HSNO 637271

REPORT NUMBER 225-GTL-04-007

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

LANDROVER IN THE UK
2004 LAND ROVER FREELANDER, MPV
NHTSA NO. C40600

GENERAL TESTING LABORATORIES, INC.
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JULY 27, 2004

FINAL REPORT

PREPARED FOR

U. S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
SAFETY ENFORCEMENT
OFFICE OF VEHICLE SAFETY COMPLIANCE
400 SEVENTH STREET, SW
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16. Abstract

Compliance tests were conducted on the subject, 2004 Land Rover Freelander MPV in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-225T and TP-225L for the determination of FMVSS 225 compliance. Test failures identified were as follows:
NONE

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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 2004 Land Rover Freelander 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 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 2004 Land Rover Freelander MPV. Nomenclature applicable to the test vehicle are:

A. Vehicle Identification Number: SALNY22214A298687

B. NHTSA No.: C40600

C. Manufacturer: LANDROVER in the UK

D. Manufacture Date: 10/03

1.2 TEST DATE

The test vehicle was subjected to FMVSS No. 225 testing during the time period June 29, 2004.

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 2004 Land Rover Freelander MPV appeared 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)
5237	SFAD 1 Tether Strap	2nd Row Center	14,941	122.2
5238	Lower Anchorage	2nd Row Right	7913	79.1
5239	SFAD 2 Tether Strap	2nd Row Left	14,932	96.2

Table 2. General Test and Vehicle Parameter Data

VEH. MOD YR/MAKE/MODEL BODY	2004 Land Rover Freelander
VEH. NHTSA NO.	C40600
VIN	SALNY22214A298687
VEH. BUILD DATE	10/03
TEST DATE	06/29/04
TEST LABORATORY	GTL
OBSERVERS	Grant Farrand, Jimmy Latane

GENERAL INFORMATION:

Date Received: 12/29/03 Odometer Reading: 9

DATA FROM VEHICLE'S CERTIFICATION LABEL:

Vehicle Manufactured by: LANDROVER IN THE UK

Date of Manufacture: 10/03 VIN: SALNY22214A298687

GVWR: 2060 kg; GAWR FRONT: 1080 kg
GAWR REAR: 1120 kg

SECTION 3

COMPLIANCE TEST DATA

3.0 TEST RESULTS

The following data sheets document the results of testing on the 2004 Land Rover Freelander MPV.

DATA SHEET 1
CHILD RESTRAINT TETHER ANCHORAGE CONFIGURATION

VEH. MOD YR/MAKE/MODEL/BODY: 2004 LANDROVER FREELANDER MPV
VEH. NHTSA NO: C40600; VIN: SALNY22214A298687
VEH. BUILD DATE: 10/03 ; TEST DATE: JUNE 29, 2004
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= 0
Total= 5

SEATING POSITION		OBSERVED CONFIGURATION			
		Permit the attachment of a tether hook	Accessible without the need for any tool other than a screwdriver of 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	NO	N/A	N/A	N/A
Second	Left	YES	YES	YES	YES
	Center	YES	YES	YES	YES
	Right	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: 06/29/04

APPROVED BY: D. Munich

DATA SHEET 2
CHILD RESTRAINT LOWER ANCHORAGES CONFIGURATION

VEH. MOD YR/MAKE/MODEL/BODY: 2004 LANDROVER FREELANDER MPV
VEH. NHTSA NO: C40600; VIN: SALNY22214A298687
VEH. BUILD DATE: 10/03 ; TEST DATE: JUNE 29, 2004
TEST LABORATORY: GENERAL TESTING LABORATORIES
OBSERVERS: GRANT FARRAND, JIMMY LATANE

OBSERVED LOWER ANCHORAGE CONFIGURATION	SEAT POSITION	FRONT	REAR LEFT	REAR RIGHT	THIRD LEFT	THIRD RIGHT
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	NO	NO	N/A	
	Center	N/A	N/A		N/A	
	Right	N/A	NO	NO	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	YES	YES	N/A	
	Center	N/A	N/A		N/A	
	Right	N/A	YES	YES	N/A	
Diameter of the bar (mm)	Left	N/A	6.0	5.99	N/A	
	Center	N/A	N/A		N/A	
	Right	N/A	6.0	6.0	N/A	
Inspect if the bars are straight, horizontal and transverse	Left	N/A	YES	YES	N/A	
	Center	N/A	N/A		N/A	
	Right	N/A	YES	YES	N/A	

DATA SHEET 2 CONTINUED
CHILD RESTRAINT LOWER ANCHORAGES CONFIGURATION

VEH. MOD YR/MAKE/MODEL/BODY: 2004 LANDROVER FREELANDER MPV
VEH. NHTSA NO: C40600; VIN: SALNY22214A298687
VEH. BUILD DATE: 10/03 ; TEST DATE: JUNE 29, 2004
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*	40 MM 35 MM	N/A
	Center	N/A	N/A	N/A
	Right	N/A	30 MM 40 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*		N/A
	Center	N/A	N/A	N/A
	Right	N/A		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 ± 1 mm.	Left	N/A*	280	N/A
	Center	N/A	N/A	N/A
	Right	N/A	281	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: [signature] DATE: 06/29/04
APPROVED BY: D. Messick

DATA SHEET 2 CONTINUED
CHILD RESTRAINT LOWER ANCHORAGES CONFIGURATION

VEH. MOD YR/MAKE/MODEL/BODY: 2004 LANDROVER FREELANDER MPV
VEH. NHTSA NO: C40600; VIN: SALNY22214A298687
VEH. BUILD DATE: 10/03 ; TEST DATE: JUNE 29, 2004
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: 06/29/04

APPROVED BY: D. Messick

DATA SHEET 3
LOCATION AND DIMENSIONAL MEASUREMENTS

VEH. MOD YR/MAKE/MODEL/BODY: 2004 LANDROVER FREELANDER MPV
VEH. NHTSA NO: C40600; VIN: SALNY22214A298687
VEH. BUILD DATE: 10/03 ; TEST DATE: JUNE 29, 2004
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= 0
Total= 5

SEAT POSITION FOR TETHER		LOCATION OF DSPs	TETHER ANCHORAGE LOCATION	
		TETHER OBSERVED	REQUIRED	MEASURED Is it in the required zone?
FRONT	Left	N/A	N/A	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
THIRD	Left	N/A	N/A	N/A
	Center	N/A	N/A	N/A
	Right	N/A	N/A	N/A

RECORDED BY: [signature] DATE: 06/29/04

APPROVED BY: D. Mysicl

DATA SHEET 3 CONTINUED
LOCATION AND DIMENSIONAL MEASUREMENTS

VEH. MOD YR/MAKE/MODEL/BODY: 2004 LANDROVER FREELANDER MPV
VEH. NHTSA NO: C40600; VIN: SALNY22214A298687
VEH. BUILD DATE: 10/03 ; TEST DATE: JUNE 29, 2004
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= 0 Total= 5

SEAT POSITION FOR LOWER ANCHORAGE	PRESENCE OF ANCHORAGES		COMMENTS
	REQUIRED	OBSERVED	
FRONT	NONE	NONE	N/A
REAR	2	2	LEFT & RIGHT
THIRD	NONE	NONE	N/A

SEAT POSITIONS FOR LOWER ANCHORAGES		LOCATION OF ANCHORAGE				COMMENTS		
		MEASURED FROM "Z" (mm)		MEASURED FROM "SRP" (mm)				
		Left	Right	Left	Right	PITCH	ROLL	YAW
FRONT	Left	N/A		N/A		N/A		
	Center	N/A		N/A		N/A		
	Right	N/A		N/A		N/A		
REAR	Left	44	40	166	168	13°	0°	0°
	Center	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Right	39	39	168	166	13°	0°	0°
THIRD	Left	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
	Right	N/A	N/A	N/A	N/A	N/A	N/A	N/A

RECORDED BY: G. Farrand DATE: 06/29/04
APPROVED BY: D. Munich

DATA SHEET 4
ANCHORAGE STATIC LOADING

VEH. MOD YR/MAKE/MODEL/BODY: 2004 LANDROVER FREELANDER MPV
VEH. NHTSA NO: C40600; VIN: SALNY22214A298687
VEH. BUILD DATE: 10/03 ; TEST DATE: JUNE 29, 2004
TEST LABORATORY: GENERAL TESTING LABORATORIES
OBSERVERS: GRANT FARRAND, JIMMY LATANE
TEST # 5237 & 5239

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	N/A
	Center	N/A	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	N/A
Second	Left	FIXED	25°	UP	2	10°	0.0	577 N/SEC	14,932	96.2	96.2
	Center	FIXED	27°	UP	1	10°	0.0	577 N/SEC	14,941	122.2	122.2
	Right (If any)	N/A	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	N/A
	Center	N/A	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	N/A

REMARKS: TESTED TO S6.3.1

RECORDED BY: G. Farrand DATE: 06/29/04
APPROVED BY: D. Russell

DATA SHEET 5
ANCHORAGE STATIC LOADING

VEH. MOD YR/MAKE/MODEL/BODY: 2004 LANDROVER FREELANDER MPV
VEH. NHTSA NO: C40600; VIN: SALNY22214A298687
VEH. BUILD DATE: 10/03 ; TEST DATE: JUNE 29, 2004
TEST LABORATORY: GENERAL TESTING LABORATORIES
OBSERVERS: GRANT FARRAND, JIMMY LATANE

TEST # 5238
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	N/A
	Center	N/A	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	N/A
Rear	Left	N/A	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	N/A
	Right (If any)	FIXED	25°	UP	10°	0°	0.0	4000 N/SEC	7913	79.1	79.1
Third	Left	N/A	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	N/A
	Right	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

REMARKS:

RECORDED BY: G. Farrand DATE: 06/29/04
APPROVED BY: D. Mynard

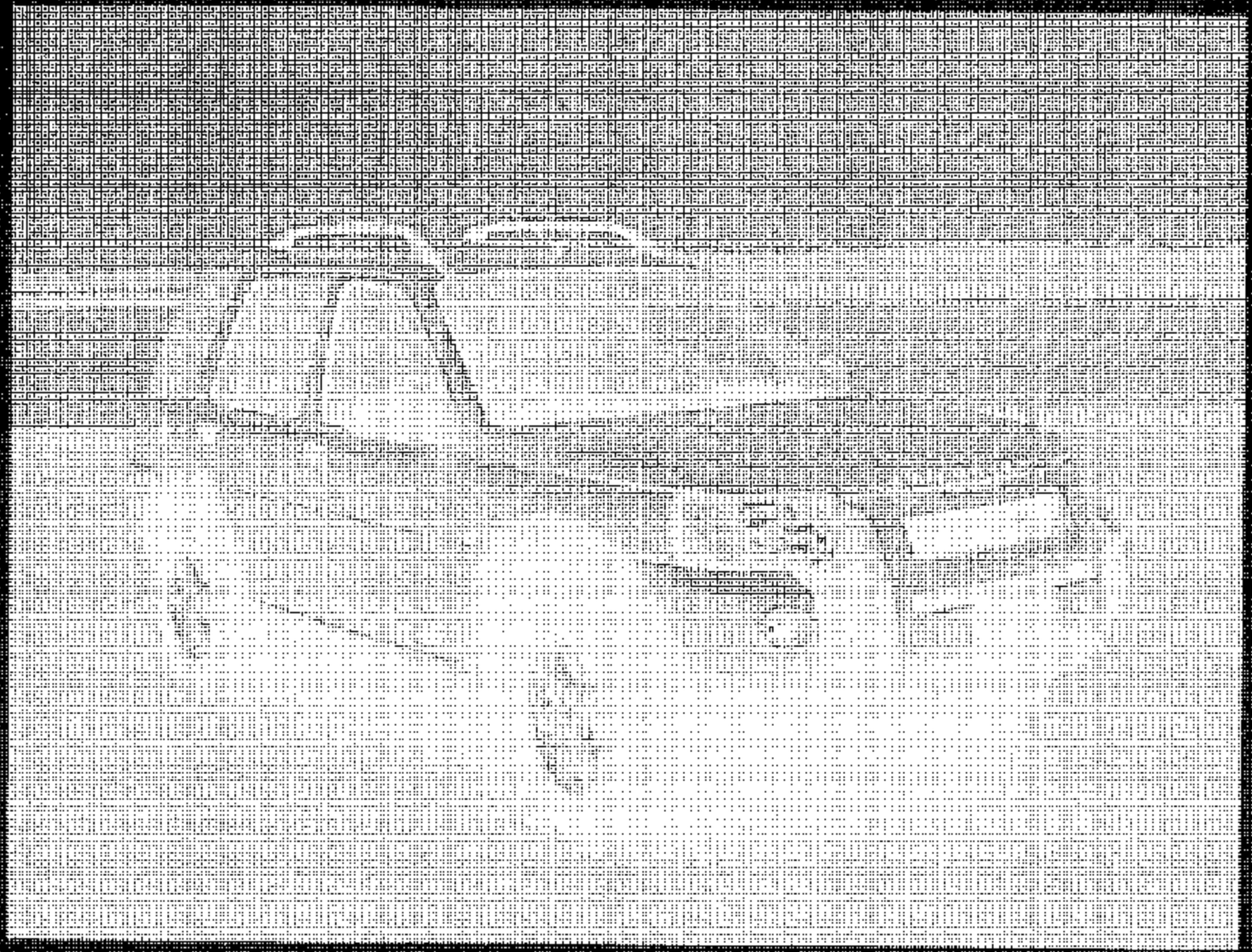
SECTION 4
INSTRUMENTATION AND EQUIPMENT LIST

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	INTERFACE	496	06/03	06/04
LINEAR TRANSDUCER	CELESCO	69	BEFORE USE	BEFORE USE
LINEAR TRANSDUCER	CELESCO	70	BEFORE USE	BEFORE USE
LINEAR TRANSDUCER	CELESCO	72	BEFORE USE	BEFORE USE
LEVEL	STANLEY	42-449	02/04	02/05
FORCE GAUGE	CHATILLON	8761	BEFORE USE	BEFORE USE
CALIPER	N/A	Q9322365	BEFORE USE	BEFORE USE

SECTION 5

PHOTOGRAPHS

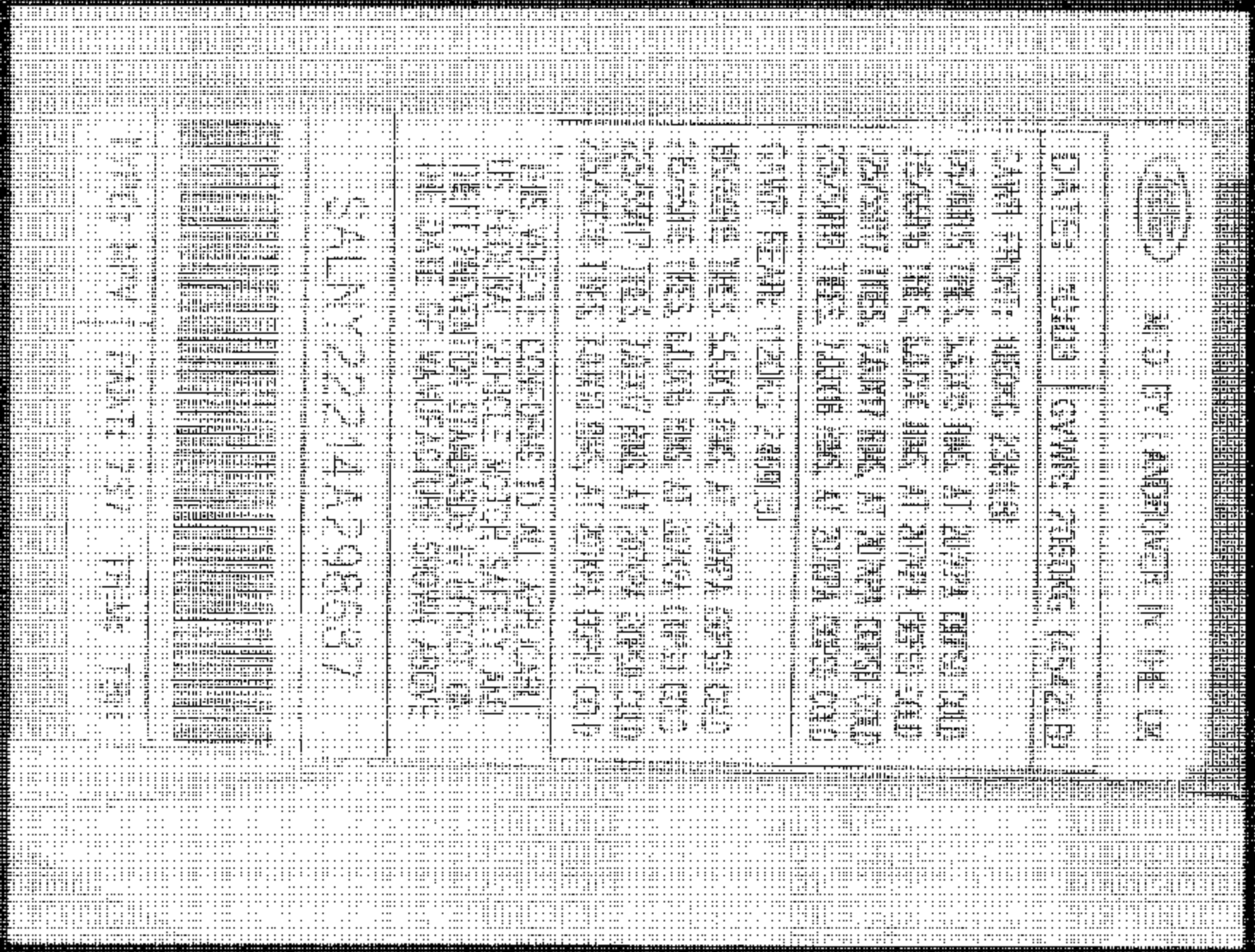


2004 LAND ROVER FREELANDER
NHTSA NO. C40500
FMVSS NO. 226

FIGURE 5.1
¾ FRONTAL RIGHT SIDE VIEW OF VEHICLE

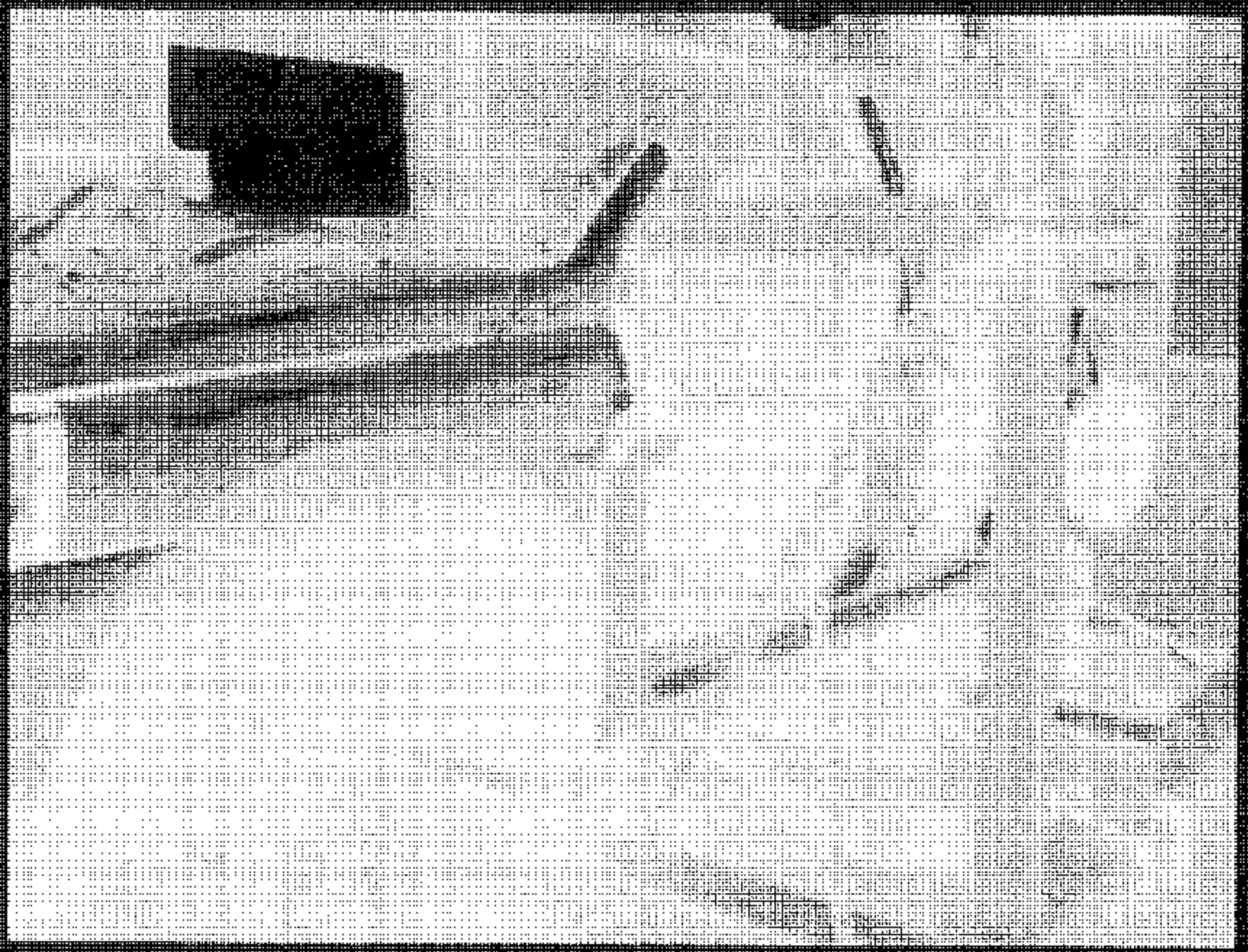
2004 LAND ROVER FREELANDER
NHTSA NO. C40600
FMVSS NO. 225

FIGURE 6.2
¾ REARWARD LEFT SIDE VIEW OF VEHICLE



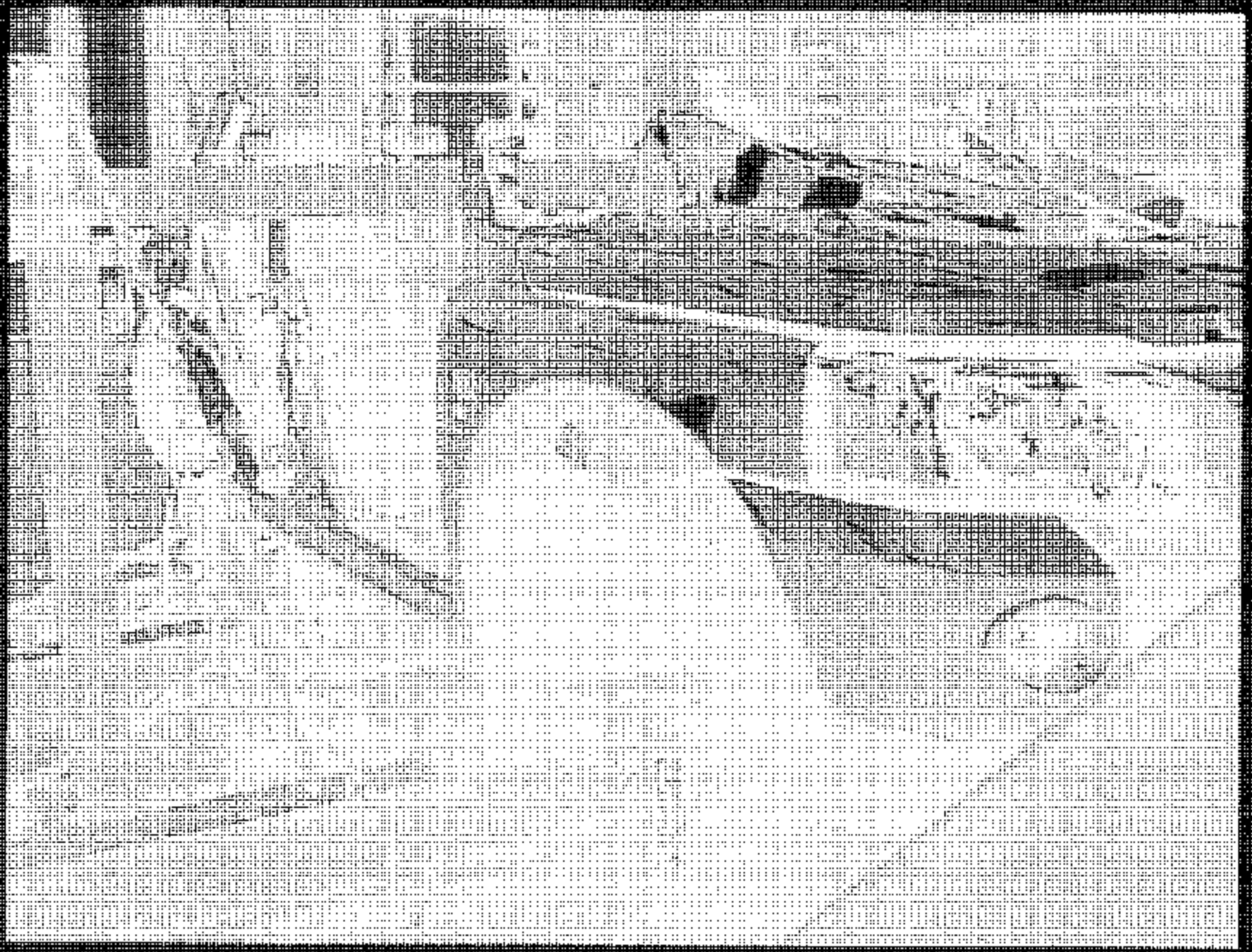
2004 LAND ROVER FREELANDER
NHTSA NO. C40600
FMVSS NO. 225

FIGURE 5.3
CLOSE-UP VIEW OF VEHICLE'S CERTIFICATION
AND TIRE INFORMATION LABEL



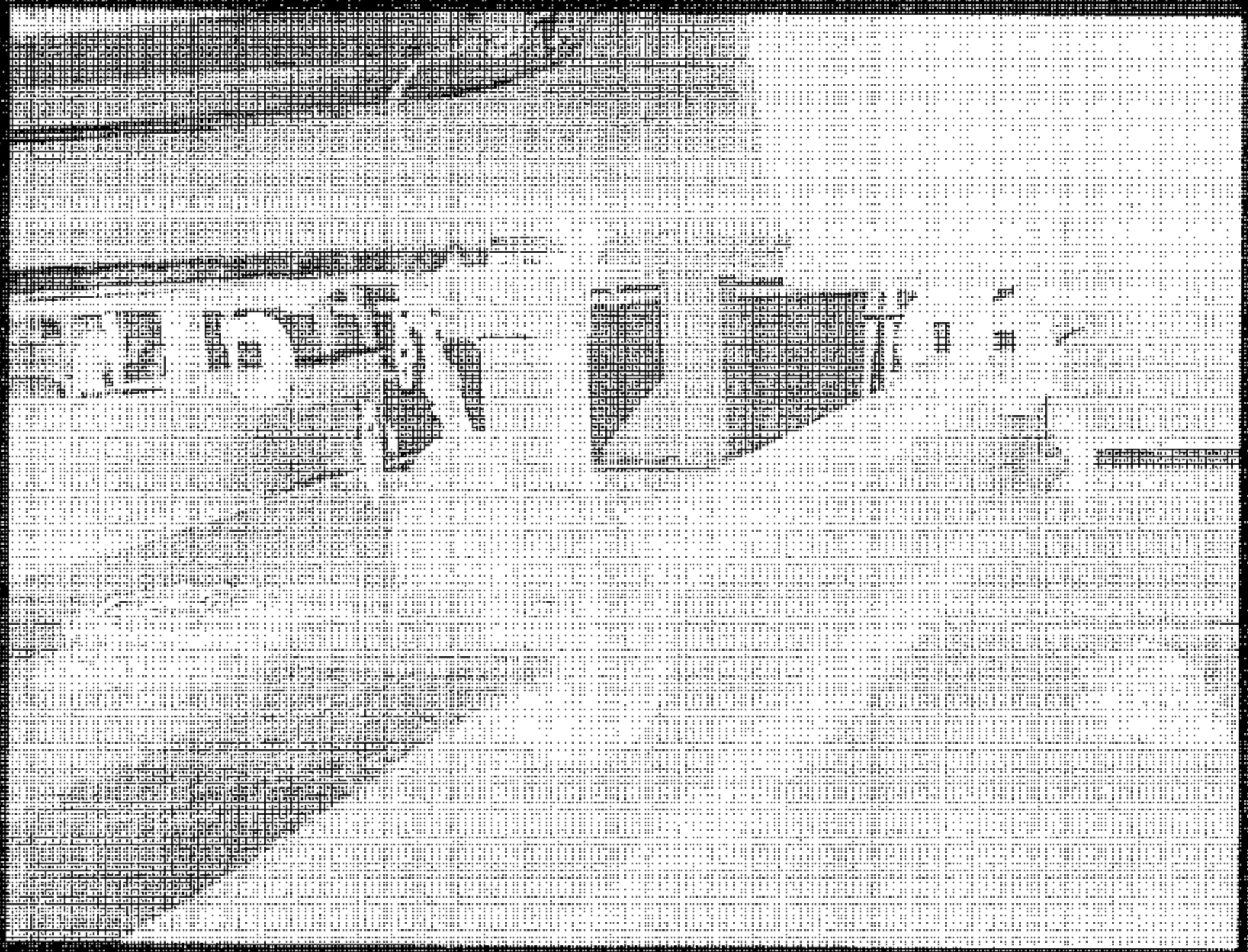
2004 LAND ROVER FREELANDER
NHTSA NO. C40600
FMVSS NO. 225

