

EA12-005

CHRYSLER

12-13-2012

Enclosure 6B

301 Developmental Crash
Tests Public

KJ Development Crash Test
VC07623.Photos-BuildDown

VC 7623





VC 7623

VC7623 VC
REAR
FUEL TK RM
PASS THRU

VC 7623



BEAR
ET RL AND YAN



VC 7623





VC 7623

NOTIFIED BY NAME
REAR
LT. MIL. WASH. TANK

VC 7623



VC 7623

EA12-005

CHRYSLER

12-13-2012

Enclosure 6B

301 Developmental Crash
Tests Public

KJ Development Crash Test

VC07623.Photos-
Instrumentation

VC7623 KJ4003
REAR KJJ74
RT RR SILL



VC7623 KJ4003
REAR KJJ74
RT RL TRANS
XMBR

VC7623 KJ4003
REAR KJJ74
RT FT SILL

VC7623 KJ4003
REAR KJJ74
RT RAIL FT
XMBR

VC7623 KJ400
REAR KJJ74
LT FT XMBR
SEN LOC

VC7623 KJ4003
PRE KJJ74
RT FT XMBR
SEN LOC

4003

VC7623 KJ400
REAR KJ74
LT RAIL FT
XMBR

VC7623 KJ4003
REAR KJJ74
LT FT SILL



VC7623 KJ4003
REAR KJJ74
LT RL TRANS
XMBR

VC7623 KJ400
REAR KJJ74
LT RR SILL

VC7623 KJ400
REAR KJJ74
LT RL MID TANK

VC7623 KJ400
REAR FUEL TK RL
PASS-THRU KJJ74

VC7623 KJ4003
REAR KJJ74
RT RL MID TANK

C7623
REAR
FUEL
FACE TK FT

KJ4003
KJJ74



VC7623 KJ4003
REAR KJJ74
FUEL TK BTM



K3600
KJ374
FUEL-TK PL
PASS-THRU

VC7623 KJ400
PRE KJJ74
FUEL TANK SIDE

VC7623 KJ4003
PRE KJJ74
RT SILL B PLR

VC7623 KJ4003
REAR KJJ74
RT RR SILL ST
XMBR

VC7623 KJ400
REAR KJJ74
RT FT SILL ST
XMBR

310

VC7623 KJ4003
REAR KJJ74
LT SILL B PLR

VC7623
REAR KJ400
LT RR SILL KJJ74
XMBR ST

VC7623 KJ4003
REAR KJJ74
LT FT SILL ST
XMF

VC7623 KJ4003
REAR KJJ74
ORC FRONT LT

EA12-005

CHRYSLER

12-13-2012

Enclosure 6B

301 Developmental Crash
Tests Public

KJ Development Crash Test

VC07623.Photos-PostTest

VC 7623





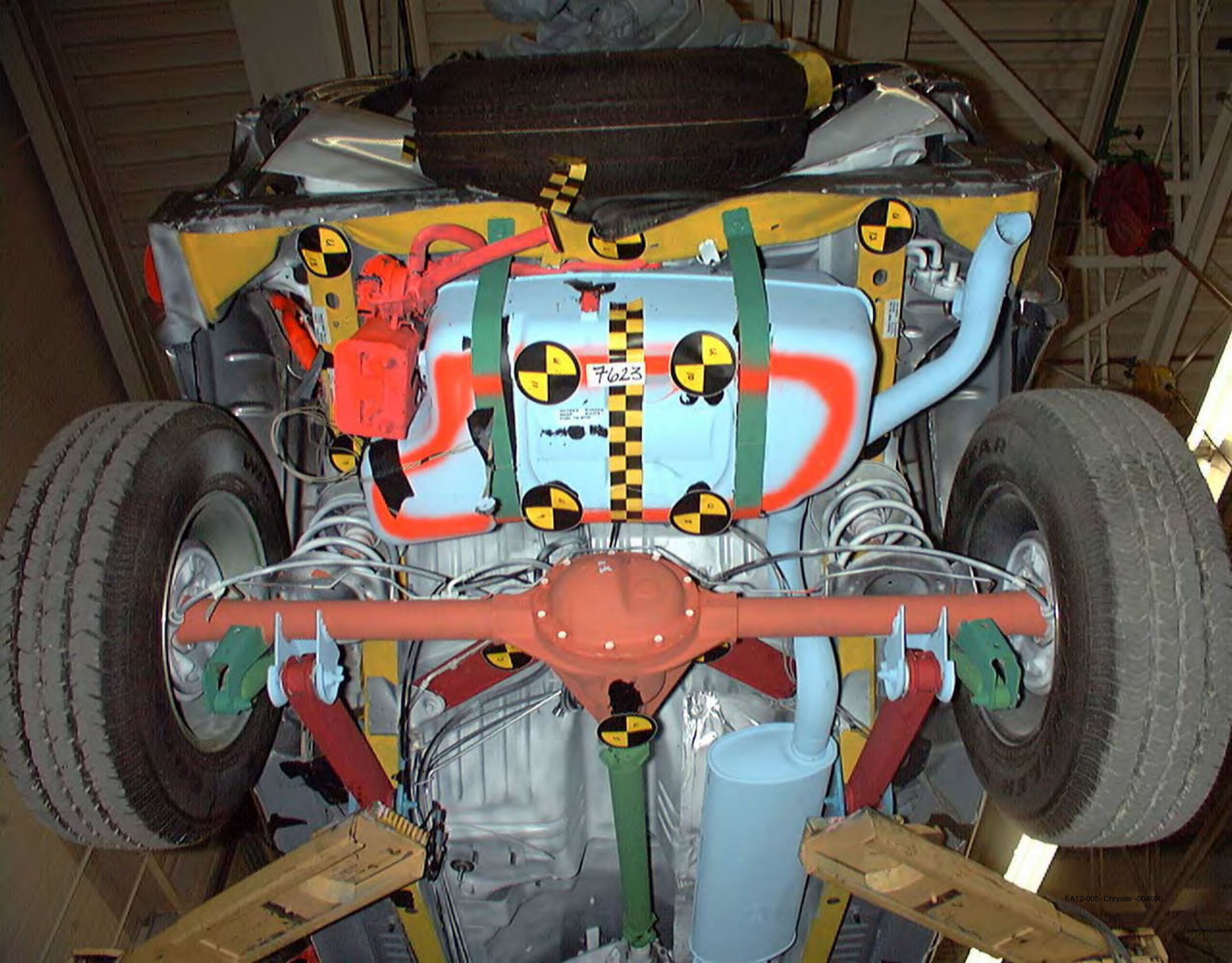
VC 7623

EA12-005-Chrysler-004604

15.05
14.94 S.S.

7623





7623



VC7823
KJJ7A
REAR TK RL
PASS-THRU

4

VC7823
7023

7623

VC7623
REAR
LT RL MID TANK

FUEL TK RL
PASS-THRU

EA12-005

CHRYSLER

12-13-2012

Enclosure 6B

301 Developmental Crash
Tests Public

KJ Development Crash Test

VC07623.Photos-PreTest



VC 7623

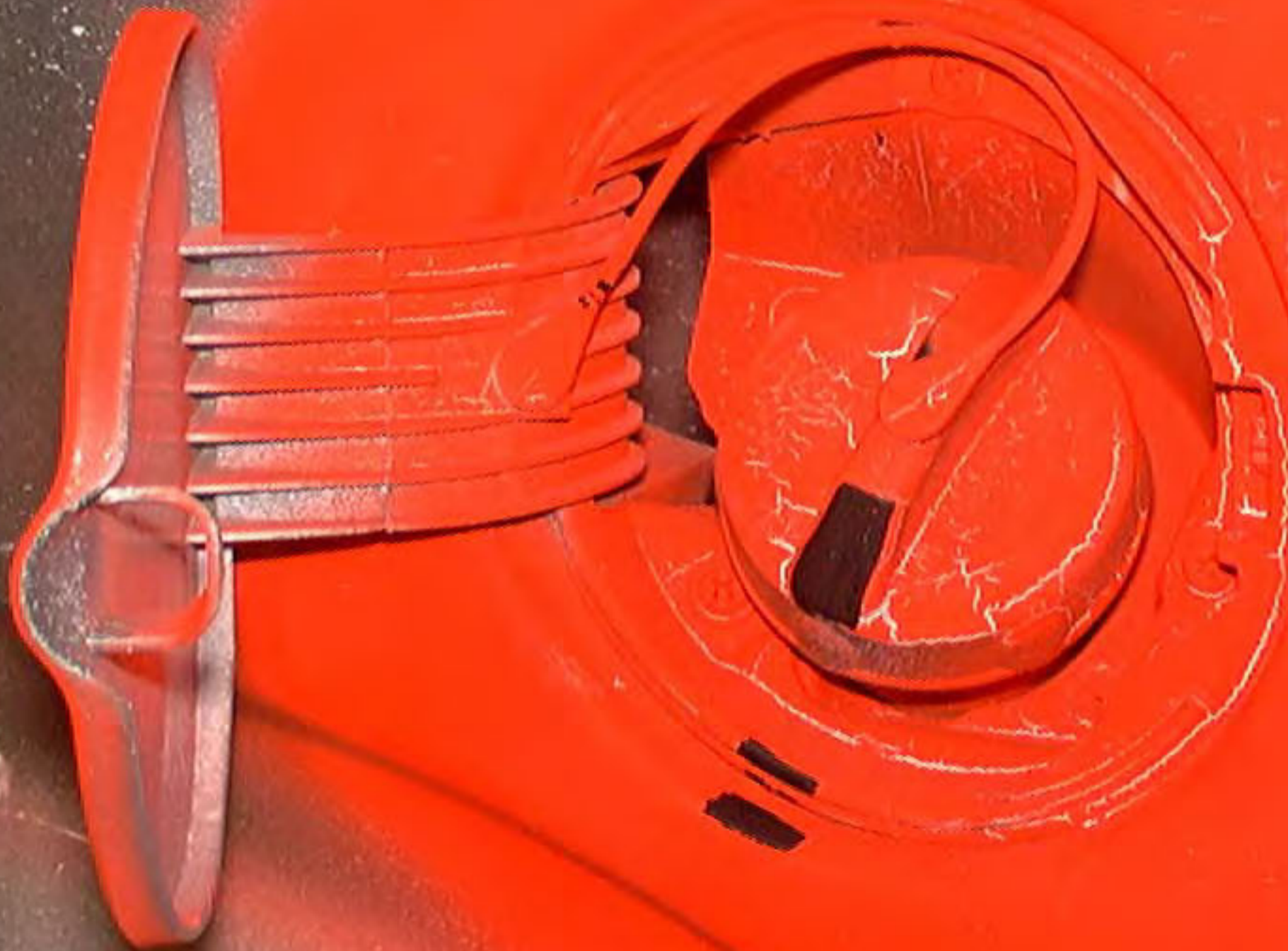
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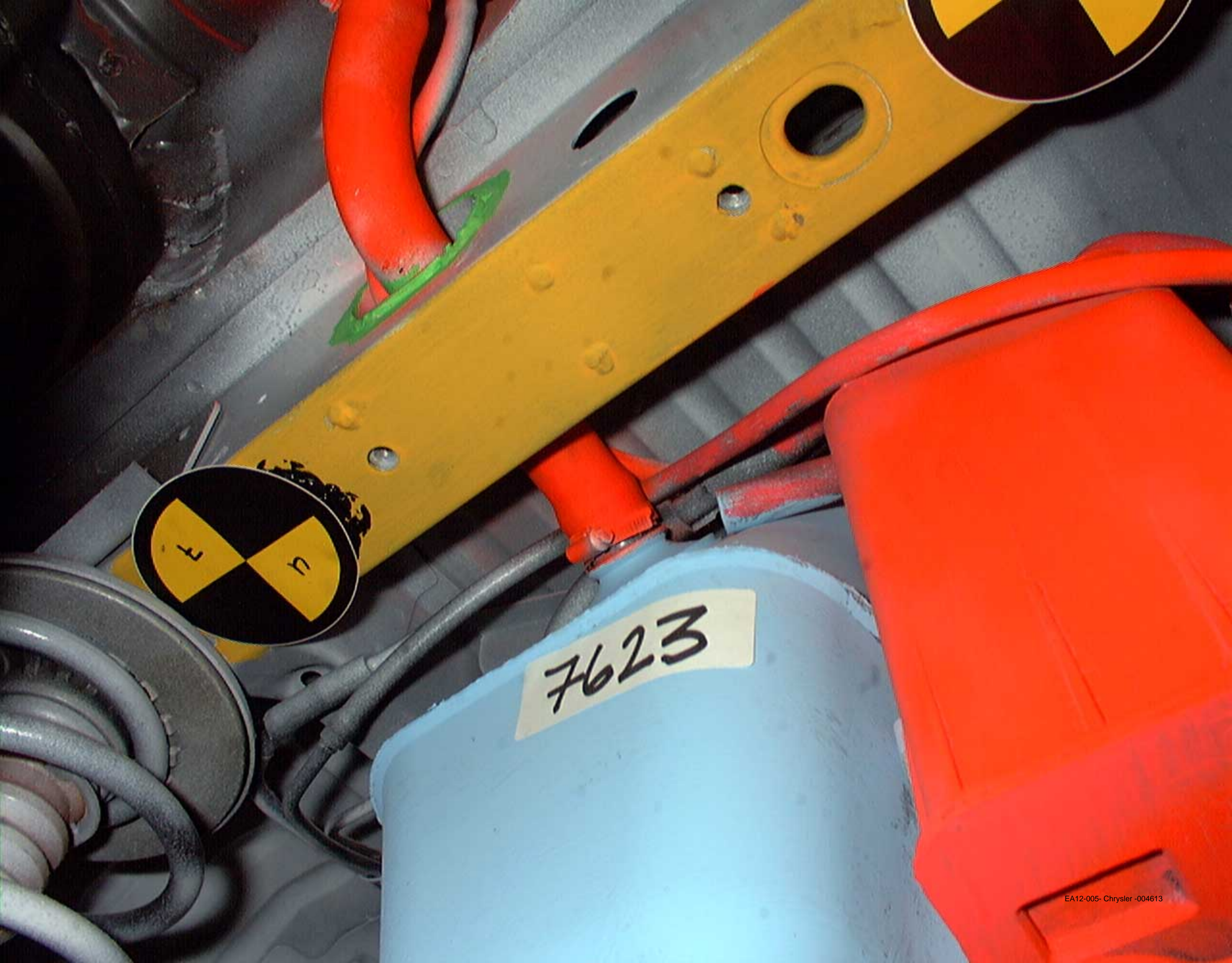


VC 7623

15.05
14.94 S.S.

7623





7623



EA12-005

CHRYSLER

12-13-2012

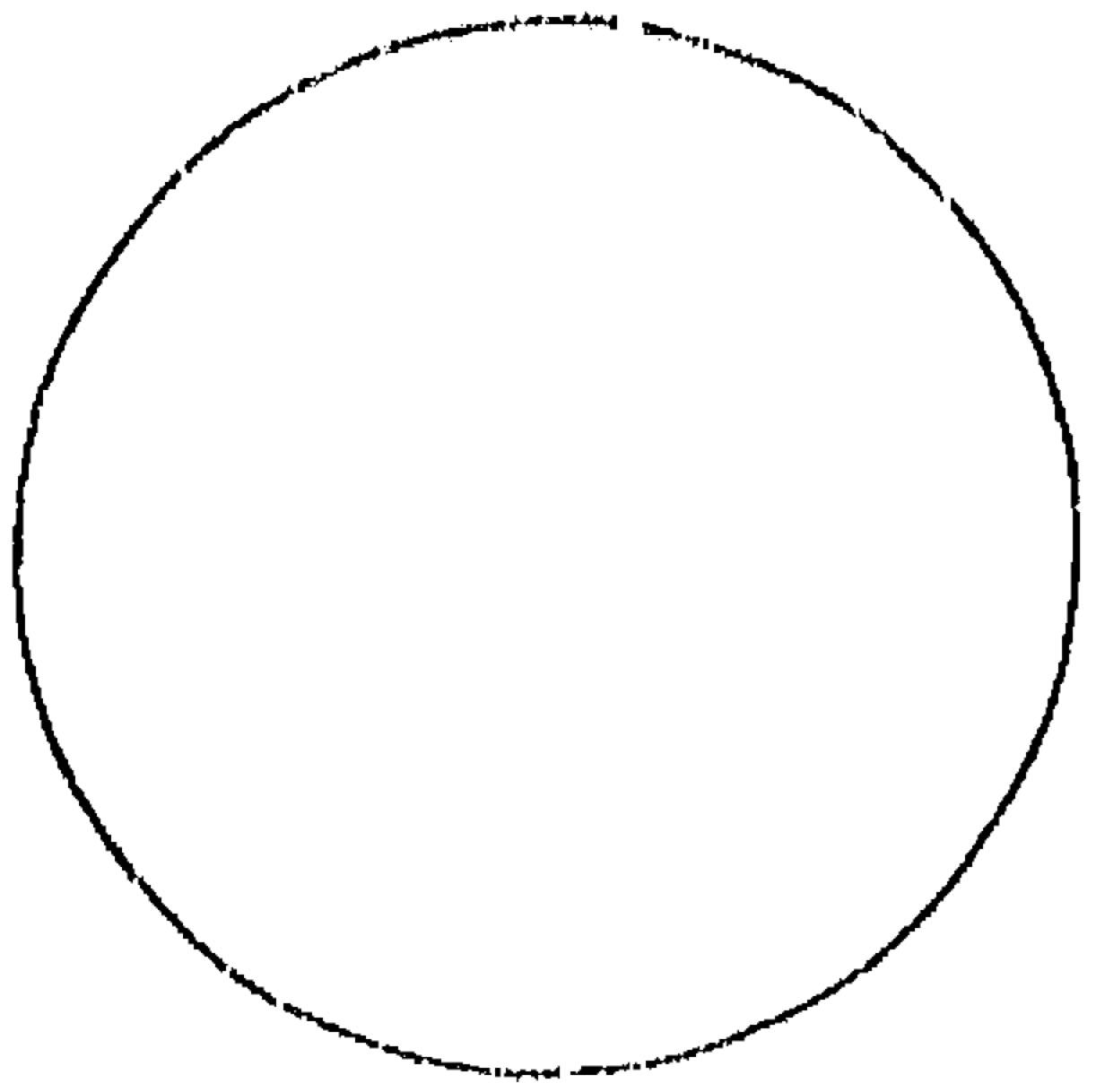
Enclosure 6B

301 Developmental Crash

Tests Public

KJ Development Crash Test

VC7623 Public

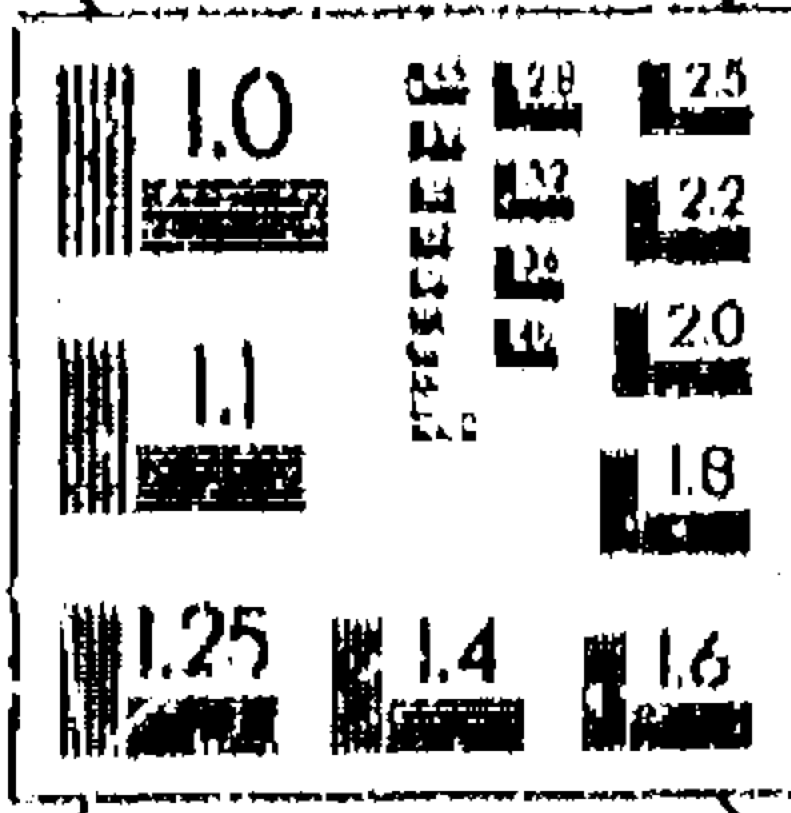


POINT
SIZE

- 4 ...
 - 6 ...
 - 8 ...
 - 10 ...
 - 12 ...
 - 14 ...
- FUTURA

- NEWS GOTHIC
- K2b8t Okjdg
 - 14 4uf8k Gmn0c
 - 12 Zln6x Gq92
 - 7n34a 6Y3sl
 - 10 YOr8l A7n7q
 - Oel7l 2xbly
 - 8 9ss9d l.lcdg
 - 6 J3q7n E119g
 - 4 ...

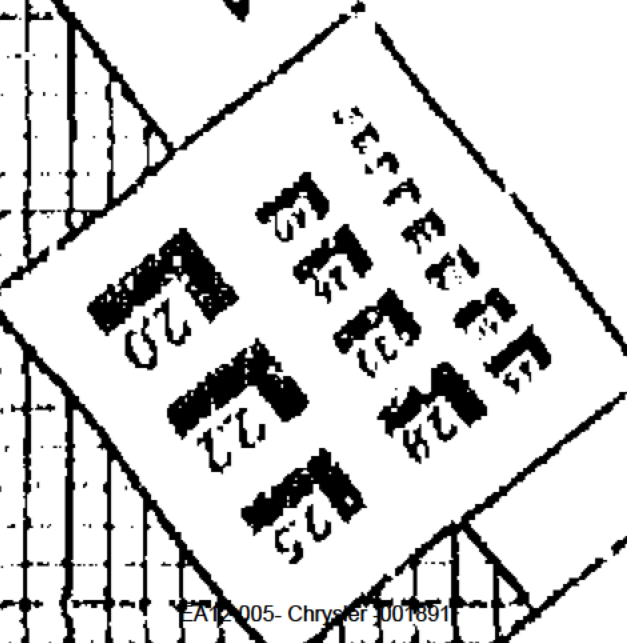
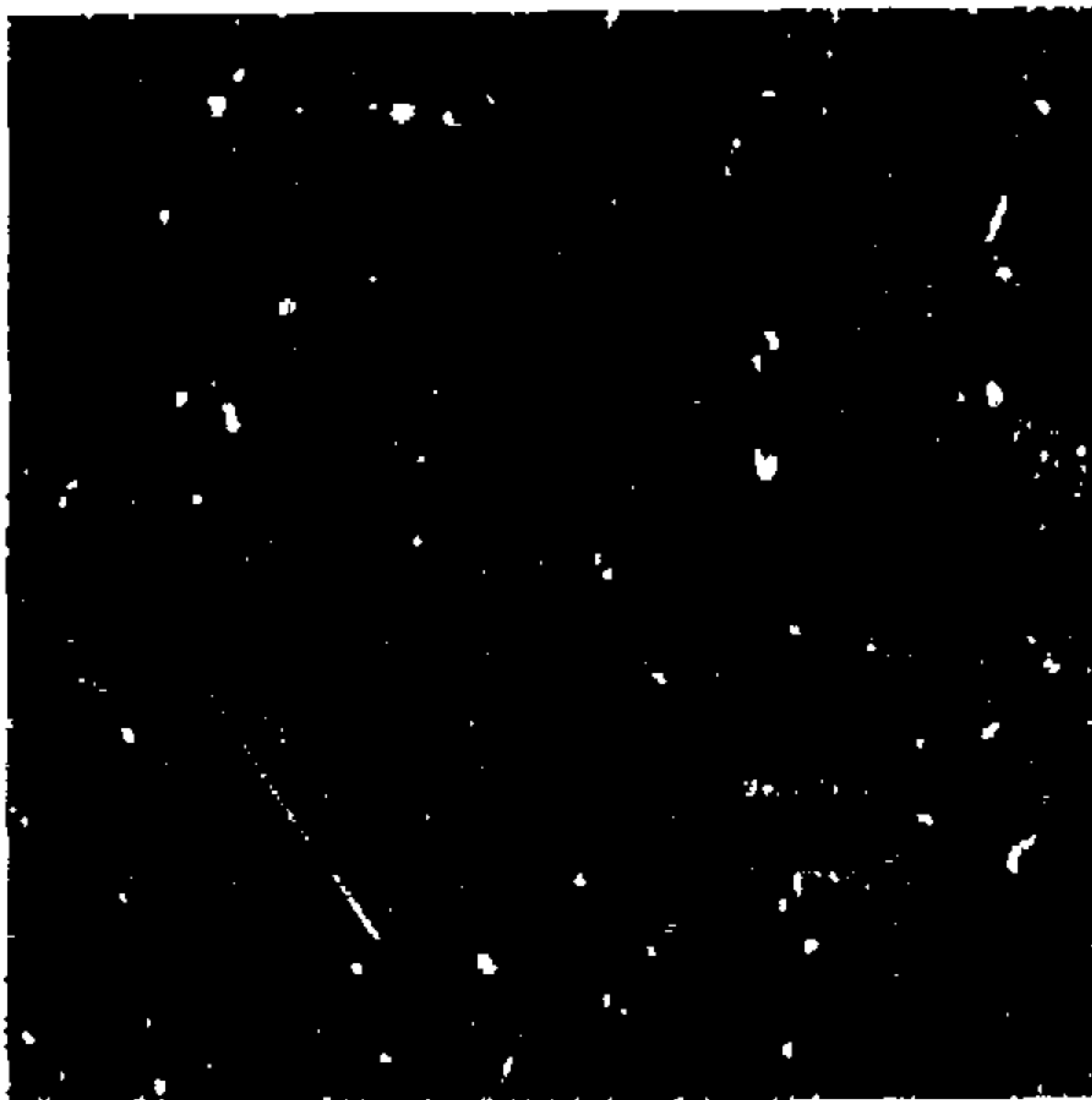
POINT
SIZE



SERIF (BASKERVILLE) POINT SIZE SANS SERIF (MICROFONT)

4 ... 6 ... 8 ... 10 ... 12 ... 14 ...

K277c Rho9k Umlk8t Ecafe 6 65jfen Zm79a 3s43l iskr' Y 126FRXM EB7AU FUDW7M BOONF
Oz7h9 B3e1P Wo8nk 8:izxH C9E83 BI8AJ Z7GY



Retrieval Methods Inc.
1142 E. Big Beaver Rd.
Troy, MI 48083

Declaration of Intent and Purpose

I David G. Venice,

Employed by Retrieval Methods Inc., do hereby declare that the records microfilmed herein are actual records of DaimlerChrysler Corp. created during its normal course of business and that it is the express intent and purpose of this organization to return all original records microphotographed herein.

Date: 19 MAR 03

Microfiche Operator: David Venice

RECEIVED
MAY 15 1974
U.S. AIR FORCE
301 100

VC07623 - F



SAFETY TEST
VEHICLE CRASH TEST LETTER

PAGE 01

VCO7623 30-MPH REAR MOVING BARRIER, KJ-J-74 ITEM KJ4003
2002 HSV3 301 REAR IMPACT DEVELOPMENT.
TEST DATE 06/16/99

TEST PURPOSE PRIMARY, 2002 USA 301 DEVELOPMENT.
DETERMINE FUEL SYSTEM INTEGRITY.

IMPACT TYPE TARGET SPEED; 30.1 MPH
DAMAGE LOCATION; REAR
BARRIER TYPE; REAR TYPE IV
BARRIER SURFACE; PLYWOOD

VEHICLE BODY CLASS; KJ
CAR LINE; J
BODY; 74
ENGINE; 2.4 LITRE
ENGINE NOTE; ELECTRONIC FUEL INJECTION
TRANSMISSION; 6 SPEED MANUAL 4X4
TRANS. NOTE;
VIN AS TESTED; 1J4G75B752A [REDACTED] MOD.
VIN AS BUILT; 1J4G55B152A [REDACTED] MOD.

TEST SPEED 30.3 TRAP

TEST WEIGHT (LBS) 4451 TOTAL, 2517 FRONT, 1934 REAR

OCCUPANTS LEFT FRONT, HYBRID II BALLAST. AD-59
RESTRAINT-BELTS ONLY.
RIGHT FRONT, HYBRID II BALLAST. AD-70
RESTRAINT-BELTS ONLY.

SAFETY TEST
VEHICLE CRASH TEST LETTER

PAGE 02

VC07623 30-MPH REAR MOVING BARRIER, KJ-7-74 ITEM KJ4003
2002 MV98 301 REAR IMPACT DEVELOPMENT.
TEST DATE 06/16/99

BUILD CONDITION

TARGET WEIGHT (LBS) 3829 TOTAL, 2013 FRONT, 1816 REAR REP MAX OPT,
WEIGHT FOR A 2.4L 4X4 NOT INCLUDING DUMMIES OR
CARGO WEIGHT.

FUEL AND BALLAST 17 GALLONS OF STODDARD SOLVENT,
300 LBS.
350 LBS ON REAR FOOT WELL

POST TEST REMARKS FUEL PILL, CAME UP FULL AT 15.0 GALLONS
NO EVIDENCE OF POST IMPACT LEAKAGE

SAFETY TEST
VEHICLE CRASH TEST LETTER

PAGE 03

VC07623 30-MPH REAR MOVING BARRIER, KJ-J-74 ITEM KJ4003
2002 MY88 301 REAR IMPACT DEVELOPMENT.
TEST DATE 06/16/99

REPORT CODES

A = TRANSDUCER DATA	B = ALL FILM DATA
C = HIGH SPEED FILM	D = ENGINEER'S REPORT
E = DUMMY KINEMATICS	F = STEERING COLUMN
G = UNDERBODY	H = A-POST
I = DYNAMIC CRUSH	J = ENGINE COMPARTMENT
K = DOOR CRUSH	L = FORCE/CRUSH/ENERGY
M = SPECIAL	N = CATALOG RDP DATA
* = REPORT REQUESTOR	

DISTRIBUTION

M.P. LEVINE	514-17-41 (AB)
M.A. GIELOW	481-02-13 (AB)
M. STEBELTON	422-05-01 (AB)

DATE 06/16/99

TIME 14:18:46.

Sup # 445 this
distribution

ITEM NO. KJ4003

PAGE 01

CHRYSLER MOTORS
SAFETY TEST
VEHICLE CRASH TEST REQUEST

SUPPLEMENT NO. 05

TEST REPORT CHARGE NO. KJHEAR ISSUE DATE 8/6/99

VC 766 REAR MOVING BARRIER, KJ-J-74,
2002 MYSS 301 REAR IMPACT DEVELOPMENT.

TEST DATE

06/16/99
SPEED 30.3 MPH

ENGINEER

SOURCE

Colie
TRP

TEST PURPOSE

PRIMARY, 2002 USA 301 DEVELOPMENT.
DETERMINE FUEL SYSTEM INTEGRITY.

IMPACT TYPE

TARGET SPEED; 30.1 MPH
DAMAGE LOCATION; REAR
BARRIER TYPE; REAR TYPE IV
BARRIER SURFACE; PLYWOOD

VEHICLE

BODY CLASS; KJ
CAR LINE; J
BODY; 74
ENGINE; 2.4 LITRE
ENGINE NOTE; ELECTRONIC FUEL INJECTION
TRANSMISSION; 5 SPEED MANUAL 4x4
TRANS. NOTE;
VIN AS TESTED; 1J4G758752A [REDACTED] MOD.
VIN AS BUILT; 1J4G558152A [REDACTED] MOD.

POST TEST REMARKS

CHRYSLER MOTORS
SAFETY TEST
VEHICLE CRASH TEST REQUEST

SUPPLEMENT NO. 05

BUILD CONDITION

TARGET WEIGHT (LBS) 3829 TOTAL, 2013 FRONT, 1816 REAR RRP MAX OPT.
WEIGHT FOR A 2.4L 4X4 NOT INCLUDING DUMMIES OR
CARGO WEIGHT.

TEST WEIGHT (LBS) 4457 TOTAL, 2577 FRONT, 1934 REAR

FUEL BALLAST 17 GALLONS OF STODDARD SOLVENT.

LUGGAGE BALLAST 300 LBS.

OTHER BALLAST

OCCUPANTS

LEFT FRONT, HYBRID II BALLAST.
RESTRAINT-BELTS ONLY.

AD NO. 52

RIGHT FRONT, HYBRID II BALLAST.
RESTRAINT-BELTS ONLY.

AD NO. 70

CHRYSLER MOTORS
SAFETY TEST
VEHICLE CRASH TEST REQUEST

SUPPLEMENT NO. 05

MECHANICAL REQ

TARGET VEHICLE PER THIRD SHEET FOR KJ VEHICLE.
POSITION DRIVER AND PASS SEAT IN MID POSITION &
FULL DOWN.
MEASURE VEHICLE ATTITUDE AS RECEIVED AND WHEN
TESTED.
PRESSURE TEST PRE TEST WITH PUMP RUNNING.
FUEL PUMP TO BE RUNNING DURING TEST.
STATIC ROLL VEHICLE POST TEST.
PAINT RAILS AND REAR UNDERBODY COMPONENTS
INCLUDING FUEL FILLER LINE, PASSTHROUGH HOLE IN
RAIL, FUEL TANK, REAR SUSPENSION, REAR DUMPER,
ORV CANISTER, LINES AND EQUIPMENT, ETC. IN
CONTRASTING COLORS FOR UNDERBODY VIEW.

INSTRUMENTATION REQ

SEE THIRD SHEET FOR KJ REAR IMPACT TESTING FOR
ACCEL. LOCATIONS.
TRIAxIAL ACCEL. ON FRONT FACE OF TANK.
TRIAxIAL ACCEL ON BOTTOM OF TANK
TRIAxIAL ACCEL ON SIDE OF TANK NEAR RAIL PASS-THRU
TRIAxIAL ACCEL ON RAIL NEAR ABOVE TANK MOUNTED
ACCEL (NEAR FUEL PASSTHROUGH IN RAIL)
USE INDUCTIVE PICKUPS (6) TO MONITOR ALL (6) AECM
OUTPUTS.
TRIAxIAL ACCEL L&R FRONT BUMPER CROSSMEMBER (AT
FRONT REMOTE SENSOR LOCATIONS)".
MONITOR AECM INTERNAL ACCEL & SAFING SENSOR.
TRIAxIAL ACCEL ATTACHED TO ORC FT LT.
BIAxIAL (X&Y) ACCEL ON INBOARD SURFACE OF FRONT
SILL (L&R DOOR) FT SILL FWD STR XMBR
BIAxIAL (X&Y) L&R SILL @ B-PILLAR
BIAxIAL (X&Y) ACCEL INBOARD SURFACE OF REAR DOOR
SILL LT & RT RR SILL FWD ST XMBR

CHRYSLER MOTORS
SAFETY TEST
VEHICLE CRASH TEST REQUEST

SUPPLEMENT NO. 05

PHOTOGRAPHIC REQ

1-VELOCITY CAMERA.
1-PIT CAMERA TO VIEW ORVR EQUIPMENT (ATTACHED TO FUEL TANK).
1-LEFT OVERALL.
1-RIGHT OVERALL.
1-HIGH SPEED VIDEO OF LEFT (DRIVER) SIDE OVERALL.
1-HIGH SPEED VIDEO OF LEFT (DRIVER) SIDE REAR QUARTER.
2-PIT CAMERAS FOR REAR UNDERBODY ANALYSIS.
1-L SIDE CLOSE UP OF FUEL FILLER AREA FROM PIT
1-L&R CLOSE UP OF REAR QUARTER OF VEHICLE.
1-PIT CAMERA CLOSEUP OF L-RAIL FROM KICKUP RWD.
PRE&POST TEST PHOTOS OF OVERALL & UNDERBODY (REAR), FRAME RAILS, FUEL TANK/REAR AXLE AREA, ETC.
PHOTOS OF ALL SENSOR LOCATIONS.

ALL CAMERAS TO HAVE DIGITAL TIMING IF POSSIBLE.

PRE AND POST TEST DIGITAL PHOTOS.

FM ANALYSIS

REAR DYNAMIC CRUSH.
REAR UNDERBODY ANALYSIS.

VEHICLE VELOCITY - ONLY IF REQUESTED.

REMARKS

TEST REQUESTOR: M.P. LEVINE (X35360)
MAKE 2 COPIES OD FILM AND 1 VIDEO, SEND TO:
M.P. LEVINE 514-17-41 1 FILM & 1 VIDEO
M. GIELOW 481-02-13 1 FILM
PLEASE RETURN VEHICLE TO CTC STRUCTURES LAB
ATTN AMIR HASAN.

T. E. REPORT

FUEL SYSTEM REPORT REQUIRED.

REPORT CODES

A = TRANSDUCER DATA	B = ALL FILM DATA
C = HIGH SPEED FILM	D = ENGINEER'S REPORT
E = DUMMY KINEMATICS	F = STEERING COLUMN
G = UNDERBODY	H = A-POST
I = DYNAMIC CRUSH	J = ENGINE COMPARTMENT
K = DOOR CRUSH	L = FORCE/CRUSH/ENERGY
M = SPECIAL	N = CATALOG EDP DATA
* = REPORT REQUESTOR	

DISTRIBUTION

M.P. LEVINE	514-17-41	(AB)
M.A. GIELOW	481-02-13	(AB)
M. STEBLTON	422-05-01	(AB)

CHRYSLER MOTORS
SAFETY TEST
VEHICLE CRASH TEST REQUEST

SUPPLEMENT NO. 05

*****CHANGED 05/11/99 11:31 LEVINE SUPPLEMENT 01

INSTRUMENTATION REQ

MODIFY OUTPUTS.
TO READ OUTPUTS.
ADD TRIAXIAL ACCEL L/R FRONT BUMPER CROSSMEMBER (AT
ADD FRONT REMOTE SENSOR LOCATIONS).

*****CHANGED 05/12/99 06:39 LEVINE SUPPLEMENT 02

VEHICLE

MODIFY VIN AS TESTED; XXXXX MOD.
TO READ VIN AS TESTED; 1J4G758752A MOD.
MODIFY VIN AS BUILT; XXXXX MOD.
TO READ VIN AS BUILT; 1J4G558152A MOD.

*****CHANGED 05/24/99 07:57 LEVINE SUPPLEMENT 03

BUILD CONDITION

*****CHANGED 06/11/99 11:52 LEVINE SUPPLEMENT 04

VEHICLE

MODIFY ENGINE; 3.7 LITRE
TO READ ENGINE; 2.4 LITRE
MODIFY TRANSMISSION; 4 SPEED AUTO 4x4
TO READ TRANSMISSION; 5 SPEED MANUAL 4x4

BUILD CONDITION

TARGET WEIGHT (LBS)

MODIFY 4171 TOTAL, 2229 FRONT, 1942 REAR REP MAX OPT.
TO READ 3819 TOTAL, 1962 FRONT, 1817 REAR REP MAX OPT.
MODIFY WEIGHT FOR A 3.7L 4X4 NOT INCLUDING DUMMIES OR
TO READ WEIGHT FOR A 2.4L 4X4 NOT INCLUDING DUMMIES OR

*****CHANGED 06/11/99 11:57 LEVINE SUPPLEMENT 05

CHRYSLER MOTORS
SAFETY TEST
VEHICLE CRASH TEST REQUEST

SUPPLEMENT NO. 06

TARGET WEIGHT (LBS)

MODIFY 3819 TOTAL, 1962 FRONT, 1817 REAR REP MAX OPT.
TO READ 3829 TOTAL, 2013 FRONT, 1816 REAR REP MAX OPT.

CHRYSLER PD
3700 SOUTH M52
CHELSEA MI 48110

09159149 05/16/99

ID VC7623 TEST WT

LEFT FRONT
LEFT REAR

1273 lb
948 lb

RIGHT FRONT
RIGHT REAR

1244 lb
986 lb

FRONT AXLE

2517 lb

BACK AXLE

1934 lb

TOTAL

4451 lb

VEHICLE ATTITUDE

TEST NUMBER VC7623

TEST ENGINEER COLI.

ITEM NUMBER KJ4003

TEST DATE 06/14/29

X FENDER/WHEELWELL HEIGHTS

_____ SIDE HEIGHTS

AS RECEIVED

AS BUILT-UP

AS TESTED

	LF	LR	RF	RR
AS RECEIVED	35.0	35.7	34.8	35.7
AS BUILT-UP				
AS TESTED	32.8	34.2	32.3	34.1

X, Y, Z DIMENSIONS

TEST NUMBER VC7623, TEST ENGINEER COLIE
 TEST TYPE: 30 MPH REAR WITH TYPE 4 MOV. BARR. V.I.N. 1J4G758152A

LOCATION	X	Y	Z	LOCATION	X	Y	Z
B0	XXXX	0.0	XXXX	BC2	178.9	0.0	XXXX
B1	164.2	-0.5	XXXX	B2			XXXX
U1	108.0	-19.0	17.3	U2	116.8	18.5	12.2
U3	126.8	-8.3	19.3	U4	127.5	6.5	19.5
U5	128.2	1.0	10.1	U6	192.2	18.8	24.0
U7	197.0	-19.2	23.9	U8	195.3	5.6	14.2
U9	195.7	3.5	14.2	U10	195.5	5.3	13.8
U11	195.2	3.5	13.6	U12	198.2	19.0	24.4
U13	198.0	-19.4	24.5				
LFB	60.6	-33.5	13.5				
LMB	85.0	-39.6	13.6				
LRA		15.7					
4" TARGET W/O BLACK RING	135.1	10 44- 16- -34.0	14.0			44-	

TRAMMEL DIMENSIONS:

LFB-LMB PRE 29.10 U1-U2 27.22
 POST 29.11

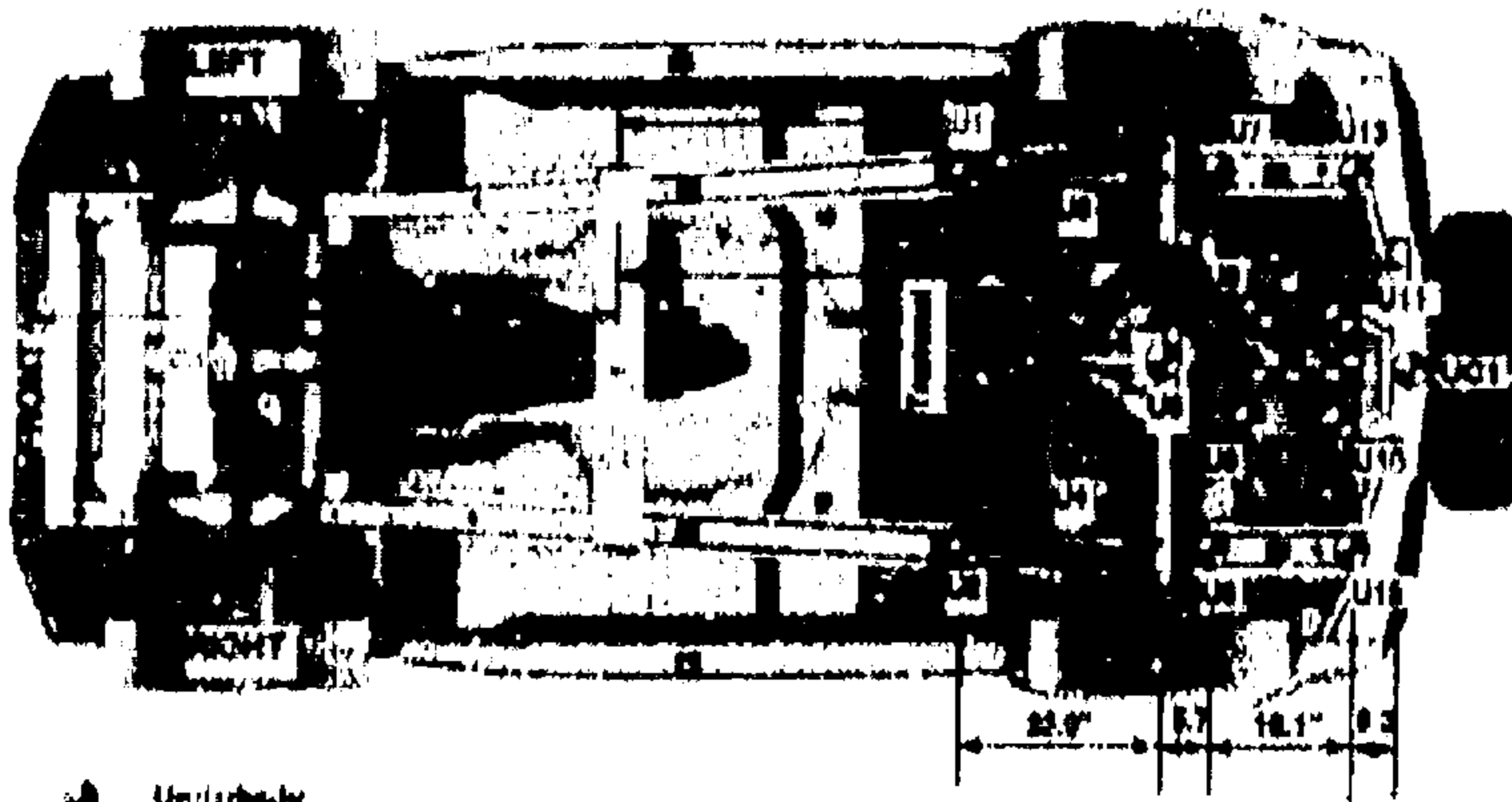
Program: 02KJ

V07023; Item No. KJ4003

REAR UNDERBODY FOR ALL REAR IMPACTS

Impact Analysis Engineer: RAN / 05/03/1999
Viability Approved: DCIL / 05/03/1999
Approved for OPE Use: GAB / 05/03/1999

Third Sheet Item V0
Jeep Cherokee 414 KJ
Target and Accelerometer Locations
For Rear Impact



- U Underbody
- S Side View
- A Single Axis (X) Accelerometer
- B Bial (X & Z) Accelerometer

Guidelines to Placement of Critical Targets:

Item	Comments
U1 & U2	6.5" ahead of forward edge of control arm mounting bracket.
U3 & U4	At midpoint of upper swing arms.

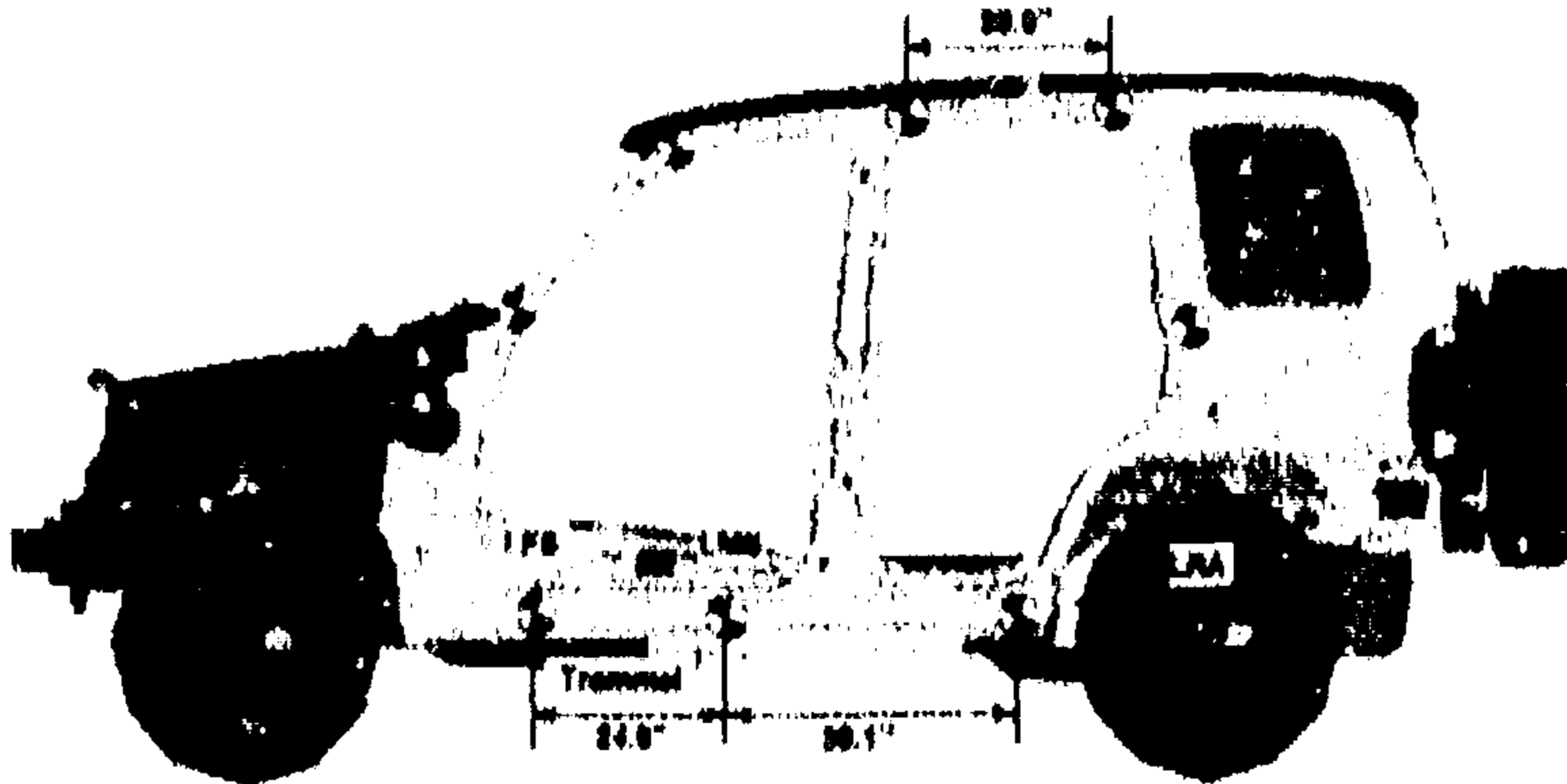
Program: 02KJ

VCT023, Item No. KJ4003

LEFT SIDE FOR ALL REAR IMPACTS

Impact Analysis Engineer: PRN / 05/03/1999
Viability Approved: DGL / 05/03/1999
Approved for OPG Use: GAB / 05/03/1999

Third Show Item: V0
Jeep Cherokee 4x4 KJ



3 Side view

Guidelines to Placement of Critical Targets:

Item	Comments
L1	Target not required on rear impact.
L3	Target not required on rear impact.
L5	Target not required on rear impact.
LCP	Target not required on rear impact.
LRS	Target not required on rear impact.
LRA	Place target on center of hub.
LFS, LMS	Besides LRA, these are only other two targets required.

Version: 02
EA12-005-Chrysler-001907

LEFT

TUBE COLOR

Blue

FRONT SILL

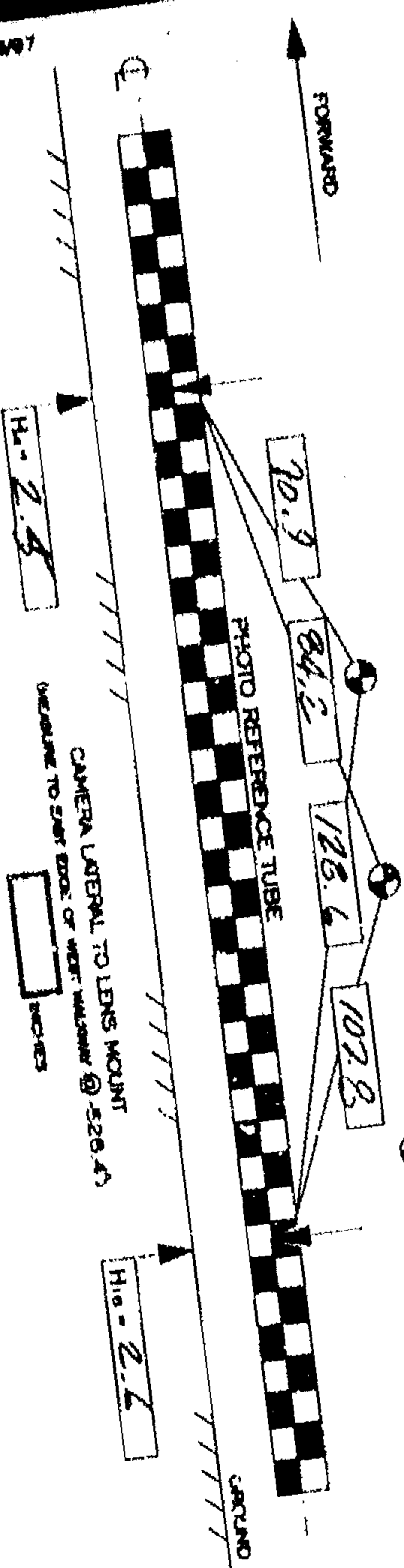
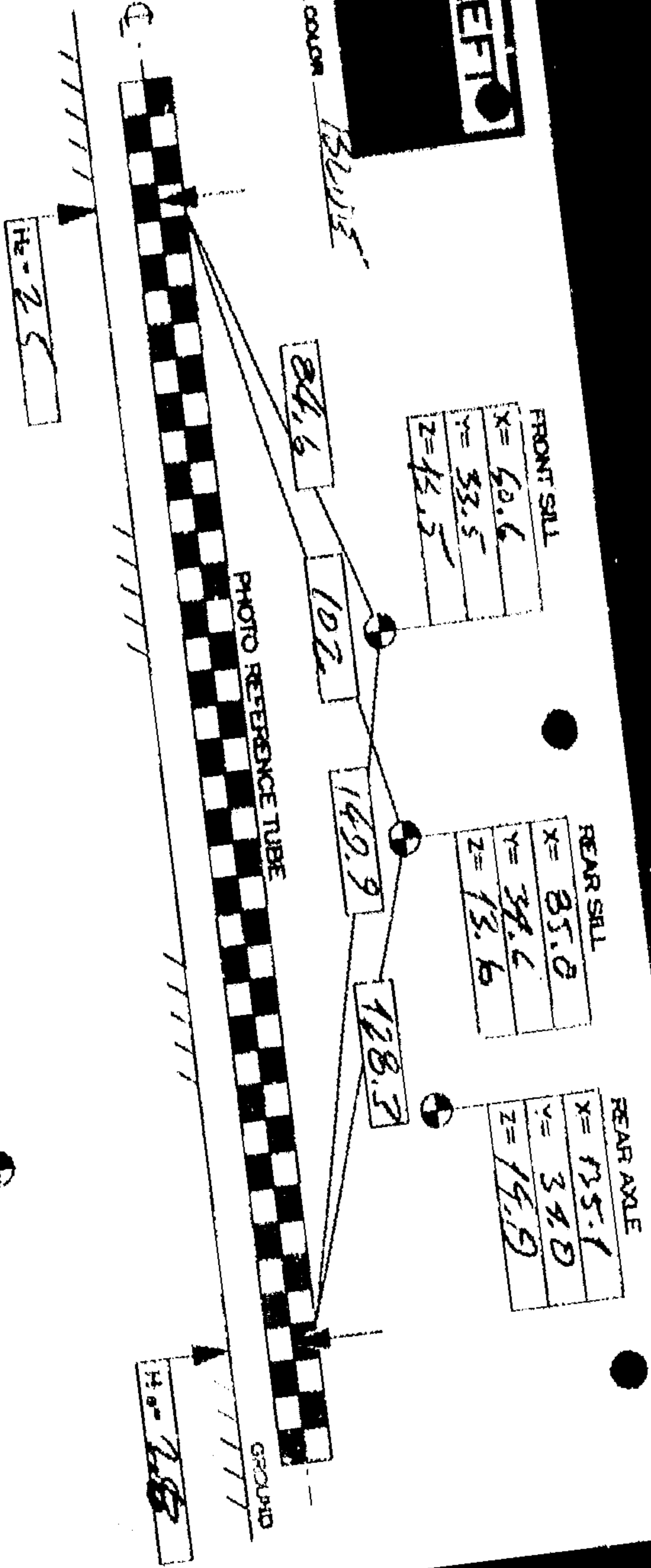
X =	60.6
Y =	33.5
Z =	18.5

REAR SILL

X =	85.8
Y =	38.6
Z =	13.6

REAR AXLE

X =	135.1
Y =	34.0
Z =	14.9

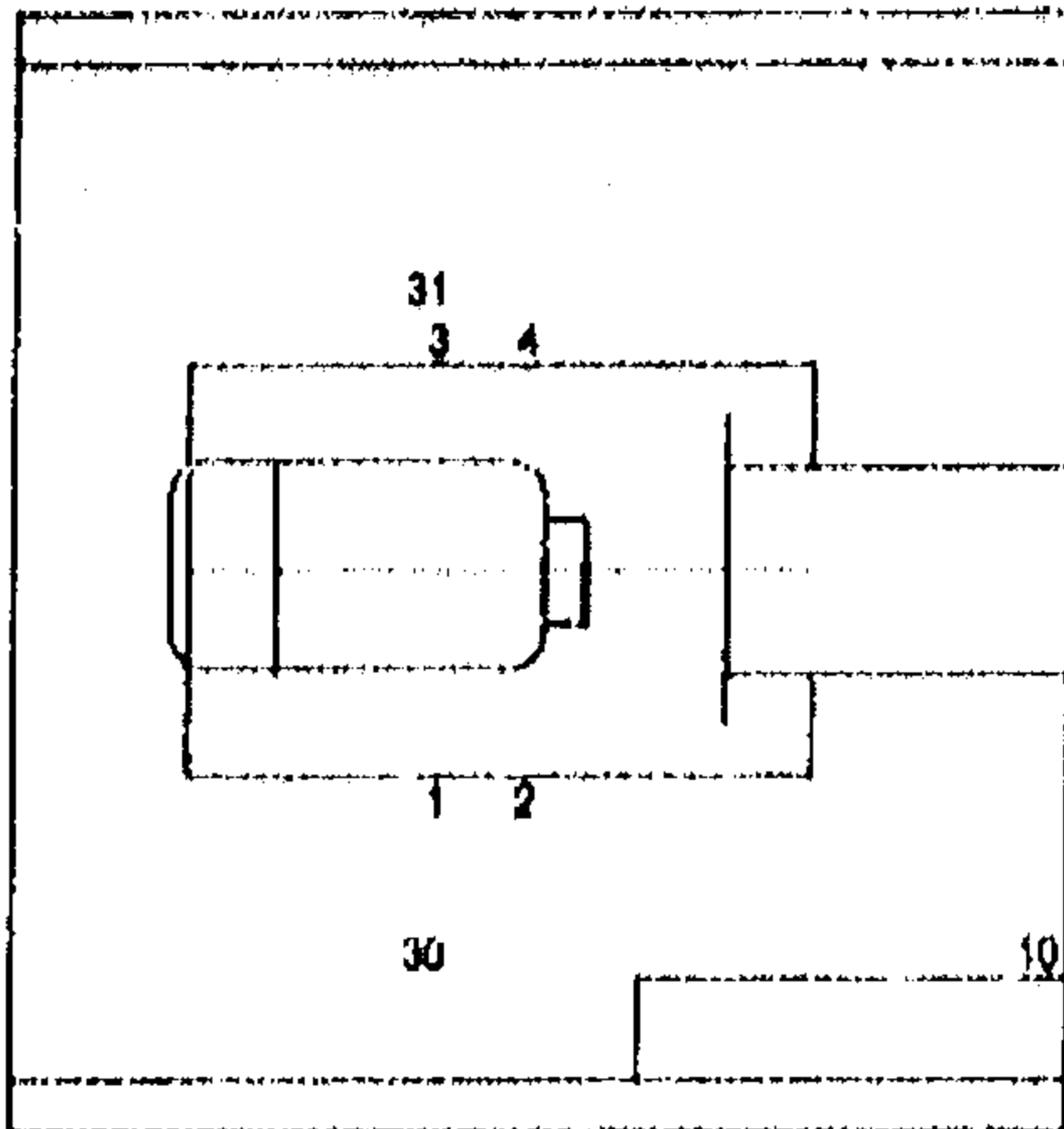


- NOTES:
1. THE Z DIMENSION FOR THE SILL TARGETS AND REAR AXLE MUST BE REWINDEN AT THE TEST SITE
 2. IF OTHER TUBE POINTS ARE USED, SO INDICATE

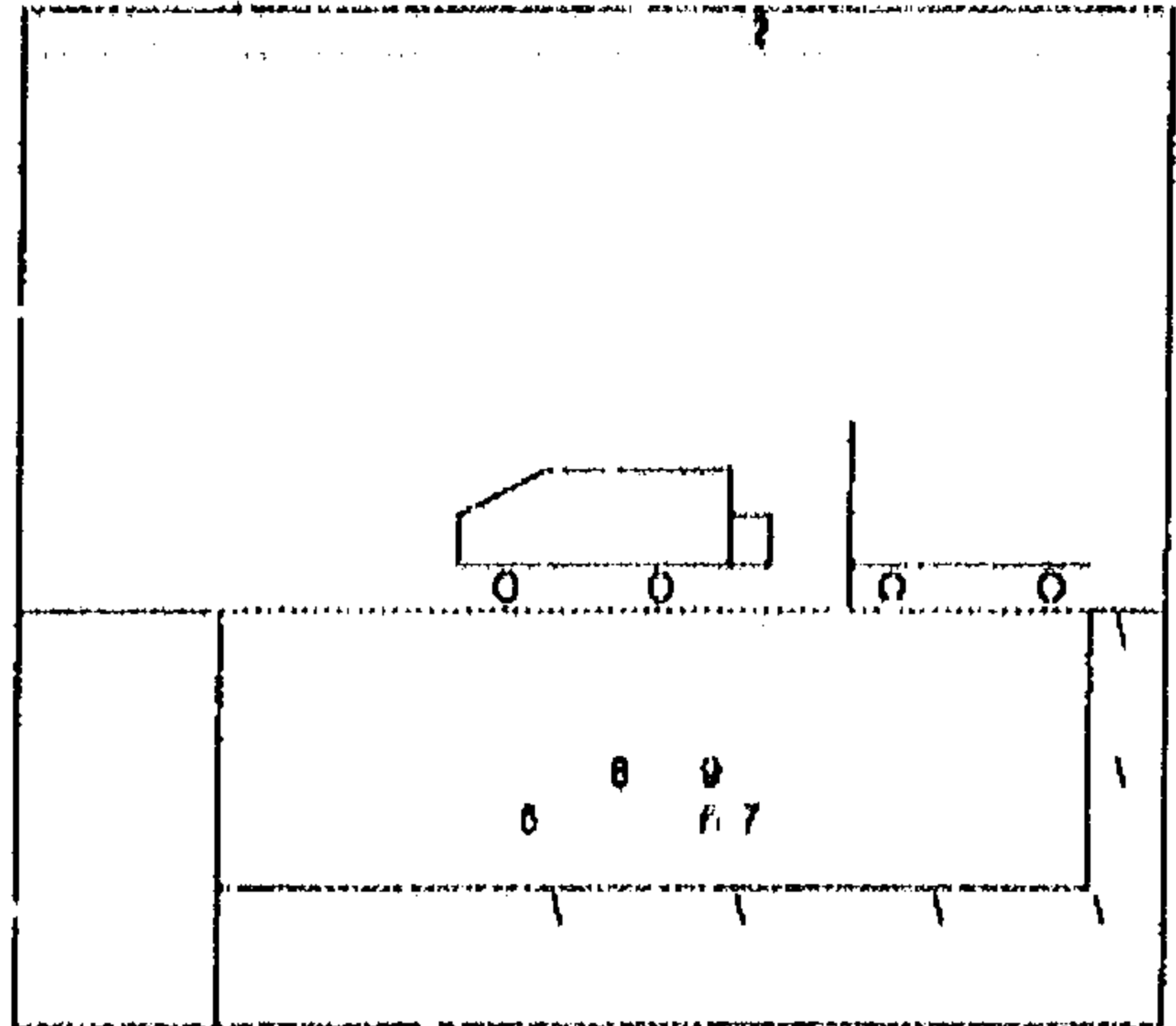
CAMERA LATERAL TO LENS MOUNT
 (MEASURE TO LEFT EDGE OF WET MOUNT) @ 228.45
 [] INCHES

FOR REAR IMPACT TESTS - DIMENSIONING
 BETWEEN SILL TARGETS AND PHOTO REFERENCE TUBE
 TEST DIMS 223
 VC

PLAN VIEW



BIDE VIEW



TEST NUMBER:	VO 7023	VEHICLE TYPE:	KJ74
TEST TYPE:	30 MPH Rear Type IV Impact	TEST ENGINEER:	Matt Cole
REQUEST DATE:	08/09/1999		

#	VIEW DESCRIPTION A=ANALYSIS	CAM S/N	LENS FL	LENS S/N	LENS MFG.	F. STP	PRU/SKT/CBL	MISC
1	LI - upper Dynamic Crush	200	100MM	110003	KIN			
2	LI - Lower Dynamic Crush	427	130MM	105430	UM			
3	LI - Close Up of Rear Quarter Panel	1872	35MM	111005	KIN			
4	RI - Overall	201	100MM	107231	KIN			
5	RI - Close Up of Rear Quarter Panel	1874	35MM	111100	KIN			
6	PI - Overall Underbody - Forward	430	130MM	0	COI	4 5/8		
7	PI - Overall Underbody - Rear	431	130MM	4	COI	4 5/8		
8	PI - View of ORVR Equipment (attached at LR)	277	35mm	111203	KIN			
9	PI - Close Up of Fuel Fill Area	278	50mm	111000	KIN			
10	PI - Close Up of LI Rail from Kick Up to Rear	278	ZOOM	063	SDR	2.8 1/2		
11	Velocity	200	100MM	02005	LOT	8		
30	LI - Ektapro - Overall View	EKTA	ZOOM	914245	SNY	8 1/2		
31	LI - Ektapro - Rear Quarter View	PRO	25MM	00102	KIN	8 1/2		
	vo photo w/in 000353							

8/16/99

FUEL SYSTEM AND STATIC ROLLOVER SUMMARY

TEST NUMBER VC7623, ITEM NUMBER KJ400J, TEST ENGINEER COLIE

V.I.N. 1J4G75H152A [REDACTED], TEST DATE 8/11/29 ROLL DATE 8/18/29

TEST TYPE, 30 MPH TYPE IV MOVING BARRIER REAR IMPACT

FUEL, TYPE AND QUANTITY - .767 S.O. STODDARD SOLVENT, 17.0 GALLONS

TEST SPEED 30.3 MPH, TEST WEIGHT 457 POUNDS.

POST IMPACT LEAKAGE(OZ); AT IMPACT 0

1ST 5 MIN. 0

NEXT 25 MIN. 0

POST TEST PRESSURE CHECK

ELECTRIC FUEL PUMP RUN

[] NO STATIC ROLL PERFORMED

STATIC ROLL LEAKAGE WITH VEHICLE SIDE DOWN FIRST

FUEL LEAKAGE LOCATIONS DURING STATIC ROLL

ROLL TIME					TOTAL
0-90	1ST 5 MIN				0
1:30	POST 5 MIN				0
90-180	1ST 5 MIN				0
1:31	POST 5 MIN				0
180-270	1ST 5 MIN				0
1:31	POST 5 MIN				0
270-360	1ST 5 MIN				0
1:24	POST 5 MIN				0

* OUNCES IN 5 MINUTES, ** OUNCES PER MINUTE

POST TEST FUEL SYSTEM OBSERVATIONS No evidence of leakage

Post-Test at Rolling Roll

DATE 06/17/99
 TIME 12:53:28.

ELECTRONIC DATA PROCESSING
 EDP TEST LETTER

VEHICLE CRASH ENGINEERING
 DEPT 5320

VC07623 ITEM KJ4003
 VC07623 30-MPH REAR MOVING BARRIER, KJ-J-74 ITEM KJ4003
 2002 MV88 301 REAR IMPACT DEVELOPMENT.
 TEST DATE 06/16/99

TEST PURPOSE PRIMARY, 2002 OBA 301 DEVELOPMENT.
 DETERMINE FUEL SYSTEM INTEGRITY.

IMPACT TYPE TARGET SPEED; 30.1 MPH
 DAMAGE LOCATION; REAR
 BARRIER TYPE; REAR TYPE IV
 BARRIER SURFACE; PLYWOOD

VEHICLE BODY CLASS; KJ
 CAR LINE; J
 BODY; 74
 ENGINE; 2.4 LITRE
 ENGINE NOTE; ELECTRONIC FUEL INJECTION
 TRANSMISSION; 5 SPEED MANUAL 4x4
 TRANS. NOTE;
 VIN AS TESTED; 1J4G75B7527 [REDACTED] MOD.
 VIN AS BUILT; 1J4G55B7527 [REDACTED] MOD.

TEST SPEED 30.3 TRAP

TEST WEIGHT (LBS) 4451 TOTAL, 2517 FRONT, 1934 REAR

OCCUPANTS LEFT FRONT, HYBRID II BALLAST. AD-59
 RESTRAINT-BELTS ONLY.
 RIGHT FRONT, HYBRID II BALLAST. AD-70
 RESTRAINT-BELTS ONLY.

DATE 06/17/99
TIME 12:53:28.

ELECTRONIC DATA PROCESSING
EDP TEST LETTER

VEHICLE CRASH ENGINEERING
DEPT 5320

VC07623 ITEM KJ4003
VC07623 30-MPH REAR MOVING BARRIER, KJ-J-74 ITEM KJ4003
2002 MVGH 301 REAR IMPACT DEVELOPMENT.
TEST DATE 06/16/99

BUILD CONDITION

TARGET WEIGHT (LBS) 3829 TOTAL, 2013 FRONT, 1816 REAR REP MAX OPT.
WEIGHT FOR A 2.4L 4X4 NOT INCLUDING DUMMIES OR
CARGO WEIGHT.

FUEL AND BALLAST 17 GALLONS OF STODDARD SOLVENT.
300 LBS.
350 LBS ON REAR FOOT WELL

POST TEST REMARKS FUEL FILL CAME UP FULL AT 15.0 GALLONS
NO EVIDENCE OF POST IMPACT LEAKAGE

DATE 06/17/99
TIME 12:53:28.

