

REPORT NUMBER 225-GTL-03-002

**SAFETY COMPLIANCE TESTING FOR
FMVSS NO. 225
CHILD RESTRAINT ANCHORAGE SYSTEMS
LOWER AND TETHER ANCHORAGES**

**GENERAL MOTORS DE MEXICO, S. DE. R.L. DE C.V.
2003 BUICK RENDEZVOUS, MPV
NHTSA NO. C30106**

**GENERAL TESTING LABORATORIES, INC.
1623 LEEDSTOWN ROAD
COLONIAL BEACH, VIRGINIA 22443**



NOVEMBER 3, 2003

FINAL REPORT

PREPARED FOR

**U. S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
SAFETY ENFORCEMENT
OFFICE OF VEHICLE SAFETY COMPLIANCE
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Appendix A – Owner's Manual Child Restraint Information
 Appendix B – Manufacturer's Data

SECTION 1

PURPOSE OF COMPLIANCE TEST

1.0 PURPOSE OF COMPLIANCE TEST

A 2003 Buick Rendezvous MPV was subjected to Federal Motor Vehicle Safety Standard (FMVSS) No. 225 testing to determine if the vehicle was in compliance with the requirements of the standard. The purpose of this standard is to establish requirements for child restraint anchorage systems to ensure their proper location and strength for the effective securing of child restraints, to reduce the likelihood of the anchorage systems' failure and to increase the likelihood that child restraints are properly secured and thus more fully achieve their potential effectiveness in motor vehicles.

1.1 The test vehicle was a 2003 Buick Rendezvous MPV. Nomenclature applicable to the test vehicle are:

A. Vehicle Identification Number: 3G5DA03E03S560384

B. NHTSA No.: C30106

C. Manufacturer: GENERAL MOTORS DE MEXICO, S. DE R.L. DE C.V.

D. Manufacture Date: 12/02

1.2 TEST DATE

The test vehicle was subjected to FMVSS No. 225 testing on August 5, 2003.

SECTION 2

COMPLIANCE TEST RESULTS SUMMARY

2.0 TEST RESULTS

All tests were conducted in accordance with NHTSA, Office of Vehicle Safety Compliance (OVSC) Laboratory Procedures, TP-225T dated 3 May 2001 and TP-225L dated 11, June, 2001.

Based on the test performed, the 2003 Buick Rendezvous MPV appears to meet the requirements of FMVSS 225 testing. Strength and displacement summary data are provided below.

Table 1. Summary Data for Strength and Displacement

GTL Test #	Fixture Type	Seating Position	Max. Load (N)	Displacement (mm)
5105	SFAD II Tether Strap	2 nd Row Right	9950	54.4
5106	SFAD I Tether Strap	2 nd Row Center	9937	69.9
5107	Lower Anchorage	2 nd Row Left	7904	40.8

Table 2. General Test and Vehicle Parameter Data

VEH. MOD YR/MAKE/MODEL BODY	2003 Buick Rendezvous
VEH. NHTSA NO.	C30106
VIN	3G5DA03E03S560384
VEH. BUILD DATE	12/02
TEST DATE	08/05/03
TEST LABORATORY	GTL
OBSERVERS	Grant Farrand, Jimmy Latane

GENERAL INFORMATION:

Date Received: 03/17/03 Odometer Reading: 65

DATA FROM VEHICLE'S CERTIFICATION LABEL:

Vehicle Manufactured by: General Motors De Mexico, S. DE R.L. DE C.V.

Date of Manufacture: 12/02 VIN: 3G5DA03E03S560384

GVWR: 2430 kg; GAWR FRONT: 1230 kg
GAWR REAR: 1210 kg

SECTION 3

COMPLIANCE TEST DATA

3.0 TEST RESULTS

The following data sheets document the results of testing on the 2003 Buick Rendezvous MPV.

DATA SHEET 1 CHILD RESTRAINT TETHER ANCHORAGE CONFIGURATION

VEH. MOD YR/MAKE/MODEL/BODY: 2003 BUICK RENDEZVOUS MPV
 VEH. NHTSA NO: C30106; VIN: 3G5DA03E03S560384
 VEH. BUILD DATE: 12/02; TEST DATE: JUNE 5, 2003
 TEST LABORATORY: GENERAL TESTING LABORATORIES
 OBSERVERS: GRANT FARRAND, JIMMY LATANE

Number of DSP's in Test Vehicle As Stated on Tire Label using Figures for Maximum Vehicle Loading:

Front Seat= 2
 Rear Seat= 3
 Third Seat= N/A
 Total= 5

SEATING POSITION		OBSERVED CONFIGURATION			
		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	Left	N/A	N/A	N/A	N/A
	Center	N/A	N/A	N/A	N/A
	Right	N/A	N/A	N/A	N/A
Second	Left	YES	YES	YES	YES
	Right	YES	YES	YES	YES
	Center	YES	YES	YES	YES
Third	Left	N/A	N/A	N/A	N/A
	Center	N/A	N/A	N/A	N/A
	Right	N/A	N/A	N/A	N/A

REMARKS:

RECORDED BY: *[Signature]*

DATE: 06/05/03

APPROVED BY: *[Signature]*

DATA SHEET 2
CHILD RESTRAINT LOWER ANCHORAGES CONFIGURATION

VEH. MOD YR/MAKE/MODEL/BODY: 2003 BUICK RENDEZVOUS MPV
 VEH. NHTSA NO: C30106; VIN: 3G5DA03E03S560384
 VEH. BUILD DATE: 12/02; TEST DATE: JUNE 5, 2003
 TEST LABORATORY: GENERAL TESTING LABORATORIES
 OBSERVERS: GRANT FARRAND, JIMMY LATANE

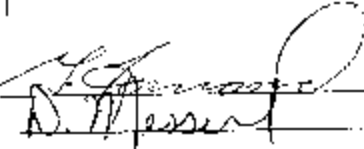
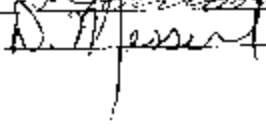
OBSERVED LOWER ANCHORAGE CONFIGURATION	SEAT POSITION			
		FRONT	REAR	THIRD
Above anchorage permanently marked with a circle not less than 13 mm in Dia.; and whose color contrasts with its background; and its center is not less than 50 mm and not more than 75 mm above the bar, and in the vertical longitudinal plane that passes through the center of the bar.	Left	N/A	YES	N/A
	Center	N/A	N/A	N/A
	Right	N/A	YES	N/A
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.	Left	N/A	NO	N/A
	Center	N/A	N/A	N/A
	Right	N/A	NO	N/A
Diameter of the bar (mm)	Left	N/A	6.01	N/A
	Center	N/A	N/A	N/A
	Right	N/A	6.01	N/A
Inspect if the bars are straight, horizontal and transverse	Left	N/A	YES	N/A
	Center	N/A	N/A	N/A
	Right	N/A	YES	N/A

DATA SHEET 2 CONTINUED
CHILD RESTRAINT LOWER ANCHORAGES CONFIGURATION

VEH. MOD YR/MAKE/MODEL/BODY: 2003 BUICK RENDEZVOUS MPV
 VEH. NHTSA NO: C30106; VIN: 3G5DA03E03S560384
 VEH. BUILD DATE: 12/02; TEST DATE: JUNE 5, 2003
 TEST LABORATORY: GENERAL TESTING LABORATORIES
 OBSERVERS: GRANT FARRAND, JIMMY LATANE

OBSERVED LOWER ANCHORAGE CONFIGURATION	SEAT POSITION			
		FRONT	REAR	THIRD
Inspect if the centroidal longitudinal axes are collinear within 5 degrees.	Left	N/A*	YES	N/A
	Center	N/A	N/A	N/A
	Right	N/A	YES	N/A
Inspect 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.	Left	N/A*	YES 30 MM	N/A
	Center	N/A	N/A	N/A
	Right	N/A	YES 30 MM	N/A
Inspect if the bars can be connected to, over their entire inside length by the connectors of child restraint system.	Left	N/A*	YES CRF FITS	N/A
	Center	N/A	N/A	N/A
	Right	N/A	YES CRF FITS	N/A
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.	Left	N/A*	280	N/A
	Center	N/A	N/A	N/A
	Right	N/A	280	N/A
Inspect if the bars are an integral and permanent part of the vehicle.	Left	N/A*	YES	N/A
	Center	N/A	N/A	N/A
	Right	N/A	YES	N/A
Inspect if the bars are rigidly attached to the vehicle. If feasible, hold the bar firmly with two fingers and gently pull.	Left	N/A*	YES	N/A
	Center	N/A	N/A	N/A
	Right	N/A	YES	N/A

* DRIVER'S SEAT

RECORDED BY: 
 APPROVED BY: 

DATE: 06/05/03

DATA SHEET 2 CONTINUED
CHILD RESTRAINT LOWER ANCHORAGES CONFIGURATION

VEH. MOD YR/MAKE/MODEL/BODY: 2003 BUICK RENDEZVOUS MPV
 VEH. NHTSA NO: C30106; VIN: 3G5DA03E03S560384
 VEH. BUILD DATE: 12/02; TEST DATE: JUNE 5, 2003
 TEST LABORATORY: GENERAL TESTING LABORATORIES
 OBSERVERS: GRANT FARRAND, JIMMY LATANE

OBSERVED LOWER ANCHORAGE CONFIGURATION	SEAT POSITION			
		FRONT	REAR	THIRD
Optional Marking: At least one anchorage bar (when deployed for use, if storable anchorages), one guidance fixture, or one seat marking is visible	Left	N/A*	N/A	N/A
	Center	N/A	N/A	N/A
	Right	N/A	N/A	N/A
Optional Marking: If guidance fixtures are used, the fixture(s) must be installed.	Left	N/A*	N/A	N/A
	Center	N/A	N/A	N/A
	Right	N/A	N/A	N/A

* DRIVER'S SEAT

RECORDED BY: [Signature]

DATE: 06/05/03

APPROVED BY: [Signature]

DATA SHEET 3
LOCATION AND DIMENSIONAL MEASUREMENTS

VEH. MOD YR/MAKE/MODEL/BODY: 2003 BUICK RENDEZVOUS MPV

VEH. NHTSA NO: C30106; VIN: 3G5DA03E03S560384

VEH. BUILD DATE: 12/02; TEST DATE: JUNE 5, 2003

TEST LABORATORY: GENERAL TESTING LABORATORIES

OBSERVERS: GRANT FARRAND, JIMMY LATANE

Number of DSP's in Test Vehicle As Stated on Tire Label using Figures for Maximum Vehicle Loading:

Front Seat= 2
Rear Seat= 3
Third Seat= N/A
Total= 5

SEAT POSITION FOR TETHER		LOCATION OF DSPs		TETHER ANCHORAGE LOCATION	
		TETHER OBSERVED	REQUIRED	MEASURED Is it in the required zone?	
FRONT	Left	NO	NO	N/A	
	Center	N/A	N/A	N/A	
	Right	NO	NO	N/A	
SECOND	Left	YES	YES	YES	
	Center	YES	YES	YES	
	Right	YES	YES	YES	

RECORDED BY: [Signature]

DATE: 06/05/03

APPROVED BY: [Signature]

DATA SHEET 3 CONTINUED LOCATION AND DIMENSIONAL MEASUREMENTS

VEH. MOD YR/MAKE/MODEL/BODY: 2003 BUICK RENDEZVOUS MPV
 VEH. NHTSA NO: C30106; VIN: 3G5DA03E03S560384
 VEH. BUILD DATE: 12/02; TEST DATE: JUNE 5, 2003
 TEST LABORATORY: GENERAL TESTING LABORATORIES
 OBSERVERS: GRANT FARRAND, JIMMY LATANE

Number of DSP's in Test Vehicle As Stated on Tire Label using Figures for Maximum Vehicle Loading: Front Seat= 2 Rear Seat 3 Third Seat= N/A Total= 5

SEAT POSITION FOR LOWER ANCHORAGE		PRESENCE OF ANCHORAGES		COMMENTS				
		REQUIRED	OBSERVED					
FRONT		NONE	NONE	N/A				
REAR		2	2	LEFT & RIGHT				
THIRD		N/A	N/A	N/A				
SEAT POSITIONS FOR LOWER ANCHORAGES		LOCATION OF ANCHORAGE		COMMENTS				
		MEASURED FROM "Z" (mm) Left Right	MEASURED FROM "SRP" (mm) Left Right					
FRONT	Left	N/A	N/A	DRIVER'S SEAT				
	Center	N/A	N/A					
	Right	N/A	N/A					
REAR	Left	68	68	175	175	18°	0°	0°
	Center							
	Right	69	69	175	175	17°	0°	0°

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DATE: 06/05/03

APPROVED BY: [Signature]

DATA SHEET 4
ANCHORAGE STATIC LOADING

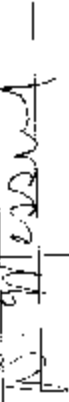
VEH. MOD YR/MAKE/MODEL/BODY: 2003 BUICK RENDEZVOUS MPV _____
 VEH. NHTSA NO: C30106; VIN: 3G5DA03E03S560384 _____
 VEH. BUILD DATE: 12/02; TEST DATE: AUGUST 5, 2003 _____
 TEST LABORATORY: GENERAL TESTING LABORATORIES _____
 OBSERVERS: GRANT FARRAND, JIMMY LATANE _____
 TEST # 5105 & 5106 _____

TETHER ANCHORAGE- WITH SFAD:

SEATING POSITION	Seat, Seat Back & Head Restraint positions			Type of SFAD used	Angle	Initial location	Onset rate	Force Applied	Final location	Horizontal Displacement
	Seat	Seat Back	Head Restraint							
Front	Driver	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Center	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Right	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Second	Left	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Center	FIXED	22.5°	N/A	0°	0.0	384 N/SEC	9937 N	69.9	69.9
	Right (if any)	FIXED	22.5°	UP	0°	0.0	384 N/SEC	9950 N	54.4	54.4
Third	Left	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Center	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Right	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

REMARKS: TESTED TO S6.

RECORDED BY:  DATE: 08/05/03

APPROVED BY: 

DATA SHEET 5
ANCHORAGE STATIC LOADING

VEH. MOD YR/MAKE/MODEL/BODY: 2003 BUICK RENDEZVOUS MPV
 VEH. NHTSA NO: C30106; VIN: 3G5DA03E03S560384
 VEH. BUILD DATE: 12/02; TEST DATE: AUGUST 5, 2003
 TEST LABORATORY: GENERAL TESTING LABORATORIES
 OBSERVERS: GRANT FARRAND, JIMMY LATANE

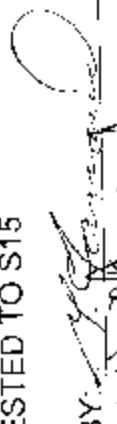
TEST # 5107

LOWER ANCHORAGE- FORWARD FORCE APPLICATION:

SEATING POSITION	Seat, Seat Back & Head Restraint positions			Measured Angles		Initial location	Onset rate	Force Applied	Final location	Displacement
	Seat	Seat Back	Head Restraint	Vertical	Horizontal					
Front	Driver	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Center	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Right	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Rear	Left	FIXED	22.5°	UP	0°	0.0	8000 N/SEC	7904 N	40.8 mm	40.8 mm
	Center	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Right (if any)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Third	Left	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Center	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Right	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

REMARKS: TESTED TO S15

DATE: 08/05/03

RECORDED BY: 

APPROVED BY: 

SECTION 4
INSTRUMENTATION AND EQUIPMENT LIST

TABLE 1 - INSTRUMENTATION & EQUIPMENT LIST

EQUIPMENT	DESCRIPTION	MODEL/ SERIAL NO.	CAL. DATE	NEXT CAL. DATE
COMPUTER	AT&T	486DX266	BEFORE USE	BEFORE USE
LOAD CELL	REVERE	1353	06/03	06/04
LINEAR TRANSDUCER	CELESCO	69	BEFORE USE	BEFORE USE
LINEAR TRANSDUCER	CELESCO	70	BEFORE USE	BEFORE USE
LINEAR TRANSDUCER	CELESCO	71	BEFORE USE	BEFORE USE
LEVEL	STANLEY	42-449	04/03	04/04
FORCE GAUGE	CHATILLON	8761	BEFORE USE	BEFORE USE
CALIPER	N/A	Q9322365	BEFORE USE	BEFORE USE

SECTION 5
PHOTOGRAPHS

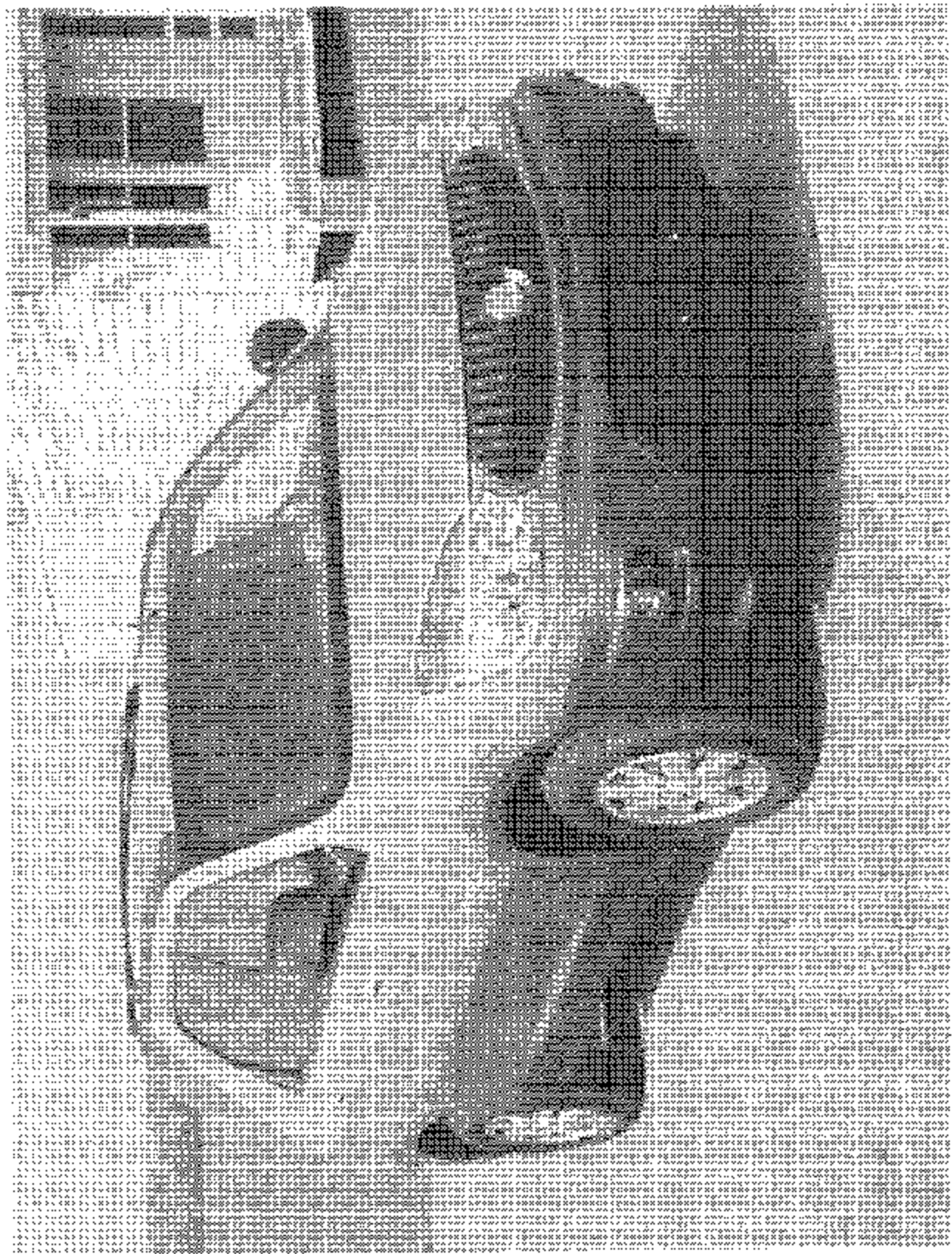


FIGURE 5-1
¾ FRONTAL RIGHT SIDE VIEW OF VEHICLE

2003 BUICK RENDEZVOUS
NHTSA NO. C30106
FMVSS NO. 225

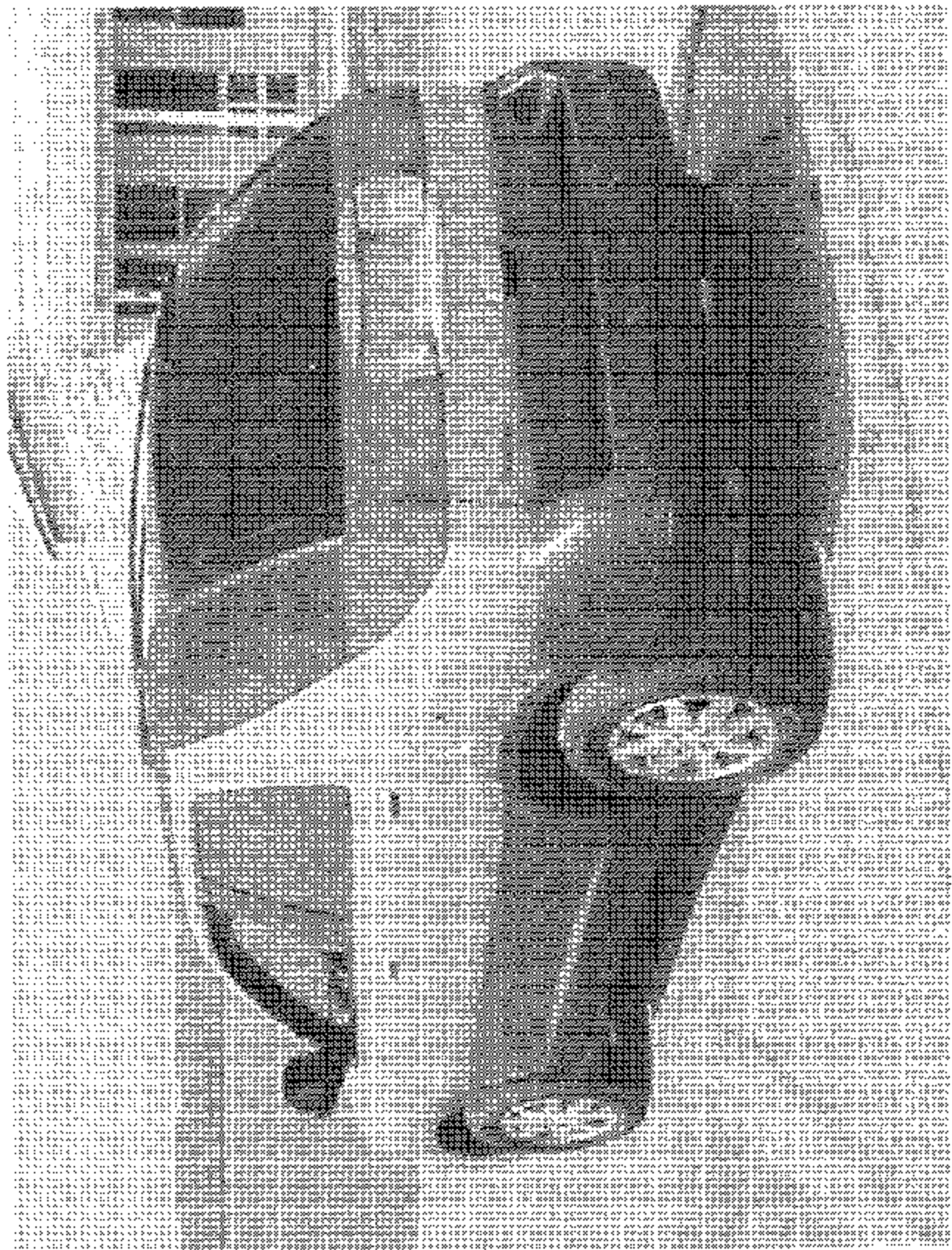
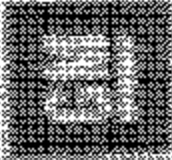


FIGURE 5.2
¾ REARWARD LEFT SIDE VIEW OF VEHICLE

2003 BUICK RENDEZVOUS
NHTSA NO. C30105
FMVSS NO. 225



2003 BUICK RENDEZVOUS
VIN: 3G5DA03E038550384
TYPE: M.P.V.

THIS VEHICLE CONFORMS TO ALL APPLICABLE U.S. FEDERAL MOTOR
VEHICLE SAFETY AND THEFT PREVENTION STANDARDS IN EFFECT ON
THE DATE OF MANUFACTURE SHOWN ABOVE.

TYPE: M.P.V.

MODEL: RENDEZVOUS

SEAT BELT USE IS REQUIRED AT ALL TIMES

SEAT BELT USE IS REQUIRED AT ALL TIMES

SEAT BELT USE IS REQUIRED AT ALL TIMES

SEAT BELT USE IS REQUIRED AT ALL TIMES

SEAT BELT USE IS REQUIRED AT ALL TIMES

SEE OWNER'S MANUAL FOR MORE INFORMATION

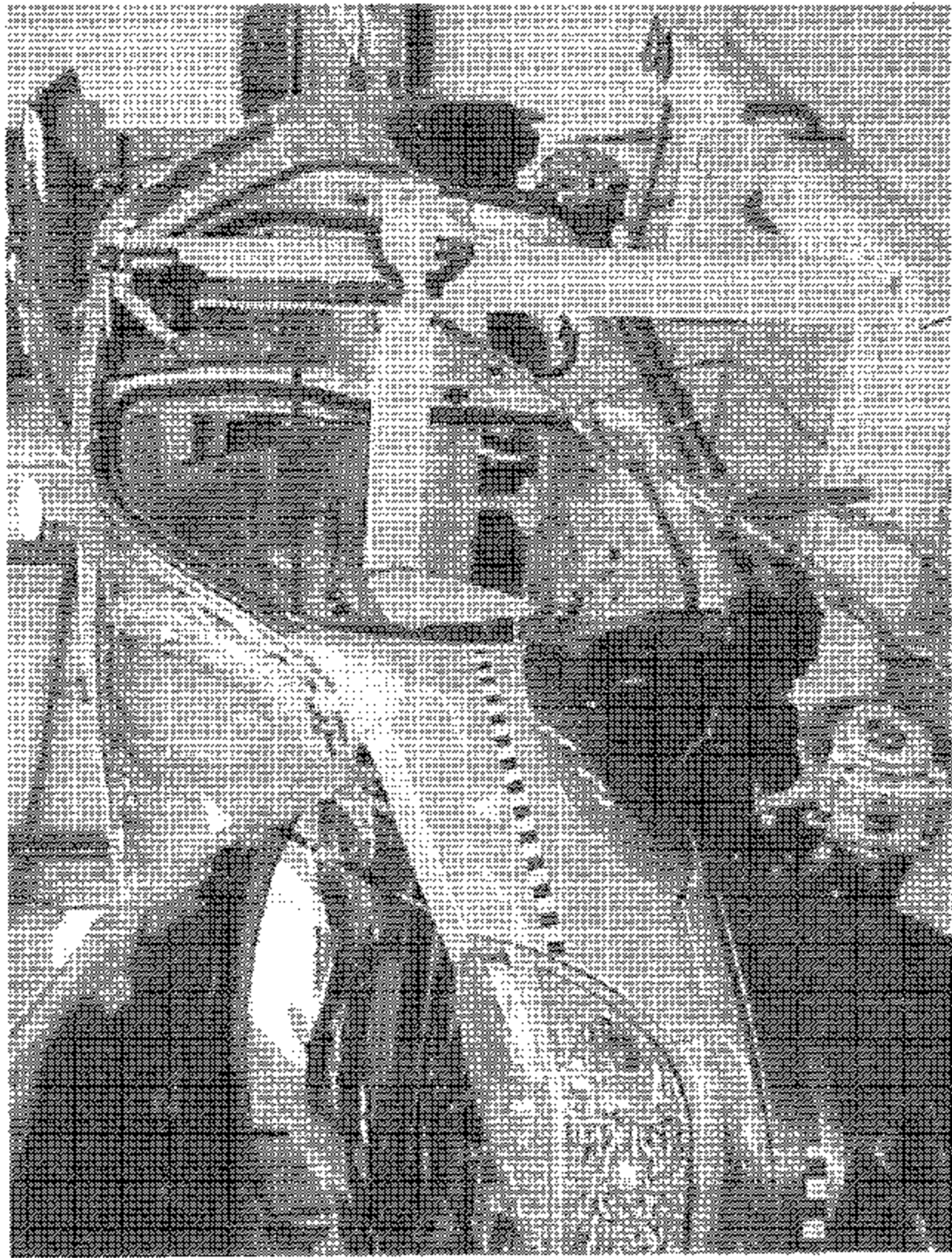
COLD TIRE PRESSURE

240KPA(35PSI)

240KPA(35PSI)

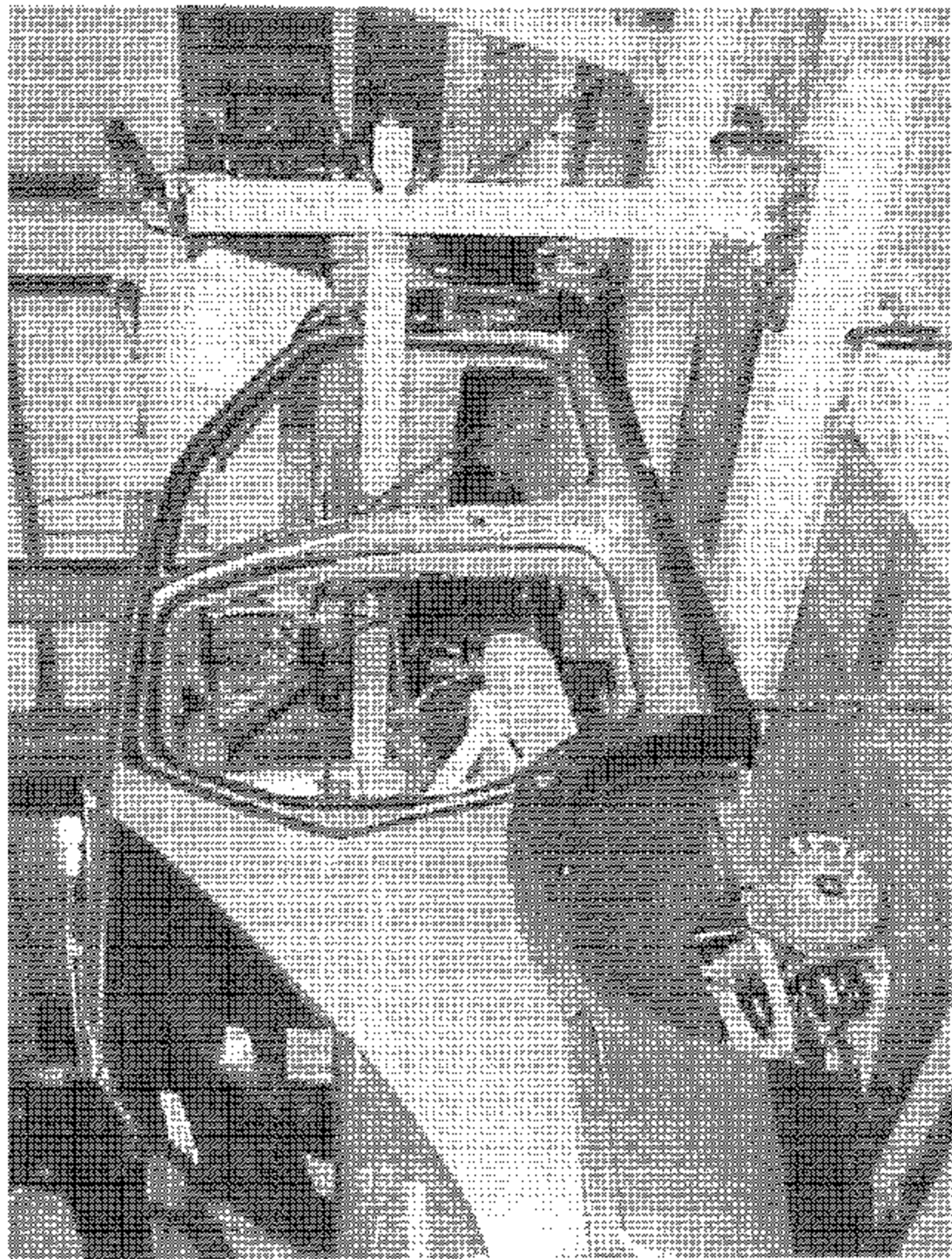
240KPA(35PSI)

