #2 of SFACH test 2 of 2



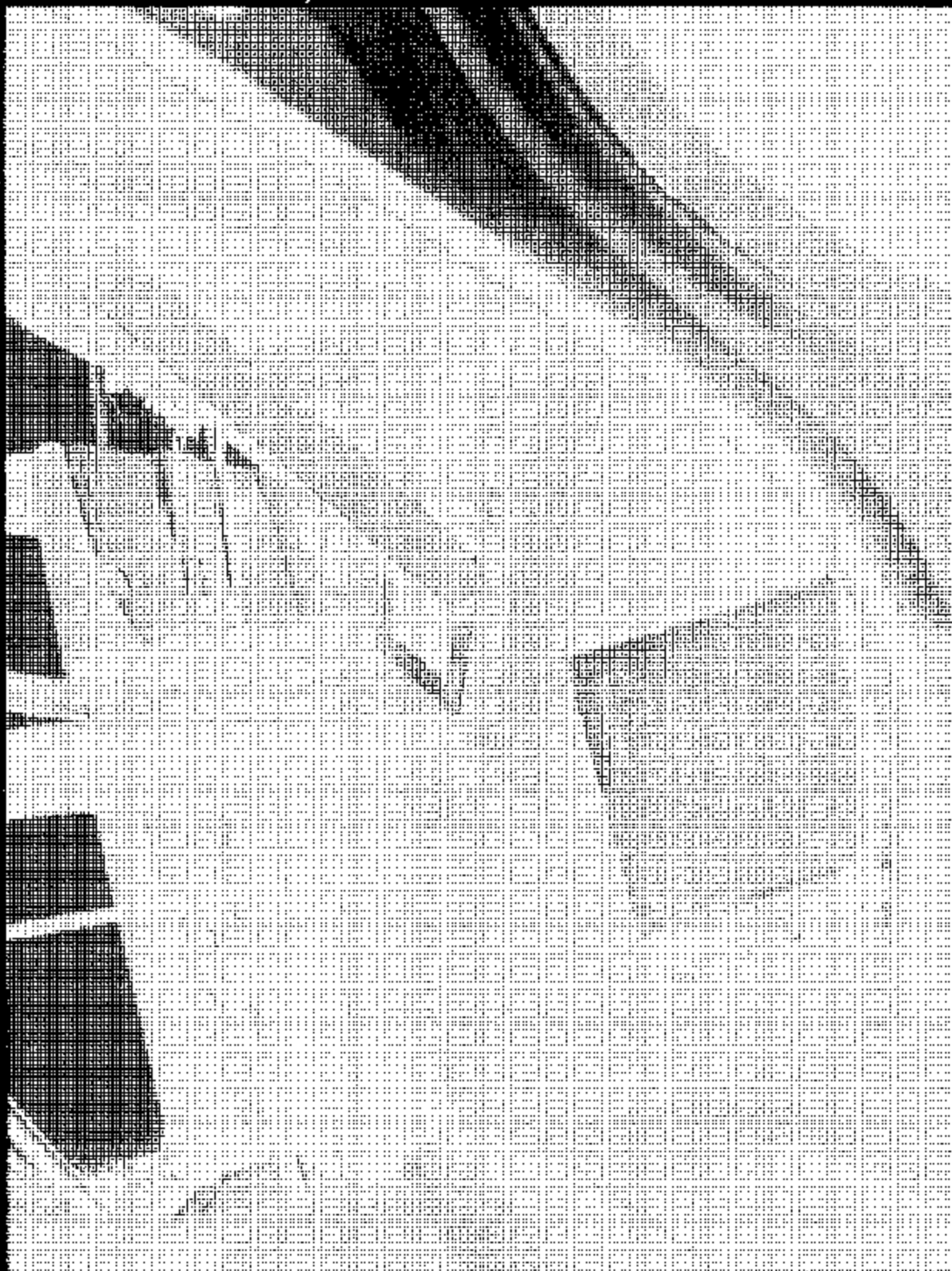
6.10.6 Pre-test photo #3 of SFADI test 2 of 2



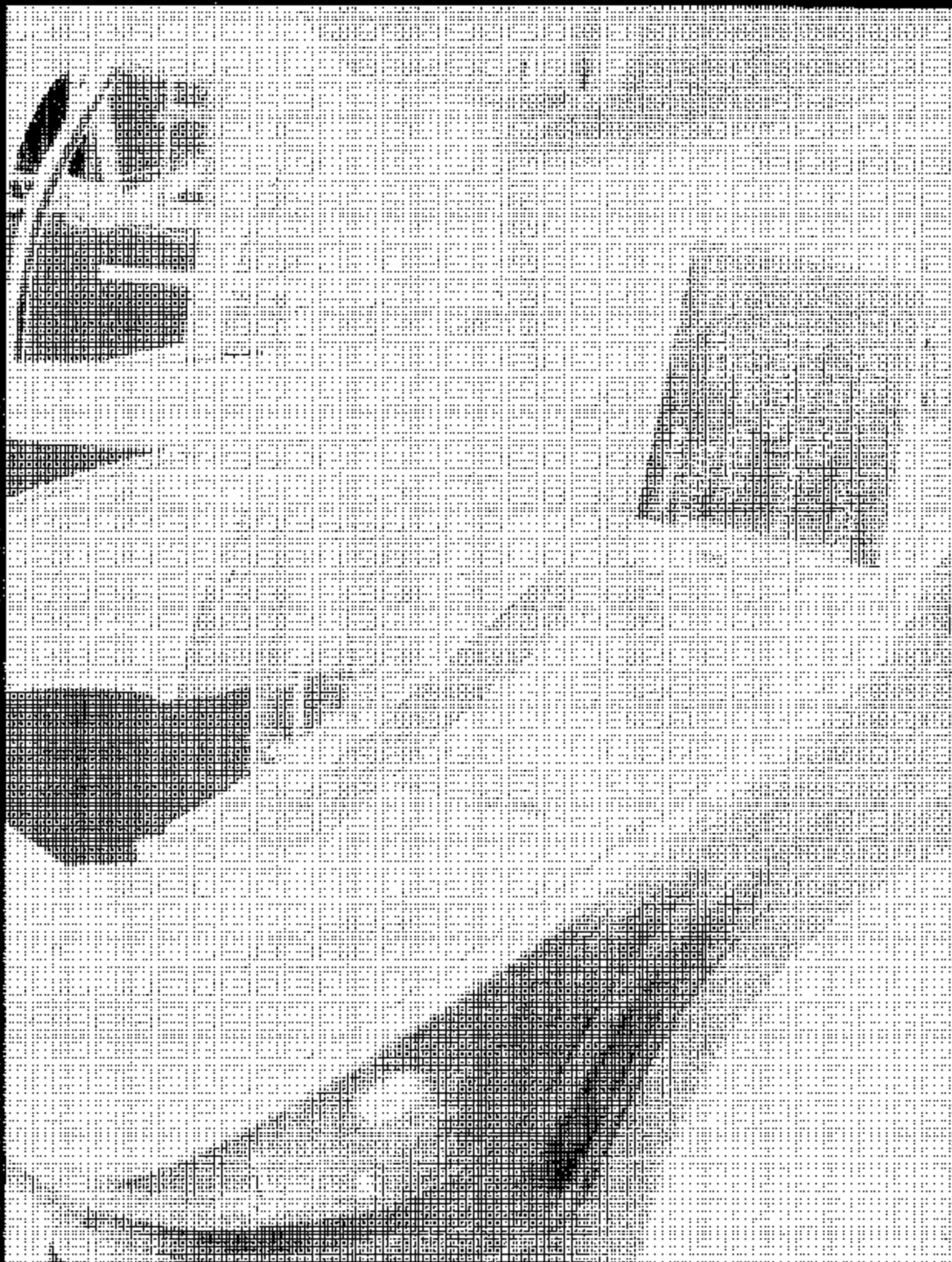
6.11 Post-test views of each child restraint anchorage
6.11.1 Post-test photo #1 of SPADII test 1 of 2



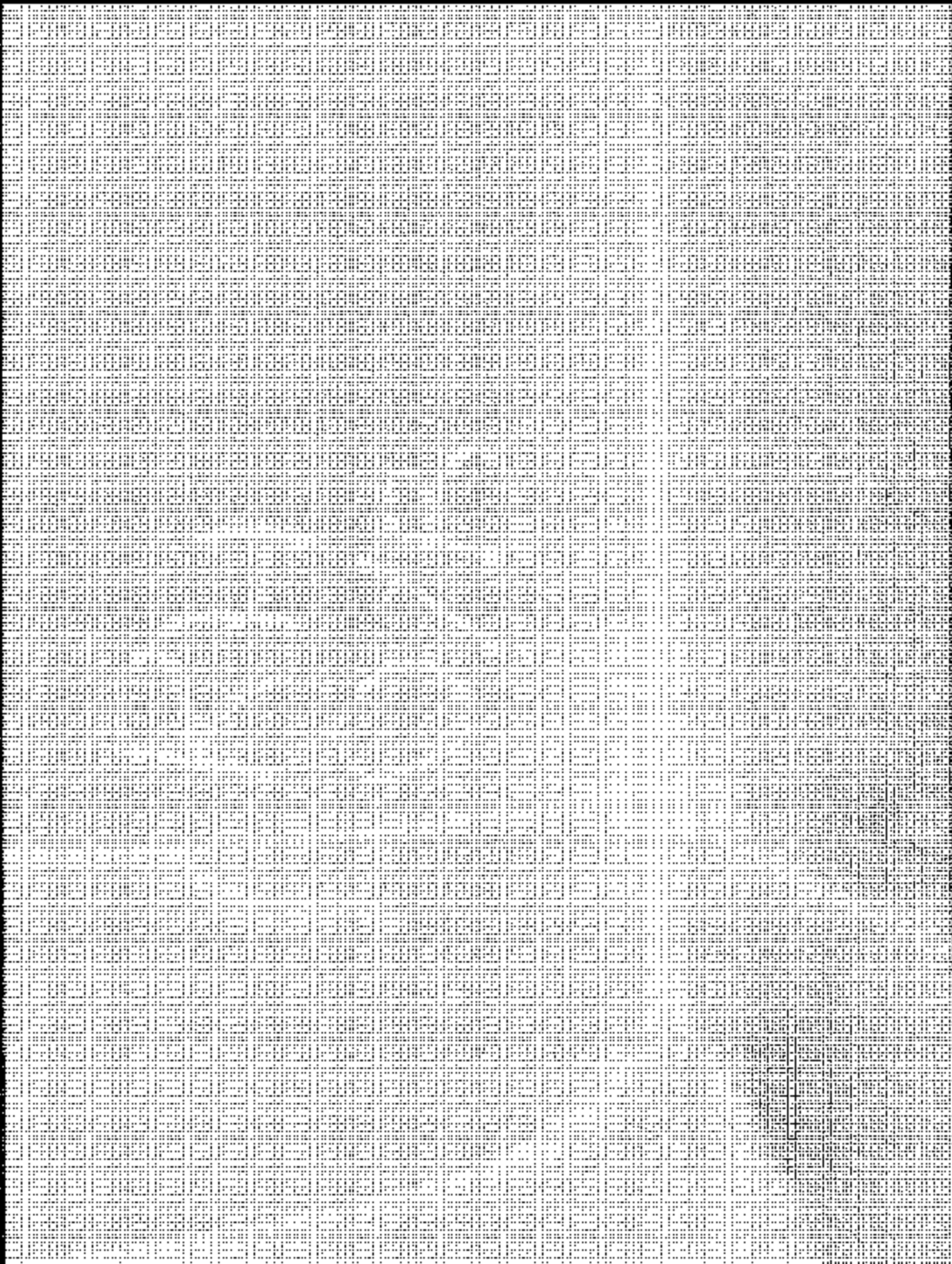
6.11.2 Post-test photo #2 of SFADII test 1 of 2