ELECTRONIC DATA PROCESSING
EDP TEST LETTER

VEHICLE CRASH ENGINEERING
DEPT 5320

VC07623 ITEM KJ4003
VC07623 30-MPH REAR MOVING BARRIER, KJ-J-74 ITEM KJ4003
2002 MV38 301 REAR IMPACT DEVELOPMENT.
TEST DATE 06/16/99

EDP TECHNICIAN B. MARCHENIA

No. of Pages 96
CC

M. A. GIELOW	481-03-13
M. P. LEVINE	514-17-41
N. STEBELTON	422-05-01

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***** VC07623A *****

Page 1-01

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PAGE: 002 TBR Channels 009 - 016
PAGE: 003 TBR Channels 017 - 024
PAGE: 004 TBR Channels 025 - 032
PAGE: 005 TBR Channels 033 - 040
PAGE: 006 TBR Channels 041 - 048
PAGE: 007 TBR Channels 049 - 056
PAGE: 008 TBR Channels 057 - 064
PAGE: 009 TBR Channels 065 - 066

***** VC07623B *****

TITLE: Vehicle Channels

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PAGE: 011 Average of Frt Sill Chls 41 & 43
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PAGE: 013 LEFT FRONT SILL X, Chl 1, VD
PAGE: 014 RIGHT FRONT SILL X, Chl 2
PAGE: 015 RIGHT FRONT SILL X, Chl 2, VD
PAGE: 016 LEFT REAR SILL X, Chl 3
PAGE: 017 LEFT REAR SILL X, Chl 3, VD
PAGE: 018 LEFT REAR SILL Z, Chl 4
PAGE: 019 RIGHT REAR SILL X, Chl 5
PAGE: 020 RIGHT REAR SILL X, Chl 5, VD
PAGE: 021 RIGHT REAR SILL Z, Chl 6
PAGE: 022 RT REAR RAIL MID TANK X, Chl 7
PAGE: 023 RT REAR RAIL MID TANK X, Chl 7, VD
PAGE: 024 RT REAR RAIL MID TANK Z, Chl 8
PAGE: 025 LT REAR RAIL MID TANK X, Chl 9
PAGE: 026 LT REAR RAIL MID TANK X, Chl 9, VD
PAGE: 027 LT REAR RAIL MID TANK Y, Chl 10
PAGE: 028 LT REAR RAIL MID TANK Z, Chl 11
PAGE: 029 LT RAIL TRANS X/MBR X, Chl 12
PAGE: 030 LT RAIL TRANS X/MBR X, Chl 12, VD
PAGE: 031 LT RAIL TRANS X/MBR Z, Chl 13
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PAGE: 037 FUEL TANK SIDE X, Chl 17
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PAGE: 040 RT RAIL FT XMBR X, Chl 18, VD
PAGE: 041 FUEL TANK SIDE Y, Chl 19
PAGE: 042 FUEL TANK FT FACE X, Chl 20
PAGE: 043 FUEL TANK FT FACE X, Chl 20, VD
PAGE: 044 FUEL TANK FT FACE Y, Chl 21
PAGE: 045 FUEL TANK FT FACE Z, Chl 22
PAGE: 046 FUEL TANK BTM X, Chl 23
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PAGE: 048 FUEL TANK BTM Y, Chl 24
PAGE: 049 FUEL TANK BTM Z, Chl 25
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PAGE: 051 FUEL TANK RL PASS-THRU X, Chl 26, VD
PAGE: 052 FUEL TANK RL PASS-THRU Y, Chl 27
PAGE: 053 FUEL TANK RL PASS-THRU Z, Chl 28
PAGE: 054 FUEL TANK SIDE Z, Chl 29

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PAGE: 055 DAB SQUIB PRI, Chl 30, Event
 PAGE: 056 DAB SQUIB SEC, Chl 31
 PAGE: 057 PAB SQUIB PRI, Chl 32, Event
 PAGE: 058 PAB SQUIB SEC, Chl 33
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 PAGE: 062 ORC INTERN ACCEL G, Chl 37
 PAGE: 063 ORC FRONT LT X, Chl 38
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 PAGE: 068 LT FT SILL FWD ST XMBRX, Chl 41, VD
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 PAGE: 070 RT FT SILL FWD ST XMBRX, Chl 43
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 PAGE: 077 RT SILL AT B PILLAR X, Chl 47, VD
 PAGE: 078 RT SILL AT B PILLAR Y, Chl 48
 PAGE: 079 LT RR SILL FWD ST XMBRX, Chl 49
 PAGE: 080 LT RR SILL FWD ST XMBRX, Chl 49, VD
 PAGE: 081 LT RR SILL FWD ST XMDRY, Chl 50
 PAGE: 082 RT RR SILL FWD ST XMBRX, Chl 51
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 PAGE: 090 RT FT XMBR SEN LOC X, Chl 56, VD
 PAGE: 091 RT FT XMBR SEN LOC Y, Chl 57
 PAGE: 092 RT FT XMBR SEN LOC Z, Chl 58

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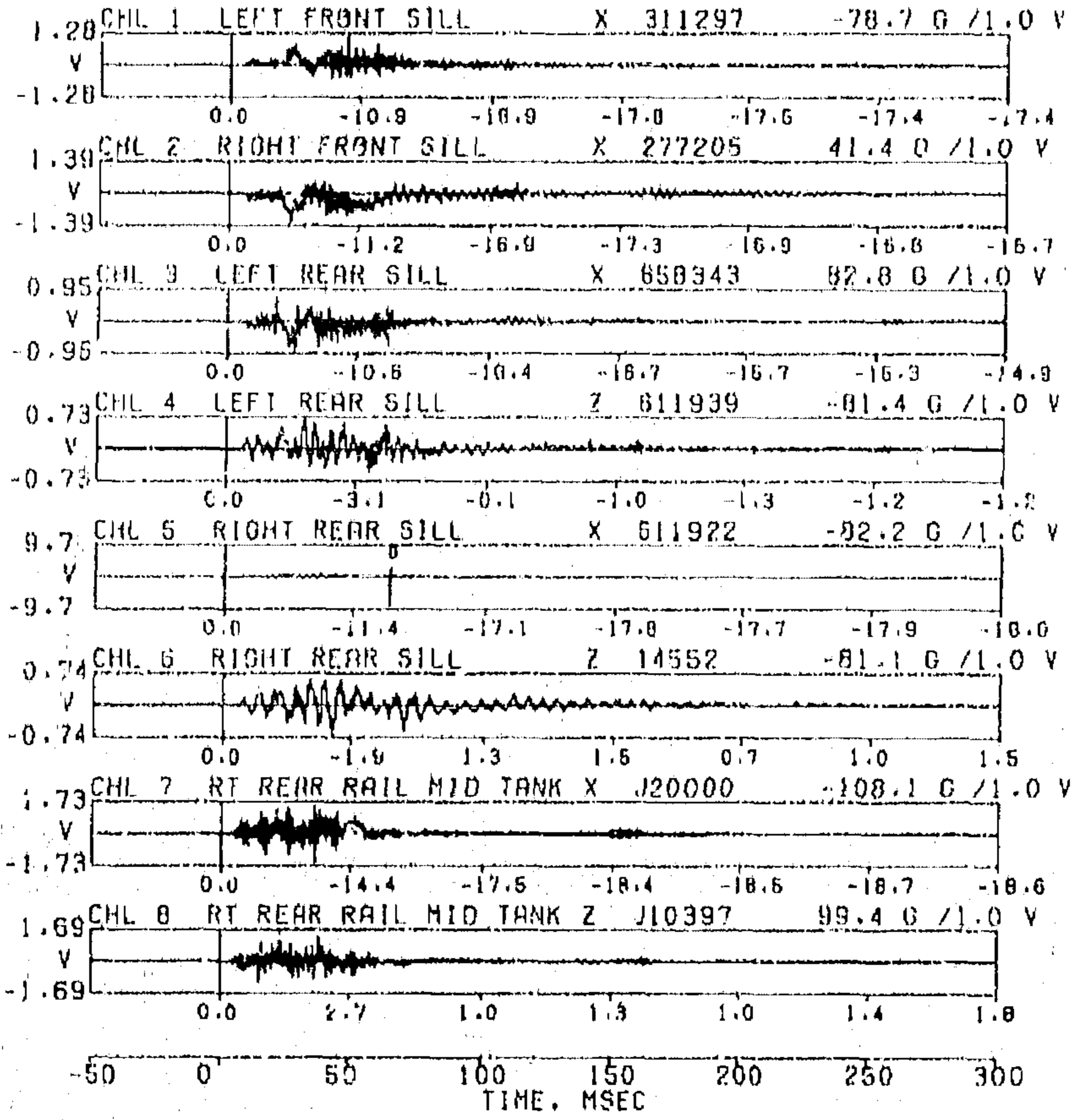
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 PAGE: 093 LT RAIL MBAR MID X Chl 65
 PAGE: 094 LT RAIL MBAR MID X, Chl 65, VD
 PAGE: 095 RT RAIL MBAR MID X Chl 66
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TRANSDUCER SUMMARY REPORT

VC07023 30-MPH REAR MOVING BARRIER, KJ-J-74, ITEM KJ4003
 2002 HYSS 301 REAR IMPACT DEVELOPMENT,
 IMPACT ANALYSIS DEPT, 5320
 JUN 17, 1998

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 ERRATA 1

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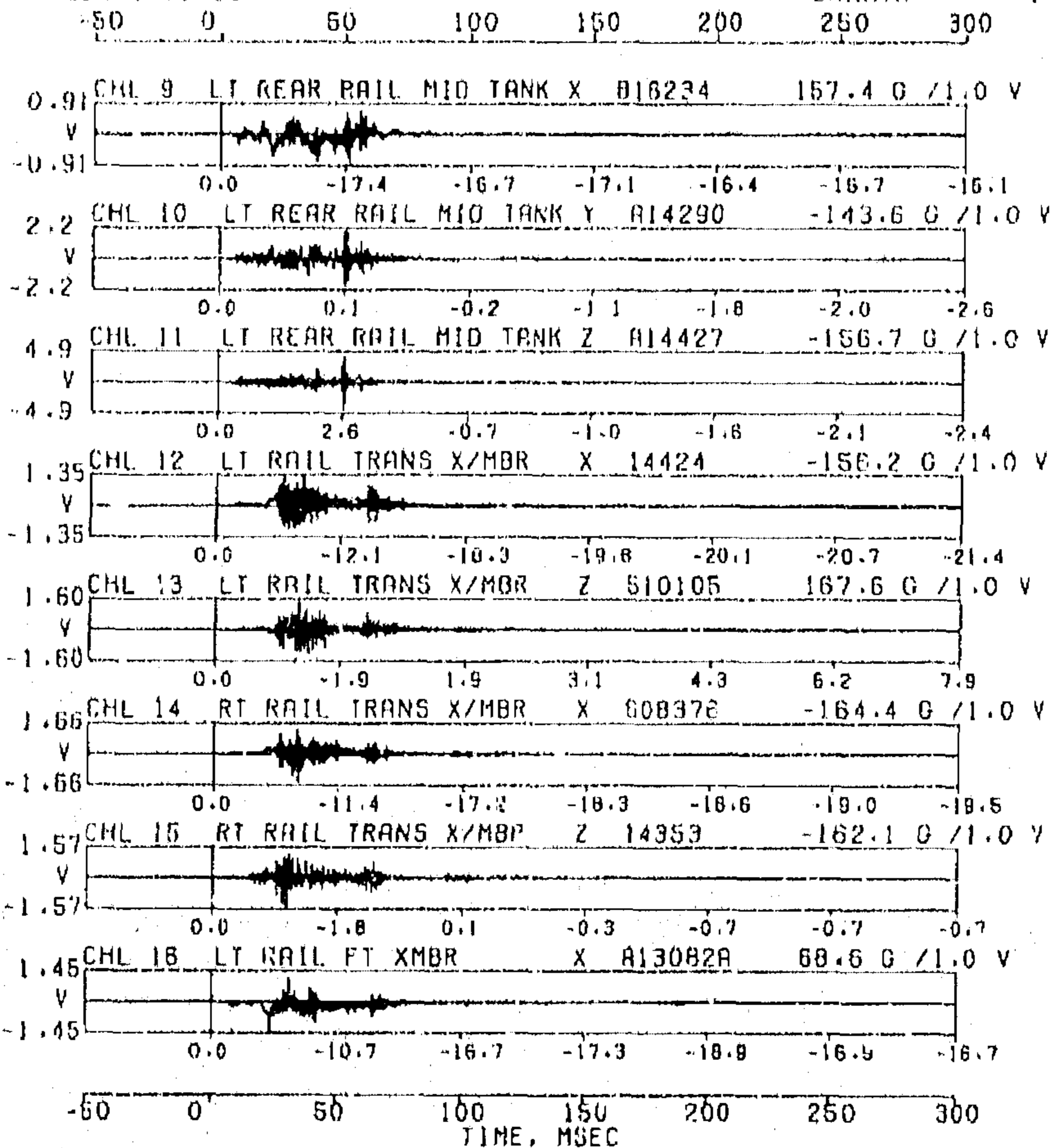


NOTE COMPUTED FIRST INTEGRAL VALUES ARE INDICATED BELOW EACH CHANNEL AND BRIDGED DATA IS INDICATED BY A -B-.

TRANSDUCER SUMMARY REPORT

VC07633 30-MPH REAR MOVING BARRIER, KJ-J-74, ITEM KJ4003
 2002 MY85 301 REAR IMPACT DEVELOPMENT,
 IMPACT ANALYSIS DEPT. 5320
 JUN 17, 1999

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 ERRATA 1



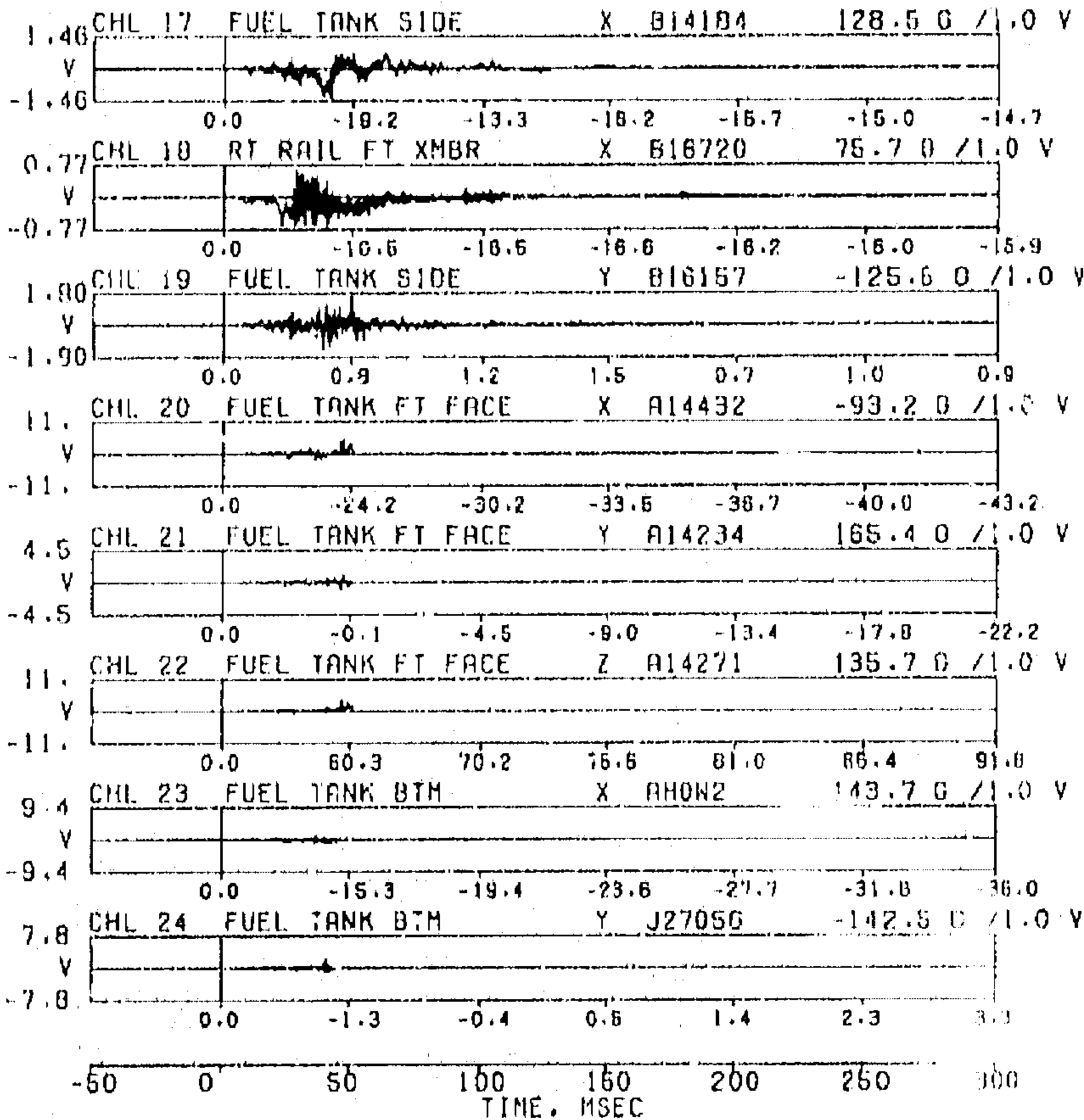
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TRANSDUCER SUMMARY REPORT

VC07823 30-MPH REAR MOVING BARRIER, KJ-J-74, ITEM KJ1003
 2002 MYRS 301 REAR IMPACT DEVELOPMENT.
 IMPACT ANALYSIS DEPT. 5320
 JUN 17, 1999

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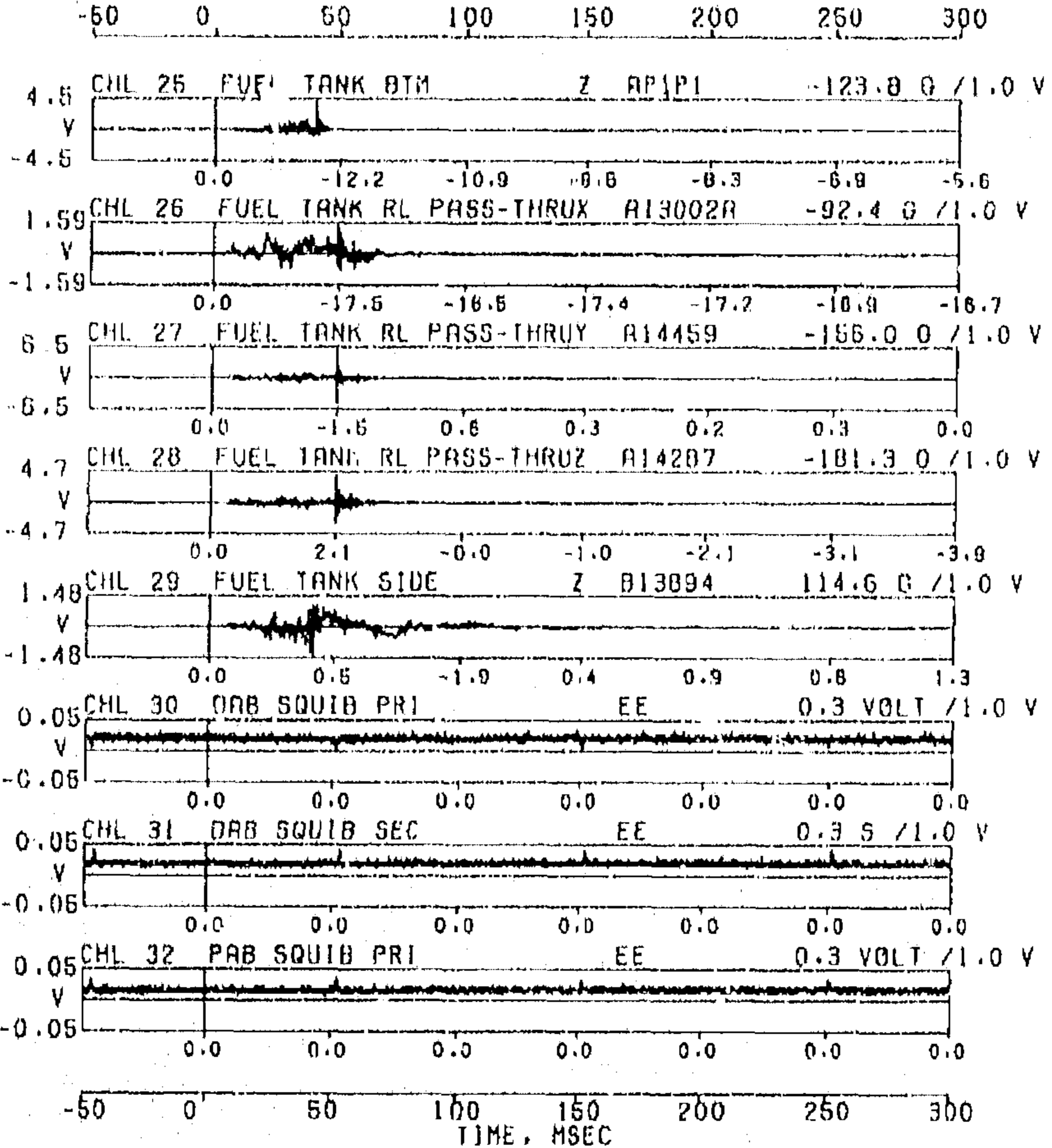


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TRANSDUCER SUMMARY REPORT

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 2002 NV50 301 REAR IMPACT DEVELOPMENT.
 IMPACT ANALYSIS DEPT. 5320
 JUN 17, 1999

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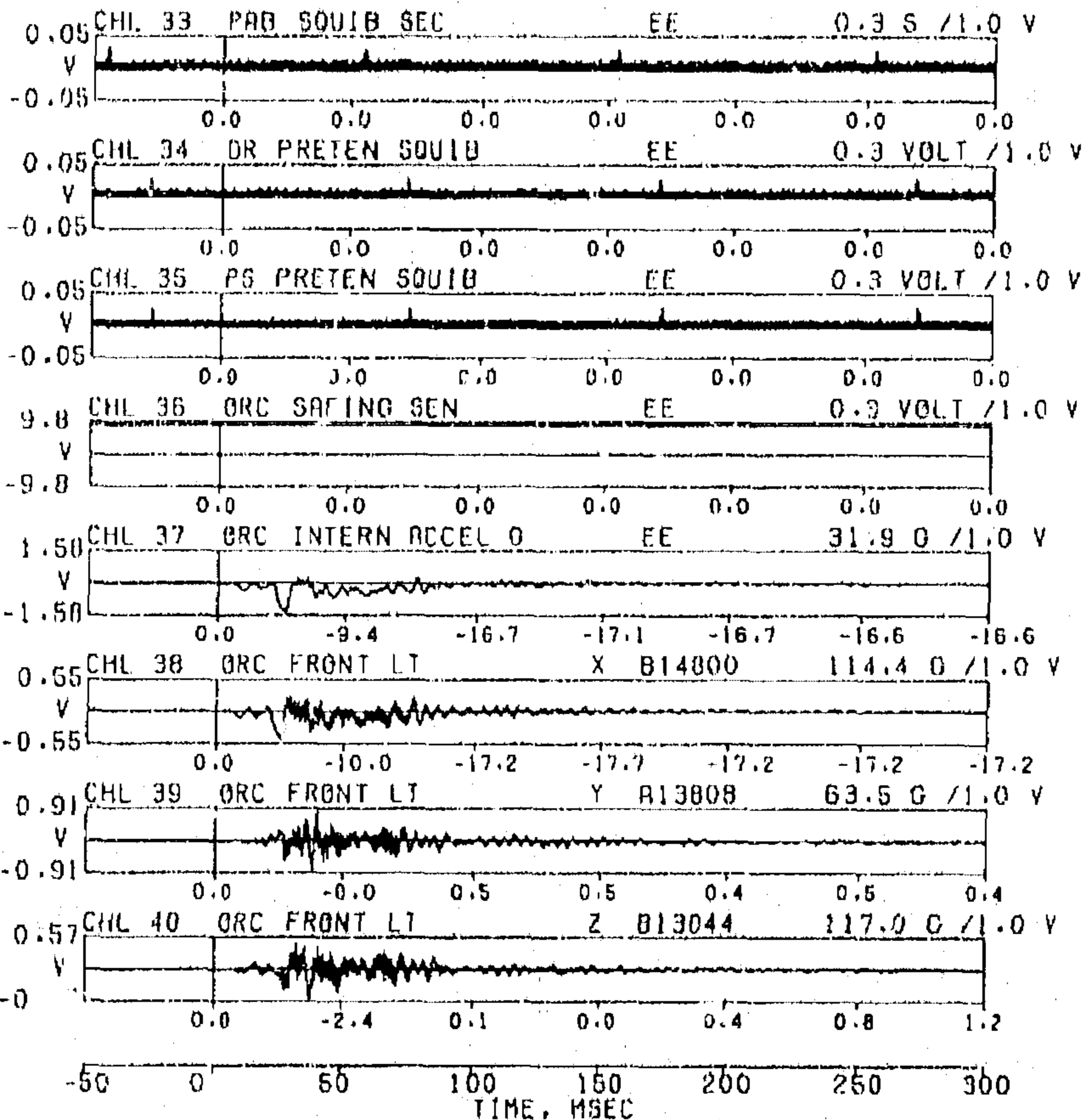
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 2002 HY88 301 REAR IMPACT DEVELOPMENT.
 IMPACT ANALYSIS DEPT. 5320
 JUN 17, 1999

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 ERRATA 1

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NOTE COMPUTED FIRST INTEGRAL VALUES ARE INDICATED BELOW EACH CHANNEL AND BRIDGED DATA IS INDICATED BY A -B-

TRANSDUCER SUMMARY REPORT

VC07623 30-MPH REAR MOVING BARRIER, KJ-J-74. ITEM KJ4003
 2002 MY95 301 REAR IMPACT DEVELOPMENT,
 IMPACT ANALYSIS DEPT. 6320

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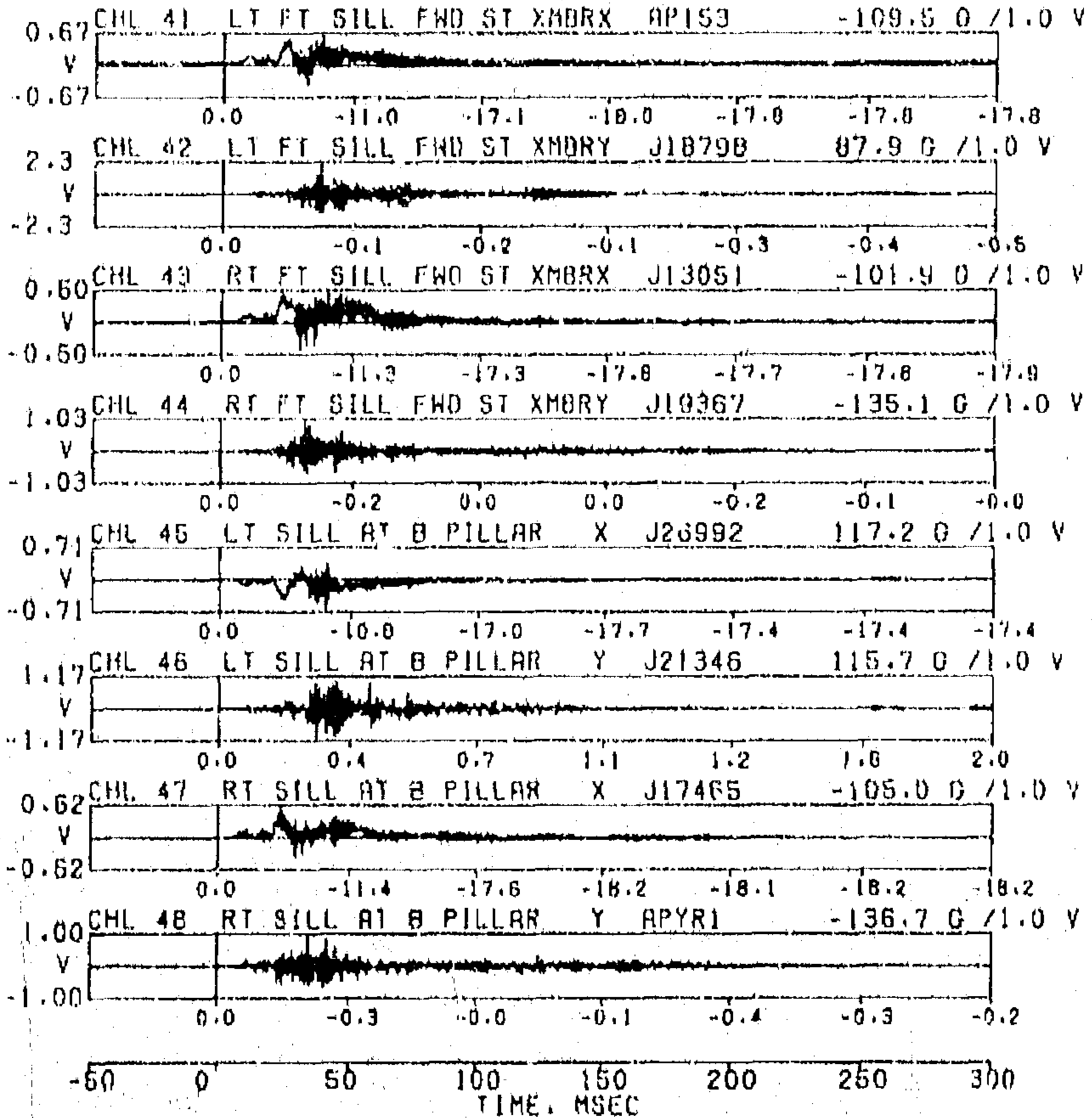
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JUN 17, 1999

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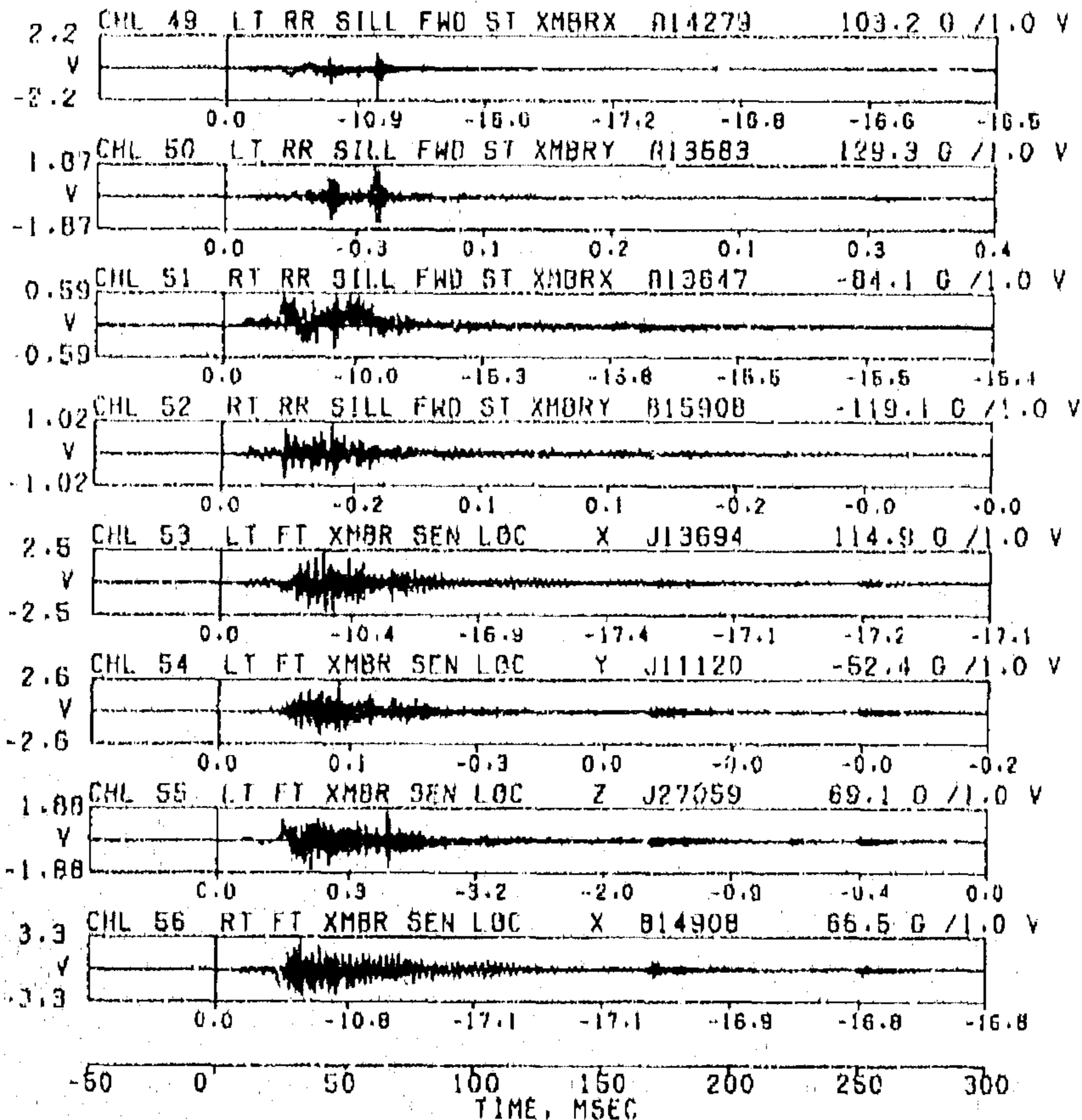
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 2002 MY88 301 REAR IMPACT DEVELOPMENT,
 IMPACT ANALYSIS DEPT. 6320
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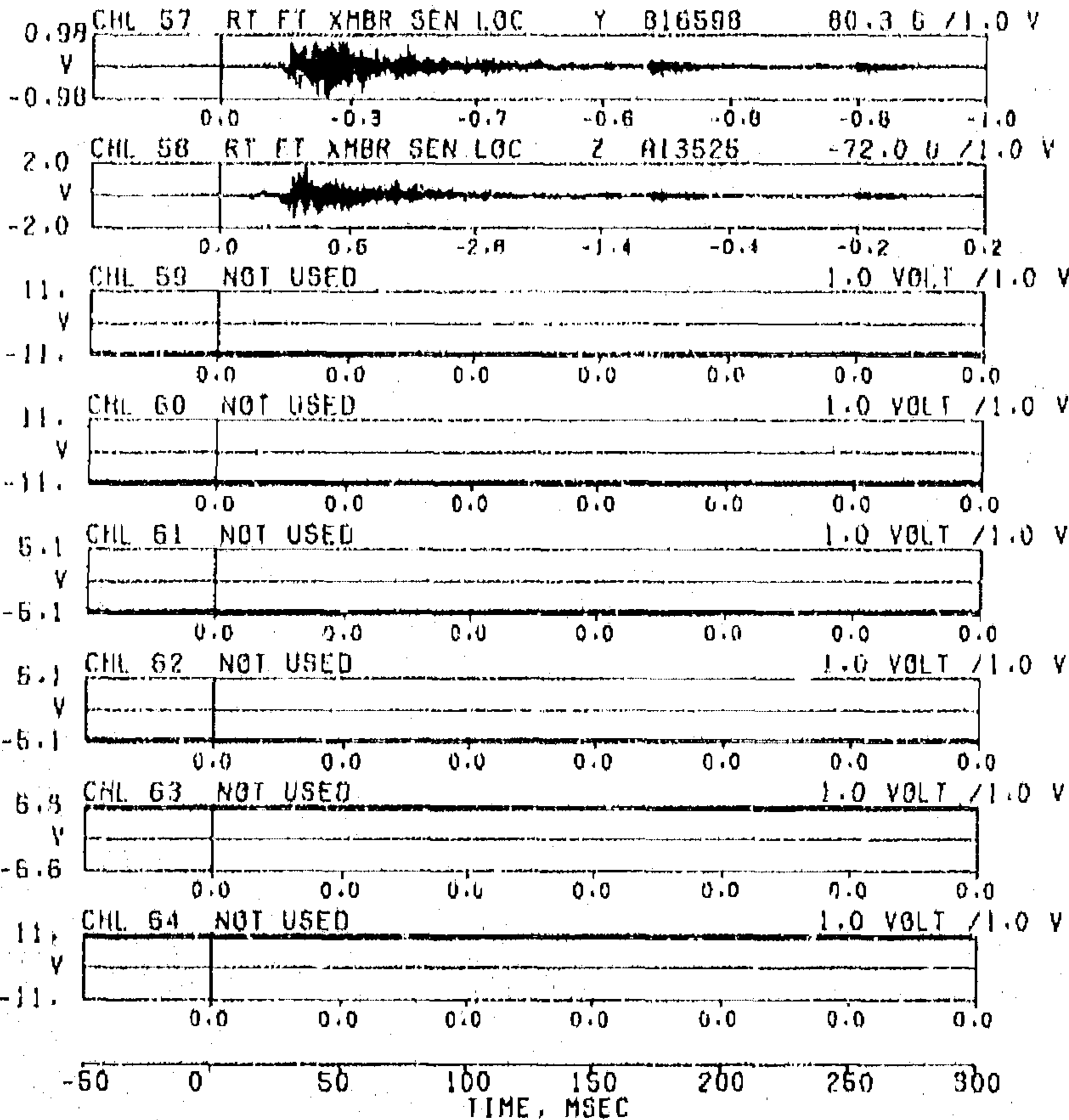
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 2002 HV38 301 REAR IMPACT DEVELOPMENT,
 IMPACT ANALYSIS DEPT. 6320
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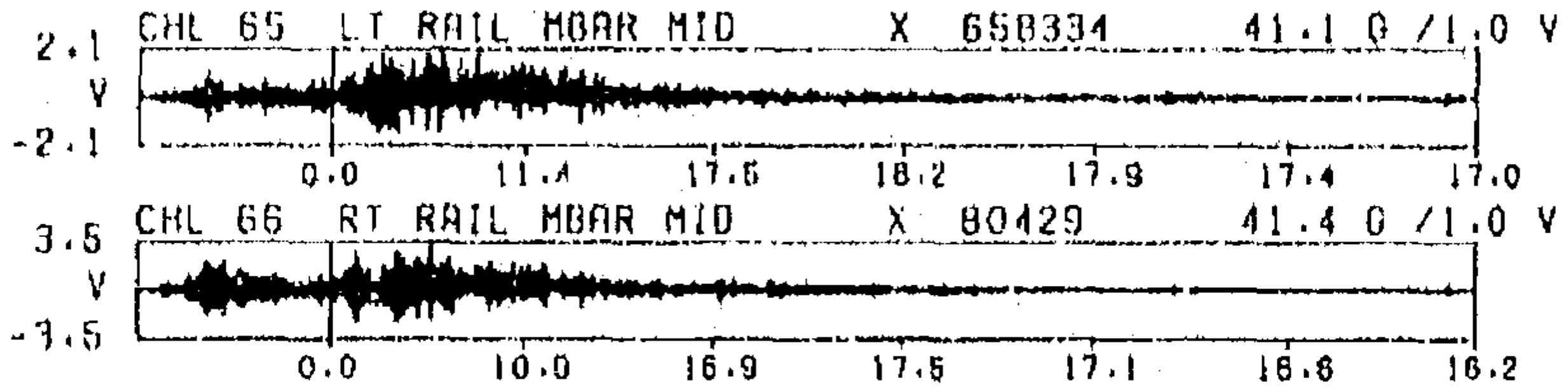
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TRANSDUCER SUMMARY REPORT

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 2002 MVSS 301 REAR IMPACT DEVELOPMENT.
 IMPACT ANALYSIS DEPT. 5320
 JUN 17, 1999

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 TIME MSEC

NOTE COMPUTED FIRST INTEGRAL VALUES ARE INDICATED BELOW EACH CHANNEL AND BRIDGED DATA IS INDICATED BY A -B-.

VC07623 30-MPH REAR MOVING BARRIER, KJ-J-74. ITEM KJ4003
2002 MY56 301 REAR IMPACT DEVELOPMENT.

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OF 096

AVERAGE OF

CHANNEL 041 LT FT SILL FWD ST XMBRX AP153
CHANNEL 043 RT FT SILL FWD ST XMBRX J13051
CHANNEL 049 LT RR SILL FWD ST XMBRX A14279
CHANNEL 051 RT RR SILL FWD ST XMBRX A13647

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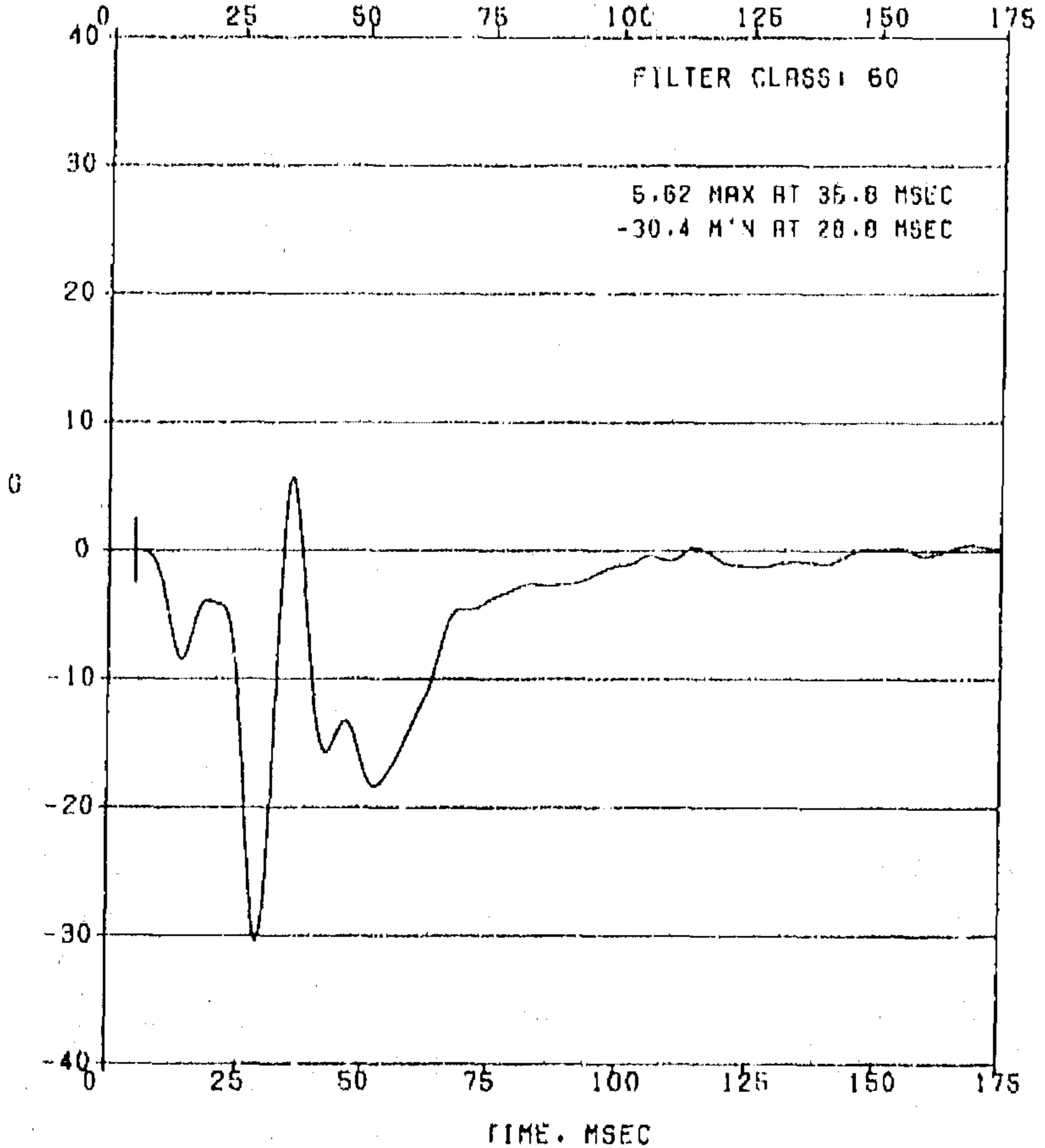
IMPACT ANALYSIS DEPT. 5320

DATA SET 06/16/99BT

JUN 17, 1999

ERRATA

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VC07B23 30-MPH REAR MOVING BARRIER, KJ-J-74. ITEM KJ4003
2002 HY88 301 REAR IMPACT DEVELOPMENT.

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AVERAGE OF

CHANNEL 041 LT FT SILL FWD ST XMRX RP153
CHANNEL 043 RT FT SILL FWD ST XMRX J13051

FILTER TYPE: DAE J2118/80 DC C60(IPF-R) EFF 3/24/86

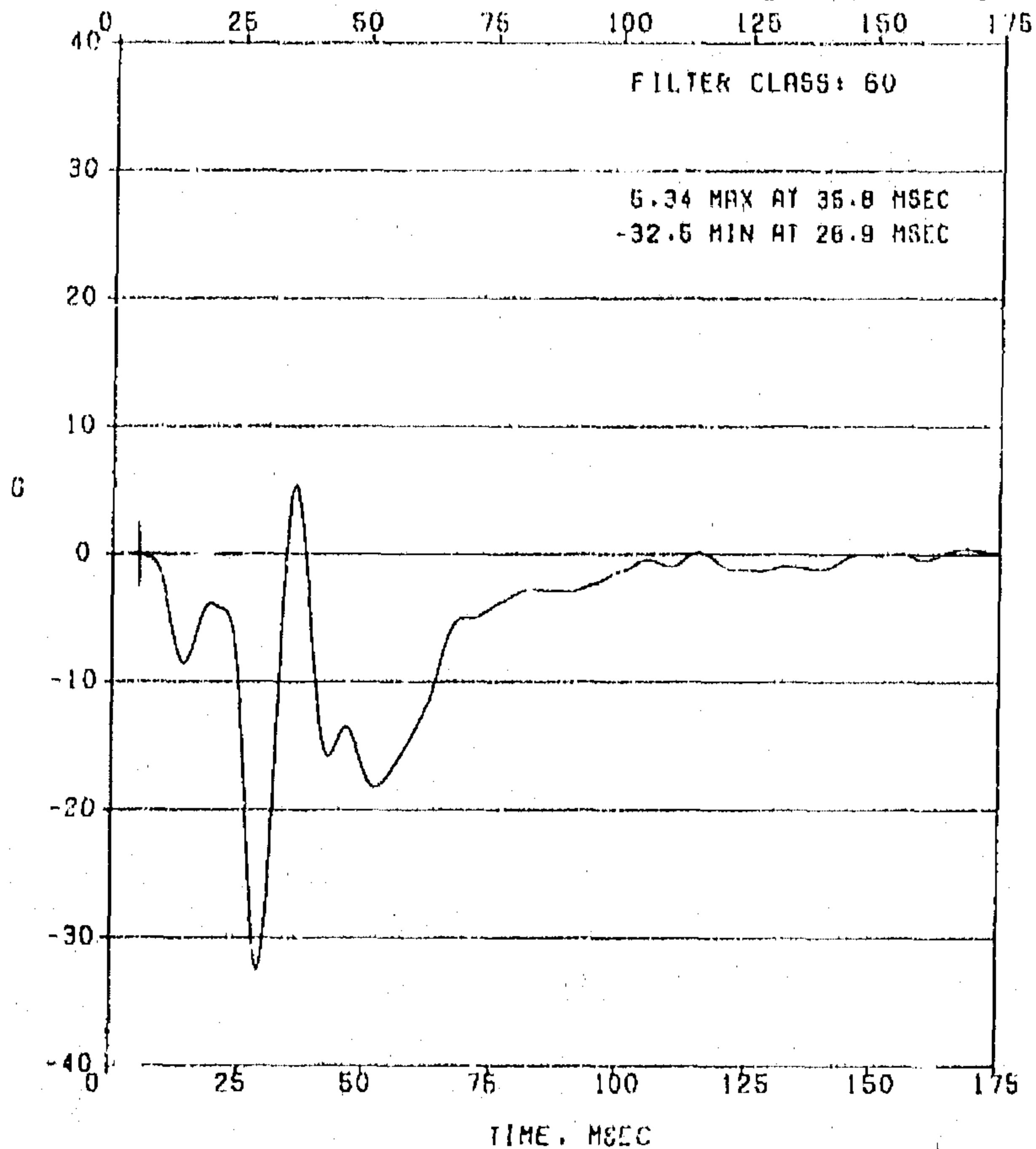
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DATA SET 06/16/99BT

JUN 17, 1999

ERRATA

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VC07623 30-MPH REAR MOVING BARRIER, KJ-J-74, ITEM KJ4009

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2002 MY88 801 REAR IMPACT DEVELOPMENT,

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CHANNEL 001 LEFT FRONT SILL X 311297

FILTER TYPE: 000HS-III RESPONSE CORRECTION, CLASS 1000 FILTER(1660)

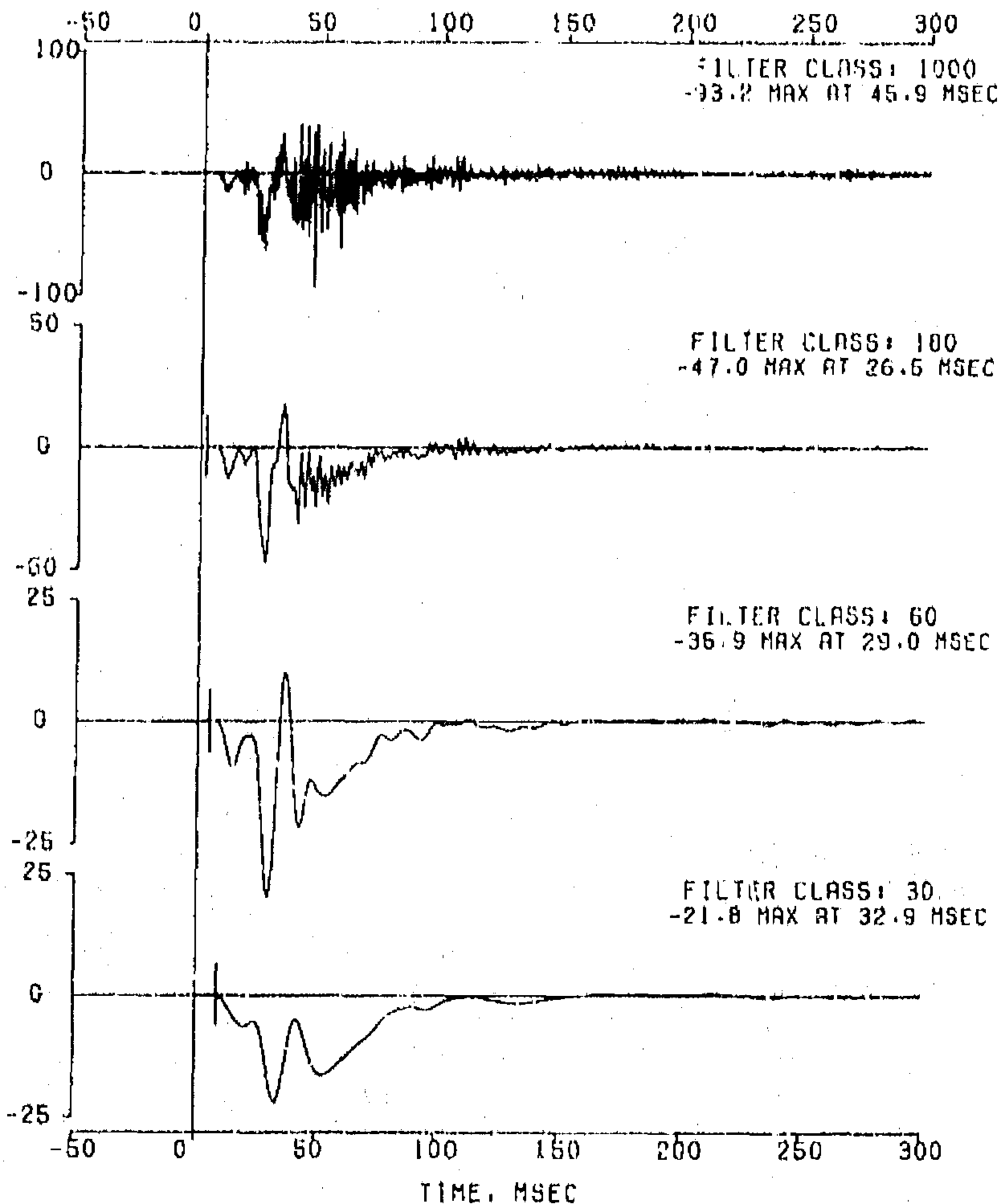
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DATA SET 08/16/99BR

JUN 17, 1999

ERRATA

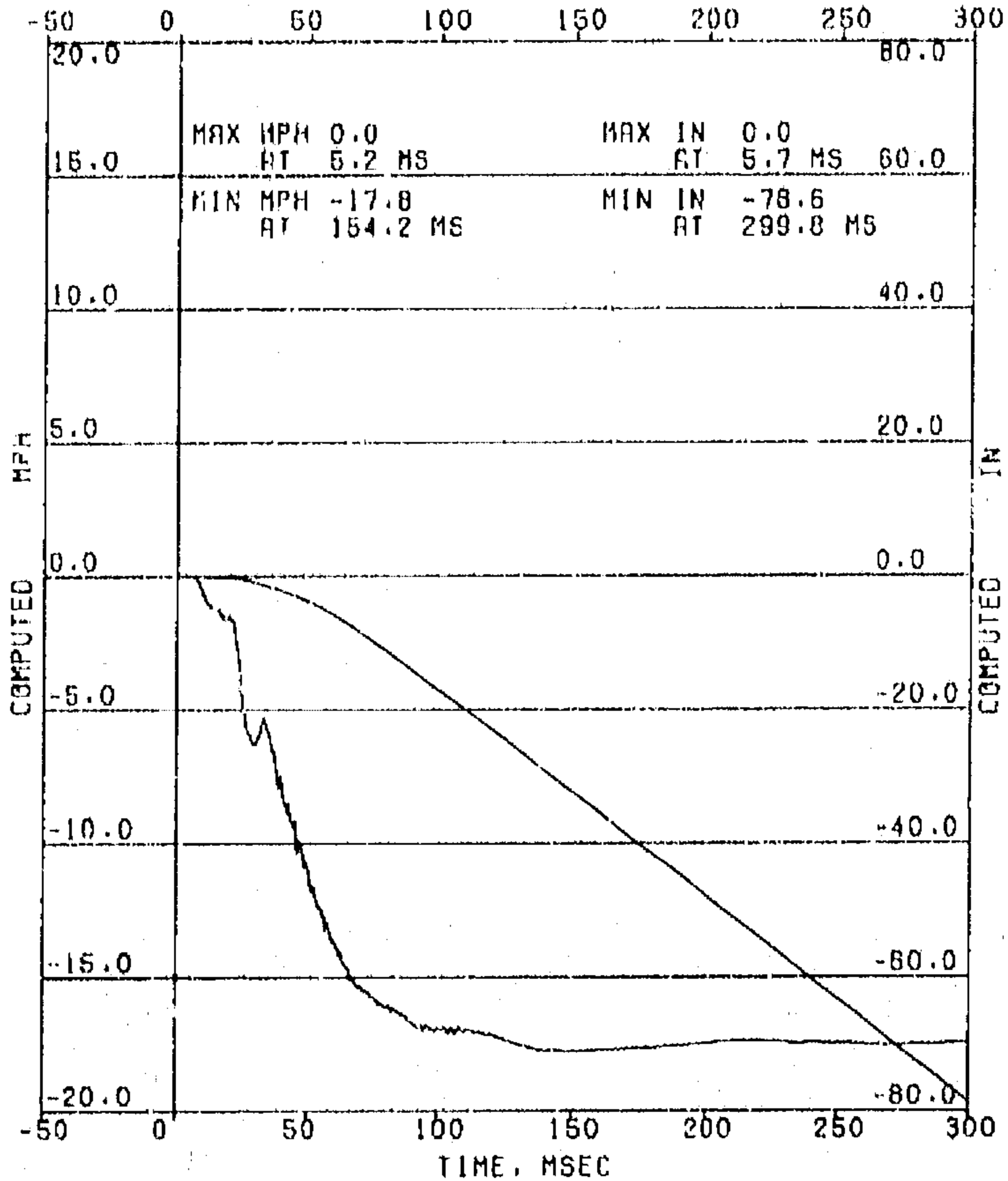
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IMPACT ANALYSIS DEPT. 5320
 JUN 17, 1999

DATA SET 06/16/99DR
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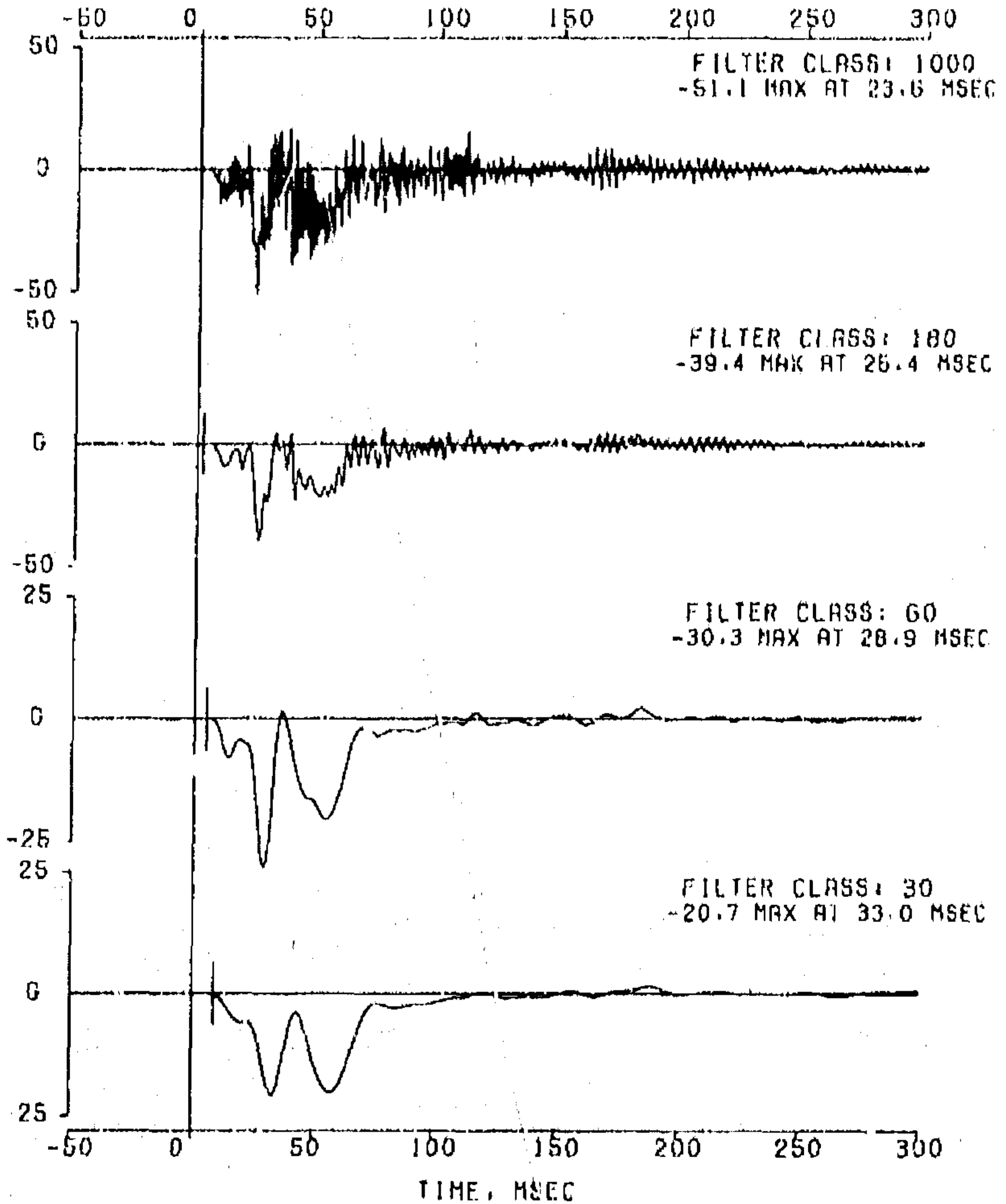


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 COMPUTED IN

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2002 HY88 301 REAR IMPACT DEVELOPMENT.
CHANNEL 002 RIGHT FRONT SILL X 277205
FILTER TYPE: OBDAS-III RESPONSE CORRECTION, CLASS 1000 FILTER(1660)
IMPACT ANALYSIS DEPT. 5320
JUN 17, 1999

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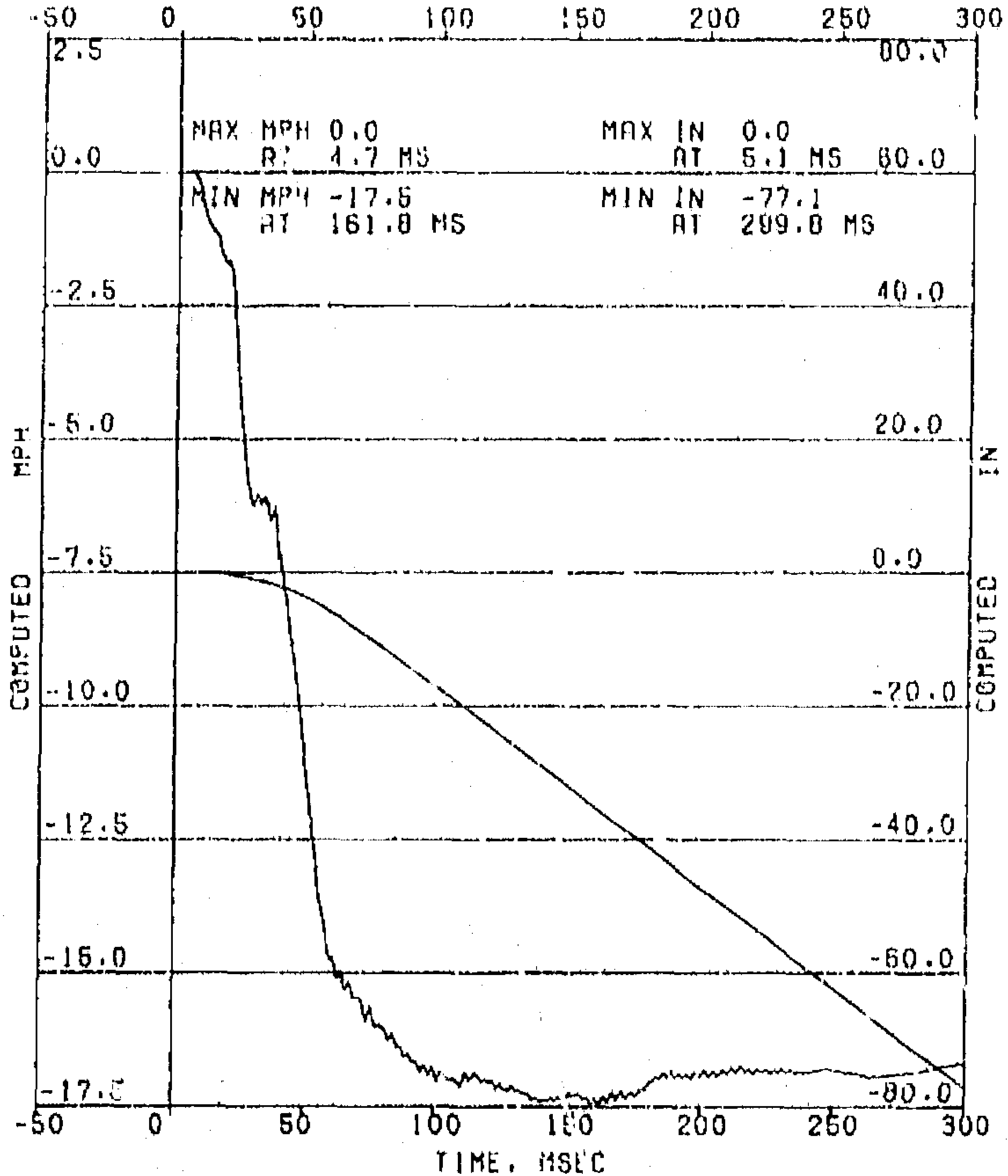
DATA SET 06/16/99OR
ERRATA 1



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IMPACT ANALYSIS DEPT. 5320
 JUN 17, 1999

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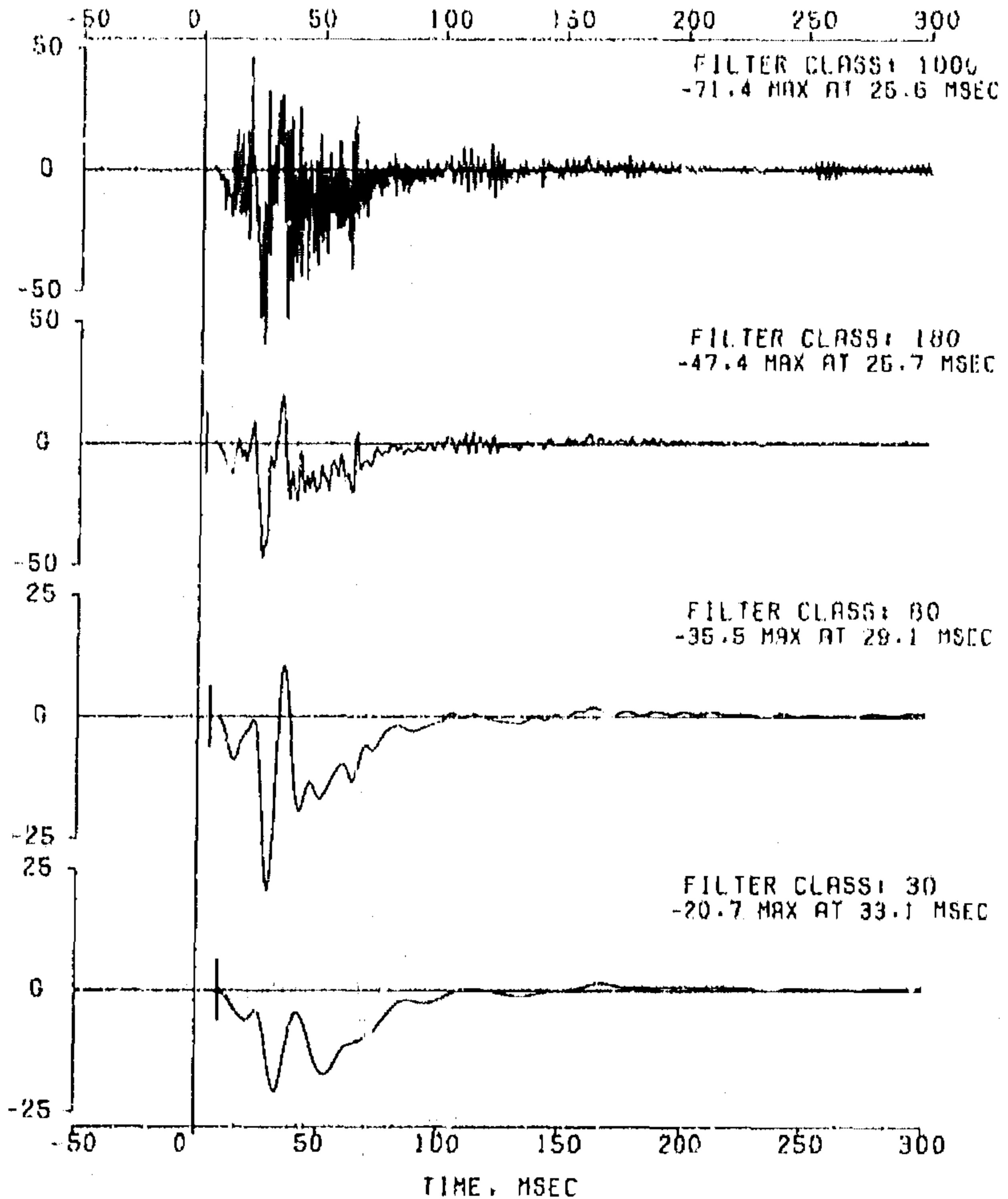


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2002 HY88 301 REAR IMPACT DEVELOPMENT.
CHANNEL 003 LEFT REAR FILL X 050343
FILTER TYPE: OBDAS-III RESPONSE CORRECTION, CLASS 1000 FILTER(1850)
IMPACT ANALYSIS DEPT. 5320
JUN 17, 1999

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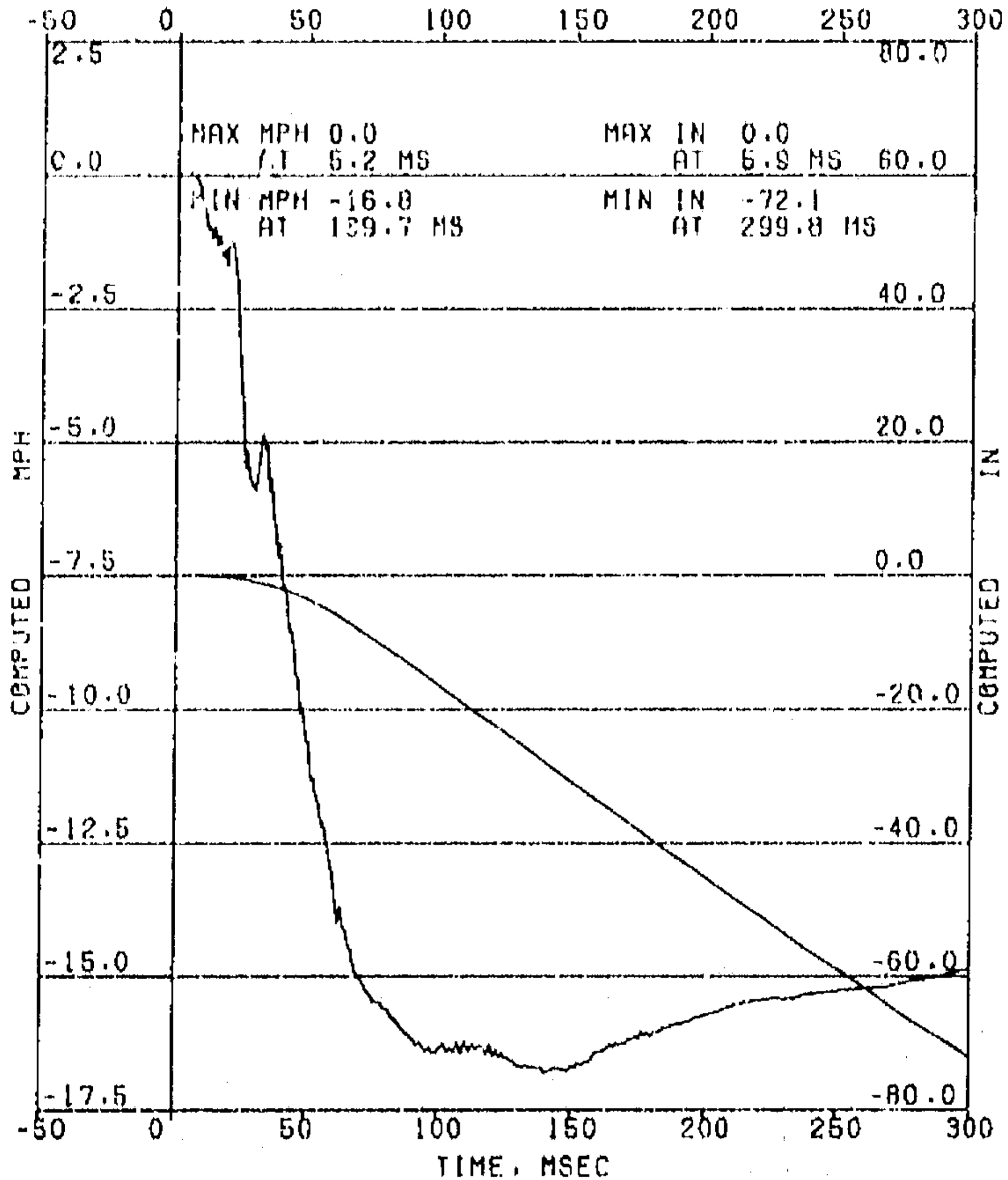
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IMPACT ANALYSIS DEPT. 5320
 JUN 17, 1999

DATA SET 06/16/99BR
 ERRATA 1

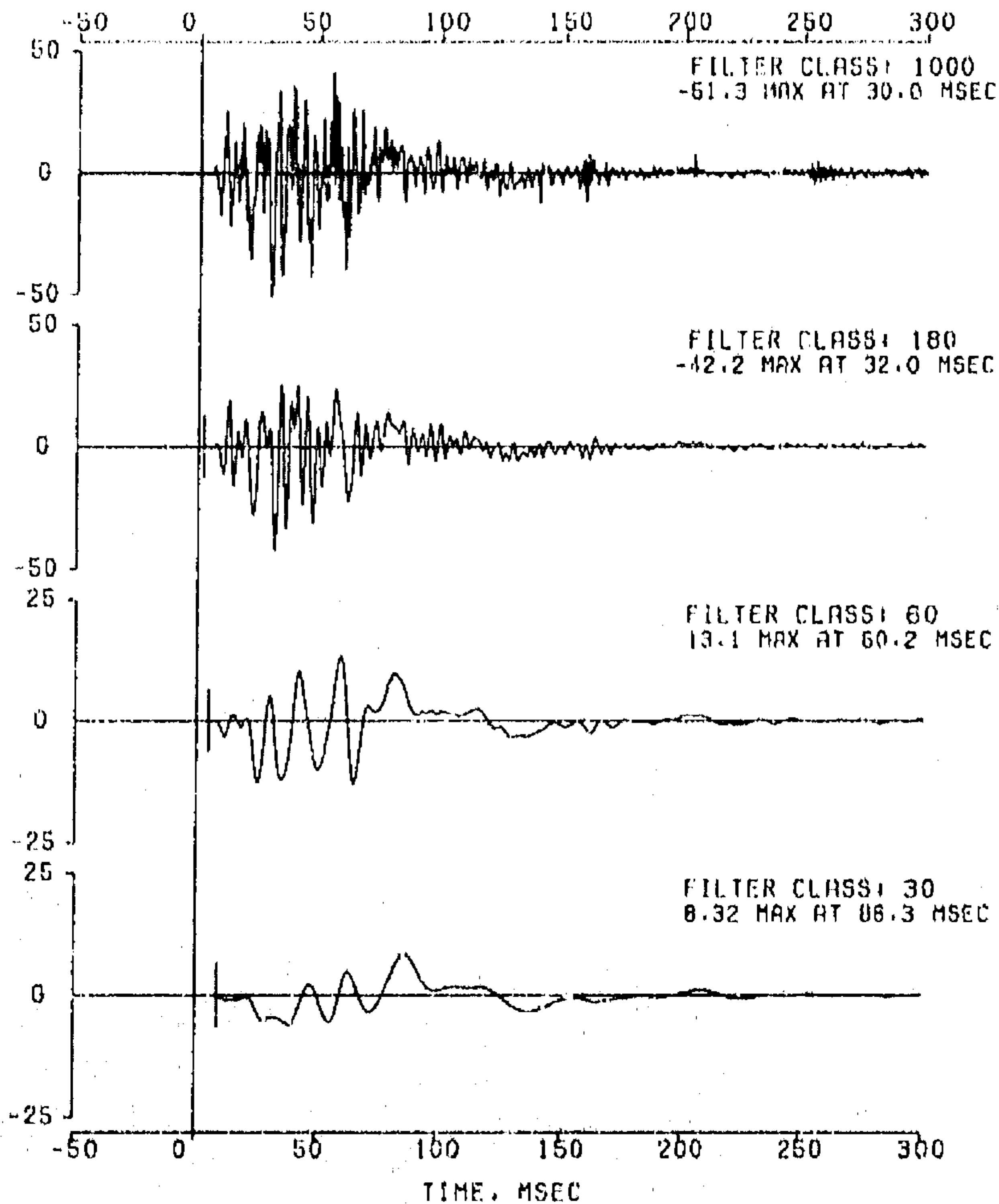


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2002 MY66 301 REAR IMPACT DEVELOPMENT,
CHANNEL 004 LEFT REAR SILL Z 811939
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IMPACT ANALYSIS DEPT. 5320
JUN 17, 1999