240KPA(35PSI)



2003 BUICK RENDEZVOUS
NHTSA NO. C30106
FMVSS NO. 225

FIGURE 54
3/4 FRONTAL LEFT SIDE VIEW OF TEST VEHICLE
WITH TEST APPARATUS IN PLACE



2003 BUICK RENDEZVOUS
NHTSA NO. C30106
FMVSS NO. 225

FIGURE 6.5
% REARWARD RIGHT SIDE VIEW OF TEST
VEHICLE WITH TEST APPARATUS IN PLACE

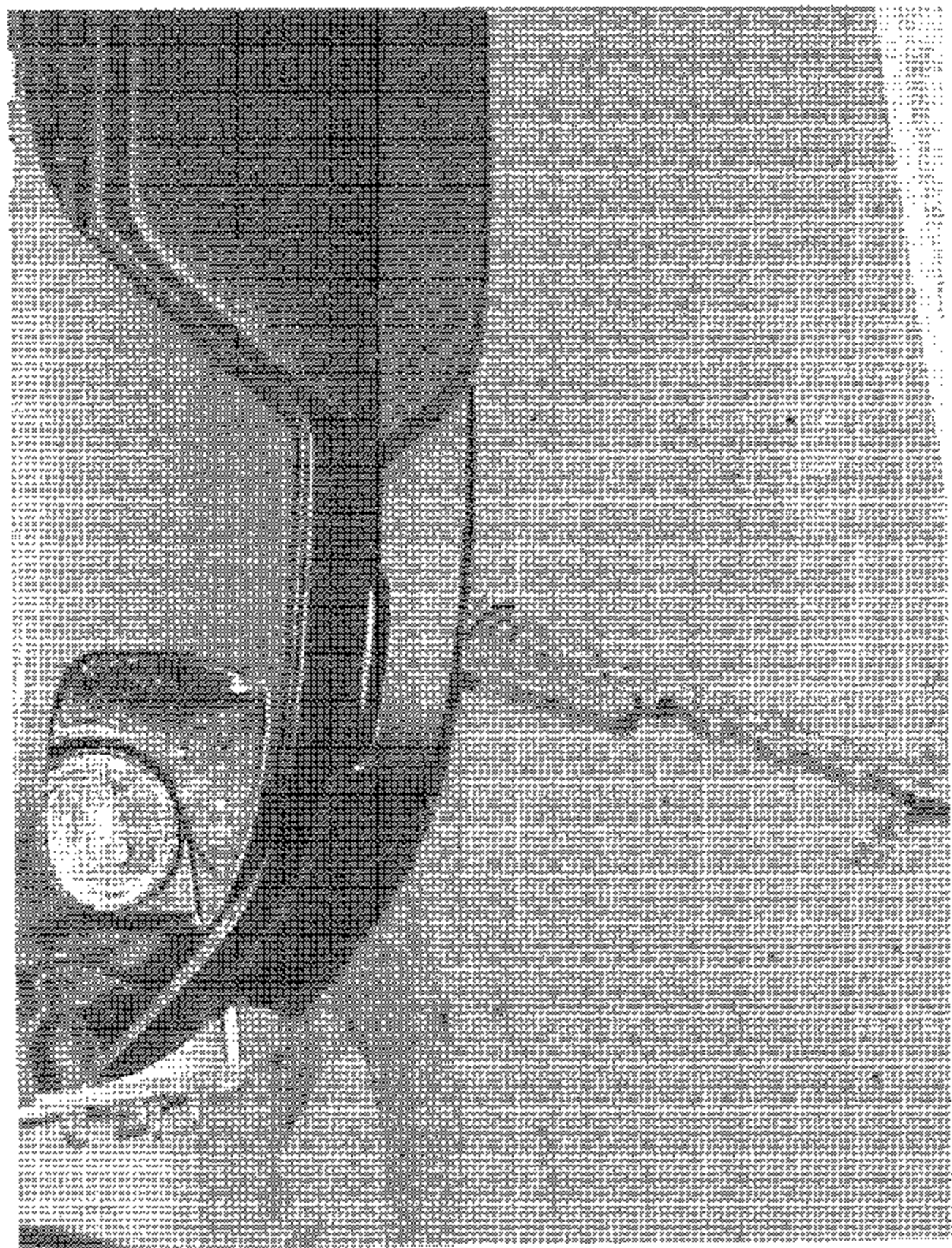


FIGURE 5.6
RIGHT FRONT VEHICLE TIE DOWN

2003 BUICK RENDEZVOUS
NHTSA NO. C30166
FMVSS NO. 225

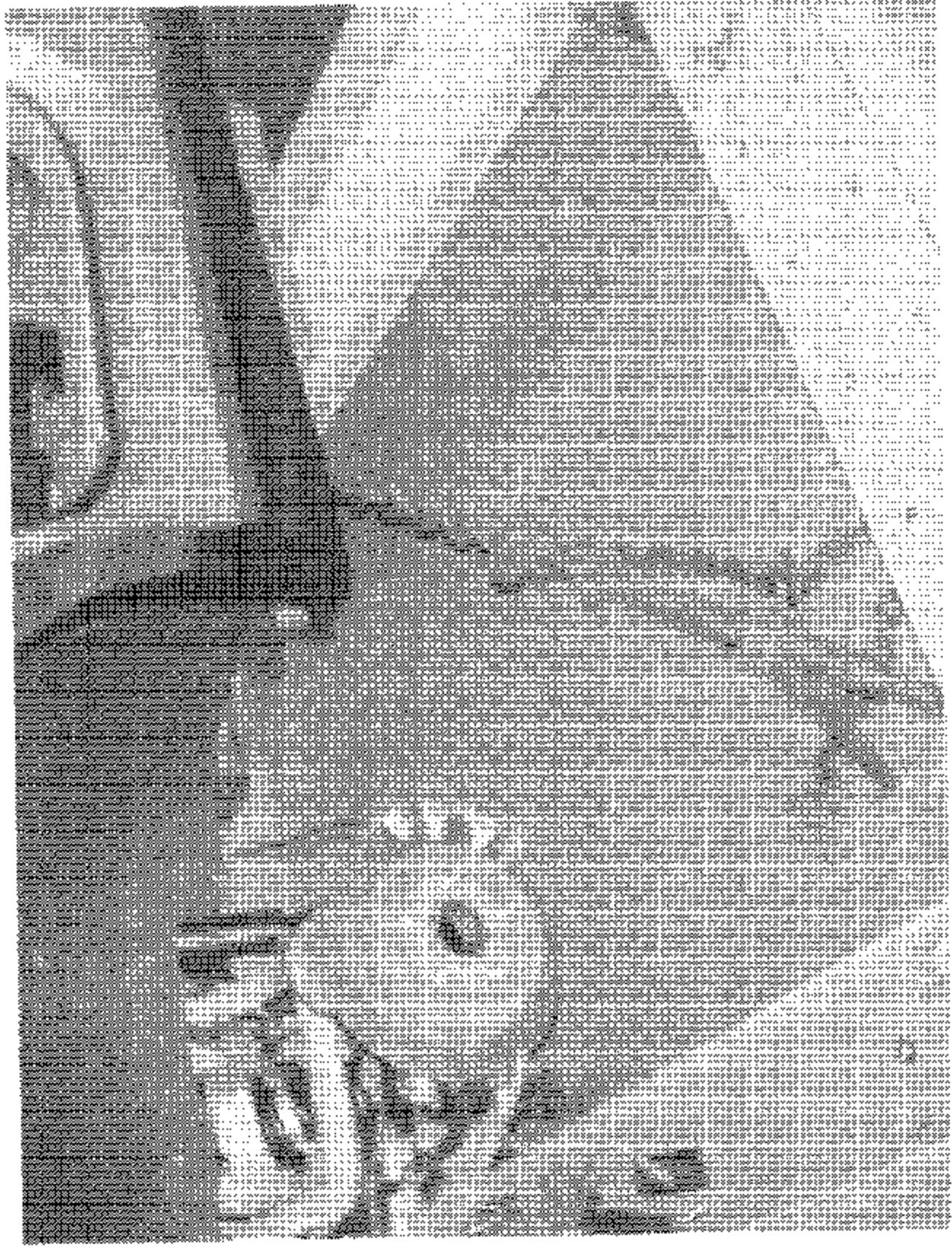


FIGURE 5.7
RIGHT REAR VEHICLE TIE DOWN

2003 BUICK RENDEZVOUS
NHTSA NO. C30166
FMVSS NO. 225

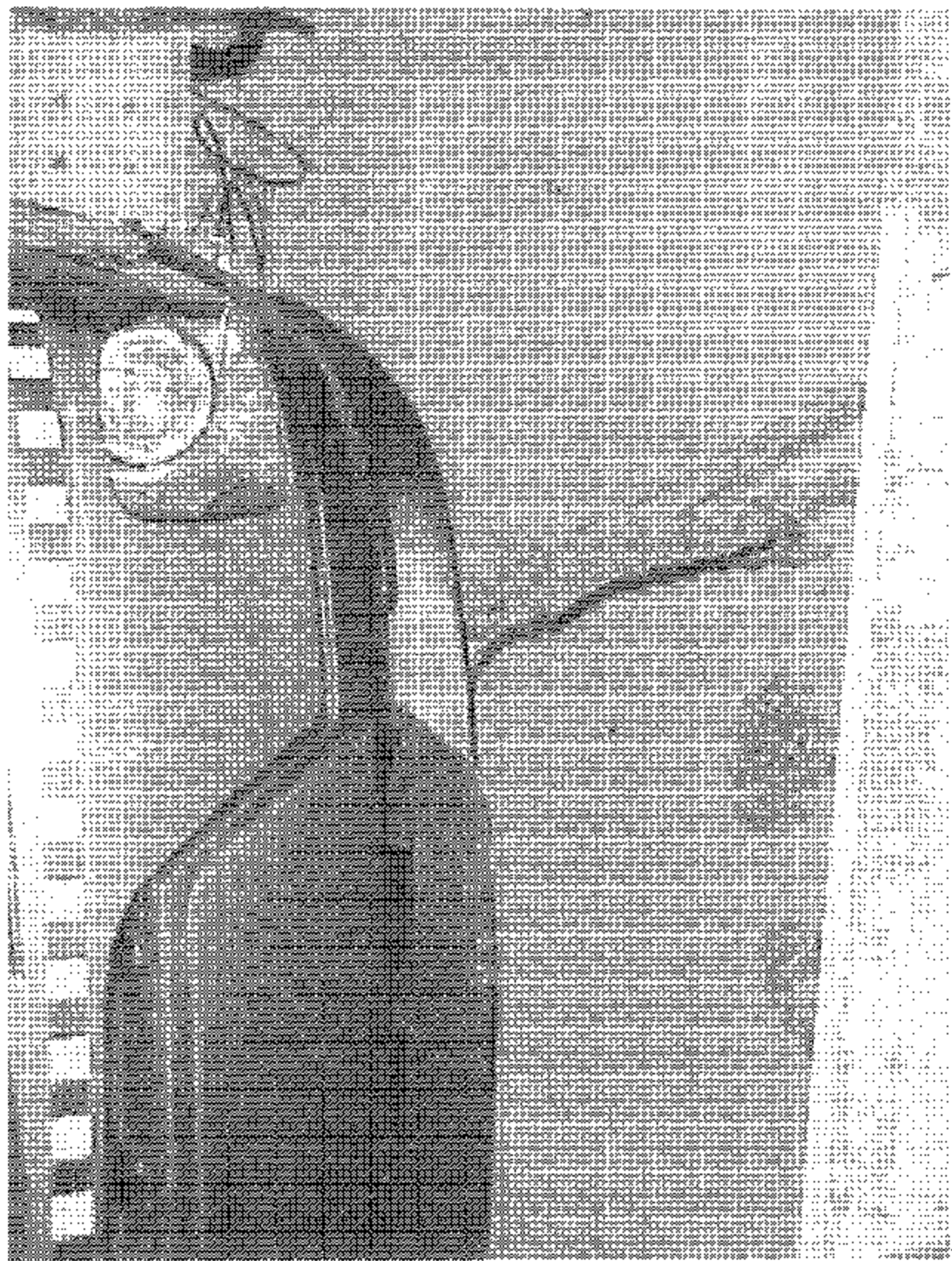


FIGURE 5.8
LEFT FRONT VEHICLE TIE DOWN

2003 BUICK RENDEZVOUS
NHTSA NO. C30106
FMVSS NO. 225

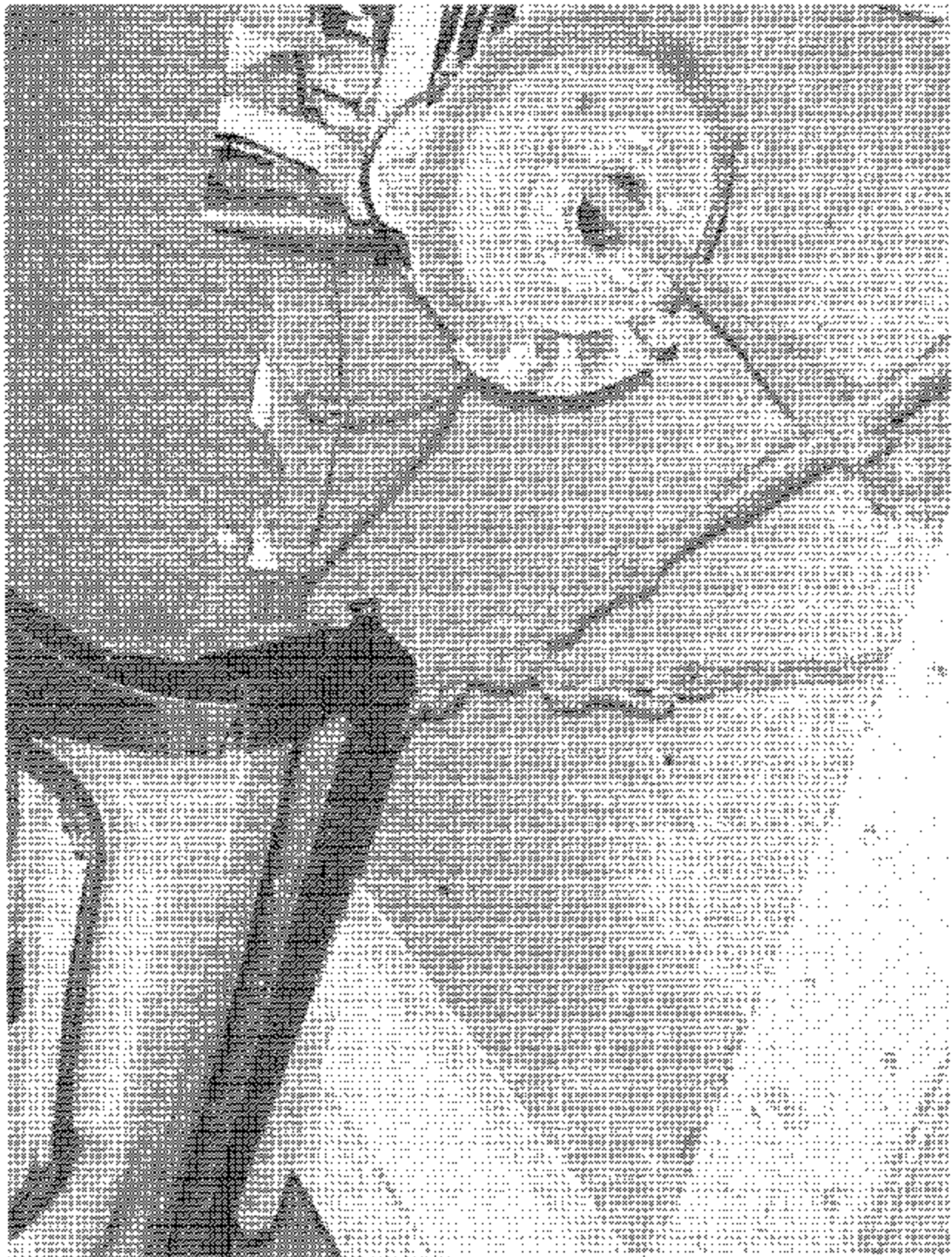


FIGURE 9 9
LEFT REAR VEHICLE TIE DOWN

2003 BUICK RENDEZVOUS
NHTSA NO. C30106
FMVSS NO. 225

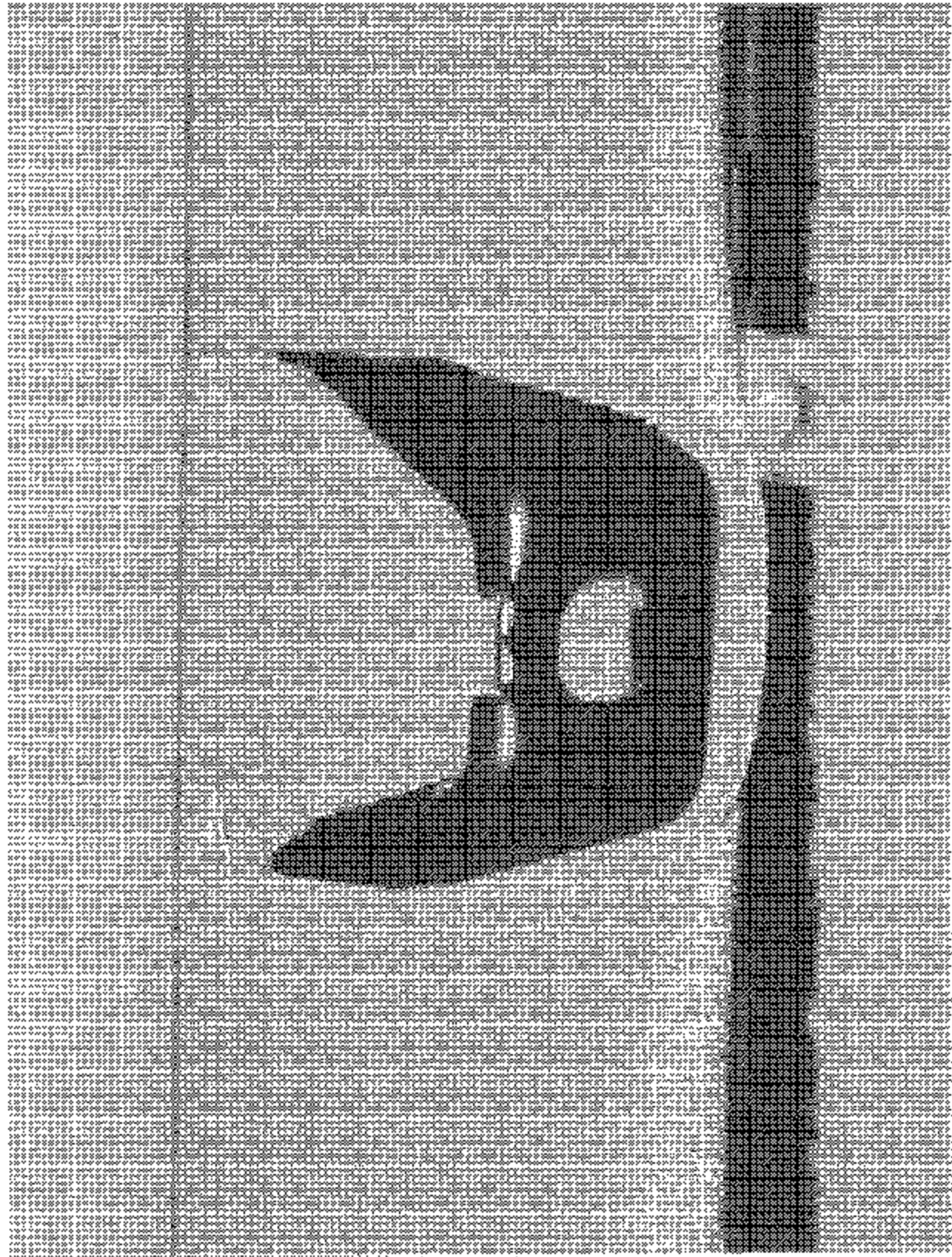


FIGURE 5-10
PRE-TEST FRONT VIEW OF 2ND ROW LEFT
TOP TETHER ANCHOR

2003 SUICK RENDEZVOUS
NHTSA NO. C30106
FMVSS NO. 225

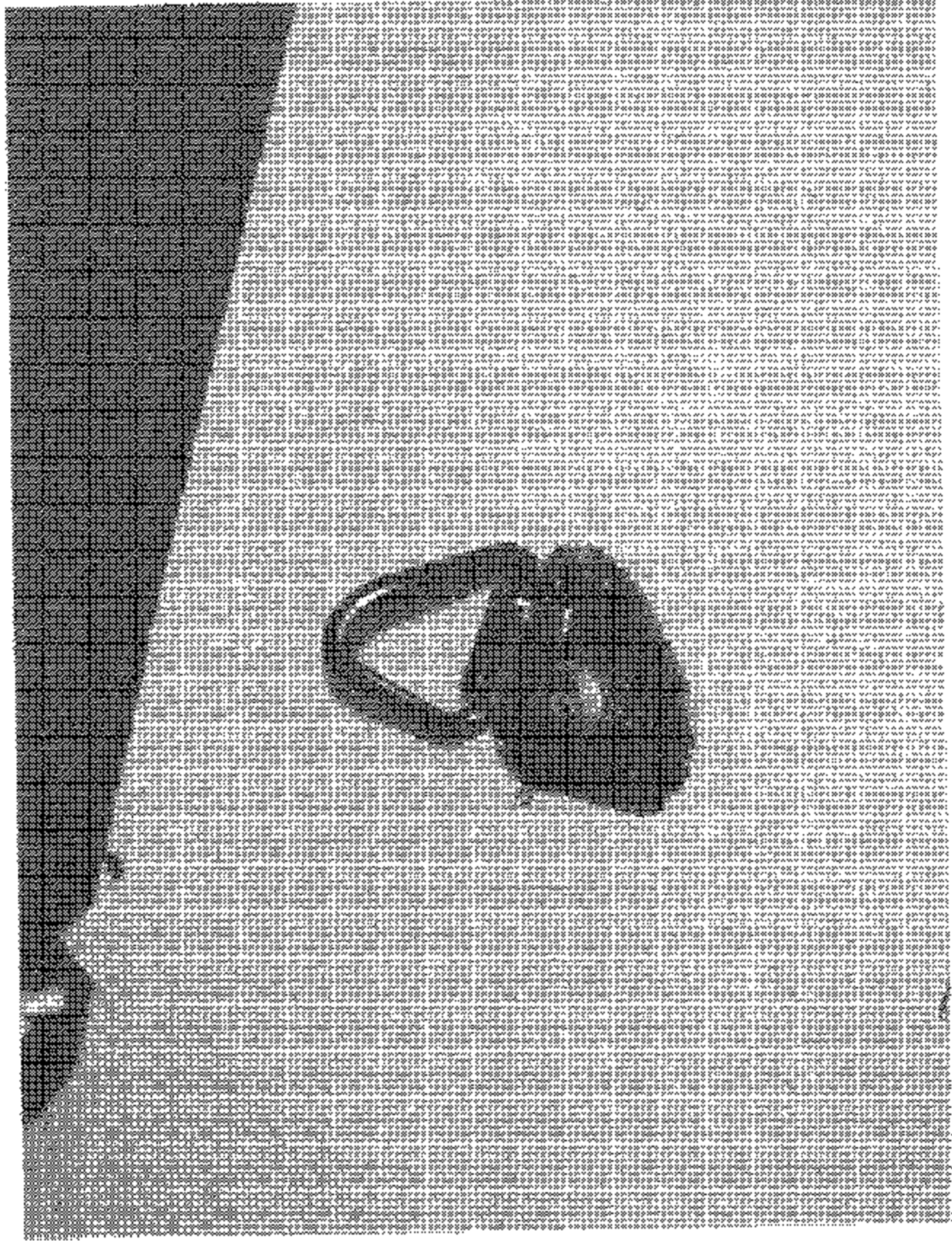


FIGURE 5.11
PRE-TEST FRONT VIEW OF 2ND ROW CENTER
TOP TETHER ANCHOR

2003 BUICK RENDEZVOUS
NHTSA NO. C36106
FAVSS NO. 225

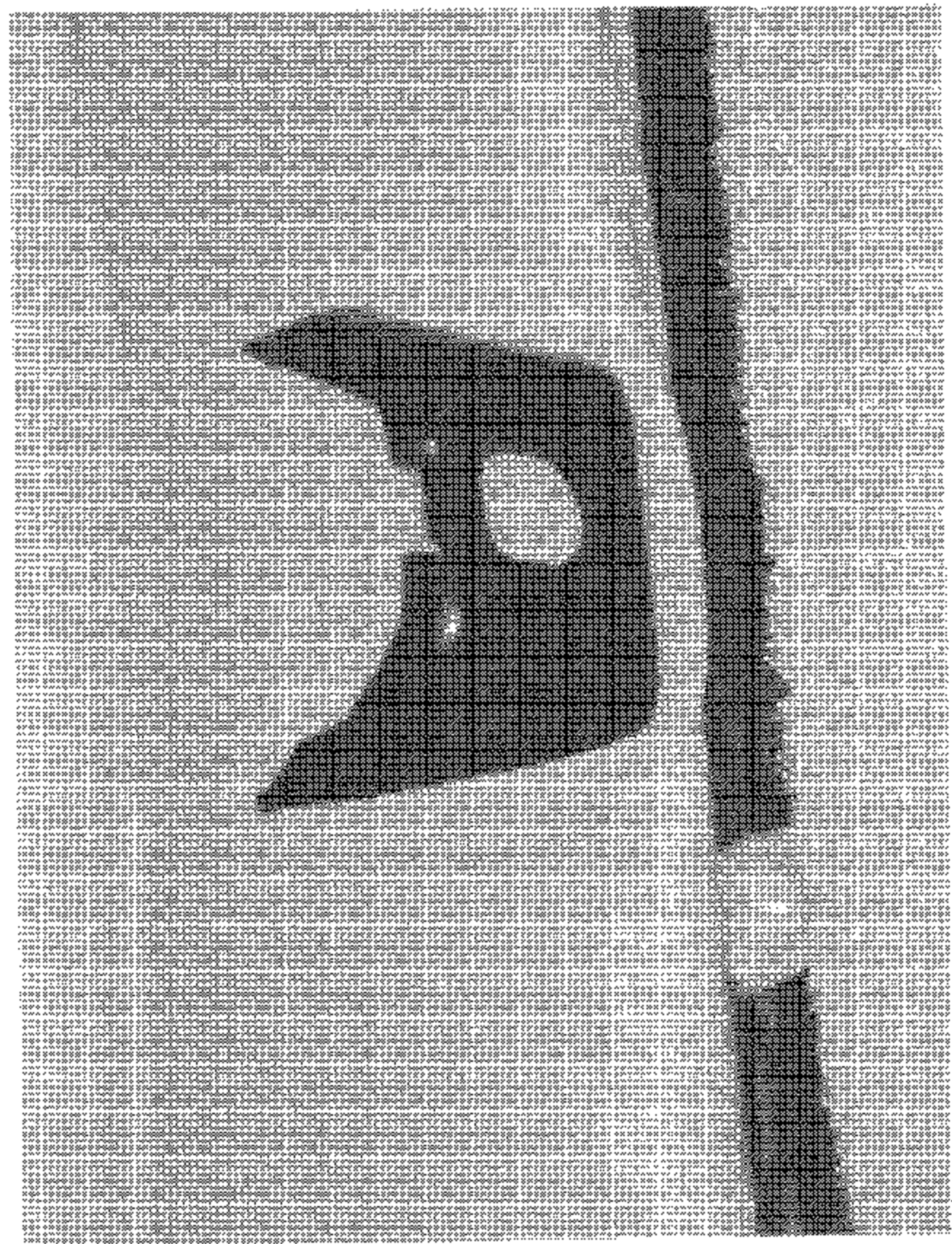


FIGURE 5.12