6.11.3 Post-test photo #3 of SEADII test 1 of 2



6.11.4 Post-test photo #4 of SFADH test 1 of 2



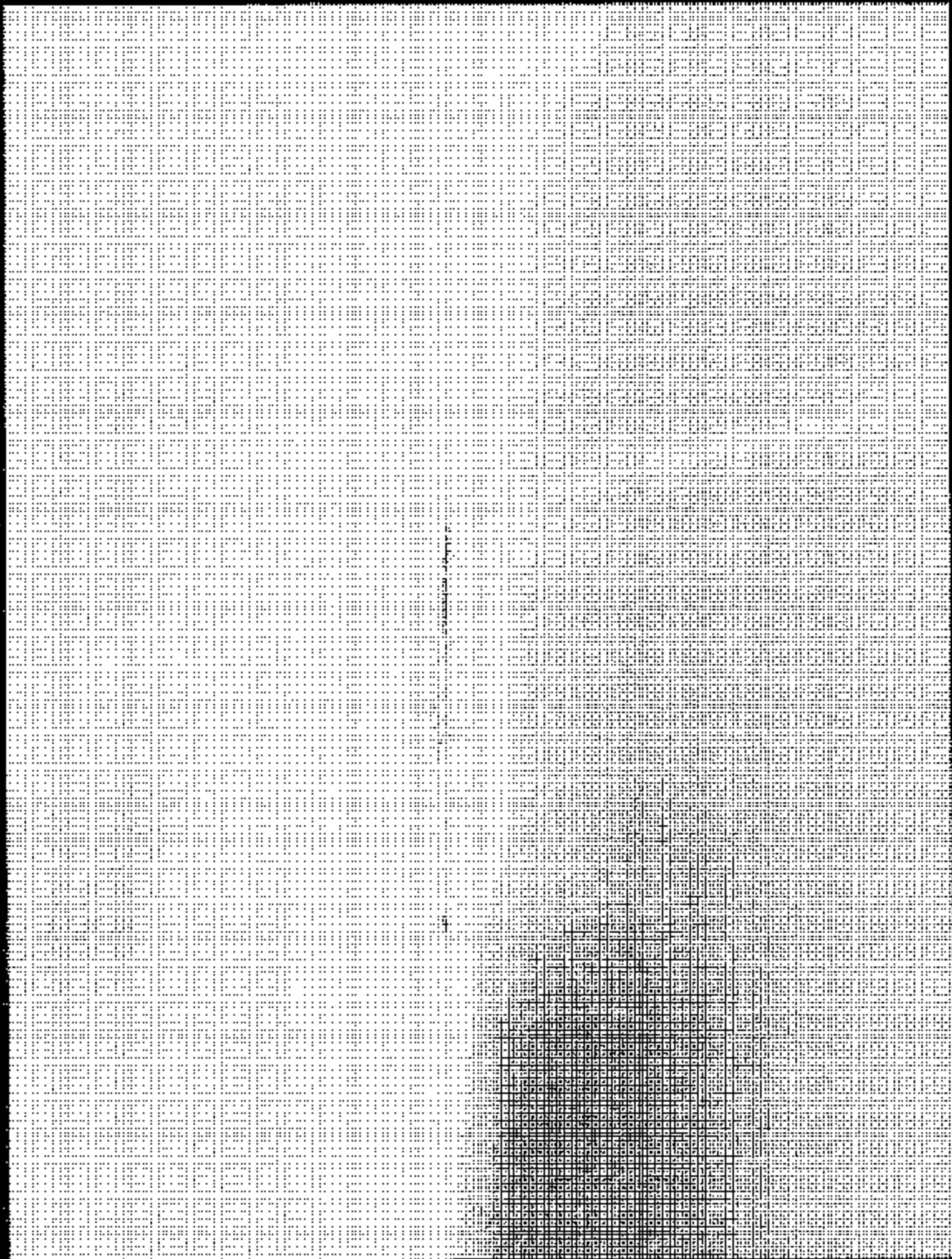
6.11.5 Post-test photo #5 of SPADII test 1 of 2



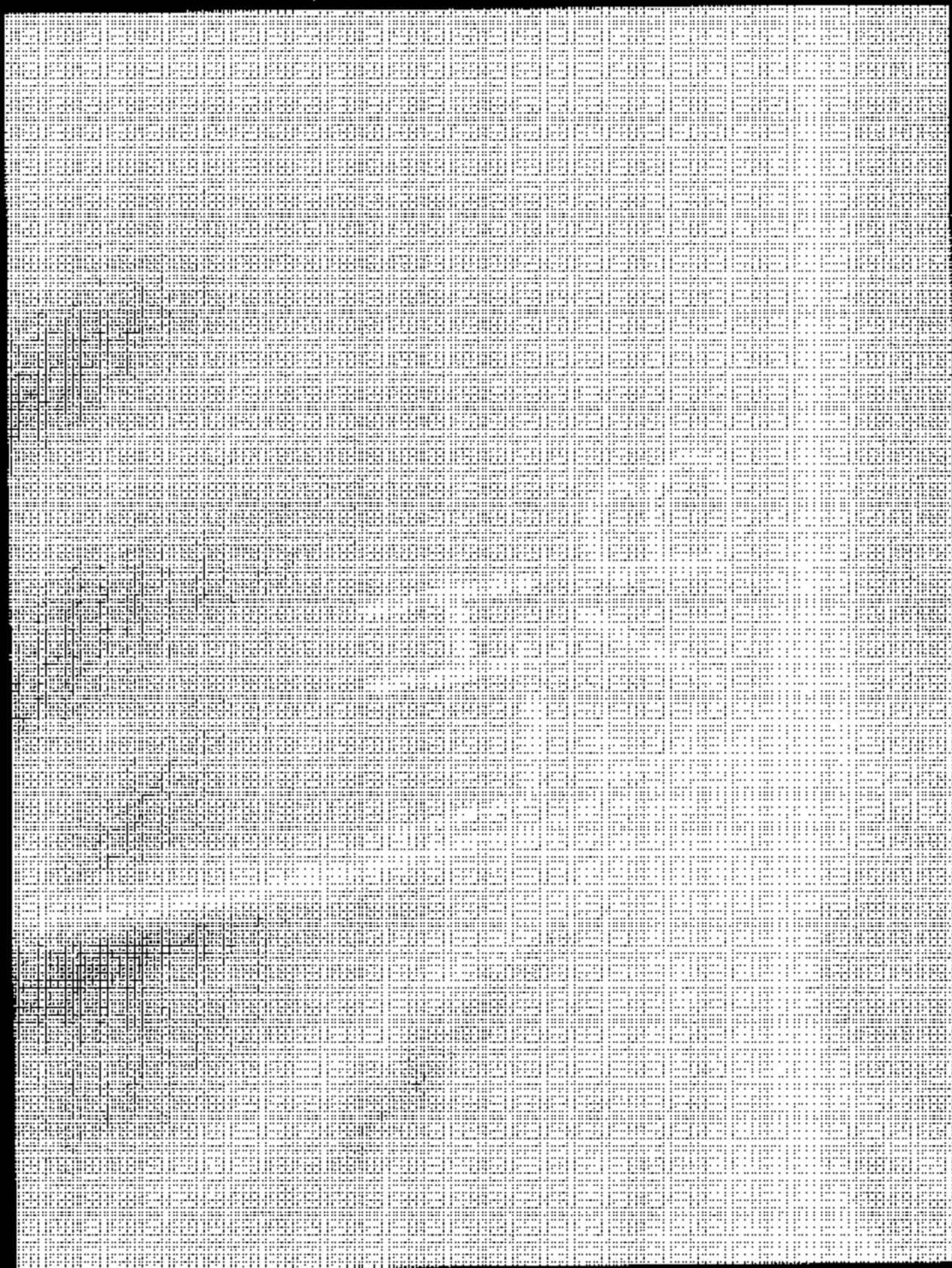
6.11.6 Post-test photo #6 of SFADII test 1 of 2



6.11.7 Post-test photo #7 of SFADIII test 1 of 2



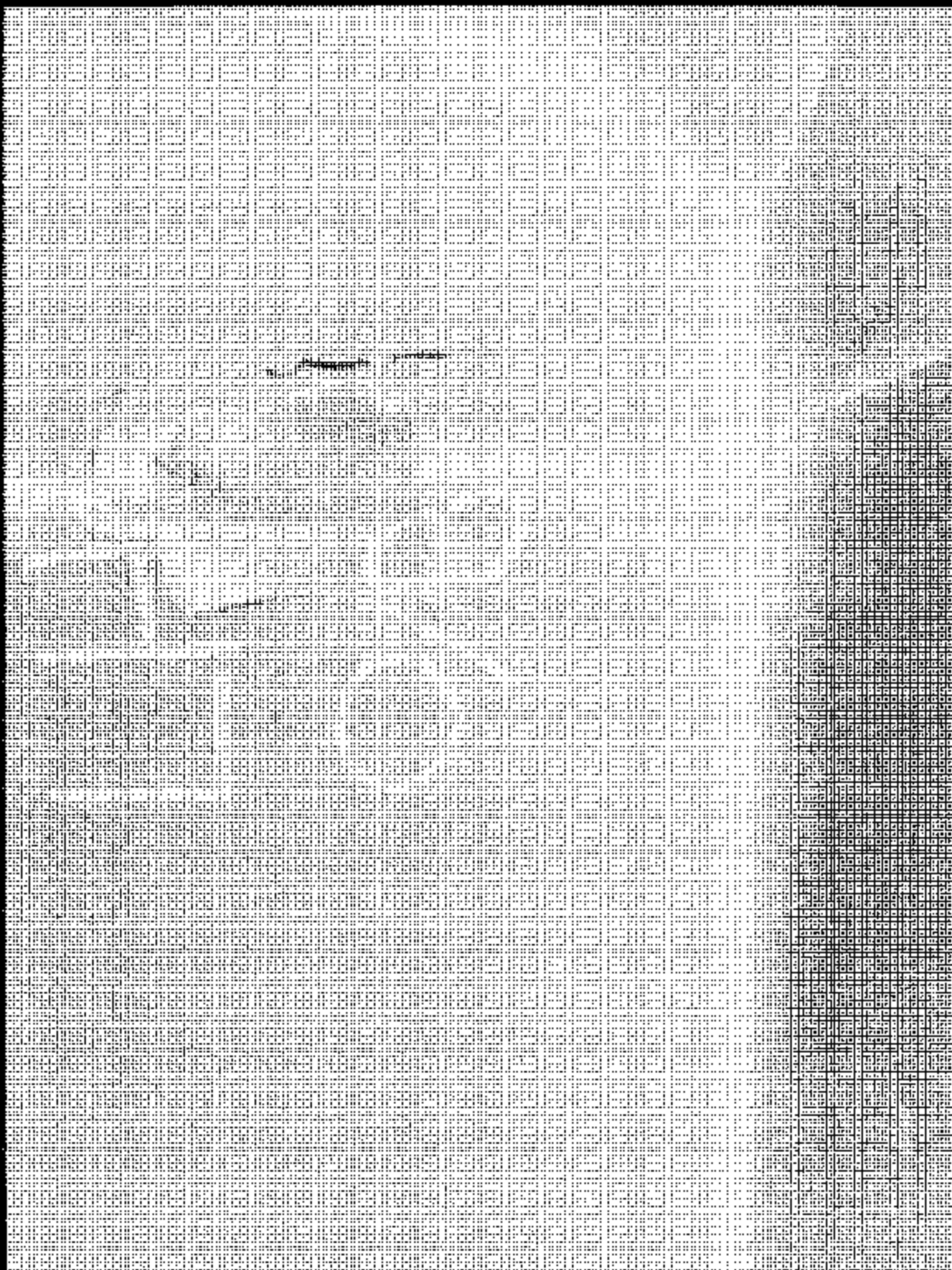
6.11.8 Post-test photo #3 of SPADII test 1 of 2



