

FINAL REPORT NUMBER 225-MGA-05-004

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

DAIMLERCHRYSLER CORPORATION
2005 DODGE MAGNUM
NHTSA No. C50302

MGA RESEARCH CORPORATION
446 Executive Drive
Troy, Michigan 48083



Test Date: February 16, 2005
Report Date: March 30, 2005

FINAL REPORT

PREPARED FOR:

U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
ENFORCEMENT
OFFICE OF VEHICLE SAFETY COMPLIANCE
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ROOM 6111 (NVS-220)
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16. Abstract A compliance test was conducted on the subject 2005 Dodge Magnum, NHTSA No. C50302, 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 February 16, 2005. Test failures identified were as follows: NONE The data recorded indicates that the 2005 Dodge Magnum tested appears to comply with the requirements for FMVSS 225.			
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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 2005 Dodge Magnum, NHTSA No. C50302 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 bench seat. Each 2nd row occupant seating position was equipped with a child restraint anchorage system (one tether and two lower anchors). The center-to-center spacing between the 2nd row outboard lower anchorages was approximately 760 mm. Each 2nd row occupant seating position was tested with the SFADII fixture.

2.0 COMPLIANCE TEST AND DATA SUMMARY

TEST SUMMARY

The testing was conducted at MGA in Troy, Michigan on February 16, 2005.

Based on the test results, the 2005 Dodge Magnum appears to comply with the performance requirements of FMVSS No. 225 for these tests.

The SFADII at the 2nd row left occupant seating position sustained a maximum force of 10,939 N and held the required load for 4 seconds. The total displacement from point "X" on the SFADII for the 2nd row left occupant seating position was 45 mm. The SFADII at the 2nd row right occupant seating position sustained a maximum force of 10,886 N and held the required load for 4 seconds. The total displacement from point "X" on the SFADII for the 2nd row right occupant seating position was 52 mm. The SFADII at the 2nd row center occupant seating position sustained a maximum force of 14,996 N and held the required load for 4 seconds.

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)
SB5043	SFAD II	Lower Anchors Only	2 nd Row Left	10,939	45
			2 nd Row Right	10,886	52
SB5044	SFAD II	Lower Anchors & Tether	2 nd Row Center	14,996	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	2005 Dodge Magnum
VEH. NHTSA NO.	C50302
VIN	2D4FV48T55H513493
COLOR	White
VEH. BUILD DATE	08/04
TEST DATE	February 16, 2005
TEST LABORATORY	MGA Research Corporation
OBSERVERS	Melanie Schick, Brad Reaume, Kenney Godfrey

GENERAL INFORMATION:

DATA FROM VEHICLE'S CERTIFICATION LABEL:

Vehicle Manufactured By: DaimlerChrysler Corporation

Date of Manufacture: 08/04; VIN: 2D4FV48T55H513493

GVWR: 2225 kg; GAWR FRONT: 1266 kg

GAWR REAR: 1266 kg

DATA FROM TIRE PLACARD:

Tire Pressure with Maximum Capacity Vehicle Load:

FRONT: 210 kPa REAR: 210 kPa

Recommended Tire Size: P215/65R17

Recommended Cold Tire Pressure:

FRONT: 210 kPa REAR: 210 kPa

Size of Tire on Test Vehicle: P215/65R17

Type of Spare Tire: Standard: T135/90D17

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 48083	
Test Equipment Used for Testing	Calibration Due Date
MGA Hydraulic Test Frame	N/A
Three (3) Load Cell 3,000 lb Capability	S/N 180s (07/10/05), S/N 607 (02/23/05), S/N 251 (04/18/05)
Two (2) String Potentiometer	Calibrated at each use (S/N 20769, 20763)
Hydraulic Pump	N/A
MGA CRF Fixture	N/A
MGA SFADII	N/A
MGA SFADII	N/A
MGA 2-Dimensional Template	N/A
Linear Scale	TPM411 (11/05/05)
MGA Data Acquisition System	N/A
One (1) Hydraulic Cylinder	N/A
Digital Calipers	S/N MGA00053 (09/02/05)
Force Gauge	S/N MGA00113 (05/19/05)
Inclinometer (Digital)	S/N MGA00034 (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	Yes		N/A
	Ctr		Yes		
	RH		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	Yes		N/A
	Ctr		Yes		
	RH		Yes		
Diameter of the bar (mm)	LH	N/A	5.95	6.00	N/A
	Ctr		6.00	6.00	
	RH		6.00	6.00	
Inspect if the bars are straight, horizontal and transverse	LH	N/A	Yes		N/A
	Ctr		Yes		
	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	45		N/A
	Ctr		53		
	RH		40		
Measure the distance between the SRP to the center of the anchorage bar (mm)	LH	N/A	148		N/A
	Ctr		160		
	RH		148		

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		Yes		
	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	26.5	26.5	N/A
	Ctr		26.5	26.5	
	RH		26.5	26.5	
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		Yes		
	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 $\pm$ 1 mm (mm).	LH	N/A	280		N/A
	Ctr		280		
	RH		280		
Inspect if the bars are an integral and permanent part of the vehicle.	LH	N/A	Yes		N/A
	Ctr		Yes		
	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		Yes		
	RH		Yes		

PITCH, YAW, & ROLL INFORMATION

SEAT POSITION	PITCH (deg)	YAW (deg)	ROLL (deg)
2 nd Row Left	9	No Data	1
2 nd Row Center	12	No Data	0
2 nd Row Right	9	No Data	0

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
	Ctr.	Yes
	RH	Yes
Third Row		N/A

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

REMARKS: NONE

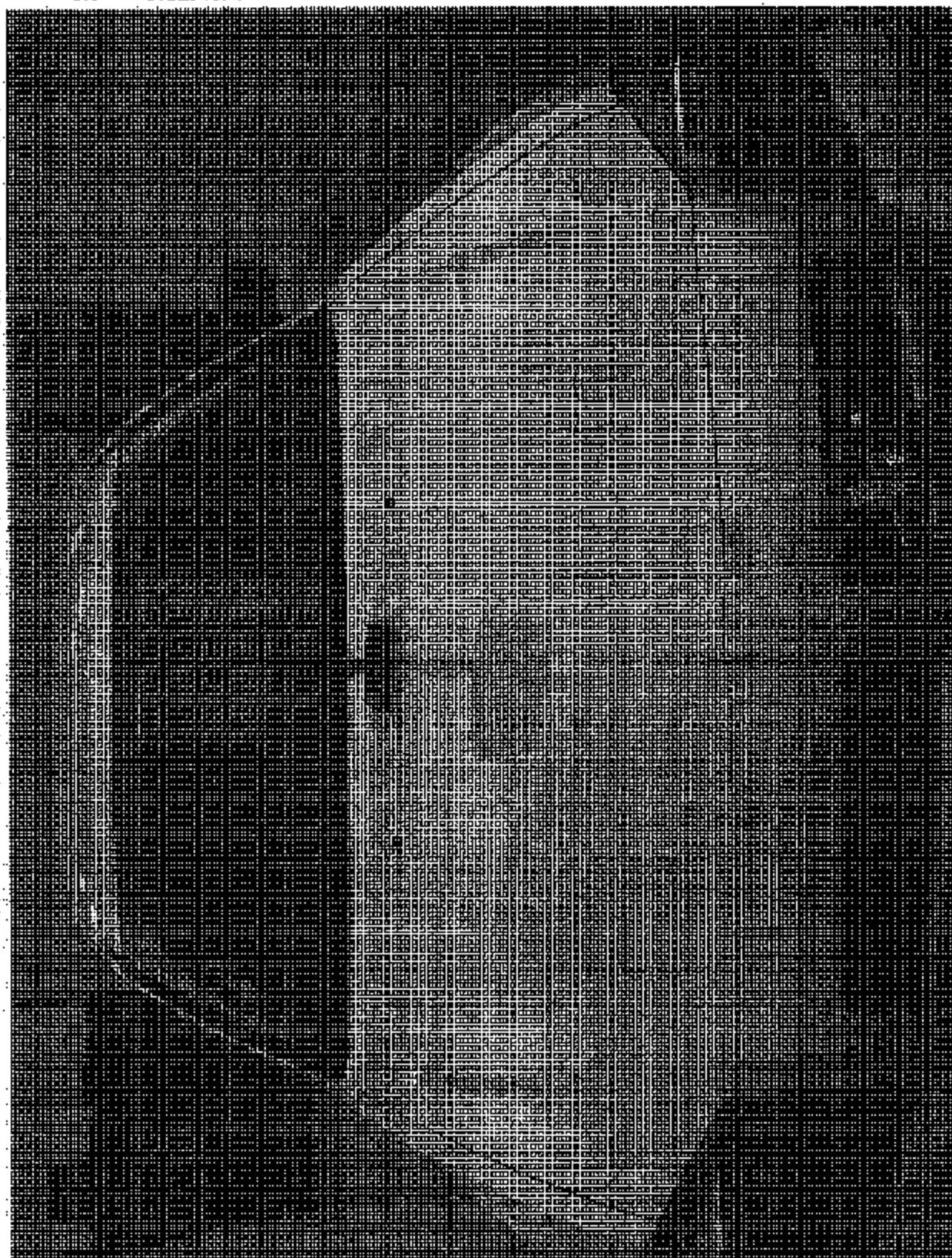
Table 6. Tether Anchorage Static Loading and Displacement (Data Sheet 5)

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 Thera 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	Fixed	Fixed	Yes	II	9	19	387	11,000	10,939	64	45
	Cr.			N/A	II	9	N/A	535	15,000	14,996	N/A	N/A
	RH			Yes	II	9	19	387	11,000	10,886	67	52
Third Row		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

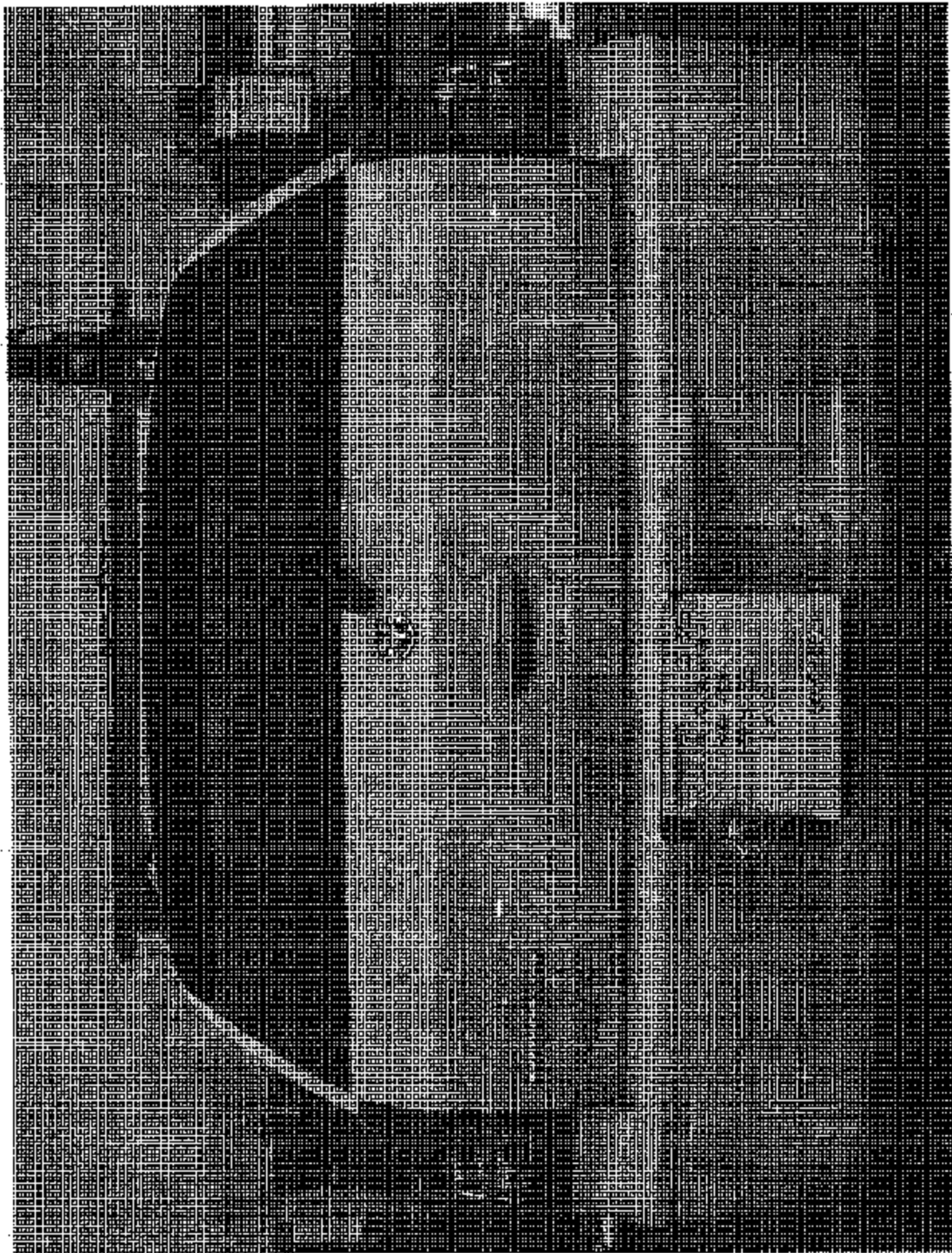
Note: (1) AS DETERMINED USING THE PROCEDURES SPECIFIED IN TP-225L & 225T.

6.0 PHOTOGRAPHS

6.1 Front view



6.2 Rear view



6.3 1/4 Front left view

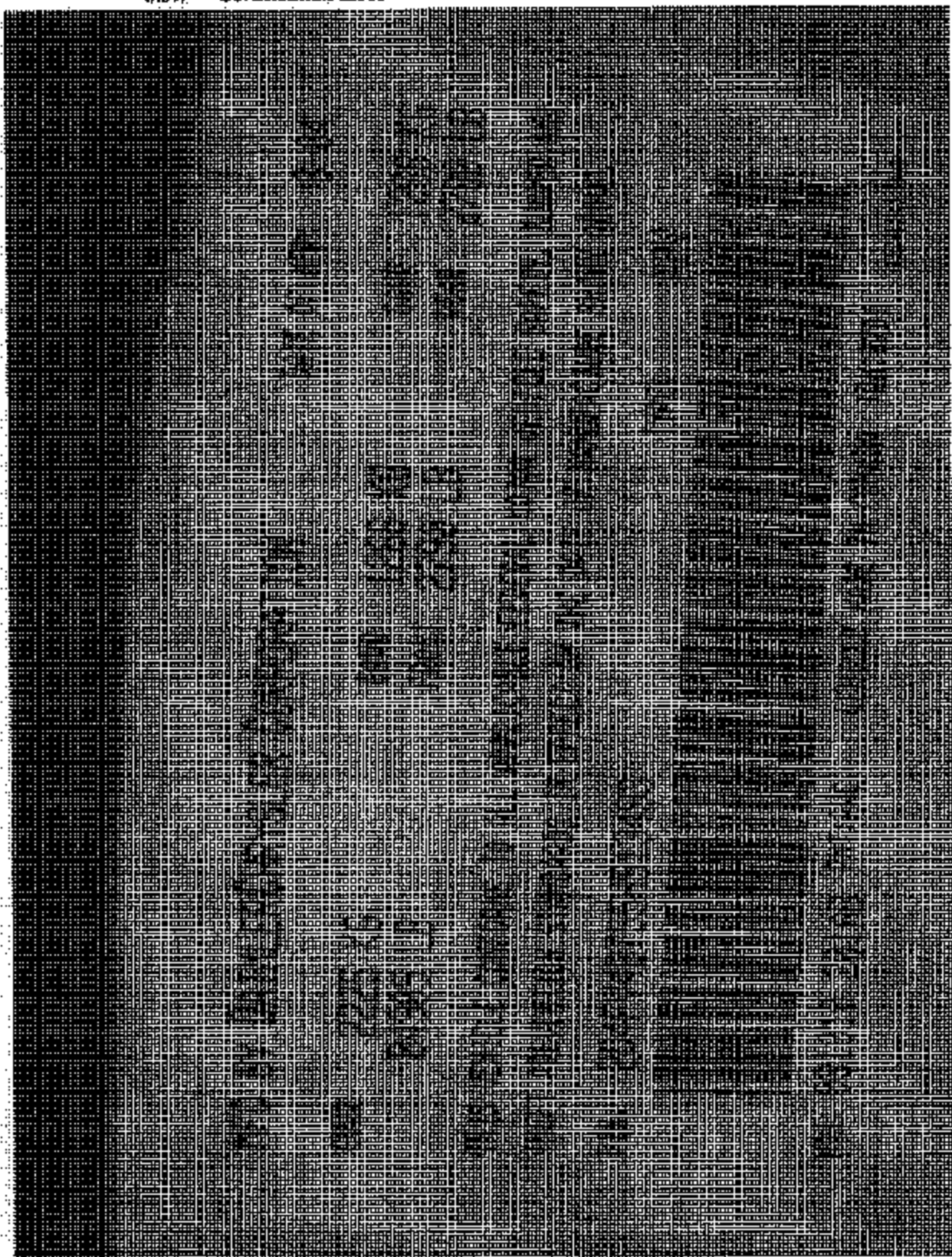


6.4 ¼ Front right view



6.5 Test vehicle's certification label

6.5.1 Certification label



6.5.2 Tire information label



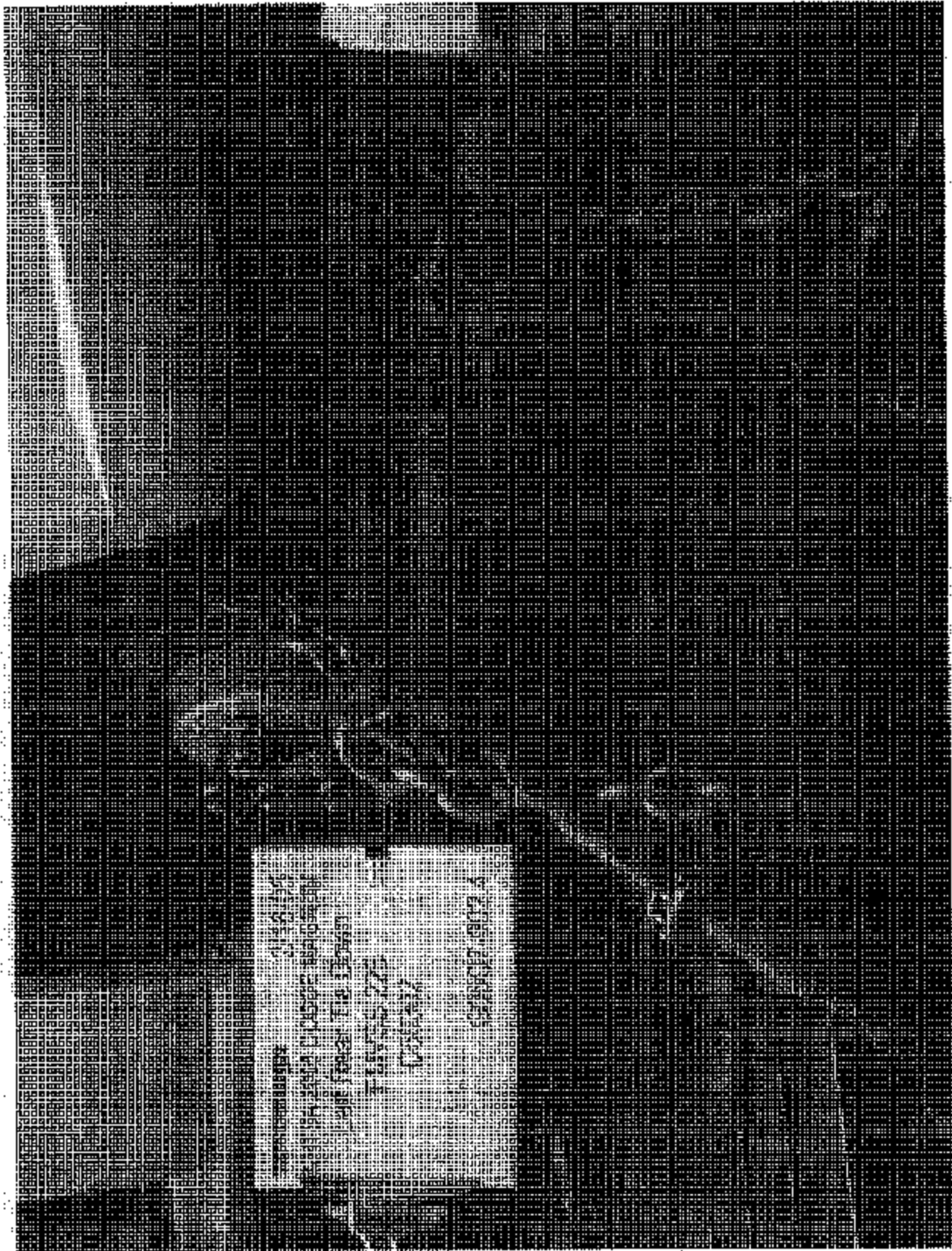
6.6 Vehicle tie down at each tie down location

6.6.1 Front under vehicle

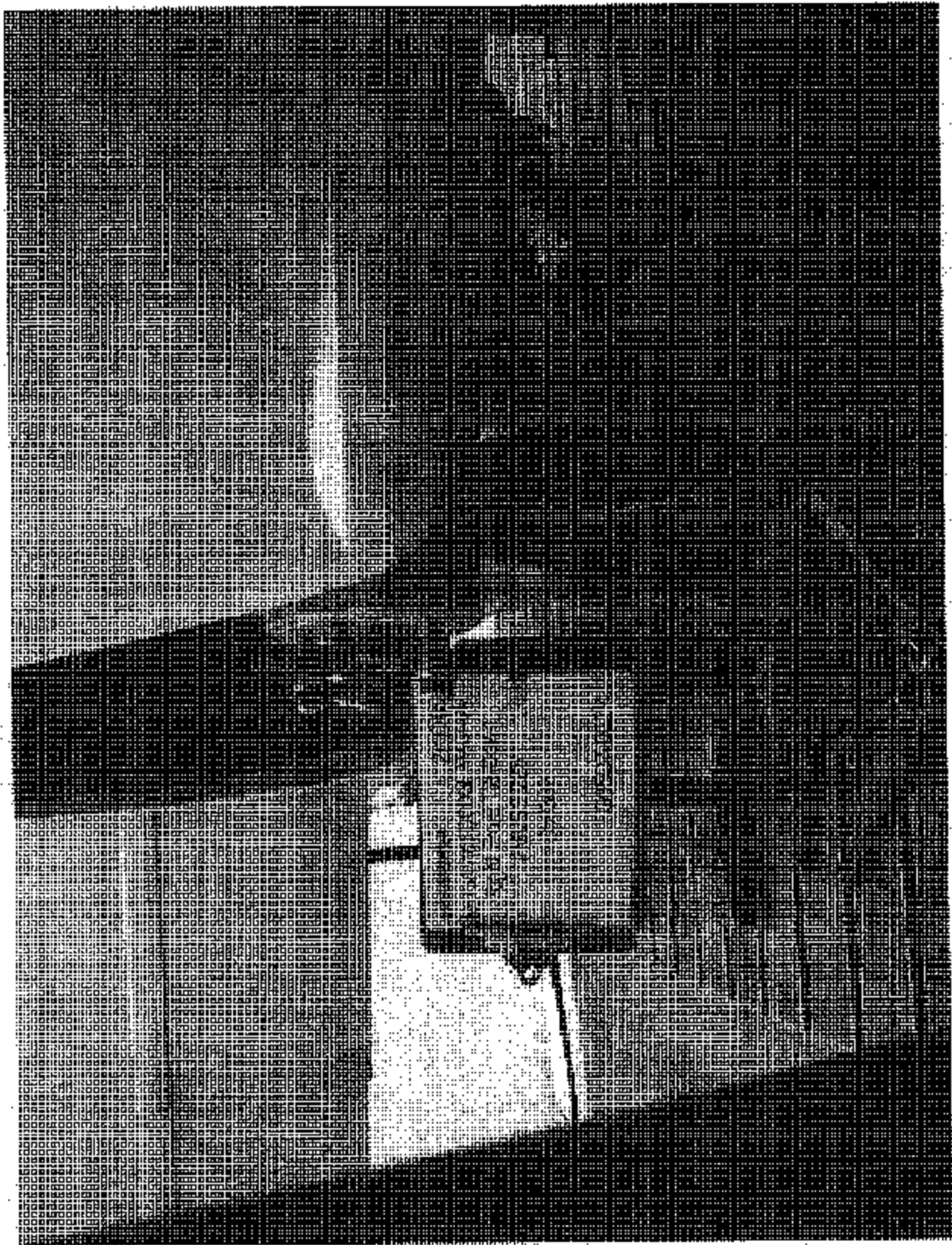


A high-contrast, black and white photograph of a person's face, heavily obscured by a dense, grid-like pattern of small squares, resembling a halftone or a heavily textured surface. The person's features are barely visible through the pattern.

