



INFORMATION BULLETIN

FOR VEHICLE MANUFACTURERS ASSOCIATION OF THE UNITED STATES, INC. • 7430 SECOND AVENUE, SUITE 300 • DETROIT, MICHIGAN 48202 • 872-4311 AREA 313

V1476

August 27, 1990

TO: Side Impact Subcommittee
FROM: Ronald J. Wasko
SUBJECT: **MVMA Full Vehicle BioSID Test Report - Test 4B**

Attached for information is a copy of the final report for one of the twelve MVMA Full Vehicle Side Impact Tests. The tests were conducted during February to April, 1990 at the General Motors Proving Grounds, using the BioSID dummy. The calibration procedures and results will be transmitted in a separate bulletin.

Attachment

cc: Engineering Research Subcommittee
Vehicle Safety Development Subcommittee

**MVMA FULL VEHICLE BIOSID SIDE IMPACT
TEST SERIES**

FEBRUARY-APRIL, 1990

USING PROPOSED NHTSA FULL VEHICLE SIDE IMPACT TEST PROCEDURE

TEST NUMBER 4B*

(B= Baseline door interior; P= Padded door interior)



TYPE IMPACT:

- REAR MOVING BARRIER
 LEFT SIDE MOVING BARRIER
 RIGHT SIDE MOVING BARRIER
 OTHER

TEST REPORT

REPORT NO. PG

SRDL TEST NO. C8804

TEST DATE MAR 06, 1990

BARRIER TYPE:

- FLAT FACE CONTOURED OTHER

OTHER:

- CRABBED DEFORMABLE BARRIER @ 27 DEG

VEHICLE DESCRIPTION

MAKE	YEAR	BODY TYPE	BODY STYLE	DIVISION CAR NO.	BUILD STATUS	
PONTIAC	90	A	2AF69	MVMA 4B	PRODUCTION	
ENGINE	CONFIGURATION	L4	DISPLACEMENT	2.5 L	PREVIOUS IMPACTS	NONE
	FUEL	GASOLINE			TRAILER HITCH	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> TYPE
	FUEL INDUCTION	ELECTRONIC FUEL INJECTION		SPARE TIRE TYPE		COMPACT
FUEL TANK	USABLE CAPACITY	N/D L	UNUSABLE CAPACITY	N/D L	AC	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>
SPECIAL FEATURES:						
VEHICLE TESTED FOR MVMA FOR EVALUATION OF THE BIOSID AND SID DUMMIES						

TEST CONDITIONS

MOVING BARRIER		VEHICLE		DUMMIES	
VELOCITY AT IMPACT	53.6 km/h	VEHICLE LOCATION	VEHICLE <input type="checkbox"/>	DRIVER SRP <input type="checkbox"/>	OTHER <input checked="" type="checkbox"/>
TEST MASS	1360 kg	AT IMPACT			
TEST MASS		FRONT	921 kg	LEFT FRONT	MAKE SID NO. 3
LESS DUMMIES <input checked="" type="checkbox"/>		REAR	571 kg	LEFT REAR	TYPE 50TH %ILE MALE MASS 78.5 kg
INCLUDING DUMMIES <input type="checkbox"/>		TOTAL	1592 kg		RESTRAINT UNBELTED
FUEL TANK	TEST VOLUME: CONTENTS WATER				MAKE BIOSID NO. 2
N/D	% OF USABLE CAPACITY=		64.4 L		TYPE 50TH %ILE MALE MASS 77.3 kg
	FUEL LINES AND SYSTEM FILLED	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>		RESTRAINT UNBELTED
	VEHICLE SERVICE BRAKES ON @ IMPACT	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>	TEST CONFIGURATION:	
SEAT POSITION	MID				
VEHICLE ATTITUDE					
J= DRIVER SIDE	196 mm	PASSENGER SIDE	191 mm		
K= DRIVER SIDE	181 mm	PASSENGER SIDE	166 mm		
COMMENTS:					
LEFT SIDE OF MOVING BARRIER FACE WAS POSITIONED					
940 MM FORWARD OF VEHICLE WHEELBASE CENTERLINE.					
(SEE PAGE 4) FUEL TANK WAS FILLED WITH WATER.					

PHOTOGRAPHIC COVERAGE

OFFBOARD	OVER ALL	X	FUEL TANK	
	REAR HALF		OVERHEAD	X
	PIT			
OTHER	OFFBD-DR SIDE	X	ON MDR-IMPACT	X
	ONBD-DRIVER	X		
	ONBD-LR OCCUP	X		

RECORDED DATA

FLOOR PAN ACCEL.	LONG <input type="checkbox"/>	LAT <input type="checkbox"/>	TRIAX <input type="checkbox"/>
FRAME ACCEL	LONG <input type="checkbox"/>	LAT <input type="checkbox"/>	TRIAX <input type="checkbox"/>
ROCKER PANEL ACCEL.	LONG <input type="checkbox"/>	LAT <input type="checkbox"/>	TRIAX <input type="checkbox"/>
VEHICLE ACCEL	<input checked="" type="checkbox"/> SID DATA		X
VEHICLE DISP	<input checked="" type="checkbox"/> BIOSID DATA		X
MOVING BARR ACCEL	<input checked="" type="checkbox"/>		

N/A NOT APPLICABLE N/D NOT DETERMINED



POST-TEST OBSERVATIONS

		YES	NO	N/A	N/D	FIG.	NOTE
D O O R S	ALL EXTERIOR DOORS REMAINED CLOSED	X					
	ALL EXTERIOR DOORS REMAINED LATCHED	X					
	ALL EXTERIOR DOOR HINGES REMAINED INTACT	X					
		LATCH OPERABLE		DISTANCE DOOR MAY BE OPENED (1)		(1) DISTANCE MEASURED BETWEEN DOOR OUTER SURFACE AND ADJACENT BODY OUTER SURFACE WHEN 450 N PULL IS APPLIED TO HANDLE.	
		YES	NO	OTHER			
	LEFT FRONT		X		0 mm		
	RIGHT FRONT	X			FULL mm		
LEFT REAR		X		0 mm			
RIGHT REAR	X			FULL mm			
B O D Y	BODY TO-FRAME OR CRADLE MOUNTS REMAINED ATTACHED	X					
	SPARE TIRE REMAINED IN PLACE	X					
	TRUNK LID OR REAR HATCH REMAINED INTACT	X					
	TRUNK LID OR REAR HATCH REMAINED CLOSED	X					
D R I V E	REAR AXLE INTACT			X			1
	REAR AXLE DEFORMED			X			1
	DRIVESHAFT INTACT			X			1
	DRIVESHAFT DEFORMED			X			1
F U E L	FUEL TANK RETAINED	X					
	FILLER TUBE INTACT	X					
NOTE:							
1. FRONT WHEEL DRIVE VEHICLE							

VEHICLE DATA

REAR IMPACT							
VEHICLE	DRIVER SIDE	_____ mm	FUEL TANK	DRIVER SIDE	_____ mm		
RESIDUAL CRUSH	PASSENGER SIDE	_____ mm	RESIDUAL CRUSH	PASSENGER SIDE	_____ mm		
VEHICLE	DRIVER SIDE	_____ mm	FUEL TANK	DRIVER SIDE	_____ mm		
DYNAMIC CRUSH	PASSENGER SIDE	_____ mm	RESIDUAL DISP	PASSENGER SIDE	_____ mm		
SIDE IMPACT							
VEHICLE RESIDUAL CRUSH				FUEL TANK LATERAL RESIDUAL CRUSH			
FRONT	_____ mm			FRONT	N/D mm	REAR	N/D mm
MID	_____ mm			FUEL TANK LATERAL RESIDUAL DISPLACEMENT			
REAR	_____ mm			FRONT	N/D mm	REAR	N/D mm

NOTE: (A) RESIDUAL CRUSH MEASUREMENTS +OR- 25mm, OTHER RESIDUAL MEASUREMENTS +OR- 5mm
 (B) GENERALIZED TOLERANCE CANNOT BE SPECIFIED FOR DYNAMIC MEASUREMENTS BECAUSE OF ACCURACY VARIATIONS DUE TO DIFFERENCES IN ANALYSIS TECHNIQUES.

A TOLERANCE FOR SPECIFIC TEST DATA CAN BE FURNISHED ON REQUEST.
 N/A NOT APPLICABLE N/D NOT DETERMINED

DUMMY LOCATION IN VEHICLE

The following values reflect the dummy location in the test vehicle in corporate body coordinates. The location is determined relative to the vehicle front fiducial mark (front outboard seat anchor stud).

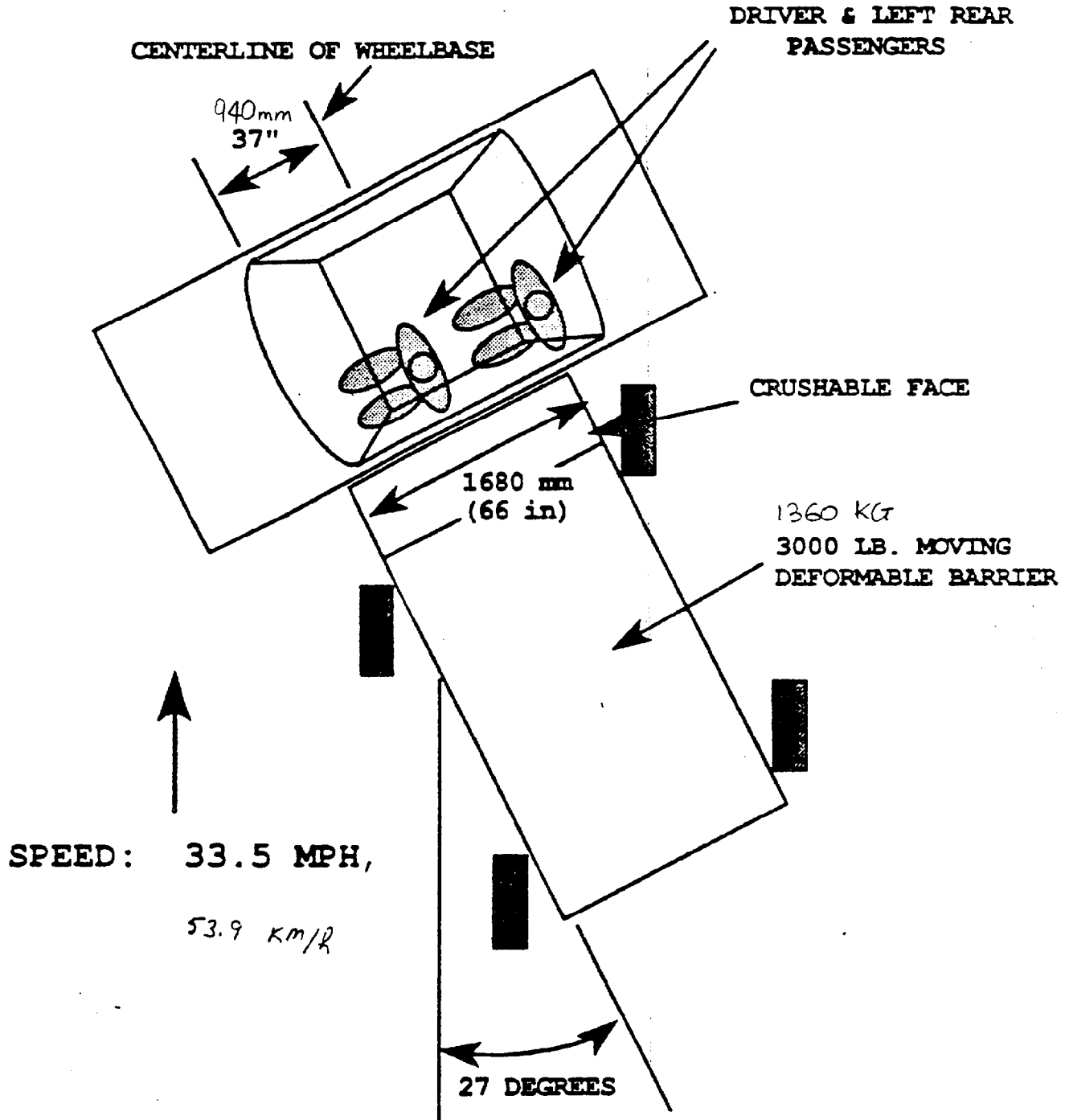
BODY COORDINATES (mm)

	LONGITUDINAL	VERTICAL
<u>LEFT FRONT PASSENGER</u>		
HEAD	<u>3225</u>	<u>1140</u>
HIP	<u>3067</u>	<u>464</u>
KNEE	<u>2667</u>	<u>552</u>
PELVIC ANGLE	<u>26</u>	SEAT BACK ANGLE <u>24</u>
<u>LEFT REAR PASSENGER</u>		
HEAD	<u>4087</u>	<u>1126</u>
HIP	<u>3917</u>	<u>466</u>
KNEE	<u>3539</u>	<u>622</u>
PELVIC ANGLE	<u>27</u>	SEAT BACK ANGLE <u>N/D</u>

Dummy lateral location: 343 mm relative to VEHICLE C/L

Comments: DUMMY HEAD ANGLE IN DEGREES LT FRT: 0, LT RR: -11

NHTSA TEST CONFIGURATION



27 DEGREE CRABBED MOVING DEFORMABLE BARRIER TO CAR SIDE IMPACT
TEST VEHICLE PRE-TEST, POST-TEST, AND STATIC CRUSH MEASUREMENTS (in mm)

TEST NUMBER: C8004
 TEST DATE: 3-6-90

LOCATION			WINDOW TOP			WINDOW SILL			MID DOOR			N - POINT			AXCLE CL		
HEIGHT (in mm)			-			791			-			438			198		
TIME & CRUSH			PRE TEST	POST TEST	RSDL. CRUSH	PRE TEST	POST TEST	RSDL. CRUSH	PRE TEST	POST TEST	RSDL. CRUSH	PRE TEST	POST TEST	RSDL. CRUSH	PRE TEST	POST TEST	RSDL. CRUSH
M	F	610	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
E	R	457	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A	M	305	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S	D	152	-	-	-	236	199	-37	-	-	-	-	-	-	-	-	-
U		0*	-	-	-	226	198	-28	-	-	-	174	122	-52	272	244	-28
R		152	-	-	-	222	311	89	-	-	-	174	411	237	279	327	48
E		305	-	-	-	219	369	150	-	-	-	172	475	303	279	357	78
M		457	-	-	-	216	395	179	-	-	-	170	493	323	279	380	101
E		610	-	-	-	213	409	196	-	-	-	168	510	342	278	406	128
N	R	762	-	-	-	211	428	217	-	-	-	166	532	366	277	430	153
T	E	914	-	-	-	211	454	243	-	-	-	165	547	382	278	455	177
	A	1067	-	-	-	207	471	264	-	-	-	164	562	398	280	480	200
L	R	1219	-	-	-	206	496	290	-	-	-	165	571	406	279	521	242
O	M	1372	-	-	-	205	507	302	-	-	-	165	595	430	279	436	157
C	A	1524	-	-	-	205	521	316	-	-	-	166	604	438	278	378	100
A	R	1676	-	-	-	205	539	334	-	-	-	166	609	443	279	328	49
T	D	1829	-	-	-	205	448	243	-	-	-	168	511	343	280	289	9
I		1981	-	-	-	205	324	119	-	-	-	-	-	-	-	-	-
O		2134	-	-	-	206	277	71	-	-	-	-	-	-	-	-	-
N		2286	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		2438	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

(in mm)

* IMPACT POINT- MOVING DEFORMABLE BARRIER LEADING EDGE

27 DEGREE CRABBED MOVING DEFORMABLE BARRIER TO CAR SIDE IMPACT
 STRIKING VEHICLE PRE-TEST, POST-TEST, AND STATIC CRUSH MEASUREMENTS (in mm)

TEST NUMBER: C8004
 TEST DATE: MAR. 6, 1990

LOCATION	HEIGHT	TIME/CRUSH	MEASUREMENT LOCATION (in mm)																				
			DISTANCE LEFT OF CENTER**									DISTANCE RIGHT OF CENTER**											
			813	711	610	508	406	305	203	102	0	102	203	305	406	508	610	711	813				
TOPOF																							
STACK LEVEL	813		307	280	276	281	282	282	282	282	282	282	286	287	290	292	300	320	357	390			
			276	276	276	276	276	276	276	276	276	276	276	276	276	276	276	276	276	276	276		
			31	4	4	5	6	6	6	6	6	8	8	9	10	11	14	16	24	44	81	114	
MID-STACK																							
LEVEL	686		284	278	280	280	280	280	280	280	280	280	282	282	282	283	283	283	290	321	383		
			276	276	276	276	276	276	276	276	276	276	276	276	276	276	276	276	276	276	276	276	
			8	2	4	4	4	4	4	4	4	4	6	6	4	4	5	6	7	7	14	45	107
BOTTOMOF																							
STACK LEVEL	559		300	285	282	281	281	281	280	280	280	278	277	281	280	280	283	283	287	296	333		
			276	276	276	276	276	276	276	276	276	276	276	276	276	276	276	276	276	276	276	276	276
			24	9	6	5	5	5	4	4	2	1	1	5	5	4	7	7	11	20	57		
BUMPER LEVEL	432		N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	N/D	

* HEIGHTS MEASURED ABOVE GROUND LEVEL
 ** LOOKING AT THE FACE OF THE BARRIER.



Document No.	Fig. No.
5619	30



Document No.	Fig. No.
5619	31

Document No.	Fig. No.
55619	32

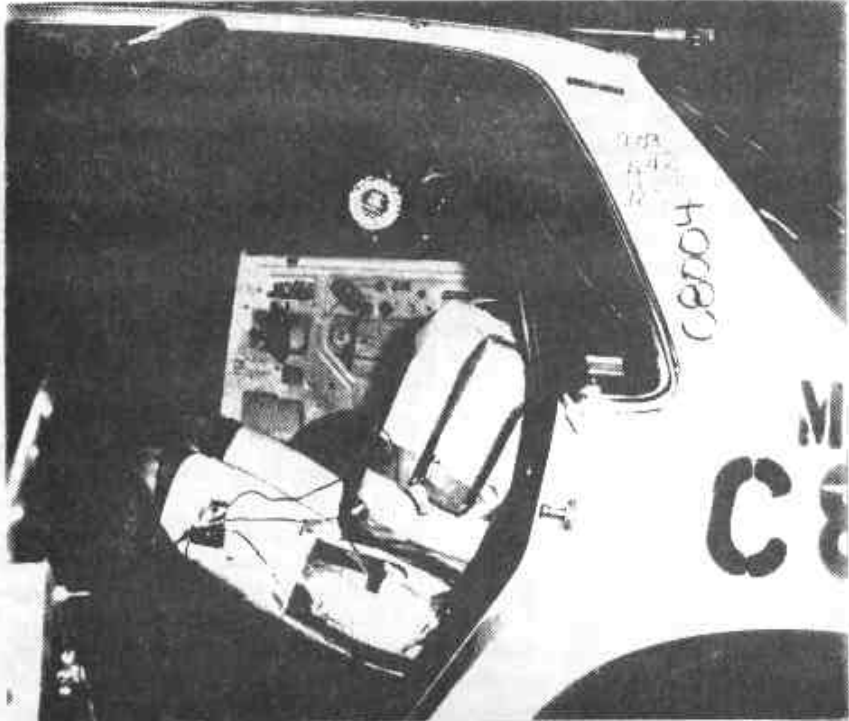


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Document No.	Fig. No.
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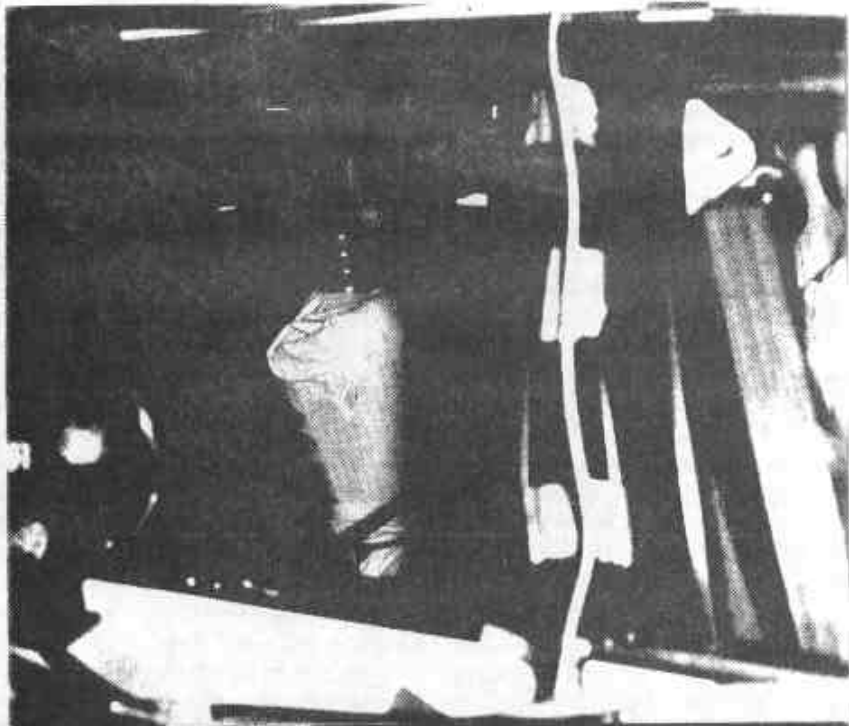


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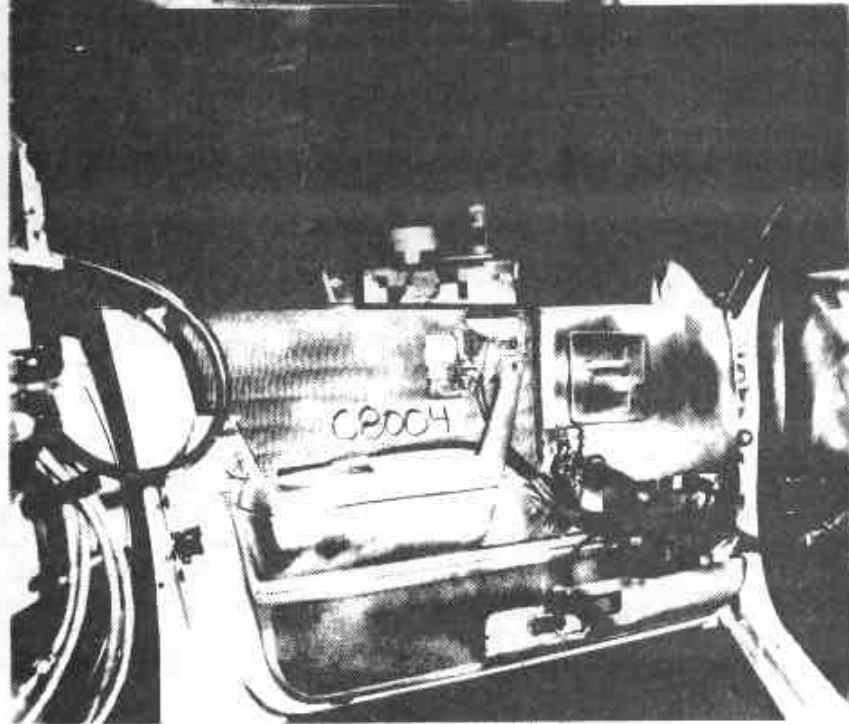


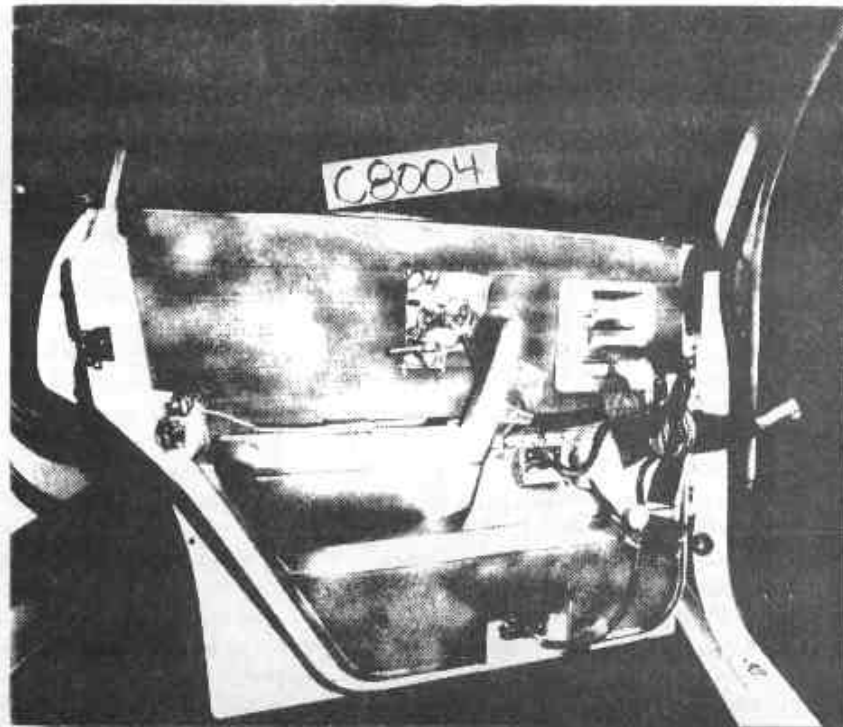
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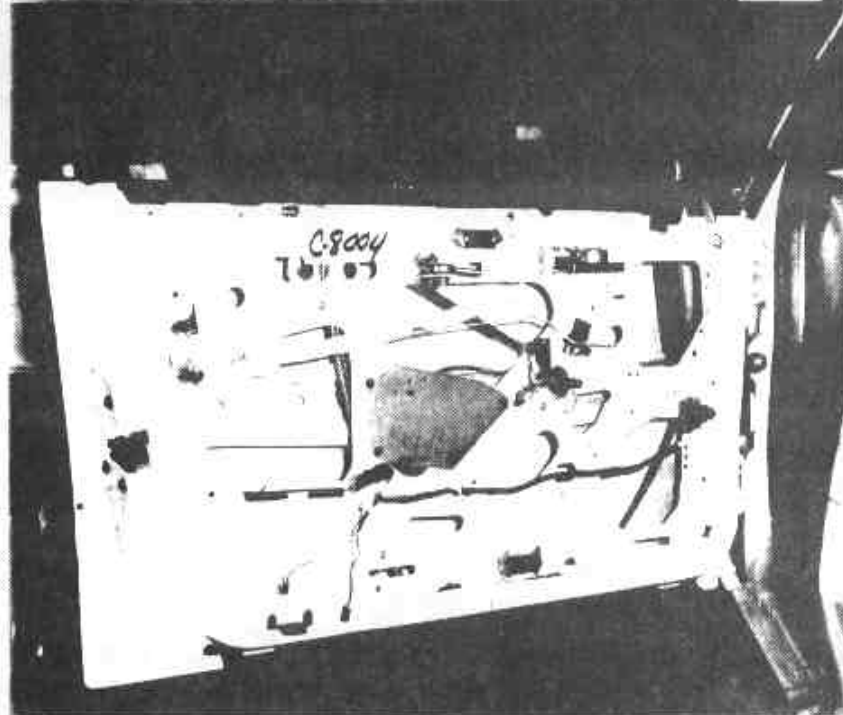


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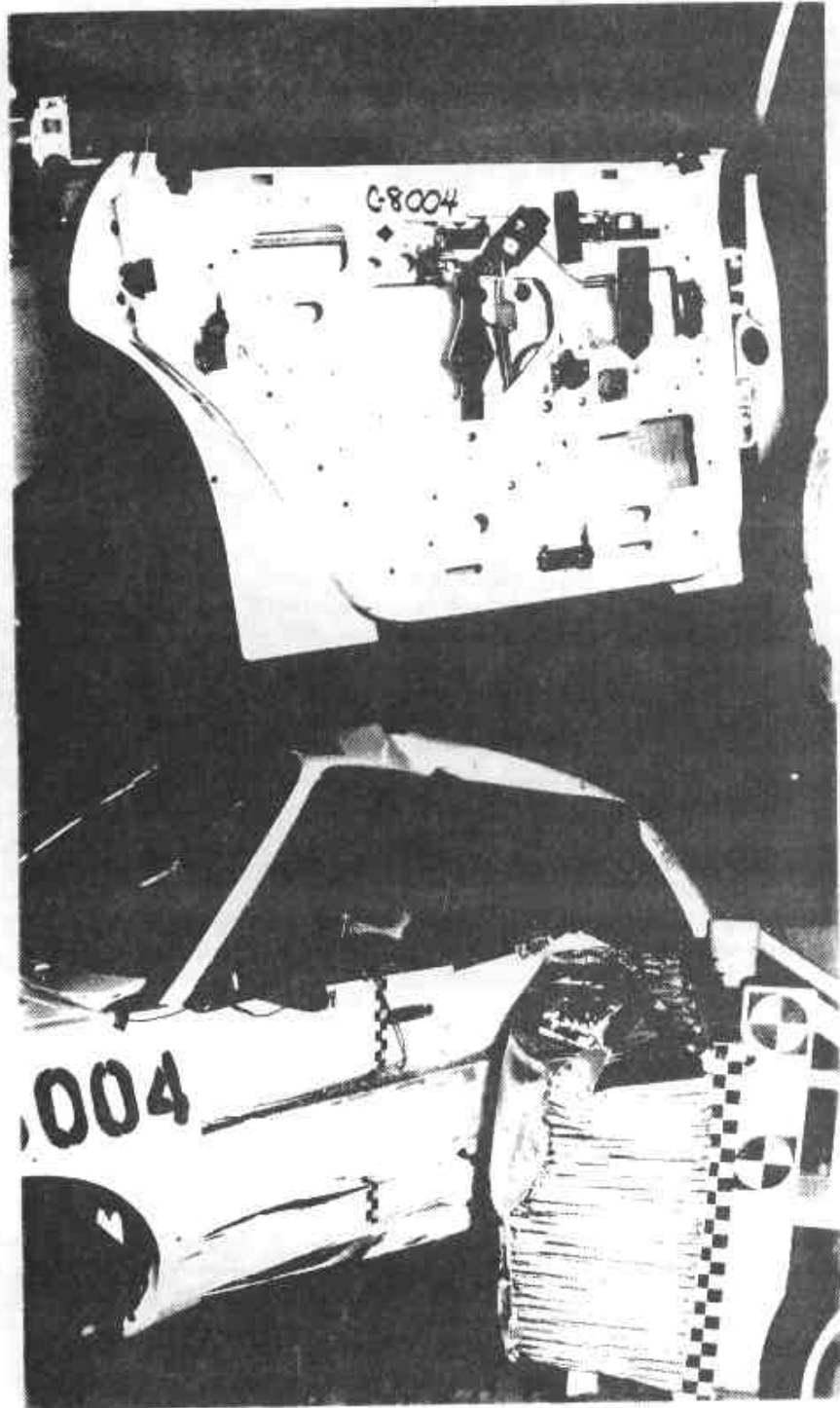




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Document No.	Fig. No.
65619	141



Document No.	Fig. No.
55619	142

Document No.	Fig. No.
55619	143



Document No.	Fig. No.
55619	144

Document No.	Fig. No.
55619	145



Document No.	Fig. No.
85619	46

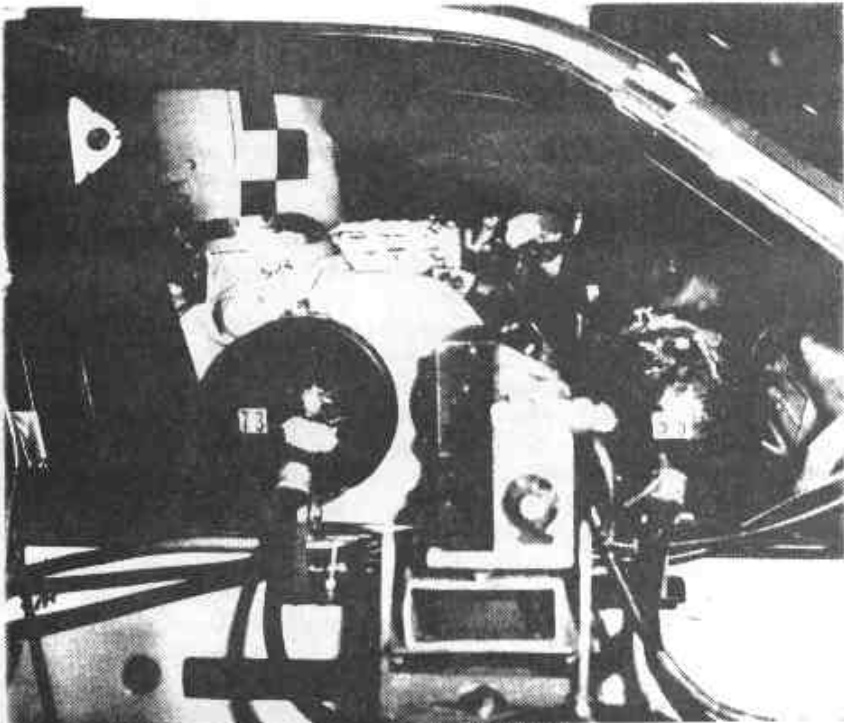
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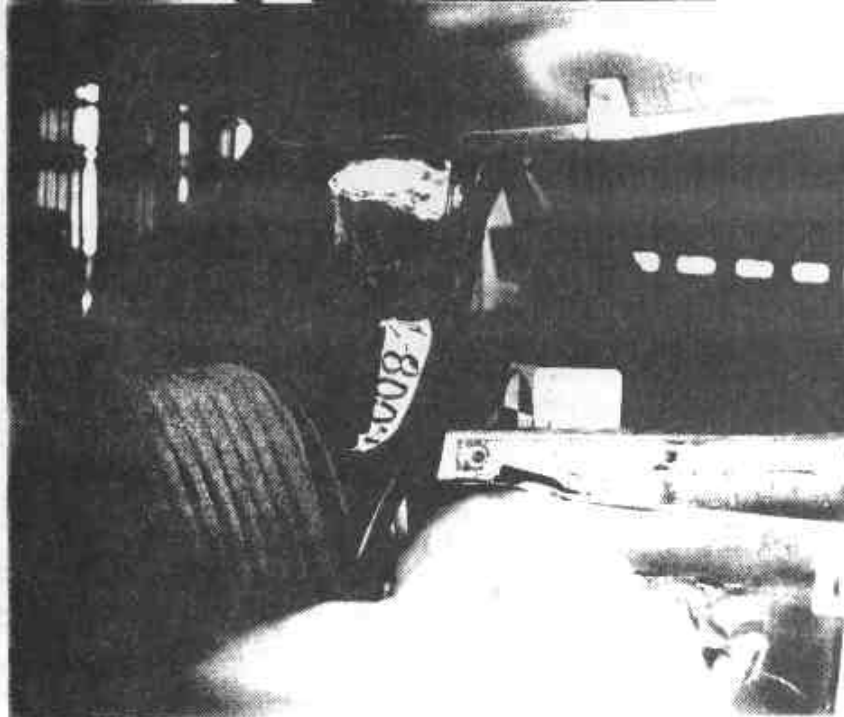
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Document No.	Fig. No.
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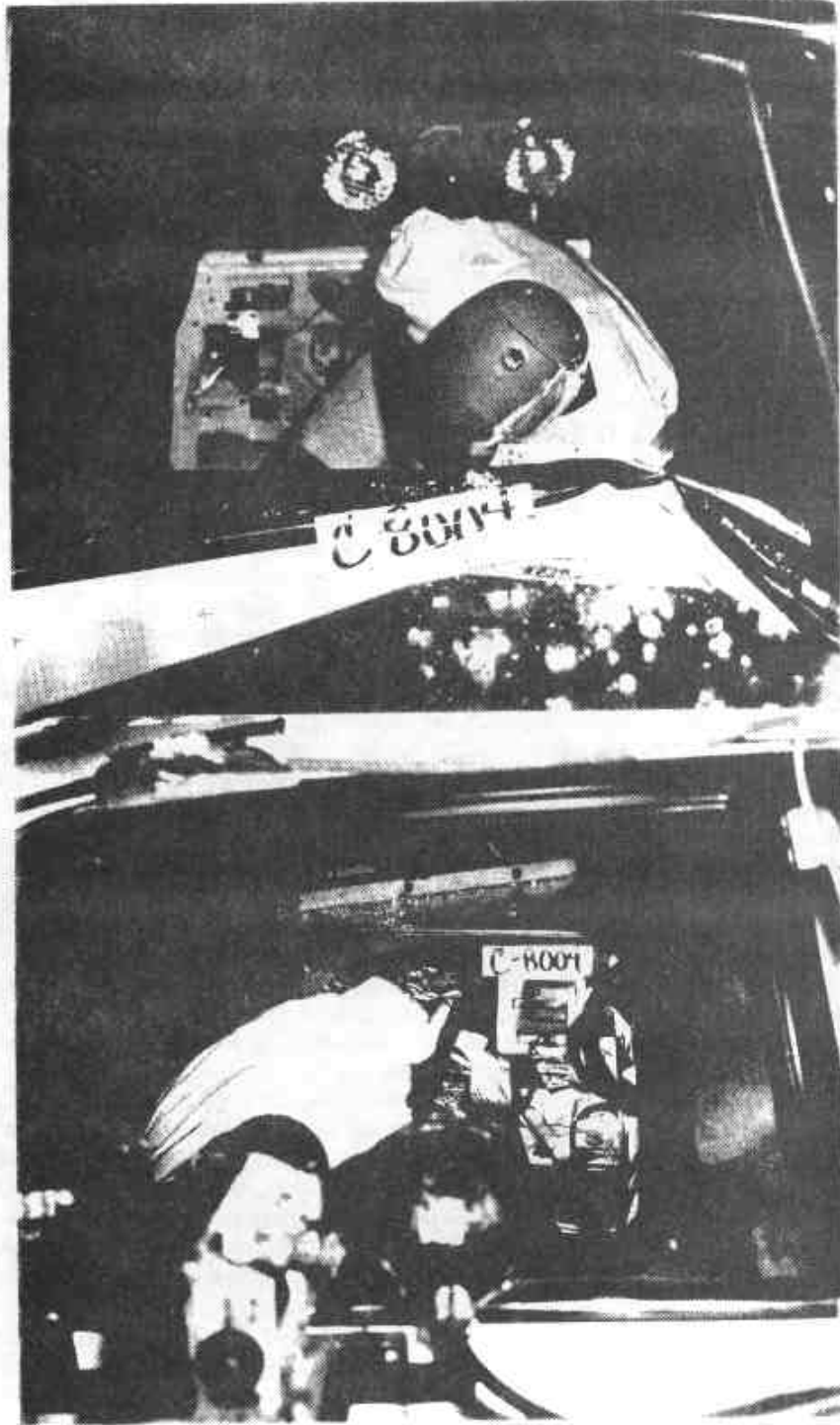


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55619	150



Document No.	Fig. No.
55619	151

Document No.	Fig. No.
55619	152



Document No.	Fig. No.
55619	153

Document No.	Fig. No.
55619	154



Document No.	Fig. No.
55619	155

C8004 L.SIDE IMPACT AT 27 DE MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 1

3868-905

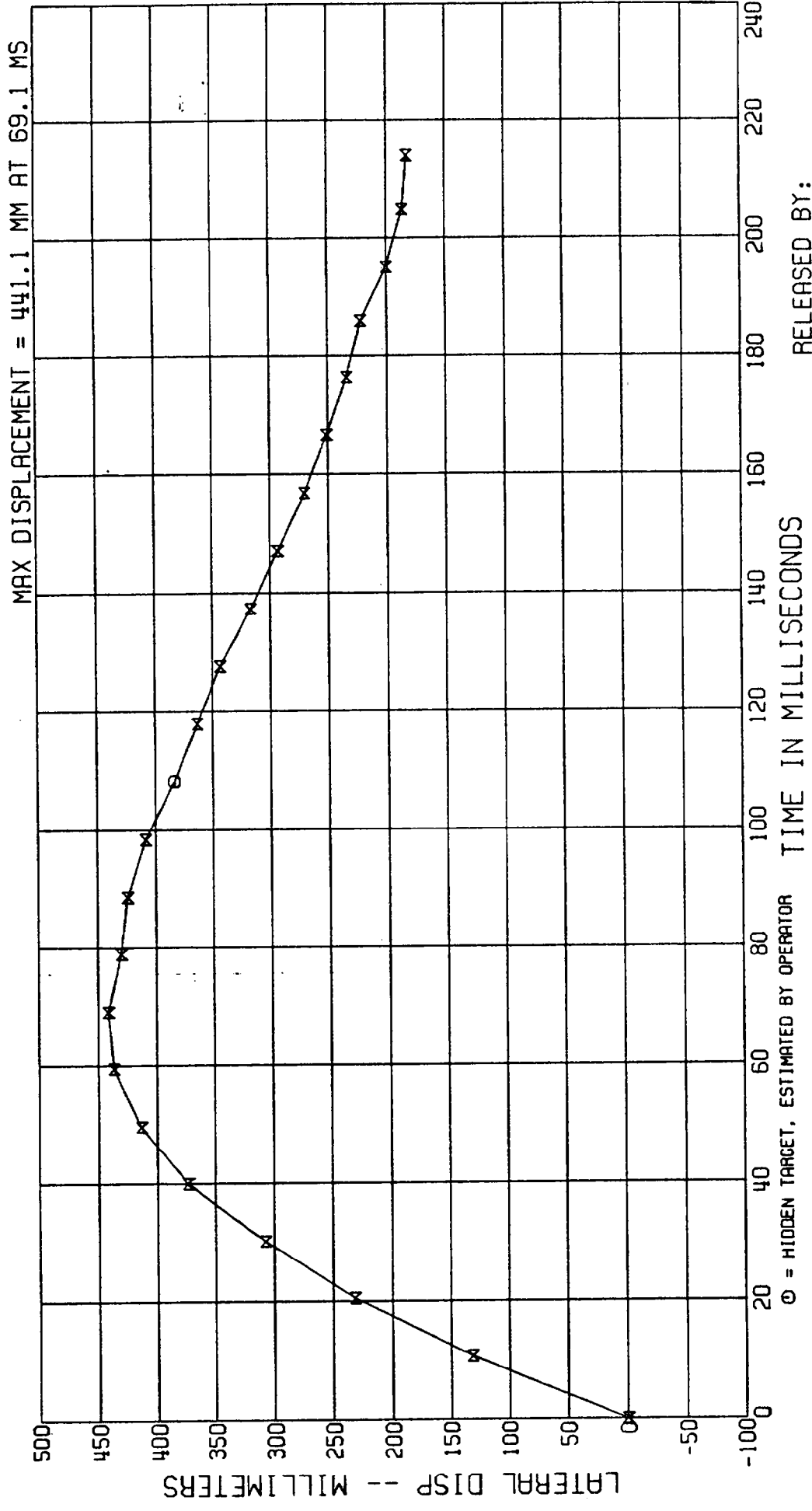
CPE MVMA 4B 2AF69

FILM DATA

OVERHEAD VIEW

TEST DATE: 03-06-90

STRIKING BARRIER RELATIVE TO STRUCK VEHICLE

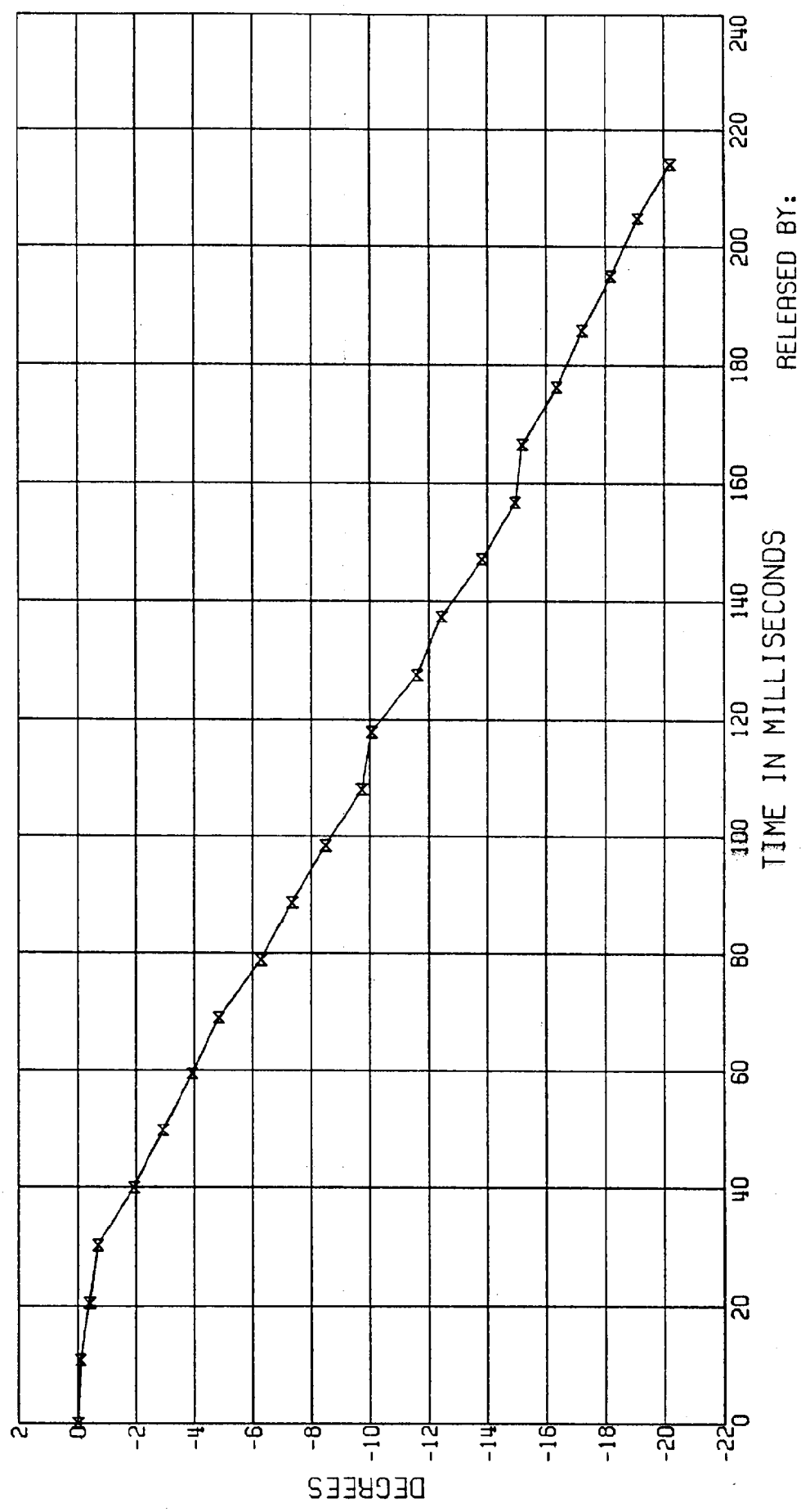


⊙ = HIDDEN TARGET, ESTIMATED BY OPERATOR

RELEASED BY:
1 PROCESSED 15 MY 90 06:26

C8004 L. SIDE IMPACT AT 27 DE MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 2
3868-905
CPE MVMA 4B 2AF69
FILM DATA
OVERHEAD VIEW
TEST DATE: 03-06-90

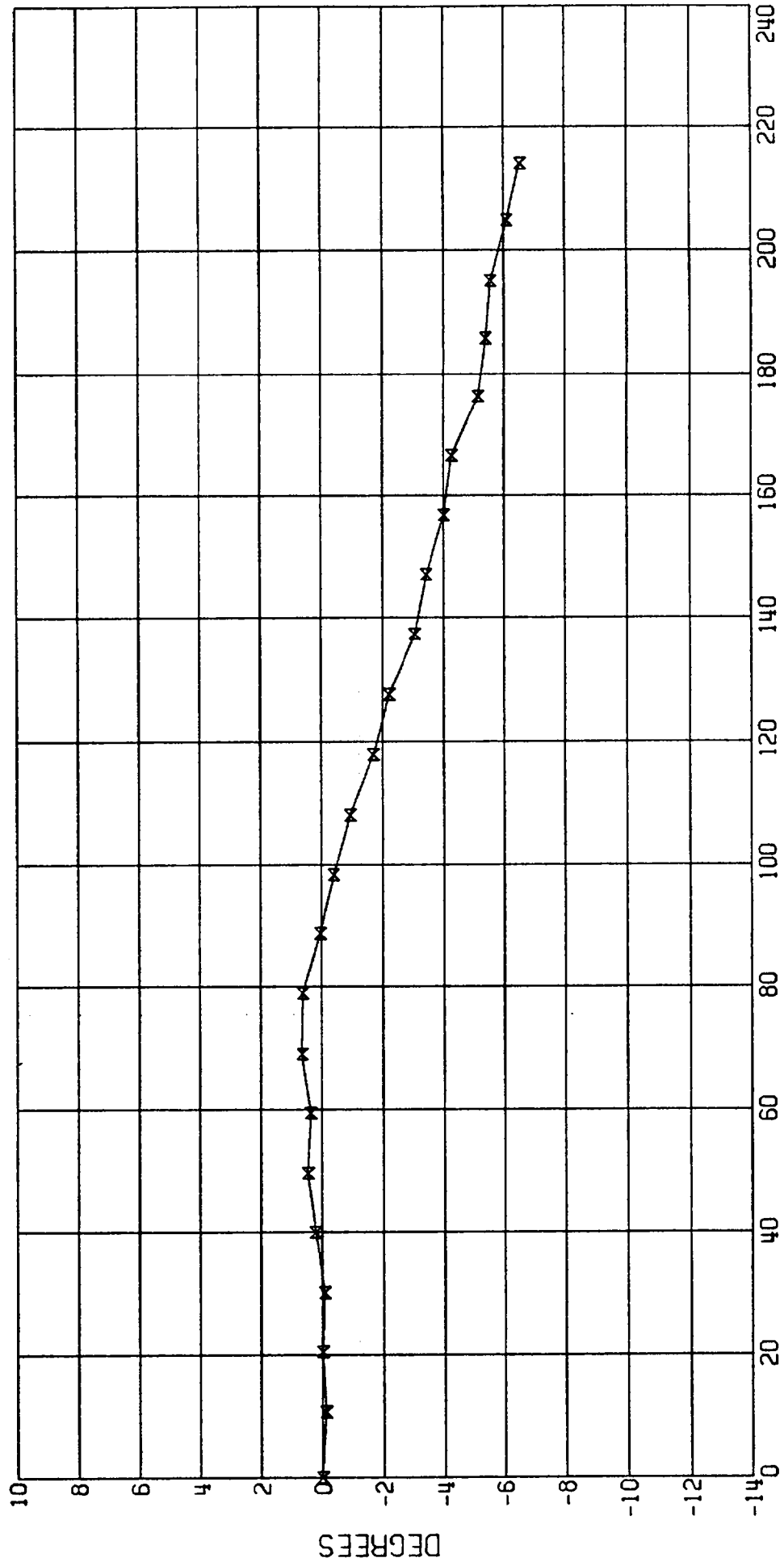
STRIKING BARRIER YAW RELATIVE TO GROUND REFERENCE



RELEASED BY:
3 PROCESSED 15 MY 90 06:26

C8004 L.SIDE IMPACT AT 27 DE MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 3
3868-905
CPE MVMR 4B 2AF69
FILM DATA OVERHEAD VIEW TEST DATE: 03-06-90

STRUCK VEHICLE YAW RELATIVE TO GROUND REFERENCE



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4 PROCESSED 15 MY 90 06:26

C8004 L. SIDE IMPACT AT 27 DE MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 4

3868-905

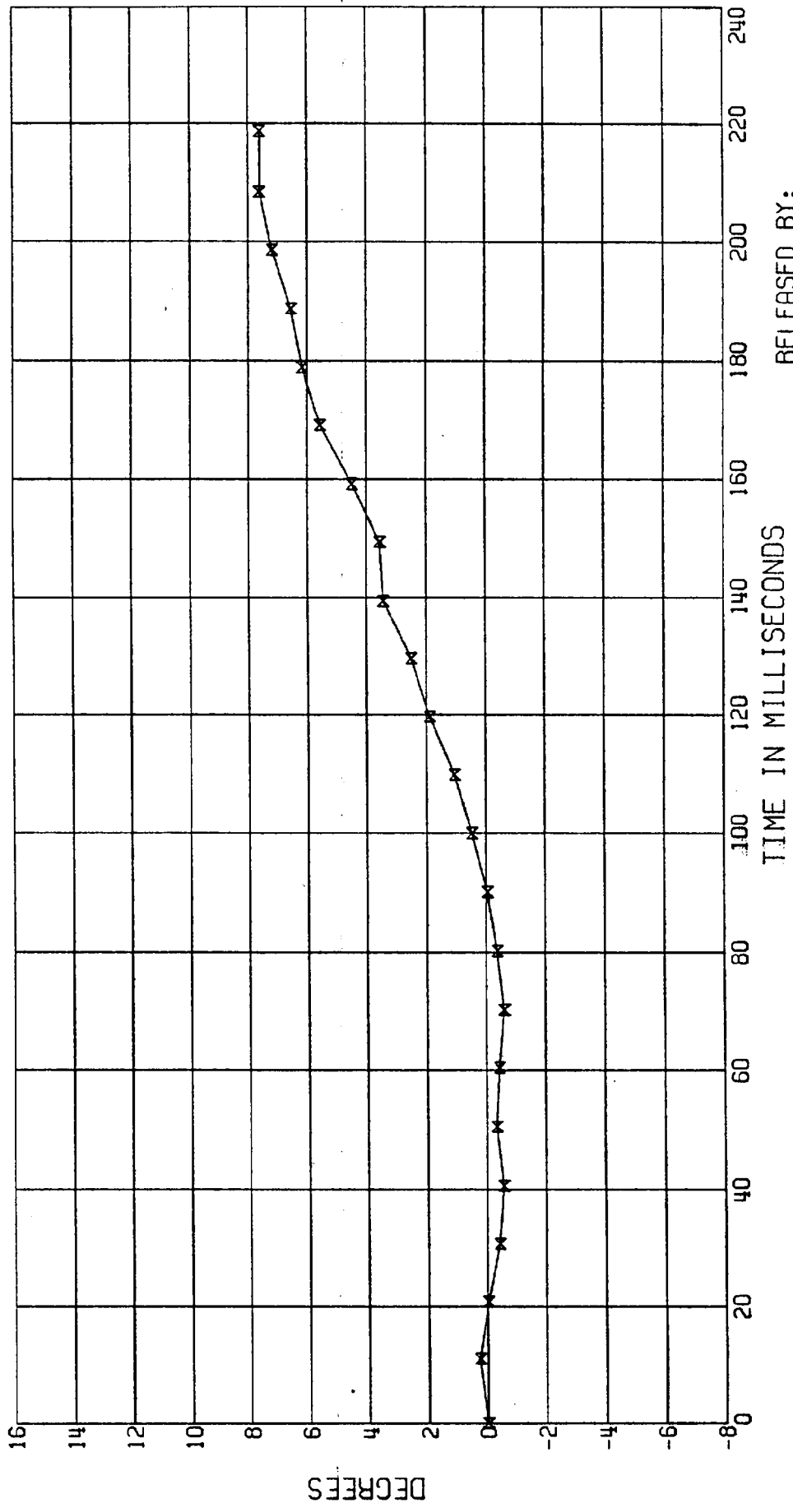
CPE MVMA 4B 2AF69

FILM DATA

REAR VIEW

TEST DATE: 03-06-90

STRUCK VEHICLE ROLL RELATIVE TO GROUND REFERENCE



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6

M9B6UAC#

C8004B

05/04/90

11:31:13

NUMBER OF PLOTS = 77

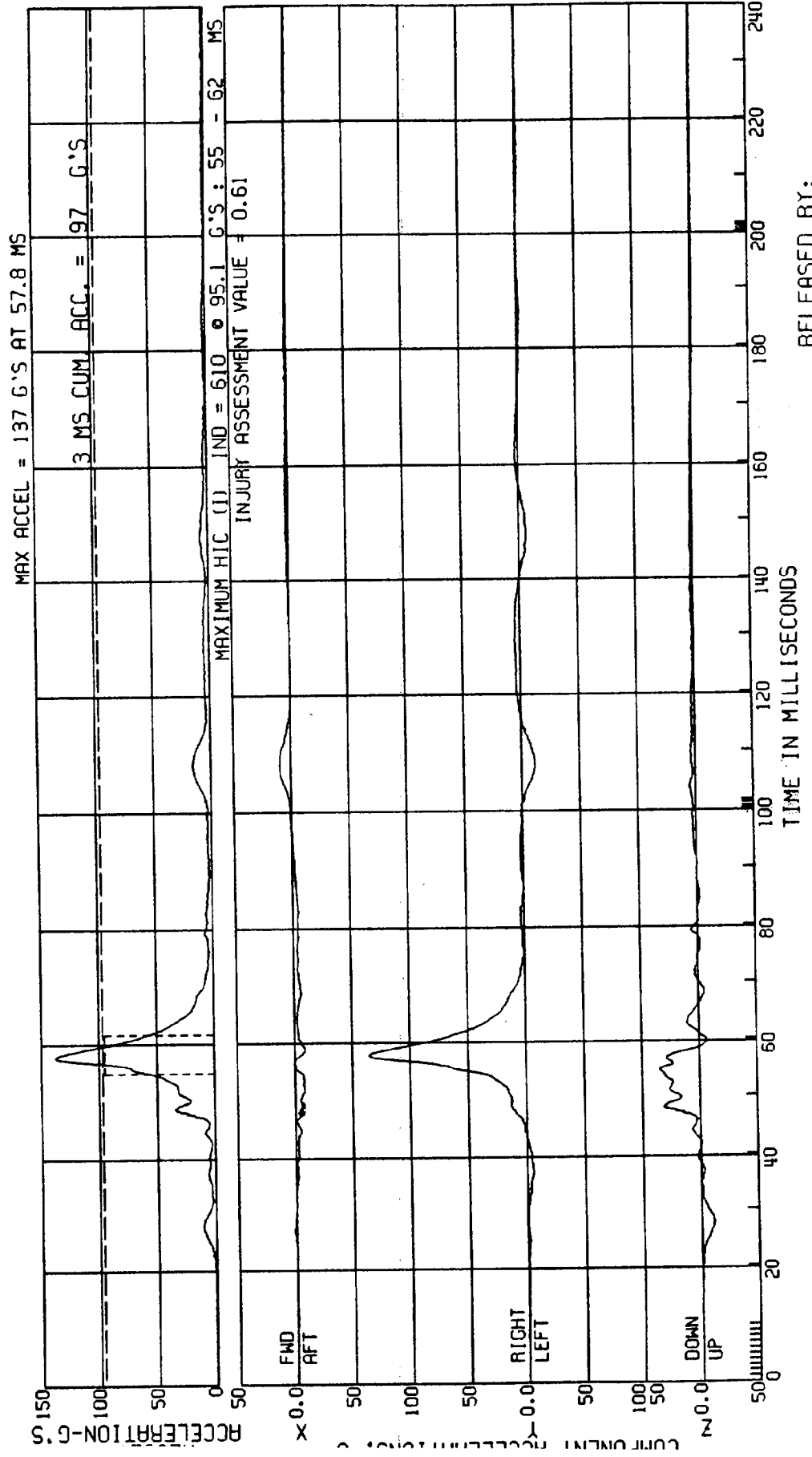
XOFF = 10.10

YOFF = 0.75

Good

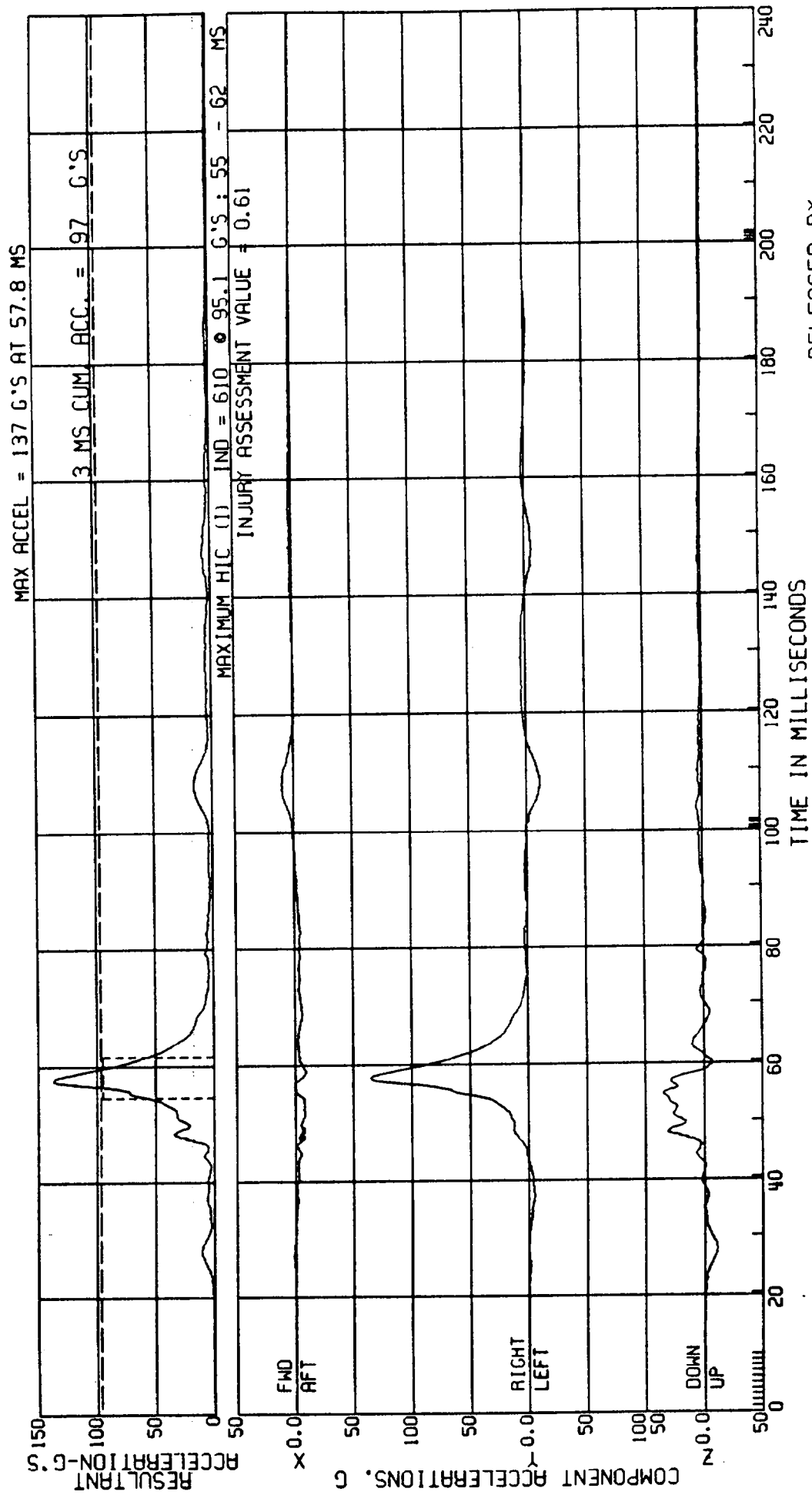
2-77

004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 6
 68-905 ATD TYPE: BIOSID
 E MVMA 4B 2AF69 L. REAR HEAD ACCEL.
 EC DATA, SAE CLASS 1000 (HIC 1 LIMITED TO 15MS) TEST DATE: 03-06-90



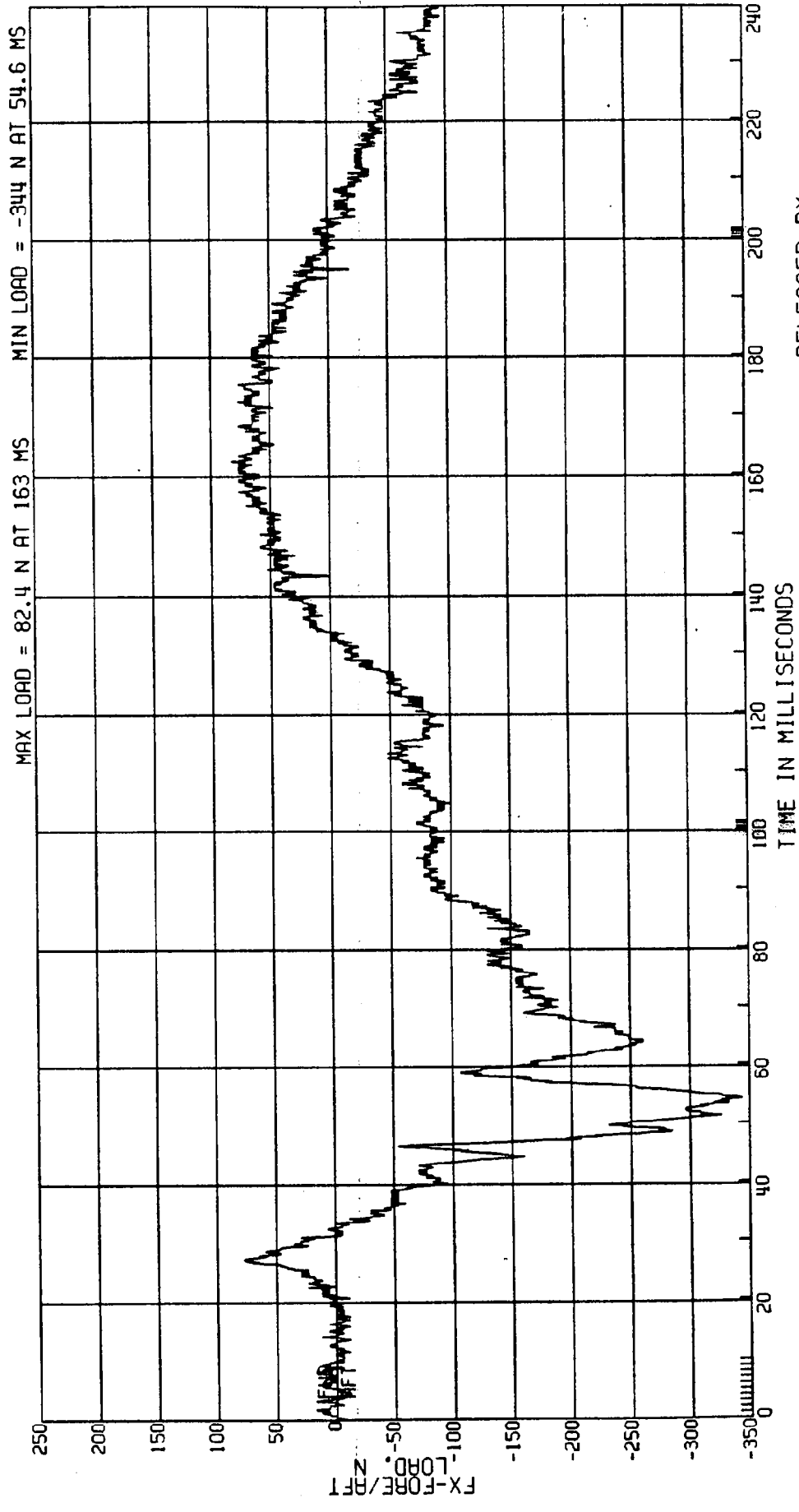
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C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 7
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 4B 2AF69 TEST DATE: 03-06-90
 ELEC DATA, SAE CLASS 1000 L. REAR HEAD ACCEL.
 (HIC I LIMITED TO 36MS)



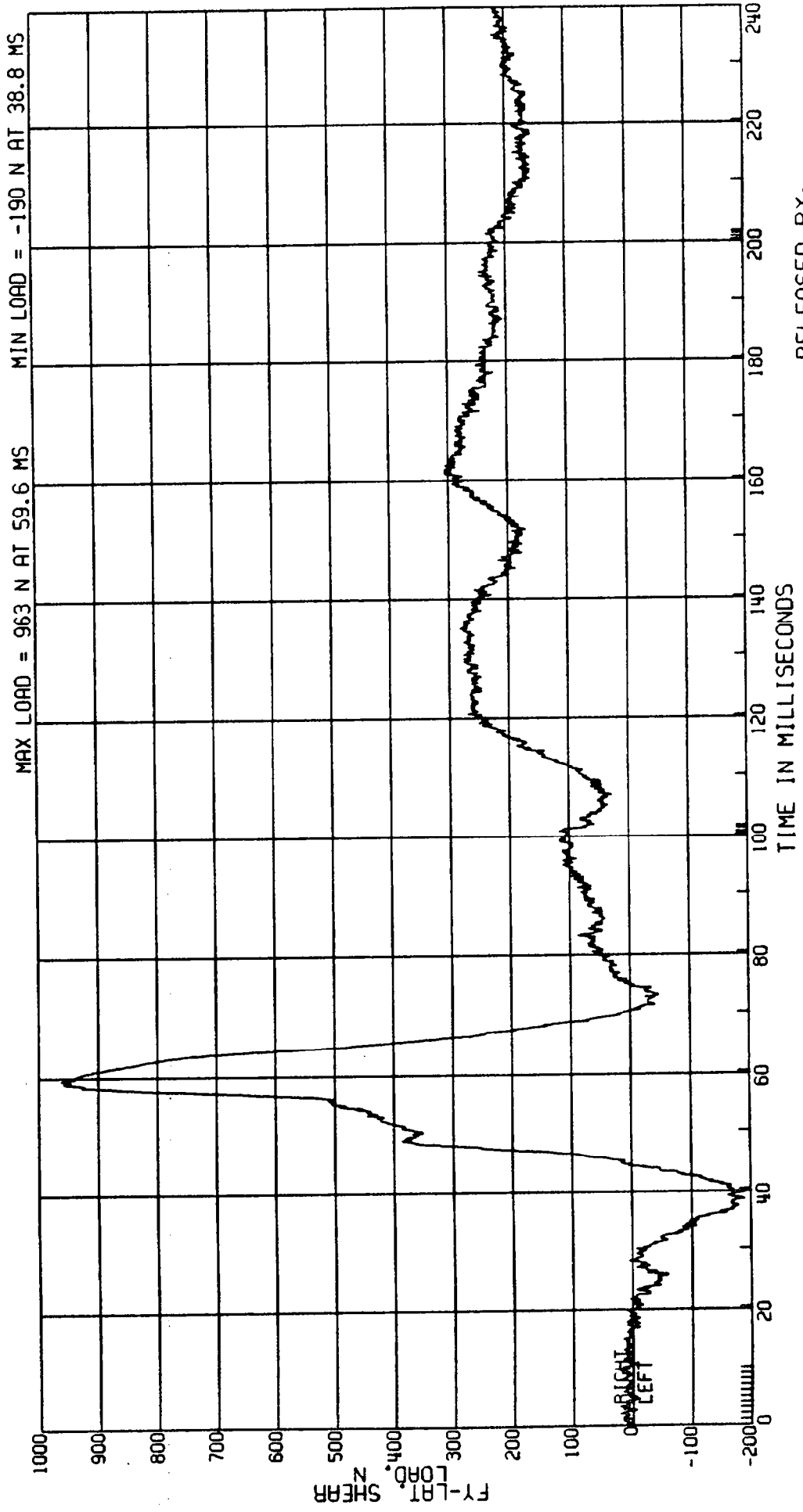
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C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 8
 3868-905 ATD TYPE: B10SID
 CPE MVMA 4B 2AF69 L. REAR NECK LOADING ON HEAD, UPPER LOAD TEST DATE: 03-06-90
 ELEC DATA, SAE CLASS 1000



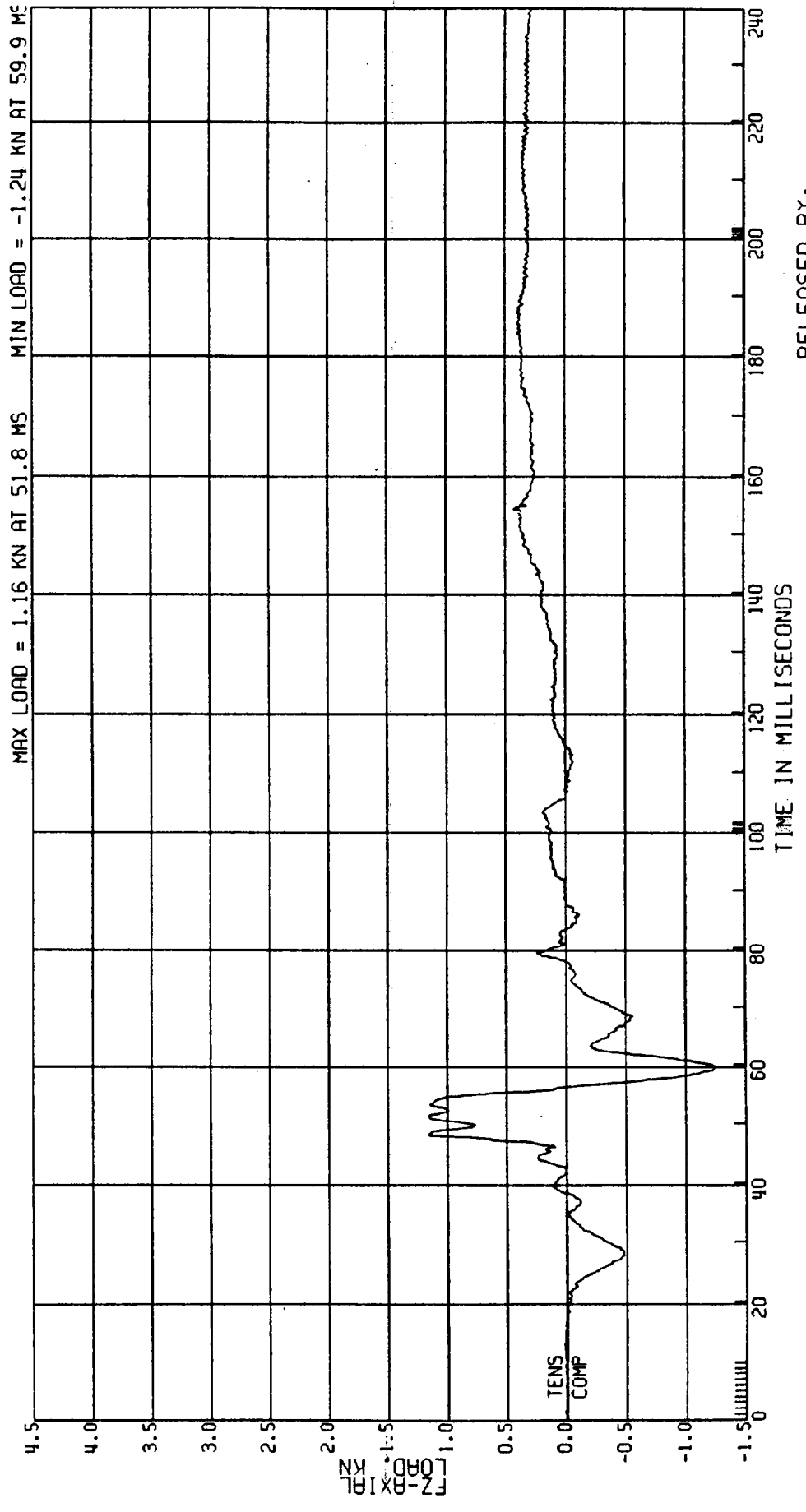
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C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 9
 3868-905 ATD TYPE: B10SID
 CPE MVMA 4B 2AF69 L. REAR NECK LOADING ON HEAD, UPPER LOAD TEST DATE: 03-06-90
 ELEC DATA, SAE CLASS 1000

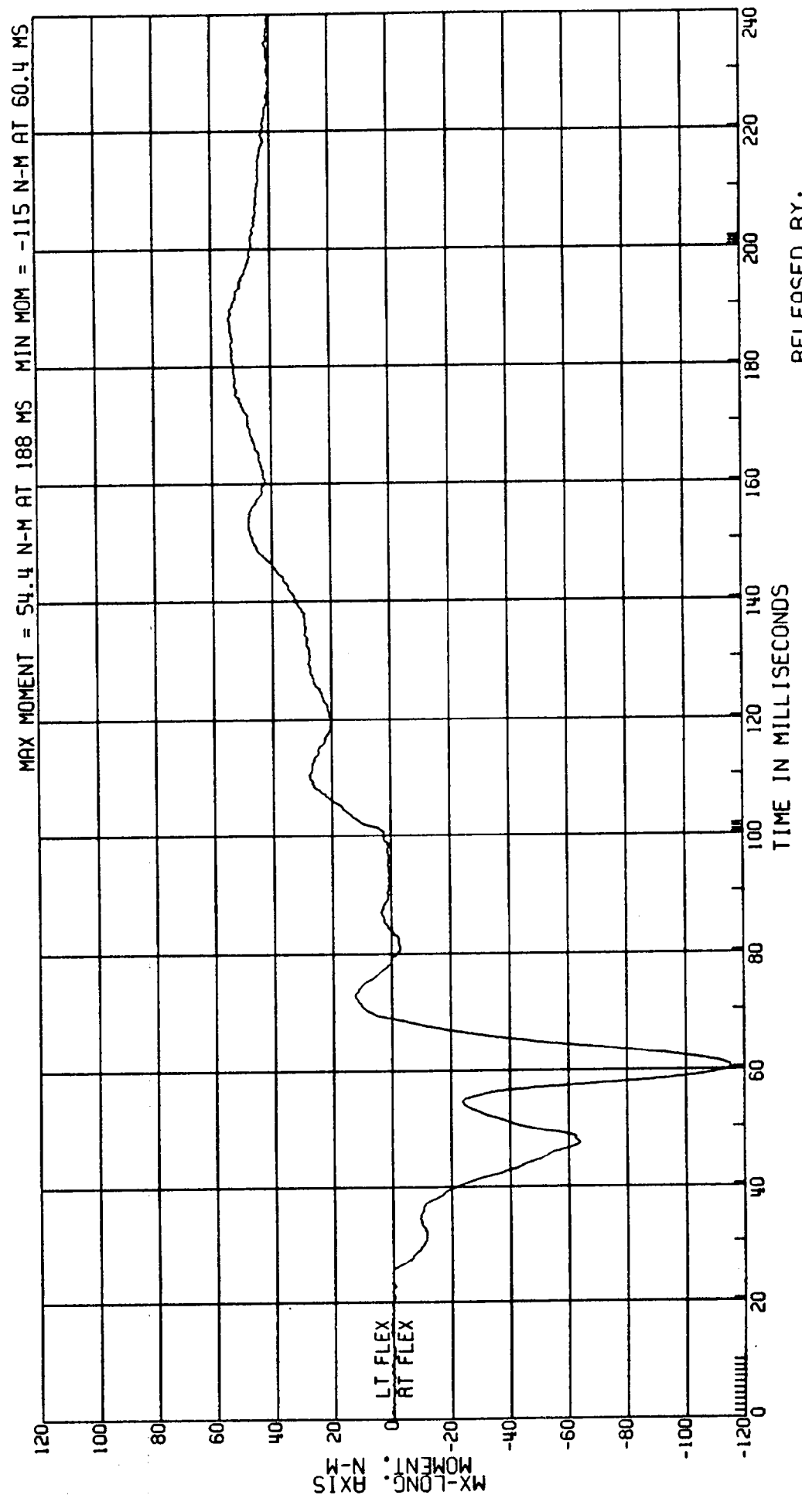


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C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 10
 3868-905 ATD TYPE: B10SID
 CPE MVMA 4B 2AF69 L. REAR NECK LOADING ON HEAD, UPPER LOAD TEST DATE: 03-06-90
 ELEC DATA, SAE CLASS 1000

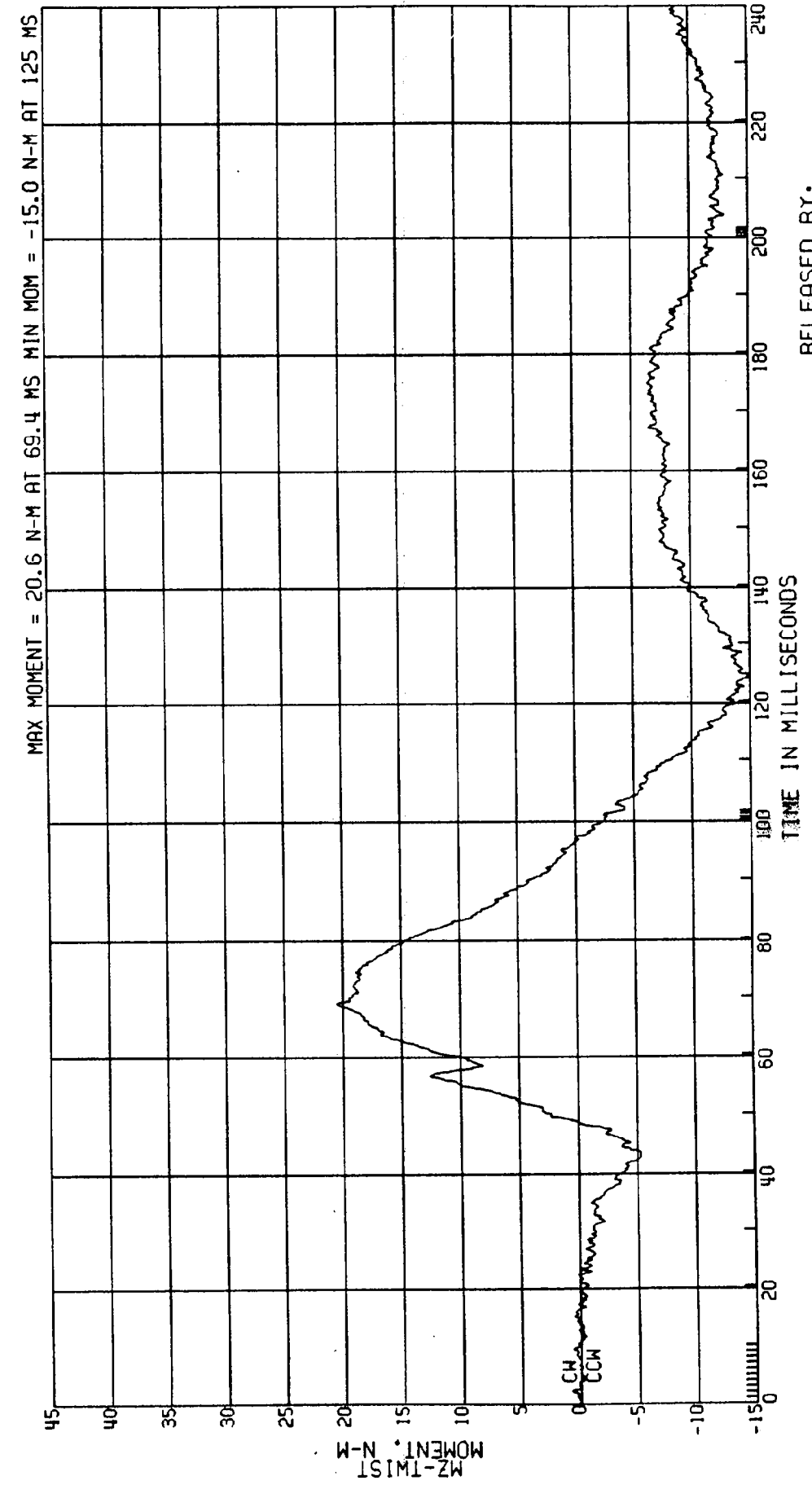


C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 11
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 4B 2AF69 L. REAR NECK LOADING ON HEAD, UPPER
 ELEC DATA, SAE CLASS 600 TEST DATE: 03-06-90