FIGURE 5.4
¾ LEFT FRONT VIEW OF TEST VEHICLE IN TEST RIG



2004 LAND ROVER FREELANDER
NHTSA NO. C40600
FMVSS NO. 226

FIGURE 5.5
¾ RIGHT FRONT VIEW OF TEST VEHICLE IN TEST RIG



2004 LAND ROVER FREELANDER
NHTSA NO. C40600
FMVSS NO. 225

FIGURE 5.6
RIGHT FRONT VEHICLE TIE DOWN

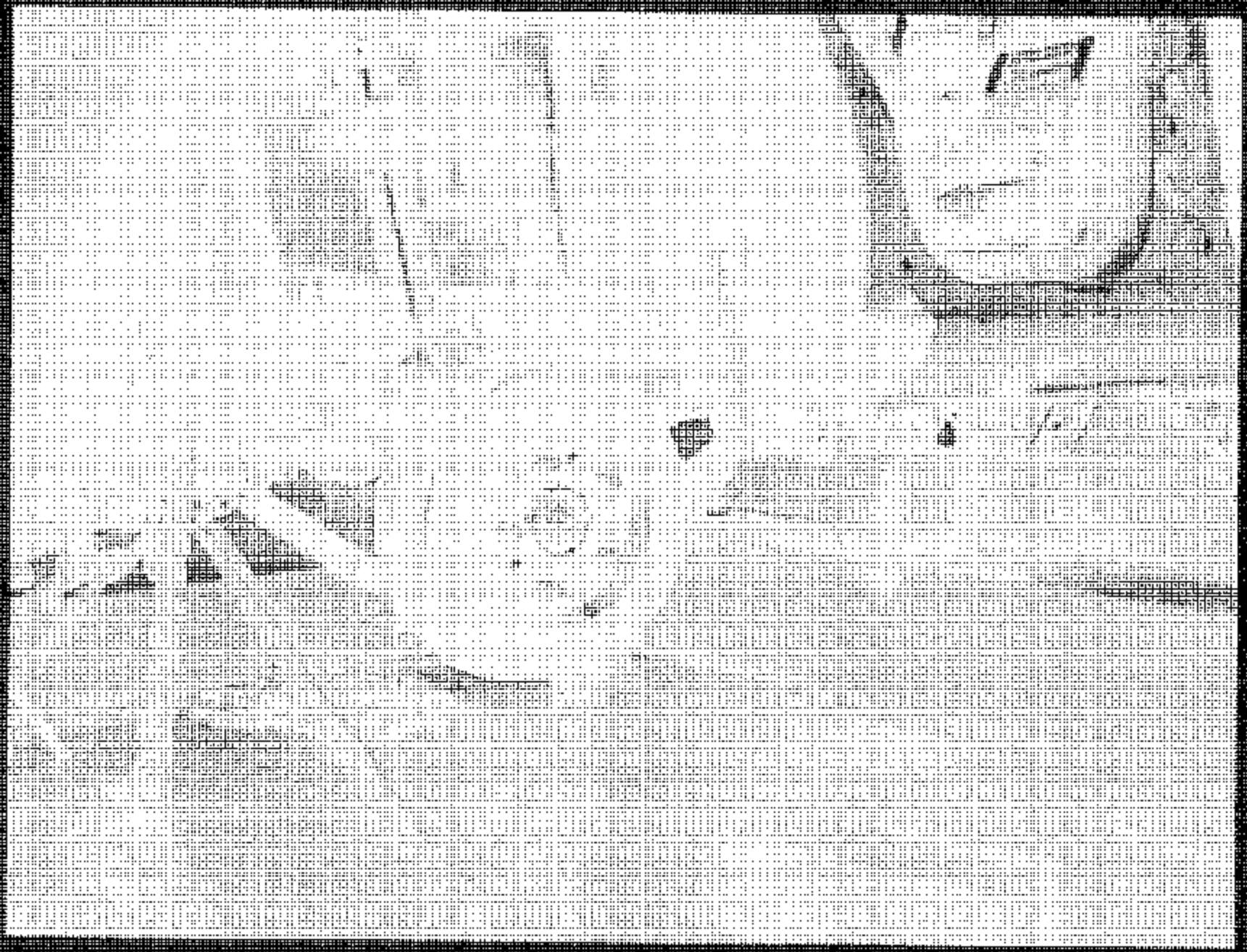


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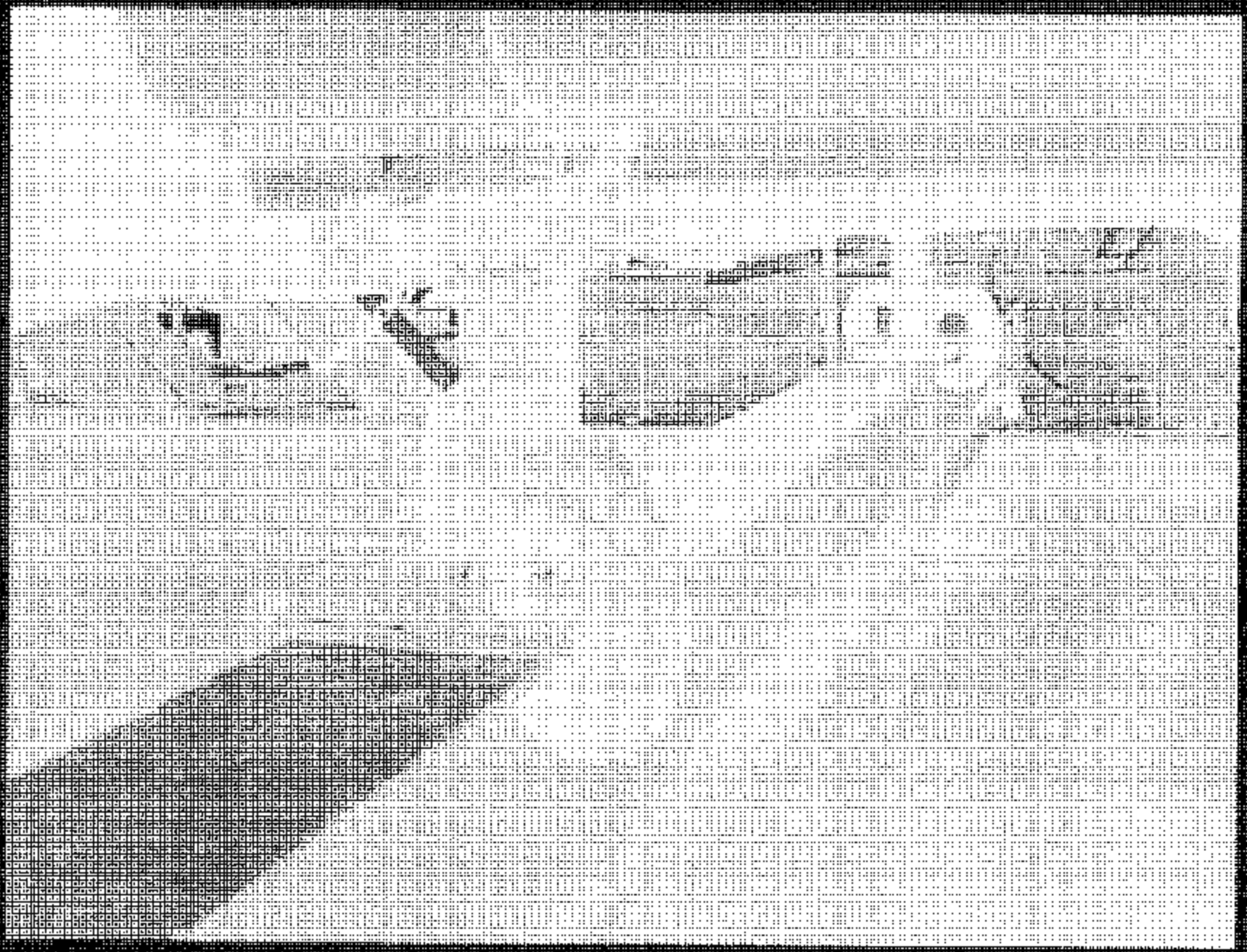
FIGURE 9.7
RIGHT REAR VEHICLE TIE DOWN



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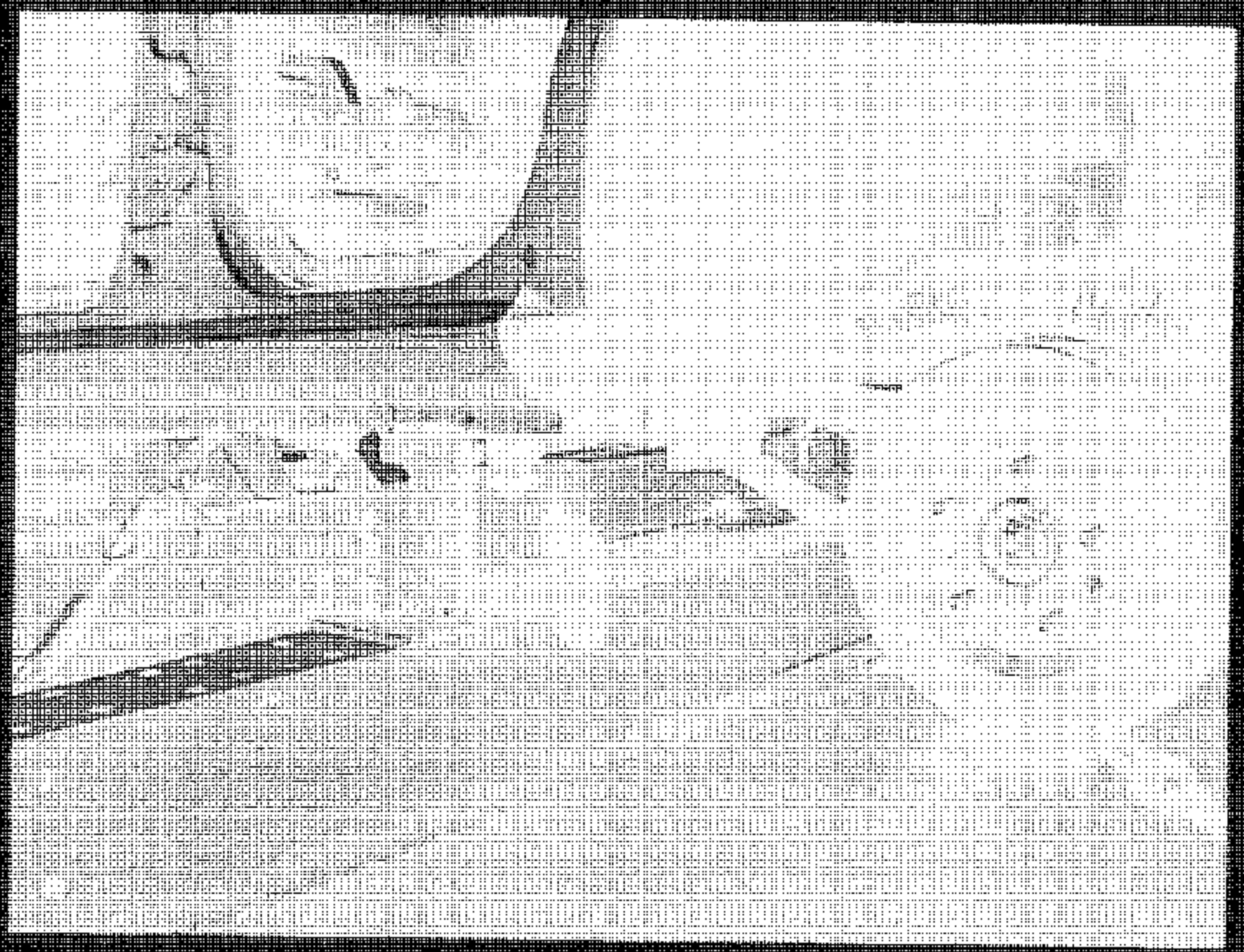
NHTSA NO. C4D600
FMVSS NO. 225

FIGURE 6.5
LEFT FRONT VEHICLE TIE DOWN



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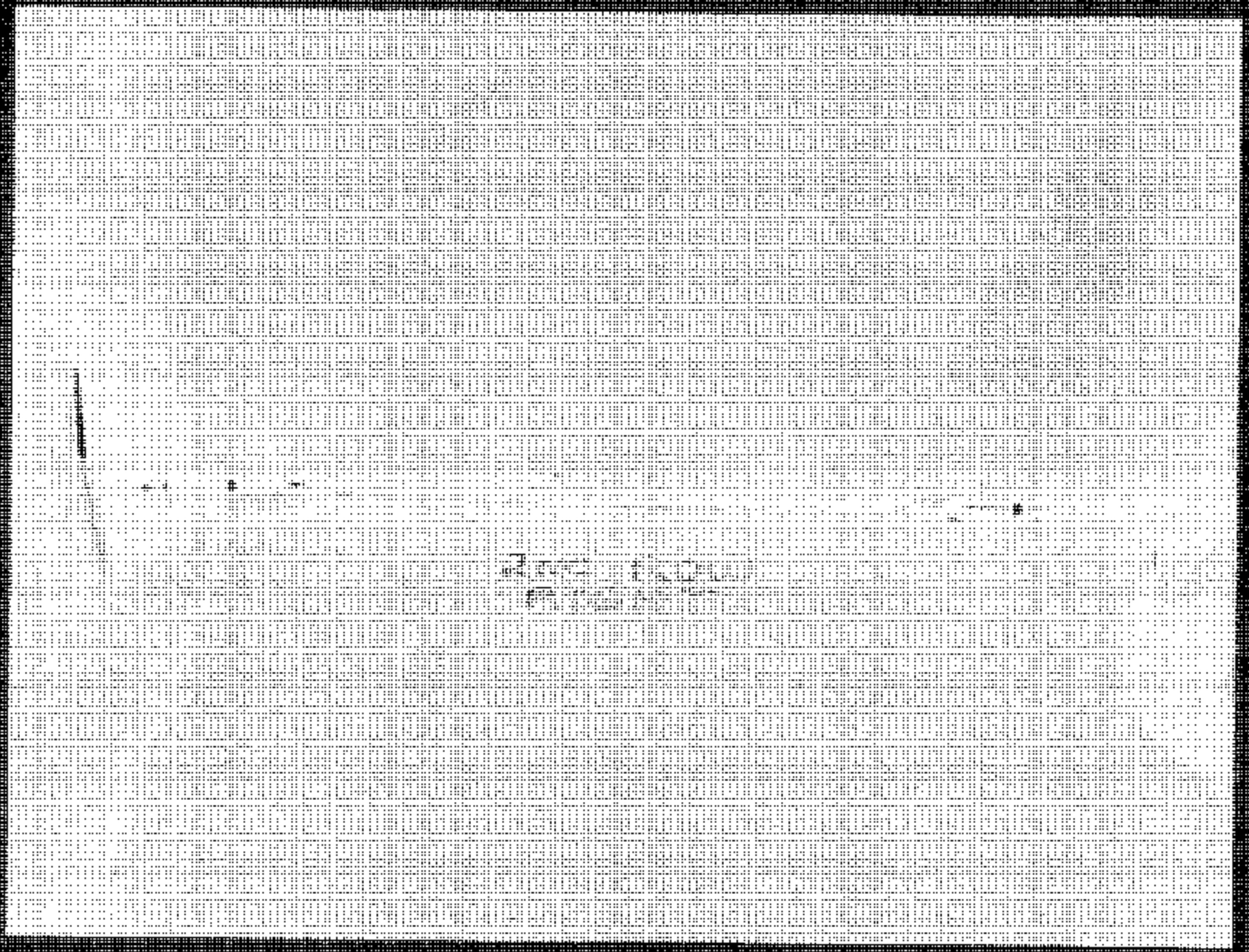
NHTSA NO. C40500
FMVSS NO. 225

FIGURE 5.9
LEFT REAR VEHICLE TIE DOWN



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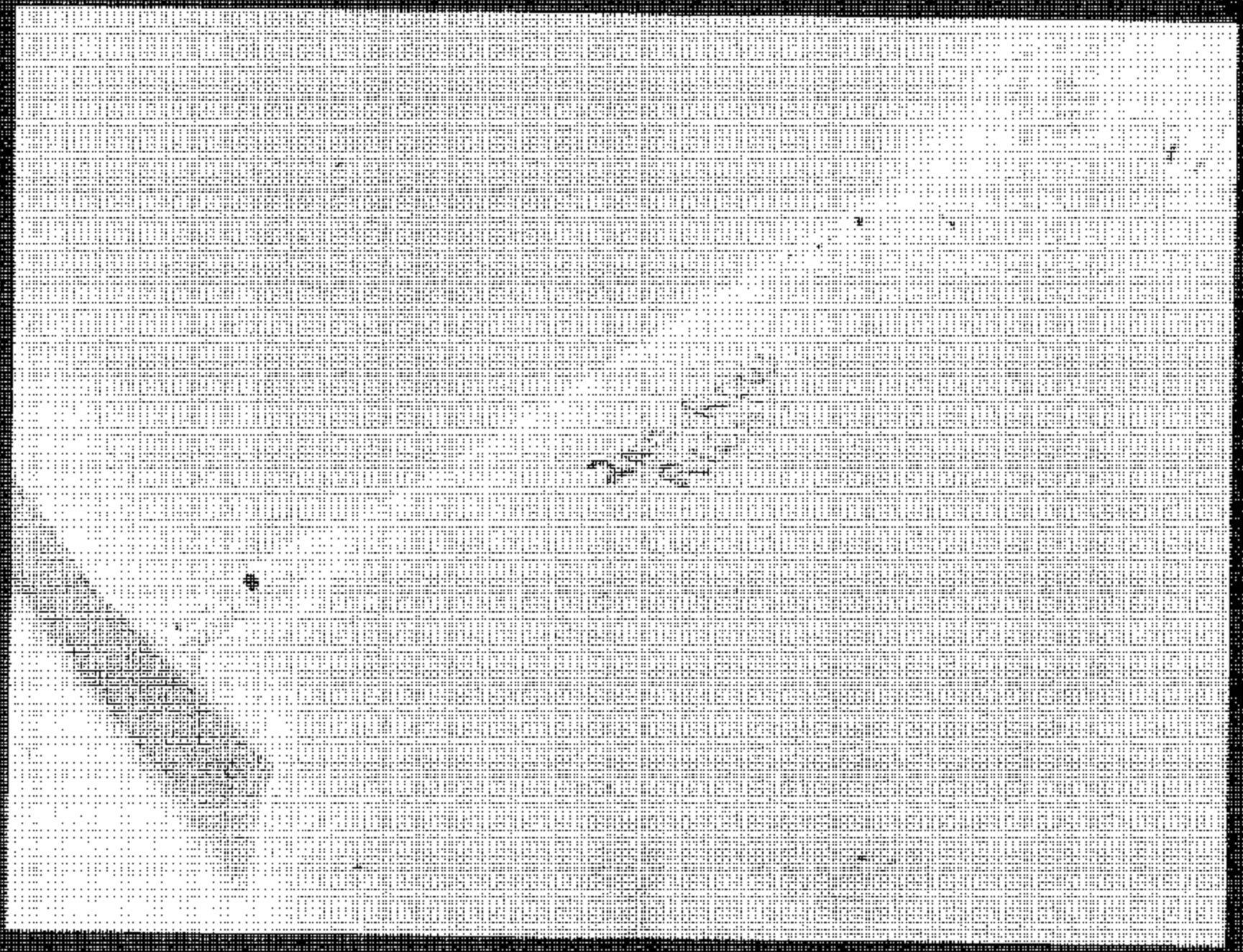
NHTSA NO. C40800
FMVSS NO. 225

FIGURE 5.10
PRE-TEST 2ND ROW RIGHT LOWER ANCHORS
FRONT VIEW



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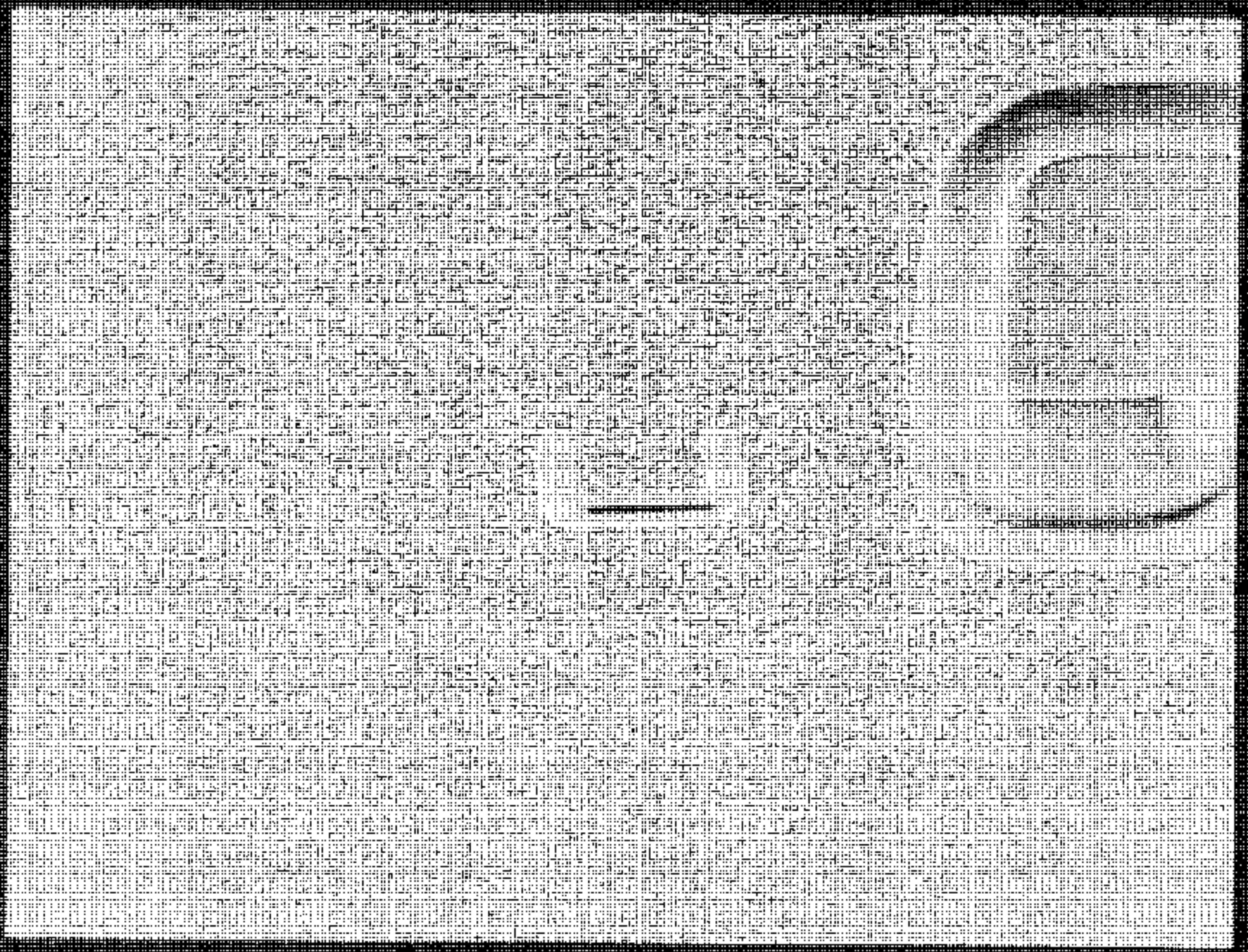
NHTSA NO. C40800
FMVSS NO. 225

FIGURE 5.11
PRE-TEST 2ND ROW RIGHT LOWER ANCHORS
SIDE VIEW



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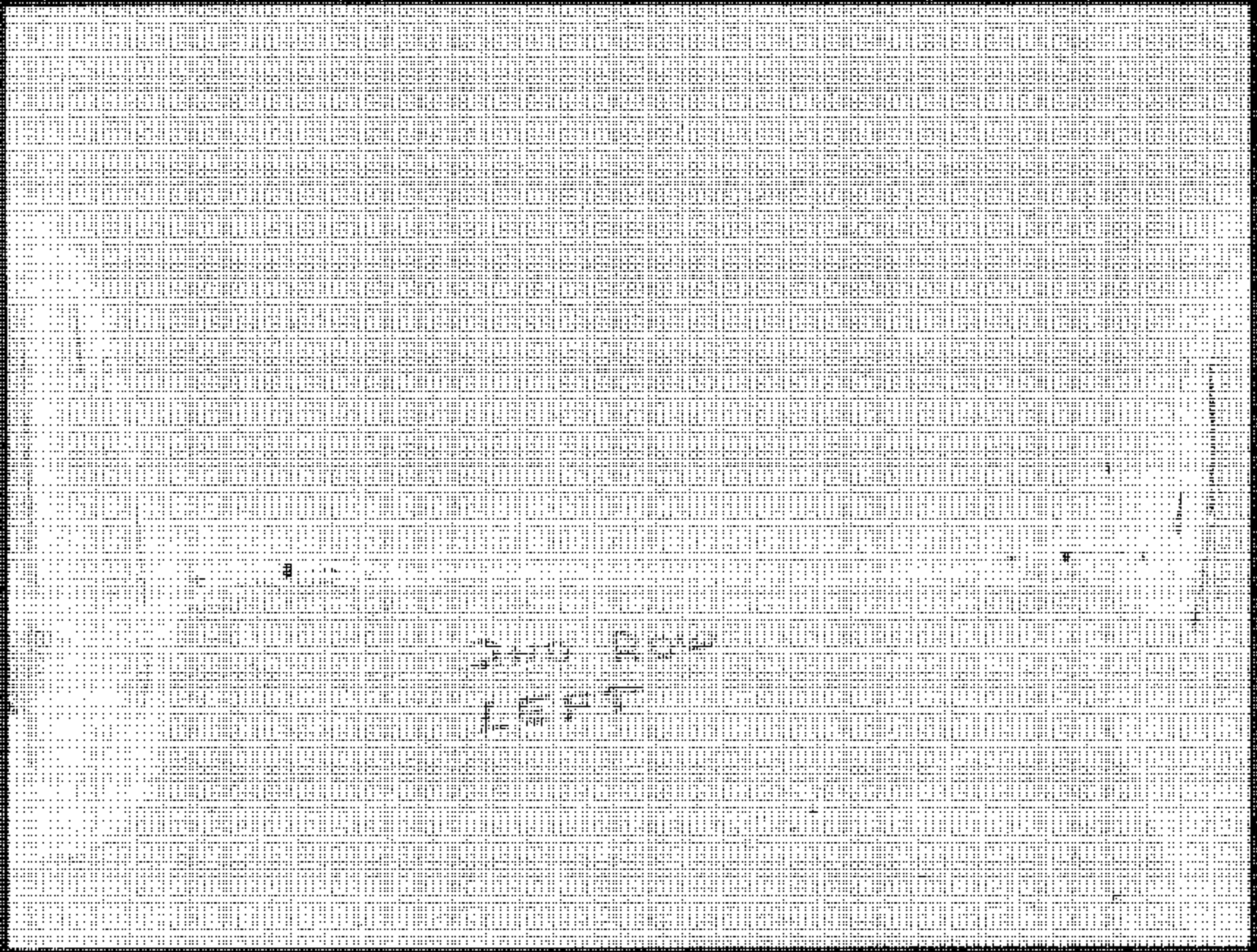
NHTSA NO. C40800
FMVSS NO. 225

FIGURE G.12
PRE-TEST 2ND ROW RIGHT TOP TETHER ANCHOR



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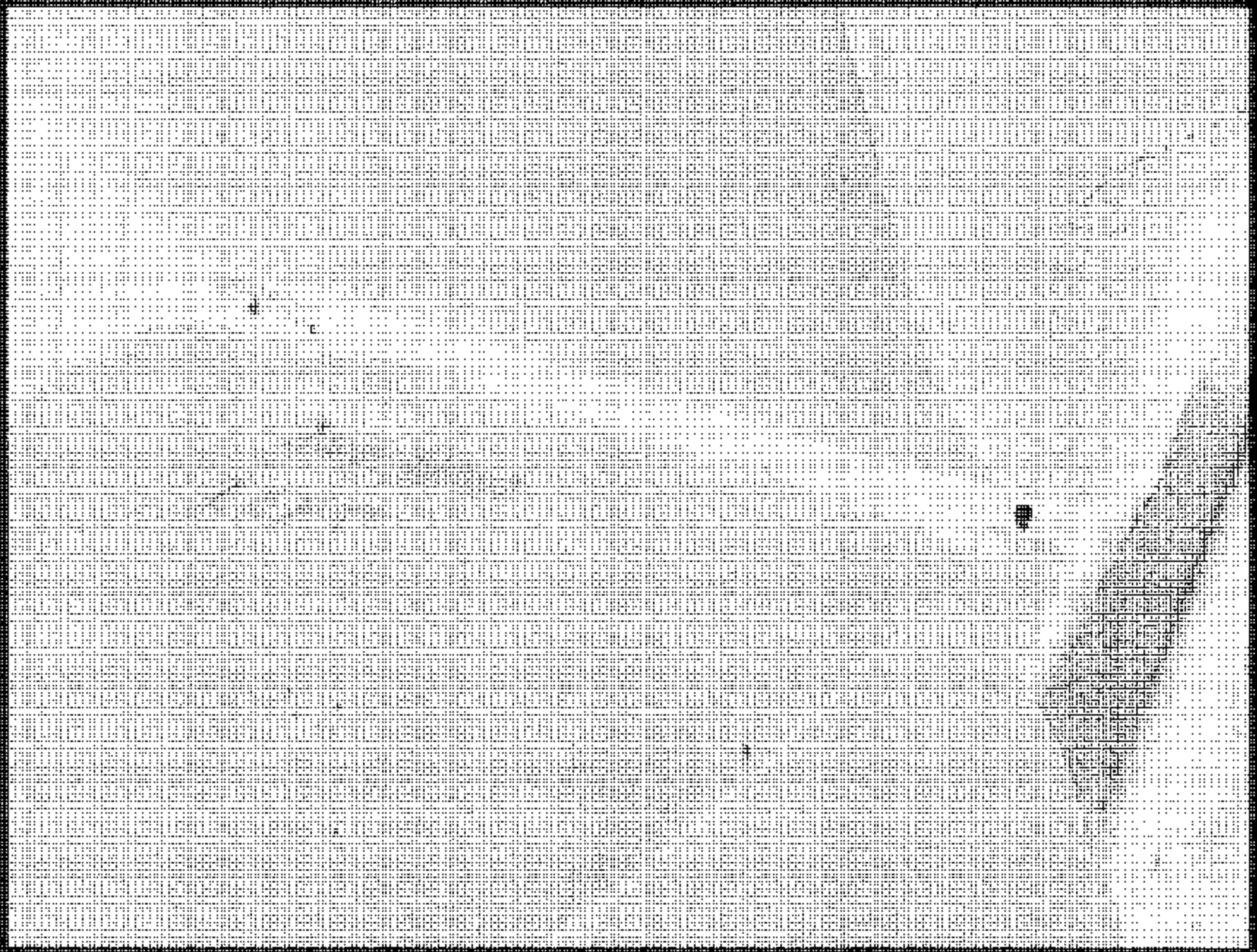
NHTSA NO. C40600
FMVSS NO. 225

FIGURE 5.13
PRE-TEST 2ND ROW LEFT LOWER ANCHORS
FRONT VIEW



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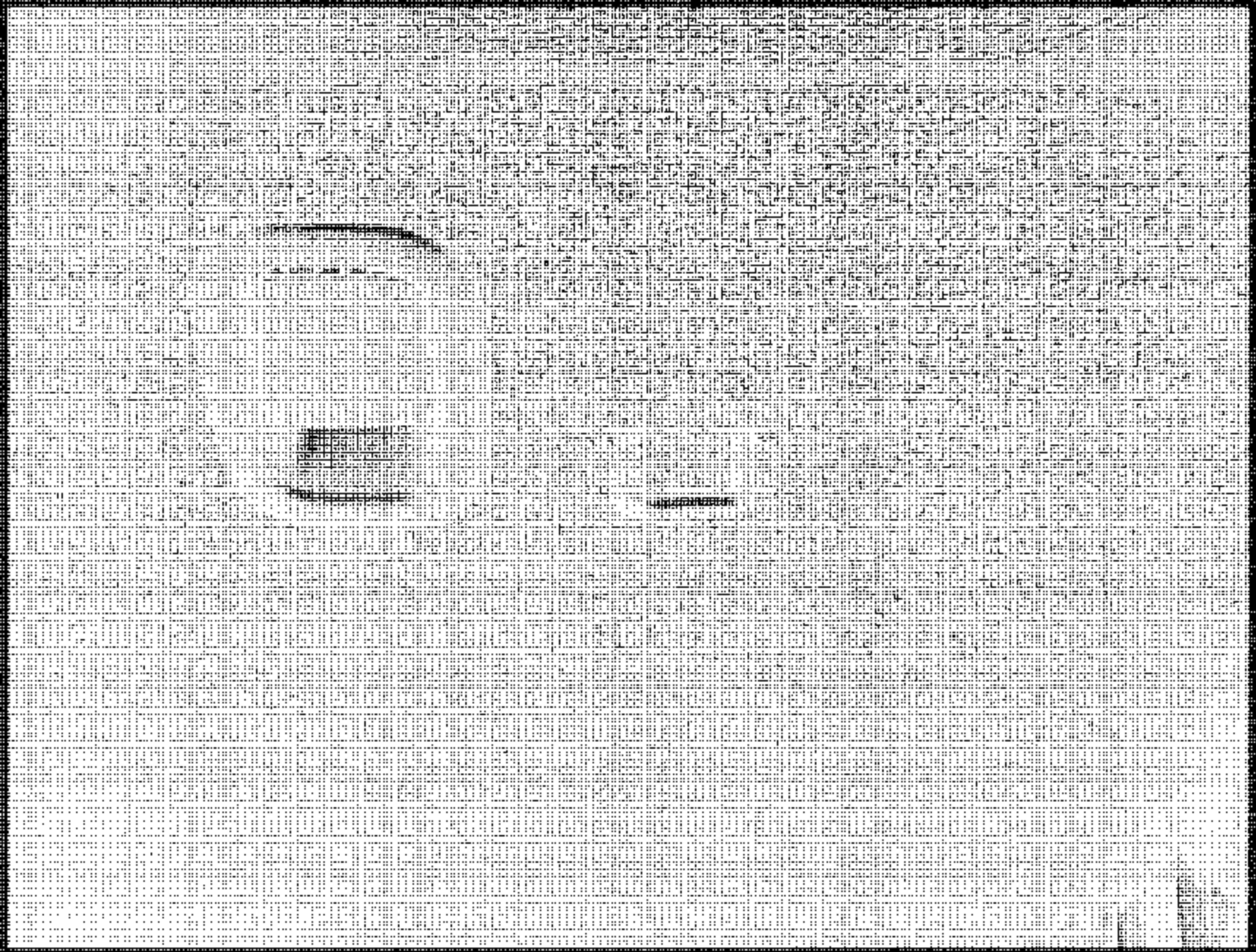
NHTSA NO. C40600
FMVSS NO. 225

