



INFORMATION BULLETIN

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

V1484

August 27, 1990

TO: Side Impact Subcommittee
FROM: Ronald J. Wasko
SUBJECT: MVMA Full Vehicle BioSID Test Report - Test 12P

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 12P*

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

TEST REPORT

REPORT NO. PG _____
 SRDL TEST NO. C8012
 TEST DATE APR 04, 1990

TYPE IMPACT:

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

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	MVA 12P	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 MVA FOR EVALUATION OF THE BIOSID AND SID DUMMIES						

TEST CONDITIONS

MOVING BARRIER			
VELOCITY AT IMPACT	53.5 km/h	LOCATION	VEHICLE <input type="checkbox"/> DRIVER SRP <input type="checkbox"/> OTHER <input checked="" type="checkbox"/>
TEST MASS	1360 kg	AT IMPACT	

VEHICLE			
TEST MASS	FRONT	922 kg	
LESS DUMMIES <input checked="" type="checkbox"/>	REAR	671 kg	
INCLUDING DUMMIES <input type="checkbox"/>	TOTAL	1593 kg	
FUEL TANK	TEST VOLUME: CONTENTS	WATER	
	N/D % OF USABLE CAPACITY =	64.4	L
FUEL LINES AND SYSTEM FILLED	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>		
VEHICLE SERVICE BRAKES ON @ IMPACT	YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>		
SEAT POSITION	MID		
VEHICLE ATTITUDE			
J= DRIVER SIDE	191 mm	PASSENGER SIDE	176 mm
K= DRIVER SIDE	176 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			

DUMMIES			
LEFT FRONT	MAKE	BIOSID	NO. 2
	TYPE	50TH %ILE MALE	MASS 77.3 kg
	RESTRAINT	UNBELTED	
LEFT REAR	MAKE	SID	NO. 3
	TYPE	50TH %ILE MALE	MASS 78.5 kg
	RESTRAINT	UNBELTED	

TEST CONFIGURATION:

PHOTOGRAPHIC COVERAGE

OFFBOARD	OVER ALL	<input checked="" type="checkbox"/>	FUEL TANK	<input type="checkbox"/>
	REAR HALF	<input type="checkbox"/>	OVERHEAD	<input type="checkbox"/>
	PIT	<input type="checkbox"/>		<input type="checkbox"/>
OTHER	OFFBD-DR SIDE	<input checked="" type="checkbox"/>	ON MVB-IMPACT	<input checked="" type="checkbox"/>
	ONBD-DRIVER	<input checked="" type="checkbox"/>		<input type="checkbox"/>
	ONBD-LR OCCUP	<input checked="" type="checkbox"/>		<input type="checkbox"/>

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"/>	BIOSID DATA		<input checked="" type="checkbox"/>
VEHICLE DISP	<input checked="" type="checkbox"/>	SID DATA		<input checked="" type="checkbox"/>
MOVING BARRIER ACC	<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		(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).

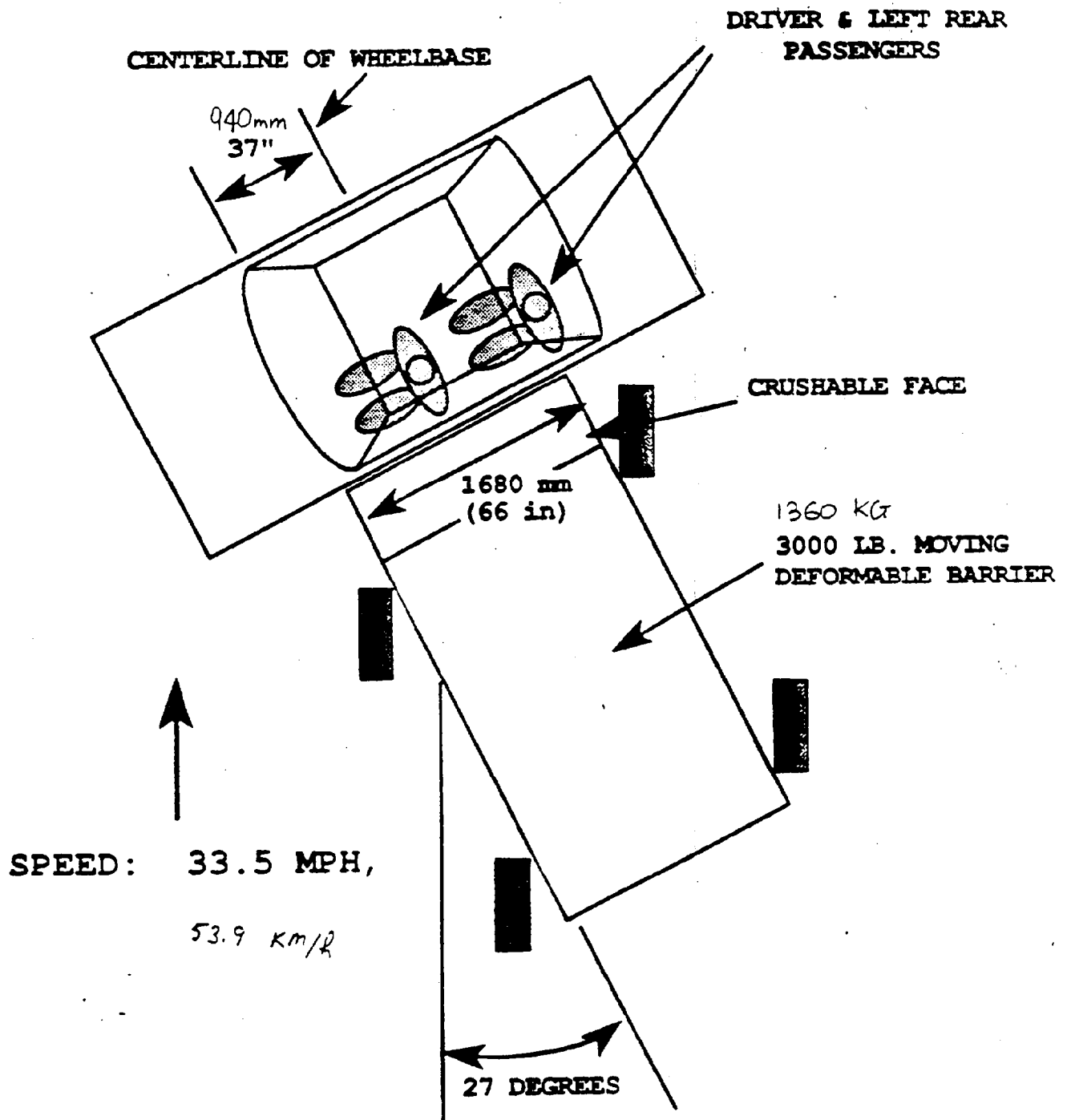
BODY COORDINATES (mm)

	LONGITUDINAL	VERTICAL
<u>LEFT FRONT PASSENGER</u>		
HEAD	<u>3205</u>	<u>1140</u>
HIP	<u>3062</u>	<u>458</u>
KNEE	<u>2655</u>	<u>550</u>
PELVIC ANGLE	<u>21</u>	SEAT BACK ANGLE <u>24</u>
<u>LEFT REAR PASSENGER</u>		
HEAD	<u>4164</u>	<u>1084</u>
HIP	<u>3887</u>	<u>458</u>
KNEE	<u>3521</u>	<u>600</u>
PELVIC ANGLE	<u>17</u>	SEAT BACK ANGLE <u>N/D</u>

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

Comments: HEAD ANGLE IN DEGREES: LT FRT: -8, LT RR: -10

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: C8012

TEST DATE: 4-4-90

LOCATION			WINDOW TOP			WINDOW SILL			MID DOOR			H - POINT			AXCLE CL		
WEIGHT (in mm)			-			805			-			448			210		
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
N	F	610	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
E	R	457	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A	W	305	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
B	D	152	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
U		0*	-	-	-	399	399	0	-	-	-	347	333	-14	445	441	-4
R		152	-	-	-	396	510	114	-	-	-	348	612	264	448	526	78
E		305	-	-	-	394	563	169	-	-	-	346	669	323	445	550	105
N		457	-	-	-	393	582	189	-	-	-	344	682	338	443	571	128
E		610	-	-	-	391	595	204	-	-	-	342	697	355	445	593	148
N	R	762	-	-	-	389	610	221	-	-	-	346	716	370	439	614	175
T	E	914	-	-	-	388	633	245	-	-	-	340	725	385	438	637	199
	A	1067	-	-	-	387	647	260	-	-	-	340	734	394	440	659	219
L	R	1219	-	-	-	387	676	289	-	-	-	340	748	408	437	703	266
O	W	1372	-	-	-	387	688	301	-	-	-	340	767	427	441	598	157
C	A	1524	-	-	-	387	701	314	-	-	-	340	780	440	437	532	95
A	R	1676	-	-	-	396	718	322	-	-	-	341	785	444	438	479	41
T	D	1829	-	-	-	387	600	213	-	-	-	342	675	333	438	442	4
I		1981	-	-	-	389	478	89	-	-	-	-	-	-	-	-	-
O		2134	-	-	-	390	415	25	-	-	-	-	-	-	-	-	-
N		2286	-	-	-	393	384	-9	-	-	-	-	-	-	-	-	-
		2438	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

(in mm)

* IMPACT POINT- MOVING DEFORMABLE BARRIER LEADING EDGE

MOVING BARRIER

REAR IMPACT
 SIDE IMPACT

PAGE NO. 7
 REPORT NO. PG _____
 SRDL TEST NO. CB012

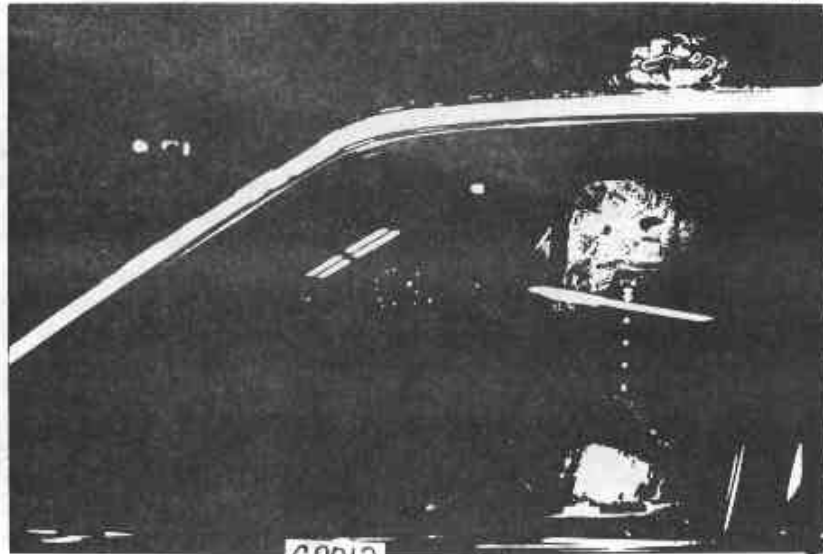
FIGURE INSTRUMENTATION, FILM ANALYSIS DATA AND PHOTOGRAPH INDEX

	ROCKER PANEL ACCELERATION	
	FLOOR PAN ACCELERATION	
	VEHICLE VELOCITY COMPUTED FROM	ACCELERATION
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	COMPUTED MOVING BARRIER FORCE	
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153-156	CLOSEUP OF INTERIOR WITHOUT DUMMIES	



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Document No.	Fig. No.
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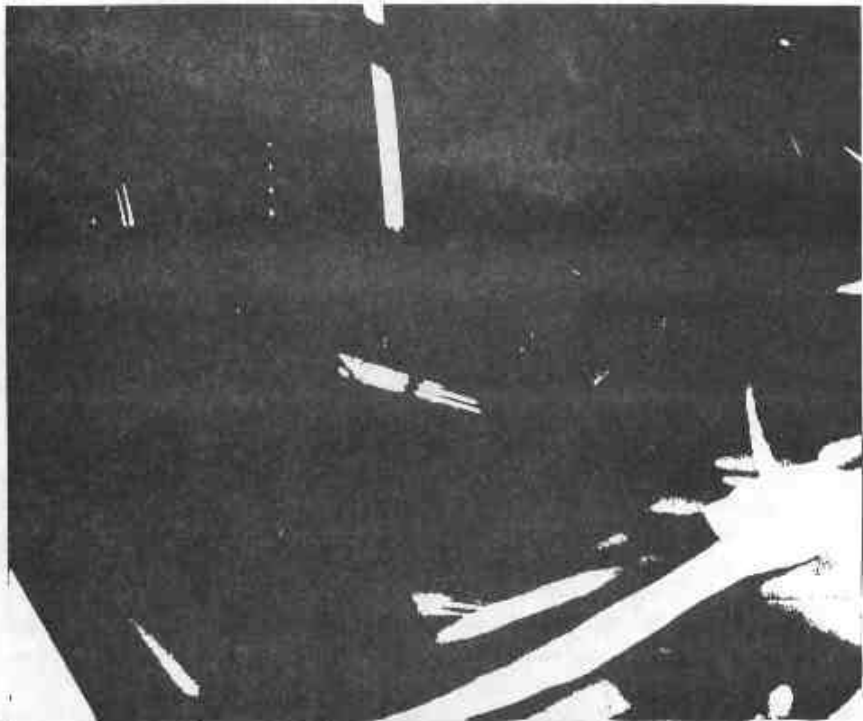


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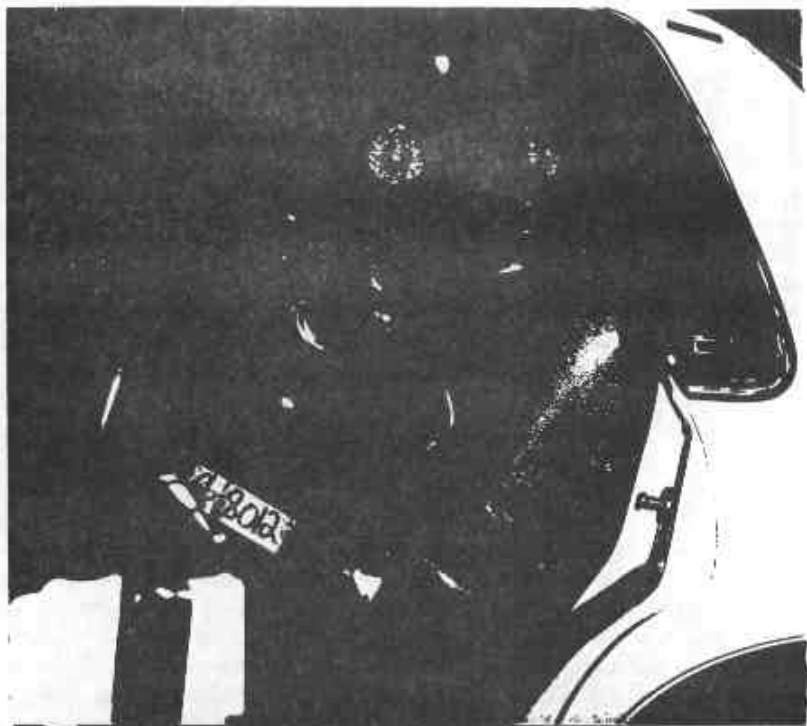
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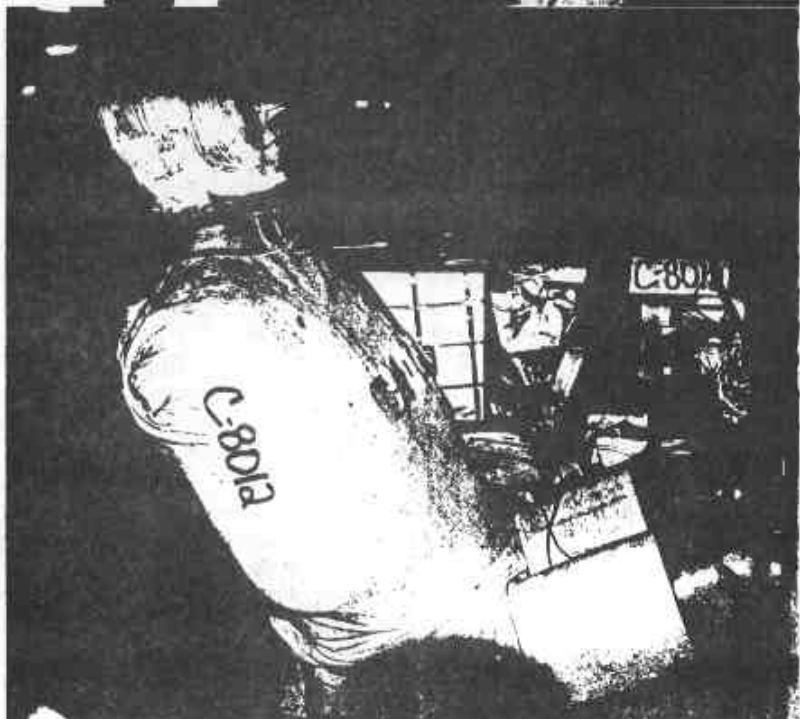
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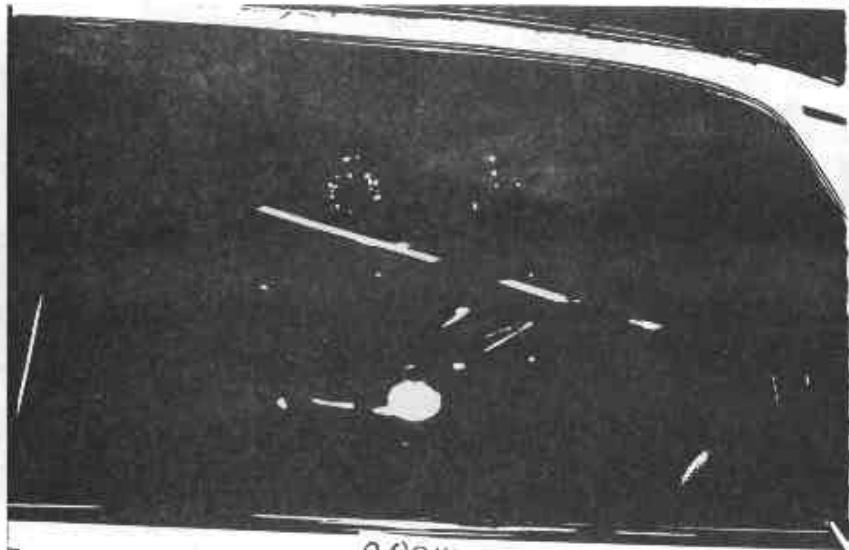


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Document No.	Fig. No.
55405	35



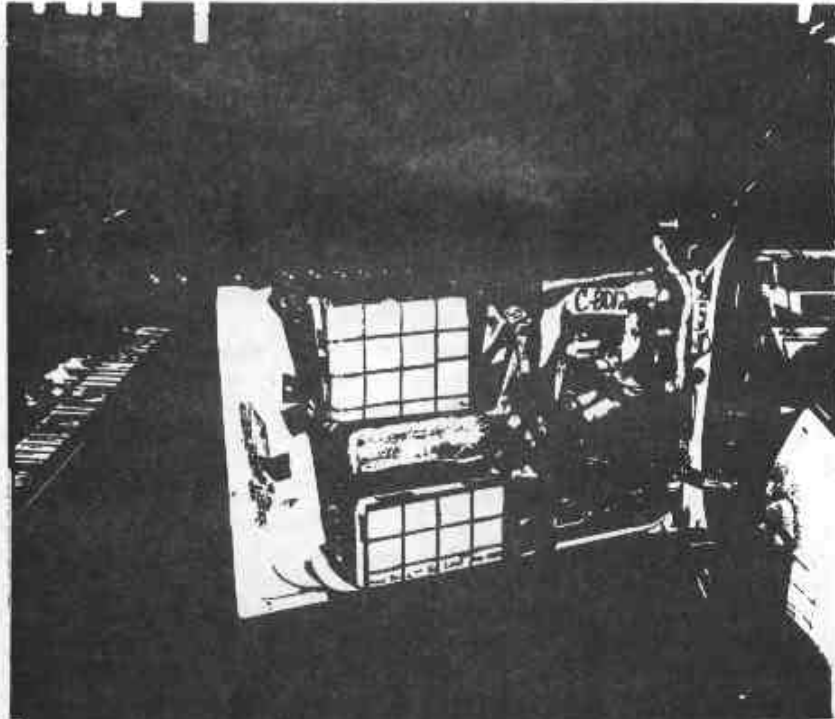


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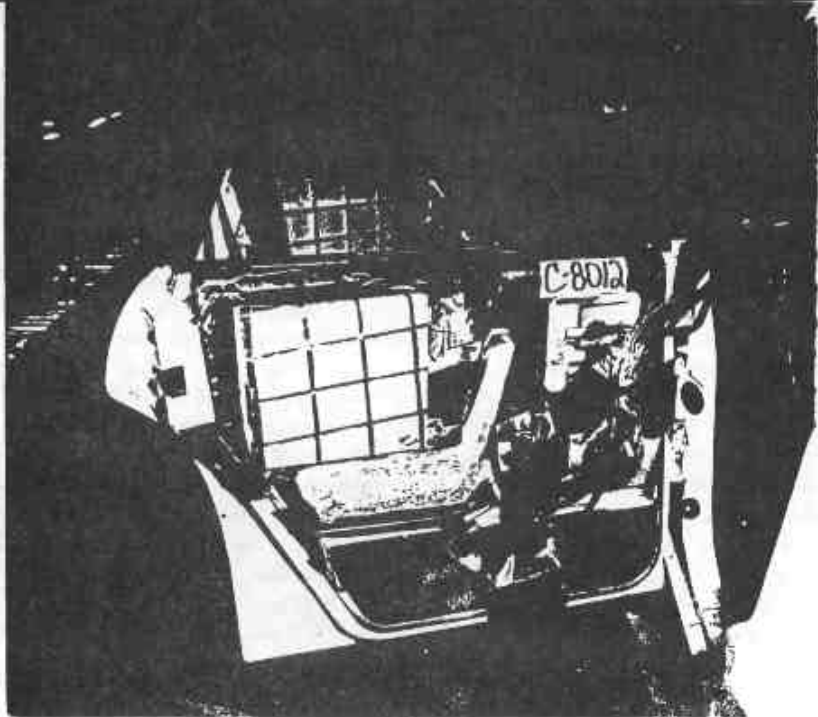


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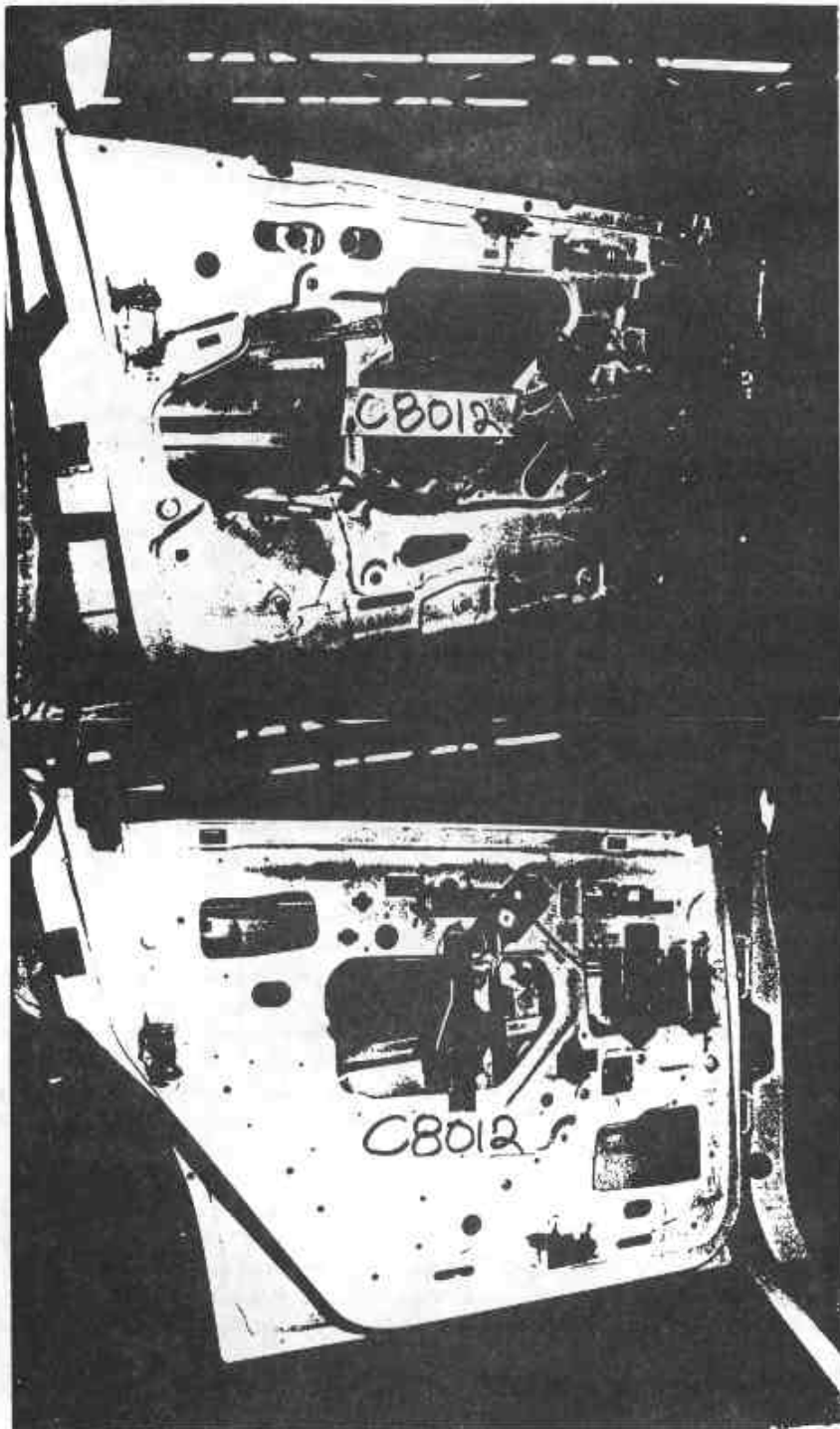
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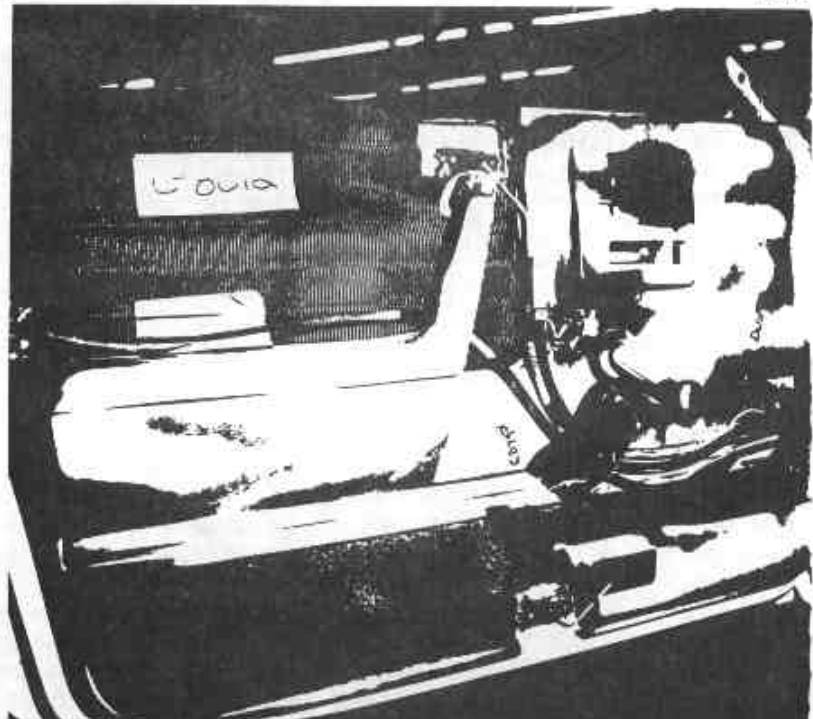
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Document No.	Fig. No.
55405	141



Document No.	Fig. No.
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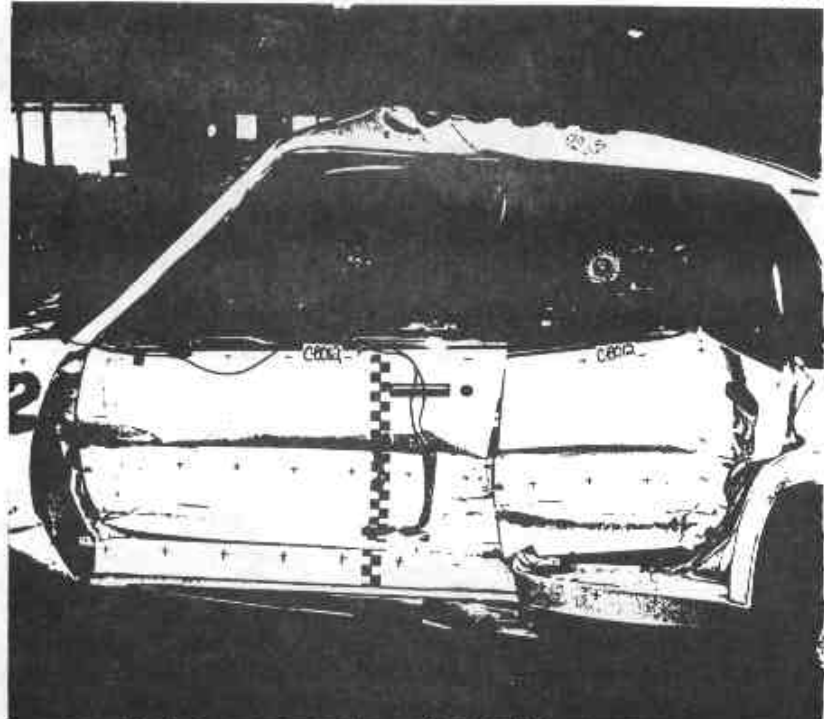
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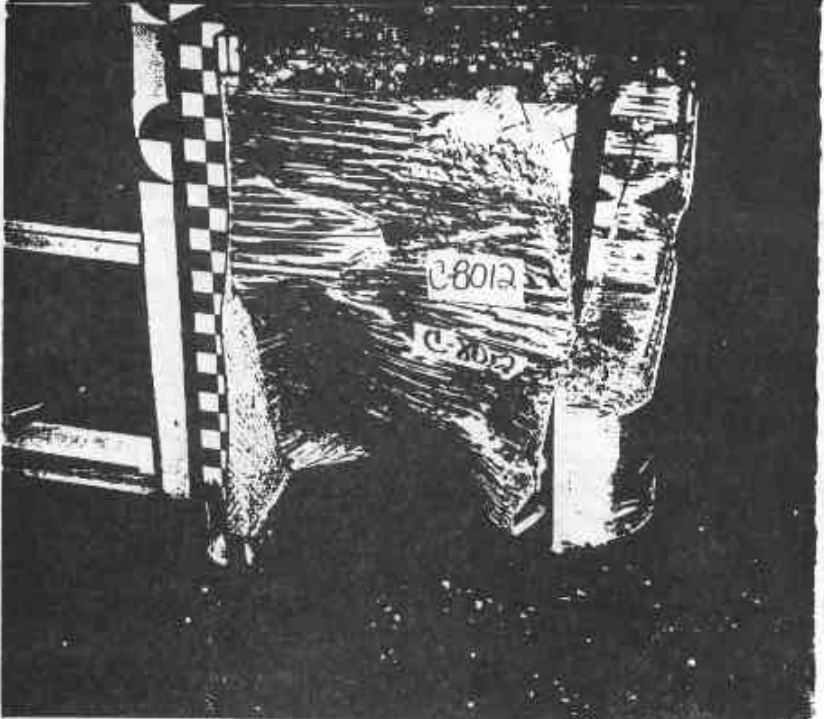


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55405	146



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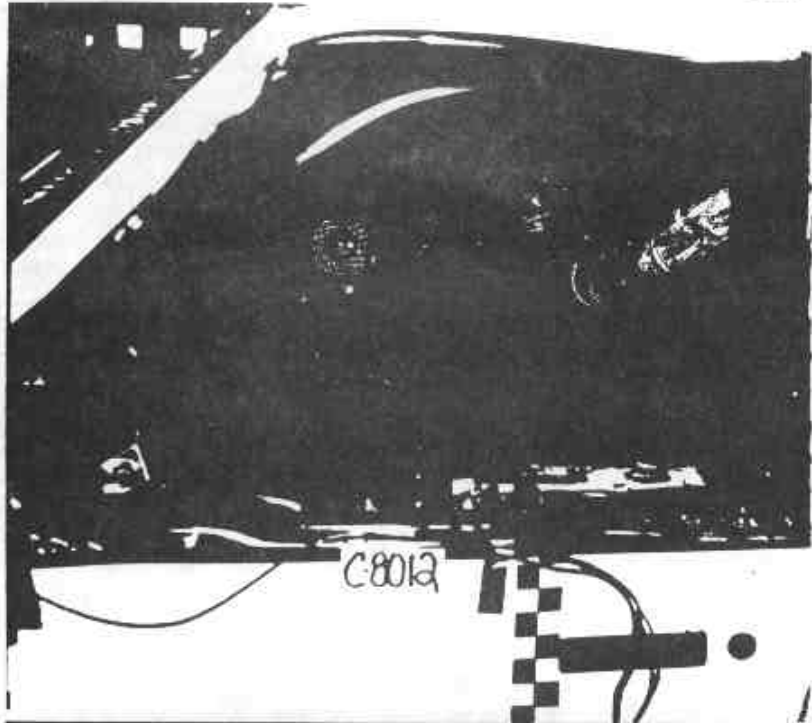


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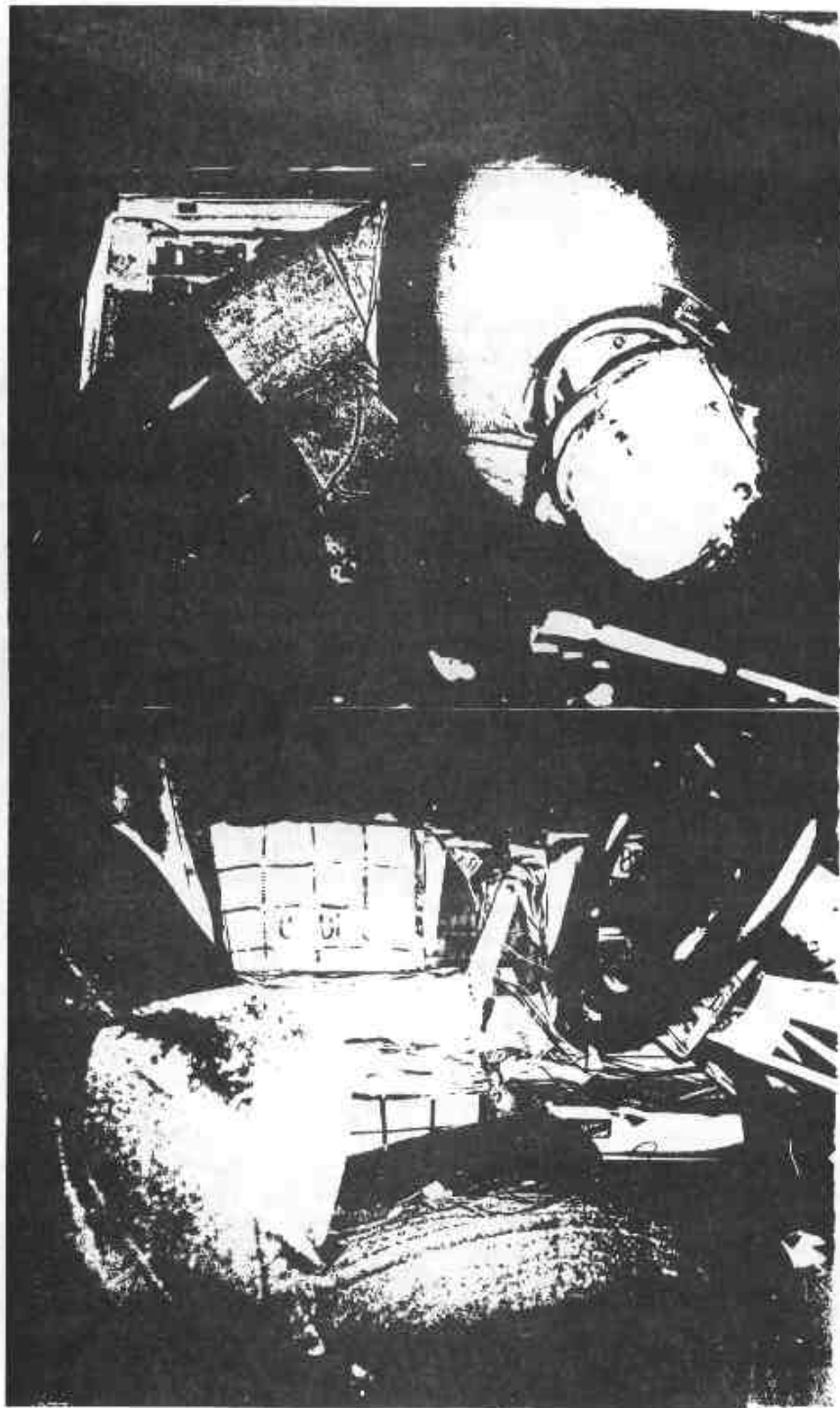
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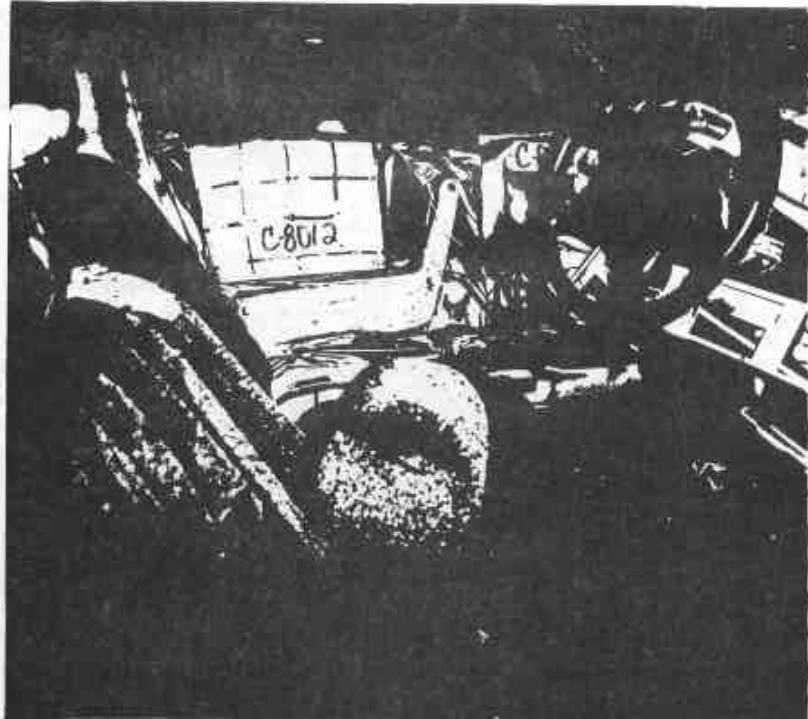
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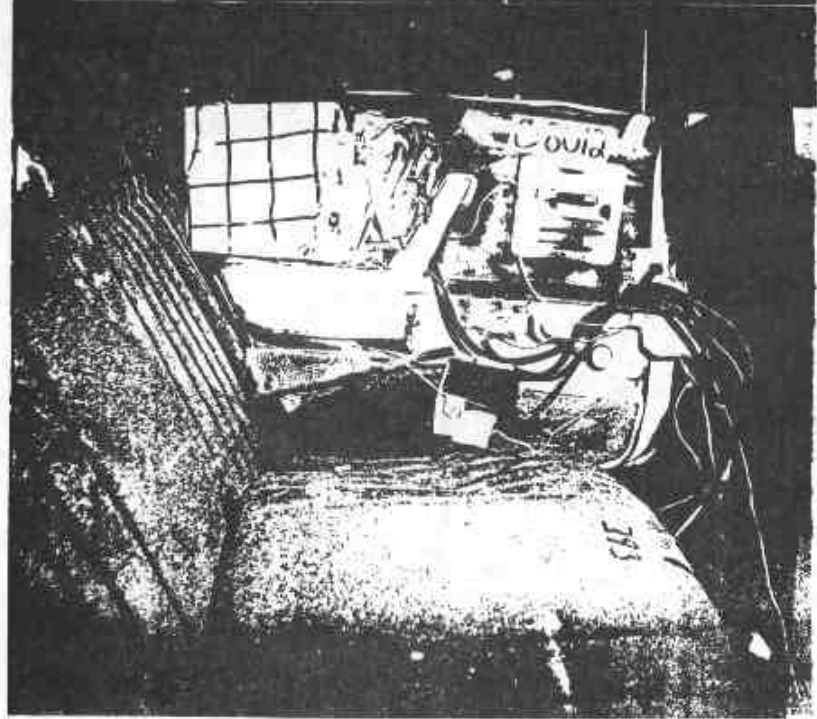
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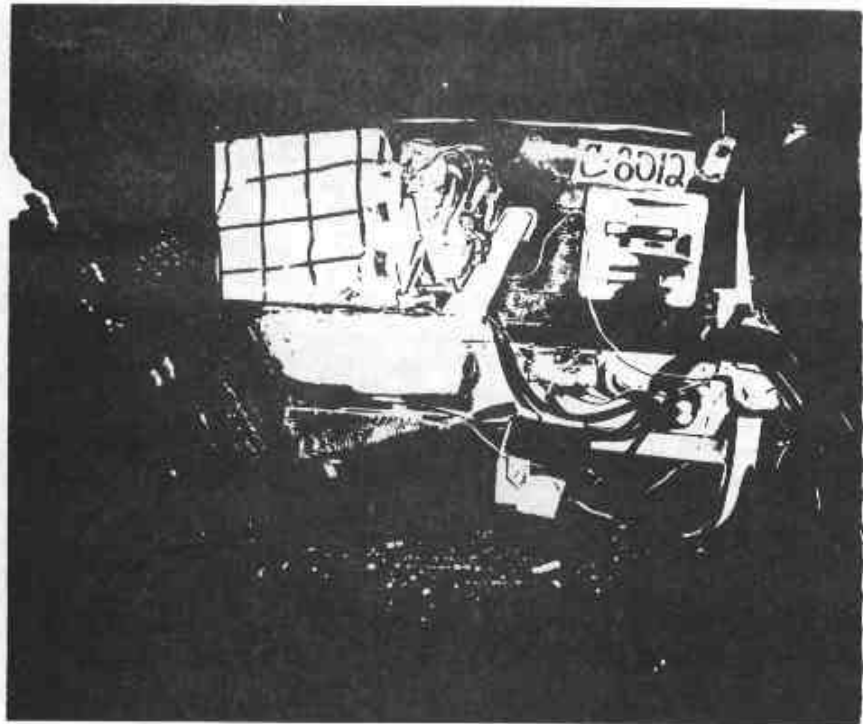
Document No.	Fig. No.
55405	153



Document No.	Fig. No.
55405	6*



Document No.	Fig. No.
5405	55



Document No.	Fig. No.
55405	154

Document No.	Fig. No.

M9B6UAG#

C8012T

05/15/90

06:49:02

OF PLOTS= 5

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YOFF= 1.07999E+01

WPEN=

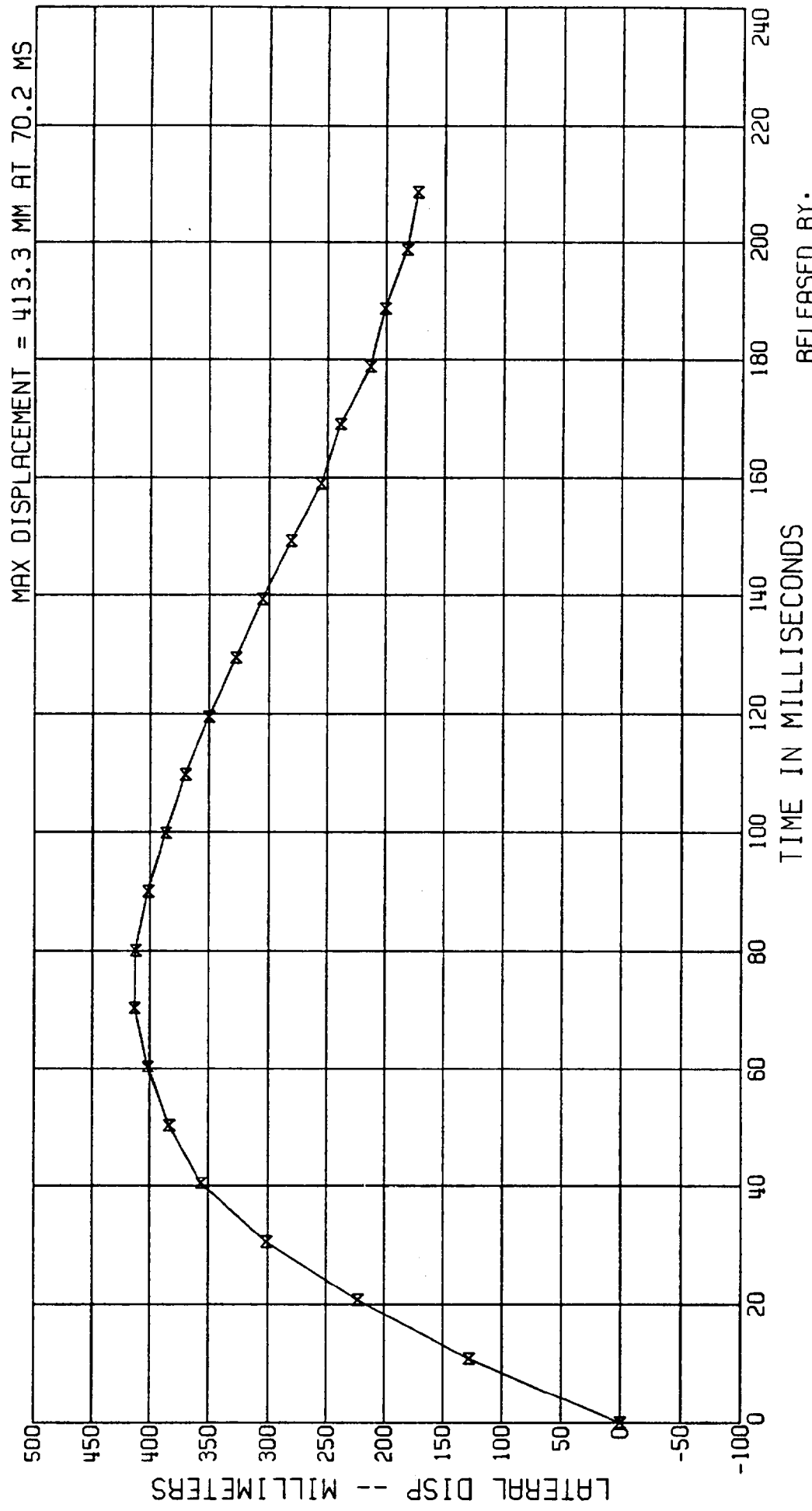
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C8012 L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE ()
3868-905
CPE MVMA12P 2AF69
FILM DATA

TEST DATE: 04-04-90

OVERHEAD VIEW

STRIKING BARRIER RELATIVE TO STRUCK VEHICLE



RELEASED BY:
1 PROCESSED 15 MY 90 06:49

C8012 L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 2

3868-905

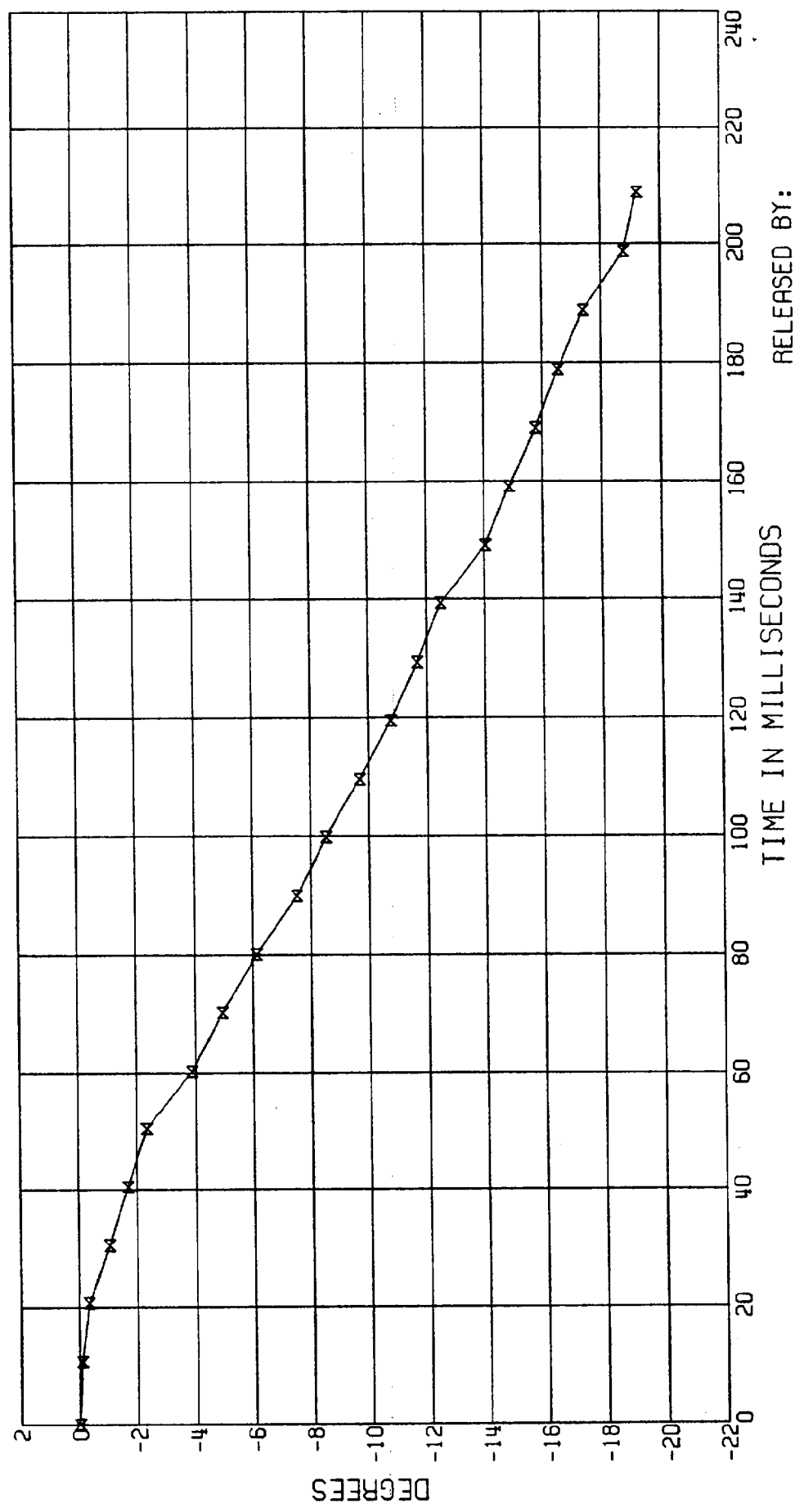
CPE MVMA12P 2AF69

FILM DATA

OVERHEAD VIEW

TEST DATE: 04-04-90

STRIKING BARRIER YAW RELATIVE TO GROUND REFERENCE



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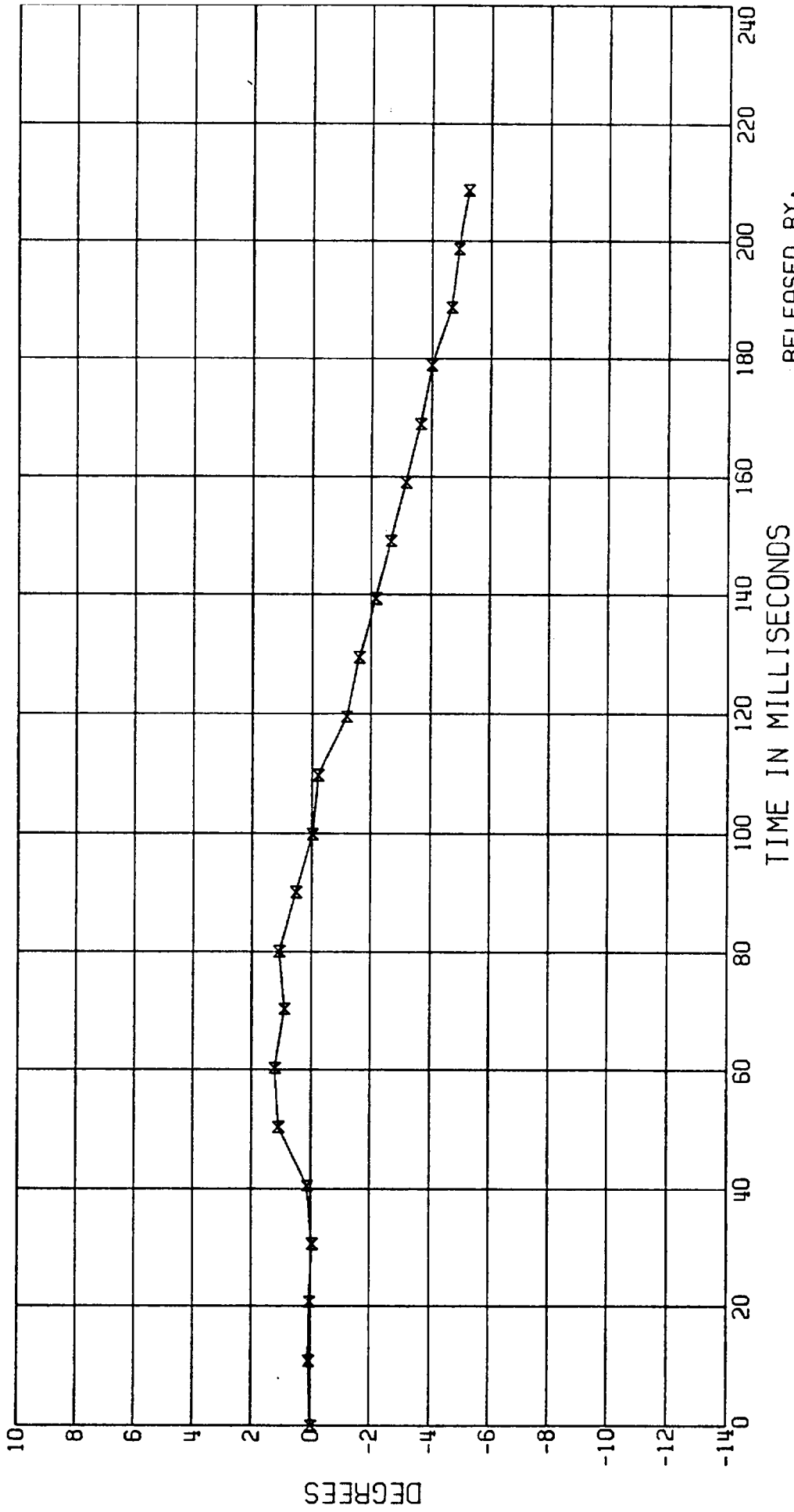
C8012 L. SIDE IMPACT-27 DEG
3868-905
CPE MVMA12P 2AF69
FILM DATA

MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 3

OVERHEAD VIEW

TEST DATE:04-04-90

STRUCK VEHICLE YAW RELATIVE TO GROUND REFERENCE



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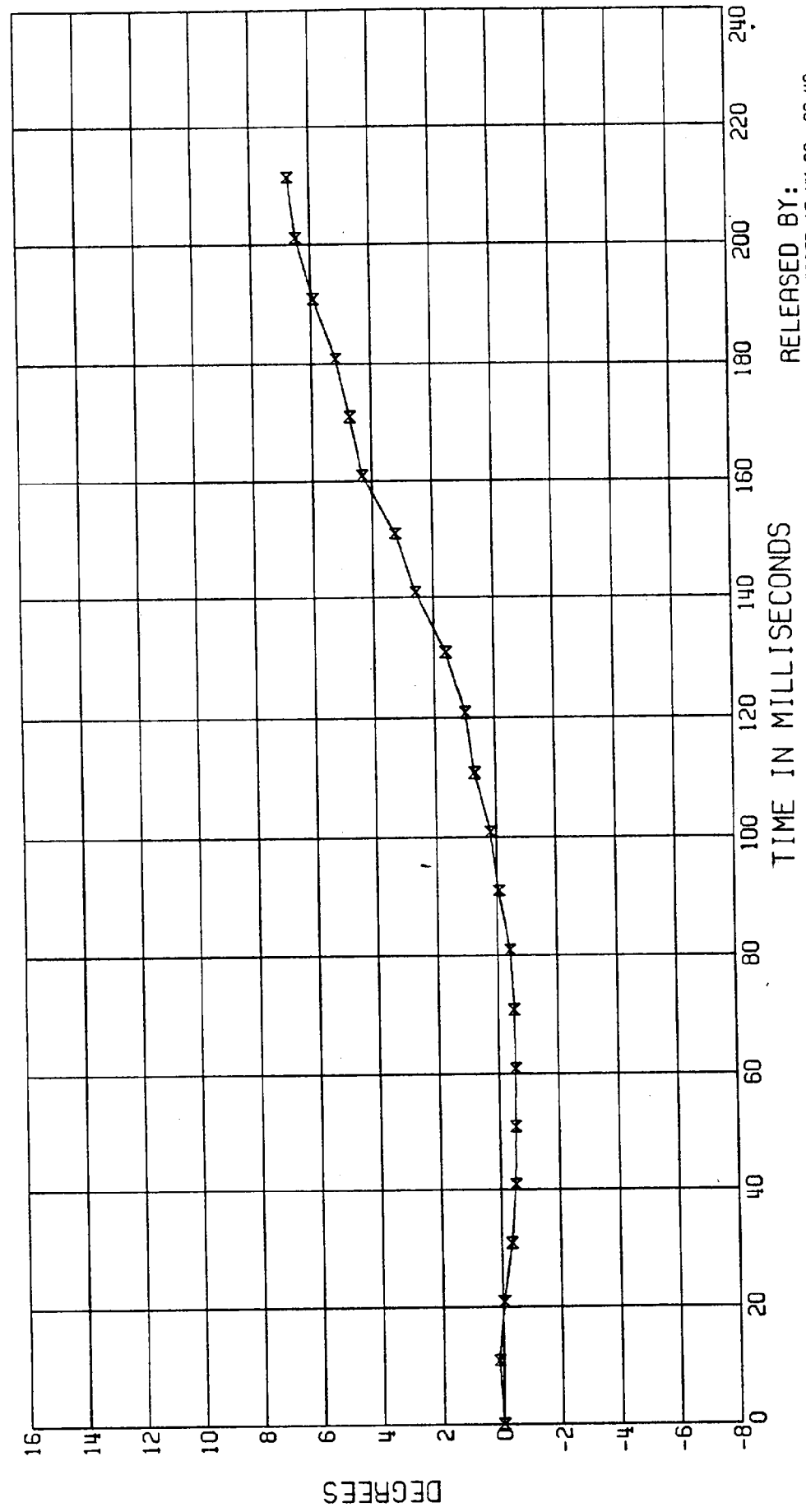
C8012 L. SIDE IMPACT-27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 4

3868-905
CPE MVMR12P 2AF69
FILM DATA

REAR VIEW

TEST DATE: 04-04-90

REAR VEHICLE ROLL RELATIVE TO GROUND REFERENCE



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5 PROCESSED 15 MY 90 06:49

MS 61AG/

07/03/90

12 12 55

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YOFF= 1.07999E+01

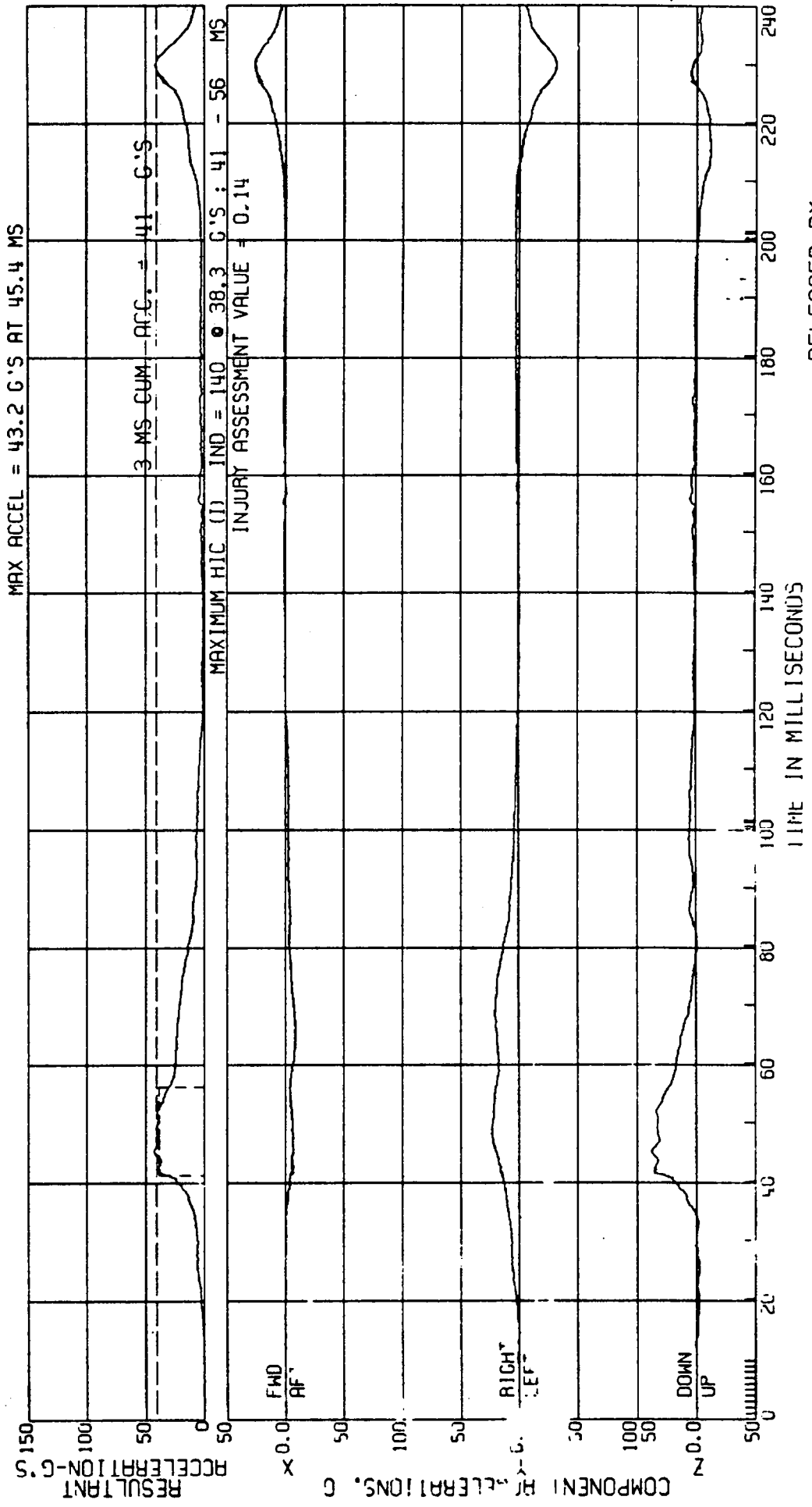
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~~12
Not~~

4a.

C80128 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 5
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 12P 2AF69 DRIVER HEAD ACCEL.
 TEST DATE: 04-04-90

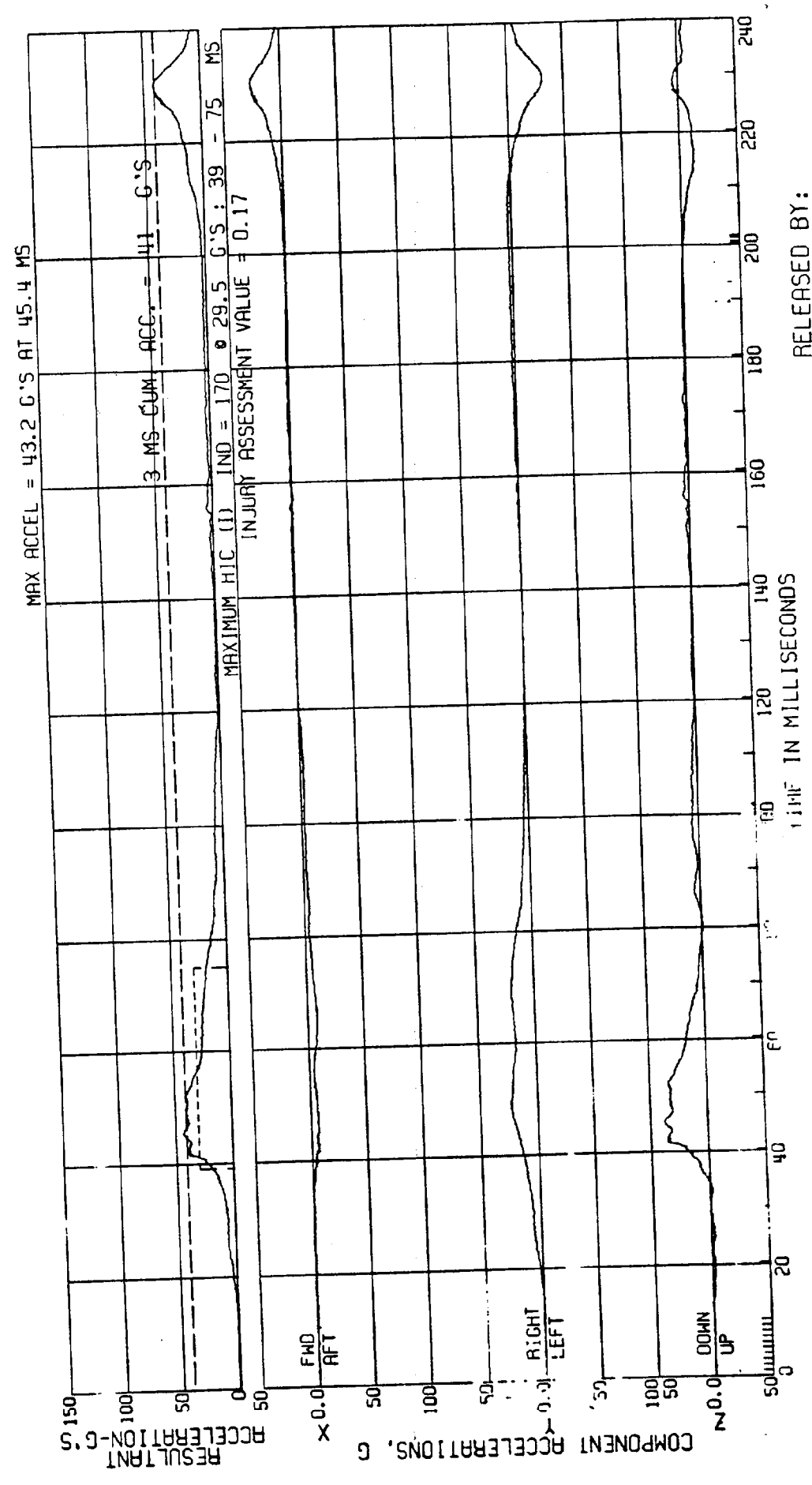
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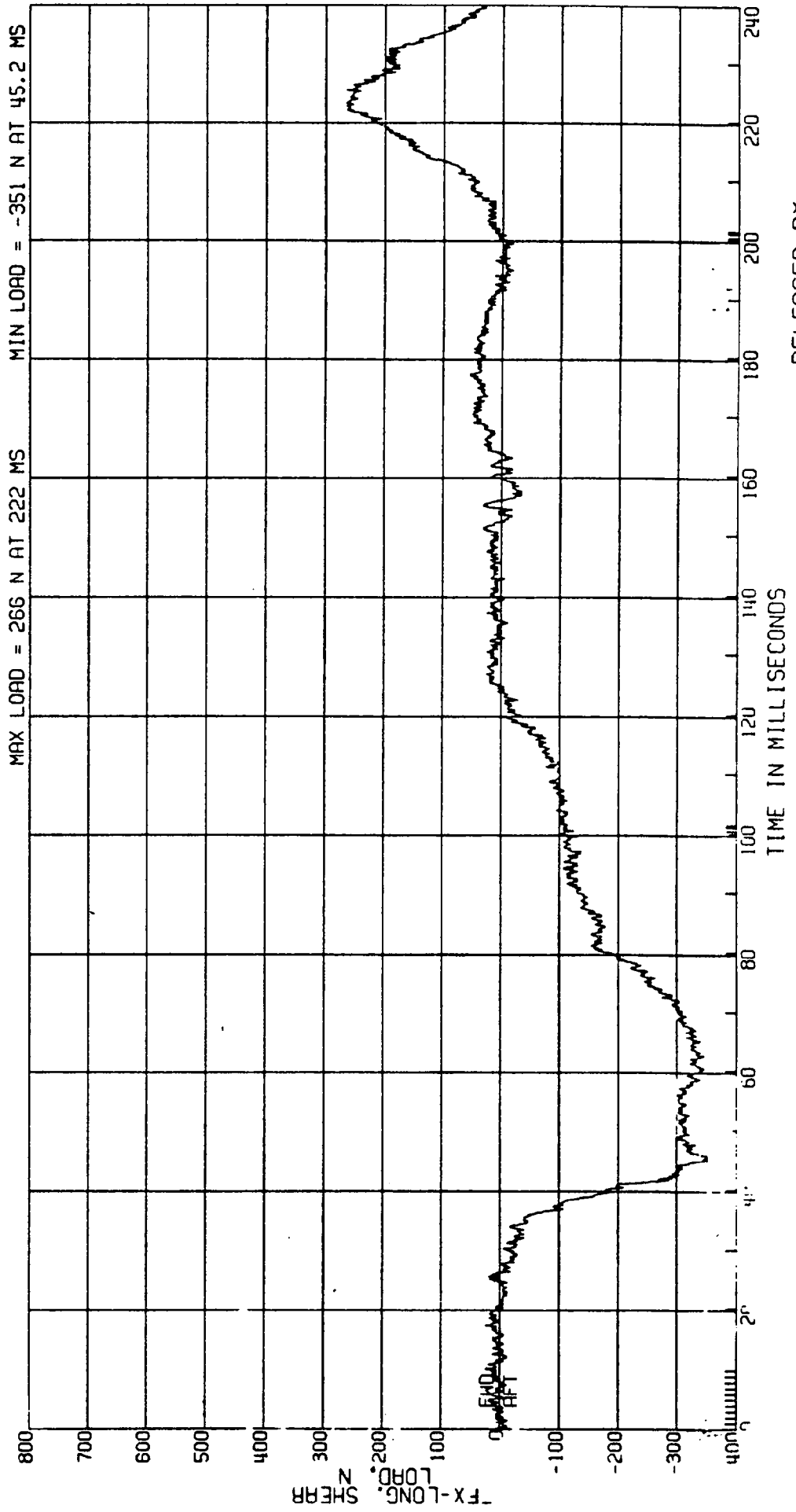
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C8012B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 6
 3868-905
 CPE MVMA 12P 2AF69
 FILEC DATA, SAE CLASS 1000
 DRIVER HEAD ACCEL.
 (HIC I LIMITED TO 36MS)



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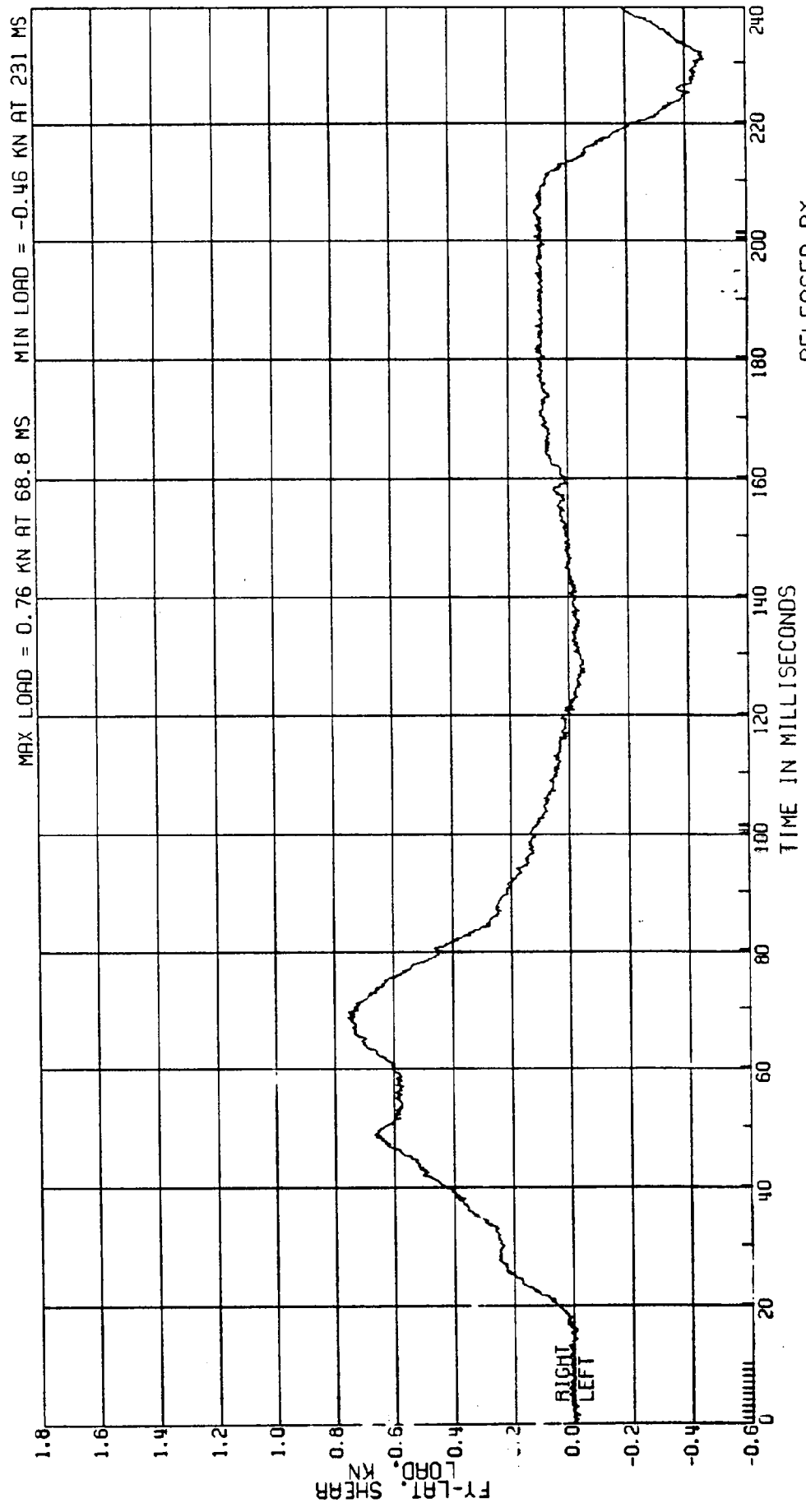
C8012B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 7
3868-905 ATD TYPE: BIOSID
CPE MVMA 12P 2AF69 DRIVER NECK LOADING ON HEAD, UPPER LOAD TEST DATE: 04-04-90
FLEC DATA, SAE CLASS 1000



RELEASED BY: 3 PROCESSED 3 MY 90 12:10

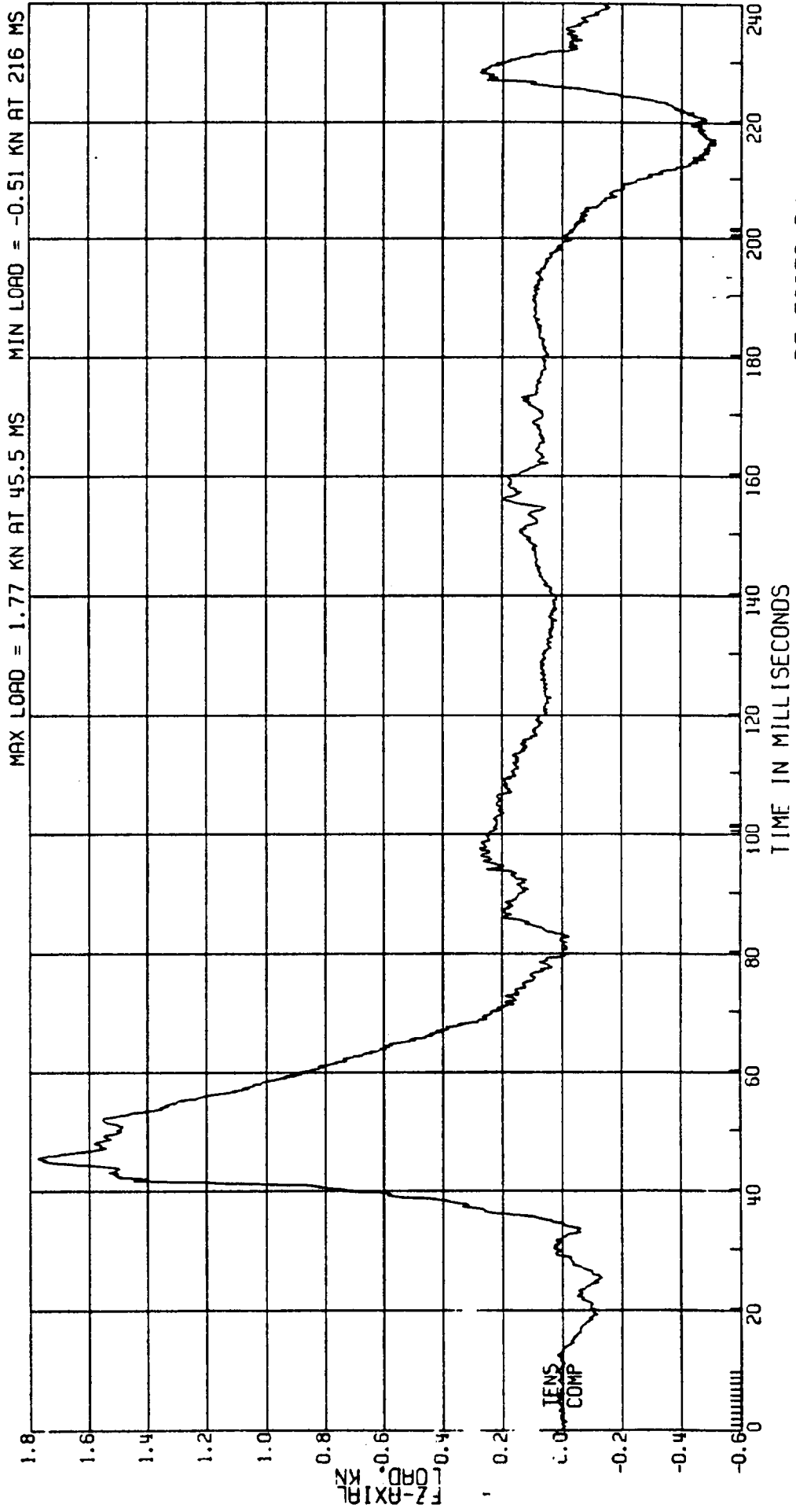
C80128 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 8
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 12P 2AF69 DRIVER NECK LOADING ON HEAD, UPPER LOAD TEST DATE:04-04-90
 ELEC DATA, SAE CLASS 1000

2 1 1



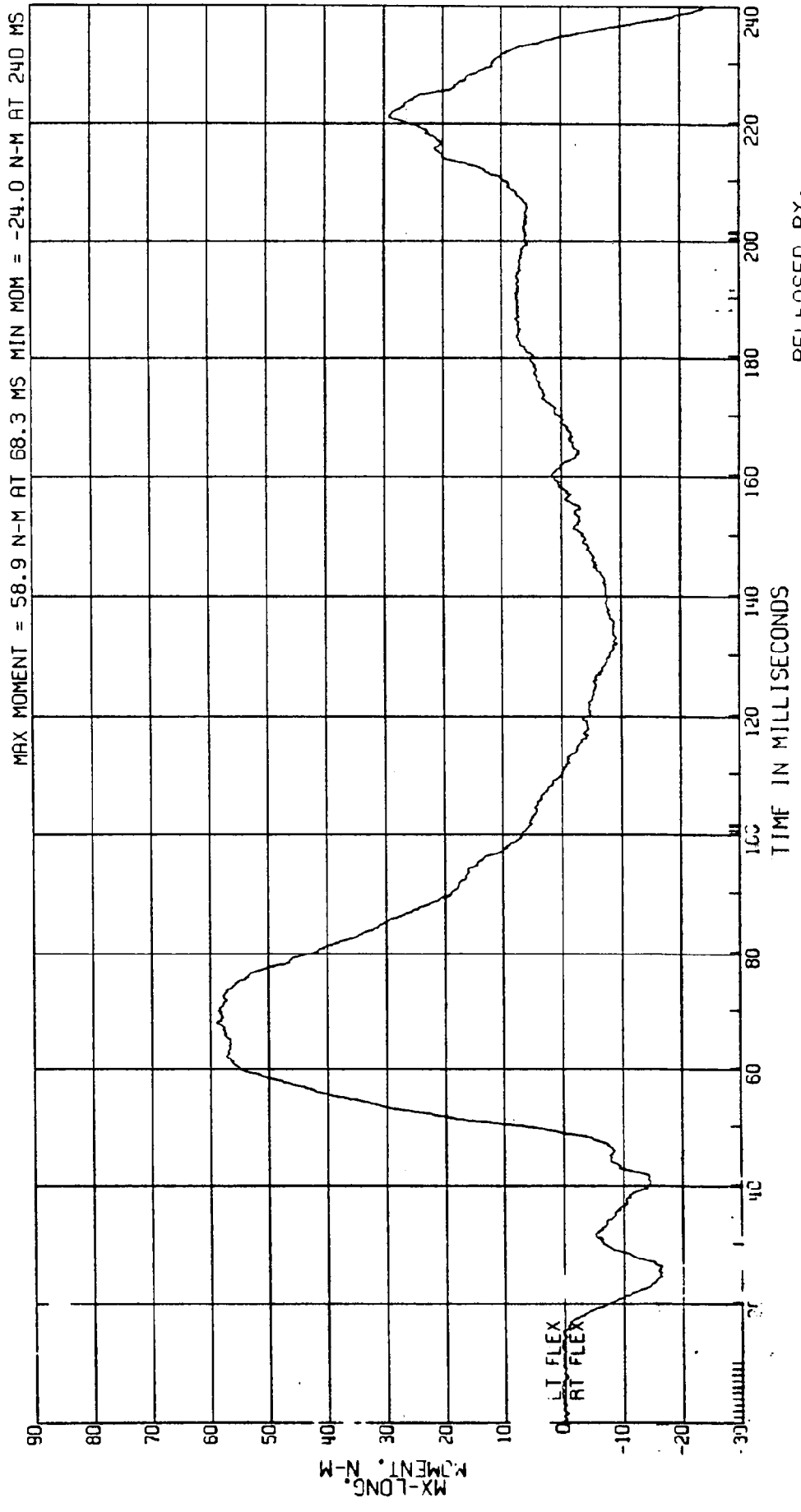
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 4 PROCESSED 3 MY 90 12:10