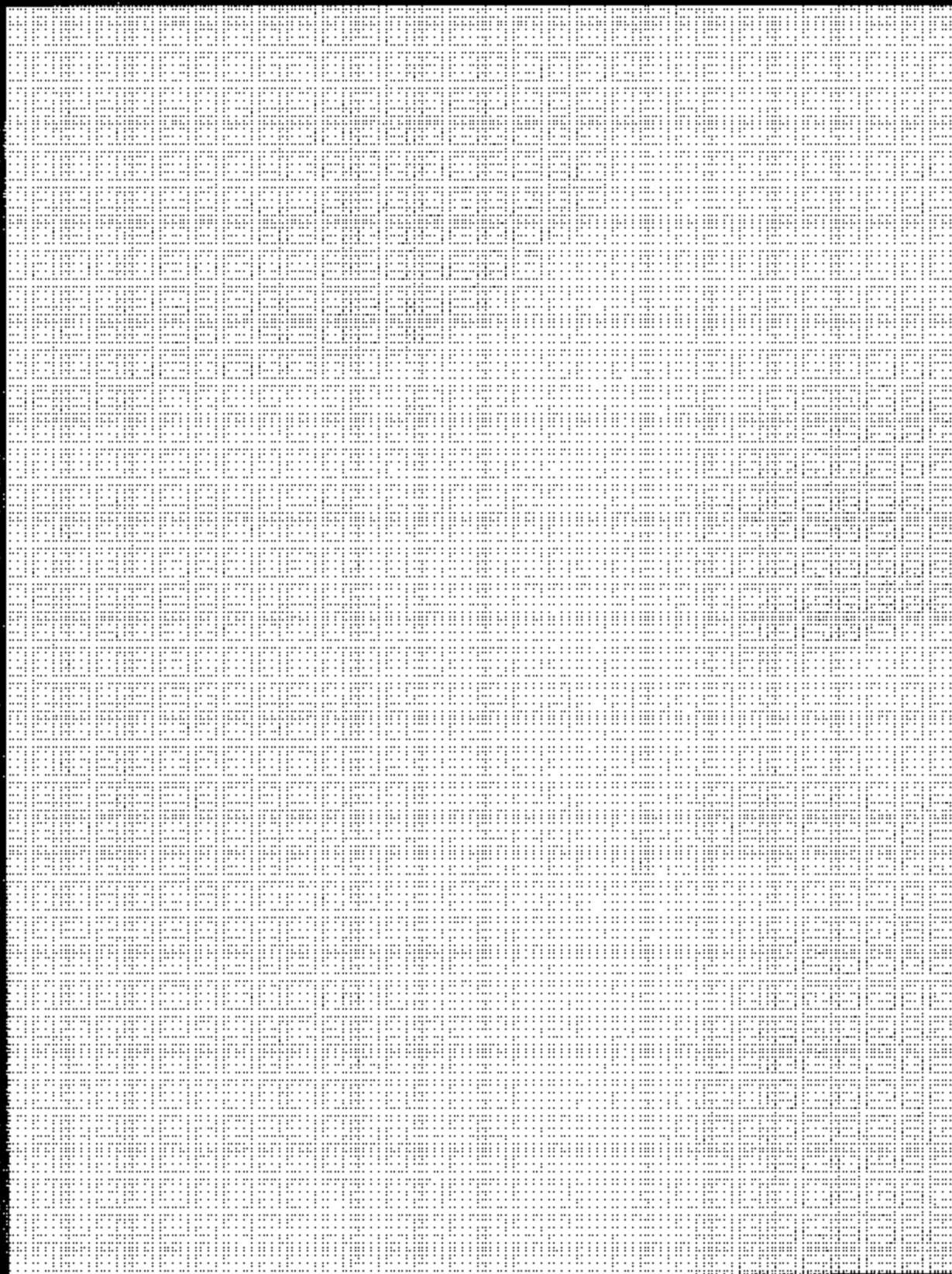
6.11.9 Post-test photo #9 of SPADII test 1 of 2



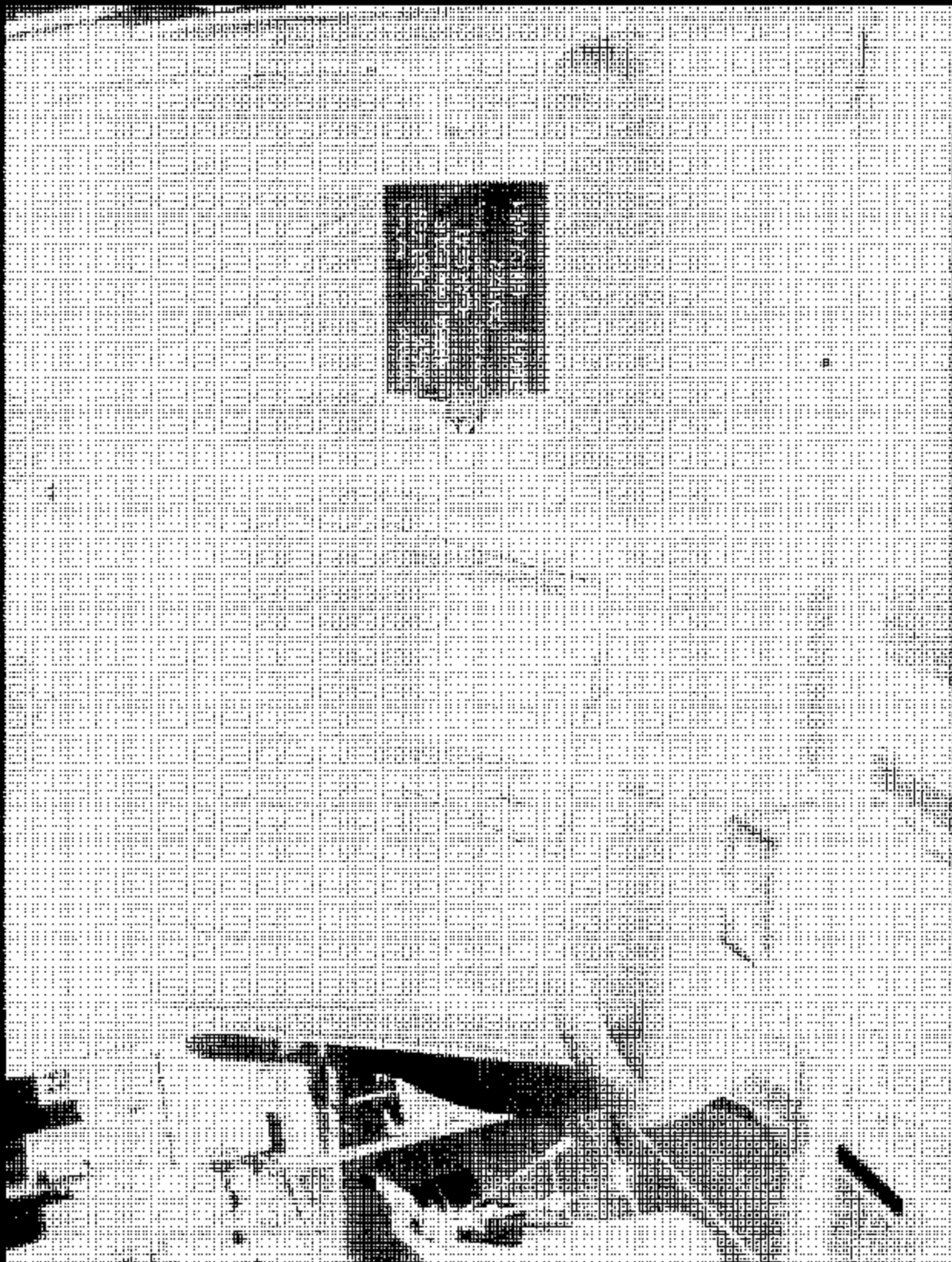
6.11.10 Post-test photo #10 of SPADII test 1 of 2



6.11.11 Post-test photo #11 of SPADII test 1 of 2



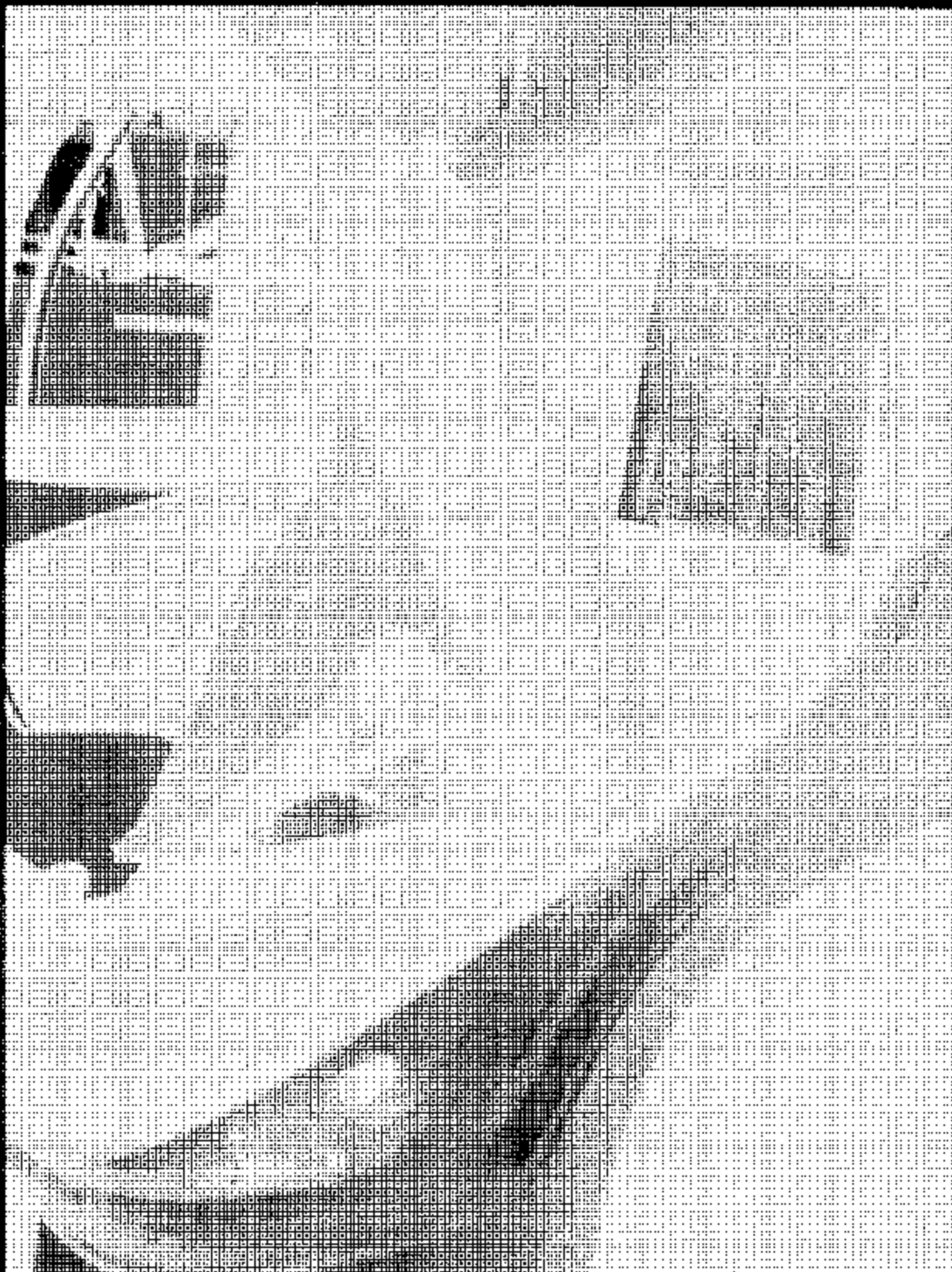
6.11.12 Post-test photo #1 of SEADI test 2 of 2



