638006

FINAL REPORT NUMBER 225-MGA-05-011

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

NISSAN MOTOR CO., LTD.
2005 INFINITI FX35
NHTSA No. C55205

MGA RESEARCH CORPORATION
446 Executive Drive
Troy, Michigan 48083

Test Date: July 22, 2005
Report Date: August 18, 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

Prepared By:

Melanie Schick, Project Engineer

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Approved By:

Approval Date: 08/18/2005

FINAL REPORT ACCEPTANCE BY OVSC:

Accepted By: Amanda Prescott

Acceptance Date:

TECHNICAL REPORT STANDARD TITLE PAGE

1. Report No. 225-MGA-05-011	2. Government Accession No.	3. Recipient's Catalog No.
4. Title and Subtitle Final Report of FMVSS 225 Compliance Testing of a 2005 Infiniti FX35, NHTSA No. C55205		5. Report Date August 18, 2005 6. Performing Organization Code MGA
7. Author(s) Helen A. Kaleto, Laboratory Manager Melanie Schick, Project Engineer Brad Reaume, Test Personnel		8. Performing Organization Report No. 225-MGA-05-011
9. Performing Organization Name and Address MGA Research Corporation 446 Executive Drive Troy, Michigan 48083		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 2005 Infiniti FX35, NHTSA No. C55205, in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-225-01 for the determination of FMVSS 225 compliance. The tests were conducted at MGA Research Corporation in Troy, Michigan on July 22, 2005. Test failures identified were as follows:

S9.2.2 (a): The lower anchor bars for the 2nd row left seating position were 76 mm behind point Z of the CRF, and the lower anchor bars for the 2nd row right seating position were 83 mm behind point Z of the CRF. The requirement is the vertical transverse plane tangent to the front surface of the anchorage must be less than 70 mm behind point Z of the CRF.

The data recorded indicates that the 2005 Infiniti FX35 tested does not appear to meet the requirements of FMVSS 225.

17. Key Words Compliance Testing Safety Engineering FMVSS 225 2005 Infiniti FX35		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) 366-4946	
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Form DOT F 1700.7 (8-70)

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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 Infiniti FX35, NHTSA No. C55205 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 Procedure TP-225-01 (4/11/05) and MGA's Laboratory Test Procedure, MGATP225GOV (2/24/05).

The front occupant compartment consisted of two (2) adjustable outboard bucket seats and the rear occupant compartment consisted of a 2nd row three-passenger 60/40 bench seat. Each 2nd row outboard seating position was equipped with a child restraint anchorage system (one tether and two lower anchorages). The 2nd row center seating position was equipped with a tether anchorage. The center-to-center spacing between the 2nd row outboard lower anchorages was approximately 700 mm. Each 2nd row outboard 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 July 22, 2005.

Based on the test results, the 2005 Infiniti FX35 does not appear to meet the requirements of S9.2.2 (a) of FMVSS No. 225 for this test.

The SFADII at the 2nd row left seating position sustained a maximum force of 5,085 N and held the required load for 3 seconds. The total displacement from point "X" on the SFADII for the 2nd row left seating position was 91 mm. The SFADII at the 2nd row right seating position sustained a maximum force of 5,099 N and held the required load for 3 seconds. The total displacement from point "X" on the SFADII for the 2nd row right seating position was 86 mm.

DATA SUMMARY

Strength and displacement summary data are provided below. 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)
SB5273	SFAD II	Lateral Right	2nd Row Left	5,085	91
			2nd Row Right	5,099	86

3.0 TEST VEHICLE INFORMATION

Table 2. General Test and Vehicle Parameter Data

VEH. MOD YR/MAKE/MODEL/BODY	2005 Infiniti FX35
VEH. NHTSA NO.	C55205
VIN	JNRAS08W95X207623
COLOR	Silver
VEH. BUILD DATE	11/04
TEST DATE	July 22, 2005
TEST LABORATORY	MGA Research Corporation
OBSERVERS	Melanie Schick, Brad Reaume, Kenney Godfrey

GENERAL INFORMATION:

DATA FROM VEHICLE'S CERTIFICATION LABEL:

Vehicle Manufactured By: Nissan Motor Co., Ltd.

Date of Manufacture: 11/04; VIN: JNRAS08W95X207623

GVWR: 5351 lbs; GAWR FRONT: 2554 lbs

GAWR REAR: 2824 lbs

DATA FROM TIRE PLACARD:

Tire Pressure with Maximum Capacity Vehicle Load:

FRONT: 32 psi REAR: 32 psi

Recommended Tire Size: P265/60R18

Recommended Cold Tire Pressure:

FRONT: 32 psi REAR: 32 psi

Size of Tire on Test Vehicle: P265/60R18

Type of Spare Tire: T175/90D18

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
Two (2) Load Cell 10,000 lb Capability	S/N 270 (10/19/05), S/N 618 (09/03/05)
String Potentiometer	Calibrated at each use (S/N 20765, 21810)
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 TPM460 (03/07/06)
MGA Data Acquisition System	N/A
Digital Calipers	S/N MGA00305 (03/22/06)
Force Gauge	S/N MGA00014 (02/02/06)
Inclinometer (Digital)	S/N MGA00050 (10/06/05)

5.0 DATA

Table 3. Child Restraint Tether Anchorage Configuration

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-225-01.

REMARKS: NONE.

Table 4. Child Restraint Lower Anchorage Configuration

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	81	85	N/A
	Ctr		N/A		
	RH		81	85	
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	5.97	5.99	N/A
	Ctr		N/A		
	RH		5.99	5.98	
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 front surface of the anchorage bar (mm)	LH	N/A	76*		N/A
	Ctr		N/A		
	RH		83*		
Measure the distance between the SRP to the center of the anchorage bar (mm)	LH	N/A	202		N/A
	Ctr		N/A		
	RH		214		

REMARKS: * The required displacement of the CRF must not exceed 70 mm in accordance with S9.2.2 (a) of Standard No. 225 (§571.225).

Table 4. Child Restraint Lower Anchorage Configuration (continued)

OBSERVED LOWER ANCHORAGE CONFIGURATION		SEAT POSITION			
		FRONT ROW	SECOND ROW I/B	SECOND ROW O/B	THIRD ROW
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 60 mm in length (mm).	LH	N/A	39	39	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	281		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)
2nd Row Left	13	No Data	1
2nd Row Center	N/A	N/A	N/A
2nd Row Right	13	No Data	1

N/A indicates that there were no lower anchorages in the 2nd row center seating position.

Note: AS DETERMINED USING THE PROCEDURES SPECIFIED IN TP-225-01.

REMARKS: NONE

Table 5. Tether Location and Dimensional Measurements

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-225-01.

REMARKS: NONE

Table 6. Tether Anchorage Static Loading and Displacement

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	Is 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	Fixed	Foremost	Yes	II	0	15	167	5,000	5,085*	106	91
	Ctr.			Yes	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	RH			Yes	II	0	23	167	5,000	5,099*	109	86
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-225-01.

REMARKS: * Applied force exceeded the force specified in the test procedure.

6.0 PHOTOGRAPHS

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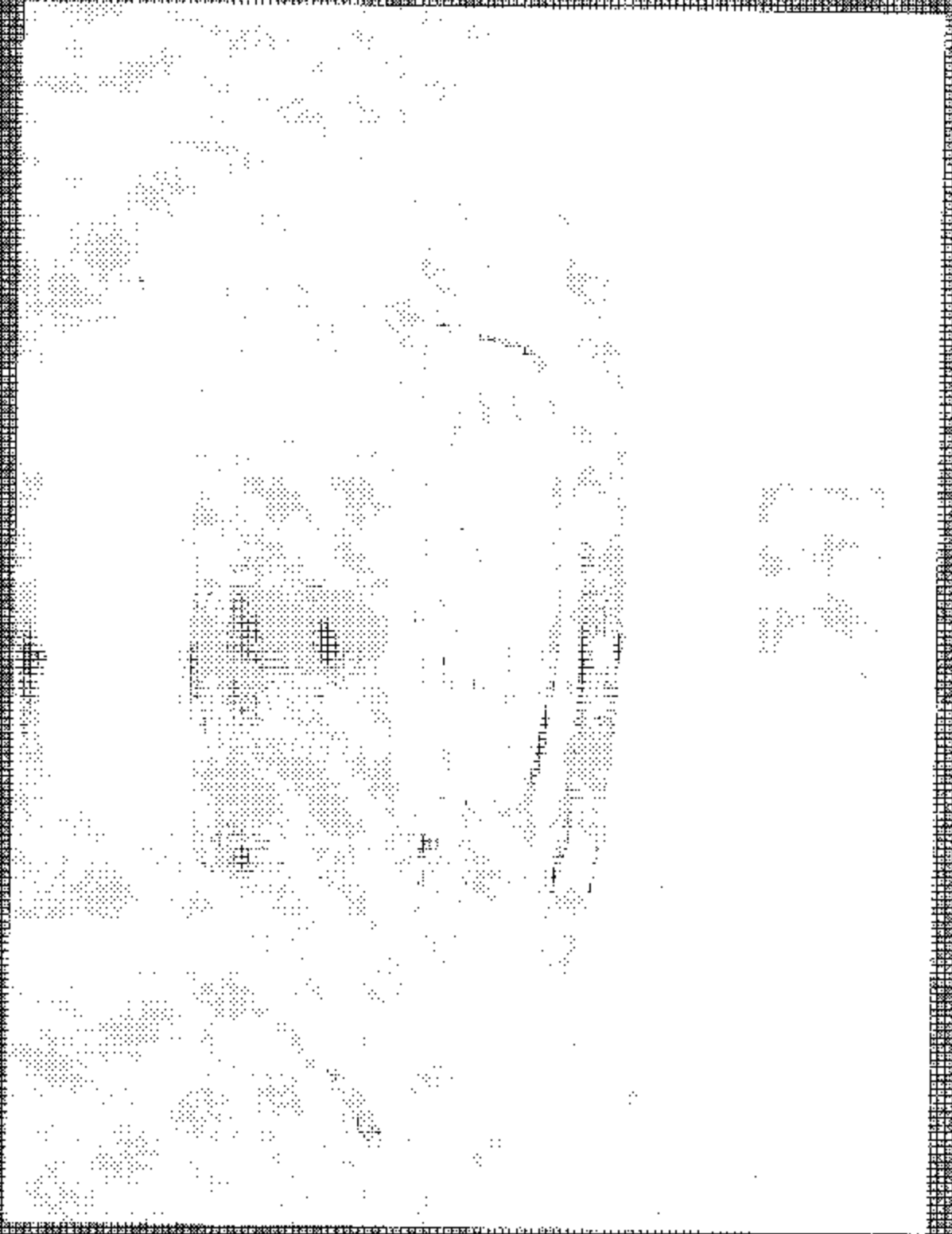
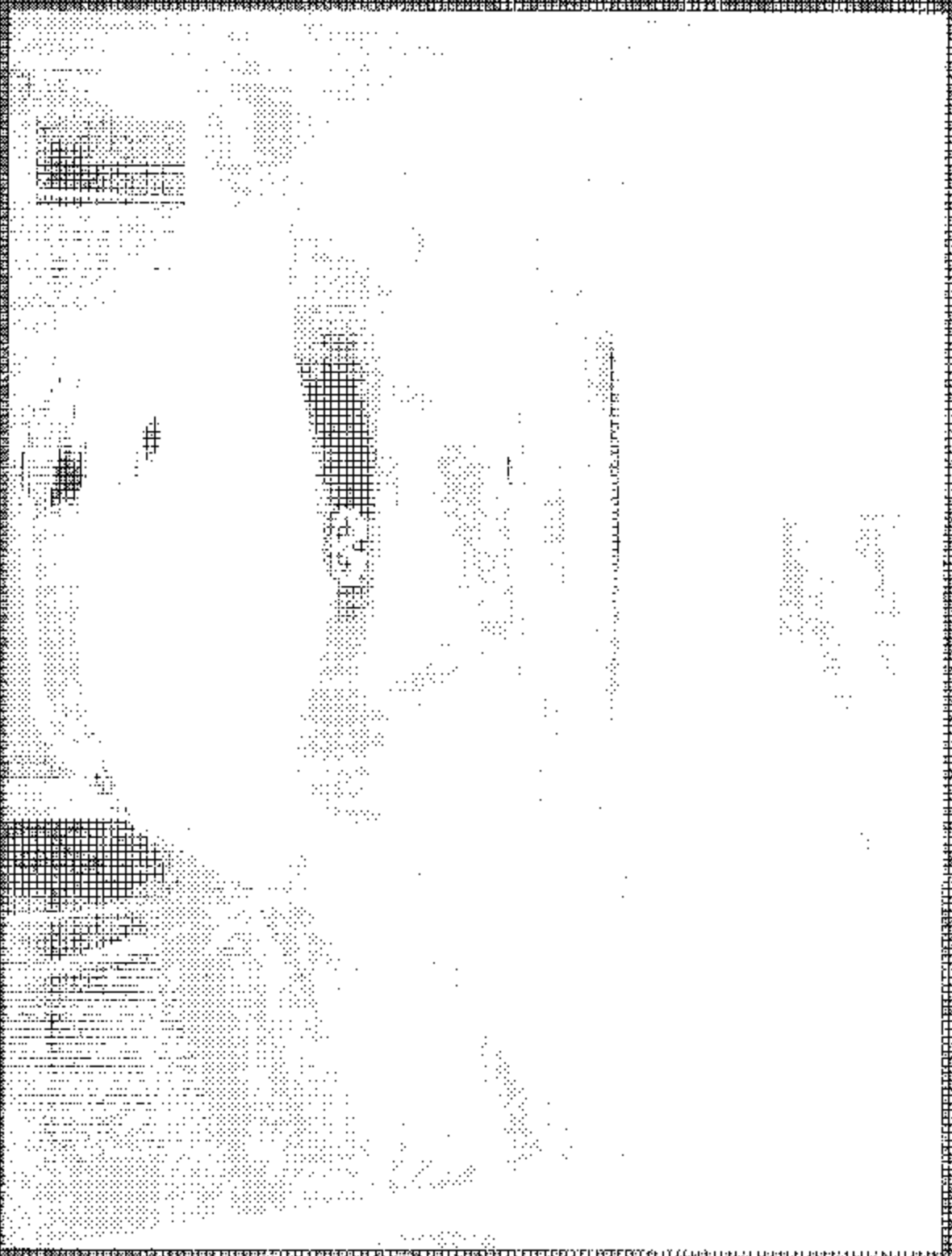