C80128 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 9
 3868-905
 MVMA 12P 2AF69 DRIVER NECK LOADING ON HEAD, UPPER LOAD
 CPE
 ELEC DATA, SAE CLASS 1000
 ATD TYPE: BIOSID
 TEST DATE: 04-04-90



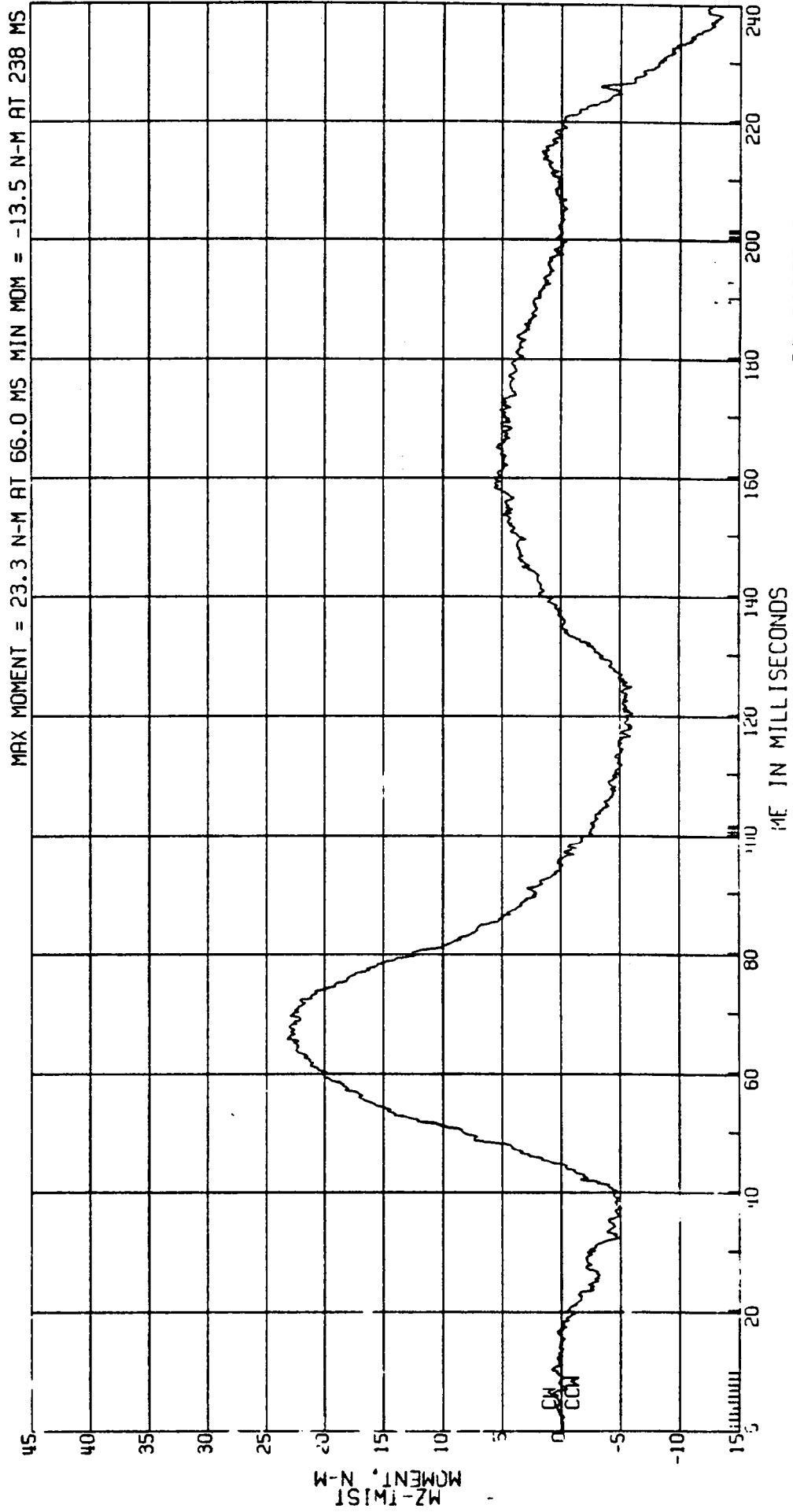
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C80128 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE / 0
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 12P 2AF69 DRIVER NECK LOADING ON HEAD, UPPER TEST DATE: 04-04-90
 ELEC DATA, SAE CLASS 600



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 6 PROCESSED 3 MY 90 12:10

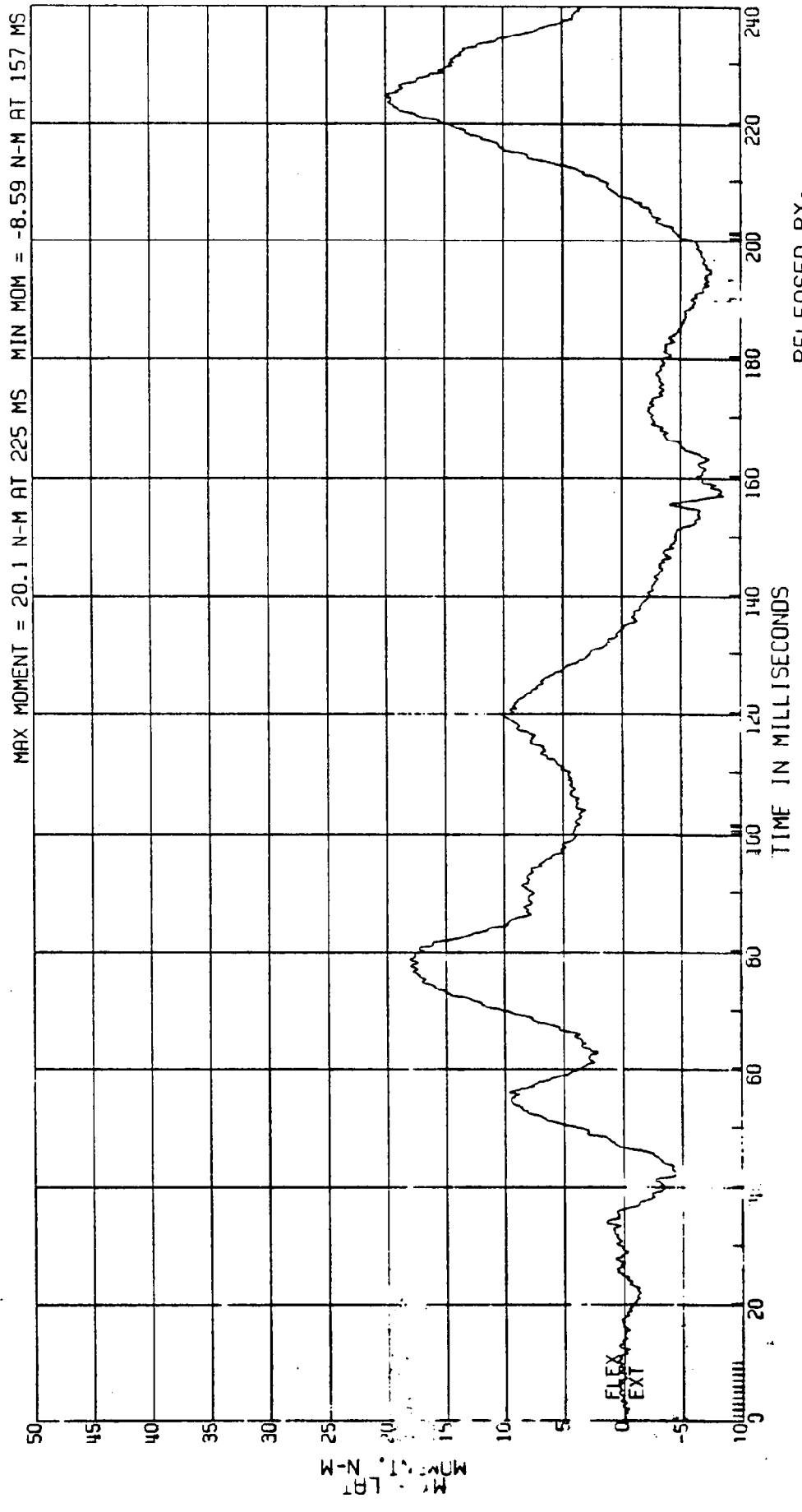
C80128 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE //
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 12P 2AF69 DRIVER NECK LOADING ON HEAD, UPPER
 ELEC DATA, SAE CLASS 600 TEST DATE:04-04-90



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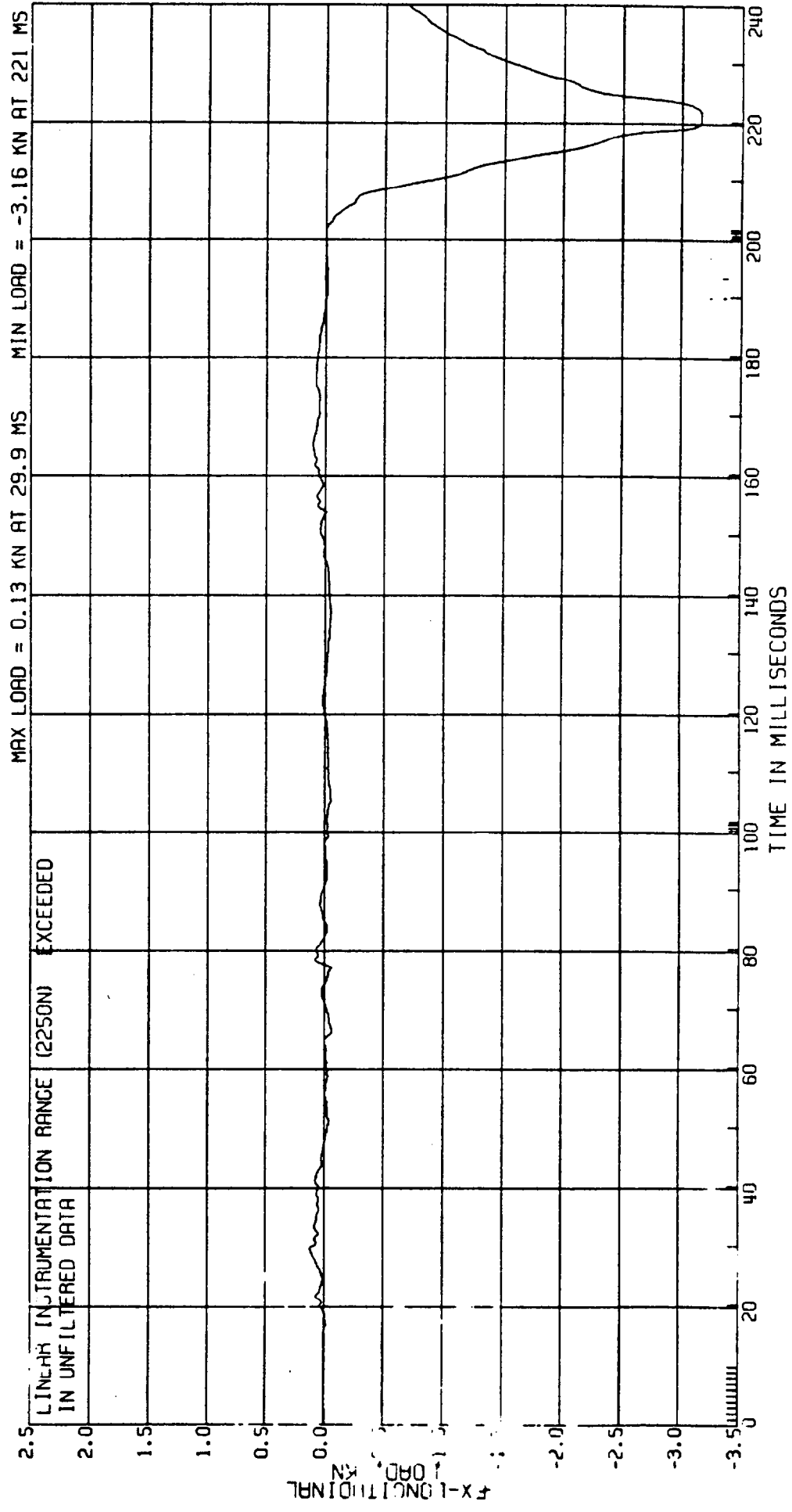
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C80128 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 12
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 12P 2AF69 DRIVER NECK LOADING ON HEAD TEST DATE:04-04-90
 ELEC DATA, SAE CLASS 600



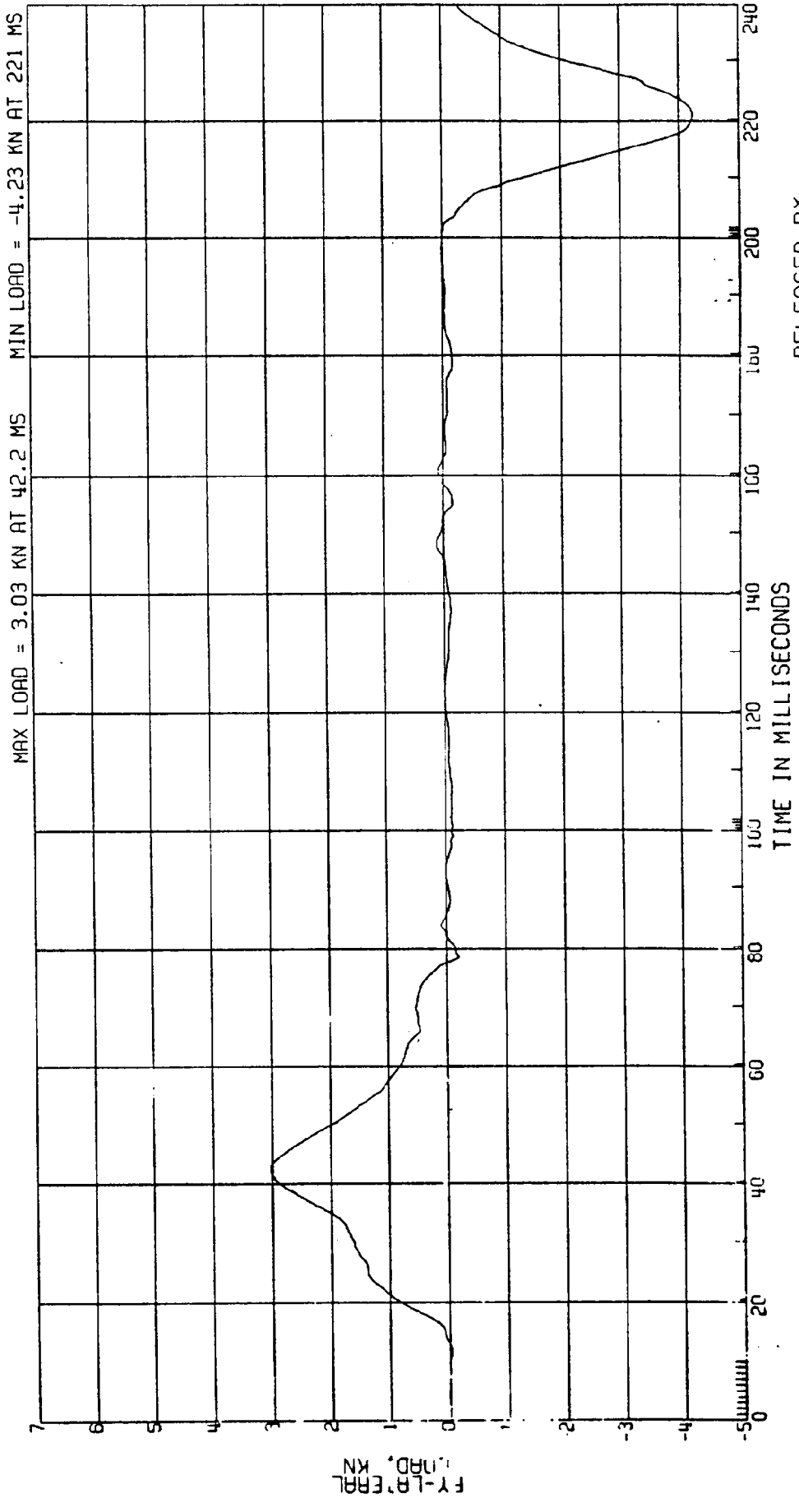
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C8012B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 13
 3868-905
 CPE MVMA 12P 2AF69
 ELEC DATA, SAE CLASS 180
 DRIVER SHOULDER LOAD
 ATD TYPE: BIOSID
 TEST DATE: 04-04-90



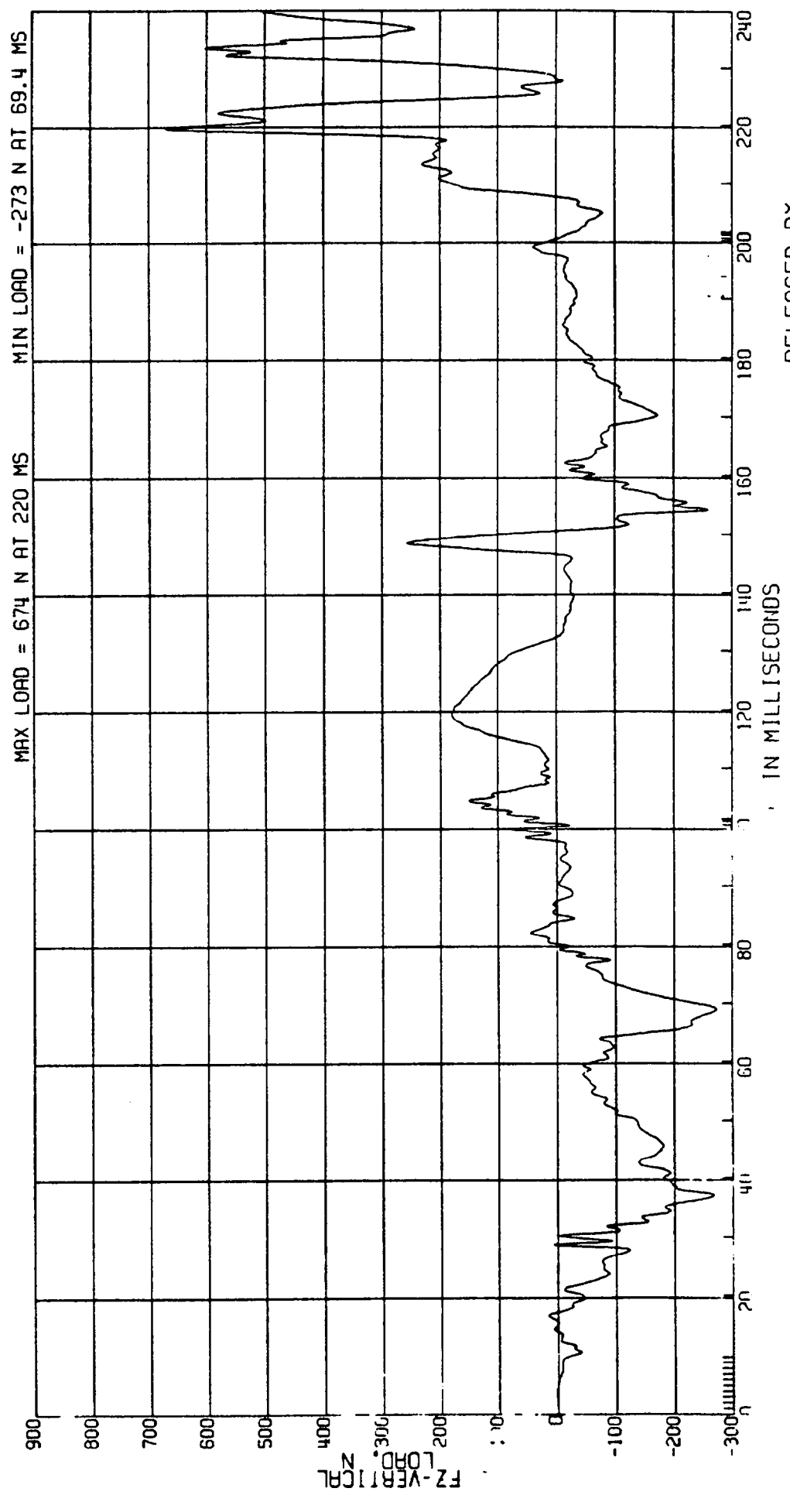
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C80128 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 14
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 12P 2AF69 DRIVER SHOULDER LOAD TEST DATE:04-04-90
 ELEC DATA, SAE CLASS 180



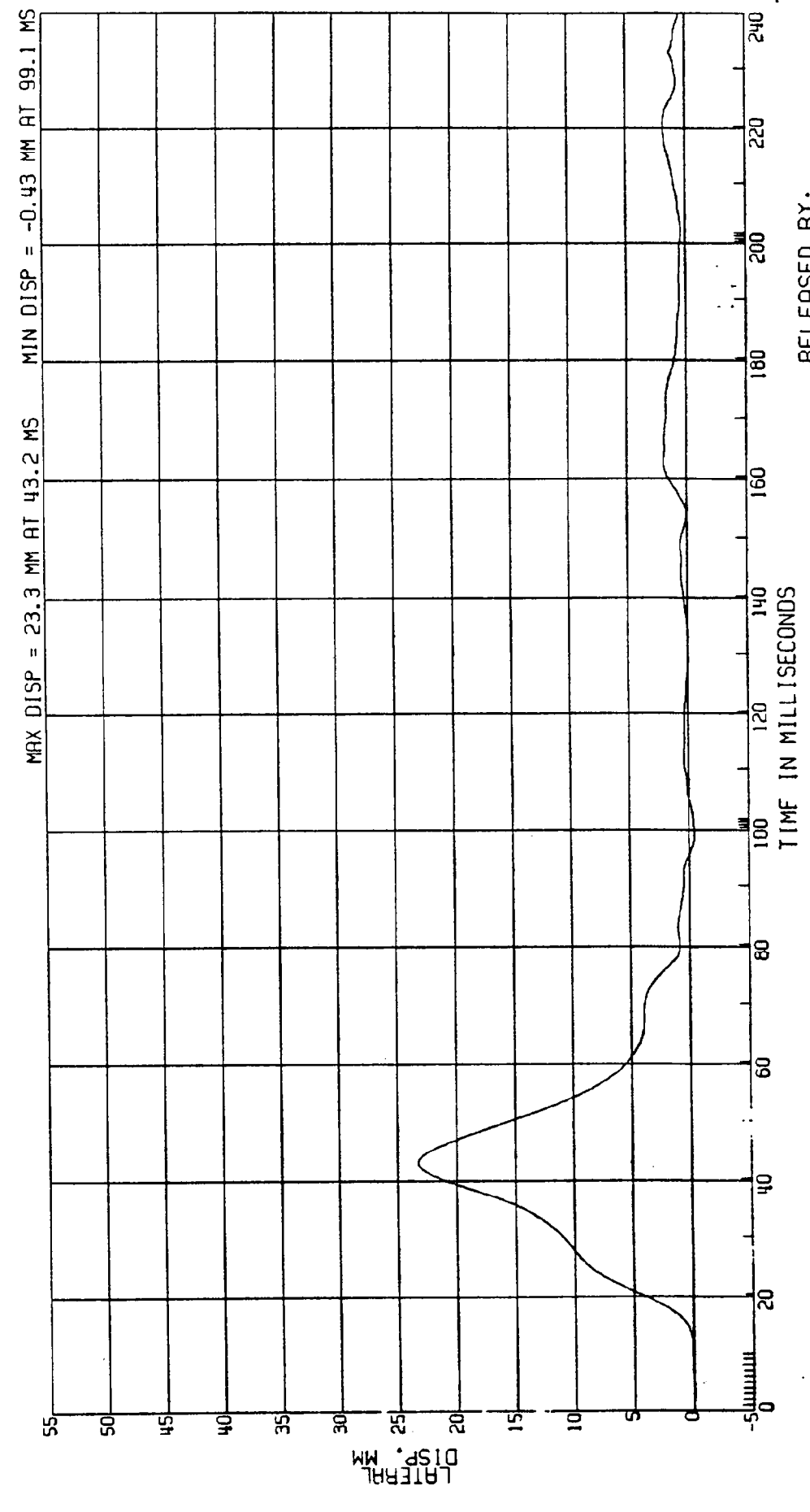
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C80128 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 15
 3868-905 AID TYPE: BIOSID
 CPE MVMA 12P 2AF69 DRIVER SHOULDER LOAD
 ELEC DATA, SAE CLASS 180 TEST DATE:04-04-90



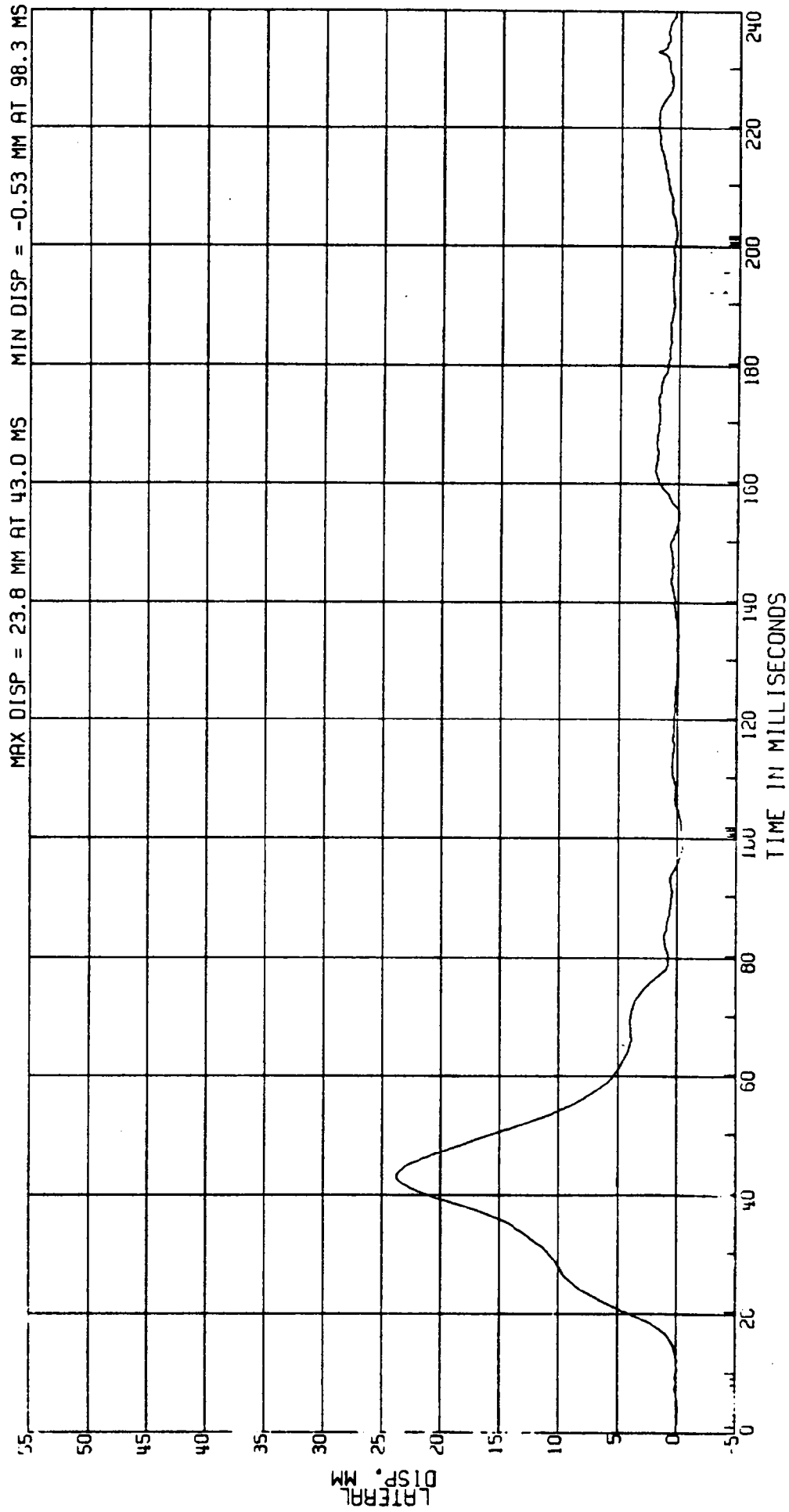
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C80128 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE /6
 3868-905 MVMA 12P 2AF69
 CPE DRIVER SHOULDER DISP.
 ELEC DATA, SAE CLASS 60



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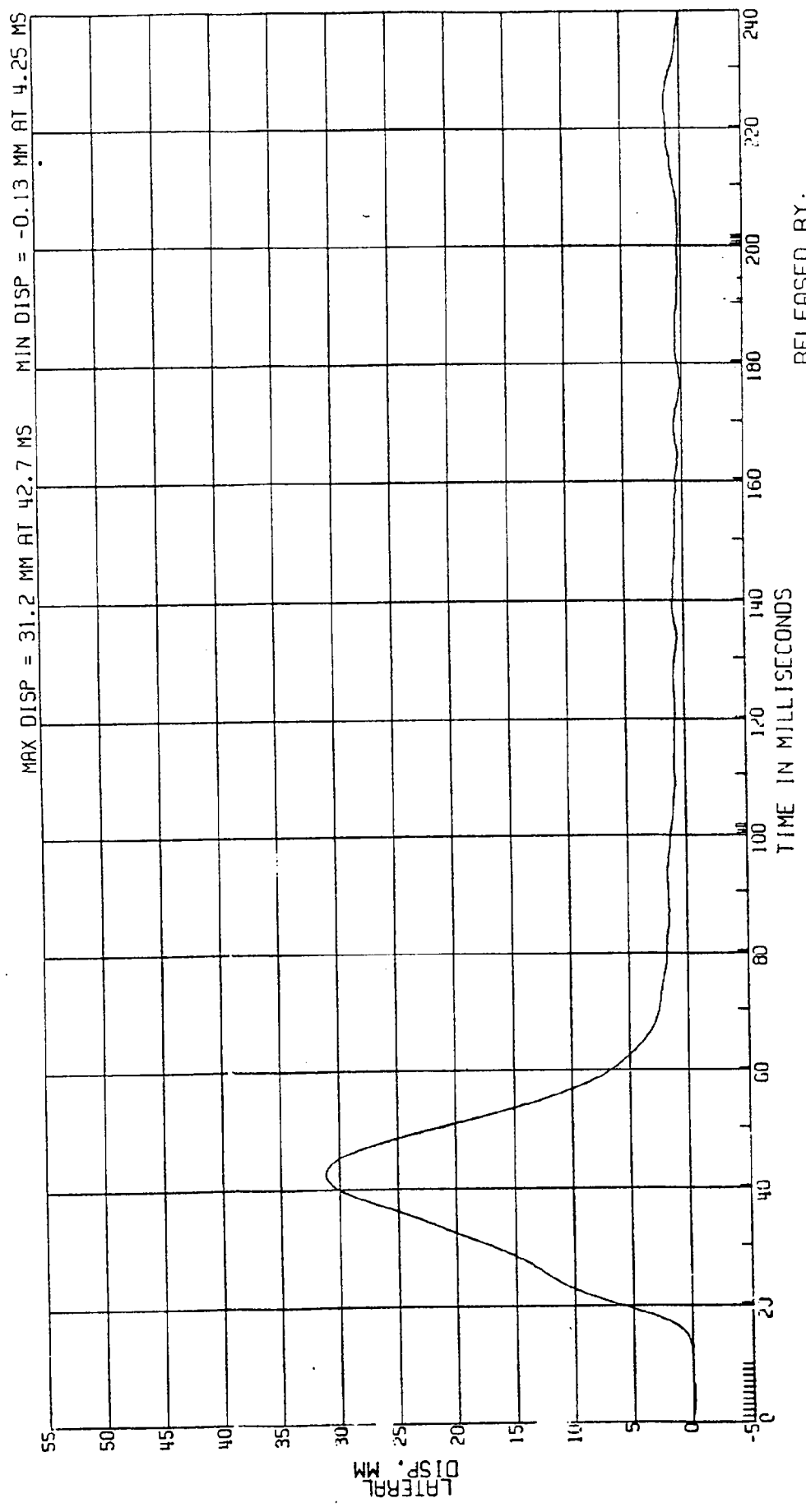
C80128 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 17
3868-905 ATD TYPE: BIOSID
CPE MVMA 12P 2AF69 DRIVER SHOULDER DISP.
ELEC DATA, SAE CLASS 180 TEST DATE:04-04-90



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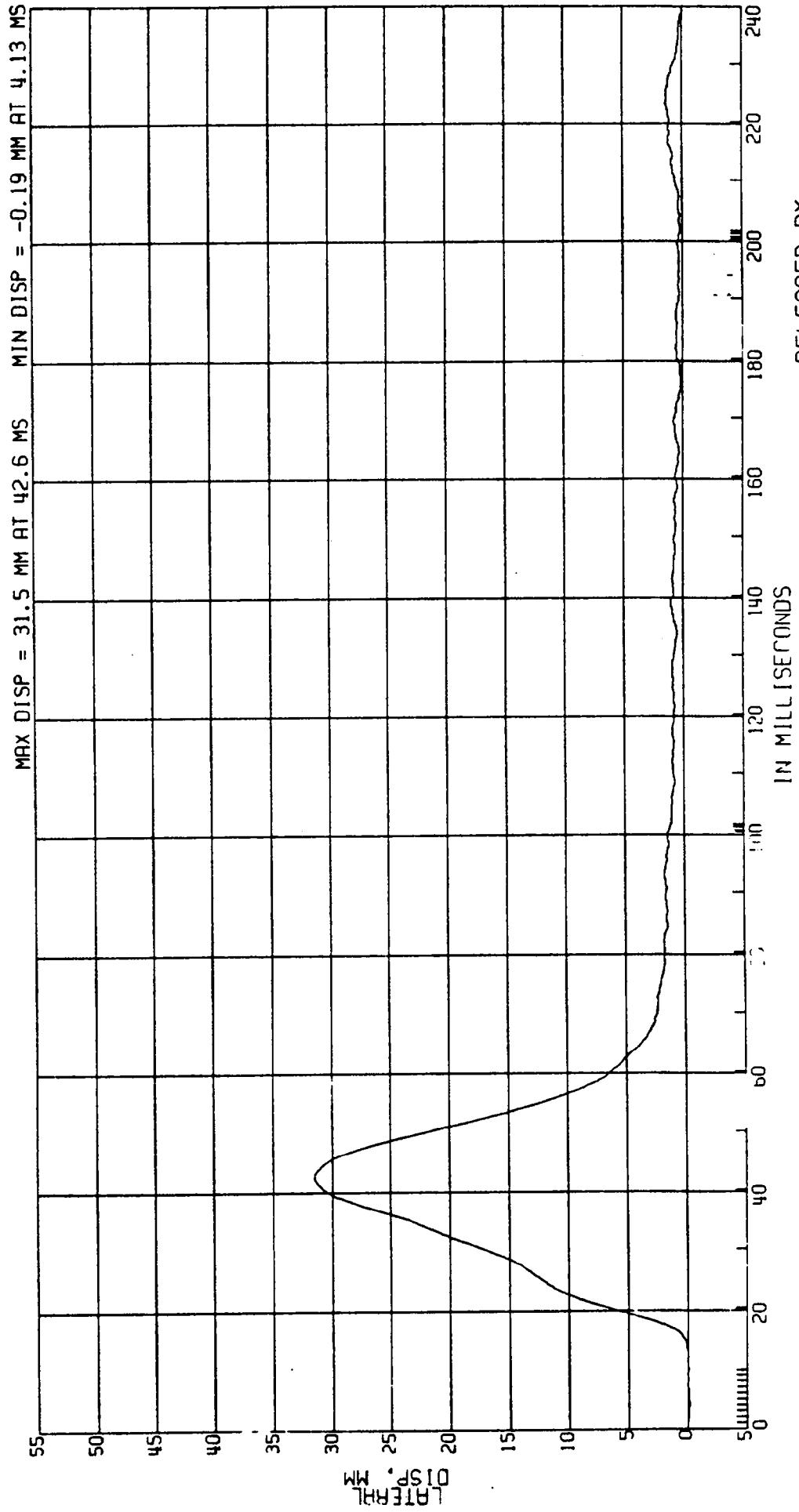
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C80128 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 18
3868-905 ATD TYPE: BIOSID
CPE MVMA 12P 2AF69 DRIVER FIRST THORACIC RIB DISP. TEST DATE: 04-04-90
ELEC DATA, SAE CLASS 60



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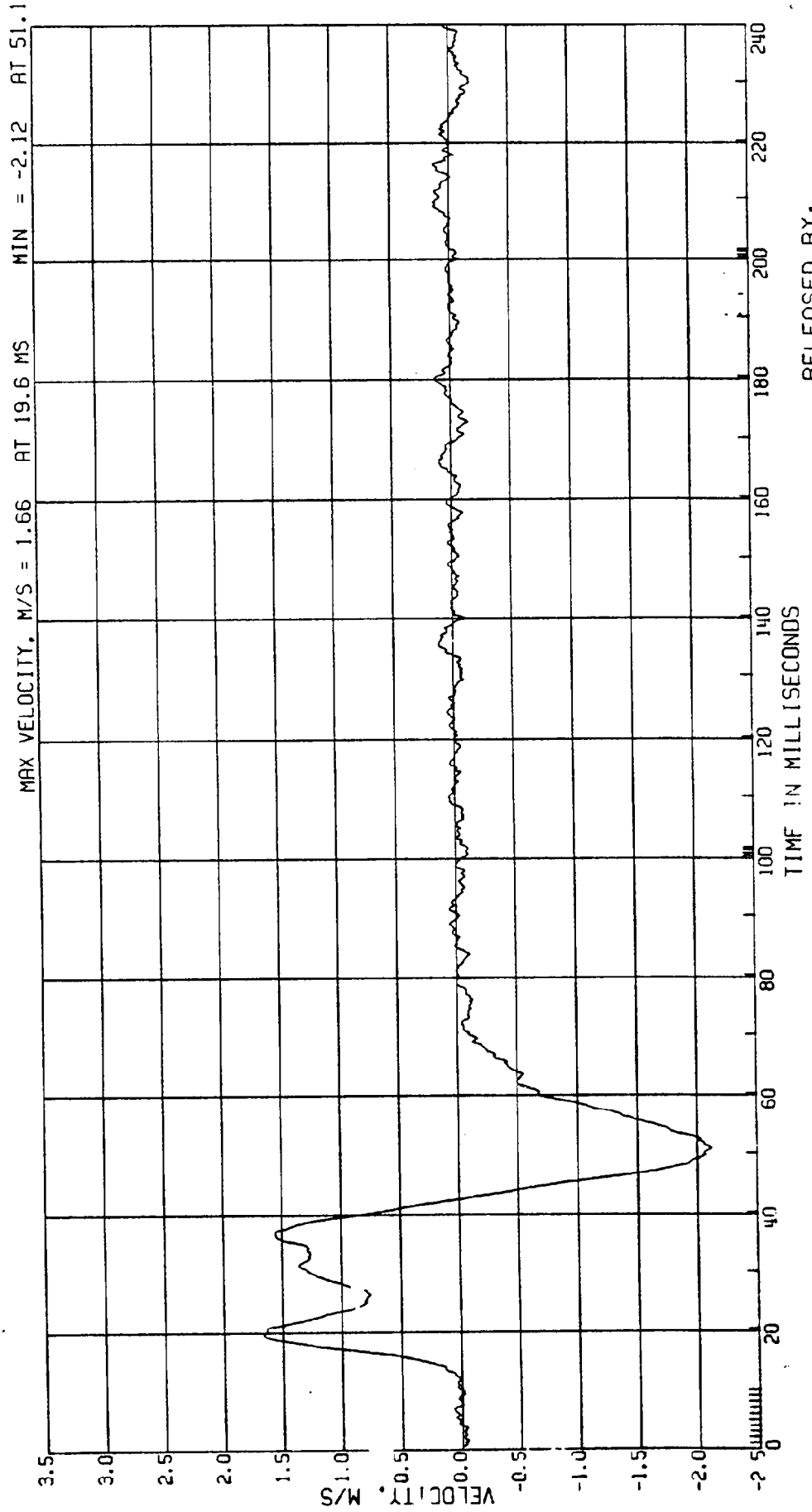
C80128 L. SIDE IMPACT - 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 19
3868-905 ATD TYPE: BIOSID
CPE MVMA 12P 2AF69 DRIVER FIRST THORACIC RIB DISP.
ELEC DATA, SAE CLASS 180 TEST DATE: 04-04-90



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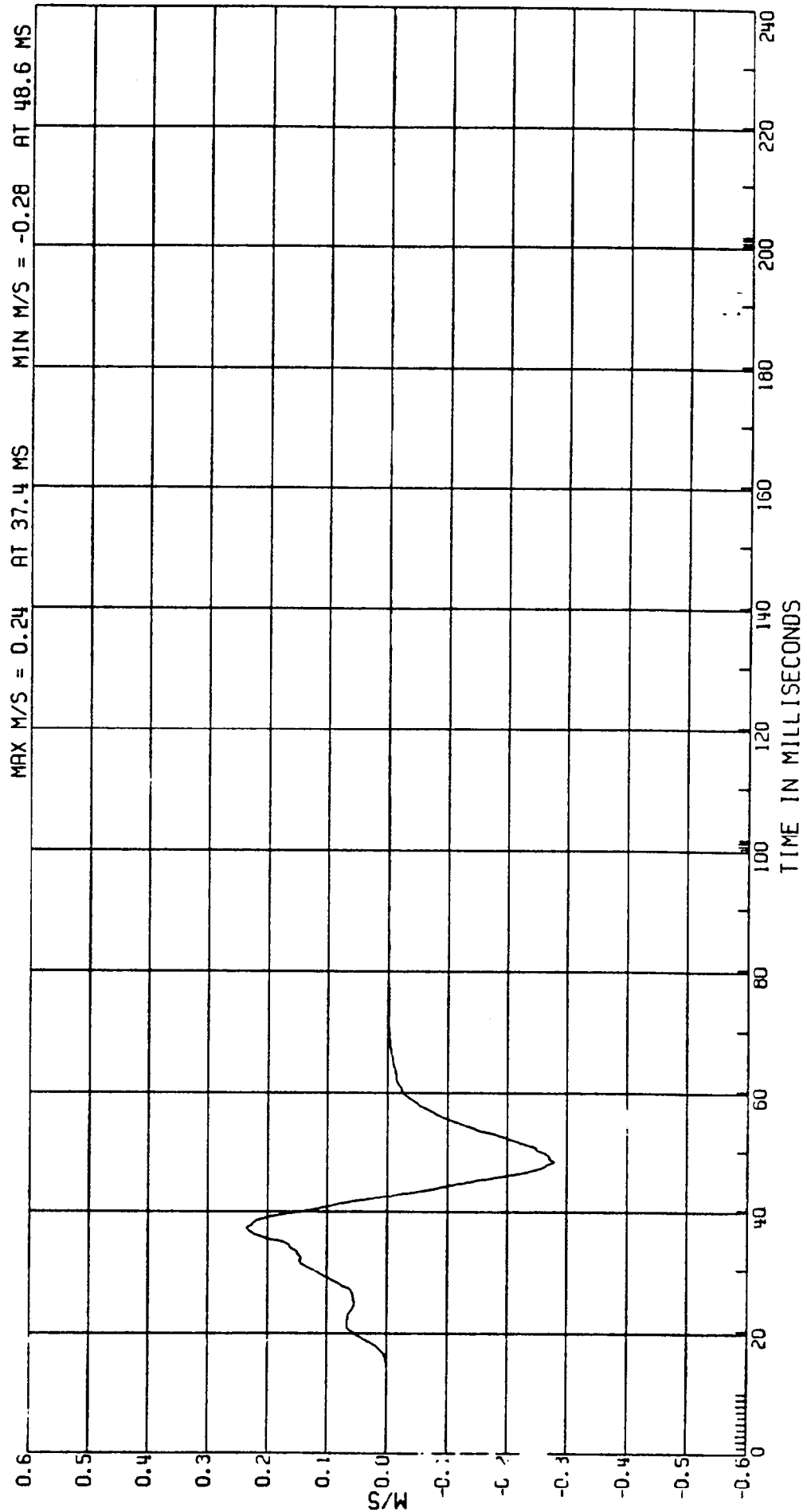
15 PROCESSED 3 MY 90 12:10

C80128 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 20
3868-905 ATD TYPE: BIOSID
CPE MVMA 12P 2AF69 DRIVER 1ST THORACIC RIB VELOCITY TEST DATE:04-04-90
ELEC DATA, SAE CLASS 60 (DIFF OF 1ST RIB DISP)



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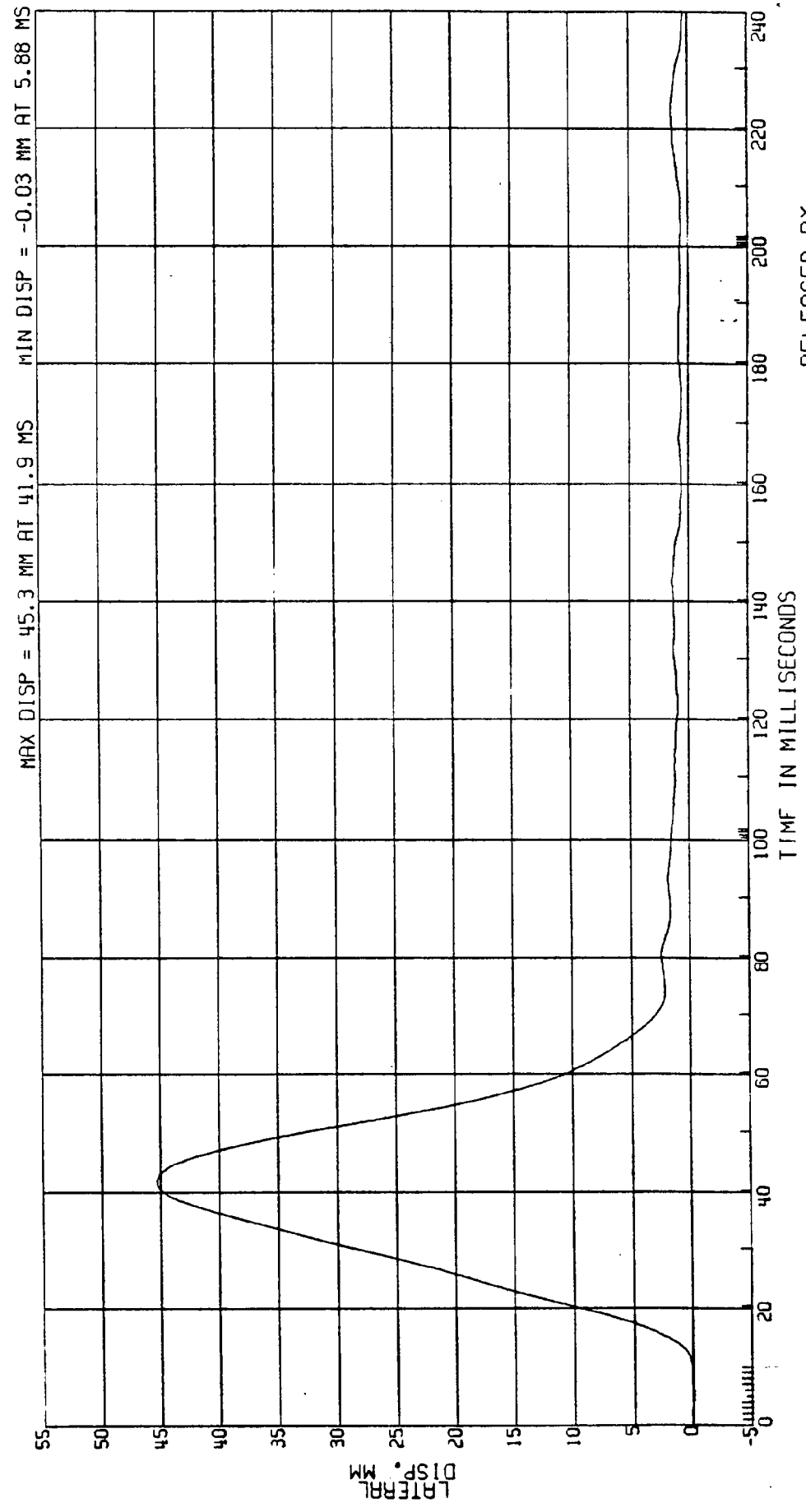
C80128 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 2/
 3868-905
 CPE MVMA 12P 2AF69
 ELEC DATA, SAE CLASS 60
 VISCOUS RESPONSE OF 1ST THORACIC RIB
 (1ST RIB DISP*1ST RIB VEL)/175MM
 ATD TYPE: BIOSID
 TEST DATE: 04-04-90



RELEASED BY:
 17 PROCESSED 3 MY 90 12:10

C80128 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 22
3868-905 ATD TYPE: BIOSID
CPE MVMA 12P 2AF69 DRIVER SECOND THORACIC RIB DISP. TEST DATE:04-04-90
ELEC DATA, SAE CLASS 60

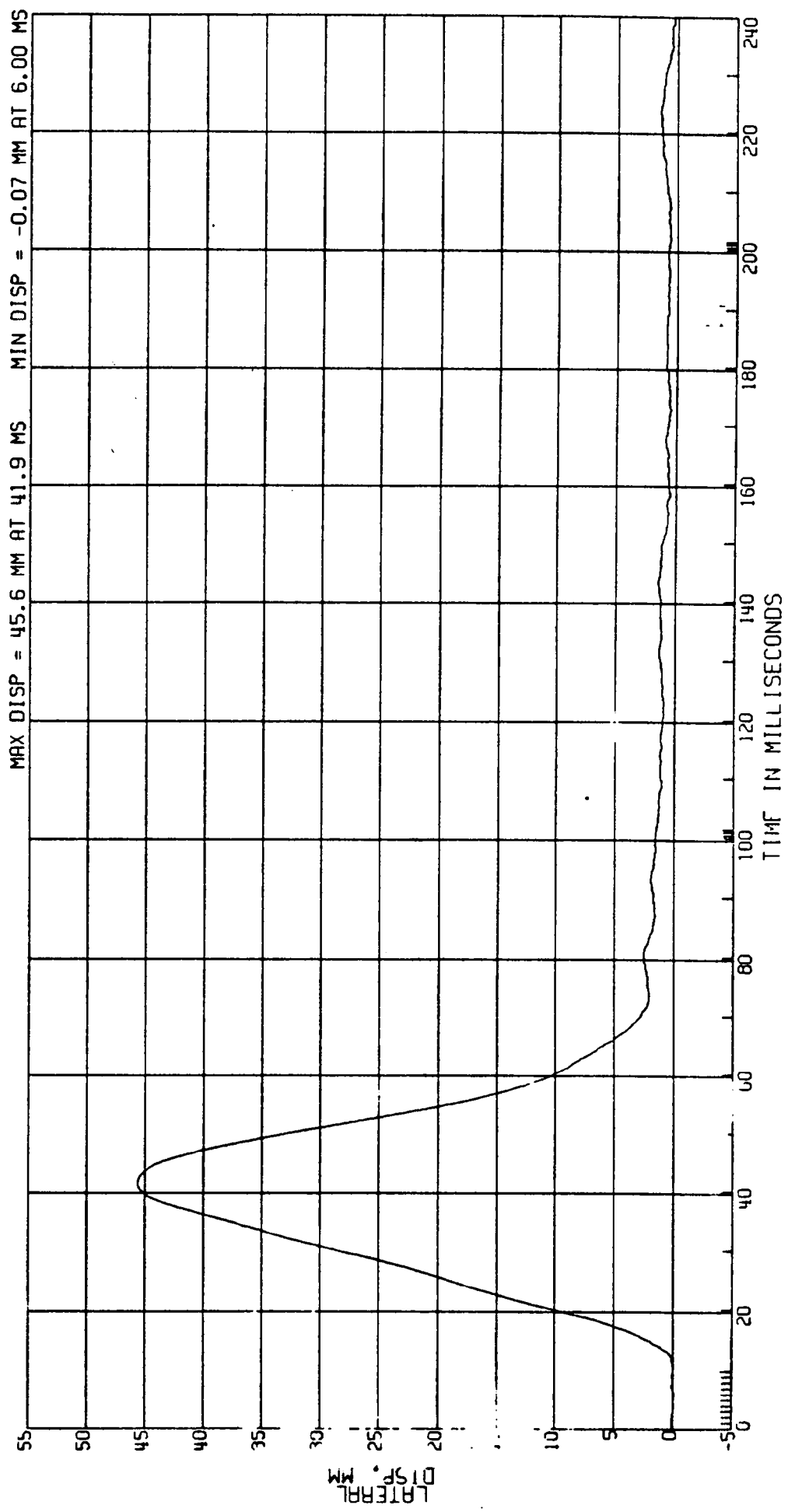
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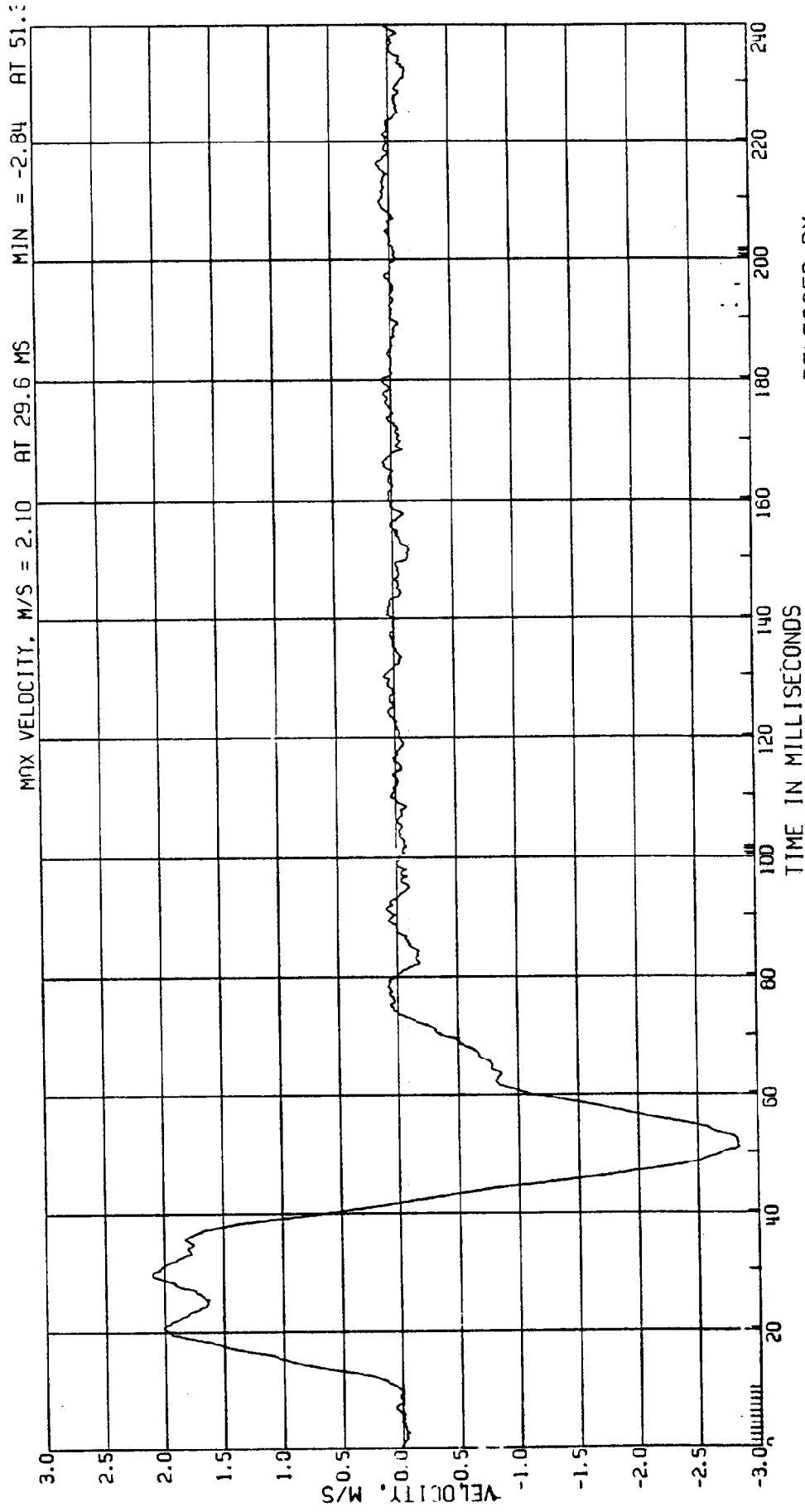
C80128 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 23
3868-905
CPE MVMA 12P 2AF69
E-LEC DATA, SAE CLASS 180

ATD TYPE: BIOSID
TEST DATE: 04-04-90



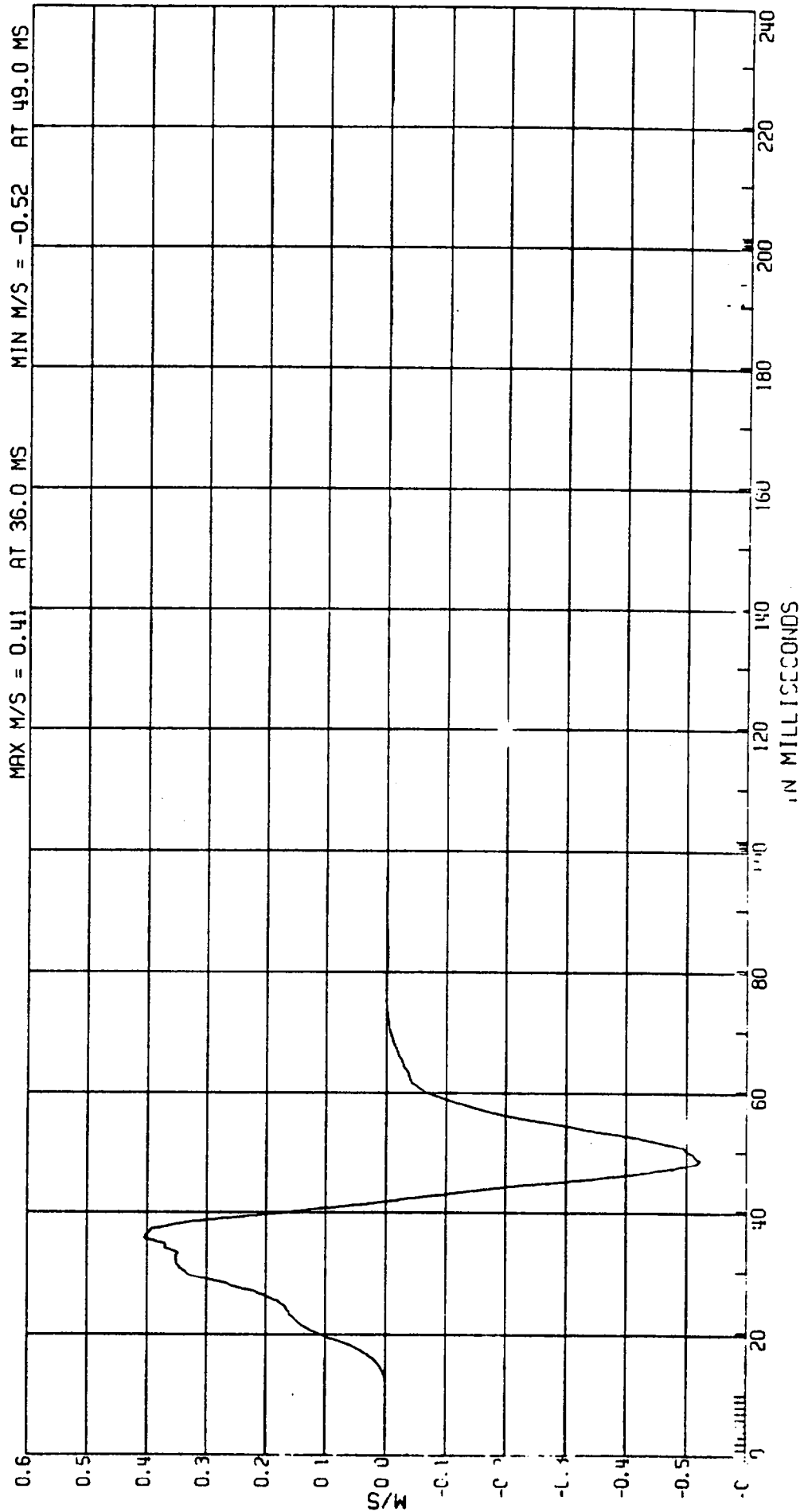
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C80128 L. SIDE IMPACT - 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5 KM/H FIGURE 24
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 12P 2AF69 TEST DATE: 04-04-90
 ELEC DATA, SAE CLASS 60 DRIVER 2ND THORACIC RIB VELOCITY
 (DIFF OF 2ND RIB DISP)



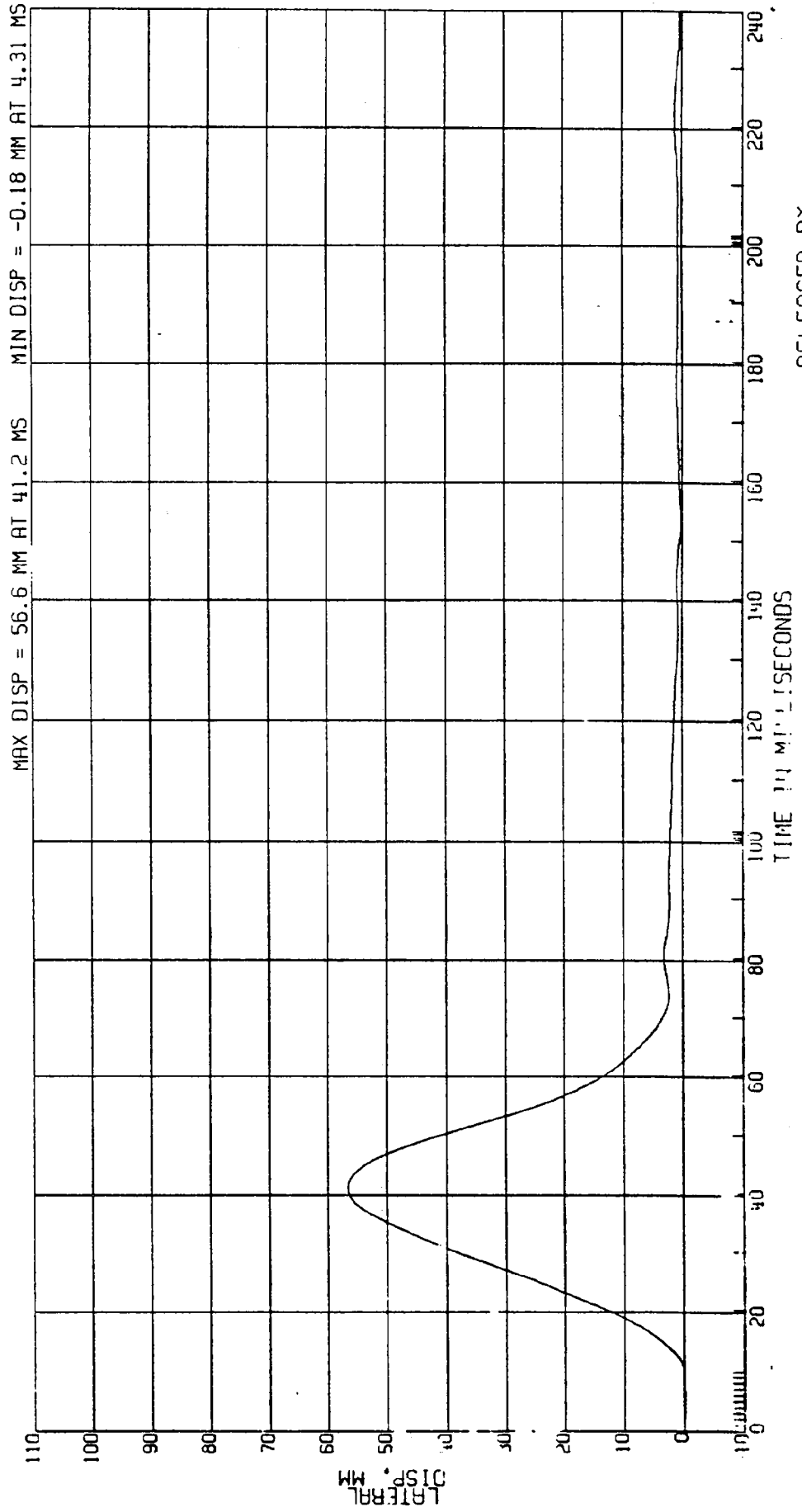
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C80128 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 25
 3868-905
 CPE MVMA 12P 2AF69
 ELEC DATA, SAE CLASS 60
 VISCOUS RESPONSE OF 2ND THORACIC RIB
 (2ND RIB DISP*2ND RIB VEL)/175MM
 ATD TYPE: BIOSID
 TEST DATE: 04-04-90



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 21 PROCESSED 3 MT 90 12:11

C80128 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 26
3868-905
CPE MVMA 12P 2AF69
ELEC DATA, SAE CLASS 60
DRIVER THIRD THORACIC RIB DISP.
ATD TYPE: BIOSID
TEST DATE: 04-04-90



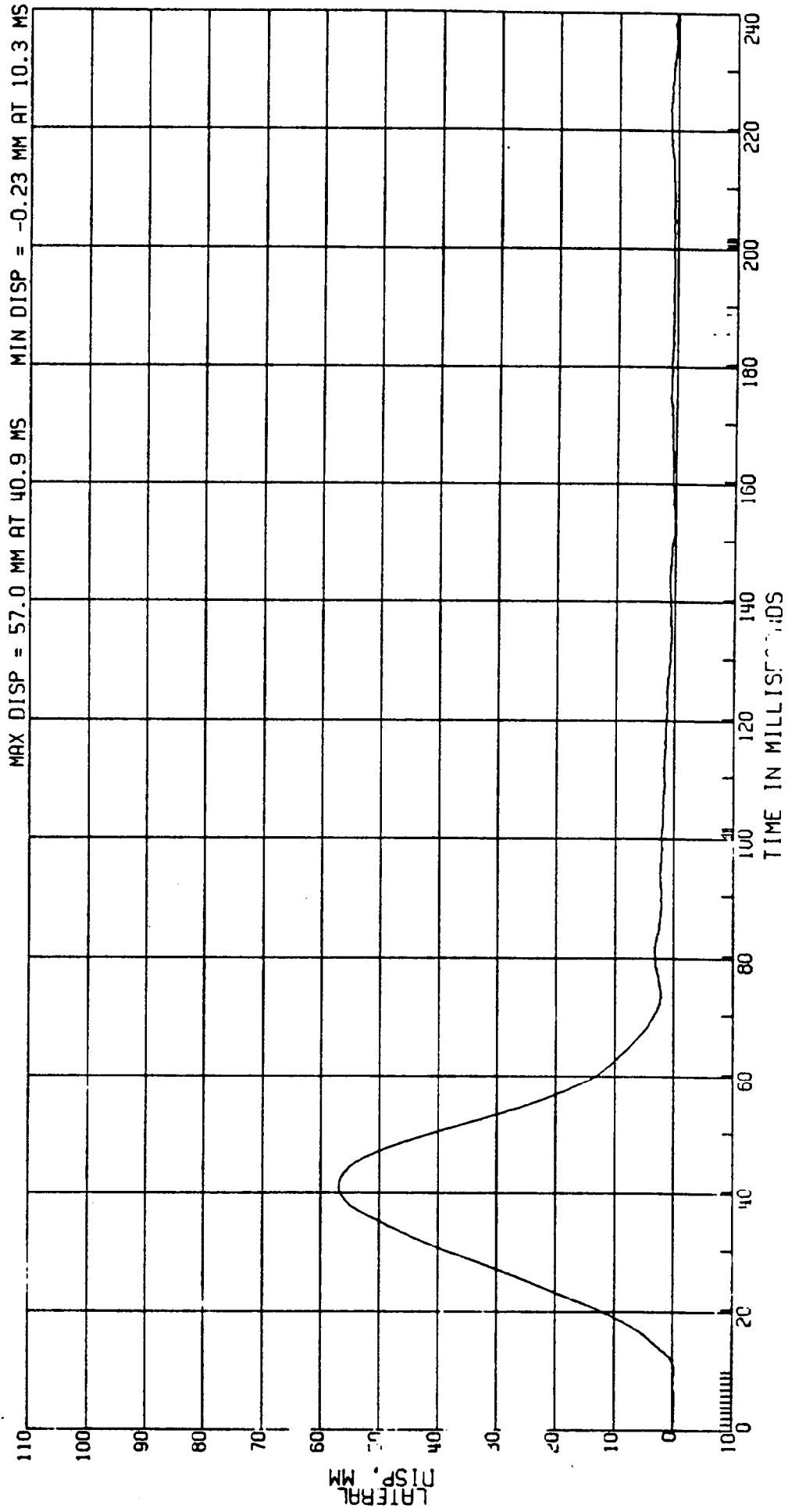
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C80128 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 27
3868-905
CPE MVMA 12P 2AF69
ELEC DATA, SAE CLASS 180

DRIVER THIRD THORACIC RIB DISP.

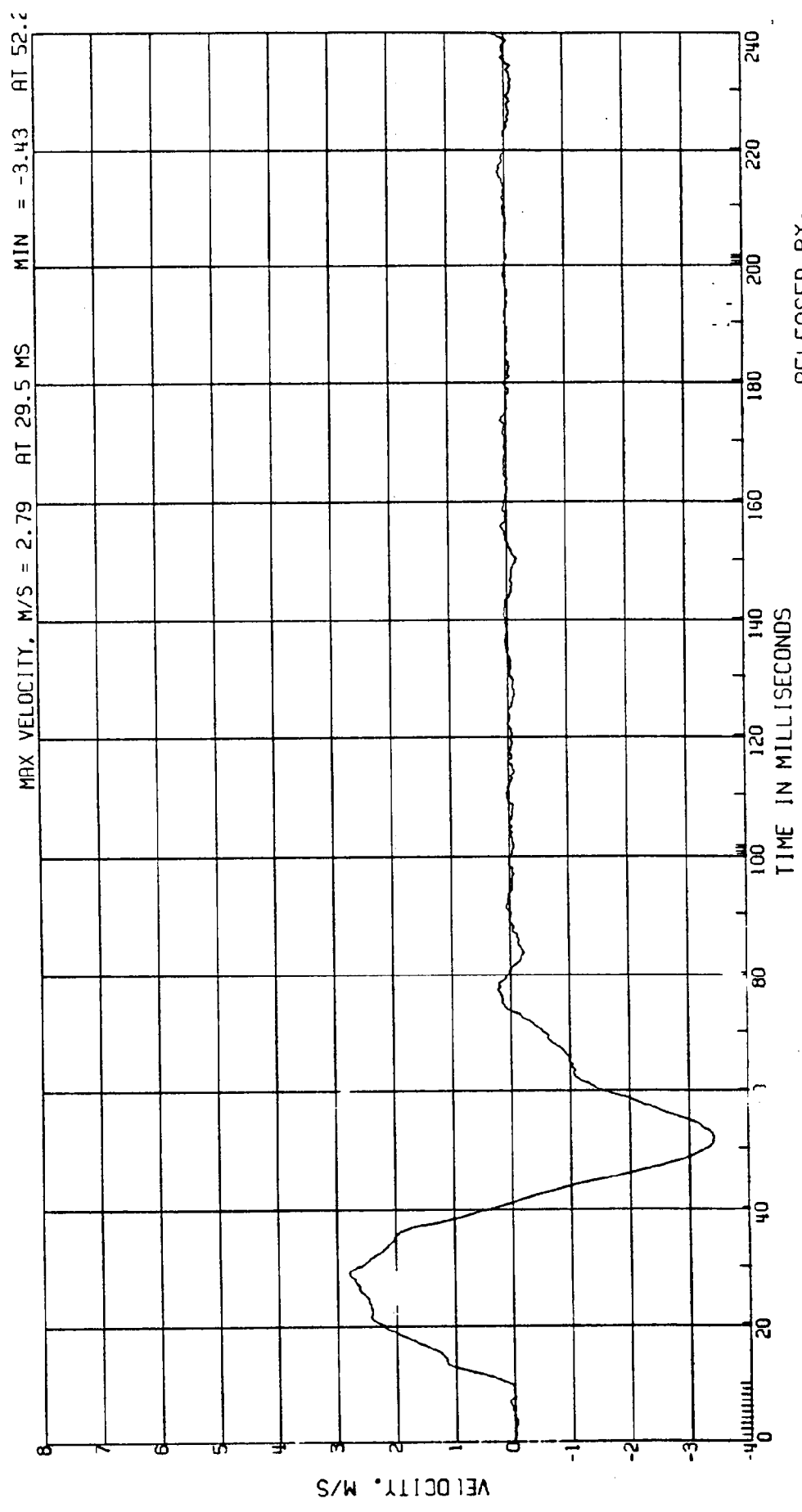
ATD TYPE: BIOSID
TEST DATE: 04-04-90



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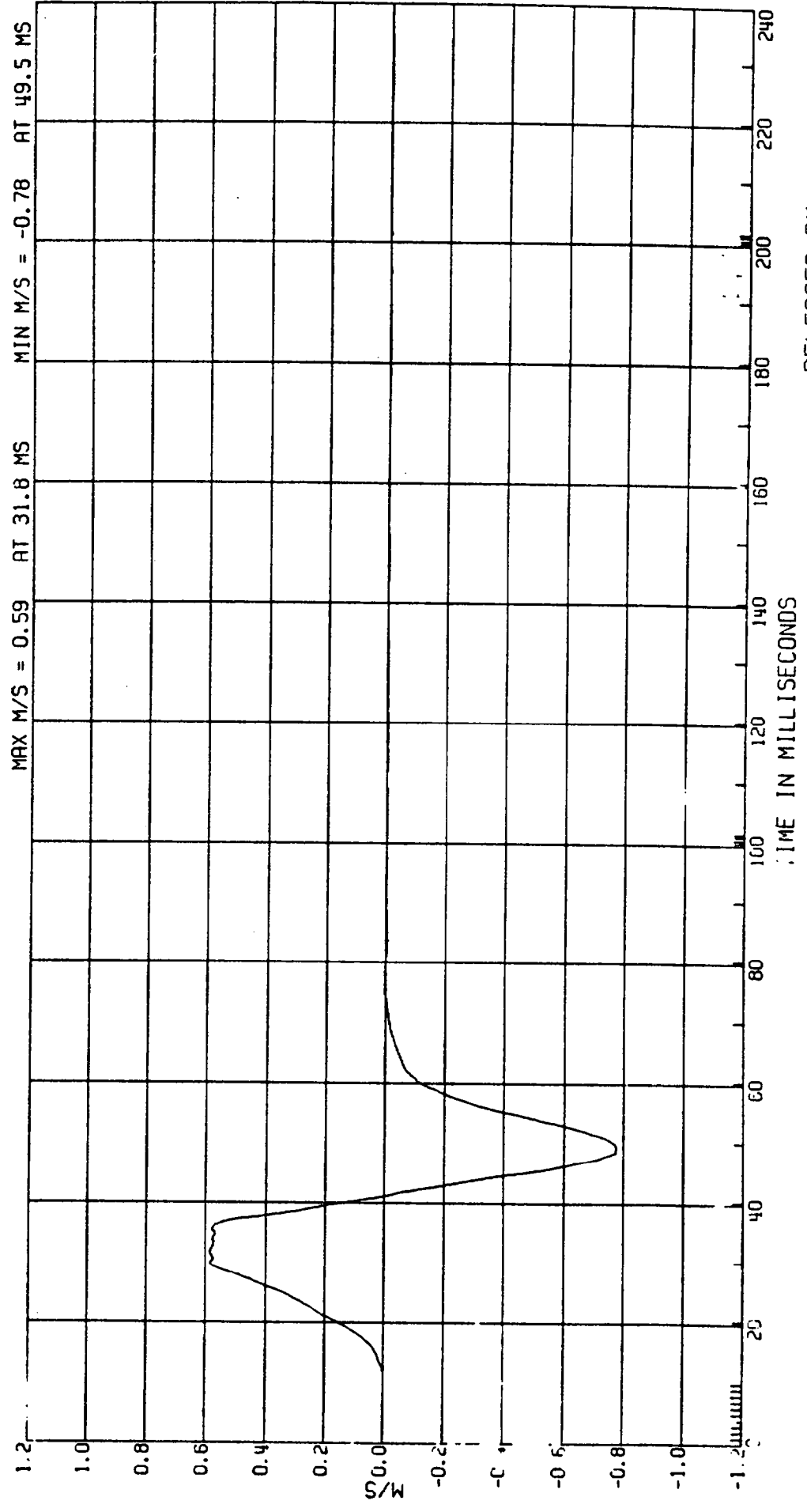
23 PROCESSED 3 MY 90 12:11

C80128 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PAK VEHICLE 53.5KM/H FIGURE 28
3868-905 ATD TYPE: BIOSID
CPE MVMA 12P 2AF69 TEST DATE: 04-04-90
ELEC DATA, SAE CLASS 60 DRIVER 3RD THORACIC RIB VELOCITY
(DIFF OF 3RD RIB DISP)



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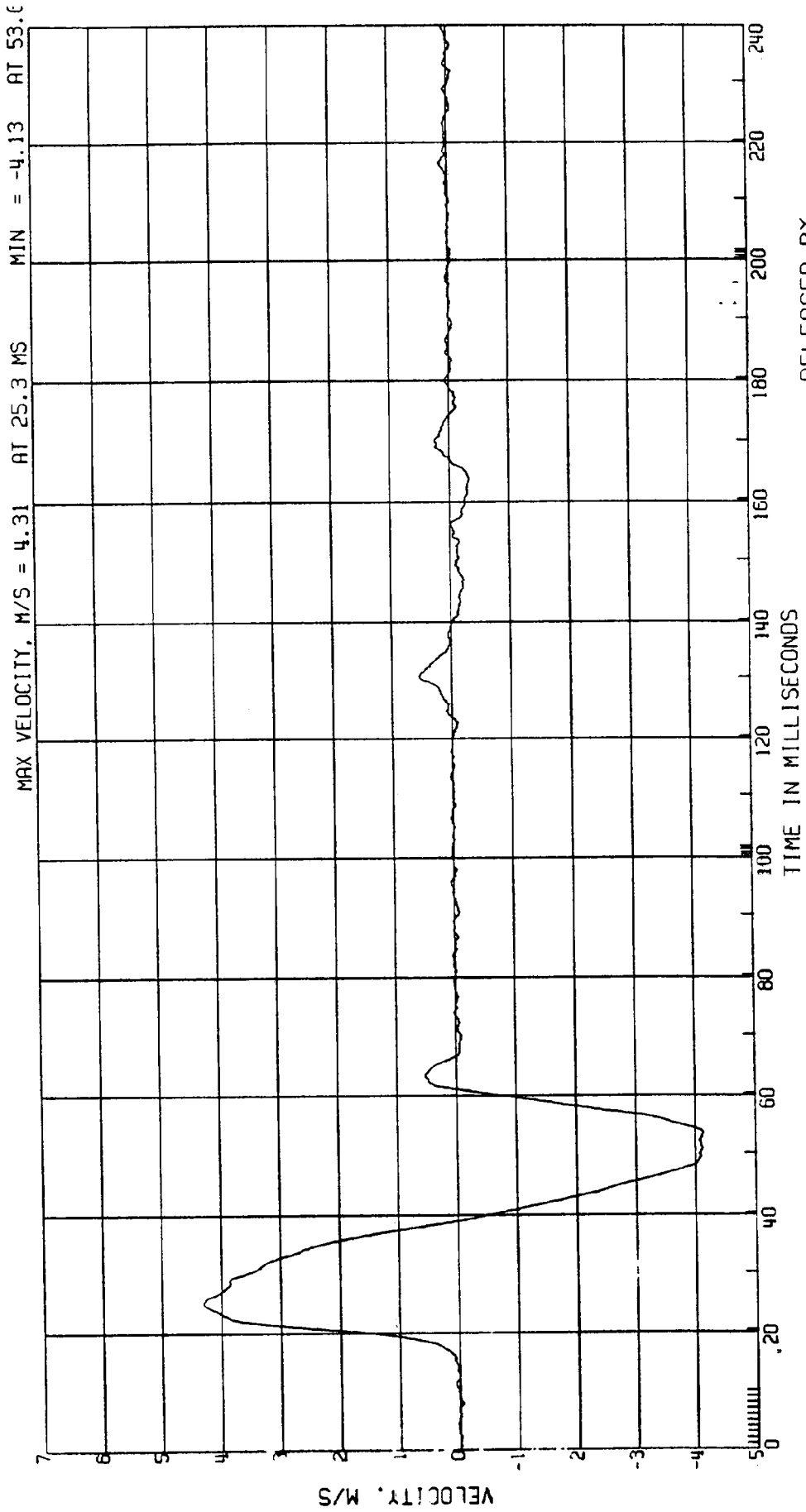
C80128 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 29
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 12P 2AF69 TEST DATE: 04-04-90
 ELEC DATA, SAE CLASS 60 (3RD RIB DISP*3RD RIB VEL) / 175MM



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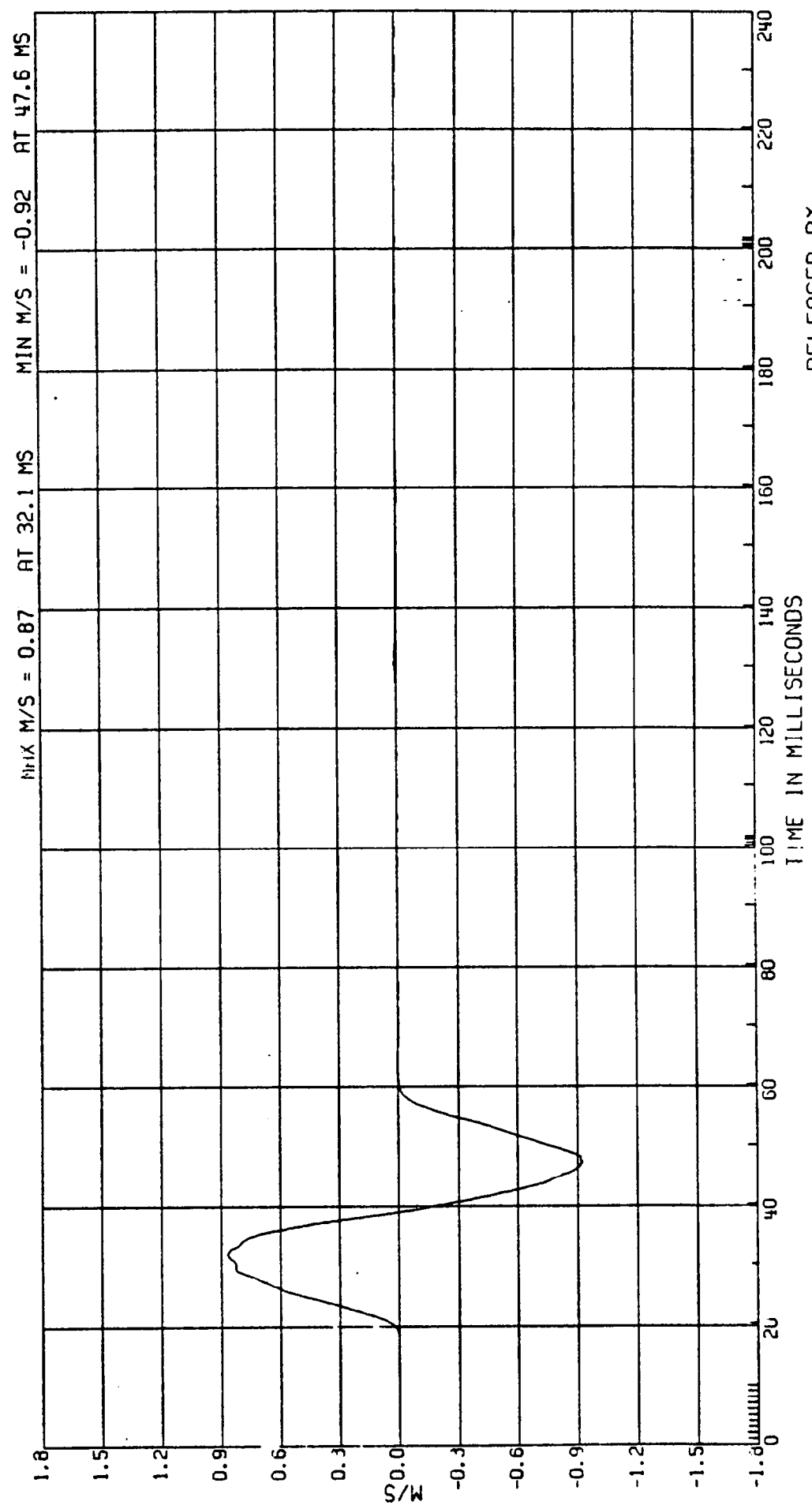
C80128 L. SIDE IMPACT - 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 30
3868-905 MVMA 12P 2AF69 ATD TYPE: BIOSID
CPE DRIVER 1ST ABDOMINAL RIB VELOCITY TEST DATE: 04-04-90
ELEC DATA, SAE CLASS 60 (DIFF OF 1ST RIB DISP)