FIGURE 5.14
PRE-TEST 2ND ROW LEFT LOWER ANCHORS
SIDE VIEW



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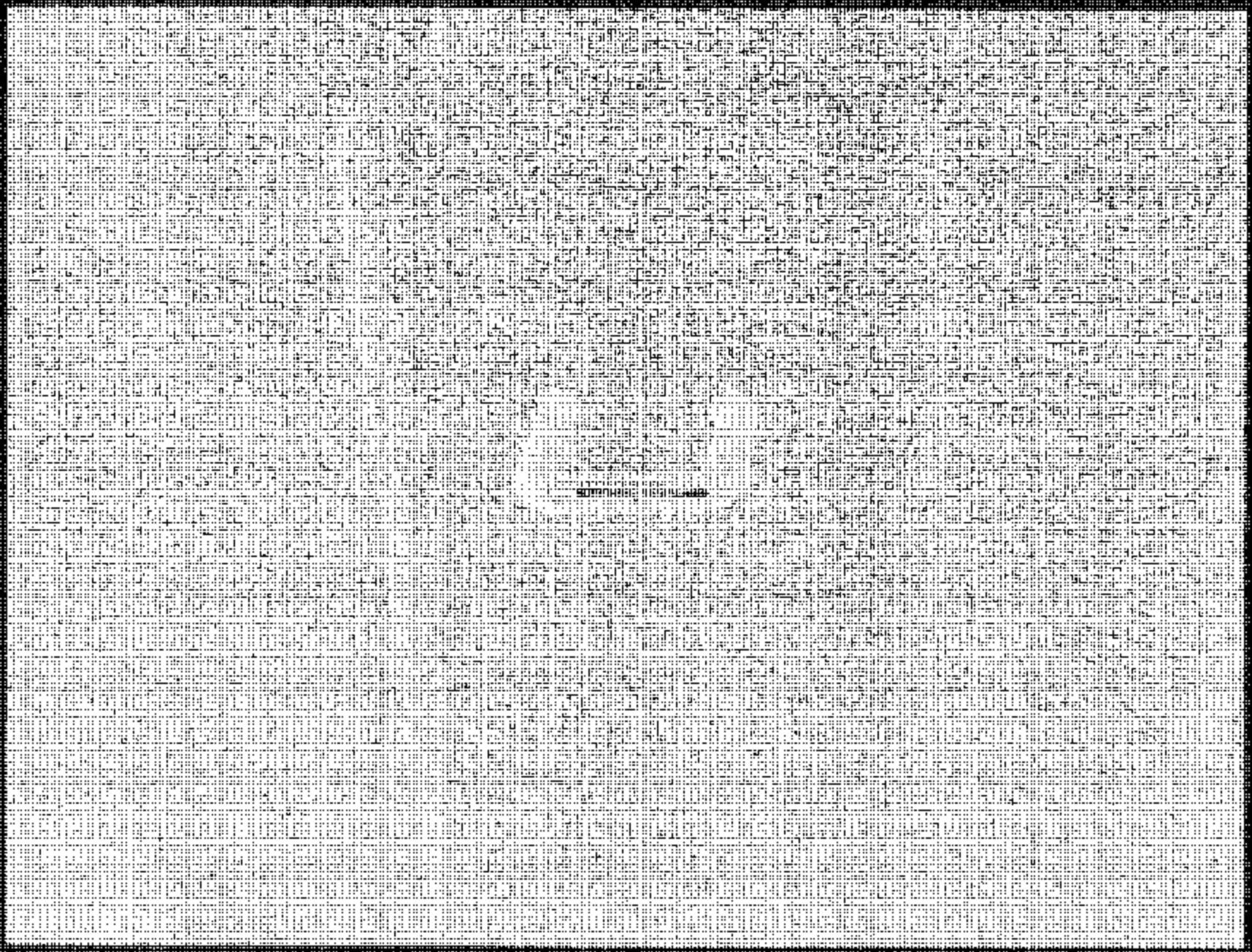
NHTSA NO. C40600
FMVSS NO. 225

FIGURE 5.15
PRE-TEST 2ND ROW LEFT TOP TETHER ANCHOR



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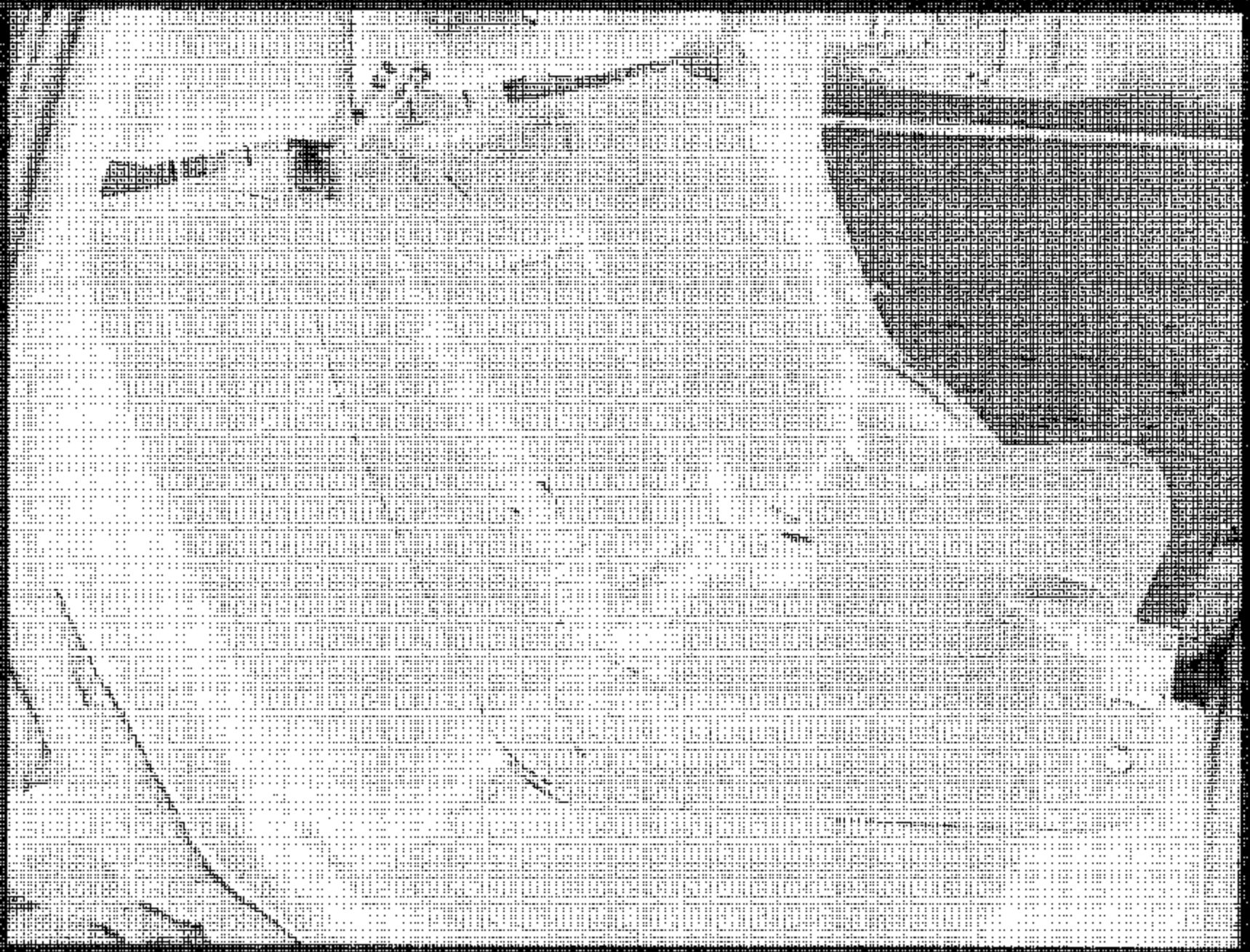
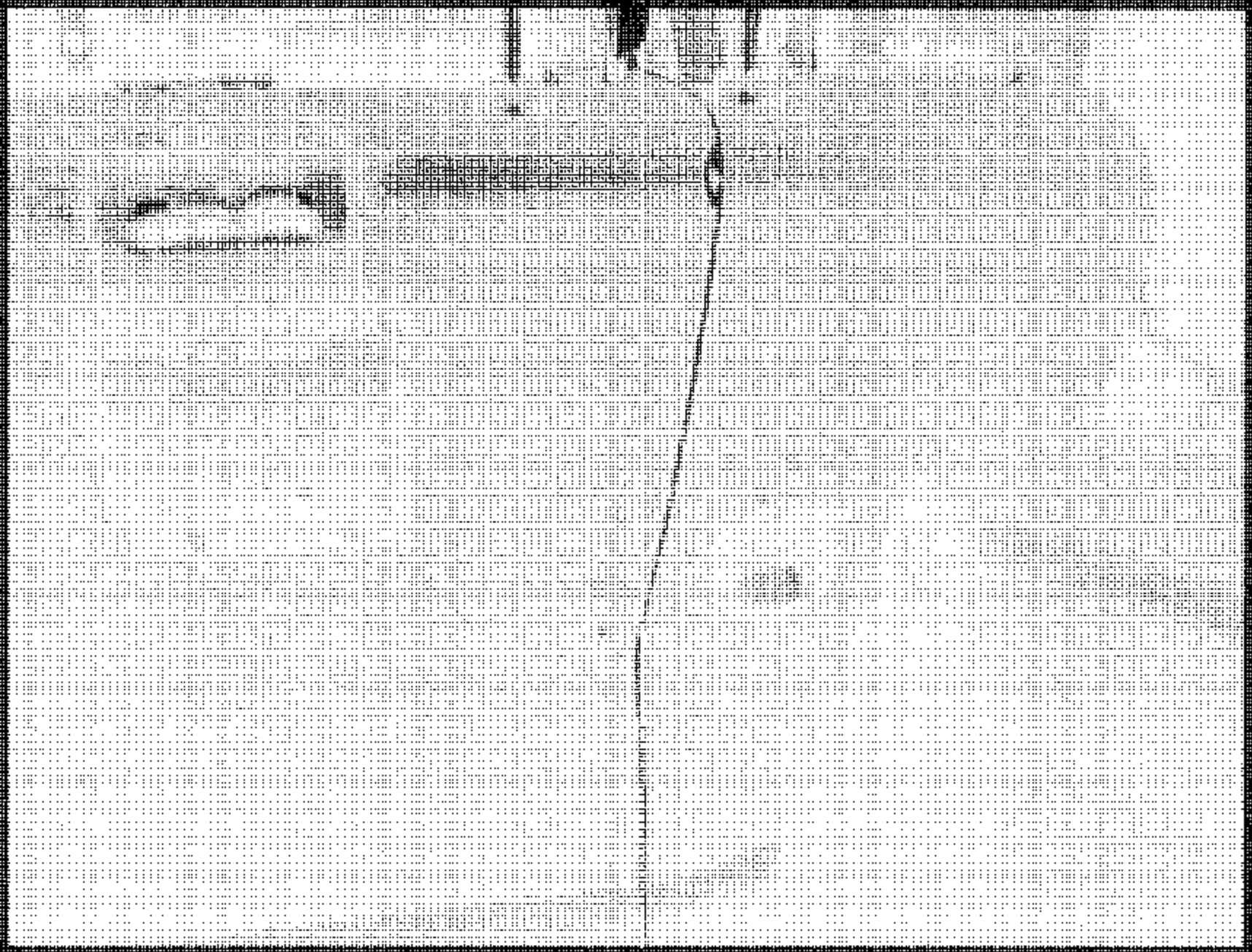
NHTSA NO. C40600
FMVSS NO. 225

FIGURE 5.18
PRE-TEST 2ND ROW CENTER TOP TETHER ANCHOR



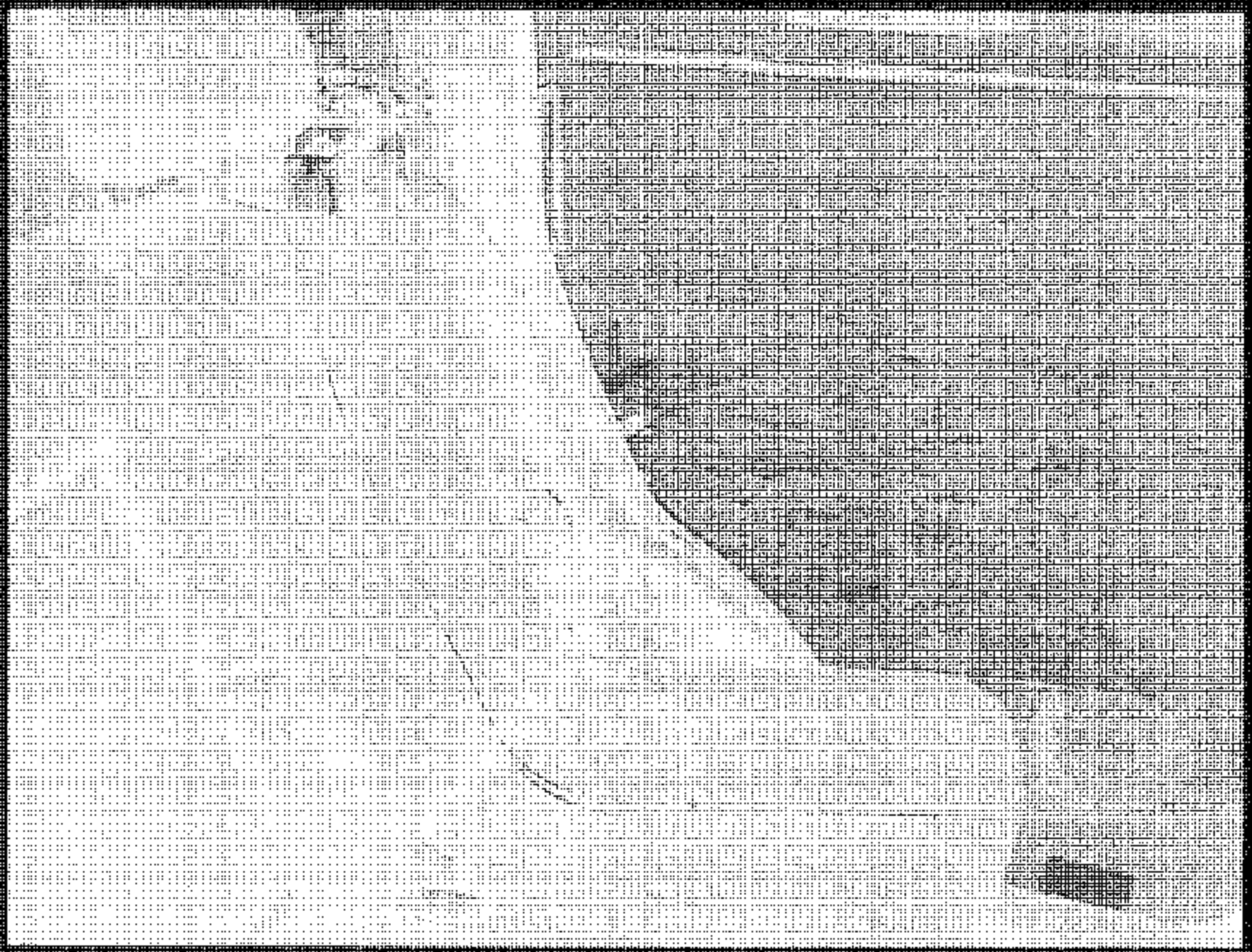
2004 LAND ROVER FREELANDER
NHTSA NO. C40000
FMVSS NO. 225

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



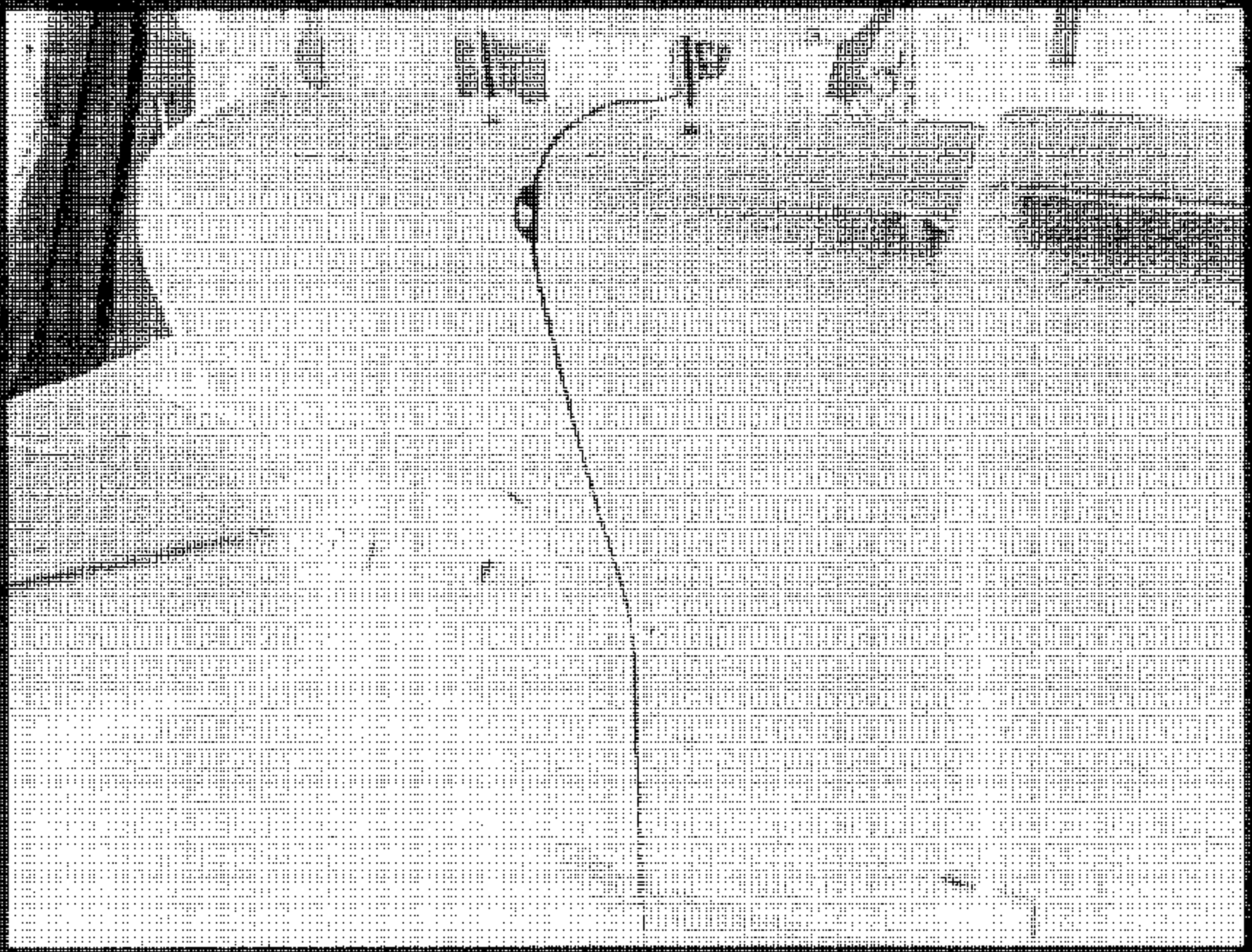
2004 LAND ROVER FREELANDER
NHTSA NO. C40600
FMVSS NO. 225

FIGURE 8.13
VIEW OF 2D TEMPLATE IN 2ND ROW RIGHT SEAT



2004 LAND ROVER FREELANDER
NHTSA NO. C40600
FMVSS NO. 225

FIGURE 5.10
VIEW OF 2D TEMPLATE IN 2ND ROW LEFT SEAT



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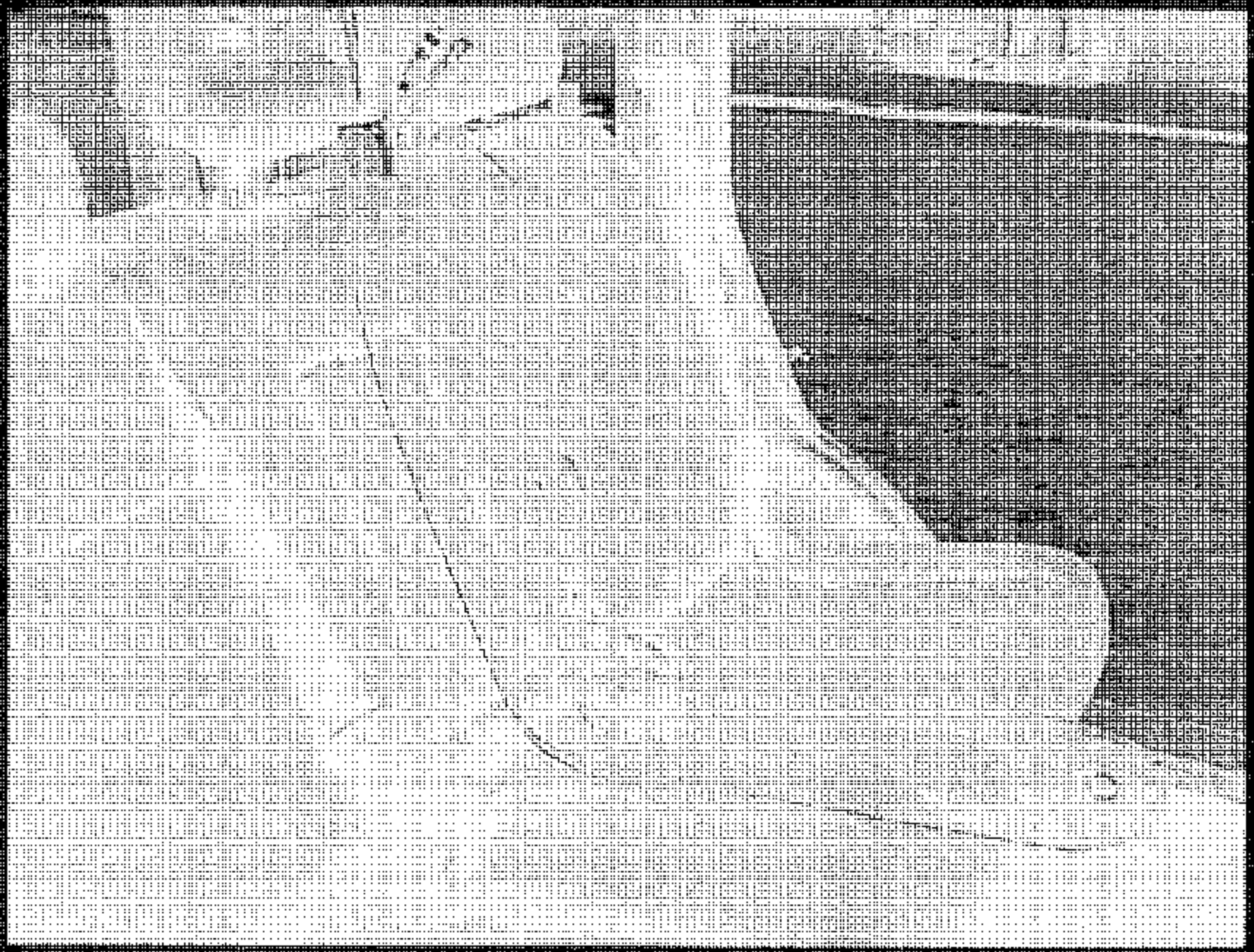
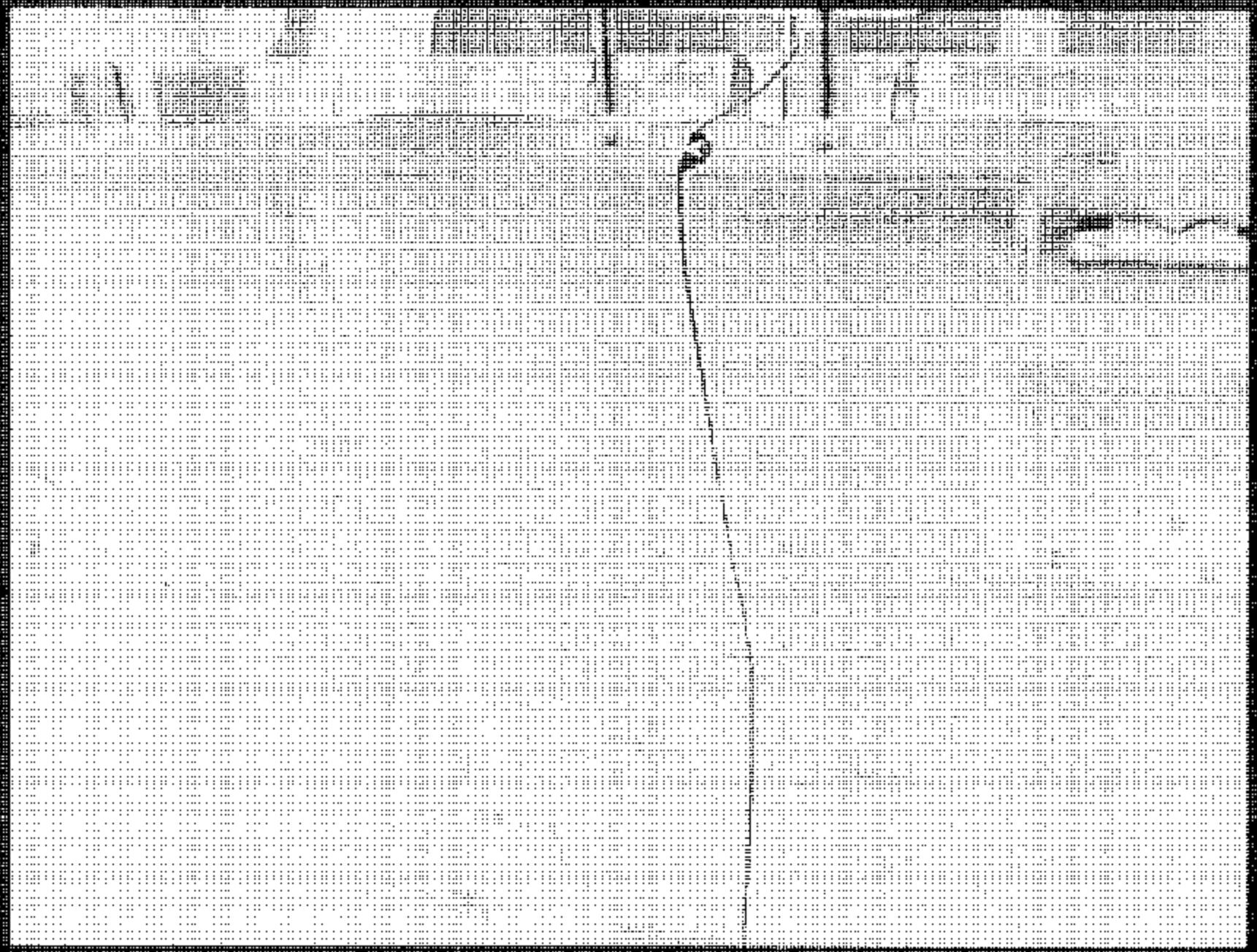
NHTSA NO. C40600
FMVSS NO. 225

FIGURE 4-20
VIEW OF 2D TEMPLATE IN 2ND ROW LEFT SEAT



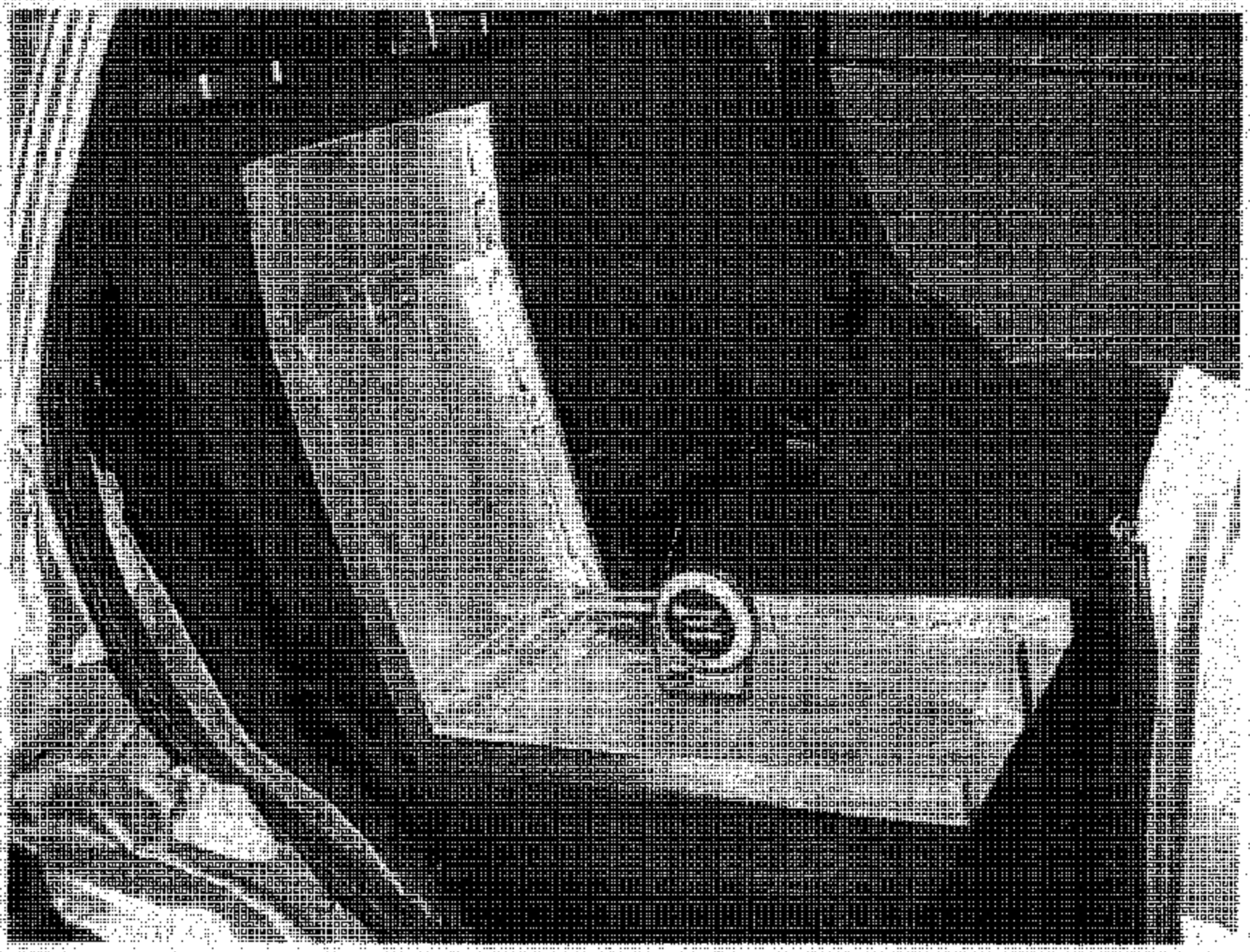
2004 LAND ROVER FREELANDER
NHTSA NO. C40000
FMVSS NO. 225