1.3. Rear view



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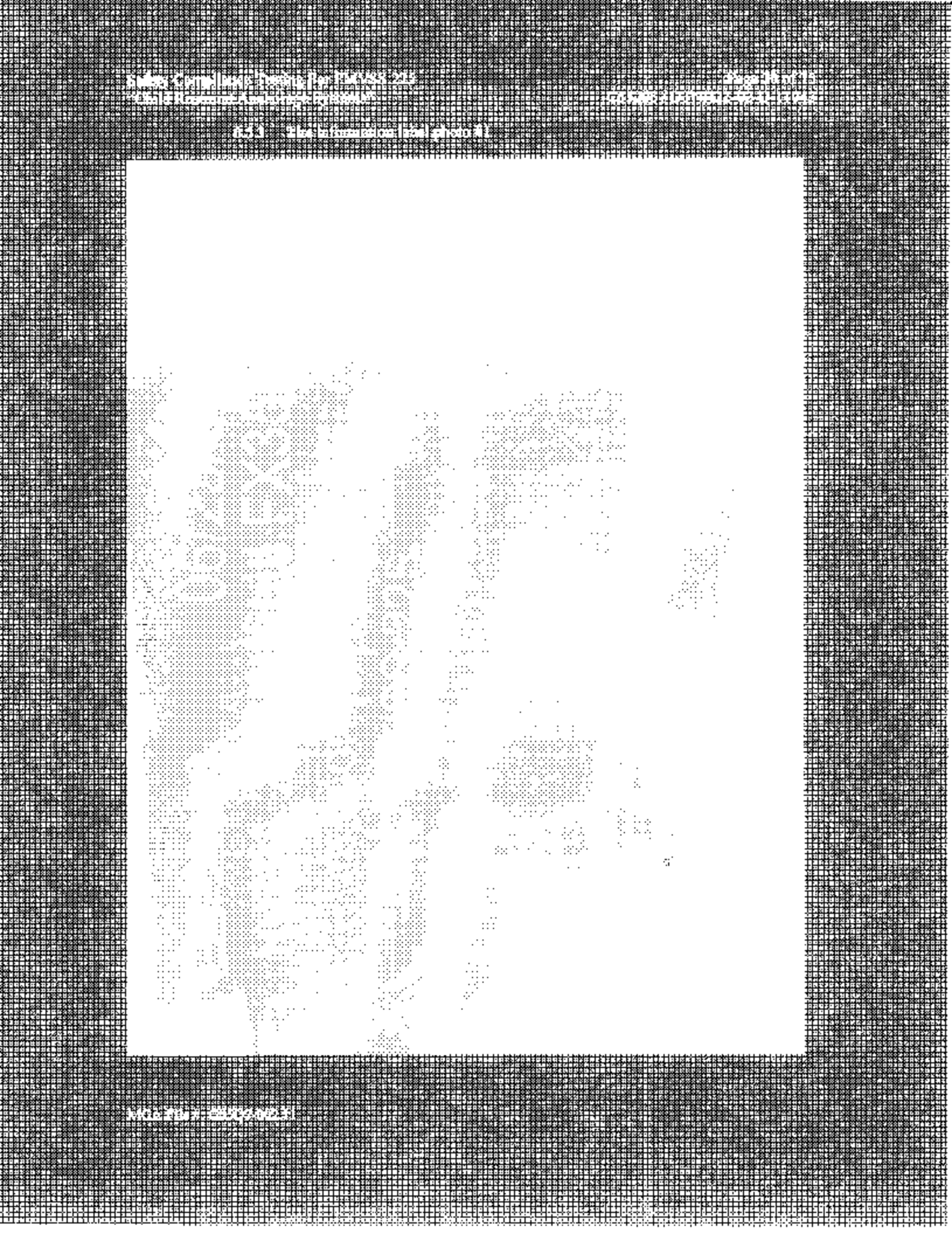
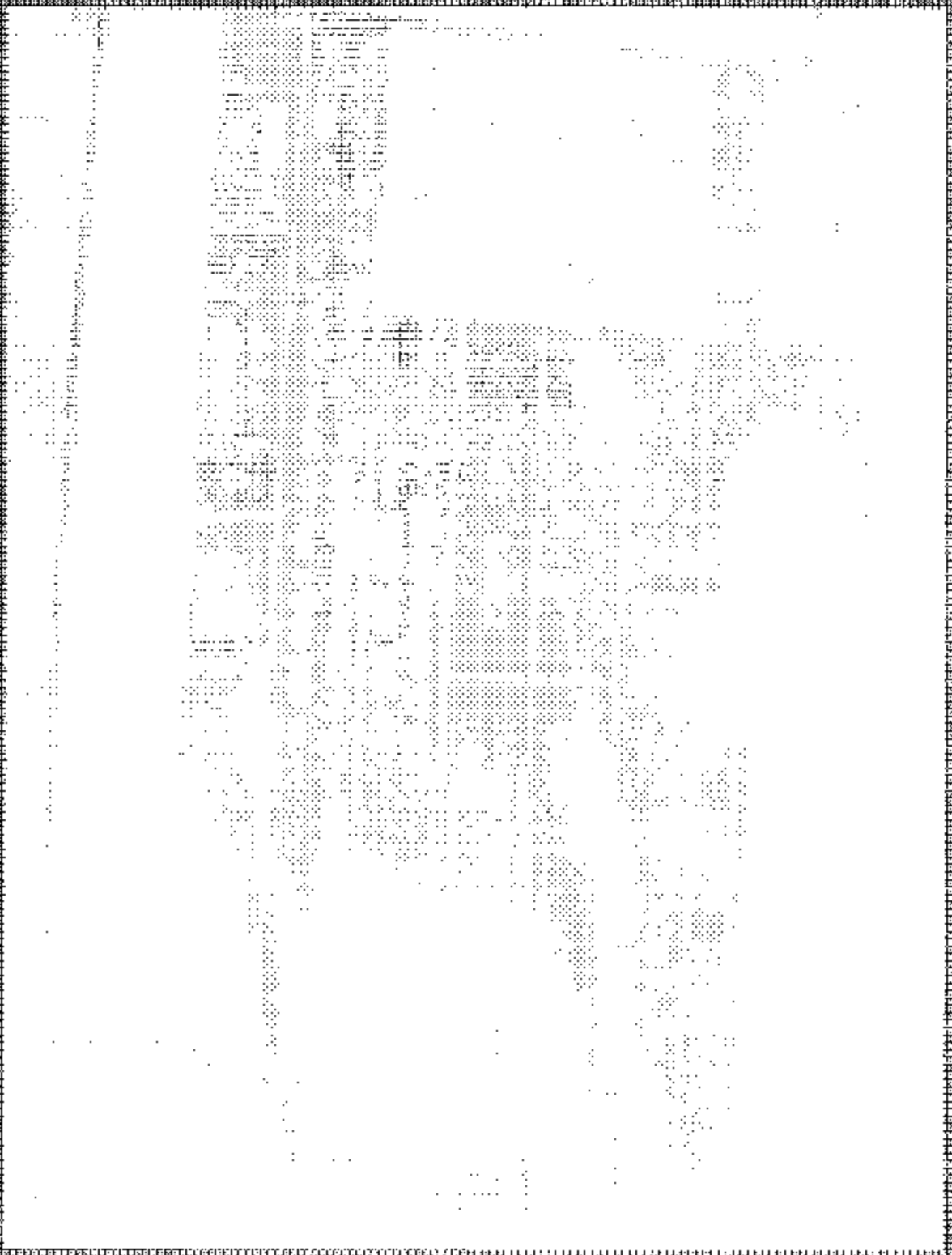
6.3 [illegible]

6.3.1 [illegible]