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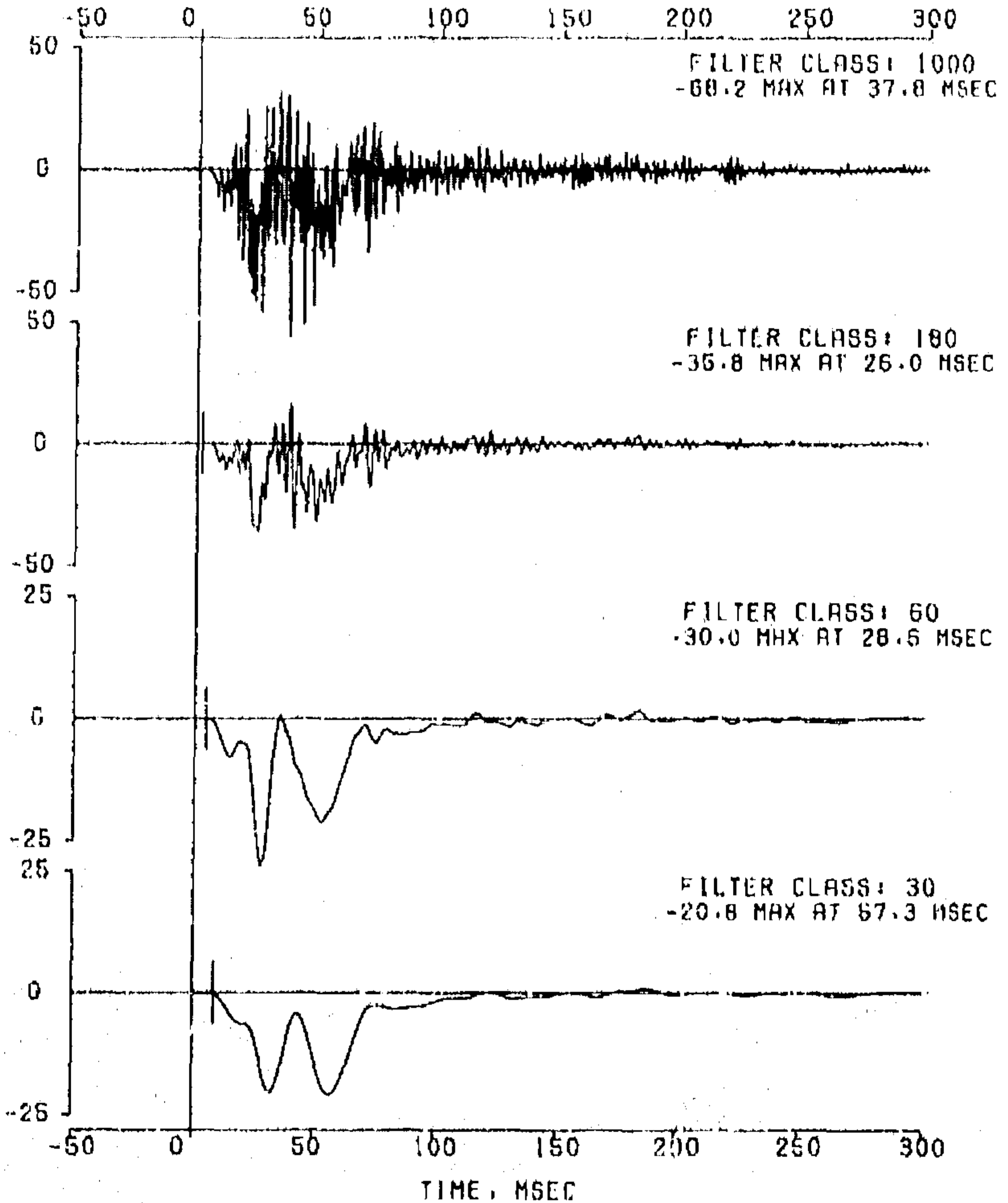
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ERRATA 1



VC07323 30-MPH REAR MOVING BARRIER, NJ-J-74, ITEM KJ4003
2002 HY88 301 REAR IMPACT DEVELOPMENT,
CHANNEL 005 RIGHT REAR BOLL X 611922
FILTER TYPE: 08DAS-III RESPONSE CORRECTION, CLASS 1000 FILTER(1860)
IMPACT ANALYSIS DEPT, 6320
JUN 17, 1999

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DATA SET 06/16/99BR
ERRATA 1



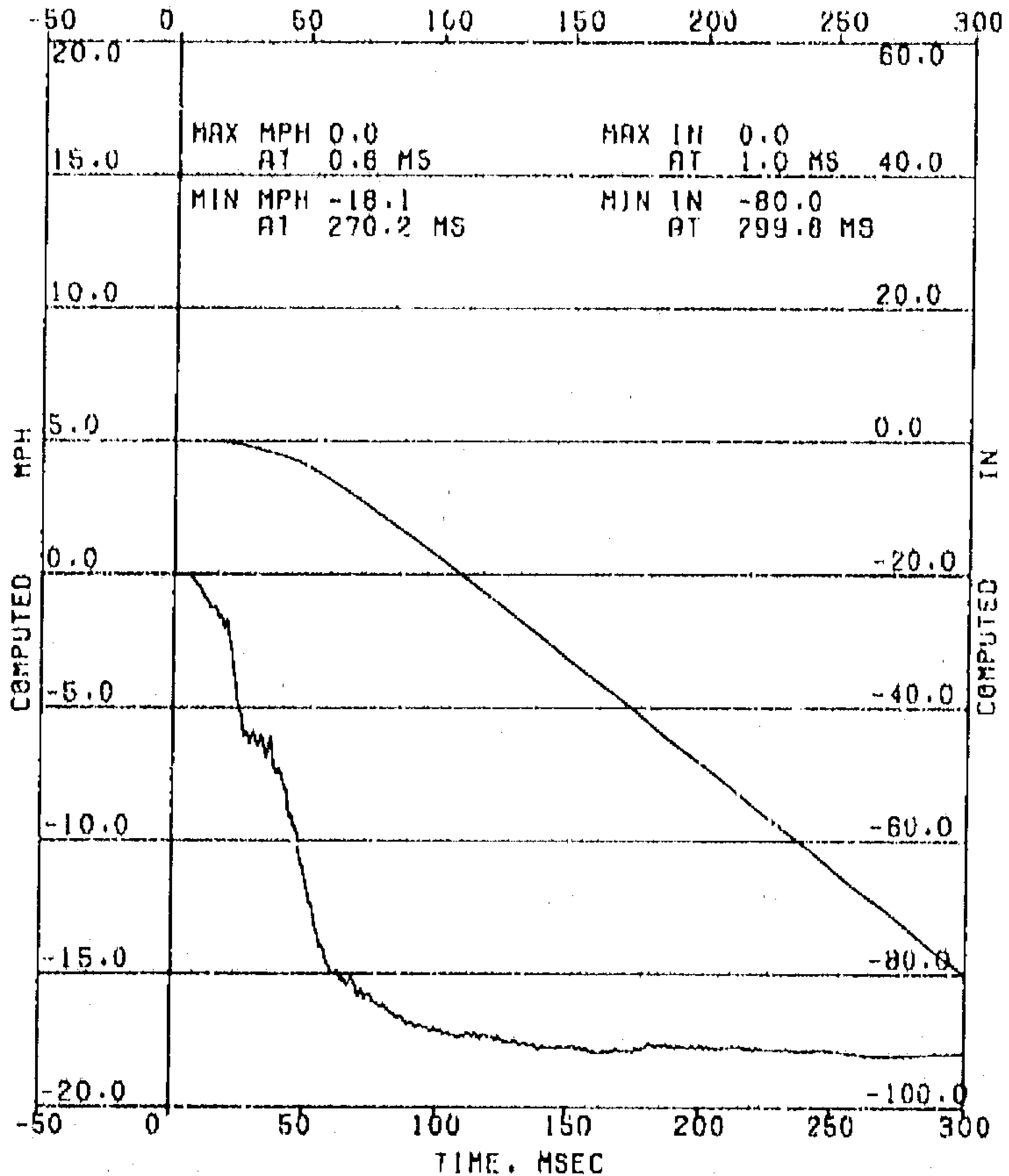
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 2002 HYBR 301 REAR IMPACT DEVELOPMENT,
 CHANNEL 005 RIGHT REAR SILL X 611922

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FILTER TYPE: OBDAS-III RESPONSE CORRECTION, CLASS 1000 FILTER (1650)
 FILTER CLASS: 1000

IMPACT ANALYSIS DEPT. 5320
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DATA SET 08/16/99BR
 ERRATA 1



COMPUTED MPH
 COMPUTED IN

YCU7023 30-MPH REAR MOVING BARRIER, KJ-J-74, ITEM KJ4003

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2002 MY88 301 REAR IMPACT DEVELOPMENT,

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CHANNEL 006 RIGHT REAR SILL Z 14552

FILTER TYPE: 080A8-III RESPONSE CORRECTION, CLASS 1000 FILTER(1050)

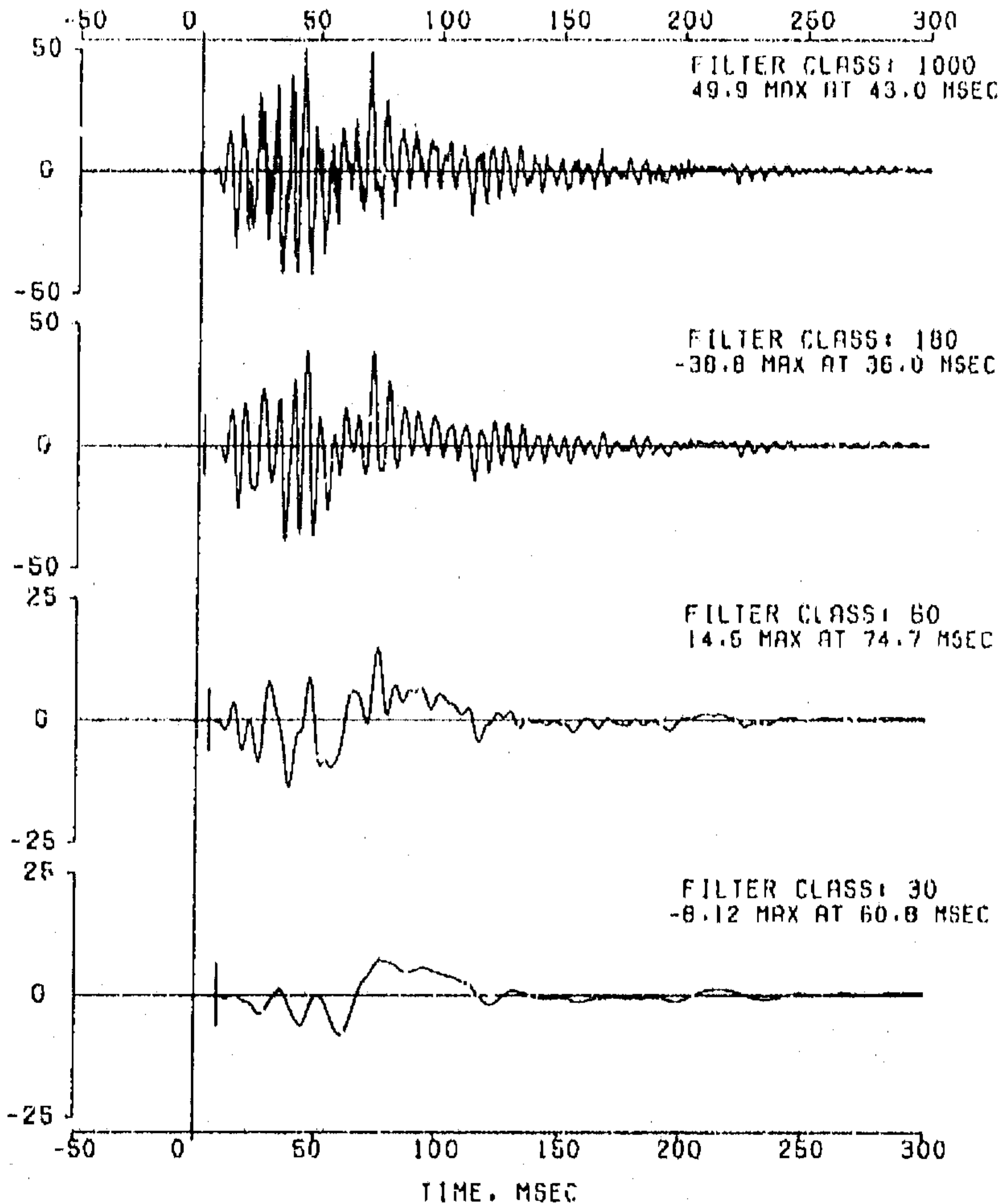
IMPACT ANALYSIS DEPT. 6320

DATA SET 06/16/99BR

JUN 17, 1999

ERRATA

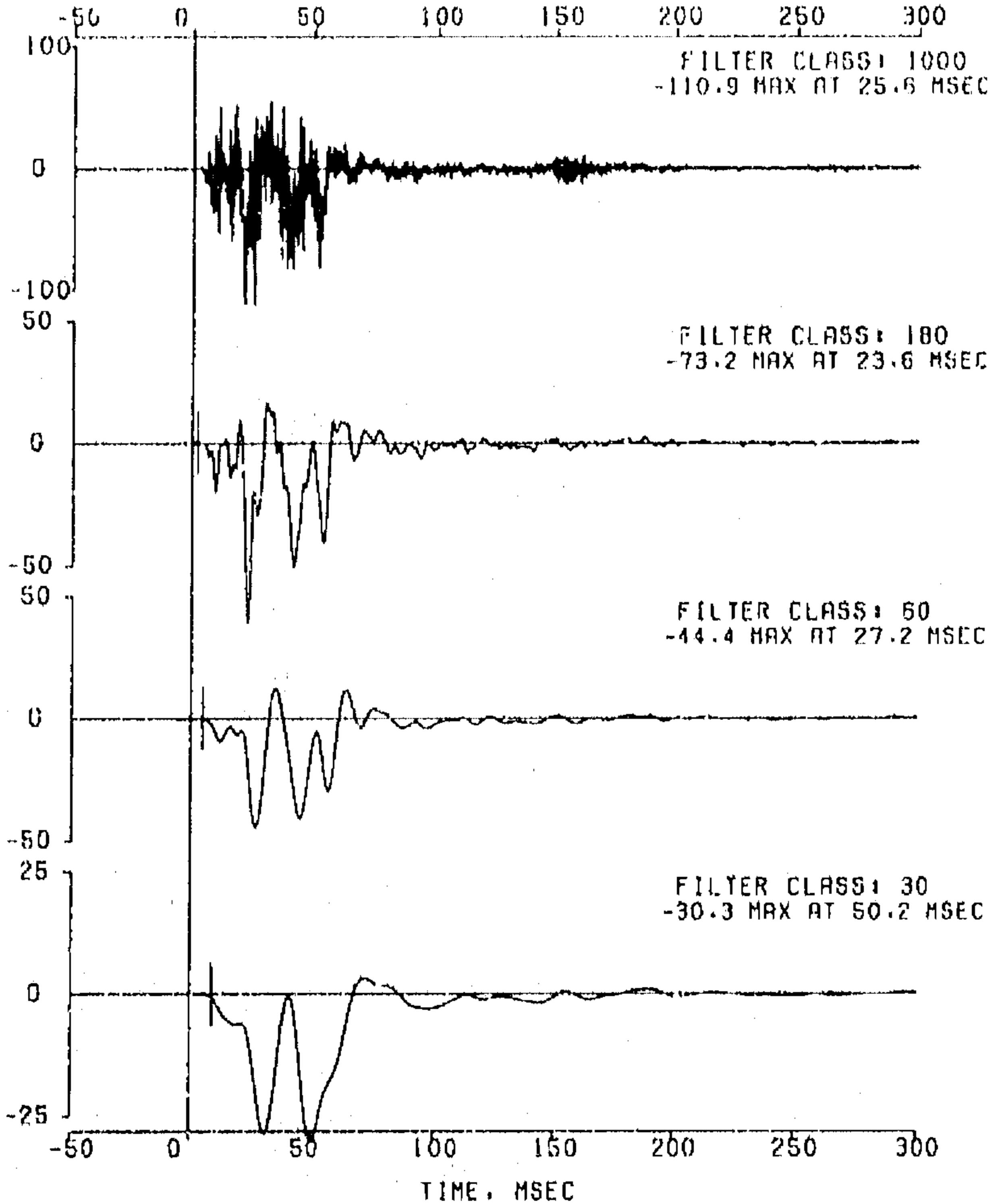
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VC07823 30-MPH REAR MOVING BARRIER, KJ-1-74, ITEM KJ4003
2002 MY85 301 REAR IMPACT DEVELOPMENT.
CHANNEL 007 RT REAR RAIL MID TANK X J20000
FILTER TYPE: OBDAS-111 RESPONSE CORRECTION, CLASS 1000 FILTER(1650)
IMPACT ANALYSIS DEPT. 6320
JUN 17, 1999

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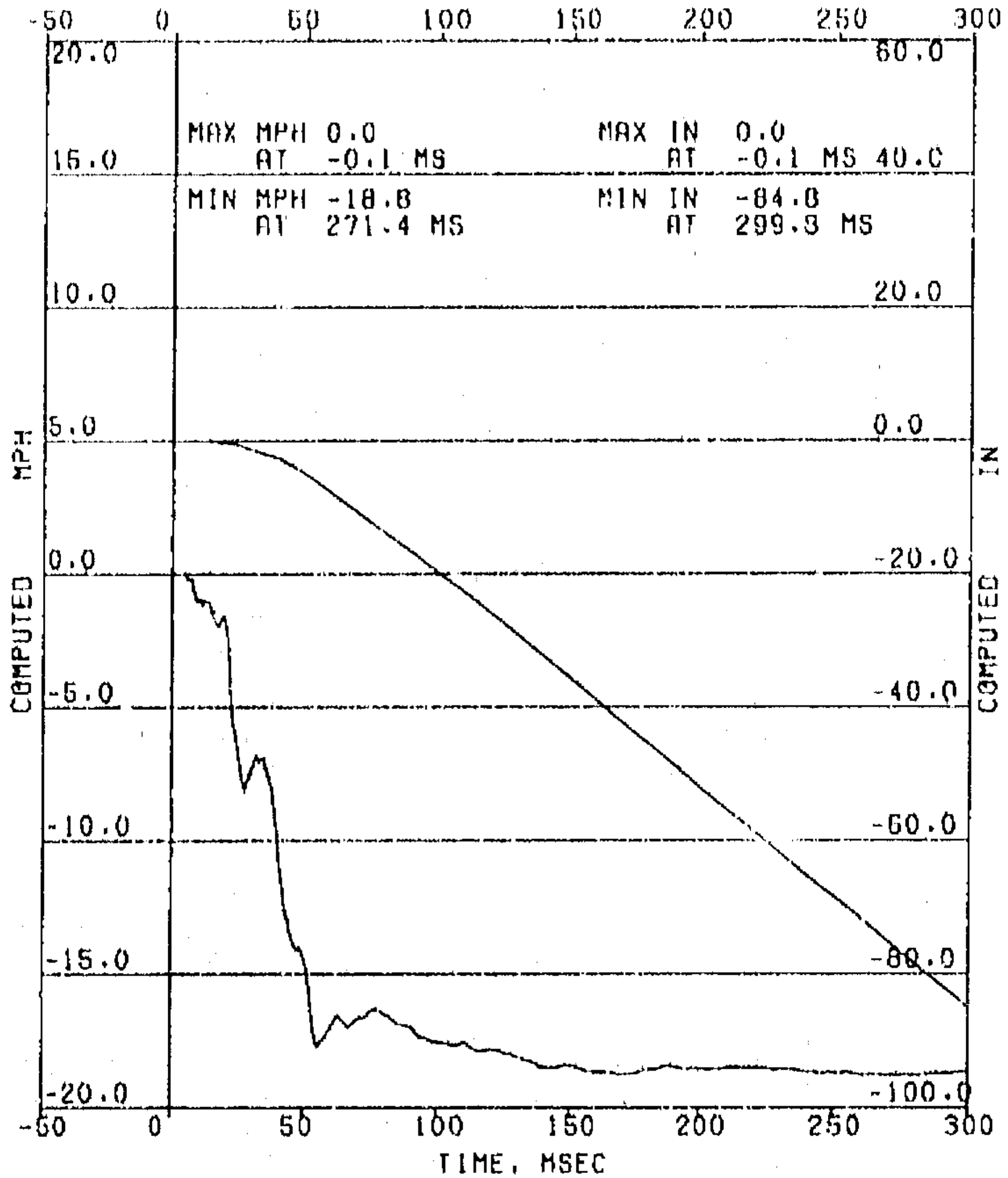
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IMPACT ANALYSIS DEPT. 5320
JUN 17, 1999

DATA SET 06/16/99BR
ERRATA 1

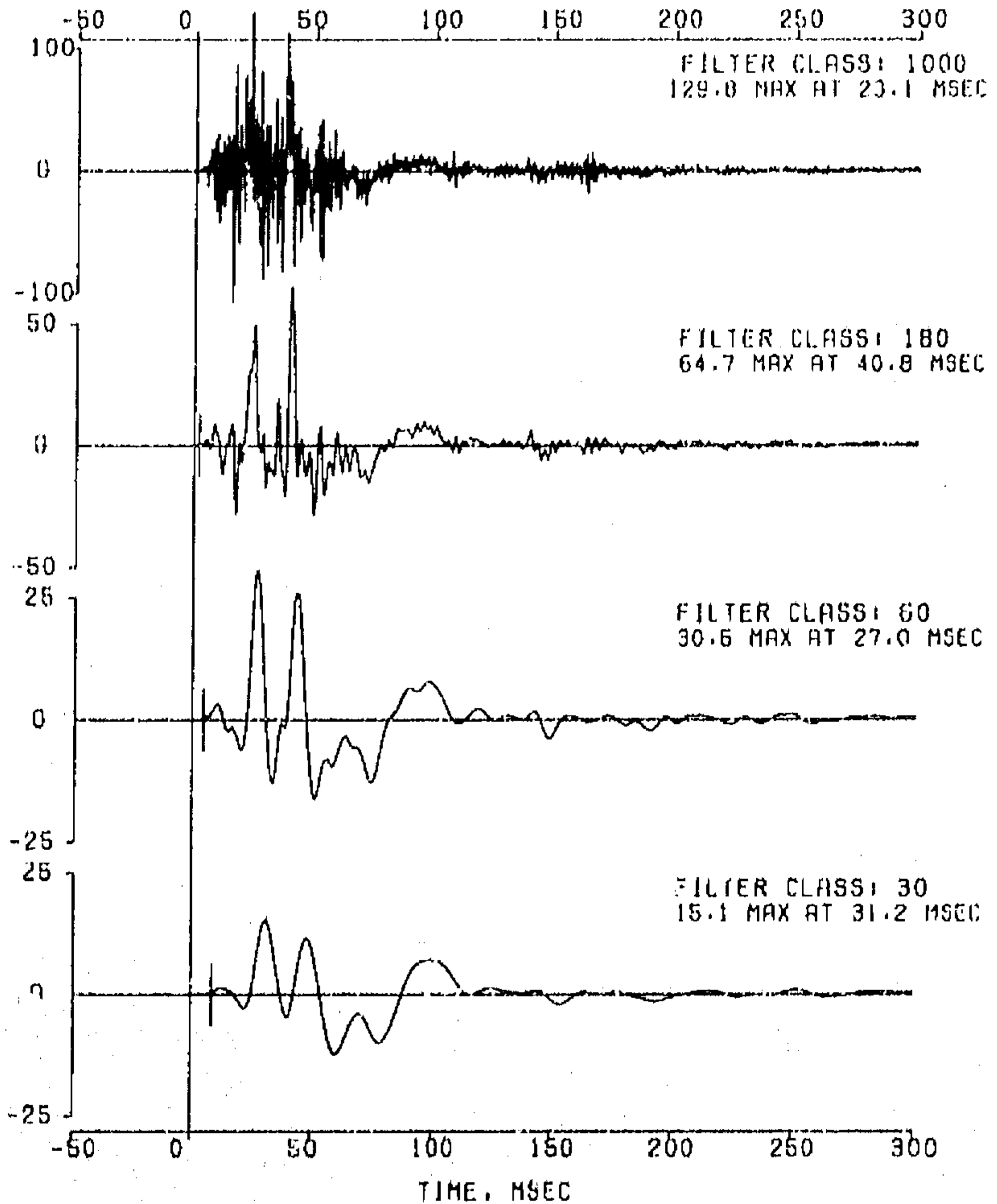


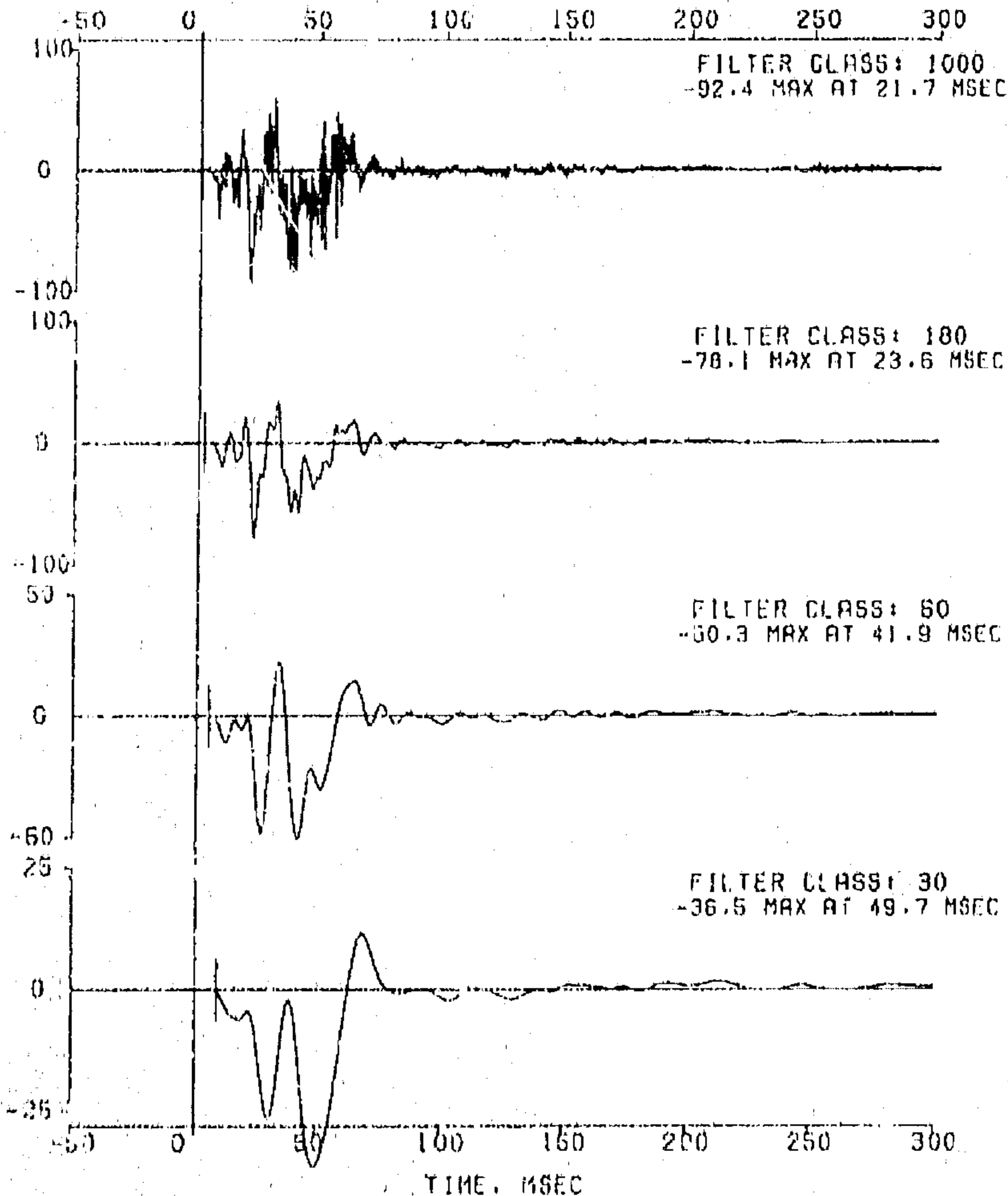
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COMPUTED IN

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2002 MY88 301 REAR IMPACT DEVELOPMENT.
CHANNEL 008 AT REAR RAIL MID TANK 2 J10387
FILTER TYPE: 080A8-111 RESPONSE CORRECTION, CLASS 1000 FILTER(1850)
IMPACT ANALYSIS DEPT. 5320
JUN 17, 1999

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DATA SET 08/16/99BR
ERRATA 1

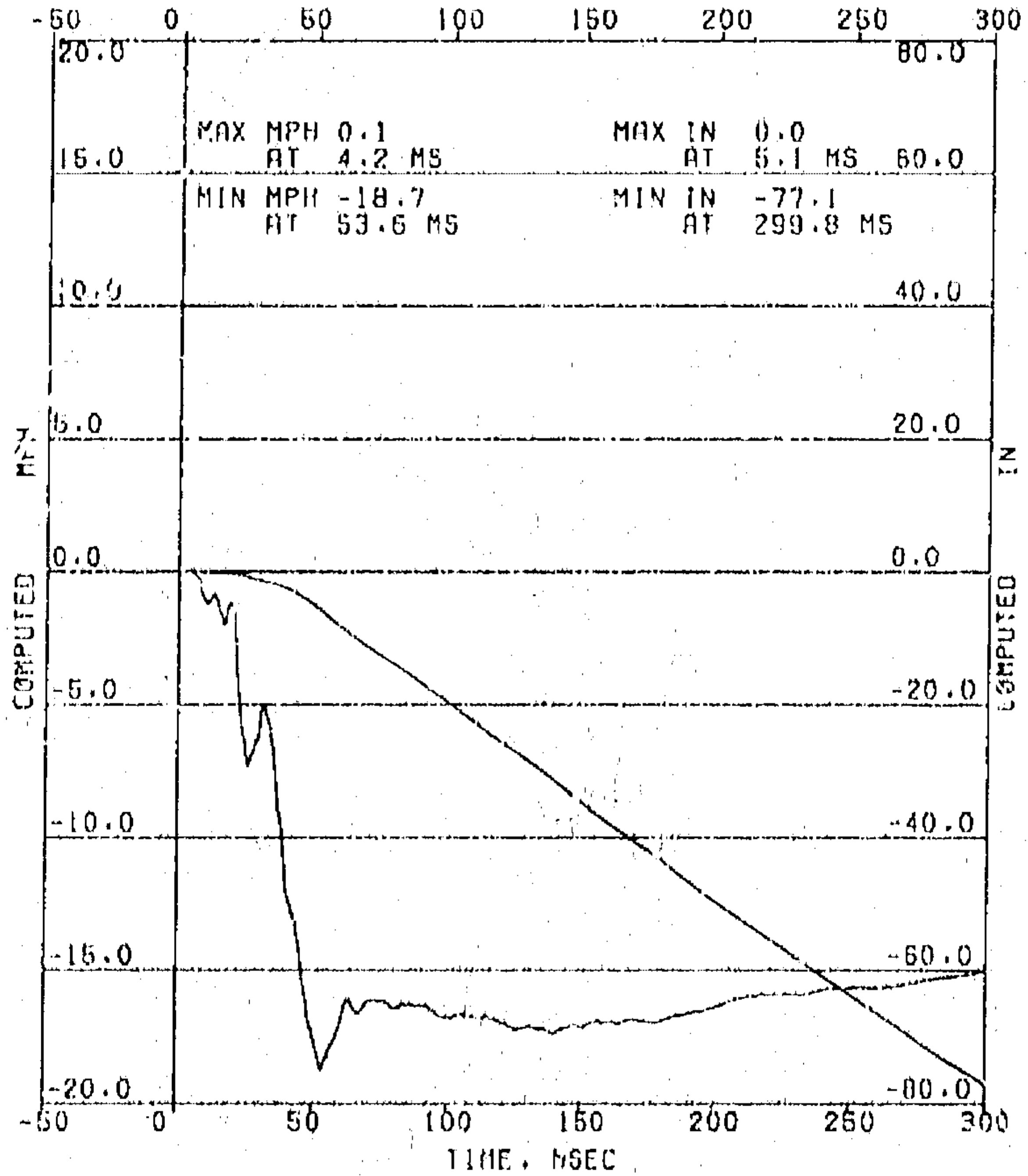




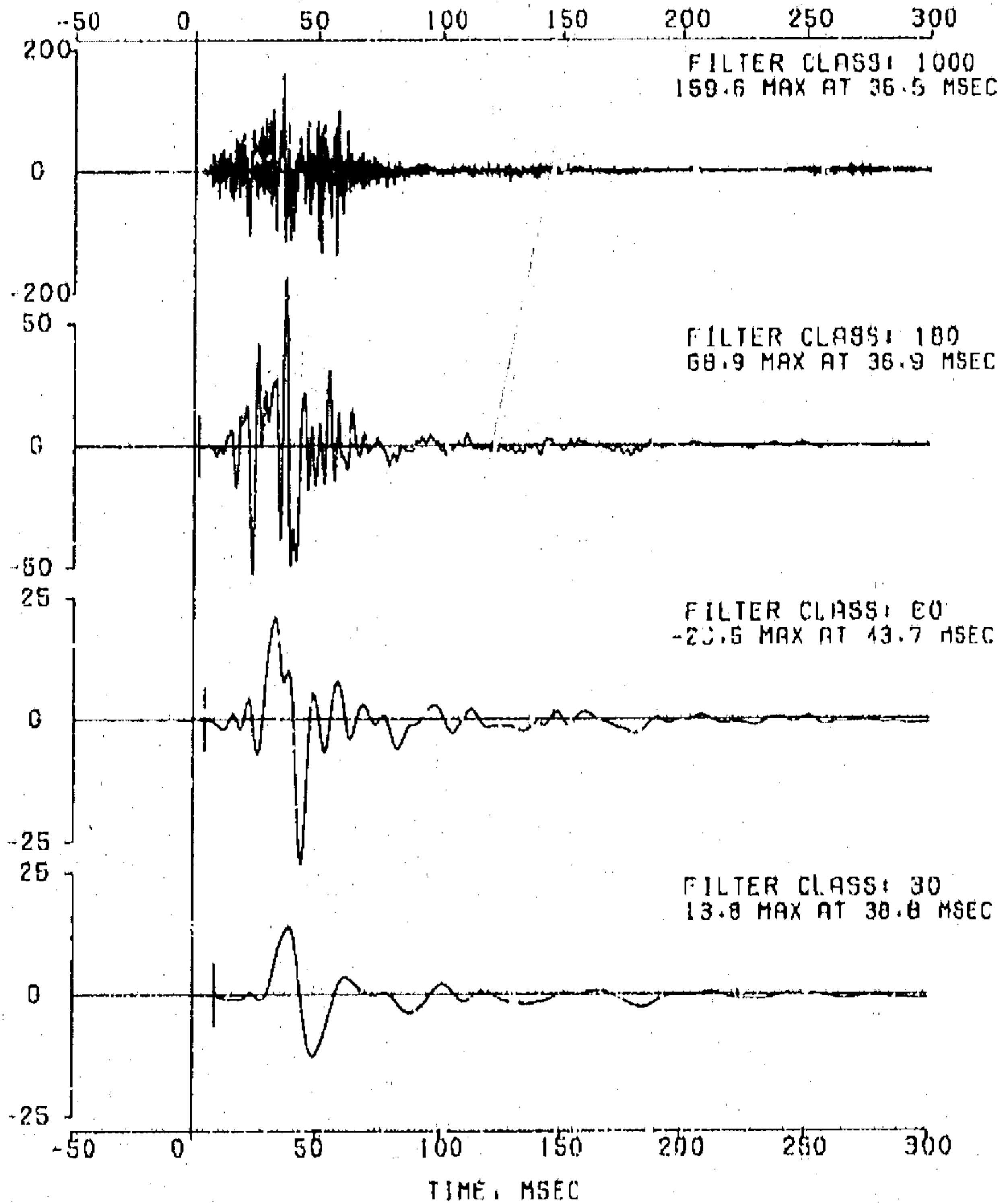
FILTER TYPE: 000A6-111 RESPONSE CORRECTION, CLASS 1000 FILTER(1650)
 FILTER CLASS: 1000

IMPACT ANALYSIS DEPT. 5320
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DATA SET 06/16/99BR
 ERRATA 1



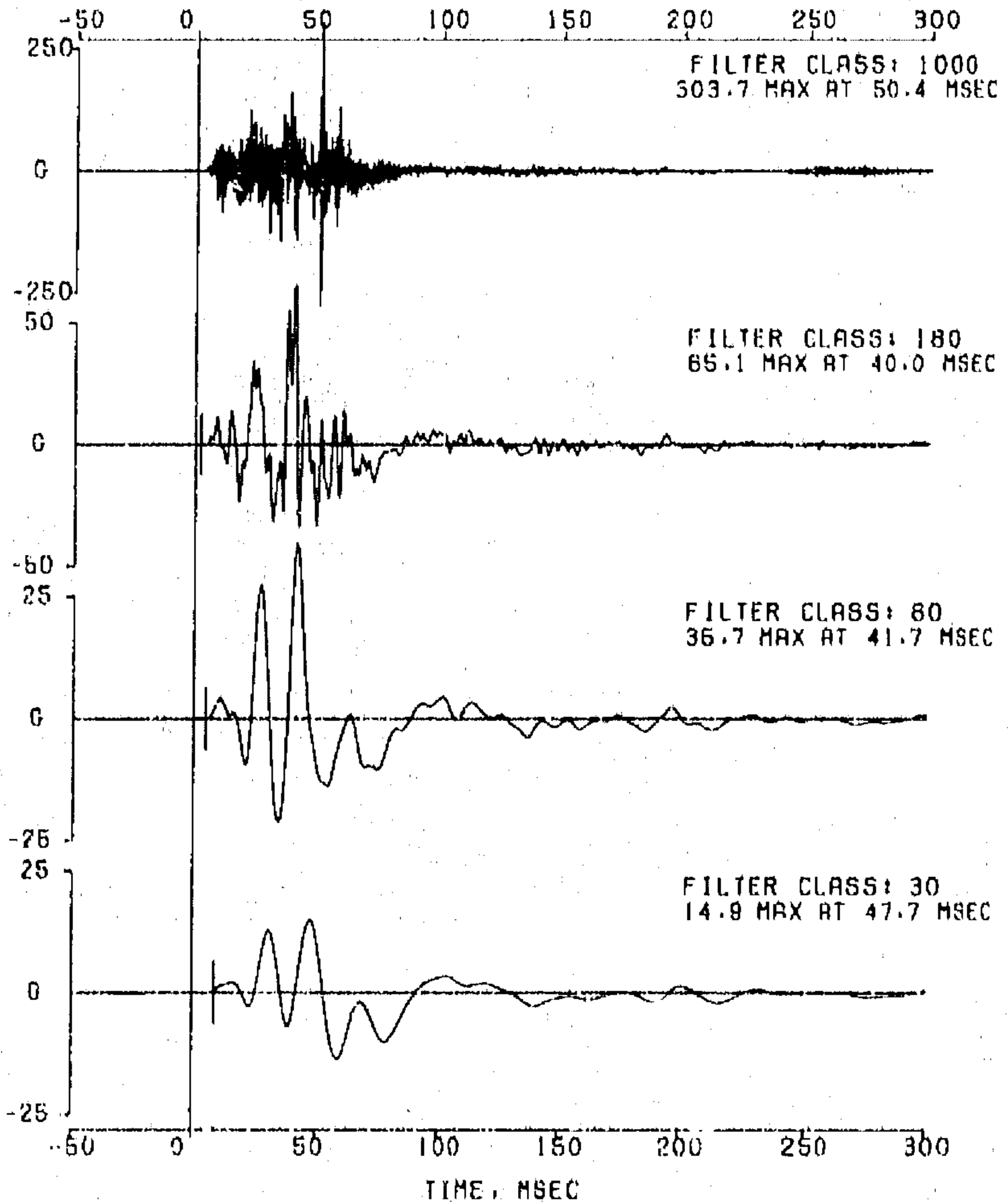
COMPUTED MPH
 COMPUTED IN



VC07823 30-MPH REAR MOVING BARRIER, KJ-J-74, ITEM KJ4003
2002 MYSS 301 REAR IMPACT DEVELOPMENT.
CHANNEL 011 LT REAR RAIL MID TANK Z A14427
FILTER TYPE: OBDAS-111 RESPONSE CORRECTION, CLASS 1000 FILTER(1680)
IMPACT ANALYSIS DEPT. 5320
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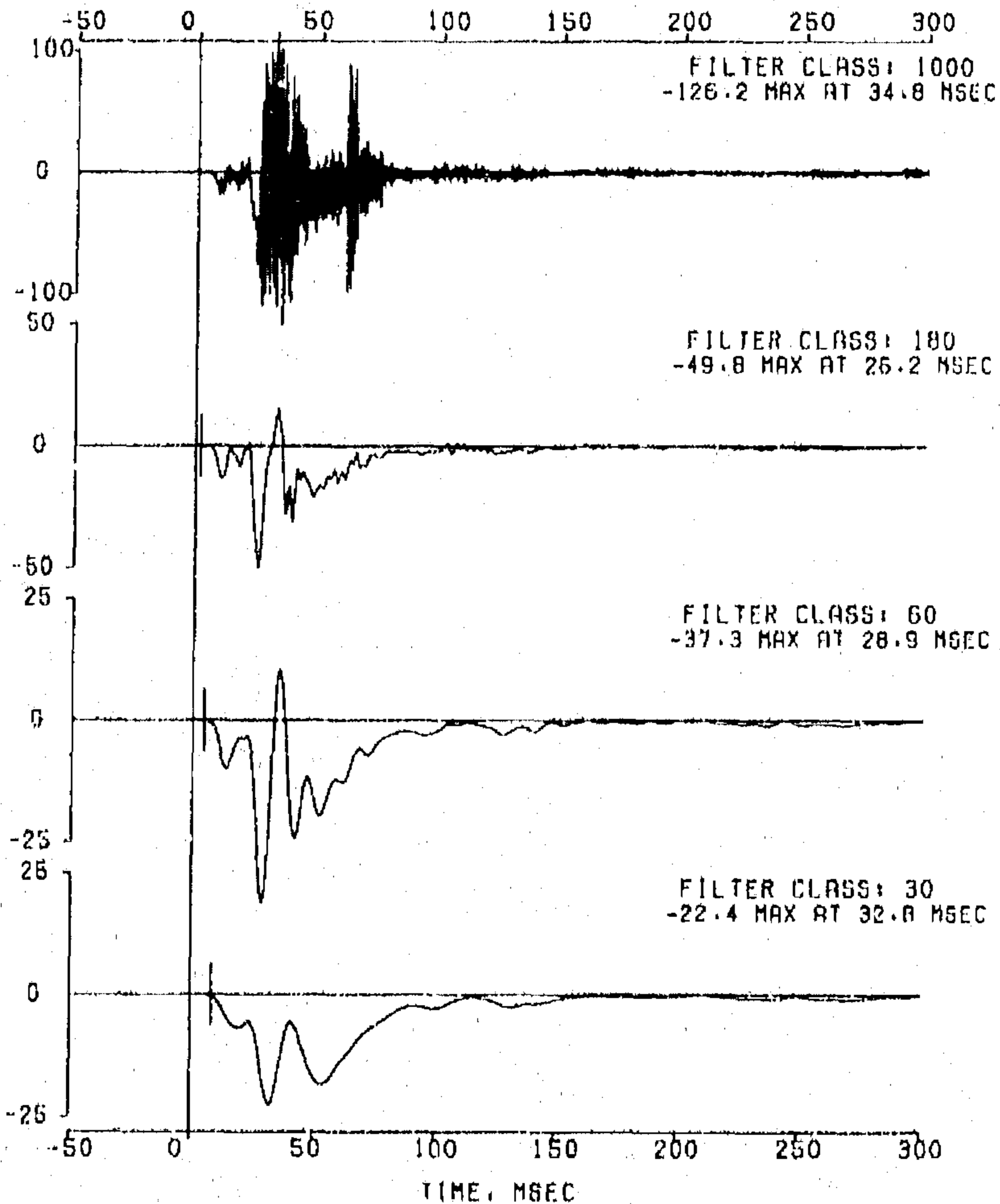
DATA SET 06/18/99BR
ERRATA 1



VC07G23 30-MPH REAR MOVING BARRIER, KJ-J-74, ITEM KJ4003
2002 MV09 301 REAR IMPACT DEVELOPMENT,
CHANNEL 012 LT RAIL TRANS X/1BR X 14424
FILTER TYPE: QBDAS-III RESPONSE CORRECTION, CLASS 1000 FILTER(1650)
IMPACT ANALYSIS DEPT. 5320
JUN 17, 1999

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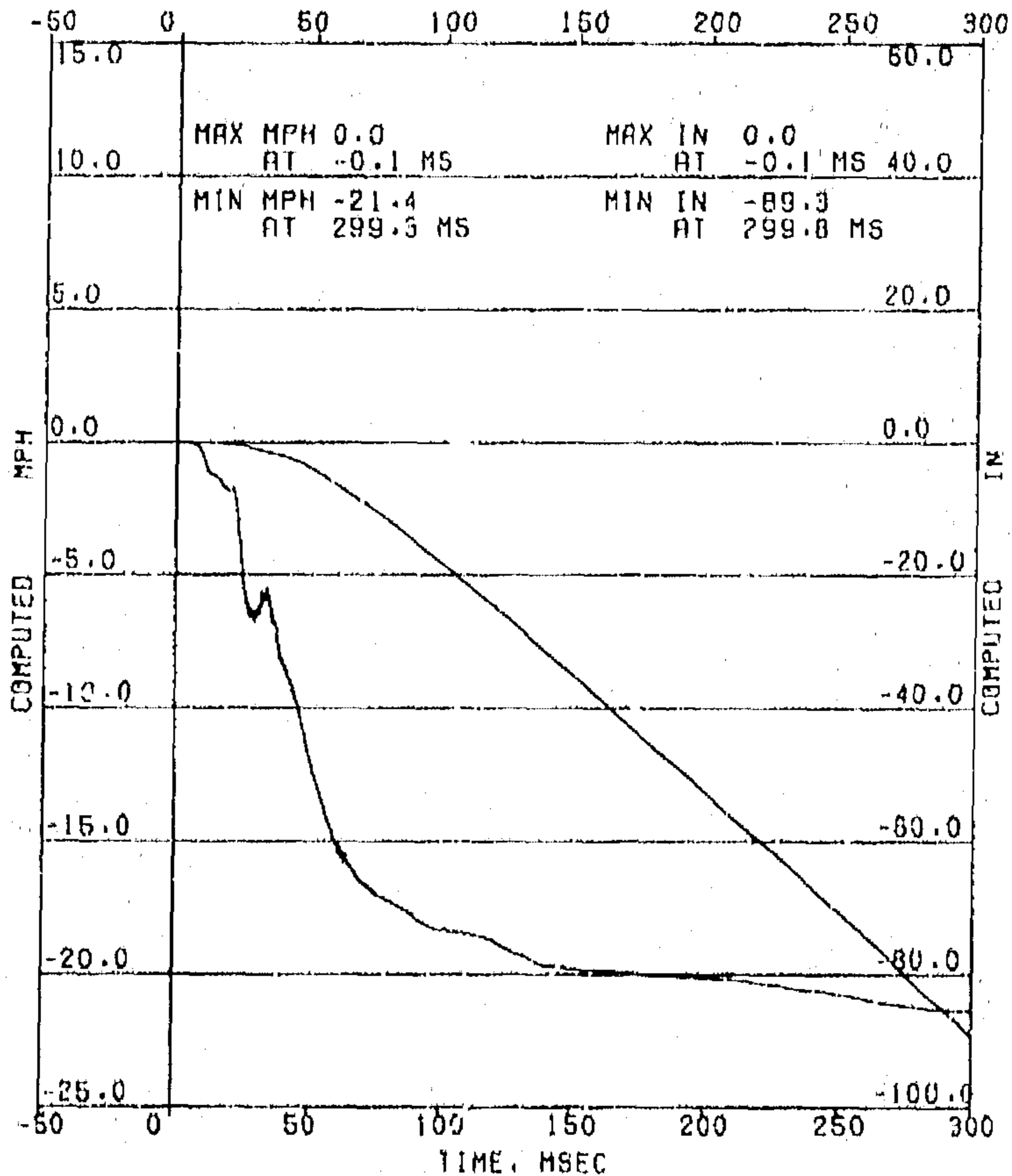
DATA SET 06/16/99BR
ERRATA 1



FILTER TYPE: 080AS-111 RESPON CORRECTION, CLASS 1000 FILTER(1650)
 FILTER CLASS: 1000

IMPACT ANALYSIS DEPT. 5320
 JUN 17, 1999

DATA SET 06/16/99BR
 ERRATA 1

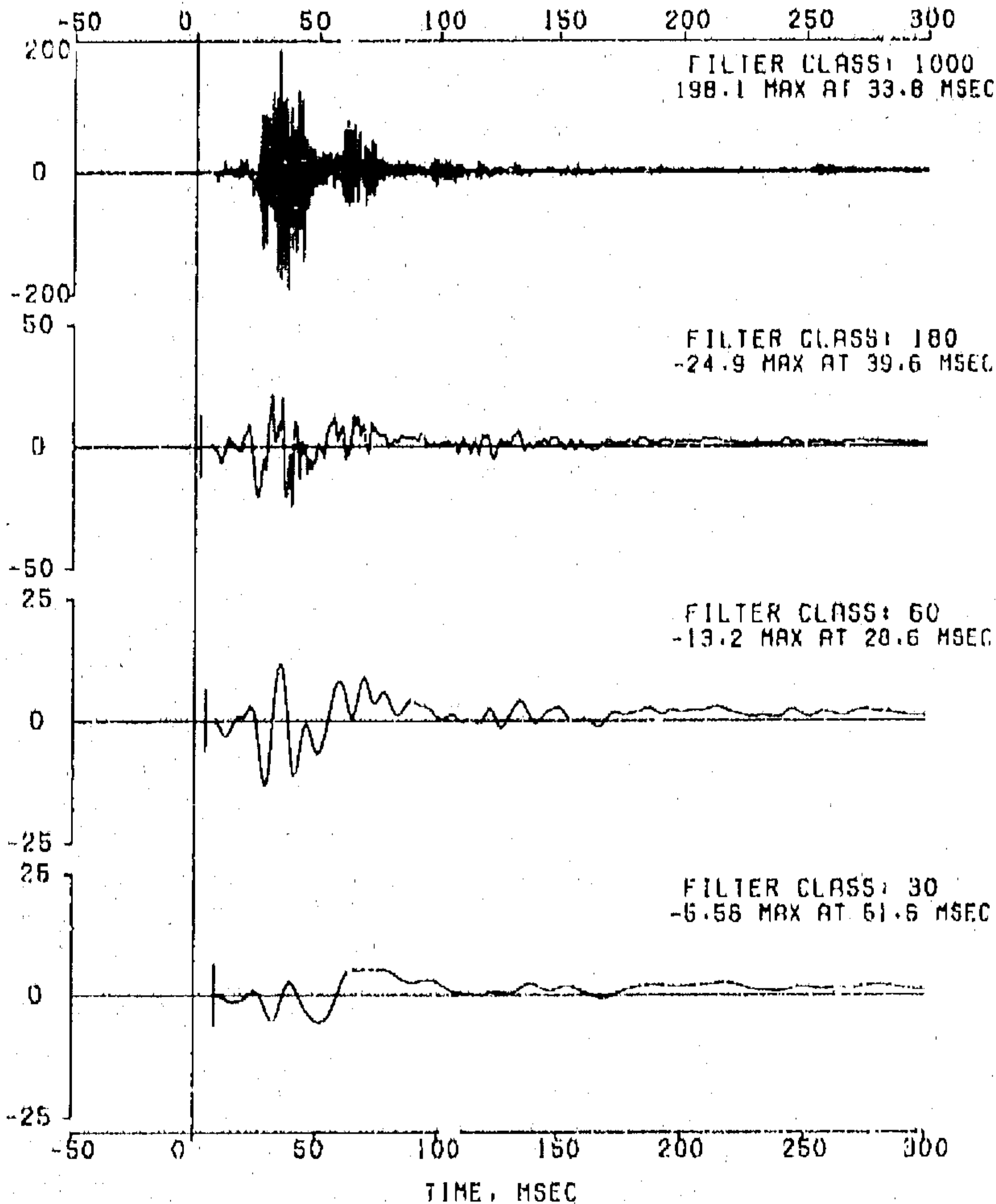


COMPUTED MPH
 COMPUTED IN

VC07623 30-MPH REAR MOVING BARRIER, KJ-J-74, ITEM KJ4003
2002 MY58 301 REAR IMPACT DEVELOPMENT.
CHANNEL 013 LT RAIL TRANS X/MBR Z 510105
FILTER TYPE: OBDAS-111 RESPONSE CORRECTION, CLASS 1000 FILTER(1650)
IMPACT ANALYSIS DEPT. 5320
JUN 17, 1999

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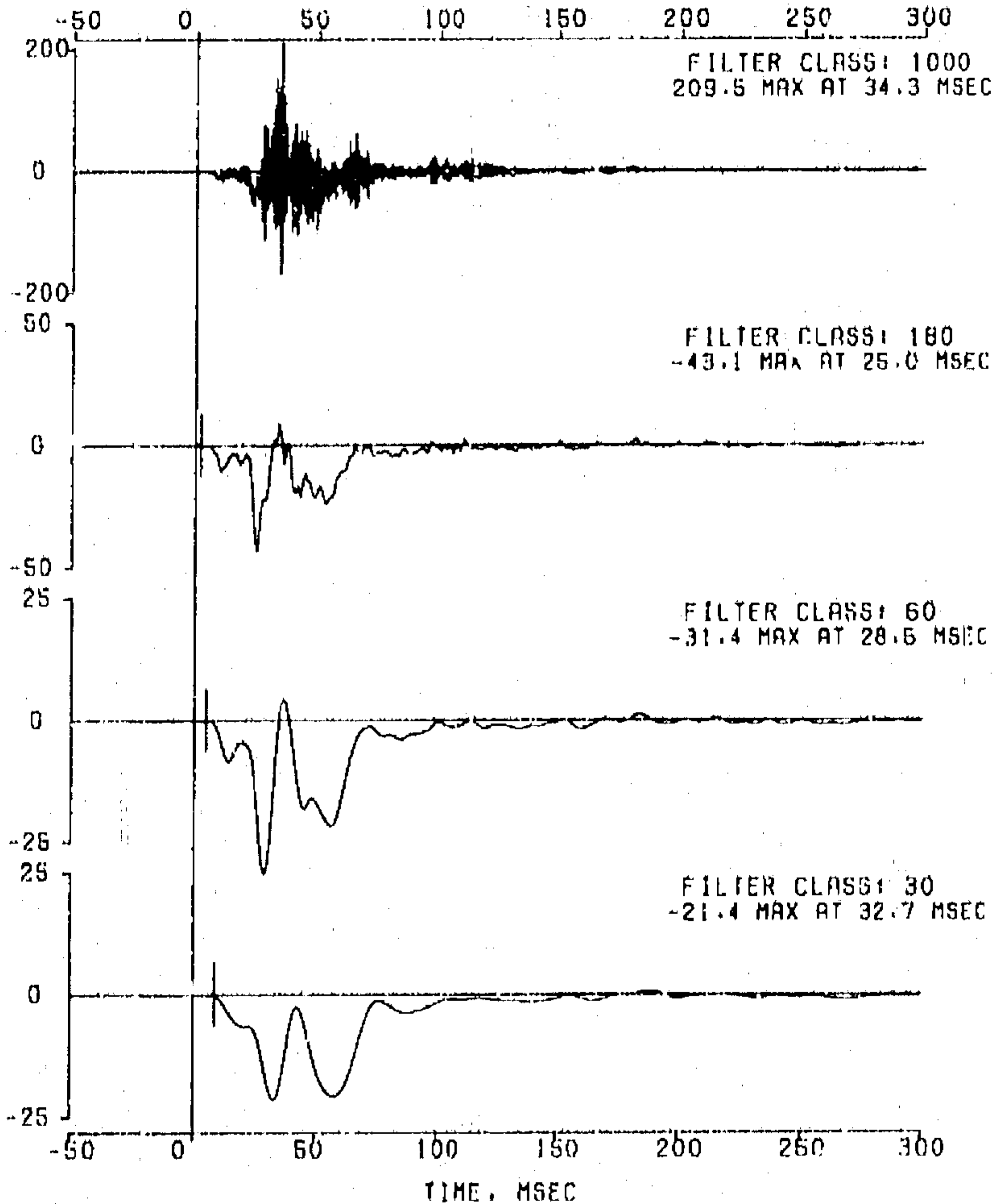
DATA SET 06/16/98BR
ERRATA 1



VC07623 30-MPH REAR MOVING BARRIER, KJ-J-74, ITEM KJ4003
2002 MV89 301 REAR IMPACT DEVELOPMENT,
CHANNEL 014 RT RAIL TRANS X/MBR X 608376
FILTER TYPE: OBDAS-III RESPONSE CORRECTION, CLASS 1000 FILTER(1650)
IMPACT ANALYSIS DEPT. 5320
JUN 17, 1999

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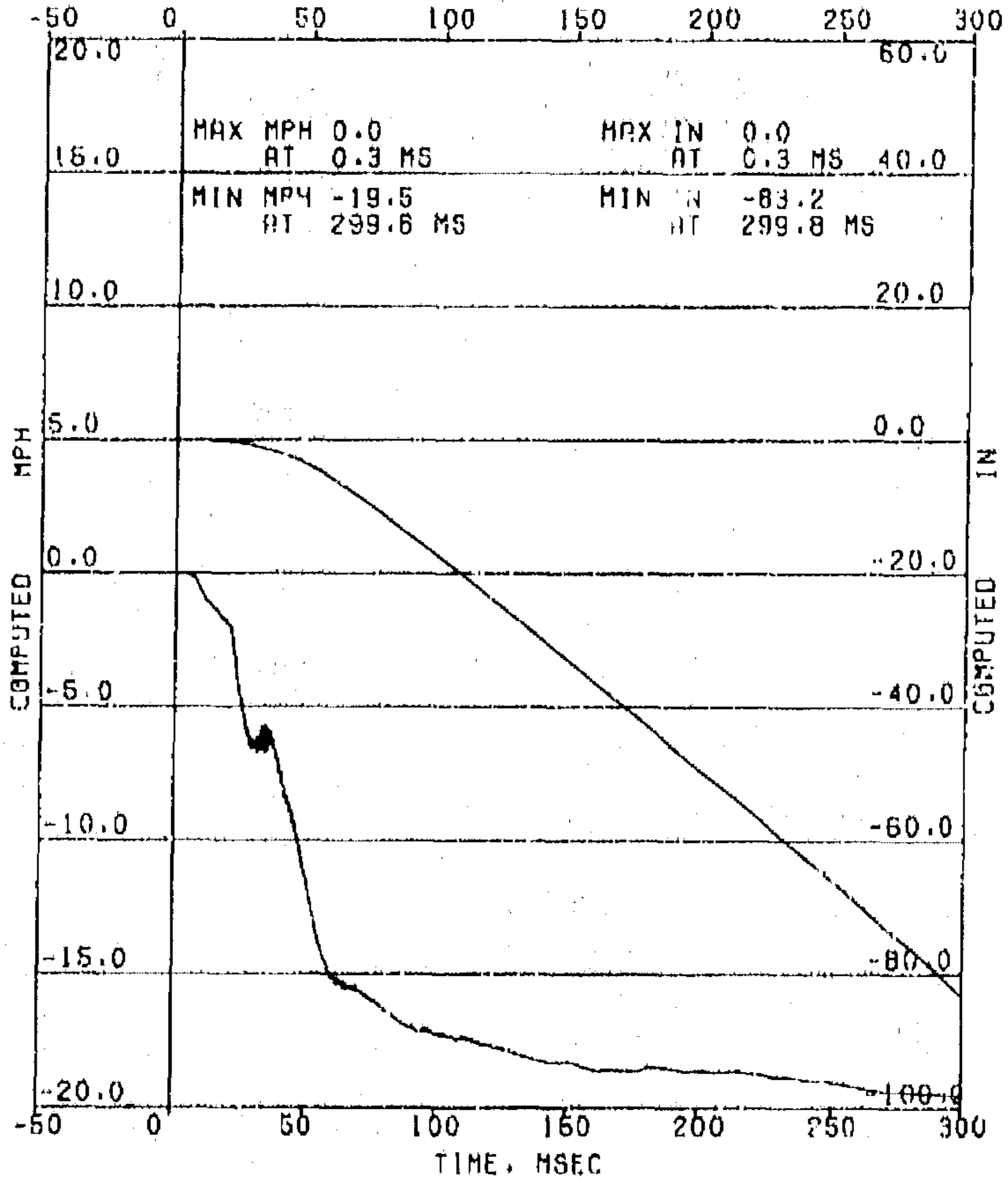
DATA SET 06/16/99BR
ERRATA 1



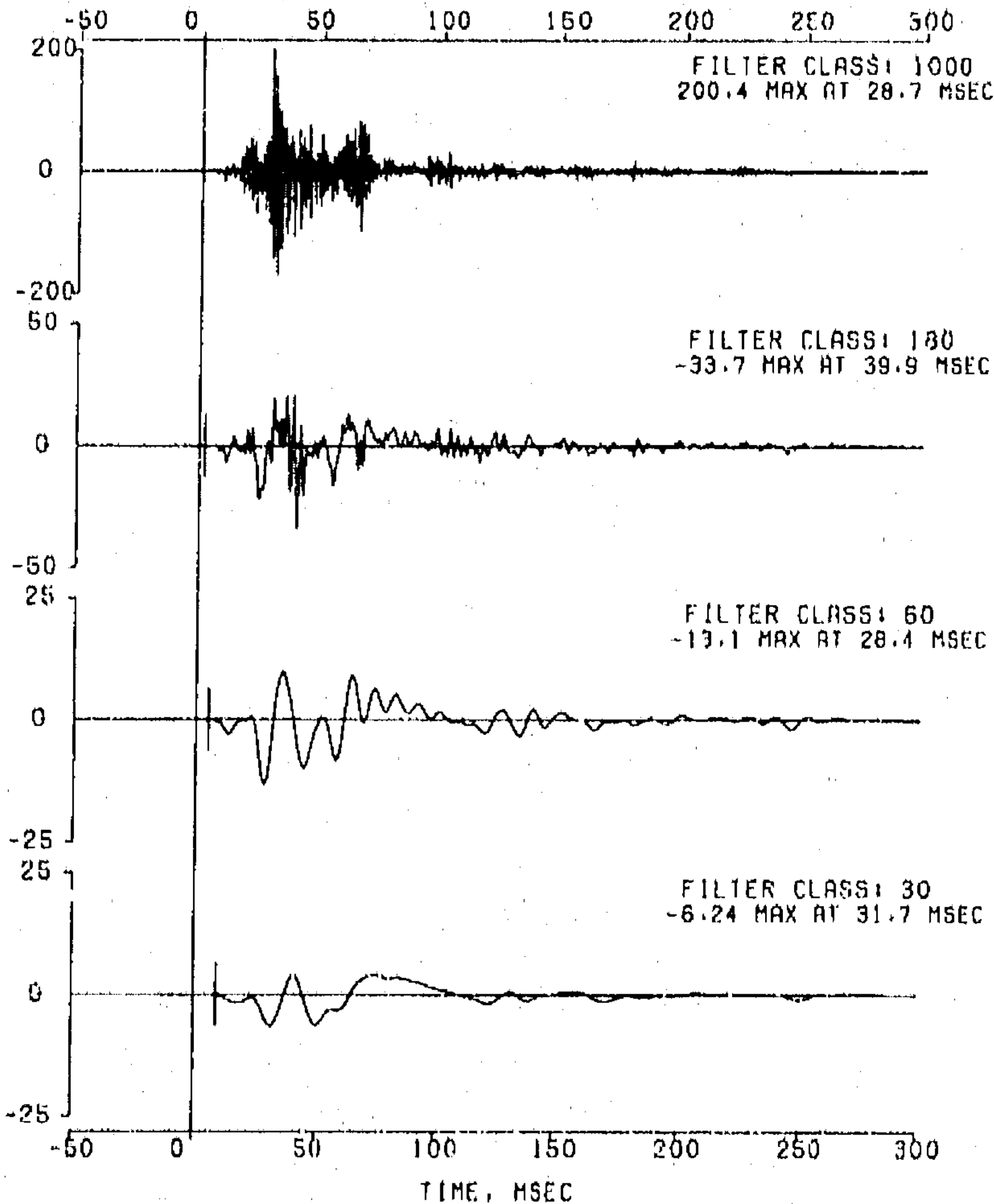
FILTER TYPE: OBDAS-III RESPONSE CORRECTION, CLASS 1000 FILTER(1650)
 FILTER CLASS: 1000

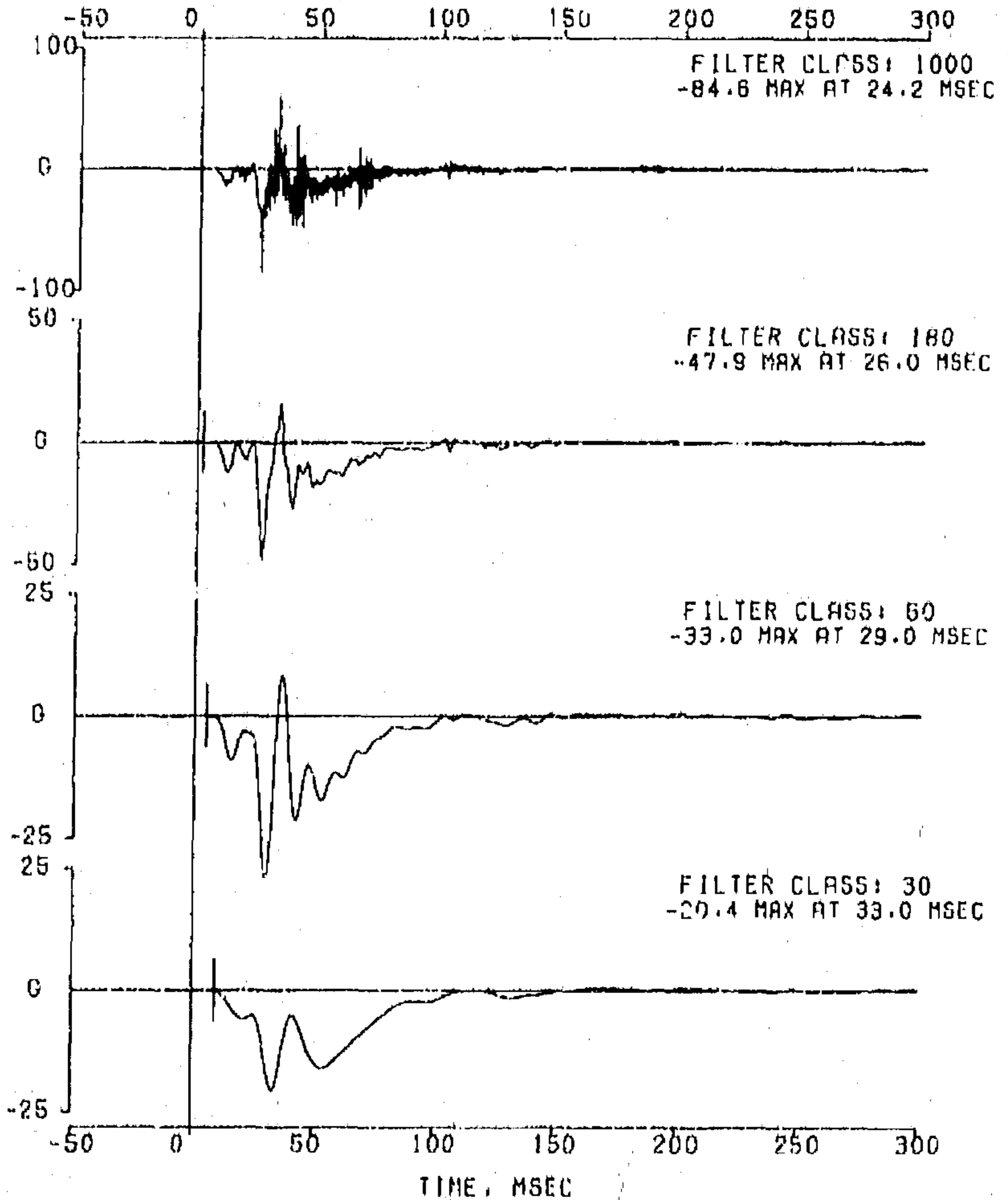
IMPACT ANALYSIS DEPT. 5320
 JUN 17, 1999

DATA SET 06/16/99BR
 ERGPTA 1



COMPUTED MPH
 COMPUTED IN





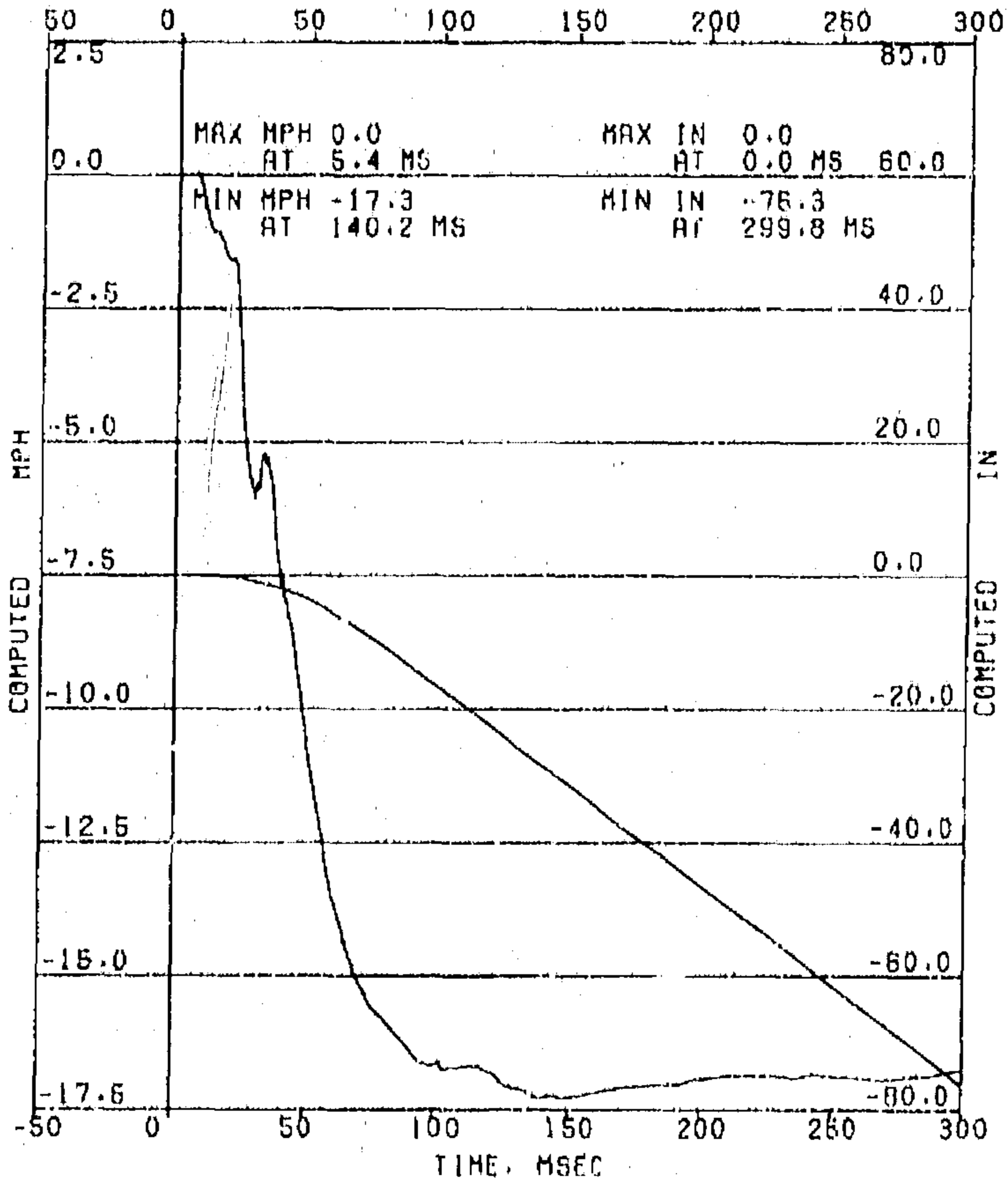
VC07623 30-MPH REAR MOVING BARRIER, KJ-J-74, ITEM KJ4003
 2002 HYBR 301 REAR IMPACT DEVELOPMENT,
 CHANNEL 016 LT RAIL FT XMR X R13082A

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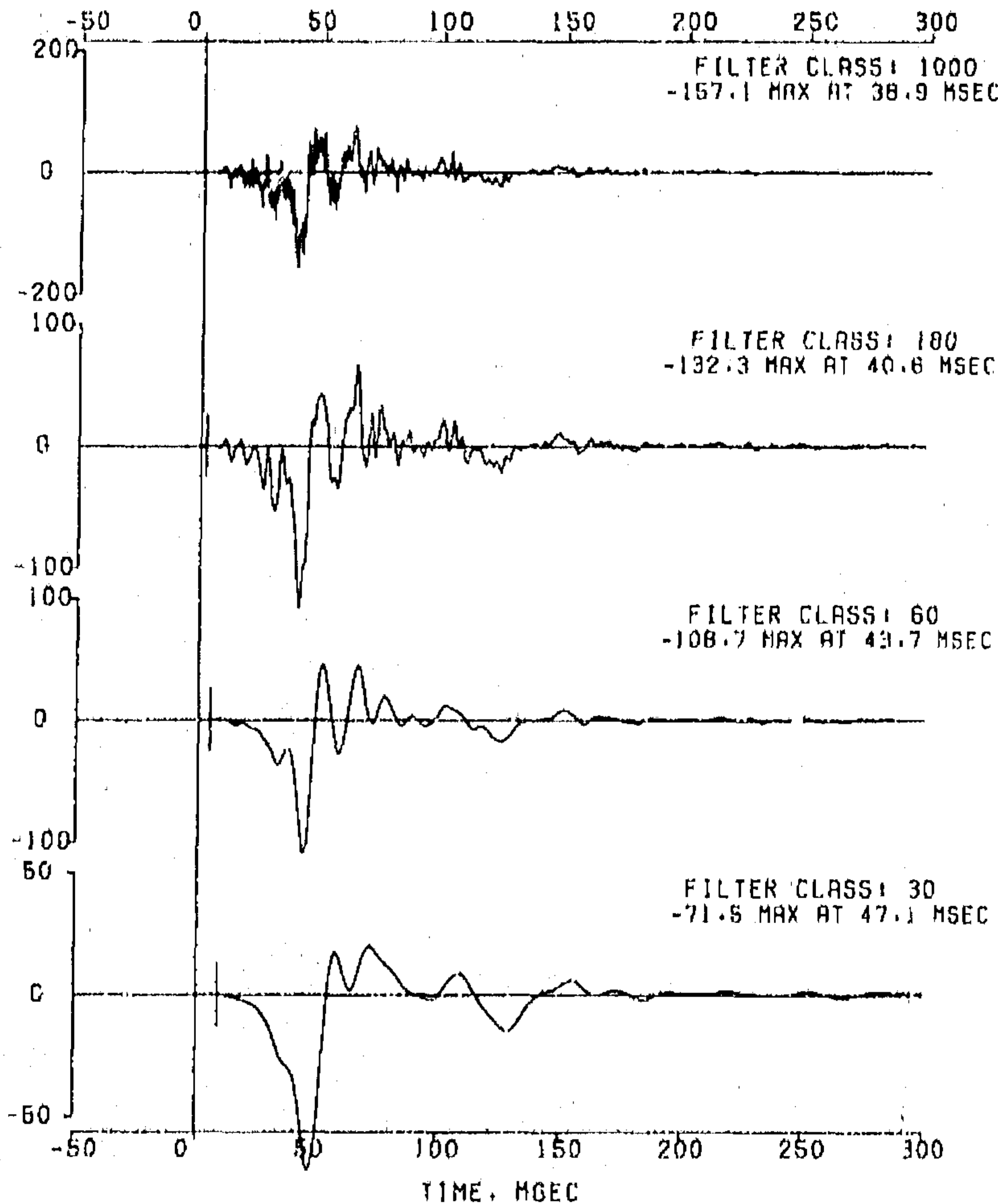
FILTER TYPE: QADAS-III RESPONSE CORRECTION, CLASS 1000 FILTER(1650)
 FILTER CLASS: 1000

IMPACT ANALYSIS DEPT. 5320
 JUN 17, 1999

DATA SET 06/16/99BR
 ERRATA 1



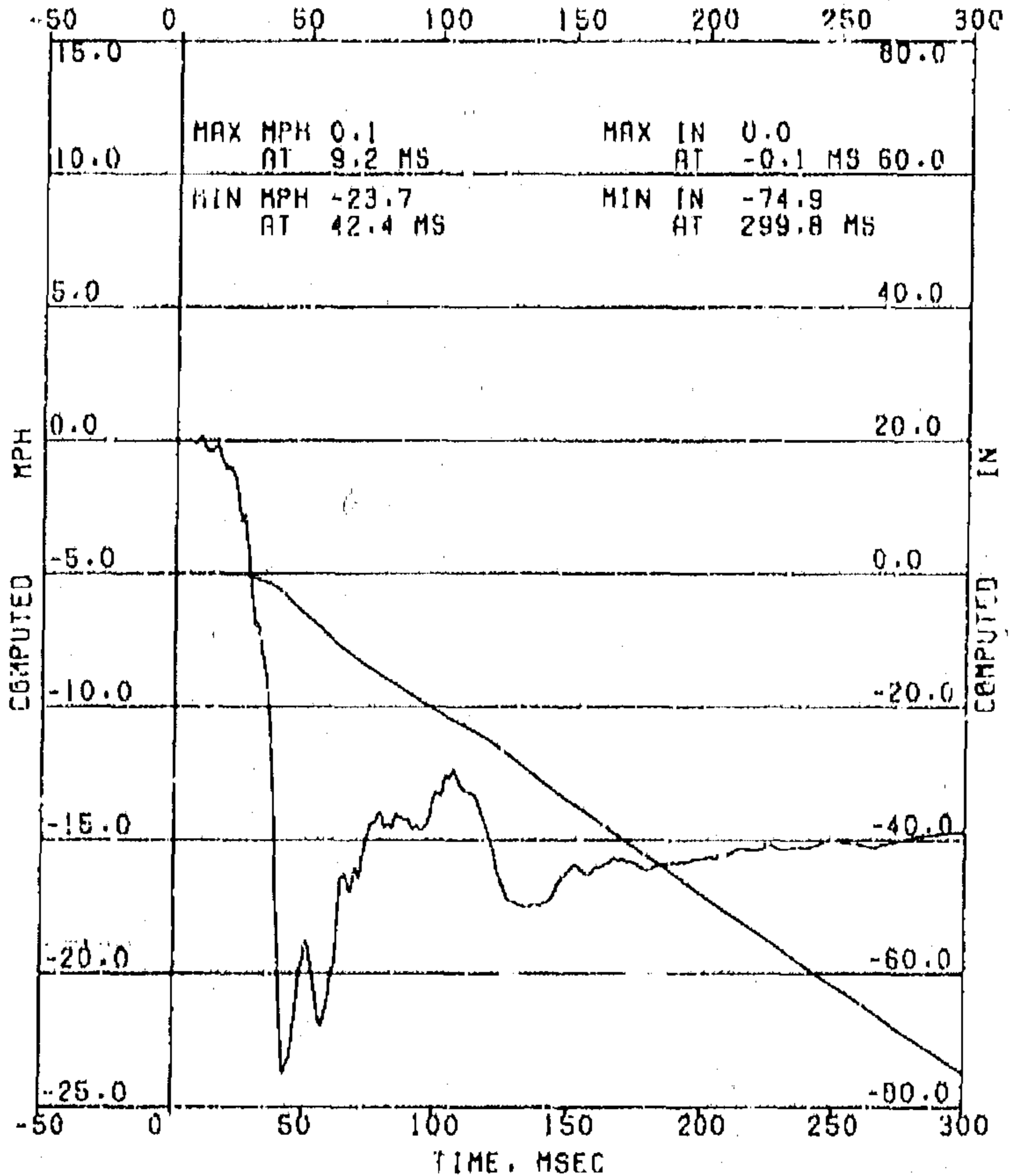
COMPUTED MPH
 COMPUTED IN



FILTER TYPE: 0800S-III RESPONSE CORRECTION, CLASS 1000 FILTER(1650)
FILTER CLASS: 1000

IMPACT ANALYSIS DEPT. 5320
JUN 17, 1999

DATA SET 06/16/99BS
ERRATA 1



COMPUTED MPH
COMPUTED IN

VC07023 30-MPH REAR MOVING BARRIER, KJ-J-74. ITEM KJ4003
2002 HY88 301 REAR IMPACT DEVELOPMENT.