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



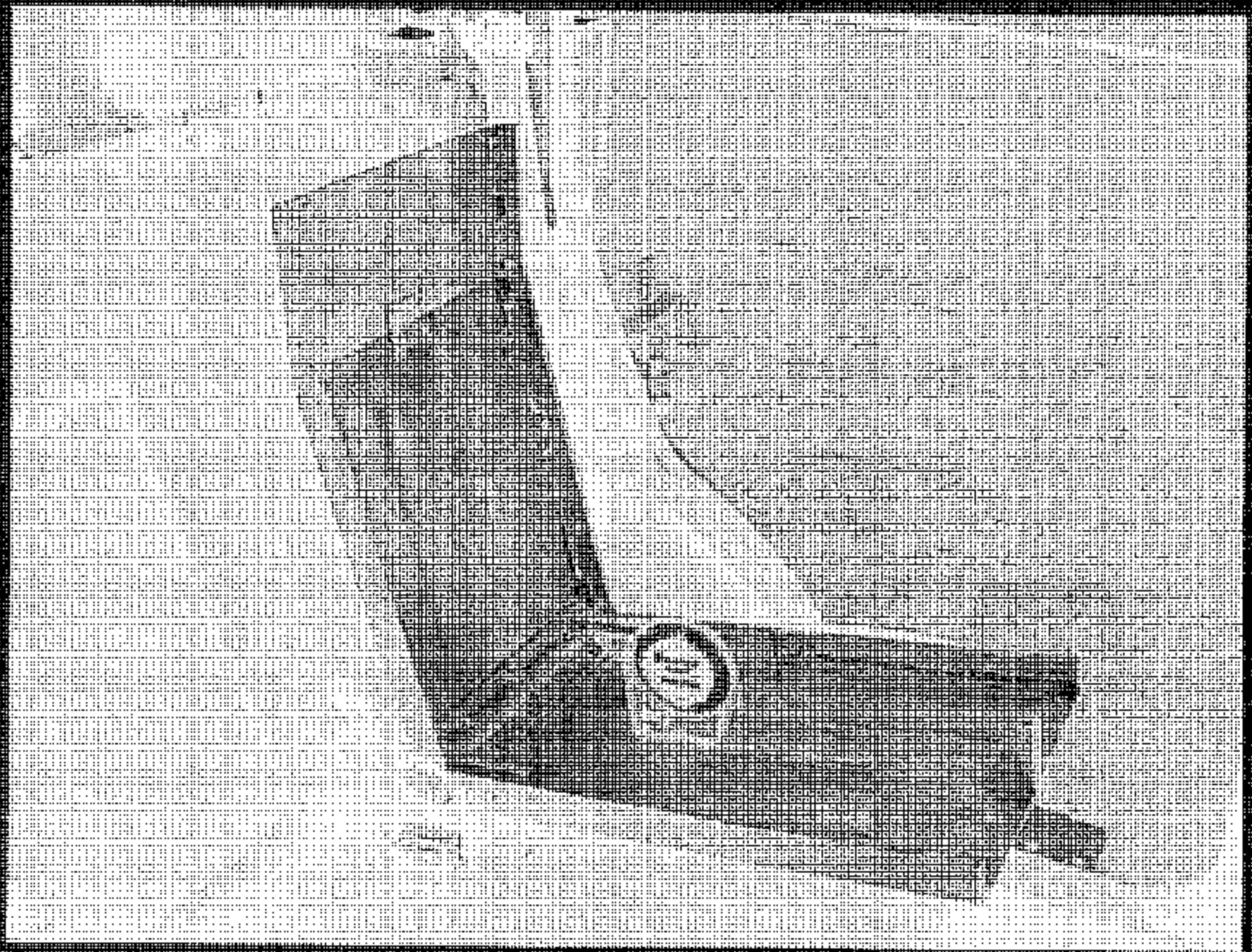
2004 LAND ROVER FREELANDER
NHTSA NO. C40660
FMVSS NO. 225

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



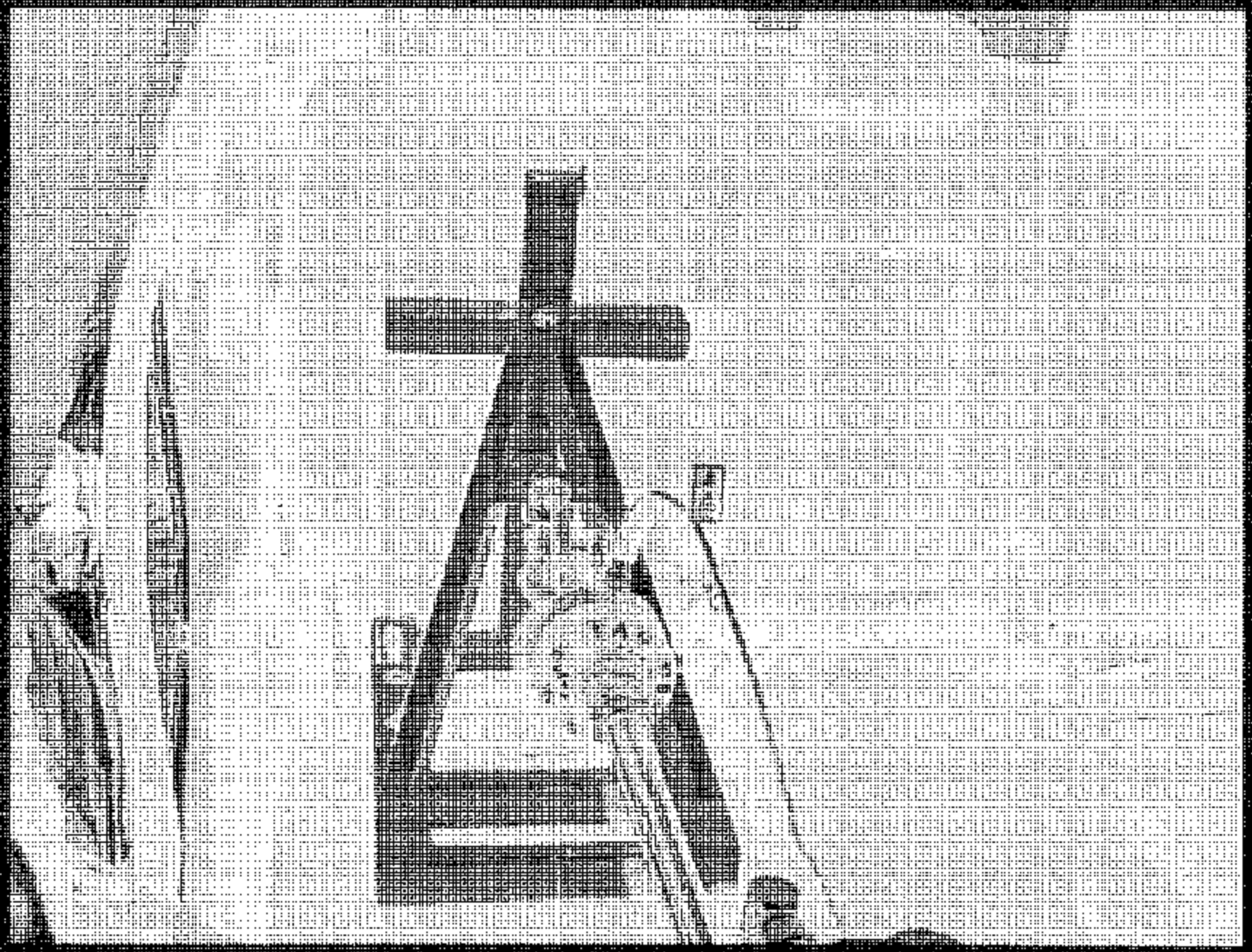
2004 LAND ROVER FREELANDER
NHTSA NO. C40600
FMVSS NO. 225

FIGURE 5.23
VIEW OF CRF IN 2ND ROW RIGHT SEAT



2004 LAND ROVER FREELANDER
NHTSA NO. C40800
FMVSS NO. 225

FIGURE 5.24
VIEW OF CRF IN 2ND ROW LEFT SEAT



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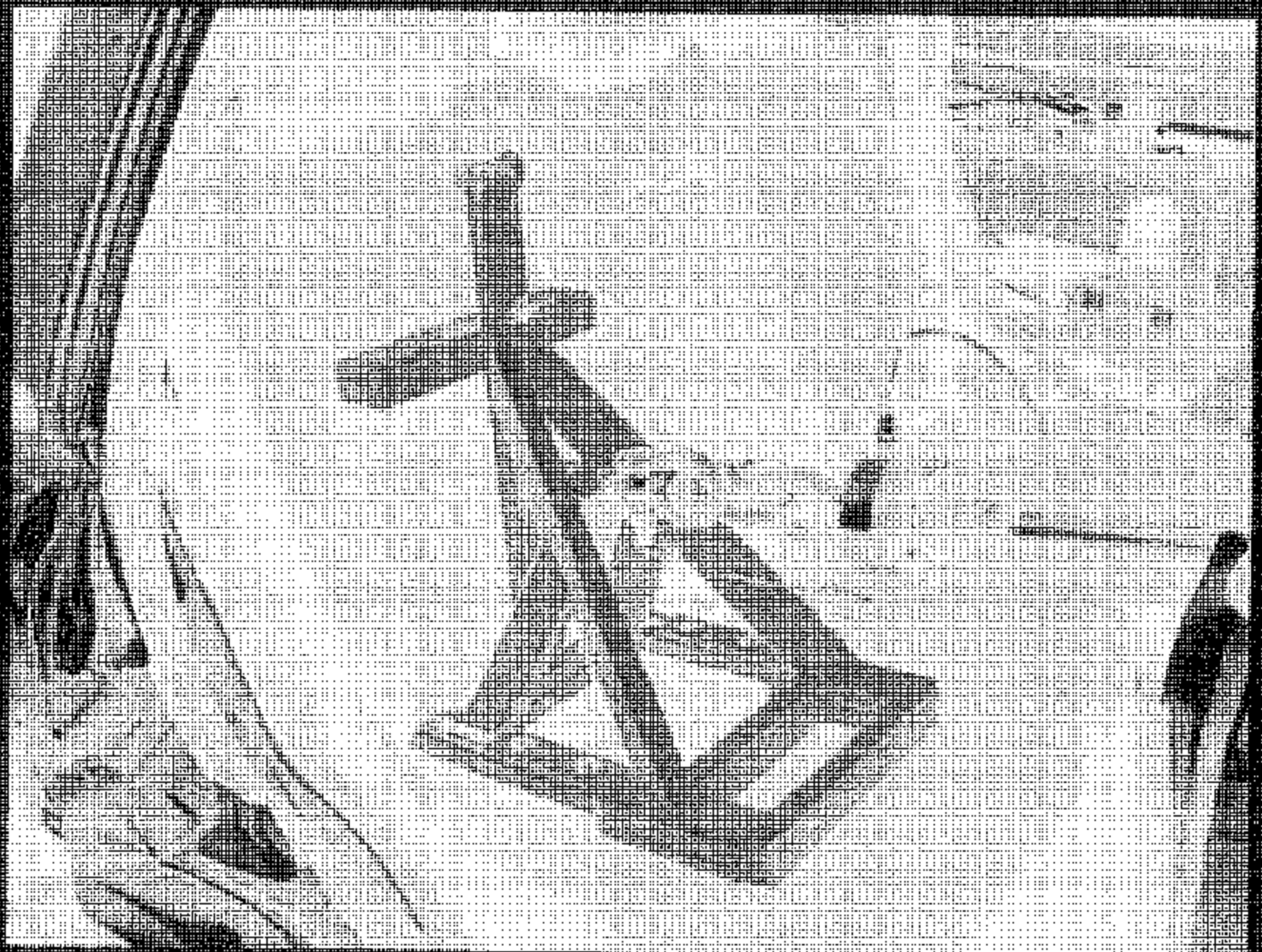
NHTSA NO. C40600
FMVSS NO. 225

FIGURE 5.25
PRE-TEST SET-UP 2ND ROW RIGHT POSITION
FRONT VIEW



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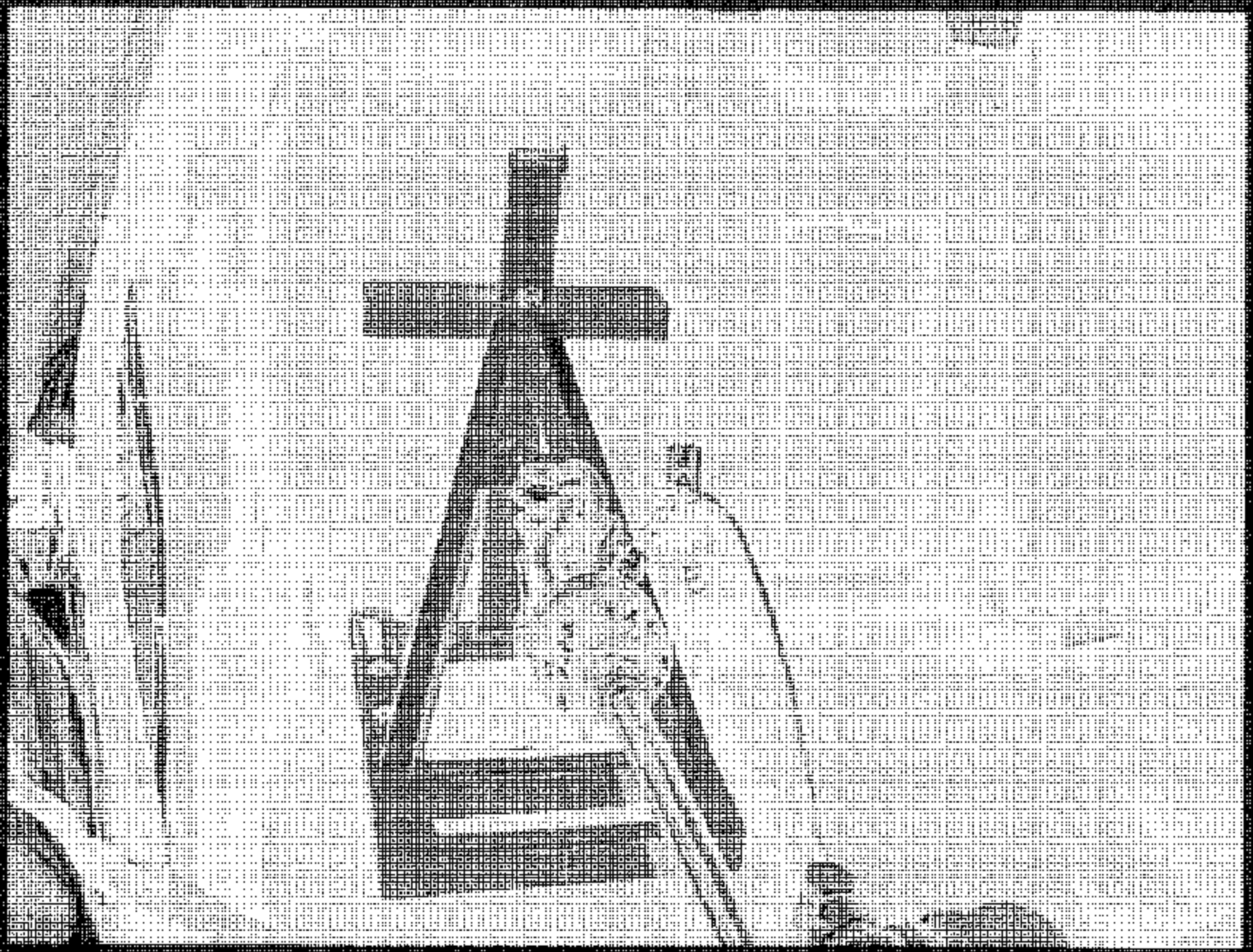
NHTSA NO. C40600
FMVSS NO. 225

FIGURE 5.26
PRE-TEST SET UP 2ND ROW RIGHT POSITION
SIDE VIEW



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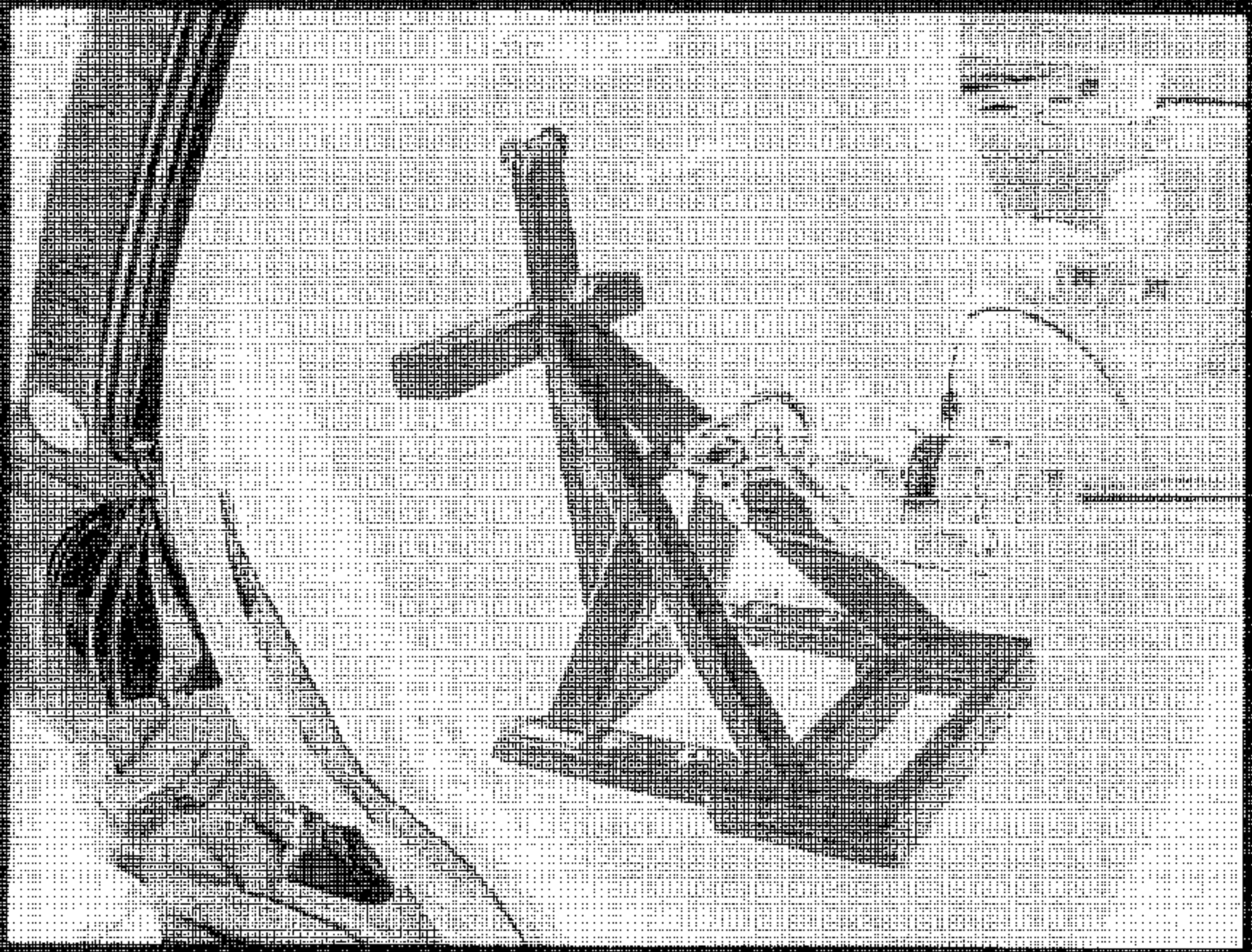
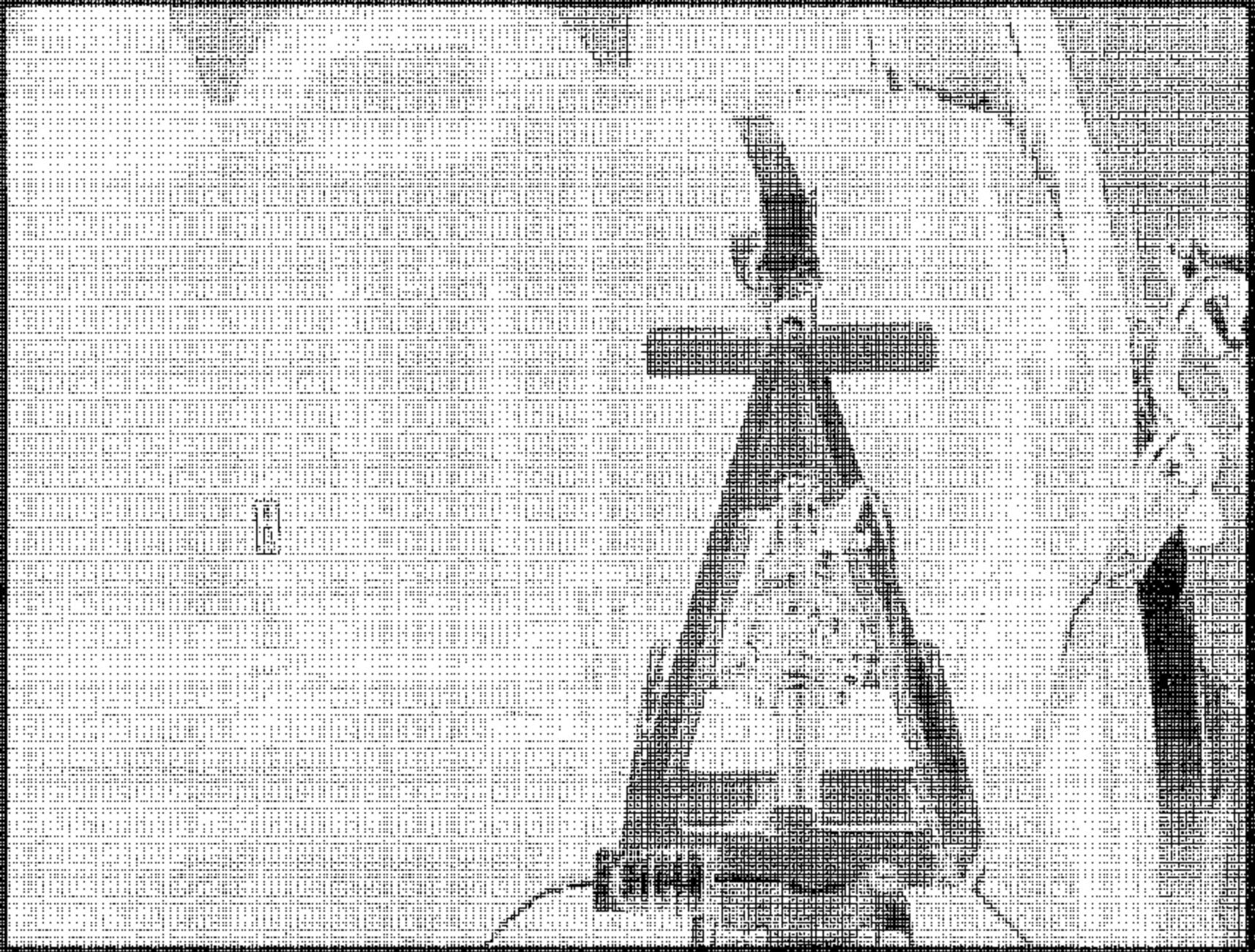
NHTSA NO. C40600
FMVSS NO. 225

FIGURE 5.27
POST TEST 2ND ROW RIGHT POSITION FRONT VIEW



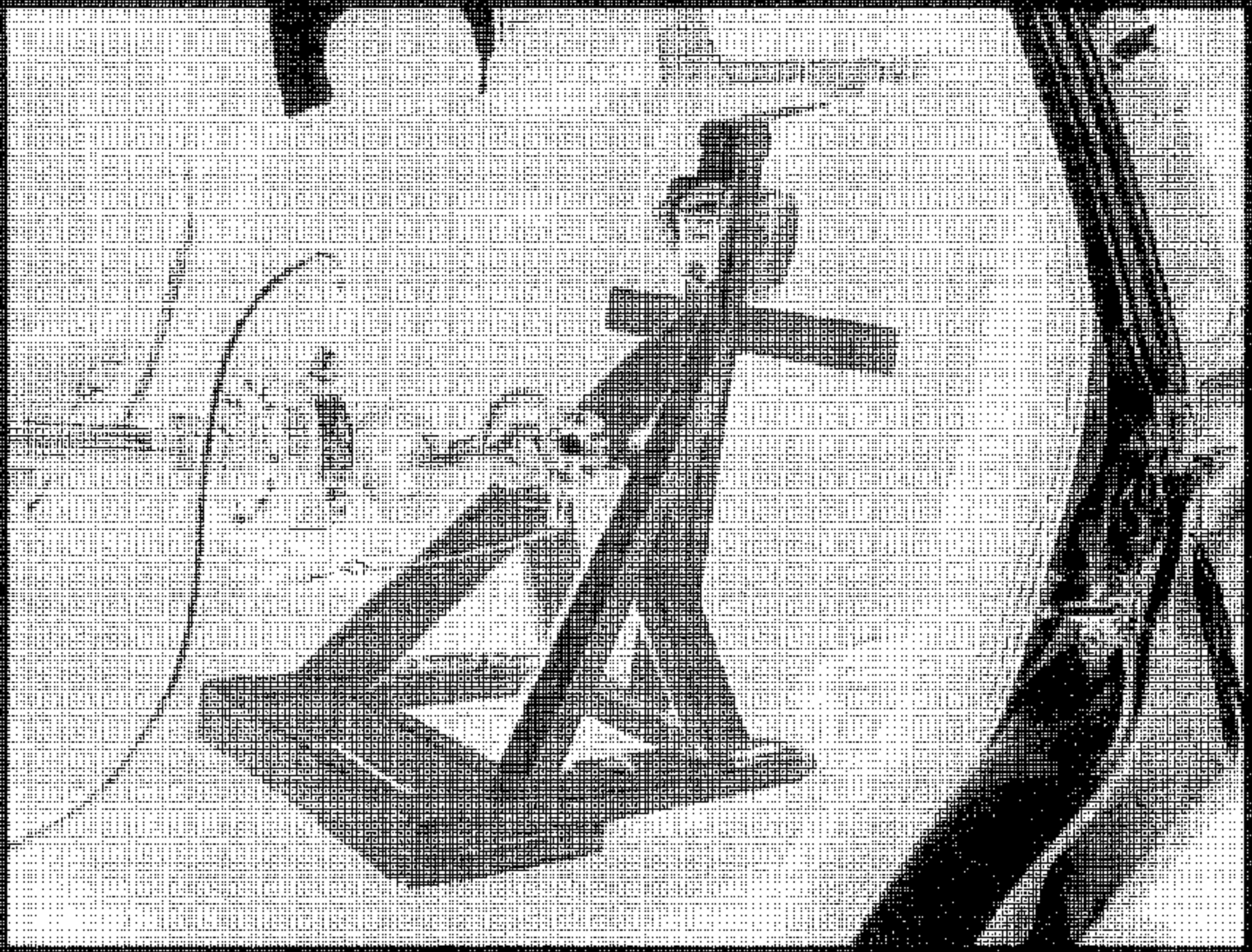
2004 LAND ROVER FREELANDER
NHTSA NO. C40600
FMVSS NO. 225

FIGURE 5.28
POST TEST 2ND ROW RIGHT POSITION SIDE VIEW



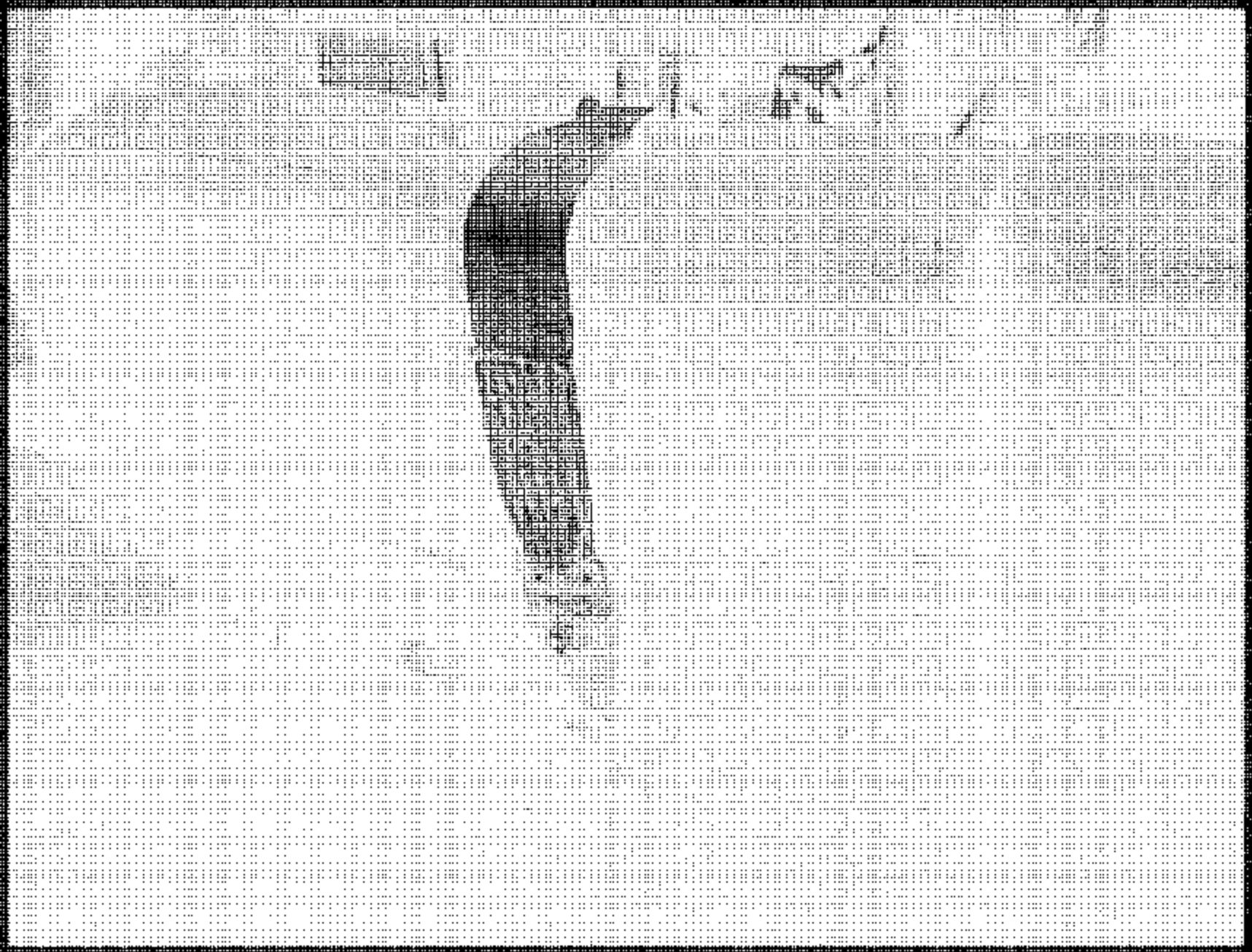
2004 LAND ROVER FREELANDER
NHTSA NO. C40800
FMVSS NO. 225