6.6.3 Left rear

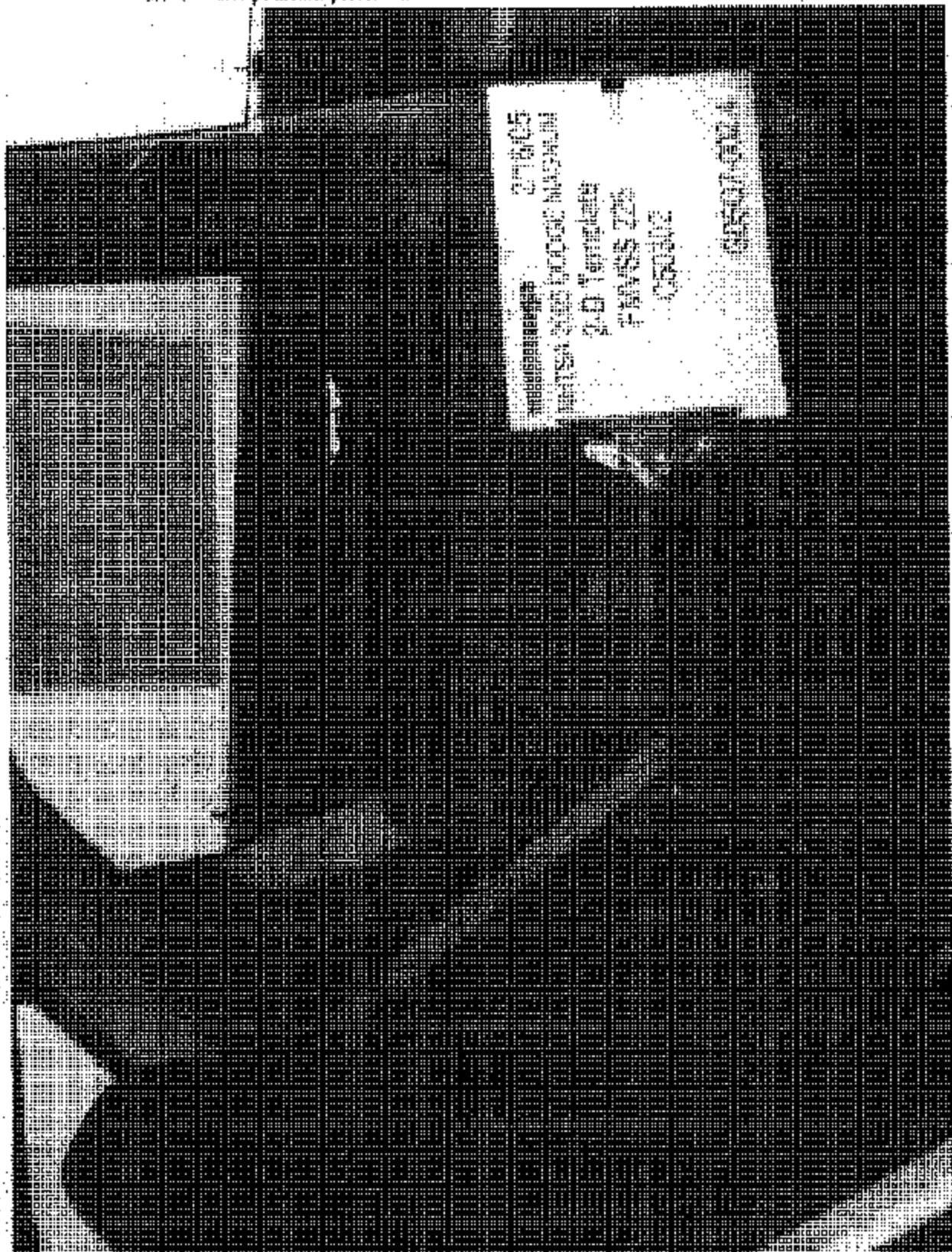


6.6.4 Right front

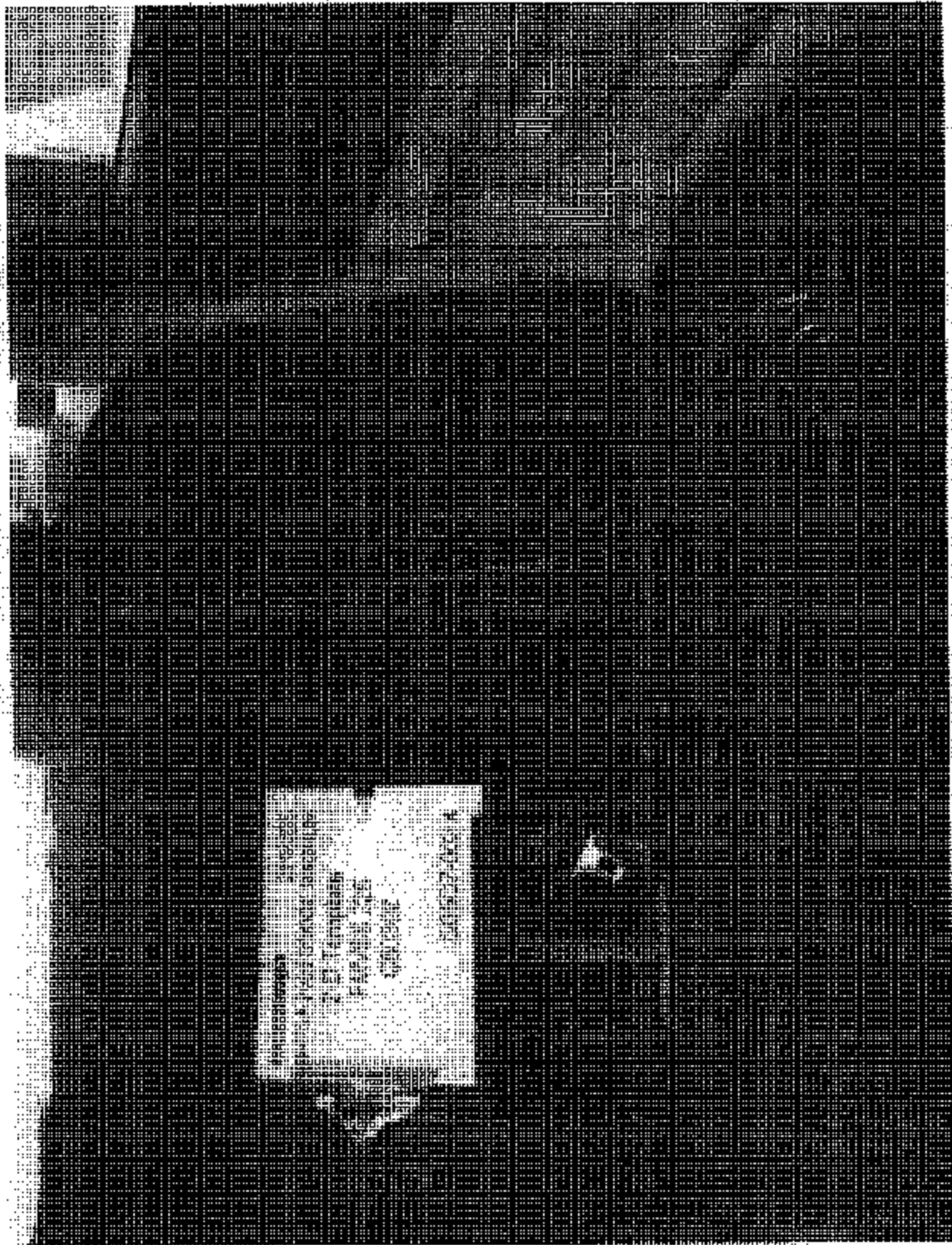


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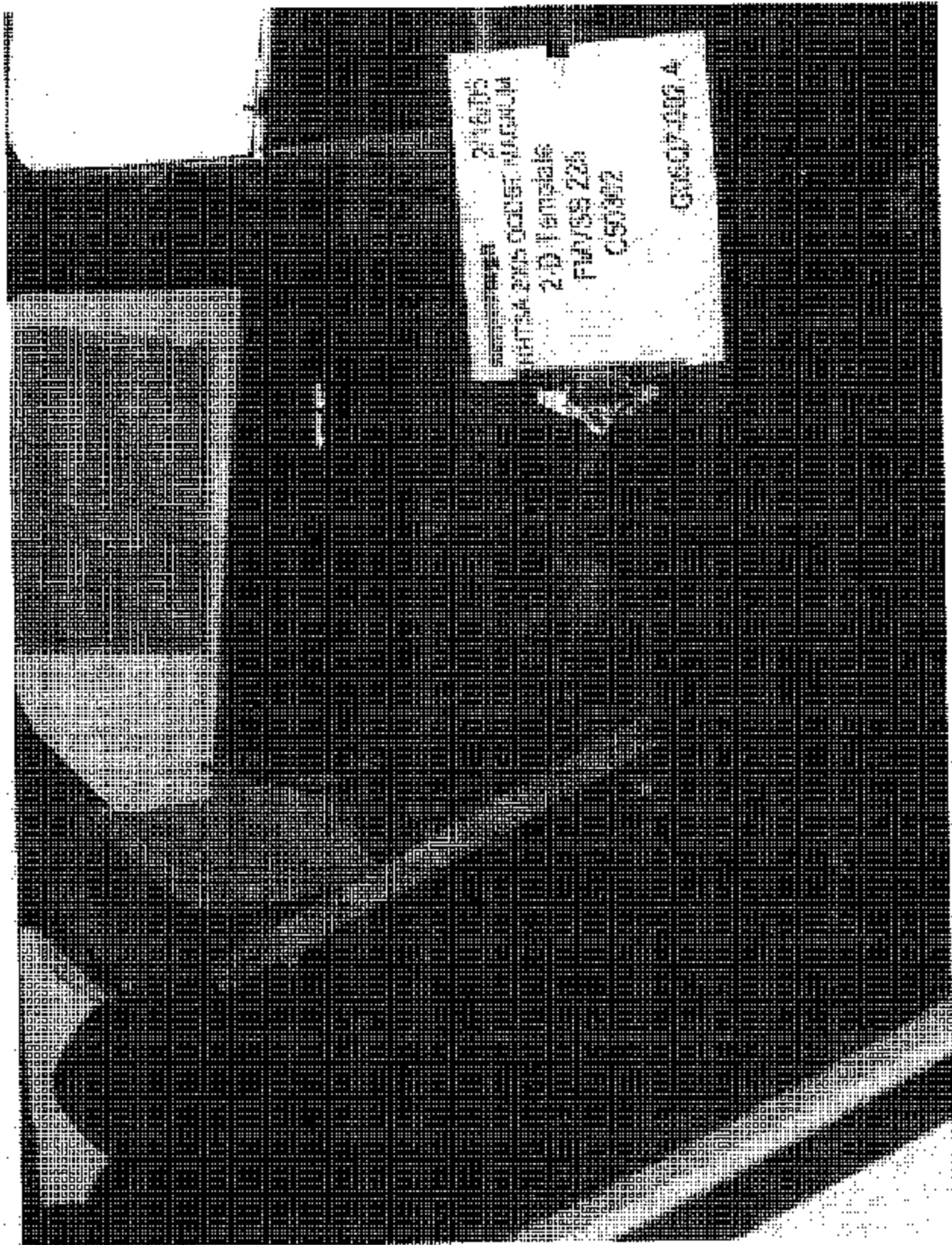
6.7.1 LTI position photo #1



