

**SAFETY COMPLIANCE TESTING FOR FMVSS 201U
Occupant Protection In Interior Impact
Upper Interior Head Impact Protection**

**HONDA OF CANADA MFG.
2003 Honda Pilot 4-DOOR SUV
NHTSA No. C35304**

**MGA RESEARCH CORPORATION
446 Executive Drive
Troy, Michigan 48083**



**Test Dates: April 30, 2003 - May 1, 2003
Report Date: May 2, 2003**

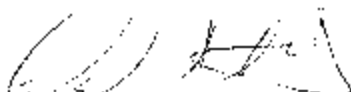
FINAL REPORT

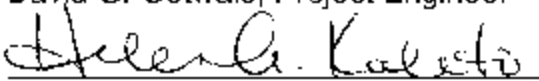
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SAFETY ASSURANCE
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400 SEVENTH STREET, SW
ROOM 6111 (NVS-220)
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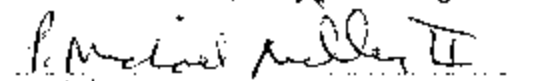
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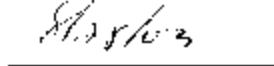

David G. Gotwals, Project Engineer


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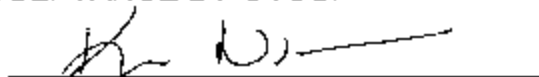


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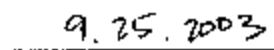

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16. Abstract A compliance test was conducted on the subject 2003 Honda Pilot 4-Door SUV, NHTSA No. C35304, in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-201U-01 for the determination of FMVSS 201U compliance. The test was conducted at the MGA Research Corporation in Troy, Michigan on April 30, 2003 - May 1, 2003. Test failures identified were as follows: NONE The data recorded seems to indicate that the 2003 Honda Pilot tested appears to comply with the requirements for FMVSS 201U which were set forth by the National Highway Traffic Safety Administration.			
17. Key Words Compliance Testing Safety Engineering FMVSS 201U 2003 Honda Pilot 4-Door SUV		18. Distribution Statement Copies of this report are available from: NHTSA Technical Reference Division, Mail Code: NPO-230 400 Seventh Street, SW, Room 5108 Washington, D.C. 20590 Telephone No. (202) 366-4946	
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1.0 PURPOSE OF COMPLIANCE TEST

The purpose of this head impact compliance test was to determine whether the subject vehicle, a 2003 Honda Pilot 4-Door SUV, meets the performance requirements of FMVSS 201U, Occupant Protection in Interior Impact - Upper Interior Head Impact Protection.

Tests were conducted during April 30, 2003 - May 1, 2003 on a 2003 Honda Pilot 4-Door SUV, manufactured by Honda of Canada Mfg.

All tests were conducted in accordance with the U. S. Department of Transportation, National Highway Traffic Safety Administration's Laboratory Test Procedure TP-201U-01 dated April 3, 1998 and the corresponding MGA Research Corporation's FMVSS 201U procedure number MGATP201U_FRAME#2 dated March 20, 2003.

All tests were conducted at MGA Research Corporation in Troy, Michigan and were performed by MGA engineers and technicians. The FMVSS 201U impactor test machine was used to conduct the testing. Target locations were determined by using a Coordinate Measurement Machine in conjunction with the MGA EZ-Target™ program and MGA procedure MGATP201U_Test Series dated March 30, 2003.

2.0 COMPLIANCE TEST DATA SUMMARY

The 2003 Honda Pilot 4-Door SUV was equipped with A, B, C, and D-Pillars, an adjustable seat belt anchorage on each B-Pillar, a fixed seat belt anchorage on each C and D- Pillar, a grab handle located on the siderail between each pillar, a front roof light console, and a seat belt anchorage located on the upper roof utilized by the center rear designated seating position. Upon completion of targeting the test vehicle, ten (10) targets were chosen to be impacted based upon engineering judgement and certification test data provided by Honda. Targets were chosen which appeared most likely to give high HIC(d) values. The ten (10) targets chosen were:

AP1	BP1	RP1	UR5
AP2	BP2	SR1	
AP3	BP4	SR2A	

The 2003 Honda Pilot 4-Door SUV tested appears to comply with the performance criteria for FMVSS 201U. The HIC(d) measured using the Part 572L (Free Motion Headform) was below 1000 for each tested component.

TABLE 2-1
SUMMARY TABLE OF TEST RESULTS

VEH. MOD YR/MAKE/MODEL/BODY: 2003 Honda Pilot 4-Door SUV

VEH. NHTSA NO.: C35304 VIN: 2HKYF18463H560711 COLOR: Silver

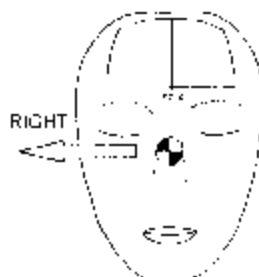
VEH. BUILD DATE: January, 2003 TEST DATES: April 30, 2003 - May 1, 2003

TEST LABORATORY: MGA Research Corporation

OBSERVERS: David Gotwals, Scott Kreiger, Louis Campbell, Nicholas Brzuch, Donald J. Whiteside

TARGET	VEHICLE SIDE	HORIZONTAL ANGLE (deg)	VERTICAL ANGLE (deg)	VELOCITY (kph)	HIC(d)	FMH HIC	IMPACT ON FMH (mm)	
							Above	Left/Right
AP1	Right	109	18	23.9	461	390	20	8 Right
AP2	Left	205	44	23.9	694	700	10	8 Left
AP3	Right	154	40	23.6	630	615	12	3 Left
BP1	Left	270	5	23.9	598	572	60	5 Left
BP2	Right	90	5	23.9	563	526	9	3 Left
BP4	Left	220	-10	24.0	598	573	15	2 Right
RP1	Right	35	8	23.8	829	879	36	5 Left
SR1	Left	270	23	23.9	806	848	10	0
SR2A	Right	90	20	23.9	726	742	11	8 Left
UR5	Right	90	36	23.6	567	531	50	5 Right

Above and left/right refers to the position relative to reference pt. 0 where the target made contact with the Free Motion Headform. See the diagram below for details.



POST TEST COMMENTS:

The following description lists any post-test damage or other test observations for each target.

AP1 Right: Slight headliner compression.

AP2 Left: The trim separated from the pillar during impact.

AP3 Right: The trim separated from the pillar during impact.

BP4 Left: Stress marks on pillar.

RP1 Right: The pillar trim compressed during impact.

SR2A Right: The grab handle anchorage cover separated during impact.

No damage was observed for any other targets.

REMARKS:

The targets listed were impacted in the following order:

Right: AP3, AP1, BP2, UR5, SR2A, RP1

Left: AP2, SR1, BP4, BP1

The 150 mm rule was observed for targets horizontal to each other and the 200 mm rule was observed for vertical components.

RECORDED BY: David G. Gotwals

DATE: April 30, 2003

APPROVED BY: Helen A. Kaleto

TABLE 2-2
GENERAL TEST AND VEHICLE PARAMETER DATA

VEH. MOD YR/MAKE/MODEL/BODY: 2003 Honda Pilot 4-Door SUV

VEH. NHTSA NO.: C35304 VIN: 2HKYF18463H560711 COLOR: Silver

VEH. BUILD DATE: January, 2003 TEST DATES: April 30, 2003 - May 1, 2003

TEST LABORATORY: MGA Research Corporation

OBSERVERS: David Gotwals, Scott Kreiger, Louis Campbell, Nicholas Brzuch, Donald J. Whiteside

INTERIOR TRIM INFORMATION: A, B, C, and D-Pillars, an adjustable seat belt anchorage on each B-Pillar, a fixed seat belt anchorage on each C and D- Pillar, a grab handle located on the siderail between each pillar, a front roof light console, and a seat belt anchorage located on the upper roof utilized by the center rear designated seating position.

SUNROOF INFORMATION:

Installed: ☐ Yes ☒ No
Operation: ☐ Electric ☐ Manual

ROLL-BAR INFORMATION:

Installed: ☐ Yes ☒ No
Padded: ☐ Yes ☒ No
Braces: ☐ Yes ☒ No

GENERAL INFORMATION:

Date Received: 3/14/03; Odometer Reading: 41 miles

DATA FROM VEHICLE'S CERTIFICATION LABEL:

Vehicle Manufactured By: Honda of Canada Mfg.

Date of Manufacture: January, 2003 VIN: 2HKYF18463H560711

GVWR: 2699 kg;

GAWR FRONT: 1300 kg

GAWR REAR: 1431 kg

DATA FROM TIRE PLACARD:

Tire Pressure with Maximum Capacity Vehicle Load:

FRONT: 220 kpa REAR: 220 kpaRecommended Tire Size: P235/70R16

Recommended Cold Tire Pressure:

FRONT: 220 kpa REAR: 220 kpaSize of Tire on Test Vehicle: P235/70R16104SType of Spare Tire: T155/90D16; Space Saver: X; Standard:

VEHICLE CAPACITY DATA:

Type of Front Seats: Bench ; Bucket X; Split Bench Number of Occupants: Front 2; Rear 6; TOTAL 8VEHICLE CAPACITY WEIGHT (VCW) = 600 kgNo. of Occupants x 68 kg = 544 kgRated Cargo/Luggage Weight (RCLW) = 56 kg (difference)

WEIGHT OF TEST VEHICLE AS DELIVERED AT LABORATORY: (with maximum fluids)

Right Front = 557.0 kg Right Rear = 436.0 kgLeft Front = 554.0 kg Left Rear = 458.0 kgTOTAL FRONT = 1111.0 kg TOTAL REAR = 894.0 kg% Total Weight = 55.4 % % Total Weight = 44.6 %TOTAL DELIVERED WEIGHT = 2005.0 kg

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:

Total Delivered Weight = 2005.0 kgRated Cargo/Luggage Wt. = 56 kgTARGET TEST WEIGHT 2061.0 kg

WEIGHT OF TEST VEHICLE:

Right Front =	<u>551.0</u> kg	Right Rear =	<u>468.0</u> kg
Left Front =	<u>550.0</u> kg	Left Rear =	<u>490.5</u> kg
TOTAL FRONT =	<u>1101.0</u> kg	TOTAL REAR =	<u>958.5</u> kg
% Total Weight =	<u>53.5</u> %	% Total Weight =	<u>46.5</u> %
TOTAL TEST WEIGHT = <u>2059.5</u> kg			
Weight of ballast secured in vehicle's cargo area = <u>53.5</u> kg			

TEST VEHICLE ATTITUDE:

AS DELIVERED: Right Front 841 mm; Left Front 837 mm;
 Right Rear 850 mm; Left Rear 844 mm;
 Pitch Angle at Right Door Sill = 0.1° rear higher
 Pitch Angle at Left Door Sill = 0.3° rear higher
 Roll Angle at Front Bumper = 0.3° right higher
 Roll Angle at Rear Bumper = 0.2° left higher

FULLY LOADED: Right Front 844 mm; Left Front 838 mm;
 Right Rear 841 mm; Left Rear 836 mm;
 Pitch Angle at Right Door Sill = 0.1° front higher
 Pitch Angle at Left Door Sill = 0.0°
 Roll Angle at Front Bumper = 0.3° right higher
 Roll Angle at Rear Bumper = 0.2° left higher

AS TARGETED:

Pitch Angle at Right Door Sill = 0.1° front higher
 Pitch Angle at Left Door Sill = 0.2° rear higher
 Roll Angle at Front Bumper = 0.3° right higher
 Roll Angle at Rear Bumper = 0.2° left higher

AS TESTED (Targets Impacted on Right Side):

Pitch Angle at Right Door Sill = 0.1° front higherPitch Angle at Left Door Sill = 0.2° rear higherRoll Angle at Front Bumper = 0.3° right higherRoll Angle at Rear Bumper = 0.2° left higher

AS TESTED (Targets Impacted on Left Side):

Pitch Angle at Right Door Sill = 0.0°Pitch Angle at Left Door Sill = 0.1° rear higherRoll Angle at Front Bumper = 0.3° right higherRoll Angle at Rear Bumper = 0.2° left higherVEHICLE WHEELBASE = 2680 mm

REMARKS: The seat travel distance was measured to be 240 mm for the driver front seat and 240 mm for the passenger front seat.

RECORDED BY: David G. GotwalsDATE: April 30, 2003APPROVED BY: Helen A. Kaleto

TABLE 2-3
HORIZONTAL IMPACT ANGLE RANGE FOR A AND B PILLARS

VEH. MOD YR/MAKE/MODEL/BODY: 2003 Honda Pilot 4-Door SUV

VEH. NHTSA NO.: C35304 VIN: 2HKYF18463H560711 COLOR: Silver

VEH. BUILD DATE: January, 2003 TEST DATES: April 30, 2003 - May 1, 2003

TEST LABORATORY: MGA Research Corporation

OBSERVERS: David Gotwals, Scott Kreiger, Louis Campbell, Nicholas Brzuch, Donald J. Whiteside

HORIZONTAL IMPACT ANGLE RANGE FOR A AND B PILLARS

	HORIZONTAL ANGLE SPECIFIED RANGE	MINIMUM HORIZONTAL ANGLE	MAXIMUM HORIZONTAL ANGLE
A-PILLAR	L 195°-255°	L 205.4°	L 250.4°
	R 105°-165°	R 109.3°	R 154.1°
B-PILLAR	L 195°-345°	L 204.6°	L 285.3°
	R 15°-165°	R 73.4°	R 155.5°

AS DETERMINED USING THE PROCEDURES SPECIFIED IN S8.13.4.1

REMARKS:

RECORDED BY: David G. Gotwals

DATE: April 29, 2003

APPROVED BY: Helen A. Kaleto

TABLE 2-4

VERTICAL IMPACT ANGLE RANGES

VEH. MOD YR/MAKE/MODEL/BODY: 2003 Honda Pilot 4-Door SUVVEH. NHTSA NO.: C35304 VIN: 2HKYF18463H560711 COLOR: SilverVEH. BUILD DATE: January, 2003 TEST DATES: April 30, 2003 - May 1, 2003TEST LABORATORY: MGA Research CorporationOBSERVERS: David Gotwals, Scott Kreiger, Louis Campbell, Nicholas Brzuch, Donald J. Whiteside

VERTICAL IMPACT ANGLE RANGES

		VERTICAL ANGLE SPECIFIED RANGE	MINIMUM VERTICAL ANGLE	MAXIMUM VERTICAL ANGLE
FRONT HEADER	FH1	L 0°-50°	L 0°	L 50°
		R 0°-50°	R 0°	R 50°
	FH2	L 0°-50°	L 0°	L 50°
		R 0°-50°	R 0°	R 50°
SIDE RAIL	SR1	L 0°-50°	L 0°	L 23°
		R 0°-50°	R 0°	R 21°
	SR2A	L 0°-50°	L 0°	L 20°
		R 0°-50°	R 0°	R 20°
	SR2B	L 0°-50°	L 0°	L 15°
		R 0°-50°	R 0°	R 16°
	SR3-1	L 0°-50°	L 0°	L 25°
		R 0°-50°	R 0°	R 24°
	SR3-2	L 0°-50°	L 0°	L 29°
		R 0°-50°	R 0°	R 26°
	SR3-3	L 0°-50°	L 0°	L 25°
		R 0°-50°	R 0°	R 24°
	SR3-4	L 0°-50°	L 0°	L 29°
		R 0°-50°	R 0°	R 26°
A-PILLAR	AP1	L -5°-50°	L -5°	L 18°
		R -5°-50°	R -5°	R 18°

		VERTICAL ANGLE SPECIFIED RANGE	MINIMUM VERTICAL ANGLE	MAXIMUM VERTICAL ANGLE
	AP2	L -5°-50°	L -5°	L 44°
		R -5°-50°	R -5°	R 44°
	AP3	L -5°-50°	L -5°	L 40°
		R -5°-50°	R -5°	R 40°
B-PILLAR	BP1	L -10°-50°	L -10°	L 5°
		R -10°-50°	R -10°	R 5°
	BP2*	L 0°-50°	L 0°	L 5°
		R 0°-50°	R 0°	R 5°
	BP3	L -10°-50°	L -10°	L -2°
		R -10°-50°	R -10°	R -7°
	BP4	L -10°-50°	L -10°	L -10°
		R -10°-50°	R -10°	R -10°
OTHER PILLAR	OP1*	L 0°-50°	L 0°	L 10°
		R 0°-50°	R 0°	R 10°
	OP2	L -10°-50°	L -10°	L -3°
		R -10°-50°	R -10°	R -3°
REAR PILLAR	RP1	L -10°-50°	L -10°	L 10°
		R -10°-50°	R -10°	R 8°
	RP2*	L 0°-50°	L 0°	L 20°
		R 0°-50°	R 0°	R 23°
UPPER ROOF 1		0°-50°	0°	25°
UPPER ROOF 2		0°-50°	0°	36°
UPPER ROOF 3		0°-50°	0°	50°
UPPER ROOF 4		0°-50°	0°	25°
UPPER ROOF 5		0°-50°	0°	36°
UPPER ROOF 6		0°-50°	0°	36°

As determined using the Procedures specified in S8.13.4.2. *Targets BP2, OP1 and RP2 are seat belt anchorage locations.

RECORDED BY: DAVID G. Gotwals

DATE: April 29, 2003

APPROVED BY: Helen A. Kalet

TABLE 2-5
TARGET MEASUREMENTS

VEH. MOD YR/MAKE/MODEL/BODY: 2003 Honda Pilot 4-Door SUV

VEH. NHTSA NO.: C35304 VIN: 2HKYF18463H560711 COLOR: Silver

VEH. BUILD DATE: January, 2003 TEST DATES: April 30, 2003 - May 1, 2003

TEST LABORATORY: MGA Research Corporation

OBSERVERS: David Gotwals, Scott Kreiger, Louis Campbell, Nicholas Brzuch, Donald J. Whiteside

Measurement	Description	Left Side	Right Side
M	Seat Fore/Aft Travel (Front seats)	240.0 mm	240.0 mm
T°	Horizontal ∠ {CG-F1 (Left Seat) to (Right A-Pillar)}	109.6°	--
A1°	360° - T°	250.4°	--
W°	Horizontal ∠ {CG-2 (Left Seat) to (Left A-Pillar)}	205.4°	--
A2°	A2° = W°	205.4°	--
U°	Horizontal ∠ {CG-2 (Left Seat) to (Left B-Pillar)}	285.3°	--
B1°	B1° = U°	285.3°	--
V°	Horizontal ∠ {CG-R (Left Seat) to (Left B-Pillar)}	204.6°	--
B2°	B2° = V°	204.6°	--
W° (right)	Horizontal ∠ {CG-F2 (Right Seat) to (Right A-Pillar)}	--	154.1°
A1° (right)	A1° (right) = W° (right)	--	154.1°
T° (right)	Horizontal ∠ {CG-F1 (Right Seat) to (Left A-Pillar)}	--	250.7°
A2° (right)	360° - T° (right)	--	109.3°
V° (right)	Horizontal ∠ {CG-R (Right Seat) to (Right B-Pillar)}	--	155.5°
B1° (right)	B1° (right) = V° (right)	--	155.5°
U° (right)	Horizontal ∠ {CG-F2 (Right Seat) to (Right B-Pillar)}	--	73.4°
B2° (right)	B2° (right) = U° (right)	--	73.4°
J	A-Pillar {(Plane 3) - (Plane 5)}	385.9 mm	389.2 mm
J/2	J ÷ 2	193.0 mm	194.6 mm
D1	Upper Roof {(Plane A) - (Plane B)}	2540.0 mm	
D1/2	D1 ÷ 2	1270.0 mm	
D2	Upper Roof {(Plane C) - (Plane D)}	1362.4 mm	

Measurement	Description	Left Side	Right Side
D2/2	D2 + 2	681.2 mm	
.35D1	.35 x D1	889.0 mm	
.35D2	.35 x D2	476.8 mm	
N	B-Pillar {(BPR) - (lowest point on daylight opening forward of B-Pillar)}	537.8 mm	535.0 mm
N/2	B-Pillar {(BP3) - (lowest point on daylight opening forward of B-Pillar)}	268.9 mm	267.5 mm
N/4	B-Pillar {(BP4) - (lowest point on daylight opening forward of B-Pillar)}	134.5 mm	133.8 mm
Q	Q-Pillar {(QPR) - (lowest point on daylight opening)}	500.9 mm	497.7 mm
Q/2	Q + 2	250.5 mm	248.9 mm
D	R-Pillar (Point 7 - Point M)	1017.0 mm	1015.0 mm
3D/7	(3 x D) + 7	435.9 mm	435.0 mm

As determined using the Procedures specified in S10.1-10.13.

SgRP Locations (World Coordinates)						
	Left (mm)			Right (mm)		
	x	y	z	x	y	z
Front	2087.8	-394.7	726.9	2087.3	395.1	727.0
2nd Row	2970.7	-395.3	648.3	2970.2	394.6	648.4
Rear Row	3703.4	-360.8	635.9	3702.9	359.1	636.0

CG Locations (World Coordinates)						
	Left (mm)			Right (mm)		
	x	y	z	x	y	z
CGF1	2007.8	-394.7	1386.9	2007.3	395.1	1387.0
CGF2	2247.8	-394.7	1386.9	2247.3	395.1	1387.0
CGR (2 nd Row)	3130.7	-395.3	1308.3	3130.2	394.6	1308.4
CGR (Rear Row)	3863.4	-360.8	1295.9	3862.9	359.1	1296.0

REFERENCE FOR WORLD COORDINATE SYSTEM:

Driver door striker attachment, upper hole (x, y, z) = (1776.8, -630.2, 376.2)

REMARKS: No vehicle coordinate system was provided by Honda. The world coordinate CG locations were determined with measurements provided by Honda from the seat belt anchorage hole.

RECORDED BY: David G. Gotwals

DATE: April 30, 2003

APPROVED BY: Helen A. Kalet

TABLE 2-6
SUMMARY OF TARGETING RESULTS

VEH. MOD YR/MAKE/MODEL/BODY: 2003 Honda Pilot 4-Door SUV

VEH. NHTSA NO.: C35304 VIN: 2HKYF18463H560711 COLOR: Silver

VEH. BUILD DATE: January, 2003 TEST DATES: April 30, 2003 - May 1, 2003

TEST LABORATORY: MGA Research Corporation

OBSERVERS: David Gotwals, Scott Kreiger, Louis Campbell, Nicholas Brzuch, Donald J. Whiteside

SUMMARY OF TARGETING RESULTS								
Target	Location (mm)			Horizontal Angle (deg)	Vertical Angle (deg)	Relocation (Yes/No)	Extension (# of 25 mm Spheres)	Impact (Yes/No)
	x	y	z					
A-Pillar Left Side								
AP1	1826.2	-617.0	1532.2			Yes		
REL	1849.4	-617.0	1534.7	250	18		1	No
AP2	1728.3	-667.2	1444.7	205	44	No		Yes
AP3	1568.2	-702.2	1340.1	205	40	No		No
A-Pillar Right Side								
AP1	1825.9	618.8	1535.2			Yes		
REL	1846.6	619.7	1534.7	109	18		1	Yes
AP2	1730.9	666.9	1447.6	154	44	No		No
AP3	1568.1	701.5	1341.1	154	40	No		Yes
B-Pillar Left Side								
BP1	2394.9	-569.5	1643.7	270	5	No		Yes
BP2	2368.5	-656.7	1360.8	270	5	No		No
BP3	2328.3	-689.7	1375.4	275	-2	No		No
BP4	2416.0	-733.1	1242.2	220	-10	No		Yes
B-Pillar Right Side								
BP1	2393.1	572.4	1640.7	90	5	No		No
BP2	2368.1	658.1	1360.0	90	5	No		Yes
BP3	2327.9	690.7	1374.0	85	-7	No		No
BP4	2416.6	734.8	1241.0	140	-10	No		No
Other Pillar Left Side								
OPR	3268.3	-556.8	1652.3					

SUMMARY OF TARGETING RESULTS								
Target	Location (mm)			Horizontal Angle (deg)	Vertical Angle (deg)	Relocation (Yes/No)	Extension (# of 25 mm Spheres)	Impact (Yes/No)
	x	y	z					
OP1	3307.3	-667.7	1369.8	270	10			No
OP2	3313.2	-686.0	1402.5			Yes		
REL	3356.5	-693.4	1365.0	270	-3		2	No
Other Pillar Right Side								
OPR	3262.9	562.8	1646.8					
OP1	3302.7	671.7	1365.6	90	10	No		No
OP2	3310.1	689.7	1398.6			Yes		
REL	3354.8	696.5	1384.8	90	-3		2	No
Rear Pillar Left Side								
RP1	3971.1	-565.1	1557.3	325	10	No		No
RP2	4022.3	-586.7	1412.6	325	20	No		No
Rear Pillar Right Side								
RP1	3966.8	561.5	1561.7	35	8	No		Yes
RP2	4022.8	591.5	1408.3	35	23	No		No
Front Header Left Side								
FH1	1760.0	-507.8	1576.6	180	50	No		No
FH2	1730.0	-362.0	1580.3	180	50	No		No
Front Header Right Side								
FH1	1769.1	508.7	1576.5	180	50	No		No
FH2	1732.0	360.2	1580.3	180	50	No		No
Side Rail Left Side								
SR1	1975.8	-596.4	1588.4			Yes		
REL	2002.6	-579.4	1556.1	270	23		2	Yes
SR2(A)	2125.2	-582.2	1625.0			Yes		
REL	2136.3	-574.2	1572.8	270	20		2	No
SR2(B)	2095.0	-579.2	1622.3			Yes		
REL	2101.2	-569.3	1572.8	270	15		2	No
SR3-1	2782.7	-553.5	1608.7	270	25	No		No
SR3-2	2933.2	-554.0	1611.3	270	29	No		No
SR3-3	3405.1	-539.4	1614.0	270	25	No		No

SUMMARY OF TARGETING RESULTS								
Target	Location (mm)			Horizontal Angle (deg)	Vertical Angle (deg)	Relocation (Yes/No)	Extension (# of 25 mm Spheres)	Impact (Yes/No)
	x	y	z					
SR3-4	3657.2	-534.7	1614.6	270	29	No		No
Side Rail Right Side								
SR1	1976.9	598.6	1589.0			Yes		
REL	2000.1	582.0	1554.6	90	21		2	No
SR2(A)	2125.9	582.9	1623.6			Yes		
REL	2135.1	575.2	1572.3	90	20		2	Yes
SR2(B)	2092.8	582.2	1621.1			Yes		
REL	2099.4	571.2	1570.3	90	16		2	No
SR3-1	2778.7	555.1	1605.5	90	24	No		No
SR3-2	2933.0	555.9	1608.7	90	26	No		No
SR3-3	3402.0	543.8	1610.4	90	24	No		No
SR3-4	3656.5	540.0	1612.6	90	26	No		No
Rear Header Left Side								
RH	3886.3	-360.7	1630.6	0	50	No		No
Rear Header Right Side								
RH	3930.4	359.8	1640.8	0	50	No		No
Upper Roof Left Side								
UR1	2028.8	-475.9	1641.0	270	25	No		No
UR2	2393.0	-474.7	1672.9	270	36	No		No
UR3	3306.0	-371.9	1674.3	270	50	No		No
Upper Roof Right Side								
UR4	2029.1	476.6	1640.7	90	25	No		No
UR5	2395.6	477.8	1671.2	90	36	No		Yes
UR6	3250.5	477.9	1671.5	90	36	No		No

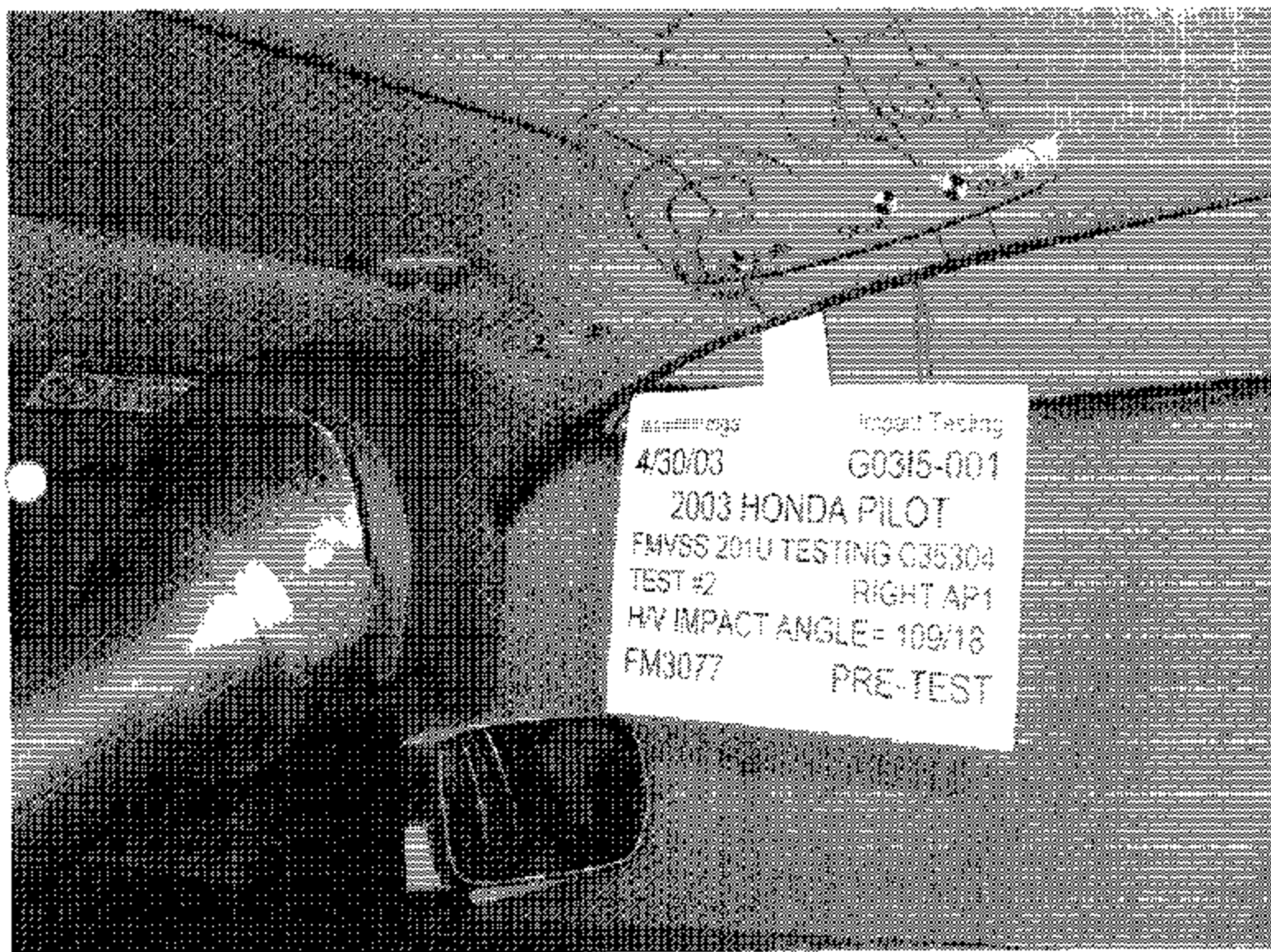
As determined using the Procedures specified in S10.1-10.13.

REMARKS:

RECORDED BY: David G. Gotwals

DATE: April 30, 2003

APPROVED BY: Helen A. Kaleto



4/30/03

Import Testing

4/30/03

G0315-001

2003 HONDA PILOT

FMVSS 201U TESTING C35304

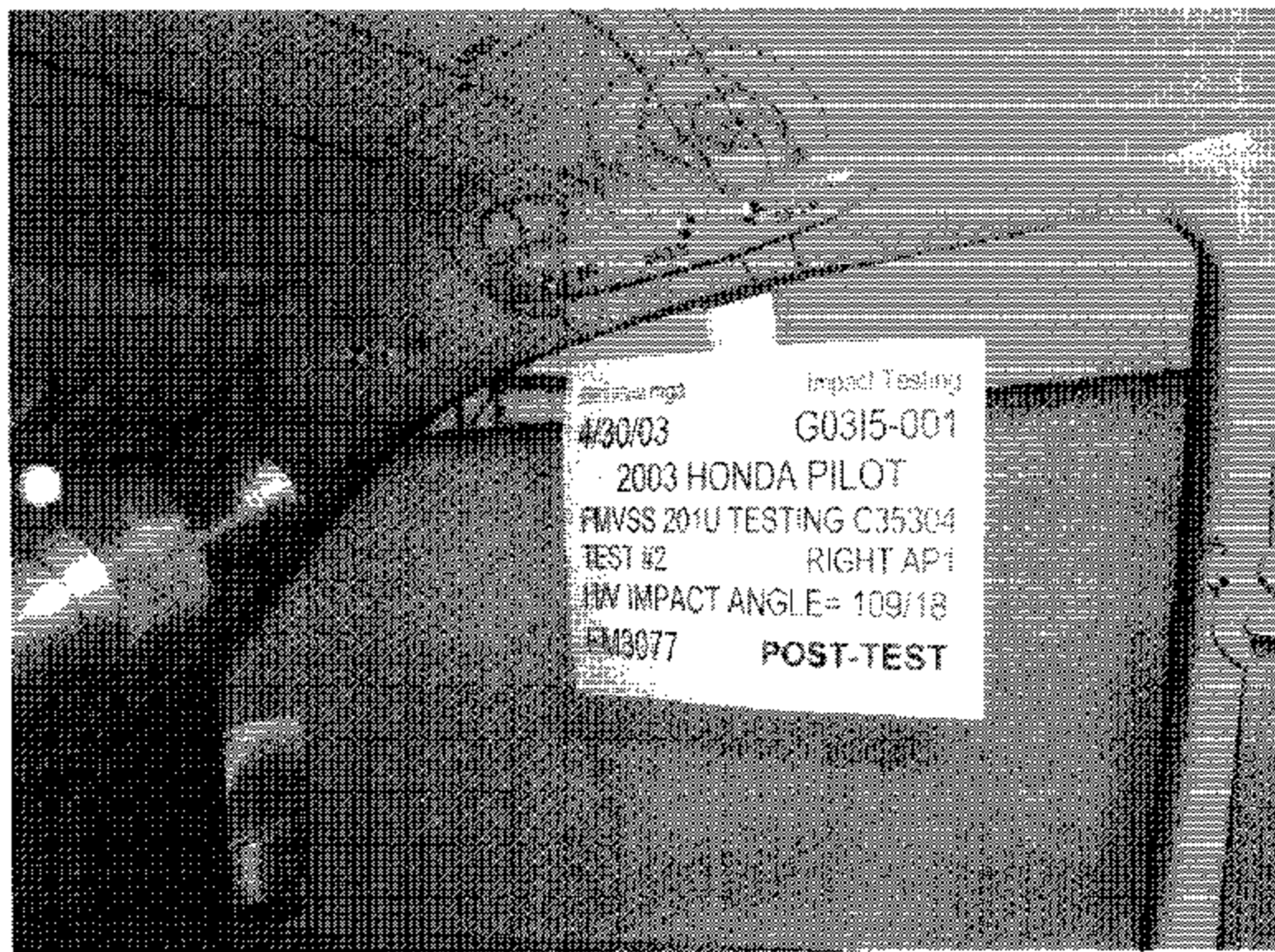
TEST #2

RIGHT AP1

HV IMPACT ANGLE= 109/18

FM3077

PRE-TEST



4/30/03

Impact Testing

G0315-001

2003 HONDA PILOT

FMVSS 201U TESTING C35304

TEST #2

RIGHT AP1

HV IMPACT ANGLE= 109/18

EM3077

POST-TEST

mga

Impact Testing

4/30/03

G0315-001

2003 HONDA PILOT

FMVSS 201U TESTING C35304

TEST #2

RIGHT AP1

H/V IMPACT ANGLE = 109/18

FM3077

POST-TEST

MICHIGAN OPERATIONS
DATE: 3/20/03
SUPERCEDES: MGATP201U_FRAME #2.4

DOC. NO. MGATP201U_FRAME #2
REVISION NO. 3
PAGE 9 OF 9

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: C35304 VEHICLE YR/MAKE/MODEL: 2003 HONDA PILOT

GENERAL TEST PARAMETERS:

Test Number: 2

Target (Vehicle Side): left/right AP1

Temperature: 22 °F CC

MGA Test Reference No.: FM3077

Humidity: 22 %

Approach Angles: Horizontal 109 °

Time of Test: 204 am/pm (pm)

Vertical 13 °

FMH Serial No. 36

TEST RESULTS:

HIC(d)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right <u>(Right)</u> Pt. O
461	390	7.9	23.9	20	8

INSTRUMENTATION INFORMATION: (all accelerometers are Endevco 7264-2000)

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
<u>X</u>	5	J35923	-101.6	1.21	1.21
<u>Y</u>	6	J35916	101.2	1.23	1.23
<u>Z</u>	7	J35918	99.4	1.51	1.51

REMARKS (Summary of test, damage, non-compliance, invalid test, etc.): _____

Slight Headliner Compression

Recorded By: MDG/2/2 Approved By: Heidi A. Kalish Date: 4-30-03

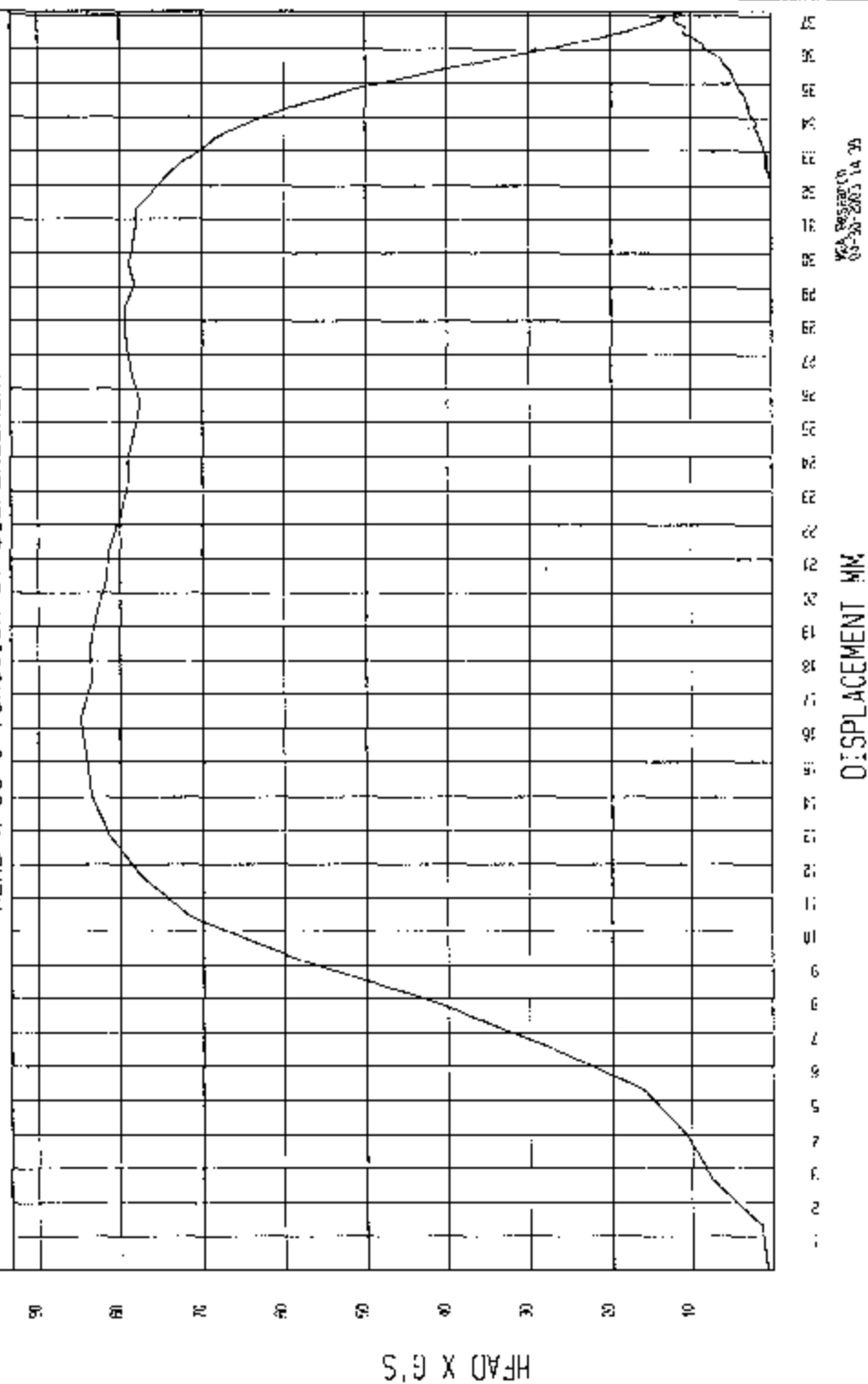
*Only necessary for NHTSA (Government) Compliance testing.

```
*****
RESULTS OF HIC36 PROGRAM
*****
The input file is \NHTSA\FM3077AV.A05
HIC = 389.92 calculated over 7.9 msec
T1 = 1.20 msec T2 = 9.10 msec
*****
HIC(d) = 461
Impact Velocity = 23.9 (km/h)
```