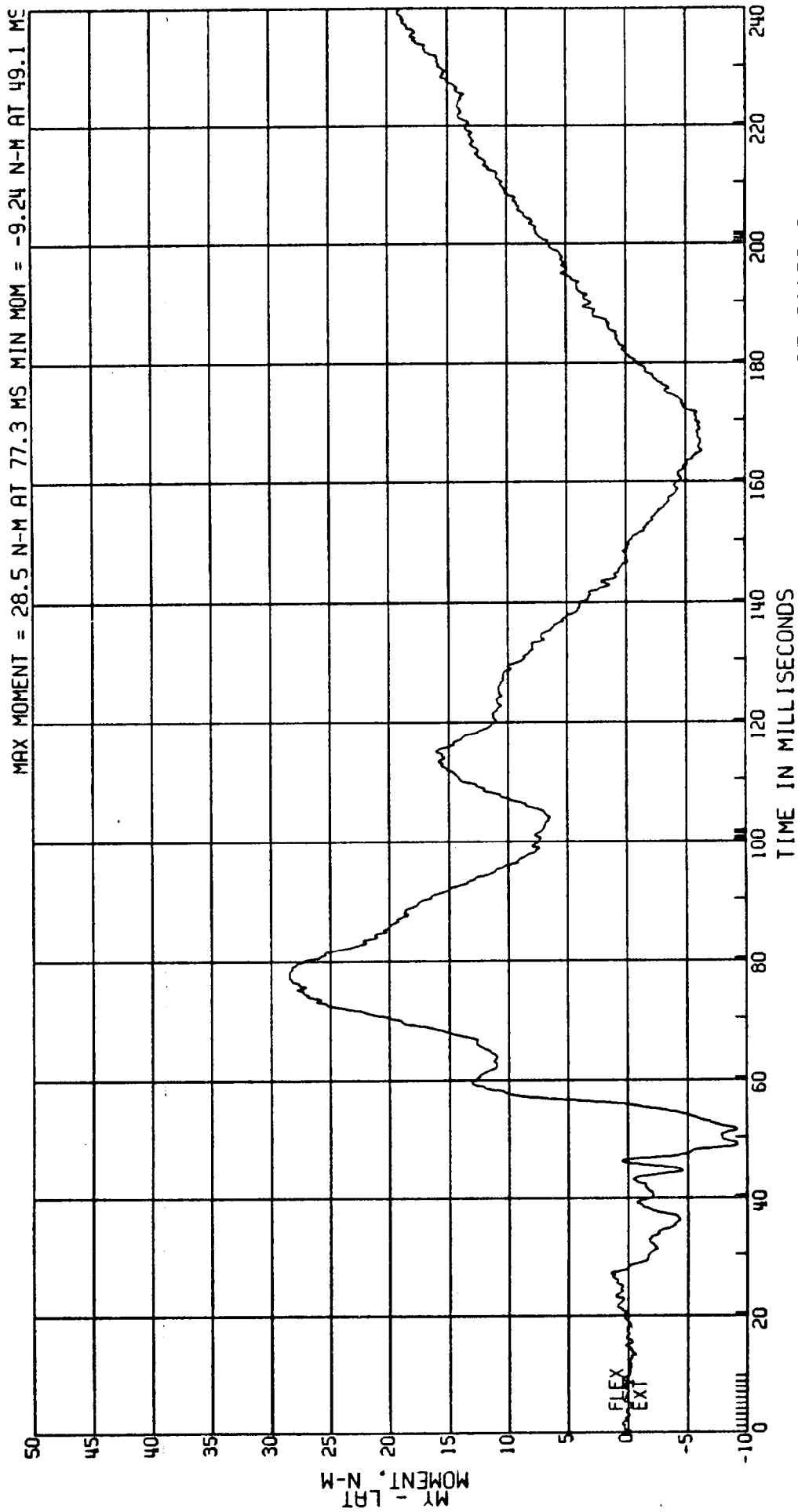
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C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 12
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 4B 2AF69 L. REAR NECK LOADING ON HEAD, UPPER
 ELEC DATA, SAE CLASS 600 TEST DATE: 03-06-90



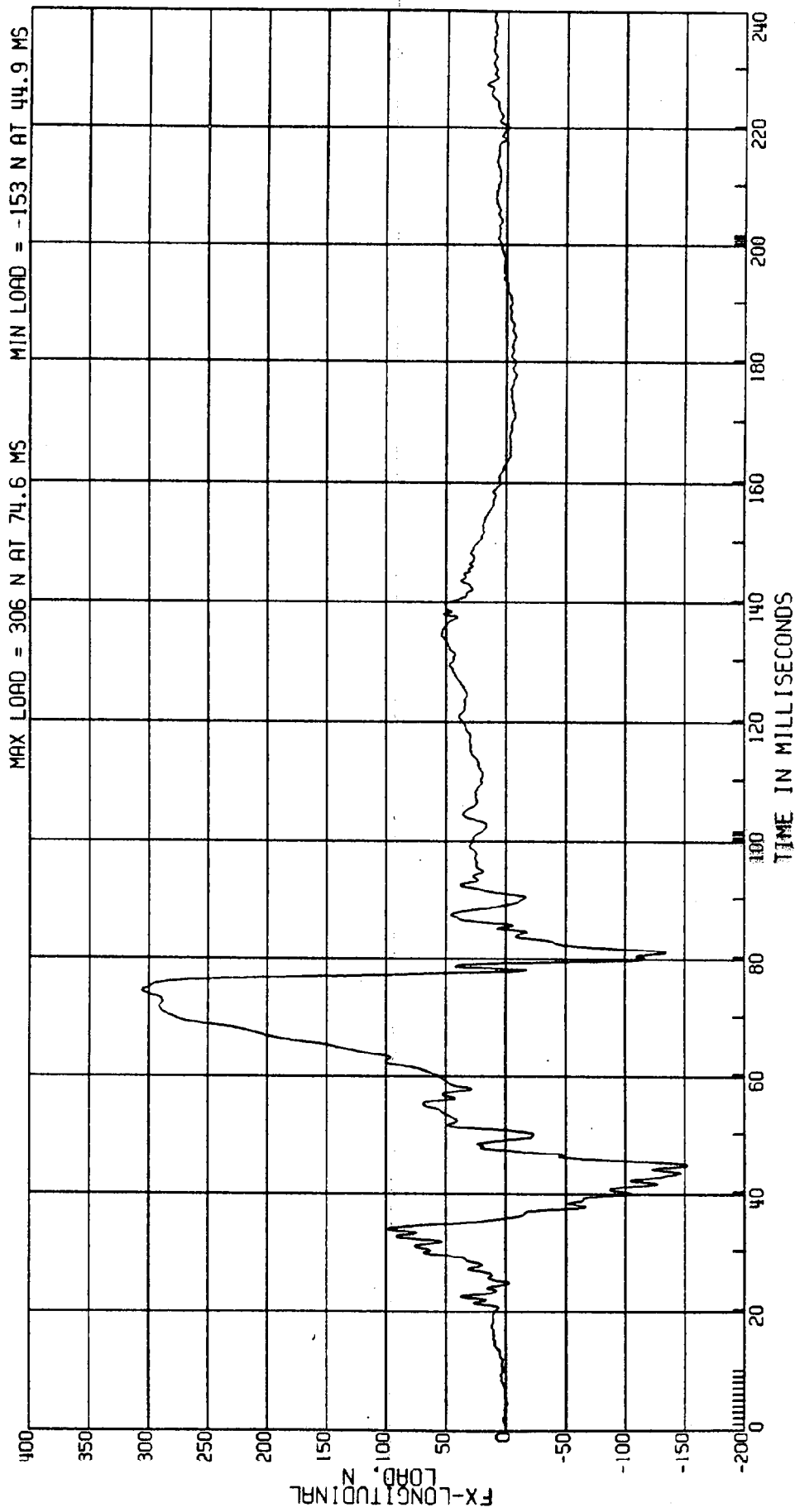
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C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE /3
3868-905 ATD TYPE: BIOSID
CPE MVMA 4B 2AF69 L. REAR NECK LOADING ON HEAD TEST DATE:03-06-90
ELEC DATA, SAE CLASS 600



RELEASED BY:
8 PROCESSED 4 MY 90 11:31

C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 14
3868-905 ATD TYPE: BIOSID
CPE MVMA 4B 2AF69 L. REAR SHOULDER LOAD TEST DATE: 03-06-90
ELEC DATA, SAE CLASS 180

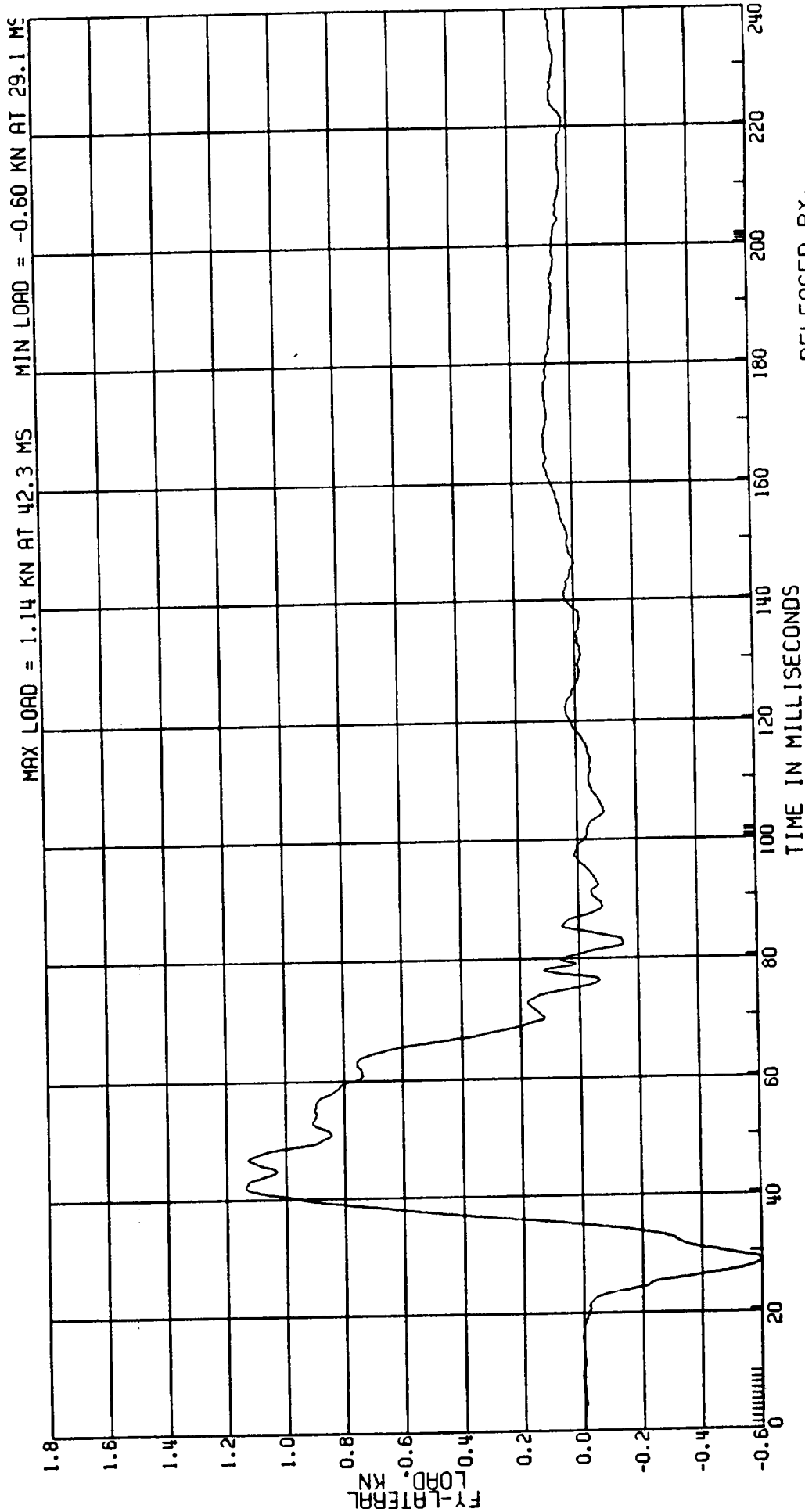


RELEASED BY:
9 PROCESSED 4 MY 90 11:31

C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE /5
ATD TYPE: BIOSID
TEST DATE:03-06-90

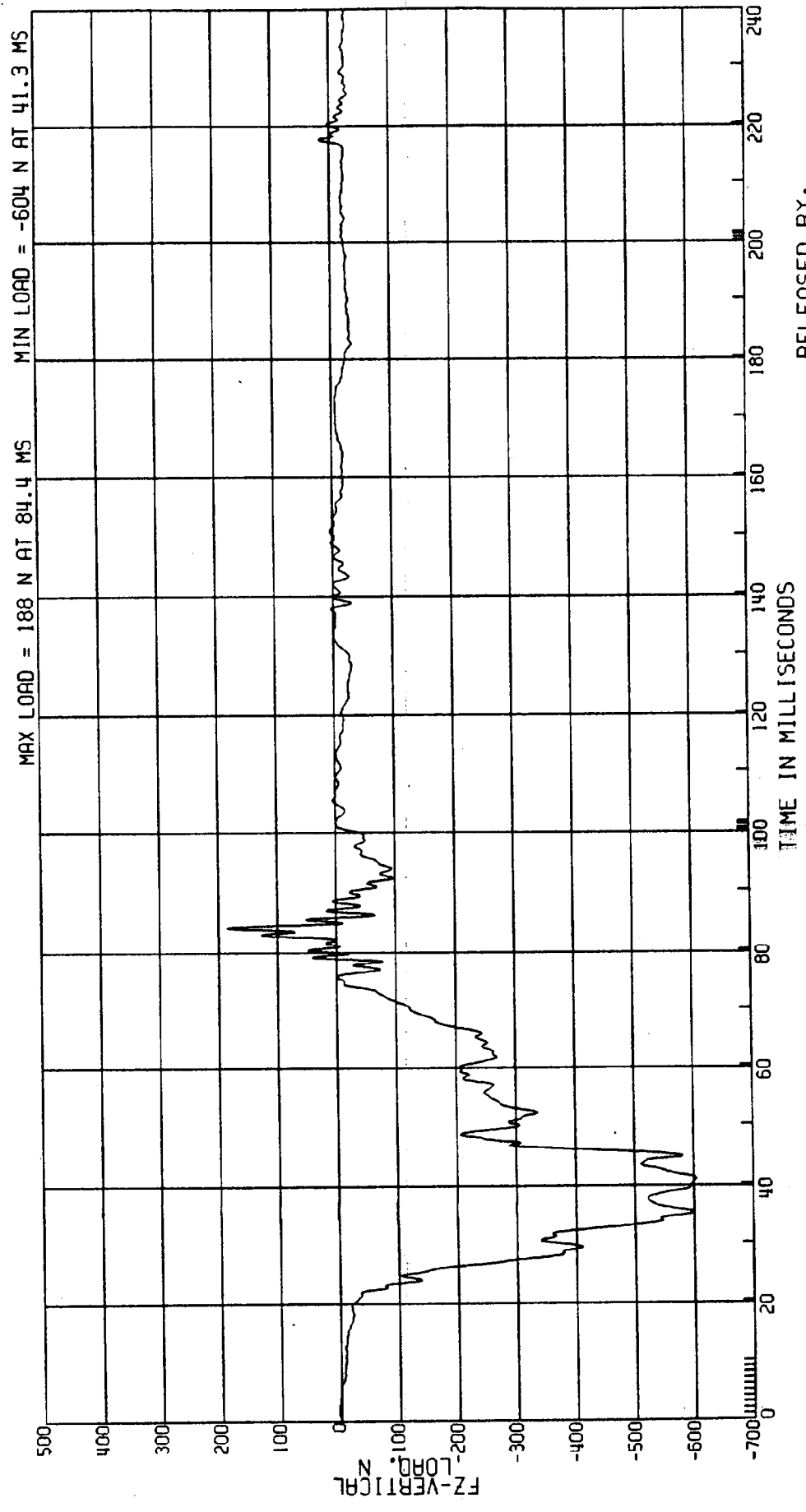
3868-905 MVMA 4B 2AF69
CPE
ELEC DATA, SAE CLASS 180

L. REAR SHOULDER LOAD



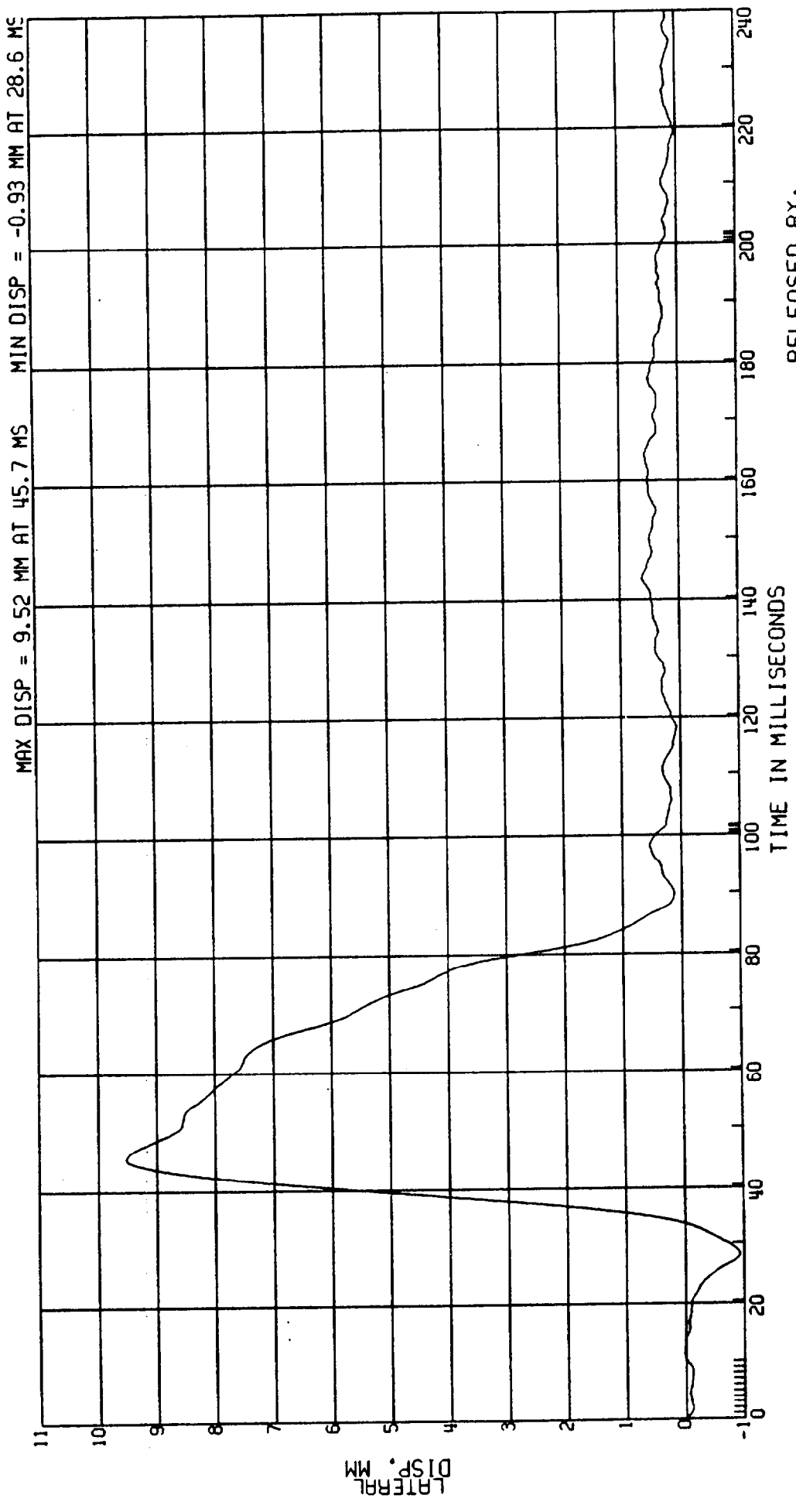
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10 PROCESSED 4 MY 90 11:31

C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 16
 3868-905 ATD TYPE: B10SID
 CPE MVMA 4B 2AF69 TEST DATE: 03-06-90
 ELEC DATA, SAE CLASS 180 L. REAR SHOULDER LOAD



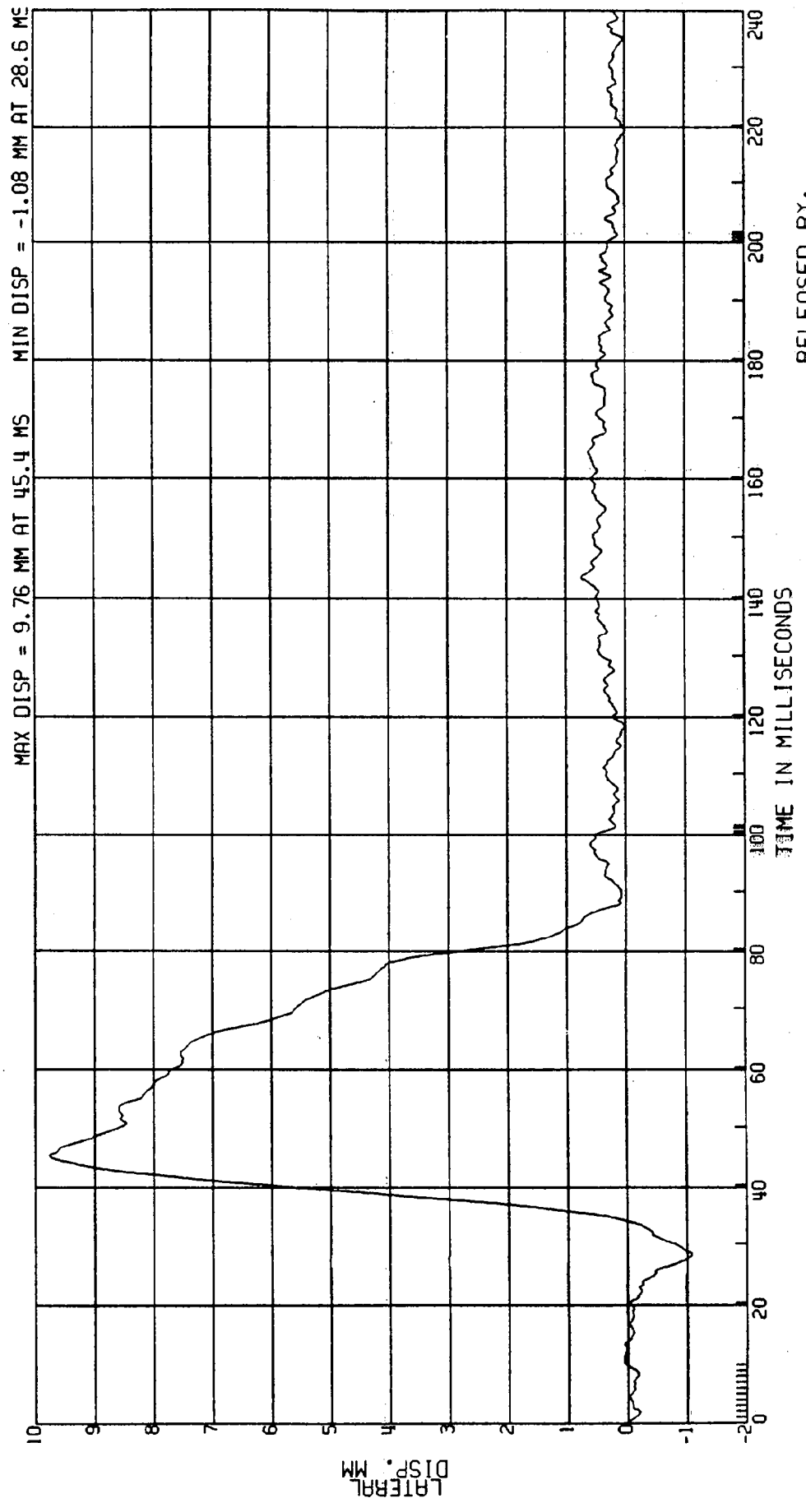
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 11 PROCESSED 4 MAY 90 11:31

C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 17
3868-905 ATD TYPE: BIOSID
CPE MVMA 4B 2AF69 TEST DATE:03-06-90
ELEC DATA, SAE CLASS 60 L. REAR SHOULDER DISP.



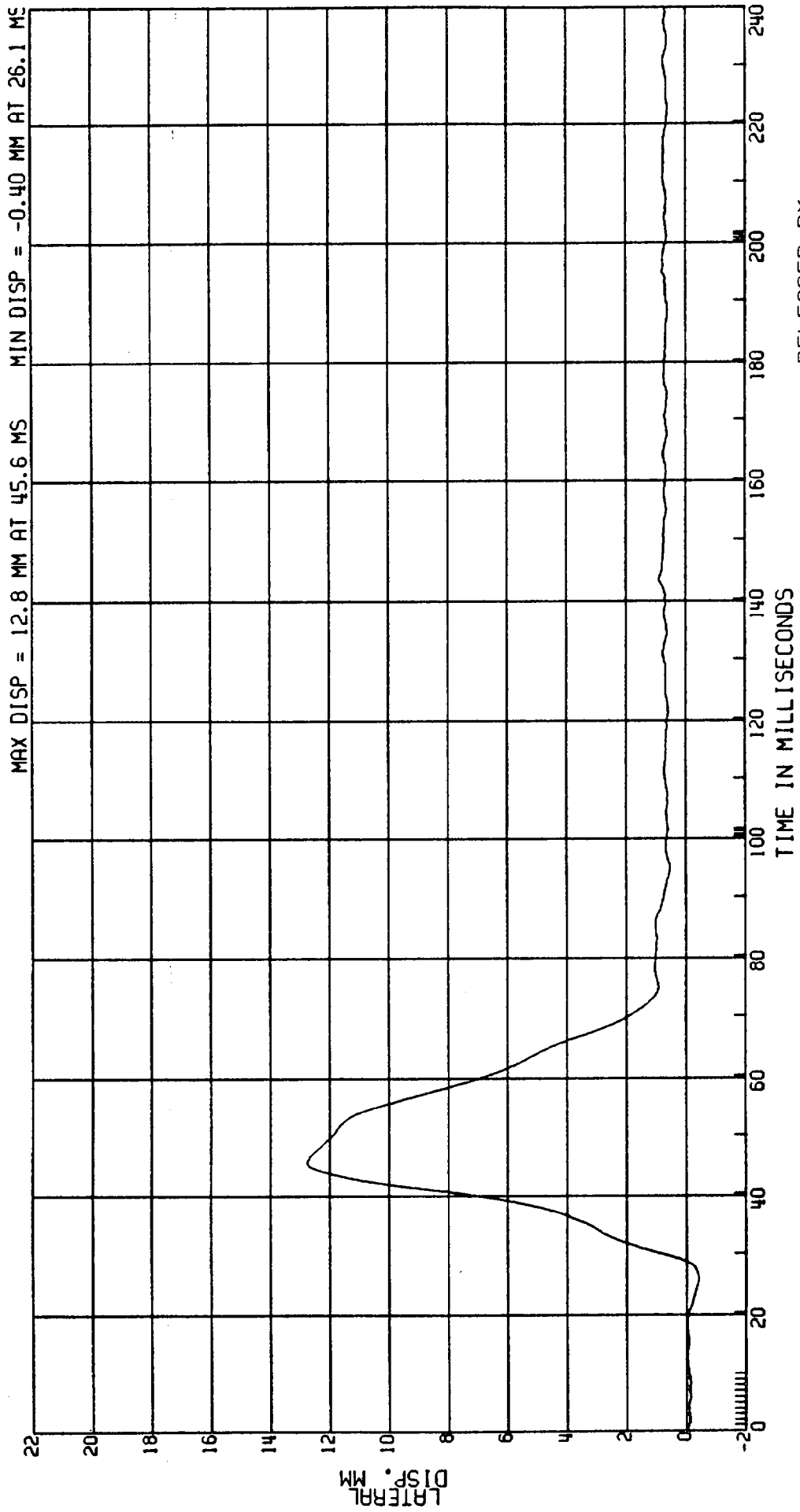
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12 PROCESSED 4 MY 90 11:31

C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE /8
3868-905 ATD TYPE: BIOSID
CPE MVMA 4B 2AF69 L. REAR SHOULDER DISP. TEST DATE: 03-06-90
ELEC DATA, SAE CLASS 180



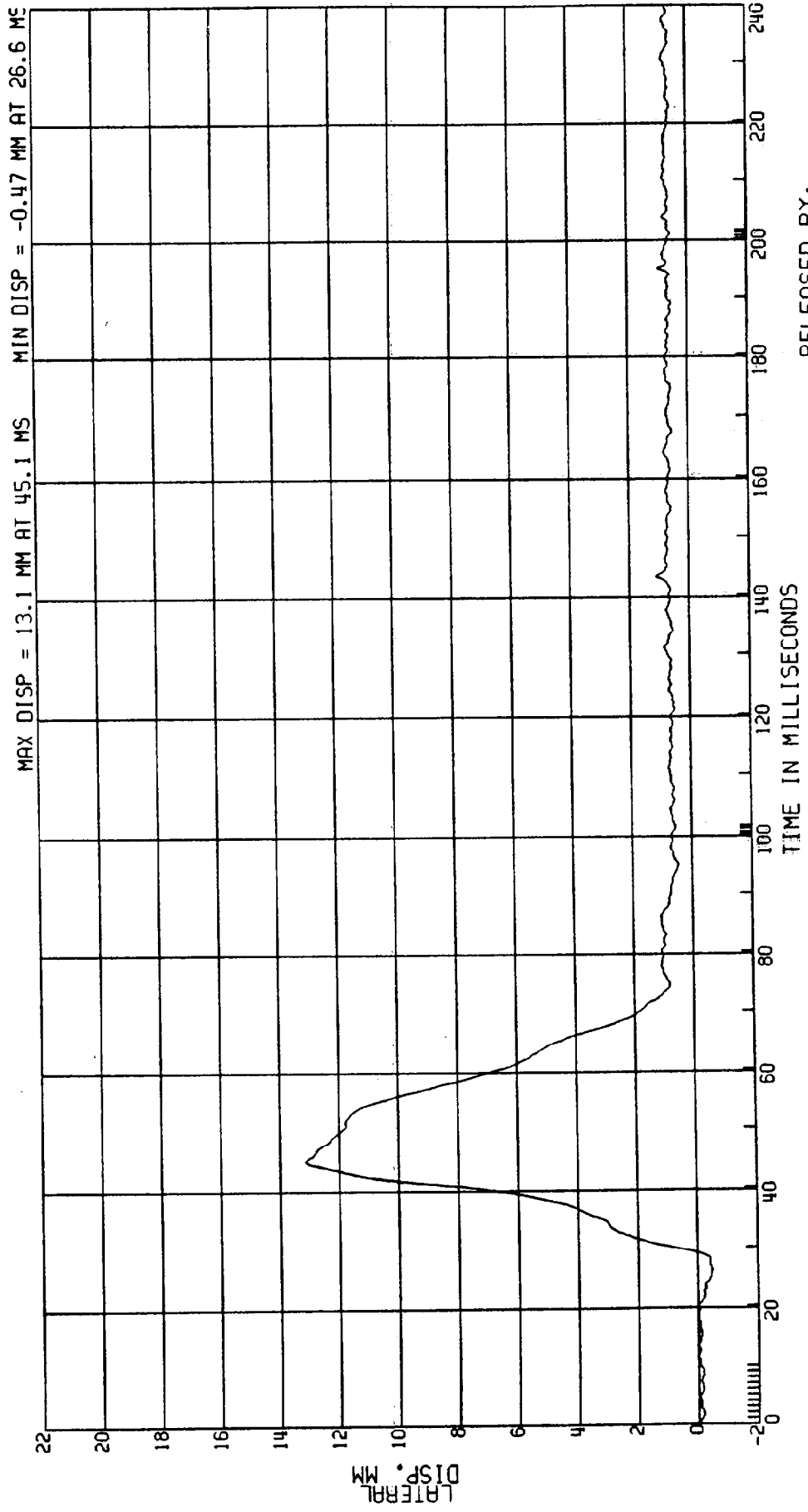
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13 PROCESSED 4 MT 90 11:31

C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE /9
3868-905 ATD TYPE: BIOSID
CPE MVMA 4B 2AF69 L. REAR FIRST THORACIC RIB DISP.
ELEC DATA. SAE CLASS 60 TEST DATE:03-06-90



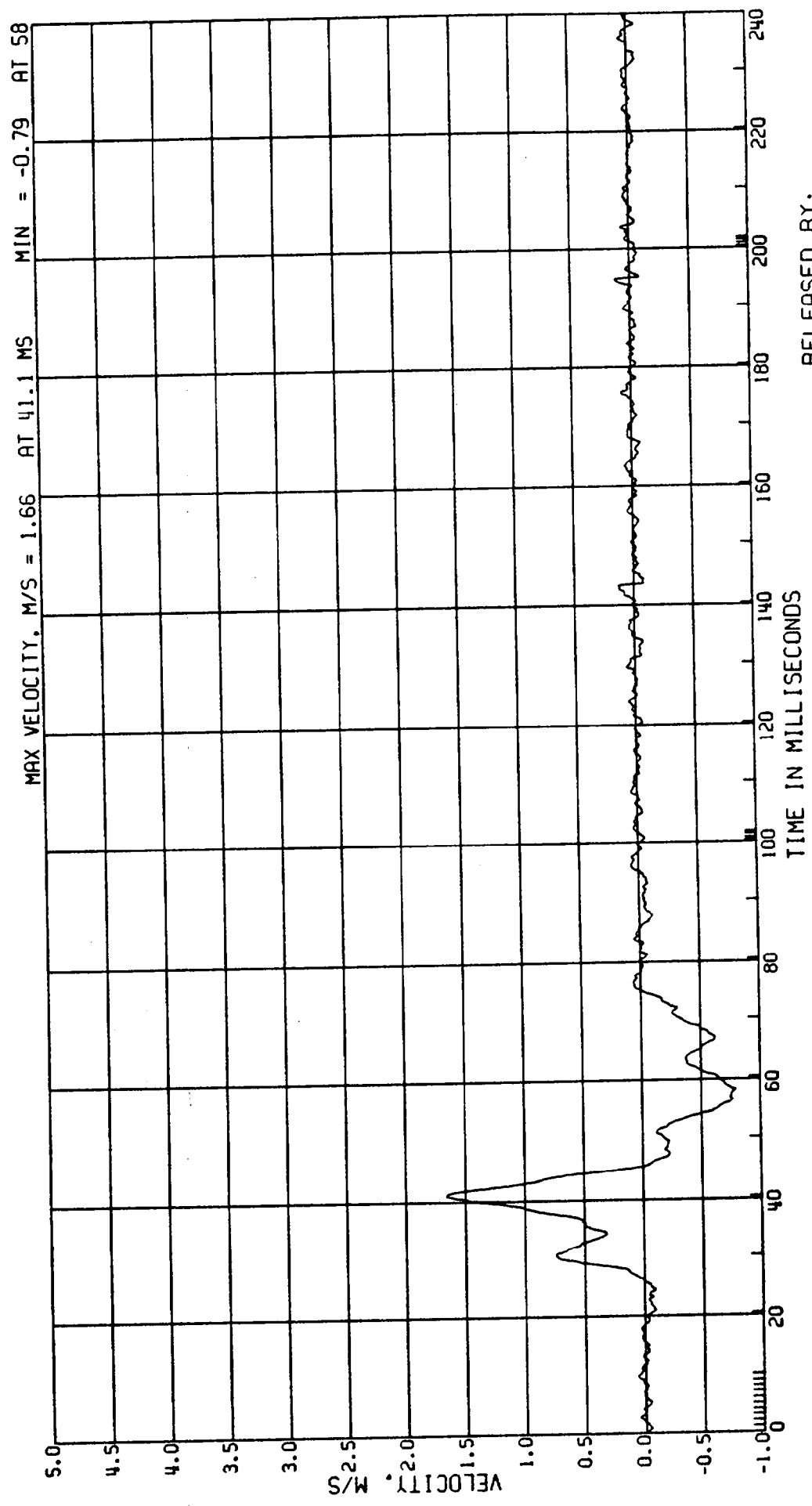
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14 PROCESSED 4 MY 90 11:31

C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 20
3868-905 ATD TYPE: BIOSID
CPE MVMA 4B 2AF69 L. REAR FIRST THORACIC RIB DISP. TEST DATE: 03-06-90
ELEC DATA, SAE CLASS 180



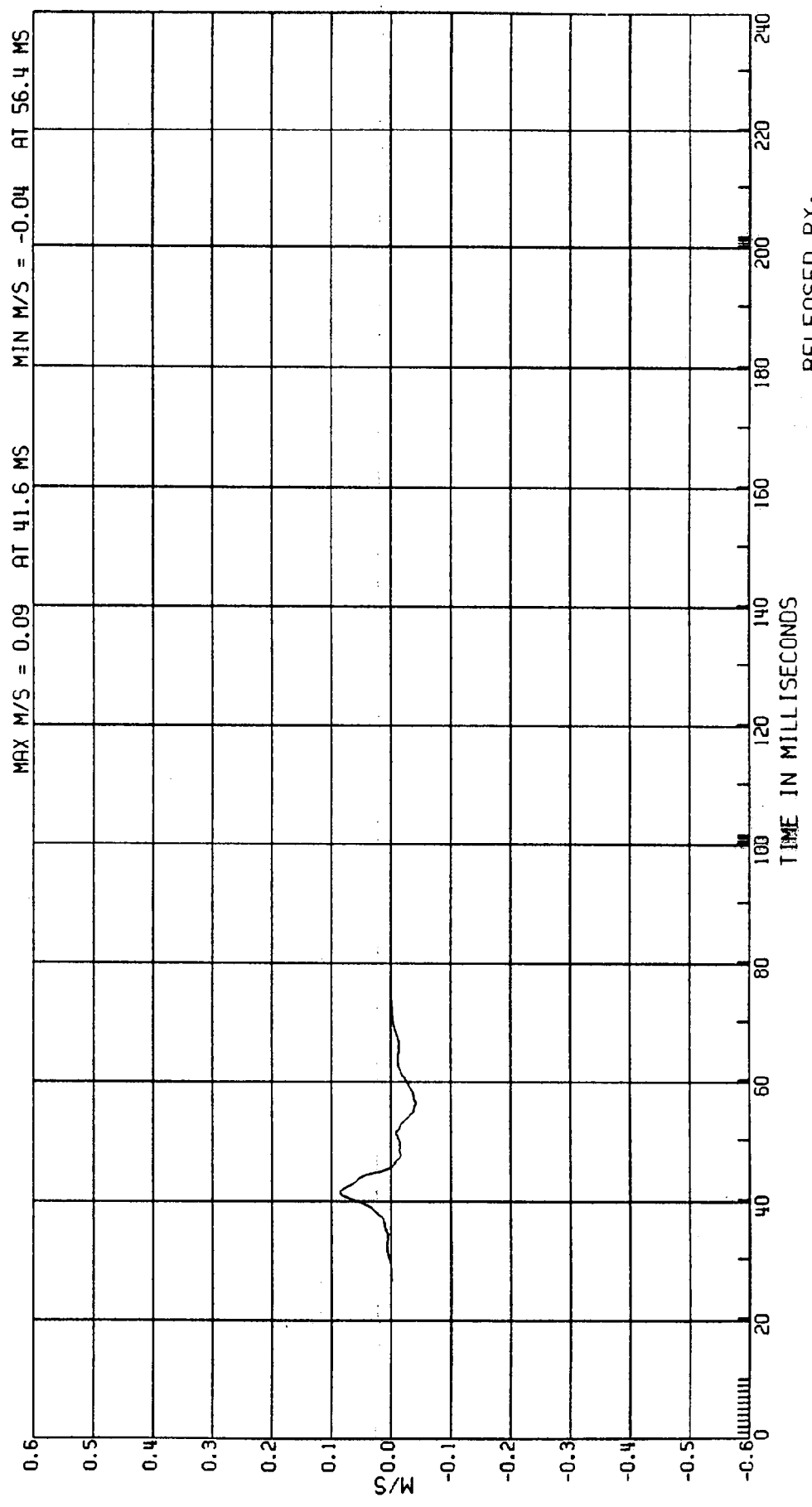
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15 PROCESSED 4 MY 90 11:31

C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 27
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 4B 2AF69 TEST DATE: 03-06-90
 ELEC DATA, SAE CLASS 60 L.REAR 1ST THORACIC RIB VELOCITY
 (DIFF OF 1ST RIB DISP)



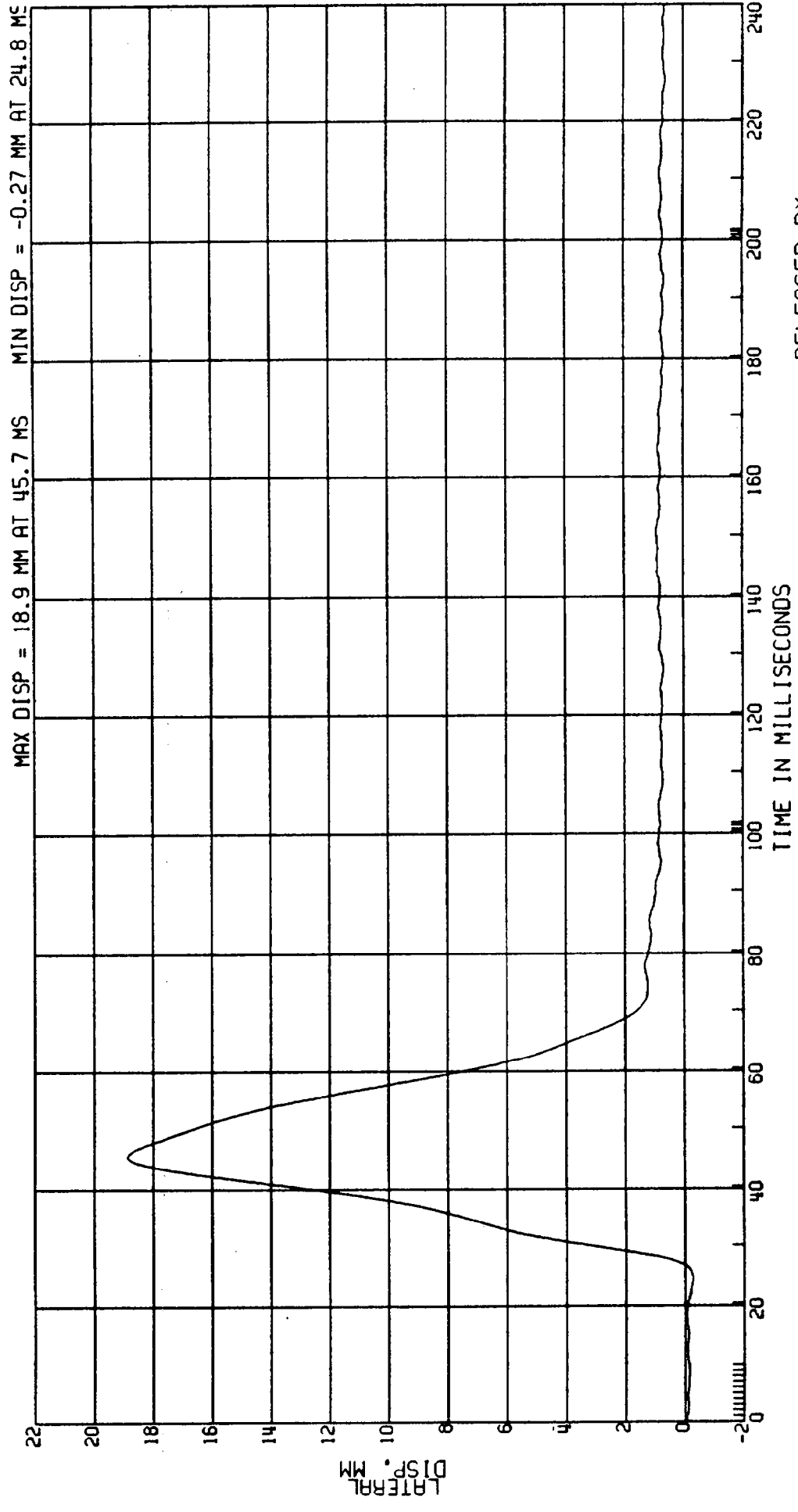
RELEASED BY:
 16 PROCESSED 4 MY 90 11:31

C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 22
3868-905 MVMA 4B 2AF69 ATD TYPE: BIOSID
CPE ELEC DATA, SAE CLASS 60 (1ST RIB DISP*1ST RIB VEL)/175MM TEST DATE:03-06-90



RELEASED BY:
17 PROCESSED 4 MY 90 11:31

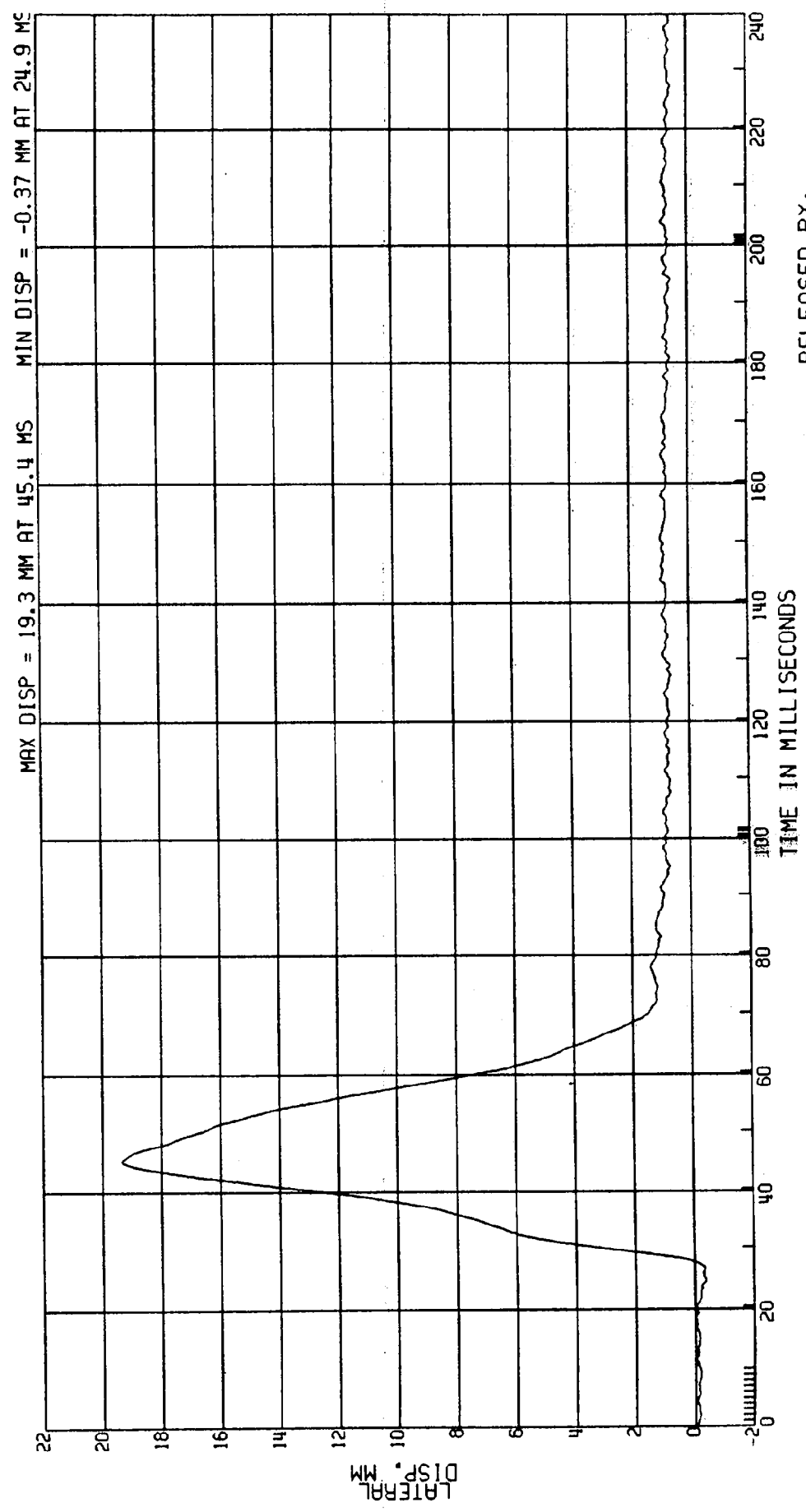
C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 23
3868-905 ATD TYPE: BIOSID
CPE MVMA 4B 2AF69 L. REAR SECOND THORACIC RIB DISP. TEST DATE:03-06-90
ELEC DATA, SAE CLASS 60



RELEASED BY:
18 PROCESSED 4 MY 90 11:32

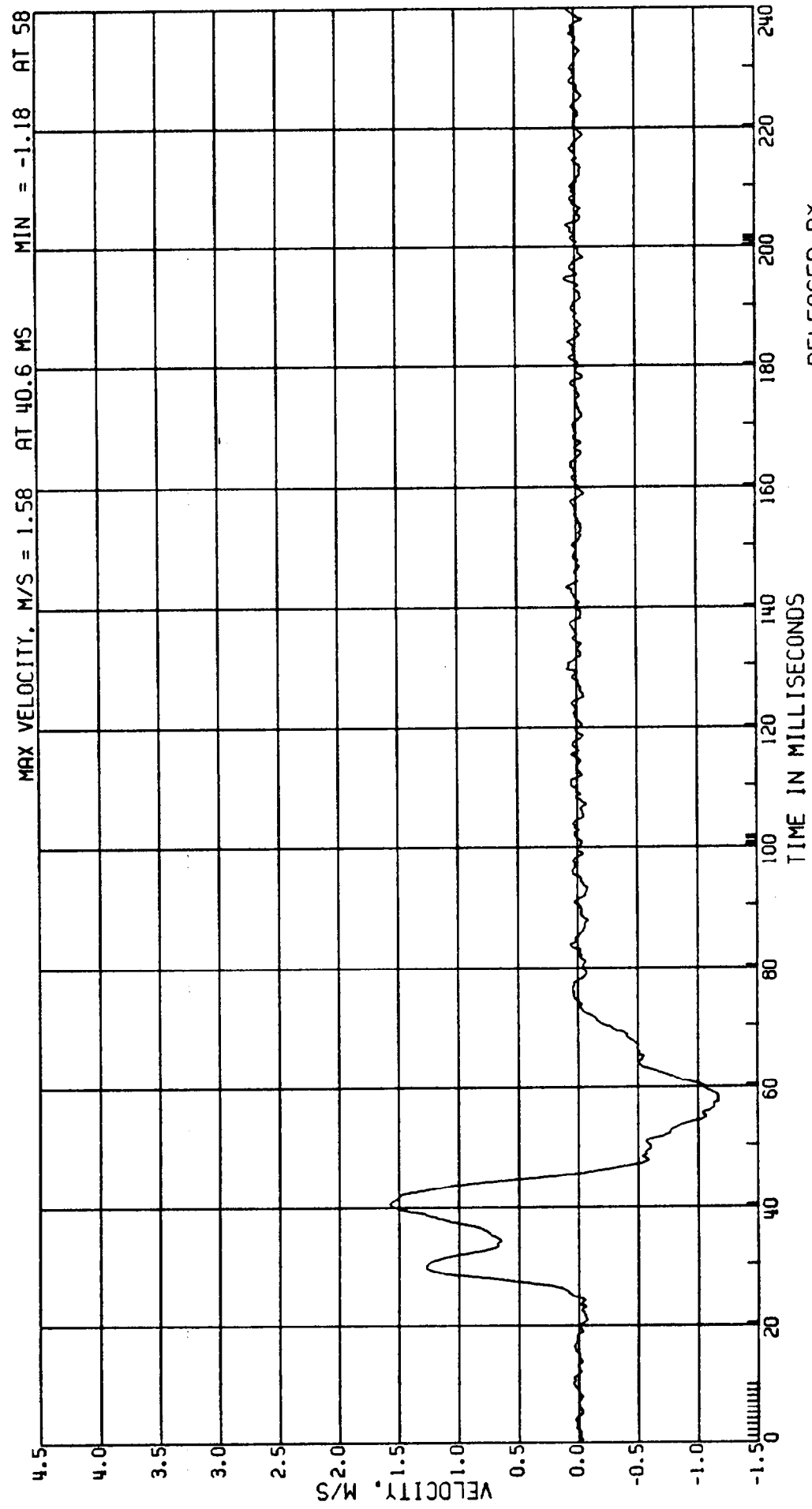
C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 24
3868-905 ATD TYPE: BIOSID
CPE MVMA 4B 2AF69 TEST DATE: 03-06-90
ELEC DATA, SAE CLASS 180

L. REAR SECOND THORACIC RIB DISP.



RELEASED BY:
19 PROCESSED 4 NY 90 11:32

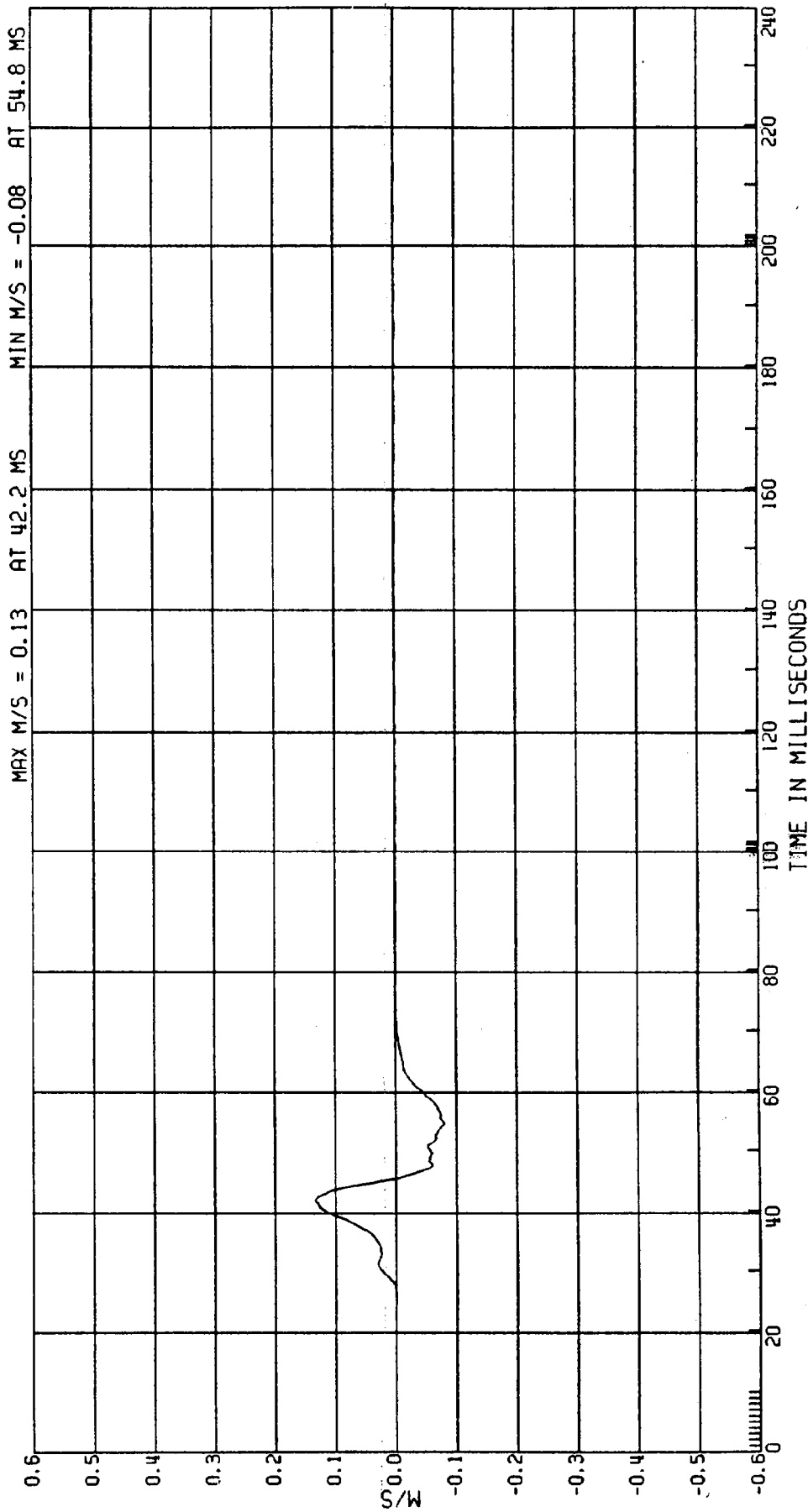
C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 25
3868-905 ATD TYPE: BIOSID
CPE MVMA 4B 2AF69 L. REAR 2ND THORACIC RIB VELOCITY TEST DATE: 03-06-90
ELEC DATA, SAE CLASS 60 (DIFF OF 2ND RIB DISP)



RELEASED BY:
20 PROCESSED 4 MY 90 11:32

C8004B L. SIDE IMPACT-27 DEC
3868-905
CPE MVMA 4B 2AF69
ELEC DATA, SAE CLASS 60

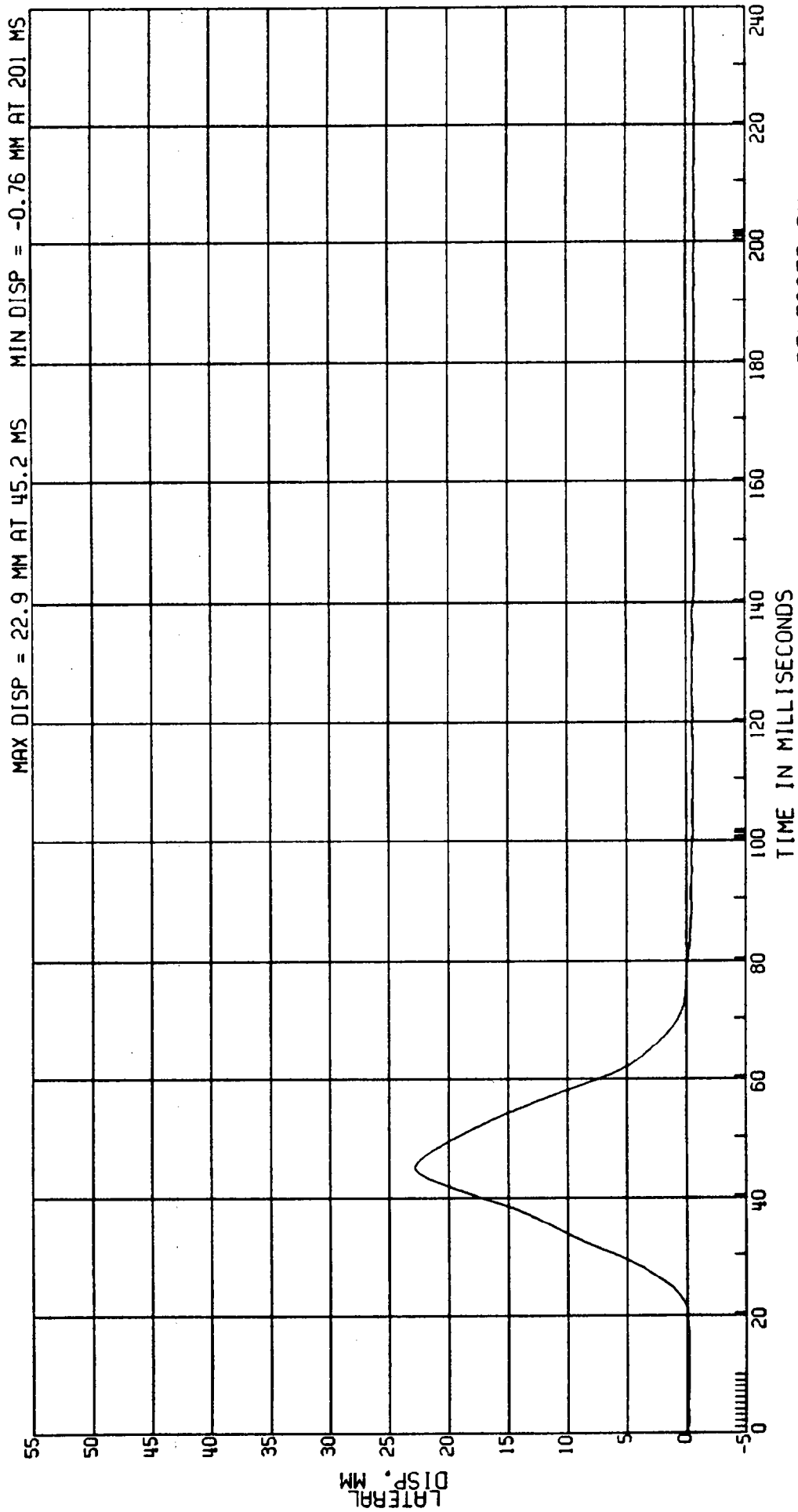
MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 26
VISCIOUS RESPONSE OF 2ND THORACIC RIB
(2ND RIB DISP*2ND RIB VEL)/175MM
ATD TYPE: BIOSID
TEST DATE:03-06-90



RELEASED BY:

21 PROCESSED 4 MY 90 11:32

C80048 L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 27
3868-905 ATD TYPE: BIOSID
CPE MVMA 4B 2AF69 L. REAR THIRD THORACIC RIB DISP. TEST DATE:03-06-90
ELEC DATA, SAE CLASS 60

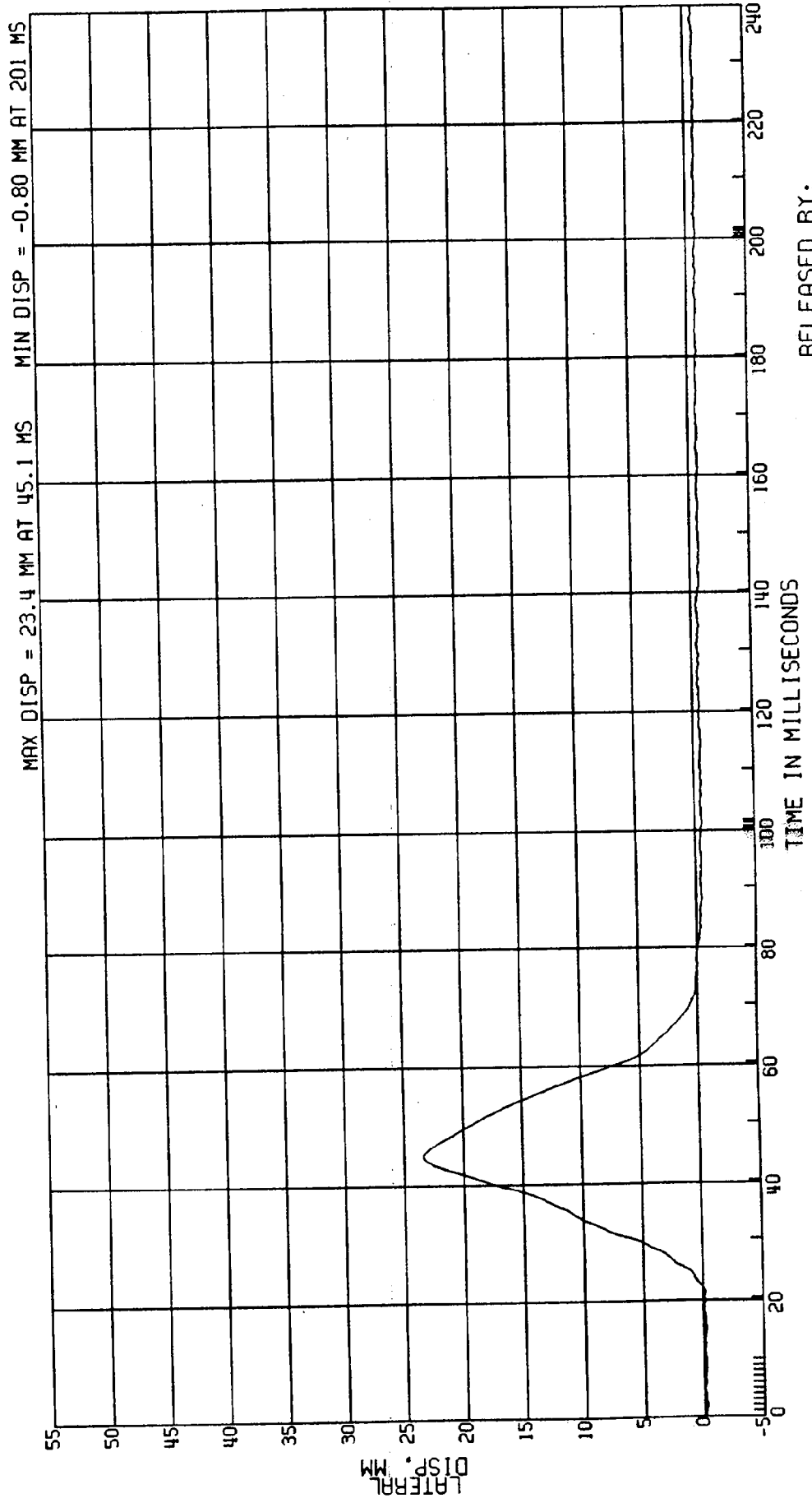


RELEASED BY:
22 PROCESSED 4 MY 90 11:32

MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 28
ATD TYPE: BIOSID
TEST DATE: 03-06-90

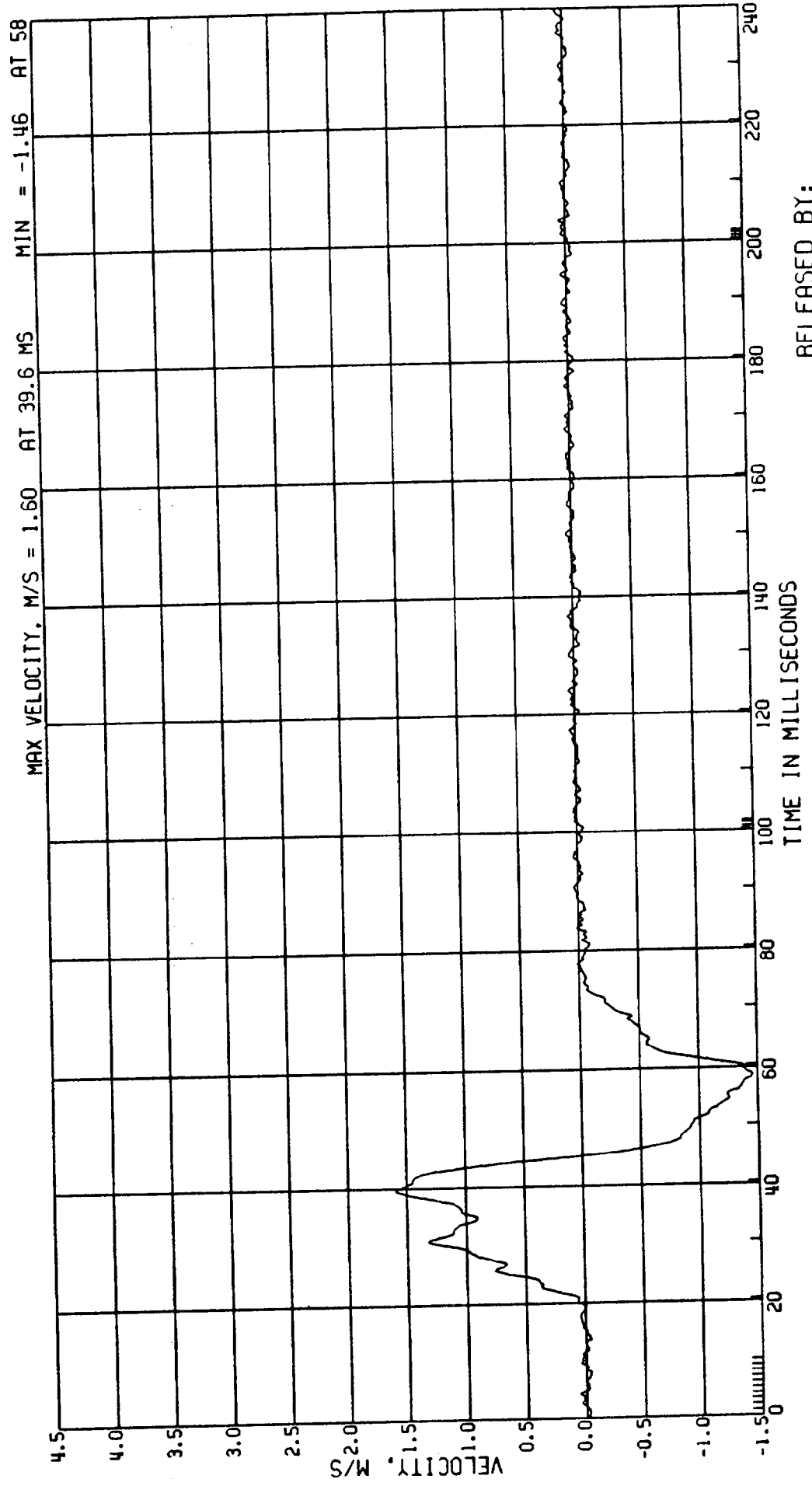
C8004B L. SIDE IMPACT-27 DEG
3868-905
CPE MVMA 4B 2AF69
ELEC DATA, SAE CLASS 180

L. REAR THIRD THORACIC RIB DISP.



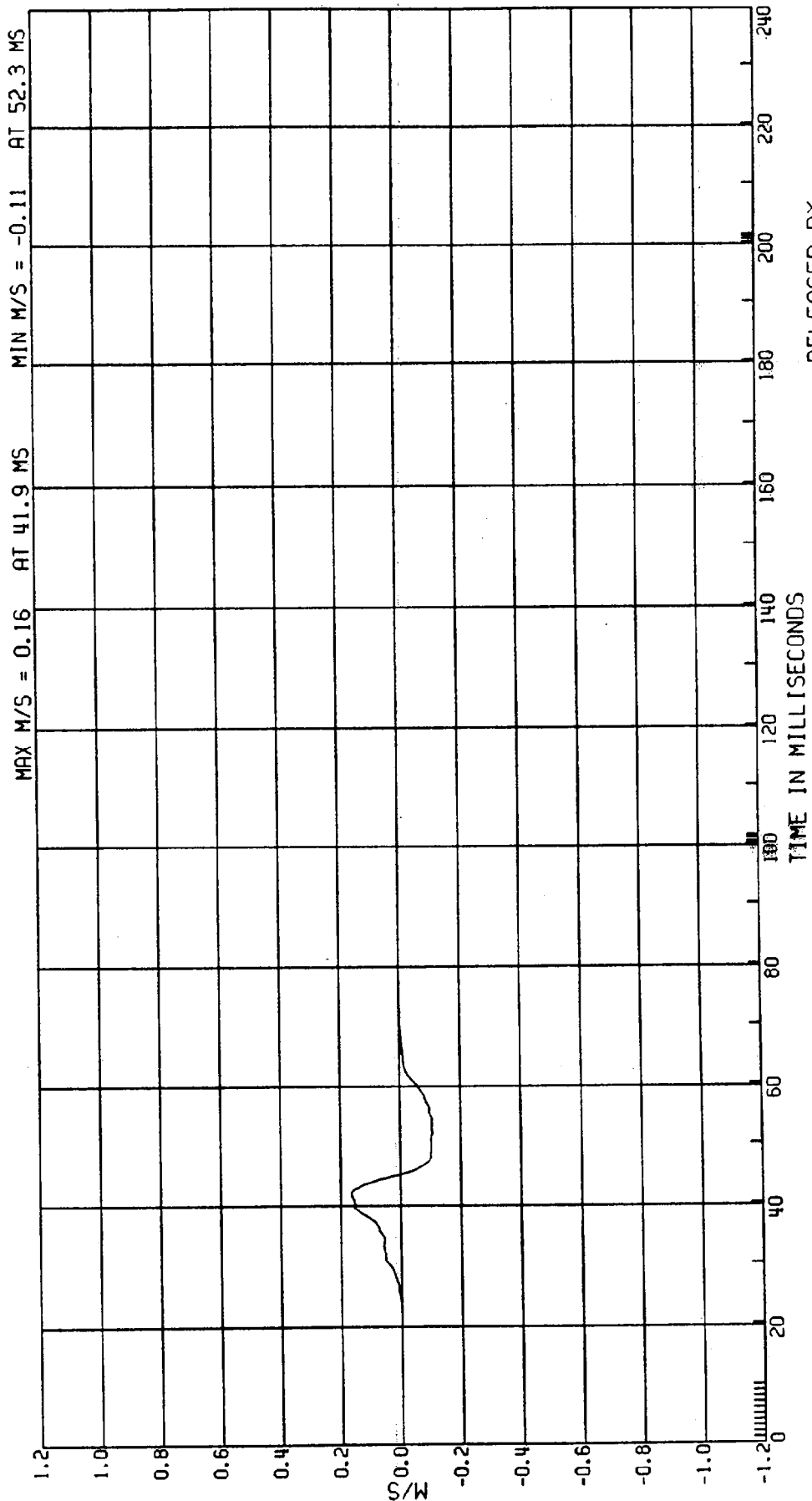
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23 PROCESSED 4 MT 90 11:32

C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 29
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 4B 2AF69 L. REAR 3RD THORACIC RIB VELOCITY TEST DATE: 03-06-90
 ELEC DATA, SAE CLASS 60 (DIFF OF 3RD RIB DISP)



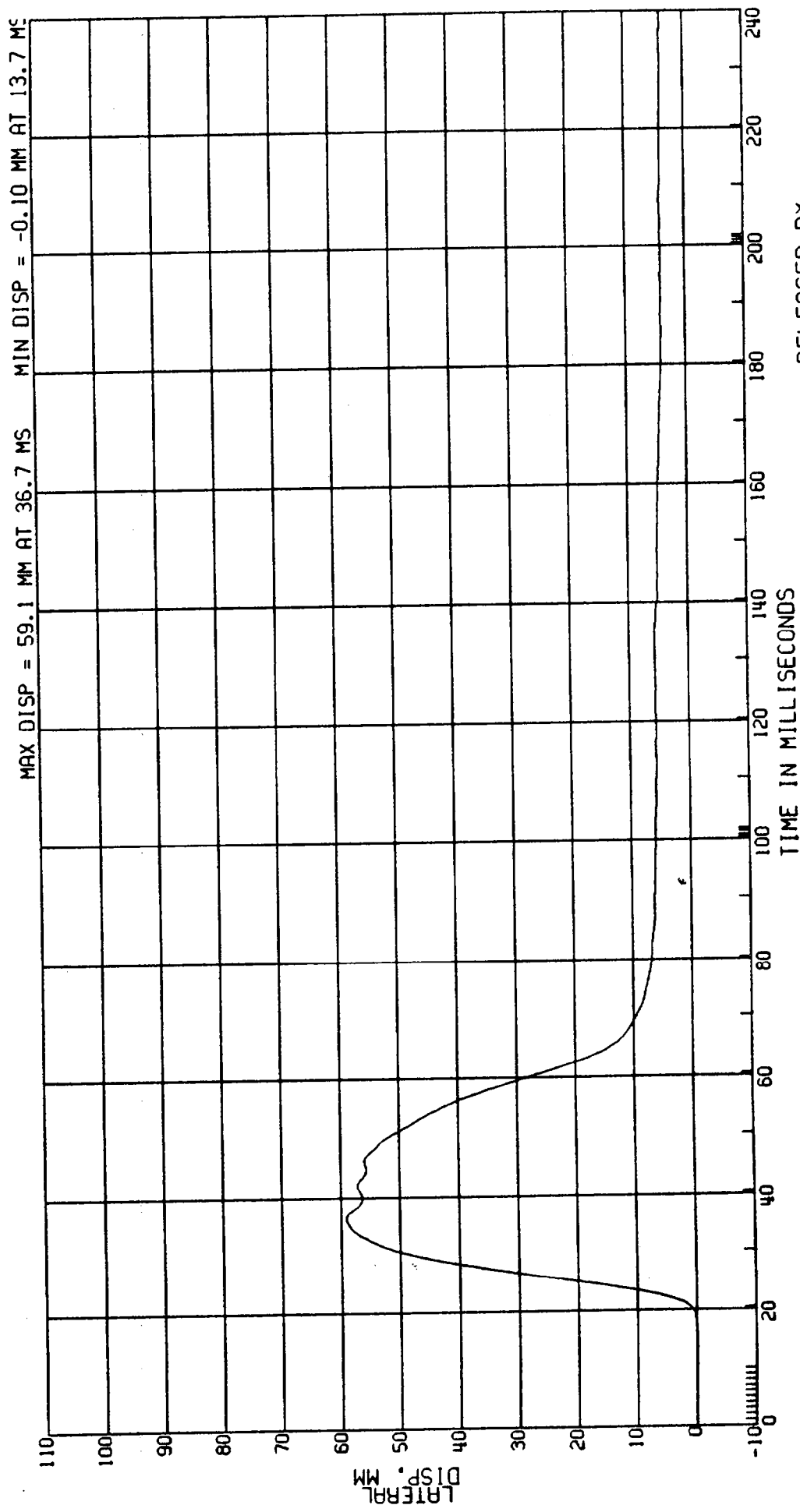
RELEASED BY:
 24 PROCESSED 4 MT 90 11:32

C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 30
 3868-905 AID TYPE: BIOSID
 CPE MVMA 4B 2AF69 TEST DATE:03-06-90
 ELEC DATA, SAE CLASS 60 (3RD RIB DISP*3RD RIB VEL)/175MM



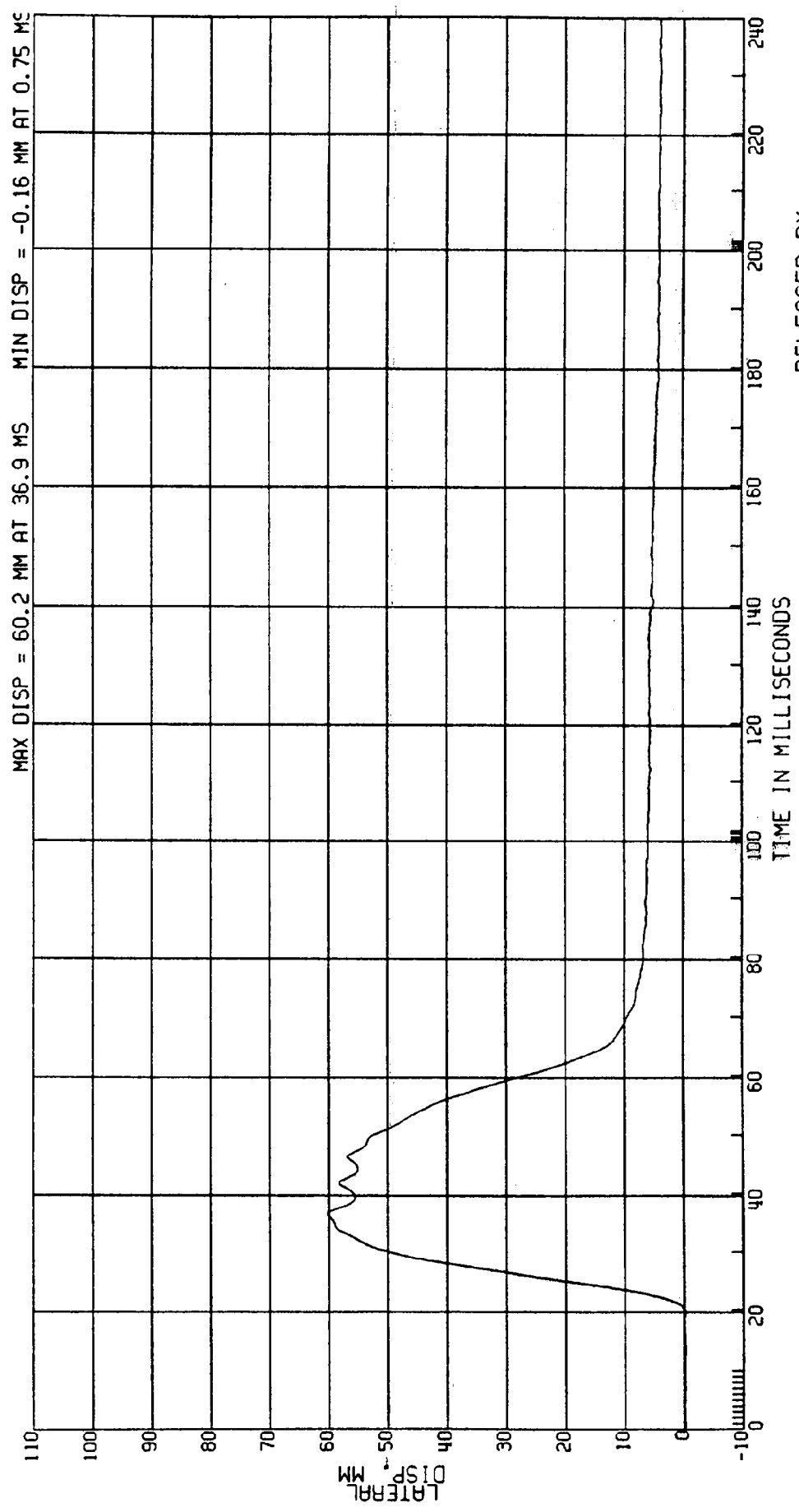
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C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 3/
3868-905 ATD TYPE: BIOSID
CPE MVMA 4B 2AF69 L.REAR FIRST ABDOMINAL RIB DISP. TEST DATE:03-06-90
ELEC DATA, SAE CLASS 60



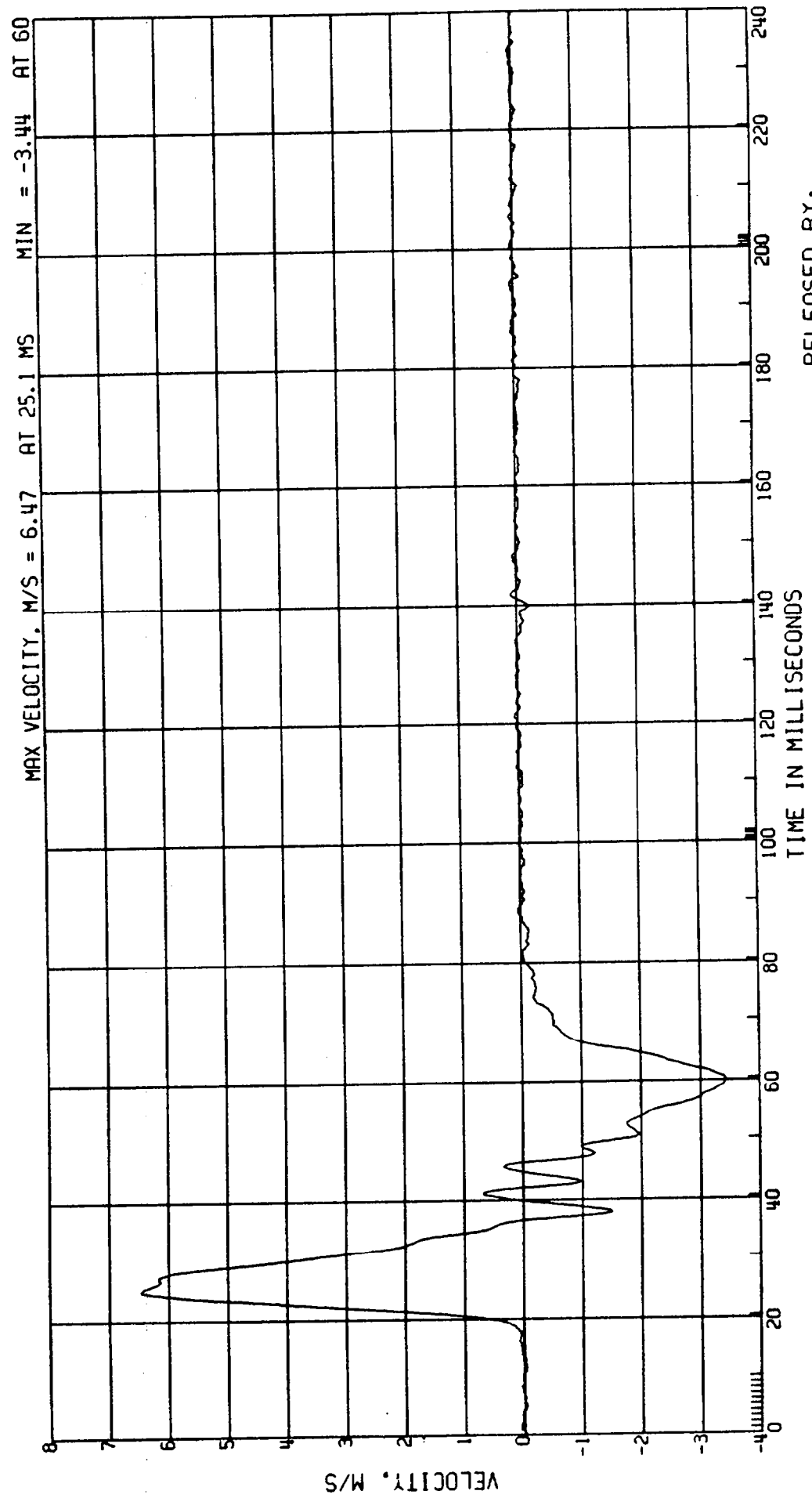
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26 PROCESSED 4 MY 90 11:32

C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 32
3868-905 AID TYPE: BIOSID
CPE MVMA 4B 2AF69 L. REAR FIRST ABDOMINAL RIB DISP. TEST DATE:03-06-90
ELEC DATA, SAE CLASS 180