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CHANNEL 010 RT RAIL FT XMR X 816720

FILTER TYPE: CDDAS-III RESPONSE CORRECTION. CLASS 1000 FILTER(1650)

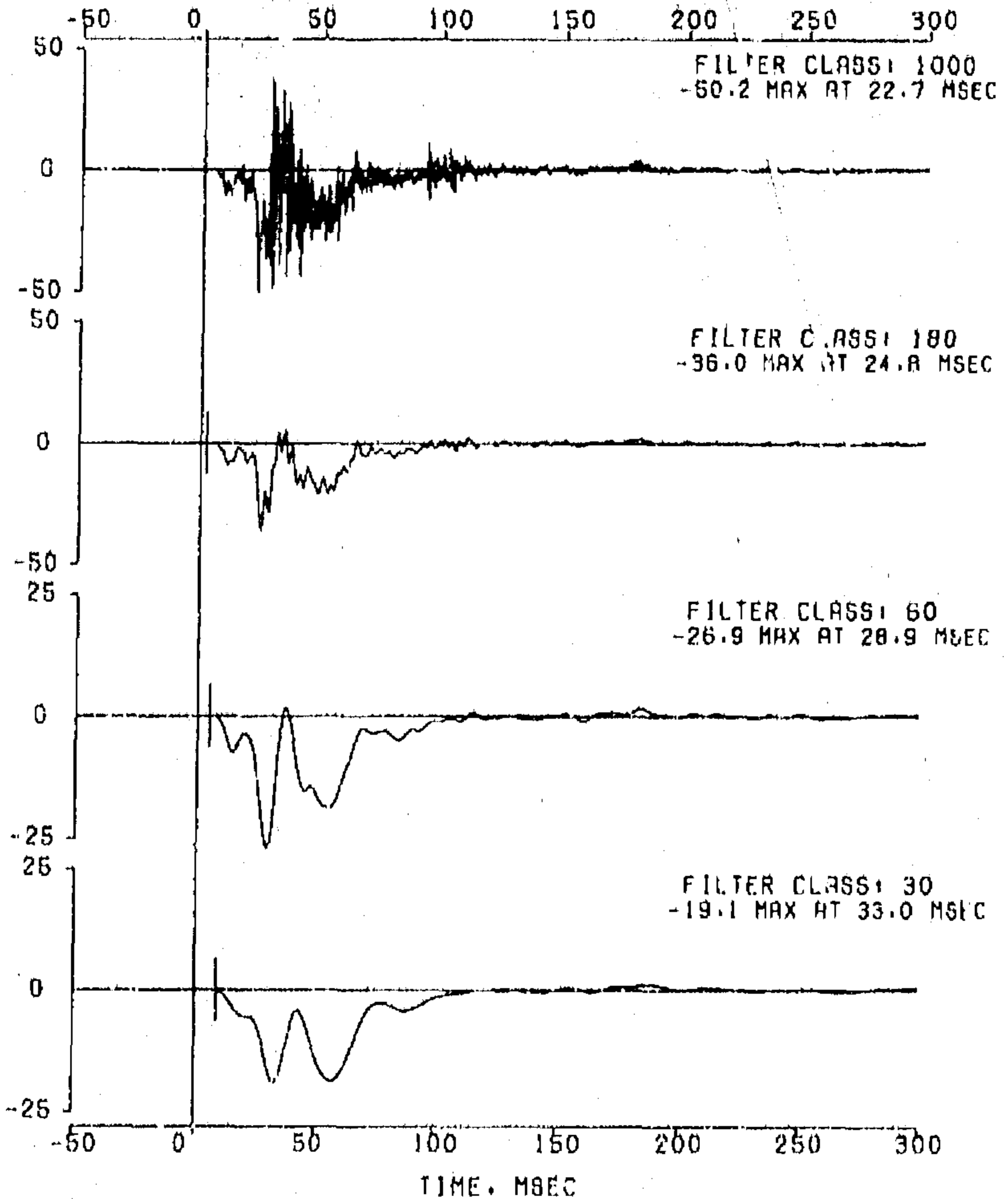
IMPACT ANALYSIS DEPT. 5320

DATA SET 06/16/99BS

JUN 17, 1999

ERRATA

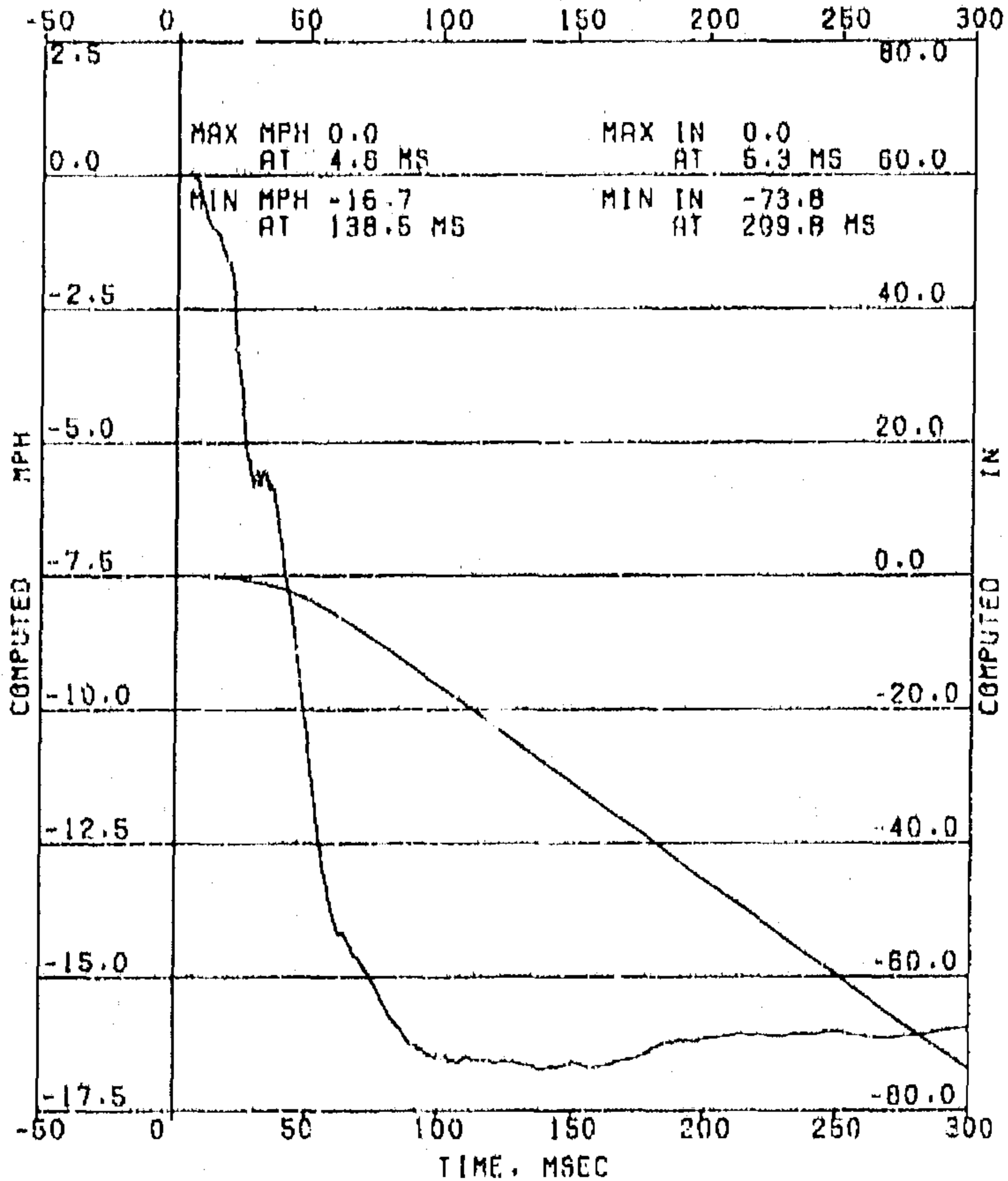
1



FILTER TYPE: 080AS-III RESPONSE CORRECTION, CLASS 1000 FILTER(1650)
FILTER CLASS: 1000

IMPACT ANALYSIS DEPT. 5320
JUN 17, 1989

DATA SET 06/16/99BS
ERRATA 1

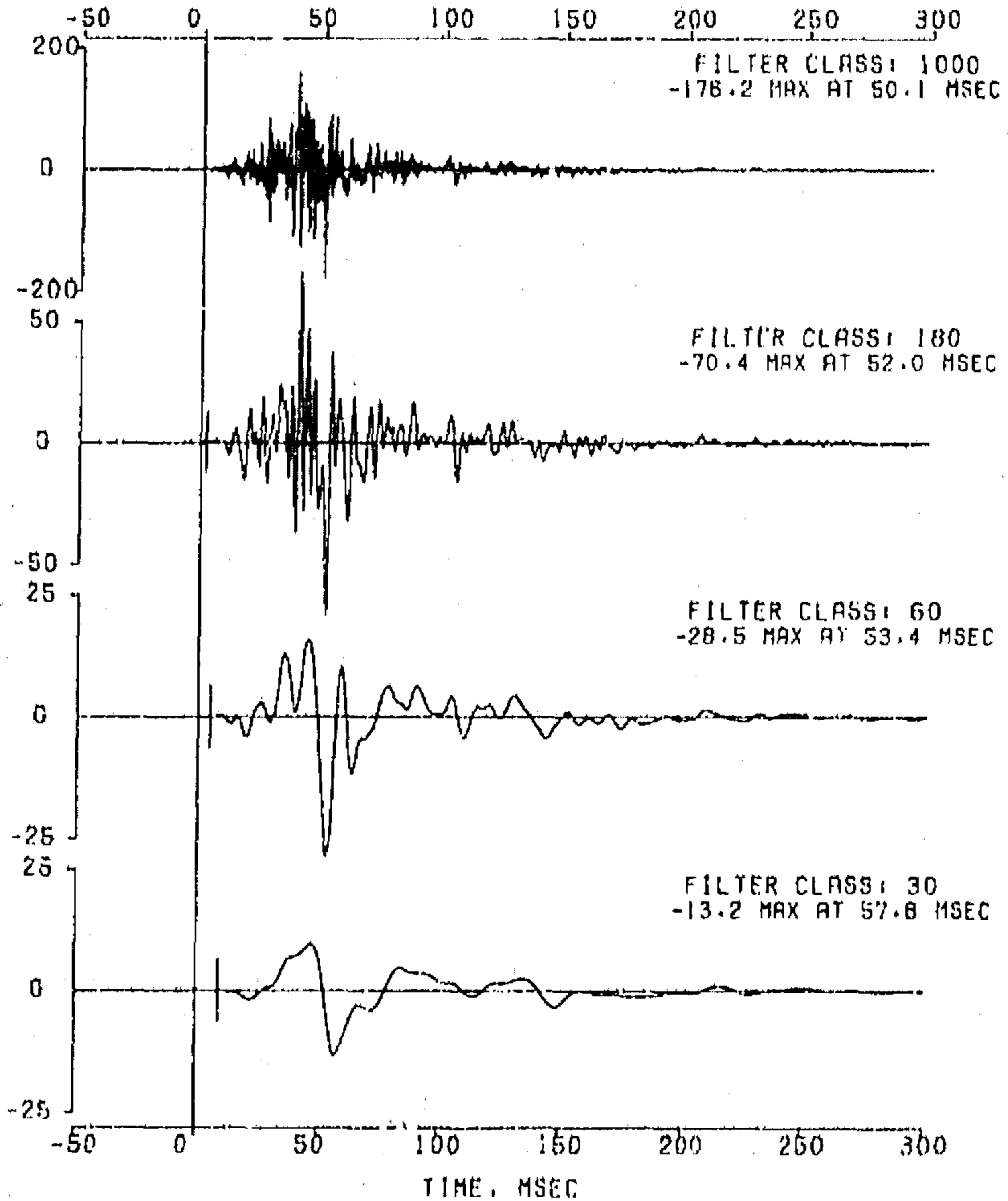


COMPUTED MPH
COMPUTED IN

VC07823 30-MPH REAR MOVING BARRIER, KJ-J-74, ITEM KJ4003
2002 MV90 301 REAR IMPACT DEVELOPMENT.
CHANNEL 019 FUEL TANK SIDE Y B16157
FILTER TYPE: OBDAS-III RESPONSE CORRECTION, CLASS 1000 FILTER(1650)
IMPACT ANALYSIS DEPT. 5320
JUN 17, 1999

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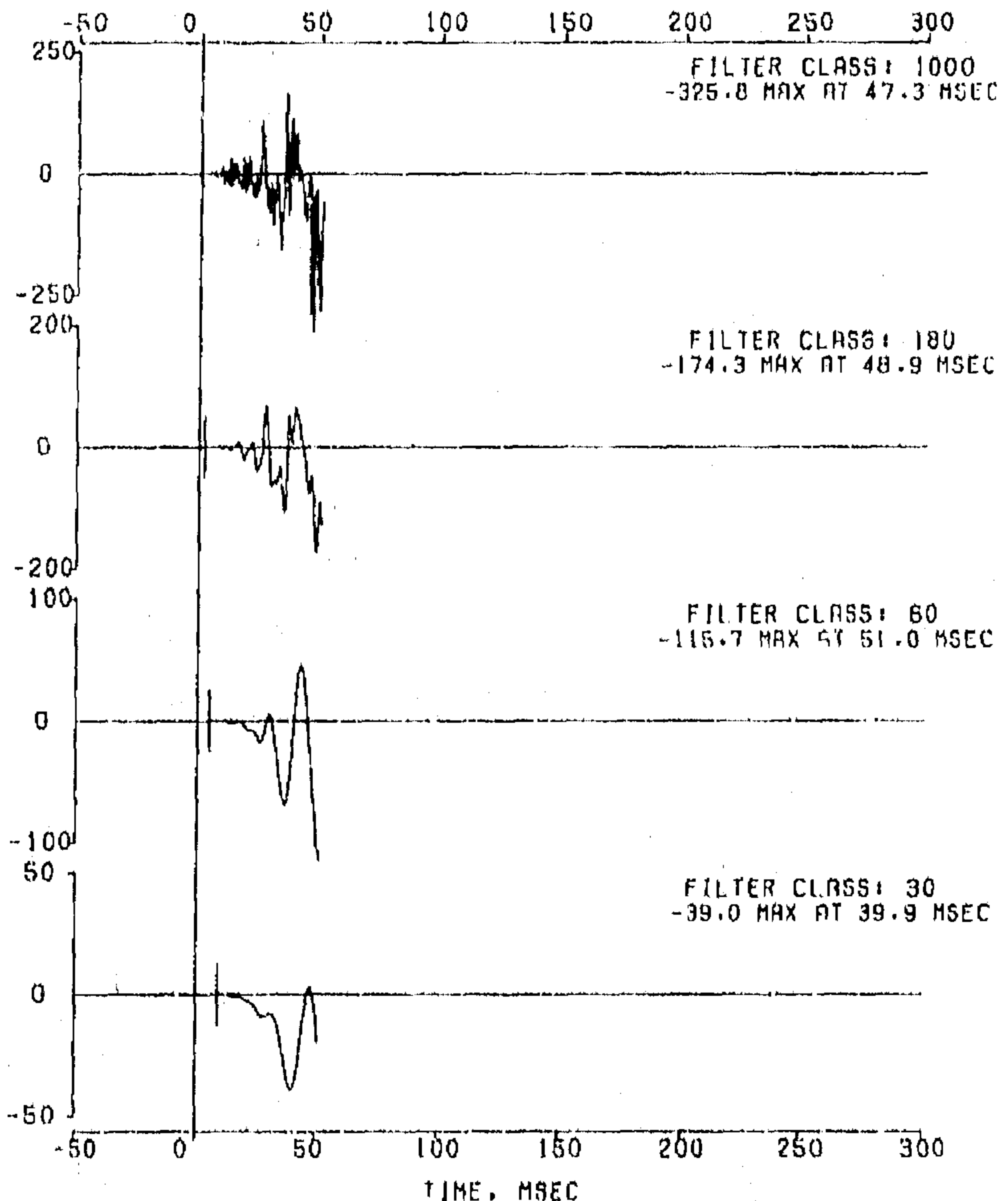
DATA SET 06/16/9985
ERRATA 1



VC07623 30-MPH REAR MOVING BARRIER. KJ-J-74. ITEM KJ4003
 2002 MVSS 301 REAR IMPACT DEVELOPMENT.
 CHANNEL 020 FUEL TANK FT FACE X A14432
 FILTER TYPE: OBDAS-III RESPONSE CORRECTION, CLASS 1000 FILTER(1650)
 IMPACT ANALYSIS DEPT. 5320
 JUN 17, 1999

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DATA SET 06/16/9985
 ERRATA 1

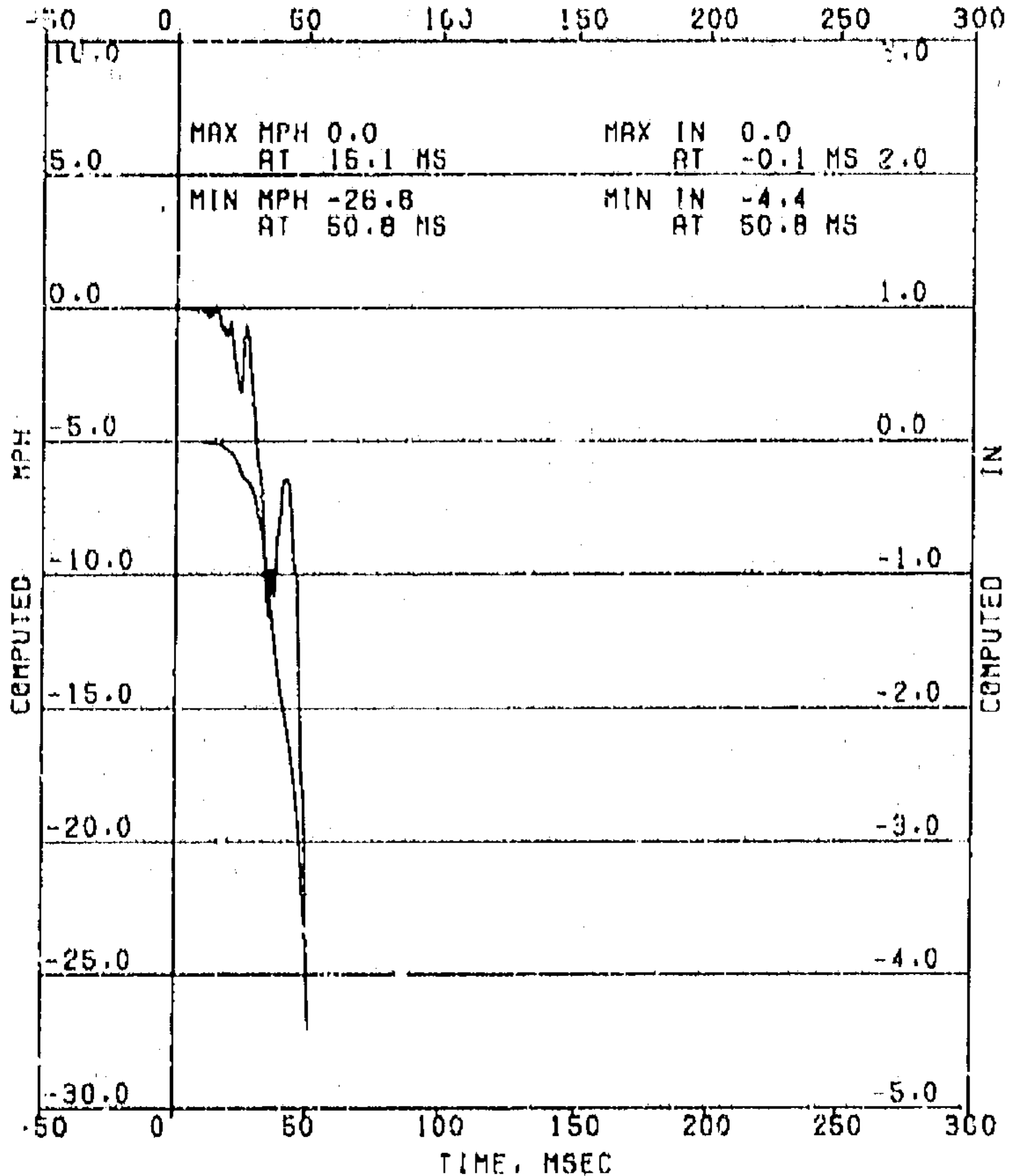


***** CPU 20H *****
 ***** INST. MALFUNCTION AFTER 51.0 MS *****

FILTER TYPE: 080AS-111 RESPONSE CORRECTION, CLASS 1000 FILTER(1650)
 FILTER CLASS: 1000

IMPACT ANALYSIS DEPT. 5320
 JUN 17, 1999

DATA SET 06/16/99BS
 ERRATA 1



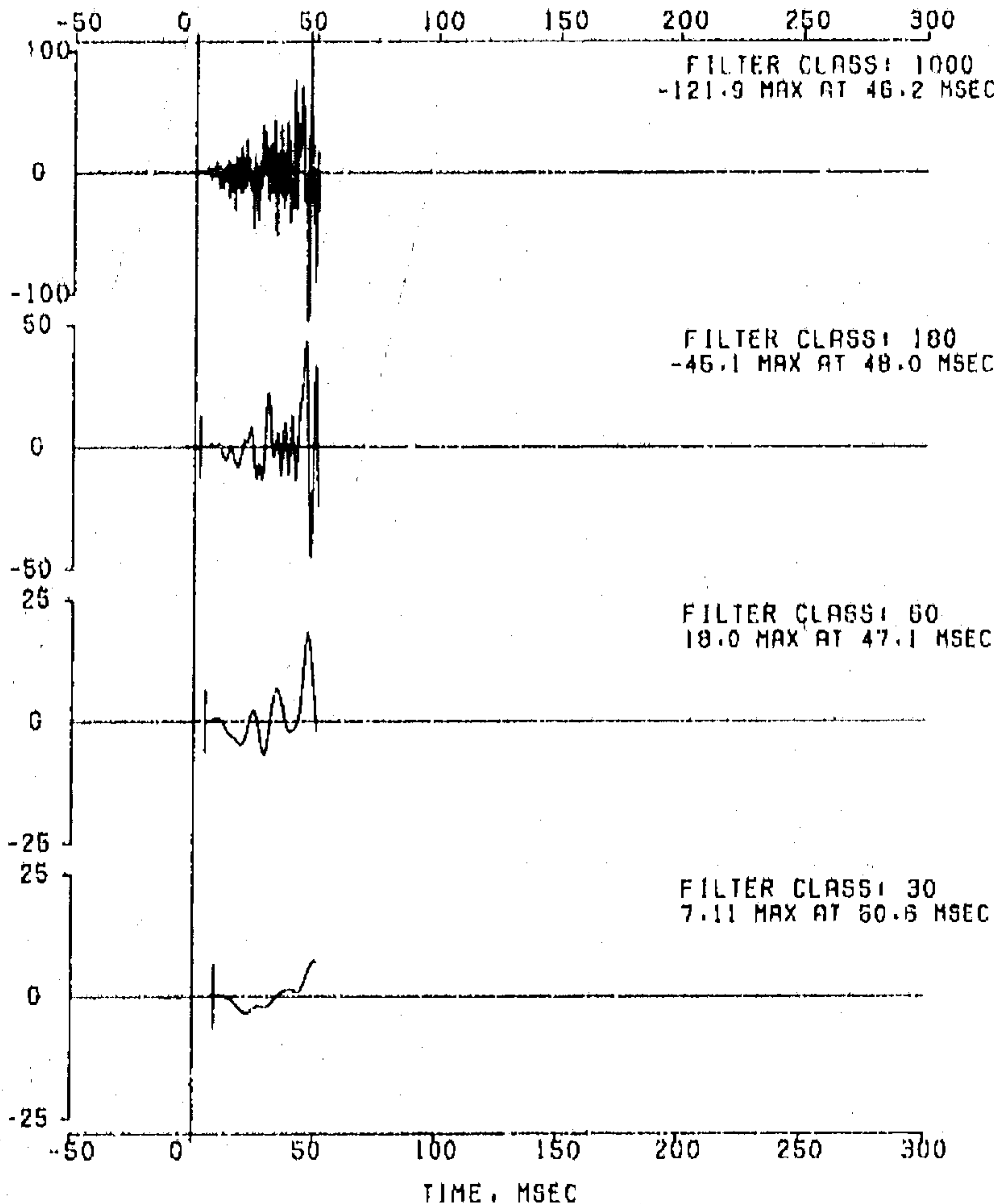
CAUTION
 INST. MALFUNCTION AFTER 51.0 MS

COMPUTED MPH
 COMPUTED IN

VC07823 30-MPH REAR MOVING BARRIER, KJ-J-74, ITEM KJ4003
2002 MY88 301 REAR IMPACT DEVELOPMENT,
CHANNEL 021 FUEL TANK FT FACE Y A14234
FILTER TYPE: OBJAS-III RESPONSE CORRECTION, CLASS 1000 FILTER(1850)
IMPACT ANALYSIS DEPT. 5320
JUN 17, 1999

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DATA SET 06/16/99DS
ERRATA 1

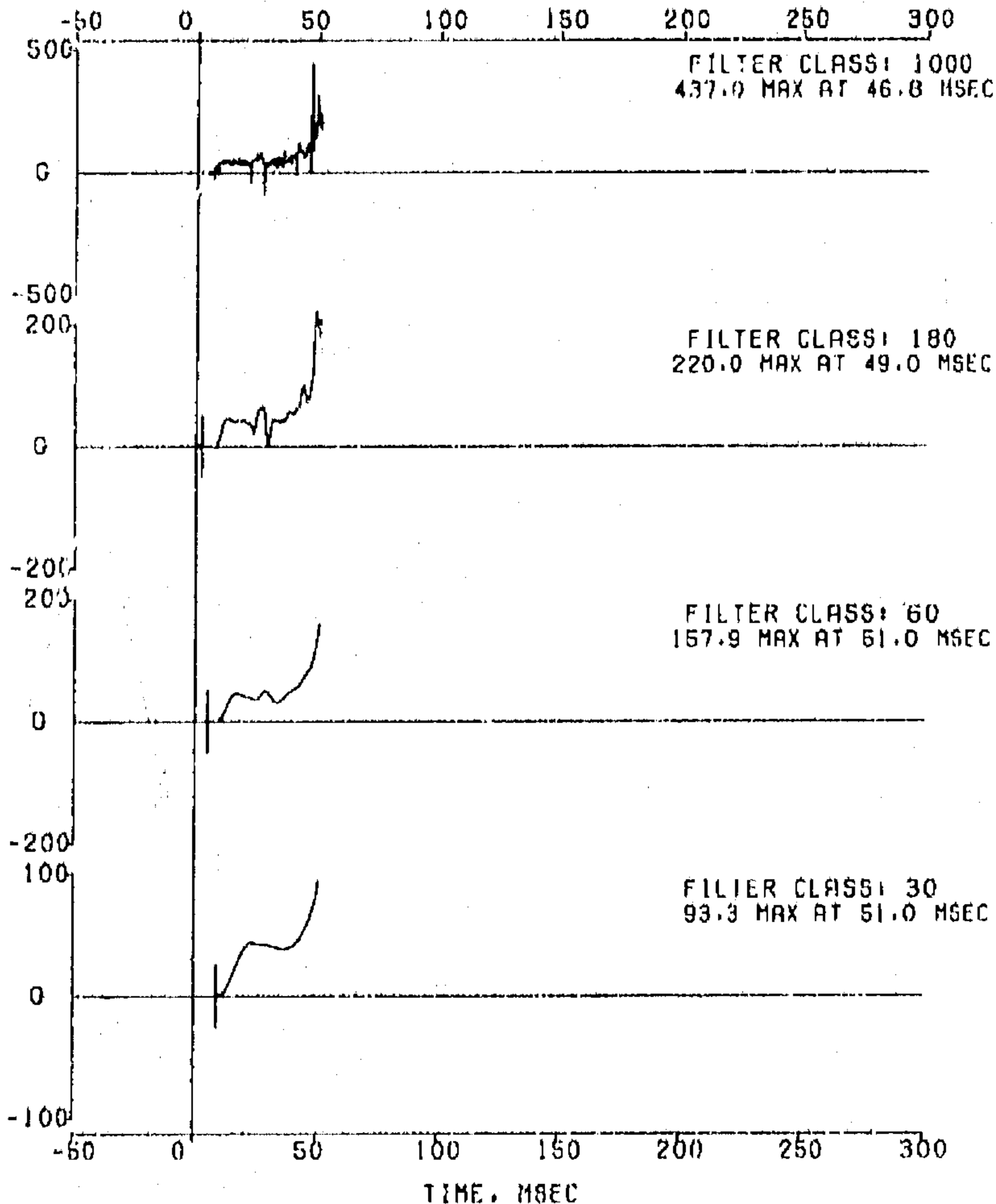


***** CAUTION *****
***** INST. MALFUNCTION AFTER 51.0 MS *****

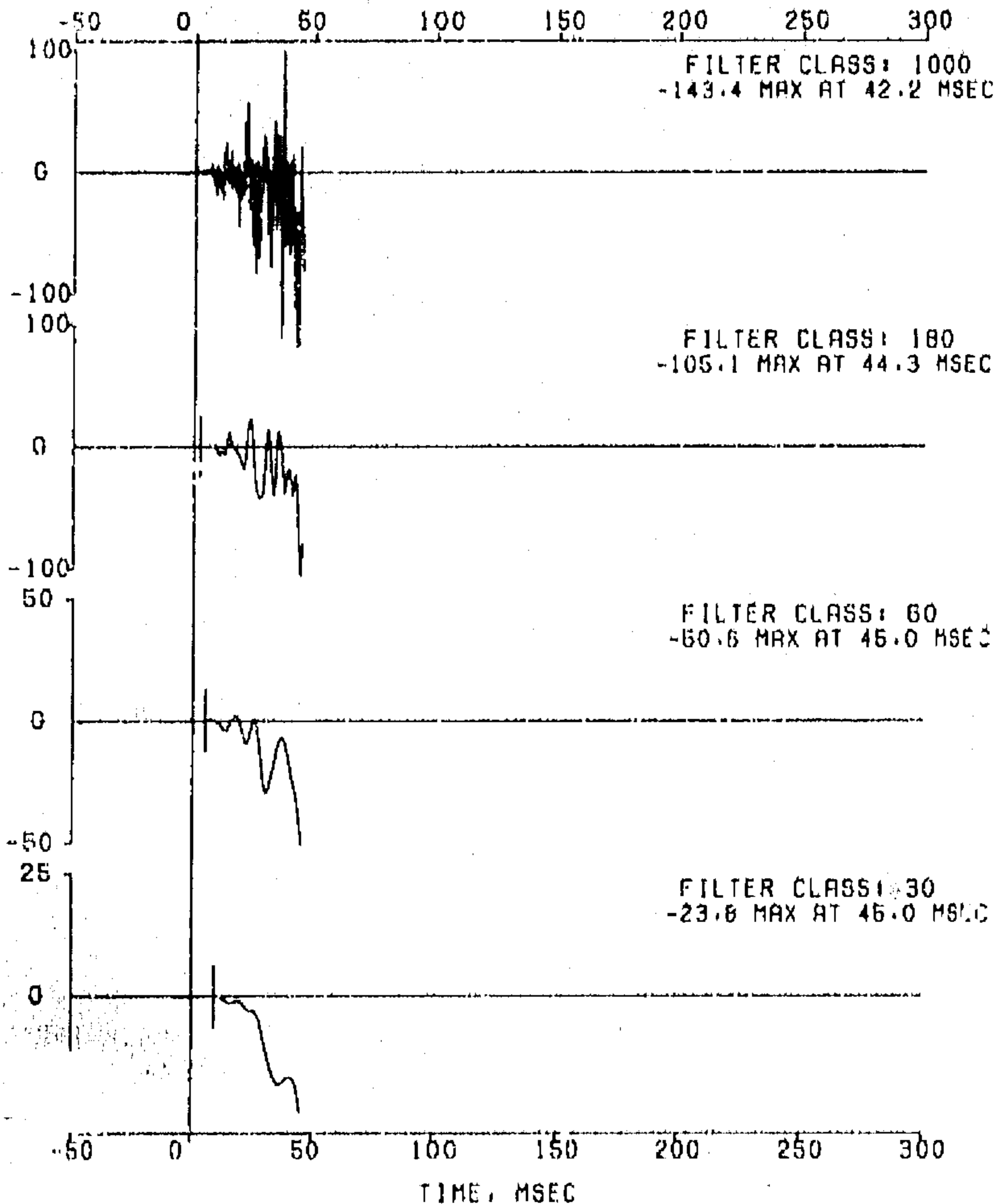
VC07623 30-MPH REAR MOVING BARRIER. KJ-J-74. ITEM KJ4003
2002 MY69 301 REAR IMPACT DEVELOPMENT.
CHANNEL 022 FUEL TANK FT FACE Z R14271
FILTER TYPE: 080AS-111 RESPONSE CORRECTION. CLASS 1000 FILTER(1650)
IMPACT ANALYSIS DEPT. 5320
JUN 17, 1999

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DATA SET 06/16/99BS
ERRATA 1



CAUTION
INST. MALFUNCTION AFTER 51.0 MS

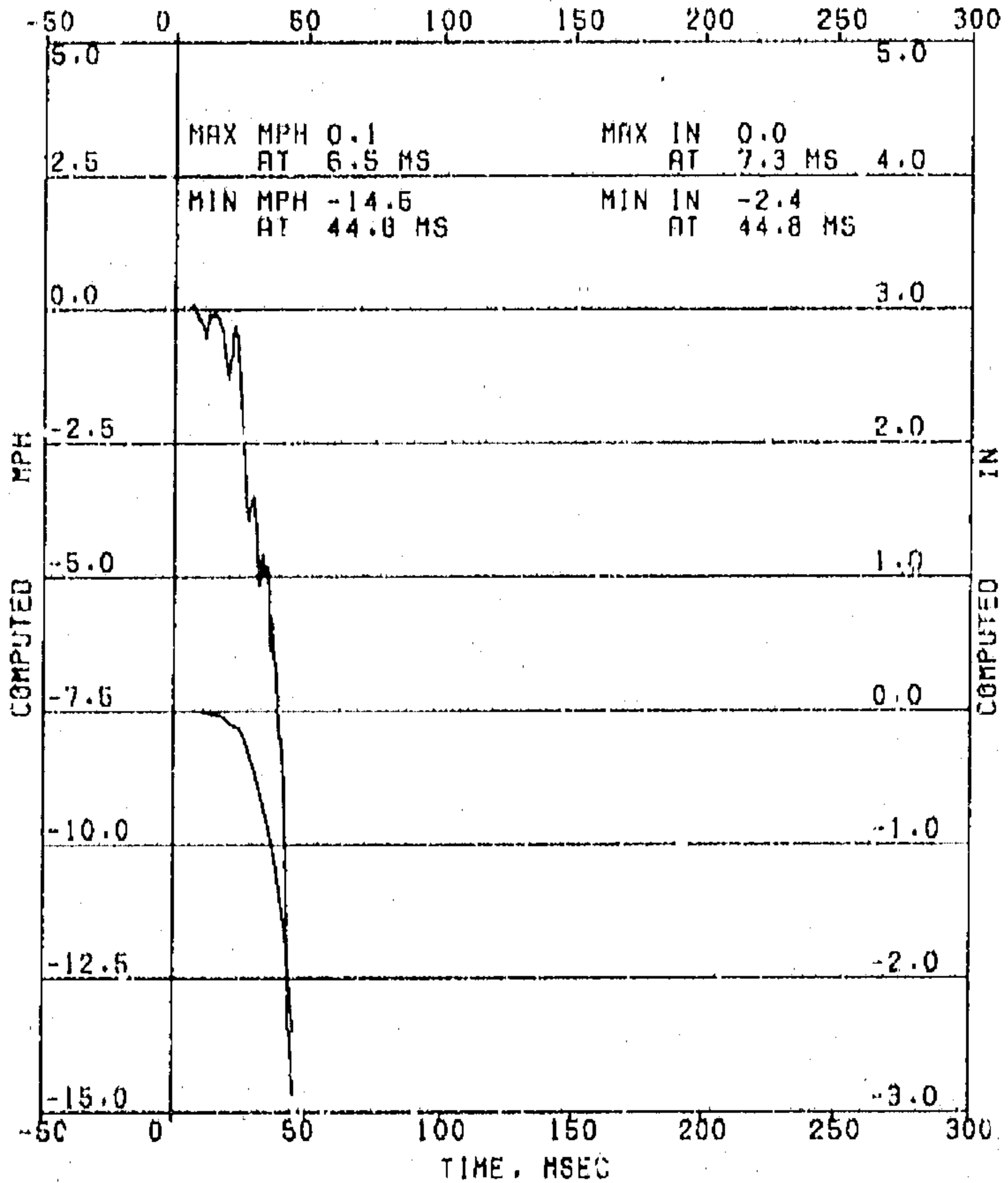


***** CAUTION *****
 ***** INST. MALFUNCTION AFTER 45.0 MS *****

FILTER TYPE: OBDAS-III RESPONSE CORRECTION, CLASS 1000 FILTER(1650)
 FILTER CLASS: 1000

IMPACT ANALYSIS DEPT. 5320
 JUN 17, 1999

DATA SET 06/16/998S
 ERRATA 1

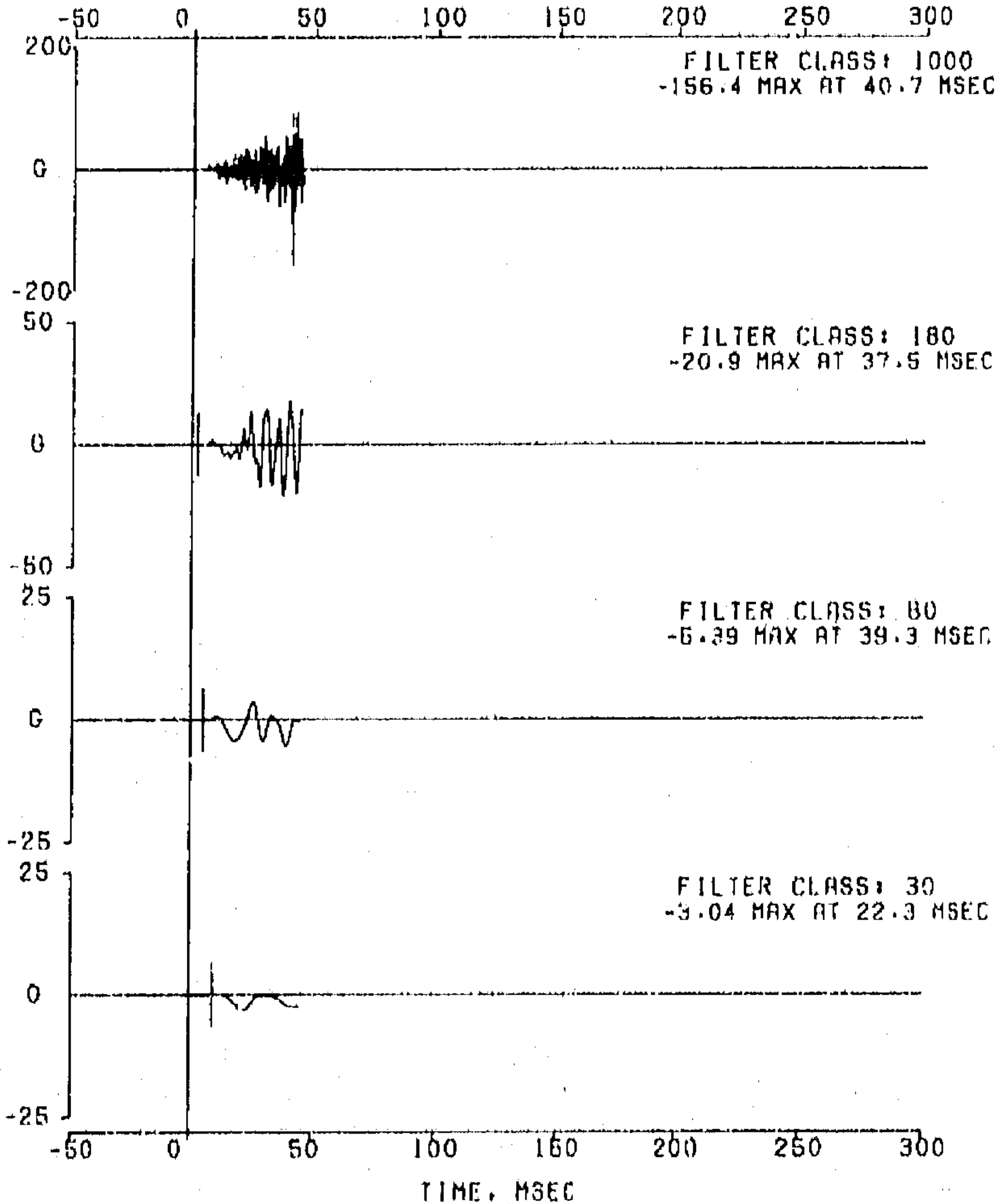


***** CAUTION *****
 ***** INST. MALFUNCTION AFTER 45.0 MS *****

COMPUTED MPH
 COMPUTED IN

VC07823 30-MPH REAR MOVING BARRIER, KJ-J-74. ITEM KJ4003
 2002 HY86 301 REAR IMPACT DEVELOPMENT.
 CHANNEL 024 FUEL TANK BTM Y J27058
 FILTER TYPE: OBOAS-III RESPONSE CORRECTION, CLASS 1000 FILTER(1650)
 IMPACT ANALYSIS DEPT. 5320
 JUN 17, 1999

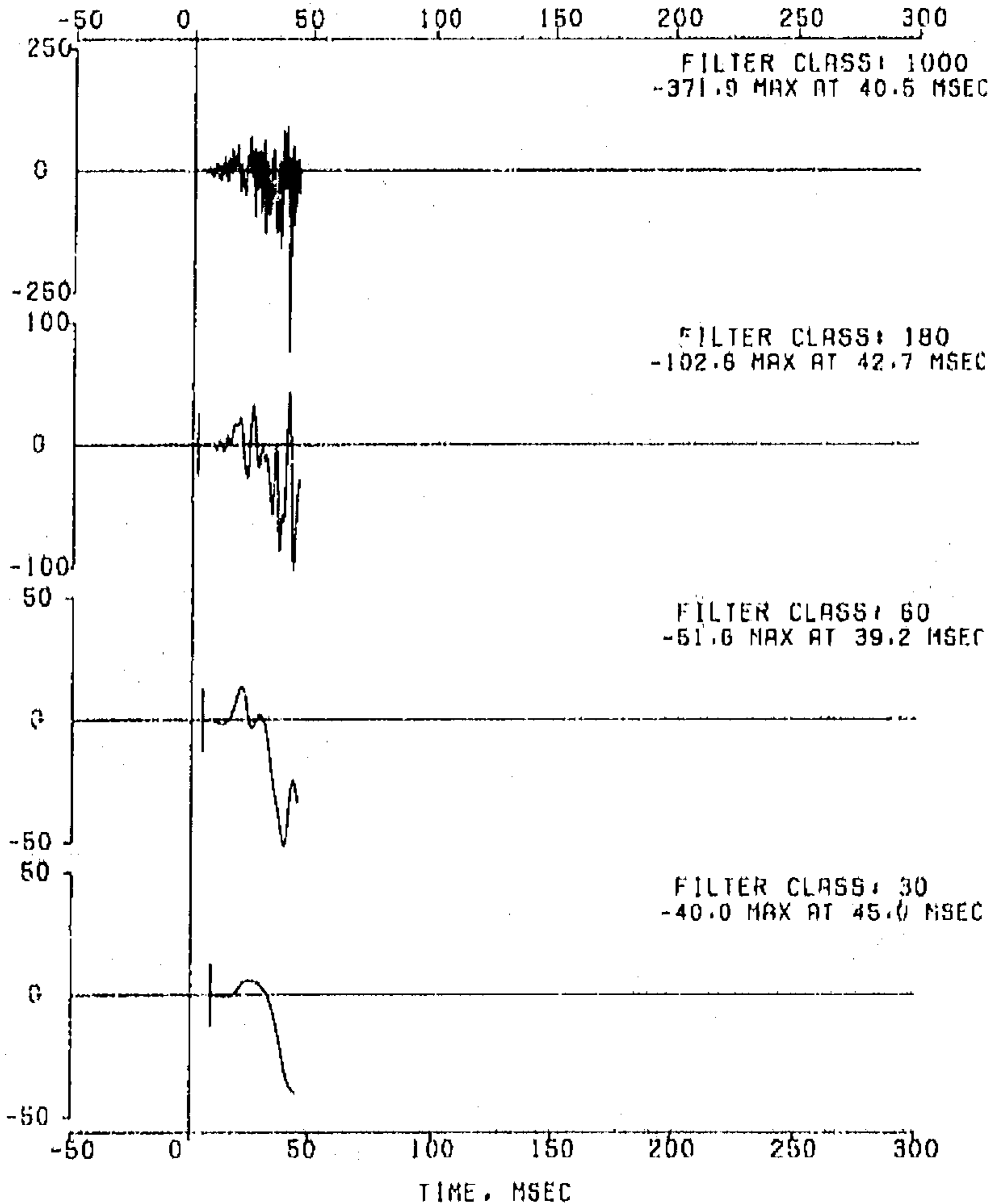
DATA SET 06/16/998S
 ERRATA 1



CAUTION
 INST. MALFUNCTION AFTER 46.0 MS

VC07623 30-MPH REAR MOVING BARRIER, KJ-J-74, ITEM KJ4003
 2002 MY88 301 REAR IMPACT DEVELOPMENT.
 CHANNEL 025 FUEL TANK BTM Z APIPI
 FILTER TYPE: 08089-III RESPONSE CORRECTION, CLASS 1000 FILTER(1650)
 IMPACT ANALYSIS DEPT. 5320
 JUN 17, 1999

DATA SET 06/16/99BS
 ERRATA 1

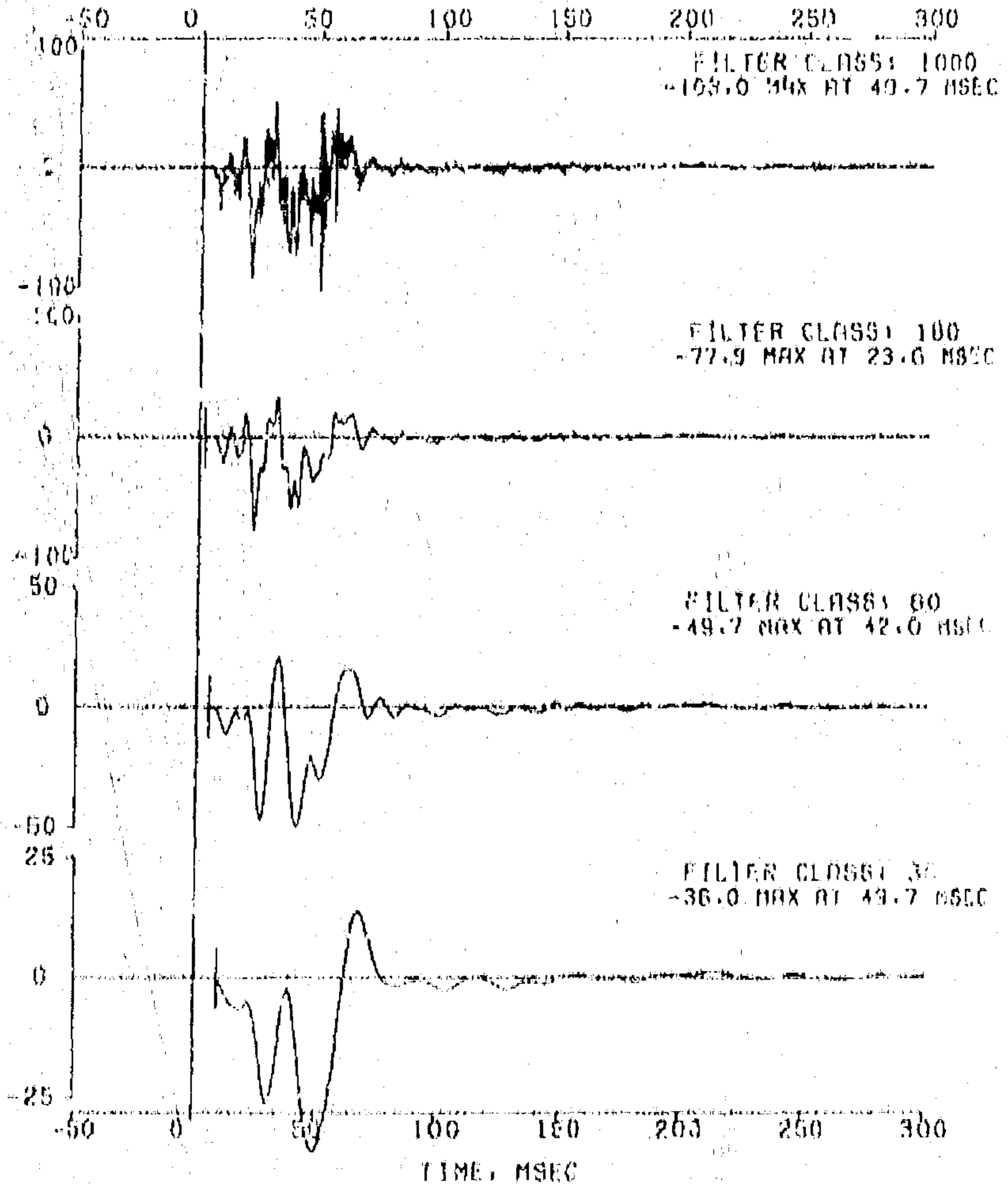


CAUTION
 INST. MALFUNCTION AFTER 46.0 MS

V507953 30-MPH REAR MOVING BARRIER, KJ-J-74, ITEM KJ4003
21002 HV00 301 REAR IMPACT DEVELOPMENT.
CHANNEL 026 PULS TANK RL PASS-THRU H13002A
FILTER TYPE: 9B006-111 RESPONSE CORRECTION, CLASS 1000 FILTER (1650)
IMPACT ANALYSIS DEPT. 6320
JUN 17 1988

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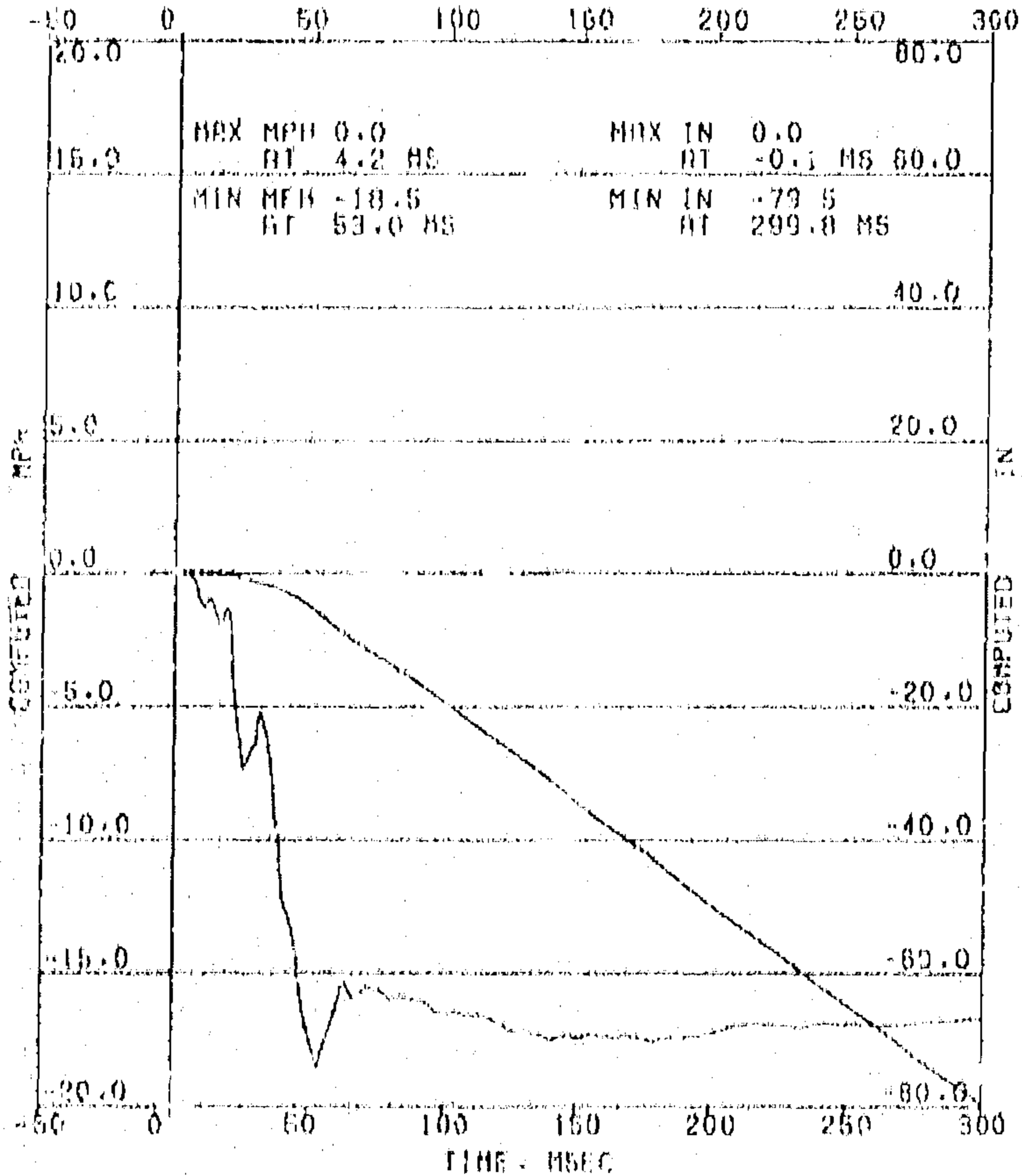
DATA SET 06/16/88BS
ERRATA :



FILTER TYPE: OBDHS-III RESPONSE CORRECTION, CLASS 1000 FILTER(1650)
 FILTER CLASS: 1000

IMPACT ANALYSIS DEPT. 5320
 JUN 17, 1999

DATA SET 06/16/9985
 ERRATA 1

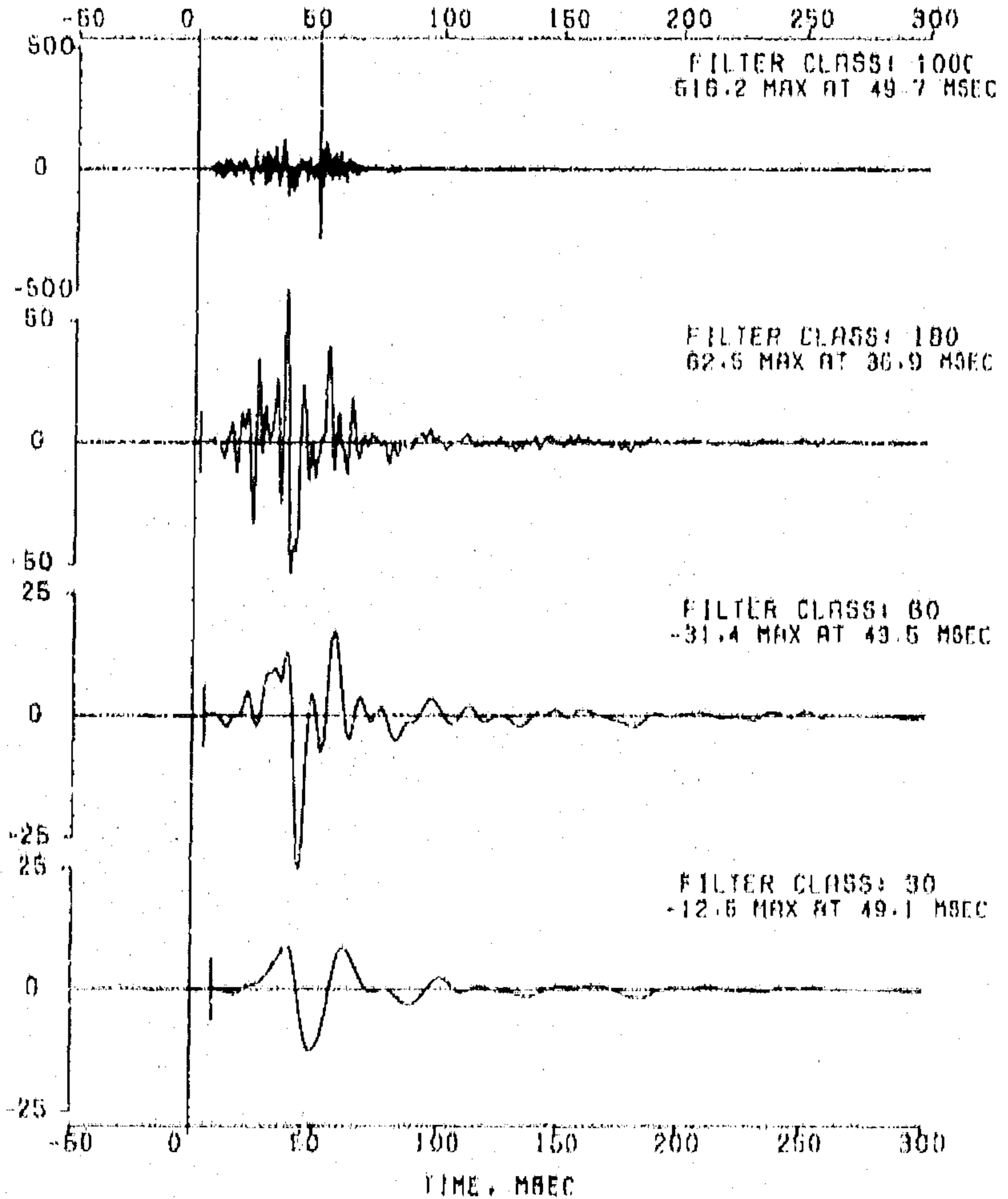


COMPUTED MPH
 COMPUTED IN

VC07B23 30-MPH REAR MOVING BARRIER, KJ-J-74, ITEM KJ4003
2002 MY85 301 REAR IMPACT DEVELOPMENT,
CHANNEL 027 FUEL TANK RL PASS-THRU A14459
FILTER TYPE: 08DAS-III RESPONSE CORRECTION, CLASS 1000 FILTER(1650)
IMPACT ANALYSIS DEPT. 6320
JUN 17, 1999

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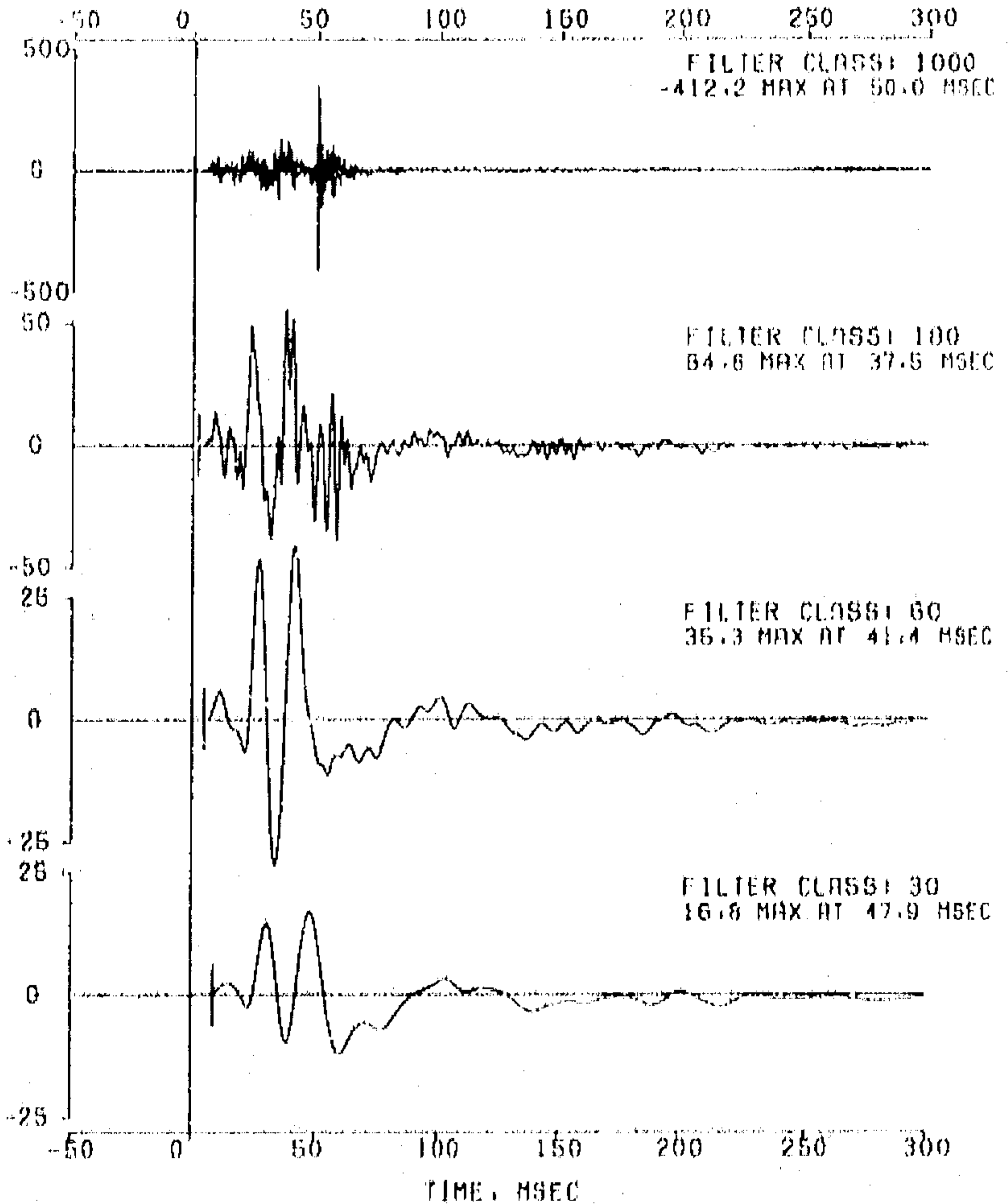
DATA SET 06/16/99BS
ERRATA 1



VC07823 30-MPH REAR MOVING BARRIER, KJ-J-74, ITEM KJ4003
2002 MY68 301 REAR IMPACT DEVELOPMENT,
CHANNEL 020 FUEL TANK RL PASS-THRUZ RI428"
FILTER TYPE: 0B00S-111 RESPONSE CORRECTION, CLASS 1000 FILTER(1650)
IMPACT ANALYSIS DEPT. 5320
JUN 17, 1999

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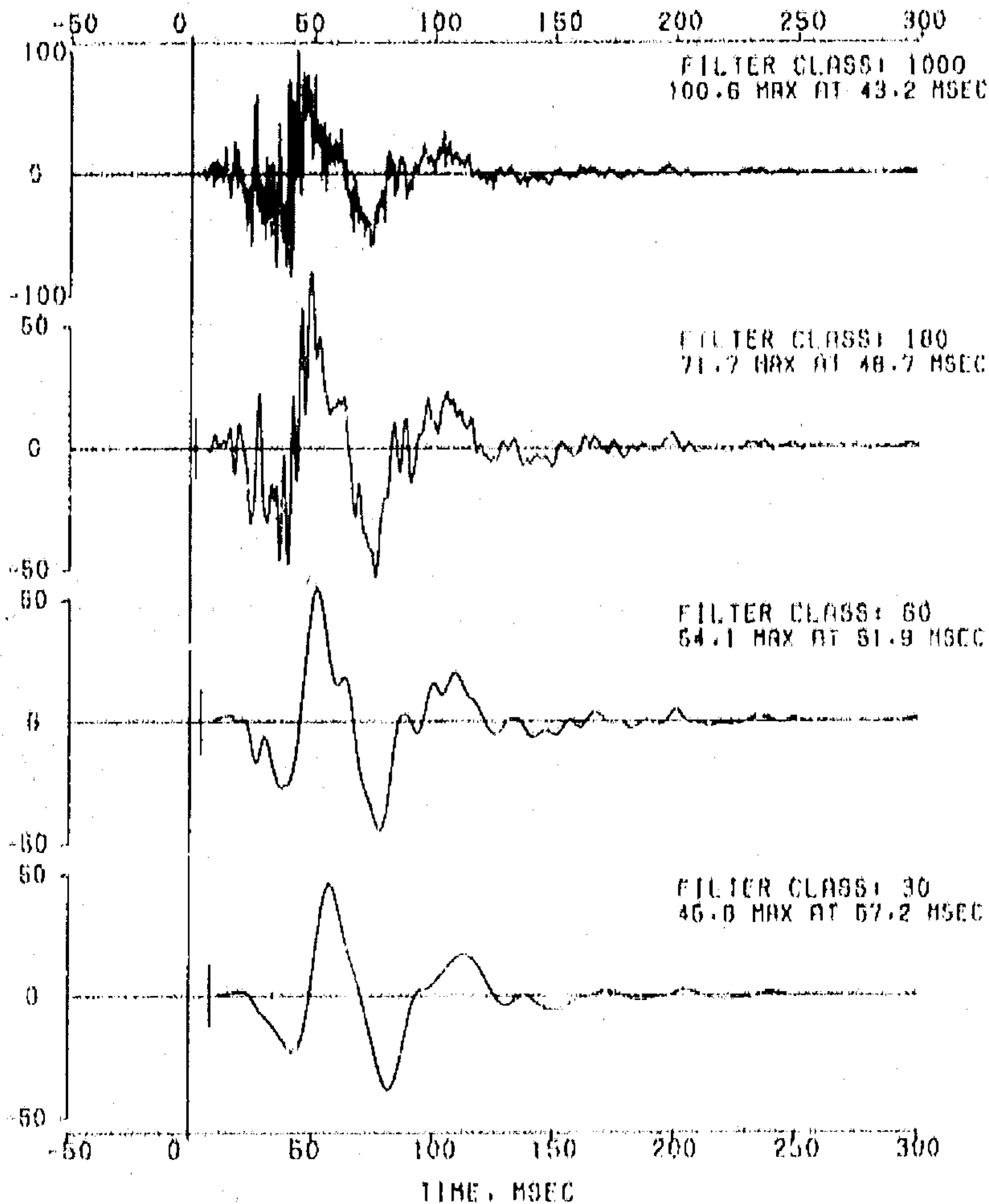
DATA SET 08/16/98BS
ERRATA 1