TEST: 2003 HONDA PILOT 4/30/03 FMVSS 201U TESTING C35304

COMPONENT: TEST #2 (FM3077) RIGHT AP1, H/V = 109/1B

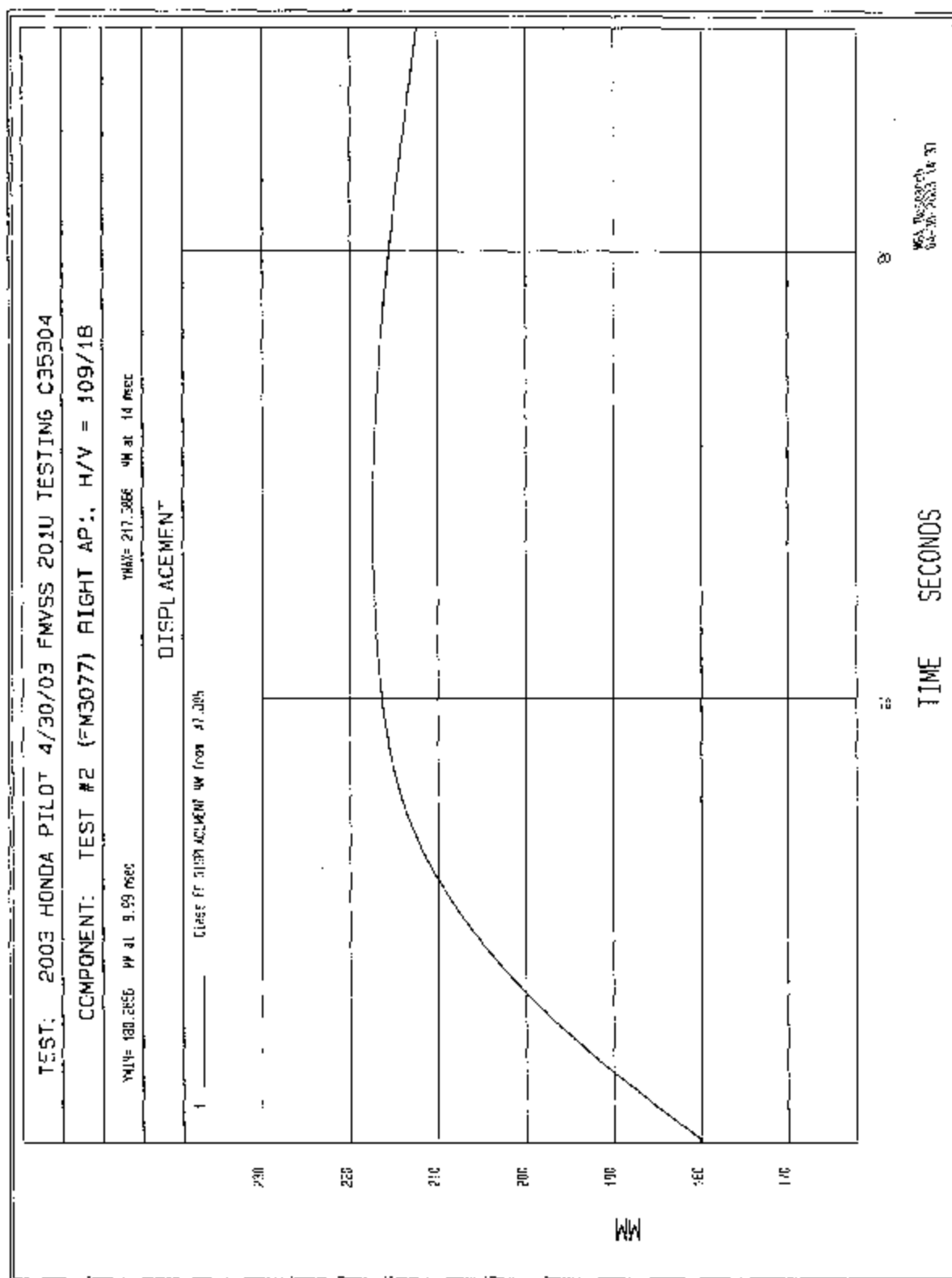
HEAD X as a function of DISPLACEMENT

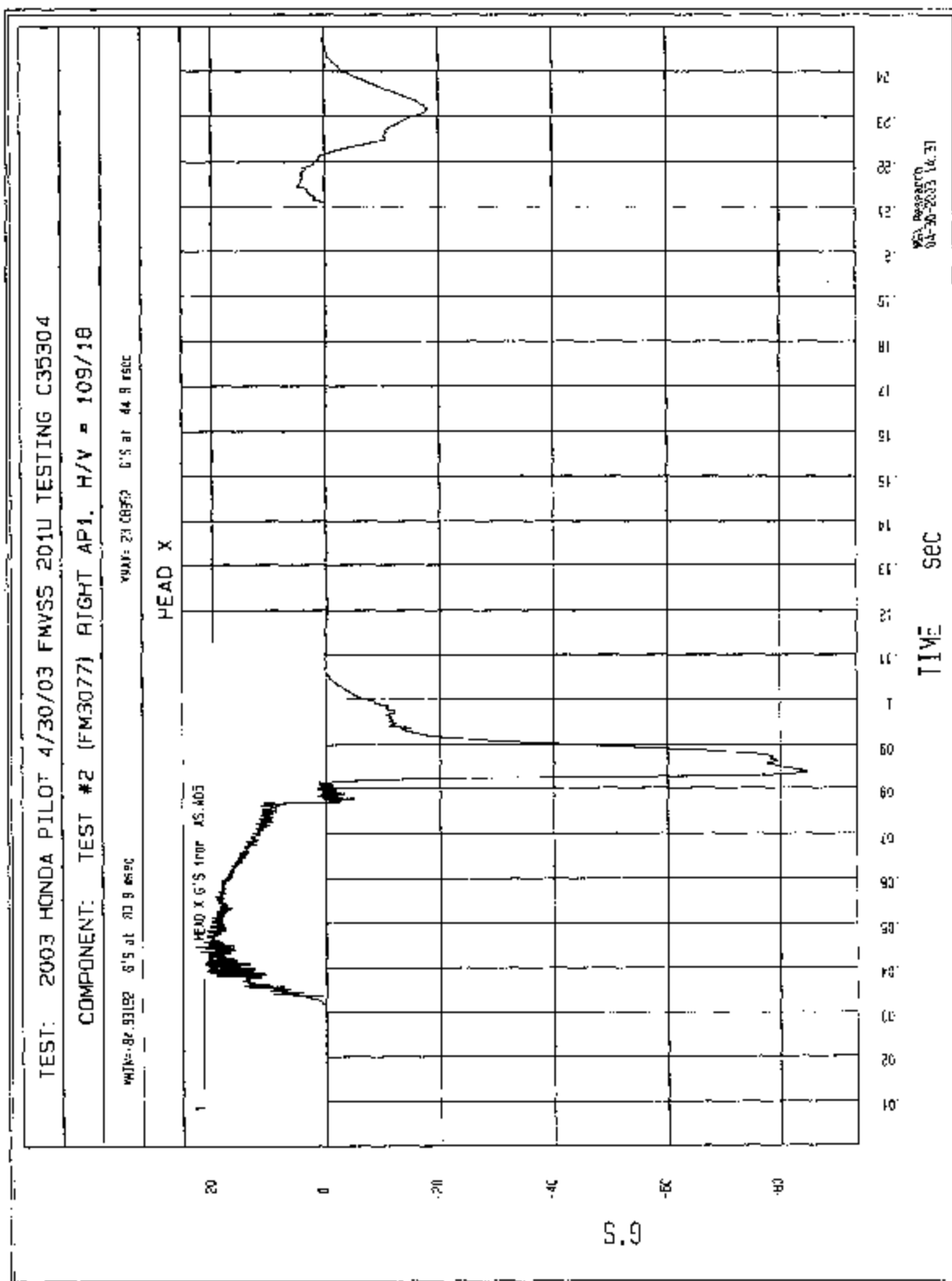


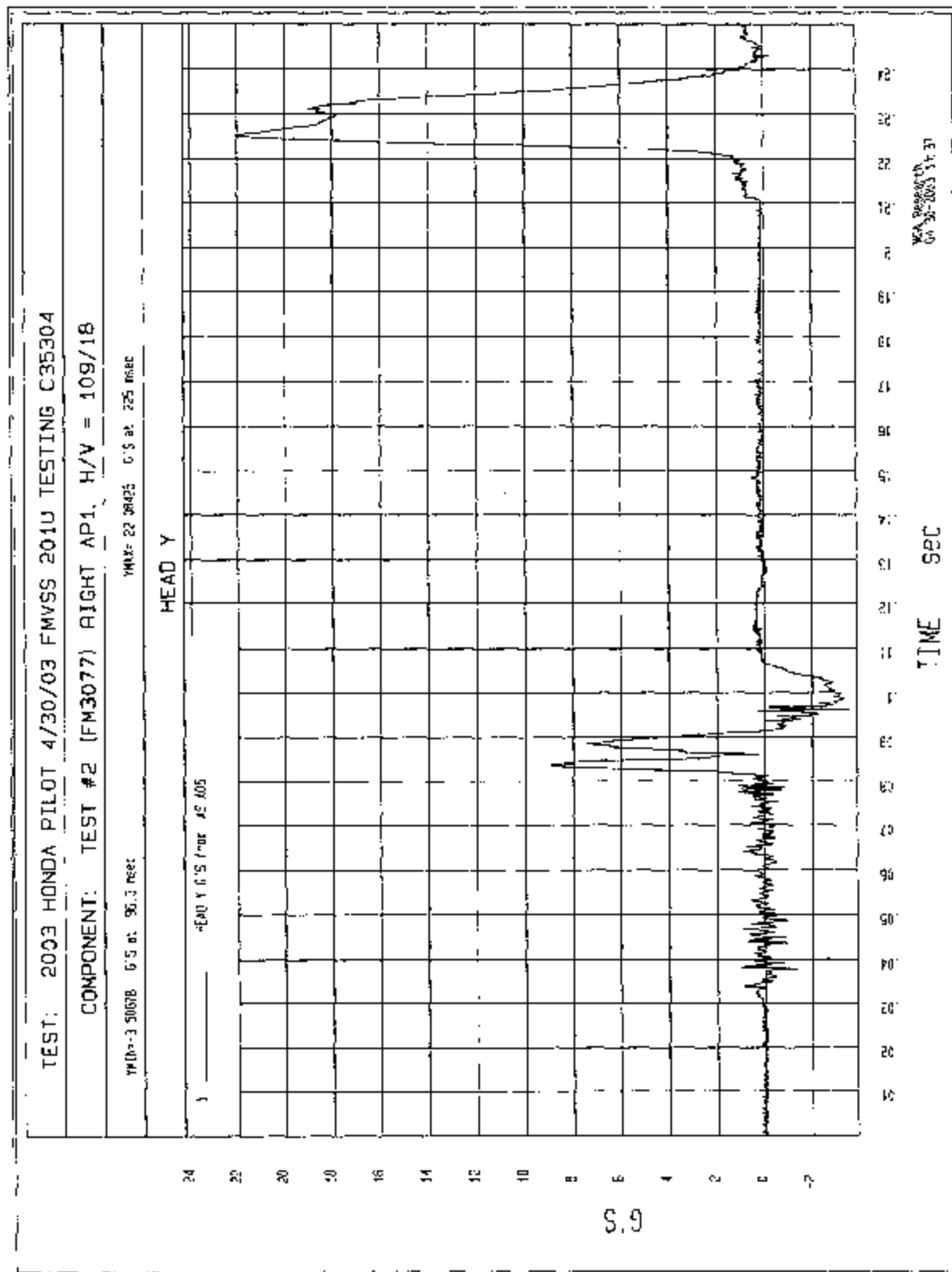
WCA Research
04-30-2003 14:25

DISPLACEMENT MM

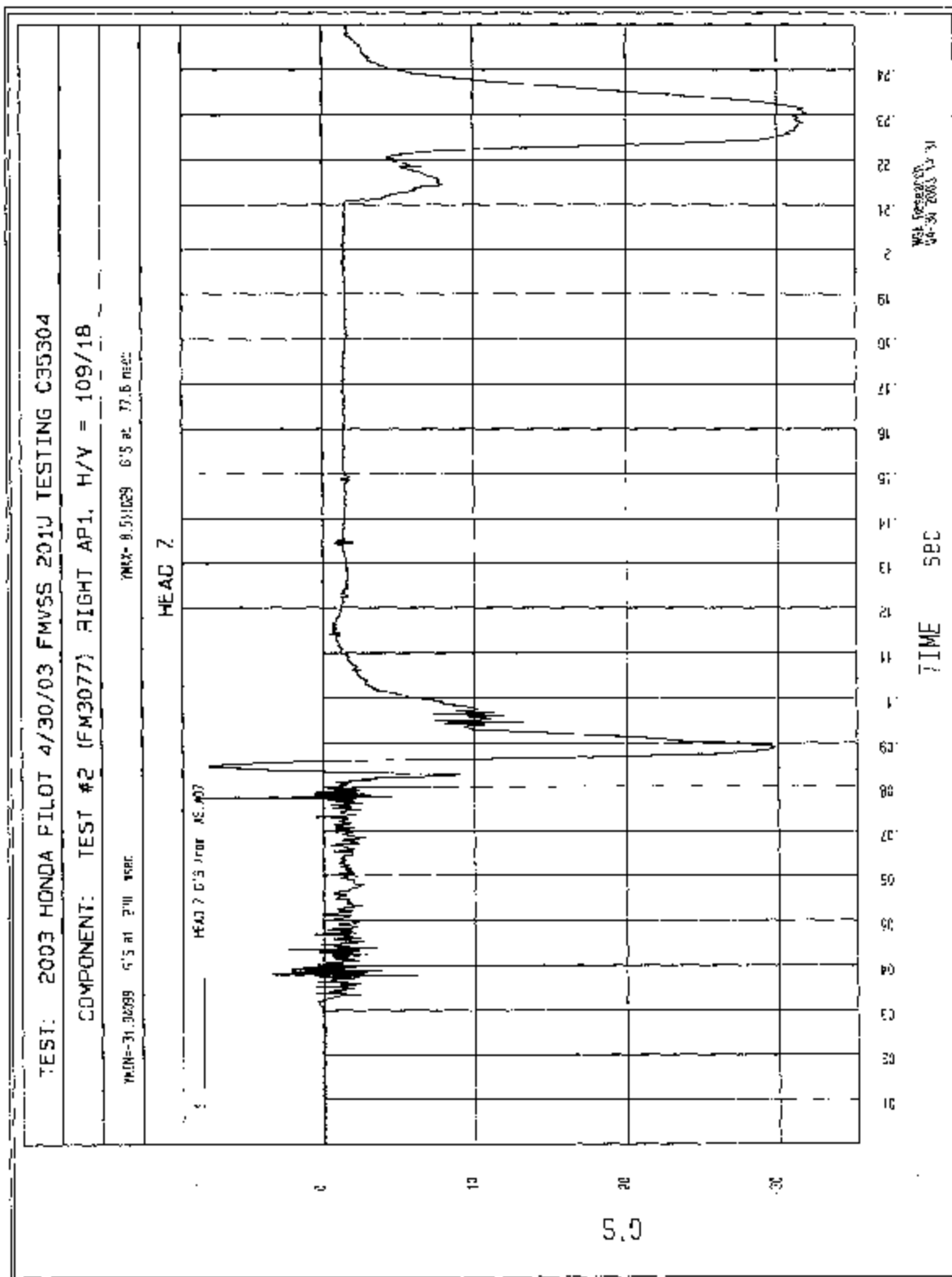
HEAD X G'S

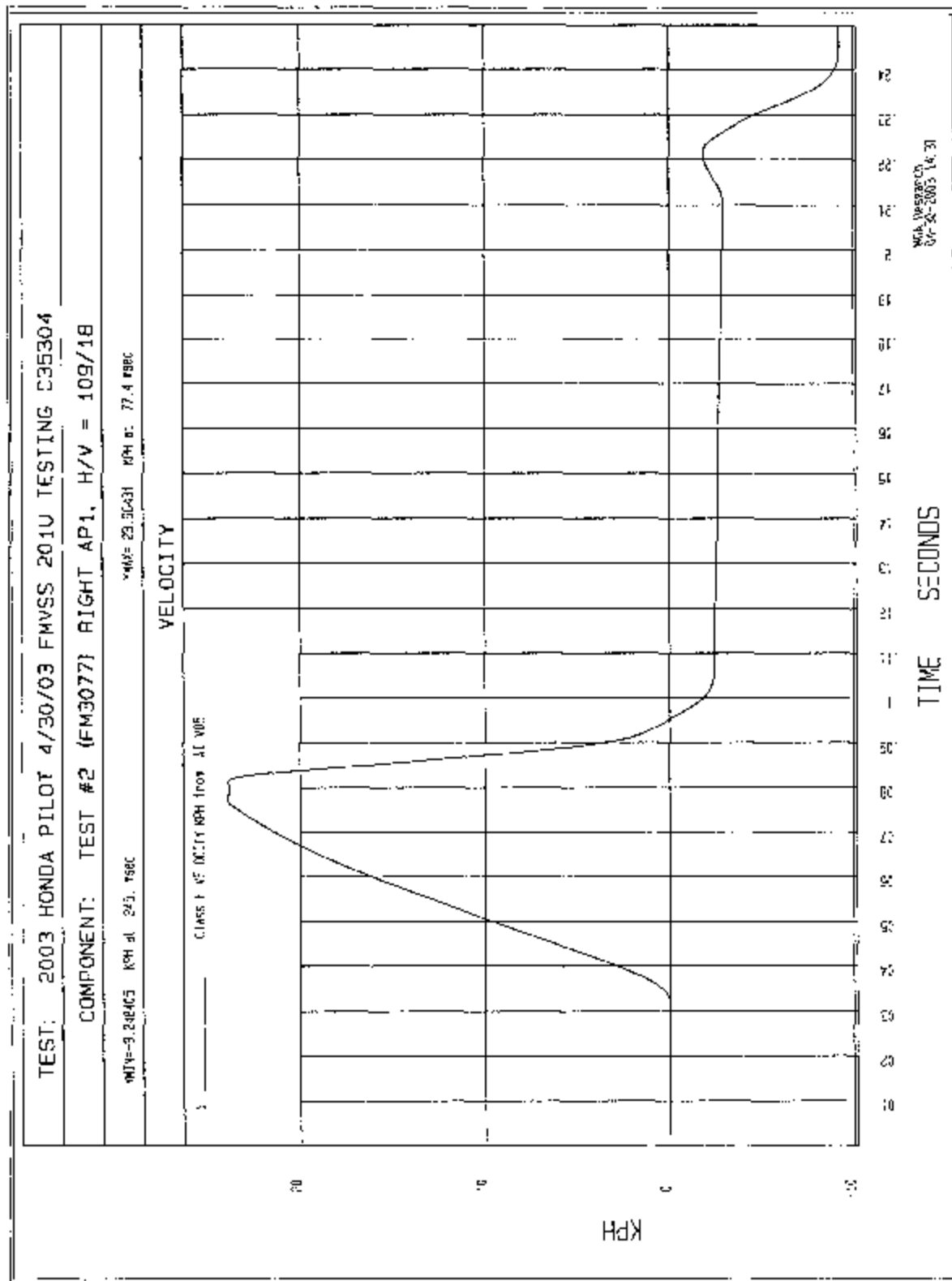






S.9





mga

Impact Testing

5/1/03

G0315-001

2003 HONDA PILOT

2003 HONDA PILOT FM3082 FM3082 2011 TESTED 03/04

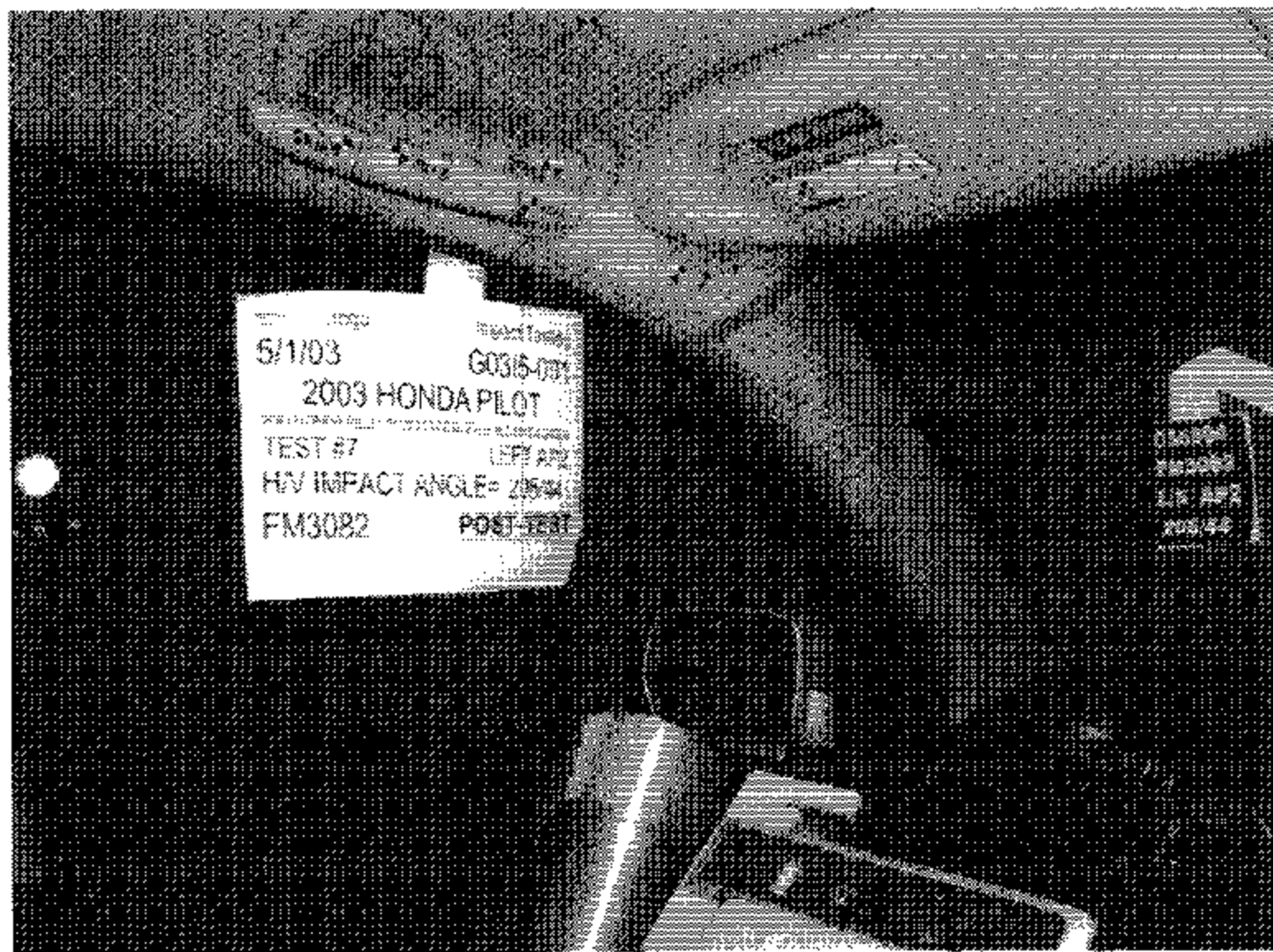
TEST #7

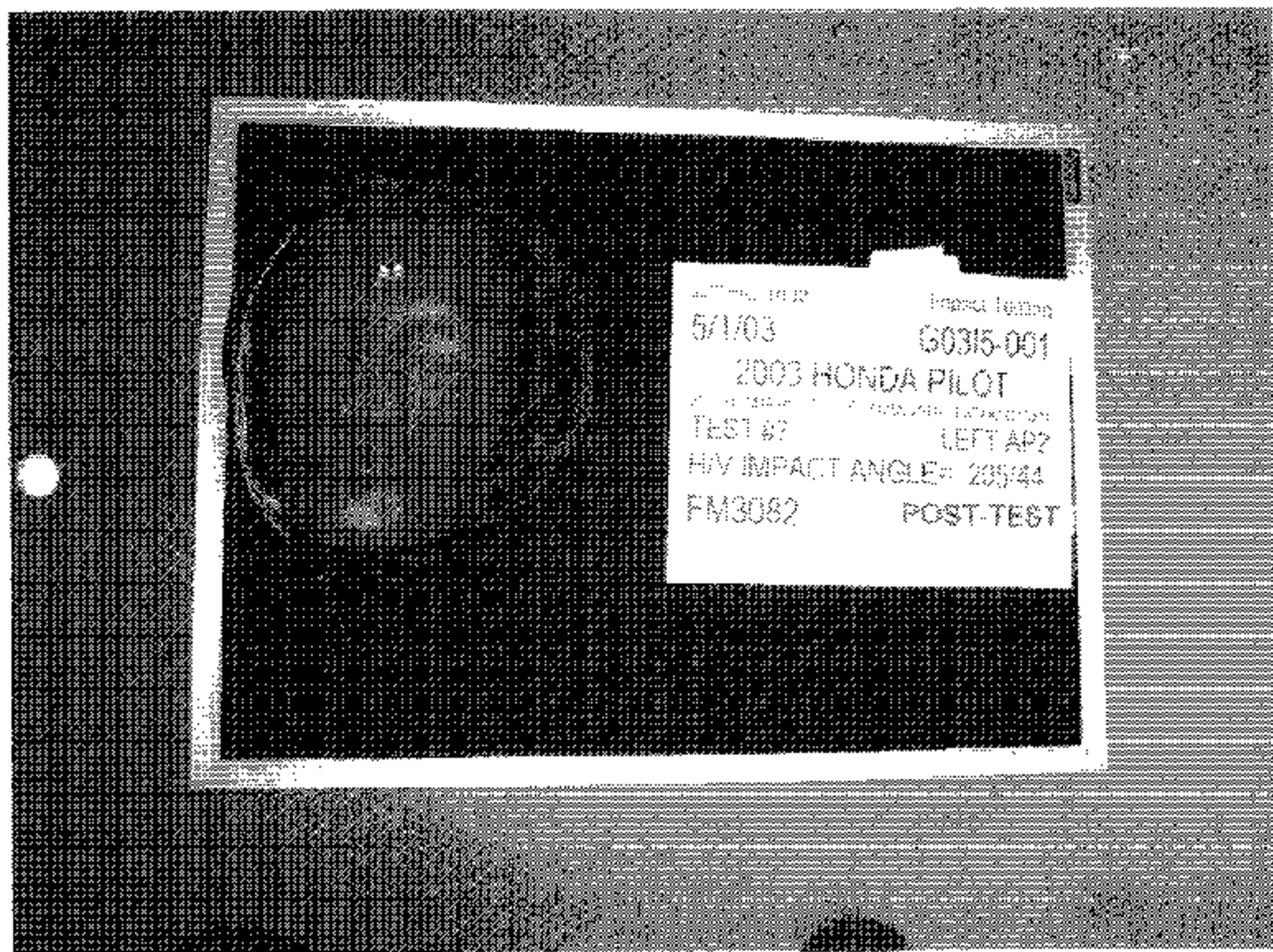
LEFT AP2

H/V IMPACT ANGLE= 205/44

FM3082

PRE-TEST





MICHIGAN OPERATIONS
DATE: 3/20/03
SUPERCEDES: MGAIP201U_FRAME #2.4

DOC. NO: MGAIP201U_FRAME #2
REVISION NO: 5
PAGE 9 OF 9

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: C35304 VEHICLE YR/MAKE/MODEL: 2003 HONDA PILOT

GENERAL TEST PARAMETERS:

Test Number: 7

Target (Vehicle Side) left/right AP2

Temperature: 23 °F/C

MGA Test Reference No.: FM3082

Humidity: 37 %

Approach Angles: Horizontal 205 °

Time of Test: 11:00 am/pm

Vertical 44 °

FMH Serial No: 35

TEST RESULTS:

HIC(d)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
<u>694</u>	<u>700</u>	<u>8.3</u>	<u>23.5</u>	<u>10</u>	<u>8</u>

INSTRUMENTAION INFORMATION: (all accelerometers are Endevco 7264-2000)

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
<u>x</u>	<u>4</u>	<u>335924</u>	<u>-92.7</u>	<u>1.21</u>	<u>1.21</u>
<u>y</u>	<u>5</u>	<u>335919</u>	<u>95.4</u>	<u>1.23</u>	<u>1.23</u>
<u>z</u>	<u>6</u>	<u>331051</u>	<u>95.3</u>	<u>1.51</u>	<u>1.51</u>

REMARKS (Summary of test, damage, non-compliance, invalid test, etc.):

THE TRIM SEPARATED FROM THE PILLAR DURING IMPACT

Recorded By: [Signature]

Approved By*: [Signature]

Date: 5/1/03

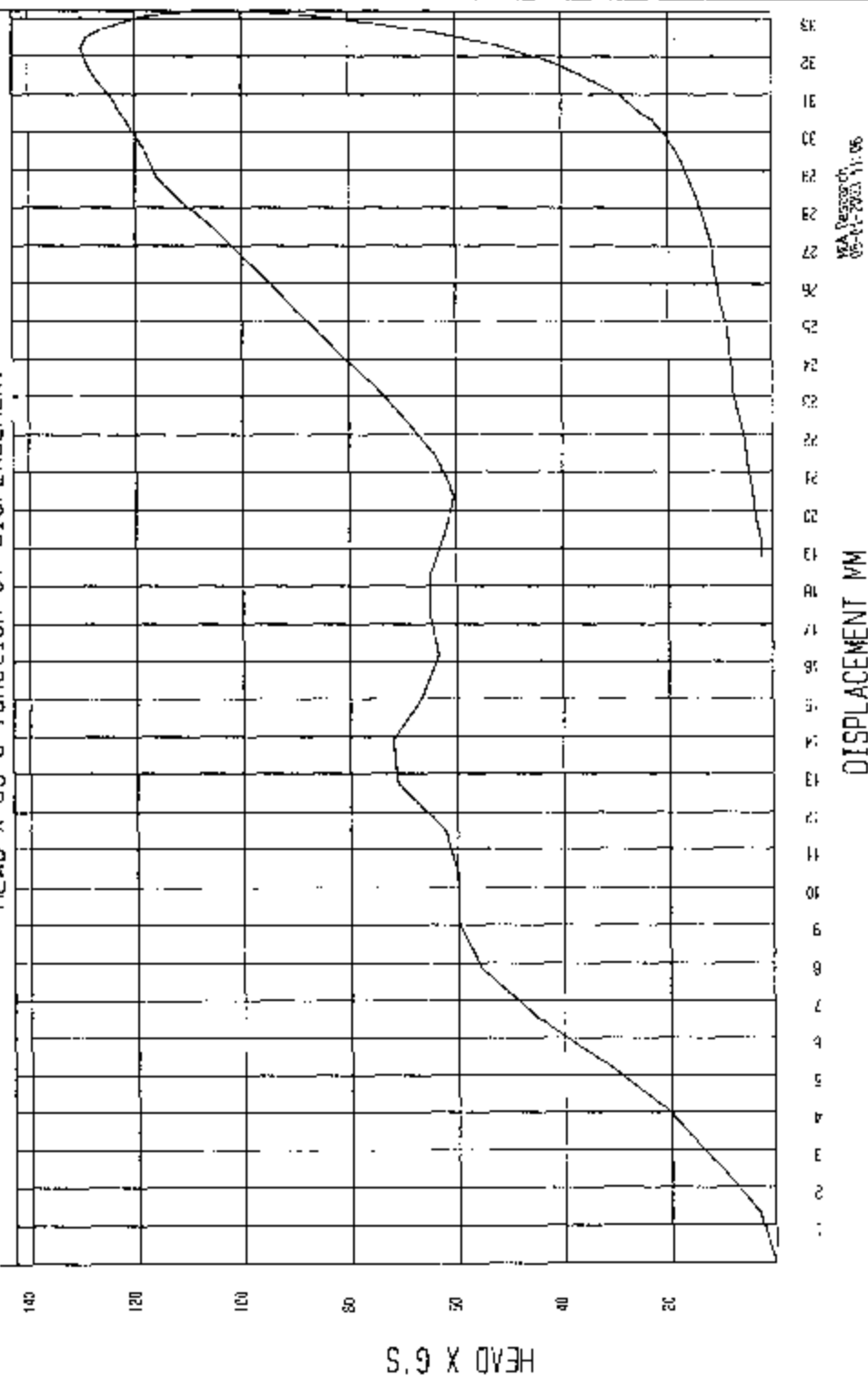
*Only necessary for NHTSA (Government) Compliance testing.

```
*****
RESULTS OF HIC36 PROGRAM
*****
The input file is \NETSA\FM3082AV.A05
e HIC = 699.60 calculated over 8.3 msec
T1 = 1.20 msec T2 = 9.50 msec
*****
HIC(d) = 694
Impact velocity = 23.9 (km/h)
```

TEST: 2003 HONDA PILOT 5/1/03 FMVSS 201U IFSTING C35304

COMPONENT: TEST #7 (FM3082) LEFT AP2, H/V = 205/44

HEAD X as a function of DISPLACEMENT



TEST: 2003 HONDA PILOT 5/1/03 FMVSS 201U TESTING C35304

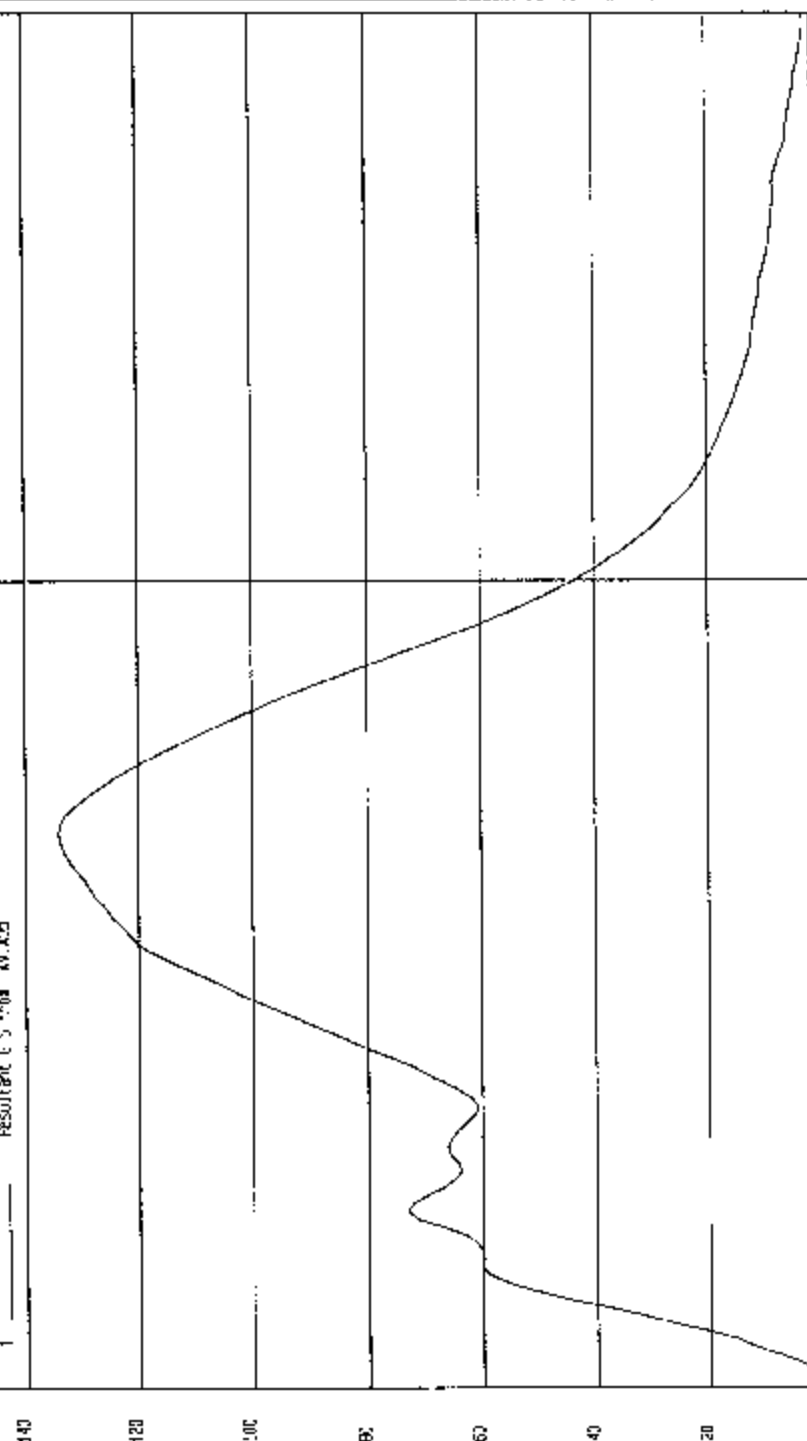
COMPONENT: TEST #7 (FM30B2) LEFT AP2 H/V = 205/44

YMIN= 1.577844 G'S at 9.98 msec

YMAX= 114.1276 G'S at 6.9 msec

FMH RESULTANT

1 Resultant G'S from AVX05



05-01-2003 14:06

TIME SEC

TEST: 2003 HONDA PILOT 5/1/03 FNVSS 201U TESTING C35304

COMPONENT: TEST #7 (FN3082) LEFT AP2, H/V = 205/44

YMIN= 164.617 MM at 9.99 msec

YMAX= 217.017 MM at 8.2 msec

DISPLACEMENT

1 _____ Class FF DISPLACEMENT MM from AT 005

230

220

210

200

190

180

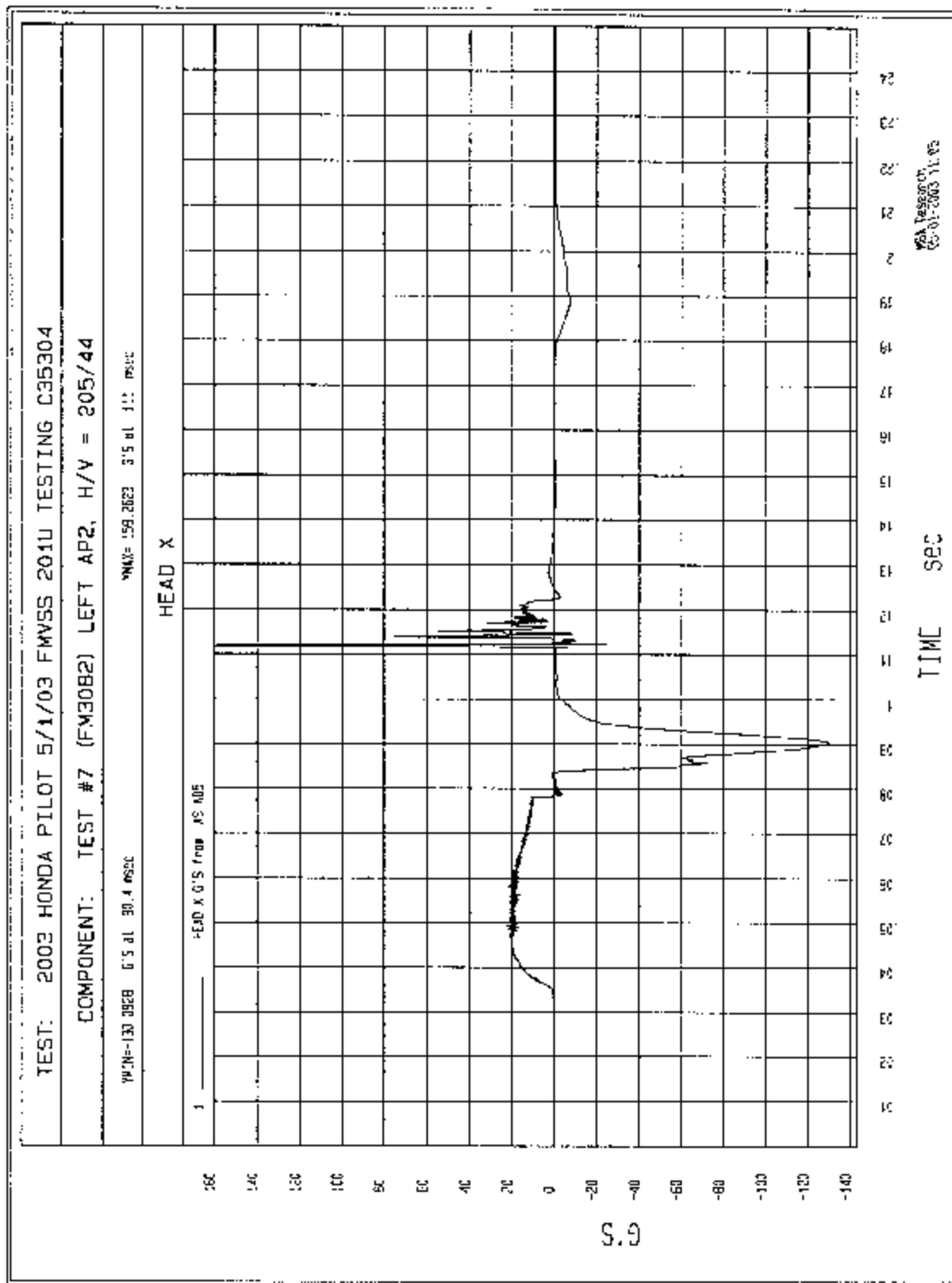
170

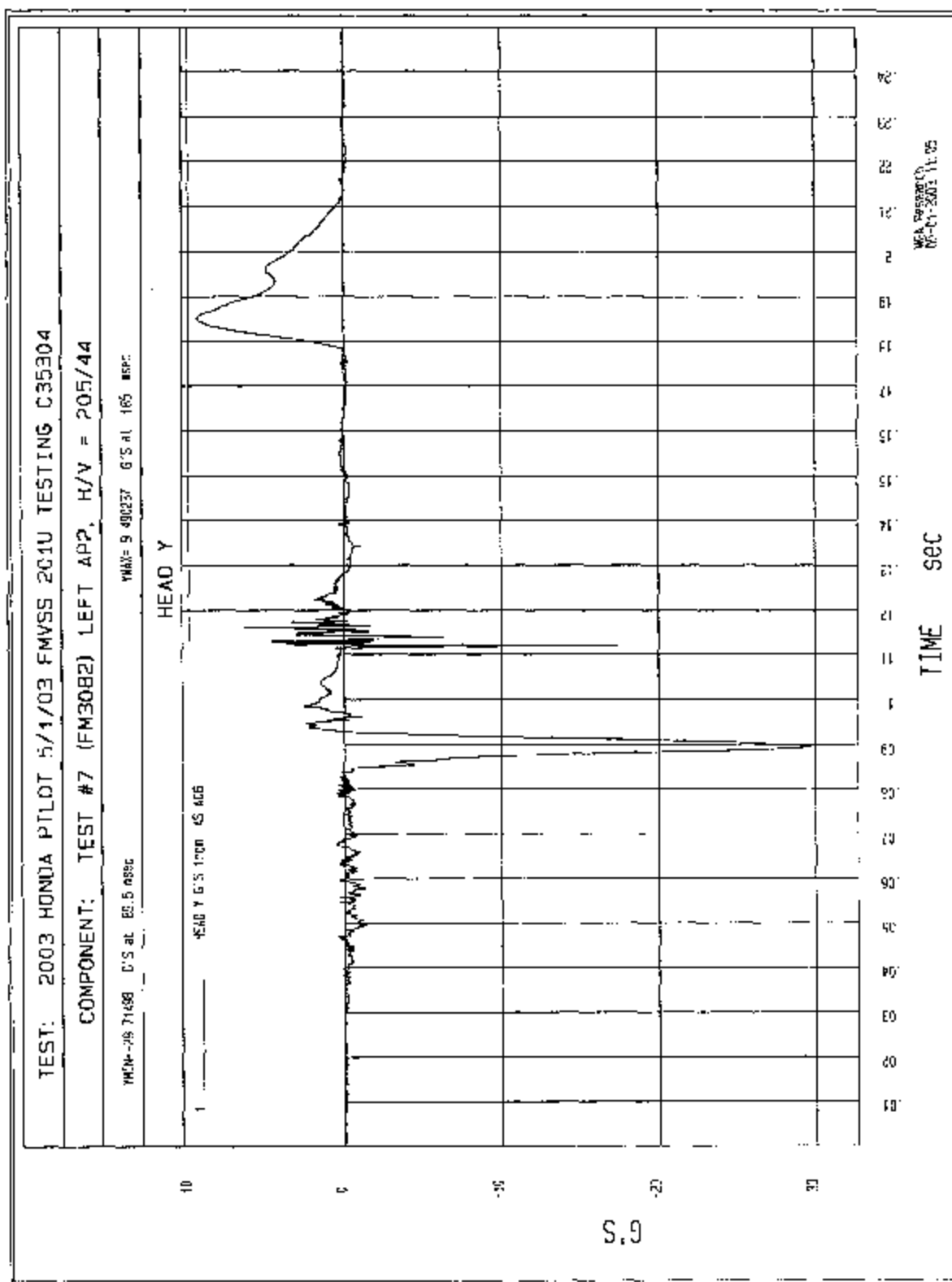
MM

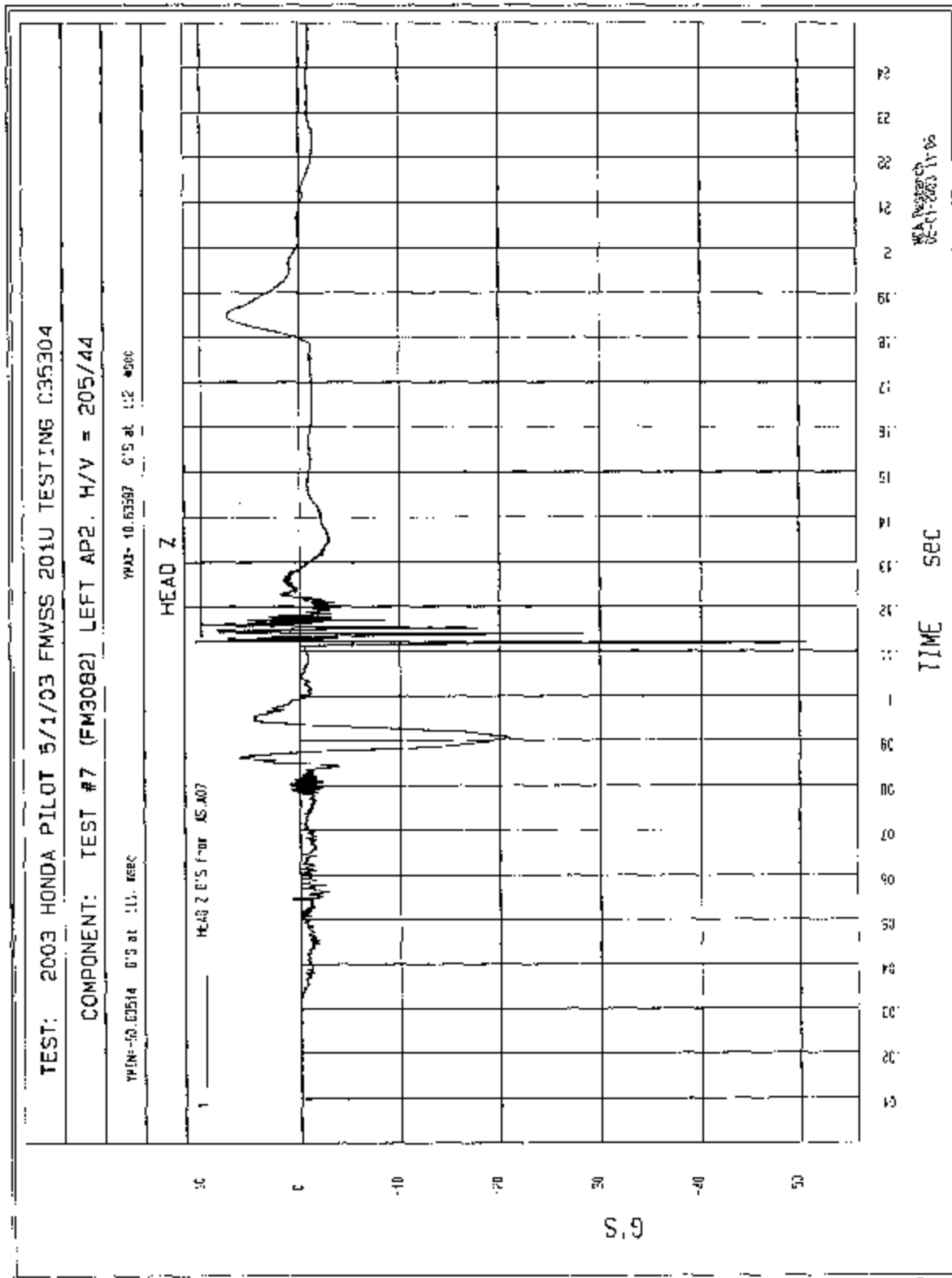
PC

TIME SECONDS

MEA P0032304
05-11-2003 11.06







TEST: 2003 HONDA PILOT 5/1/03 FMVSS 201U TESTING C35304

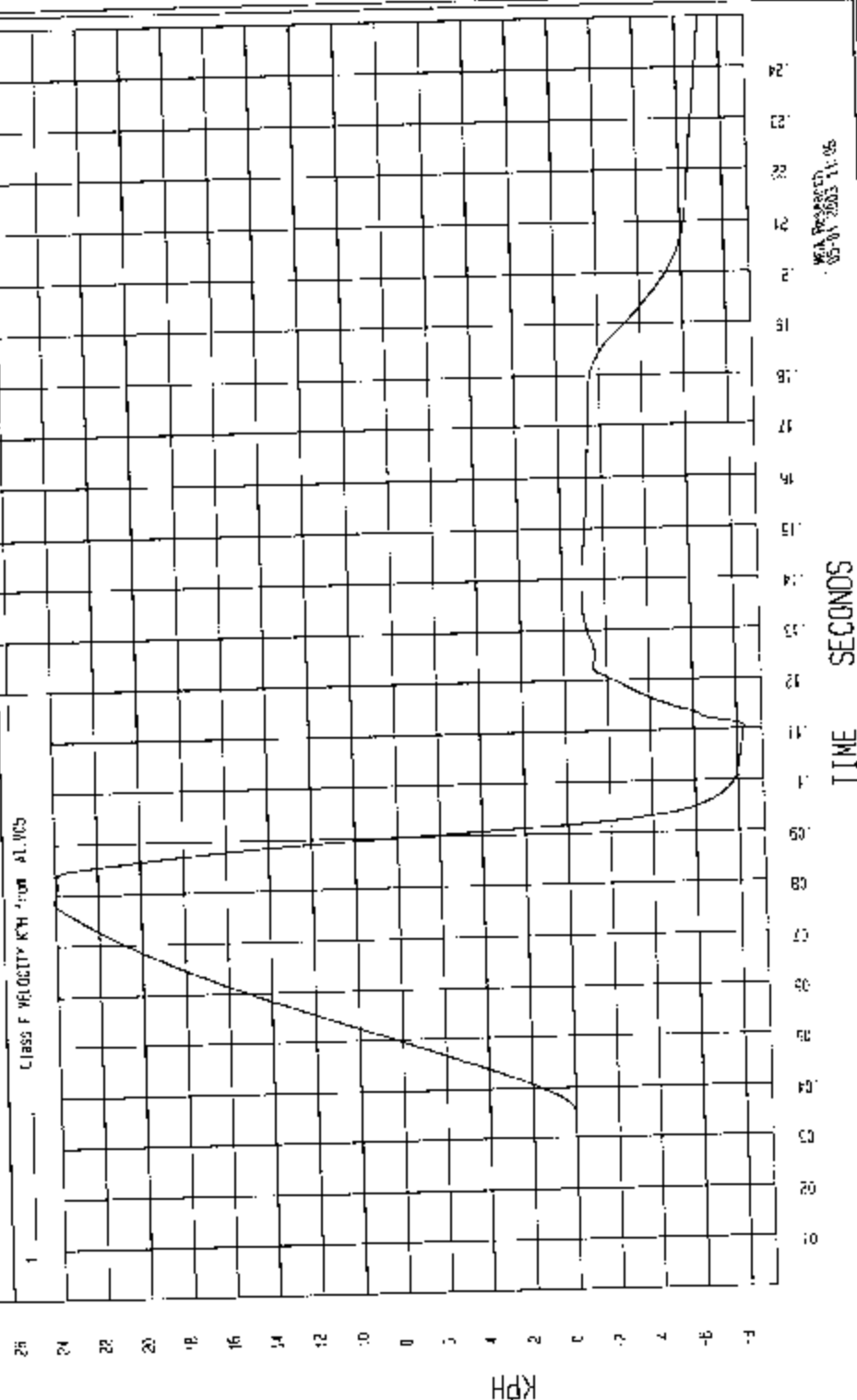
COMPONENT: TEST #7 (FM3082) LEFT AP2, H/V = 205/44

WJN--8.35193 MPH at 110 msec

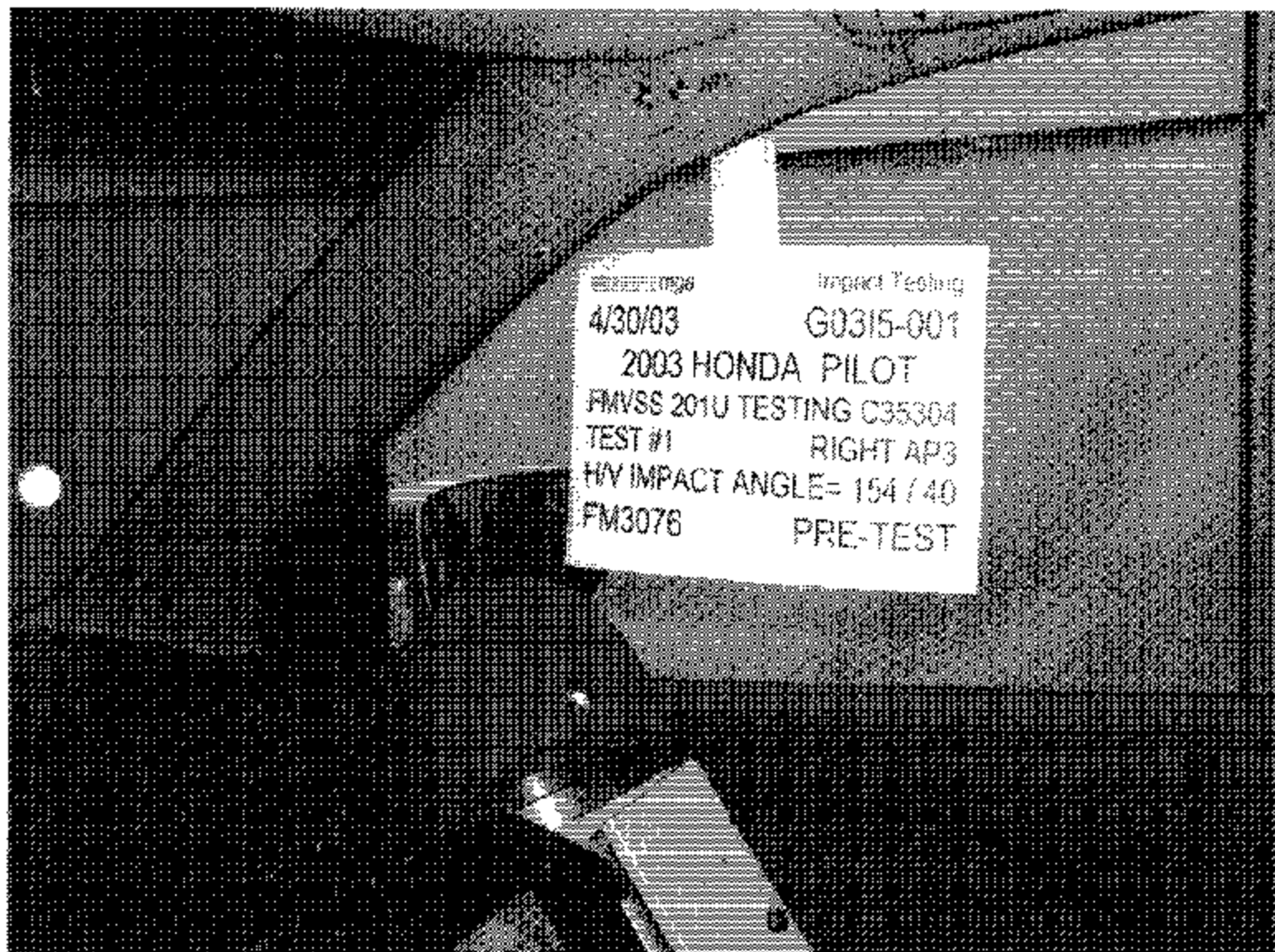
WJN--24.05347 MPH at 78.6 msec

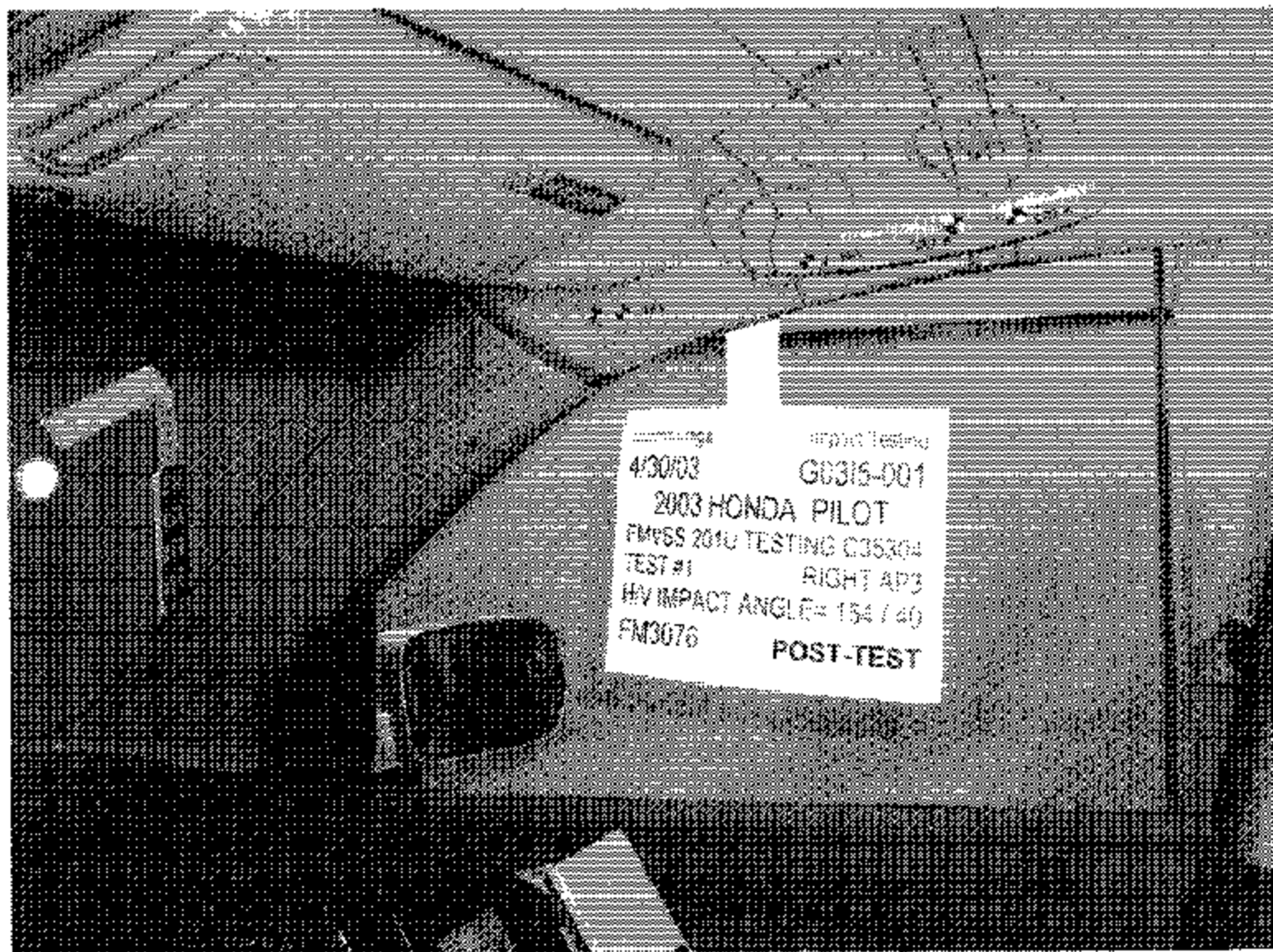
VELOCITY

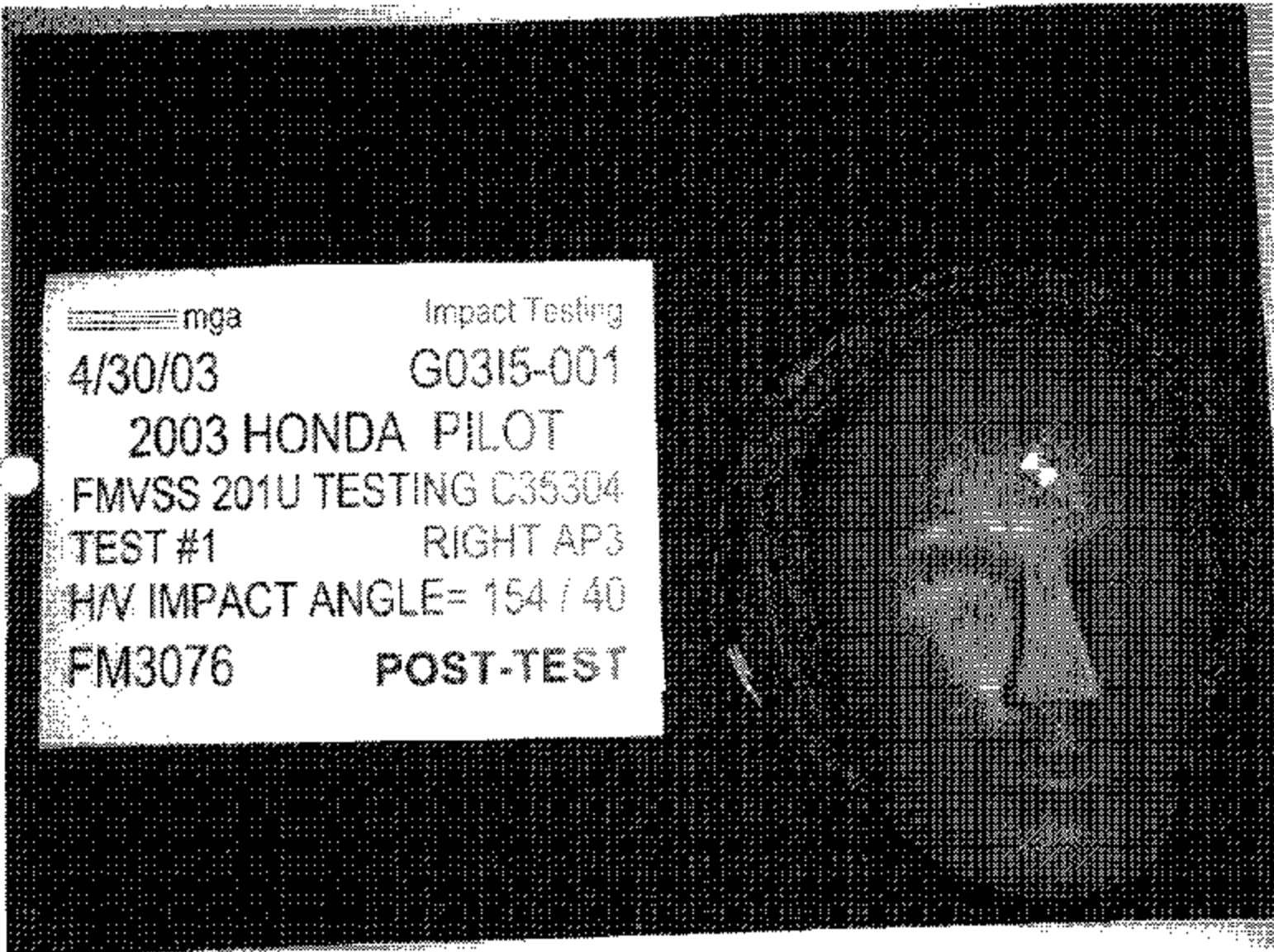
1 Class F Velocity KPH from ALVCS



WJA Prepared
05-01-2003 11:06







mga

Impact Testing

4/30/03

G0315-001

2003 HONDA PILOT

FMVSS 201U TESTING C35304

TEST #1

RIGHT AP3

H/V IMPACT ANGLE= 154 / 40

FM3076

POST-TEST

MICHIGAN OPERATIONS
DATE: 3/20/03
SUPERCEDES: MGATP201U, FRAME #24

DOC. NO.: MGATP201U, FRAME #2
REVISION NO.: 5
PAGE 9 OF 9

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: C35304 VEHICLE YR/MAKE/MODEL: 2003 HONDA PILOT

GENERAL TEST PARAMETERS:

Test Number: 1

Target (Vehicle Side): left/right AP3

Temperature: 22 °F FCO

MGA Test Reference No.: FM3076

Humidity: 18 %

Approach Angles: Horizontal 154 °

Time of Test: 12:10 am/pm pm

Vertical 40 °

FMH Serial No: 35

TEST RESULTS:

HIC(d)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
<u>630</u>	<u>615</u>	<u>9.4</u>	<u>23.6</u>	<u>12</u>	<u>3</u>

INSTRUMENTATION INFORMATION: (all accelerometers are Endevco 7264-2000)

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
<u>X</u>	<u>5</u>	<u>J35124</u>	<u>-92.7</u>	<u>1.21</u>	<u>1.21</u>
<u>Y</u>	<u>6</u>	<u>J35119</u>	<u>95.4</u>	<u>1.23</u>	<u>1.23</u>
<u>Z</u>	<u>7</u>	<u>J31081</u>	<u>95.1</u>	<u>1.51</u>	<u>1.51</u>

REMARKS (Summary of test, damage, non-compliance, invalid test, etc.): _____

AIR TRIM SEPARATED FROM THE PILLOW DURING IMPACT

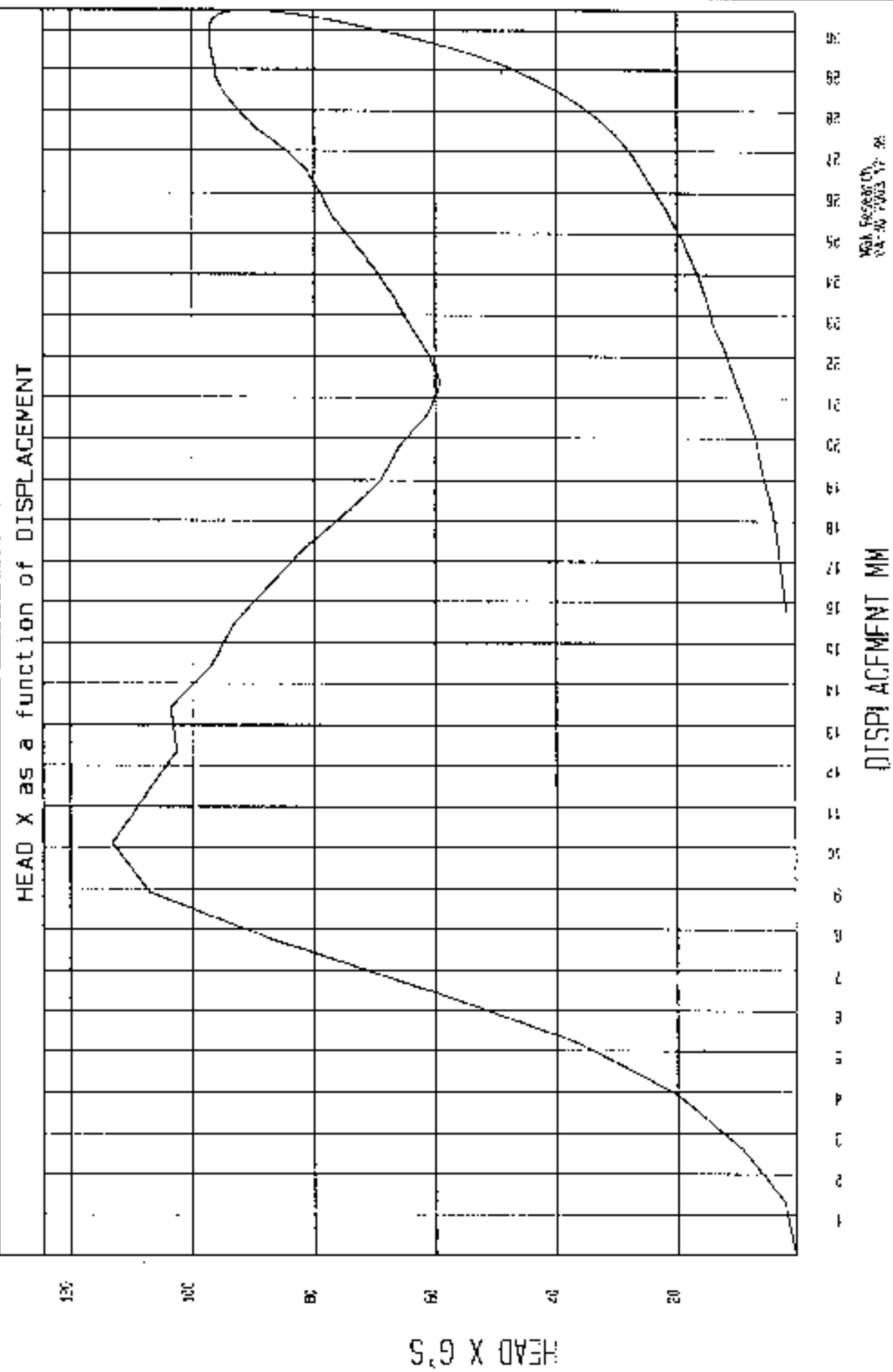
Recorded By: [Signature] Approved By*: Heena Kalita Date: 4/30/03

*Only necessary for NHTSA (Government) Compliance testing.