PRE-TEST FRONT VIEW OF 2ND ROW RIGHT
TOP TETHER ANCHOR

2003 BUICK RENDEZVOUS
NHTSA NO. C30106
FMVSS NO. 225

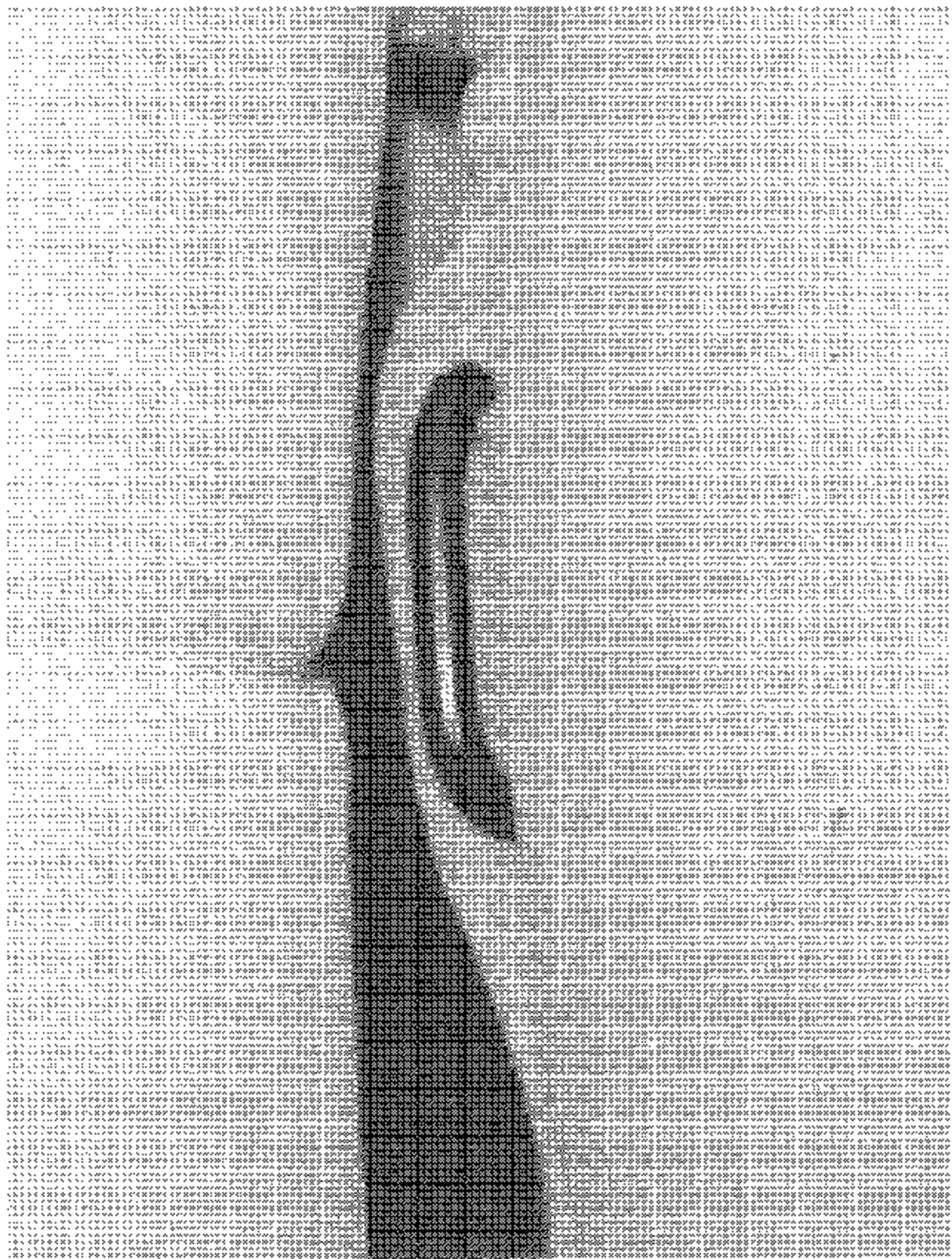


FIGURE 5.10
PRE-TEST FRONT VIEW OF 2ND ROW LEFT
OUTBOARD LOWER ANCHOR

2003 BUICK RENDEZVOUS
NHTSA NO. C30108
FMVSS NO. 225

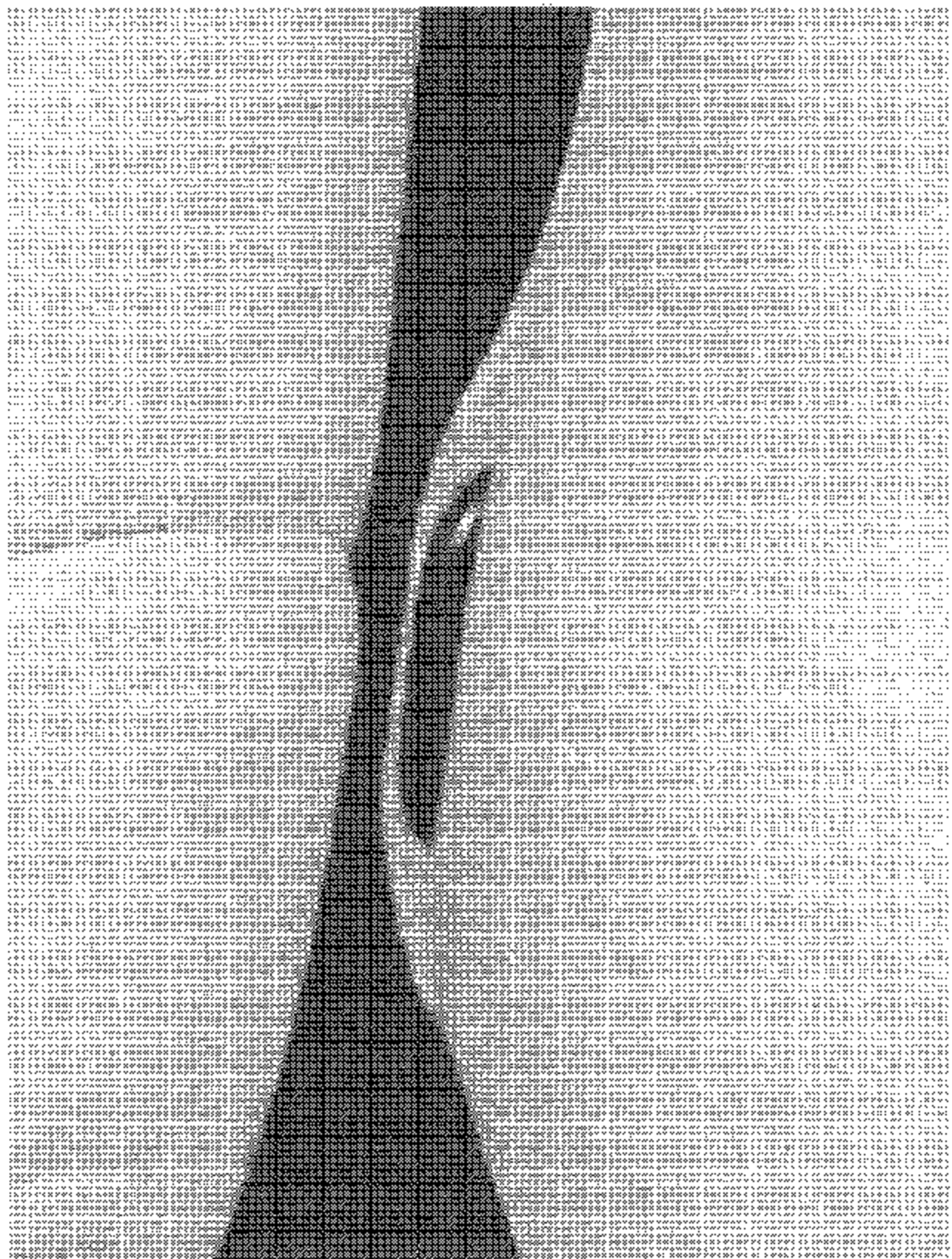


FIGURE 5.14
PRE-TEST FRONT VIEW OF 2ND ROW LEFT
INBOARD LOWER ANCHOR

2003 BUICK RENDEZVOUS
NHTSA NO. C30106
FMVSS NO. 225

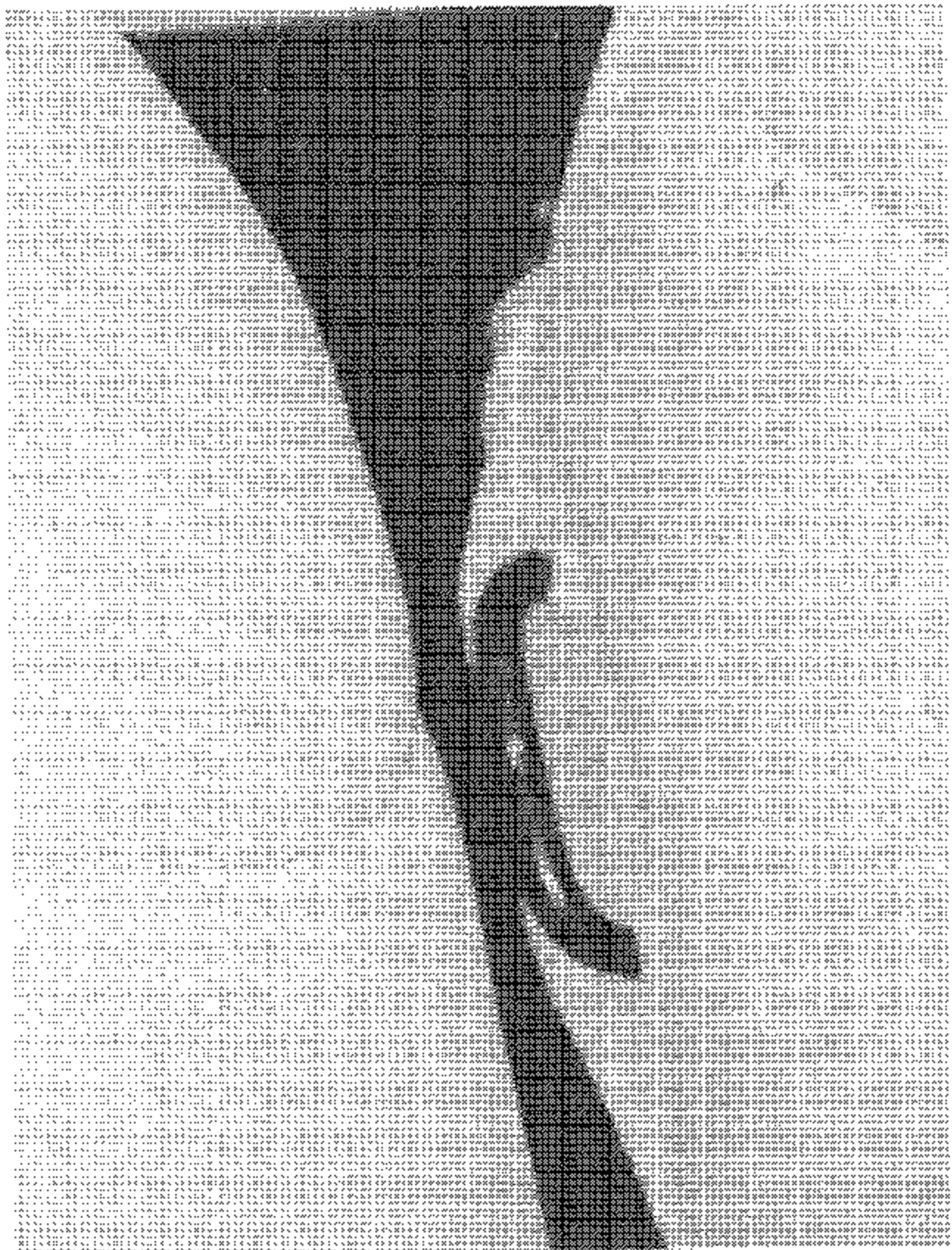


FIGURE 5-15
PRE-TEST FRONT VIEW OF 2ND ROW RIGHT
INBOARD LOWER ANCHOR

2003 BUICK RENDEZVOUS
NHTSA NO. C30106
FMVSS NO. 225

FIGURE 5.16
PRE-TEST FRONT VIEW OF 2ND ROW RIGHT
OUTBOARD LOWER ANCHOR

2003 BUICK RENDEZVOUS
NHTSA NO. C38105
FMVSS NO. 225

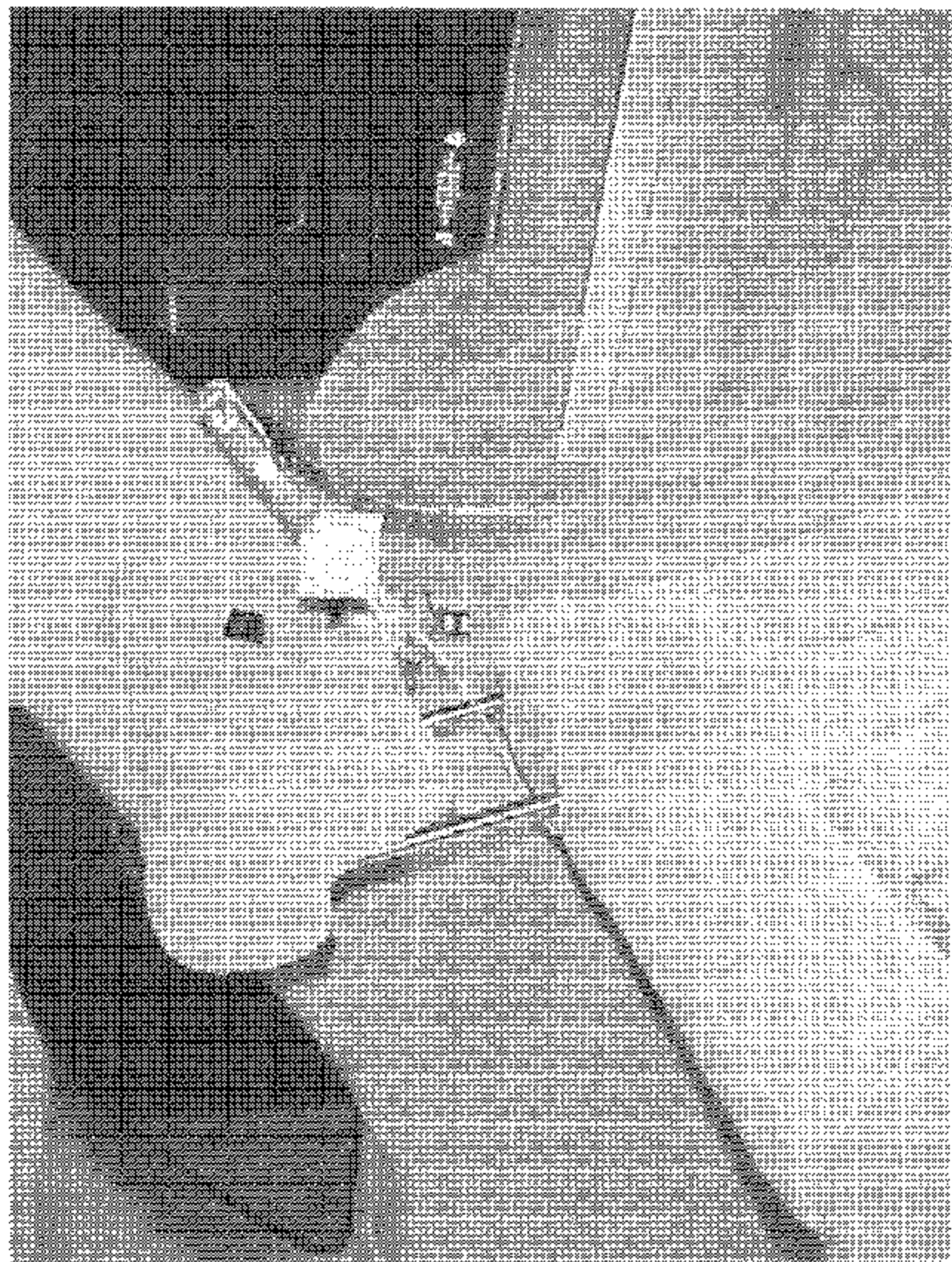
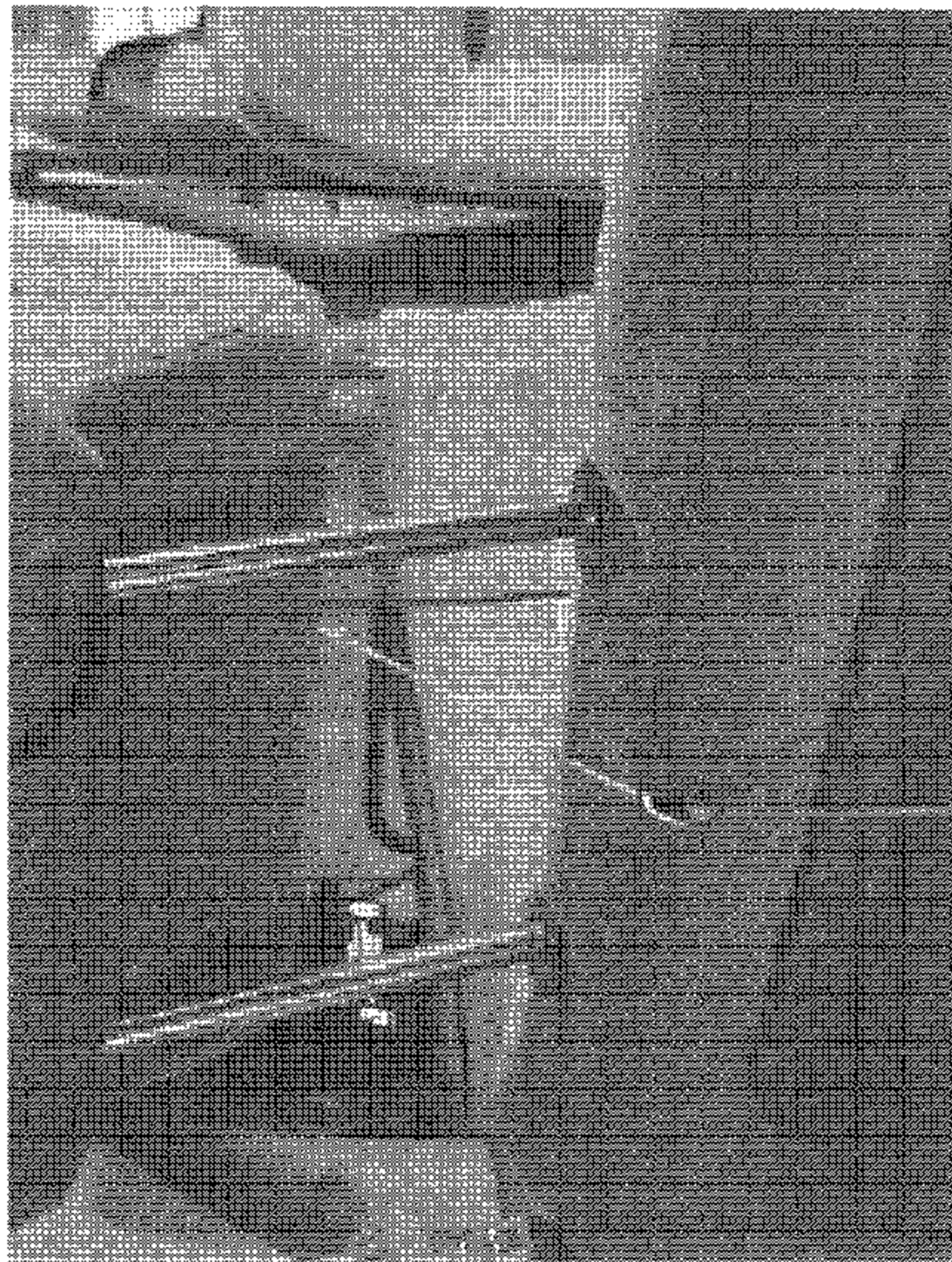


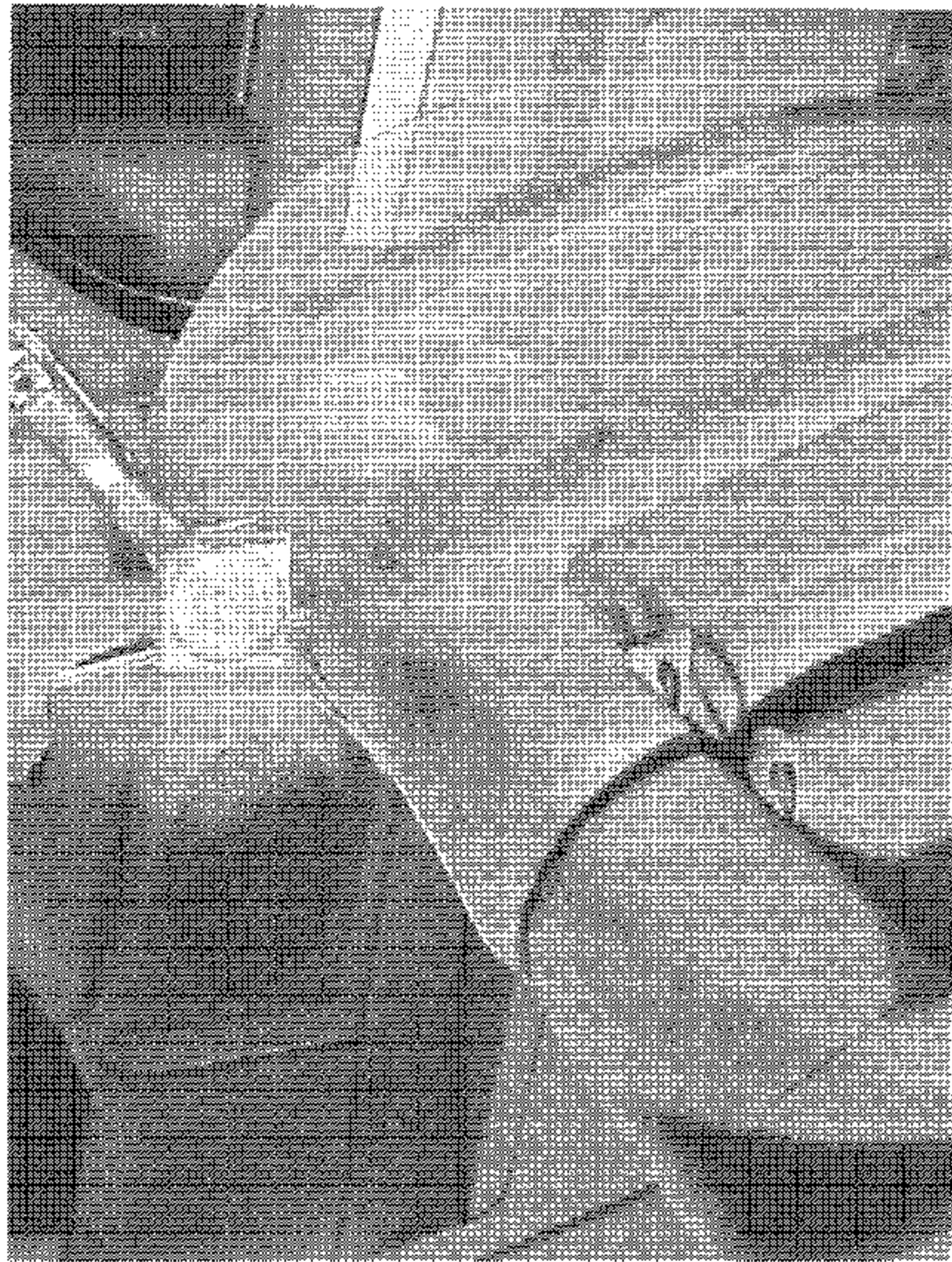
FIGURE 5.17
VIEW OF 2D TEMPLATE IN 2ND ROW LEFT SEAT

2003 BUICK RENDEZVOUS
NHTSA NO C30106
FMVSS NO 225



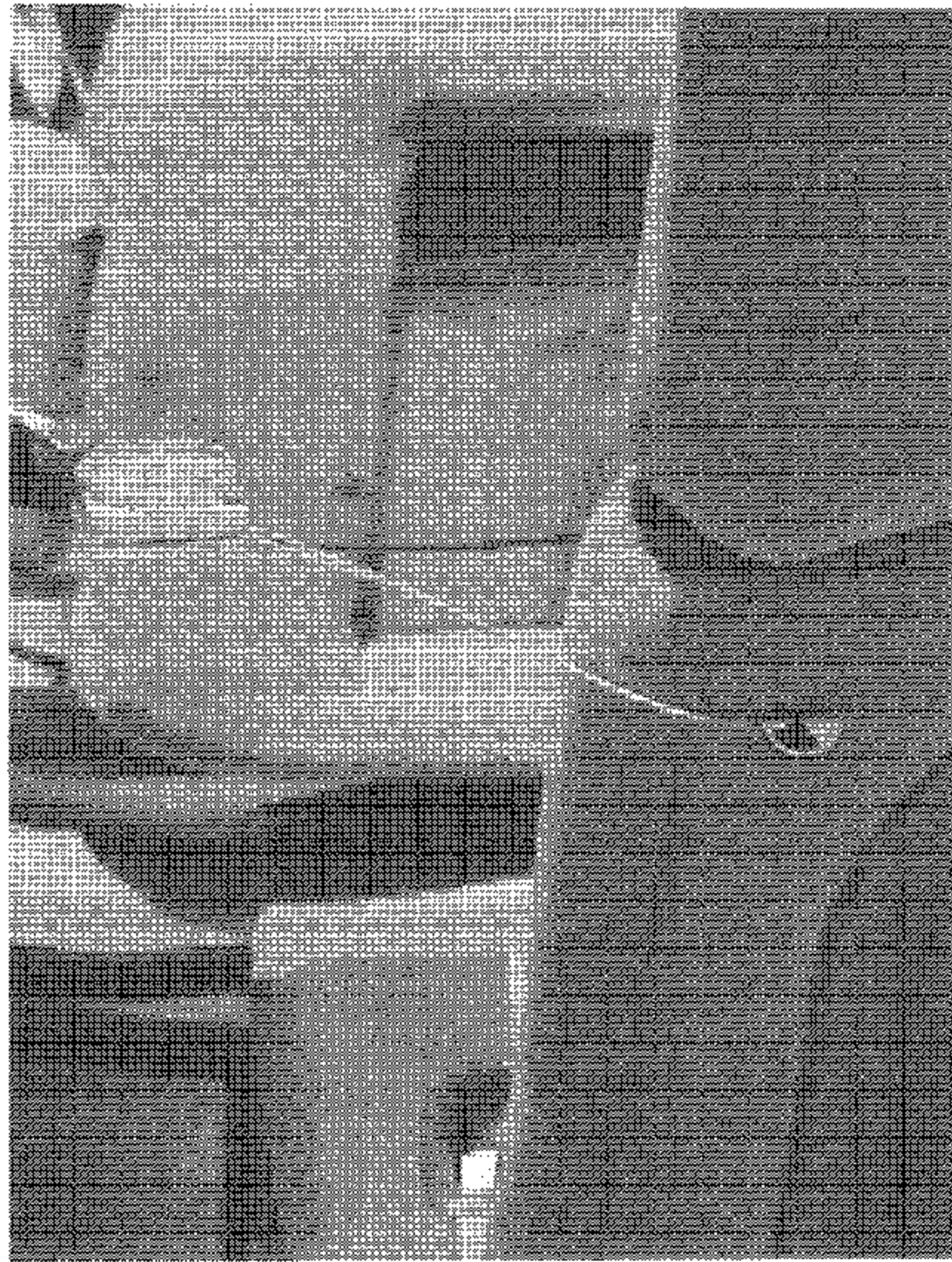
2003 BUICK RENDEZVOUS
NHTSA NO C30106
FMVSS NO 225

FIGURE 5.18
VIEW OF 2D TEMPLATE IN 2ND ROW LEFT SEAT



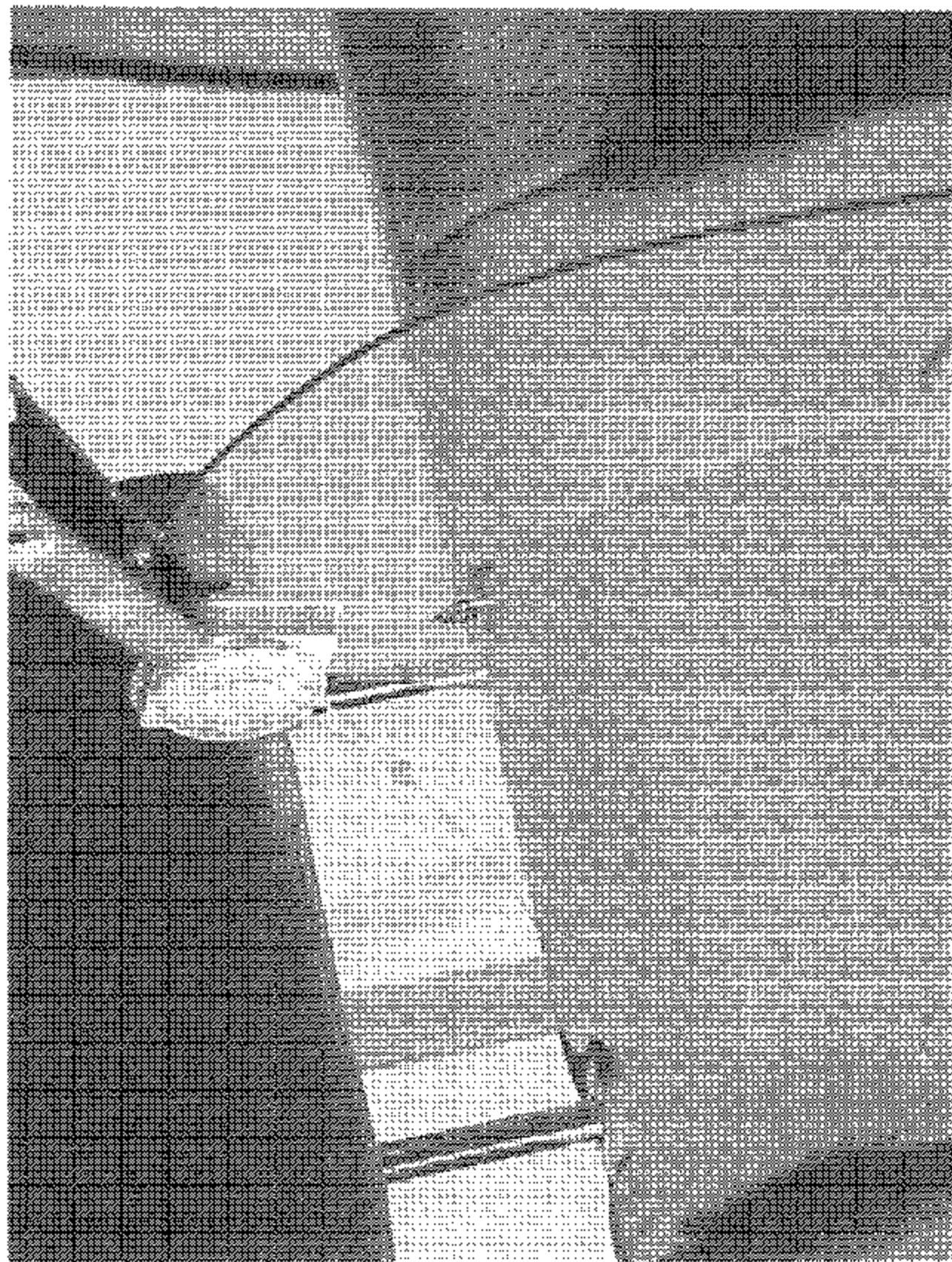
2003 BUICK RENDEZVOUS
NHTSA NO. C30106
FMVSS NO. 225