4.3.3 Cardboard [illegible]



6.5.4 The information level above it.



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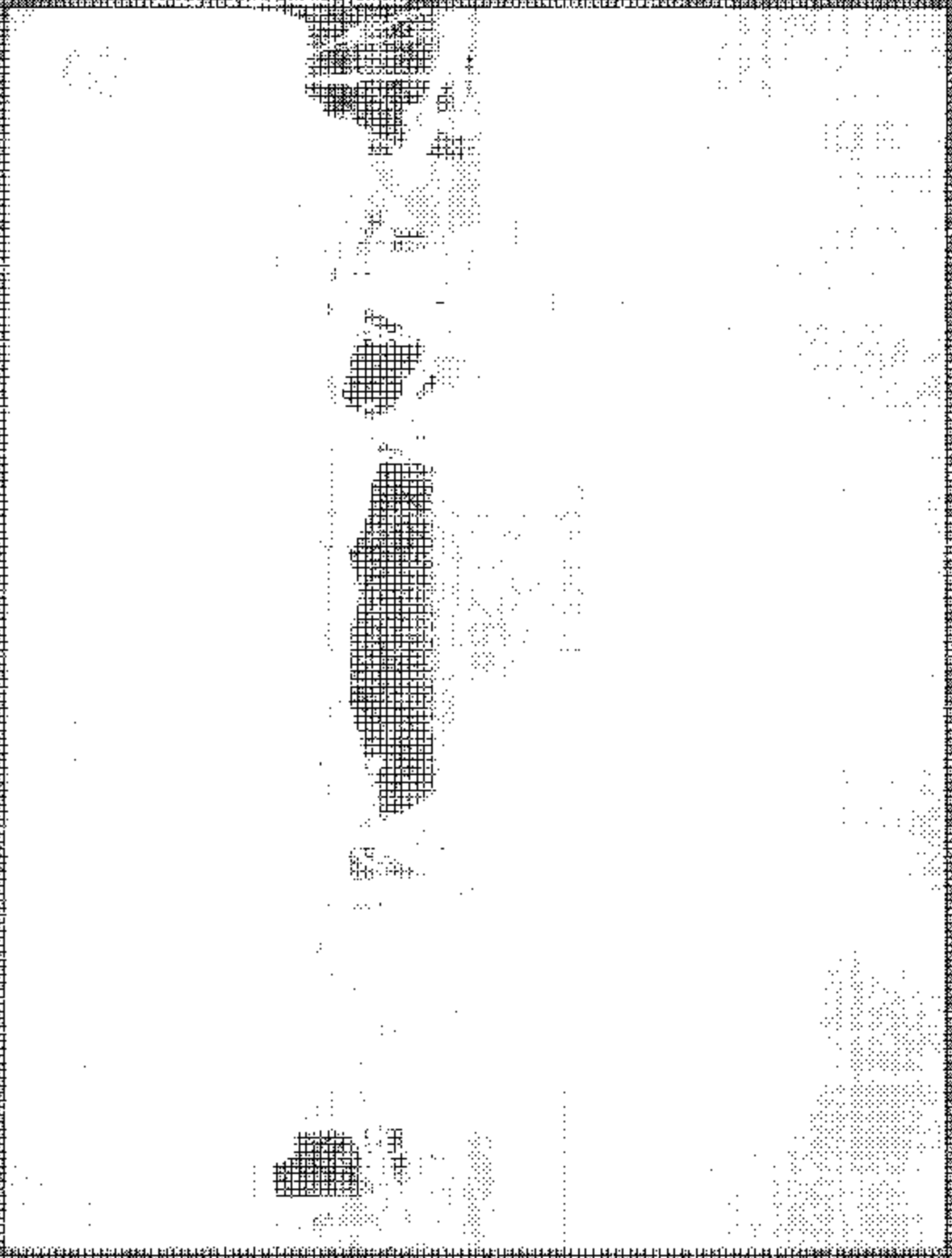
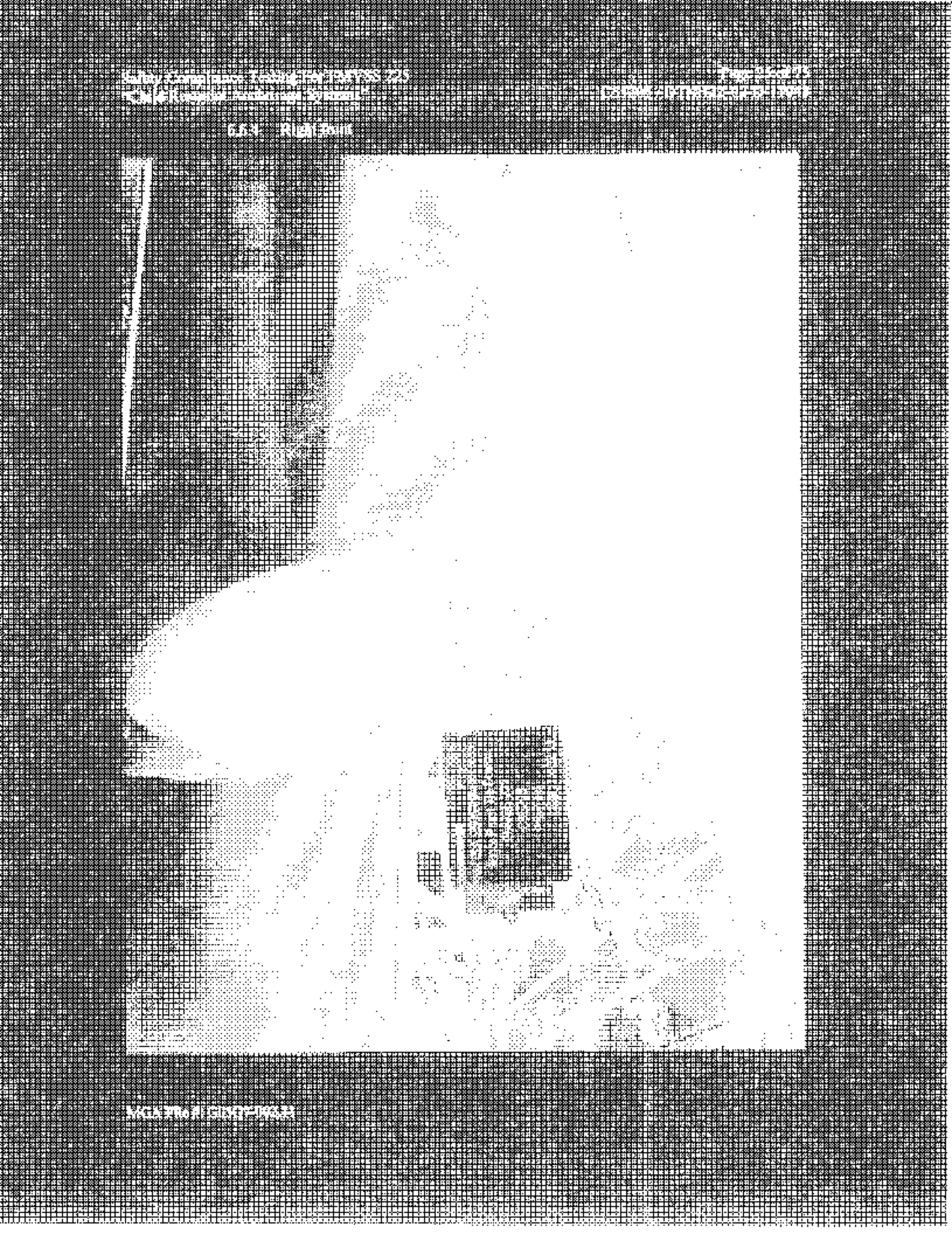
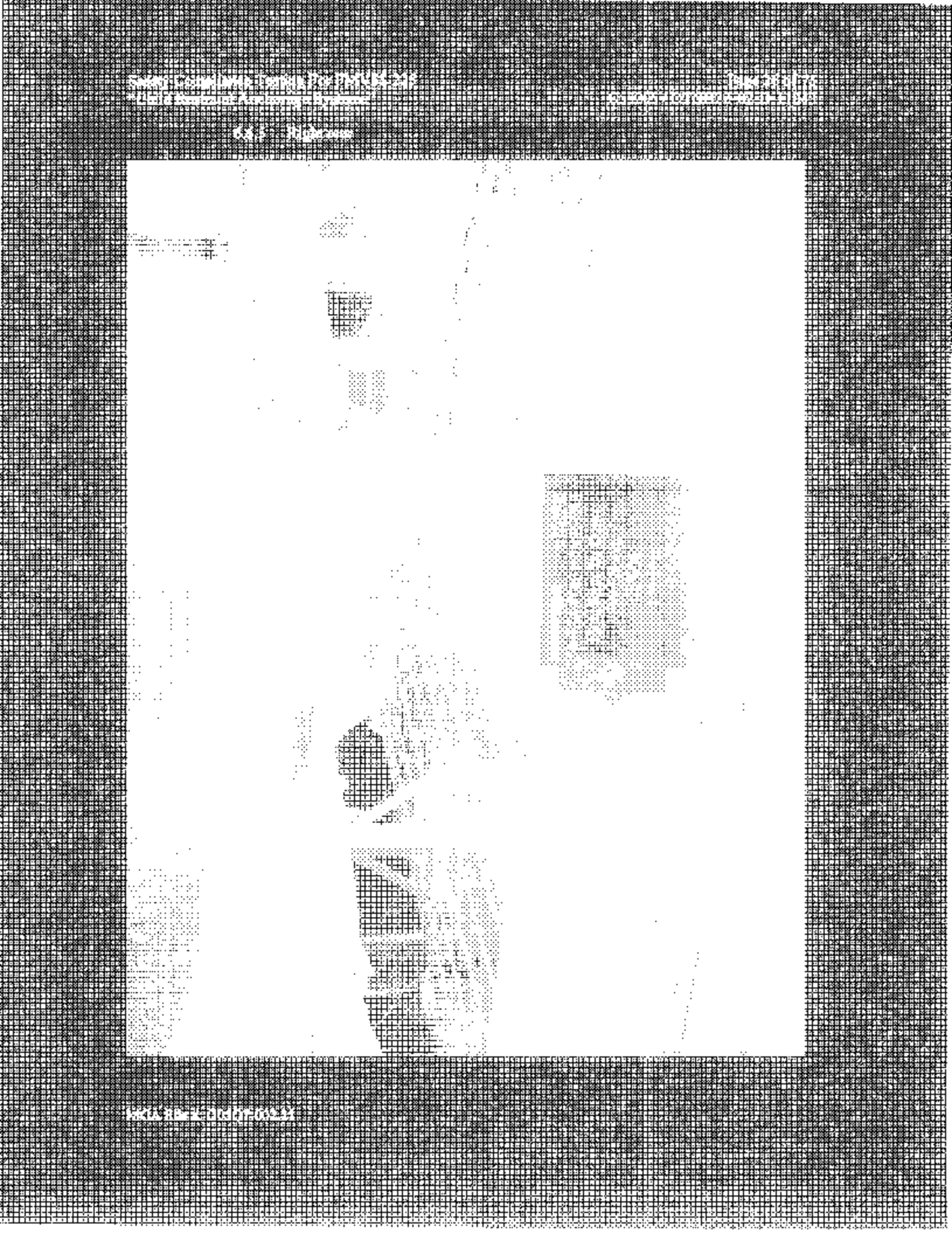
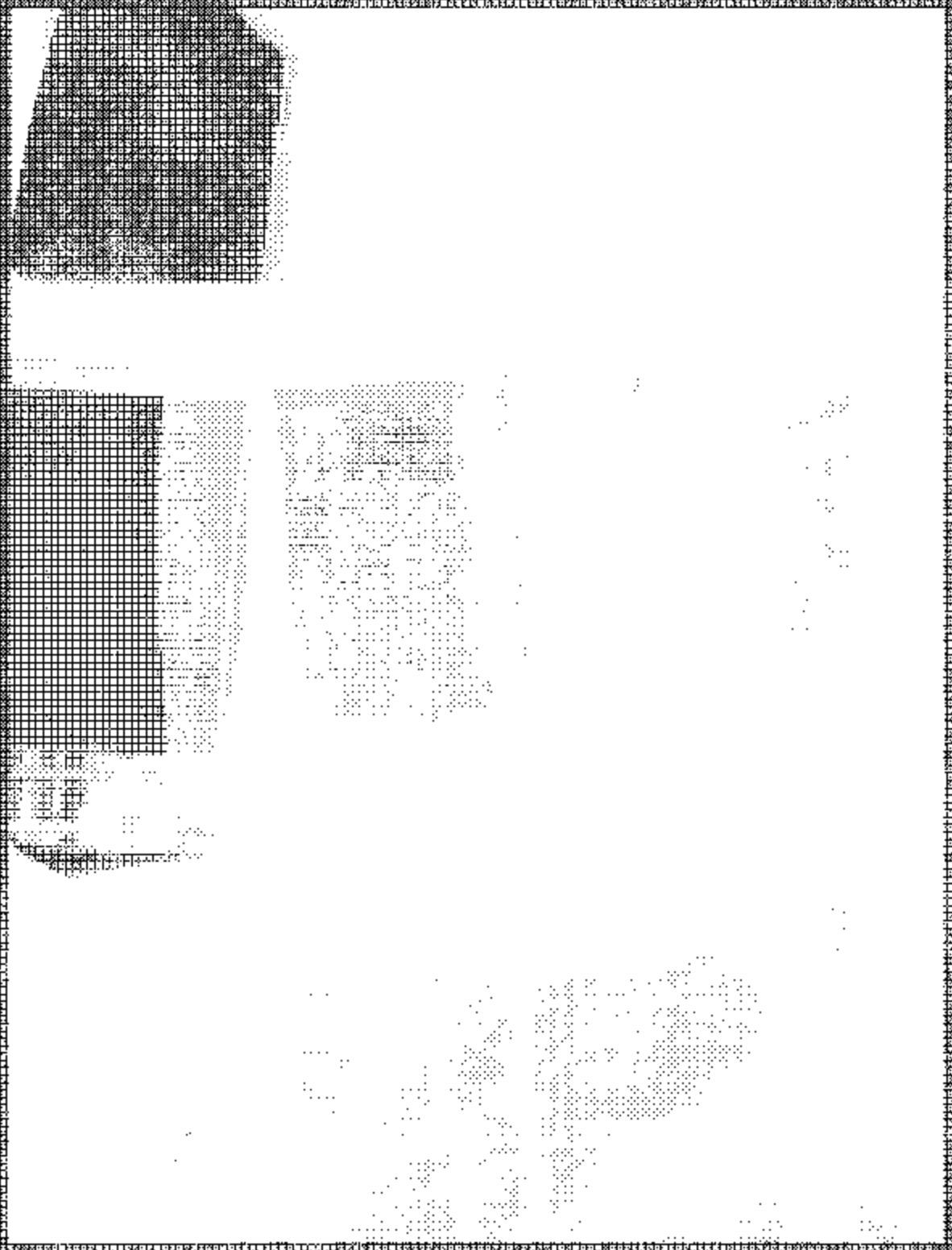