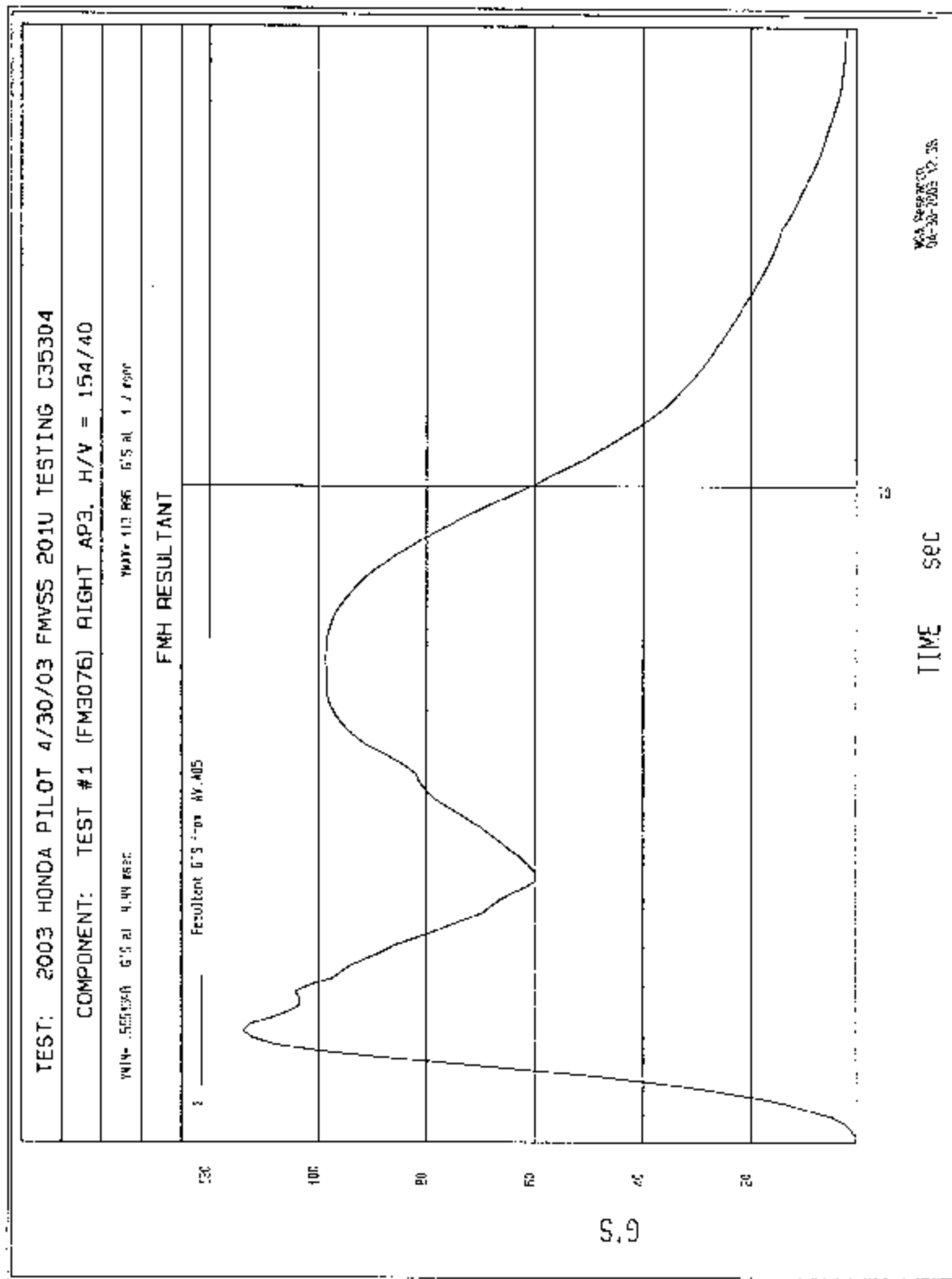
```
*****
RESULTS OF HIC36 PROGRAM
*****
The input file is \NHTSA\FM3076AV.A05
  e HIC = 614.68 calculated over 9.4 msec
  t1 = .90 msec T2 = 10.30 msec
*****
HIC(d) = 630
Impact Velocity = 23.6 (km/h)
```

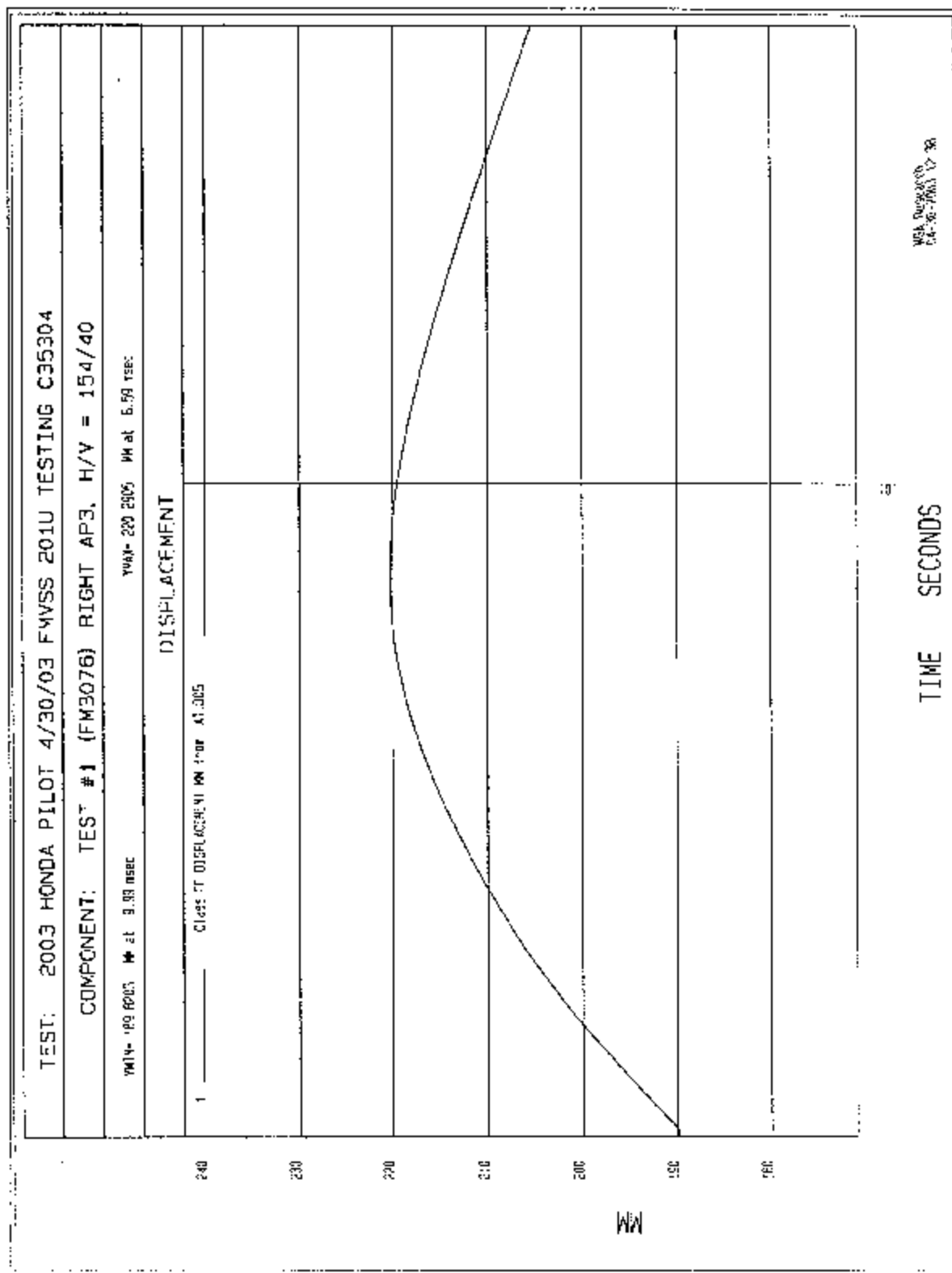
TEST: 2003 HONDA PILOT 4/30/03 FMVSS 201U TESTING C353E04

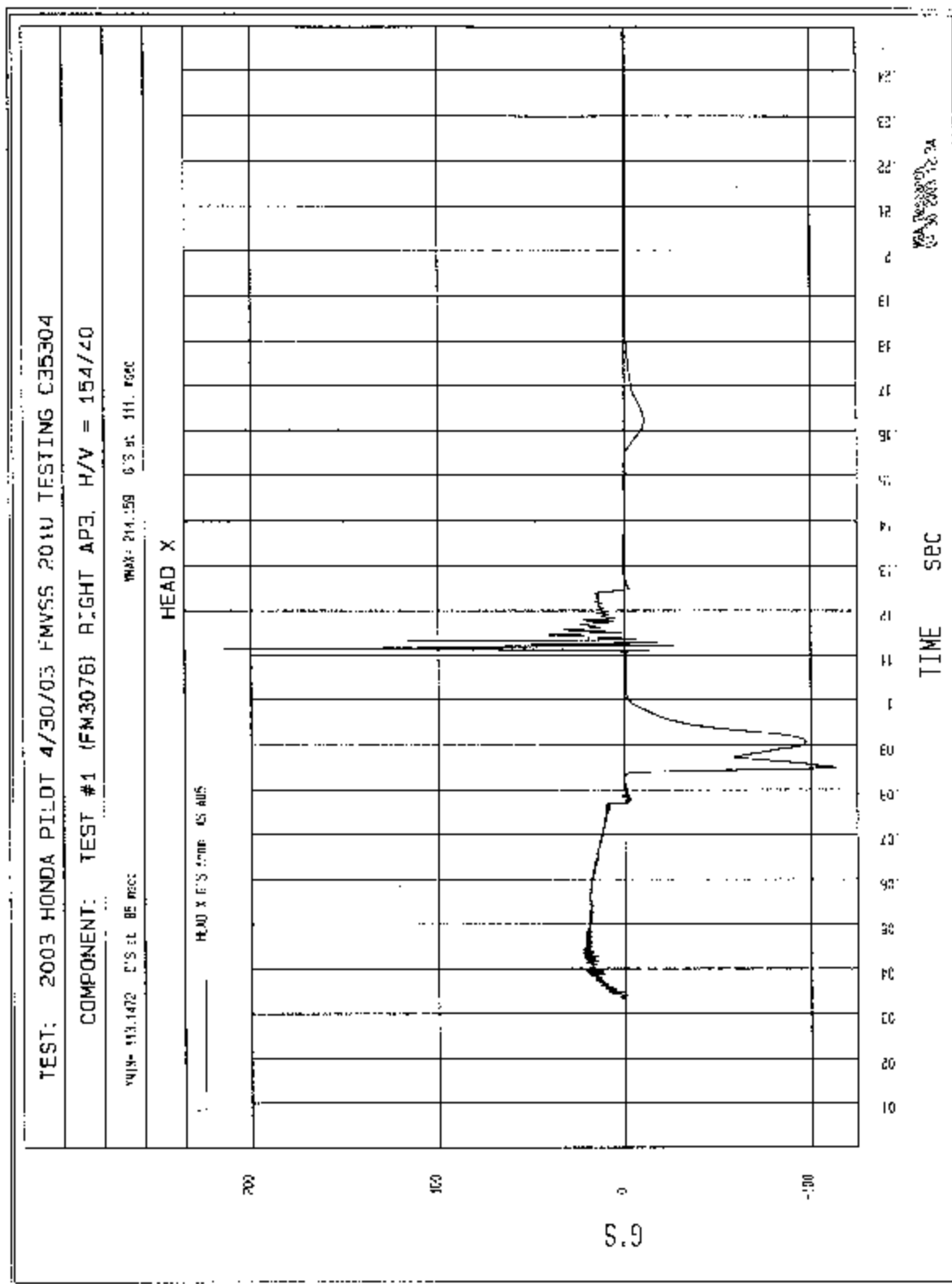
COMPONENT: ~EST #1 (FM3076) RIGHT AP3, H/V = 154/40

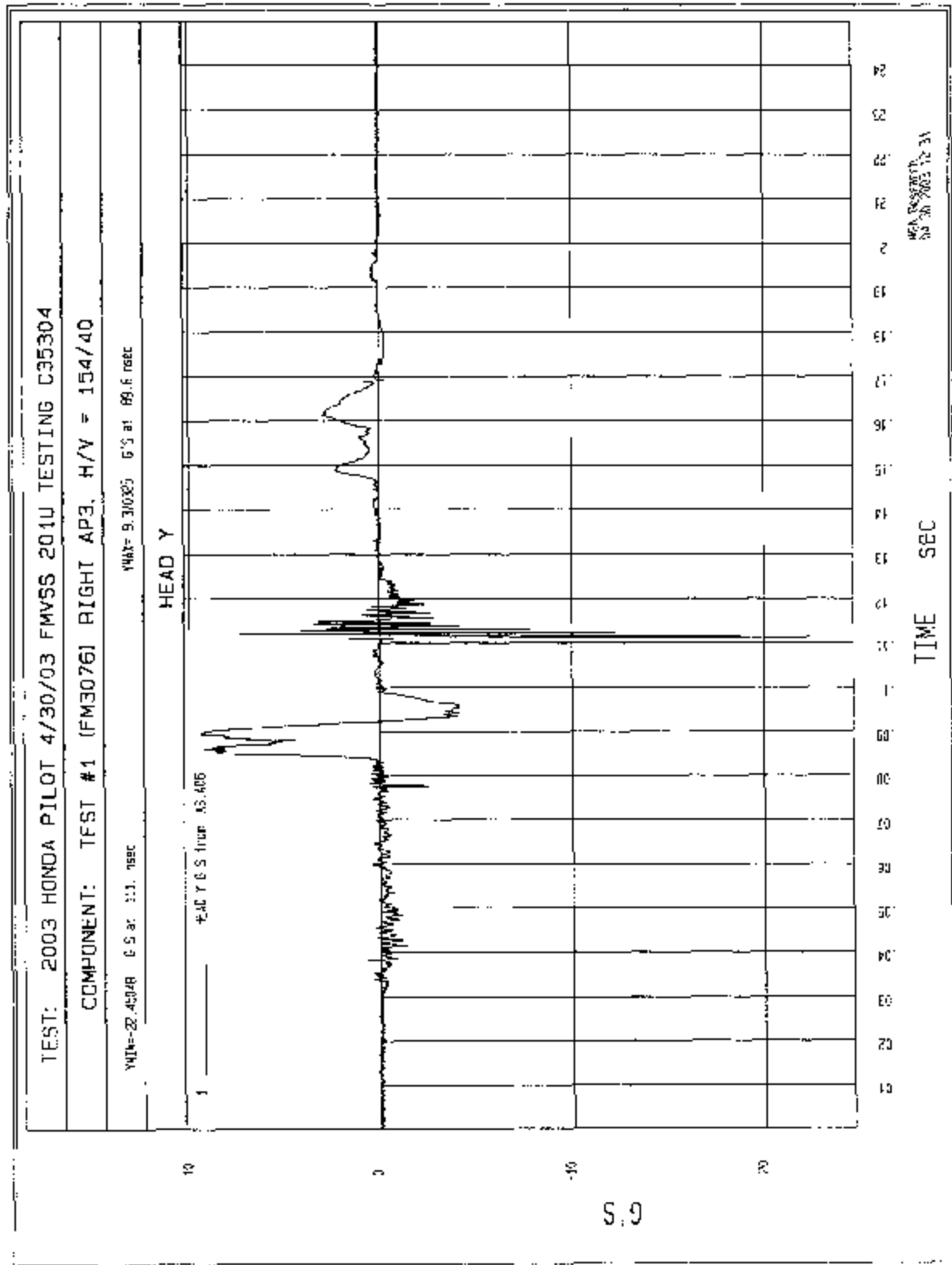


Wash. Forest Co.
P.O. Box 1000
Seattle, Wash. 98101









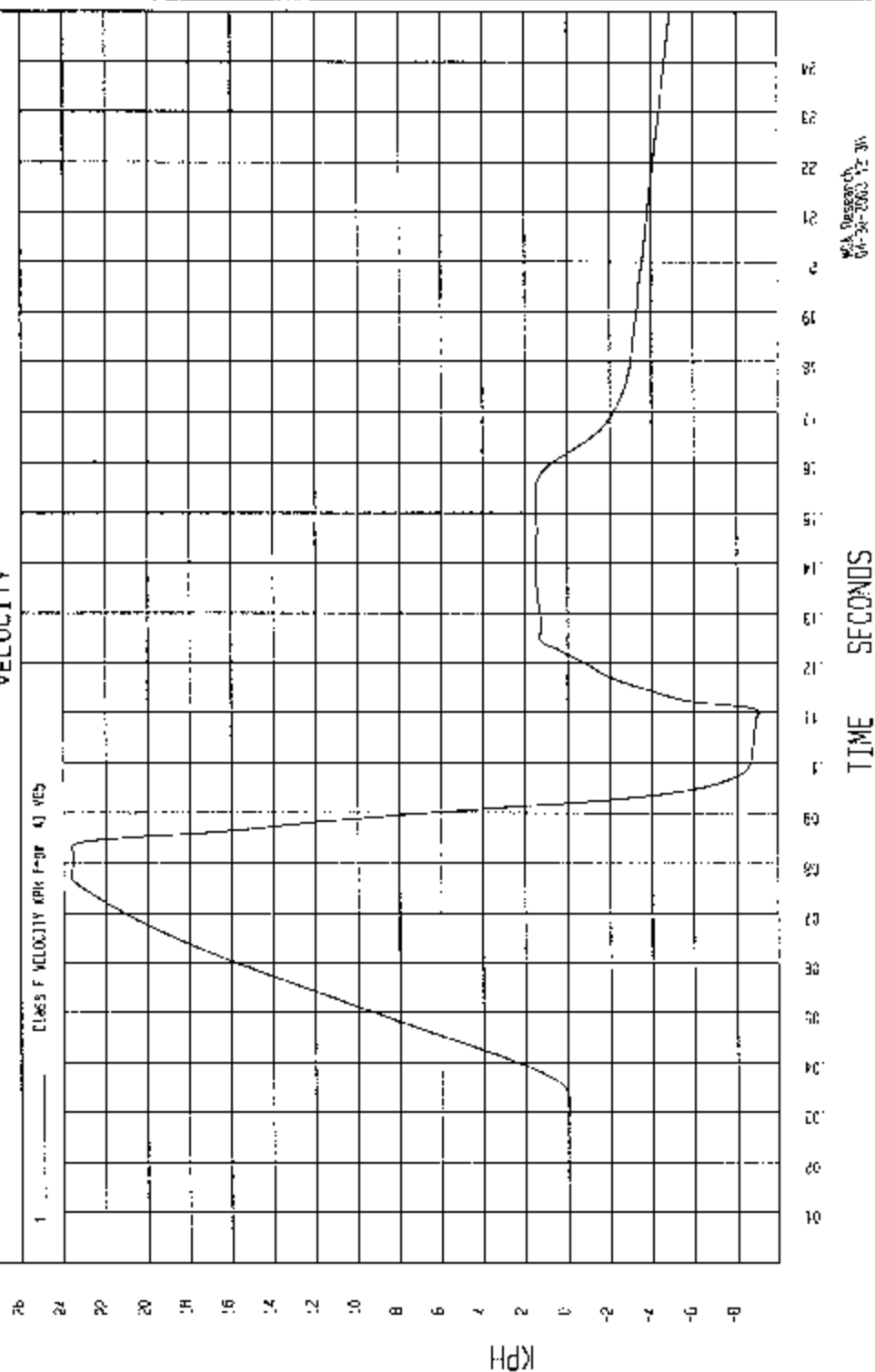
TEST: 2003 HONDA PILOT 4/30/03 FMVSS 201U TESTING C35304

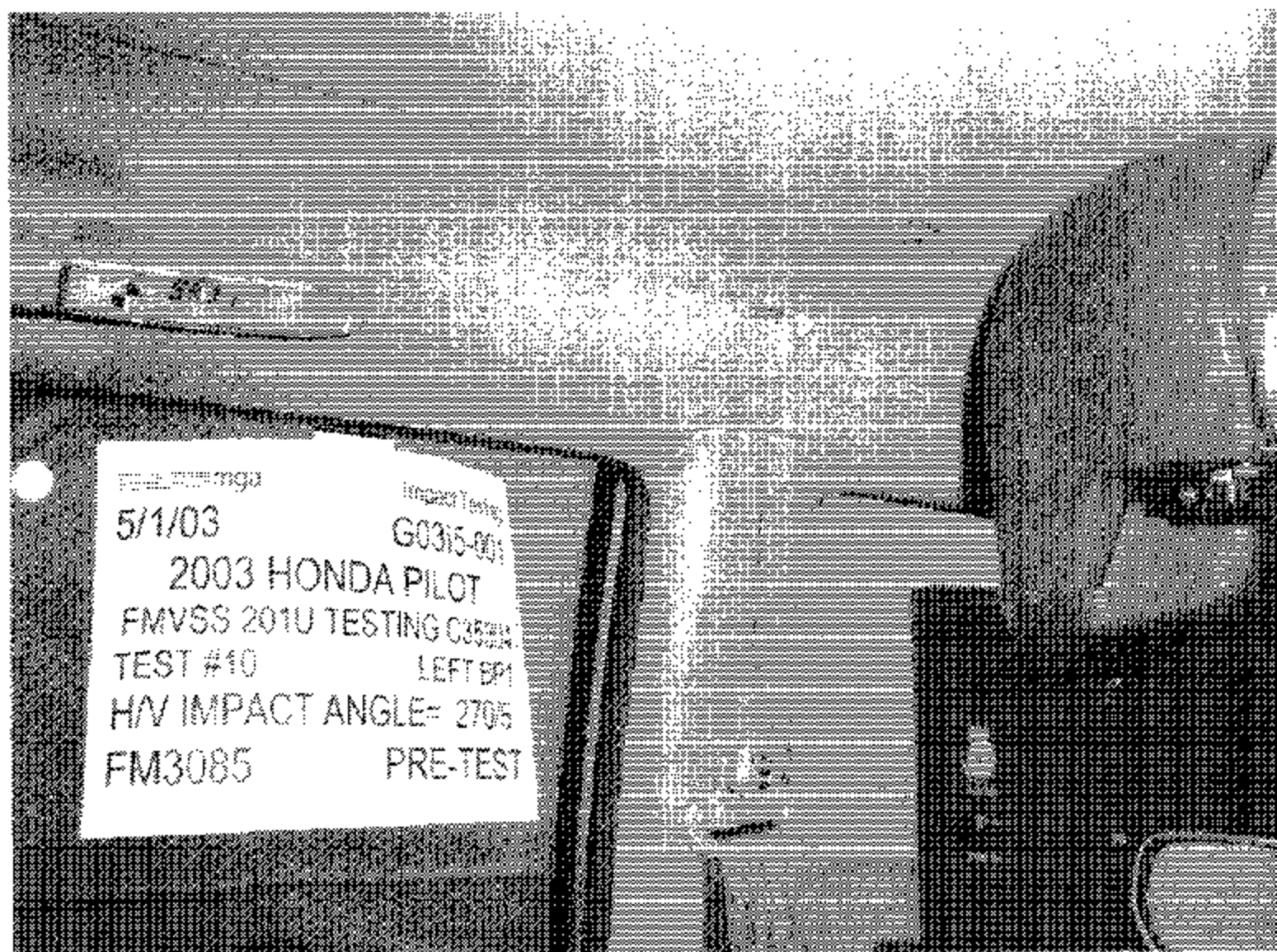
COMPONENT: TEST #1 (FM3075) RIGHT AP3, H/V = 154/40

WIND--W 055237 504 at 110. msec

WIND--W 06583 824 at 77.4 msec

VELOCITY





5/1/03

5/1/03

Impact Testing

G0315-001

2003 HONDA PILOT

FMVSS 201U TESTING C35214

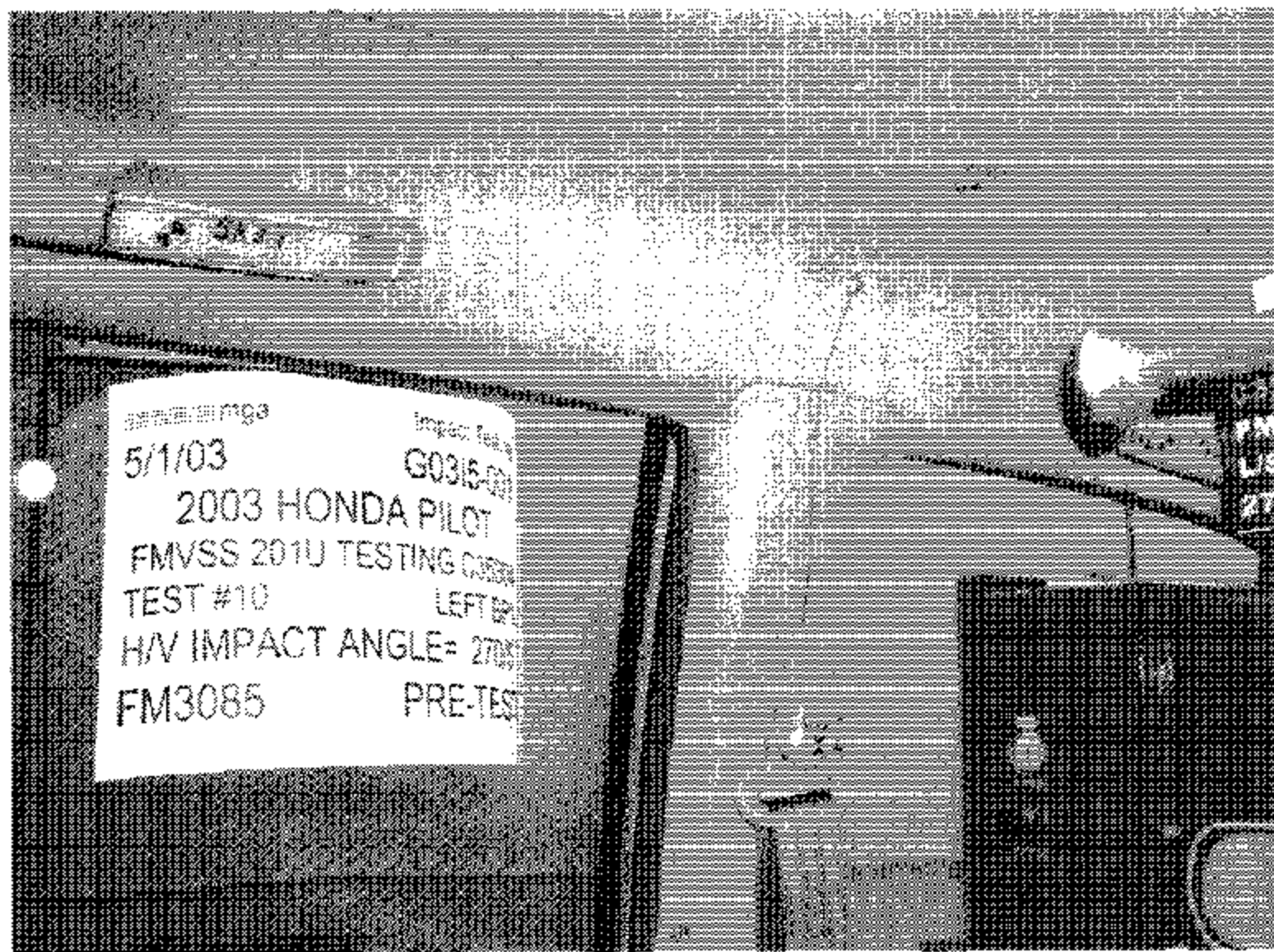
TEST #10

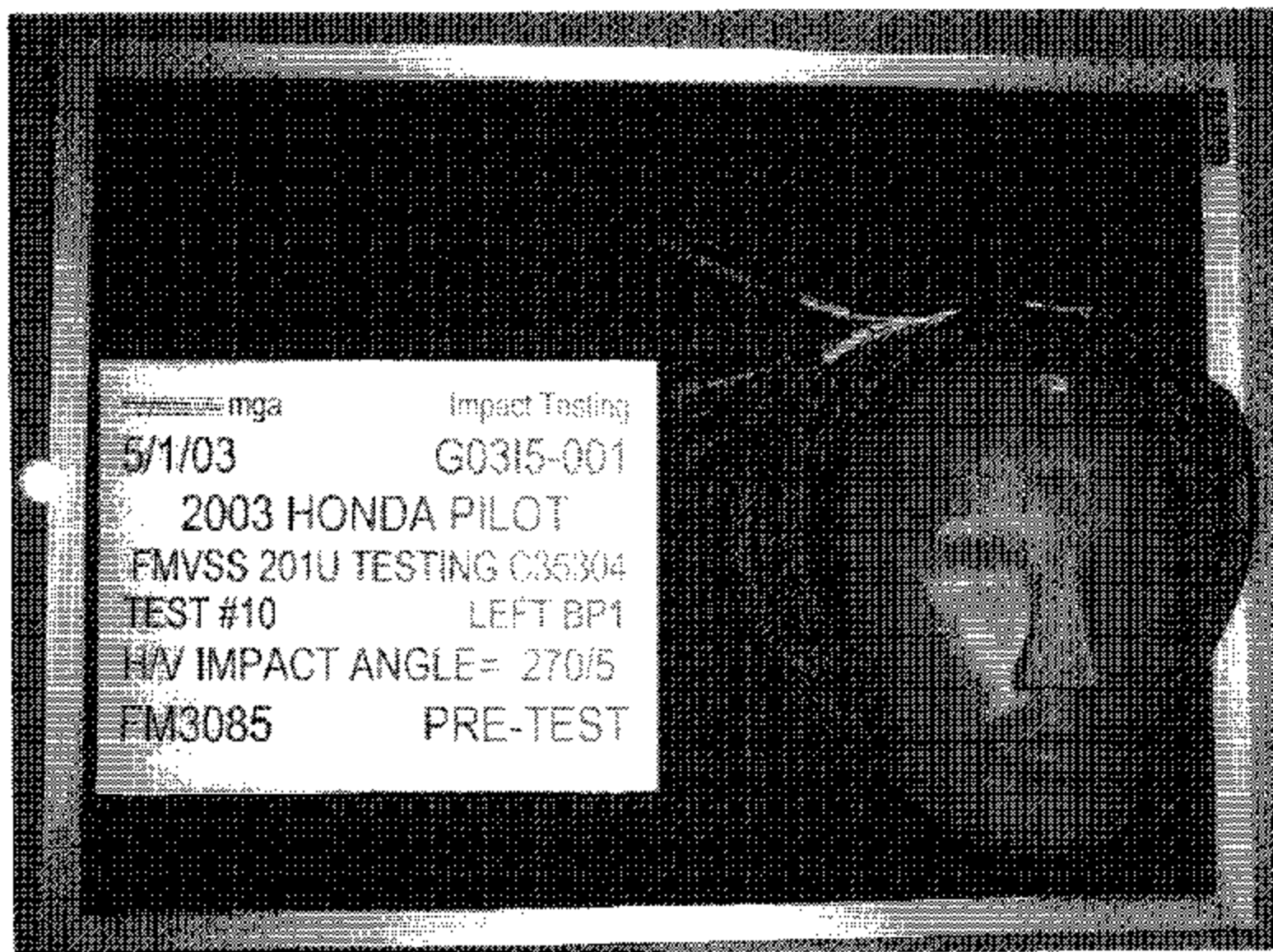
LEFT BP1

H/V IMPACT ANGLE= 270/5

FM3085

PRE-TEST





mga

Impact Testing

5/1/03

G0315-001

2003 HONDA PILOT

FMVSS 201U TESTING C35304

TEST #10

LEFT BP1

H/V IMPACT ANGLE= 270/5

FM3085

PRE-TEST

Post Test

MICHIGAN OPERATIONS
DATE: 3/20/03
SUPERCEDES: MGATP201U_FRAME #2.4

DOC. NO: MGATP201U_FRAME #2
REVISION NO: 3
PAGE 9 OF 9

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: C35304 VEHICLE YR/MAKE/MODEL: 2003 HONDA PILOT

GENERAL TEST PARAMETERS:

Test Number: 10

Target (Vehicle Side) (Left/Right) (R)

Temperature: 24 °F (C)

MGA Test Reference No.: FM3005

Humidity: 39 %

Approach Angles: Horizontal 270 °

Time of Test: 3:25 am/pm

Vertical 5 °

FMH Serial No: 35

TEST RESULTS:

HIC(d)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
598	572	9.0	23.9	60	5

INSTRUMENTAION INFORMATION: (all accelerometers are Endevco 7264-2000)

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
X	5	J35924	-92.7	1.71	1.21
Y	6	J35919	95.4	1.23	1.23
Z	7	J31051	95.3	1.51	1.51

REMARKS (Summary of test, damage, non-compliance, invalid test, etc.):

NO VISIBLE DAMAGE

Recorded By: [Signature] Approved By: Helen A. Kalish Date: 5/1/03

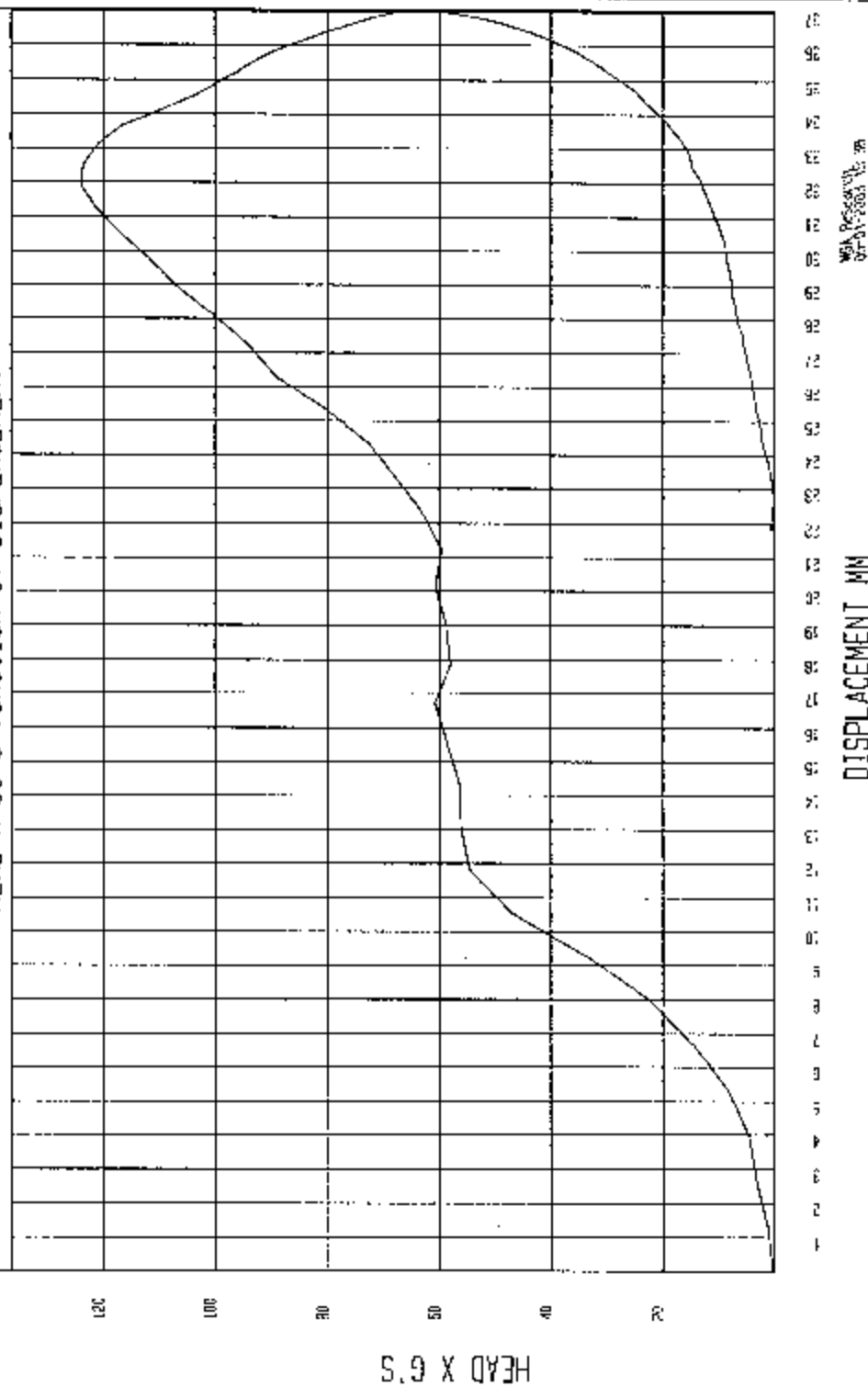
*Only necessary for NHTSA (Government) Compliance testing.

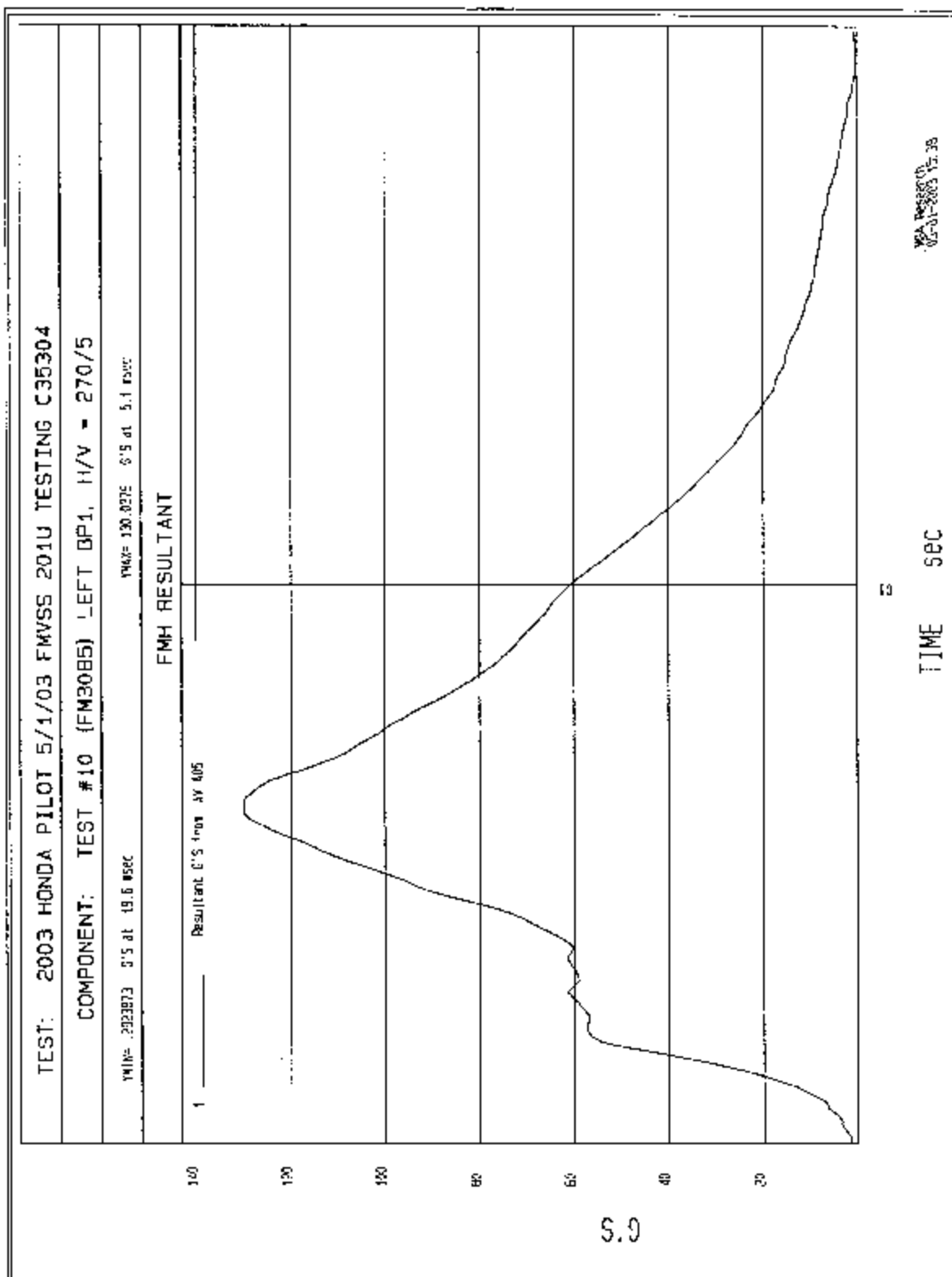
```
*****
RESULTS OF HIC36 PROGRAM
*****
input file is \NHTSA\FM3085AV.A05
HIC = 572.27 calculated over 9.0 msec
T1 = 1.60 msec T2 = 10.60 msec
*****
HIC(d) = 598
Impact Velocity = 23.9 (km/h)
```

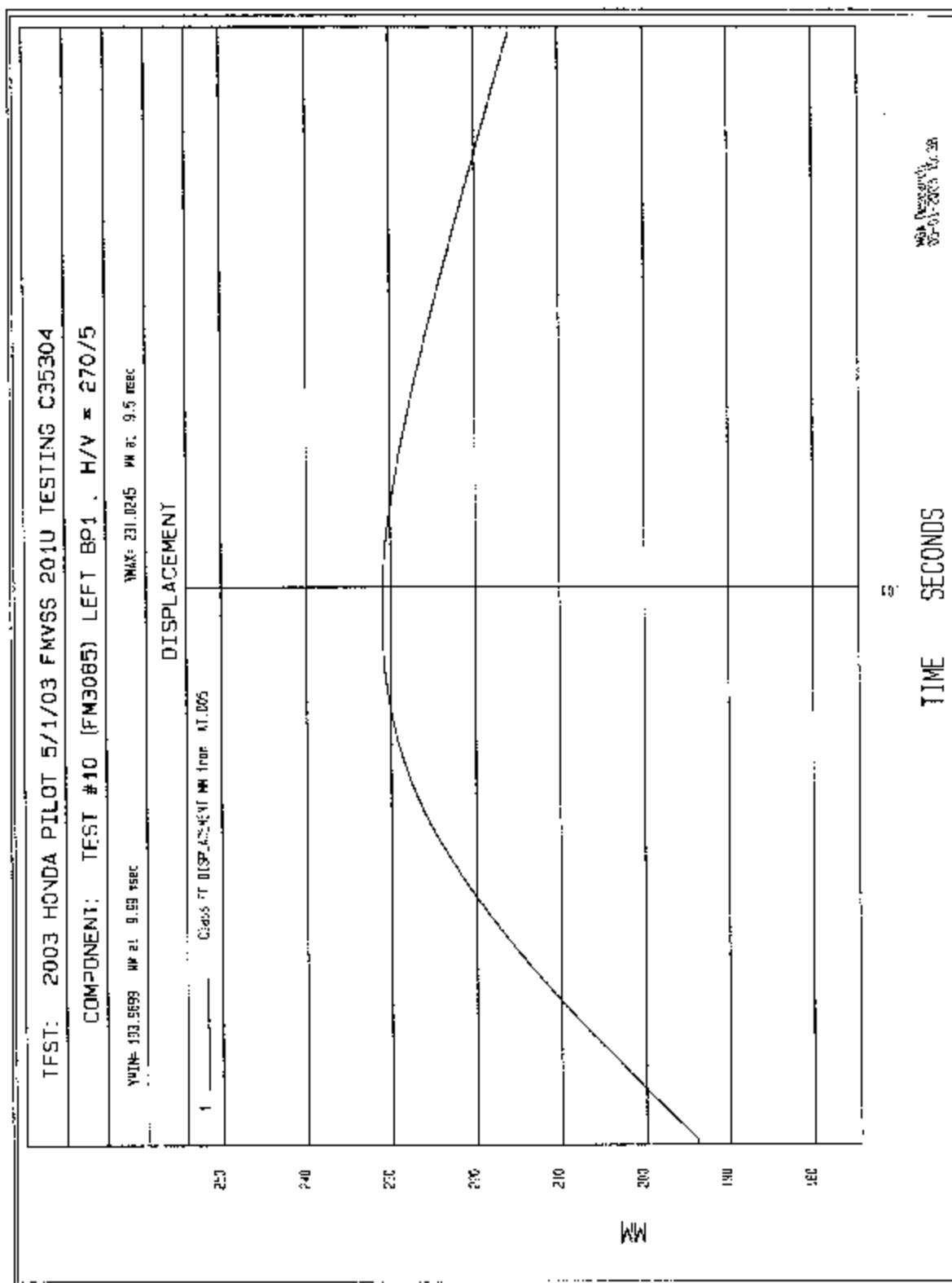
TEST: 2003 HONDA PILOT 5/1/03 FMVSS 201U TESTING C35304

COMPONENT: TEST #10 (FM3085) LEFT BP1, I/V - 270/5

HEAD X as a function of DISPLACEMENT







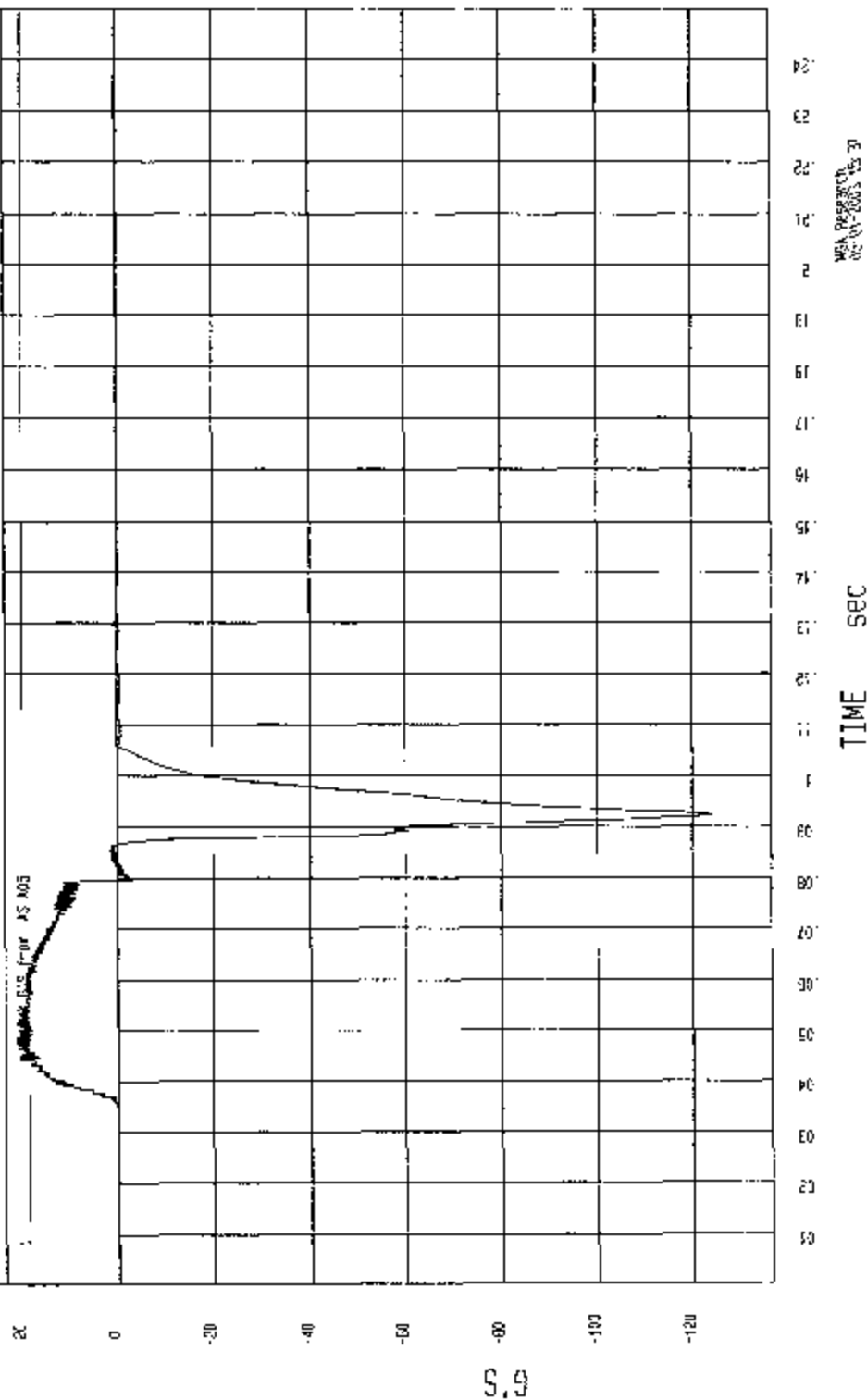
TEST: 2003 HONDA PILOT 5/1/03 FMVSS 201U TESTING C35304

