

638081

Report Number: 214-TRC-04-009

**Safety Compliance Testing For FMVSS 214**

**Side Impact Protection**

**Mitsubishi Motors North America, Inc.  
2006 Mitsubishi Eclipse GS 2-door sport coupe**

**NHTSA Number: C65601**

**Transportation Research Center Inc.**

**10820 State Route 347**

**P. O. Box B-67**

**East Liberty, OH 43319**



**Test Date: October 17, 2005**

**Final Report: October 28, 2005**

**U. S. Department Of Transportation  
National Highway Traffic Safety Administration  
Enforcement**

**Office of Vehicle Safety Compliance**

**400 Seventh Street, S. W.**

**Room No. 6111 (NVS-220)**

**Washington, DC 20590**

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Test Performed By: John Shultz, Supervisor

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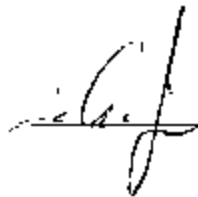
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<p>16. Abstract</p> <p>This 48/24 km/h 90° Impact (Moving Deformable Barrier) Compliance Test was conducted on the subject vehicle, a 2006 Mitsubishi Eclipse GS 2-door sport coupe in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-214D-06 to determine FMVSS 214 Side Impact Protection compliance. This test was conducted by Transportation Research Center Inc. in East Liberty, Ohio, on October 17, 2005.</p> <p>The impact velocity of the Moving Deformable Barrier (MDB) was 53.0 km/h, and the ambient temperature at the struck (driver) side of the target vehicle at the time of impact was 21° C. The target vehicle's post-test maximum crush was 156 mm at Level 3.</p> <p>The test or target vehicle's performance is given below:</p> <table border="0" style="margin-left: 40px;"> <tr> <td></td> <td style="text-align: center;"><u>Front SID</u></td> <td></td> </tr> <tr> <td>Left Upper Rib Acceleration:</td> <td style="text-align: center;">36.7</td> <td>g's</td> </tr> <tr> <td>Left Lower Rib Acceleration:</td> <td style="text-align: center;">29.7</td> <td>g's</td> </tr> <tr> <td>Lower Spine Acceleration:</td> <td style="text-align: center;">36.6</td> <td>g's</td> </tr> <tr> <td>Thoracic Trauma Index, (TTI):</td> <td style="text-align: center;">36.7</td> <td>g's</td> </tr> <tr> <td>Pelvis Acceleration (PEV):</td> <td style="text-align: center;">31.7</td> <td>g's</td> </tr> </table> <p>The door on the struck side of the vehicle did not separate from the body at the hinges or latches and the opposite door did not open during side impact event.</p>					<u>Front SID</u>		Left Upper Rib Acceleration:	36.7	g's	Left Lower Rib Acceleration:	29.7	g's	Lower Spine Acceleration:	36.6	g's	Thoracic Trauma Index, (TTI):	36.7	g's	Pelvis Acceleration (PEV):	31.7	g's
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## Section 1

### Purpose and Test Procedure

This side impact test is part of the FMVSS 214 Side Impact Protection Compliance Test Program sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract No. DTNH22-02-D-11114. The purpose of this test was to evaluate side impact protection in a 2006 Mitsubishi Eclipse GS 2-door sport coupe. The test was conducted in accordance with the Office of Vehicle Safety Compliance's Laboratory Test Procedure (TP-214D-06, dated July 2001).

## Section 2

### Summary of Side Impact Test

A 2006 Mitsubishi Eclipse GS 2-door sport coupe was impacted on the driver side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the monorail at a velocity of 53.0 km/h (32.9 mph). The target vehicle was stationary and was positioned at an angle of 63° to the line of forward motion. The side impact test was conducted by Transportation Research Center Inc. in East Liberty, Ohio on October 17, 2005. Pre-test and post-test photographs of the test vehicle, the moving deformable barrier (MDB), and the side impact dummy (SID) are included in Appendix A.

One restrained Side Impact Dummy (SID) was placed in the driver (Pos. #1) designated seating position according to the instructions specified in the OVSC Side Impact Laboratory Test Procedure (TP-214D-06, dated July 2001). The SID was certified prior to this test. The side impact test was documented by one real-time camera and 8 high-speed cameras. Camera locations and other pertinent camera information are included in this report.

The SID was instrumented with the following accelerometers:

1. Left Upper Rib (LUR) uniaxial and redundant accelerometer (Y-direction)
2. Left Lower Rib (LLR) uniaxial and redundant accelerometer (Y-direction)
3. Lower Thoracic Spine (T<sub>12</sub>) uniaxial and redundant accelerometer (Y-direction)
4. Pelvic (PEV) section uniaxial accelerometer (Y-direction)

A summary of the side impact dummy (SID) configuration and verification test data can be found in Appendix C. A total of 35 channels of data were recorded. Appendix B contains the vehicle, MDB, and dummy response data traces.

The following table summarizes the results of the test.

Injury Criteria	Front SID
TII (g)	36.7
PEV (g)	31.7

### Data Acquisition Explanations

The vehicle's left side sill at rear seat Y-axis acceleration data channel, 14SILBRE0000AC'YA, exceeded full-scale at approximately 19 milliseconds. The velocity and displacement were also affected.

The vehicle's left lower A-post Y-axis acceleration data channel, 11APILLO0000AC'YA, exceeded full-scale at approximately 10 milliseconds. The velocity was also affected.

The vehicle's left middle A-post Y-axis acceleration data channel, 11APILMI0000AC'YA, exceeded full-scale at approximately 17 milliseconds. The velocity was also affected.

Section 3

Summary of Test Results



Data Sheet 1

General Test Vehicle Parameter Data

Test Vehicle Information:

Vehicle Year/Make/Model: 2006 Mitsubishi Eclipse GS  
Vehicle Body Style/Color: 2-door sport coupe/Sunset Pearlescent  
VIN: 4A3AK24F56E004756  
Vehicle NHTSA No.: C65601 Build Date: 06/05  
Engine Data: 4 Cylinders;      CID; 2.4 Liters;      cc  
Placement: X Longitudinal; or - Lateral; or - Horizontal  
Transmission: 5 Speed; X Manual; - Automatic; X Overdrive  
Final Drive: - RWD; X FWD; - Four-Wheel Drive  
Odometer Reading: 232 miles  
Options: X A/C; X Power steering; X Power brakes; X Power windows

Data From Vehicle's Tire Placard:

Tire Pressure (at capacity)\* 220 kPa Front; 220 kPa Rear  
Recommended Tire Size: P225/50R17  
Tires on Test Vehicle: P225/50R17 Manufacturer: Bridgestone, Potenza

Vehicle Capacity Data:

Number of Occupants: 2 Front; 2 Rear; - 3rd seat; 4 Total  
Type of Front Seats: X Bucket; - Bench; - Split bench  
Type of Front Seat Back: - Fixed; X Adjustable with X Lever or - Knob  
Vehicle Max. Capacity Loading = 300 kg (A)  
No. of Occupants x 68.04 kg. = 272 kg (B)  
Vehicle Cargo Capacity (A-B) = 28 kg

Test Vehicle Delivered Weight With Maximum Fluids:

Left Front	=	<u>448.0</u> kg	Left Rear	=	<u>287.5</u> kg
Right Front	=	<u>436.5</u> kg	Right Rear	=	<u>308.0</u> kg
Total Front	=	<u>884.5</u> kg	Total Rear	=	<u>595.5</u> kg
Front % of Total Weight	=	<u>59.8</u> %	Rear % of Total Weight	=	<u>40.2</u> %
Total Weight	=	<u>1480.0</u> kg			

\* Tire pressure used in test.

Data Sheet 1 (Continued)

General Test Vehicle Parameter Data

Calculation Of Vehicle's Target Test Weight:

Total Test Vehicle Delivered Weight With Max. Fluids	=	<u>1480.0</u> kg (A)
Maximum Cargo Carrying Capacity of Test Vehicle	=	<u>28.0</u> kg (B)
Weight of Instrumented Side Impact Dummies (1 X <u>83.0</u> kg)	=	<u>83.0</u> kg (C)
Test Vehicle Target Weight:	=	<u>1591.0</u> kg (A+B+C)

Fully Loaded Test Vehicle (UDW + 1 SID + Cargo):<sup>1</sup>

Left Front	=	<u>500.5</u> kg	Left Rear	=	<u>370.5</u> kg
Right Front	=	<u>442.5</u> kg	Right Rear	=	<u>360.5</u> kg
Total Front	=	<u>943.0</u> kg	Total Rear	=	<u>731.0</u> kg
Front % of Total Weight	=	<u>56.3</u> %	Rear % of Total Weight	=	<u>43.7</u> %
Total Weight	=	<u>1674.0</u> kg			

As Tested Weight of Test Vehicle (1 SID + Cargo + Equipment & Instrumentation):

Left Front	=	<u>465.2</u> kg	Left Rear	=	<u>338.0</u> kg
Right Front	=	<u>450.4</u> kg	Right Rear	=	<u>332.6</u> kg
Total Front	=	<u>915.6</u> kg	Total Rear	=	<u>670.6</u> kg
Front % of Total Weight	=	<u>57.7</u> %	Rear % of Total Weight	=	<u>42.3</u> %
Total Weight	=	<u>1586.2</u> kg			

Test Vehicle Attitude (all dimensions in millimeters):

As Delivered	Fully Loaded	Ready For Test
Right Front <u>734</u>	Right Front <u>715</u>	Right Front <u>715</u>
Left Front <u>723</u>	Left Front <u>705</u>	Left Front <u>714</u>
Right Rear <u>737</u>	Right Rear <u>712</u>	Right Rear <u>727</u>
Left Rear <u>734</u>	Left Rear <u>702</u>	Left Rear <u>724</u>

<sup>1</sup> Test was originally scheduled to be performed with two SID dummies.

Data Sheet 1 (Continued)

General Test Vehicle Parameter Data

Test Vehicle Attitude:

	Left Sill Pitch	Right Sill Pitch	Front Bumper L-R Roll	Rear Bumper L-R Roll
As Delivered:	0.4°	0.2°	-0.6°	0.0°
Fully Loaded:	0.2°	0.8°	0.0°	0.0°
As Tested:	-0.2°	-0.2°	-0.4°	-0.4°

Negative Pitch Angle = Vehicle front down

Negative Roll Angle = Driver side down

Test Vehicle Wheelbase: 2575 mm

C.G. = 1089 mm rearward of front wheel centerline

Total Vehicle Length:

Right Side = 4200 mm

Left Side = 4200 mm

Centerline = 4565 mm

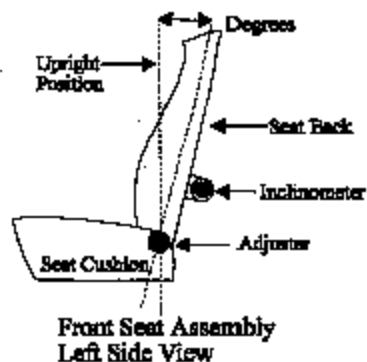
Data Sheet 1 (Continued)

General Test Vehicle Parameter Data

Vehicle: 2006 Mitsubishi Eclipse GS 2-door sport coupe

NHTSA No.: C65601

Nominal Design Riding Position for adjustable driver and passenger seat backs. Please describe how to position the inclinometer to measure the seat back angle. Include description of the location of the adjustment latch detent, if applicable.



Front Seat Cushion Placement: detent #12 of 23, full forward is detent #1

Total Length of Fore/Aft Adjustment Travel: 220 mm

Total Number of Adjustment Positions or Detents: 23

Front Seat Back Adjustment Position: The seat back was adjusted to 25.0°

Seat Back Torso Angle: 23.4 degrees measured dummy pelvic angle when positioned for test

Adjustable Steering Column Position: middle of geometric range of travel

Window Positions:

Right Front: Open

Right Rear: Fixed

Left Front: Closed

Left Rear: Fixed

Note: Windows will be in closed position on struck side of test vehicle and in open position on opposite side.

Amount of Stoddard Solvent In Fuel Tank:

67.0 liters (fuel tank usable capacity)

62.8 liters used in test (92% - 94% of fuel tank usable capacity)

Location of Impact Point On Test Vehicle Side To Be Impacted:

Wheelbase = 2575 millimeters

Intended impact point is 348 millimeters rearward of front axle centerline  
(which is 940 millimeters forward of the wheelbase midpoint)

Actual Impact Point is 364 millimeters rearward of front axle centerline

Data Sheet 2

Test Vehicle Summary of Results

Vehicle Year/Make/Model: 2006/Mitsubishi/Eclipse GS

Body Style: 2-door sport coupe

VIN: 4A3AK24F56E004756

NHTSA No.: C65601

Build Date: 06/2005

Test Date: 10/17/05

Vehicle Overall Length = 4565 mm

Overall Width = 1835 mm

Vehicle Test Weight (Pre-Test):

Left Front	=	<u>465.2</u>	kg	Left Rear	=	<u>338.0</u>	kg
Right Front	=	<u>450.4</u>	kg	Right Rear	=	<u>332.6</u>	kg
Total Front	=	<u>915.6</u>	kg	Total Rear	=	<u>670.6</u>	kg
Total Weight	=	<u>1586.2</u>	kg				
Wheelbase	=	<u>2575</u>	mm				

Longitudinal C.G. From Center Of Front Axle = 1089 mm

Impact Angle With Respect To Impactor = 90 degrees

Impact Point:

Actual Impact Point is 16 mm right of nominal impact ref. line (Lateral)

Actual Impact Point is 15 mm up from nominal impact point (Vertical)

Maximum Exterior Static Crush:

1. Level 1 (	<u>247</u>	mm above ground)	=	<u>0</u>	mm
2. Level 2 (	<u>495</u>	mm above ground)	=	<u>134</u>	mm
3. Level 3 (	<u>603</u>	mm above ground)	=	<u>156</u>	mm
4. Level 4 (	<u>821</u>	mm above ground)	=	<u>127</u>	mm
5. Level 5 (	<u>1300</u>	mm above ground)	=	<u>6</u>	mm

Maximum Post-Test Intrusion = 156 mm

Occupants:

Front Passenger

Dummy Identification 027

Restraints Used 3-pt seat belt, curtain and torso airbags

Instrumentation:

Number of Vehicle Data Channels: = 21

Number of Cameras: Onboard = 2 Offboard = 6 Total = 8

Data Sheet 3

Moving Deformable Barrier (MDB) Summary

MDB Face Manufacturer And Serial Number:

Plascore, 219A1004 239B1004

Position Of Impactor (MDB) On Monorail:

Crabbed 27° to the left

MDB Specifications:

Overall Width of Framework Carriage = 1251 mm  
Overall Length of MDB (Incl. honeycomb impact face) = 4014 mm  
Wheelbase of Framework Carriage = 2591 mm  
Track of Framework Carriage (Front & Rear) = 1881 mm  
C.G. Location Rearward of Front Axle = 1127 mm

MDB Weight:

Left Front	=	<u>524.6</u>	kg	Left Rear	=	<u>161.8</u>	kg
Right Front	=	<u>247.8</u>	kg	Right Rear	=	<u>433.4</u>	kg
Total Front	=	<u>772.4</u>	kg	Total Rear	=	<u>595.2</u>	kg
Total MDB Weight	=	<u>1367.6</u>	kg				
Impact Angle (MDB C/L to Target Vehicle C/L)	=	<u>90</u>	degrees				
Impact Speed	=	<u>53.0</u>	km/h				

Maximum Static Crush of Honeycomb Impact Face:

1. Row A at Center of Bumper Level = 183 millimeters
2. Row B at Top of Bumper Level = 98 millimeters
3. Row C at Mid Level = 105 millimeters
4. Row D at Top of Stack Level = 97 millimeters

Instrumentation:

Number of MDB Data Channels = 5

Data Sheet 4

Post-Test Observations

Vehicle: 2006 Mitsubishi Eclipse GS 2-door sport coupe

NHTSA No.: C65601

Visible Dummy Contact Points:

Left Front SID

Head: Curtain airbag, headliner

Upper Torso: Torso airbag

Lower Torso: Torso airbag

Left Knee: Door panel

Right Knee: None

Door Opening:

Left Side

Right Side

Front: Jammed and latched

Easy

Rear: N/A

N/A

MDB Distance From Target Impact Point:

Vertical: 15 mm up from target

Horizontal: 16 mm right from target

Arm Rest Locations:

Front: 335 mm below the bottom of the window

Rear: N/A

Seat Movement:

Front: None

Rear: None

Glazing Damage:

Windshield: None

Window: Impacted side window broken.

Pillar Separation: No

Sill Separation: No

Other Notable Impact Effects:

None

Section 4

Occupant and Vehicle Information



Data Sheet 5

SID Instrumentation Data

Vehicle: 2006 Mitsubishi Eclipse GS 2-door sport coupe

NHTSA No.: C65601

Test Number: 051017

Driver Dummy Serial Number: 027

Location	Positive Direction		Negative Direction	
	Max.	Time (ms)	Max.	Time (ms)
<b>Left Upper Rib Acceleration</b>				
Lateral (P)	36.7	36.2	4.6	206.2
Lateral (R)	34.3	36.2	4.5	206.3
<b>Left Lower Rib Acceleration</b>				
Lateral (P)	29.7	40.6	3.4	206.2
Lateral (R)	29.3	40.6	3.5	206.2
<b>Lower Spine Acceleration</b>				
Lateral (P)	36.6	41.8	3.8	95.0
Lateral (R)	36.4	41.8	3.9	95.0
<b>Pelvis Acceleration</b>				
Lateral (P)	31.7	38.1	7.8	63.1
TTI	36.7			

Positive Direction

Longitudinal: Forward

Lateral: Rightward

Vertical: Downward

Negative Direction

Longitudinal: Rearward

Lateral: Leftward

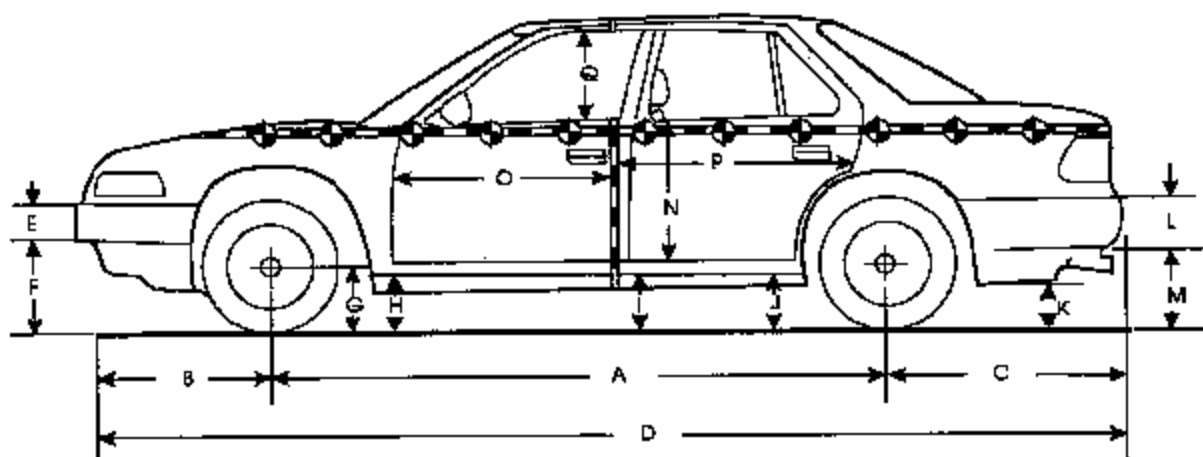
Vertical: Upward

## Data Sheet 6

### Vehicle Pre-Test And Post-Test Measurements

Vehicle: 2006 Mitsubishi Eclipse GS 2-door sport coupe

NHTSA No.: C65601



Left Side View

Note: All dimensions are in millimeters with tolerance of  $\pm 3$  mm

	Pre-Test (as delivered)	Pre-Test (as tested)	Post-Test (as tested)	Change
A	2575	2575	2582	-7
B	1020	1020	1004	16
C	970	970	963	7
D	4565	4565	4560	5
E	145	145	145	0
F	424	421	443	-22
G	307	308	308	0
H	219	207	225	-18
I	212	198	235	-37
J1	188	165	177	-12
J2	251	228	249	-21
K	280	248	249	-1
L	324	324	324	0
M	481	444	456	-12
N	N/A	N/A	N/A	N/A
O	680	680	683	-3
P	645	645	657	-12
Q	344	344	335	9
R	4200	4200	4207	-7
S	4200	4200	4200	0
T	1221	1221	1183	38

D = Length at centerline  
T = Width at B-pillar

B&L = Bumper Thickness  
J1 = To Pinch Weld

R = Right Side Length  
J2 = To Sill

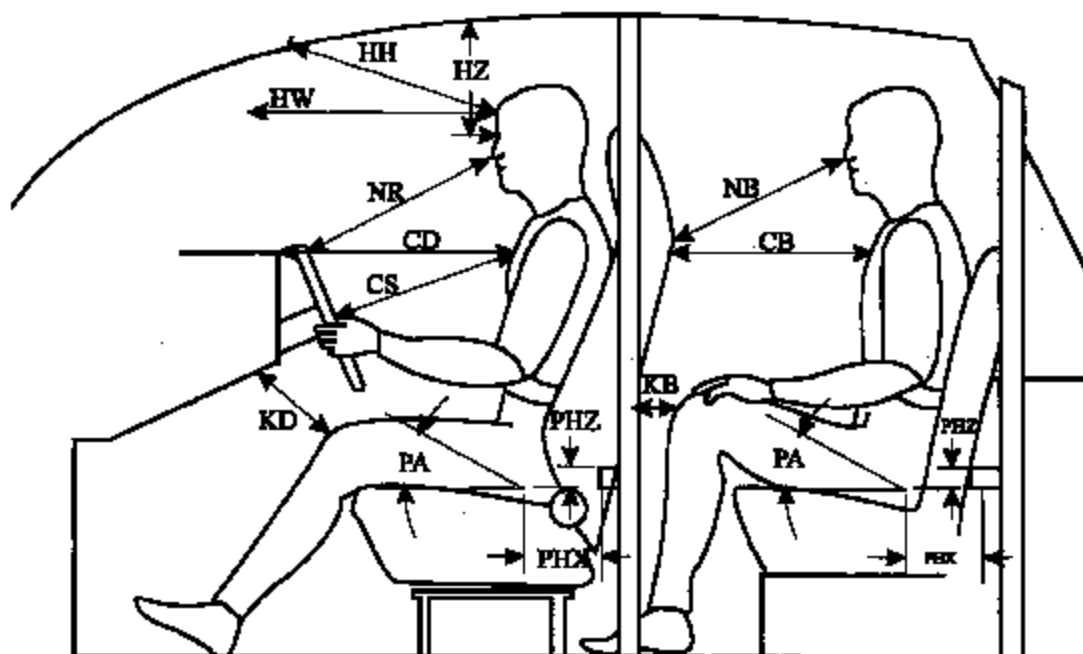
S = Left Side Length

## Data Sheet 7

### SID Longitudinal Clearance Dimensions

Vehicle: 2006 Mitsubishi Eclipse GS 2-door sport coupe

NHTSA No.: C65601



Left Side View

Note: All measurements are in millimeters with tolerance of  $\pm 3$  mm

Measurement	Driver SID # 027
HH	418
HW	732
HZ	150
NR/NB	384
CD/CB	568
CS	300
KDL(KDA°)/KBL(KBA°)	110/(8.8°)
KDR(KDA°)/KBR(KBA°)	90/(7.5°)
PA°	23.4°
PHX	430
PHZ	279

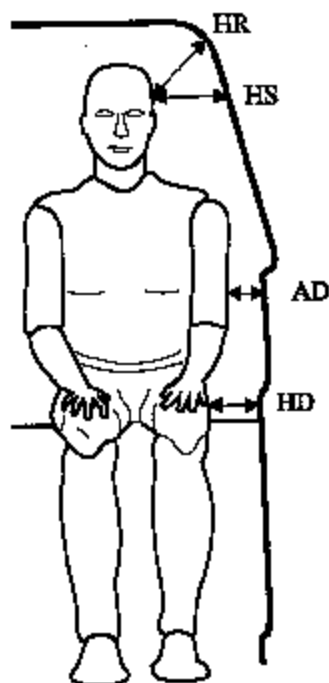
Note: 2-door vehicle shown. Rear dummy PHX and PHZ measurements for 4-door vehicle would use the C-post striker as a reference point.

Data Sheet 8

SID Lateral Clearance Dimensions

Vehicle: 2006 Mitsubishi Eclipse GS 2-door sport coupe

NHTSA No.: C65601



Note: All measurements are in millimeters with tolerance of  $\pm 3$  mm

Measurement	Driver SID # 027
HR	176
HS	320
AD*	Lower: 126      Upper: 83
HD	143

\* Lower measurement is taken laterally at center of the lower rib accelerometer height from the SID arm segment to the closest part of the vehicle side.

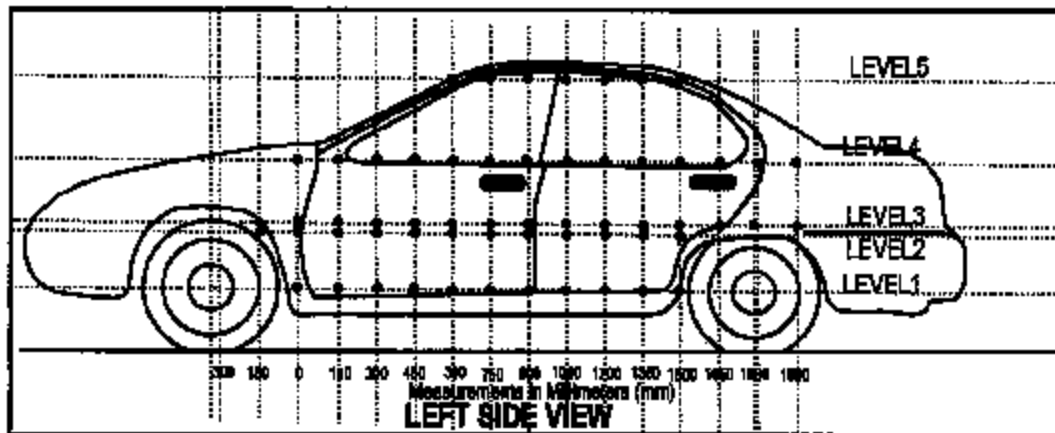
Upper measurement is taken laterally at center of the upper rib accelerometer height from the SID arm segment to the closest part of the vehicle side.

Data Sheet 9

Vehicle Side Measurements

Vehicle: 2006 Mitsubishi Eclipse GS 2-door sport coupe

NHTSA No.: C65601



Level 5 - Window Top

Level 4 - Window Sill

Level 3 - Mid-Door

Level 2 - Occupant H-Point

Level 1 - Axle Centerline Height or Sill Top Height

Measurements Are Taken When The Vehicle Is In The "As Tested" Configuration.

Measurements along the vertical 750 mm line shown above:

Level 5 @ Window Top	=	<u>1300</u>	mm
Level 4 @ Window Sill	=	<u>821</u>	mm
Level 3 @ Mid Door	=	<u>603</u>	mm
Level 2 @ Occupant H-Point	=	<u>495</u>	mm
Level 1 @ Axle Centerline Height (or Sill Top Height)	=	<u>247</u>	mm

Data Sheet 10

Vehicle Exterior Crush Profiles - All Levels

Vehicle: 2006 Mitsubishi Eclipse GS 2-door sport coupe

NHTSA No.: C65601

Location	Height		(mm) From Impact Point													
			-1200	-1050	-900	-750	-600	-450	-300	-150	0	150	300	450	600	750
Level 1 Side Sill	247	Pre	---	---	---	---	---	---	---	---	---	640	641	638	640	640
		Post	---	---	---	---	---	---	---	---	---	629	636	636	637	640
		Crush	---	---	---	---	---	---	---	---	---	-11	-5	-2	-3	0
Level 2 H-Point	495	Pre	---	---	---	616	---	---	---	---	---	615	621	620	621	626
		Post	---	---	---	611	---	---	---	---	---	663	739	743	755	759
		Crush	---	---	---	-5	---	---	---	---	---	48	118	123	134	133
Level 3 Mid-Door	603	Pre	---	---	---	620	---	---	---	---	597	608	606	606	606	608
		Post	---	---	---	612	---	---	---	---	---	685	710	749	762	758
		Crush	---	---	---	-8	---	---	---	---	---	77	104	143	156	150
Level 4 Window Sill	821	Pre	---	---	---	---	654	630	618	625	640	640	636	634	628	627
		Post	---	---	---	---	652	630	623	633	652	663	682	702	716	726
		Crush	---	---	---	---	-2	0	5	8	12	23	46	68	88	99
Level 5 Window Top	1300	Pre	---	---	---	---	---	---	---	---	---	---	---	---	---	888
		Post	---	---	---	---	---	---	---	---	---	---	---	---	---	891
		Crush	---	---	---	---	---	---	---	---	---	---	---	---	---	3

Data Sheet 10 (Continued)

Vehicle Exterior Crush Profiles - All Levels

Vehicle: 2006 Mitsubishi Eclipse GS 2-door sport coupe

NHTSA No.: C65601

Location	Height		(mm) From Impact Point												
			900	1050	1200	1350	1500	1650	1800	1950	2100	2250	2400	2550	2700
Level 1 Side Sill	247	Pre	640	644	645	645	648	646	647	---	---	---	---	---	---
		Post	639	640	642	642	636	636	636	---	---	---	---	---	---
		Crush	-1	-4	-3	-3	-12	-10	-11	---	---	---	---	---	---
Level 2 H-Point	495	Pre	631	636	643	656	660	631	610	---	---	---	---	---	---
		Post	759	762	760	749	763	669	626	---	---	---	---	---	---
		Crush	128	126	117	93	103	38	16	---	---	---	---	---	---
Level 3 Mid-Door	603	Pre	615	622	626	635	643	630	605	---	---	---	---	---	---
		Post	771	766	769	752	767	778	747	---	---	---	---	---	---
		Crush	156	144	143	117	124	148	142	---	---	---	---	---	---
Level 4 Window Sill	821	Pre	630	633	635	642	652	655	650	625	610	610	618	---	---
		Post	727	731	738	738	749	782	749	689	642	624	619	---	---
		Crush	97	98	103	96	97	127	99	64	32	14	1	---	---
Level 5 Window Top	1300	Pre	890	895	895	905	912	926	---	---	---	---	---	---	---
		Post	893	896	896	903	906	932	---	---	---	---	---	---	---
		Crush	3	1	1	-2	-6	6	---	---	---	---	---	---	---

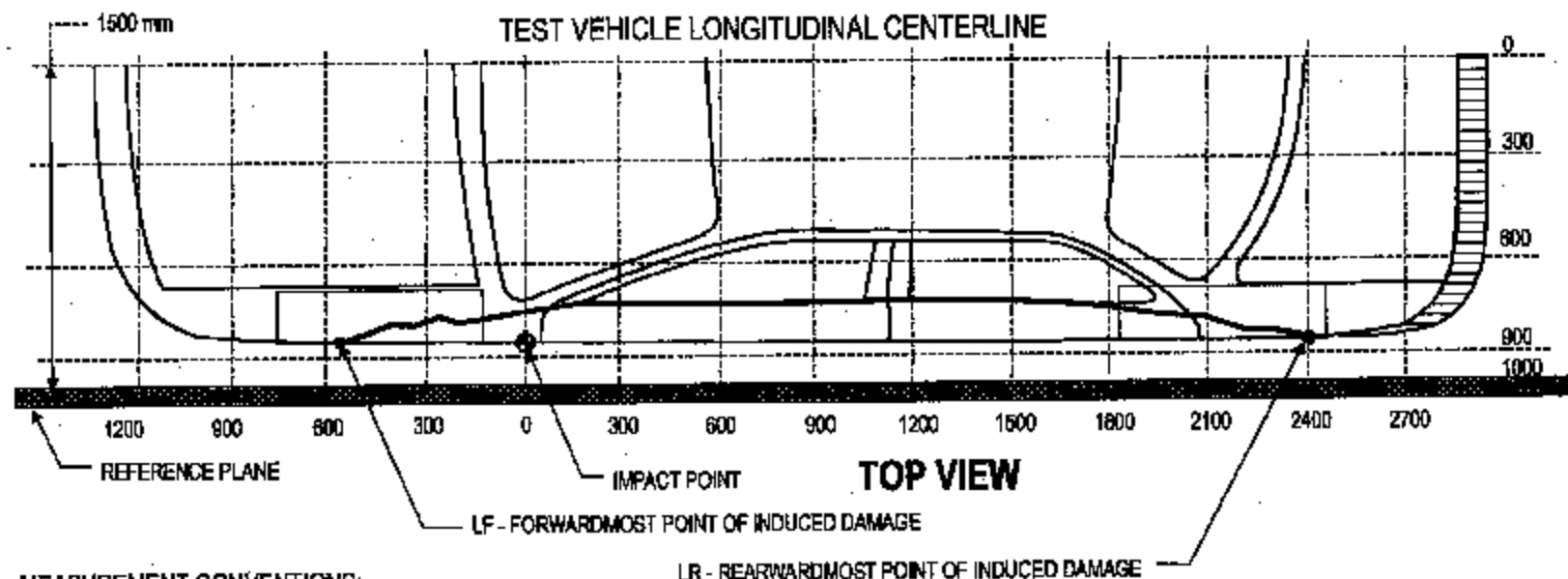
Data Sheet 11

Vehicle Damage Profile Distances

Vehicle: 2006 Mitsubishi Eclipse GS 2-door sport coupe

NHTSA No.: C65601

NOTE: All measurements are in millimeters (mm) and should be accurate to plus or minus 3mm.



**MEASUREMENT CONVENTIONS:**

Forward of the impact point (towards front of vehicle) is considered negative (-)

Rearward of the impact point (towards rear end of vehicle) is considered positive (+)

DPD Measurements	Pre-Test (mm)	Post-Test (mm)	Static Crush (mm)
6: LF = 150 mm (Level 3)	608	685	77
5: 450 mm (Level 3)	606	749	143
4: 900 mm (Level 3)	615	771	156
3: 1200 mm (Level 3)	626	769	143
2: 1500 mm (Level 3)	643	767	124
1: LR = 1800 mm (Level 3)	605	747	142

Full length of induced damage was 1650 mm.