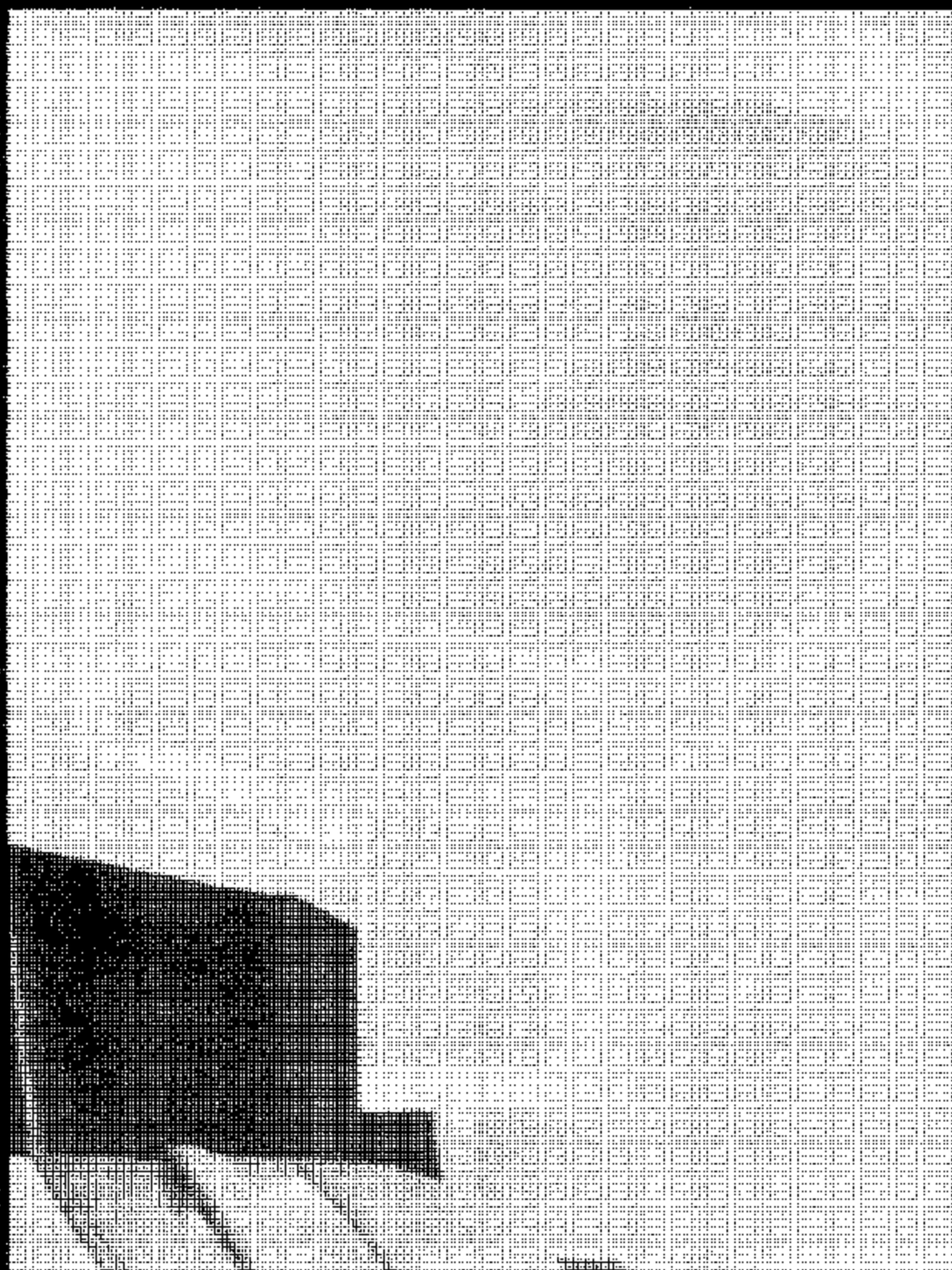
6.11.13 Post-test photo #2 of SFADI test 2 of 2



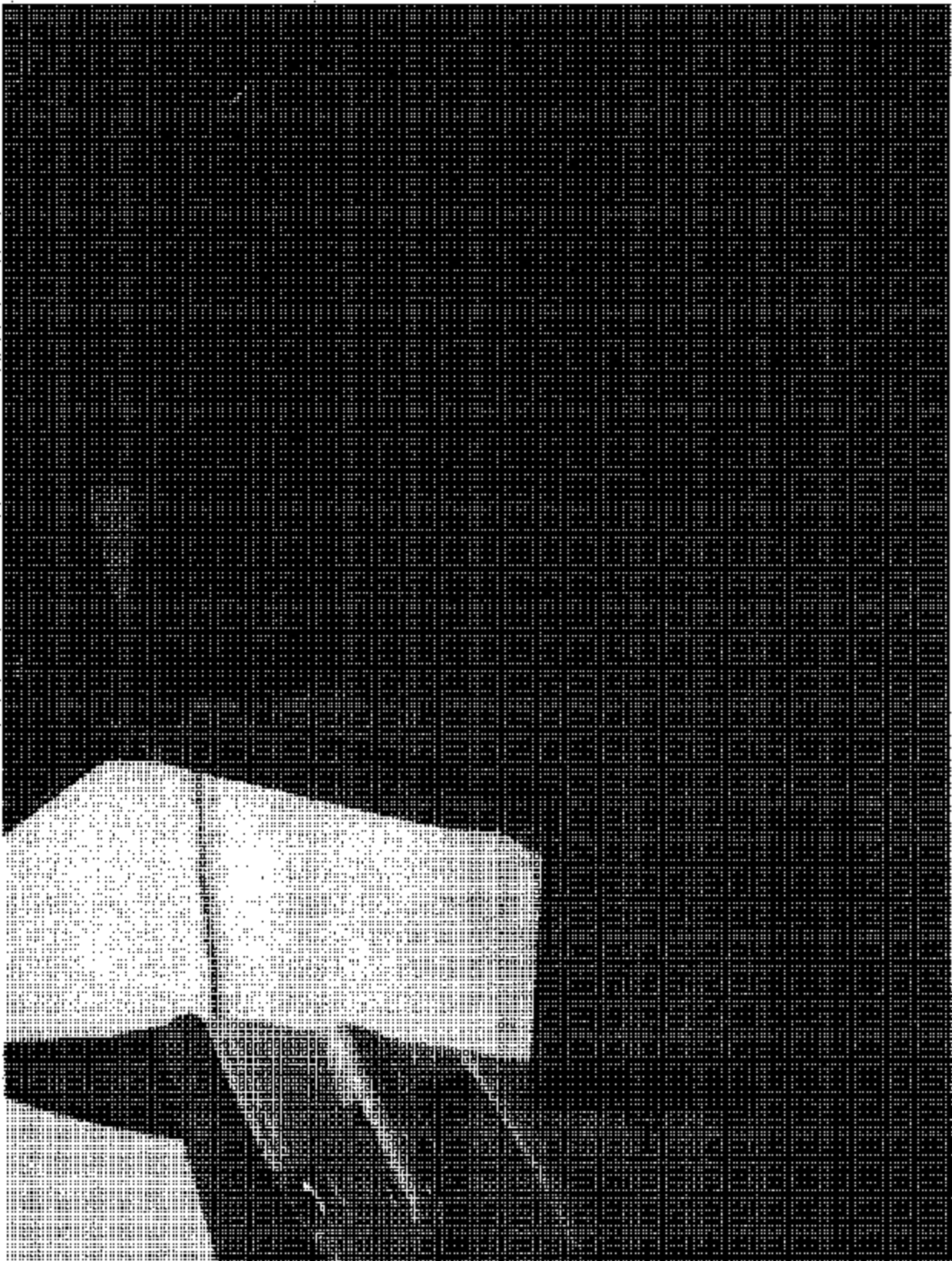
6.11.14 Post-test photo #1 of SFADI test 2 of 2



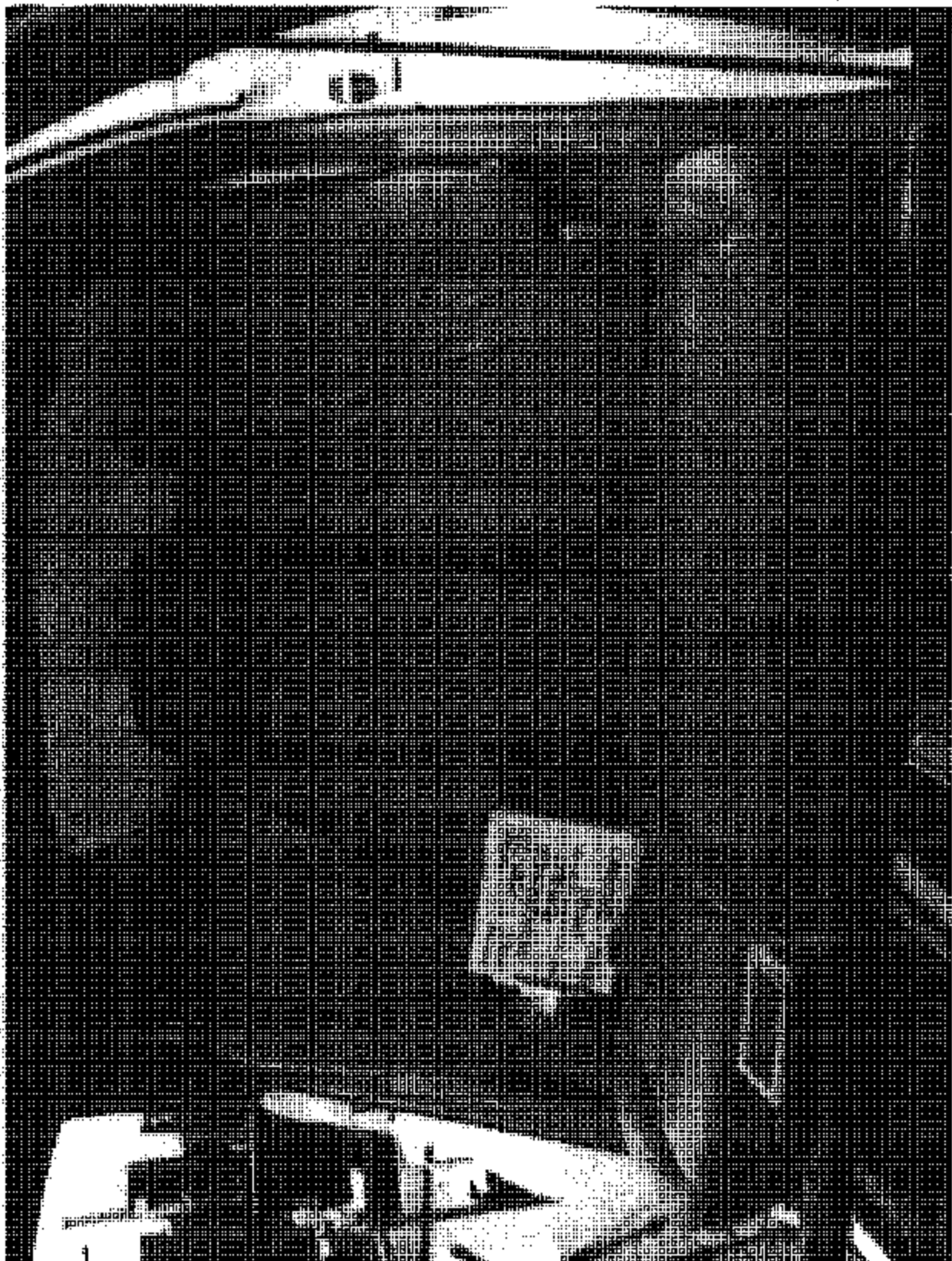
6.11.15 Post-test photo #4 of SPAD1 test 2 of 2