FIGURE 5.19
VIEW OF 2D TEMPLATE IN 2ND ROW CENTER
SEAT



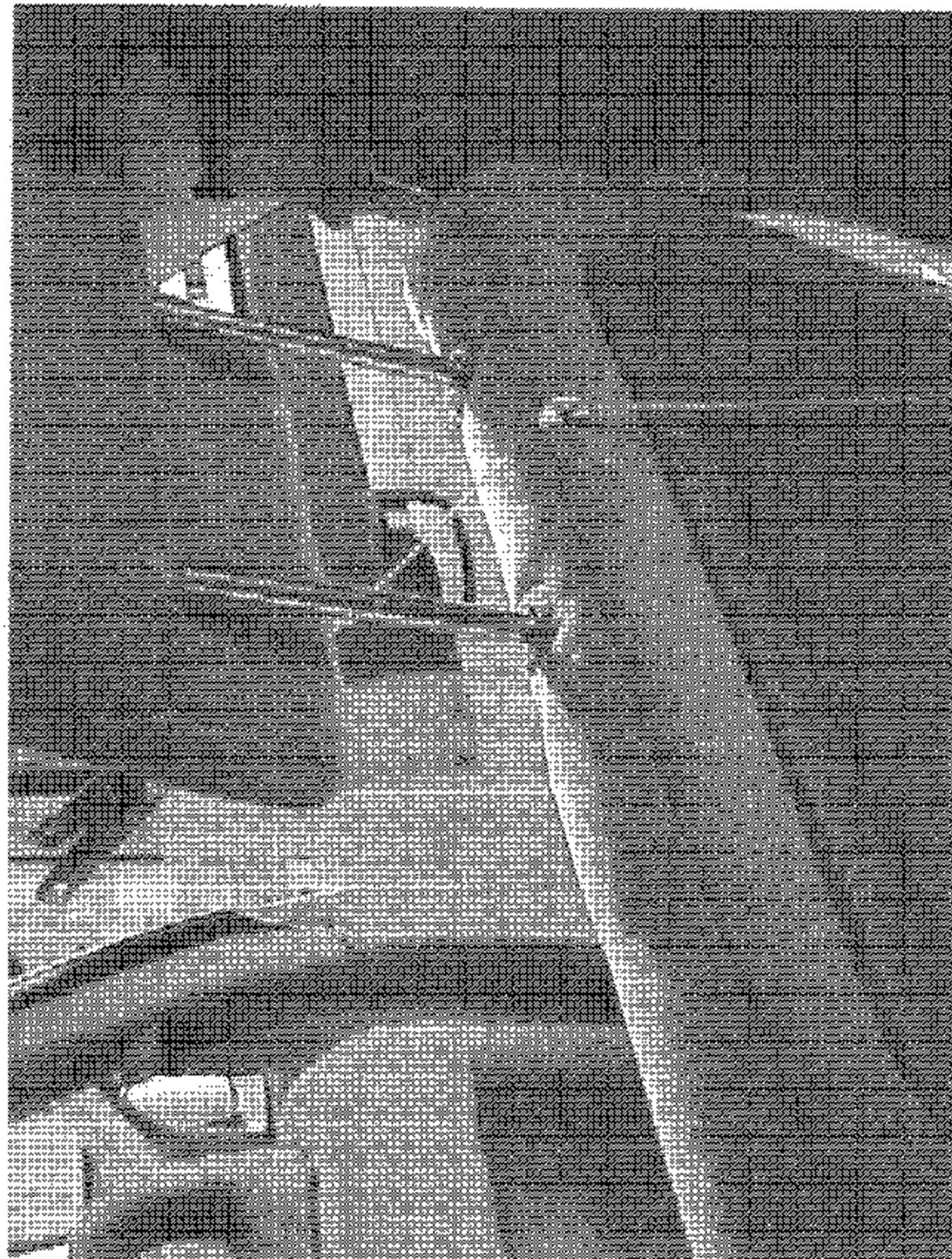
2003 BUICK RENDEZVOUS
NHTSA NO. C30195
FMVSS NO. 225

FIGURE 5 20
VIEW OF 2D TEMPLATE IN 2ND ROW CENTER
SEAT



2003 BUICK RENDEZVOUS
NHTSA NO. C30106
FMVSS NO. 275

FIGURE 5.21
VIEW OF 2D TEMPLATE IN 2ND ROW RIGHT
SEAT



2003 BUICK RENDEZVOUS
NHTSA NO. C3D106
FRVSS NO. 225

FIGURE 5.22
VIEW OF 2D TEMPLATE IN 2ND ROW RIGHT
SEAT

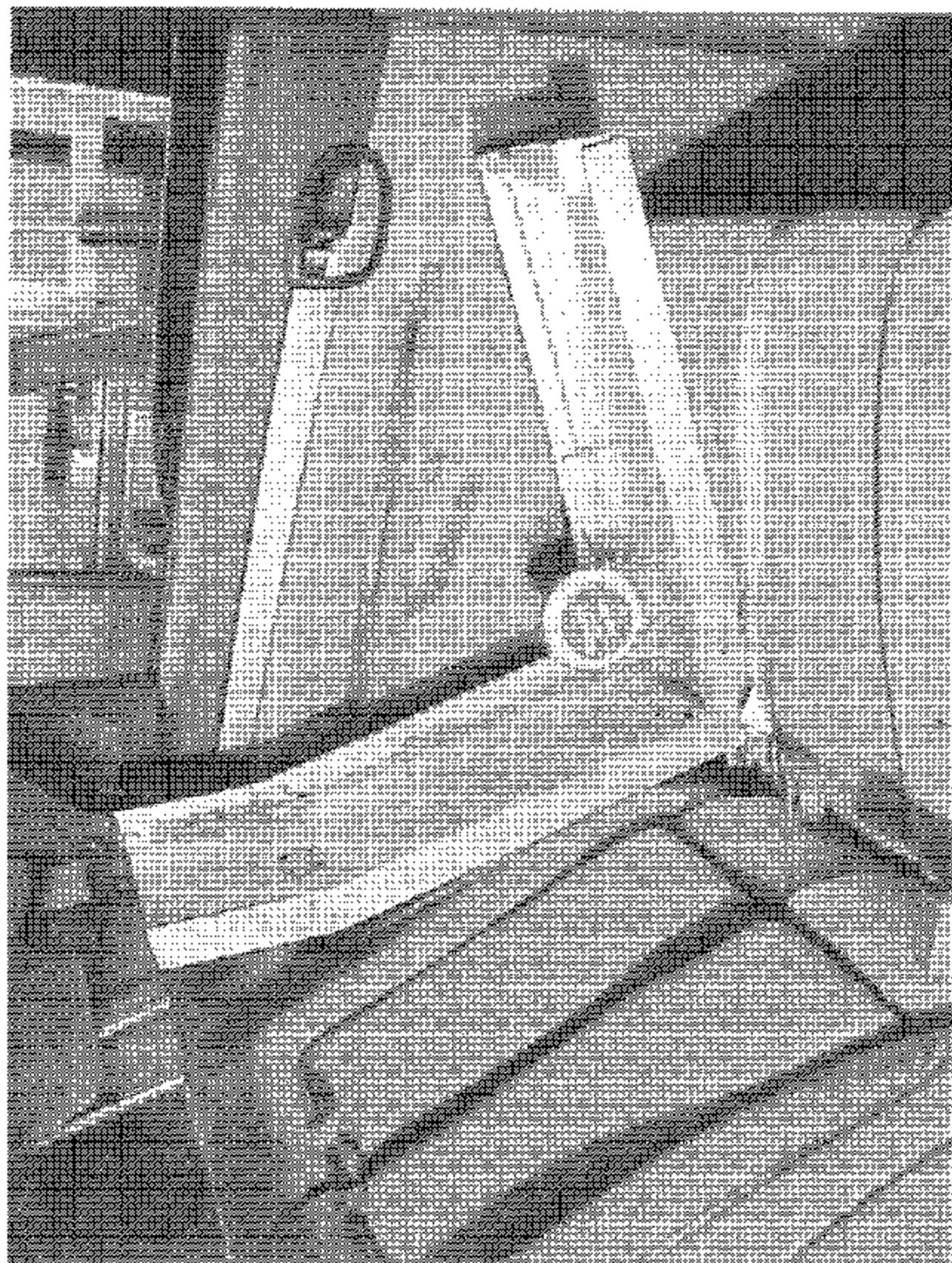


FIGURE 5 23
VIEW OF CRF IN 2ND ROW LEFT SEAT

2003 BUICK RENDEZVOUS
NHTSA NO. C30105
FMVSS NO. 225

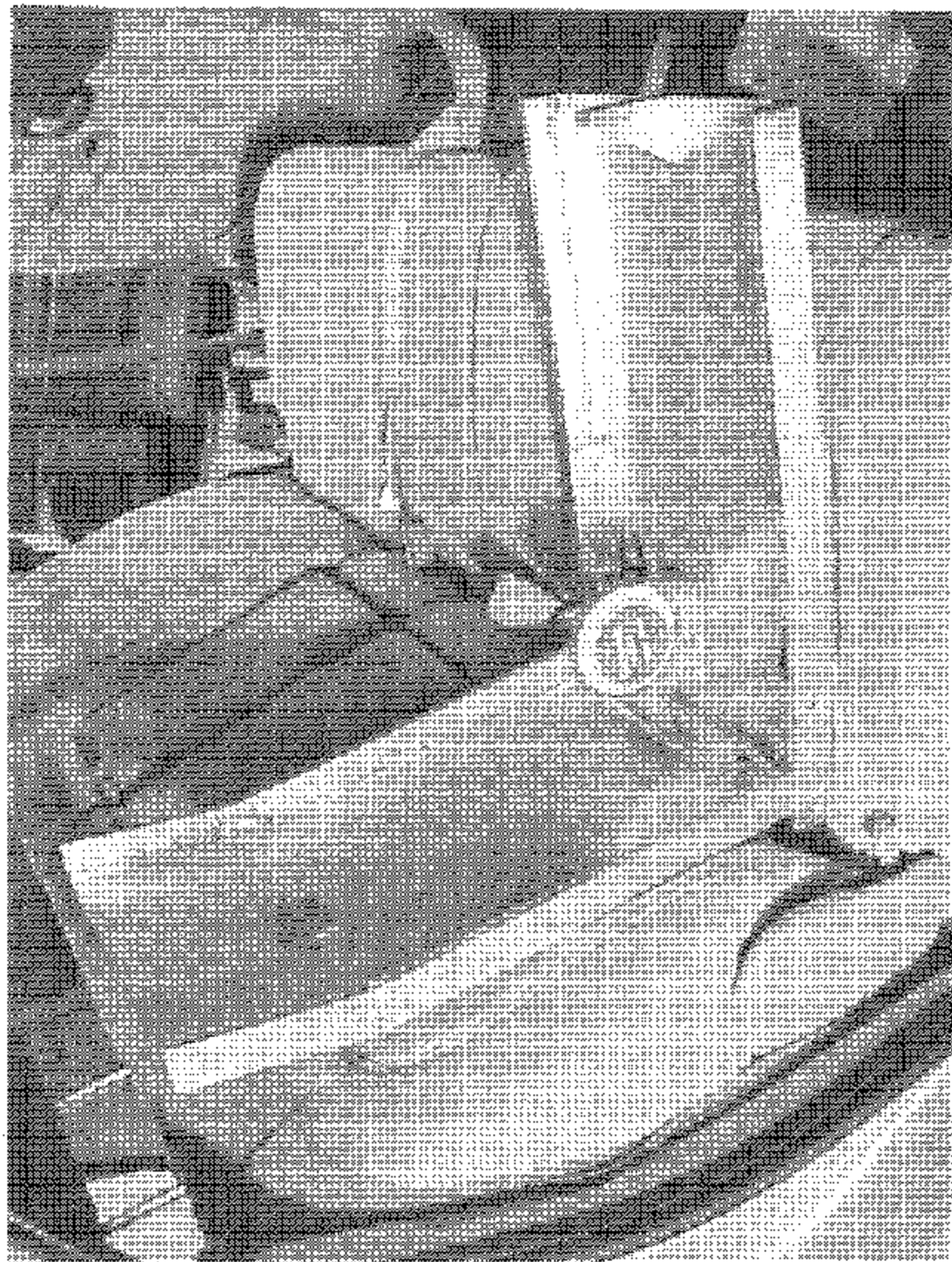


FIGURE 5.24
VIEW OF CRF IN 2ND ROW RIGHT SEAT

2003 BUICK RENDEZVOUS
NHTSA NO. C30106
FMVSS NO. 225

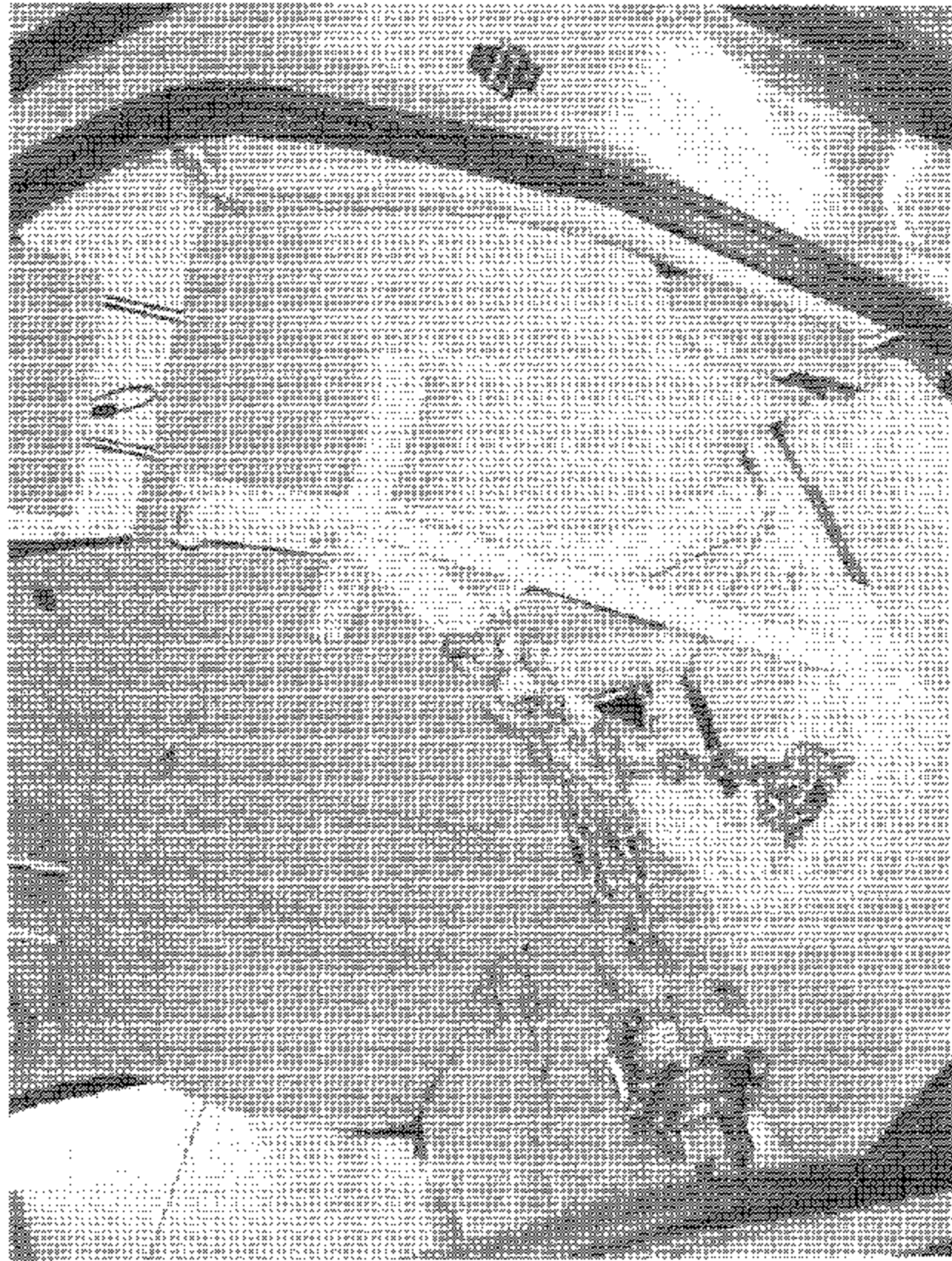


FIGURE 5.25
PRE-TEST SET-UP 2ND ROW LEFT POSITION

2003 BUICK RENDEZVOUS
NHTSA NO. C30106
FMVSS NO. 225

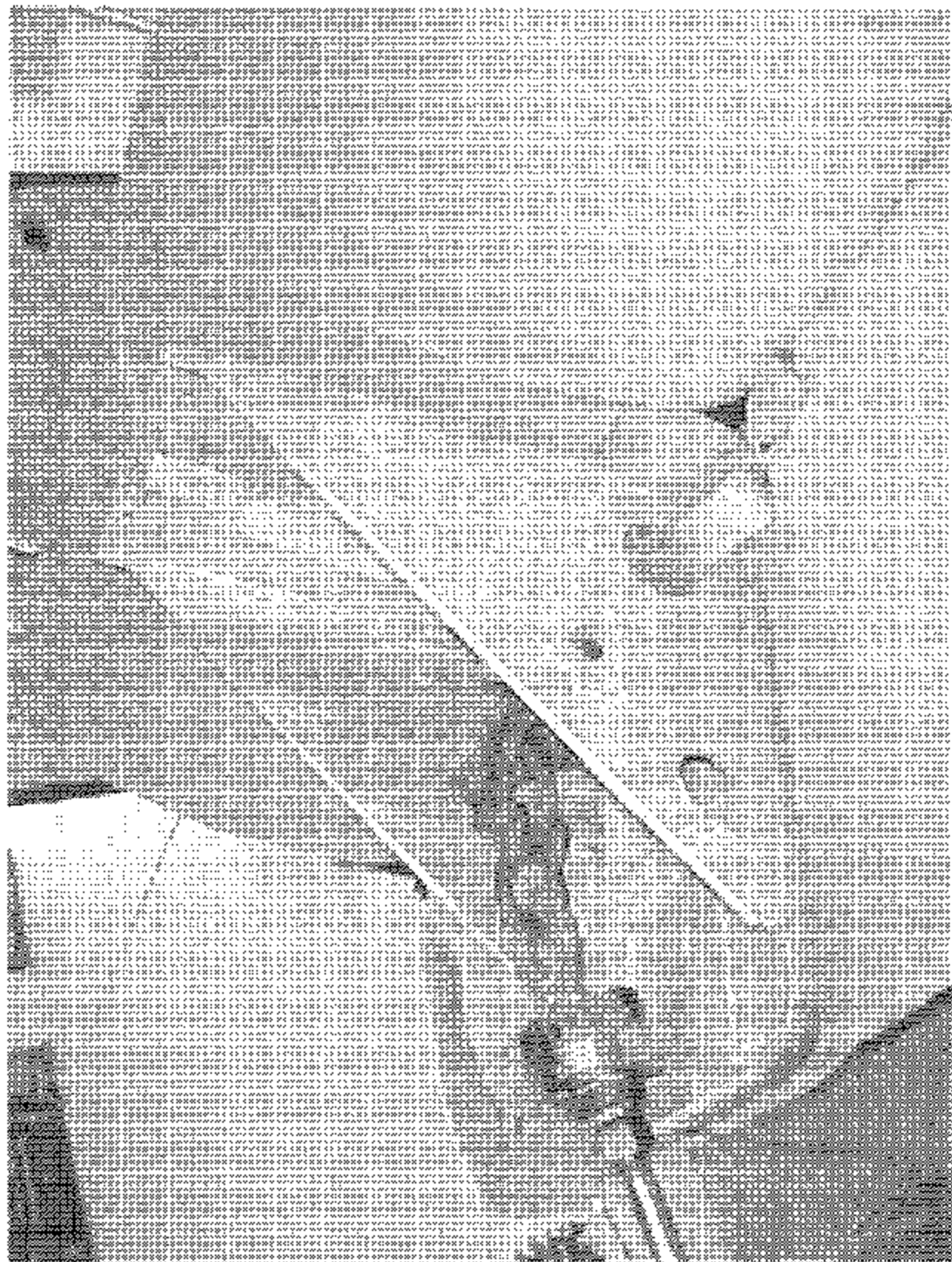


FIGURE 5.20
PRE-TEST SET-UP 2ND ROW CENTER POSITION

2003 BUICK RENDEZVOUS
NHTSA NO C30106
FVSS NO 225

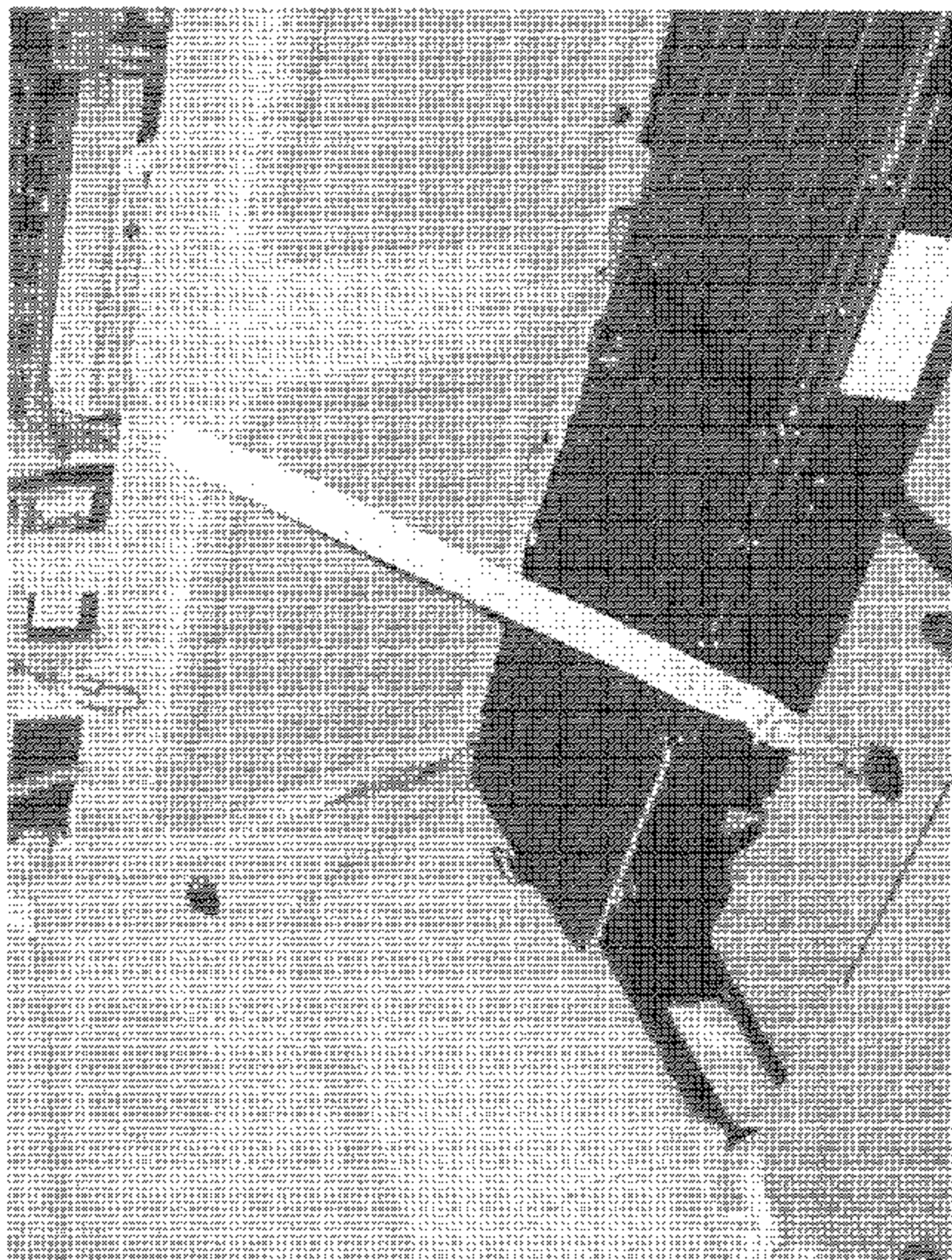


FIGURE 6.27
PRE-TEST SET-UP 2ND ROW CENTER POSITION

2003 BUICK RENDEZVOUS
NHTSA NO. C30106
FRVSS NO. 225

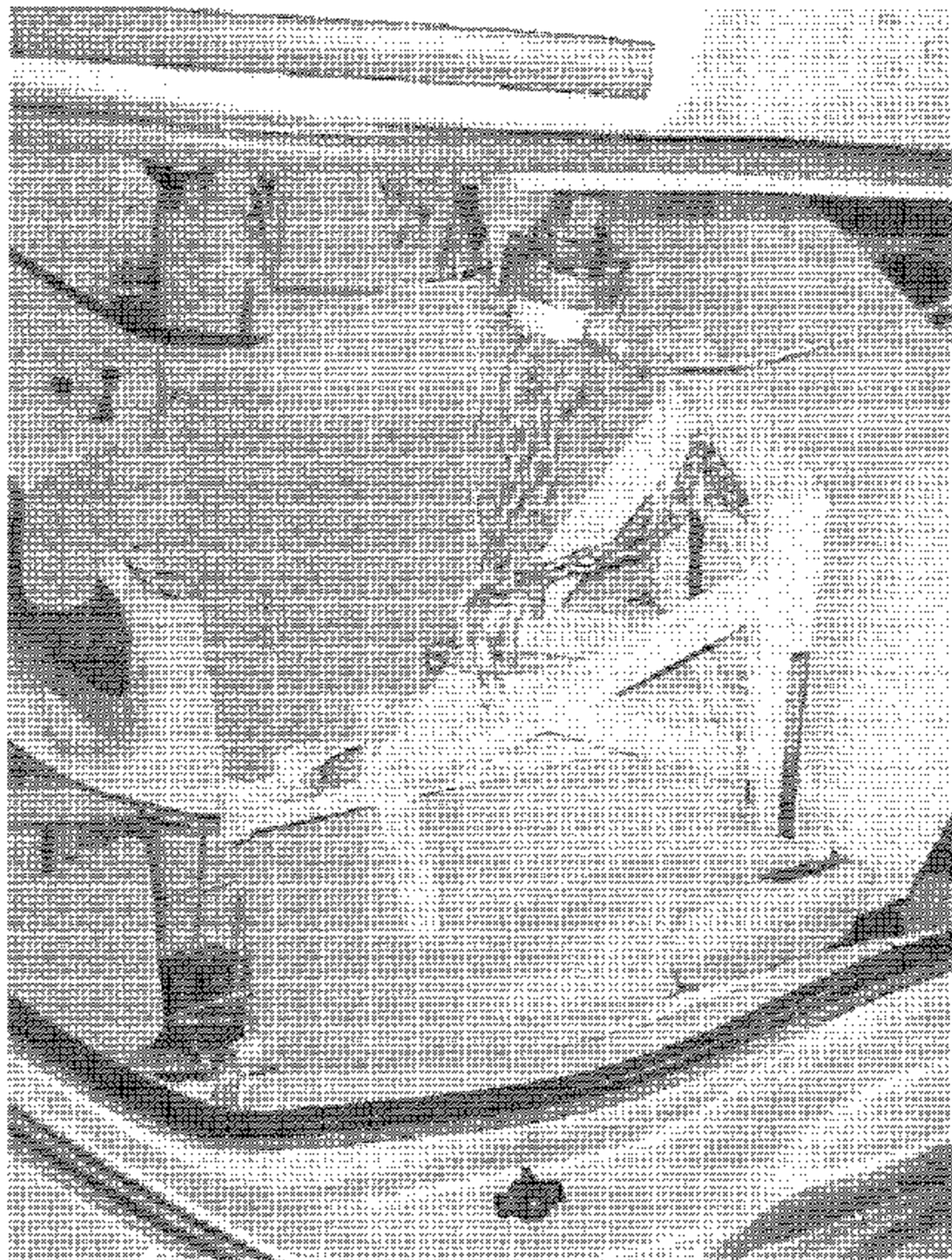


FIGURE 5.28
PRE-TEST SET-UP 2ND ROW RIGHT
POSITION

2003 BUICK RENDEZVOUS
NHTSA NO. C30106
FMVSS NO. 225

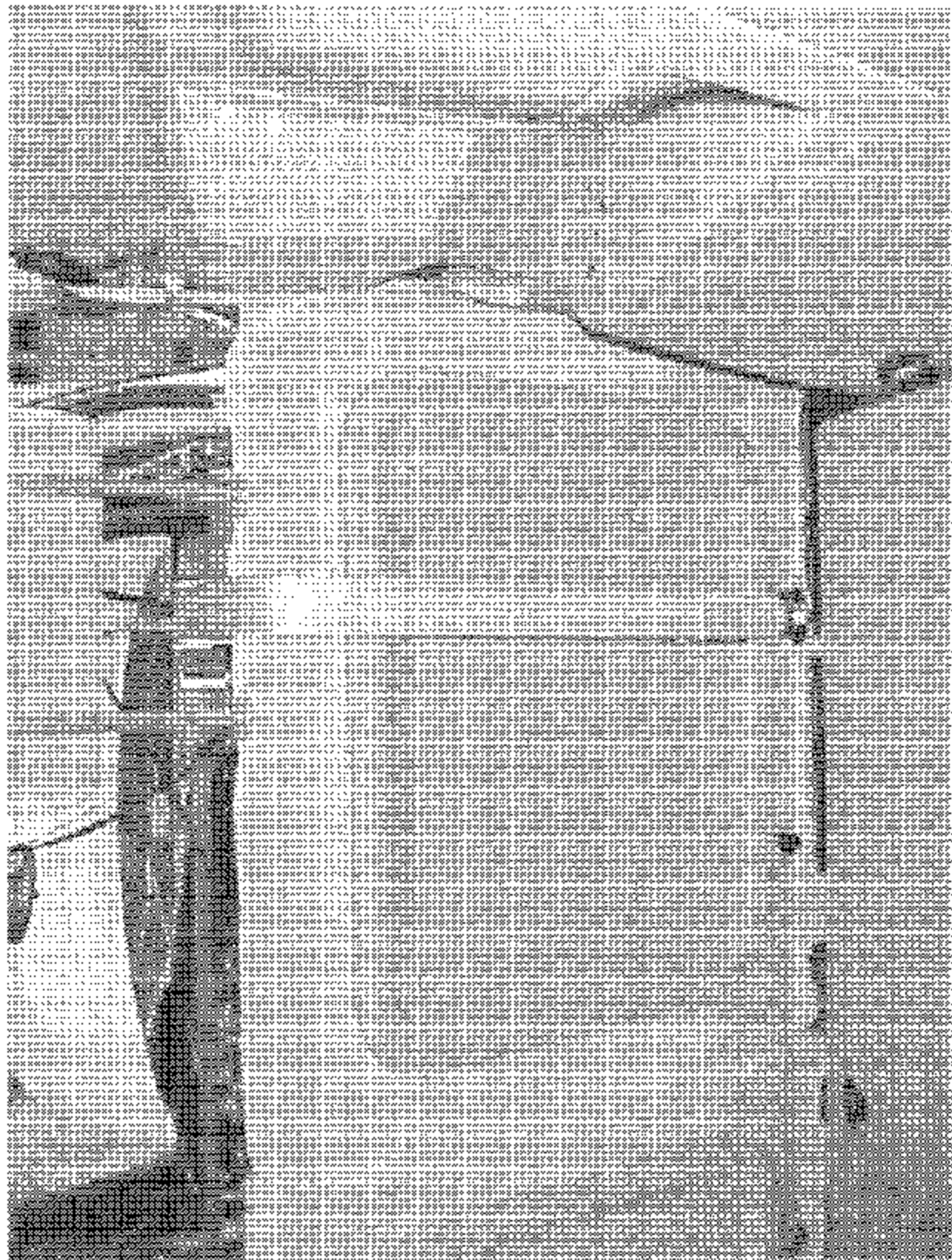


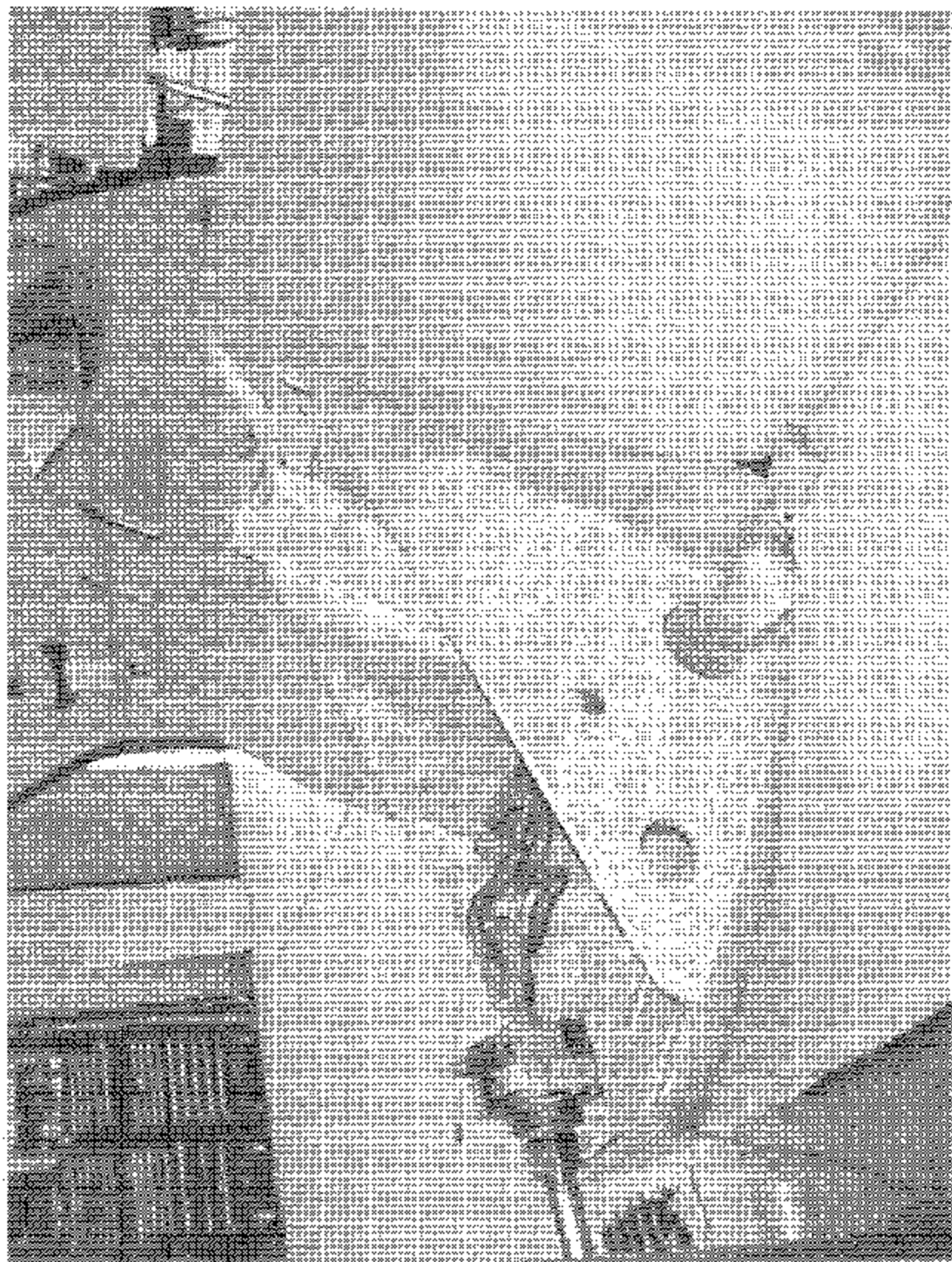
FIGURE 6.29
PRE-TEST SET-UP 2ND ROW RIGHT
POSITION