VC07623 30-MPH REAR MOVING BARRIER, KJ-J-74, ITEM KJ4003
2002 HY55 301 REAR IMPACT DEVELOPMENT.
CHANNEL 029 FUEL TANK SIDE Z B13894
FILTER TYPE: OBDAS-111 RESPONSE CORRECTION, CLASS 1000 FILTER(1600)
IMPACT ANALYSIS DEPT. 5320
JUN 17, 1999

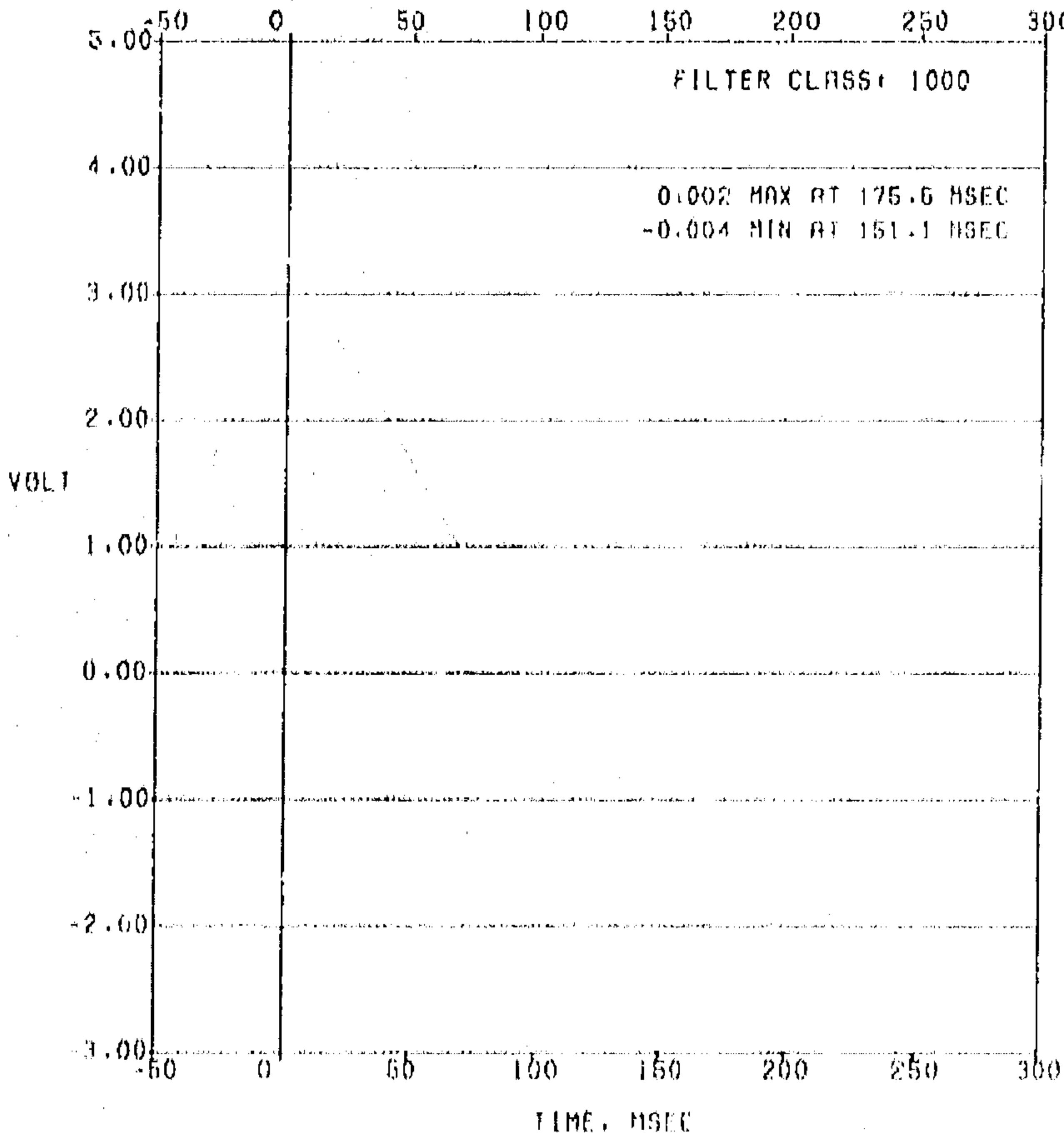
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DATA SET 06/16/99BS
ERRATA 1



CHANNEL 030 OAB 3001A PRI EE

FILTER TYPE: OBDAB-111 RESPONSE CORRECTION, CLASS 1000 FILTER(1650)
IMPACT ANALYSIS DEPT. 5320 DATA SET 06/10/99B3
JUN 17, 1999 ERRATA 1

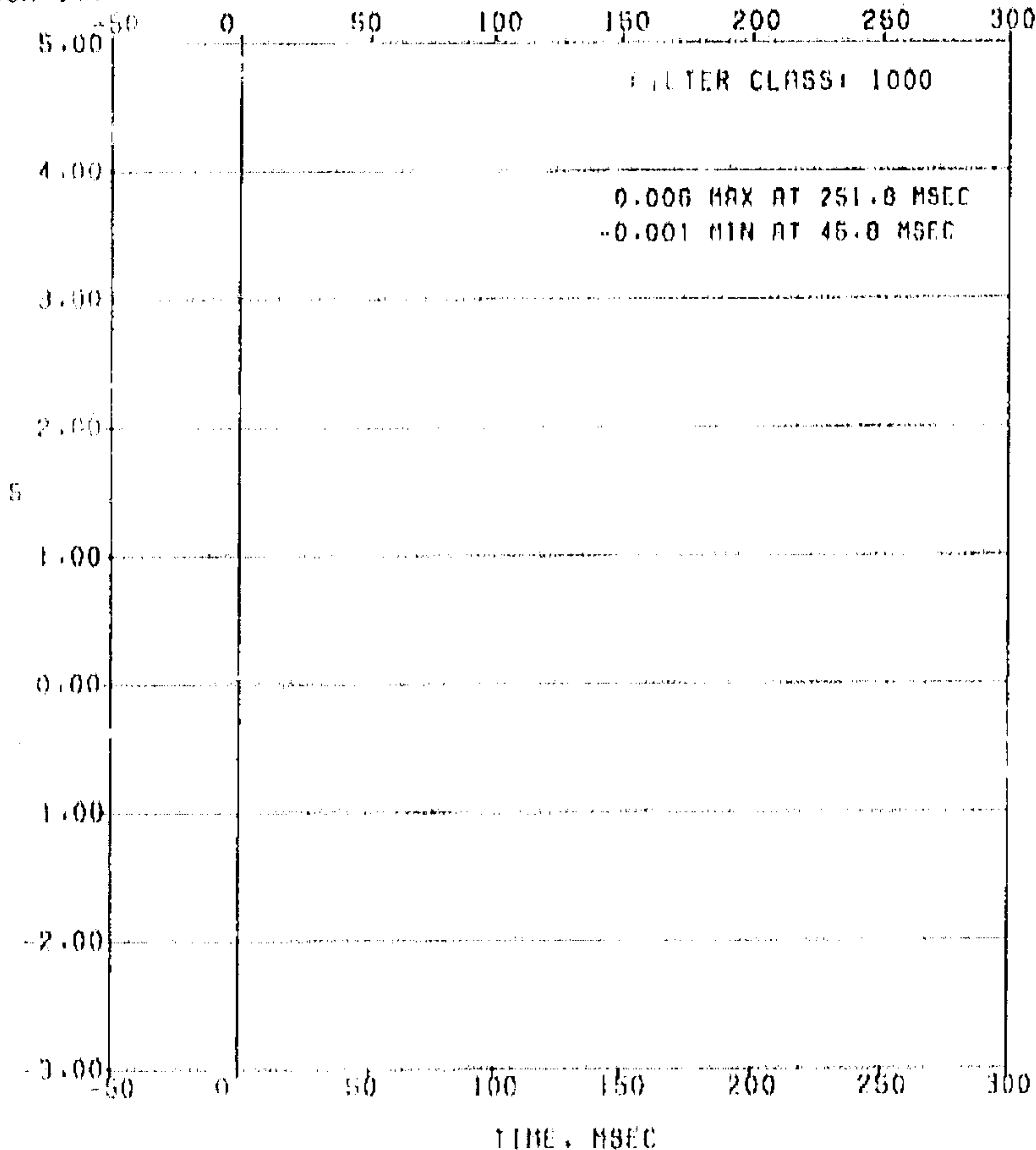


***** NOTE *****
***** NO EVENT *****

CHANNEL 031 DAB S0010 SEC

EE

FILTER TYPE: 08085-111 RESPONSE CORRECTION, CLASS 1000 FILTER(1650)
IMPACT ANALYSIS DEPT. 5520 DATA SET 06/16/99DS
JUN 17, 1999 ERRATA 1

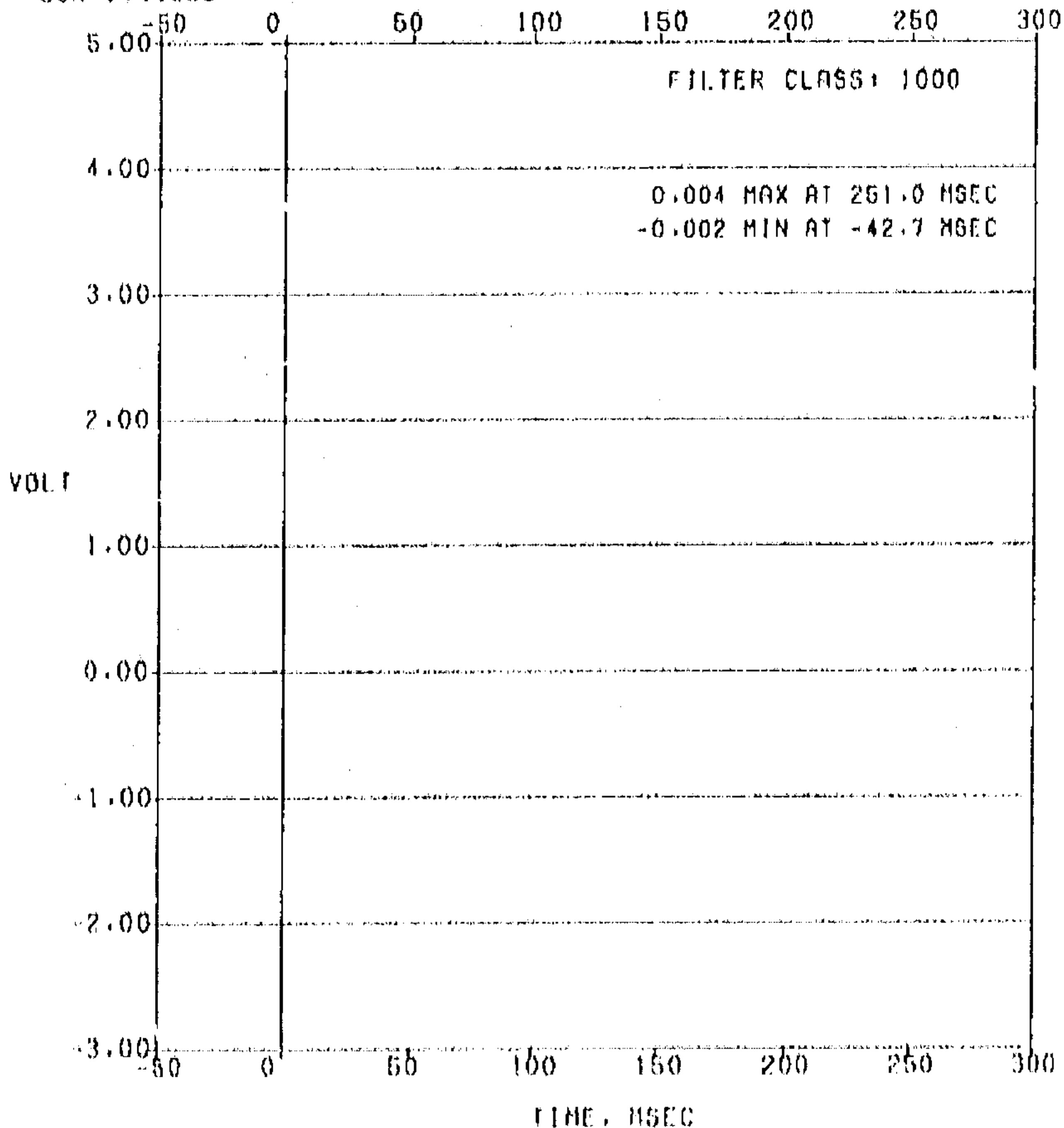


***** NOTE *****
***** NO EVENT *****

CHANNEL 032 PAB SQUIB PRI

EE

FILTER TYPE: 080AS-III RESPONSE CORRECTION, CLASS 1000 FILTER(1650)
IMPACT ANALYSIS DEPT. 5320 DATA SET 06/16/99BS
JUN 17, 1999 ERRATA I

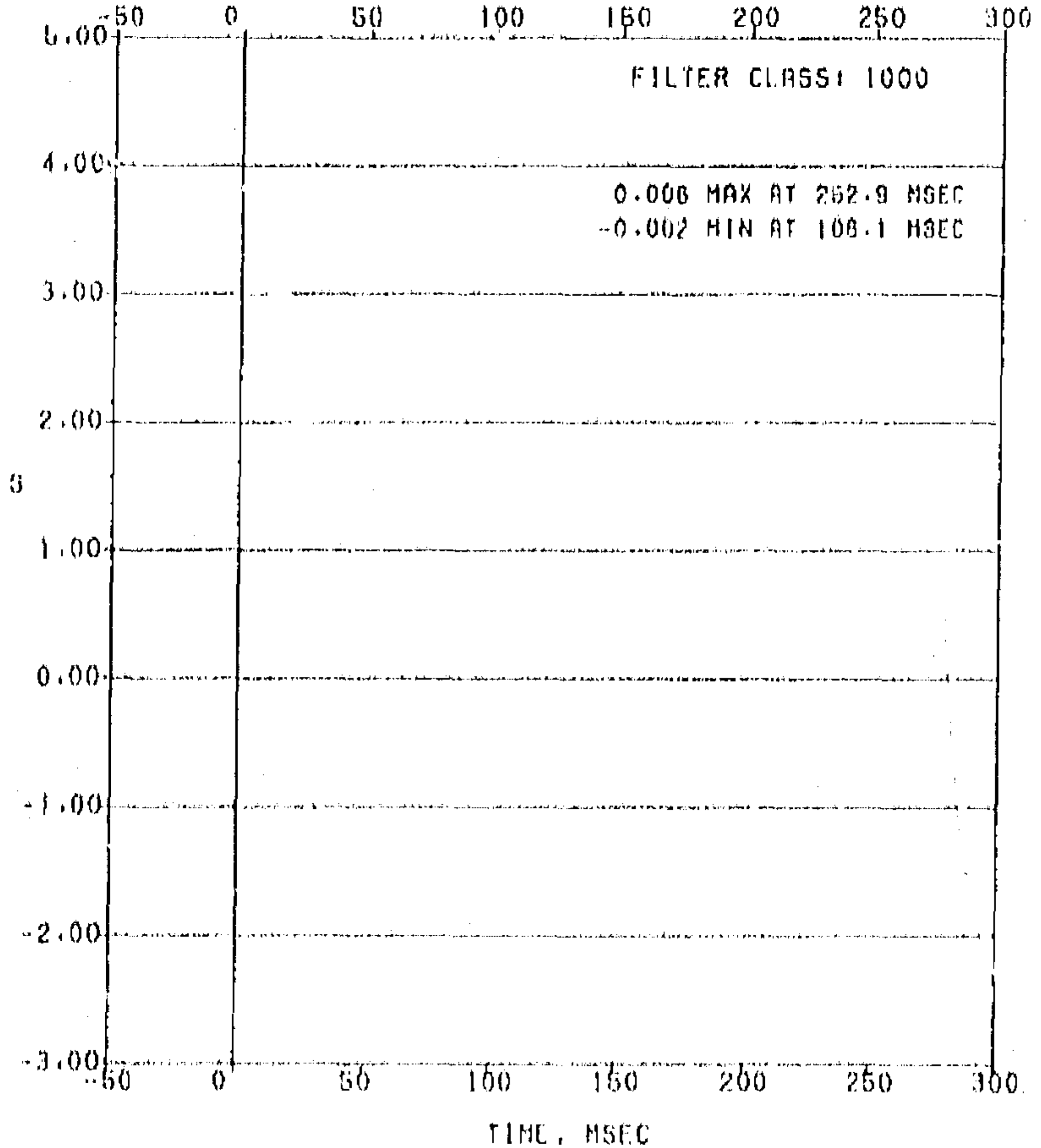


NOTE: NO EVENT

CHANNEL 033 PAD SQUIB SEC

EE

FILTER TYPE: 0008-III RESPONSE CORRECTION, CLASS 1000 FILTER(1050)
IMPACT ANALYSIS DEPT. 5320 DATA SET 06/16/98BT
JUN 17, 1999 ERRATA 1

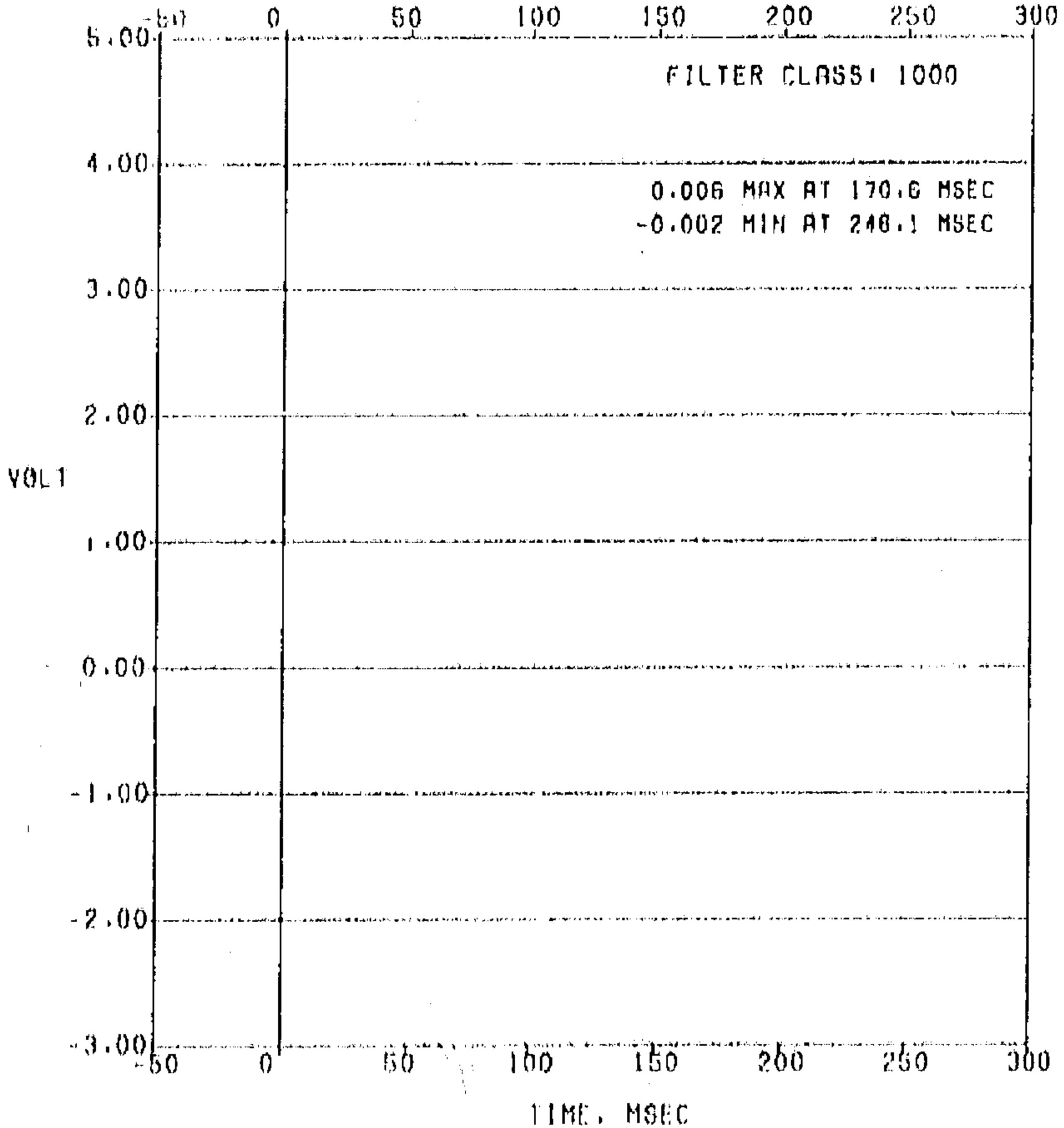


***** NOTE *****
***** NO EVENT *****

CHANNEL 034 OR PRETEN SQUID

EE

FILTER TYPE: OBD09-111 RESPONSE CORRECTION, CLASS 1000 FILTER(1050)
IMPACT ANALYSIS DEPT. 5320 DATA SET 08/16/99BT
JUN 17, 1999 ERRATA 1

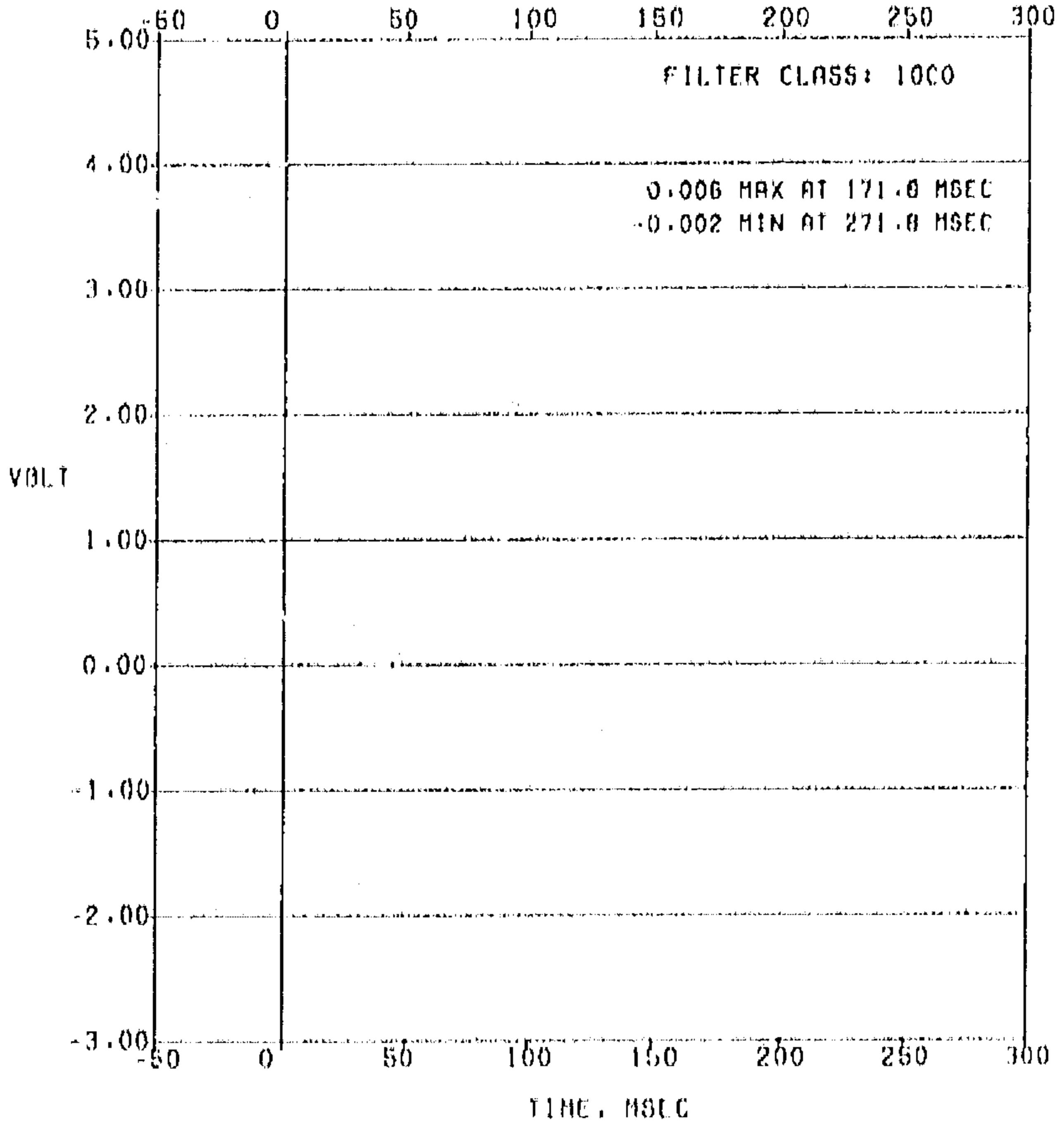


***** NOTE *****
***** NO EVENT *****

CHANNEL 035 PS PRETEN SQUIB

EE

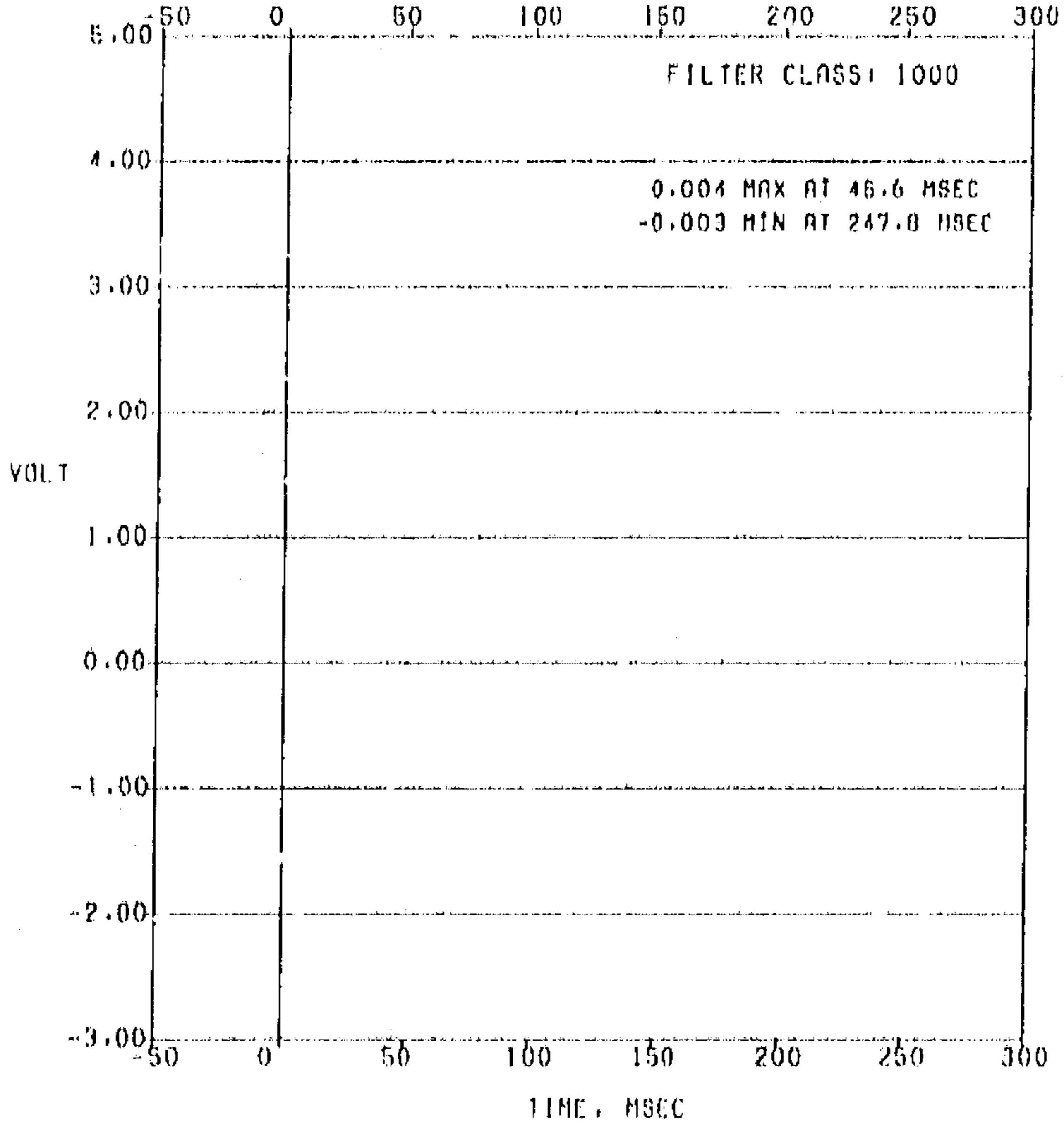
FILTER TYPE: 06DAS-111 RESPONSE CORRECTION, CLASS 1000 FILTER(1000)
IMPACT ANALYSIS DEPT. 5320 DATA SET 06/15/99B1
JUN 17, 1999 ERRATA 1



NOTE: NO EVENT

CHANNEL 036 SRC SAFINO SEN EE

FILTER TYPE: 08005-111 RESPONSE CORRECTION, CLASS 1000 FILTER(1650)
IMPACT ANALYSIS DEPT. 5320 DATA SET 08/16/99BT
JUN 17, 1999 ERRATA 1

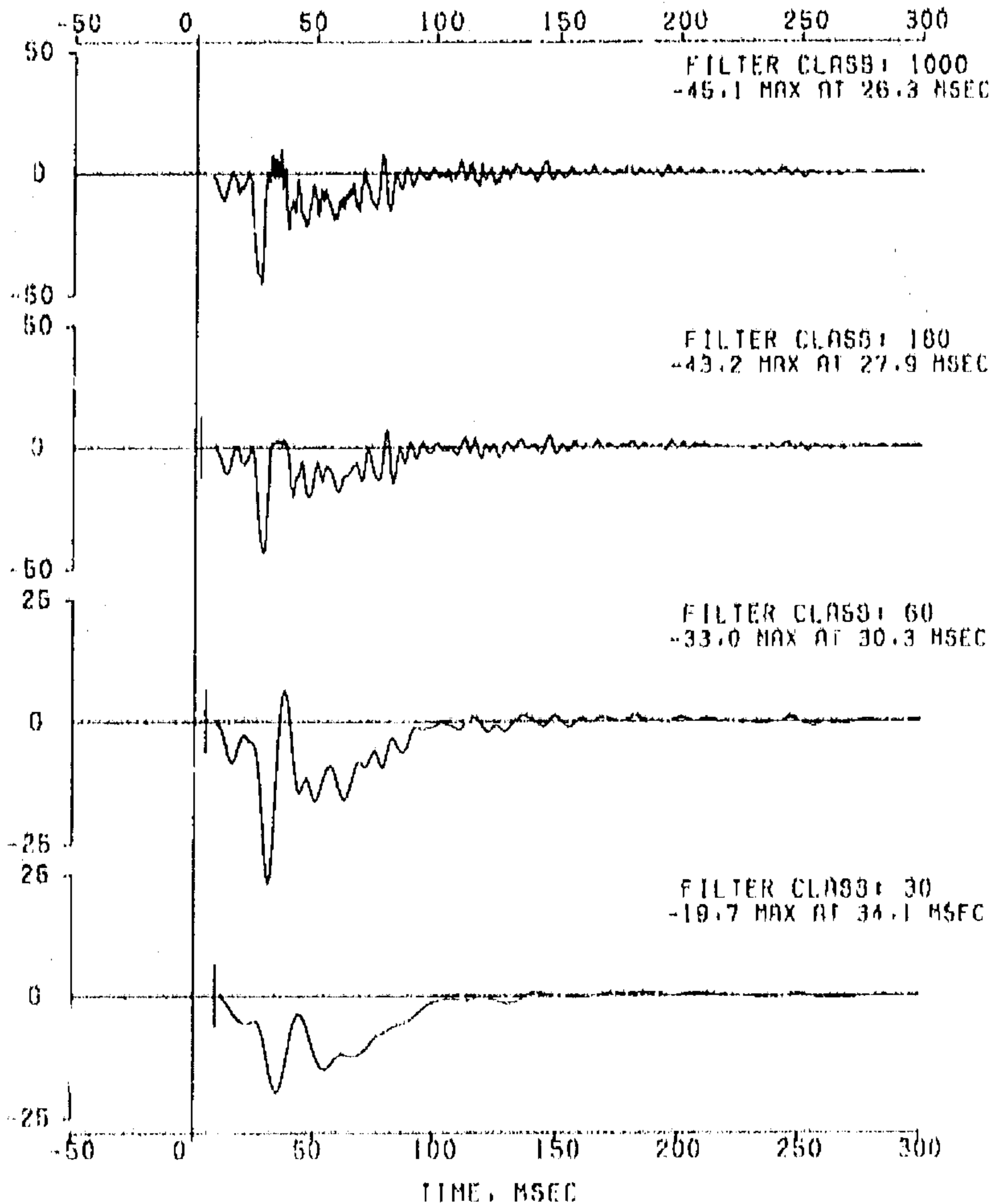


NOTE: NO EVENT

VC07823 30-MPH REAR MOVING BARRIER, KJ-J-74. ITEM KJ4003
2002 HY88 301 REAR IMPACT DEVELOPMENT.
CHANNEL 037 ORC INTERN ACCEL. 0 EE
FILTER TYPE: 080AS-III RESPONSE CORRECTION. CLASS 1000 FILTER(1650)
IMPACT ANALYSIS DEPT. 5320
JUN 17, 1999

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DATA SET 08/16/99BT
ERRATA 1



VC07023 30-MPH REAR MOVING BARRIER, KJ-J-74. ITEM KJ4003

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2002 MV98 301 REAR IMPACT DEVELOPMENT.

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CHANNEL 038 ORC FRONT LT

X U14000

FILTER TYPE: UBD05-111 RESPONSE CORRECTION, CLASS 1000 FILTER(1660)

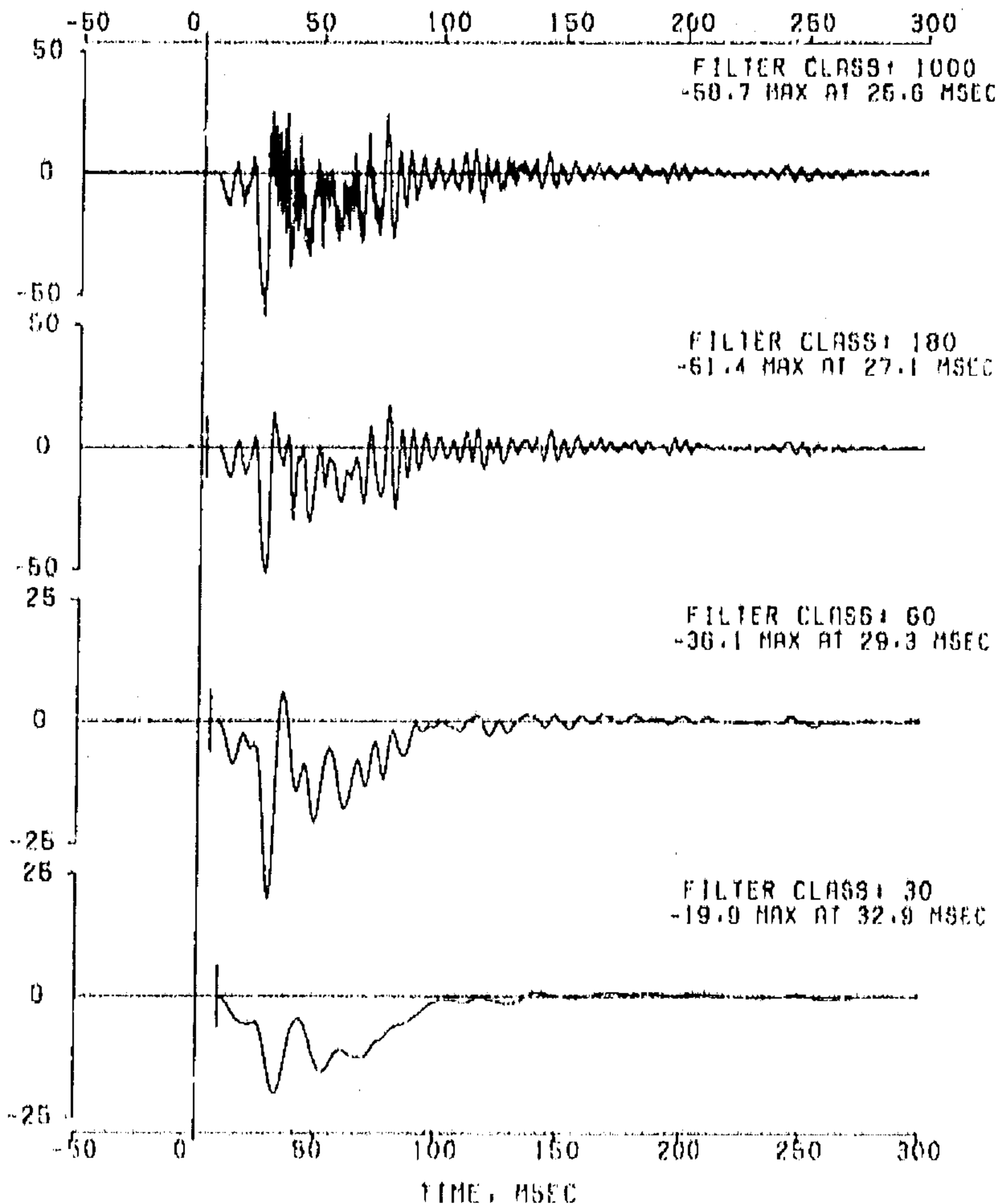
IMPACT ANALYSIS DEPT. 6320

DATA SET 06/16/9901

JUN 17, 1999

ERRATA

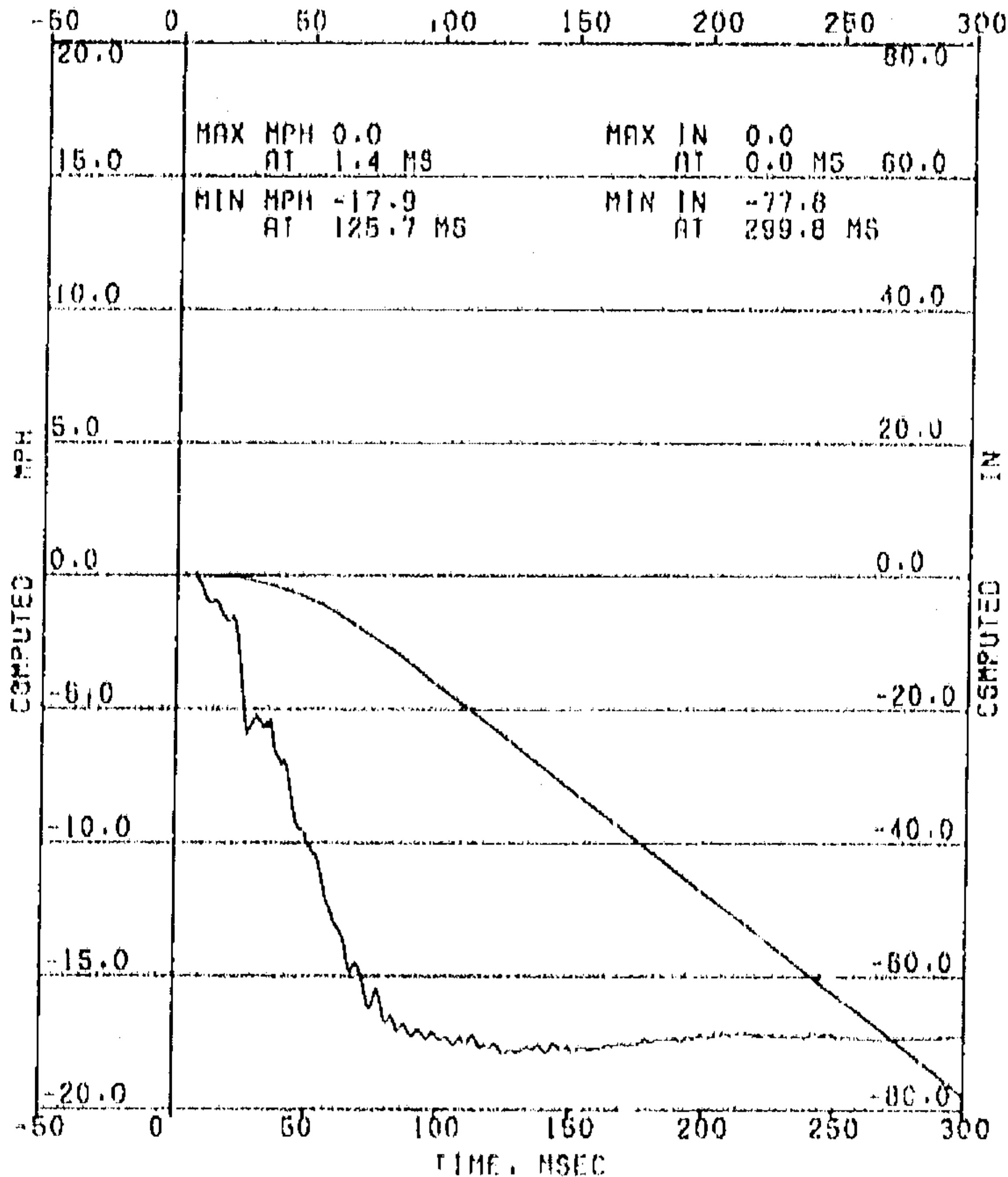
1



FILTER TYPE: OBDAS-111 RESPONSE CORRECTION, CLASS 1000 FILTER(1650)
 FILTER CLASS: 1000

IMPACT ANALYSIS DEPT. 5320
 JUN 17, 1999

DATA SET 06/16/99BT
 ERRATA I

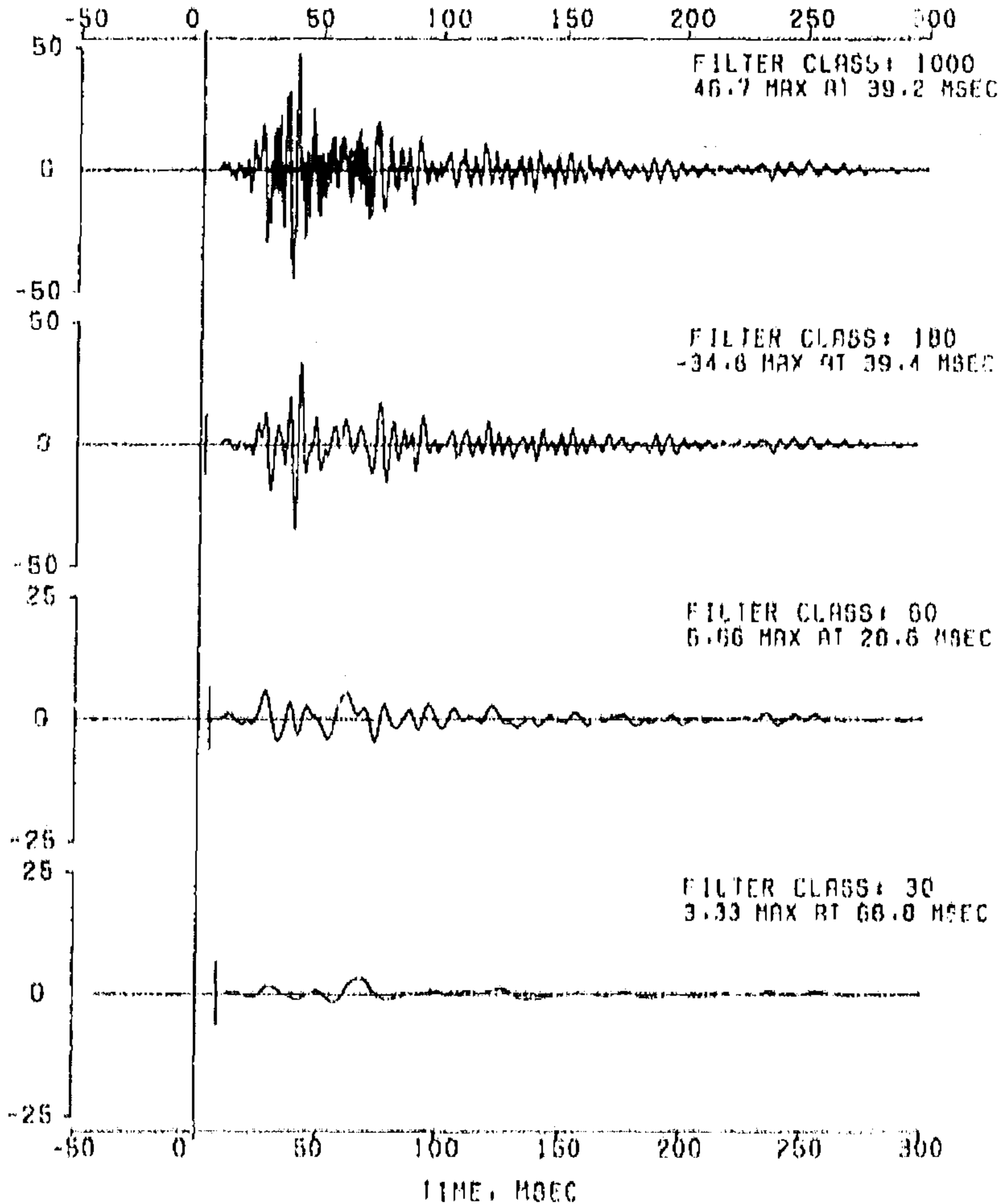


COMPUTED MPH
 COMPUTED IN

VC07823 30-MPH REAR MOVING BARRIER, KJ-J-74, ITEM KJ4003
2002 MYSS 301 REAR IMPACT DEVELOPMENT,
CHANNEL 039 ORC FRONT LT Y R13008
FILTER TYPE: OBDAS-III RESPONSE CORRECTION, CLASS 1000 FILTER(1660)
IMPACT ANALYSIS DEPT. 5320
JUN 17, 1999

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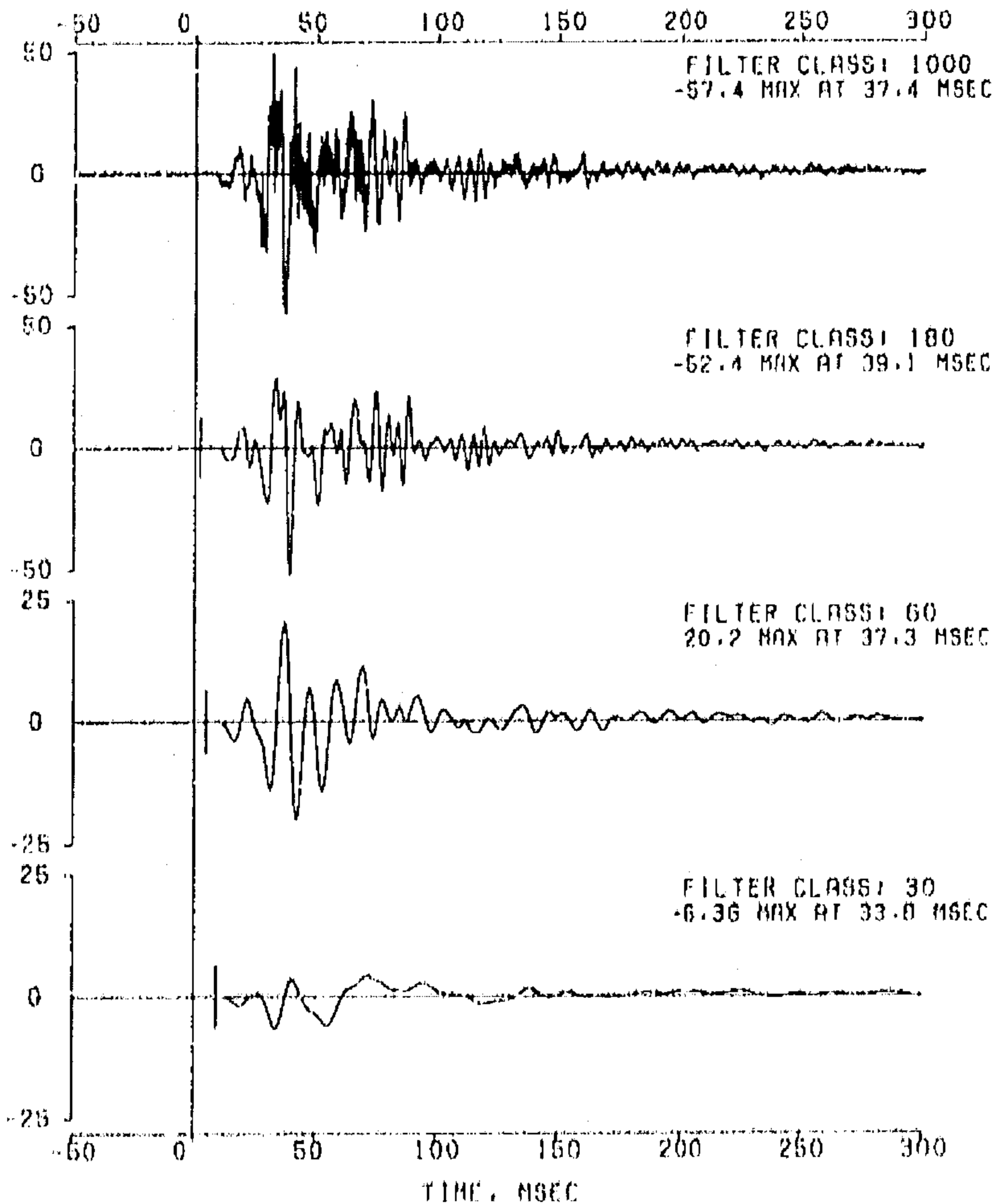
DATA SET 06/16/9901
ERRATA 1



VC07623 30-MPH REAR MOVING BARRIER, KJ-J-74, ITEM KJ4003
2002 MV8A 301 REAR IMPACT DEVELOPMENT.
CHANNEL 040 ORC FRONT L1 Z B13044
FILTER TYPE T 080MS-III RESPONSE CORRECTION, CLASS 1000 FILTER(1650)
IMPACT ANALYSIS DEPT. 5320
JUN 17, 1999

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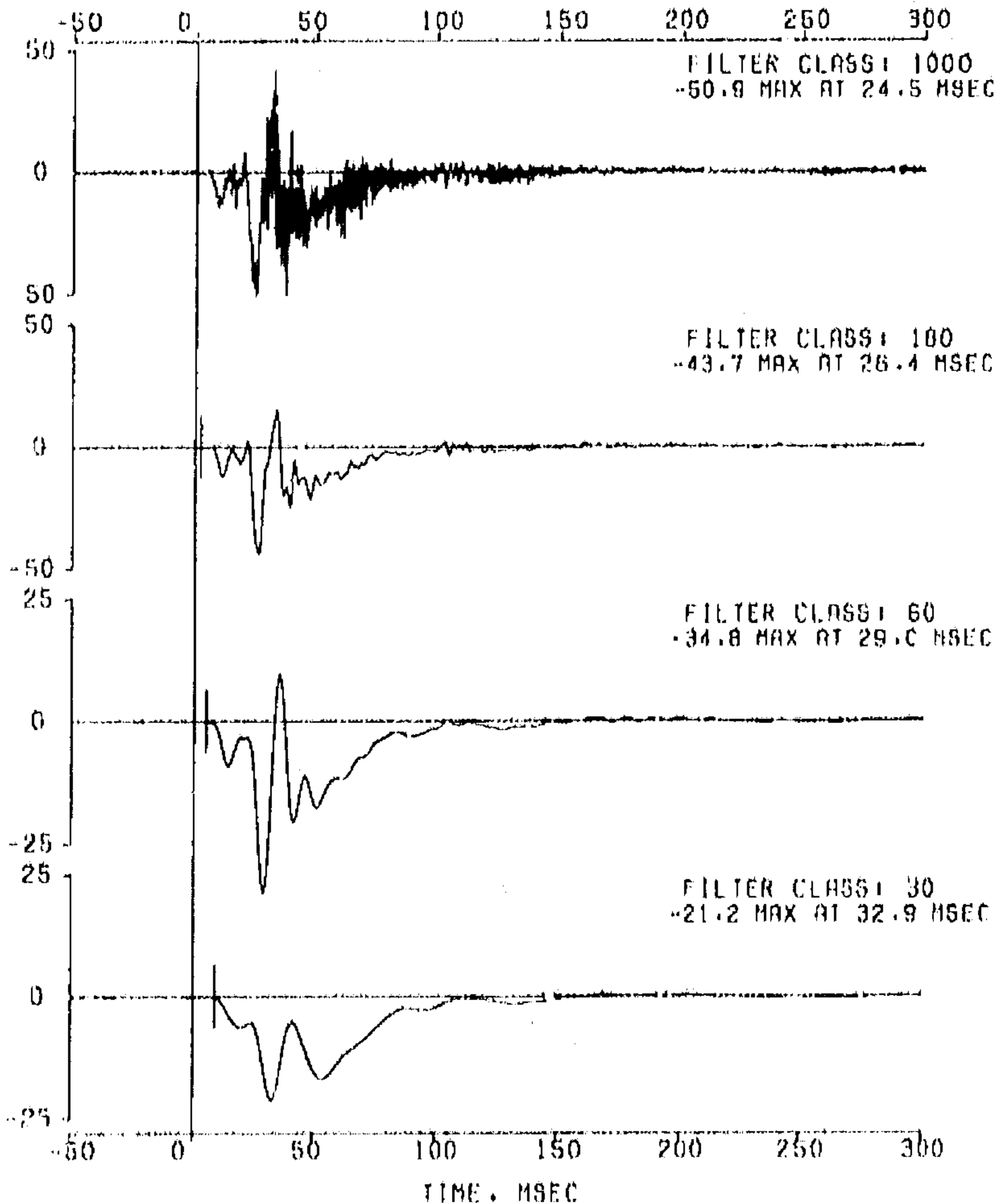
DATA SET 06/16/99BT
ERRATA 1



VC07023 30-MPH REAR MOVING BARRIER, KJ-J-74, ITEM KJ4003
2002 HYSS 301 REAR IMPACT DEVELOPMENT,
CHANNEL 041 LT FT SILL FWD ST XDRX AP153
FILTER TYPE: OBOAG-III RESPONSE CORRECTION, CLASS 1000 FILTER(1660)
IMPACT ANALYSIS DEPT. 5320
JUN 17, 1999

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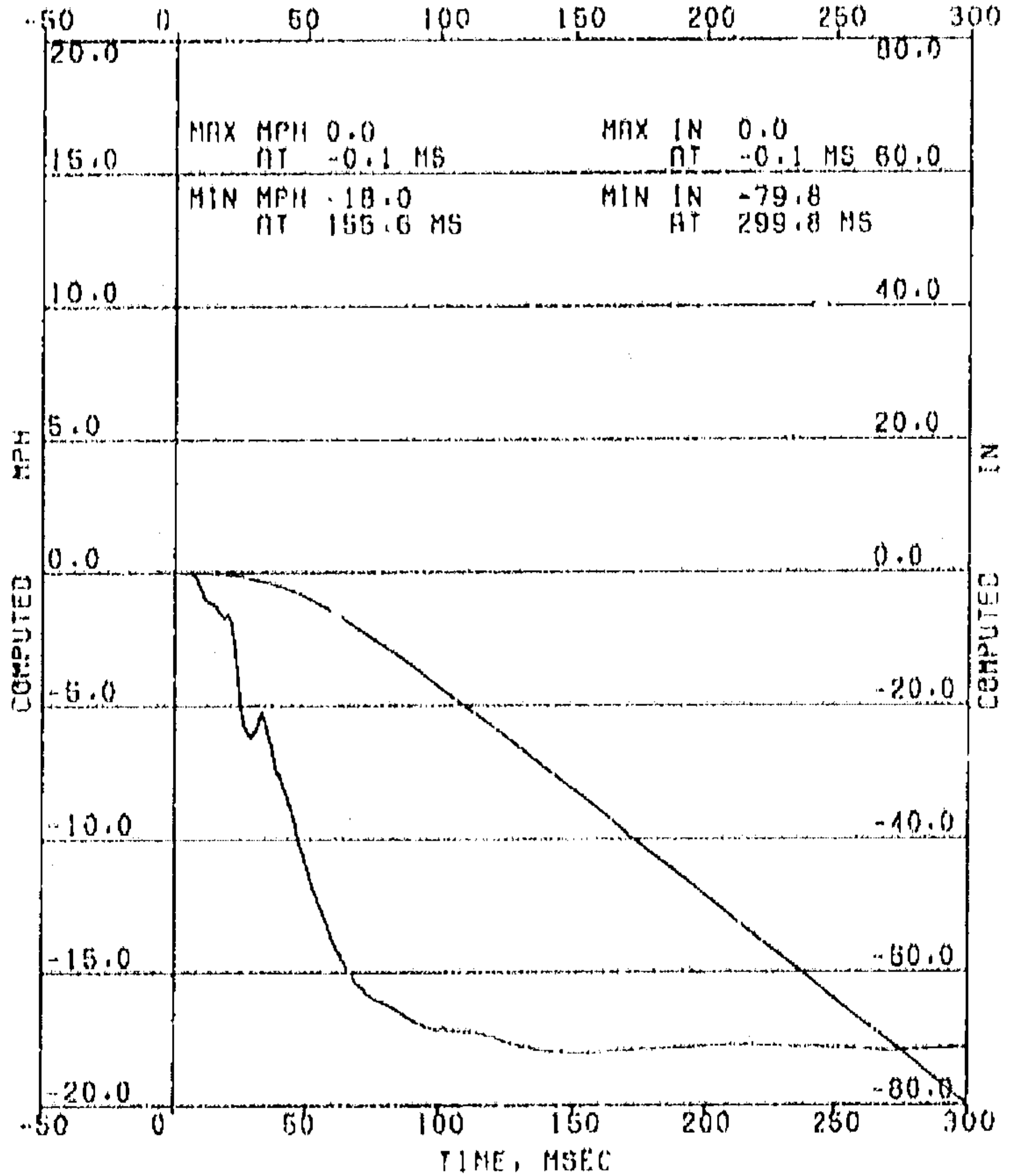
DATA SET 06/16/99BT
ERRATA 1



FILTER TYPE: 080MS-111 RESPONSE CORRECTION, CLASS 1000 FILTER(1650)
 FILTER CLASS: 1000

IMPACT ANALYSIS DEPT. 5320
 JUN 17, 1999

DATA SET 06/16/89UT
 ERRATA 1

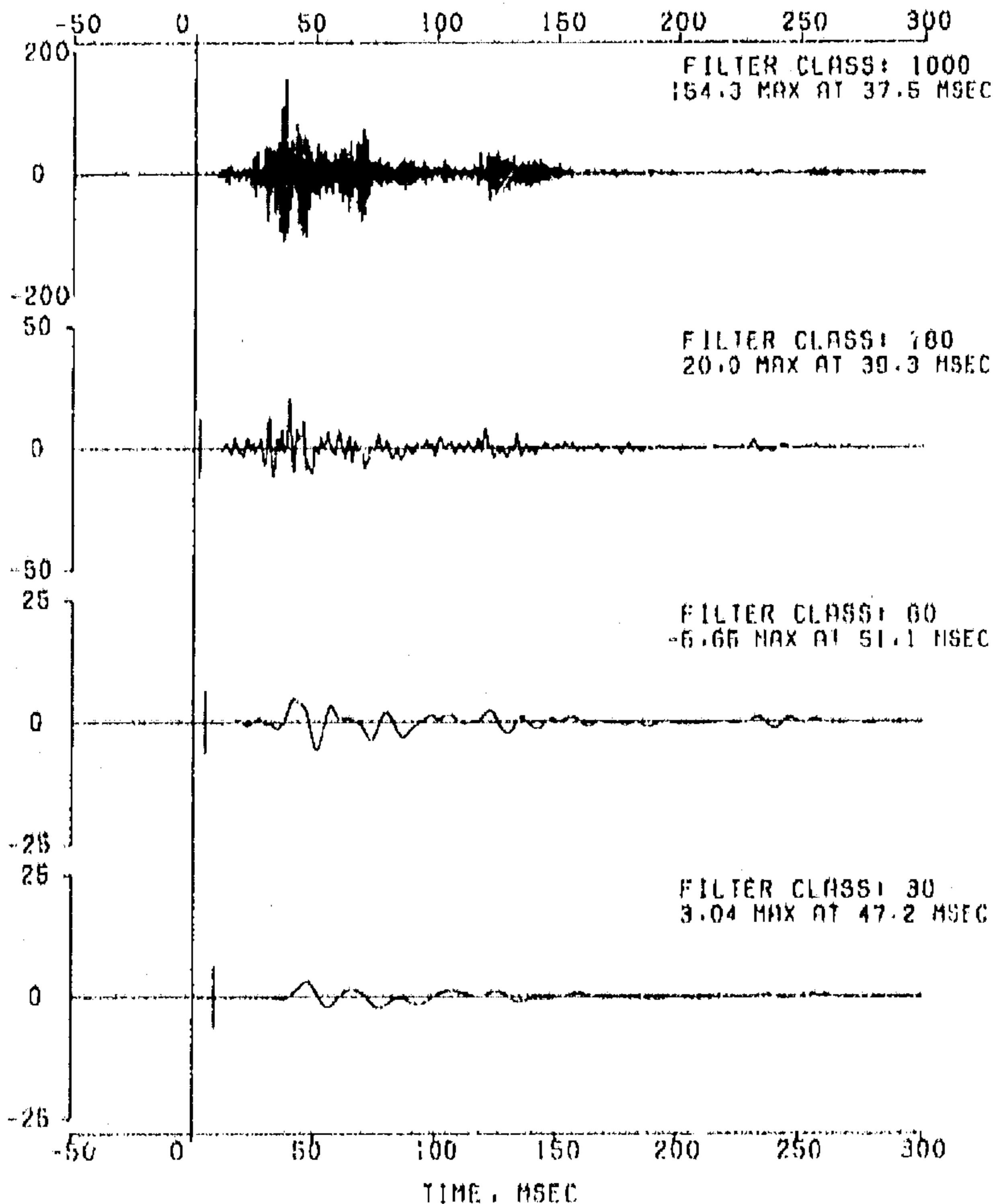


COMPUTED MPH
 COMPUTED IN

VC07023 30-MPH REAR MOVING BARRIER, KJ-J-74, ITEM KJ4003
2002 HYSS 301 REAR IMPACT DEVELOPMENT,
CHANNEL 042 LT FT SILL FWD BT XMBRY J10798
FILTER TYPE: 00006-111 RESPONSE CORRECTION, CLASS 1000 FILTER(1650)
IMPACT ANALYSIS DEPT. 5320
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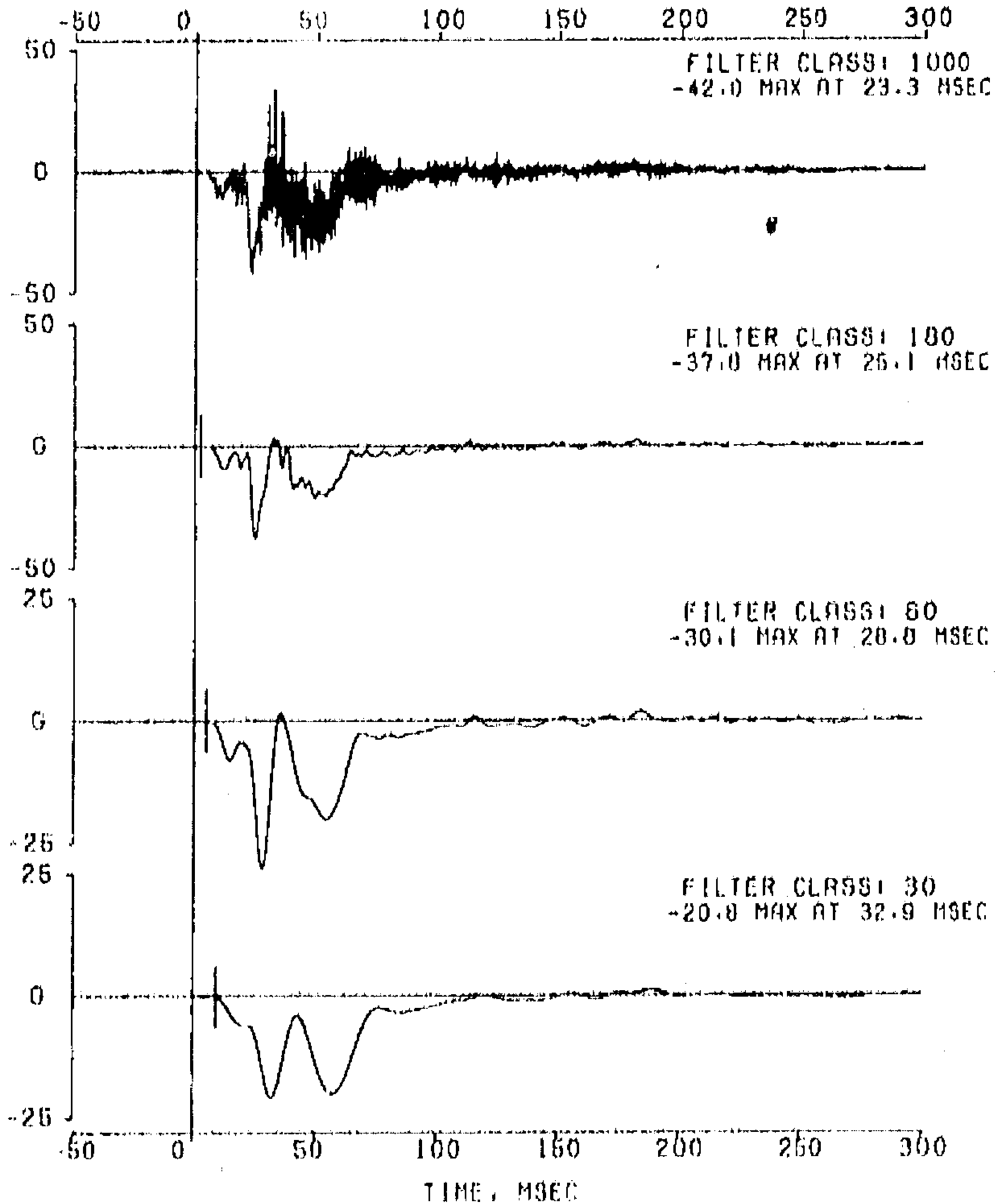
DATA SET 06/16/99BT
ERRATA 1



VC07523 30-MPH REAR MOVING BARRIER, XJ-J-74, ITEM KJ4003
2002 NV88 301 REAR IMPACT DEVELOPMENT.
CHANNEL 043 RT FT SILL FWD ST XMBRX J13051
FILTER TYPE: OBD98-111 RESPONSE CORRECTION, CLASS 1000 FILTER(1650)
IMPACT ANALYSIS DEPT. 5320
JUN 17, 1999

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DATA SET 06/18/99BT
ERRATA 1



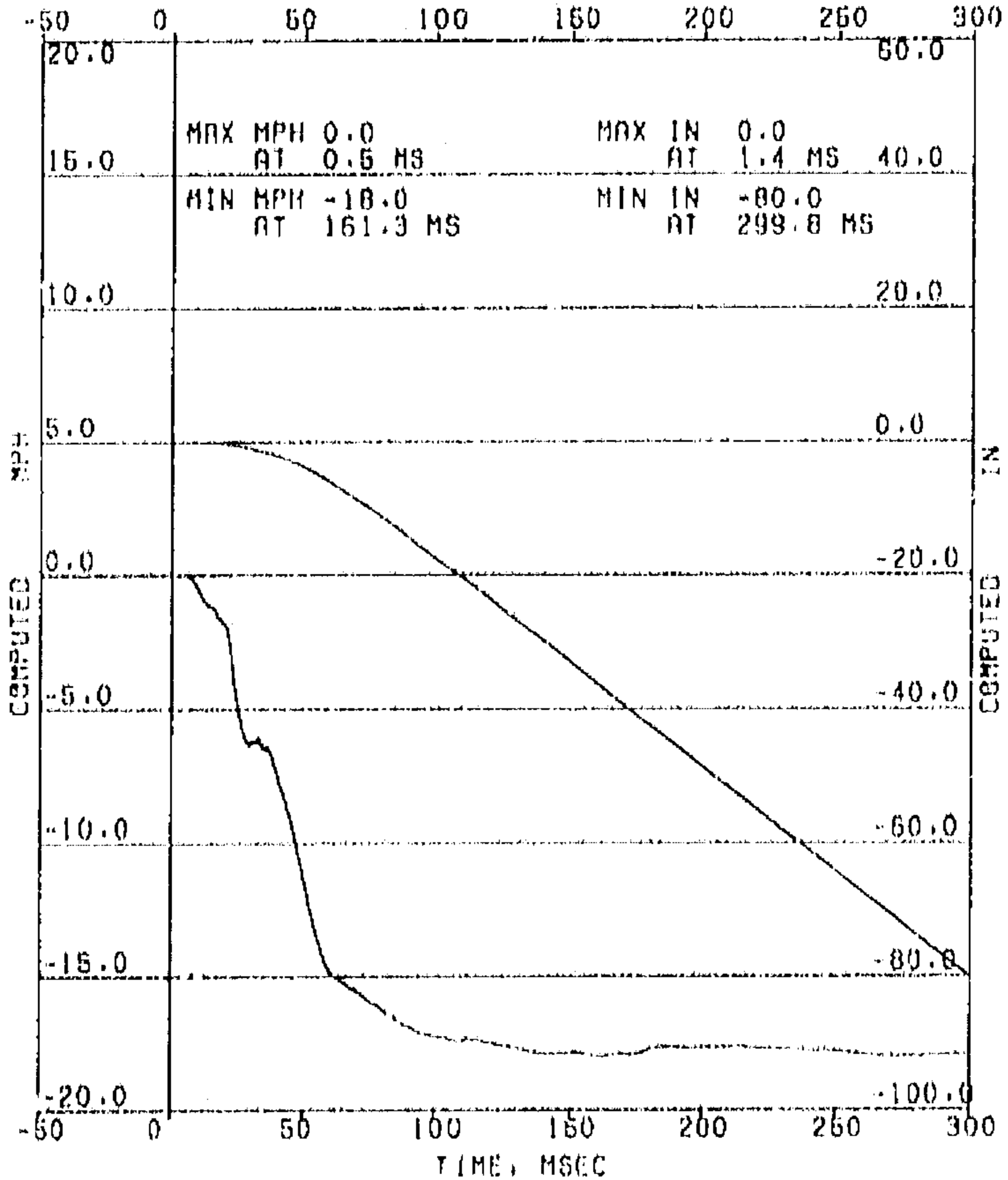
VCO7023 30-MPH REAR MOVING BARRIER, KJ-J-74. ITEM KJ4003
 2002 HYBR 301 REAR IMPACT DEVELOPMENT,
 CHANNEL 043 RT FT SILL FWD ST XMRX J13051

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FILTER TYPE: 04DH6-111 RESPONSE CORRECTION, CLASS 1000 FILTER(1650)
 FILTER CLASS: 1000