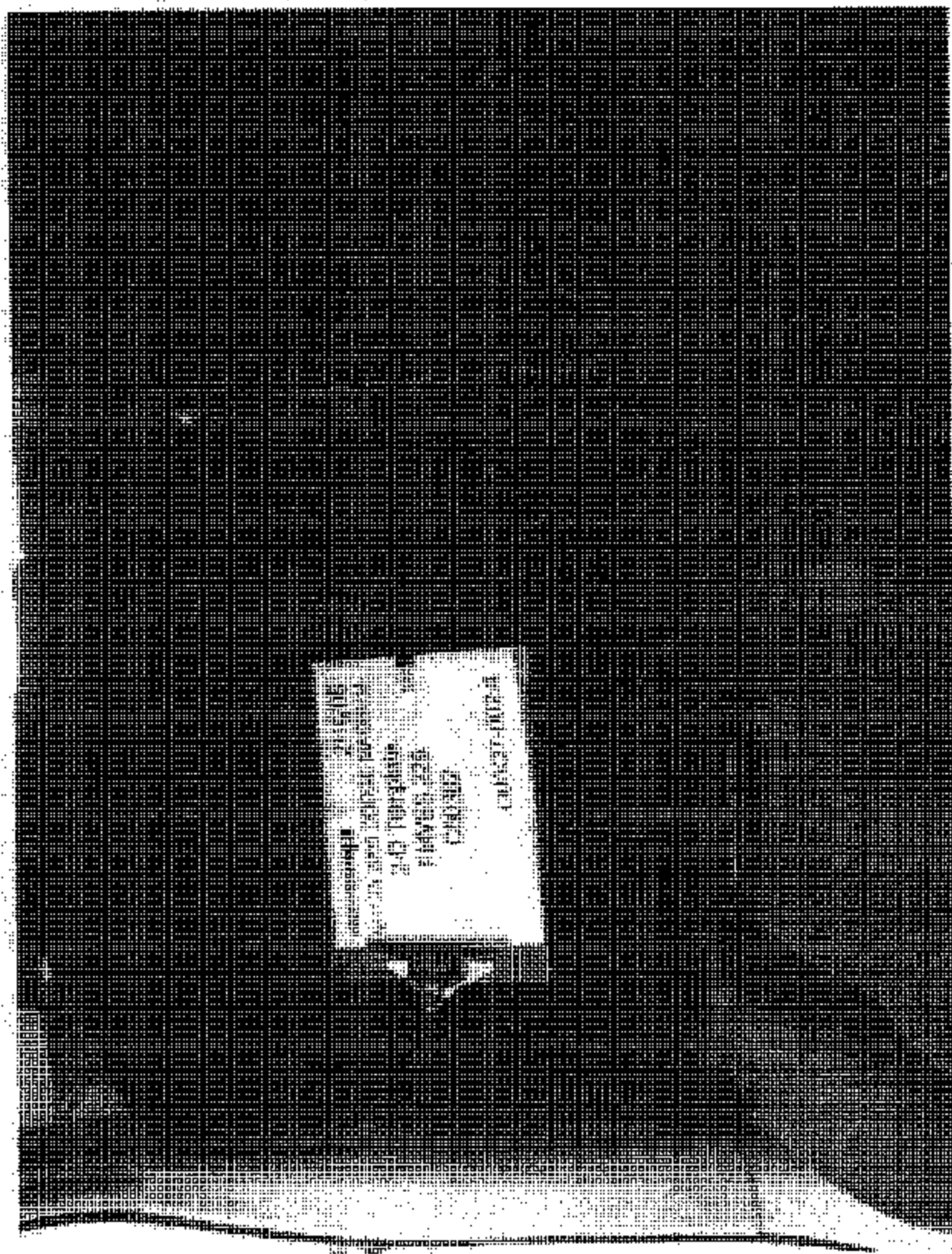
6.7.2 LH position photo #2



6.7.3 Center position photo #1



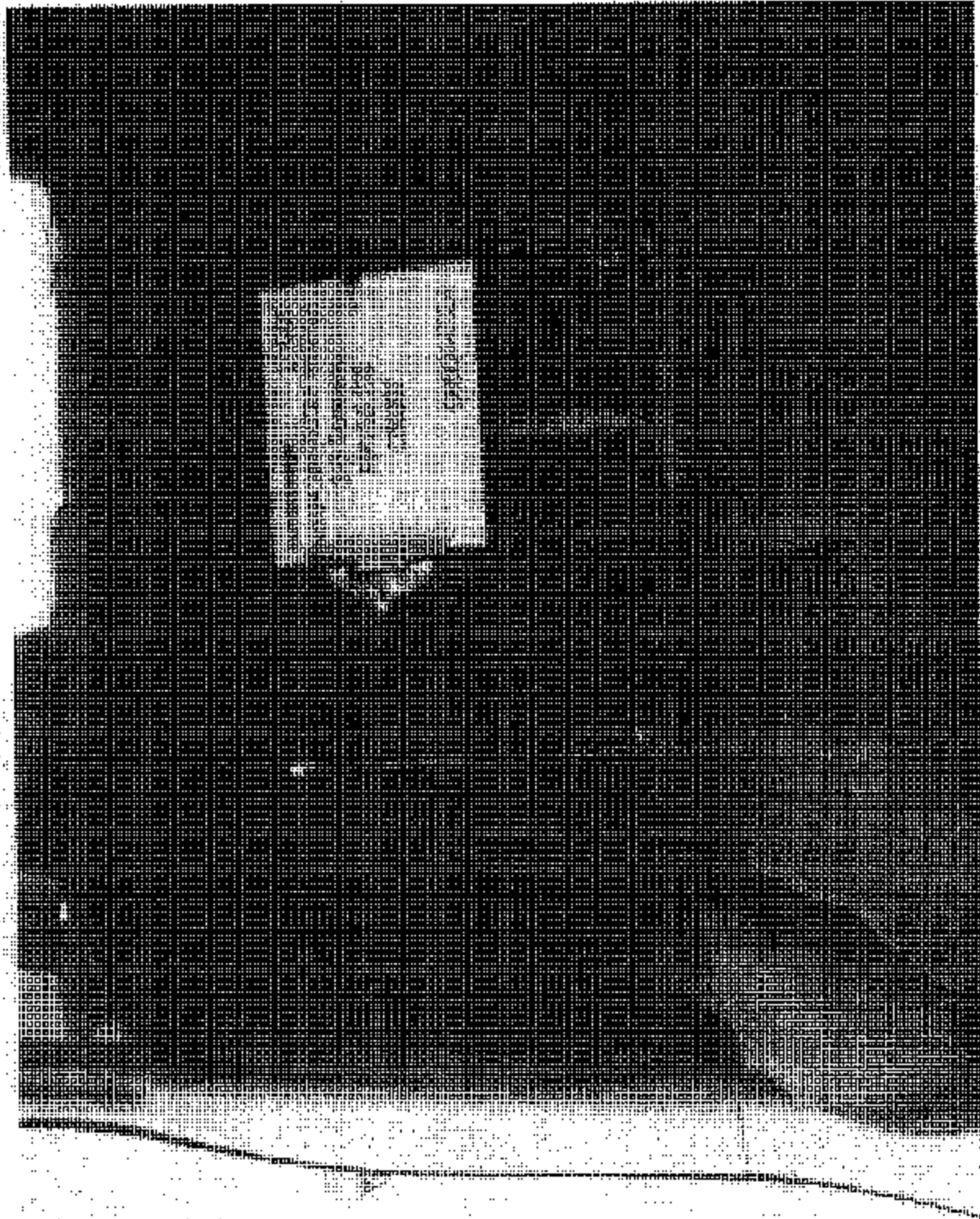
6.7.4 Center position photo #2



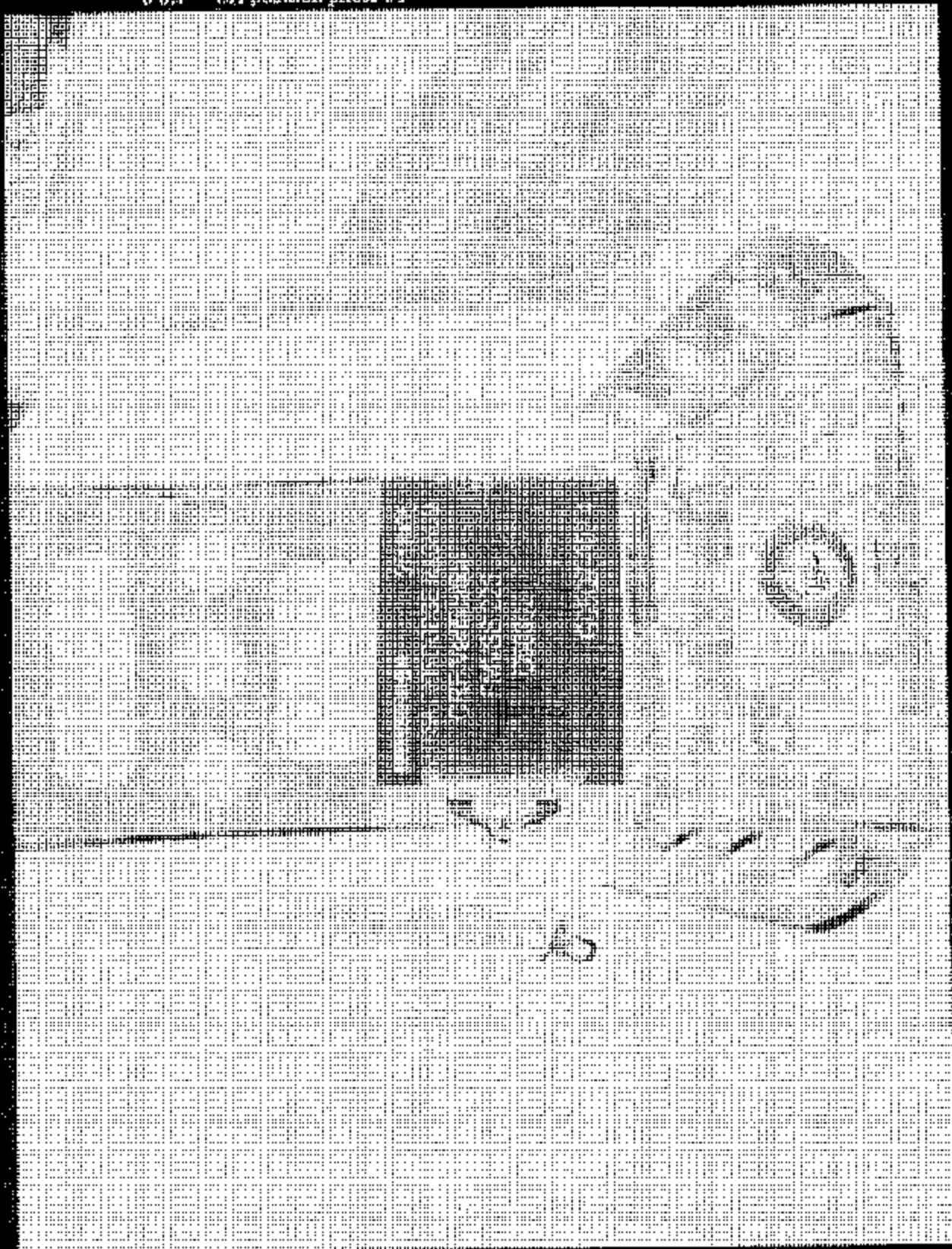
6.7.5 RH position photo #1



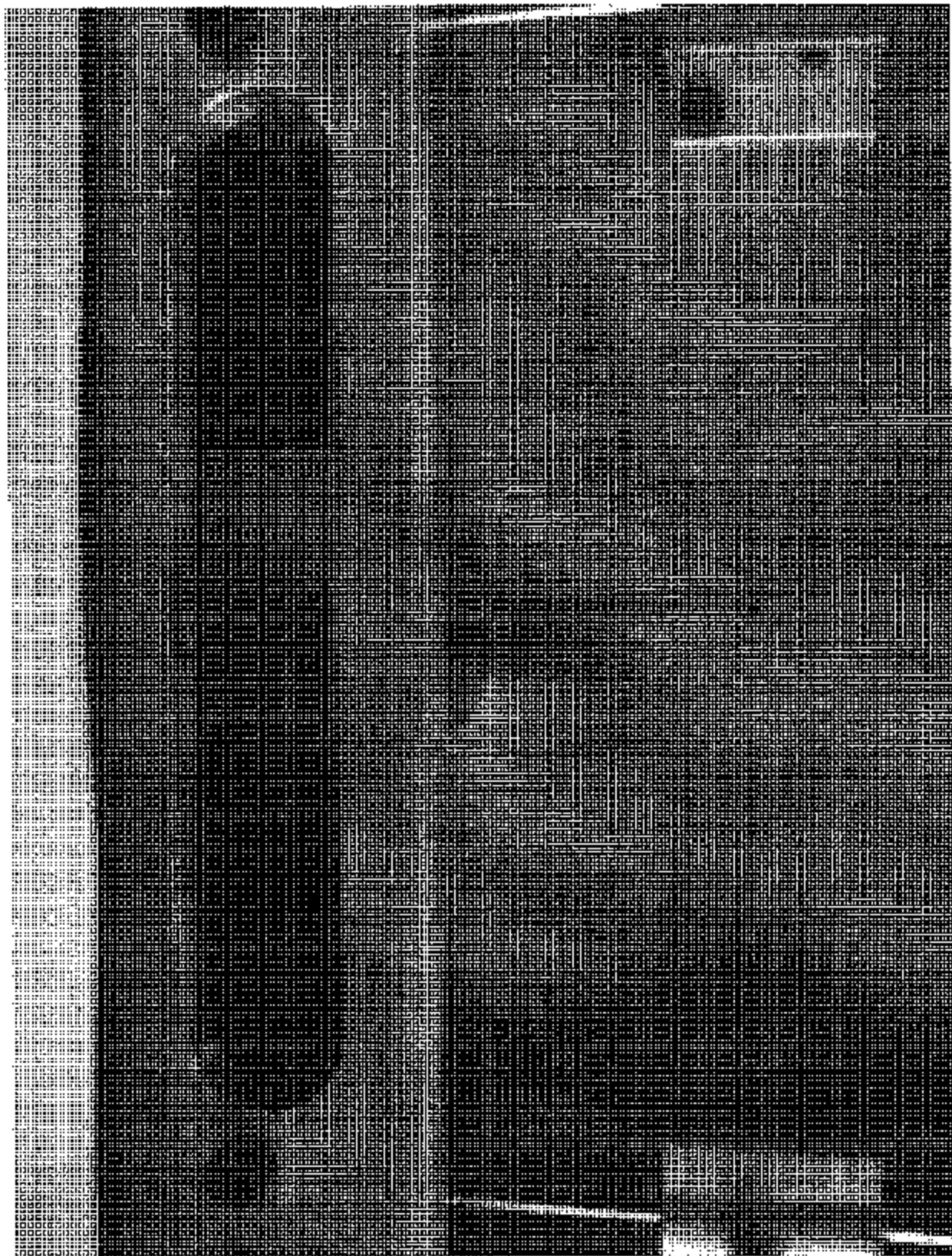
6.7.6 RH position photo #2



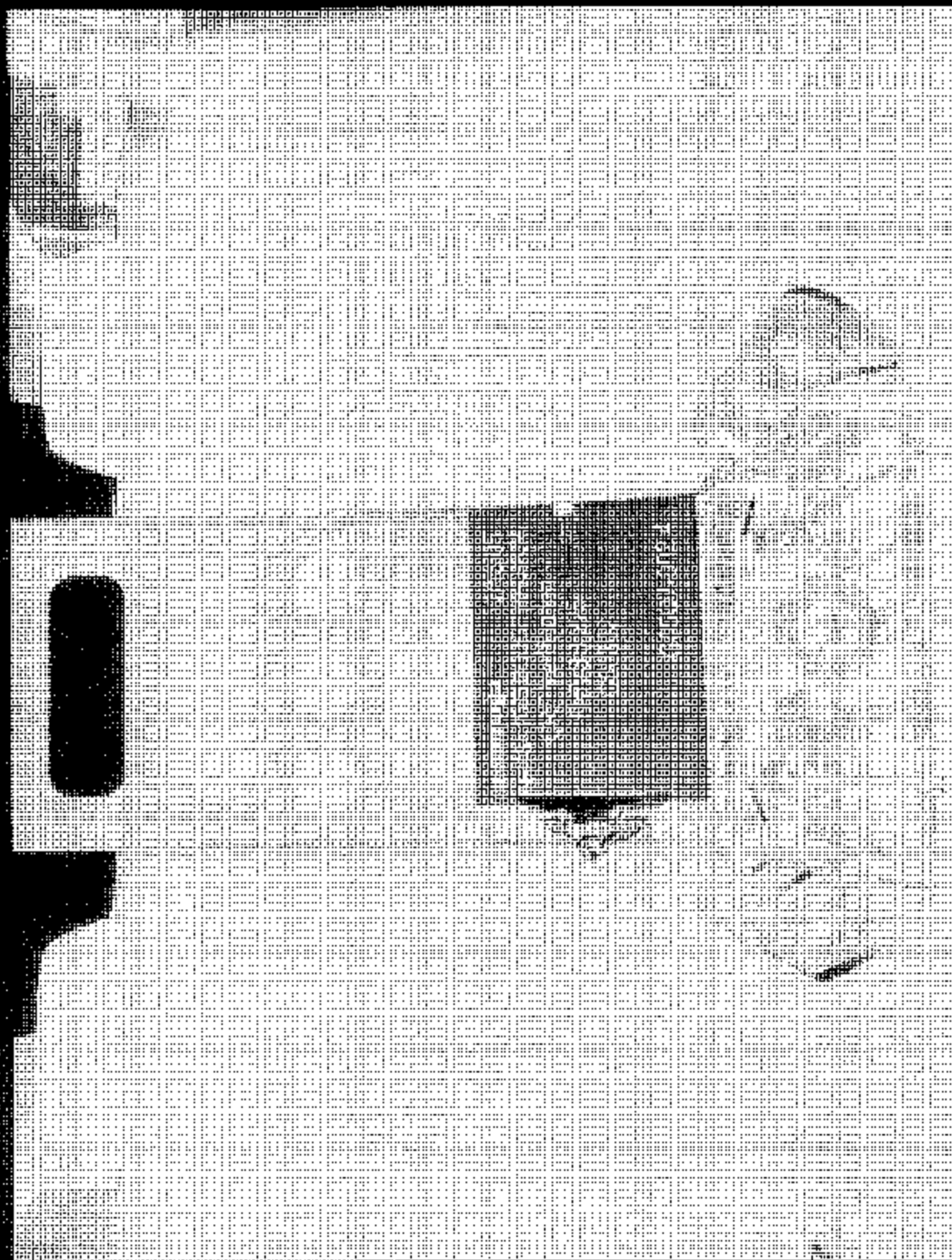
4.8 CRE verification
4.8.1 LH position photo #1