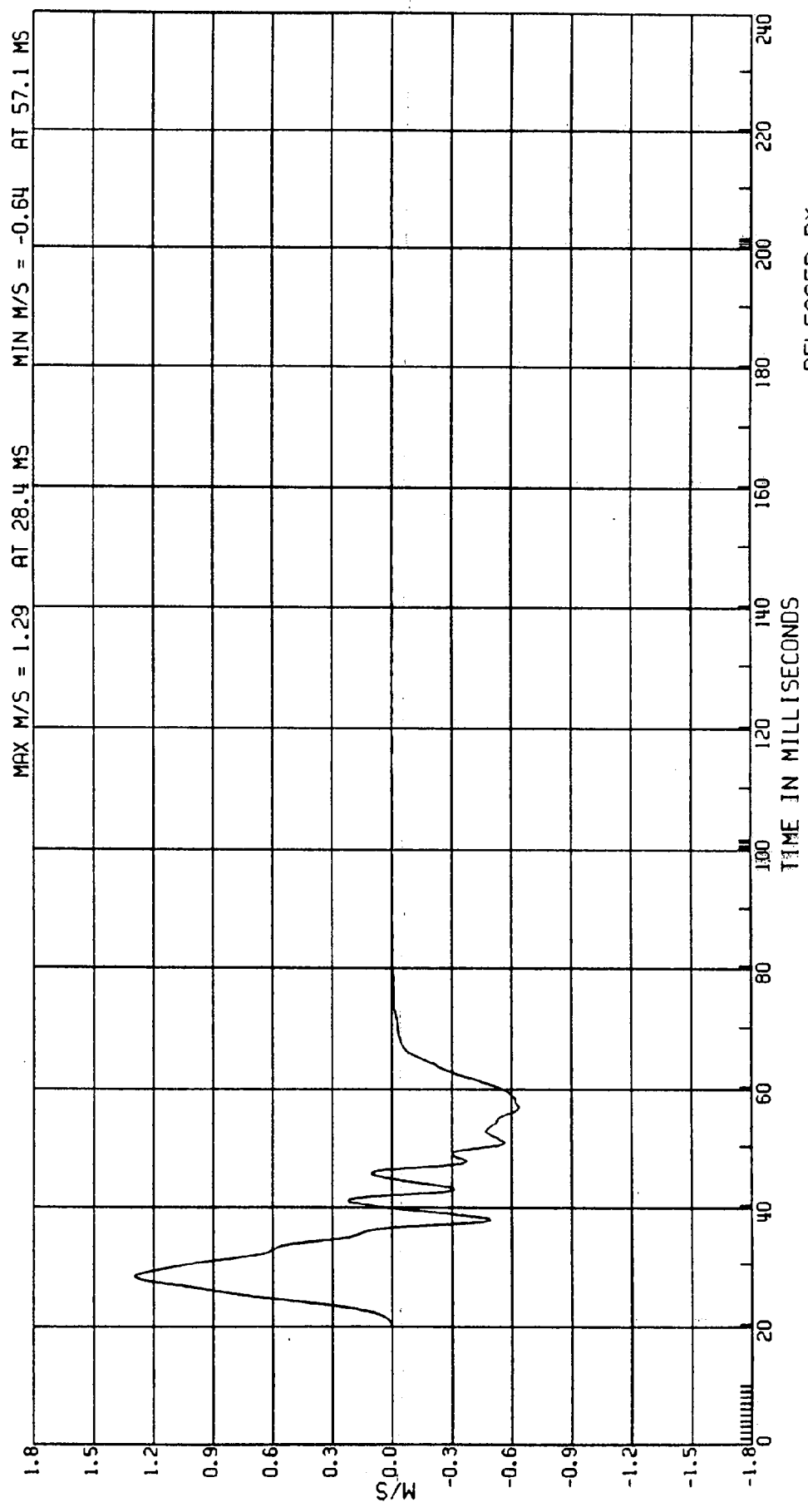
RELEASED BY:
27 PROCESSED 4 MY 90 11:32

C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 33
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 4B 2AF69 L. REAR 1ST ABDOMINAL RIB VELOCITY TEST DATE: 03-06-90
 ELEC DATA, SAE CLASS 60 (DIFF OF 1ST RIB DISP)



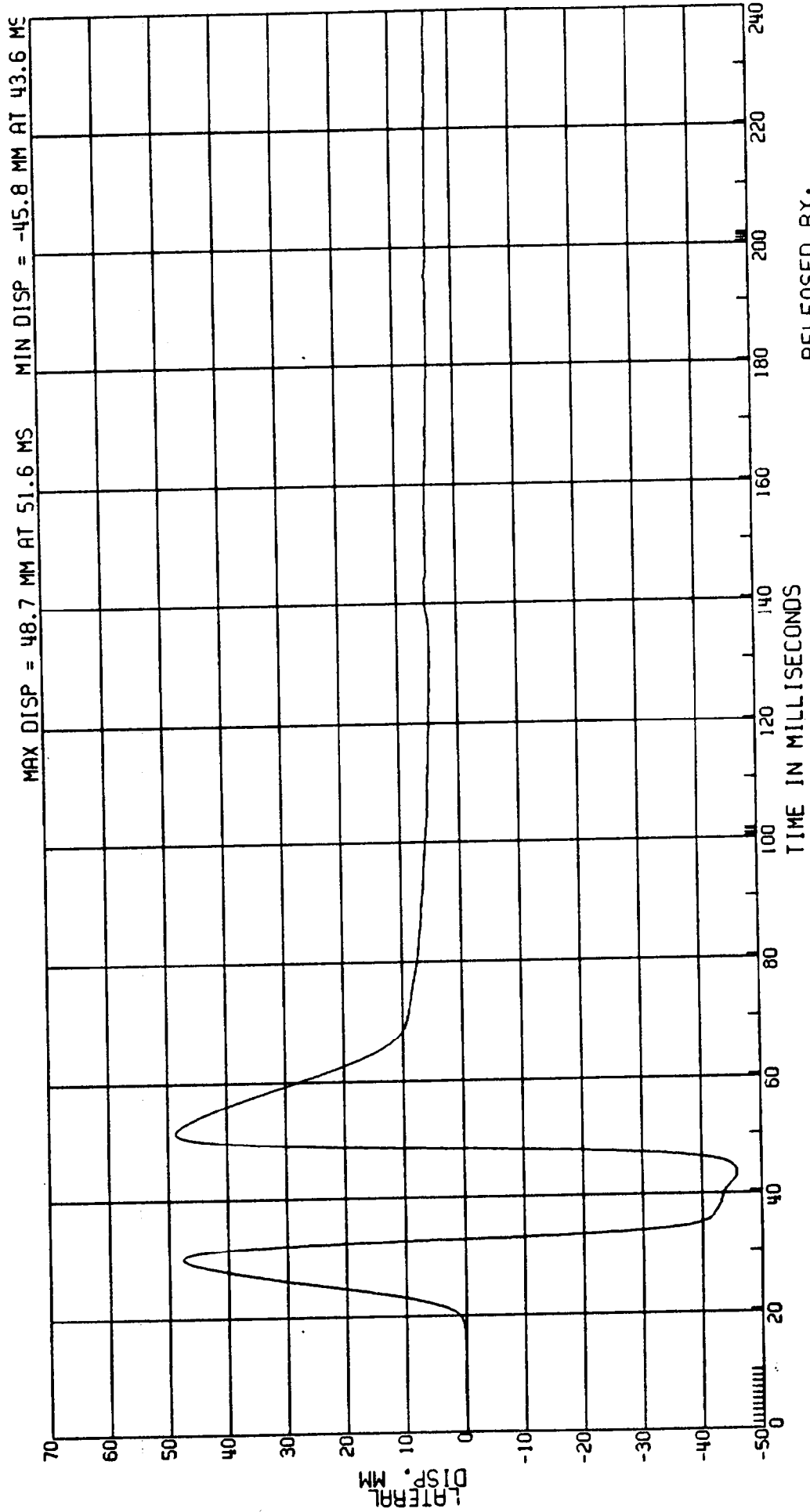
RELEASED BY:
 28 PROCESSED 4 MY 90 11:32

C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 34
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 4B 2AF69 TEST DATE:03-06-90
 ELEC DATA, SAE CLASS 60 (1ST RIB DISP*1ST RIB VEL)/175MM
 VISCIOUS RESPONSE OF 1ST ABDOMINAL RIB



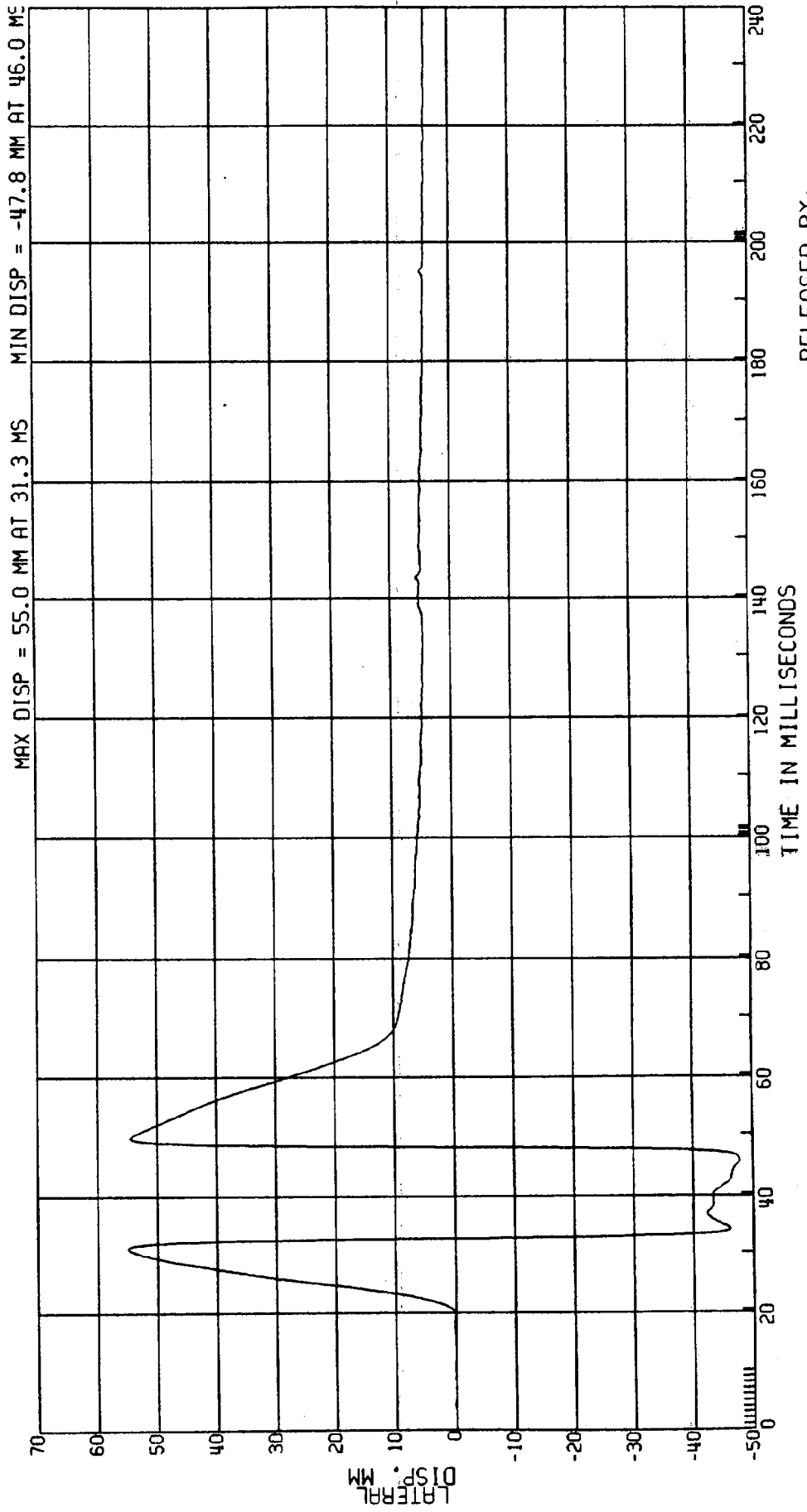
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 29 PROCESSED 4 MY 90 11:32

C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 35
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 4B 2AF69 L. REAR SECOND ABDOMINAL RIB DISP. TEST DATE: 03-06-90
 ELEC DATA, SAE CLASS 60



RELEASED BY:
 30 PROCESSED 4 MY 90 11:32

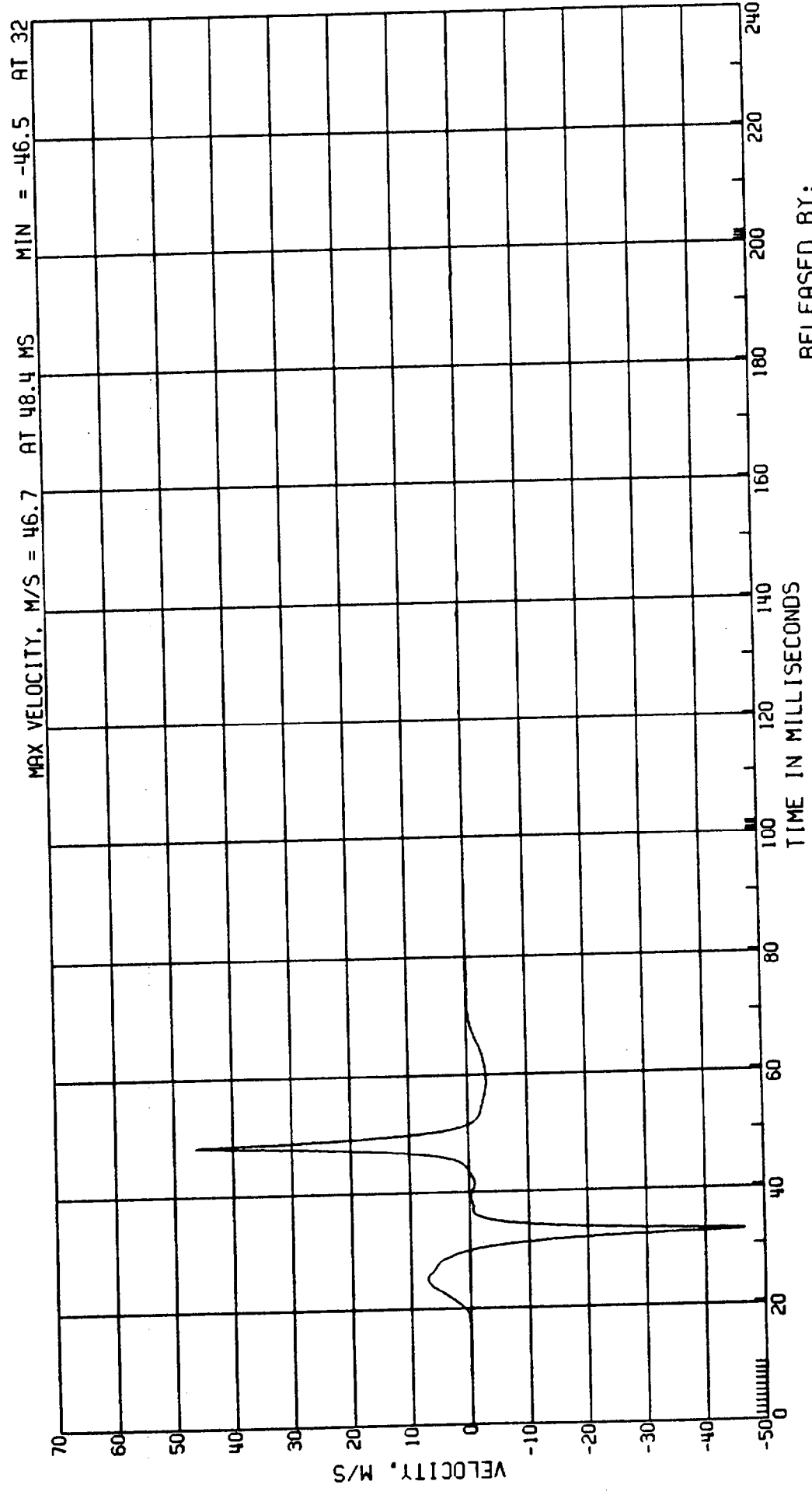
C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 36
3868-905 ATD TYPE: BIOSID
CPE MVMA 4B 2AF69 L. REAR SECOND ABDOMINAL RIB DISP. TEST DATE: 03-06-90
ELEC DATA, SAE CLASS 180



RELEASED BY:

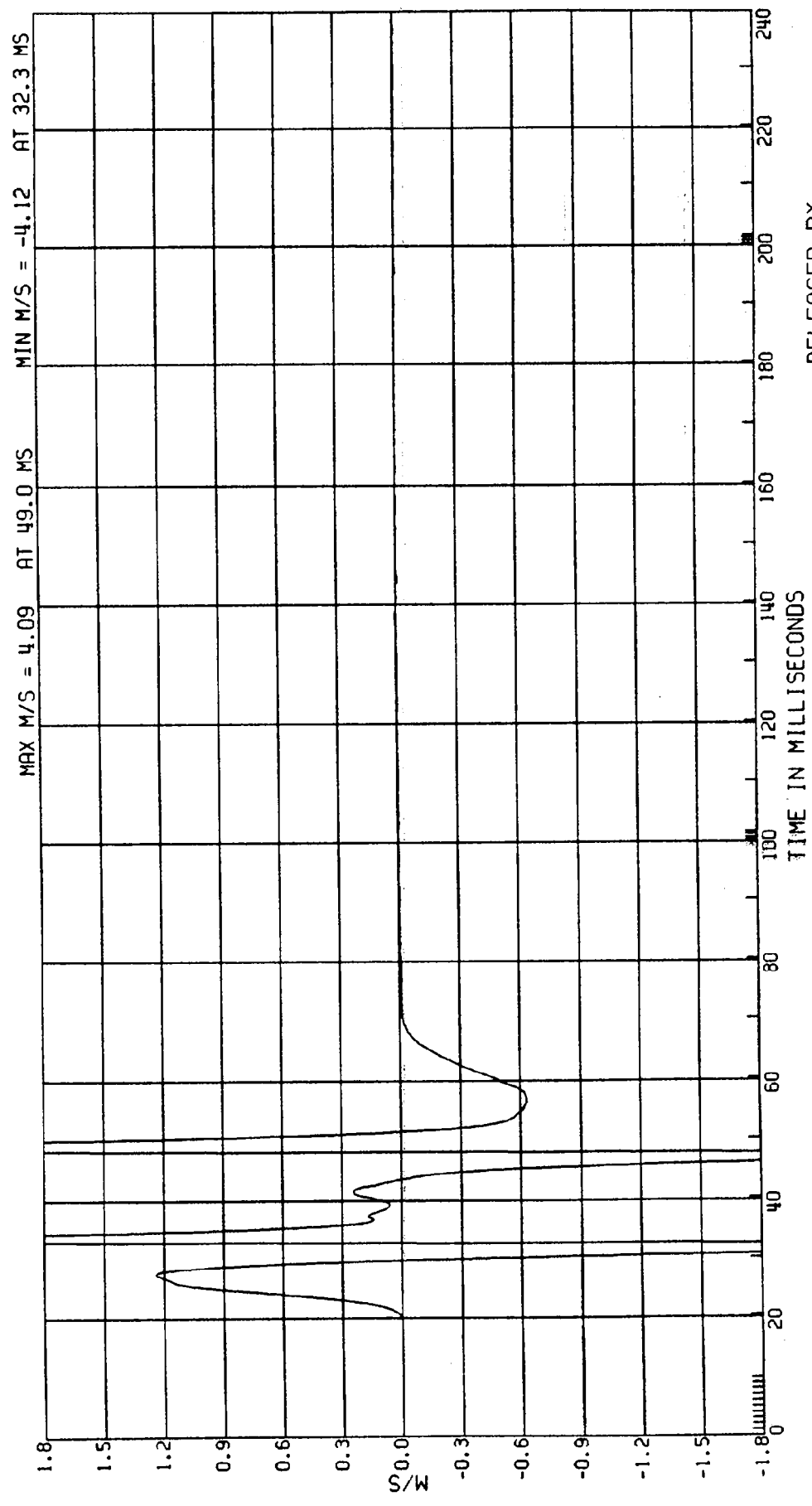
31 PROCESSED 4 MAY 90 11:32

C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 37
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 4B 2AF69 TEST DATE: 03-06-90
 ELEC DATA, SAE CLASS 60 L. REAR 2ND ABDOMINAL RIB VELOCITY
 (DIFF OF 2ND RIB DISP)

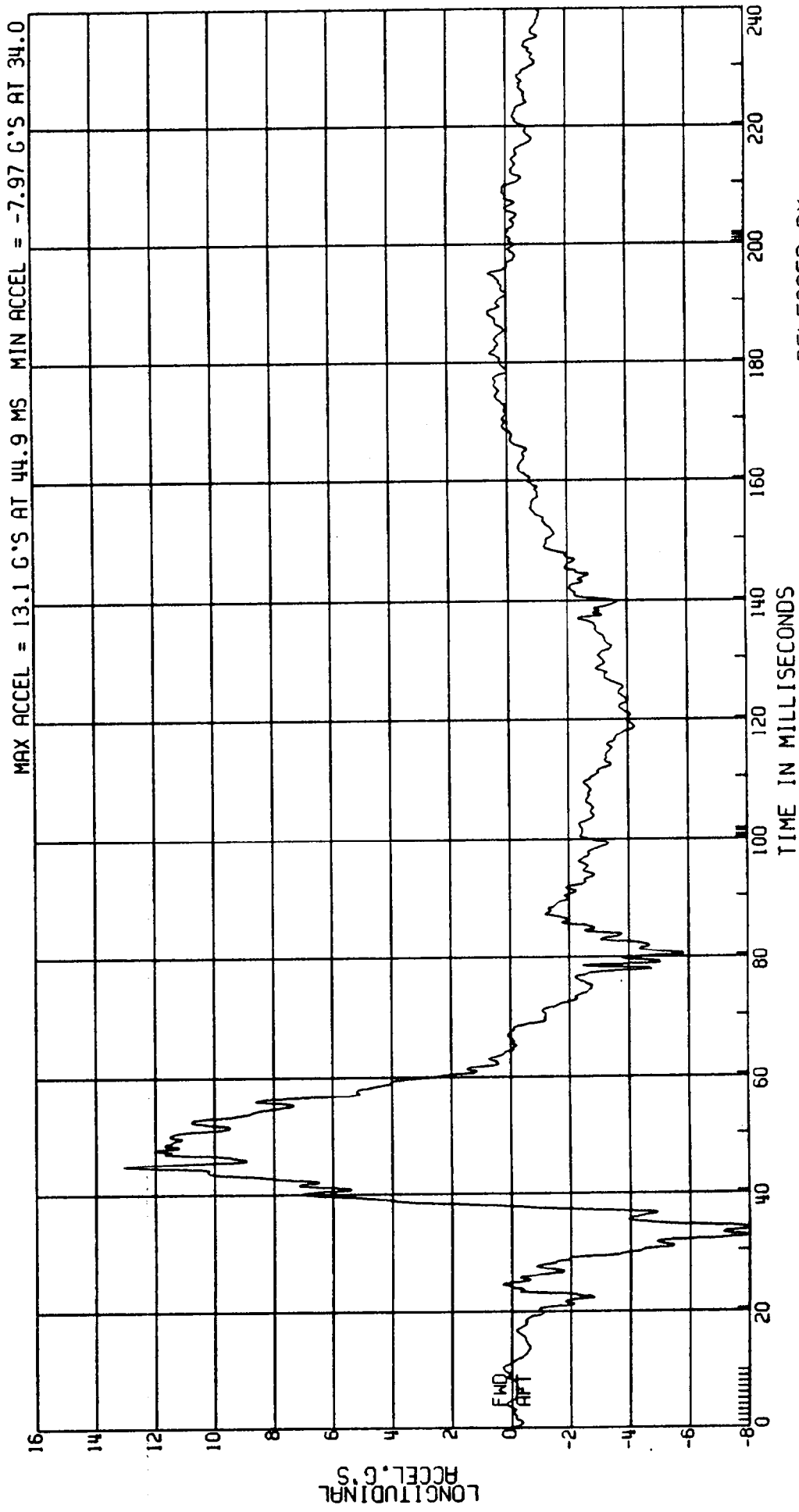


RELEASED BY:
 32 PROCESSED 4 MY 90 11:32

C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 38
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 4B 2AF69 VISCIOUS RESPONSE OF 2ND ABDOMINAL RIB
 ELEC DATA, SAE CLASS 60 (2ND RIB DISP*2ND RIB VEL)/175MM
 TEST DATE:03-06-90

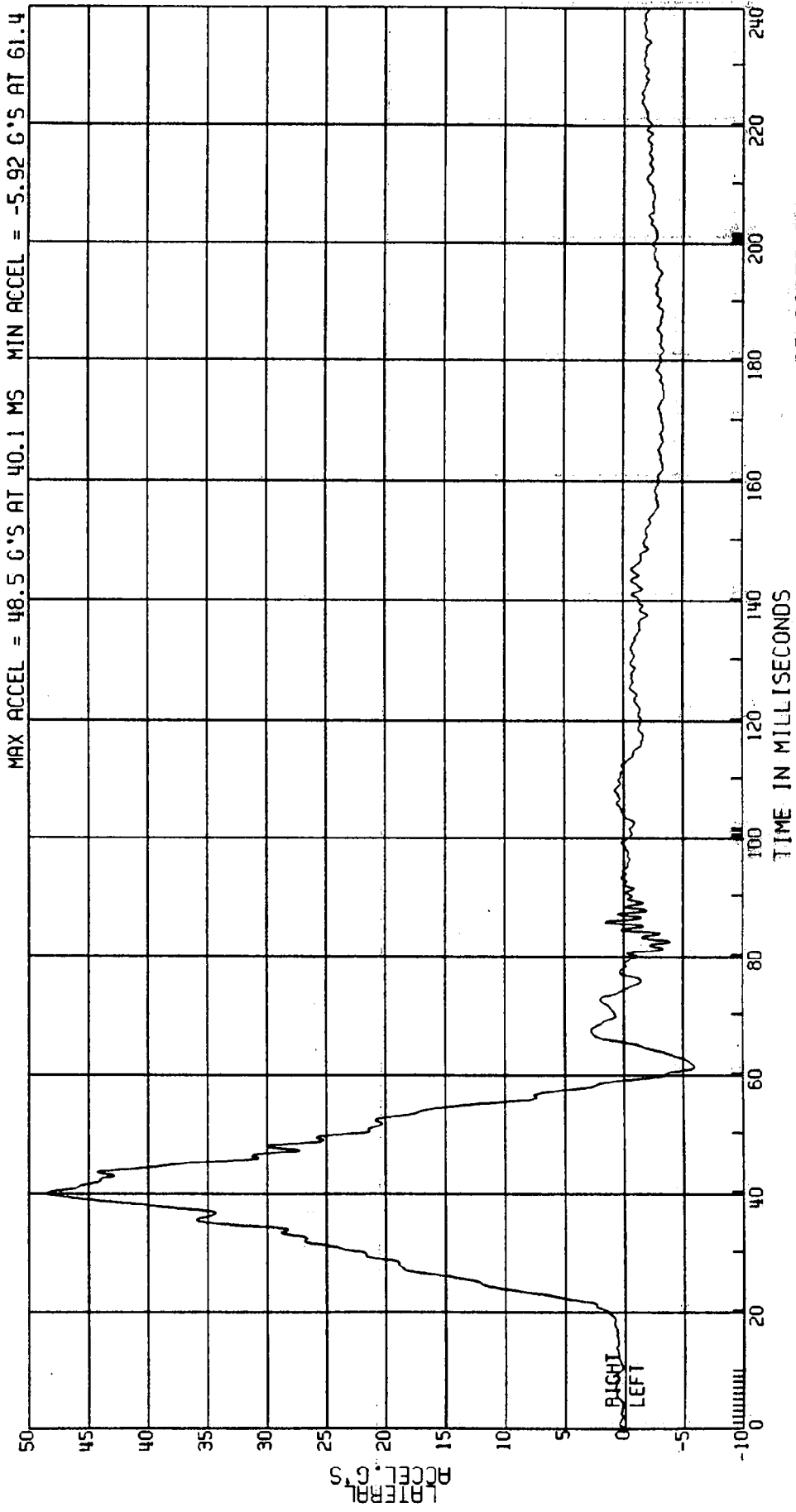


C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 39
3868-905 ATD TYPE: BIOSID
CPE MVMA 4B 2AF69 TEST DATE:03-06-90
ELEC DATA, SAE CLASS 180 L.REAR UPPER SPINE ACCEL.

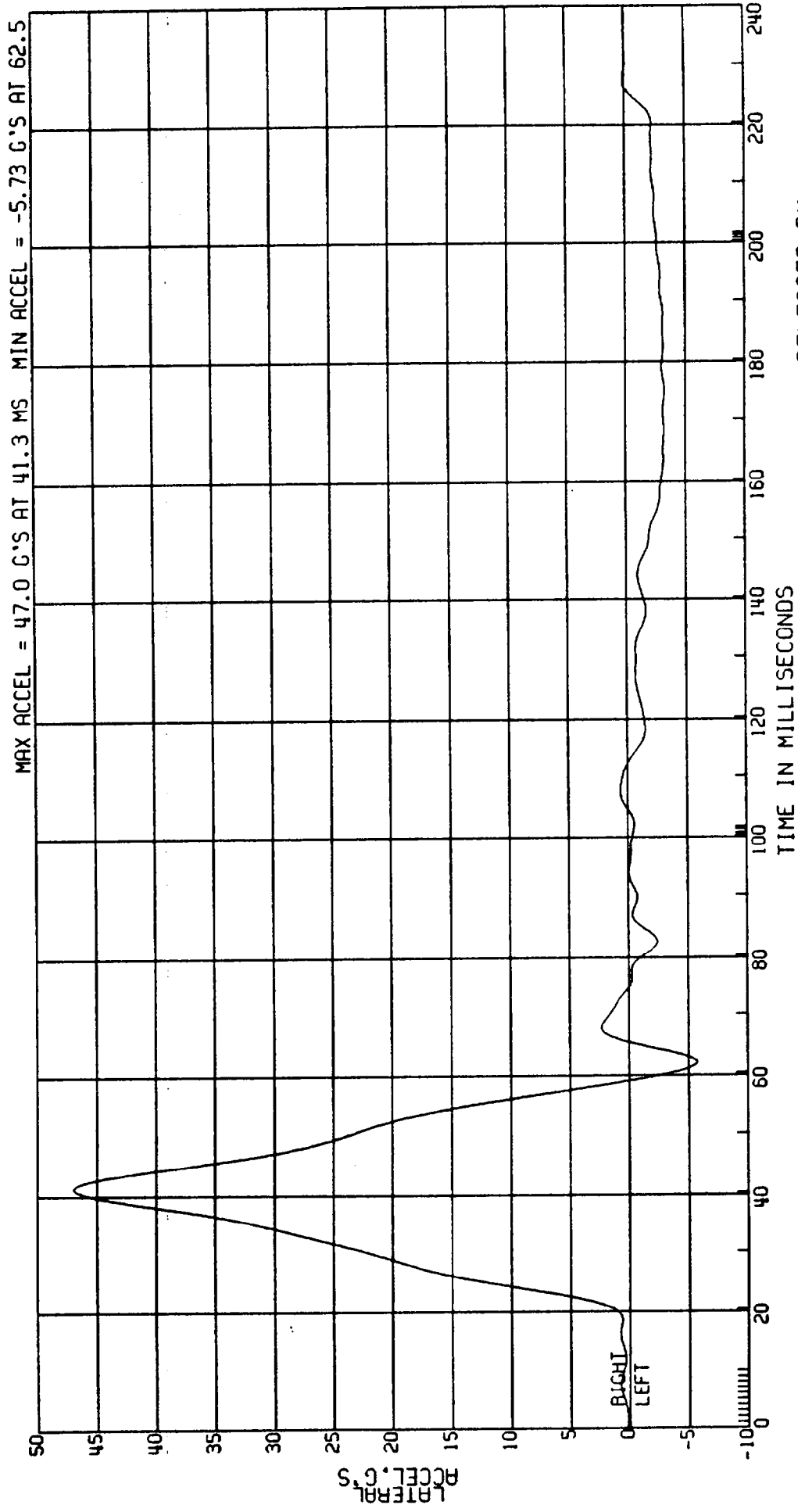


RELEASED BY:
34 PROCESSED 4 MY 90 11:32

C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 4d
3868-905 ATD TYPE: BIOSID
CPE MVMA 4B 2AF69 L. REAR UPPER SPINE ACCEL.
ELEC DATA, SAE CLASS 180 TEST DATE: 03-06-90



C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 4/
3868-905 ATD TYPE: BIOSID
CPE MVMA 4B 2AF69 TEST DATE:03-06-90
ELEC DATA, NHTSA FIR FILTER L. REAR UPPER SPINE ACCEL.
F.I.R. FILTER, CLASS 300 BUTTERWORTH

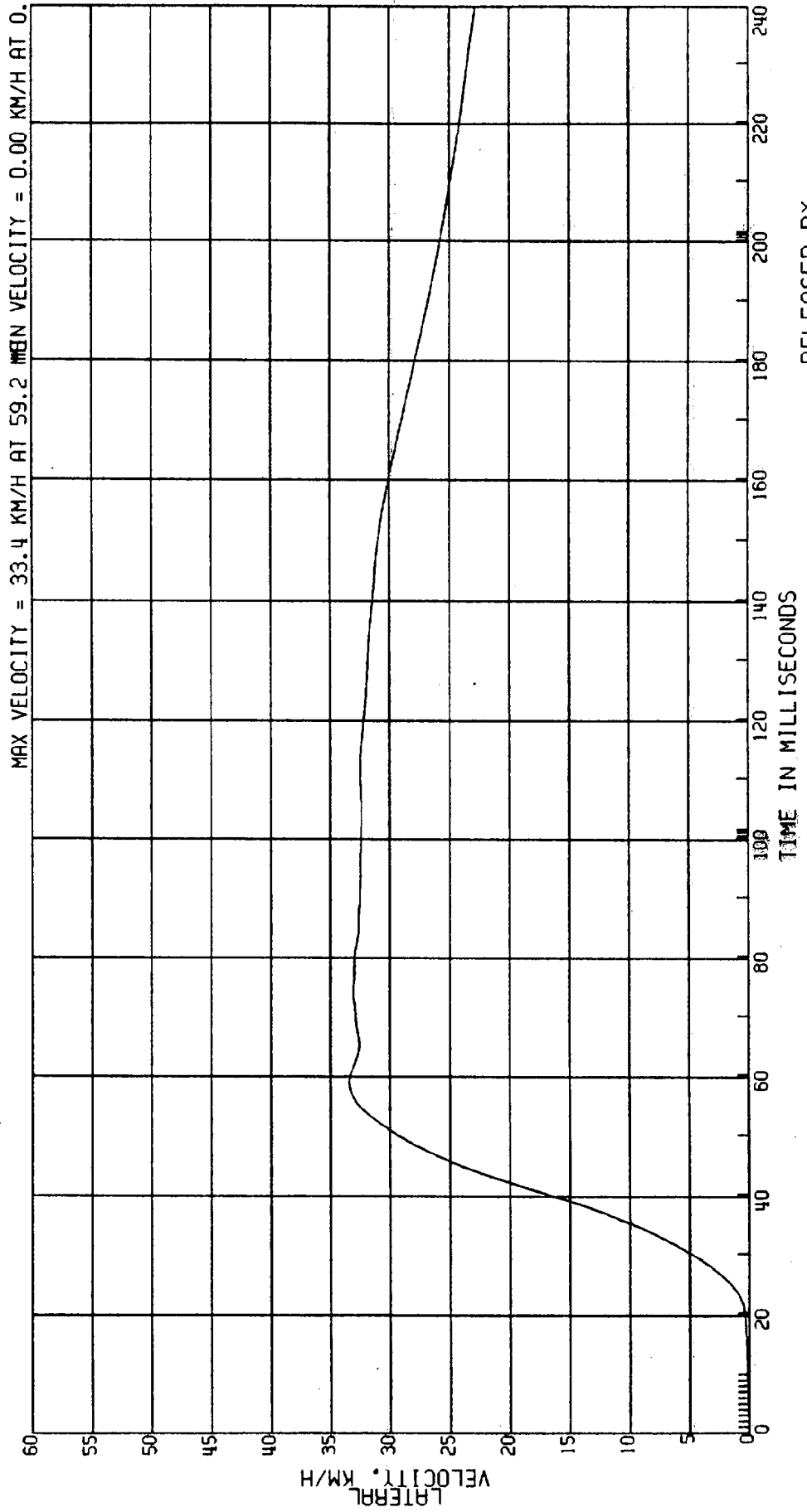


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36 PROCESSED 4 MY 90 11:32

C8004B L. SIDE IMPACT-27 DEG
3868-905
CPE MVMA 4B 2AF69
ELEC DATA, SAE CLASS 180

MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 4-2
ATD TYPE: BIOSID
TEST DATE: 03-06-90

COMPUTED UPPER SPINE VELOCITY
(1ST INTEGRAL L. REAR ACCELERATION)



RELEASED BY:

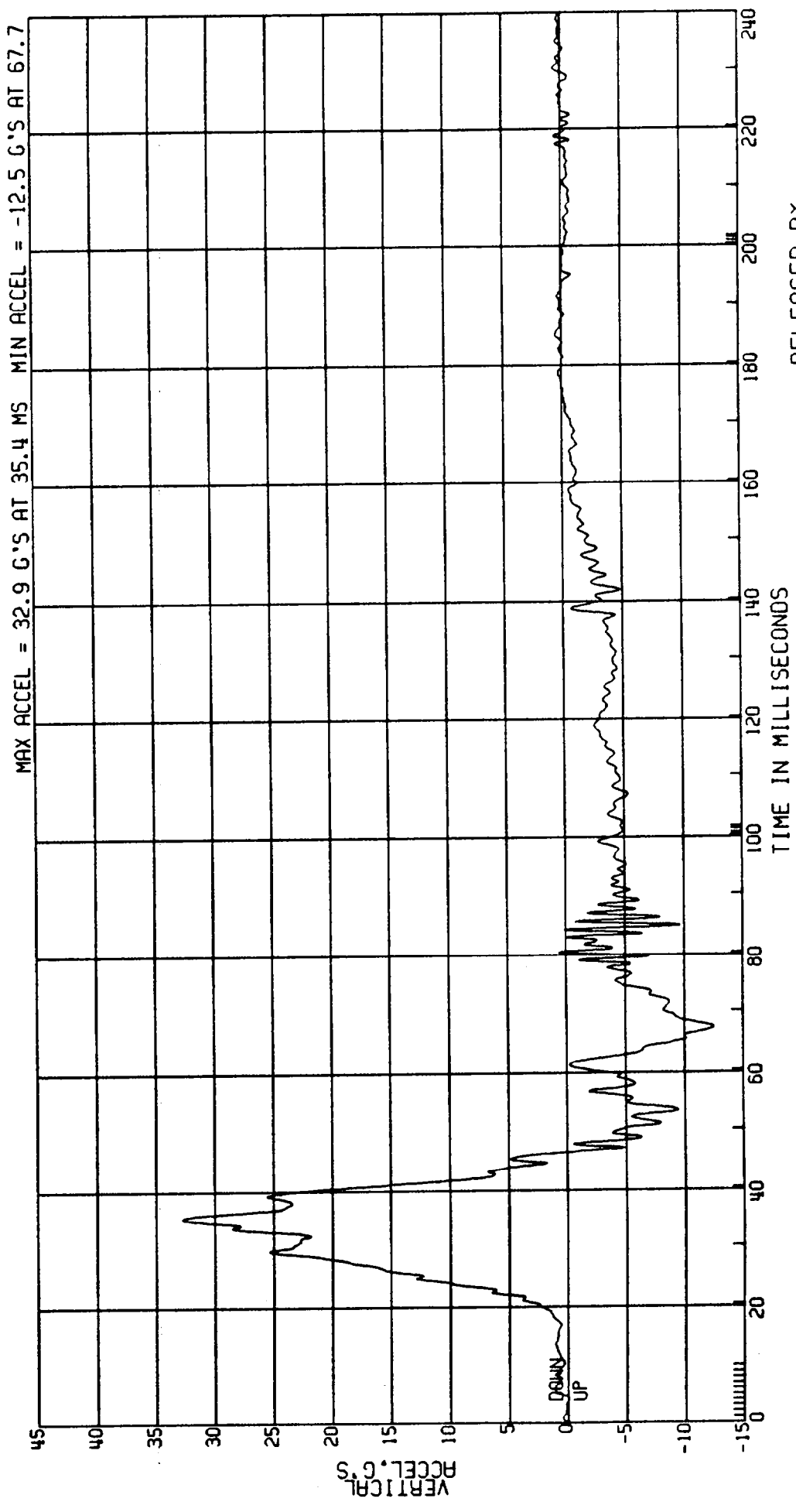
37 PROCESSED 4 MT 90 11:32

C8004B L. SIDE IMPACT-27 DEG
3868-905
CPE

MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 43
ATD TYPE: BIOSID
TEST DATE: 03-06-90

MVMA 4B 2AF69
ELEC DATA, SAE CLASS 180

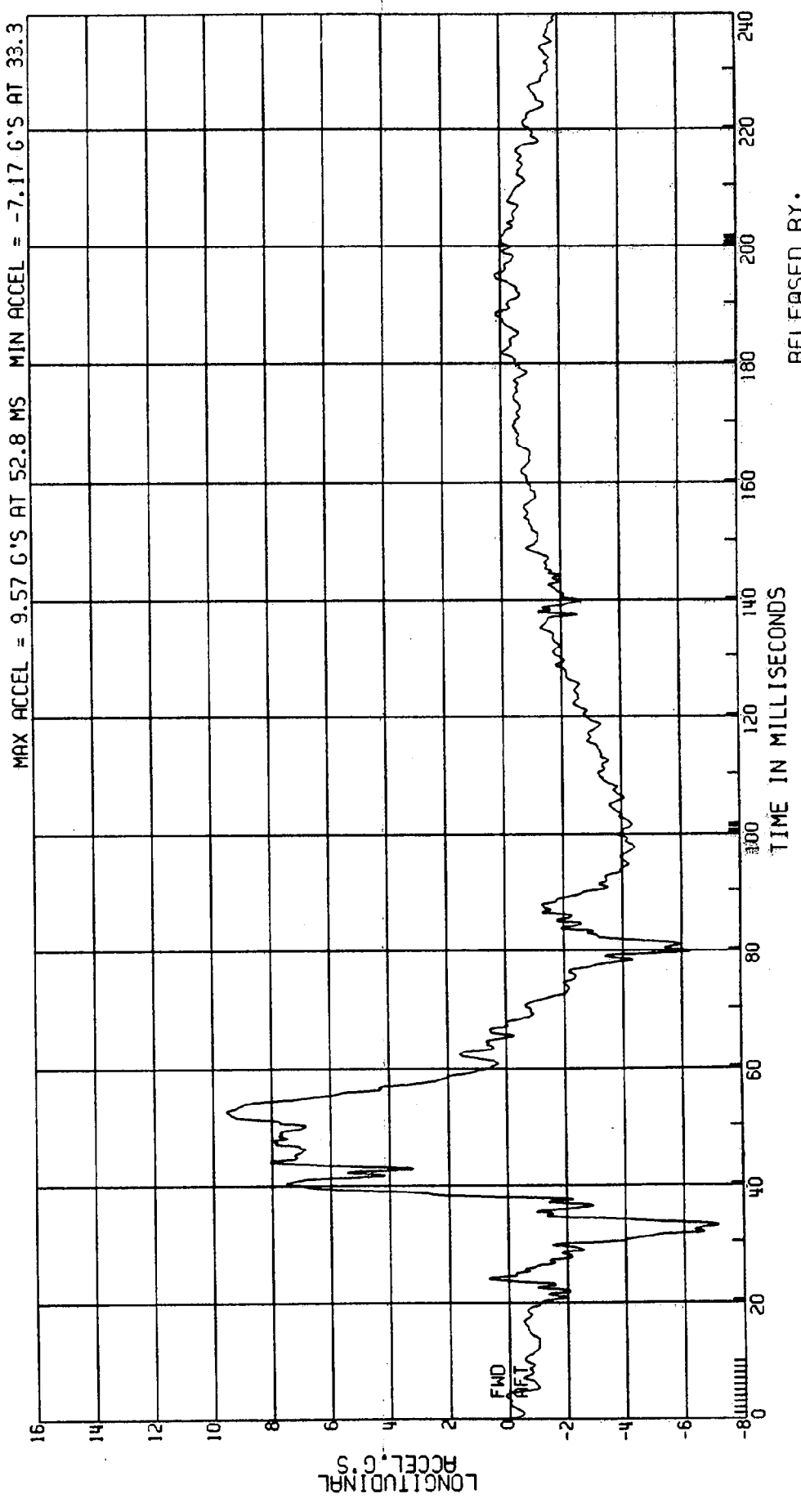
L. REAR UPPER SPINE ACCEL.



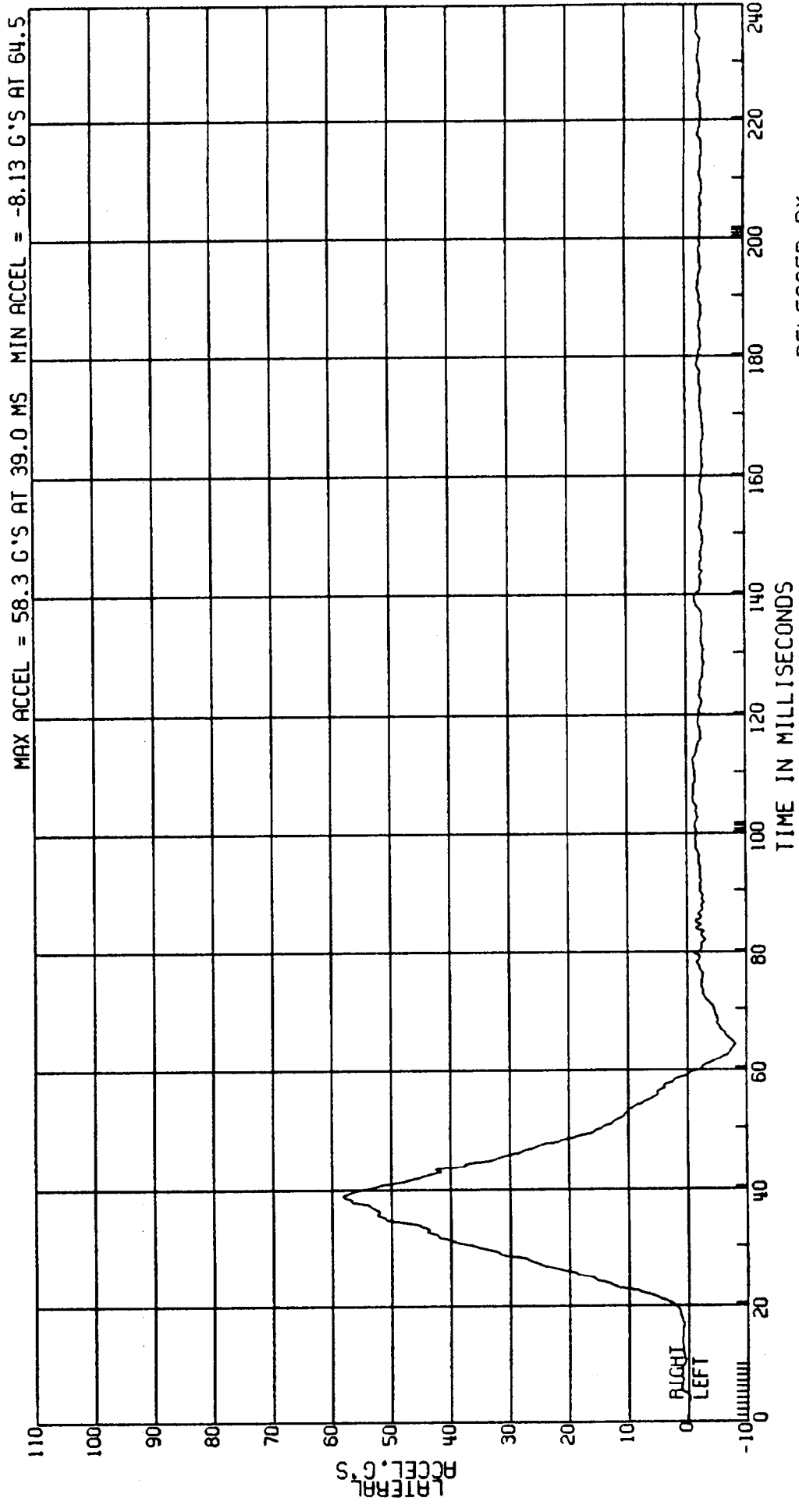
RELEASED BY:

38 PROCESSED 4 MY 90 11:32

C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 74
3868-905 ATD TYPE: BIOSID
CPE MVMA 4B 2AF69 TEST DATE:03-06-90
ELEC DATA, SAE CLASS 180 L. REAR LOWER SPINE ACCEL.

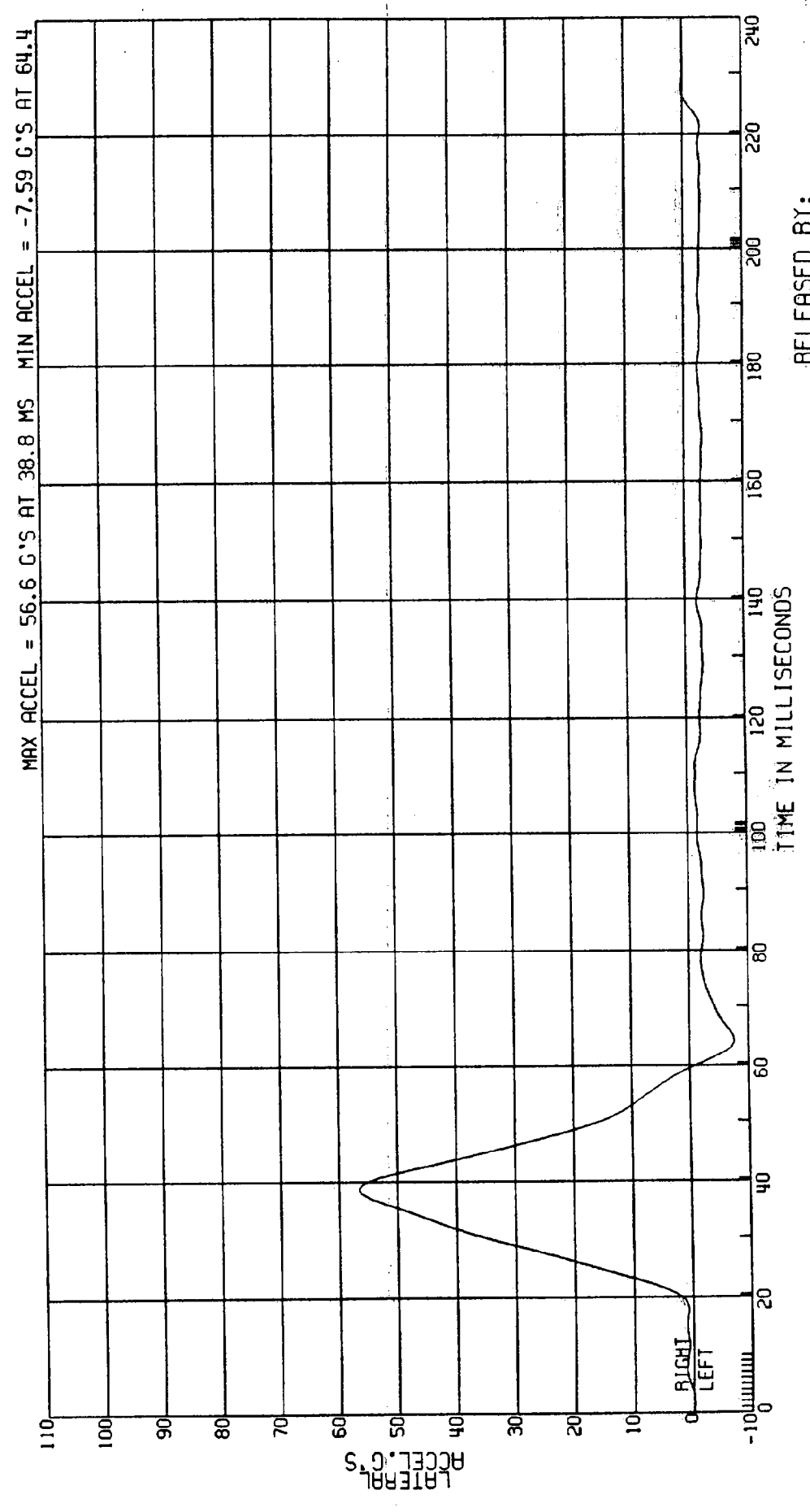


C80048 L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 45
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 48 2AF69 L. REAR LOWER SPINE ACCEL.
 ELEC DATA, SAE CLASS 180 TEST DATE: 03-06-90



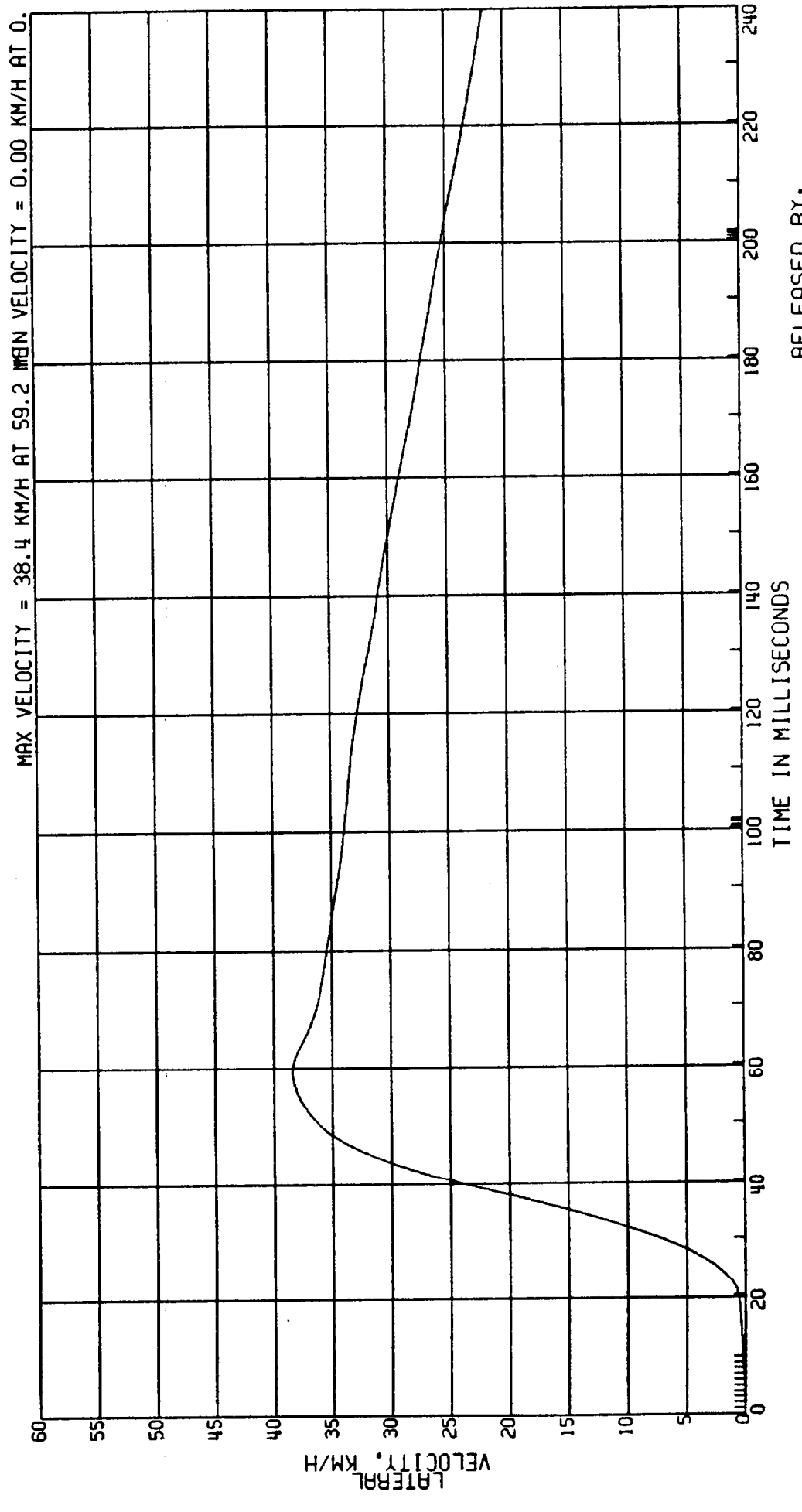
RELEASED BY:
 40 PROCESSED 4 MY 90 11:32

C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 46
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 4B 2AF69 TEST DATE: 03-06-90
 ELEC DATA, NHTSA FIR FILTER L. REAR LOWER SPINE ACCEL.
 F.I.R. FILTER, CLASS 300 BUTTERWORTH



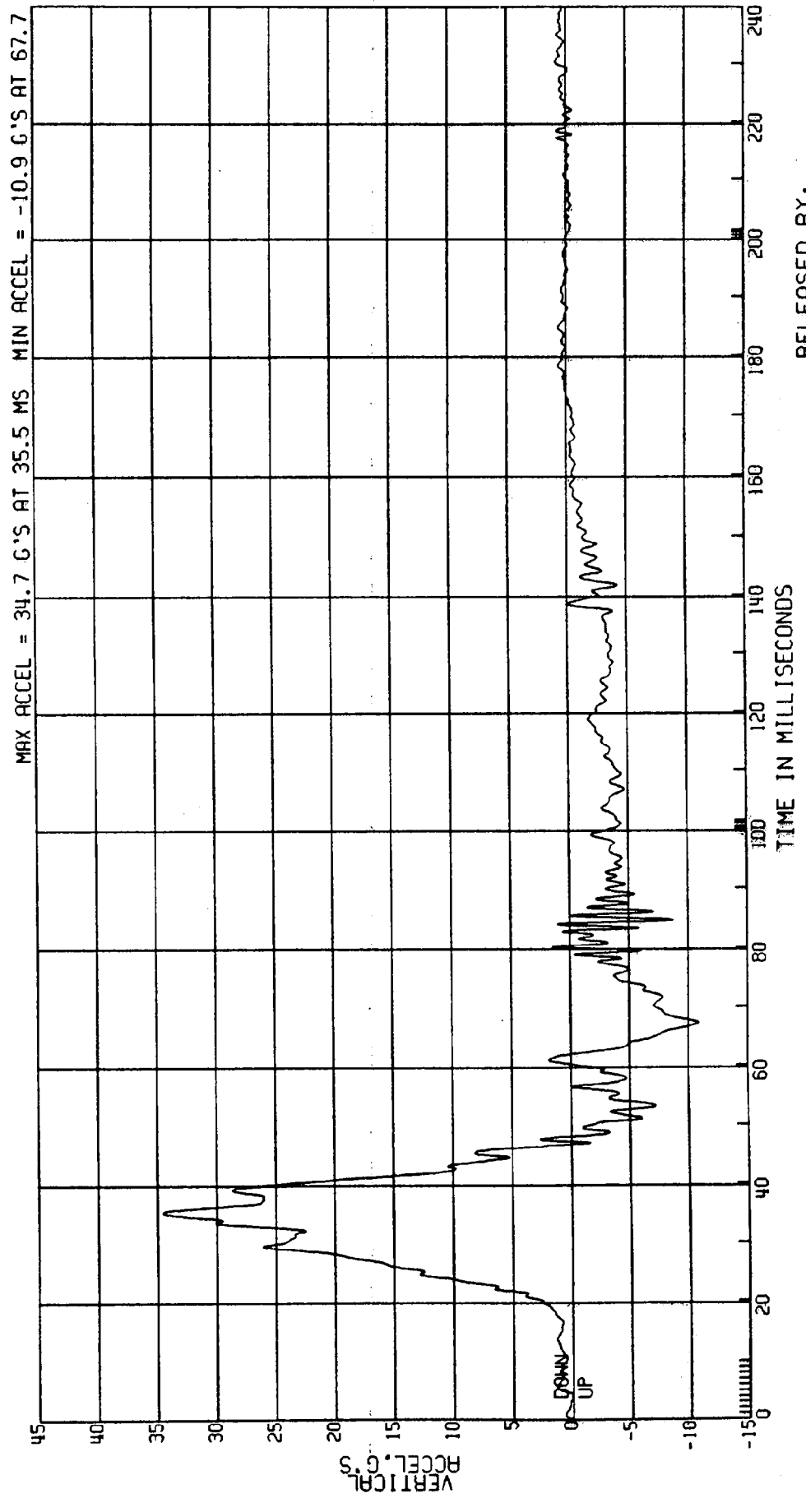
RELEASED BY:
 41 PROCESSED 4 MY 90 11:32

C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 47
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 4B 2AF69 TEST DATE:03-06-90
 ELEC DATA, SAE CLASS 180
 COMPUTED LOWER SPINE VELOCITY
 (1ST INTEGRAL L.REAR ACCELERATION)

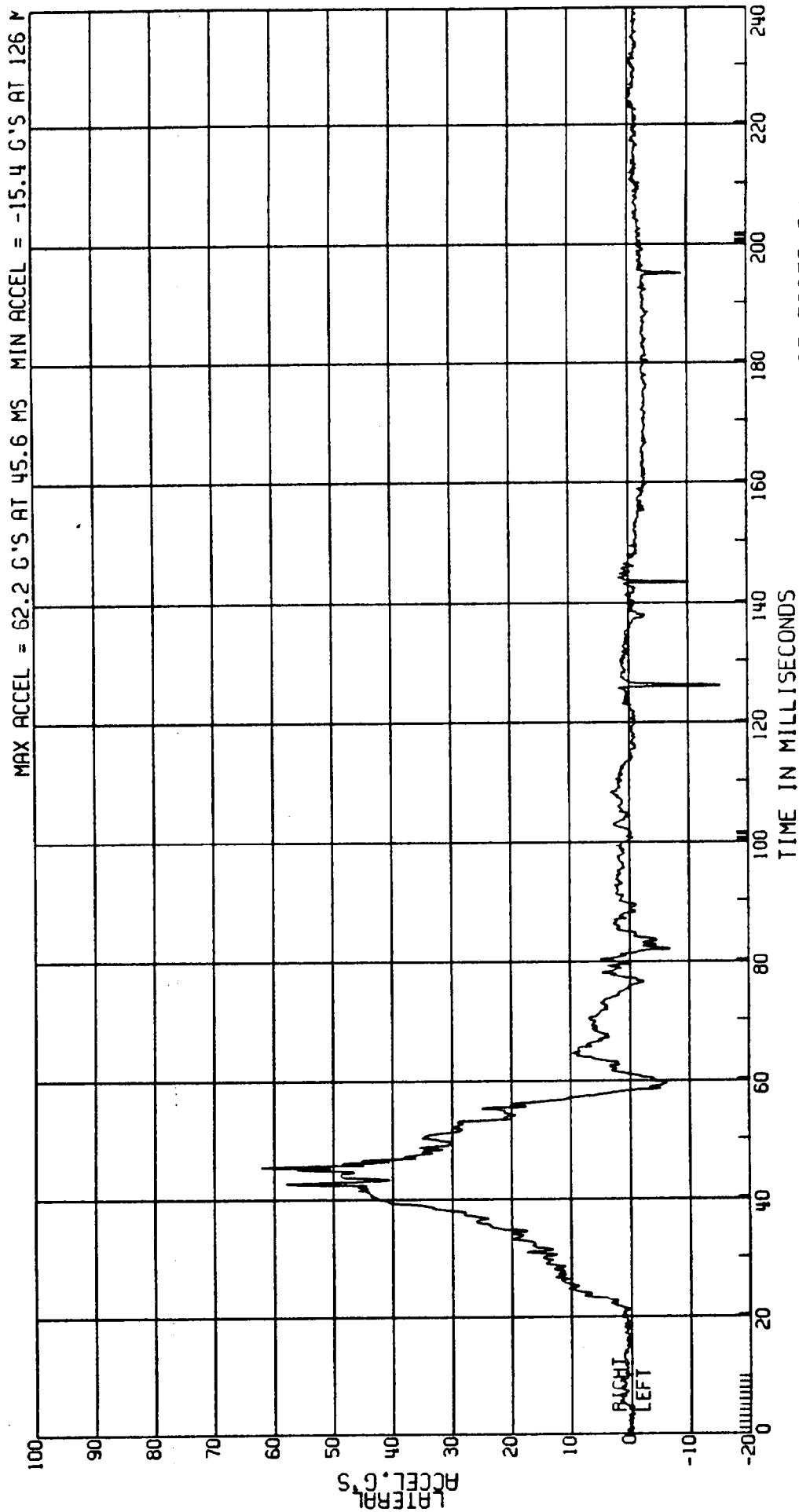


RELEASED BY:
 42 PROCESSED 4 MY 90 11:32

C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 48
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 4B 2AF69 L. REAR LOWER SPINE ACCEL. TEST DATE: 03-06-90
 ELEC DATA, SAE CLASS 180

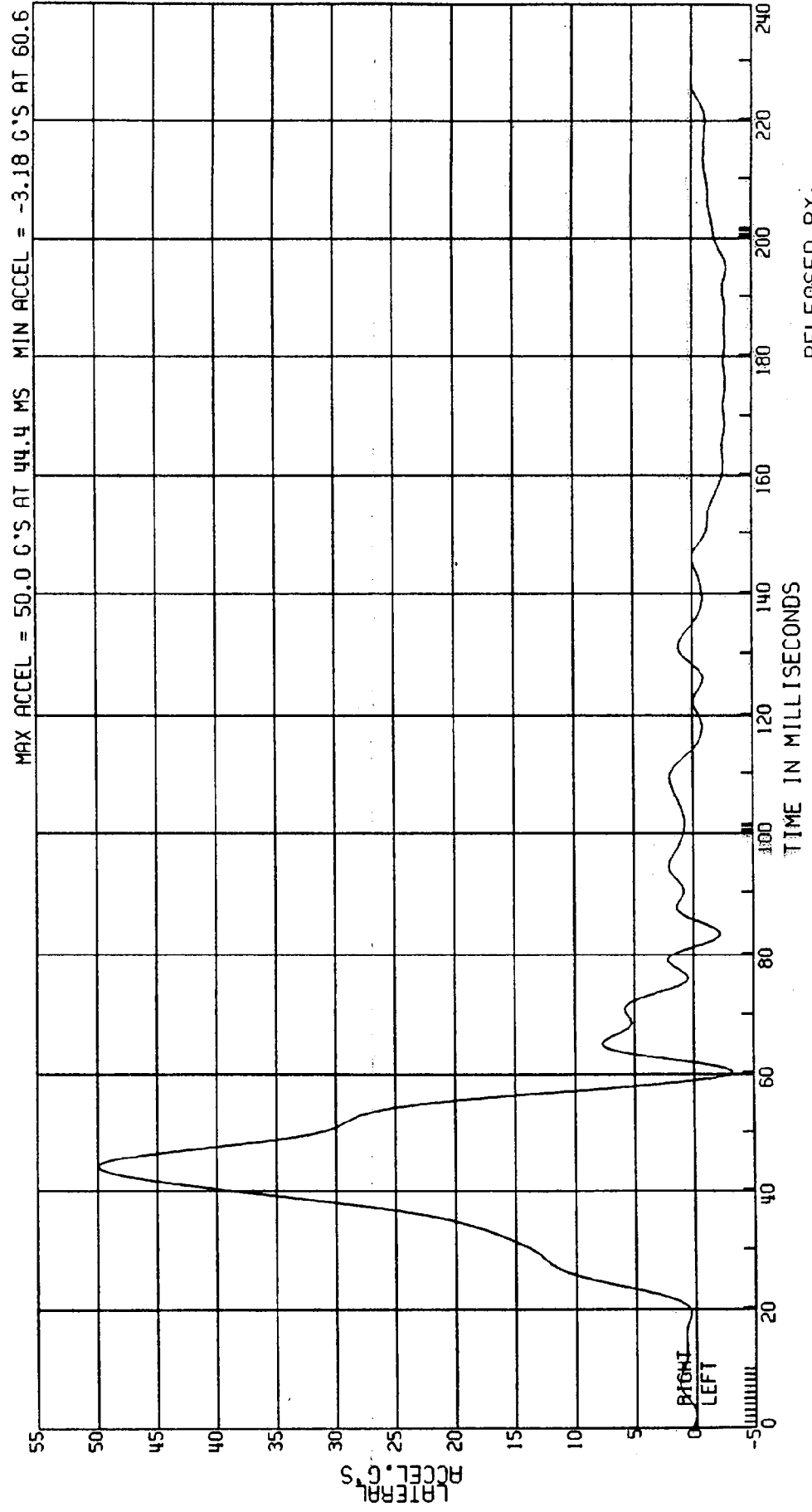


C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 49
3868-905 ATD TYPE: BIOSID
CPE MVMA 4B 2AF69 TEST DATE:03-06-90
ELEC DATA, SAE CLASS 1000 L. REAR T1 ACCEL.



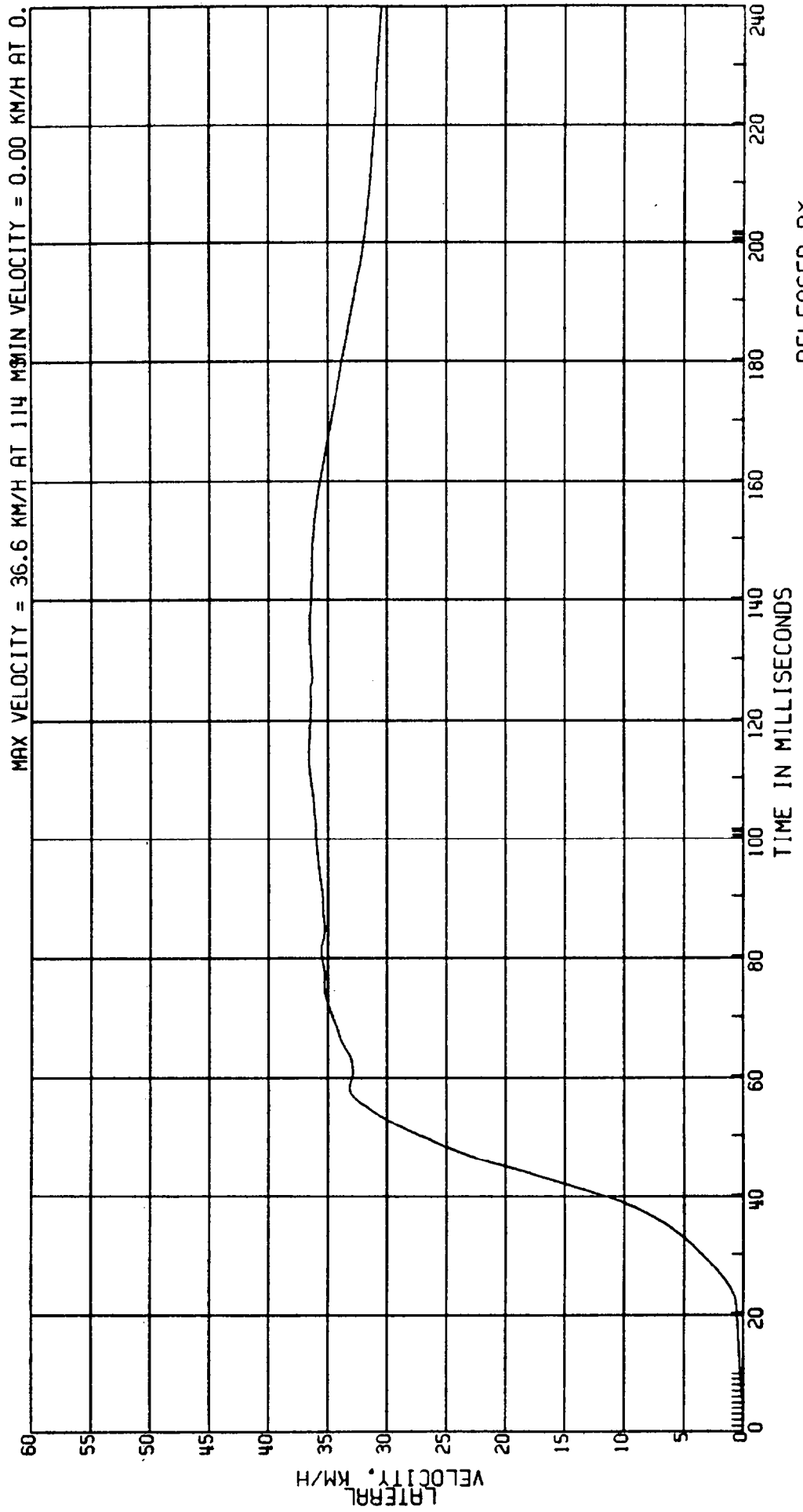
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44 PROCESSED 4 MY 90 11:32

C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 50
3868-905 ATD TYPE: BIOSID
CPE MVMA 4B 2AF69 TEST DATE:03-06-90
ELEC DATA, NHTSA FIR FILTER L. REAR T1 ACCEL.
F.I.R. FILTER, CLASS 300 BUTTERWORTH



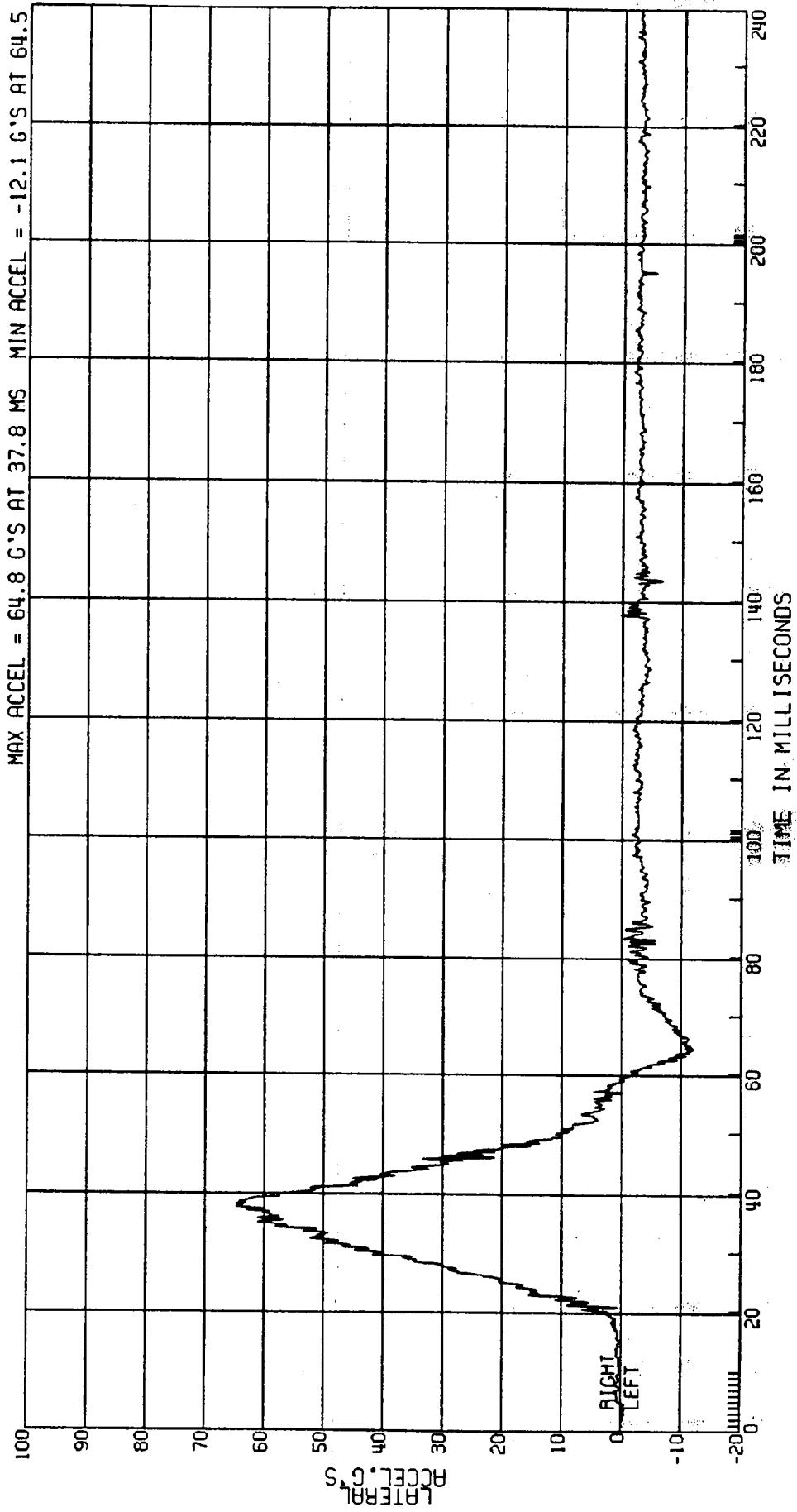
RELEASED BY:
45 PROCESSED 4 MY 90 15:32

C80048 L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 5 /
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 48 2AF69 COMPUTED T1 VELOCITY TEST DATE: 03-06-90
 ELEC DATA, SAE CLASS 180 (1ST INTEGRAL L. REAR ACCELERATION)



RELEASED BY:
 46 PROCESSED 4 MY 90 11:32

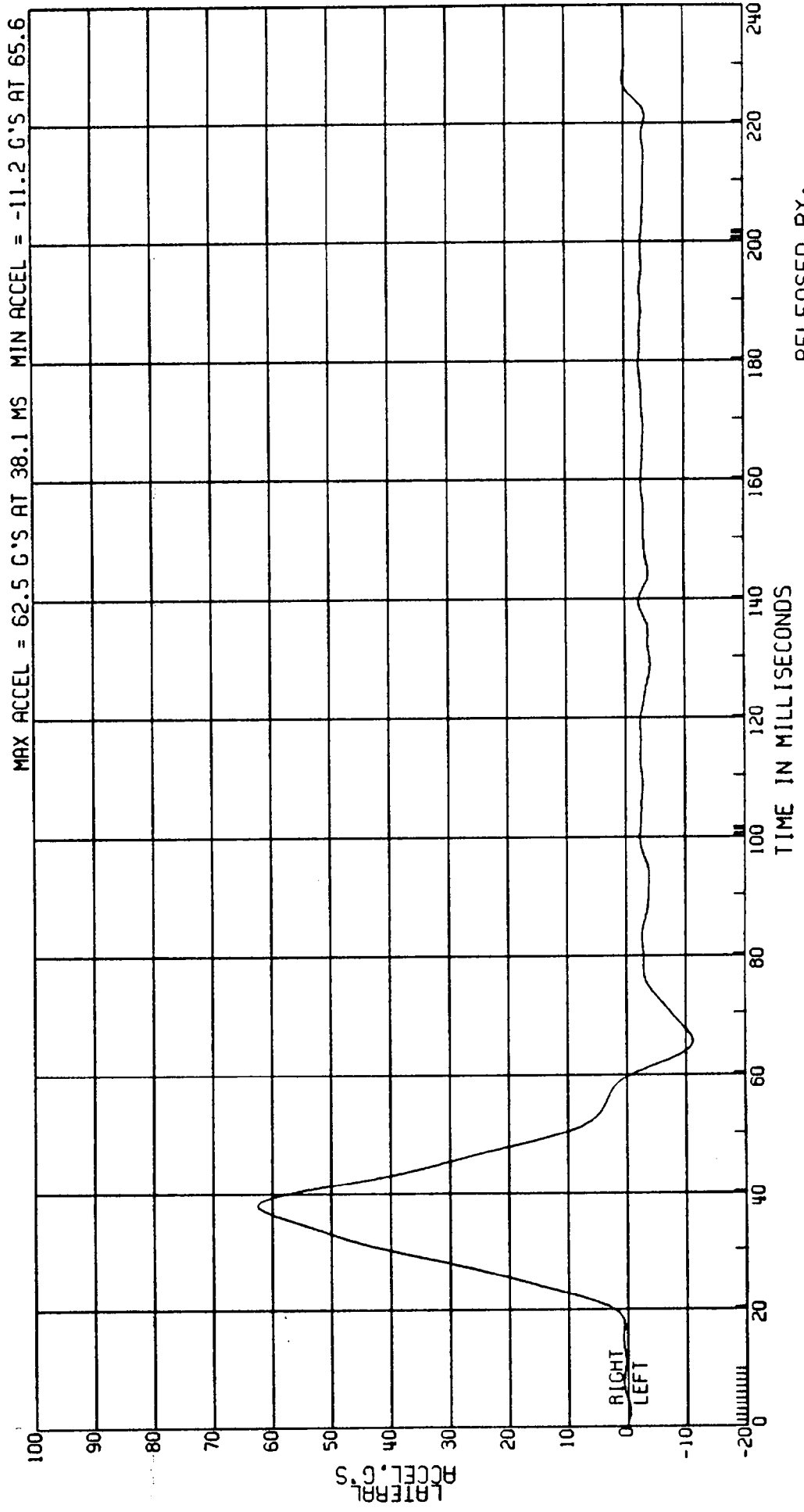
C80048 L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 5a
 3868-905
 CPE MVMA 4B 2AF69
 ELEC DATA, SAE CLASS 1000
 L. REAR T112 ACCEL.
 ATD TYPE: BIOSID
 TEST DATE: 03-06-90



RELEASED BY:
 47 PROCESSED 4 MY 90 11432

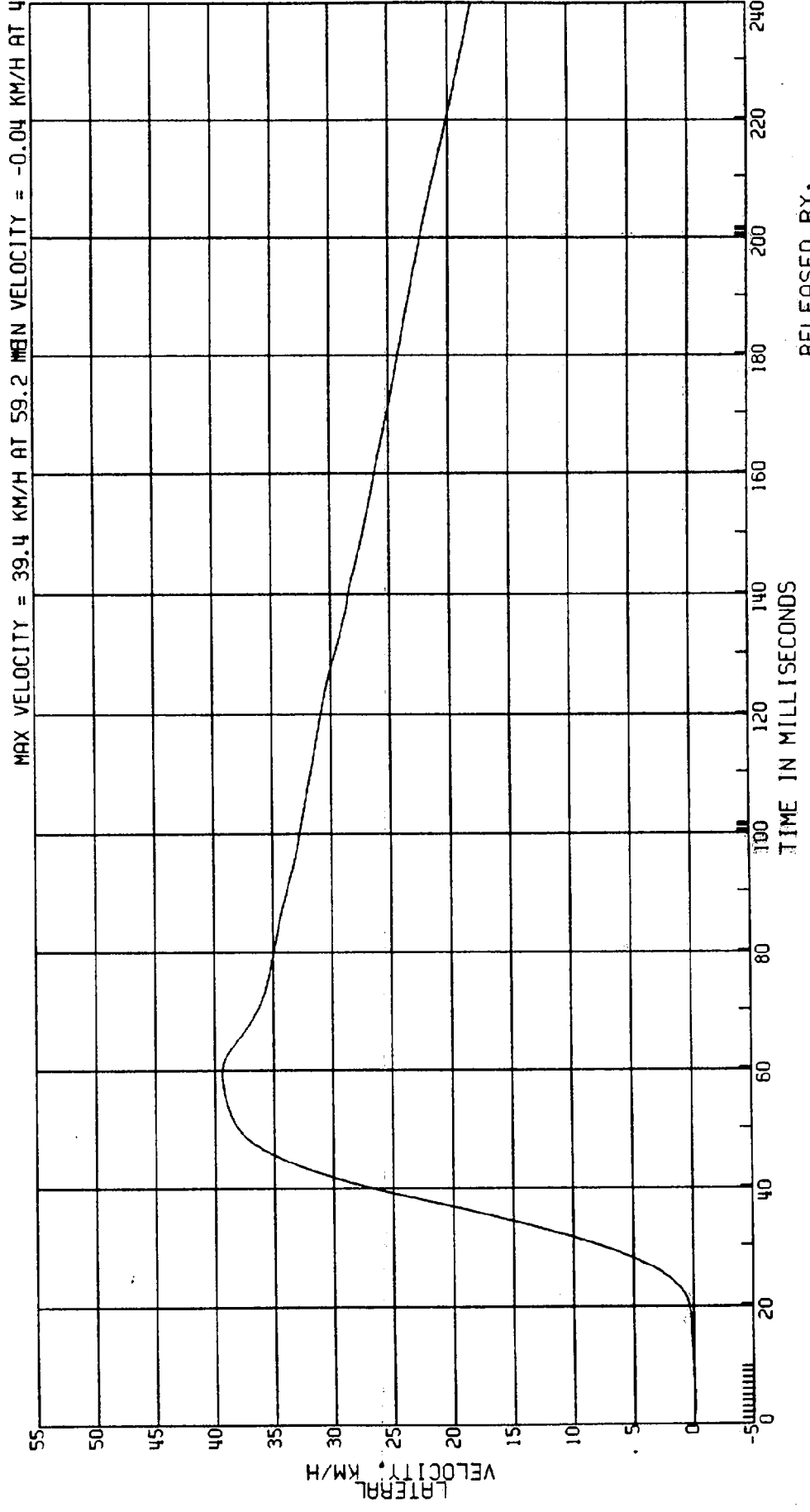
C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 53
3868-905 ATD TYPE: BIOSID
CPE MVMA 4B 2AF69 TEST DATE: 03-06-90