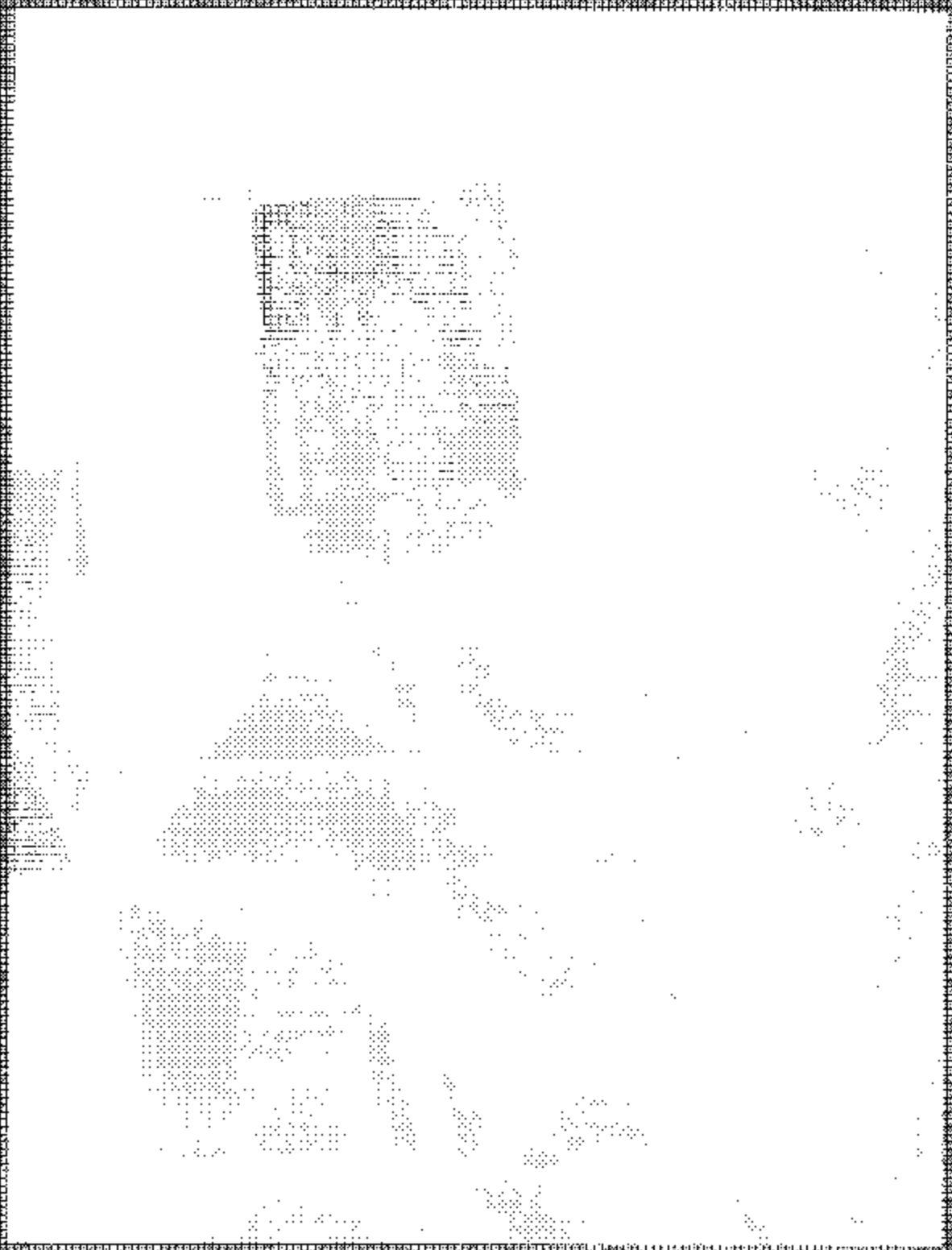


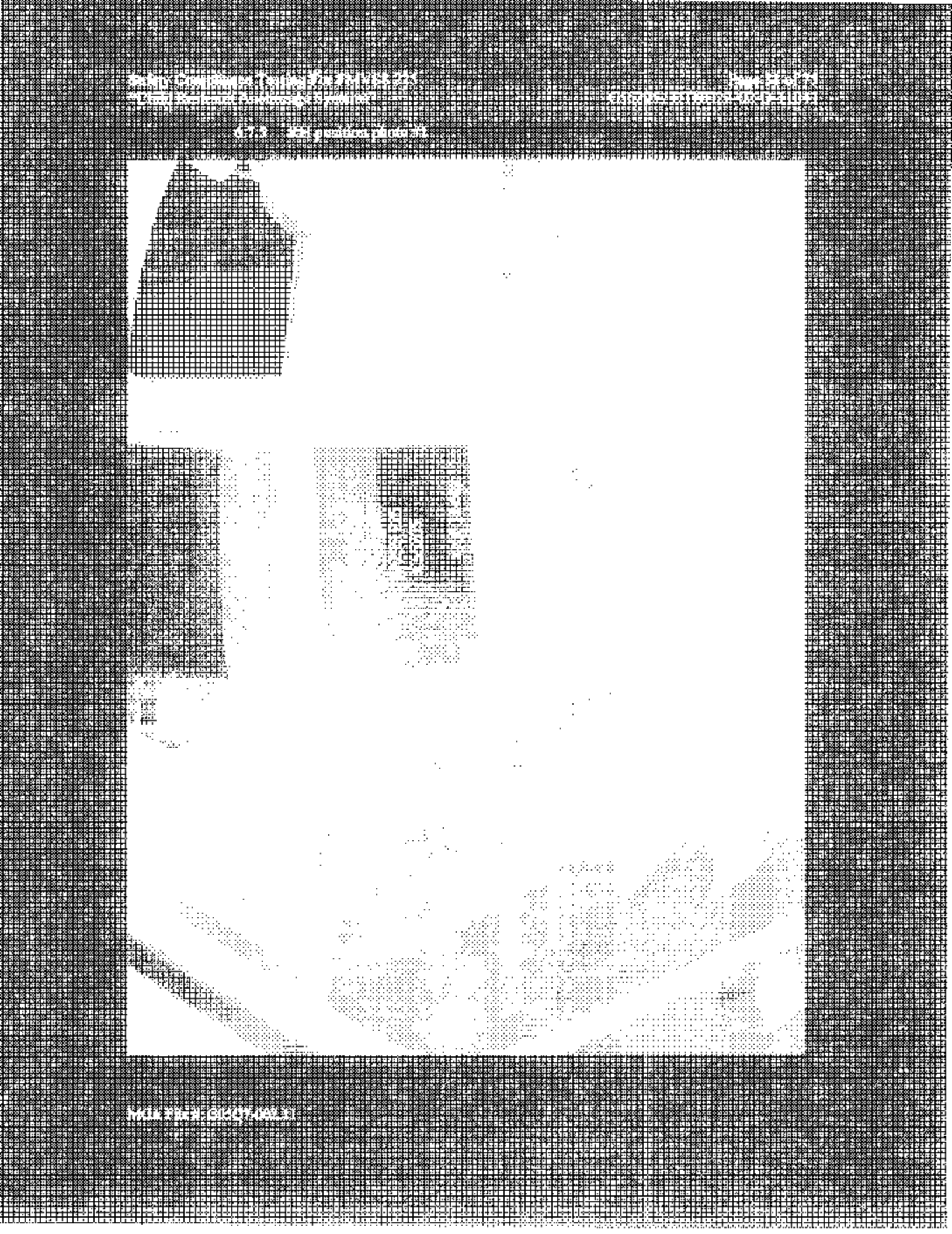


4/3 Camera position photo #1



6.7.4 Communication sheet #2





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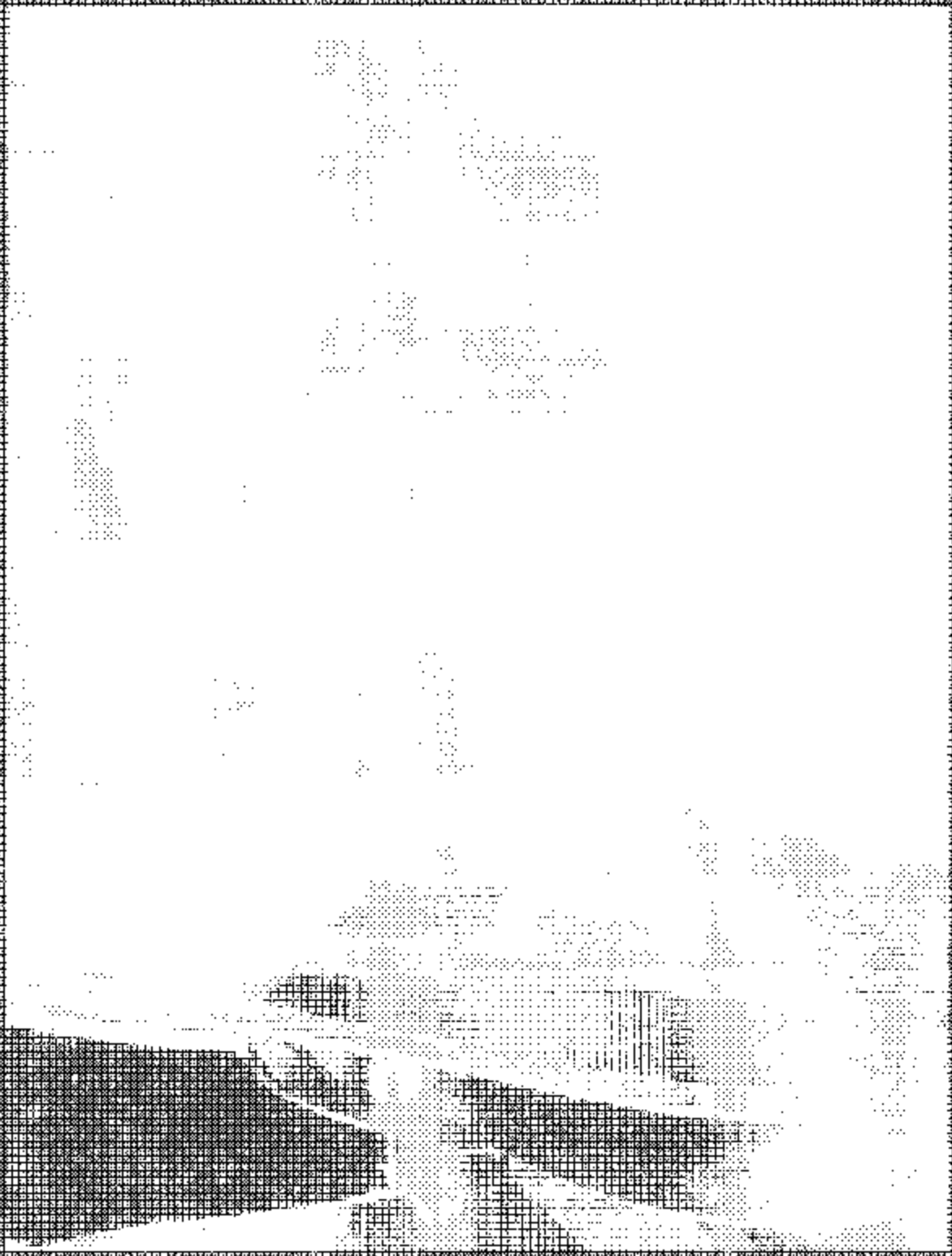