IMPACT ANALYSIS DEPT. 5320
 JUN 17, 1999

DATA SET 06/16/99BT
 ERRATA 1

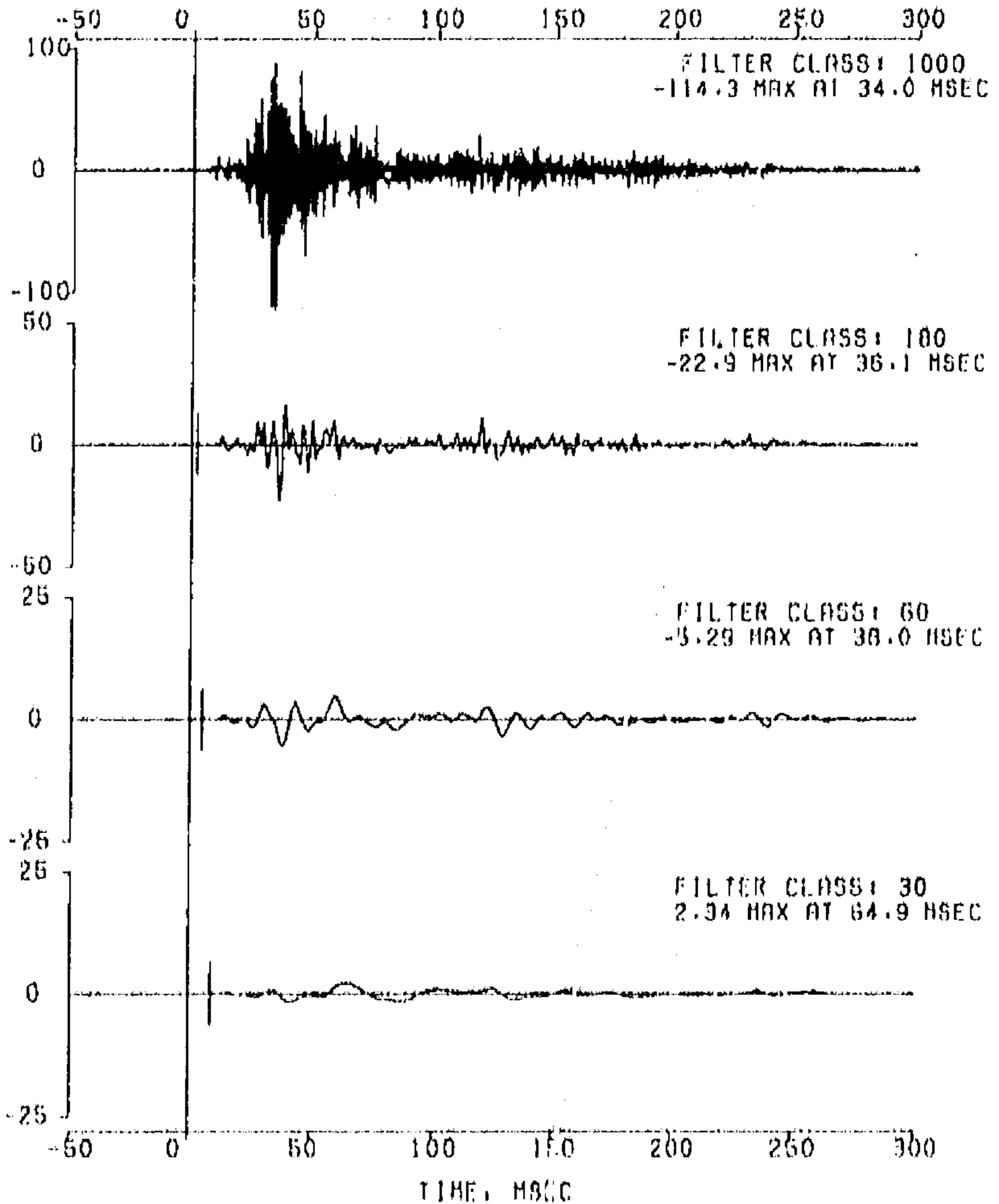


COMPUTED MPH
 COMPUTED IN

VC07823 30-MPH REAR MOVING BARRIER, KJ-J-74, ITEM KJ4003
2002 MY85 301 REAR IMPACT DEVELOPMENT,
CHANNEL 044 RT FT SILL FWD ST XMBRY J19367
FILTER TYPE: OBUAS-III RESPONSE CORRECTION, CLASS 1000 FILTER(1550)
IMPACT ANALYSIS DEPT. 5320
JUN 17, 1999

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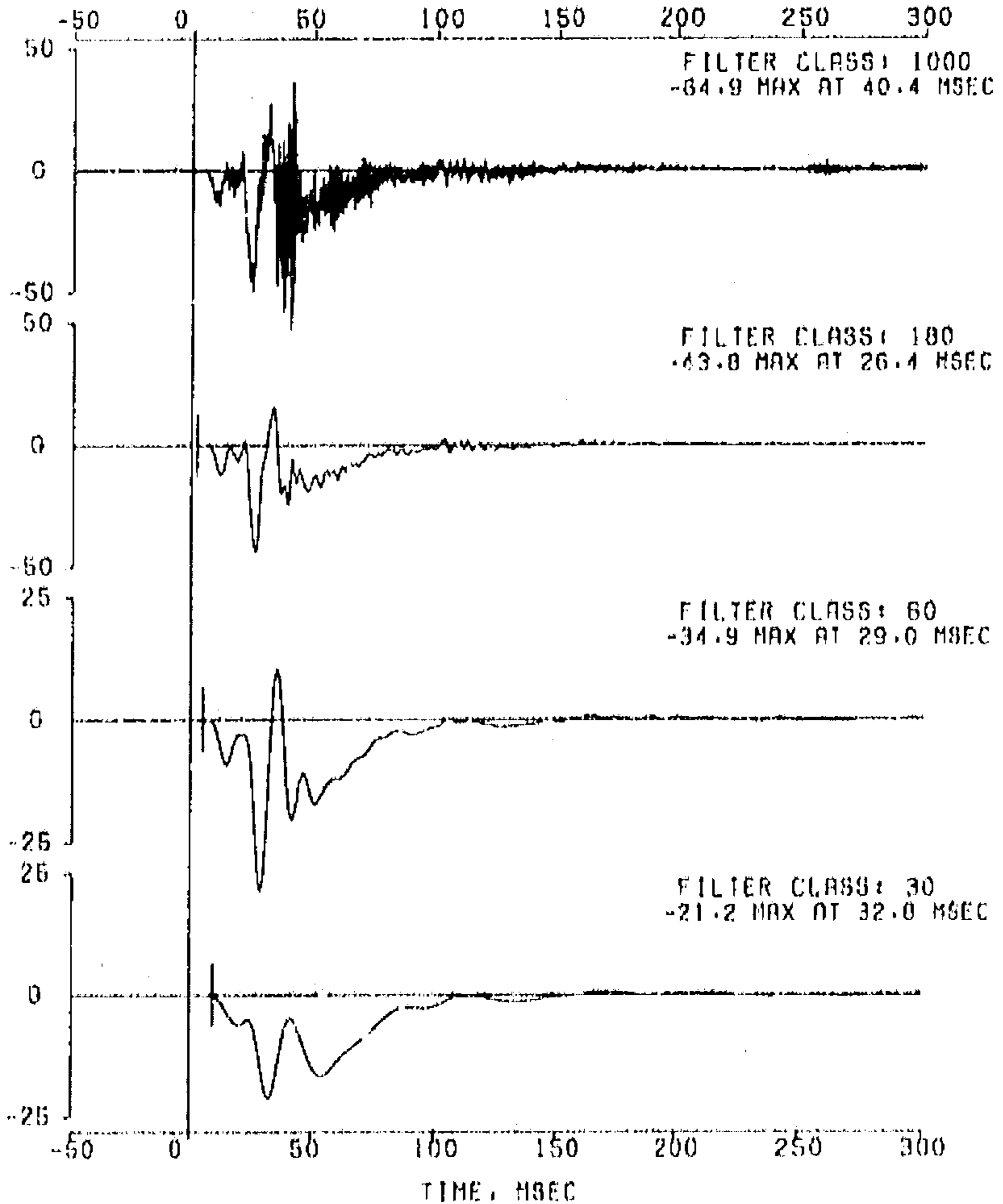
DATA SET 06/16/98BT
ERRATA 1



VCO7623 30-MPH REAR MOVING BARRIER, KJ-J-74. ITEM KJ4003
2002 MY99 301 REAR IMPACT DEVELOPMENT,
CHANNEL 045 LT SILL AT B PILLAR X J26992
FILTER TYPE: 00045-III RESPONSE CORRECTION, CLASS 1000 FILTER(1050)
IMPACT ANALYSIS DEPT. 5320
JUN 17, 1999

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DATA SET 06/16/99BT
ERRATA 1



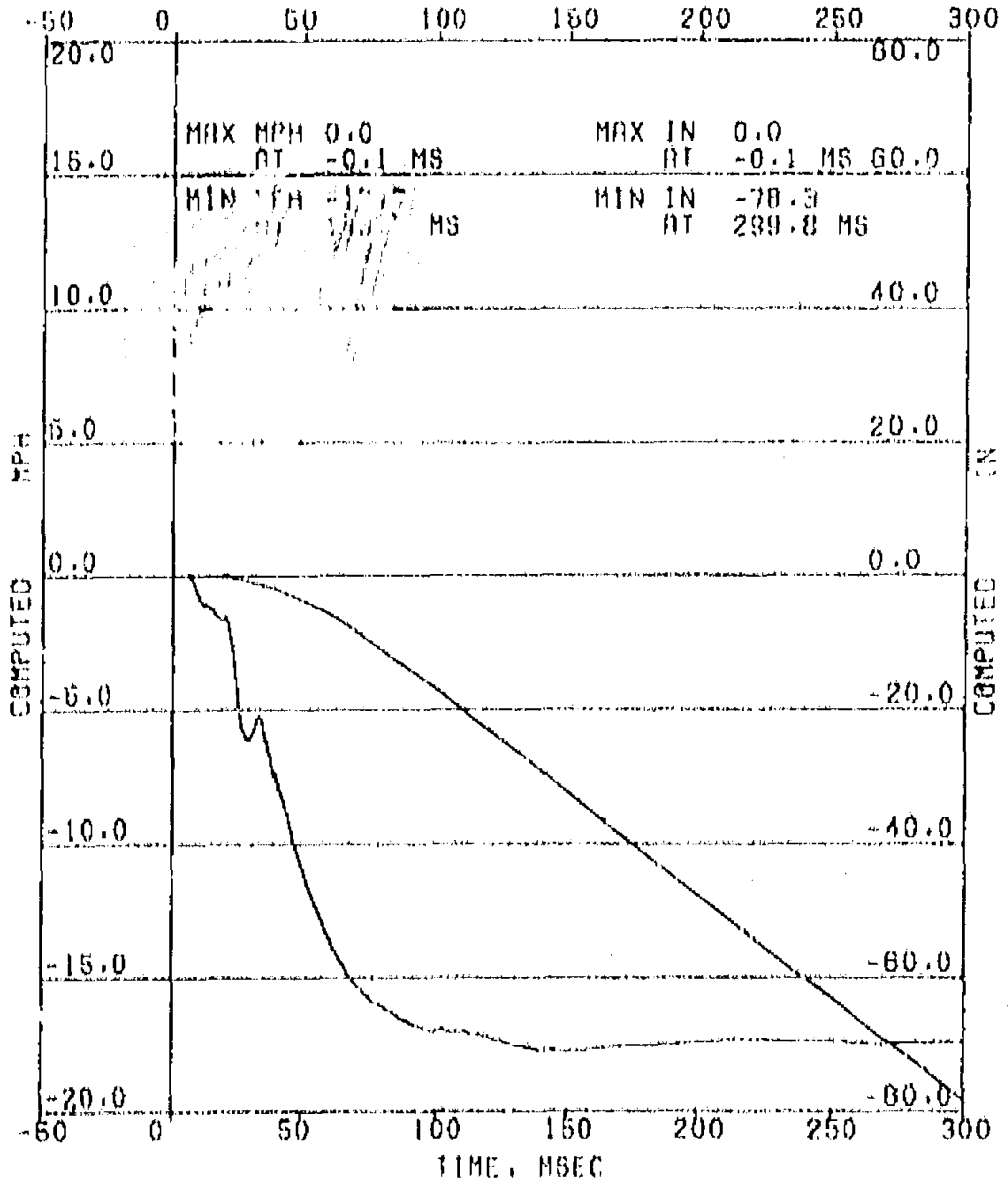
VC07629 30-MPH REAR MOVING BARRIER, KJ-J-74, ITEM KJ4003
 2002 HVS9 301 REAR IMPACT DEVELOPMENT,
 CHANNEL 045 LT SILL AT B PILLAR X .026997

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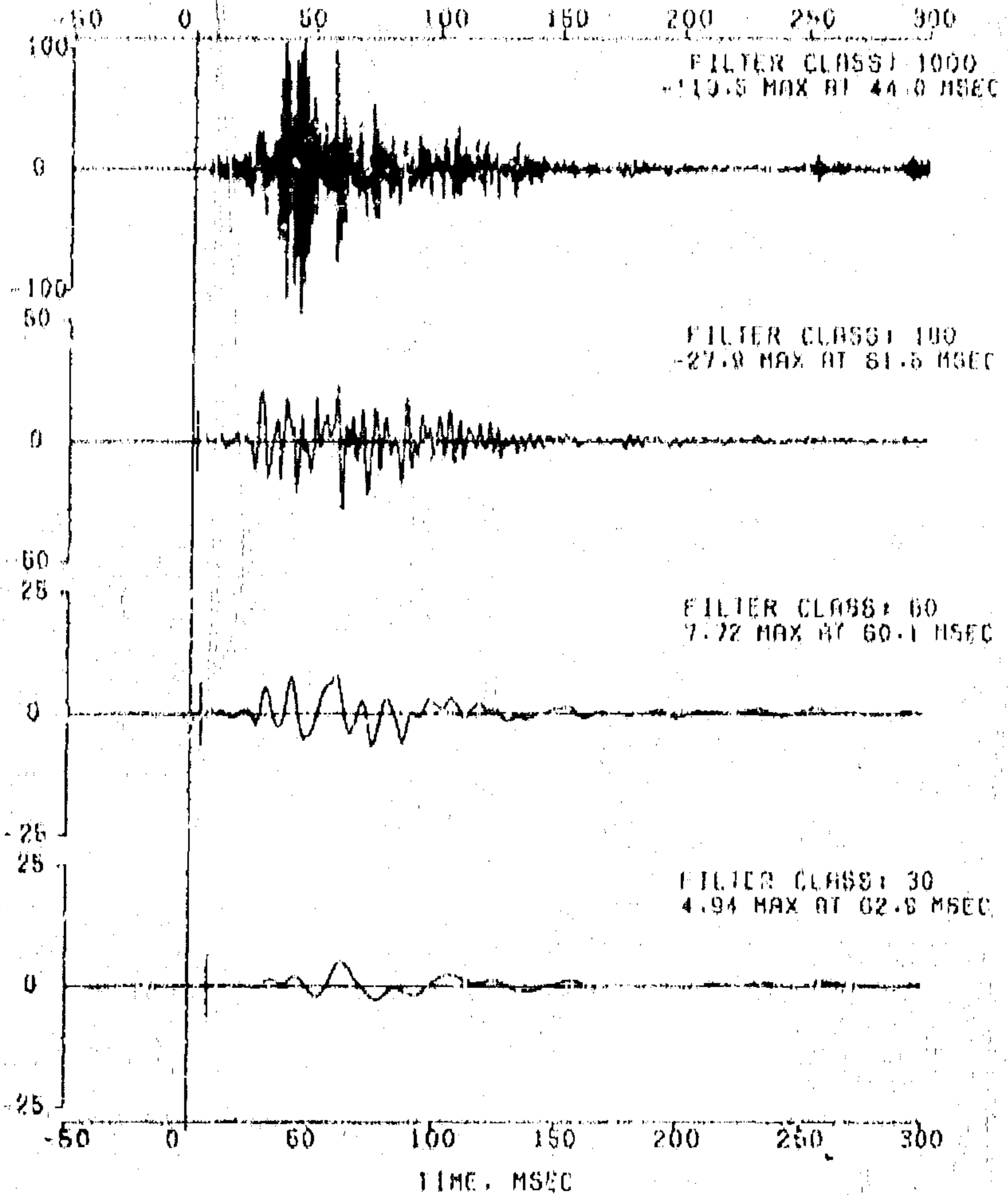
FILTER TYPE: 000AS-111 RESPONSE CORRECTION, CLASS 1000 FILTER(1650)
 FILTER CLASS: 1000

IMPACT ANALYSIS DEPT. 5320
 JUN 17, 1999

DATA SET 08/16/99BT
 ERRATA 1



COMPUTED MPH
 COMPUTED IN



VCD7623 30 MPH REAR MOVING STRIKER, KJ-3-74, ITEM KJ4003

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2002 MY90 301 REAR IMPACT DEVELOPMENT

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CHANNEL 047 BT STILL AT B PILLAR X J17468

FILTER TYPE: QBDAS - ALL RESPONSE CORRECTION, CLASS 1000 FILTER(1850)

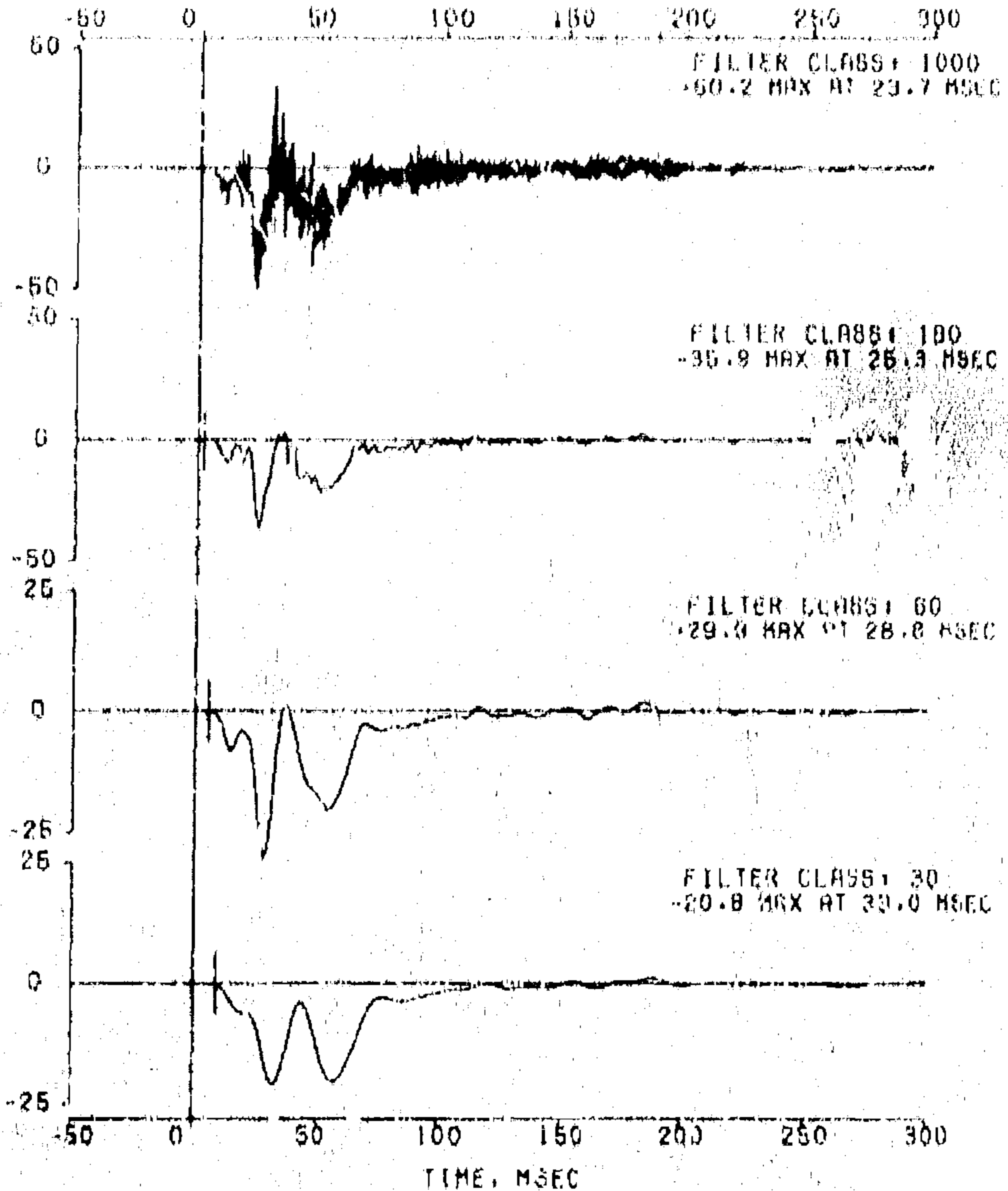
IMPACT ANALYSIS DEPT, 6320

DATA SET 06/16/99BT

JUN 17, 1999

ERRATA

1



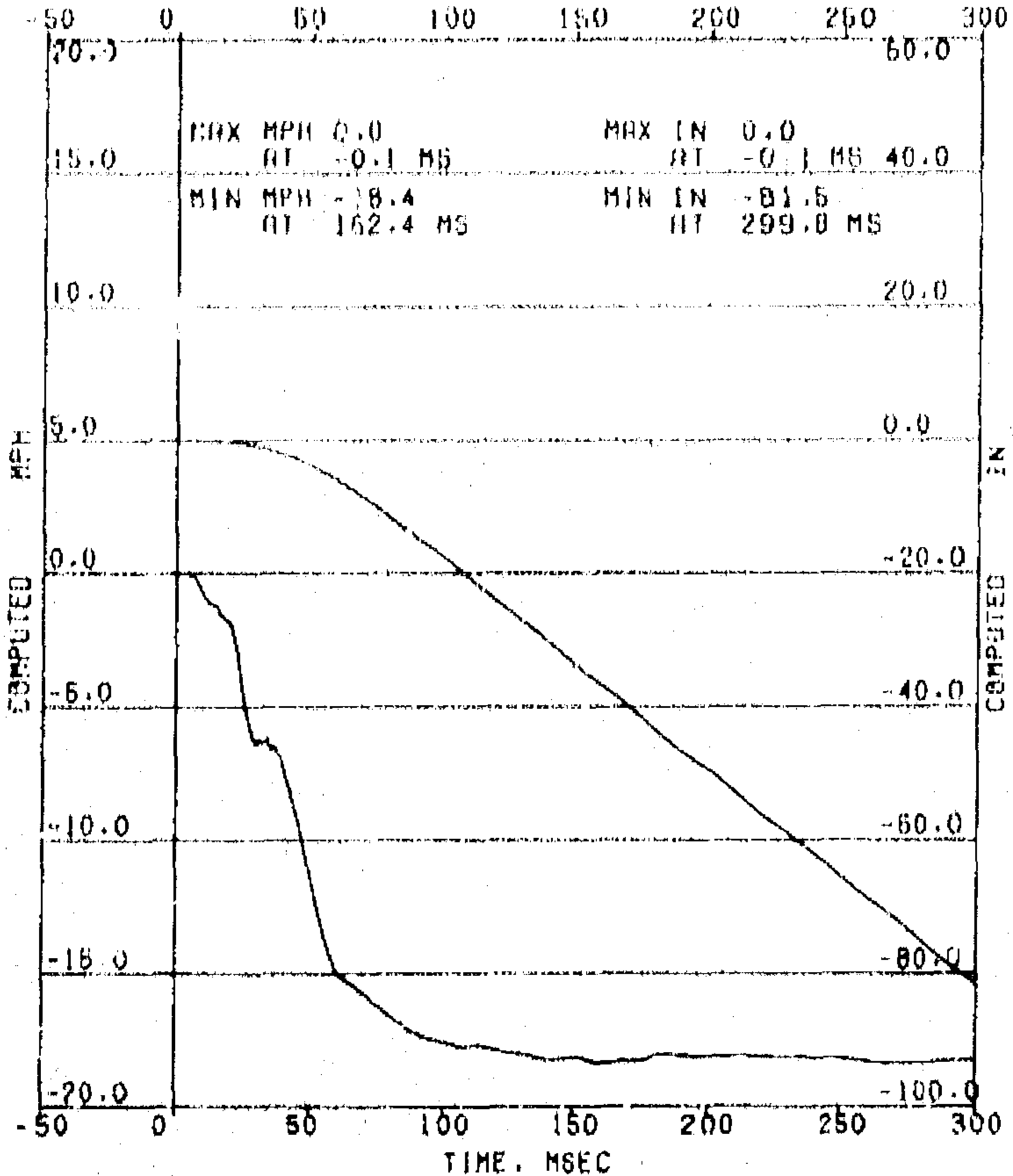
VIC0782: 50-MPH REAR MOVING BARRIER, KJ-3-74, ITEM KJ4003
 2002 2755 301 REAR IMPACT DEVELOPMENT
 CHANNEL 047 RT BILL HT B PILLER X J17466

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FILTER TYPE: OBDAS III RESPONSE CORRECTION, CLASS 1000 FILTER(1650)
 FILTER CLASS: 1000

IMPACT ANALYSIS DEPT. 5320
 JUN 17, 1998

DATA SET 06/15/98BT
 ERRATA 1

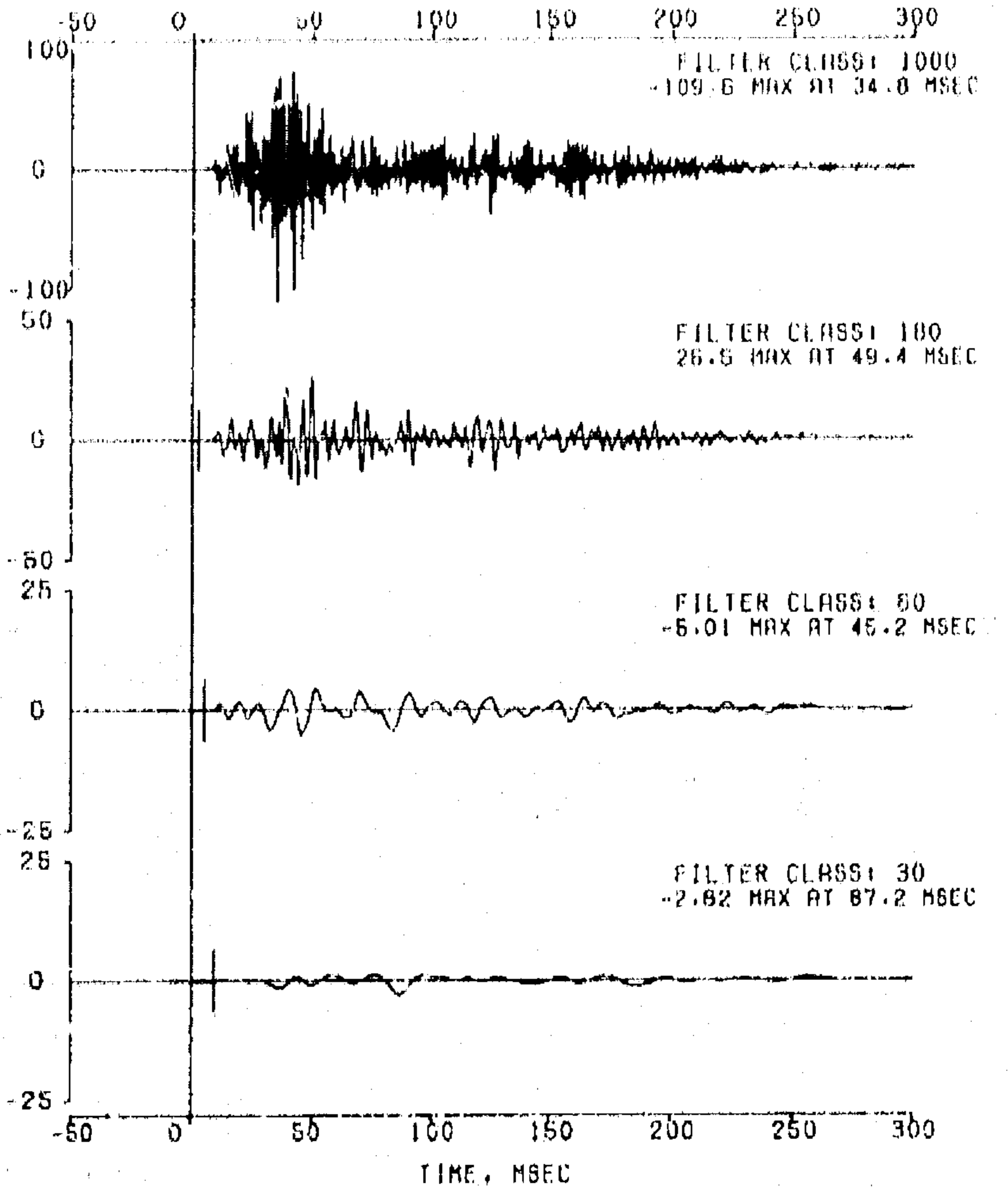


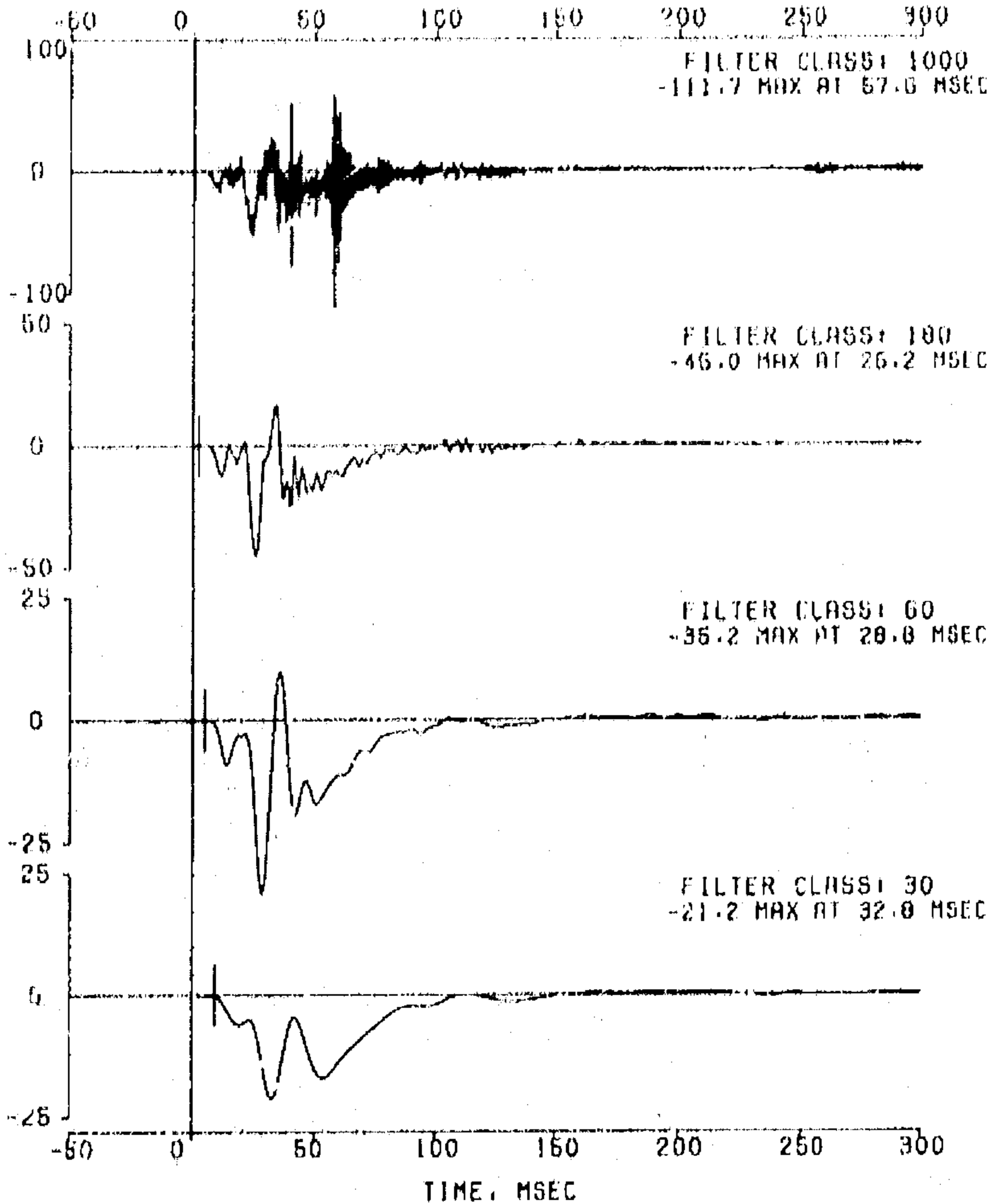
COMPUTED MPH
 COMPUTED IN

Y007623 30-KPH REAR MOVING BARRIER, KJ-J-74, ITEM KJ4003
2002 HYBR 301 REAR IMPACT DEVELOPMENT,
CHANNEL 048 RT VILL AT B PILLAR Y APYR1
FILTER TYPE: 08085-III RESPONSE CORRECTION, CLASS 1000 FILTERC16501
IMPACT ANALYSIS DEPT. 5320
JUN 17, 1999

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DATA SET 06/16/99BT
ERRATA 1

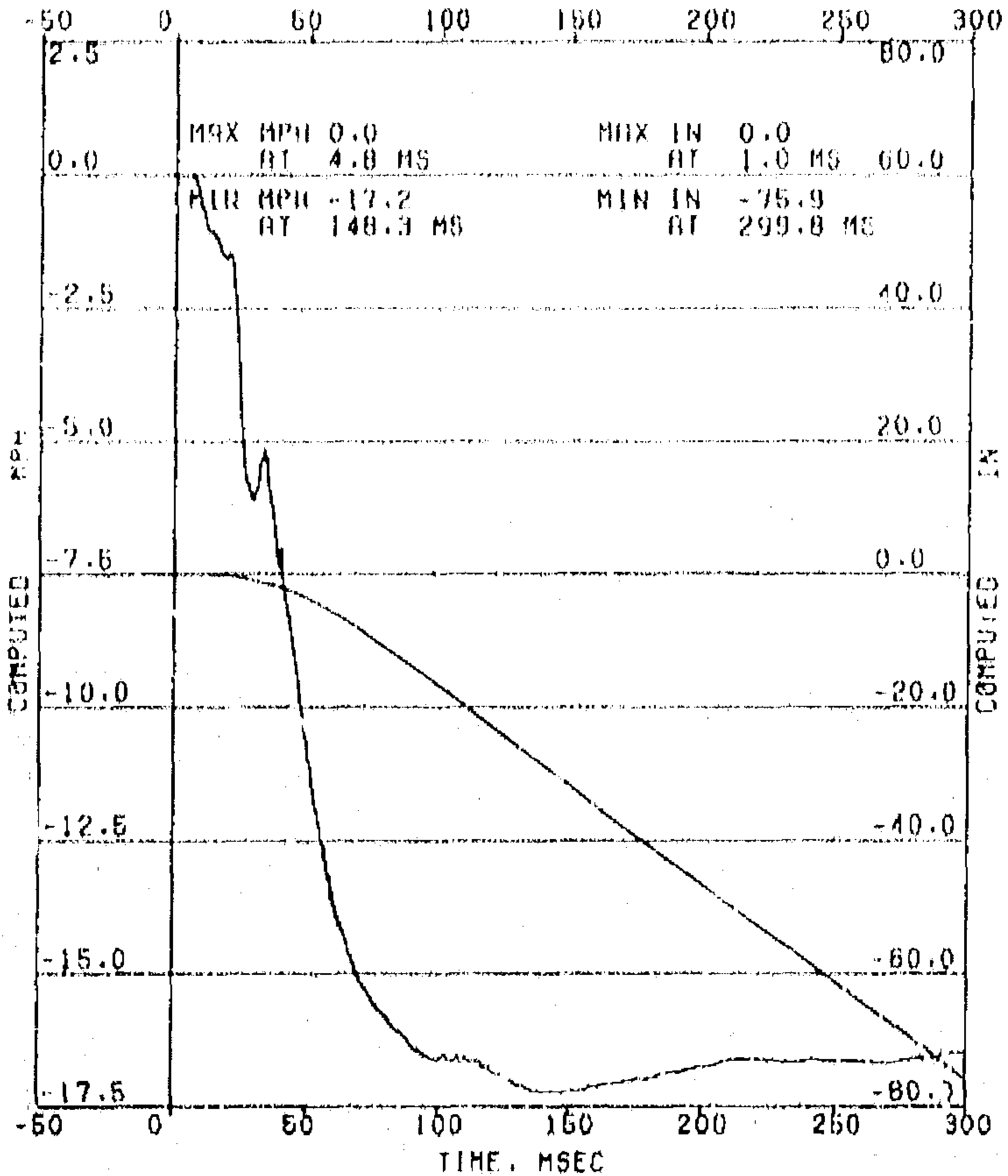




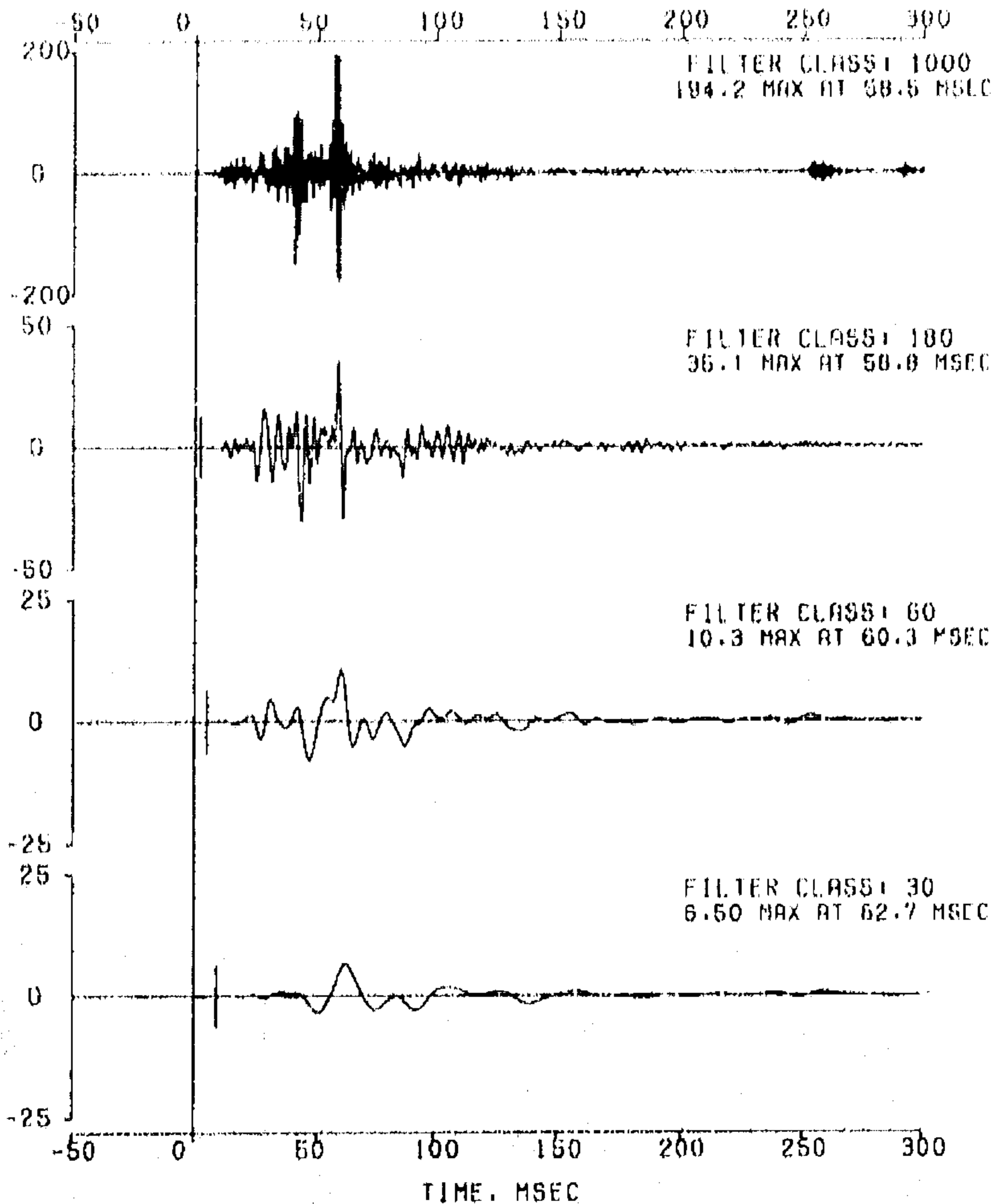
FILTER TYPE: 08045-111 RESPONSE CORRECTION, CLASS 1000 FILTER(1650)
 FILTER CLASS: 1000

IMPACT ANALYSIS DEPT. 5320
 JUN 17, 1993

DATA SET 06/16/99BU
 ERRATA 1



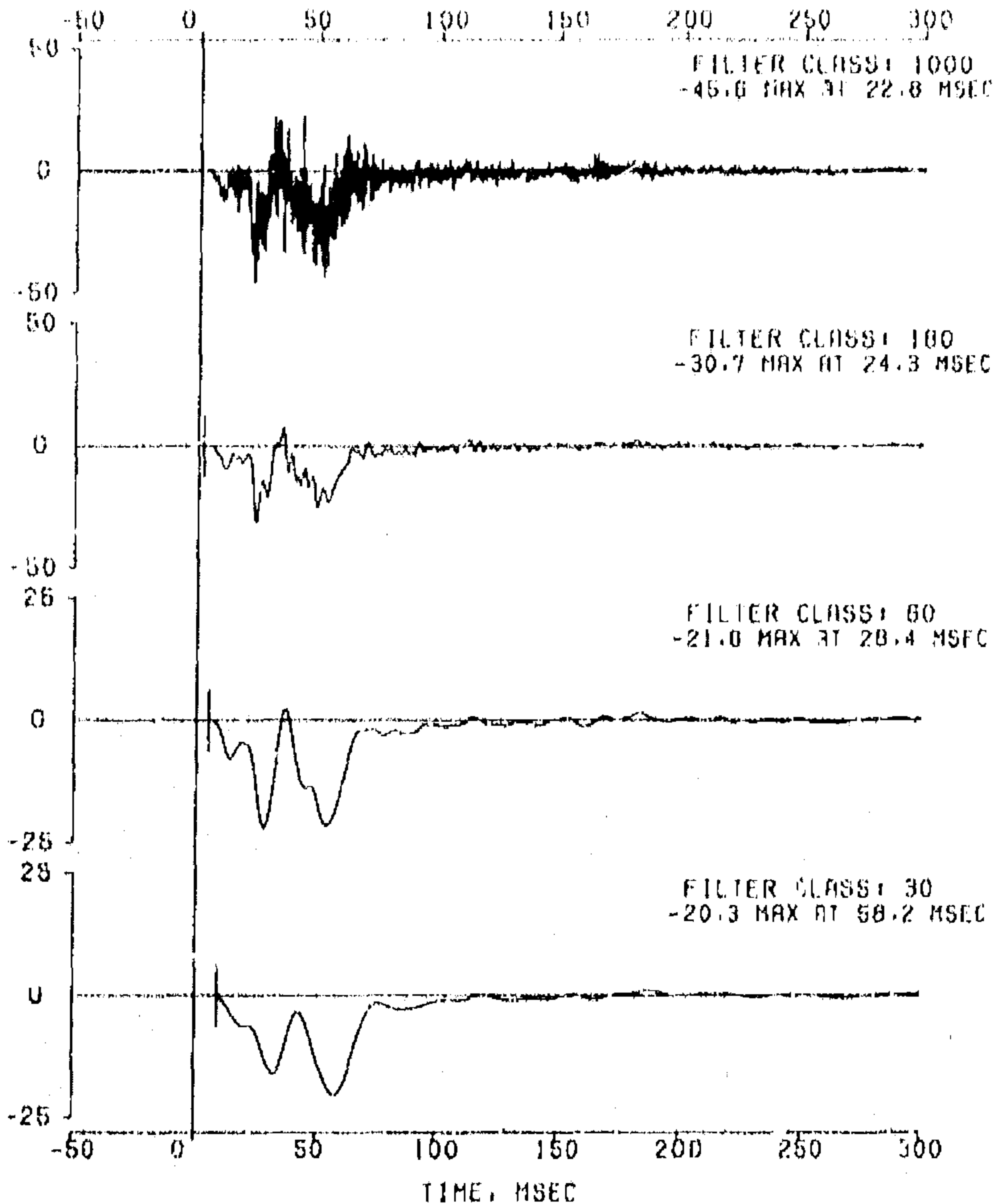
COMPUTED MPH
 COMPUTED IN



VC07023 30-MPH REAR MOVING BARRIER, KJ-J-74. ITEM KJ4003
2002 MVB8 301 REAR IMPACT DEVELOPMENT,
CHANNEL 051 RT RR SILL FHO ST XDRX A13647
FILTER TYPE: 08085-111 RESPONSE CORRECTION, CLASS 1000 FILTER(1660)
IMPACT ANALYSIS DEPT. 5320
JUN 17, 1999

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DATA SET 06/10/99BU
ERRATA



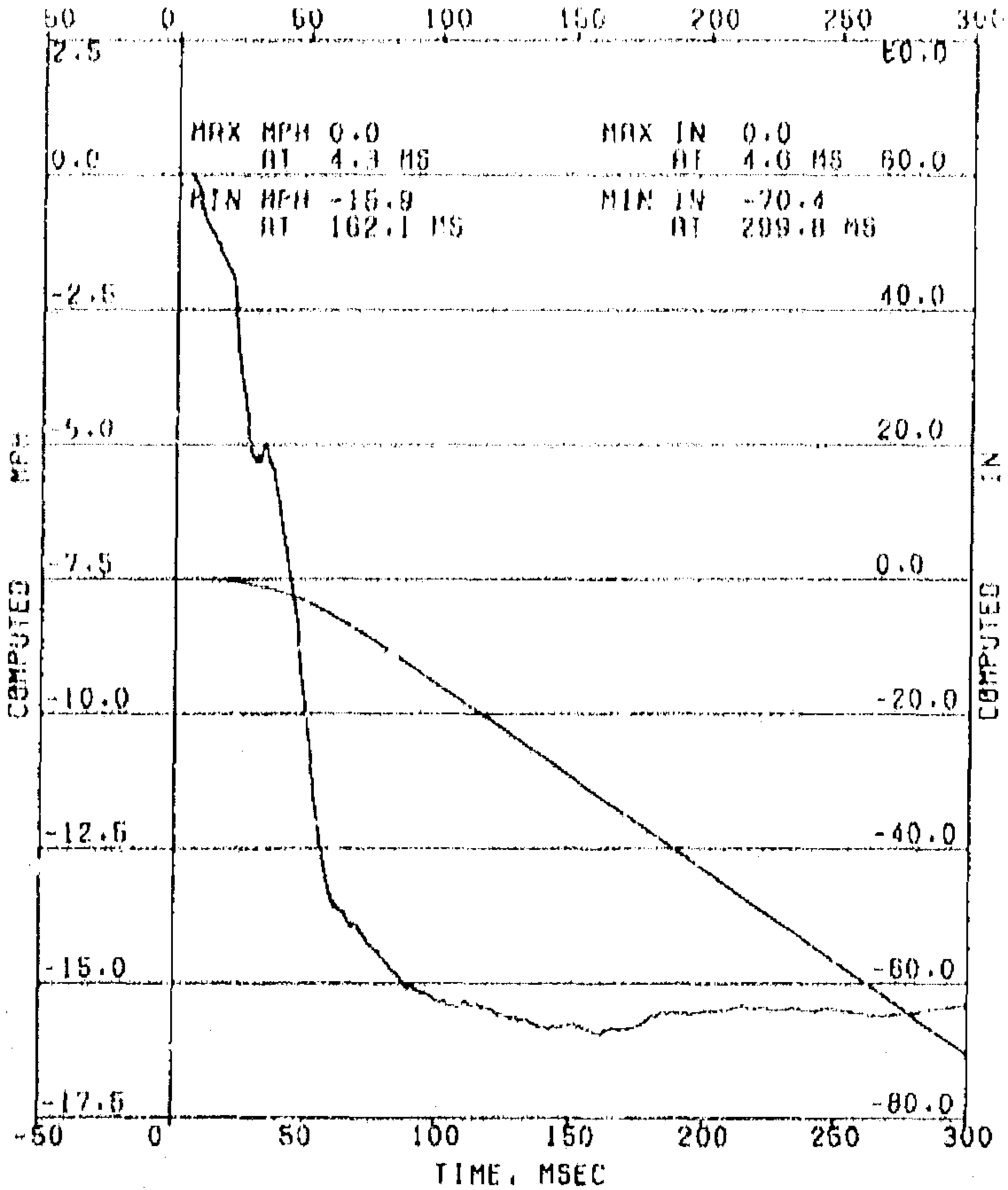
VC07623 30-MPH REAR MOVING BARRIER, 80-J-74, ITEM KJ4003
2002 MY98 301 REAR IMPACT DEVELOPMENT.
CHANNEL 061 RT RR BILL FWD ST XMBRX 013647

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FILTER TYPE: 00085-111 RESPONSE CORRECTION, CLASS 1000 FILTER(1850)
FILTER CLASS: 1000

IMPACT ANALYSIS DEPT. 6320
JUN 17, 1999

DATA SET 06/16/99BU
RURATE 1

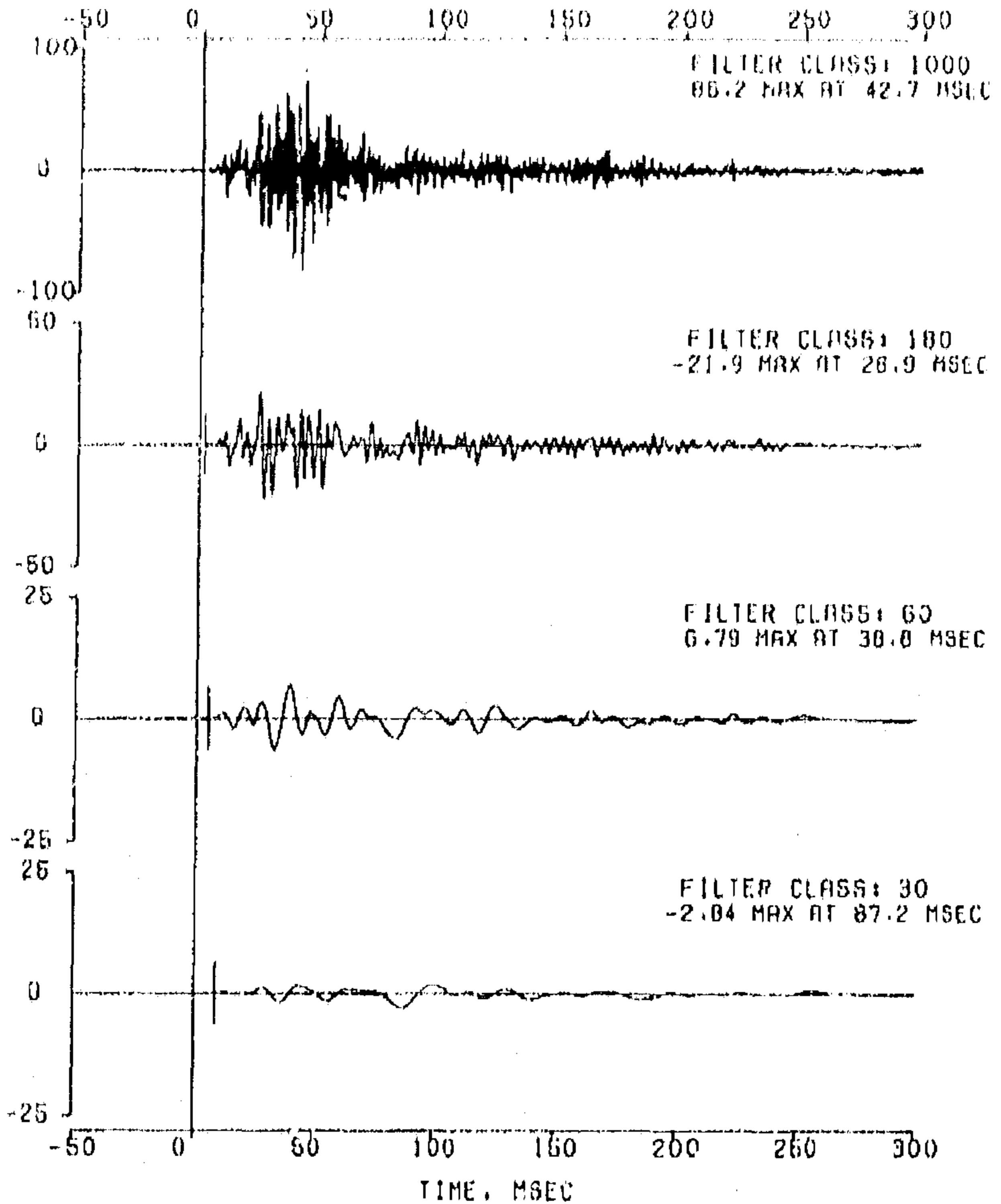


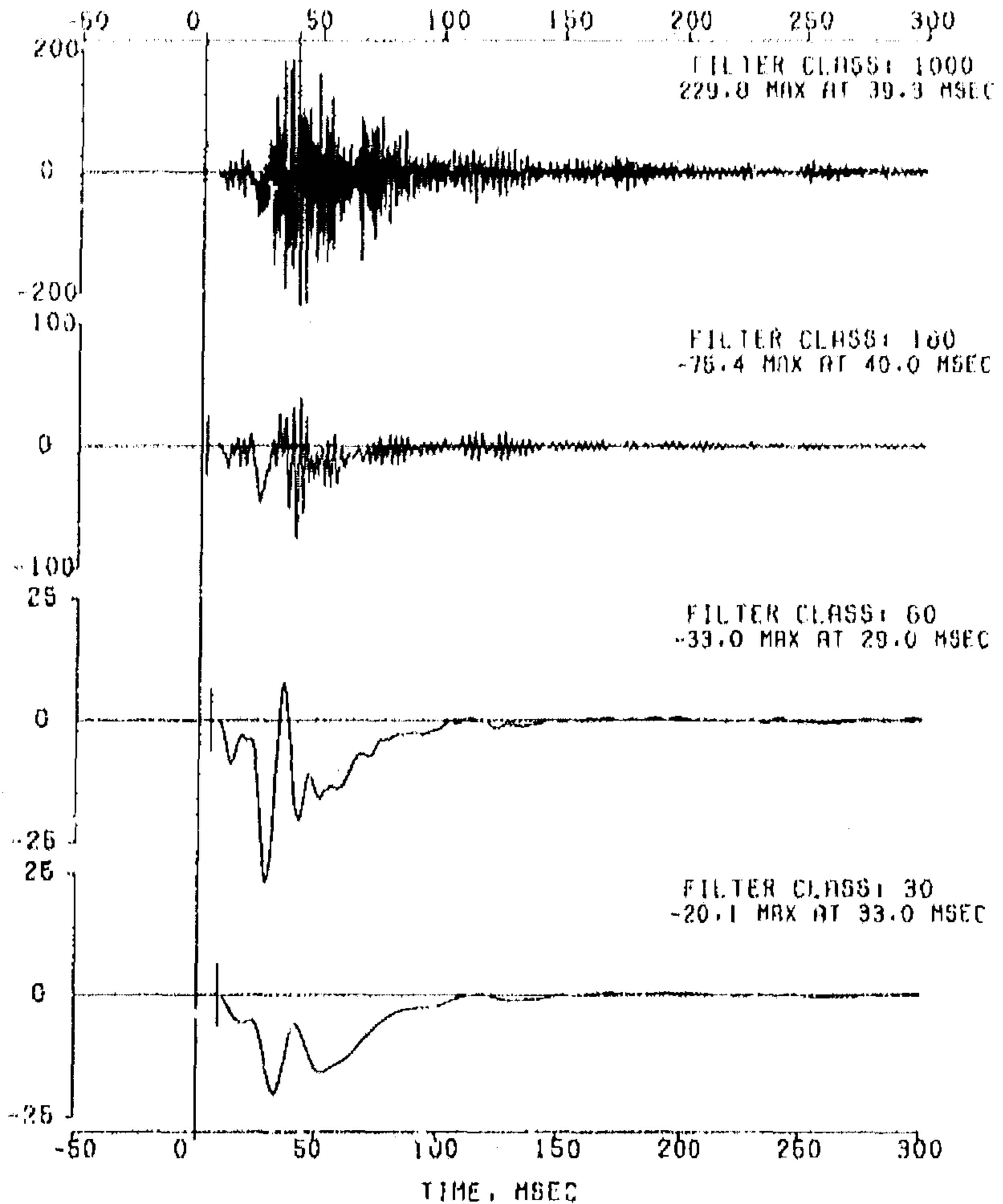
COMPUTED MPH
COMPUTED IN

YCD7623 30-MPH REAR MOVING BARRIER, KJ-J-74, ITEM XJ4009
2002 MY88 301 REAR IMPACT DEVELOPMENT.
CHANNEL 052 RT RR SILL FWD ST XMBRY B15908
FILTER TYPE: 08085-111 RESPONSE CORRECTION, CLASS 1000 FILTER(1860)
IMPACT ANALYSIS DEPT. 5929
JUN 17, 1999

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DATA SET 08/16/99B0
ERRATA 1





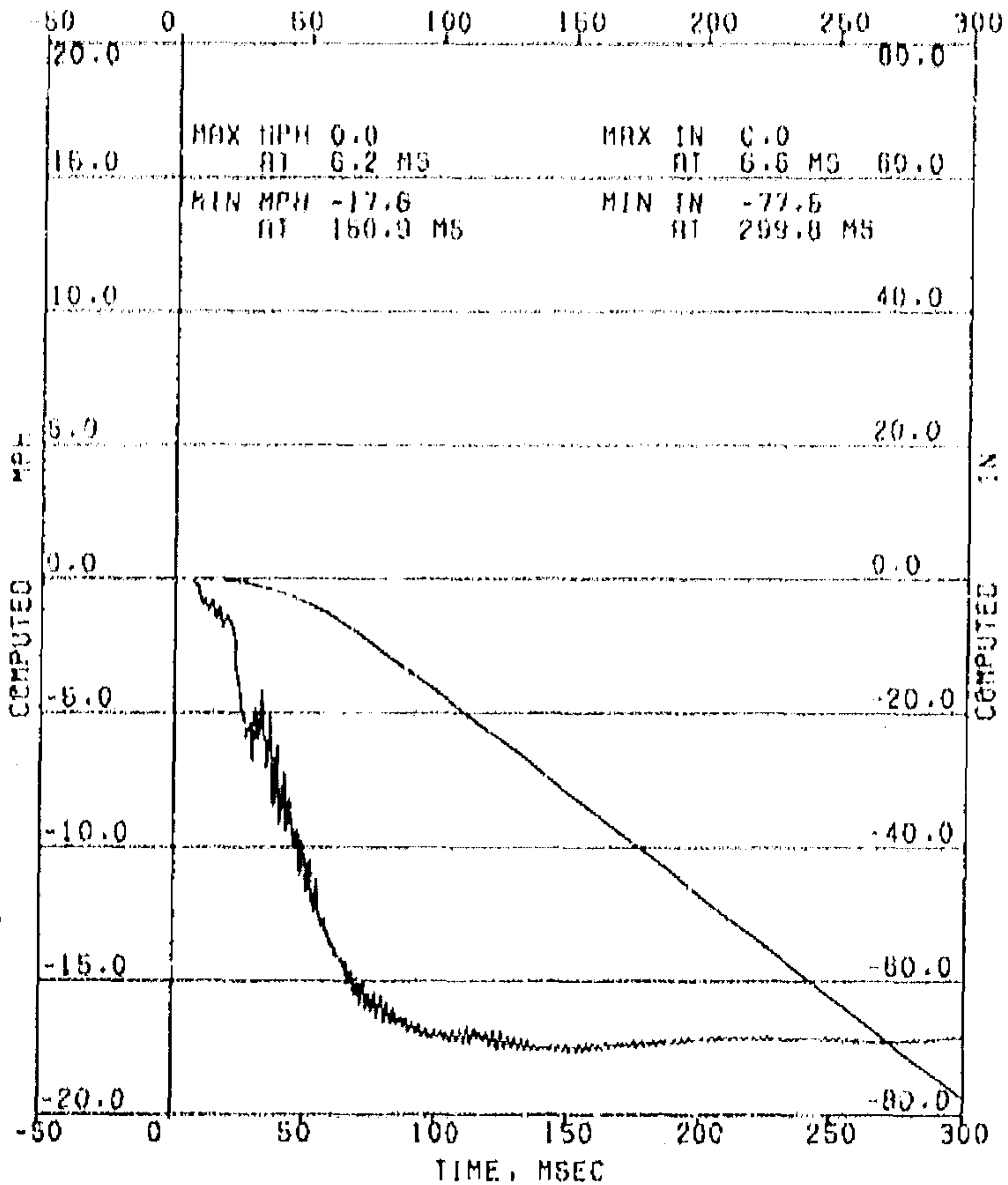
VC07023 30-MPH REAR MOVING BARRIER, KJ-3-74, ITEM KJ4003
 2002 HY98 301 REAR IMPACT DEVELOPMENT,
 CHANNEL 053 17 FT AMOR SEN LOC X J13694

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 OF 006

FILTER TYPE: 08088-111 RESPONSE CORRECTION, CLASS 1000 FILTER(1650)
 FILTER CLASS: 1000

IMPACT ANALYSIS DEPT. 5320
 JUN 17, 1999

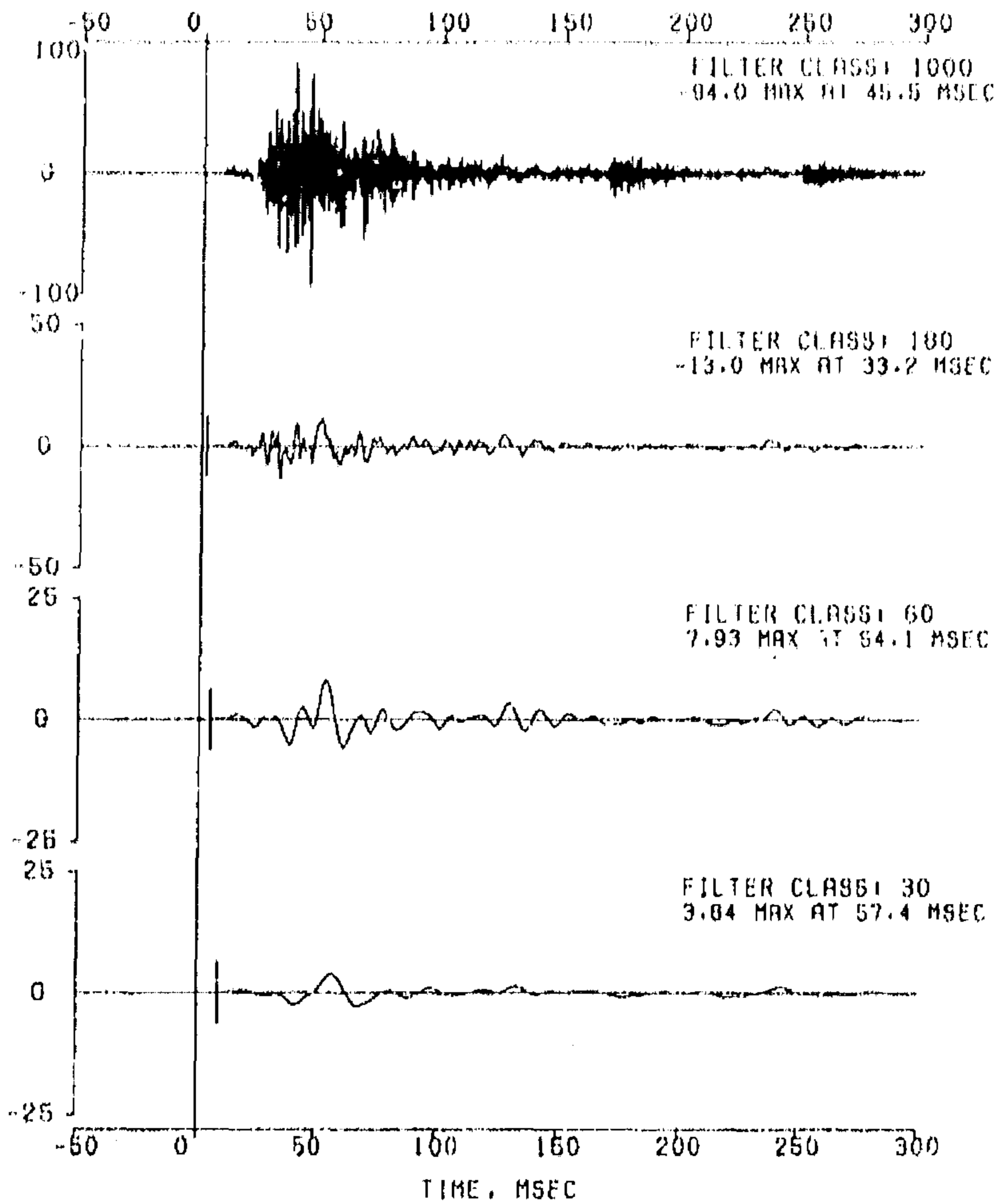
DATA SET 06/16/99BU
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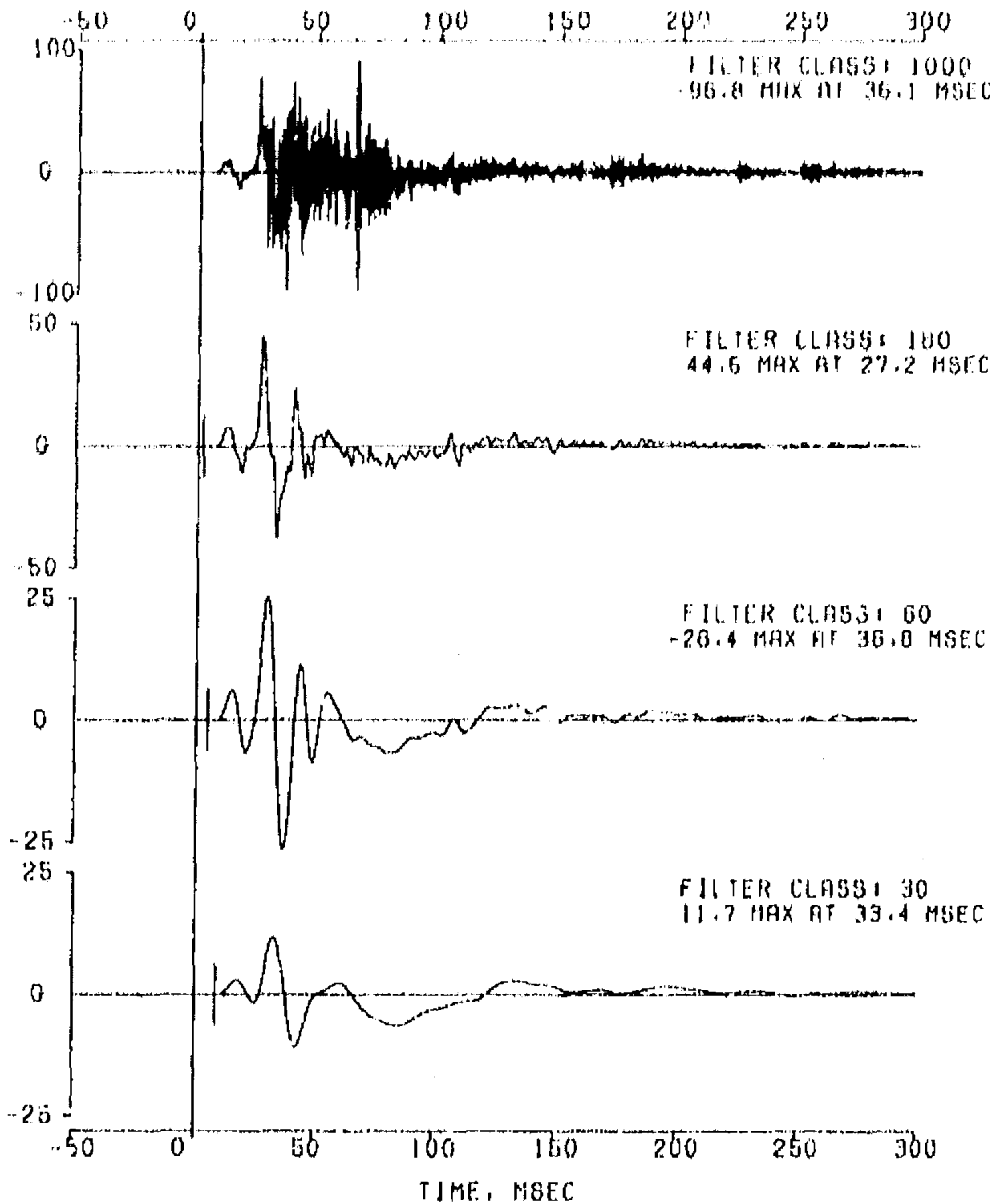


COMPUTED MPH
 COMPUTED IN

VC07023 30-MPH REAR MOVING BARRIER, 70-J-74, ITEM KJ4003
2002 MY88 301 REAR IMPACT DEVELOPMENT,
CHANNEL 054 LT FT XMR SEN LOC Y J11120
FILTER TYPE: QUD89-III RESPONSE CORRECTION, CLASS 1000 FILTER(1660)
IMPACT ANALYSIS DEPT. 5320
JUN 17, 1999

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DATA SET 06/18/99BU
ERRATA 1





VC07023 30-MPH REAR MOVING BARRIER, KJ-J-74, ITEM KJ4003

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2002 HYSS 301 REAR IMPACT DEVELOPMENT.