ELEC DATA, NHTSA FIR FILTER L. REAR T12 ACCEL.
F.I.R. FILTER, CLASS 300 BUTTERWORTH

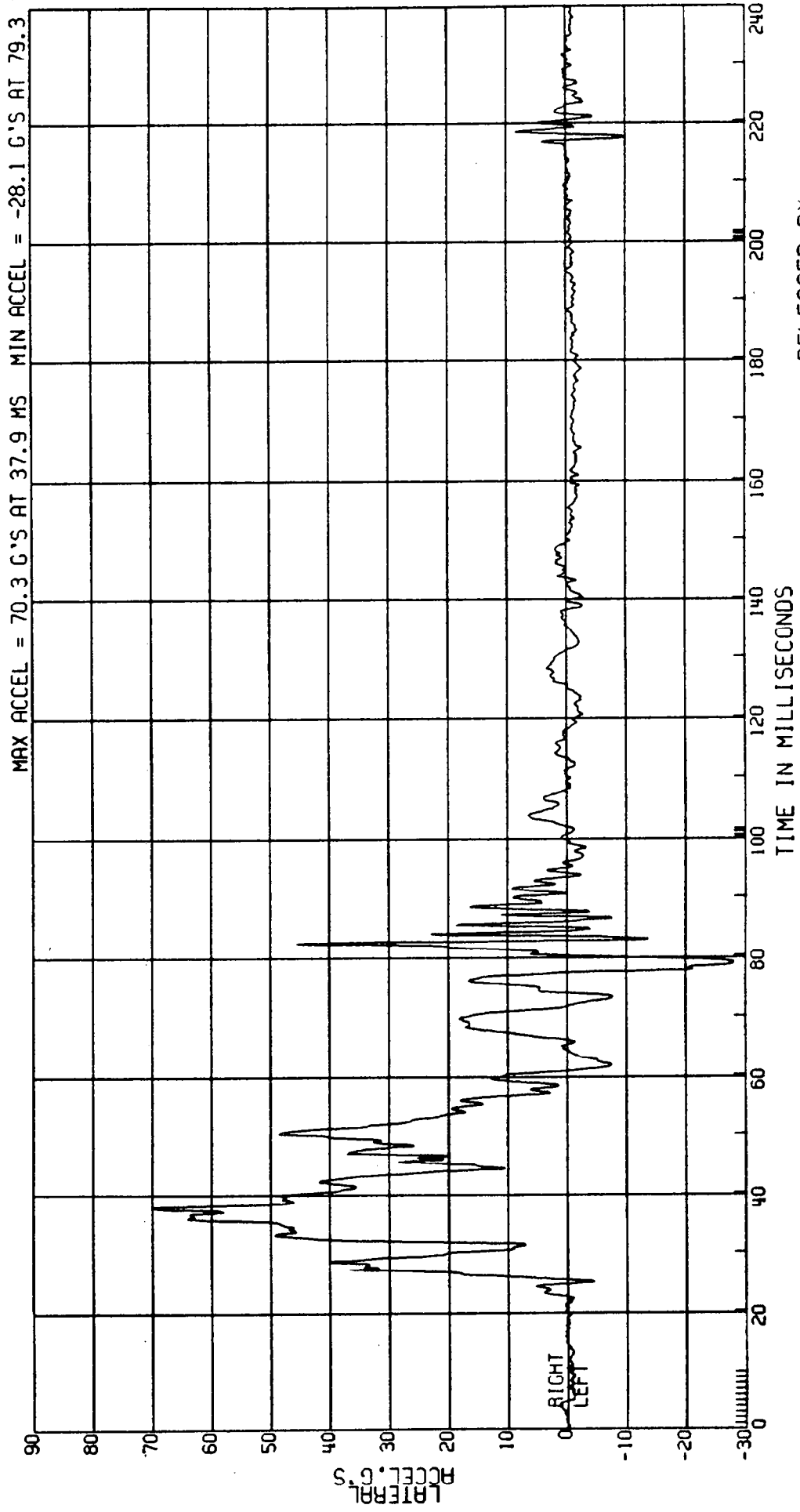


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4B PROCESSED 4 MY 90 11:32

C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 54
 3868-905 AID TYPE: BIOSID
 CPE MVMA 4B 2AF69 COMPUTED T12 VELOCITY TEST DATE: 03-06-90
 ELEC DATA, SAE CLASS 180 (1ST INTEGRAL L. REAR ACCELERATION)

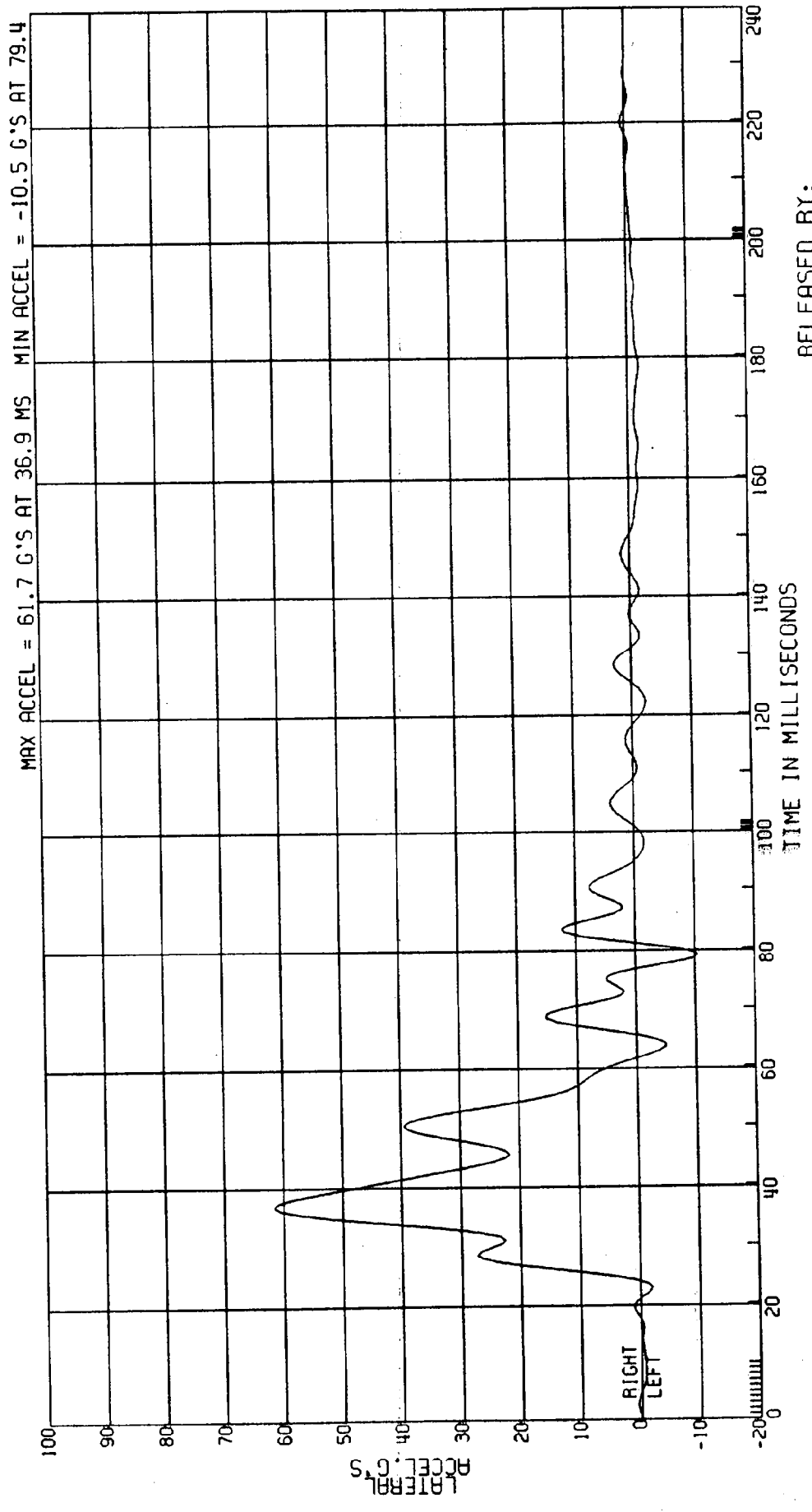


C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 55
3868-905 ATD TYPE: BIOSID
CPE MVMA 4B 2AF69 L. REAR SHOULDER ACCEL. TEST DATE: 03-06-90
ELEC DATA, SAE CLASS 600



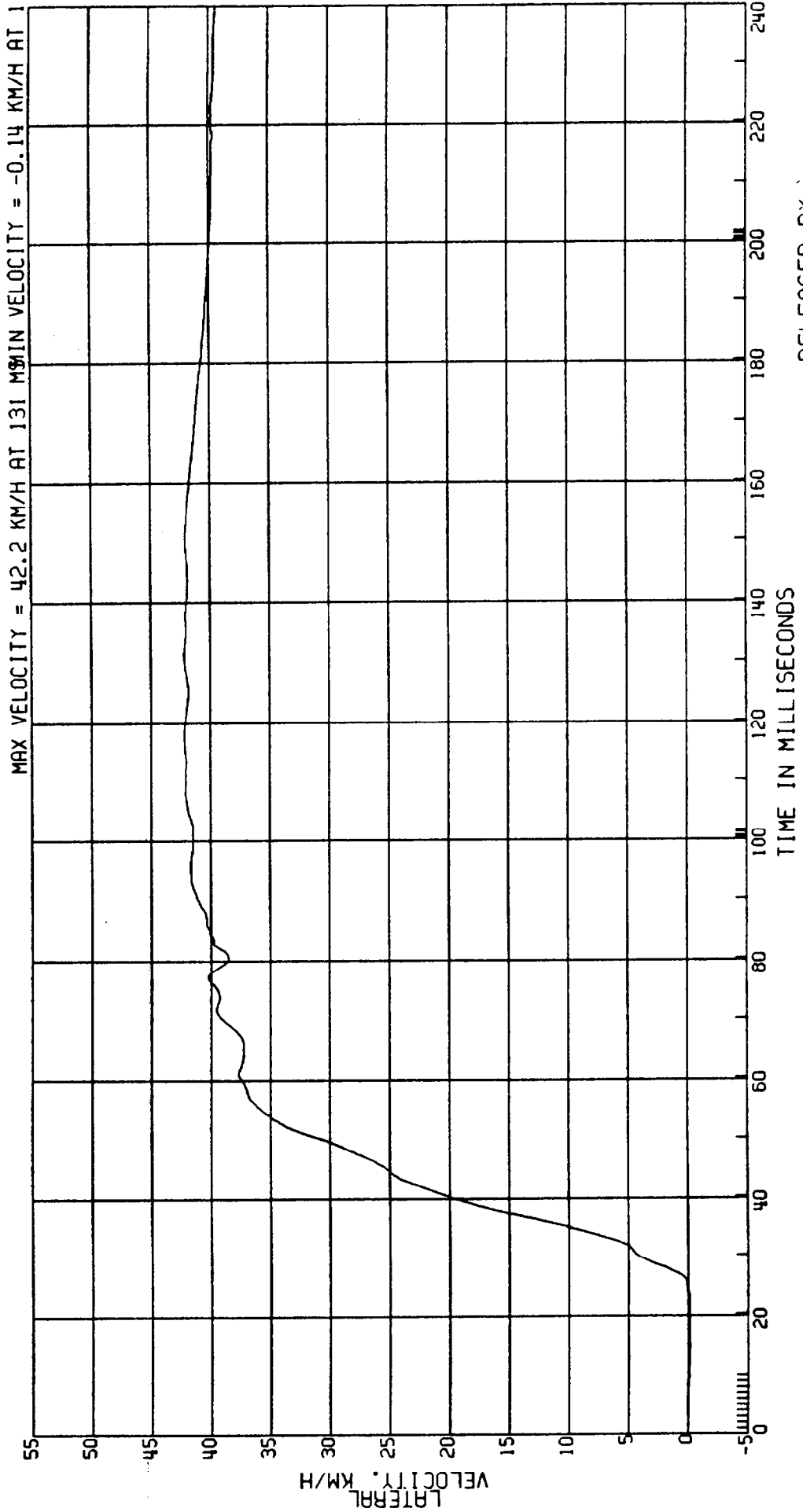
RELEASED BY:
50 PROCESSED 4 MY 90 11:33

C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 56
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 4B 2AF69 L. REAR SHOULDER ACCEL.
 ELEC DATA, NHTSA FIR FILTER F.I.R. FILTER, CLASS 300 BUTTERWORTH TEST DATE: 03-06-90



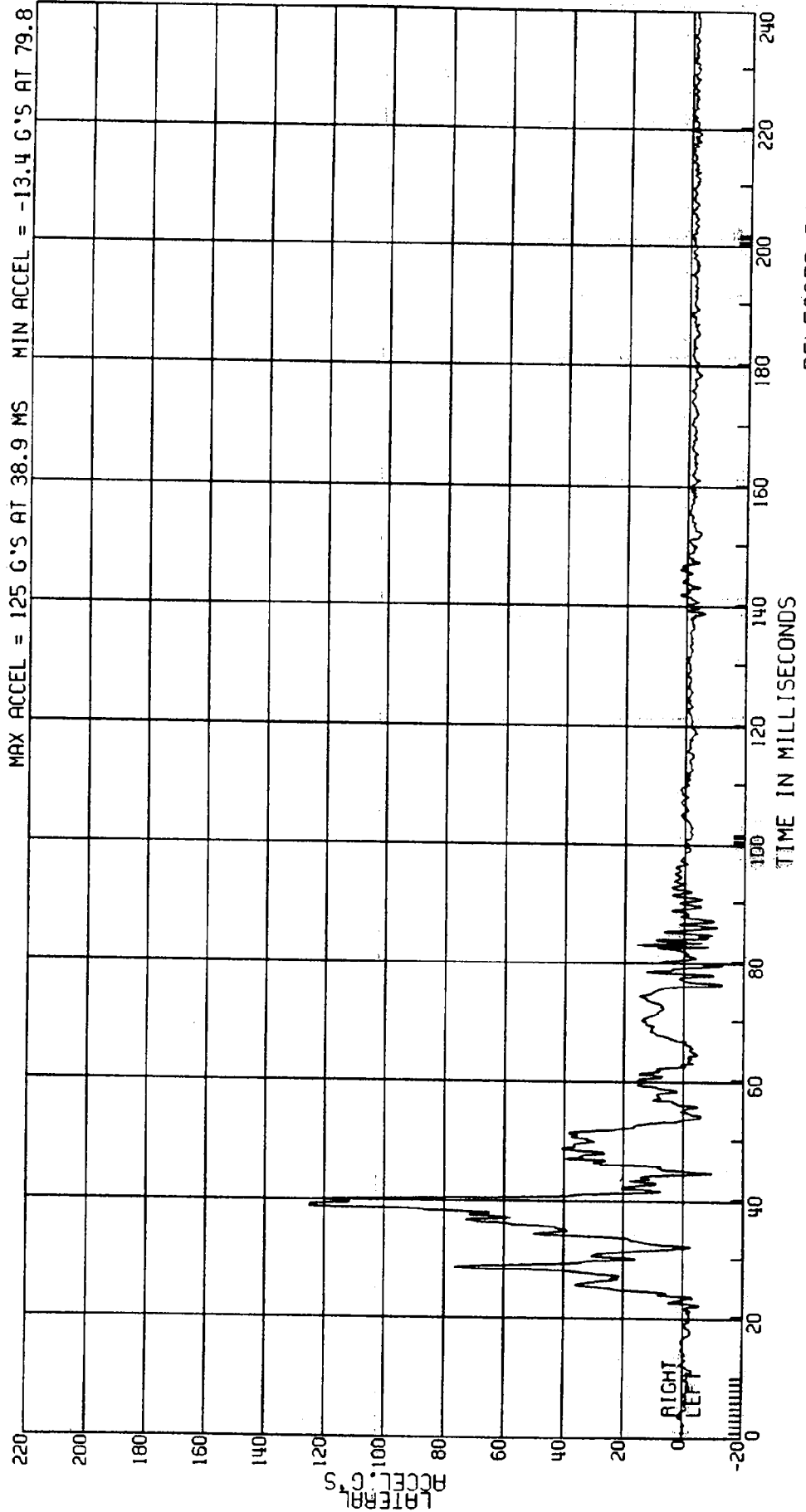
RELEASED BY:
 51 PROCESSED 4 MY 90 11:33

C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 57
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 4B 2AF69 COMPUTED SHOULDER VELOCITY TEST DATE:03-06-90
 ELEC DATA, SAE CLASS 180 (1ST INTEGRAL L.REAR ACCELERATION)

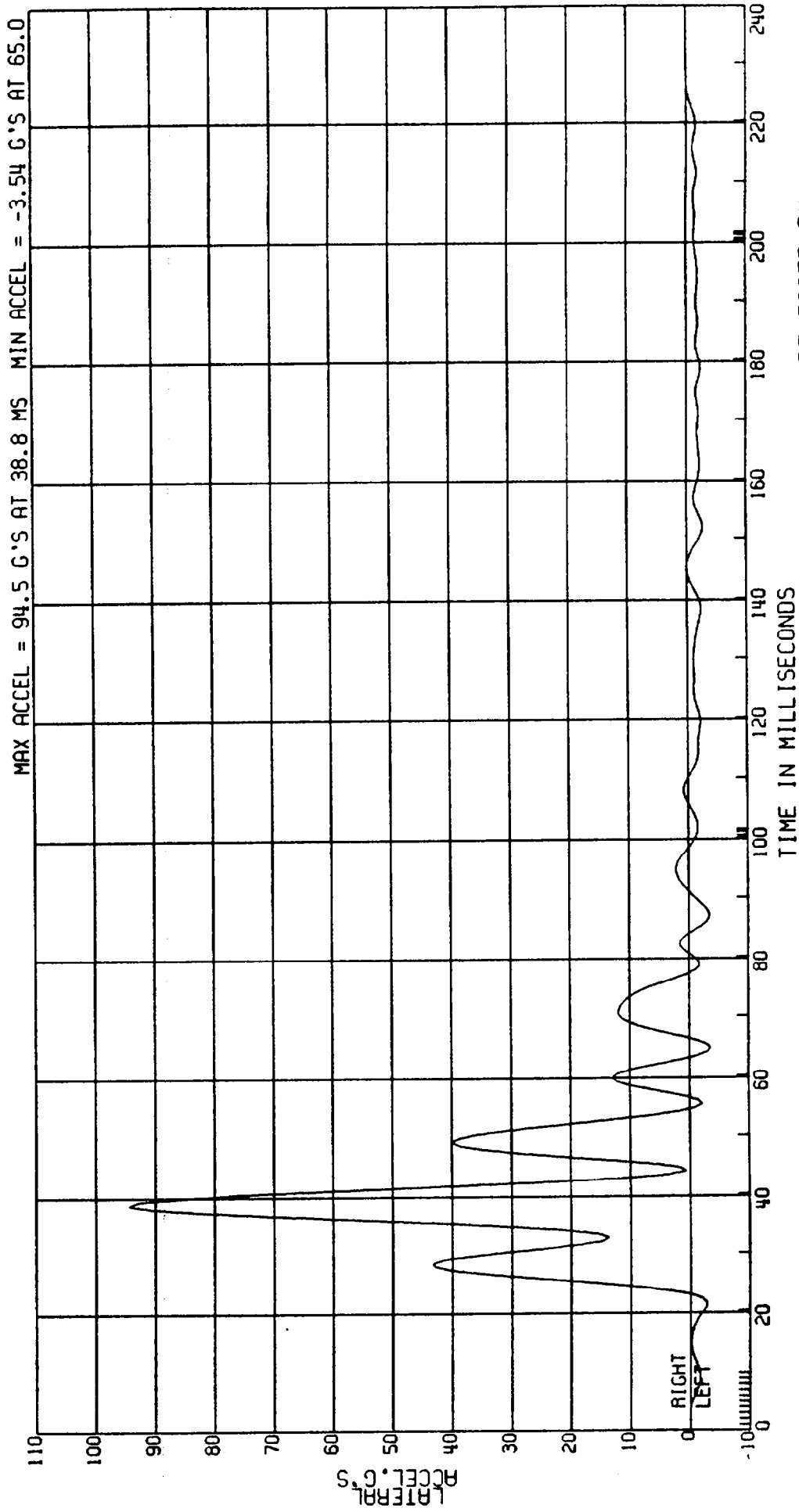


RELEASED BY:
 52 PROCESSED 4 MY 90 11:33

C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 58
3868-905
CPE MVMA 4B 2AF69 ATD TYPE: B10SID
ELEC DATA, SAE CLASS 1000 L. REAR FIRST THORACIC RIB ACCEL. TEST DATE: 03-06-90

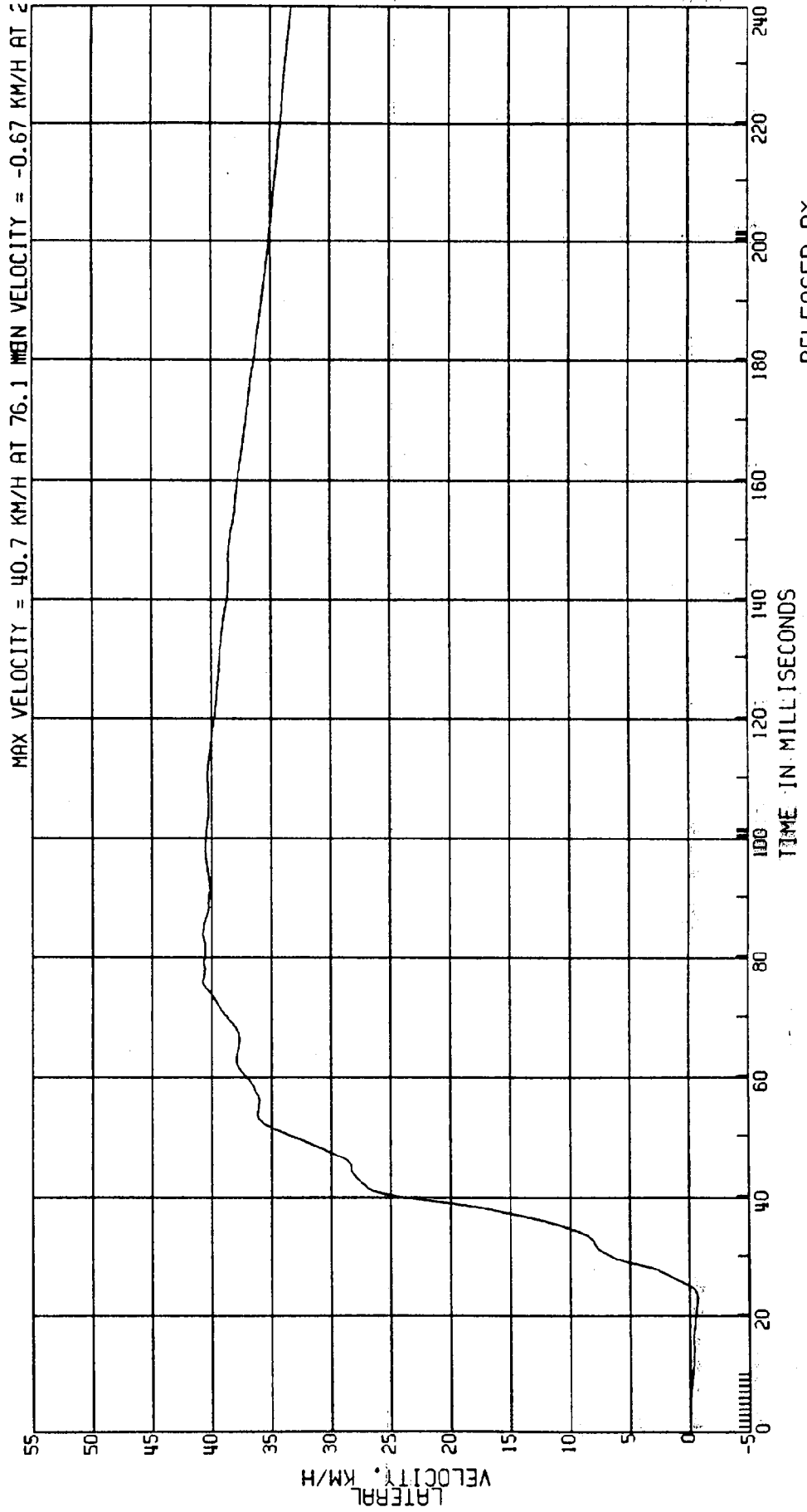


C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 59
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 4B 2AF69 L. REAR FIRST THORACIC RIB ACCEL.
 ELEC DATA, NHTSA FIR FILTER F.I.R. FILTER, CLASS 300 BUTTERWORTH TEST DATE:03-06-90



RELEASED BY:
 54 PROCESSED 4 MY 90 11:33

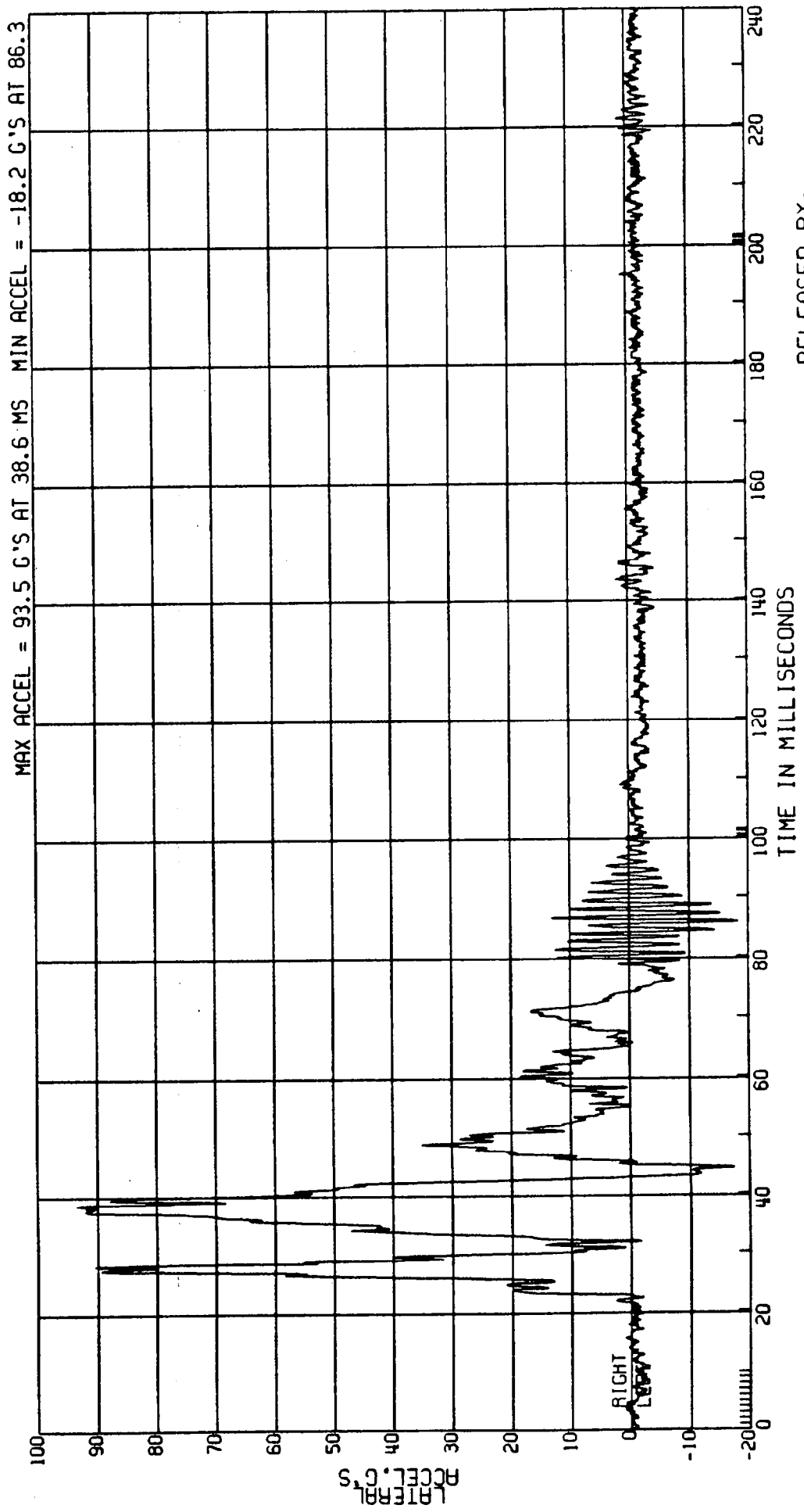
C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 60
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 4B 2AF69 COMPUTED 1ST THORACIC RIB VELOCITY TEST DATE:03-06-90
 ELEC DATA, SAE CLASS 180 (1ST INTEGRAL L. REAR ACCELERATION)



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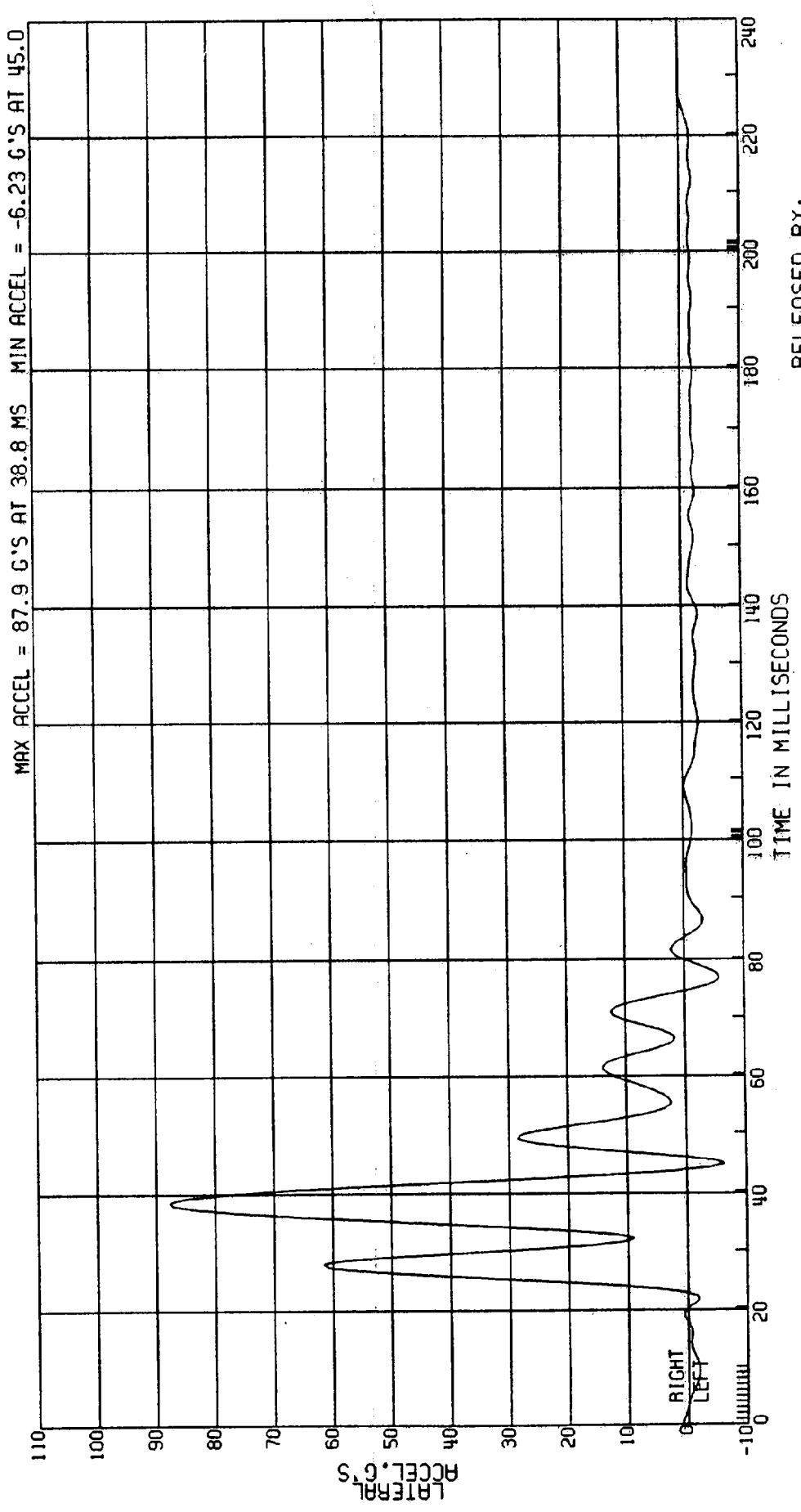
55 PROCESSED 4 MY 90 11:33

C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 61
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 4B 2AF69 L. REAR SECOND THORACIC RIB ACCEL.
 ELEC DATA, SAE CLASS 1000 TEST DATE: 03-06-90



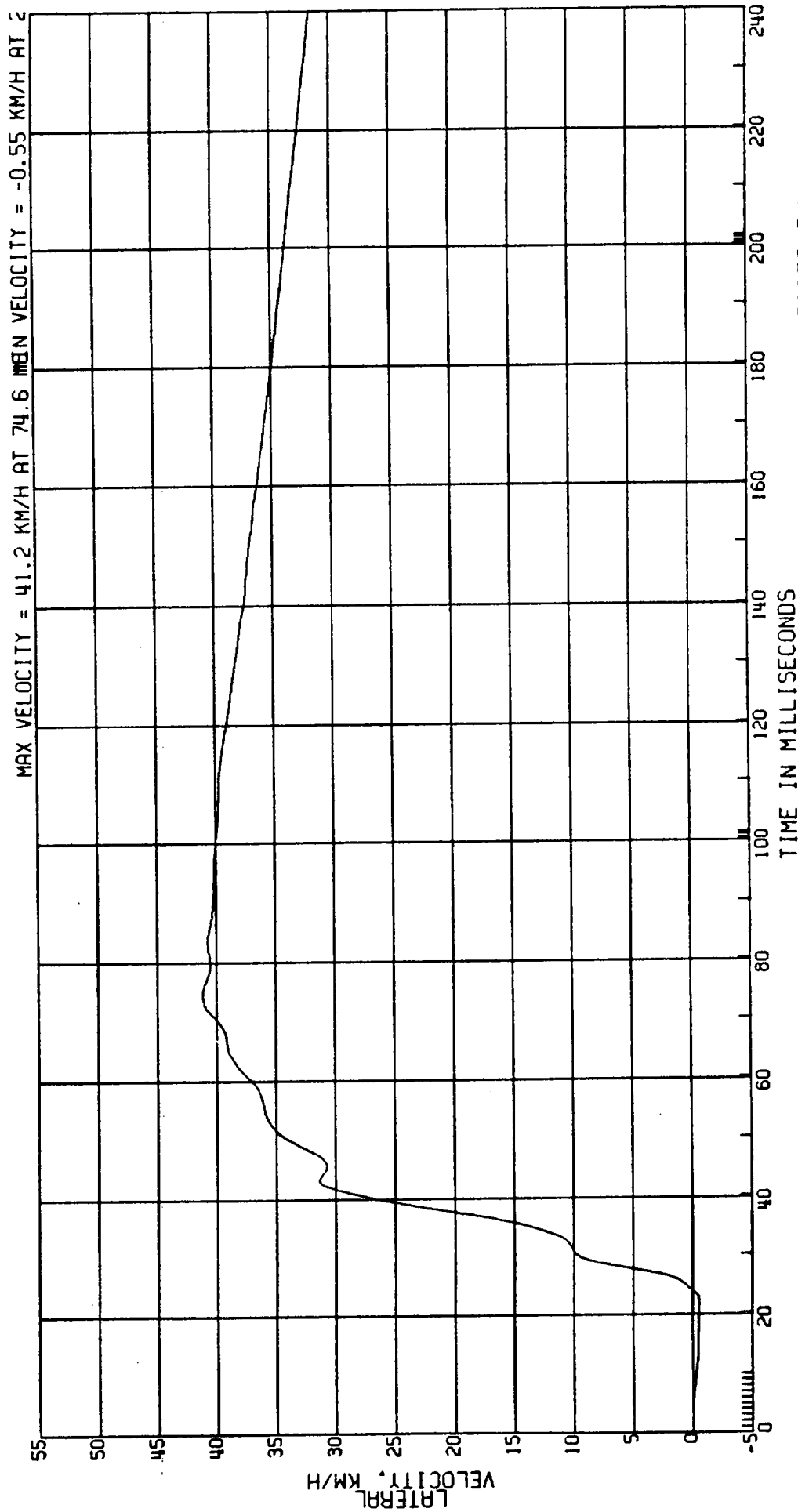
RELEASED BY:
 56 PROCESSED 4 MT 90 11:33

C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 62
 3868-905 ATD TYPE: BIOSID
 CPE MYMA 4B 2AF69 L. REAR SECOND THORACIC RIB ACCEL. TEST DATE: 03-06-90
 ELEC DATA, NHTSA FIR FILTER F.I.R. FILTER, CLASS 300 BUTTERWORTH

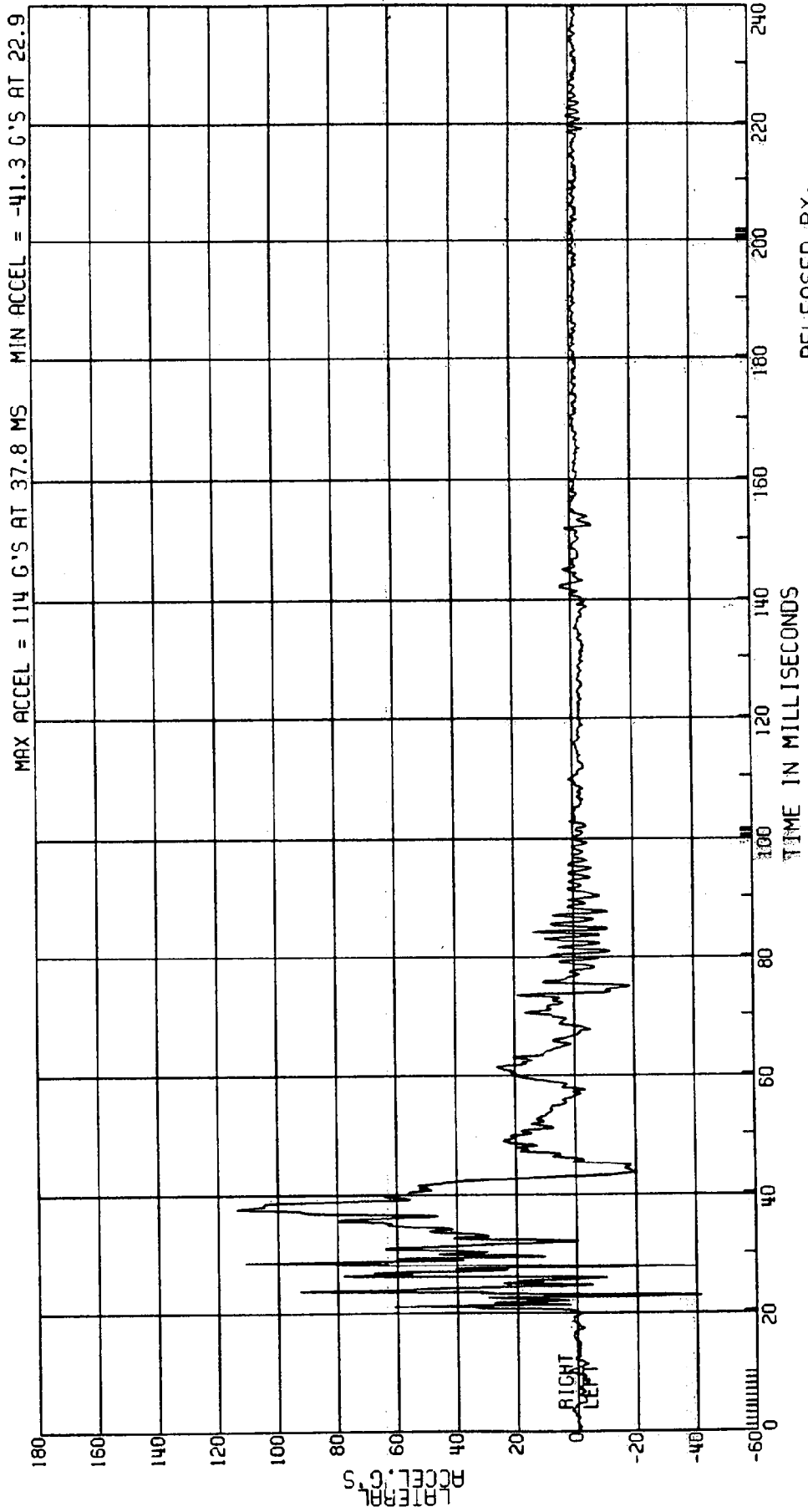


RELEASED BY: 57 PROCESSED 4-MY 90 11:33

C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 63
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 4B 2AF69 TEST DATE: 03-06-90
 ELEC DATA, SAE CLASS 180 (1ST INTEGRAL L. REAR ACCELERATION)
 COMPUTED 2ND THORACIC RIB VELOCITY



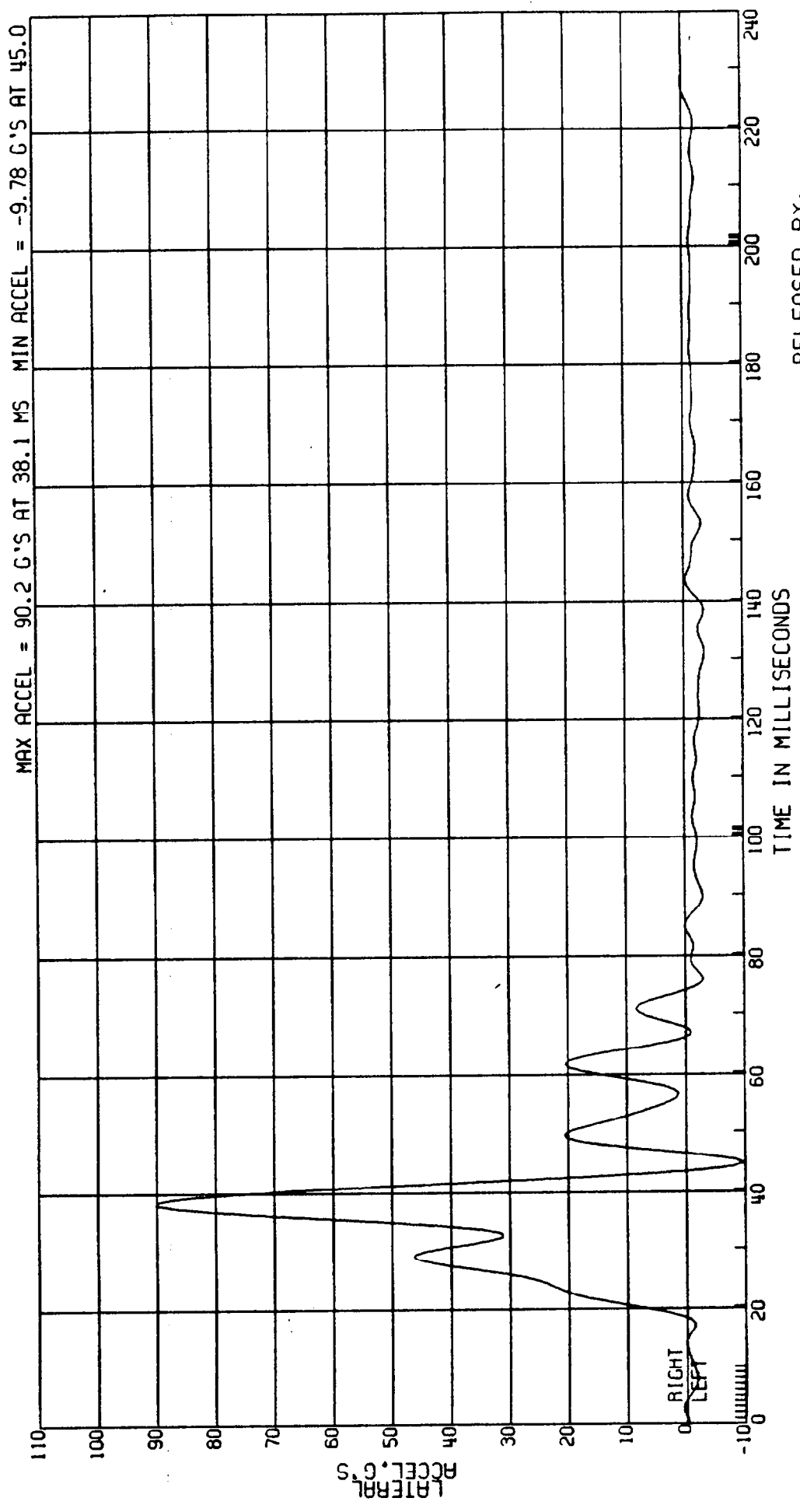
C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 64
3868-905 ATD TYPE: BIOSID
CPE MVMR 4B 2AF69 L. REAR THIRD THORACIC RIB ACCEL.
ELEC DATA, SAE CLASS 1000 TEST DATE: 03-06-90



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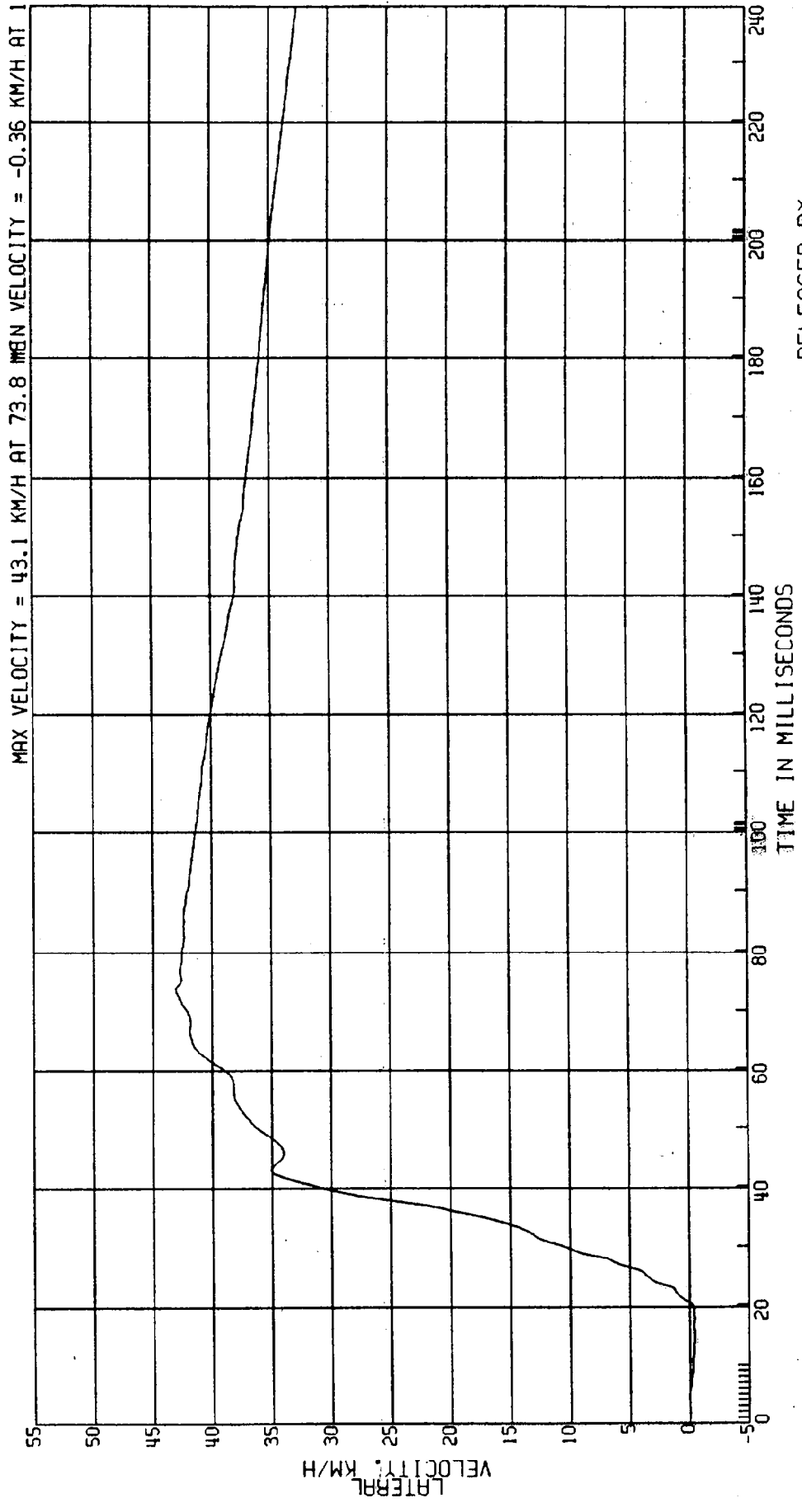
59 PROCESSED 4 MAY 90 11:33 AM

C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 65
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 4B 2AF69 L. REAR THIRD THORACIC RIB ACCEL.
 ELEC DATA, NHTSA FIR FILTER F.I.R. FILTER, CLASS 300 BUTTERWORTH TEST DATE:03-06-90



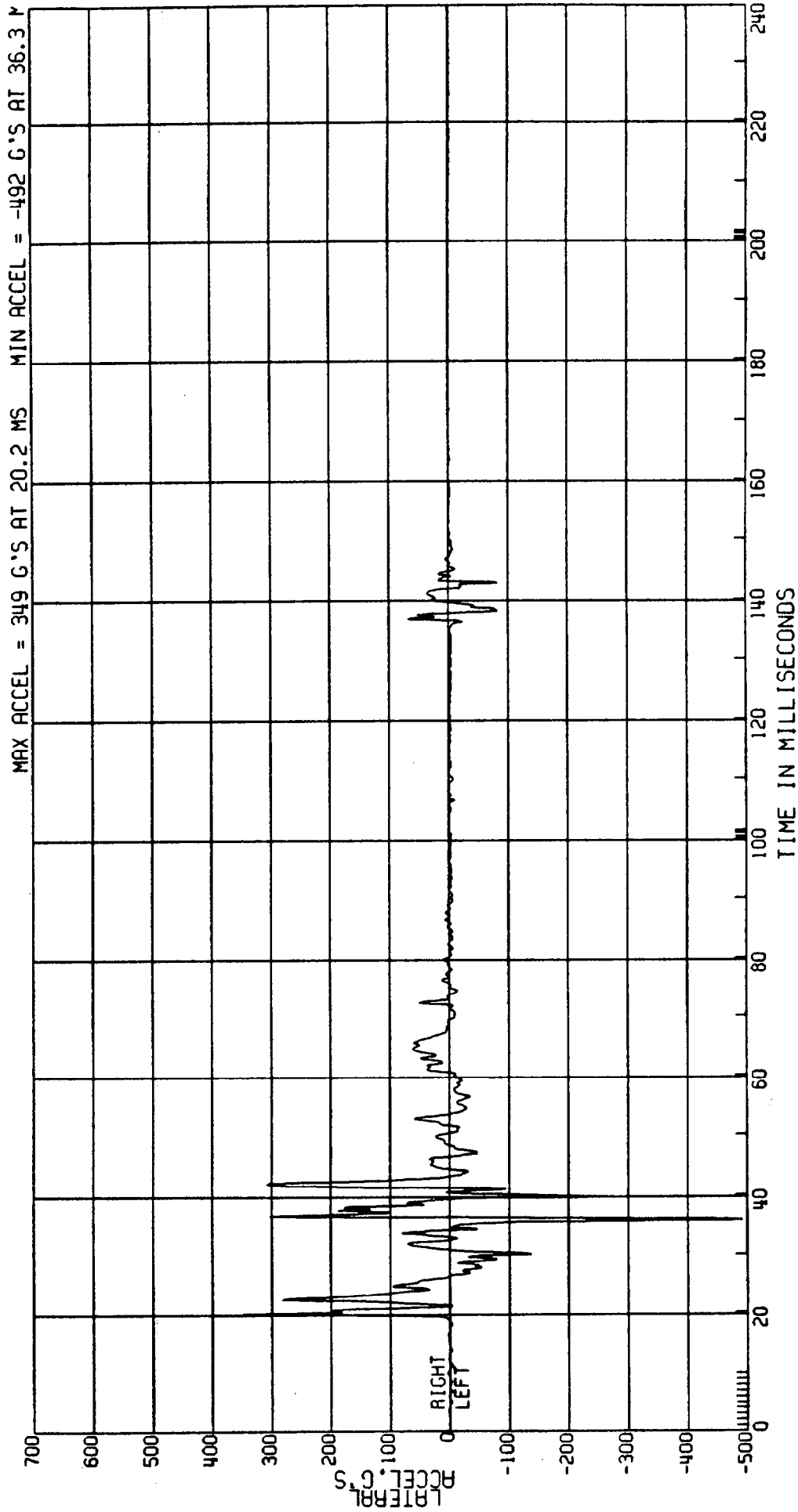
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 60 PROCESSED 4 MY 90 11:33

C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 66
3868-905 ATD TYPE: BIOSID
CPE MVMA 4B 2AF69 TEST DATE: 03-06-90
ELEC DATA, SAE CLASS 180 (1ST INTEGRAL L. REAR ACCELERATION)



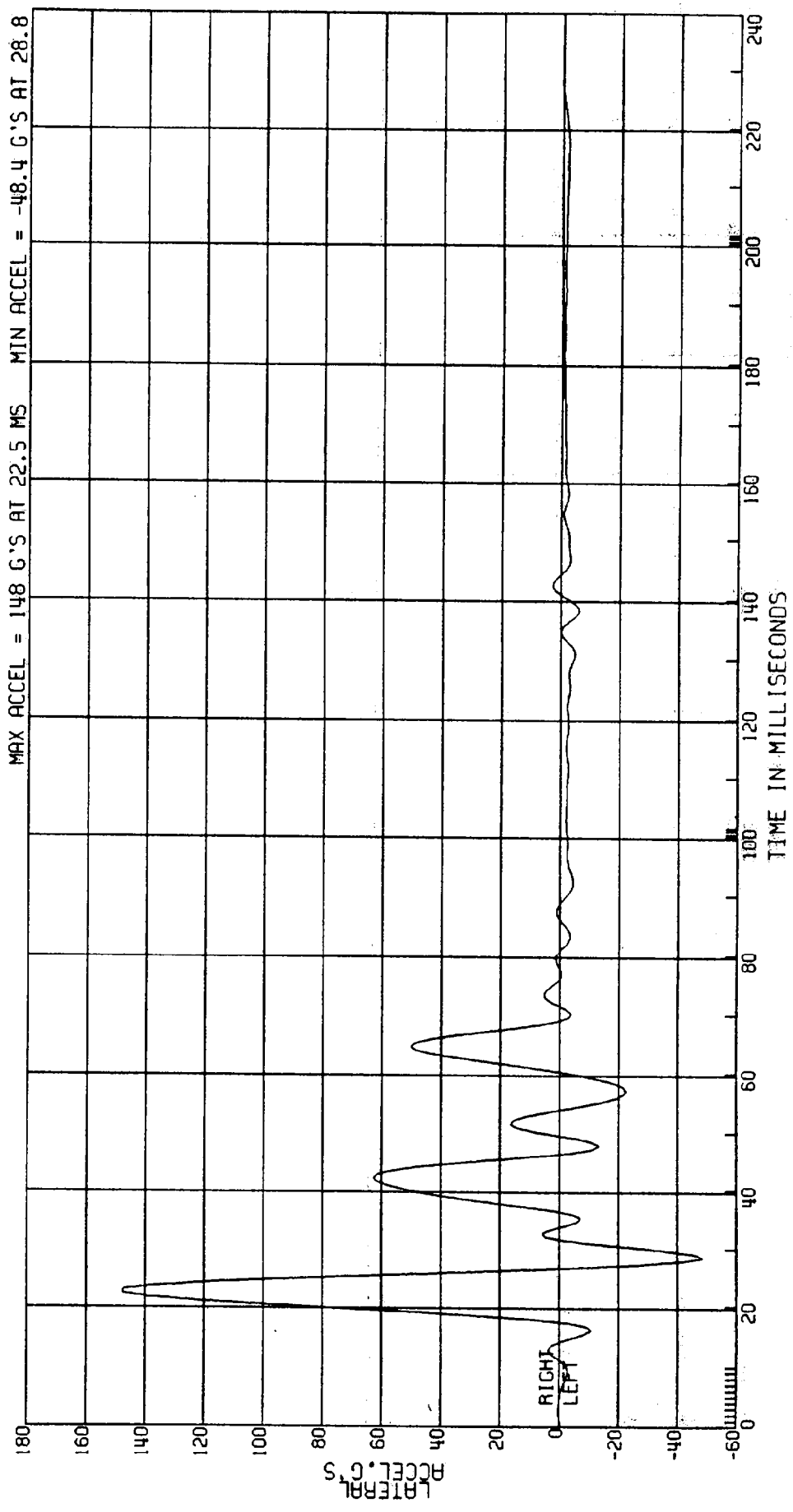
RELEASED BY:
61 PROCESSED 4 MAY 90 11:33 AM

C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 67
3868-905 ATD TYPE: BIOSID
CPE MVMA 4B 2AF69 TEST DATE:03-06-90
ELEC DATA, SAE CLASS 1000 L. REAR FIRST ABDOMINAL RIB ACCEL.

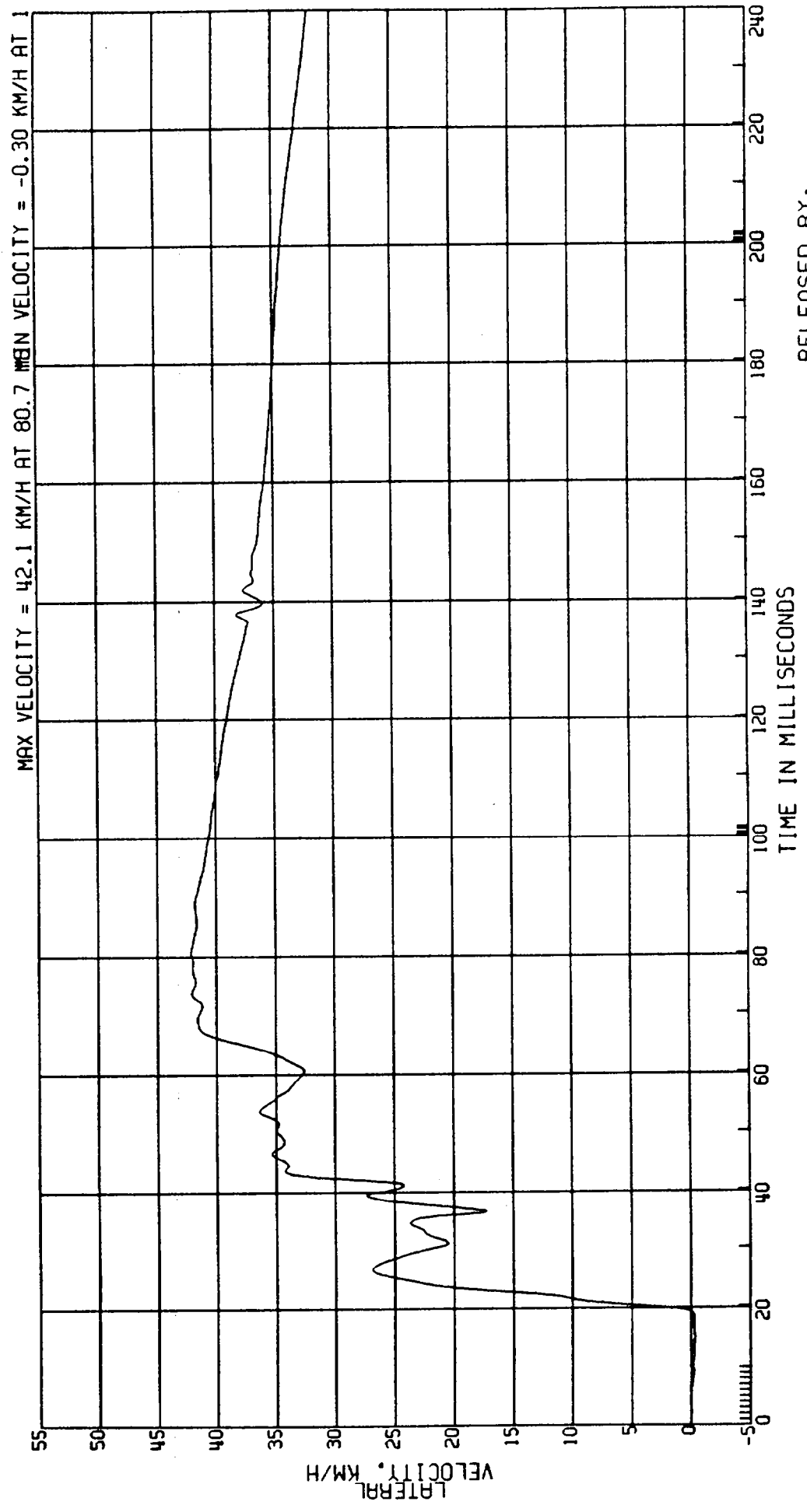


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62 PROCESSED 4 MY 90 11:33

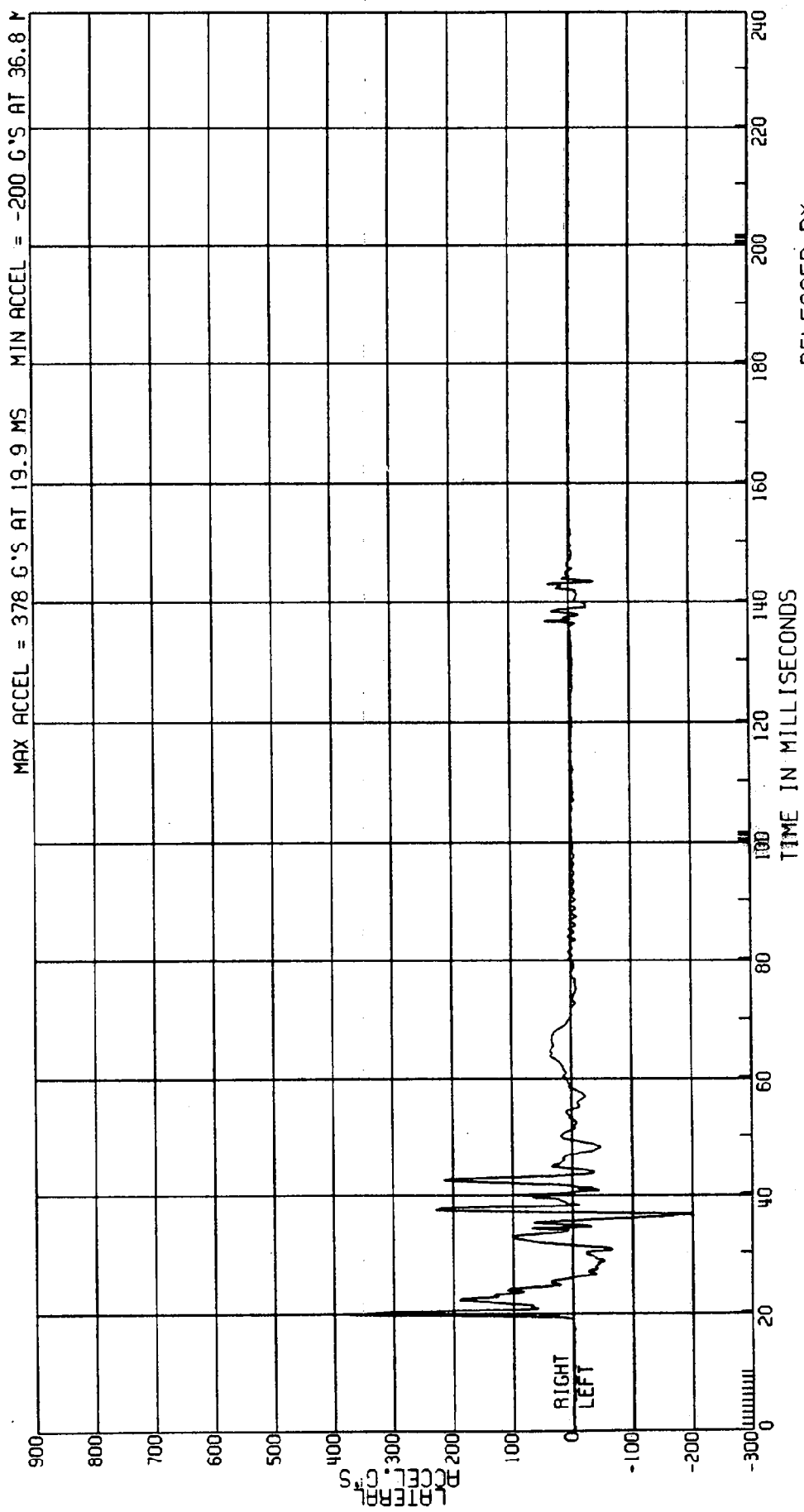
C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 68
 3868-905
 CPE MVMA 4B 2AF69 ATD TYPE: BIOSID
 ELEC DATA, NHTSA FIR FILTER L. REAR FIRST ABDOMINAL RIB ACCEL. TEST DATE: 03-06-90
 F.I.R. FILTER, CLASS 300 BUTTERWORTH



C8004B L. SIDE IMPACT-27 DEC MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 69
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 4B 2AF69 TEST DATE:03-06-90
 ELEC DATA, SAE CLASS 180 (1ST INTEGRAL L.REAR ACCELERATION)
 COMPUTED 1ST ABDOMINAL RIB VELOCITY



C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 70
3868-905 MVMA 4B 2AF69 TEST DATE:03-06-90
CPE L. REAR SECOND ABDOMINAL RIB ACCEL.
ELEC DATA, SAE CLASS 1000



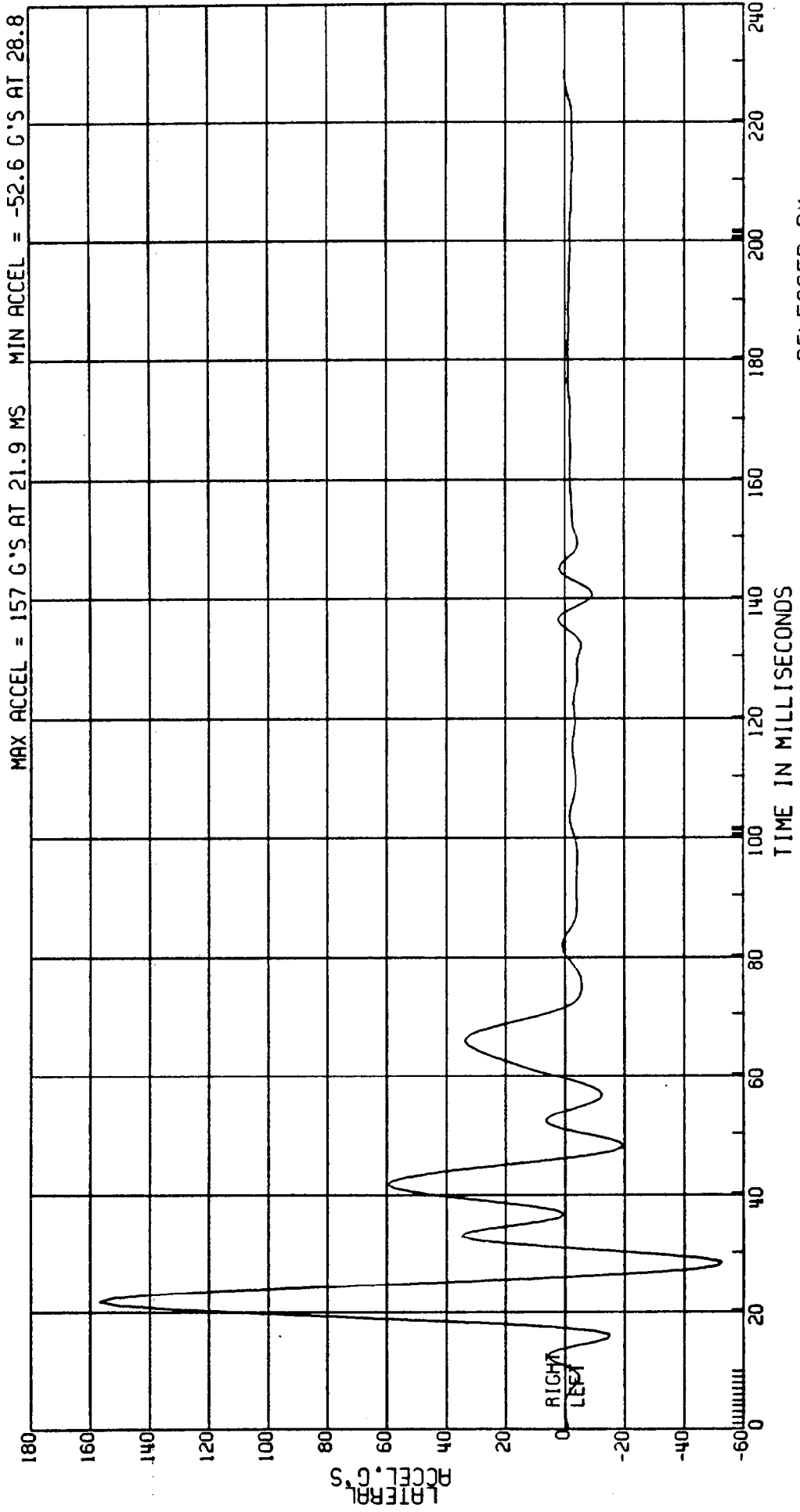
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65 PROCESSED 4 MY 90 11:33

C8004B L. SIDE IMPACT-27 DEG
3868-905
CPE MVMA 4B 2AF69
ELEC DATA, NHTSA FIR FILTER

MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 71
L. REAR SECOND ABDOMINAL RIB ACCEL.
F.I.R. FILTER, CLASS 300 BUTTERWORTH

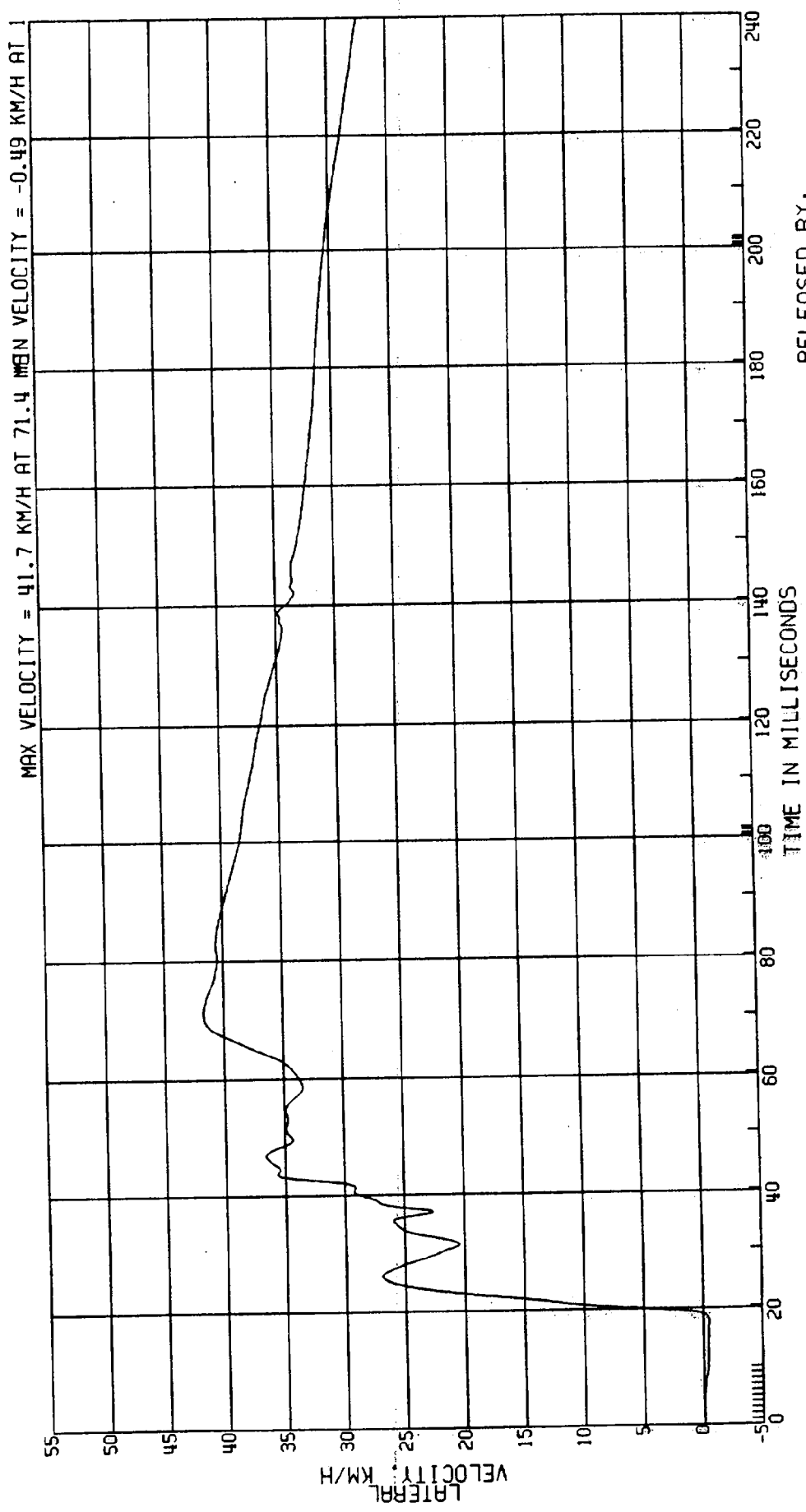
TEST DATE: 03-06-90



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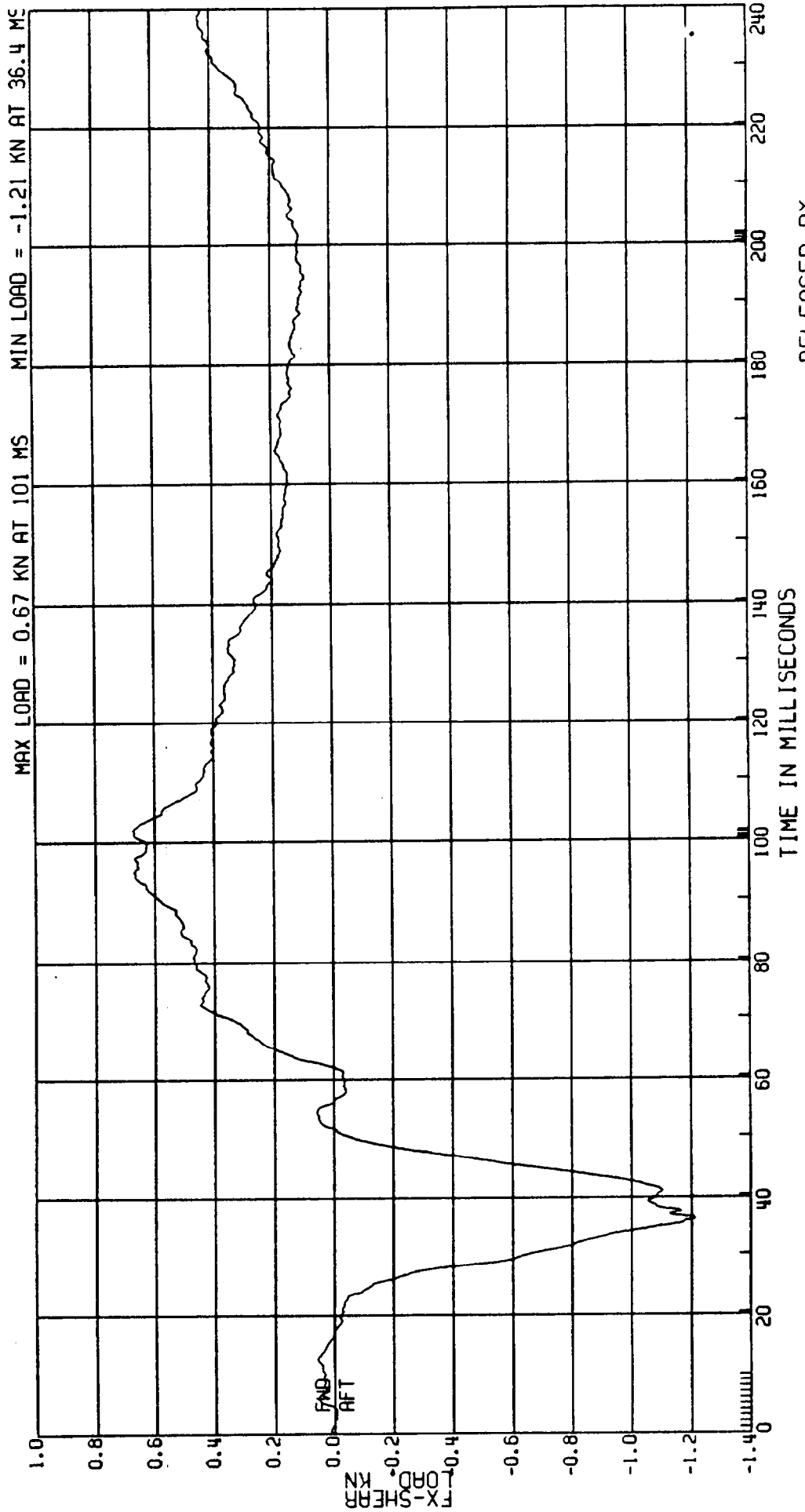
66 PROCESSED 4 MY 90 11:33

C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 7a
 3868-905 MVMA 4B 2AF69 ATD TYPE: BIOSID
 CPE ELEC DATA, SAE CLASS 180 COMPUTED 2ND ABDOMINAL RIB VELOCITY TEST DATE: 03-06-90
 (1ST INTEGRAL L. REAR ACCELERATION)



RELEASED BY:
 67 PROCESSED 4 MY 90 11:33

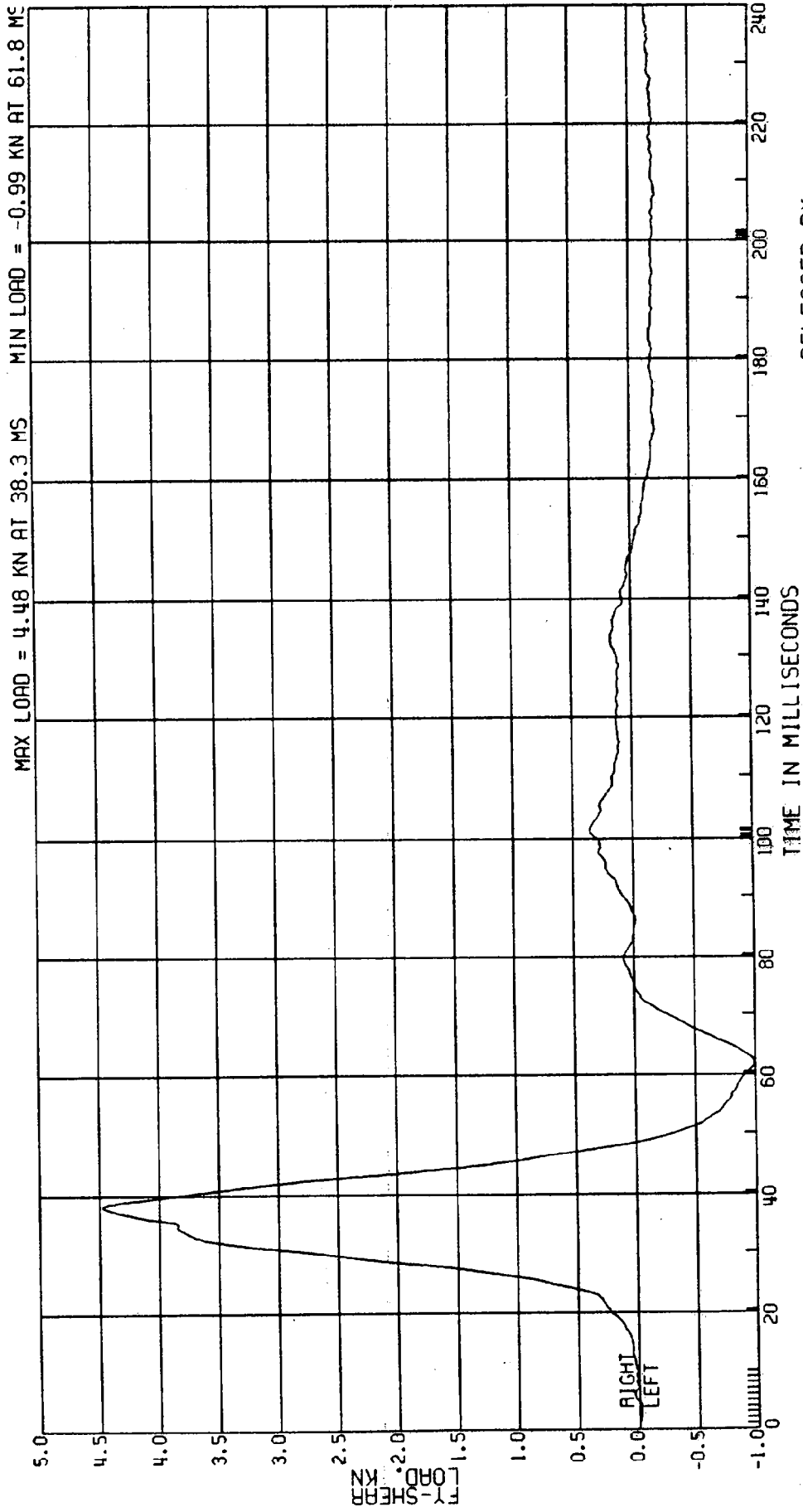
C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 73
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 4B 2AF69 L. REAR LOWER LUMBAR LOAD TEST DATE: 03-06-90
 ELEC DATA, SAE CLASS 180



C8004B L. SIDE IMPACT-27 DEG
3868-905
CPE MVMA 4B 2AF69
ELEC DATA. SAE CLASS 180

MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 74
L. REAR LOWER LUMBAR LOAD

ATD TYPE: BIOSID
TEST DATE: 03-06-90

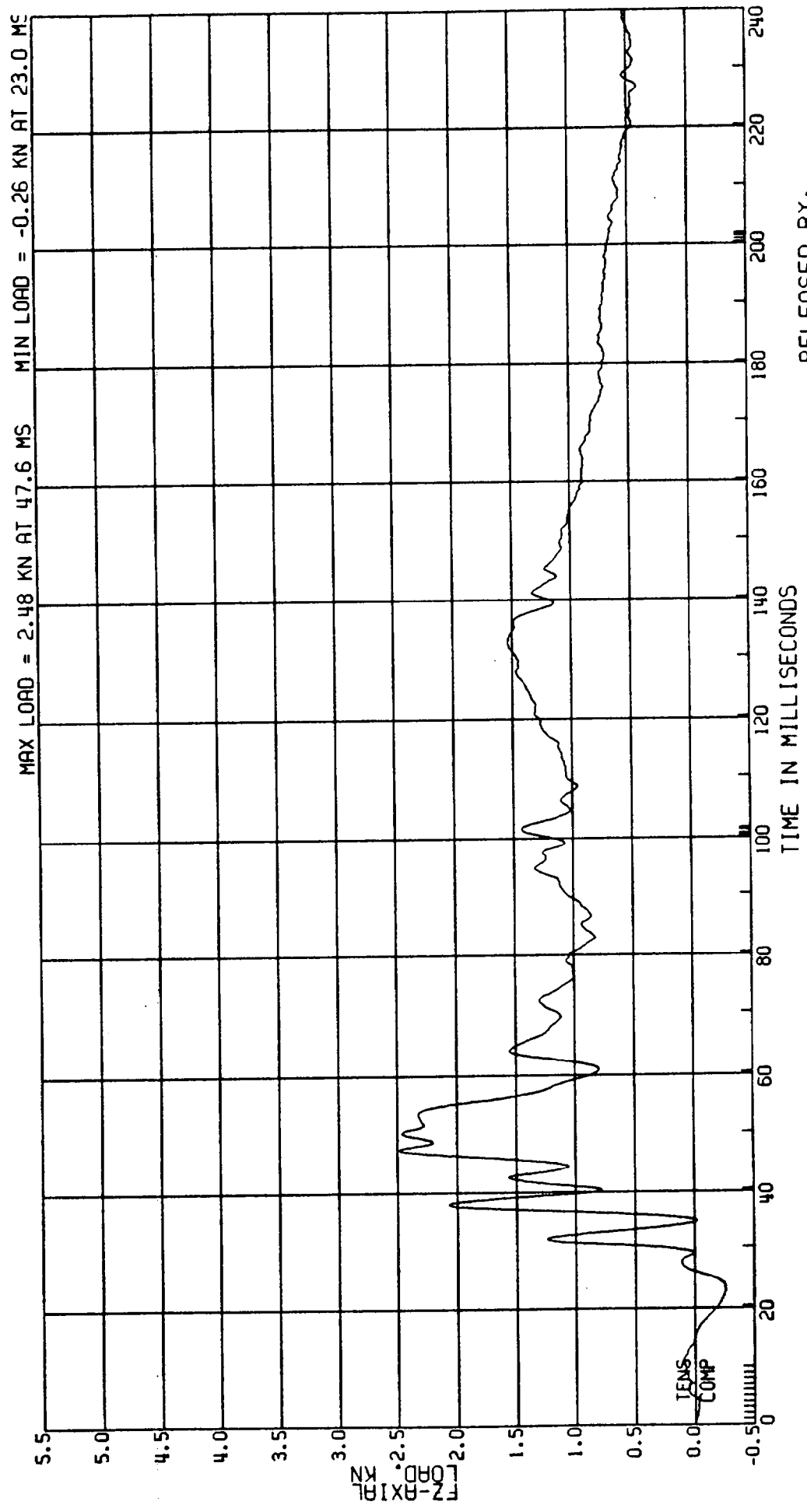


RELEASED BY:

69 PROCESSED 4 MY 90 11:33

C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 75
3868-905 ATD TYPE: BIOSID
CPE MVMA 4B 2AF69 TEST DATE:03-06-90
ELEC DATA, SAE CLASS 180

L. REAR LOWER LUMBAR LOAD

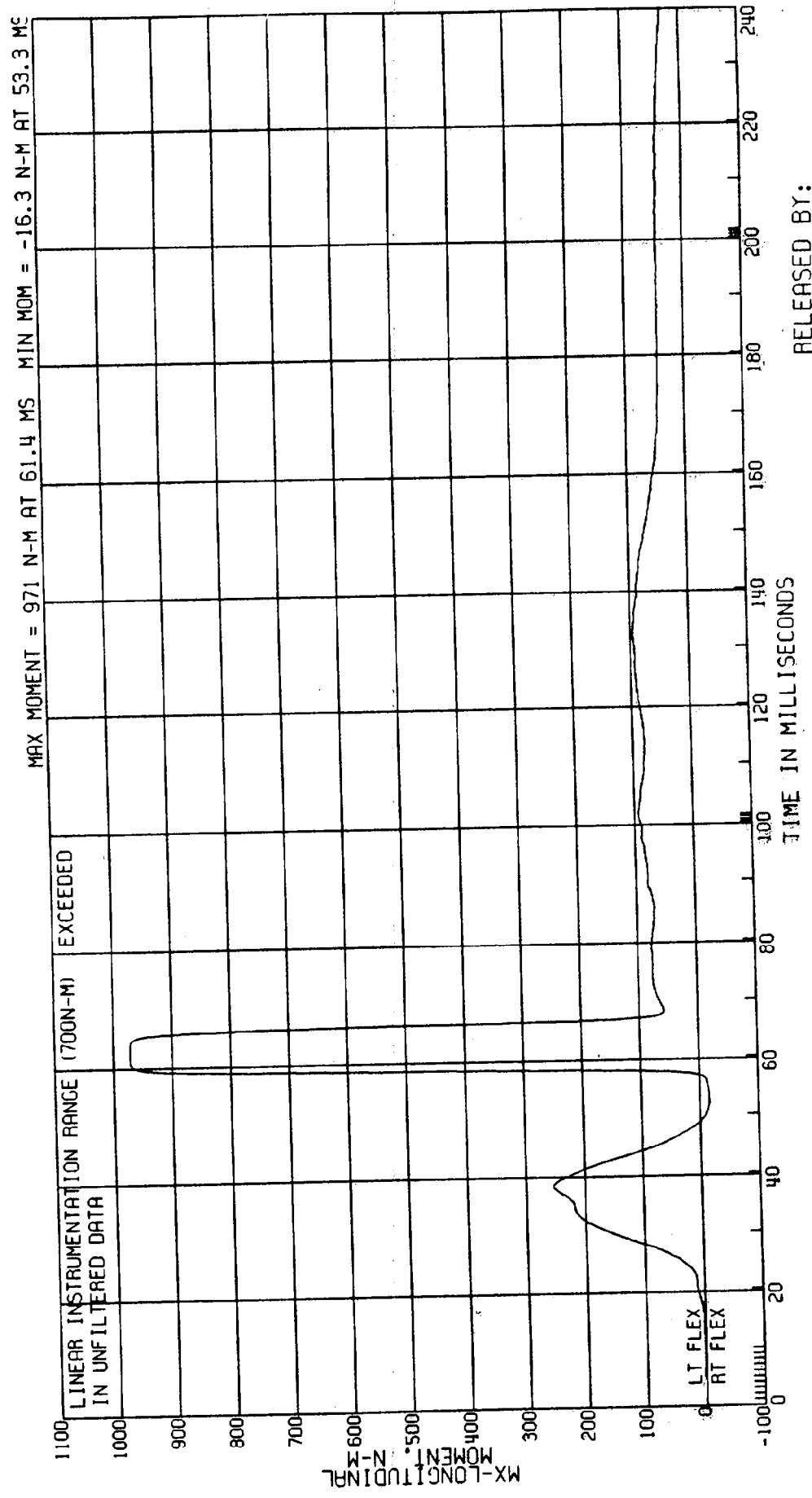


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70 PROCESSED 4 MY 90 11:33

C8004B L. SIDE IMPACT-27 DEG
3868-905 MVMA 4B 2AF69
CPE ELEC DATA, SAE CLASS 180

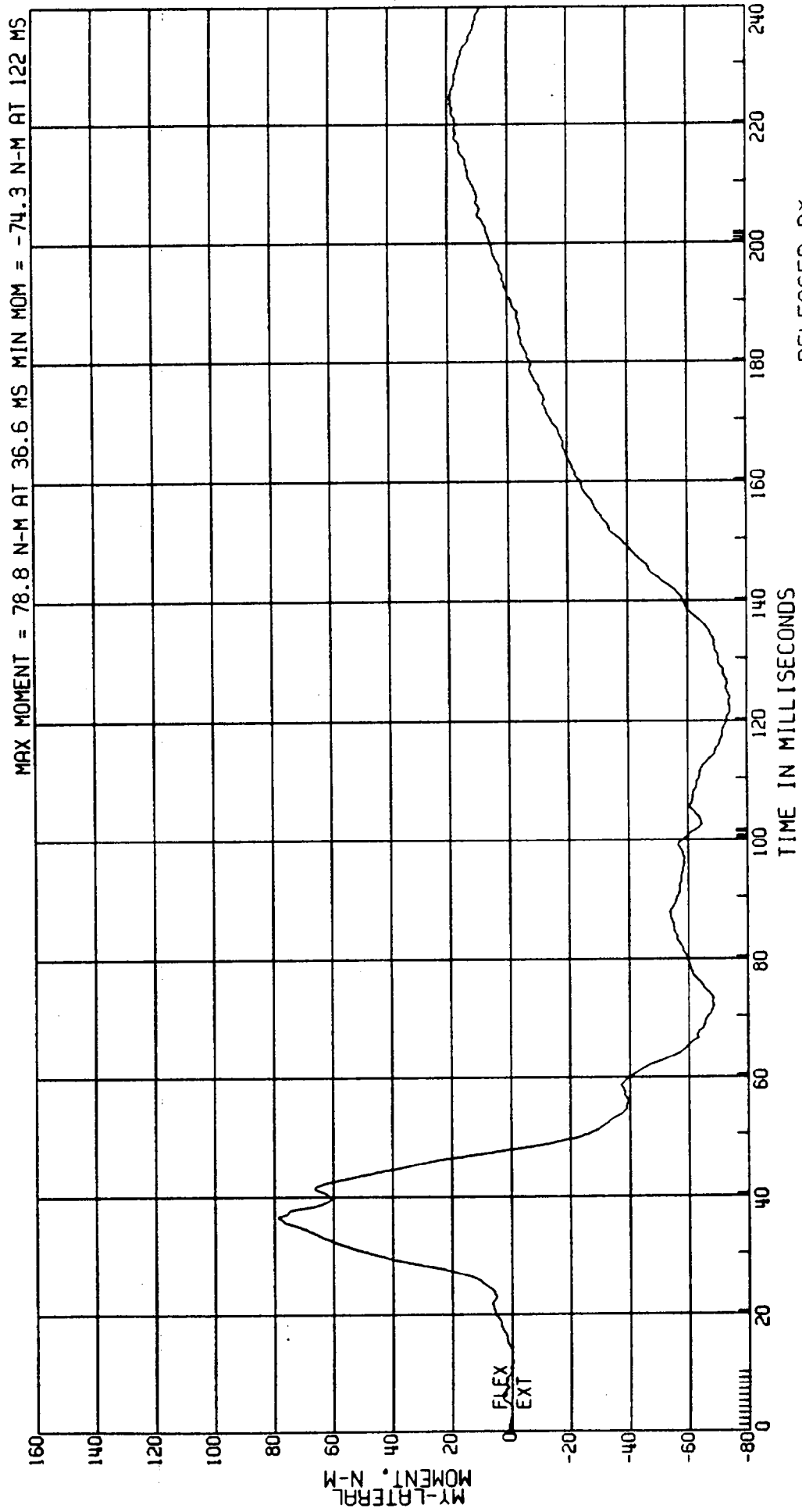
MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 76
L. REAR LOWER LUMBAR MOMENT

ATD TYPE: BIOSID
TEST DATE: 03-06-90



RELEASED BY:
71 PROCESSED 4 MY 90 11:33

C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 77
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 4B 2AF69 TEST DATE:03-06-90
 ELEC DATA, SAE CLASS 180 L. REAR LOWER LUMBAR MOMENT

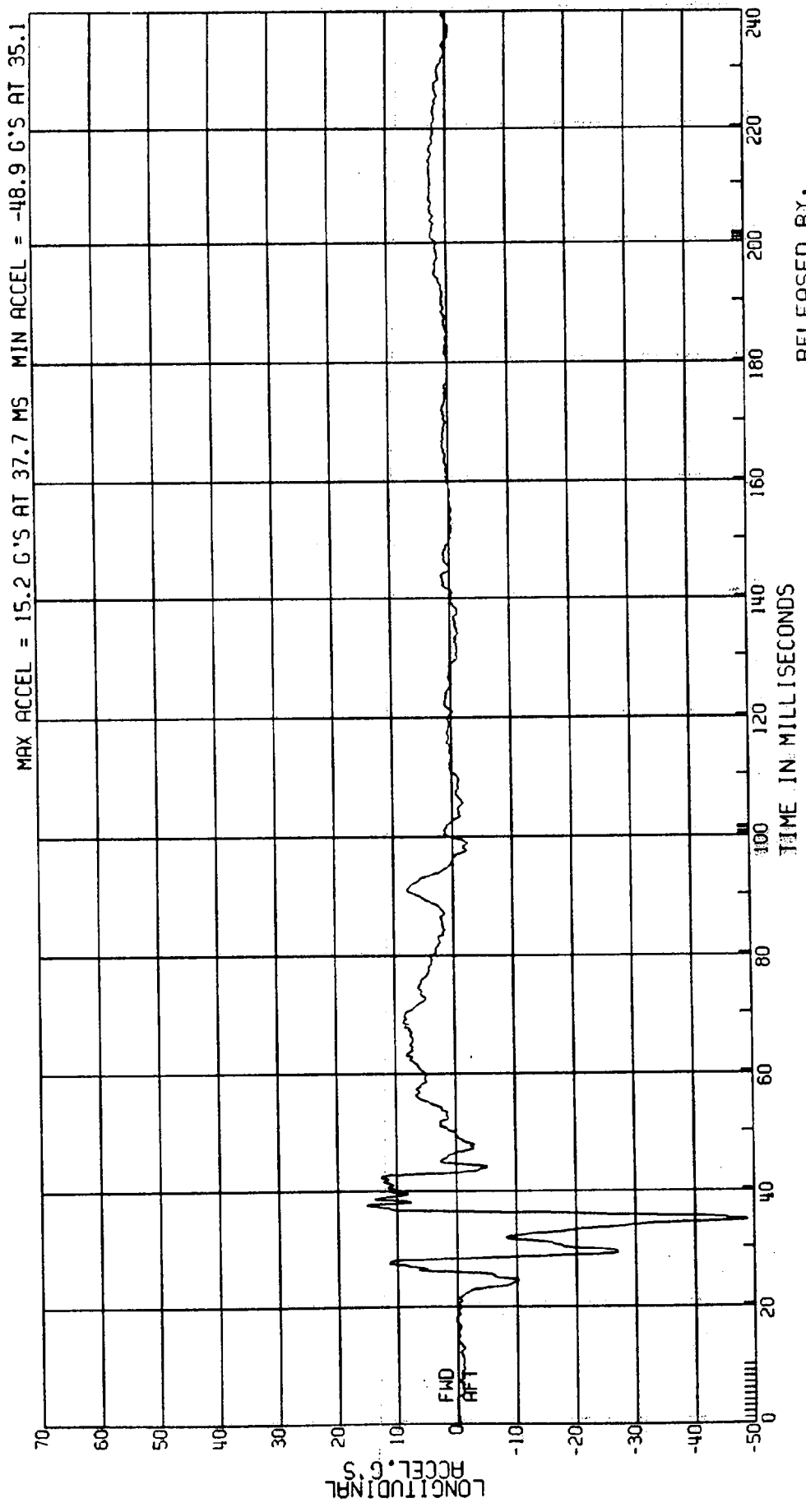


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 72 PROCESSED 4 MY 90 11:33

C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 78
ATD TYPE: BIOSID
TEST DATE: 03-06-90

L. REAR PELVIC ACCEL.

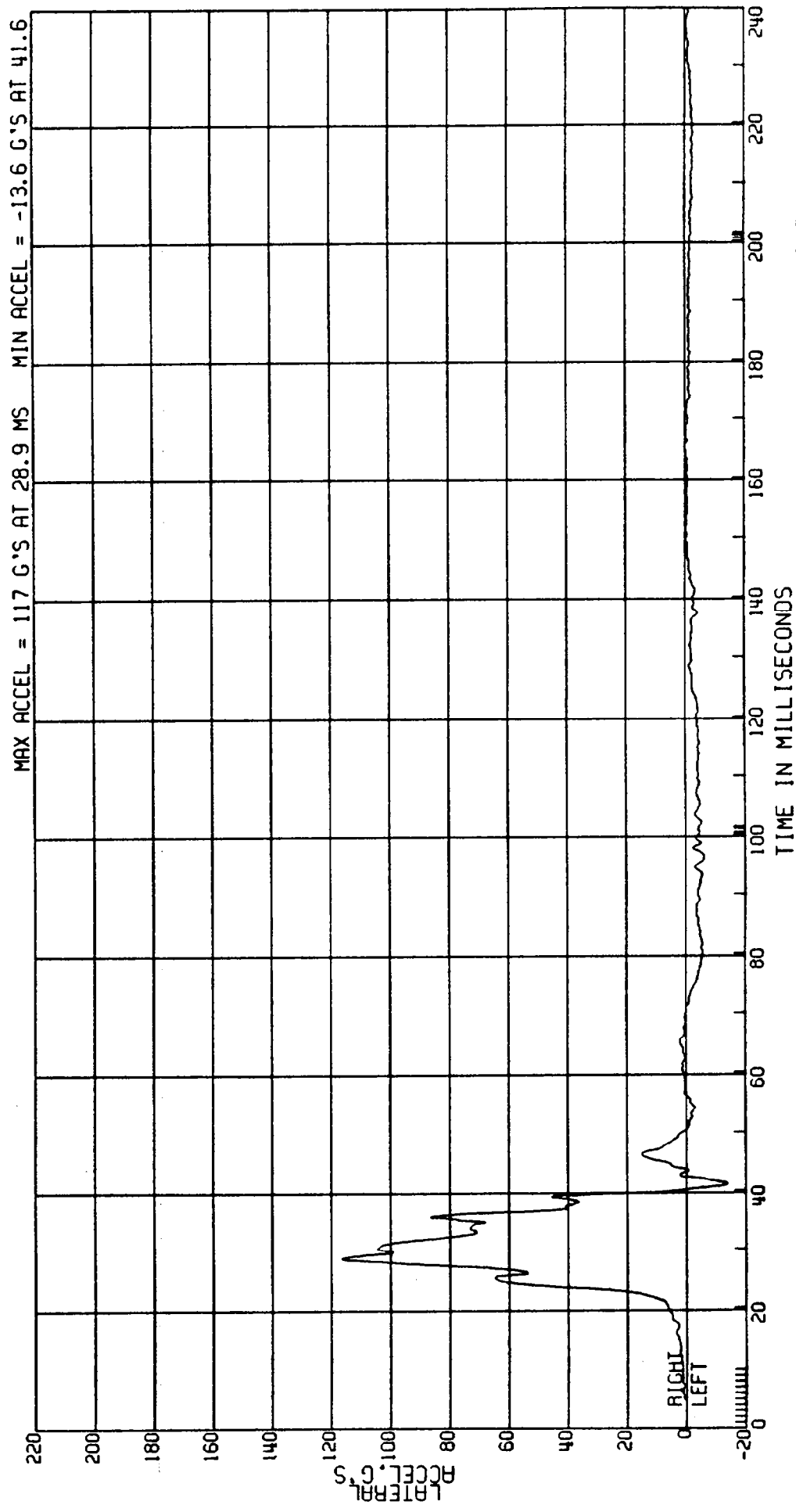
3858-905
CPE MVMA 4B 2AF69
ELEC DATA, SAE CLASS 600



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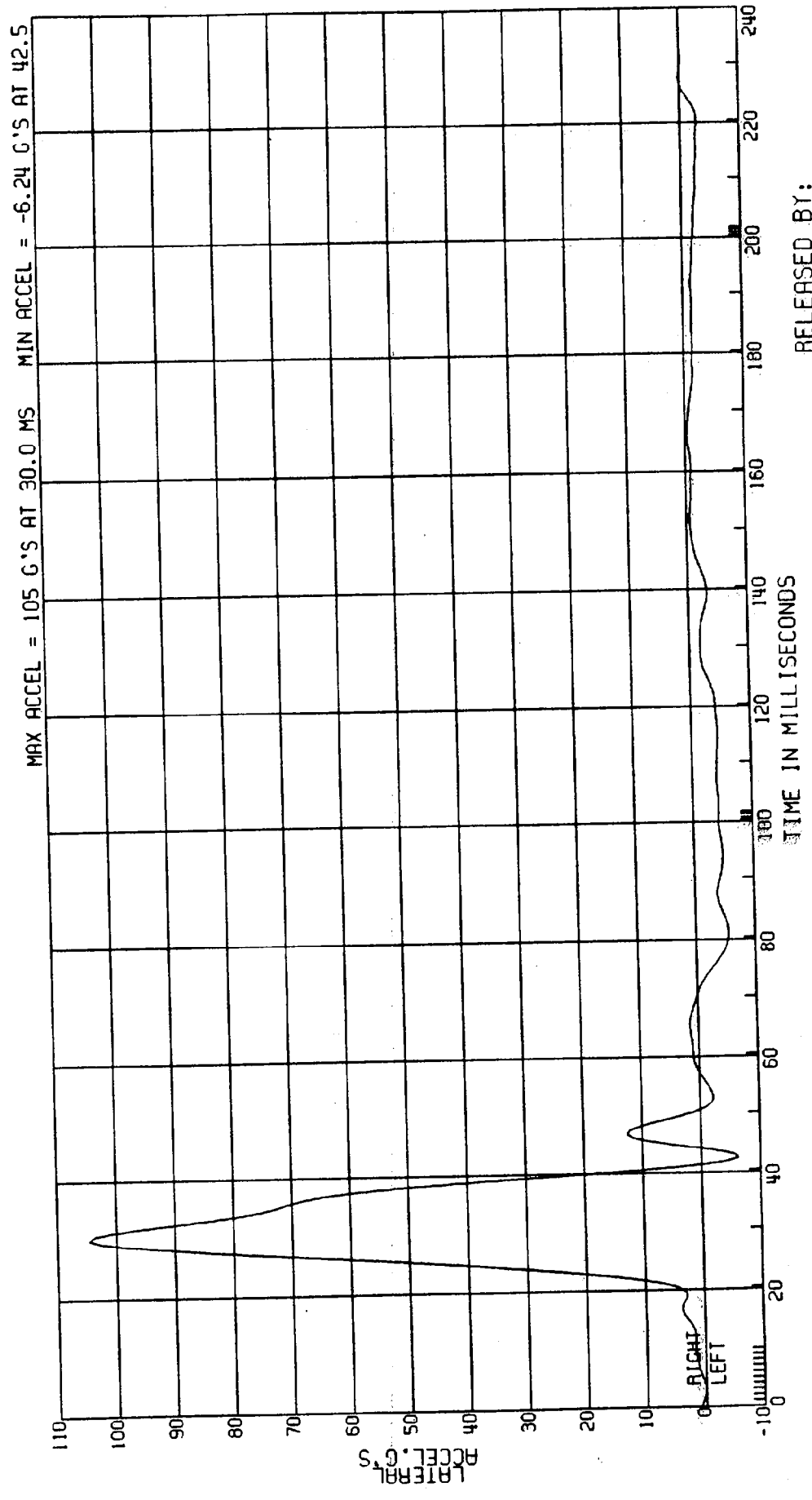
73 PROCESSED 4 MAY 90 11:33

C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 79
3868-905 AID TYPE: BIOSID
CPE MVMA 4B 2AF69 L. REAR PELVIC ACCEL.
ELEC DATA. SAE CLASS 600 TEST DATE: 03-06-90



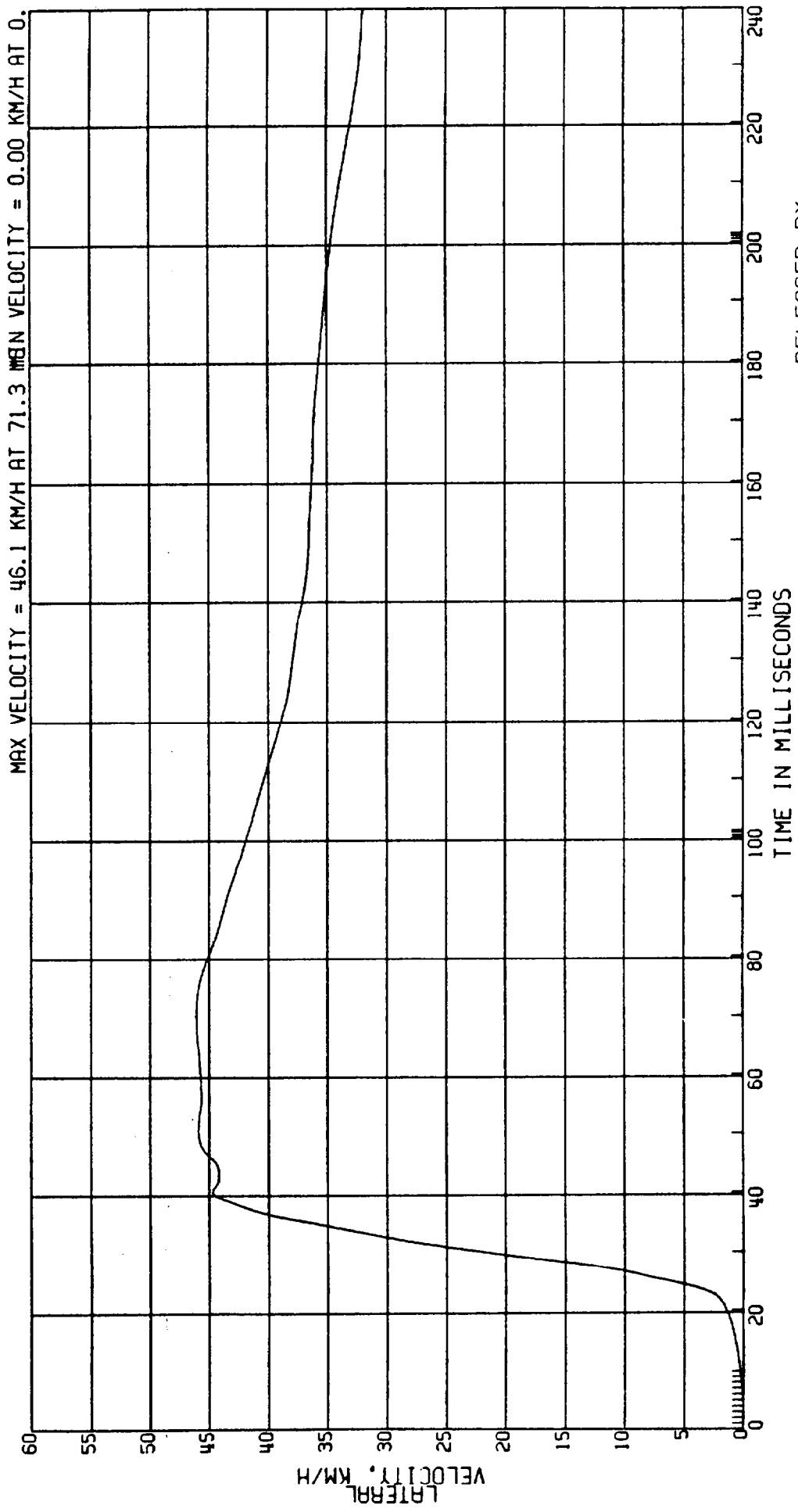
RELEASED BY:
74 PROCESSED 4 MY 90 11:33

C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 80
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 4B 2AF69 TEST DATE: 03-06-90
 ELEC DATA, NHTSA FIR FILTER L. REAR PELVIC ACCEL.
 F.I.R. FILTER, CLASS 300 BUTTERWORTH



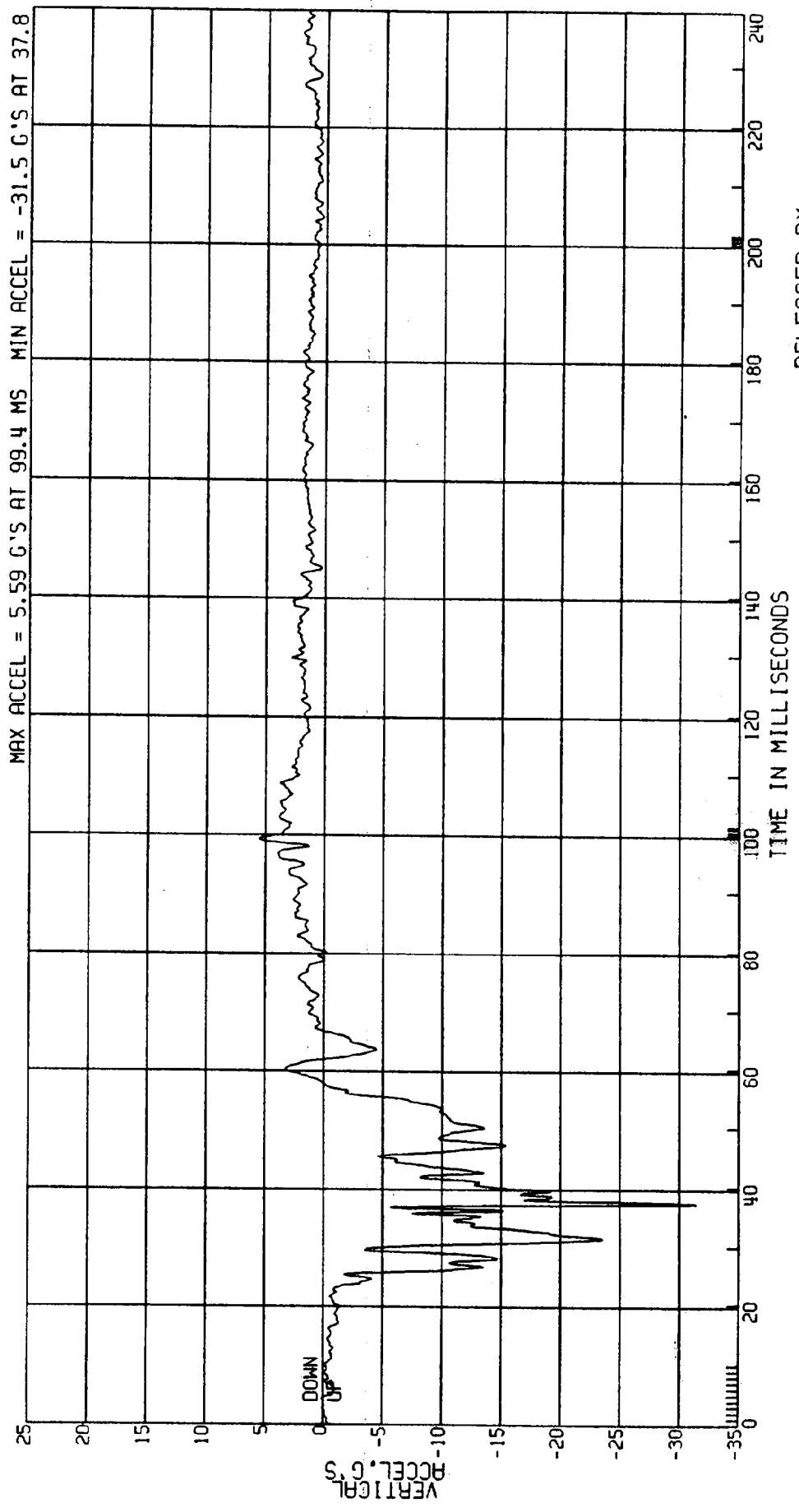
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 75 PROCESSED 4 MY 90 11:33

C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 8/
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 4B 2AF69 COMPUTED PELVIC VELOCITY
 ELEC DATA, SAE CLASS 180 (1ST INTEGRAL L. REAR ACCELERATION) TEST DATE: 03-06-90



RELEASED BY:
 76 PROCESSED 4 MY 90 11:33

C8004B L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 82
3868-905
CPE MVMA 4B 2AF69
ELEC DATA. SAE CLASS 600 L.REAR PELVIC ACCEL. ATD TYPE: BIOSID TEST DATE:03-06-90

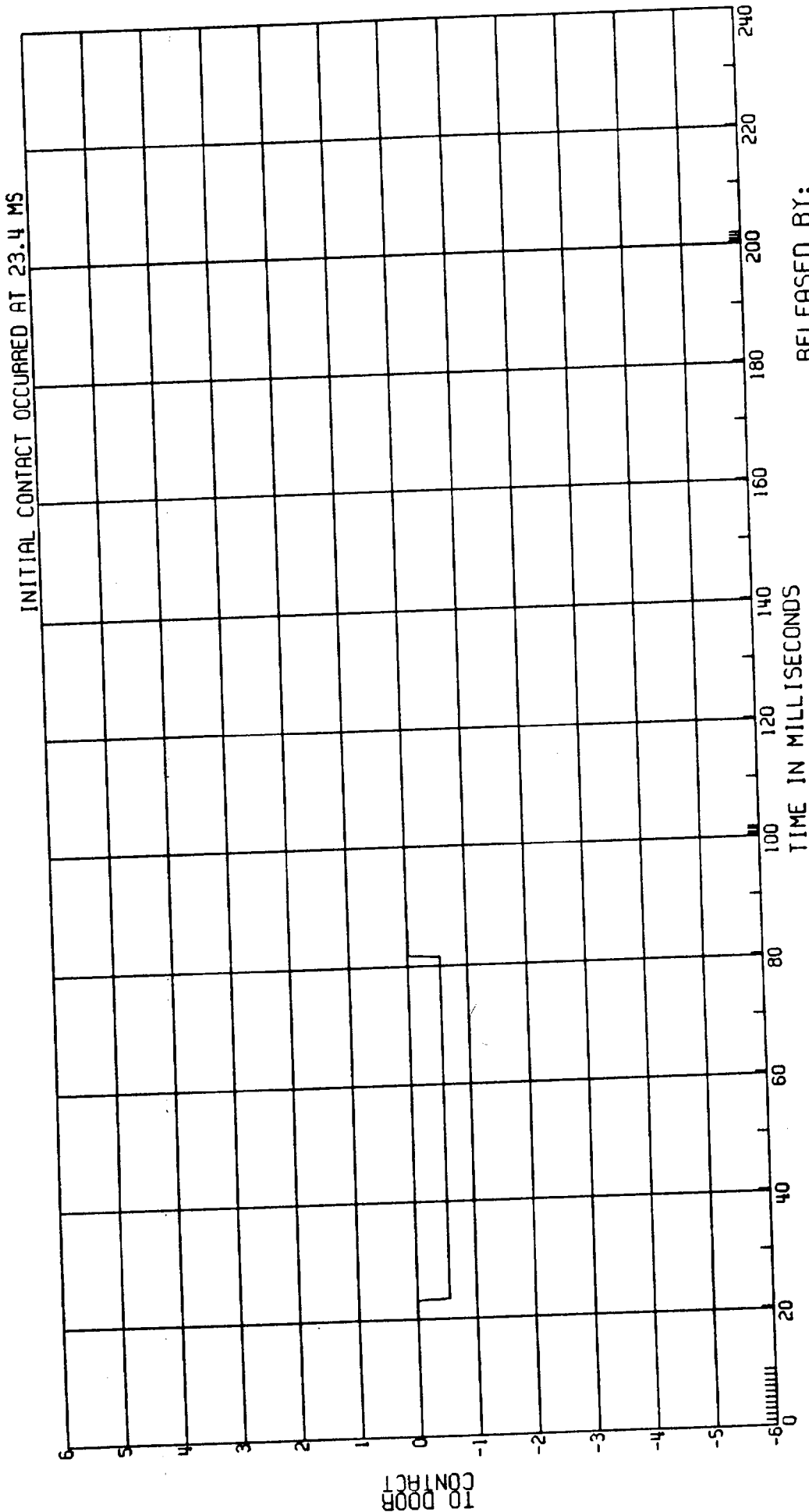


83

MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE
ATD TYPE: BIOSID
TEST DATE: 03-06-90

C8004A L. SIDE IMPACT-27 DEG
3868-905
CPE
MVMA 4B 2AF69
ELEC DATA, SAE CLASS 1000

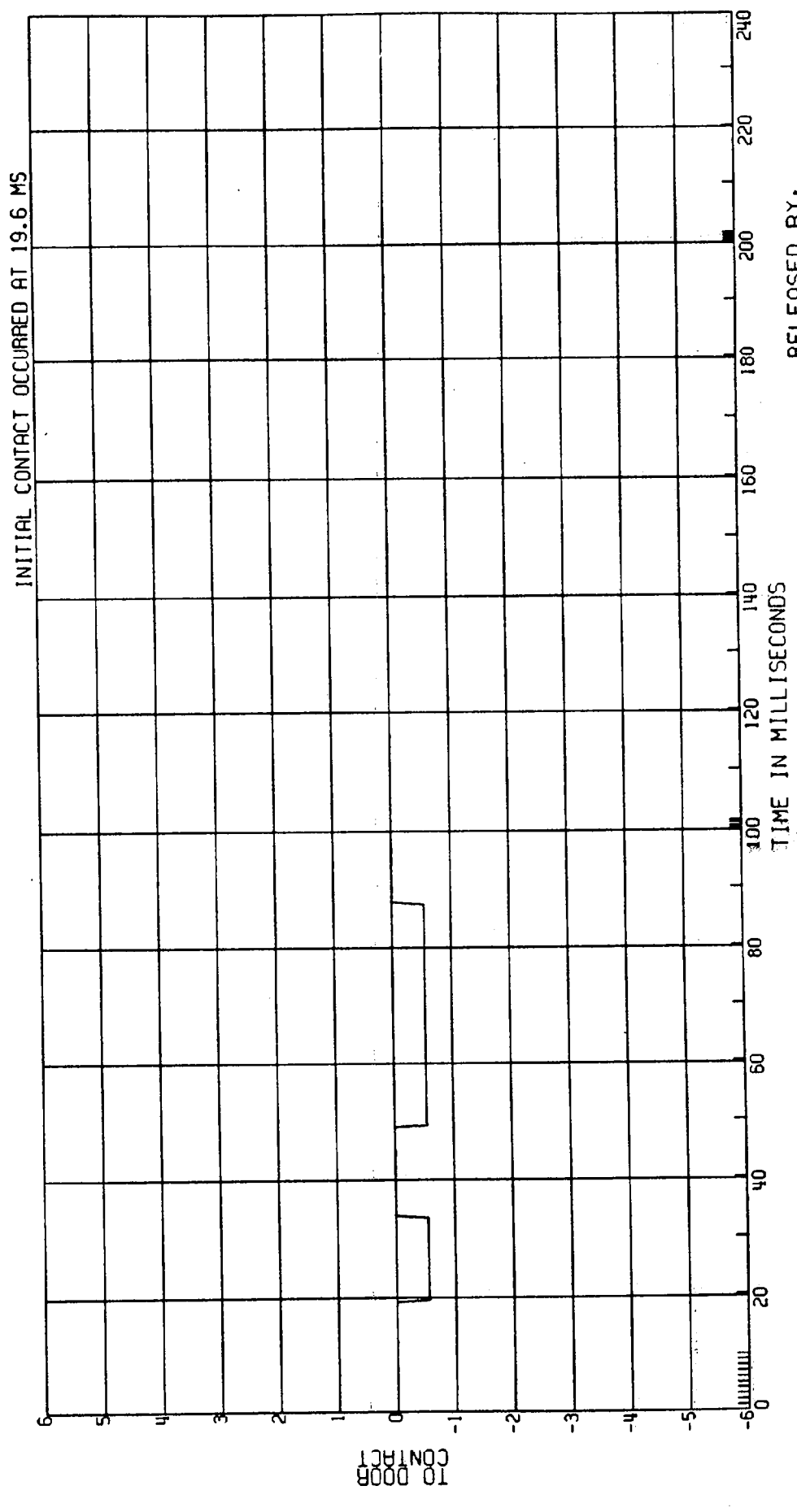
L. REAR THORAX-LEFT SIDE CONTACT



RELEASED BY:

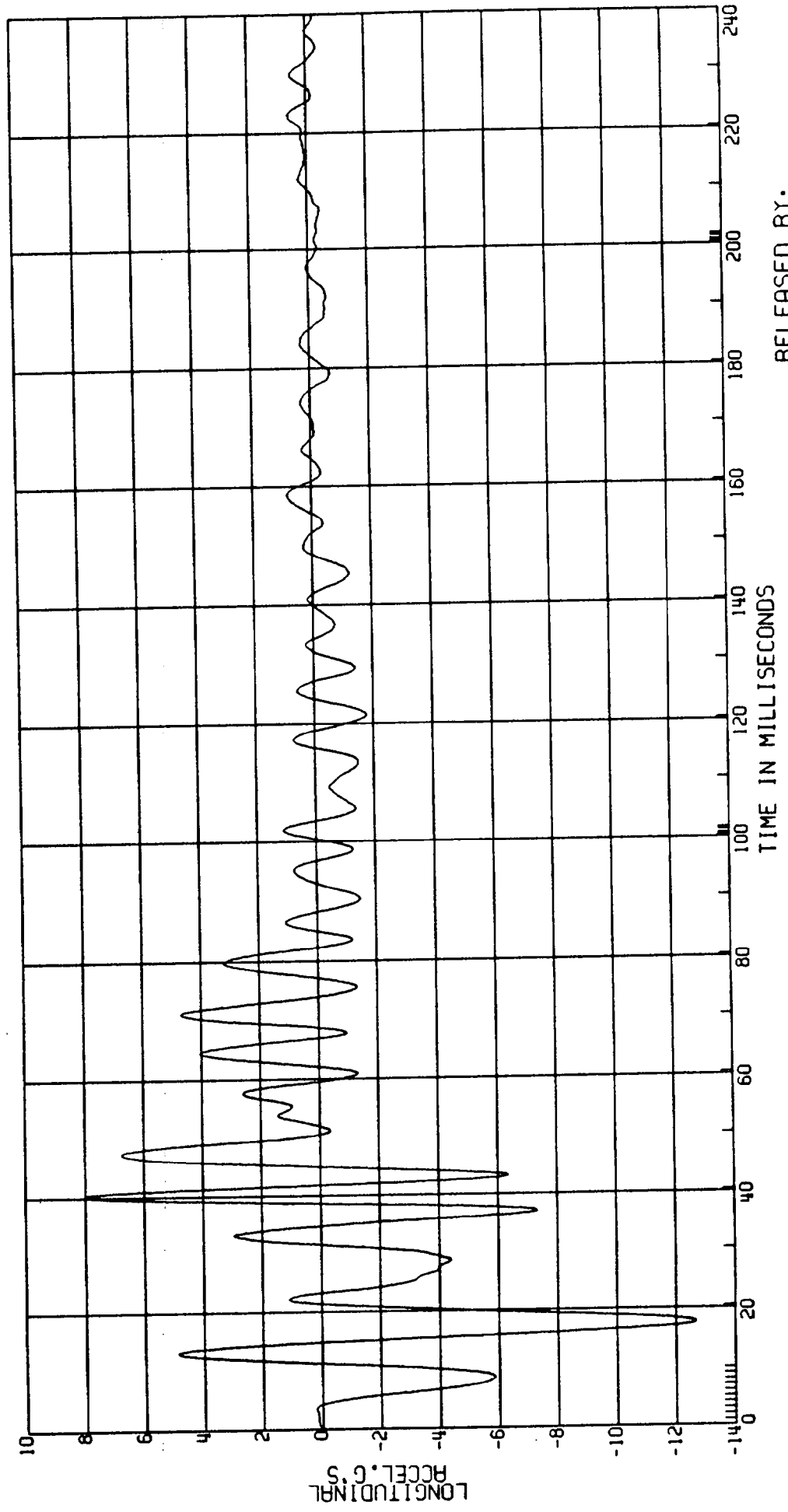
74 PROCESSED 4 MY 90 11:27

C8004A L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 84
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 4B 2AF69 L. REAR ABDOMEN-LEFT SIDE CONTACT TEST DATE: 03-06-90
 ELEC DATA, SAE CLASS 1000



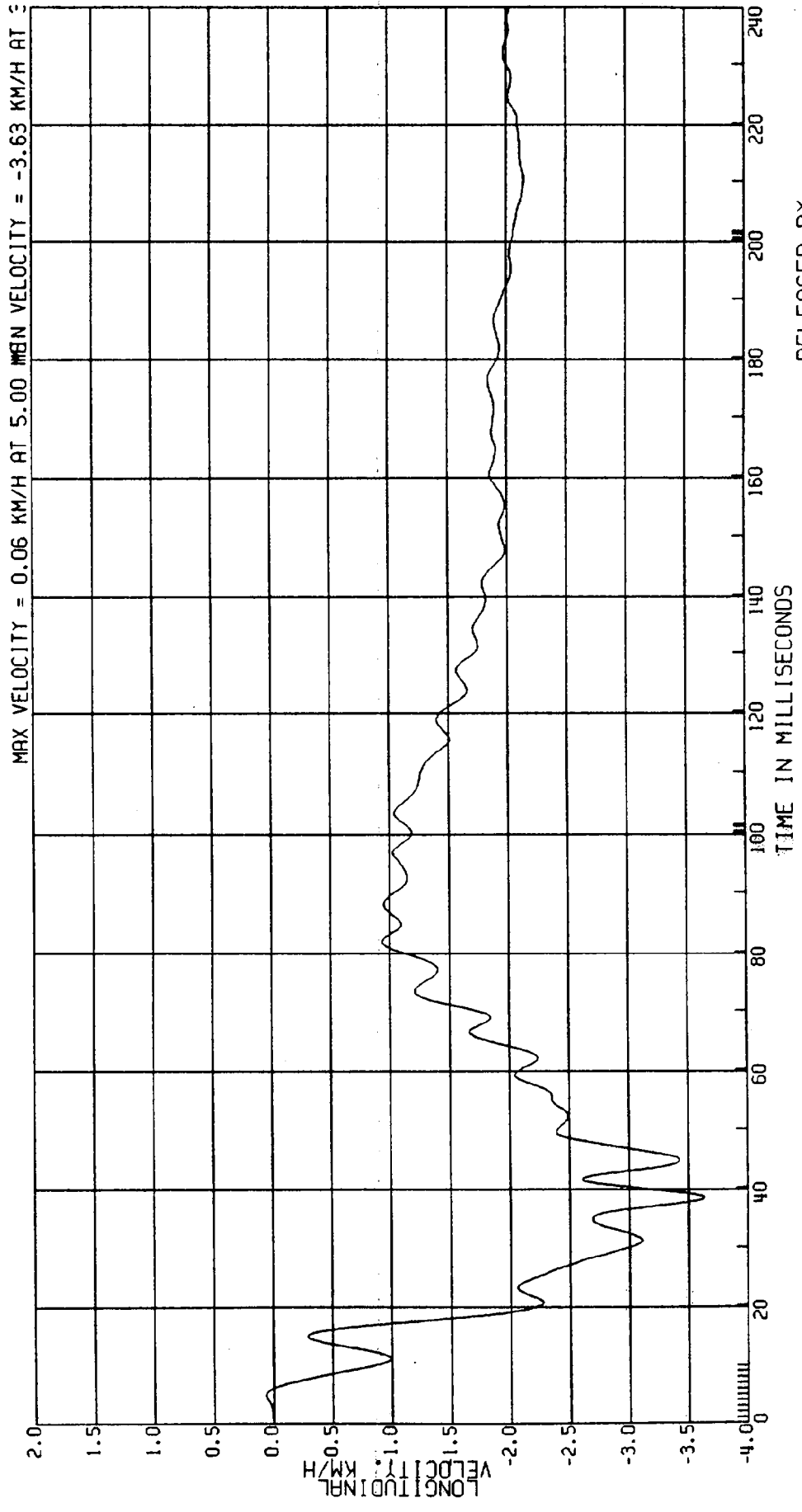
RELEASED BY:
 75 PROCESSED 4 MY 90 11:27

C8004A L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 85
3868-905
CPE MVMA 4B 2AF69 PASS-SIDE ROCKER AT CTR OF IMPACT ACCEL. TEST DATE:03-06-90
ELEC DATA, SAE CLASS 60



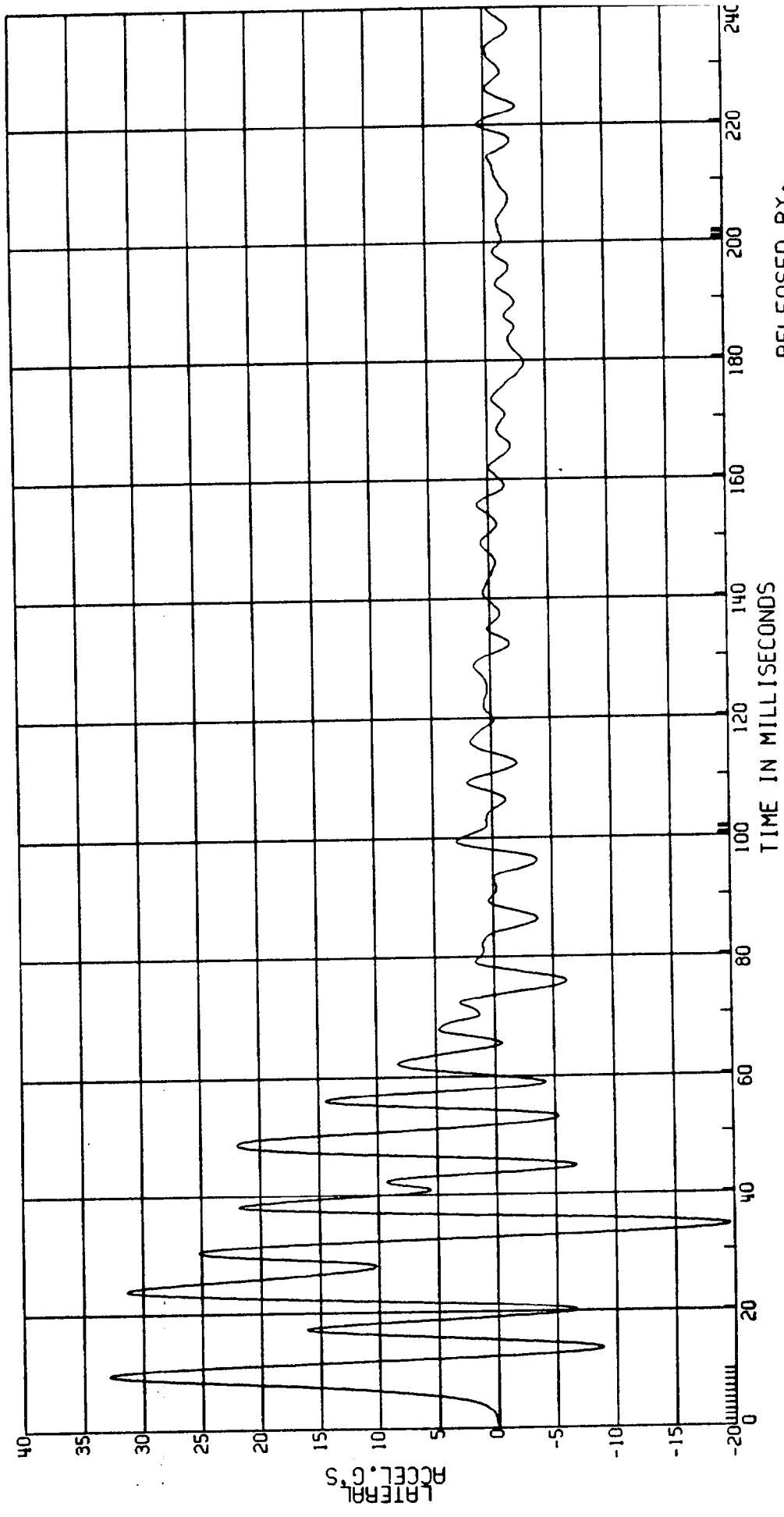
RELEASED BY:
3 PROCESSED 4 MY 90 11:24

C8004A L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 86
 3868-905 MVMA 4B 2AF69 COMPUTED ROCKER AT CTR OF IMPACT VEL TEST DATE: 03-06-90
 CPE ELEC DATA, SAE CLASS 180 (1ST INTEGRAL OF PASS-SIDE ACCELERATION)



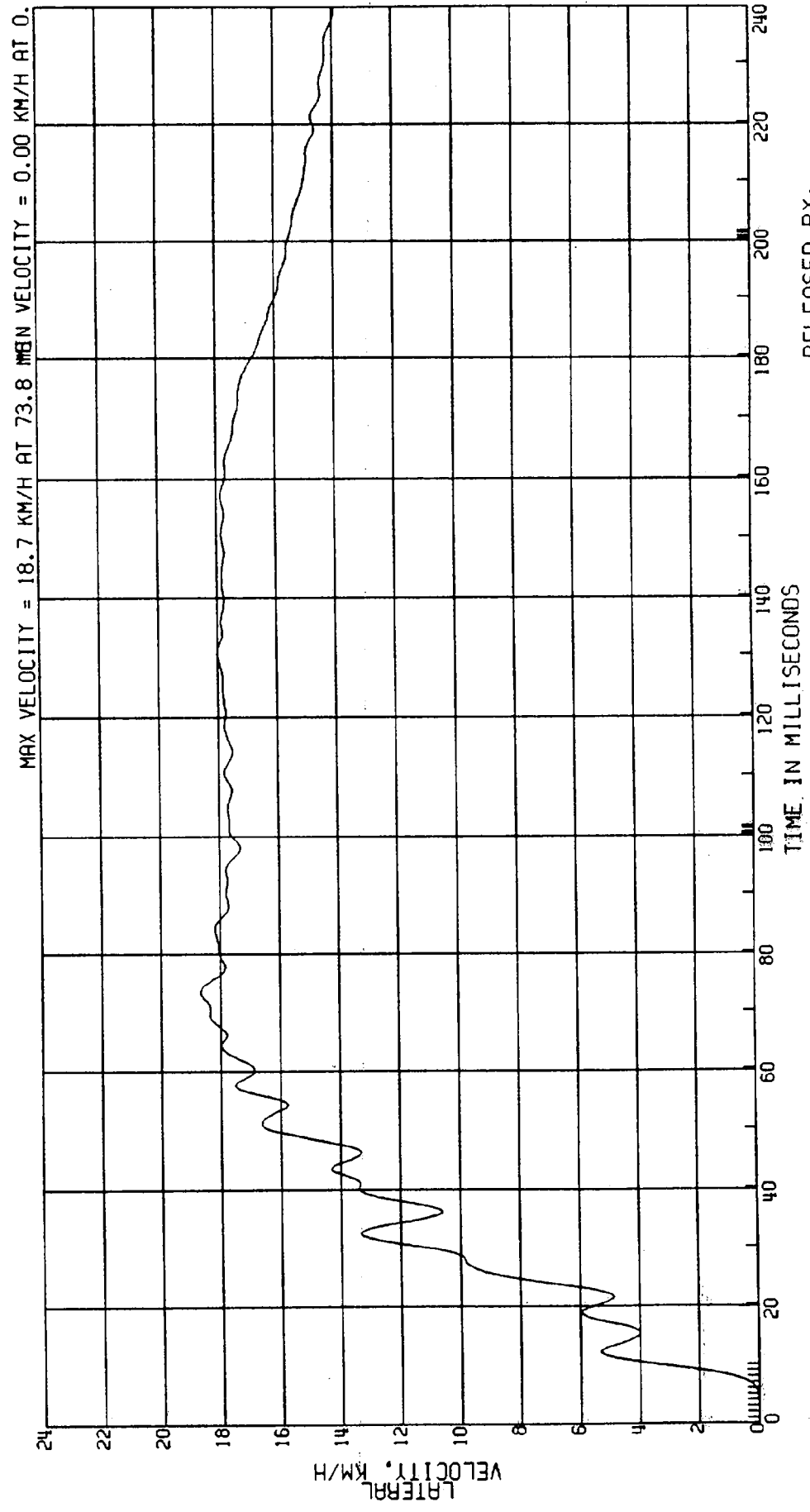
RELEASED BY:
 4 PROCESSED 4 MY 90 11:24

C8004A L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 87
3868-905
CPE MVMA 4B 2AF69 PASS-SIDE ROCKER AT CTR OF IMPACT ACCEL. TEST DATE:03-06-90
ELEC DATA, SAE CLASS 60



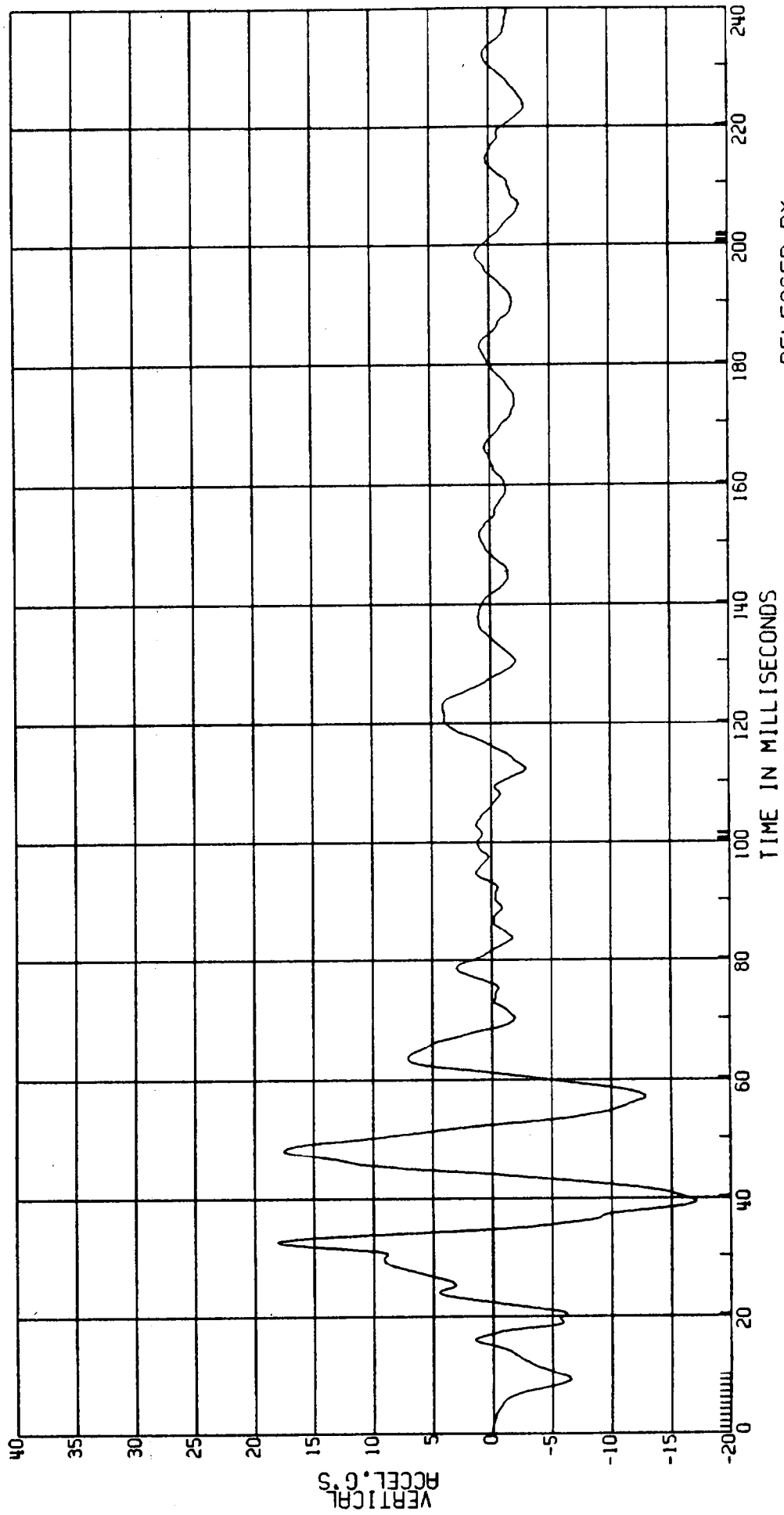
RELEASED BY:
5 PROCESSED 4 MT 90 11:25

C8004A L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 88
3868-905
CPE MVMA 4B 2AF69 COMPUTED ROCKER AT CTR OF IMPACT VEL TEST DATE:03-06-90
ELEC DATA, SAE CLASS 180 (1ST INTEGRAL OF PASS-SIDE ACCELERATION)



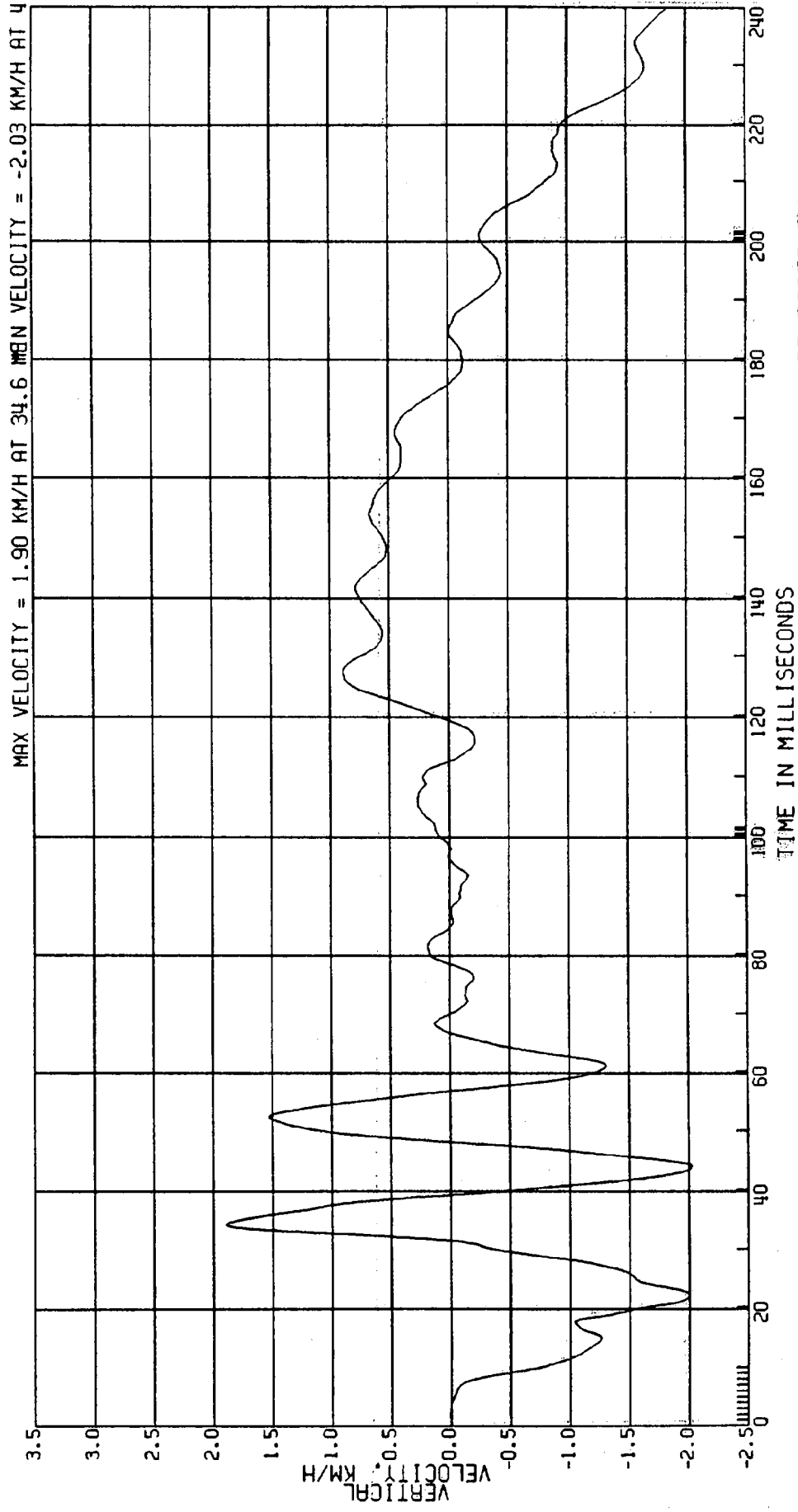
RELEASED BY:
6 PROCESSED 4 MY'90 11:25

C8004A L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 89
3868-905
CPE MVMA 4B 2AF69 PASS-SIDE ROCKER AT CTR OF IMPACT ACCEL. TEST DATE:03-06-90
ELEC DATA, SAE CLASS 60



RELEASED BY:
7 PROCESSED 4 MT 90 11:25

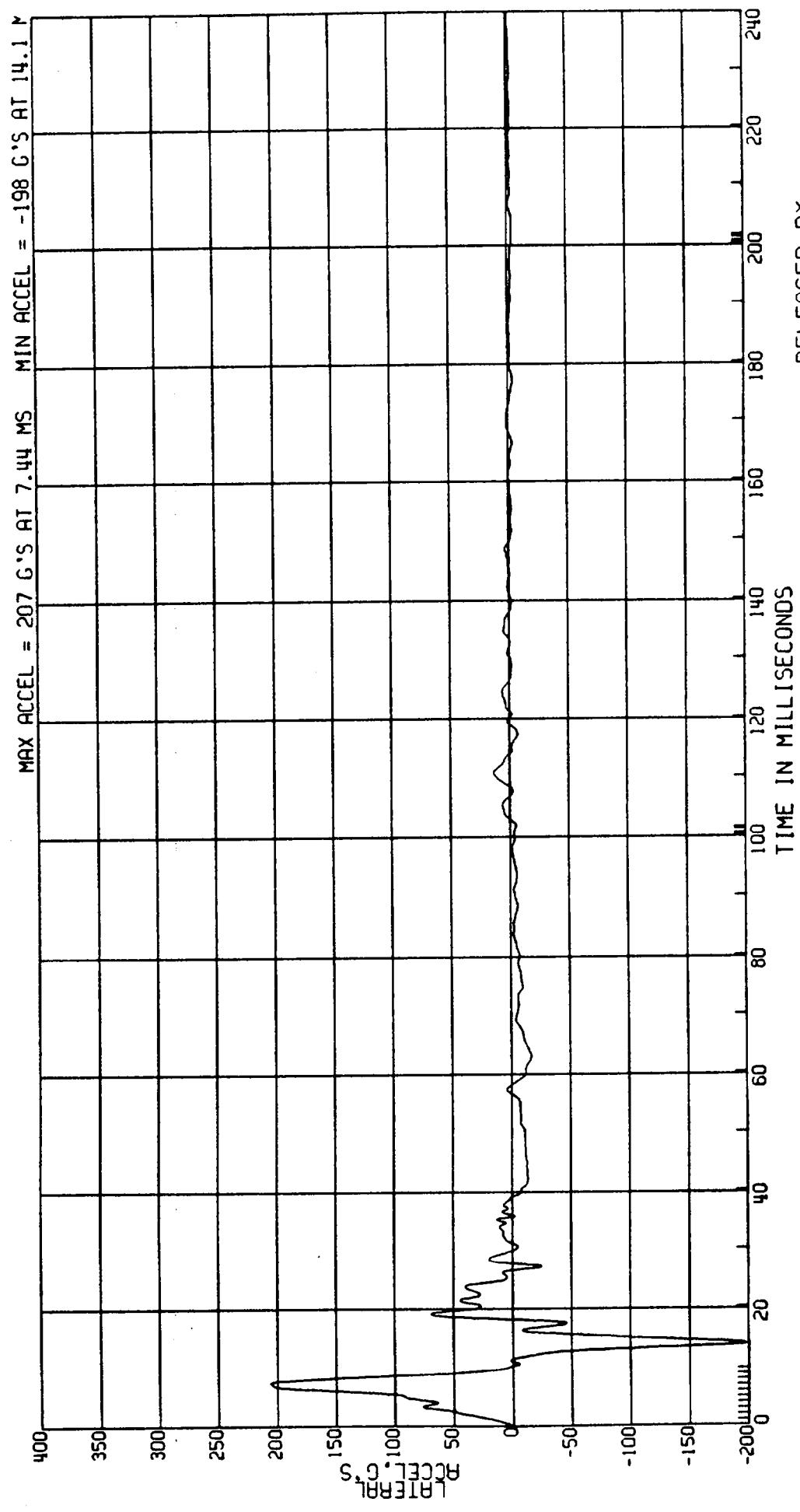
C8004 L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 90
 3868-905
 CPE MVMA 4B 2AF69 COMPUTED ROCKER AT CTR OF IMPACT VEL TEST DATE: 03-06-90
 ELEC DATA, SAE CLASS 180 (1ST INTEGRAL OF PASS-SIDE ACCELERATION)



RELEASED BY:

8 PROCESSED 4 MY 90 11:25

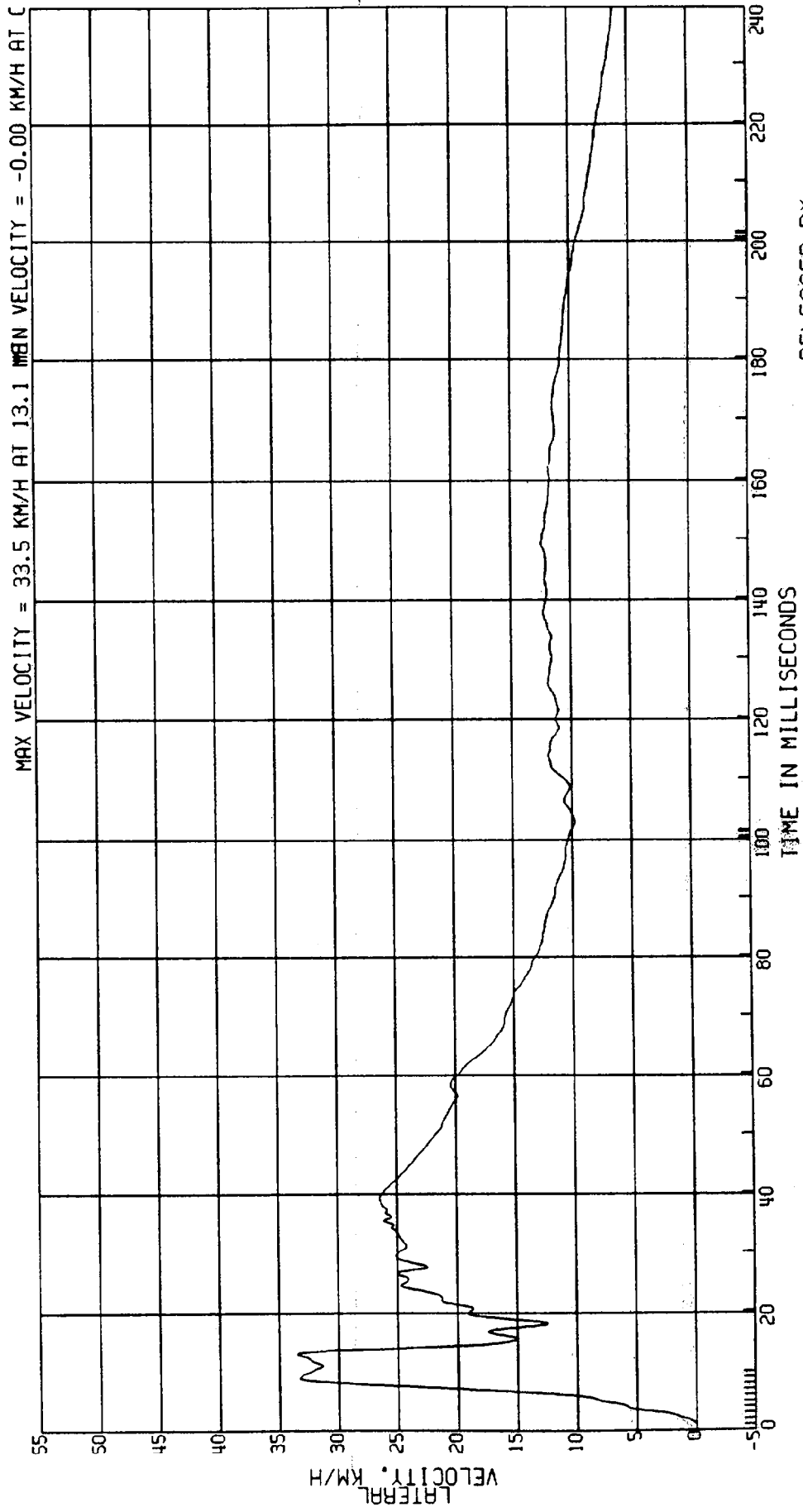
C8004A L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 91
3868-905
CPE MVMA 4B 2AF69 DR-SIDE FRT. DOOR NO. 1 ACCEL. TEST DATE:03-06-90
ELEC DATA, SAE CLASS 60



RELEASED BY:
9 PROCESSED 4 MY 90 11:25

C8004A L. SIDE IMPACT-27 DEG
3868-905
CPE MVMA 4B 2AF69
ELEC DATA, SAE CLASS 180

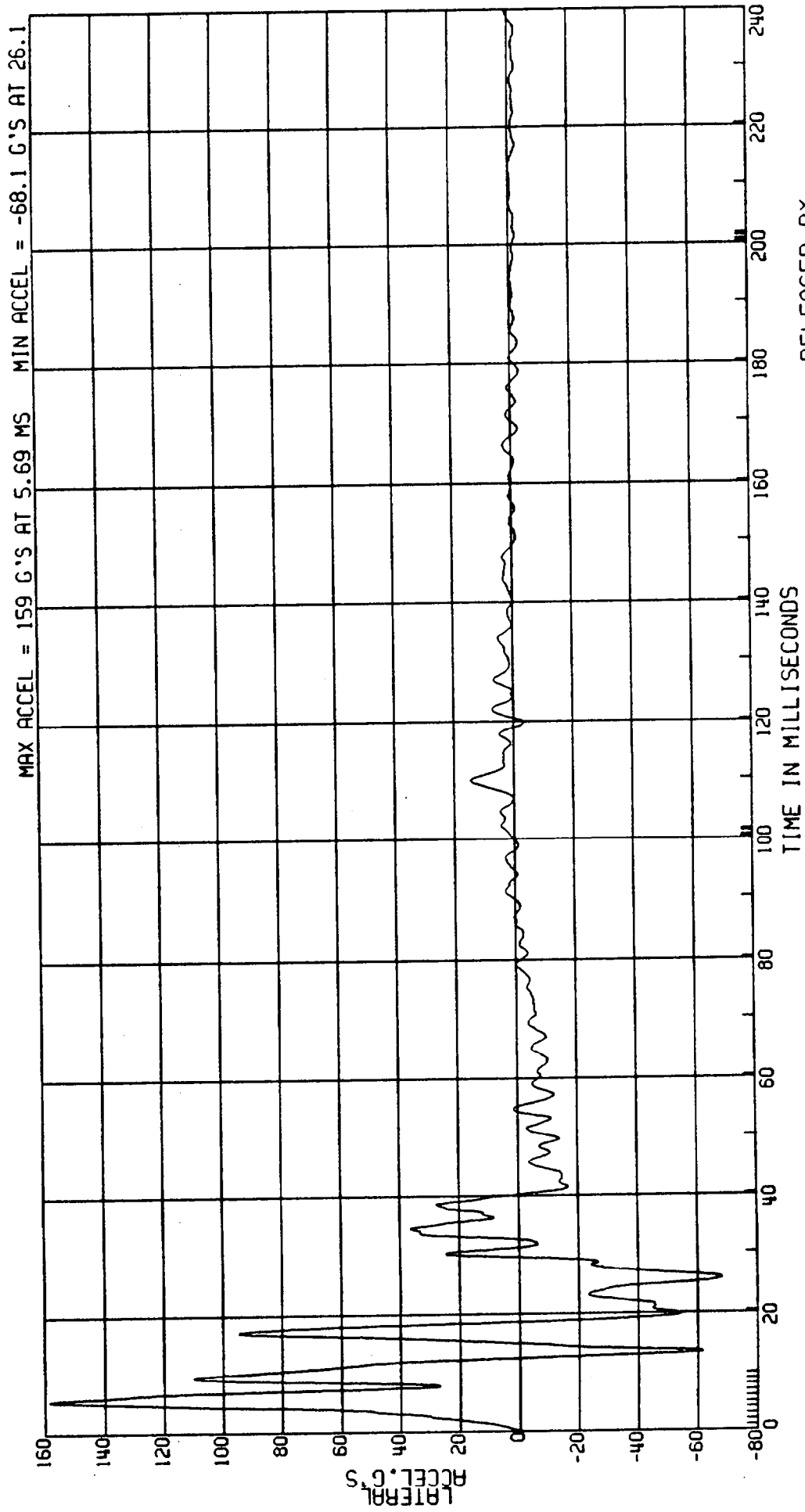
MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 92
COMPUTED FRT. DOOR NO. 1 VELOCITY
(1ST INTEGRAL OF DR-SIDE ACCELERATION)
TEST DATE: 03-06-90



RELEASED BY:

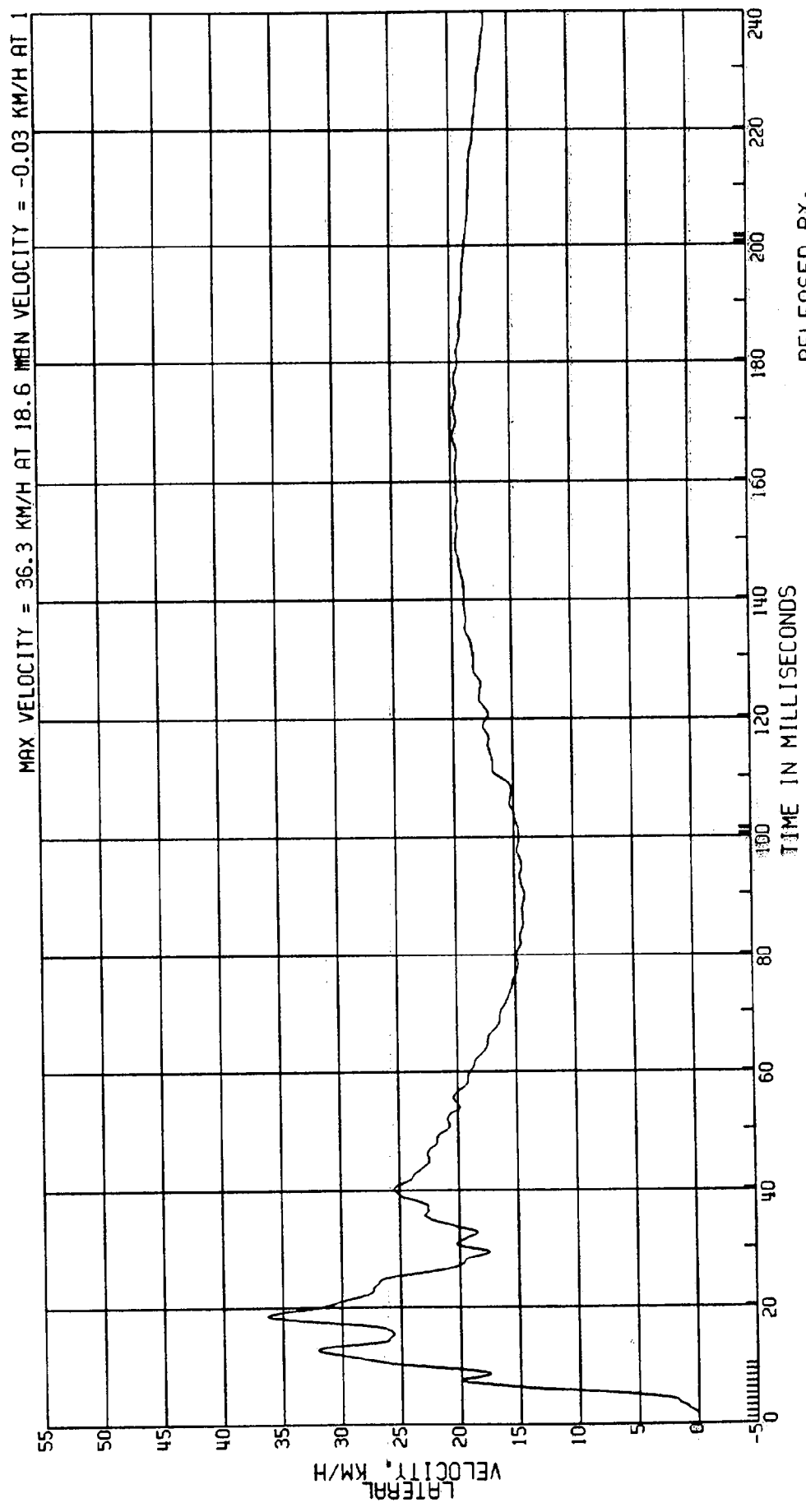
10 PROCESSED 4 MY 90 11:25

C8004A L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 93
3868-905 DR-SIDE FRT. DOOR NO. 2 ACCEL. TEST DATE:03-06-90
CPE MVMA 4B 2AF69
ELEC DATA, SAE CLASS 60



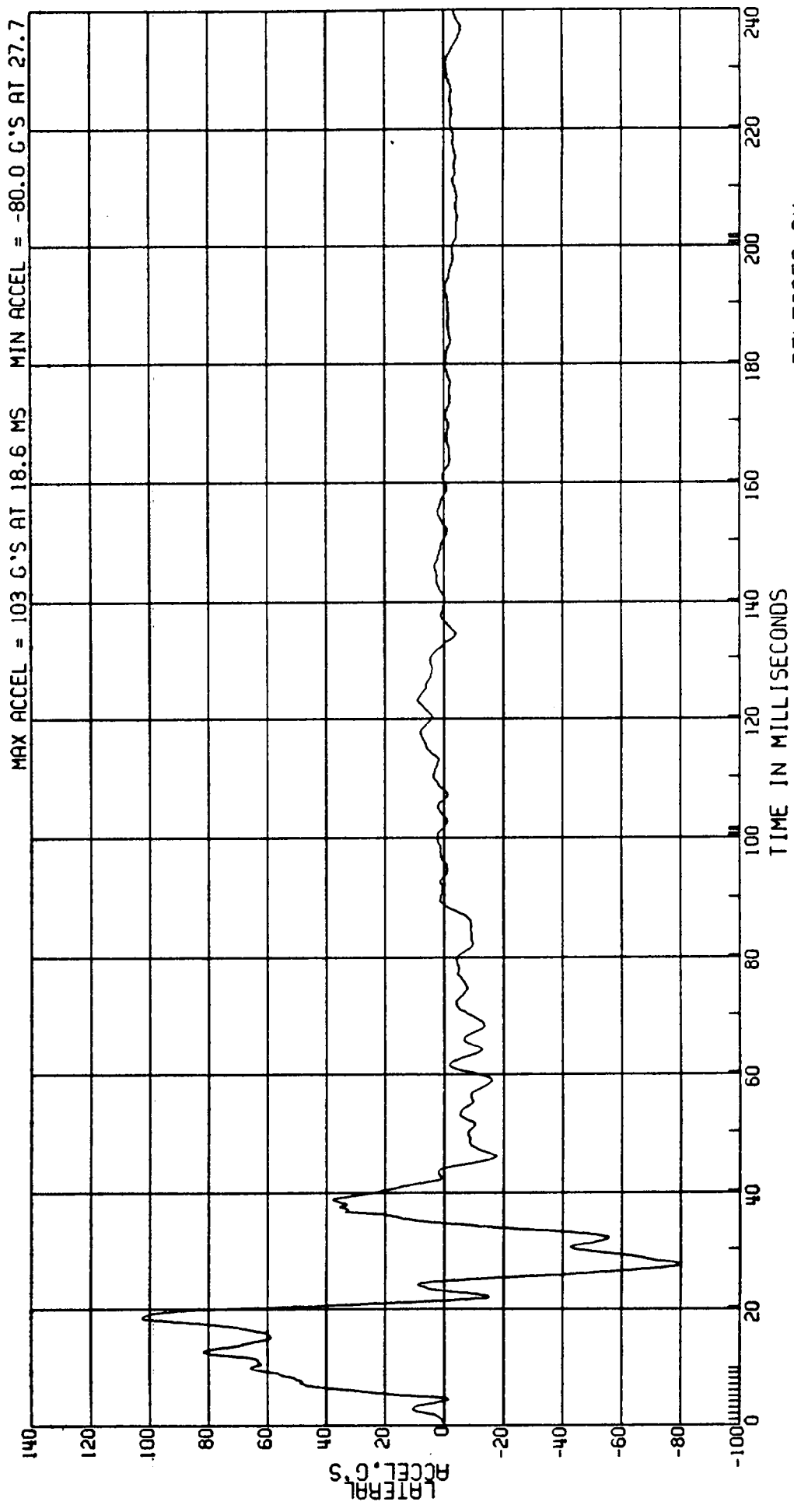
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11 PROCESSED 4 MY 90 11:25

C8004 L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 94
3868-905 COMPUTED FR. T. DOOR NO. 2 VELOCITY TEST DATE:03-06-90
CPE MVMA 4B 2AF69
ELEC DATA, SAE CLASS 180 (1ST INTEGRAL OF DR-SIDE ACCELERATION)