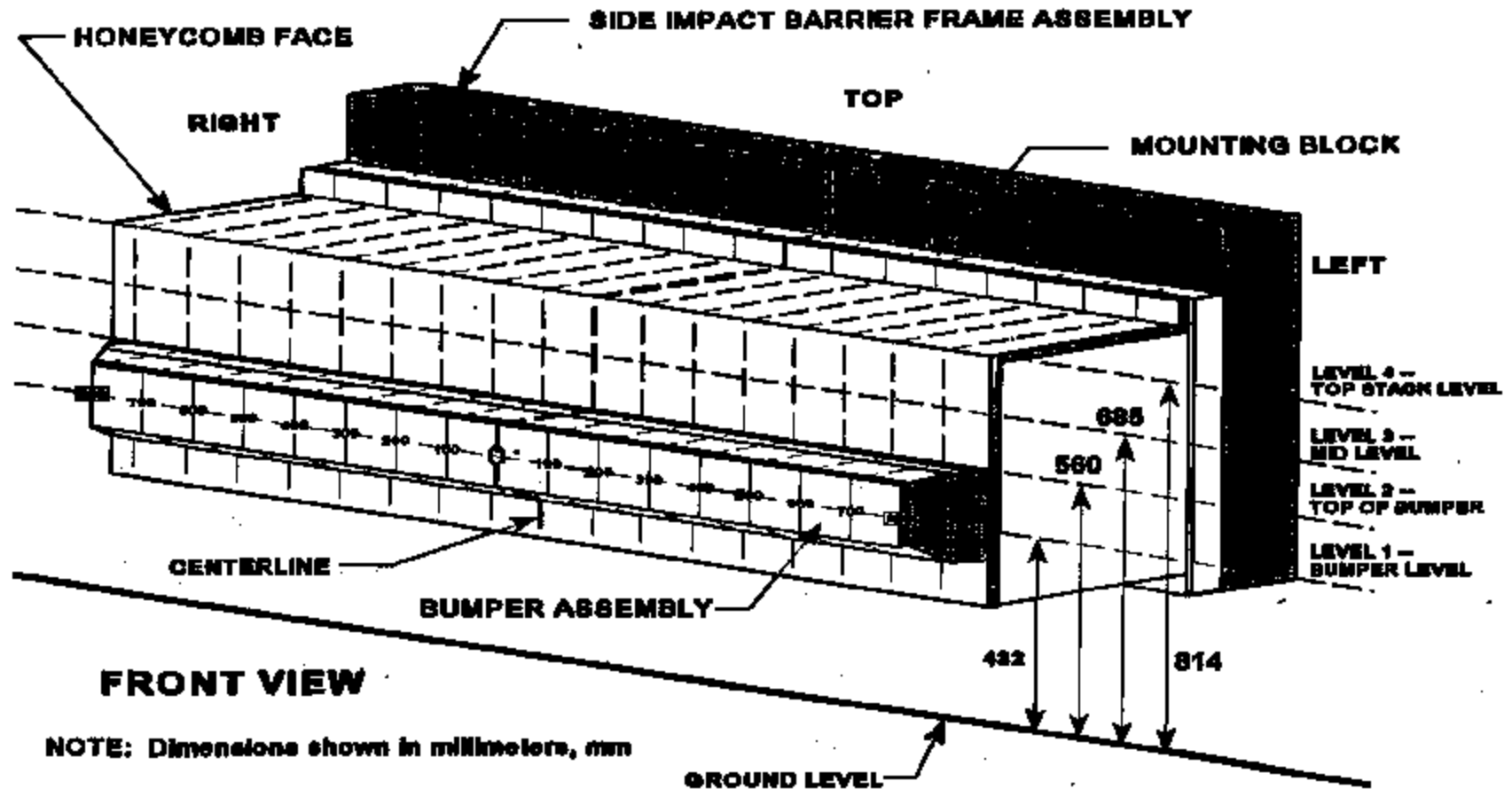
Data Sheet 12

Exterior Static Crush For Impactor Face

(Grid as looking at MDB from front)

Vehicle: 2006 Mitsubishi Eclipse GS 2-door sport coupe

NHTSA No.: C65601



NOTE: Dimensions shown in millimeters, mm

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Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2006 Mitsubishi Eclipse GS 2-door sport coupe

NHTSA No.: C65601

Exterior Static Crush For Impactor Face

Location	Height At CL	Distance Right of Center (mm)									Distance Left of Center (mm)								
		800	700	600	500	400	300	200	100	0	100	200	300	400	500	600	700	800	
Top Stack Level - Level D	814	-20	-7	-22	-37	-11	-5	-4	-1	-2	-3	-13	-30	-41	-36	-58	-74	-97	
Mid Level Level C	685	-16	-5	-23	-38	-26	-15	-6	-5	-4	-7	-11	-17	-24	-44	-68	-99	-105	
Top Bumper Level - Level B	560	-44	-45	-47	-47	-41	-32	-27	-29	-30	-33	-35	-38	-41	-45	-55	-81	-98	
Mid Bumper Level - Level A	432	-138	-138	-140	-140	-139	-132	-125	-124	-125	-127	-128	-131	-132	-138	-152	-183	-174	

All measurements were recorded using TRC Inc.'s FARO Arm with a tolerance of  $\pm 0.1$  mm.

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Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2006 Mitsubishi Eclipse GS 2-door sport coupe

NHTSA No.: C65601

Deformable Barrier Face Profile

Level D - Top Stack

Pre-Test

Index	Xmm	Ymm	Zmm
1	-384	800	-51
2	-384	700	-51
3	-384	599	-50
4	-384	499	-51
5	-384	400	-51
6	-384	300	-51
7	-384	200	-51
8	-384	99	-51
9	-384	-1	-51
10	-384	-100	-51
11	-384	-201	-51
12	-384	-301	-51
13	-383	-400	-51
14	-383	-501	-52
15	-383	-601	-52
16	-383	-701	-51
17	-382	-801	-52

Post-Test

Index	Xmm	Ymm	Zmm
1	-364	763	-103
2	-377	665	-103
3	-362	567	-102
4	-347	471	-99
5	-373	375	-98
6	-379	275	-95
7	-381	175	-91
8	-383	75	-86
9	-382	-24	-81
10	-381	-124	-76
11	-371	-223	-70
12	-354	-322	-67
13	-343	-422	-64
14	-347	-521	-54
15	-325	-619	-50
16	-308	-718	-47
17	-285	-814	-39

Difference

Index	Xmm	Ymm	Zmm
1	-20	36	52
2	-7	34	52
3	-22	32	51
4	-37	29	49
5	-11	25	47
6	-5	25	44
7	-4	24	40
8	-1	24	35
9	-2	24	30
10	-3	24	25
11	-13	23	19
12	-30	22	16
13	-41	22	13
14	-36	21	2
15	-58	19	-2
16	-74	17	-4
17	-97	13	-13

Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2006 Mitsubishi Eclipse GS 2-door sport coupe

NHTSA No.: C65601

Deformable Barrier Face Profile Cont'd.

Level C - Mid Level

Pre-Test

Index	Xmm	Ymm	Zmm
18	-384	795	-180
19	-384	695	-180
20	-384	595	-180
21	-384	495	-180
22	-384	395	-180
23	-384	295	-180
24	-384	194	-180
25	-384	95	-180
26	-384	-6	-180
27	-383	-106	-180
28	-383	-206	-180
29	-383	-306	-179
30	-383	-406	-180
31	-383	-506	-179
32	-383	-606	-180
33	-383	-706	-180
34	-382	-805	-180

Post-Test

Index	Xmm	Ymm	Zmm
18	-368	757	-232
19	-379	659	-231
20	-361	561	-229
21	-346	463	-228
22	-358	363	-225
23	-368	264	-222
24	-377	164	-218
25	-378	65	-214
26	-379	-36	-208
27	-376	-136	-203
28	-373	-236	-197
29	-366	-336	-192
30	-359	-435	-187
31	-339	-532	-181
32	-314	-628	-176
33	-283	-724	-170
34	-278	-817	-165

Difference

Index	Xmm	Ymm	Zmm
18	-16	37	52
19	-5	36	51
20	-23	34	50
21	-38	32	48
22	-26	32	45
23	-15	31	42
24	-6	31	38
25	-5	30	33
26	-4	30	29
27	-7	30	23
28	-11	30	17
29	-17	29	13
30	-24	29	7
31	-44	27	3
32	-68	22	-4
33	-99	18	-9
34	-105	12	-15

Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2006 Mitsubishi Eclipse GS 2-door sport coupe

NHTSA No.: C65601

Deformable Barrier Face Profile Cont'd.

Level B - Top of Bumper

Pre-Test

Index	Xmm	Ymm	Zmm
35	-384	799	-304
36	-384	699	-304
37	-384	598	-304
38	-384	498	-305
39	-383	398	-305
40	-383	298	-305
41	-383	198	-304
42	-383	99	-305
43	-383	-3	-305
44	-383	-102	-305
45	-383	-201	-305
46	-383	-301	-305
47	-382	-403	-306
48	-382	-502	-305
49	-382	-602	-305
50	-382	-702	-305
51	-382	-802	-305

Post-Test

Index	Xmm	Ymm	Zmm
35	-340	762	-341
36	-339	662	-341
37	-337	562	-337
38	-337	462	-336
39	-343	363	-336
40	-352	263	-339
41	-356	162	-338
42	-355	63	-334
43	-353	-39	-329
44	-350	-138	-323
45	-348	-237	-318
46	-345	-338	-312
47	-341	-438	-307
48	-337	-538	-301
49	-327	-638	-292
50	-301	-731	-277
51	-284	-832	-287

Difference

Index	Xmm	Ymm	Zmm
35	-44	37	37
36	-45	37	37
37	-47	37	33
38	-47	36	32
39	-41	35	32
40	-32	36	34
41	-27	36	33
42	-29	36	29
43	-30	36	24
44	-33	36	18
45	-35	36	13
46	-38	37	7
47	-41	35	1
48	-45	36	-4
49	-55	36	-13
50	-81	30	-28
51	-98	30	-18

Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2006 Mitsubishi Eclipse GS 2-door sport coupe

NHTSA No.: C65601

Deformable Barrier Face Profile Cont'd.

Level A - Mid Bumper

Pre-Test

Index	Xmm	Ymm	Zmm
52	-476	795	-432
53	-485	696	-433
54	-485	596	-433
55	-485	497	-433
56	-485	397	-433
57	-485	296	-434
58	-485	196	-433
59	-485	97	-433
60	-485	-3	-434
61	-485	-103	-434
62	-485	-203	-434
63	-485	-304	-433
64	-484	-404	-433
65	-484	-504	-433
66	-484	-604	-434
67	-483	-703	-434
68	-471	-802	-434

Post-Test

Index	Xmm	Ymm	Zmm
52	-338	751	-492
53	-347	653	-495
54	-345	553	-490
55	-345	453	-487
56	-346	353	-484
57	-353	254	-486
58	-360	154	-487
59	-361	54	-484
60	-360	-46	-480
61	-358	-146	-475
62	-356	-246	-470
63	-354	-346	-466
64	-352	-446	-461
65	-346	-546	-455
66	-332	-644	-443
67	-300	-737	-422
68	-297	-835	-413

Difference

Index	Xmm	Ymm	Zmm
52	-138	44	60
53	-138	44	62
54	-140	44	57
55	-140	44	54
56	-139	44	50
57	-132	43	52
58	-125	43	54
59	-124	43	50
60	-125	43	46
61	-127	43	41
62	-128	43	37
63	-131	43	33
64	-132	43	28
65	-138	43	21
66	-152	41	9
67	-183	34	-12
68	-174	33	-21

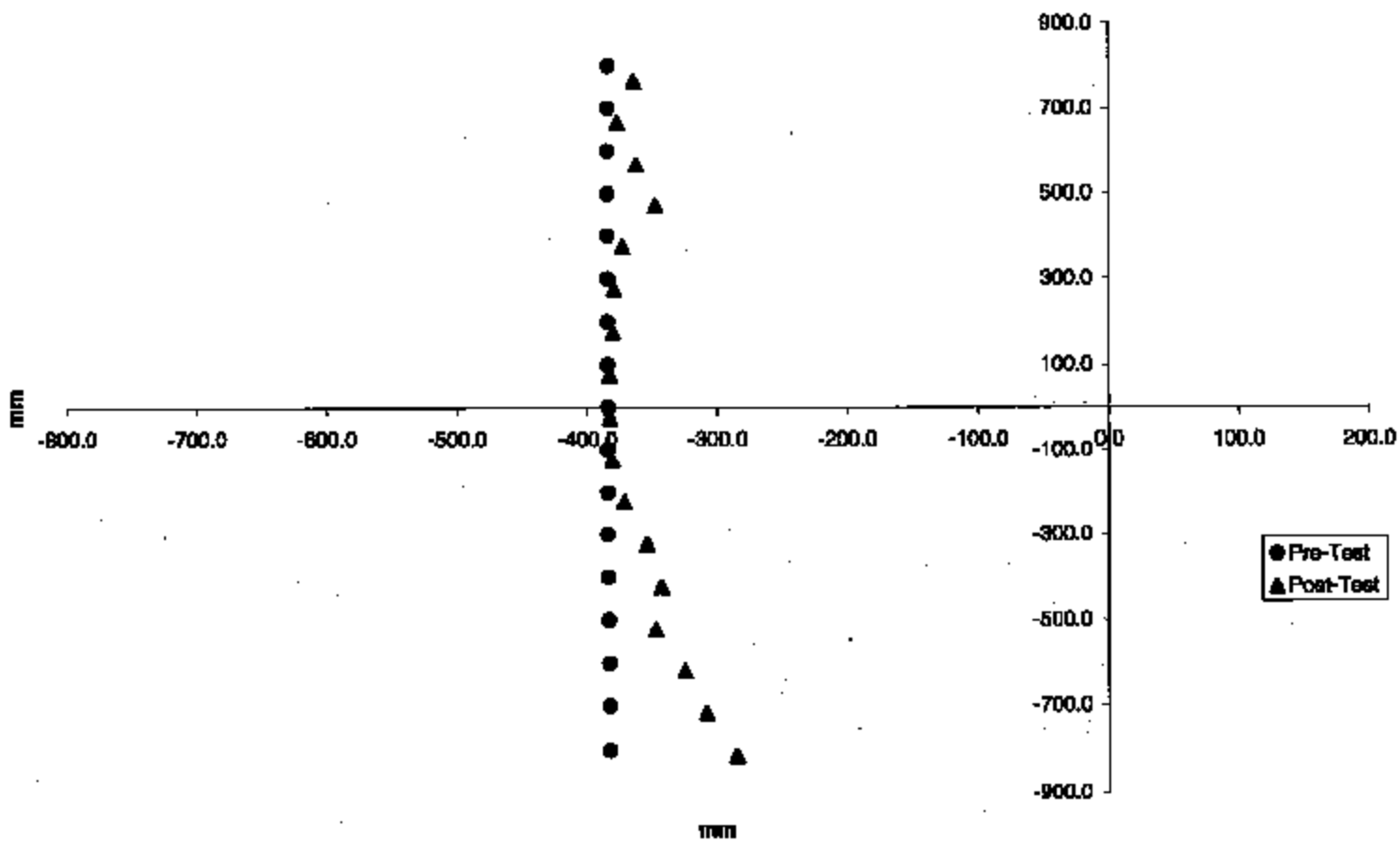
Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2006 Mitsubishi Eclipse GS 2-door sport coupe

NHTSA No.: C65601

**Level D - Deformable Barrier Face Profile 1-17**



4-16

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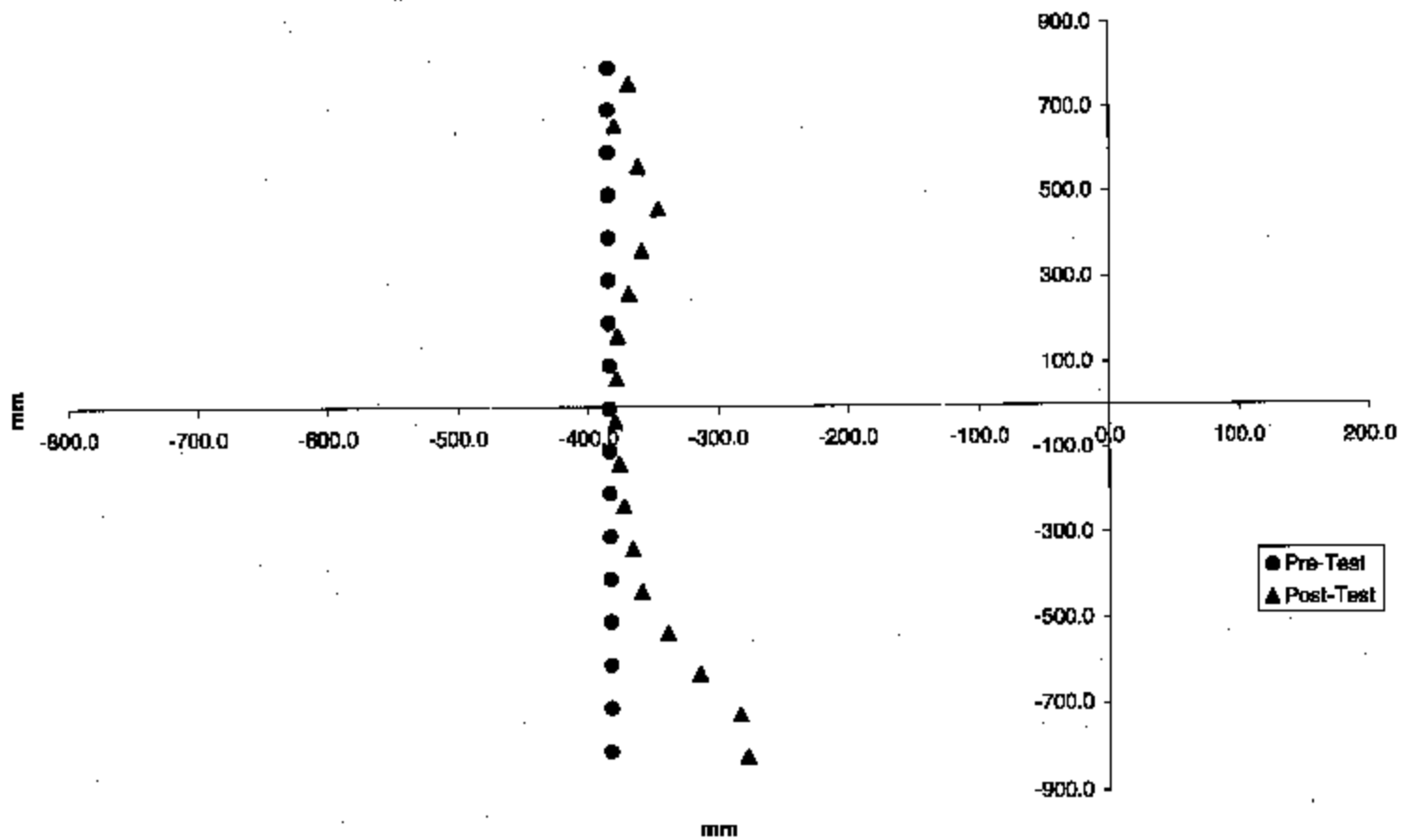
Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2006 Mitsubishi Eclipse GS 2-door sport coupe

NHTSA No.: C65601

**Level C - Deformable Barrier Face Profile 18-34**



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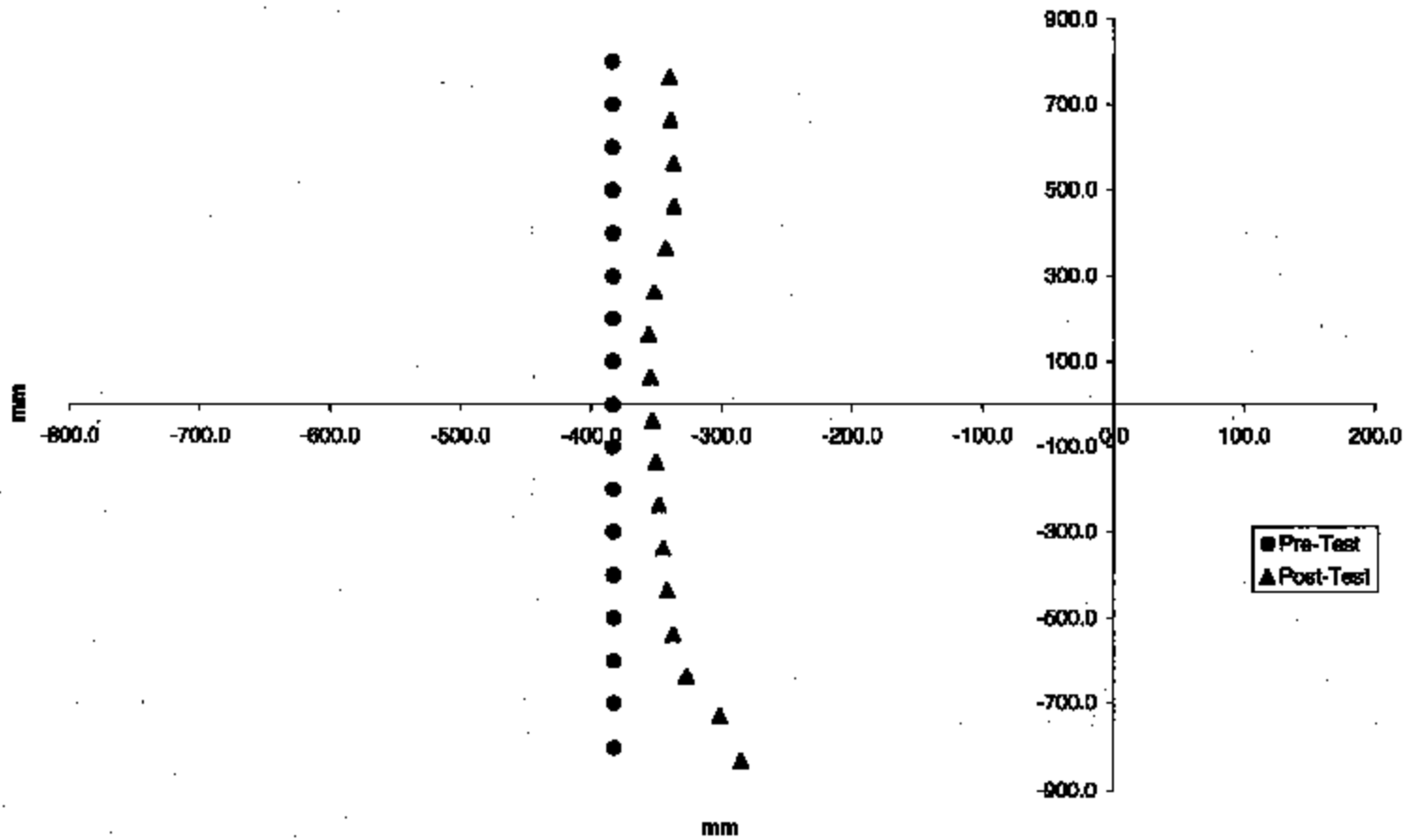
Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2006 Mitsubishi Eclipse GS 2-door sport coupe

NHTSA No.: C65601

Level B - Deformable Barrier Face Profile 35-51



4-18

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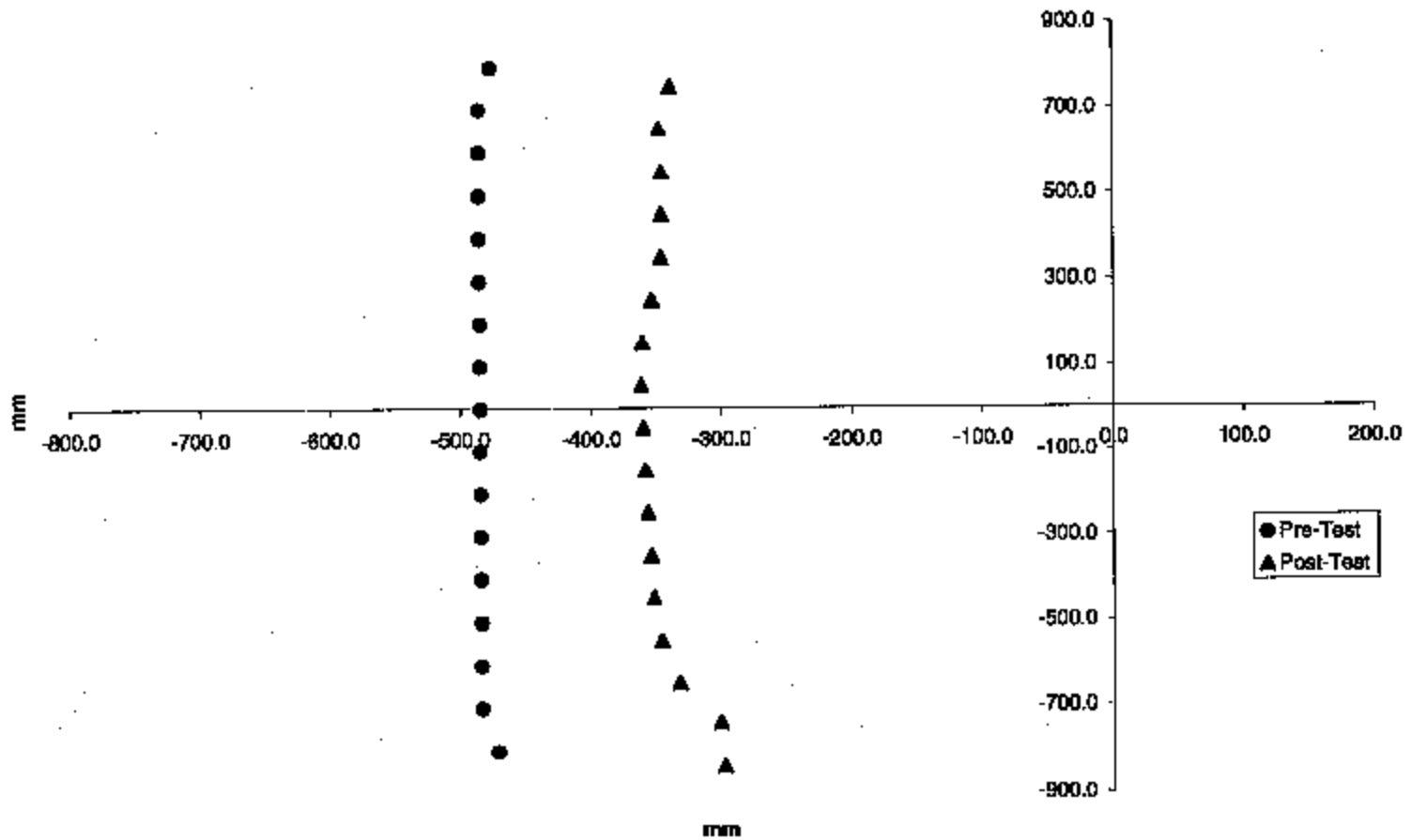
Data Sheet 12 (Continued)

Exterior Static Crush For Impactor Face

Vehicle: 2006 Mitsubishi Eclipse GS 2-door sport coupe

NHTSA No.: C65601

Level A - Deformable Barrier Face Profile 52-88



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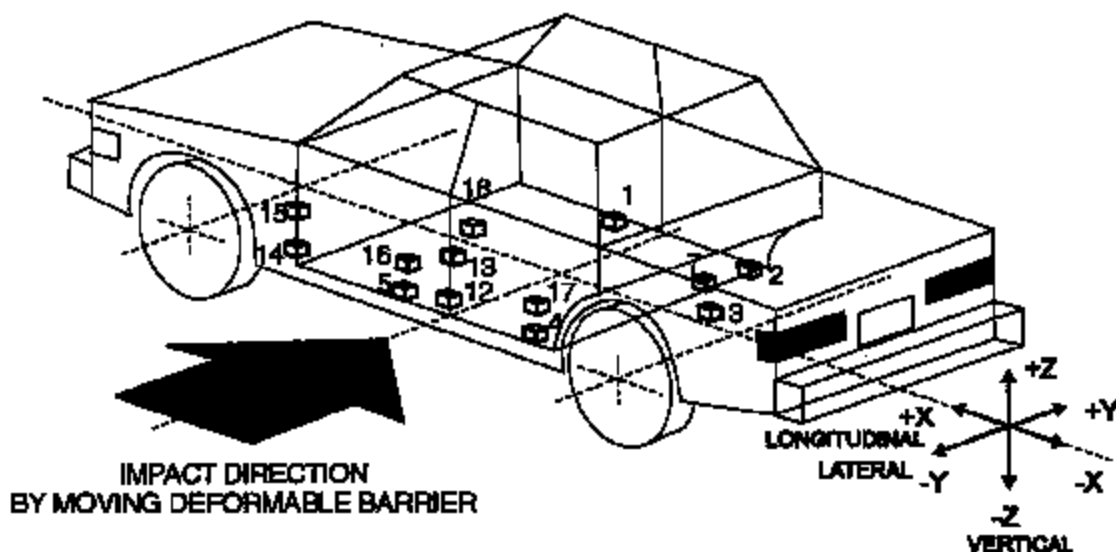
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Data Sheet 13

Test Vehicle Accelerometer Locations and Data Summary

Vehicle: 2006 Mitsubishi Eclipse GS 2-door sport coupe

NHTSA No.: C65601



- 1-Right Front Side Sill
- 2-Right Side Sill at Rear Seat
- 3-Rear Floorpan above Axle
- 4-Left Side Sill at Rear Seat
- 5-Left Front Side Sill
- 7-Right Rear Occupant Compartment
- 12-Left Side Lower B-pillar

- 13-Left Side Middle B-pillar
- 14-Left Side Lower A-pillar
- 15-Left Side Middle A-pillar
- 16-Left Side Front Seat Track at H-point
- 17-Left Rear Seat Track at H-point
- 18-Vehicle Center of Gravity

Data Sheet 13 (Continued)

Test Vehicle Accelerometer Locations and Data Summary

Vehicle: 2006 Mitsubishi Eclipse GS 2-door sport coupe

NHTSA No.: C65601

Location				Positive Direction		Negative Direction	
	X	Y	Z	Max.	Time (ms)	Max.	Time (ms)
<b>1 Right Side Sill at Front Seat</b>							
	2667	700	-298				
Longitudinal				5.3	51.1	4.0	7.2
Lateral				29.4	8.3	2.5	80.4
Vertical				5.6	31.8	10.0	9.7
Resultant				31.0	8.4		
<b>2 Right Side Sill at Rear Seat</b>							
	1882	700	-259				
Longitudinal				5.6	51.1	16.4	8.8
Lateral				24.0	7.5	2.2	79.3
Vertical				5.4	44.8	9.7	10.0
Resultant				28.7	8.2		
<b>3 Rear Floorpan Above Axle</b>							
	957	0	-621				
Longitudinal				4.1	49.3	6.4	29.7
Lateral				25.7	32.0	1.6	66.5
Vertical				7.9	9.9	6.2	15.5
Resultant				26.0	31.6		
<b>4 Left Side Sill at Rear Seat</b>							
	1867	-700	-234				
Longitudinal							
Lateral <sup>1</sup>				---	---	---	---
Vertical							
Resultant							
<b>5 Left Side Sill at Front Seat</b>							
	2782	-700	-264				
Longitudinal							
Lateral				47.1	5.3	34.7	12.6
Vertical							
Resultant							

Data Sheet 13 (Continued)

Test Vehicle Accelerometer Locations and Data Summary

Vehicle: 2006 Mitsubishi Eclipse GS 2-door sport coupe

NHTSA No.: C65601

Location				Positive Direction		Negative Direction	
	X	Y	Z	Max.	Time (ms)	Max.	Time (ms)
7 Right Rear Occupant Compartment	1822	400	-275				
Longitudinal							
Lateral				25.4	7.6	2.0	79.1
Vertical							
Resultant							
12 Left Lower B-Pillar	1887	-750	-355				
Longitudinal							
Lateral				142.8	6.3	18.5	28.4
Vertical							
Resultant							
13 Left Middle B-Pillar	1817	-732	-695				
Longitudinal							
Lateral				89.0	16.2	42.2	29.0
Vertical							
Resultant							
14 Left Lower A-Pillar	2992	-840	-390				
Longitudinal							
Lateral <sup>1</sup>				---	---	---	---
Vertical							
Resultant							
15 Left Middle A-Pillar	3320	-835	-535				
Longitudinal							
Lateral <sup>1</sup>				---	---	---	---
Vertical							
Resultant							

Data Sheet 13 (Continued)

Test Vehicle Accelerometer Locations and Data Summary

Vehicle: 2006 Mitsubishi Eclipse GS 2-door sport coupe

NHTSA No.: C65601

Location				Positive Direction		Negative Direction	
	X	Y	Z	Max.	Time (ms)	Max.	Time (ms)
16 Left Front Seat Track				2266	-555	-245	
Longitudinal							
Lateral				35.0	7.0	1.7	78.3
Vertical							
Resultant							
17 Left Rear Seat Track				1422	-520	-372	
Longitudinal							
Lateral				22.7	37.4	1.4	81.0
Vertical							
Resultant							
18 Vehicle CG				2575	0	-560	
Longitudinal				6.5	51.5	9.5	28.7
Lateral				30.5	47.1	13.1	60.0
Vertical				30.4	16.0	27.6	61.4
Resultant				38.1	15.4		

Reference: X: + Forward from rear bumper  
 Y: + Rightward from vehicle centerline  
 Z: + Downward from ground level

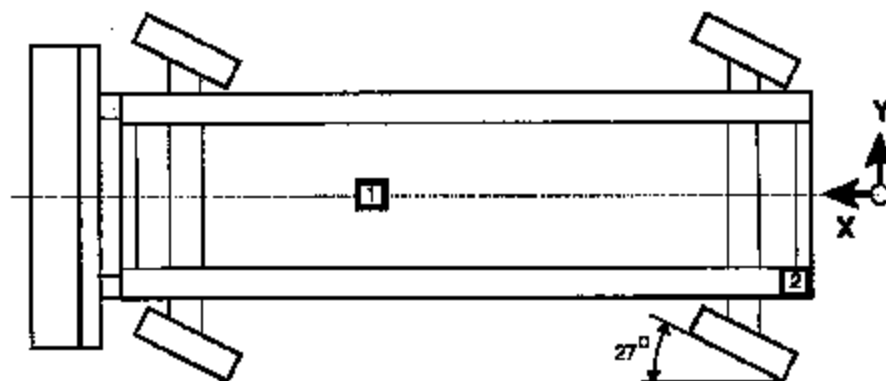
For acceleration data sign convention see Report Sign Convention in Appendix D.