2003 BUICK RENDEZVOUS
NHTSA NO. 030106
FAVSS NO. 225



FIGURE S.30
POST TEST 2ND ROW LEFT POSITION

2003 BUICK RENDEZVOUS
NHTSA NO. C30106
FMVSS NO. 225



2003 BUICK RENDEZVOUS
NHTSA NO. C30106
FMVSS NO. 225

FIGURE 5.31
POST TEST 2ND ROW CENTER POSITION

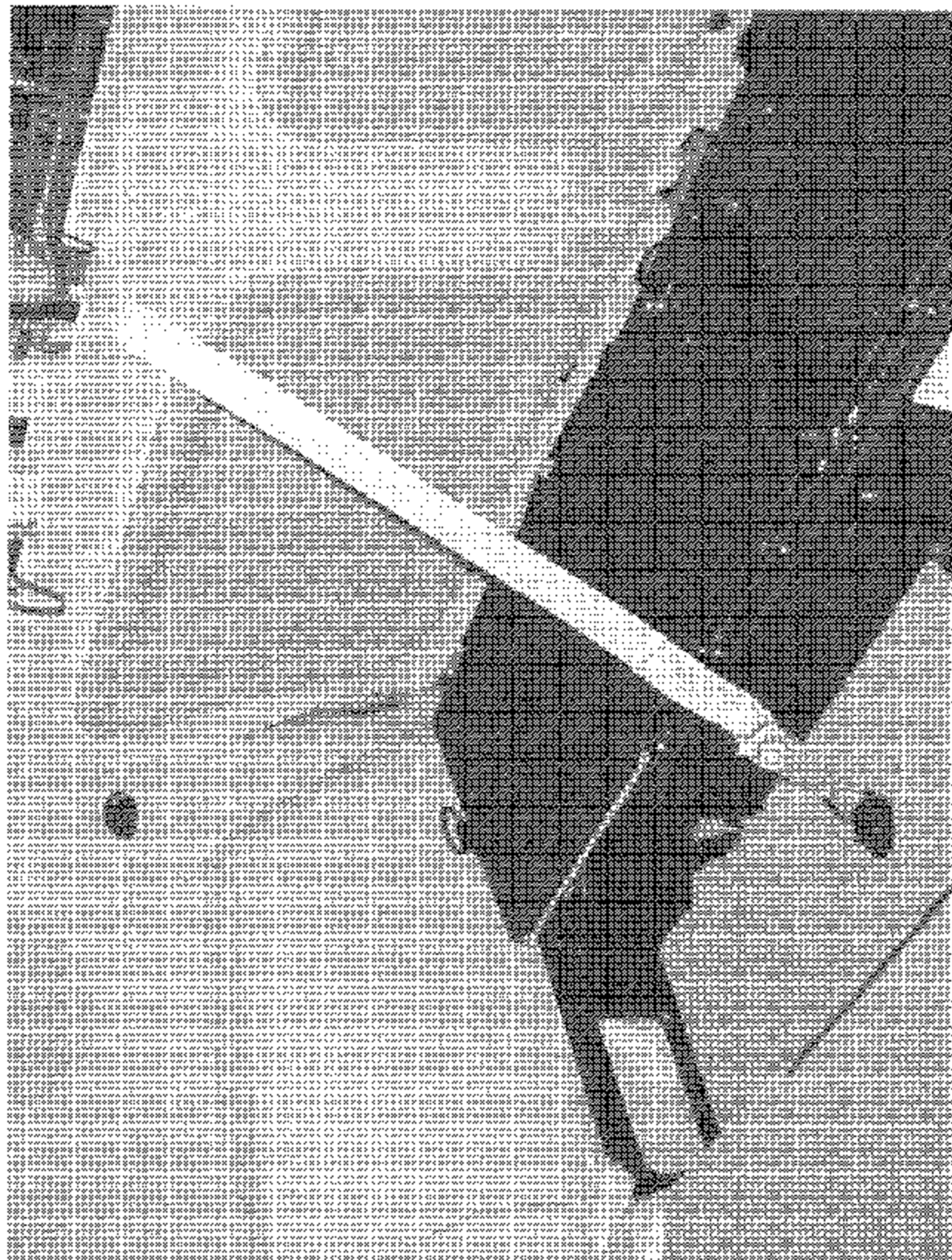


FIGURE 5.32
POST TEST 2ND ROW CENTER POSITION

2003 BUICK RENDEZVOUS
NHTSA NO. C30105
FMVSS NO. 225

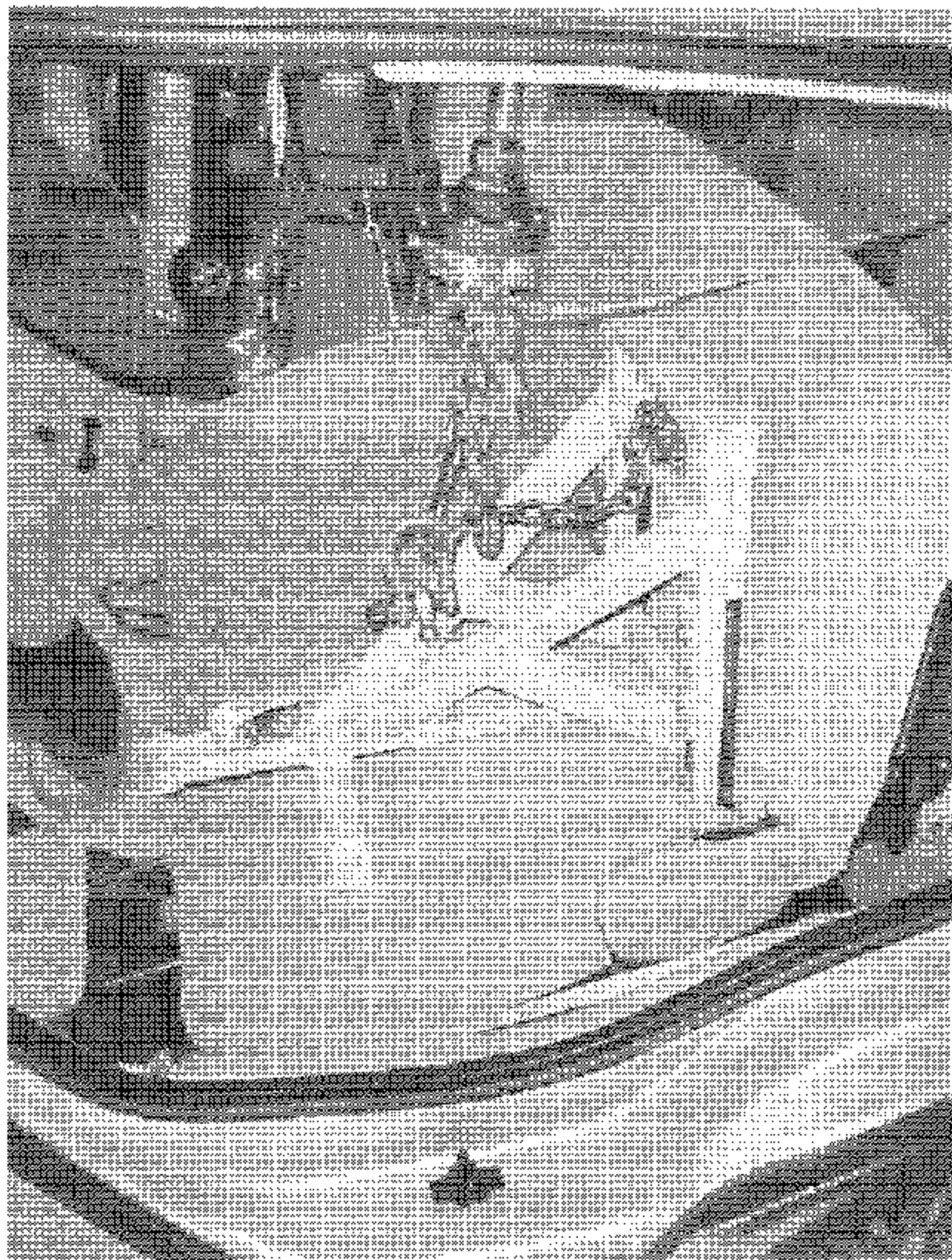


FIGURE 6.33
POST TEST 2ND ROW RIGHT POSITION

2003 BUICK RENDEZVOUS
NHTSA NO. C30105
FMVSS NO. 225

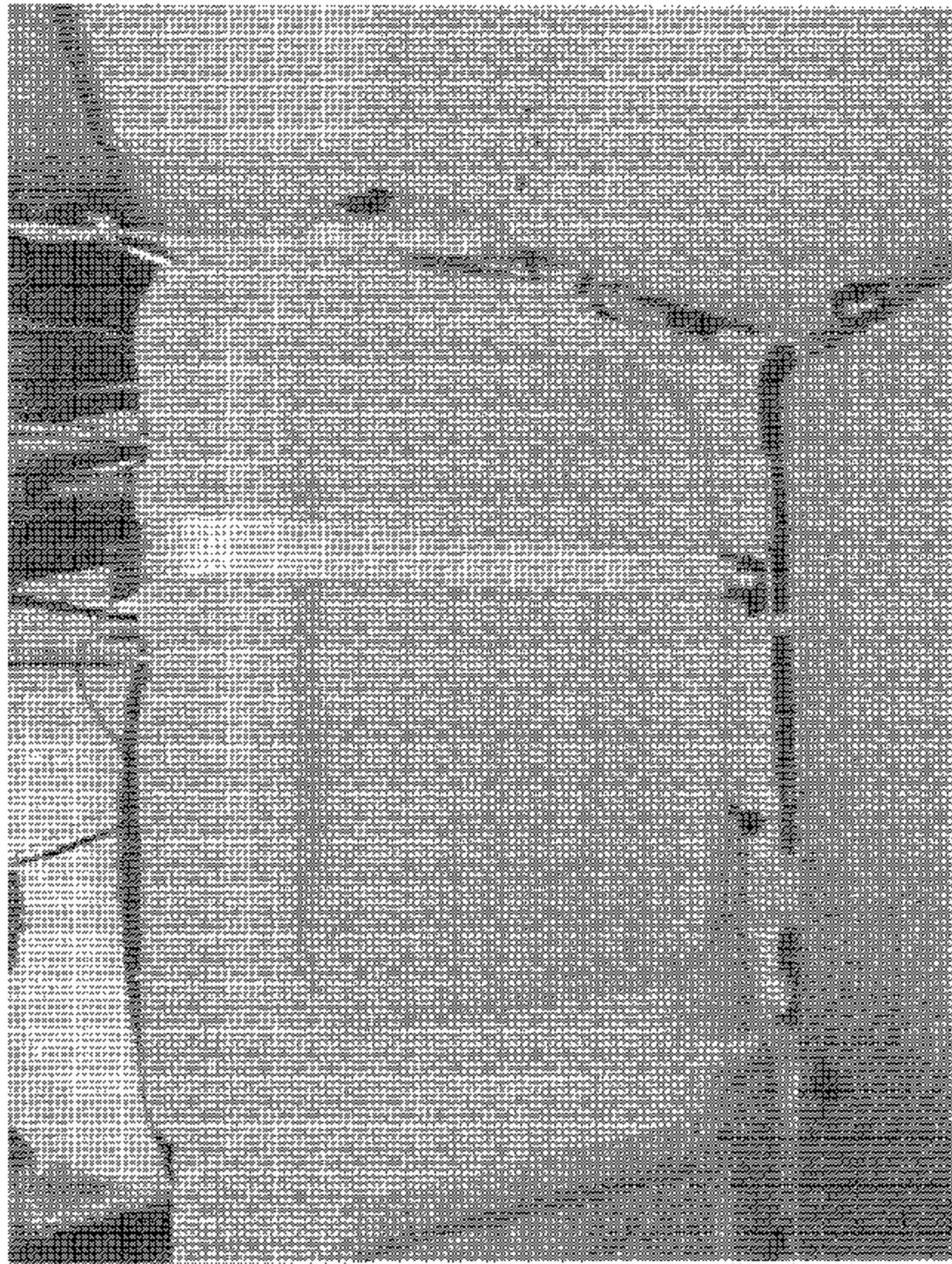


FIGURE 5.34
POST TEST 2ND ROW RIGHT POSITION

2003 BUICK RENDEZVOUS
NHTSA NO. C30106
FMVSS NO. 226

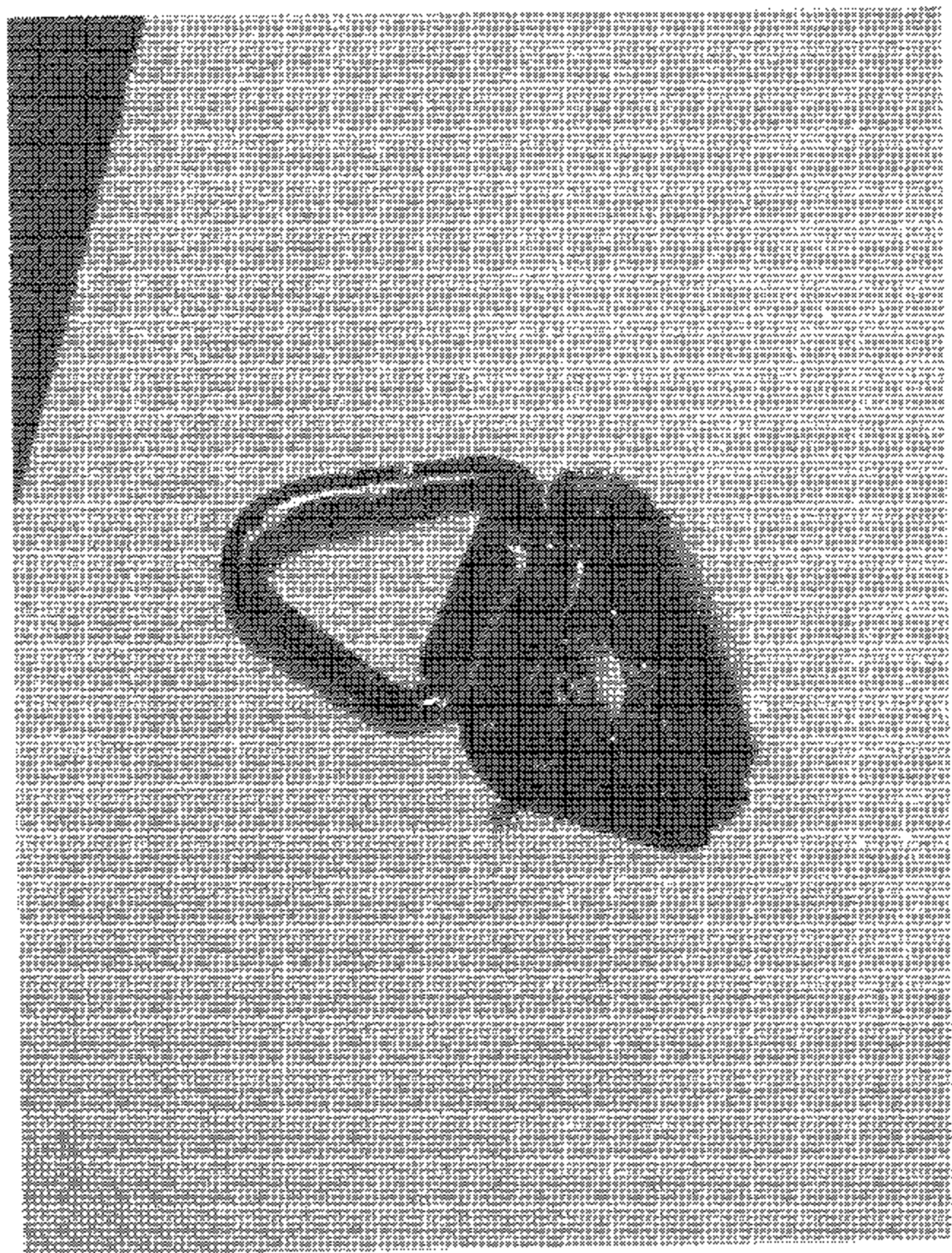


FIGURE 5.35
POST TEST 2ND ROW CENTER TETHER
ANCHOR

2003 BUICK RENDEZVOUS
NHTSA NO. C30108
FMVSS NO. 225

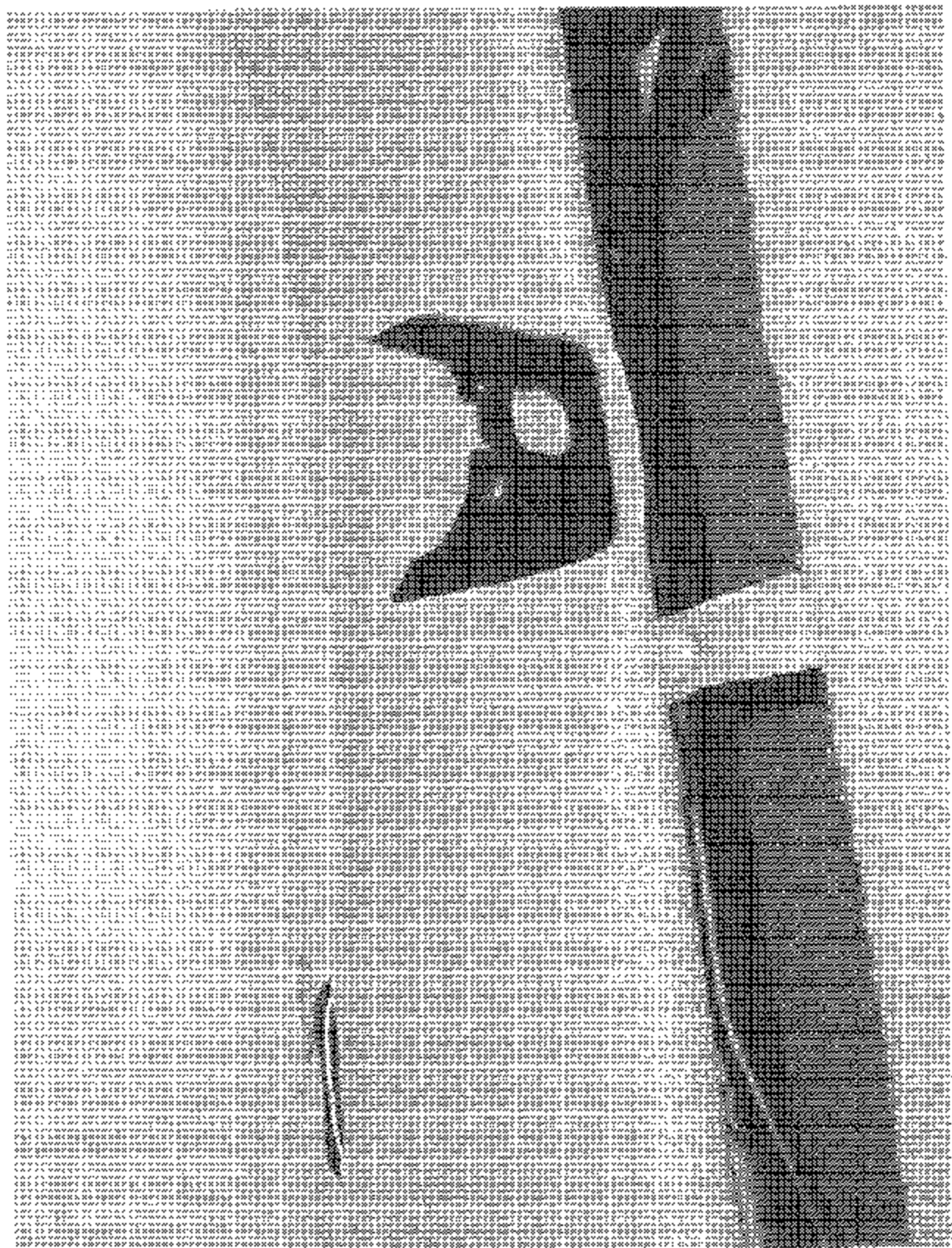


FIGURE 5.36
POST TEST 2ND ROW RIGHT TETHER
ANCHOR

2003 BUICK RENDEZVOUS
NHTSA NO. C39106
FMVSS NO. 225

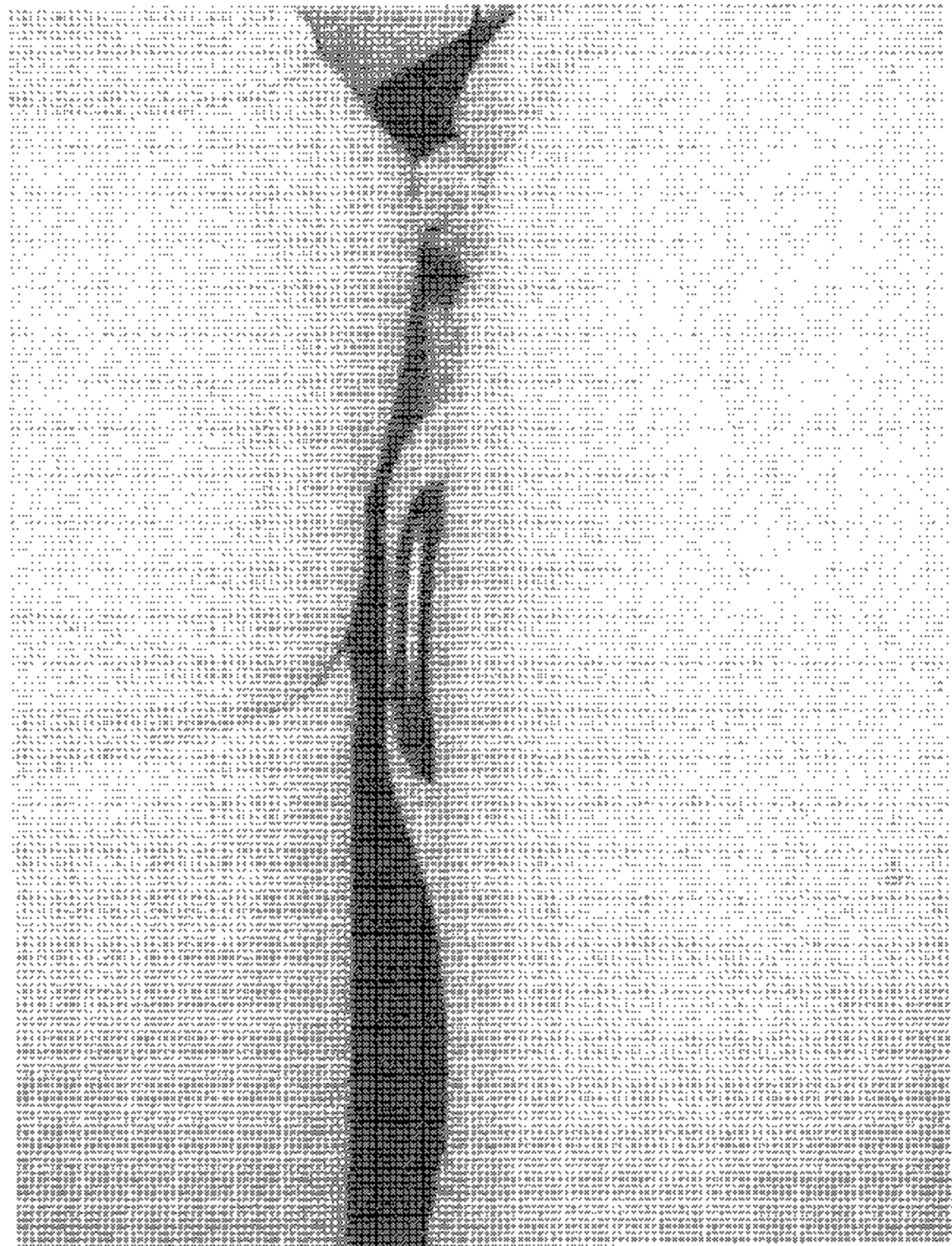


FIGURE 5.37
POST TEST 2ND FOW LEFT OUTBOARD LOWER
ANCHOR

2003 BUICK RENDEZVOUS
NHTSA NO. C39106
FMVSS NO. 225

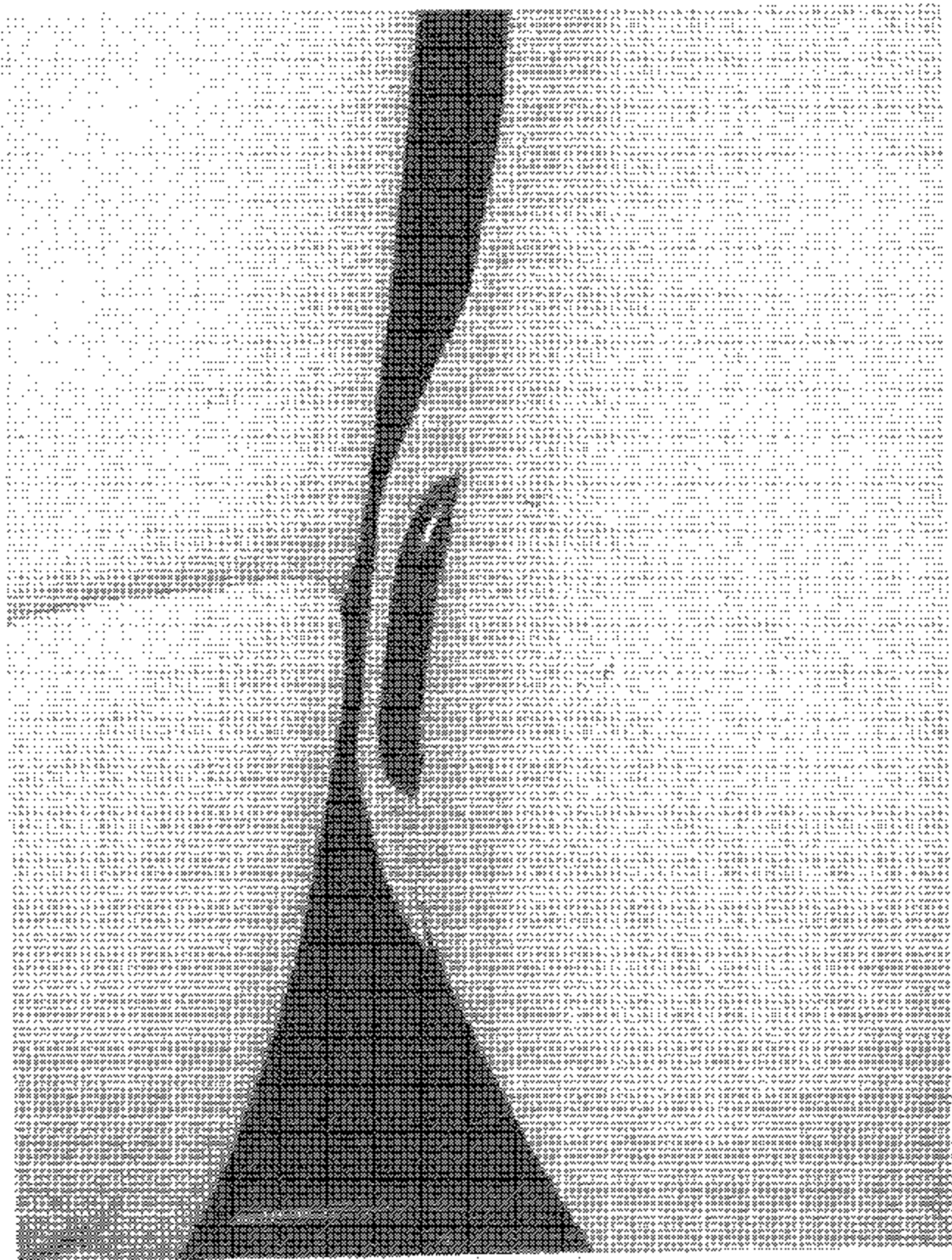
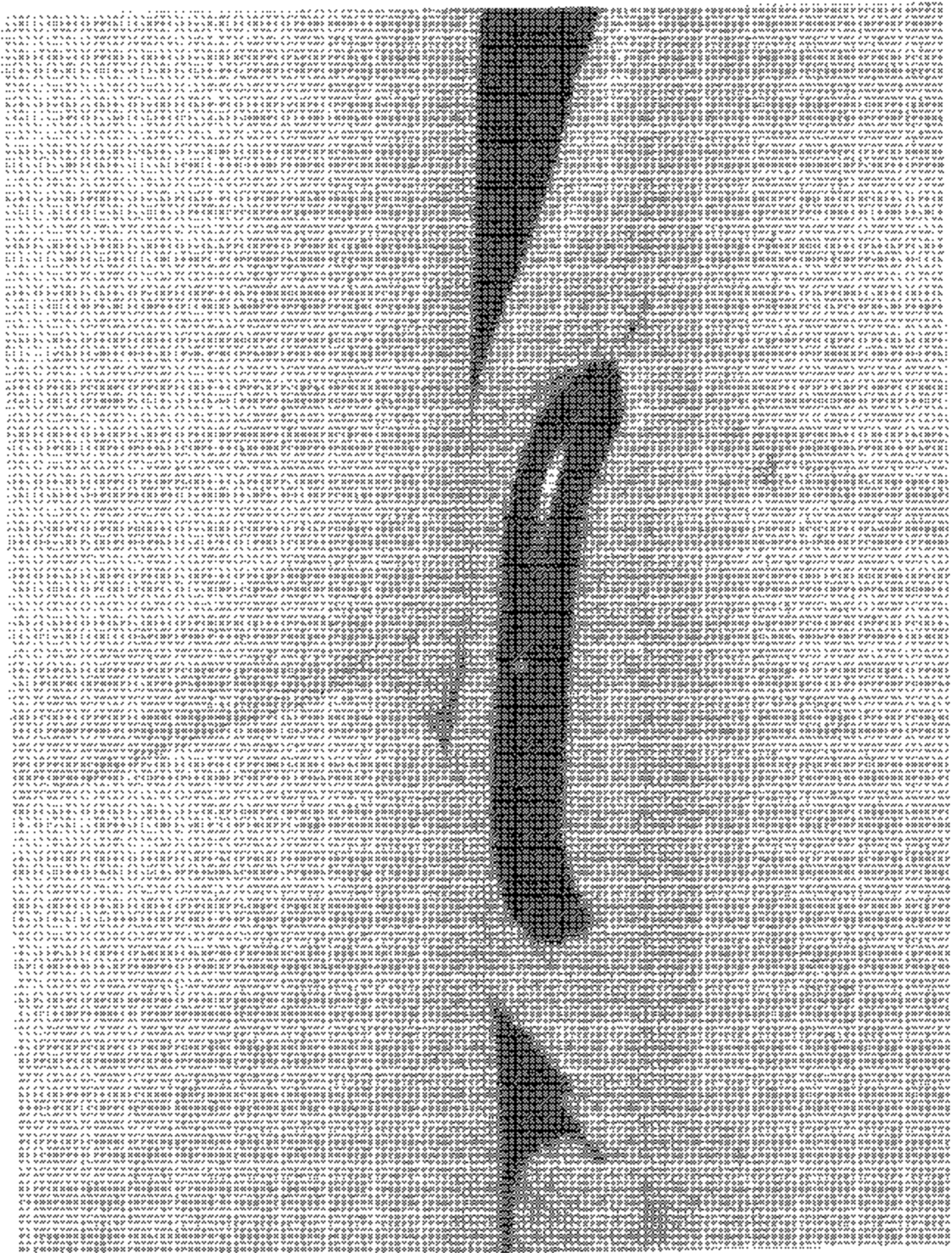