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28 PROCESSED 3 MY 90 12:11

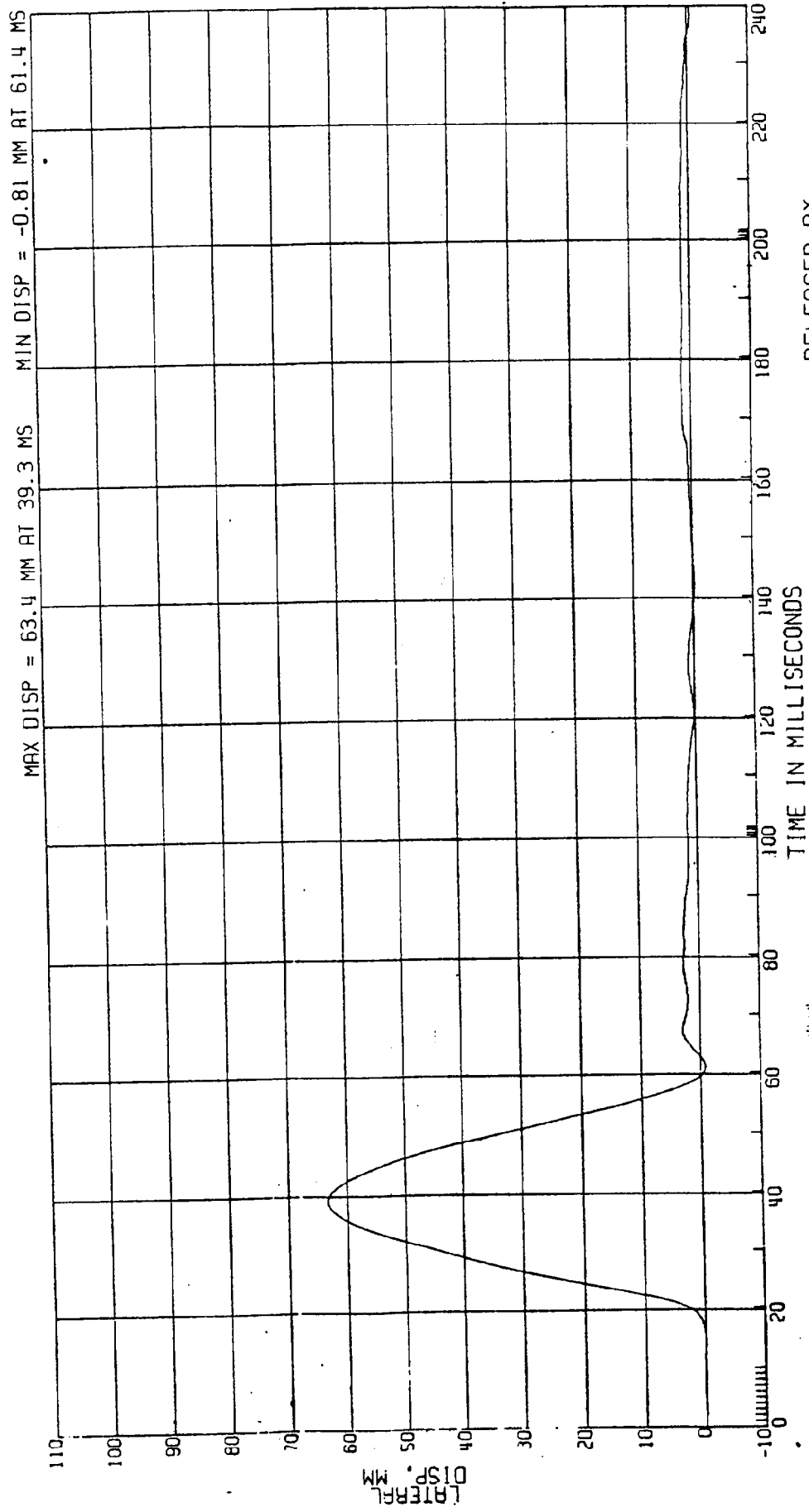
C8012B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 31
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 12P 2AF69 VISCIOUS RESPONSE OF 1ST ABDOMINAL RIB TEST DATE:04-04-90
 ELEC DATA, SAE CLASS 60 (1ST RIB DISP*1ST RIB VEL)/175MM



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 29 PROCESSED 3 MY 90 12:11

C80128 L. SIDE IMPACT-- 27 DEG
3868-905 MVMA 12P 2AF69
CPE
ELEC DATA, SAE CLASS 60

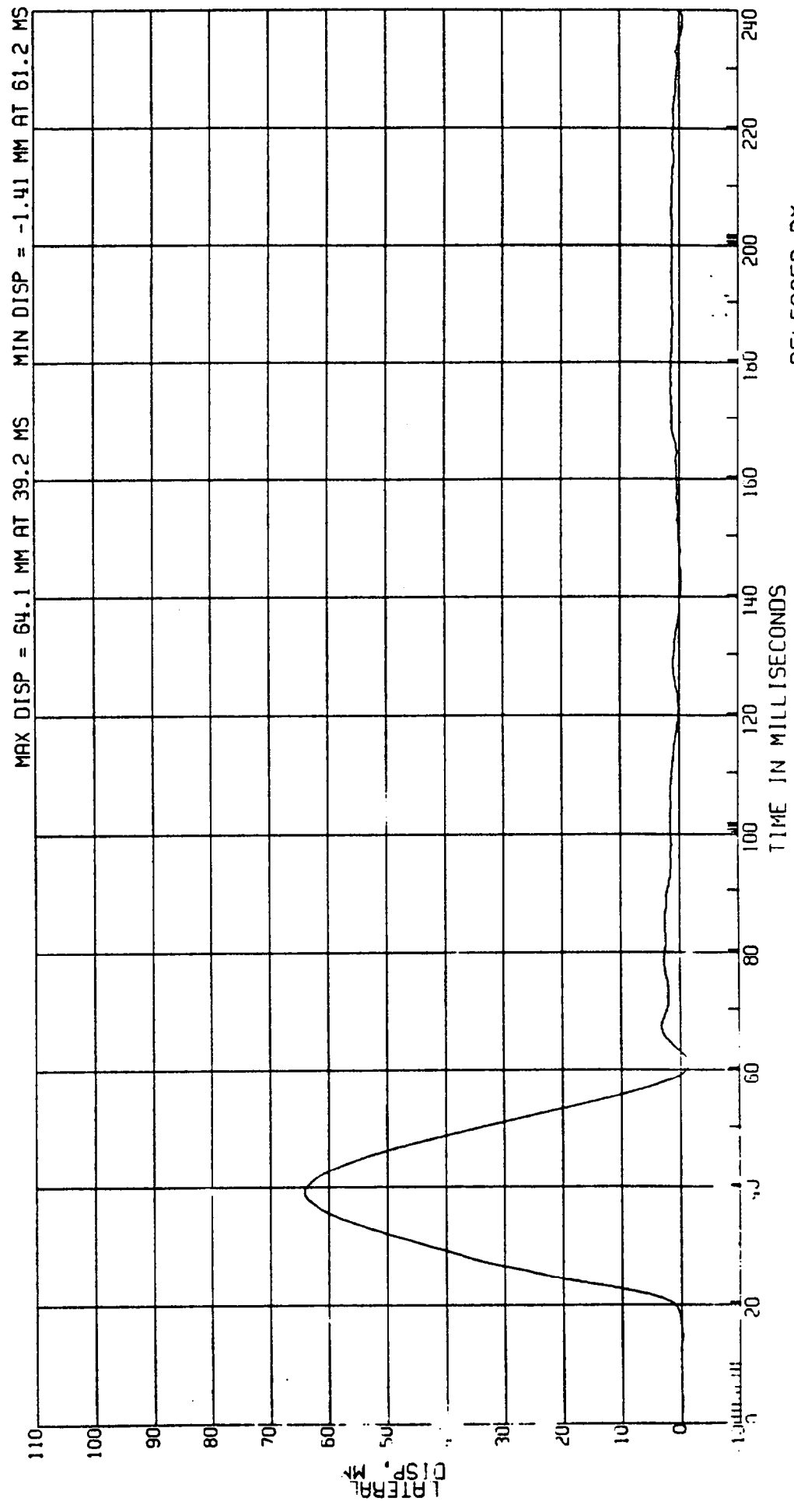
MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 32
ATD TYPE: BIOSID
DRIVER SECOND ABDOMINAL RIB DISP.
TEST DATE: 04-04-90



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C80128 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 33
3868-905 ATD TYPE: BIOSID
CPE MVMA 12P 2AF69 DRIVER SECOND ABDOMINAL RIB DISP.
ELEC DATA. SAE CLASS 180 TEST DATE:04-04-90

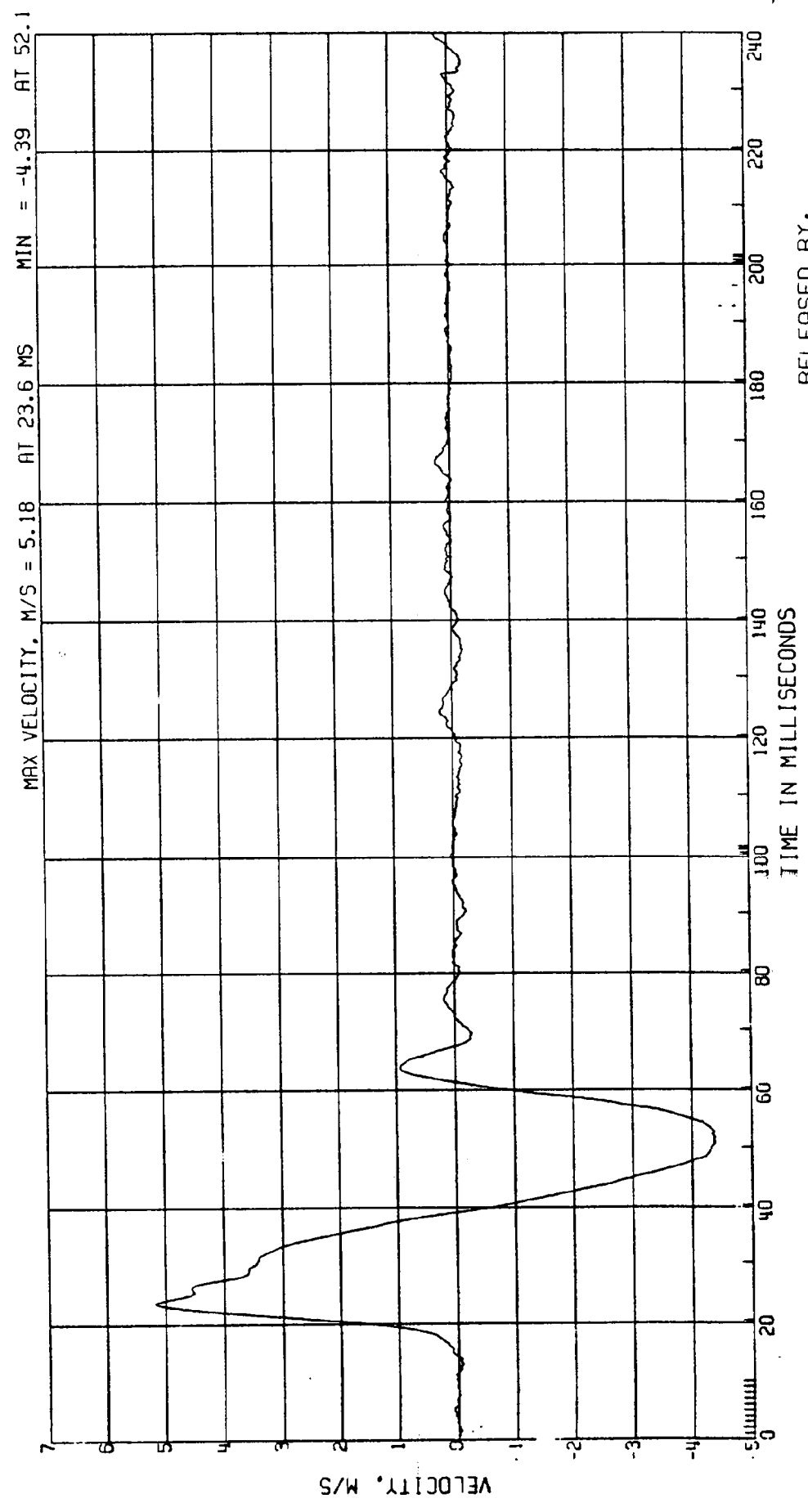
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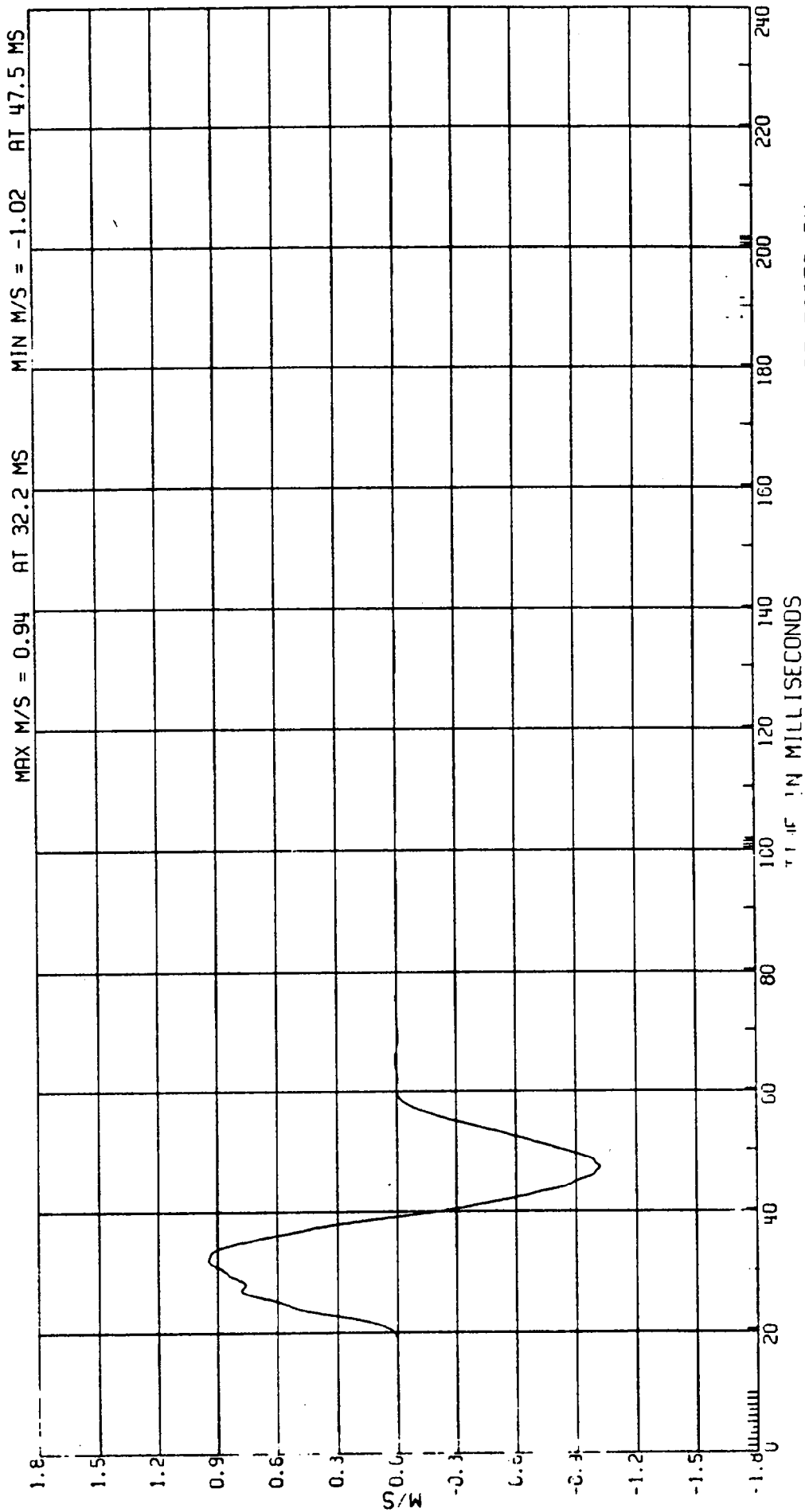
C80128 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 34
3868-905 ATD TYPE: BIOSID
CPE MVMA 12P 2AF69 DRIVER 2ND ABDOMINAL RIB VELOCITY TEST DATE:04-04-90
ELEC DATA, SAE CLASS 60 (DIFF OF 2ND RIB DISP)

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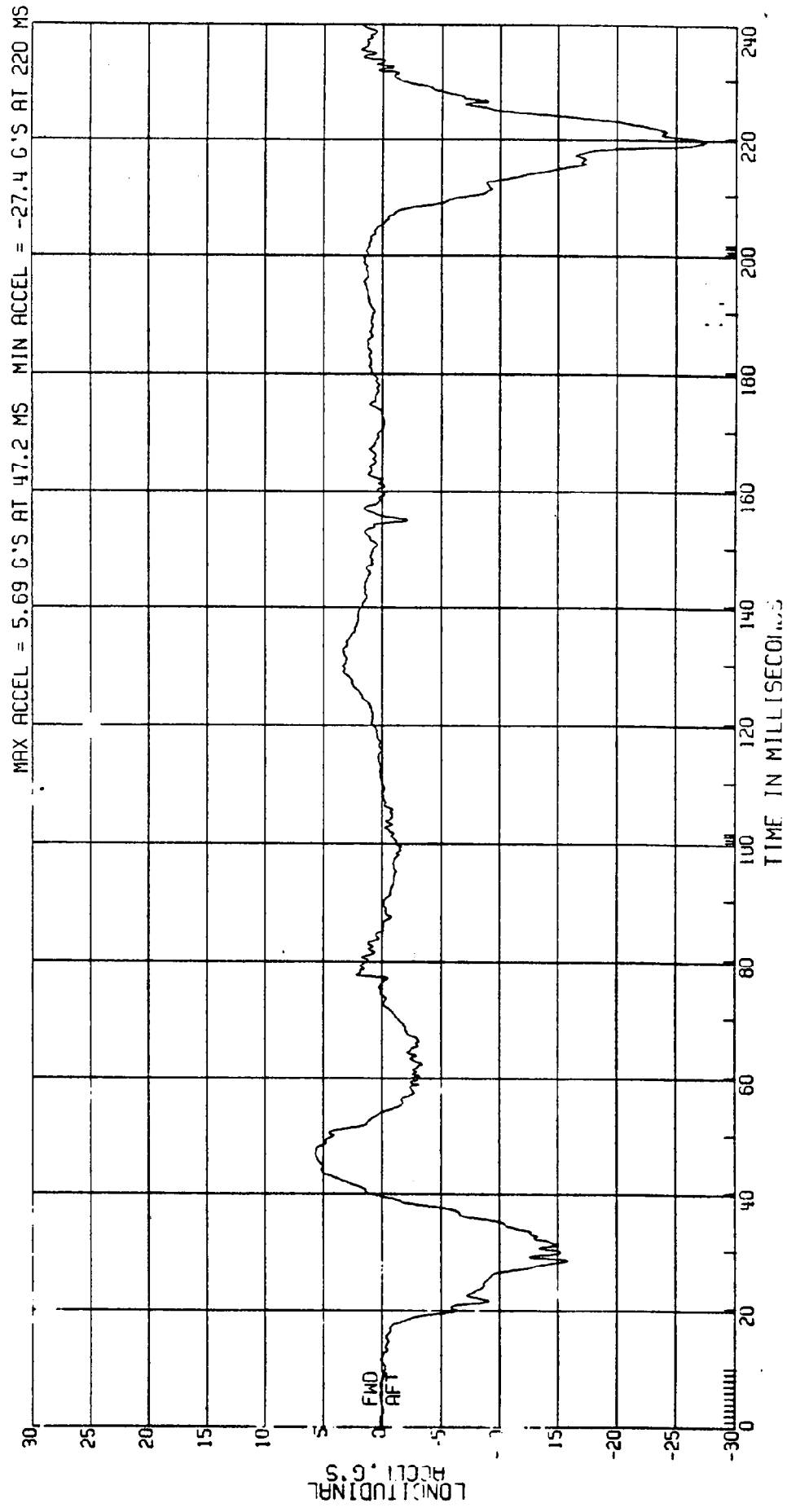
J80128 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 35
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 12P 2AF69 TEST DATE:04-04-90
 ELEC DATA, SAE CLASS 60 (2ND RIB DISP*2ND RIB VEL)/175MM



RELEASED BY:

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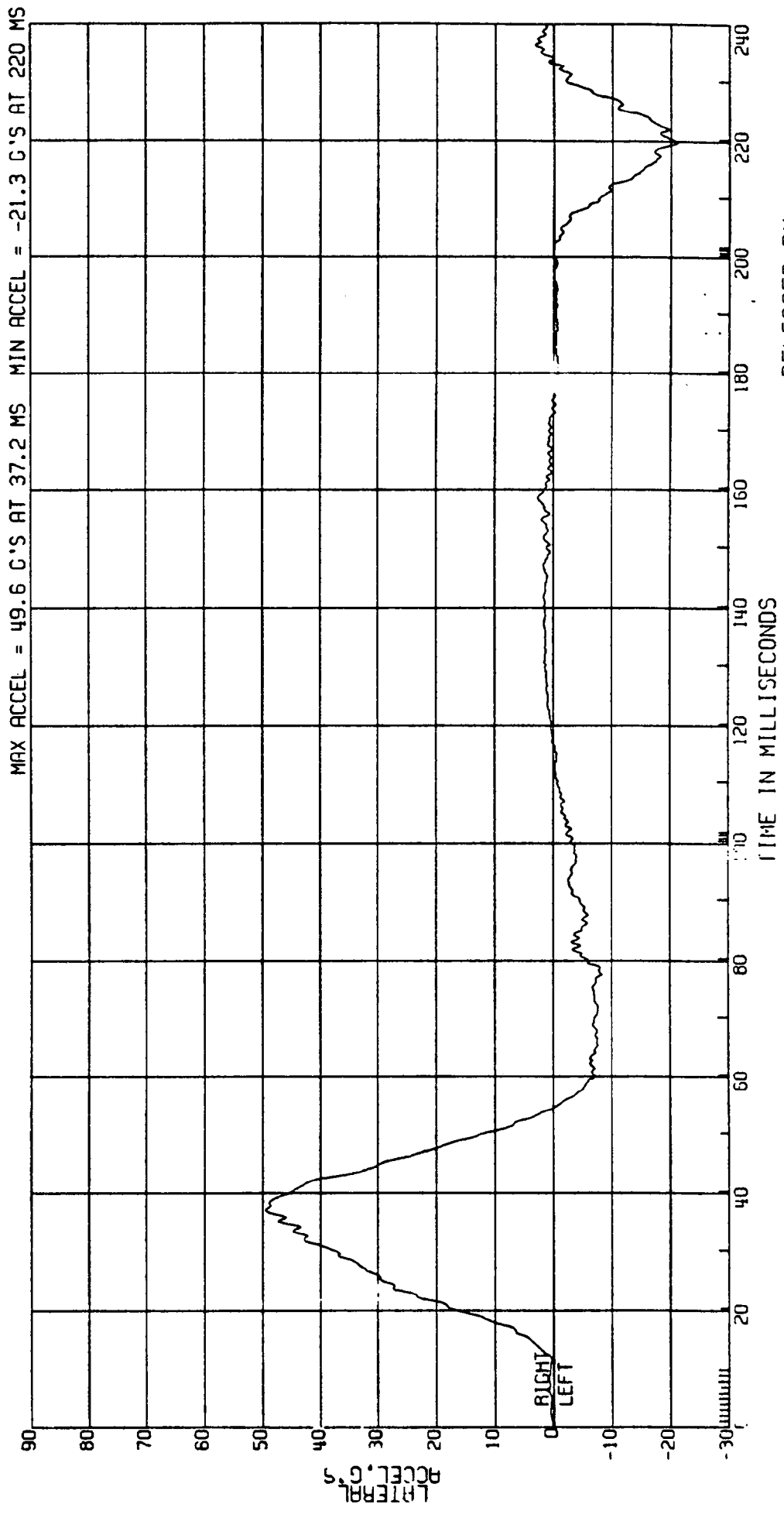
COJ12B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 36
3868-905 ATD TYPE: BIOSID
CPE MVMA 12P 2AF69 DRIVER UPPER SPINE ACCEL.
FLEC DATA, SAE CLASS 180 TEST DATE:04-04-90



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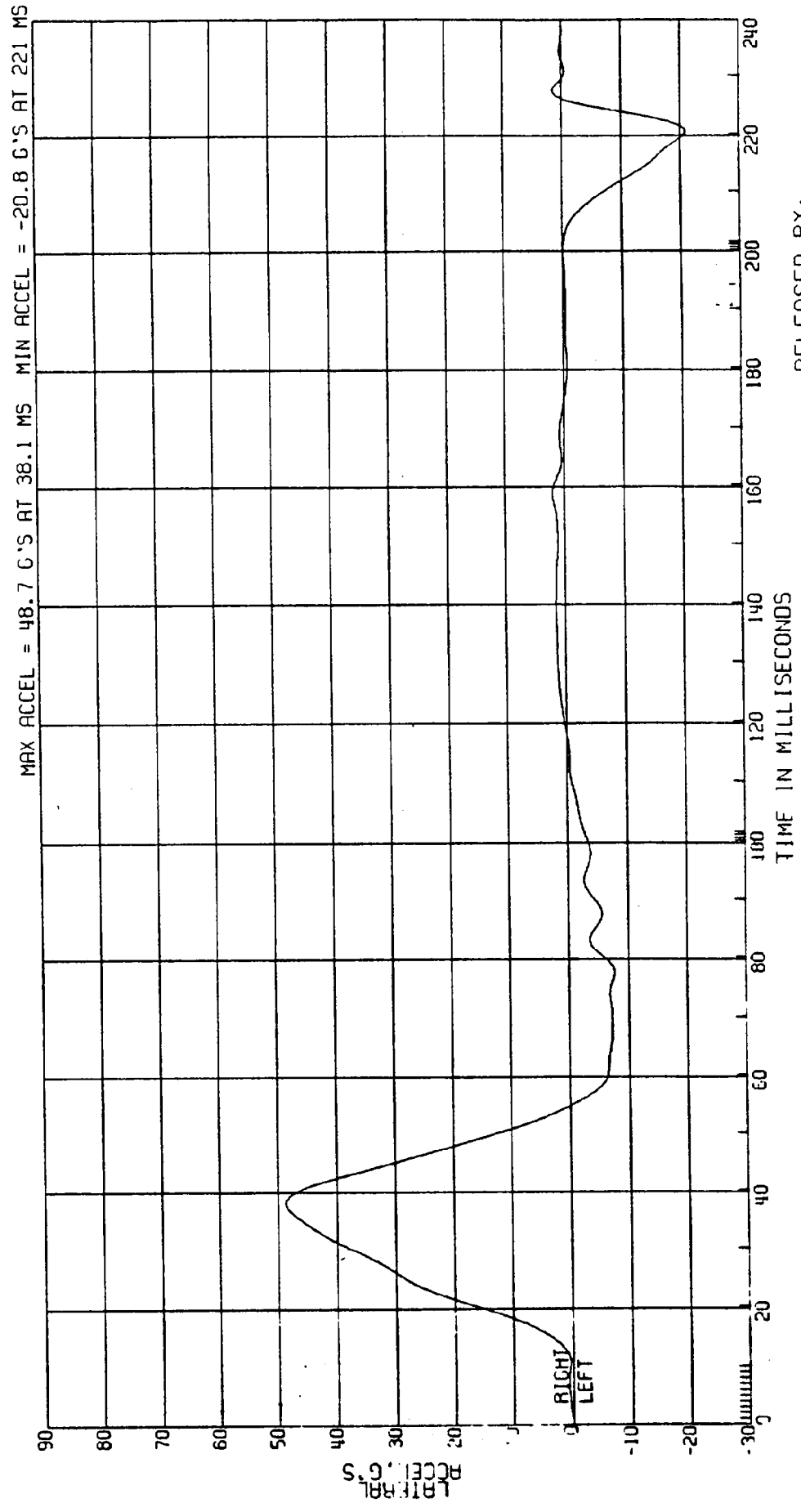
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C8012B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 37
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 12P 2AF69 DRIVER UPPER SPINE ACCEL.
 ELEC DATA, SAE CLASS 180 TEST DATE: 04-04-90



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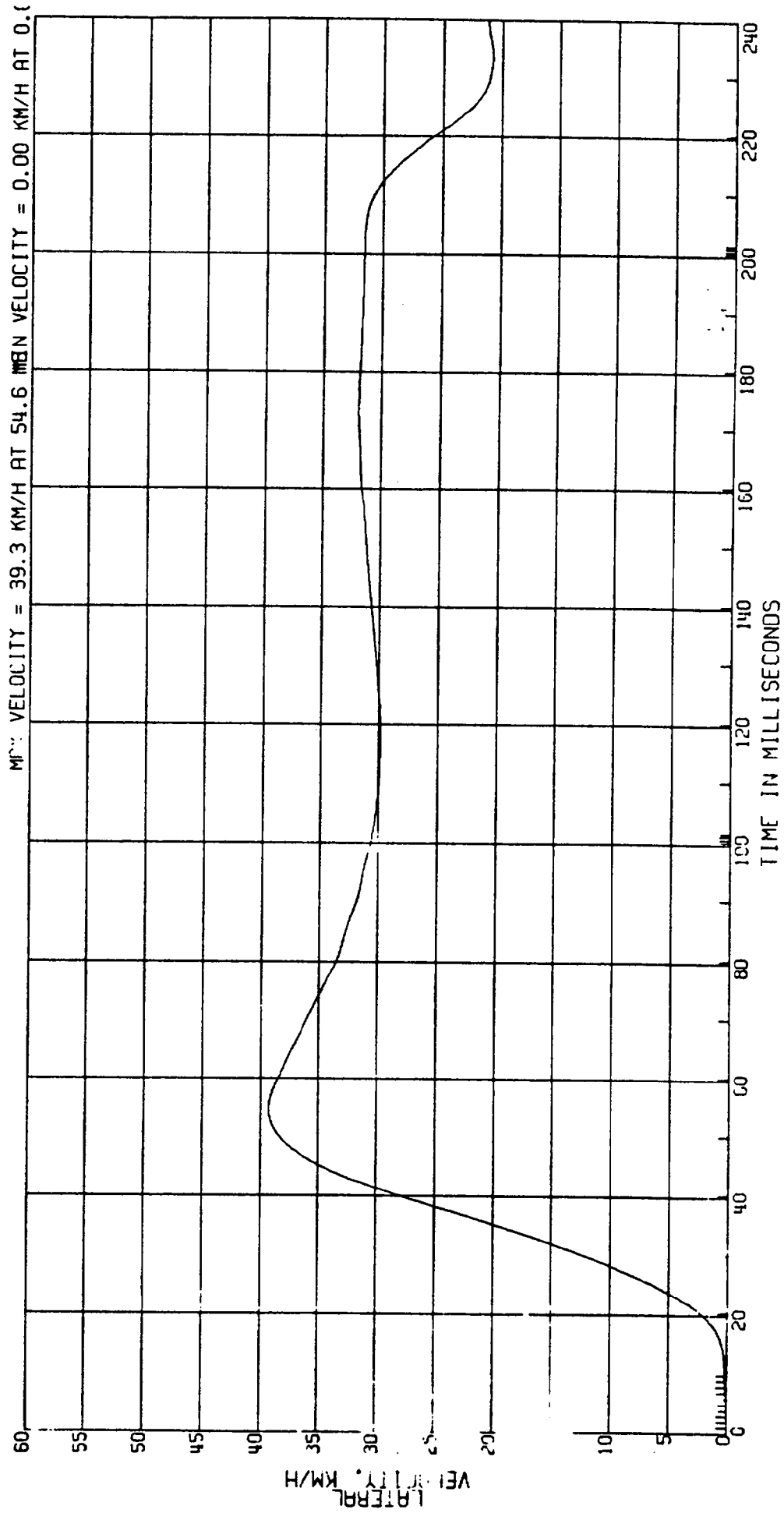
C8012B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PAK VEHICLE 53.5KM/H FIGURE 38
3868-905
CPE MVMA 12P 2AF69
ELEC DATA, NHTSA FIR FILTER F.I.R. FILTER, CLASS 300 BUTTERWORTH
DRIVER UPPER SPINE ACCEL.
ATD TYPE: BIOSID
TEST DATE:04-04-90



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C80128 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 39
 3868-905
 CPE MVMA 12P 2AF69
 ELEC DATA, SAE CLASS 180
 COMPUTED UPPER SPINE VELOCITY
 (1ST INTEGRAL DRIVER ACCELERATION)

ATD TYPE: BIOSID
 TEST DATE: 04-04-90



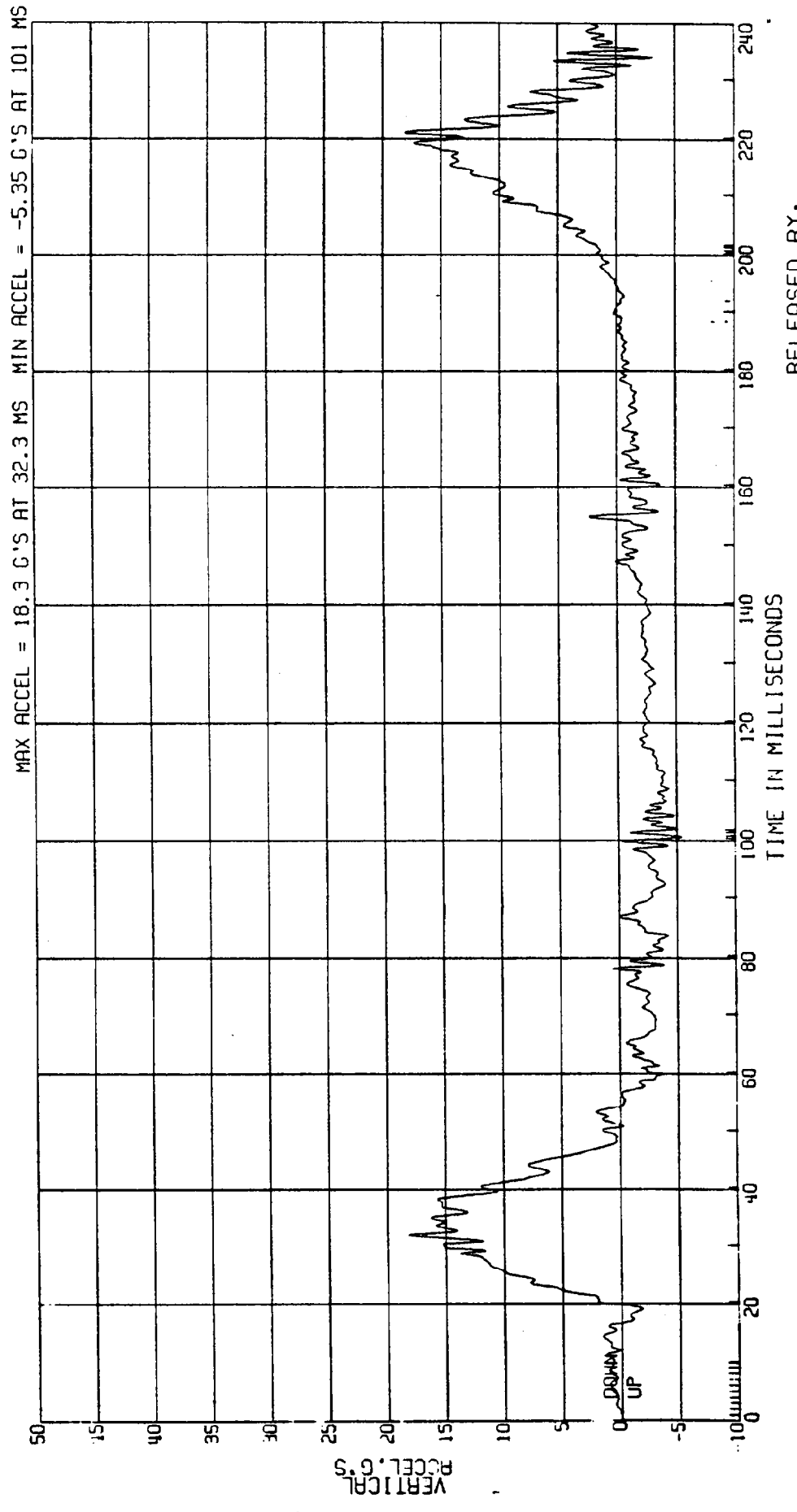
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C8012B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 40
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 12P 2AF69 DRIVER UPPER SPINE ACCEL.
 ELEC DATA, SAE CLASS 180 TEST DATE: 04-04-90

1 1

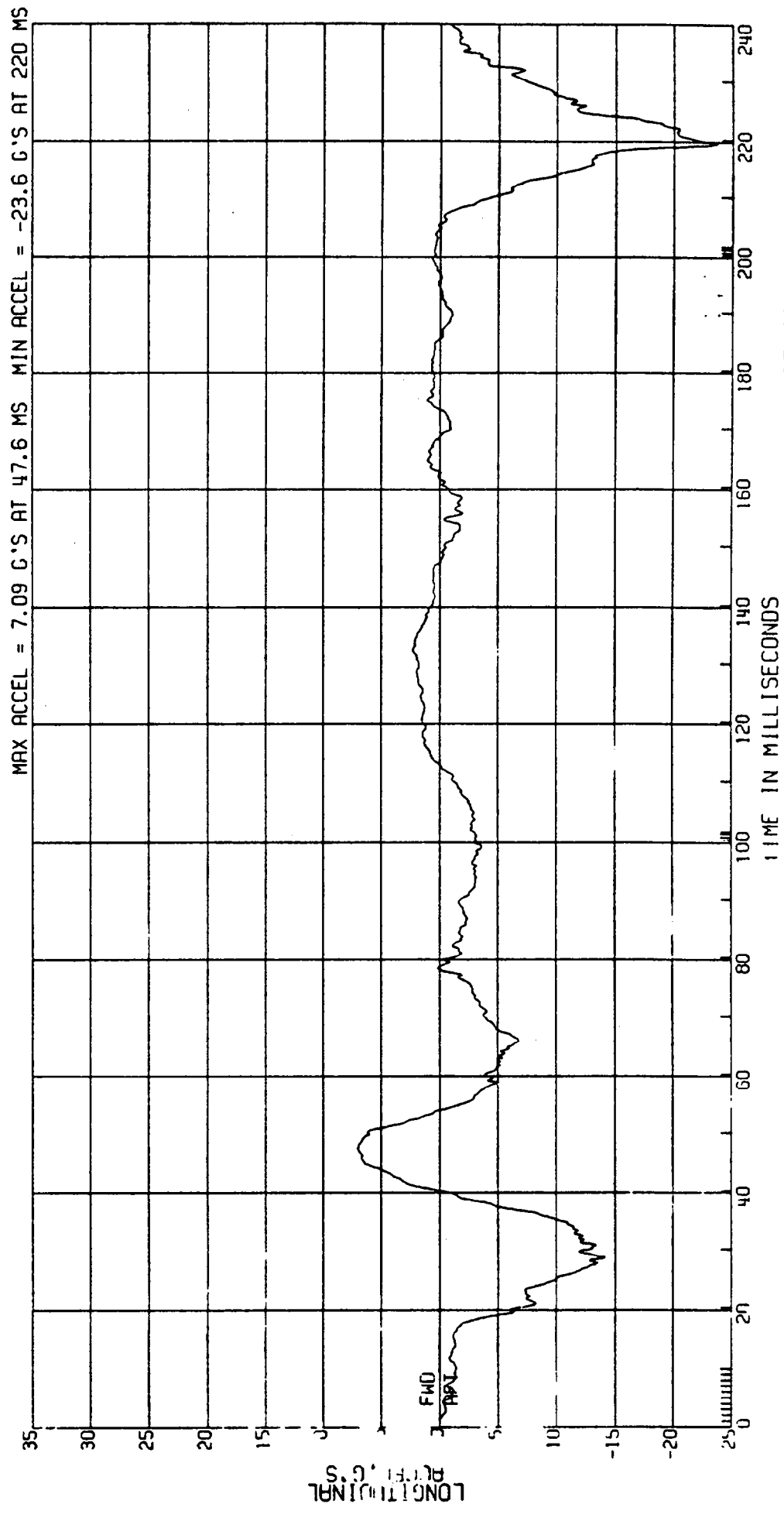


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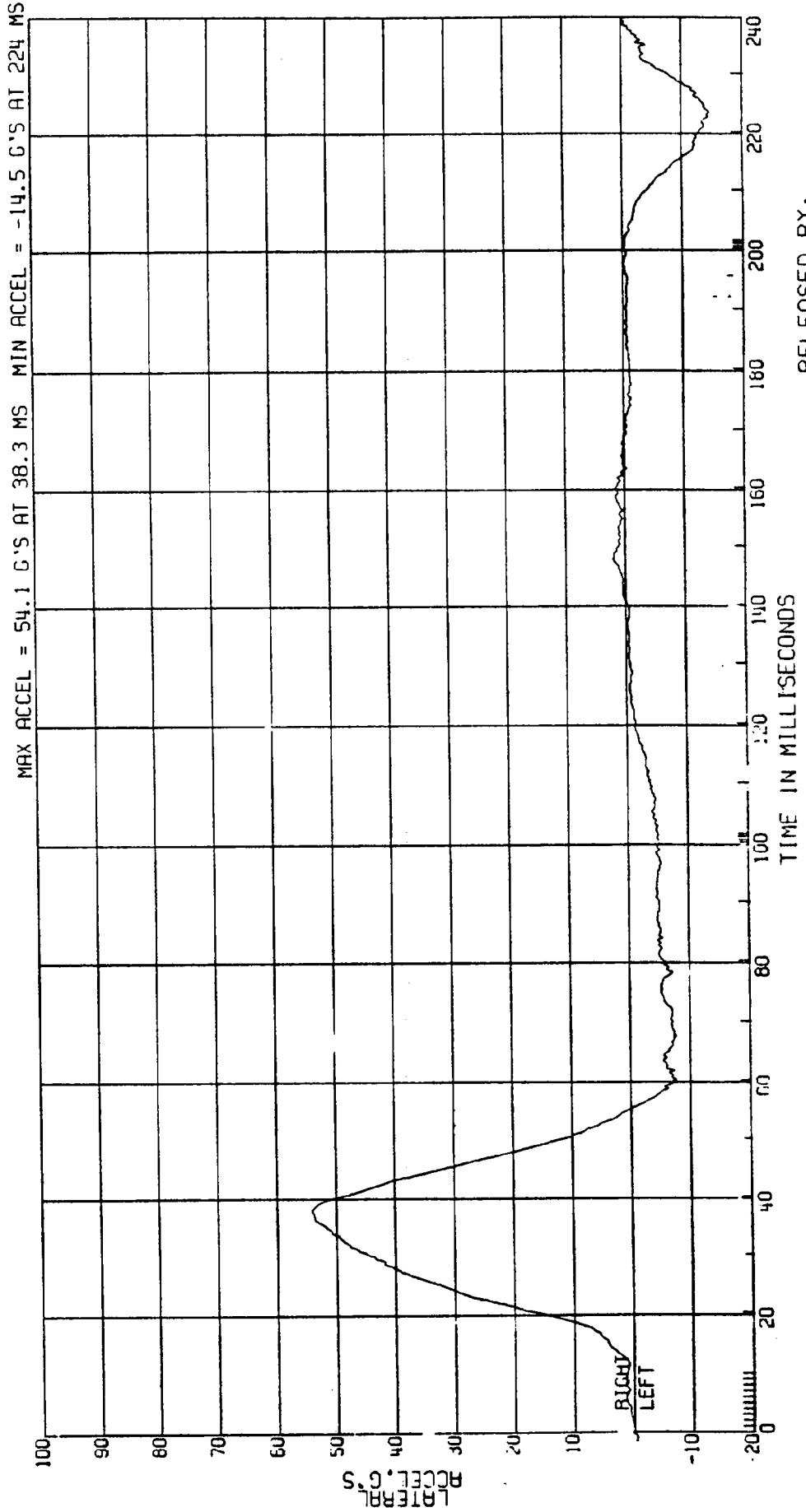
C80128 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 4/
3868-905 ATD TYPE: BIOSID
CPE MVMA 12P 2AF69 DRIVER LOWER SPINE ACCEL. TEST DATE:04-04-90
ELEC DATA, SAE CLASS 180

1 1 1



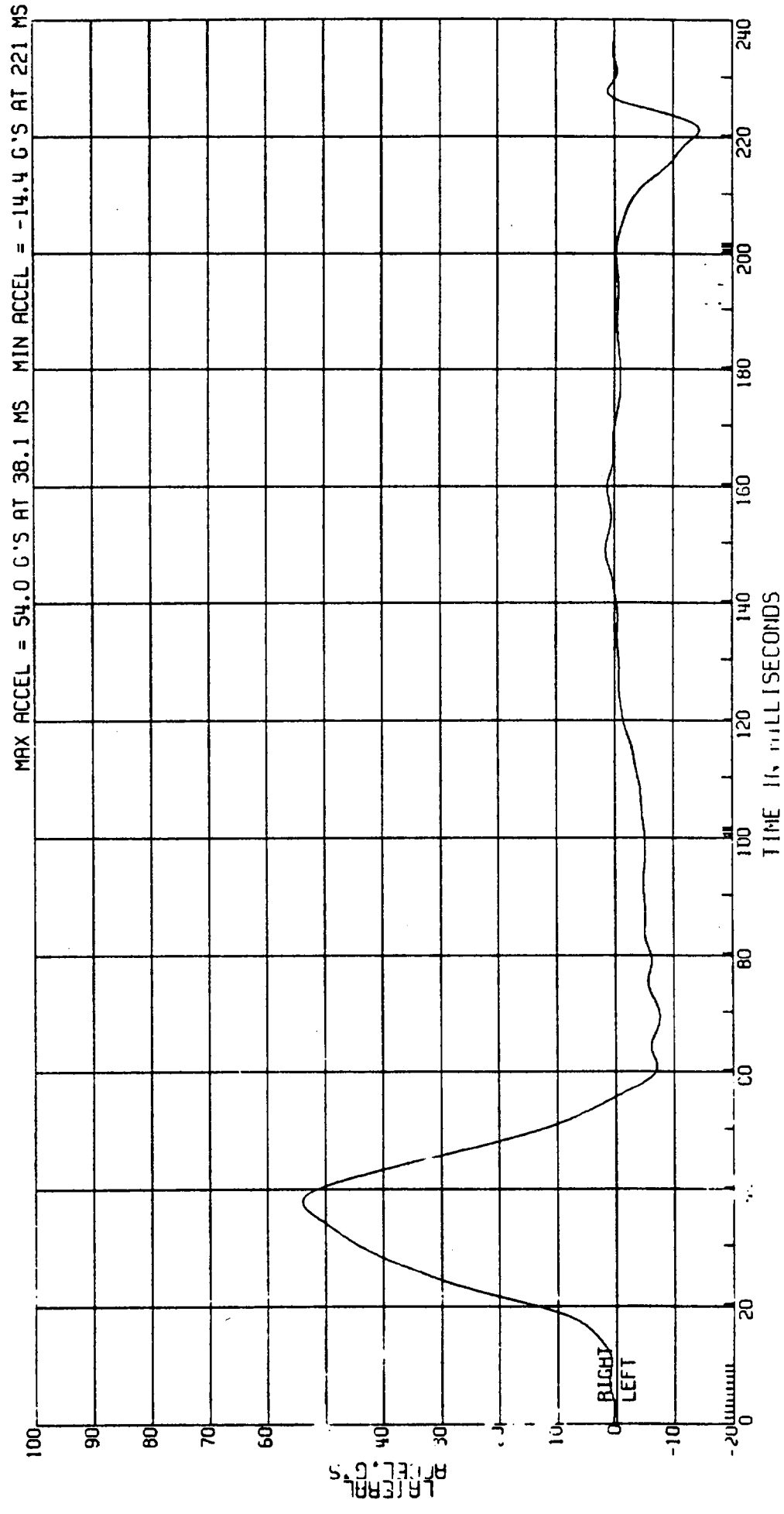
RELEASED BY:
39 PROCESSED 3 MY 90 12:11

C80128 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 42
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 12P 2AF69 TEST DATE: 04-04-90
 DRIVER LOWER SPINE ACCEL.
 ELEC DATA, SAE CLASS 180



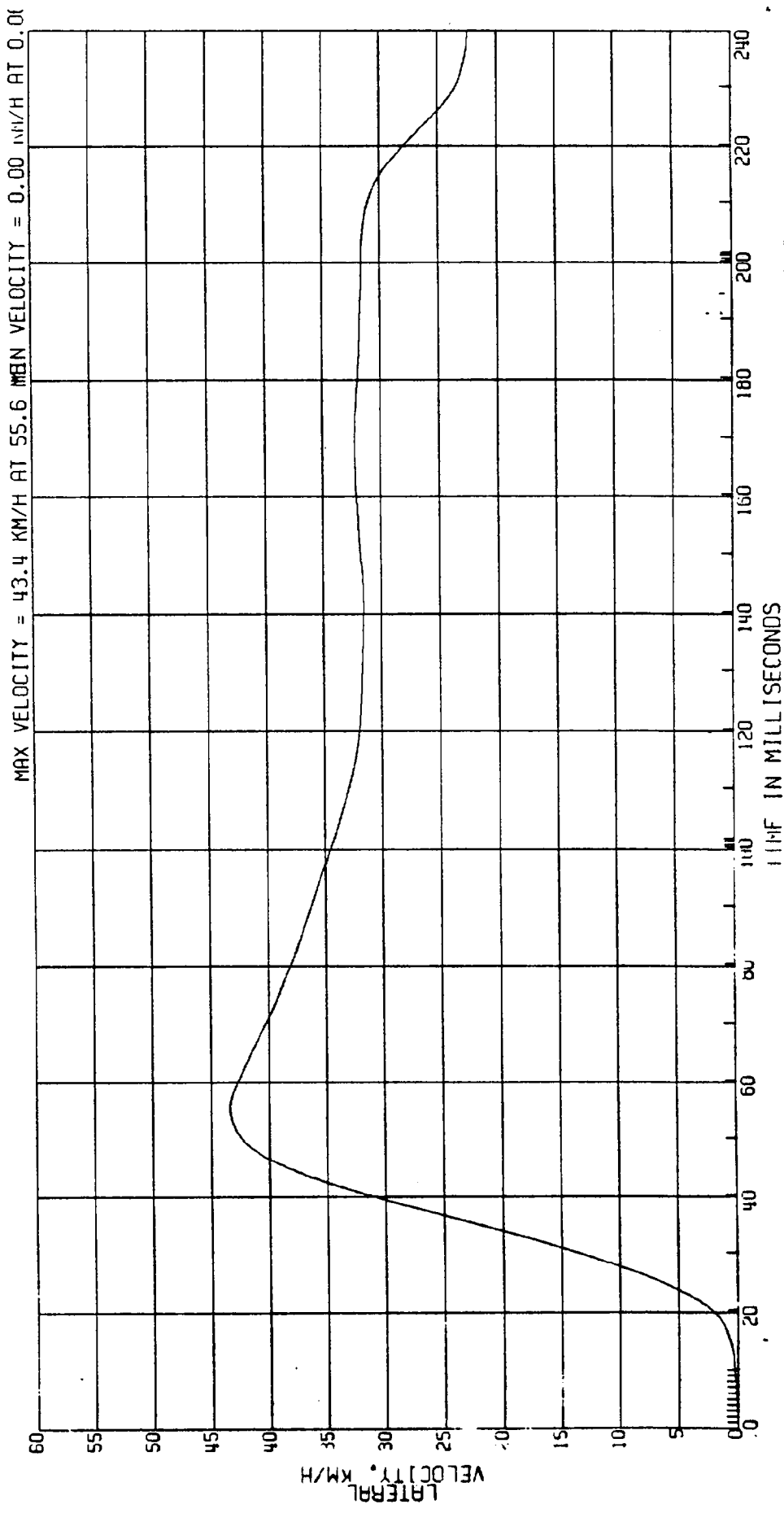
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C80128 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 43
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 12P 2AF69 DRIVER LOWER SPINE ACCEL.
 TEST DATE: 04-04-90
 ELEC DATA, NHTSA FIR FILTER F.I.R. FILTER, CLASS 300 BUTTERWORTH



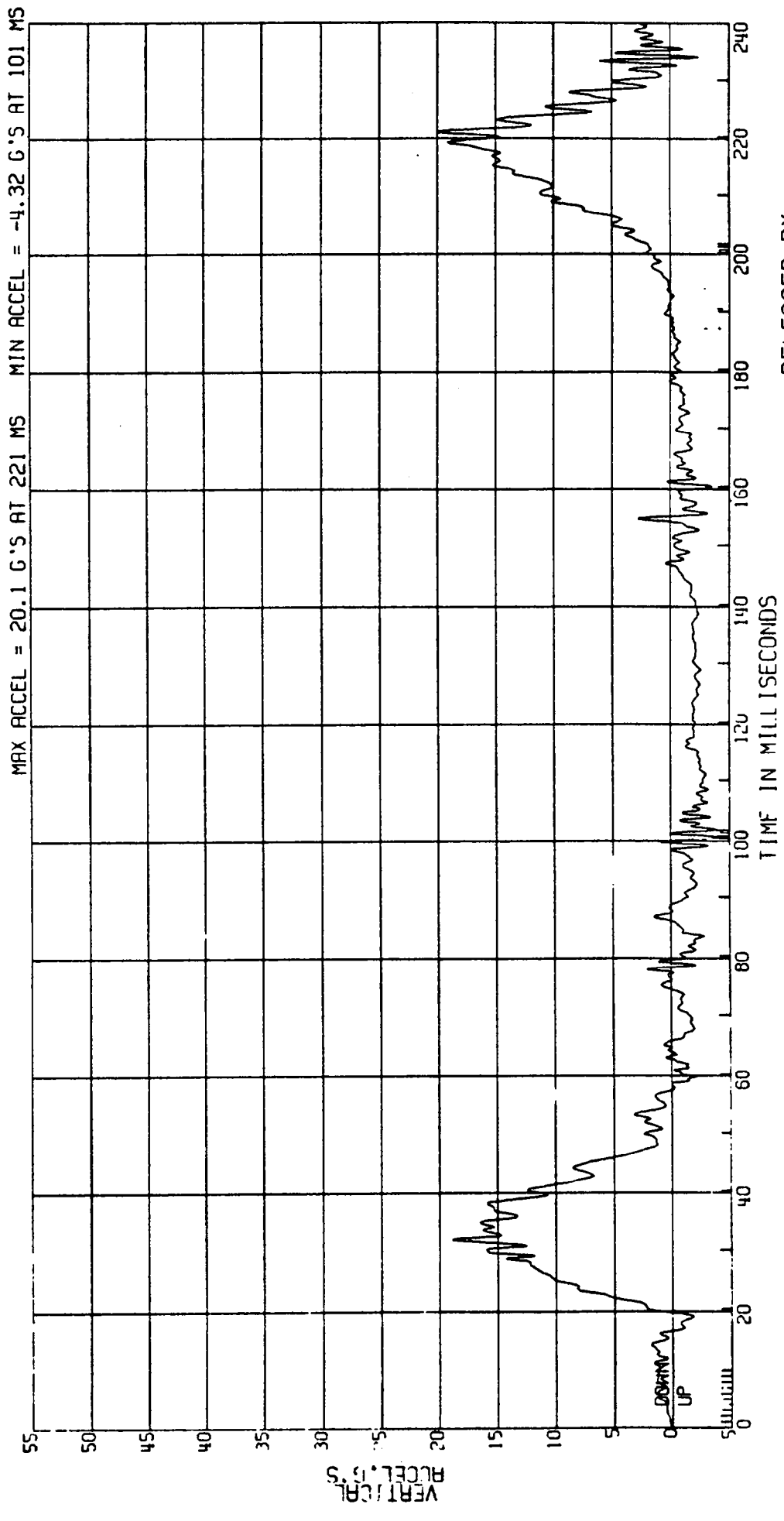
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 41 PROCESSED 3 MY 90 12:11

C80128 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5 KM/H FIGURE 44
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 12P 2AF69 COMPUTED LOWER SPINE VELOCITY TEST DATE: 04-04-90
 ELEC DATA, SAE CLASS 180 (1ST INTEGRAL DRIVER ACCELERATION)



RELEASED BY:
 42 PROCESSED 3 MY 90 12:11

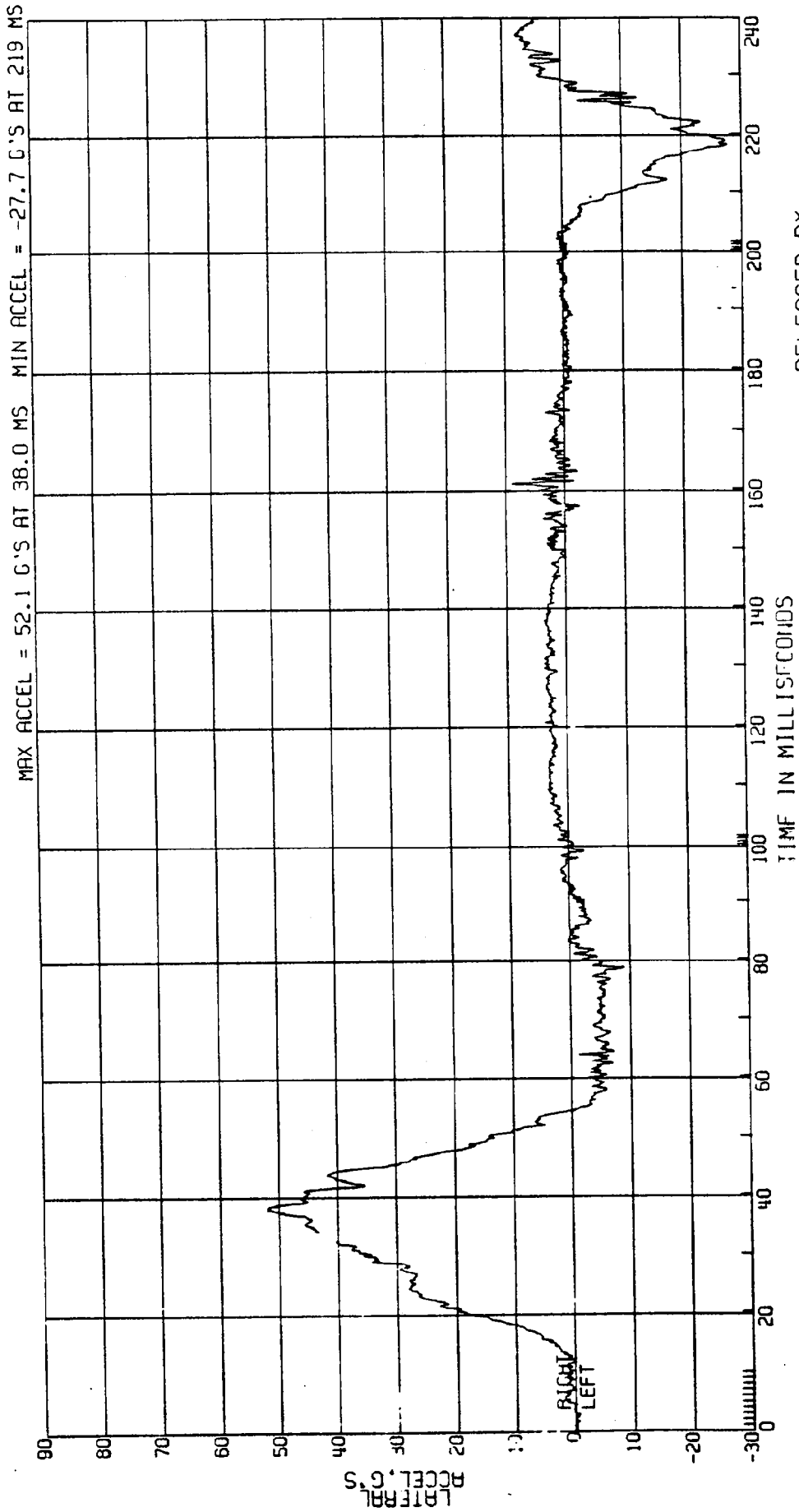
C8012B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 45
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 12P 2AF69 DRIVER LOWER SPINE ACCEL.
 E-EC DATA, SAE CLASS 180 TEST DATE: 04-04-90



RELEASED BY:
 43 PROCESSED 3 MY 90 12:11

C80128 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 46
3868-905 MVMA 12P 2AF69
CPE DRIVER T1 ACCEL.
E-EC DATA, SAE CLASS 100U

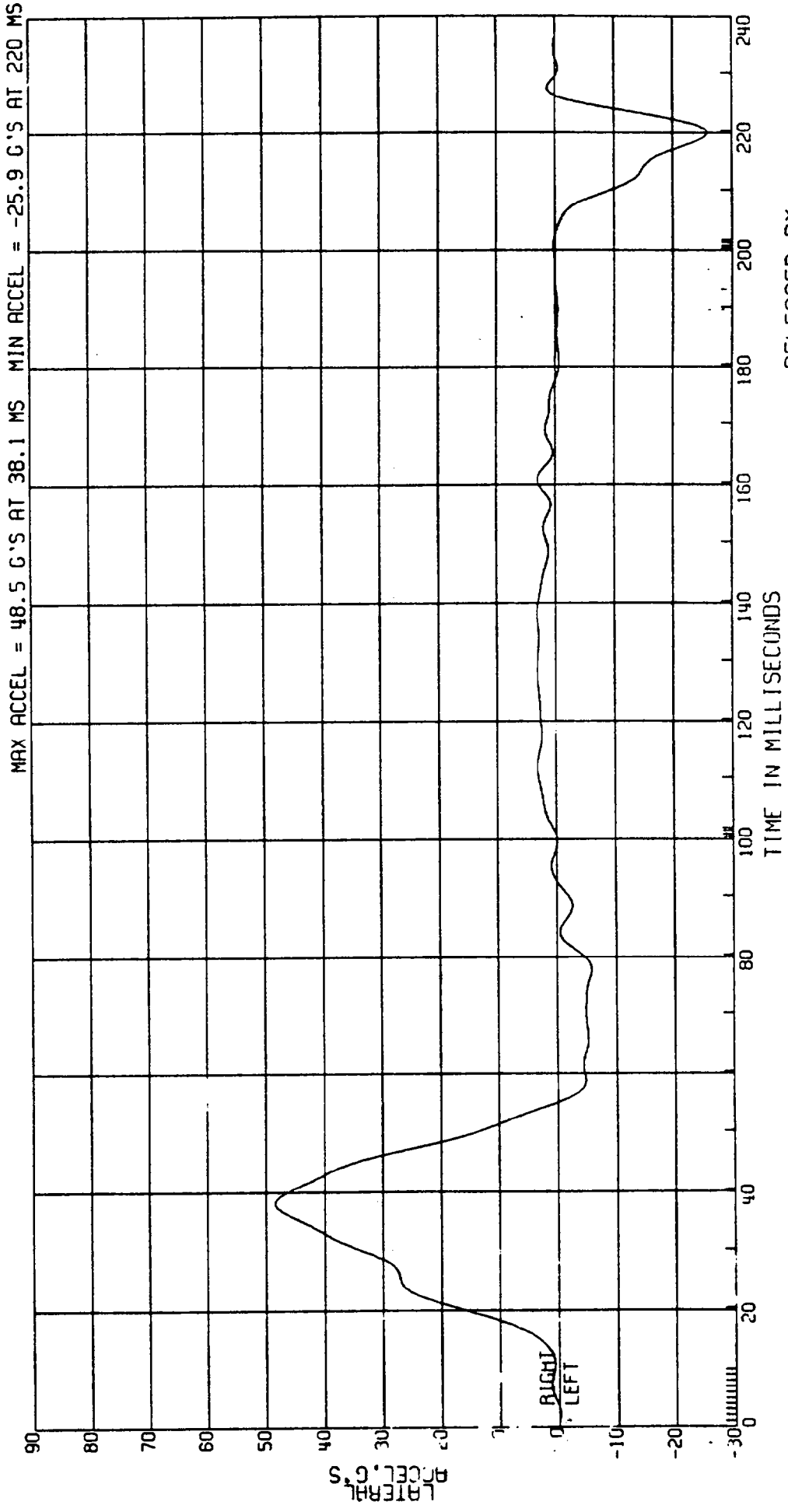
MAX ACCEL = 52.1 G'S AT 38.0 MS MIN ACCEL = -27.7 G'S AT 219 MS



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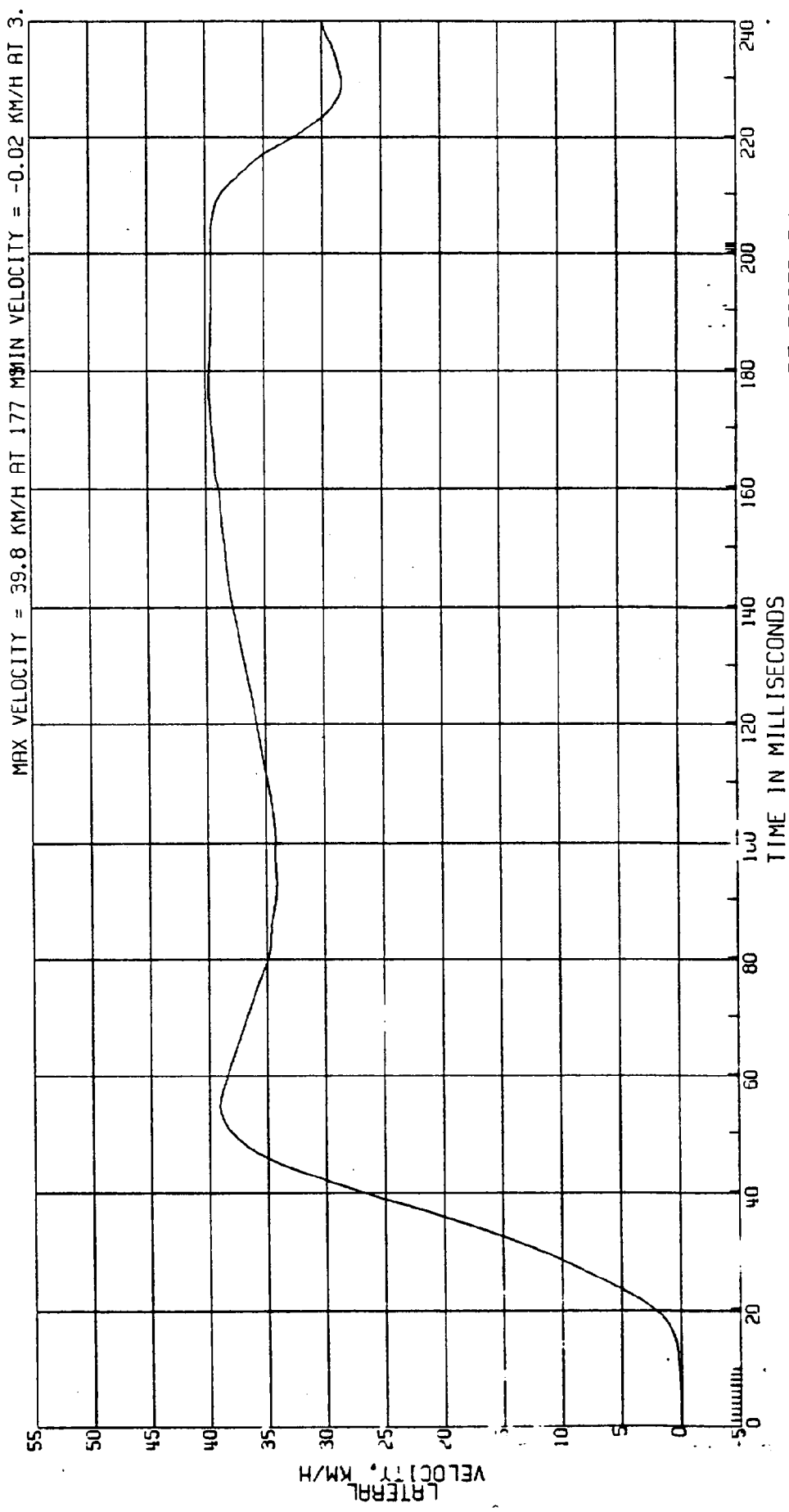
C80128 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 47
3868-905
CPE MVMA 12P 2AF69
ELEC DATA, NHTSA FIR FILTER DRIVER T1 ACCEL.
F.I.R. FILTER, CLASS 300 BUTTERWORTH

MAX ACCEL = 48.5 G'S AT 38.1 MS MIN ACCEL = -25.9 G'S AT 220 MS



RELEASED BY:
45 PROCESSED 3 MY 90 12:11

C8012B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 48
3858-905 ATD TYPE: BIOSID
CPE MVMA 12P 2AF69 TEST DATE: 04-04-90
ELEC DATA, SAE CLASS 180 (1ST INTEGRAL DRIVER ACCELERATION) COMPUTED T1 VELOCITY

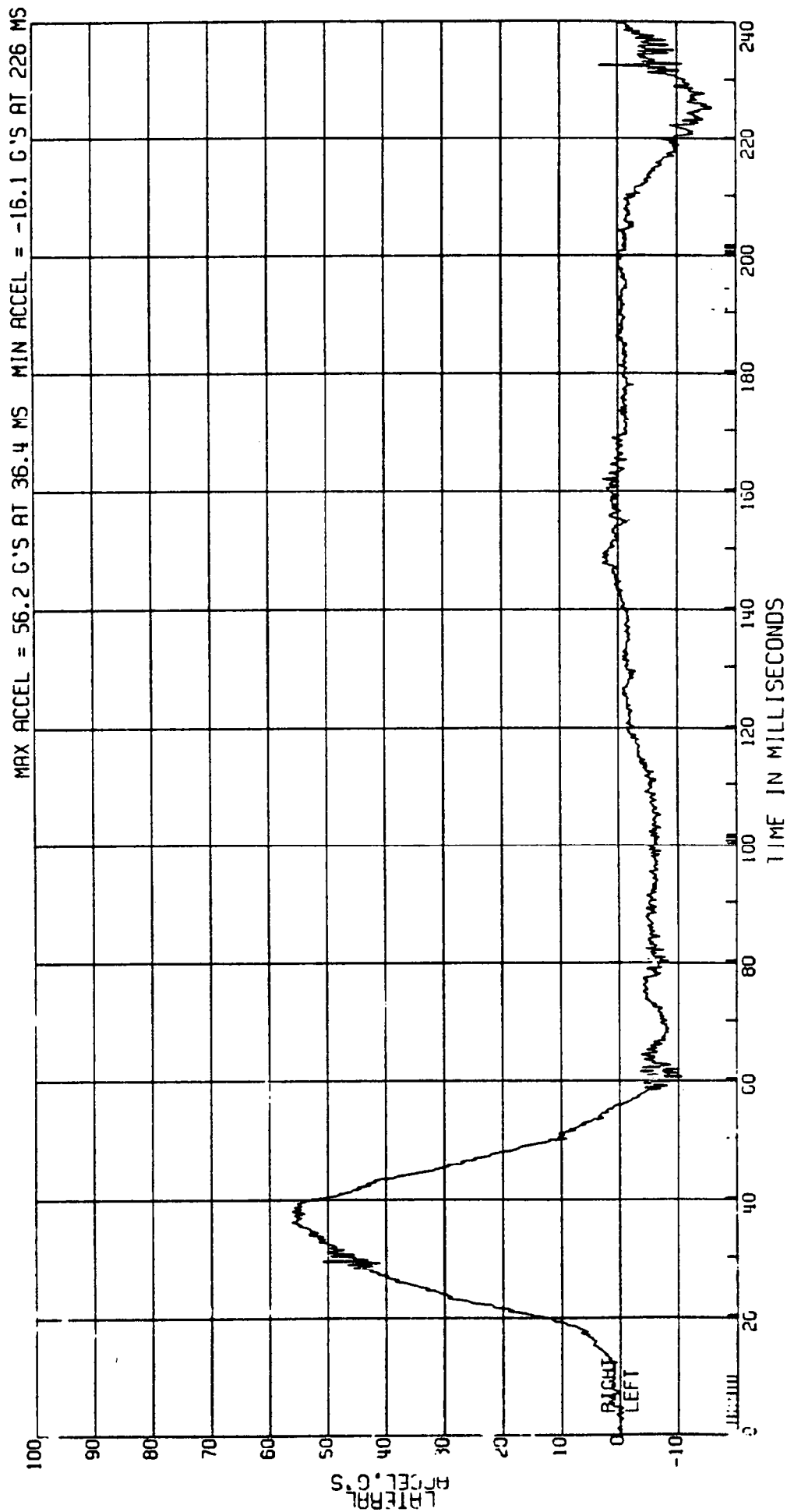


RELEASED BY:
46 PROCESSED 3 MY 90 12:11

C80128 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 49
ATD TYPE: BIOSID
TEST DATE: 04-04-90

3868-905
CPE MVMR 12P 2AF69
ELEC DATA, SAE CLASS 1000
DRIVER T12 ACCEL.