Data Sheet 14

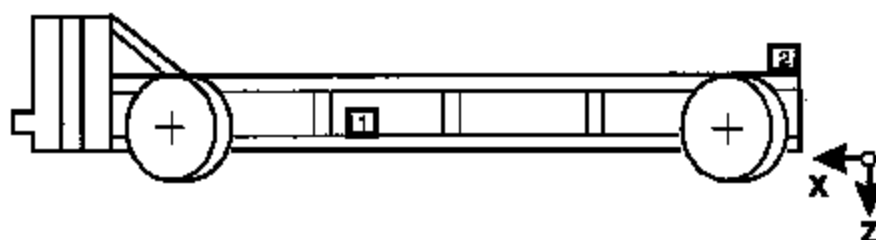
MDB Accelerometer Locations and Data Summary

Vehicle: 2006 Mitsubishi Eclipse GS 2-door sport coupe

NHTSA No.: C65601



TOP VIEW



SIDE VIEW

Accel. No.	Location	Coordinates (millimeters)			Positive Direction		Negative Direction	
		X*	Y*	Z*	Max. (g)	Time (ms)	Max. (g)	Time (ms)
1	MDB Center of Gravity	1855	0	-520				
	Longitudinal X				4.5	12.4	22.1	38.1
	Lateral Y				2.0	69.4	6.5	21.1
	Vertical Z				5.4	17.1	4.0	107.4
	Resultant R				23.1	38.2		
2	Rear Frame Member	412	-677	-625				
	Longitudinal X				2.5	127.0	23.2	39.5
	Lateral Y				2.6	21.1	5.1	290.0

\*Reference: X = Rear Bumper (+ Forward)

Y = Vehicle Centerline (+ To Right)

Z = Ground Level (+ Down)

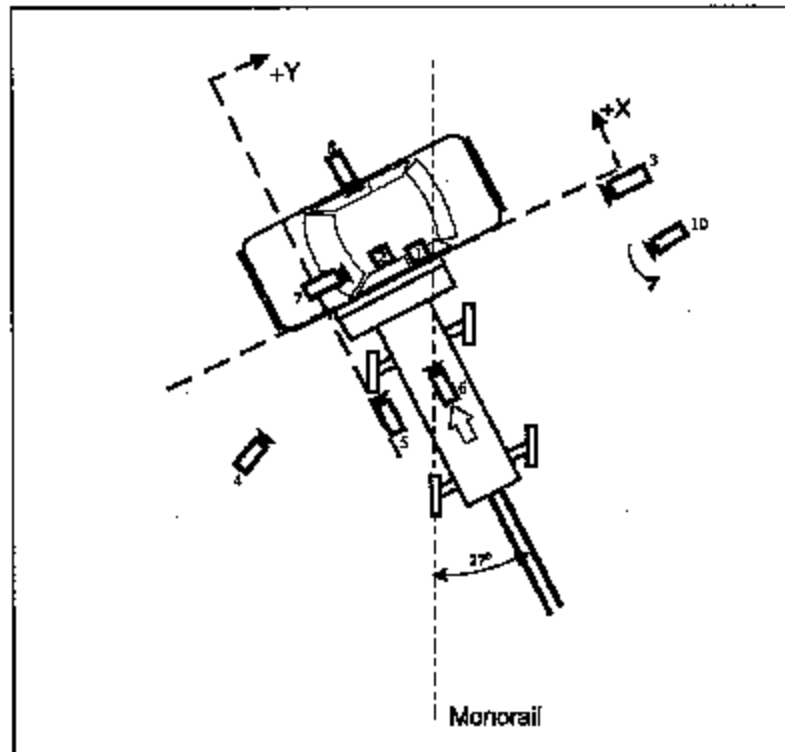
All measurements accurate to within  $\pm 3$  mm.

Data Sheet 15

High-Speed Camera Locations and Data Summary

Vehicle: 2006 Mitsubishi Eclipse GS 2-door sport coupe

NHTSA No.: C65601



Impact  
Area

Camera Number	Location	Location, mm			Angle (deg.)	Lens (mm)	Speed (fps)
		X	Y	Z			
1	Overhead wide	250	2150	-5750	-77.5	10	1000
2	Overhead tight	370	1800	-5750	-85.5	Zoom	1000
3	Right side of MDB	0	7300	-940	-2.3	25	1000
4	Left side of MDB	-2400	-4650	-950	-4.1	25	1000
5	Onboard MDB left side	-1750	-40	-720	-0.5	13	1000
6	Onboard MDB center	-2480	830	-1353	-5.2	17	1000
7	Onboard vehicle front	490	-1300	-1210	-7.9	25	1000
8	Onboard side front door	1630	20	-1120	-7.8	12.5	1000
10	Documentary/Panning	N/A	N/A	N/A	N/A	Zoom	30

+X: Forward (referenced to MDB) from impact point

+Y: Rightward (referenced to MDB) from impact point

+Z: Downward from ground level



Section 5

Vehicle Fuel System Integrity

Data Sheet 16

FMVSS 301 Fuel System Integrity Data

NHTSA No.: C65601

Test Date: 10/17/05

Vehicle Year/Make/Model/Body Style: 2006 Mitsubishi Eclipse GS 2-door sport coupe

\*\*\*\*\*

Test Vehicle Impact Type :

- Frontal (48.3 km/h)  
 Oblique (48.3 km/h) with \_\_\_° barrier  
face first contacting the (driver/passenger) side  
 Rear Moving Barrier (48.3 km/h)  
 Lateral Moving Barrier (32.2 km/h)  
 Side Impact Moving Deformable Barrier (32.9  
mph) contacting the driver side

Fuel Spillage Measurement:

1. From impact until vehicle motion ceases
2. For five-minute period after vehicle motion ceases
3. For next 25 minutes.

Actual	Maximum Allowed
0 g	28 g
0 g	142 g
0 g	28 g/1 minute

Solvent Spillage Details :

None

Data Sheet 17

FMVSS 301 Rollover Data

Vehicle: 2006 Mitsubishi Eclipse GS 2-door sport coupe

NHTSA No.: C65601

0 - 90 Degrees



1. Determination of Solvent Collection Time Period:

Rollover Fixture 90° Rotation Time        1   minutes        30   seconds  
(Spec. Range = 1 to 3 minutes)  
FMVSS 301 Position Hold Time +        5   minutes        0   seconds  
Total        6   minutes        30   seconds  
Next whole minute interval        7   minutes

2. FMVSS 301 Requirements:

(1) Time Period

First 5 minutes from onset of rotation	6th min.	7th min.	8th min. (if required)
--	----------	----------	------------------------

(2) Maximum Allowable Solvent Spillage

142 g	28 g	28 g	28 g
-------	------	------	------

3. Actual Test Vehicle Solvent Spillage:

0 g	0 g	0 g	N/A
-----	-----	-----	-----

Note: Record spillage for whole minute intervals only as determined above.

4. Solvent Spillage Location(s):

None

Data Sheet 17 (Continued)

FMVSS 301 Rollover Data

Vehicle: 2006 Mitsubishi Eclipse GS 2-door sport coupe

NHTSA No.: C65601

90 - 180 Degrees



1. Determination of Solvent Collection Time Period:

Rollover Fixture 90° Rotation Time	<u>1</u> minutes	<u>30</u> seconds
(Spec. Range = 1 to 3 minutes)		
FMVSS 301 Position Hold Time +	<u>5</u> minutes	<u>0</u> seconds
Total	<u>6</u> minutes	<u>30</u> seconds
Next whole minute interval	<u>7</u> minutes	

2. FMVSS 301 Requirements:

(1) Time Period

First 5 minutes from onset of rotation	6th min.	7th min.	8th min. (if required)
--	----------	----------	------------------------

(2) Maximum Allowable Solvent Spillage

142 g	28 g	28 g	28 g
-------	------	------	------

3. Actual Test Vehicle Solvent Spillage:

0 g	0 g	0 g	N/A
-----	-----	-----	-----

Note: Record spillage for whole minute intervals only as determined above.

4. Solvent Spillage Location(s):

None

Data Sheet 17 (Continued)

FMVSS 301 Rollover Data

Vehicle: 2006 Mitsubishi Eclipse GS 2-door sport coupe

NHTSA No.: C65601

180 - 270 Degrees



1. Determination of Solvent Collection Time Period:

Rollover Fixture 90° Rotation Time	<u>1</u> minutes	<u>30</u> seconds
(Spec. Range = 1 to 3 minutes)		
FMVSS 301 Position Hold Time +	<u>5</u> minutes	<u>0</u> seconds
Total	<u>6</u> minutes	<u>30</u> seconds
Next whole minute interval	<u>7</u> minutes	

2. FMVSS 301 Requirements:

(1) Time Period

First 5 minutes from onset of rotation	6th min.	7th min.	8th min. (if required)
--	----------	----------	------------------------

(2) Maximum Allowable Solvent Spillage

142 g	28 g	28 g	28 g
-------	------	------	------

3. Actual Test Vehicle Solvent Spillage:

0 g	0 g	0 g	N/A
-----	-----	-----	-----

Note: Record spillage for whole minute intervals only as determined above.

4. Solvent Spillage Location(s):

None

Data Sheet 17 (Continued)

FMVSS 301 Rollover Data

Vehicle: 2006 Mitsubishi Eclipse GS 2-door sport coupe

NHTSA No.: C65601

270 - 360 Degrees



1. Determination Of Solvent Collection Time Period:

Rollover Fixture 90° Rotation Time       1   minutes      30  seconds  
(Spec. Range = 1 to 3 minutes)  
FMVSS 301 Position Hold Time +       5   minutes       0   seconds  
Total       6   minutes      30  seconds  
Next whole minute interval       7   minutes

2. FMVSS 301 Requirements:

(1) Time Period

First 5 minutes from onset of rotation	6th min.	7th min.	8th min. (if required)
--	----------	----------	------------------------

(2) Maximum Allowable Solvent Spillage

142 g	28 g	28 g	28 g
-------	------	------	------

3. Actual Test Vehicle Solvent Spillage:

0 g	0 g	0 g	N/A
-----	-----	-----	-----

Note: Record spillage for whole minute intervals only as determined above.

4. Solvent Spillage Location(s):

None

Appendix A

Photographs

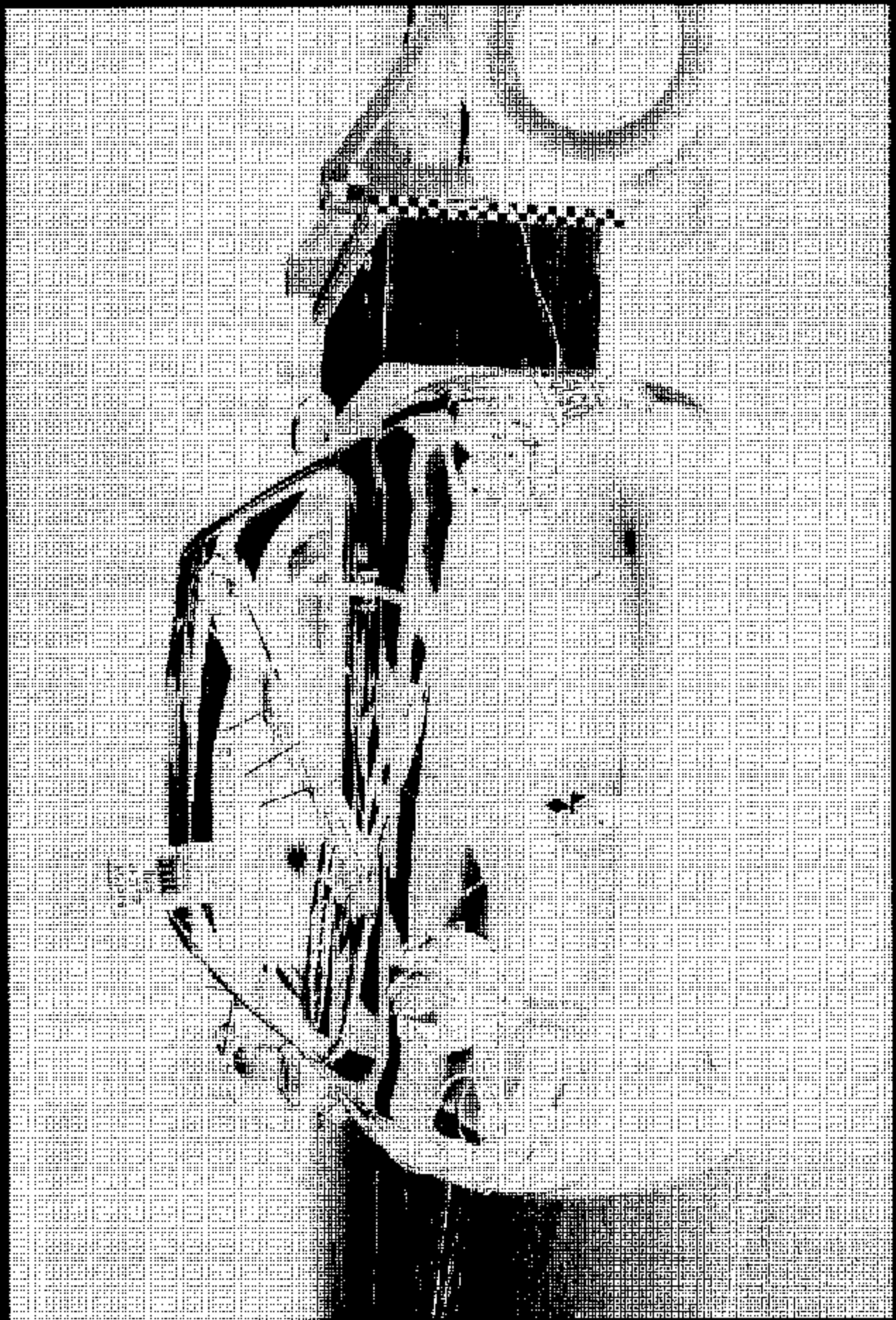
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A-1 Pre-Test Front View of Test Vehicle