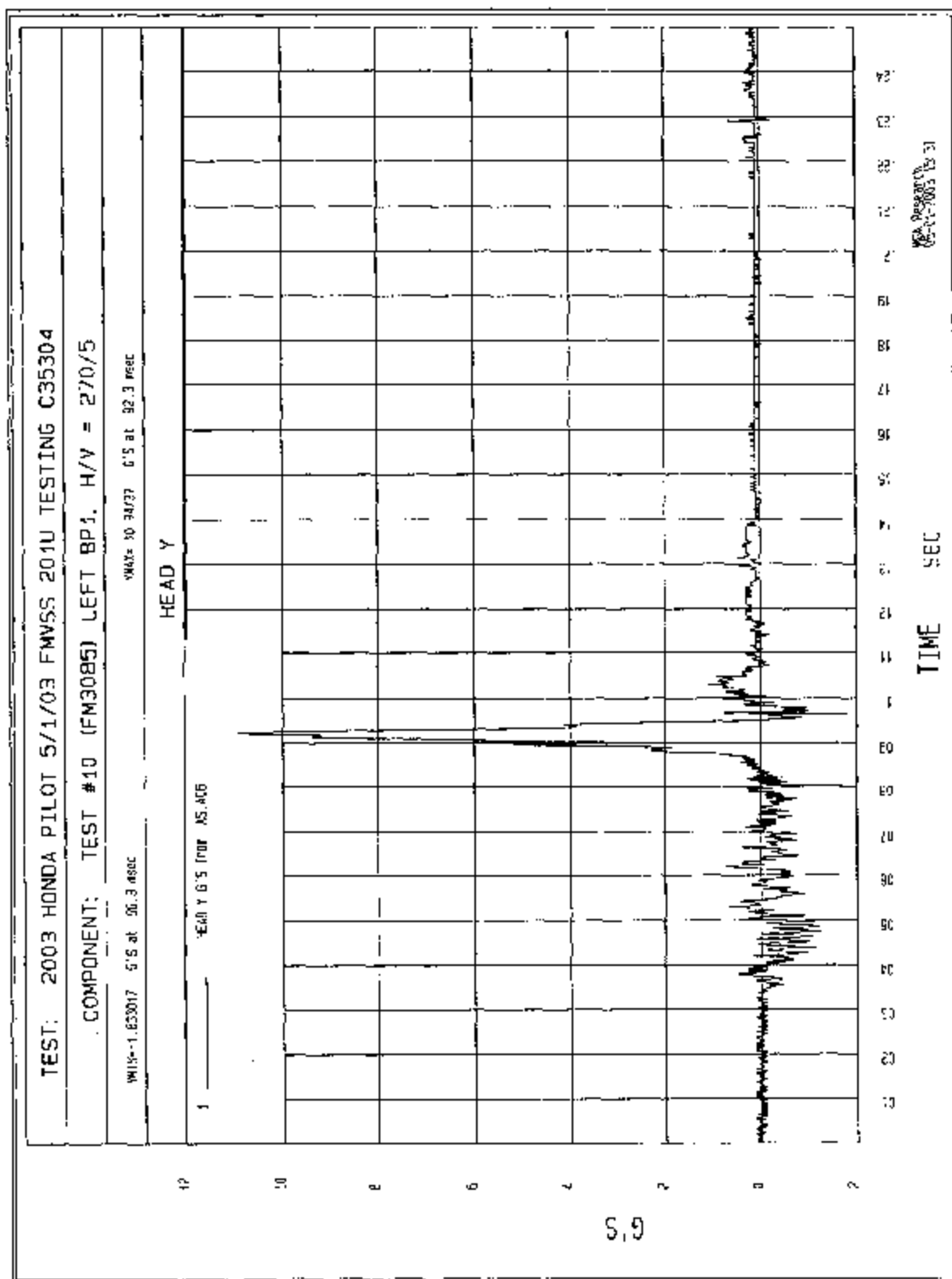
COMPONENT: TEST #10 (FM3085) LEFT BP1, H/V = 270/5

YU1H--124.0112 0'S at 52.3 #50C

YU1H--21.5717 0'S at 48.0#50C

HEAD X





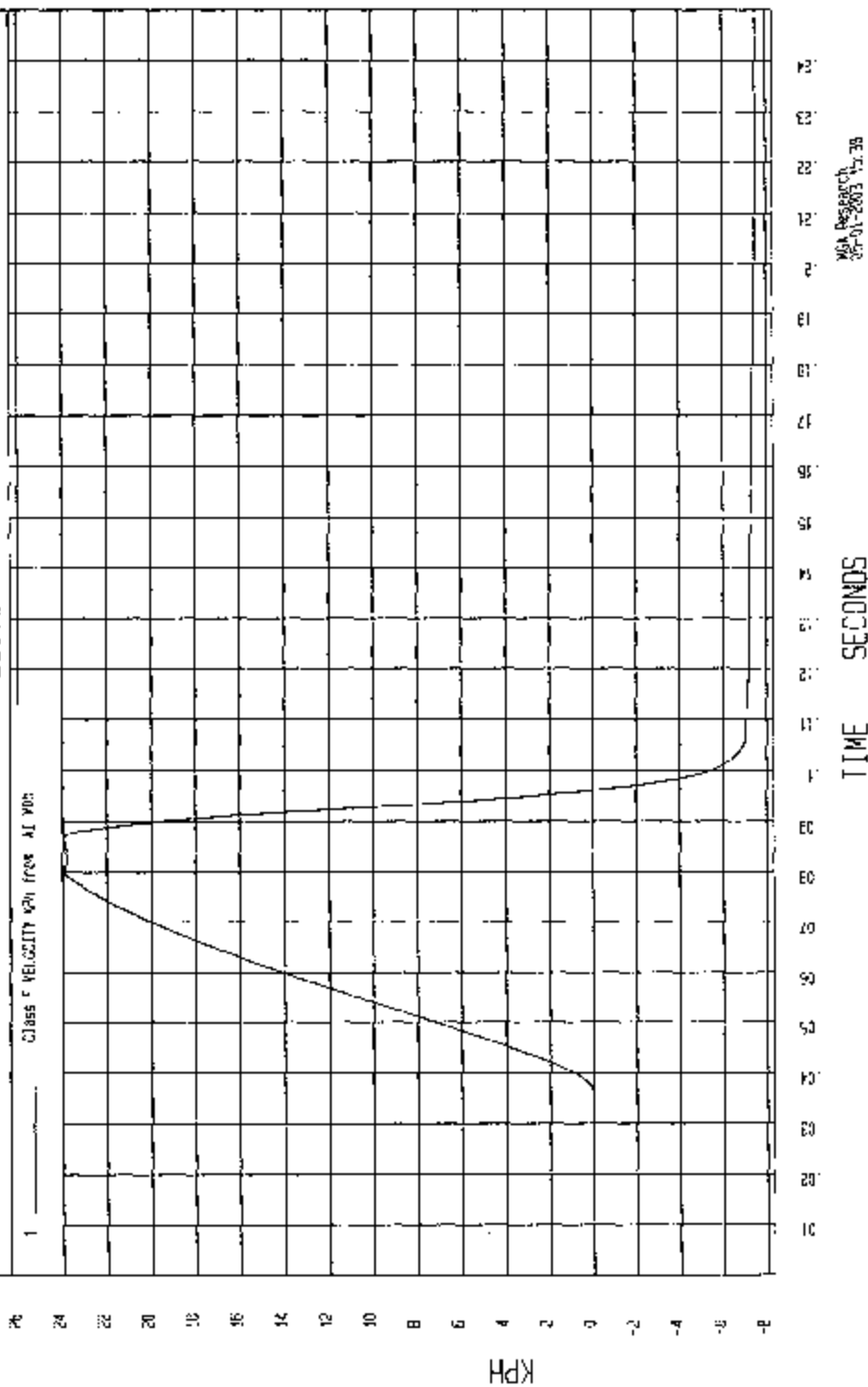
TFST: 2003 HONDA PILOT 5/1/03 FMVSS 201U TESTING C35304

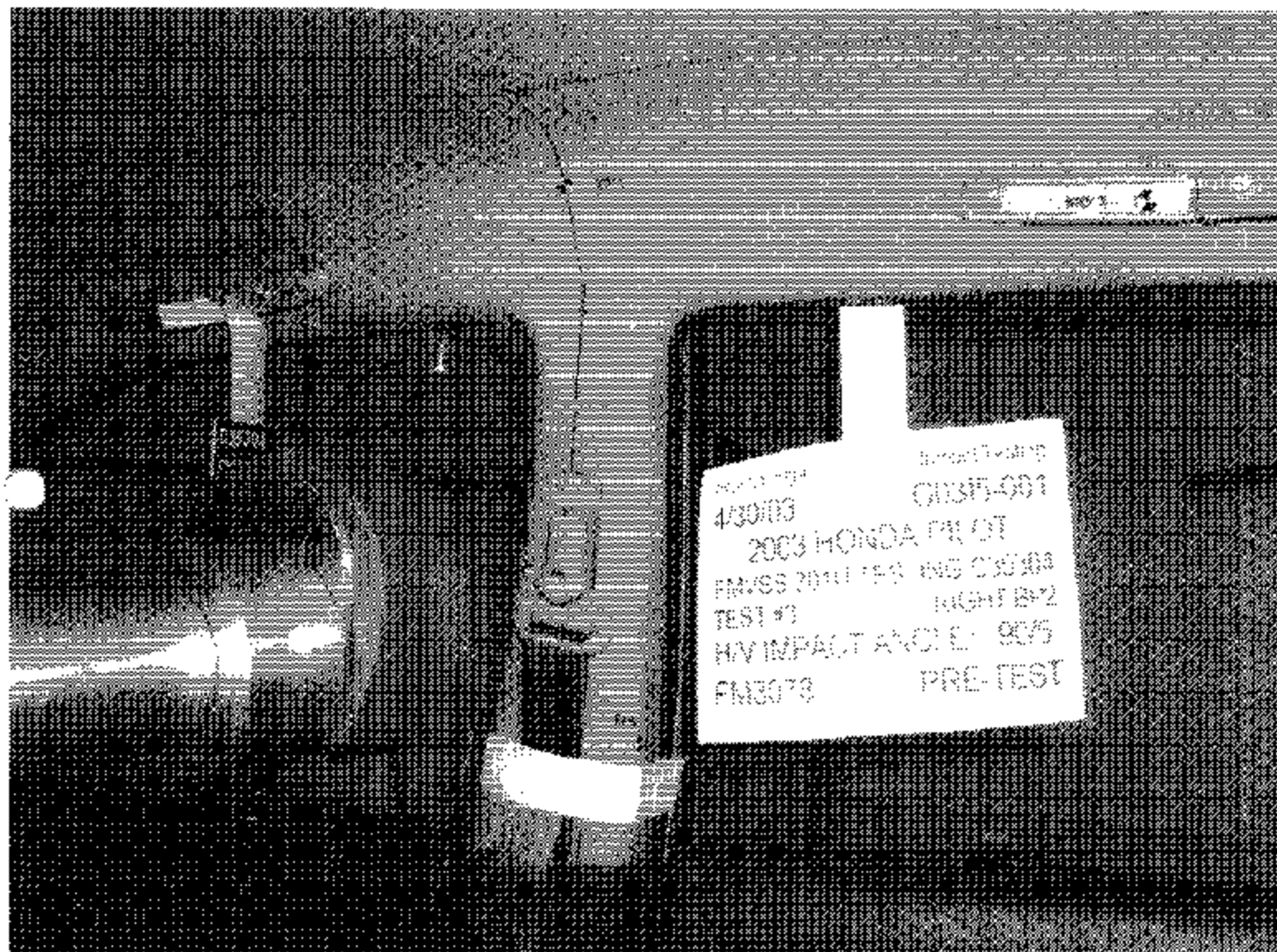
COMPONENT: TEST #10 (FM3085) LEFT BP1 H/V = 270/5

YMIN=-1.54645 KPH AT 227. FSEC

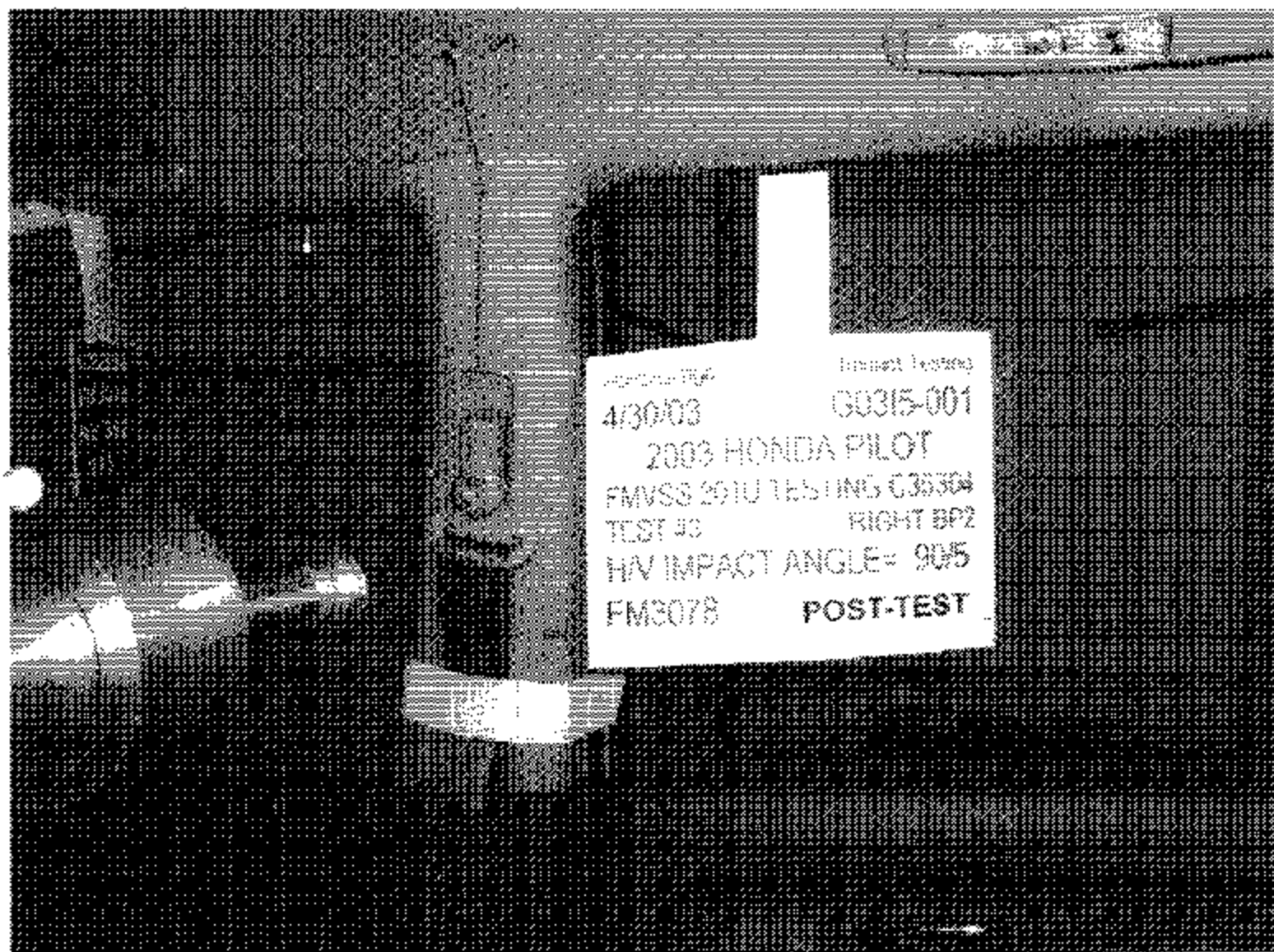
YMAX= 23.9501 KPH at 86 F. FSEC

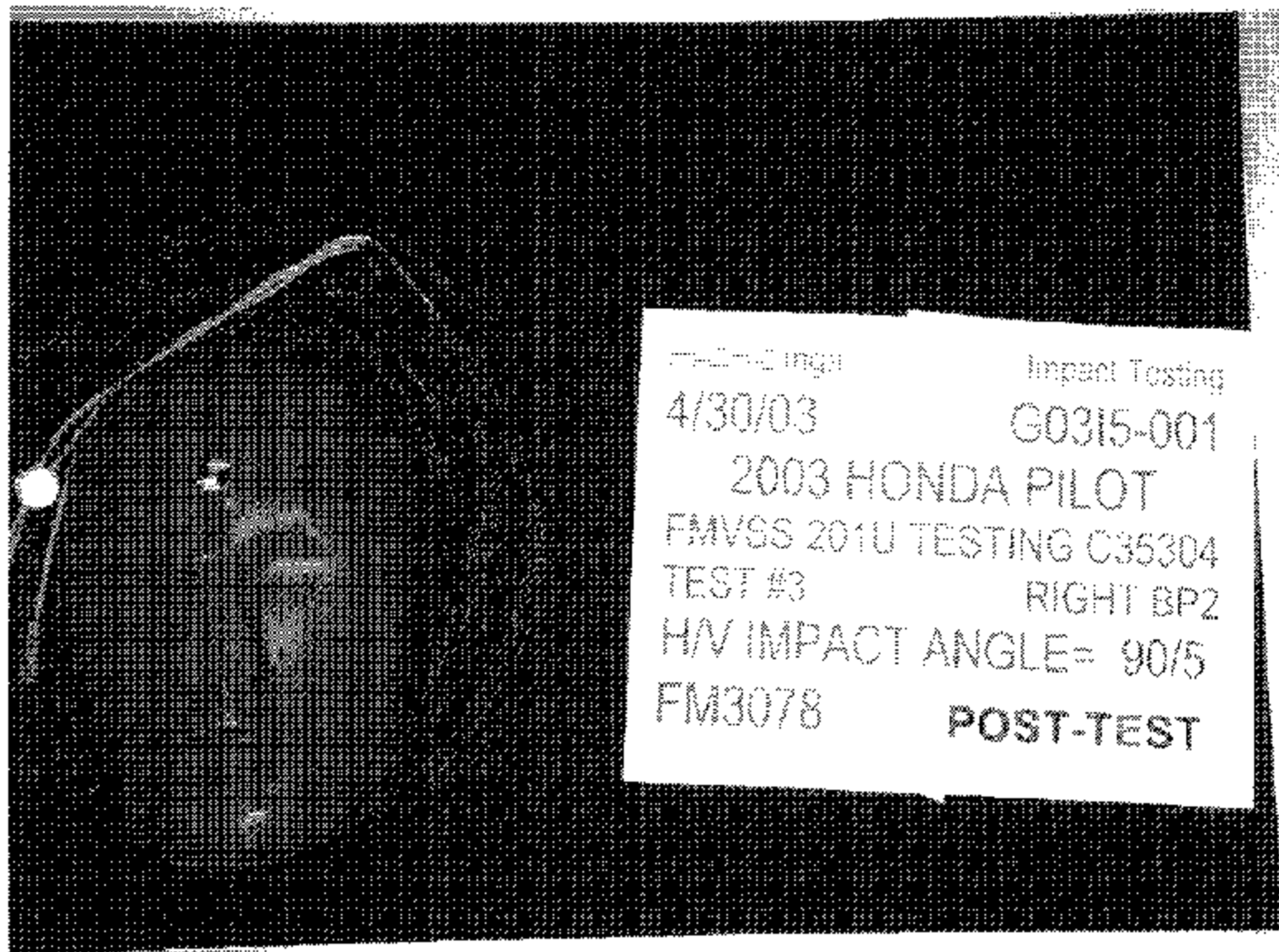
VELOCITY





4/30/03
2003 HONDA PILOT
FM3078
TEST #1
HV IMPACT ANGLE: 90°
PRE-TEST





FMVSS 201U

Impact Testing

4/30/03

G0315-001

2003 HONDA PILOT

FMVSS 201U TESTING C35304

TEST #3

RIGHT BP2

H/V IMPACT ANGLE= 90/5

FM3078

POST-TEST

MICHIGAN OPERATIONS
DATE: 3/20/03
SUPERCEDES: MGATP201U_FRAME #2.4

DOC. NO.: MGATP201U_FRAME #2
REVISION NO.: 3
PAGE 9 OF 9

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: C35304 VEHICLE YR/MAKE/MODEL: 2003 HONDA PILOT

GENERAL TEST PARAMETERS:

Test Number: 3

Target (Vehicle Side): left/right BP2

Temperature: 22 °F/C

MGA Test Reference No.: FM3078

Humidity: 25 %

Approach Angles: Horizontal 90 °

Time of Test: 2:50 am/pm

Vertical 5 °

FMH Serial No: 38

TEST RESULTS:

HIC(d)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
563	526	7.1	23.9	9	3

INSTRUMENTAION INFORMATION: (all accelerometers are Endevco 7264-2000)

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
X	5	236197	-108.7	1.21	1.21
Y	6	236193	102.9	1.23	1.23
Z	7	236353	98.8	1.51	1.51

REMARKS (Summary of test, damage, non-compliance, invalid test, etc.): NO VISIBLE DAMAGE

Recorded By: [Signature] Approved By: [Signature] Date: 4/30/03

*Only necessary for NHTSA (Government) Compliance testing.

RESULTS OF HIC36 PROGRAM*****
The input file is \NHTSA\FM3078AV.A05

HIC = 525.96 calculated over 7.1 msec

T1 = 2.00 msec T2 = 9.10 msec

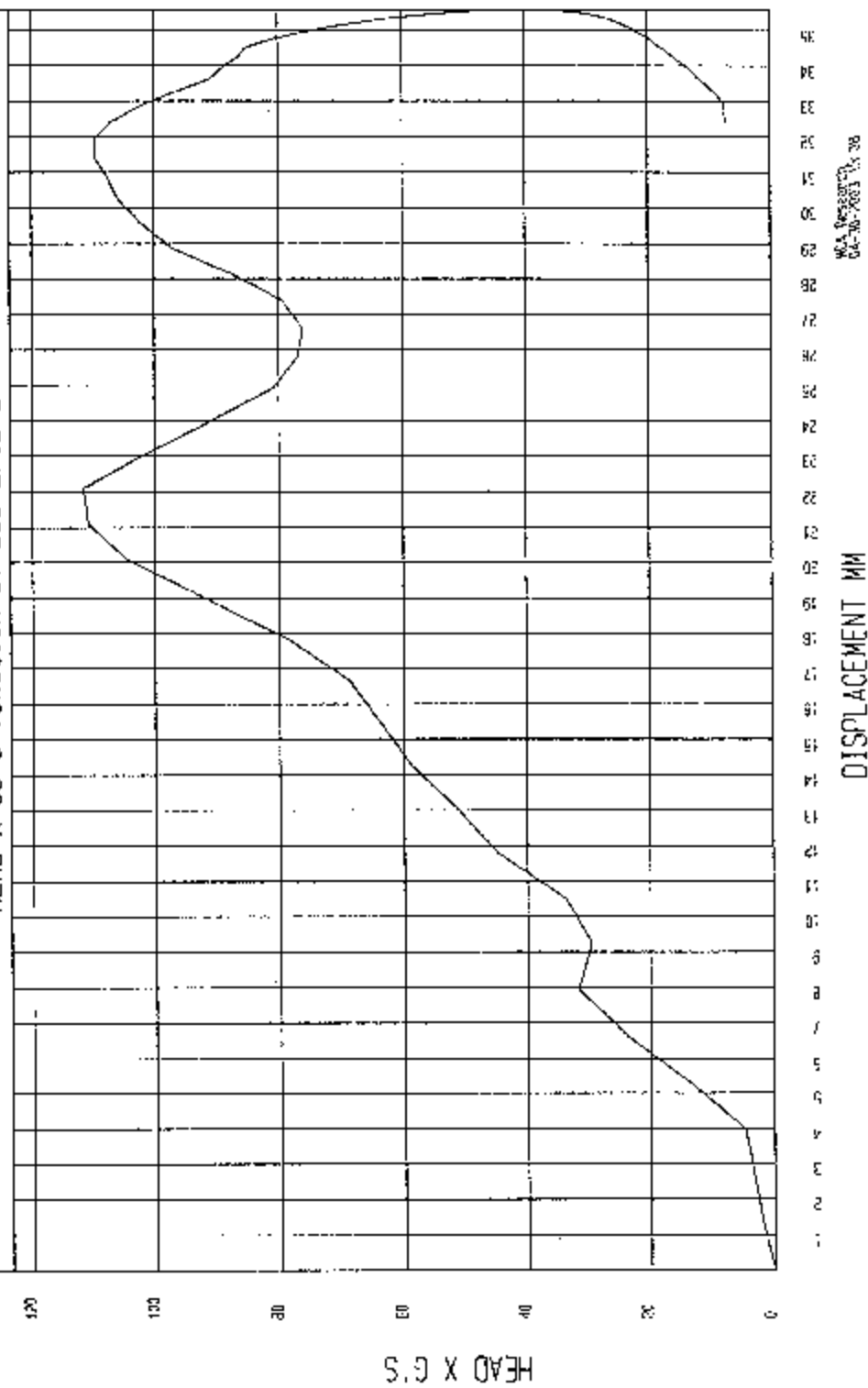
HIC(d) = 563

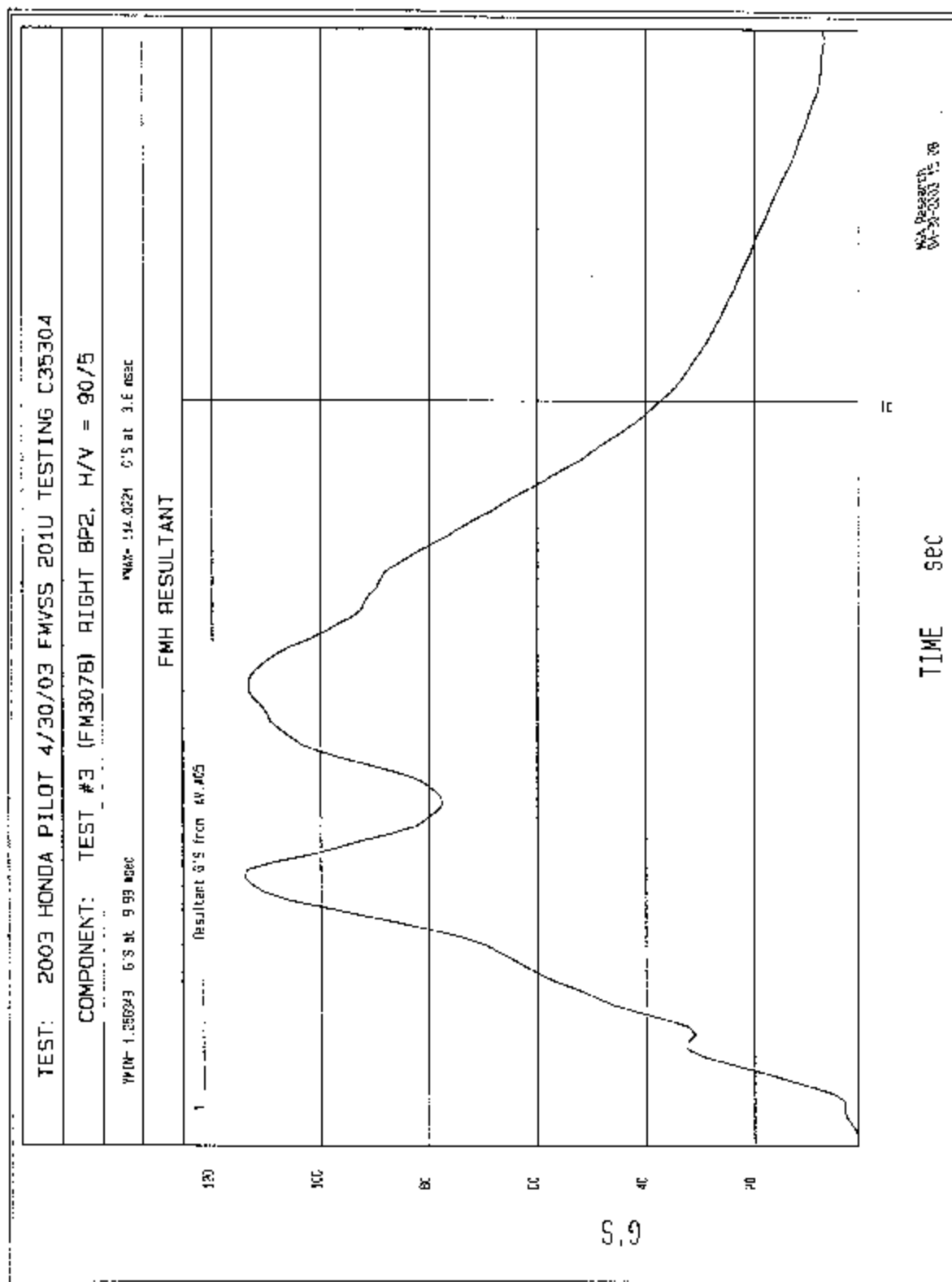
Impact Velocity = 23.9 (km/h)

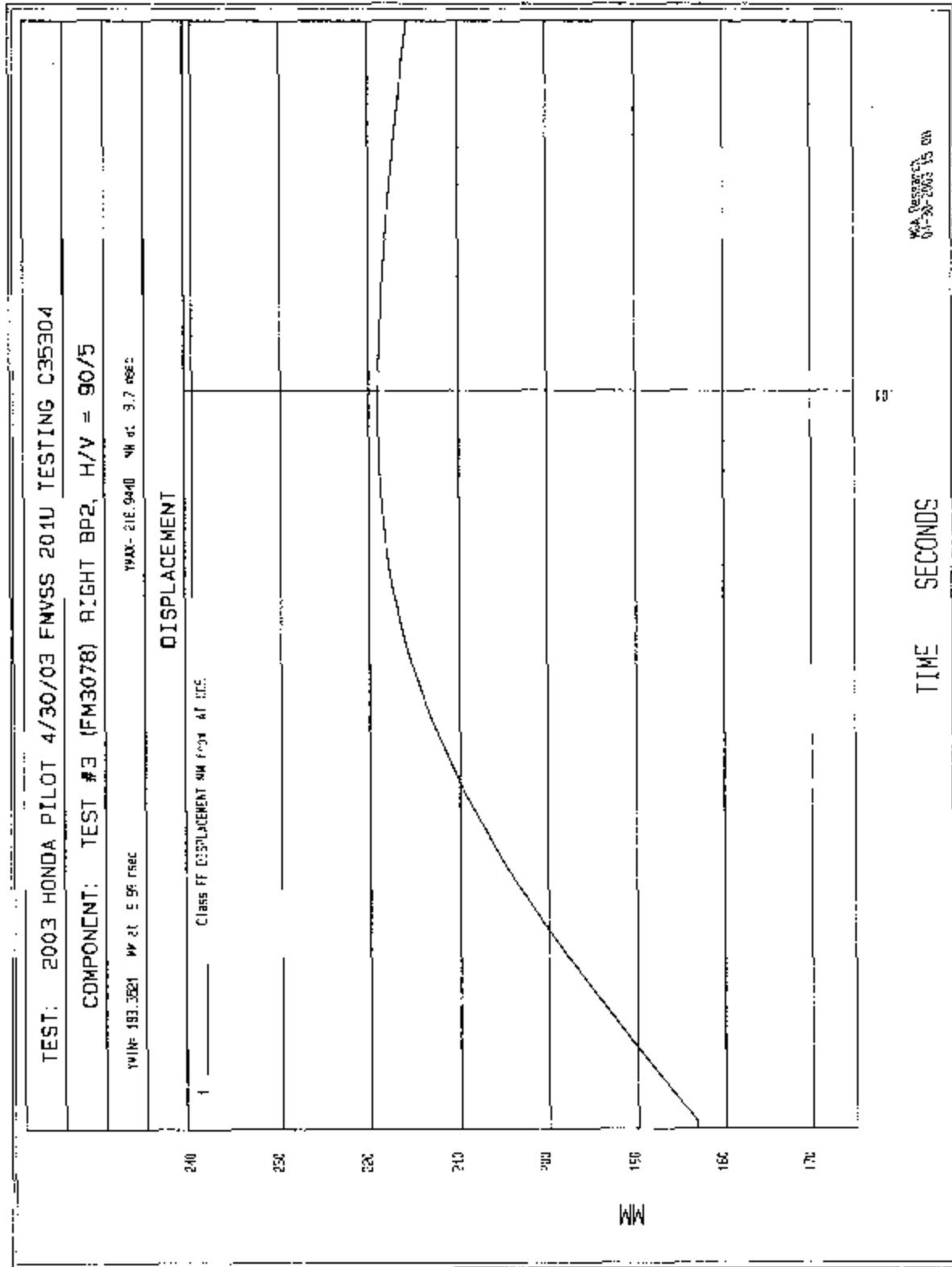
TEST: 2003 HONDA PILOT 4/30/03 FMVSS 201U TESTING C35304

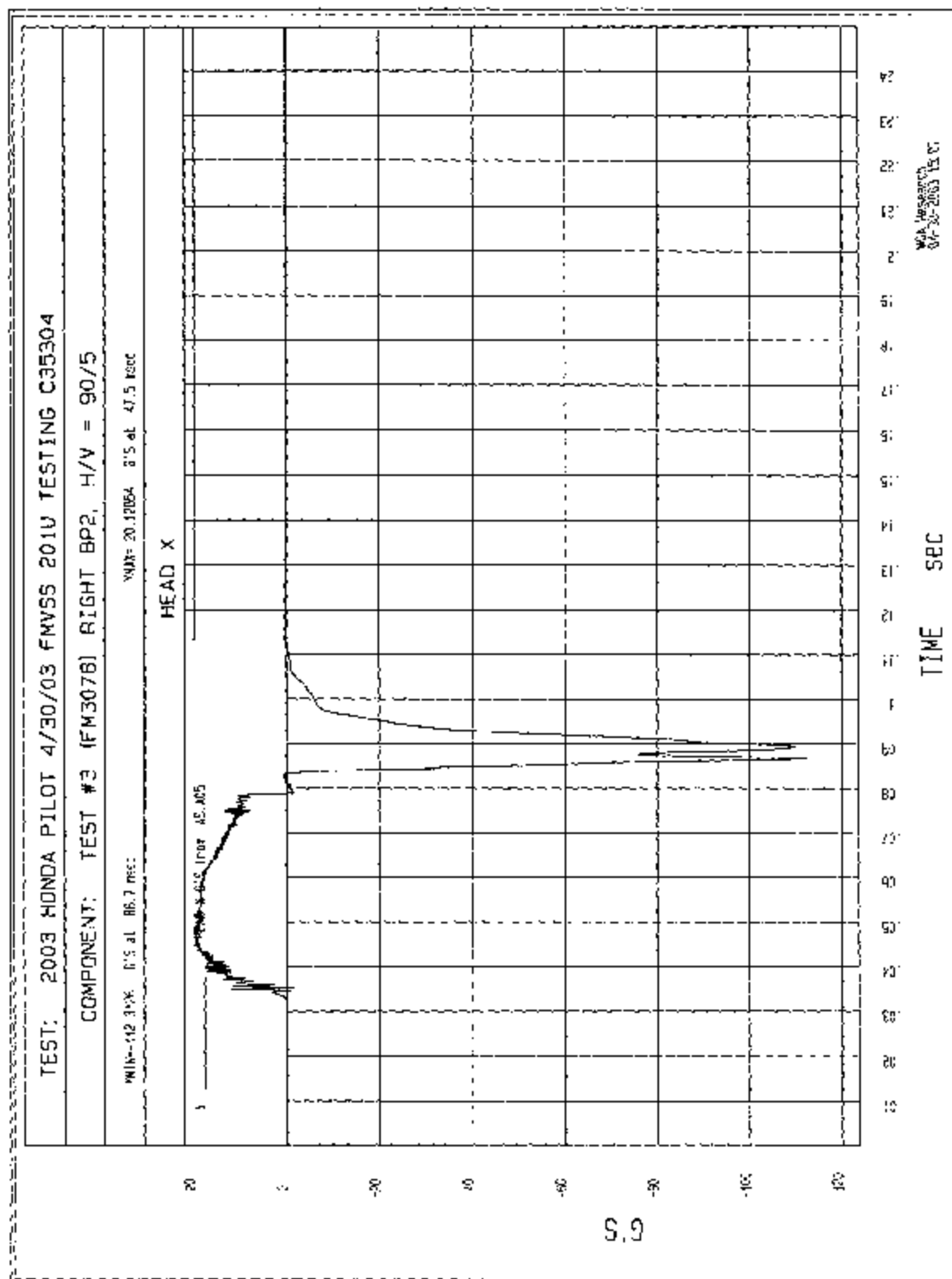
COMPONENT: TEST #3 (FM307B) RIGHT 8P2, H/V = 90/5

HEAD X as a function of DISPLACEMENT









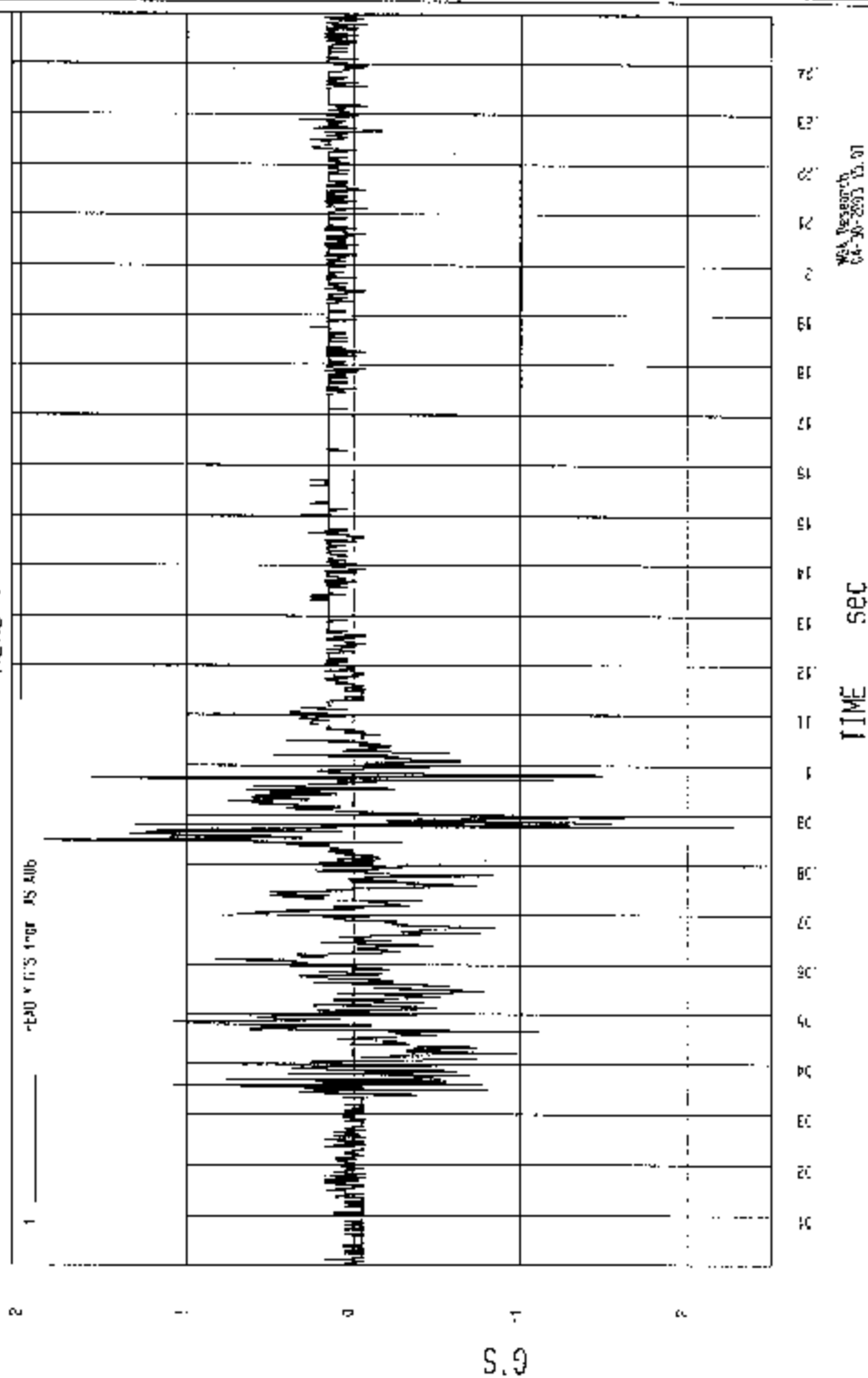
TEST: 2003 HONDA PILOT 4/30/03 FMVSS 201U TESTING C35304

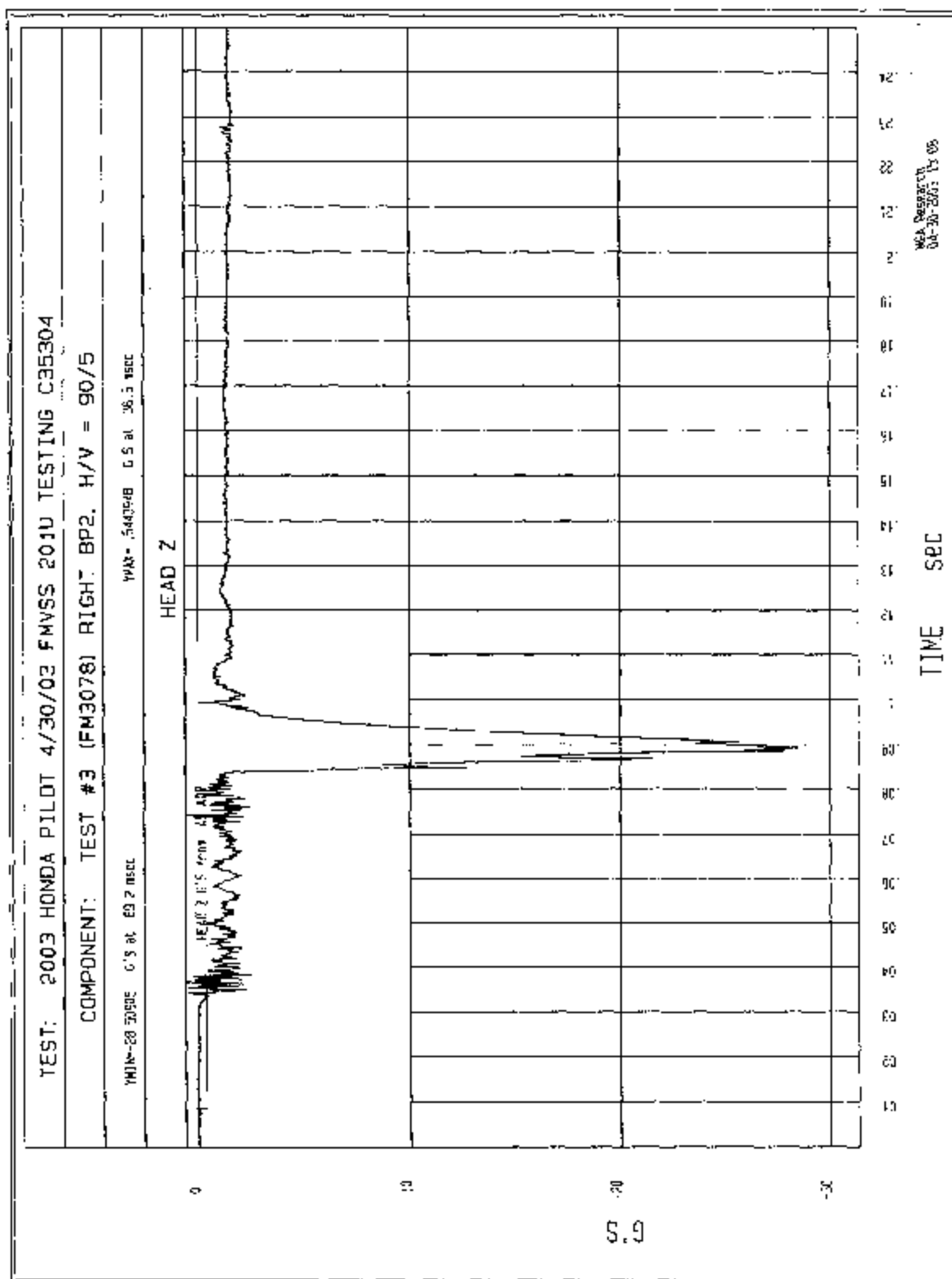
COMPONENT: TEST #3 (FM307B) RIGHT BP2, H/V = 90/5

YMIN=-2.2751E5 G'S at 87.8 msec

YMAX=1.0681E6 G'S at 84.9 msec

HEAD Y





TEST: 2003 HONDA PILOT 4/30/03 FMVSS 201U TESTING C35304

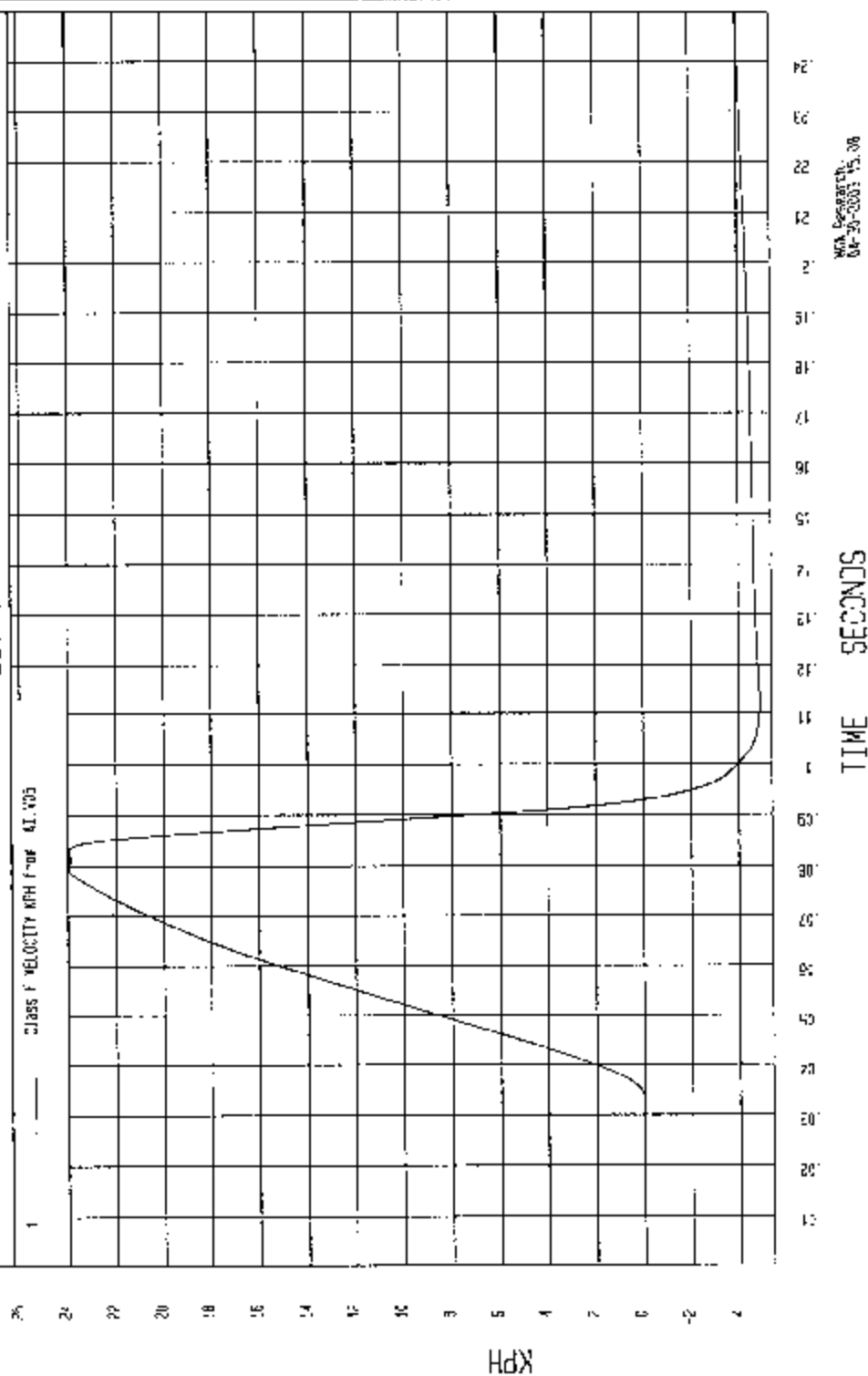
COMPONENT: TEST #3 (FM3078) RIGHT BP2, H/V = 90/5

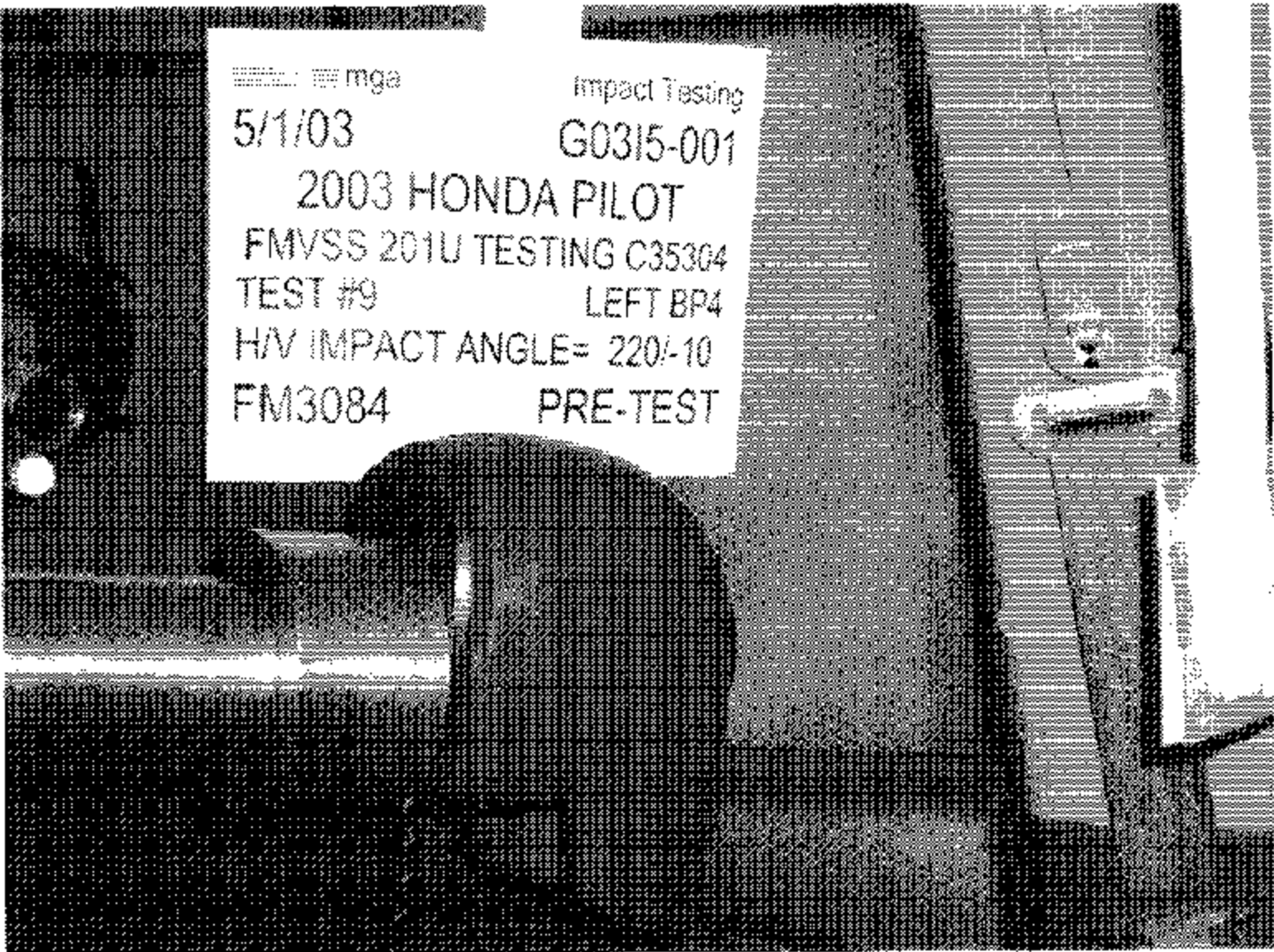
VIN=4LEF308 KPH at 132 msec

VMAX= 23.94207 KPH at 75 msec

VELOCITY

1 CLASS F VELOCITY KPH F=06 41.405

MOA Research
04-20-2003 15:06



mga

5/1/03

Impact Testing

G0315-001

2003 HONDA PILOT

FMVSS 201U TESTING C35304

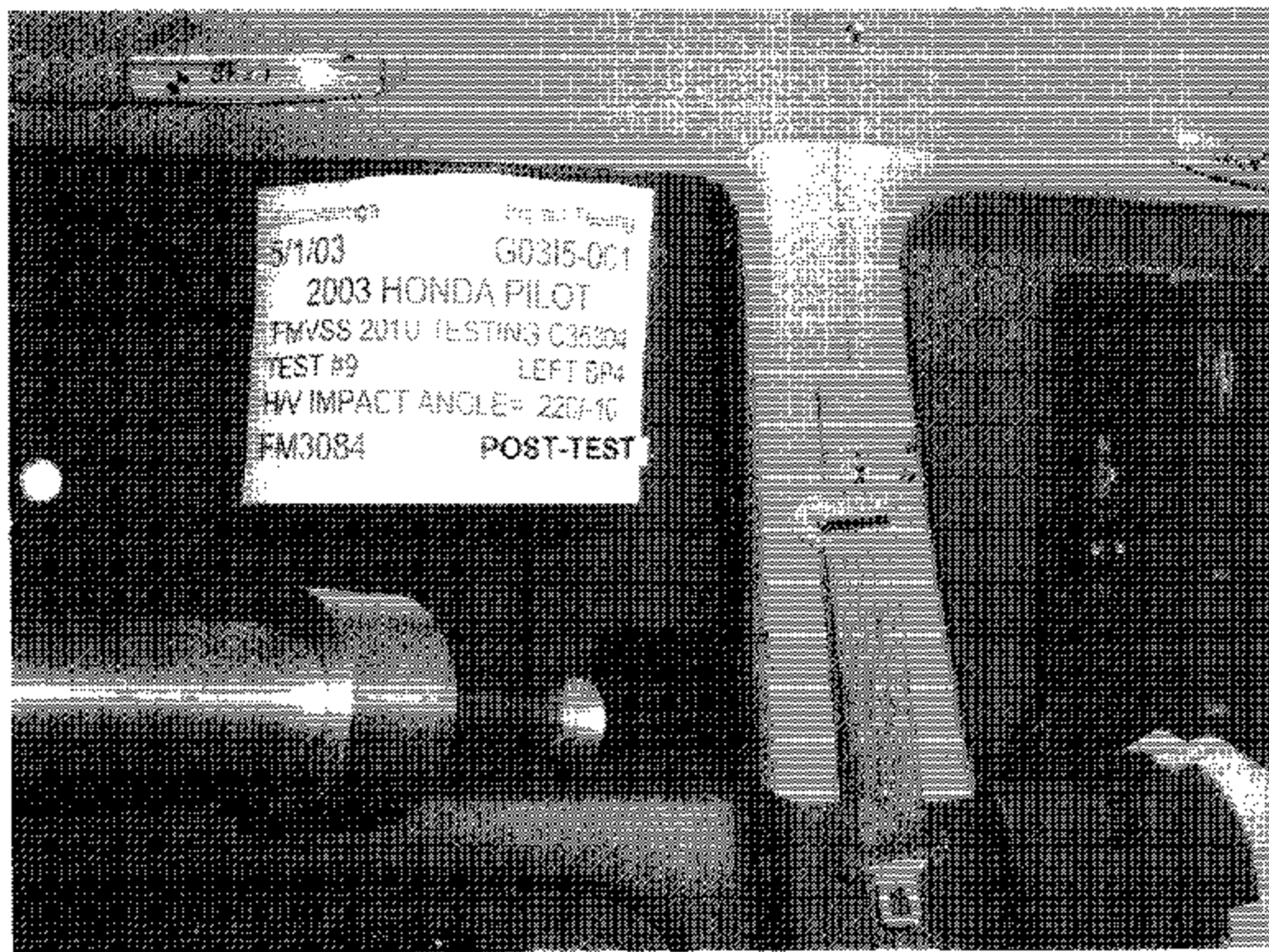
TEST #9

LEFT BP4

H/V IMPACT ANGLE= 220/-10

FM3084

PRE-TEST



mga

Impact Testing

5/1/03

G0315-001

2003 HONDA PILOT

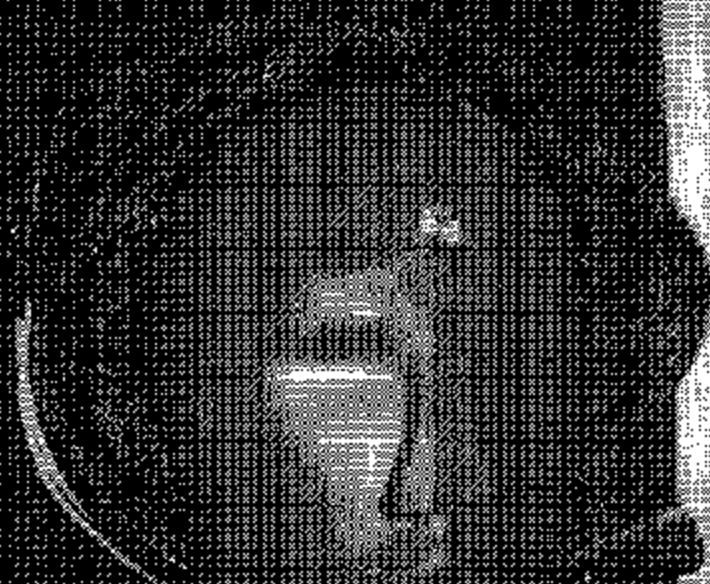
FMVSS 201U TESTING C35304

TEST #9 LEFT BP4

HV IMPACT ANGLE= 220/-10

FM3084

POST-TEST



MICHIGAN OPERATIONS
DATE: 3/20/03
SUPERCEDES: MGAT201U_FRAME #2.4

DOC. NO.: MGAT201U_FRAME #2
REVISION NO.: 5
PAGE 9 OF 9

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: G35304 VEHICLE YR/MAKE/MODEL: 2003 Honda Pilot