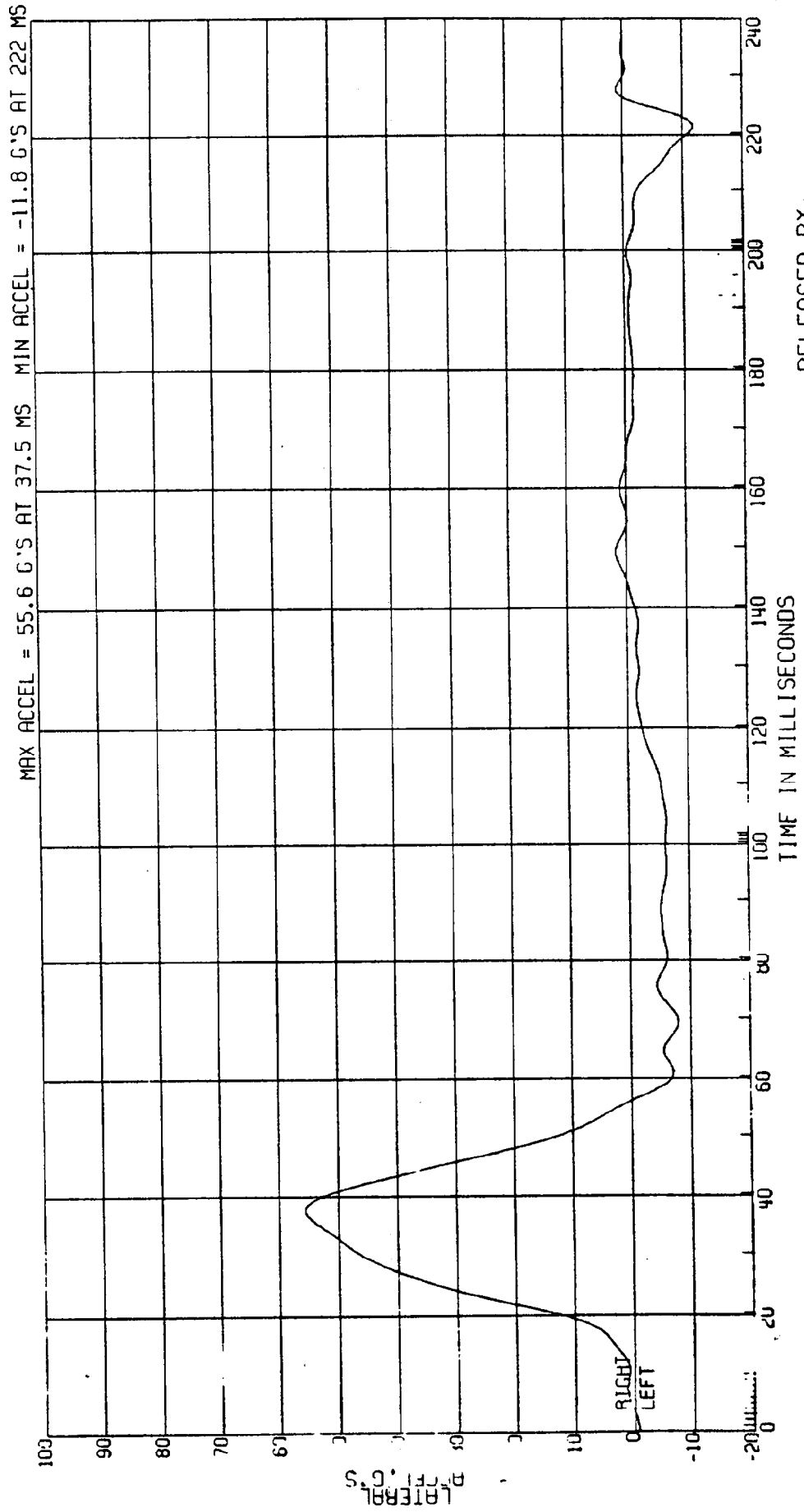
MAX ACCEL = 56.2 G'S AT 36.4 MS MIN ACCEL = -16.1 G'S AT 226 MS



RELEASED BY:

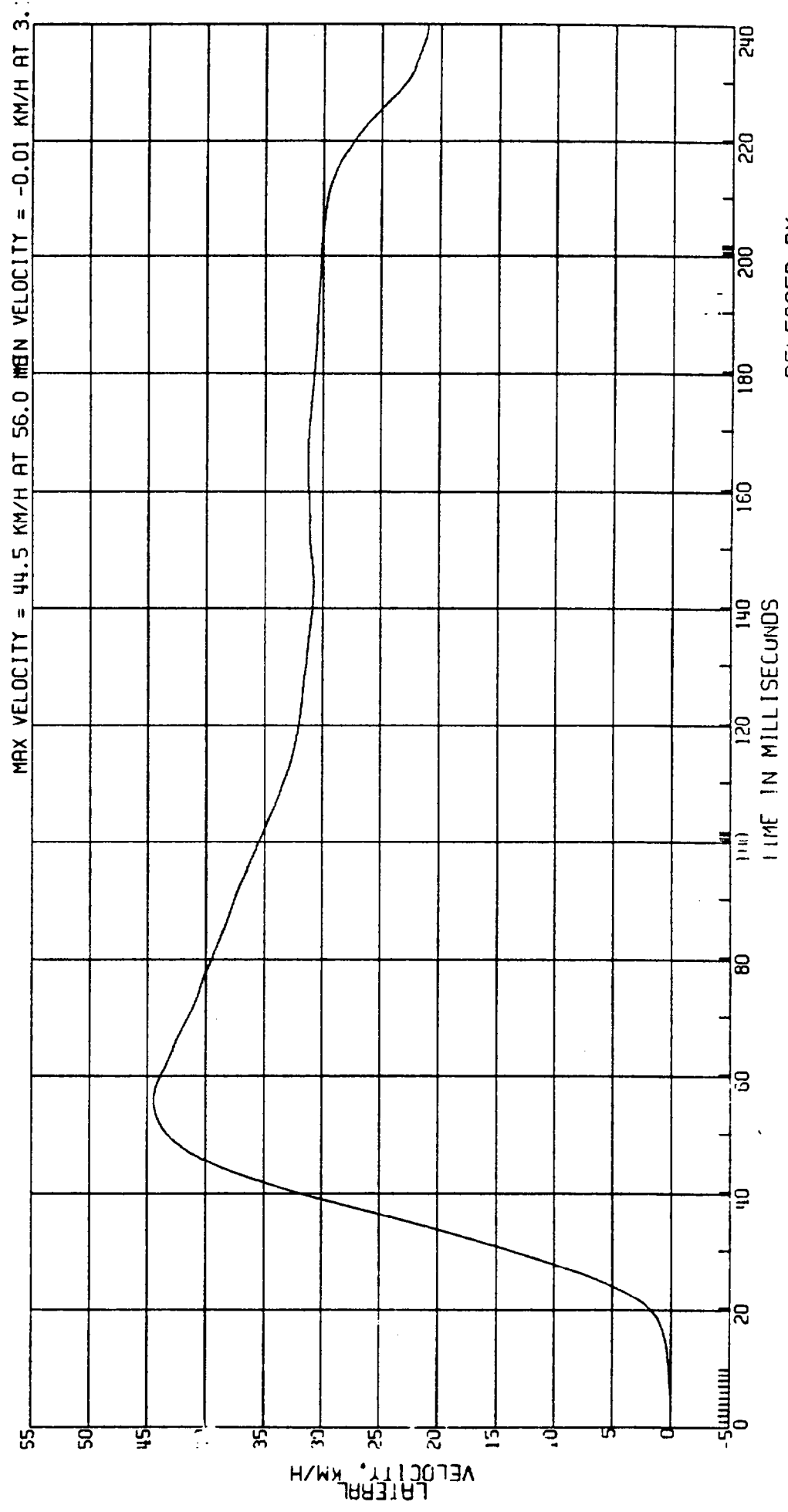
47 PROCESSED 3 MY 90 12:11

C80128 L. SIDE IMPACT - 27 DEG MOVING CRABBED BARR TO PAK VEHICLE 53.5KM/H FIGURE 50
 3868-905 ATD TYPE: BIOSID
 CPE MVMR 12P 2AF69 TEST DATE: 04-04-90
 ELEC DATA. NHTSA FIR FILTER DRIVER T12 ACCEL.
 F.I.R. FILTER, CLASS 300 BUTTERWORTH



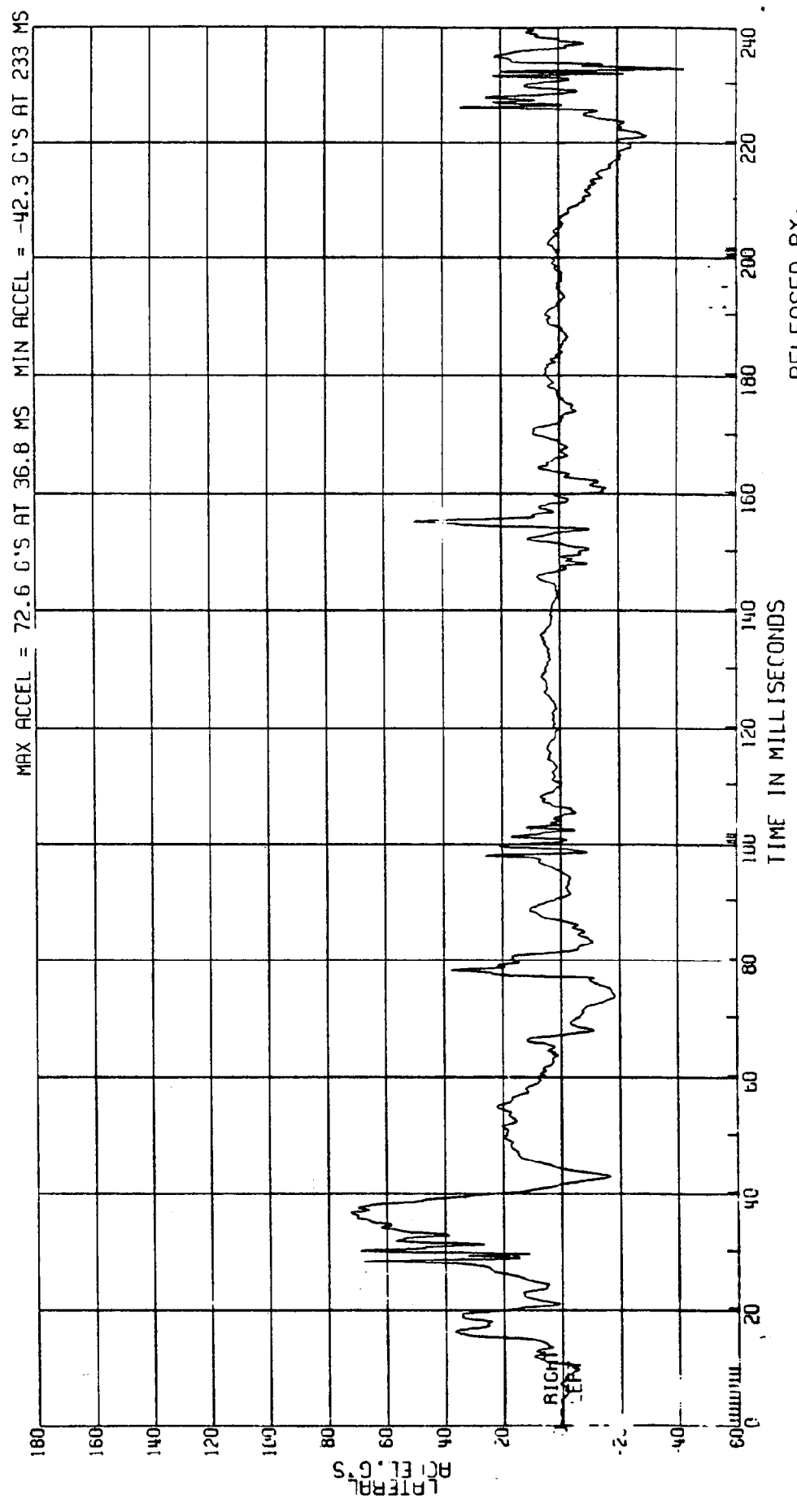
RELEASED BY:
 48 PROCESSED 3 MY 90 12:11

C80128 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 5 /
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 12P 2AF69 COMPUTED T12 VELOCITY TEST DATE: 04-04-90
 ELEC DATA. SAE CLASS 180 (1ST INTEGRAL DRIVER ACCELERATION)



RELEASED BY:
 49 PROCESSED 3 MY 90 12:11

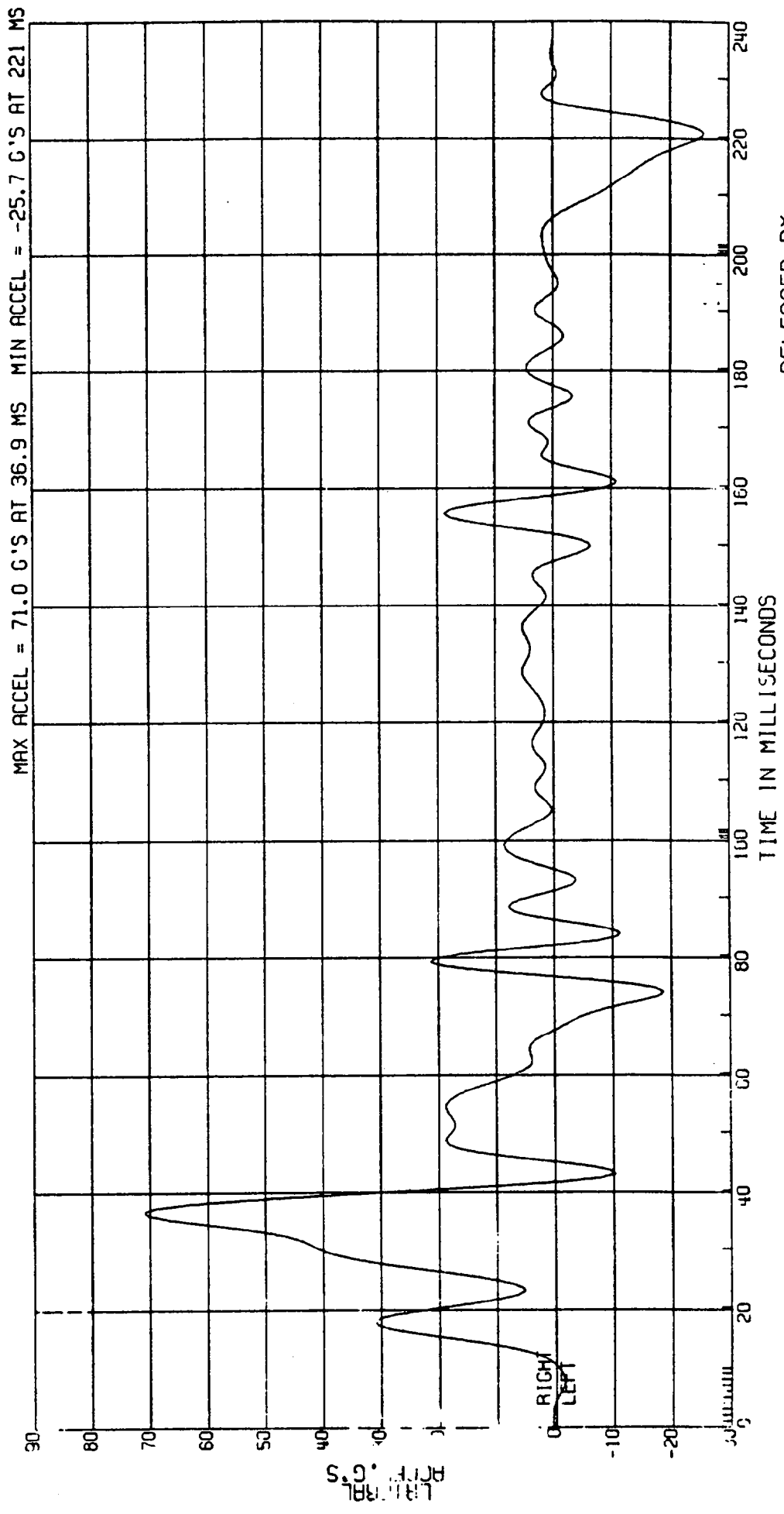
C80128 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5 KM/H FIGURE 52
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 12P 2AF69 DRIVER SHOULDER ACCEL.
 ELEC DATA, SAE CLASS 600 TEST DATE: 04-04-90



RELEASED BY:
 50 PROCESSED 3 MI 90 12:11

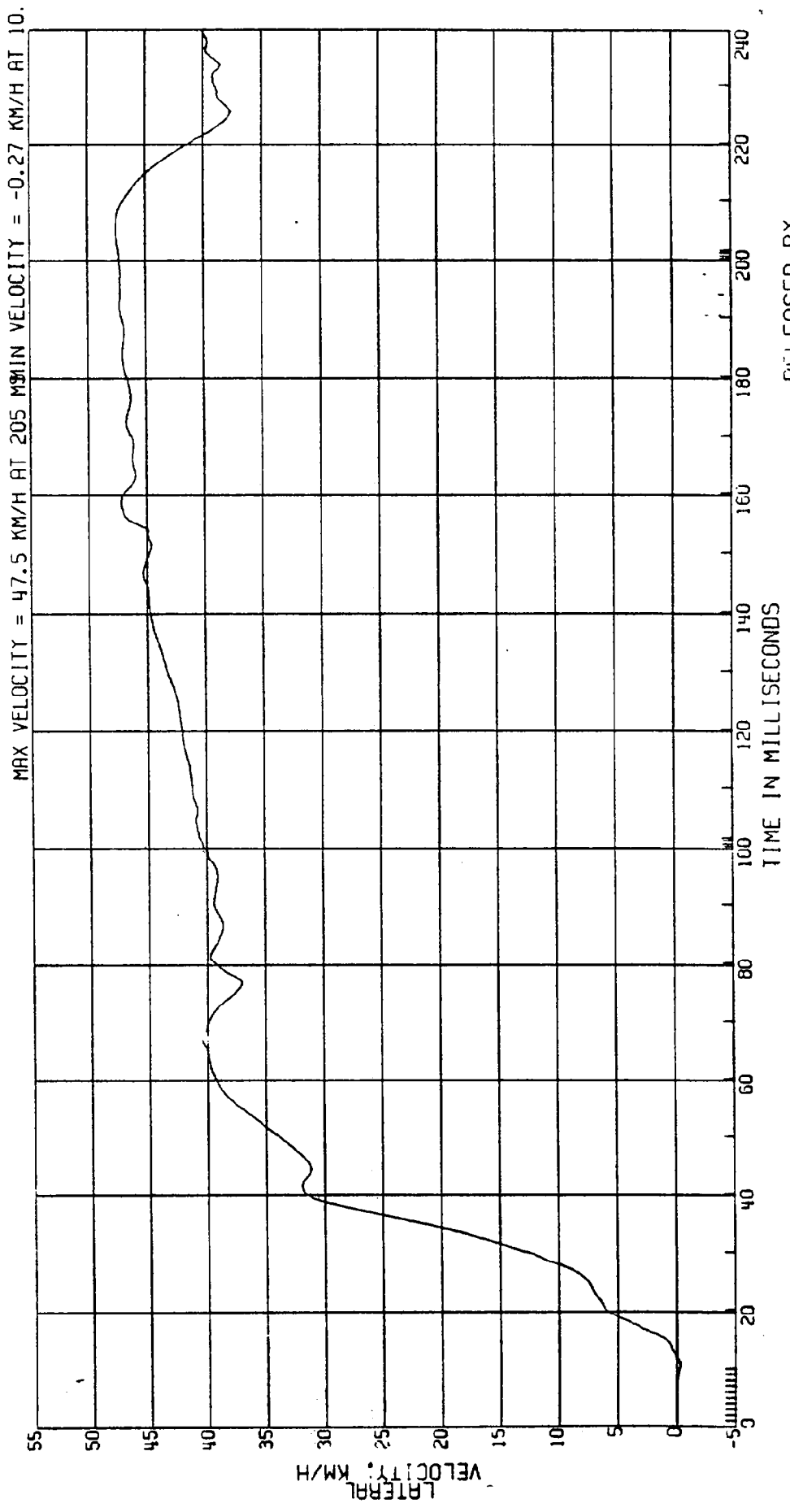
C80128 L. SIDE IMPACT - 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 53
3868-905 ATD TYPE: BIOSID
CPE MVMA 12P 2AF69 DRIVER SHOULDER ACCEL.
ELEC DATA, NHTSA FIR FILTER F.I.R. FILTER, CLASS 300 BUTTERWORTH TEST DATE: 04-04-90

F.I.R. FILTER, CLASS 300 BUTTERWORTH



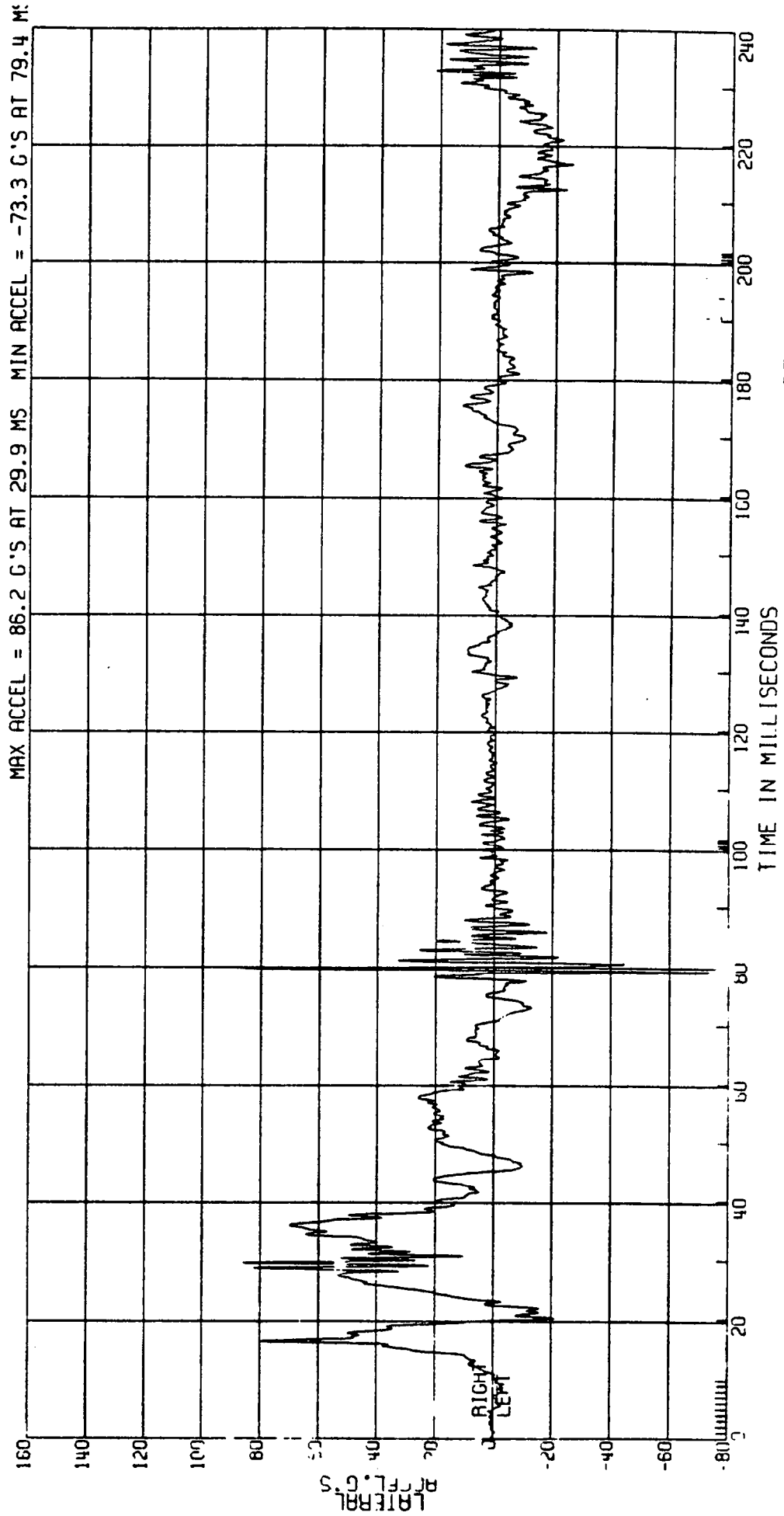
RELEASED BY:
51 PROCESSED 3 MY 90 12:11

C8012B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 54
 3868-905 ATD TYPE: BIOSID
 GPE MVMA 12P 2AF69 COMPUTED SHOULDER VELOCITY TEST DATE: 04-04-90
 ELEC DATA, SAE CLASS 180 (1ST INTEGRAL DRIVER ACCELERATION)



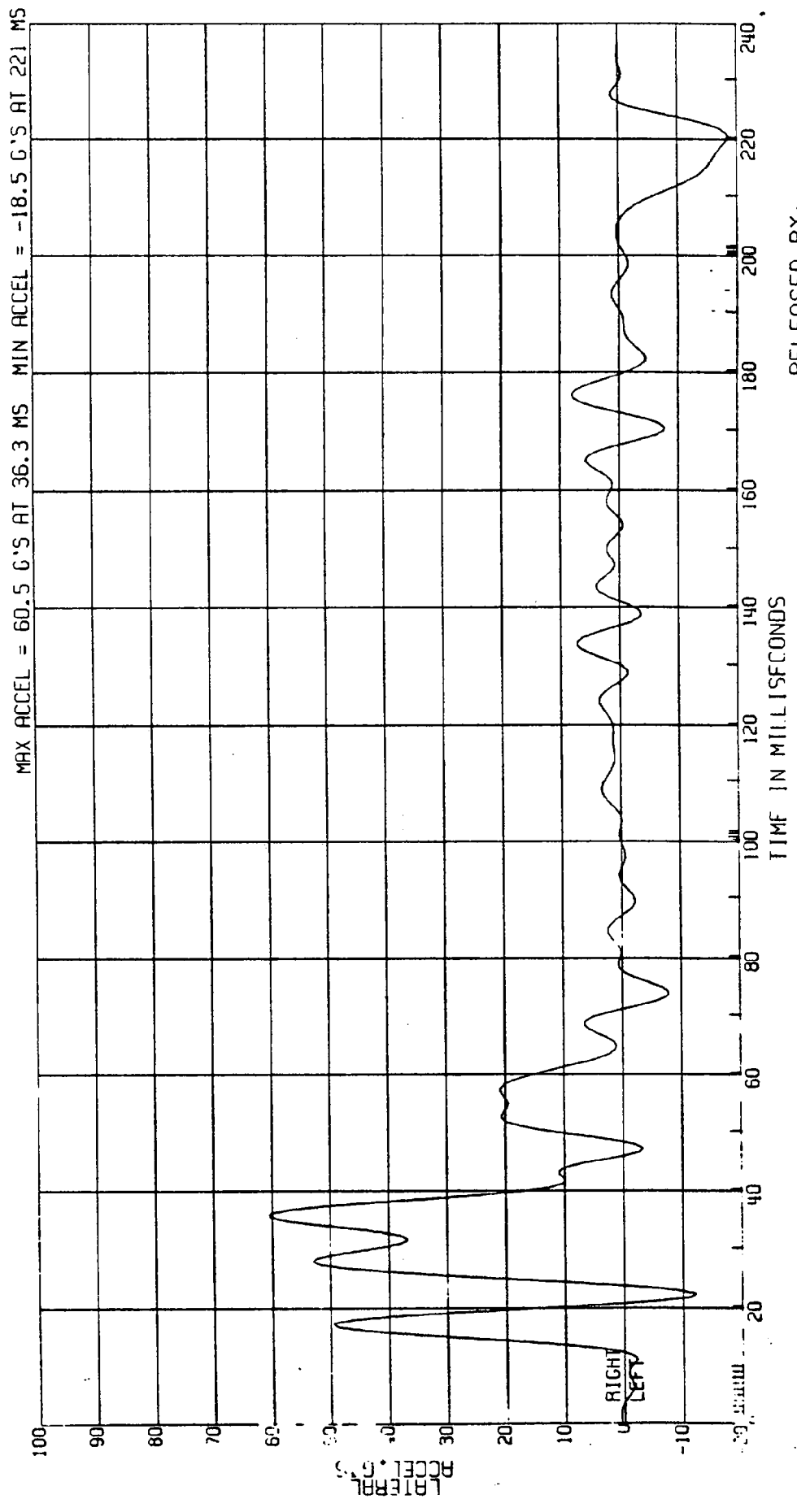
RELEASED BY:
 52 PROCESSED 3 MY 90 12:11

C80128 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 55
3868-905 ATD TYPE: BIOSID
CPE MVMA 12P 2AF69 DRIVER FIRST THORACIC RIB ACCEL.
ELEC DATA. SAE CLASS 1000 TEST DATE:04-04-90



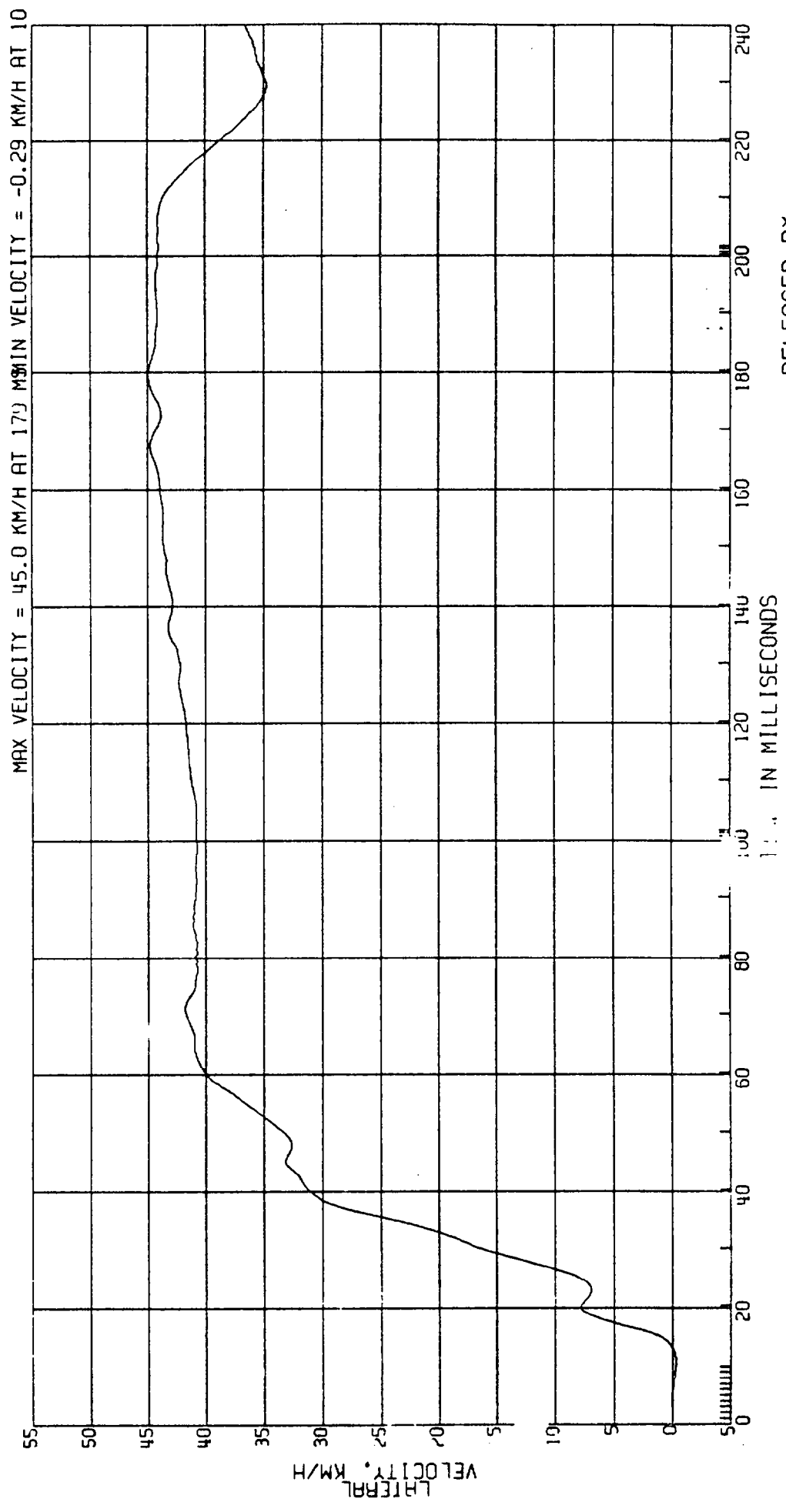
RELEASED BY:
53 PROCESSED 3 MY 90 12:11

28012B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 56
 3868-905 MVMA 12P 2AF69 ATD TYPE: BIOSID
 CPE NHTSA FIR FILTER DRIVER FIRST THORACIC RIB ACCEL. TEST DATE: 04-04-90
 ELEC DATA, NHTSA FIR FILTER F.I.R. FILTER, CLASS 300 BUTTERWORTH



RELEASED BY:
 54 PROCESSED 3 MY 90 12:11

C80128 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 57
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 12P 2AF69 TEST DATE: 04-04-90
 E-EC DATA, SAE CLASS 180 COMPUTED 1ST THORACIC RIB VELOCITY
 (1ST INTEGRAL DRIVER ACCELERATION)

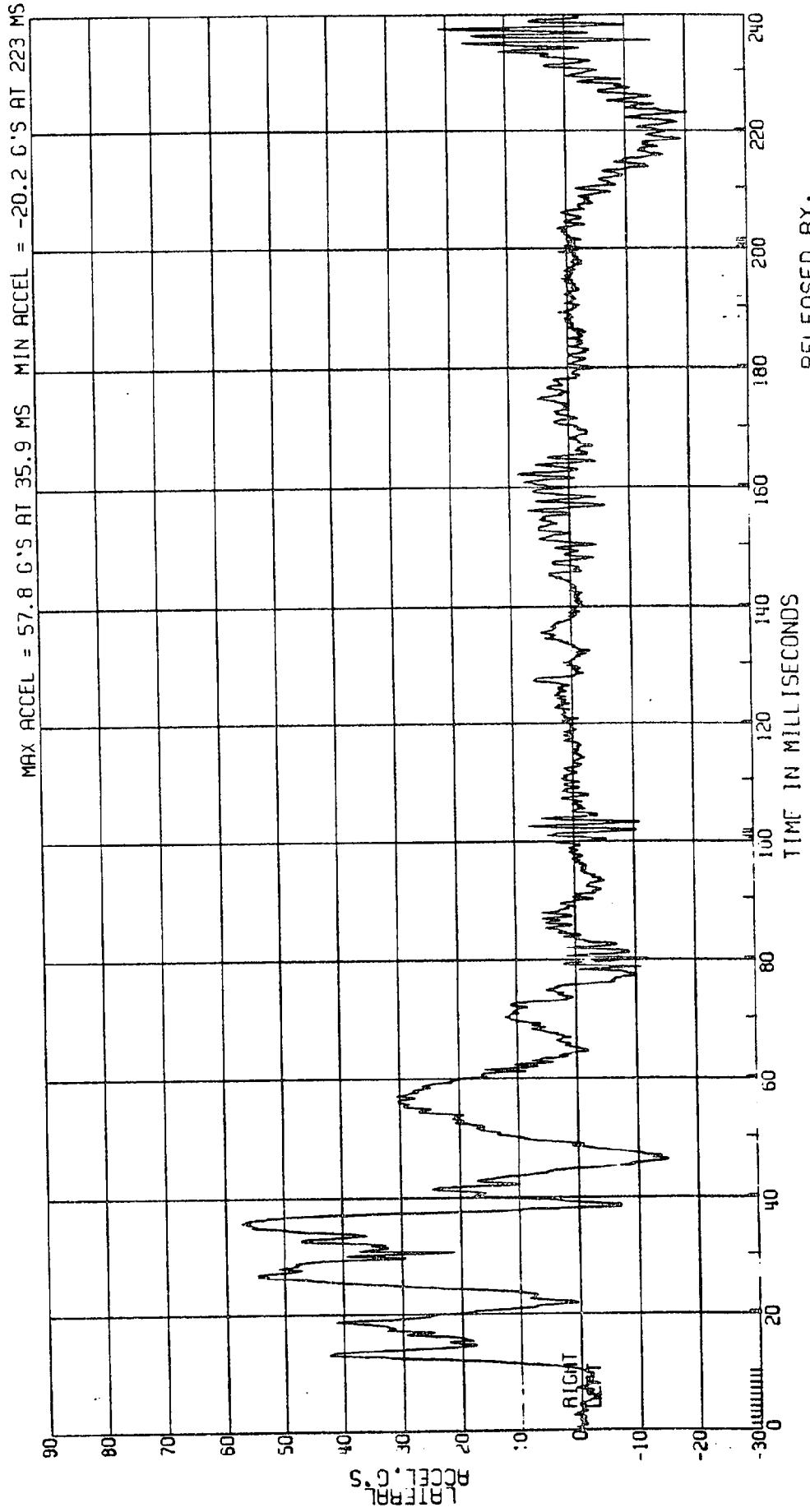


RELEASED BY:
 55 PROCESSED 3 MY 90 12:11

C80128 L. SIDE IMPACT- 27 DEG
MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 58
AID TYPE: BIOSID
TEST DATE: 04-04-90

DRIVER SECOND THORACIC RIB ACCEL.

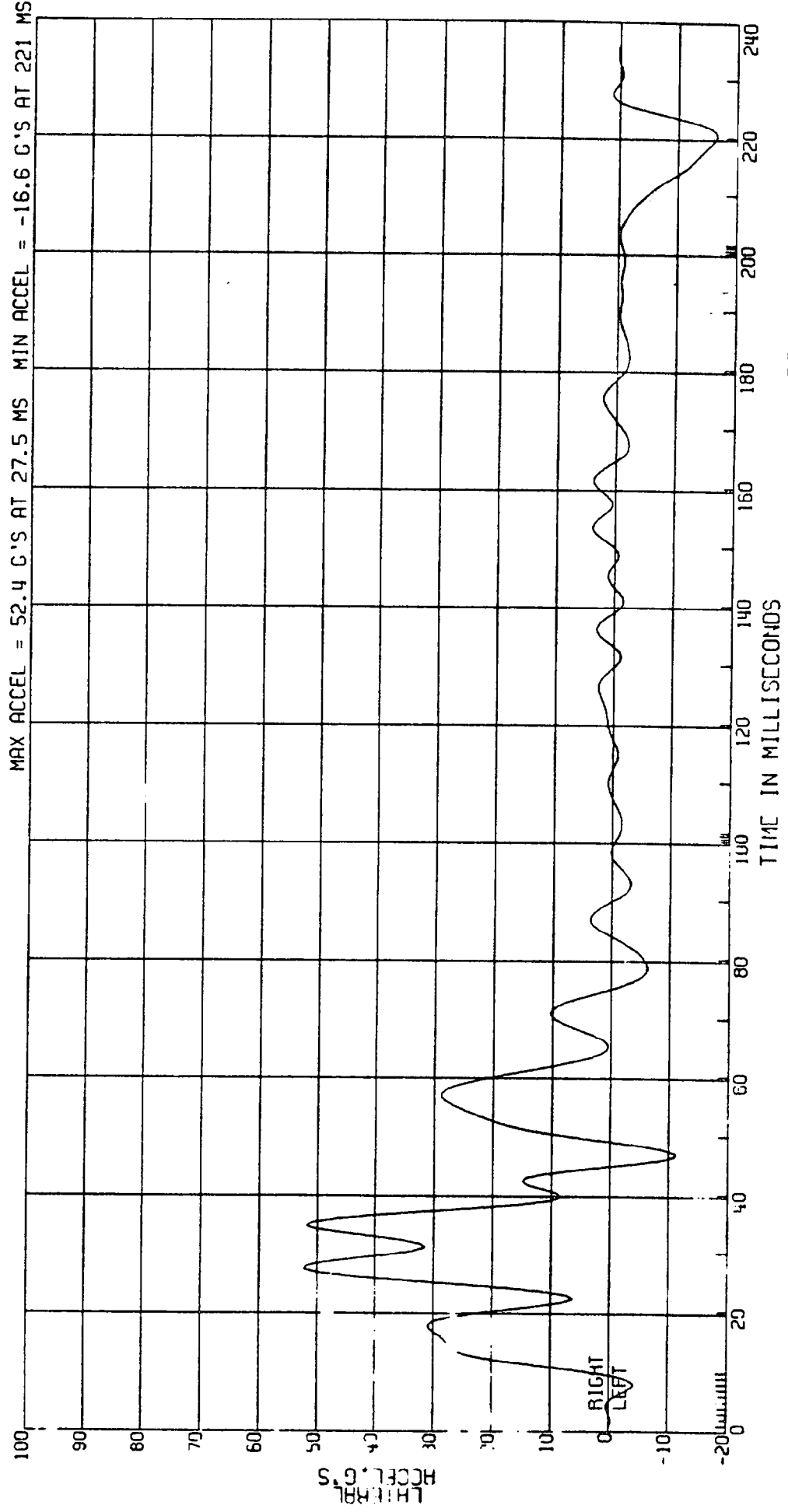
3868-905
CPE
MVMA 12P 2AF69
ELEC DATA, SAE CLASS 1000



RELEASED BY:
56 PROCESSED 3 MT 90 12:11

C80128 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 59
 3868-905
 CPE MVMA 12P 2AF69
 ELEC DATA, NHTSA FIR FILTER DRIVER SECOND THORACIC K1B ACCEL.
 F.I.R. FILTER, CLASS 300 BUTTERWORTH

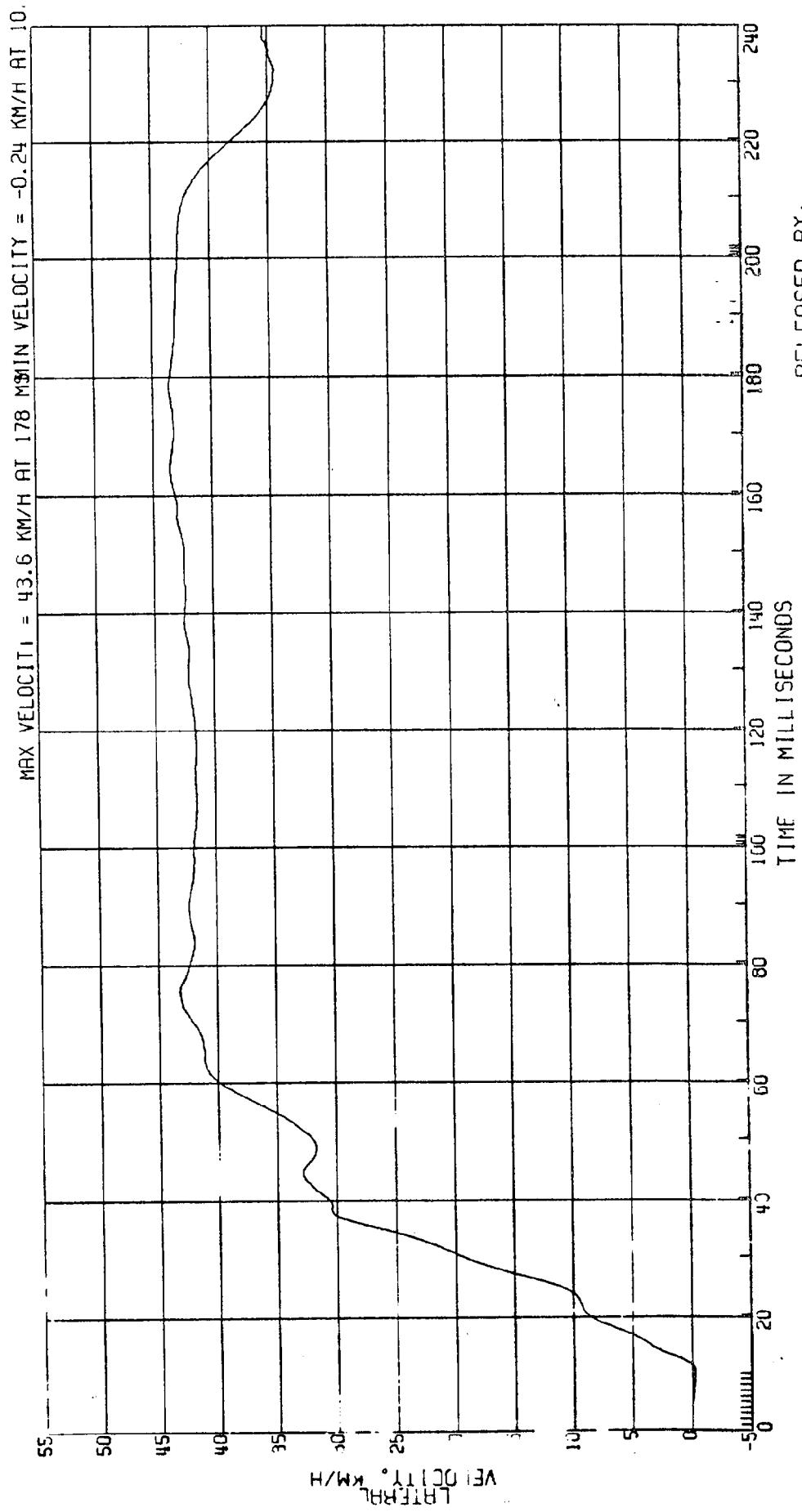
ATD TYPE: BIOSID
 TEST DATE: 04-04-90



RELEASED BY:

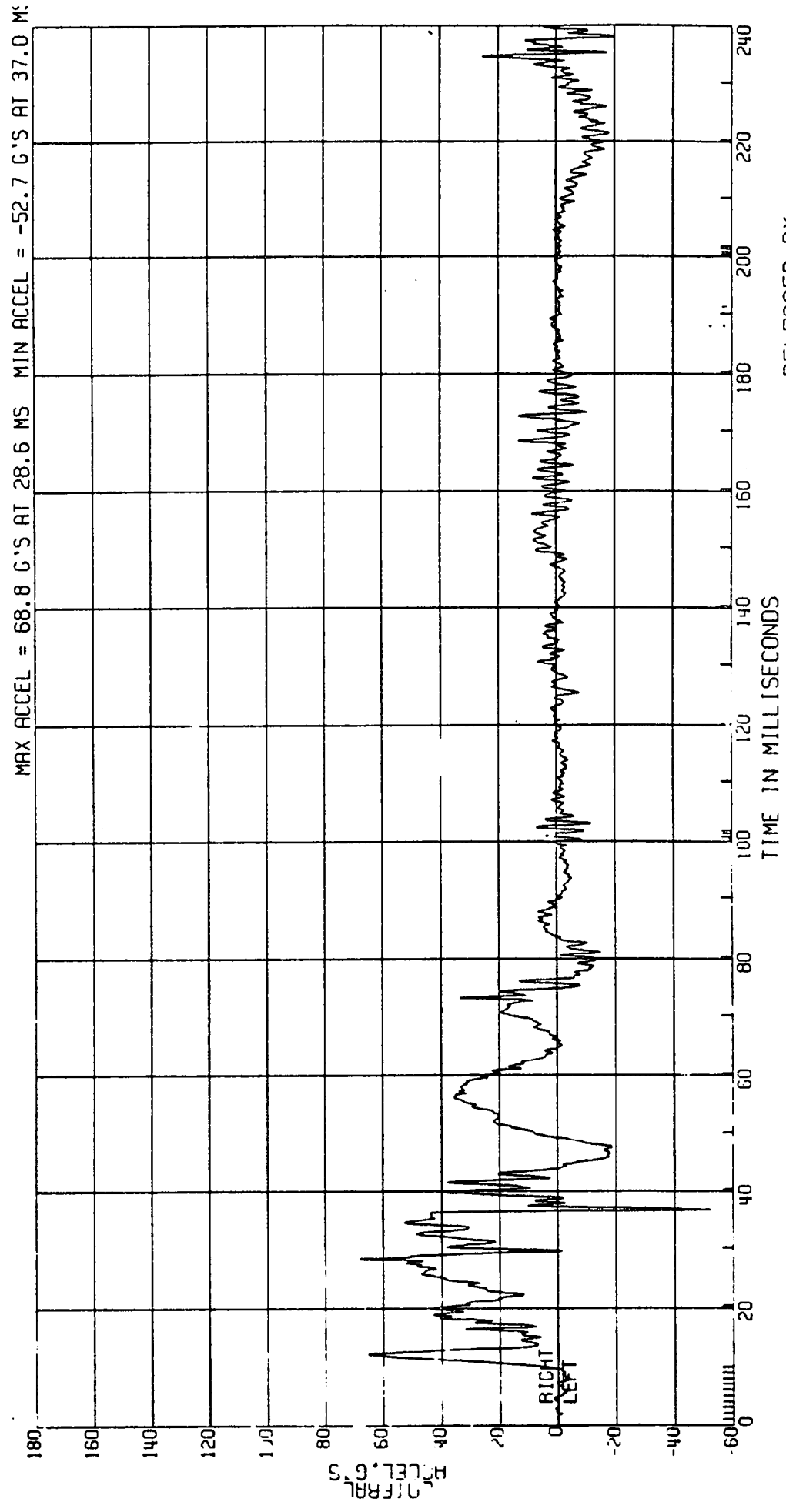
57 PROCESSED 3 MY 90 12:11

C8012B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5 KM/H FIGURE 60
3868-905 ATD TYPE: BIOSID
CPE MVMA 12P 2AF69 COMPUTED 2ND THORACIC RIB VELOCITY
ELEC DATA, SAE CLASS 180 (1ST INTEGRAL DRIVER ACCELERATION) TEST DATE: 04-04-90



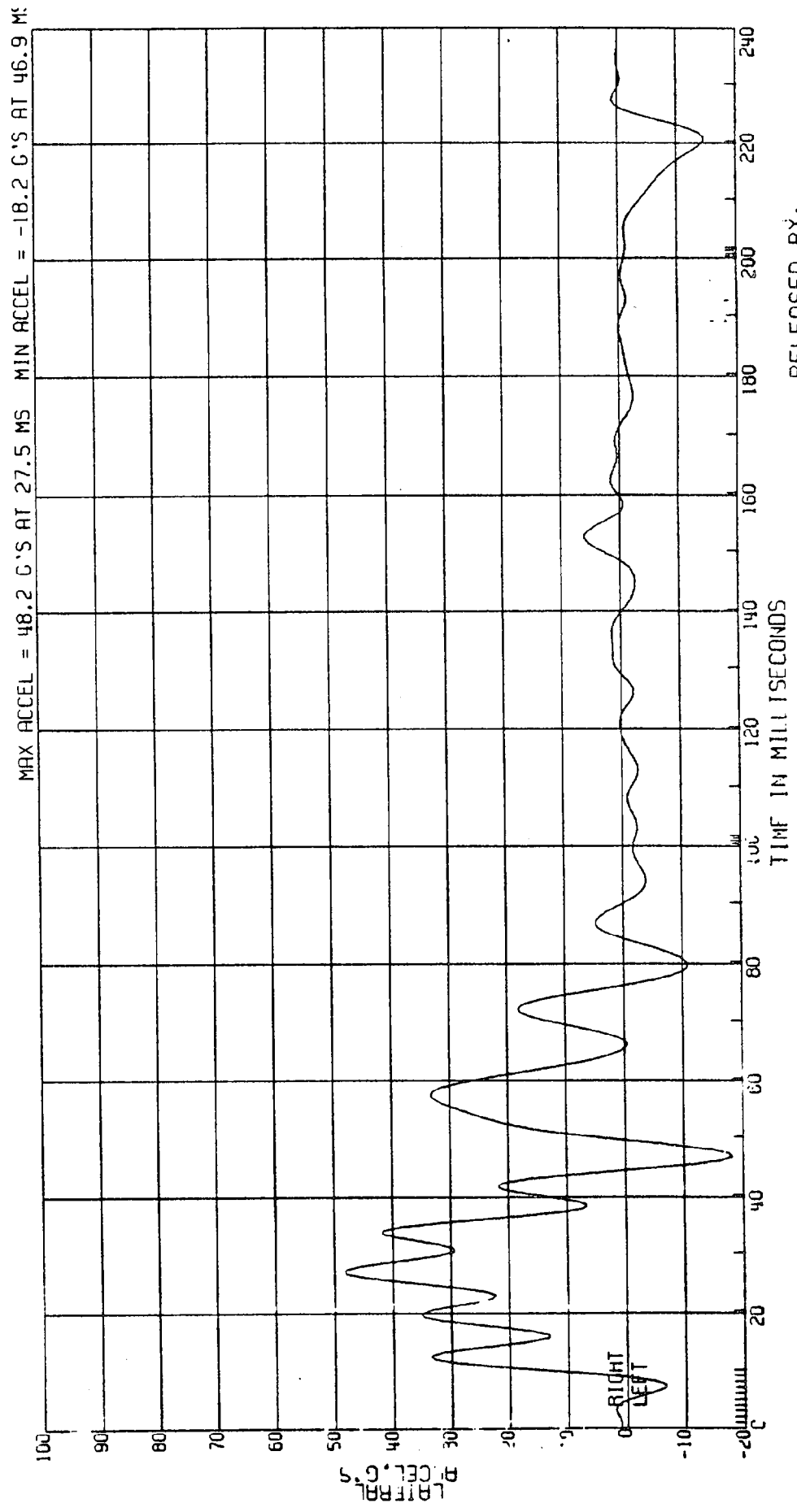
RELEASED BY:
58 PROCESSED 3 MY 90 12:11

C8012B L. SIDE IMPACT - 27 DEG MOVING CRABBED BHRR TO PRK VEHICLE 53.5KM/H FIGURE 61
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 12P 2AF69 DRIVER THIRD THORACIC RIB ACCEL. TEST DATE: 04-04-90
 ELEC DATA, SAE CLASS 1000



RELEASED BY:
 59 PROCESSED 3 MY 90 12:11

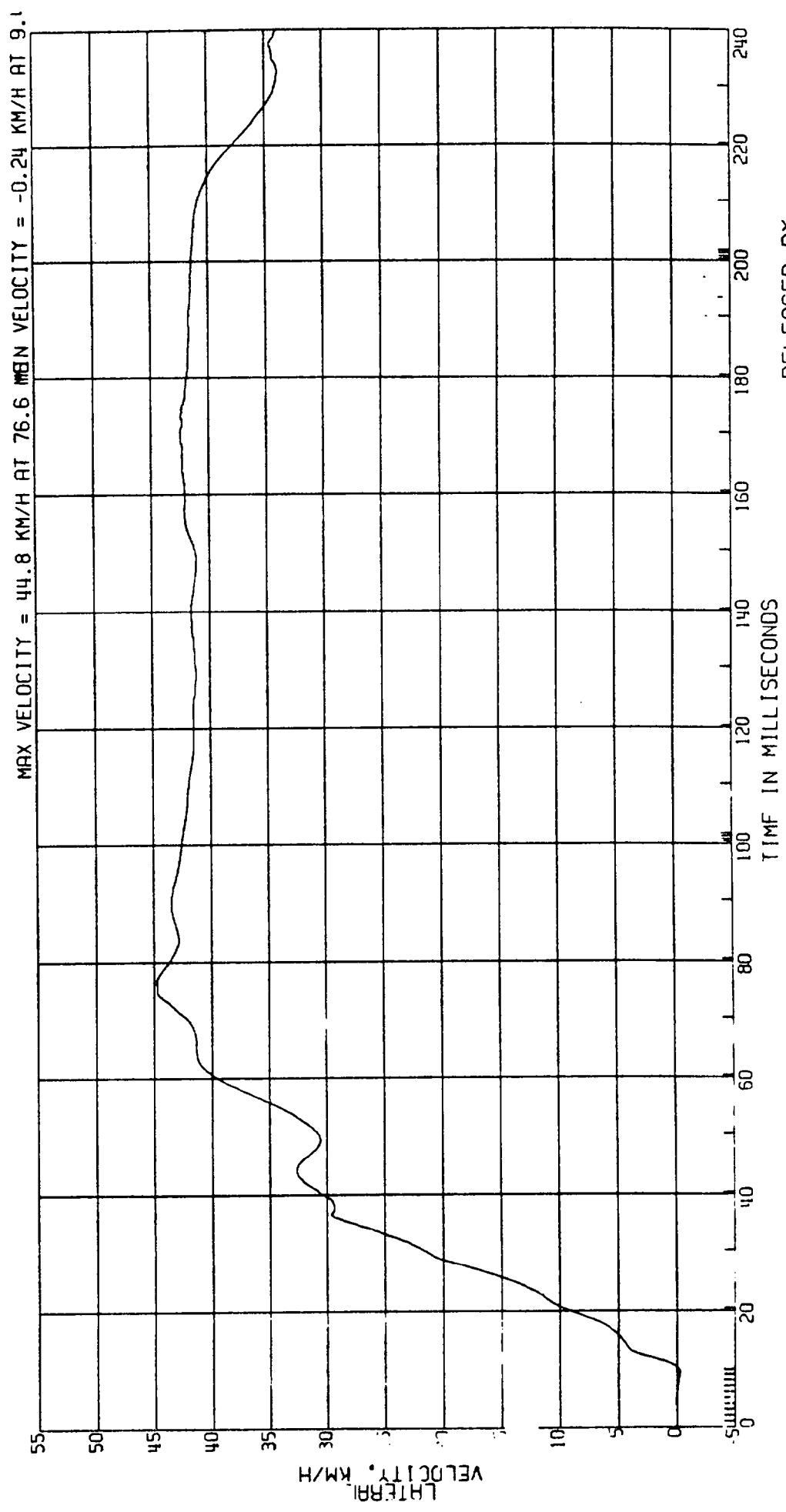
C80128 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 62
 3868-905 ATD TYPE: B10SID
 CPE MVMA 12P 2AF69 DRIVER THIRD THORACIC RIB ACCEL. TEST DATE: 04-04-90
 ELEC DATA, NHTSA FIR FILTER F.I.R. FILTER, CLASS 300 BUTTERWORTH



RELEASED BY:
 60 PROCESSED 3 MT 90 12:11

C80128 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 63
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 12P 2AF69 COMPUTED 3RD THORACIC RIB VELOCITY TEST DATE:04-04-90
 ELEC DATA, SAE CLASS 180 (1ST INTEGRAL DRIVER ACCELERATION)

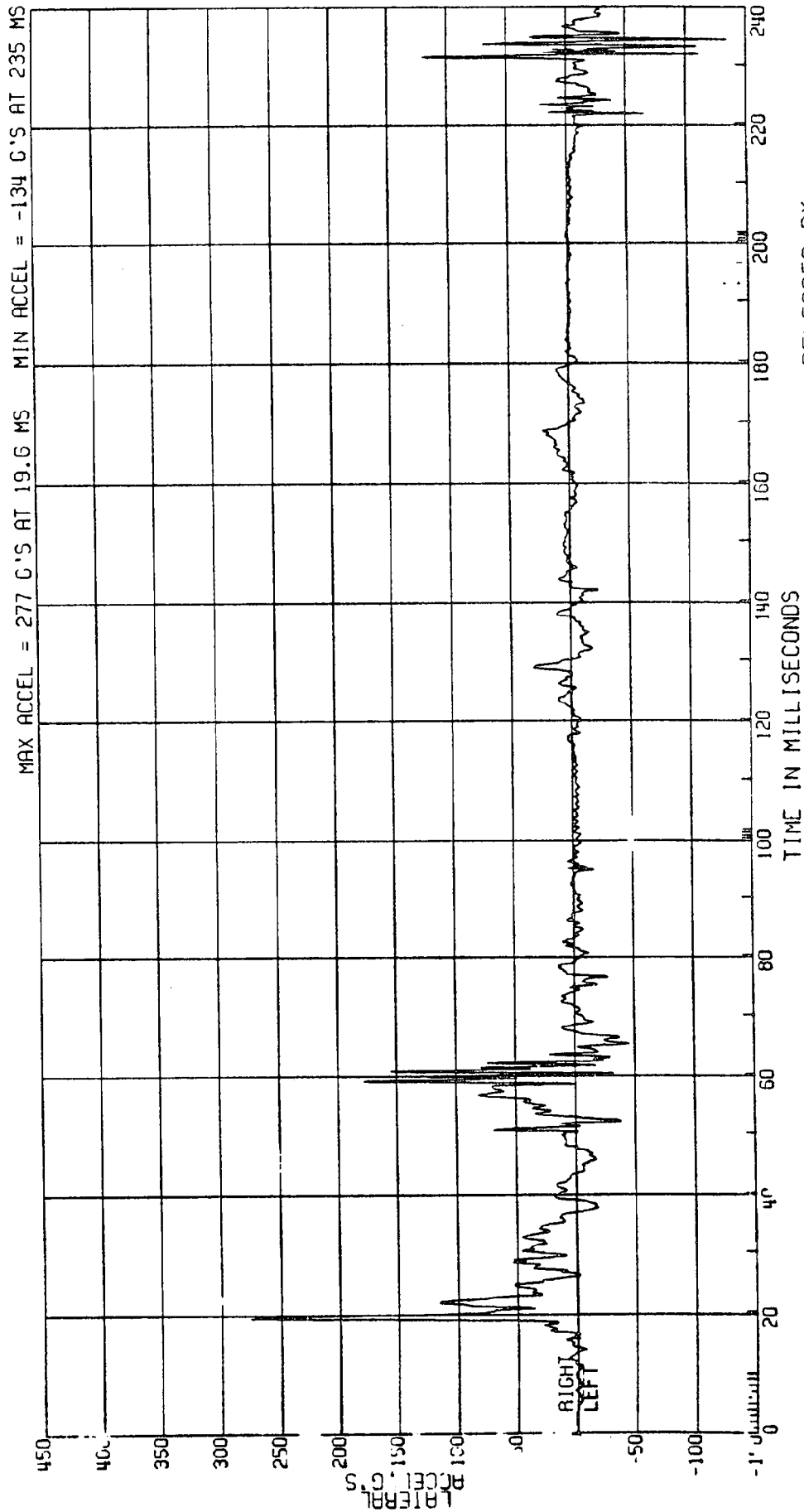
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RELEASED BY:
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8012B L. SIDE IMPACT- 27 DEG
1868-905
PE MVMA 12P 2AF69
LEC DATA, SAE CLASS 1000

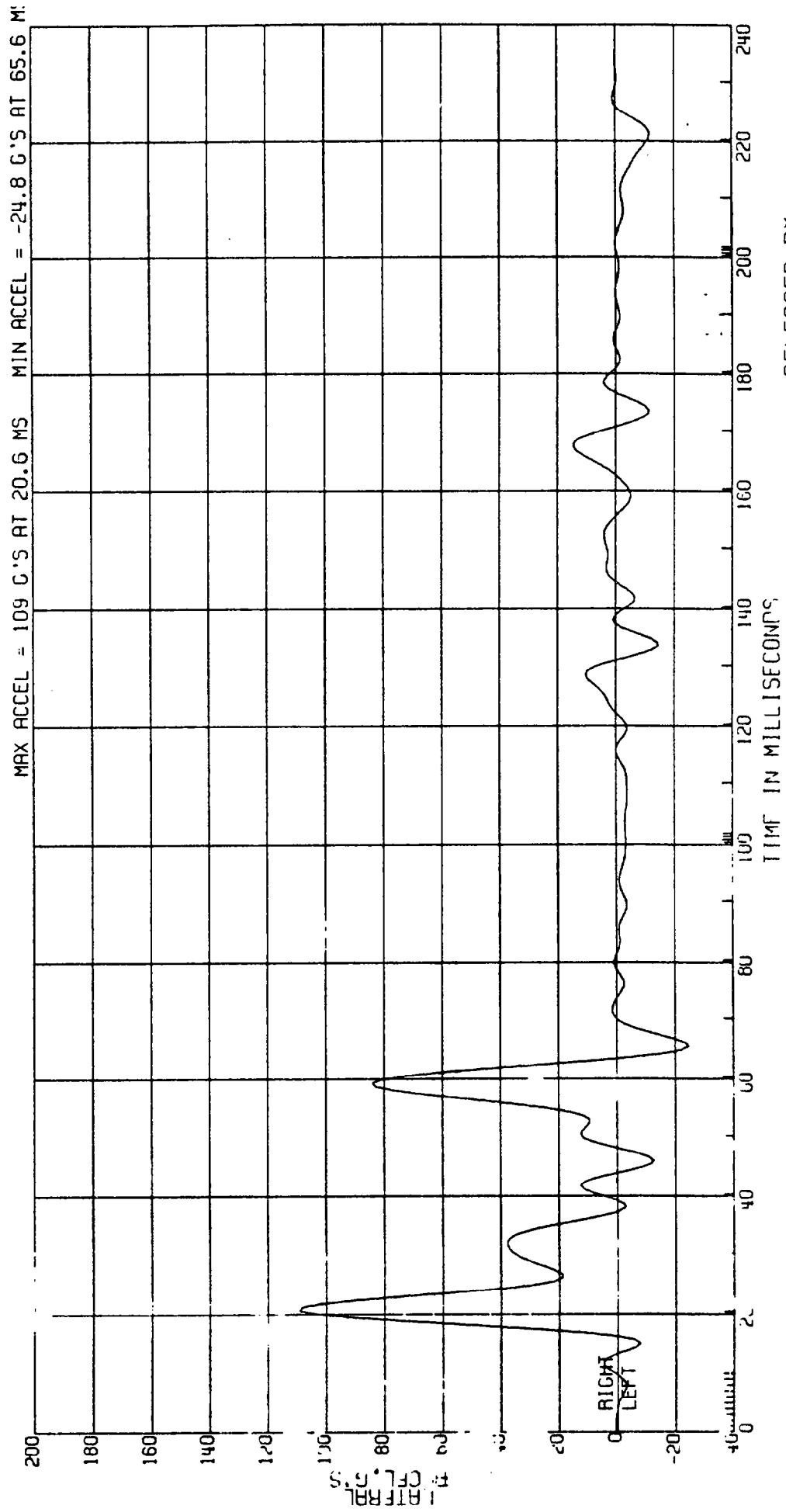
MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 64
AID TYPE: BIOSID
TEST DATE: 04-04-90
DRIVER FIRST ABDOMINAL RIB ACCEL.



RELEASED BY:
62 PROCESSED 3 MY 90 12:12

C80128 L. SIDE IMPACT- 27 DEG
3868-905
CPE MVMA 12P 2AF69
E-LEC DATA, NHTSA FIR FILTER

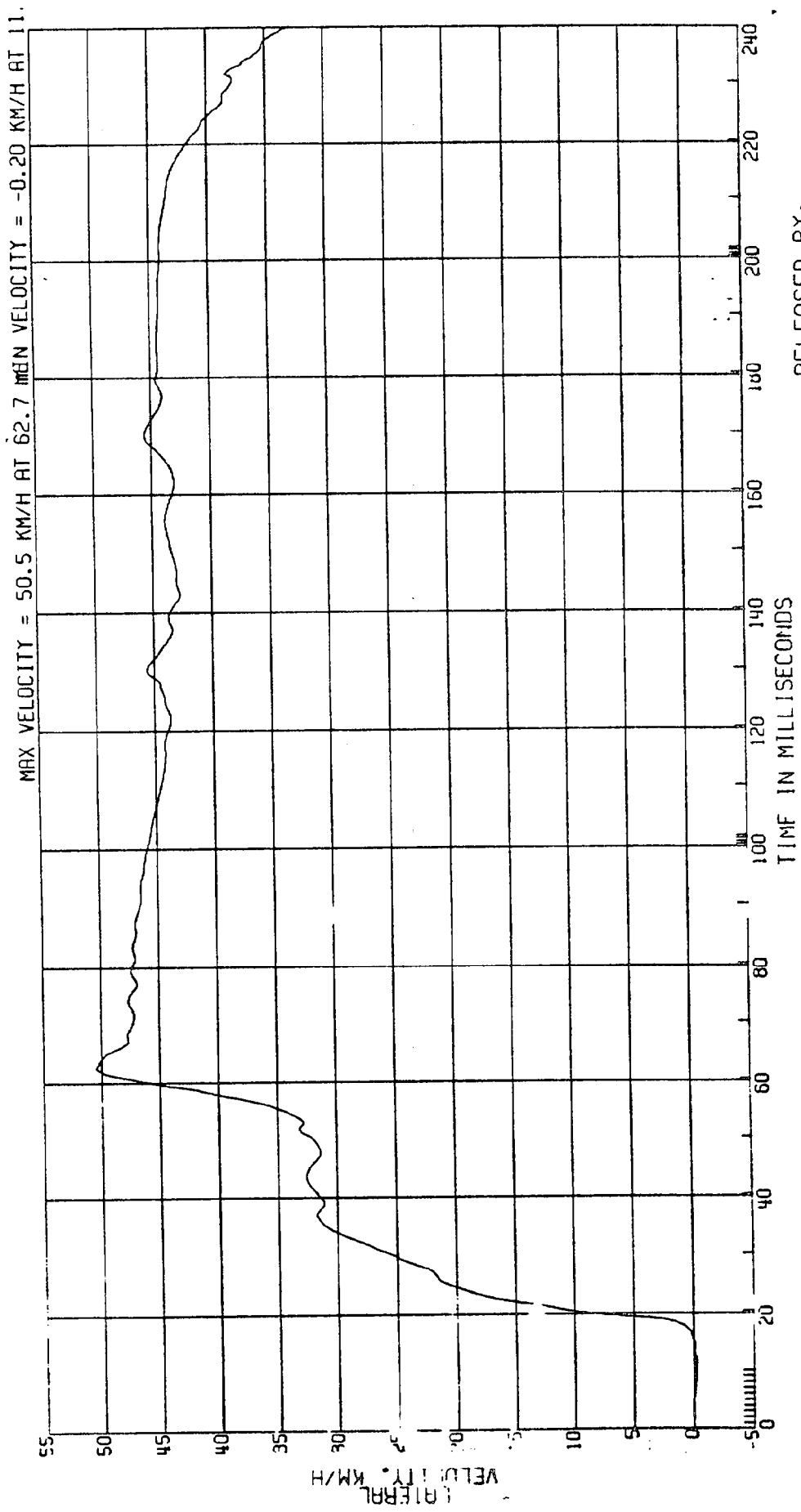
MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 65
ATD TYPE: BIOSID
TEST DATE: 04-04-90
DRIVER FIRST ABDOMINAL RIB ACCEL.
F.I.R. FILTER, CLASS 300 BUTTERWORTH



RELEASED BY:

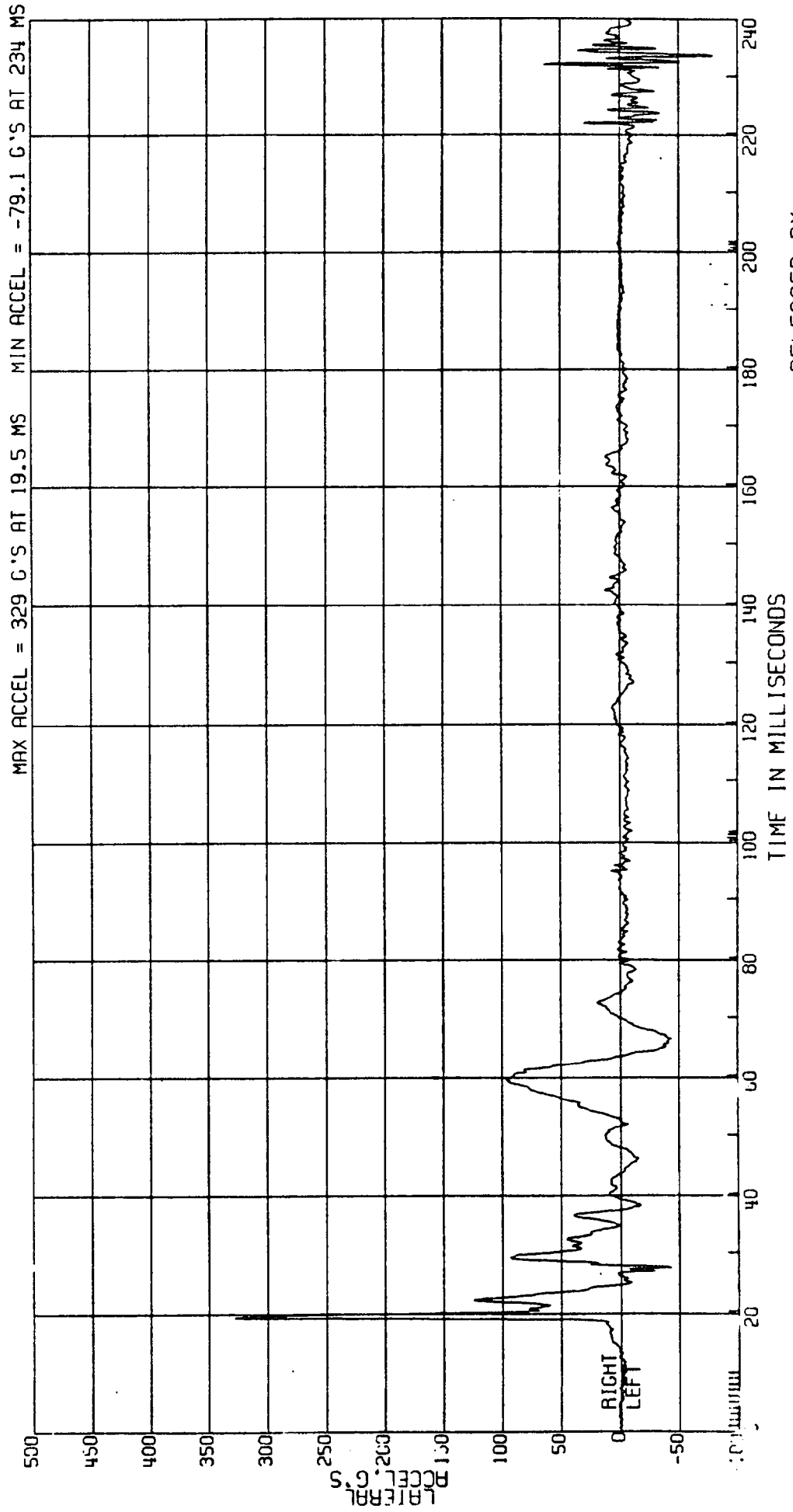
63 PROCESSED 3 MY 90 12:12

C8012B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 66
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 12P 2AF69 COMPUTED 1ST ABDOMINAL RIB VELOCITY TEST DATE:04-04-90
 ELEC DATA, SAE CLASS 180 (1ST INTEGRAL DRIVER ACCELERATION)



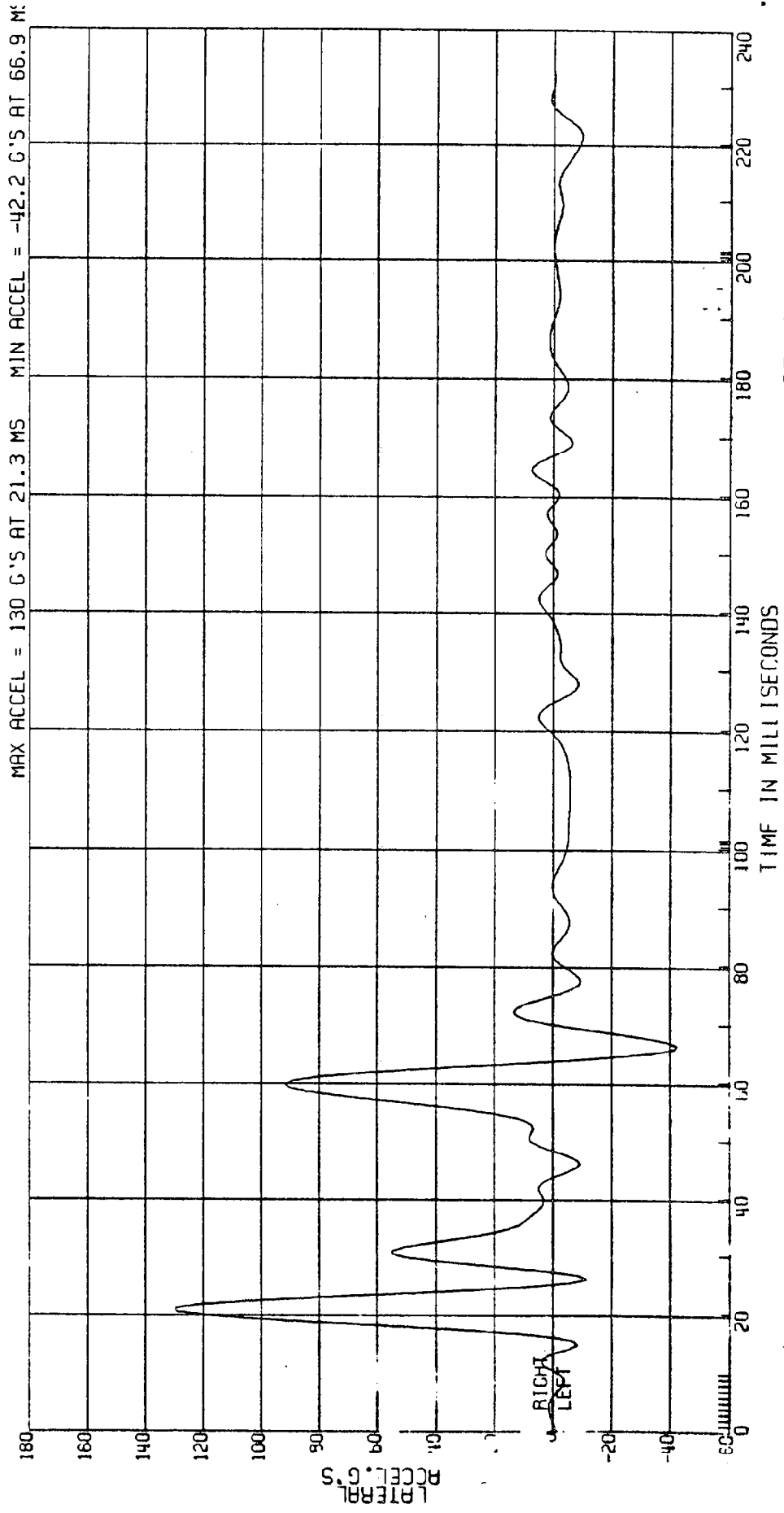
RELEASED BY:
 64 PROCESSED 3 MY 90 12:12

C8012B L. SIDE IMPACT - 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 67
3868-905
CPE MVMA 12P 2AF69 DRIVER SECOND ABDOMINAL RIB ACCEL.
ELEC DATA, SAE CLASS 1000 TEST DATE: 04-04-90



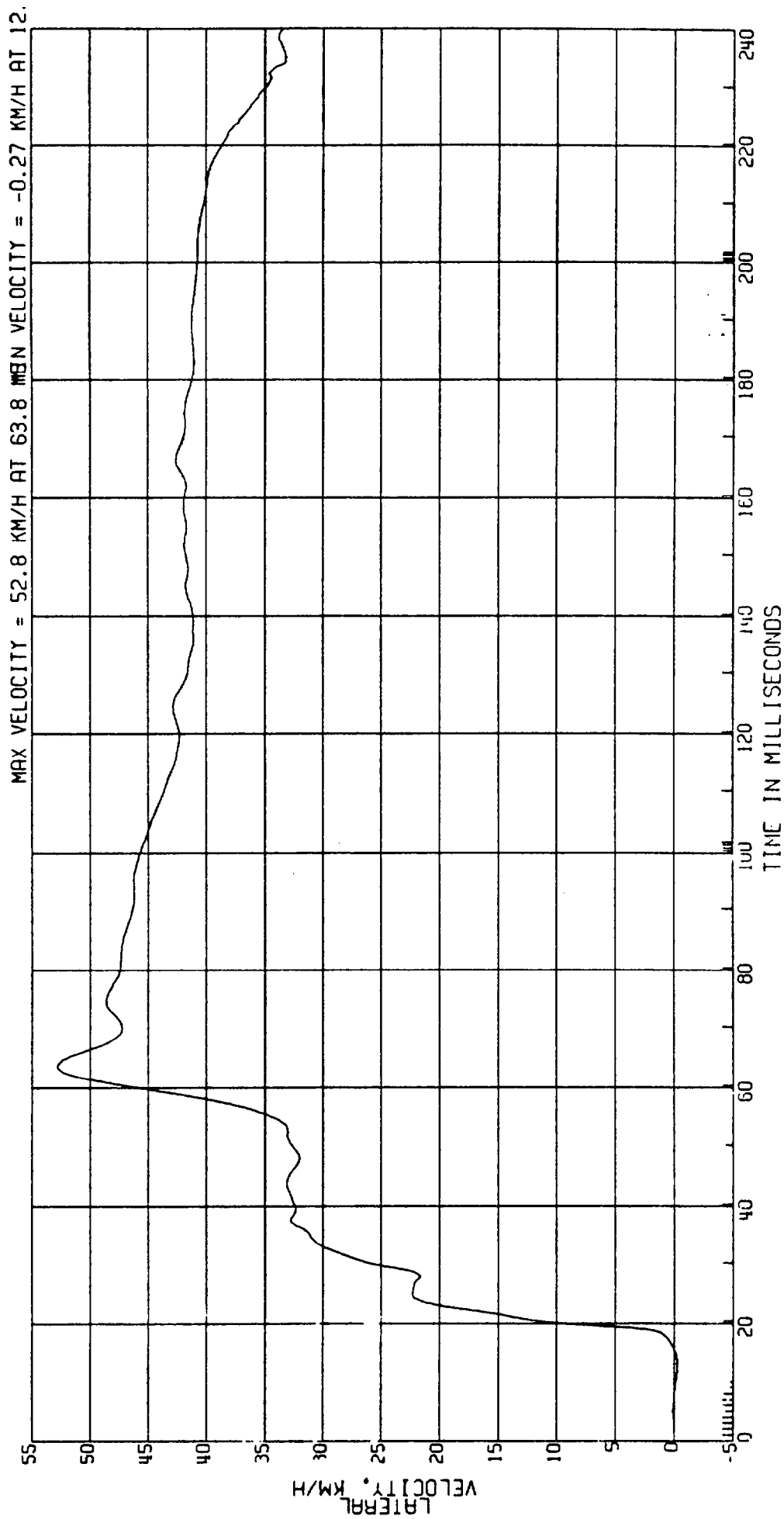
RELEASED BY:
65 PROCESSED 3 MY 90 12:12

C80128 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 68
3868-905
CPE MVMA 12P 2AF69 DRIVER SECOND ABDOMINAL RIB ACCEL. TEST DATE:04-04-90
ELEC DATA, NHTSA FIR FILTER F.I.R. FILTER, CLASS 300 BUTTERWORTH



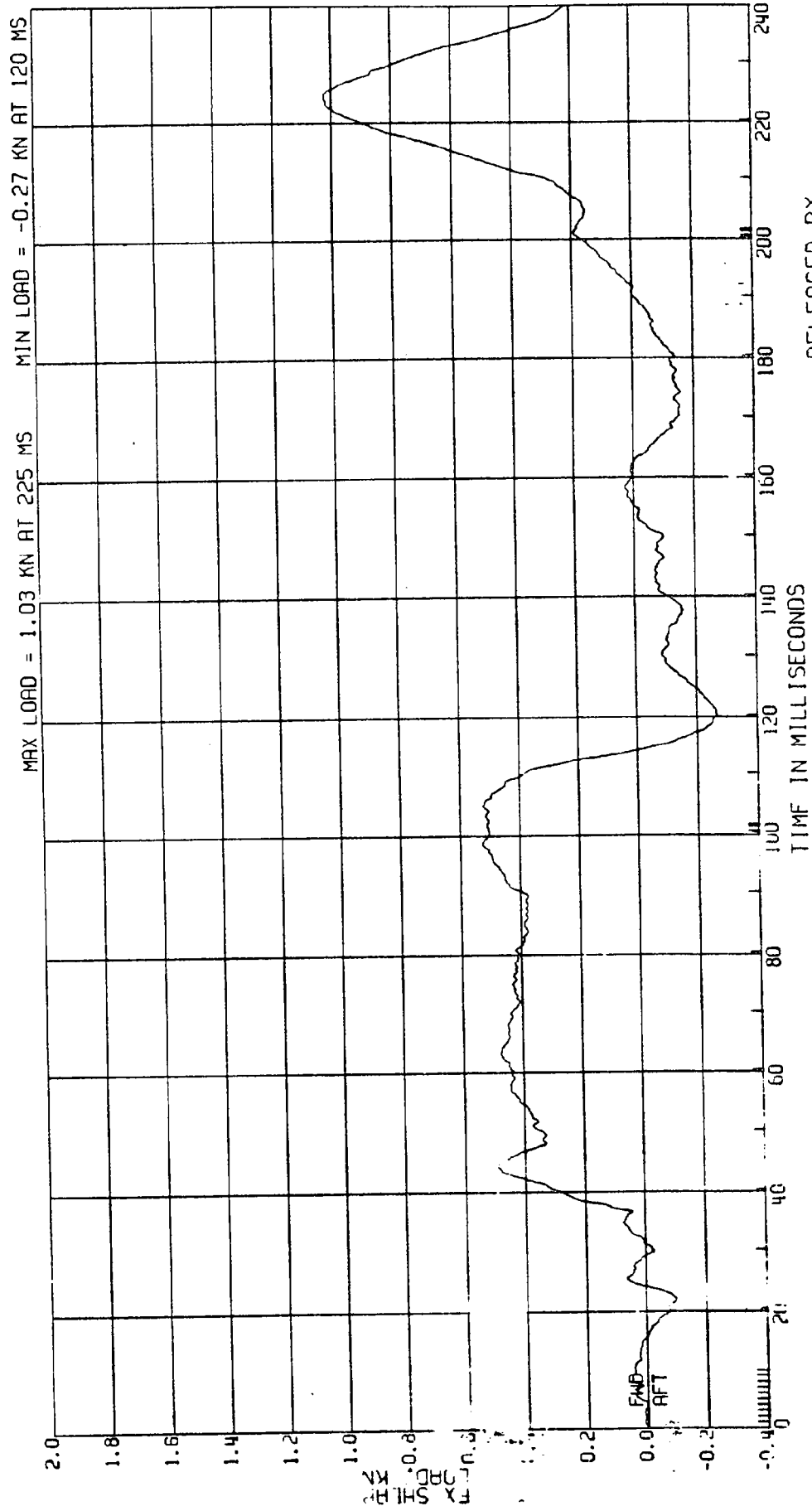
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66 PROCESSED 3 MY 90 12:12

C8012B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5 KM/H FIGURE 69
3868-905 ATD TYPE: BIOSID
CPE MVMA 12P 2AF69 COMPUTED 2ND ABDOMINAL RIB VELOCITY
E-EC DATA. SAE CLASS 180 (1ST INTEGRAL DRIVER ACCELERATION)
TEST DATE: 04-04-90



RELEASED BY:
67 PROCESSED 3 MY 90 12:12

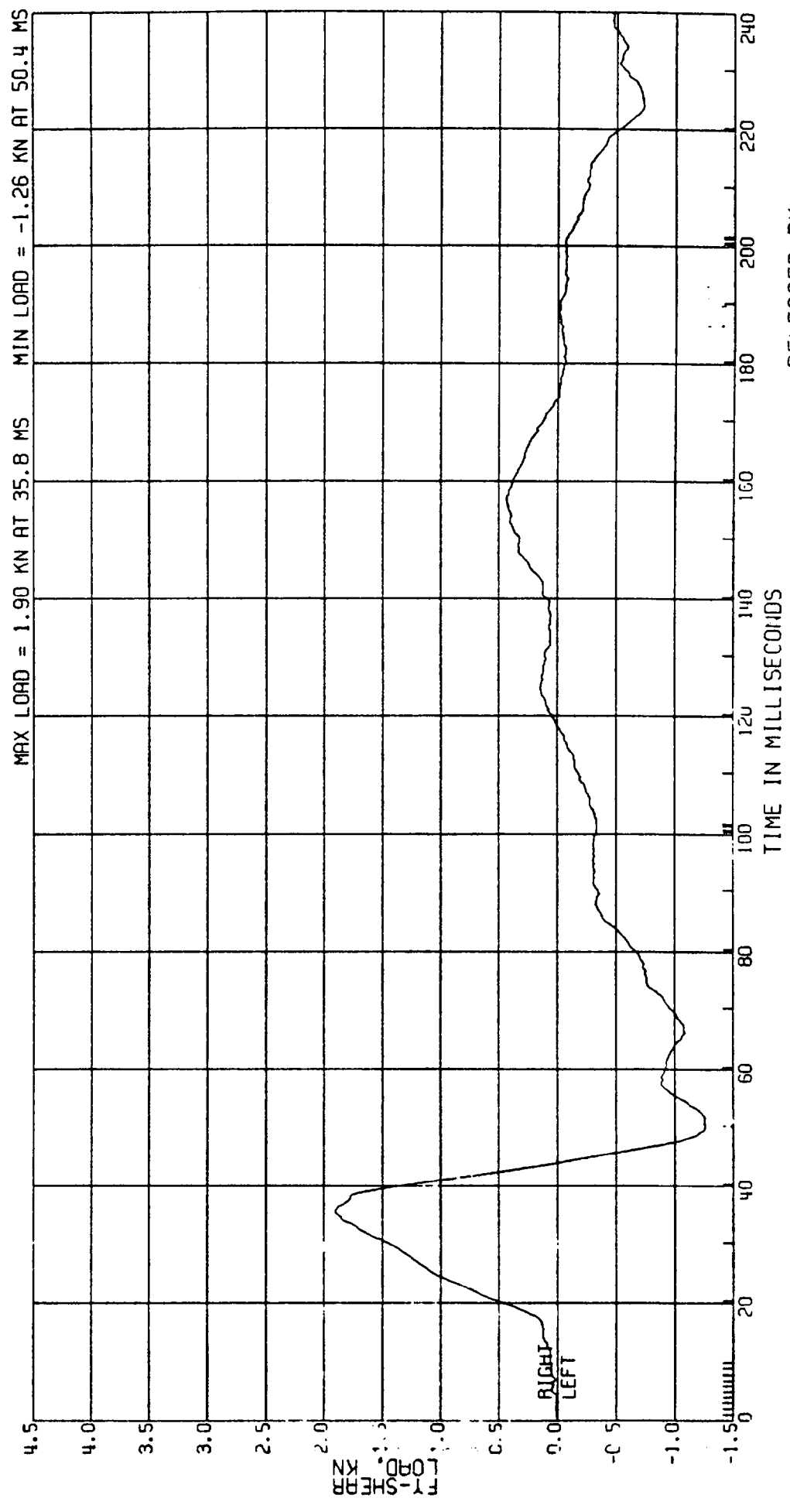
C80128 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 70
 3868-905 MVMA 12P 2AF69
 CPE ELEC DATA, SAE CLASS 180 DRIVER LOWER LUMBAR LOAD
 ATD TYPE: BIOSID
 TEST DATE: 04-04-90