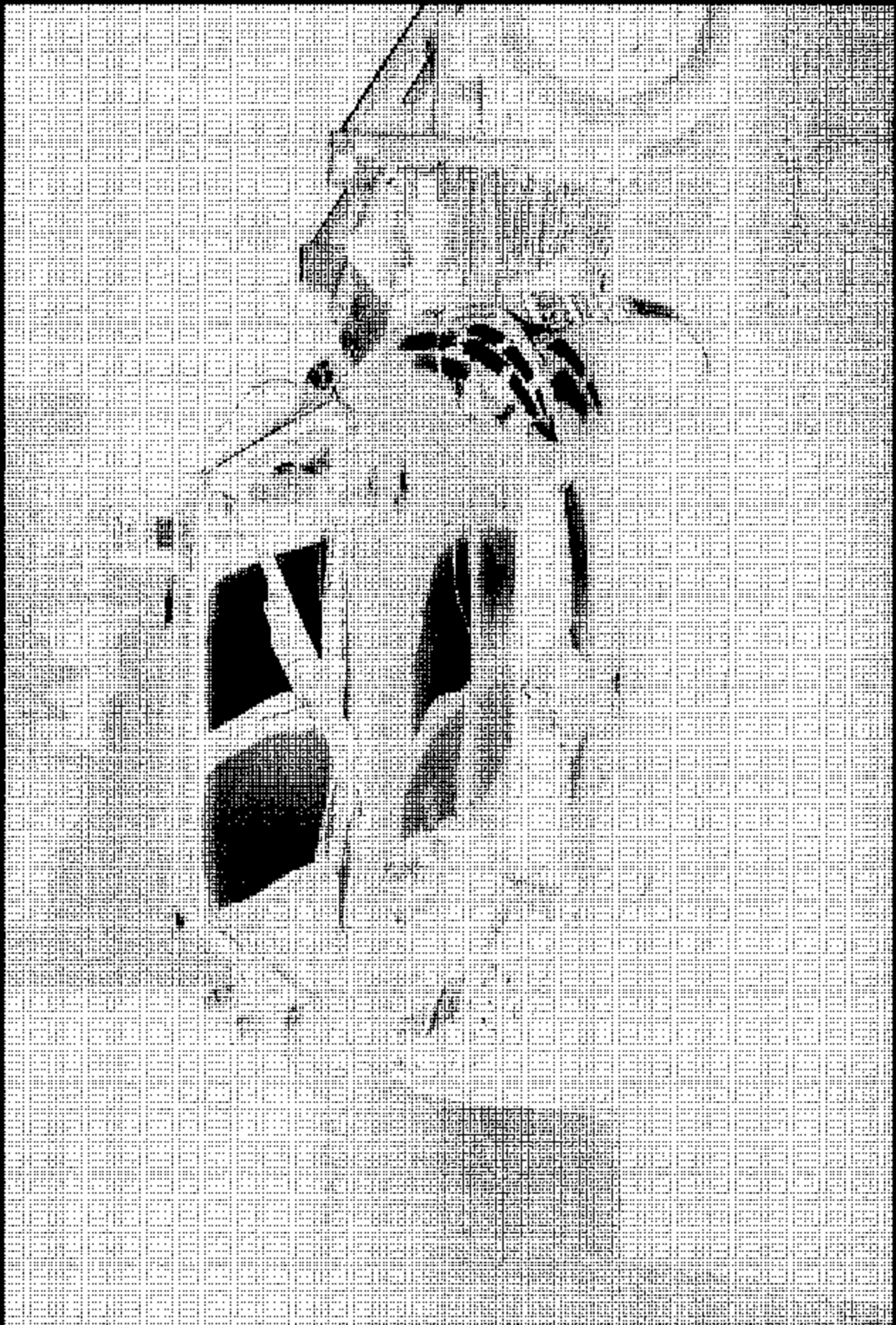


Figure A-2 Post-Test Front View of Test Vehicle

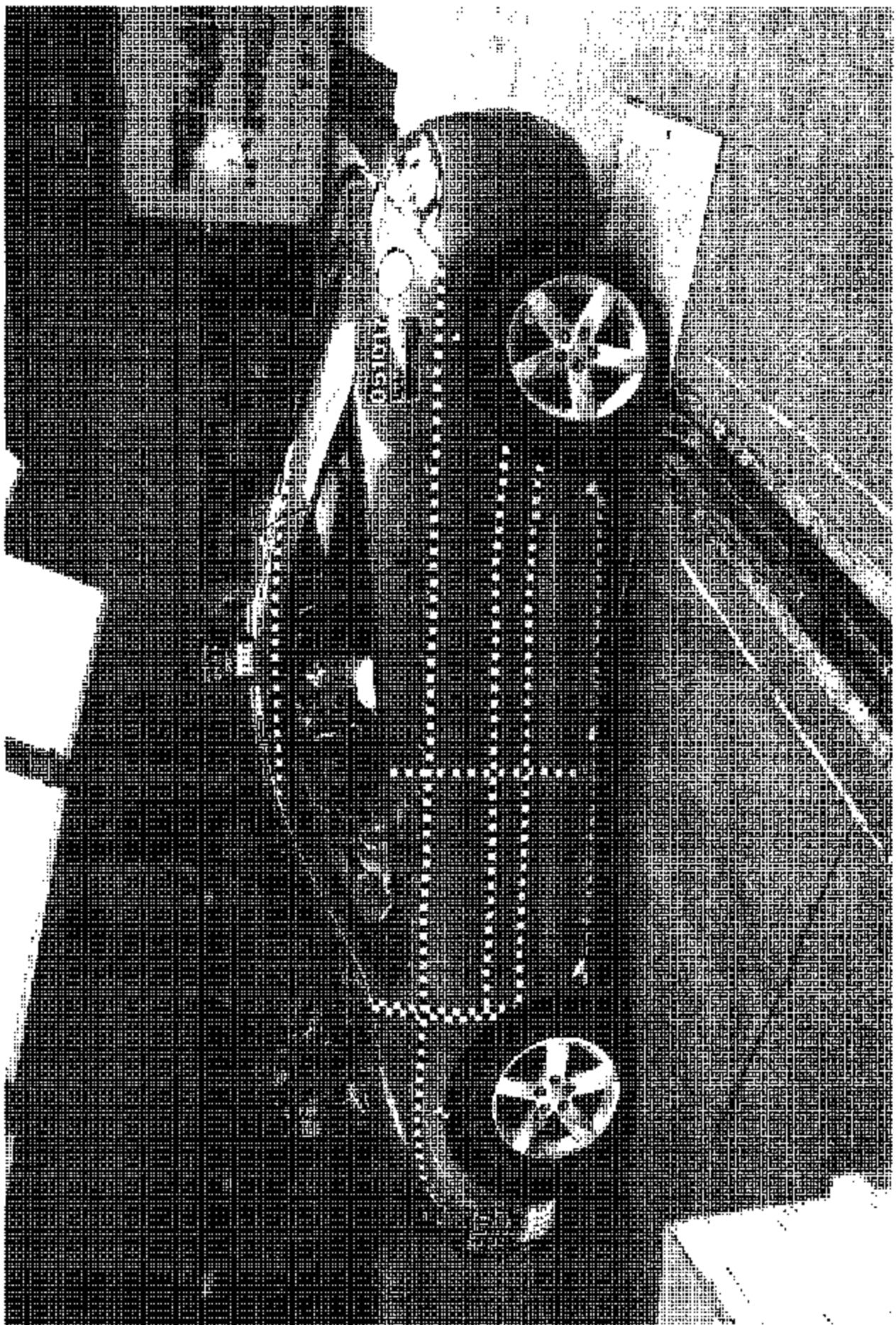


Figure A-3 Pre-Test Impacted Side View of Test Vehicle

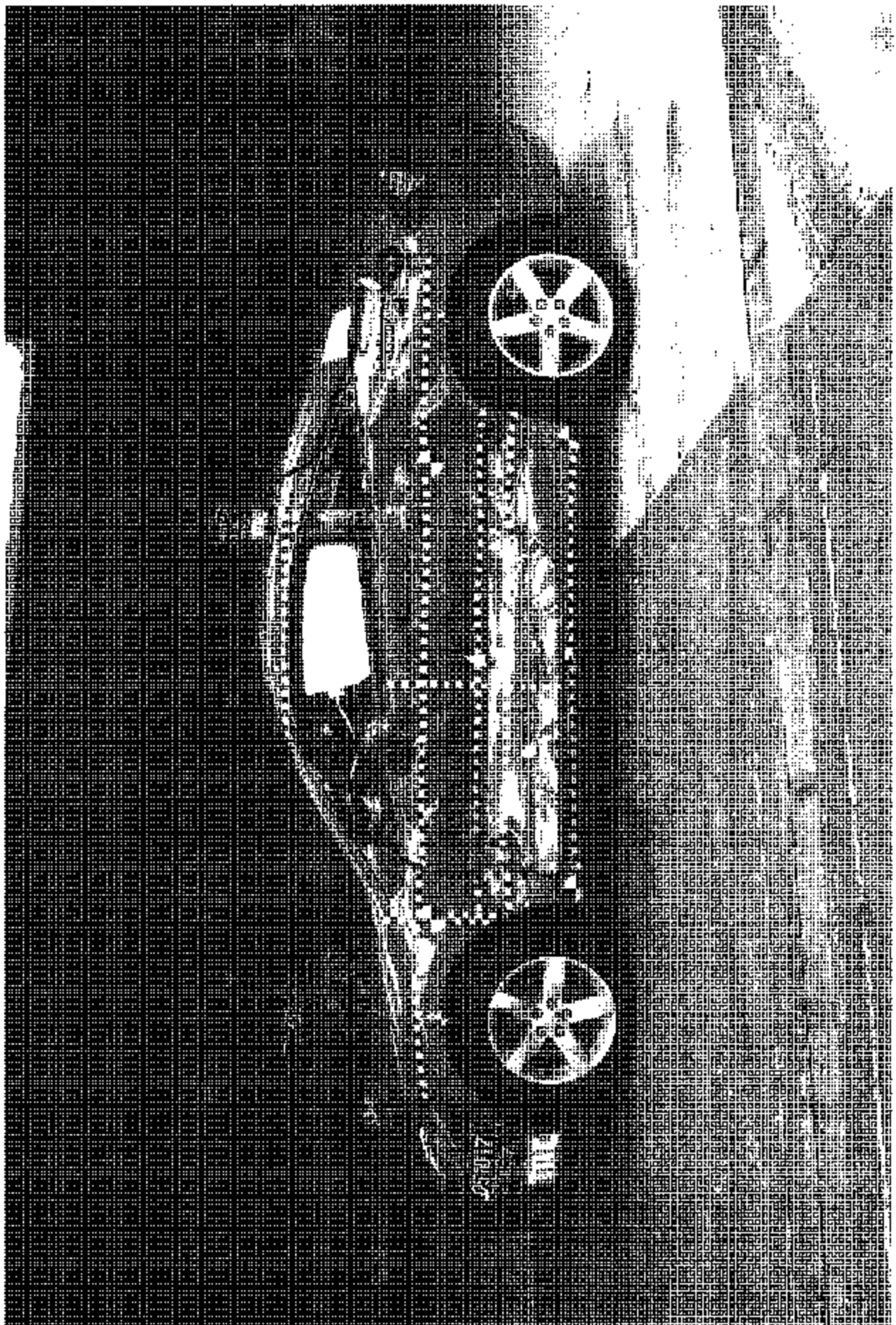


Figure A-4 Post-Test Impacted Side View of Test Vehicle

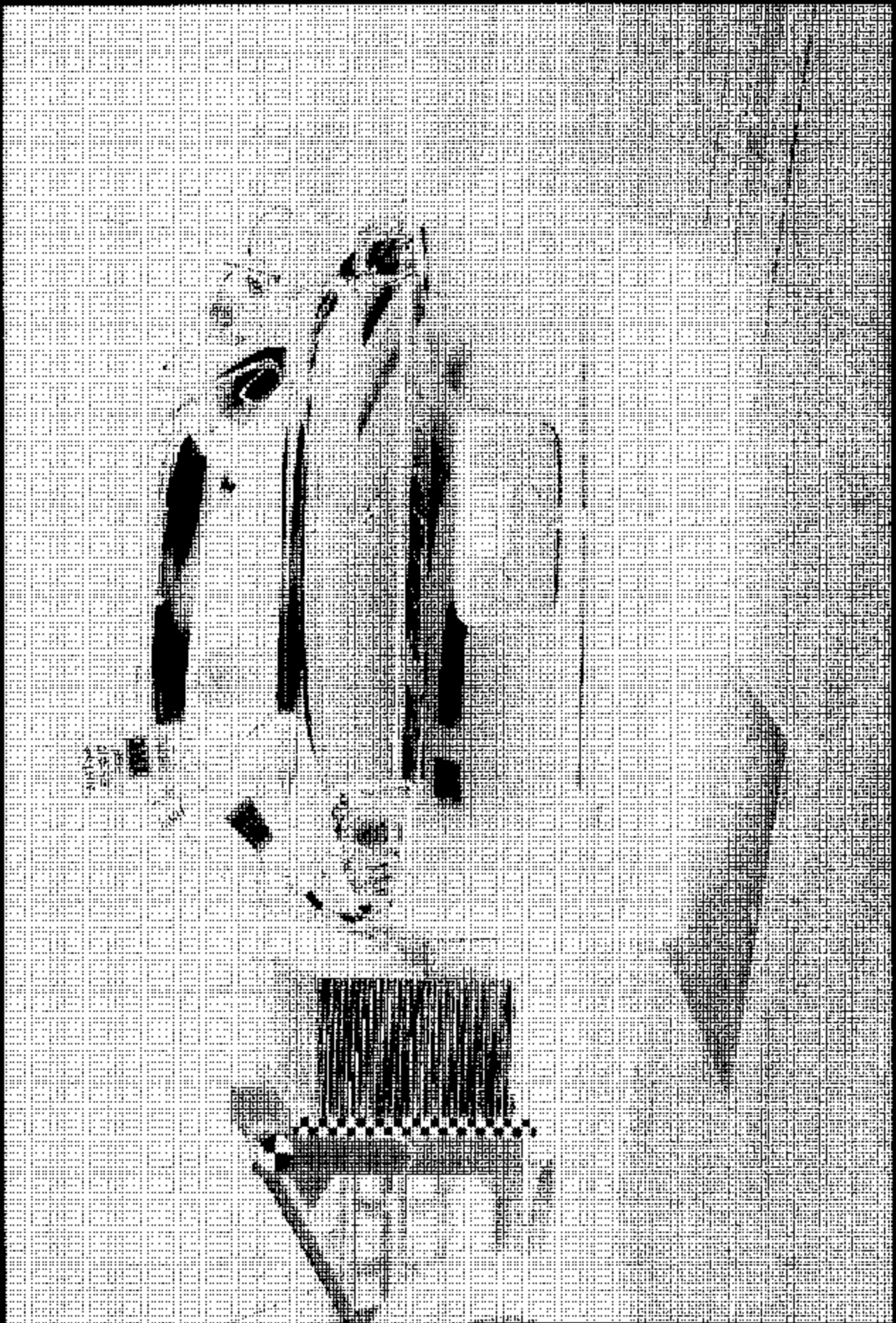


Figure A-5 Pre-Test Rear View of Test Vehicle

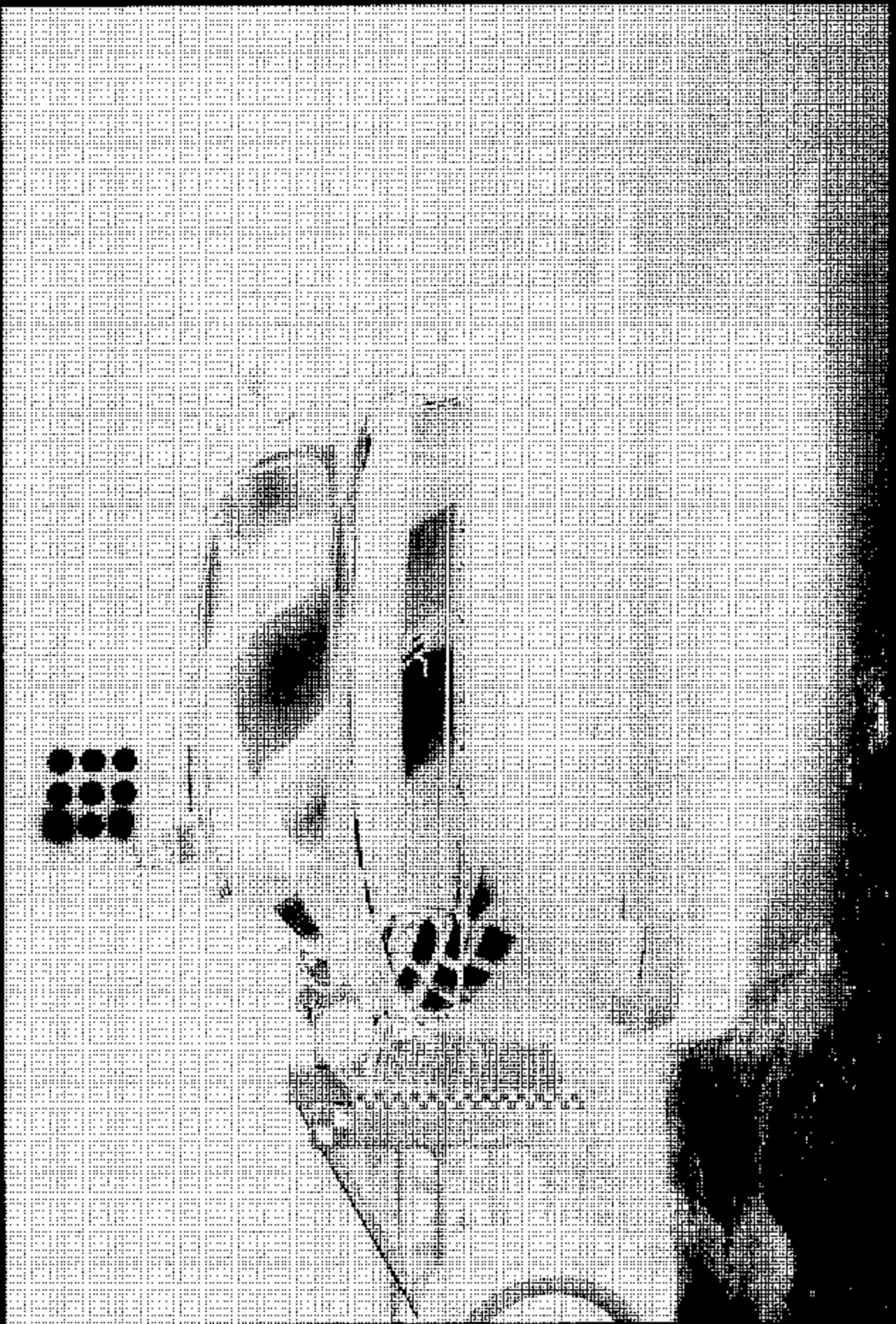


Figure A-6 Post-Test Rear View of Test Vehicle

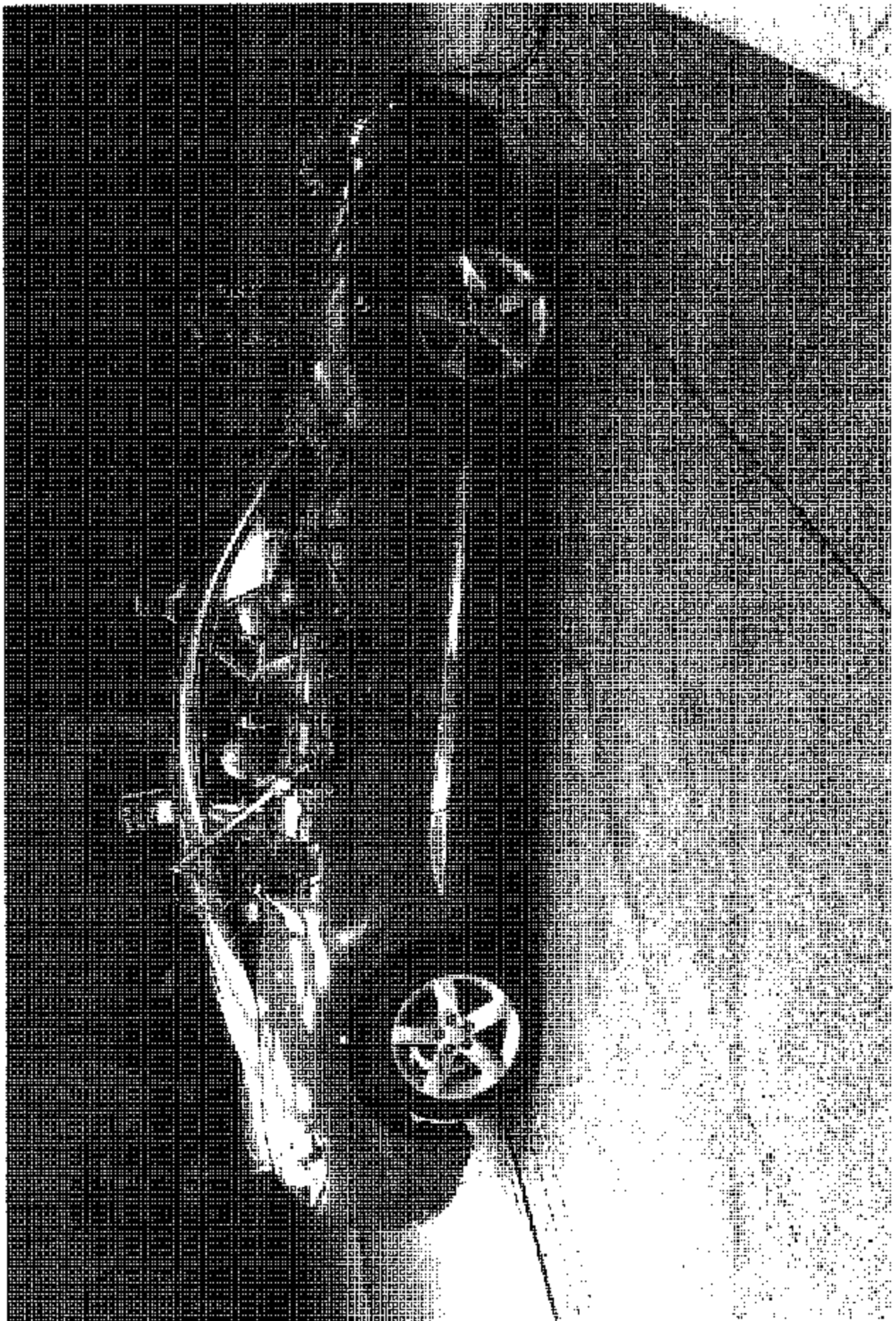


Figure A-7 Pre-Test Right Side View of Test Vehicle



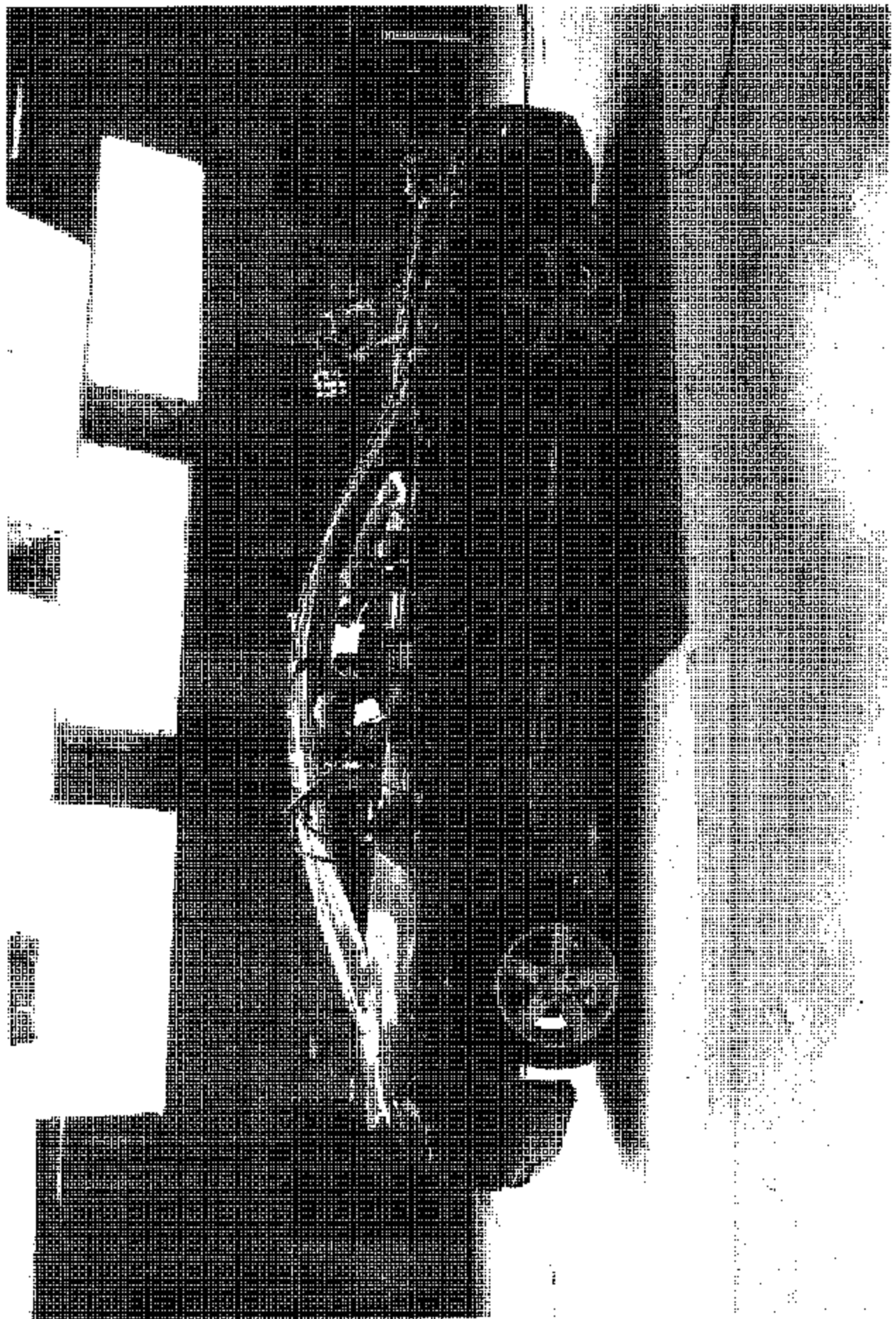


Figure A-8 Post-Test Right Side View of Test Vehicle

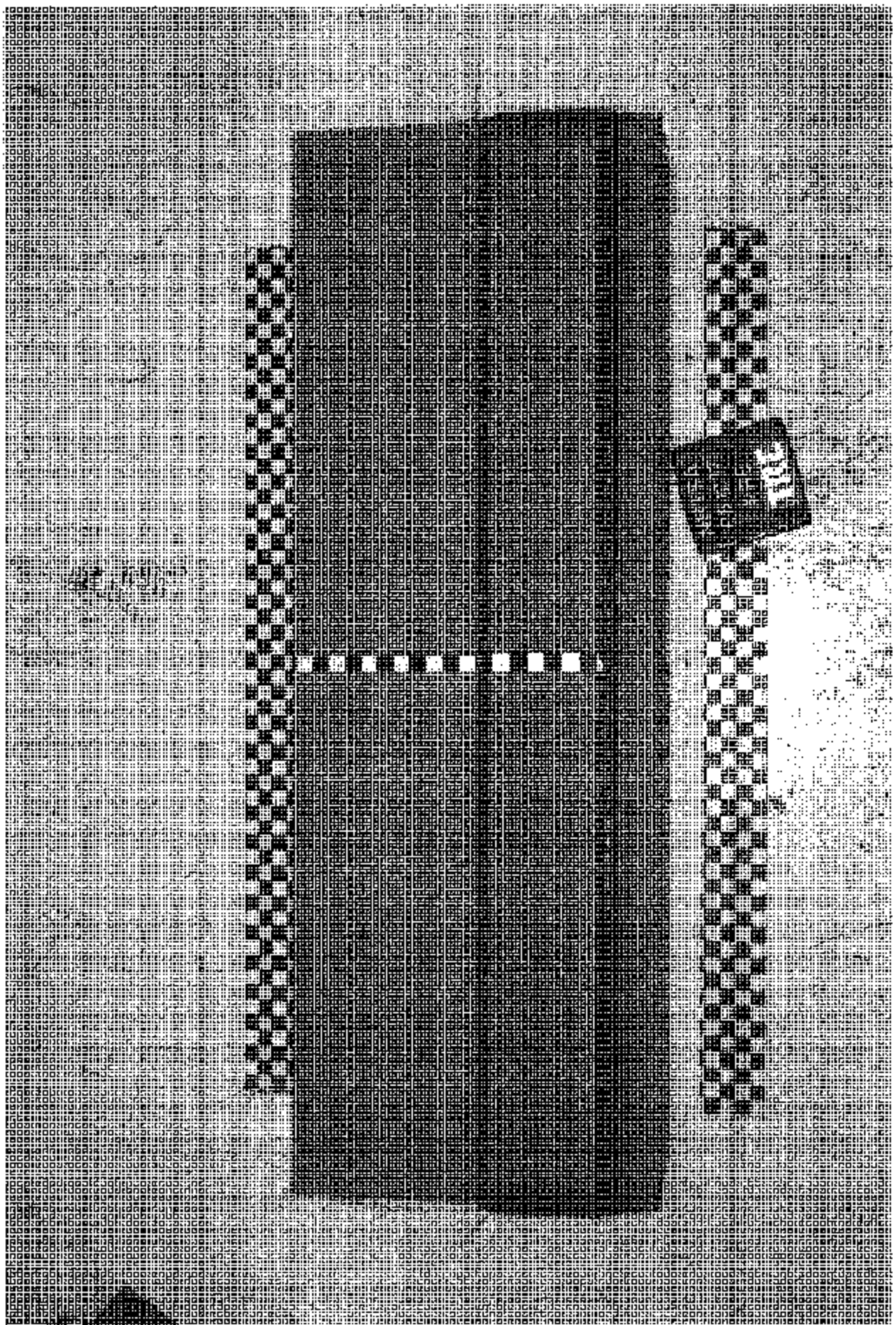


Figure A-9 Pre-Test Frontal View of Impactor Face

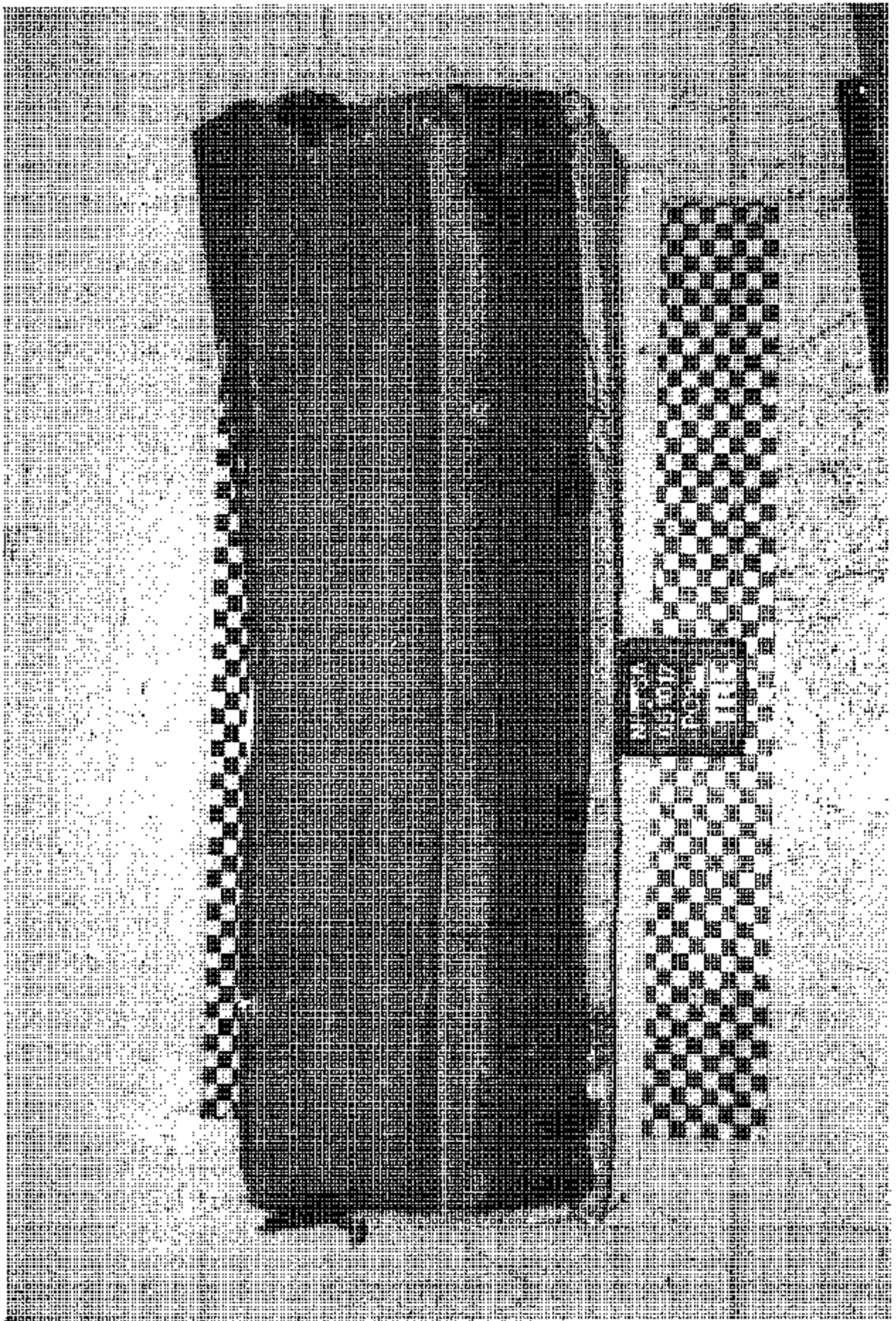


Figure A-10 Post-Test Frontal View of Impactor Face