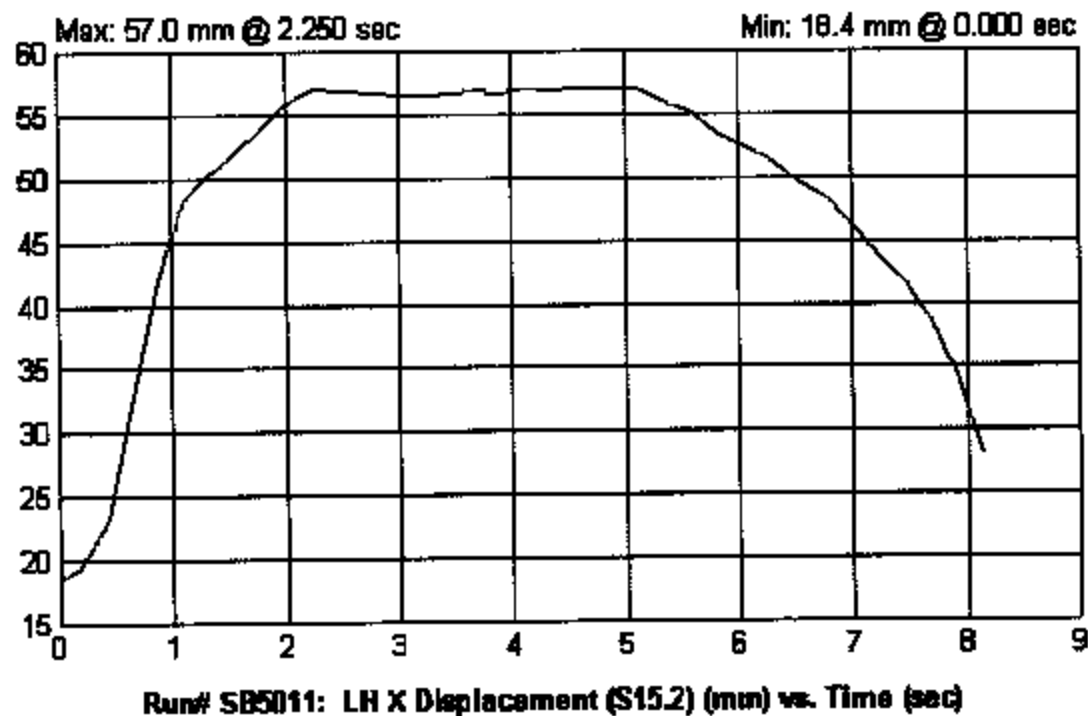
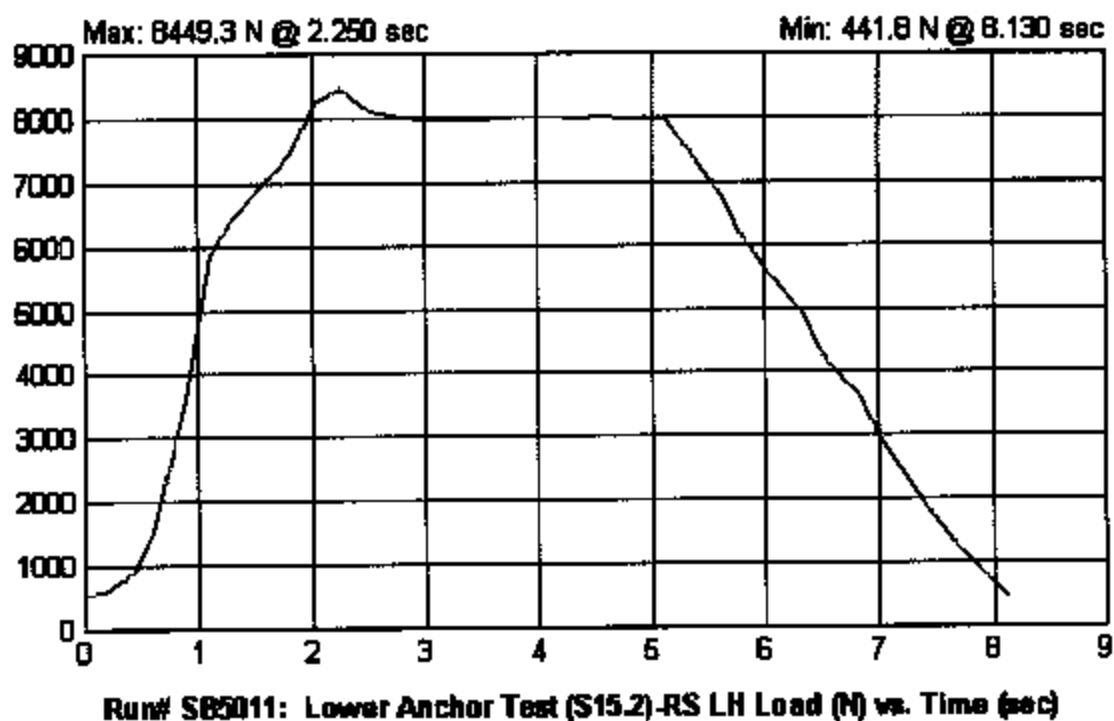
6.11.16 Post-test photo #5 of SFAD test 2 of 2

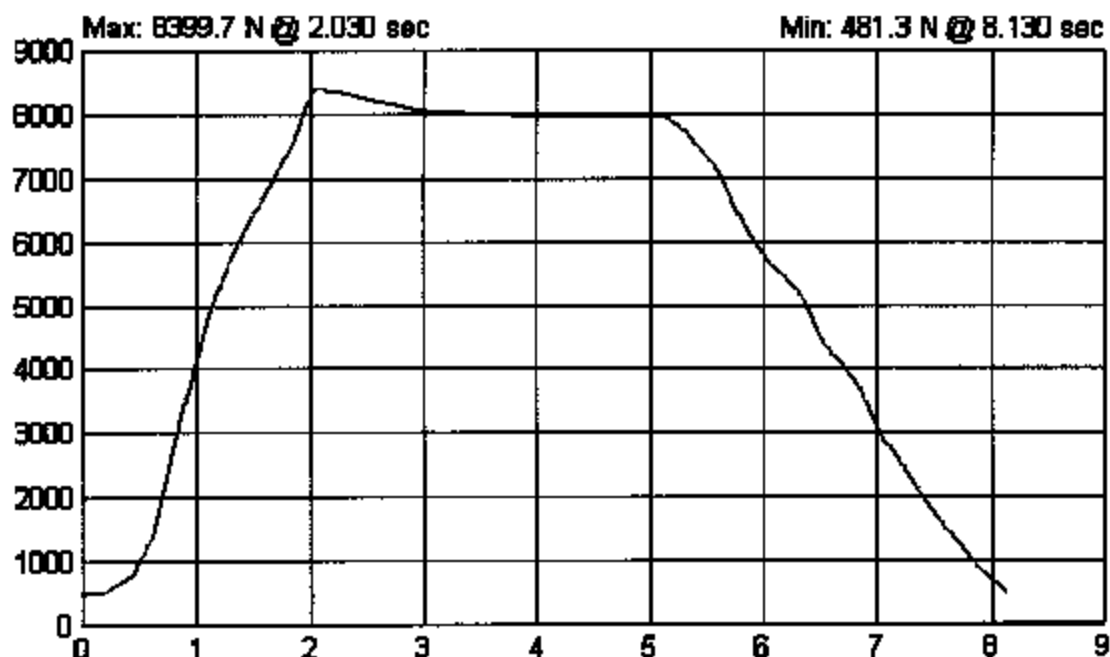


6.11.17 Post-test photo #6 of SFAD test 2 of 2

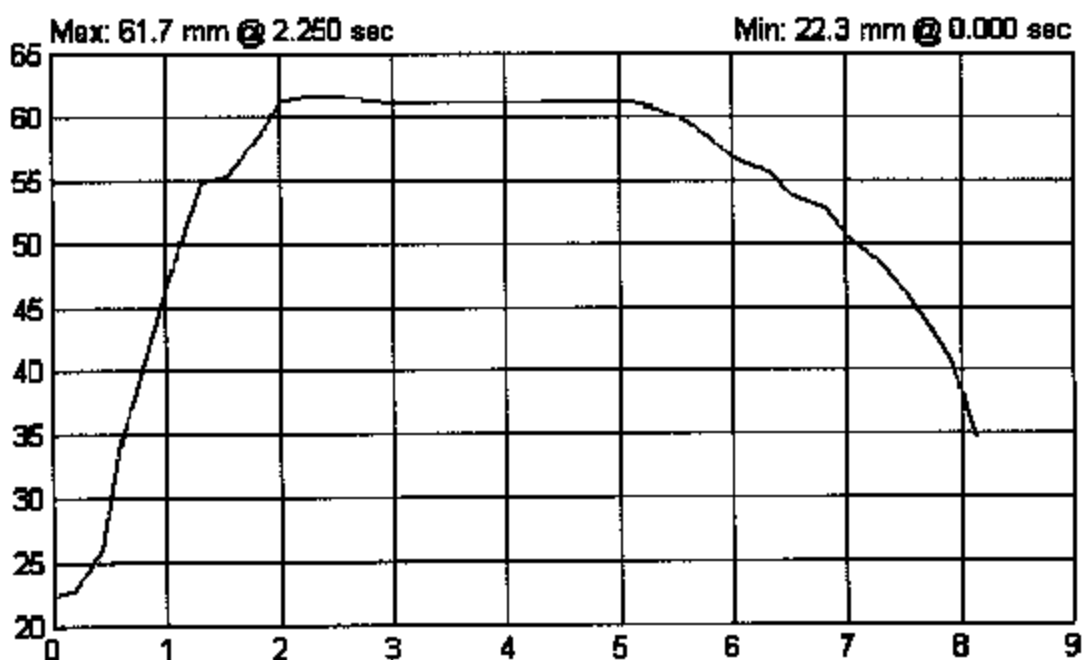


7.0 PLOTS

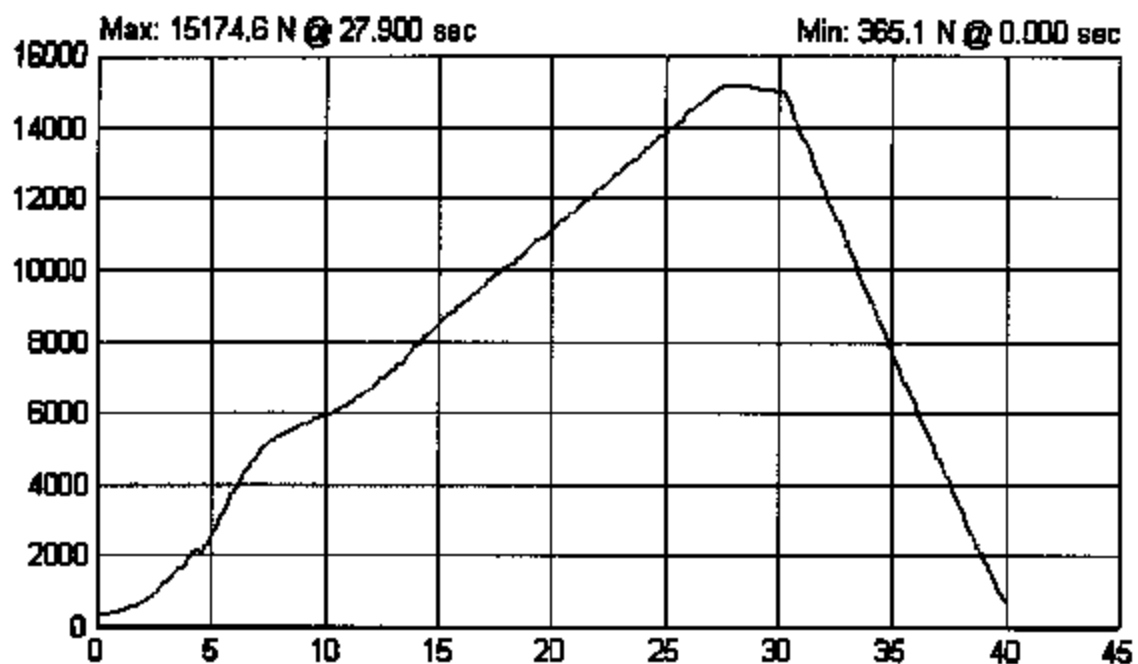




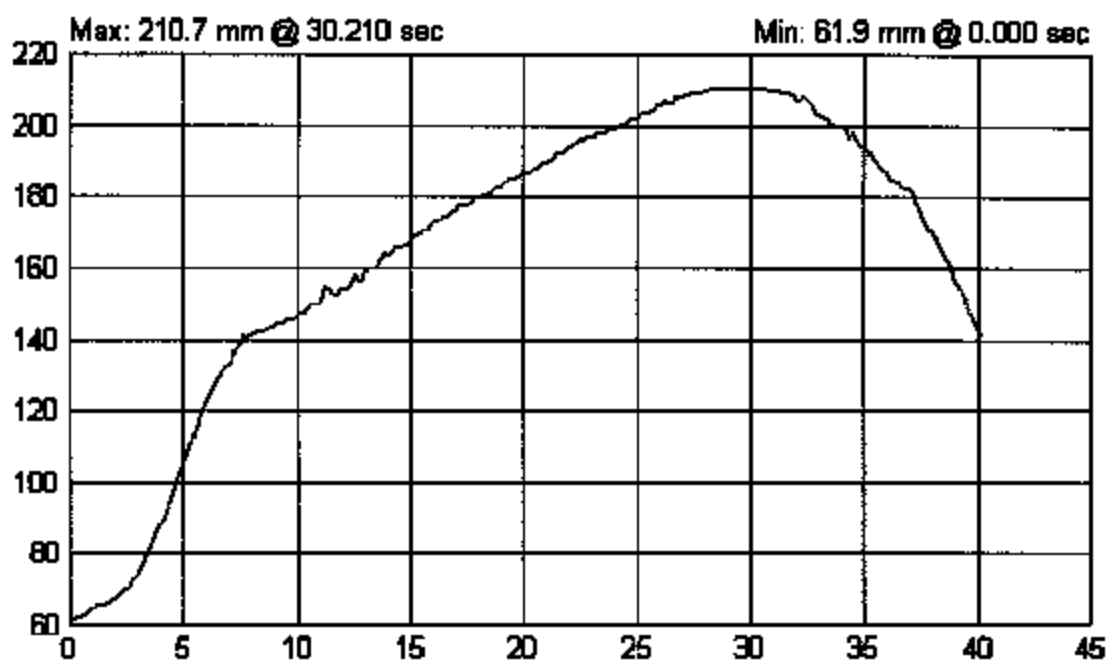
Run# SB5011: Lower Anchor Test (S15.2)-RS RH Load (N) vs. Time (sec)