FIGURE 5.26
PRE-TEST SET-UP 2ND ROW LEFT POSITION
FRONT VIEW



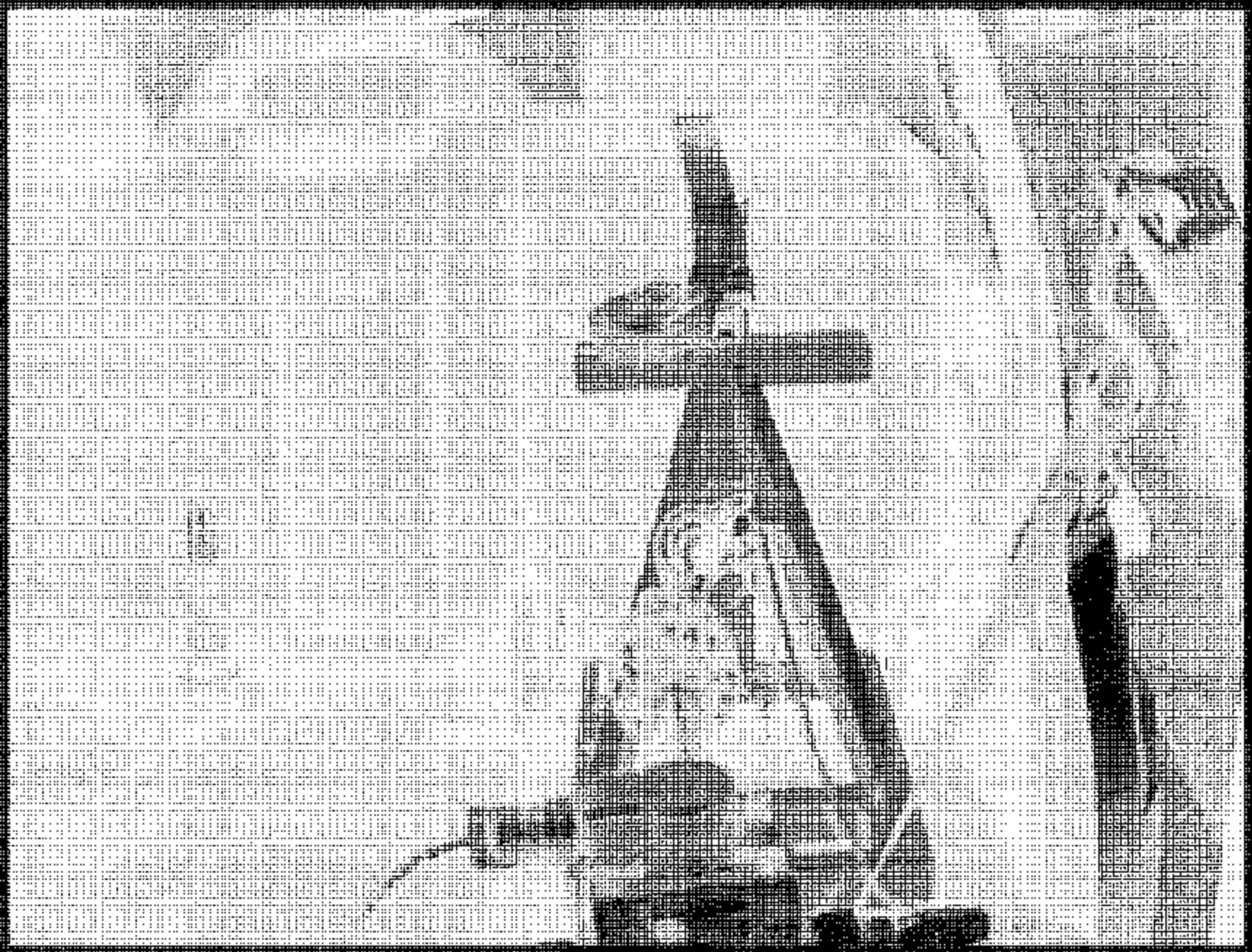
2004 LAND ROVER FREELANDER
NHTSA NO. C40000
FMVSS NO. 225

FIGURE 5.30
PRE-TEST SET-UP 2ND ROW LEFT POSITION
SIDE VIEW



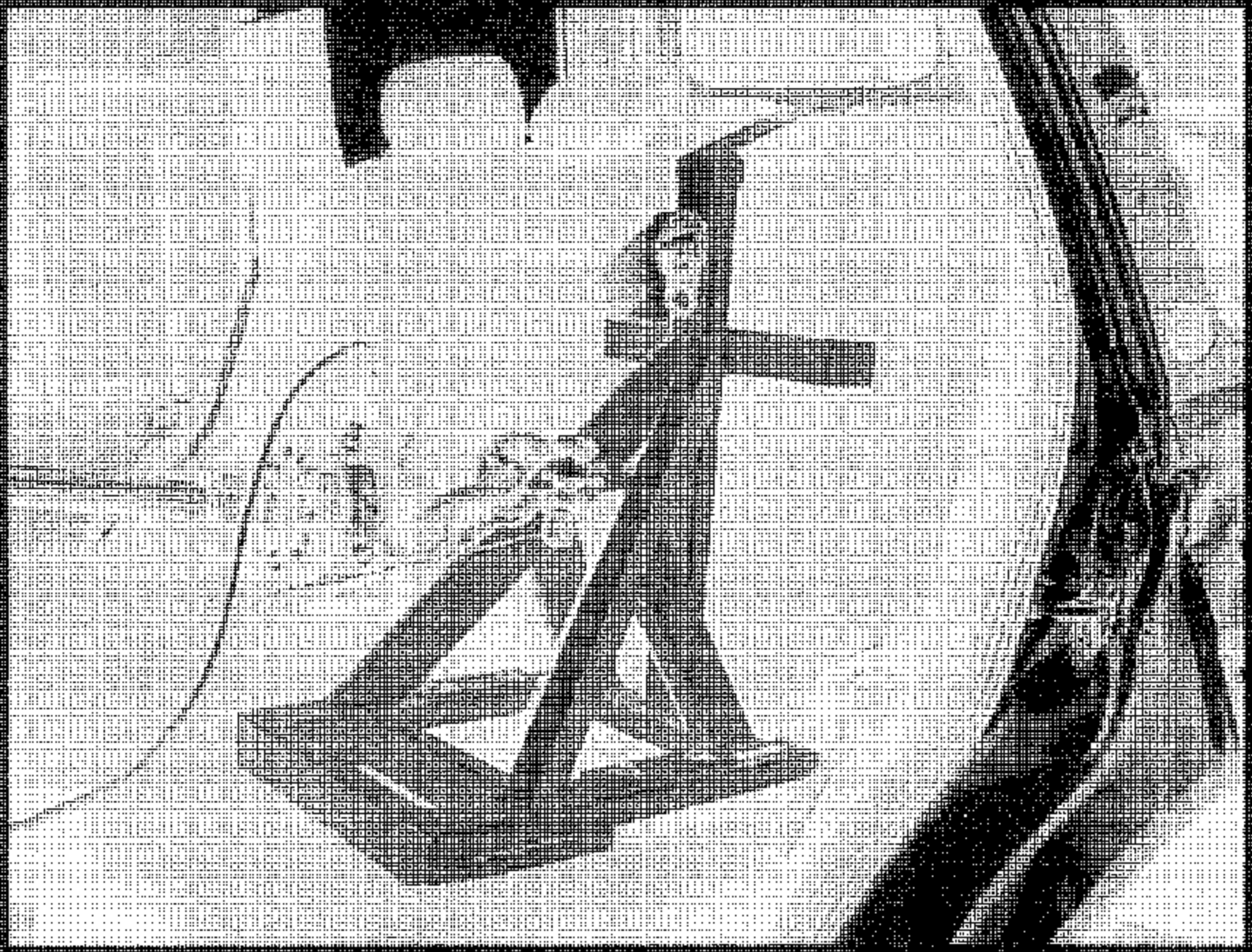
2004 LAND ROVER FREELANDER
NHTSA NO. C40600
FMVSS NO. 225

FIGURE 5.31
PRE-TEST SET-UP 2ND ROW LEFT POSITION
REAR VIEW



2004 LAND ROVER FREELANDER
NHTSA NO. C40500
FMVSS NO. 225

FIGURE 5.32
POST TEST 2ND ROW LEFT POSITION FRONT VIEW



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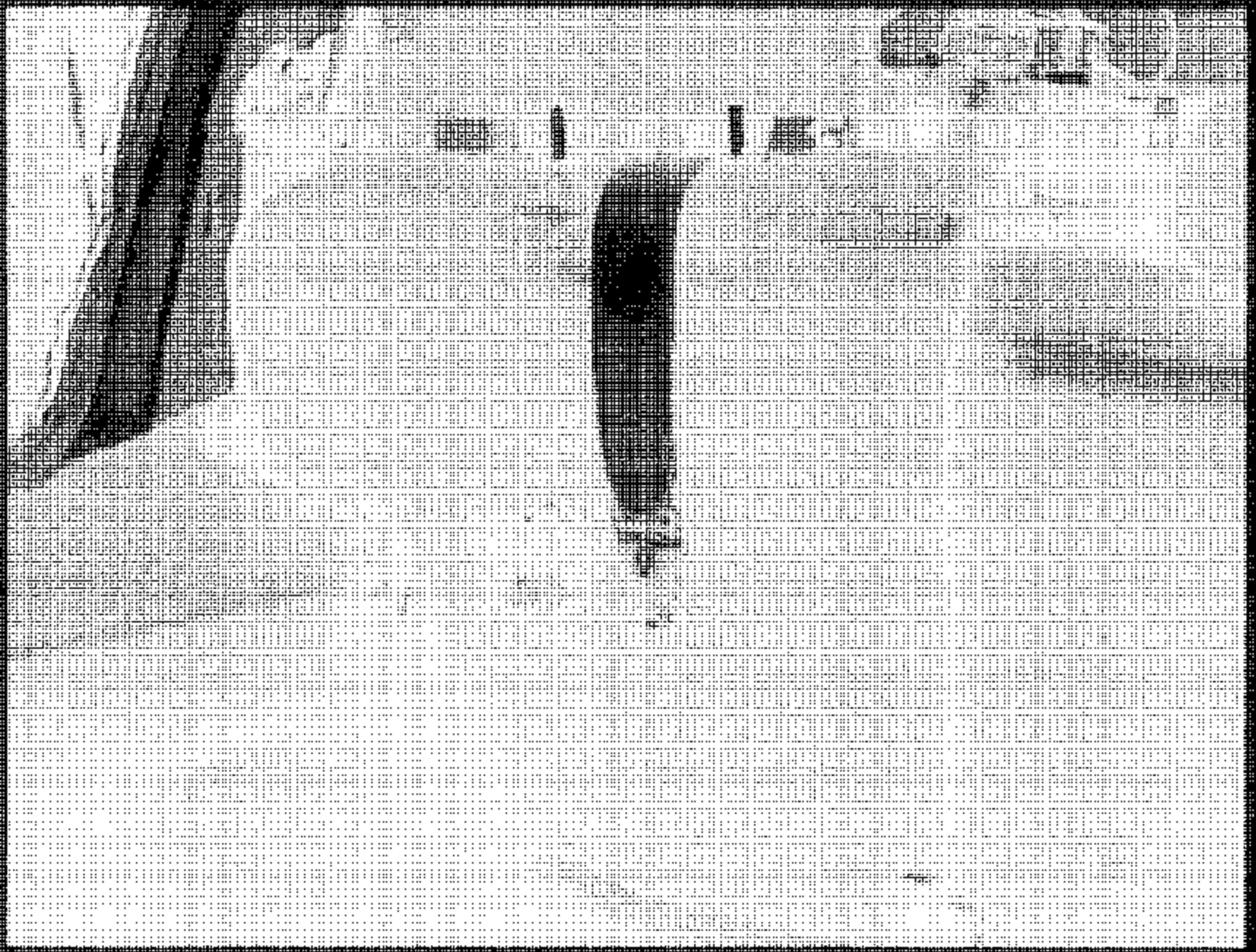
NHTSA NO. C40500
FMVSS NO. 225

FIGURE 5.33
POST TEST 2ND ROW LEFT POSITION SIDE VIEW



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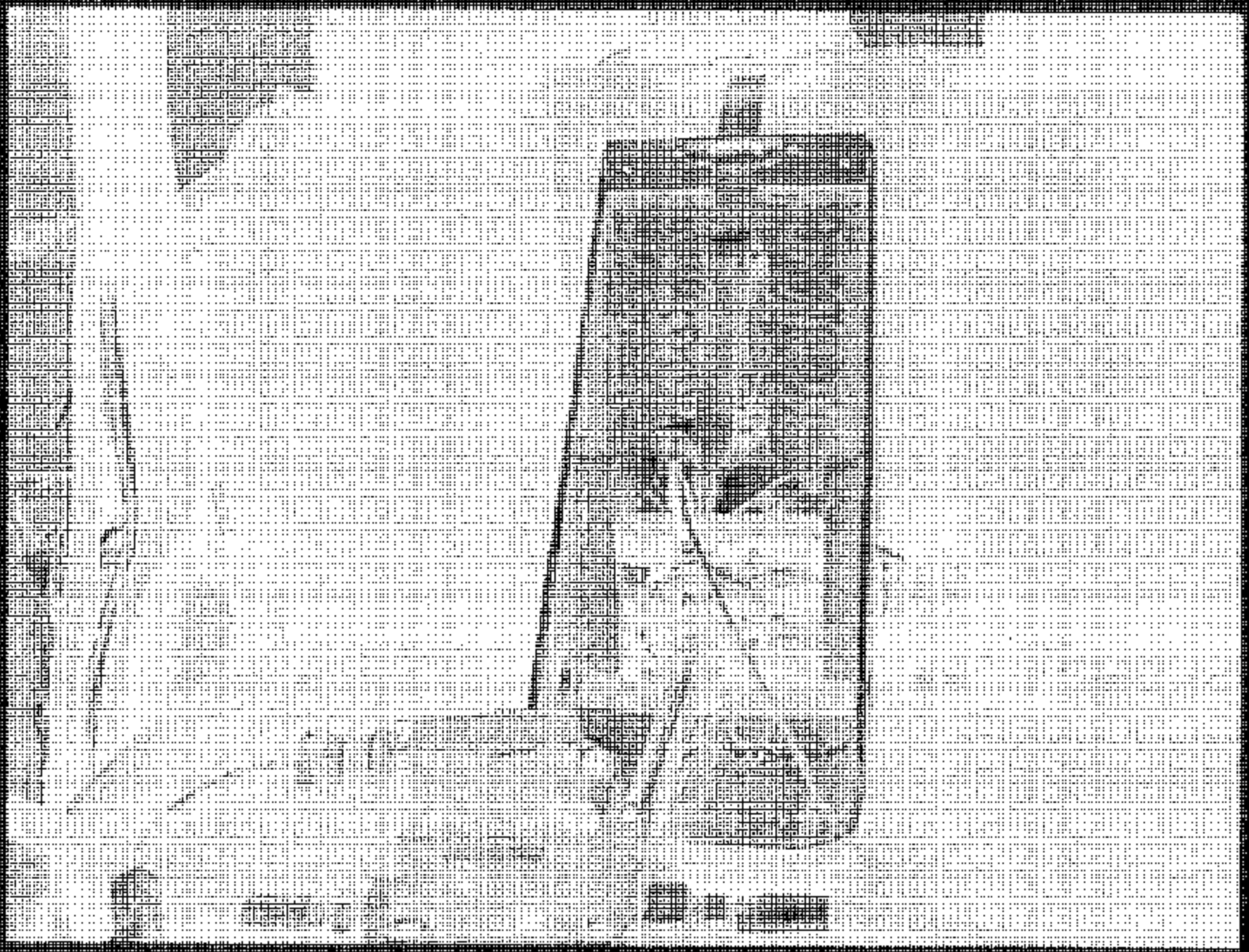
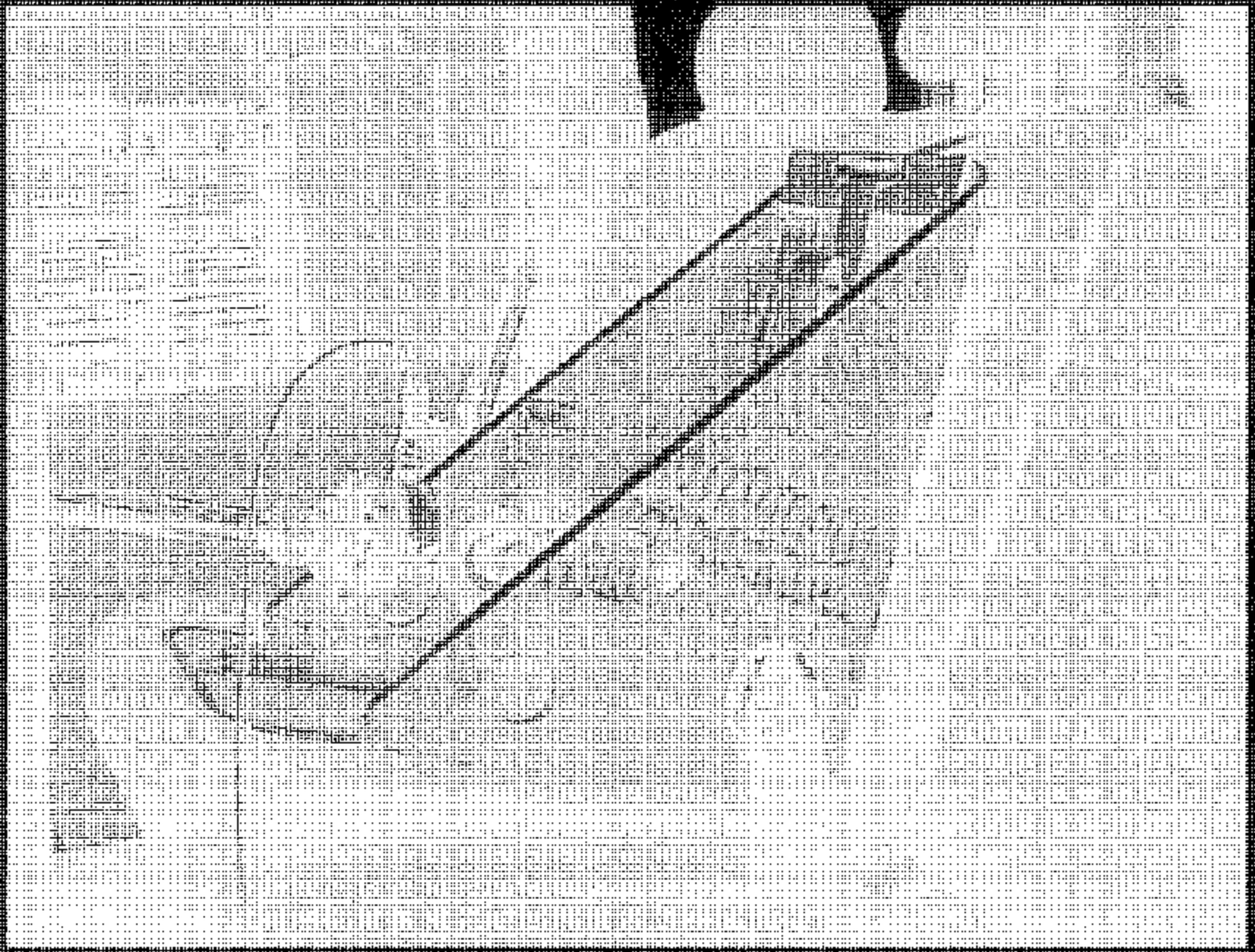
NHTSA NO. C40800
FMVSS NO. 225

FIGURE 5.34
POST TEST 2ND ROW LEFT POSITION REAR VIEW



2004 LAND ROVER FREELANDER
NHTSA NO. C40060
FMVSS NO. 225

FIGURE 5.35
PRE-TEST SET-UP 2ND ROW CENTER POSITION
FRONT VIEW



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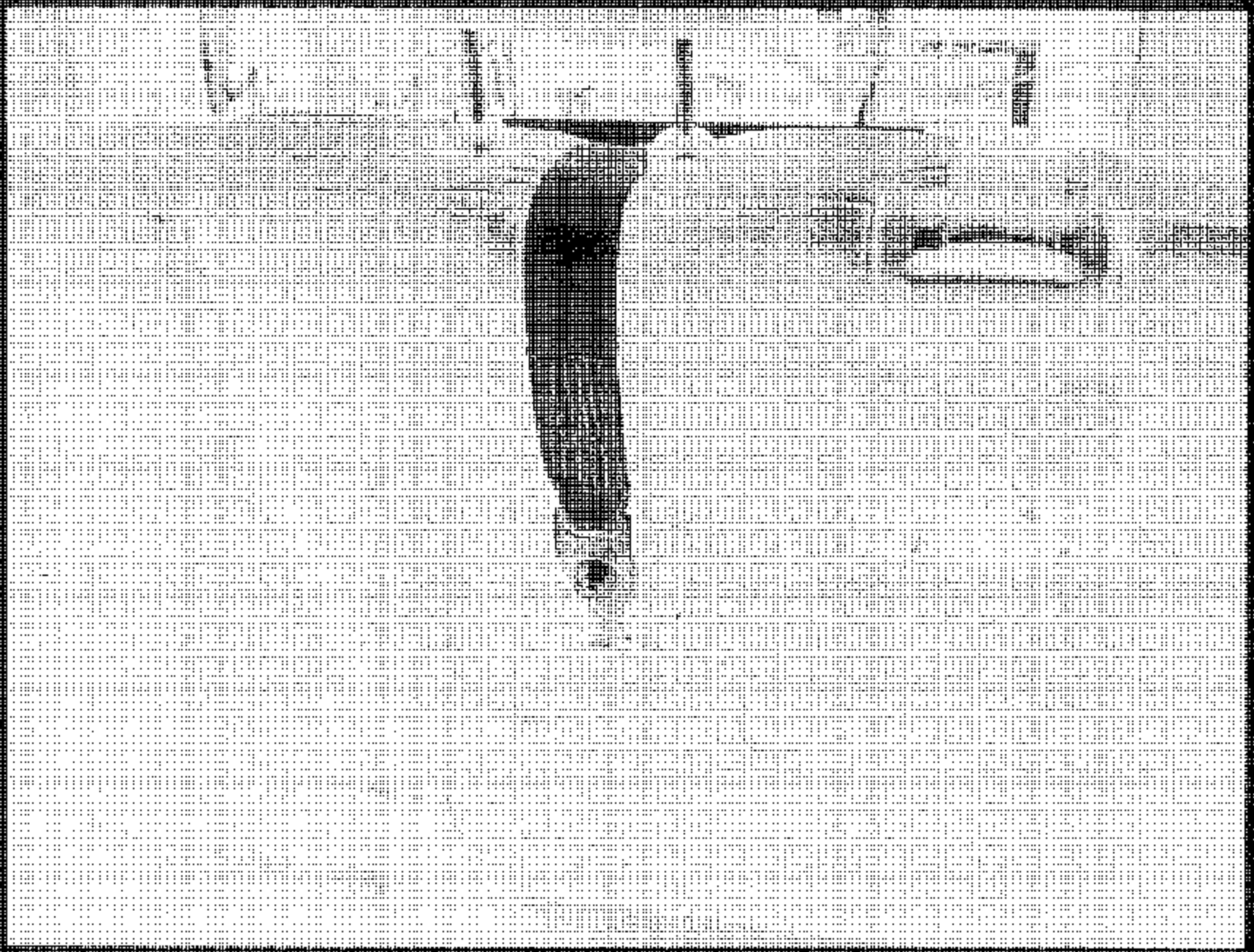
NHTSA NO. C40600
FMVSS NO. 225

FIGURE 5.36
PRE-TEST SET-UP 2ND ROW CENTER POSITION
SIDE VIEW



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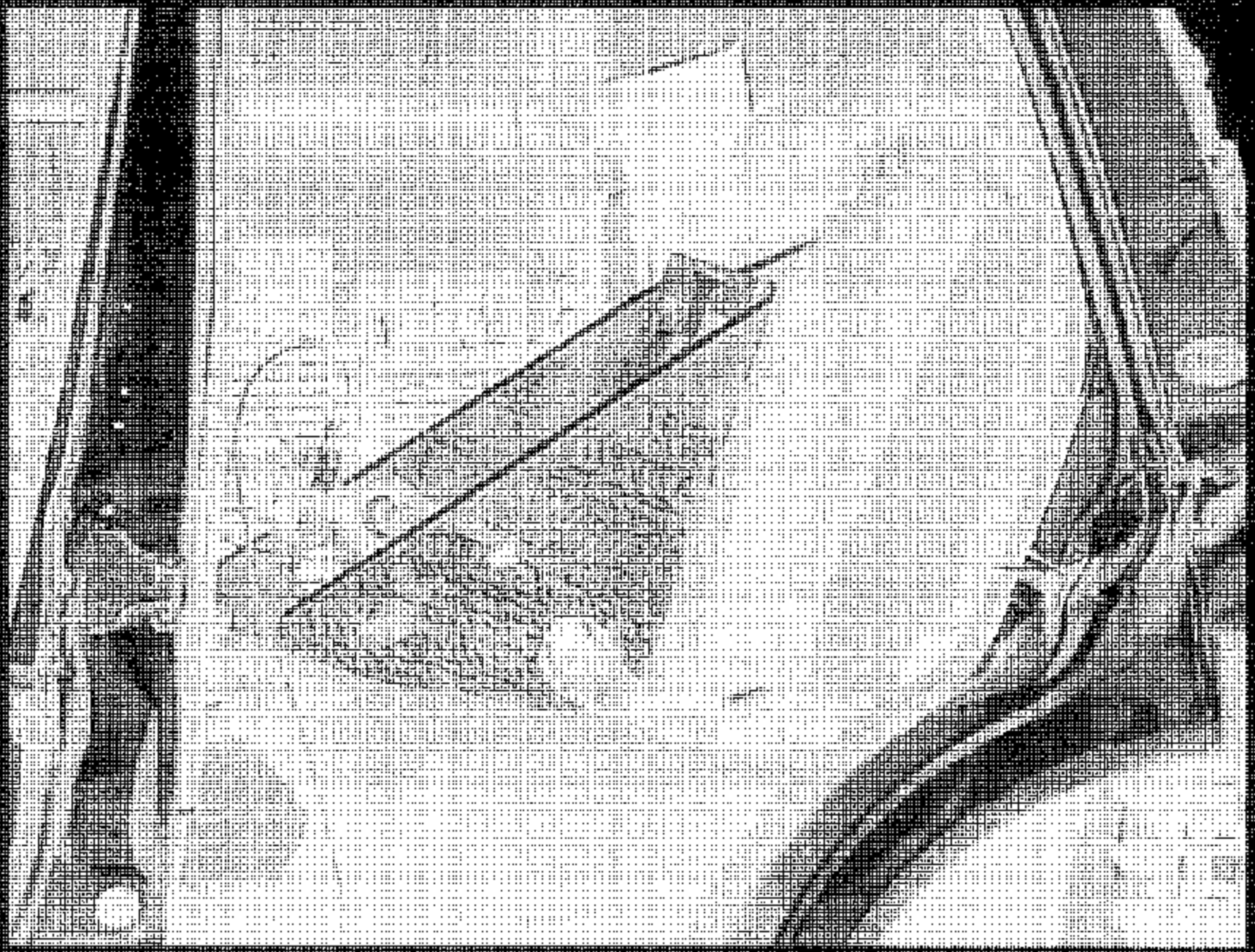
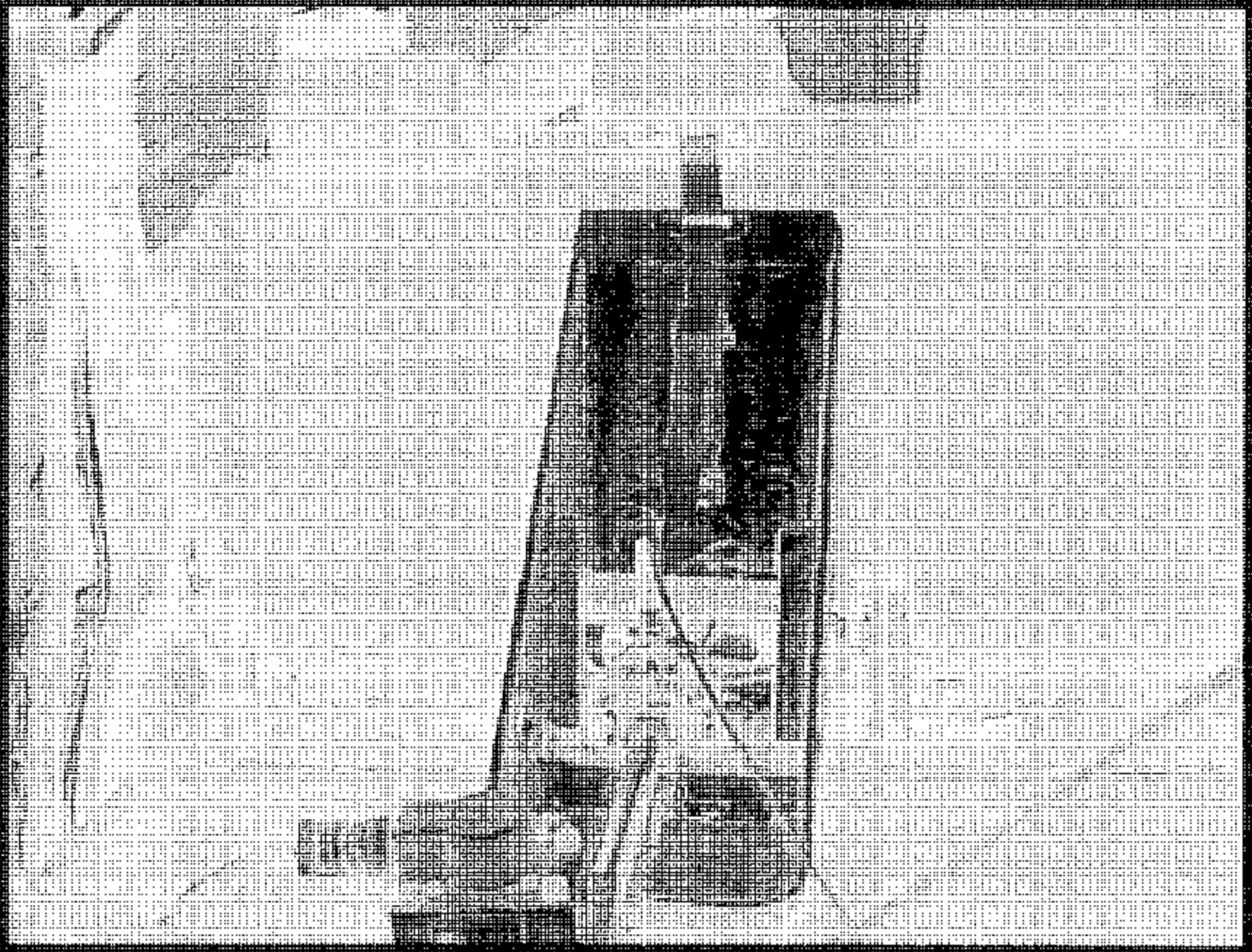
NHTSA NO. C40800
FMVSS NO. 225