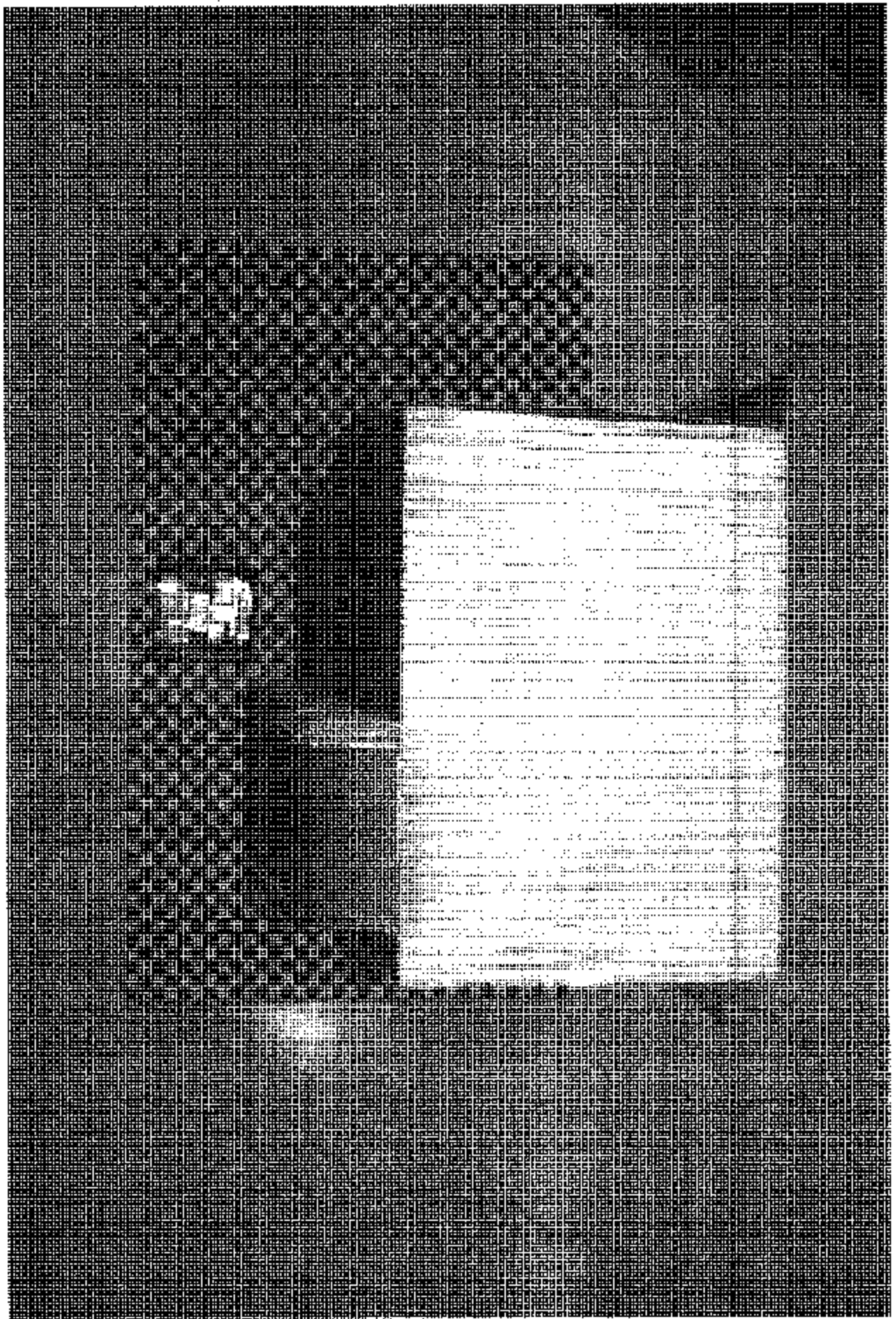


Figure A-11 Pre-Test Left Side View of Impactor Face

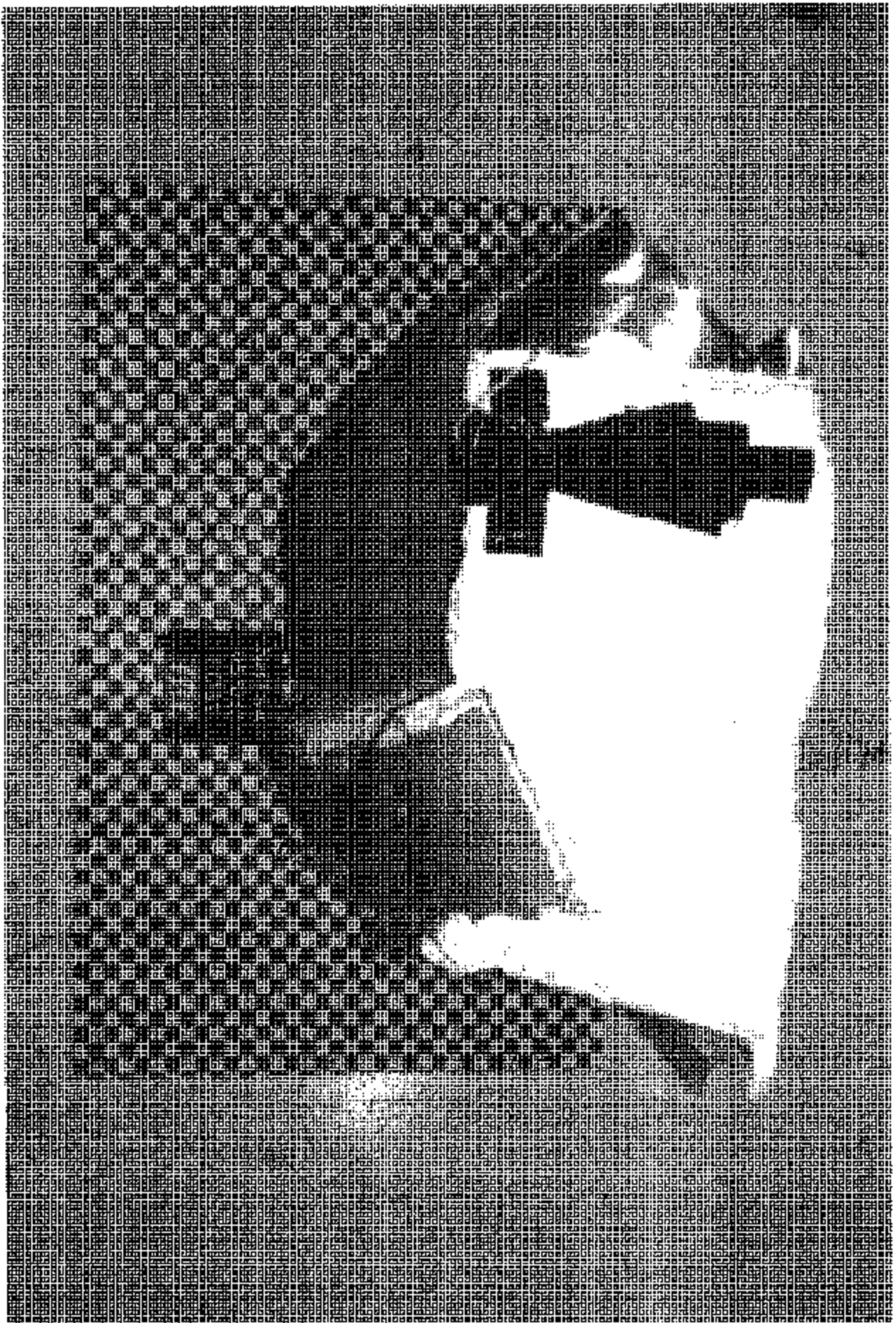


Figure A-12 Post-Test Left Side View of Impactor Face

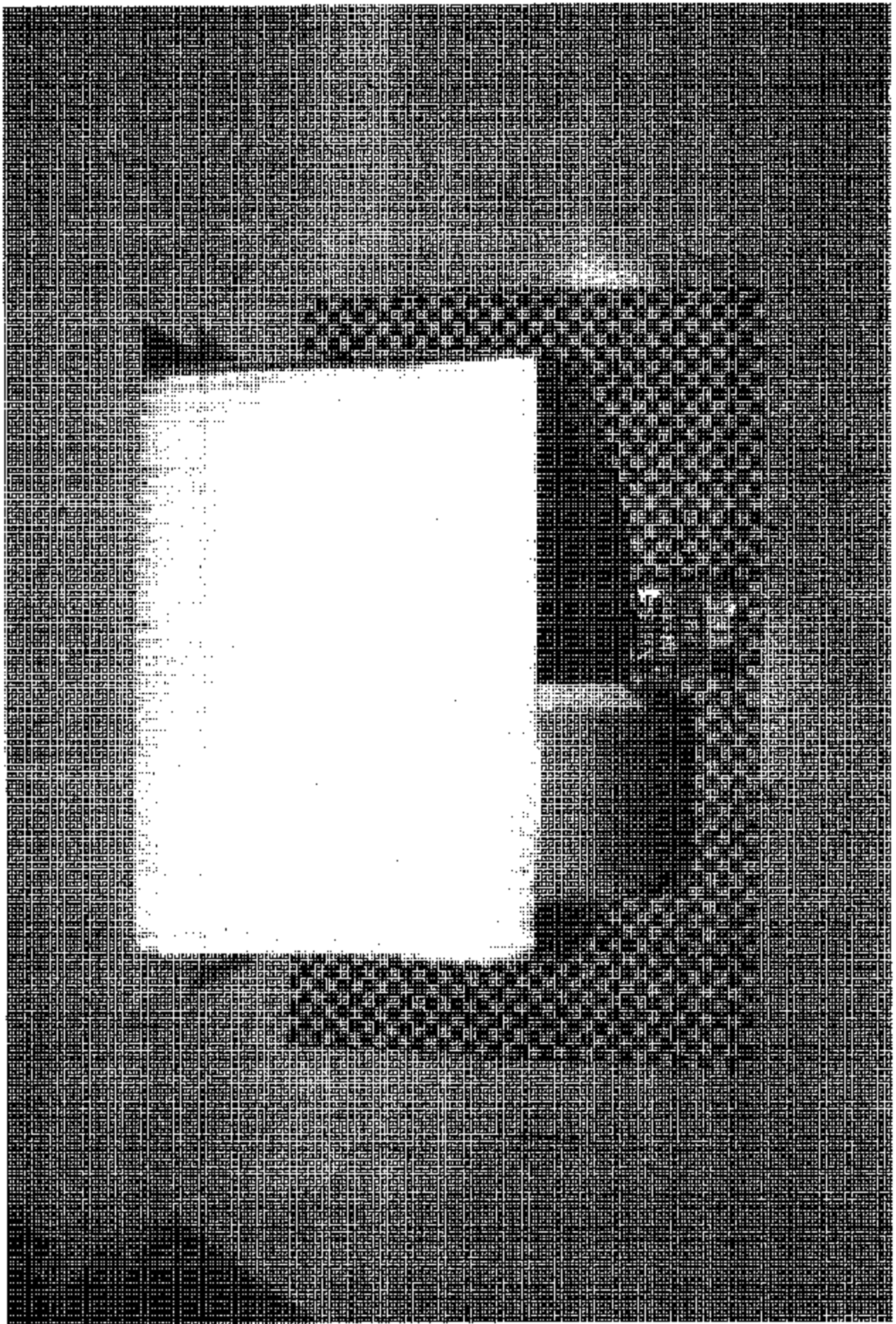


Figure A-13 Pre-Test Right Side View of Impactor Face

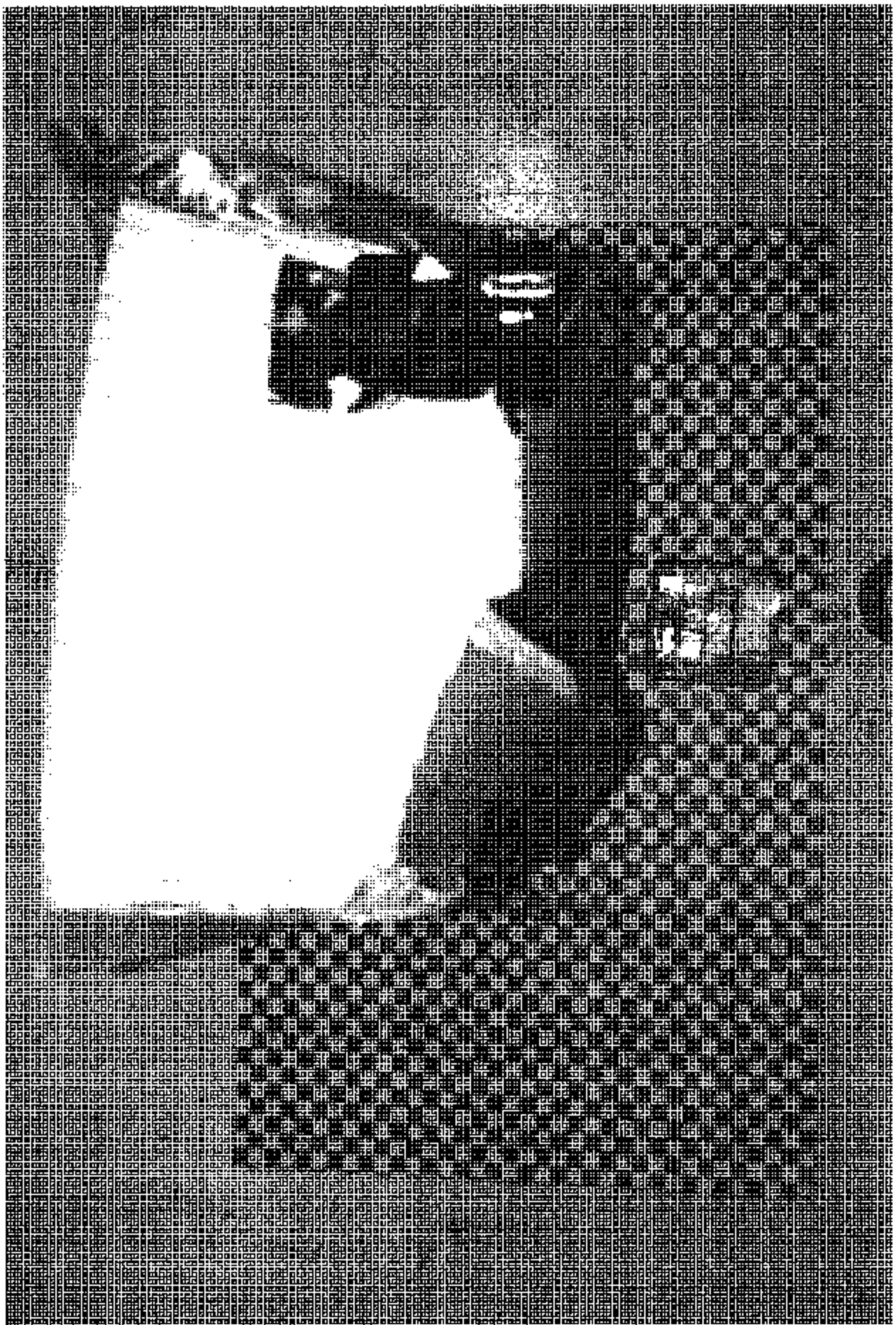


Figure A-14 Post-Test Right Side View of Impactor Face

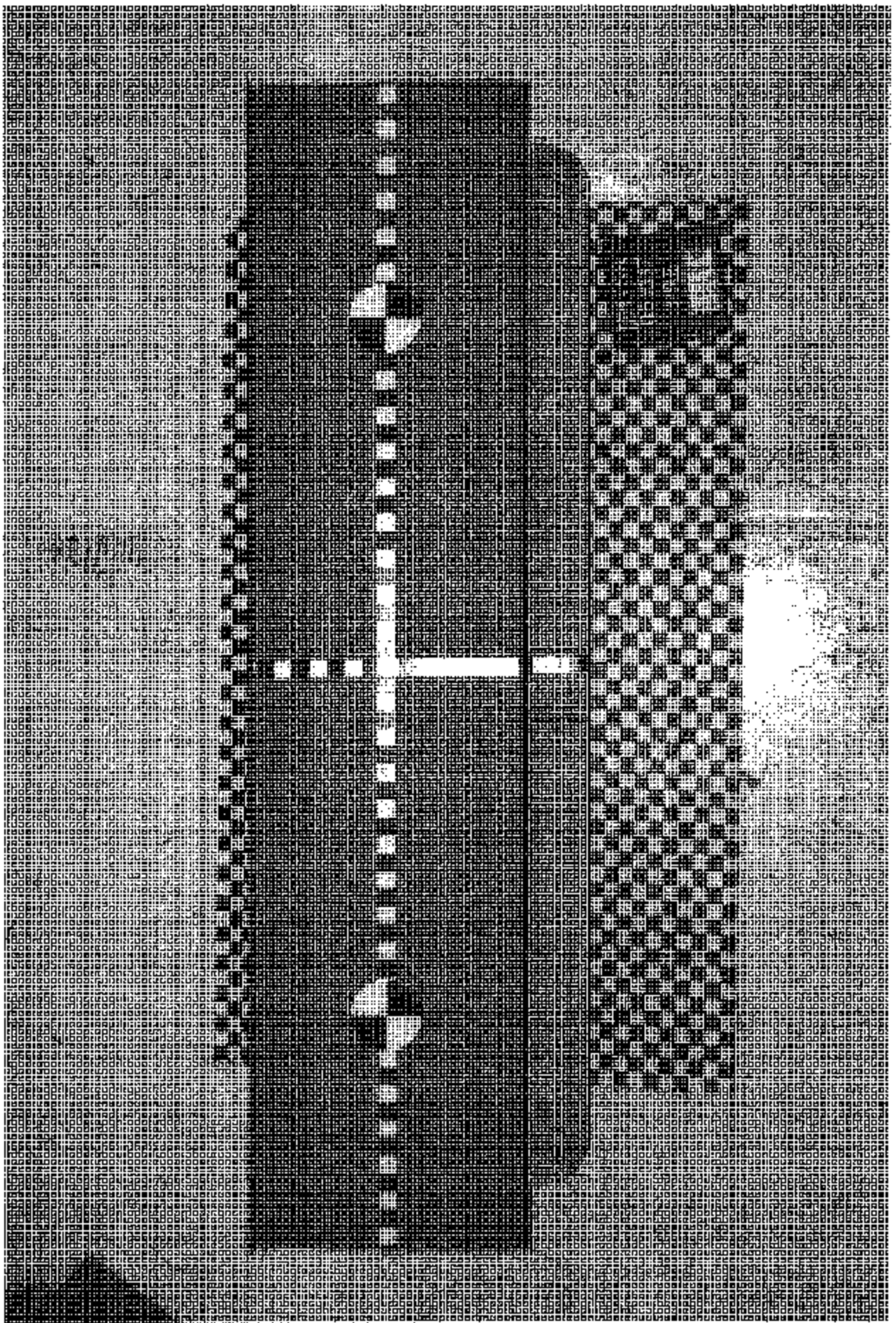


Figure A-15 Pre-Test Top View of Impactor Face



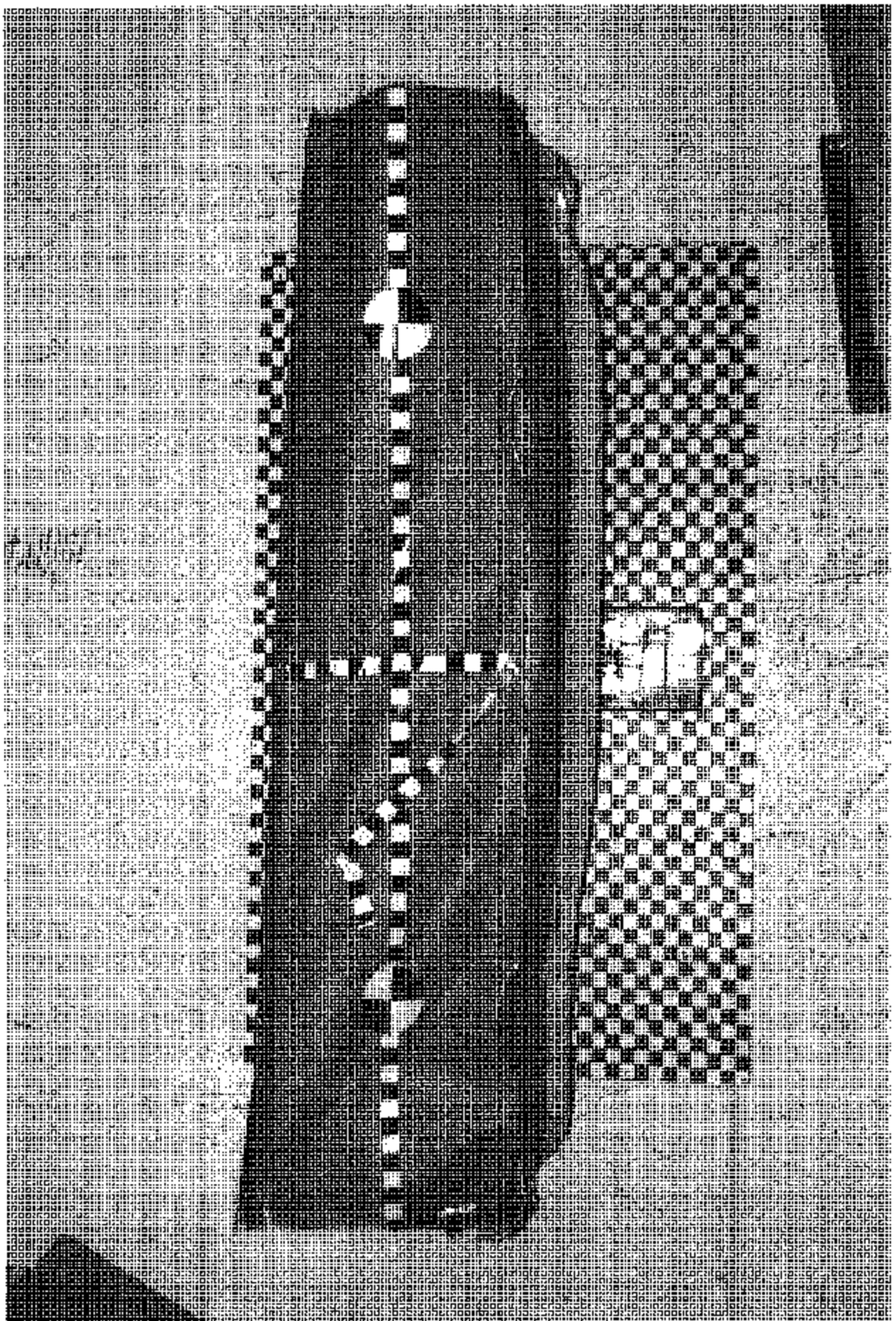


Figure A-16 Post-Test Top View of Impactor Face

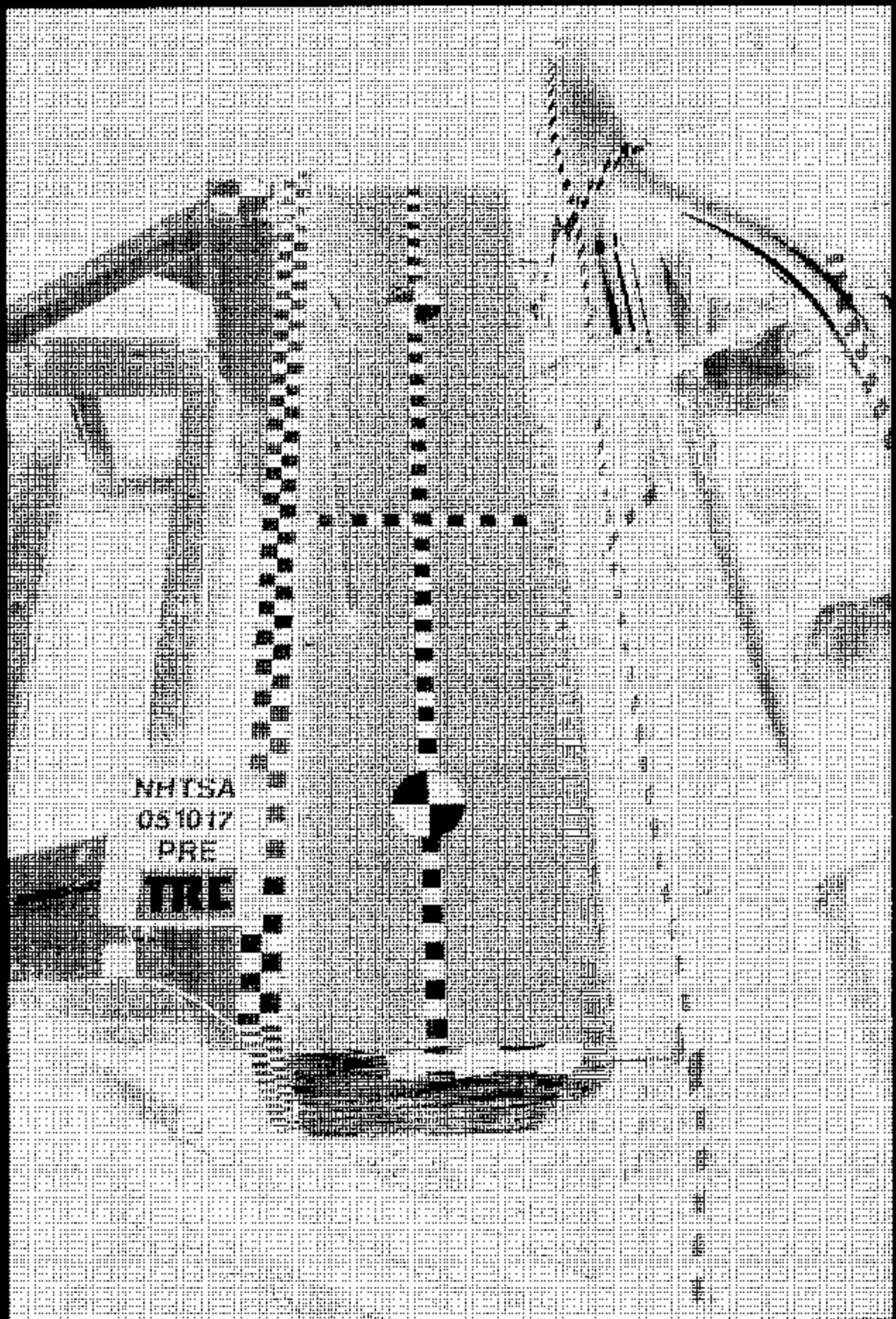


Figure A-17 Pre-Test Overhead View of MDB Aligned with Vehicle

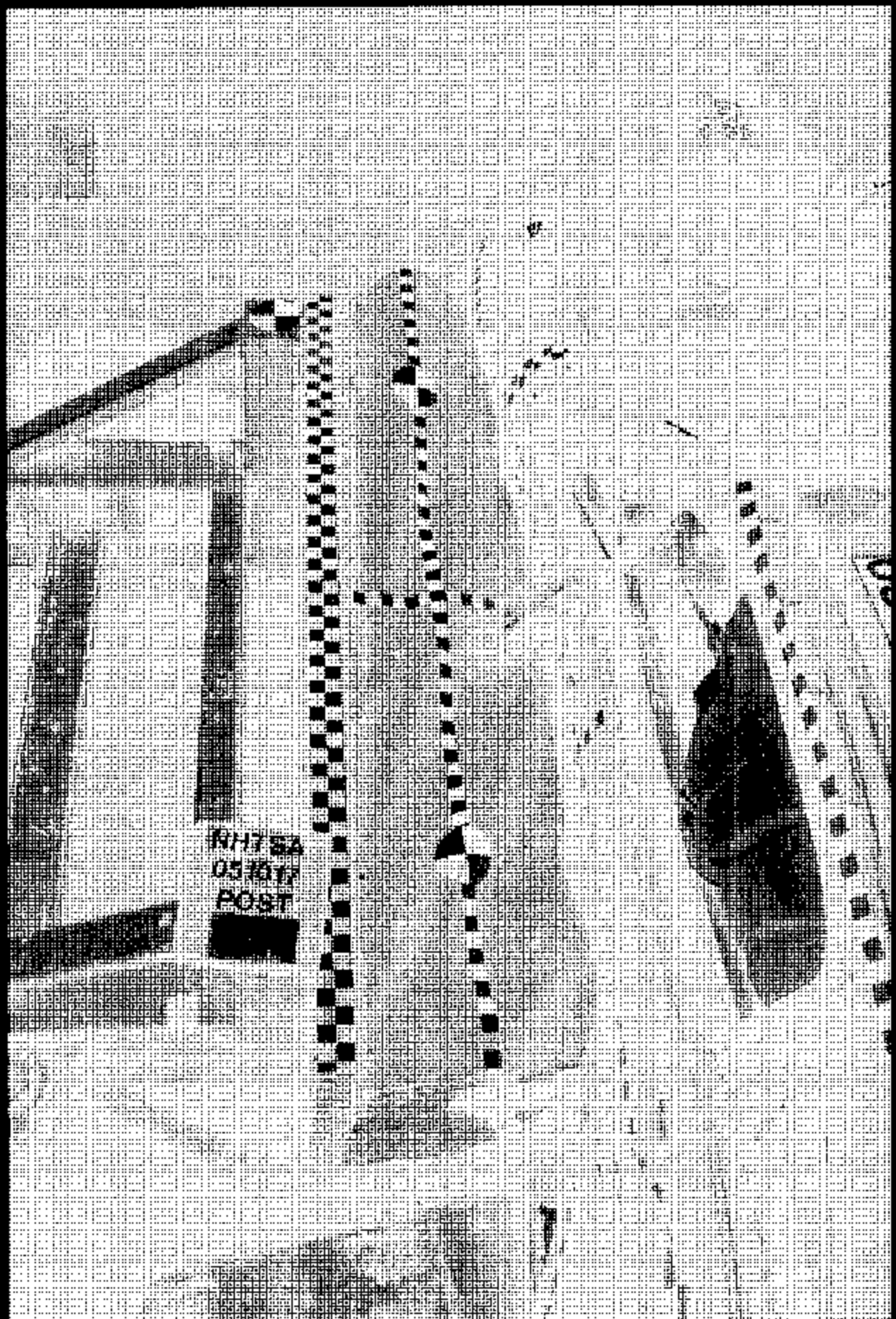


Figure A-18 Post-Test Overhead View of MDB and Vehicle

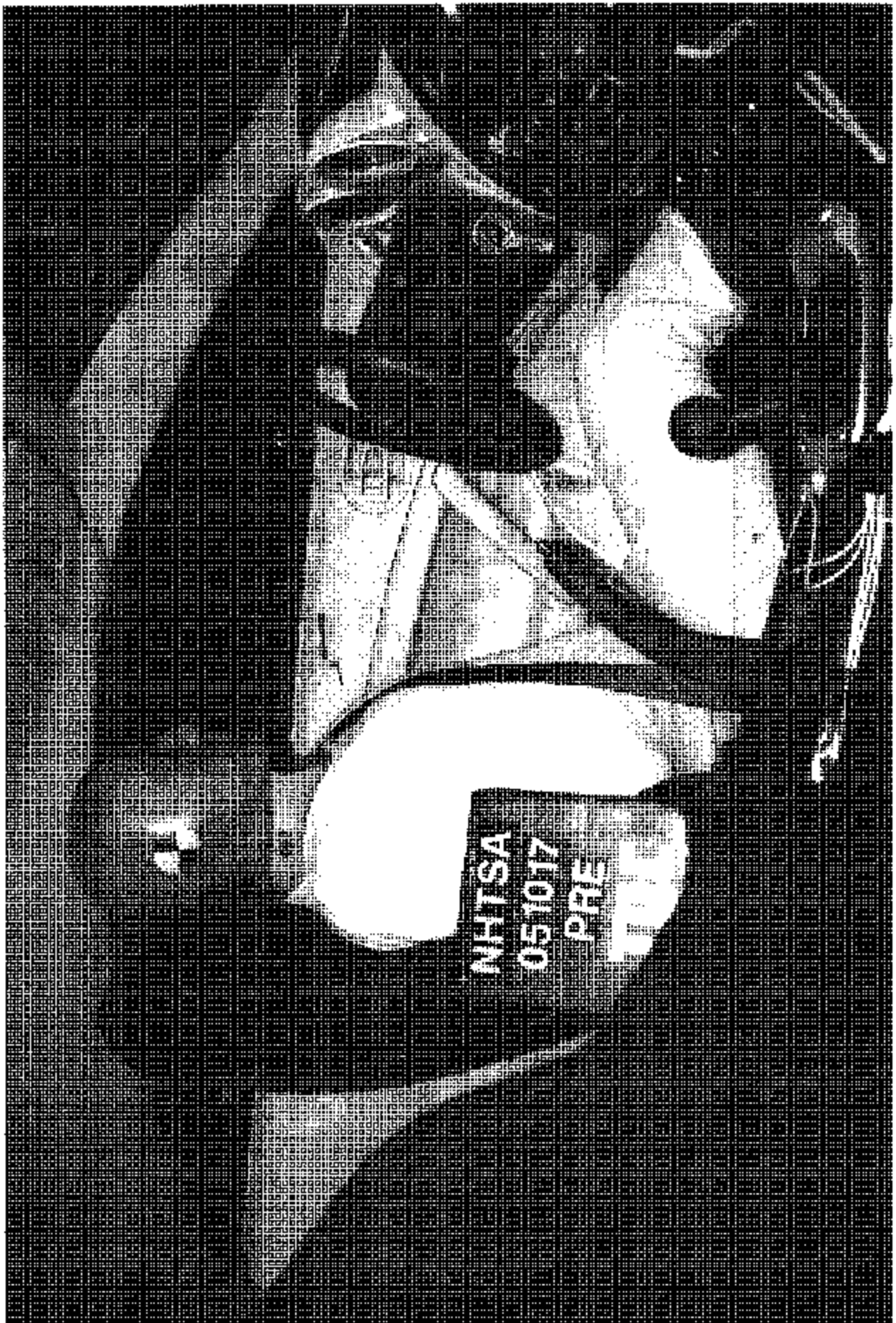
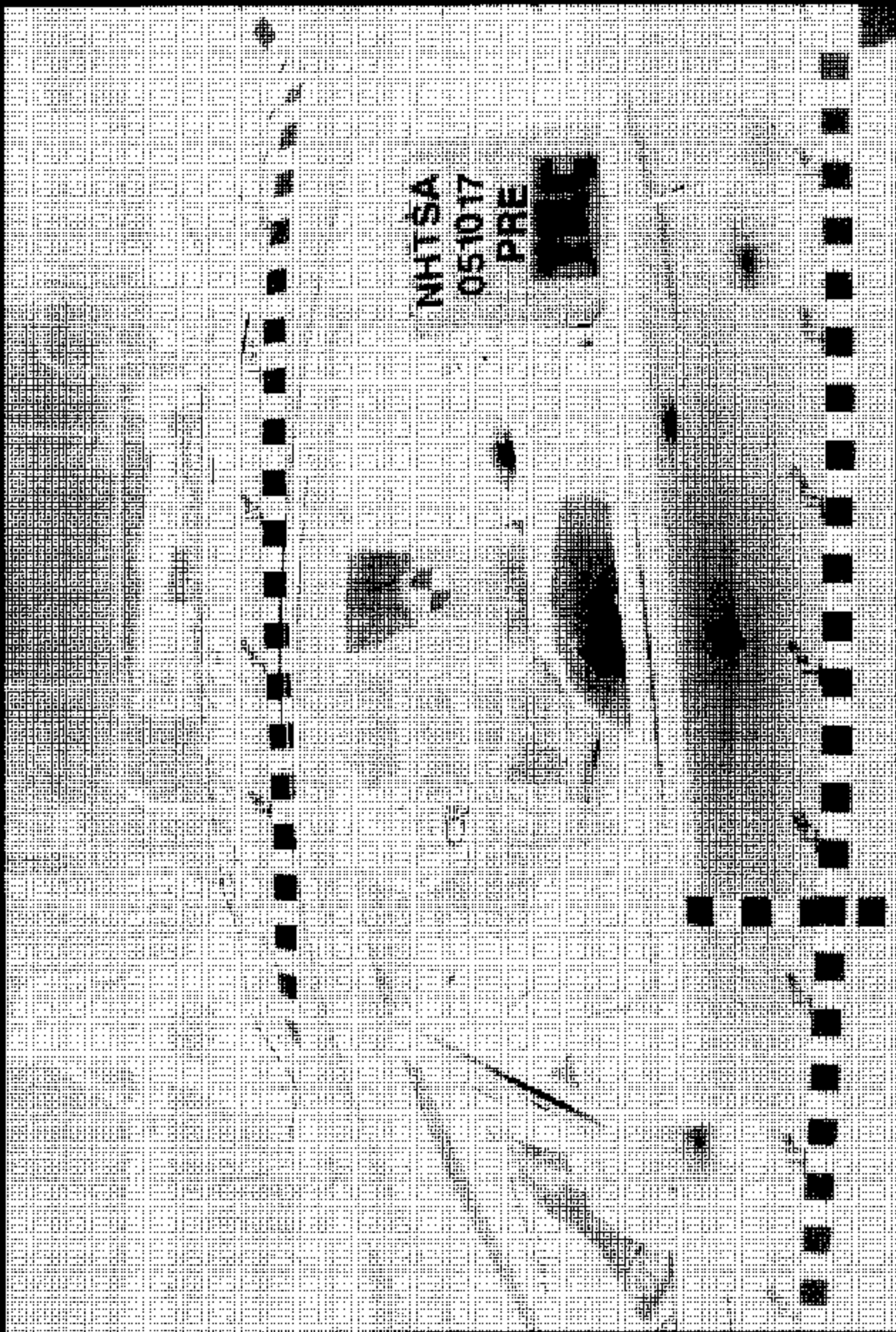