Run# SB5011: RH X Displacement (S15.2) (mm) vs. Time (sec)



Run# SB5012: SFAD 1 Top Tether Test (S6.3.1)-RS Center Load (N) vs. Time (sec)



Run# SB5012: Center X Displacement (S6.3.1) (mm) vs. Time (sec)

8.0 REPORT of VEHICLE CONDITION

REPORT OF VEHICLE CONDITION AT THE COMPLETION OF TESTING

CONTRACT No.: DTNH22-02-D-11043

DATE: January 13, 2005

From: MGA Research Corporation, 446 Executive Drive, Troy, MI 48063

To: NHTSA, OVSC, NVS-220

The following vehicle has been subjected to compliance testing for FMVSS No. 208 and 225

The vehicle was inspected upon arrival at the laboratory for the test and found to contain all of the equipment listed below. All variances have been reported within 2 working days of vehicle arrival, by letter, to the NHTSA Industrial Property Manager (NAD0-30), with a copy to the OVSC COIR. The vehicle is again inspected, after the above test has been conducted, and all changes are noted below. The final condition of the vehicle is also noted in detail.

VEH. MOD YR/MAKE/MODEL/BODY: 2004 Lexus RX330

VEH. NHTSA NO.: C45102

VIN: JTJHA31U940045394

COLOR: White

ODOMETER READINGS: ARRIVAL unknown miles Date: 8/21/04

COMPLETION unknown miles Date: 1/13/05

PURCHASE PRICE: N/A DEALER'S NAME: Lexus of Highland Park (IL)

ENGINE DATA: 6 Cylinder 3.3 Liters Cubic Inches

TRANSMISSION DATA: X Automatic Manual No. of Speeds 5;

FINAL DRIVE DATA: Rear Drive X Front Drive 4 Wheel Drive

CHECK APPROPRIATE BOXES FOR VEHICLE EQUIPMENT:

TEST LABORATORY: MGA Research Corporation

OBSERVERS: Melanie Schick, Brad Reaume, Kenney Godfrey

X	Air Conditioning	X	Traction Control	X	Clock
X	Tinted Glass		All Wheel Drive	X	Roof Rack
X	Power Steering	X	Speed Control	X	Console
X	Power Windows	X	Rear Window Defroster	X	Driver Air Bag
X	Power Door Locks	X	Sun Roof or T-Top	X	Passenger Air Bag
X	Power Seat(s)	X	Tachometer	X	Front Disc Brakes
X	Power Brakes	X	Tilt Steering Wheel	X	Rear Disc Brakes
X	Antilock Brake System	X	AM/FM/Compact Disc		Other

REMARKS:

Salvage only.

Equipment that is no longer on the test vehicle as noted on previous pages:

All equipment inventoried and placed in vehicle.

Explanation for equipment removal:

Windshield and front seats were removed before conducting the testing.

Test Vehicle Condition:

Salvage only.

RECORDED BY: Melanie Schick, Kamey Godfrey

DATE: January 13, 2005

APPROVED BY: Brad Reaume

APPENDIX A
OWNERS MANUAL CHILD RESTRAINT SYSTEMS

CHILD RESTRAINT

Laws strongly urge the use of child restraint systems for children small enough to use them.

Your vehicle conforms to SAE J1818.

If a child is too large for a child restraint system, the child should sit in the rear seat and must be restrained using the vehicle's seat belt. See "Seat belts" on page 164 for details.

In addition to the precautions outlined above, the "AIRBAG OFF" indicator light may not be illuminated when a child sits in the front passenger seat or a forward-facing child restraint system is installed in the front passenger seat. If the "AIRBAG OFF" indicator light is not illuminated in these circumstances, the front passenger airbag and side airbag on the front passenger side are in an activated condition — the airbags will deploy if an impact meets the deployment criteria. Refer to all the cautions in this Section and "Child restraint system" on page 197.

105

A SAUND

- [illegible]

158

OCCUPANT RESTRAINT SYSTEMS

Child restraint system

A child restraint system for a small child or baby must itself be properly restrained on the seat with the lap portion of the lap/shoulder belt. You must carefully consult the manufacturer's instructions which accompany the child restraint system.

To provide proper restraint, use a child restraint system following the manufacturer's instructions about the appropriate age and size of the child for the child restraint system.

Install the child restraint system correctly following the instructions provided by its manufacturer. General directions are also provided under the following illustrations.

The child restraint system should be installed on the rear seat. According to accident statistics, the child is safer when properly restrained in the rear seat than in the front seat.

When not using the child restraint system, keep it secured with the seat belt or place it somewhere other than the passenger compartment. This will prevent it from injuring passengers in the event of a sudden stop or accident.

Types of child restraint system

Child restraint systems are classified into the following 3 types depending on the child's age and size.

- (A) Infant seat
- (B) Convertible seat
- (C) Booster seat

Install the child restraint system following the instructions provided by its manufacturer.

Your vehicle has anchor brackets for securing the top strap of a child restraint system.

For instructions about how to use the anchor bracket, see "Using a top strap" on page 216.

The child restraint lower anchorages approved for your vehicle may also be used. See "Installation with child restraint lower anchorages" on page 216 for instructions.

197

OCCUPANT RESTRAINT SYSTEMS

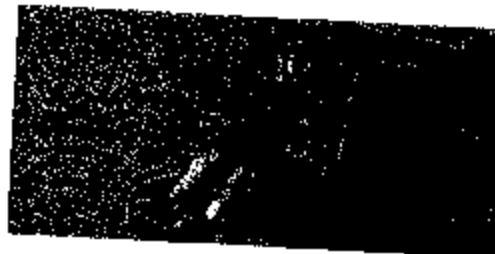
(A) Infant seat



(B) Convertible seat



(C) Booster seat



OCCUPANT RESTRAINT SYSTEMS

INSTALLATION WITH 3-POINT TYPE SEAT BELT

(A) Infant seat installation.



An infant seat must be used in rear-facing position only.



189

OCCUPANT RESTRAINT SYSTEMS



► 1 Same position 2 Same angle



200

OCCUPANT RESTRAINT SYSTEMS



1. Run the lap and shoulder belt through or around the infant seat following the instructions provided by its manufacturer and insert the tab into the buckle taking care not to twist the belt. Keep the lap portion of the belt tight.



OCCUPANT RESTRAINT SYSTEMS



2. Fully extend the shoulder belt to put it in the lock mode. When the belt is then retracted even slightly, it cannot be extended.

To hold the infant seat securely, make sure the belt is in the lock mode before letting the belt retract.



3. While pressing the infant seat firmly against the seat cushion and seatback, let the shoulder belt retract as far as it will go to hold the infant seat securely.

OCCUPANT RESTRAINT SYSTEMS



4. To remove the infant seat, press the buckle-release button and allow the belt to retract completely. The belt will move freely again and be ready to work for an adult or older child passenger.



208

OCCUPANT RESTRAINT SYSTEMS

(B) Convertible seat installation



A convertible seat must be used in forward-facing or rear-facing position depending on the age and size of the child. When installing, follow the manufacturer's instructions about the appropriate age and size of the child as well as directions for installing the child restraint system.

Install the child restraint system on the front passenger seat only when it is unavoidable. Your vehicle is equipped with a front passenger occupant classification system. In order to activate the occupant classification system correctly, install the forward-facing child restraint system on the front passenger seat in the following order:

1. Turn the ignition key to the "ON" position.
2. Move the front passenger seat to the rearward position.
3. Put the child restraint system on the front passenger seat without putting your weight on the front passenger seat.
4. Insert the seat belt tab into the seat belt buckle.

5. Fully extend the shoulder belt to put it in the lock mode. When the belt is then retracted even slightly, it cannot be extended. To hold the seat securely, make sure the belt is in the lock mode before letting the belt retract.

6. While pressing the convertible seat firmly against the seat cushion and backrest, let the shoulder belt retract as far as it will go to hold the convertible seat securely.

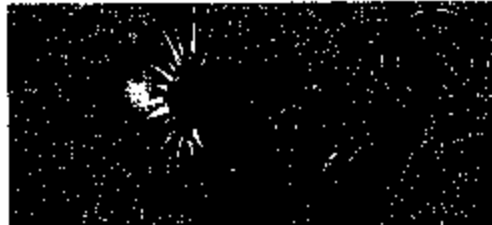


7. Put a child on the child restraint system and secure the child, complying with the instructions provided by the child restraint system manufacturer.

The "AIRBAG OFF" indicator light is illuminated when the ignition key is "ON" and the child is in the child restraint system after following these procedures. The "AIRBAG OFF" indicator light indicates the SRS front passenger airbag and side airbag on the passenger side will not deploy. If the indicator light is not illuminated, remove the child restraint system and reinstall it with the ignition key in the "ACC" or "LOCK" position. If the indicator light is not illuminated when the ignition key is turned to the "ON" position, then the SRS front passenger airbag and side airbag on the passenger side may deploy in an accident. Do not drive the vehicle in this condition. Remove the child restraint system and contact your Lexus dealer.

204

OCCUPANT RESTRAINT SYSTEMS



205

OCCUPANT RESTRAINT SYSTEMS

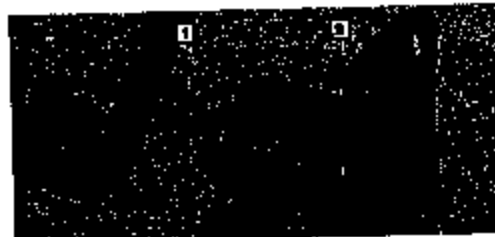


► Move seat fully back



206

OCCUPANT RESTRAINT SYSTEMS



► (1) Same position (2) Same angle



207

OCCUPANT RESTRAINT SYSTEMS

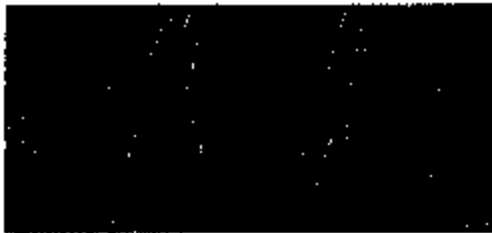


1. Run the lap and shoulder belt through or around the convertible seat following the instructions provided by its manufacturer and insert the tab into the buckle taking care not to twist the belt. Keep the lap portion of the belt tight.



208

OCCUPANT RESTRAINT SYSTEMS



2. Fully extend the shoulder belt to put it in the lock mode. When the belt is then retracted even slightly, it cannot be extended.

To hold the convertible seat securely, make sure the belt is in the lock mode before letting the belt retract.



3. While pressing the convertible seat firmly against the seat station and seatback, let the shoulder belt retract as far as it will go to hold the convertible seat securely.