GENERAL TEST PARAMETERS:

Test Number: 9

Target (Vehicle Side) (left/right) BP4

Temperature: 24 °F (C)

MGA Test Reference No.: FM3084

Humidity: 39 %

Approach Angles: Horizontal 22.0 °

Time of Test: 1:50 am/pm (pm)

Vertical -10 °

FMH Serial No: 38

TEST RESULTS:

HIC(d)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
598	578	10.2	24.0	15	2

INSTRUMENTAION INFORMATION: (all accelerometers are Endevco 7264-2000)

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
x	5	J36197	-108.7	1.21	1.21
y	6	J36193	102.9	1.23	1.23
z	7	J36353	98.8	1.51	1.51

REMARKS (Summary of test, damage, non-compliance, invalid test, etc.): _____

STRESS MARKS ON PILLOW

Recorded By: [Signature] Approved By*: Helen A. Valto Date: 5/1/03

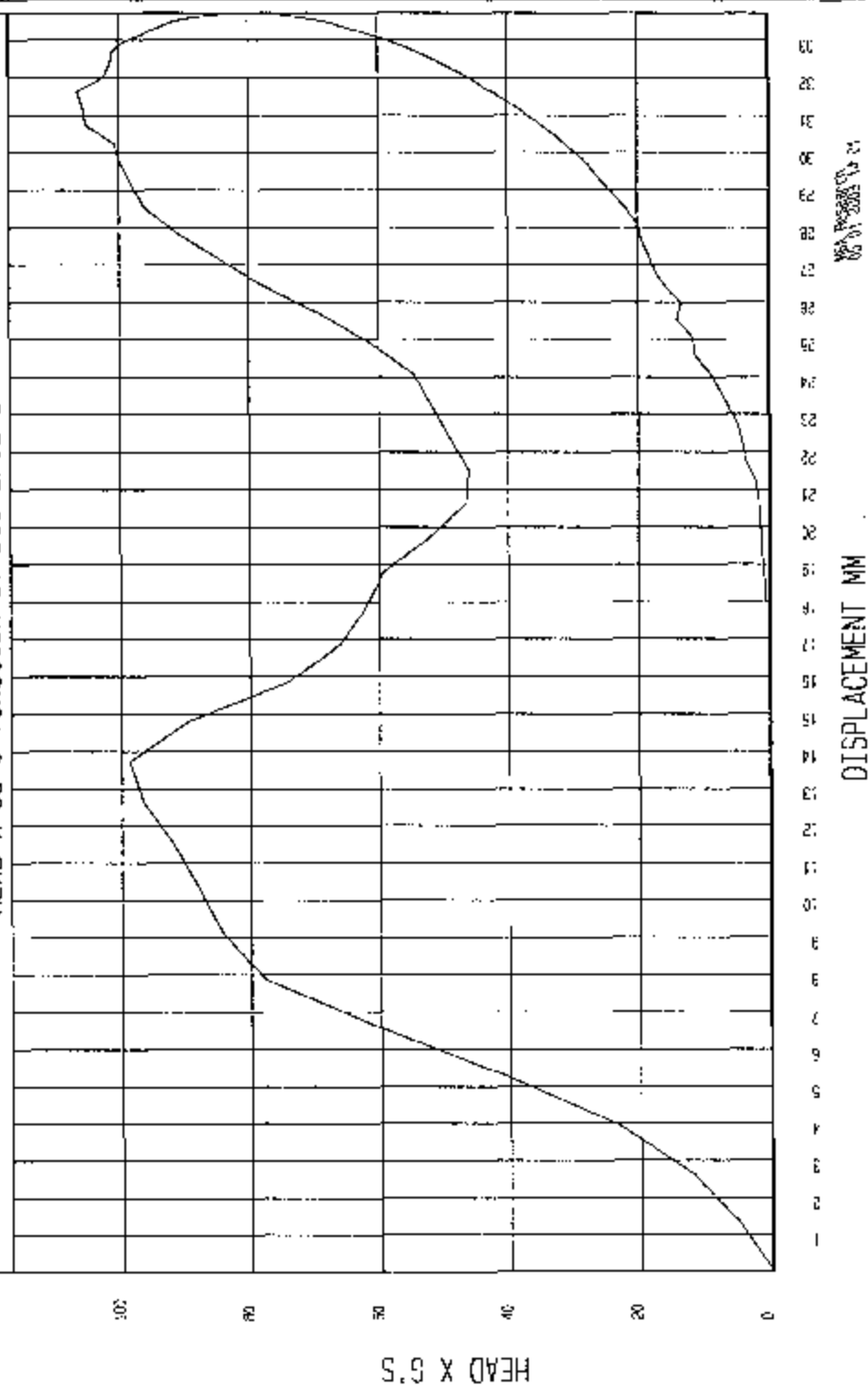
*Only necessary for NHTSA (Government) Compliance testing.

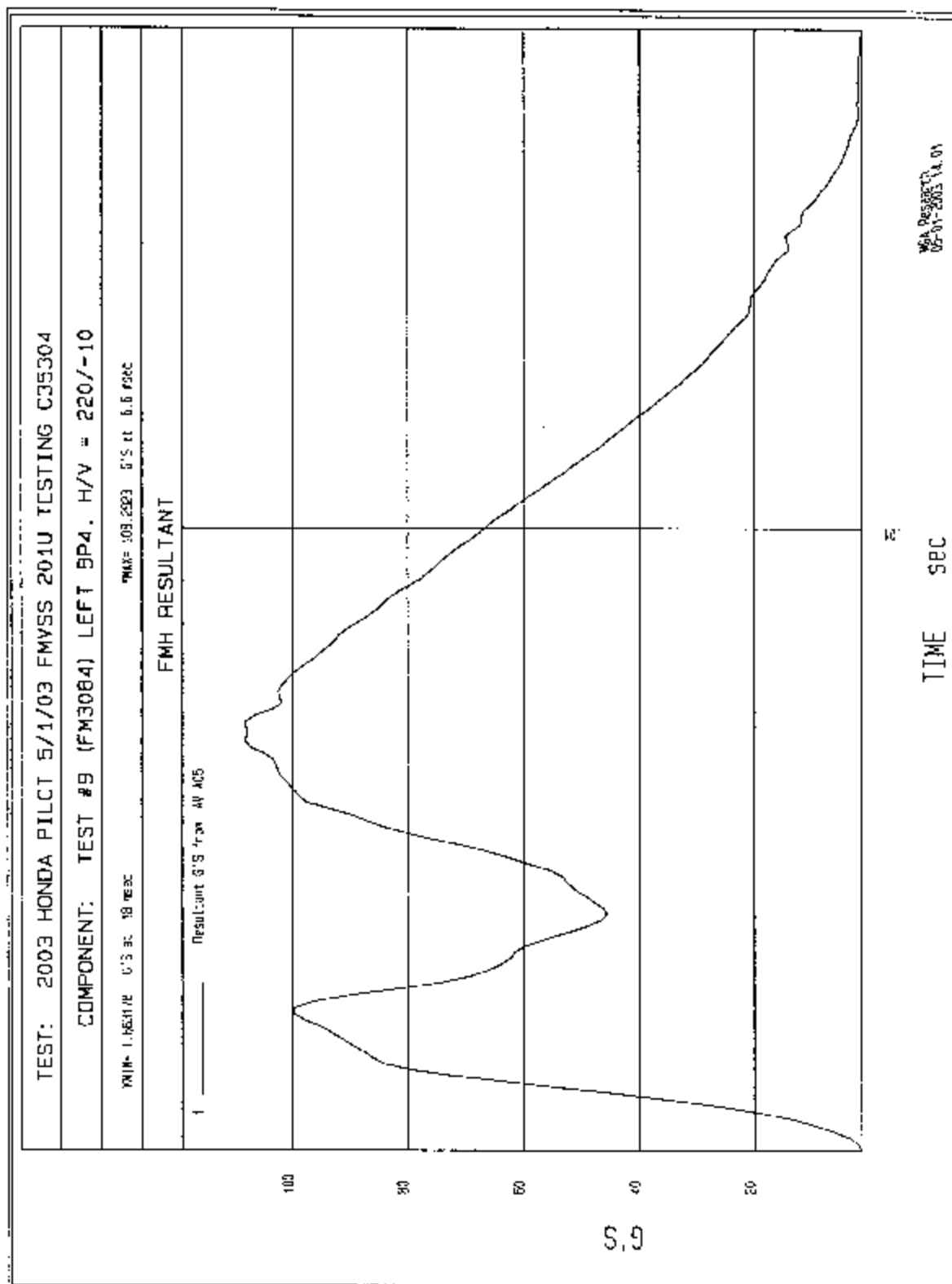
```
*****
RESULTS OF HIC36 PROGRAM
*****
e input file is \NHTSA\FM3084AV.A05
ie HIC = 572.55 calculated over 10.2 msec
T1 = .90 msec T2 = 11.10 msec
*****
HIC(d) = 598
Impact Velocity = 24.0 (km/h)
```

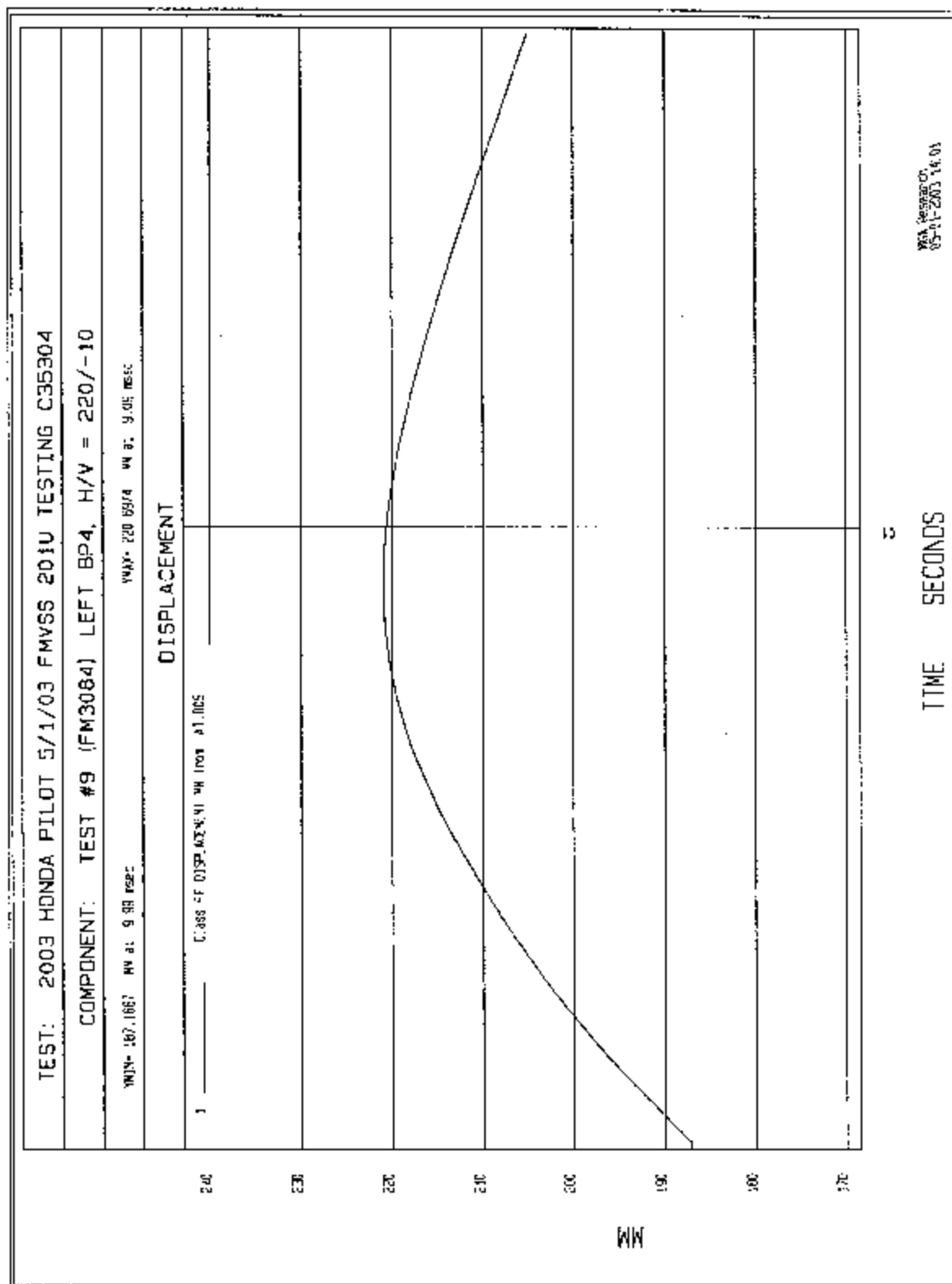
TEST: 2003 HONDA PILOT 5/1/03 FMVSS 2010 TESTING C35304

COMPONENT: TEST #9 (FM30B4) LEFT BP4, H/V = 220/-10

HEAD X as a function of DISPLACEMENT

WPA PROJECT
05-01-2003 12:21





TEST: 2003 HONDA PILOT 5/1/03 FMVSS 201U TESTING C35304

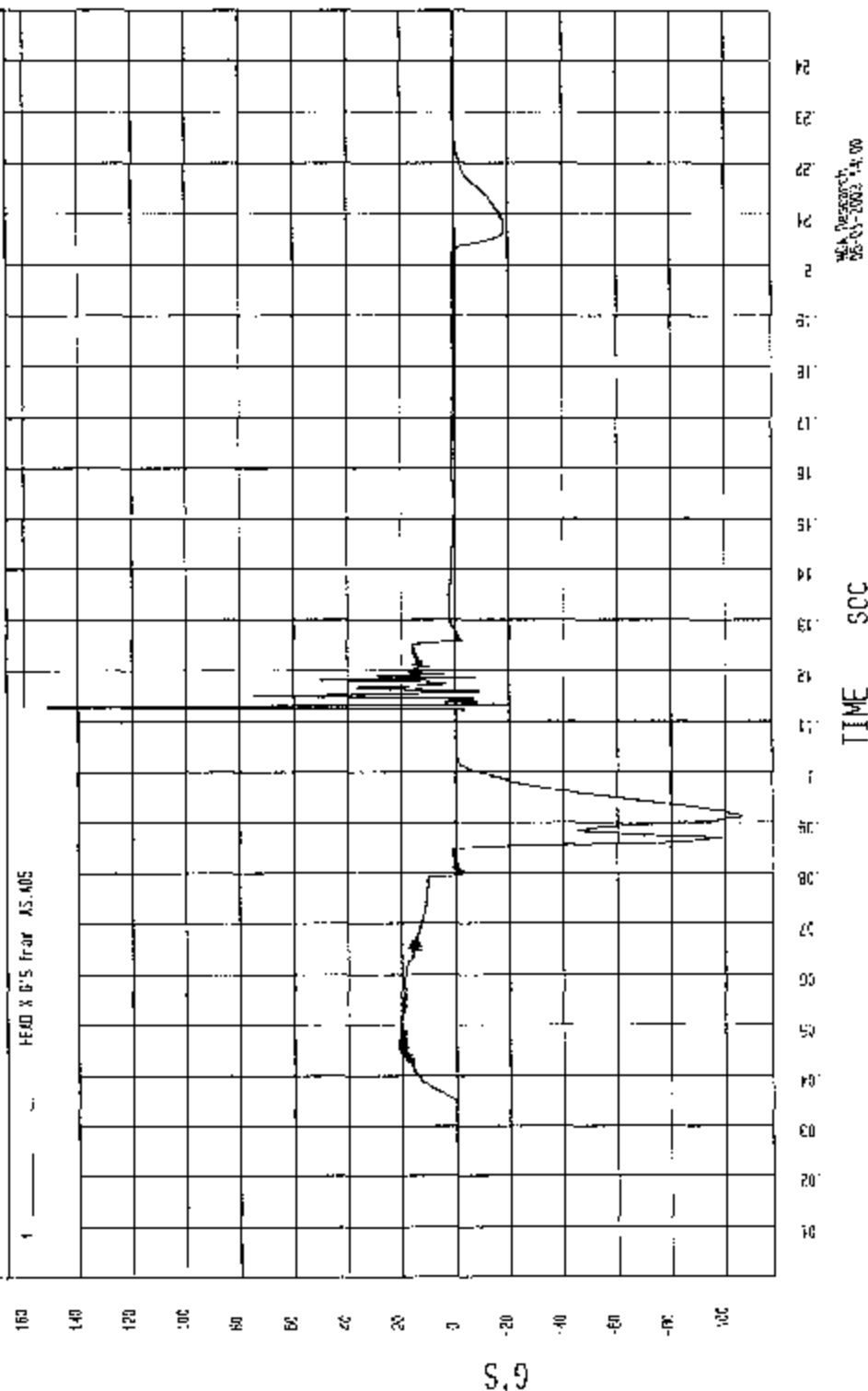
COMPONENT: TEST #9 (FM3084) LEFT BP4, H/V = 220/-10

YMIN=-106.513 3'S at 91.5 msec

YMAX=151.2140 3'S at 112. msec

HEAD X

HEAD X 0'S from AS 405



S.9

TEST: 2003 HONDA PILOT 5/1/03 FMVSS 201U TESTING C35304

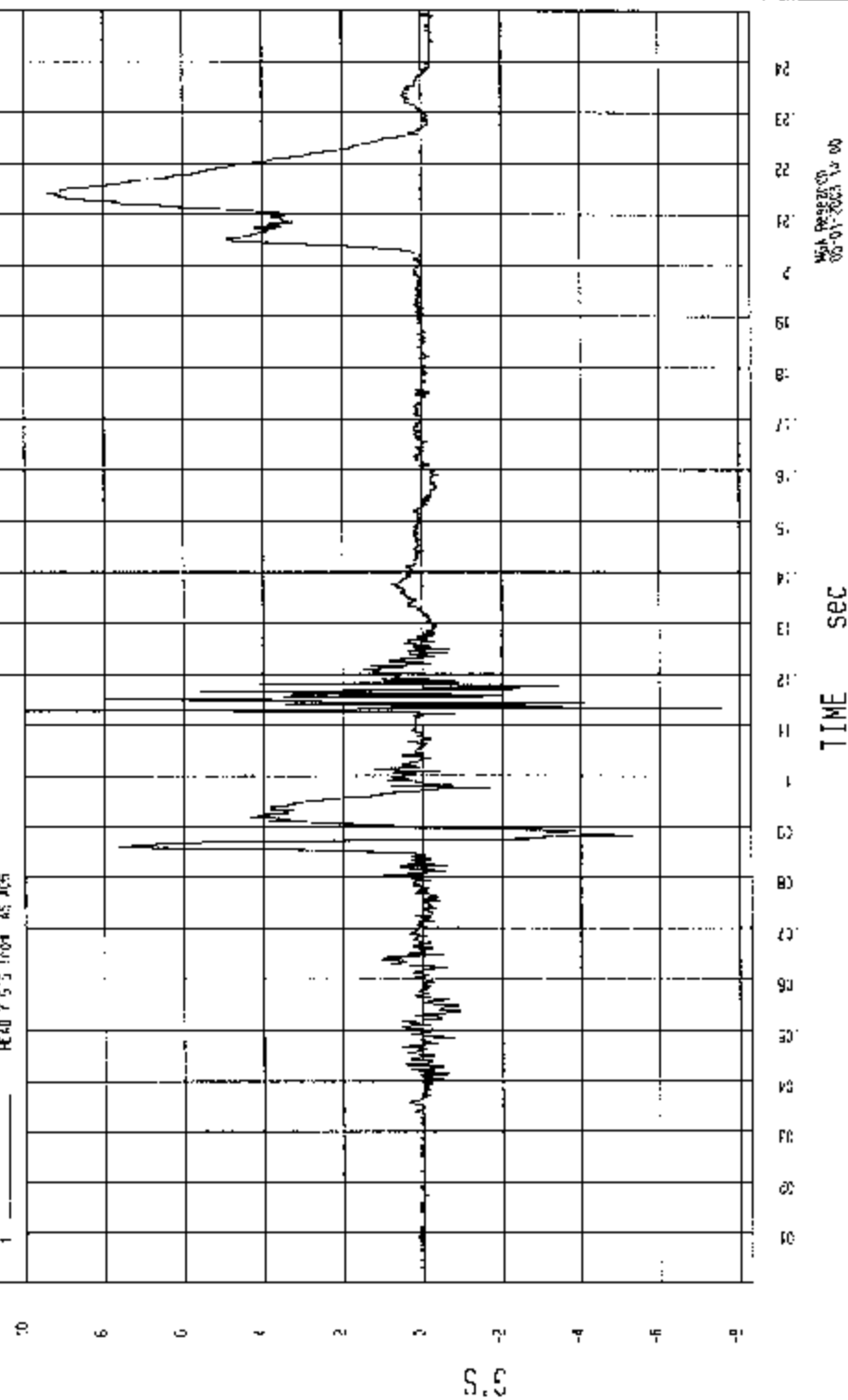
COMPONENT: TEST #9 (FM3084) LEFT BP4, H/V = 220/-10

WIN=7.530753 C'S at 113.45SEC

FMVSS=9.983744 G'S at 112.05SEC

HEAD Y

1 HEAD Y'S from AS ACH



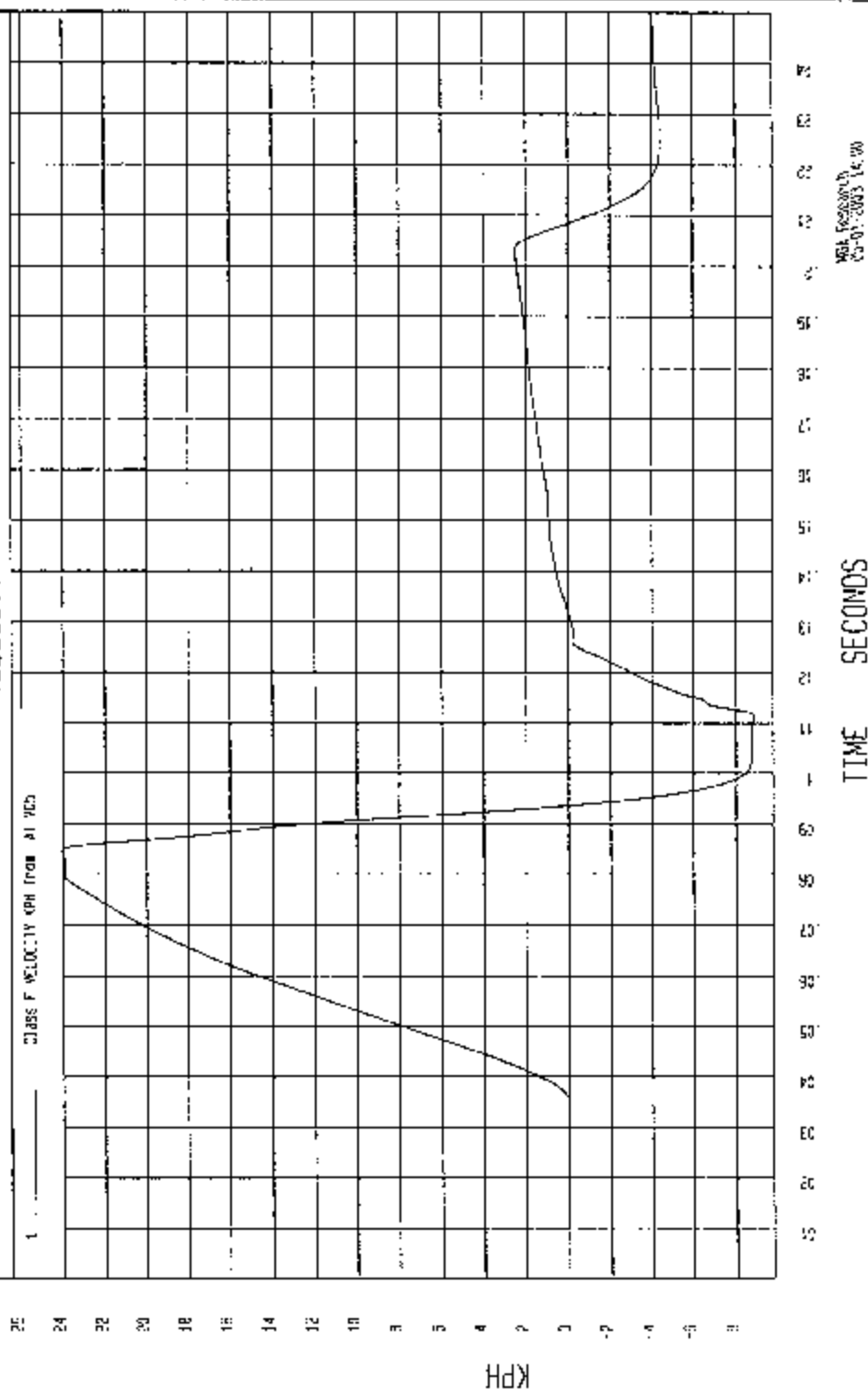
TEST: 2003 HONDA PILOT 5/1/03 FMVSS 201U TESTING C35304

COMPONENT: TEST #9 (FM3084) LEFT BP4, H/V = 220/-10

PM14-8.657421 KTH BT 111.886C

PM13-24.05144 MPH 31.014 KSPC

VELOCITY





DATE OF TEST

4/1/03

MODEL IDENTIFY

G0315-001

2003 HONDA PILOT

PASS 2010 TESTING C35304

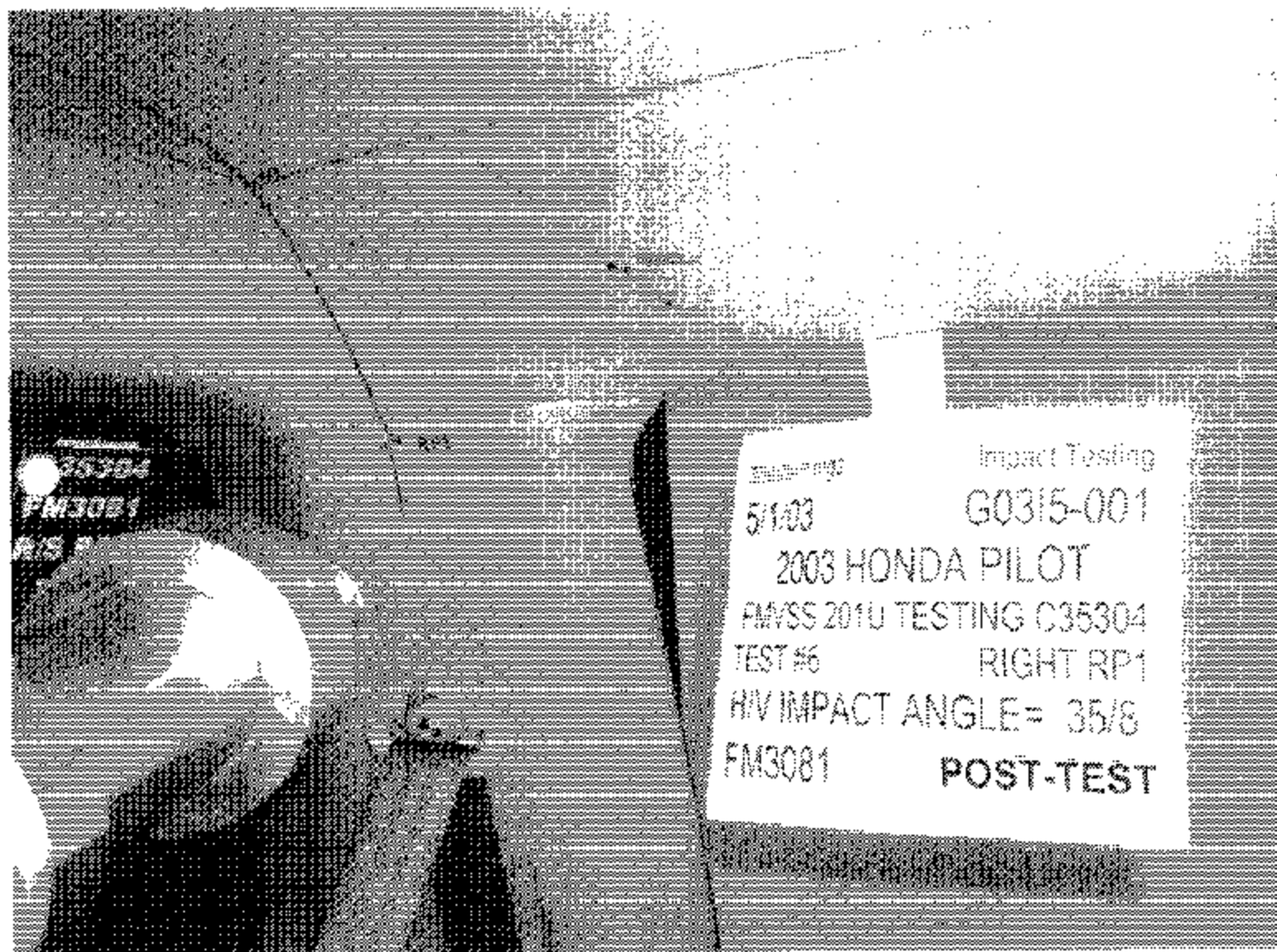
TEST #6

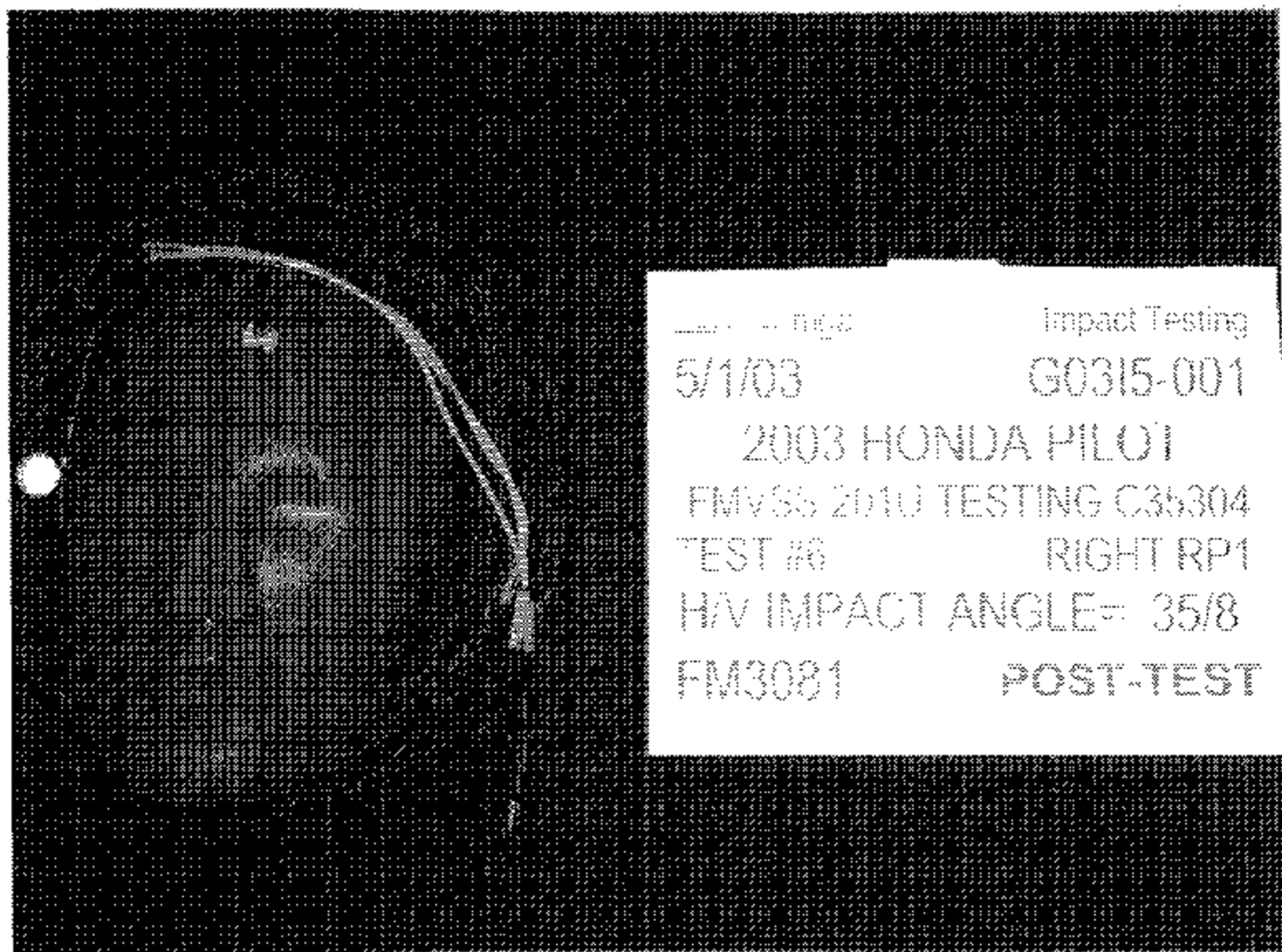
RIGHT RP1

HV IMPACT ANGLE= 35/8

FM3081

PRE-TEST





5/1/03

Impact Testing

5/1/03

G0315-001

2003 HONDA PILOT

FMVSS 2010 TESTING C35304

TEST #6

RIGHT RP1

H/V IMPACT ANGLE= 35/8

FM3081

POST-TEST

MICHIGAN OPERATIONS
DATE: 3/20/03
SUPERCEDES: MGATP201U_FRAME #2.1

DOC NO: MGATP201U_FRAME #2
REVISION NO: 3
PAGE 9 OF 9

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: C35304 VEHICLE YR/MAKE/MODEL: 2003 Honda Pilot

GENERAL TEST PARAMETERS:

Test Number: 6

Target (Vehicle Side): left/right RPI

Temperature: 23 °F/C

MGA Test Reference No.: FM3081

Humidity: 33 %

Approach Angles: Horizontal 35 °

Time of Test: 8:30 am/pm

Vertical 8 °

FMH Serial No: 38

TEST RESULTS:

HIC(d)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
829	879	7.5	23.8	36	5

INSTRUMENTATION INFORMATION: (all accelerometers are Endevco 7264-2000)

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
X	5	J36197	-108.7	1.21	1.21
Y	6	J36193	102.9	1.23	1.23
Z	7	J36353	98.9	1.51	1.51

REMARKS (Summary of test, damage, non-compliance, invalid test, etc.):

THE PILLOW-TIM COMPRESSED DURING IMPACT

Recorded By: [Signature] Approved By: Helen A. Kalish Date: 5/1/03

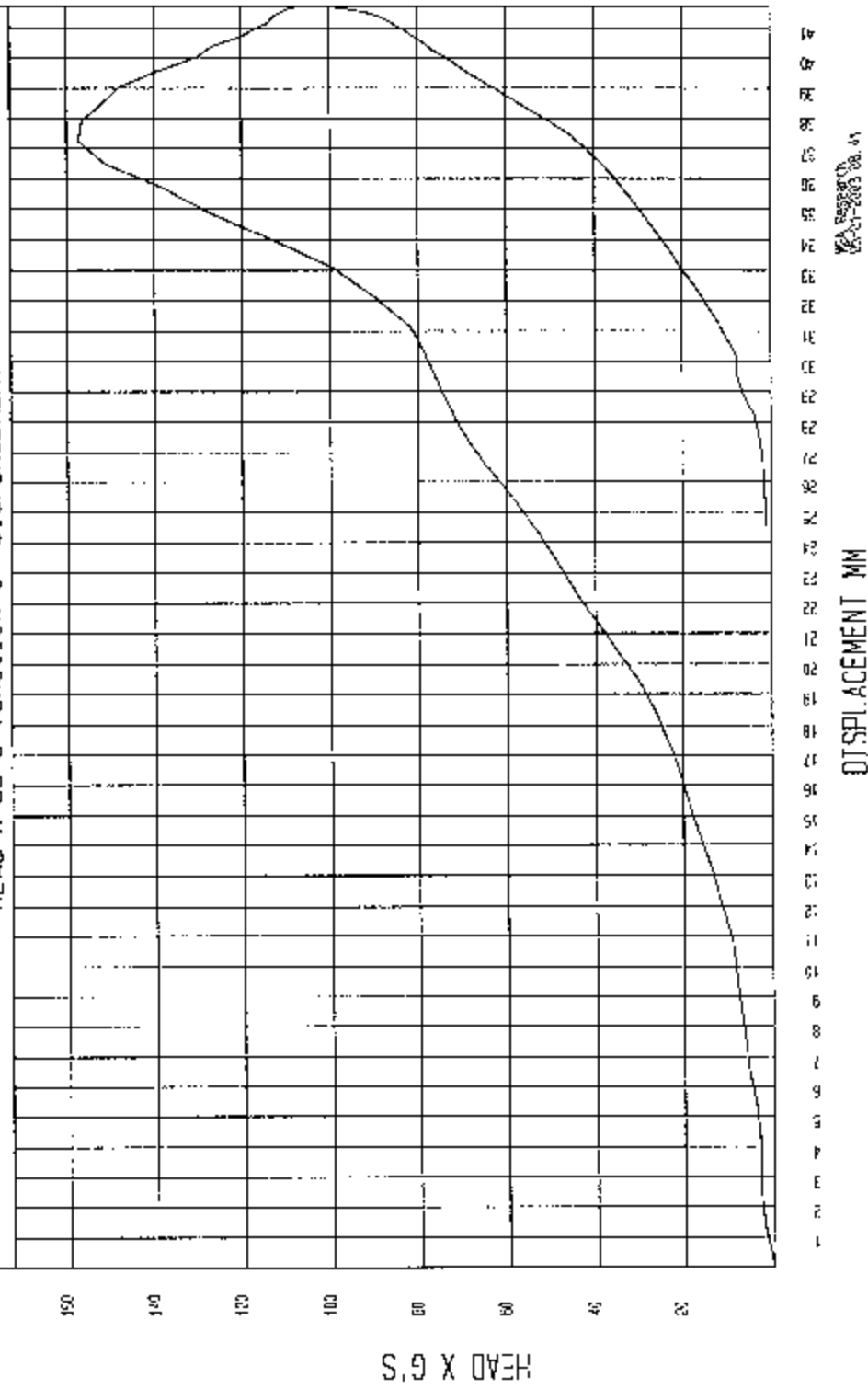
*Only necessary for NHTSA (Government) Compliance testing.

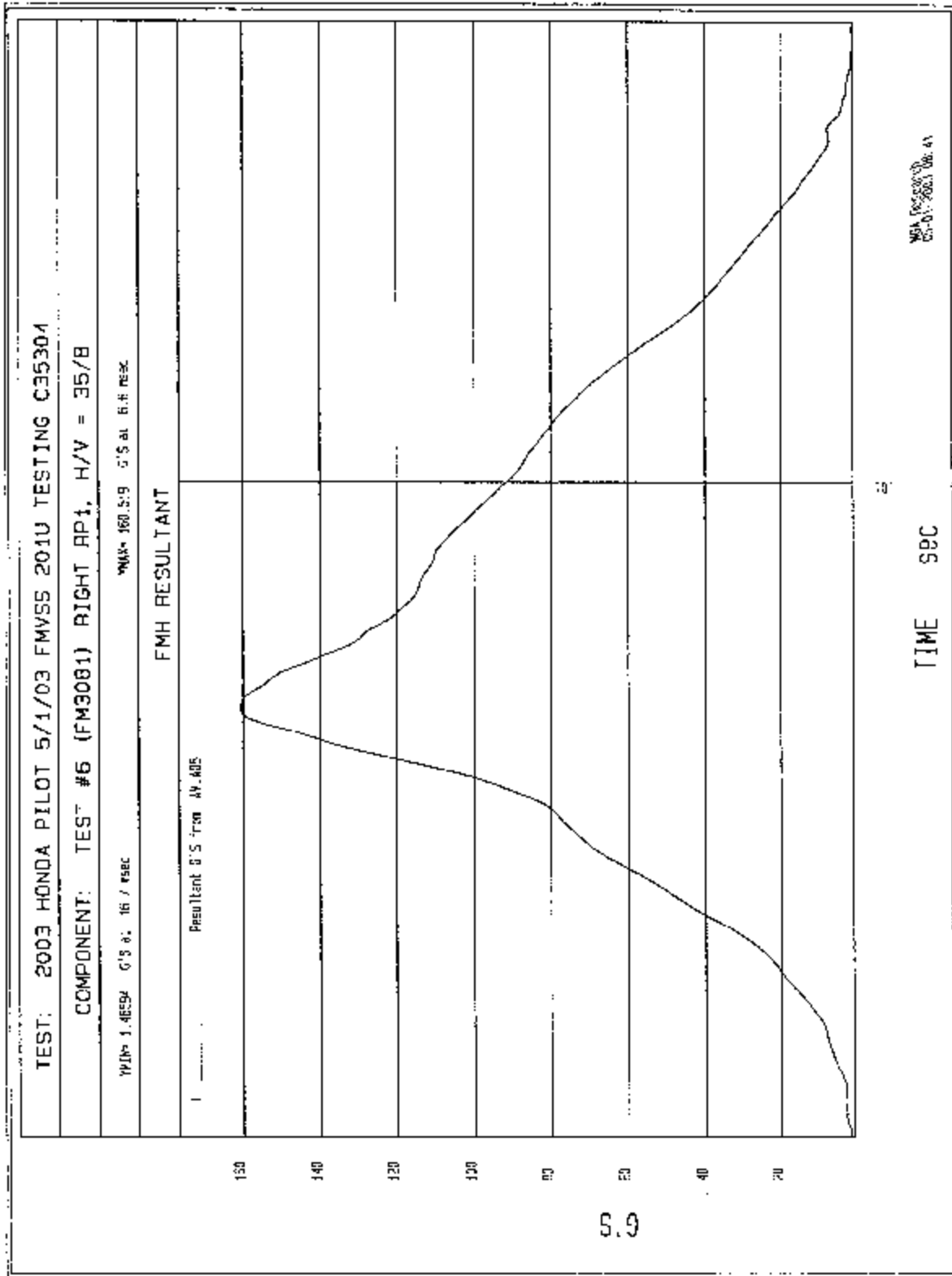
```
*****
RESULTS OF HIC36 PROGRAM
*****
input file is \NHTSA\FM3081AV.A05
HIC = 878.73 calculated over 7.5 msec
T1 = 4.10 msec T2 = 11.60 msec
*****
HIC(d) = 829
Impact Velocity = 23.8 (km/h)
```

TEST: 2003 HONDA PILOT 5/1/03 FMVSS 201U TESTING C35304

COMPONENT: TEST #6 (FM3081) RIGHT RP1, H/V = 35/B

HEAD X as a function of DISPLACEMENT





TEST: 2003 HONDA PILOT 5/1/03 FMVSS 201U TESTING C35304

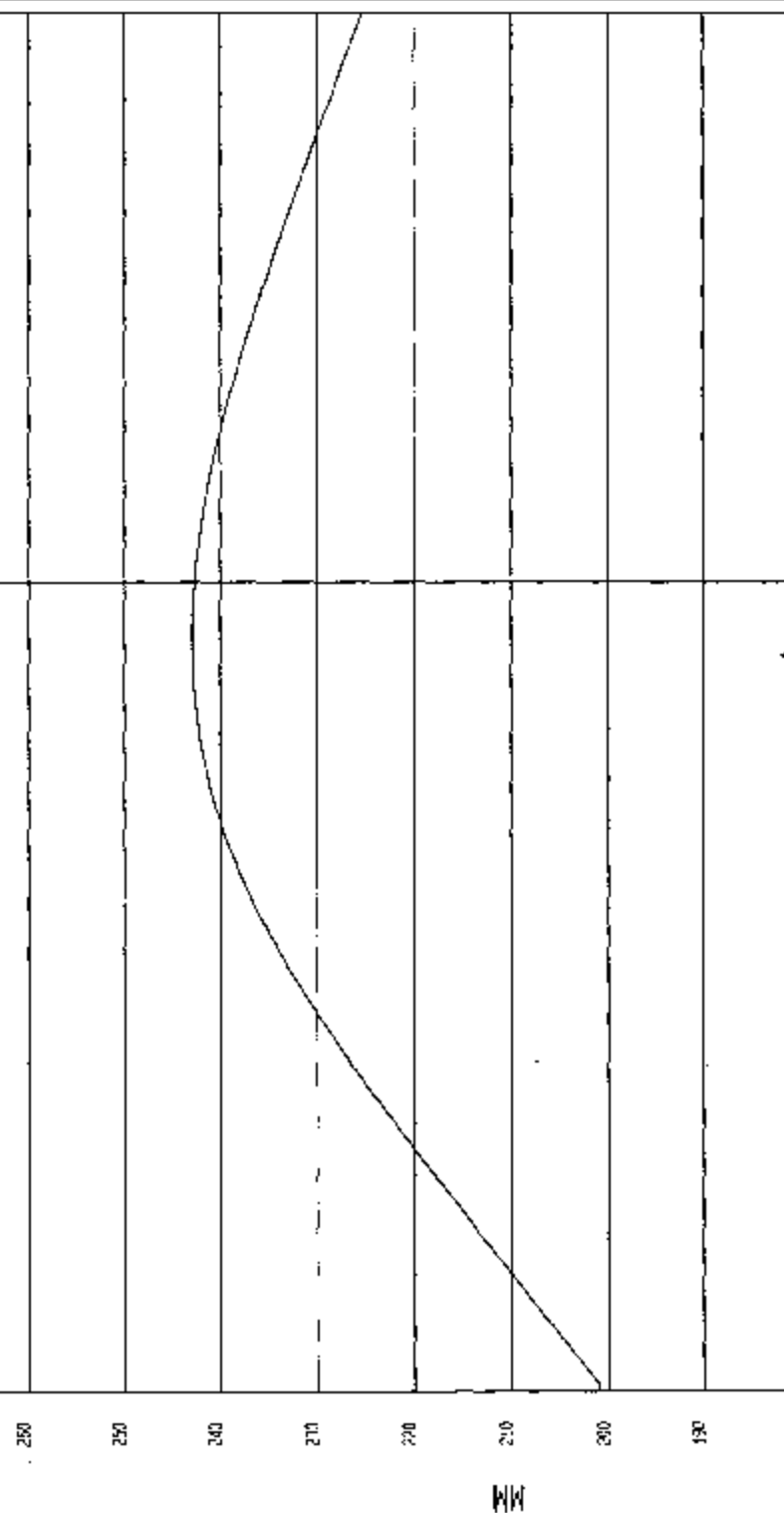
COMPONENT: TEST #6 (FM3081) RIGHT RP1, H/V = 35/8

Y41N 201.09RZ Wt at: 9.39 MSRC

YMA3= 242.0417 Wt at: 9.3 MSRC

DISPLACEMENT

1 _____ [Less FF DISPLACEMENT] from AT 005

MSA, CHRYSLER CO.
02-16-2003 09.12

TEST: 2003 HONDA PILOT 5/1/03 FMVSS 201U TESTING C35304

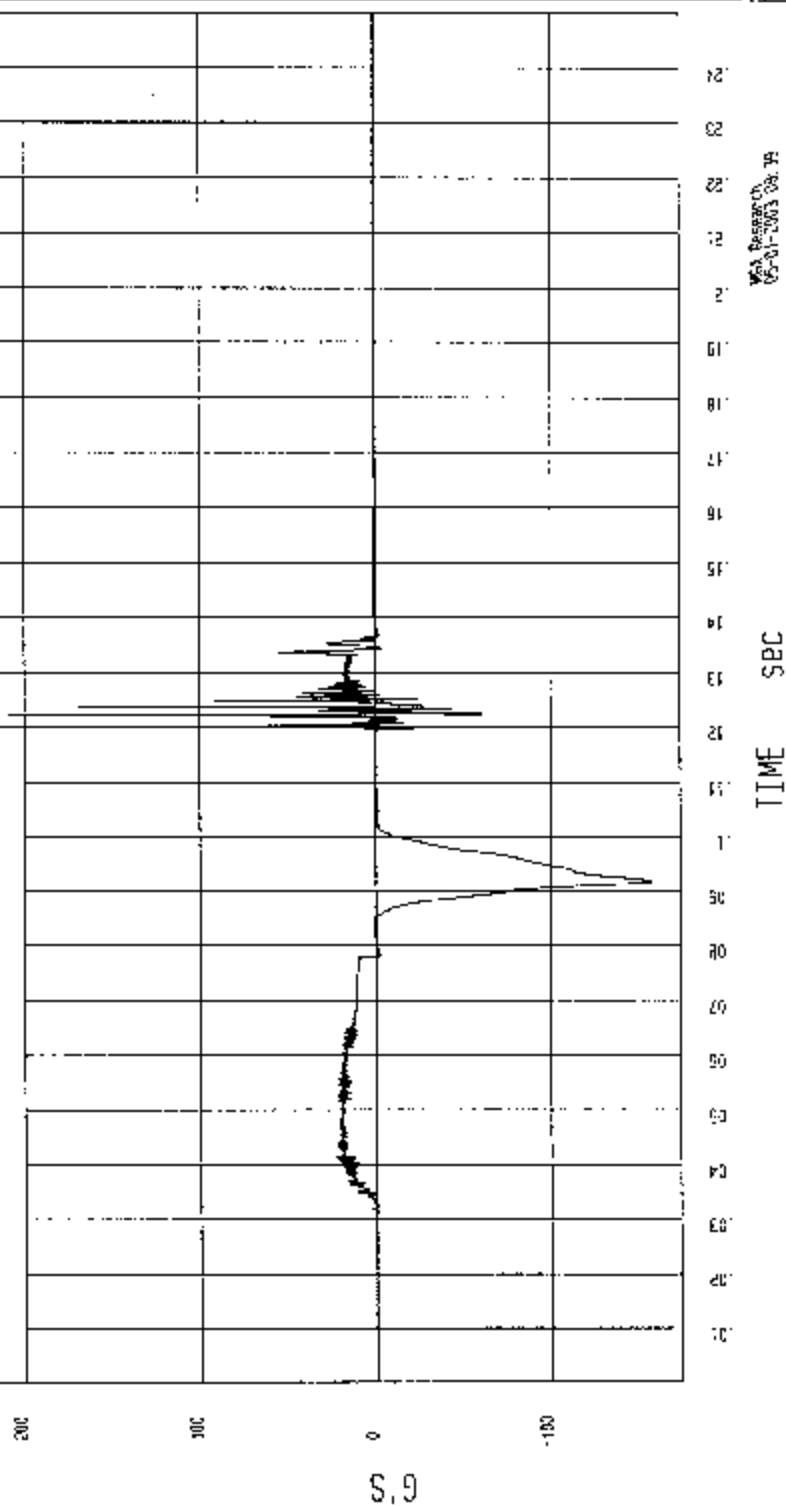
COMPONENT: TEST #6 (FM3081) RIGHT RP1, H/V = 35/8