Figure A-19 Pre-Test Right Occupant Compartment View of Front SID



Figure A-20 Post-Test Right Occupant Compartment View of Front SID



NHTSA  
051017  
PRE

Figure A-21 Pre-Test Left View of Front SID

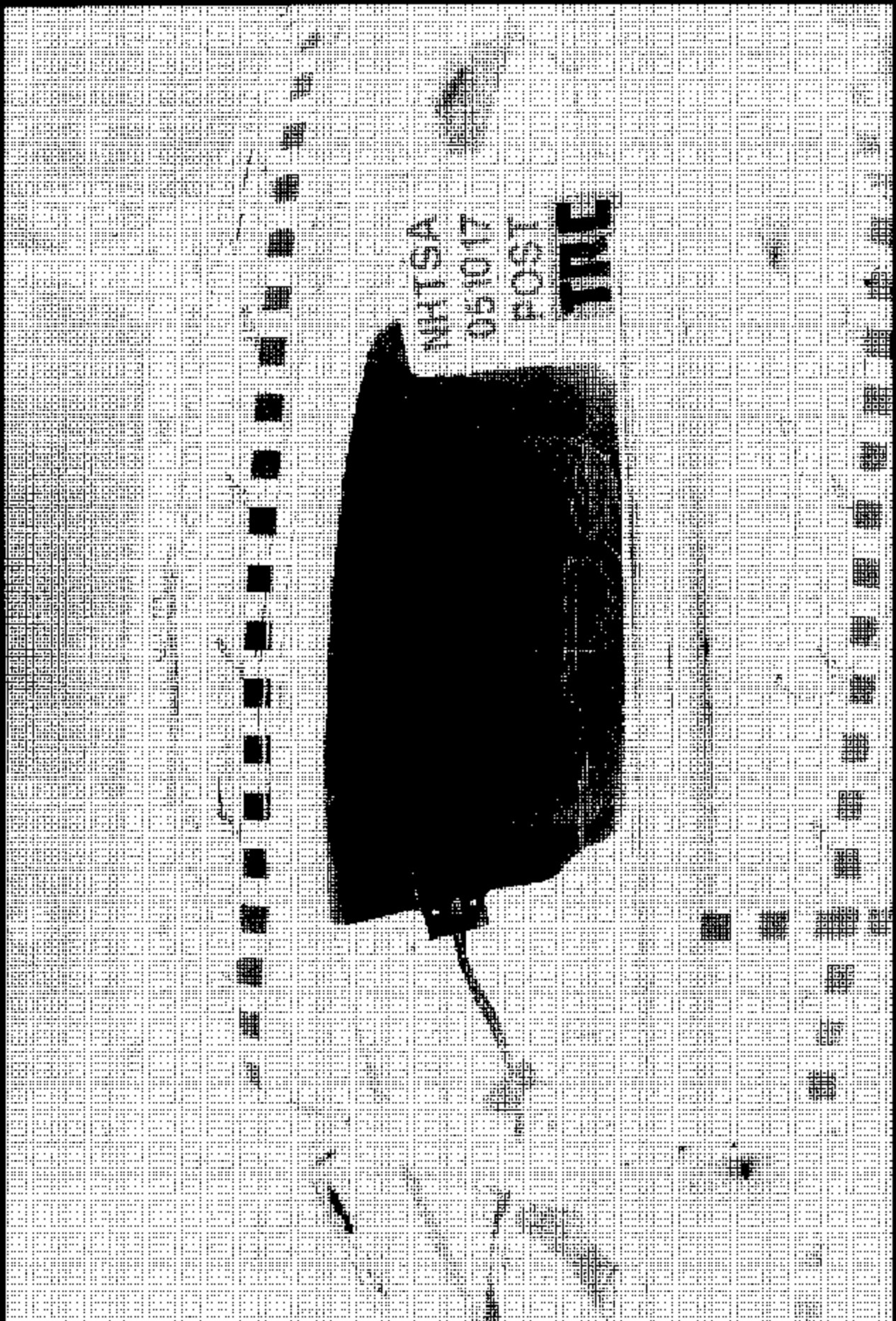


Figure A-23 Post-Test Left View of Front SID

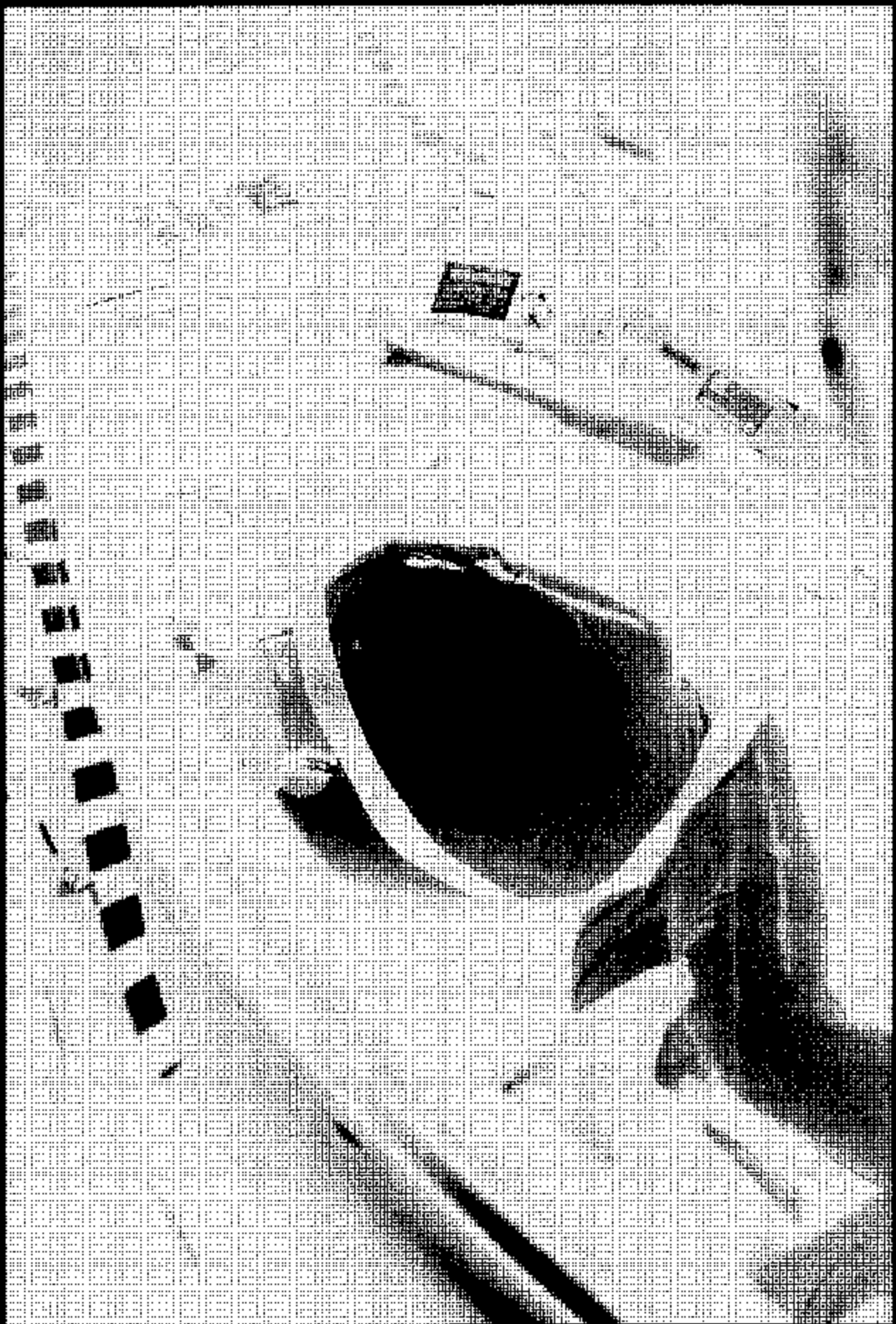


Figure A-23 Pre-Test Left View of Front SID and Belt Position



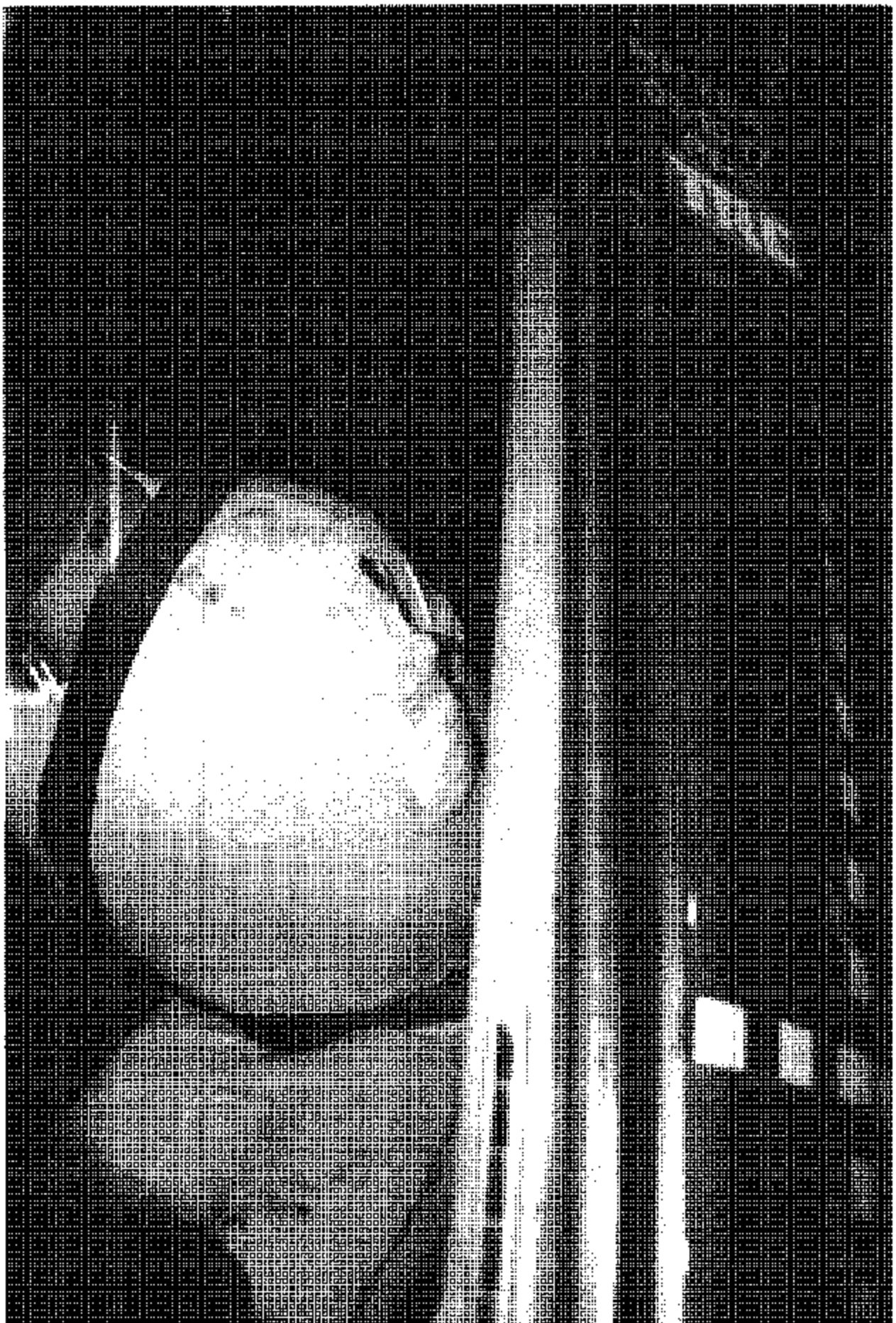


Figure A-24 Pre-Test Left View of Front SID and Door Clearance



Figure A-25 Post-Test Left View of Front SID and Door Clearance

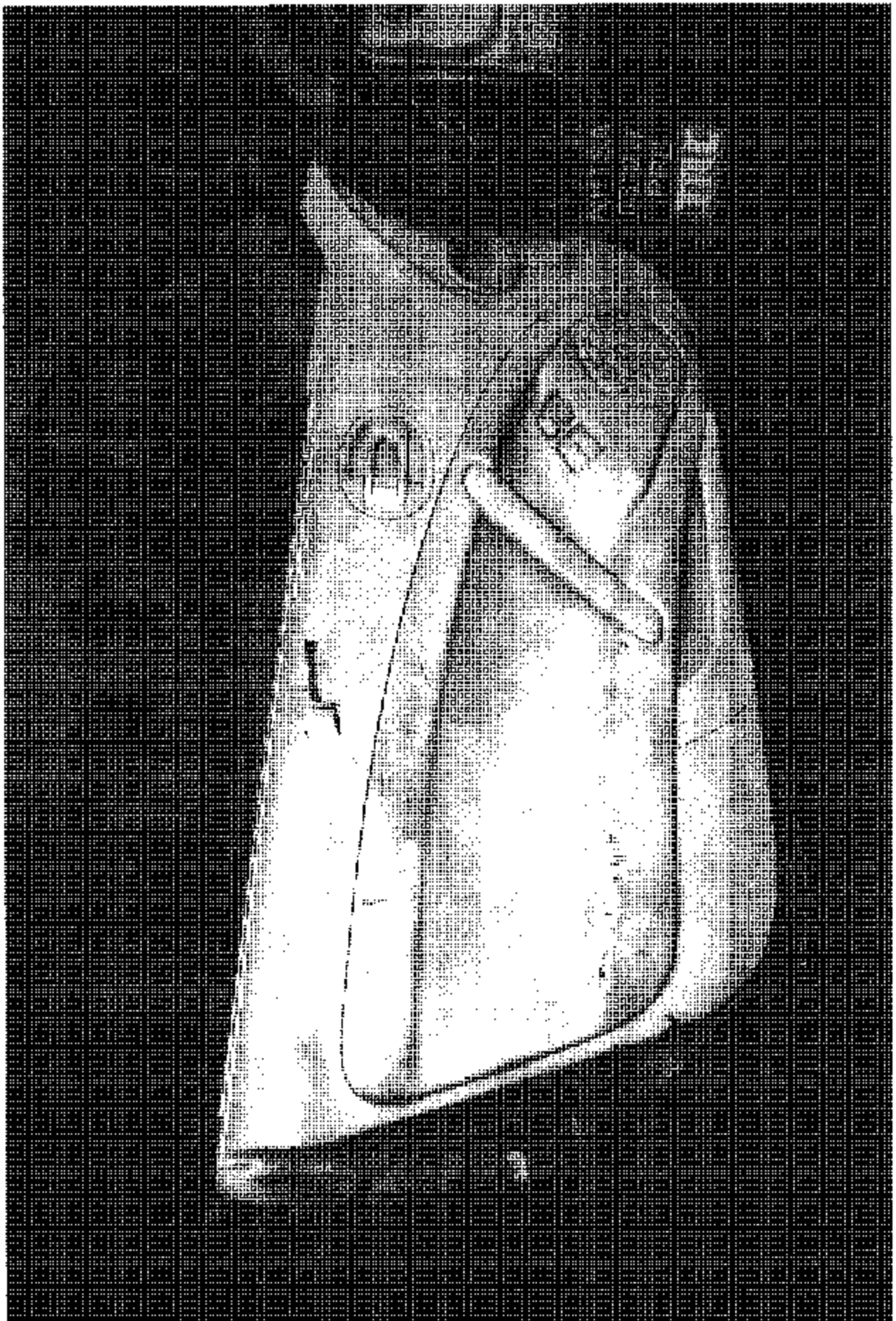


Figure A-26 Pre-Test Interior of Front Door



Figure A-27 Post-Test Interior of Front Door Showing SID Impact Locations

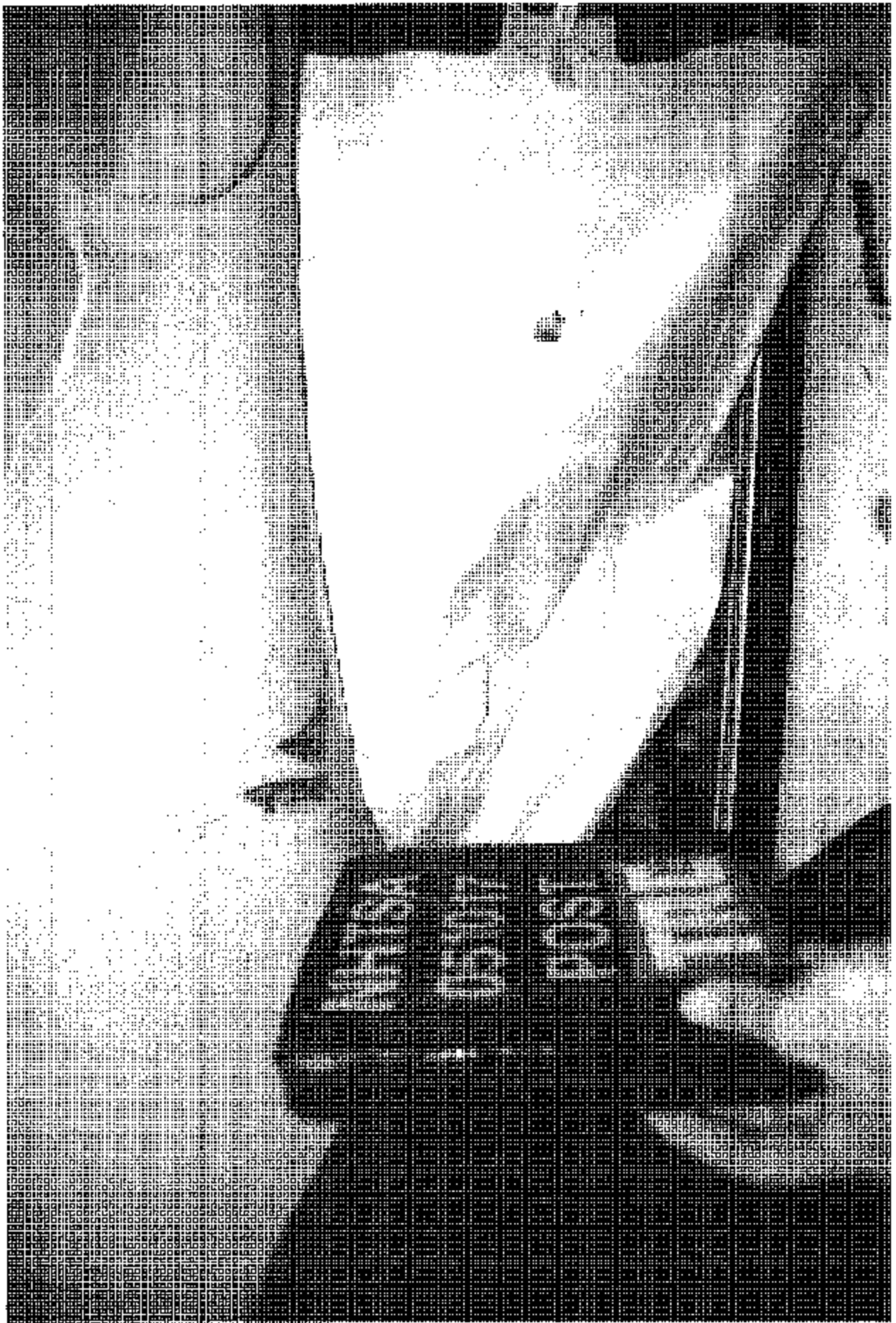


Figure A-28 Post-Test Front SID Contact - View 1



Figure A-29 Post-Test Front SID Contact - View 2

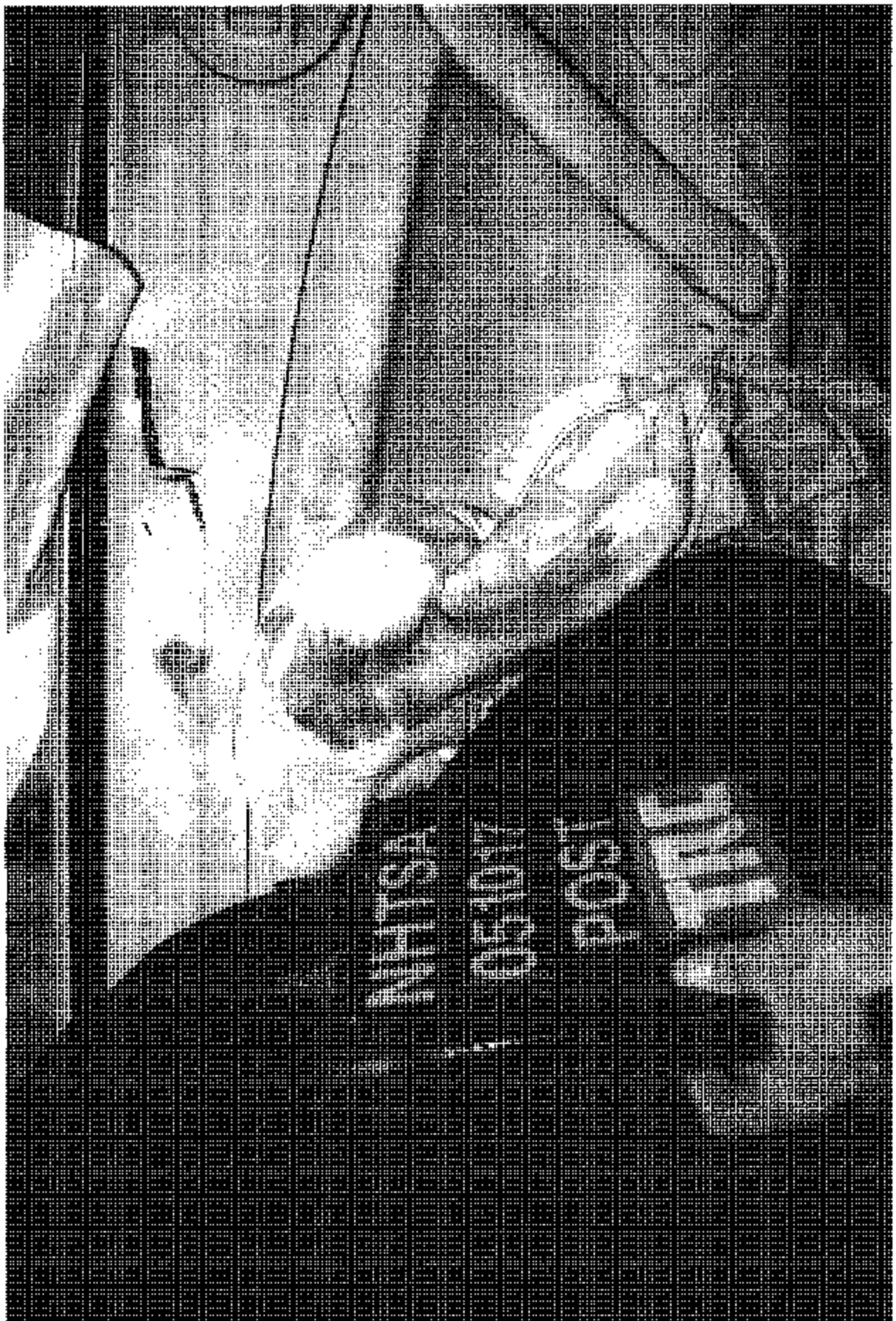


Figure A-30 Post-Test Front SID Contact - View 3

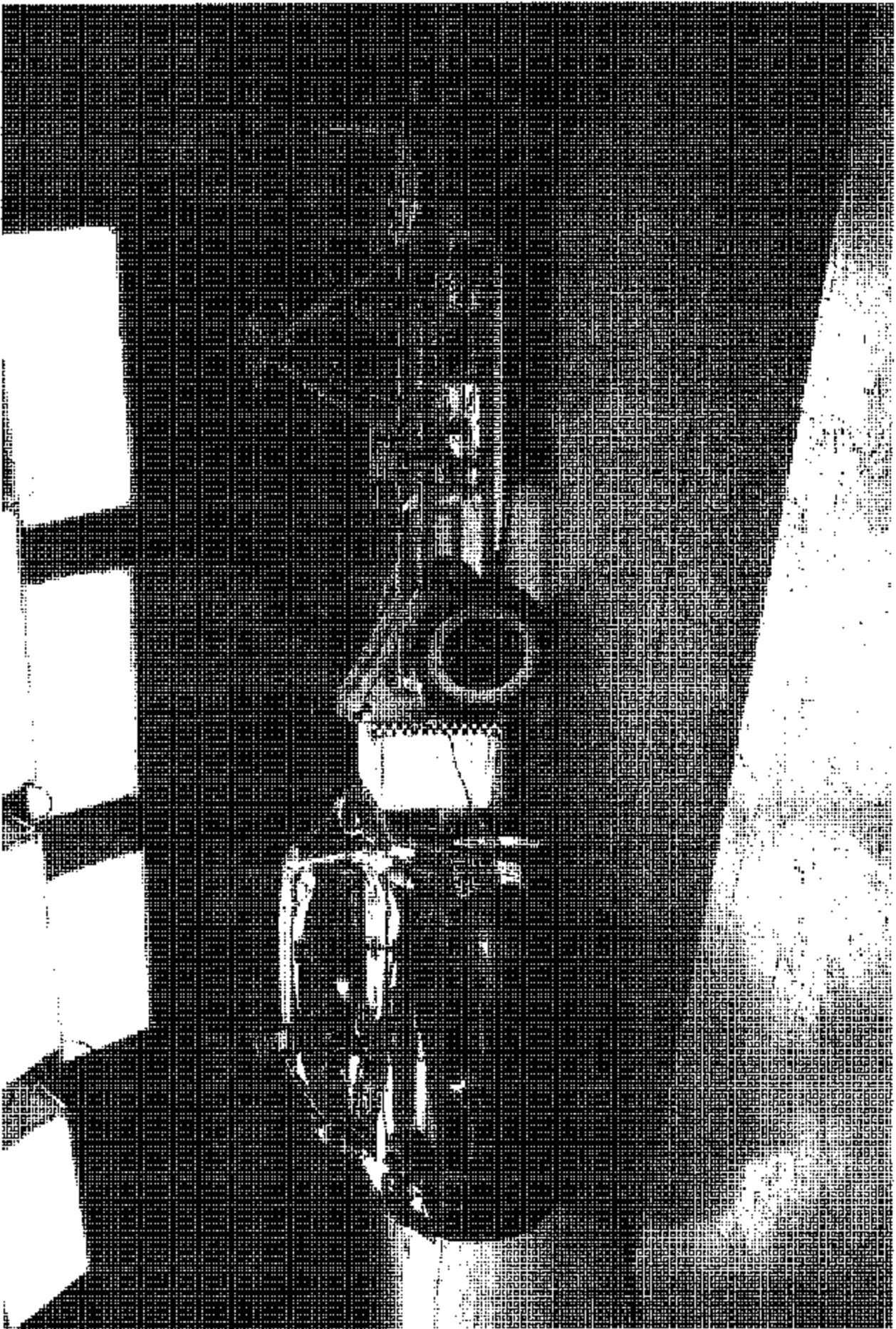


Figure A-31 Pre-Test Left Side View of MDB With Impactor Face in Position



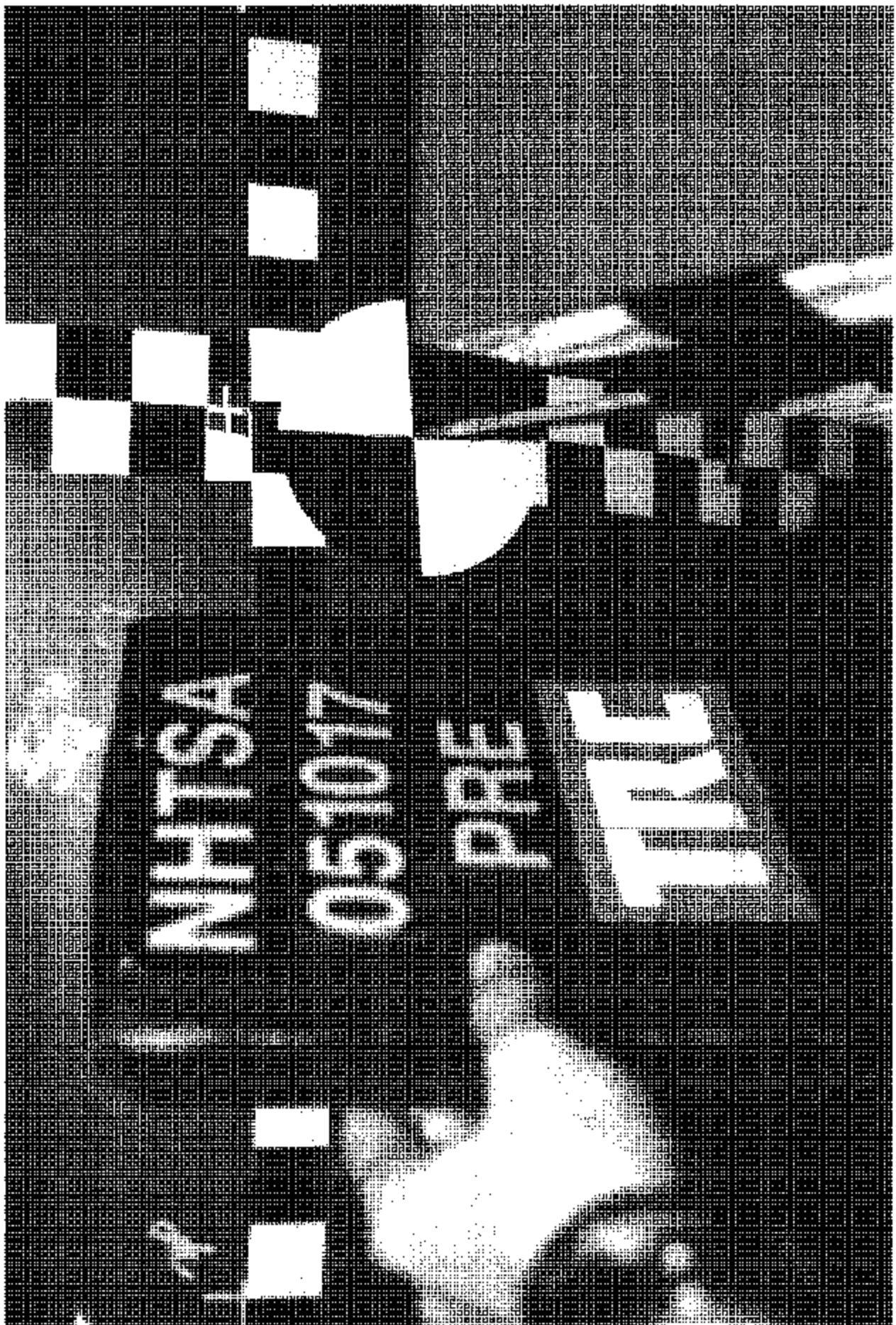


Figure A-32 Pre-Test Primary Impact Point View



Figure A-33 Post-Test Primary Impact Point View

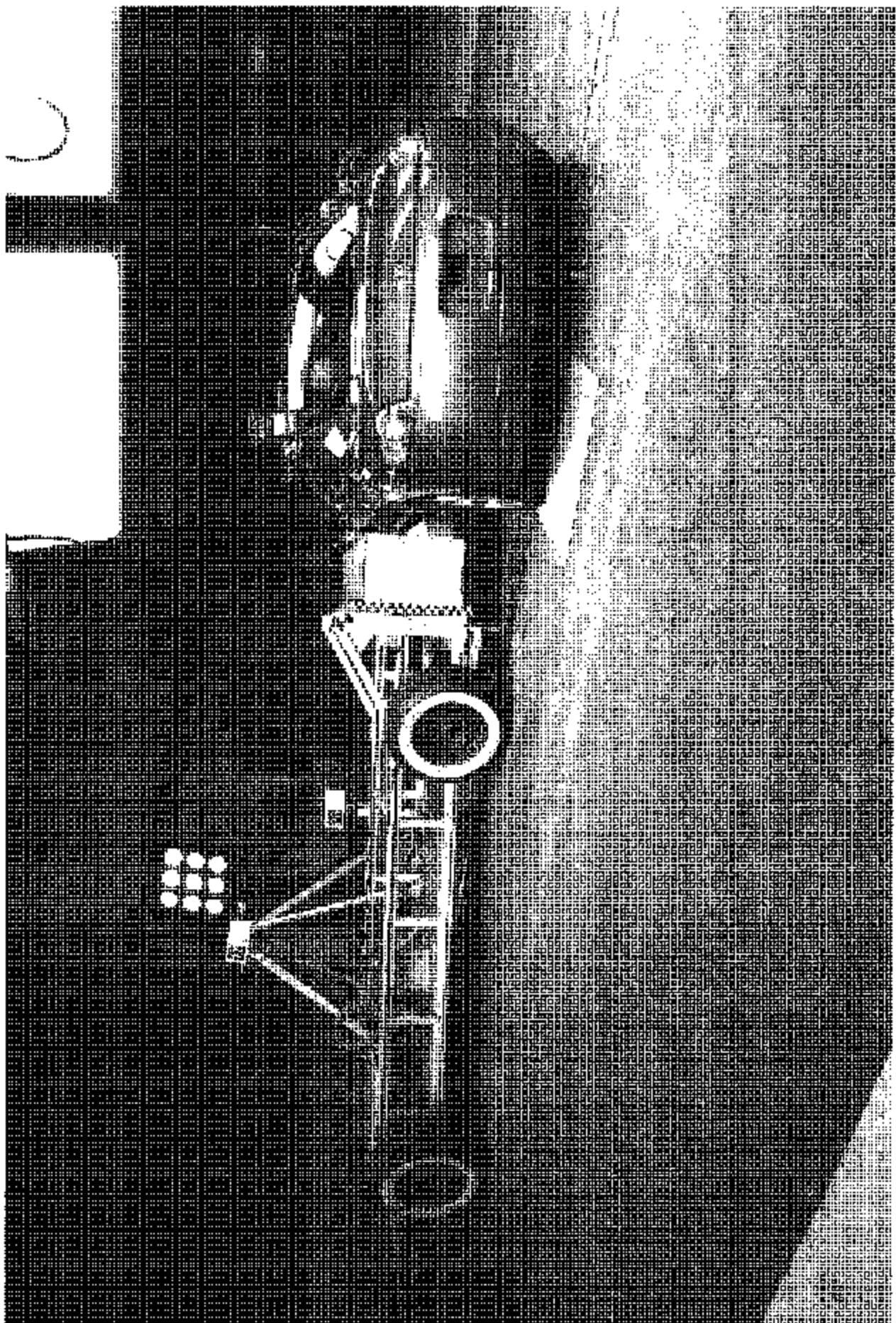


Figure A-34 Pre-Test Right Side View of MDB With Impactor Face in Position

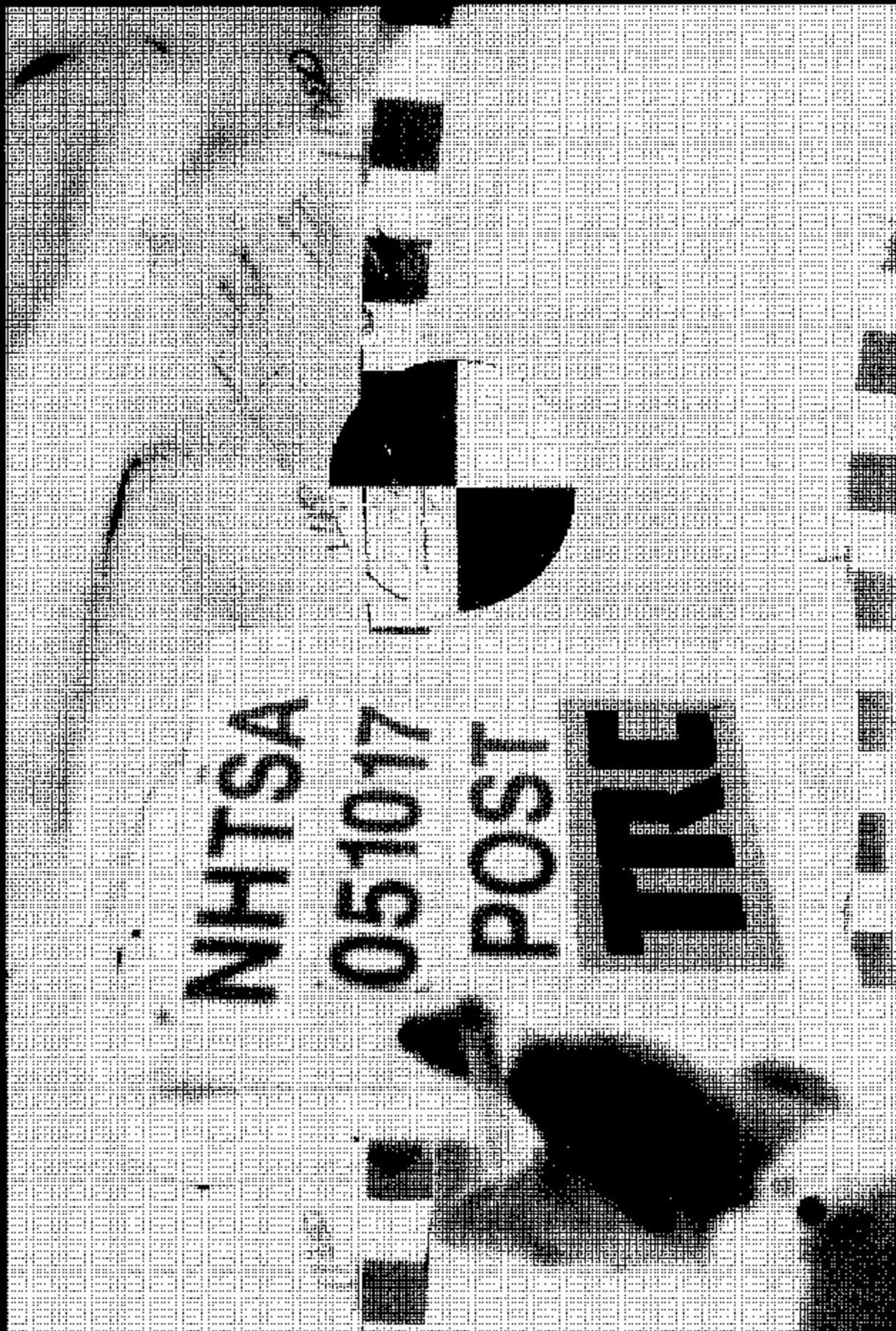
WHITSA

051017

PRE

FILE

Figure A-35 Pre-Test Secondary Impact Point View



WHTSA

051017

POST

ER

Figure A-36 Post-Test Secondary Impact Point View

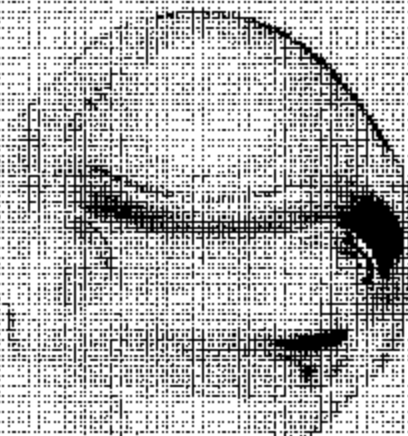
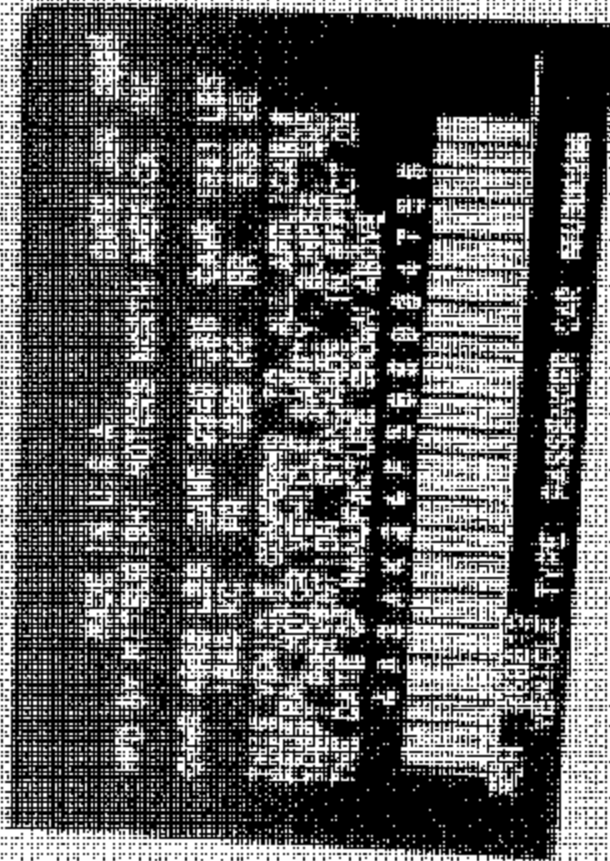


Figure A-37 Pre-Test Vehicle Certification Label View

**GENERAL MOTORS CORPORATION**

**SAFARI SAFARI 4 DOOR 2 WHEEL 2**

The established weight of occupants and cargo should never exceed weight of 405 lbs.

TIRES	SIZE	LOAD TYPE	PRESSURE
FRONT	P225/50R17	225 MPa, 32 PSI	
REAR	P225/50R17	225 MPa, 32 PSI	
SPARE	T126/70R16	200 MPa, 29 PSI	

SAFARI SAFARI 4 DOOR 2 WHEEL 2

Figure A-38 Pre-Test Vehicle Recommended Tire Pressure Label View



Figure A-39 Impact Event



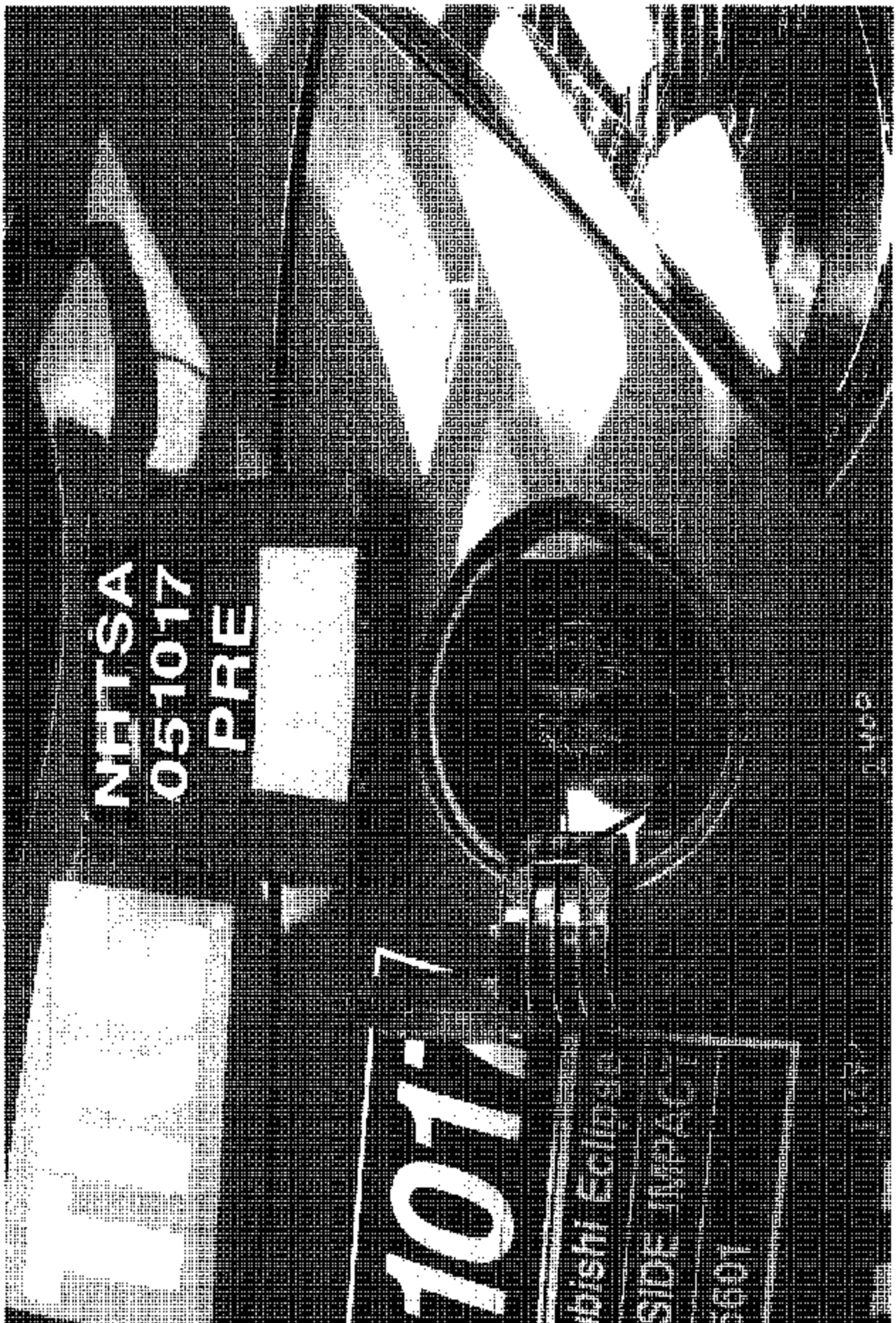


Figure A-40 Pre-Test Fuel Cap

**TIRE**

**NHTSA  
051017**

**POST**

**TIRE**

**51017**

**Ecips  
TOP SIDE IMPACT**



Figure A-41 Post-Test Fuel Cap

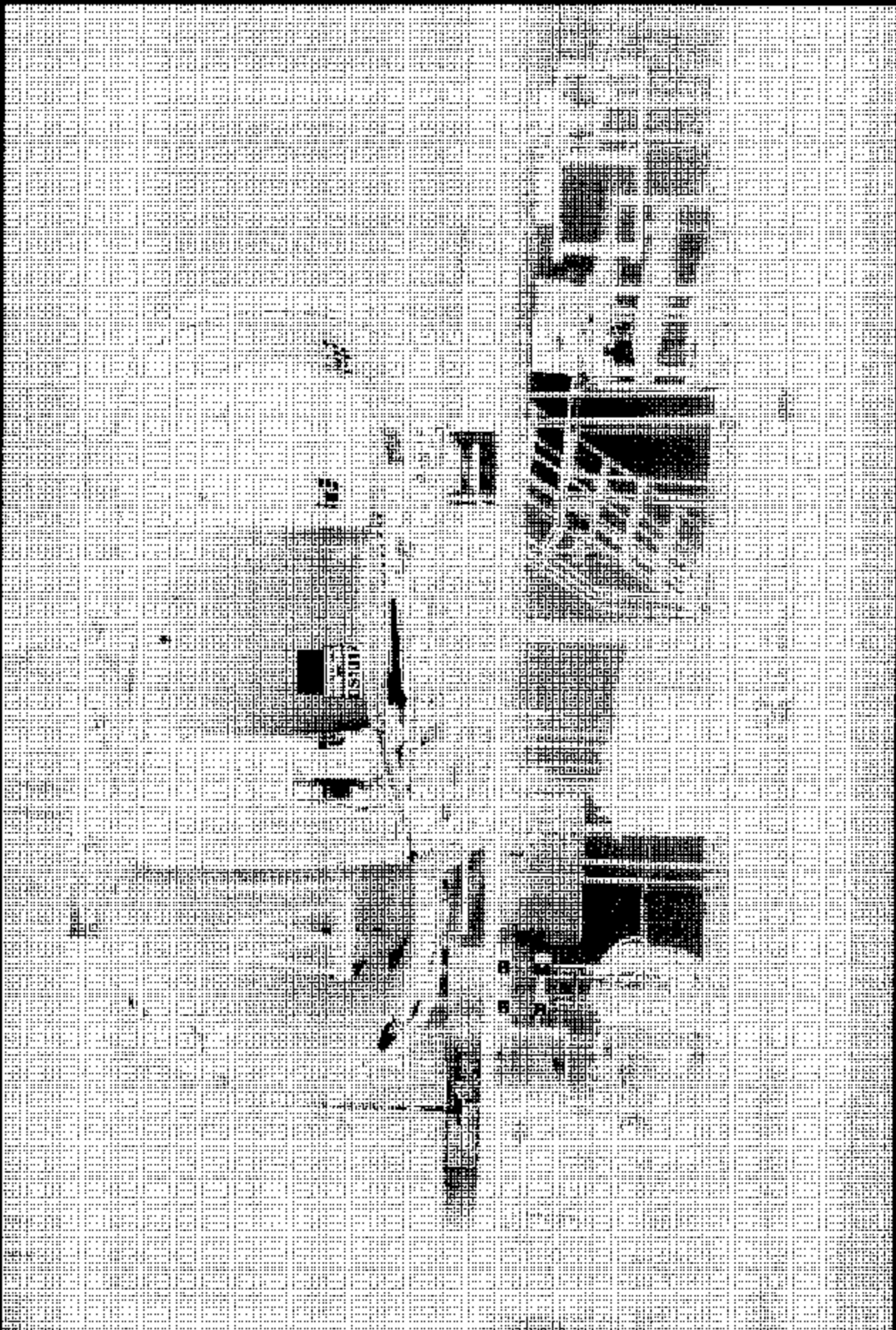


Figure A-42 FMVSS 301 Rollover View at 90°

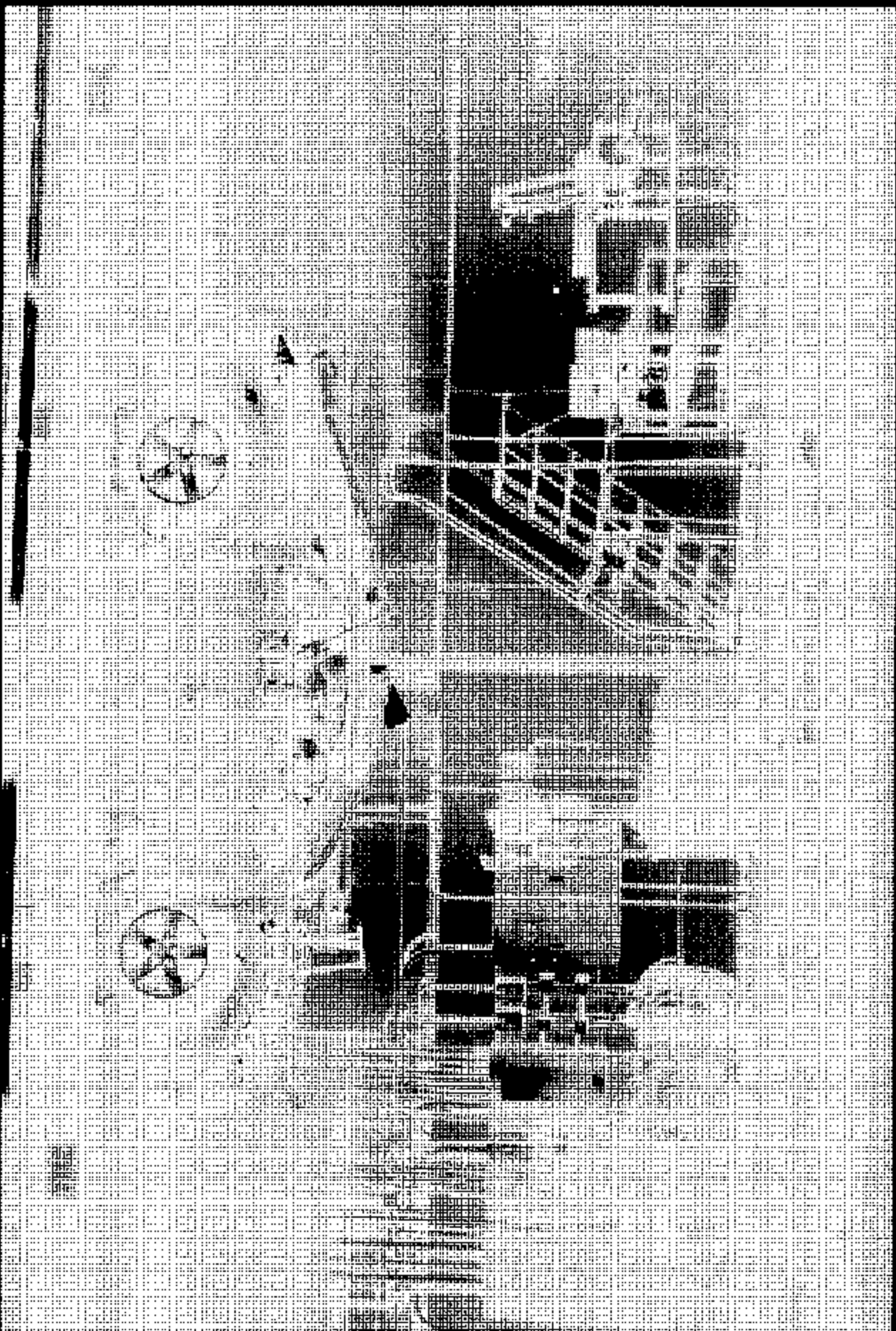


Figure A-43 FMVSS 301 Rollover View at 130°



Figure A-44 FMVSS 301 Rollover View at 270°

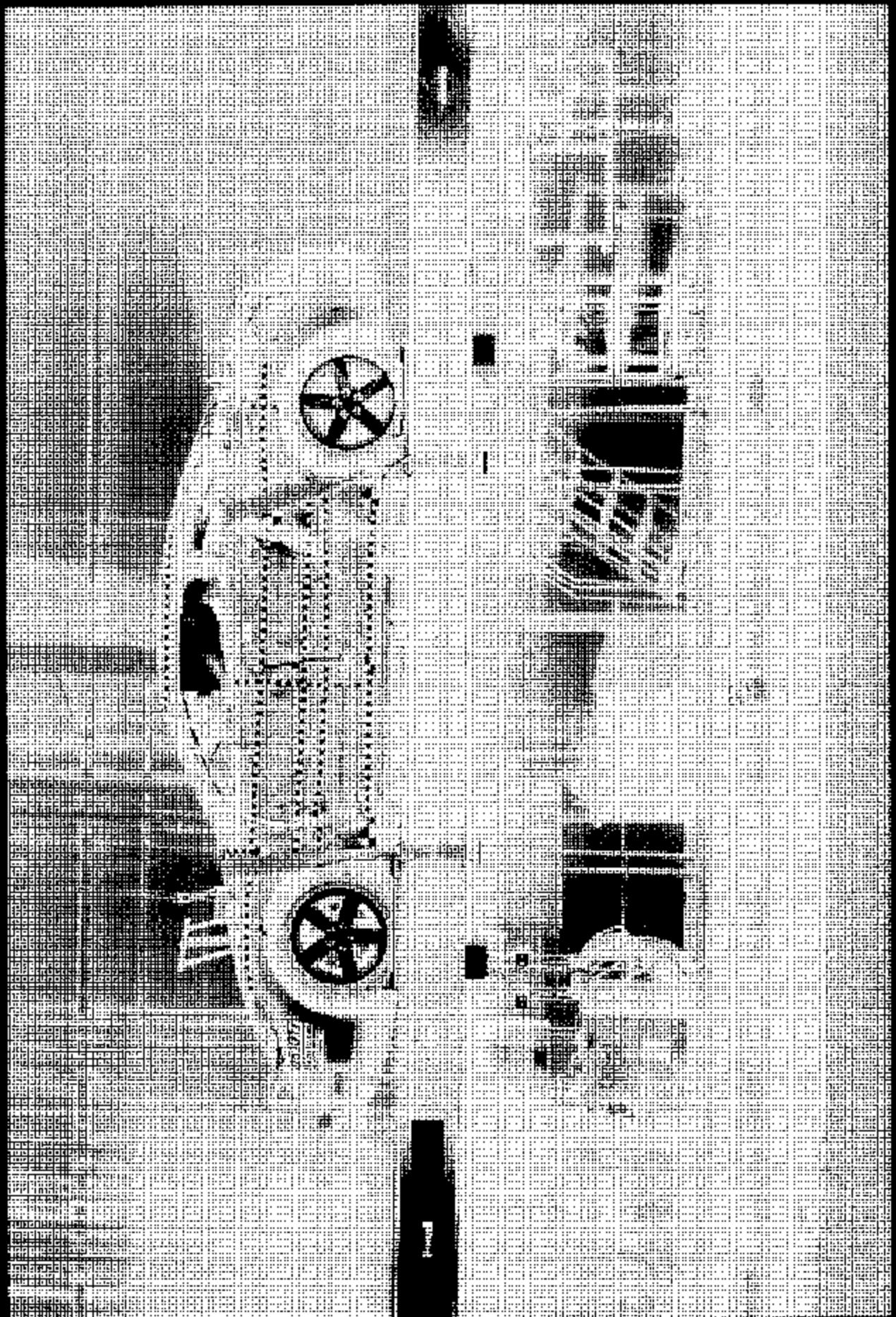


Figure A-45 FMVSS 301 Rollover View at 360°

Appendix B

Data Plots

Table of Data Plots  
Driver Dummy Instrumentation Plots  
Acceleration Data - Filter Class 1000  
Integration Data - Filter Class 180