FIGURE 3.37
PRE-TEST SET-UP 2ND ROW CENTER POSITION
REAR VIEW



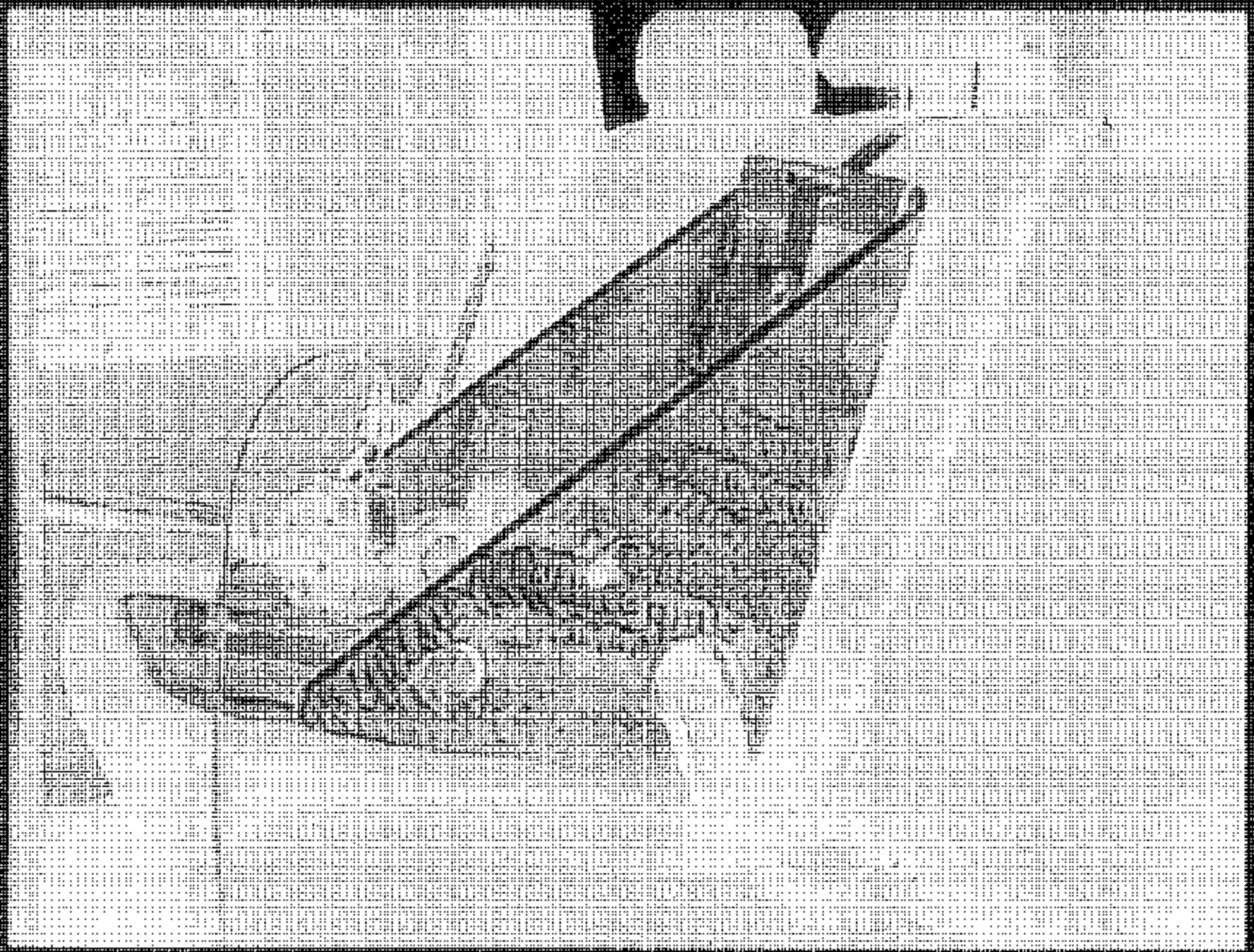
2004 LAND ROVER FREELANDER
NHTSA NO. C40600
RMVSS NO. 226

FIGURE 5.38
POST TEST 2ND ROW CENTER POSITION AT
FULL LOAD SIDE VIEW



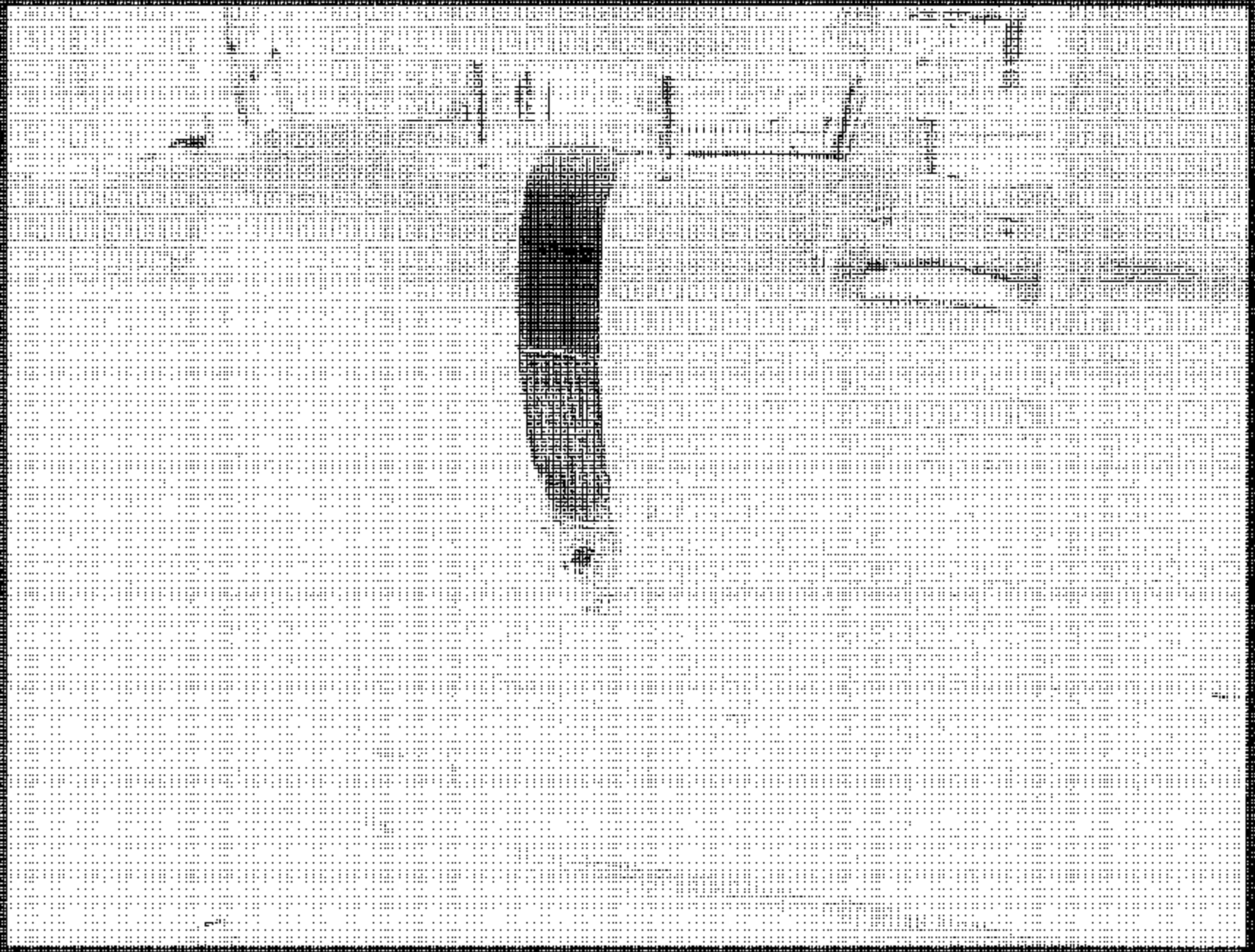
2004 LAND ROVER FREELANDER
NHTSA NO. C40600
FMVSS NO. 225

FIGURE 6.39
POST TEST 2ND ROW CENTER POSITION FRONT VIEW



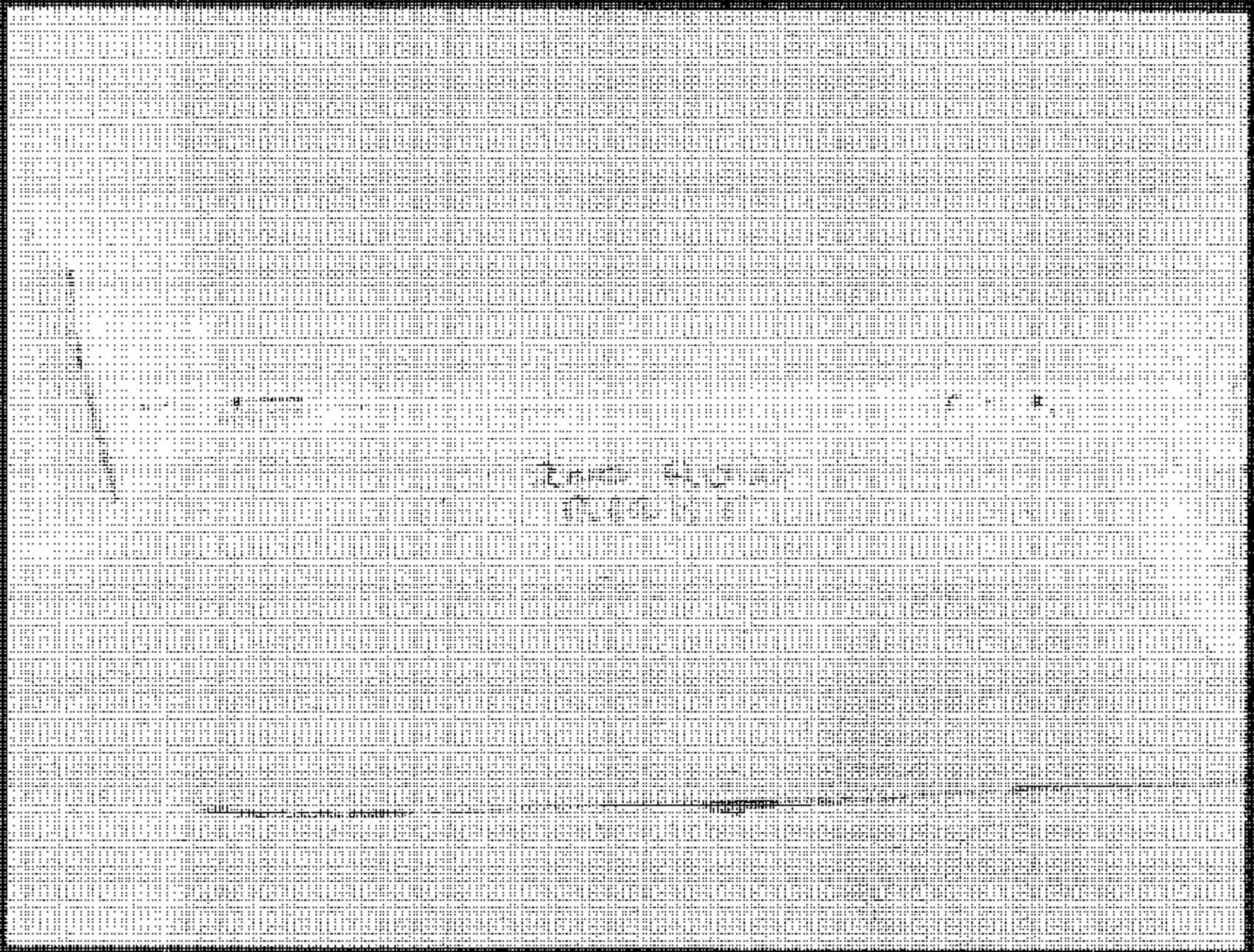
2004 LAND ROVER FREELANDER
NHTSA NO. C40600
FMVSS NO. 225

FIGURE 5.40
POST TEST 2ND ROW CENTER POSITION SIDE VIEW



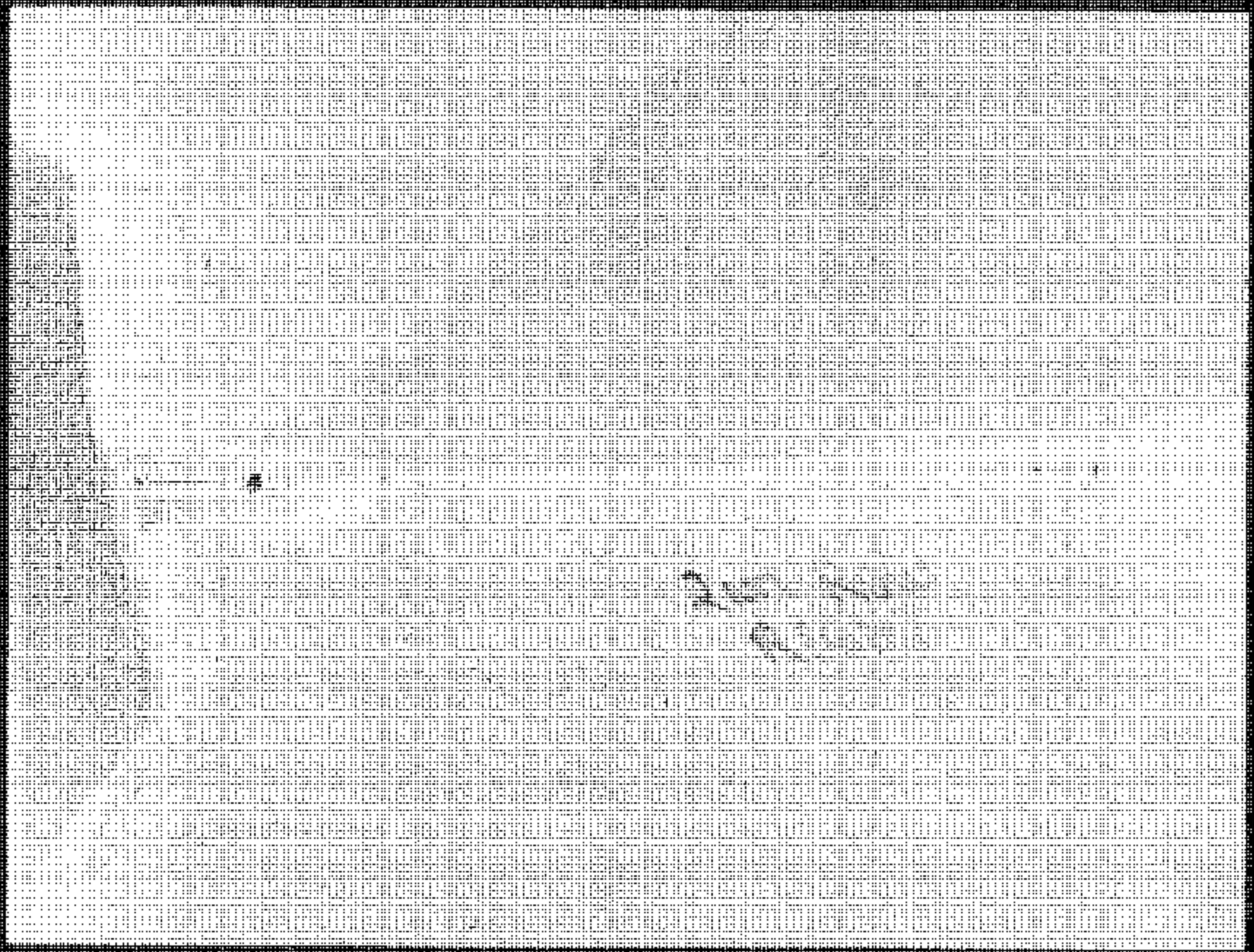
2004 LAND ROVER FREELANDER
NHTSA NO. C40600
FMVSS NO. 225

FIGURE 5.41
POST TEST 2ND ROW CENTER POSITION REAR VIEW



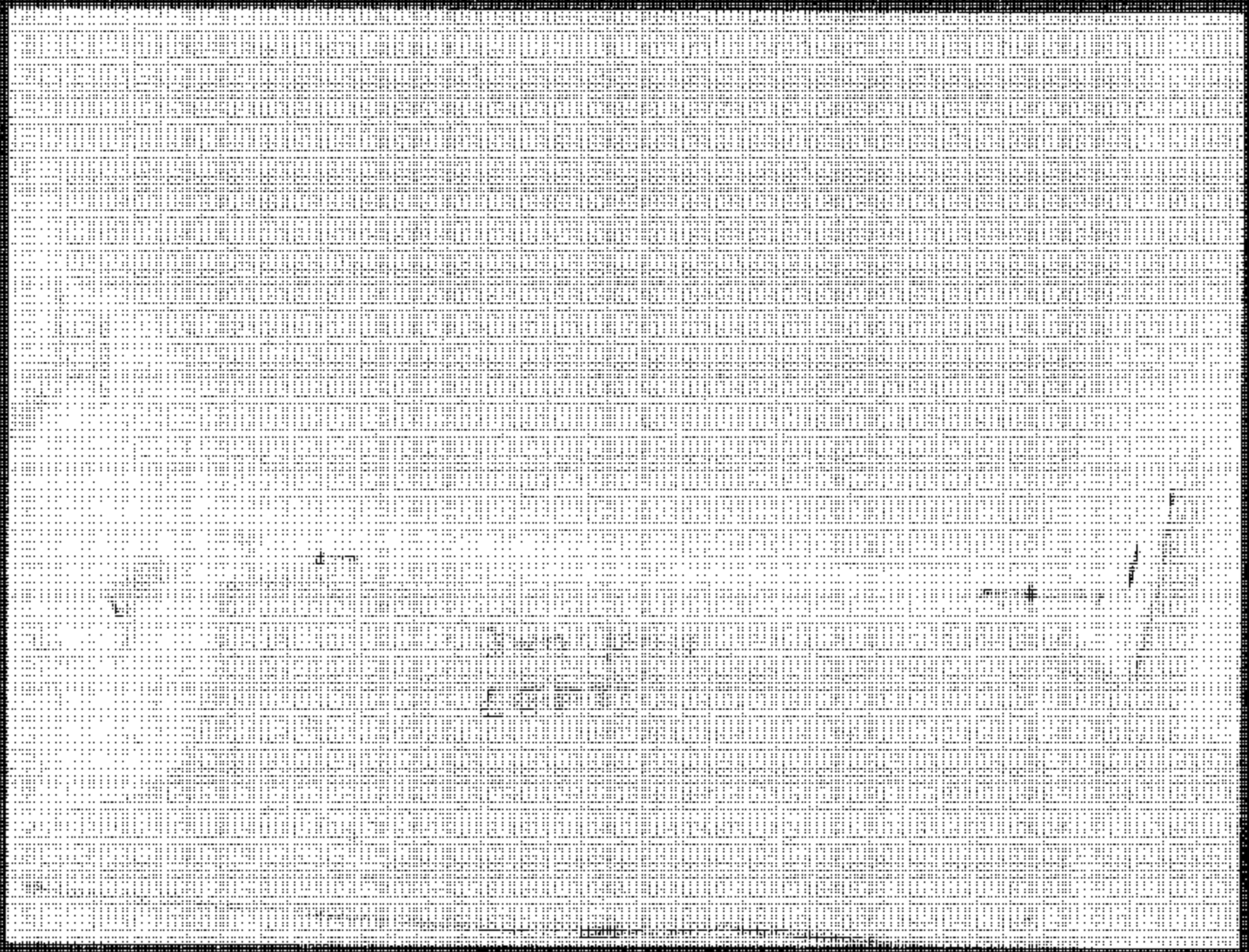
2004 LAND ROVER FREELANDER
NHTSA NO. C40600
FMVSS NO. 225

FIGURE 5.42
POST TEST 2ND ROW RIGHT LOWER ANCHORS
FRONT VIEW



2004 LAND ROVER FREELANDER
NHTSA NO. C40600
FMVSS NO. 225

FIGURE 5.43
POST TEST 2ND ROW RIGHT LOWER ANCHORS
SIDE VIEW



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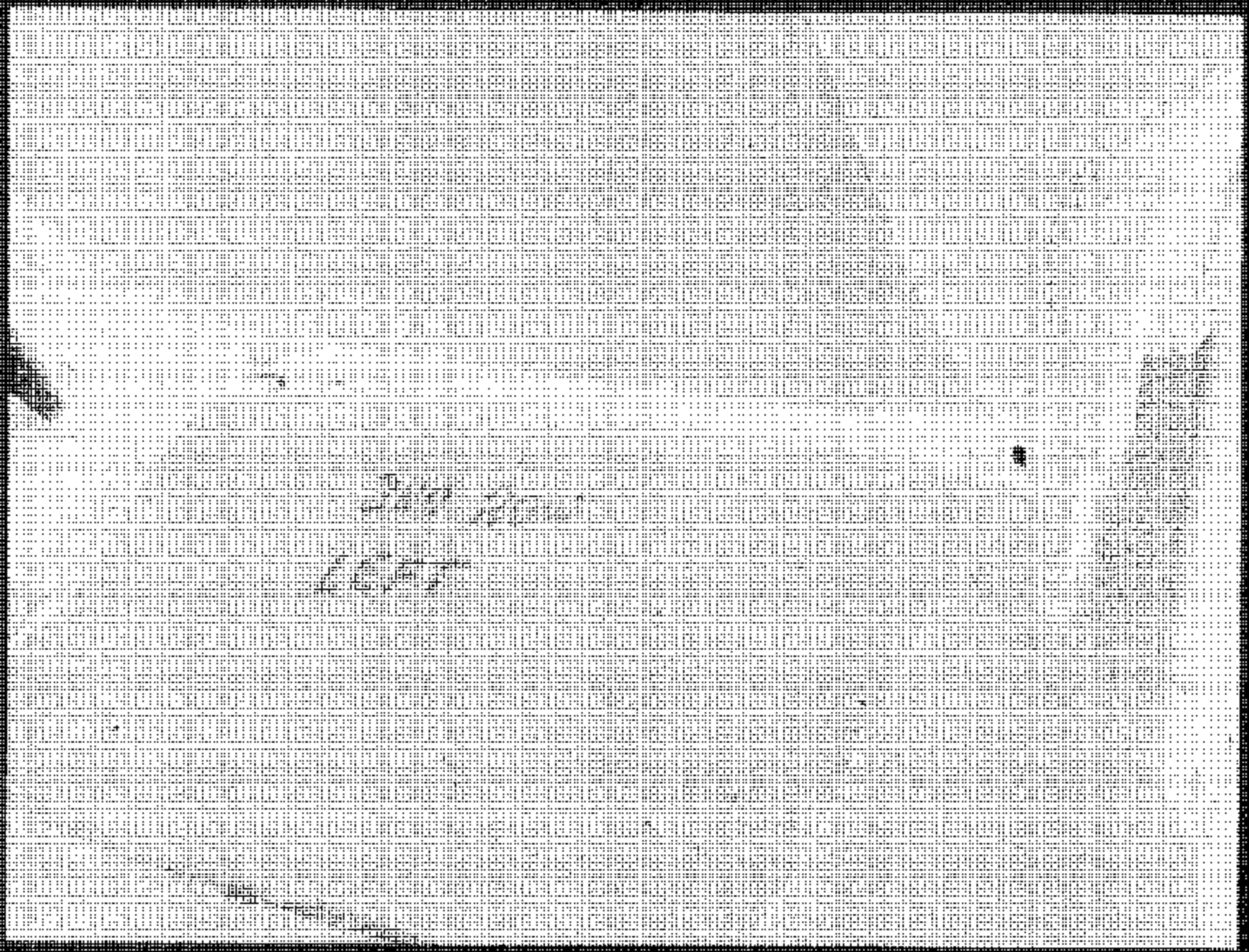
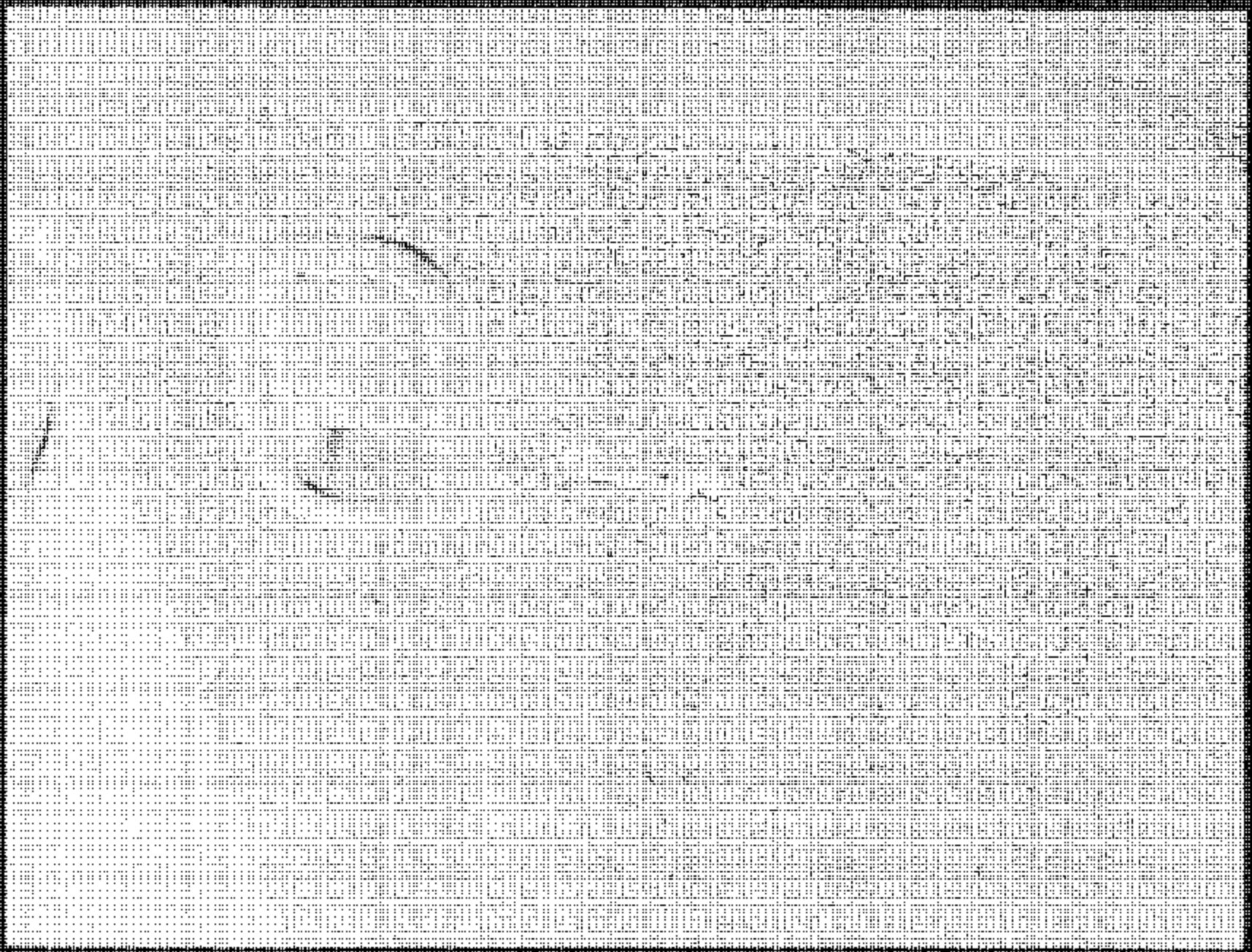
NHTSA NO. C40800
FMVSS NO. 225

FIGURE 5.44
POST TEST 2ND ROW LEFT LOWER ANCHORS
FRONT VIEW



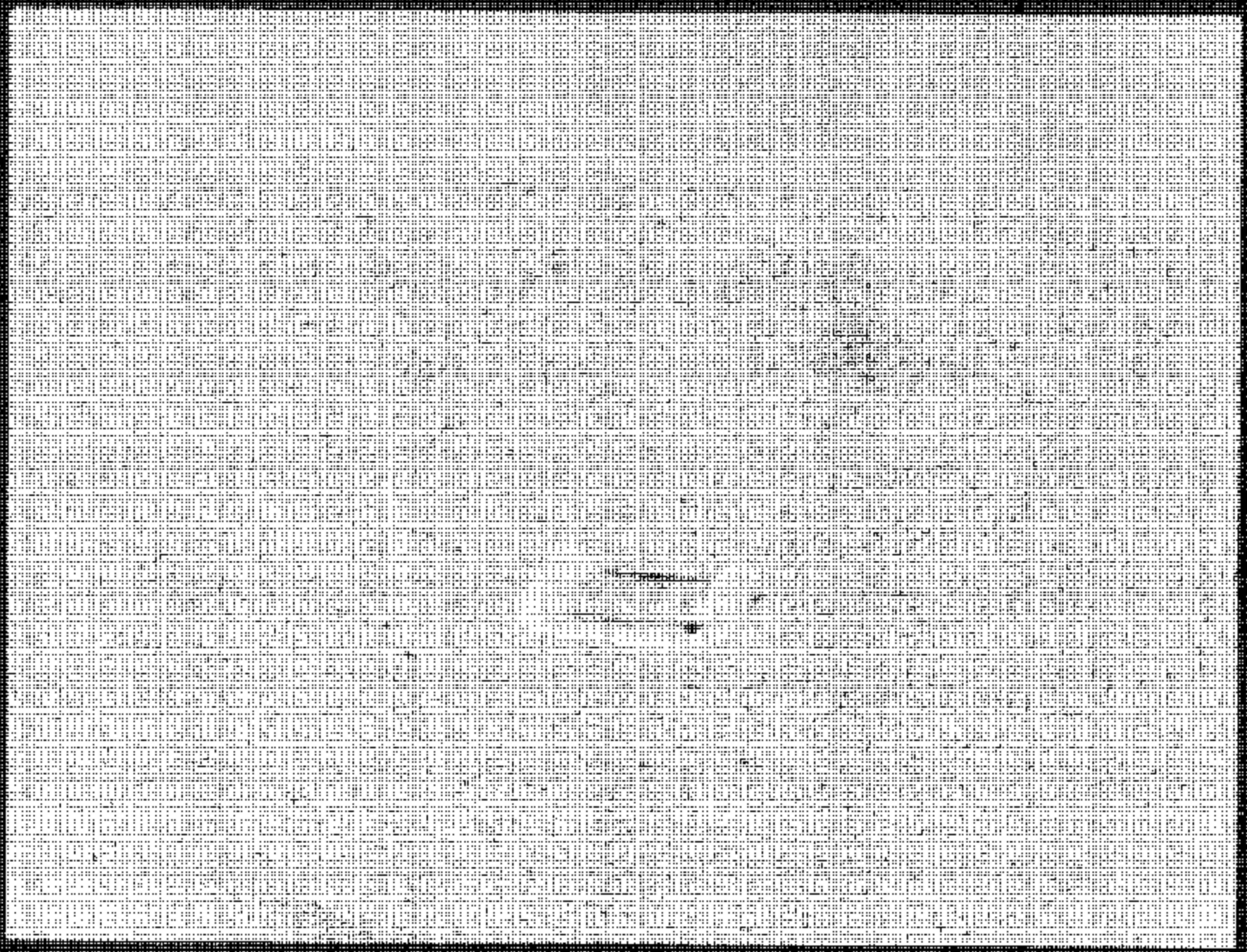
2004 LAND ROVER FREELANDER
NHTSA NO. C40500
FMVSS NO. 225