MIN--50/2002 G'S at 51.9 msec

MAX=209.7864 G'S at 120 msec

HEAD X

1 HLAC X G'S from 45.405



WDA Research
05-01-2003 09:19

TEST: 2003 HONDA PILOT 5/1/03 FMVSS 201U TESTING C35304

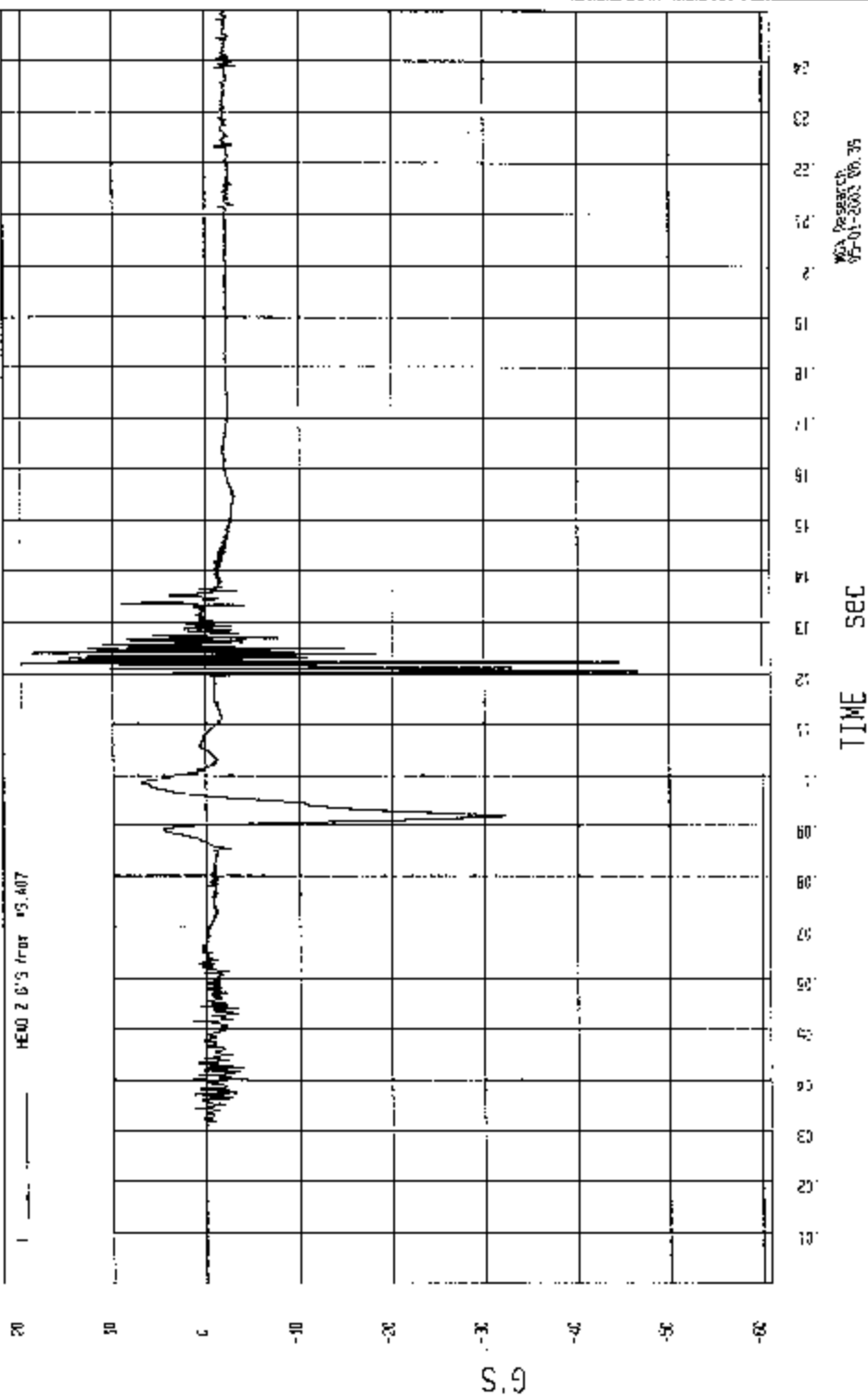
COMPONENT: TEST #6 (FM3081) RIGHT RPI, H/V = 35/8

WIN-55 3574 G'S at 120 msec

VMAX= 19.9362 G'S at 122 msec

HEAD Z

HEAD Z G'S from #3.407



WCA Research
05-01-2003 09:35

TEST: 2003 HONDA PILOT 5/1/03 FMVSS 2010 TESTING C35304

COMPONENT: TEST #6 (FM3081) RIGHT RP1, H/V = 35/B

MIN-11.5123 CH AL 116.000

MAX-23.7025 KPH at BE REC

VELOCITY

1 Class F VELOCITY KPH from AJ W03

20

10

KPH

-10

72

60

48

36

24

12

0

-12

-24

-36

-48

-60

-72

-84

-96

-108

-120

-132

-144

-156

-168

-180

-192

-204

-216

-228

-240

-252

-264

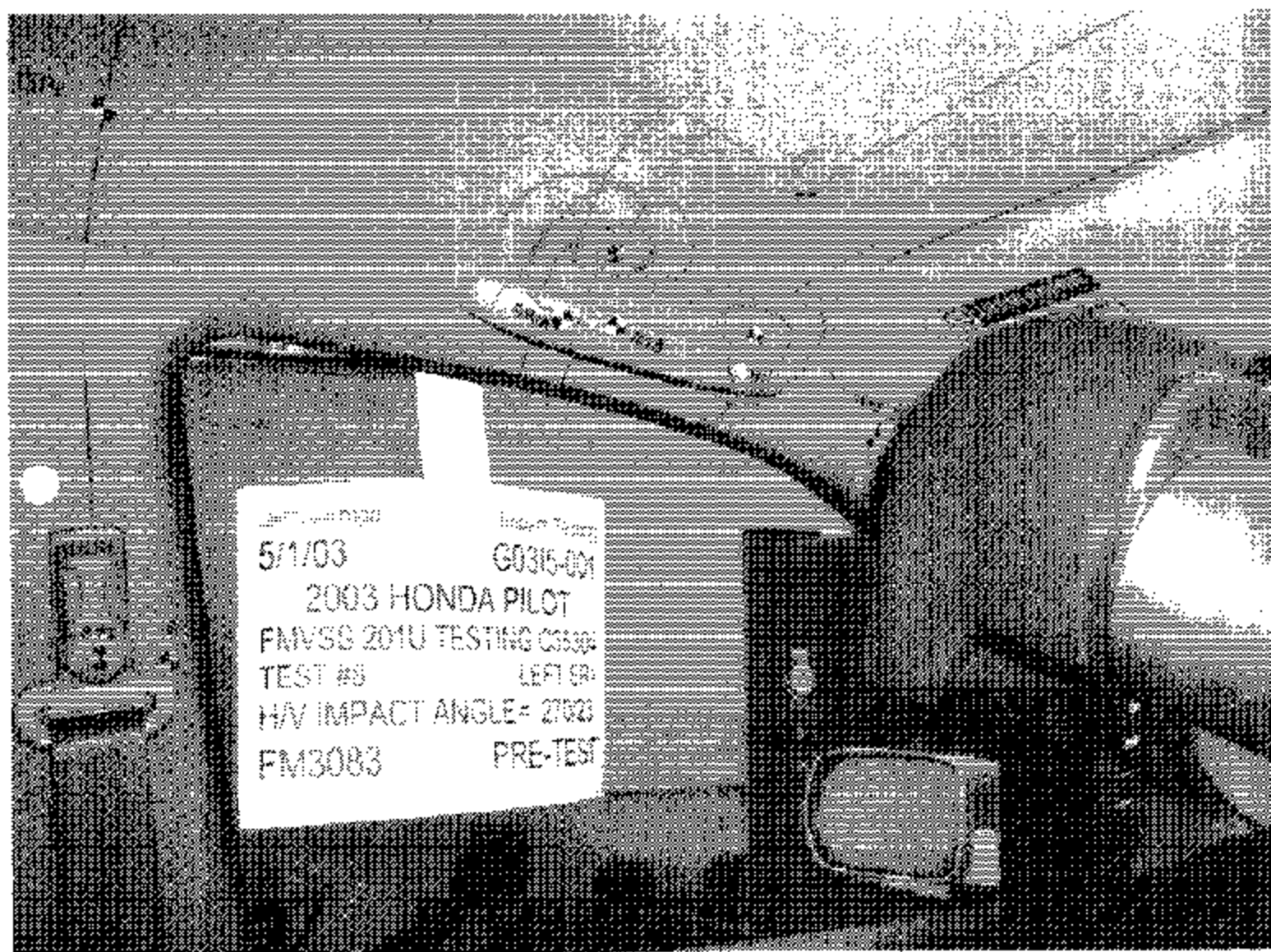
-276

-288

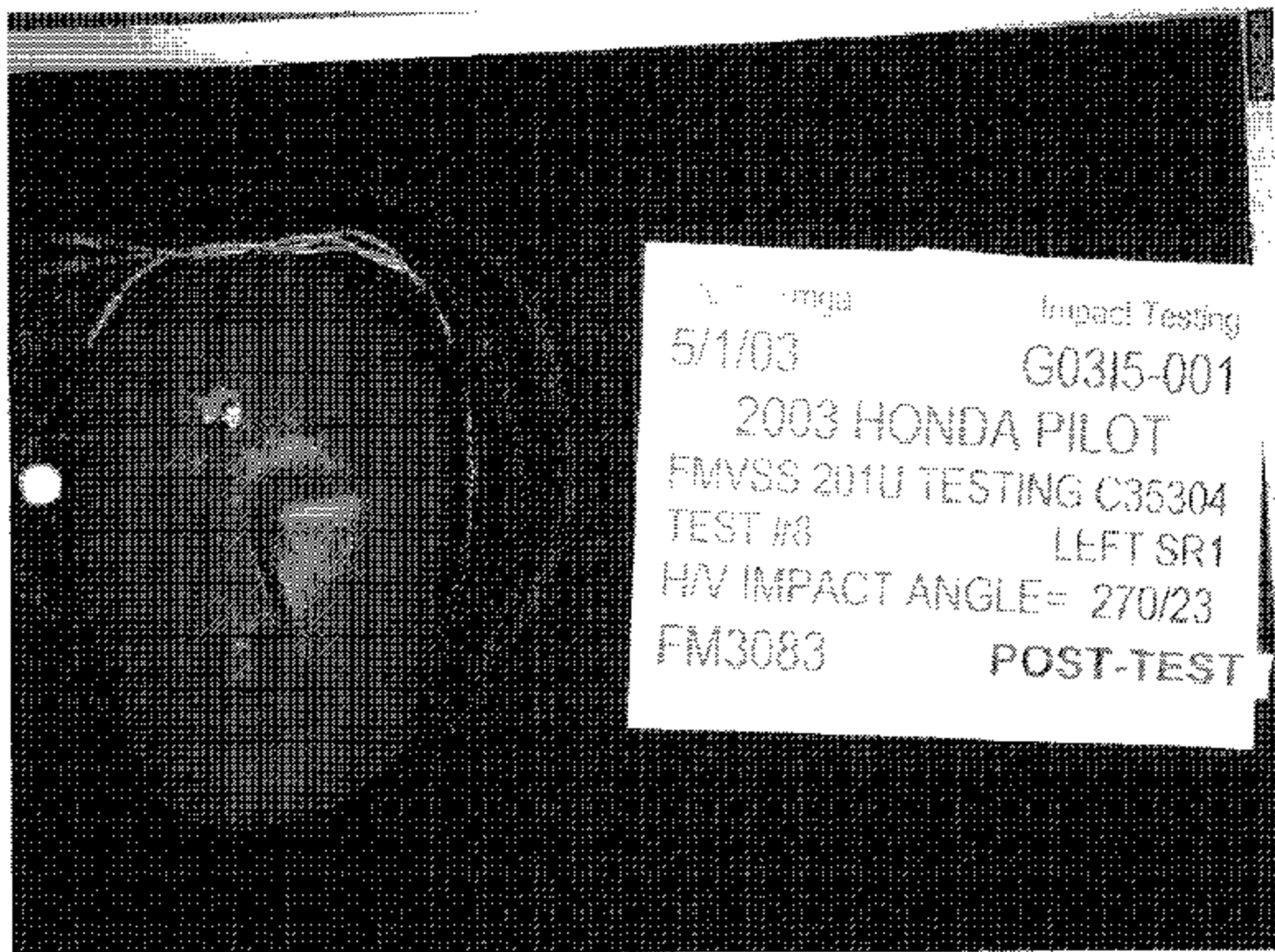
-300

TIME SECONDS

K&A Research
05-01-2003 06:44







N. T. - mja

Impact Testing

5/1/03

G0315-001

2003 HONDA PILOT

FMVSS 201U TESTING C35304

TEST #8

LEFT SR1

H/V IMPACT ANGLE= 270/23

FM3083

POST-TEST

MICHIGAN OPERATIONS
DATE 3/20/03
SUPERCEDES: MGATP201L_FRAME #2.4

DOC. NO.: MGATP201L_FRAME #1
REVISION NO. 5
PAGE 9 OF 9

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: C35304 VEHICLE YR/MAKE/MODEL: 2003 Honda PILOT

GENERAL TEST PARAMETERS:

Test Number: 8

Target (Vehicle Side) (left/right) SRI

Temperature: 23 °F/C

MGA Test Reference No.: FM3083

Humidity: 38 %

Approach Angles: Horizontal 270 °

Time of Test: 11:40 am/pm

Vertical 23 °

FMH Serial No: 36

TEST RESULTS:

HIC(d)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
<u>8006</u>	<u>848</u>	<u>6.3</u>	<u>23.9</u>	<u>10</u>	<u>0</u>

INSTRUMENTATION INFORMATION: (all accelerometers are Endevco 7264-2000)

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
<u>x</u>	<u>5</u>	<u>235923</u>	<u>-101.6</u>	<u>1.21</u>	<u>1.21</u>
<u>y</u>	<u>6</u>	<u>235916</u>	<u>101.2</u>	<u>1.23</u>	<u>1.23</u>
<u>z</u>	<u>7</u>	<u>235913</u>	<u>99.4</u>	<u>1.51</u>	<u>1.51</u>

REMARKS (Summary of test, damage, non-compliance, invalid test, etc.):

NO VISIBLE DAMAGE

Recorded By: [Signature] Approved By: Helen A. Kales Date: 8/1/03

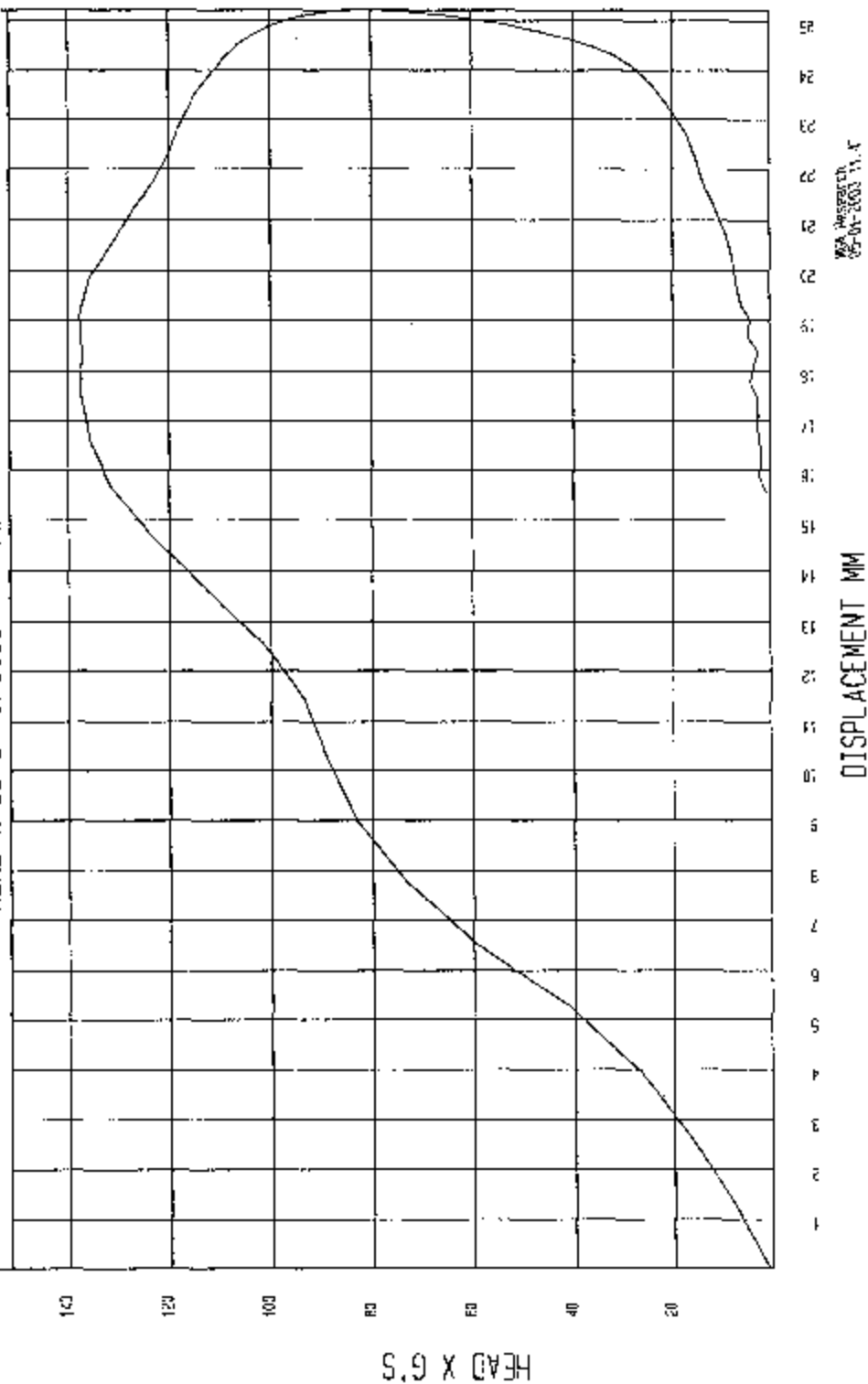
*Only necessary for NHTSA (Government) Compliance testing.

```
*****
RESULTS OF HIC36 PROGRAM
*****
The input file is \NHTSA\FM3083AV.A05
The HIC = 847.57 calculated over 6.3 msec
T1 = 1.10 msec T2 = 7.40 msec
*****
HIC(d) = 806
Impact Velocity = 23.9 (km/h)
```

TEST: 2003 HONDA PILOT 5/1/03 FMVSS 201U TESTING C35304

COMPONENT: TEST #8 (FM3083) LEFT SR1, H/V = 270/23

HEAD X as a function of DISPLACEMENT



TEST: 2003 HONDA PILOT 5/1/03 FMVSS 201U TESTING C35304

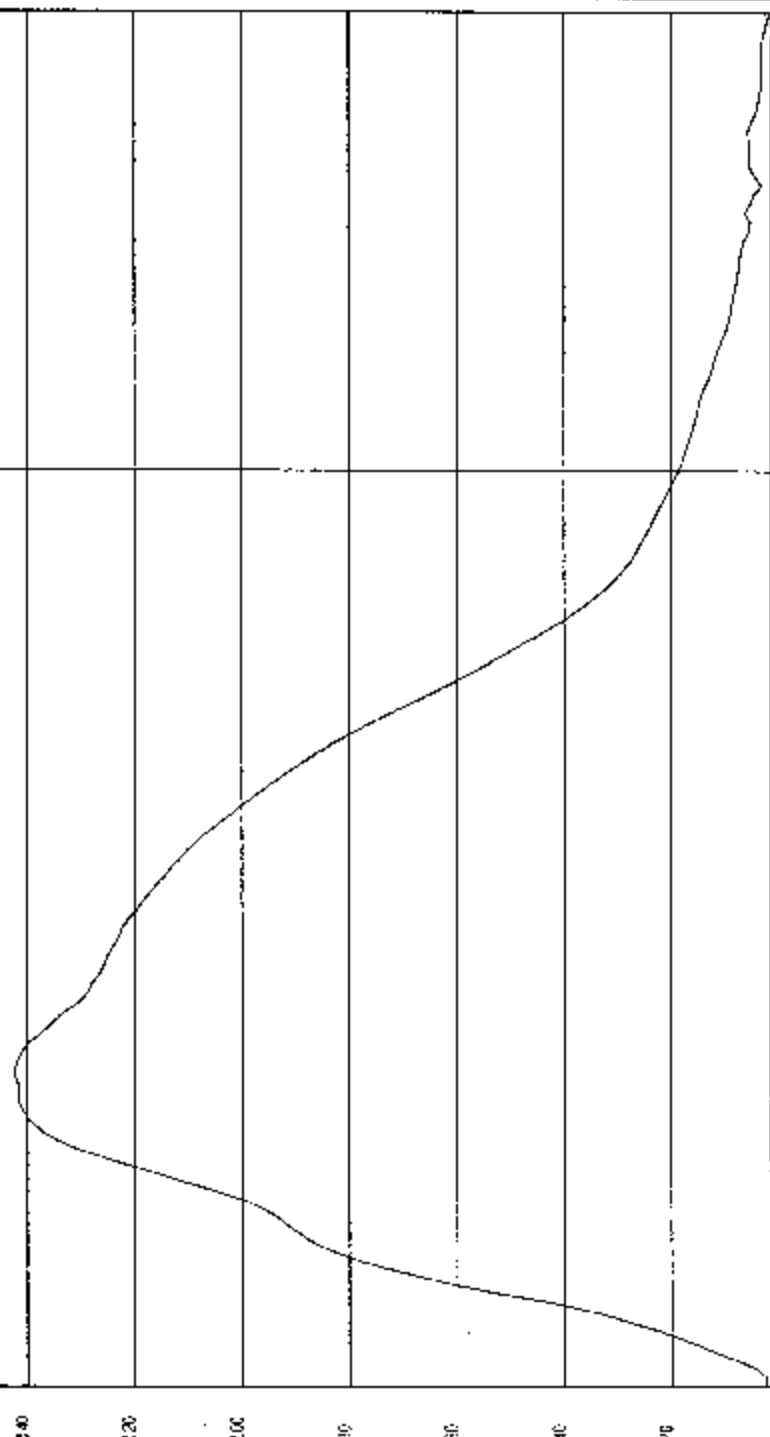
COMPONENT: TEST #8 (FM3083) LCFT SR1, H/V = 270/23

YMIN= 1.550344 G'S at 15 msec

YMAX= 142.415 G'S at 3.4 msec

FMH RESULTANT

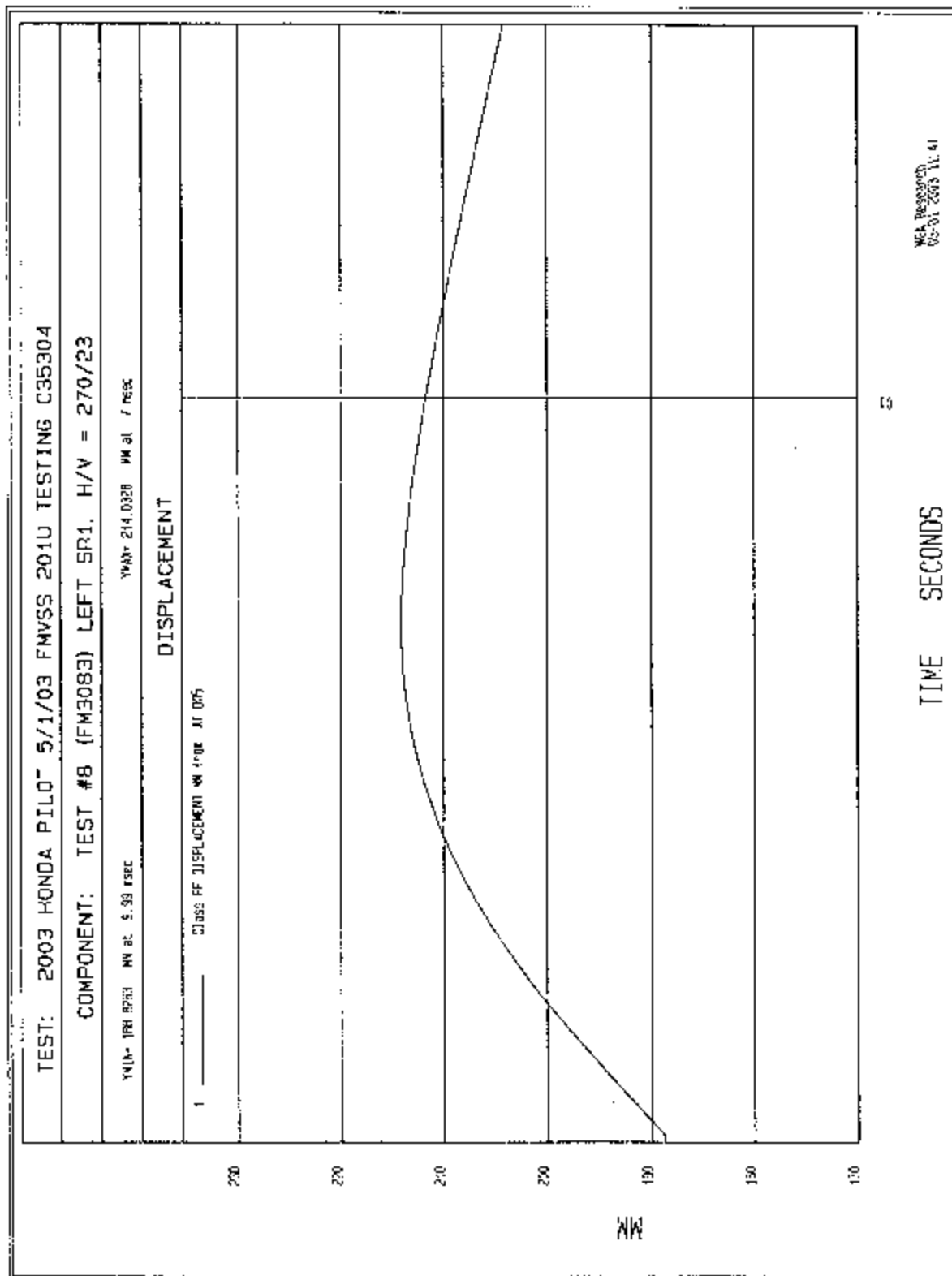
1 ——— Resultant G'S from AV, AD5



NSA Research
05-01-2003 11:40

TIME SEC

5.9



TEST: 2003 HONDA PILOT 5/1/03 FMVSS 201C TESTING C35304

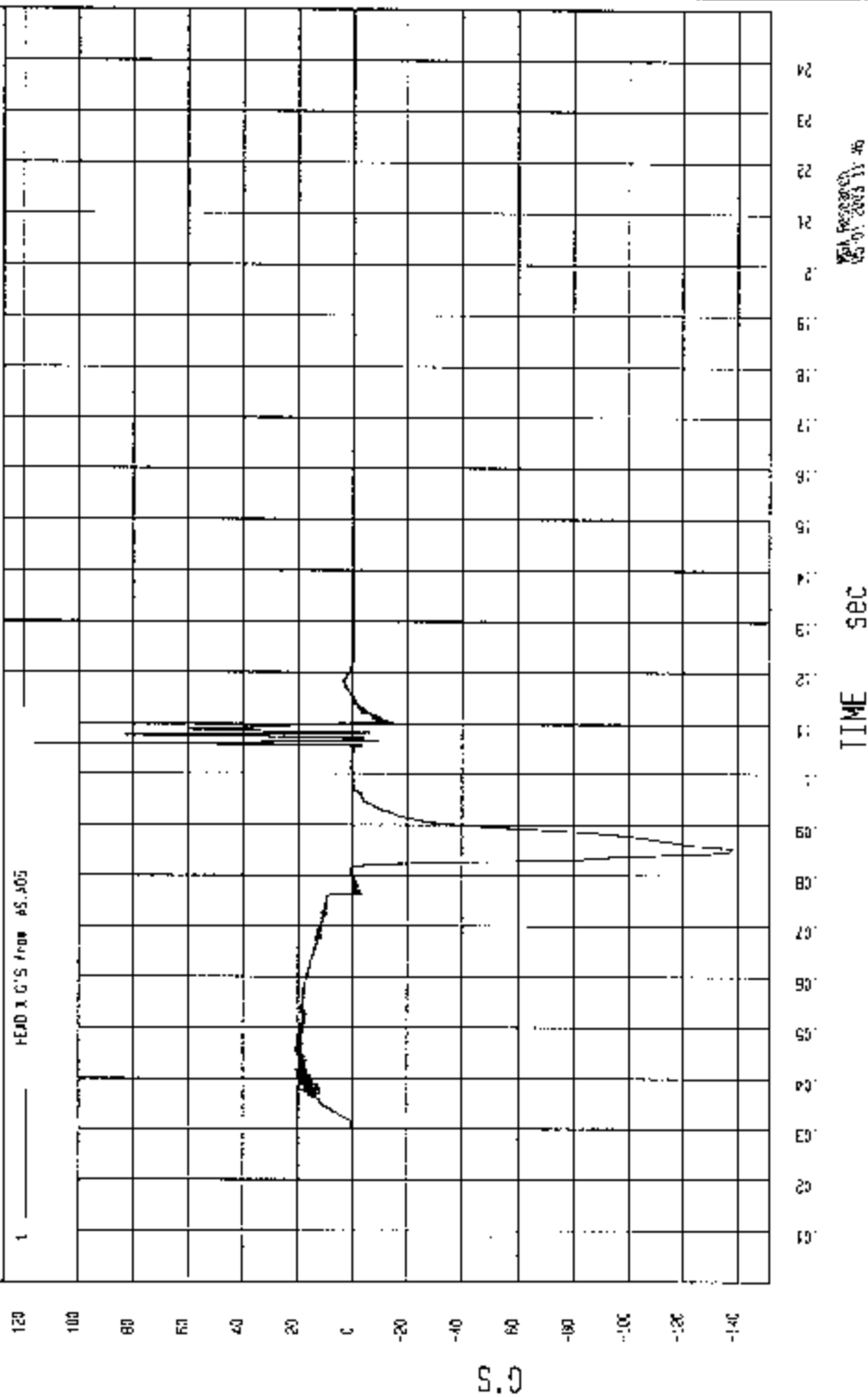
COMPONENT: TEST #8 (FM3083) LEFT SR1, H/V = 270/23

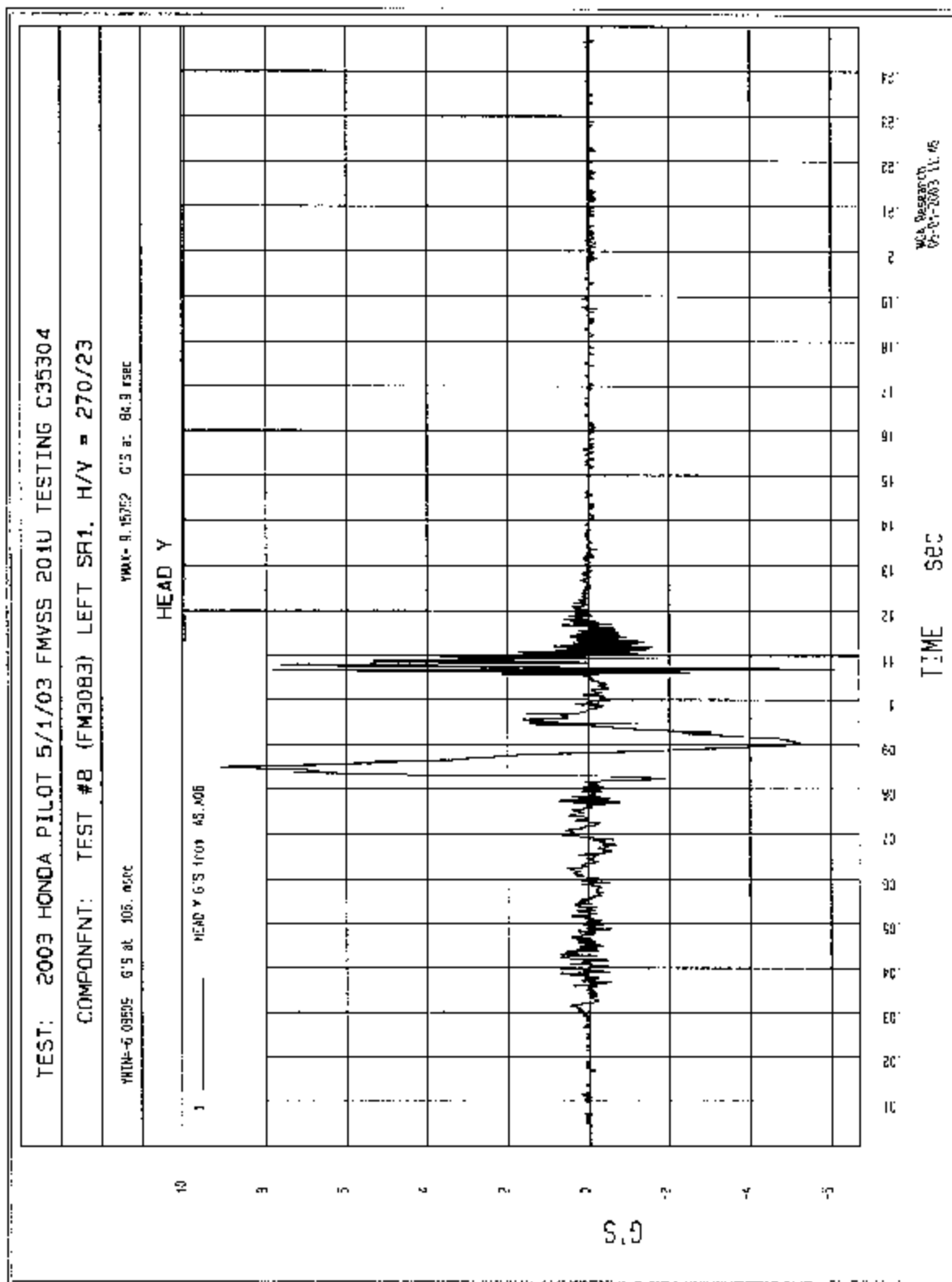
YMIN=-137.7404 G'S at .95 msec

YMAX=115.8493 G'S at .506 msec

HEAD X

1 HEAD X G'S from #5.005





TEST: 2003 HONDA PILOT 5/1/03 FMVSS 201U TESTING C35304

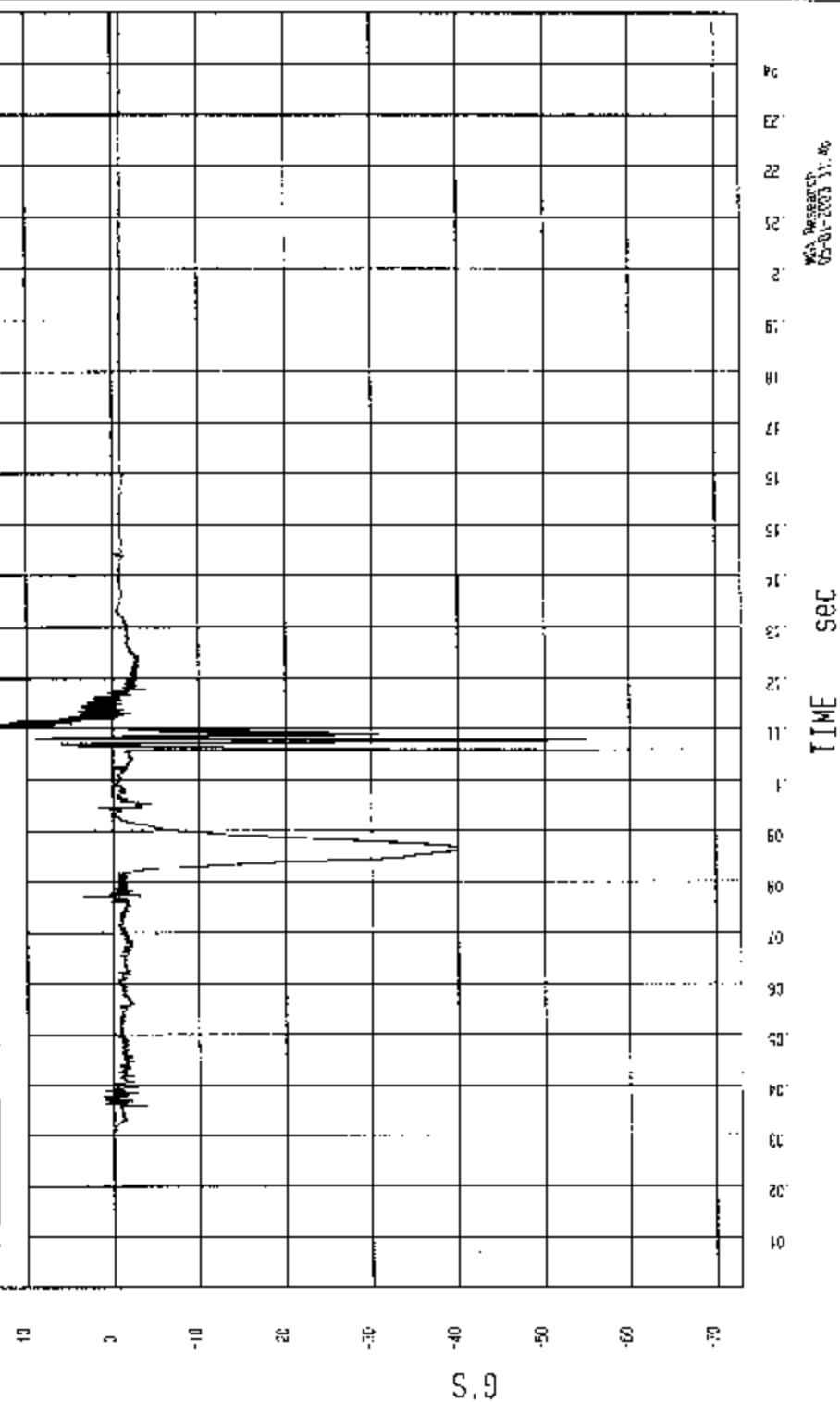
COMPONENT: TEST #8 (FM3063) LEFT SR1. H/V = 270/23

YAW: -65.00000 G'S at 120 msec

YAW: 14.60000 G'S at 110 msec

HEAD Z

1 HEAD Z G'S from ASL A07



McGraw-Hill Research
05-01-2003 11:40

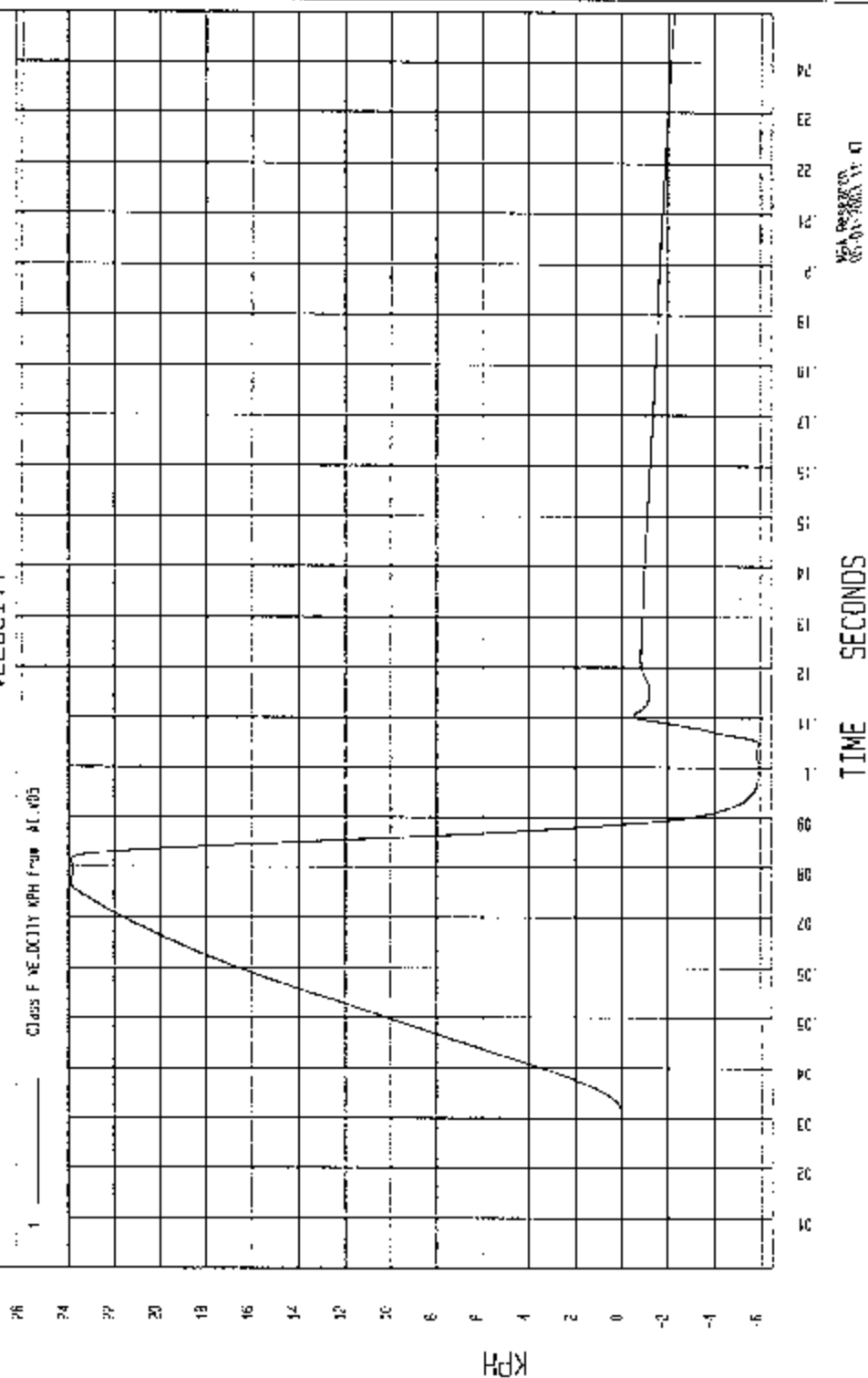
TEST: 2003 HONDA PILOT 5/1/03 FMVSS 201U TESTING C35304

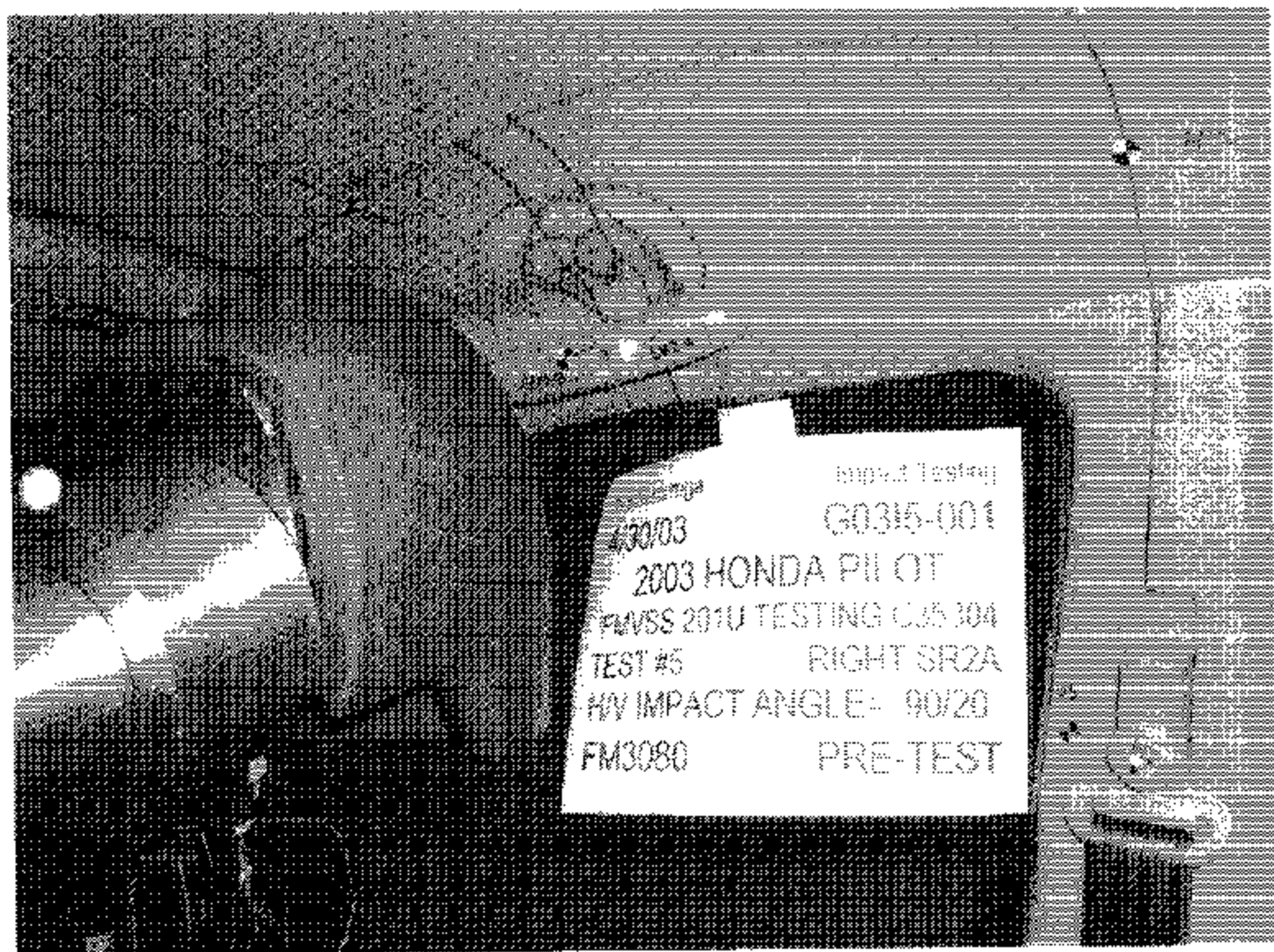
COMPONENT: TEST #8 (FM3083) LEFT SR1, H/V = 270/23

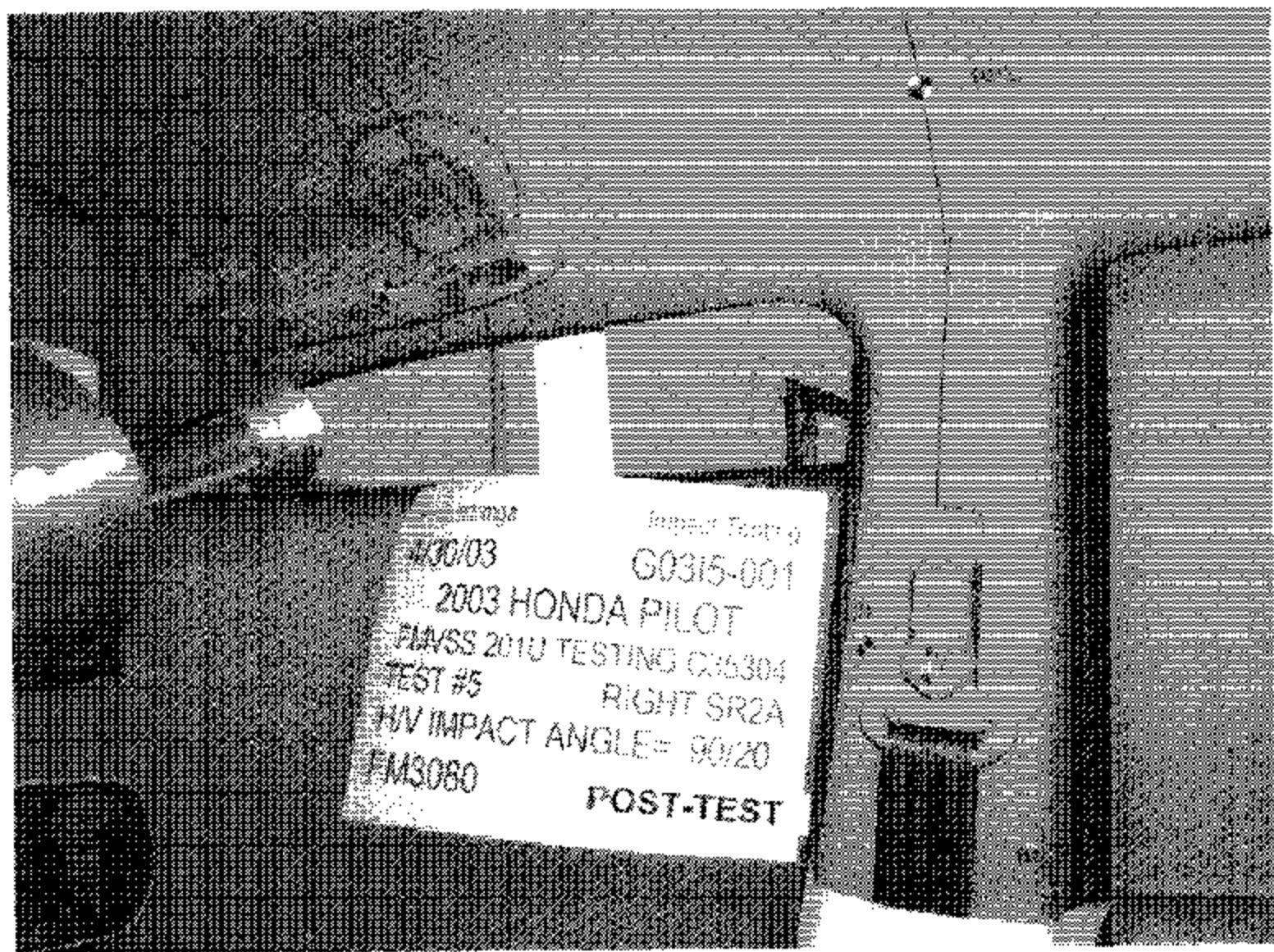
YU10=5.86/30 MPH at 1.54 msec

YU4Y=23.51636 MPH at 76.8 msec

VELOCITY







4/30/03

Impact Testing

4/30/03

G0315-001

2003 HONDA PILOT

FMVSS 201U TESTING C35304

TEST #5 RIGHT SR2A

H/V IMPACT ANGLE= 90/20

FM3080

POST-TEST



MICHIGAN OPERATIONS
DATE: 3/20/03
SUPERCEDES: MGATP201U_FRAME #2.4

DOC. NO.: MGATP201U_FRAME #2
REVISION NO: 5
PAGE 9 OF 9

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: 60319-001 VEHICLE YR/MAKE/MODEL: 2003 Honda Pilot

GENERAL TEST PARAMETERS:

Test Number: 5

Target (Vehicle Side): left/right SR2A

Temperature: 22 °F (C)

MGA Test Reference No.: FM3080

Humidity: 75 %

Approach Angles: Horizontal 90 °

Time of Test: 5:07 am/pm (pm)

Vertical 20 °

FMH Serial No: 36

TEST RESULTS:

HIC(d)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
726	712	7.1	23.9	11	8

INSTRUMENTAION INFORMATION: (all accelerometers are Endevco 7264-2000)

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
X	5	J35923	-101.6	1.21	1.21
Y	6	J35916	101.2	1.23	1.23
Z	7	J35910	99.4	1.51	1.51

REMARKS (Summary of test, damage, non-compliance, invalid test, etc.):

THE GRAB HANDLE ANCHORAGE COVER SEPARATED
DURING IMPACT

Recorded By: [Signature] Approved By: Heleen A. Kalich Date: 4/30/03

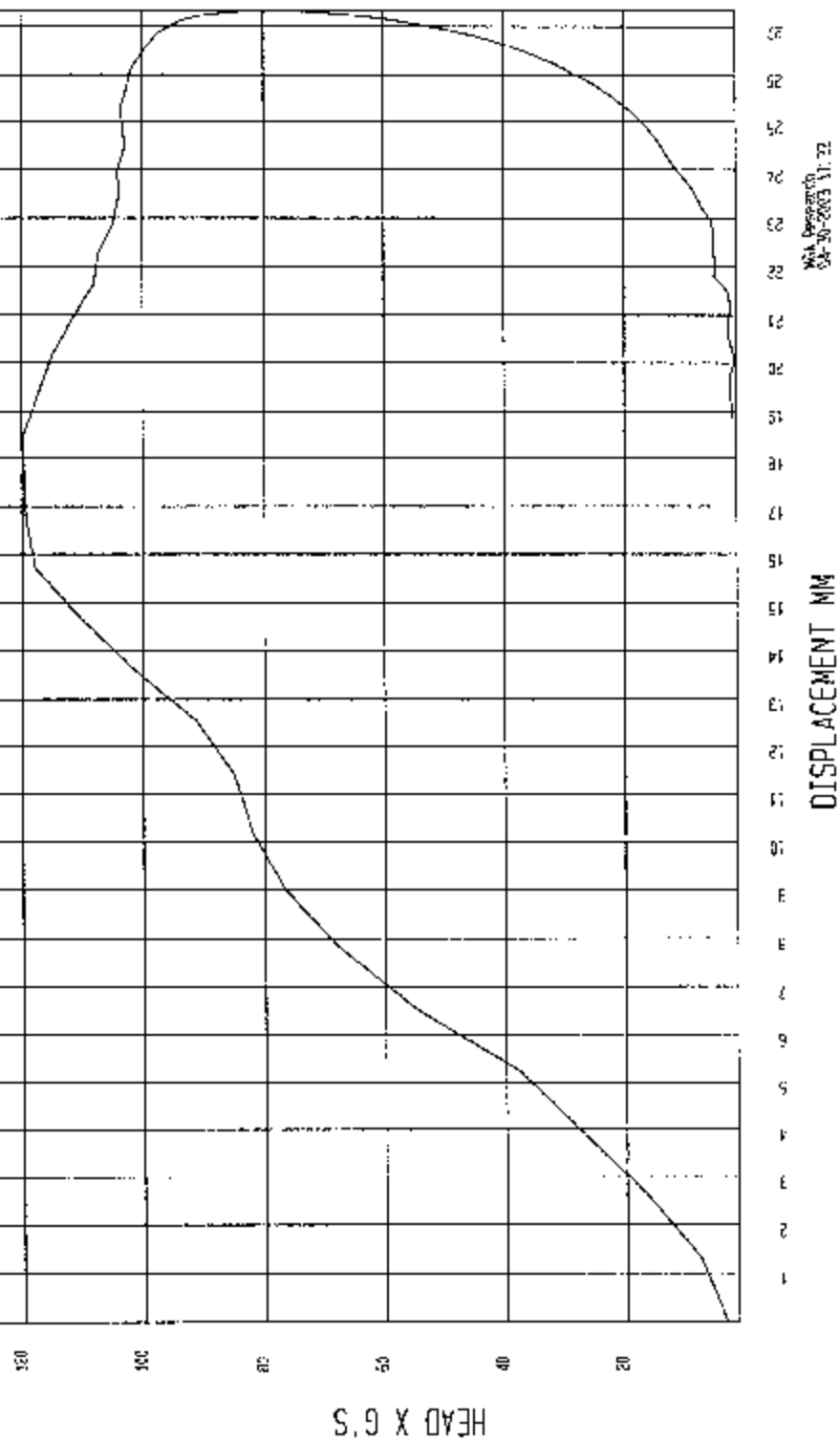
*Only necessary for NHTSA (Government) Compliance testing.