RELEASED BY:
 68 PROCESSED 3 MY 90 12:12

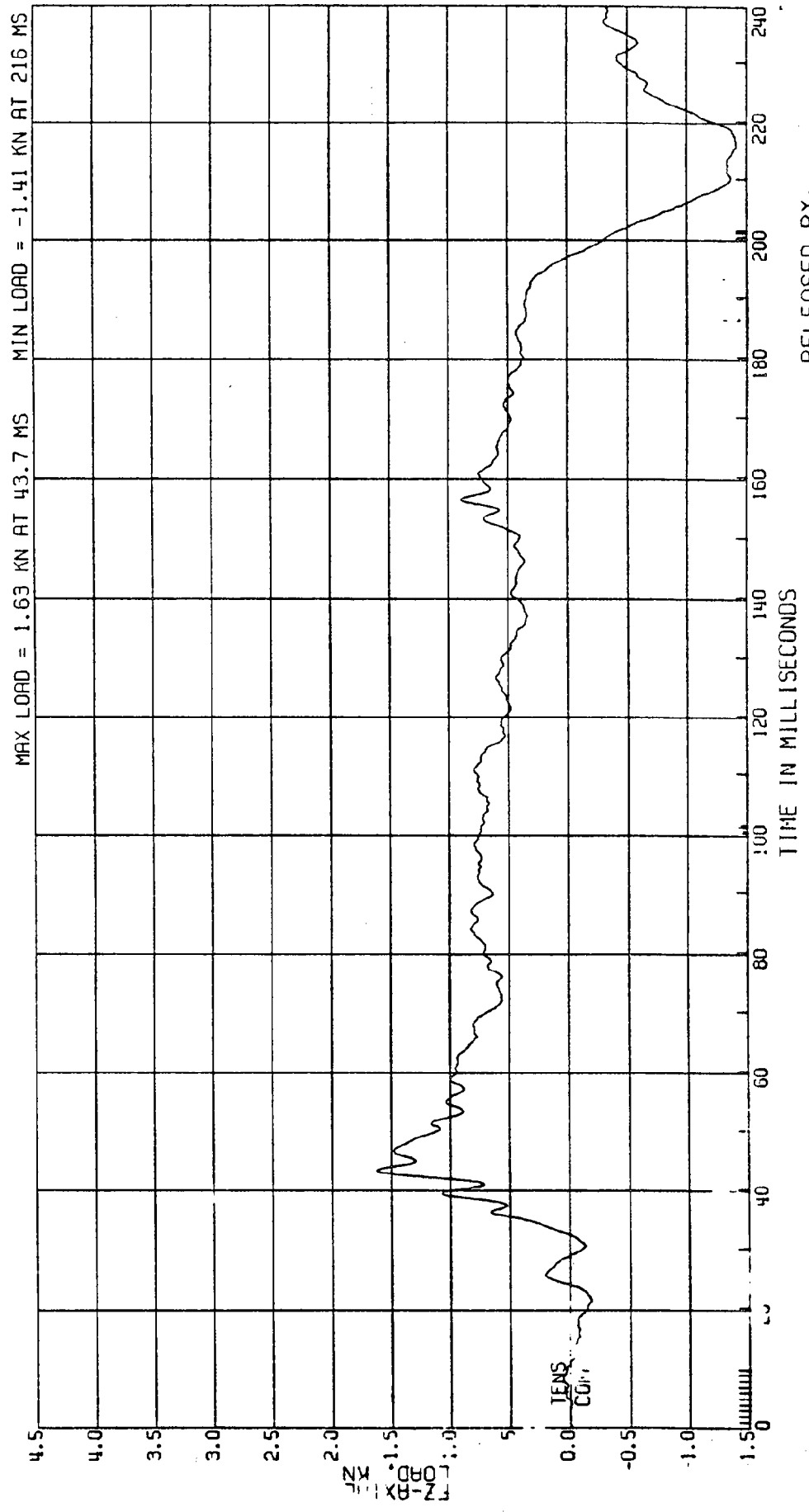
C8012B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 71
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 12P 2AF69 DRIVER LOWER LUMBAR LOAD
 ELEC DATA, SAE CLASS 180 TEST DATE: 04-04-90

1 1 1



RELEASED BY:
 69 PROCESSED 3 MY 90 12:12

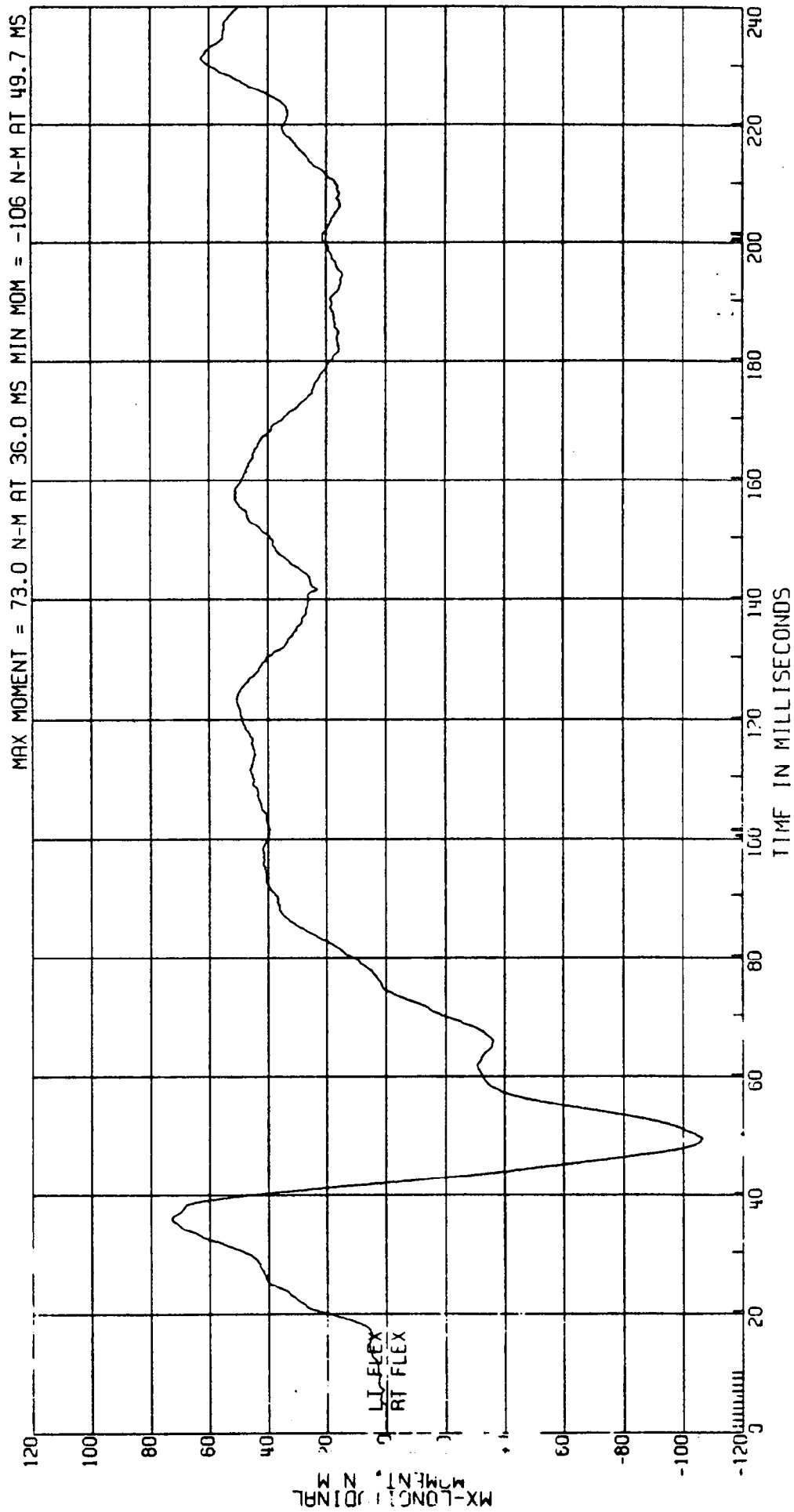
C8012B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 72
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 12P 2AF69 DRIVER LOWER LUMBAR LOAD TEST DATE:04-04-90
 ELEC DATA, SAE CLASS 180



RELEASED BY:
 70 PROCESSED 3 MY 90 12:12

C80128 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 73
3868-905
CPE MVMA 12P 2AF69
ELEC DATA, SAE CLASS 180

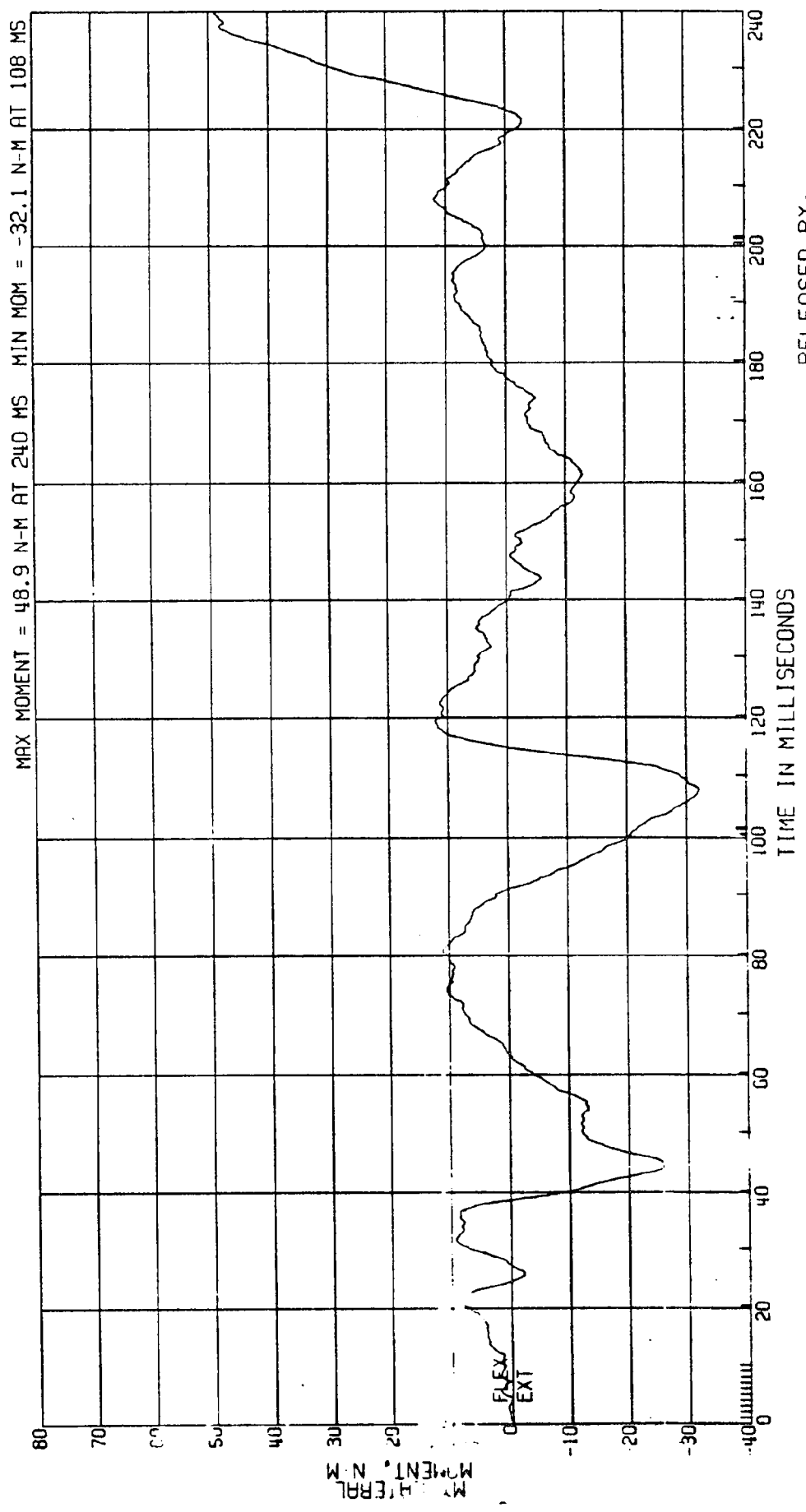
ATD TYPE: BIOSID
TEST DATE: 04-04-90



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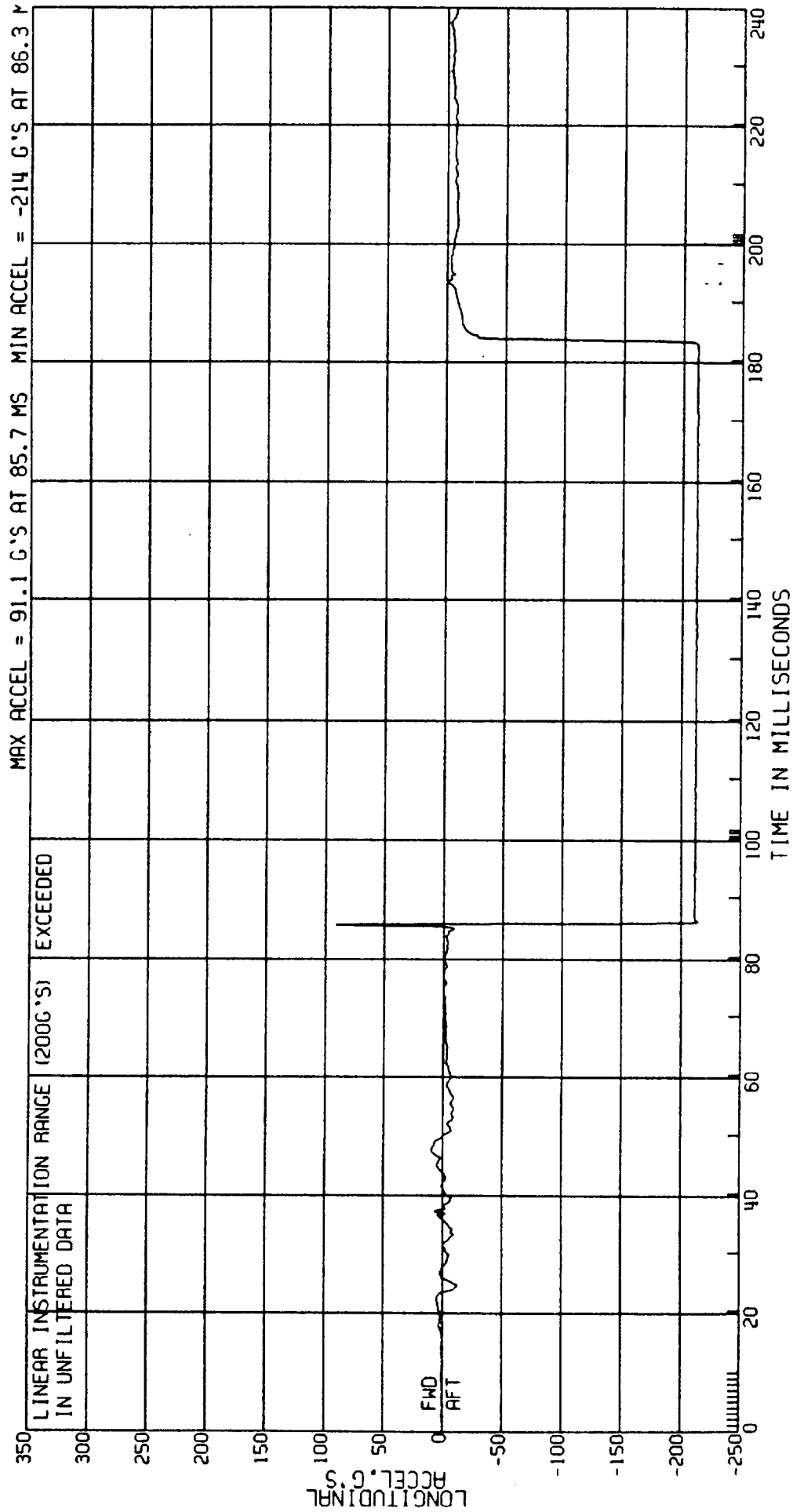
71 PROCESSED 3 MY 90 12:12

C8012B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 74
 3868-905 ATD TYPE: B10SID
 CPE MVMA 12P 2AF69 DRIVER LOWER LUMBAR MOMENT TEST DATE: 04-04-90
 ELEC DATA, SAE CLASS 180



RELEASED BY:
 72 PROCESSED 3 MY 90 12:12

C8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 75
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 12P 2AF69 DRIVER PELVIC ACCEL.
 ELEC DATA, SAE CLASS 600 TEST DATE:04-04-90

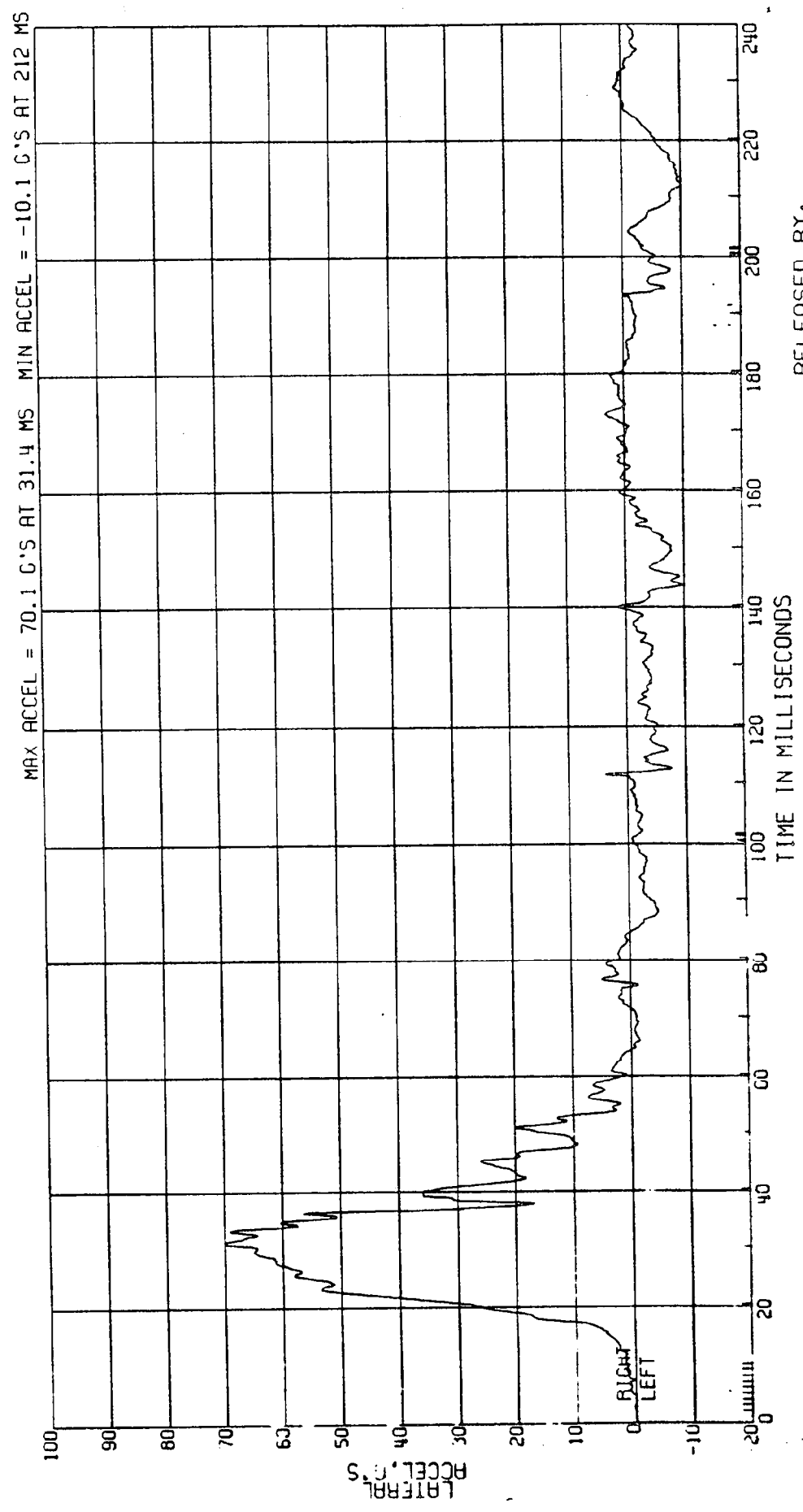


RELEASED BY:
 74 PROCESSED 3 MY 90 12:07

C8012B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 76
ATD TYPE: BIOSID
TEST DATE: 04-04-90

DRIVER PELVIC ACCEL.

3868-905 MVMA 12P 2AF69
CPE ELEC DATA, SAE CLASS 600

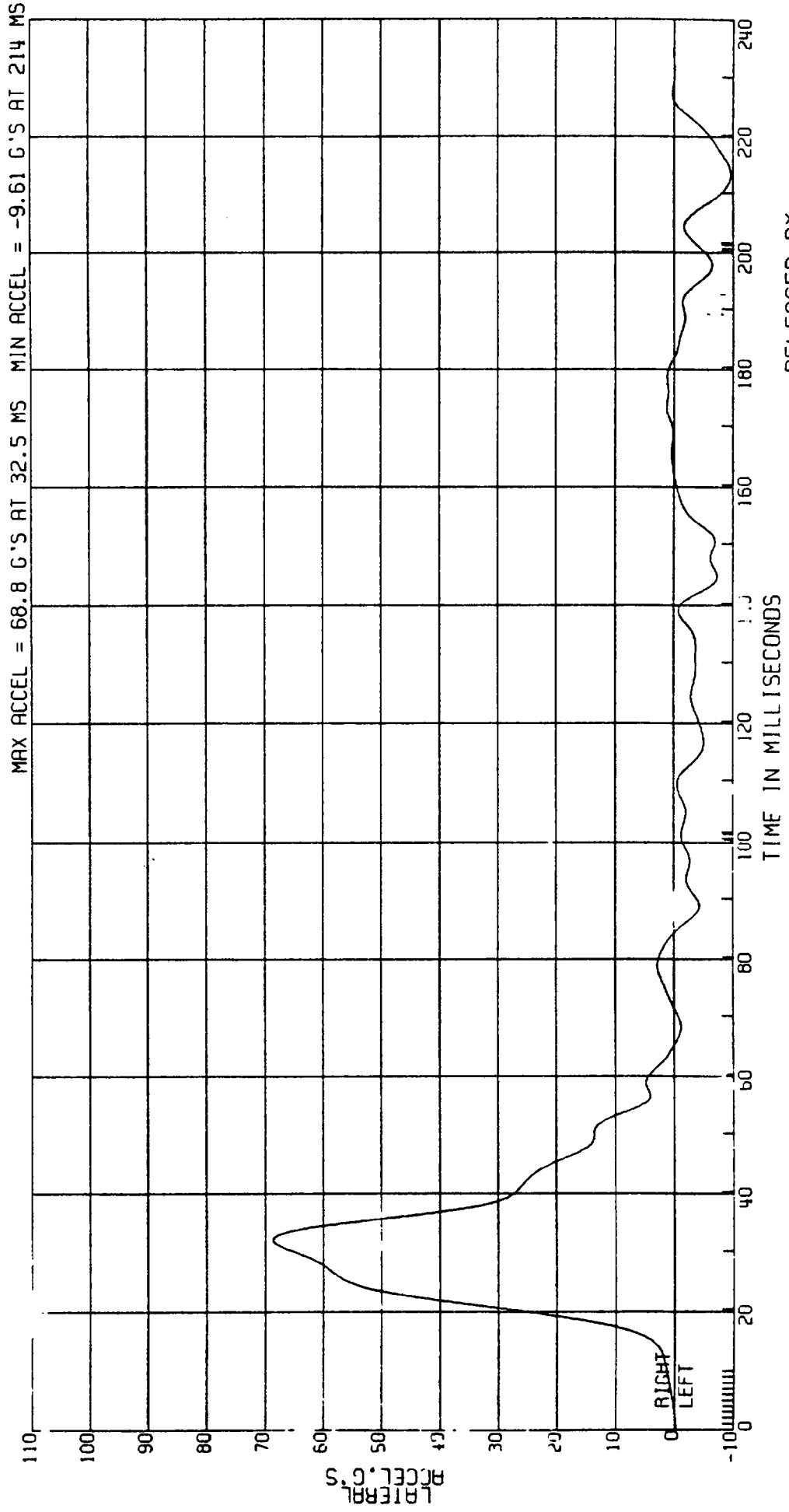


RELEASED BY:

73 PROCESSED 3 MY 90 12:12

C80128 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 77
3868-905 ATD TYPE: BIOSID
CPE MVMA 12P 2AF69 DRIVER PELVIC ACCEL. TEST DATE:04-04-90

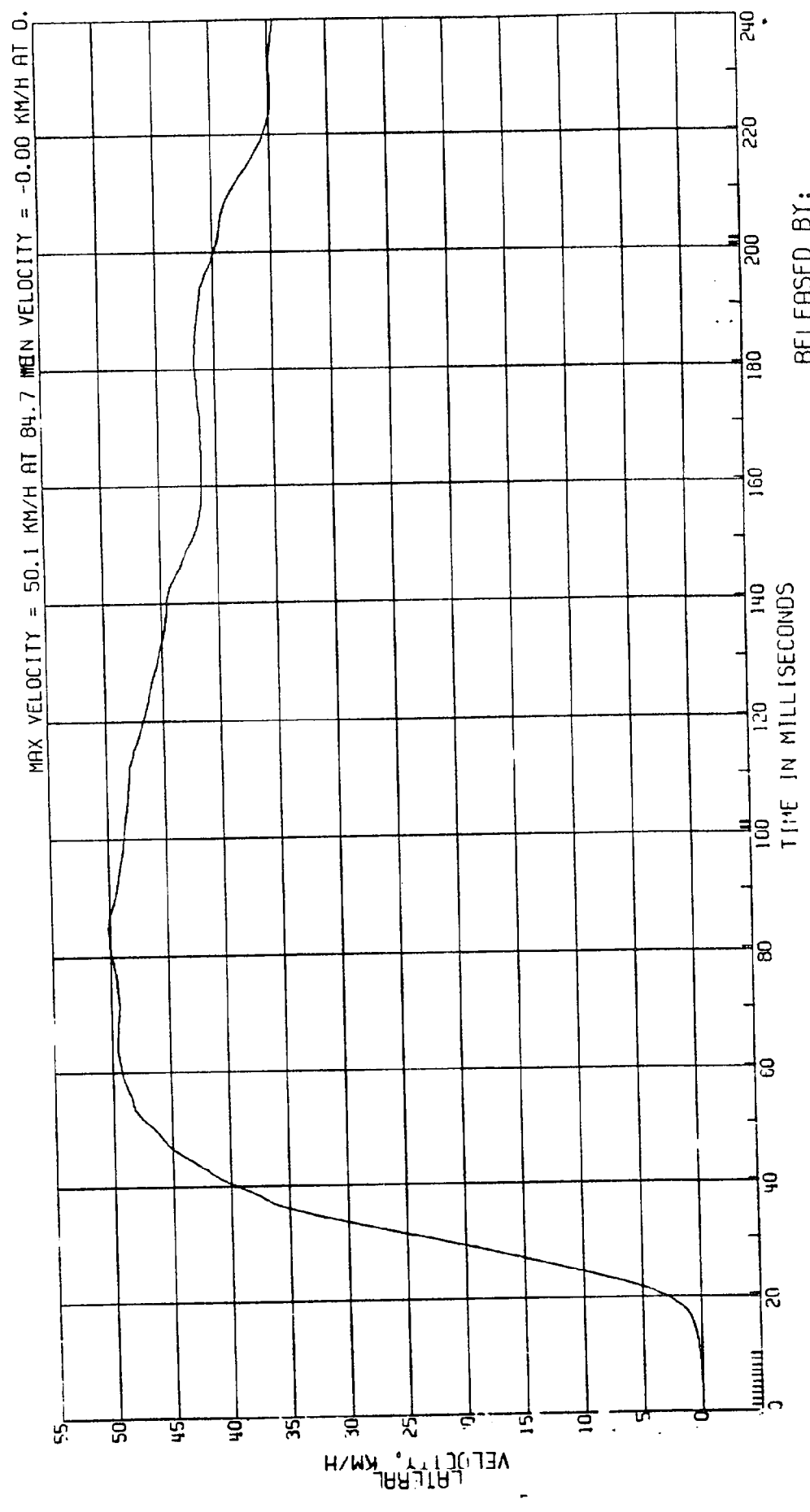
ELEC DATA, NHTSA FIR FILTER F.I.R. FILTER, CLASS 300 BUTTERWORTH



RELEASED BY:

74 PROCESSED 3 MY 90 12:12

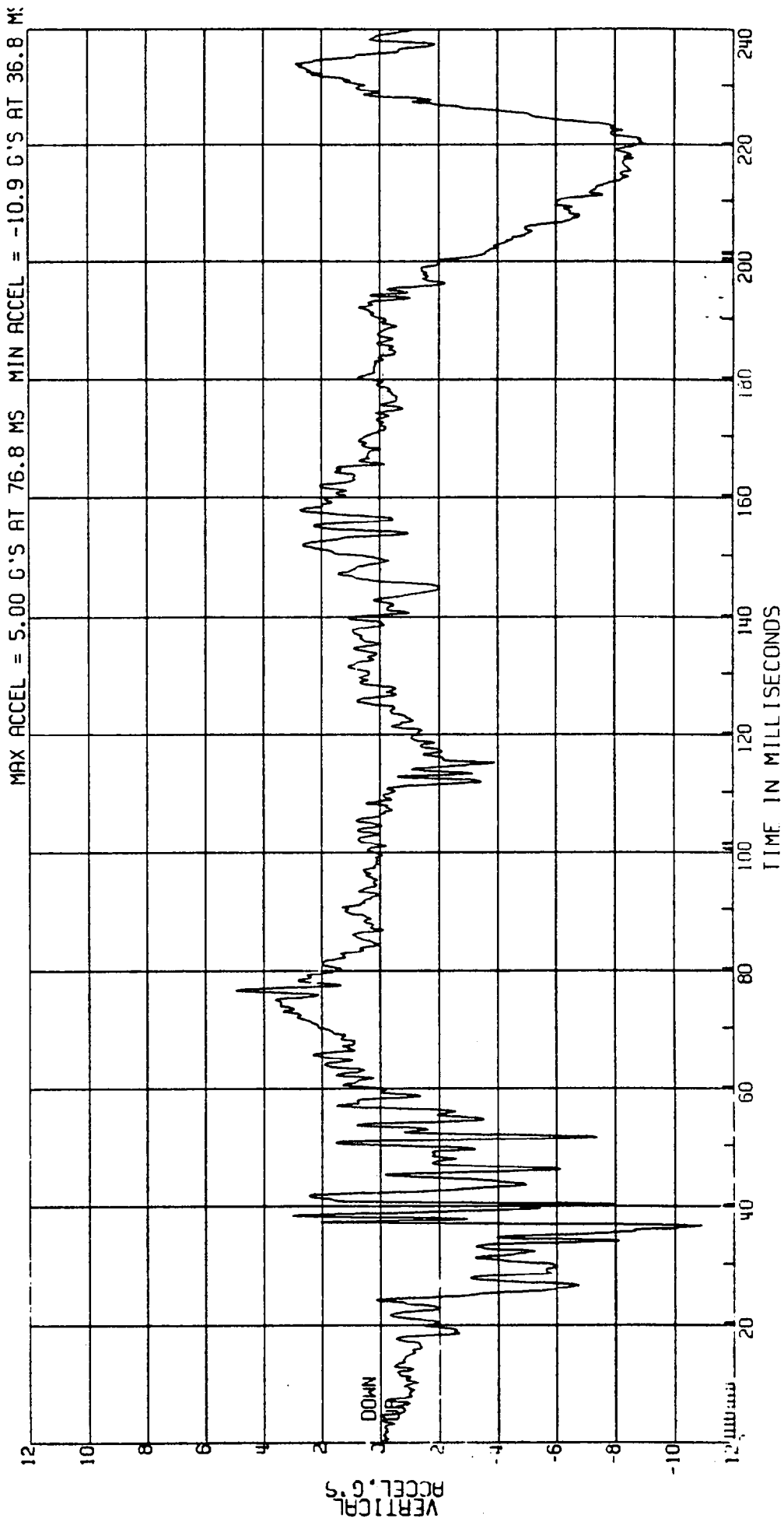
C8012B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 78
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 12P 2AF69 TEST DATE: 04-04-90
 FLEC DATA, SAE CLASS 180 COMPUTED PELVIC VELOCITY
 (1ST INTEGRAL DRIVER ACCELERATION)



RELEASED BY:
 75 PROCESSED 3 MY 90 12:12

C80128 L. SIDE IMPACT - 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 79
3868-905 ATD TYPE: BIOSID
CPE MVMA 12P 2AF69 DRIVER PELVIC ACCEL.
ELEC DR. A, SAE CLASS 600 TEST DATE: 04-04-90

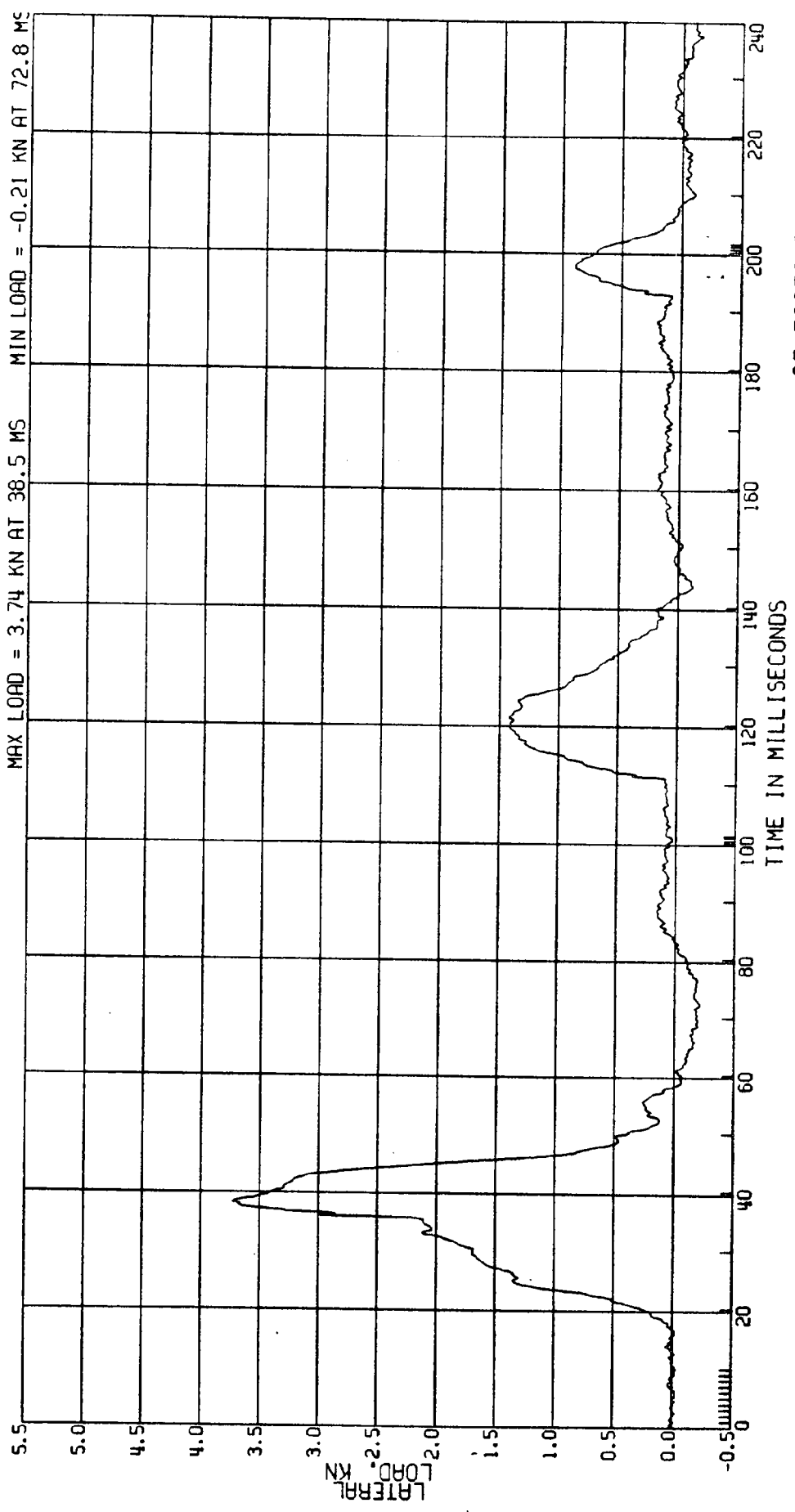
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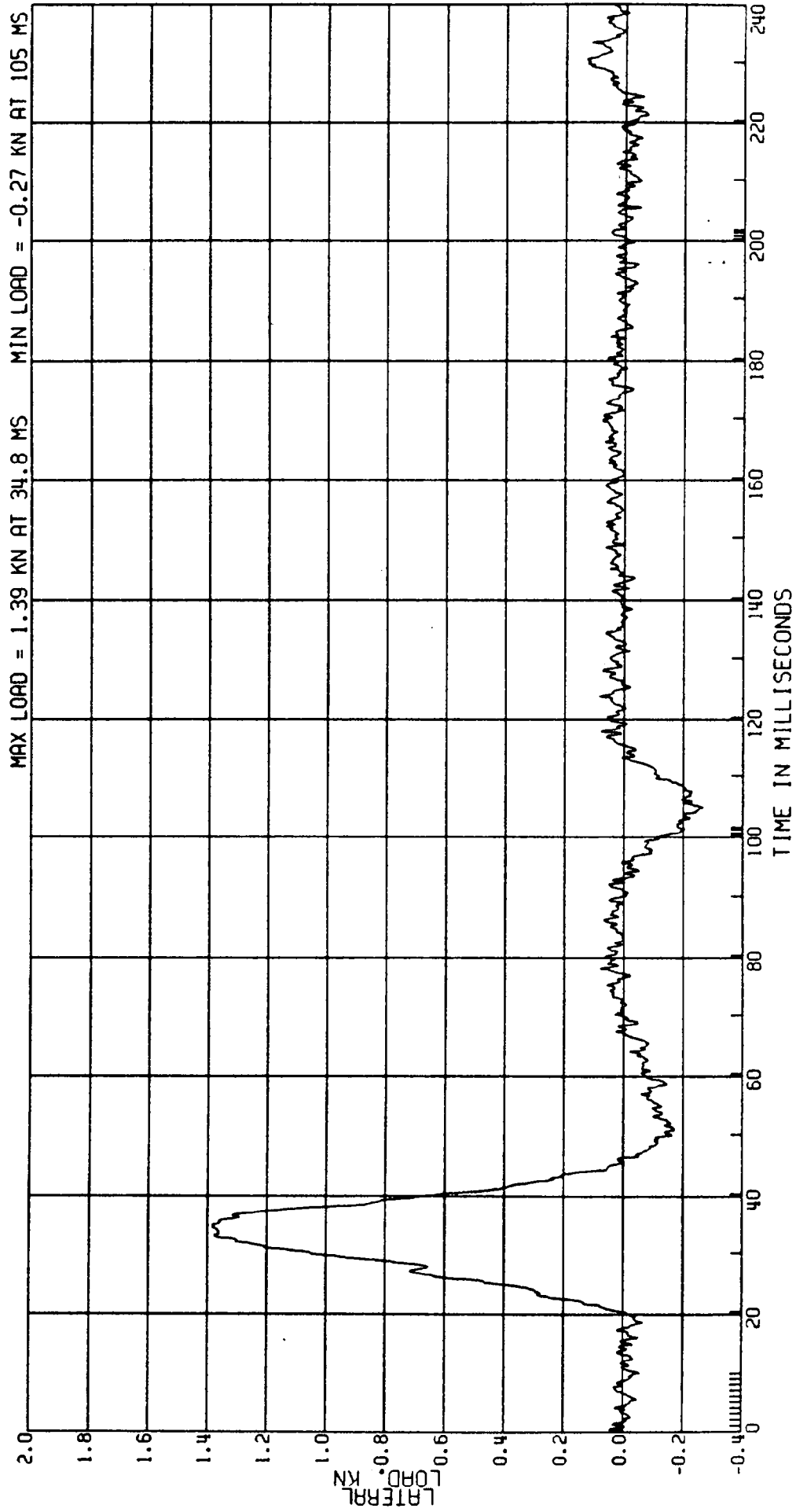
RELEASED BY:
76 PROCESSED 3 MY 90 12:12

C8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 80
 3868-905
 CPE MVMA 12P 2AF69
 ELEC DATA, SAE CLASS 600

ATD TYPE: BIOSID
 TEST DATE: 04-04-90

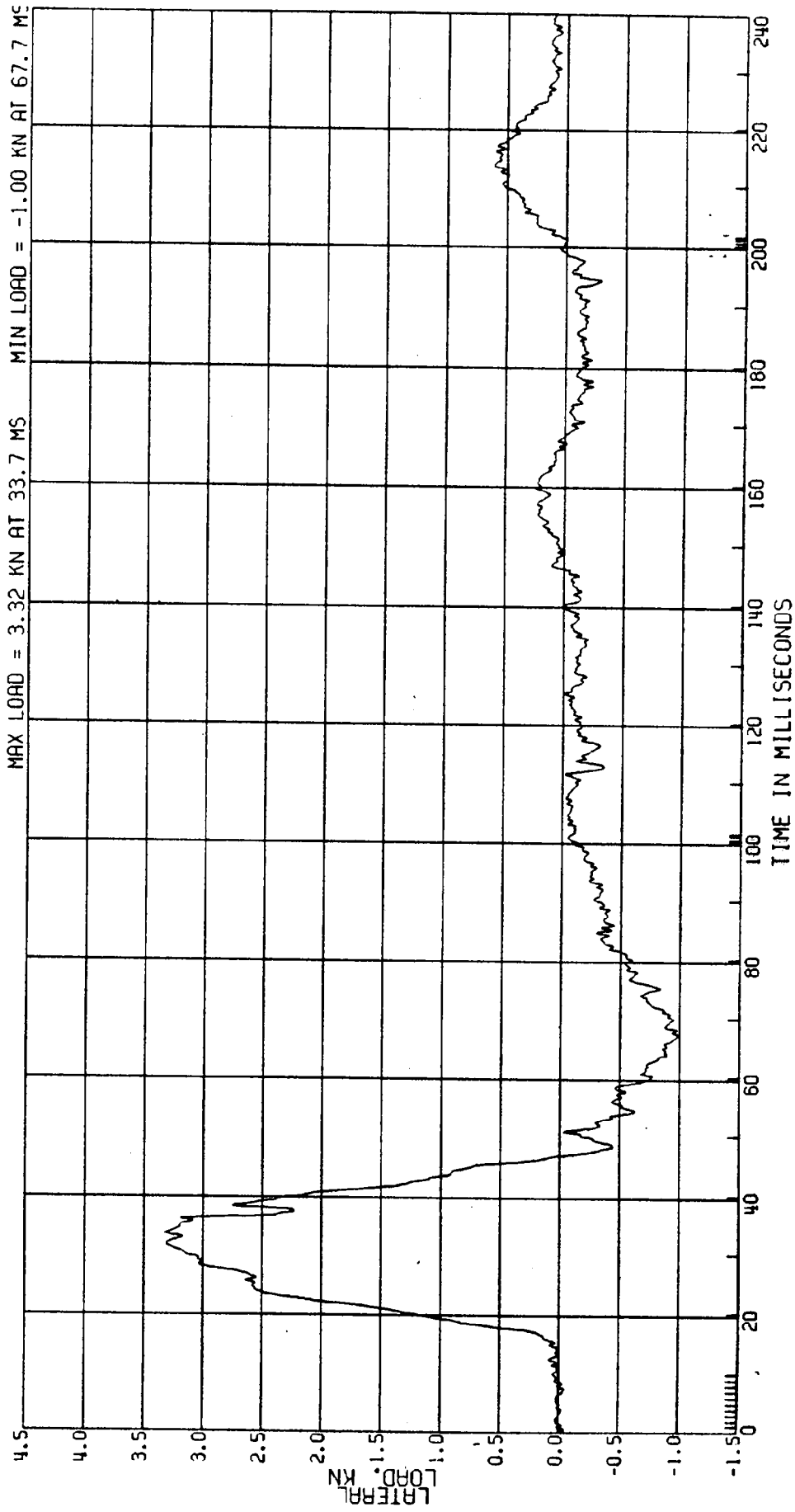


C8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5 KM/H FIGURE 8/
3868-905
CPE MVMA 12P 2AF69
ELEC DATA, SAE CLASS 600
DRIVER ILIAC LOAD
ATD TYPE: BIOSID
TEST DATE: 04-04-90



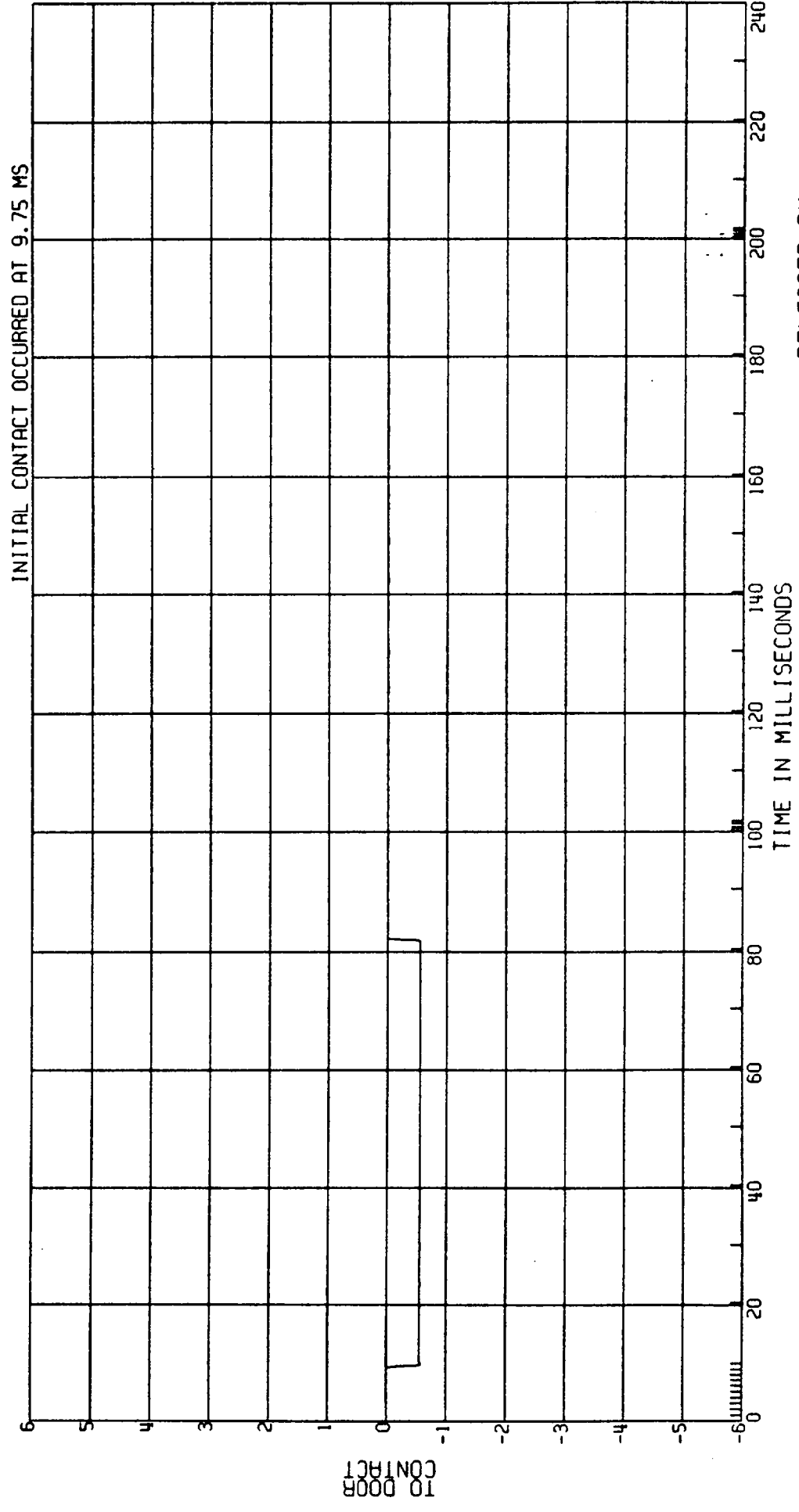
RELEASED BY:
30 PROCESSED 3 MT 90 12:06

C8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 82
3868-905
CPE MVMA 12P 2AF69
ELEC DATA, SAE CLASS 600 DRIVER SACRUM LOAD
ATD TYPE: BIOSID
TEST DATE: 04-04-90

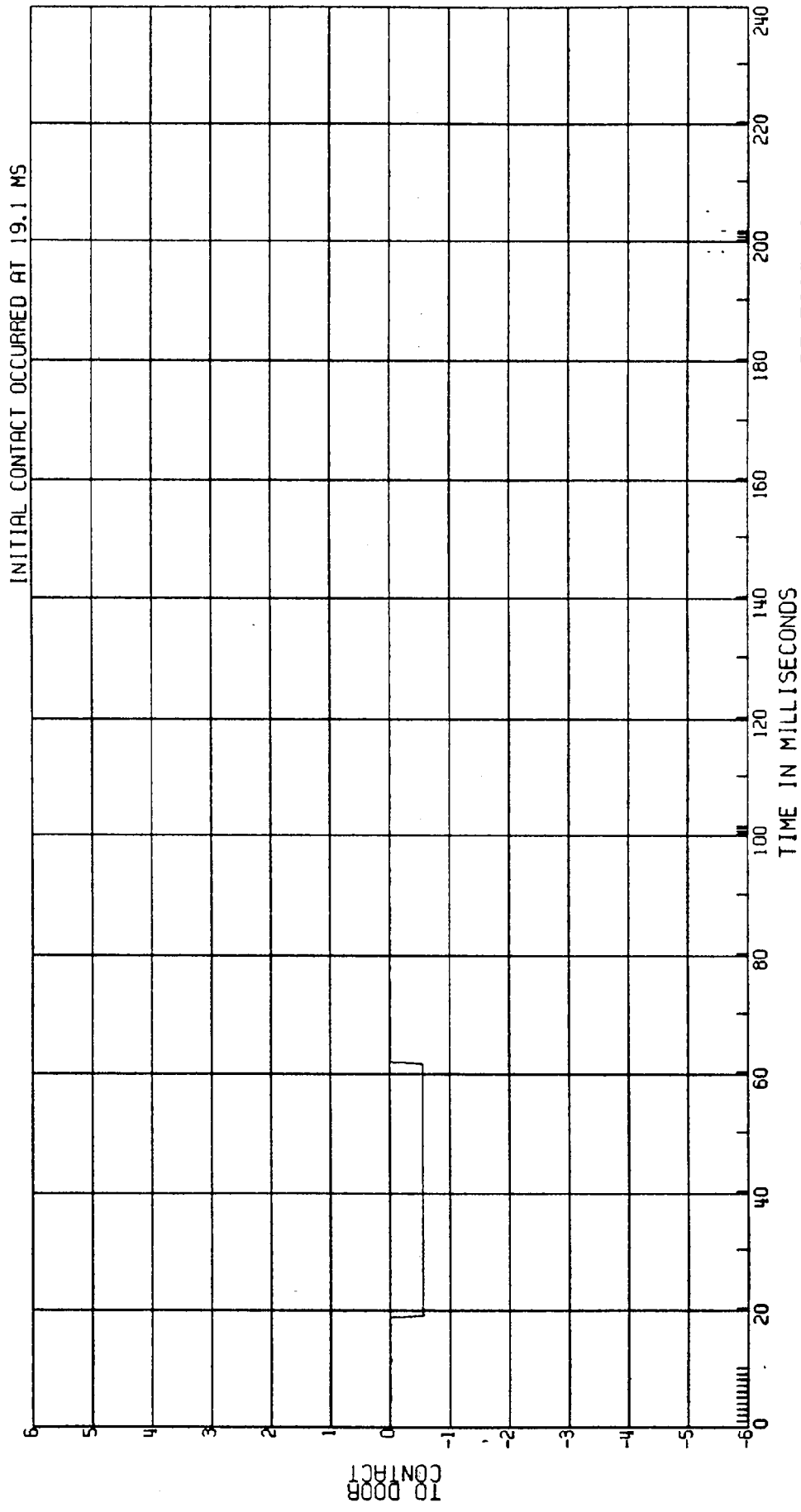


RELEASED BY:
31 PROCESSED 3 MY 90 12:06

C8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 83
3868-905
CPE MVMA 12P 2AF69 DRIVER THORAX-LEFT SIDE CONTACT
ELEC DATA, SAE CLASS 1000
ATD TYPE: BIOSID
TEST DATE:04-04-90



C8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 84
3868-905
CPE MVMA 12P 2AF69
ELEC DATA, SAE CLASS 1000
DRIVER ABDOMEN-LEFT SIDE CONTACT
ATD TYPE: BIOSID
TEST DATE: 04-04-90



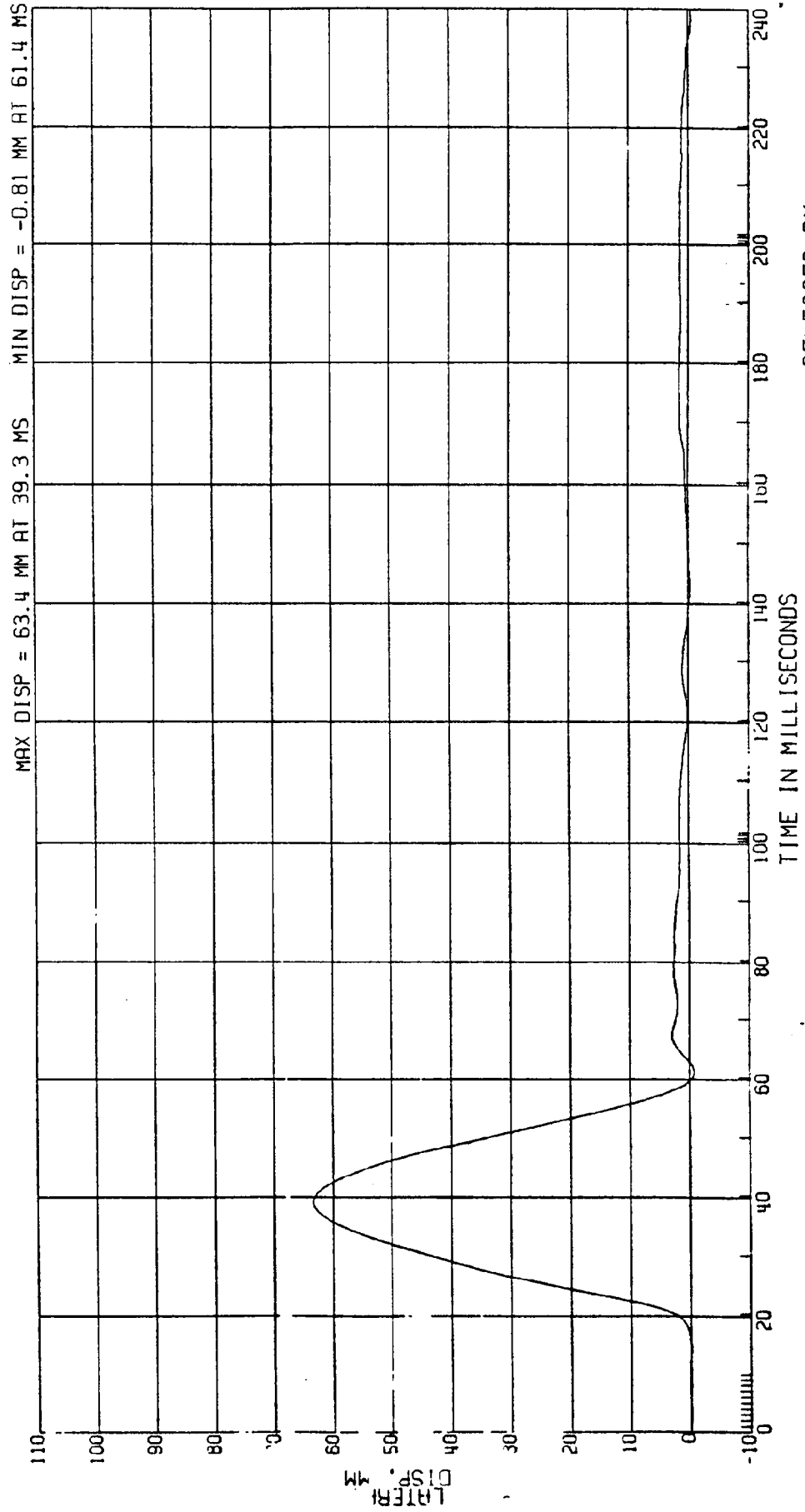
RELEASED BY:
70 PROCESSED 3 MY 90 12:07

C8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 85
 3868-905 ATO TYPE: BIOSID
 CPE MVMA 12P 2AF69 DRIVER PELVIS-LEFT SIDE CONTACT TEST DATE:04-04-90
 ELEC DATA, SAE CLASS 1000



RELEASED BY:
 71 PROCESSED 3 MY 90 12:07

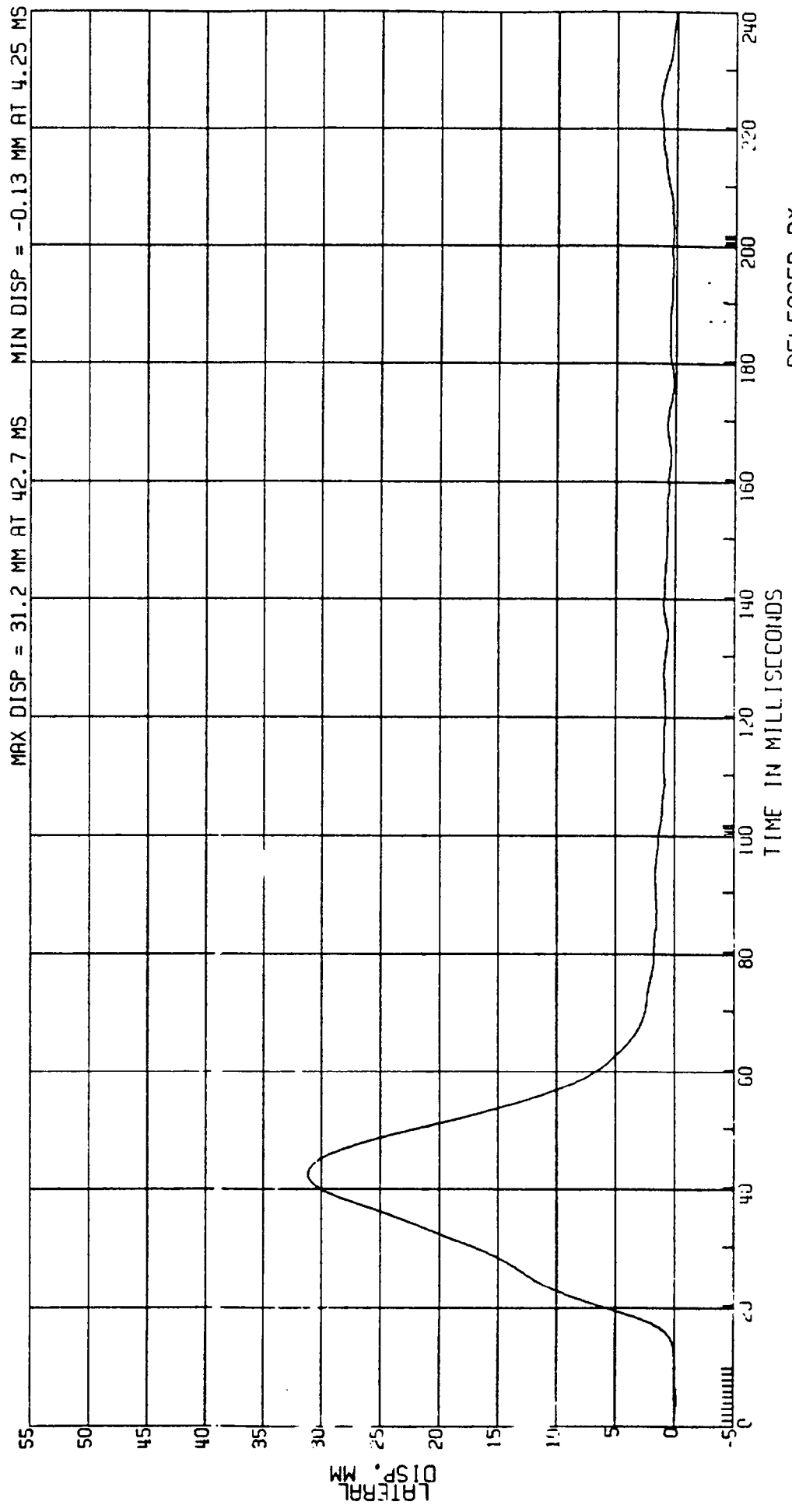
C80128 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 86
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 12P 2AF69 DRIVER SECOND ABDOMINAL RIB DISP. TEST DATE: 04-04-90
 ELEC DATA, SAE CLASS 60



RELEASED BY:

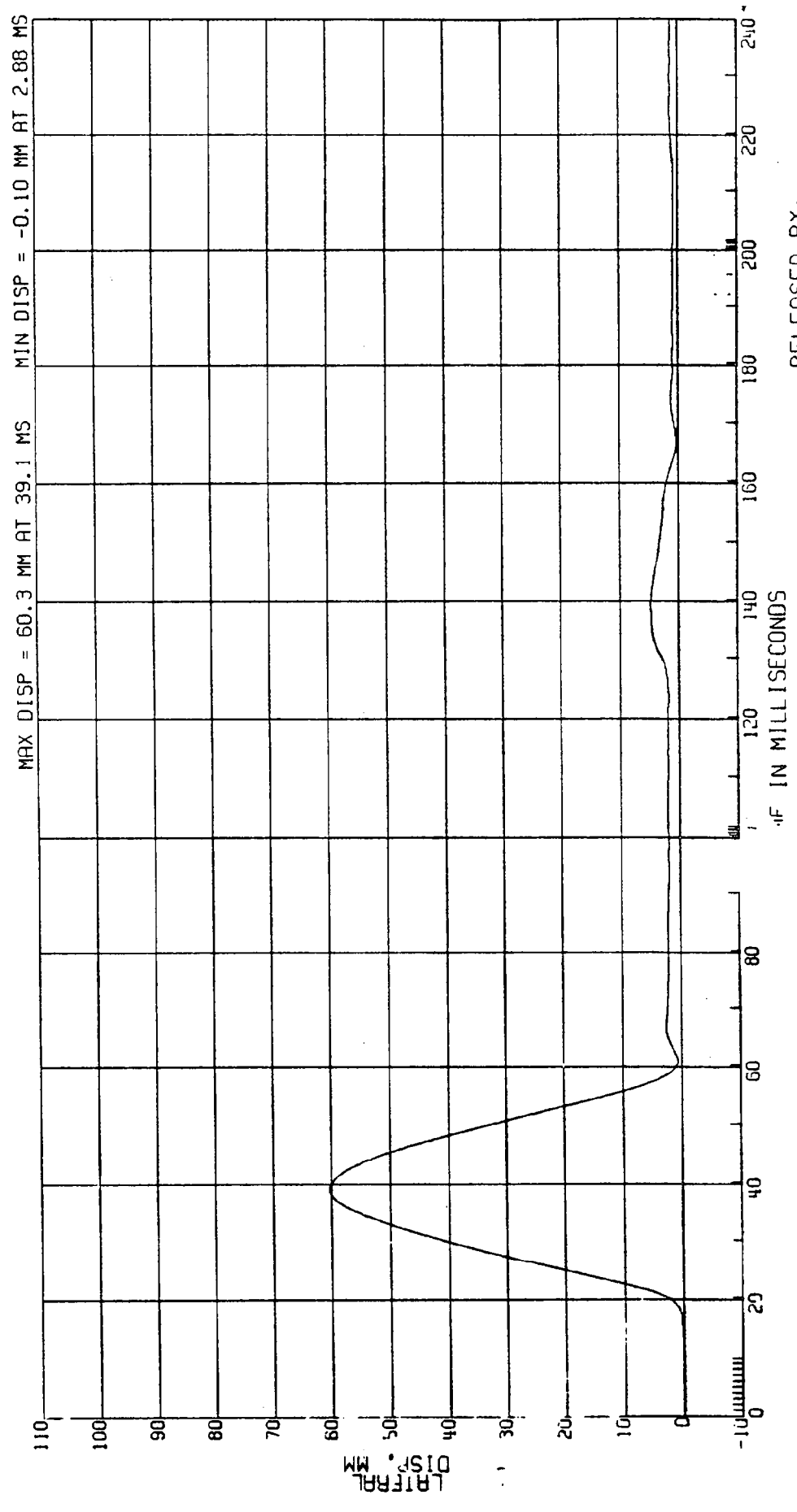
30 PROCESSED 3 MT 90 12:11

C8012B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 87
3868-905 ATD TYPE: BIOSID
CPE MVMA 12P 2AF69 DRIVER FIRST THORACIC RIB DISP. TEST DATE:04-04-90
ELEC DATA, SAE CLASS 60



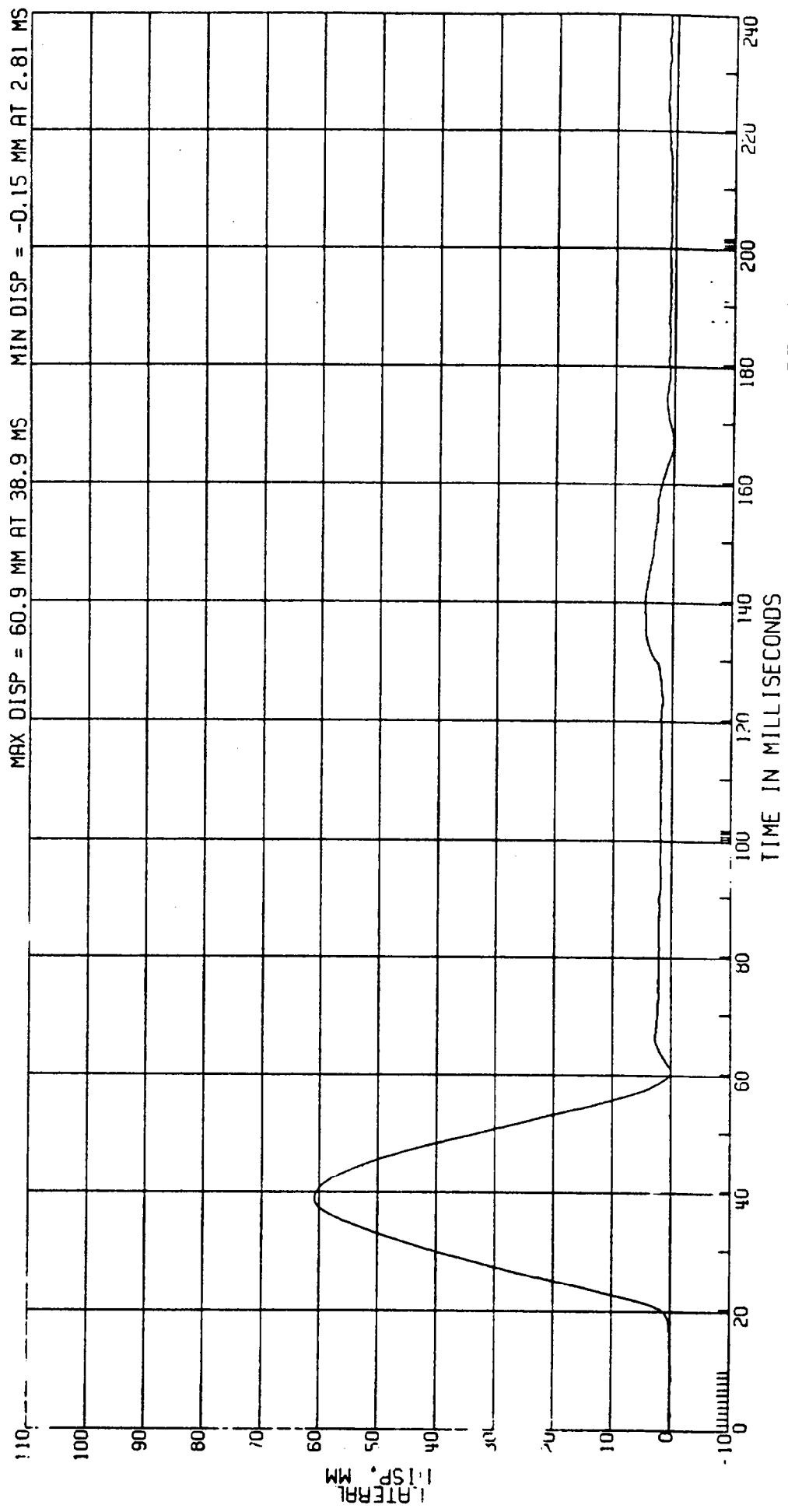
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14 PROCESSED 3 MY 90 12:10

C80128 L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 28
 3868-905 ATD TYPE: BIOSID
 CPE MVMA 12P 2AF69 DRIVER FIRST ABDOMINAL RIB DISP.
 ELEC DATA, SAE CLASS 60 TEST DATE: 04-04-90



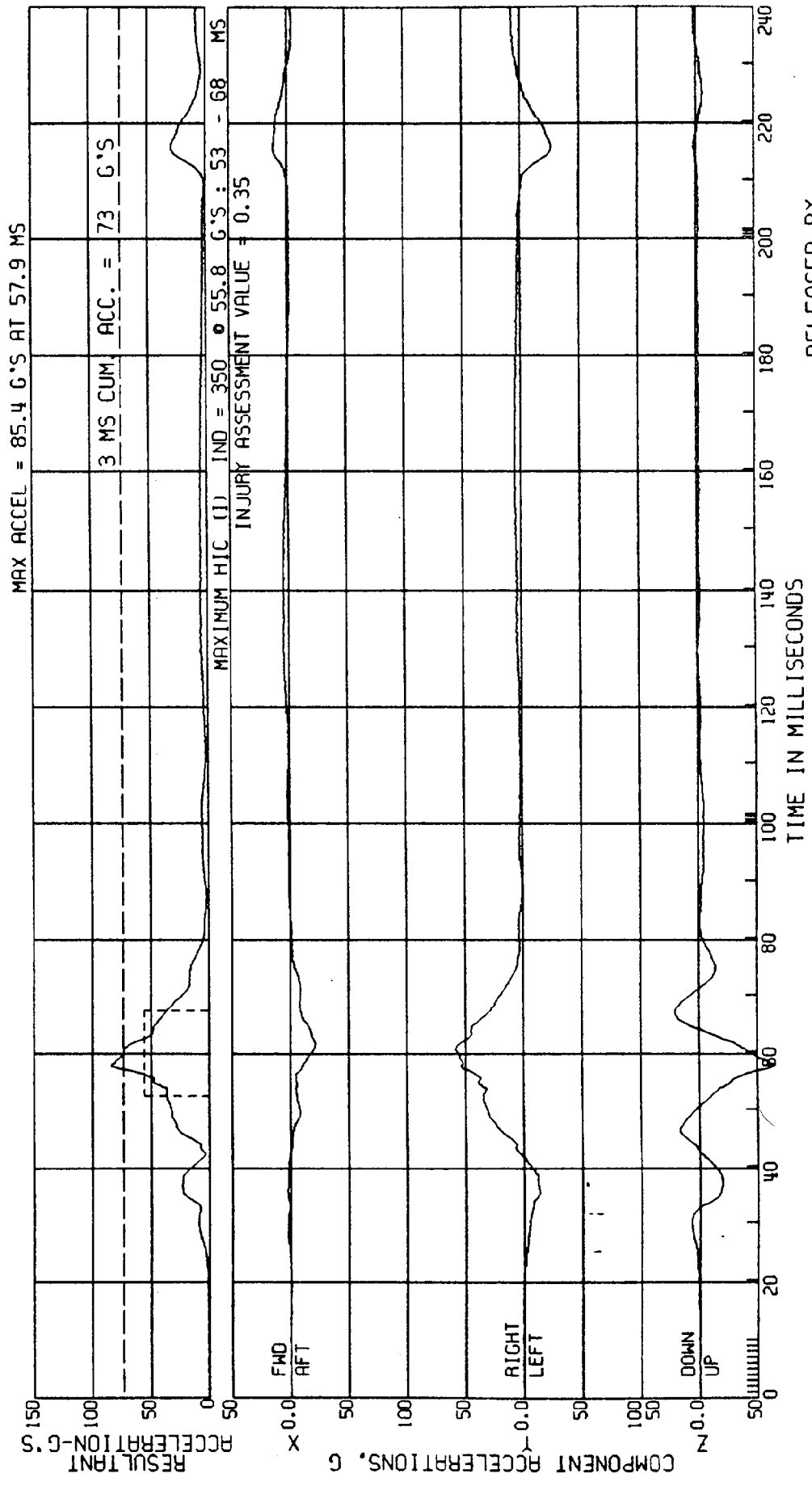
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 26 PROCESSED 3 MY 90 12:11

C8012B L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 89
3868-905 ATD TYPE: BIOSID
CPE MVMA 12P 2AF69 DRIVER FIRST ABDOMINAL RIB DISP. TEST DATE: 04-04-90
ELEC DATA, SAE CLASS 180



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27 PROCESSED 3 MY 90 12:11

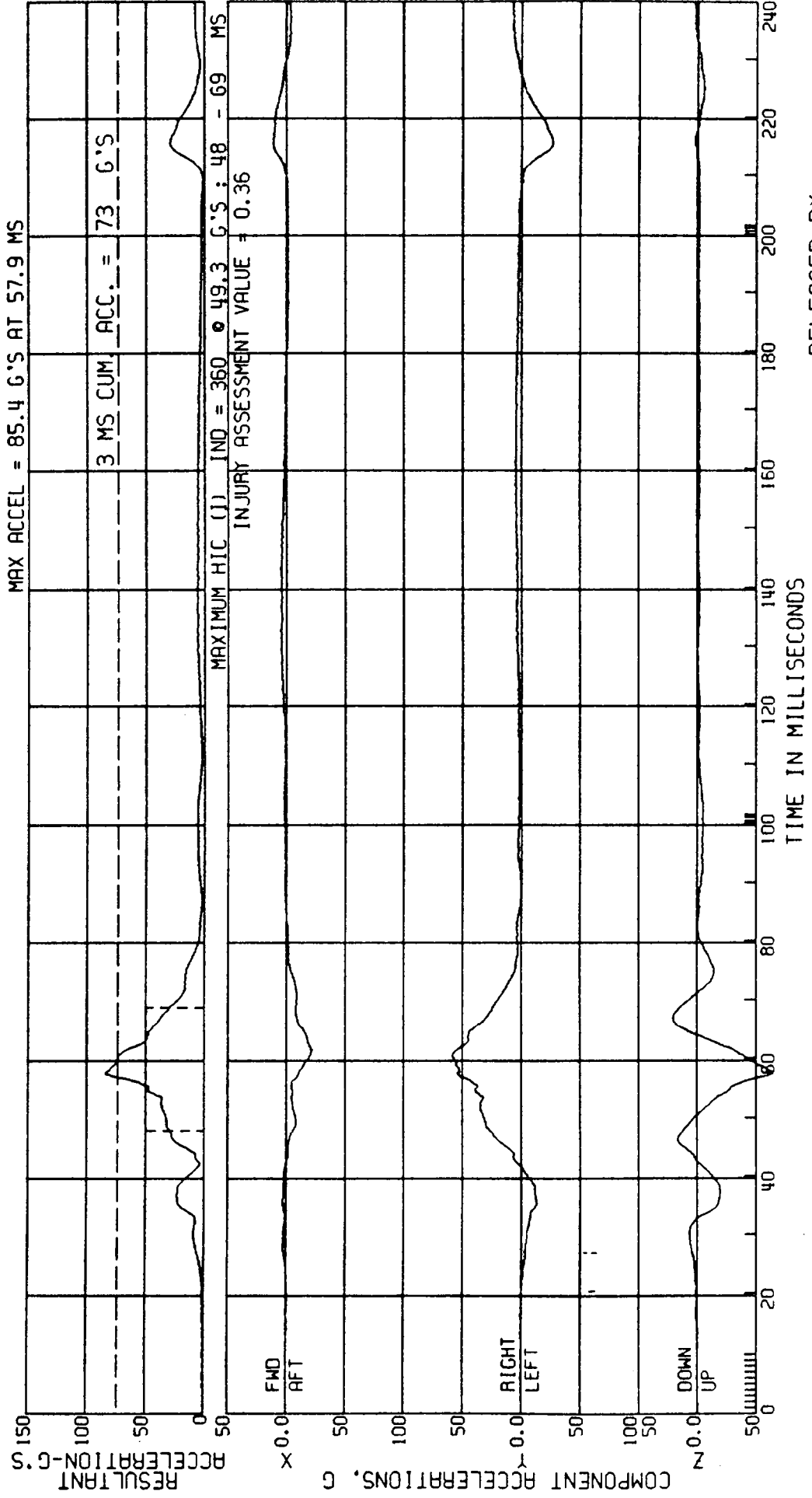
C8012A L. SIDE IMPACT - 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5 KM/H FIGURE 90
 3868-905 ATD TYPE: SID
 CPE MVMA 12P 2AF69 TEST DATE: 04-04-90
 ELEC DATA, SAE CLASS 1000 L. REAR HEAD ACCEL.
 (HIC I LIMITED TO 15MS)



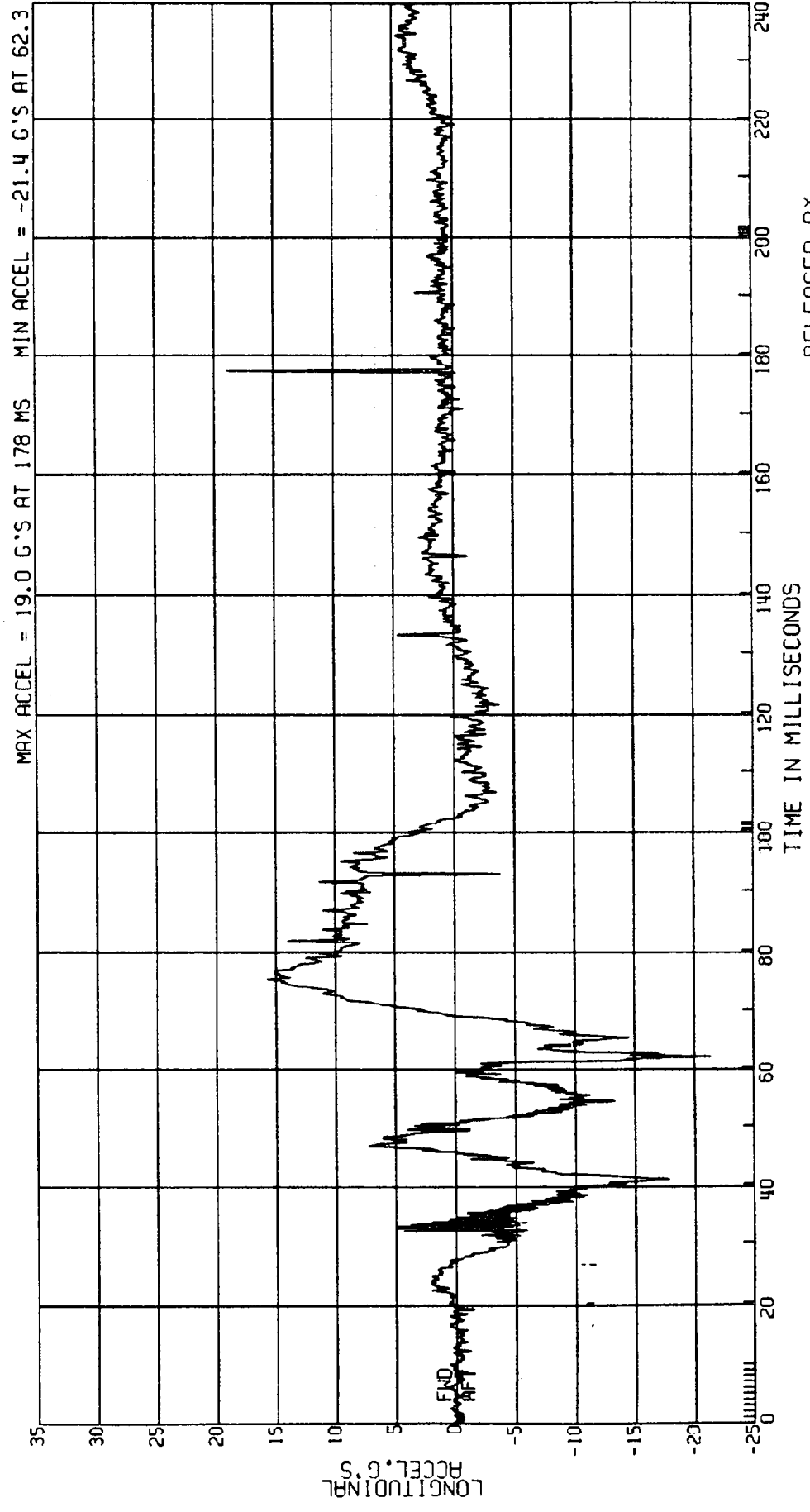
RELEASED BY:
 1 PROCESSED 3 MT 90 12:05

C8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 91
 3868-905 ATD TYPE: SID
 TEST DATE: 04-04-90

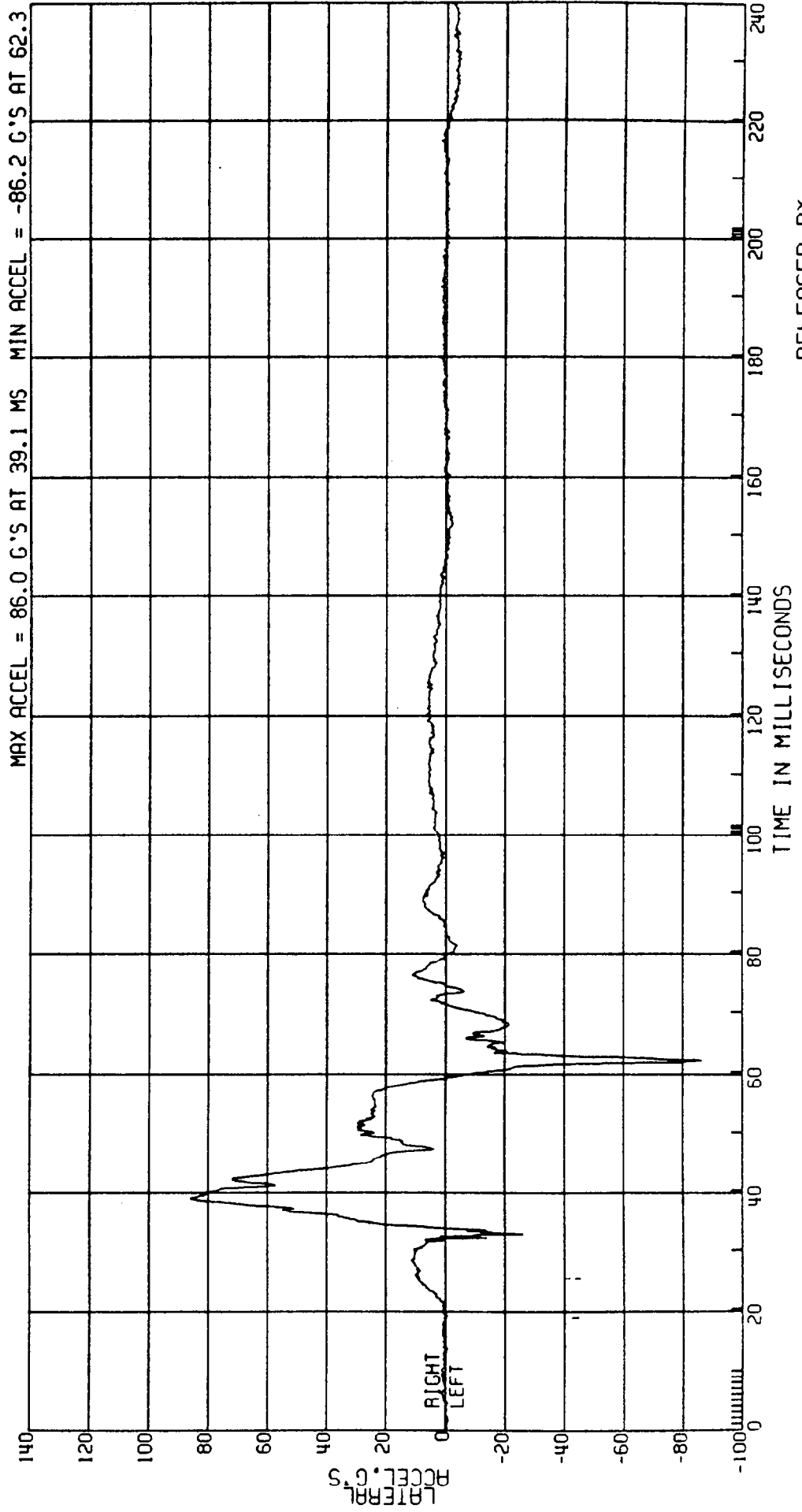
CPE MVMA 12P 2AF69 L. REAR HEAD ACCEL.
 (HIC I LIMITED TO 36MS)