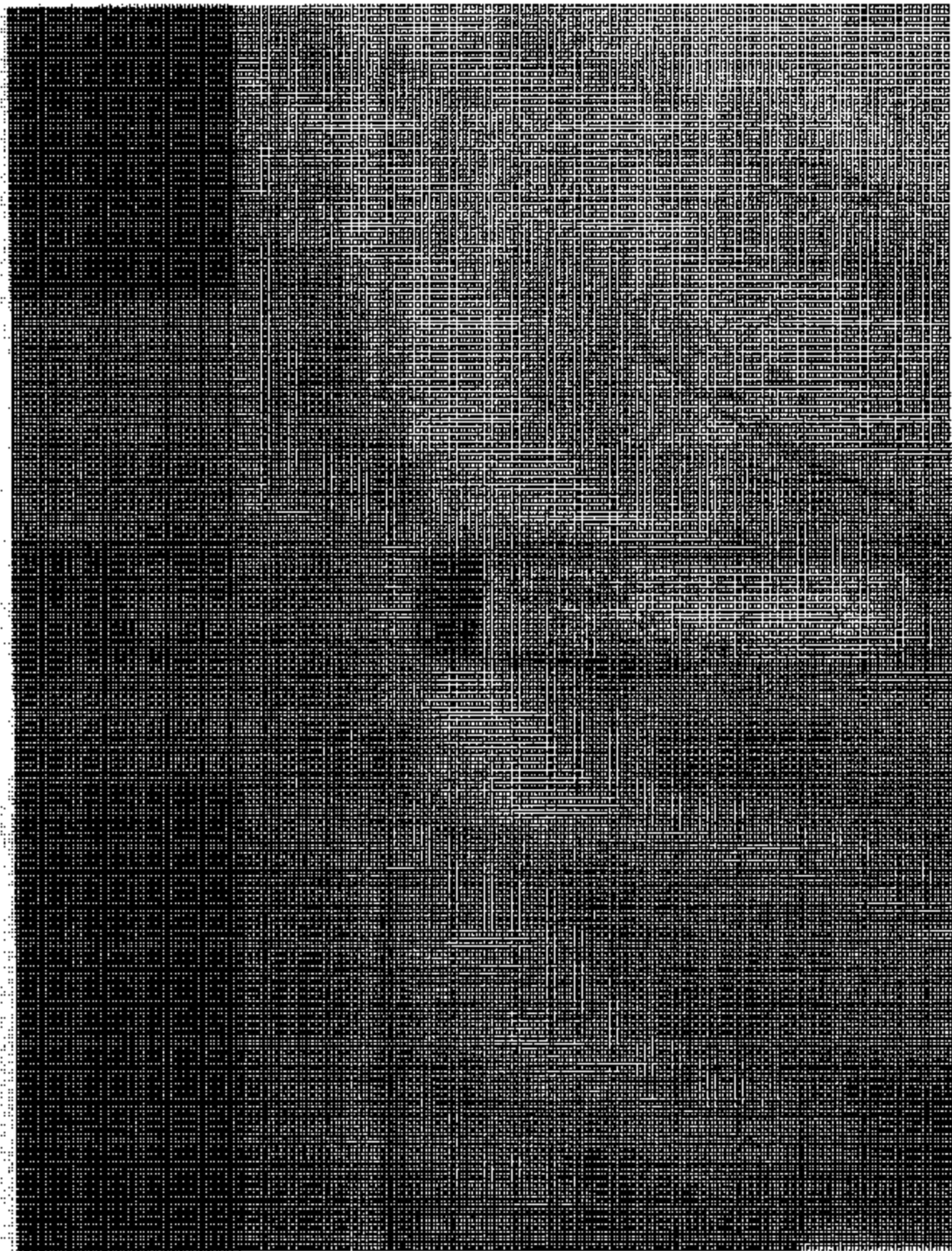
6.3.2 LH position photo #2



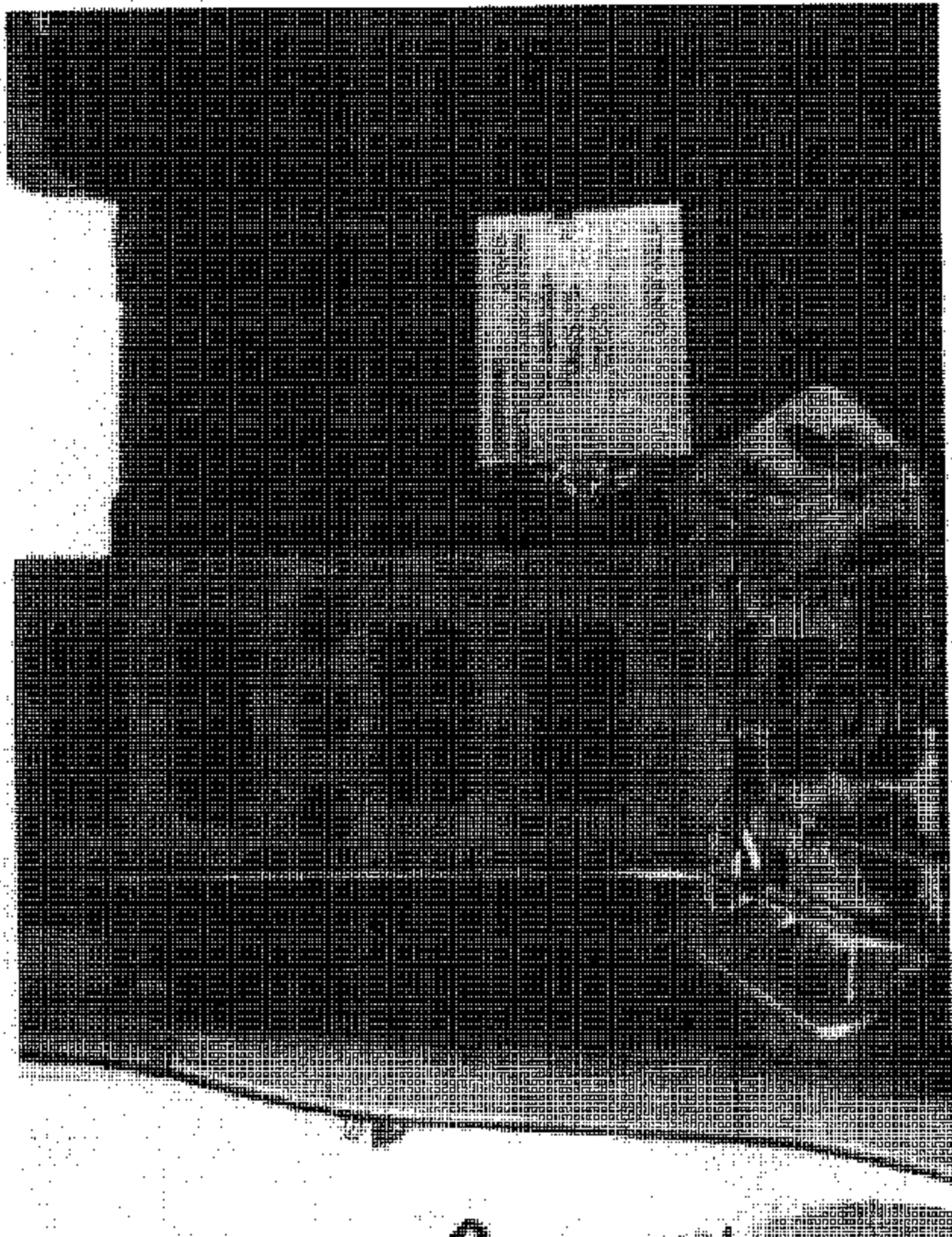
6.8.3 Center position photo #1



6.8.4 Center position photo #2



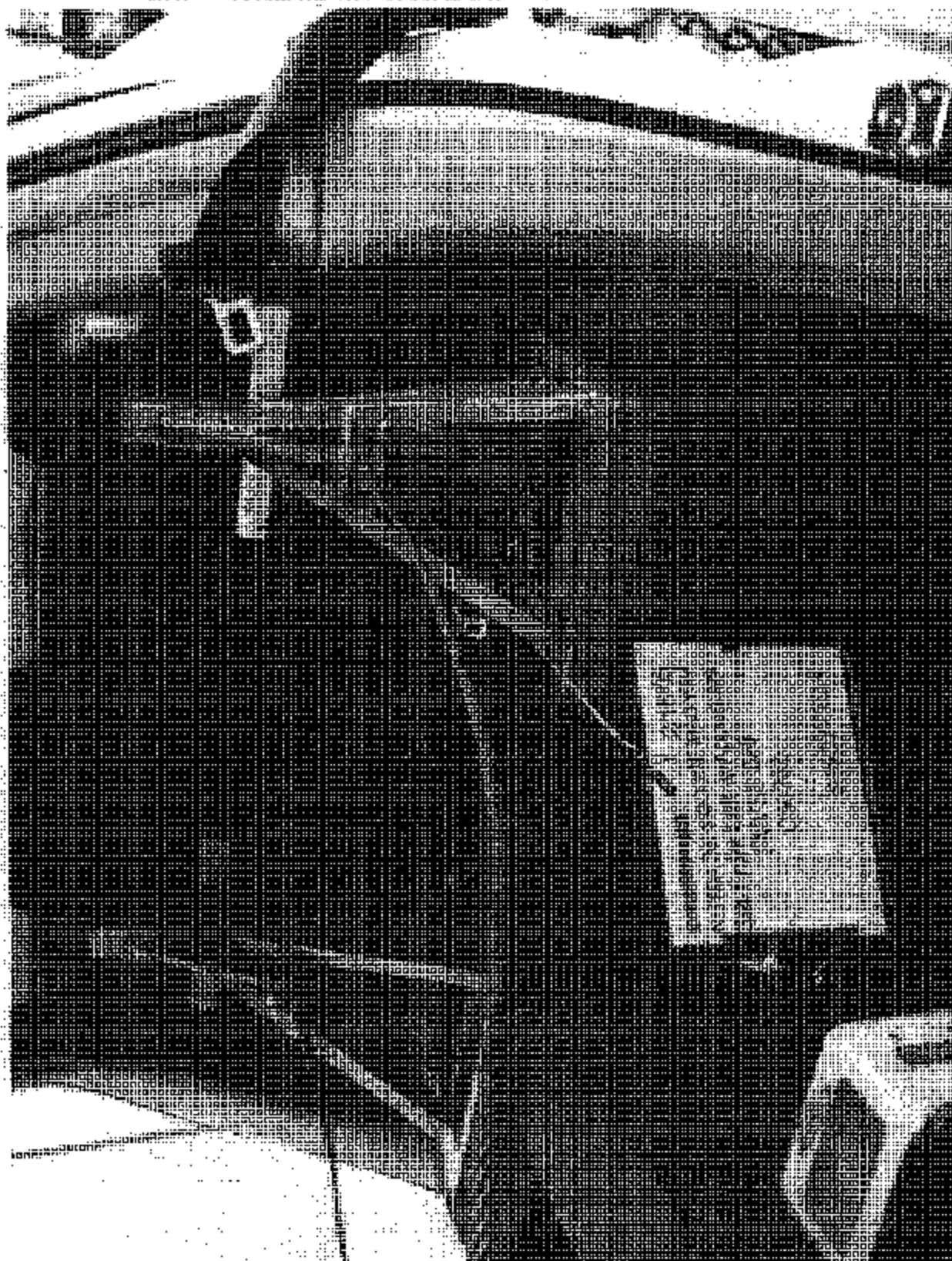
6.8.5 RE position photo #1



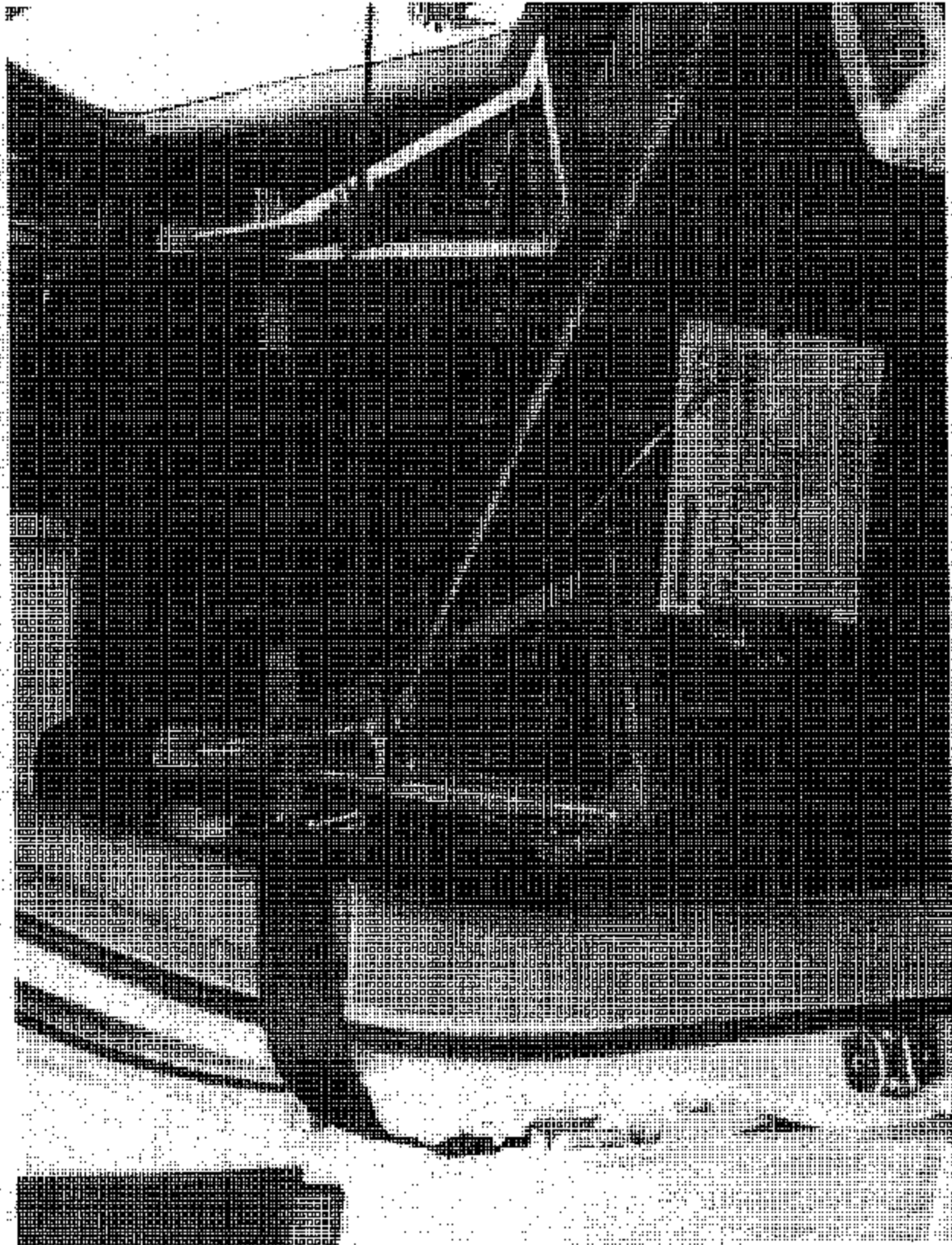
6.1.6 RH position photo #2



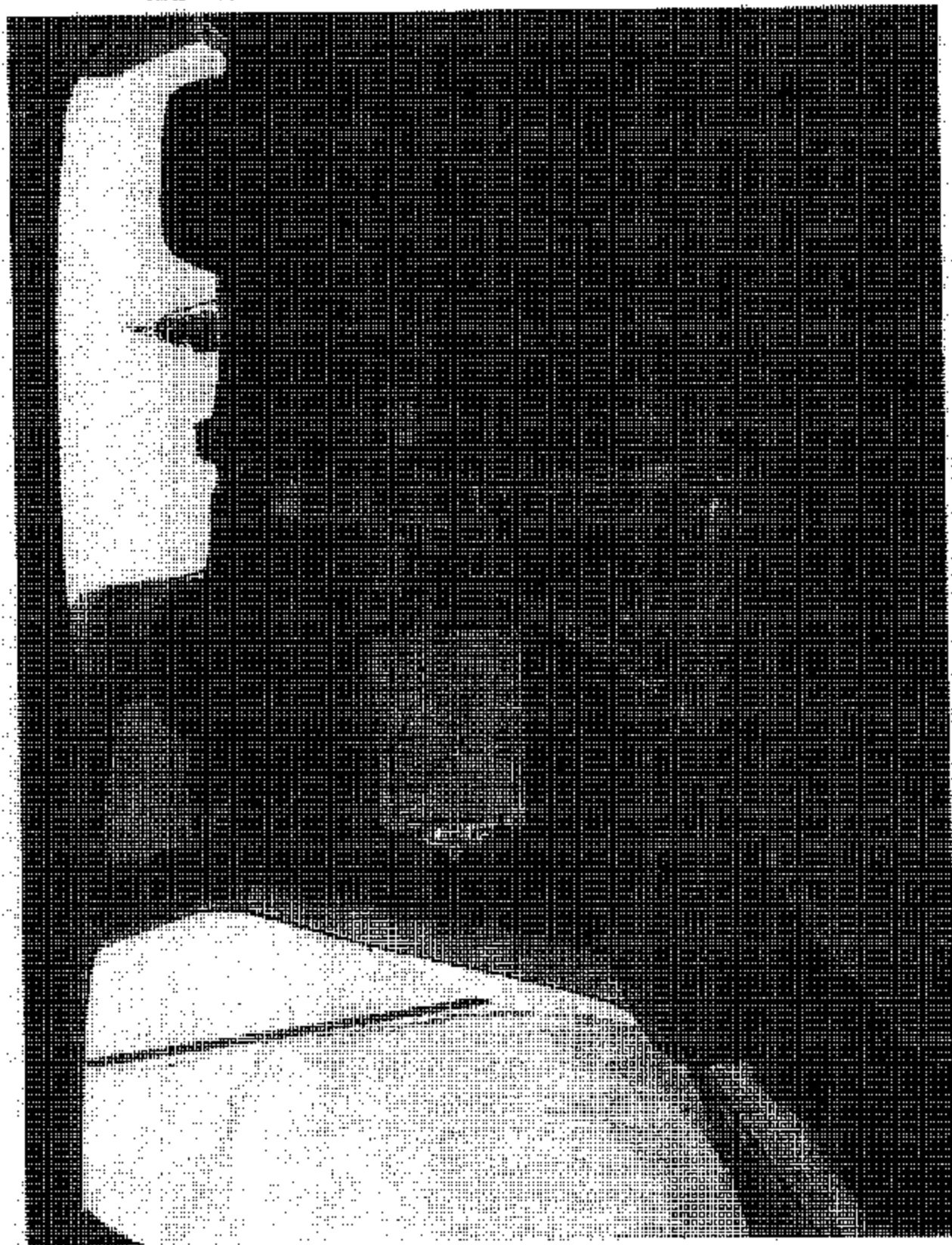
- 6.9 ¼ Front view of test vehicle with test apparatus in place
6.9.1 ¼ Front left view of SEADU test 1 of 2



6.9.2. 3/4 Front right view of SFADH test 1 of 2



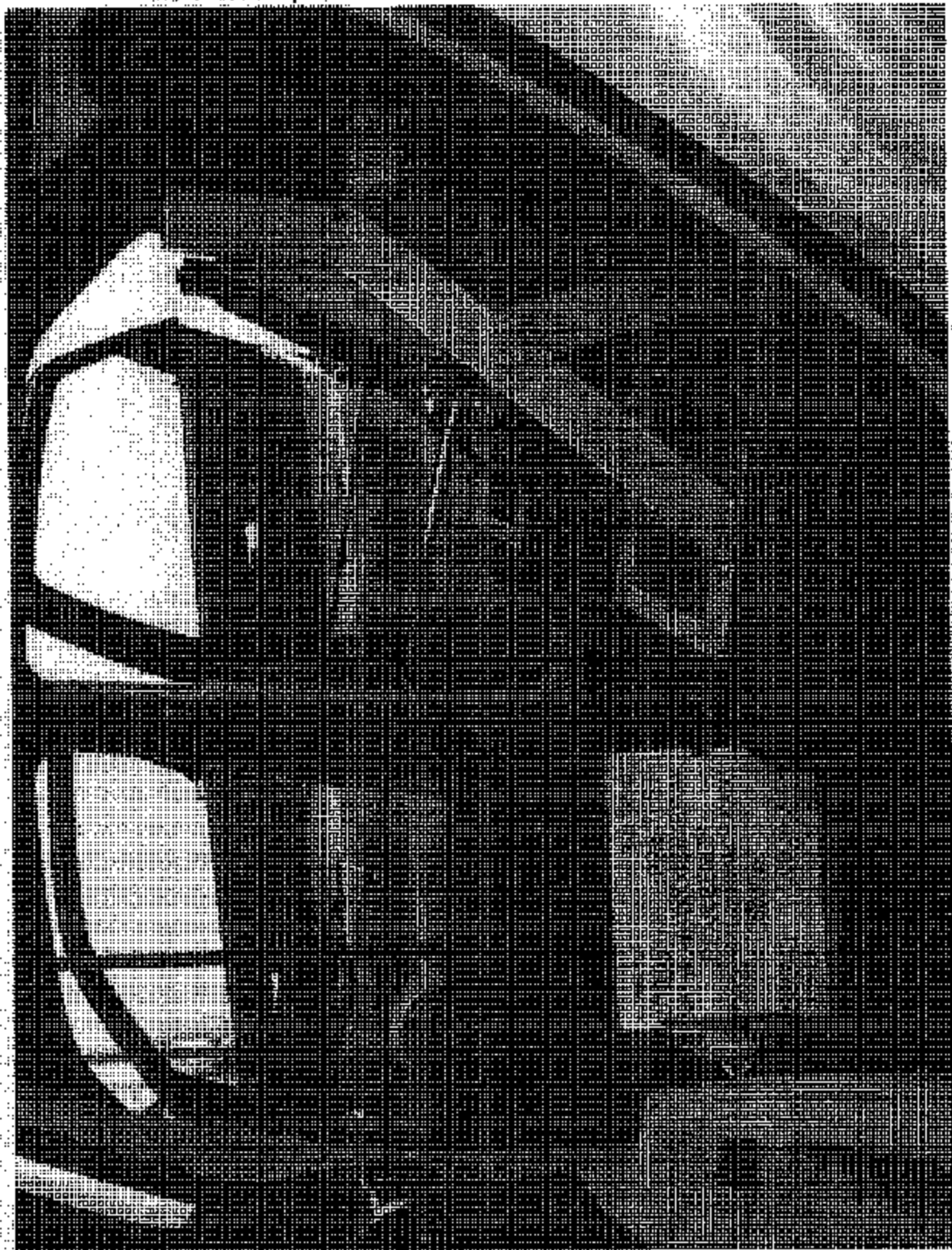
6.9.3 ¼ Front left view of SFADII test 2 of 2



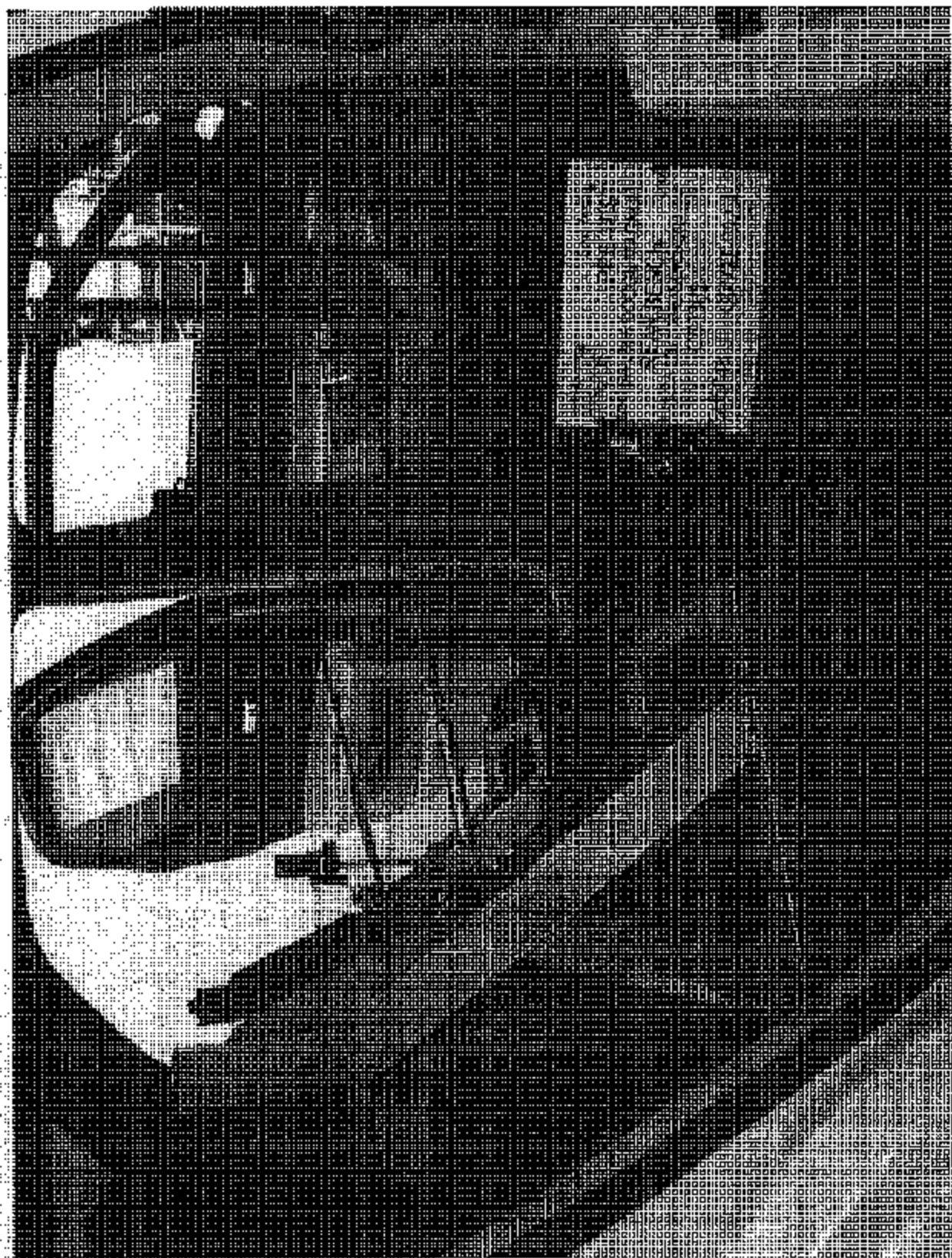
6.9.4 ¼ Front right view of SFADII test 2 of 2



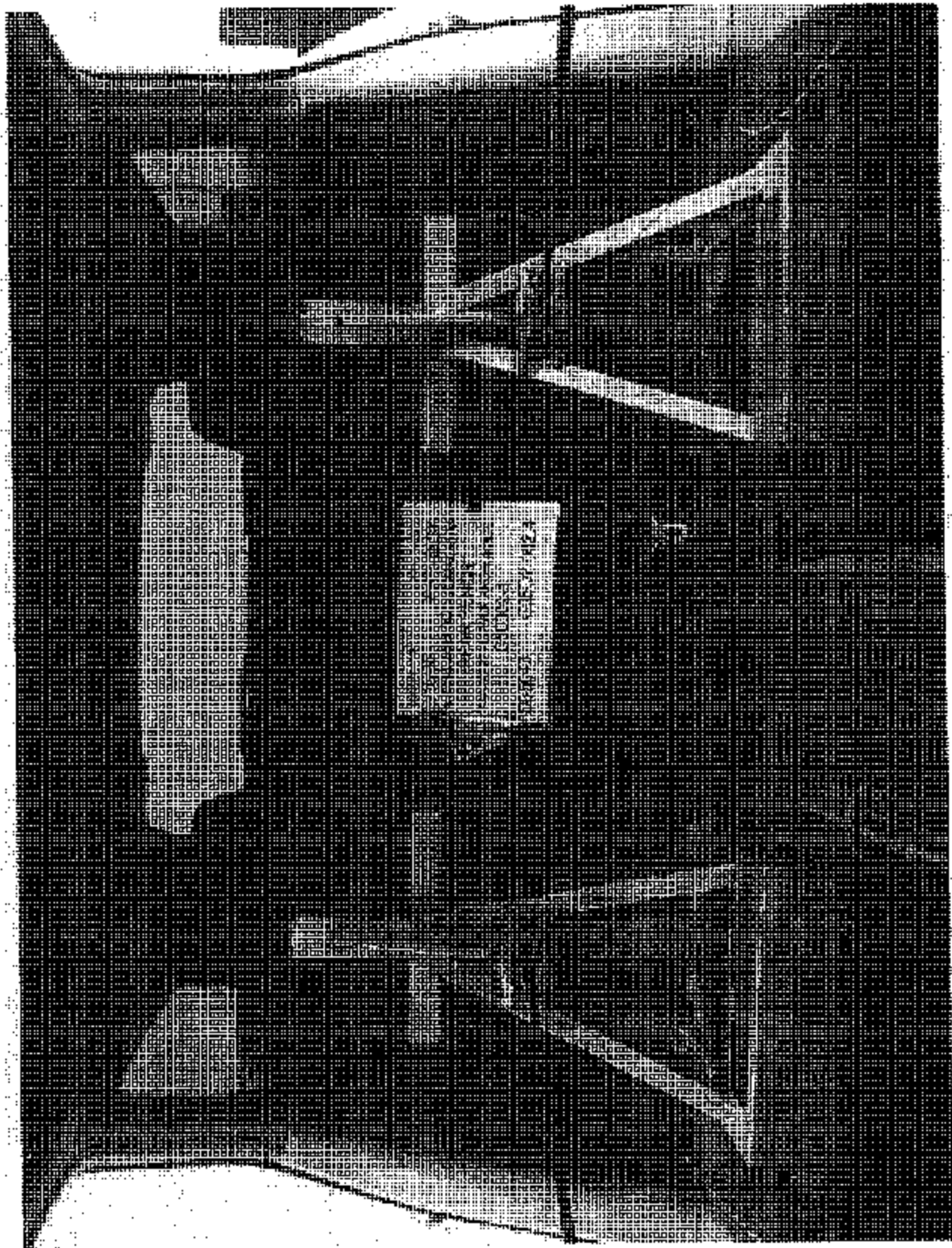
- 6.10 Pre-test views of each child restraint anchorage system installed in the vehicle
6.10.1 Pre-test photo #1 of SFADII test 1 of 2



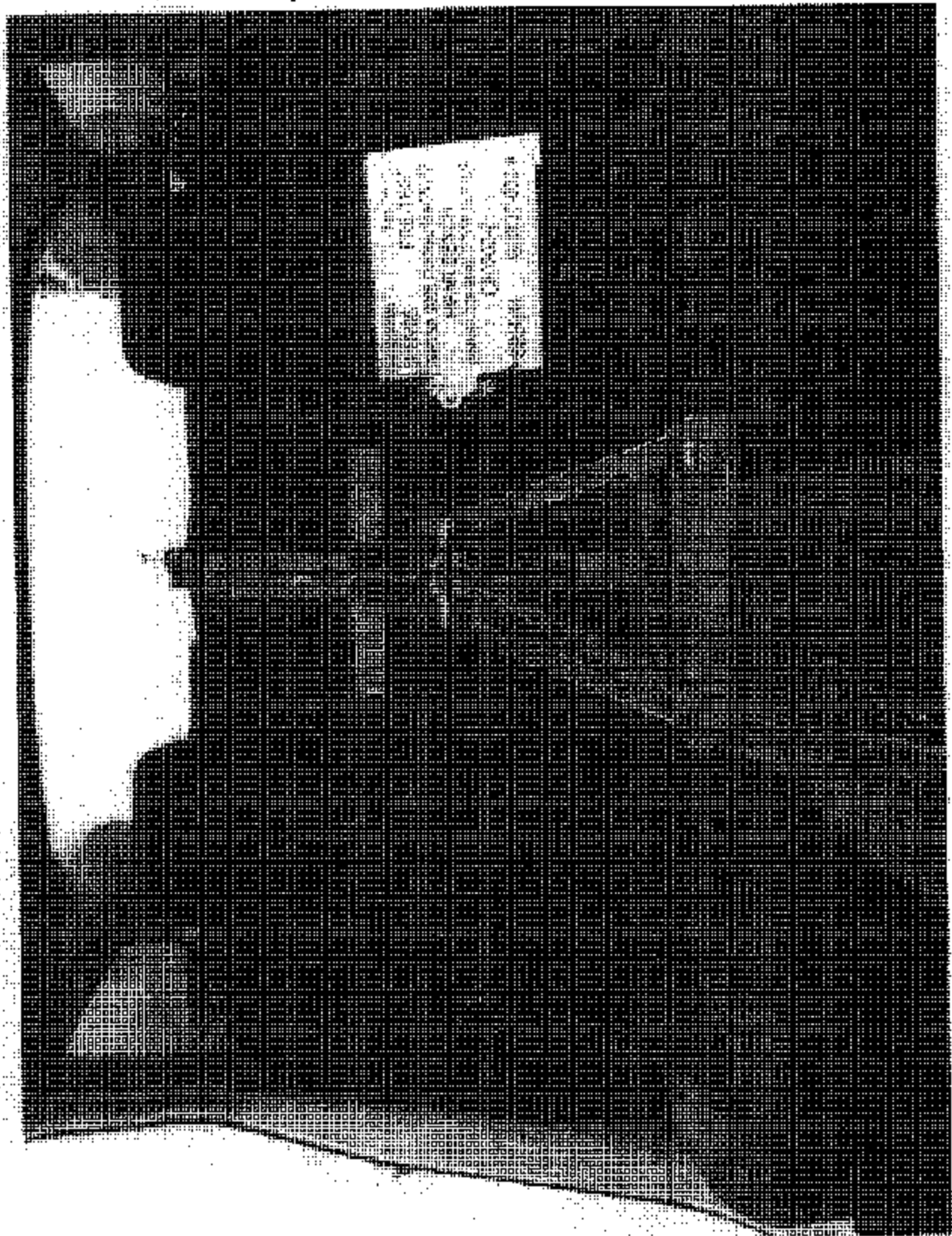
6.10.2 Pre-test photo #2 of SFADH test 1 of 2