FIGURE 5.46
POST TEST 2ND ROW LEFT LOWER ANCHORS
FRONT VIEW



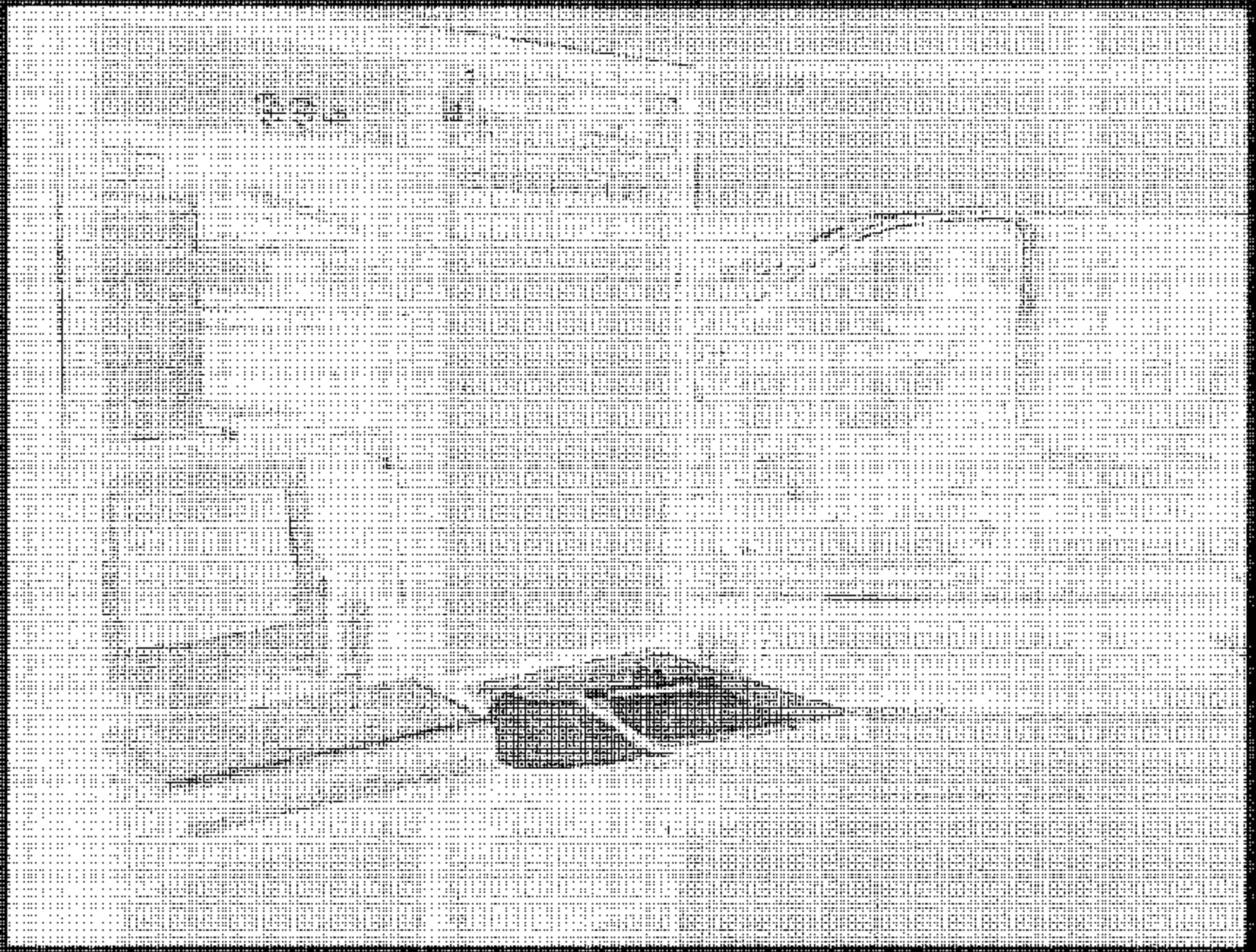
2004 LAND ROVER FREELANDER
NHTSA NO. C40800
FMVSS NO. 225

FIGURE 5.45
POST TEST 2ND ROW LEFT TOP TETHER ANCHOR



2004 LAND ROVER FREELANDER
NHTSA NO. C40800
FMVSS NO. 225

FIGURE 5.47
POST TEST 2ND ROW CENTER TOP TETHER ANCHOR

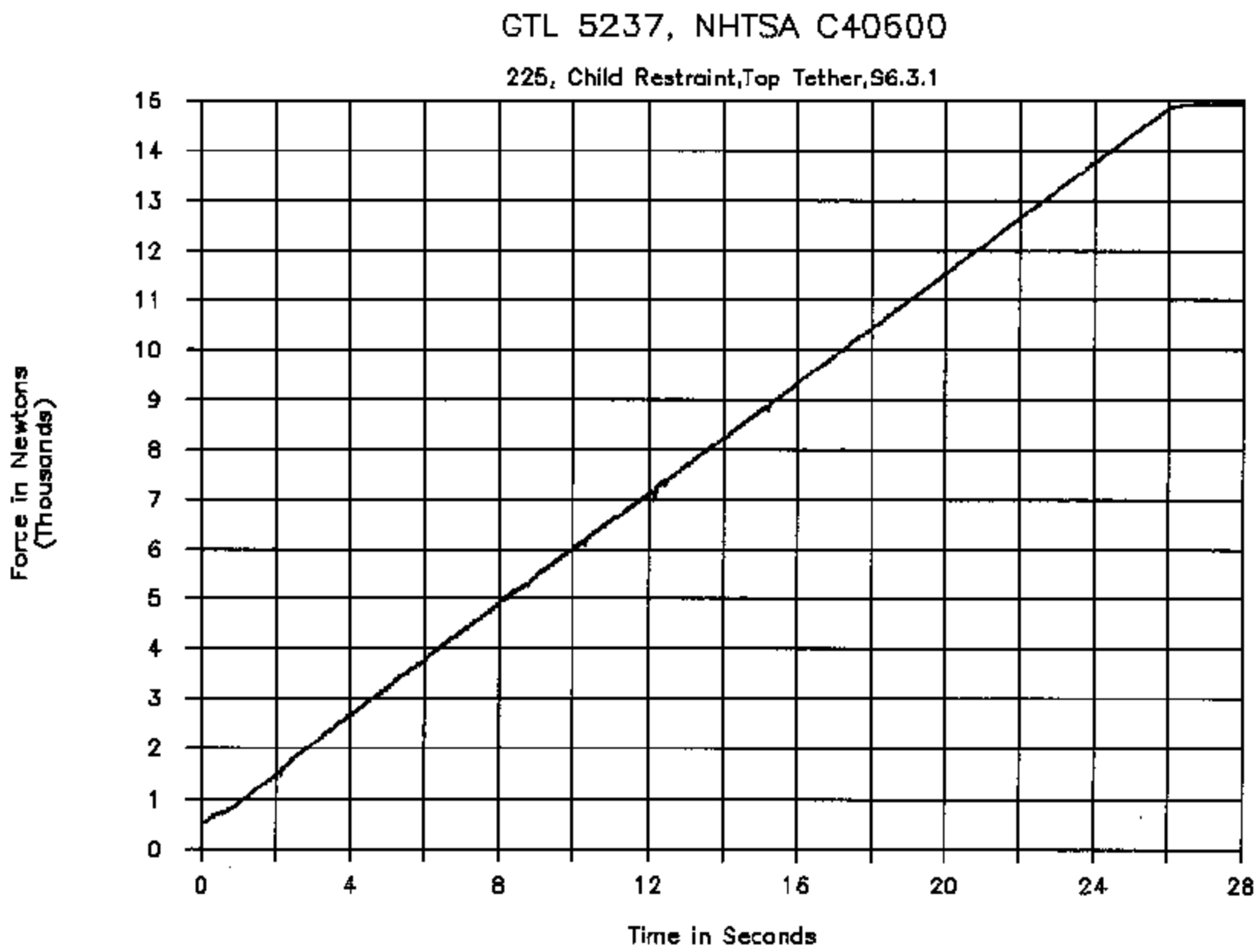


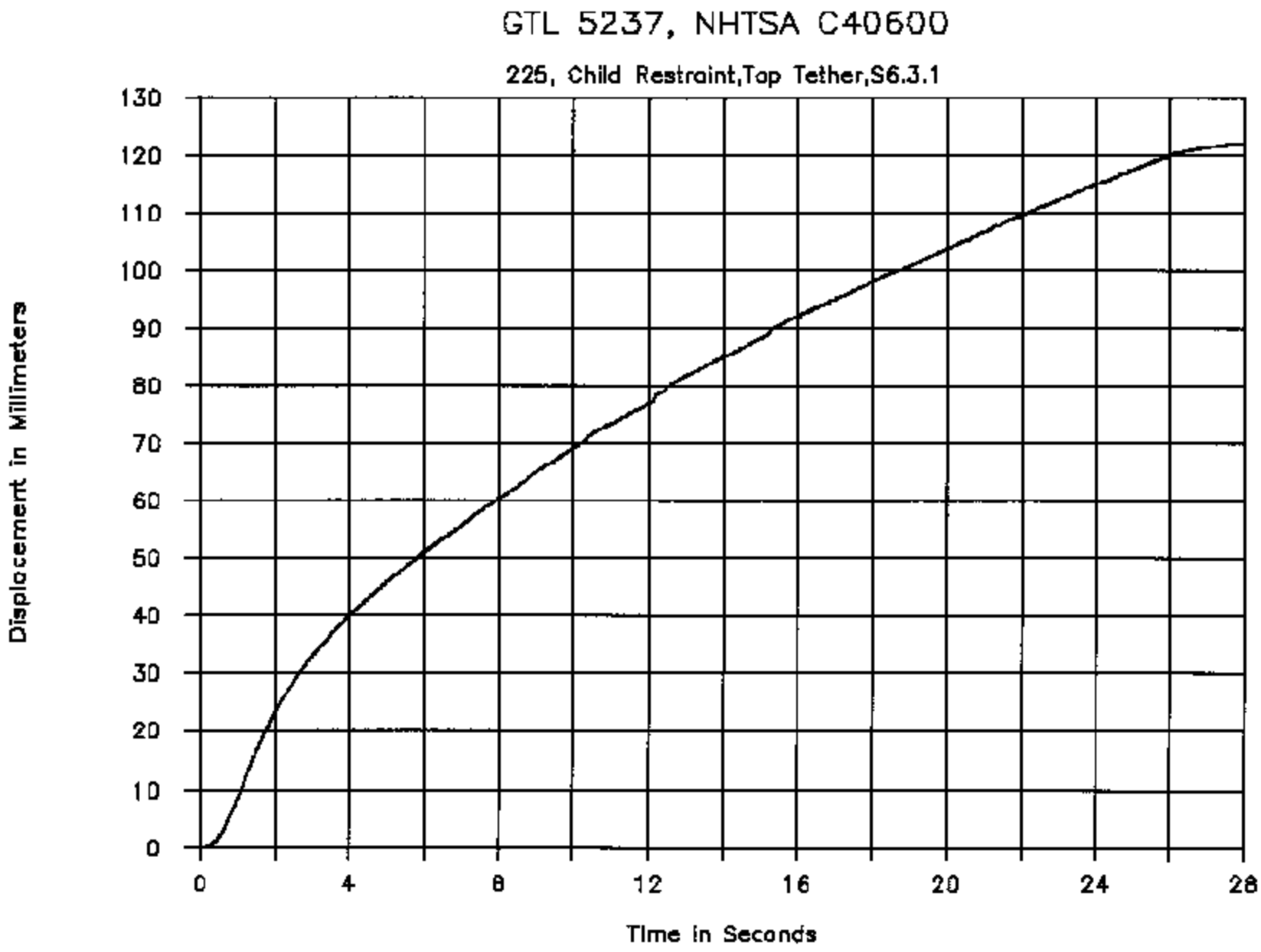
2004 LAND ROVER FREELANDER
NHTSA NO. C40800
FMVSS NO. 225

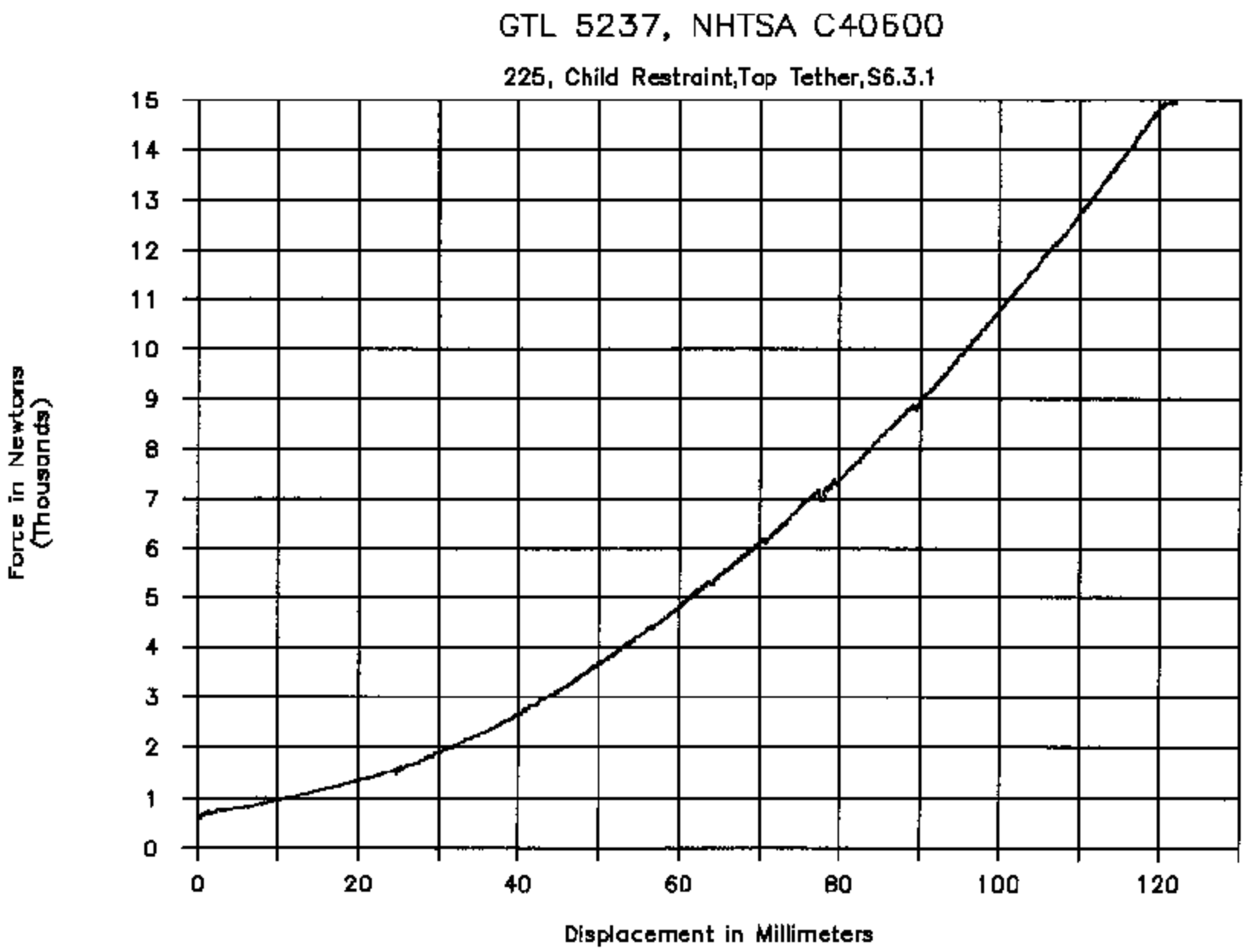
FIGURE 5.4S
LOAD SYSTEM CONTROL AND DATA
RECORDING DEVICE IN POSITION

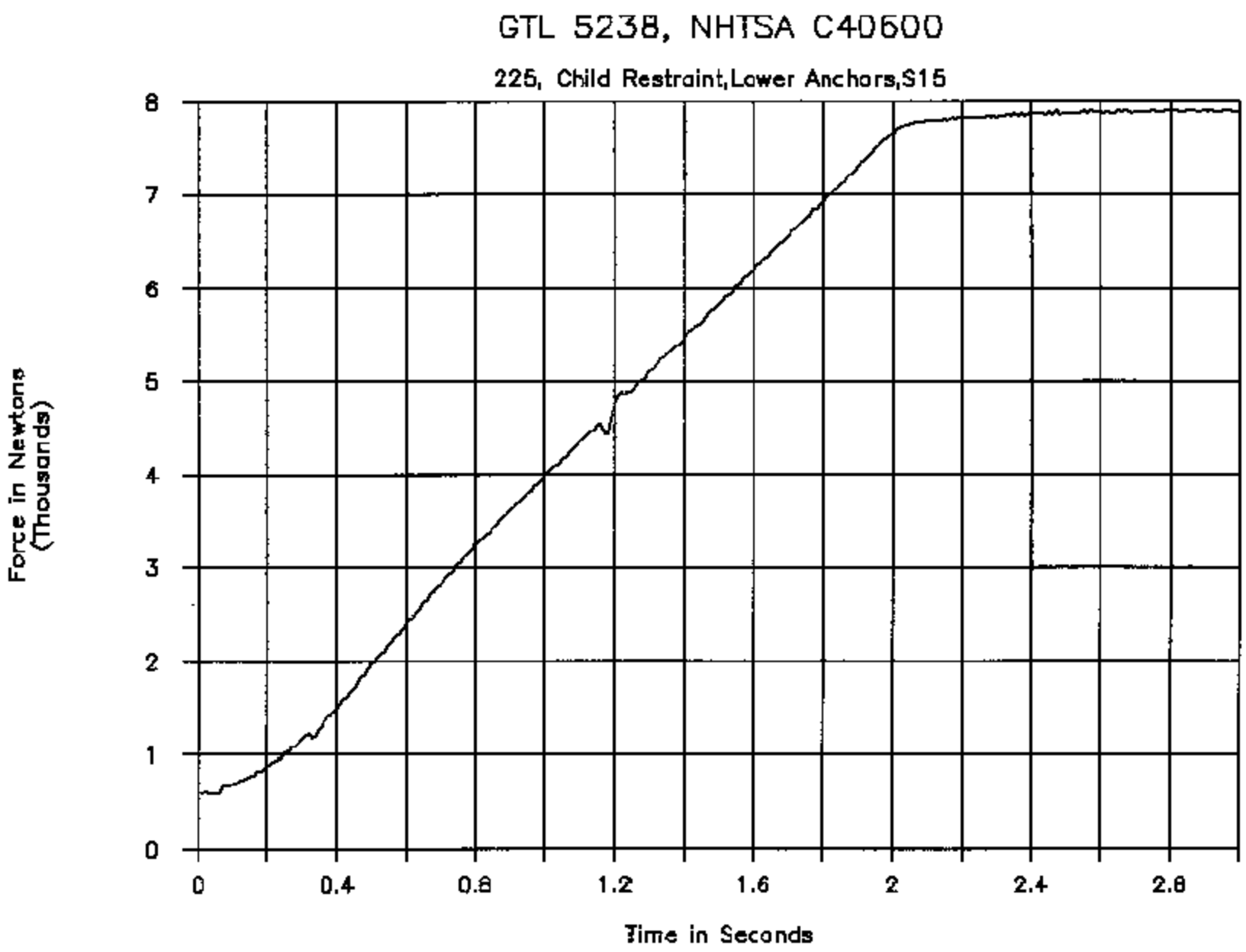
SECTION 6

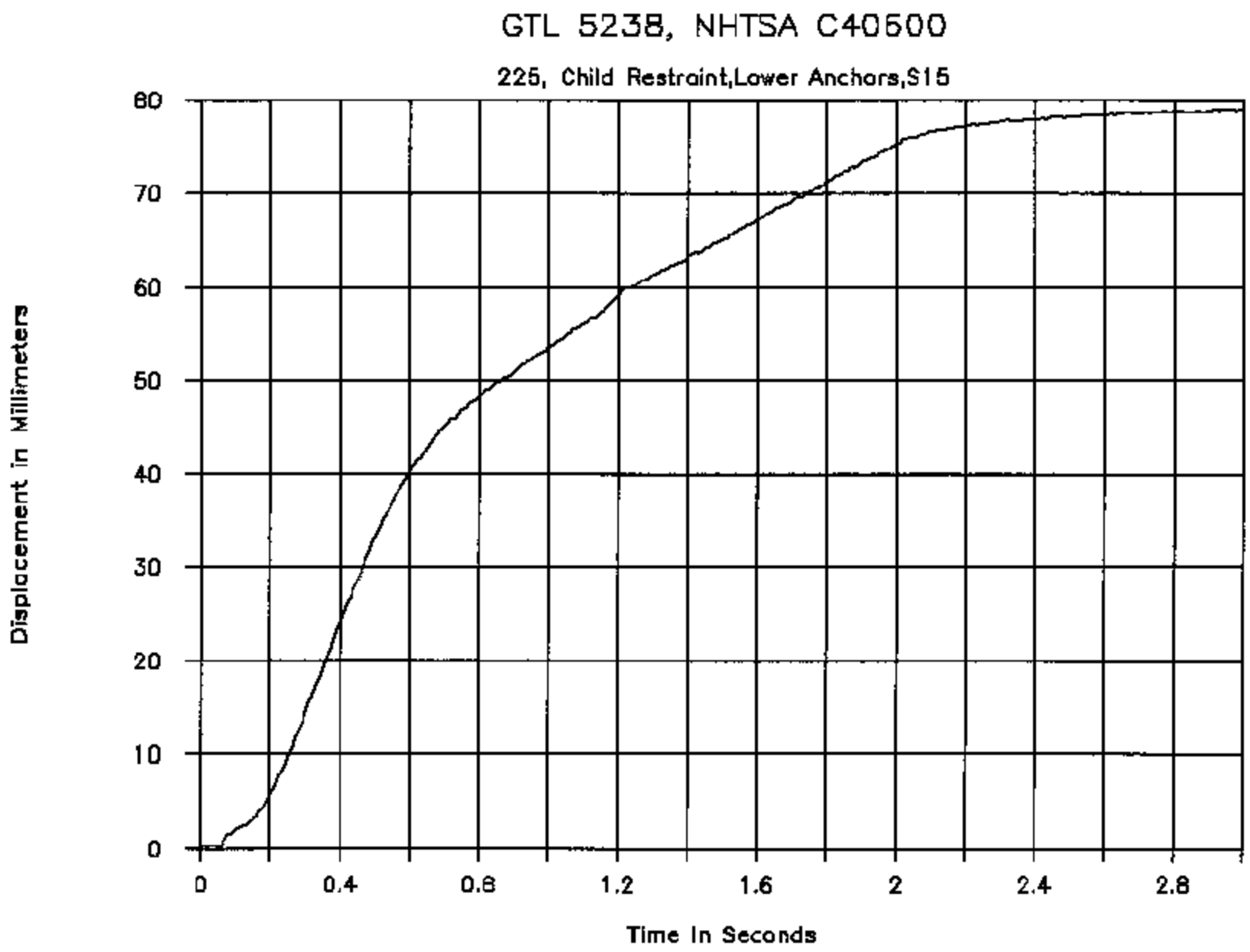
PLOTS

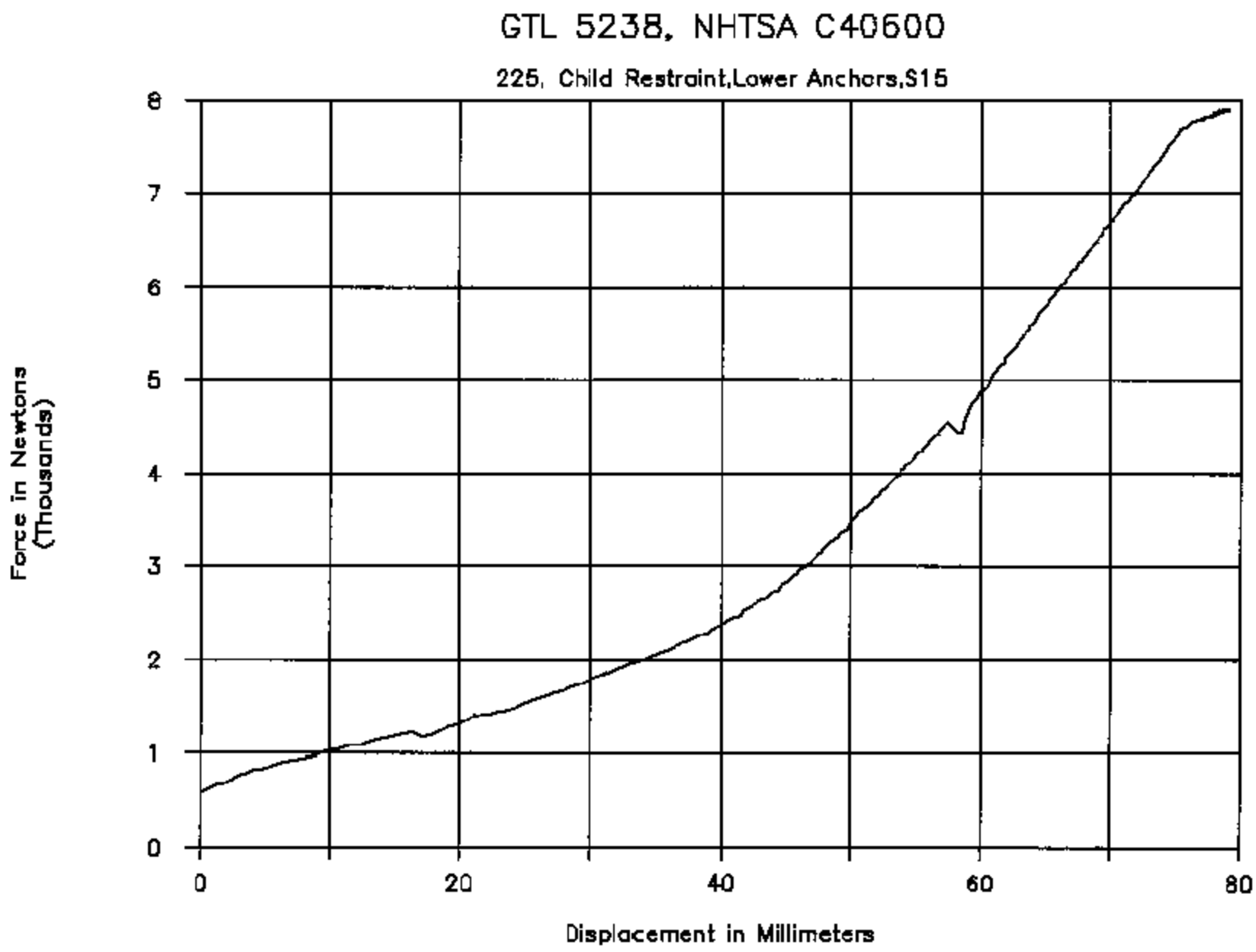

GTL 5237, NHTSA C40600
225, Child Restraint,Top Tether,S6.3.1
Force in Newtons (Thousands)
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
0
4
8
12
16
20
24
28
Time in Seconds

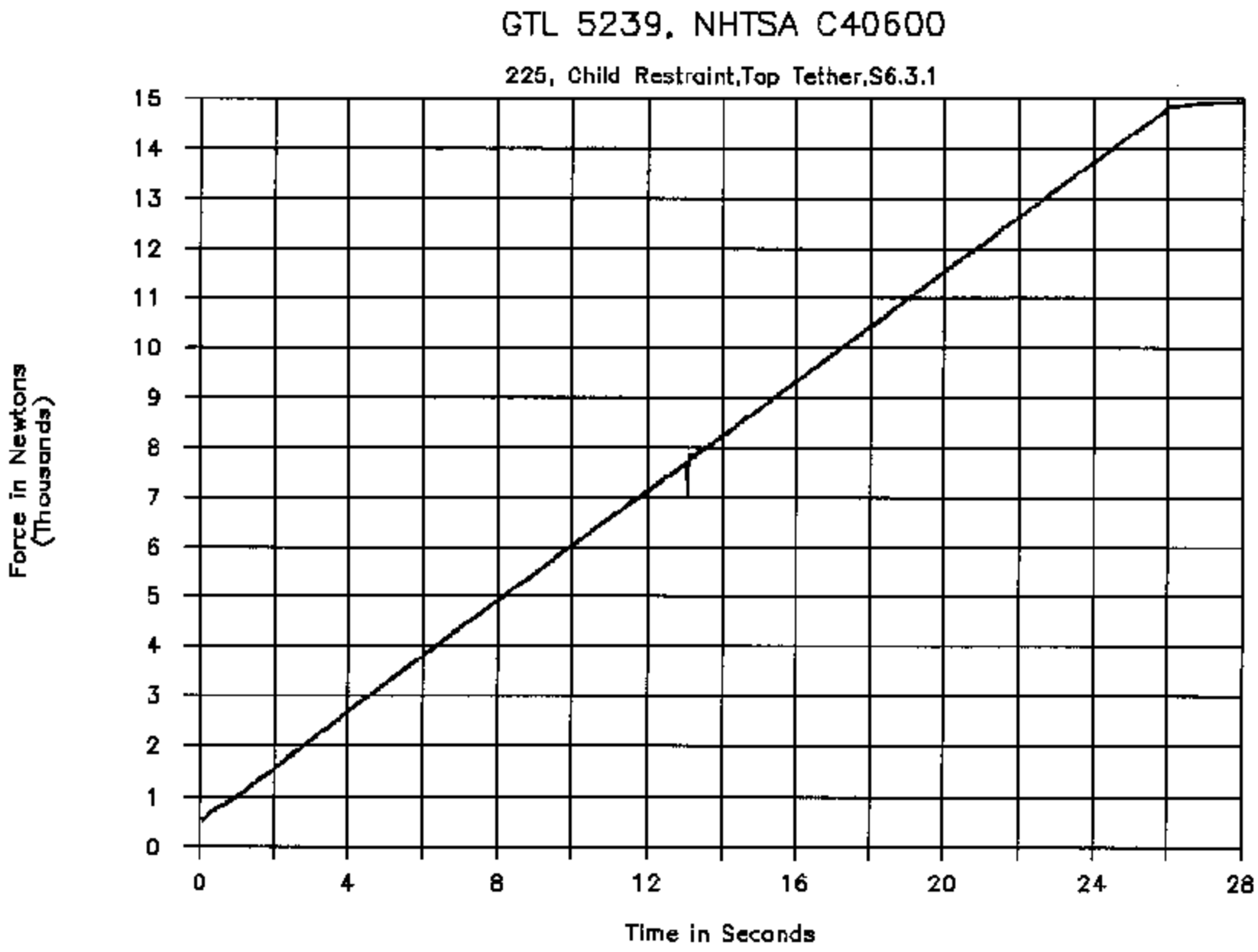

GTL 5237, NHTSA C40600
225, Child Restraint,Top Tether,S6.3.1
Displacement in Millimeters
130
120
110
100
90
80
70
60
50
40
30
20
10
0
0
4
8
12
16
20
24
28
Time in Seconds