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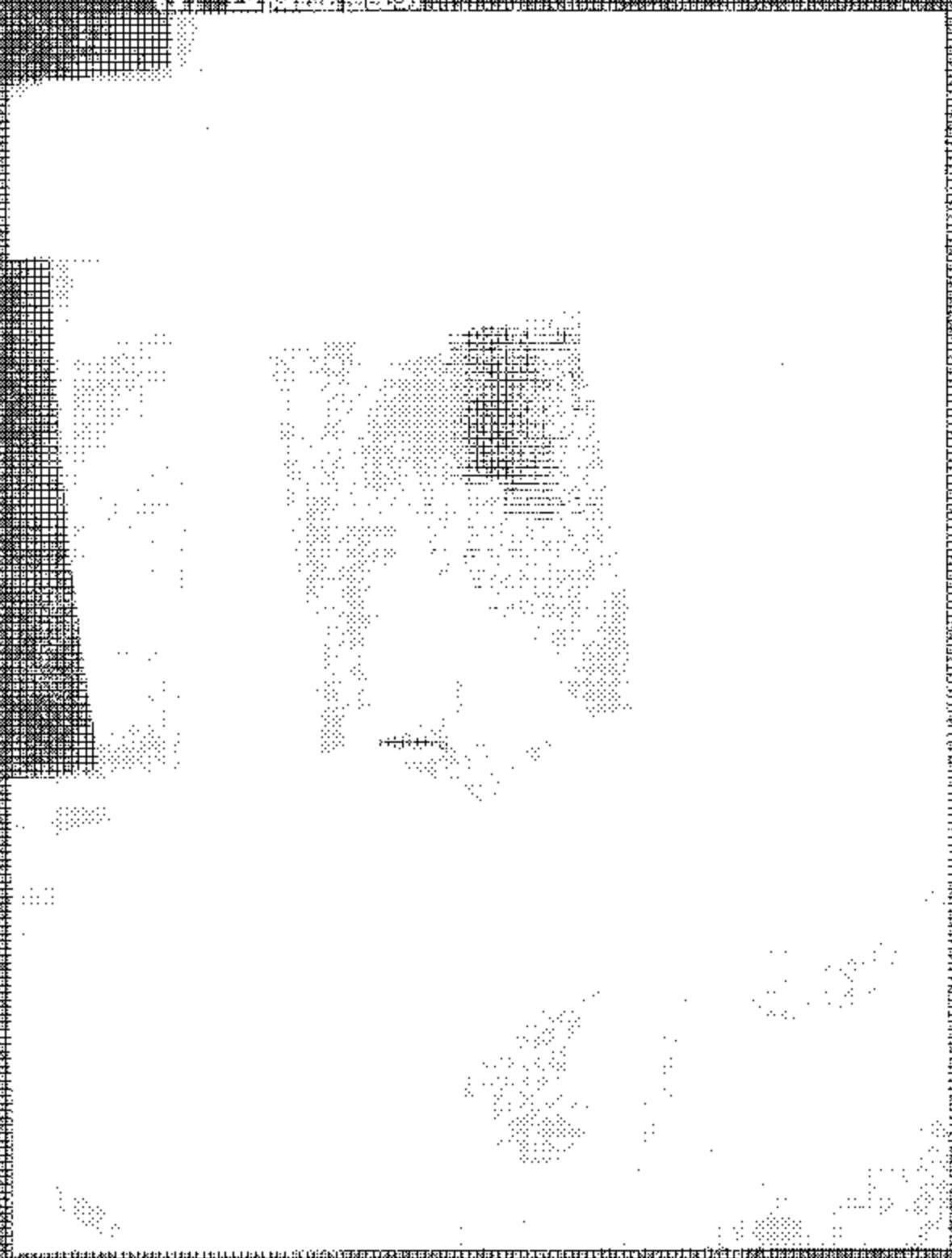
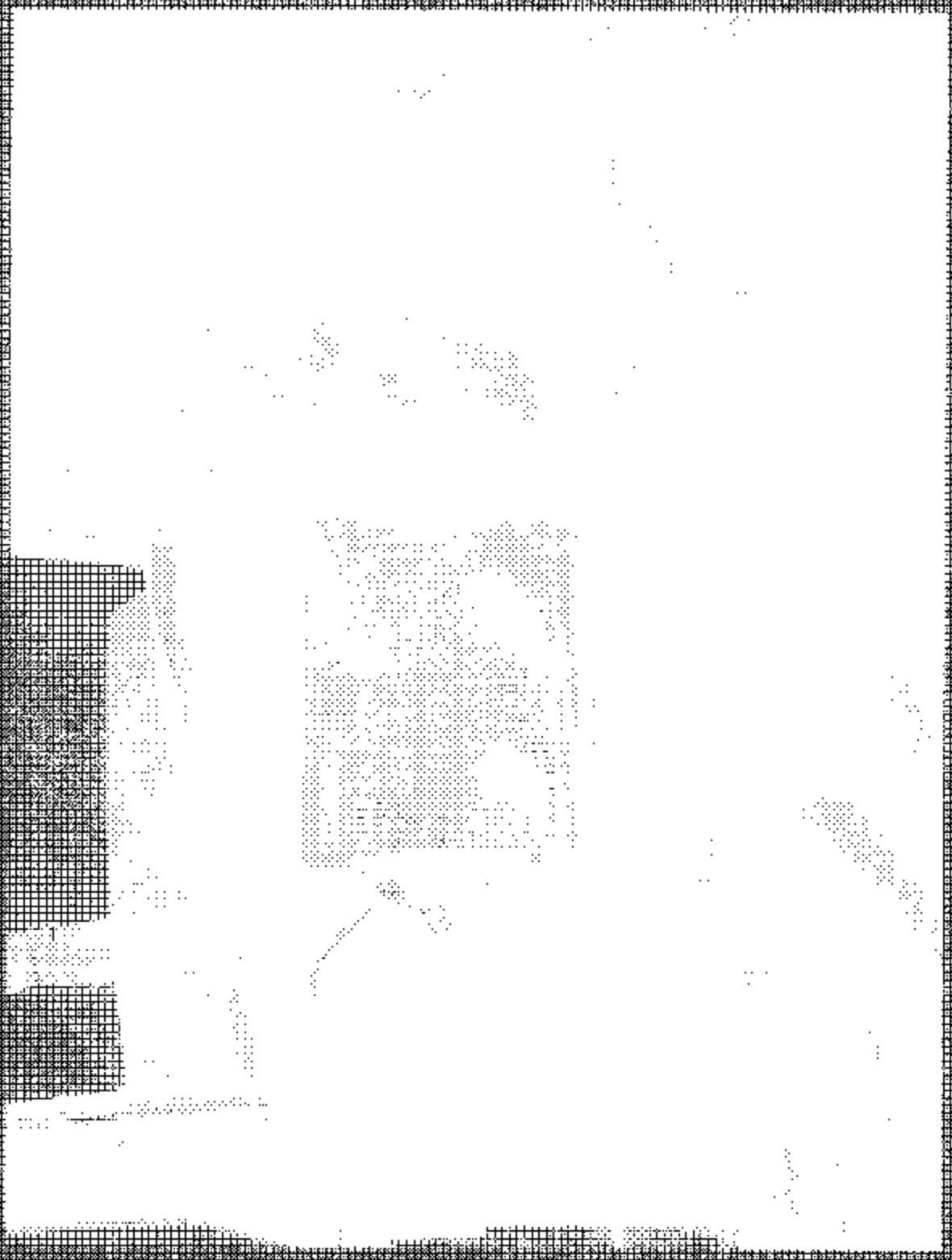
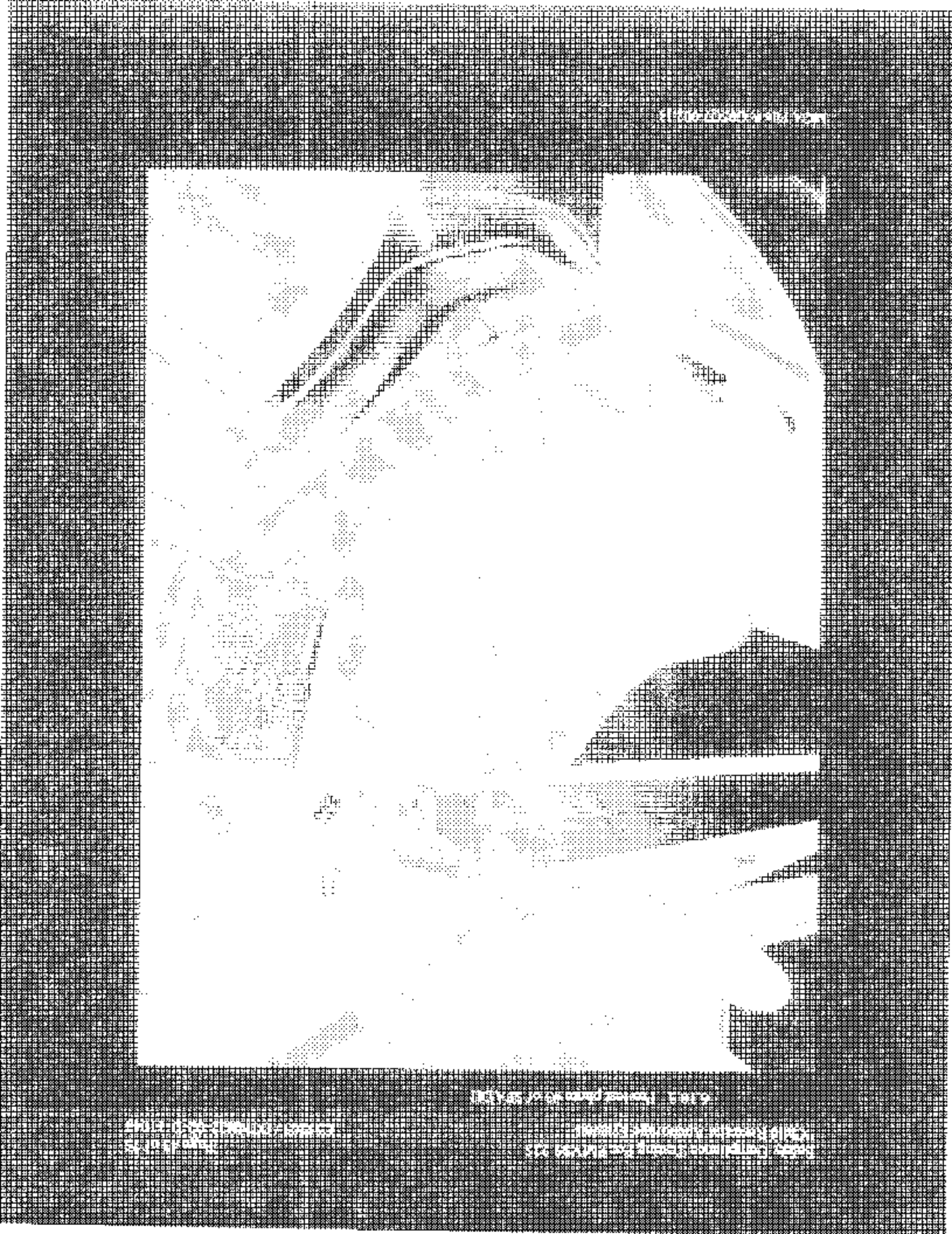
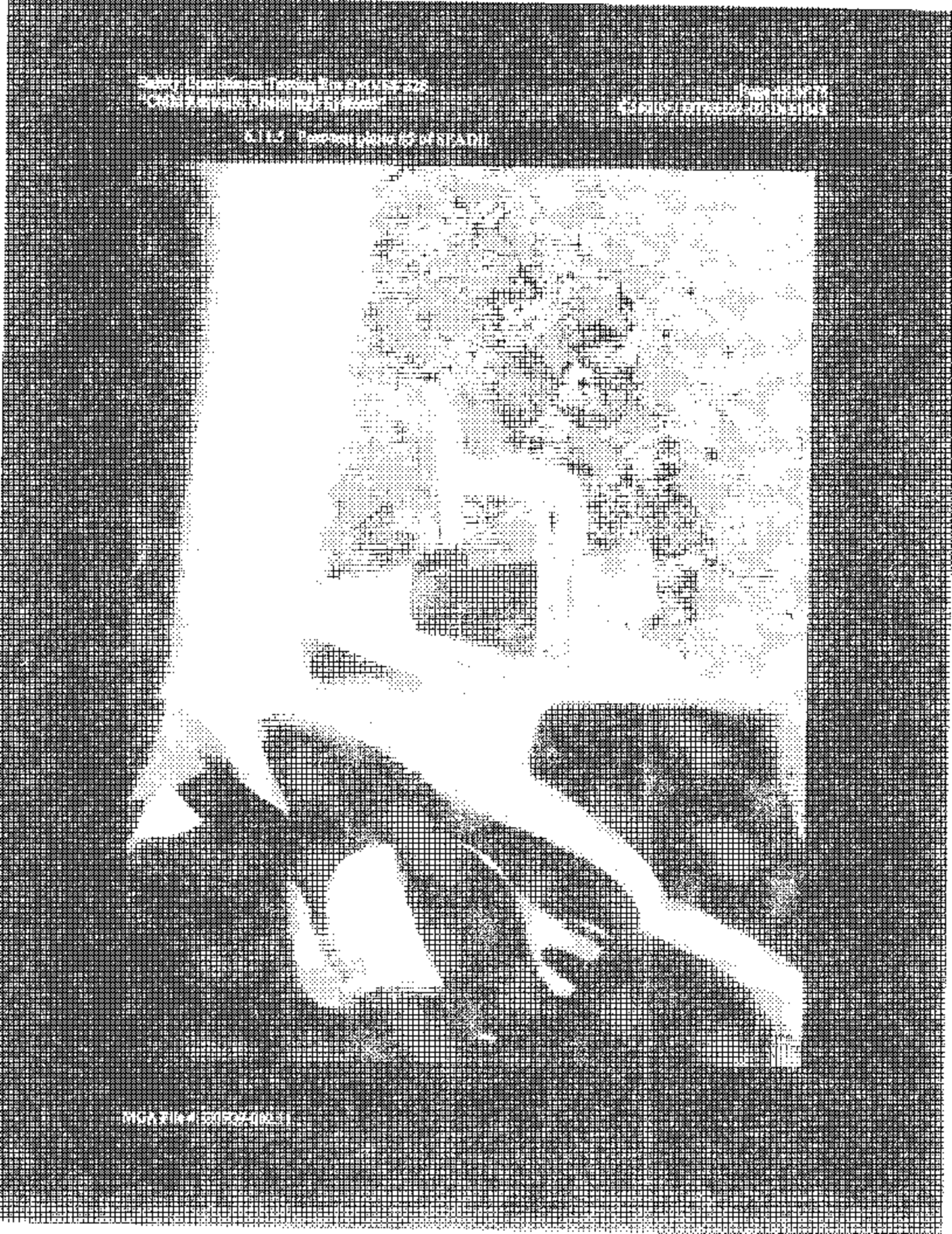