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
1	Driver Upper Rib Y-Axis Acceleration	B-7
2	Driver Upper Rib Y-Axis Velocity	B-8
3	Driver Lower Rib Y-Axis Acceleration	B-9
4	Driver Lower Rib Y-Axis Velocity	B-10
5	Driver Lower Spine Y-Axis Acceleration	B-11
6	Driver Lower Spine Y-Axis Velocity	B-12
7	Driver Pelvis Y-Axis Acceleration	B-13
8	Driver Pelvis Y-Axis Velocity	B-14

Driver Dummy Instrumentation Plots  
Acceleration Data - Filter Class 1000 - Redundant  
Integration Data - Filter Class 180 - Redundant

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
9	Driver Upper Rib Y-Axis Redundant Acceleration	B-16
10	Driver Upper Rib Y-Axis Redundant Velocity	B-17
11	Driver Lower Rib Y-Axis Redundant Acceleration	B-18
12	Driver Lower Rib Y-Axis Redundant Velocity	B-19
13	Driver Lower Spine Y-Axis Redundant Acceleration	B-20
14	Driver Lower Spine Y-Axis Redundant Velocity	B-21

Test Vehicle Instrumentation Plots  
Acceleration Data - Filter Class 60  
Integration Data - Filter Class 180

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
15	Right Side Sill At Front Seat X-Axis Acceleration	B-23
16	Right Side Sill At Front Seat X-Axis Velocity	B-24
17	Right Side Sill At Front Seat Y-Axis Acceleration	B-25
18	Right Side Sill At Front Seat Y-Axis Velocity	B-26



Table of Data Plots (Continued)  
 Test Vehicle Instrumentation Plots (Continued)  
 Acceleration Data - Filter Class 60  
 Integration Data - Filter Class 180

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
19	Right Side Sill At Front Seat Z-Axis Acceleration	B-27
20	Right Side Sill At Front Seat Z-Axis Velocity	B-28
21	Right Side Sill At Front Seat Resultant Acceleration	B-29
22	Right Side Sill At Rear Seat X-Axis Acceleration	B-30
23	Right Side Sill At Rear Seat X-Axis Velocity	B-31
24	Right Side Sill At Rear Seat Y-Axis Acceleration	B-32
25	Right Side Sill At Rear Seat Y-Axis Velocity	B-33
26	Right Side Sill At Rear Seat Z-Axis Acceleration	B-34
27	Right Side Sill At Rear Seat Z-Axis Velocity	B-35
28	Right Side Sill At Rear Seat Resultant Acceleration	B-36
29	Rear Floorpan Above Axle X-Axis Acceleration	B-37
30	Rear Floorpan Above Axle X-Axis Velocity	B-38
31	Rear Floorpan Above Axle Y-Axis Acceleration	B-39
32	Rear Floorpan Above Axle Y-Axis Velocity	B-40
33	Rear Floorpan Above Axle Z-Axis Acceleration	B-41
34	Rear Floorpan Above Axle Z-Axis Velocity	B-42
35	Rear Floorpan Above Axle Resultant Acceleration	B-43
36	Left Side Sill At Front Seat Y-Axis Acceleration	B-44
37	Left Side Sill At Front Seat Y-Axis Velocity	B-45
38	Left Side Sill At Front Seat Y-Axis Displacement	B-46
39	Left Side Sill At Rear Seat Y-Axis Acceleration	B-47
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42	Right Rear Occupant Compartment Y-Axis Acceleration	B-50
43	Right Rear Occupant Compartment Y-Axis Velocity	B-51
44	Right Rear Occupant Compartment Y-Axis Displacement	B-52
45	Left Lower A-Post Y-Axis Acceleration	B-53
46	Left Lower A-Post Y-Axis Velocity	B-54
47	Left Middle A-Post Y-Axis Acceleration	B-55
48	Left Middle A-Post Y-Axis Velocity	B-56

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 Test Vehicle Instrumentation Plots (Continued)  
 Acceleration Data - Filter Class 60  
 Integration Data - Filter Class 180

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
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50	Left Lower B-Post Y-Axis Velocity	B-58
51	Left Middle B-Post Y-Axis Acceleration	B-59
52	Left Middle B-Post Y-Axis Velocity	B-60
53	Left Front Seat Track Y-Axis Acceleration	B-61
54	Left Front Seat Track Y-Axis Velocity	B-62
55	Left Rear Seat Track Y-Axis Acceleration	B-63
56	Left Rear Seat Track Y-Axis Velocity	B-64
57	Vehicle Center Of Gravity X-Axis Acceleration	B-65
58	Vehicle Center Of Gravity X-Axis Velocity	B-66
59	Vehicle Center Of Gravity Y-Axis Acceleration	B-67
60	Vehicle Center Of Gravity Y-Axis Velocity	B-68
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62	Vehicle Center Of Gravity Z-Axis Velocity	B-70
63	Vehicle Center Of Gravity Resultant Acceleration	B-71

MDB Instrumentation Plots  
 Acceleration Data - Filter Class 60  
 Integration Data - Filter Class 180

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
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67	MDB Center Of Gravity Y-Axis Velocity	B-76
68	MDB Center Of Gravity Z-Axis Acceleration	B-77
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72	MDB Rear X-Axis Velocity	B-81

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MDB Instrumentation Plots (Continued)  
Acceleration Data - Filter Class 60  
Integration Data - Filter Class 180

73	MDB Rear Y-Axis Acceleration	B-82
74	MDB Rear Y-Axis Velocity	B-83
75	MDB Right Side Contact Switch	B-84
76	MDB Left Side Contact Switch	B-85

Driver Dummy Instrumentation Plots  
Acceleration Data - FIR Filtered

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
77	Driver Upper Rib Y-Axis Acceleration	B-87
78	Driver Lower Rib Y-Axis Acceleration	B-88
79	Driver Lower Spine Y-Axis Acceleration	B-89
80	Driver Pelvis Y-Axis Acceleration	B-90

Driver Dummy Instrumentation Plots  
Acceleration Data - FIR Filtered - Redundant

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
81	Driver Upper Rib Y-Axis Redundant Acceleration	B-92
82	Driver Lower Rib Y-Axis Redundant Acceleration	B-93
83	Driver Lower Spine Y-Axis Redundant Acceleration	B-94

Driver Dummy Instrumentation Plots  
Acceleration Data - Filter Class 1000  
Integration Data - Filter Class 180



24 kph 90 Degree Side Impact (MDB) into Left Side of 2006 Mitsubishi Eclipse

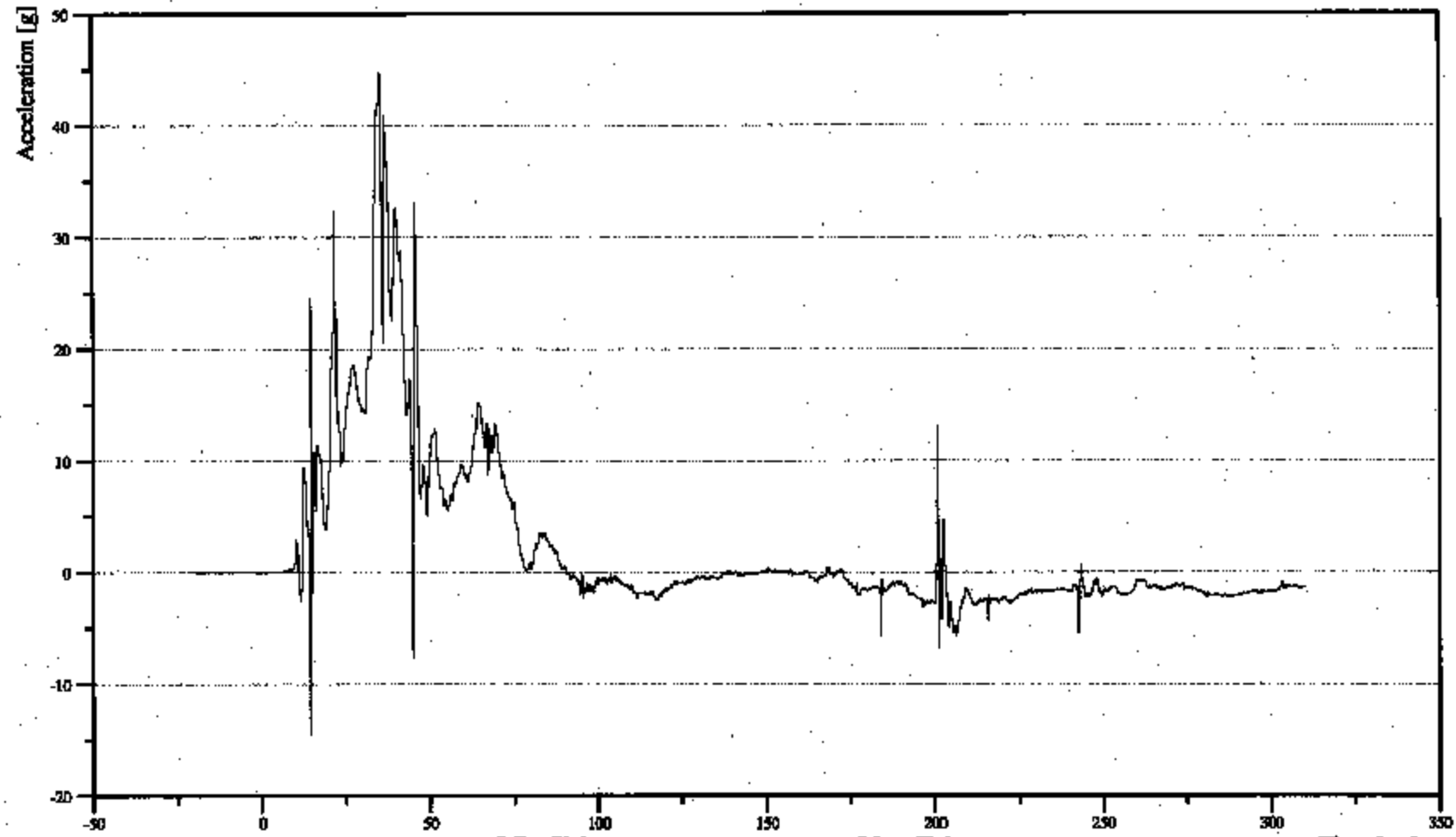
05/17/2005  
Time: 12:15

DRIVER UPPER RIB (Y) ACCELERATION VS TIME

Customer: NHTSA

11RIBSLU00SIACYA

TRC Inc. Test Lab: CTF  
Test Number: 051017



Filter: CFC\_1000

Min. Value  
-14.50 g at 14.24 ms

Max. Value  
44.82 g at 35.36 ms

B-7

051017



24/24 kph 90 Degree Side Impact (MDB) into Left Side of 2006 Mitsubishi Eclipse

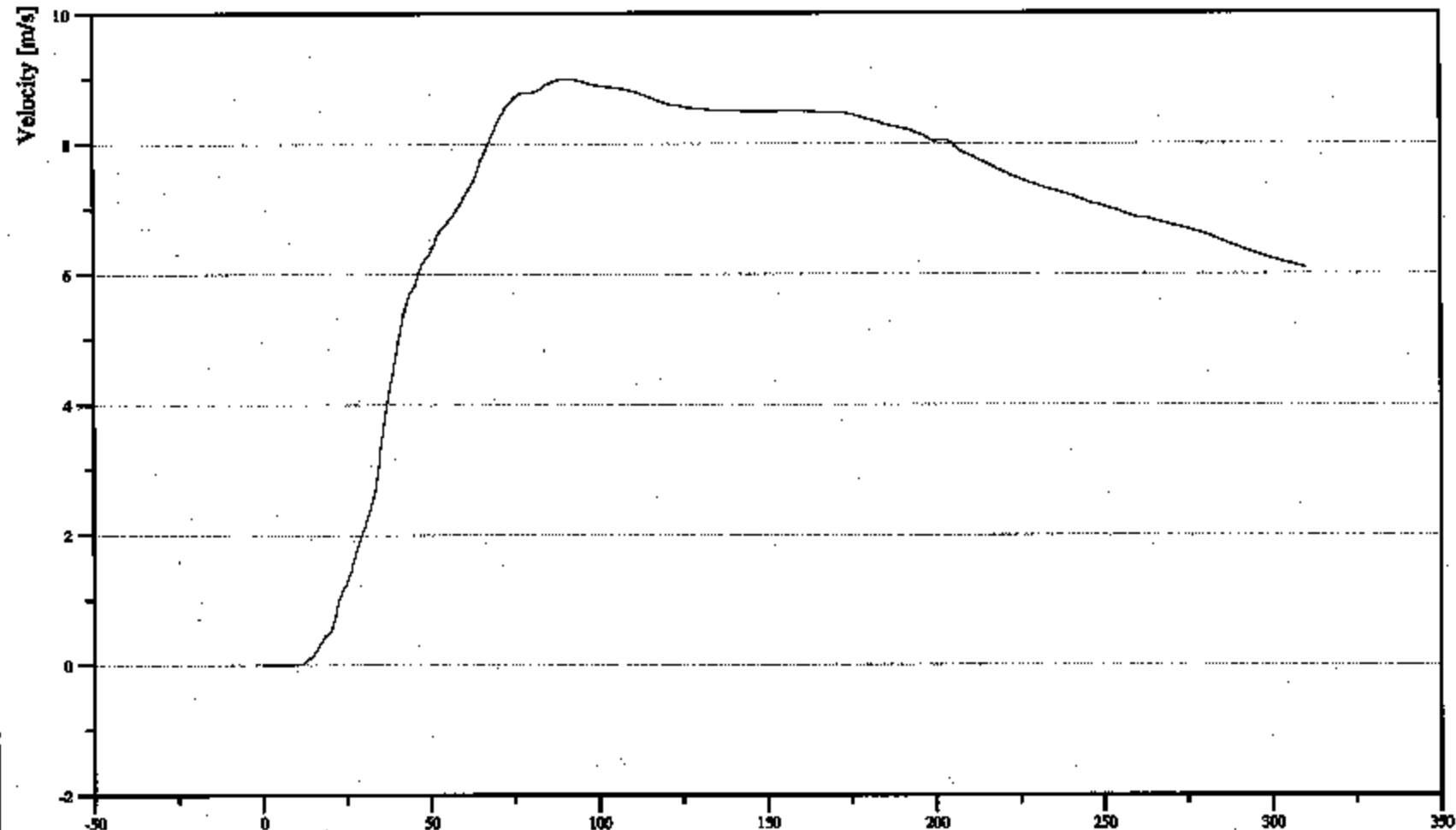
11/17/2005  
Time: 12:15

DRIVER UPPER RIB (Y) VELOCITY VS TIME

Customer: NETSA

11RIBSLU00SIVEYC

TRC Inc. Test Lab: CTF  
Test Number: 051017



Filter: CFC\_180

**Min. Value**  
0.00 m/s at 2.08 ms

**Max. Value**  
8.99 m/s at 90.64 ms

Time [ms]

B-8

051017



24 kph 90 Degree Side Impact (MDB) into Left Side of 2006 Mitsubishi Eclipse

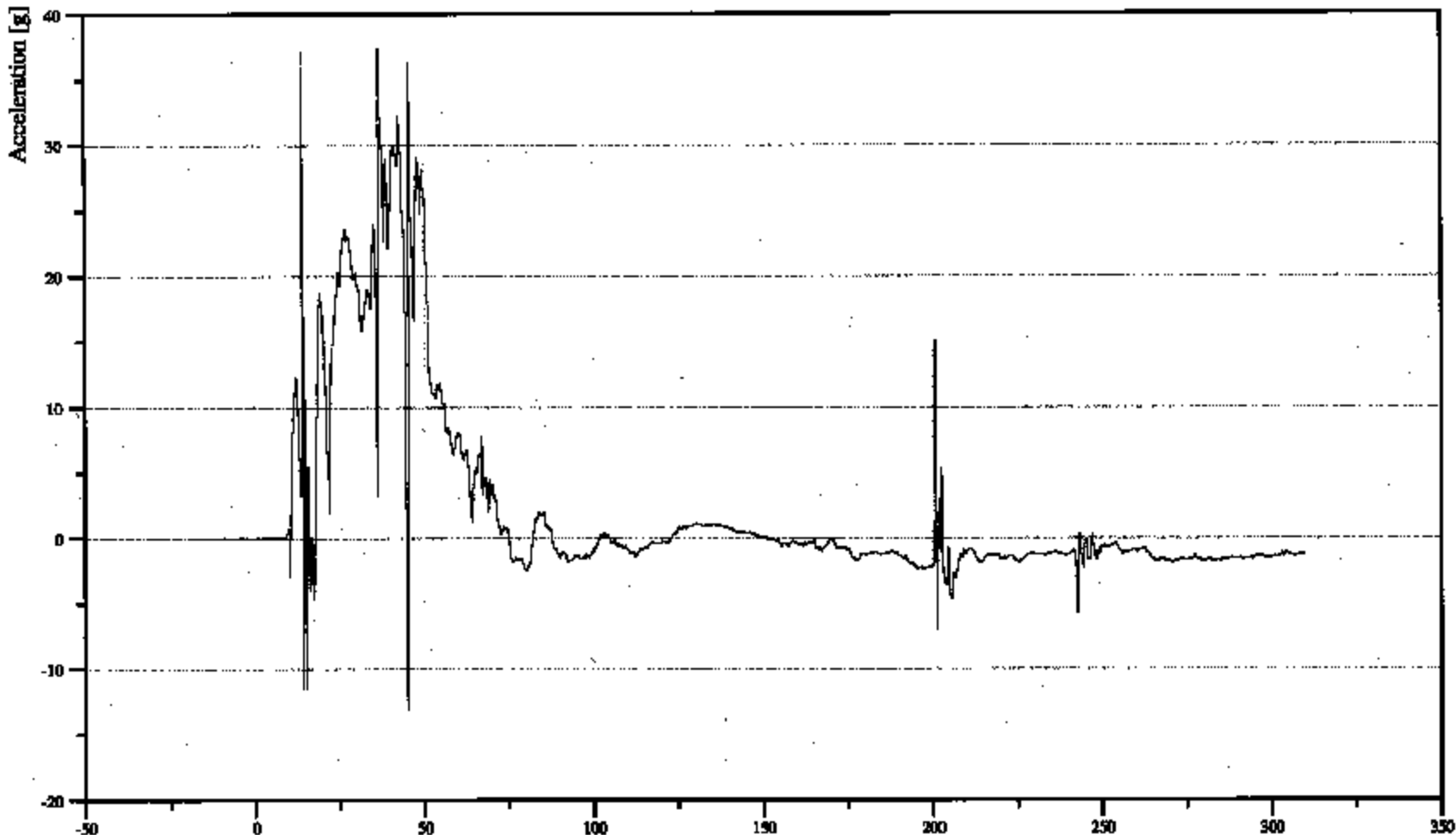
05/17/2005  
Time: 12:15

DRIVER LOWER RIB (Y) ACCELERATION VS TIME

Customer: NETSA

11RIBSLLO0SIACYA

TRC Inc. Test Lab: CTF  
Test Number: 051017



Filter: CFC\_1000

Min. Value  
-13.08 g at 44.96 ms

Max. Value  
37.52 g at 36.72 ms

Time [ms]

B-9

051017



# 24 kph 90 Degree Side Impact (MDB) into Left Side of 2006 Mitsubishi Eclipse

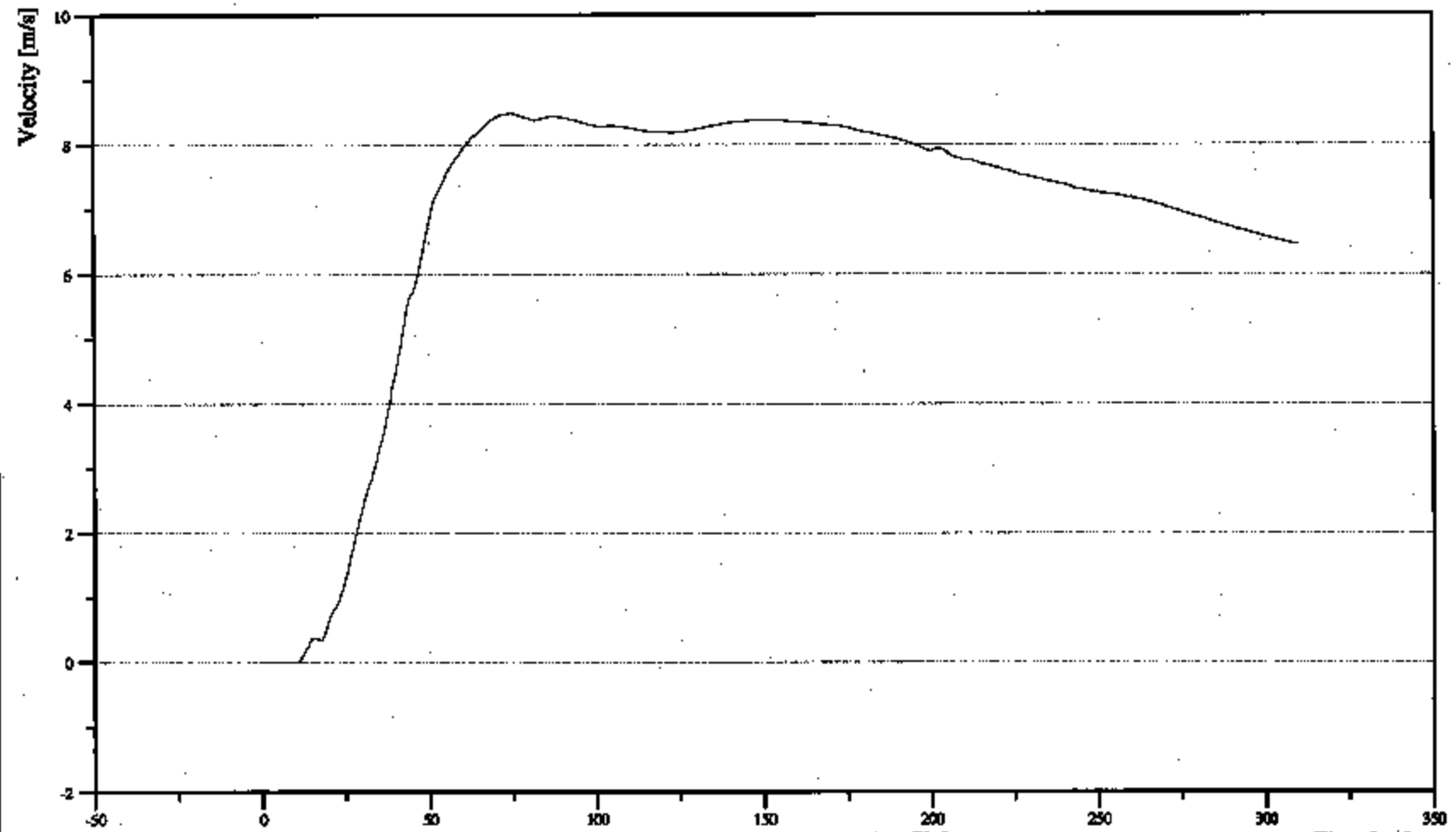
05/17/2005  
Time: 12:15

## DRIVER LOWER RIB (Y) VELOCITY VS TIME

Customer: NHTSA

### 11RIBSLL00SIVEYC

TRC Inc. Test Lab: CTF  
Test Number: 051017



Filter: CFC\_180

Min. Value  
0.00 m/s at 1.68 ms

Max. Value  
8.48 m/s at 74.56 ms

Time [ms]

B-10

051017





24 kph 90 Degree Side Impact (MDB) into Left Side of 2006 Mitsubishi Eclipse

05/17/2005  
Time: 12:15

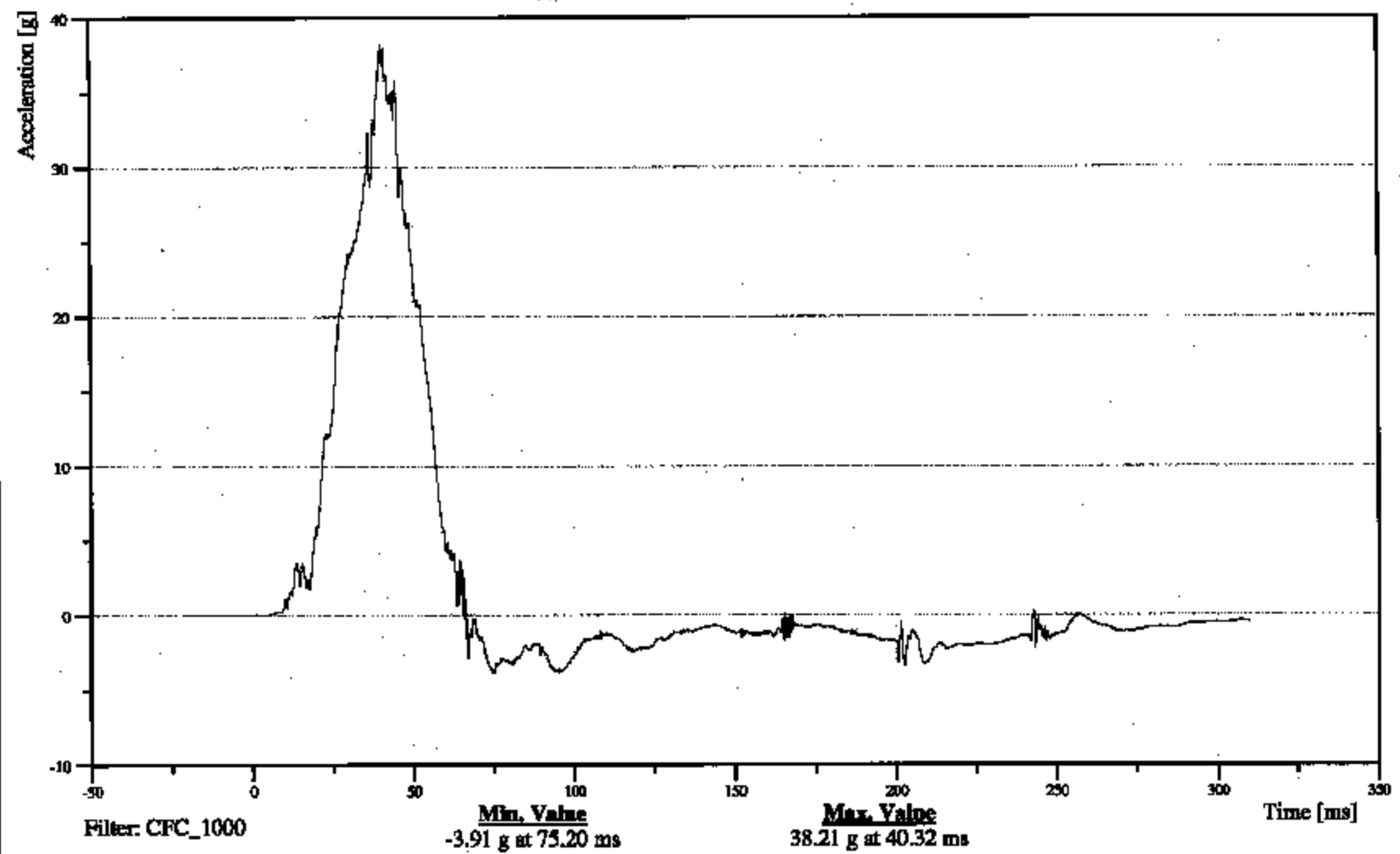
DRIVER LOWER SPINE (Y) ACCELERATION VS TIME