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CHANNEL 055 RT FT XMOR SEN LOC X 014908

FILTER TYPE: 09008-111 RESPONSE CORRECTION, CLASS 1000 FILTER(1650)

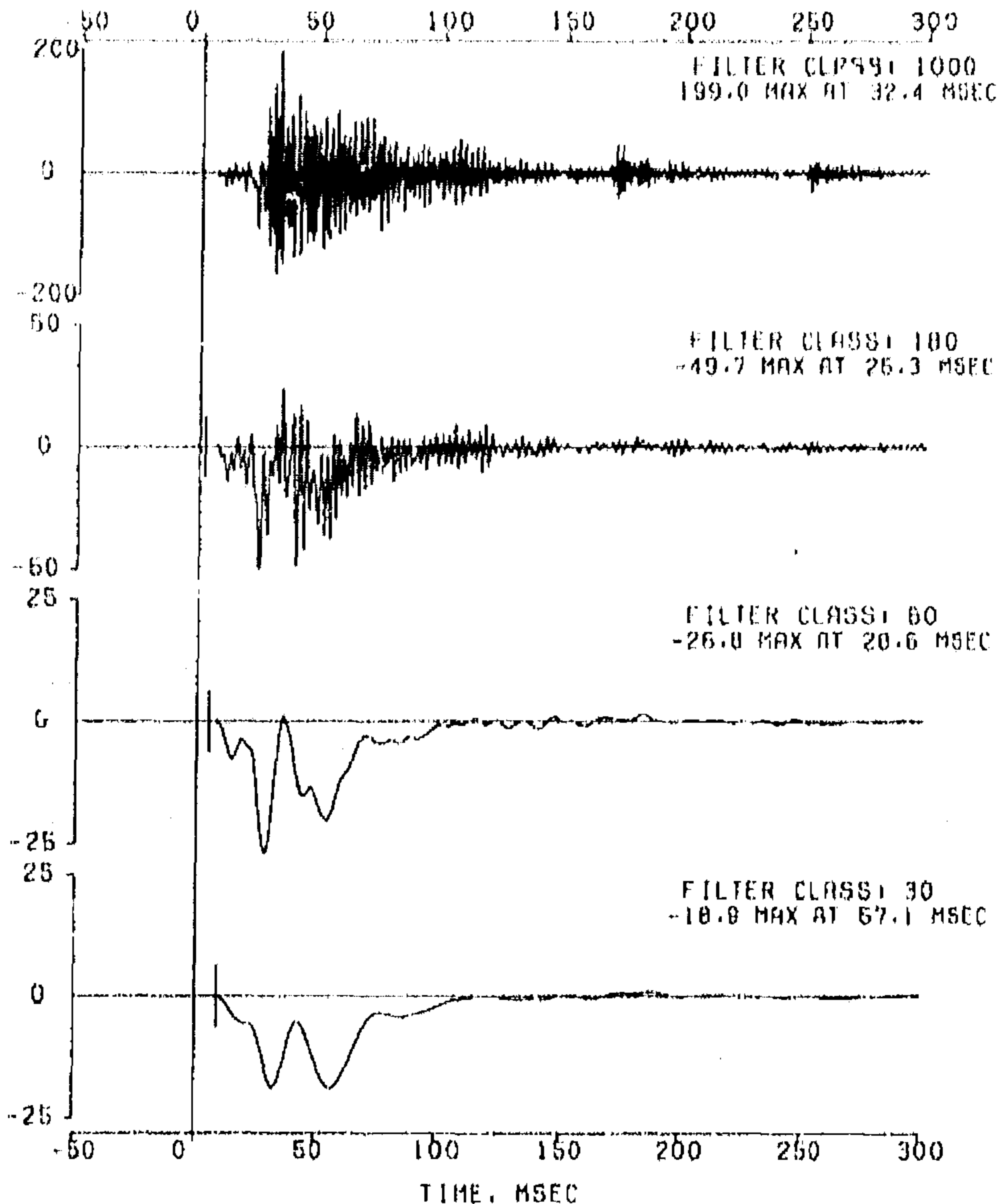
IMPACT ANALYSIS DEPT. 5320

DATA SET 06/16/99BU

JUN 17, 1999

ERRATA

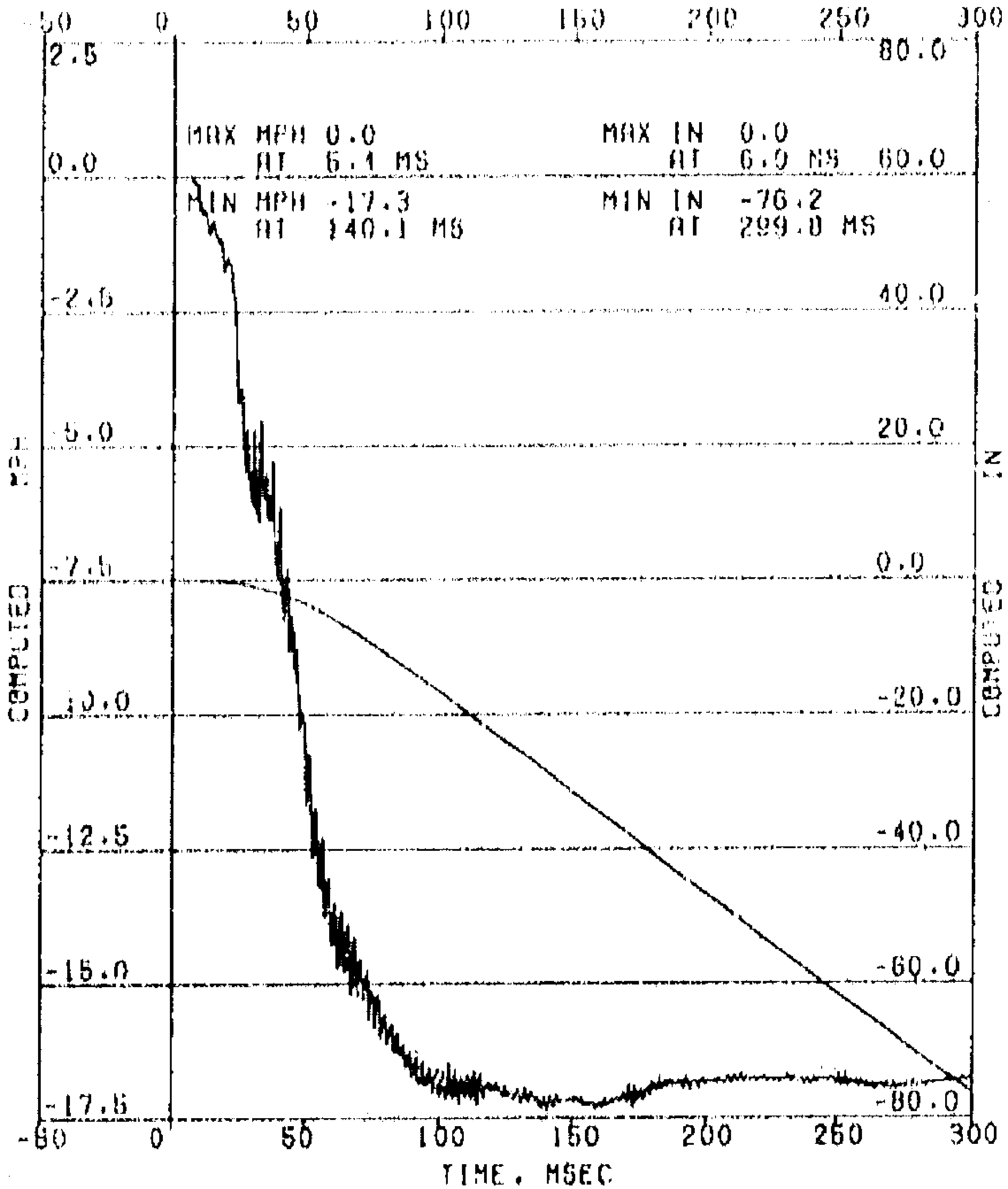
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FILTER TYPE: 080MS-III RESPONSE CORRECTION, CLASS 1000 FILTER(1600)
 FILTER CLASS: 1000

IMPACT ANALYSIS DEPT. 5320
 JUN 17, 1989

DATA SET 06/16/99BU
 ERRATA 1

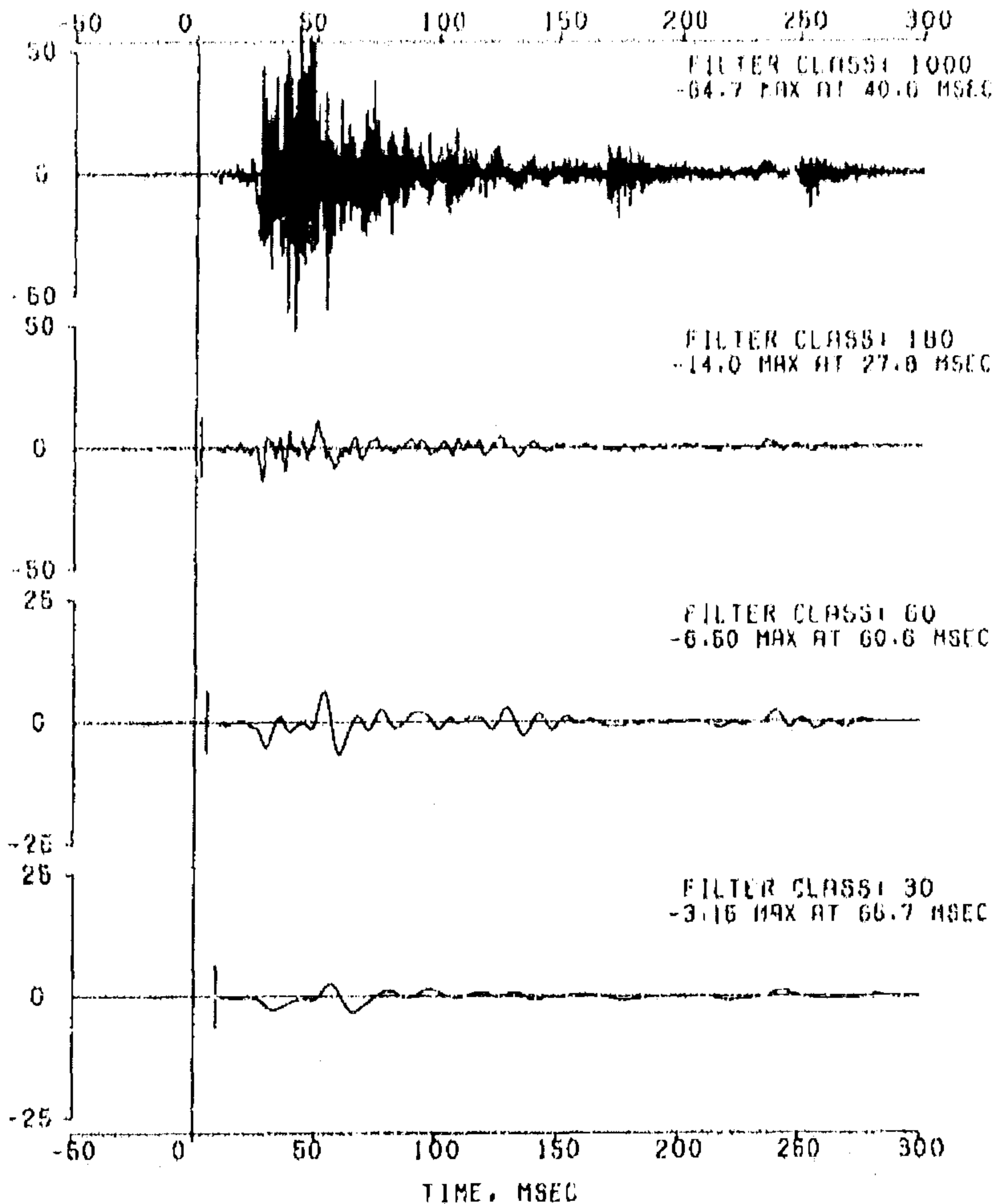


COMPUTED MPH
 COMPUTED IN

VC07523 30-MPH REAR MOVING BARRIER, KJ-D-74, ITEM KJ4003
2002 MYSS 303 REAR IMPACT DEVELOPMENT.
CHANNEL 057 RT FT XMR BEN LOC Y 016598
FILTER TYPE 00009-111 RESPONSE CORRECTION, CLASS 1000 FILTER(1660)
IMPACT ANALYSIS DEPT. 5920
JUN 17, 1999

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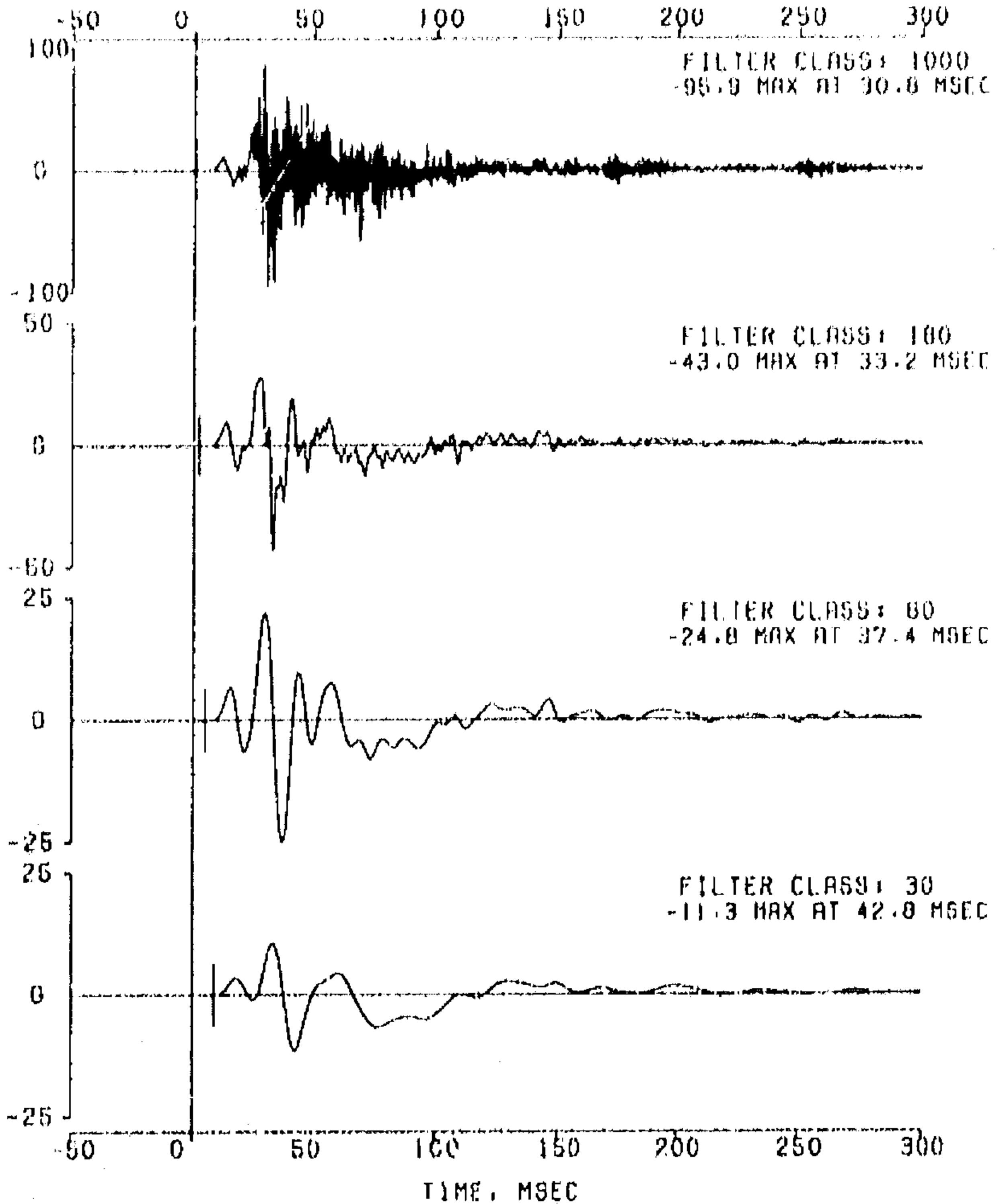
DATA SET 06/16/99BU
ERRATA 1



VC07023 30-MPH REAR MOVING BARRIER, KJ-J-74, ITEM KJ4003
2002 HYSS 301 REAR IMPACT DEVELOPMENT.
CHANNEL 050 RE FT XMUR SEN L00 Z A13525
FILTER TYPE: 00009-111 RESPONSE CORRECTION, CLASS 1000 FILTER(1850)
IMPACT ANALYSIS DEPT. 5320
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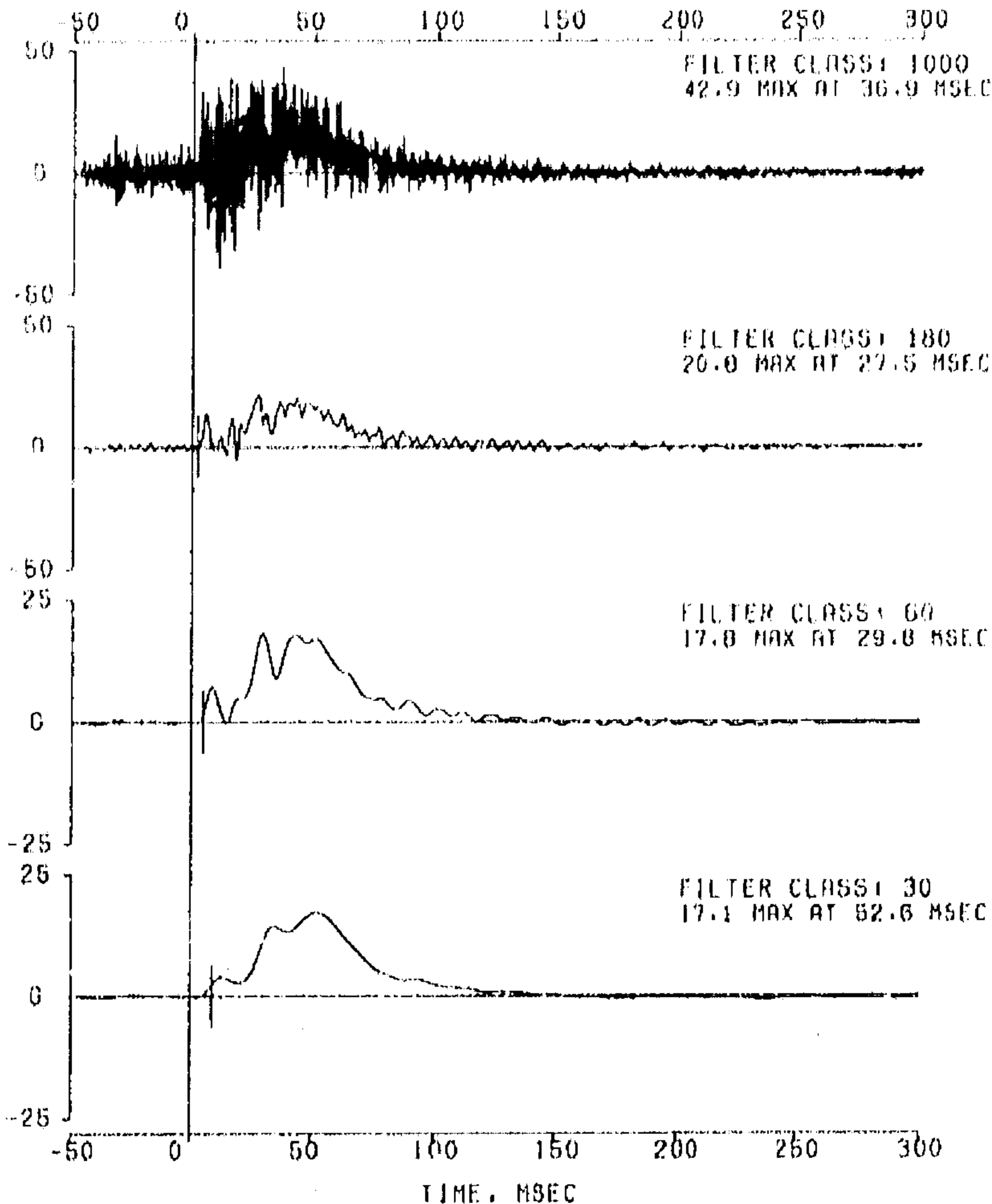
DATA SET 08/18/99BU
ERRATA 1



VC07823 30-MPH REAR MOVING BARRIER, KJ-J-74, ITEM KJ4003
2002 HY55 301 REAR IMPACT DEVELOPMENT,
CHANNEL 085 LT RAIL BAR 410 X 650334
FILTER TYPE: 080AS-111 RESPONSE CORRECTION, CLASS 1000 FILTER(1660)
IMPACT ANALYSIS DEPT. 5320
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DATA SET 06/16/99UV
ERRATA 1



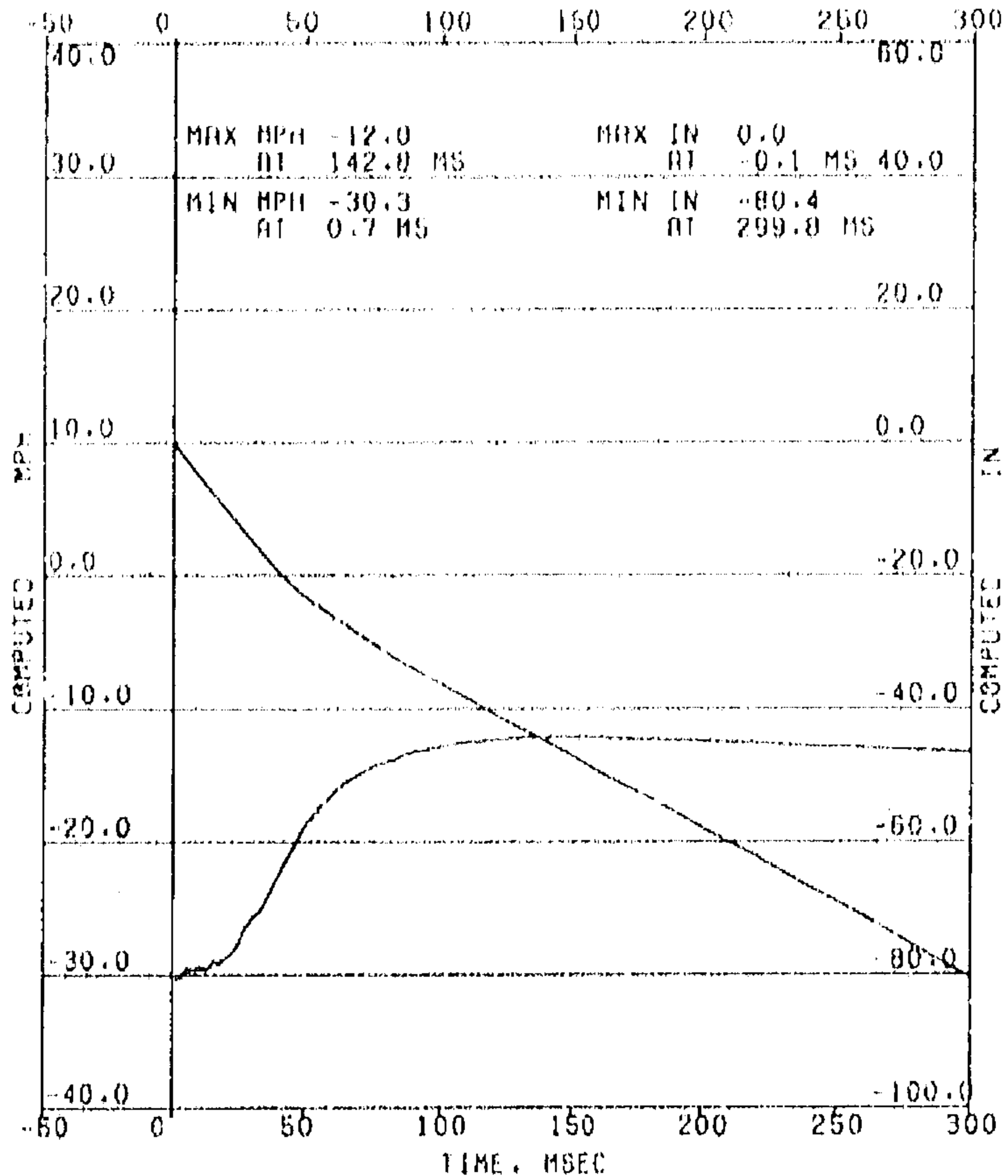
Y007623 30-MPH REAR MOVING BARRIER, KJ-9-74. ITEM KJ4003
 2002 HYSS 301 REAR IMPACT DEVELOPMENT.
 CHANNEL 065 LT RAIL BAR MID X 658334

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FILTER TYPE: 0005-111 RESPONSE CORRECTION, CLASS 1000 FILTER(1660)
 FILTER CLASS: 1000

IMPACT ANALYSIS DEPT. 5320
 JUN 17, 1999

DATA SET 05/16/99BY
 ERRATA 1

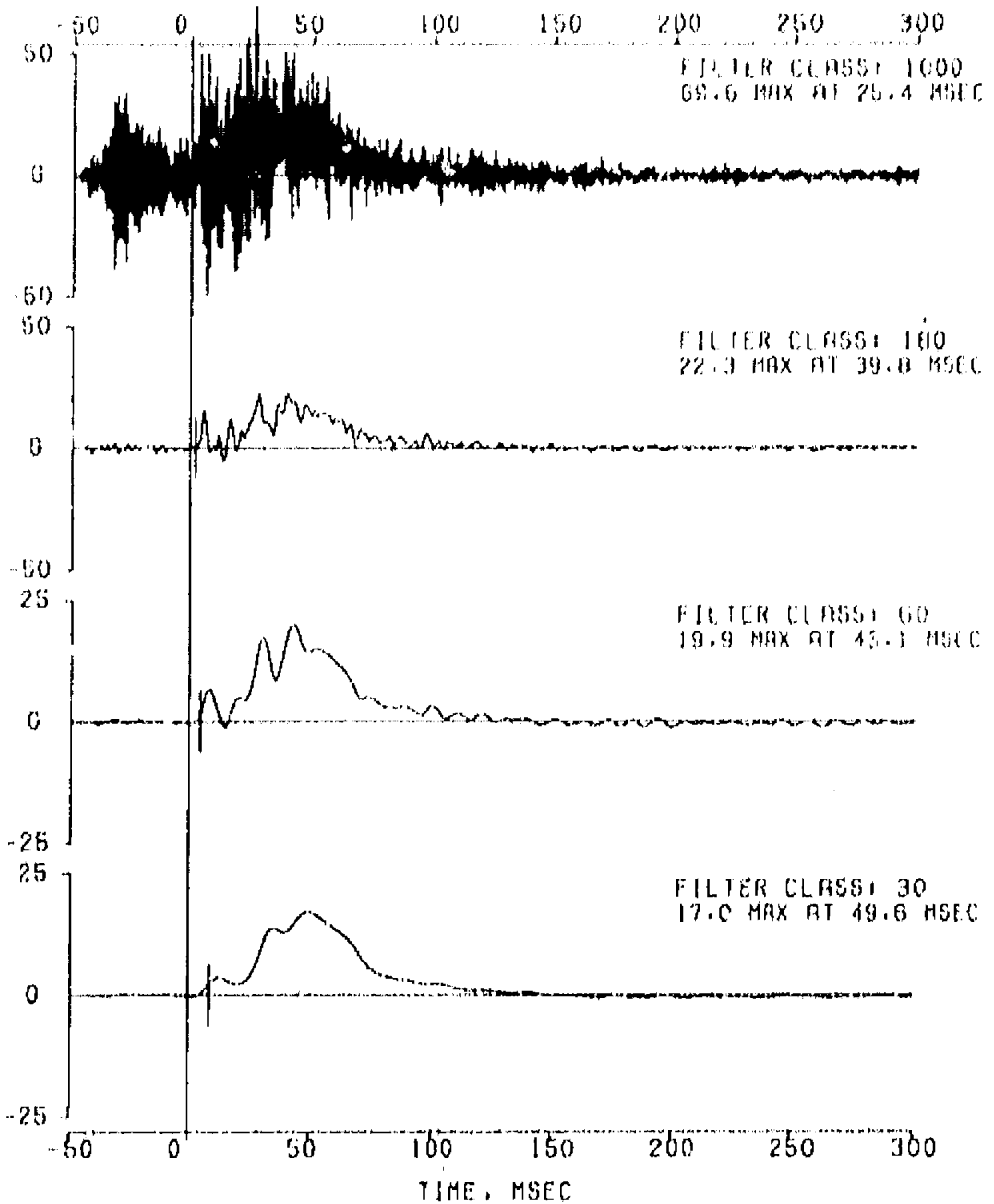


COMPUTED MPH
 COMPUTED IN

700' G23 30-MPH REAR MOVING BARRIER, KJ-0-74, ITEM KJ4003
2002 HY85 301 REAR IMPACT DEVELOPMENT,
CHANNEL 066 RT RAIL MBRK MID X 00429
FILTER TYPE: 080AS-III RESPONSE CORRECTION, CLASS 1000 FILTER(1660)
IMPACT ANALYSIS DEPT. 5320
JUN 17, 1999

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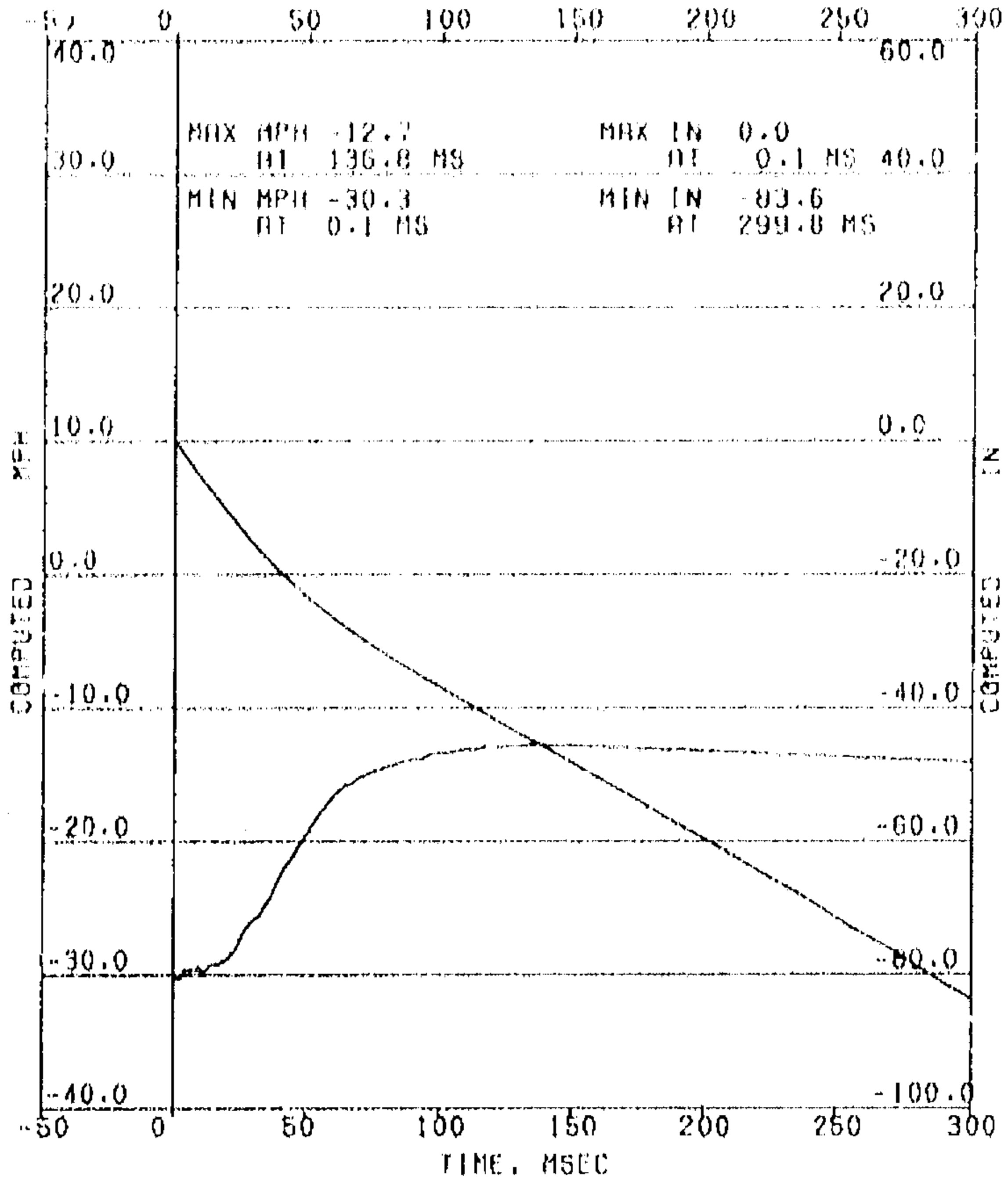
DATE SET 06/16/99 BY
ERRATA 1



FILTER TYPE: 00DAS-111 RESPONSE CORRECTION, CLASS 1000 FILTER(1650)
 FILTER CLASS: 1000

IMPACT ANALYSIS DEFT. 5320
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07/14/99

INTER COMPANY CORRESPONDENCE

DATE 07/14/99

TO
DISTRIBUTION

FROM
M. E. CREPS

DEPARTMENT
6320

PLANT/OFFICE
CTC

CMS NUMBER
481-00-27

SUBJECT:
REAR DYNAMIC CRUSH ANALYSIS
VC07623 30-MPH REAR MOVING BARRIER, KJ-J-74 ITEM KJ4009
2002 MY88 301 REAR IMPACT DEVELOPMENT.
TEST DATE 06/16/00

TEST PURPOSE PRIMARY, 2002 USA 301 DEVELOPMENT.
DETERMINE FUEL SYSTEM INTEGRITY.

IMPACT TYPE TARGET SPEED: 30.1 MPH
DAMAGE LOCATION: REAR
BARRIER TYPE: REAR TYPE IV
BARRIER SURFACE: PLYWOOD

VEHICLE BODY CLASS: KJ
CAR LINE: J
BODY: 74
ENGINE: 2.4 LITRE
ENGINE NOTE: ELECTRONIC FUEL INJECTION
TRANSMISSION: 5 SPEED MANUAL 4x4
TRANS. NOTE:
VIN AS TESTED: 1J407507528 [REDACTED] MOD.
VIN AS BUILT: 1J405501628 [REDACTED] MOD.

TEST SPEED 30.3 TRAP

TEST WEIGHT (LBS) 4451 TOTAL, 2517 FRONT, 1934 REAR

OCCUPANTS LEFT FRONT, HYBRID II BALLAST. AD-69
RESTRAINT-BELTS ONLY.
RIGHT FRONT, HYBRID II BALLAST. AD-70
RESTRAINT-BELTS ONLY.

BUILD CONDITION

TARGET WEIGHT (LBS) 3820 TOTAL, 2013 FRONT, 1816 REAR REP MAX OPT.
 HEIGHT FOR A 2.4L 4X4 NOT INCLUDING DUMMIES OR
 CAROB HEIGHT.

FUEL AND BALLAST 17 GALLONS OF STODDARD SOLVENT.
 300 LBS.
 350 LBS ON REAR FOOT WELL.

POST TEST REMARKS FUEL FILL CAME UP FULL AT 15.0 GALLONS
 NO EVIDENCE OF POST IMPACT LEAKAGE

REAR DYNAMIC CRUSH, PITCH, AND REAR WHEEL MOTION RELATIVE TO
 THE FRONT SILL HAVE BEEN DETERMINED BY FILM ANALYSIS. TIME
 WAS BASED ON CAMERA TIMING DATA. LATERAL VALUES WERE CALCULATED
 BY TRIANGULATION.

REAR DYNAMIC CRUSH 19.9 +/- 1 INCH AT 01. +/- 5 MSEC.

S.A. Helquist

 S. A. HELQUIST

Mark Creps

 M. E. CREPS

GRAPHS - 8

GLASSARY OF TERMS

USED IN STANDARD REPORTS

AD	ANTHROPOMORPHIC DEVICE
ADT	ANTHROPOMORPHIC TEST DEVICE
BASE COORD	BASE COORDINATE SYSTEM
C/L	CENTERLINE
CAR COORD	CAR COORDINATE SYSTEM
CCW	COUNTER CLOCKWISE
CORR-IN	SEPARATION IN INCHES (MINUS INITIAL LENGTH)
CORR-MM	SEPARATION IN MM (MINUS INITIAL LENGTH)
CORR-P	CORRECTED (ZEROED) PITCH
CORR-R	CORRECTED (ZEROED) ROLL
CORR-Y	CORRECTED (ZEROED) YAW
CM	CLOCKWISE
EFI	ELECTRONIC FUEL INJECTOR
ENO	ENGINE
ENOPY	ENGINE PITCH AND YAW
FEHM	FRONT END SHEET METAL
FIUCIAL	REFERENCE POINT OR TARGET
FS	FRONT BILL TARGET
FWD	FORWARD
IP	INSTRUMENT PANEL TARGET
LB	POUNDS
LCP,LOP	LEFT C-POST & QUARTER PANEL TARGETS
LFB,LMS,LRS	LEFT FRONT BILL, MID BILL, & REAR BILL TARGETS
LY	LEFT
MS	MID BILL TARGET
NORMALIZE	PUT ON A COMMON BASIS
NOSE-DOWN	LEADING END BELOW TRAILING
NOSE-UP	LEADING END ABOVE TRAILING
PERF	PERFORMANCE
REF	REFERENCE
REL	RELATIVE TO (ONE-DIMENSIONAL)
RCF,ROP	RIGHT C-POST & QUARTER PANEL TARGETS
RFB,RMS,RRS	RIGHT FRONT, MID, & REAR BILL TARGETS
ROLL-LEFT	LEFT SIDE LOWER THAN RIGHT
ROLL-RIGHT	RIGHT SIDE LOWER THAN LEFT
RS	REAR BILL TARGET
RT	RIGHT
SEP	SEPARATION OF (THREE-DIMENSIONAL)
SYS	SYSTEM
TBI	THROTTLE BODY INJECTOR
TIME.MS	TIME IN MILLISECONDS
U/B	UNDERBODY
VB	VERBOS
X	LONGITUDINAL AXIS (INCREASING TOWARD TRAILING EDGE)
XF	X-FILTERED
Y	LATERAL AXIS (INCREASING TO THE RIGHT)
YAW-LEFT	LEADING EDGE TO LEFT
YAW-RIGHT	LEADING EDGE TO RIGHT
Z	VERTICAL AXIS (INCREASING UPWARD)
ZEROU	SHIFTED TO START AT ZERO
ZERO-IN	ZEROED INCHES
ZERO-MM	ZEROED MILLIMETERS

IMPACT ANALYSIS
DEPARTMENT 5320
07/14/99 14147
TEST VC07623

VCC7623 30-APR REAR MOVING BARRIER. KJ-J-74 ITEM KJ4003
 2002-NVSS 301 REAR IMPACT DEVELOPMENT.

ZERBED X MOTION OF F3 REL TO LFS IN BASE CSORD SYS
 VERSUS TIME IN MILLISECONDS

REAR DYNAMIC CRUSH AND REAR WHEEL MOTION ANALYSIS

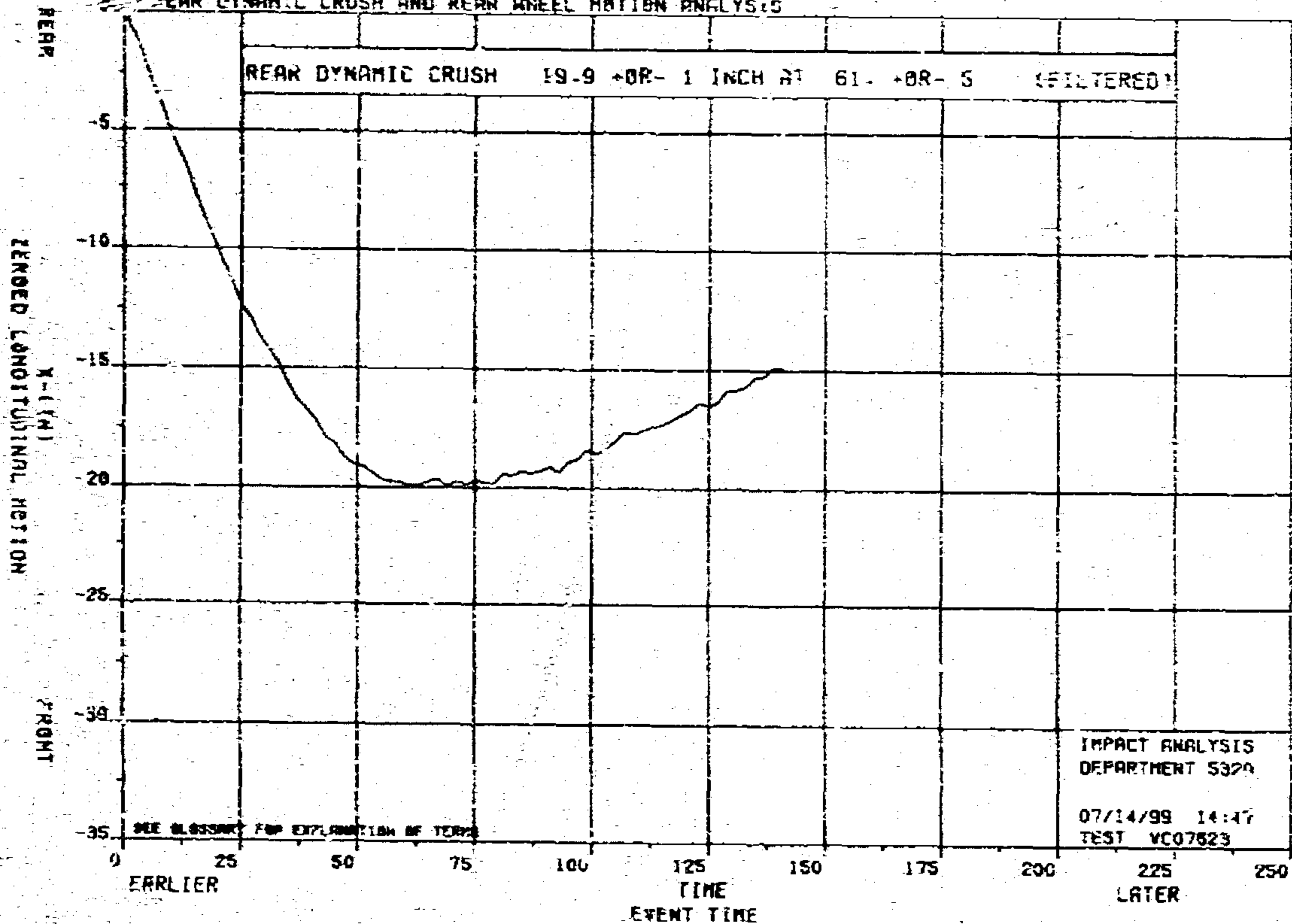


FIGURE 1

VC07S23 30-MPH REAR MOVING BARRIER. KJ-J-74 ITEM KJ4003
2002 MYSS 301 REAR IMPACT DEVELOPMENT.

ZERGED Z OF LRA RELATIVE TO LFS IN CAR COORD
VERSUS ZERGED X OF LRA RELATIVE TO LFS IN CAR COORD

REAR DYNAMIC CRASH AND REAR WHEEL MOTION ANALYSIS

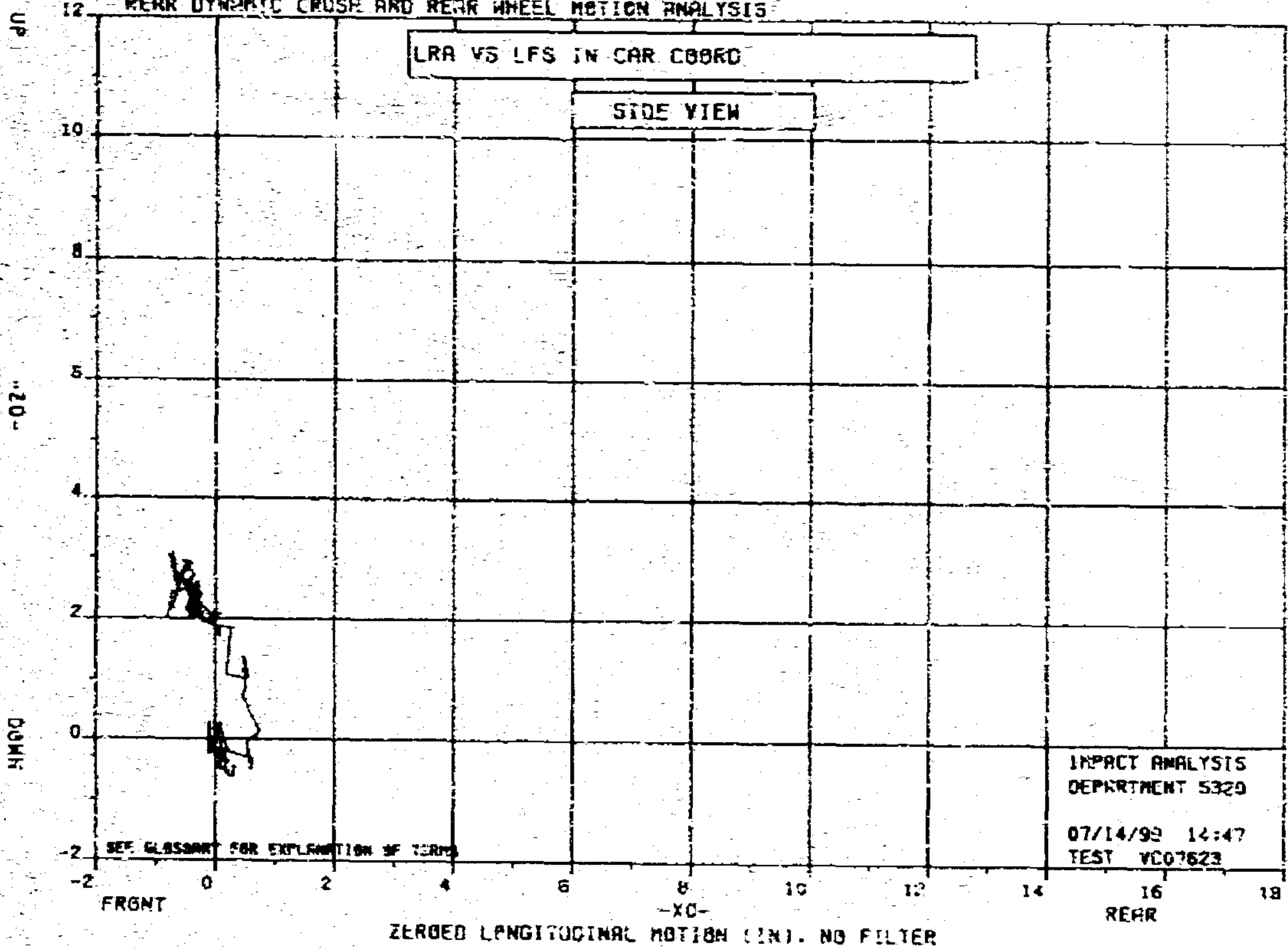


FIGURE 2

VC07623 30-MPH REAR MOVING BARRIER, XJ-J-74 ITEM KJ4003
 2002 MYSS 301 REAR IMPACT DEVELOPMENT.

ZERGED PITCH OF LFS TO LMS IN BASE COORD SYSTEM
 VERSUS TIME IN MILLISECONDS

REAR DYNAMIC CRUSH AND REAR WHEEL MOTION ANALYSIS

NOSE-UP
 DEGREES CCM AROUND Y RELATIVE TO X (RT SIDE VIEW), 50HZ FILTER
 CORR-P
 NOSE-DOWN

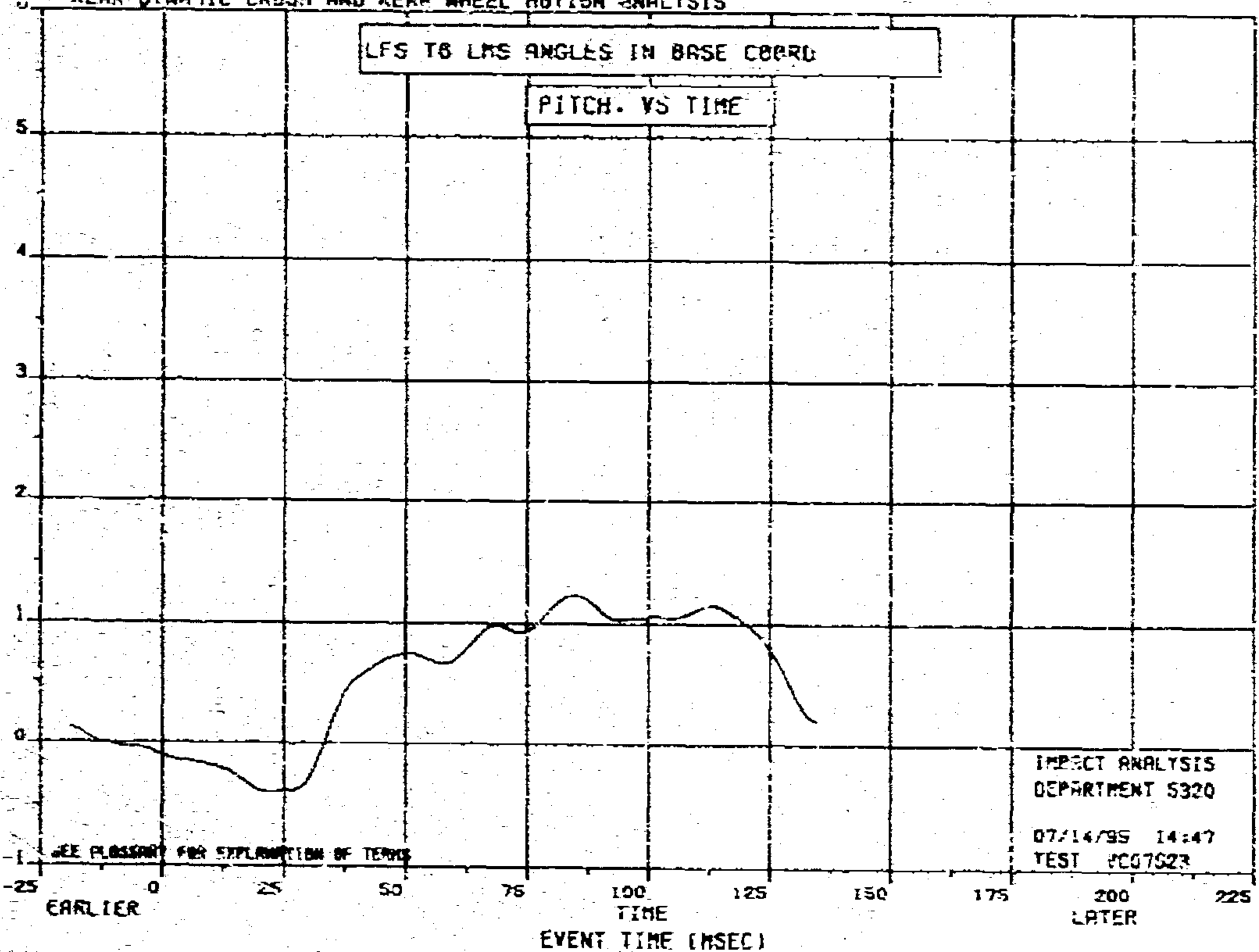


FIGURE 5

VCG7623 30-MPH REAR MOVING BARRIER. KJ-J-74 ITEM KJ4G03
 2002 NYSS 301 REAR IMPACT DEVELOPMENT.

ZERBED YAW OF LFS TO LMS IN BASE COORD SYSTEM
 VERSUS TIME IN MILLISECORS

REAR DYNAMIC CRUSH AND REAR WHEEL MOTION ANALYSIS

YRM-LEFT
 DEGREES CCW AROUND Z RELATIVE TO X (PLAN VIEW) 50HZ FILTER
 CORR-Y
 YRM-RIGHT

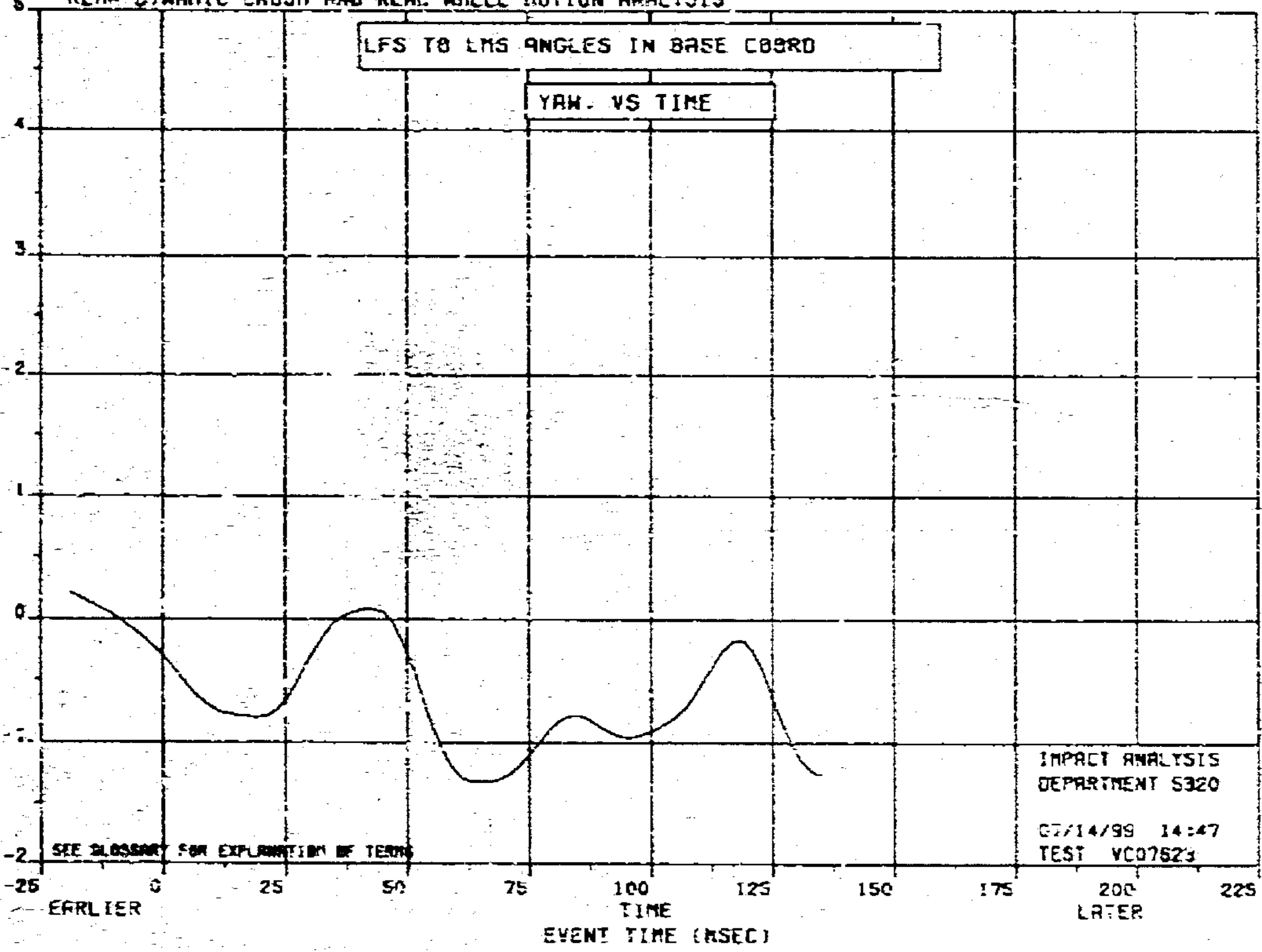


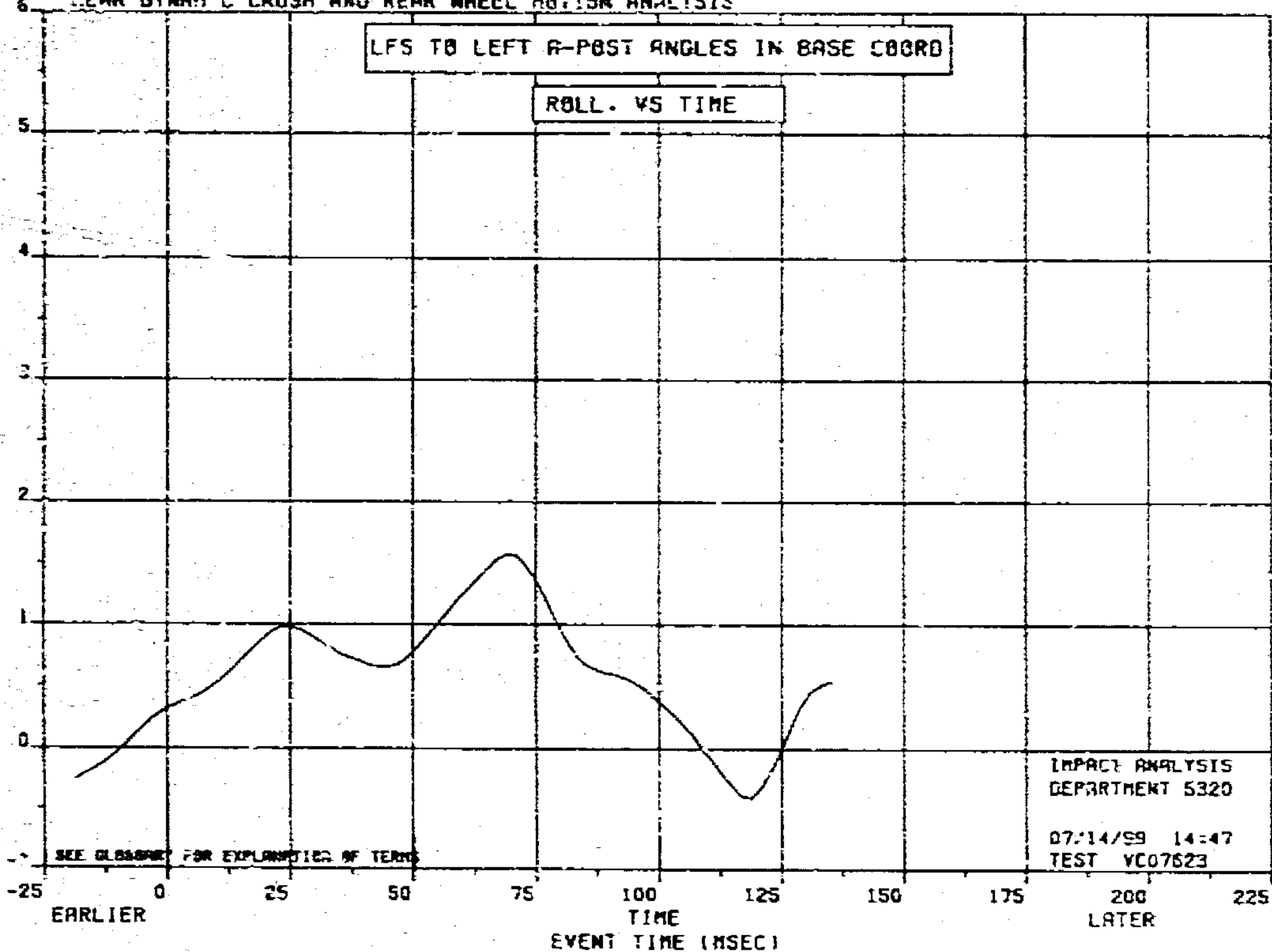
FIGURE 4

VC07623 30-MPH DEAR MOVING BARRIER, KJ-J-74 ITEM KJ4003
2602 MVSS 301 REAR IMPACT DEVELOPMENT.

ZERGED ROLL OF LFS TO LEFT A-POST IN BASE COORD SYSTEM
VERSUS TIME IN MILLISECONDS

DEAR DYNAMIC CRUSH AND REAR WHEEL MOTION ANALYSIS

ROLL-LEFT
DEGREES C/W AROUND X RELATIVE TO Y (REAR VIEW) 50HZ FILTER
CONR-A
ROLL-RIGHT



SEE GLOSSARY FOR EXPLANATION OF TERMS

IMPACT ANALYSIS
DEPARTMENT 5320

07/14/99 14:47
TEST VC07623

FIGURE 5

VC07623 30-MPH REAR HAVING BARRIER, KJ-3-74 ITEM KJ4003
2002 MVSS 301 REAR IMPACT DEVELOPMENT.

LFS TO LMS DISTANCE -24.10 INCHES (INITIAL DIST) (IN)
VERSUS TIME IN MILLISECONDS

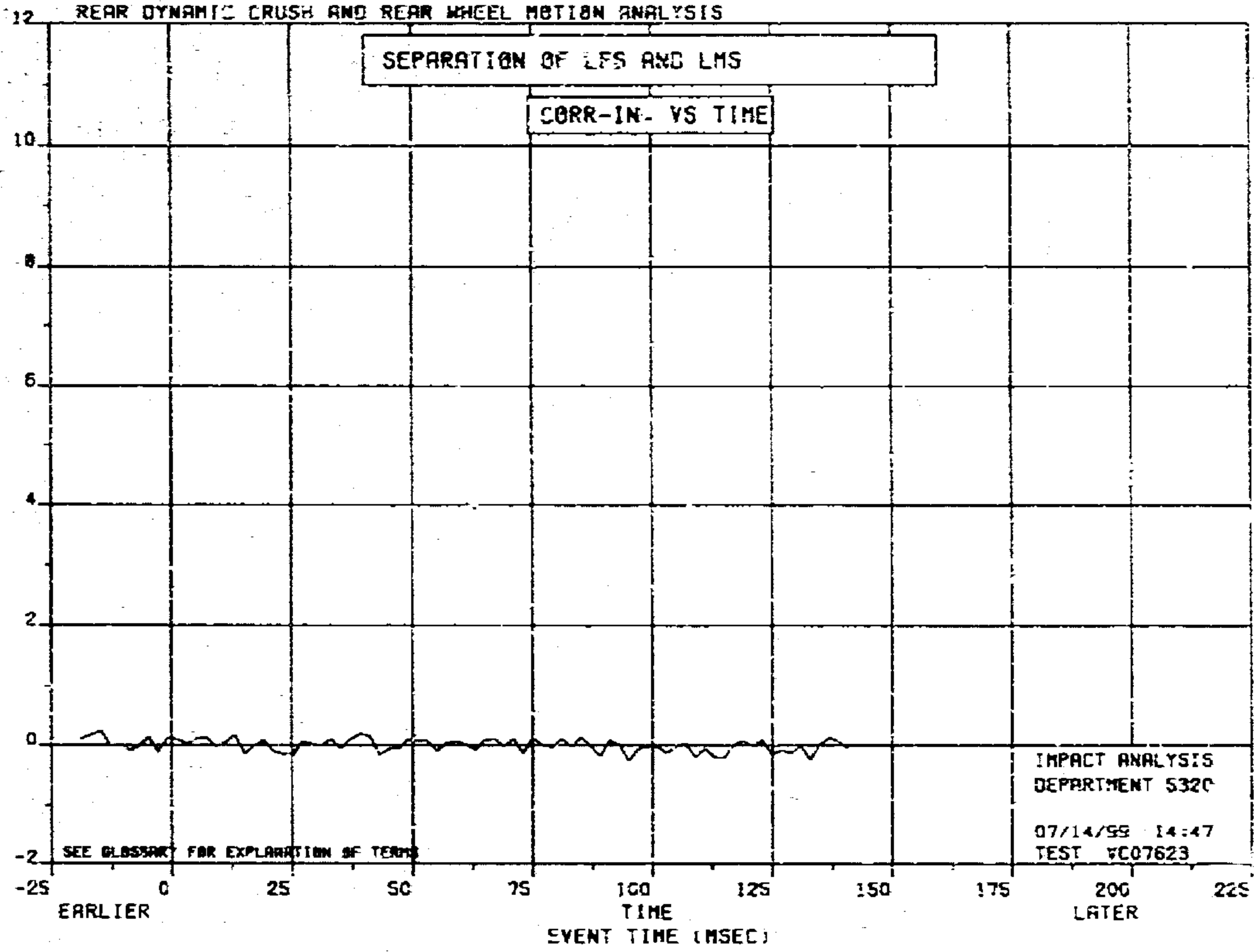


FIGURE 6

FILED JUL 30 1999

INTER COMPANY CORRESPONDENCE

DATE 07/16/99

TO
DISTRIBUTION

FROM
M. E. CREPS

DEPARTMENT
5320

PLANT/OFFICE
CTC

CIMS NUMBER
481-00-27

SUBJECT:

REAR UNDERBODY MOTION ANALYSIS
VC07623 30-MPH REAR MOVING BARRIER, KJ-J-74 ITEM KJ4003
2002 MY85 301 REAR IMPACT DEVELOPMENT.
TEST DATE 06/16/99

TEST PURPOSE PRIMARY, 2002 USA 301 DEVELOPMENT.
DETERMINE FUEL SYSTEM INTEGRITY.

IMPACT TYPE TARGET SPEED: 30.1 MPH
DAMAGE LOCATION: REAR
BARRIER TYPE: REAR TYPE IV
BARRIER SURFACE: PLYWOOD

VEHICLE BODY CLASS: KJ
CAR LINE: J
BODY: 74
ENGINE: 2.4 LITRE
ENGINE NOTE: ELECTRONIC FUEL INJECTION
TRANSMISSION: 5 SPEED MANUAL 4x4
TRANS. NOTE:
VIN AS TESTED: 1J40758252A [REDACTED] MOD.
VIN AS BUILT: 1J40558152A [REDACTED] MOD.

TEST SPEED 30.3 TRAP

TEST WEIGHT (LBS) 4451 TOTAL, 2517 FRONT, 1934 REAR

OCCUPANTS LEFT FRONT, HYBRID II BALLAST. AD-59
RESTRAINT-BELTS ONLY.
RIGHT FRONT, HYBRID II BALLAST. AD-70
RESTRAINT-BELTS ONLY.

BUILD CONDITION

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TARGET WEIGHT (LBS) 3829 TOTAL, 2013 FRONT, 1816 REAR REP MAX OPT.
WEIGHT FOR A 2.4L 4X4 NOT INCLUDING DUMMIES OR
CARGO WEIGHT.
FUEL AND BALLAST 17 GALLONS OF STODDARD SOLVENT.
300 LBS.
350 LBS ON REAR FOOT WELL
POST TEST REMARKS FUEL FILL CAME UP FULL AT 15.0 GALLONS
NO EVIDENCE OF POST IMPACT LEAKAGE

THE RELATIVE MOTIONS OF SELECTED REAR UNDERBODY TARGETS HAVE BEEN
DETERMINED BY FILM ANALYSIS. TIME WAS BASED ON CAMERA TIMING DATA.

S. A. Helquist

S. A. HELOQUIST

M. E. Creps

M. E. CREPS

GRAPHS - 30

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G L O S S A R Y O F T E R M S

U S E D I N S T A N D A R D R E P O R T S

AD	ANTHROPOMORPHIC DEVICE
ATD	ANTHROPOMORPHIC TEST DEVICE
BASE COORD	BASE COORDINATE SYSTEM
C/L	CENTERLINE
CAR COORD	CAR COORDINATE SYSTEM
CCH	COUNTER CLOCKWISE
CORR-IN	SEPARATION IN INCHES (MINUS INITIAL LENGTH)
CORR-MM	SEPARATION IN MM (MINUS INITIAL LENGTH)
CORR-P	CORRECTED (ZEROED) PITCH
CORR-R	CORRECTED (ZEROED) ROLL
CORR-Y	CORRECTED (ZEROED) YAW
CH	CLOCKWISE
EFI	ELECTRONIC FUEL INJECTOR
ENG	ENGINE
ENOPY	ENGINE PITCH AND YAW
FESH	FRONT END SHEET METAL
FIUCIAL	REFERENCE POINT OR TARGET
FS	FRONT SILL TARGET
FWD	FORWARD
IP	INSTRUMENT PANEL TARGET
LBS	POUNDS
LCP,LOP	LEFT C-POST & QUARTER PANEL TARGETS
LFG,LMS,LRS	LEFT FRONT SILL, MID SILL, & REAR SILL TARGETS
LT	LEFT
MS	MID SILL TARGET
NORMALIZE	PUT ON A COMMON BASIS
NOSE-DOWN	LEADING EDGE BELOW TRAILING
NOSE-UP	LEADING EDGE ABOVE TRAILING
PERF	PERFORMANCE
REF	REFERENCE
REL	RELATIVE TO (ONE-DIMENSIONAL)
RCP,RQP	RIGHT C-POST & QUARTER PANEL TARGETS
RFB,RMS,RRS	RIGHT FRONT, MID, & REAR SILL TARGETS
ROLL-LEFT	LEFT SIDE LOWER THAN RIGHT
ROLL-RIGHT	RIGHT SIDE LOWER THAN LEFT
RS	REAR SILL TARGET
RT	RIGHT
SEP	SEPARATION OF (THREE-DIMENSIONAL)
SYS	SYSTEM
TBI	THROTTLE BODY INJECTOR
TIME,MS	TIME IN MILLISECONDS
U/B	UNDERBODY
VS	VERSUS
X	LONGITUDINAL AXIS (INCREASING TOWARD TRAILING EDGE)
XF	X-FILTERED
Y	LATERAL AXIS (INCREASING TO THE RIGHT)
YAW-LEFT	LEADING EDGE TO LEFT
YAW-RIGHT	LEADING EDGE TO RIGHT
Z	VERTICAL AXIS (INCREASING UPWARD)
ZEROED	SHIFTED TO START AT ZERO
ZERO-IN	ZEROED INCHES
ZERO-MM	ZEROED MILLIMETERS

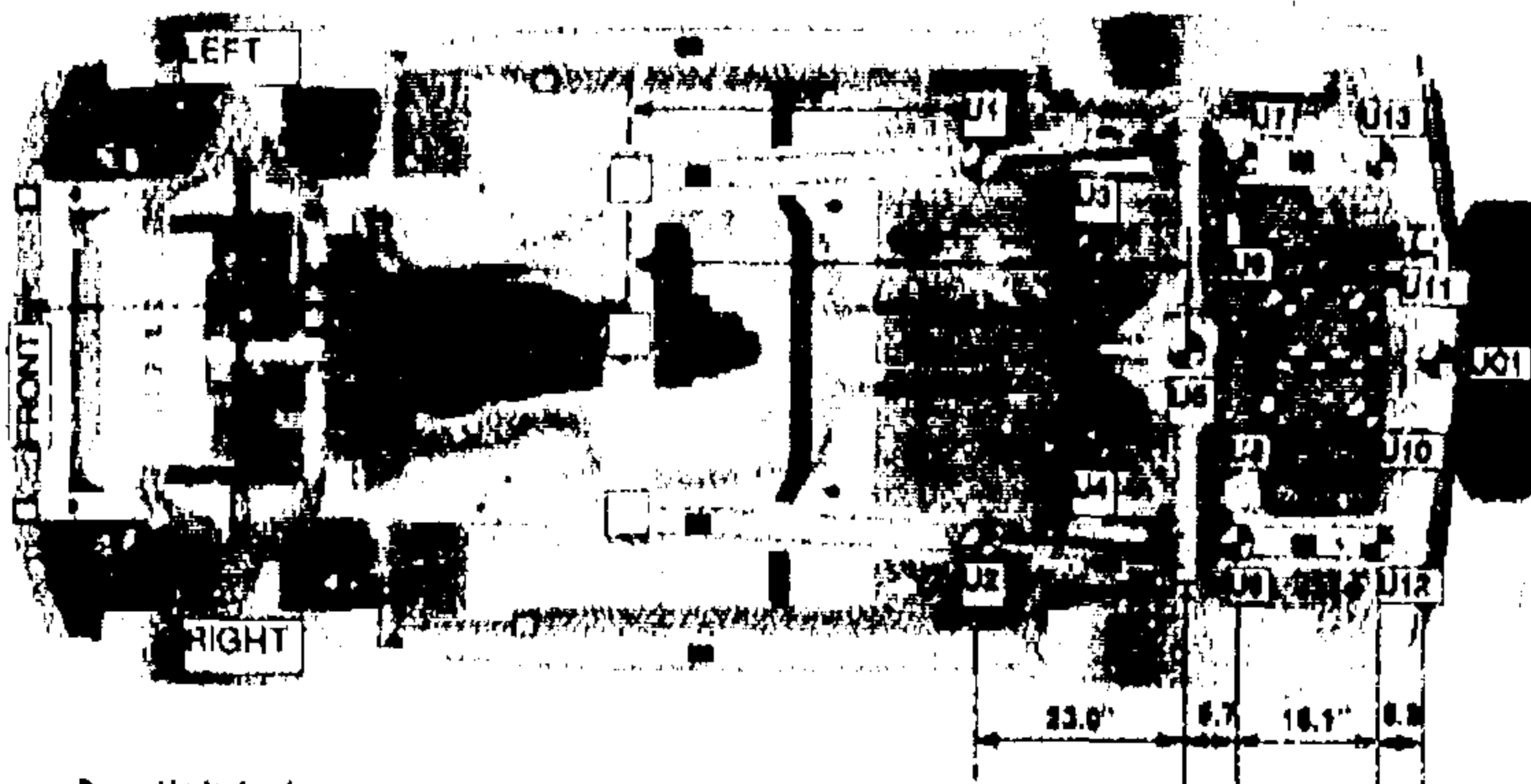
IMPACT ANALYSIS
DEPARTMENT 5320
07/16/99 13:40
TEST VC07623

VC07623 30-MPH REAR MOVING BARRIER KJ-J-74 ITEM KJ4003 2002 MVUS 301 REAR IMPACT DEVELOPMENT

Third Wheel Item VC

Jeep Cherokee 4x4 KJ

Target and Accelerometer Locations
For Rear Impact



- Underbody
- Side View
- Single Axis (X) Accelerometer
- Dual (X & Z) Accelerometer

TARGET NAME

TARGET DESCRIPTION

UC1	CENTER TARGET, REAR BUMPER CROSSMEMBER
U1	LEFT FOREMOST RAIL TARGET
U2	RIGHT FOREMOST RAIL TARGET
U3	LEFT UPPER SWING-ARM TARGET
U4	RIGHT UPPER SWING-ARM TARGET
U5	REAR DIFFERENTIAL TARGET
U6	RIGHT RAIL TARGET -RWD OF AXLE
U7	LEFT RAIL TARGET -RWD OF AXLE
U8	RIGHT FRONT CORNER FUEL TANK TARGET
U9	LEFT FRONT CORNER FUEL TANK TARGET
U10	RIGHT AFT FUEL TANK TARGET
U11	LEFT AFT FUEL TANK TARGET
U12	RIGHT AFTMOST RAIL TARGET -NEAR REAR RIGHT CORNER FUEL TANK
U13	LEFT AFTMOST RAIL TARGET - NEAR REAR LEFT CORNER FUEL TANK

IMPACT ANALYSIS
DEPARTMENT 5320
07/16/99
TEST VC07623UBR

EA12-005-Chrysler-002024

VC07623 30-MPH REAR MOVING BARRIER. KJ-J-74 ITEM KJ4003
2002 MVSS 301 REAR IMPACT DEVELOPMENT.