FIGURE 5.28
POST TEST 2ND ROW LEFT INBOARD LOWER
ANCHOR

2003 BUICK RENDEZVOUS
NHTSA NO. 030105
FMVSS NO. 225

FIGURE 5.39
POST TEST 2ND ROW RIGHT OUTBOARD
LOWER ANCHOR

2003 BUICK RENDEZVOUS
NHTSA NO. 030106
FMVSS NO. 225



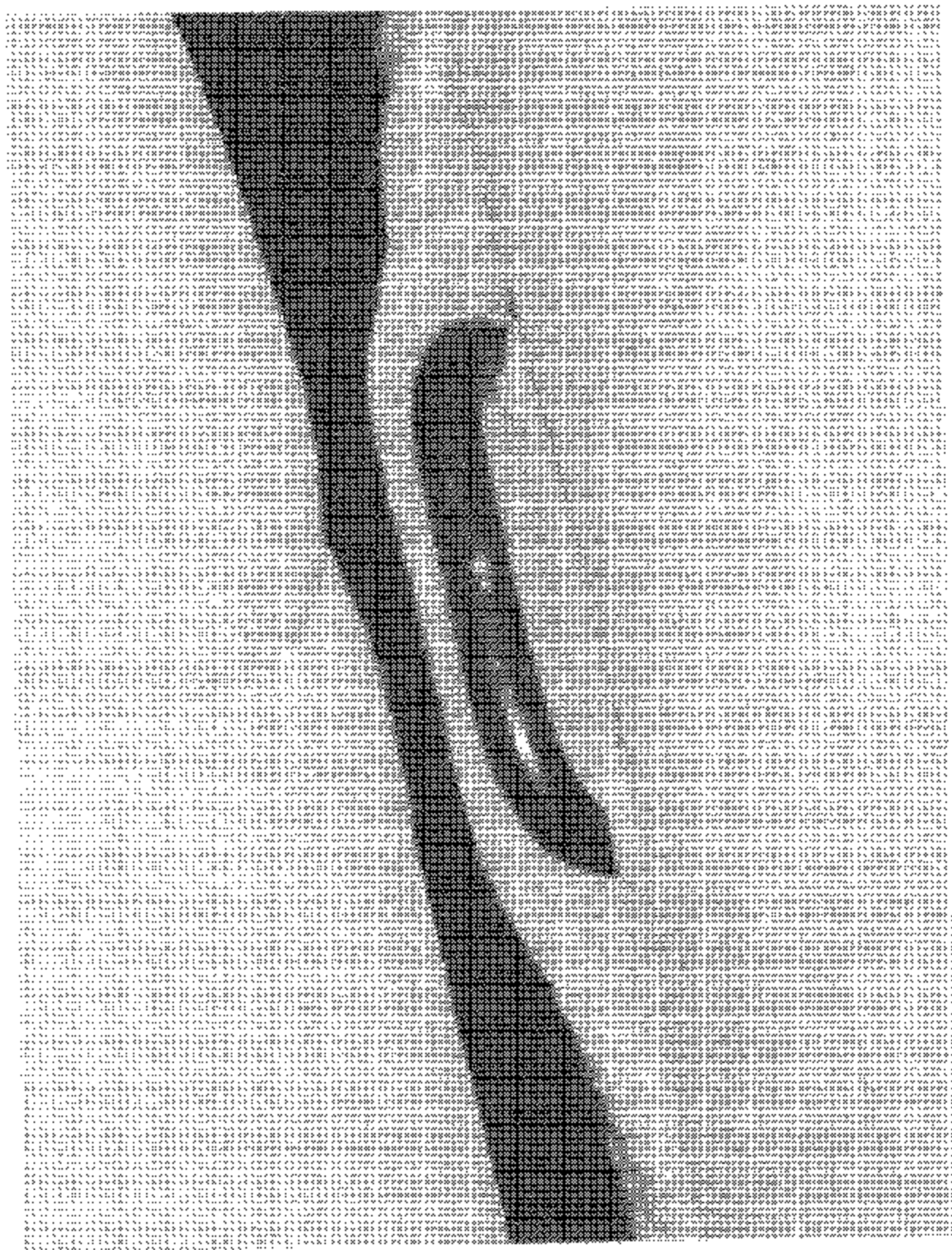


FIGURE 5.40
POST TEST 2ND ROW RIGHT INBOARD
LOWER ANCHOR

2003 BUICK RENDEZVOUS
NHTSA NO. C30100
FMVSS NO. 225

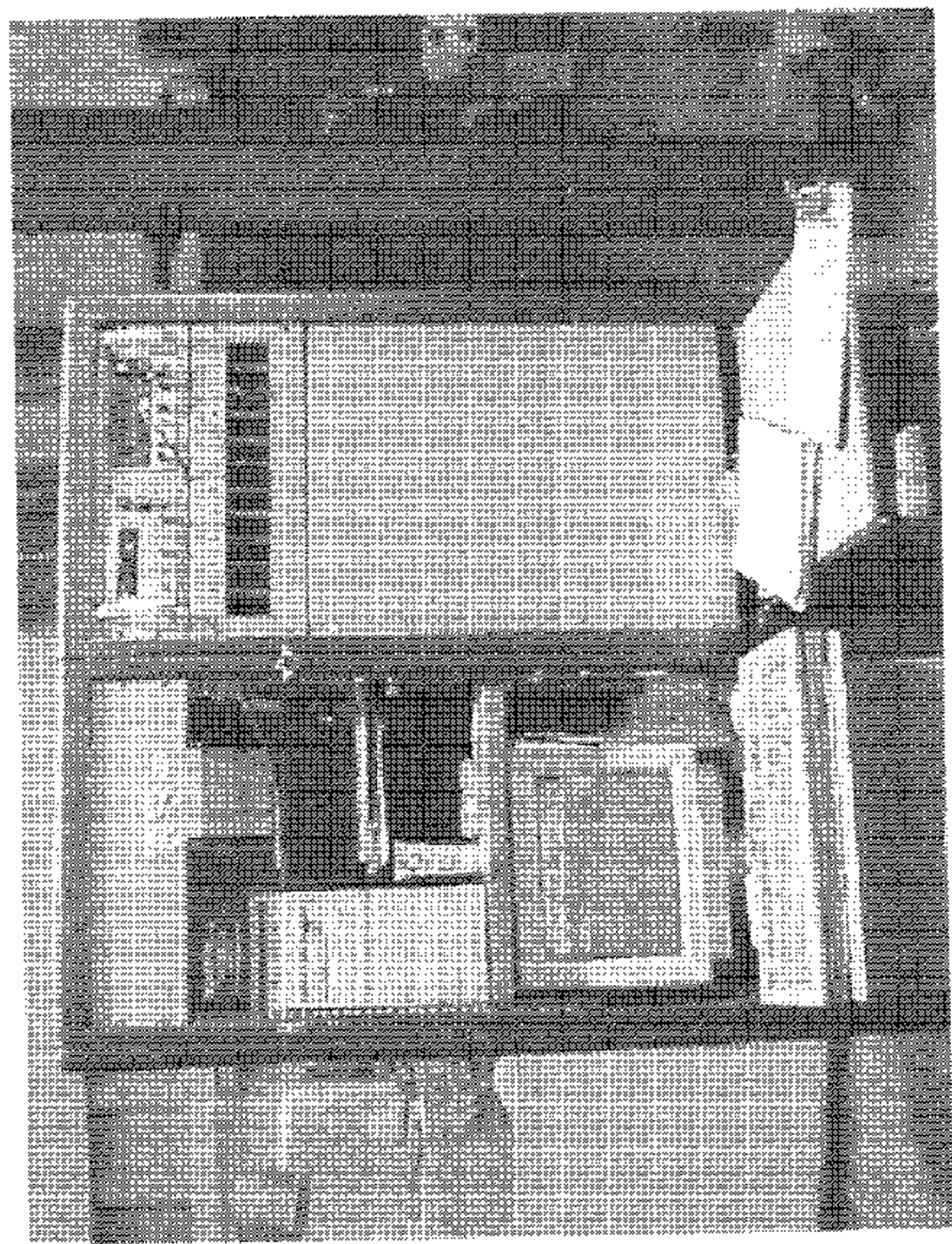


FIGURE 5.41
LOAD SYSTEM CONTROL AND DATA
RECORDING DEVICE IN TEST POSITION

2003 BUICK RENDEZVOUS
NHTSA NO. 030108
FMVSS NO. 225

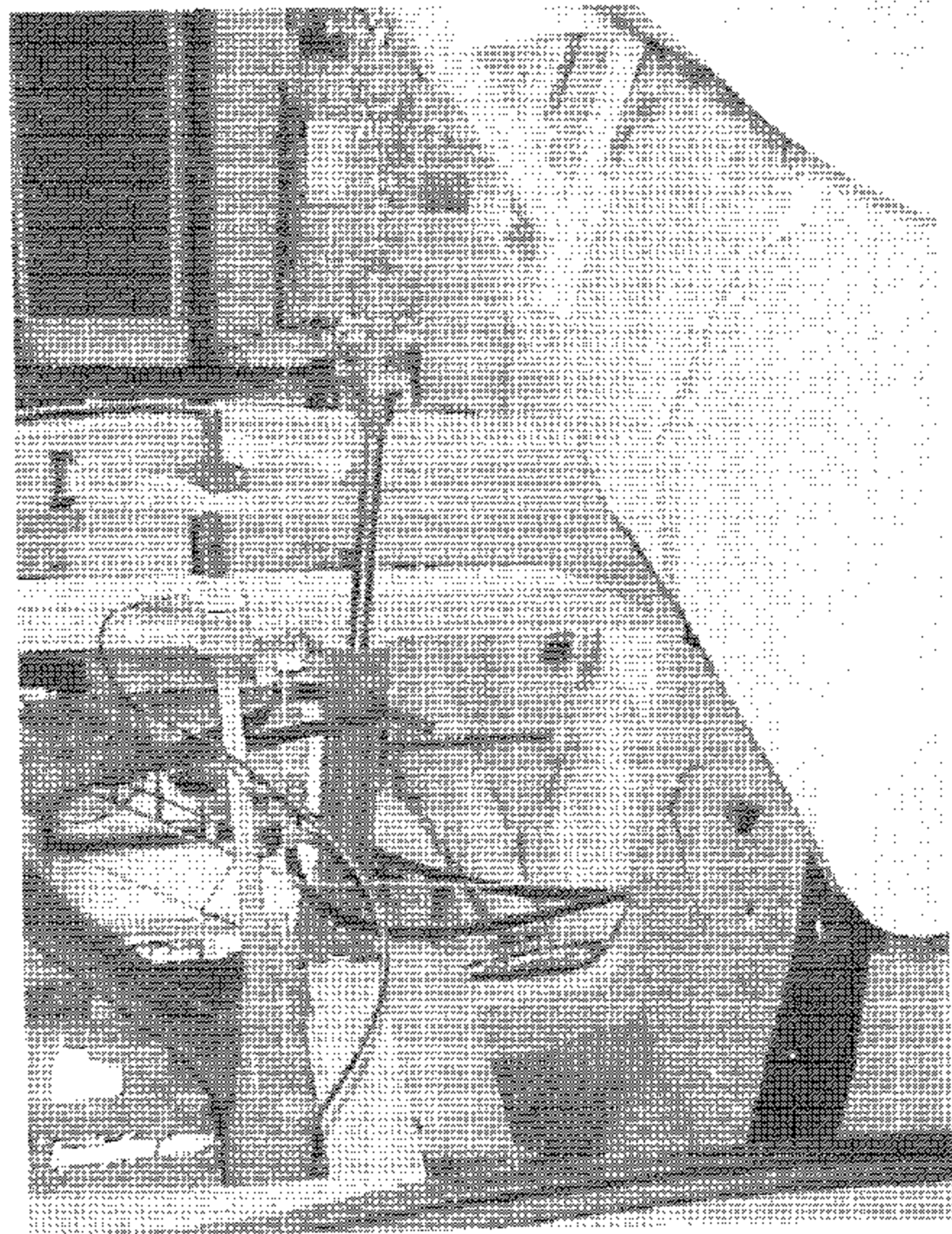


FIGURE 5.42
LOADING DEVICE WITH LOAD CELL AND TEST
FIXTURE IN TEST POSITION

2003 BUICK RENDEZVOUS
NHTSA NO. 030106
FMVSS NO. 225

SECTION 6

PLOTS

FIGURE 6.1

2ND ROW RIGHT TOP TETHER ANCHOR

GTL 5105, NHTSA C30106

22E, Child Restraint, Top Tether, S6.3

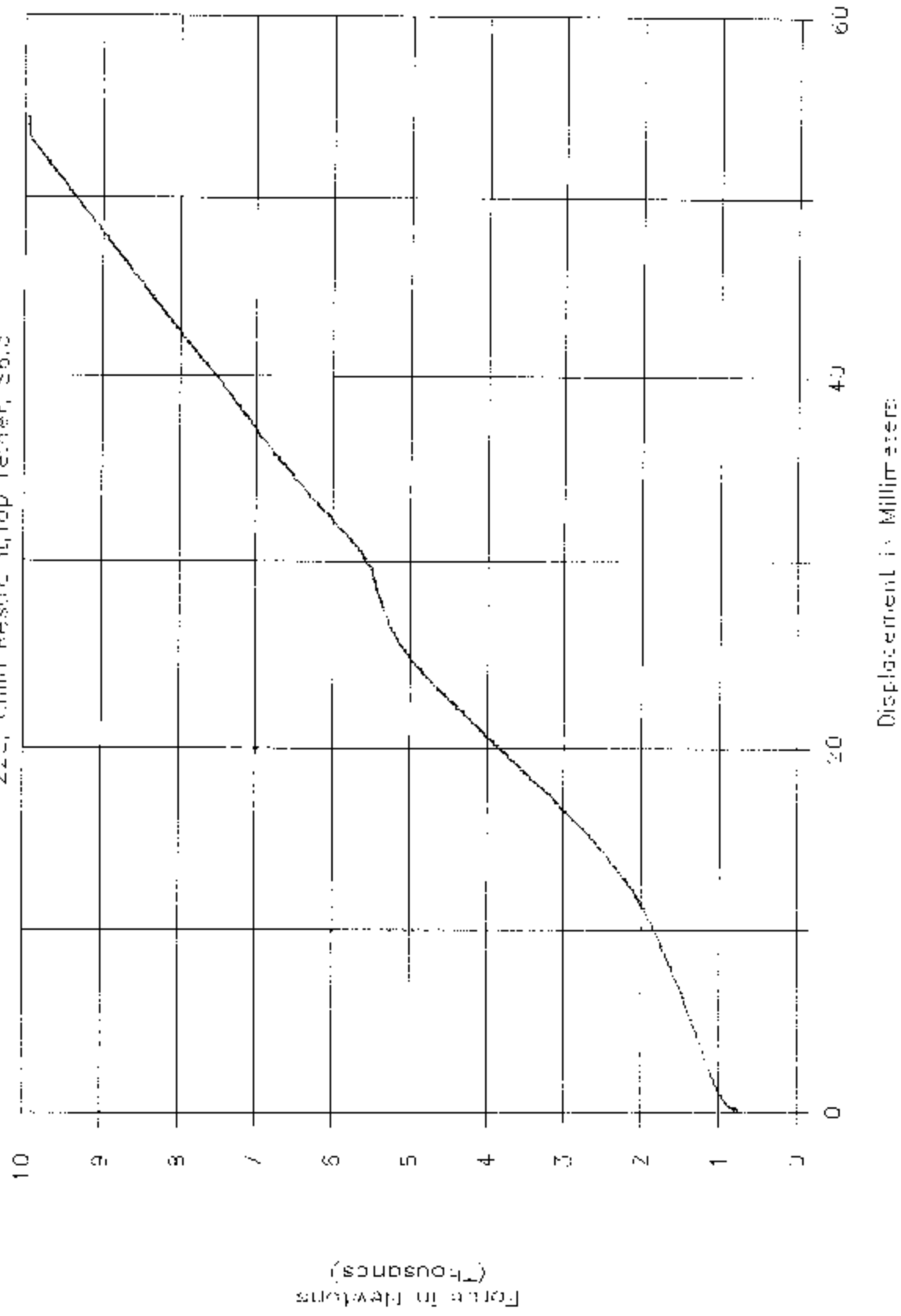


FIGURE 6.2

2ND ROW RIGHT TOP TETHER ANCHOR

GTL 5105, NHTSA C30105

225, Child Restraint, Top Tether, S6.3

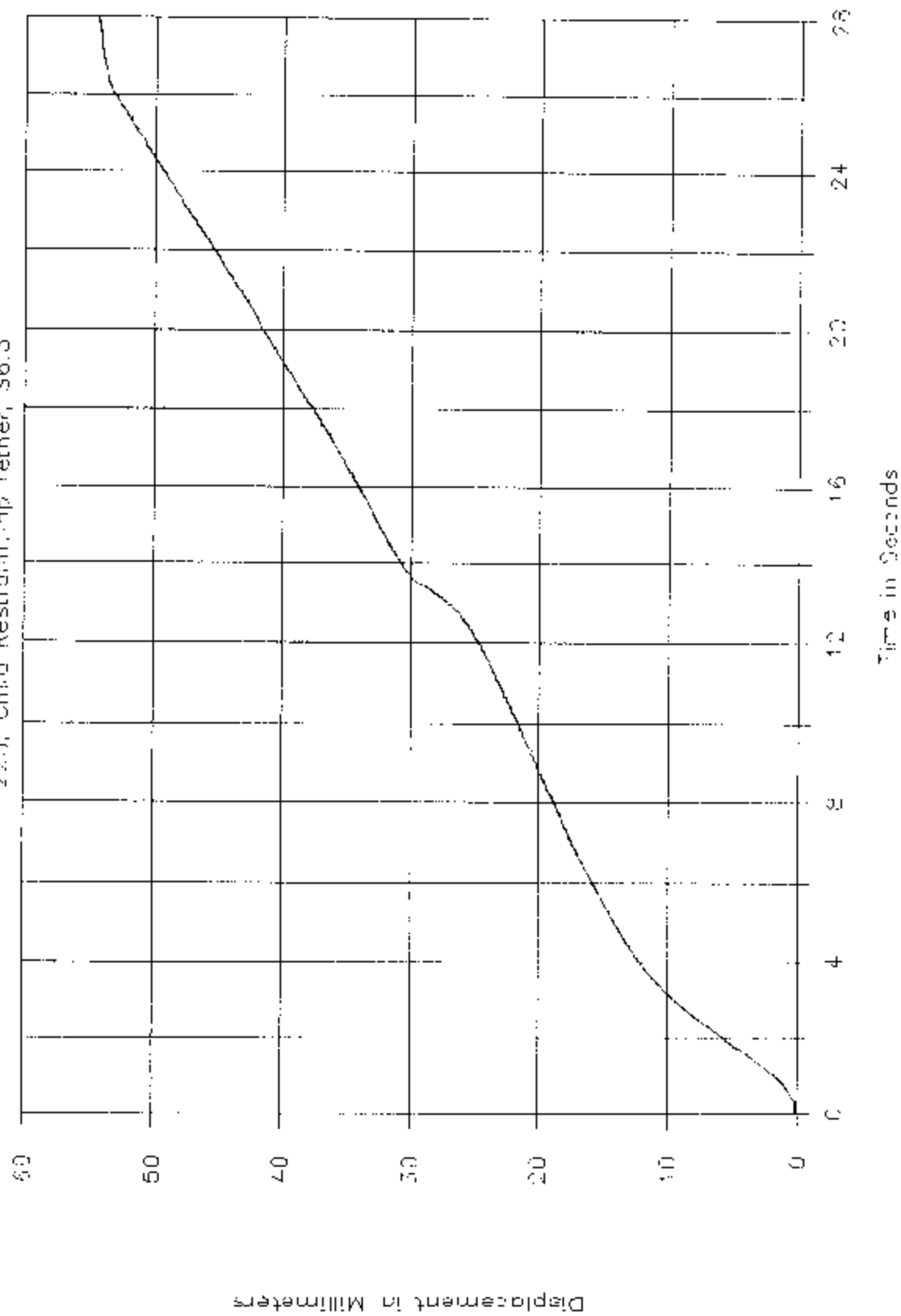


FIGURE 6.3

2ND ROW RIGHT TOP TETHER ANCHOR

GFL 5105, NHTSA C301D5

225, Child Restraint, Top Tether, S6.3

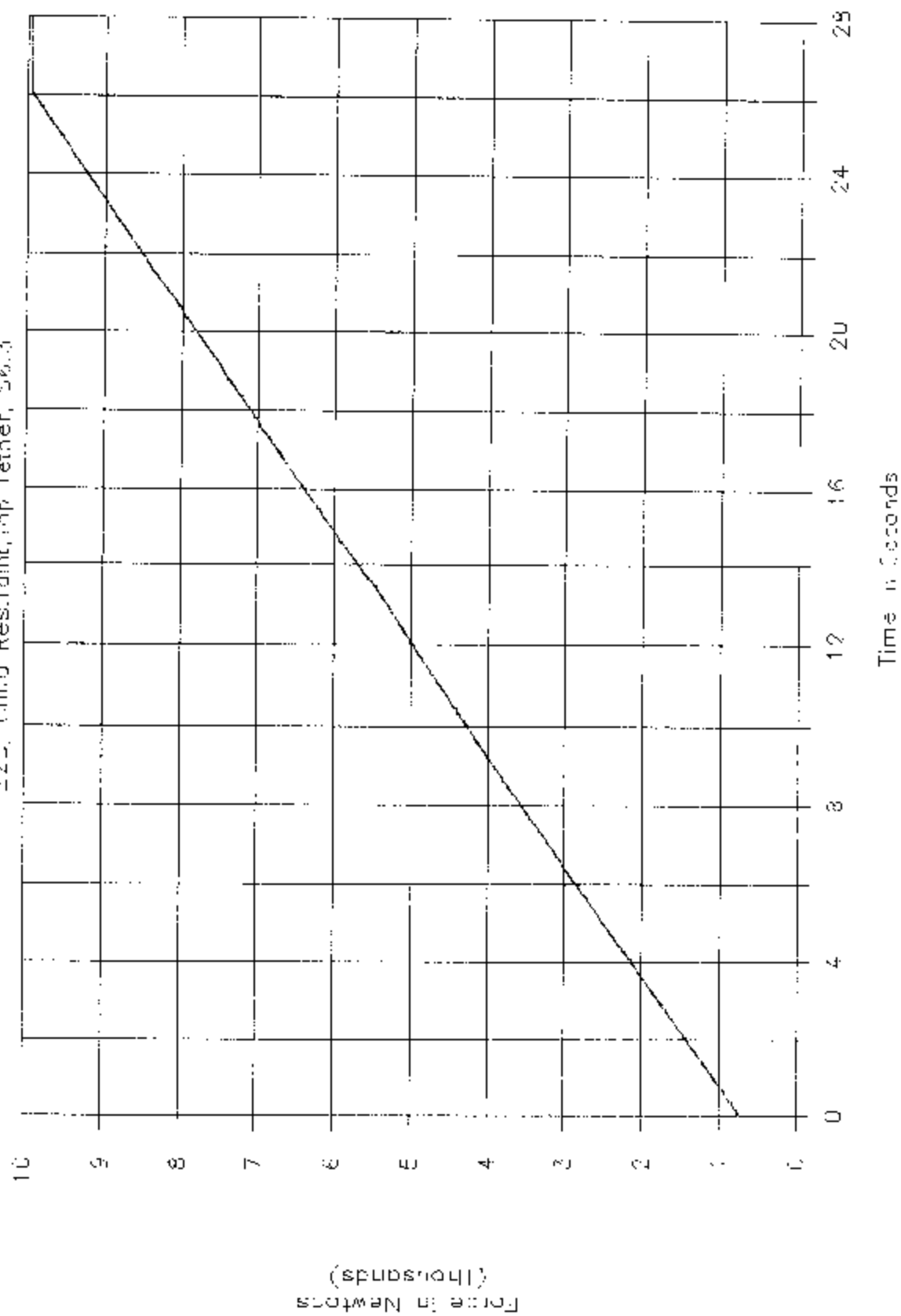


FIGURE 6.4

2ND ROW CENTER TOP TETHER ANCHOR

GTL 5105, NHTSA C30105

225, Child Restraint Top Tether, S6.3

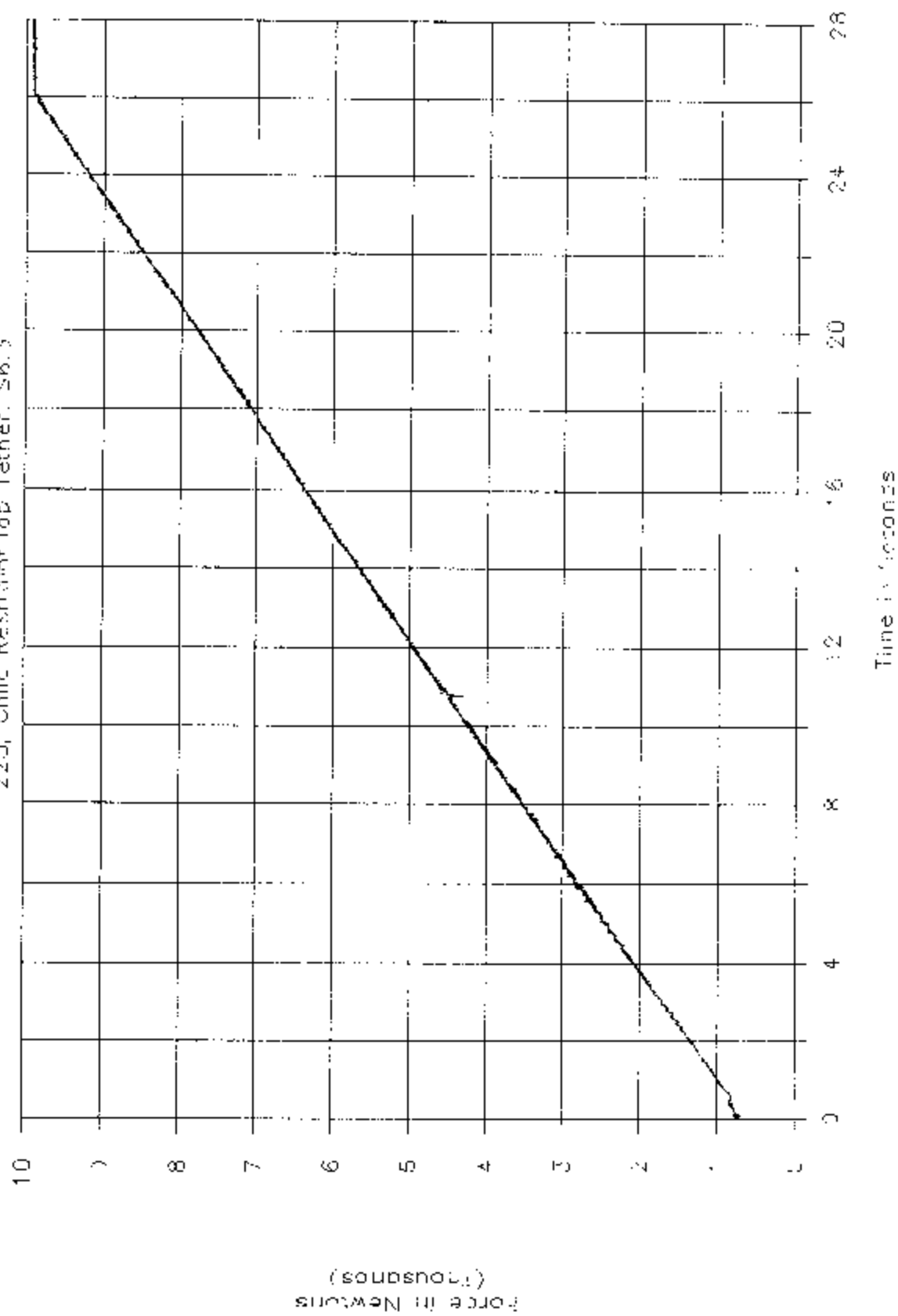


FIGURE 6.5

2ND ROW CENTER TOP TETHER ANCHOR

GTL 5106, NH TSA C30106

225, Child Restraint, Top Tether, S6.3

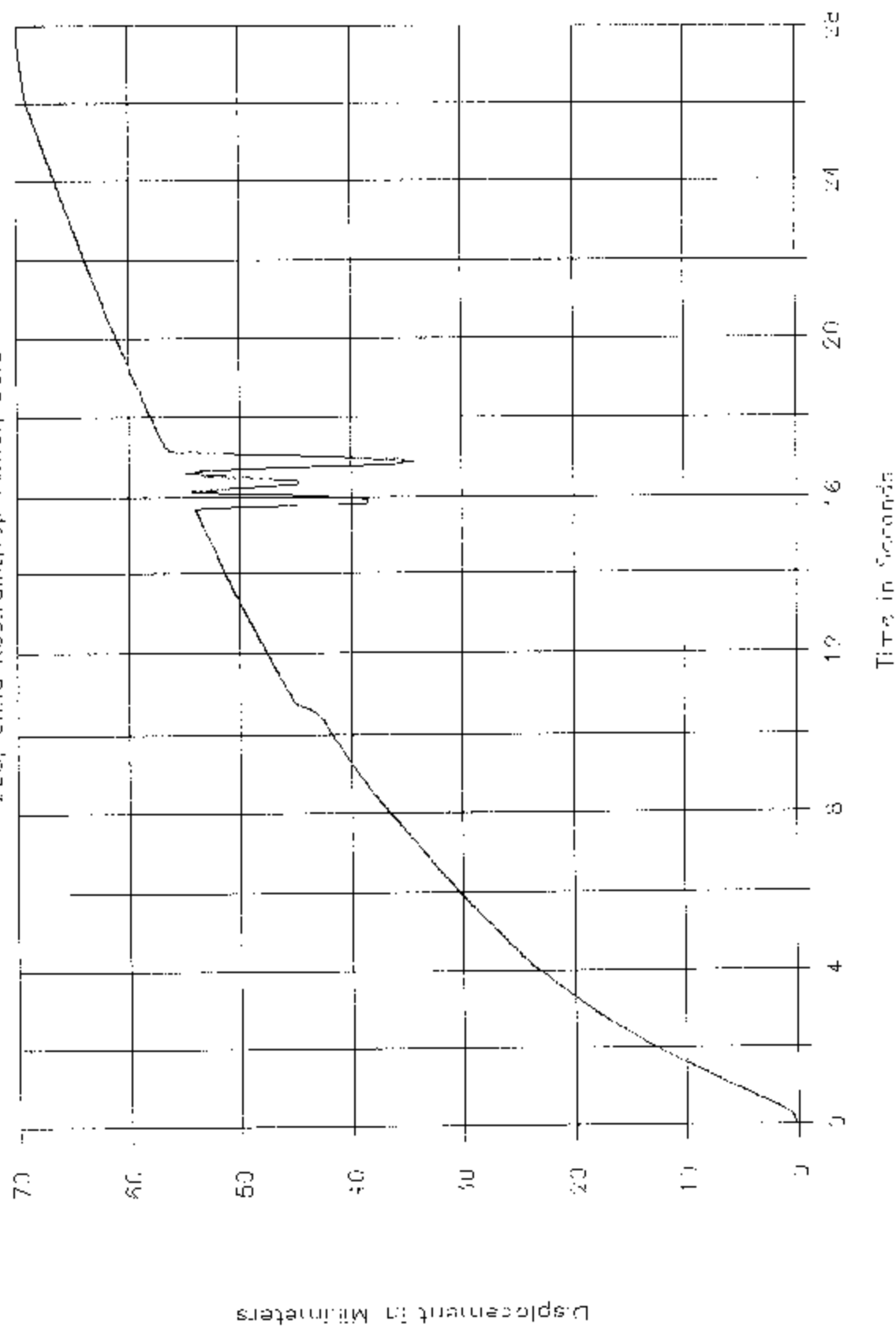


FIGURE 6.6

2ND ROW CENTER TOP TETHER ANCHOR

CTL 5105, NHTSA C30105

225, Child Restraint Top Tether, S6.3

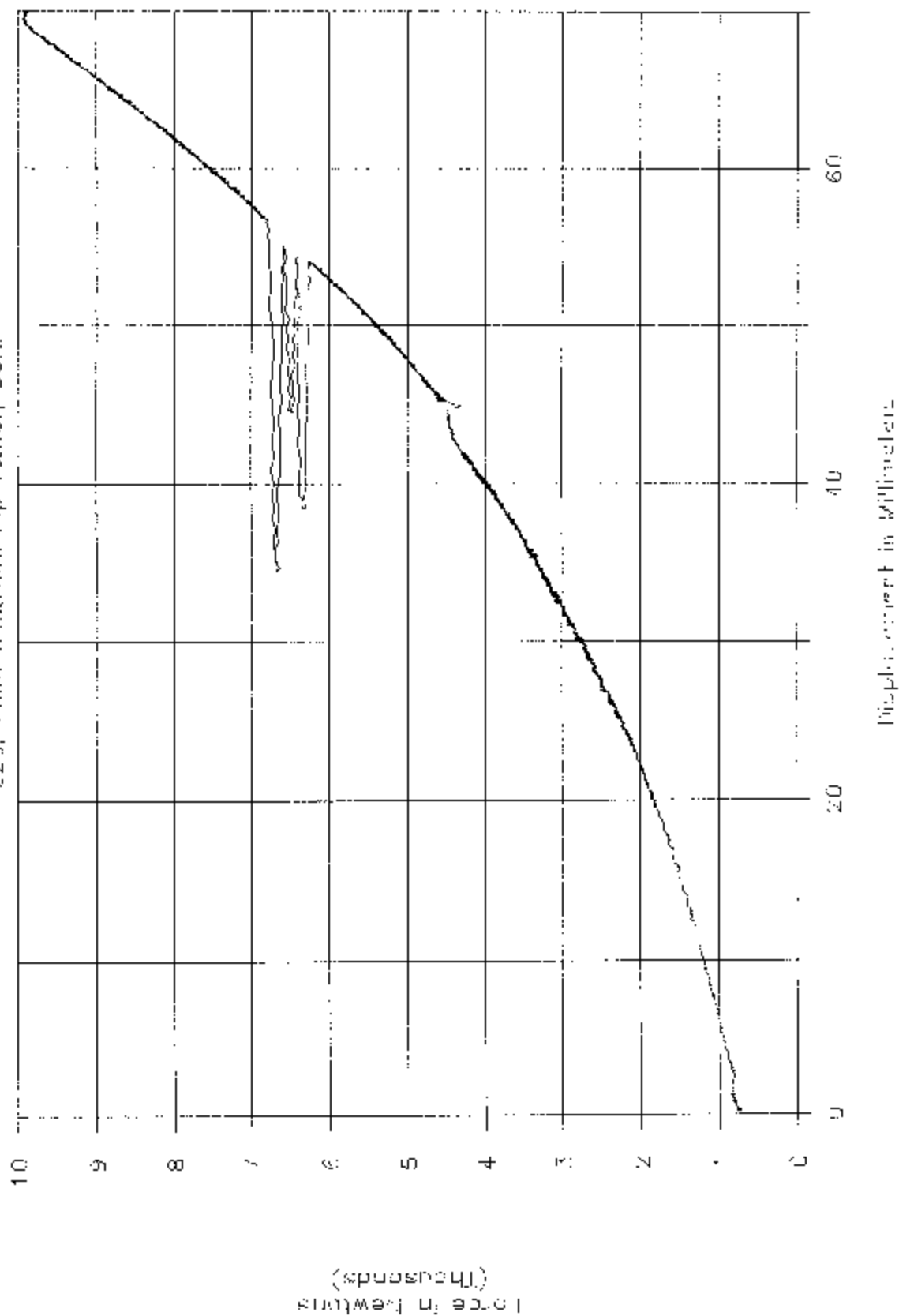


FIGURE 6.7

2ND ROW LEFT LOWER ANCHOR

G1_5107, NIITSA C30105

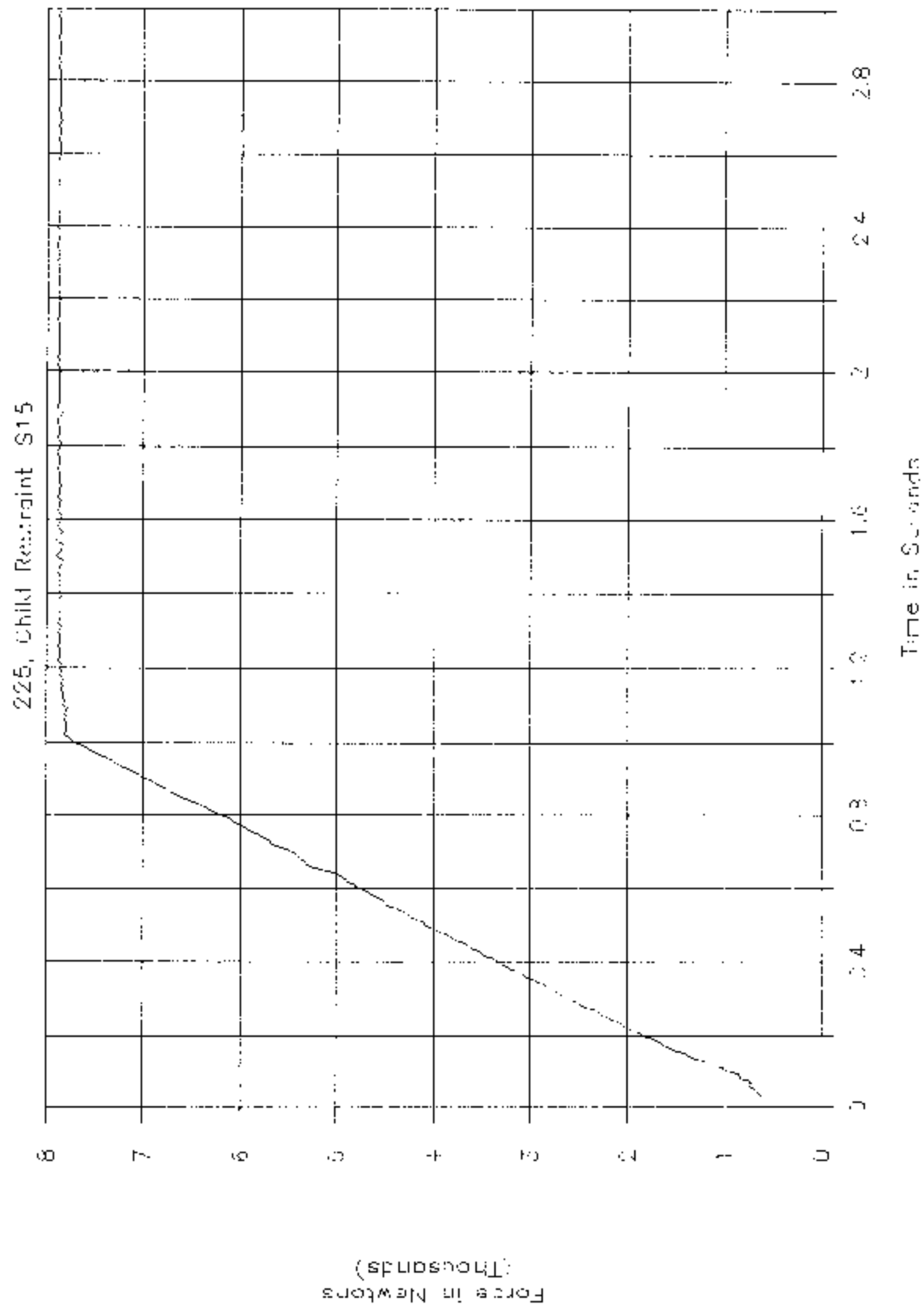


FIGURE 6.8

2ND ROW LEFT LOWER ANCHOR

CT-1 5107, NHTSA C30106

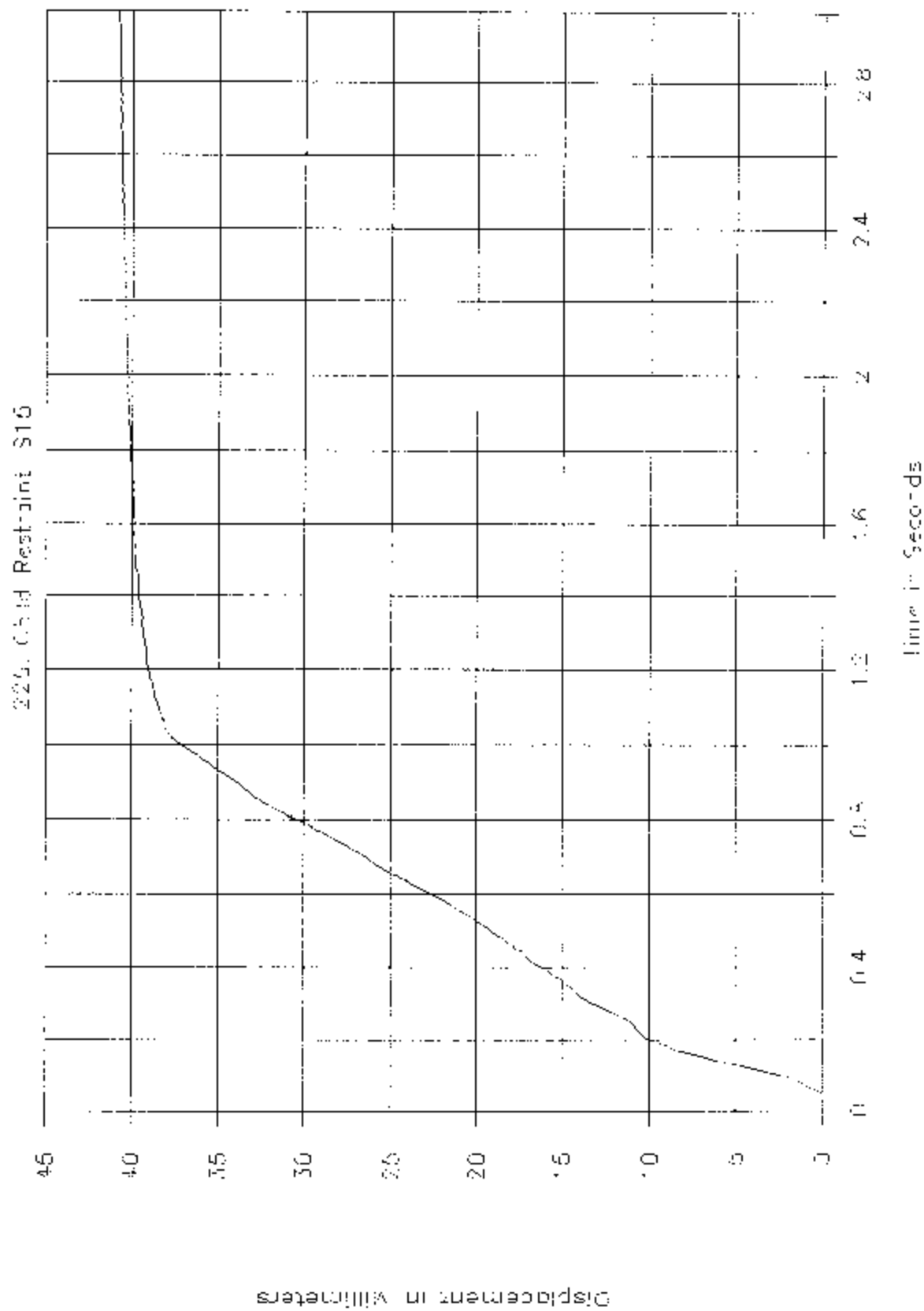
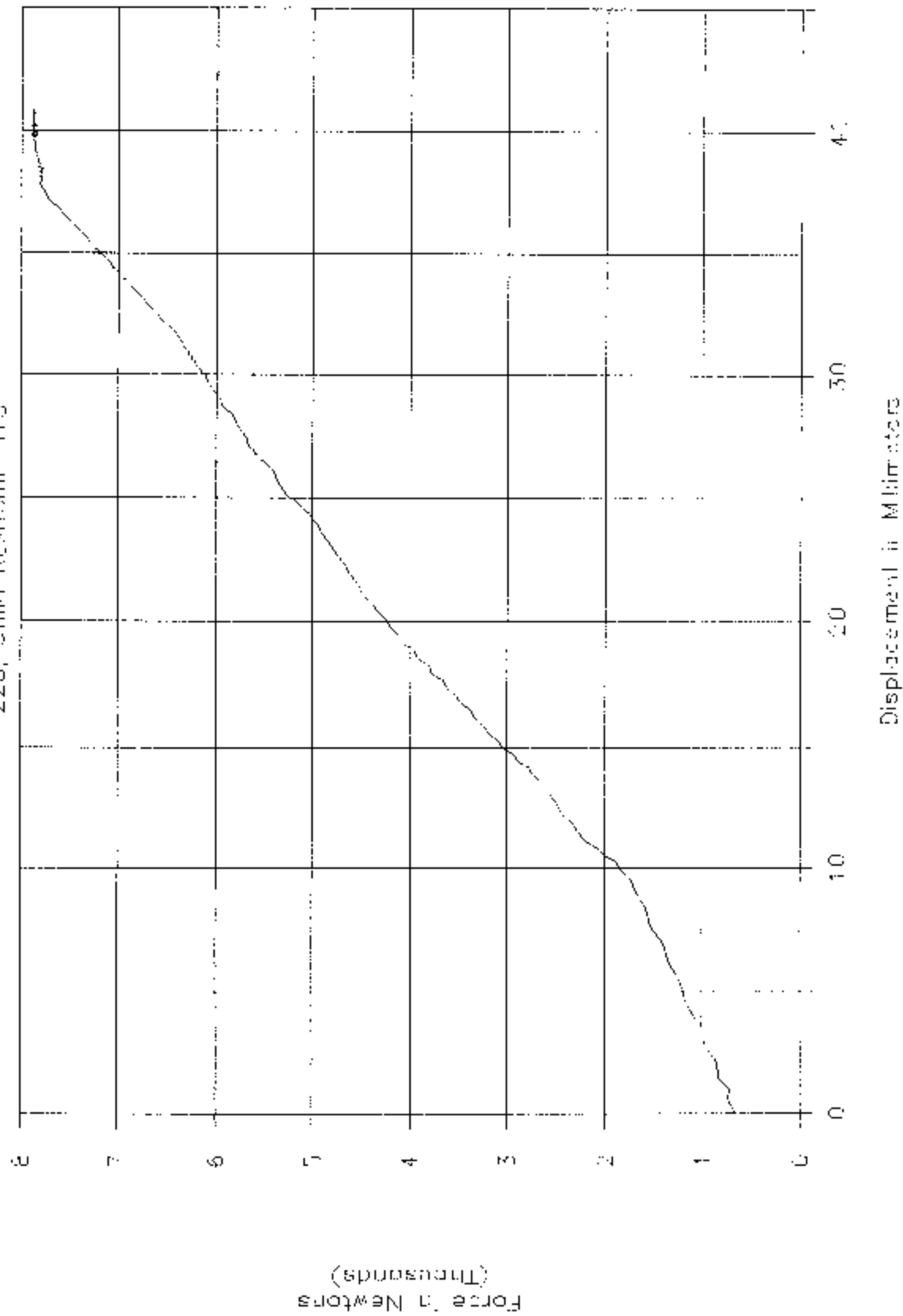


FIGURE 6.9

2ND ROW LEFT LOWER ANCHOR

GTL 5107, NITSA C30106

225, Child Restraint 915



APPENDIX A

OWNER'S MANUAL CHILD RESTRAINT INFORMATION

Whenever you install it, be sure to secure the child restraint properly.

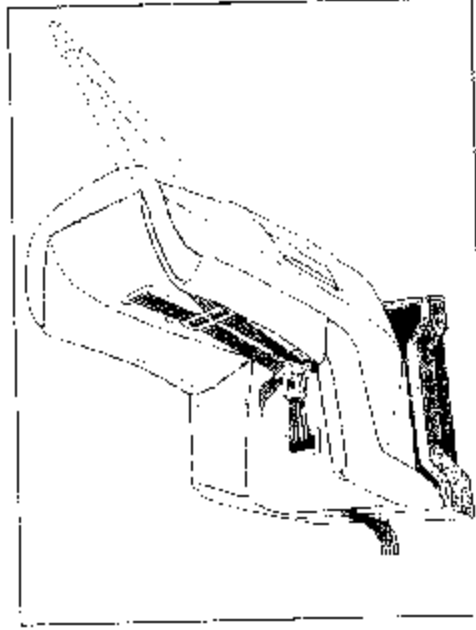
Keep in mind that an unsecured child restraint can move around in a collision or sudden stop and injure people in the vehicle. Be sure to properly secure any child restraint in your vehicle – even when no one is in it.

Top Strap

Some child restraints have a top strap, or “top tether,” that can help restrain the child restraint during a collision. For it to work, a top strap must be properly anchored to the vehicle. Some top strap-equipped child restraints are designed for use with or without the top strap being anchored. Others require the top strap always to be anchored. Be sure to read and follow the instructions for your child restraint. If yours requires that the top strap be anchored, don't use the restraint unless it is anchored properly.

If the child restraint does not have a top strap, one can be obtained, in kit form, for many child restraints.