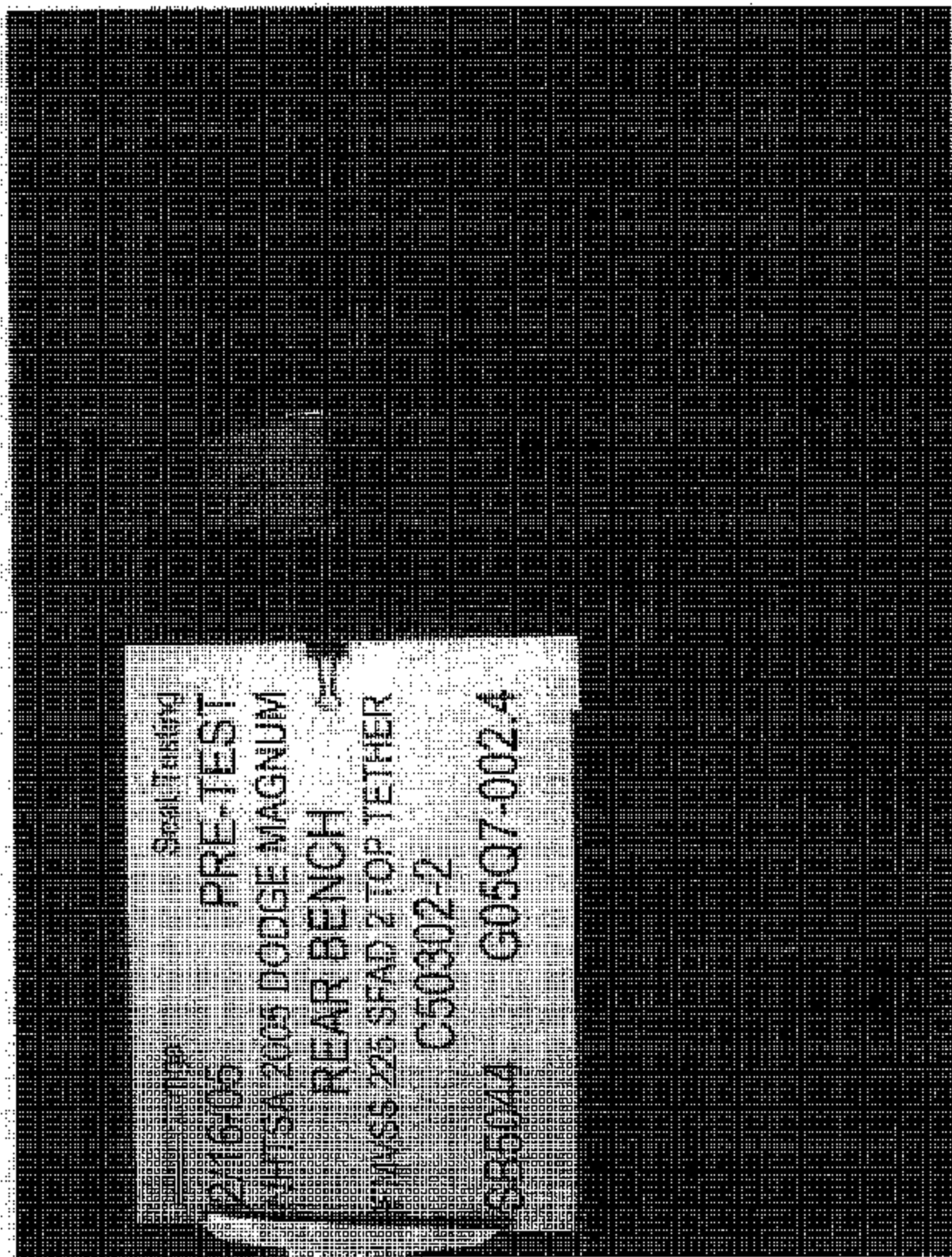
6.10.3 Pre-test photo #3 of SPADH test 1 of 2



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



6.10.4 Pre-test photo #2 of SFADH test 2 of 2



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



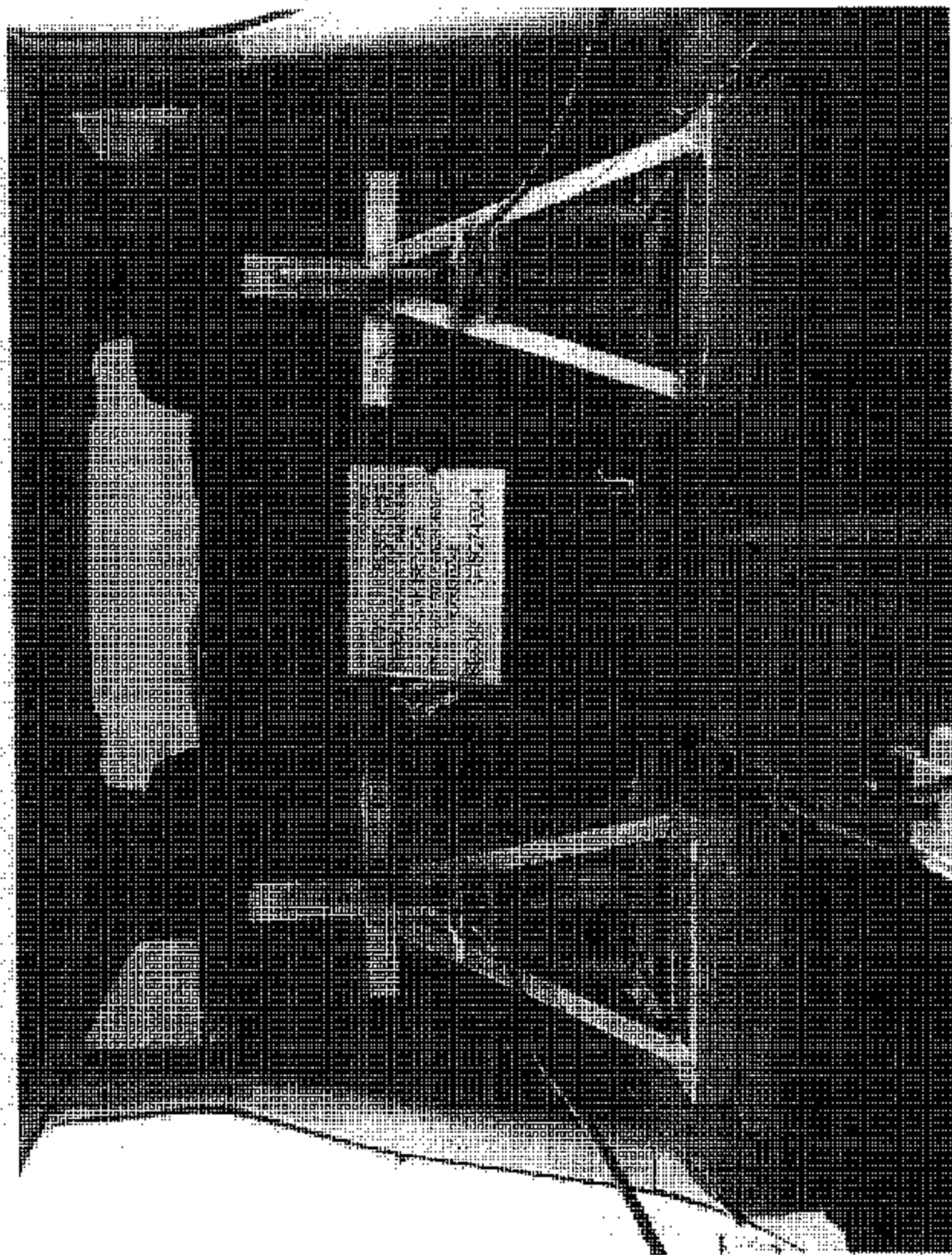
6.10.7 Pre-test photo #4 of SFADII test 2 of 2



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



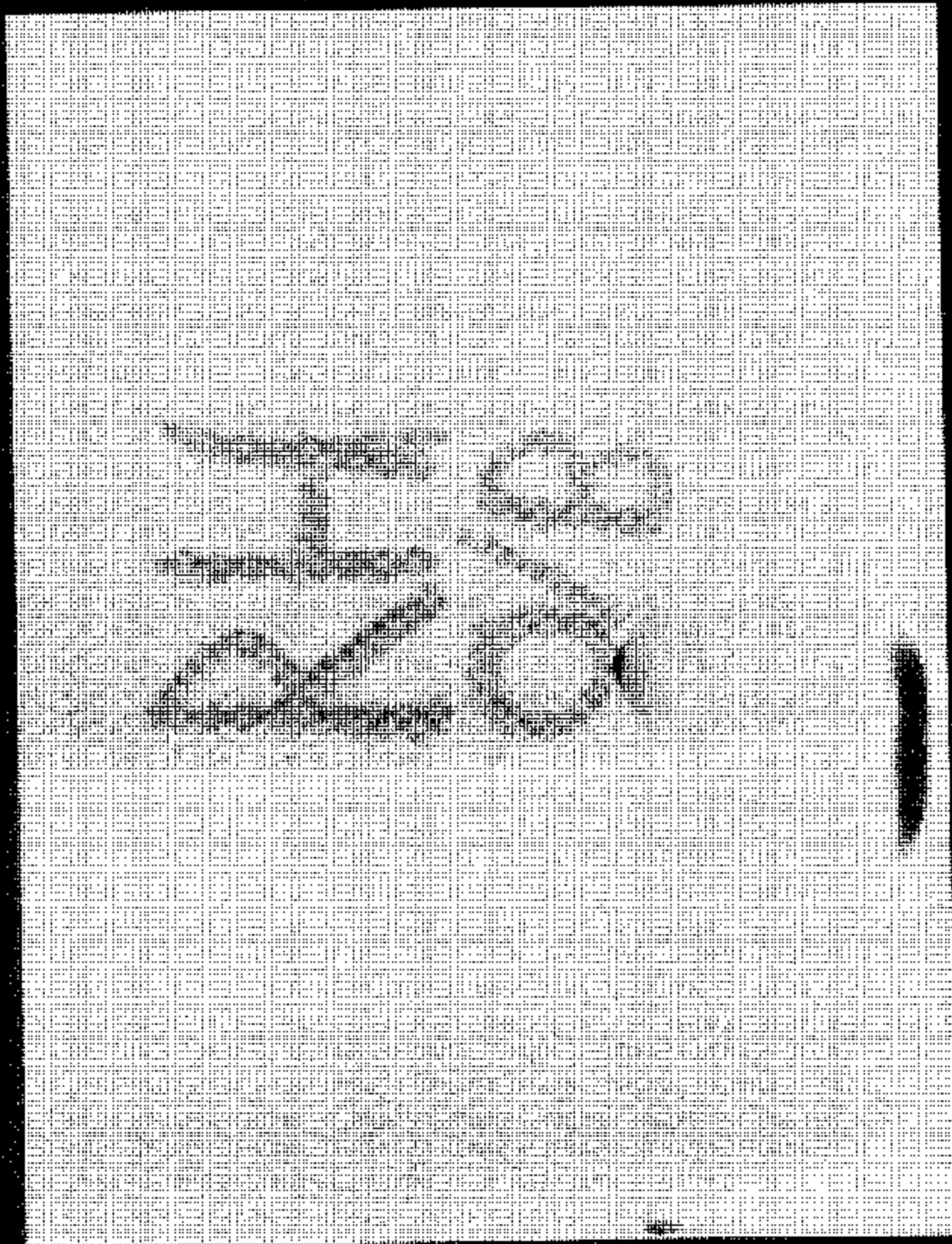
6.11.2 Post-test photo #2 of SFADII test 1 of 2



6.11.3 Post-test photo #3 of SFAD0 test 1 of 2



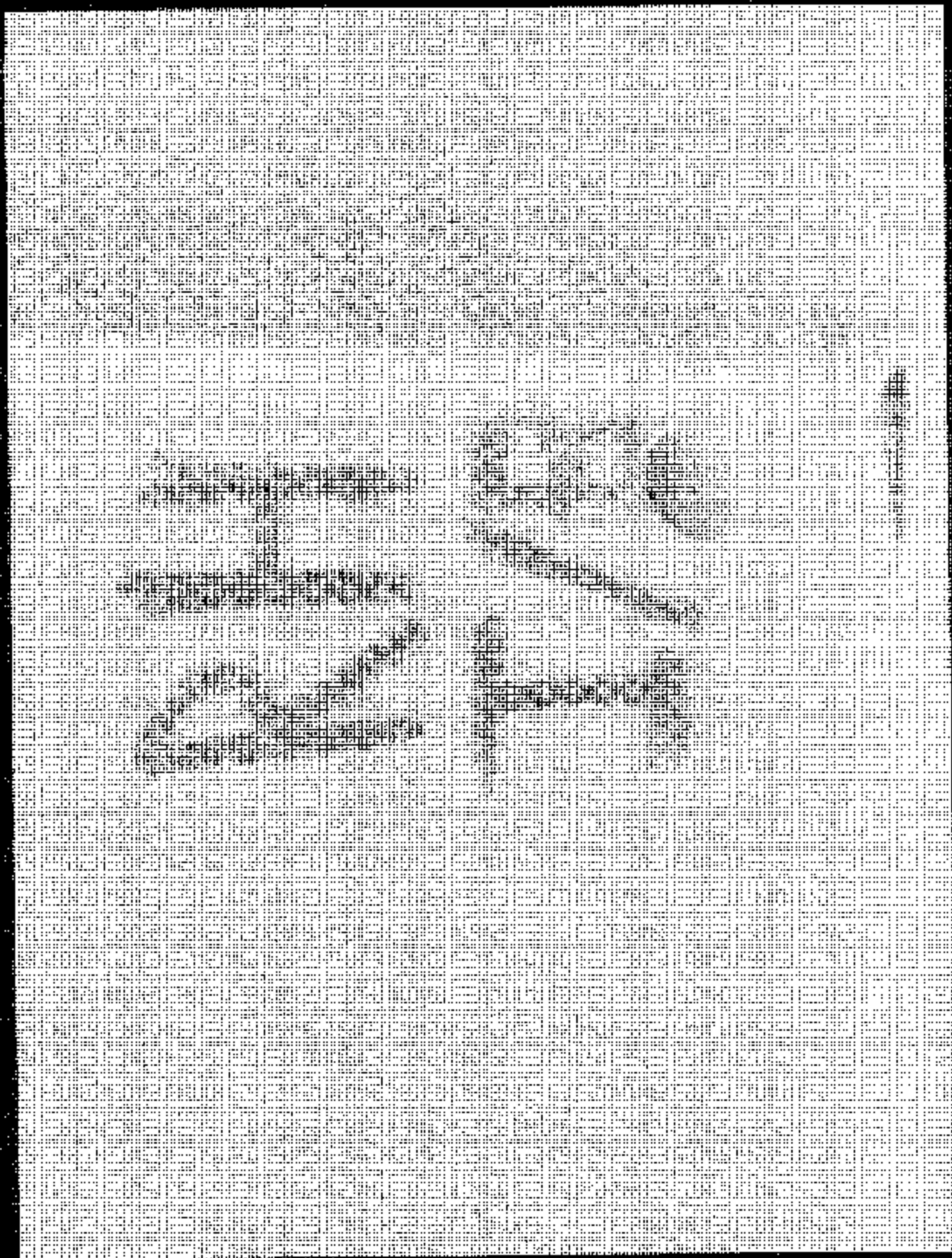
6.11.4 Post-test photo #4 of SPADII test 1 of 2



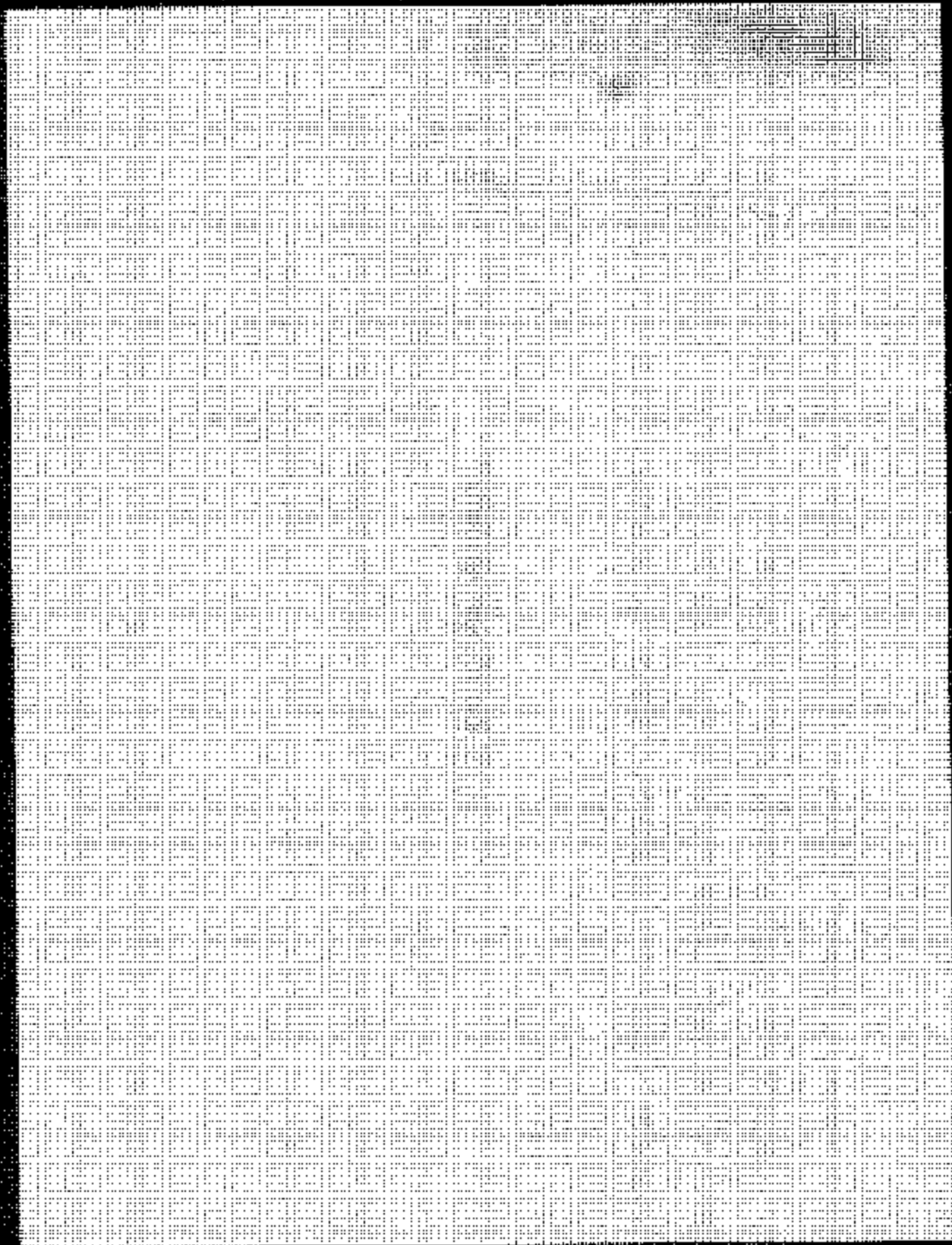
6.11.5 Post-test photo #5 of SFADII test 1 of 2



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



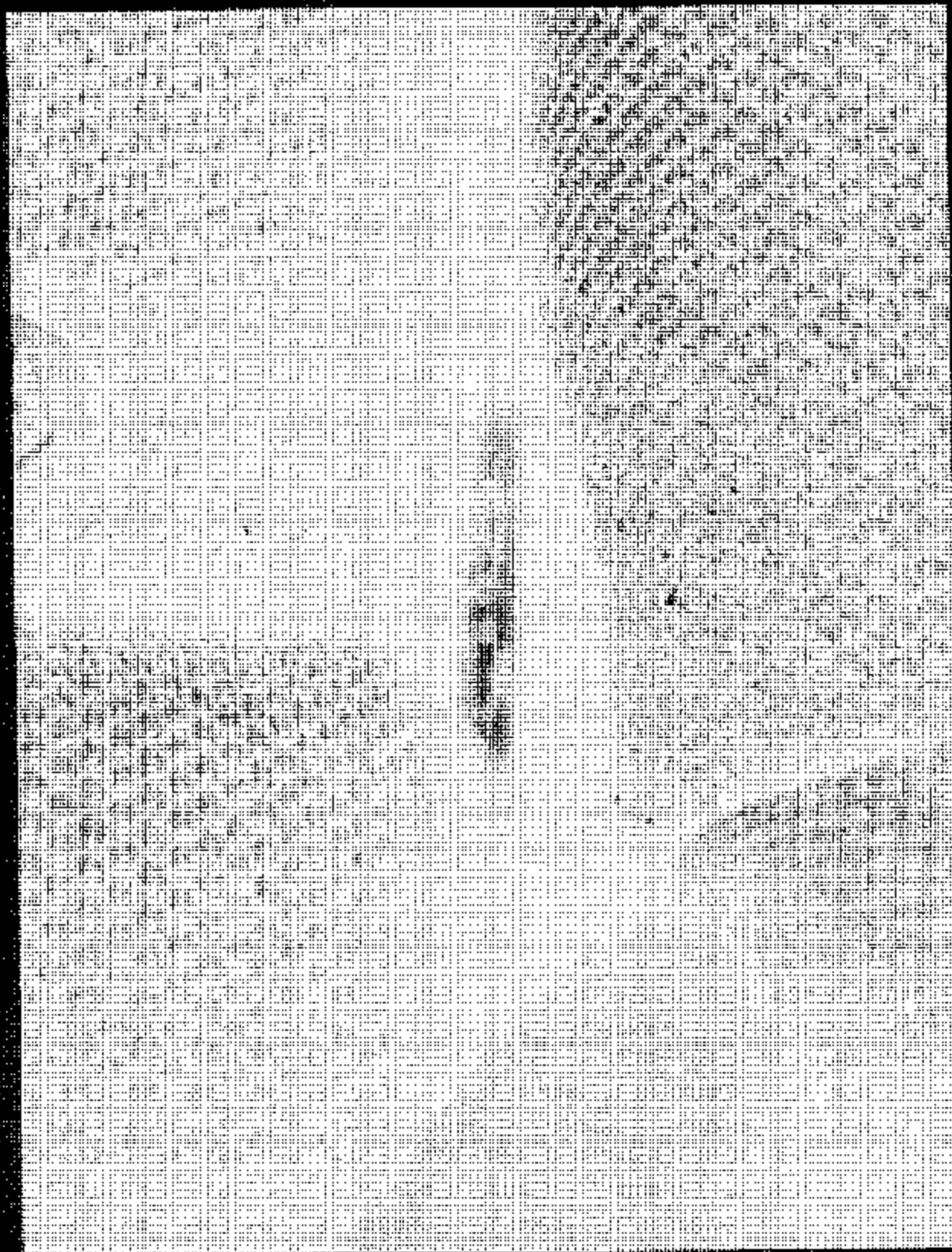
6.1.1.7 Post-test photo #7 of SFADH test 1 of 2