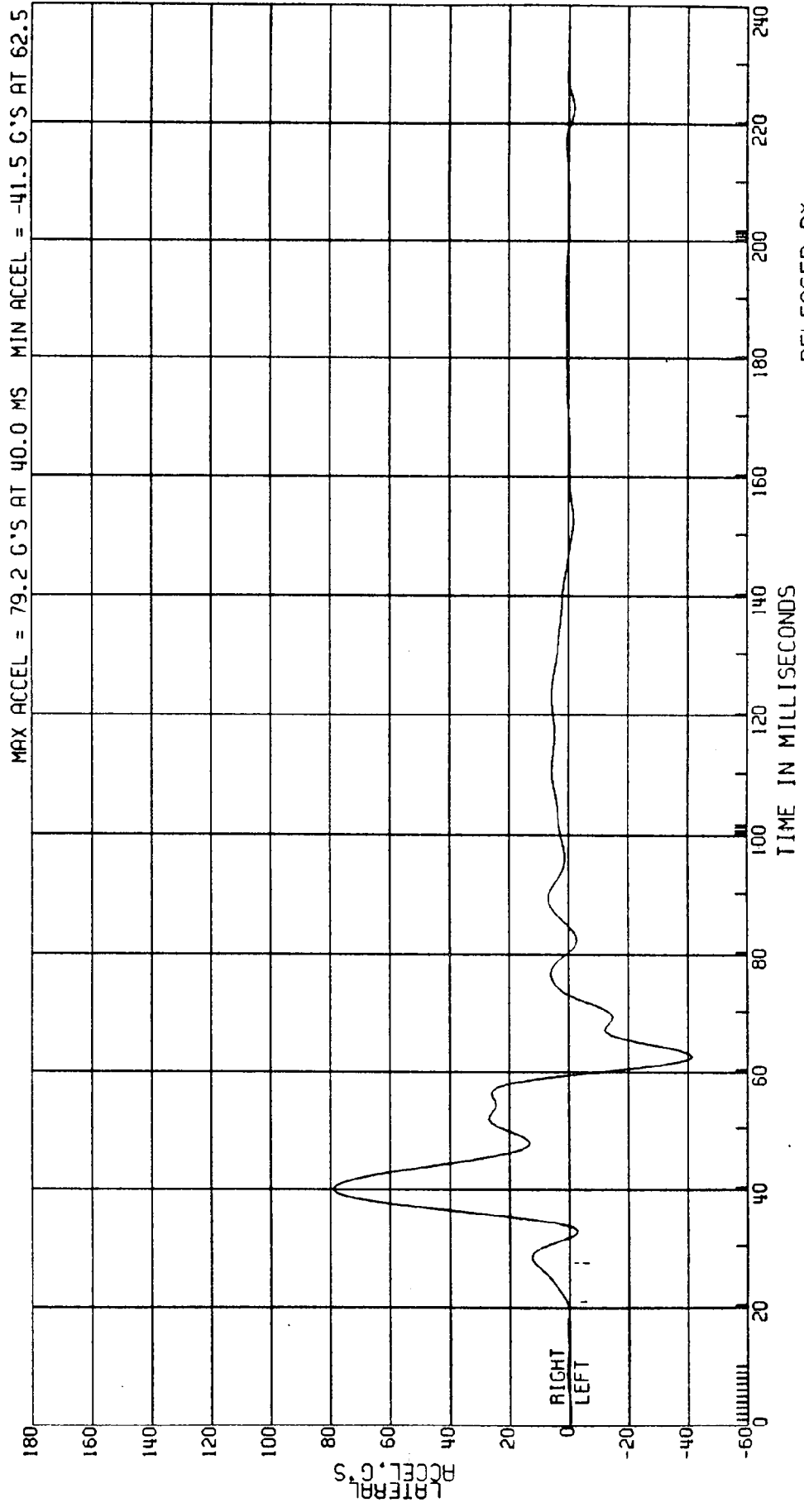
C8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 92-
 3868-905 ATD TYPE: SID
 CPE MVMA 12P 2AF69 L. REAR UPPER SPINE ACCEL.
 ELEC DATA, SAE CLASS 1000 TEST DATE: 04-04-90



C8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 93
3868-905 ATD TYPE: SID
CPE MVMA 12P 2AF69 L. REAR UPPER SPINE ACCEL.
ELEC DATA, SAE CLASS 1000 TEST DATE:04-04-90

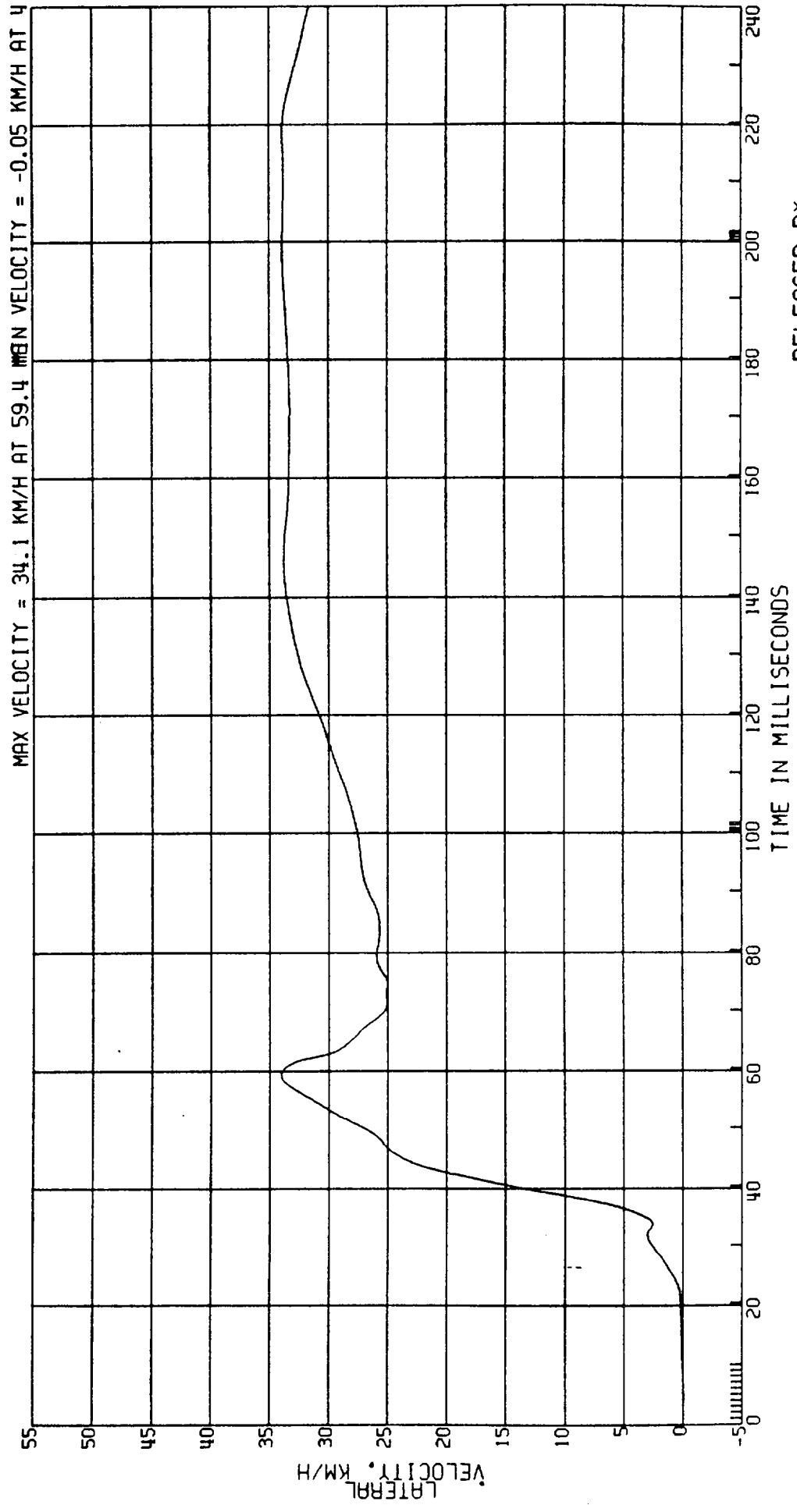


C8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 94
 3868-905 MVMA 12P 2AF69 ATD TYPE: SID
 CPE L. REAR UPPER SPINE ACCEL. TEST DATE: 04-04-90
 ELEC DATA, NHTSA FIR FILTER F.I.R. FILTER, CLASS 300 BUTTERWORTH

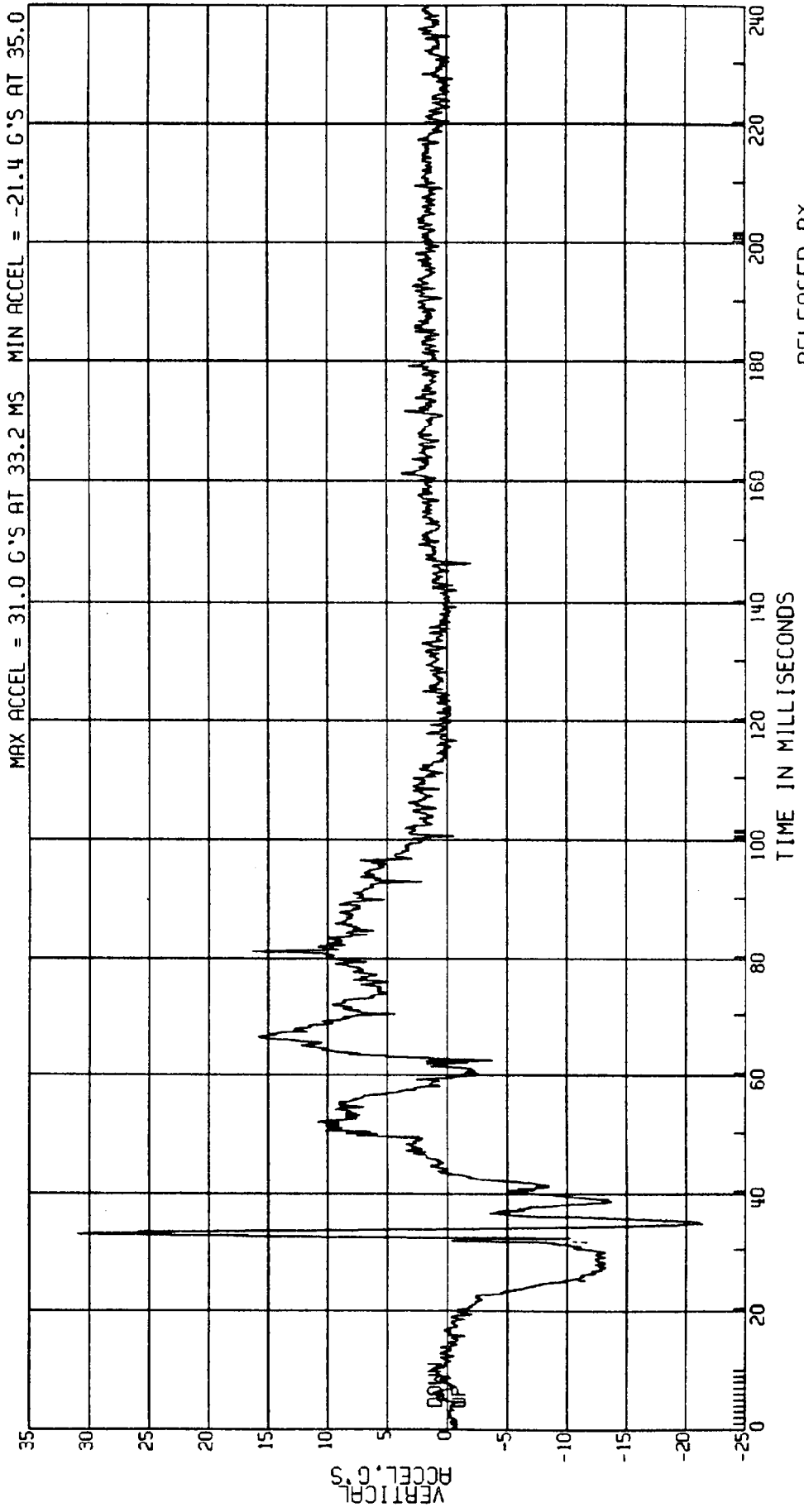


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 34 PROCESSED 3 MY 90 12:06

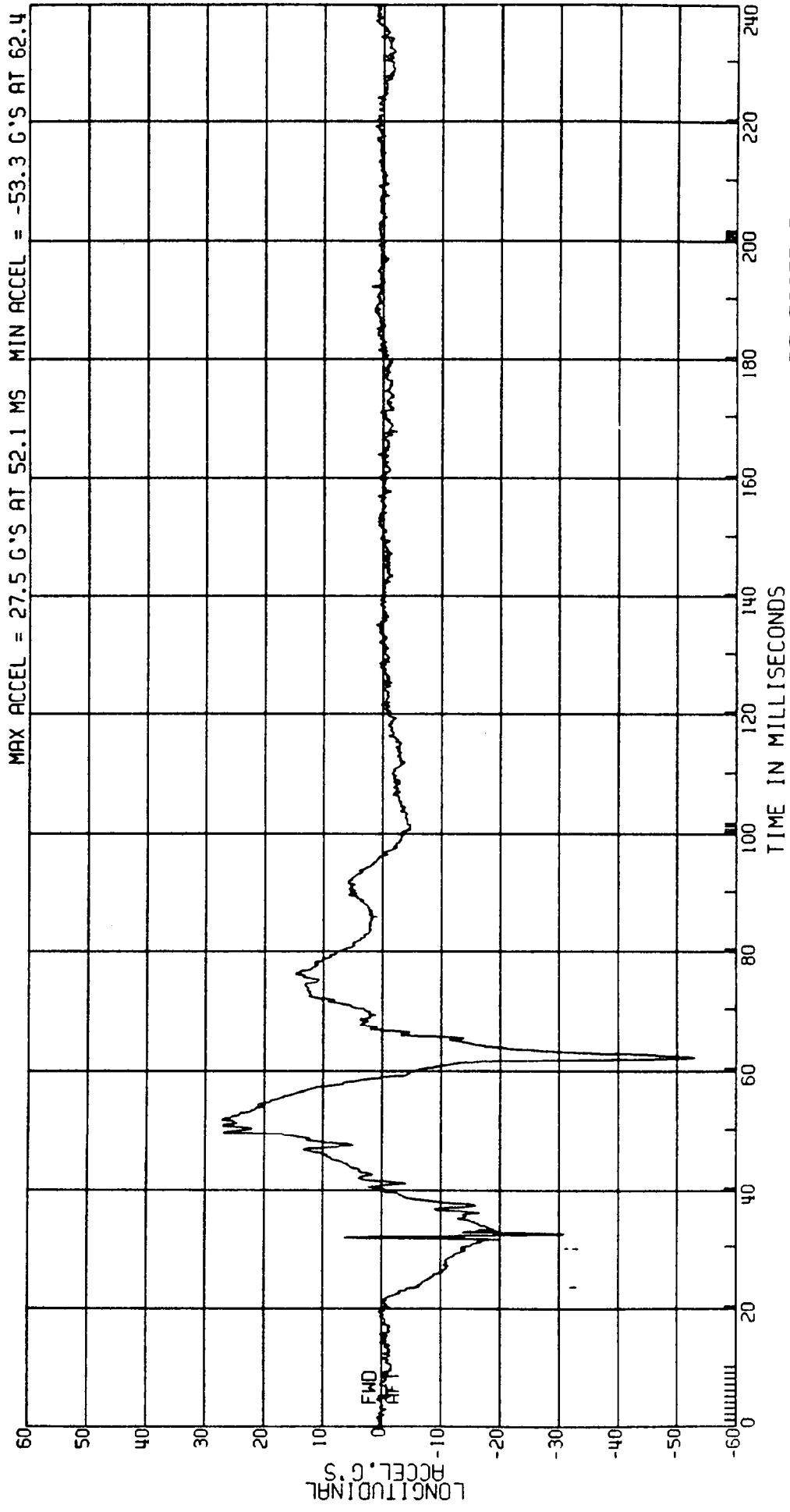
C8012A L. SIDE IMPACT - 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5 KM/H FIGURE 95
 3868-905 ATD TYPE: SID
 CPE MVMA 12P 2AF69 COMPUTED UPPER SPINE VELOCITY TEST DATE: 04-04-90
 ELEC DATA, SAE CLASS 180 (1ST INT OF L. REAR ACCELERATION)



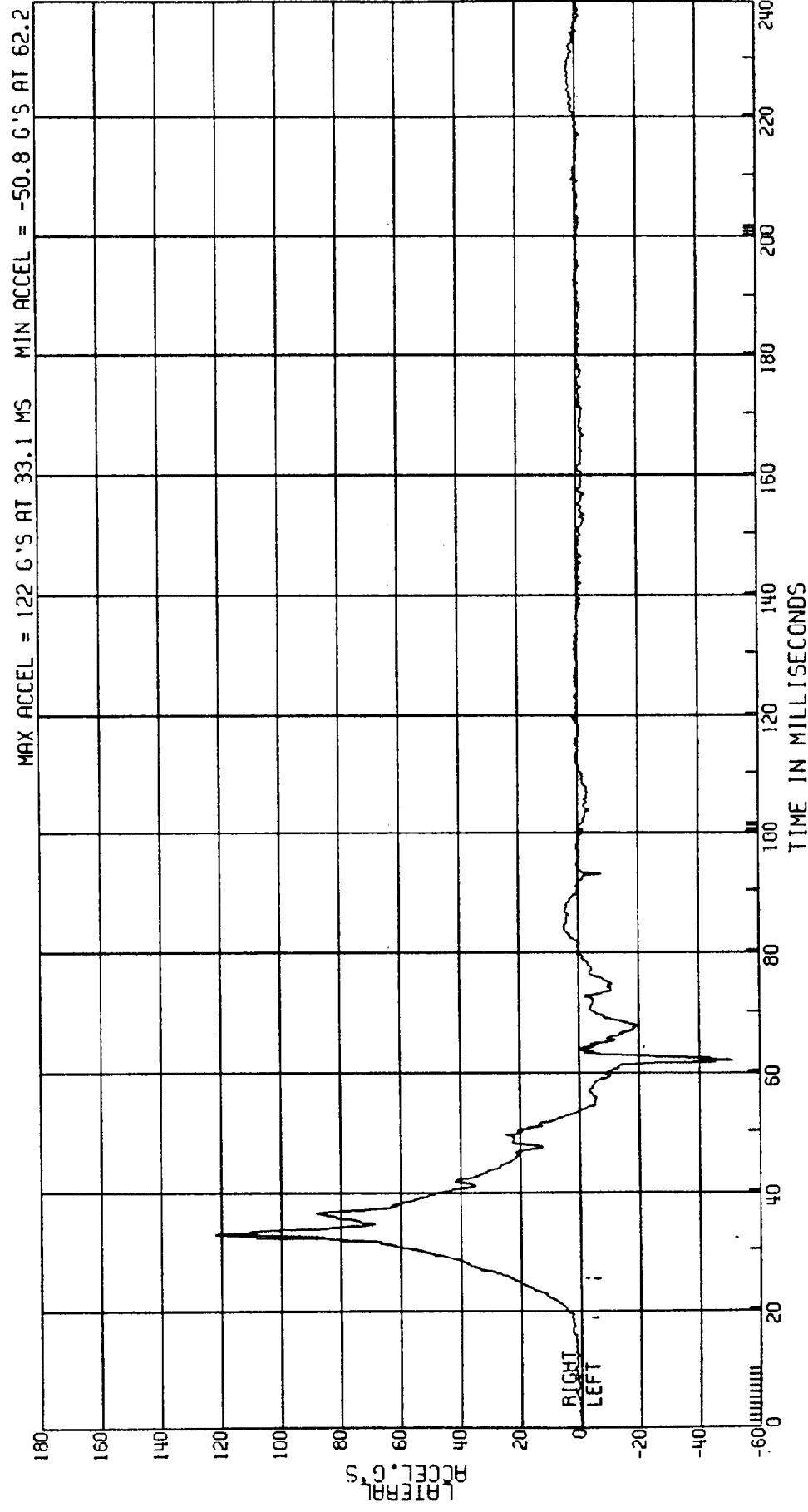
C8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 96
 3868-905 ATD TYPE: SID
 CPE MVMA 12P 2AF69 L. REAR UPPER SPINE ACCEL.
 ELEC DATA, SAE CLASS 1000 TEST DATE: 04-04-90



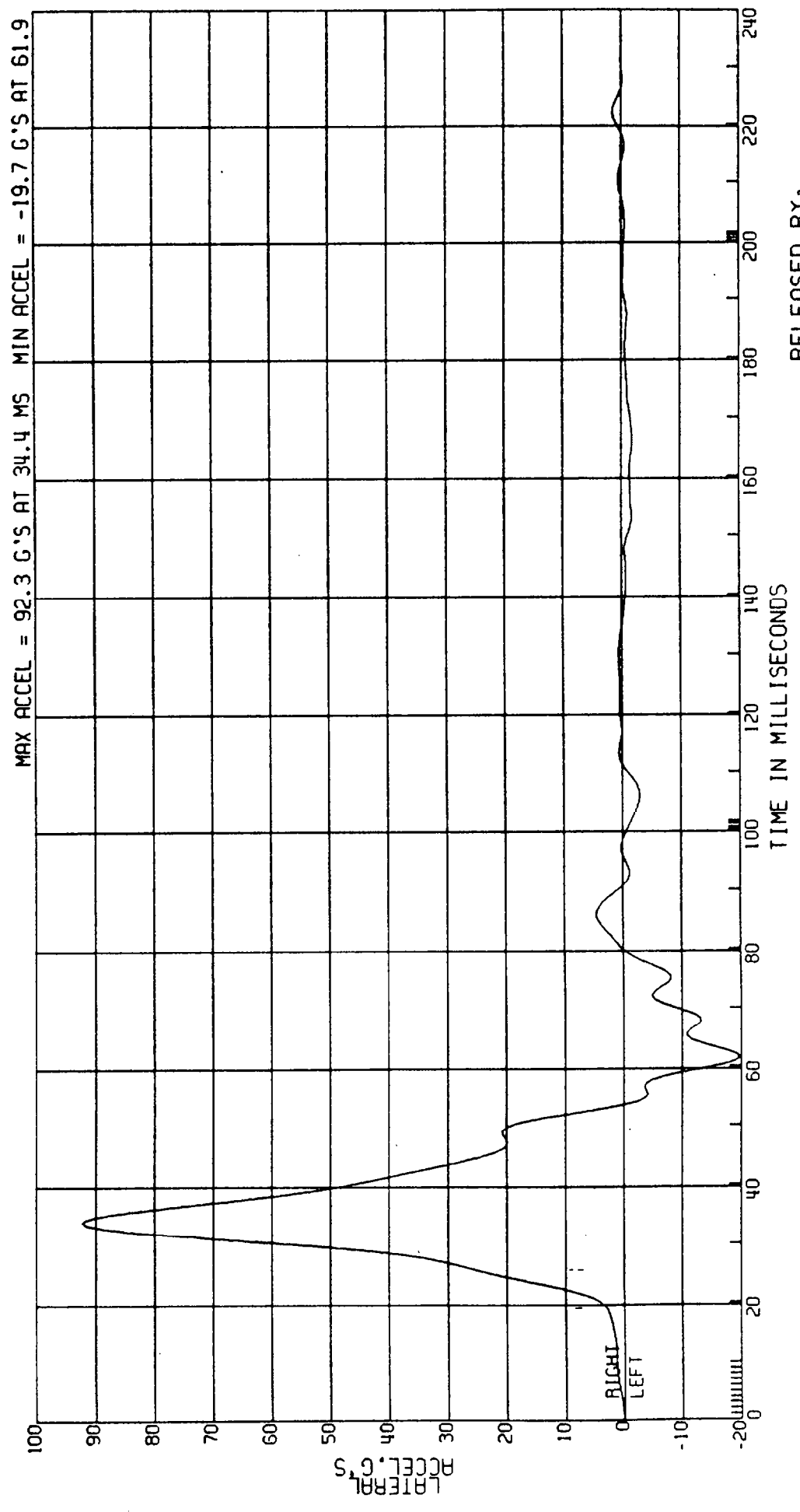
C8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 97
 3868-905 ATD TYPE: SID
 CPE MVMA I2P 2AF69 L. REAR LOWER SPINE ACCEL.
 ELEC DATA, SAE CLASS 1000 TEST DATE:04-04-90



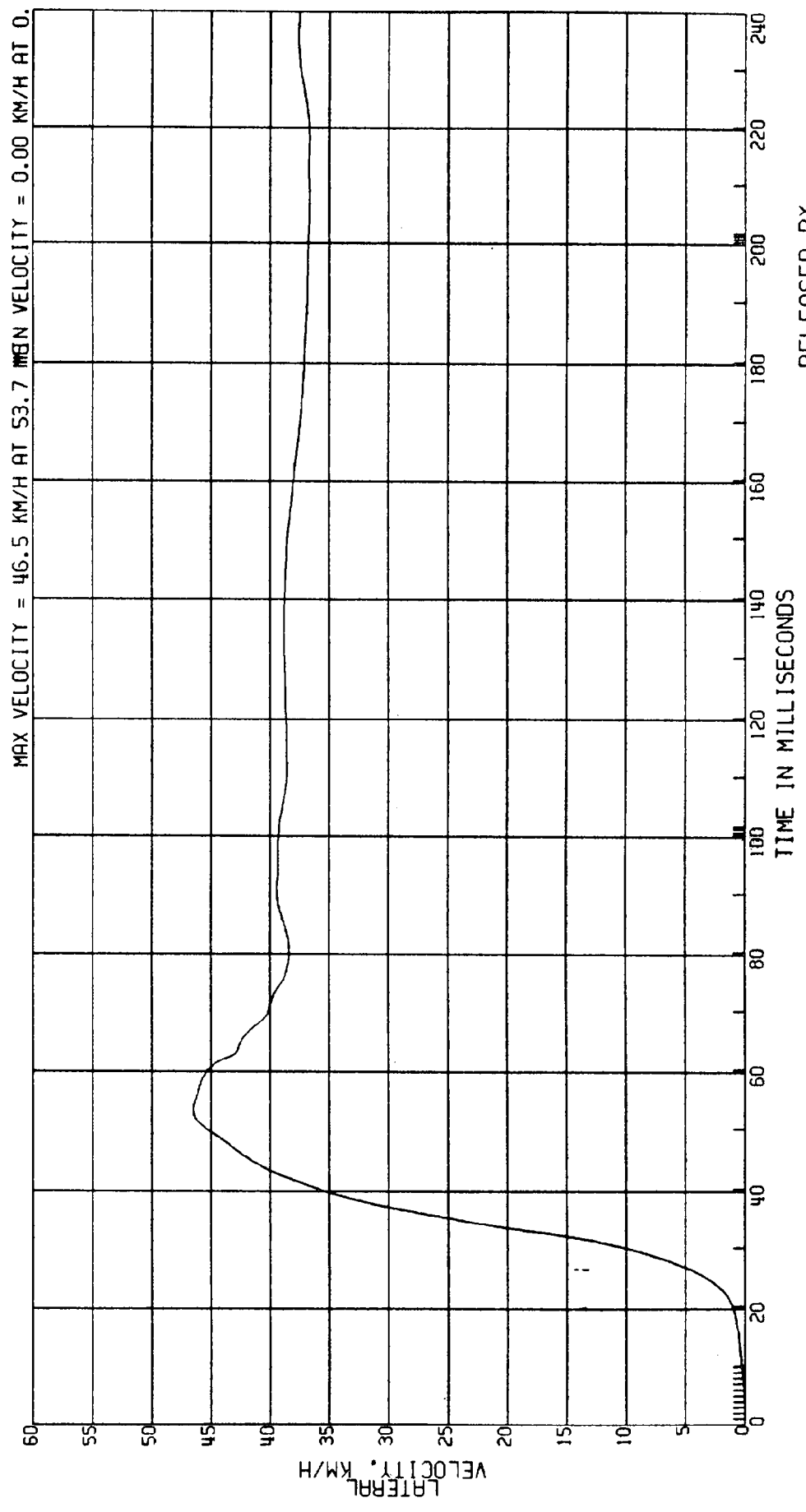
C8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5 KM/H FIGURE 98
 3868-905 ATD TYPE: SID
 CPE MVMA 12P 2AF69 L. REAR LOWER SPINE ACCEL. TEST DATE: 04-04-90
 ELEC DATA, SAE CLASS 1000



C8012A L. SIDE IMPACT - 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 99
 3868-905 ATD TYPE: SID
 CPE MVMA 12P 2AF69 TEST DATE: 04-04-90
 ELEC DATA, NHTSA FIR FILTER F.I.R. FILTER, CLASS 300 BUTTERWORTH

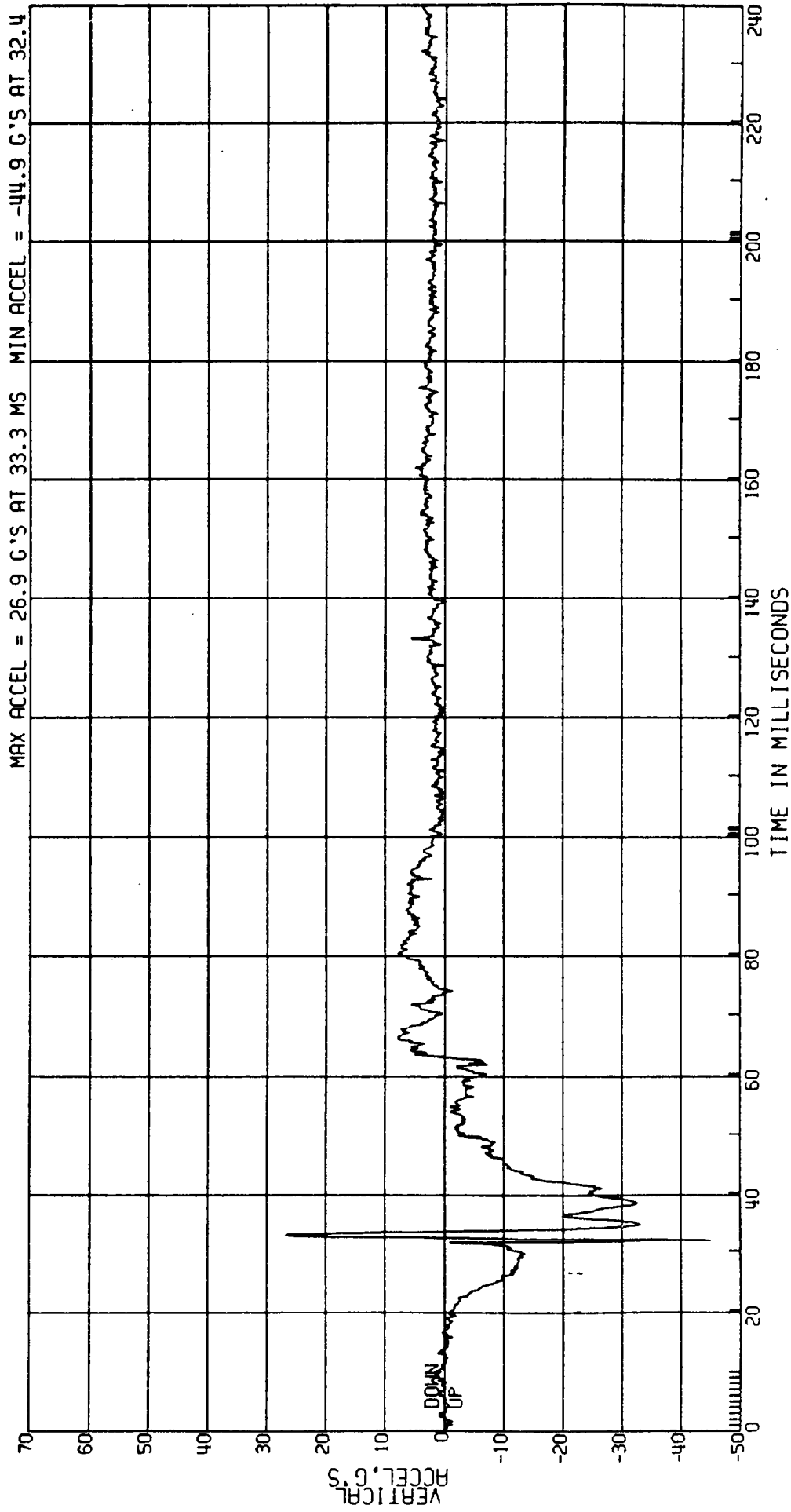


C8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE /00
3868-905
CPE MVMA 12P 2AF69
ELEC DATA, SAE CLASS 180
COMPUTED LOWER SPINE VELOCITY
(1ST INT OF L. REAR ACCELERATION)
AID TYPE: SID
TEST DATE: 04-04-90



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40 PROCESSED 3 MY 90 12:06

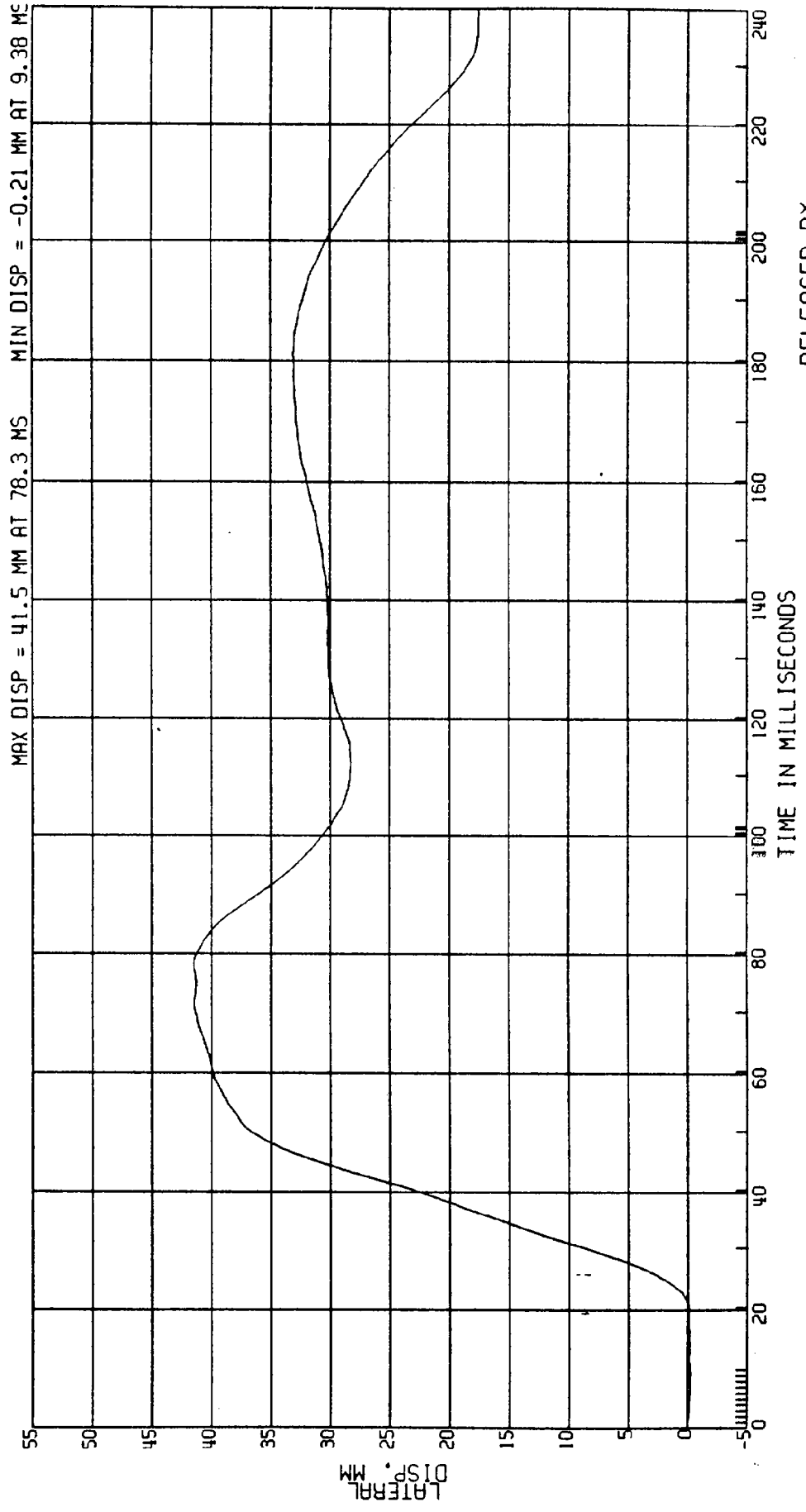
C8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE /01
 3868-905
 CPE MVMA 12P 2AF69
 ELEC DATA, SAE CLASS 1000
 L. REAR LOWER SPINE ACCEL.
 ATD TYPE: SID
 TEST DATE: 04-04-90



RELEASED BY:

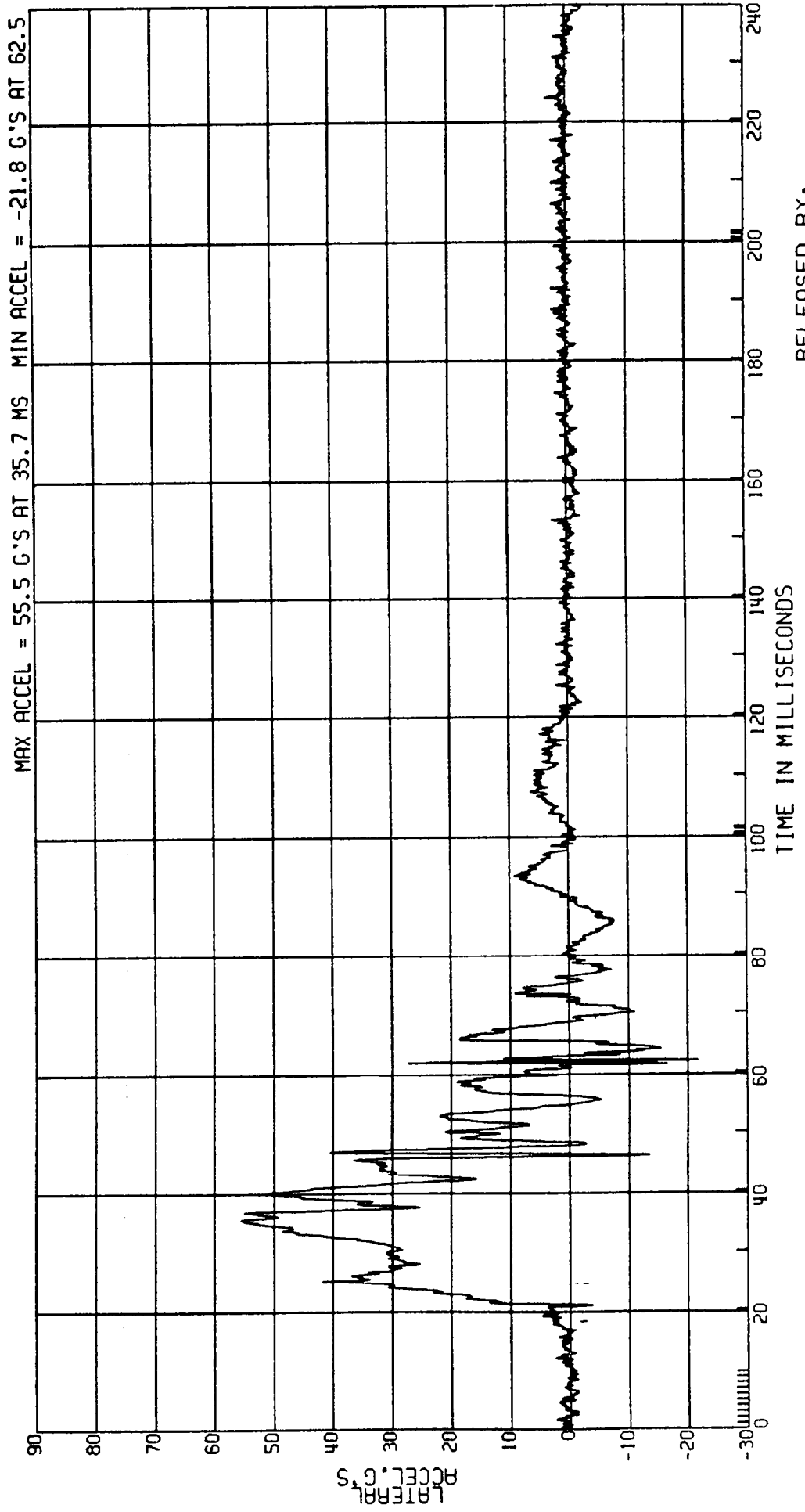
41 PROCESSED 3 MY 90 12:06

C8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 102
3868-905
CPE MVMA 12P 2AF69
ELEC DATA, SAE CLASS 60
L. REAR THORAX DISP.
ATD TYPE: SID
TEST DATE: 04-04-90

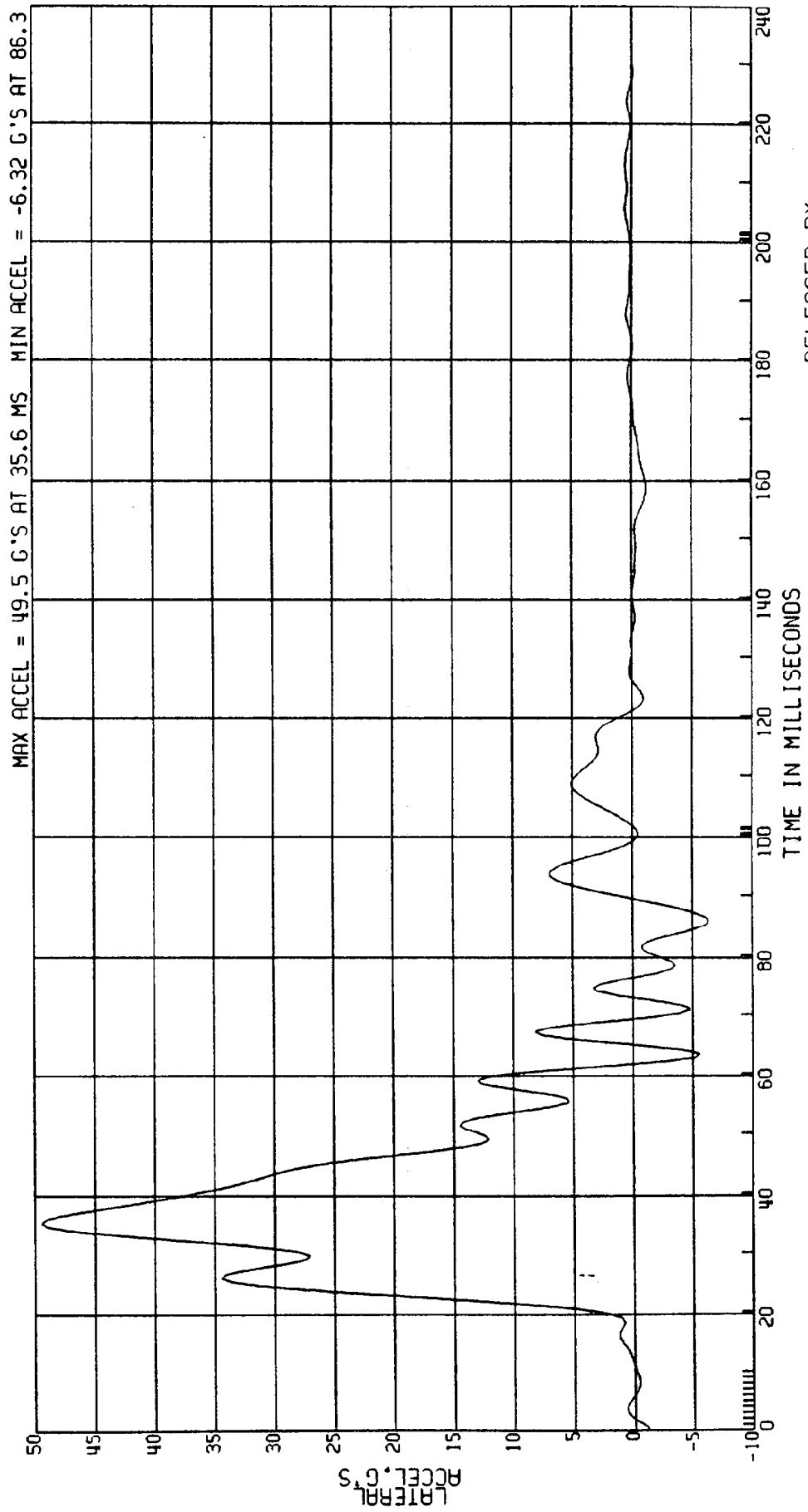


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42 PROCESSED 3 MY 90 12:06

C8012A L. SIDE IMPACT - 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 103
3868-905
CPE MVMA 12P 2AF69
ELEC DATA, SAE CLASS 1000 L. REAR LEFT UPPER RIB ACCEL.
ATD TYPE: SID
TEST DATE: 04-04-90

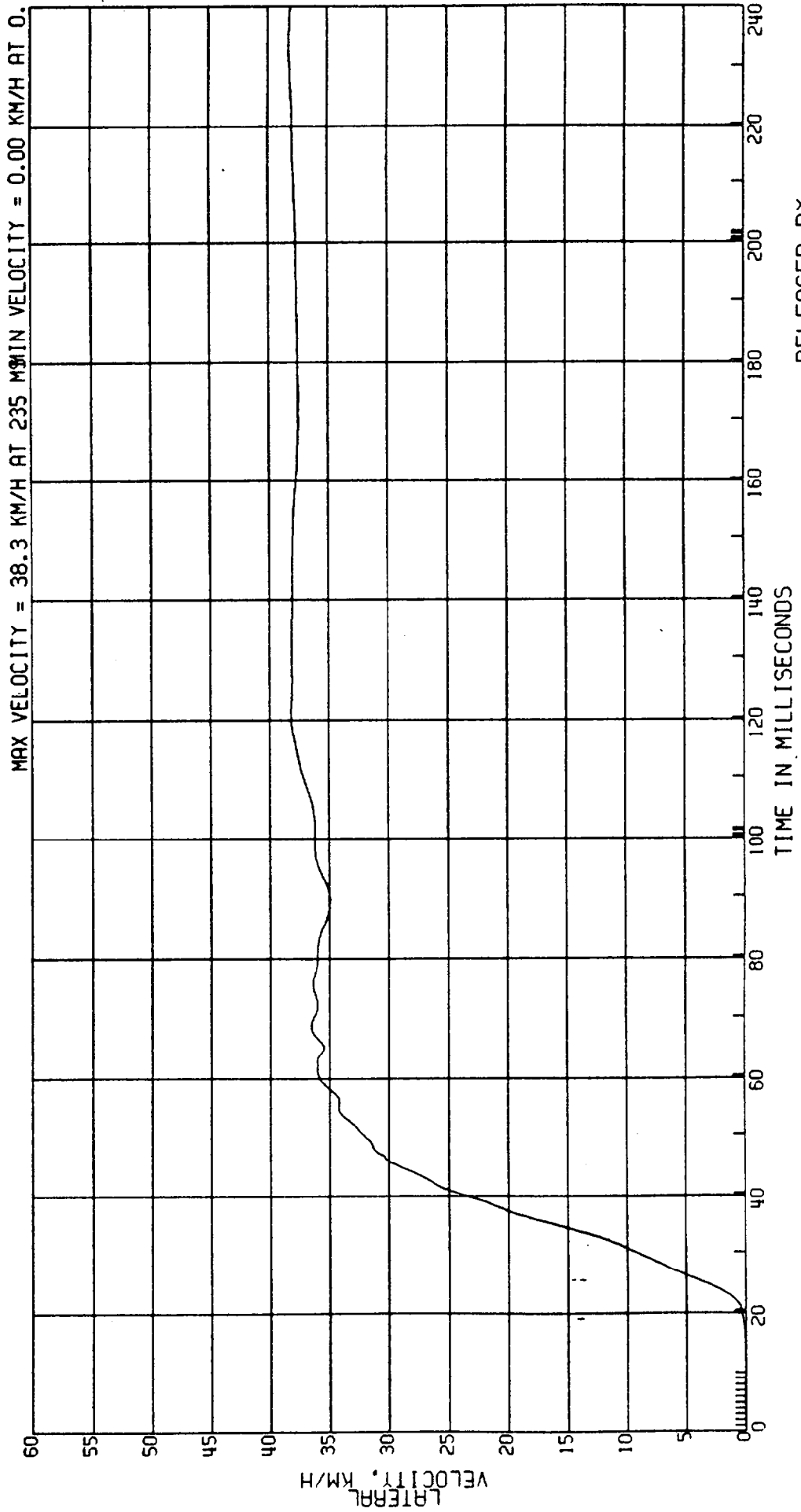


C8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 104
3868-905 MVMA 12P 2AF69 ATD TYPE: SID
CPE NHTSA FIR FILTER L. REAR LEFT UPPER RIB ACCEL. TEST DATE: 04-04-90
ELEC DATA, NHTSA FIR FILTER F. I. R. FILTER, CLASS 300 BUTTERWORTH



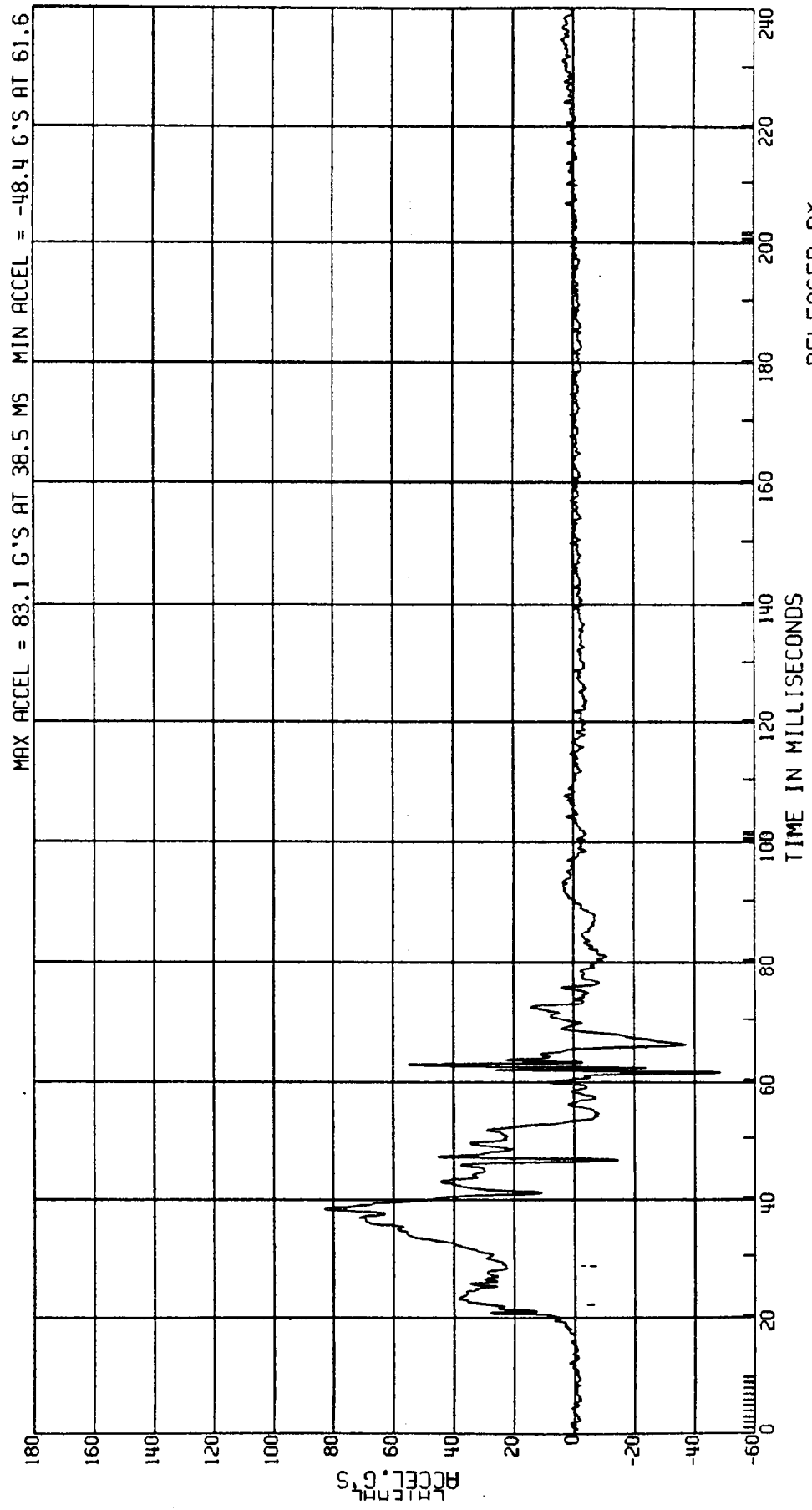
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C8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 105
 3868-905
 CPE MVMA 12P 2AF69 ATD TYPE: SID
 ELEC DATA, SAE CLASS 180 COMPUTED LEFT UPPER RIB VELOCITY TEST DATE:04-04-90
 (1ST INT OF L.REAR ACCELERATION)



RELEASED BY:
 45 PROCESSED 3 MY 90 12:06

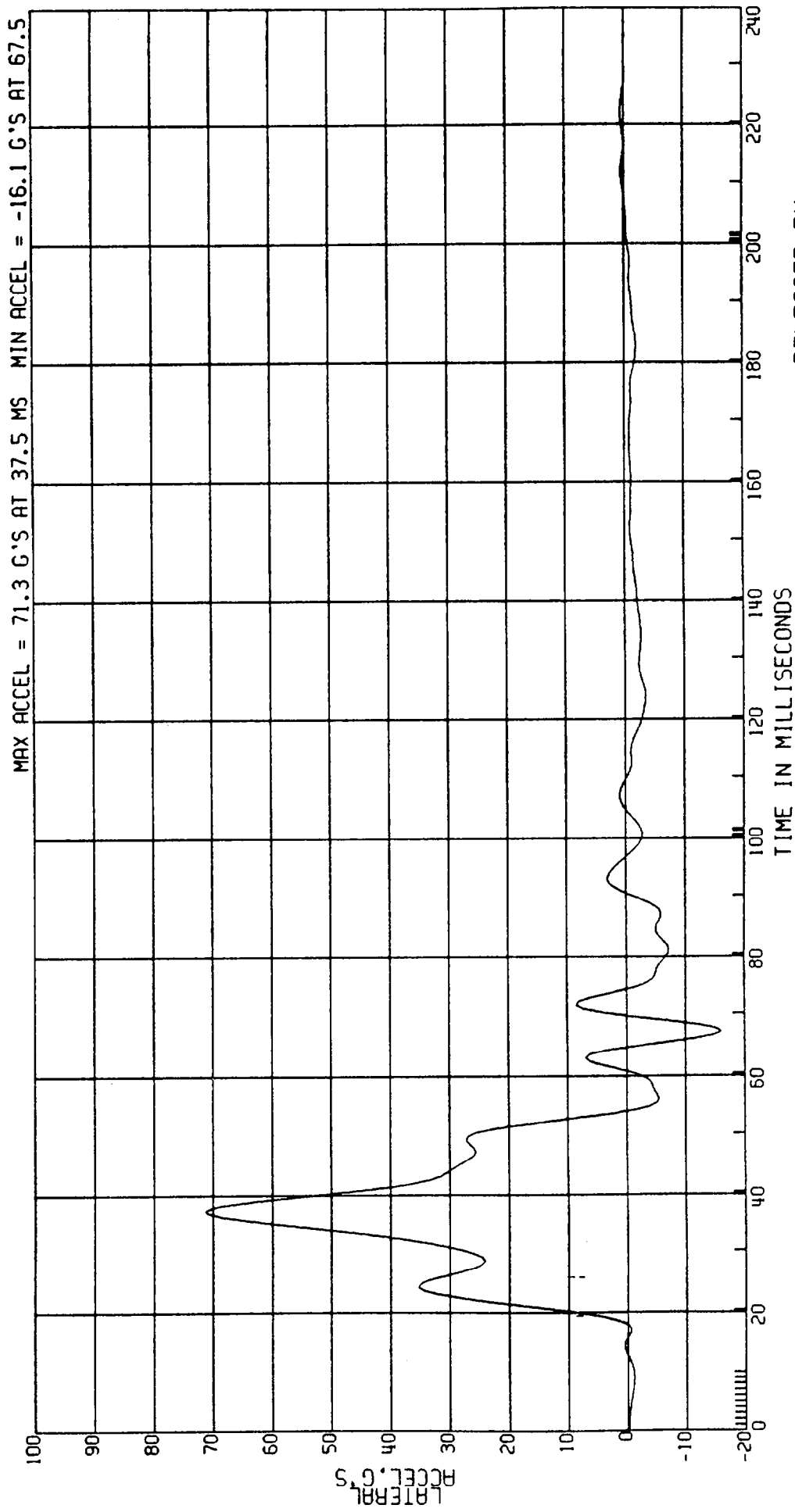
8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 106
 868-905 MVMA 12P 2AF69 ATD TYPE: SID
 L. REAR LEFT LOWER RIB ACCEL. TEST DATE: 04-04-90
 LEC DATA, SAE CLASS 1000



RELEASED BY:
 46 PROCESSED 3 MY 90 12:06

C8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 107
3868-905
CPE MVMA 12P 2AF69 ATD TYPE: SID
ELEC DATA, NHTSA FIR FILTER L. REAR LEFT LOWER RIB ACCEL. TEST DATE: 04-04-90

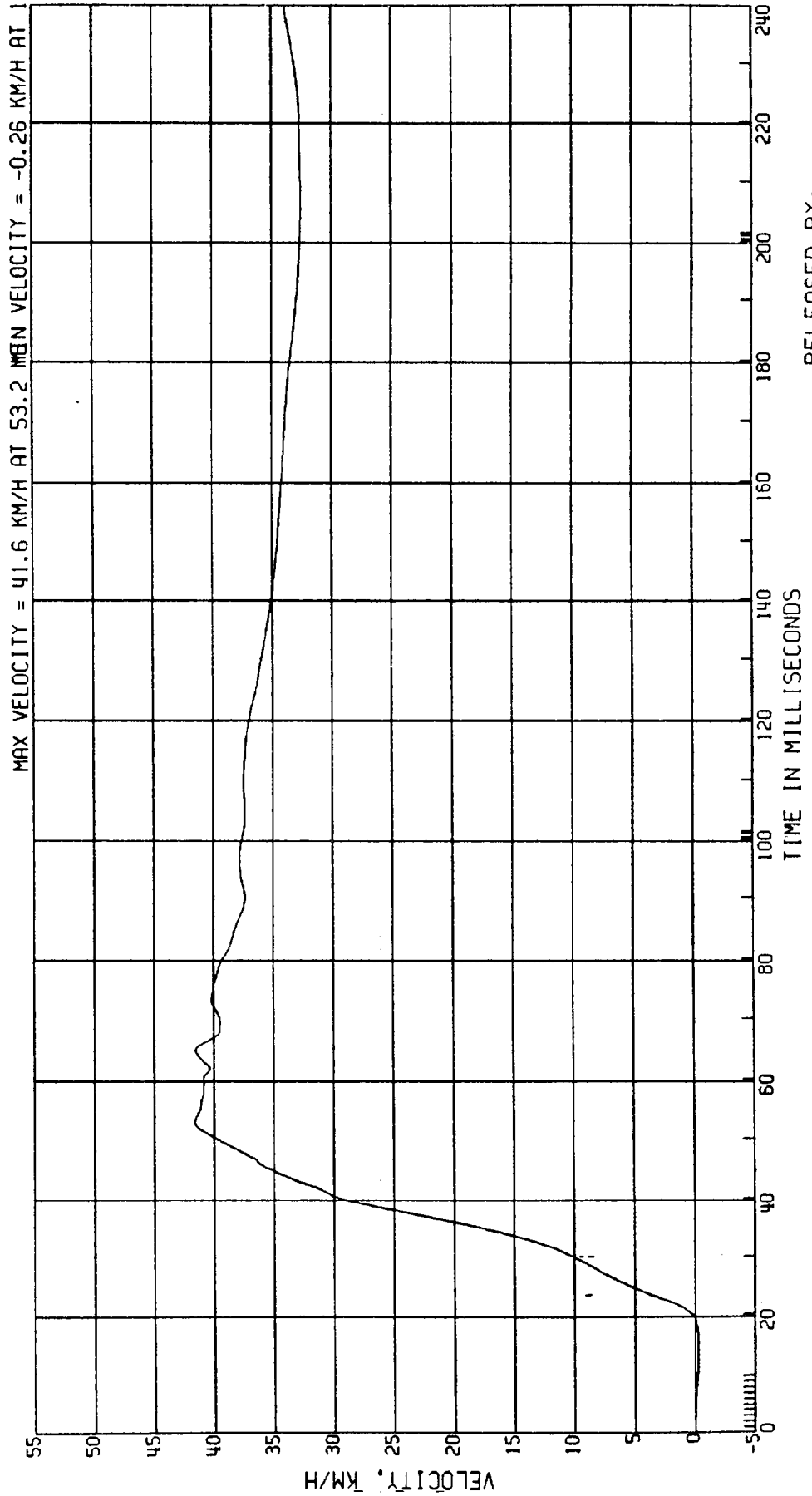
F. I. R. FILTER, CLASS 300 BUTTERWORTH



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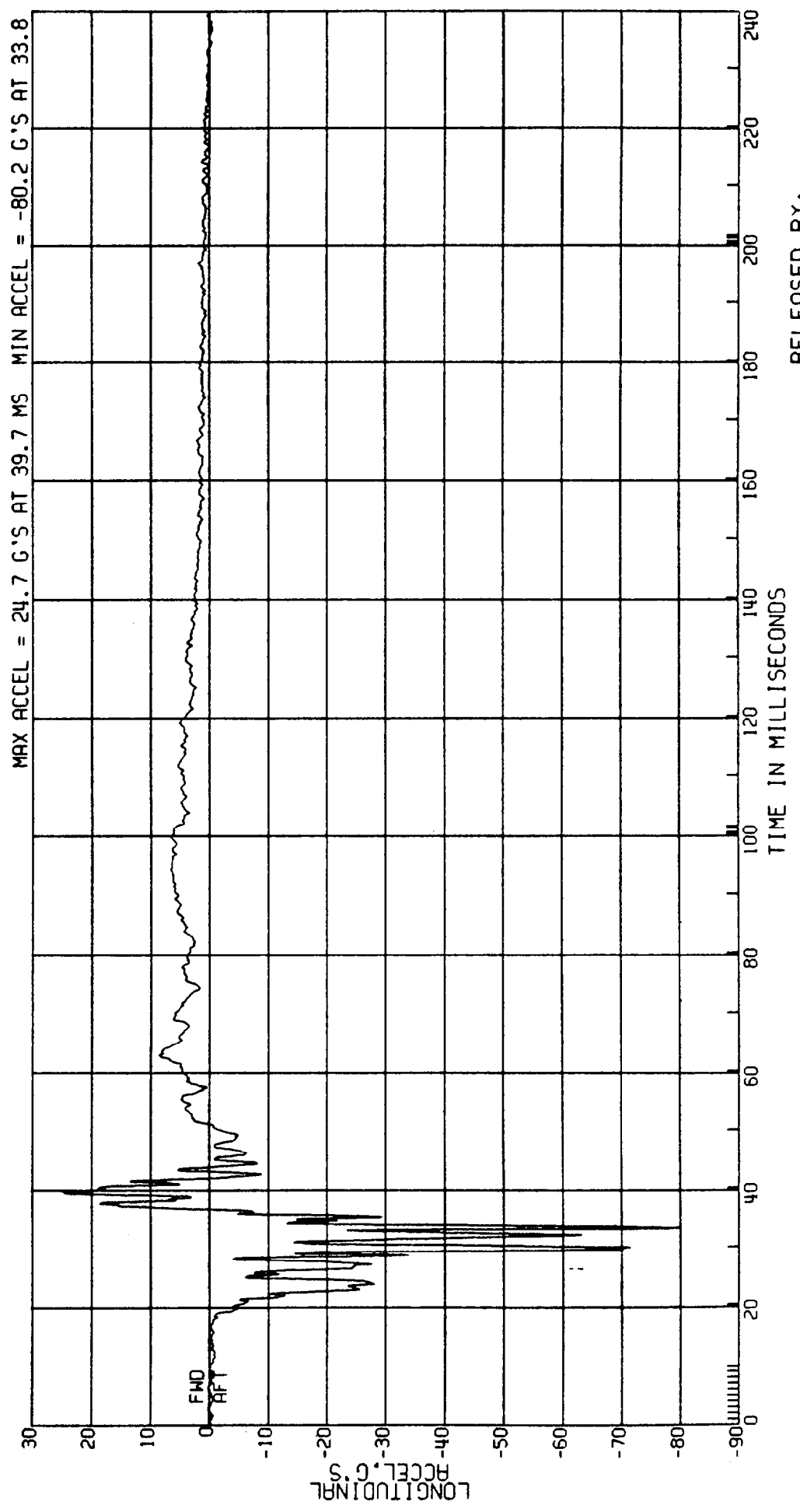
47 PROCESSED 3 MY 90 12:06

012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE /08
 68-905 MVMA 12P 2AF69 ATD TYPE: SID
 PE COMPUTED LEFT LOWER RIB VELOCITY TEST DATE:04-04-90
 EC DATA, SAE CLASS 180 (1ST INT OF L.REAR ACCELERATION)



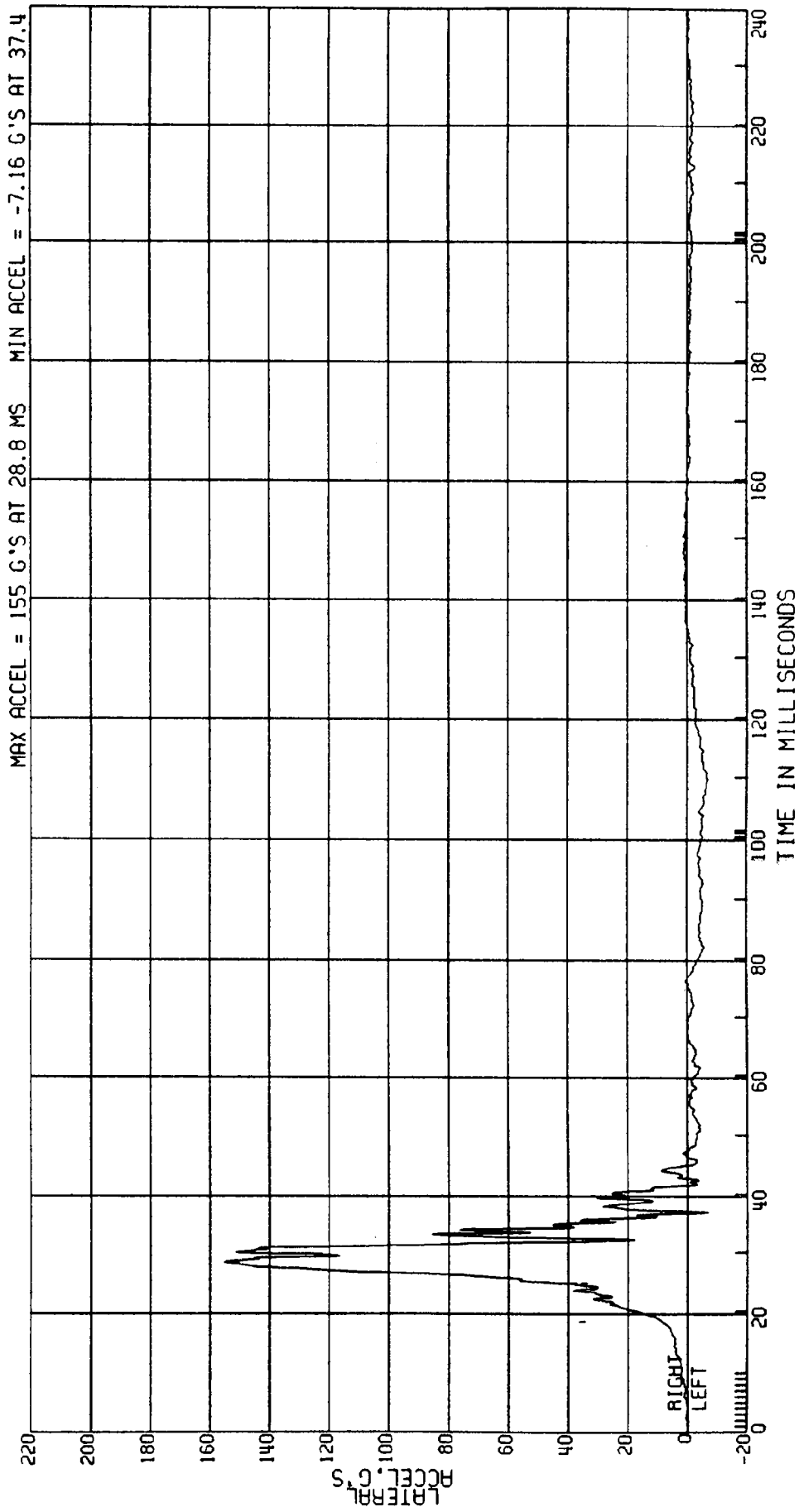
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C8012A L. SIDE IMPACT - 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE /09
3868-905 ATD TYPE: SID
CPE MVMA 12P 2AF69 L. REAR PELVIC ACCEL.
ELEC DATA, SAE CLASS 600 TEST DATE: 04-04-90



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49 PROCESSED 3 MY 90 12:06

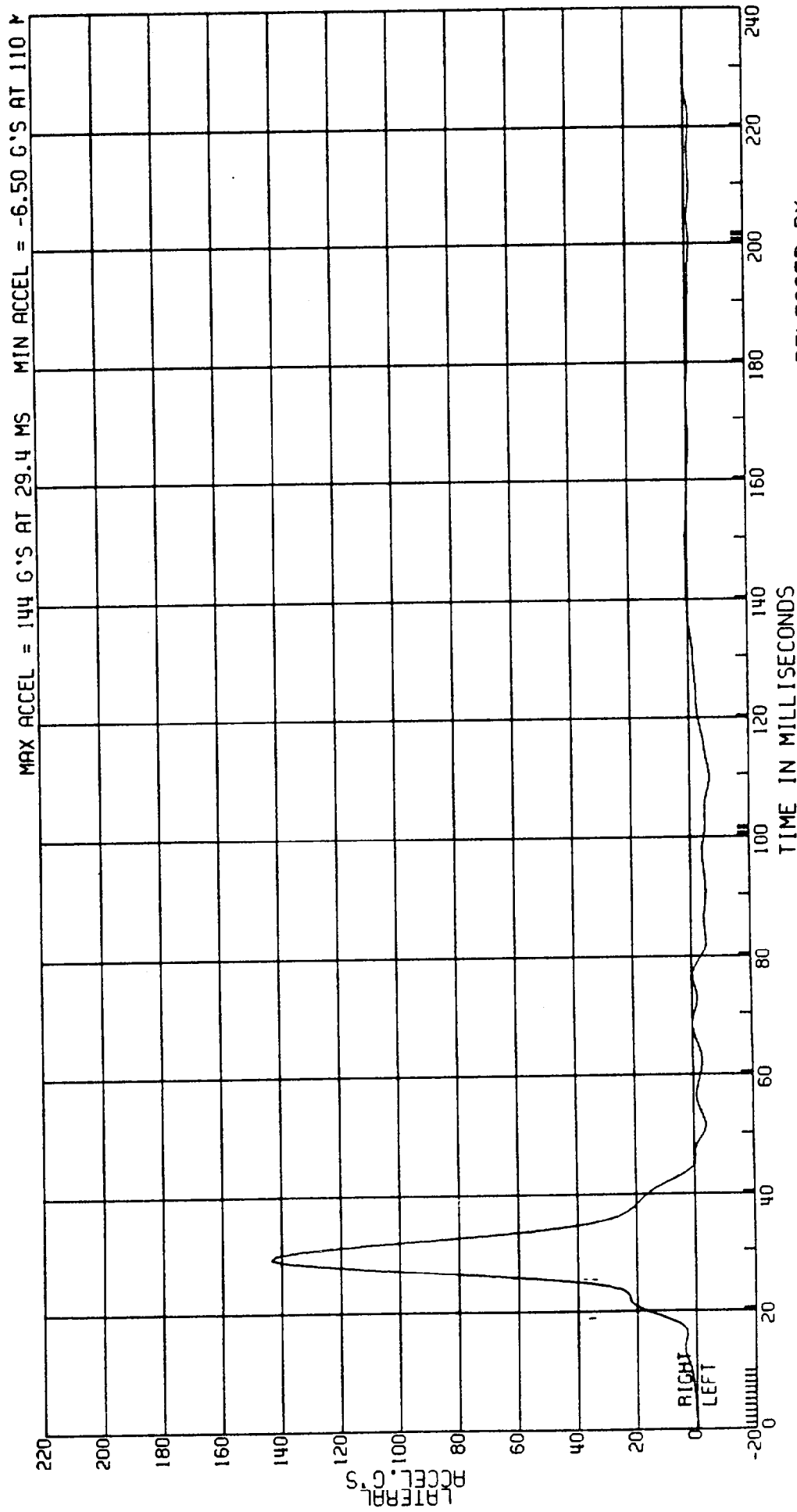
C8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5 KM/H FIGURE 110
3868-905
CPE MVMA 12P 2AF69
ELEC DATA, SAE CLASS 600 L.REAR PELVIC ACCEL. ATD TYPE: SID TEST DATE:04-04-90



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50 PROCESSED 3 MY 90 12:06

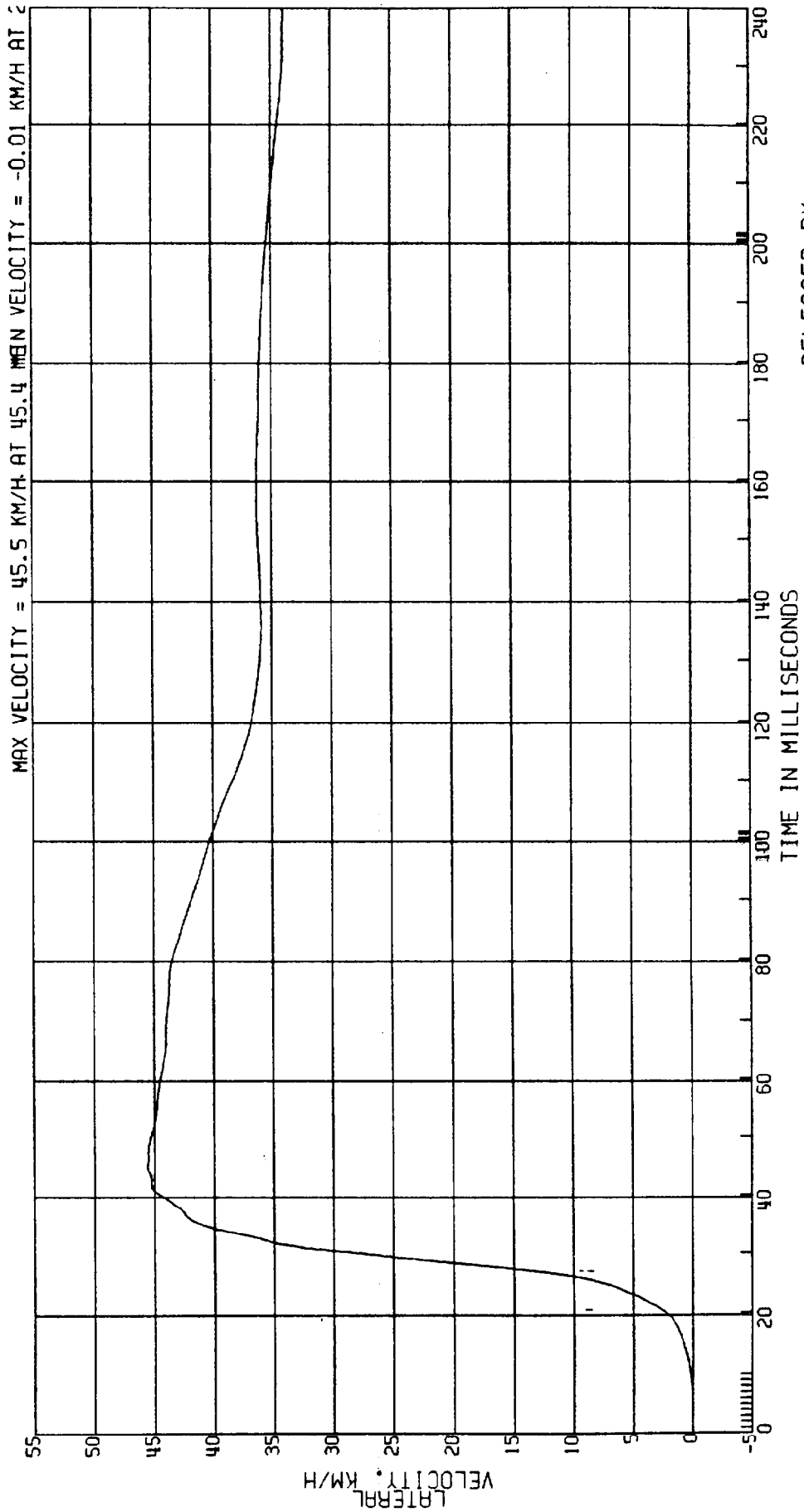
C8012A L. SIDE IMPACT - 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5 KM/H FIGURE 111
3868-905 ATD TYPE: SID
CPE MVMA 12P 2AF69 TEST DATE: 04-04-90

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

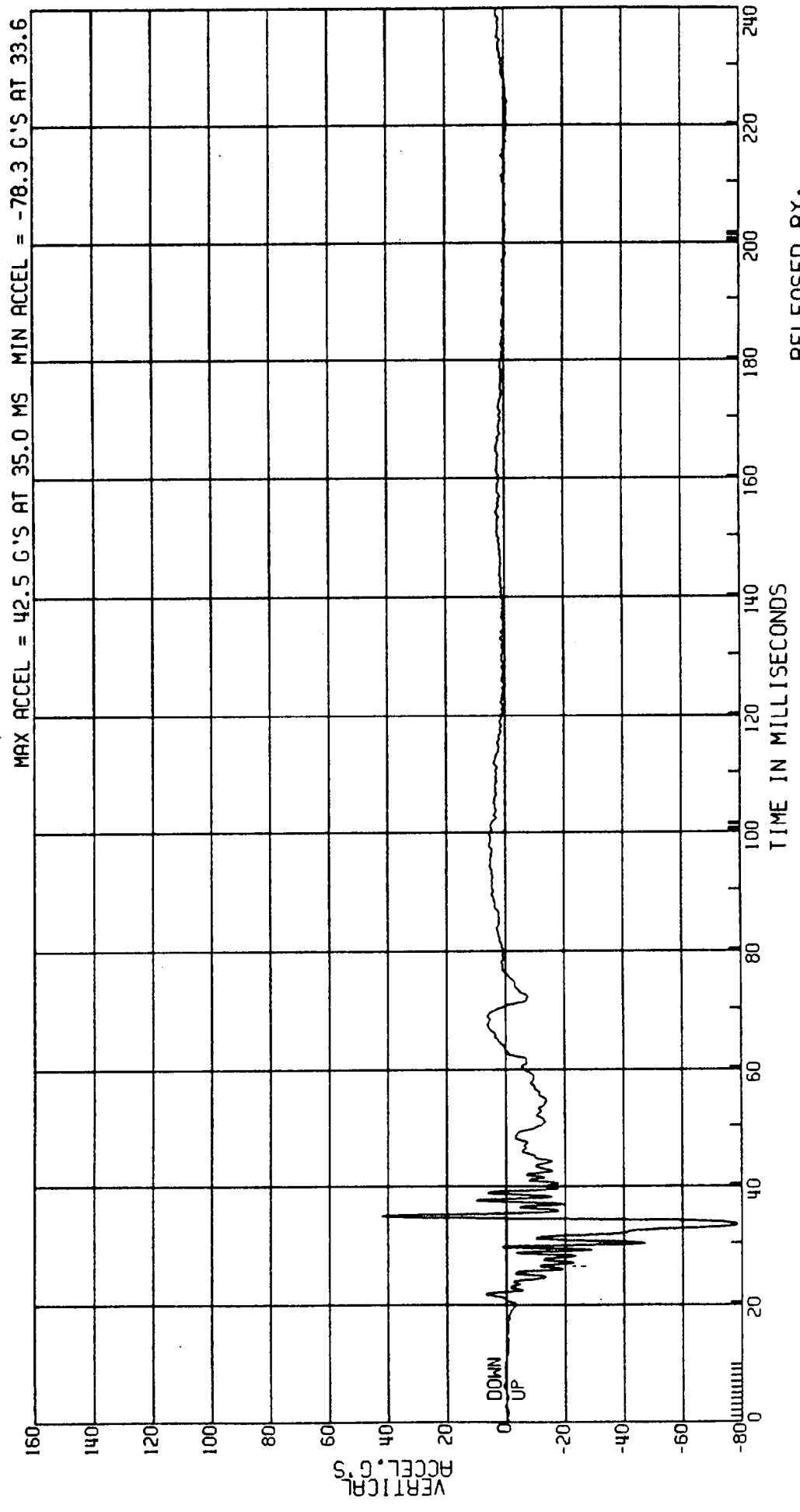


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51 PROCESSED 3 MY 90 12:07

C8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5 KM/H FIGURE 112
 3868-905 MVMA 12P 2AF69 ATD TYPE: SID
 CPE COMPUTED PELVIC VELOCITY TEST DATE: 04-04-90
 ELEC DATA, SAE CLASS 180 (1ST INT OF L. REAR ACCELERATION)