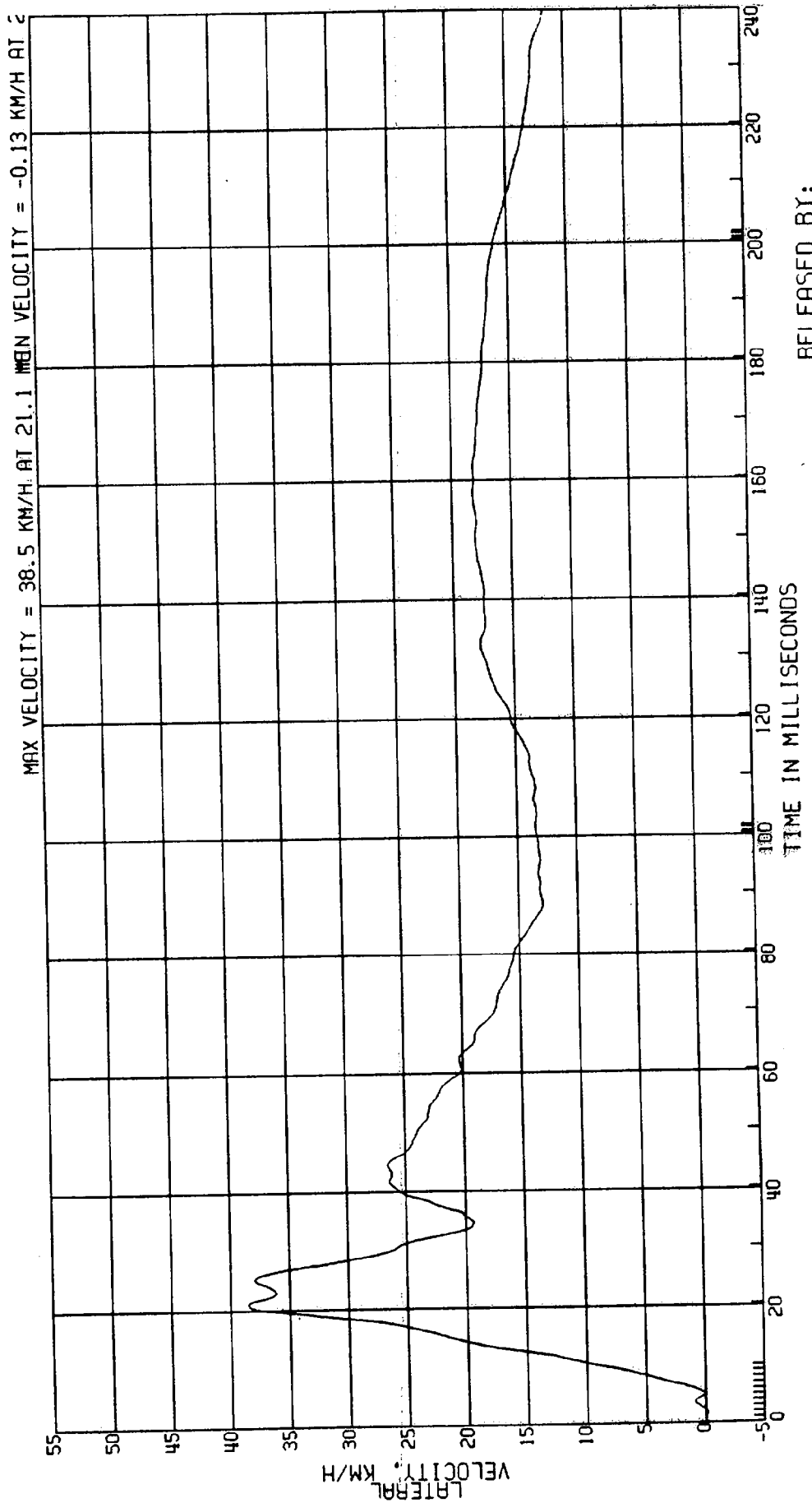
RELEASED BY:
12 PROCESSED 4 MT 90 11:25

C8004A L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 95
3868-905
CPE MVMA 4B 2AF69 DR-SIDE FRT. DOOR NO. 3 ACCEL. TEST DATE:03-06-90
ELEC DATA, SAE CLASS 60



RELEASED BY:
13 PROCESSED 4 MY 90 11:25

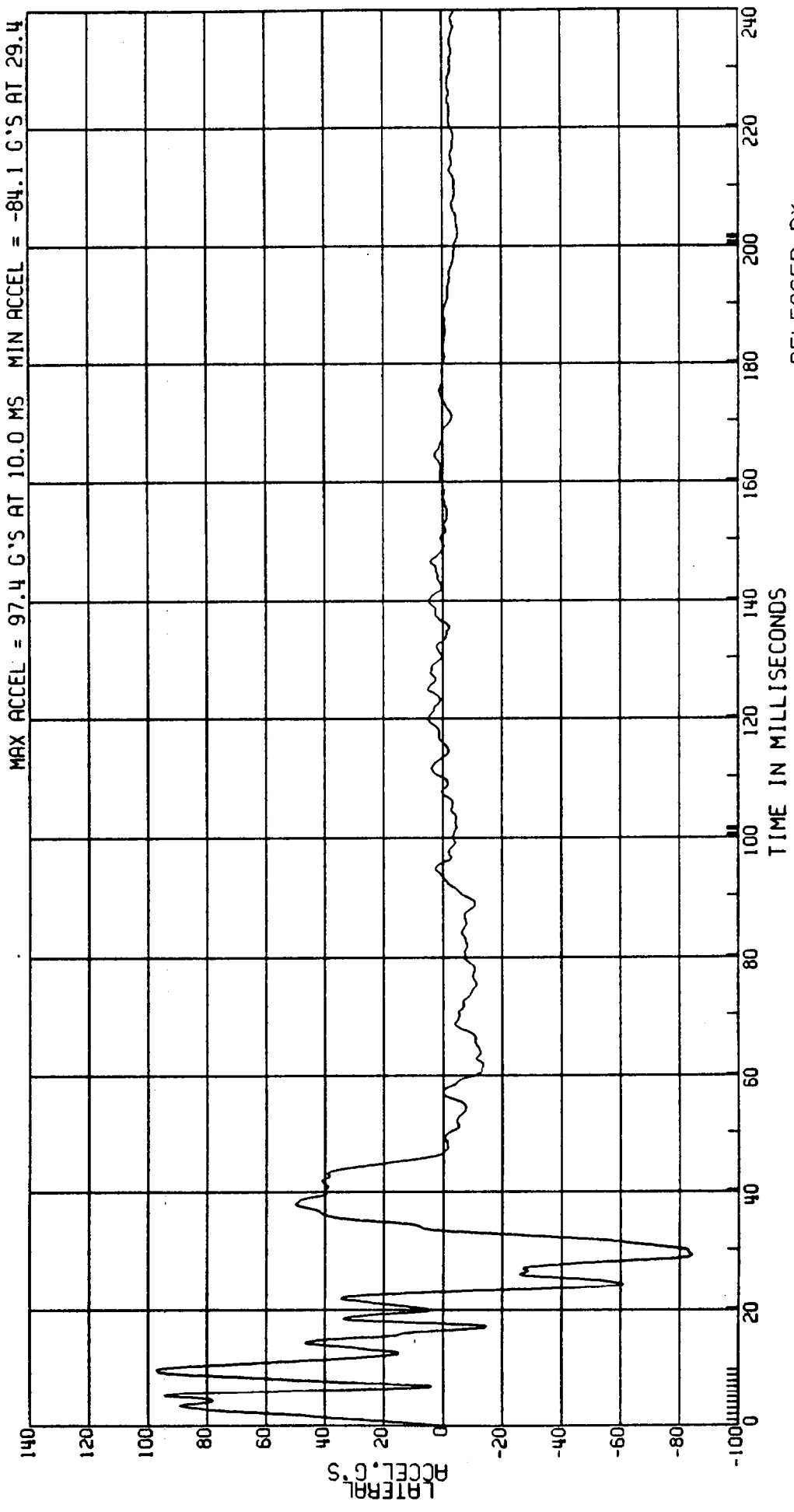
C8004A L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 96
 3868-905 COMPUTED FRT. DOOR NO. 3 VELOCITY TEST DATE: 03-06-90
 CPE MVMA 4B 2AF69
 ELEC DATA, SAE CLASS 180 (1ST INTEGRAL OF DR-SIDE ACCELERATION)



RELEASED BY:
 14 PROCESSED 4 MAY 90 11:25

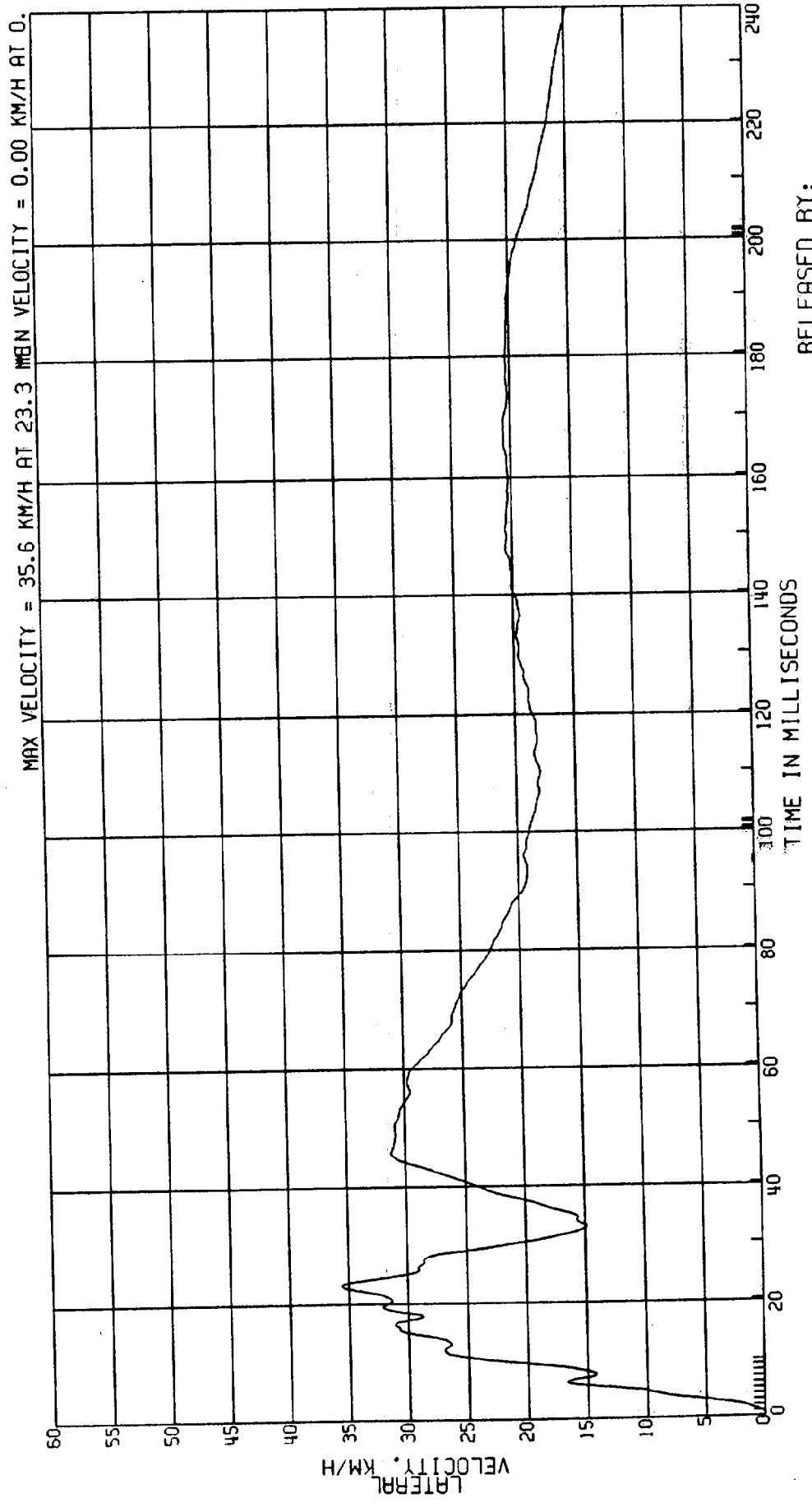
C8004A L. SIDE IMPACT-27 DEC
3868-905
CPE MVMA 4B 2AF69
ELEC DATA, SAE CLASS 60

MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 97
DR-SIDE FRT. DOOR NO. 4 ACCEL.
TEST DATE:03-06-90



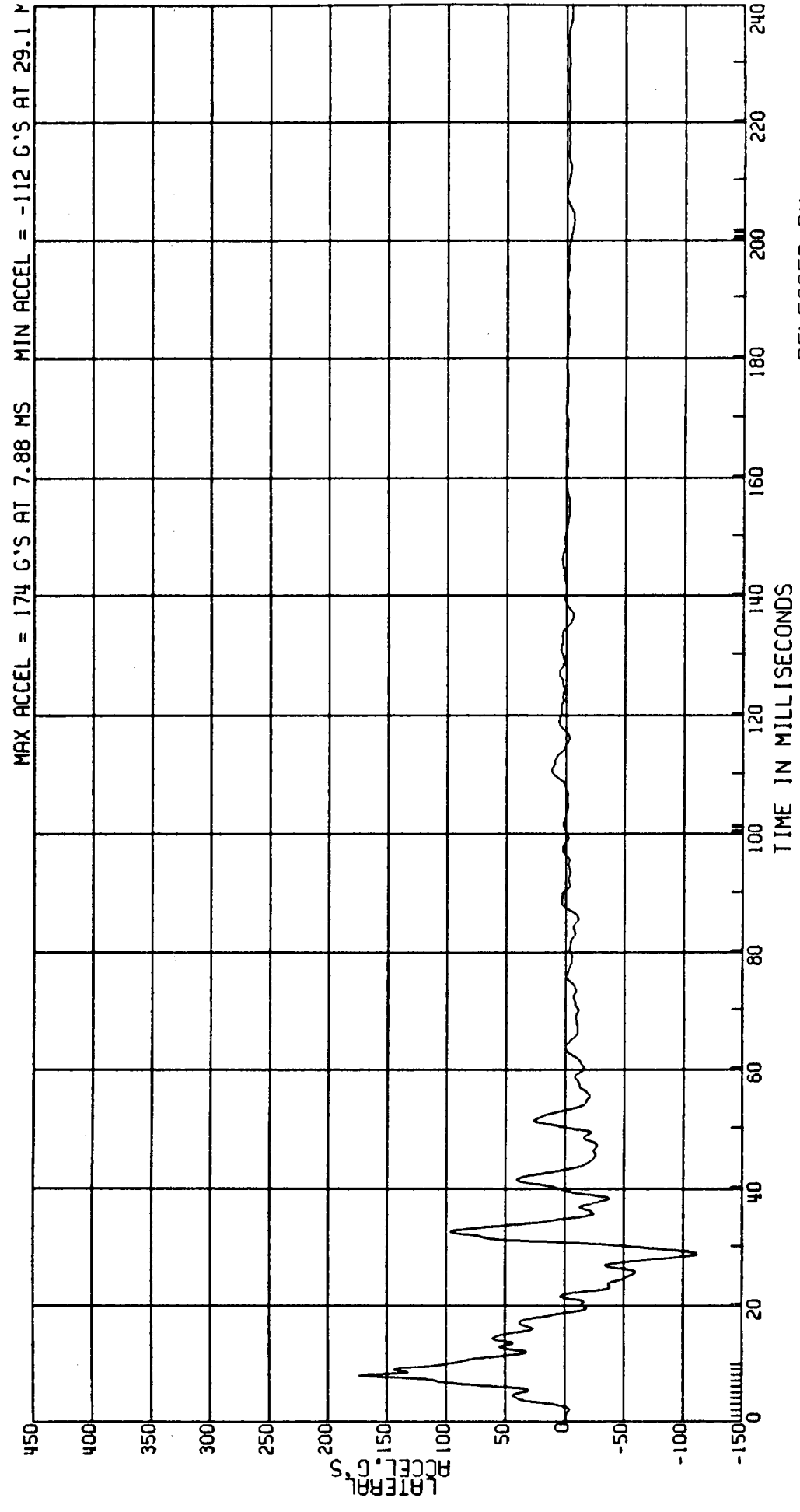
RELEASED BY:
15 PROCESSED 4 MY 90 11:25

C8004A L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 98
3868-905 MVMA 4B 2AF69 COMPUTED FR. DOOR NO. 4 VELOCITY TEST DATE: 03-06-90
CPE ELEC DATA, SAE CLASS 180 (1ST INTEGRAL OF DR-SIDE ACCELERATION)



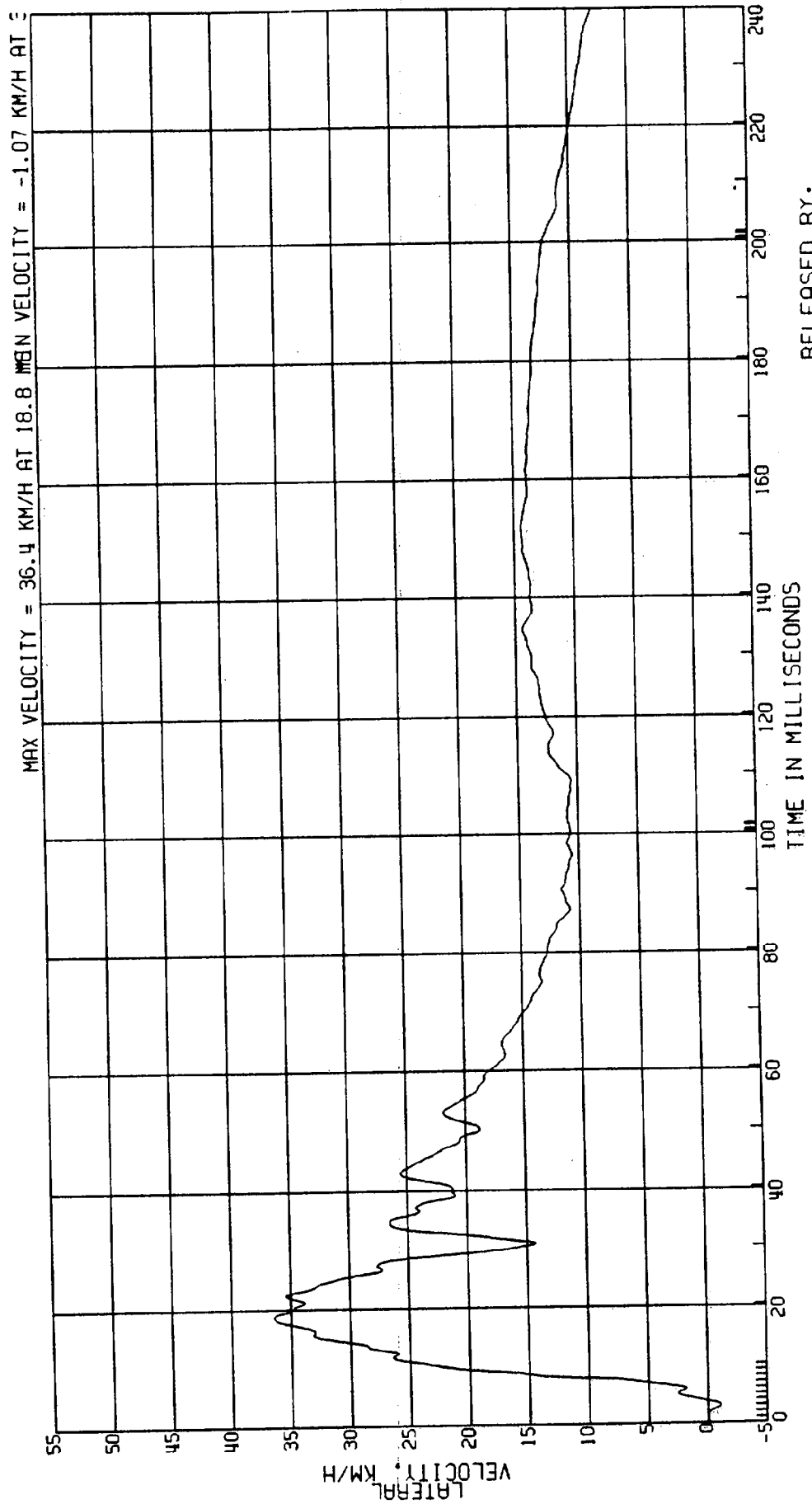
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16 PROCESSED UNIT 90 11:25

C8004A L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 99
3868-905
CPE MVMA 48 2AF69 DR-SIDE FRT. DOOR NO. 5 ACCEL. TEST DATE:03-06-90
ELEC DATA. SAE CLASS 60



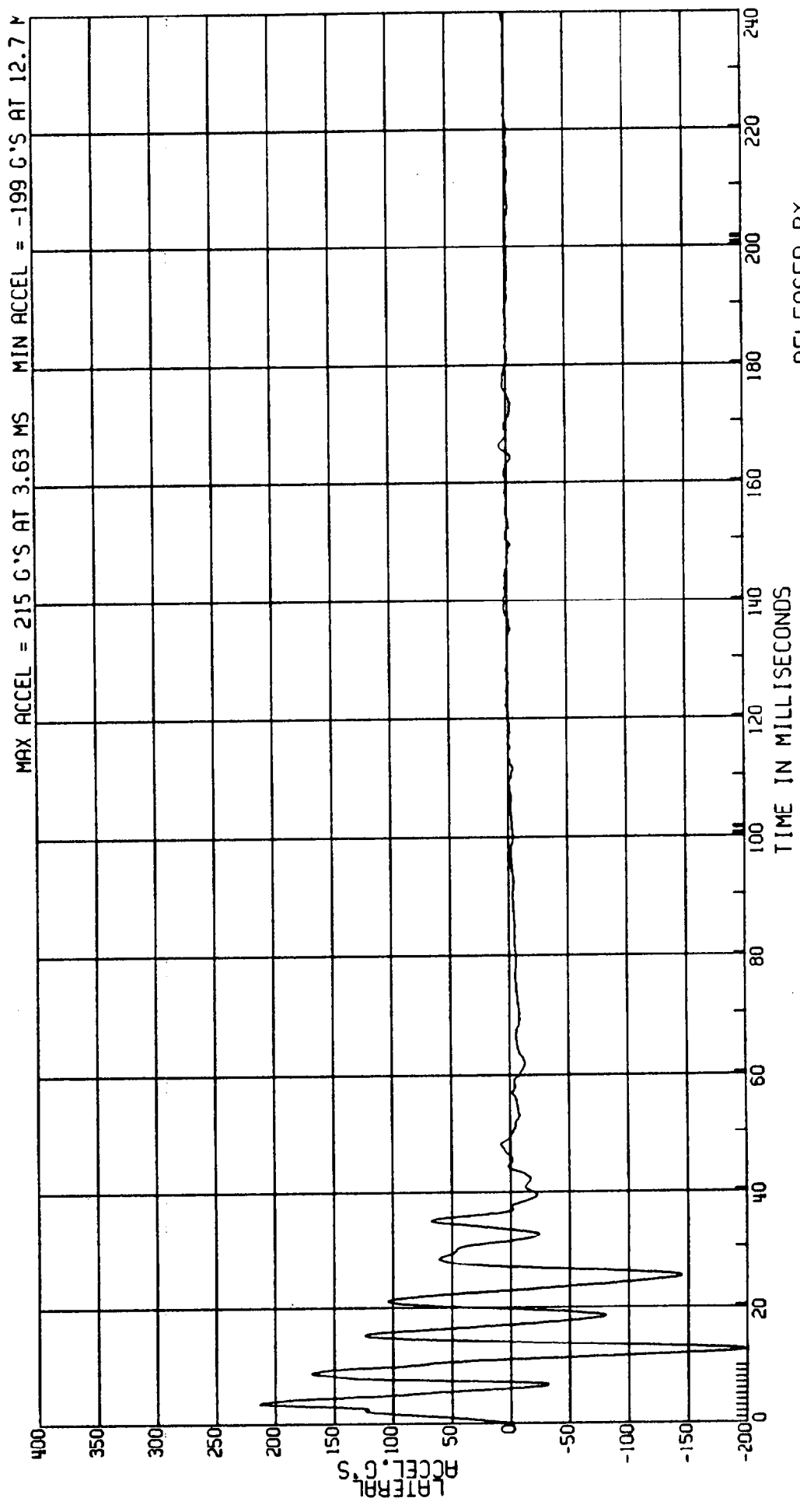
RELEASED BY:
17 PROCESSED 4 M1 90 11:25

C8004A L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 100
 3868-905 COMPUTED FRT. DOOR NO. 5 VELOCITY TEST DATE: 03-06-90
 CPE MVMA 4B 2AF69
 ELEC DATA, SAE CLASS 180 (1ST INTEGRAL OF DR-SIDE ACCELERATION)



RELEASED BY:
 18 PROCESSED 4 MY 90 11:25

C8004A L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE /0/
3868-905
CPE MVMA 4B 2AF69 DR-SIDE REAR DOOR NO. 1 ACCEL. TEST DATE:03-06-90
ELEC DATA, SAE CLASS 60



RELEASED BY:
19 PROCESSED 4 MY 90 11:25

MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 102

68004A L. SIDE IMPACT-27 DEC

3868-905

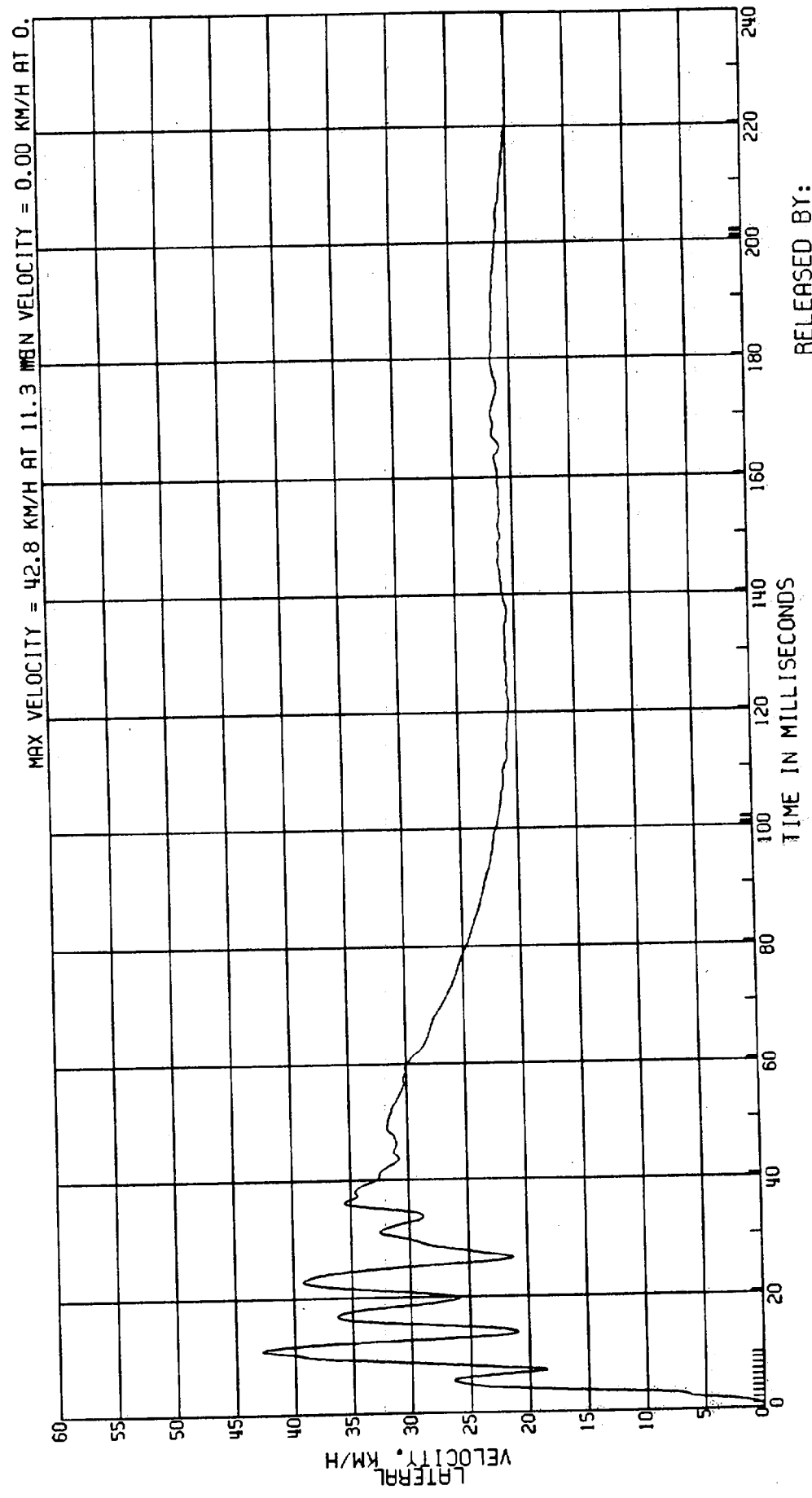
CPE MVMA 4B 2AF69

ELEC DATA, SAE CLASS 180

COMPUTED REAR DOOR NO. 1 VELOCITY

TEST DATE: 03-06-90

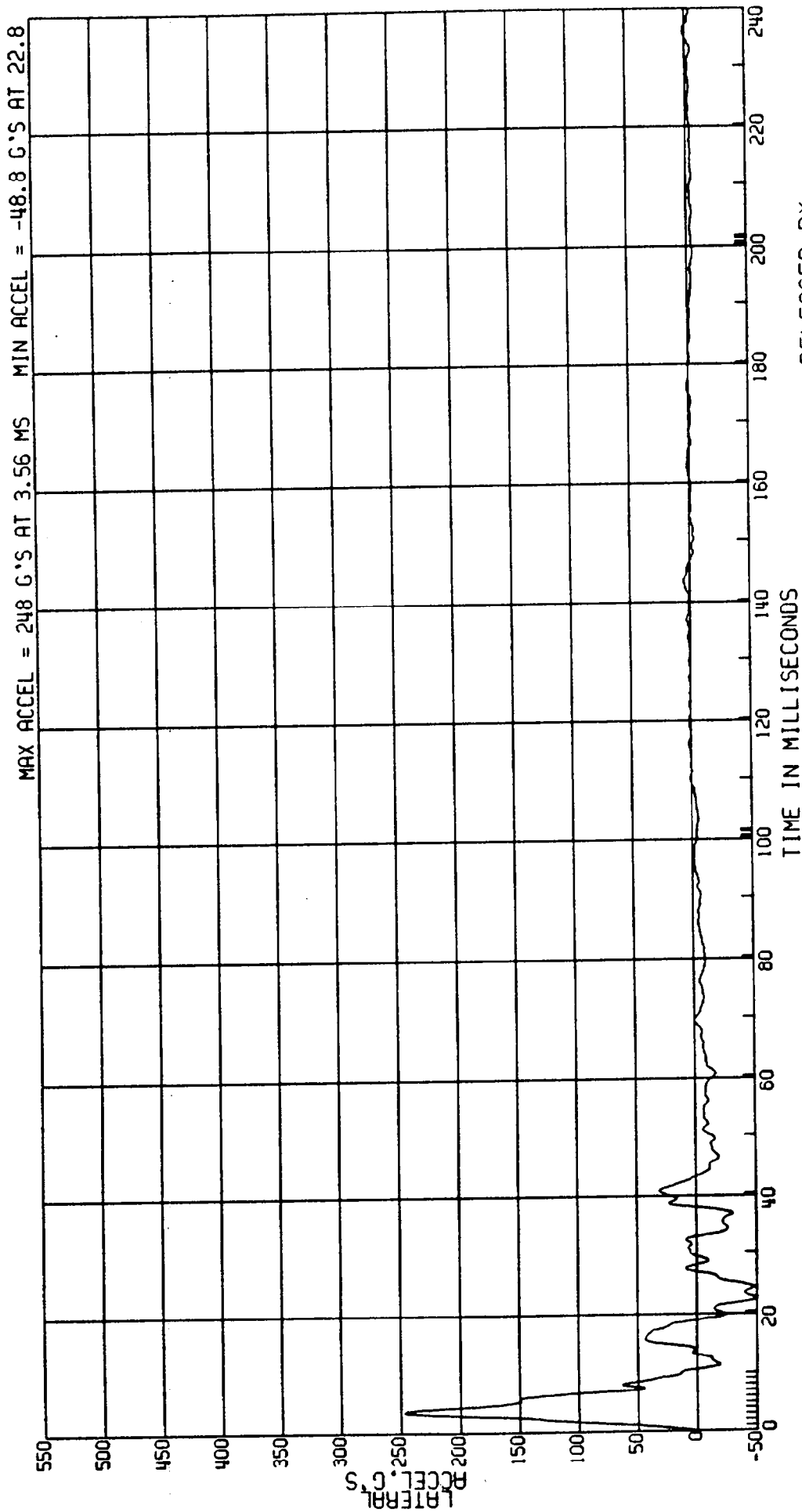
(1ST INTEGRAL OF DR-SIDE ACCELERATION)



RELEASED BY:

20 PROCESSED 4 MY 90 11:25

C8004A L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 103
3868-905
CPE MVMA 4B 2AF69 DR-SIDE REAR DOOR NO. 2 ACCEL. TEST DATE:03-06-90
ELEC DATA, SAE CLASS 60

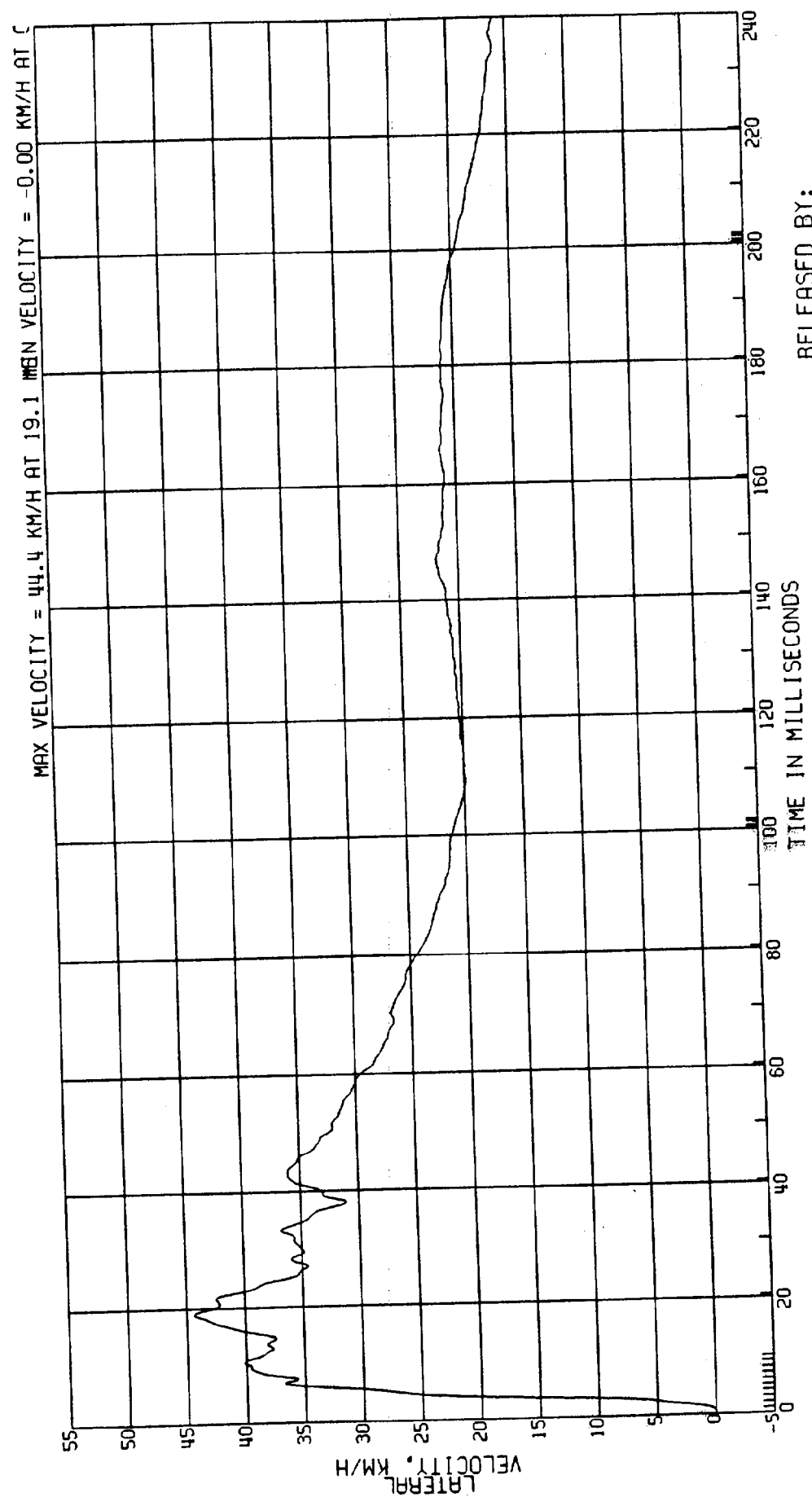


RELEASED BY:
21 PROCESSED 4 MT 90 11:25

C8004A L. SIDE IMPACT-27 DEG
3868-905
CPE
ELEC DATA, SAE CLASS 180

MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 104
COMPUTED REAR DOOR NO. 2 VELOCITY
TEST DATE:03-06-90

MVMA 4B 2AF69
(1ST INTEGRAL OF DR-SIDE ACCELERATION)



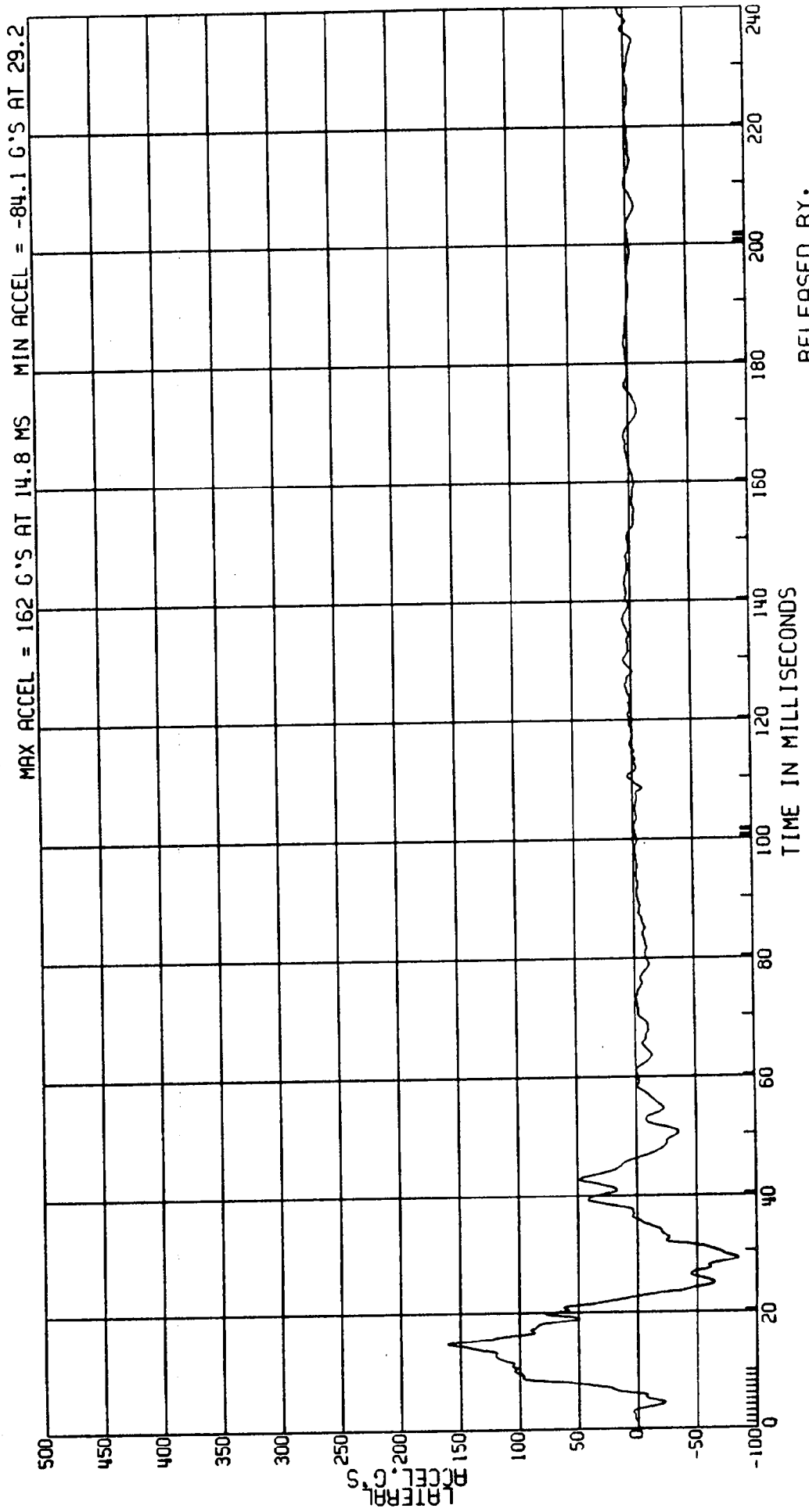
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22 PROCESSED 4 MY 90 11:25

C8004A L. SIDE IMPACT-27 DEG
MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 105

3868-905
DR-SIDE REAR DOOR NO. 3 ACCEL.

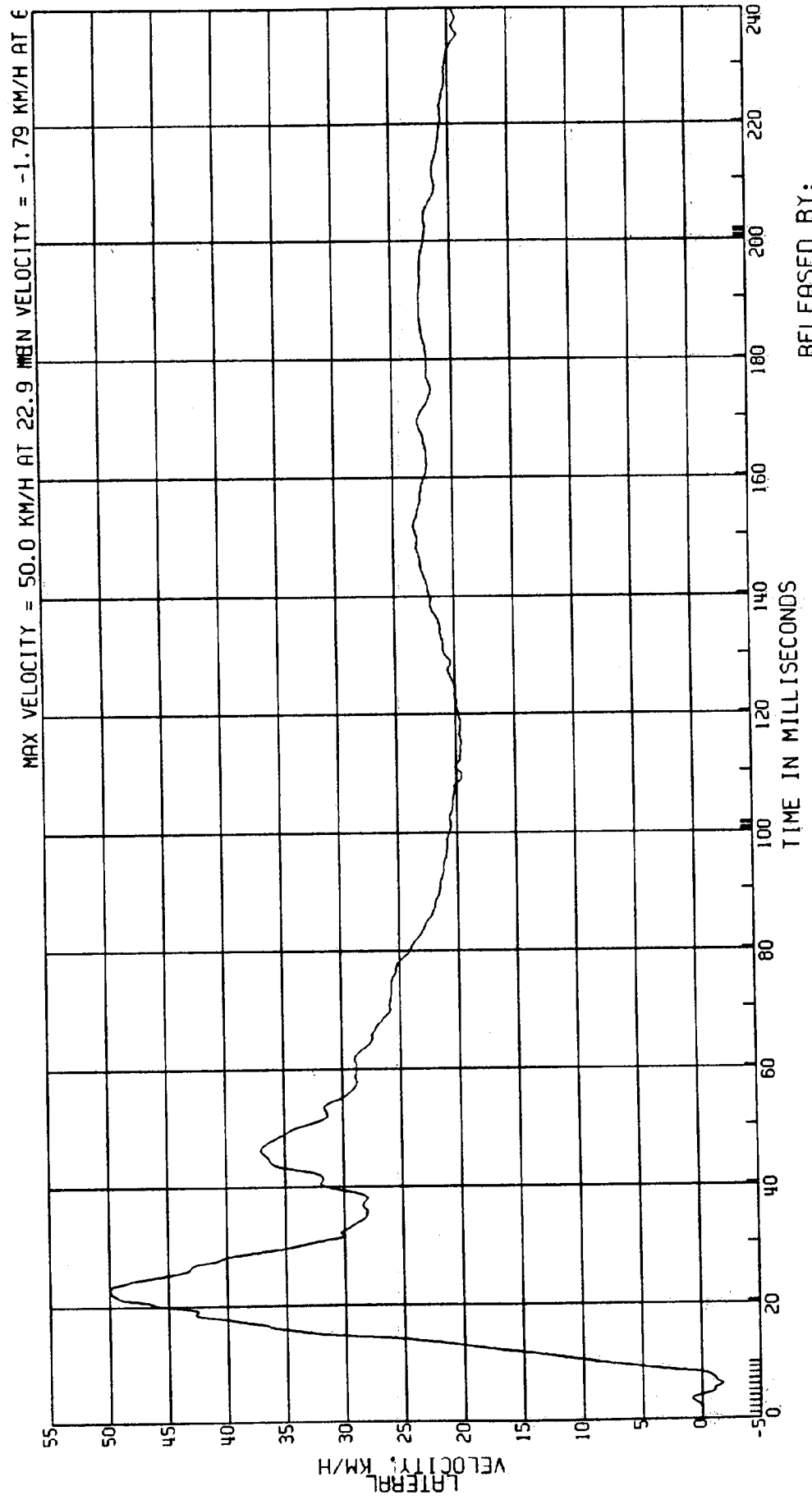
CPE
MVMA 4B 2AF69
ELEC DATA, SAE CLASS 60

TEST DATE:03-06-90



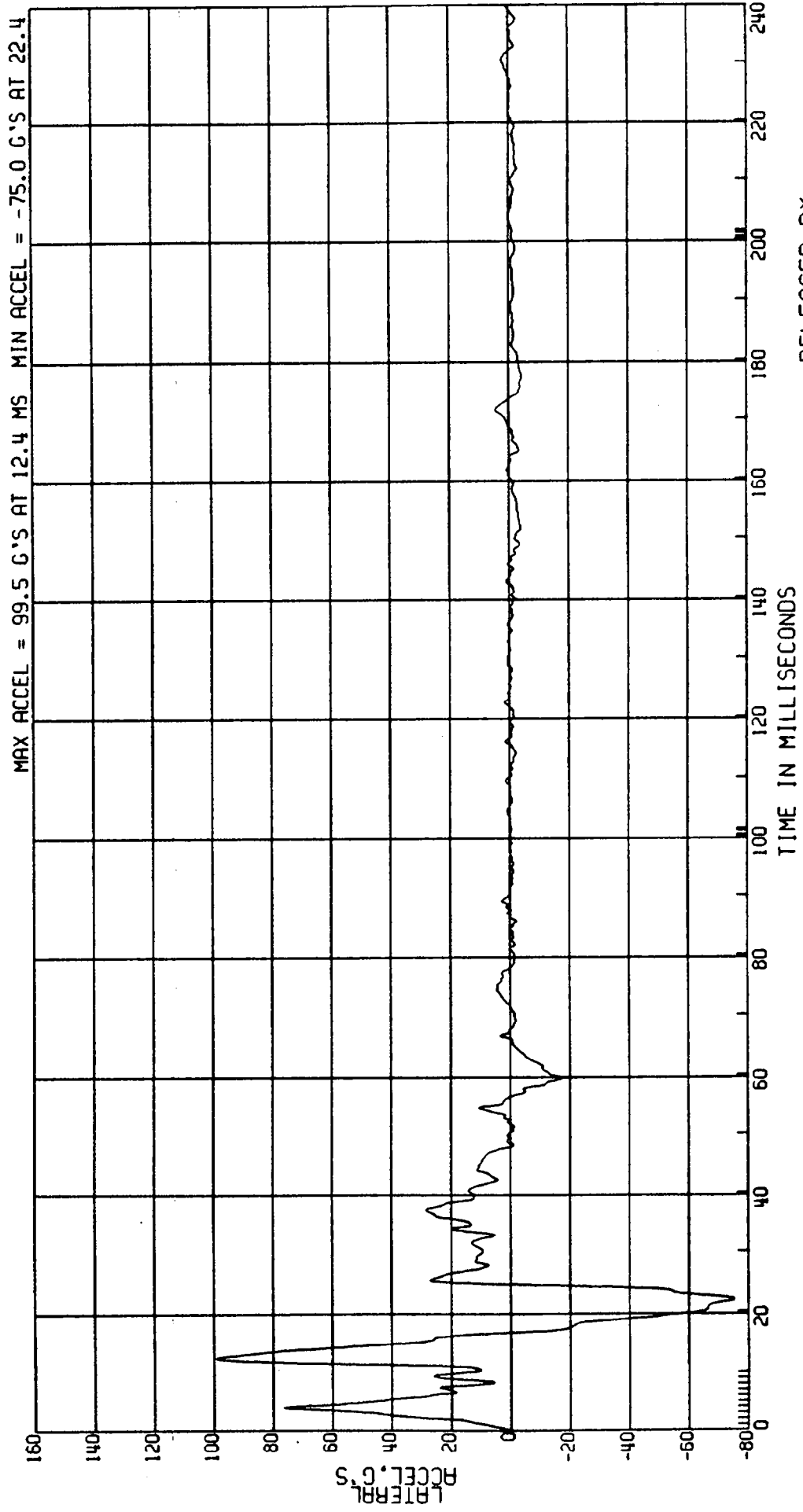
RELEASED BY:
23 PROCESSED 4 MY 90 11:25

C8004A L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE /06
3868-905 COMPUTED REAR DOOR NO. 3 VELOCITY TEST DATE:03-06-90
CPE MVMA 4B 2AF69
ELEC DATA, SAE CLASS 180 (1ST INTEGRAL OF DR-SIDE ACCELERATION)



RELEASED BY:
24 PROCESSED 4 MY 90 11:25

C8004A L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 107
3868-905
CPE MVMA 4B 2AF69 DR-SIDE REAR DOOR NO. 4 ACCEL. TEST DATE:03-06-90
ELEC DATA, SAE CLASS 60



RELEASED BY:
25 PROCESSED 4 MY 90 11:25

C8004A L. SIDE IMPACT-27 DEG

3868-905

MVMA 4B 2AF69

CPE

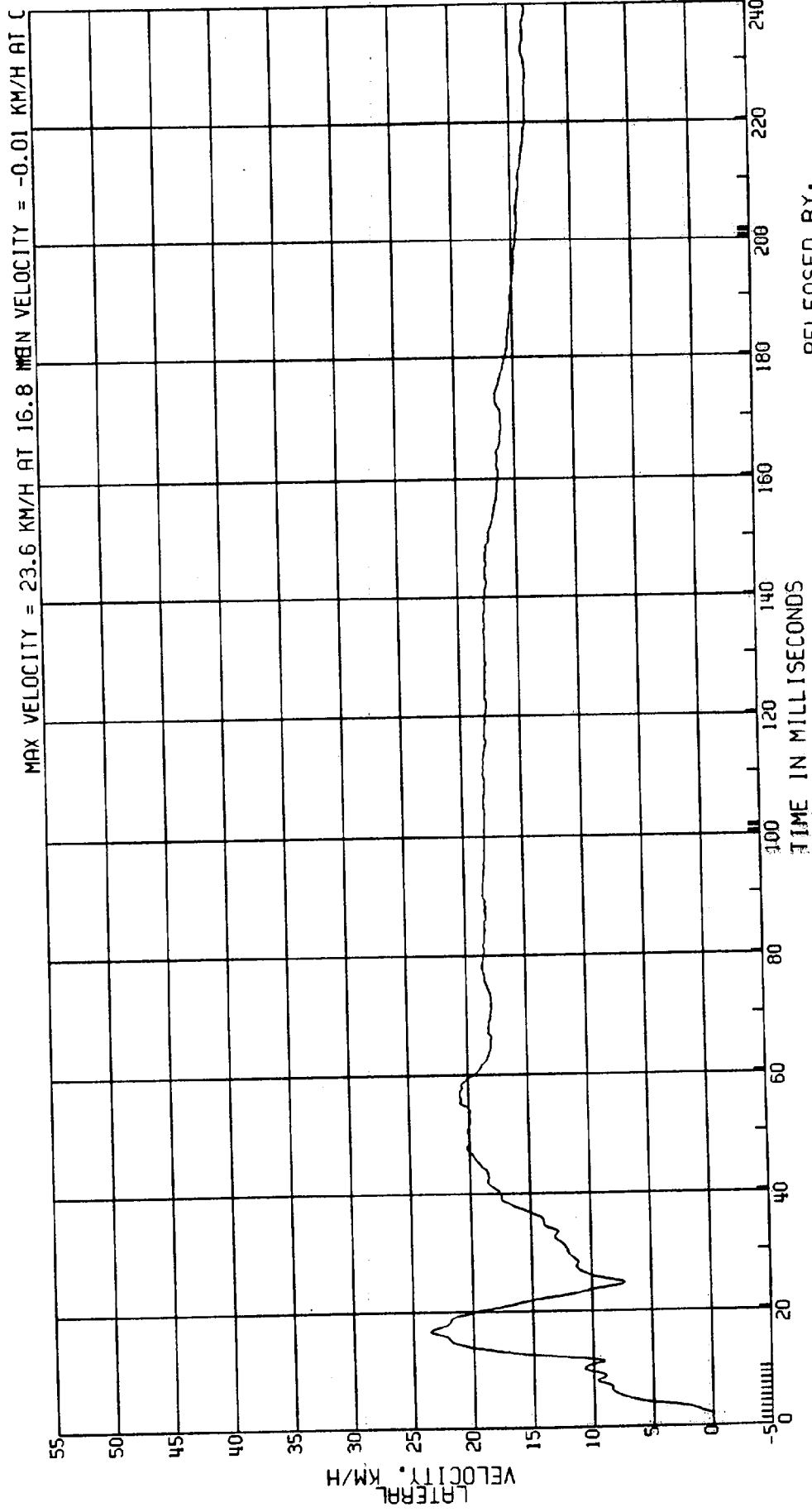
ELEC DATA, SAE CLASS 180

MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 108

COMPUTED REAR DOOR NO. 4 VELOCITY

TEST DATE:03-06-90

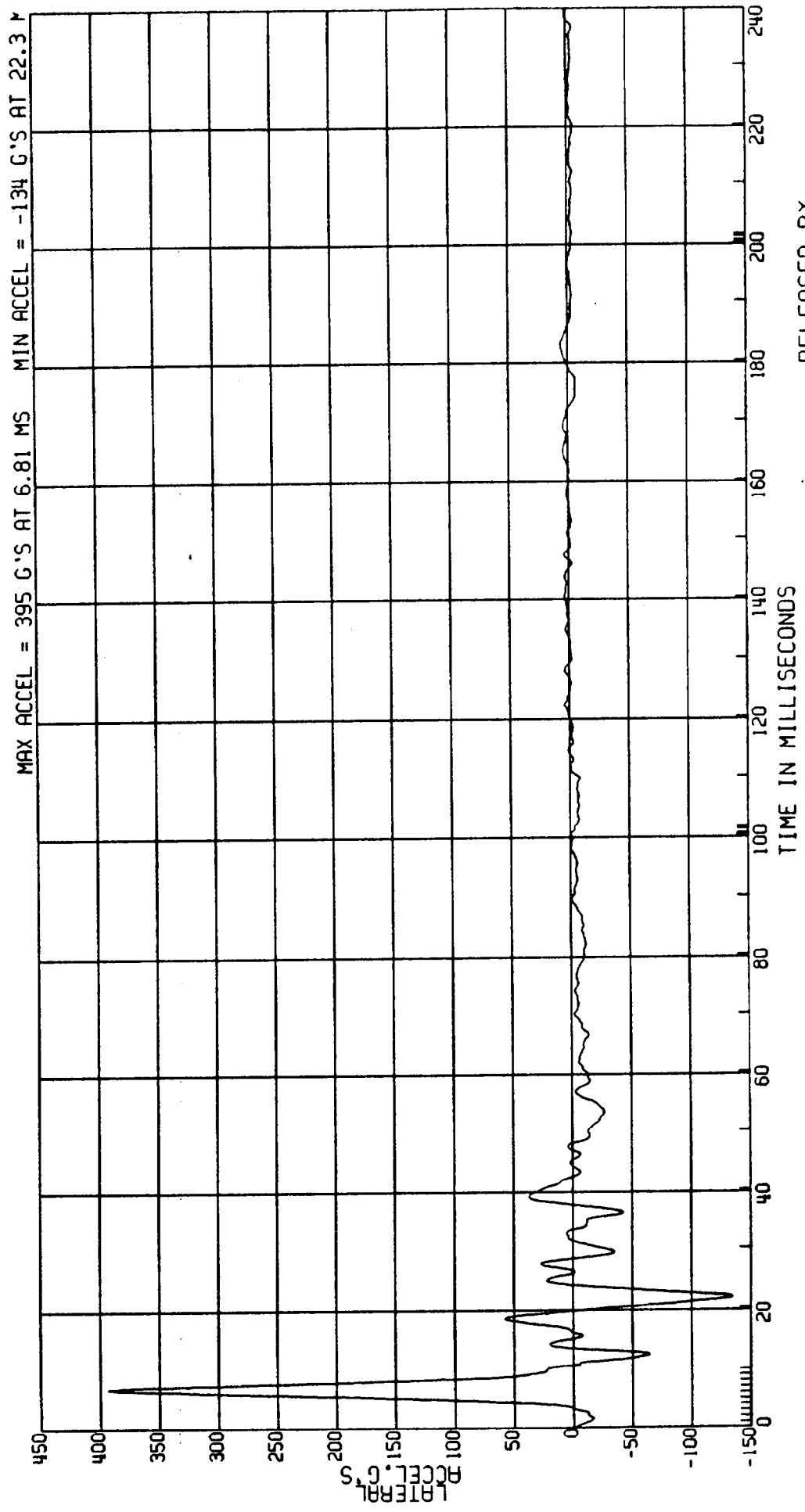
(1ST INTEGRAL OF DR-SIDE ACCELERATION)



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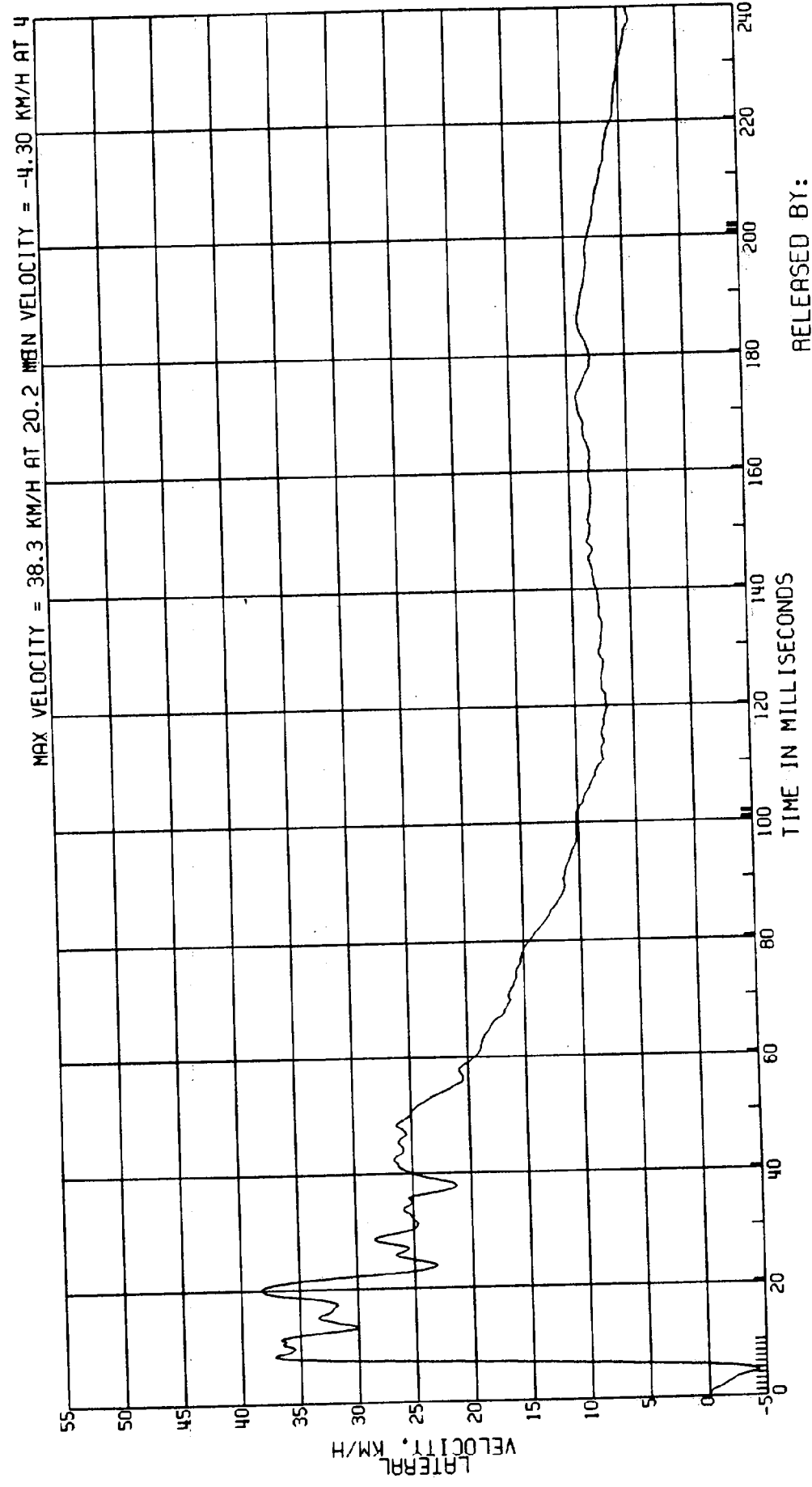
26 PROCESSED 4/MT 90 11:25

C8004A L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 109
3868-905
CPE MVMA 4B 2AF69 DR-SIDE REAR DOOR NO. 5 ACCEL. TEST DATE:03-06-90
ELEC DATA, SAE CLASS 60



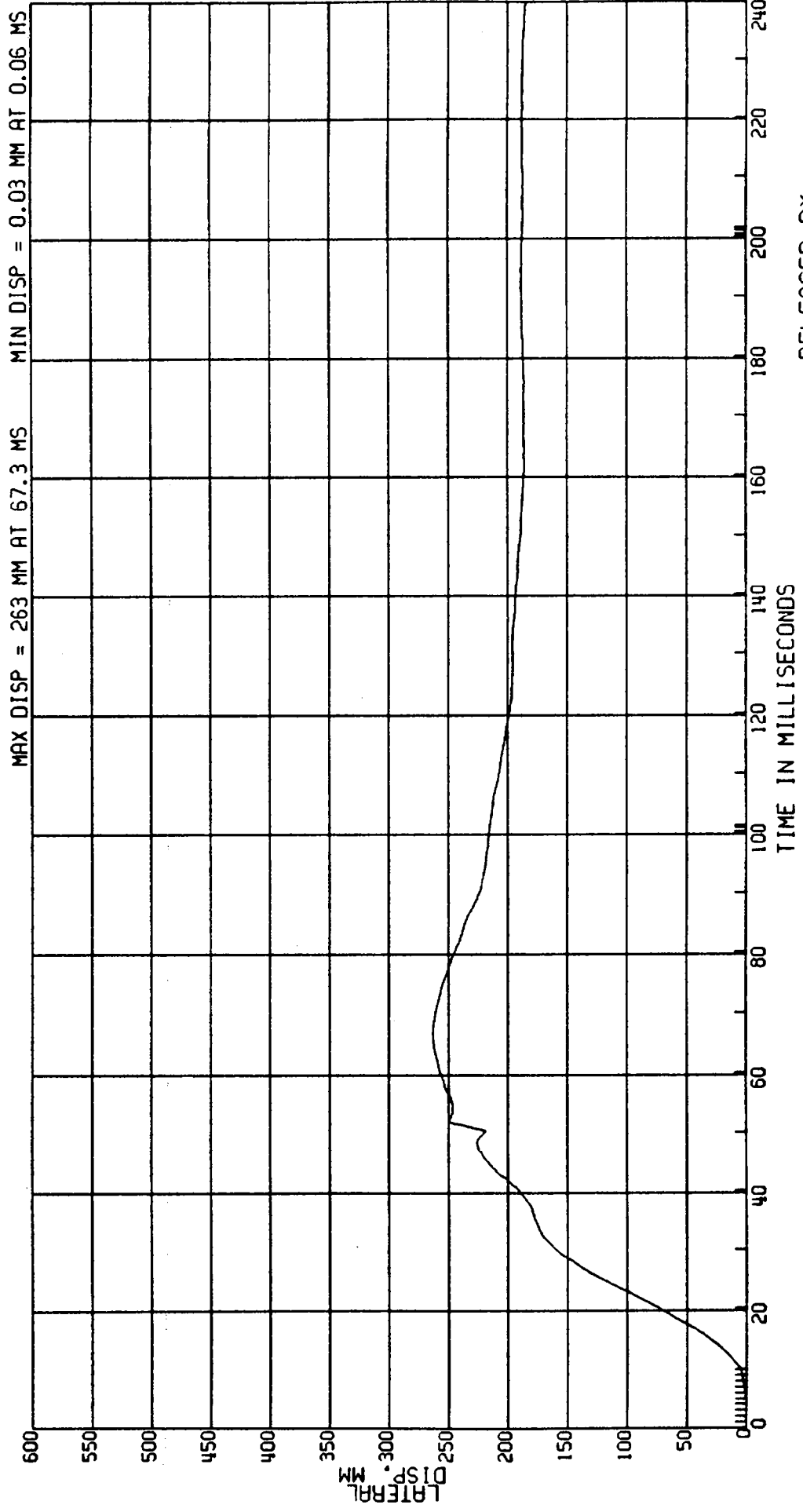
RELEASED BY:
27 PROCESSED 4 MT 90 11:26

C8004A L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 110
3868-905 COMPUTED REAR DOOR NO. 5 VELOCITY TEST DATE: 03-06-90
CPE MVMA 4B 2AF69
ELEC DATA, SAE CLASS 180 (1ST INTEGRAL OF DR-SIDE ACCELERATION)



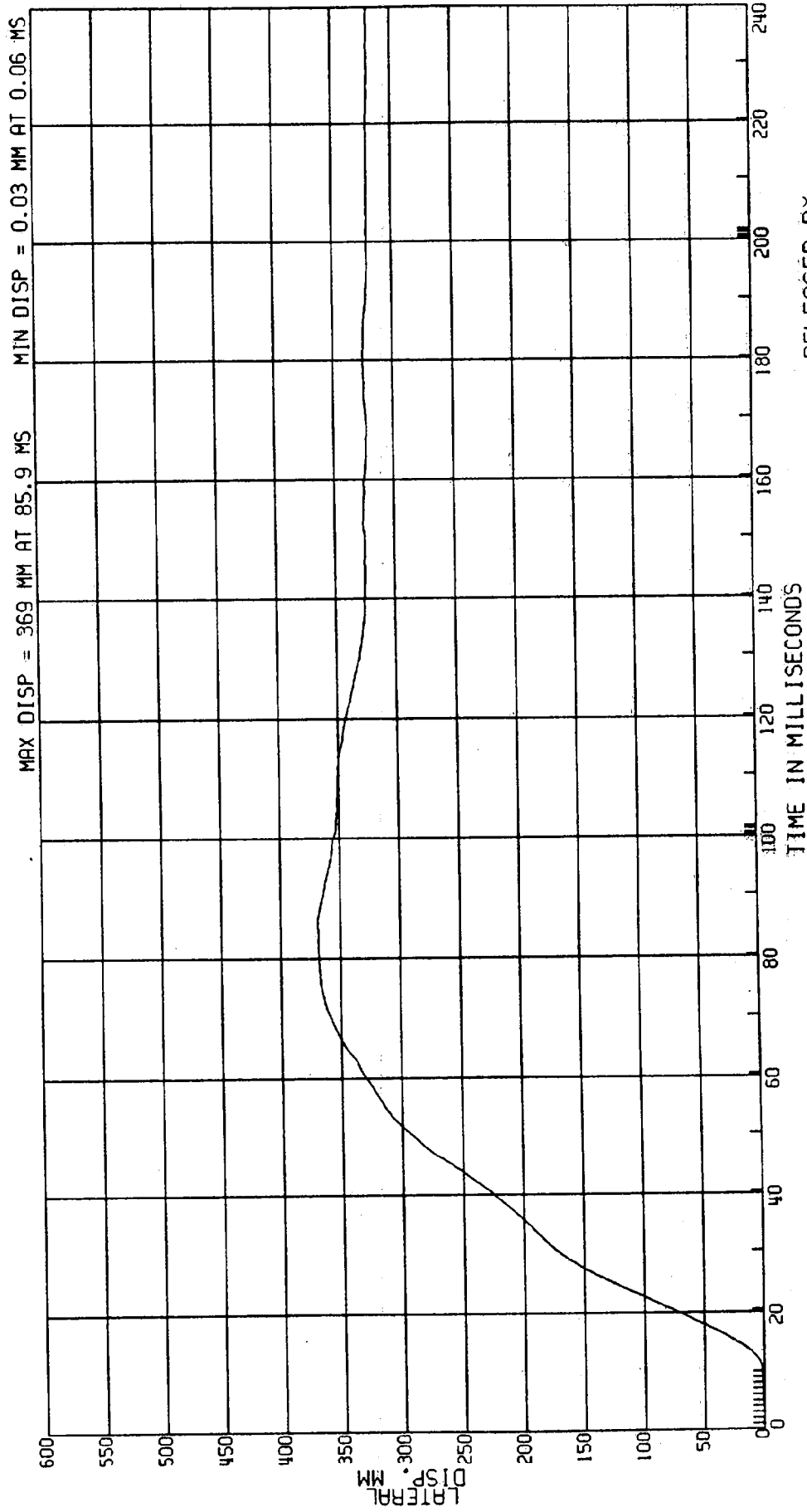
RELEASED BY:
28 PROCESSED 4 MT 90 11:26

C8004A L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 111
3868-905
CPE MVMA 4B 2AF69 DR-SIDE FRT. INNER DOOR @ ATD CHEST TEST DATE:03-06-90
ELEC DATA, SAE CLASS 60



RELEASED BY:
29 PROCESSED 4 MY 90 11126

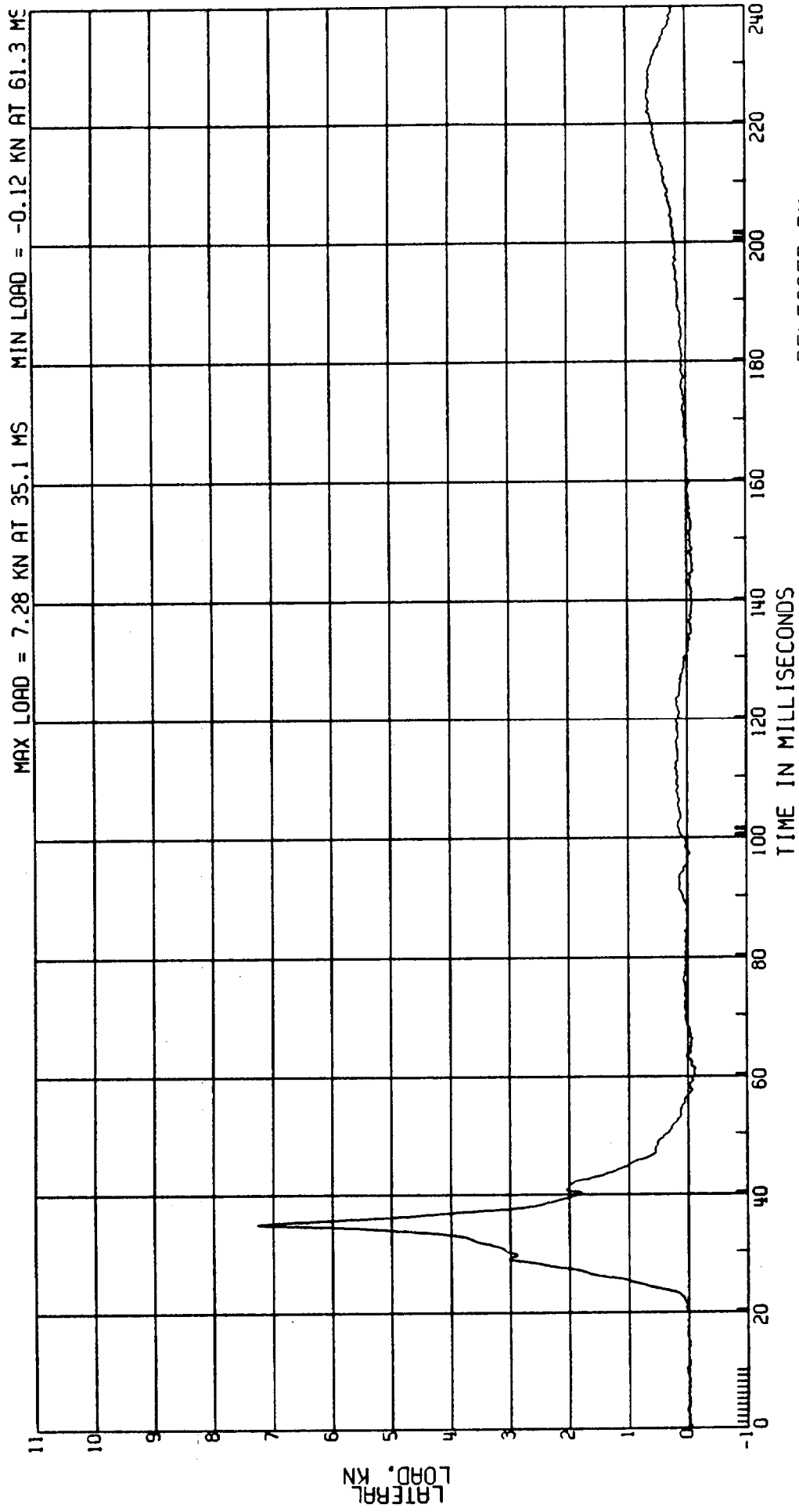
C8004A L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 112
3868-905 DR-SIDE REAR INNER DOOR @ ATD CHEST TEST DATE:03-06-90
CPE MVMA 4B 2AF69
ELEC DATA, SAE CLASS 60



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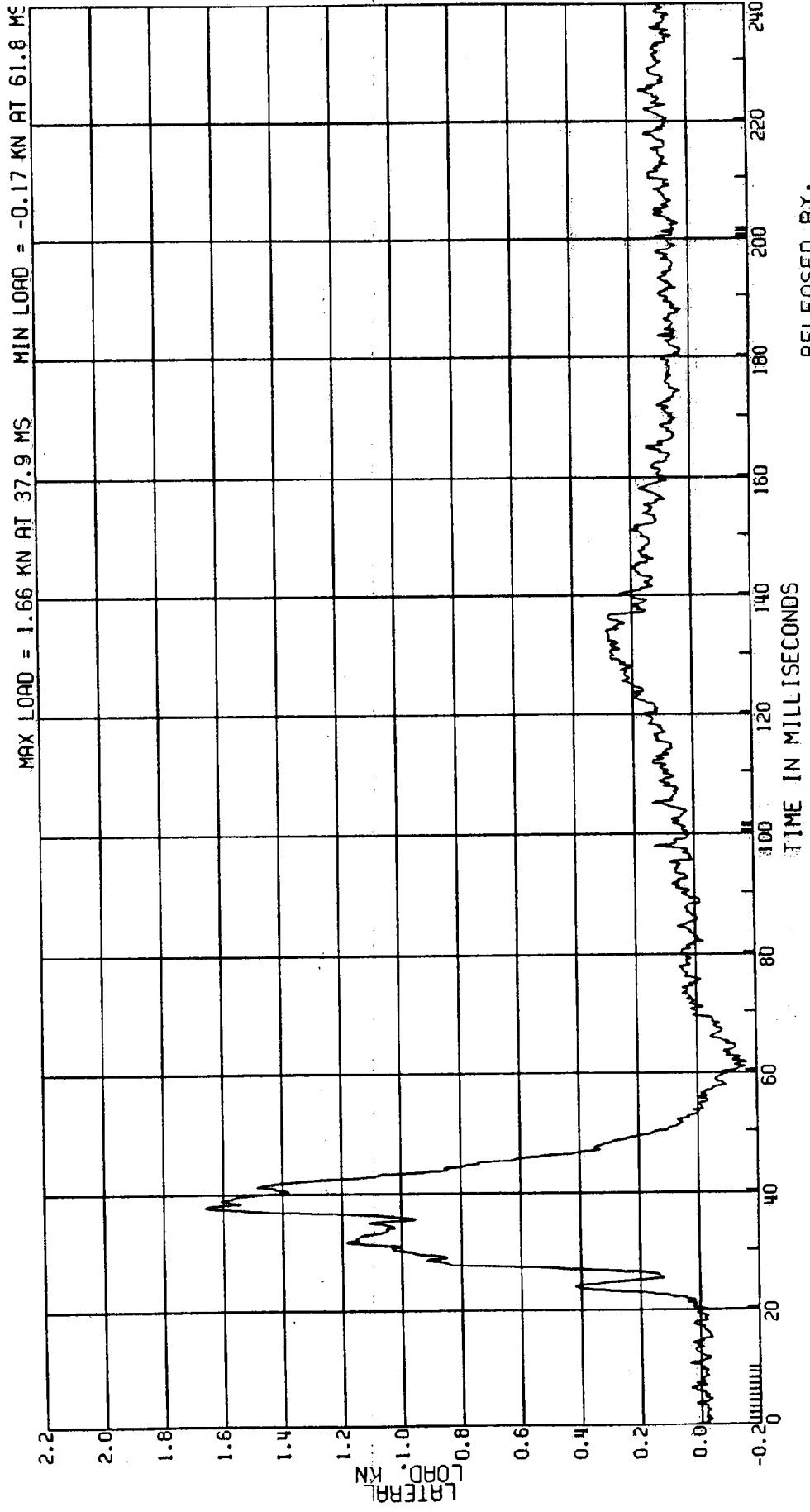
C8004A L. SIDE IMPACT-27 DEC MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 1/3
3868-905 AID TYPE: BIOSID
CPE MVMA 4B 2AF69 L. REAR PUBIC SYMPHYSIS LOAD TEST DATE:03-06-90
ELEC DATA, SAE CLASS 600



RELEASED BY:
31 PROCESSED 4 MY 90 11:26

C8004A L. SIDE IMPACT-27 DEC
3868-905 MVMA 4B 2AF69
CPE ELEC DATA, SAE CLASS 600

MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 114
L. REAR ILIAC LOAD
ATD TYPE: BIOSID
TEST DATE: 03-06-90

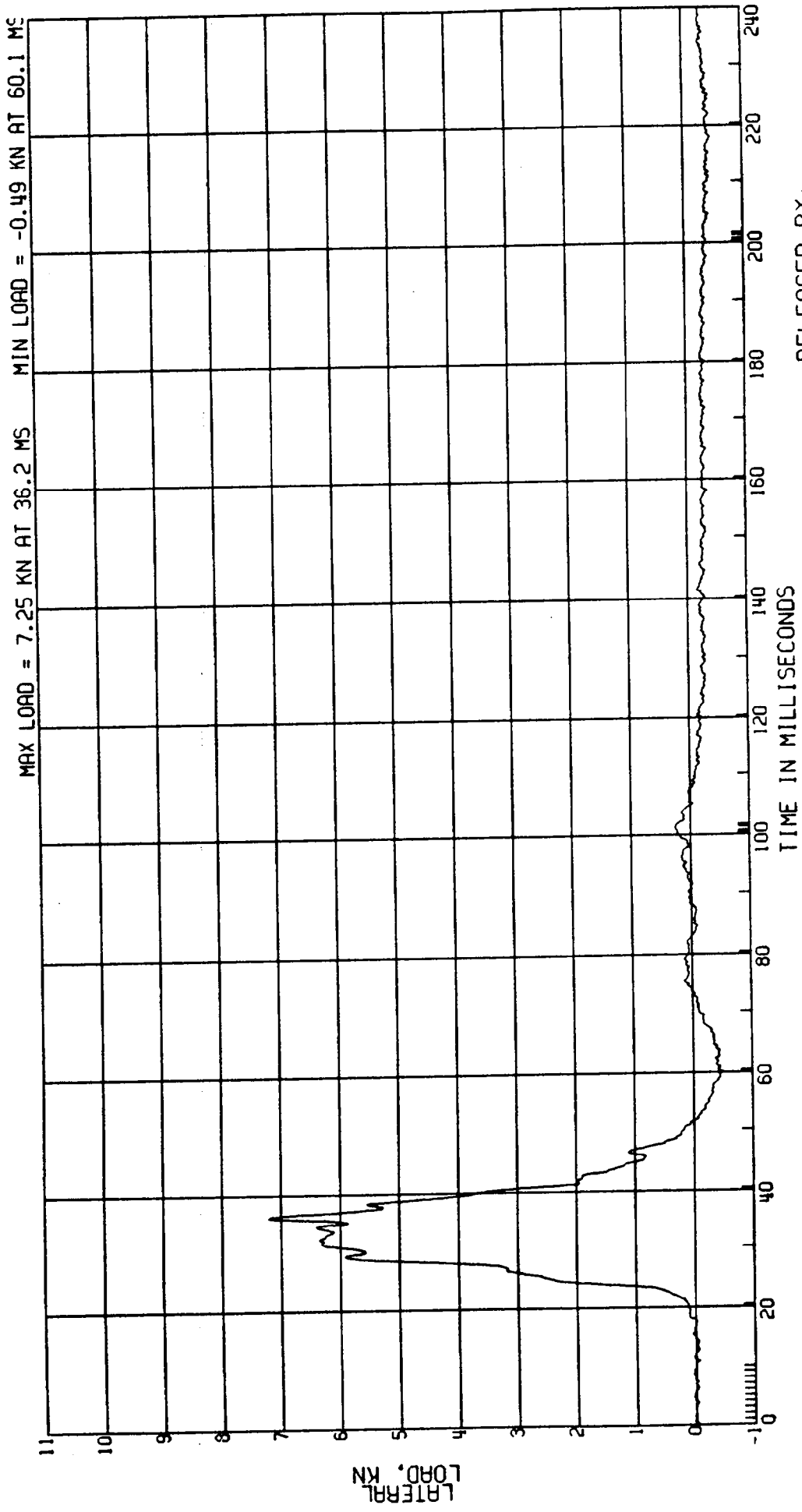


RELEASED BY:
32 PROCESSED 4-MY 90 11:26

C8004A L. SIDE IMPACT-27 DEG
3868-905
CPE

MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 115
ATD TYPE: BIOSID
TEST DATE: 03-06-90

L. REAR SACRUM LOAD
MVMA 4B 2AF69
ELEC DATA, SAE CLASS 600



RELEASED BY:
33 PROCESSED 4 MT 90 11:26

311

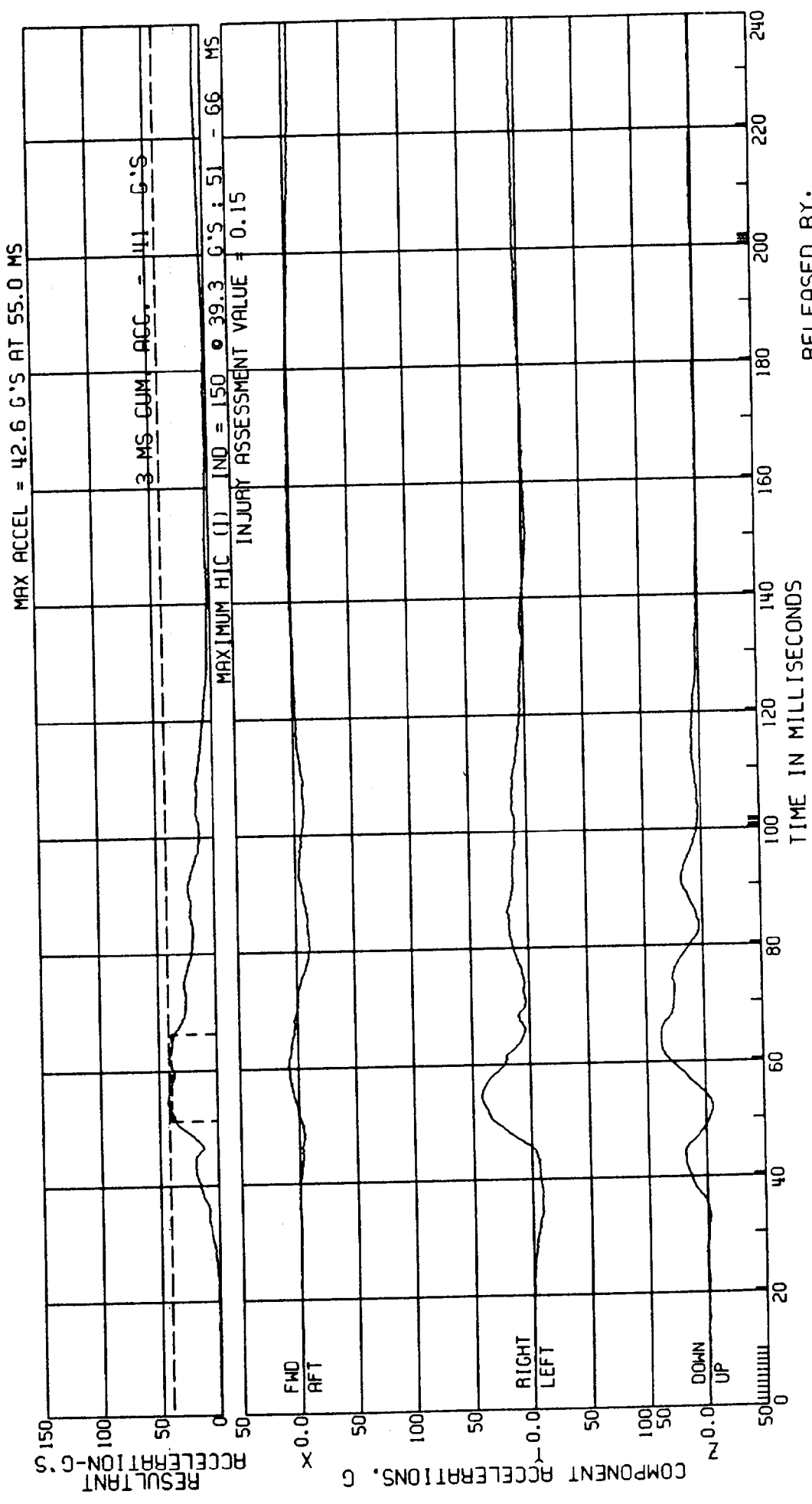
Good
copy

M9B6UAG#
C8004A
05/04/90
11:24:39
NUMBER OF PLOTS = 75
XOFF = 10.10
YOFF = 0.75

C8004A L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 1/7
 3868-905 MVMA 4B 2AF69 ATD TYPE: SID
 CPE TEST DATE: 03-06-90

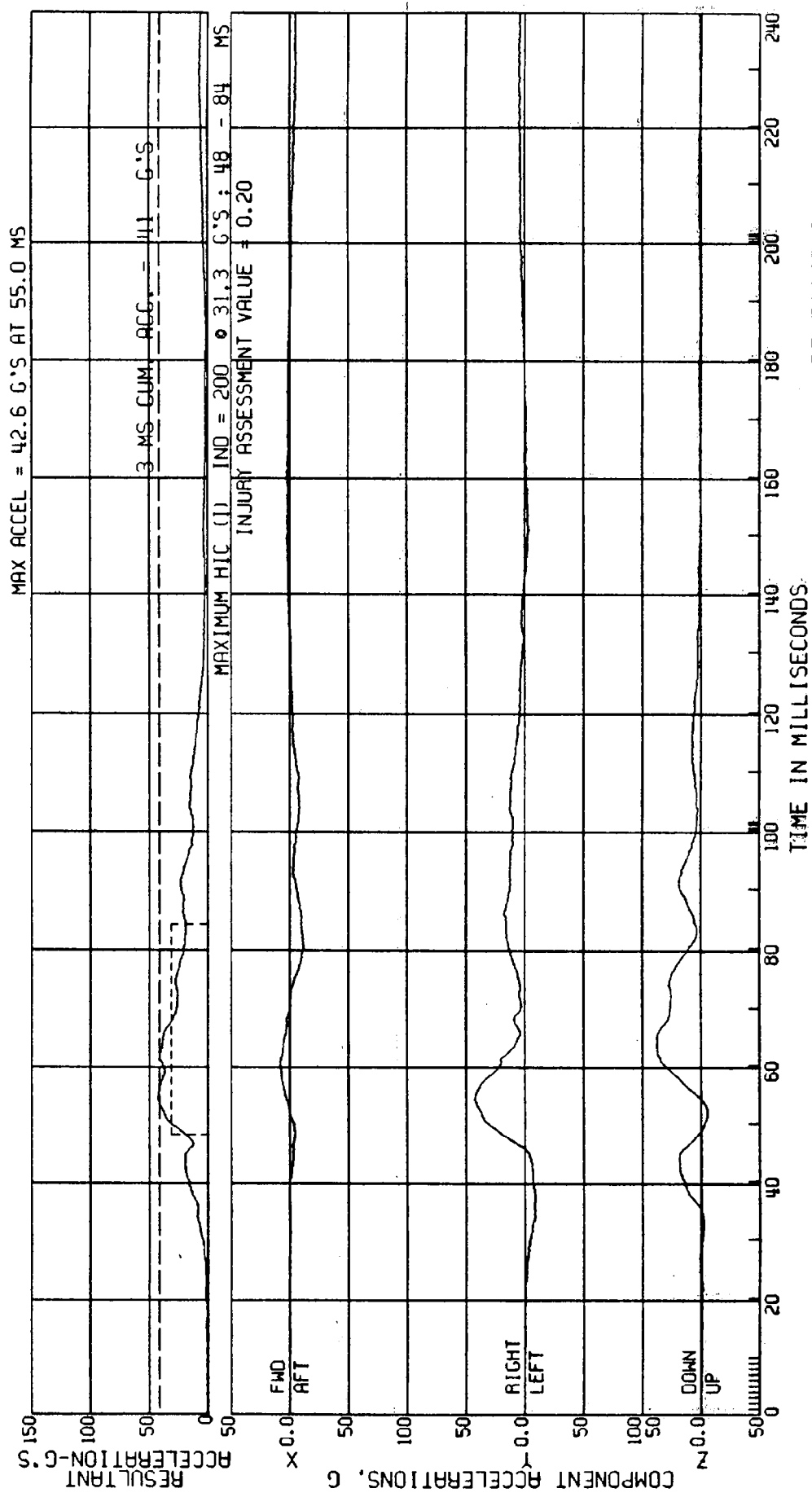
DRIVER HEAD ACCEL.
 (HIC 1 LIMITED TO 15MS)

ELEC DATA, SAE CLASS 1000



RELEASED BY:
 1 PROCESSED 4 MT 90 11:24

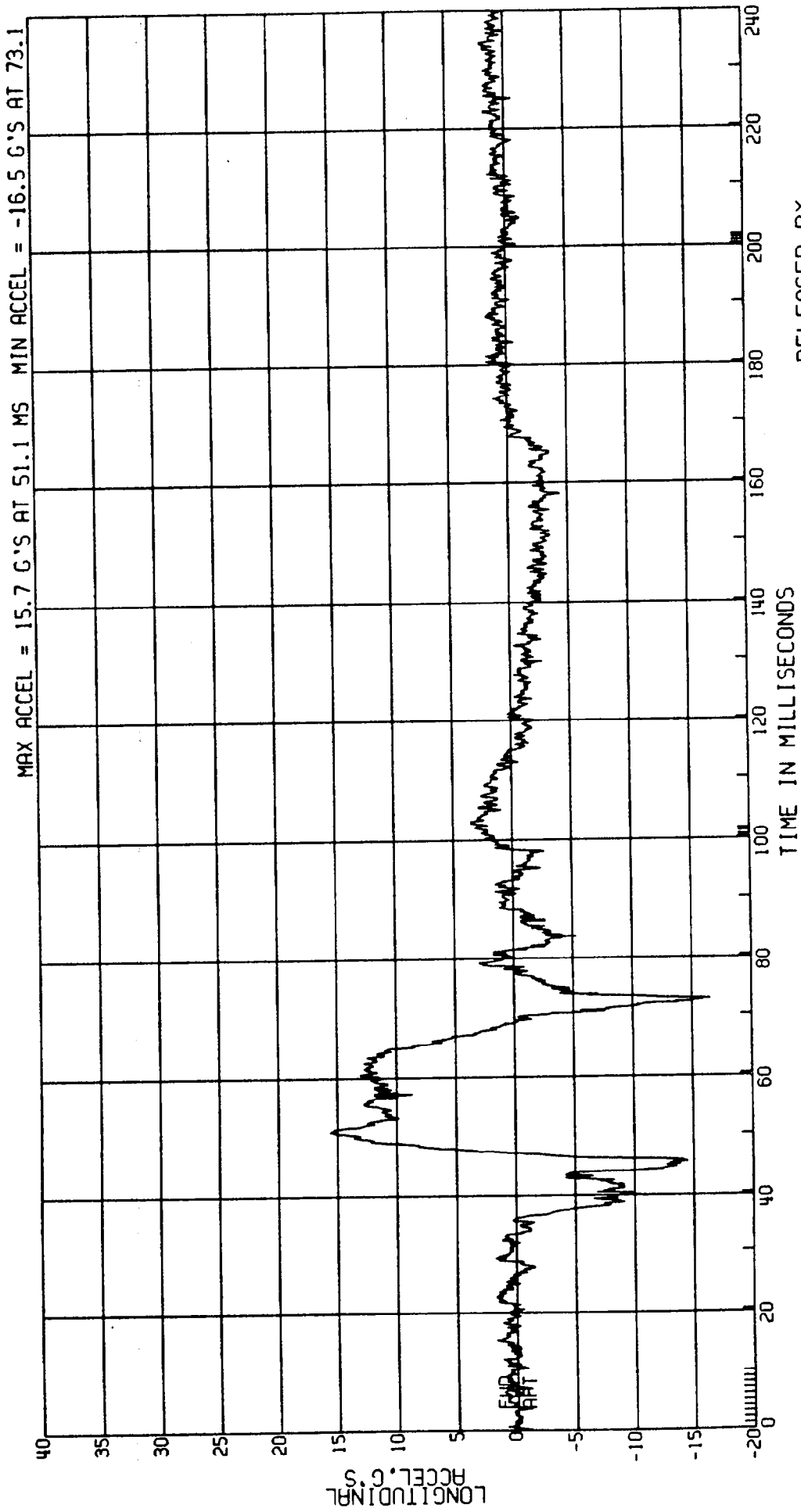
C8004 L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE / 18
 3868-905
 CPE MVMA 48 2AF69
 ELEC DATA, SAE CLASS 1000
 DRIVER HEAD ACCEL.
 (HIC 1 LIMITED TO 36MS)
 ATD TYPE: SID
 TEST DATE: 03-06-90



RELEASED BY:
 2 PROCESSED 4 MAY 90 11:24

C8004A L. SIDE IMPACT-27 DEG
MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 119
3868-905
ATD TYPE: SID
CPE MVMA 4B 2AF69
ELEC DATA, SAE CLASS 1000
TEST DATE:03-06-90

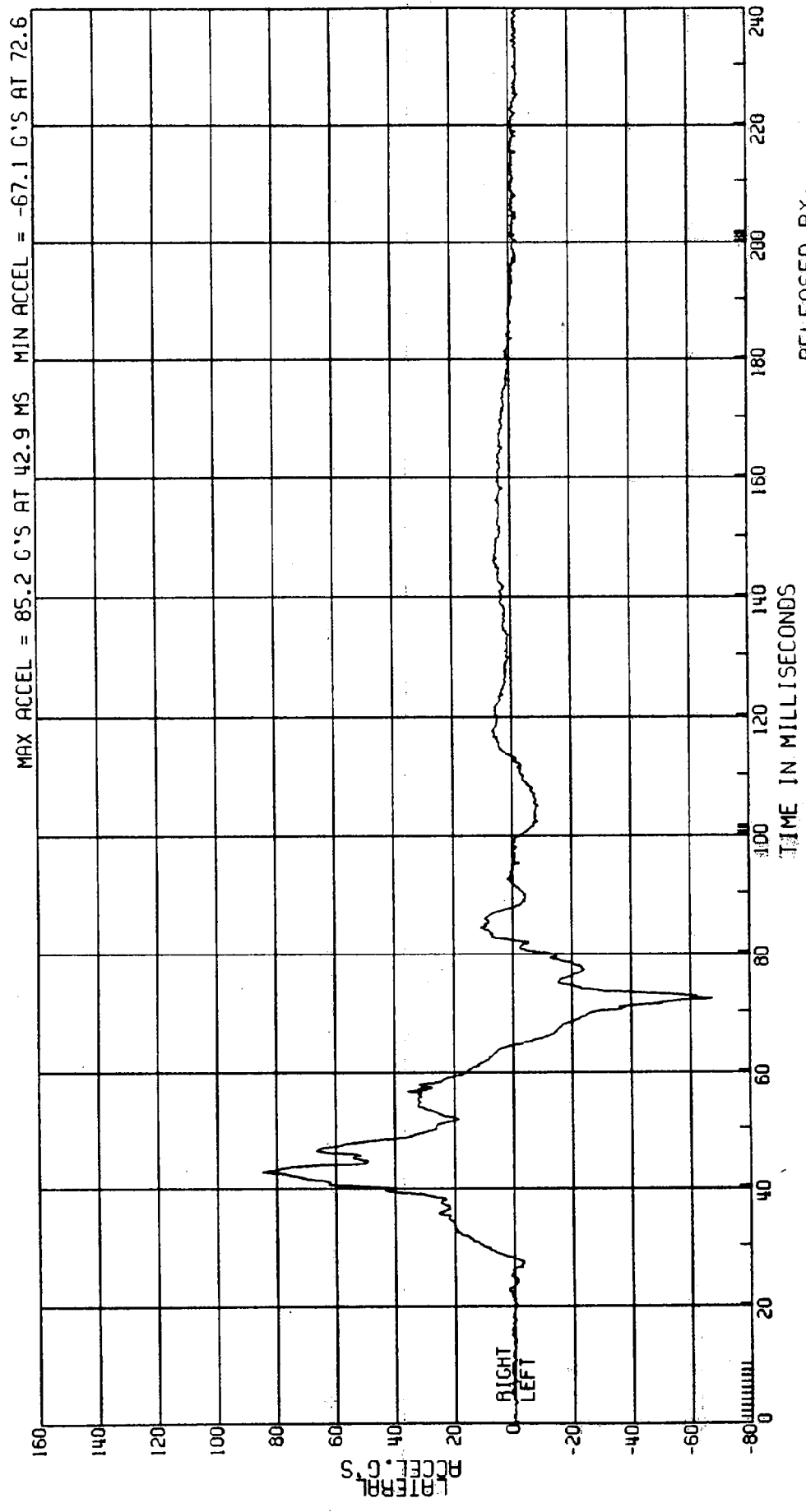
DRIVER UPPER SPINE ACCEL.