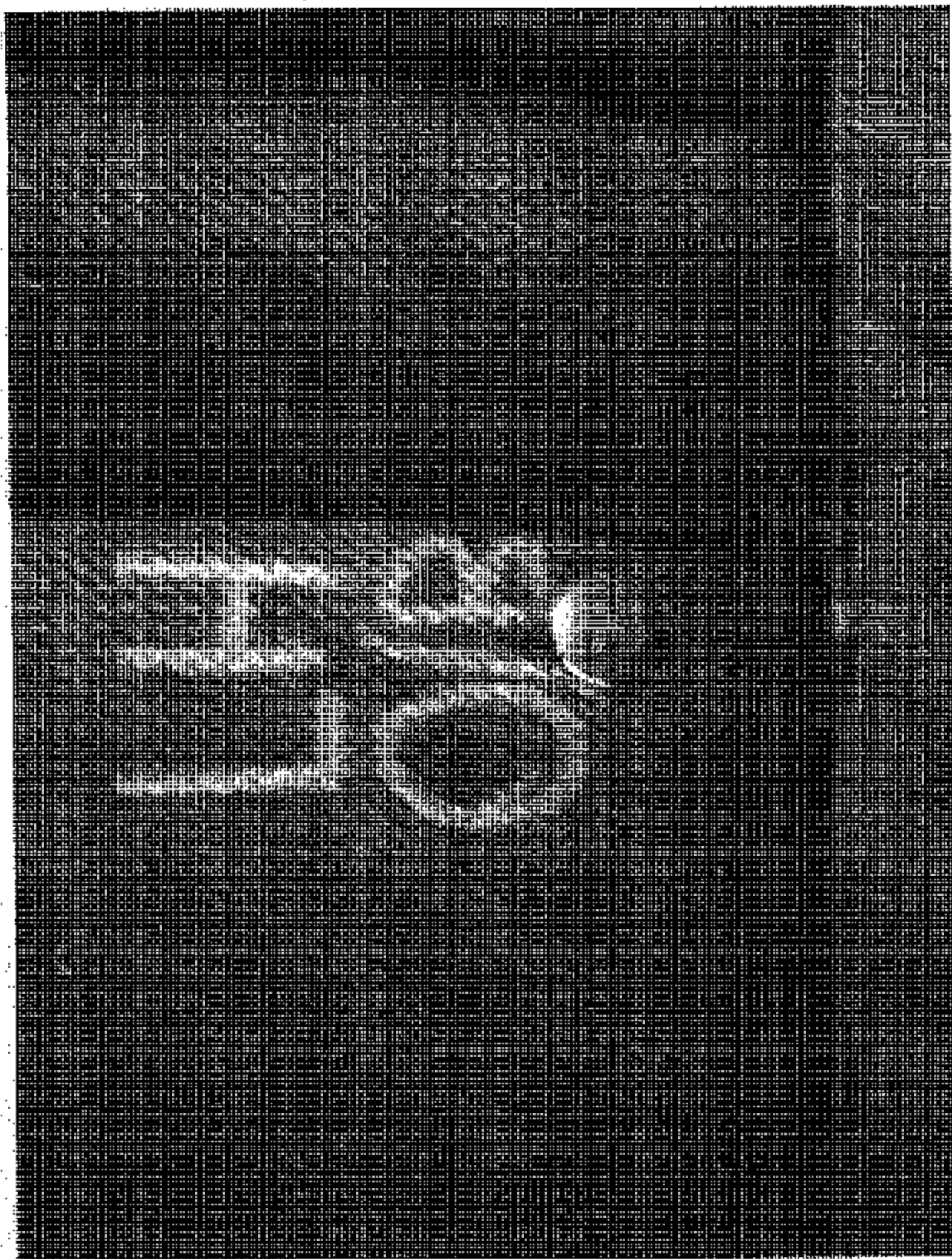
6.11.8 Post-test photo #8 of SFADII test 1 of 2



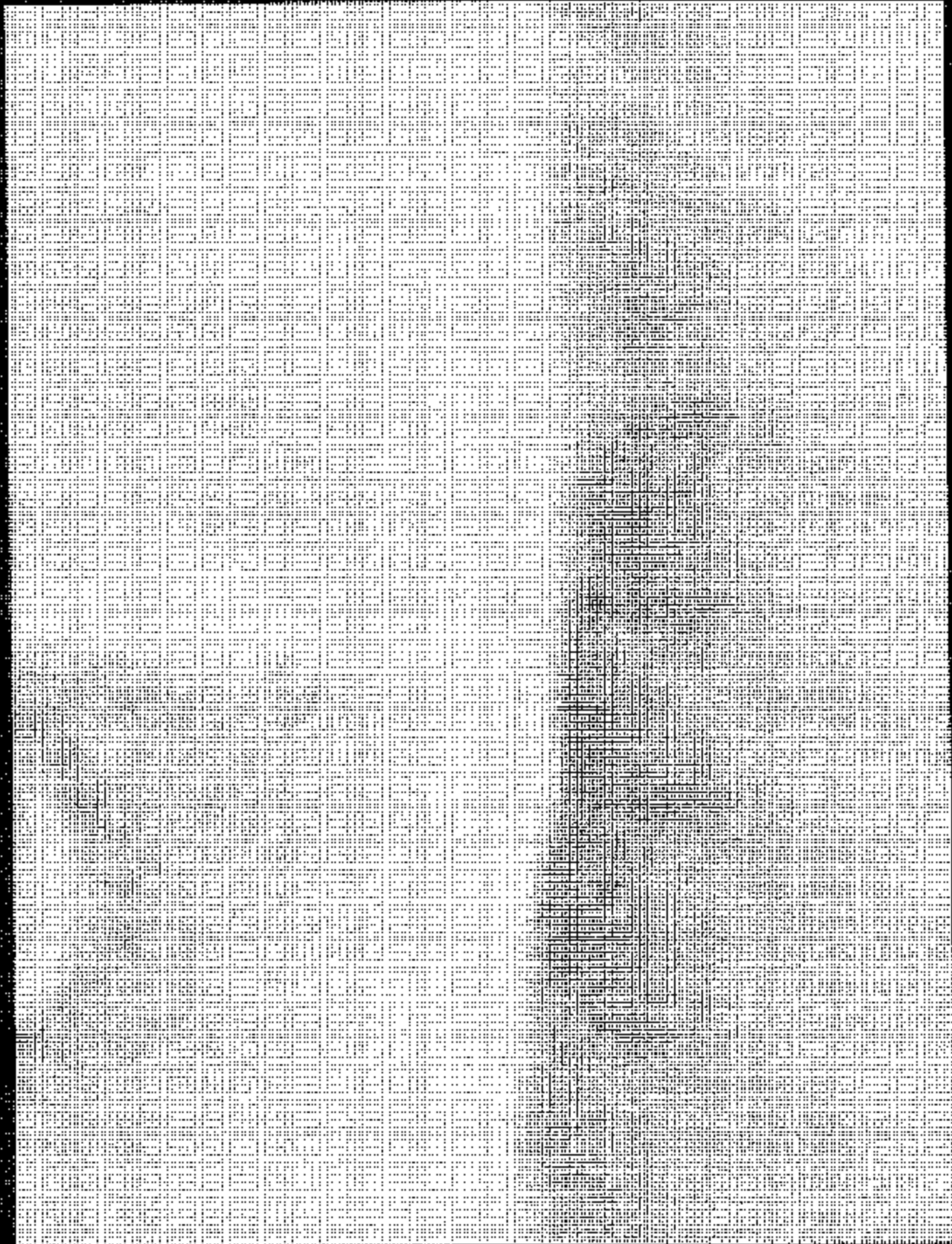
6.1.1.9 Post-test photo #9 of SFADII test 1 of 2



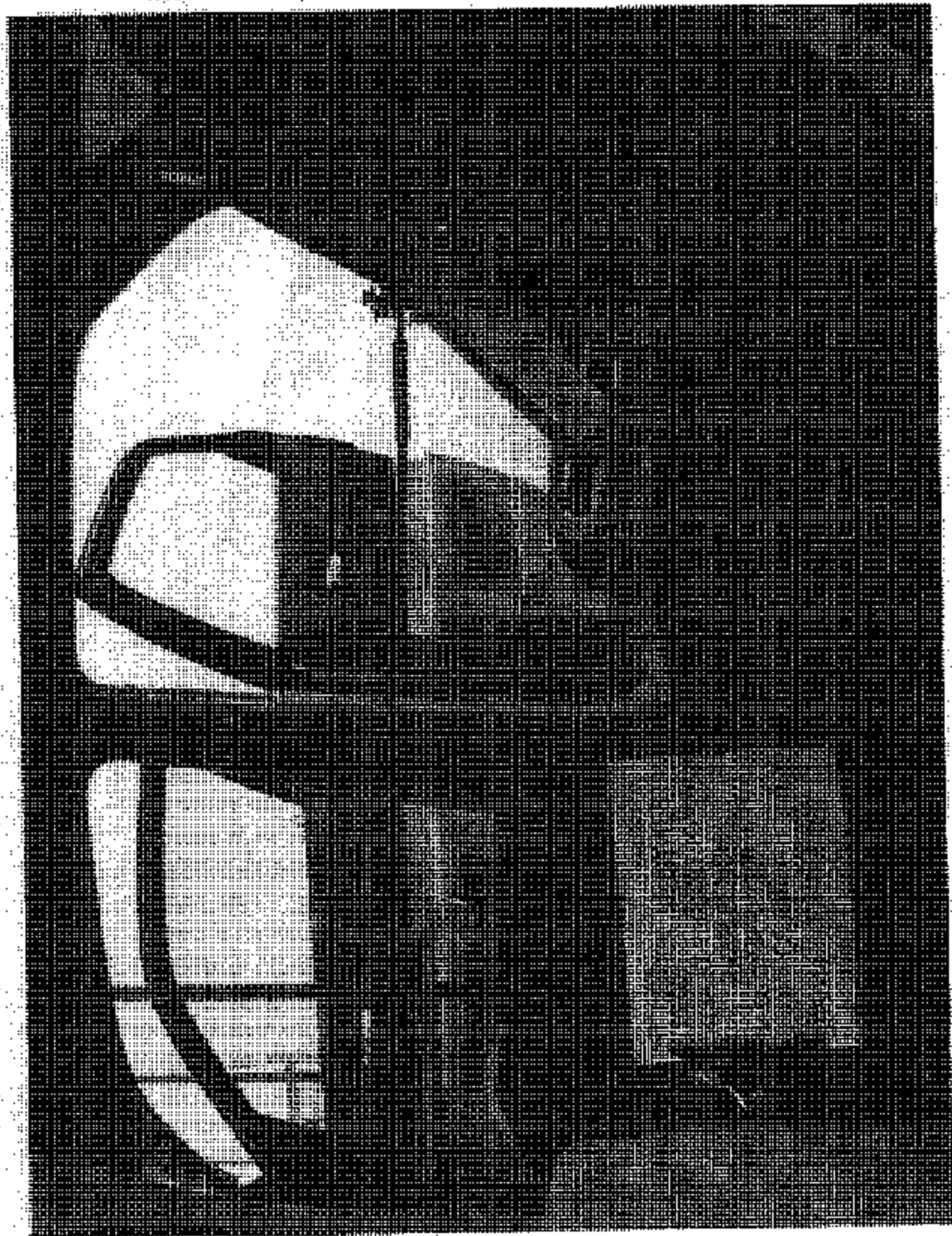
6.11.10 Post-test photo #10 of SFADII test 1 of 2



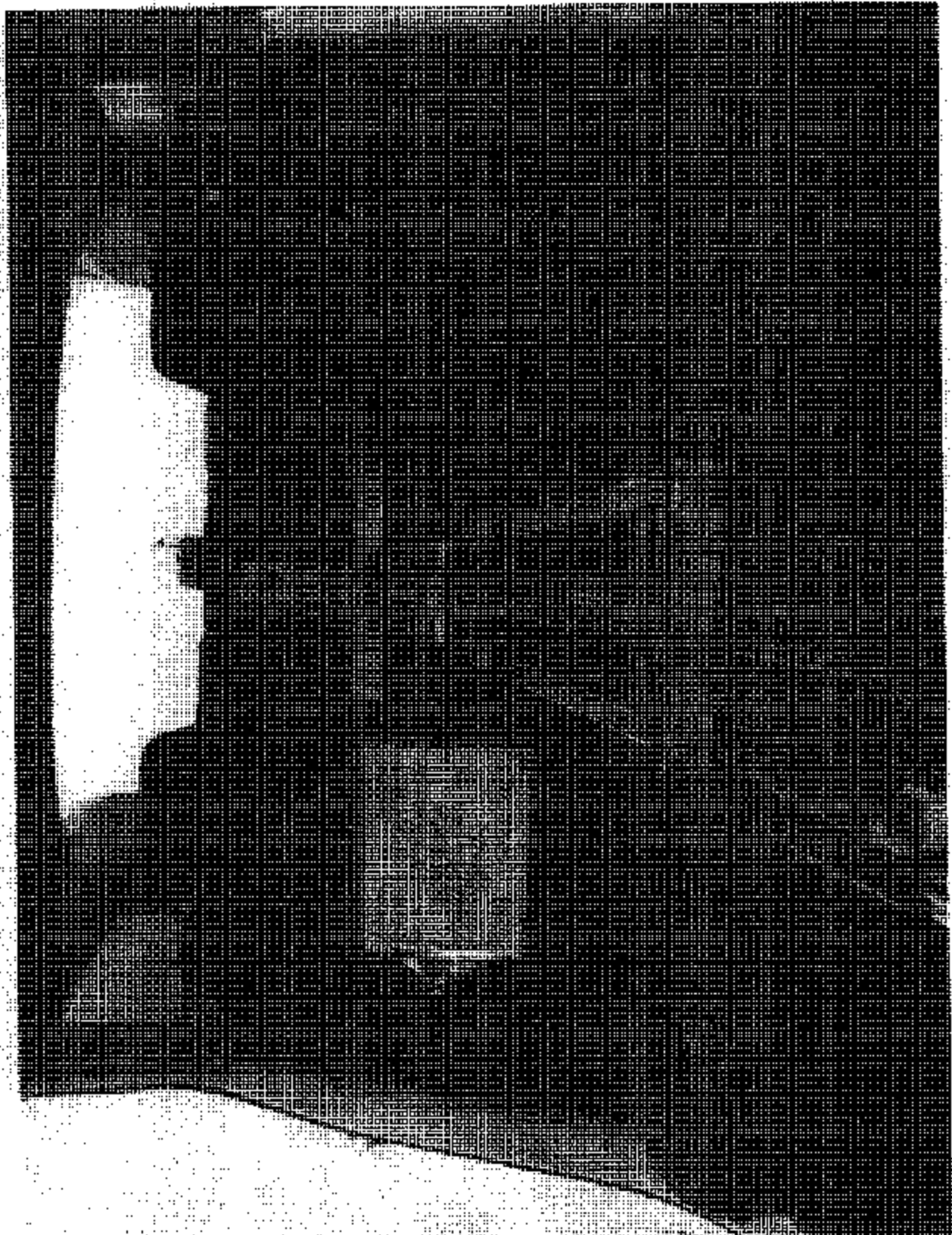
6.11.11 Post-test photo #11 of SFADR test 1 of 2



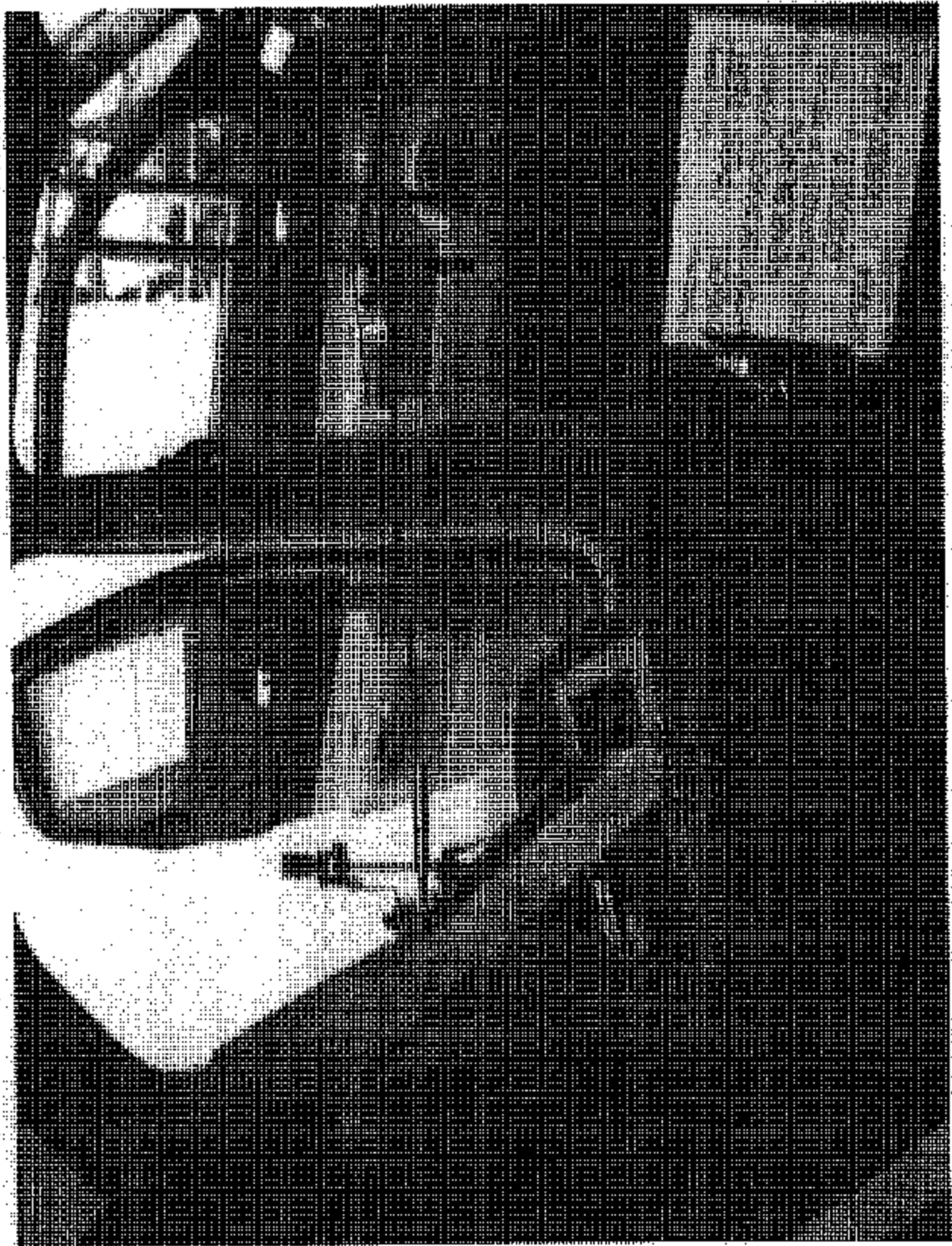
6.11.12 Post-test photo #1 of SFADII test 2 of 2



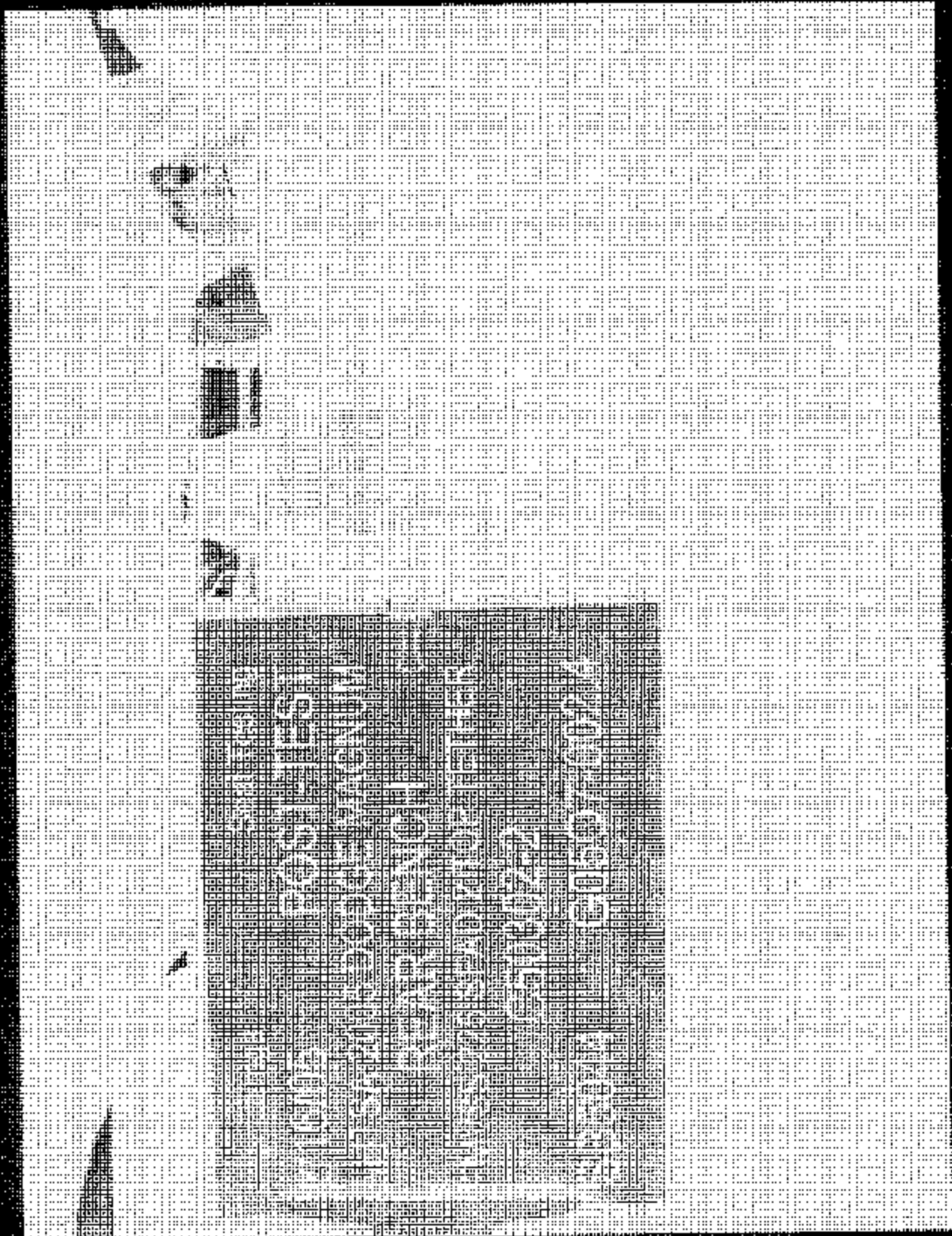
6.11.13 Post-test photo #2 of SFADII test 2 of 2