Ask the child restraint manufacturer whether or not a kit is available.

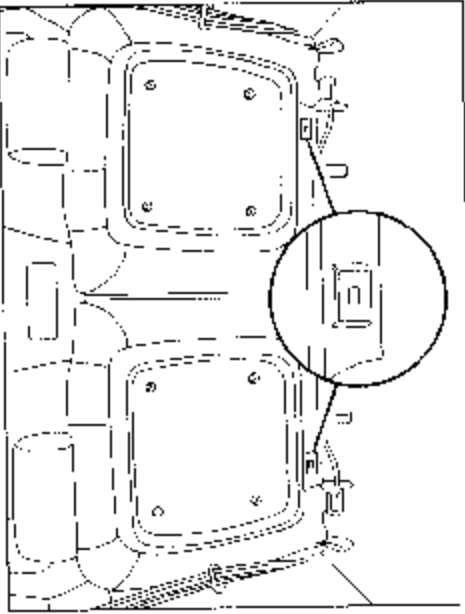


In Canada, the law requires that forward-facing child restraints have a top strap, and that the strap be anchored. In the United States, some child restraints also have a top strap. If your child restraint has a top strap, it should be anchored.

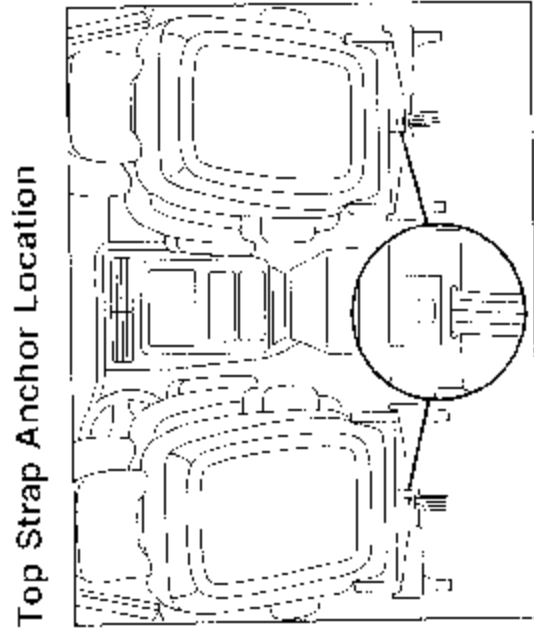
Anchor the top strap to one of the following anchor points. Be sure to use an anchor point located on the same side of the vehicle as the seating position where the child restraint will be placed. If you have an adjustable head restraint, route the top strap under it.

If you're using a top strap equipped child restraint in the second-row center console seat and need to temporarily transport a flat tire for repair, move the child restraint to a rear seat outboard position. See *Securing a Child Restraint in a Rear-Outside Seat Position on page 147* for more on this, including important safety information.

Once you have the top strap anchored, you'll be ready to secure the child restraint itself. Tighten the top strap when, and as the child restraint manufacturer's instructions say.

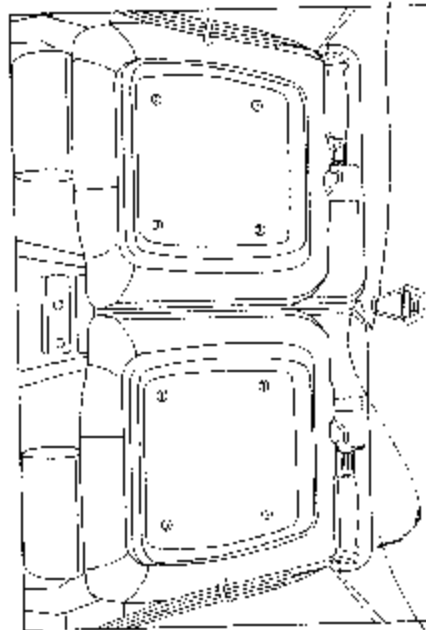


Second Row Outside Position Bench Seat



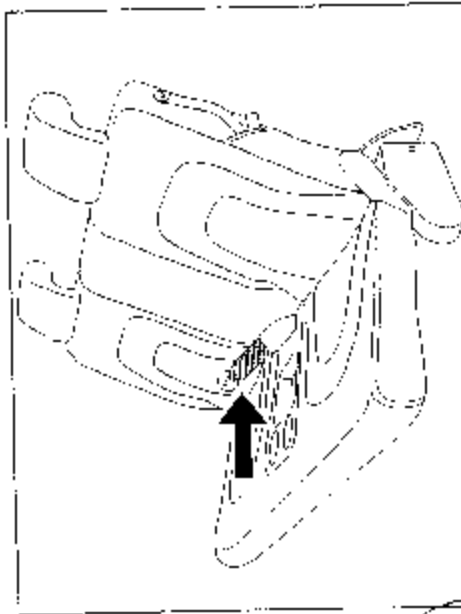
Captain's Chairs

Top Strap Anchor Location



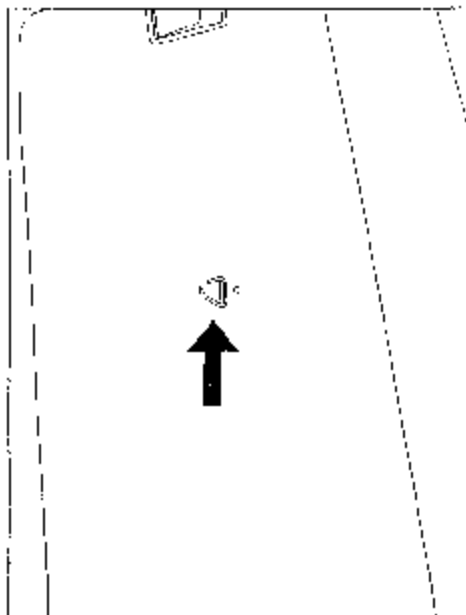
Second Row Center Position Bench Seat without Third Row Seat

You vehicle has lap seat anchors already installed for the rear seating positions. An anchor bar for a lap strap is located at the rear of the seat cushion for each second row outboard seating position. The anchor bar for the center position bench seat is located at the top behind the second row seats. If the vehicle has the extended rear convenience center, you need to remove a plastic plug and look under the convenience center to find the anchor bar for the center position bench seat.



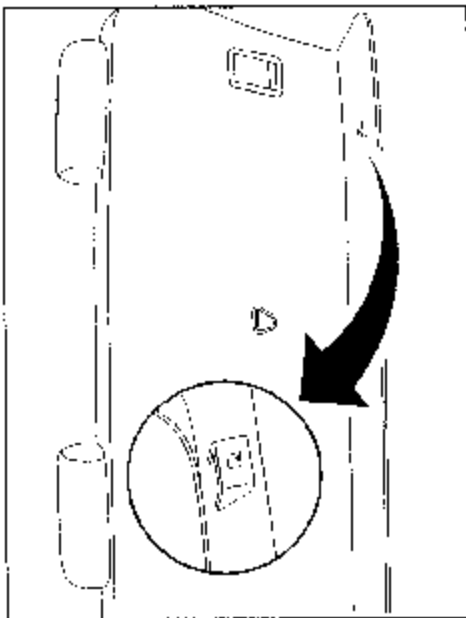
Second Row Center Position Bench Seat with Third Row Seat

If the vehicle has a third row seat and the seatback is upright, there is an anchor strap located between the third row seatback and cushion to anchor the child restraint for the second row center position bench seat.



Second Row Center Position Bench Seat with Third Row Seat Folded Down

If the vehicle has a third row seat and the seatback is folded, there is an anchor on the back of the third row seat for the second row center position bench seat.



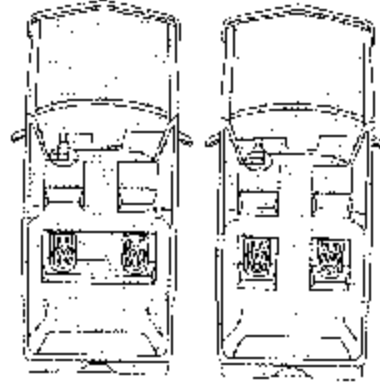
Third Row Passenger's Side Outside Position

There is also a top strap anchor for third row passenger's side outside position. Locate the anchor symbol on the flap of carpet behind the seat. Lift up the carpet to access the anchor.

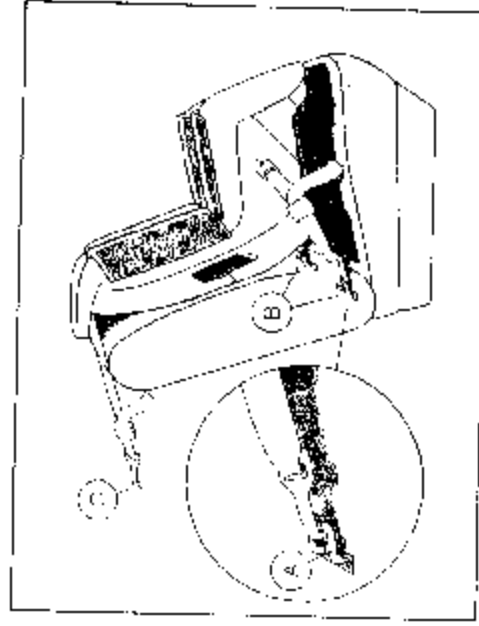
Lower Anchorages and Top Tethers for Children (LATCH System)

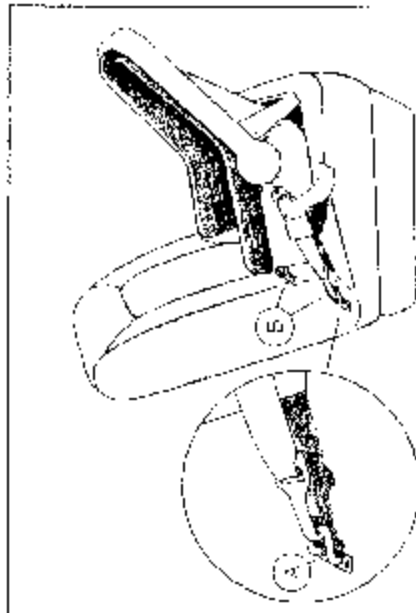
Your vehicle has the LATCH system. You'll find anchors (A) in the second row outside passenger positions.