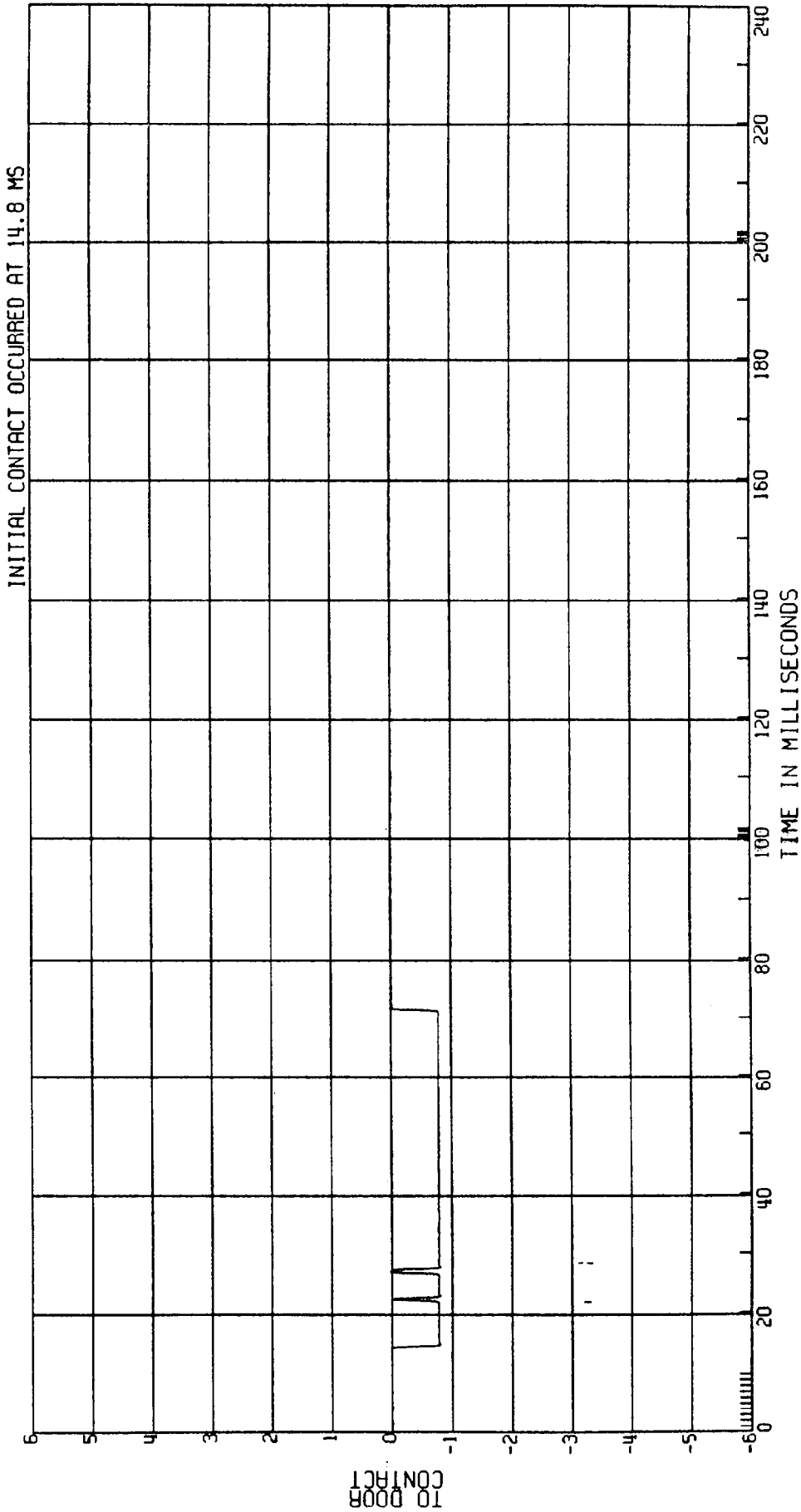


C8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 113
3868-905 ATD TYPE: SID
CPE MVMA 12P 2AF69 L. REAR PELVIC ACCEL. TEST DATE: 04-04-90
ELEC DATA, SAE CLASS 600



RELEASED BY:
53 PROCESSED 3 MY 90 12:07

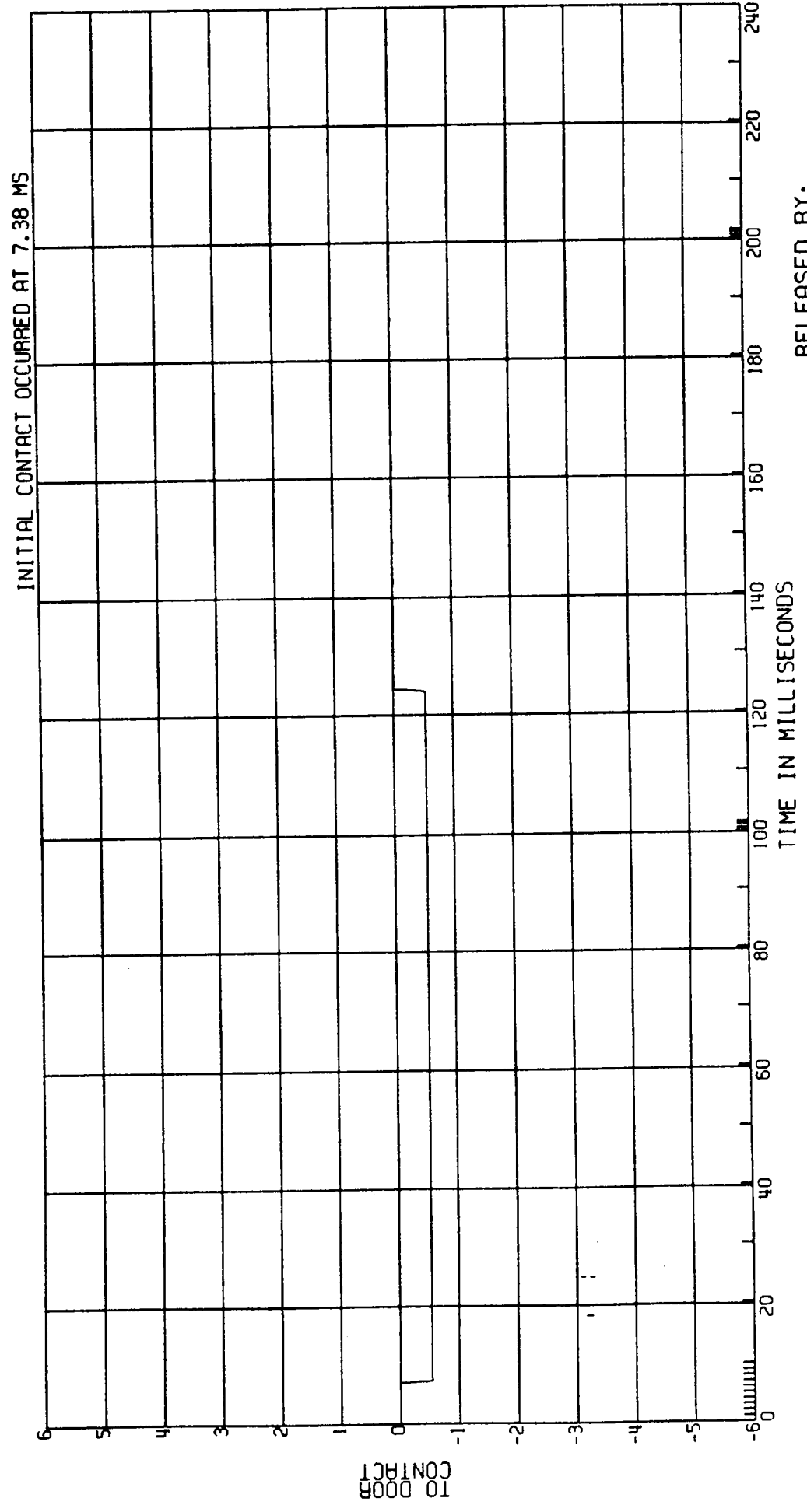
8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 114
 3868-905 MVMA 12P 2AF69 ATD TYPE: SID
 CPE L. REAR PELVIS-LEFT SIDE CONTACT TEST DATE: 04-04-90
 LEC DATA, SAE CLASS 1000



C8012A L. SIDE IMPACT- 27 DEG
3868-905
CPE

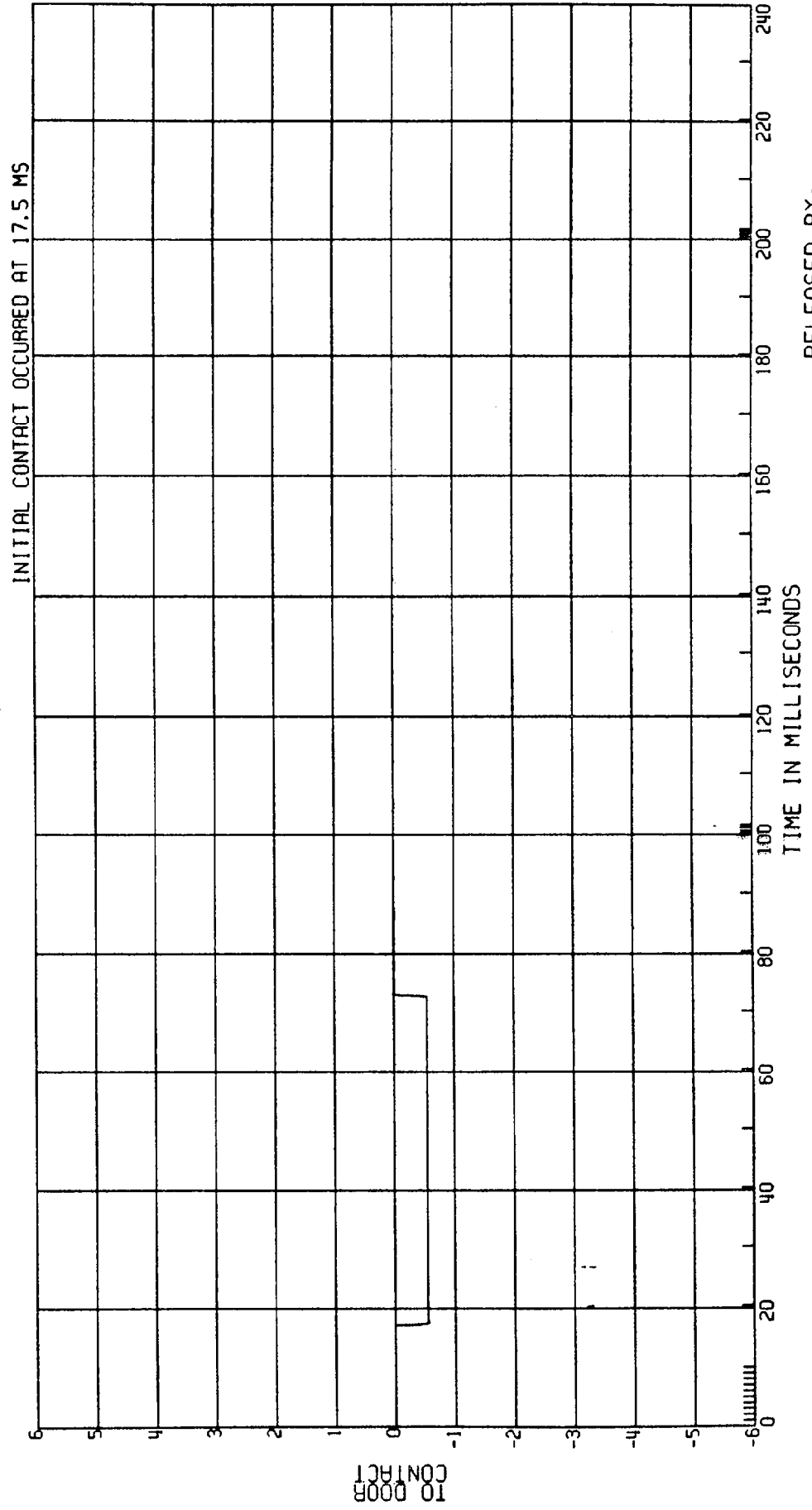
MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 115
L. REAR THORAX-LEFT SIDE CONTACT

MVMA 12P 2AF69
ELEC DATA, SAE CLASS 1000

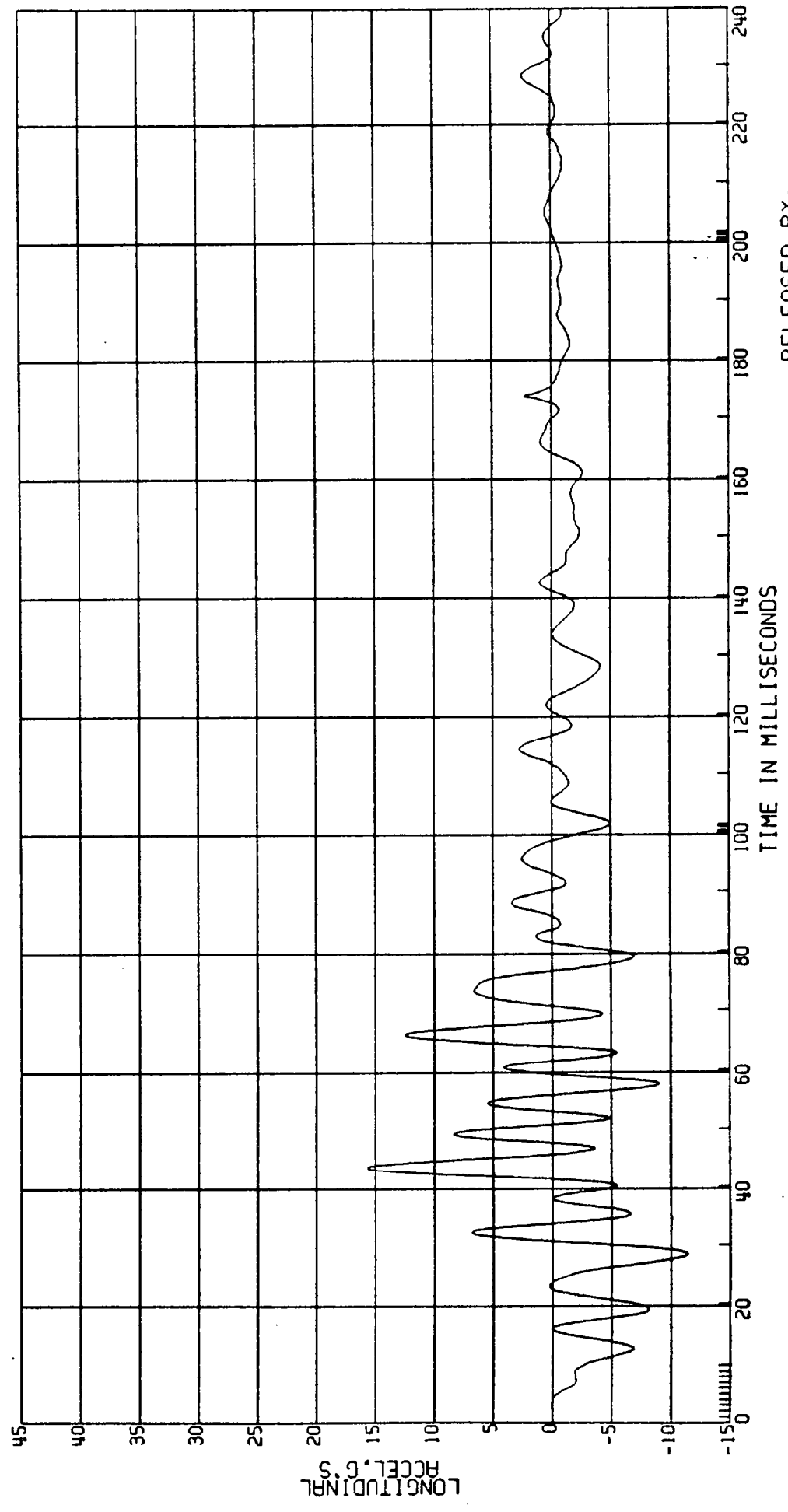


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72 PROCESSED 3 MY 90 12:07

C8012A L. SIDE IMPACT - 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 116
 3868-905 ATD TYPE: SID
 CPE MVMA 12P 2AF69 L. REAR ABDOMEN-LEFT SIDE CONTACT TEST DATE: 04-04-90
 ELEC DATA, SAE CLASS 1000

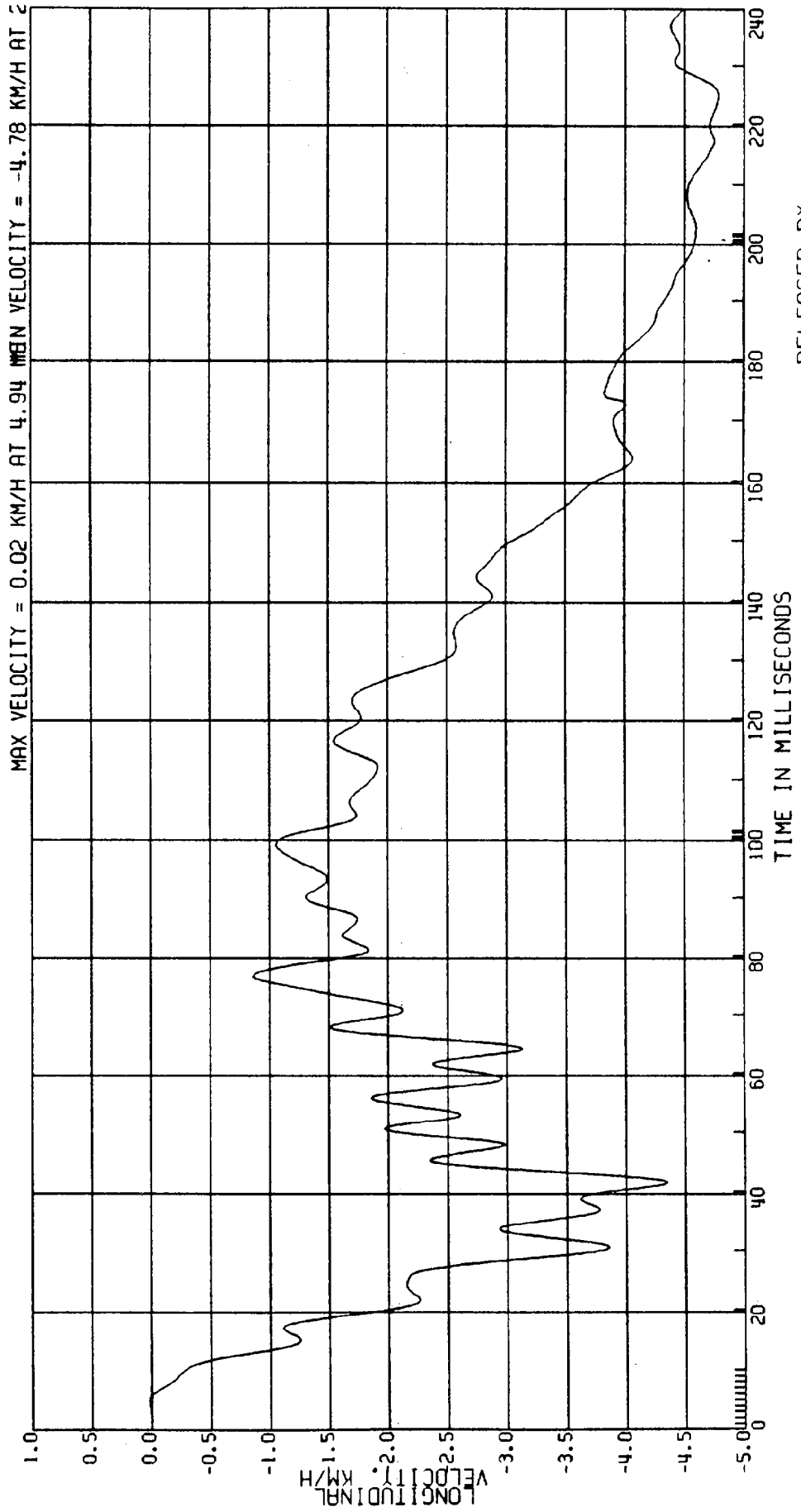


C8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 1/7
3868-905
CPE MVMA 12P 2AF69 PASS-SIDE ROCKER AT CTR OF IMPACT ACCEL. TEST DATE:04-04-90
ELEC DATA, SAE CLASS 60



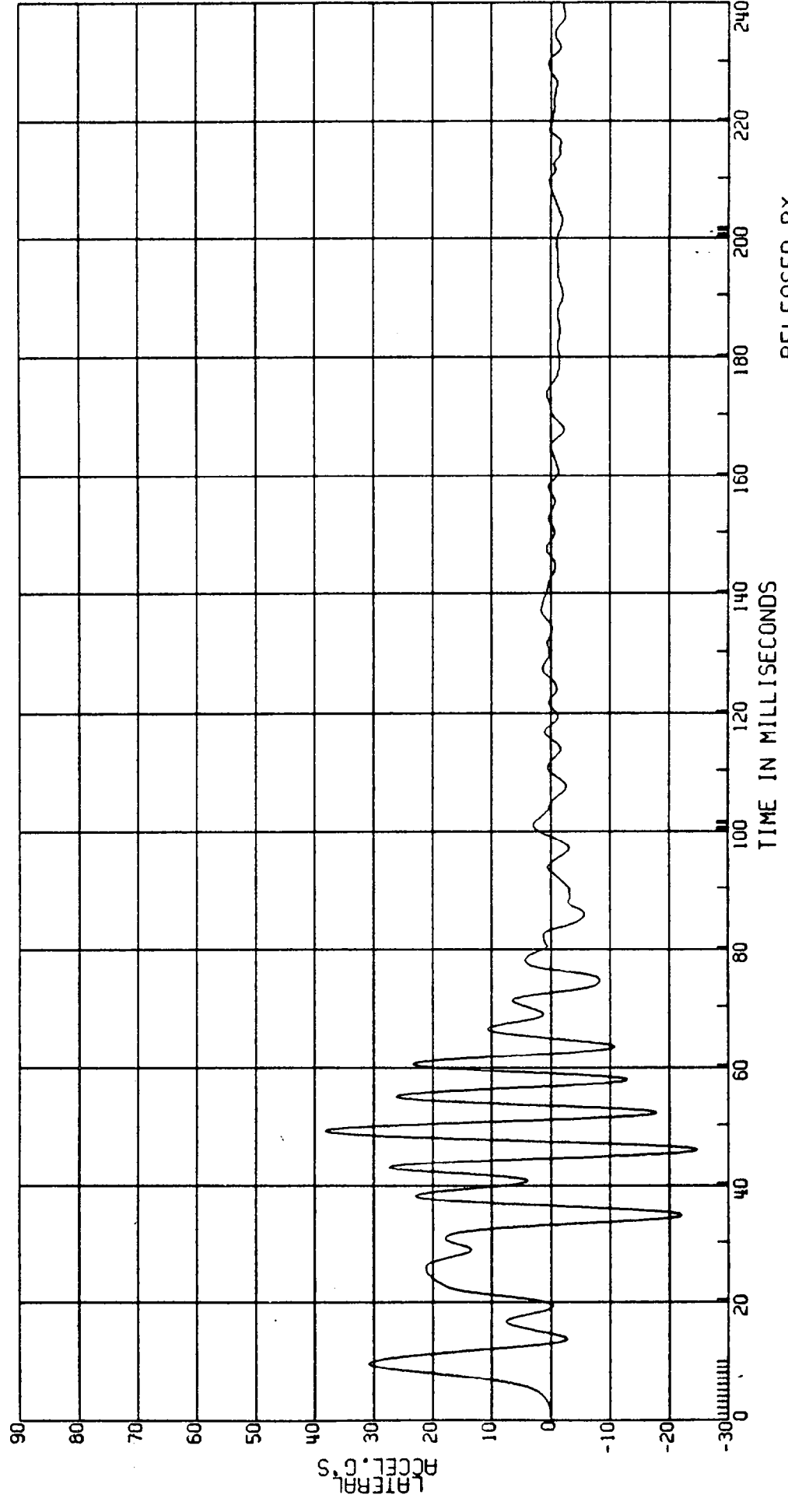
RELEASED BY:
3 PROCESSED 3 MY 90 12:06

C8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5 KM/H FIGURE 118
 3868-905
 CPE MVMA 12P 2AF69 COMPUTED ROCKER AT CTR OF IMPACT VEL TEST DATE: 04-04-90
 ELEC DATA. SAE CLASS 180 (1ST INTEGRAL OF PASS-SIDE ACCELERATION)



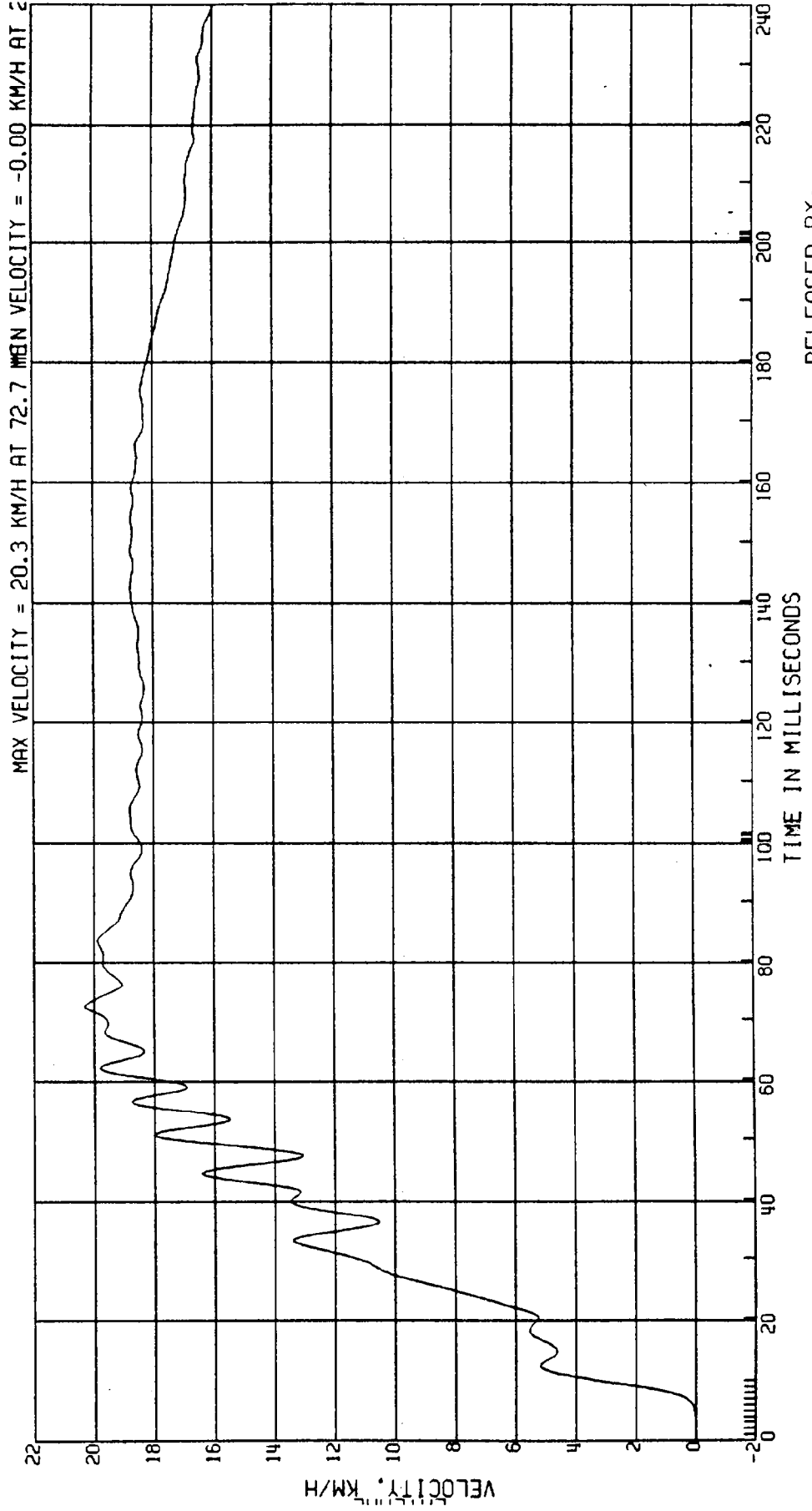
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C8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 119
3868-905
CPE MVMA 12P 2AF69 PASS-SIDE ROCKER AT CTR OF IMPACT ACCEL. TEST DATE:04-04-90
ELEC DATA, SAE CLASS 60



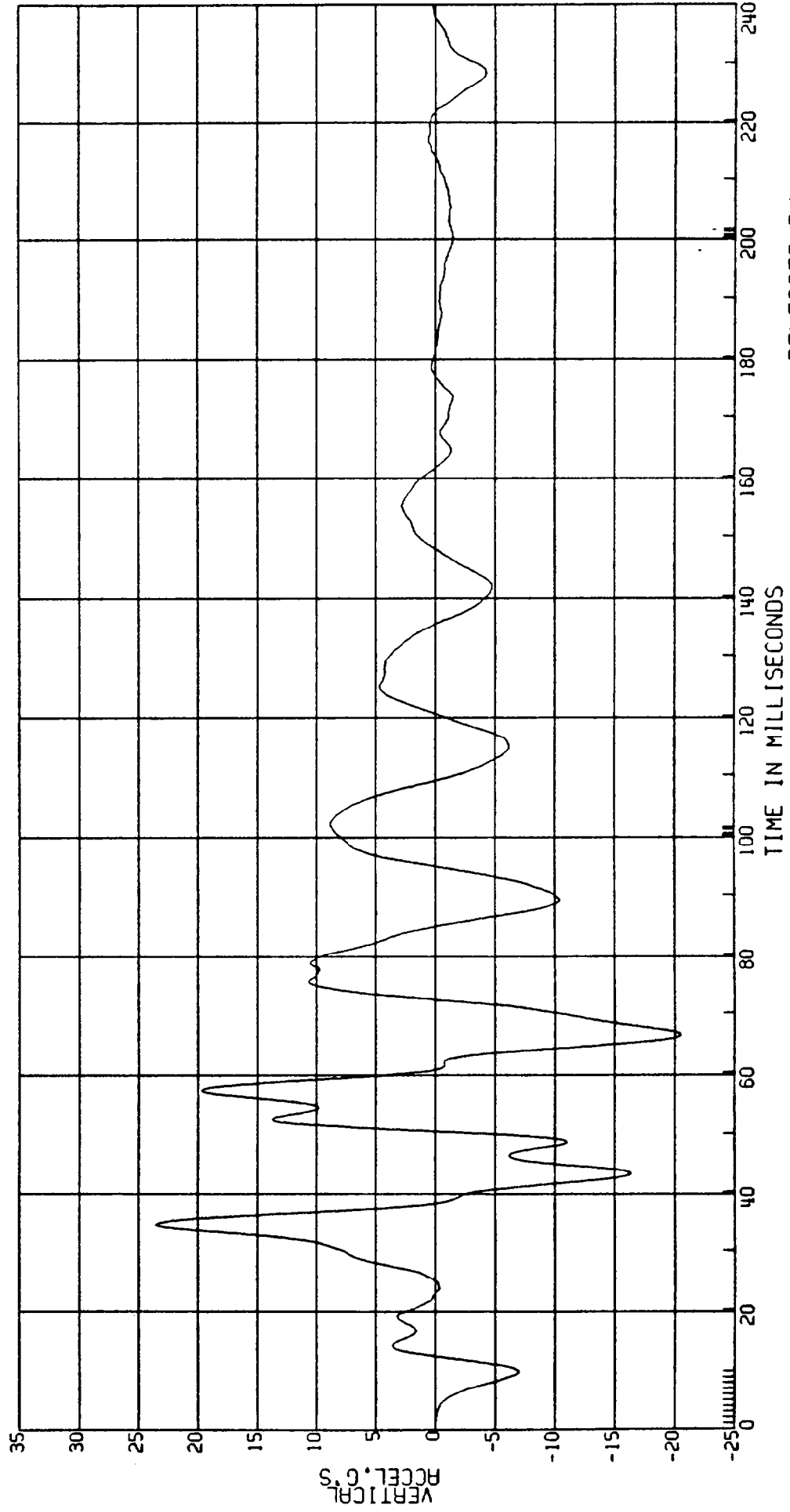
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5 PROCESSED 3 MY 90 12:06

3012A L. SIDE IMPACT - 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 120
368-905
CPE MVMA 12P 2AF69 COMPUTED ROCKER AT CTR OF IMPACT VEL TEST DATE:04-04-90
REC DATA, SAE CLASS 180 (1ST INTEGRAL OF PASS-SIDE ACCELERATION)



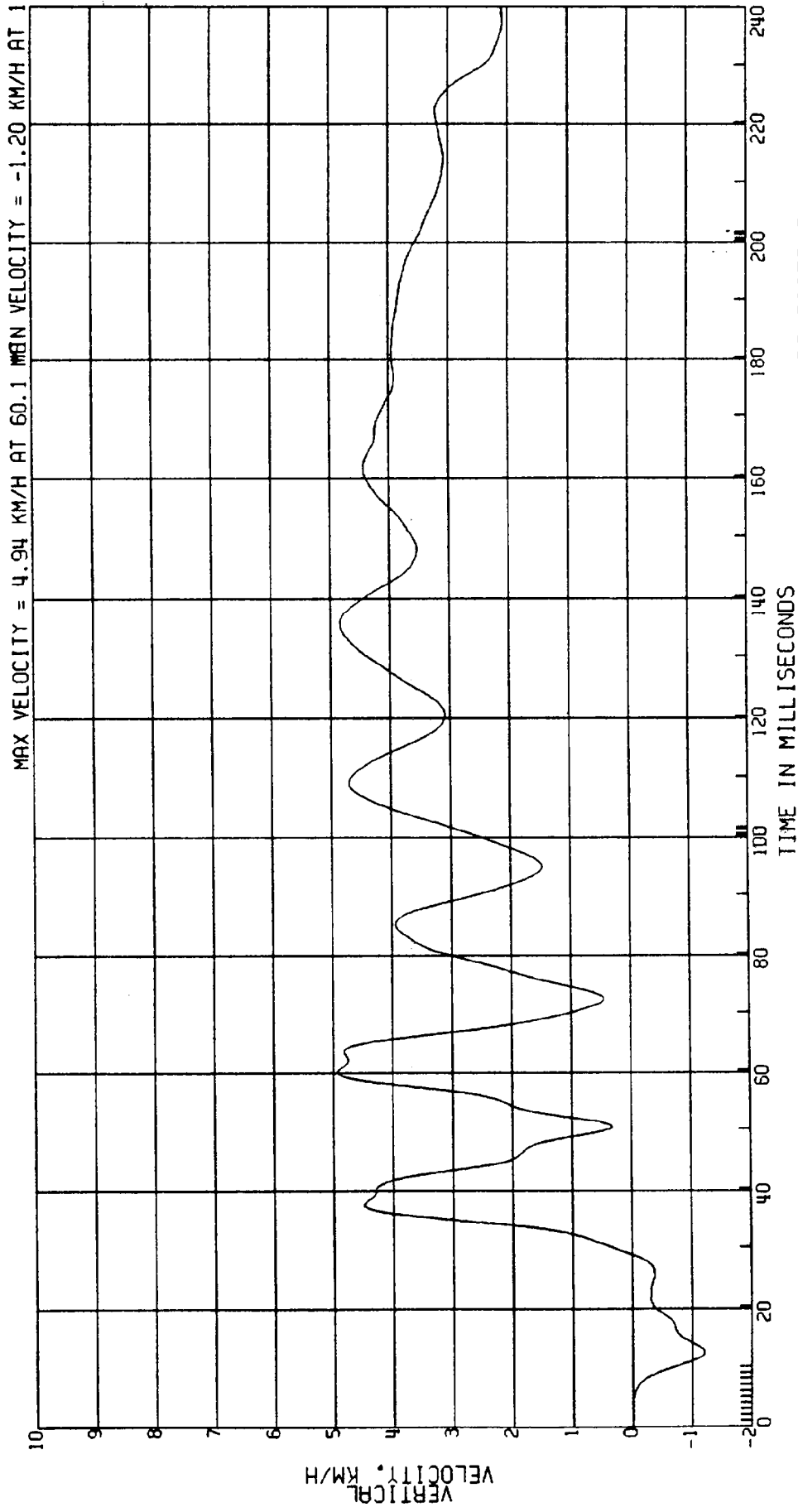
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6 PROCESSED 3 MY 90 12:06

C8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5 KM/H FIGURE / 2/
3868-905
CPE MVMA 12P 2AF69 PASS-SIDE ROCKER AT CTR OF IMPACT ACCEL. TEST DATE: 04-04-90
ELEC DATA, SAE CLASS 60



RELEASED BY:
7 PROCESSED 3 MY 90 12:06

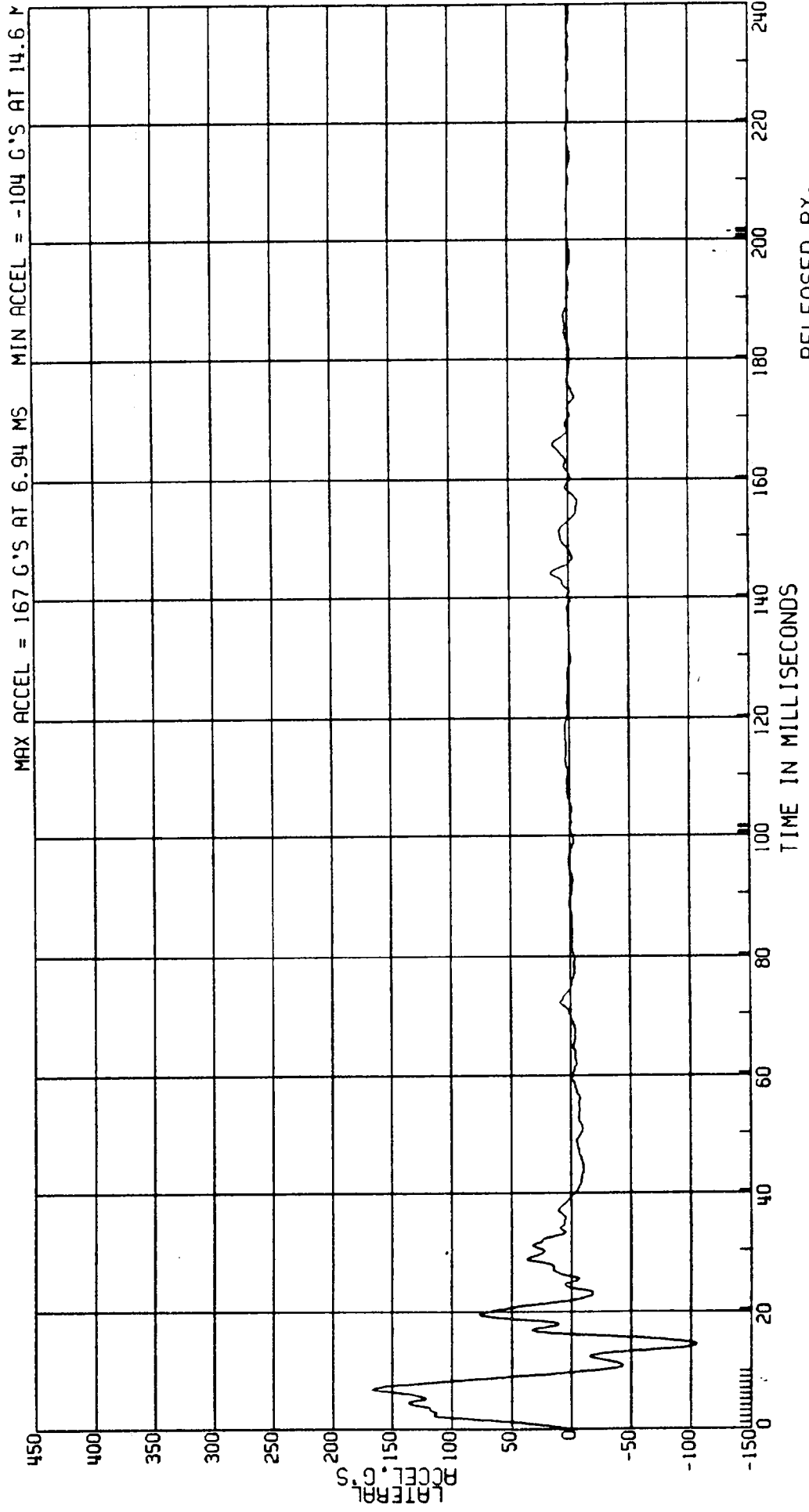
38012A L. SIDE IMPACT - 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5 KM/H FIGURE 1a2
3868-905
CPE MVMA 12P 2AF69 COMPUTED ROCKER AT CTR OF IMPACT VEL TEST DATE: 04-04-90
ELEC DATA, SAE CLASS 180 (1ST INTEGRAL OF PASS-SIDE ACCELERATION)



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8 PROCESSED 3 MY 90 12:06

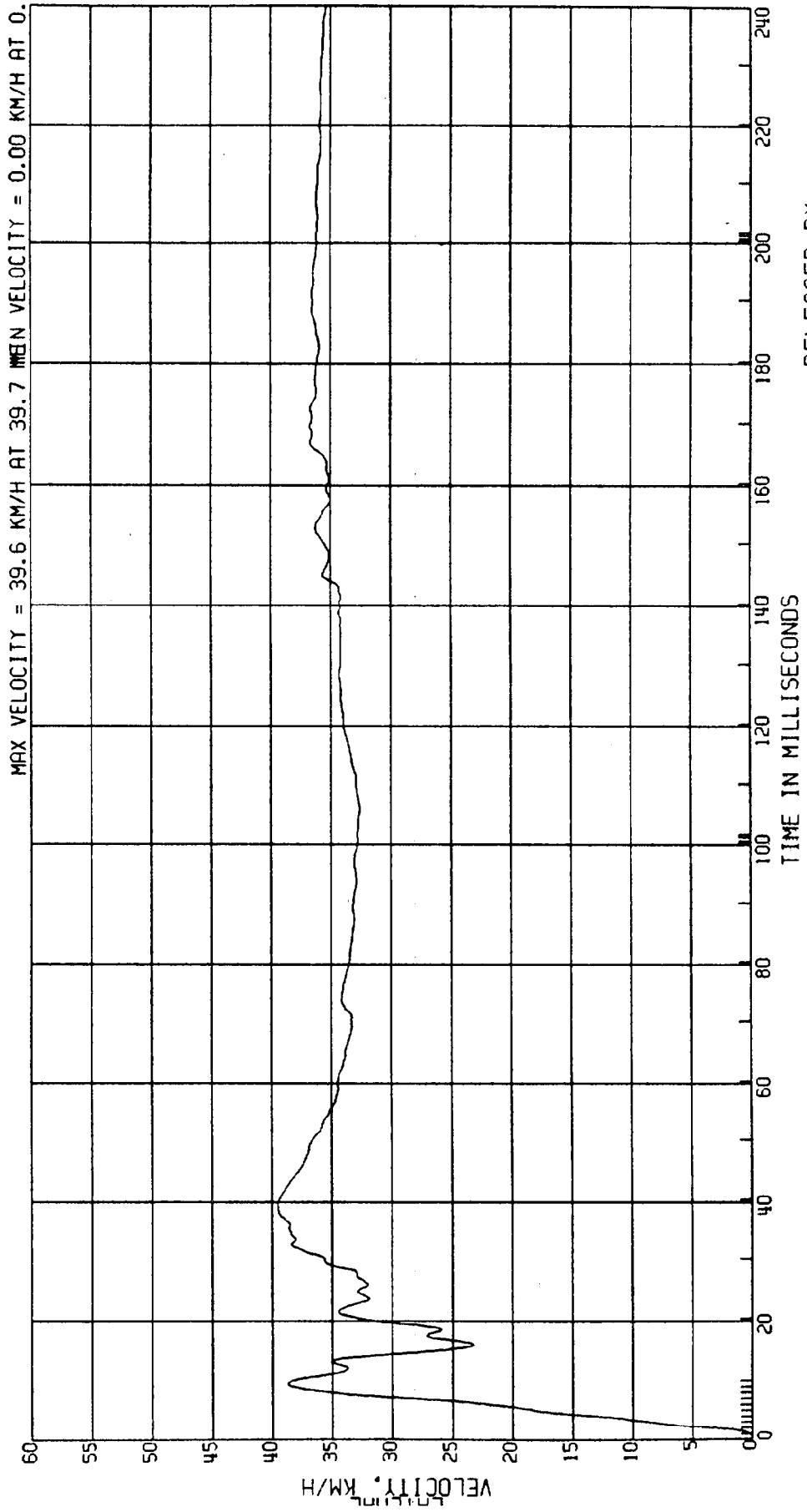
C8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE /a 3
3868-905
CPE MVMA 12P 2AF69 DR-SIDE FRT. DOOR NO. 1 ACCEL. TEST DATE:04-04-90
ELEC DATA, SAE CLASS 60

;



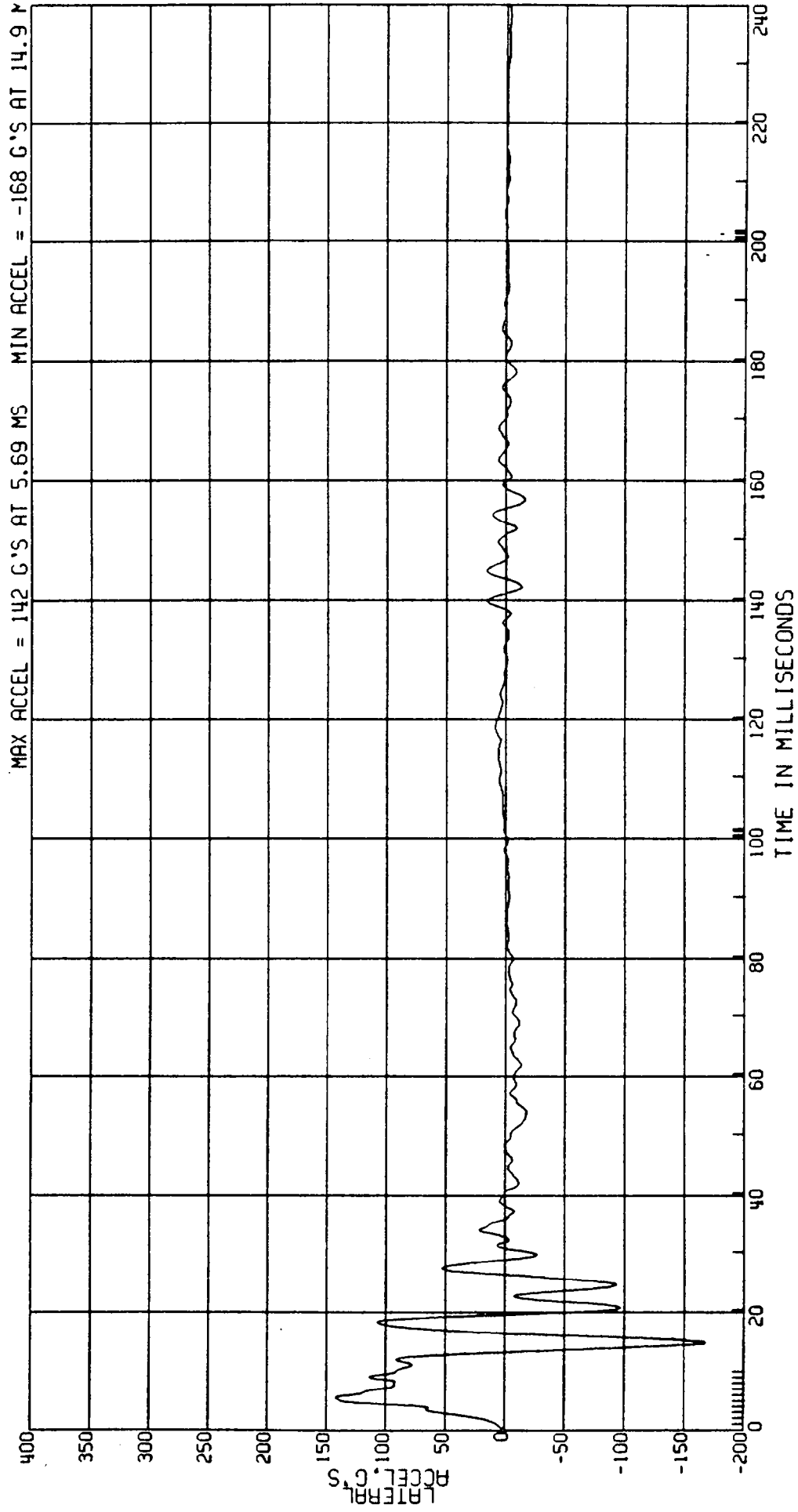
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9 PROCESSED 3 MT 90 12:06

8012A L. SIDE IMPACT - 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5 KM/H FIGURE 124
868-905
CPE MVMA 12P 2AF69 COMPUTED FRT. DOOR NO. 1 VELOCITY TEST DATE: 04-04-90
LEC DATA, SAE CLASS 180 (1ST INTEGRAL OF DR-SIDE ACCELERATION)



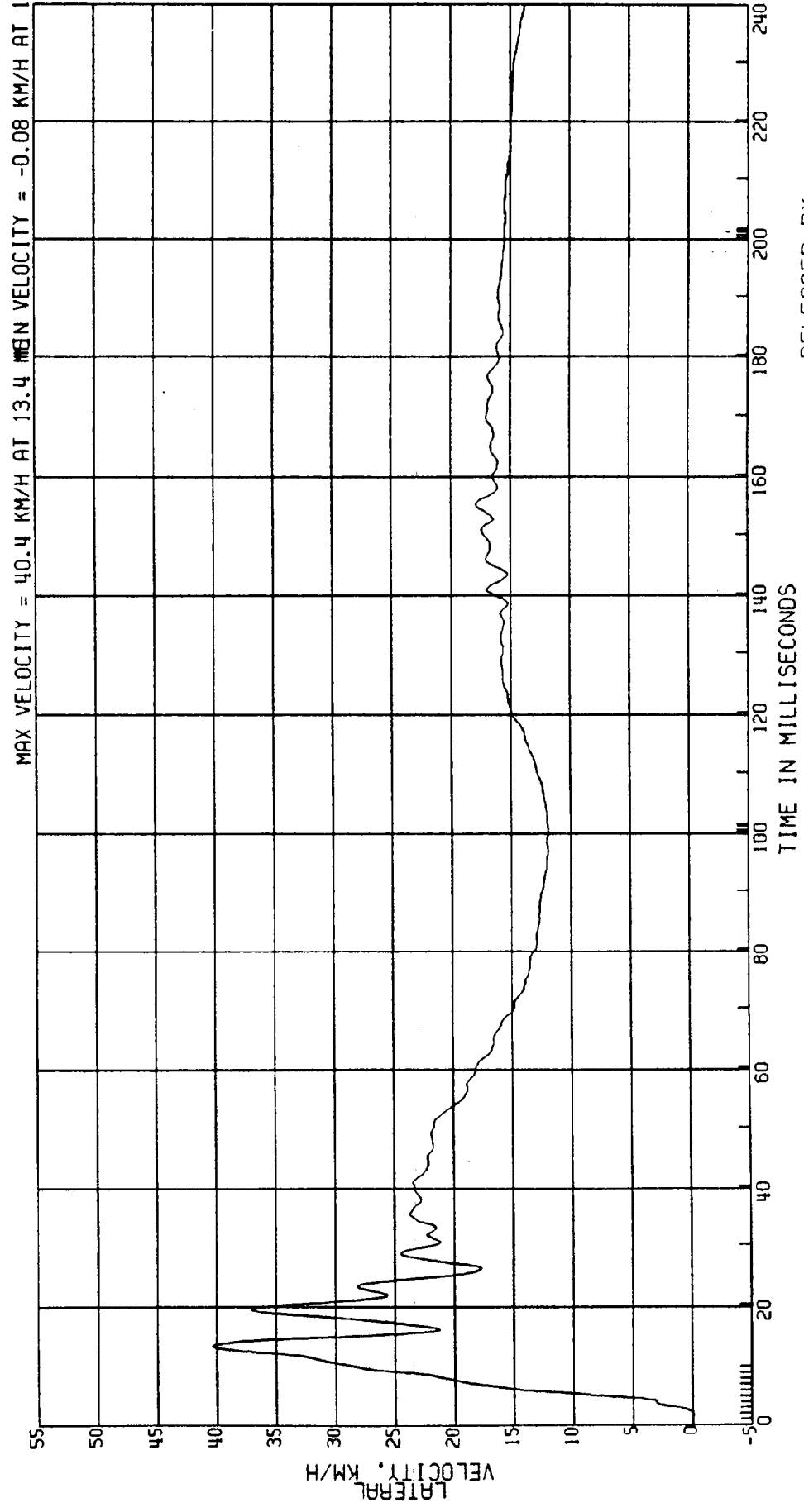
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10 PROCESSED 3 MY 90 12:06

C8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5 KM/H FIGURE / 25
3868-905
CPE MVMA 12P 2AF69 DR-SIDE FRT. DOOR NO. 2 ACCEL. TEST DATE: 04-04-90
ELEC DATA, SAE CLASS 60



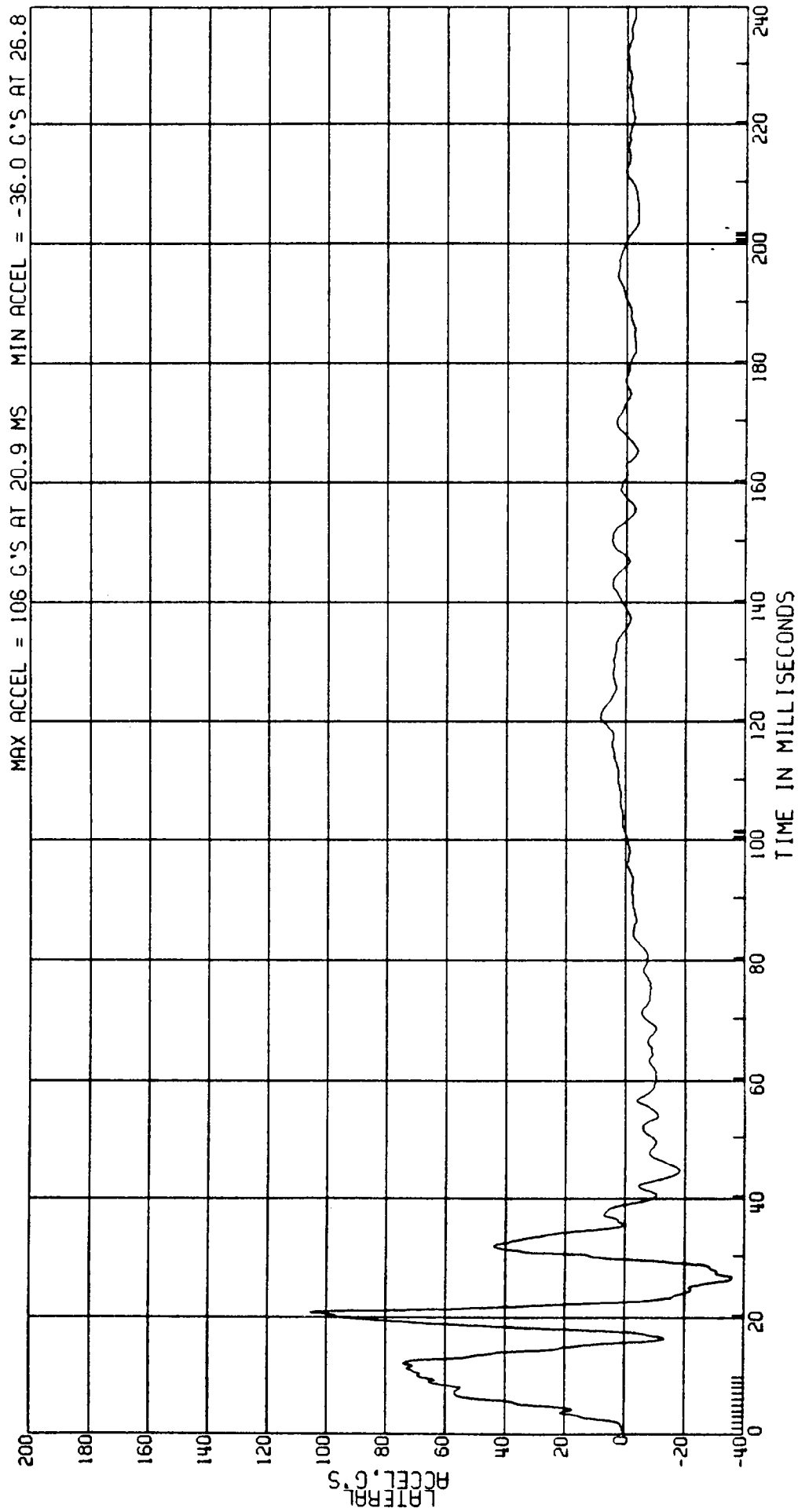
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C8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 126
 3868-905
 CPE MVMA 12P 2AF69 COMPUTED FRT. DOOR NO. 2 VELOCITY TEST DATE:04-04-90
 ELEC DATA, SAE CLASS 180 (1ST INTEGRAL OF DR-SIDE ACCELERATION)



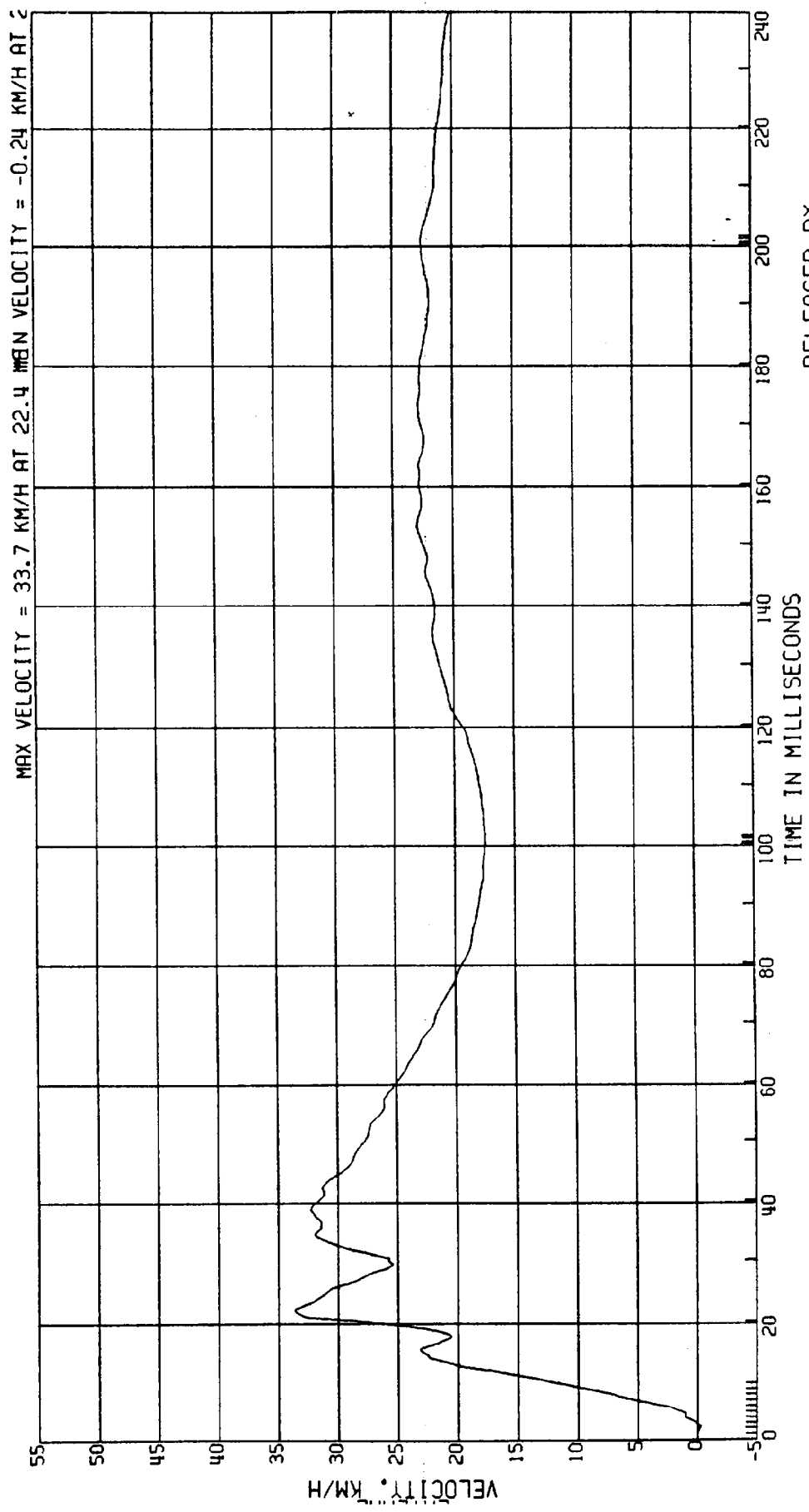
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 12 PROCESSED 3 MY 90 12:06

C8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 127
3868-905
CPE MVMA 12P 2AF69 DR-SIDE FRT. DOOR NO. 3 ACCEL. TEST DATE:04-04-90
ELEC DATA, SAE CLASS 60



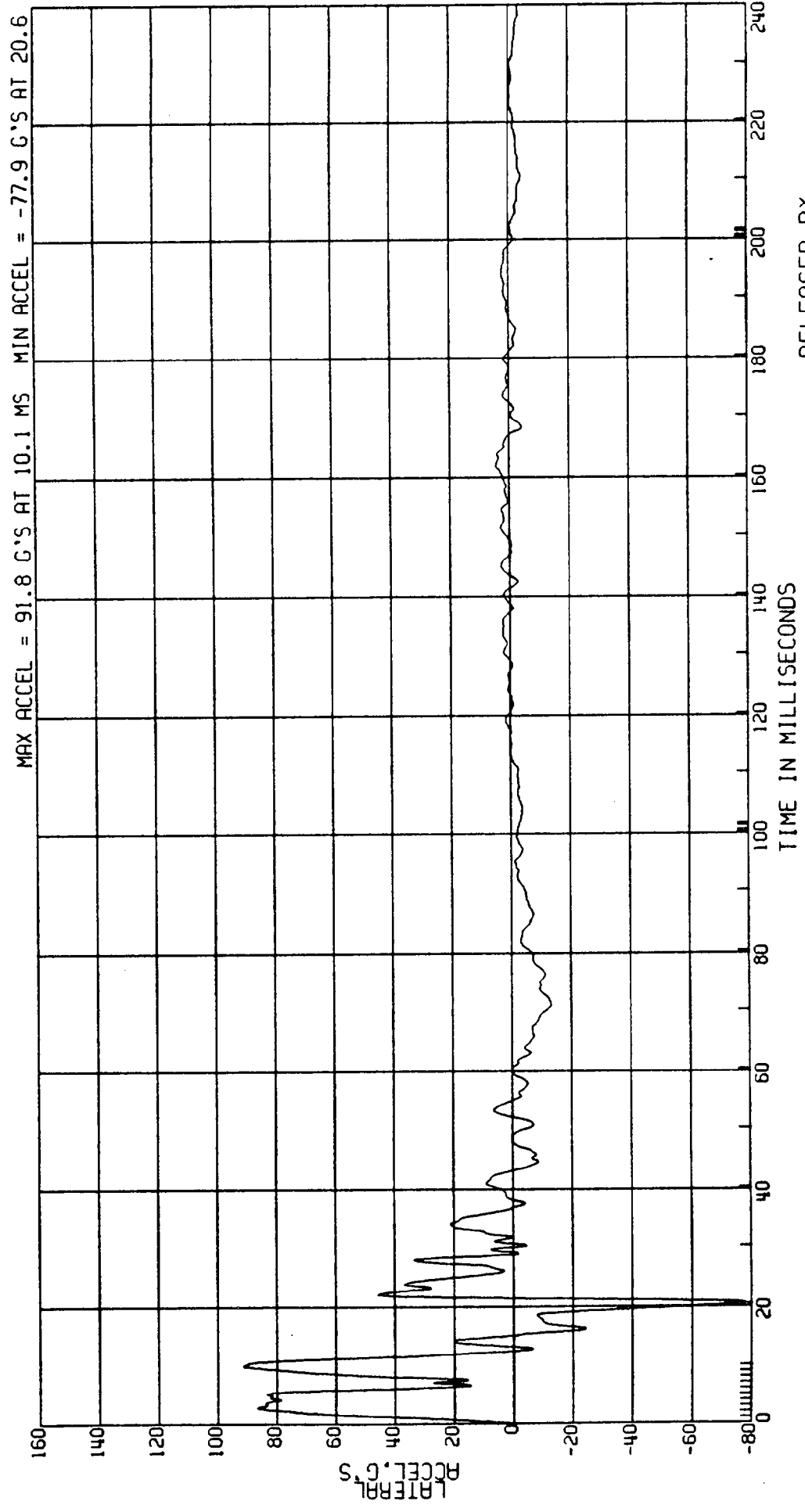
RELEASED BY:
13 PROCESSED 3 MY 90 12:06

3012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5 KM/H FIGURE 128
 368-905
 PE MVMA 12P 2AF69 COMPUTED FRT. DOOR NO. 3 VELOCITY TEST DATE: 04-04-90
 EC DATA, SAE CLASS 180 (1ST INTEGRAL OF DR-SIDE ACCELERATION)



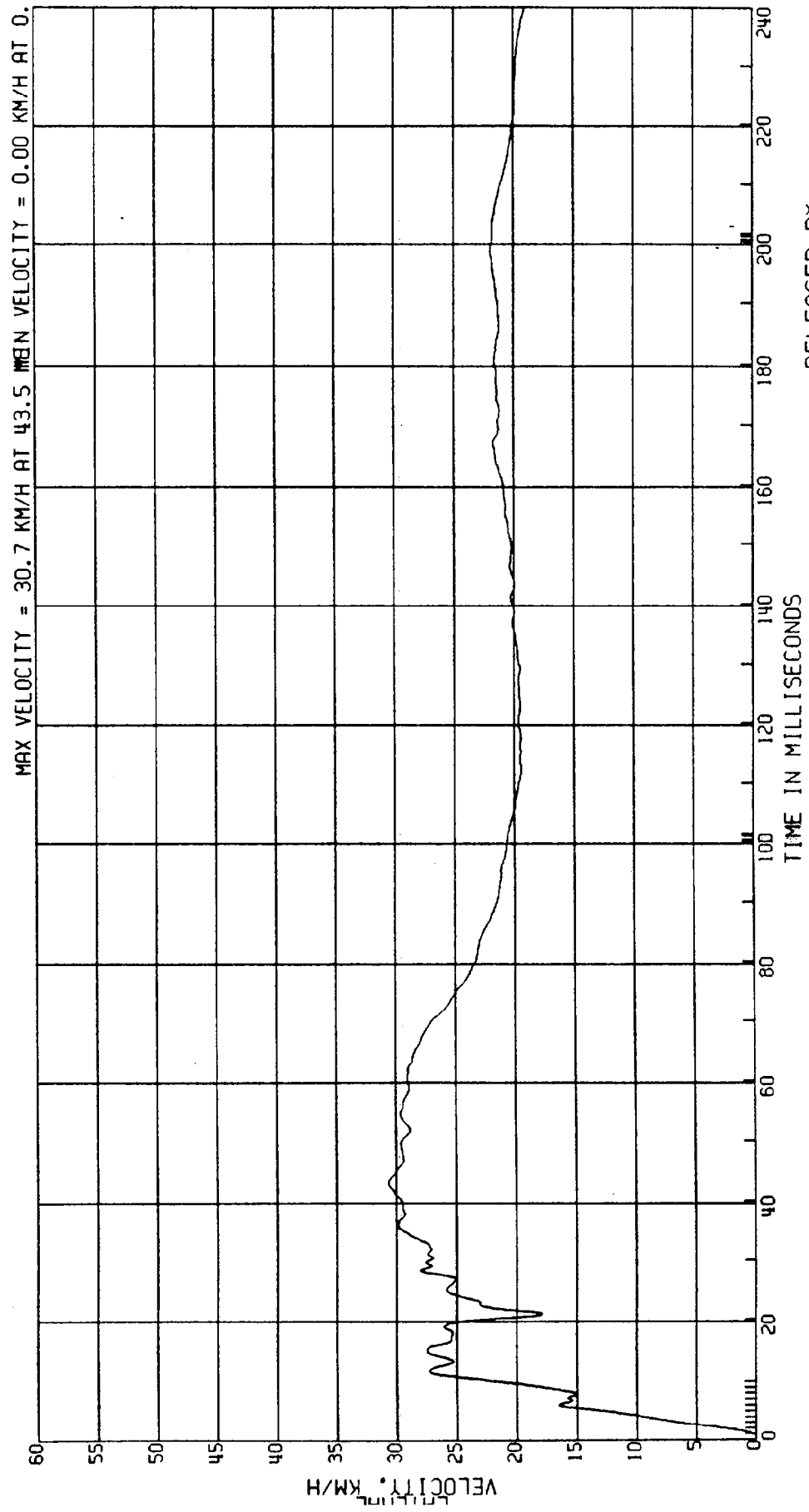
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 14 PROCESSED 3 MY 90 12:06

C8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 129
3868-905
CPE MVMA 12P 2AF69 DR-SIDE FRT. DOOR NO. 4 ACCEL. TEST DATE:04-04-90
ELEC DATA, SAE CLASS 60



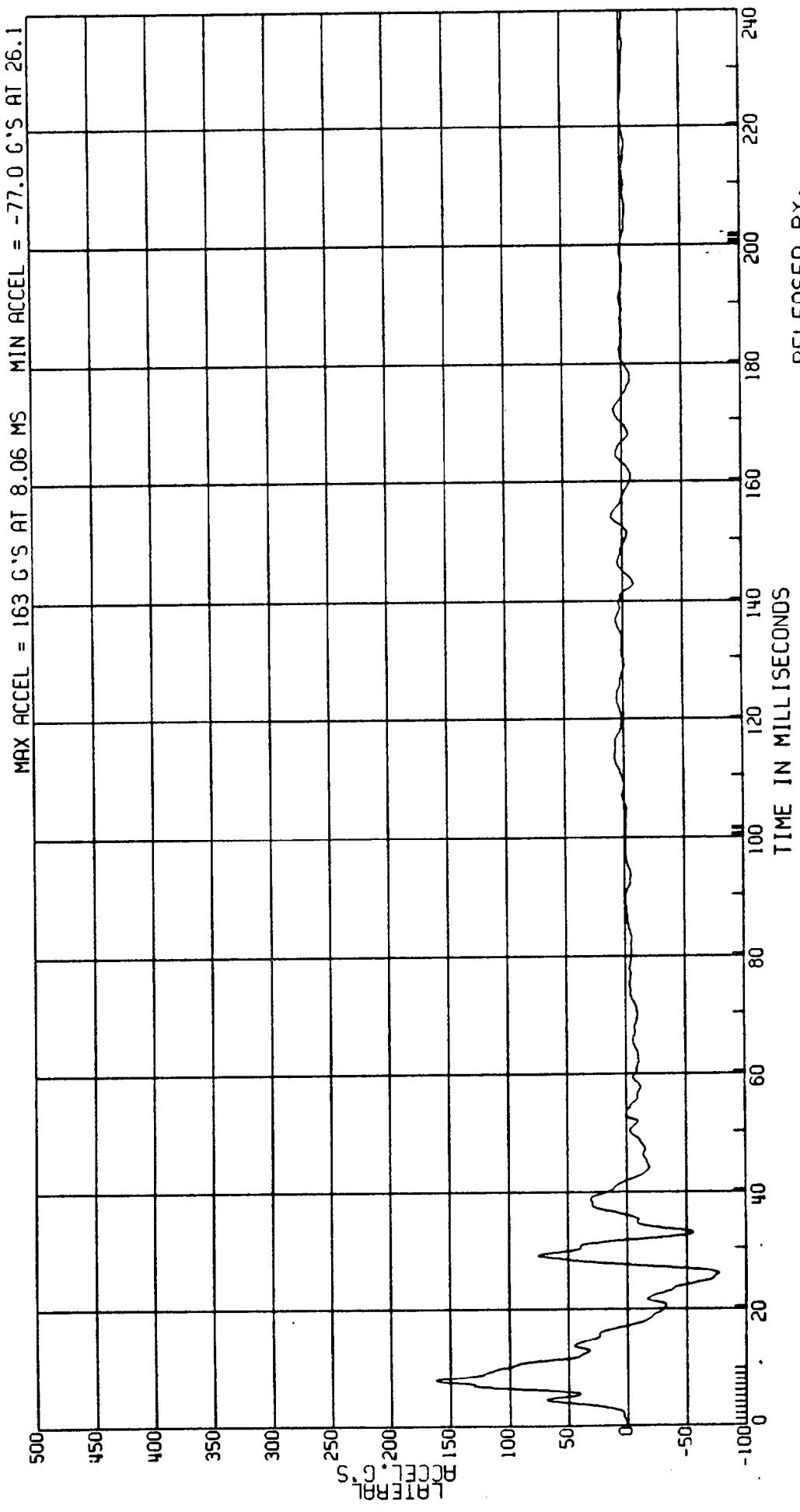
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8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5 KM/H FIGURE 130
 868-905
 CPE MVMA 12P 2AF69 COMPUTED FRT. DOOR NO. 4 VELOCITY TEST DATE: 04-04-90
 LEC DATA. SAE CLASS 180 (1ST INTEGRAL OF DR-SIDE ACCELERATION)



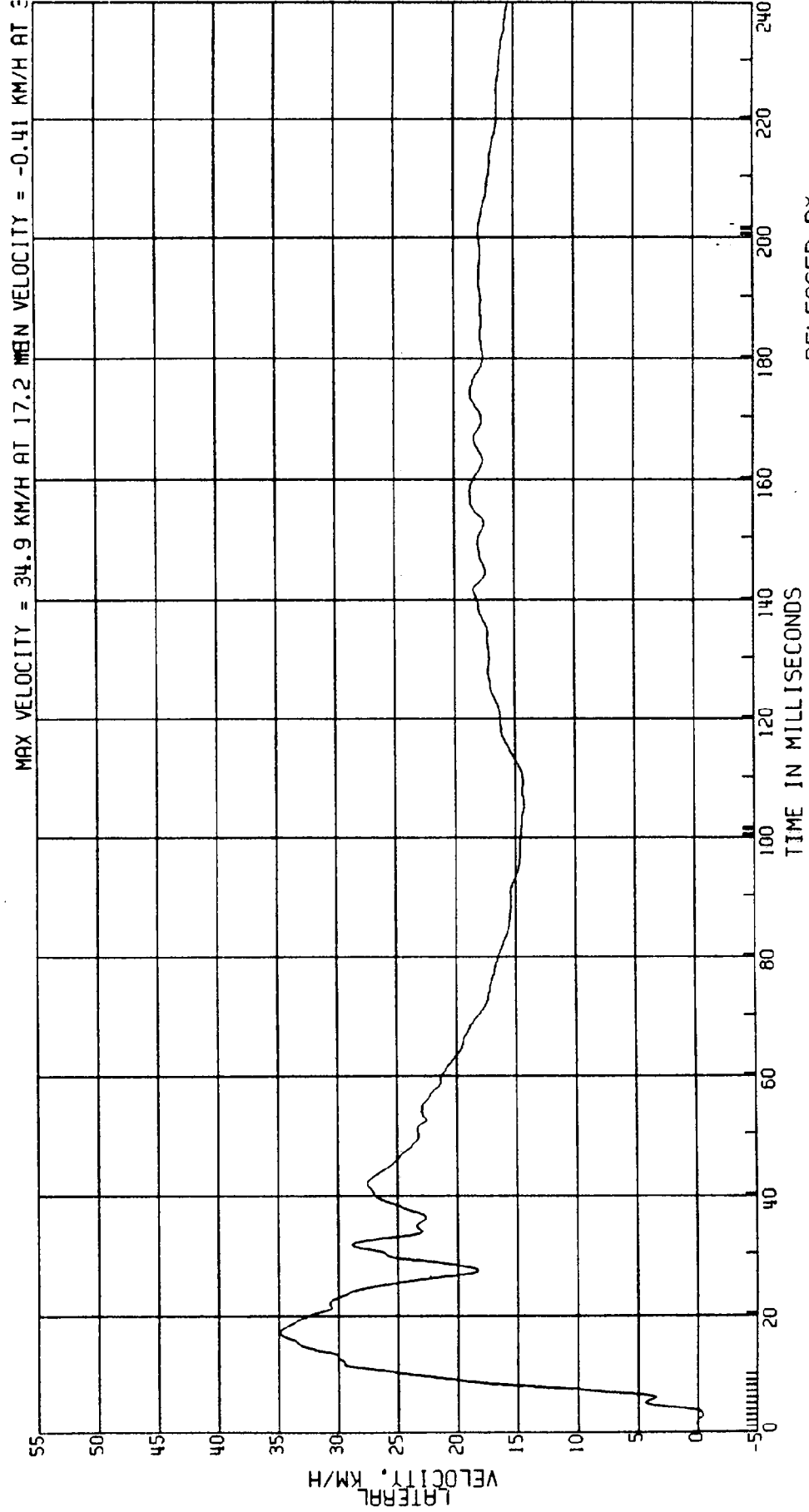
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C8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 13/
3868-905 MVMA 12P 2AF69 DR-SIDE FRT. DOOR NO. 5 ACCEL. TEST DATE:04-04-90
CPE ELEC DATA, SAE CLASS 60



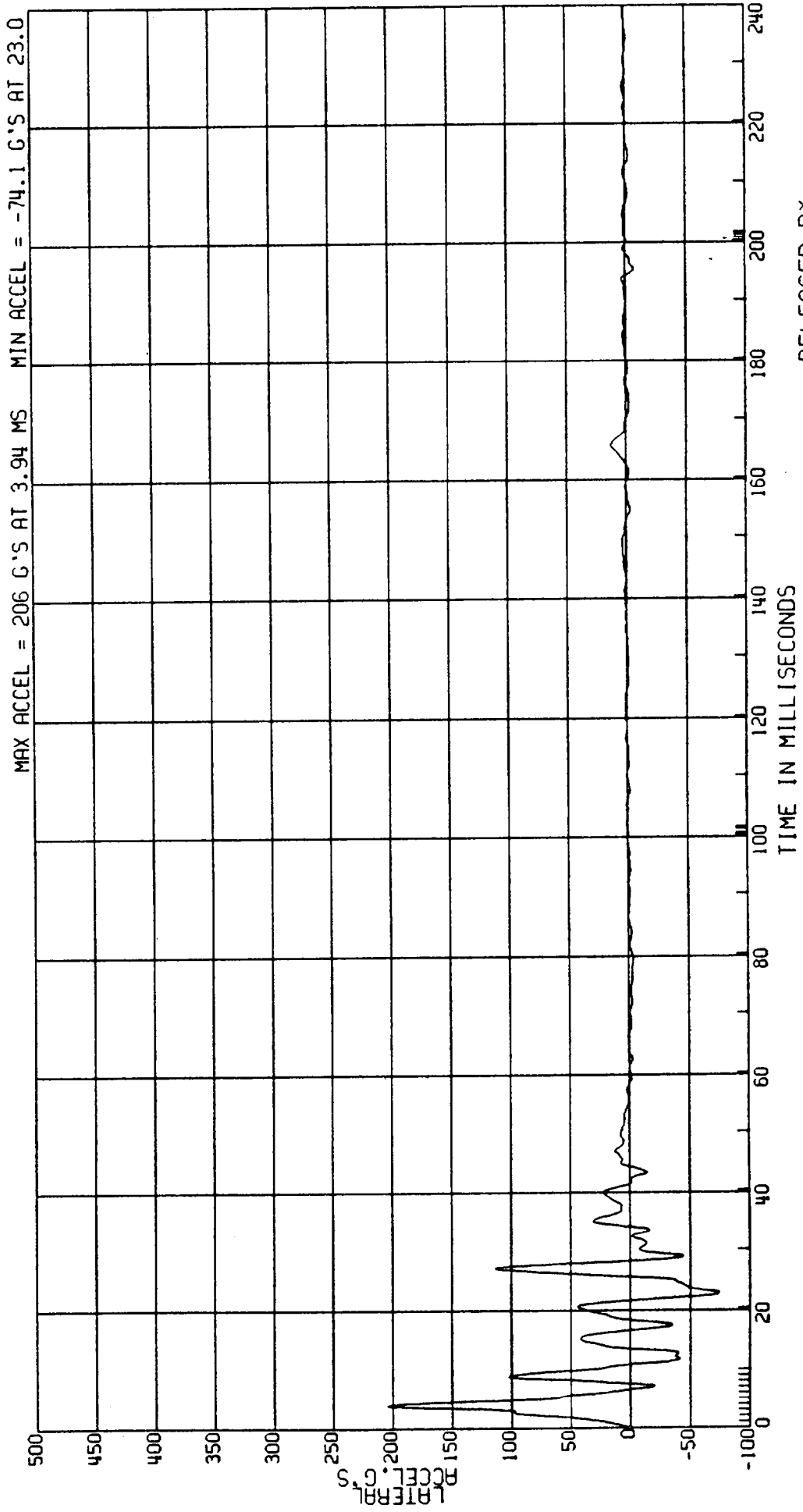
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38012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARRA TO PRK VEHICLE 53.5 KM/H FIGURE 132
3868-905
CPE MVMA 12P 2AF69 COMPUTED FRT. DOOR NO. 5 VELOCITY TEST DATE: 04-04-90
ELEC DATA. SAE CLASS 180 (1ST INTEGRAL OF DR-SIDE ACCELERATION)



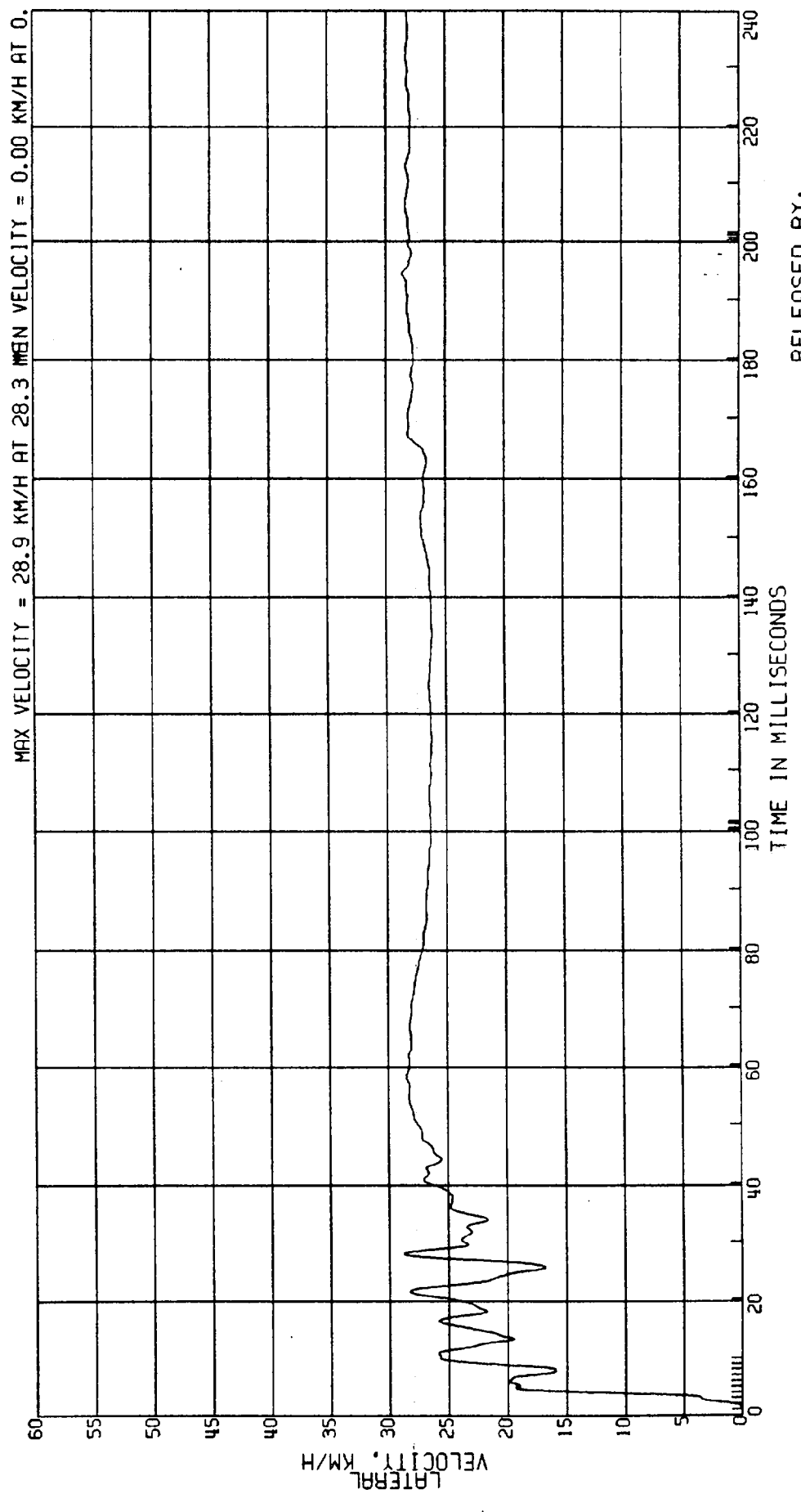
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C8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE /33
3868-905
CPE MVMA 12P 2AF69 DR-SIDE REAR DOOR NO. 1 ACCEL. TEST DATE:04-04-90
ELEC DATA, SAE CLASS 60