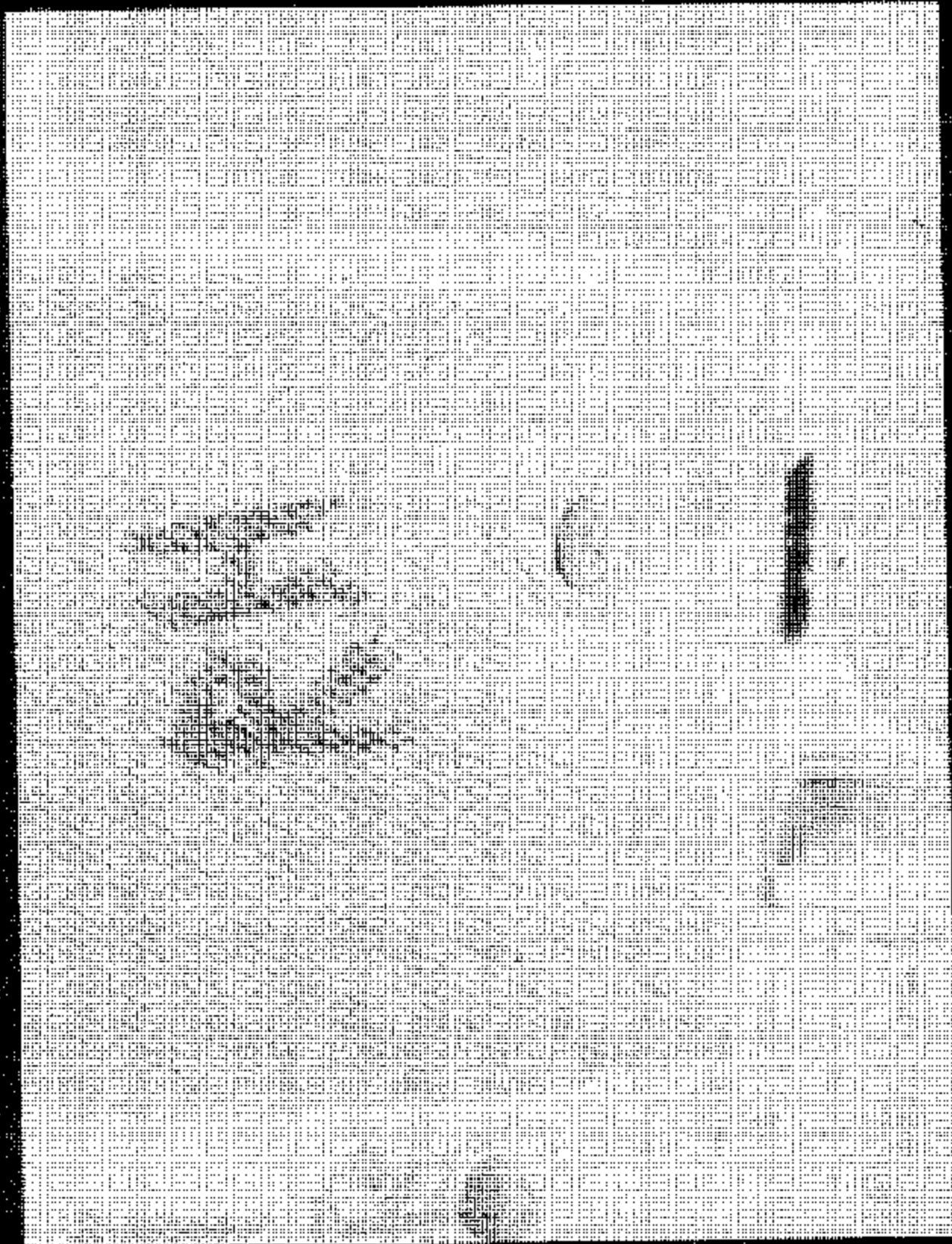
6.11.14 Post-test photo #3 of SPADII test 2 of 2



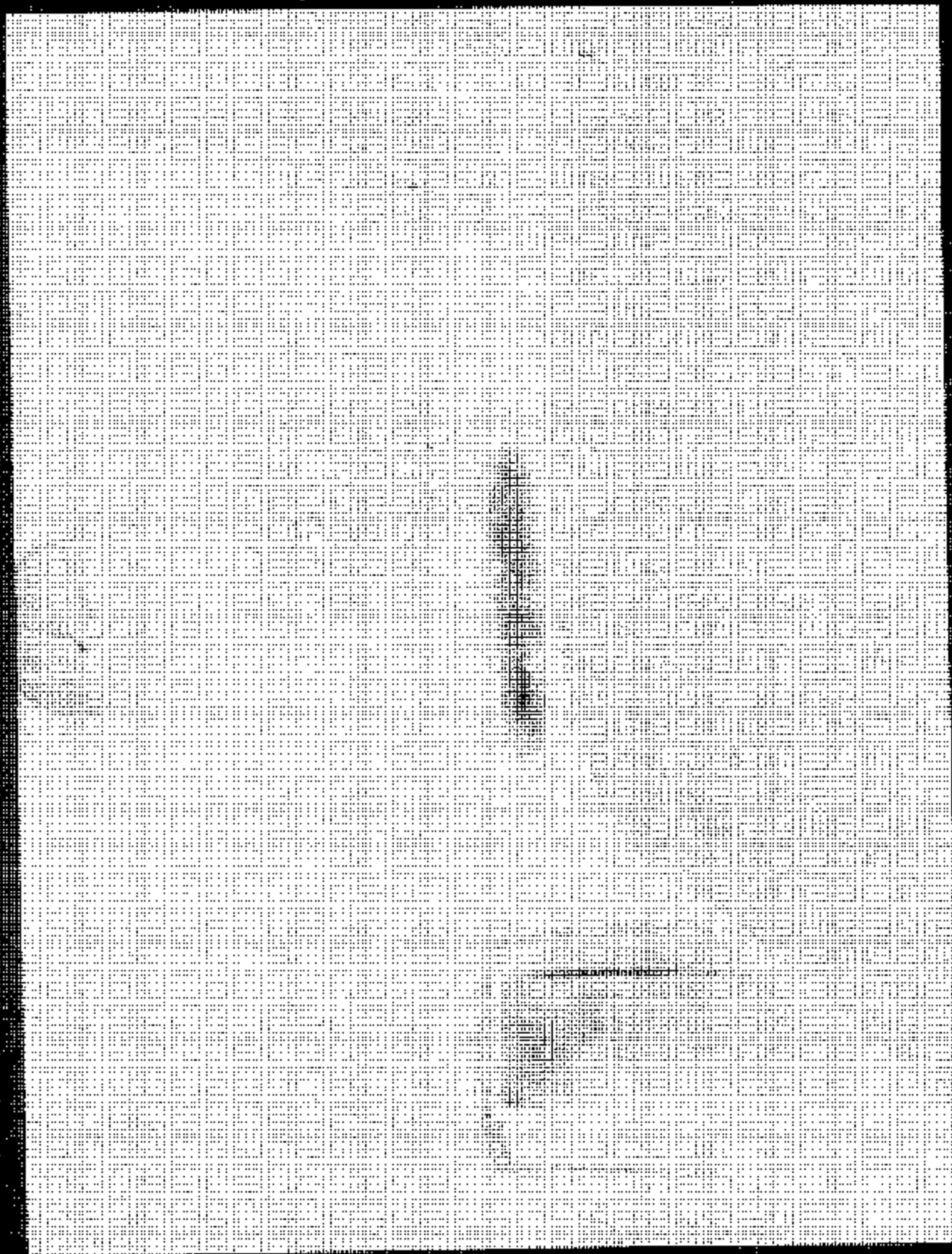
6.11.15 Post-test photo #4 of SFADII test 2 of 2



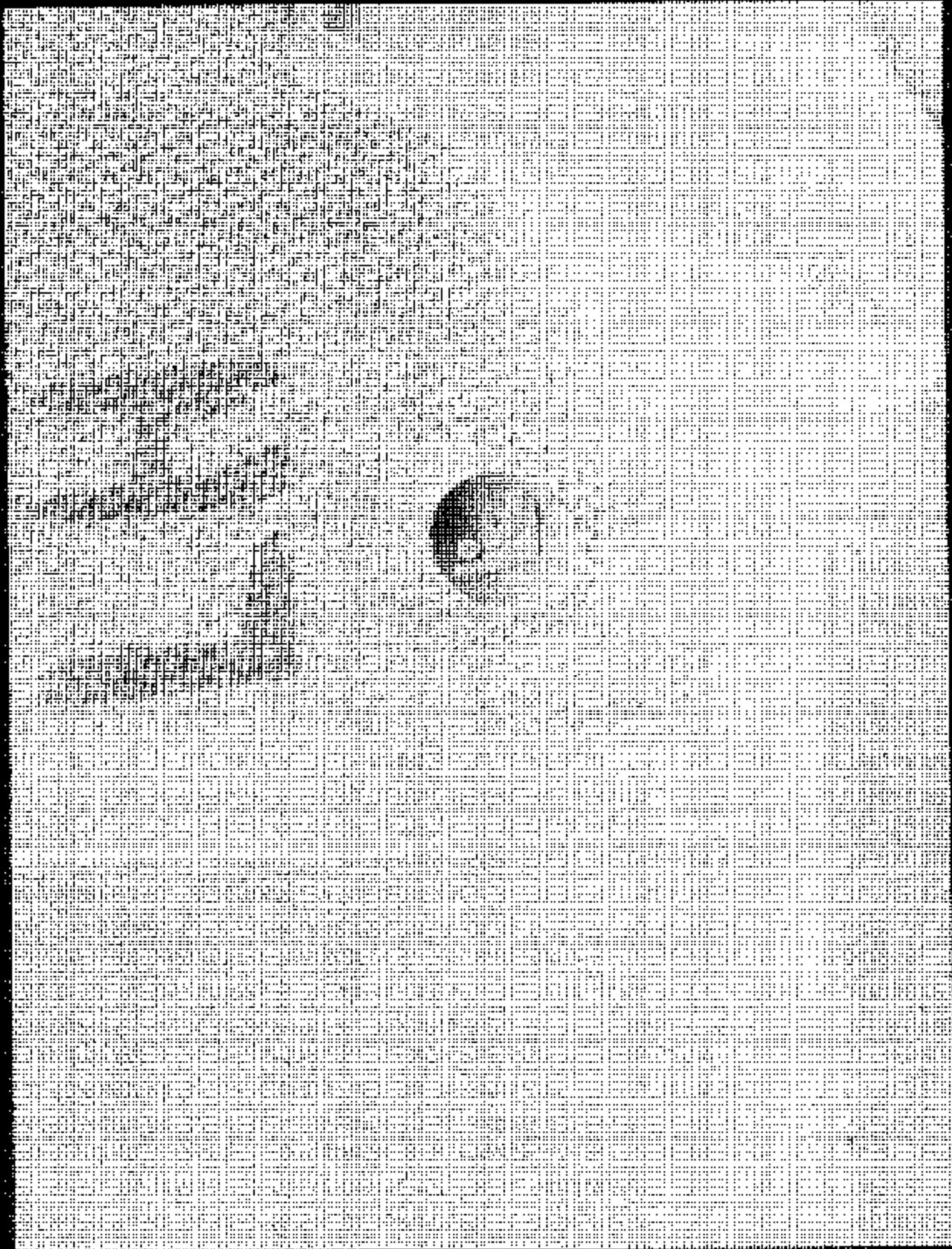
6.11.16 Post-test photo #5 of SPADII test 2 of 2



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



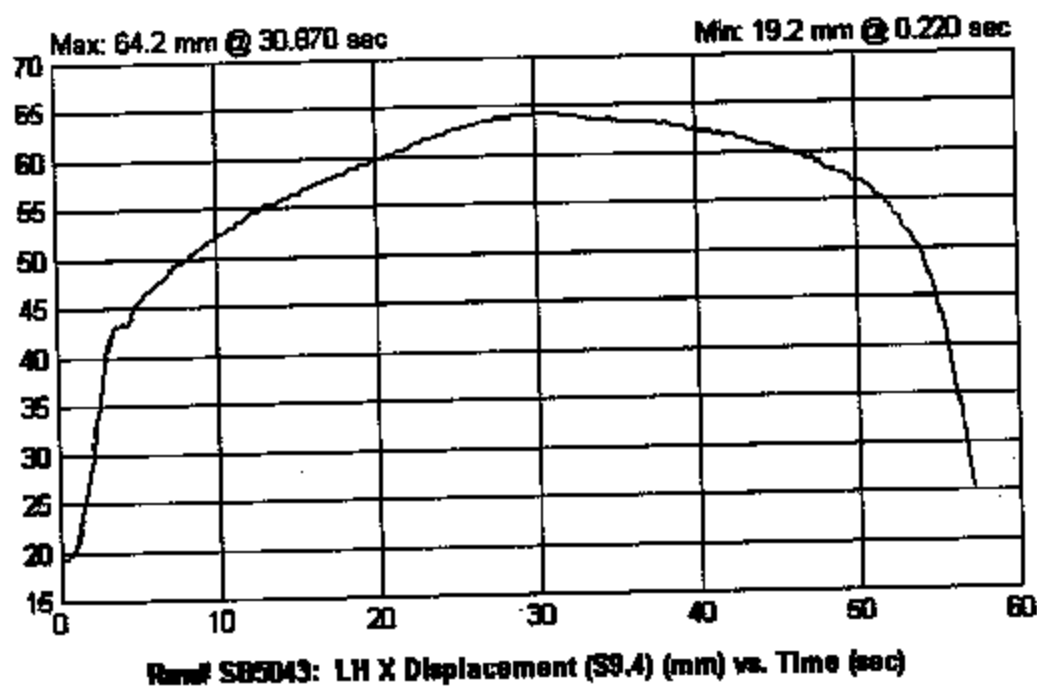
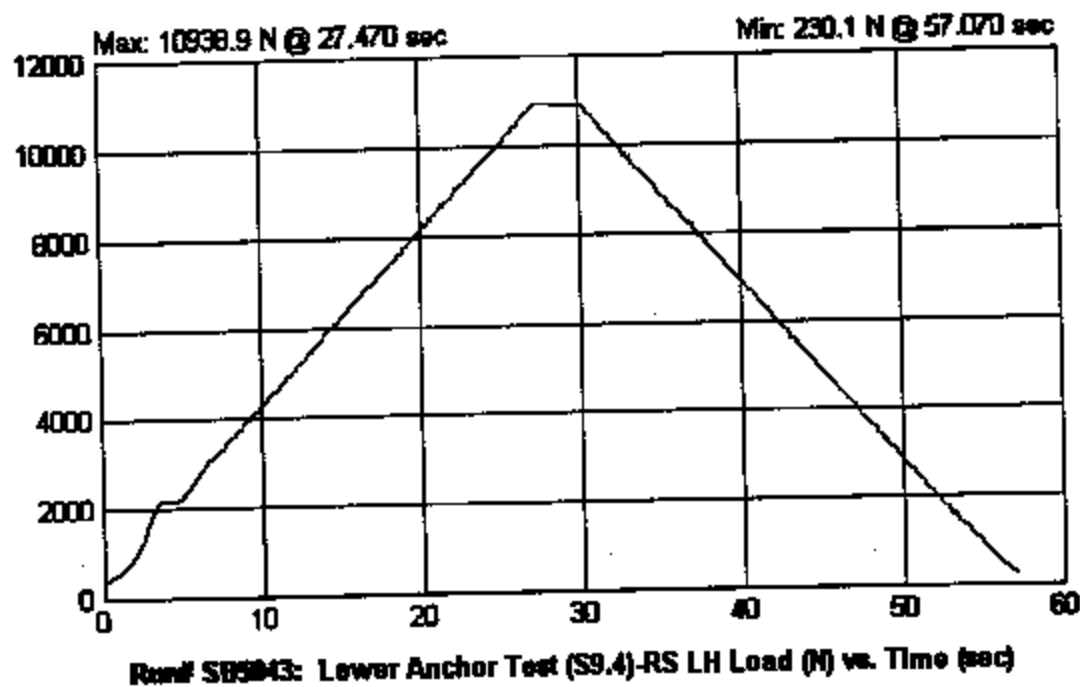
6.11.18 Post-test photo #7 of SPAD test 2 of 2

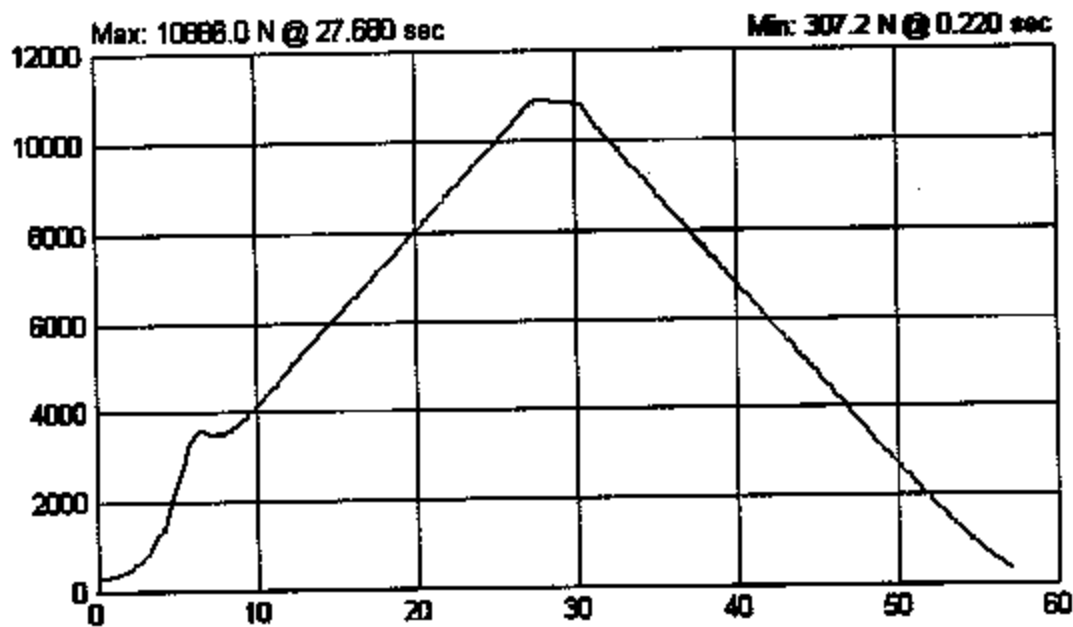


6.11.19 Post-test photo #8 of SFADII test 2 of 2

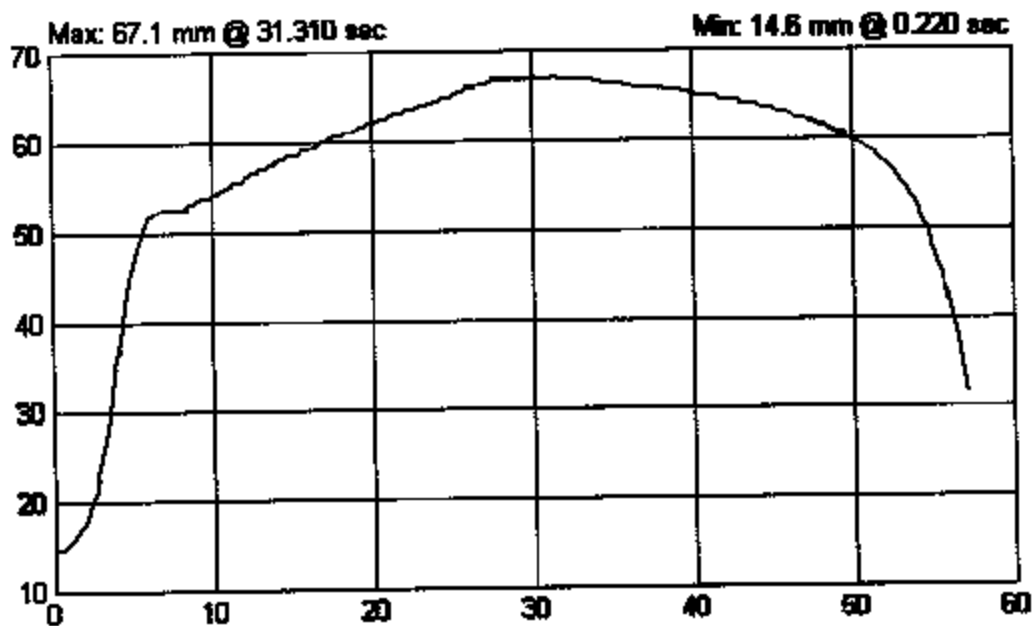


7.0 PLOTS

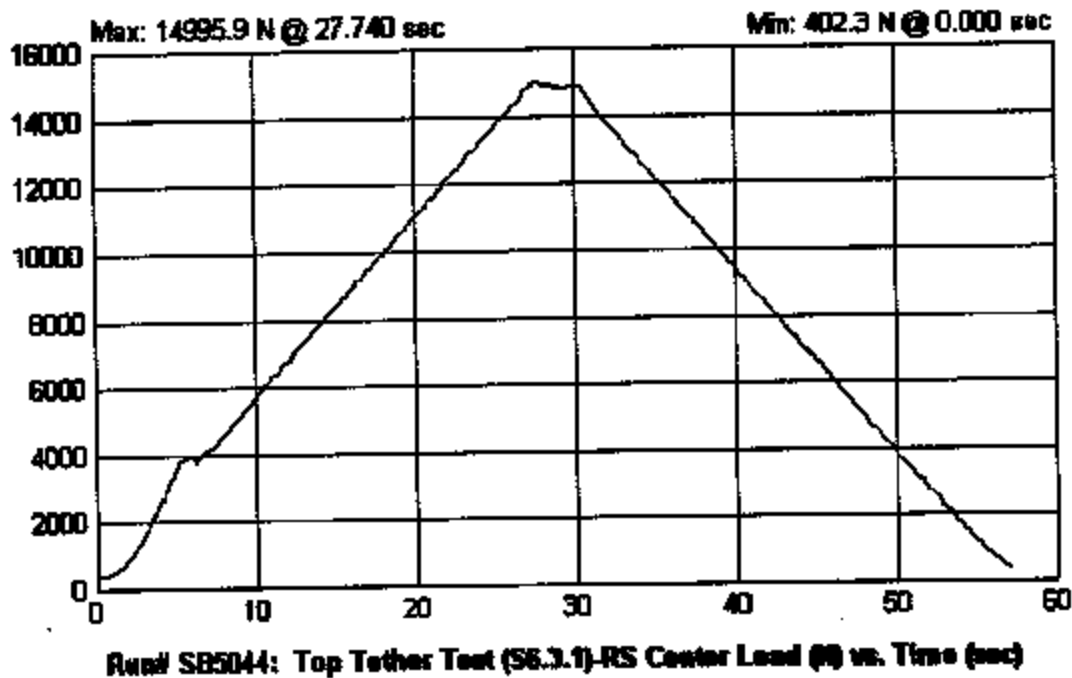




Run# SB5043: Lower Anchor Test (S9.4)-RS RH Load (N) vs. Time (sec)



Run# SB5043: RH X Displacement (S9.4) (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: February 16, 2005

From: MGA Research Corporation, 446 Executive Drive, Troy, MI 48083

To: NHTSA, OVSC, NVS-220

The following vehicle has been subjected to compliance testing for FMVSS No. 201U 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 COTR. 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: 2005 Dodge Magnum

VEH. NHTSA NO.: C50302

VIN: 2D4FV48T55H513493

COLOR: White

ODOMETER READINGS: ARRIVAL 15 miles Date: 9/10/04
COMPLETION 502 miles Date: 2/16/05

PURCHASE PRICE: \$ 20,877 DEALER'S NAME: Galeana's Van Dyke Dodge

ENGINE DATA: 6 Cylinder 2.7 Liters Cubic Inches

TRANSMISSION DATA: X Automatic Manual No. of Speeds 4;

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

CHECK APPROPRIATE BOXES FOR VEHICLE EQUIPMENT:

TEST LABORATORY: MGA Research Corporation

OBSERVERS: Melanie Schick, Brad Reaume, Kenney Godfrey

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

DATE: February 16, 2005

APPROVED BY: Brad Reaume

APPENDIX A
OWNERS MANUAL CHILD RESTRAINT SYSTEMS

45. THINGS TO KNOW BEFORE STARTING YOUR VEHICLE

transmitted confidentially. Confidential data will not be disclosed by DaimlerChrysler to any third party except when:

1. Used for research purposes, such as in crash data with a particular crash record in an aggregate database, provided confidentiality of personal data is thereafter preserved
2. Used in defense of litigation involving a DaimlerChrysler product
3. Requested by police under a legal warrant
4. Otherwise required by law

Data Parameters that May Be Retrieved:

- Diagnostic trouble code(s) and warning lamp status for electronically-controlled safety systems, including the airbag system
- Airbag disable lamp status (if equipped)
- "Time" of airbag deployment (in terms of ignition cycles and vehicle mileage)
- Airbag deployment level (if applicable)

- Seatbelt status
- Brake status (service and parking brakes)
- Accelerator status (including vehicle speed)
- Engine control status (including engine speed)
- Cruise control status
- Traction/stability control status

Child Restraint

Everyone in your vehicle needs to be buckled up all the time, babies and children, too. Every state in the United States and all Canadian provinces require that small children ride in proper restraint systems. This is the law, and you can be prosecuted for ignoring it.