To assist you in locating the lower anchors for II is child restraint system, each seating position with the LATCH system will have latches between the seatback and outboard.



In order to use the system, you need either a forward-facing child restraint that has attaching points (D) at its base and a top tether anchor (C), or a rear-facing child restraint that has attaching points (E), as shown here.





With this system, use the LATCH system instead of the vehicle's safety belts to secure a child restraint.

⚠ CAUTION:

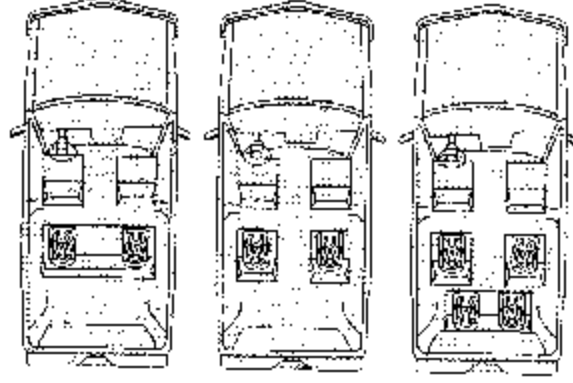
If a LATCH-type child restraint isn't attached to its anchor points, the restraint won't be able to protect a child sitting there. In a crash, the child could be seriously injured or killed. Make sure that a LATCH-type child restraint is properly installed using the anchor points, or use the vehicle's safety belts to secure the restraint. See "Securing a Child Restraint in a Rear Outside Seat Position" in the Index for information on how to secure a child restraint in your vehicle using the vehicle's safety belts.

Securing a Child Restraint Designed for the LATCH System

Securing a Child Restraint in a Rear Outside Seat Position

1. Find the anchors for the seating position you want to use, where the bottom of the seatback meets the back of the seat cushion.
2. Put the child restraint on the seat.
3. Attach the anchor points on the child restraint to the anchors in the vehicle. The child restraint instructions will show you how.
4. If the child restraint is forward-facing, attach the top strap to the top strap anchor. See Top Strap on page 1-54. Tighten the top strap according to the child restraint instructions.
5. Push and pull the child restraint in different directions to be sure it is secure.

To remove the child restraint, simply unlock the top strap from the top tether anchor and then disengage the anchor points.



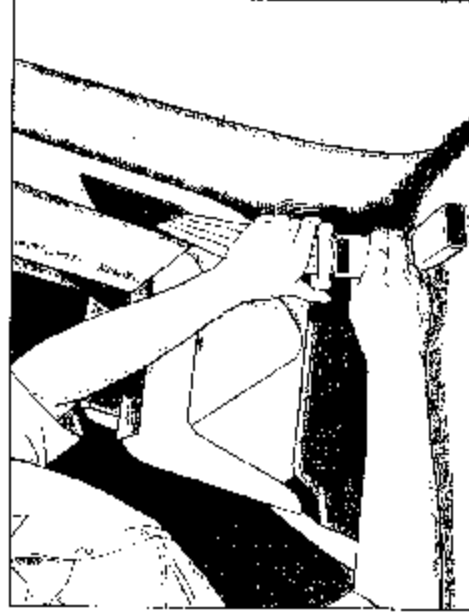
If your child restraint is equipped with the LATCH system, see Lower Anchors and Top Tethers for Children (LATCH System) on page 1-59.

You'll be using the an-shoulder belt. See Top Strap on page 154 if the child restraint has one. Be sure to follow the instructions that came with the child restraint. Secure the child in the child restraint when and as the instructions say.

1. Put the restraint on the seat.
2. Pick up the latch plate, and run the an- and shoulder portions of the vehicle's safety belt through or around the restraint. The child restraint instructions will show you how.



Tilt the latch plate to adjust the belt if needed.
The shoulder belt goes in front of the child's face or neck, but 1 behind the child restraint.



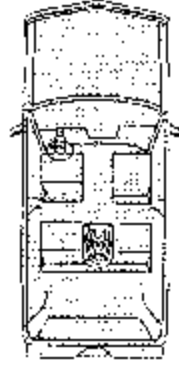
3. Buckle the belt. Make sure the release button is positioned so you would be able to unbuckle the safety belt quickly if you ever had to.



- 4 To tighten the belt, pull up on the shoulder belt while you push down on the child restraint. If you're using a forward-facing child restraint, you may find it helpful to use your knee to push down on the child restraint as you tighten the belt.
- 5 Push and pull the child restraint in different directions to be sure it is secure.

To remove the child restraint, just unbuckle the vehicle's safety belt and let it go back as the way. The safety belt will move freely again and be ready to work for an adult or larger child passenger.

Securing a Child Restraint in a Center Rear Seat Position



The center rear seating position has a lap-shoulder belt. To secure a child restraint in this position, you'll use only the lap part of the belt. Disconnect the shoulder part of the belt and store it before securing child restraint. See *Center Rear Passenger Position* on page 1-38.

If you're using a top strap-equipped child restraint in the center rear seat and need to temporarily transport a flat tire for repair, move the child restraint to a rear seat outboard position. See *Securing a Child Restraint in a Rear Outside Seat Position* on page 1-61 for more on this, including important safety information.

Be sure to follow the instructions that come with the child restraint. Secure the child in the child restraint when and as the instructions say.

See *Top Strap* on page 1-34 if the child restraint has one.



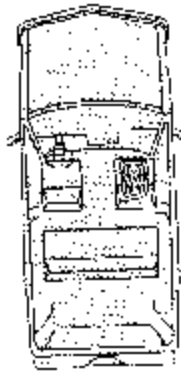
1. Make the belt as long as possible by tilting the latch plate and pulling it along the belt.
2. Put the restraint on the seat.
3. Run the vehicle's safety belt through or around the restraint. The child restraint instructions will show you how.



4. Buckle the belt. Make sure the release button is positioned so you would be able to unbuckle the safety belt quickly if you ever had to.
5. To tighten the belt, pull its free end while you push down on the child restraint. If you're using a forward-facing child restraint, you may find it helpful to use your knee to push the child restraint as you tighten the belt.
6. Push and pull the child restraint in different directions to be sure it's secure.

To remove the child restraint, just unbuckle the vehicle's safety belt. When you remove the child restraint, be sure to reconnect the lap and shoulder parts of the belt so they will be ready to work for an adult or larger child passenger.

Securing a Child Restraint in the Right Front Seat Position



Your vehicle has a front passenger air bag. Never put a rear-facing child restraint in this seat - here's why:

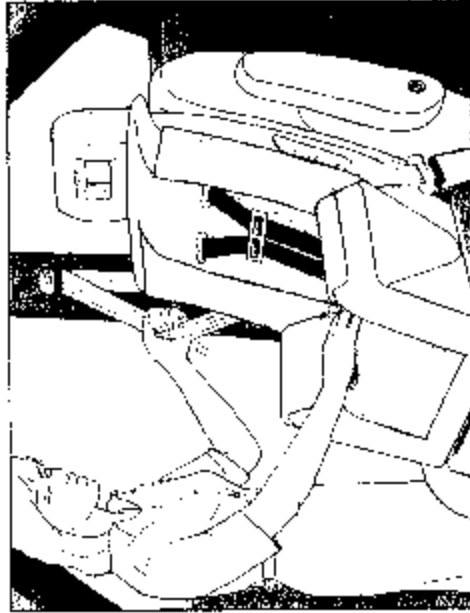
CAUTION:

A child in a rear-facing child restraint can be seriously injured or killed if the front passenger's air bag inflates. This is because the back of the rear-facing child restraint would be very close to the inflating air bag. Always secure a rear-facing child restraint in a rear seat.

Although a rear seat is a safer place, you can secure a forward-facing child restraint in the right front seat.

You'll be using the lap-shoulder belt. See Top Strap on page 1-54 if the child restraint has one. Be sure to follow the instructions that came with the child restraint. Secure the child in the child restraint when and as the instructions say.

1. Because your vehicle has a right front passenger's air bag, always move the seat as far back as it will go before securing a forward-facing child restraint. See Manual Passenger Seat on page 1-2.
2. Put the restraint on the seat.
3. Pick up the latch plate, and run the lap and shoulder portions of the vehicle's safety belt through or around the restraint. The child restraint instructions will show you how.



5. To tighten the belt, pull up on the shoulder belt while you push down on the child restraint. You may find it helpful to use your knee to push down on the child restraint as you tighten the belt.
6. Push and pull the child restraint in different directions to be sure it is secure.

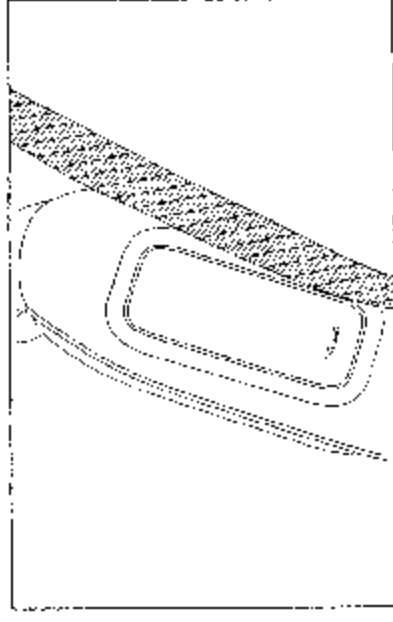
To remove the child restraint, just unbuckle the vehicle's safety belt and let it go back all the way. The safety belt will move freely again and be ready to work for an adult or larger child passenger.

Air Bag Systems

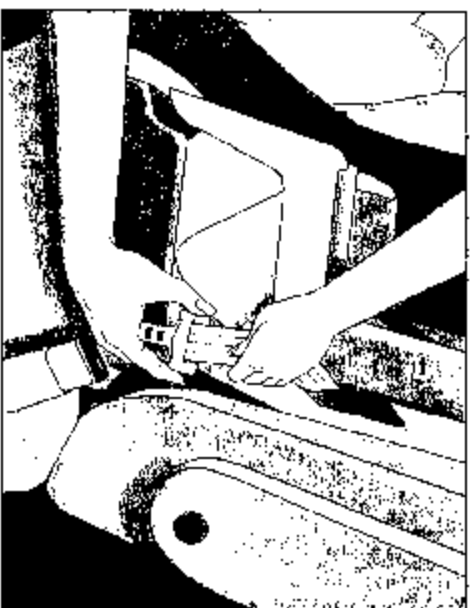
This part explains the frontal and side-impact air bag systems.

Your vehicle has air bags—a frontal air bag for the driver and another frontal air bag for the right-front passenger. Your vehicle may also have a side-impact air bag. Side-impact air bags are available for the driver and right-front passenger.

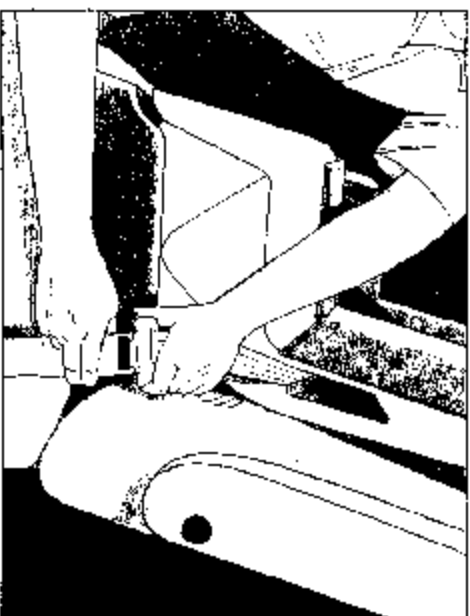
If your vehicle has a side-impact air bag for the driver, the word AIR BAG will appear on the air bag covering on the side of the driver's seatback closest to the door.



Tip the latch plate to adjust the seat if needed.



If the shoulder belt goes in front of the child's face or neck, put it behind the child restraint.



4 Buckle the belt. Make sure the release button is positioned so you could be able to unbuckle the safety belt quickly if you ever need to.

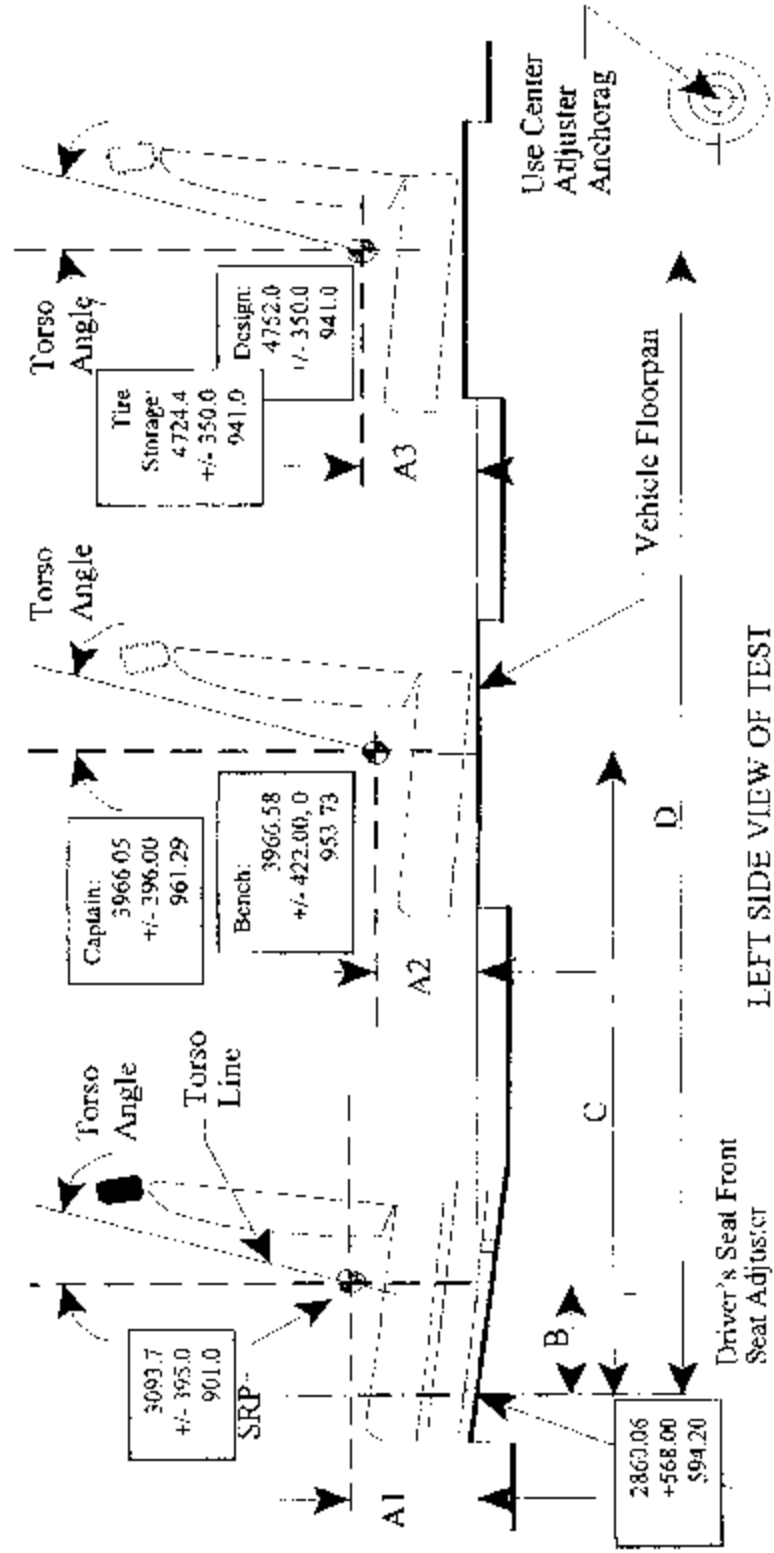
APPENDIX B

MANUFACTURER'S DATA

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

(All dimensions in mm¹)

Model Year 2003, Make: Buick; Model: Rendezvous; Body Style: Stowable Bench
Seat Style: Front row: Bucket; Second row: Split Bench or Captain's Chair; Third row: Stowable Bench



LEFT SIDE VIEW OF TEST

030106

Table 1. Seating Positions¹ and Torso Angles

	Left (Driver Side)	Center (if any)	Right
A1	(Driver)306.8	N/A	(Front Passenger)306.8
A2 _{Bench}	359.53	359.53	359.53
A2 _{Captain}	367.09	N/A	367.09
A3	346.8	N/A	346.8
B	233.6	N/A	233.6
C _{Bench}	1106.5	1106.5	1106.5
C _{Captain}	1105.99	N/A	1105.99
D _{Design}	1891.94	N/A	1891.94
D _{Fire stored}	1864.34	N/A	1864.34
Torso Angle (degree)	Front Row	N/A	20.5
	2 nd Bench	22.5	22.5
	2 nd Captain	N/A	23.3
	Third Row	N/A	23.0
	Third Row (fire stored)	N/A	11.8

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

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

Model Year: 2003 , Make: Buick , Model: Rendezvous ; Body Style: _____
Seat Style: Front row: Bucket ; Second row: Split Bench or Captain's Chair ; Third row: Stowable

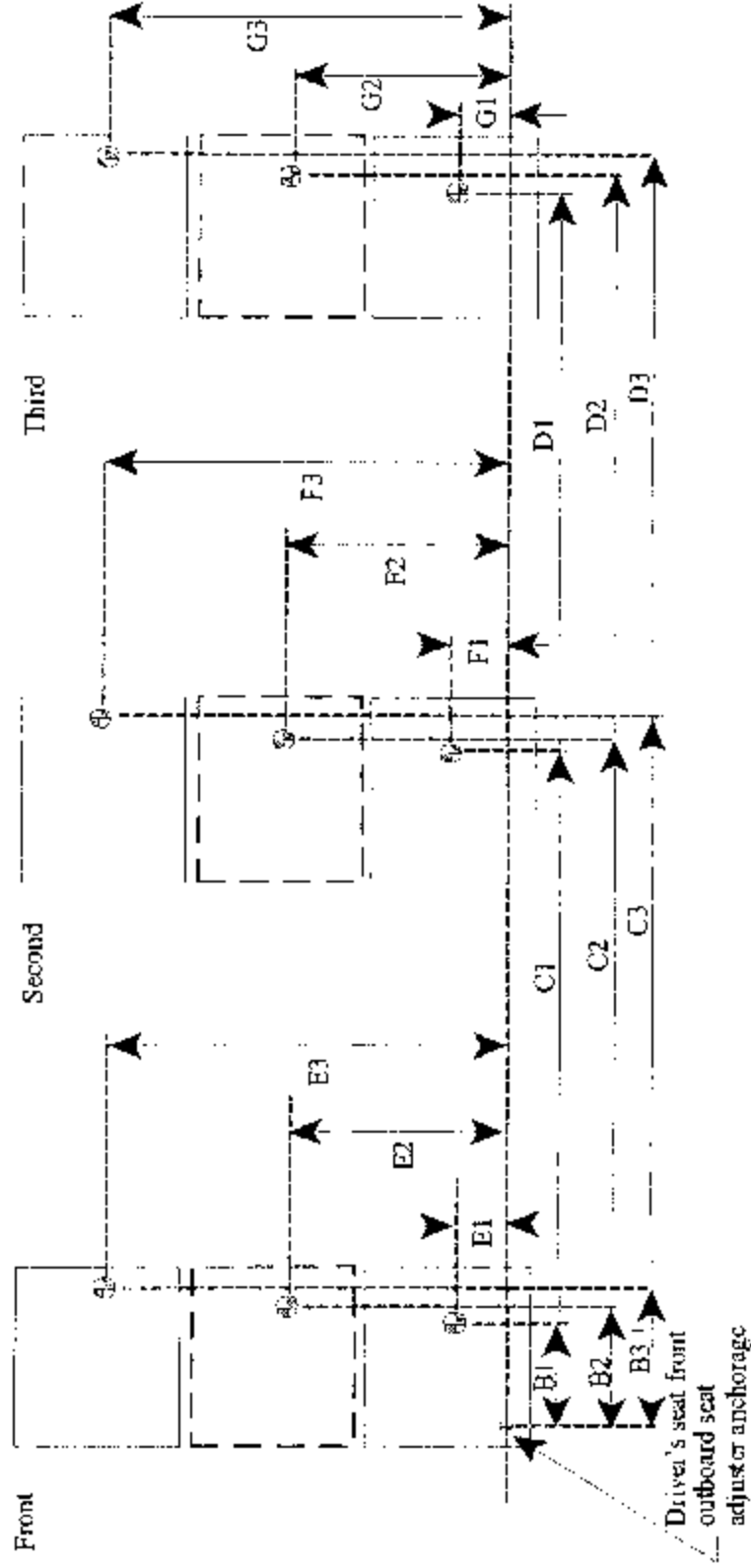


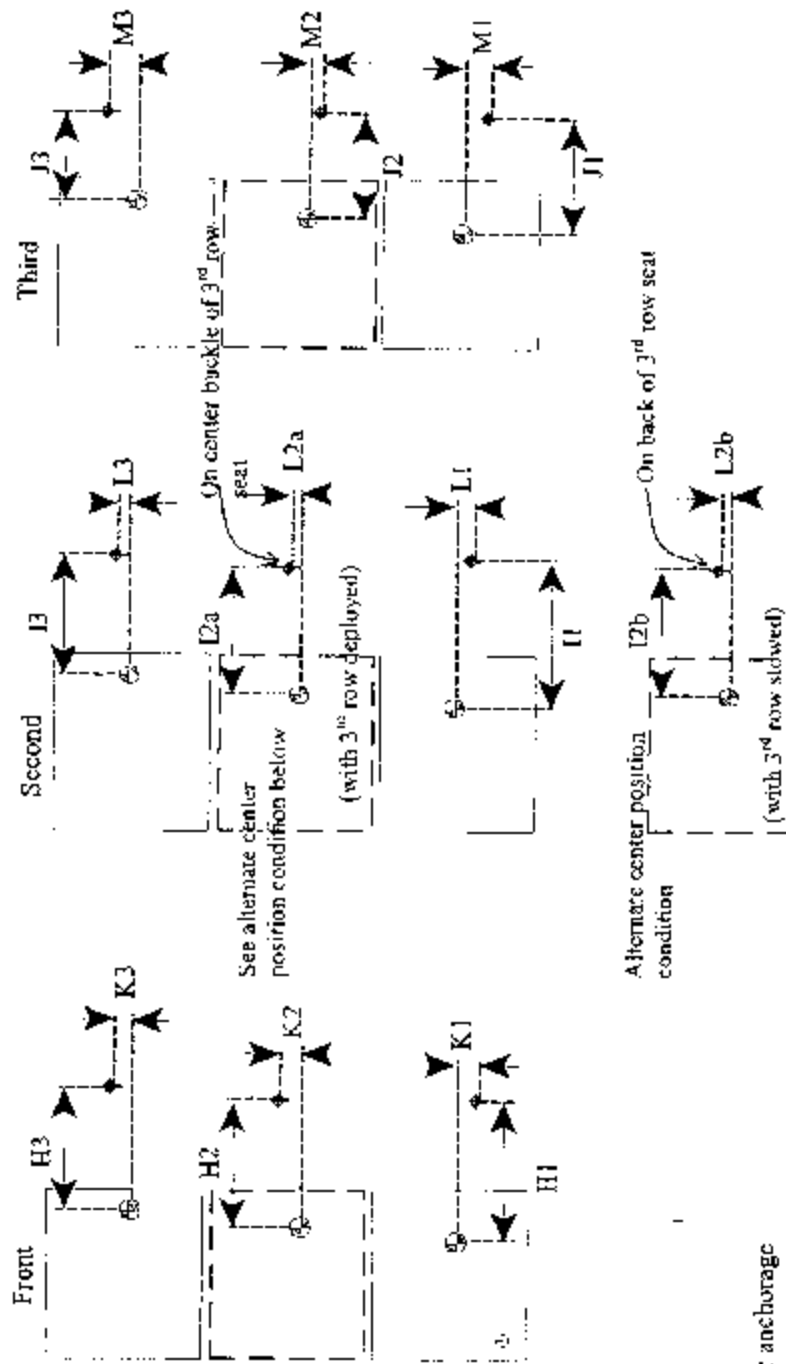
Table 2. Seating Reference Point and Tether Anchorage Locations

Seating Reference Point (SRP)		Distance from Driver's front outboard seat adjuster anchorage ¹
Front Row	B1	233.64
	E1	173.0
	B2	N/A
	E2	N/A
	B3	233.64
	E3	963.0
Second Row	C1 ₅₀₅₀	1106.5
	C1 _{Capt}	1105.99
	F1 ₅₀₅₀	146.00
	F1 _{Capt}	172.00
	C2 ₅₀₅₀	1106.5
	C2 _{Capt}	N/A
	F2 ₅₀₅₀	568
	F2 _{Capt}	N/A
	C3 ₅₀₅₀	1106.5
	F3 ₅₀₅₀	1105.9
Third Row	D1 _{Design}	1891.94
	D1 _{Tire Stored}	1864.34
	G1	218.0
	D2	N/A
	G2	N/A
	D3	1891.1
	G3	918.0

Note: 1. Use the center of anchorage.

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

Model Year: 2003 ; Make: Buick ; Model: Rendezvous ; Body Style: Stowable
Seat Style: Front row: Bucket ; Second row: Split Bench or Captain's Chair ; Third row: Stowable



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

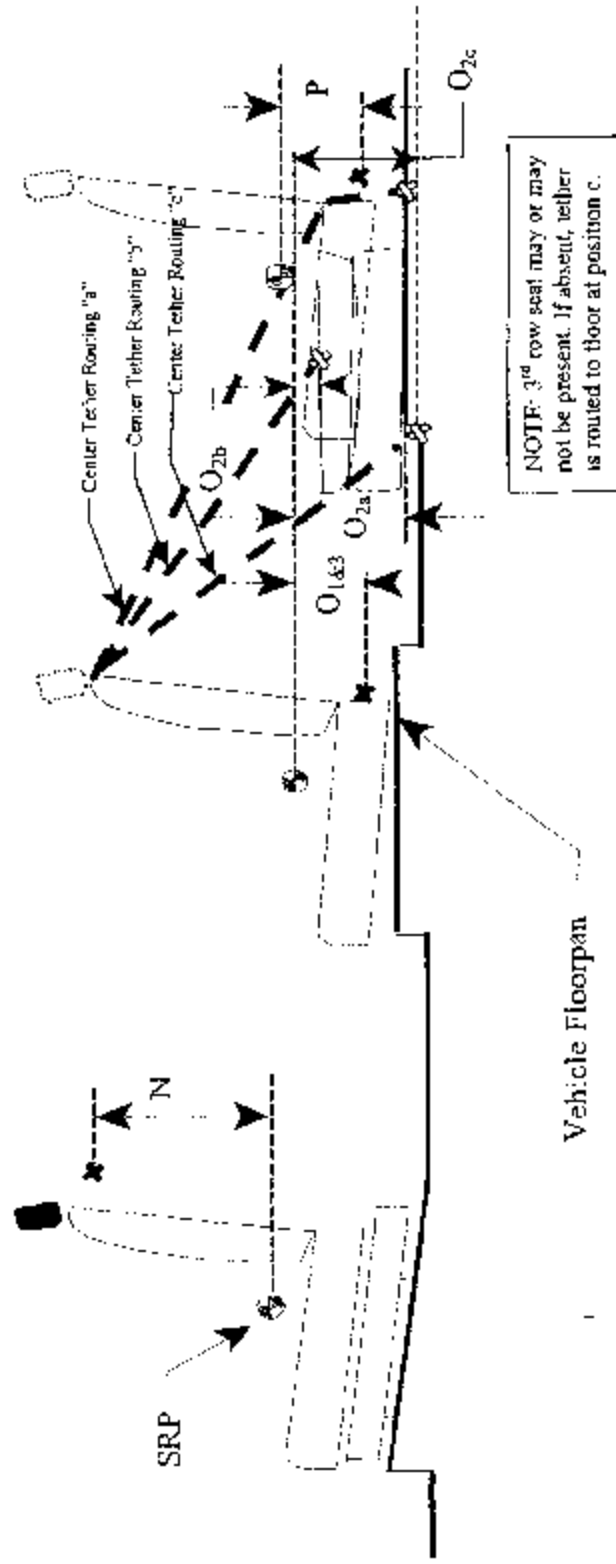
Table 3. Seating Reference Point and Tether Anchorage Locations

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 Bench	201.1
	I1 Capt	160.39
	L1 Bench	0.0
	L1 Capt	0.0
	I2a	$= X_{\text{slow belt asm anchor}}$ 3966.58
	L2a	$= 0 - Y_{\text{slow belt asm anchor}}$
	I2b	661.10
	L2b	0.0
	I3 Bench	201.1
	I3 Capt	160.39
	L3 Bench	0.0
	L3 Capt	0.0
Third Row	J1	N/A
	M1	N/A
	J2	N/A
	M2	N/A
	J3	203.4
	M3	0.0

Note: 1. Use the center of anchorage.

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

Model Year: 2003 ; Make: Buick ; Model: Rendezvous ; Body Style: _____
Seat Style: Front row: Bucket ; Second row: Split Bench or Captain's Chair ; Third row: Stowable



LEFT SIDE VIEW OF TEST VEHICLE

Table 4. Vertical Dimension For The Tester 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) Bench 134.4
	O1 (Left) Capt 163.78
	O2a (Center) Bench = 953.73 - Z _{anchor}
	O2b (Center) Bench 106.46
	O2c (Center) Bench = 953.73 - Z _{anchor}
Third Row	O3 (Right) Bench 134.4
	O3 (Right) Capt 163.78
	P1 (Left) N/A
	P2 (Center) N/A
	P3 (Right) 164.0

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

Test Procedures Used for Compliance Tests

Tether Anchorages

Seating Location	FMVSS Section(s) - Req.
Driver	N/A
Center (if any)	N/A
Right (if any)	N/A
Seat Type >>	Bench Capt
Left	S 6.3 S 6.3
Center	S 6.3 N/A
Right (if any)	S 6.3 S 6.3
Left	N/A
Center	N/A
Right	S 6.3
Left	N/A
Center	N/A
Right	N/A

Lower Anchorages

Seating Location	FMVSS Section(s) - Req.
Driver	N/A
Center (if any)	N/A
Right (if any)	N/A
Seat Type >>	Bench Capt
Left	S15.3 S15.3
Center	N/A N/A
Right	S15.3 S15.3
Left	N/A
Center	N/A
Right	N/A
Left	N/A
Center	N/A
Right	N/A

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