209

OCCUPANT RESTRAINT SYSTEMS

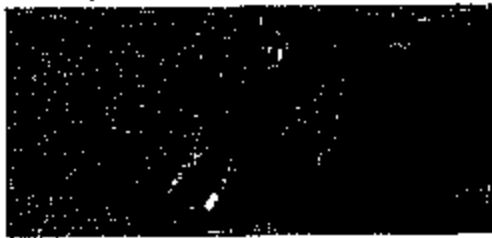


4. To remove the convertible seat, press the buckle-release button and allow the belt to retract completely. The belt will move freely again and be ready to work for an adult or older child passenger.

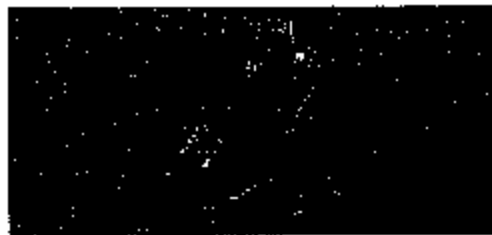
210

OCCUPANT RESTRAINT SYSTEMS

(C) Booster seat installation



A booster seat must be used in forward-facing position only.



► Move seat fully back



211

OCCUPANT RESTRAINT SYSTEMS



► 1 Same position 2 Same angle



OCCUPANT RESTRAINT SYSTEMS



1. Fit the child on a booster seat. Run the lap and shoulder belt through or around the booster seat and child following the instructions provided by the manufacturer and insert the tab into the buckle taking care not to twist the belt.

Make sure the shoulder belt is correctly across the child's shoulder and that the lap belt is positioned as low as possible on child's hips. See "Seat belts" on page 154 for details.



213

OCCUPANT RESTRAINT SYSTEMS



2. To remove the child restraint system, press the buckle-release button and allow the belt to retract.

214

OCCUPANT RESTRAINT SYSTEMS

Using a top strap



Follow the procedure below for a child restraint system that requires the use of a top strap.



1 Anchor brackets 2 Symbol mark

Use the anchor brackets on the back of the rear seatback to attach the top strap.

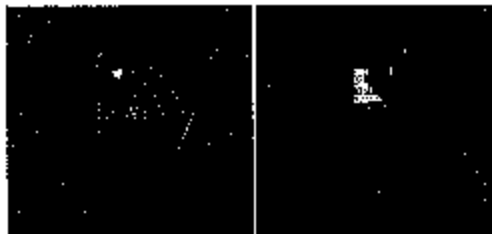
Anchor brackets are installed for each rear seating position. This symbol mark indicates the location of the anchor brackets.

216

OCCUPANT RESTRAINT SYSTEMS



1. Remove the head restraint.



2. Open the cover of the anchor bracket.



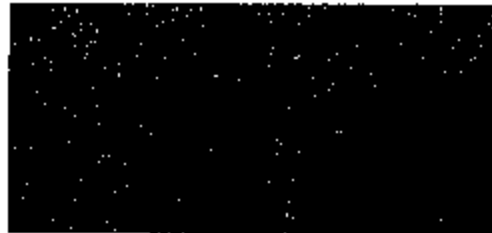
3. Fix the child restraint system with the seat belt.

4. Latch the hook onto the anchor bracket and tighten the top strap.

For instructions to install the child restraint system, see "Child restraint system" on page 197.

216

OCCUPANT RESTRAINT SYSTEMS



d. Replace the head restraint and lift it up to the uppermost lock position.

Be sure to close the cover when the anchor bracket is not in use.

217

OCCUPANT RESTRAINT SYSTEMS

Installation with child restraint lower anchorages



Lower anchorages for the child restraint systems complying with the FMVSS225 or CMVSS210.2 specifications are installed in the rear seat.

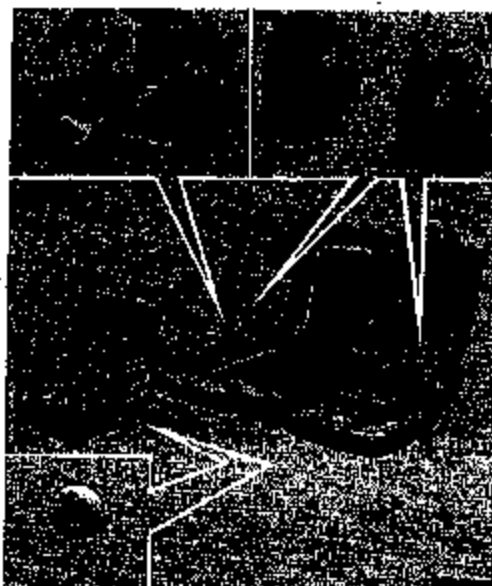
The anchorages are installed in the seat cushion of the right side seating position and between the center and left side seating position.

Child restraint system complying with the FMVSS225 or CMVSS210.2 specification can be fixed to these anchorages. In this case, it is not necessary to fix the child restraint system with a seat belt on the vehicle.

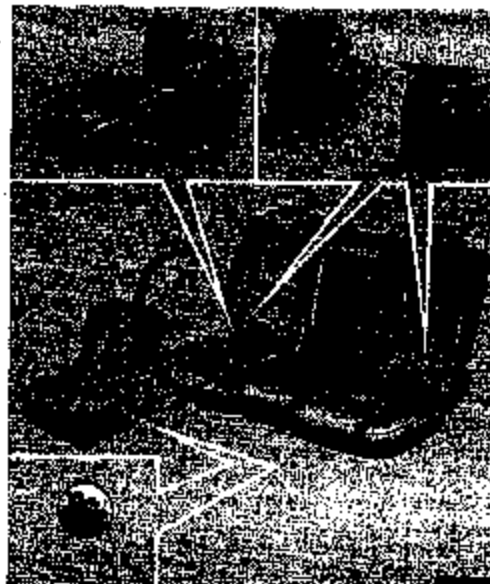
218

OCCUPANT RESTRAINT SYSTEMS

CHILD RESTRAINT SYSTEM INSTALLATION



► Type A



► Type B

219

OCCUPANT RESTRAINT SYSTEMS

For owners in Canada

The symbol on a child restraint system indicates the presence of a lower connector system.

Type A —

1. Widen the clearance between the seat cushion and seatback a little and confirm the position of the lower anchorages below the tag in the seatback.
2. Latch the hooks of lower straps onto the anchorages and tighten the lower straps.

Type B —

1. Widen the clearance between the seat cushion and seatback a little and confirm the position of the lower anchorages below the tag in the seatback.
2. Latch the buckles onto the anchorages.

If your child restraint system has a top strap, it should be anchored. (For the installation of the top strap, see "Using a top strap" on page 215.)

For the installation details, refer to the instruction manual supplied with each product.



APPENDIX B
MANUFACTURER'S DATA (OVSC FORM 14)

03/17/2004 15:52 FAX 202 338 3081

OVSC/NV5/221

+ MGA TROY

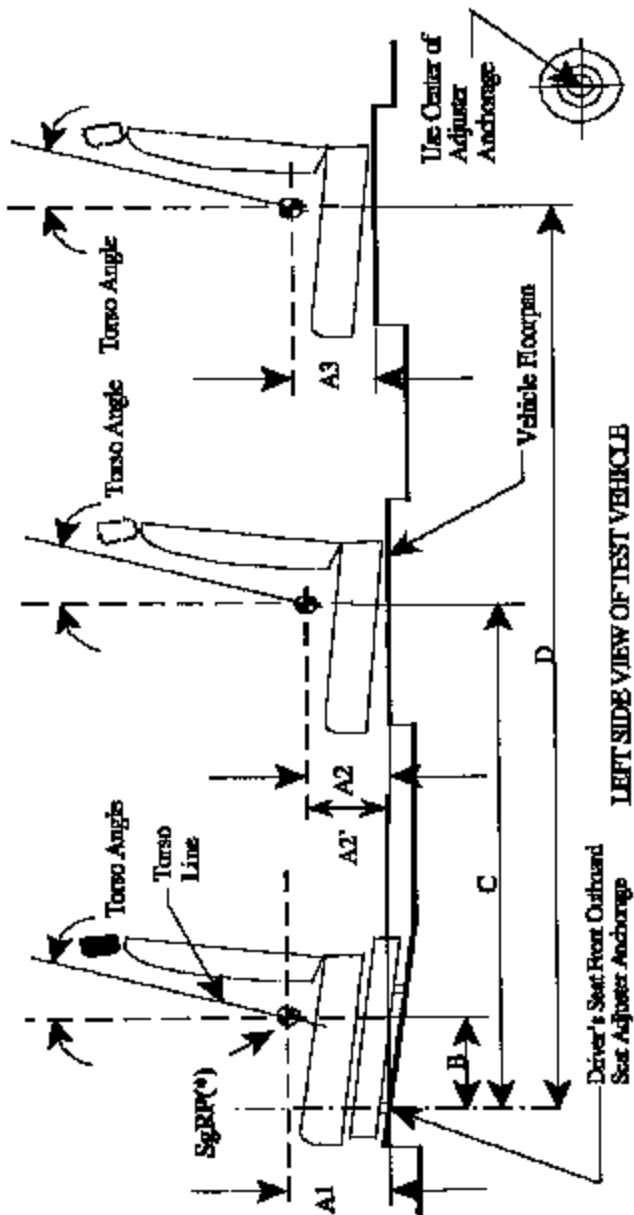
0029/042

Attachment 4-1

SEAT REFERENCE POINT (SRP) AND TORSO ANGLE DATA
 FOR FMVSS 225

(All dimensions in mm)

Model Year: 2004 ; Make: LEXUS ; Model: RX330 ; Body Style: 5Door Wagon
 Seat Style: Front row: Separate ; Second row: 4-2-4 Split ; Third row: N/A



03/17/2004 16:00 FAX 202 326 3091

GVBC/NVS/221

→ MGA TROY

021/042

Table 1. Seating Positions¹ and Torsio Angles

	Left (Driver Side)	Center (if any)	Right
A1	(Driver) 280	N/A	(Front Passenger) 280
A2' (*)	293.9	330.9	293.9
A3	N/A	N/A	N/A
B	362.5	N/A	362.5
C	1215.5	1183.5	1215.5
D	N/A	N/A	N/A
Torsio Angle (degree)	Front Row	21	21
	Second Row	25	25
	Third Row	N/A	N/A

Note: 1. All dimensions are in mm. If not, provide the unit used.

(*) A2' are the dimensions from the driver's seat front outboard seat adjuster anchorage.

03/17/2004 16:01 FAX 202 338 3081

079C/NVS/221

+ MGA TROY

021/042

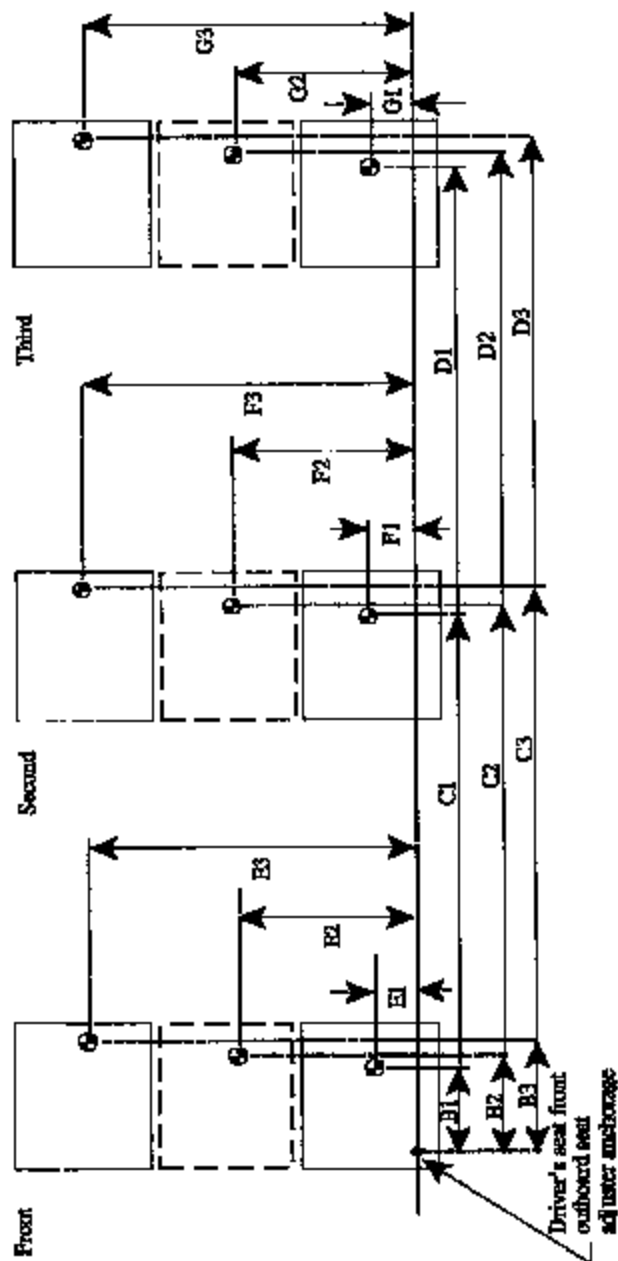
R. 14
 Page 4 of 11

SEATING REFERENCE POINT
 FOR FMVSS 225

(All dimensions in mm)