6.4.3 — Differential pressure



6.9.2 X-Fresh-light view of SPADIII





4.5.1.7 Power failure [illegible]

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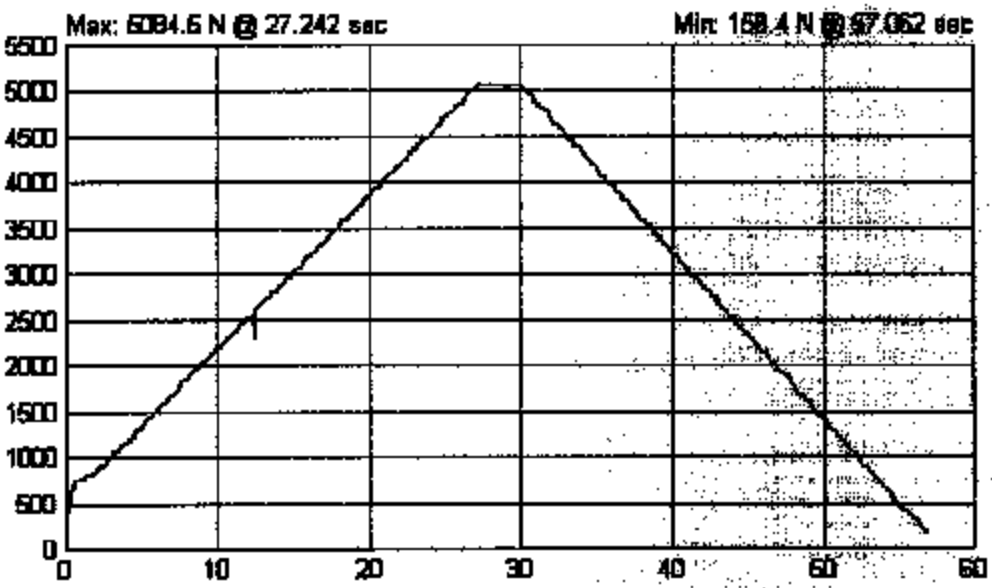
[illegible]

[illegible]

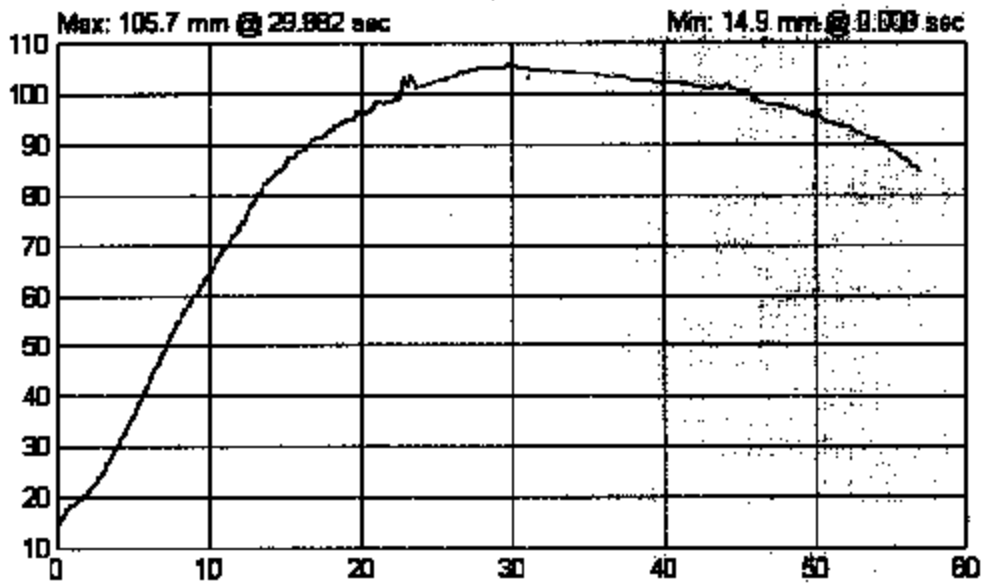
[illegible]

Fig. 1.9 - Portrait photo #7 of RPADII

7.0 PLOTS



Run# SB5273: (S9.4.1 - Lateral Right) 60% Load (N) vs. Time (sec)



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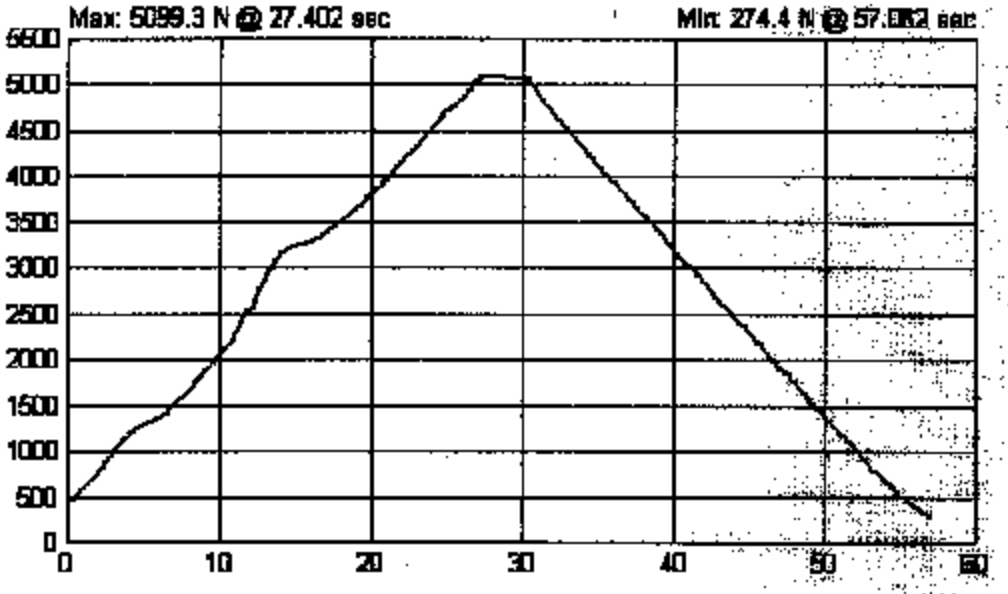

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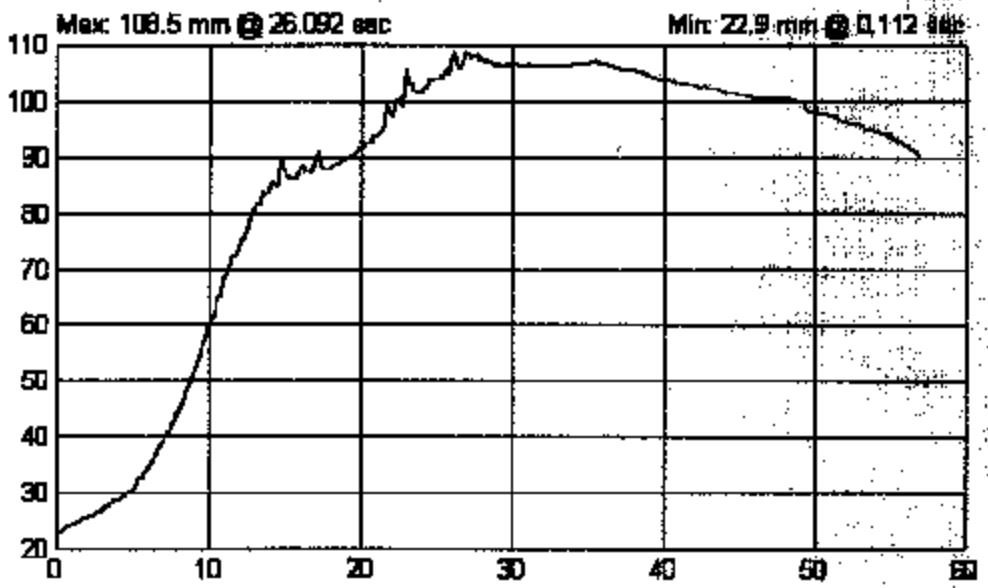

Run# SB5273: (S9.4.1 - Lateral Right) 40% Displacement (mm) vs. Time (sec)

8.0 REPORT of VEHICLE CONDITION

REPORT OF VEHICLE CONDITION AT THE COMPLETION OF TESTING

CONTRACT No.: DTNH22-02-D-11043 DATE: July 22, 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 Infiniti FX35

VEH. NHTSA NO.: C55205 VIN: JNRAS08W95X207623

COLOR: Silver

ODOMETER READINGS: ARRIVAL 163 miles Date: 03/17/05

COMPLETION 164 miles Date: 07/22/05

PURCHASE PRICE: N/A DEALER'S NAME: Pfeiffer Infiniti

ENGINE DATA: 6 Cylinders 3.5 Liters ____ Cubic Inches

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

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

X	Air Conditioning		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:

Right rear door was removed before conducting the test.

Test Vehicle Condition:

Salvage only.

RECORDED BY: Melanie Schick, Kenney Godfrey DATE: July 22, 2005

APPROVED BY: Brad Reaume

9.0 NOTICE OF TEST FAILURE

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10. FORMS

LABORATORY NOTICE OF TEST FAILURE TO OVSC

FMVSS NO.: 225 TEST DATE: 6/23/2005

LABORATORY: MGA Research

CONTRACT NO.: DTNH22-02-D-11043 ; DELV. ORDER NO.:

LABORATORY PROJECT ENGINEER'S NAME: Melanie Schick

TEST VEHICLE MAKE/MODEL/BODY STYLE: 2005 Infiniti FX35 SUV

VEHICLE NHTSA NO.: C55205; VIN: JNRAS08W95X207623

VEHICLE MODEL YEAR: 2005 ; BUILD DATE: 11/2004

TEST FAILURE DESCRIPTION: Both 60% and 40% outboard occupants exceeded the CRF displacement requirement.

S225 REQUIREMENT, PARAGRAPH S9.2.2 (a)

NOTIFICATION TO NHTSA (COTR): Amanda Prescott

DATE: 6-23-05 BY: Brad Reaume

REMARKS:

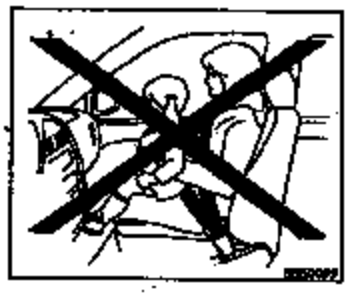
APPENDIX A
OWNERS MANUAL CHILD RESTRAINT SYSTEMS

[redacted]

SEAT BELT MAINTENANCE

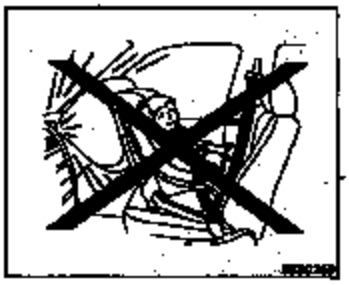
- To clean the seat belt webbings, apply a mild soap solution or any solution recommended for cleaning upholstery or carpets. Then brush the webbing, wipe it with a cloth and allow it to dry in the shade. Do not allow the seat belts to retract until they are completely dry.
- If dirt builds up in the shoulder belt guide of the seat belt anchors, the seat belts may retract slowly. Wipe the shoulder belt guide with a clean, dry cloth.
- Periodically check to see that the seat belt and the metal components such as buckles, tongues, retractors, flexible wires and anchors work properly. If loose parts, deterioration, cuts or other damage on the webbing is found, the entire belt assembly should be replaced.

CHILD RESTRAINTS



PRECAUTIONS ON CHILD RESTRAINTS

[redacted]



[redacted]

[redacted]

In general, child restraints are designed to be installed with the lap portion of a lap/shoulder seat belt. In addition, this vehicle is equipped with a universal child restraint lower anchor system, referred to as the LATCH (Lower Anchors and Tethers for Children) system. Some child restraints include two rigid or webbing-mounted attachments that can be connected to these lower anchors. For details, see "LATCH (Lower Anchors and Tethers for Children) SYSTEM" later in this section.

Child restraints for infants and children of various sizes are offered by several manufacturers. When selecting any child restraint, keep the following points in mind:

- choose only a restraint with a label certifying that it complies with Federal Motor Vehicle Safety Standard 213 or Canadian Motor Vehicle Safety Standard 213.
- check the child restraint in your vehicle to be sure it is compatible with the vehicle's seat and seat belt system.
- If the child restraint is compatible with your vehicle, place your child in the child restraint and check the various adjustments to be sure the child restraint is compatible with your child. Choose a child restraint that is designed for your child's height and weight. Always follow all recommended procedures.

All US states and Canadian provinces require that infants and small children be restrained in approved child restraints at all times while the vehicle is being operated.