Children 12 years and under should ride properly buckled up in a rear seat, if available. According to crash statistics, children are safer when properly restrained in the rear seats rather than in the front.

In a collision, an unrestrained child, even a tiny baby, can become a missile inside the vehicle. The force required to hold even an infant on your lap could become so great that you could not hold the child, no matter how strong you are. The child and others could be badly injured. Any child riding in your vehicle should be in a proper restraint for the child's size.

There are different sizes and types of restraints for children from newborns close to the child almost large enough for an adult safety belt. Always check the child seat Owner's Manual to ensure you have the right seat for your child. Use the restraint that is correct for your child.

Infants and Child Restraints

- Safety experts recommend that children ride rearward-facing in the vehicle until they are at least

THINGS TO KNOW BEFORE SEATING YOUR VEHICLE

one-year old and weigh at least 9 kg (20 lbs). Two types of child restraints can be used rearward-facing: infant carriers and "convertible" child seats.

- The infant carrier is only used rearward-facing in the vehicle. It is recommended for children who weigh up to about 20 lbs (9 kg). "Convertible" child seats can be used either rearward-facing or forward-facing in the vehicle. Convertible child seats often have a higher weight limit in the rearward-facing direction than infant carriers do, so they can be used rearward-facing by children who weigh more than 20 lbs (9 kg) but are less than one year old. Both types of child restraints are held in the vehicle by the lap/shoulder belt or the LATCH child restraint anchorage system. (See the LATCH — Child Seat Anchorage System section.)
- Rearward-facing child seats must NEVER be used in the front seat of a vehicle with the front passenger airbag unless the airbag is turned off. An airbag deployment could cause severe injury or death to infants in this position.

THINGS TO KNOW BEFORE STARTING YOUR VEHICLE

- Improper installation can lead to failure of an infant or child restraint. It could cause harm in a collision. The child could be badly injured or killed. Follow the manufacturer's directions exactly when installing an infant or child restraint.
- A rearward facing child restraint should only be used in a rear seat. A rearward facing child restraint in the front seat may be struck by a deploying passenger airbag, which may cause severe or fatal injury to the infant.

Here are some tips on getting the most out of your child restraint:

- Before buying any restraint system, make sure that it has a label certifying that it meets all applicable Safety Standards. We also recommend that you make sure that you can install the child restraint in the vehicle where you will use it before you buy it.

- The restraint must be appropriate for your child's weight and height. Check the label on the restraint for weight and height limits.
- Carefully follow the instructions that come with the restraint. If you install the restraint improperly, it may not work when you need it.
- Buckle the child into the seat according to the child restraint manufacturer's directions.
- When your child restraint is not in use, secure it in the vehicle with the seat belt or remove it from the vehicle. Do not leave it loose in the vehicle. In a sudden stop or collision, it could strike the occupants or seat backs and cause serious personal injury.

NOTE: For additional information refer to www.seatcheck.org or call 1-866-SEATCHECK.

Older Children and Child Restraints

Children who weigh more than 20 lbs (9 kg) and who are older than one year can ride forward-facing in the vehicle. Forward-facing child seats and convertible child seats used in the forward-facing direction are for children who weigh 20 to 40 lbs (9 to 18 kg) and who are older

than one year. These child seats are also held in the vehicle by the lap/shoulder belt or the LATCH child restraint anchorage system. (See the LATCH — Child Seat Anchorage System Section.)

The belt-positioning booster seat is for children weighing more than 40 lbs (18 kg), but who are still too small to fit the vehicle's seat belts properly. If the child cannot sit with knees bent over the vehicle's seat cushion while the child's back is against the seat back, they should use a belt-positioning booster seat. The child and belt-positioning booster seat are held in the vehicle by the lap/shoulder belt.

Children Too Large For Booster Seats

Children who are large enough to wear the shoulder belt comfortably, and whose legs are long enough to bend over the front of the seat when their back is against the seat back, should use the lap/shoulder belt in a rear seat.

- Make sure that the child is upright in the seat.
- The lap portion should be low on the hips and as snug as possible.

THINGS TO KNOW BEFORE STARTING YOUR VEHICLE

- Check belt fit periodically. A child's squirming or slouching can move the belt out of position.
- If the shoulder belt contacts the face or neck, move the child closer to the center of the vehicle. Never allow a child to put the shoulder belt under an arm or behind their back.

LATCH — Child Seat Anchorage System (Lower Anchors and Tether for CHildren)

Your vehicle's rear seat is equipped with the child restraint anchorage system called LATCH. The LATCH system provides for the installation of the child restraint without using the vehicle's seat belts. Instead, securing the child restraint using lower anchorage and upper tether straps from the child restraint to the vehicle structure.

LATCH-compatible child restraint systems are now available. However, because the lower anchorage are to be introduced over a period of years, child restraint systems having attachments for those anchorage will continue to also have features for installation using the vehicle's seat belts. Child restraints having tether straps and hooks for

22 THINGS TO KNOW BEFORE STARTING YOUR VEHICLE

connection to the top tether anchorages have been available for some time. For some older child restraints, many child restraint manufacturers offer add-on tether strap kits or retro-fit kits. You are urged to take advantage of all the available attachments provided with your child restraint in any vehicle.

All three rear seating positions have lower anchorages that are capable of accommodating LATCH-compatible child seats. You should NEVER install LATCH-compatible child seats such that two seats share a common lower anchorage. If installing child seats in adjacent rear-seating positions or if your child restraints are not LATCH-compatible, install the restraints using the vehicle's seat belts.



Installing the LATCH-Compatible Child Restraint System

We urge that you carefully follow the directions of the manufacturer when installing your child restraint. Not all child restraint systems will be installed as described here. Again, carefully follow the installation instructions that were provided with the child restraint system.

The rear seat lower anchorages are round bars, located at the rear of the seat cushion where it meets the seat back, and are just visible when you lean into the rear seat to install the child restraint. You will easily feel them if you run your finger along the intersection of the seatback and seat cushion surfaces.

The rear seat lower anchorage bars are identified by this symbol.



In addition, there are tether strap anchorages located behind each rear seat back.

Many, but not all restraint systems will be equipped with separate straps on each side, with each having a hook or connector for attachment to the lower anchorages and a means of adjusting the tension in the strap. Forward-facing toddler restraints and some rear-facing infant restraints will also be equipped with a tether strap, a hook for attachment to the tether strap anchorage and a means of adjusting the tension of the strap.

23 THINGS TO KNOW BEFORE STARTING YOUR VEHICLE

You will first loosen the adjusters on the lower straps and on the tether strap so that you can more easily attach the hooks or connectors to the vehicle anchorages. Next attach the lower hooks or connectors over the top of the seat cover material. Then rotate the tether anchorage cover directly behind the seat where you are placing the child restraint and attach the tether strap to the anchorage, being careful to route the tether strap to provide the most direct path between the anchor and the child restraint. If your vehicle is equipped with adjustable rear head restraints, raise the head restraint and, when possible, route the tether strap under the head restraint and between the two posts. If not possible, lower the head restraint and route the tether strap around the outboard side of the head restraint. Finally, tighten all three straps as you push the child restraint rearward and downward into the seat, removing slack in the straps according to the child restraint manufacturer's instructions.

84 THINGS TO KNOW BEFORE STARTING YOUR VEHICLE

Improper installation of a child restraint to the LATCH anchorages can lead to failure of an infant or child restraint. The child could be badly injured or killed. Follow the manufacturer's directions exactly when installing an infant or child restraint.

Installing Child Restraints Using the Vehicle Seat Belt

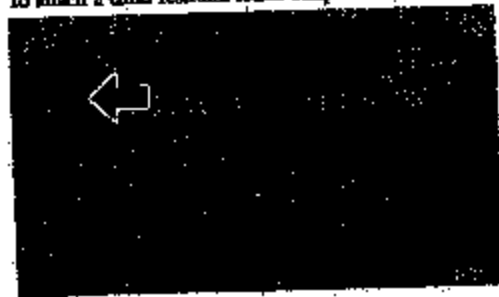
The passenger seat belts are equipped with either cinching latch plates or automatic locking retractors (center rear seat only) which are designed to keep the lap portion tight around the child restraint so that it is not necessary to use a locking clip. Pulling up on the shoulder portion of the lap/shoulder belt will tighten the belt. The cinching latch plate will keep the belt tight, however, any seat belt system will loosen with time, so check the belt occasionally and pull it tight if necessary.

The center rear seating position has an automatic locking retractor and has a distinctive label on the seat belt webbing. The seat belt must be in the automatic locking mode in order to enable a child restraint to be tightly installed. Refer to the Automatic Locking Mode section for details. A locking clip should not be necessary once the automatic locking feature is enabled. Position the shoulder and lap belt on the child restraint. The automatic locking retractor is activated by first attaching the child seat, then pulling all of the webbing out of the retractor, then allowing back in. Tighten webbing. To release, simply unbuckle the seat belt by depressing the button, allowing the webbing to retract into the retractor.

In the rear seat, you may have trouble tightening the lap/shoulder belt on the child restraint because the buckle or latch plate is too close to the belt path opening on the restraint. Disconnect the latch plate from the buckle and twist the short buckle-end belt several times to shorten it. Insert the latch plate into the buckle with the release button facing out.

If the belt still can't be tightened, or if by pulling and pushing on the restraint loosens the belt, you may need to do something more. Disconnect the latch plate from the buckle, turn the buckle around, and insert the latch plate into the buckle again. If you still can't make the child restraint secure, try a different seating position.

To attach a child restraint tether strap:



Child Tether Strap

85 THINGS TO KNOW BEFORE STARTING YOUR VEHICLE

2. Route the tether strap to provide the most direct path for the strap between the anchor and the child seat. If your vehicle is equipped with adjustable rear head restraints, raise the head restraint and, where possible, route the tether strap under the head restraint and between the two posts. If not possible, lower the head restraint and pass the tether strap around the outboard side of the head restraint.

3. Attach the tether strap hook of the child restraint to the tether anchor and remove slack in the tether strap according to the child restraint manufacturer's instructions.

An incorrectly anchored tether strap could lead to increased head motion and possible injury to the child. Use only the anchor positions directly behind the child seat to secure a child restraint top tether strap.

APPENDIX B
MANUFACTURER'S DATA (OVSC FORM 14)

G05Q7-002.4
C50302 FORM 14

SEAT REFERENCE POINT (SRP) AND TORSO ANGLE DATA
FOR FMVSS 225
(All dimensions in mm)

Model Year: 2005 Make: Dodge Model: Magnum Body Style: 49
Seat Style: Front Row: ALL Second Row: ALL Third Row: N/A

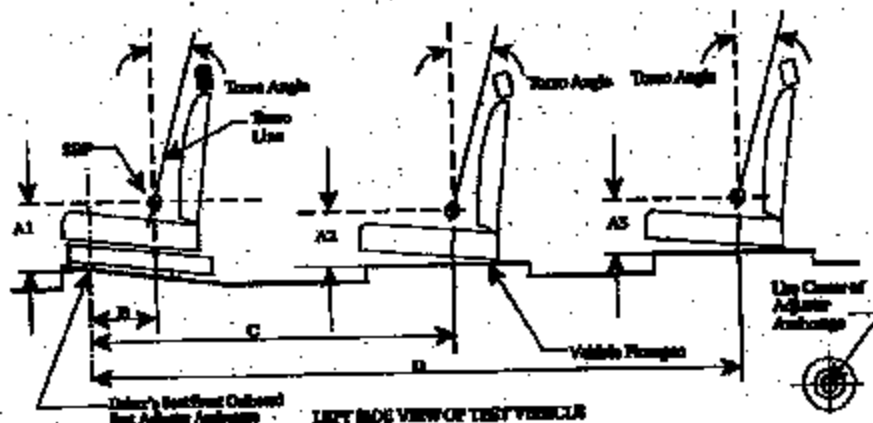


Table 1. Seating Positions¹ and Torso Angles

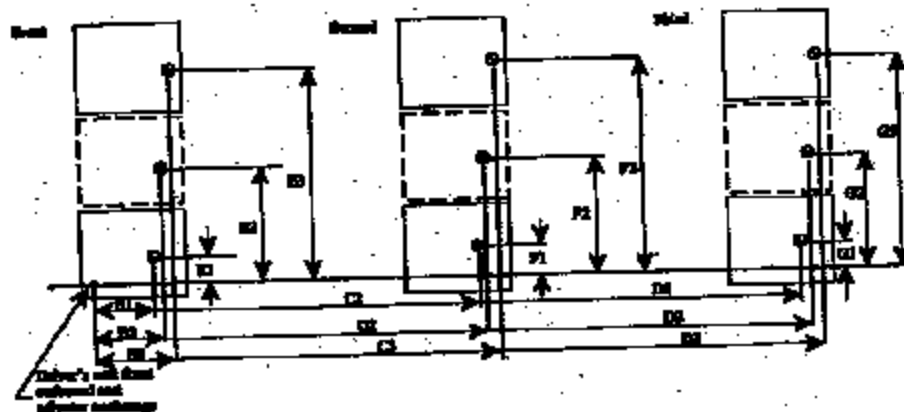
	Left (Driver Side)	Center (if any)	Right
A1	(Driver)	N/A	
A2	109.35	N/A	109.35
A3	N/A	N/A	N/A
B	298.24	N/A	298.24
C	1199.24	N/A	1199.24
D	N/A	N/A	N/A
Torso Angle (degree)	Front Row	24	24
	Second Row	27	27
	Third Row	N/A	N/A

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

FORM 14

SEATING REFERENCE POINT
FOR FMVSS 225
(All dimensions in mm)

Model Year: 2005 Make: Dodge Model: Magnum Body Style: 49
Seat Style: Front Row: All Second Row: All Third Row: N/A



FORM 14

**SEATING REFERENCE POINT
 FOR FMVSS 225
 (All dimensions in mm)**

Table 2. Seating Reference Point and Tether Anchorage Locations

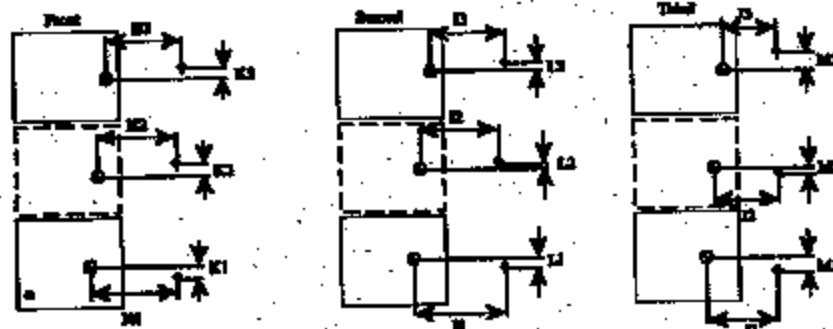
Seating Reference Point (SRP)		Distance from Driver's front outboard seat adjuster anchorage ¹
Front Row	B1	298.24
	E1	218
	B2	N/A
	E2	N/A
	B3	298.24
	E3	978
Second Row	C1	1199.24
	F1	218
	C2	N/A
	F2	N/A
	C3	1199.24
	F3	978
Third Row	D1	N/A
	G1	N/A
	D2	N/A
	G2	N/A
	D3	N/A
	G3	N/A

Note: 1. Use the center of anchorage.

FORM 14

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

Model Year: 2005 Make: Dodge Model: Magnum Body Style: 49
Seat Style: Front Row First Row: All Second Row: All Third Row: N/A



0. 007
0. Tether anchorage

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

FORM 14

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

Table 3. Seating Reference Point and Tether Anchorage Locations

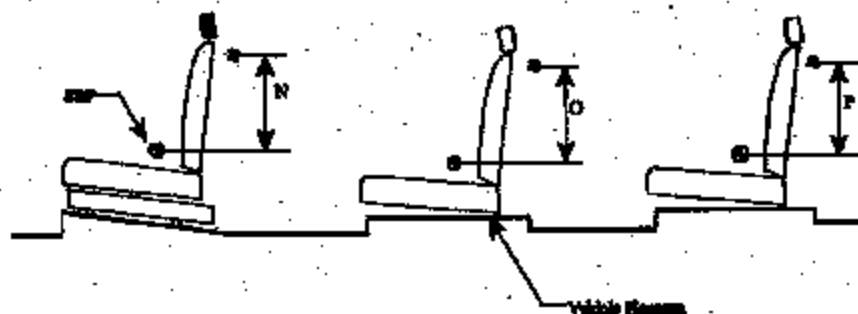
Seating Reference Point (SRP)	Distance from SRP	
Front Row	H1	N/A
	K1	N/A
	H2	N/A
	K2	N/A
	H3	N/A
	K3	N/A
Second Row	I1	362.12
	L1	0
	I2	362.12
	L2	0
	I3	362.12
	L3	0
Third Row	J1	N/A
	M1	N/A
	J2	N/A
	M2	N/A
	J3	N/A
	M3	N/A

Note: 1. Use the center of anchorage.

FORM 14

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

Model Year: 2005 Make: Dodge Model: Magnus Body Style: 49
 Seat Style: Front Row: All Second Row: All Third Row: N/A



LEFT SIDE VIEW OF TEST VEHICLE

Table 4. Vertical Dimensions 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)	284.95
	O2 (Center)	284.95
	O3 (Right)	284.95
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 used.

FORM 14

Test Procedures Used for Compliance Tests

Tether Anchorage

Seating Location		FMVSS Section(s) - Req.		
		Allowed until 9/1/04 36.9.4 (10 kN)	Required after 9/1/04 36.3.4.1 (3.3 kN)	Required after 9/1/04 36.3.1 (15 kN)
Front	Driver	N/A	N/A	N/A
	Center (if any)	N/A	N/A	N/A
	Right (if any)	N/A	N/A	N/A
Second	Left	N/A	N/A	36.3.1 (15kN)
	Center	N/A	N/A	36.3.1 (15kN)
	Right (if any)	N/A	N/A	36.3.1 (15kN)
Third	Left	N/A	N/A	N/A
	Center	N/A	N/A	N/A
	Right	N/A	N/A	N/A
Fourth	Left	N/A	N/A	N/A
	Center	N/A	N/A	N/A
	Right	N/A	N/A	N/A

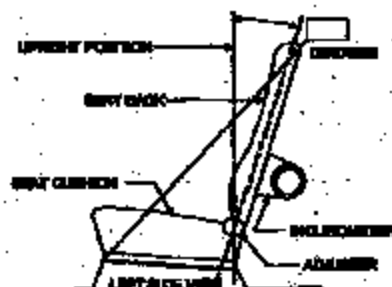
Lower Anchorage

Seating Location		FMVSS Section(s) - Req.	
		Allowed until 9/1/04 81.3 (8 kN / 5 kN)	Required after 9/1/04 89.4 (81 kN / 5 kN)
Front	Driver	N/A	N/A
	Center (if any)	N/A	N/A
	Right (if any)	N/A	N/A
Second	Left	N/A	89.4(11kN / 5 kN)
	Center	N/A	89.4(11kN / 5 kN)
	Right (if any)	N/A	89.4(11kN / 5kN)
Third	Left	N/A	N/A
	Center	N/A	N/A
	Right	N/A	N/A
Fourth	Left	N/A	N/A
	Center	N/A	N/A
	Right	N/A	N/A

2005 MY Dodge Magnum

NOMINAL DESIGN RIDING POSITION -

For adjustable driver, passenger, 2nd row and 3rd row seat backs, describe how to position the inclinometer to measure the seat back angle. Include description of the location of the adjustment latch device if applicable. Indicate if applicable, how the degrees are numbered (is the first degree "0" or "1"?). Indicate if the seat back angle is measured with the dummy in the seat.



Seat back angle for driver's seat - 14 degrees
Measurement Instructions:

Bring vehicle in level. Extend head rest to full up position. Place inclinometer on exposed head rest post and position seat back to 14 degrees.

Seat back angle for passenger's seat - 14 degrees
Measurement Instructions:

Same as driver.

Seat back angle for 2nd row seat - N/A degrees
Measurement Instructions:

Second row seat back angle is fixed by ensuring seat back latches are fully engaged.