RELEASED BY:

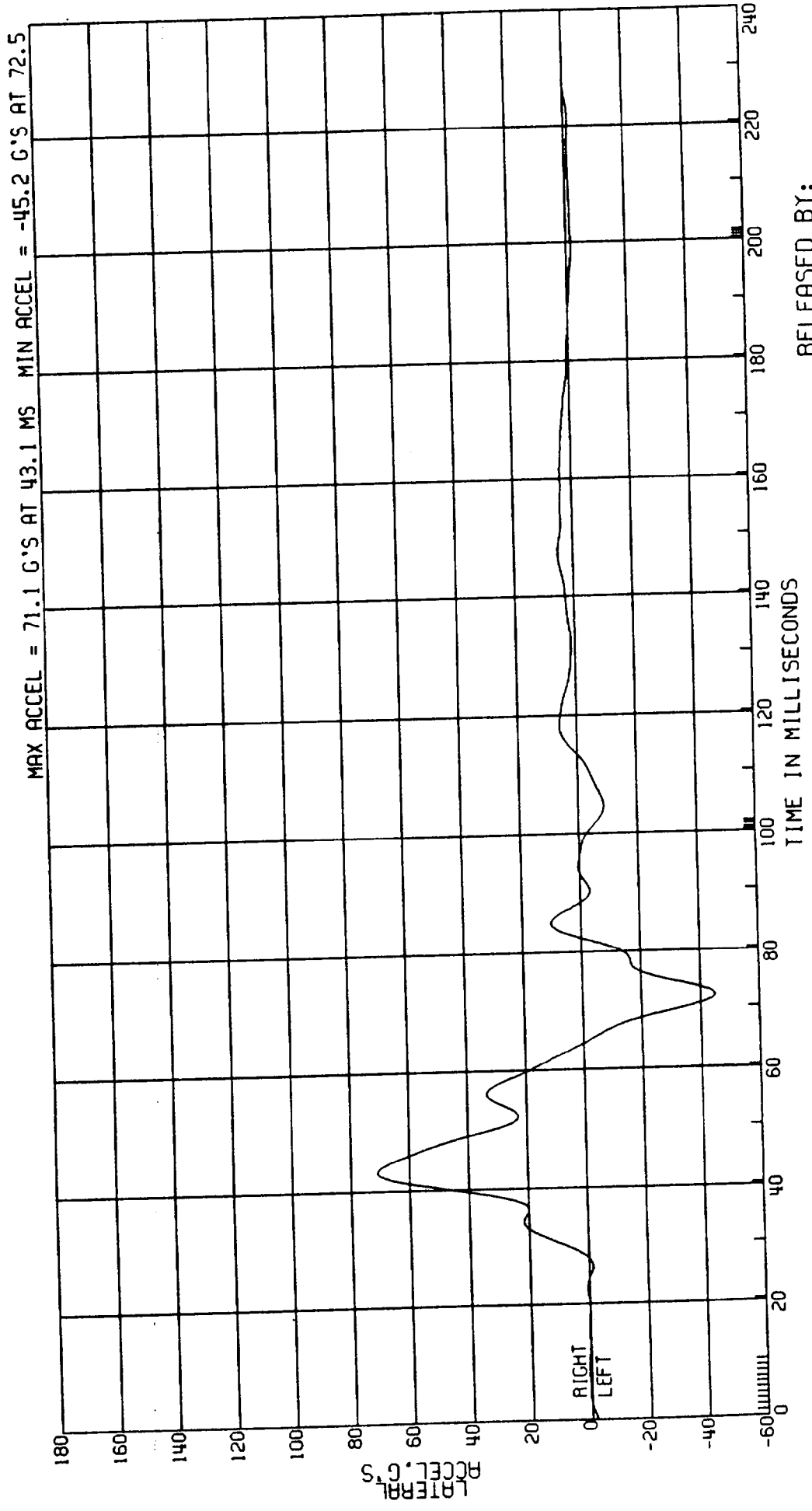
34 PROCESSED 4 MY 90 11:26

C8004A L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 120
3868-905 ATD TYPE: SID
CPE MVMA 4B 2AF69 DRIVER UPPER SPINE ACCEL.
ELEC DATA, SAE CLASS 1000 TEST DATE:03-06-90



RELEASED BY:
35 PROCESSED 4 MY 90 11:26

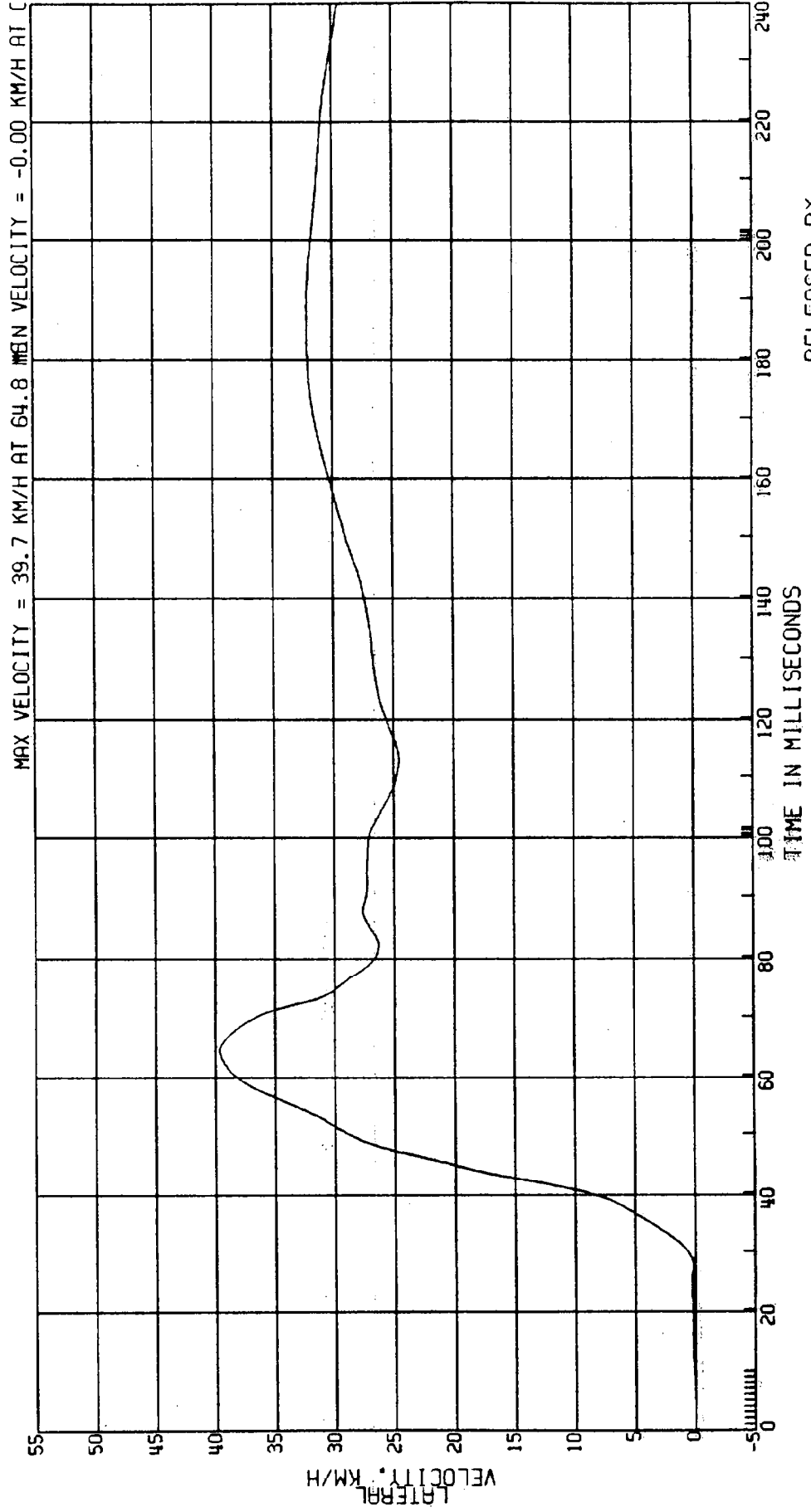
C8004A L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 121
3868-905 MVMA 4B 2AF69 ATD TYPE: SID
CPE DRIVER UPPER SPINE ACCEL. TEST DATE:03-06-90
ELEC DATA, NHTSA FIR FILTER F.I.R. FILTER, CLASS 300 BUTTERWORTH



RELEASED BY:

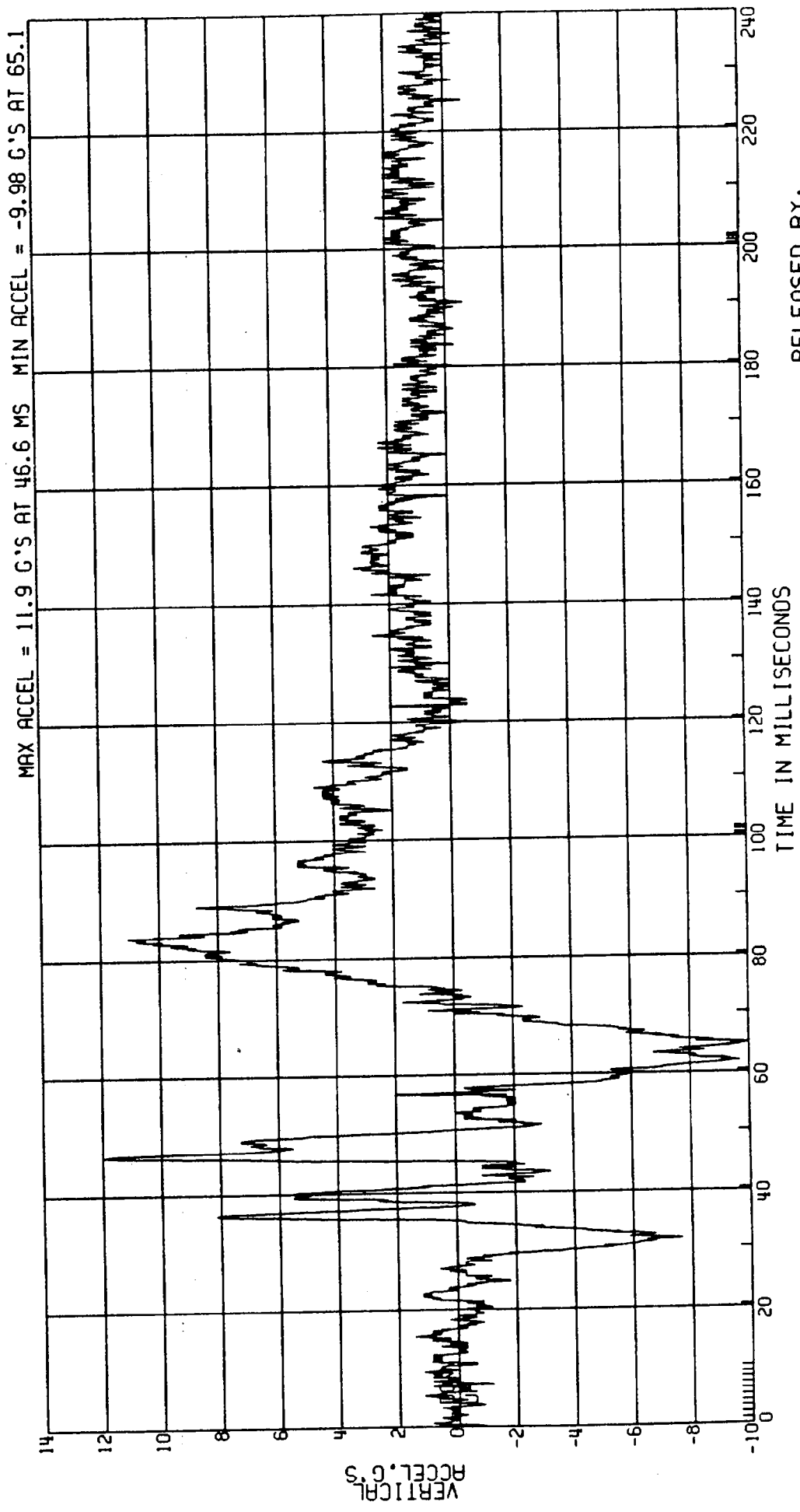
36 PROCESSED 4 MY 90 11:26

C8004A L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 122
 3868-905 ATD TYPE: SID
 CPE MVMA 4B 2AF69 COMPUTED UPPER SPINE VELOCITY
 ELEC DATA, SAE CLASS 180 (1ST INT OF DRIVER ACCELERATION) TEST DATE:03-06-90



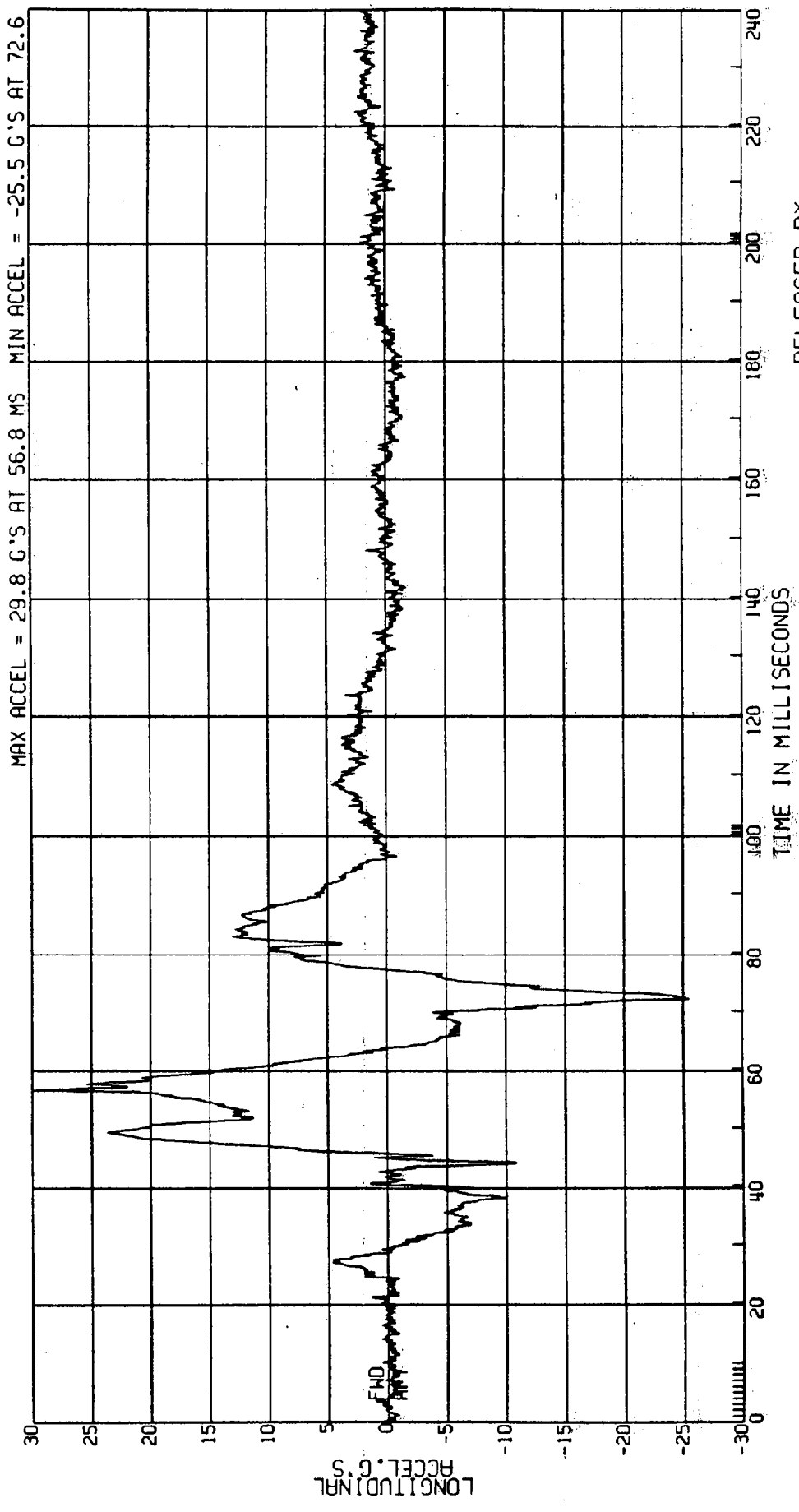
RELEASED BY:
 37 PROCESSED 4 MAY 90 11:26

C8004A L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE /2.3
3868-905 ATD TYPE: SID
CPE MVMA 4B 2AF69 DRIVER UPPER SPINE ACCEL.
ELEC DATA, SAE CLASS 1000 TEST DATE: 03-06-90



RELEASED BY:
38 PROCESSED 4 MY 90 11:26

C8004A L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 124
 3868-905 AID TYPE: SID
 CPE MVMA 4B 2AF69 DRIVER LOWER SPINE ACCEL.
 ELEC DATA, SAE CLASS 1000 TEST DATE: 03-06-90



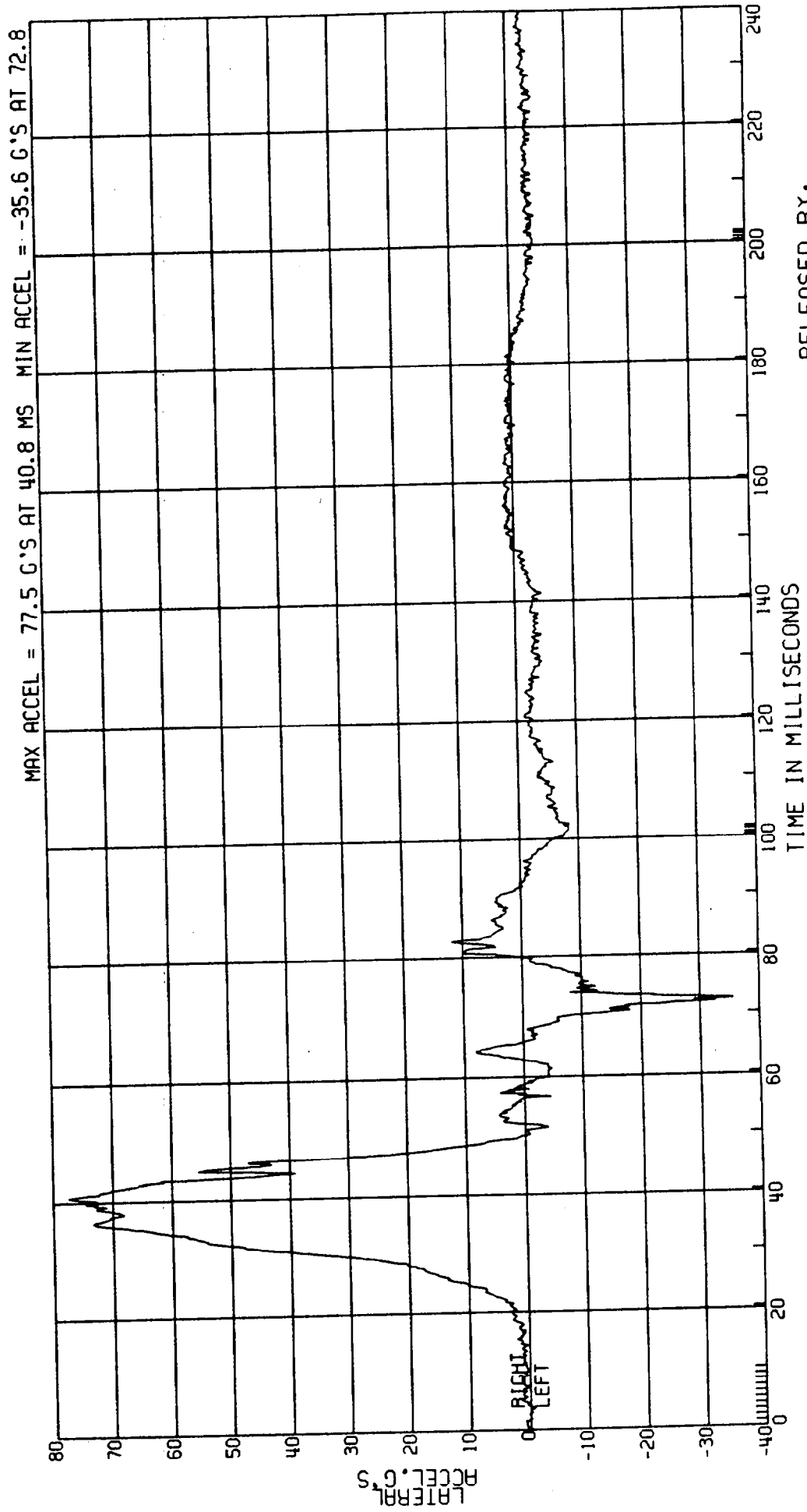
RELEASED BY:
 39 PROCESSED 4 MAY 90 11:26

8004A L. SIDE IMPACT-27 DEG
3868-905
CPE

MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE / 25
ATD TYPE: SID
TEST DATE: 03-06-90

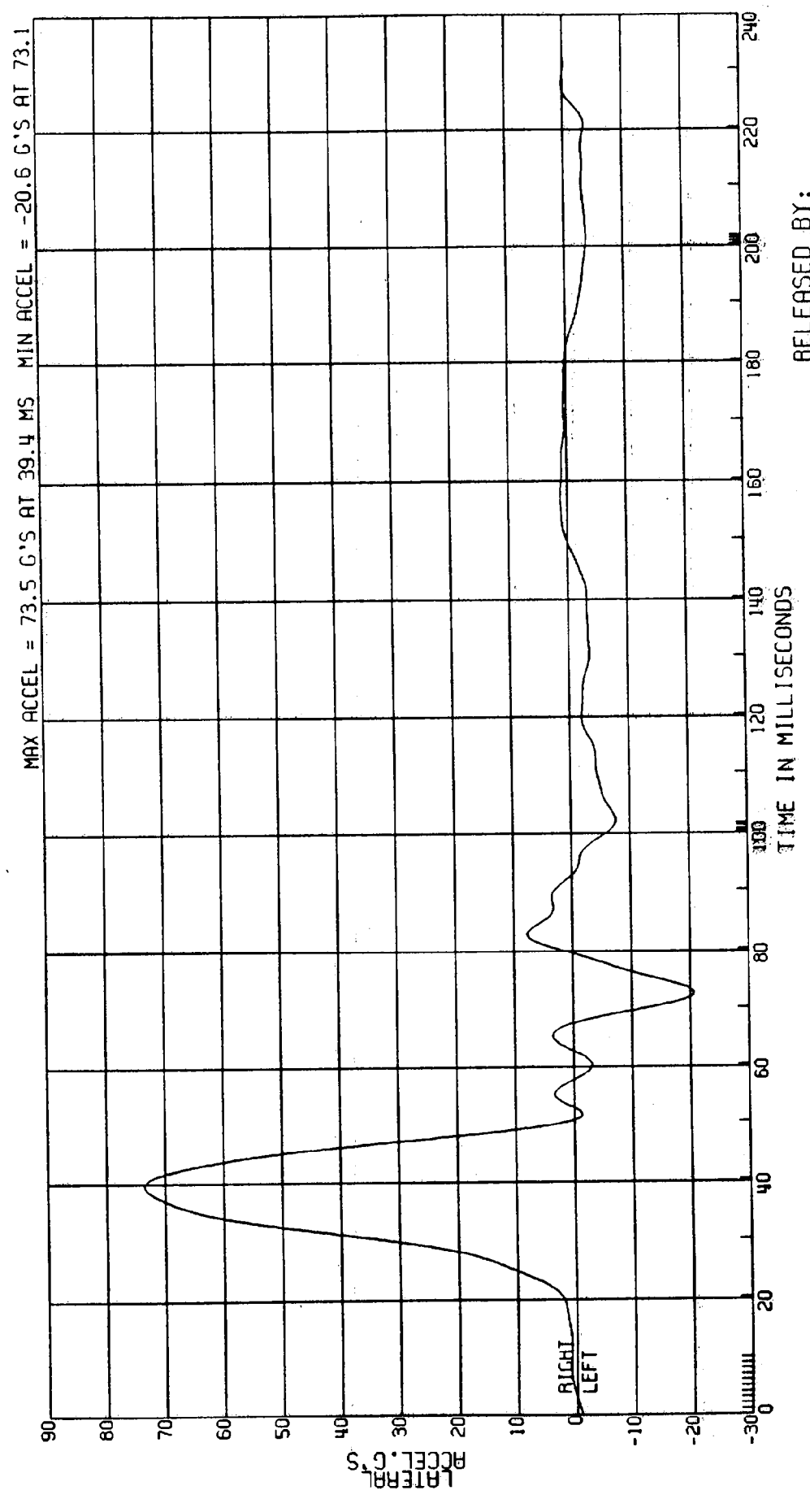
MVMA 4B 2AF69
ELEC DATA, SAE CLASS 1000

DRIVER LOWER SPINE ACCEL.



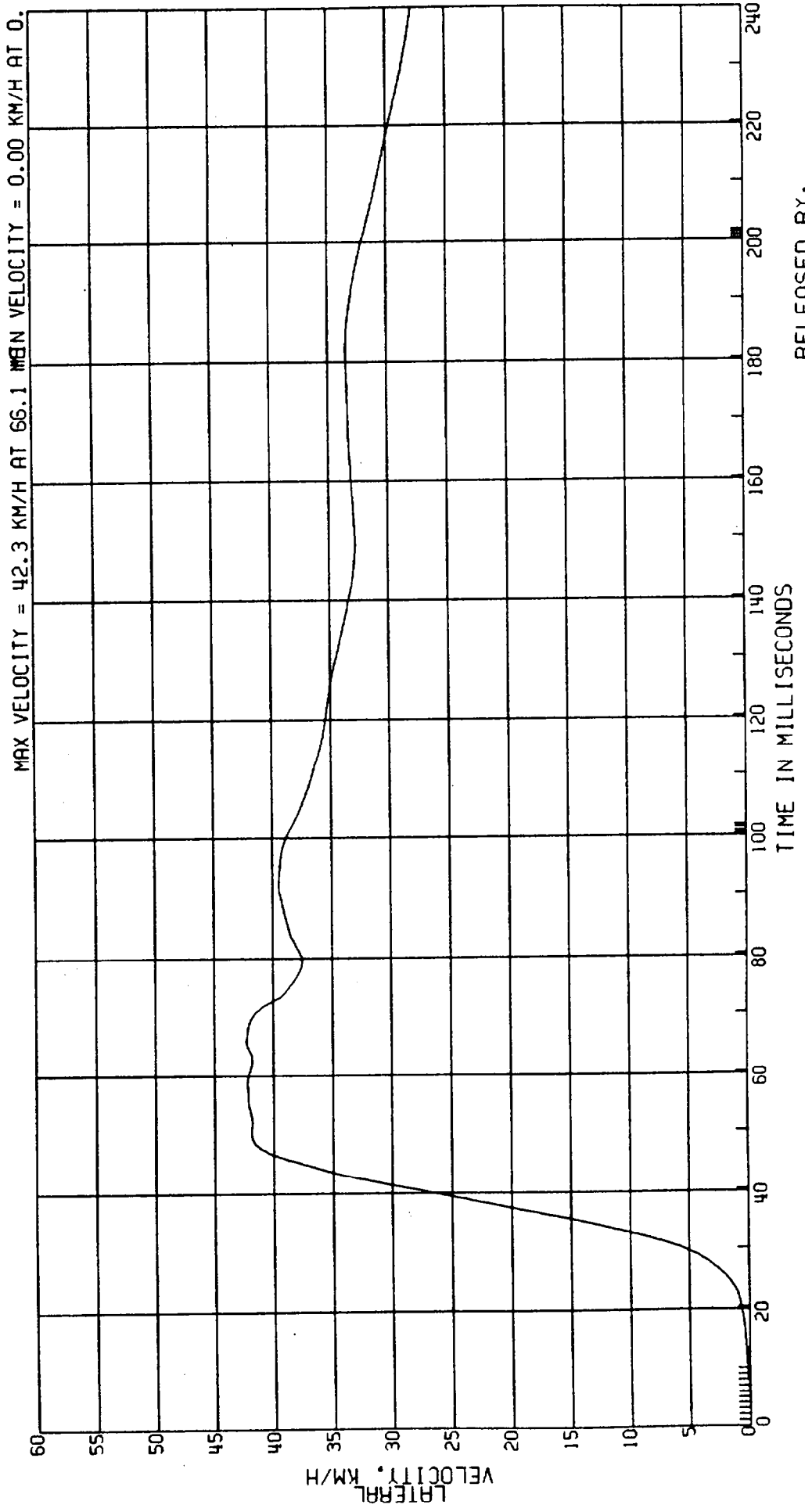
RELEASED BY:
40 PROCESSED 4 MY 90 11:26

C8004A L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 126
 3868-905 AID TYPE: SID
 CPE MVMA 4B 2AF69 TEST DATE: 03-06-90
 ELEC DATA, NHTSA FIR FILTER DRIVER LOWER SPINE ACCEL.
 F.I.R. FILTER, CLASS 300 BUTTERWORTH



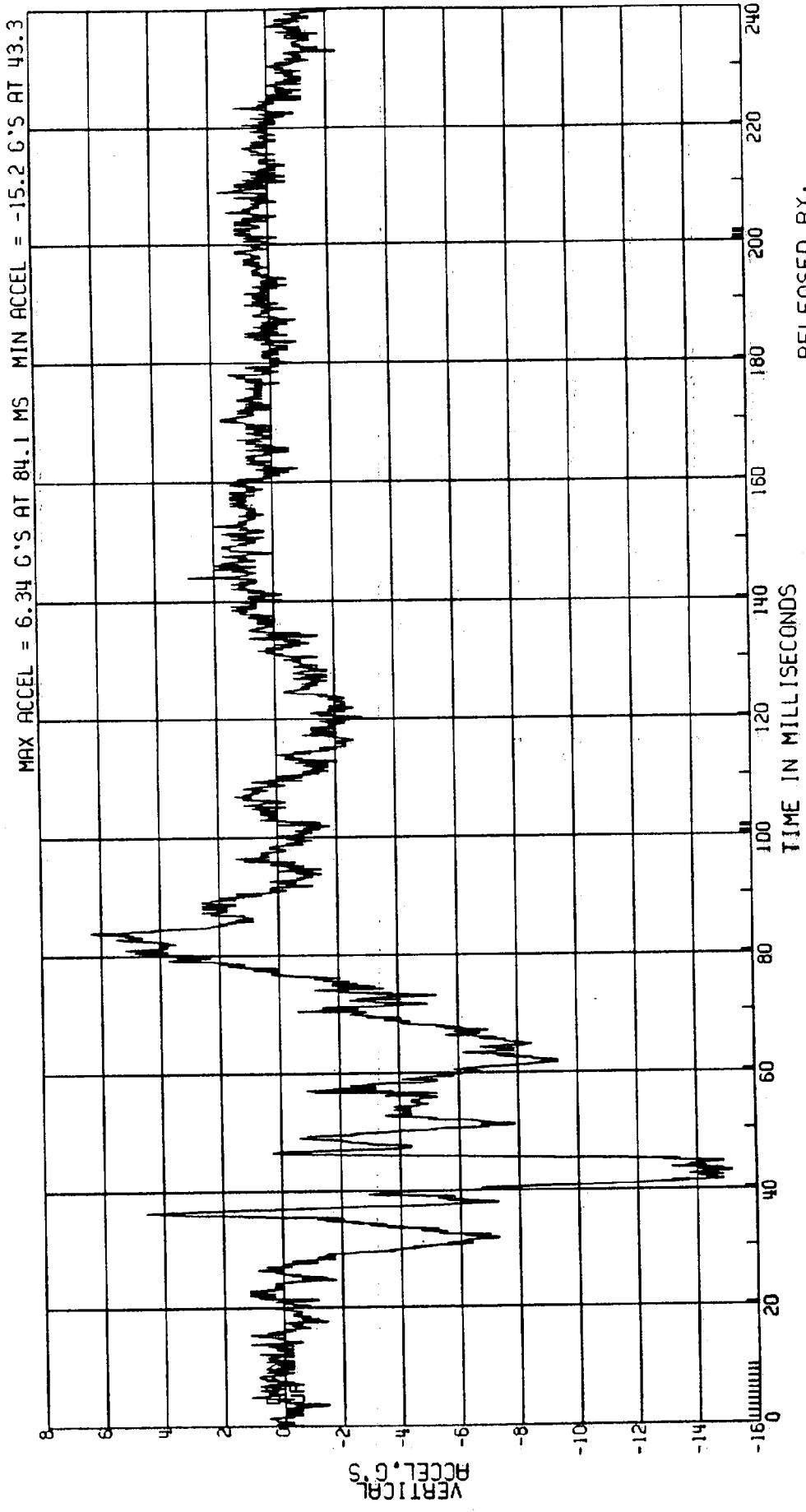
RELEASED BY:
 41 PROCESSED 4 APR 90 11:28

C8004A L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 127
 3868-905 ATD TYPE: SID
 CPE MVMA 4B 2AF69 TEST DATE: 03-06-90
 ELEC DATA, SAE CLASS 180 (1ST INT OF DRIVER ACCELERATION)
 COMPUTED LOWER SPINE VELOCITY



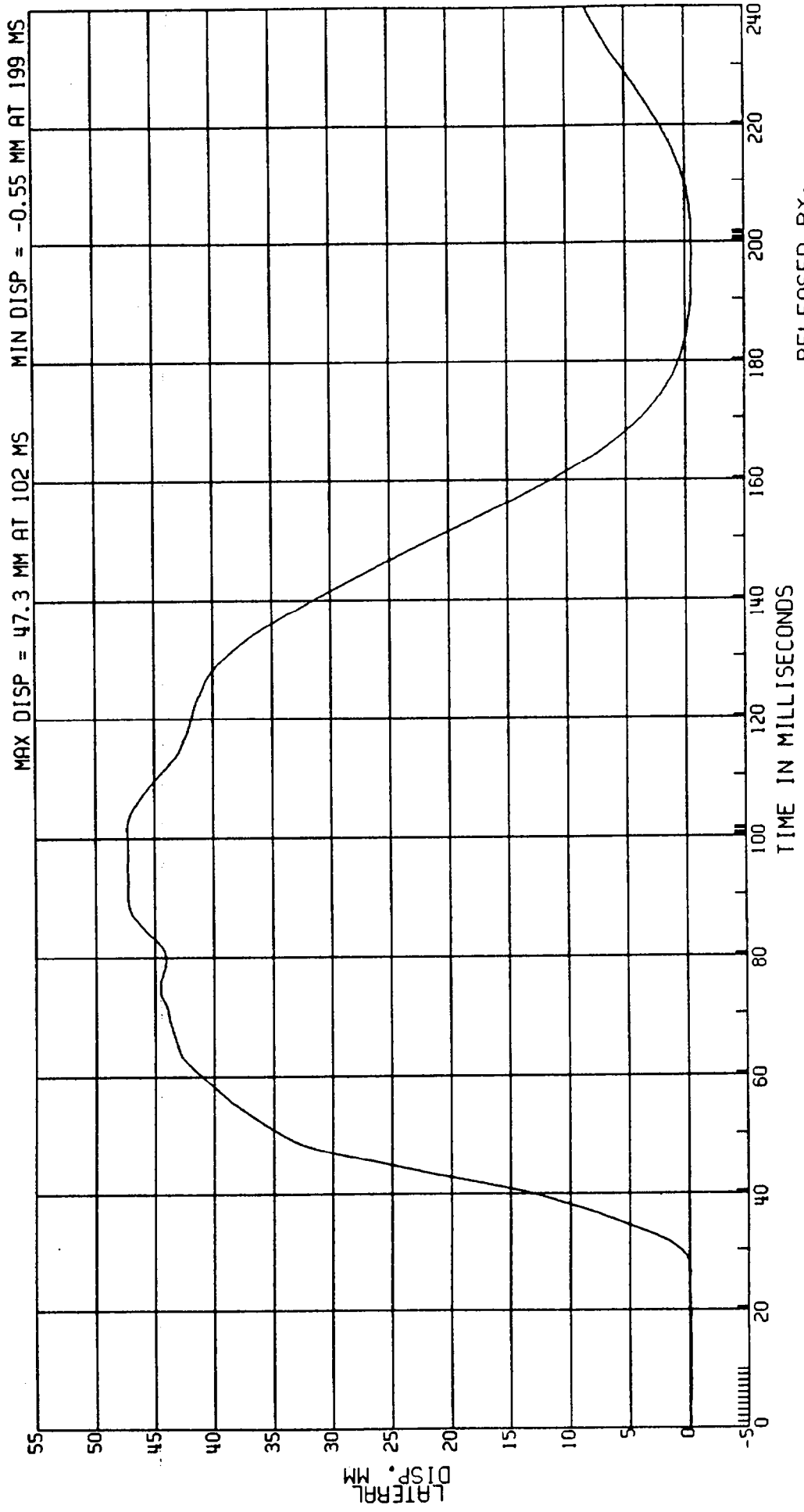
RELEASED BY:
 42 PROCESSED 4 MY 90 11:26

C8004A L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 128
3868-905 ATD TYPE: SID
CPE MVMA 4B 2AF69 DRIVER LOWER SPINE ACCEL.
ELEC DATA, SAE CLASS 1000 TEST DATE:03-06-90



RELEASED BY:
43 PROCESSED 4 MY 90 11:26

C8004A L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE / 29
3868-905 ATD TYPE: SID
CPE MVMA 4B 2AF69 DRIVER THORAX DISP.
ELEC DATA, SAE CLASS 60 TEST DATE: 03-06-90

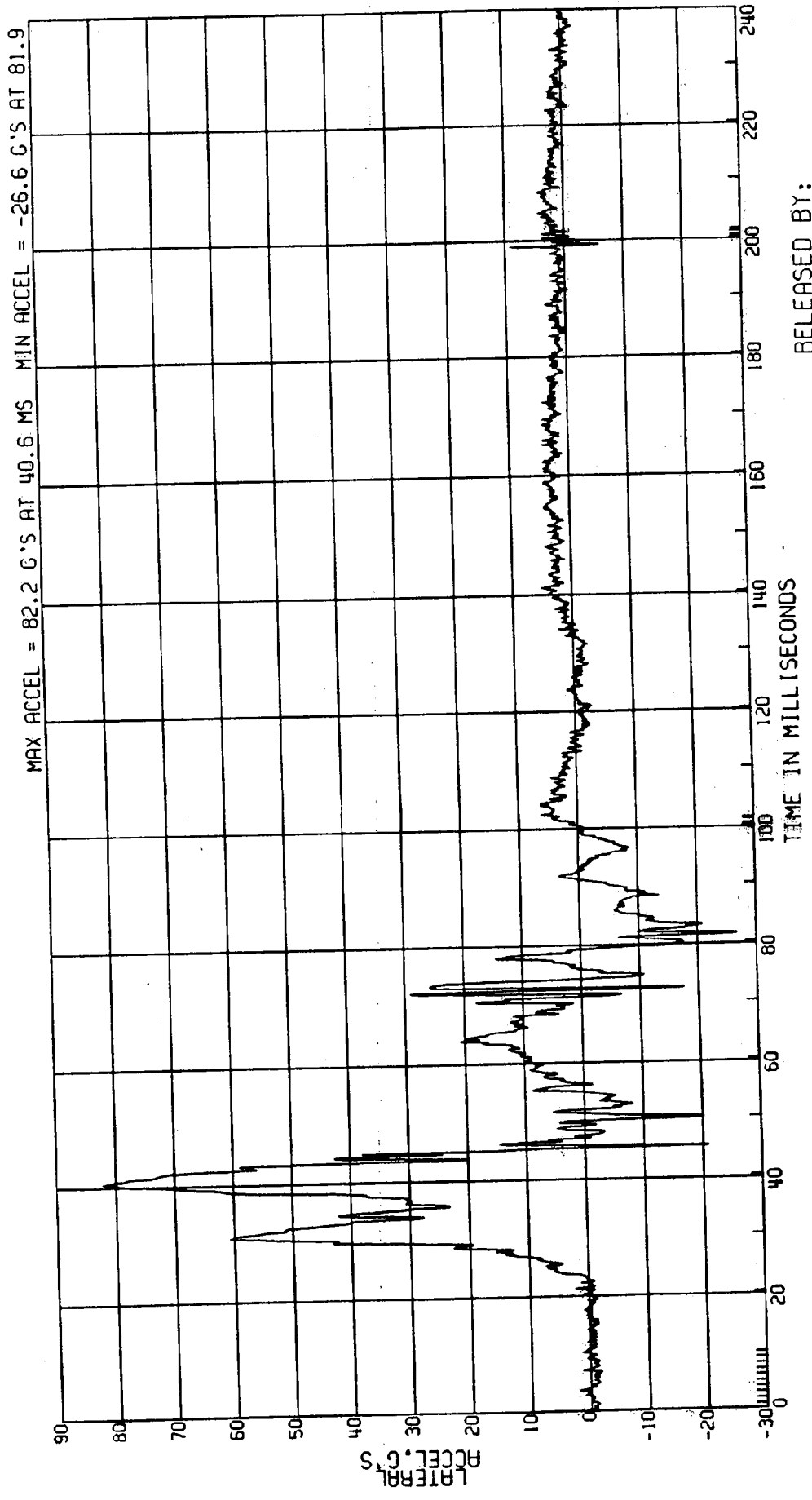


RELEASED BY:
44 PROCESSED 4 MY 90 11:26

C8004A L. SIDE IMPACT-27 DEG
MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 130
ATD TYPE: SID
TEST DATE: 03-06-90

DRIVER LEFT UPPER RIB ACCEL.

3868-905
CPE
MVMA 4B 2AF69
ELEC DATA, SAE CLASS 1000



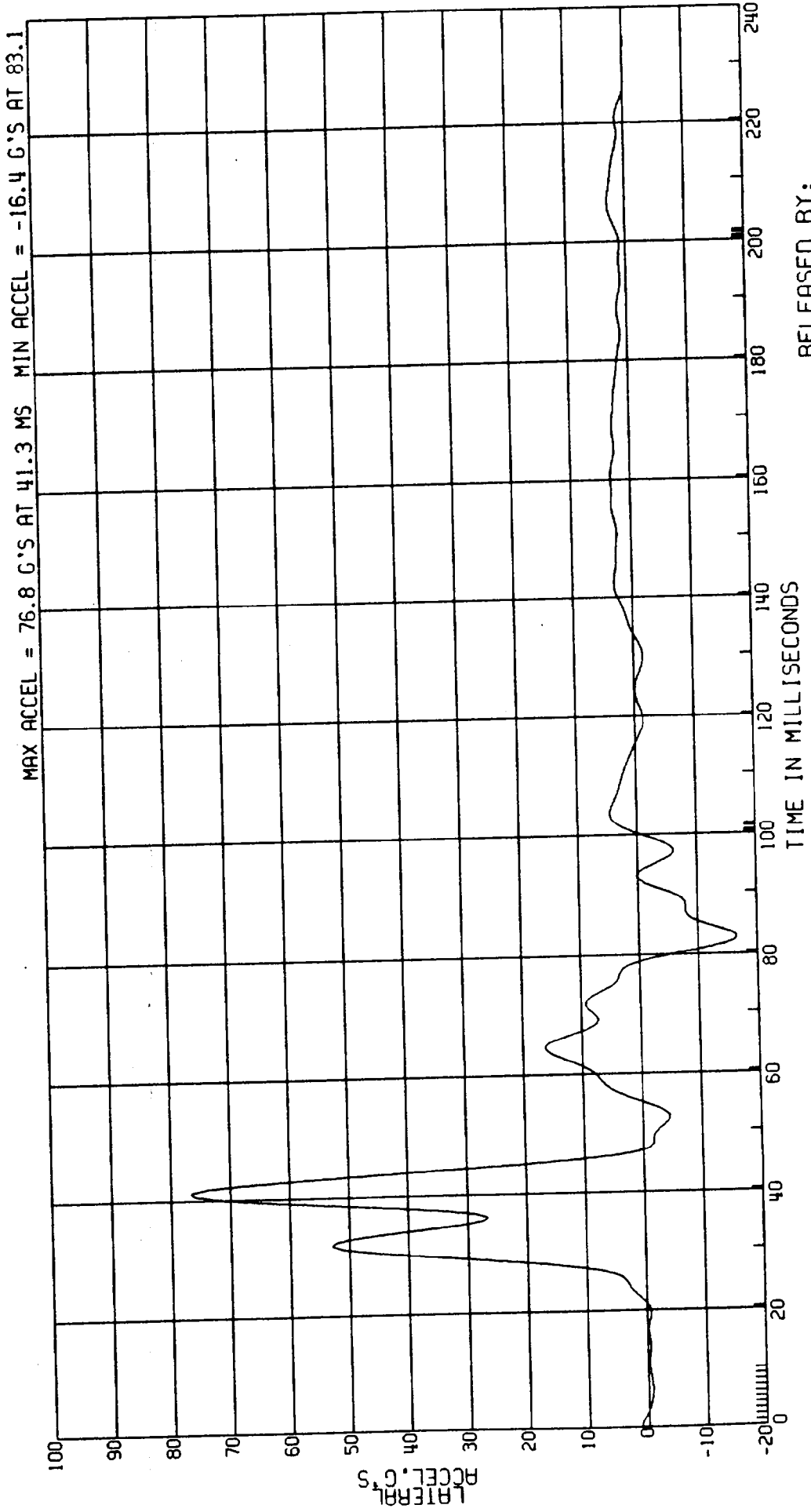
RELEASED BY:

45 PROCESSED 4 MY 90 11:26

C8004 L. SIDE IMPACT-27 DEG
3868-905
CPE
ELEC DATA, NHTSA FIR FILTER

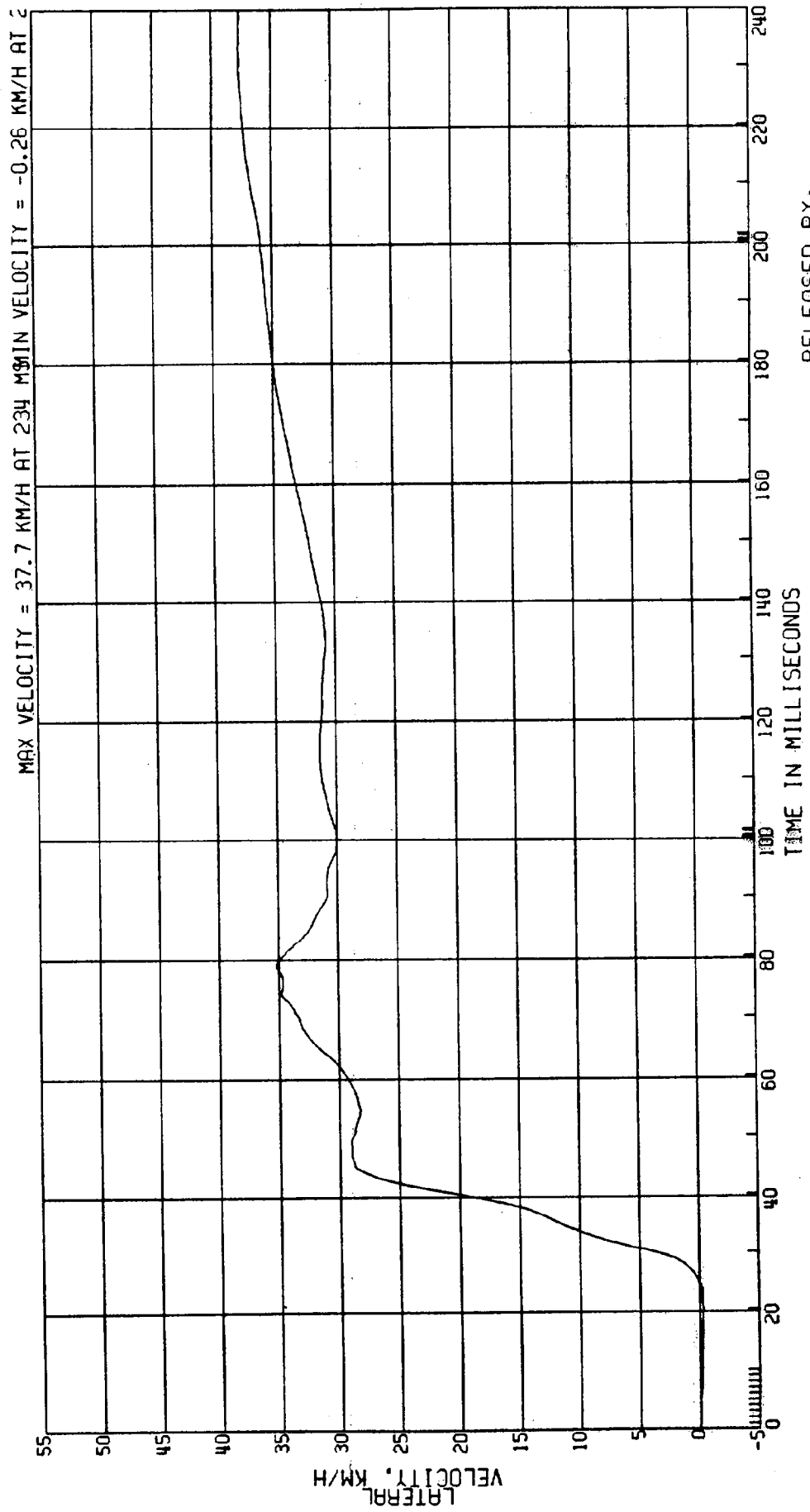
MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE (3)
ATD TYPE: SID
TEST DATE:03-06-90
DRIVER LEFT UPPER RIB ACCEL.
F.I.R. FILTER, CLASS 300 BUTTERWORTH

MVMA 4B 2AF69



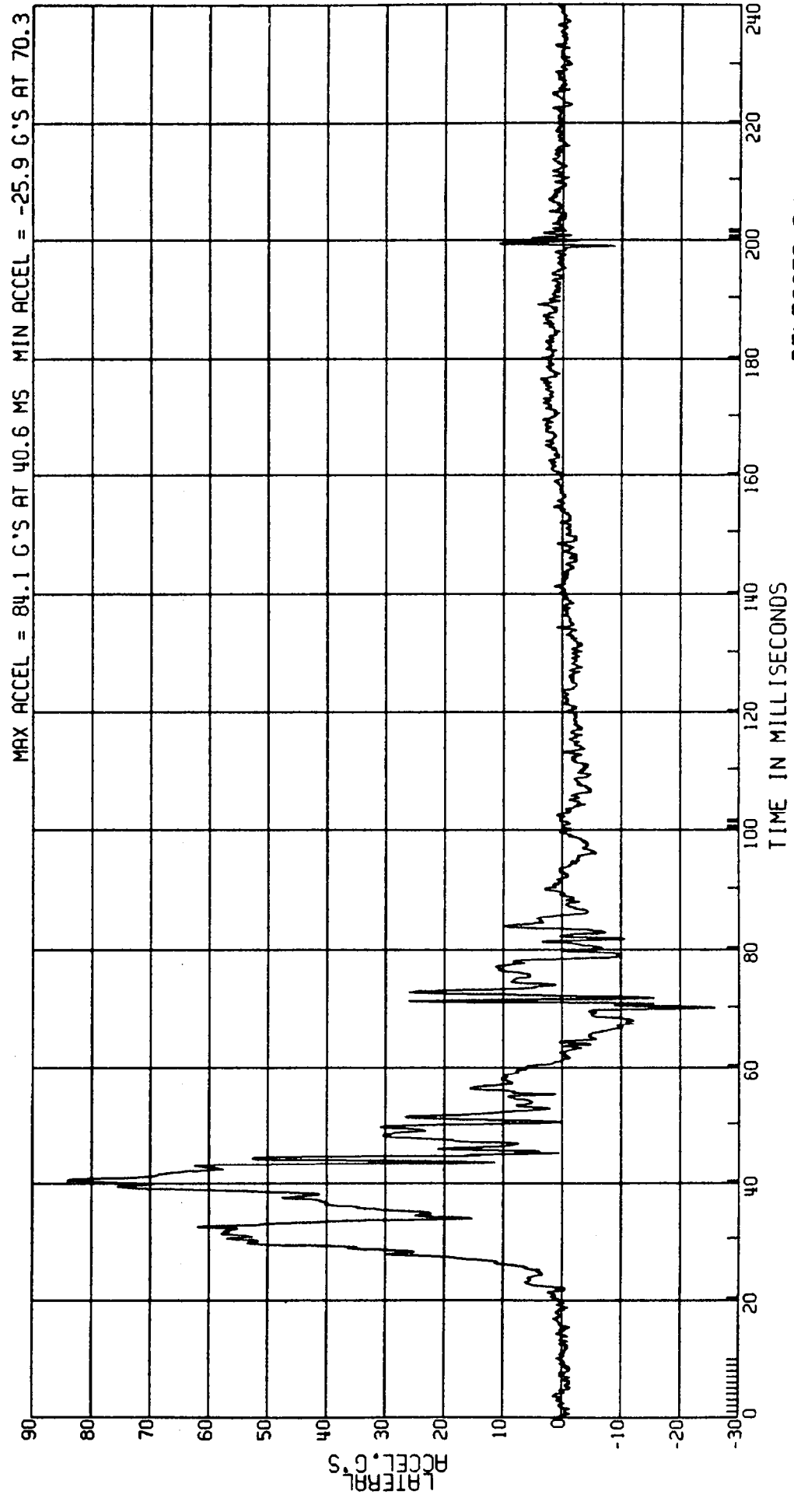
RELEASED BY:
46 PROCESSED 4 MY 90 11:26

C8004A L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 132
3868-905 ATD TYPE: SID
CPE MVMA 4B 2AF69 COMPUTED LEFT UPPER RIB VELOCITY TEST DATE: 03-06-90
ELEC DATA, SAE CLASS 180 (1ST INT OF DRIVER ACCELERATION)



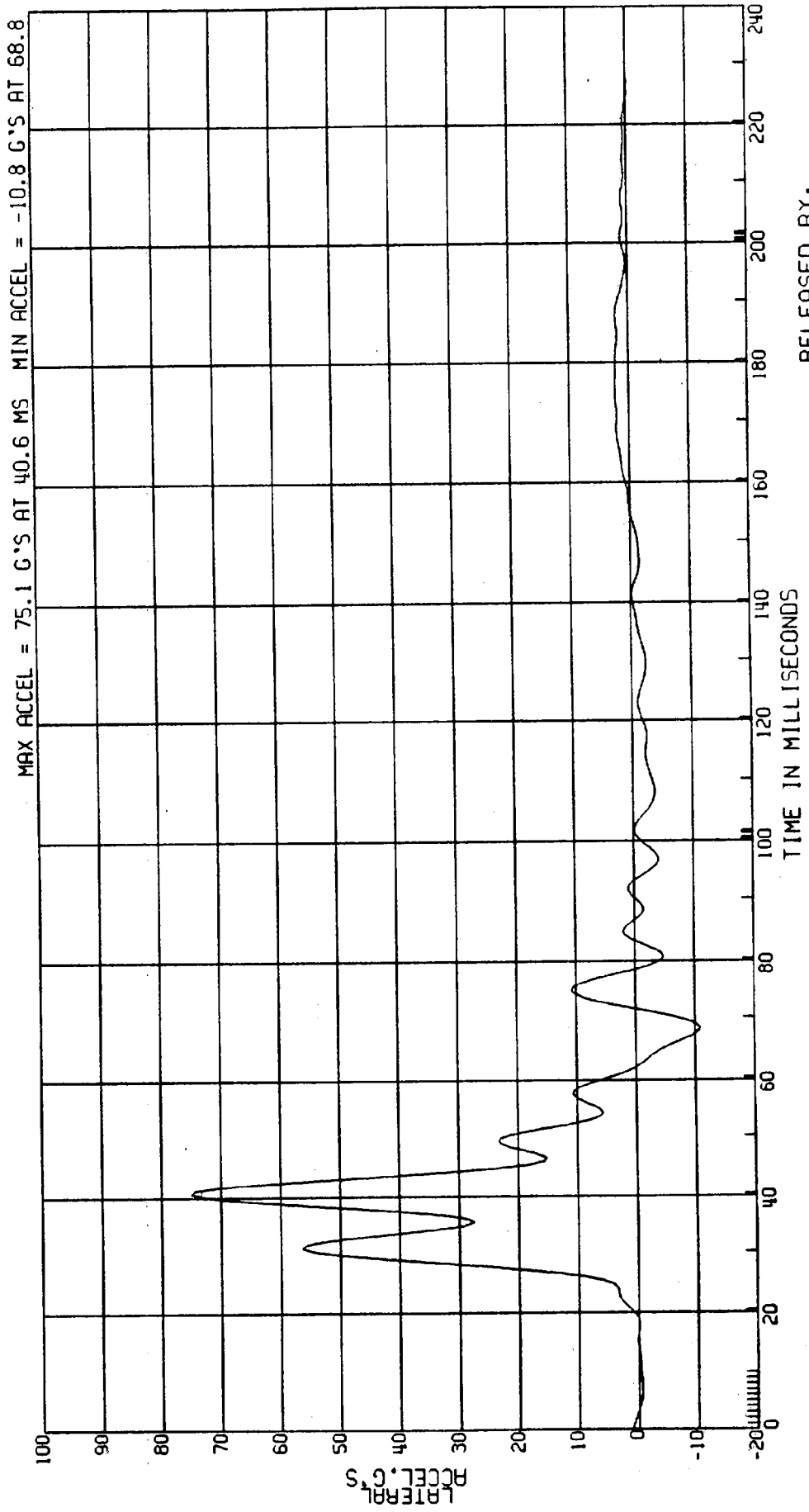
RELEASED BY:
47 PROCESSED 4 MT 90 11:26

C8004A L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE /33
3868-905 ATD TYPE: SID
CPE MVMA 4B 2AF69 DRIVER LEFT LOWER RIB ACCEL.
ELEC DATA, SAE CLASS 1000 TEST DATE:03-06-90



RELEASED BY:
48 PROCESSED 4 MY 90 11:26

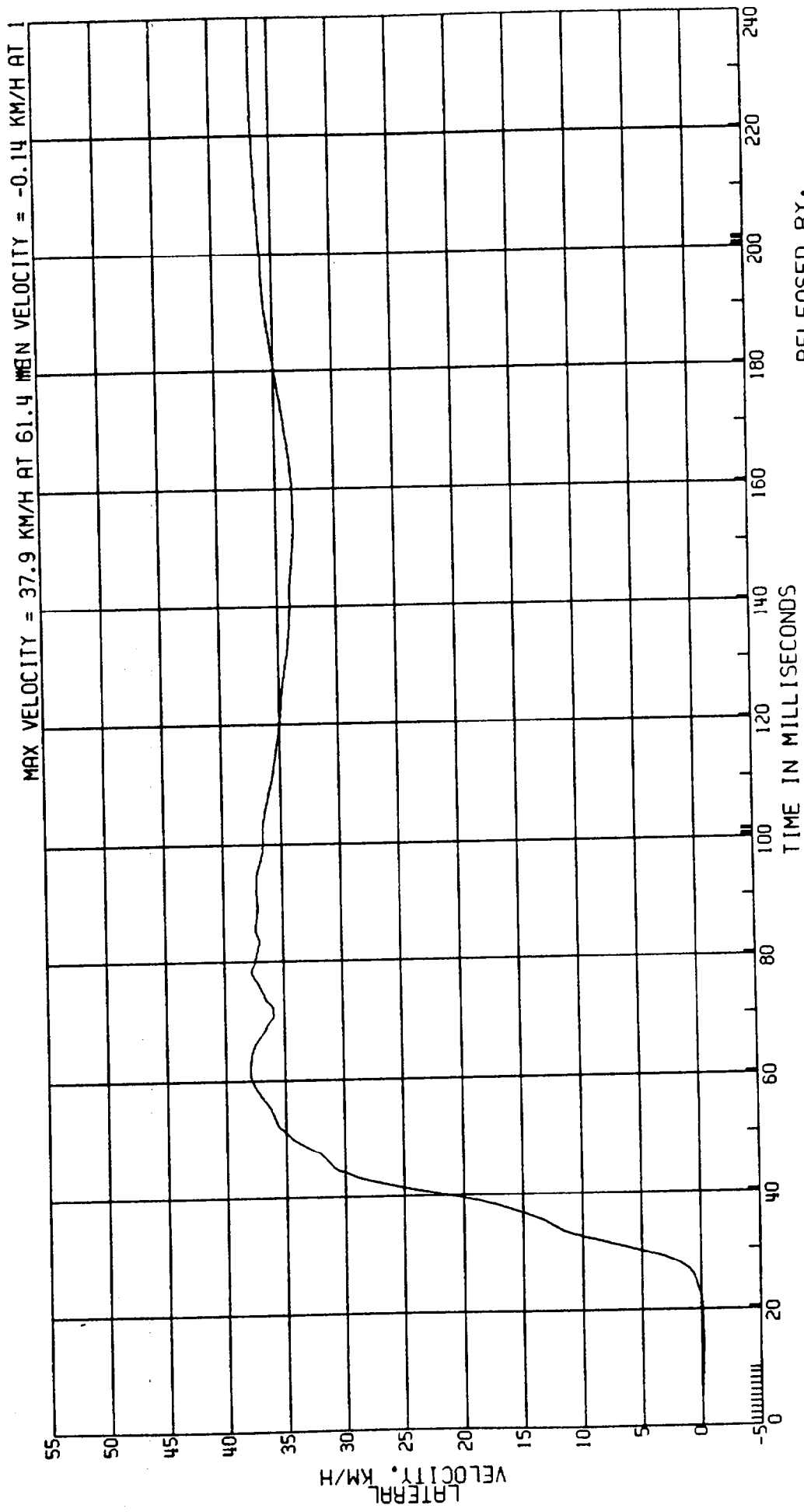
C8004A L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 134
3868-905 ATD TYPE: SID
CPE MVMA 4B 2AF69 DRIVER LEFT LOWER RIB ACCEL.
ELEC DATA, NHTSA FIR FILTER F.I.R. FILTER, CLASS 300 BUTTERWORTH TEST DATE: 03-06-90



RELEASED BY:

49 PROCESSED 4 MT 90 11:26

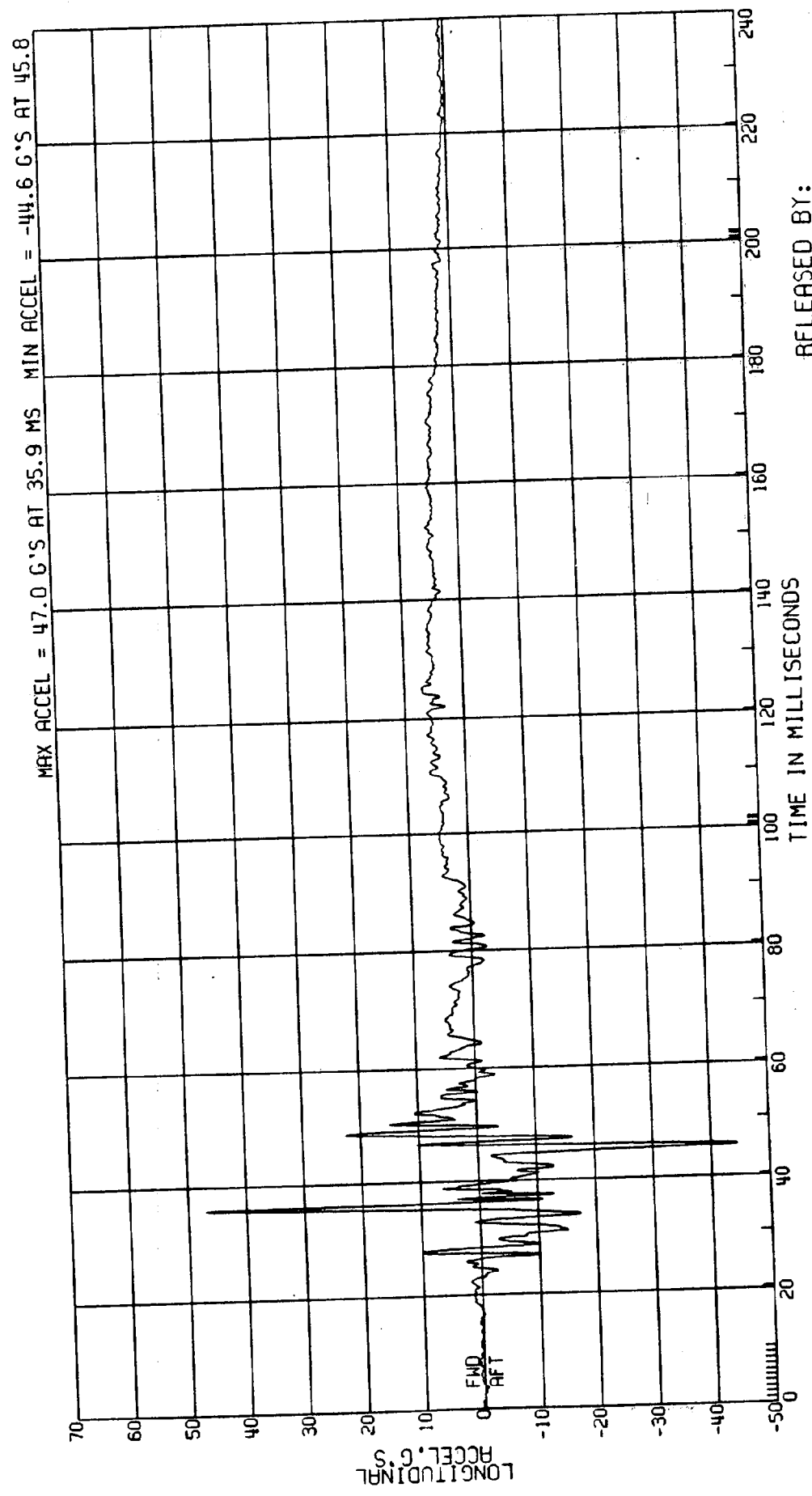
C8004A L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 135
 3868-905 ATD TYPE: SID
 CPE MVMA 4B 2AF69 TEST DATE: 03-06-90
 ELEC DATA, SAE CLASS 180 COMPUTED LEFT LOWER RIB VELOCITY
 (1ST INT OF DRIVER ACCELERATION)



RELEASED BY:
 50 PROCESSED 4 MY 90 11:26

C8004A L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 136
3868-905 DRIVER PELVIC ACCEL. TEST DATE:03-06-90
AID TYPE: SID

MVMA 4B 2AF69
CPE
ELEC DATA, SAE CLASS 600

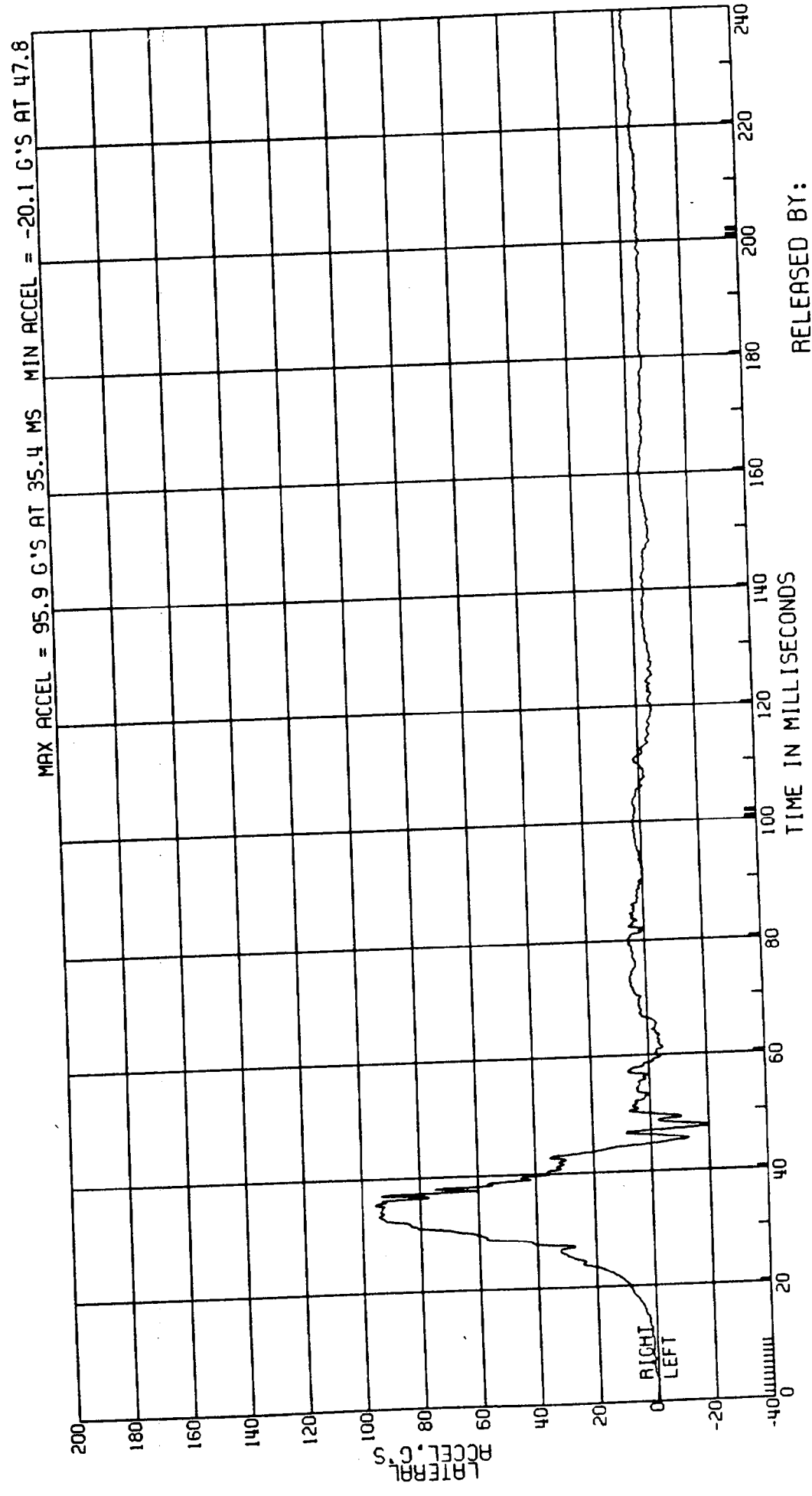


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51 PROCESSED 90 11:26

137

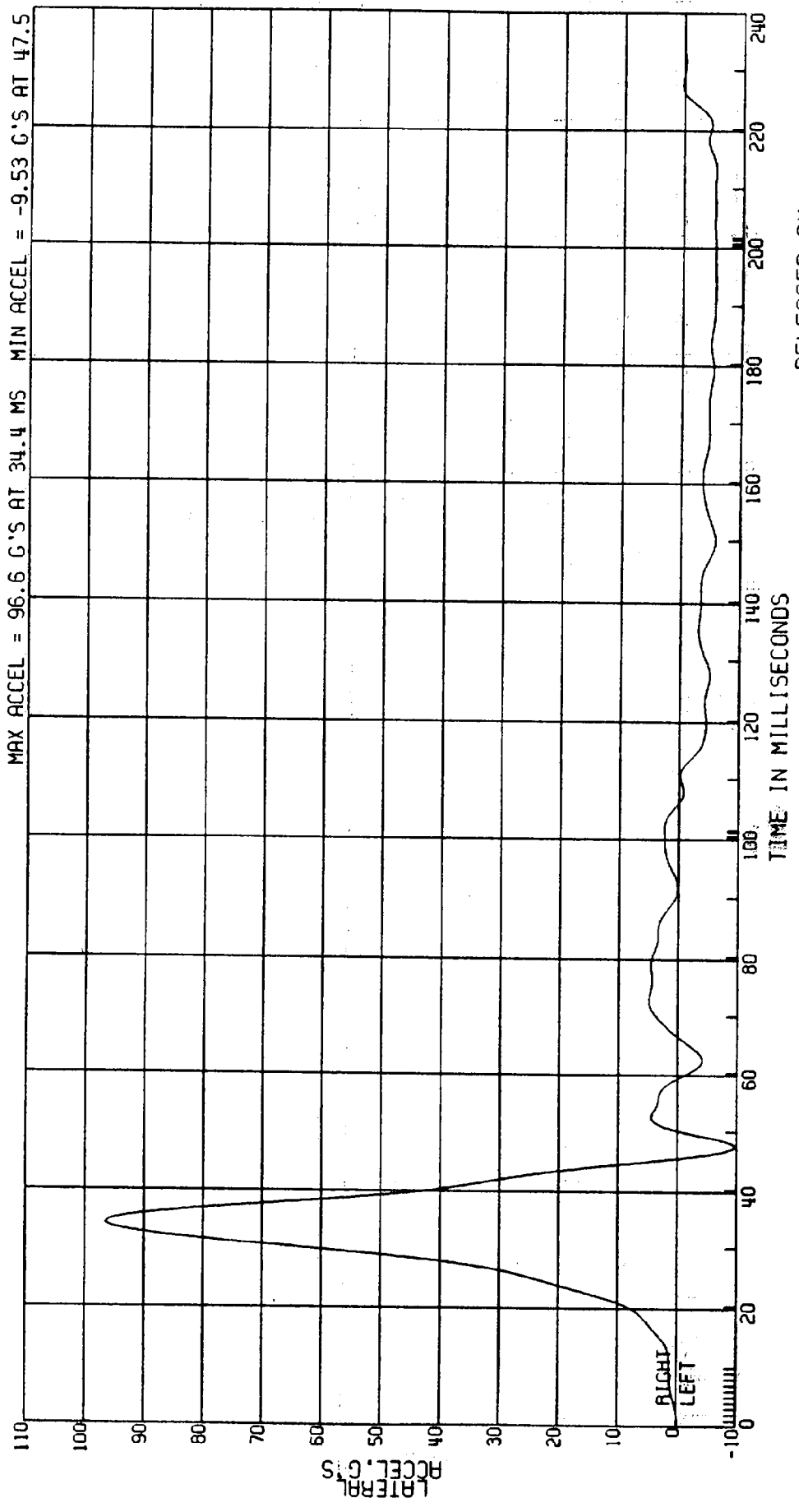
MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE
ATD TYPE: SID
TEST DATE: 03-06-90
DRIVER PELVIC ACCEL.