[redacted]

[redacted]

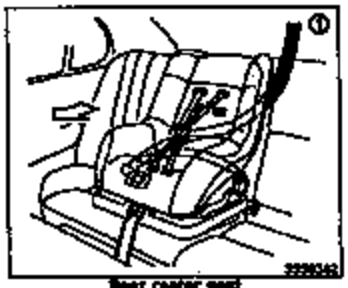
[redacted]

[redacted]

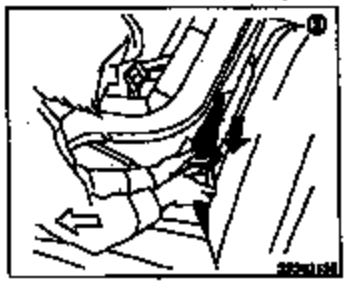
CHILD RESTRAINT INSTALLATION ON REAR SEAT OUTBOARD OR CENTER POSITIONS

[redacted]

Rear outboard seat



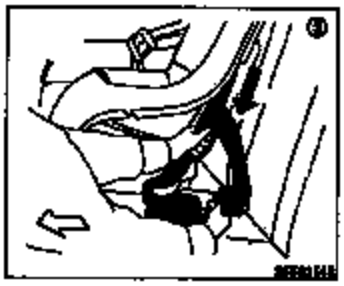
Rear center seat



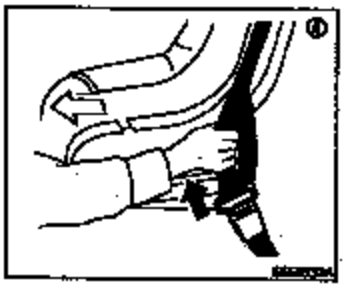
Front facing

When you install a child restraint in a rear outboard or center seat, follow these steps:

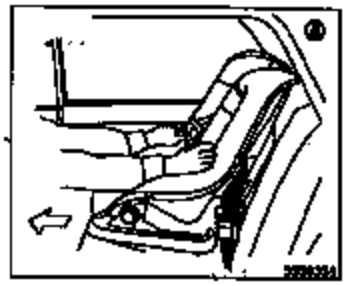
1. Position the child restraint on the seat. Always follow the child restraint manufacturer's instructions. The back of the child restraint should be secured against the vehicle seatback. If necessary, adjust or remove the head restraint to obtain the correct child restraint fit. See "Head restraint adjustment" earlier in this section. If the head restraint is removed, store it in a secure place. Be sure to install the head restraint when the child restraint is removed. If the seating position does not have an adjustable head restraint and it is interfering with the proper child restraint fit, try another seating position or a different child restraint.
2. Route the seat belt tongue through the child restraint and insert it into the buckle until you hear and feel the latch engage.
   Be sure to follow the child restraint manufacturer's instructions for belt routing.



3. Pull on the shoulder belt until all of the belt is fully extended. At this time, the belt retractor is in the automatic locking mode (child restraint mode). It reverts back to emergency locking mode when the belt is fully retracted.



4. Allow the seat belt to retract. Pull up on the shoulder belt to remove any slack in the belt.

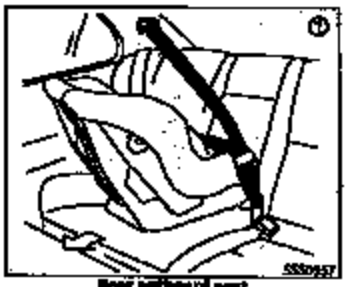


5. Before placing the child in the child restraint, use force to push the child restraint from side to side, and push it forward to make sure that it is securely held in place. It should not move more than 1 inch (25 mm). If it does move more than 1 inch (25 mm), pull again on the shoulder belt to further tighten the child restraint. If unable to properly secure the restraint, move the restraint to another rear seating position and try again, or try a different child restraint. Not all child restraints fit in all types of vehicles.

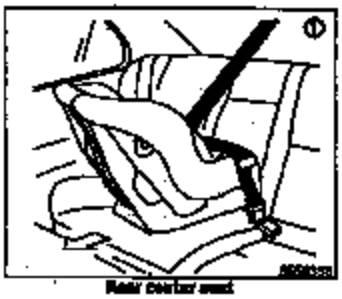
6. Check that the retractor is in the automatic locking mode by trying to pull more belt out of the retractor. If you cannot pull any more belt webbing out of the retractor, the belt is in the automatic locking mode.

7. Check to make sure that the child restraint is properly secured prior to each use. If the belt is not locked, repeat steps 3 through 6.

After the child restraint is removed and the seat belt is allowed to wind back into the retractor, the automatic locking mode (child restraint mode) is canceled.



Rear outboard seat

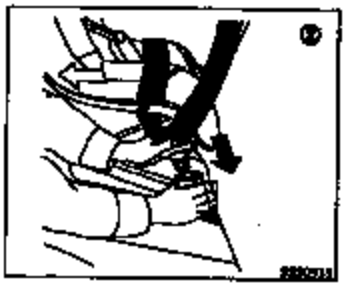


Rear center seat

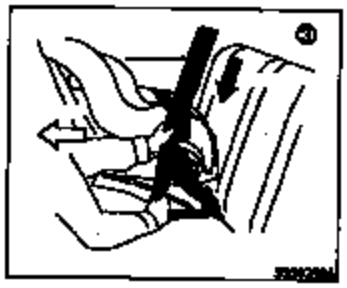
Rear facing

When you install a child restraint in a rear outboard or center seat, follow these steps:

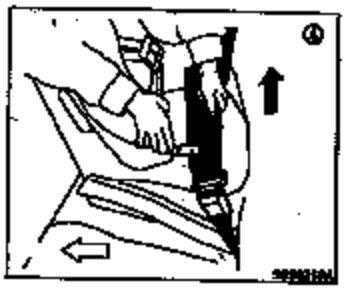
1. Position the child restraint on the seat. Always follow the restraint manufacturer's instructions.



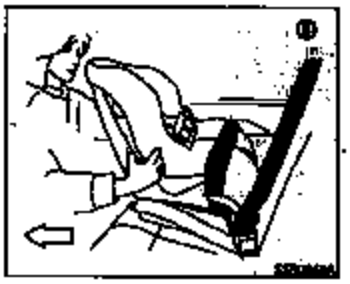
2. Route the seat belt tongue through the child restraint and insert it into the buckle until you hear and feel the latch engage.
Be sure to follow the child restraint manufacturer's instructions for belt routing.



3. Pull on the shoulder belt until all of the belt is fully extended. At this time, the belt retractor is in the automatic locking mode (child restraint mode). It reverts back to emergency locking mode when the belt is fully retracted.



4. Allow the seat belt to retract. Pull up on the shoulder belt to remove any slack in the belt.

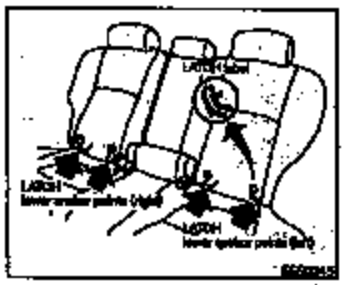


5. Before placing the child in the child restraint, use force to push the child restraint from side to side, and tug it forward to make sure that it is securely held in place. It should not move more than 1 inch (25 mm). If it does move more than 1 inch (25 mm), pull again on the shoulder belt to further tighten the child restraint. If unable to properly secure the restraint, move the restraint to another rear seating position and try again, or try a different child restraint. Not all child restraints fit in all types of vehicles.

6. Check that the retractor is in the automatic locking mode by trying to pull more belt out of the retractor. If you cannot pull any more belt webbing out of the retractor, the belt is in the automatic locking mode.

7. Check to make sure that the child restraint is properly secured prior to each use. If the belt is not locked, repeat steps 3 through 6.

After the child restraint is removed and the seat belt is allowed to wind back into the retractor, the automatic locking mode (child restraint mode) is canceled.



LATCH (LOWER ANCHORS AND TETHERS FOR CHILDREN) SYSTEM

[redacted]

[redacted]

Some child restraints include two rigid or webbing-mounted attachments that can be connected to two anchors located at certain seating positions in your vehicle. This system is known as the LATCH (Lower Anchors and Tethers for CHildren) system. This system may also be referred to as the ISOFIX or ISOFIX compatible system. With this system, you do not have to use a vehicle seat belt to secure the child restraint. Your vehicle is equipped with special anchor points that are used with LATCH system compatible child restraints. Check your child restraint for a label stating that it is compatible with the LATCH system. This information may also be in the child restraint owner's manual. If you have such a child restraint, refer to the illustration for the rear seating positions equipped with LATCH system anchors which can be used to secure the child restraint.

The LATCH system anchors are located at the rear of the seat cushion near the seatback. A label is attached to the seatback to help you locate the LATCH system anchors.

Some child restraints may also require the use of a top tether strap. See "Top tether strap child restraint" later in this section for installation instructions.

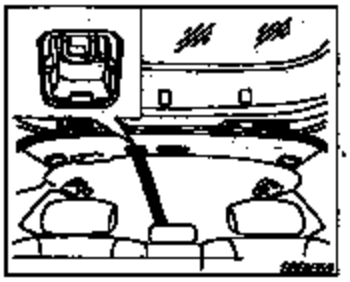
When installing a child restraint, carefully read and follow the instructions in this manual and those supplied with the child restraint.

When you install a LATCH system compatible child restraint to the lower anchor attachments in the rear seat, follow these steps.

[redacted]

[redacted]

1. To install the LATCH system compatible child restraint, adjust the height of the child restraint LATCH system anchor attachments to the anchor points on the rear seat.
2. Insert the anchor attachments into the anchor points. If the child restraint is equipped with a top tether, see "Top tether strap child restraint" later in this section for installation instructions.
3. After attaching the child restraint and before placing the child in it, use force to push the child restraint from side to side and tug it forward to make sure that the child restraint is securely held in place. It should not move more than 1 inch (25 mm)
4. Check to make sure that the child restraint is properly secured prior to each use.



TOP TETHER STRAP CHILD RESTRAINT

[redacted]

[redacted]

If your child restraint has a top tether strap, it must be secured to the anchor point provided behind its position.

First, adjust the seatback so that it is upright. Then secure the child restraint with the rear seat belt or the LATCH system (outboard positions), as applicable. Remove the anchor cover from the anchor point as illustrated. Keep the removed cover in a secure place to prevent loss or damage.

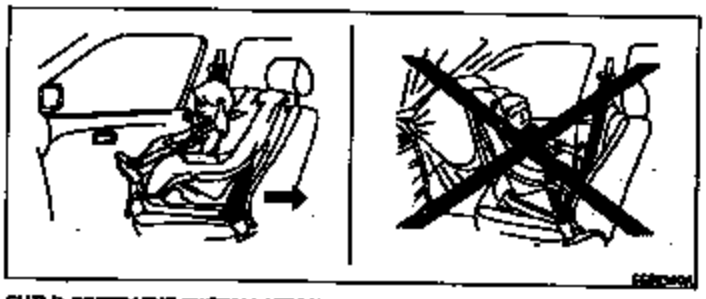
Remove the head restraint from the seatback. Store it in a secure place. Position the top tether strap over the top of the seatback and secure it to the tether anchor bracket that provides the straightest installation. Tighten the tether strap according to the manufacturer's instructions to remove any slack.

For best child restraint fit, use the child restraint installation instructions in this section and the child restraint manufacturer's instructions.

Anchor point locations

Anchor points are located on the ceiling above the luggage room.

If you have any questions when installing a top strap child restraint on the rear seat, consult an INFINITI dealer for details.



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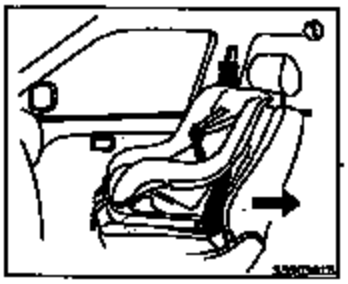
CHILD RESTRAINT INSTALLATION ON FRONT PASSENGER SEAT

[redacted]

[redacted]

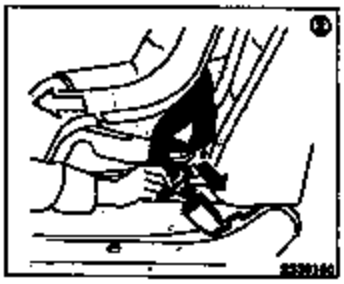


Front facing

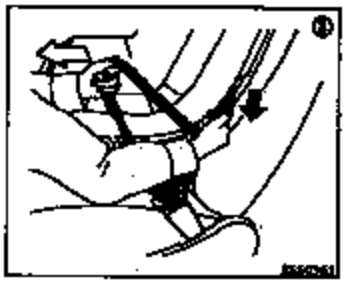
If you must install a child restraint in the front seat, follow these steps:

1. Position the child restraint on the front passenger seat. It should be placed in a front facing direction only. Move the seat to the rearmost position. Adjust the head restraint to its highest position. Always follow the child restraint manufacturer's instructions. Child restraints for infants must be used in the rear facing direction and therefore must not be used in the front seat.