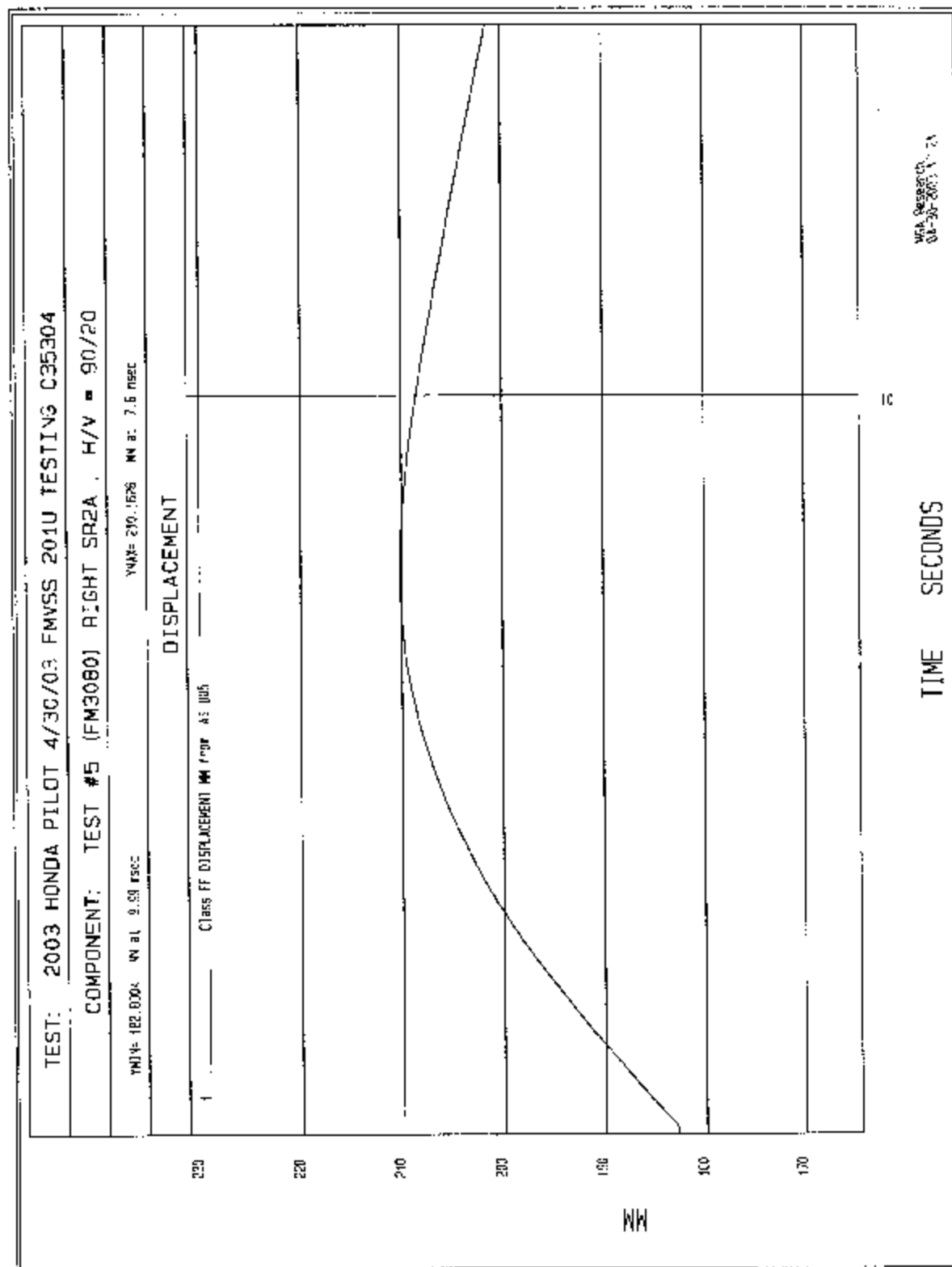
```
*****
RESULTS OF HIC36 PROGRAM
*****
The input file is \NHTSA\FM3080AV.A05
The HIC = 741.89 calculated over 7.1 msec
T1 = 1.40 msec T2 = 8.50 msec
*****
HIC(d) = 726
Impact velocity = 23.9 (km/h)
```

TEST: 2003 HONDA PILOT 4/30/03 FMVSS 201U TESTING C35304

COMPONENT: TEST #5 (FM3080) RIGHT SR2A, H/V = 90/20

HEAD X as a function of DISPLACEMENT





TEST: 2003 HONDA PILOT 4/30/03 FMVSS 201U TESTING C35304

COMPONENT: TEST #5 (FM30B0) RIGHT SR2A, H/V = 90/20

TIME= 2.34689 G'S at 14.9 msec

TIME= 125.0845 G'S at 3 msec

FMH RESULTANT

1 Resultant G'S from XZ AXIS



WCA User: WCA
04-30-2003 11:21

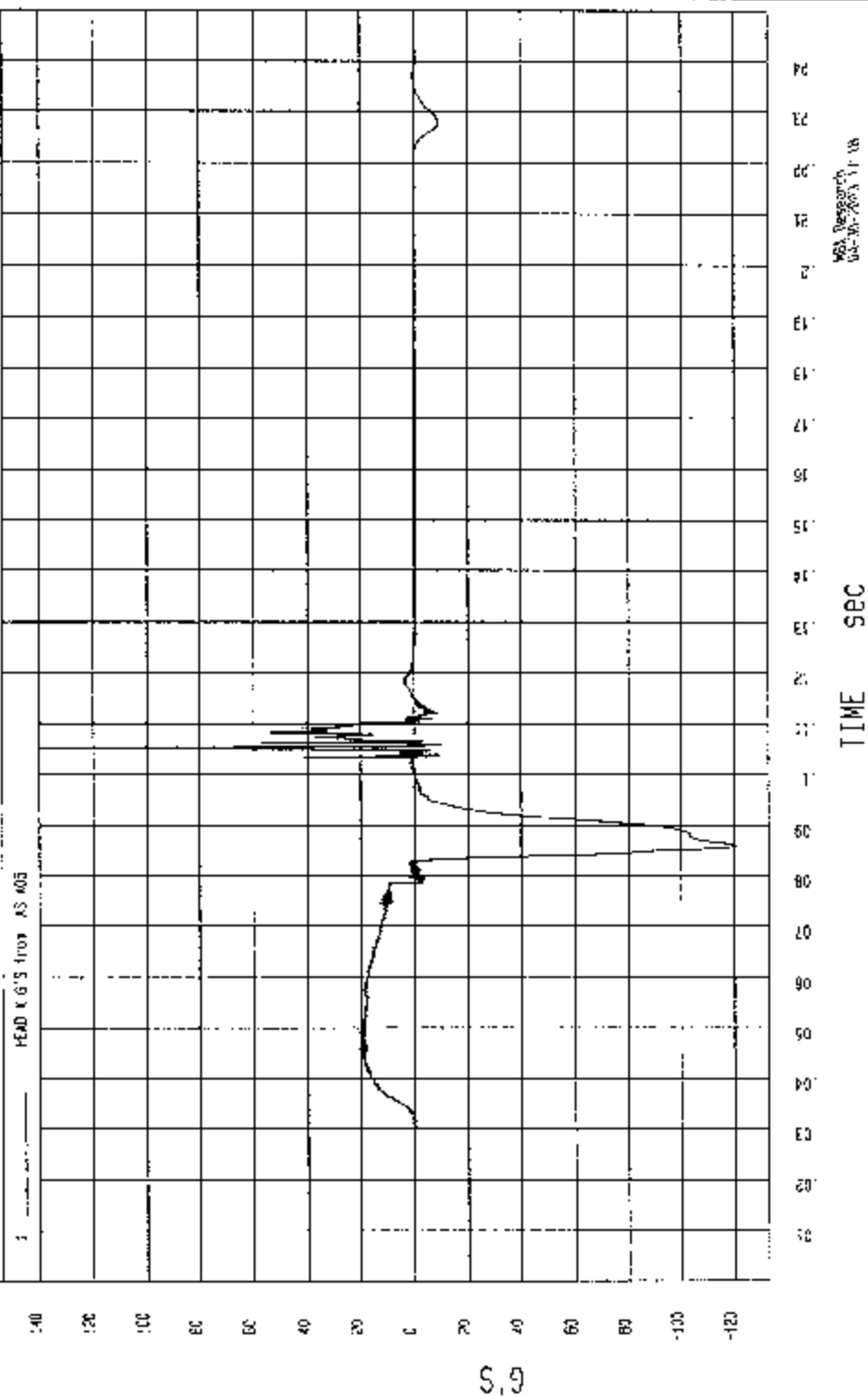
TEST: 2003 HONDA PILOT 4/30/03 FMVSS 201U TESTING C35304

COMPONENT: TEST #5 (FM3080) RIGHT SR2A, H/V = 90/20

YMIN=-120.5494 3'S 4L 05.04 SEC

YMAX=140.0391 0'S 4L 105.04 SEC

HEAD X



TEST: 20C3 HONDA PILOT 4/30/03 FMVSS 201U TESTING C35304

COMPONENT: TEST #5 (FM3080) RIGHT SR2A, H/V = 90/20

MMN-26 E353P C'S at 104. REBC

MMN-26 E353P C'S at 227. REBC

HEAD Y

1 HEAD Y C'S FOR 45 AIR

20

10

0

-10

-20

G.S

02

03

04

05

06

07

08

09

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

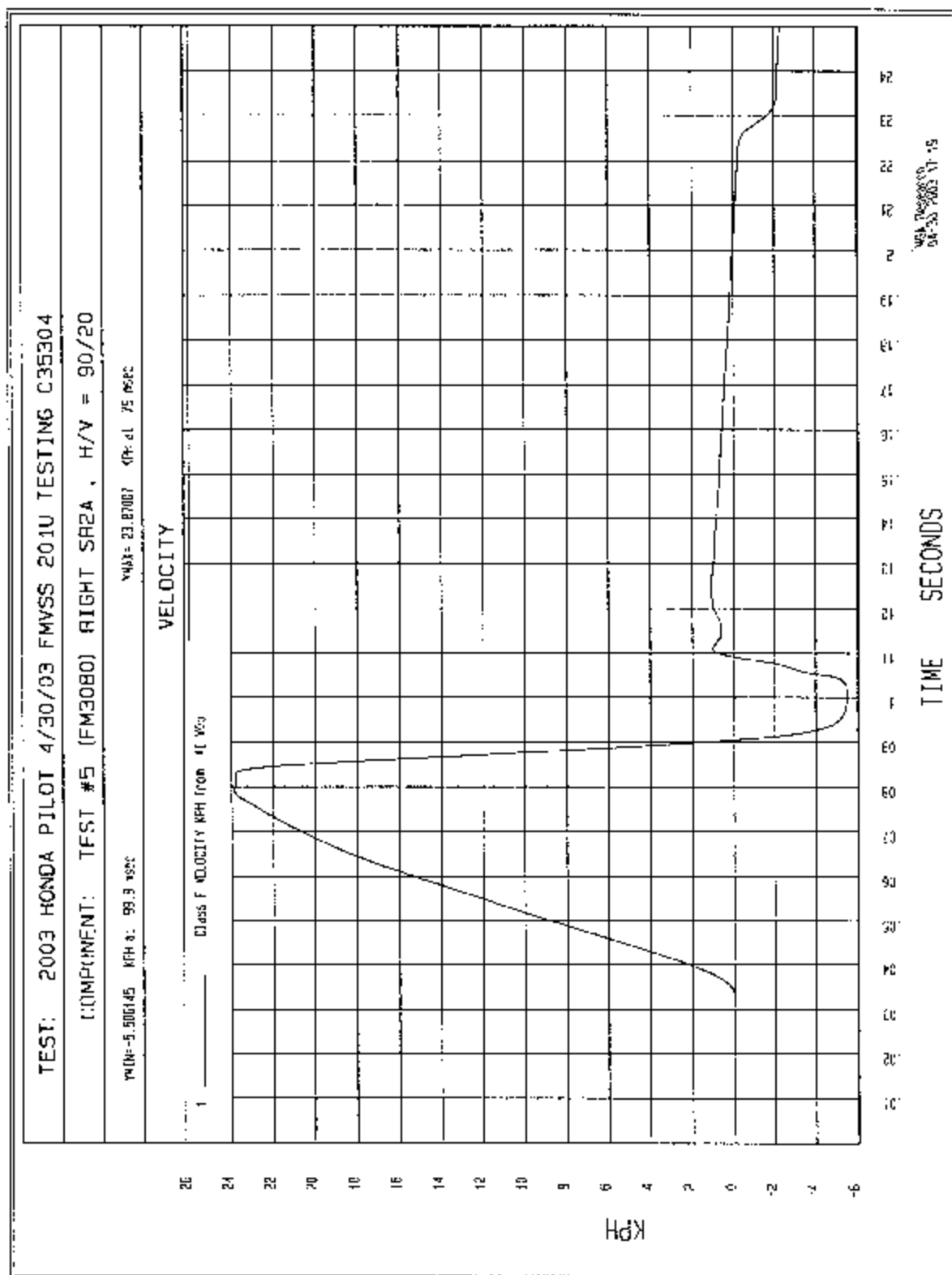
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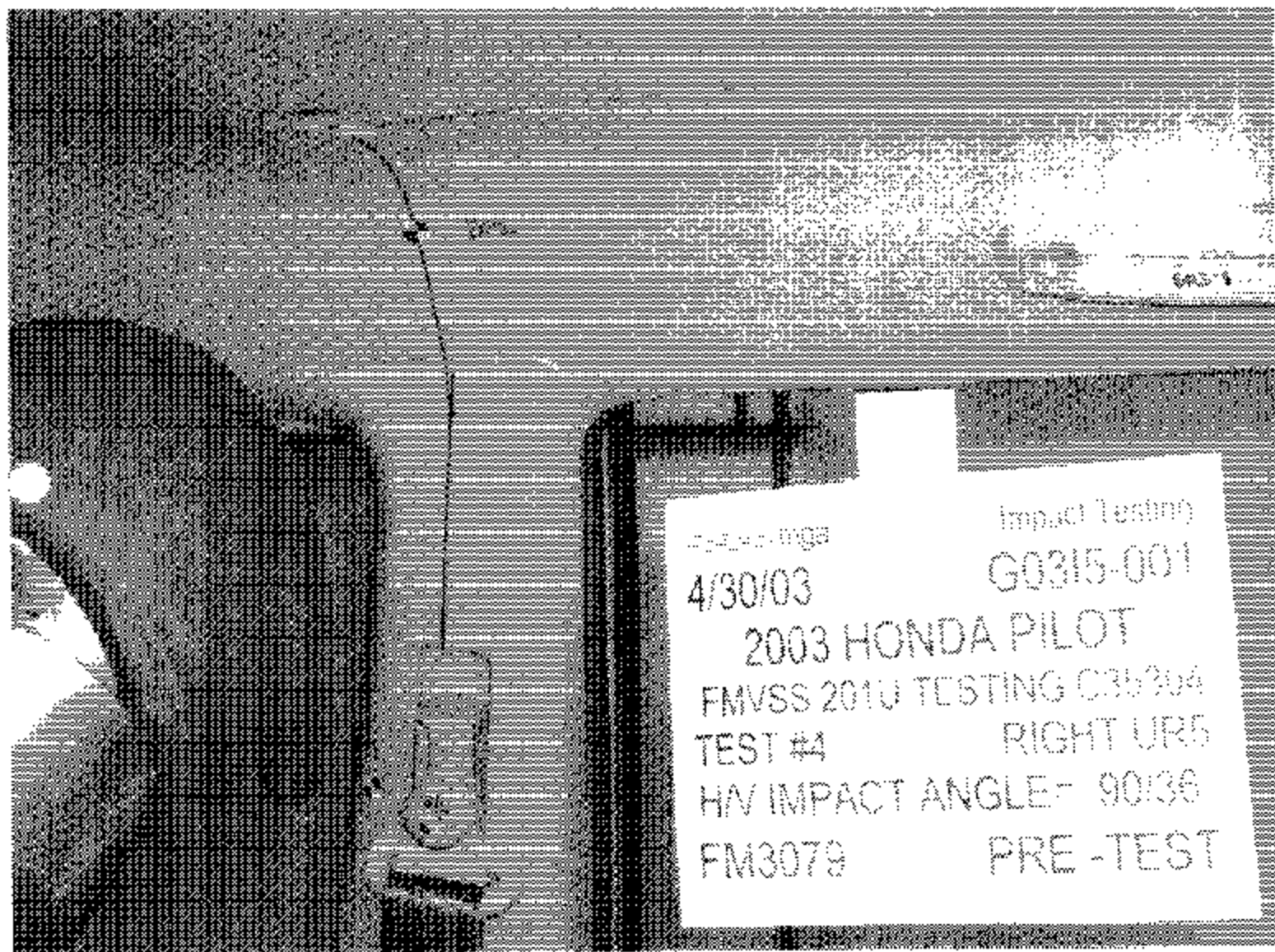
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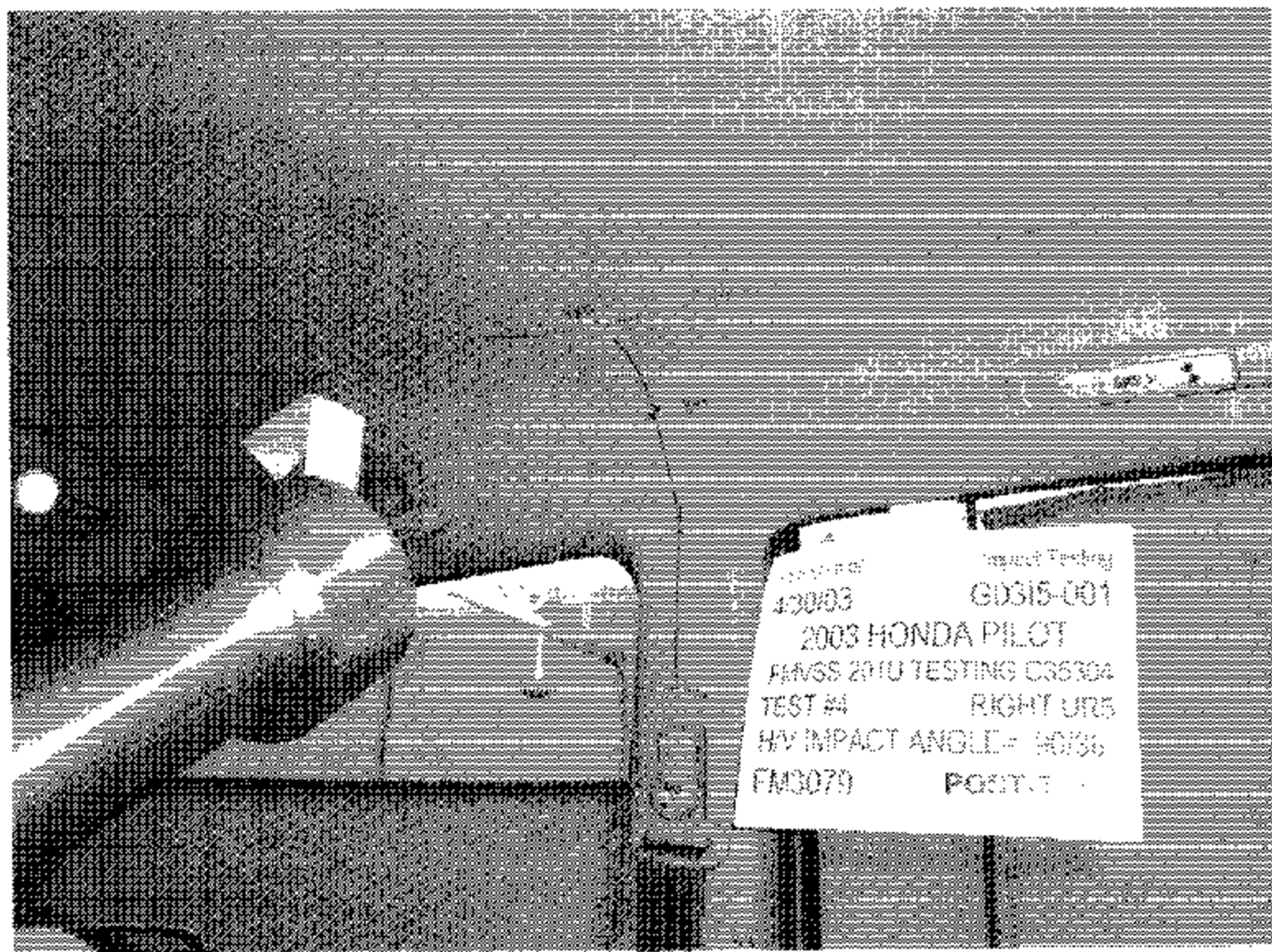
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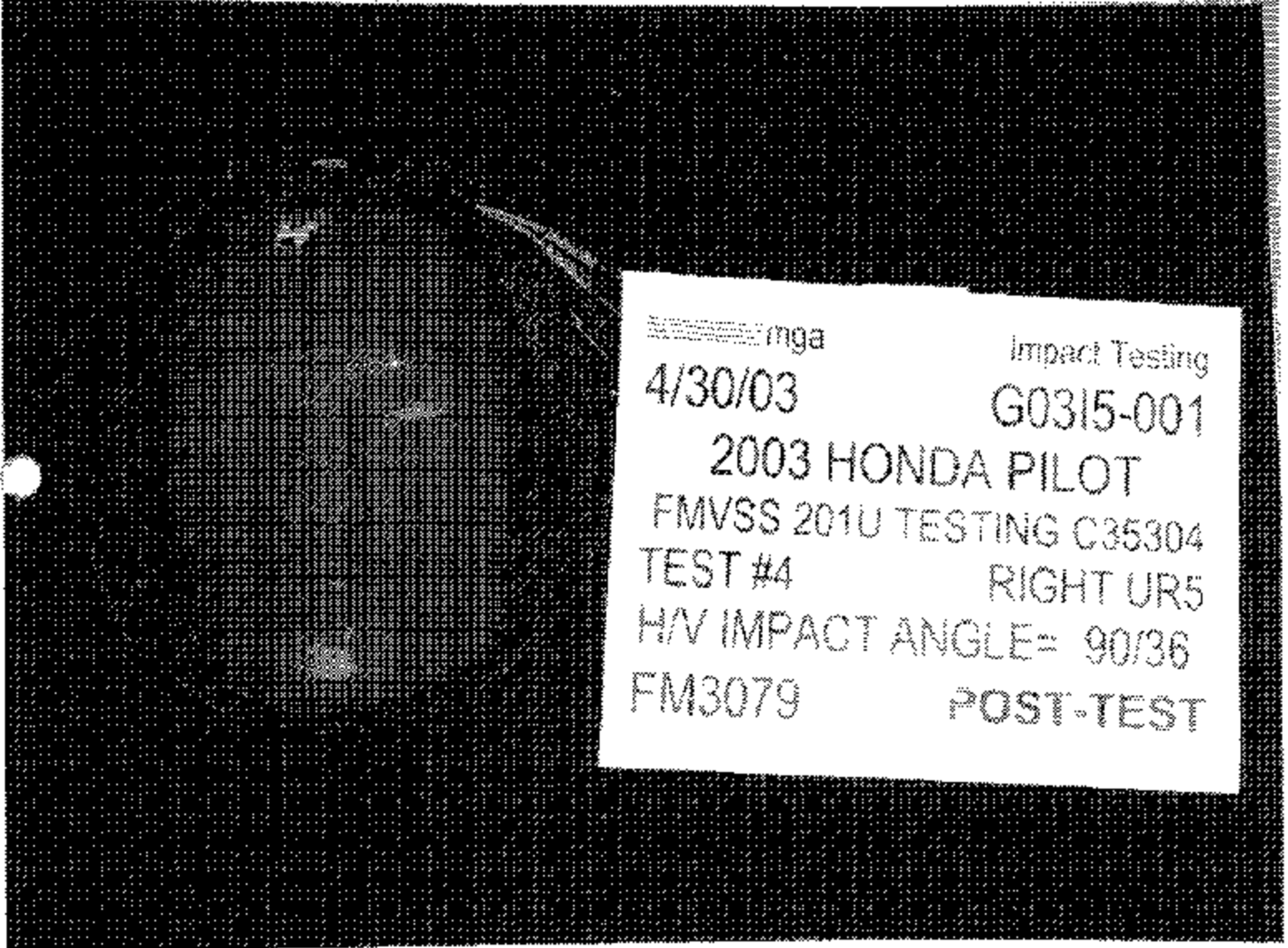
TIME SEC

SEA 20030401
04-30-2003 11:18









mga

Impact Testing

4/30/03

G0315-001

2003 HONDA PILOT

FMVSS 201U TESTING C35304

TEST #4

RIGHT UR5

H/V IMPACT ANGLE= 90/36

FM3079

POST-TEST

MICHIGAN OPERATIONS
DATE: 3/20/03
SUPERCEDES: MGATP201U FRAME #2.4

DOC. NO: MGATP201U FRAME #2
REVISION NO: 3
PAGE 9 OF 9

SUMMARY OF FMVSS 201U TEST

JOB/NHTSA NO: C35304 VEHICLE YR/MAKE/MODEL: 2003 Honda Pilot

GENERAL TEST PARAMETERS:

Test Number: 4

Target (Vehicle Side): left/right URS

Temperature: 23 °F (°C)

MGA Test Reference No.: Fm3079

Humidity: 26 %

Approach Angles: Horizontal 90 °

Time of Test: 3:55 am/pm

Vertical 36 °

FMH Serial No: 35

TEST RESULTS:

HIC(d)	HIC	Δt (msec)	Velocity (kph)	Impact location on FMH (mm)	
				Above Pt. O	Left/Right Pt. O
<u>567</u>	<u>531</u>	<u>12.0</u>	<u>23.6</u>	<u>50</u>	<u>5</u>

INSTRUMENTATION INFORMATION: (all accelerometers are Endevco 7264-2000)

Axis	Channel	Serial No.	DLR Value	ΔV Pre-Test	ΔV Post-Test
<u>X</u>	<u>5</u>	<u>235924</u>	<u>-92.7</u>	<u>1.21</u>	<u>1.21</u>
<u>Y</u>	<u>6</u>	<u>235919</u>	<u>95.4</u>	<u>1.23</u>	
<u>Z</u>	<u>7</u>	<u>231051</u>	<u>95.3</u>		

REMARKS (Summary of test, damage, non-compliance, invalid test, etc.):

NO VISIBLE DAMAGE

Recorded By: [Signature] Approved By: [Signature] Date: 4/30/03

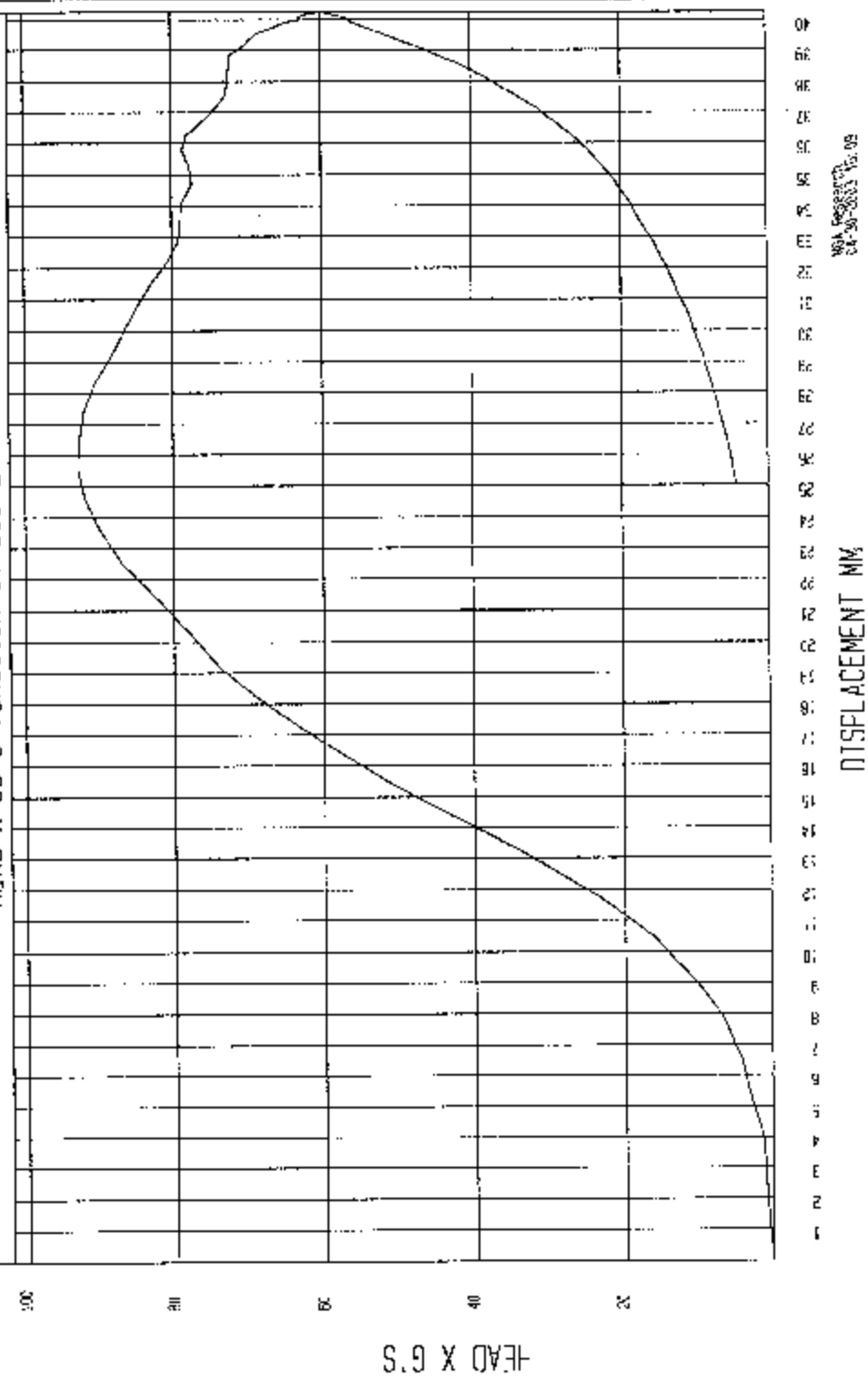
*Only necessary for NHTSA (Government) Compliance testing.

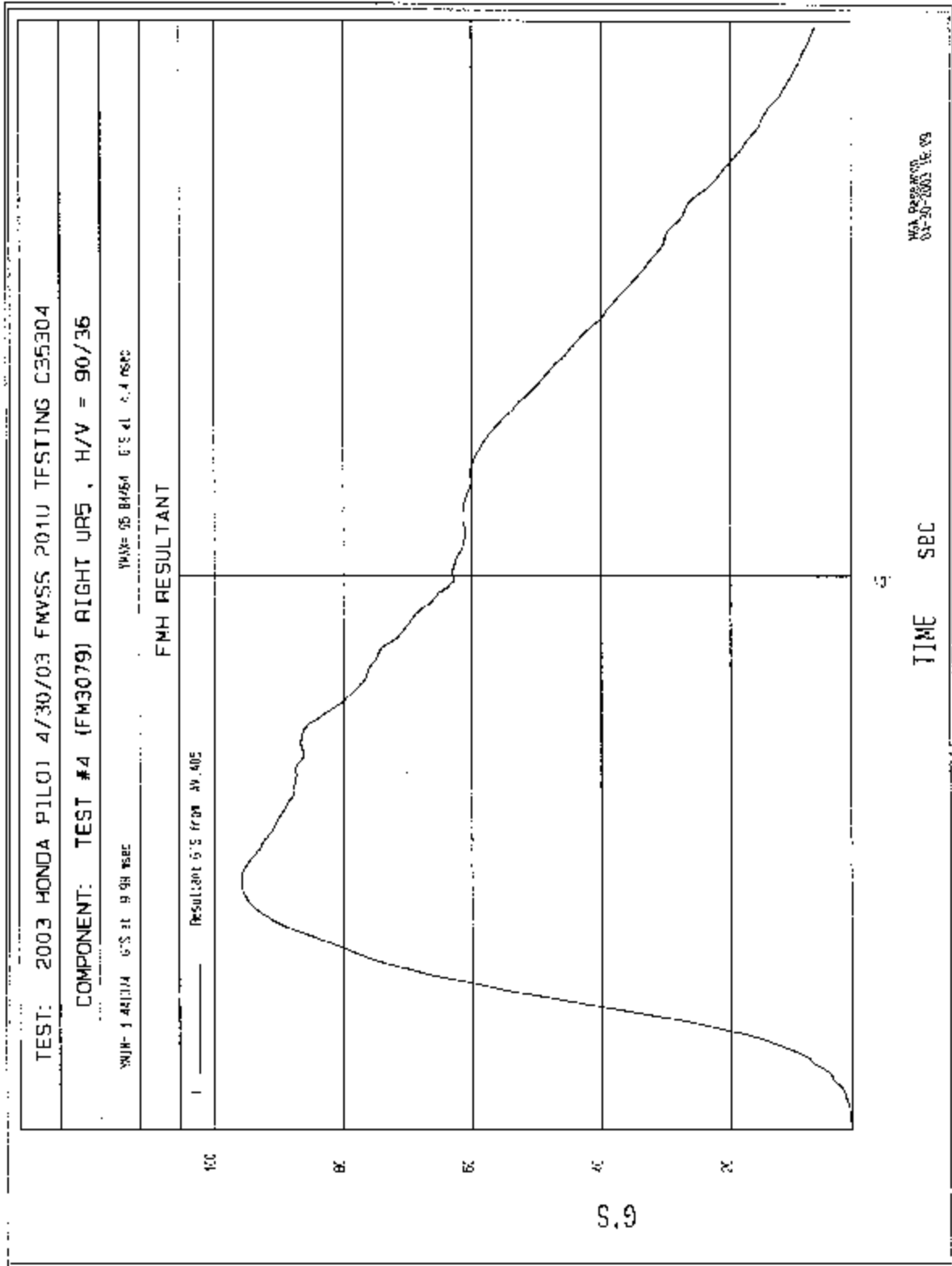
```
*****
RESULTS OF HIC36 PROGRAM
*****
  e input file is \NHTSA\FM3079AV.A05
  ue HIC = 531.14 calculated over 12.0 msec
T1 = 2.50 msec T2 = 14.50 msec
*****
  HIC(d) = 567
  Impact Velocity = 23.6 (km/h)
```

TEST: 2003 HONDA PILOT 4/30/03 FMVSS 201U TESTING C35304

COMPONENT: TEST # 4 (FN3079) RIGHT UR5, H/V = 90/36

HEAD X as a function of DISPLACEMENT





TEST: 2003 HONDA PILOT 4/30/03 FMVSS 201U TESTING C35304

COMPONENT: TEST # 4 (FM3079) RIGHT JIP5, H/V = 90/36

WIM- 200.752 NM AT 9.93 TSEC

YMAX- 240.9923 NM AT 10.9 TSEC

DISPLACEMENT

1 CLASS FC DISPLACEMENT NM 1100F AT 1005

250

250

250

250

250

250

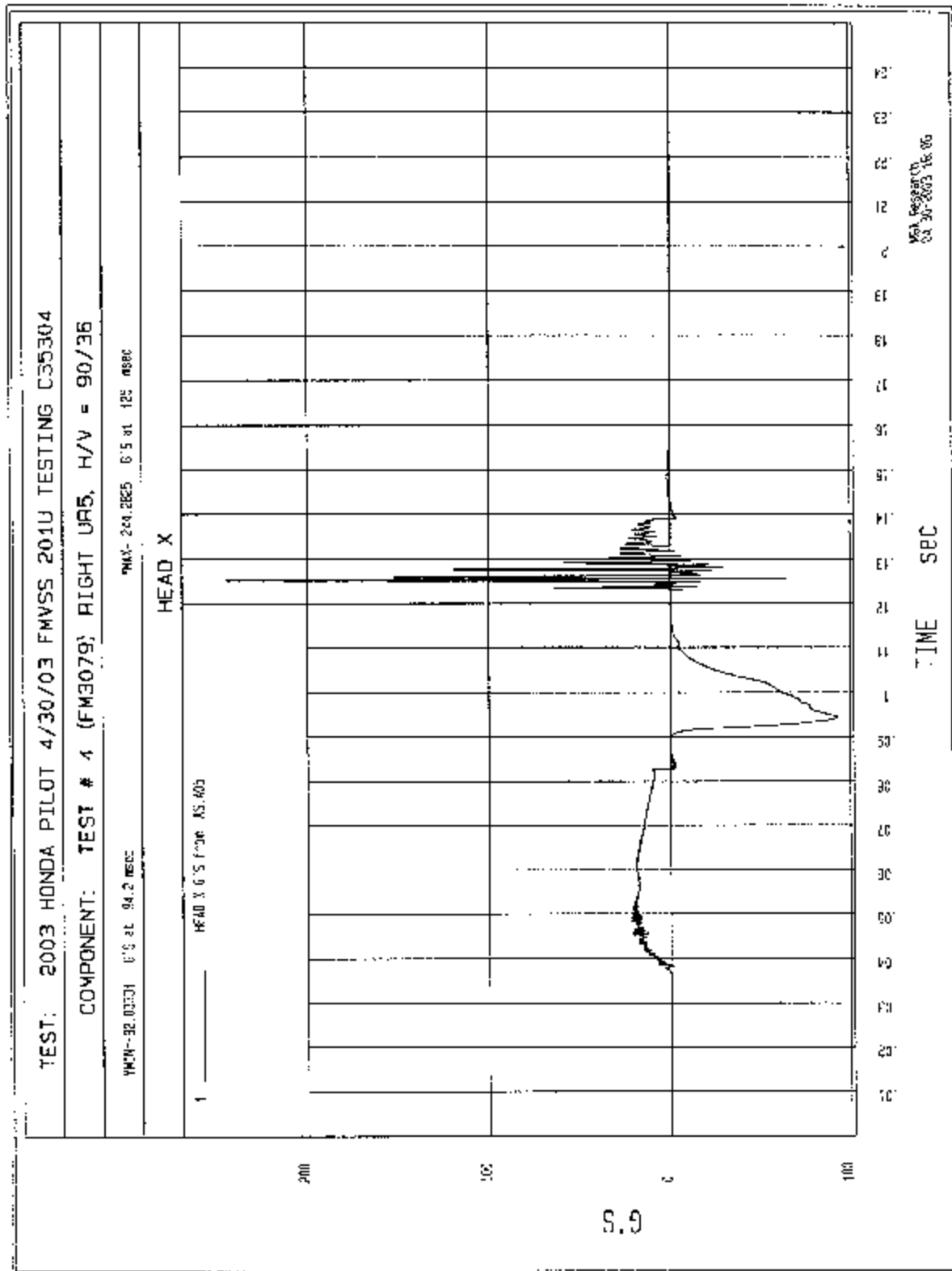
250

250

NM

TIME SECONDS

WCA Research
04-01-2005 10.00



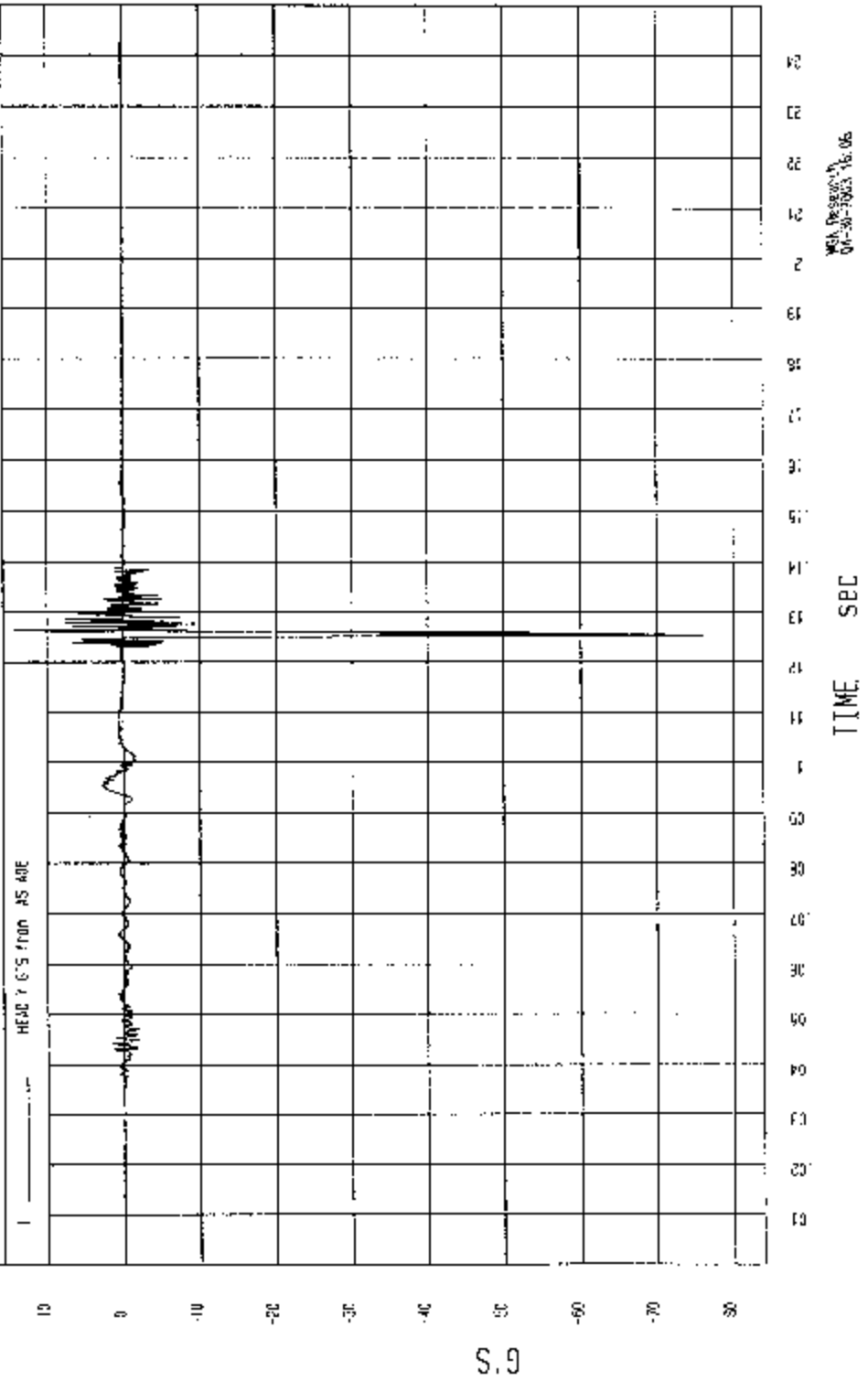
TEST: 2003 HONDA PILOT 4/30/03 FMVSS 201U TESTING C35304

COMPONENT: TEST #4 (FM3079) RIGHT UR5, H/V = 90/36

INSTR: 16.25732 E'S at 125. msec

INSTR: 14.34028 G'S at 125. msec

HEAD Y



TEST: 2003 HONDA PILOT 4/30/03 FMVSS 201U TESTING C35304

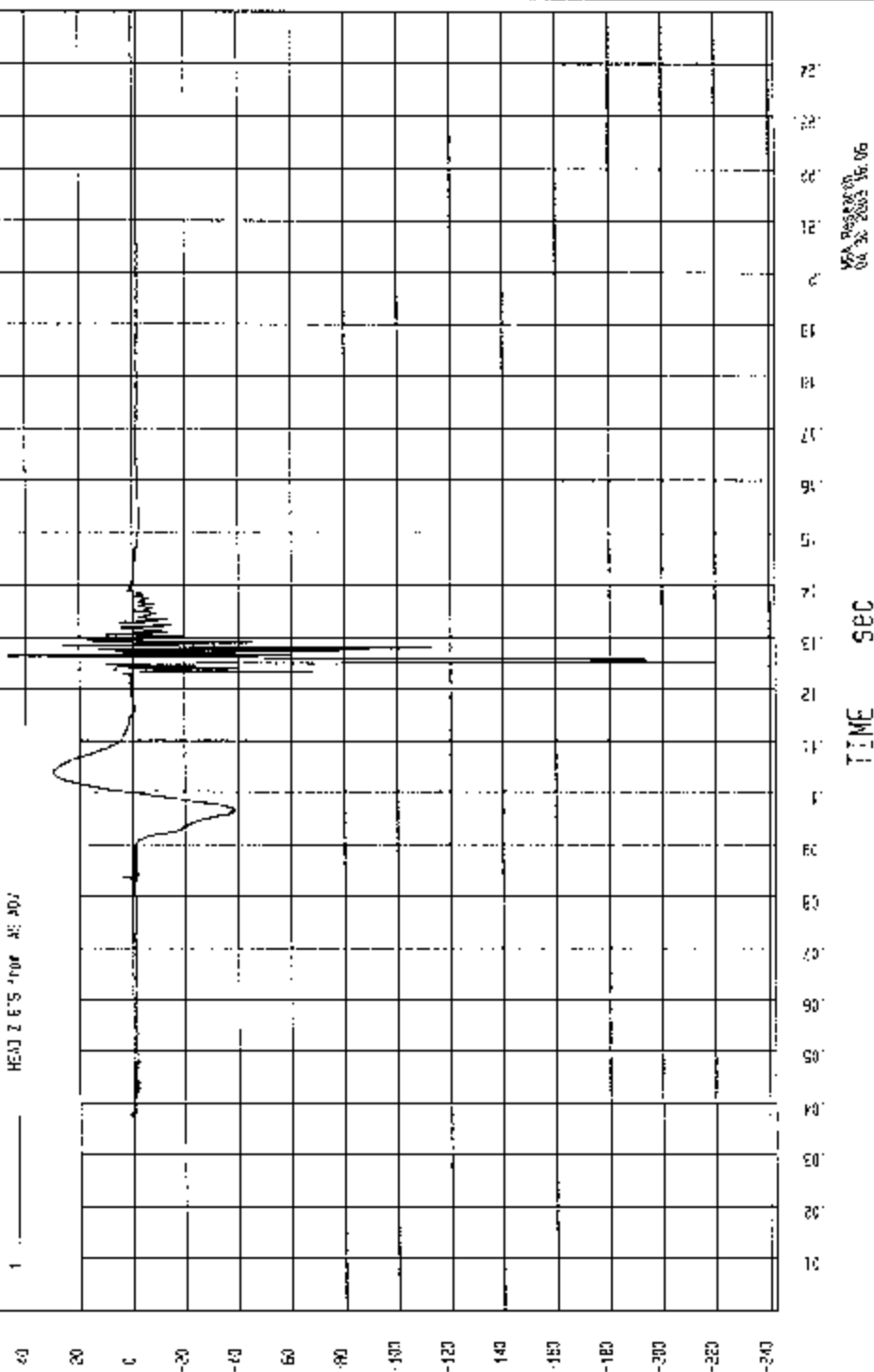
COMPONENT: TEST #4 (FM3079) RIGHT URS, H/V = 90/36

WDM-220.1/5 0'S AT 125 msec

TMAL-4E/RAPE 0'S AT 100 msec

HEAD Z

1 HEAD Z E'S FOR 4E NO/



TEST: 2003 HONDA PILOT 4/30/03 FMVSS 201U TESTING C35304

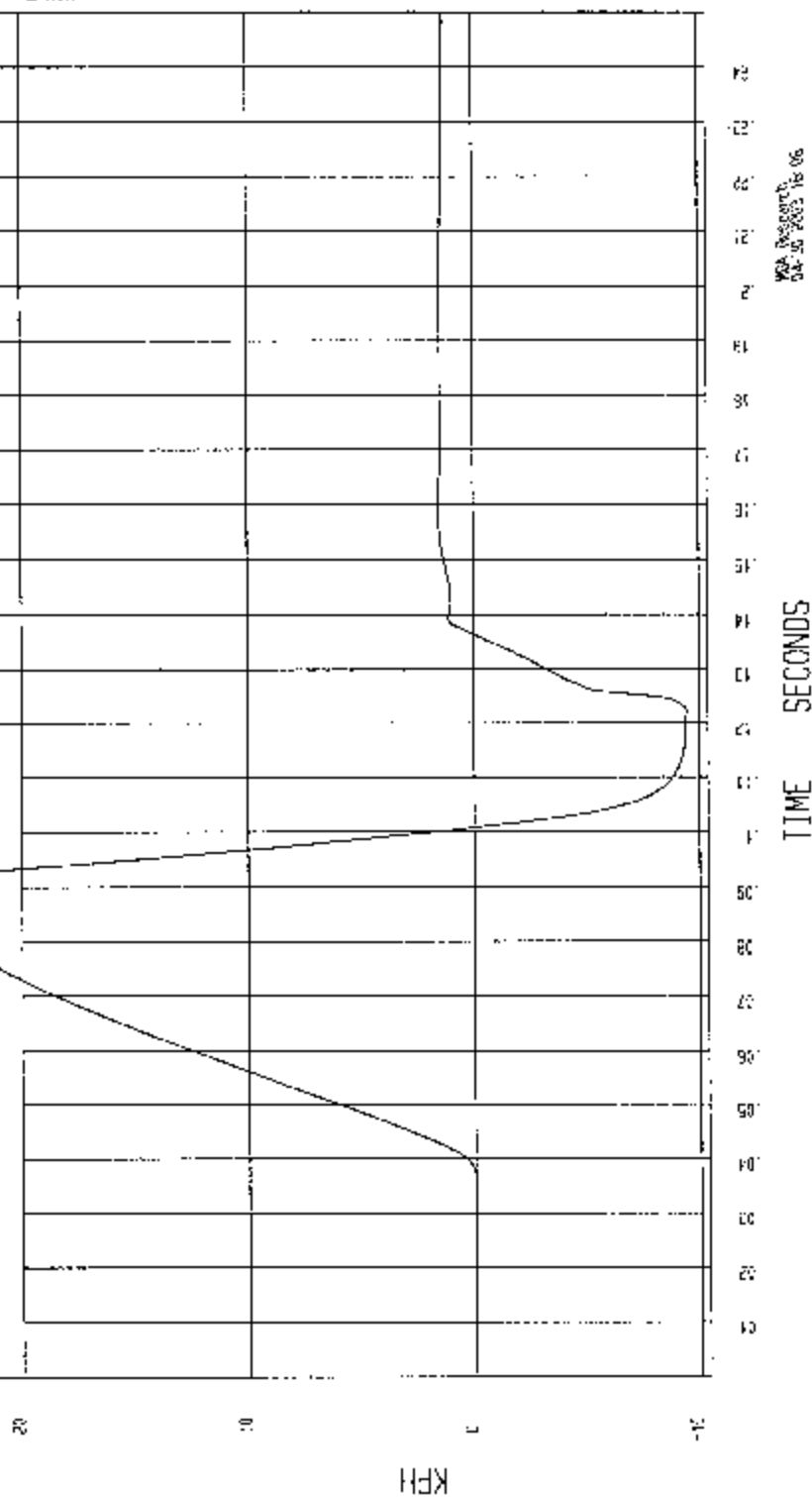
COMPONENT: TEST # 4 (FM3079) RIGHT UR5, H/V = 90/35

YMIN=-5.43759 KPH AT 177.85SEC

YMAX=23.05552 KPH AT 33.185SEC

VELOCITY

1 CLASS 1 VELOCITY KPH FROM AC V05



NOA REPORT
04-30-2003 16:06

4.0 TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

The following section lists the test equipment for the compliance test series. Items marked with an asterisk are calibrated by an external lab. An additional summary table is given for the pre and post-test calibration data for the Free Motion Headforms. The temperature trace to confirm testing was conducted between 66°F and 78°F (19°C - 26°C) is included in Appendix A.