(Note: The Child Restraint Anchorage Location determines the 225 SgRP locations)

Model Year: 2004 ; Make: LEXUS ; Model: RX330 ; Body Style: 5Door Wagon
 Seat Style: Front row: Separate ; Second row: 4-2-4 Split ; Third row: N/A



03/17/2004 16:01 FAX 202 330 3081

079C/NVS/221

- MGA TROY

024/042

FORM 14
 Page 5 of 11

Table 2. Seating Reference Point and Tether Anchorage Locations

Seating Reference Point (SgRP)		Distance from Driver's front outboard seat adjuster anchorage ¹
Front Row	B1	362.5
	B1	221.5
	B2	N/A
	F2	N/A
	B3	362.5
	B3	981.5
Second Row	C1	1215.5
	F1	226.5
	C2	1183.5
	F2	601.5
	C3	1215.5
	F3	976.5
Third Row	D1	N/A
	G1	N/A
	D2	N/A
	G2	N/A
	D3	N/A
	G3	N/A

Note: 1. Use the center of anchorage.

03/17/2004 18:02 FAX 202 335 3081

OYSC/NVS/221

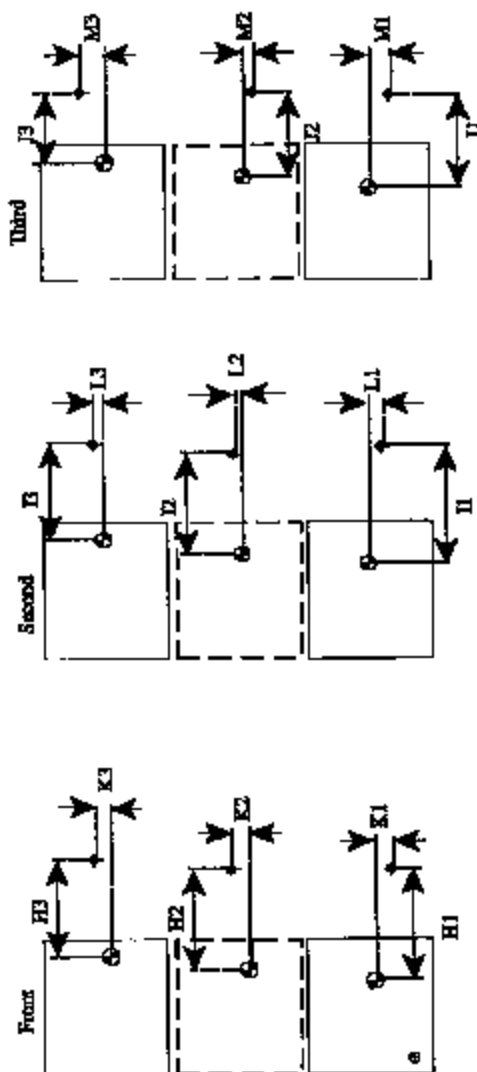
→ MGA TRGY

025/042

R₁₄
 Page 6 of 11

**TETHER ANCHORAGE LOCATIONS
 FOR FMVSS 225**
 (All dimensions in mm)

Model Year: 2004 ; Make: LEXUS ; Model: RX330 ; Body Style: 3Door Wagon
 Seat Style: Front row: Separate ; Second row: 4-2-4 Split ; Third row: N/A



○: SGRP
 ⬆: Tether anchorage

Note: 1. The location shall be measured at the center of anchorage.

02/17/2004 18:02 FAX 202 388 3081

OVSC/NYS/221

→ MGA TRDY

026/042

FORM 14
 Page 7 of 11

Table 3. Seating Reference Point and Tether Anchorage Locations

Seating Reference Point (SgRP)	Distance from SgRP	
Front Row	H1	N/A
	K1	N/A
	H2	N/A
	K2	N/A
	H3	N/A
	K3	N/A
Second Row	I1	389.2
	L1	0
	I2	421.2
	L2	0
	I3	389.2
	L3	0
Third Row	J1	N/A
	M1	N/A
	J2	N/A
	M2	N/A
	J3	N/A
	M3	N/A

Note: 1. Use the center of anchorage.

03/17/2004 16:03 FAX 202 330 2081

OVSG/NVS/221

+ MGA TRDY

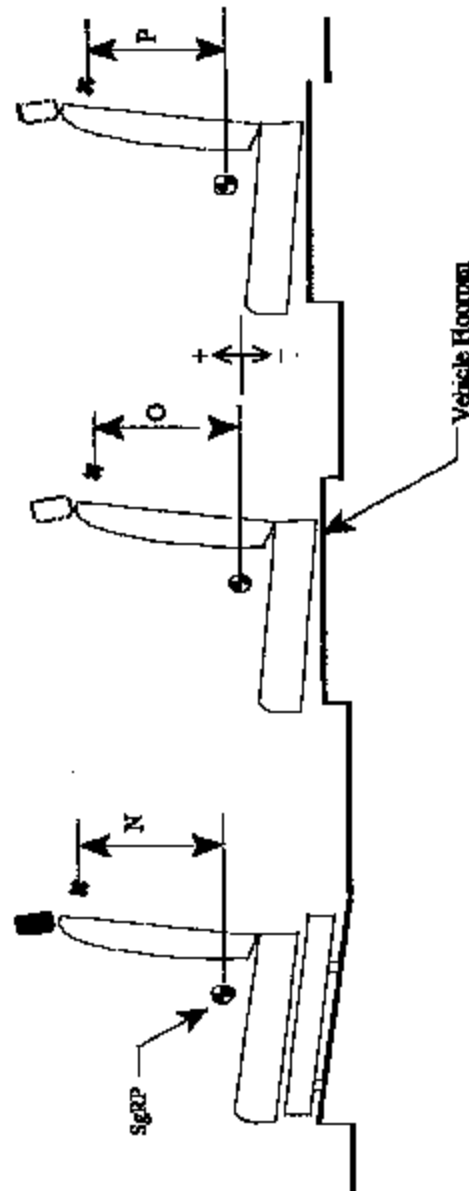
027/042

FA .14
Page 8 of 11

TETHER ANCHORAGE LOCATIONS - VERTICAL
FOR FMVSS 225

(All dimensions in mm)

Model Year: 2004 ; Make: LEXUS ; Model: RX330 ; Body Style: 5Door Wagon
Seat Style: Front row: Separate ; Second row: 4-2-4 Split ; Third row: N/A



LEFT SIDE VIEW OF TEST VEHICLE

03/17/2004 10:03 FAX 202 336 3081

OVSC/NYS/221

- MGA TROY

026/042

Table 4. Vertical Dimension For The Tether Anchorage

Seating Row	Vertical Distance from Seating Reference Point	
Front Row	N1 (Driver)	N/A
	N2 (Center)	N/A
	N3 (Right)	N/A
Second Row	O1 (Left)	320.4
	O2 (Center)	283.4
	O3 (Right)	320.4
Third Row	P1 (Left)	N/A
	P2 (Center)	N/A
	P3 (Right)	N/A

Note: 1. All dimensions are in mm. If not, provide the unit anchorage.

Page 9 of 11

03/17/2004 10:04 FAX 202 338 3081

OVSG/NVS/221

- MGA TROY

020/042

FORM 14
Page 10 of 11

Test Procedures Used for Compliance Tests

Lower Anchorages

For each seating location in each row record applicable FMVSS Section		FMVSS 225 Section(s)			
Block 1		Lower anchorage dimension certification method used (Enter applicable section used in block 1 of each position by circling A or B) A) 9.1.1 or B) 15.1.2.1			
Block 2		Lower anchorage location (Enter applicable section used in block 2 by circling A or B) A) 9.2.1 or B) 15.1.2.2 (also provide roll and yaw angles) pitch _____° roll _____° yaw _____°			
Block 3		Lower anchorage marking (Enter applicable section used in block 3 by circling A or B) A) 9.5 or B) 15.4			
Block 4		Strength requirement (Enter applicable section used in block 4 by circling A or B) A) Section 9 or B) Section 15			
	Driver	N/A			
Front	Center (if any)	Block 1 A B	Block 2 A B Pitch °, Roll °, Yaw °	Block 3 A B	Block 4 A B
	Right (if any)	Block 1 A B	Block 2 A B Pitch °, Roll °, Yaw °	Block 3 A B	Block 4 A B
Second	Left	Block 1 A B	Block 2 A B Pitch 18.5°, Roll 0°, Yaw 0°	Block 3 A B	Block 4 A B
	Center	Block 1 A B	Block 2 A B Pitch °, Roll °, Yaw °	Block 3 A B	Block 4 A B
	Right (if any)	Block 1 A B	Block 2 A B Pitch 18.5°, Roll 0°, Yaw 0°	Block 3 A B	Block 4 A B
Third	Left	Block 1 A B	Block 2 A B Pitch °, Roll °, Yaw °	Block 3 A B	Block 4 A B
	Center	Block 1 A B	Block 2 A B Pitch °, Roll °, Yaw °	Block 3 A B	Block 4 A B
	Right	Block 1 A B	Block 2 A B Pitch °, Roll °, Yaw °	Block 3 A B	Block 4 A B
Fourth	Left	Block 1 A B	Block 2 A B Pitch °, Roll °, Yaw °	Block 3 A B	Block 4 A B
	Center	Block 1 A B	Block 2 A B Pitch °, Roll °, Yaw °	Block 3 A B	Block 4 A B
	Right	Block 1 A B	Block 2 A B Pitch °, Roll °, Yaw °	Block 3 A B	Block 4 A B

03/17/2004 15:04 FAX 202 336 3881

OVSC/NYS/221

+ MGA TR07

030/042

FORM 14
Page 11 of 11

Test Procedures Used for Compliance Tests

Tether Anchorages

For each seating location in each row record applicable FMVSS Section		FMVSS Section(s) - Req.		
Block 1		Tether anchorage location certification method used (Enter applicable section used in block 1 by circling A, B, C, D, E or F) A) 6.2.1 B) 6.2.1.1 C) 6.2.1.2 D) 6.2.2 E) 6.2.2.1 F) 6.2.2.2		
Block 2		Number of tether anchorages based upon the applicable section (Enter applicable section used in block 2 by circling A or B) A) 4.4 B) 4.5		
Block 3		Tether anchorage strength requirement (Enter applicable section used in block 3 by circling A, B, or C) A) 6.3.1 B) 6.3.2 C) 6.3.4		
Front	Driver	N/A		
	Center (if any)	Block 1 A B C D E F	Block 2 A B	Block 3 A B C
	Right (if any)	Block 1 A B C D E F	Block 2 A B	Block 3 A B C
	Left	Block 1 (A) B C D E F	Block 2 A (B)	Block 3 (A) B C
Second	Center	Block 1 (A) B C D E F	Block 2 A (B)	Block 3 (A) B C
	Right	Block 1 (A) B C D E F	Block 2 A (B)	Block 3 (A) B C
Third	Left	Block 1 A B C D E F	Block 2 A B	Block 3 A B C
	Center	Block 1 A B C D E F	Block 2 A B	Block 3 A B C
	Right	Block 1 A B C D E F	Block 2 A B	Block 3 A B C
	Left	Block 1 A B C D E F	Block 2 A B	Block 3 A B C
Fourth	Center	Block 1 A B C D E F	Block 2 A B	Block 3 A B C
	Right	Block 1 A B C D E F	Block 2 A B	Block 3 A B C