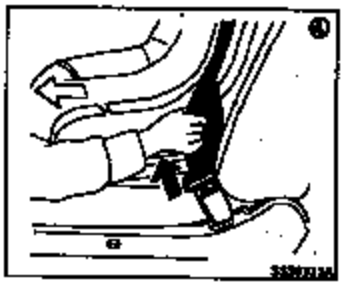
The back of the child restraint should be secured against the vehicle seatback. If necessary, adjust or remove the head restraint to obtain the correct child restraint fit. See "Head restraint adjustment" earlier in this section. If the head restraint is removed, store it in a secure place. Be sure to install the head restraint when the child restraint is removed. If the seating position does not have an adjustable head restraint and it is interfering with the proper child restraint fit, try another seating position or a different child restraint.



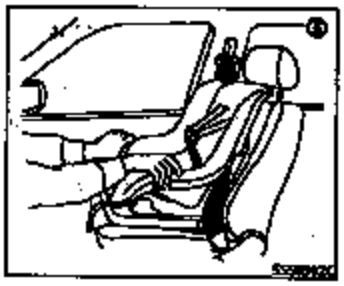
2. Route the seat belt tongue through the child restraint and insert it into the buckle until you hear and feel the latch engage. Be sure to follow the child restraint manufacturer's instructions for belt routing.



3. Pull on the shoulder belt until all of the belt is fully extended. At this time, the belt retractor is in the automatic locking mode (child restraint mode). It reverts back to emergency locking mode when the belt is fully retracted.



4. Allow the seat belt to retract. Pull up on the shoulder belt to remove any slack in the belt.



5. Before placing the child in the child restraint, use force to push the child restraint from side to side, and tug it forward to make sure that it is securely held in place. It should not move more than 1 inch (25 mm). Before placing the child in the child restraint, use force to tilt the child restraint from side to side, and tug it forward to make sure that it is securely held in place. It should not move more than 1 inch (25 mm). If it does move more more than 1 inch (25 mm), pull again on the shoulder belt to further tighten the child restraint. If un-

able to properly secure the restraint, move the restraint to another rear seating position and try again, or try a different child restraint. Not all child restraints fit in all types of vehicles.

6. Check that the retractor is in the automatic locking mode by trying to pull more belt out of the retractor. If you cannot pull any more belt webbing out of the retractor, the belt is in the automatic locking mode.

7. Check to make sure that the child restraint is properly secured prior to each use. If the lap belt is not locked, repeat steps 3 through 6.

After the child restraint is removed and the seat belt is allowed to wind back into the retractor, the automatic locking mode (child restraint mode) is canceled.

PRECAUTIONS ON BOOSTER SEATS

[redacted]

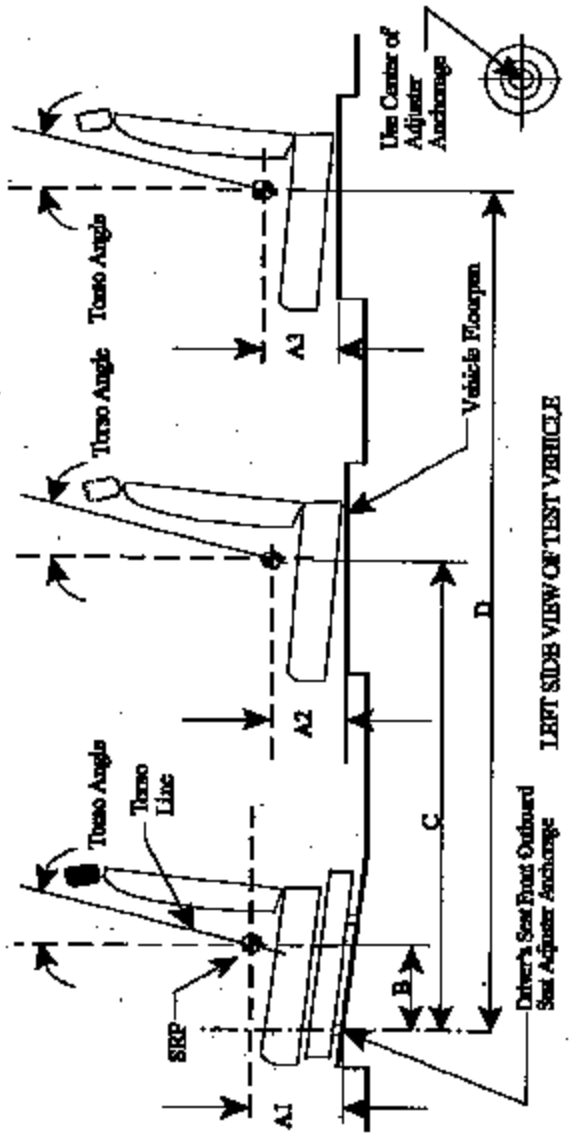
[redacted]

[redacted]

APPENDIX B
MANUFACTURER'S DATA (OVSC FORM 14)

SEAT REFERENCE POINT (SRP) AND TORSO ANGLE DATA
FOR FMVSS 225
(All dimensions in mm[1])

Model Year: 05MY ; Make: INFINITI ; Model: S50 ; Body Style: WAGON
Seat Style: Front row: SEPARATE ; Second row: SPLIT ; Third row: -



LEFT SIDE VIEW OF TEST VEHICLE

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Table 1. Seating Positions[1] and Torso Angles

		Left (Driver Side)	Center (if any)	Right
A1		(Driver) 282.1		(Front Passenger) 292.1
A2		314.7	379.7	314.7
A3				
B		388.9		388.9
C		1189.4	1159.4	1189.4
D				
Torso Angle (degrees)	Front Row	21°		21°
	Second Row	25°	25°	25°
	Third Row			

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

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

Model Year: 05MY ; Make: INFINITI ; Model: S50 ; Body Style: WAGON
Seat Style: Front row: SEPARATE ; Second row: SPLIT ; Third row: -

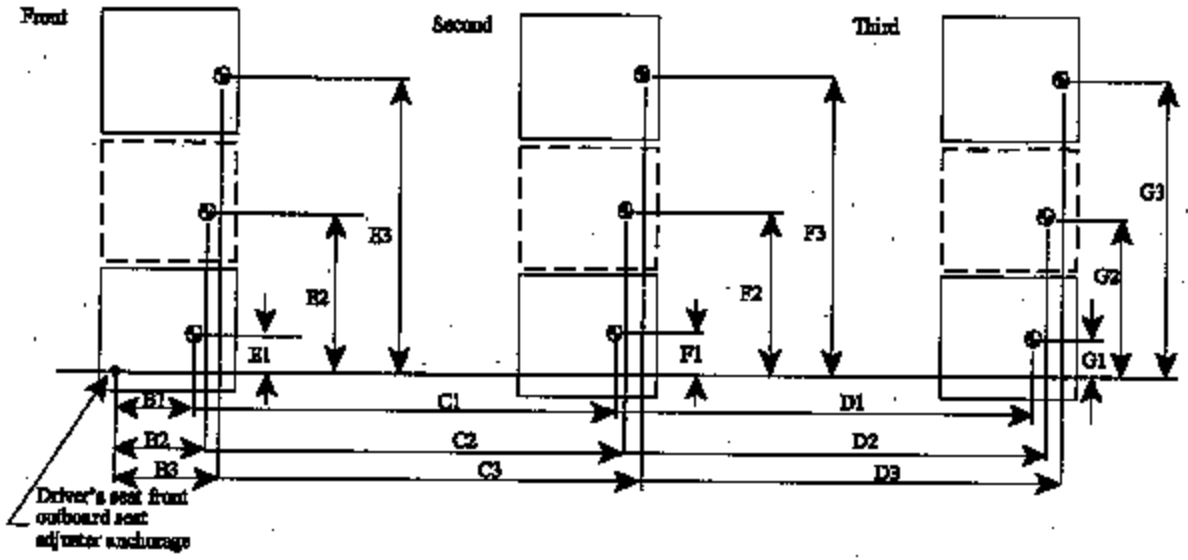

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Table 2. Seating Reference Point and Tether Anchorage Locations

Seating Reference Point (SRP)		Distance from Driver's front outboard seat adjuster anchorage[1]
Front Row	B1	388.9
	E1	210
	B2	[redacted]
	E2	
	B3	388.9
	E3	935
Second Row	C1	1189.4
	F1	245
	C2	1159.4
	F2	590
	C3	1189.4
	F3	935
Third Row	D1	[redacted]
	G1	
	D2	
	G2	
	D3	
	G3	

Note: 1. Use the center of anchorage.

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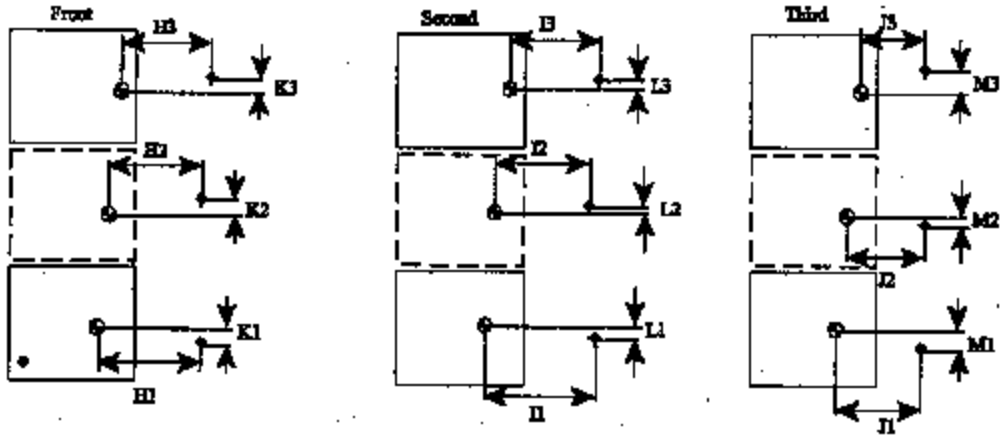
TETHER ANCHORAGE LOCATIONS
FOR FMVSS 225
(All dimensions in mm)

Model Year: '05MY ; Make: INFINITI ; Model: S50 ; Body Style: WAGON

Seat Style: Front row: SEPARATE ; Second row: SPLIT ; Third row: -



⊕: SRP
✦: Tether anchorage

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

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Table 3. Seating Reference Point and Tether Anchorage Locations

Seating Reference Point (SRP)		Distance from SRP
Front Row	H1	[redacted]
	K1	
	H2	
	K2	
	H3	
	K3	
Second Row	I1	645.6
	L1	70.6
	I2	676.1
	L2	125.4
	I3	676.1
	L3	70.6
Third Row	J1	[redacted]
	M1	
	J2	
	M2	
	J3	
	M3	

Note: 1. Use the center of anchorage.

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Table 4. Vertical Dimension For The Tether Anchorage

Seating Row	Vertical Distance from Seating Reference Point	
Front Row	N1 (Driver)	N/A
	N2 (Center)	[redacted]
	N3 (Right)	
Second Row	O1 (Left)	778.4
	O2 (Center)	746
	O3 (Right)	778.4
Third Row	P1 (Left)	[redacted]
	P2 (Center)	
	P3 (Right)	

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

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Test Procedures Used for Compliance Tests

Tether Anchorages

Seating Location		FMVSS Section(s) - Req.
Front	Driver	N/A
	Center (if any)	[redacted]
	Right (if any)	
Second	Left	SECTION6
	Center	SECTION6
	Right (if any)	SECTION6
Third	Left	[redacted]
	Center	
	Right	
Fourth	Left	
	Center	
	Right	

Lower Anchorages

Seating Location		FMVSS Section(s) - Req.
Front	Driver	N/A
	Center (if any)	[redacted]
	Right (if any)	
Second	Left	SECTION9
	Center	[redacted]
	Right	SECTION9
Third	Left	[redacted]
	Center	
	Right	
Fourth	Left	
	Center	
	Right	

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For each anchorage system, provide the following information:

1. **Lower Anchorage Dimensions:** Whether the anchorages are certified with S15.1.2.1 of FMVSS No. 225.

   6mm±0.1

2. **Lower Anchorage Location:** Whether the anchorages are certified with S15.1.2.2 of FMVSS No. 225. If the anchorages are certified with S15.1.2.2, provide the pitch, roll and yaw angles.

   Pitch15±10°

   Roll 0± 5 °

   Yaw 0±10°

3. **Lower Anchorage Marking and Conspicuity:** Whether the anchorages are certified with S15.4 of FMVSS No. 225. If guidance fixtures are used, provide the location of the seating systems that are equipped with the guidance fixture.

   There are four marks for indicating the location of lower anchorage on the rear seat back surface.

4. **Location of Tether Anchorage:** Applicable section of FMVSS No. 225 for the option used for its certification.

   SECTION 6 . 2 . 1

5. **Number of Tether Anchorage:** Applicable section of FMVSS No. 225 for the option used for its certification

   SECTION 4

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