TABLE 4-1 LIST OF ITEMS USED

ITEM	MANUFACTURER NAME	MODEL #	FUNCTION OF ITEM	ACCURACY	CAL. INTERNAL
Head Drop Tower (includes test frame and DAS)	MGA Research Corp.	MGA-100-DC	FMH Calibration	N/A	N/A
Accelerometers	Endevco	7264-2000	Acceleration Data	±0.5%	6 months
*Digital Inclinometer	Macklanburg-Duncan	PRO 360	Set Angle of FMH/Targeting	0.1°	Annual
FMVSS 201U Test Frame (includes the propulsion control system, actuator, test frame, and DAS)	MGA Research Corp.	MGA-100-FMH	Test System	N/A	N/A
Free Motion Headforms	UTAMA UTAMA UTAMA	035 036 038	Test Device	N/A	Pre and Post-Test Series
High Speed Video	Kodak	RO1000	Record Event	N/A	N/A
*FARO™	Faro Technologies	S08059801273	Targeting	0.1 mm	Annual
Measuring Devices: - Tape Measure - Plumb Bobs - Protractor	Stanley N/A Craftsman	33-215 -- --	Measurement Targeting FMH setup Horizontal Measurement	1 mm N/A 0.5°	Annual
*Vehicle Scale 9804-022/9805-175	Cardinal	8950F	Weighing Vehicle	± .5 kg	Annual
* Scale	Detecto	AP-20	Weigh FMH Head	± 0.01 lb	Annual
*Temperature Recorder	Dickson	TR320	Record Temperature and Humidity	± .5°C ± 1% RH	Annual

TABLE 4-2 FMH CALIBRATION SUMMARY DATA SUMMARY TABLE

FMH Serial #		Weight (lbs)	Temp (°C)	% Humidity	Peak Resultant Acceleration (G's)	Peak Lateral Acceleration (G's)	Unimodal
Pre	#35	10.02	22	22	239.2	13.5	Yes
Post	#35	10.02	22	42	241.1	11.7	Yes
Pre	#36	10.03	22	22	252.5	12.4	Yes
Post	#36	10.03	23	41	244.3	13.9	Yes
Pre	#38	9.99	22	22	256.7	5.2	Yes
Post	#38	9.99	23	41	256.6	6.9	Yes

Calibration certificates and headform calibration information can be found in the P572L Performance Calibration report which accompanies this report.









THREE SEATING INFORMATION

SEATER	SEATING	
SEATER	FRONT	REAR
SEATER	2865lbs	3155lbs
VEHICLE CAPACITY WEIGHT	1522LBS	
TIRE SIZE	P235/70R16 10AS	
RIM SIZE	16x6 4/3JJ	
COLD TIRE INFLATION PRESSURE	220kPa	32psi
INFLATION PRESSURE	UP TO VEHICLE CAPACITY WEIGHT	
INFLATION PRESSURE	1150/90016 110M	
INFLATION PRESSURE	420kPa, 60psi	
SEE OWNER'S MANUAL FOR ADDITIONAL INFORMATION		

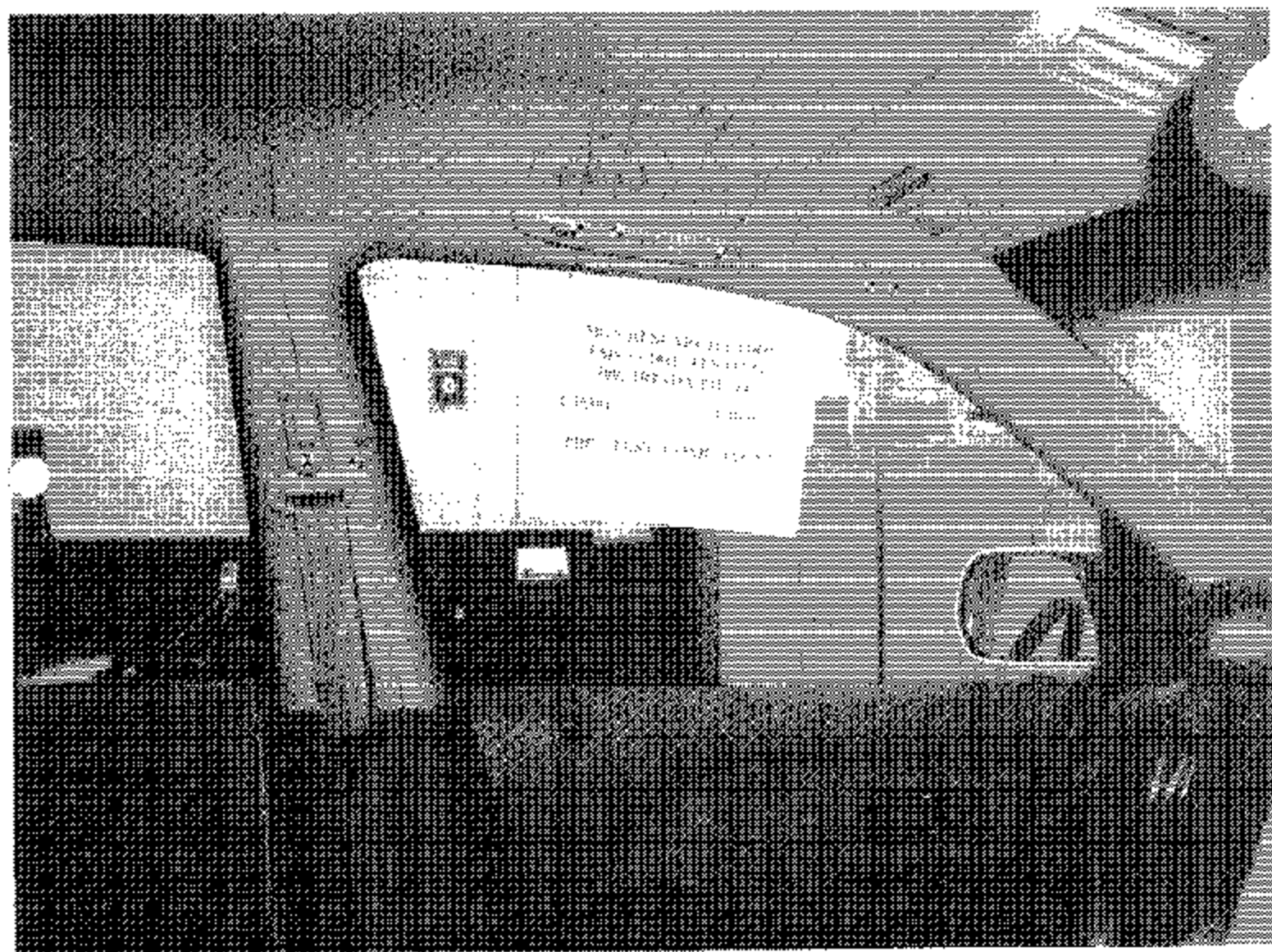
SIDE AIRBAG

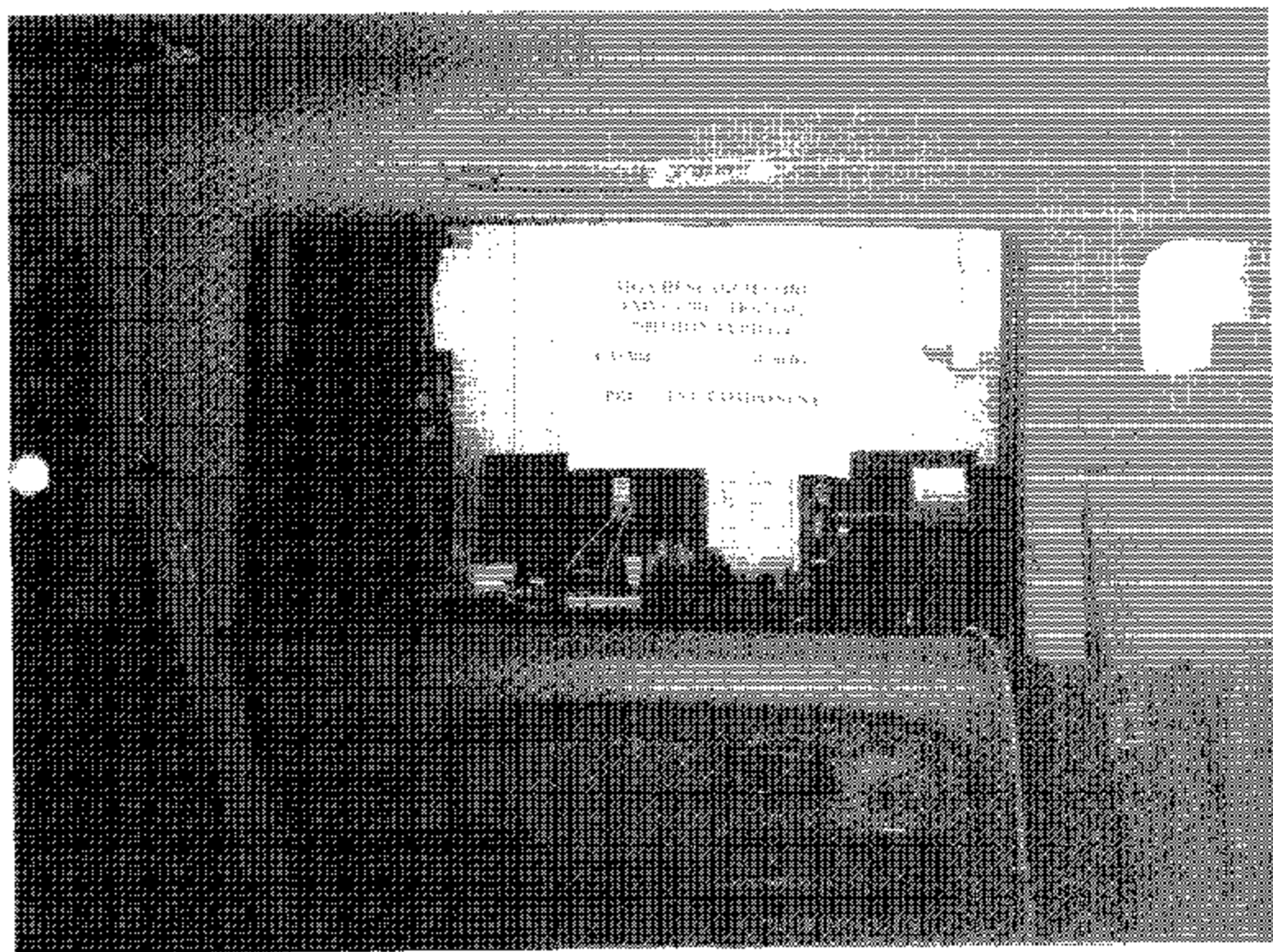
- This car is equipped with side airbags in the driver's and passenger's seat.
- Do not lean against the door.
- See driver's manual for more information.

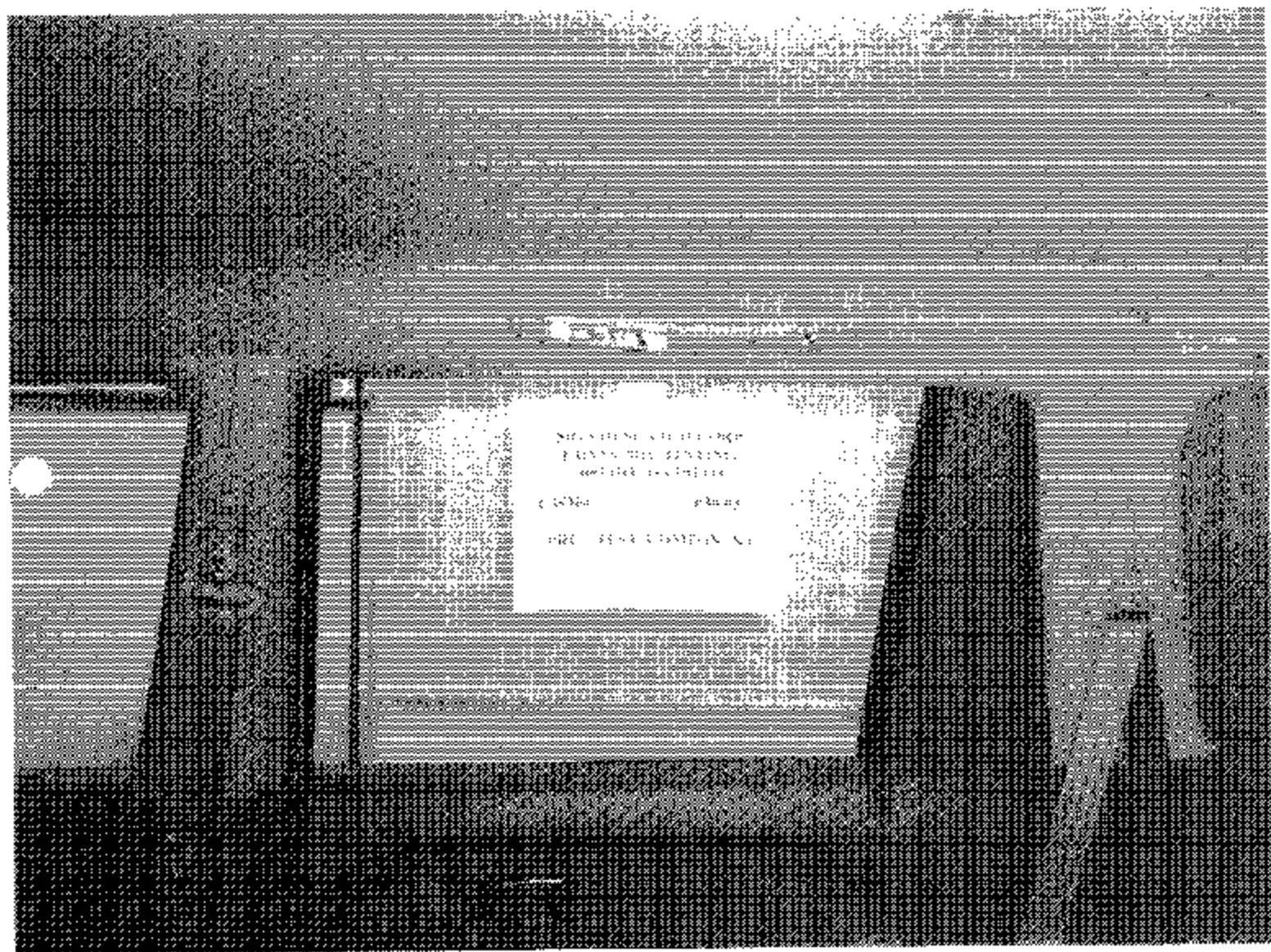
MFD. BY HONDA OF CANADA MFG. 01/03
A DIVISION OF HONDA CANADA INC. CANADA
GVWR 5050LBS GAWR F 2005LBS F FUELING
THIS VEHICLE CONFORMS TO ALL APPLICABLE
FEDERAL MOTOR VEHICLE SAFETY
AND THEFT PREVENTION STANDARDS IN EFFECT
ON THE DATE OF MANUFACTURE SHOWN ABOVE
VIN 2HKYF18463H580711

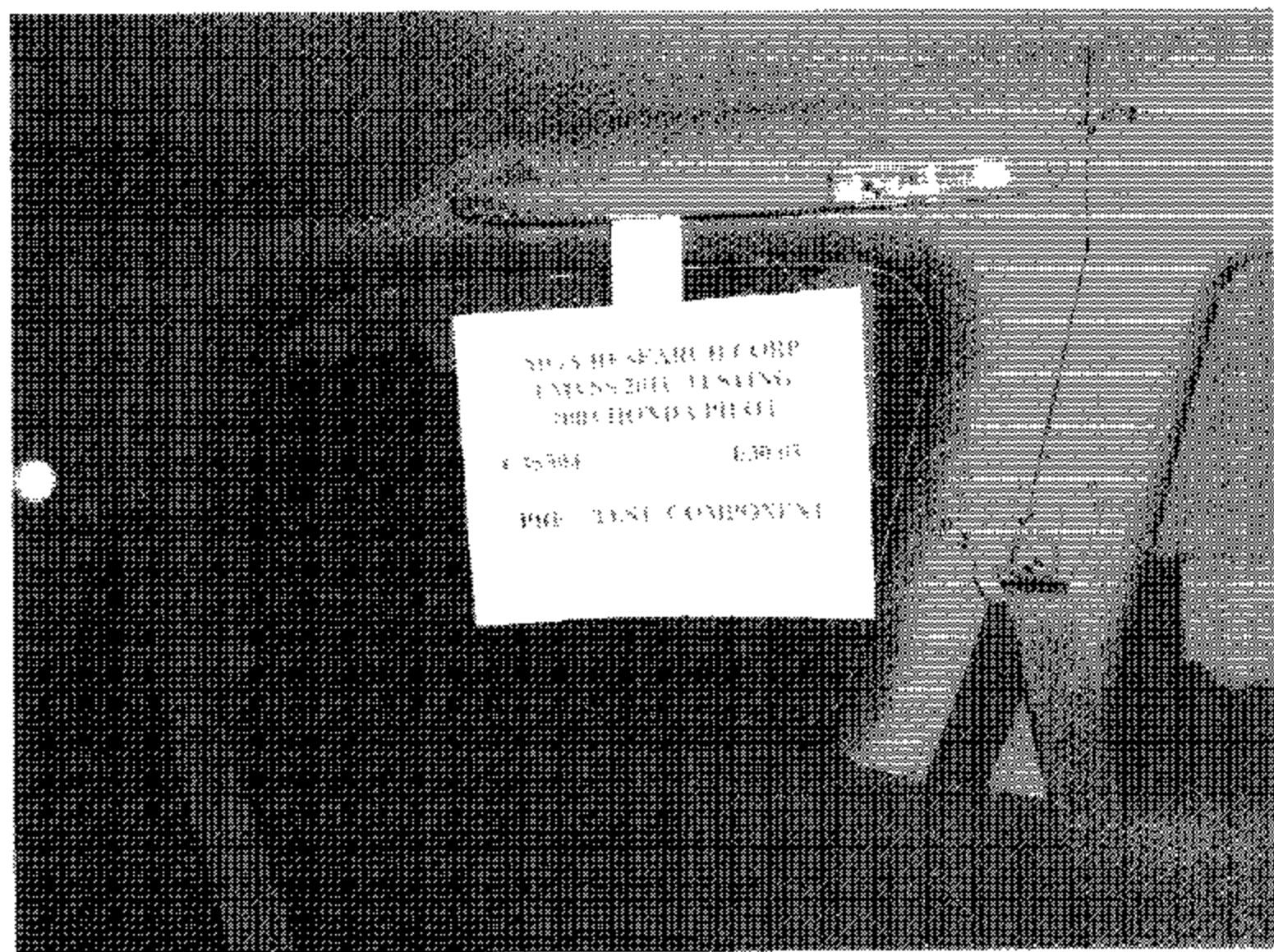


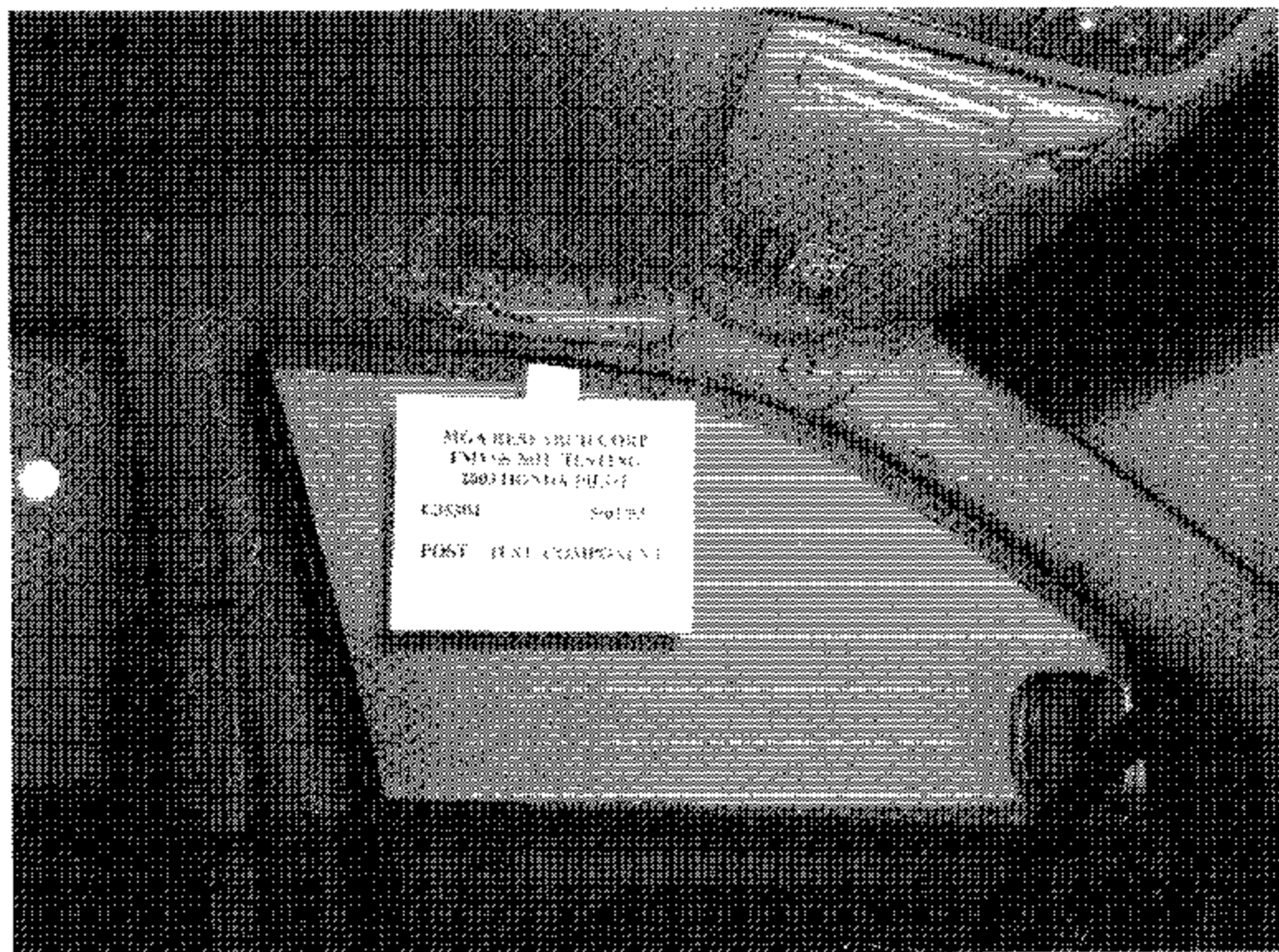
NPV

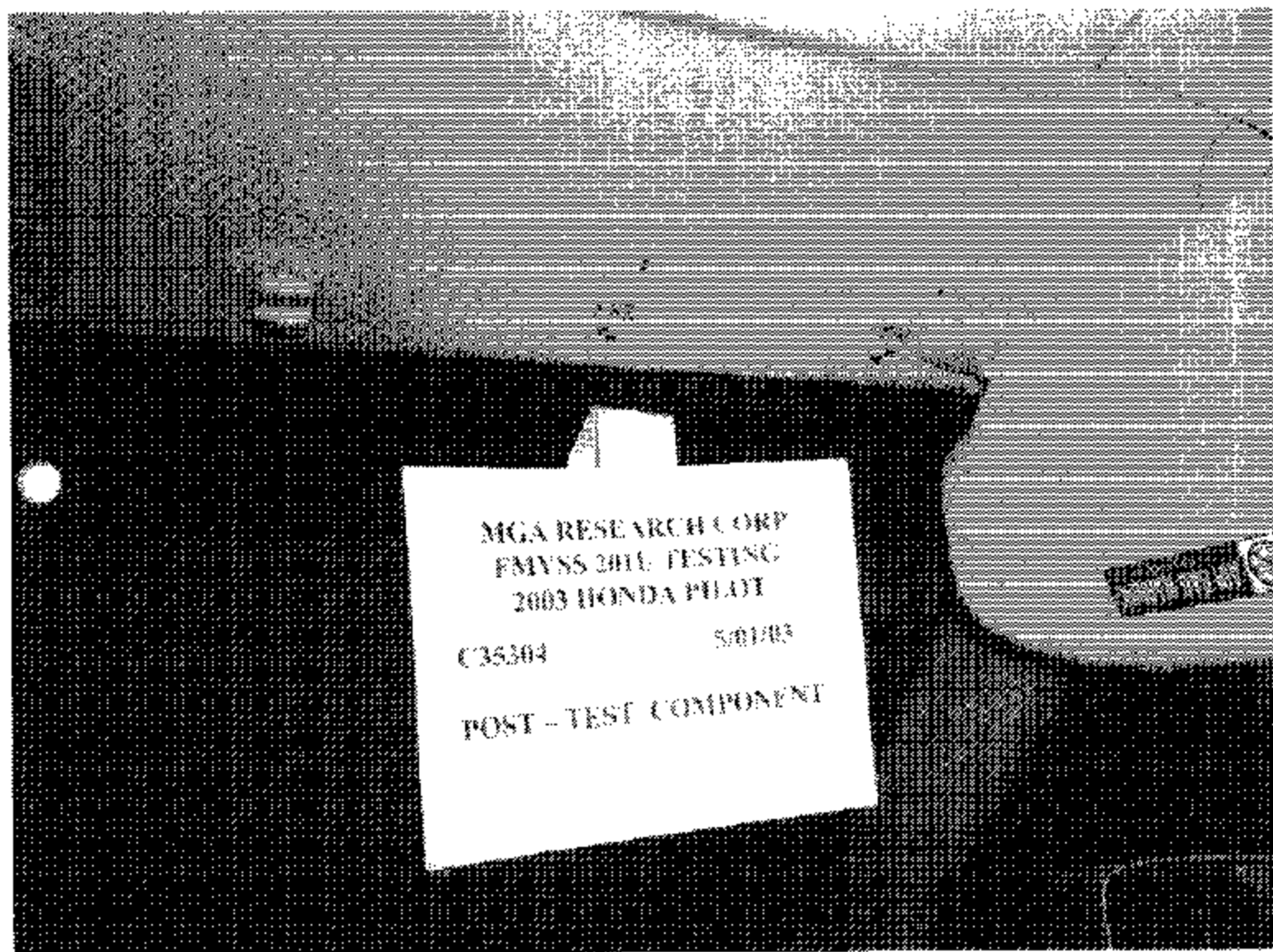


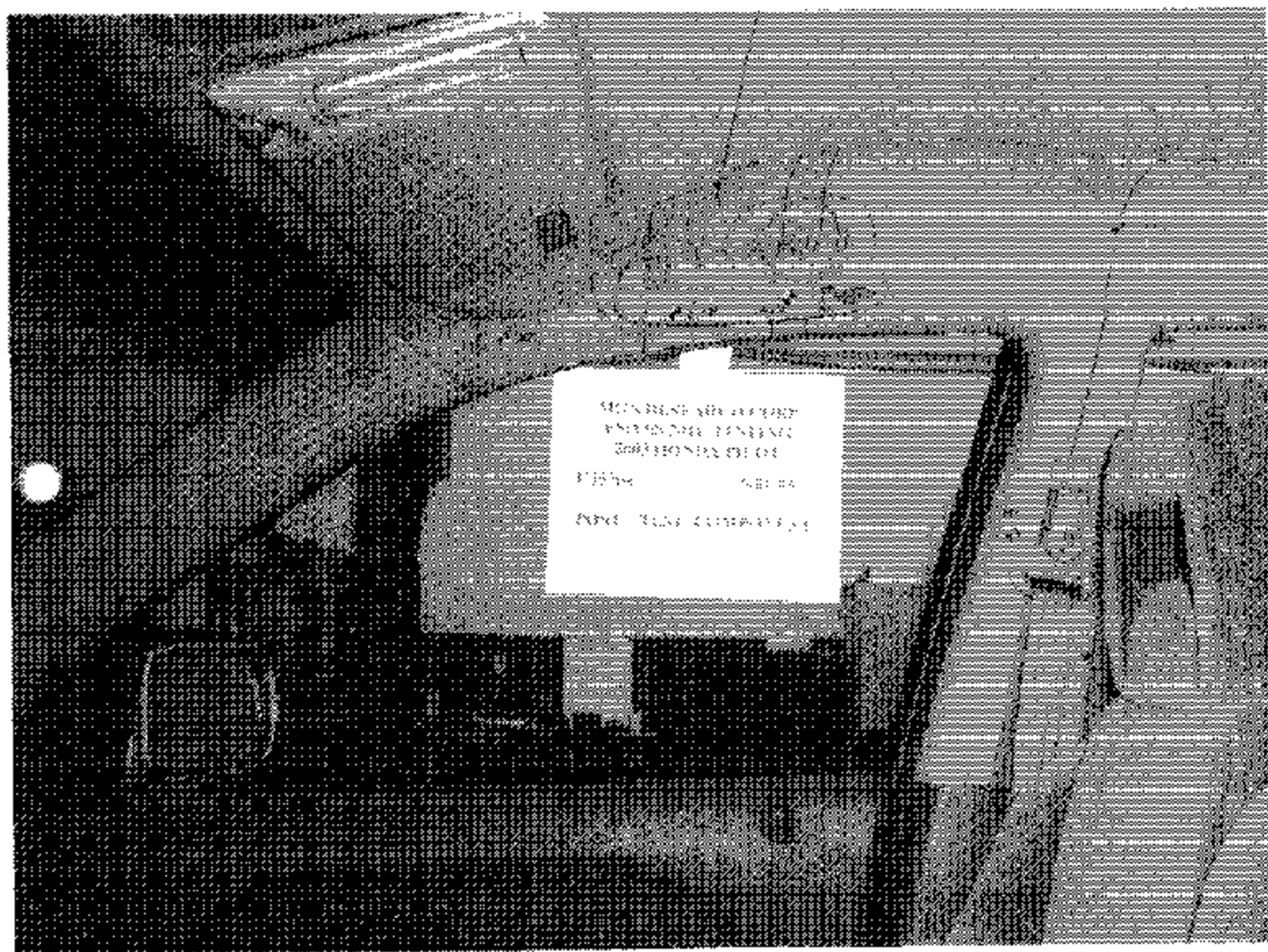


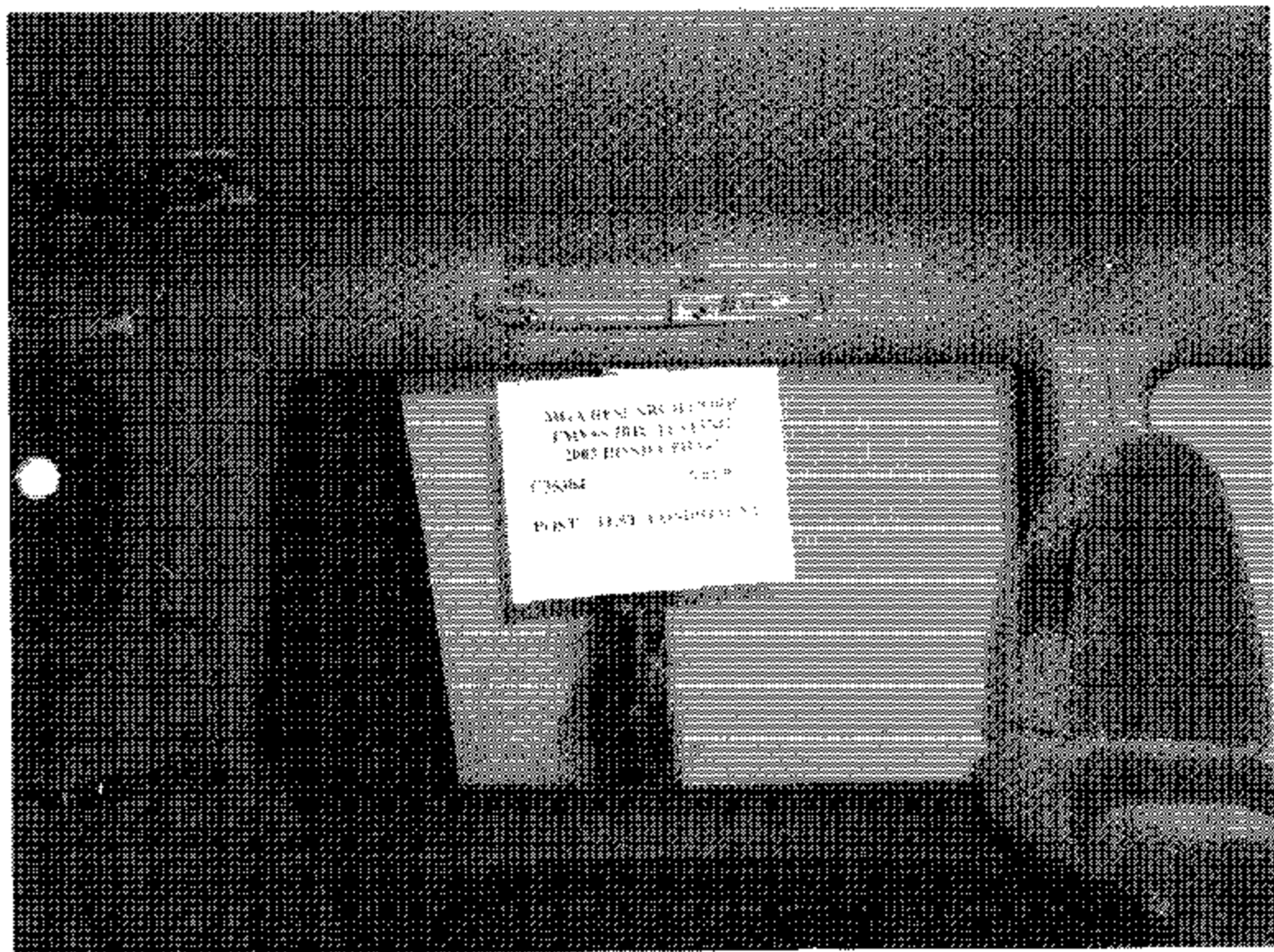


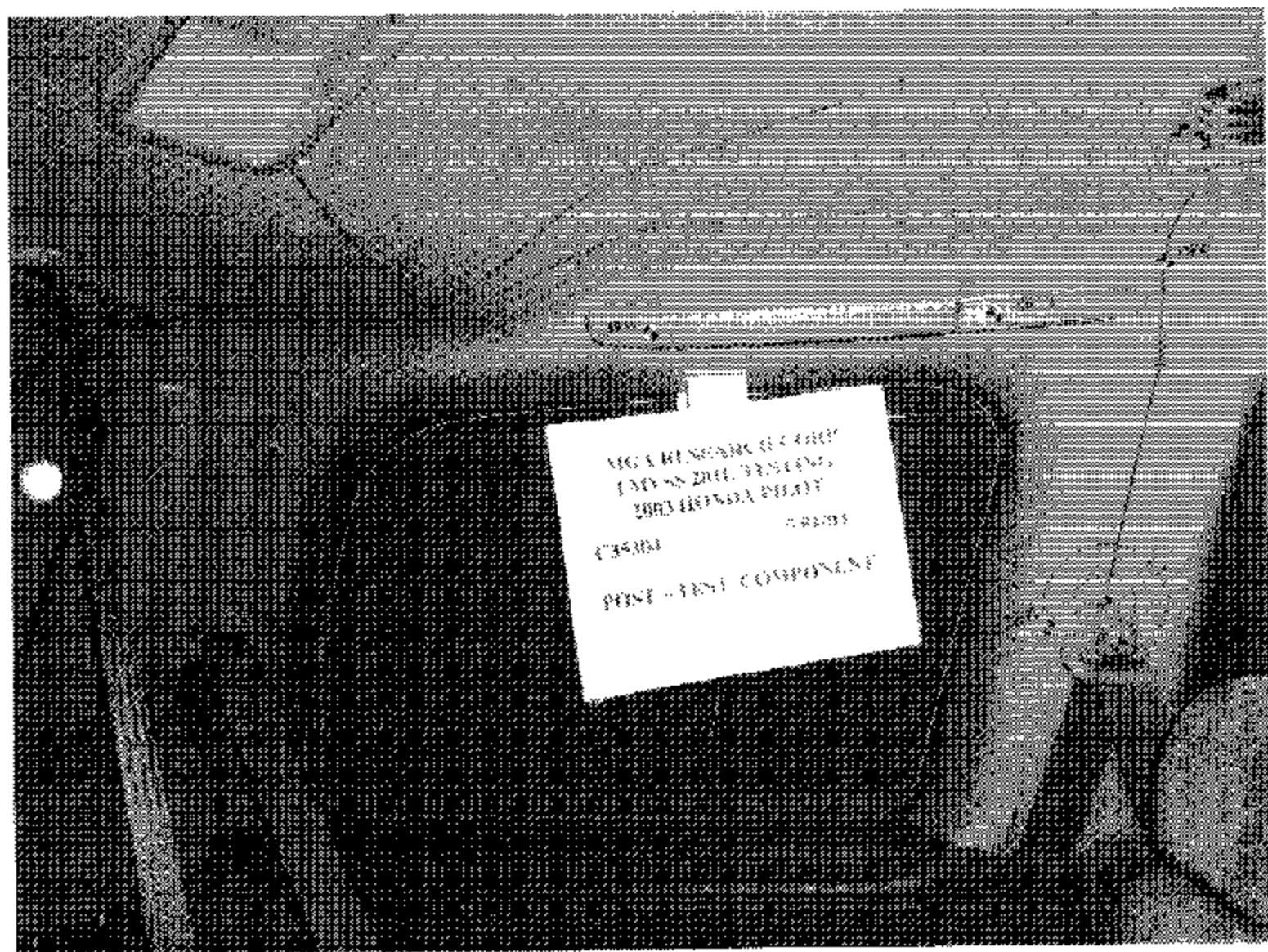


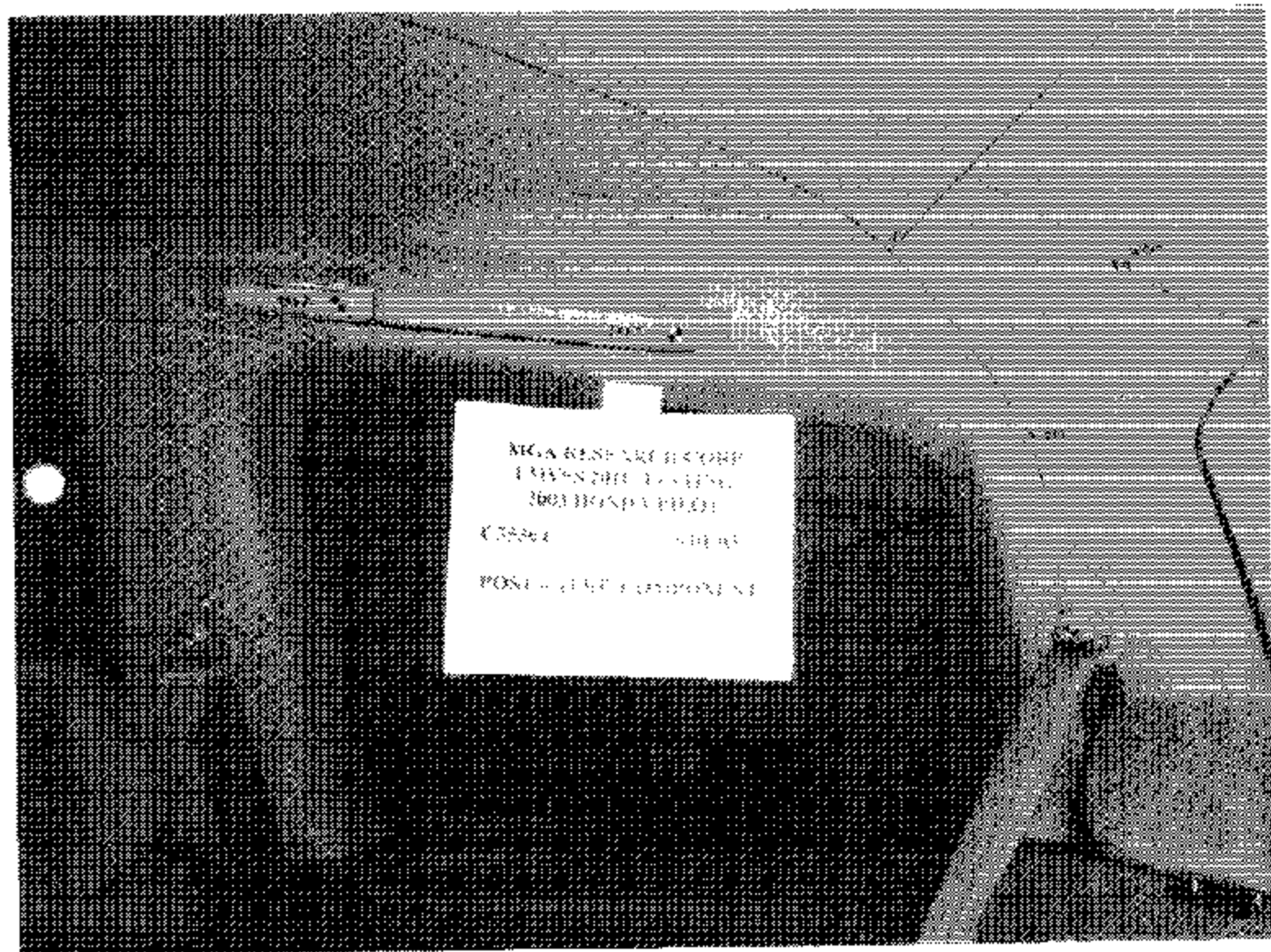


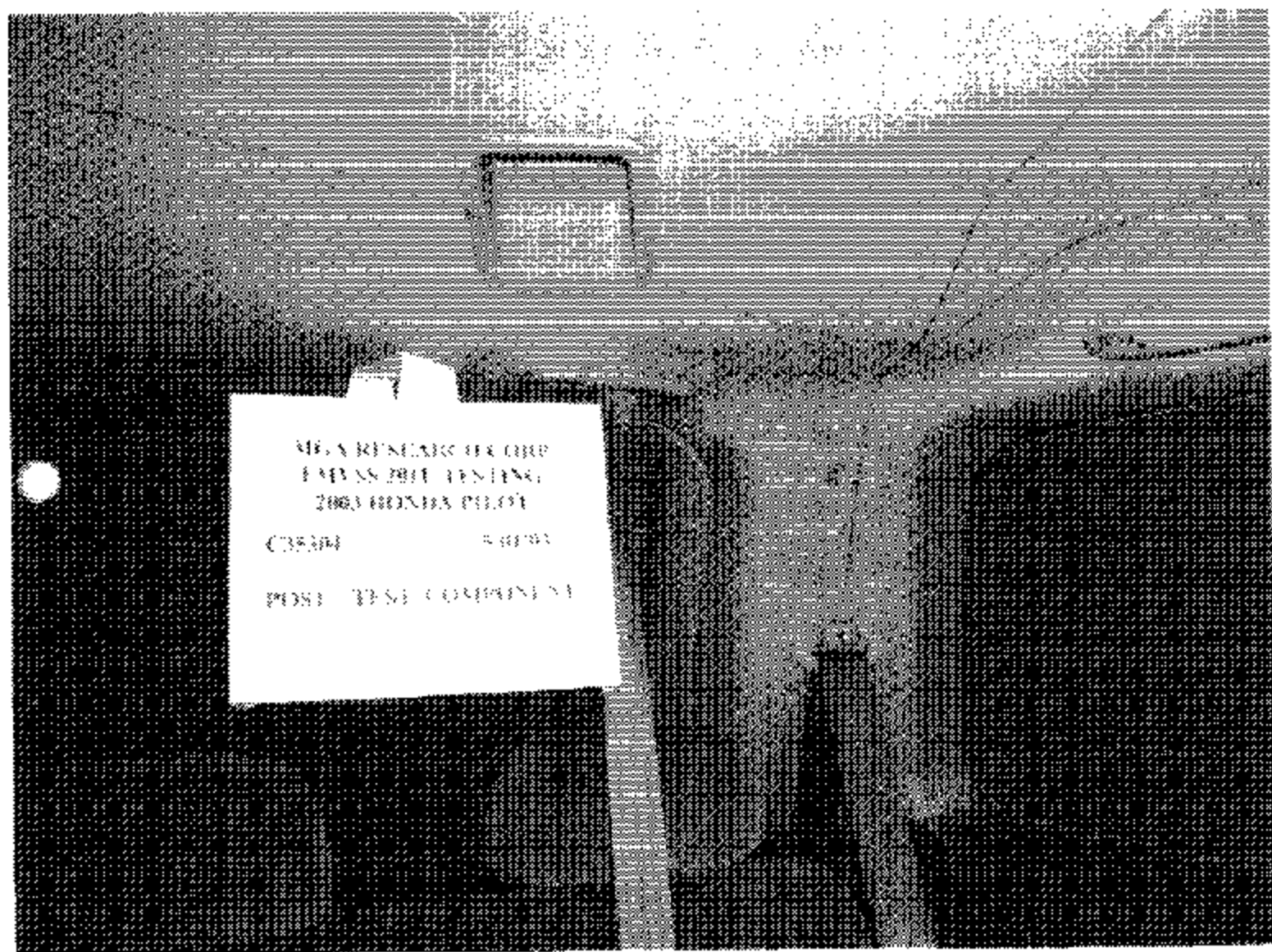








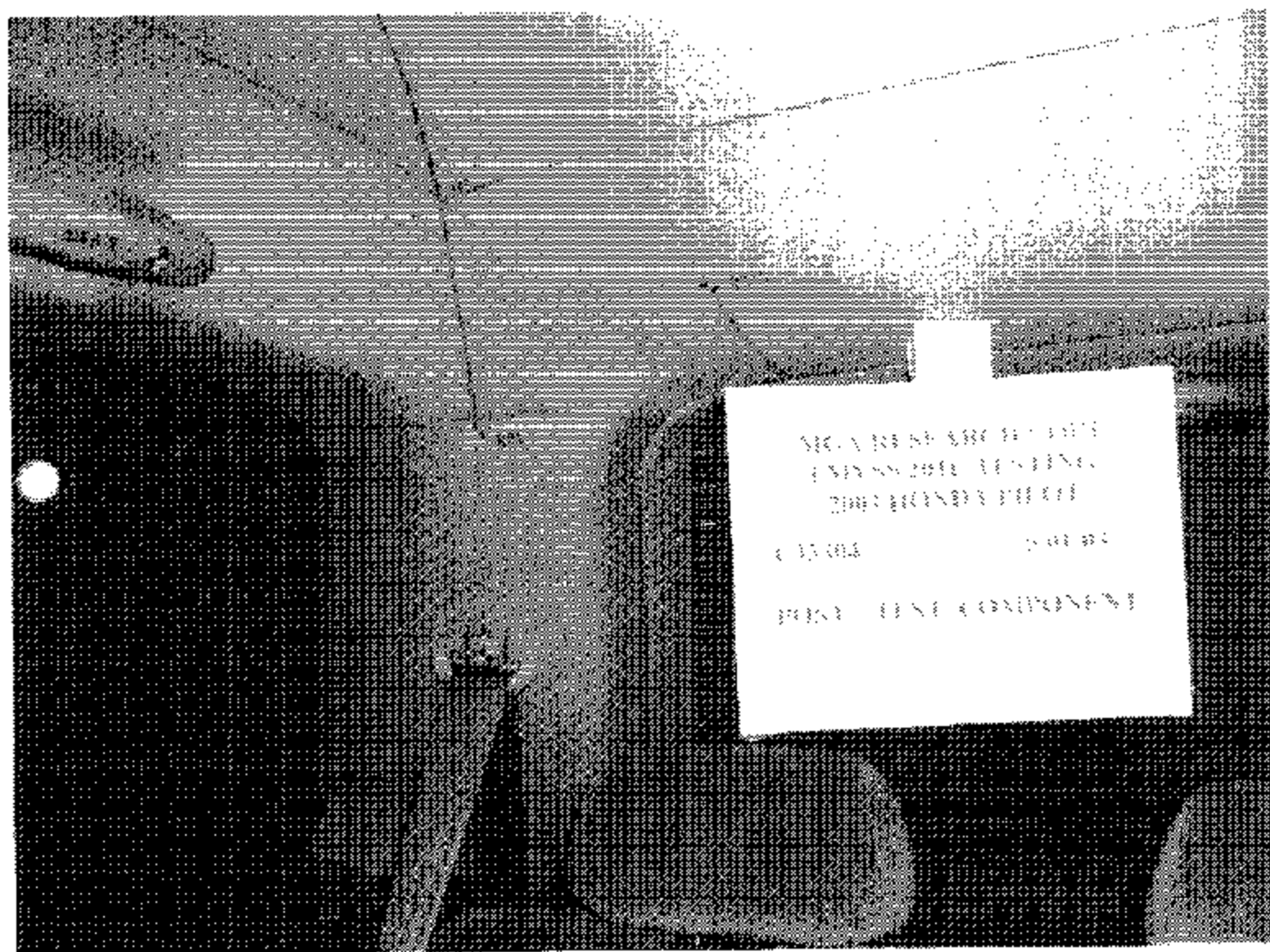


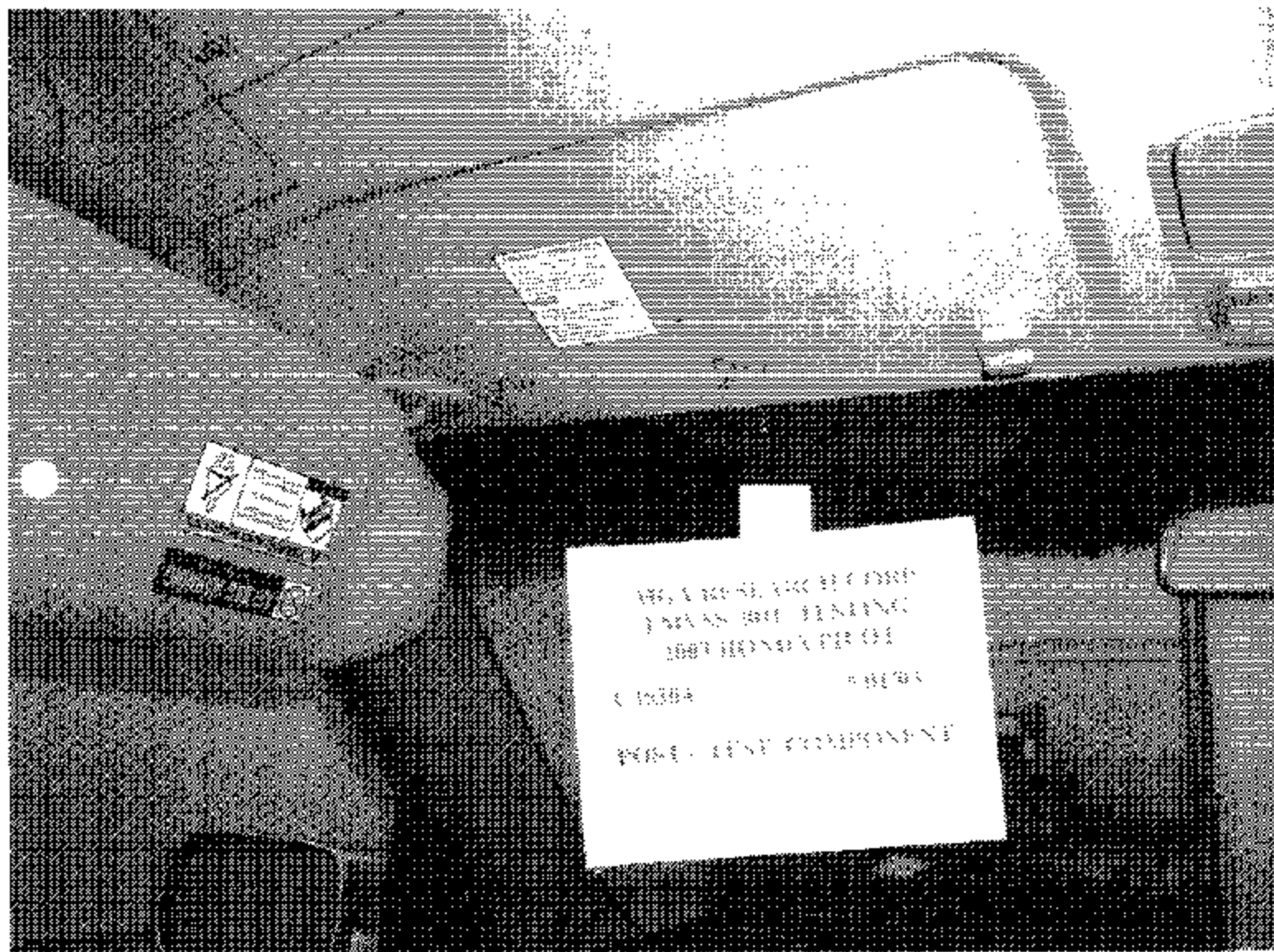


ALFA RESEARCH GROUP
EXPANSION TESTING
2003 BONDING PROJECT

C35304 5/10/03

POST TEST COMPONENT





W. C. ROSE, JR. (CDR)
JANAS BOE FLEETING
1007 HONOR PR 01
C 1004 1004
PUB. TEST COMPONENT

C35304 Temperature Trace 4/30/03 - 5/1/03