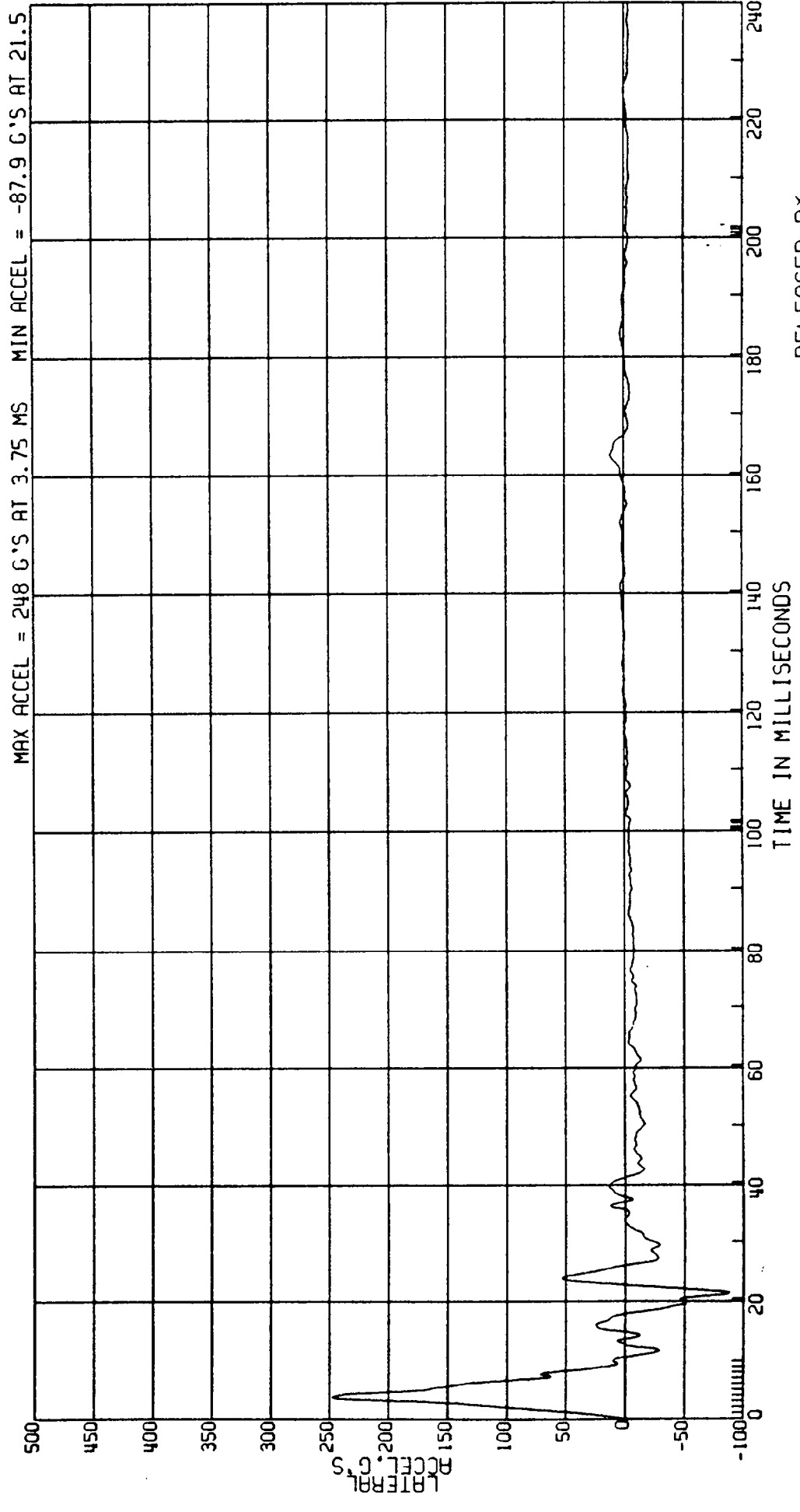
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C8012A L. SIDE IMPACT - 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5 KM/H FIGURE 134
3868-905
CPE MVMA 12P 2AF69 COMPUTED REAR DOOR NO. 1 VELOCITY TEST DATE: 04-04-90
ELEC DATA, SAE CLASS 180 (1ST INTEGRAL OF DR-SIDE ACCELERATION)



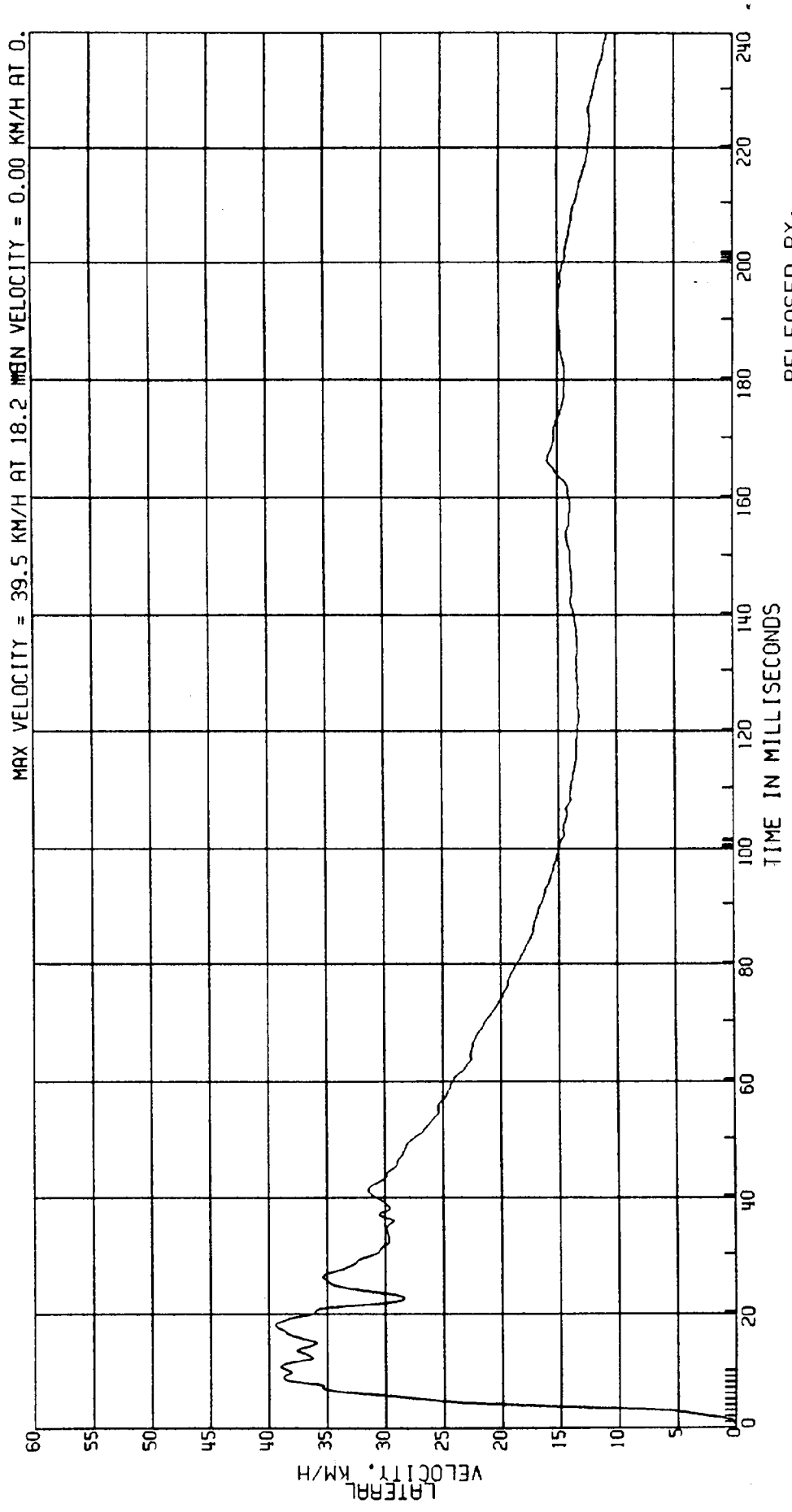
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C8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE /35
3868-905
CPE MVMA 12P 2AF69 DR-SIDE REAR DOOR NO. 2 ACCEL. TEST DATE:04-04-90
ELEC DATA, SAE CLASS 60



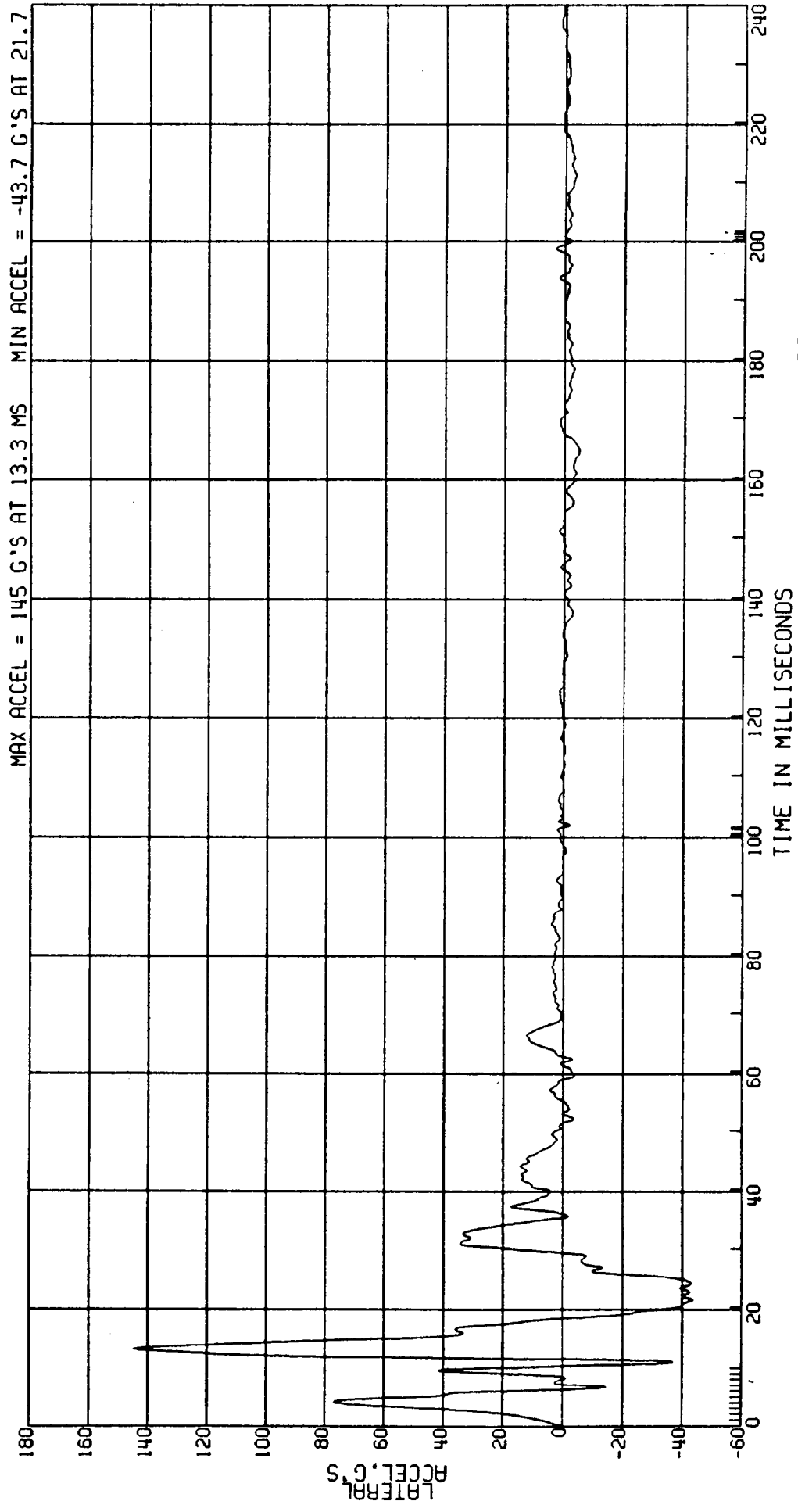
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C8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 136
3868-905
CPE MVMA 12P 2AF69 TEST DATE:04-04-90
ELEC DATA, SAE CLASS 180 (1ST INTEGRAL OF DR-SIDE ACCELERATION)



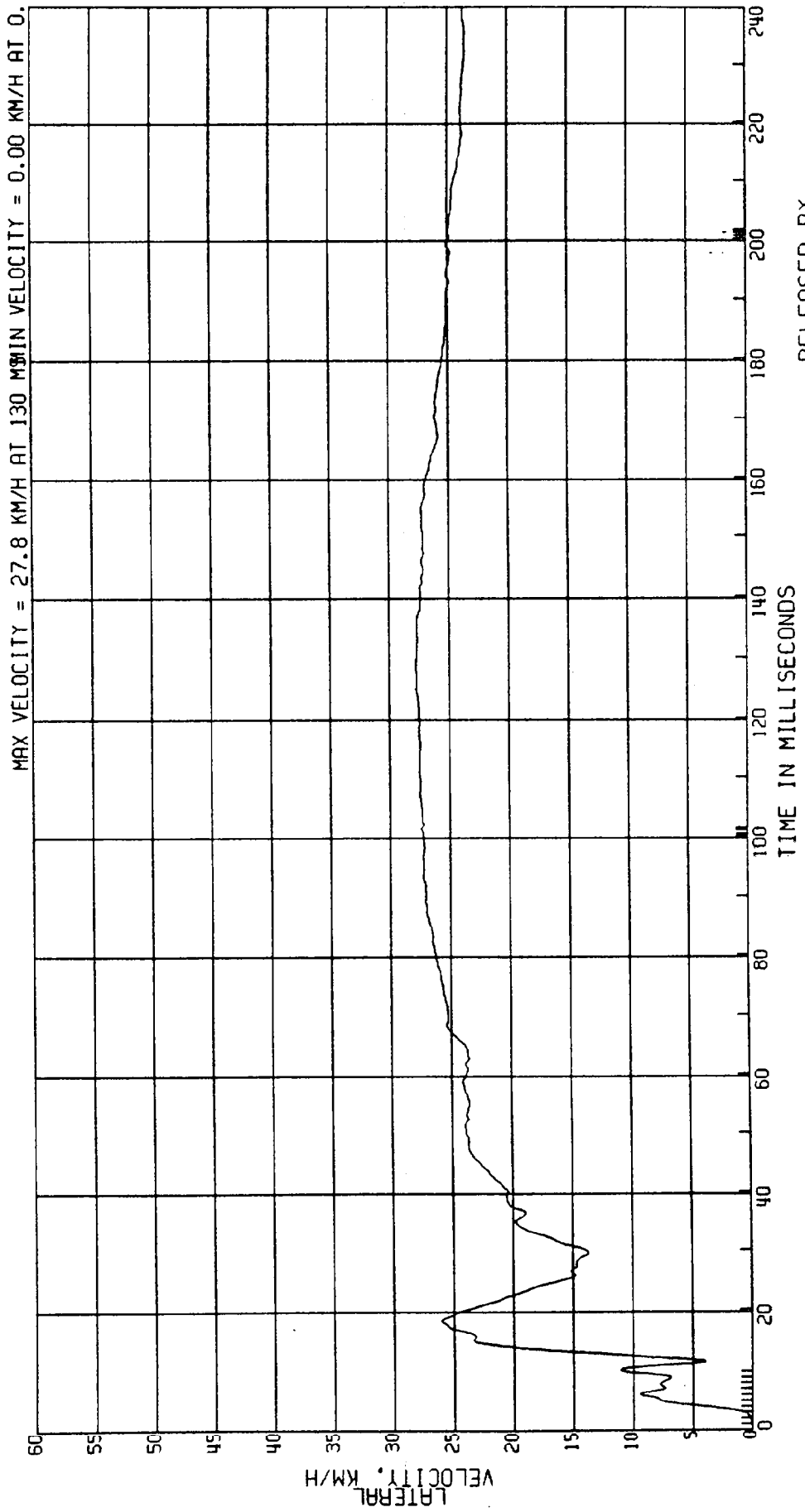
C8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE /39
3868-905
CPE MVMA 12P 2AF69 DR-SIDE REAR DOOR NO. 4 ACCEL. TEST DATE:04-04-90
ELEC DATA, SAE CLASS 60

4 1

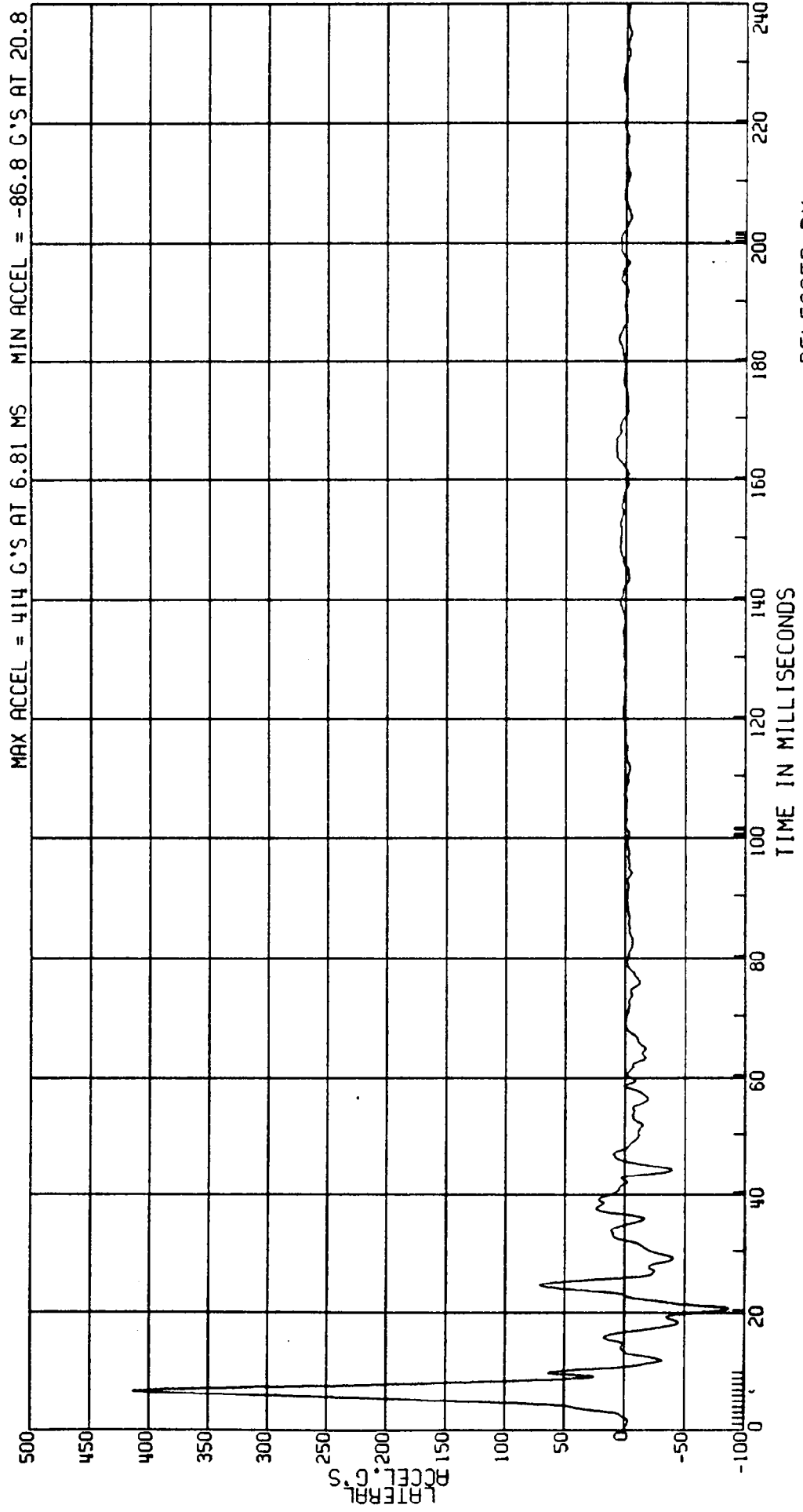


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25 PROCESSED 3 MT 90 12:06

C8012A L. SIDE IMPACT - 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5 KM/H FIGURE 140
3868-905 MVMA 12P 2AF69 TEST DATE: 04-04-90
CPE COMPUTED REAR DOOR NO. 4 VELOCITY
ELEC DATA, SAE CLASS 180 (1ST INTEGRAL OF DR-SIDE ACCELERATION)

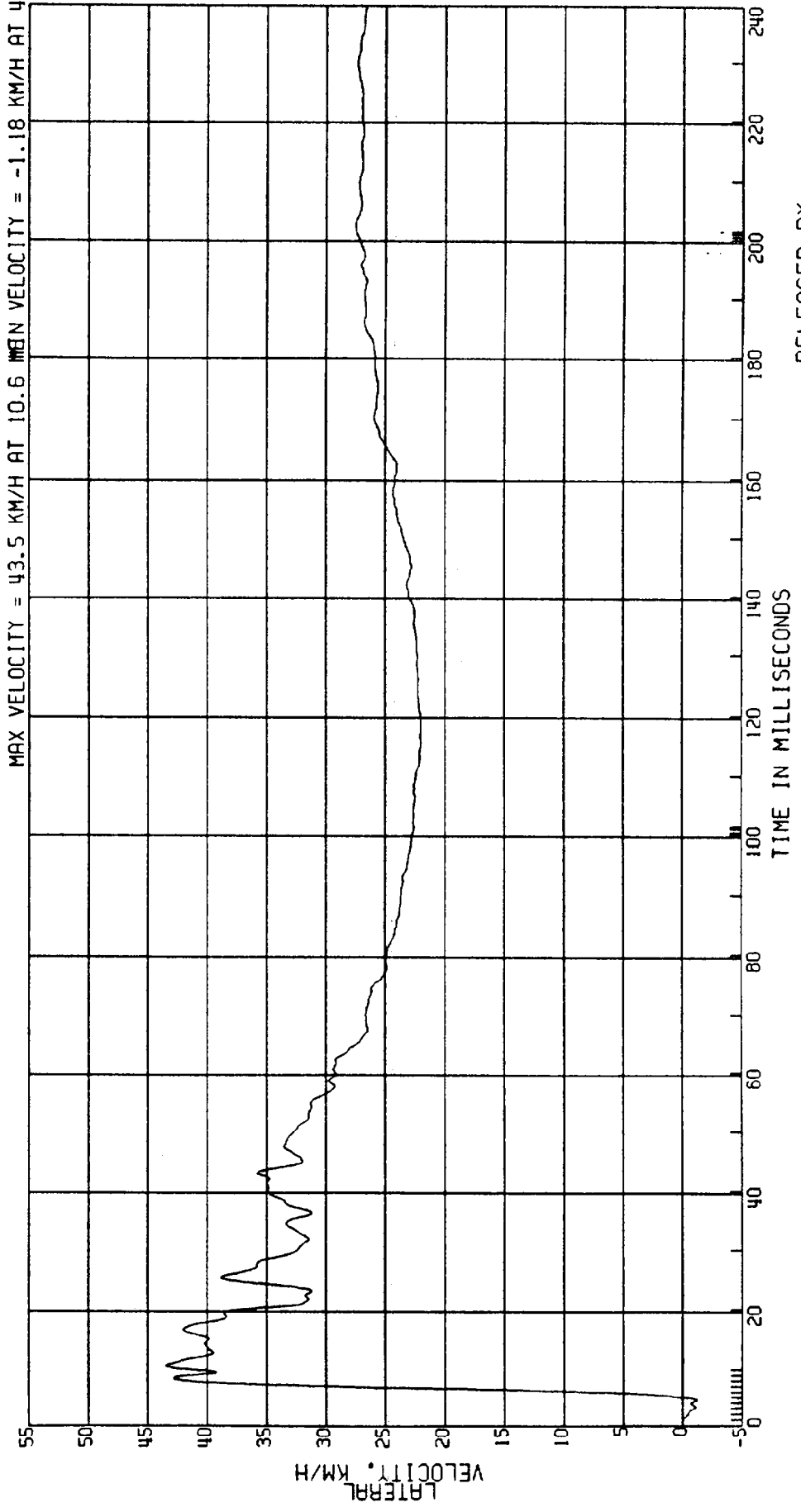


C8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 14/
3868-905
CPE MVMA 12P 2AF69 DR-SIDE REAR DOOR NO. 5 ACCEL. TEST DATE:04-04-90
ELEC DATA, SAE CLASS 60

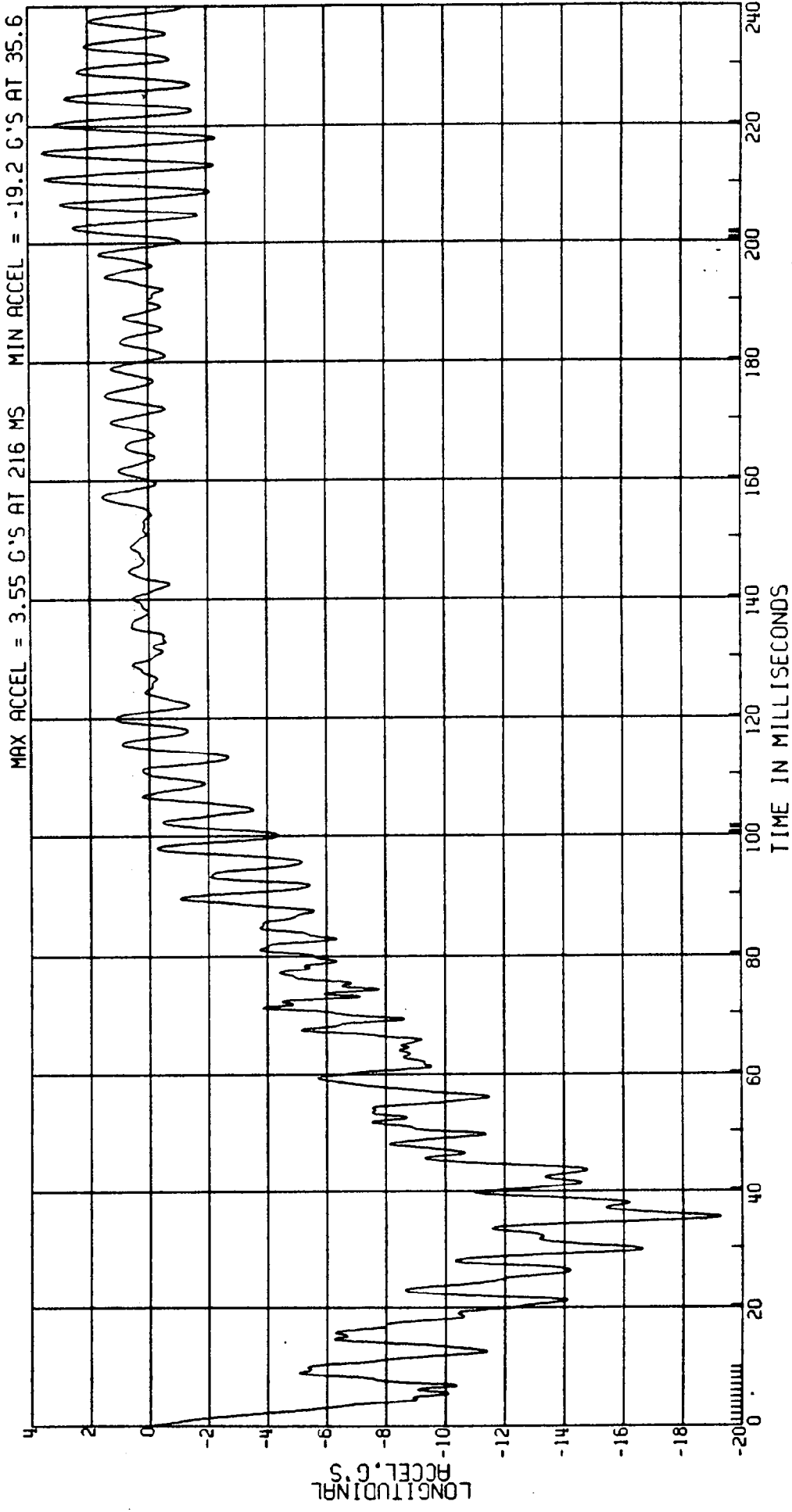


RELEASED BY:
27 PROCESSED 3 MY 90 12:06

C8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5 KM/H FIGURE 142
3868-905
CPE MVMA 12P 2AF69 COMPUTED REAR DOOR NO. 5 VELOCITY TEST DATE: 04-04-90
ELEC DATA, SAE CLASS 180 (1ST INTEGRAL OF DR-SIDE ACCELERATION)

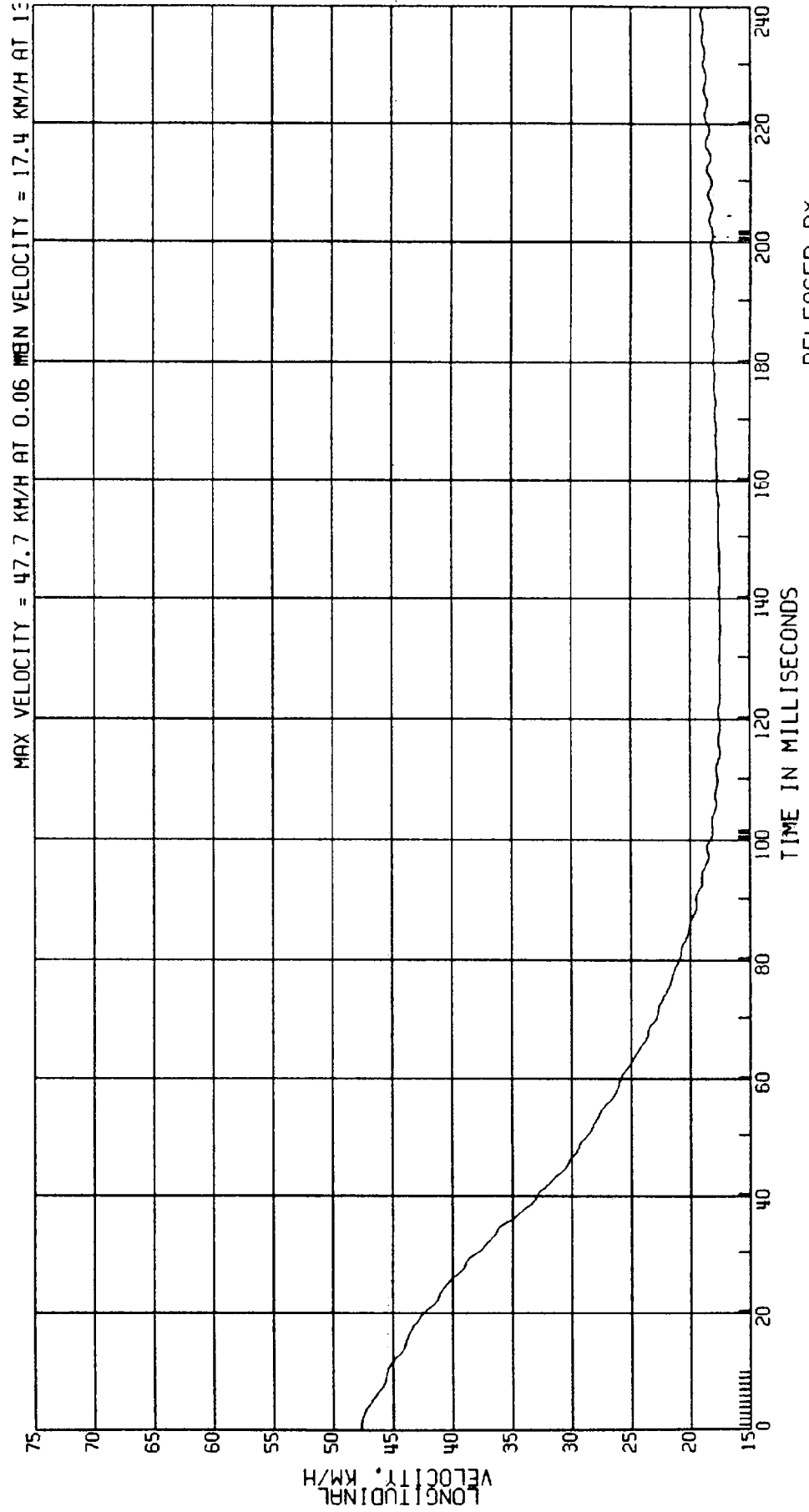


C8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 143
3868-905
CPE MVMA 12P 2AF69 M.D.B. AT C.G. ACCEL. TEST DATE:04-04-90
ELEC DATA, SAE CLASS 60



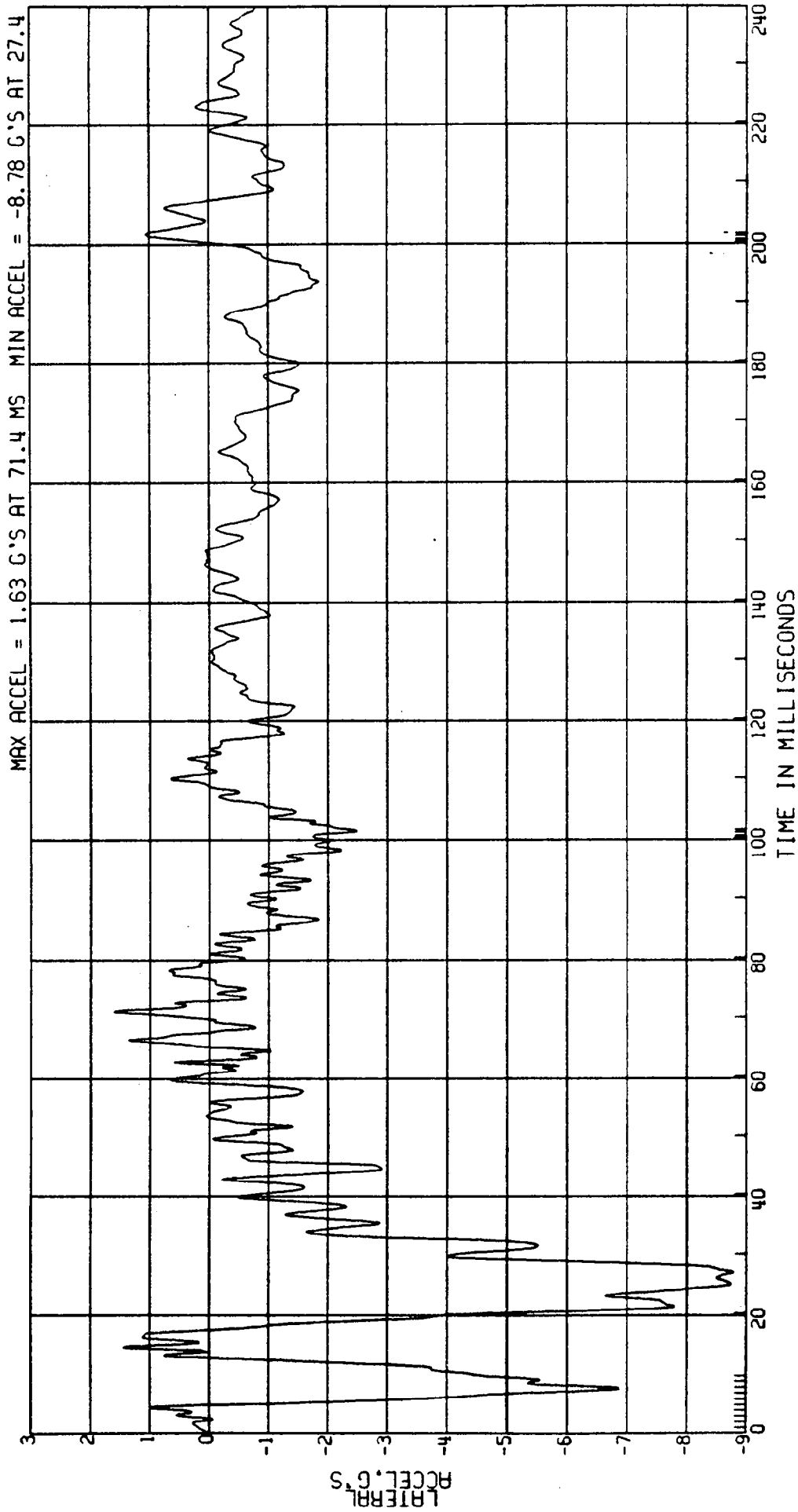
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55 PROCESSED 3 MY 90 12:07

8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 144
 868-905
 CPE MVMA 12P 2AF69 COMPUTED M.D.B. AT C.G. VELOCITY TEST DATE:04-04-90
 FILE DATA, SAE CLASS 180 (1ST INT OF ACCEL 53.5KPH* $\cos 27$ DEG)



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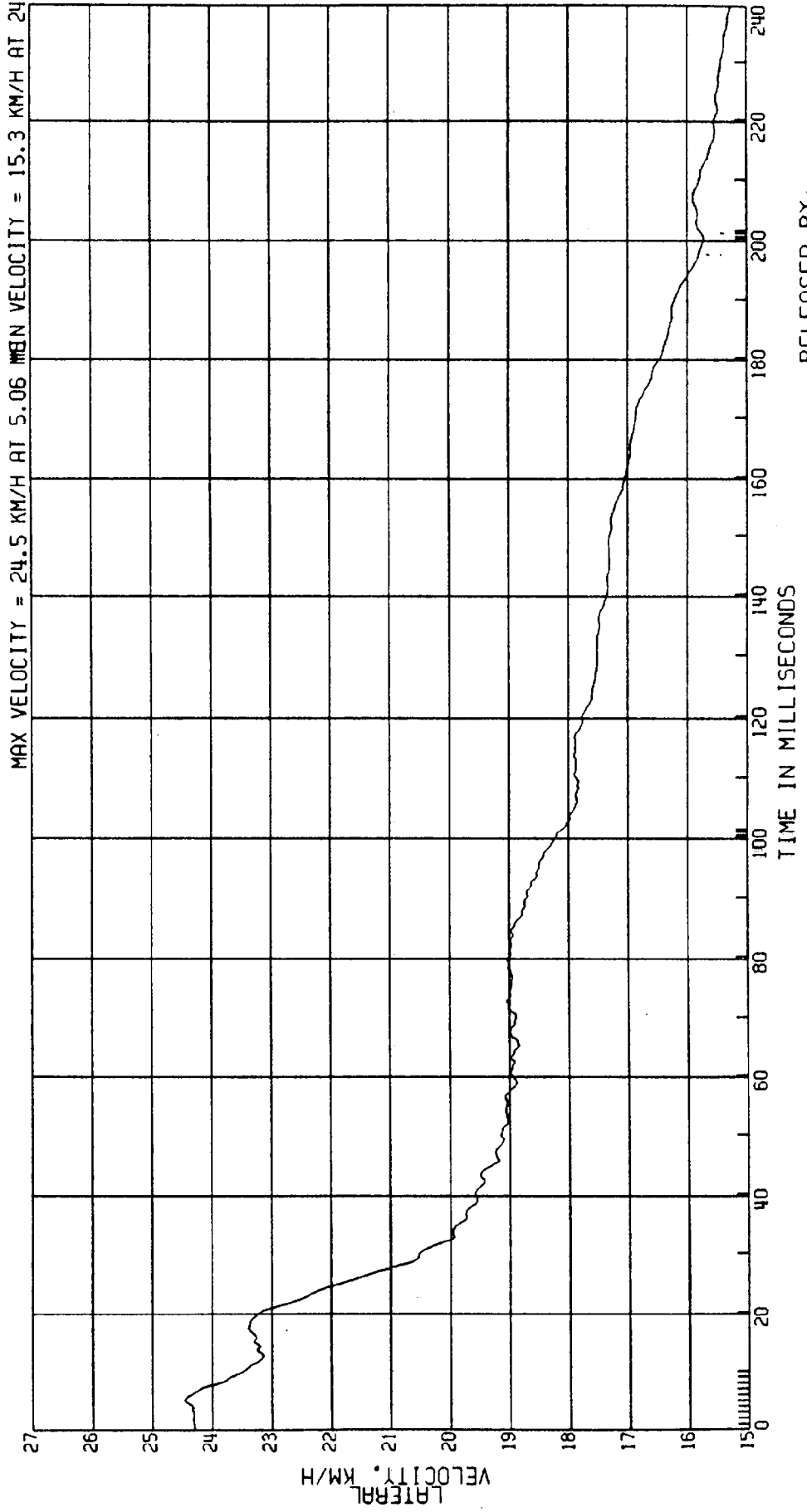
C8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 145
3868-905
CPE MVMA 12P 2AF69 M.D.B. AT C.G. ACCEL.
ELEC DATA, SAE CLASS 60 TEST DATE:04-04-90



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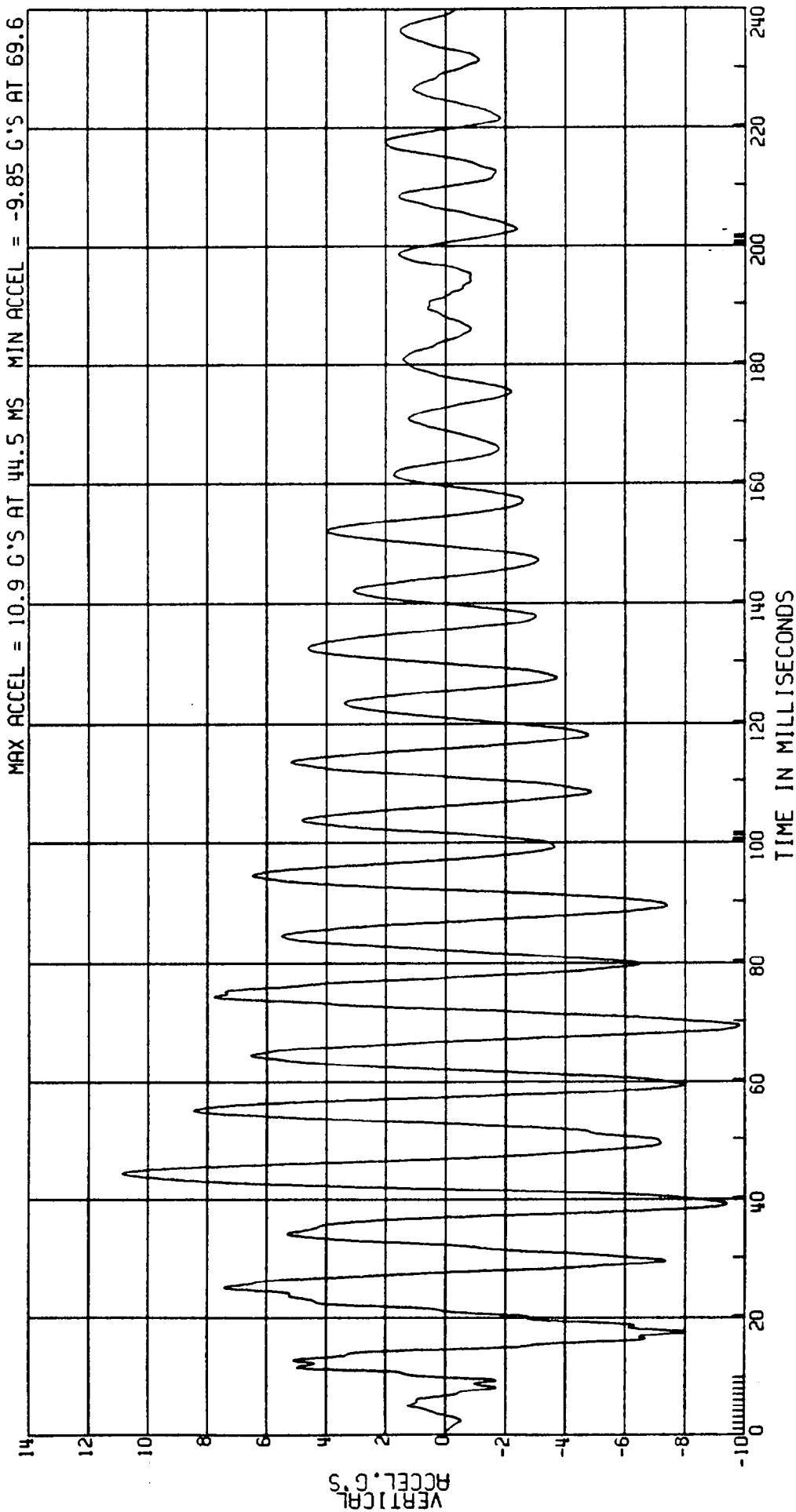
57 PROCESSED 3 MY 90 12:07

C8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5 KM/H FIGURE 146
 3868-905
 CPE MVMA 12P 2AF69 COMPUTED M.D.B. AT C.G. VELOCITY TEST DATE: 04-04-90
 ELEC DATA. SAE CLASS 180 (1ST INT OF ACCEL 53.5 KPH * SIN 27 DEG)



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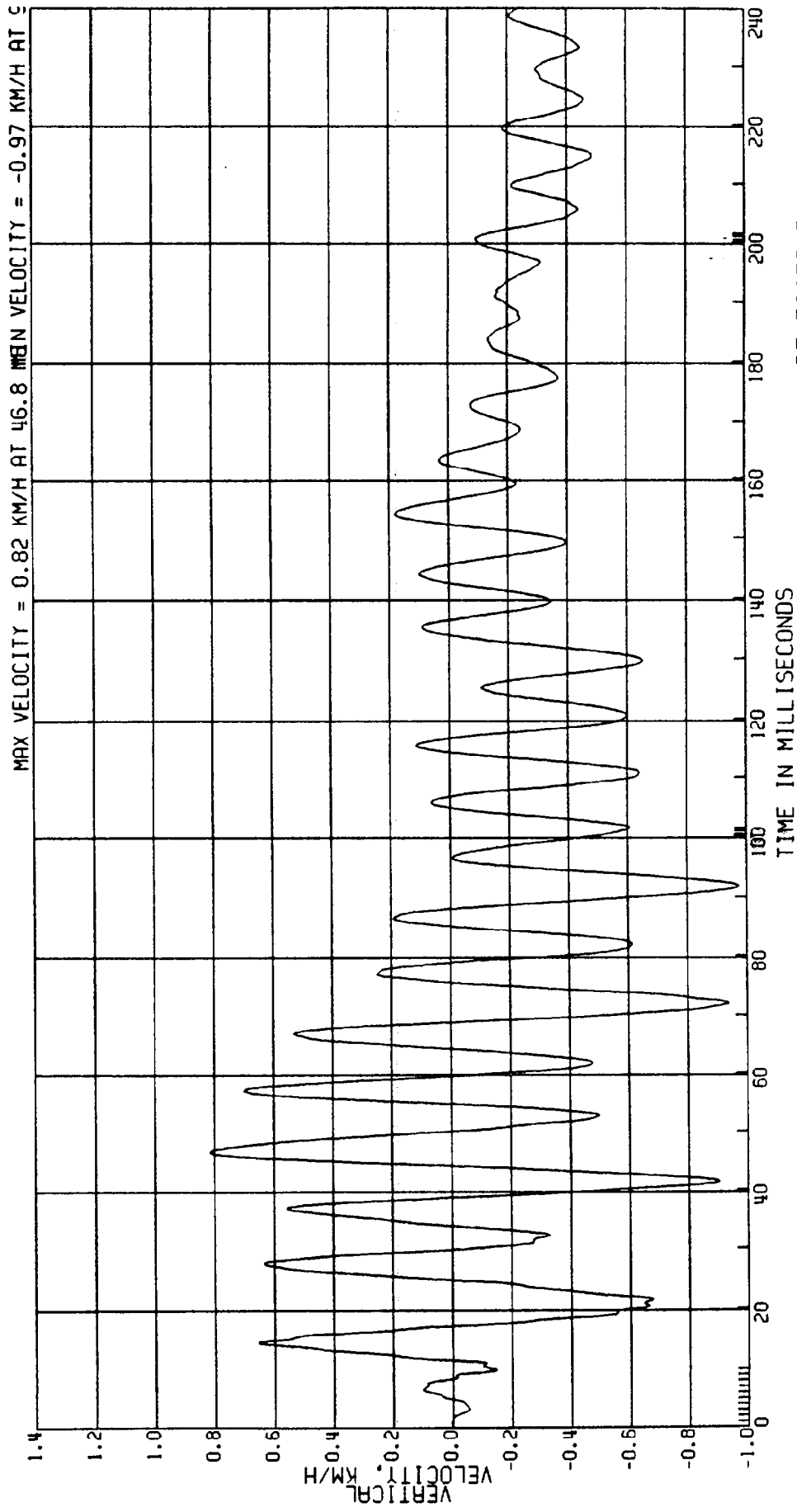
C8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 147
3868-905
CPE MVMA 12P 2AF69 M.D.B. AT C.G. ACCEL.
ELEC DATA, SAE CLASS 60 TEST DATE:04-04-90



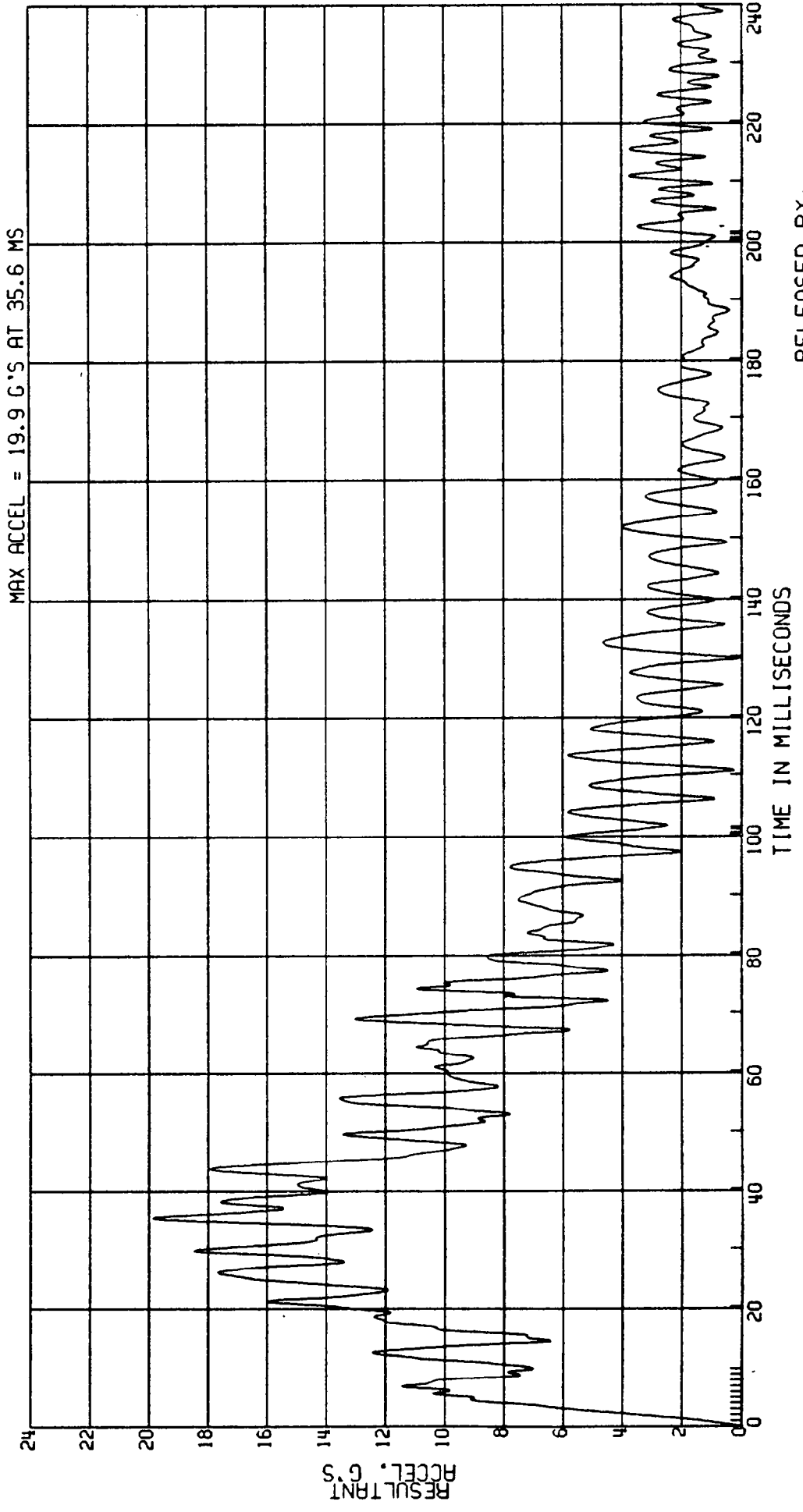
RELEASED BY:

59 PROCESSED 3 MT 90 12:07

C8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5 KM/H FIGURE 148
3868-905
CPE MVMA 12P 2AF69 COMPUTED M.D.B. AT C.G. VELOCITY TEST DATE: 04-04-90
ELEC DATA. SAE CLASS 180 (1ST INT OF ACCELERATION)

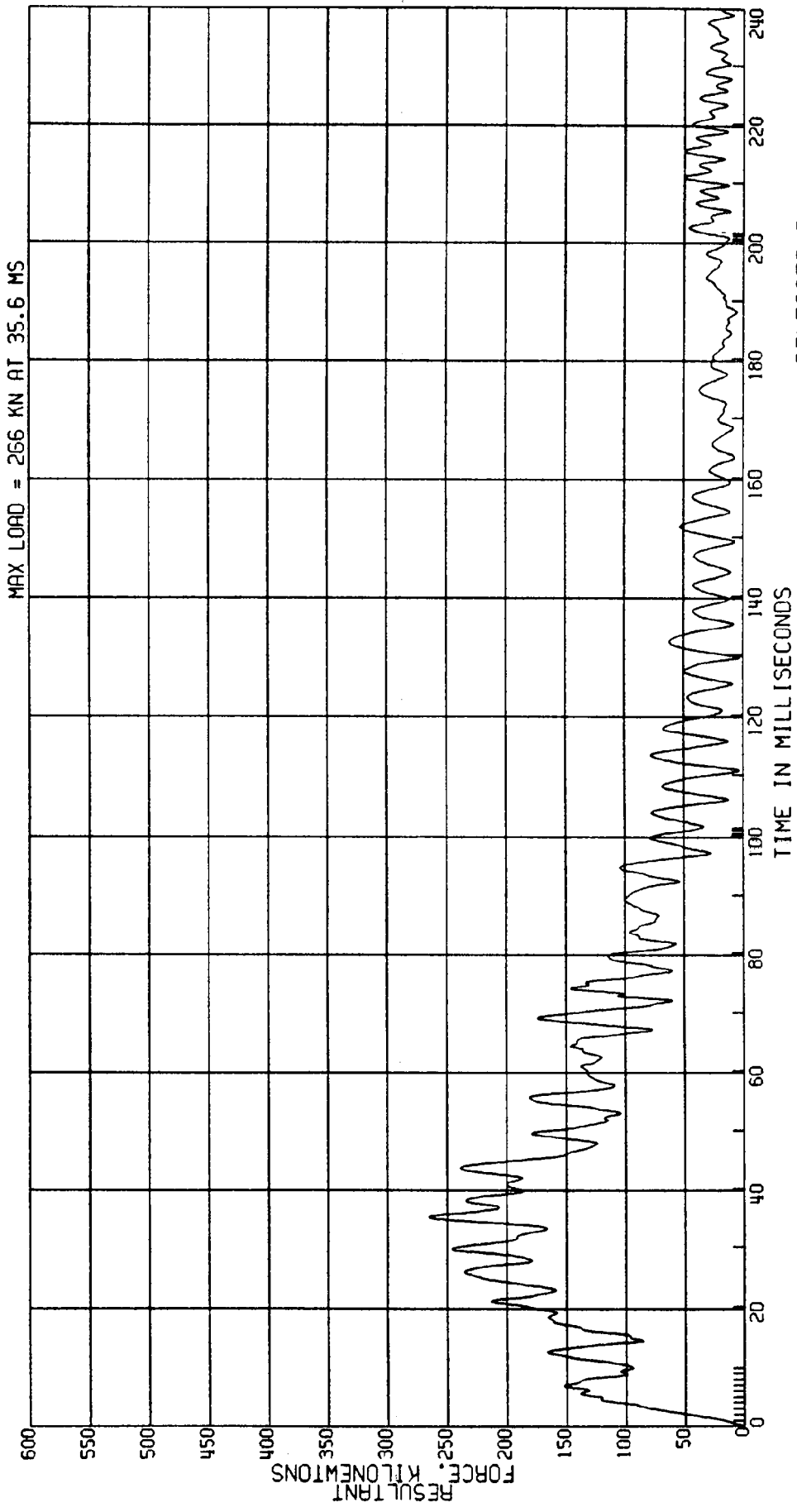


C8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 149
3868-905
CPE MVMA 12P 2AF69 M.D.B. AT C.G. ACCEL.
ELEC DATA, SAE CLASS 60 (VEC SUM OF C.G. ACCELERATIONS) TEST DATE:04-04-90



RELEASED BY:
61 PROCESSED 3 MY 90 12:07

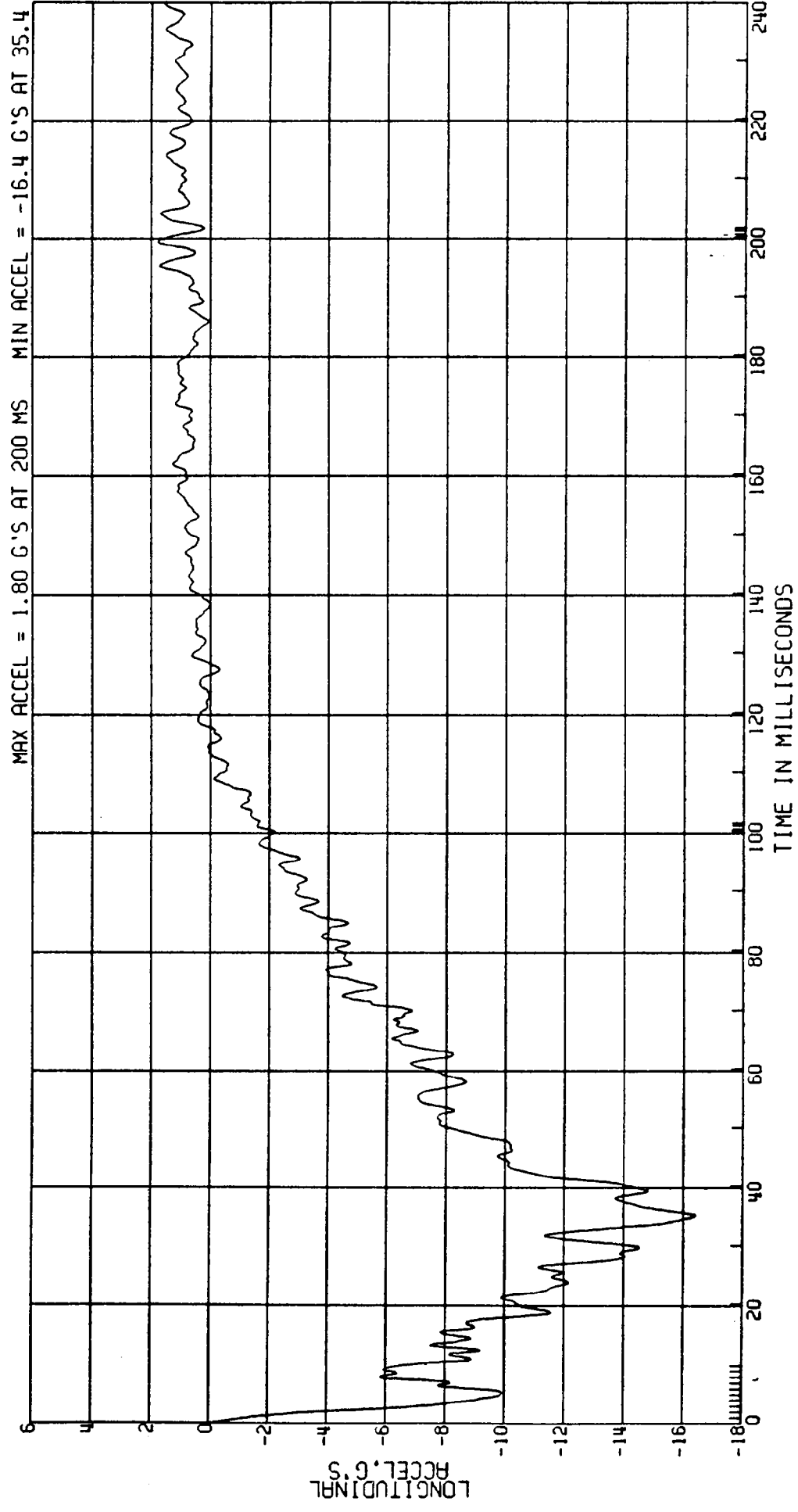
C8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 150
3868-905
CPE MVMA 12P 2AF69 COMPUTED M.D.B. AT C.G. FORCE TEST DATE:04-04-90
ELEC DATA. SAE CLASS 60 (1359.5KG) (9.807) (RESULTANT ACCEL)



RELEASED BY:
62 PROCESSED 3 MY 90 12:07

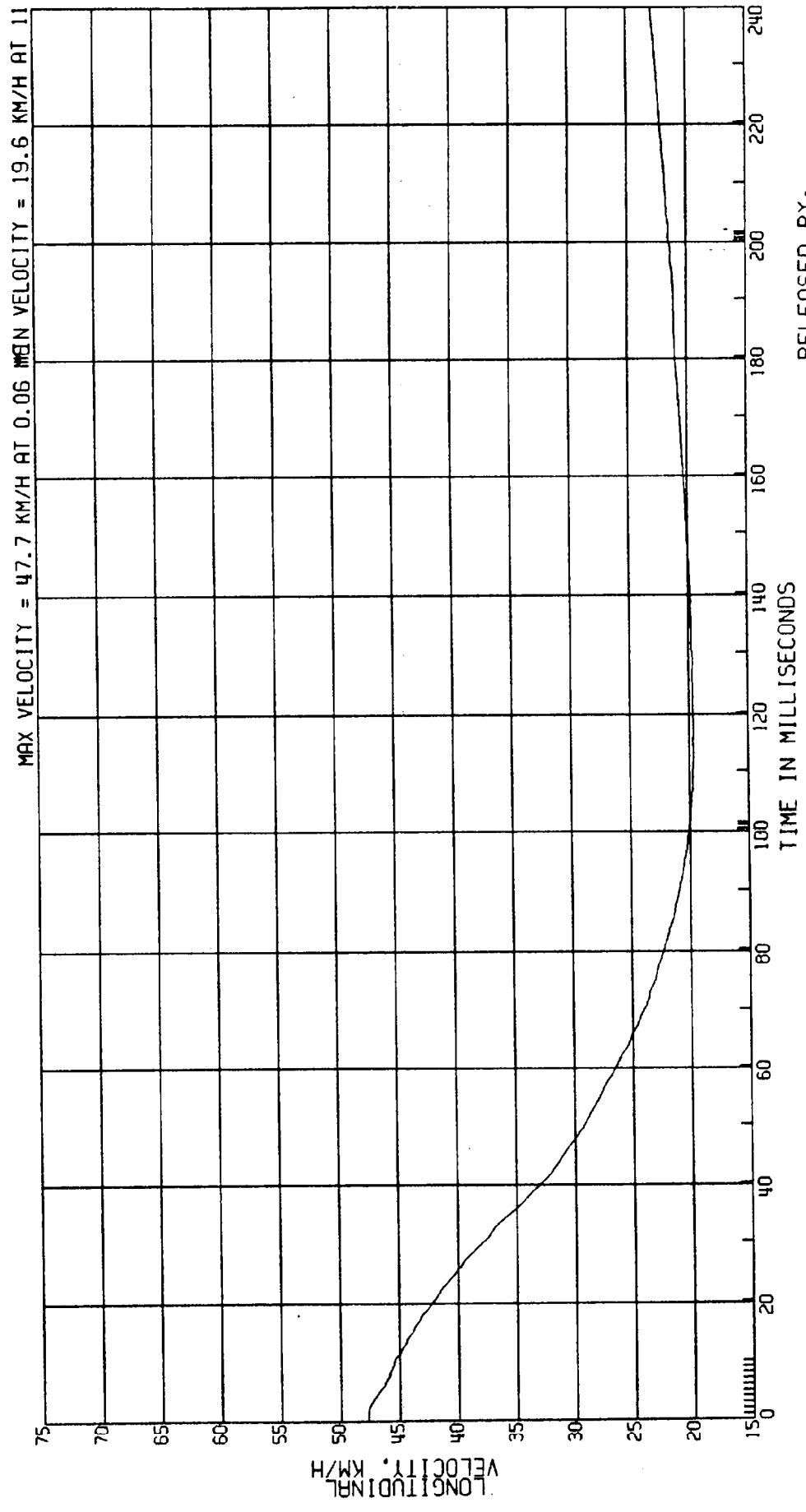
C8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE /S/
3868-905
CPE MVMA 12P 2AF69 M.D.B. REAR CROSS MEMBER ACCEL. TEST DATE:04-04-90
ELEC DATA, SAE CLASS 60

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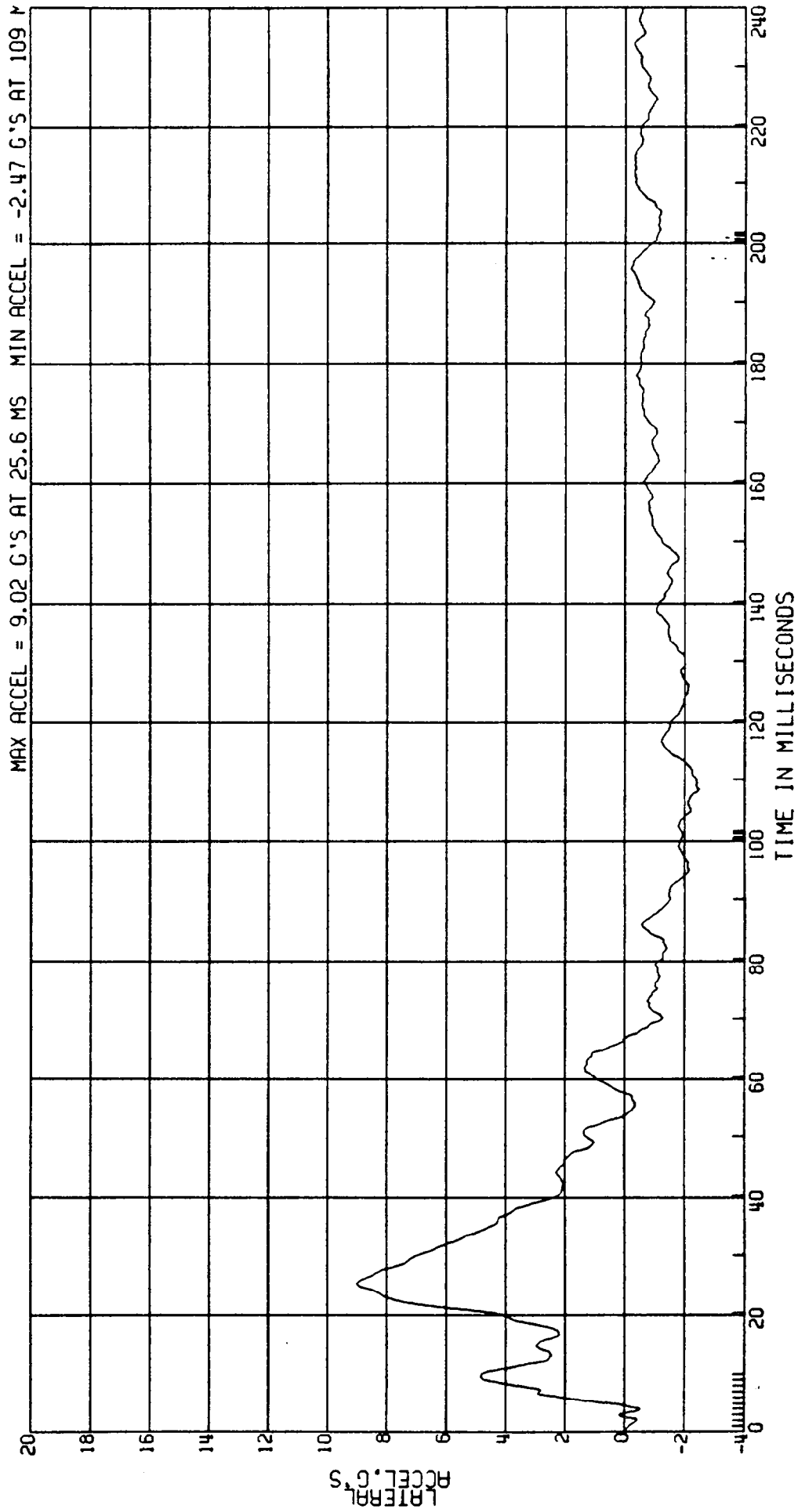
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63 PROCESSED 3 MY 90 12:07

C8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE / 52
 3868-905
 CPE MVMA 12P 2AF69 COMPUTED M.D.B. REAR CROSS MEMBER VEL TEST DATE: 04-04-90
 ELEC DATA, SAE CLASS 180 (1ST INT OF ACCEL 53.5KPH * COS27DEG)



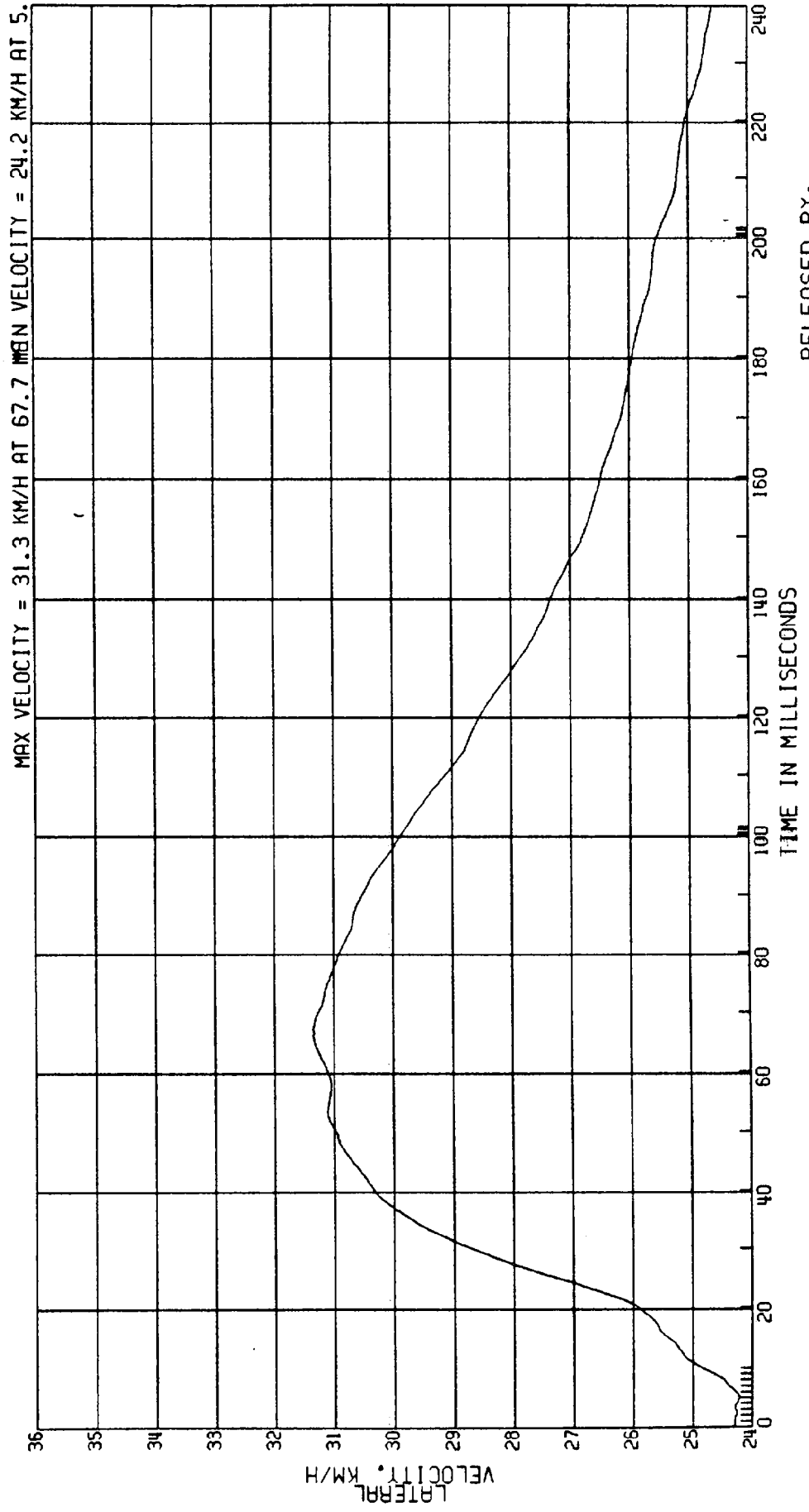
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C8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE /S-3
3868-905
CPE MVMA 12P 2AF69 M.D.B. REAR CROSS MEMBER ACCEL. TEST DATE:04-04-90
ELEC DATA, SAE CLASS 60



RELEASED BY:
65 PROCESSED 3 MT 90 12:07

C8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE 154
 3868-905
 CPE MVMA 12P 2AF69 COMPUTED M.D.B. REAR CROSS MEMBER VEL TEST DATE: 04-04-90
 ELEC DATA, SAE CLASS 180 (1ST INT OF ACCEL 53.5KPH*SIN27DEG)

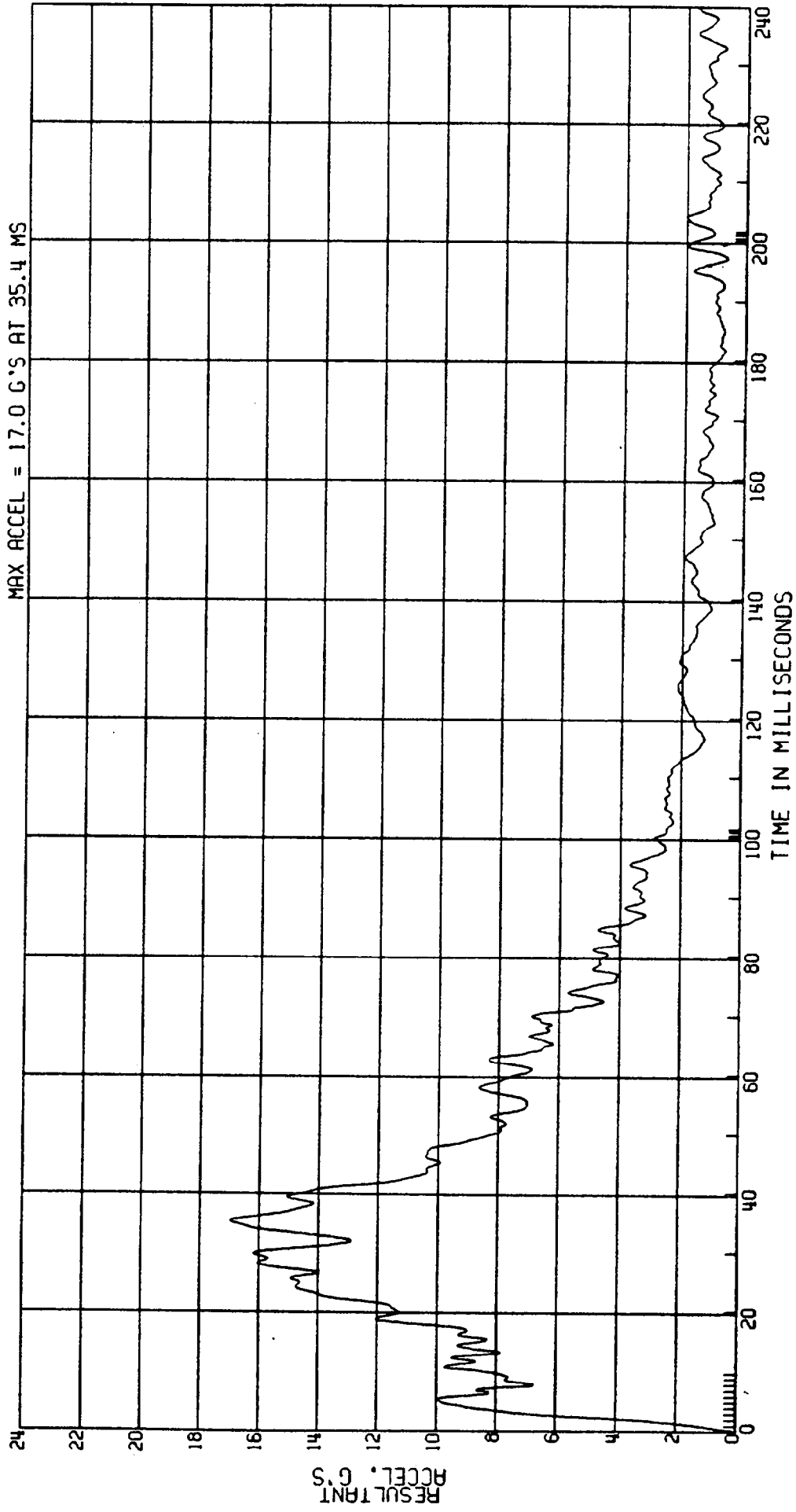


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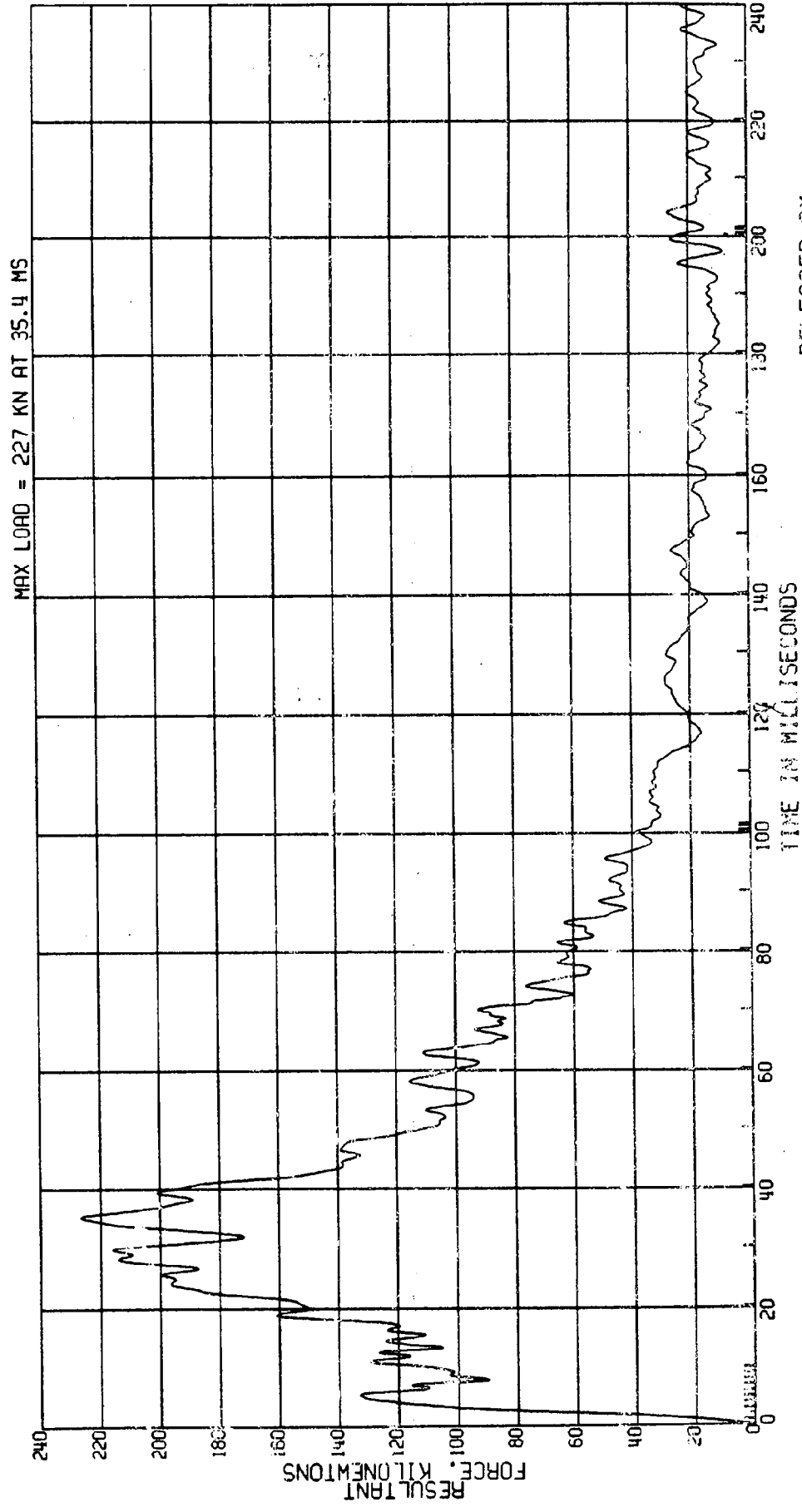
C8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE / 55
3868-905
CPE MVMA 12P 2AF69 M.D.B. REAR CROSS MEMBER ACCEL.
ELEC DATA, SAE CLASS 60 (VEC SUM OF LONG. & LAT X-MEMBER ACCELS) TEST DATE:04-04-90

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RELEASED BY:
67 PROCESSED 3 MY 90 12:07

C8012A L. SIDE IMPACT- 27 DEG MOVING CRABBED BARR TO PRK VEHICLE 53.5KM/H FIGURE / 56
 3868-905 MVMA 12P 2AF69 COMPUTED M.D.B. REAR CROSS MEMBER FORCE TEST DATE: 04-04-90
 CPE (1359.5 KG) (9.807) (RESULTANT ACCEL)



RELEASED BY:
 88 PROCESSED 5 AT 50 12:07