Customer: NHTSA

11SPIN1200SIACYA

TRC Inc. Test Lab: CTF

Test Number: 051017



B-11

051017



46/24 kph 90 Degree Side Impact (MDB) into Left Side of 2006 Mitsubishi Eclipse

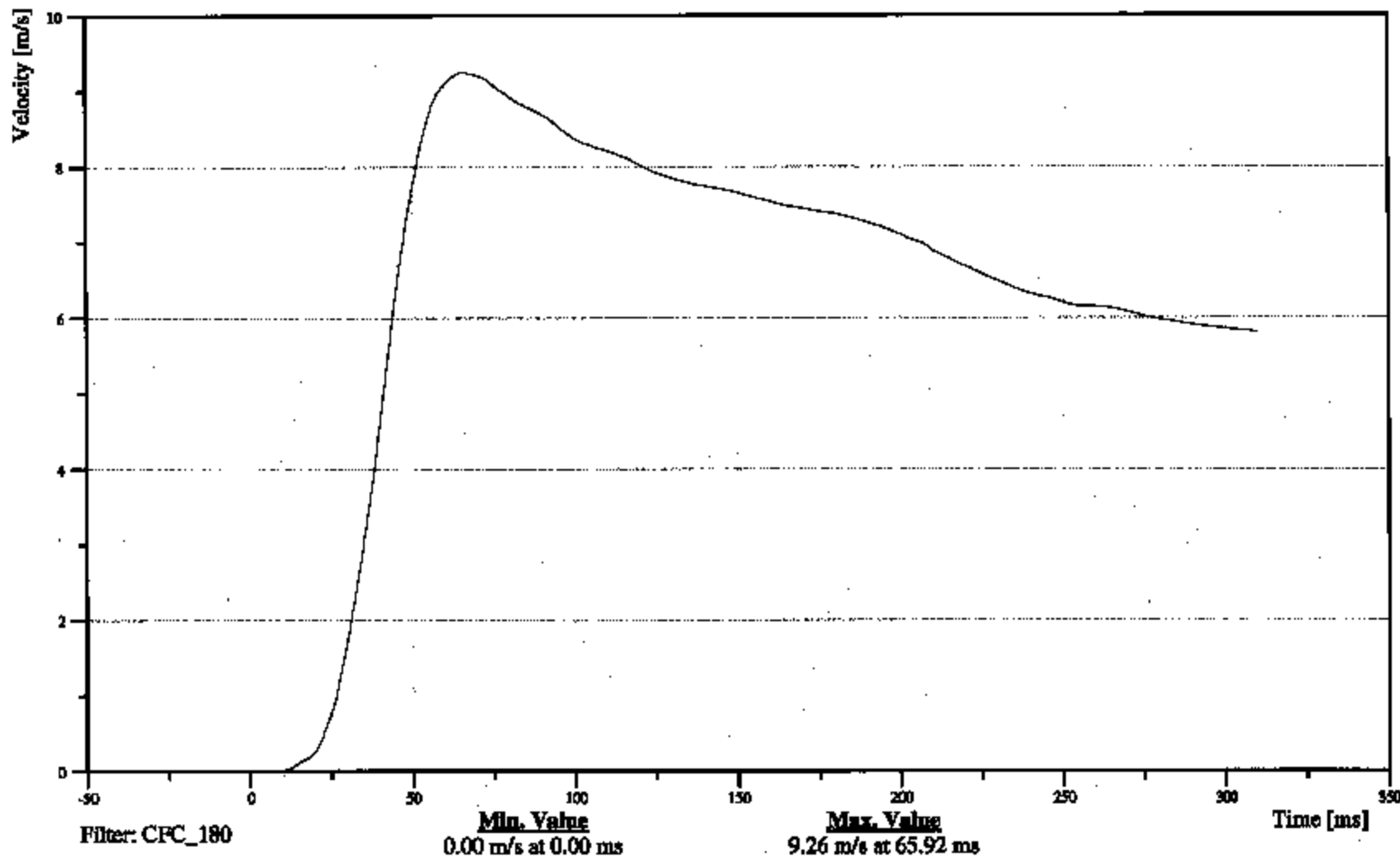
05/17/2005  
Time: 12:15

DRIVER LOWER SPINE (Y) VELOCITY VS TIME

Customer: NHISA

11SPIN1200SIVEYC

TRC Inc. Test Lab: CTF  
Test Number: 051017



B-12

051017



24 kph 90 Degree Side Impact (MDB) into Left Side of 2006 Mitsubishi Eclipse

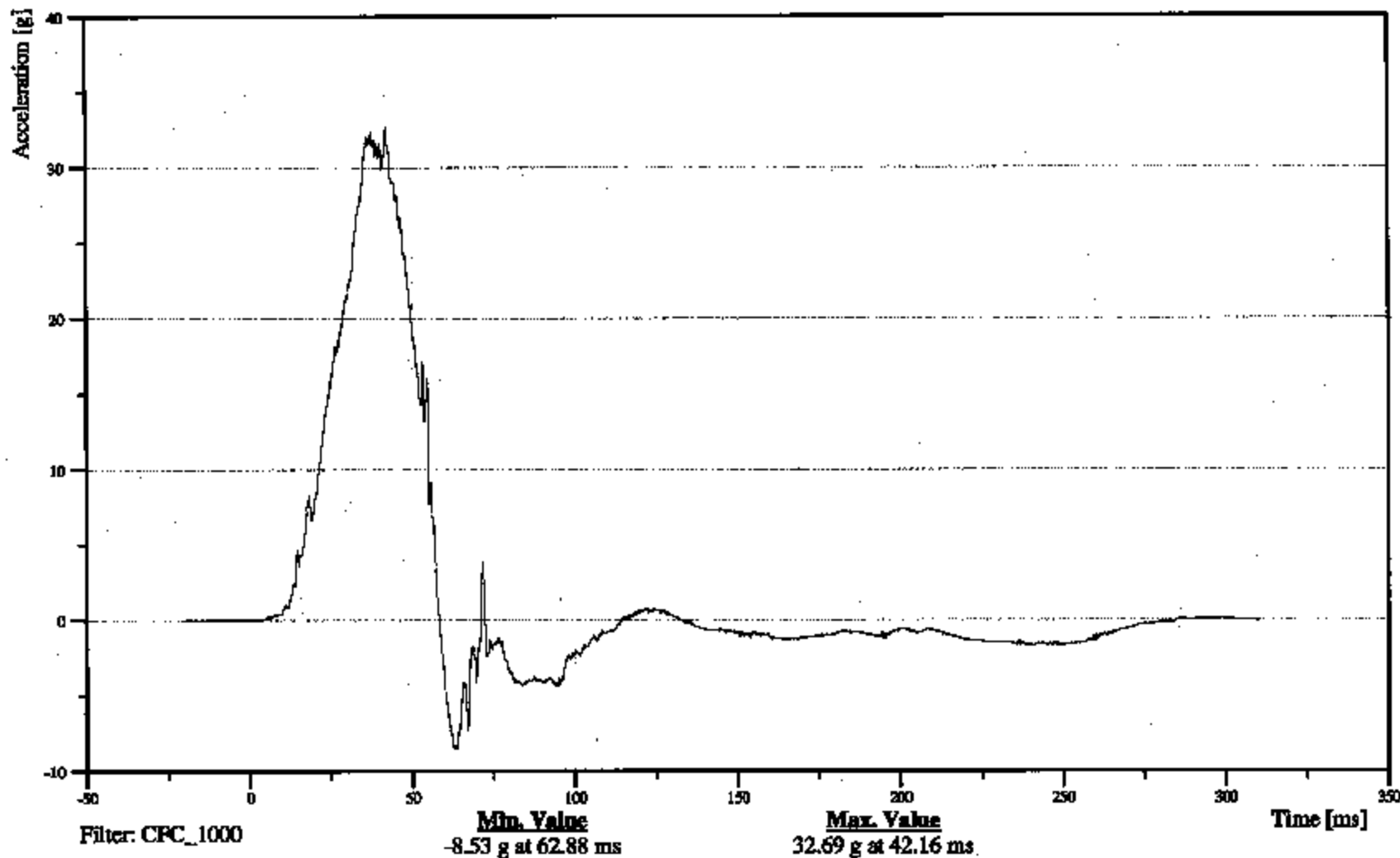
05/17/2005  
Time: 12:15

DRIVER PELVIC (Y) ACCELERATION VS TIME

Customer: NHTSA

11PELVCG00SIACYA

TBC Inc. Test Lab: CTF  
Test Number: 051017



B-13

051017



# 24 kph 90 Degree Side Impact (MDB) into Left Side of 2006 Mitsubishi Eclipse

Date: 01/17/2005  
Time: 12:15

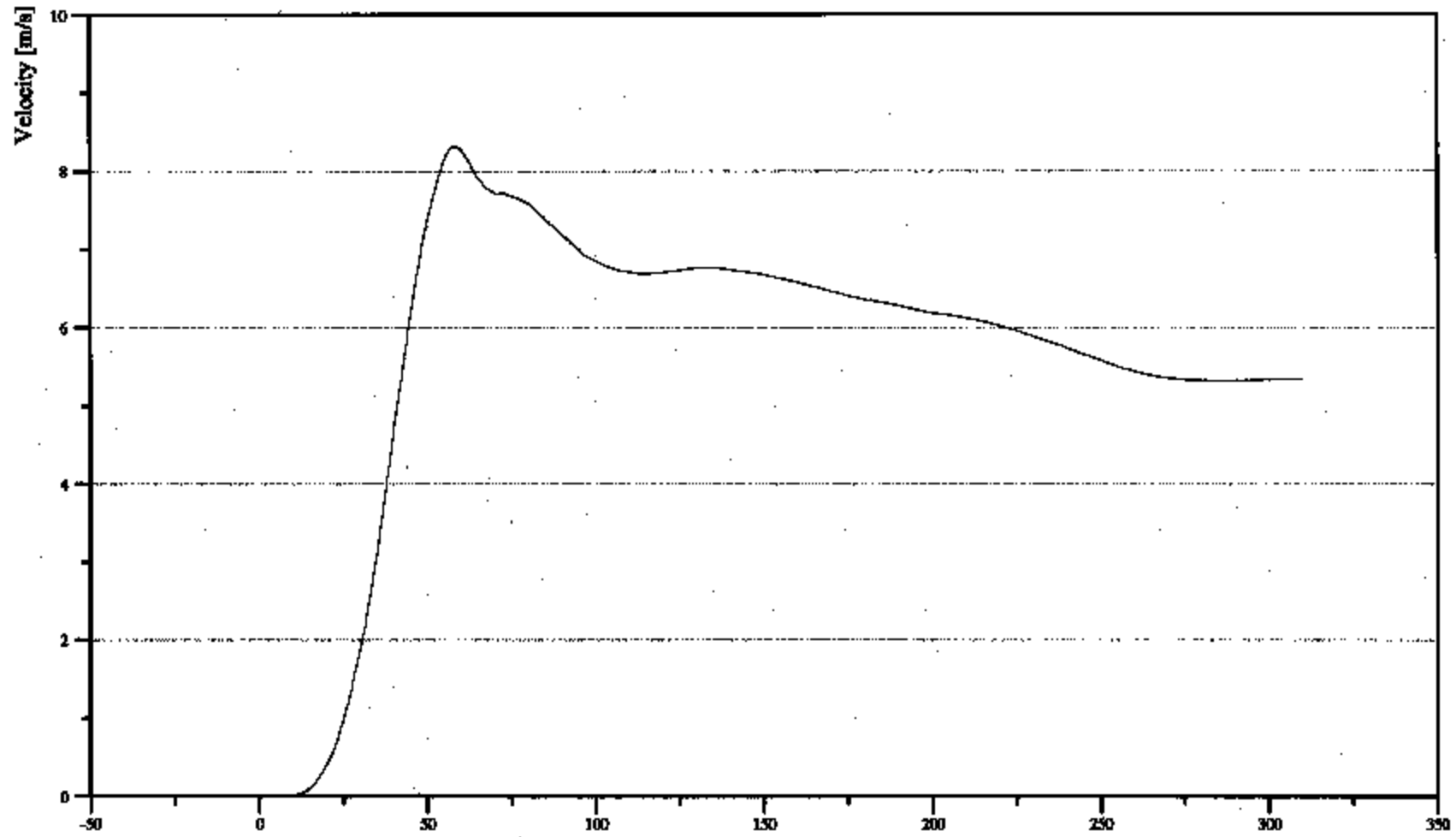
## DRIVER PELVIC (Y) VELOCITY VS TIME

Customer: NHTSA

### 11PELVCG00SIVEYC

TRC Inc. Test Lab: CTF

Test Number: 051017



Filter: CFC\_180

Min. Value  
0.00 m/s at 0.00 ms

Max. Value  
8.31 m/s at 58.16 ms

Time [ms]

B-14

051017

Driver Dummy Instrumentation Plots

Acceleration Data - Filter Class 1000 - Redundant

Integration Data - Filter Class 180 - Redundant



30/24 kph 90 Degree Side Impact (MDB) into Left Side of 2006 Mitsubishi Eclipse

05/17/2005

DRIVER UPPER RIB (Y) ACCELERATION VS TIME REDUNDANT

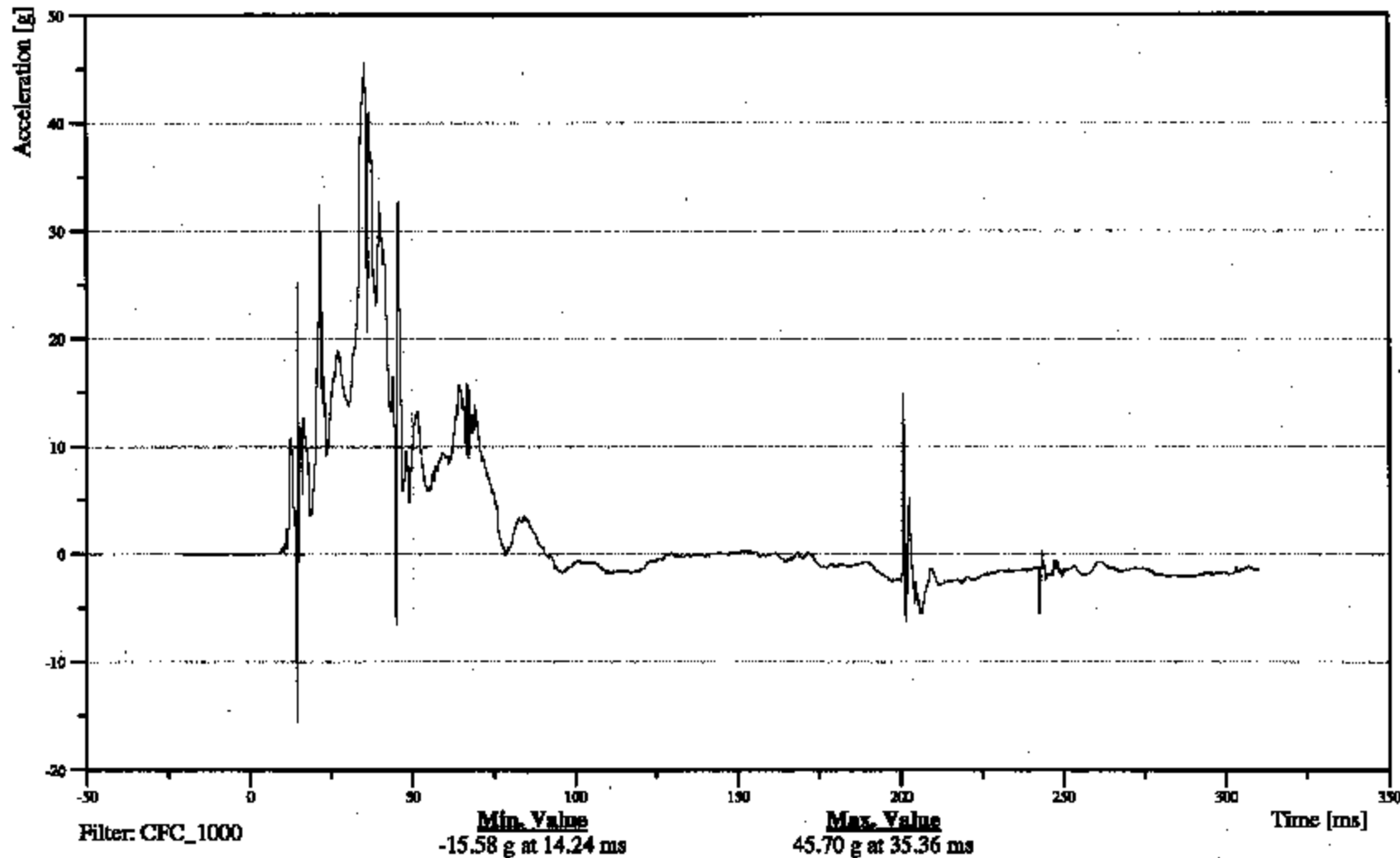
Time: 12:15

Customer: NHTSA

11RIBSLURDSIACYA

TRC Inc. Test Lab: CTF

Test Number: 051017



B-16

051017



24 kph 90 Degree Side Impact (MDB) into Left Side of 2006 Mitsubishi Eclipse

11/17/2005  
Time: 12:15

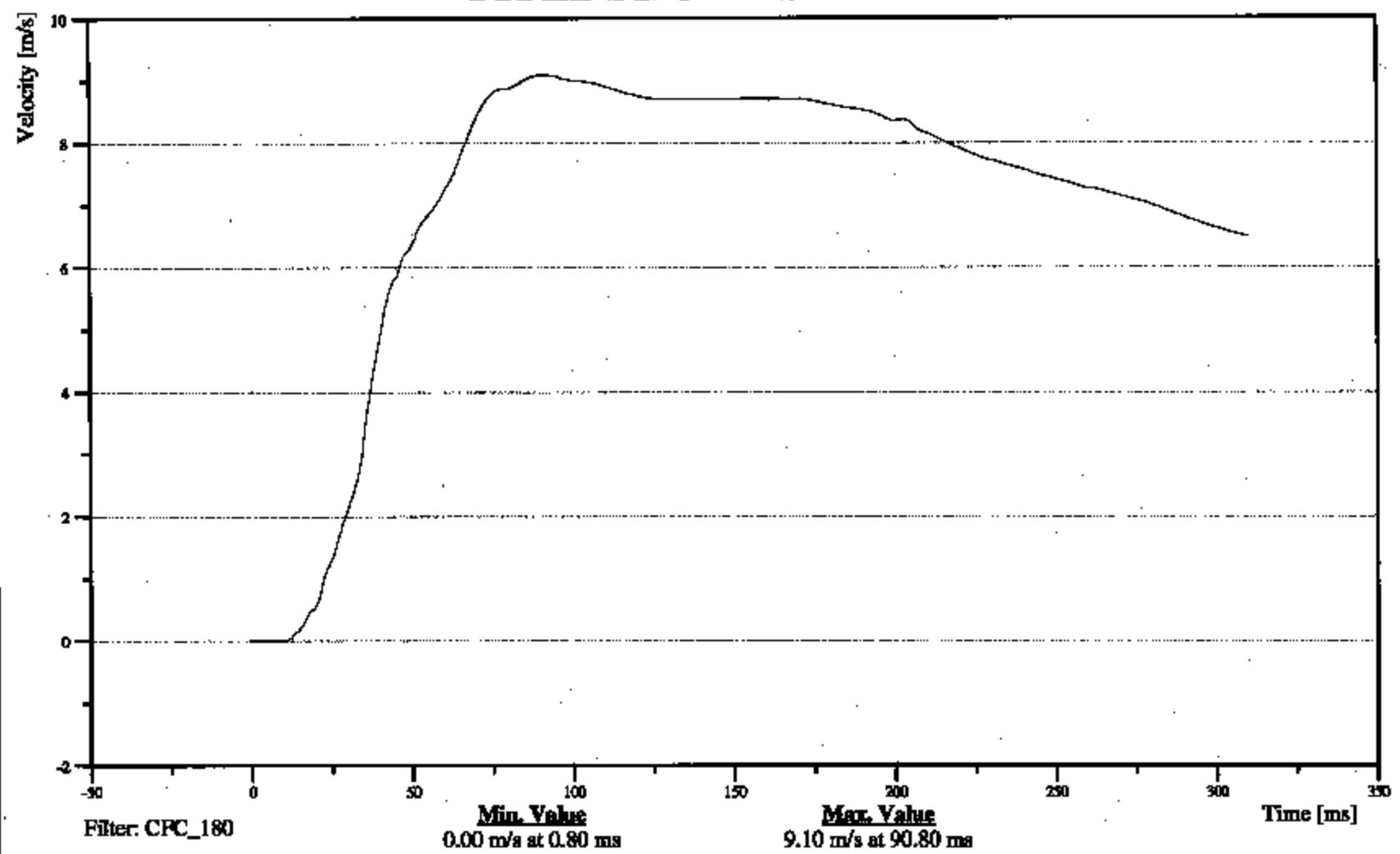
DRIVER UPPER RIB (Y) VELOCITY VS TIME REDUNDANT

Customer: NHTSA

11RIBSLURDSIVEYC

TRC Inc. Test Lab: CTF

Test Number: 051017



B-17

051017



# 24 kph 90 Degree Side Impact (MDB) into Left Side of 2006 Mitsubishi Eclipse

051017/2006  
Time: 12:15

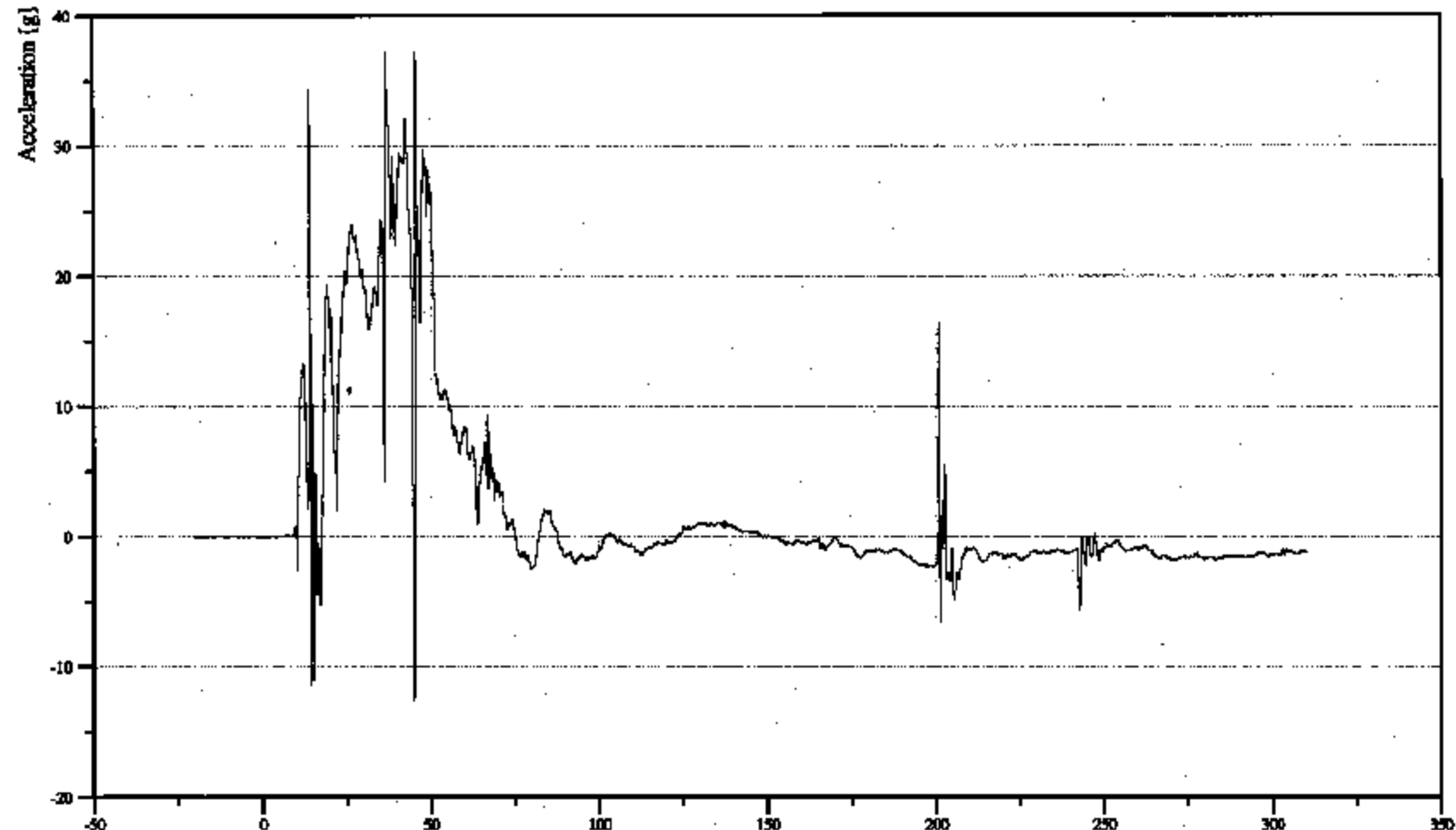
## DRIVER LOWER RIB (Y) ACCELERATION VS TIME REDUNDANT

Customer: NHTSA

### 11RIBSLLRDSIACYA

TRC Inc. Test Lab: CTF

Test Number: 051017



Filter: CFC\_1000

Min. Value  
-12.56 g at 44.96 ms

Max. Value  
37.26 g at 36.72 ms

Time [ms]

B-18

051017





24 kph 90 Degree Side Impact (MDB) into Left Side of 2006 Mitsubishi Eclipse

05/17/2005

DRIVER LOWER RIB (Y) VELOCITY VS TIME REDUNDANT

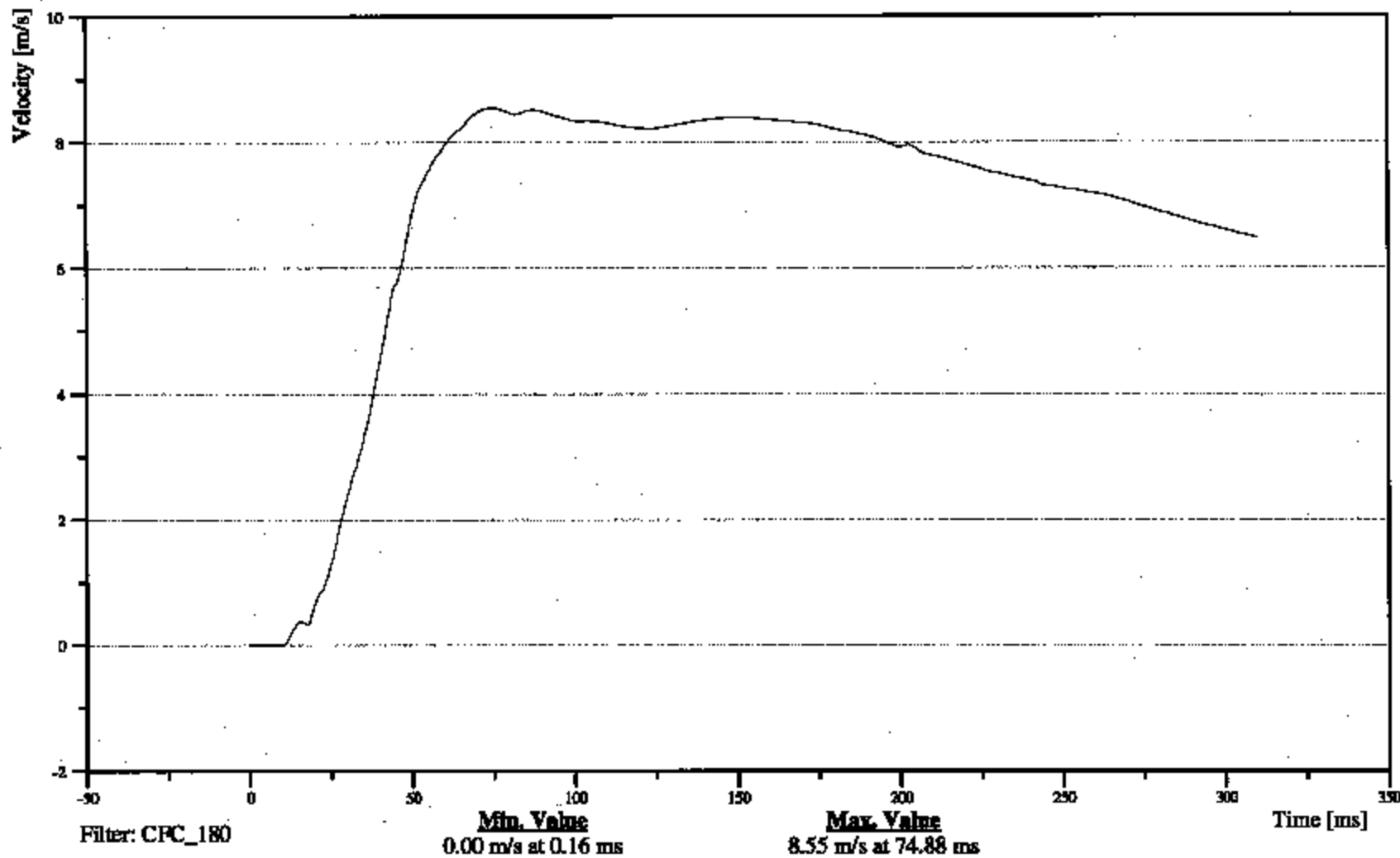
Time: 12:15

Customer: NHTSA

11RIBSLLRDSIVEYC

TRC Inc. Test Lab: CTF

Test Number: 051017



B-19

051017



36/24 kph 90 Degree Side Impact (MDB) into Left Side of 2006 Mitsubishi Eclipse

05/17/2005  
Time: 12:15

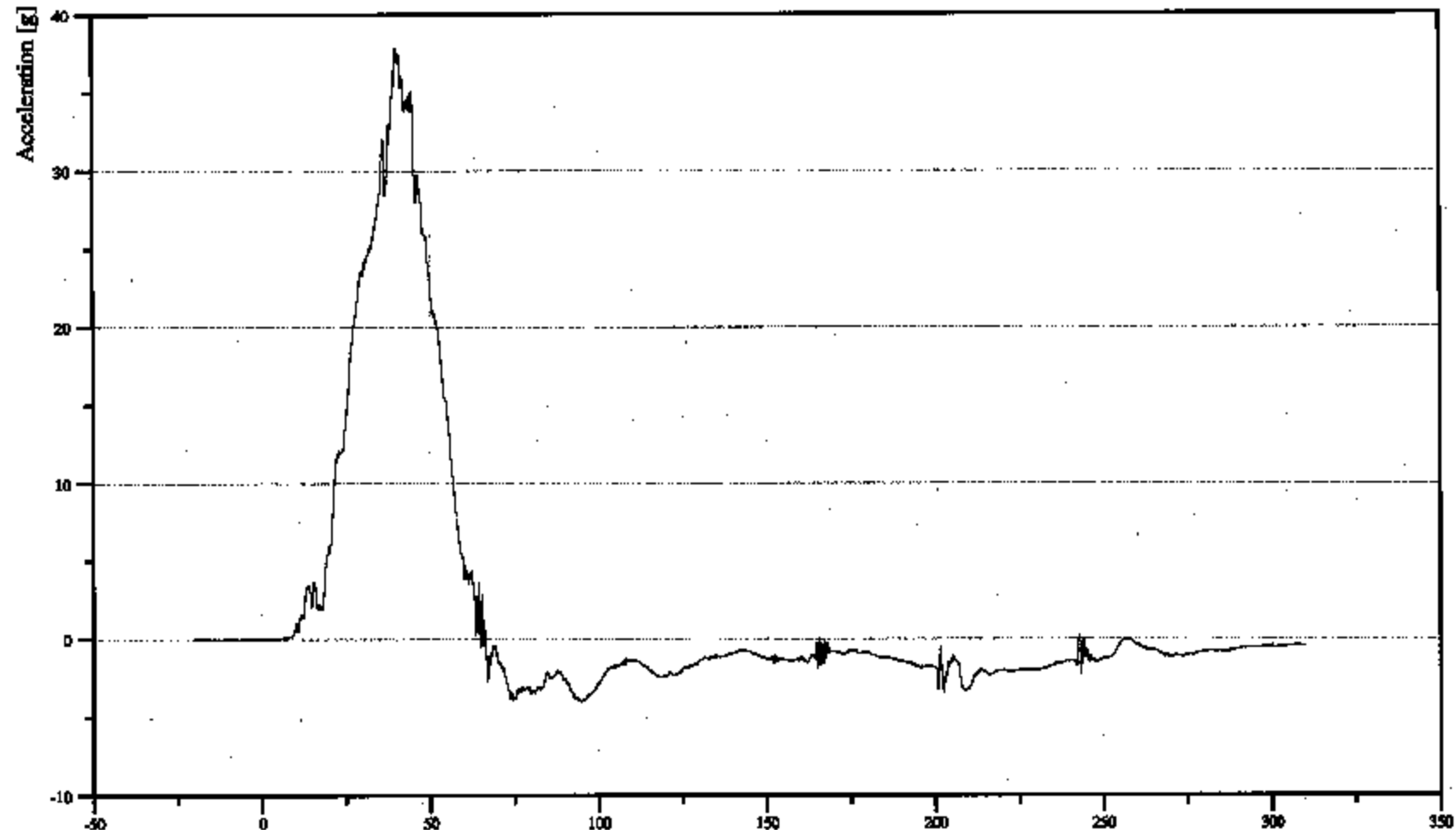
DRIVER LOWER SPINE (Y) ACCELERATION VS TIME REDUNDANT

Customer: NHTSA

11SPIN12RDSIACYA

TRC Inc. Test Lab: CTF

Test Number: 051017



Filter: CFC\_1000

Min. Value  
-3.96 g at 94.64 ms

Max. Value  
37.93 g at 40.24 ms

Time [ms]

B-20

051017



# 24 kph 90 Degree Side Impact (MDB) into Left Side of 2006 Mitsubishi Eclipse

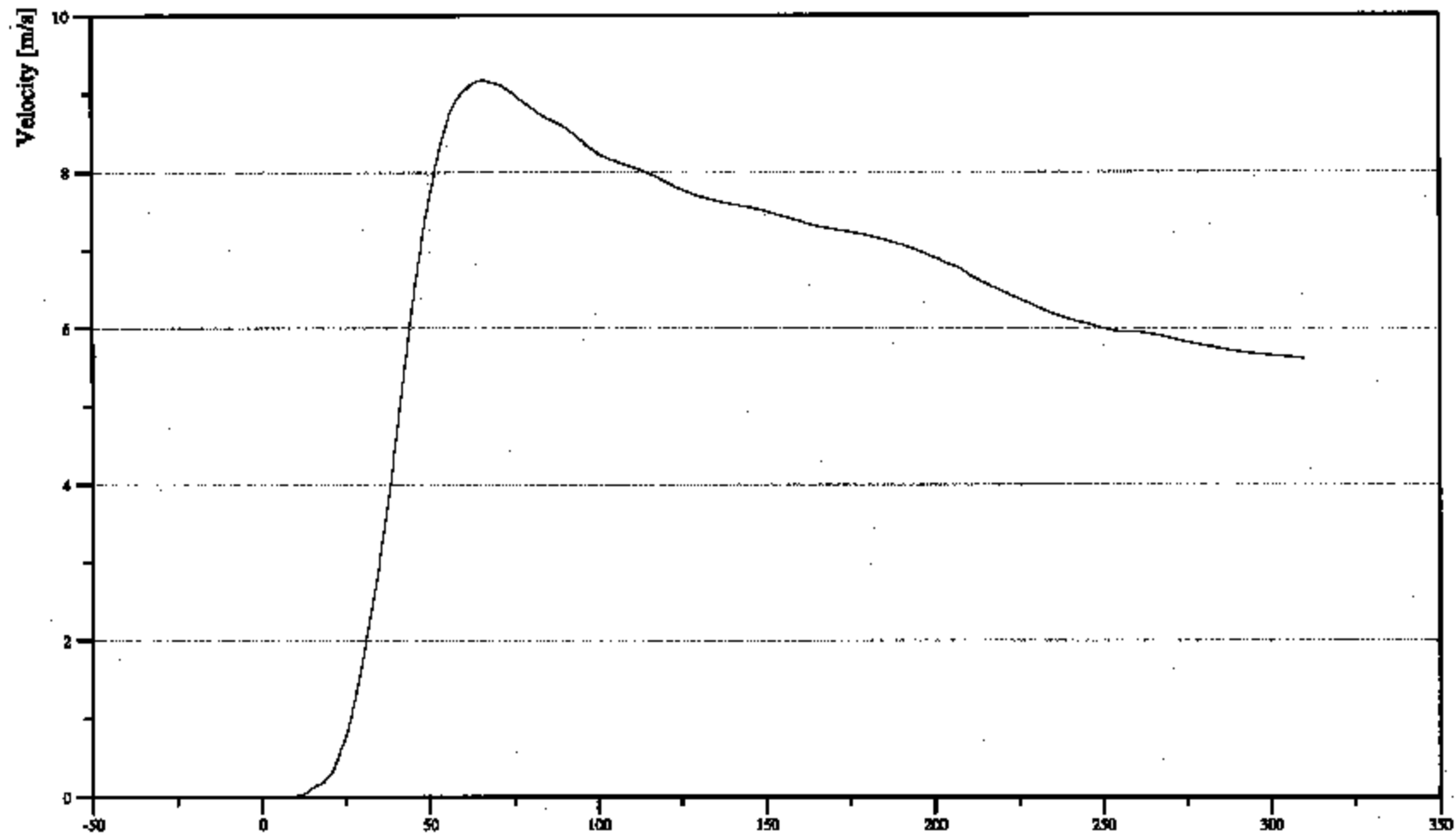
05/17/2005  
Time: 12:15

## DRIVER LOWER SPINE (Y) VELOCITY VS TIME REDUNDANT

Customer: NHTSA

### 11SPIN12RDSIVEYC

TRC Inc. Test Lab: CTF  
Test Number: 051017



Filter: CFC\_180

Min. Value  
0.00 m/s at 0.00 ms

Max. Value  
9.17 m/s at 63.92 ms

Time [ms]

B-21

051017