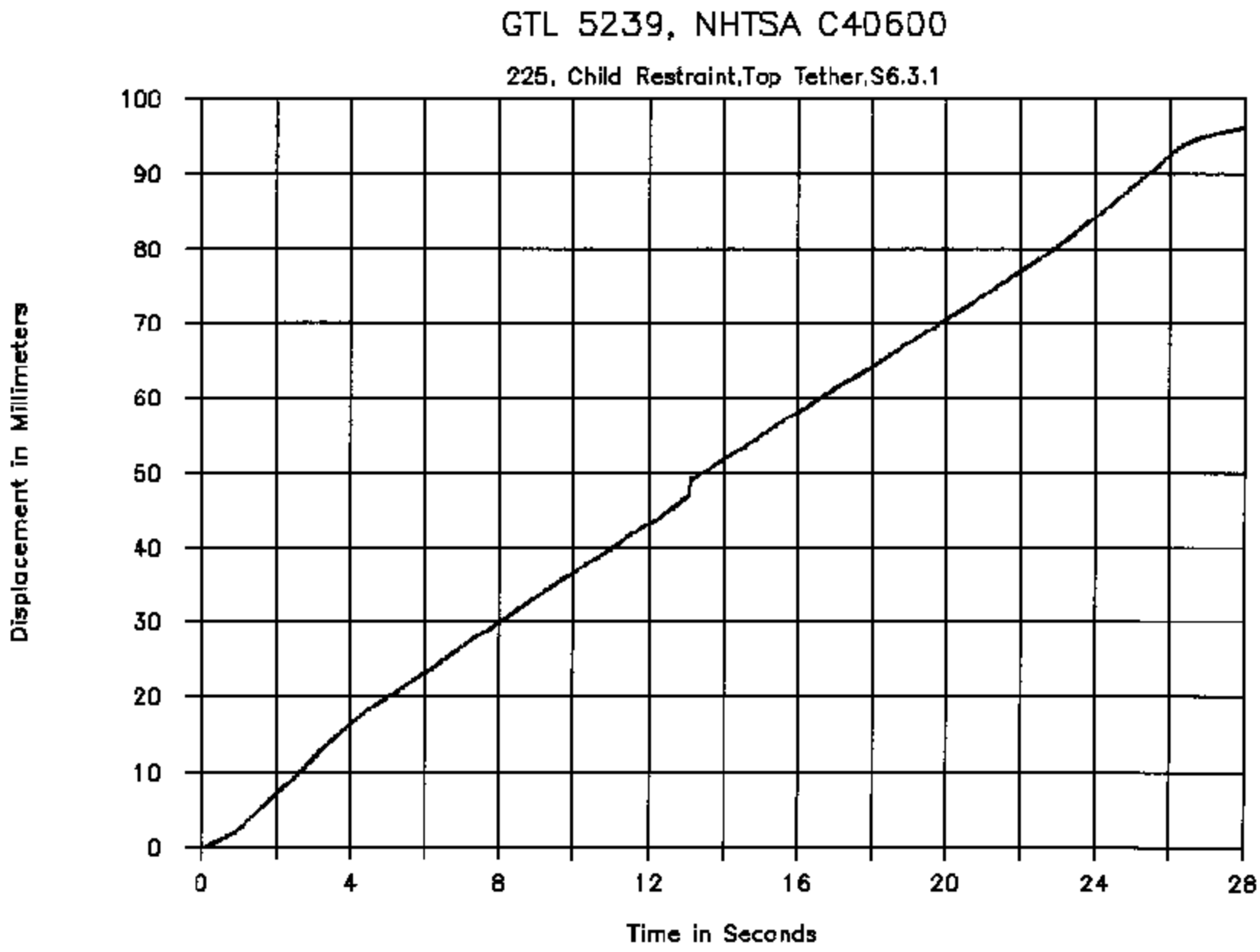

GTL 5237, NHTSA C40600
225, Child Restraint,Top Tether,S6.3.1
Force in Newtons (Thousands)
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
0
20
40
60
80
100
120
Displacement in Millimeters

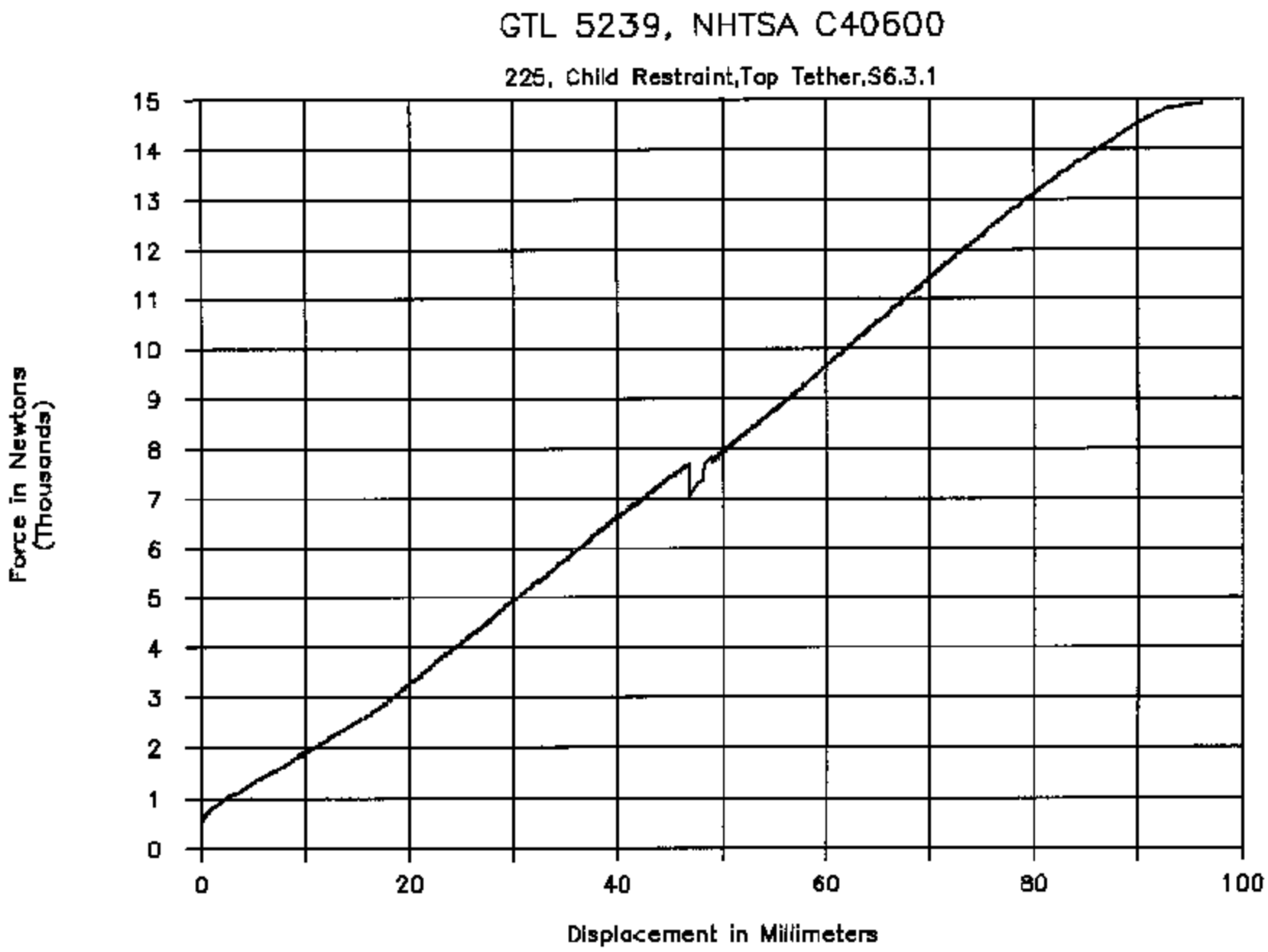

GTL 5238, NHTSA C40600
225, Child Restraint,Lower Anchors,S15
Force in Newtons (Thousands)
0
1
2
3
4
5
6
7
8
0
0.4
0.8
1.2
1.6
2
2.4
2.8
Time in Seconds


GTL 5238, NHTSA C40600
225, Child Restraint,Lower Anchors,S15
Displacement in Millimeters
80
70
60
50
40
30
20
10
0
0
0.4
0.8
1.2
1.6
2
2.4
2.8
Time In Seconds


GTL 5238, NHTSA C40600
225, Child Restraint,Lower Anchors,S15
Force in Newtons (Thousands)
0
1
2
3
4
5
6
7
8
0
20
40
60
80
Displacement in Millimeters


GTL 5239, NHTSA C40600
225, Child Restraint,Top Tether,S6.3.1
Force in Newtons (Thousands)
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
0
4
8
12
16
20
24
28
Time in Seconds


GTL 5239, NHTSA C40600
225, Child Restraint,Top Tether,S6.3.1
Displacement in Millimeters
100
90
80
70
60
50
40
30
20
10
0
0
4
8
12
16
20
24
28
Time in Seconds


GTL 5239, NHTSA C40600
225, Child Restraint,Top Tether,S6.3.1
Force in Newtons (Thousands)
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
0
20
40
60
80
100
Displacement in Millimeters

APPENDIX A

OWNER'S MANUAL CHILD RESTRAINT INFORMATION

CHILD SAFETY SEATS

Seat belts fitted to your vehicle are designed for adults and larger children. It is very important that all infants and children under 12 are restrained in a suitable child safety seat appropriate to their age and size (see table). Child safety seats approved for use in your vehicle are available from Land Rover Retailer.

Only fit a child safety seat of a type approved for the specific seating positions in your vehicle (see table), and ensure the seat manufacturer's fitting instructions are followed exactly.

WARNING

Do not attempt to fit a child safety seat in the central rear position on 3-door vehicles fitted with only four seats.

For optimum safety, children should travel in the rear of the vehicle at all times; front passenger seat travel is NOT recommended. However, if a passenger airbag is fitted and it is ESSENTIAL that a child travels in the front, set the vehicle seat fully rearward and seat the child in an approved FORWARD-FACING child seat. DO NOT use a rear-facing child seat - an inflating airbag could impact with the seat and cause serious injury.

The above symbol affixed to the passenger side fascia panel of your vehicle, warns against the use of a REAR-FACING child safety seat in the front passenger seat, when a passenger airbag is fitted. This type of seat could cause serious injury to a child in the event of an airbag deployment.

WARNING

DO NOT install a rear-facing child safety seat in a passenger seat equipped with an airbag system. Failure to follow this advice could result in serious injury, or even death, for the child in the event of an airbag deployment.

Child Restraints

NOTE: *Child restraint information given in the table is correct at time of going to press. However, availability of child restraints may change. Please refer to your retailer for the latest information.*

Mass Group (As displayed on Child Restraint packaging)	**Seating Positions**			
	Front Passenger All vehicles	Rear Outboard 2 seater	Rear Outboard 3 seater	Rear Centre
0 = Up to 10 kg (0-9 months)	X	U	L	L
0+ = Up to 13 kg (0-18 months)	X	U	L	L
I = 9 to 18 kg (9 months - 4 years)	UF**	U	L	L
II & III =15 to 36 kg (4-12 years)	UF**	U	L	L

U = Suitable for 'universal' category restraints approved for this mass group.
L = Suitable for particular child restraints as listed below.
UF = Suitable for Forward Facing 'universal' category restraints approved for this mass group.
X = Not suitable for child restraints in this mass group.
Group 0 - BRITAX Rock-A-Tot.
Group 0+ - BRITAX Rock-A-Tot.
Group I - BRITAX Renaissance.
Group II & III - BRITAX Horizon Booster.

NOTE: *Seating positions marked "* will accept 'universal' seats provided that the seat back is positioned vertically.*

WARNING! *Do not install a rear facing child restraint in a passenger seat equipped with an airbag system.*

APPENDIX B

MANUFACTURER'S DATA

[redacted]ata [redacted]on t[redacted]low[redacted]hicl[redacted],Z c[redacted]nat[redacted]

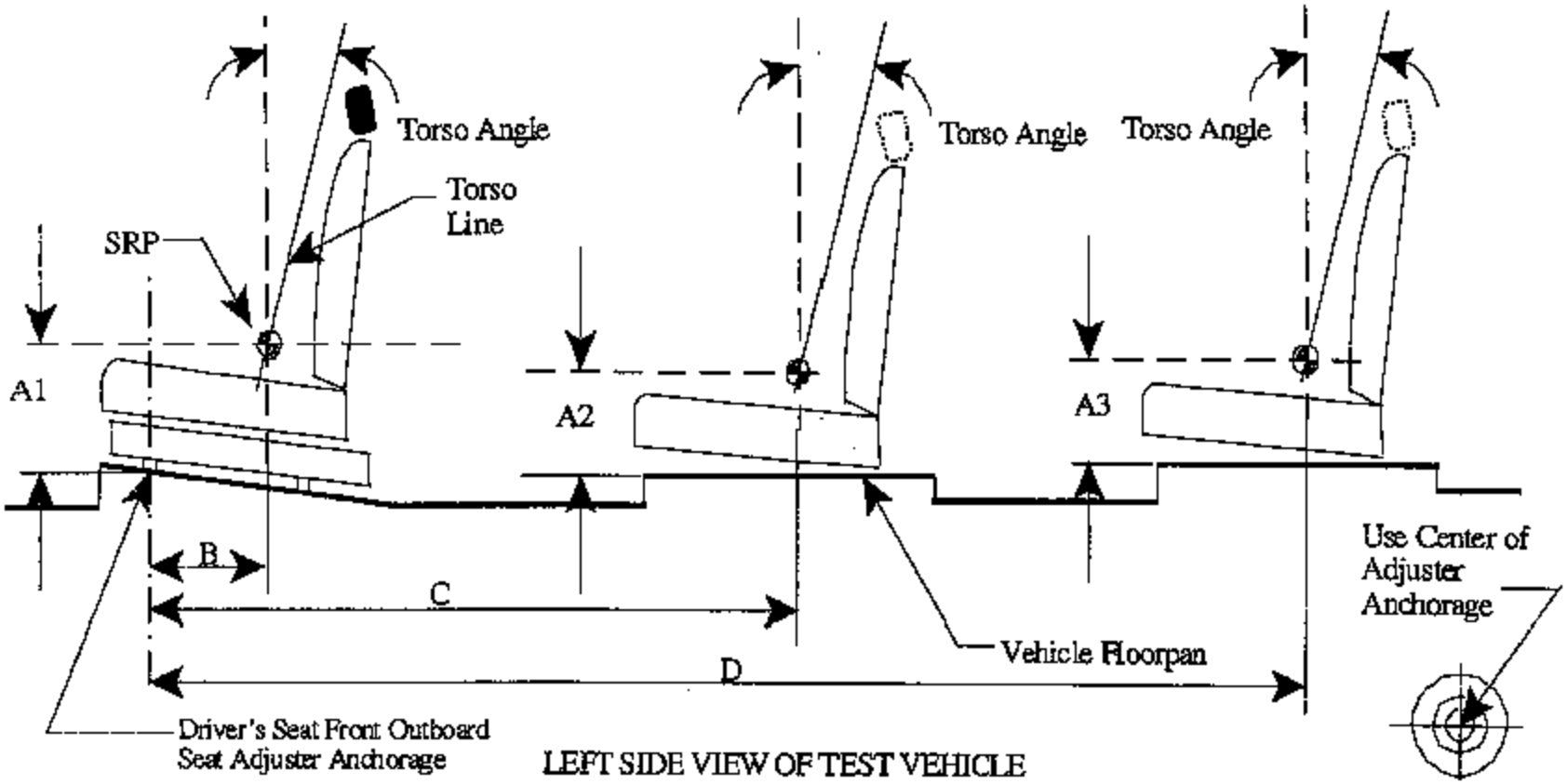
Front seat front outboard anchorage : X2035, Y617, Z218

SRP Right: X3140, Y-390, Z583, Cen: X3115, Y000, Z607, Left: X3140, Y390, Z583

Upper Tether Right : X3525.5, Y365, Z 843, Cen: X3525.5, Y000, Z 843 Left: X3525.5, Y365, Z 843

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

Model Year: 2004 ; Make: Land Rover ; Model: Freelander ; Body Style: 5 Door
Seat Style: Front row: N/A ; Second row: 60/40 Split ; Third row: N/A



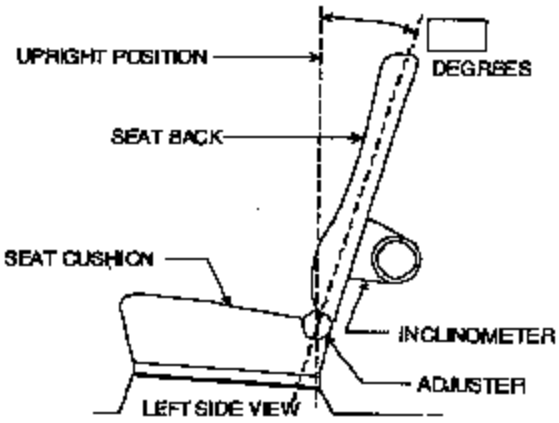
LEFT SIDE VIEW OF TEST VEHICLE

Table 1. Seating Positions[1] and Torso Angles

		Left (Driver Side)	Center (if any)	Right
A1		(Driver) N/A	N/A	(Front Passenger) N/A
A2		**364 = (582-218)**	**389**	**364 = (582-218)**
A3		N/A	N/A	N/A
B		N/A	N/A	N/A
C		**1105 = (3140-2035)**	**1080 = (3115-2035)**	**1105 = (3140-2035)**
D		N/A	N/A	N/A
Torso Angle (degree)	Front Row	N/A	N/A	N/A
	Second Row	**25**	**27**	**25**
	Third Row	N/A	N/A	N/A

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

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 detent if applicable. Indicate if applicable, how the detents are numbered (Is the first detent "0"or "1"?). Indicate if the seat back angle is measured with the dummy in the seat.



Seat back angle for driver's seat = ___degrees
Measurement Instructions:
_____N/A_____
_____
_____

Seat back angle for passenger's seat = ____ degrees
Measurement Instructions:
N/A_____
_____
_____

Seat back angle for 2nd row seat = ___degrees
Measurement Instructions:
N/A_____
_____
_____

Seat back angle for 3rd row seat = ___ degrees
Measurement Instructions:
N/A_____
_____
_____

SEATING REFERENCE POINT
FOR FMVSS 225
(All dimensions in mm)
(Note: The Child Restraint Anchorage Location determines the 225 SRP locations)

Model Year: 2004 ; Make: Land Rover ; Model: Freelander ; Body Style: 5 Door
Seat Style: Front row: N/A ; Second row: 60/40 Split ; Third row: N/A

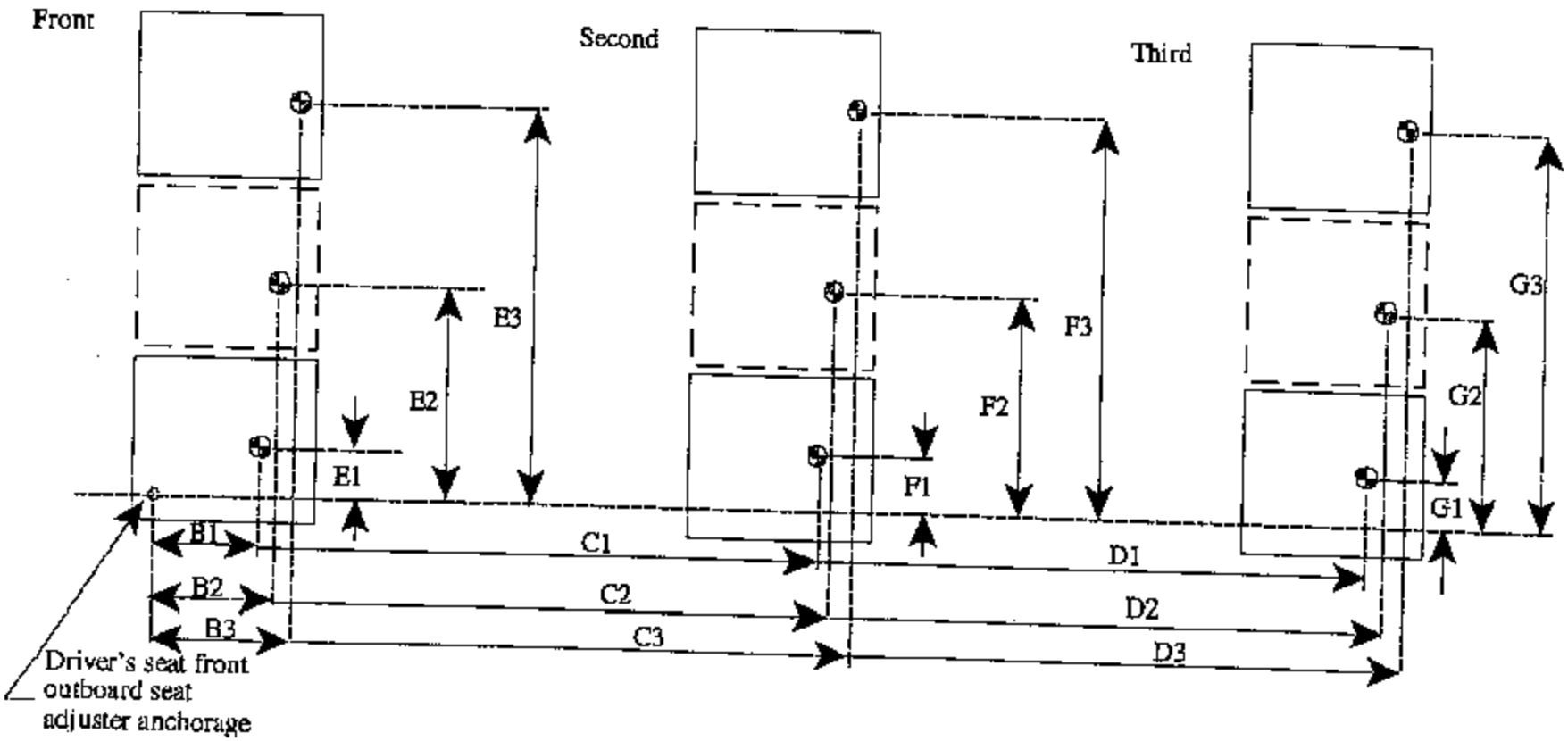


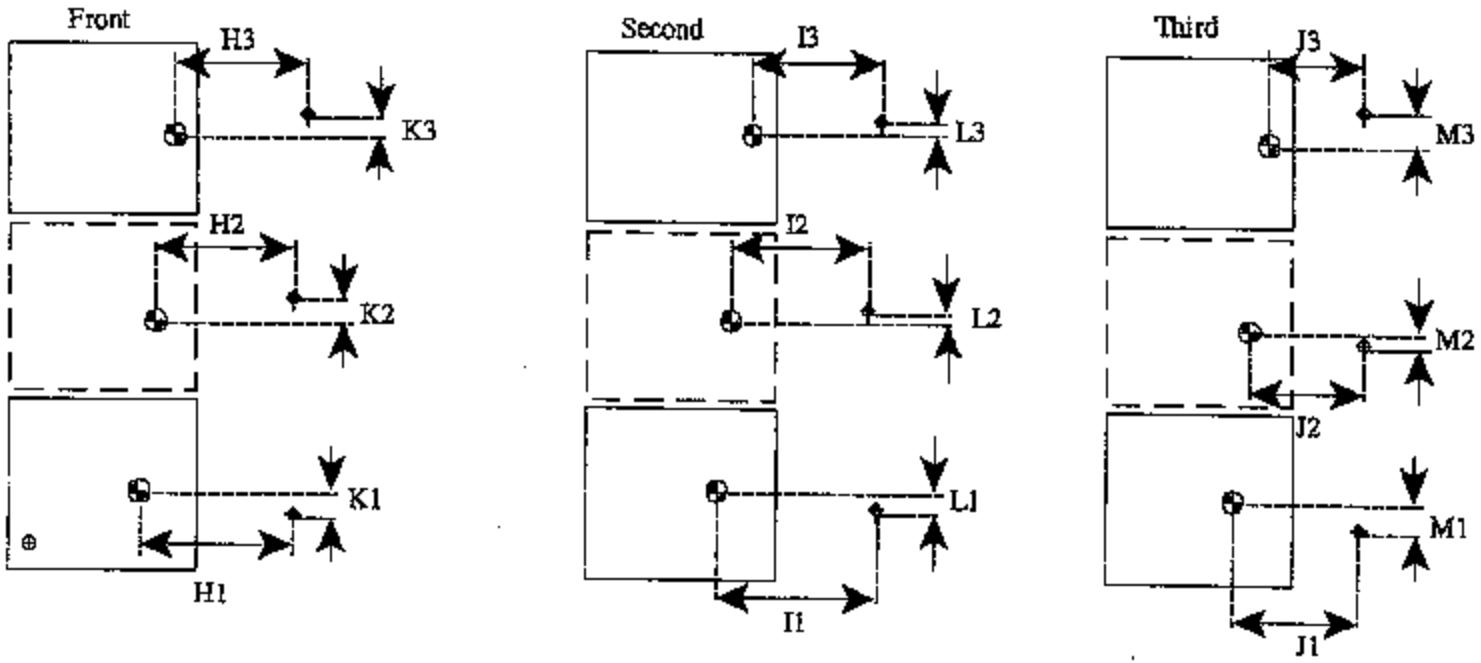
Table 2. Seating Reference Point and Tether Anchorage Locations

Seating Reference Point (SRP)		Distance from Driver's front outboard seat adjuster anchorage[1]
Front Row	B1	N/A
	E1	N/A
	B2	N/A
	E2	N/A
	B3	N/A
	E3	N/A
Second Row	C1	**1105 = (3140-2035)**
	F1	**227.5 = (617.5 – 390)**
	C2	**1080 = (3115-2035)**
	F2	**617.5 = (617.5-0)**
	C3	**1105 = (3140-2035)**
	F3	**1007.5 = (617.5+390)**
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.

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

Model Year: 2004; Make: Land Rover; Model: Freelander; Body Style: 5 Door
Seat Style: Front row: N/A; Second row: 60/40 Split; Third row: N/A



⊕: SRP
↑: Tether anchorage

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

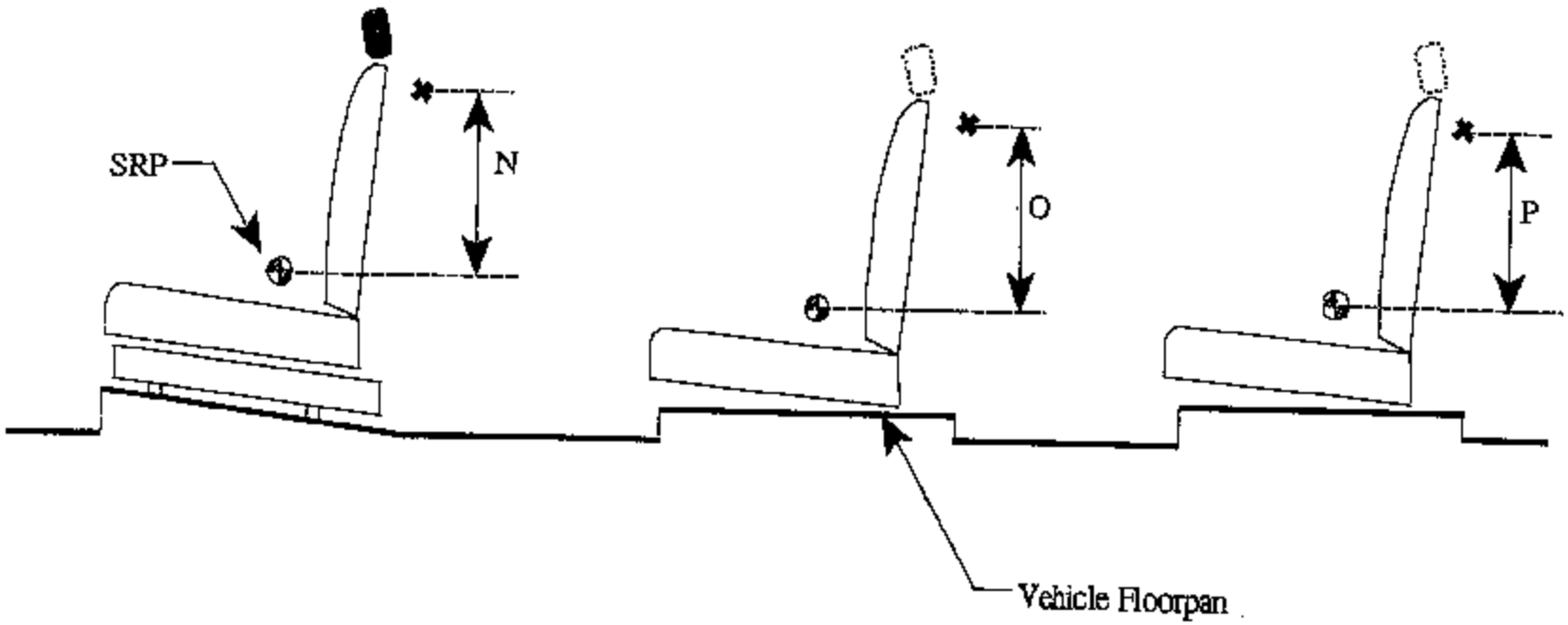
Table 3. Seating Reference Point and Tether Anchorage Locations

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	**385.5 = (3525.5-3140)**
	L1	**25 = (390–365)**
	I2	**410.5 = (3525.5-3115)**
	L2	**0**
	I3	**385.5 = (3525.5 – 3140)**
	L3	**25 = (390–365)**
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.

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

Model Year: 2004; Make: Land Rover; Model: Freelander; Body Style: 5 Door
Seat Style: Front row: N/A; Second row: 60/40 Split; Third row: N/A



LEFT SIDE VIEW OF TEST VEHICLE

Table 4. Vertical Dimension For The Tether Anchorage

Seating Row	Vertical Distance from Seating Reference Point	
Front Row	N1 (Driver)	N/A
	N2 (Center)	N/A
	N3 (Right)	N/A
Second Row	O1 (Left)	**261 = (843-582)**
	O2 (Center)	**236 = (843-607)**
	O3 (Right)	**261 = (843-582)**
Third Row	P1 (Left)	N/A
	P2 (Center)	N/A
	P3 (Right)	N/A

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

Test Procedures Used for Compliance Tests

Lower Anchorages

For each seating location in each row record applicable FMVSS Section		FMVSS 225 Section(s)			
Block 1		Lower anchorage location certification method used (Enter applicable section used in block 1 of each position by circling A or B) A) 9.2.1 or B) 15.1.2.2			
Block 2		Lower anchorage dimension (Enter applicable section used in block 2 by circling A or B) A) 9.1.1 or B) 15.1.2.2 (also provide roll and yaw angles) pitch_____° roll _____° yaw_____°			
Block 3		Lower anchorage marking (Enter applicable section used in block 3 by circling A or B) A) 9.5 or B) 15.4			
Block 4		Strength requirement (Enter applicable section used in block 4 by circling A or B) A) Section 9 or B) Section 15			
Front	Driver	N/A			
	Center (if any) N/A	Block 1 A B	Block 2 A B Pitch °, Roll °, Yaw °	Block 3 A B	Block 4 A B
	Right (if any) N/A	Block 1 A B	Block 2 A B Pitch °, Roll °, Yaw °	Block 3 A B	Block 4 A B
Second	Left	Block 1 (A) B	Block 2 (A) B Pitch 8.4 °, Roll 0°, Yaw 0°	Block 3 (A) B	Block 4 A (B)
	Center N/A	Block 1 A B	Block 2 A B Pitch °, Roll °, Yaw °	Block 3 A B	Block 4 A B
	Right	Block 1 (A) B	Block 2 (A) B Pitch 8.4 °, Roll 0°, Yaw 0°°	Block 3 (A) B	Block 4 A (B)
Third	Left N/A	Block 1 A B	Block 2 A B Pitch °, Roll °, Yaw	Block 3 A B	Block 4 A B
	Center N/A	Block 1 A B	Block 2 A B Pitch °, Roll °, Yaw °	Block 3 A B	Block 4 A B
	Right N/A	Block 1 A B	Block 2 A B Pitch °, Roll °, Yaw °	Block 3 A B	Block 4 A B
Fourth	Left N/A	Block 1 A B	Block 2 A B Pitch °, Roll °, Yaw °	Block 3 A B	Block 4 A B
	Center N/A	Block 1 A B	Block 2 A B Pitch °, Roll °, Yaw °	Block 3 A B	Block 4 A B
	Right N/A	Block 1 A B	Block 2 A B Pitch °, Roll °, Yaw °	Block 3 A B	Block 4 A B

Test Procedures Used for Compliance Tests

Tether Anchorages

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