C8004A L. SIDE IMPACT-27 DEG
3868-905
CPE
MVMA 4B 2AF69
ELEC DATA, SAE CLASS 600



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52 PROCESSED 4 MY 90 11:26

C8004A L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE /38
 3868-905
 CPE MVMA 4B 2AF69 DRIVER PELVIC ACCEL.
 ELEC DATA, NHTSA FIR FILTER F.I.R. FILTER, CLASS 300 BUTTERWORTH
 TEST DATE:03-06-90



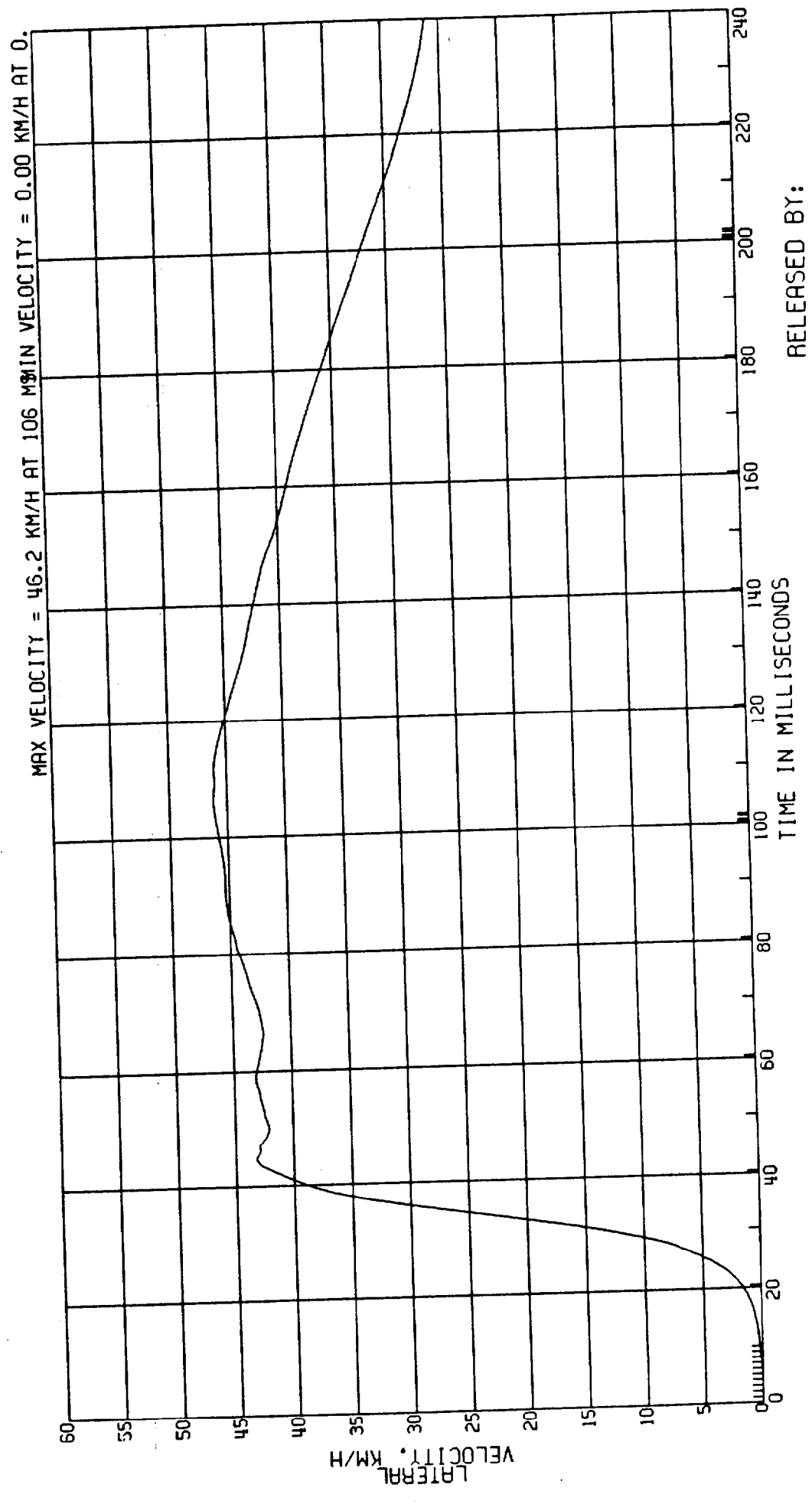
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 53 PROCESSED 4 MY 90 11:26

139

MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE
ATD TYPE: SID
TEST DATE:03-06-90

C8004A L. SIDE IMPACT-27 DEG
3868-905
CPE
MVMA 4B 2AF69
ELEC DATA, SAE CLASS 180

COMPUTED PELVIC VELOCITY
(1ST INT OF DRIVER ACCELERATION)

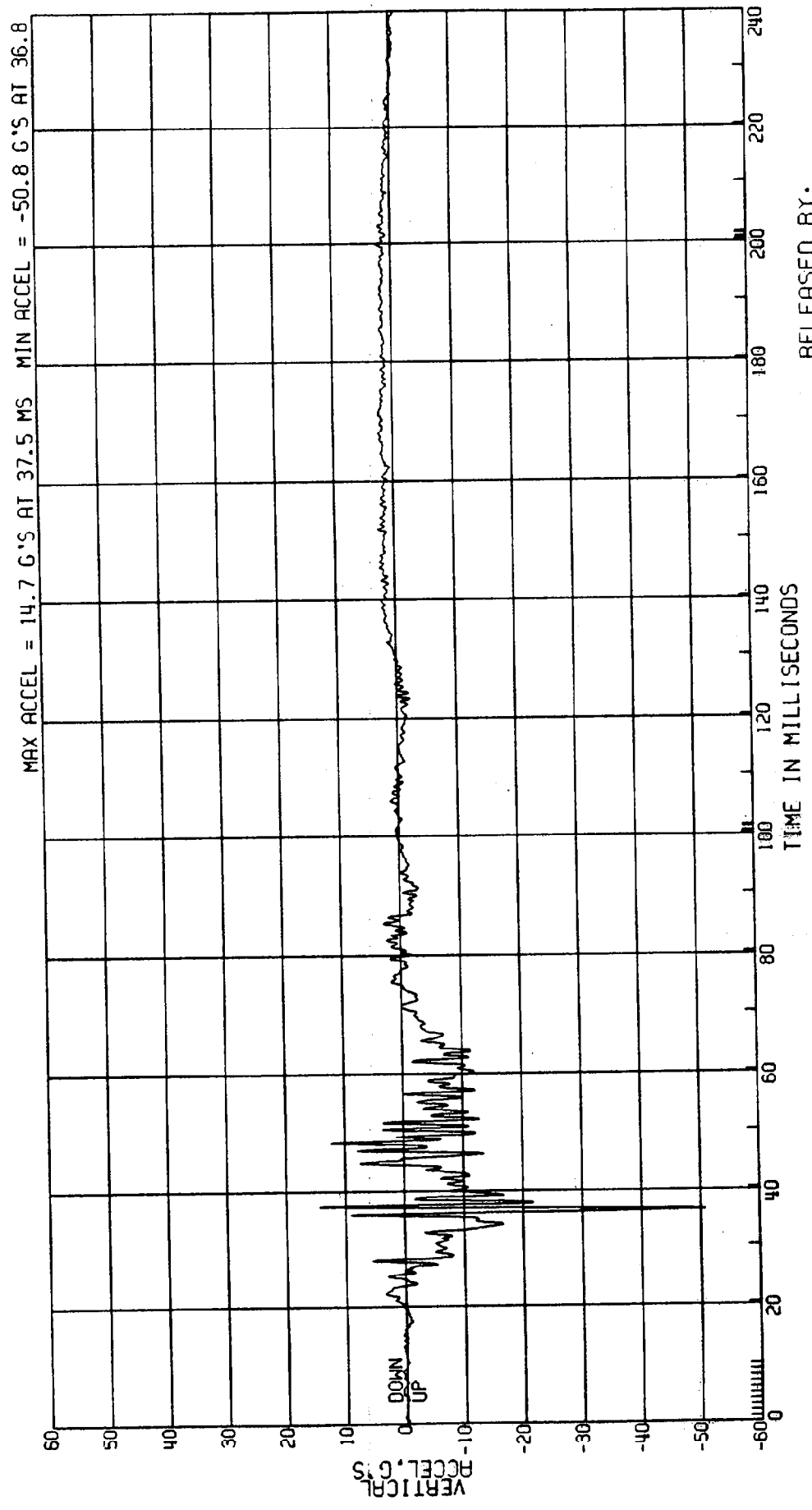


RELEASED BY:
54 PROCESSED 4 MY 90 11:26

MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 140
ATD TYPE: SID
TEST DATE: 03-06-90

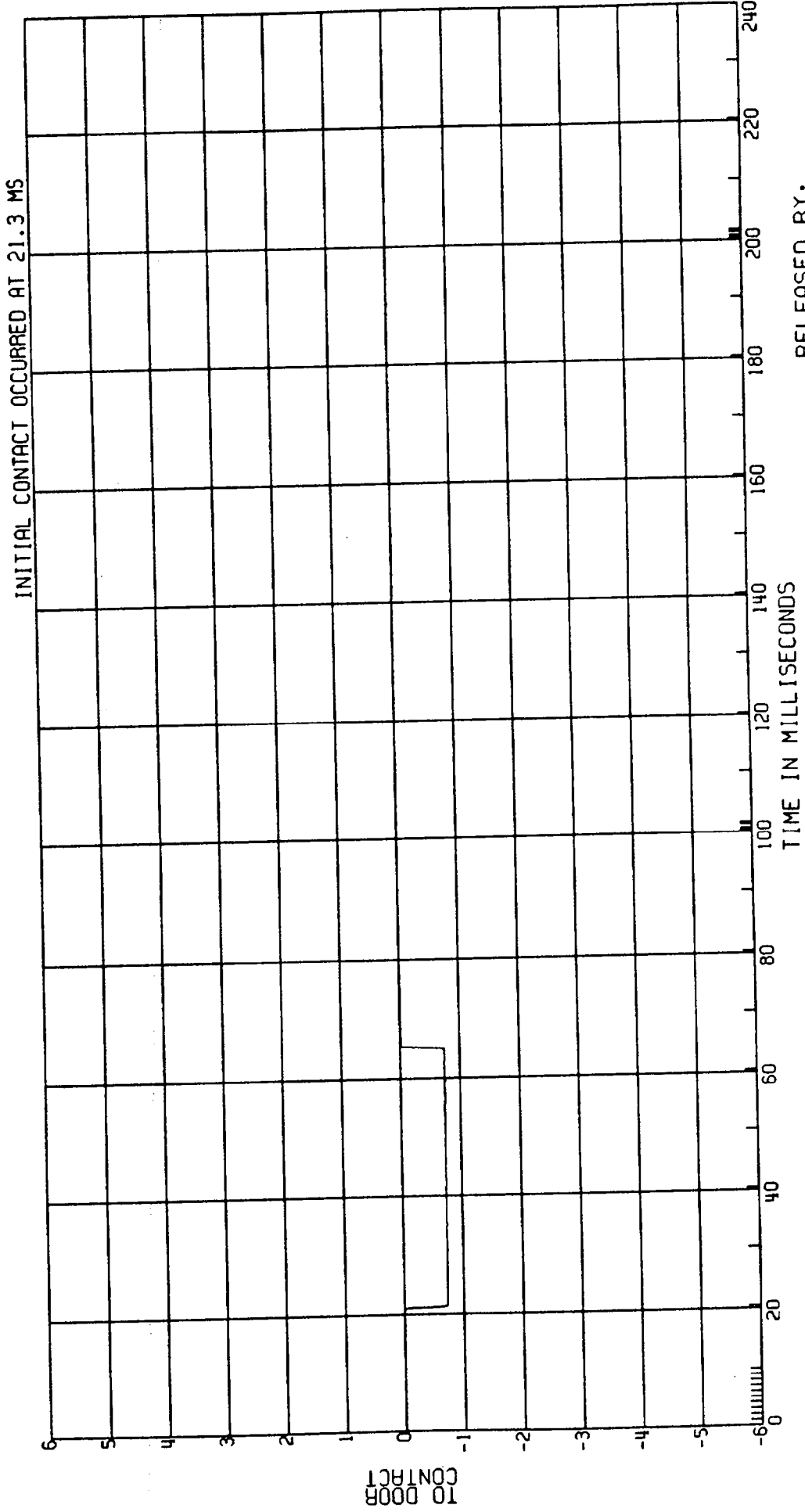
DRIVER PELVIC ACCEL.

C8004A L. SIDE IMPACT-27 DEG
3868-905
CPE MVMA 4B 2AF69
ELEC DATA, SAE CLASS 600



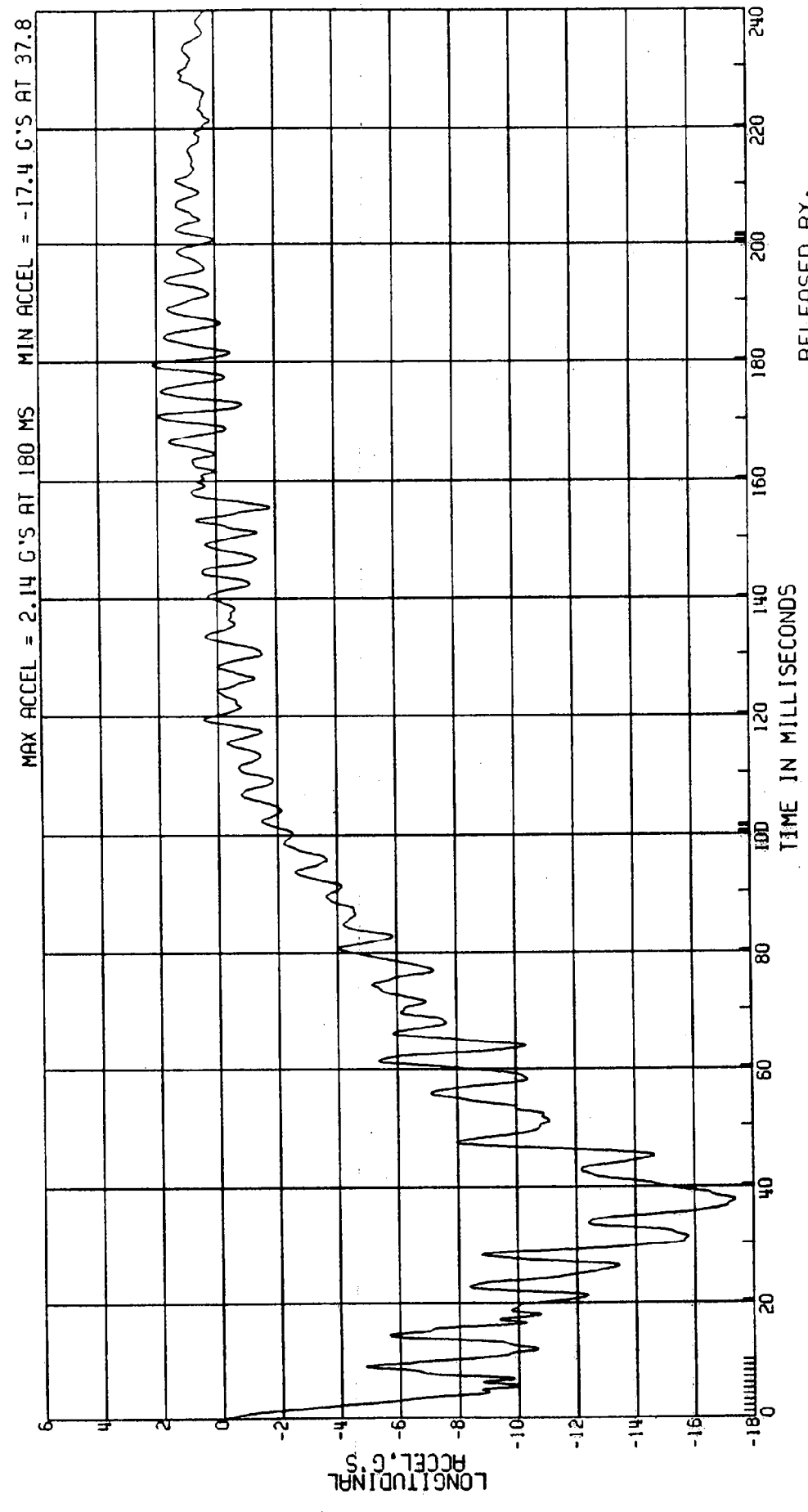
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C8004A L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE /4/
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 4B 2AF69 L. REAR PELVIC-LEFT SIDE CONTACT TEST DATE:03-06-90
 ELEC DATA, SAE CLASS 1000

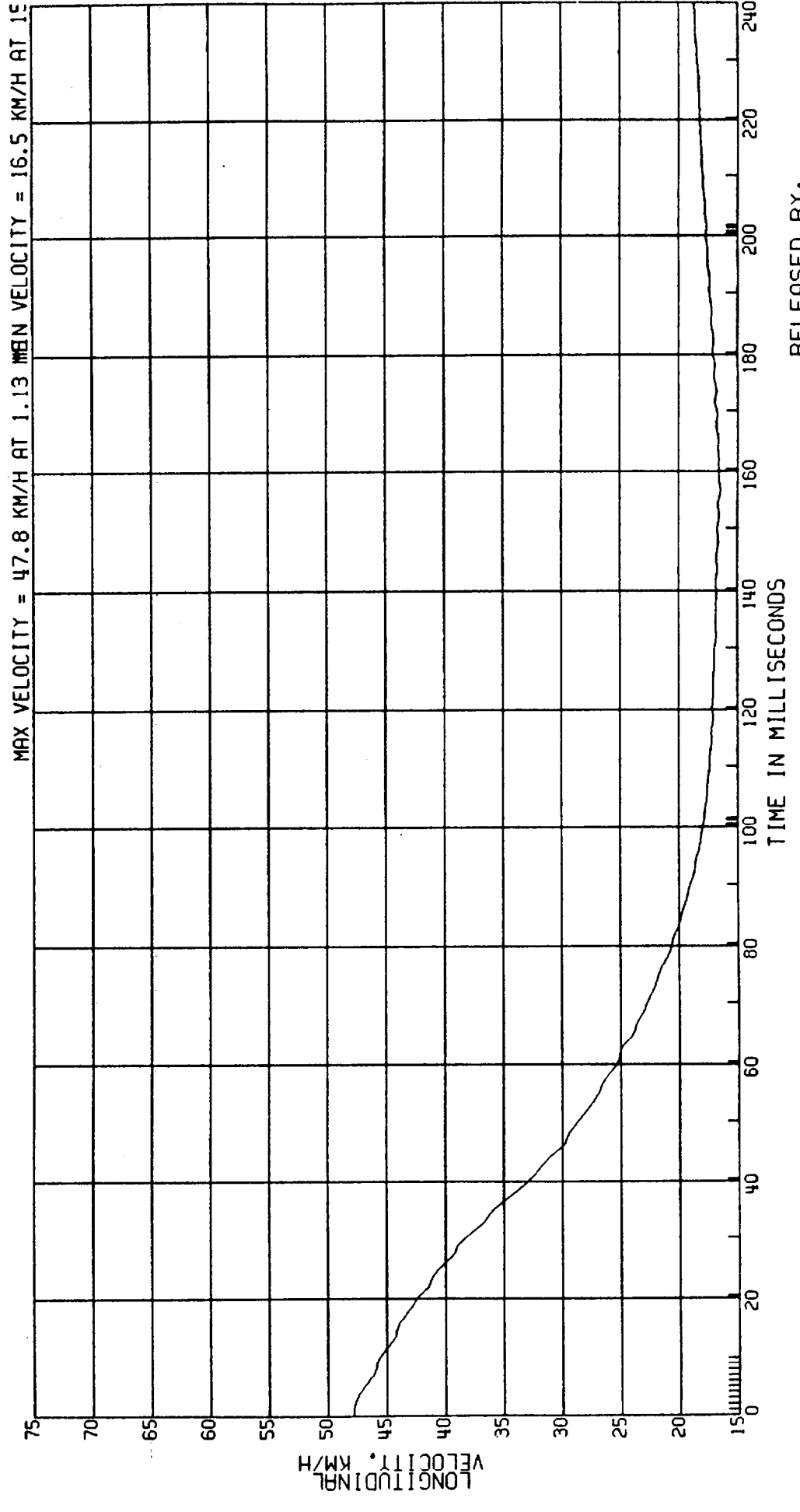


RELEASED BY:
 56 PROCESSED 4 MY 90 11:26

C8004A L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 142
3868-905 MVMA 4B 2AF69 TEST DATE: 03-06-90
CPE M.D.B. AT C.G. ACCEL.
ELEC DATA, SAE CLASS 60

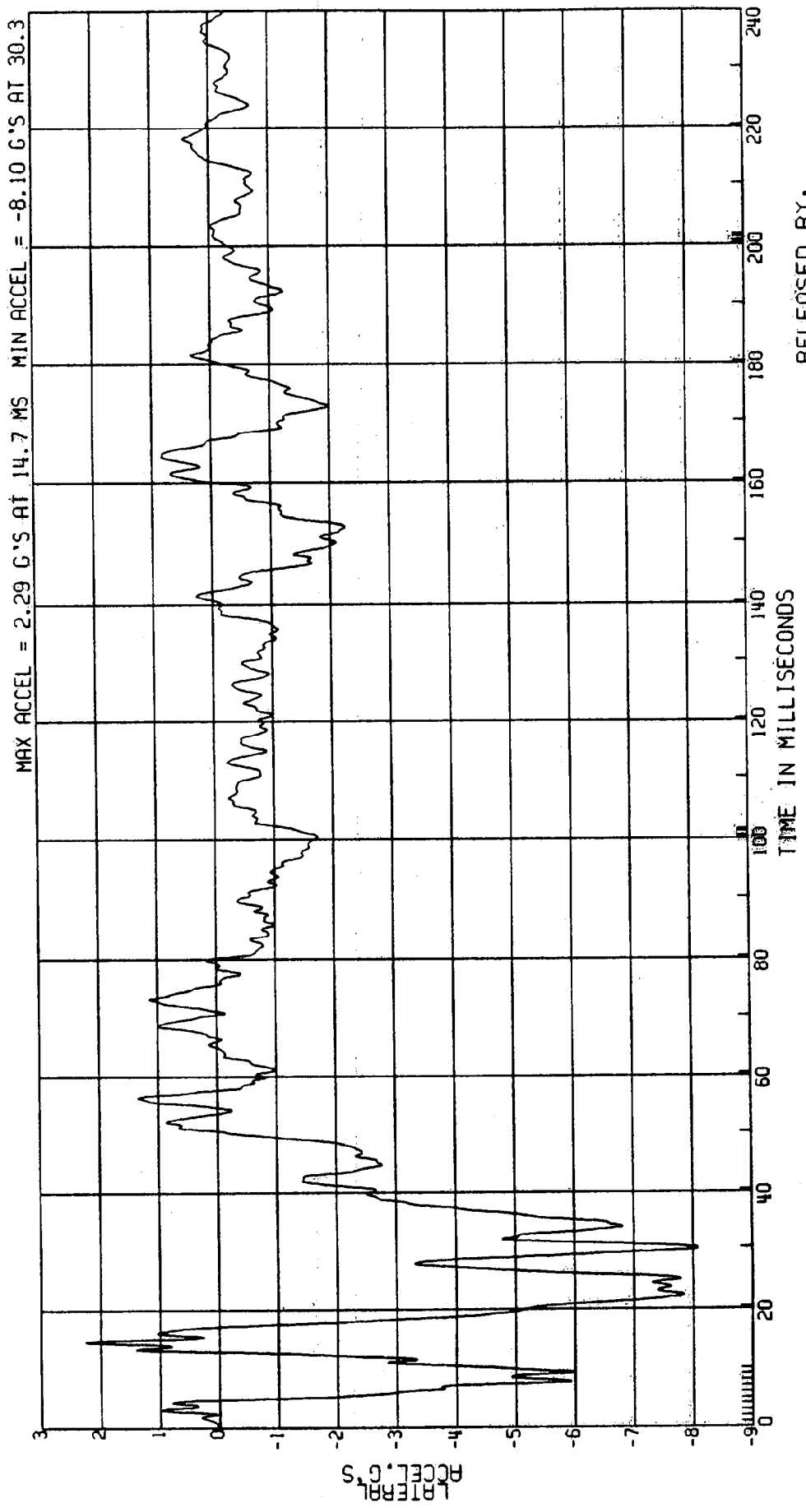


C8004A L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE /43
 3868-905
 CPE MVMA' 4B 2AF69 TEST DATE:03-06-90
 ELEC DATA, SAE CLASS 180 COMPUTED M.D.B. AT C.G. VELOCITY
 (1ST INT OF ACCEL 53.6KPH* $\cos 27$ DEG)



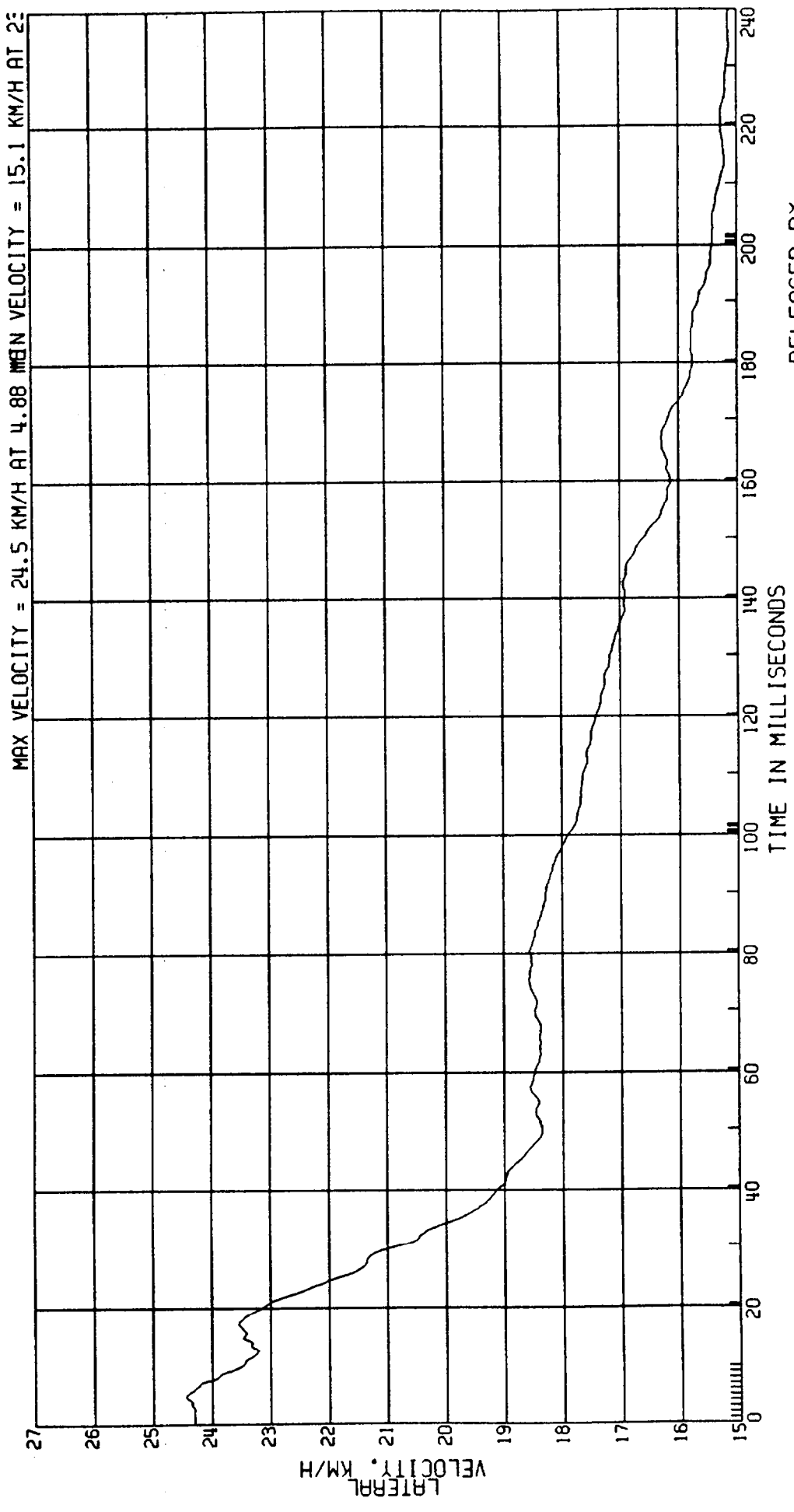
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 58 PROCESSED 4 MY 90 11:26

C8004A L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 144
3868-905 MVMA 4B 2AF69 M.D.B. AT C.G. ACCEL.
CPE TEST DATE:03-06-90
ELEC DATA, SAE CLASS 60



RELEASED BY:
59 PROCESSED 4 MY 90 11:26

C8004A L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 145
 3868-905
 CPE MVMA 4B 2AF69 TEST DATE:03-06-90
 ELEC DATA, SAE CLASS 180 COMPUTED M.D.B. AT C.G. VELOCITY
 (1ST INT OF ACCEL 53.6KPH*SIN27DEG)



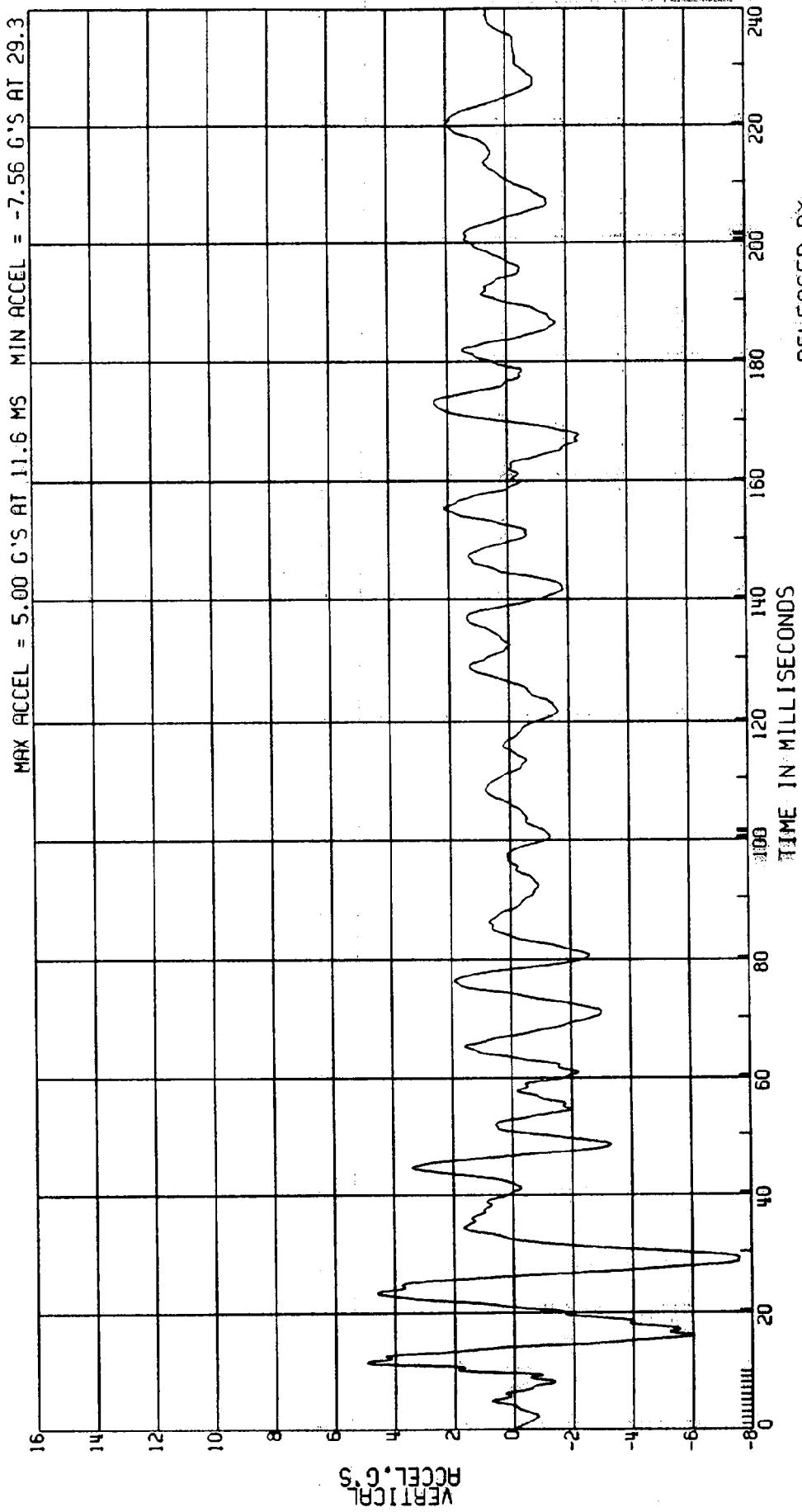
RELEASED BY:
 60 PROCESSED 4 MY 90 11:26

C8004 L. SIDE IMPACT-27 DEG
3868-905
CPE MVMA 4B 2AF69
ELEC DATA, SAE CLASS 60

MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 146

M.D.B. AT C.G. ACCEL.

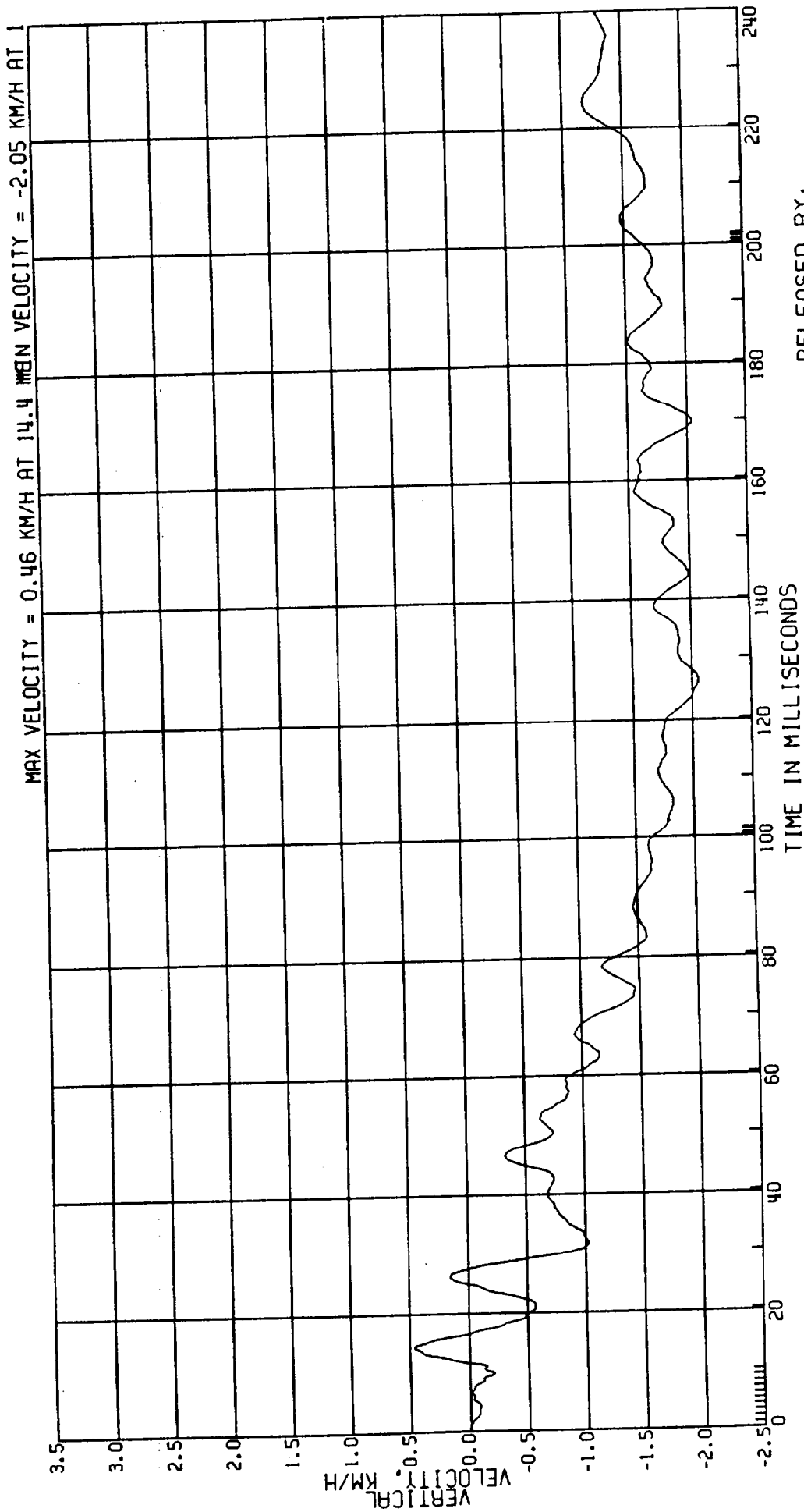
TEST DATE: 03-06-90



RELEASED BY:

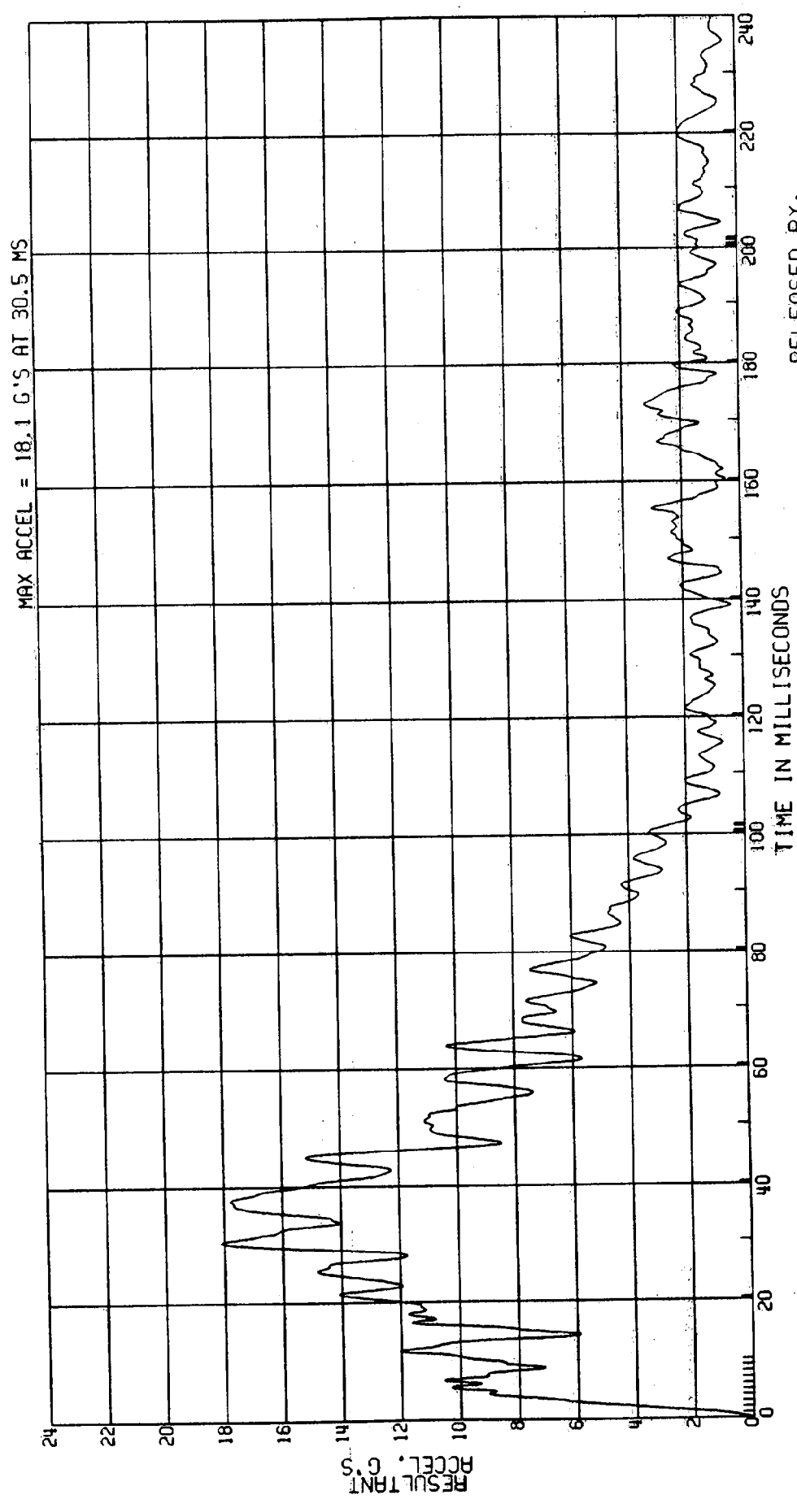
61 PROCESSED 4 HY 90 11:26

C8004A L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 147
3868-905 MVMA 4B 2AF69 COMPUTED M.D.B. AT C.G. VELOCITY TEST DATE:03-06-90
CPE ELEC DATA, SAE CLASS 180 (1ST INT OF ACCELERATION)



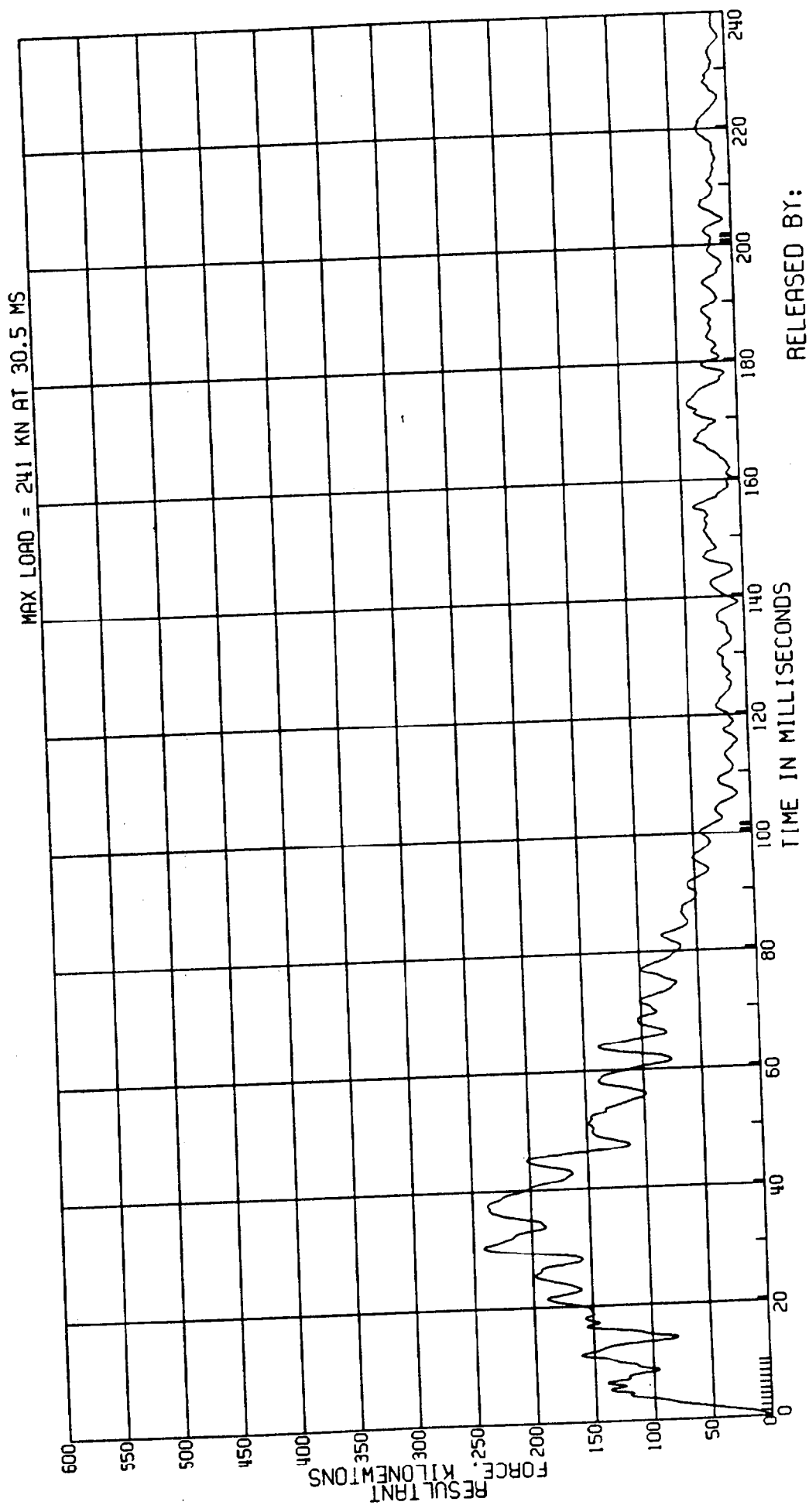
RELEASED BY:
62 PROCESSED 4 MY 90 11:26

C8004A L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE /48
 3868-905 MVMA 4B 2AF69 M.D.B. AT C.G. ACCEL. TEST DATE:03-06-90
 CPE ELEC DATA, SAE CLASS 60 (VEC SUM OF C.G. ACCELERATIONS)



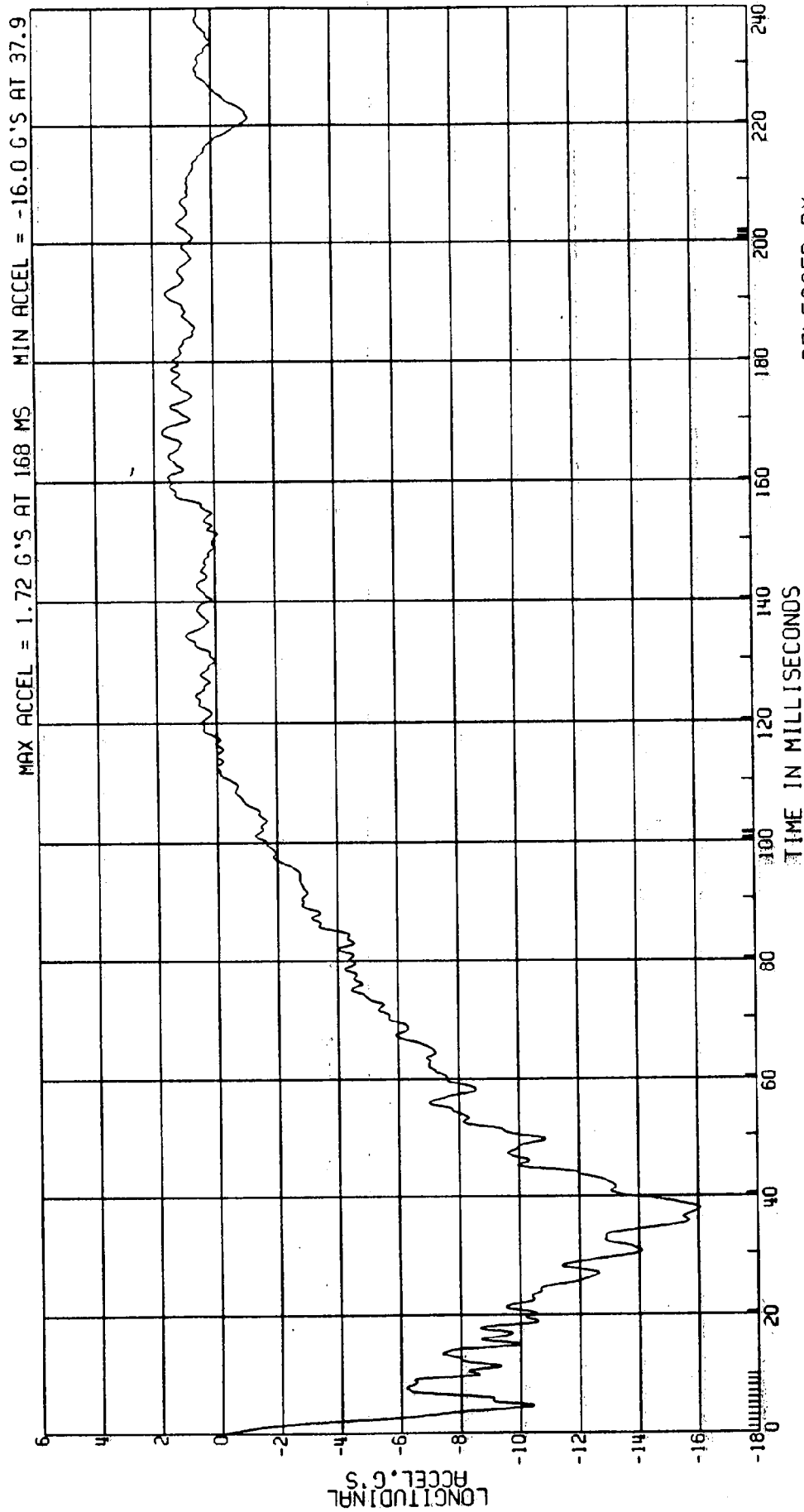
RELEASED BY:
 63 PROCESSED 4MAY 90 11:26

C8004A L. SIDE IMPACT-27 DEG
 MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 149
 3868-905
 COMPUTED M.D.B. AT C.G. FORCE
 TEST DATE:03-06-90
 CPE
 MVMA 4B 2AF69
 (1359.5KG) (9.807) (RESULTANT ACCEL)
 ELEC DATA, SAE CLASS 60



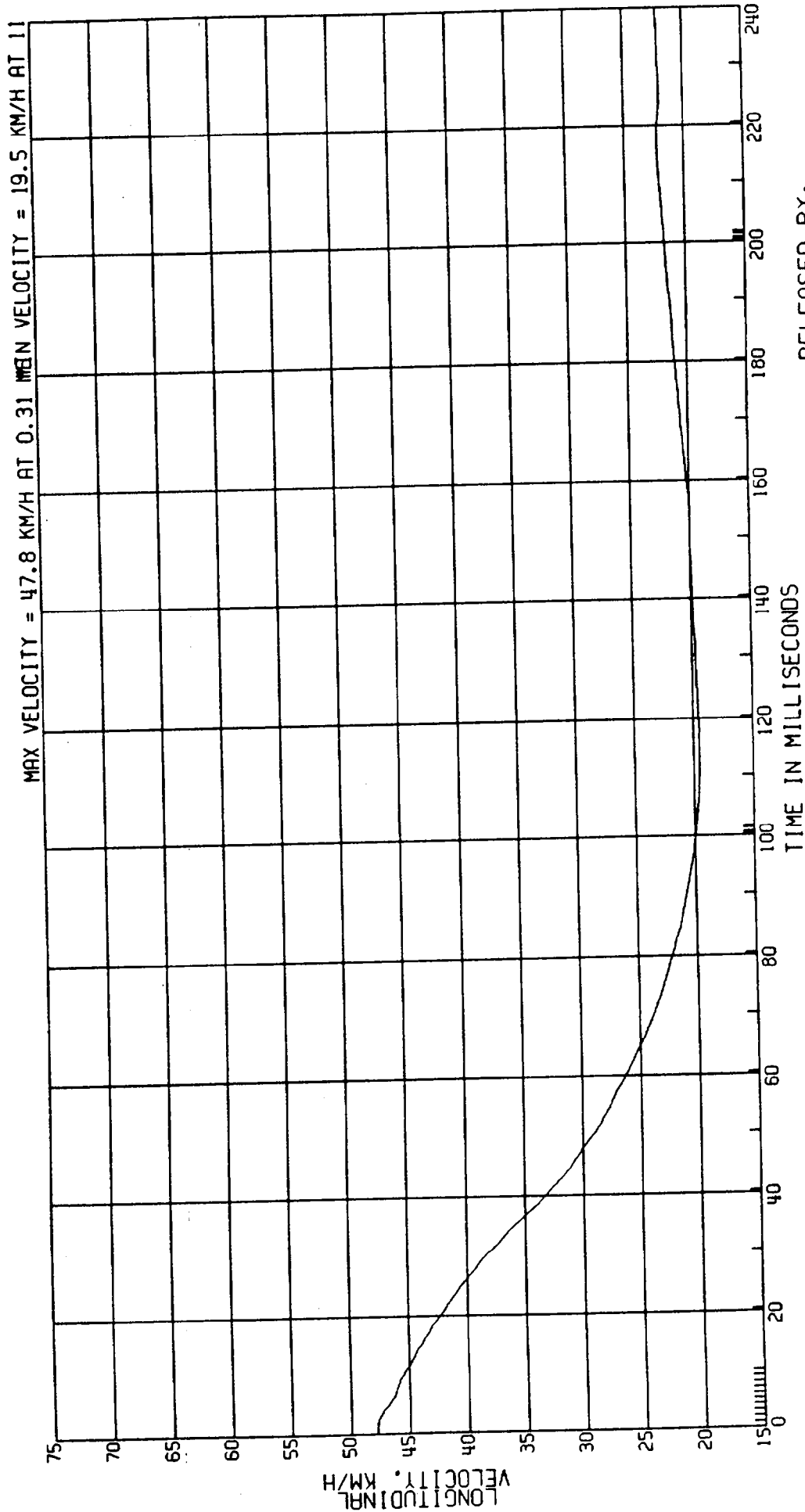
RELEASED BY:
 64 PROCESSED 4 MY 90 11:26

C8004A L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE /50
3868-905
CPE MVMA 48 2AF69 M.D.B. REAR CROSS MEMBER ACCEL. TEST DATE:03-06-90
ELEC DATA. SAE CLASS 60



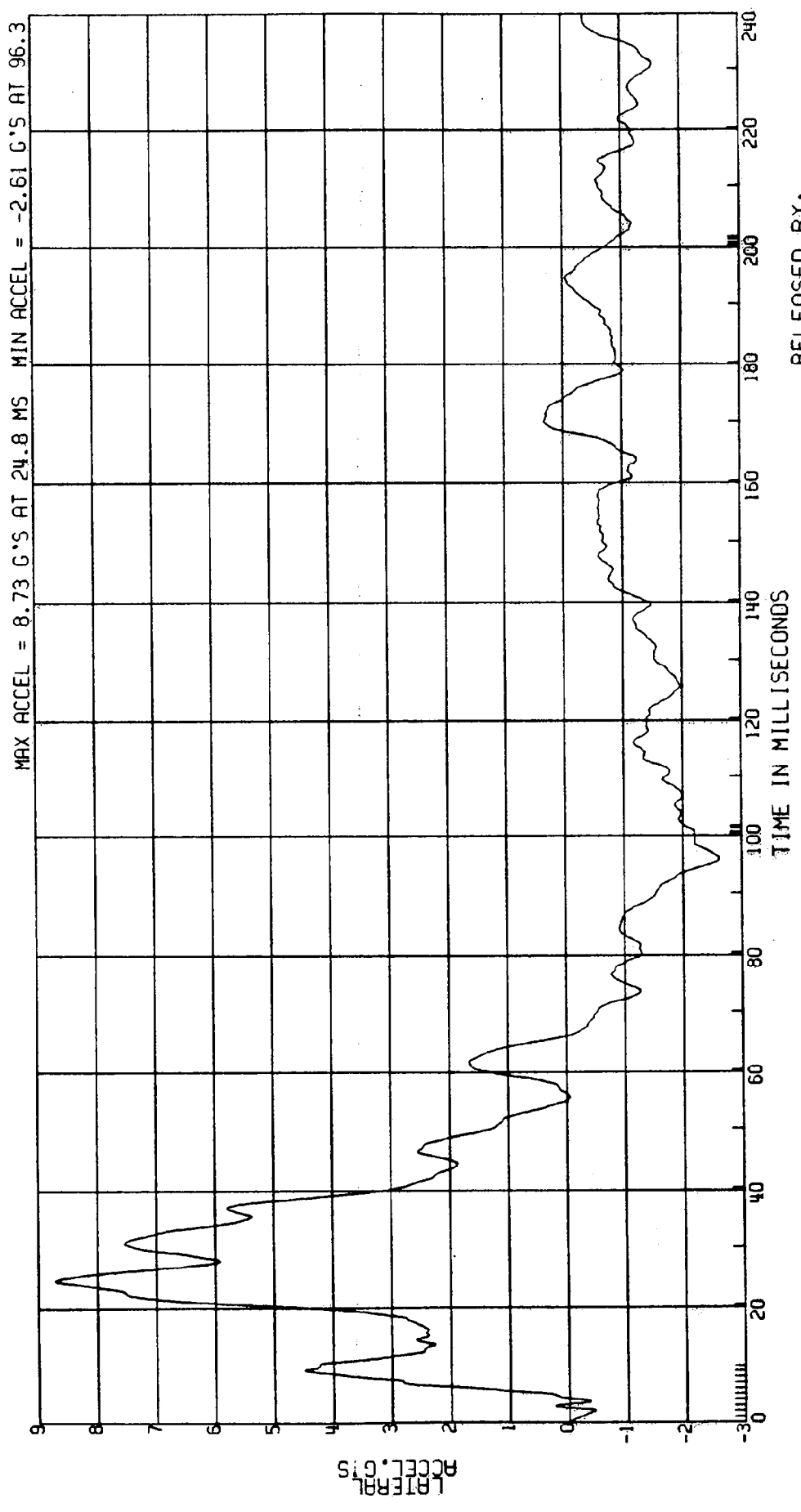
RELEASED BY:
65 PROCESSED 4 MY 90 11:27

C8004A L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE / 5 /
 3868-905 COMPUTED M.D.B. REAR CROSS MEMBER VEL TEST DATE:03-06-90
 CPE MVMA 4B 2AF69
 ELEC DATA, SAE CLASS 180 (1ST INT OF ACCEL 53.6KPH* $\cos 27$ DEG)



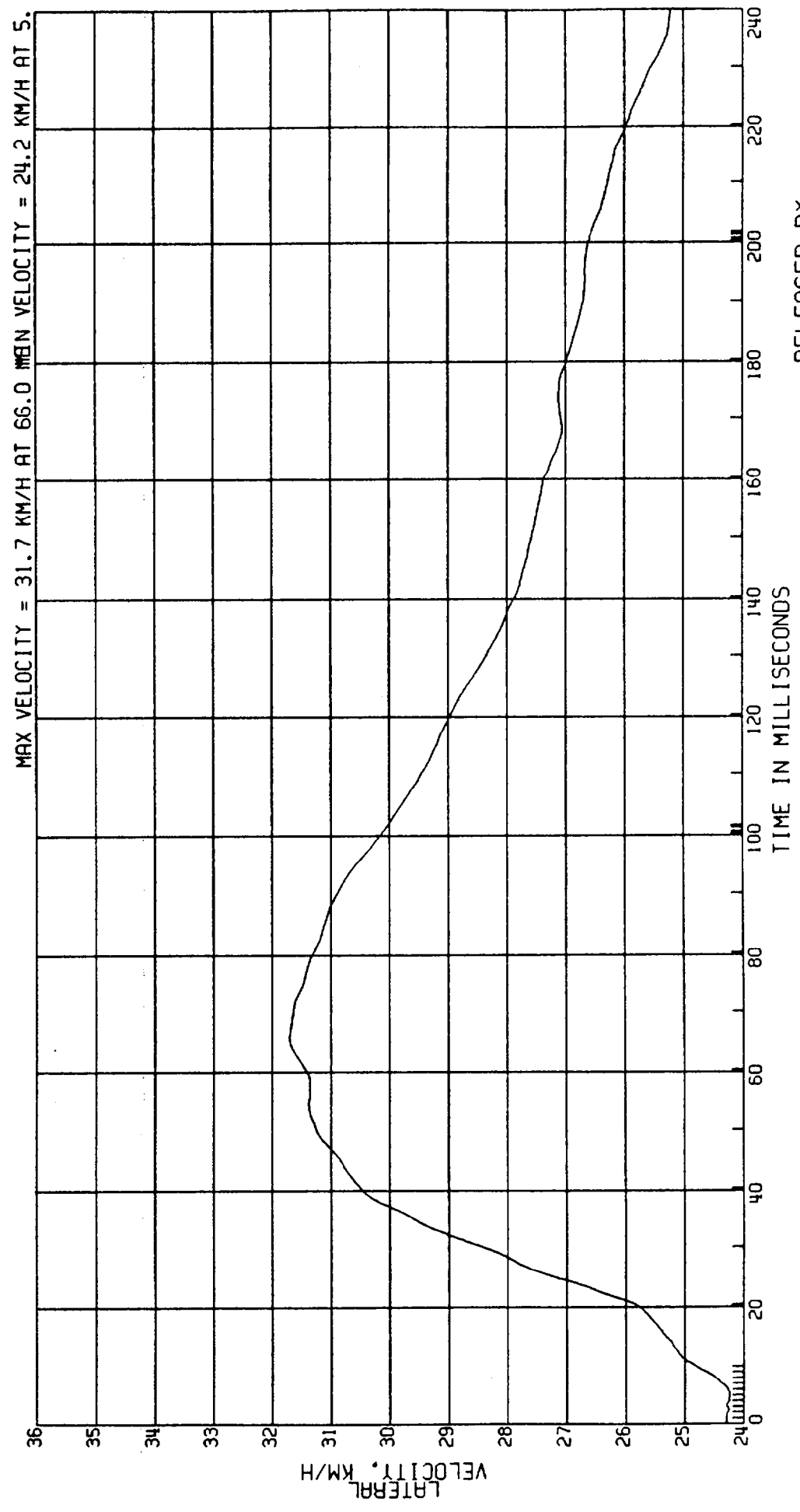
RELEASED BY:
 66 PROCESSED 4 MY 90 11:27

C8004A L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 152
3868-905
CPE MVMA 4B 2AF69 M.D.B. REAR CROSS MEMBER ACCEL. TEST DATE: 03-06-90
ELEC DATA, SAE CLASS 60

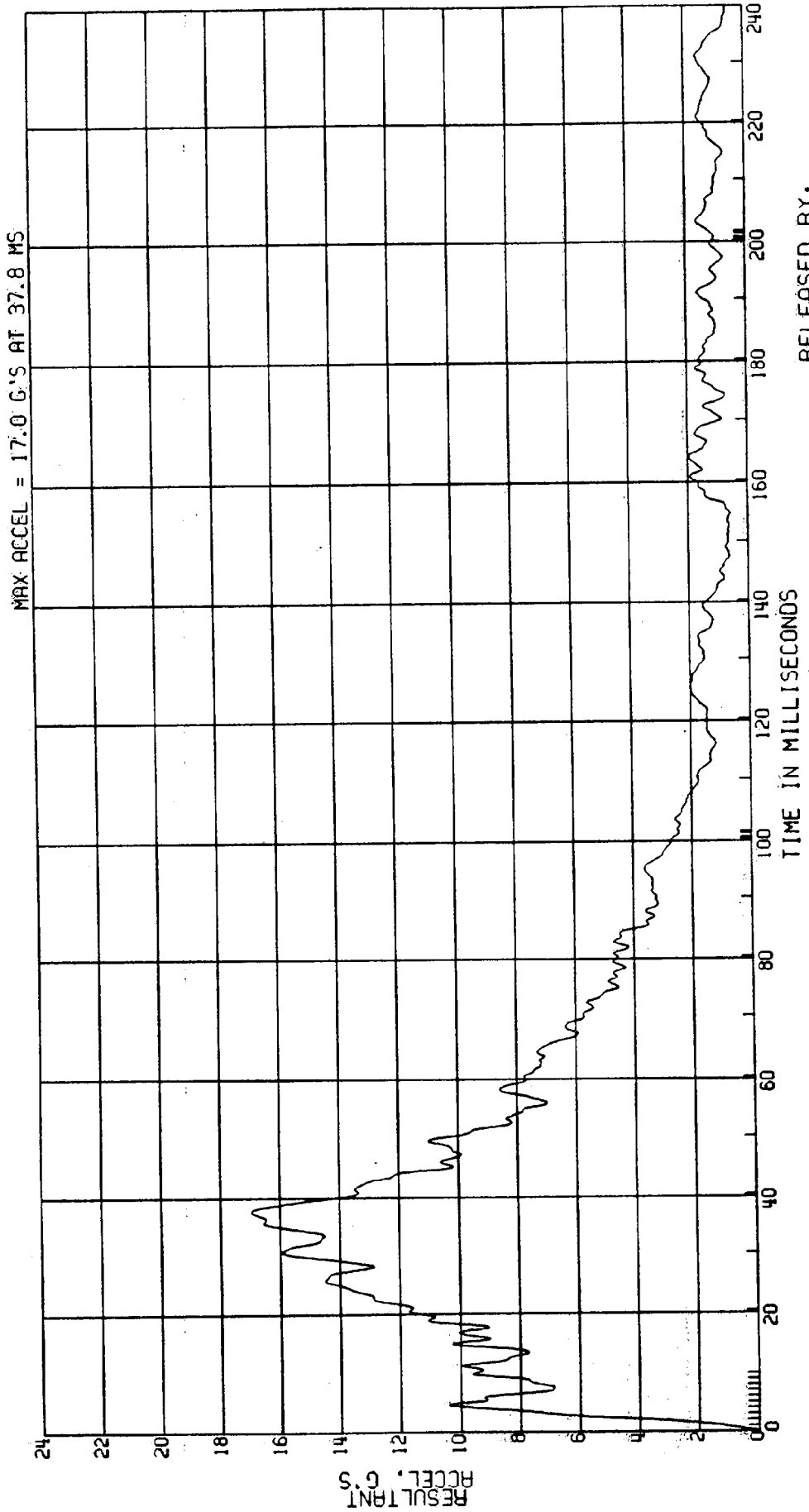


RELEASED BY:
67 PROCESSED 4 MY 90 11:27

C8004A L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE /53
 3868-905
 CPE MVMA 4B 2AF69 COMPUTED M.D.B. REAR CROSS MEMBER VEL TEST DATE:03-06-90
 ELEC DATA, SAE CLASS 180 (1ST INT OF ACCEL 53.6KPH*SIN27DEG)

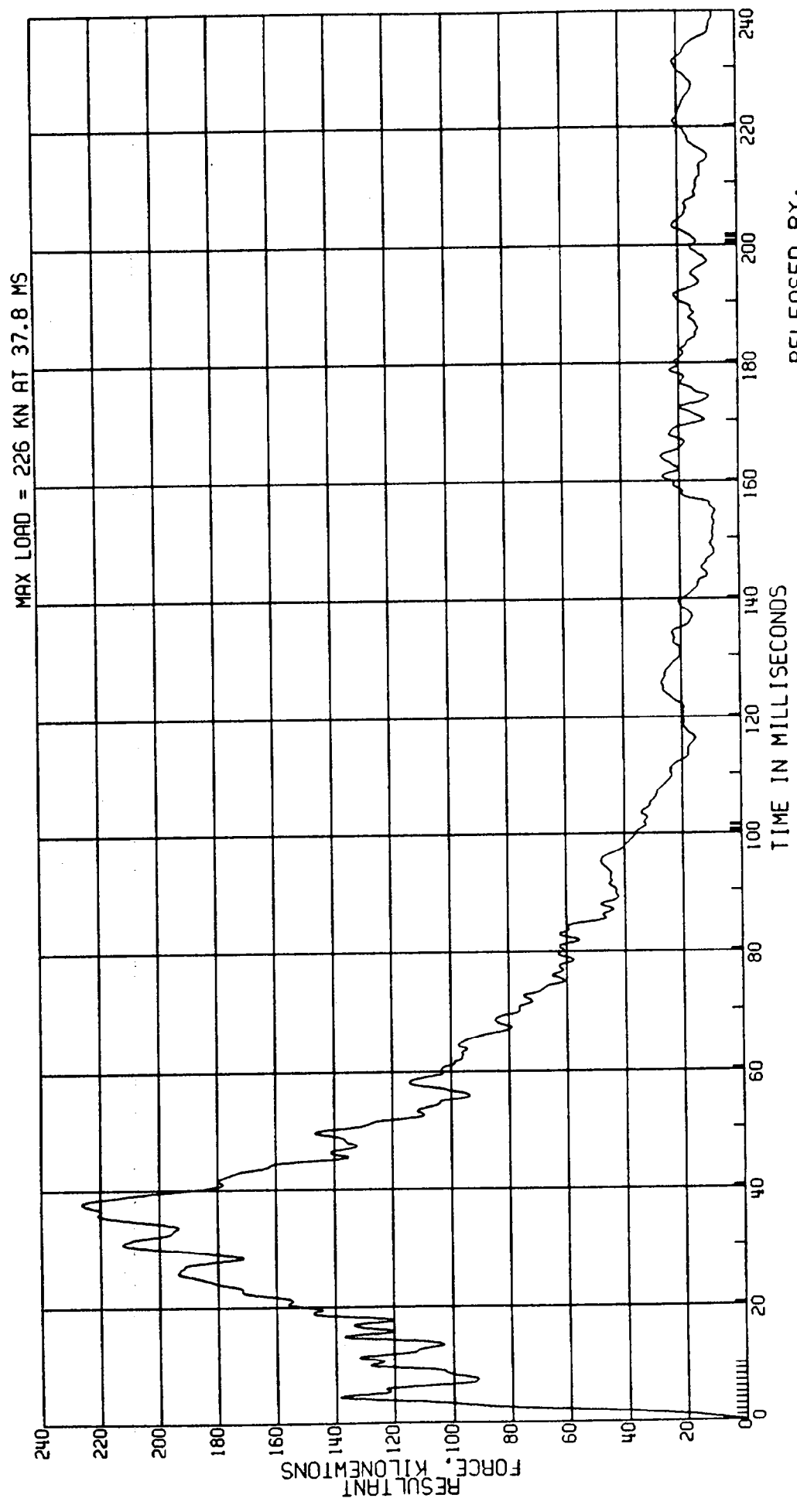


C8004A L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE 154
 3868-905 M.V.M.A 4B 2AF69 TEST DATE: 03-06-90
 CPE M.D.B. REAR CROSS MEMBER ACCEL.
 ELEC DATA, SAE CLASS 60 (VEC SUM OF LONG. & LAT X-MEMBER ACCELS)



RELEASED BY:
 69 PROCESSED 4 MY 90 11:27

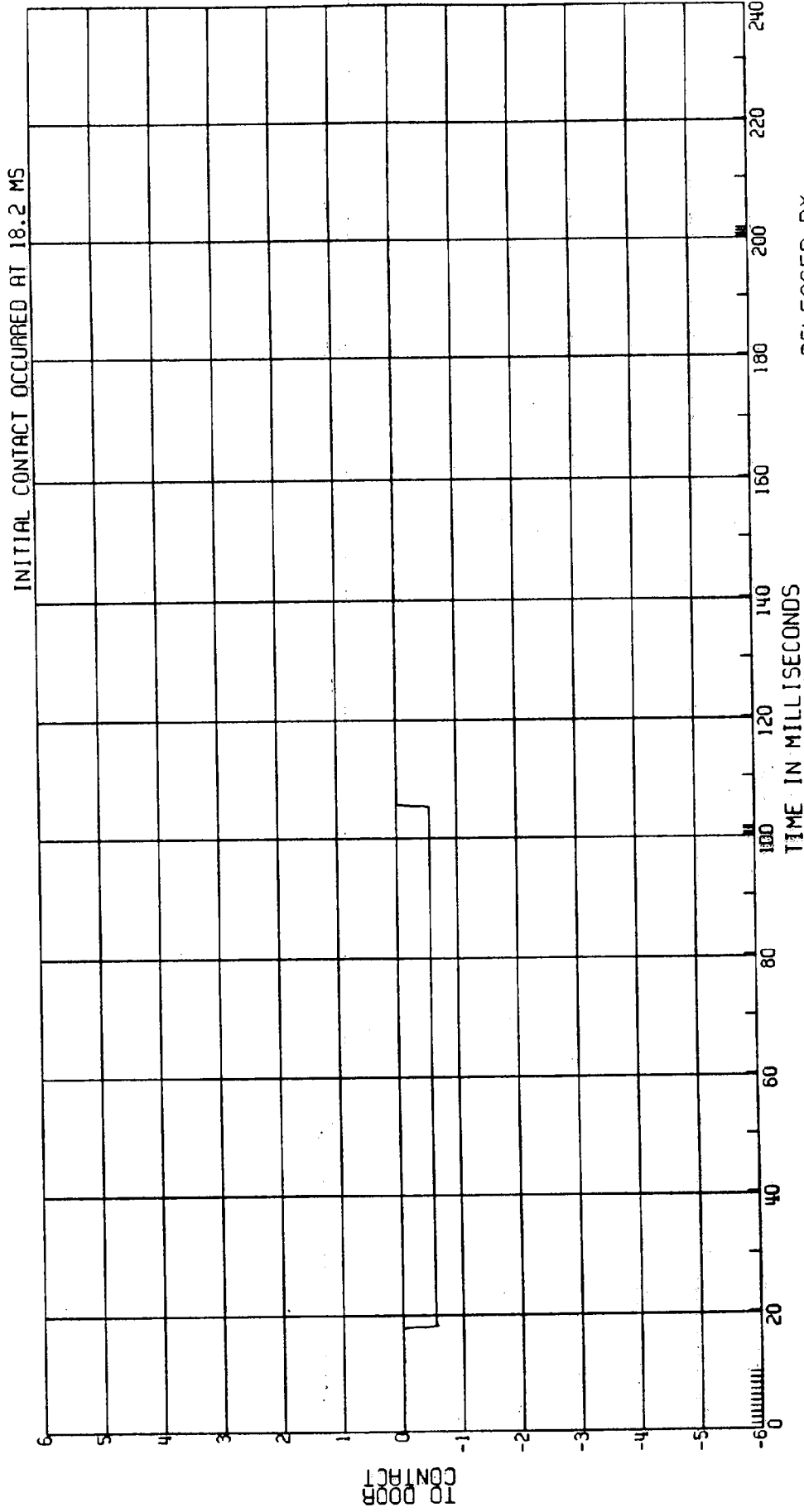
C8004 L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE / 55
 3868-905
 CPE MVMA 4B 2AF69 COMPUTED M.D.B. REAR CROSS MEMBER FORCE TEST DATE:03-06-90
 ELEC DATA, SAE CLASS 60 (1359.5 KG) (9.807) (RESULTANT ACCEL)



RELEASED BY:
 70 PROCESSED 4 MY 90 11:27

C8004A L. SIDE IMPACT-27 DEG
3868-905
CPE MVMA 4B 2AF69
ELEC DATA, SAE CLASS 1000

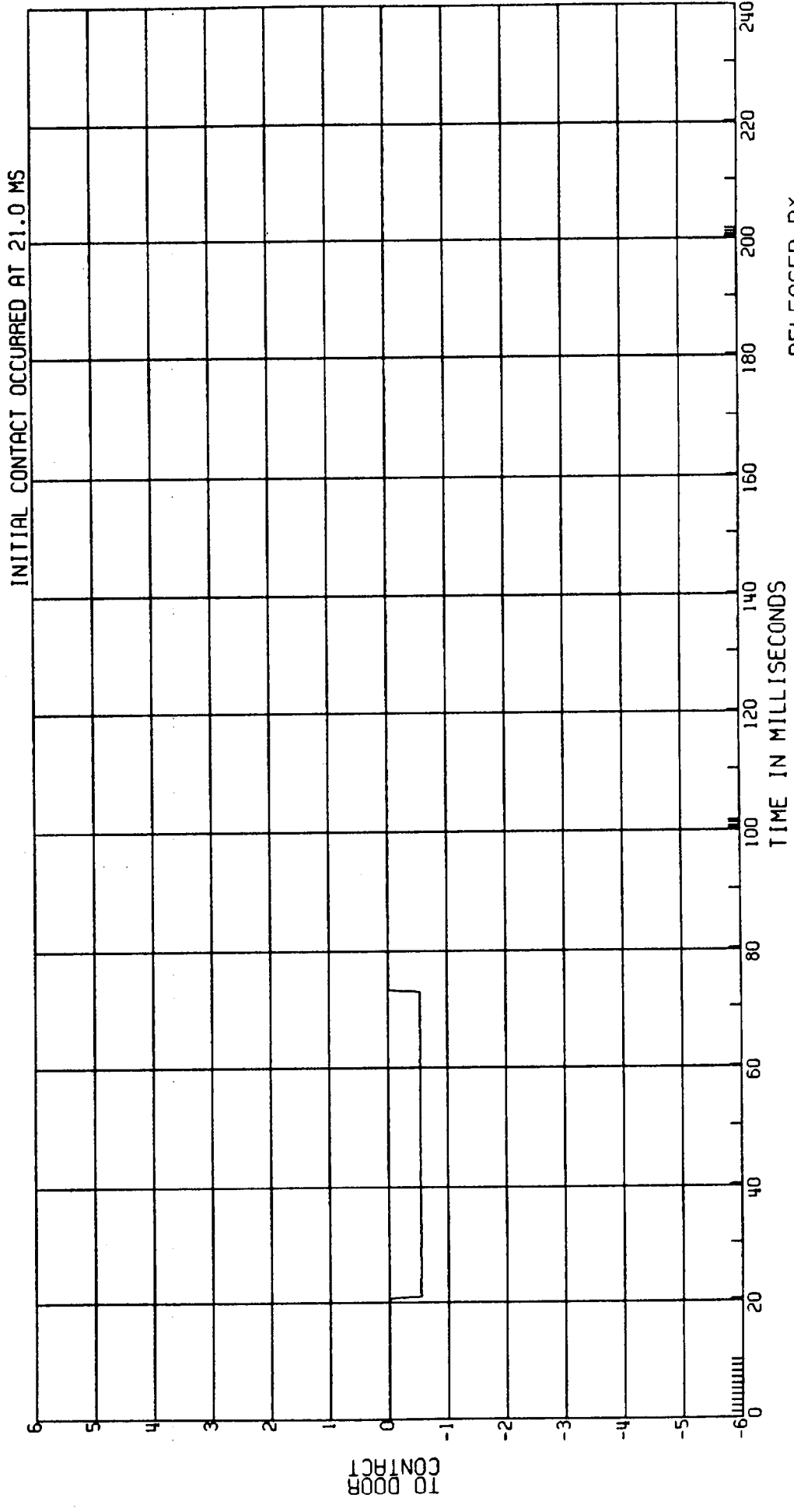
MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE /56
ATD TYPE: SID
TEST DATE: 03-06-90
DRIVER THORAX-LEFT SIDE CONTACT



RELEASED BY:

71 PROCESSED 4 MY 90 11:27

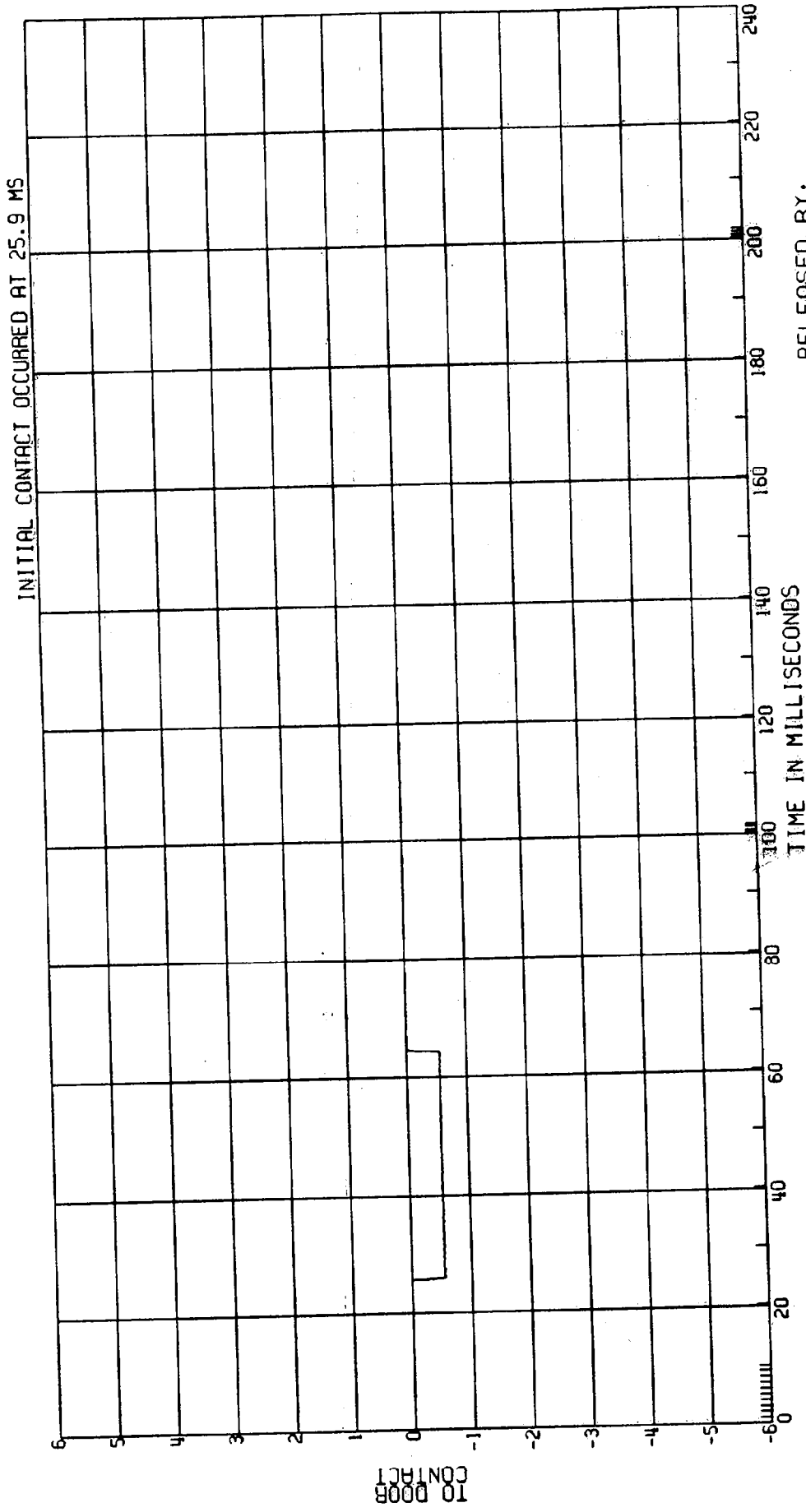
C8004 L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.6KM/H FIGURE / 57
 3868-905 ATD TYPE: SID
 CPE MVMA 4B 2AF69 DRIVER ABDOMEN-LEFT SIDE CONTACT TEST DATE:03-06-90
 ELEC DATA, SAE CLASS 1000



RELEASED BY:
 72 PROCESSED 4 MY 90 11:27

C8004A L. SIDE IMPACT-27 DEG
3868-905 MVMA 4B 2AF69
CPE
ELEC DATA, SAE CLASS 1000

MOVING CRABBED BARR TO PRK VEHICLE 53.6 KM/H FIGURE 158
AID TYPE: SID
TEST DATE: 03-06-90
DRIVER PELVIC-LEFT SIDE CONTACT



RELEASED BY:
73 PROCESSED MAY 90 11:27