ZERGED X OF UCI RELATIVE TO U1 IN CAR COORD
VERSUS TIME IN MILLISECONDS

REAR UNDERBODY MOTION ANALYSIS

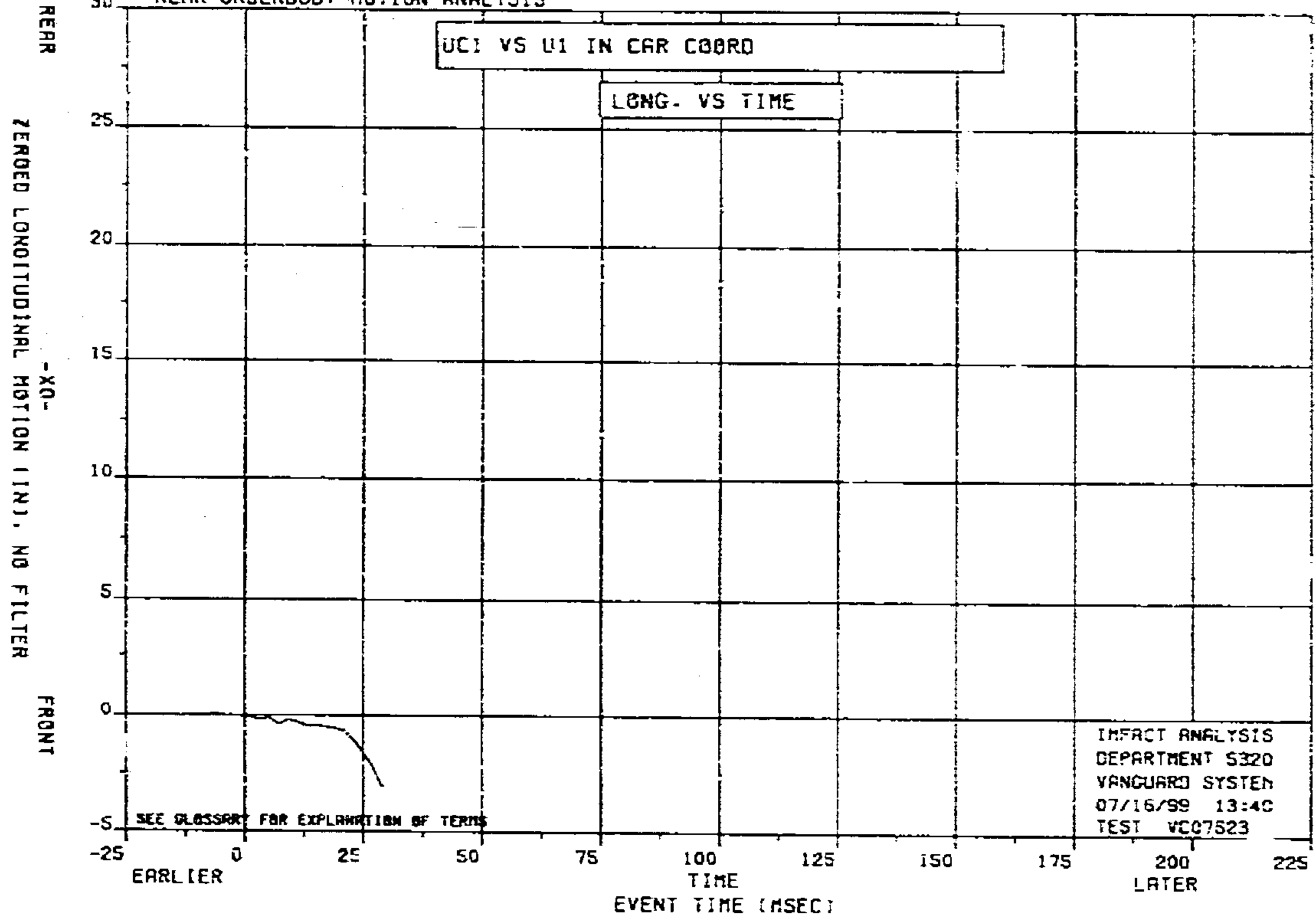


FIGURE 1

VC07623 30-MPH REAR MOVING BARRIER, KJ-J-74 ITEM KJ4003
 2002 MVSS 301 REAR IMPACT DEVELOPMENT.

ZERGED X OF MBI RELATIVE TO UI IN BASE COORD
 VERSUS TIME IN MILLISEC

REAR UNDERBODY MOTION ANALYSIS

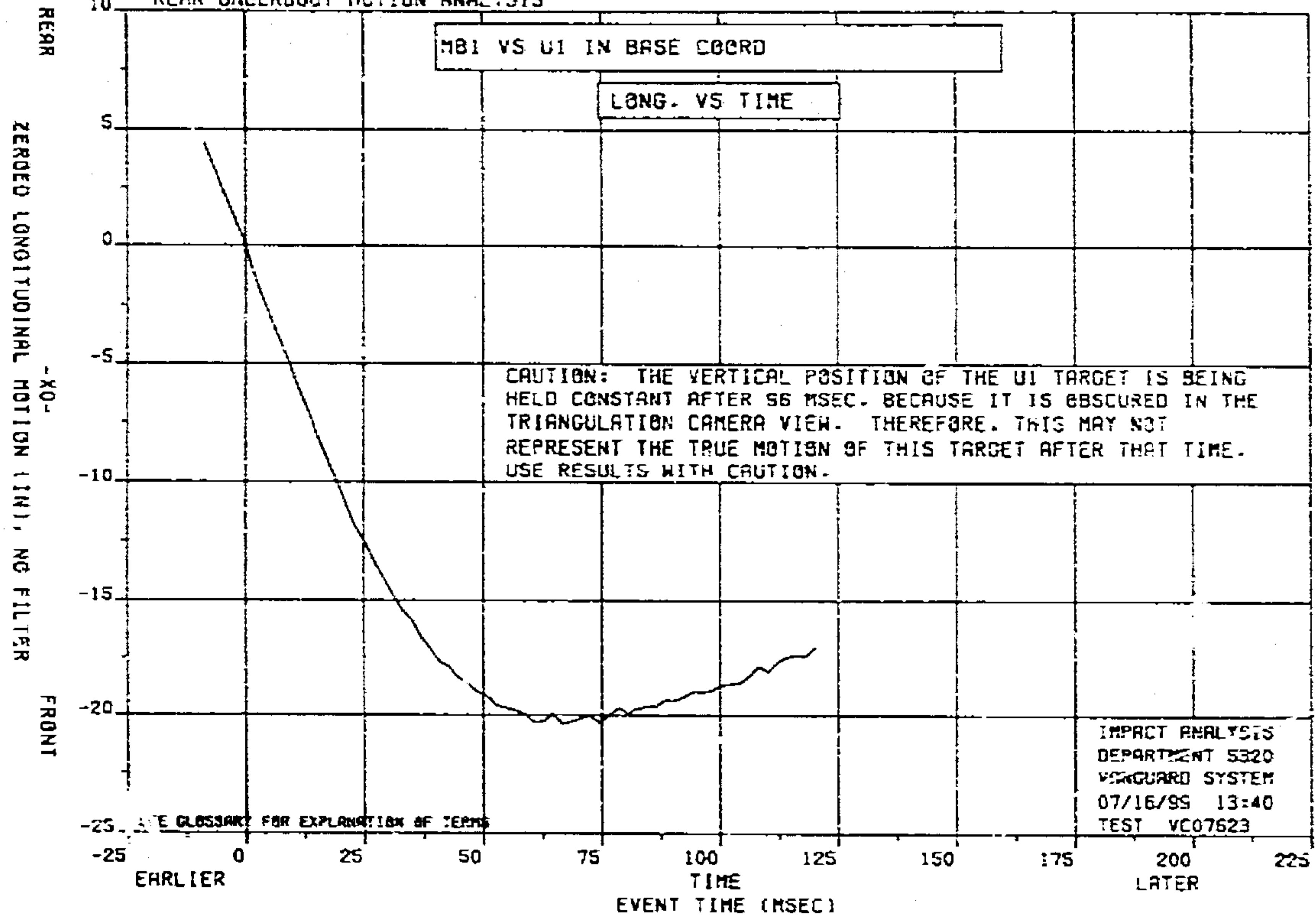


FIGURE 2

VC07623 30-MPH REAR MOVING BARRIER, KJ-J-74 ITEM KJ4003
 2002 MVSS 301 REAR IMPACT DEVELOPMENT.

ZERBED X OF M31 RELATIVE TO U7 IN BASE COORD
 VERSUS TIME IN MILLISECOND

REAR UNDERBODY MOTION ANALYSIS

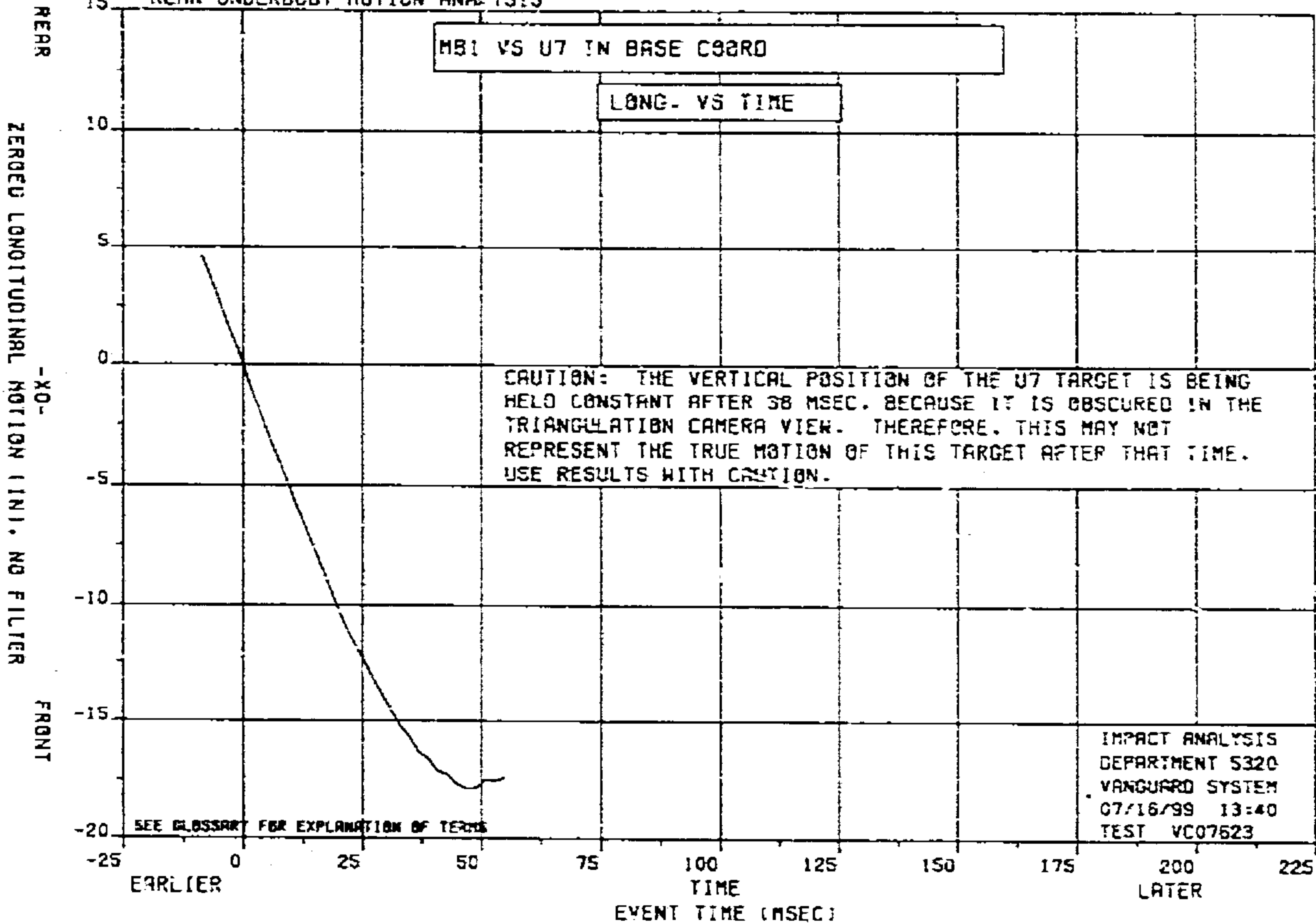


FIGURE 3

VC07623 30-MPH REAR MOVING BARRIER, KJ-J-74 ITEM KJ4003
 2002 MVSS 501 REAR IMPACT DEVELOPMENT.

ZERBED X OF MBI RELATIVE TO U13 IN CAR COORD
 VERSUS TIME IN MILLISECONDS

REAR UNDERBODY MOTION ANALYSIS

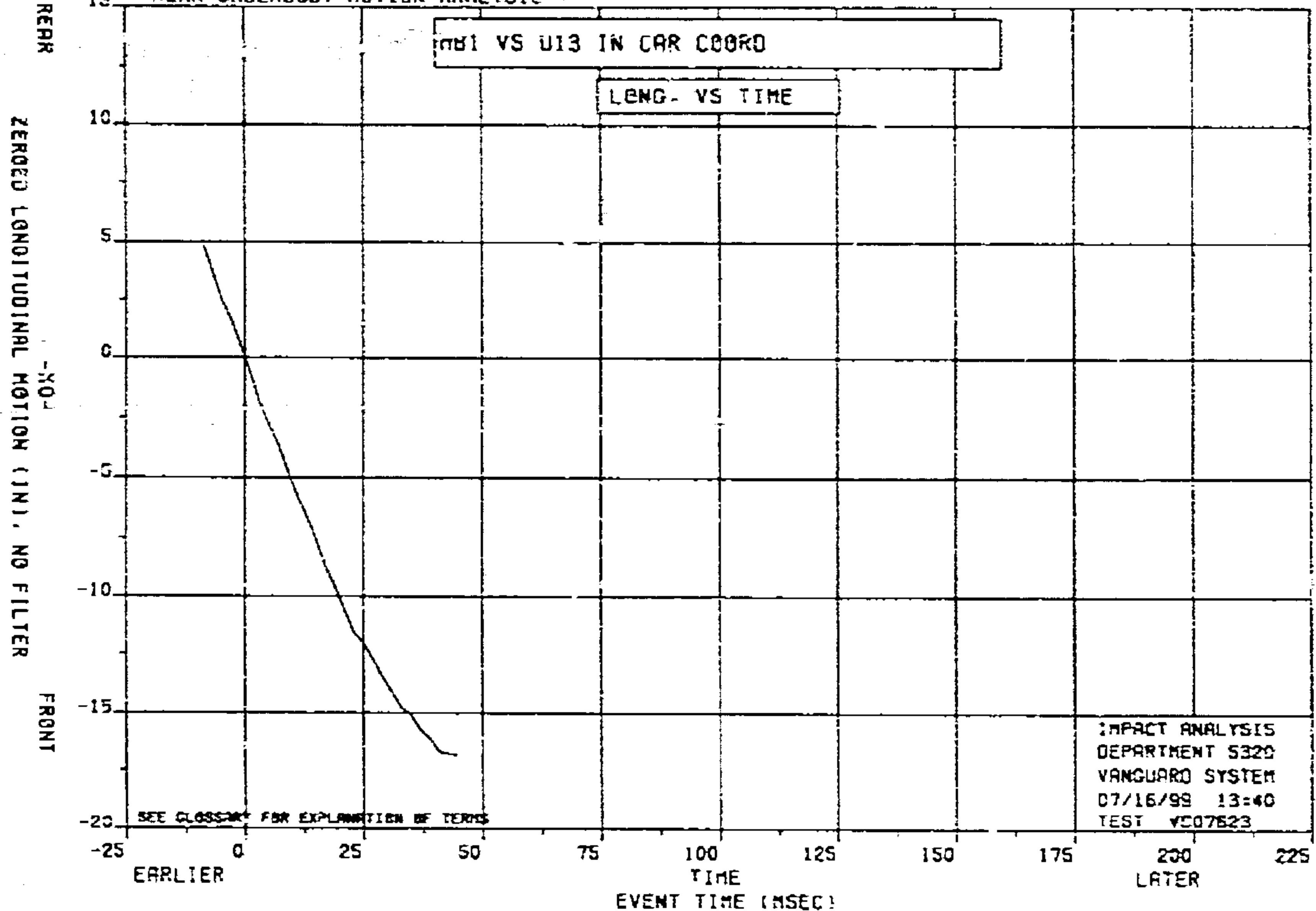


FIGURE 4

VC07623 30-MPH REAR MOVING BARRIER. KJ-J-74 ITEM KJ4003
 2002 MVSS 301 REAR IMPACT DEVELOPMENT.

ZERGED λ OF U13 RELATIVE TO U7 IN CAR COORD
 VERSUS TIME IN MILLISECONDS

REAR UNDERBODY MOTION ANALYSIS

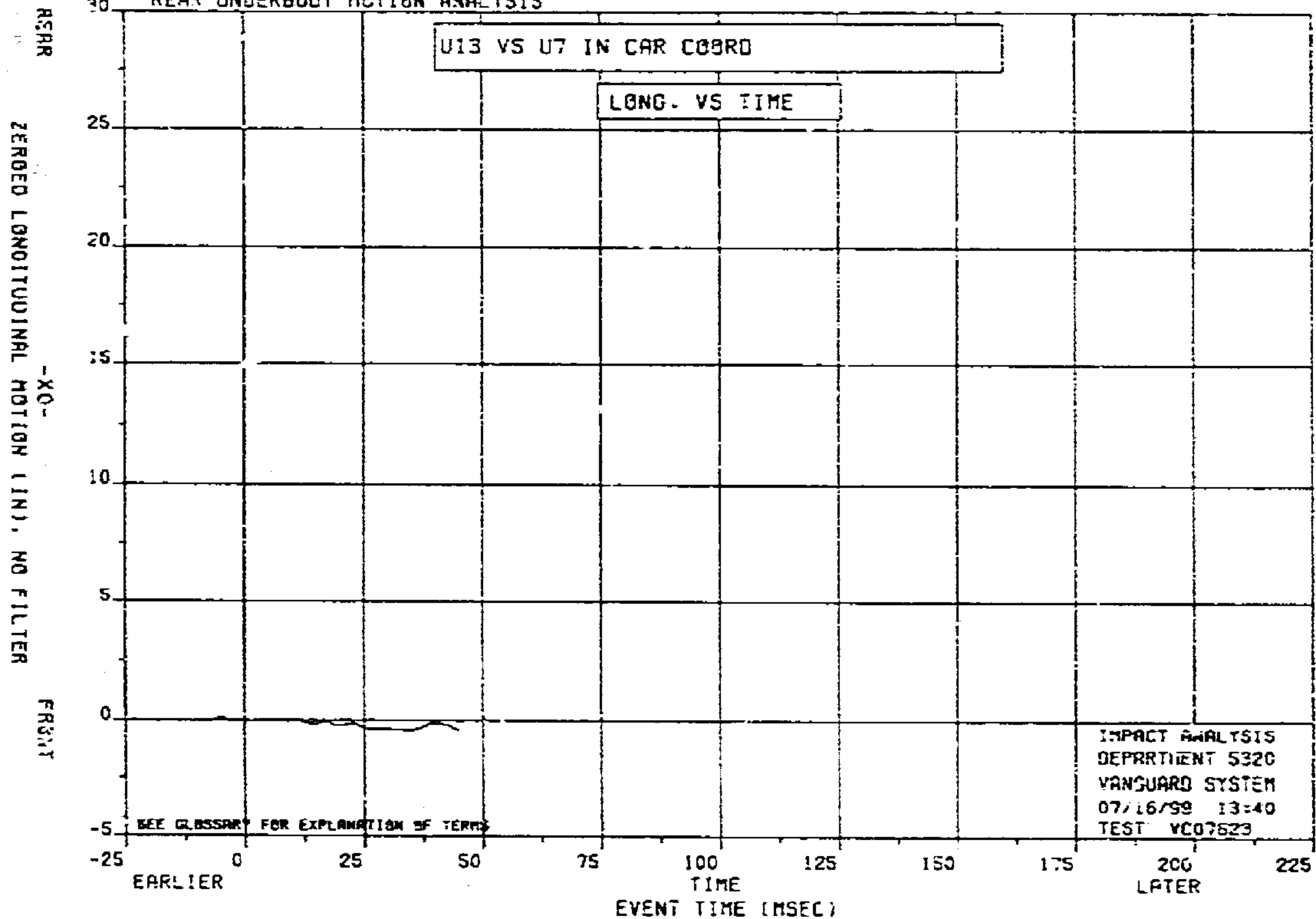


FIGURE 5

IMPACT ANALYSIS
 DEPARTMENT 5320
 VANGUARD SYSTEM
 07/16/99 13:40
 TEST VC07623

VC07623 30-MPH REAR MOVING BARRIER. KJ-J-74 ITEM KJ4003
 2002 MVSS 301 REAR IMPACT DEVELOPMENT.

ZEROED X OF U7 RELATIVE TO U1 IN CAR COORD
 VERSUS TIME IN MILLISECONDS

REAR UNDERBODY MOTION ANALYSIS

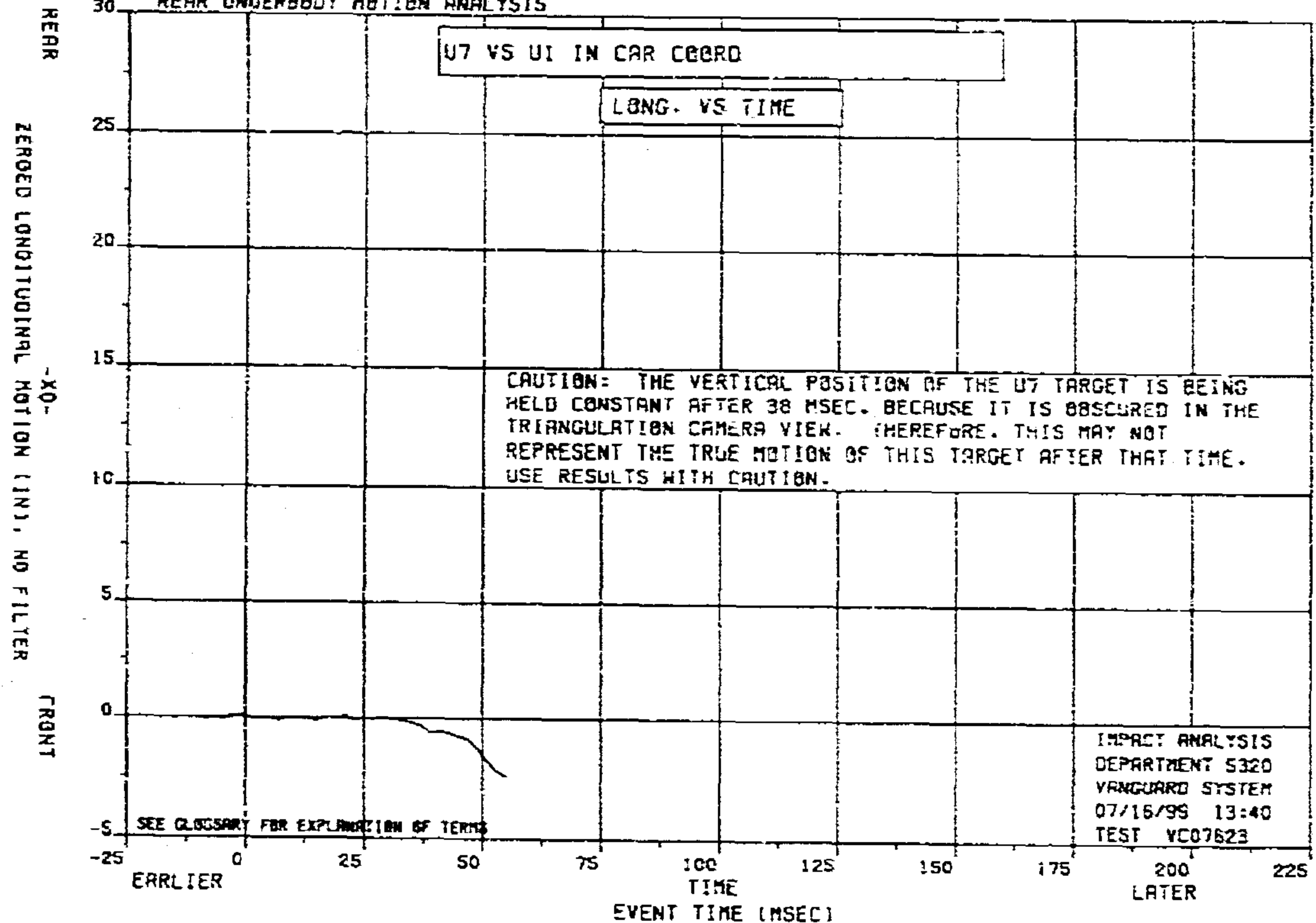


FIGURE 6

VC07623 30-MPH REAR MOVING BARRIER. KJ-5-74 ITEM KJ4003
 2002 HVSS 301 REAR IMPACT DEVELOPMENT.

ZEROED X OF MB2 RELATIVE TO U2 IN BASE COORD
 VERSUS TIME IN MILLISECONDS

REAR UNDERBODY MOTION ANALYSIS

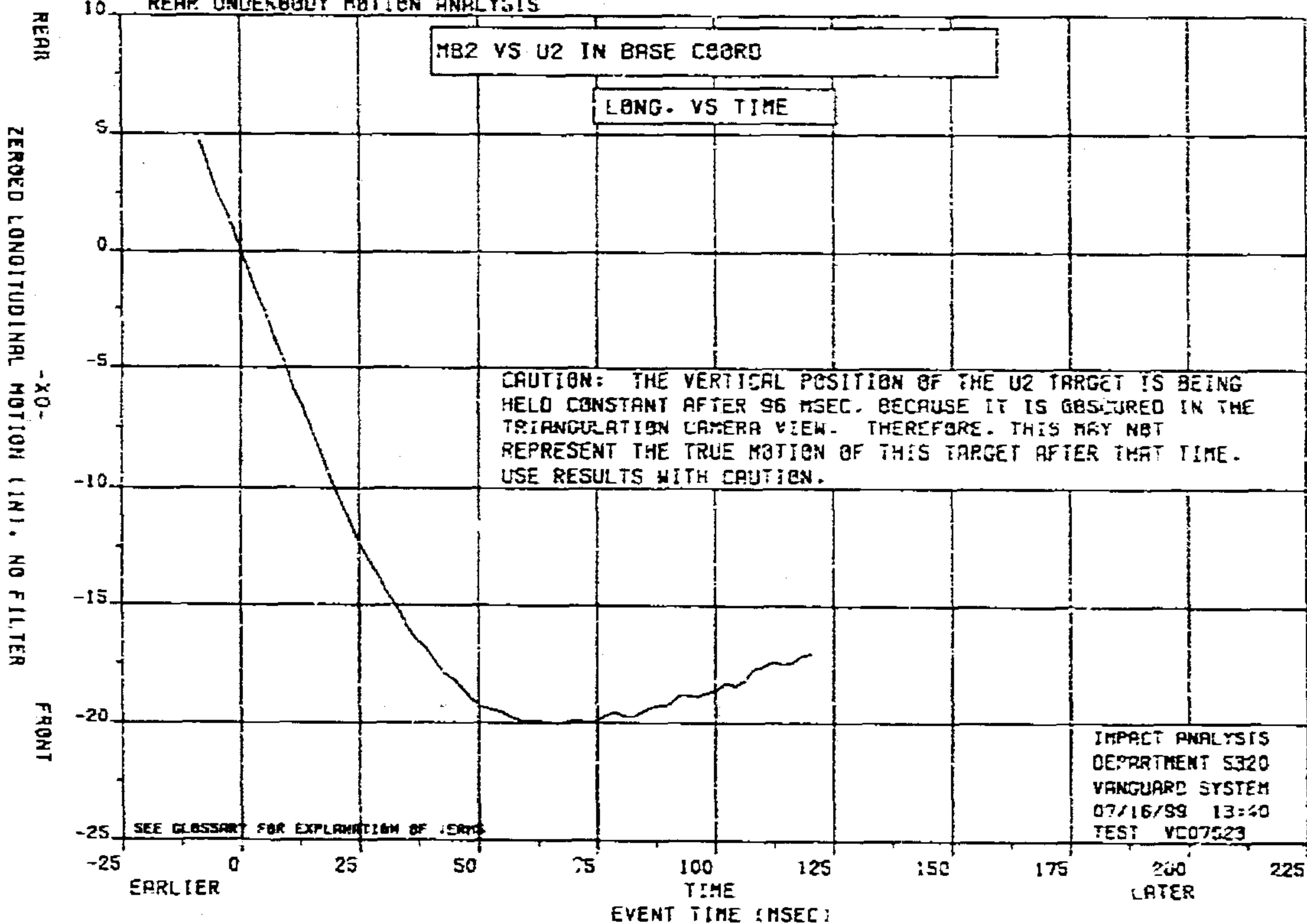


FIGURE 7

VC07623 30-MPH REAR MOVING BARRIER. KJ-3-74 ITEM KJ4003
 2002 MYSS 301 REAR IMPACT DEVELOPMENT.

ZEROED X OF MB2 RELATIVE TO U6 IN CAR COORD
 VERSUS TIME IN MILLISECONDS

REAR UNDERBODY MOTION ANALYSIS

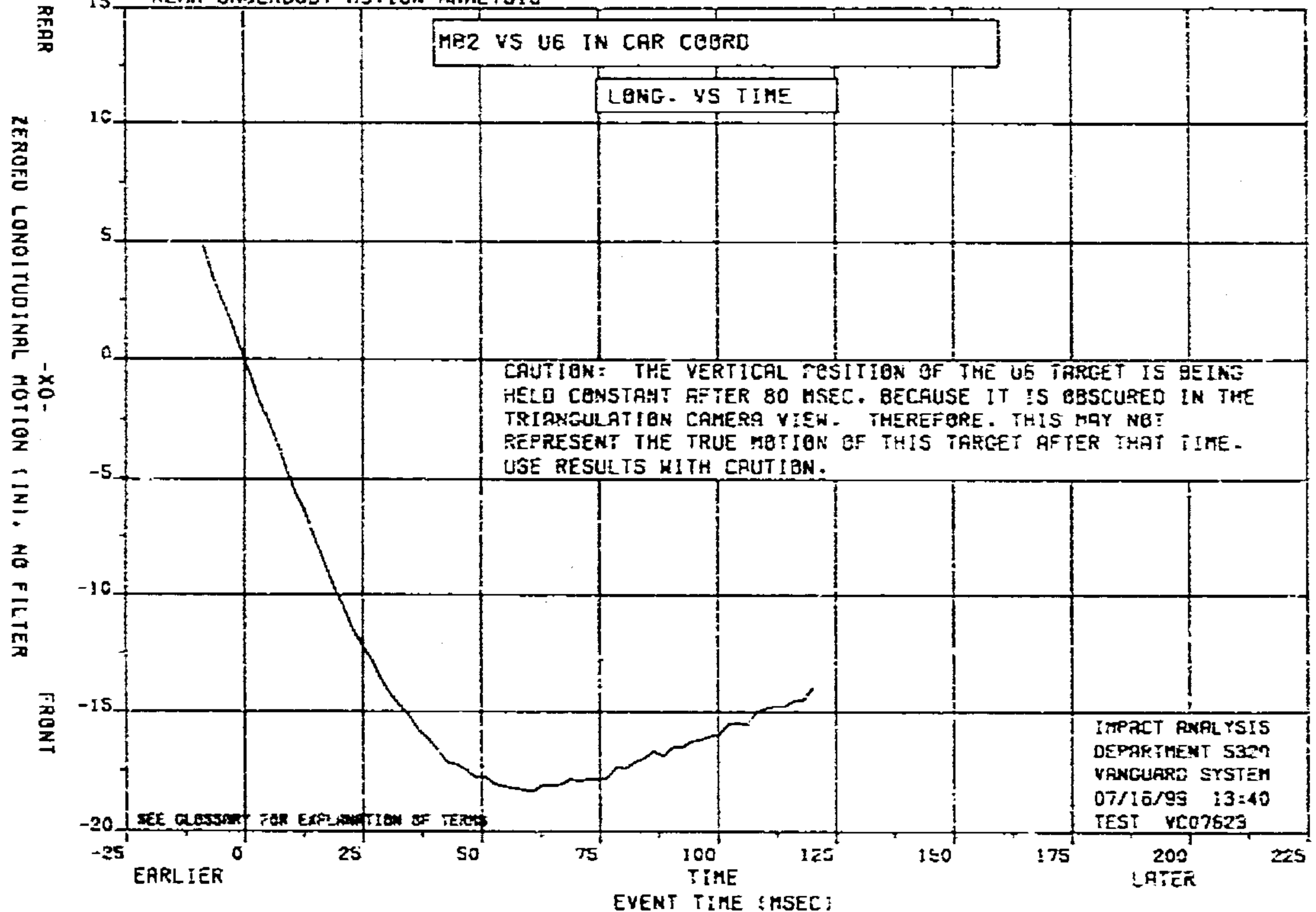


FIGURE 8

VC07523 30-MPH REAR MOVING BARRIER. KJ-J-74 ITEM KJ-02
2002 MVSS 301 REAR IMPACT DEVELOPMENT.

ZERGED X OF M82 RELATIVE TO U12 IN CAR COORD
VERSUS TIME IN MILLISECND

REAR UNDERBODY MOTION ANALYSIS

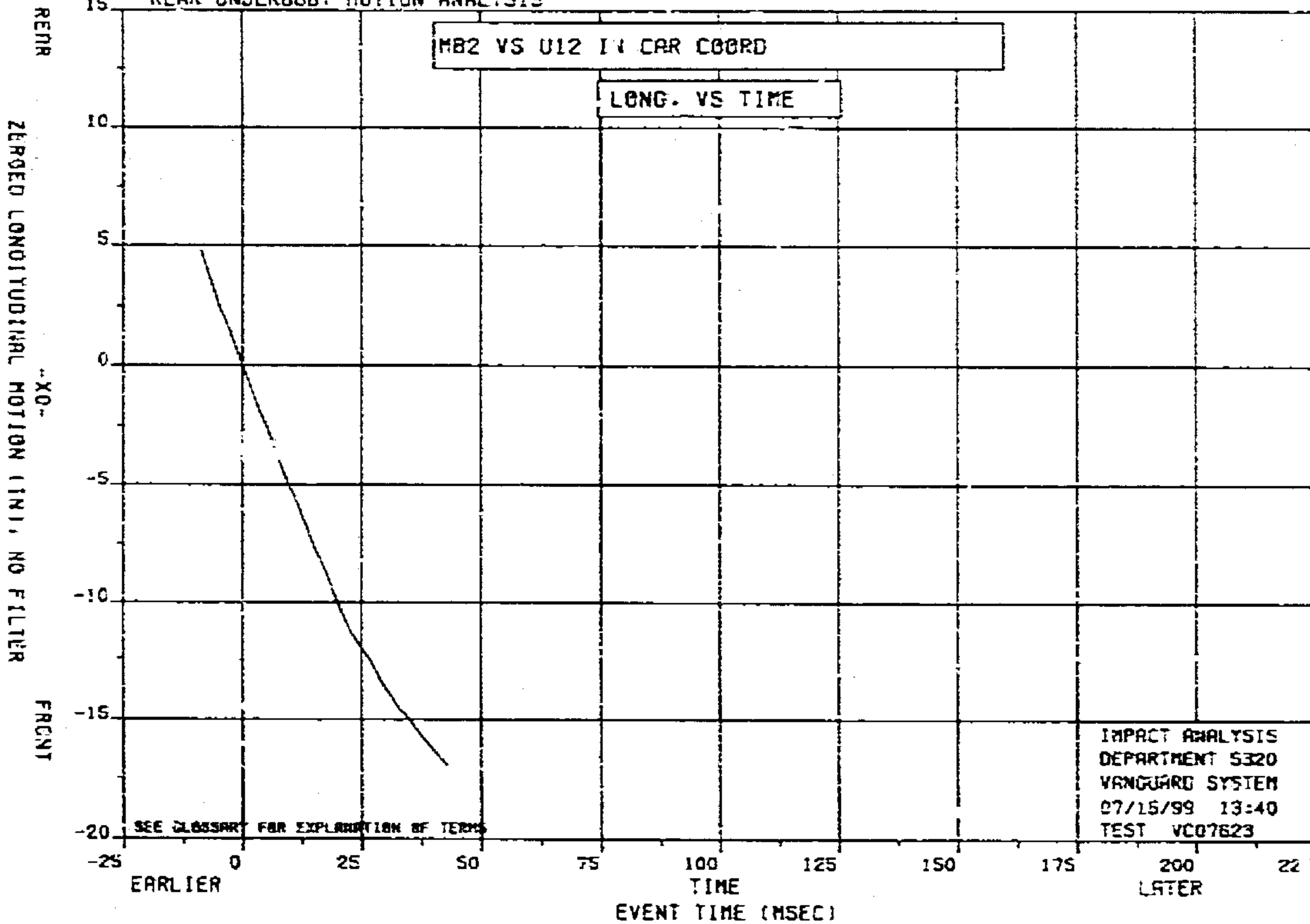


FIGURE 9

VC07623 30-MPH REAR MOVING BARRIER. KJ-J-74 ITEM KJ4003
 2002 MVSS 301 REAR IMPACT DEVELOPMENT.

ZERGED X OF U12 RELATIVE TO U6 IN CAR COORD
 VERSUS TIME IN MILLISECONDS

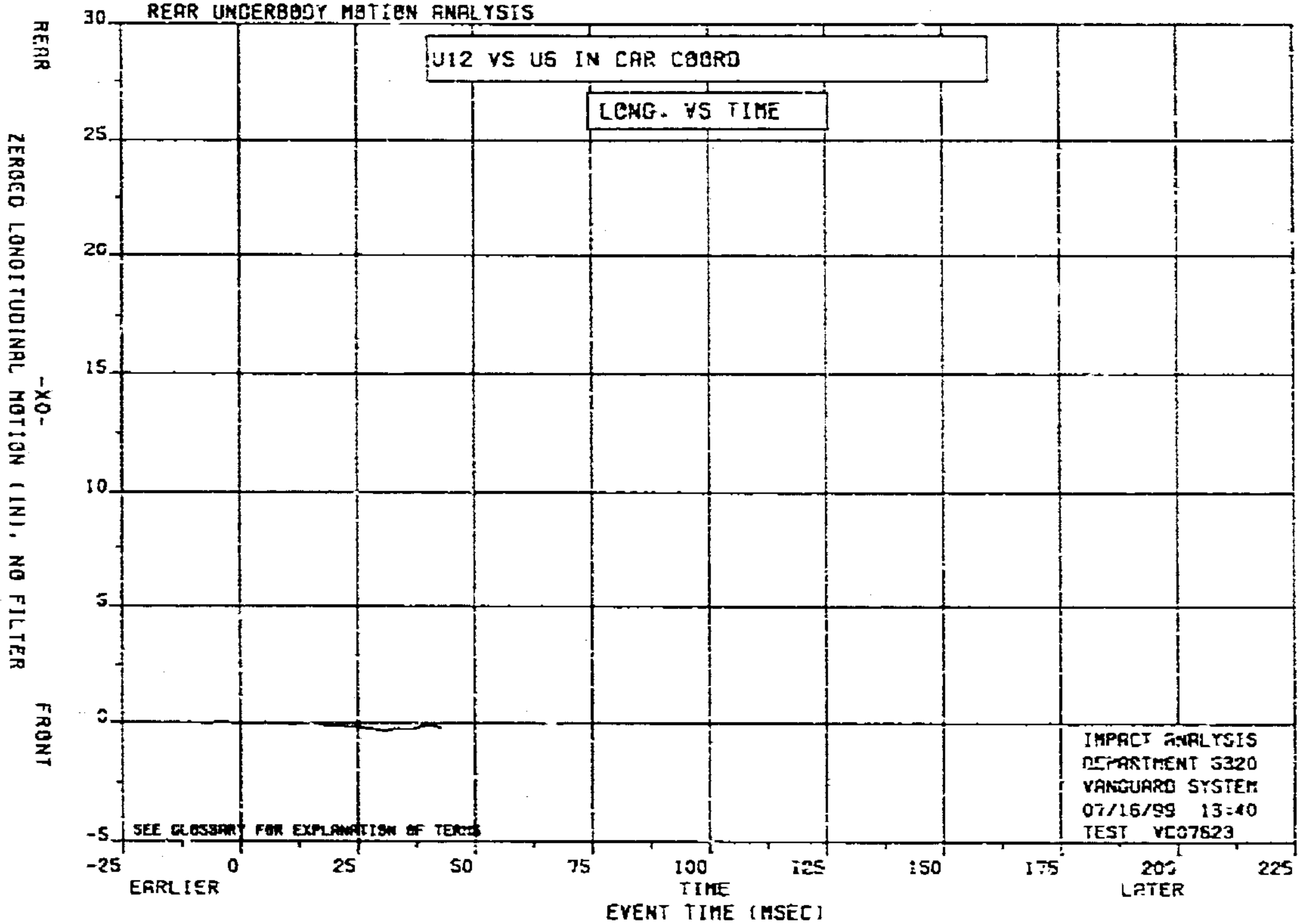


FIGURE 10

VC07623 30-MPH REAR MOVING BARRIER. KJ-J-74 ITEM KJ4003
 2022 MVSS 30: REAR IMPACT DEVELOPMENT.

ZEROED X OF U6 RELATIVE TO U2 IN CAR COORD
 VERSUS TIME IN MILLISECOND

REAR UNDERBODY MOTION ANALYSIS

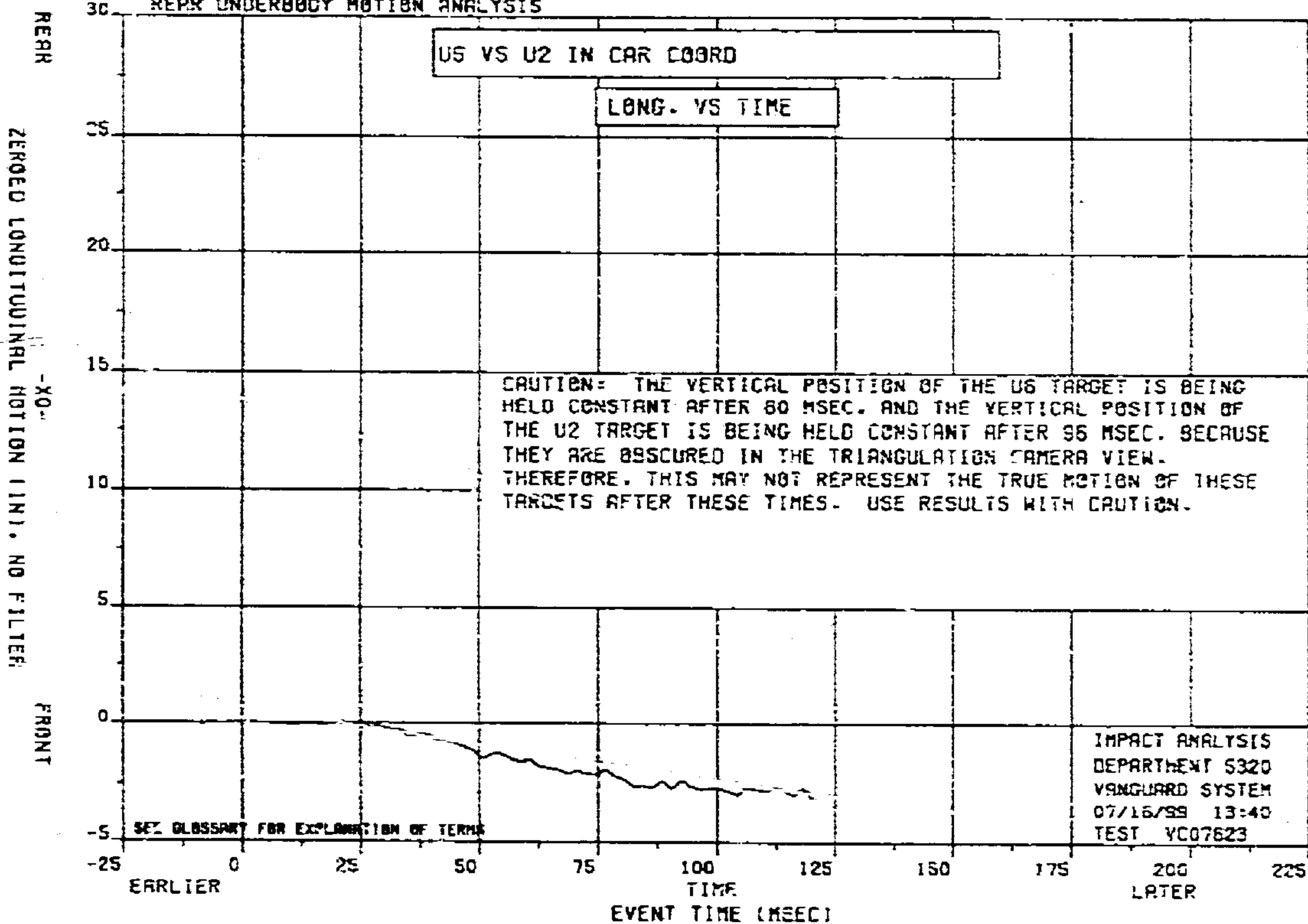


FIGURE 11

VC07623 30-MPH REAR MOVING BARRIER. KJ-J-74 ITEM KJ4003
 2002 MVSS 301 REAR IMPACT DEVELOPMENT.

ZERBED X OF US RELATIVE TO U1 IN CAR COORD
 VERSUS TIME IN MILLISEC

REAR UNDERBODY MOTION ANALYSIS

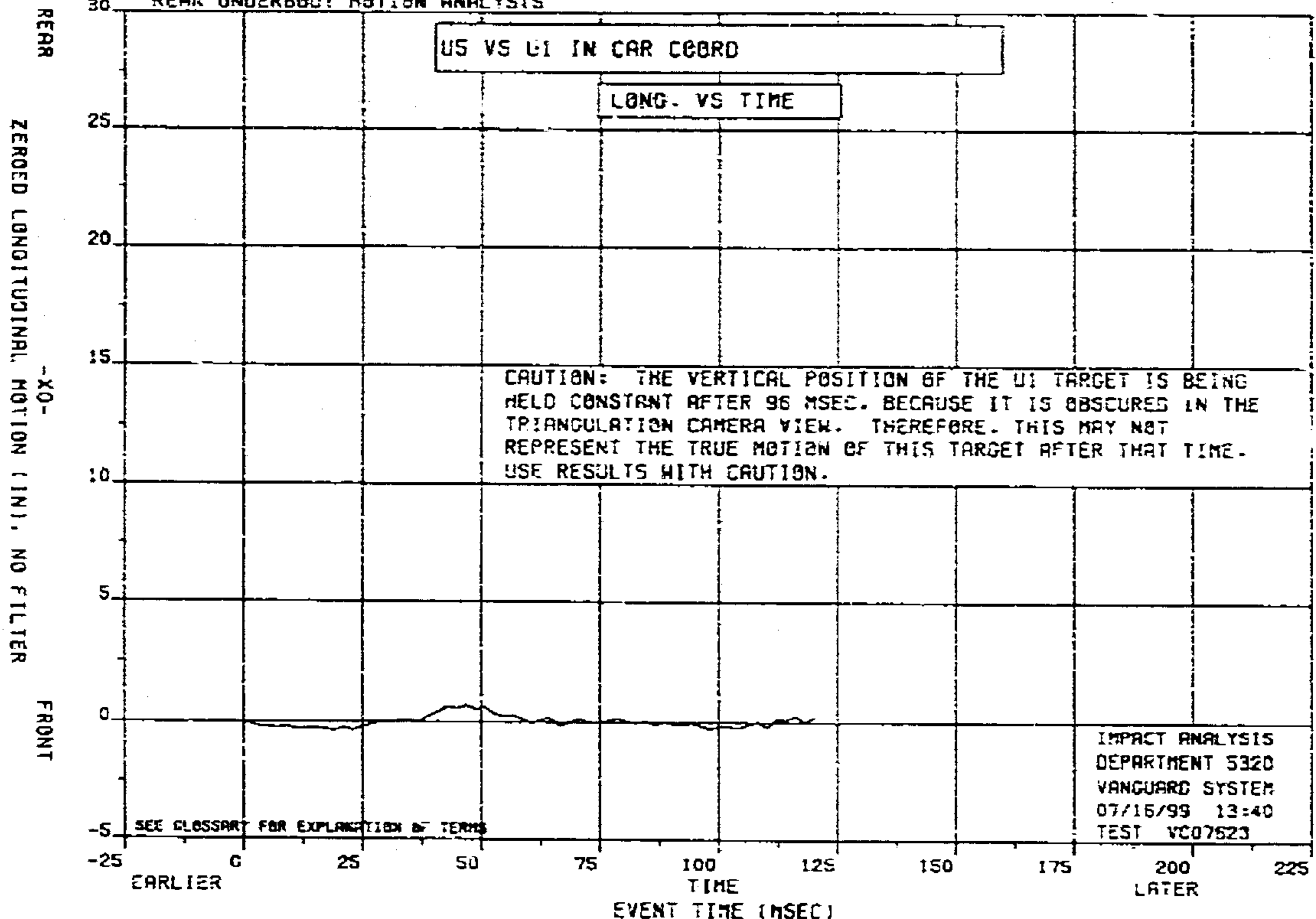


FIGURE 12

VC07623 30-MPH REAR MOVING BARRIER, KJ-J-74 ITEM KJ4003
 2002 MYSS 301 REAR IMPACT DEVELOPMENT.

ZERBED X OF U5 RELATIVE TO U2 IN CAR COORD
 VERSUS TIME IN MILLISECNS

REAR UNDERBODY MOTION ANALYSIS

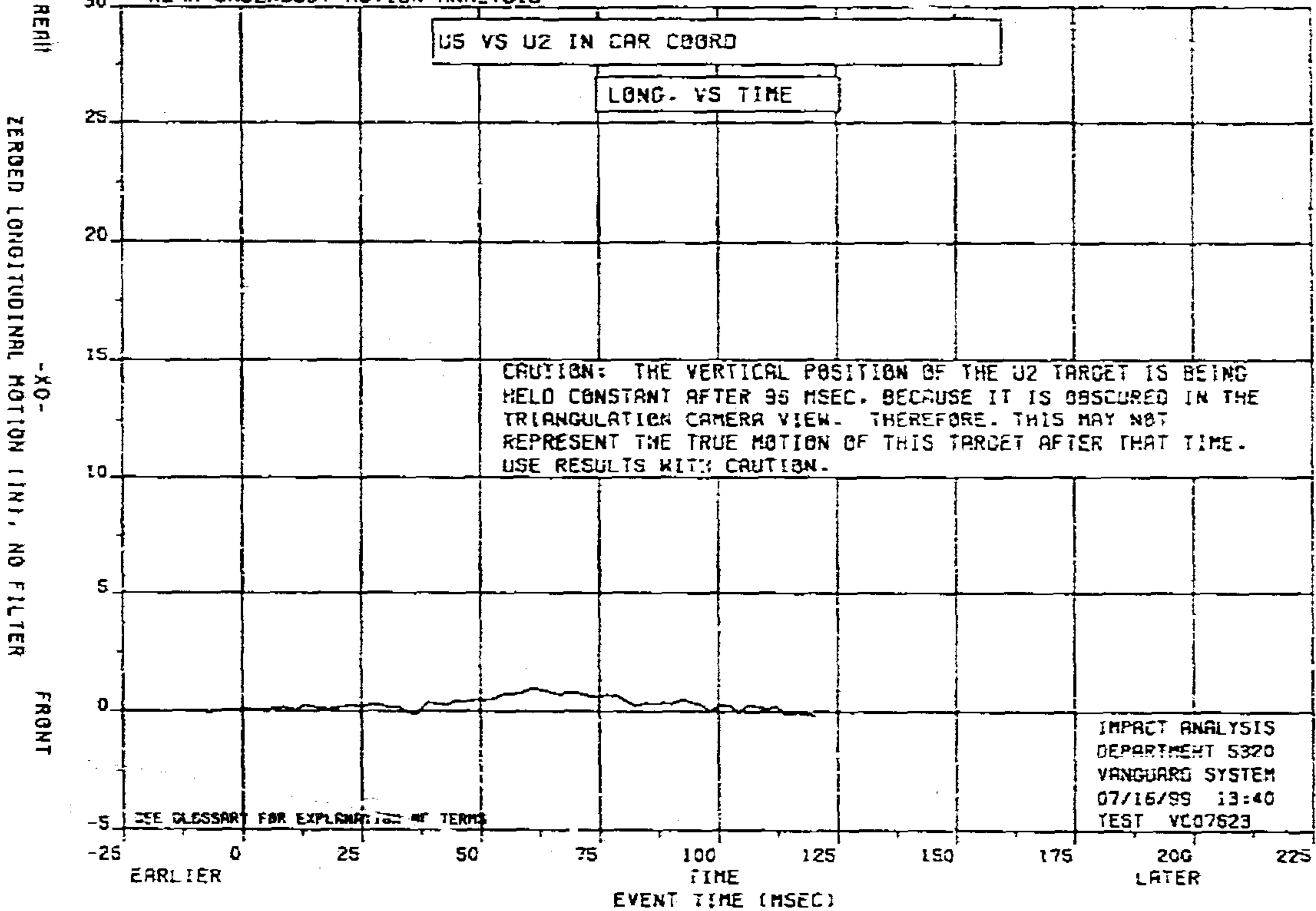


FIGURE 13

VC07623 30-MPH REAR MOVING BARRIER, KJ-J-74 ITEM KJ4003
 2002 MYSS 301 REAR IMPACT DEVELOPMENT.

ZEROED X OF U9 RELATIVE TO U1 IN CAR COORD.
 VERSUS TIME IN MILLISECONDS

REAR UNDERBODY MOTION ANALYSIS

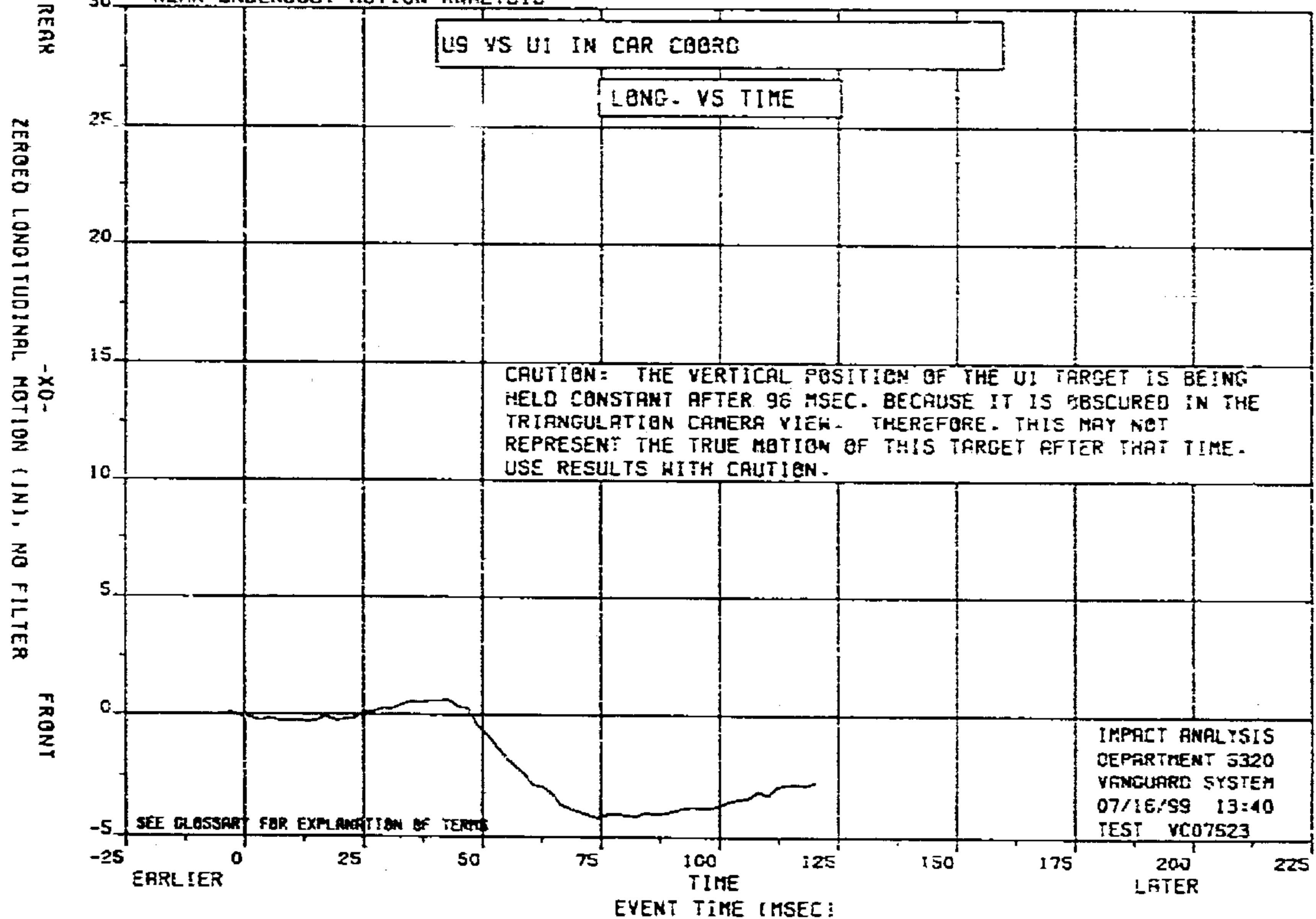


FIGURE 14

VC07623 30-MPH REAR MOVING BARRIER. KJ-J-74 ITEM KJ4003
 2002 MYSS 301 REAR IMPACT DEVELOPMENT.

ZEROED X OF U11 RELATIVE TO U1 IN CAR COORD
 VERSUS TIME IN MILLISECONDS

REAR UNDERBODY MOTION ANALYSIS

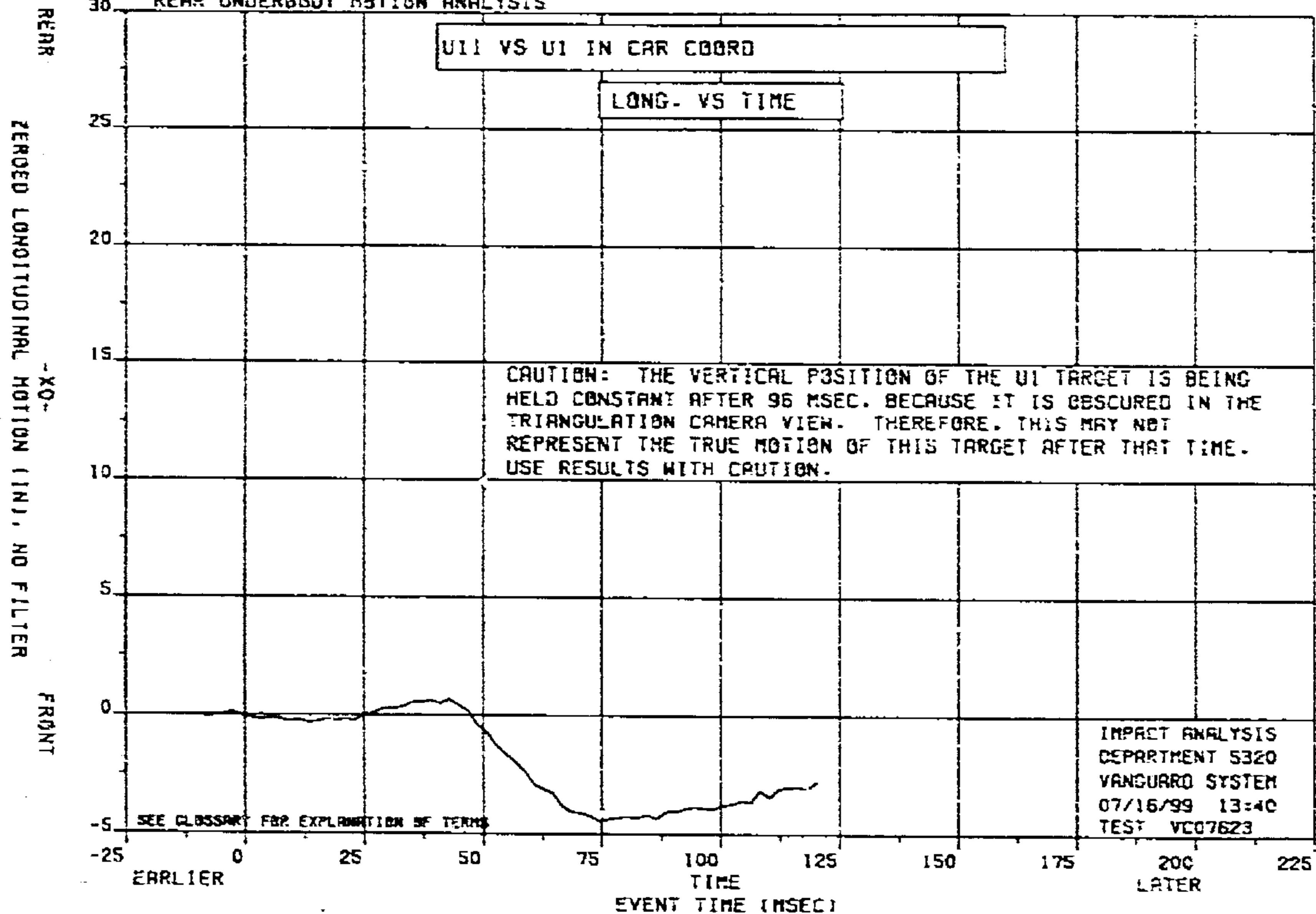


FIGURE 15

VC07623 30-MPH REAR MOVING BARRIER. KJ-J-74 ITEM KJ4003
 2002 MVSS 301 REAR IMPACT DEVELOPMENT.

ZERBED X OF U8 RELATIVE TO U1 IN CAR COORD
 VERSUS TIME IN MILLISECONDS

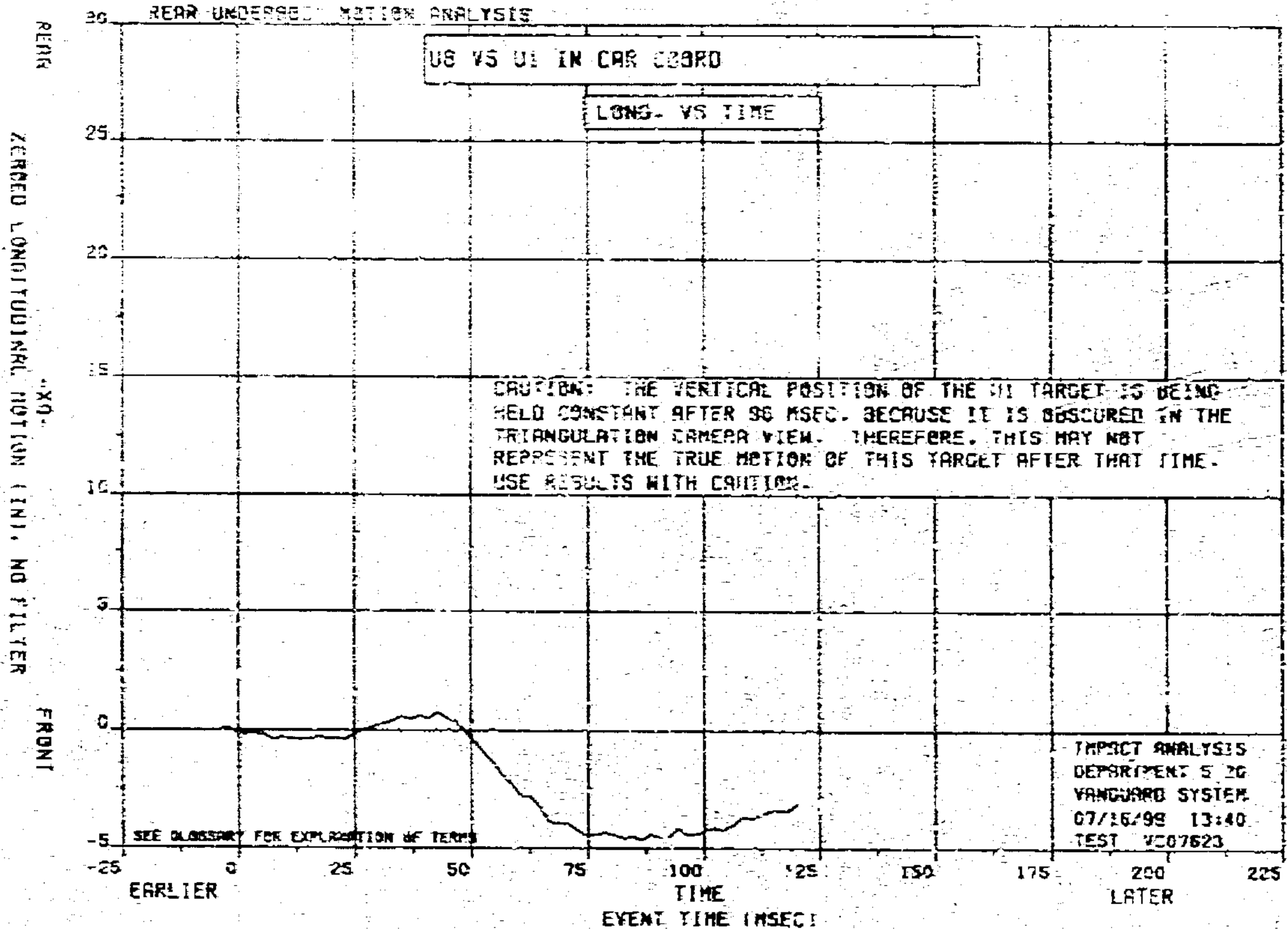


FIGURE 16

VC07523 50-MPH REAR MOVING BARRIER. KJ-J-74-LYEM KJ4603
 2002 M5SS 301 REAR IMPACT DEVELOPMENT.

ZEROED X OF UIO RELATIVE TO GE IN CAR COORD
 VERSUS TIME IN MILLISECONDS

REAR UNDERBODY MOTION ANALYSIS

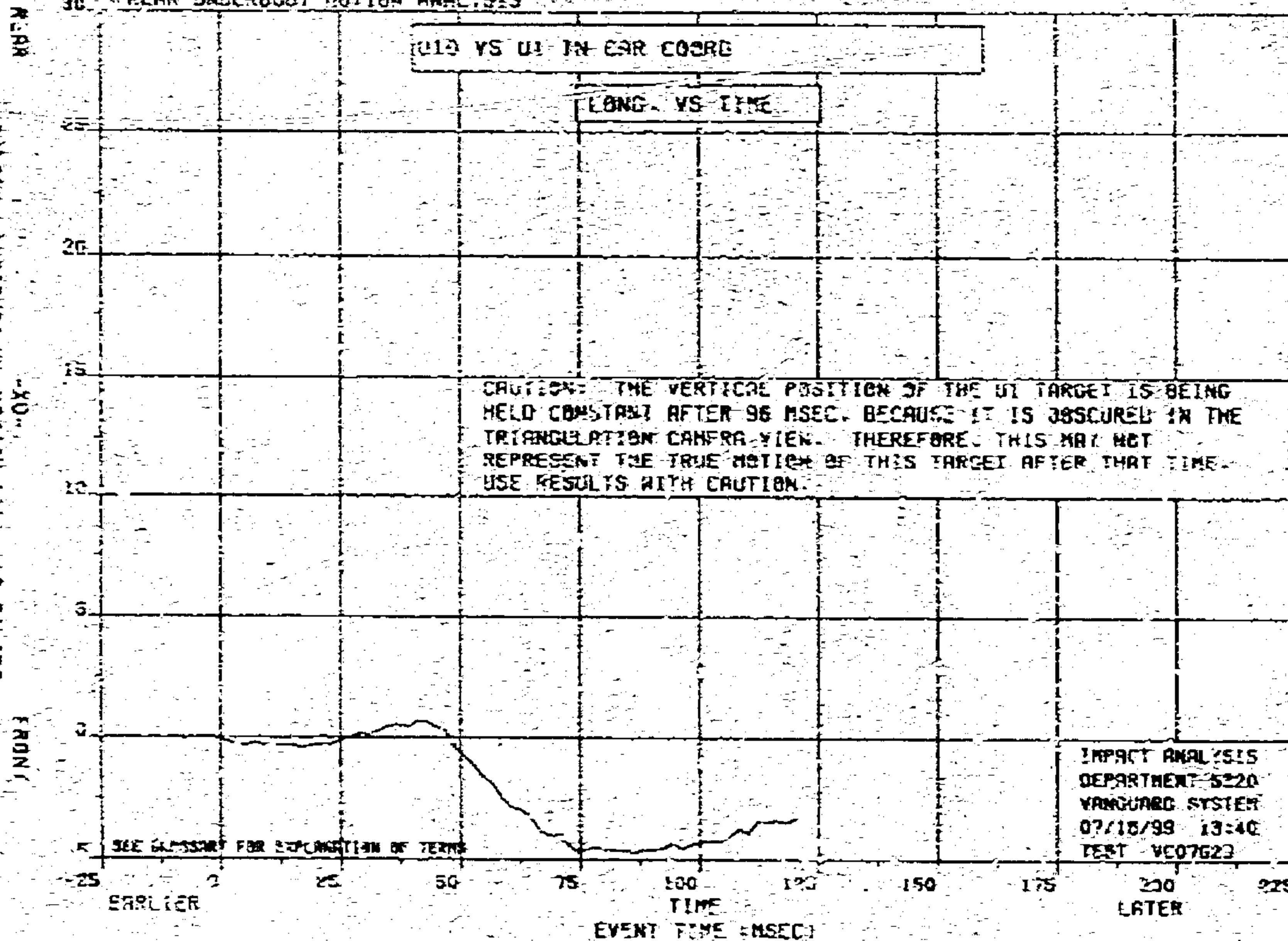


FIGURE 17
 ZEROED LONGITUDINAL POSITION (UIO) NO FILTER

VCC7623 30-APR REAR MOVING BARRIER, KJ-J-74 ITEM KJ4003
 2002 NVSS 301 REAR IMPACT DEVELOPMENT.

TWO-STEP PITCH OF U10 TO U8 IN CAR COORD SYSTEM
 VERSUS TIME IN MILLISECOND

REAR UNDERBODY MOTION ANALYSIS

NOSE-UP
 DEGREES CCW AROUND Y RELATIVE TO X (RT SIDE VIEW) SENS. FILTER
 CORR. P
 NOSE-DOWN

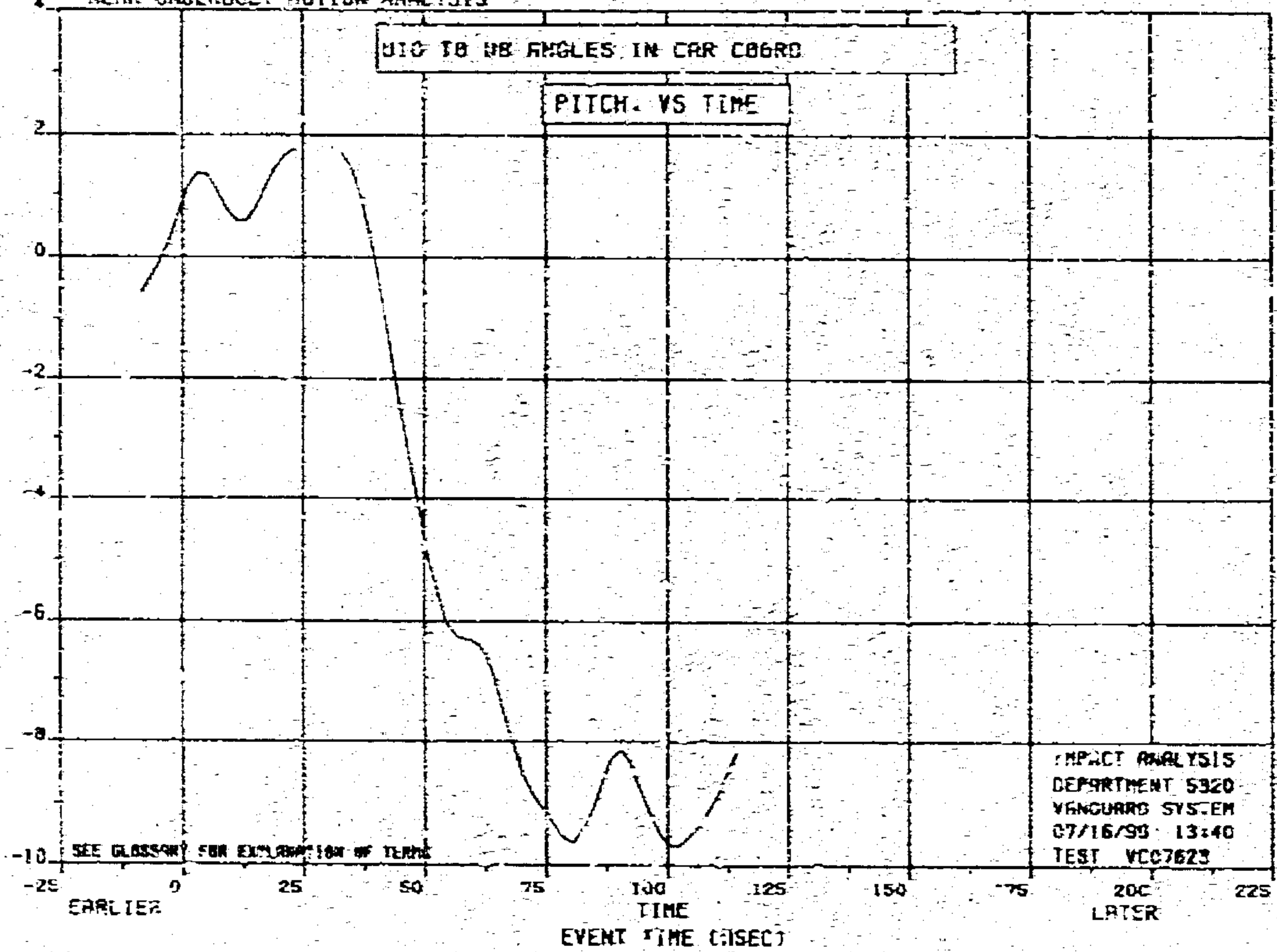


FIGURE 18

VE07623 30-MPH REAR MOVING BARRIER. KJ-J-74 ITEM KJ4003
2002 MVSS 301 REAR IMPACT DEVELOPMENT.

ZEROED SEPARATION OF U10 AND U8 (IN)
VERSUS TIME IN MILLISECONDS

REAR UNDERBODY MOTION ANALYSIS

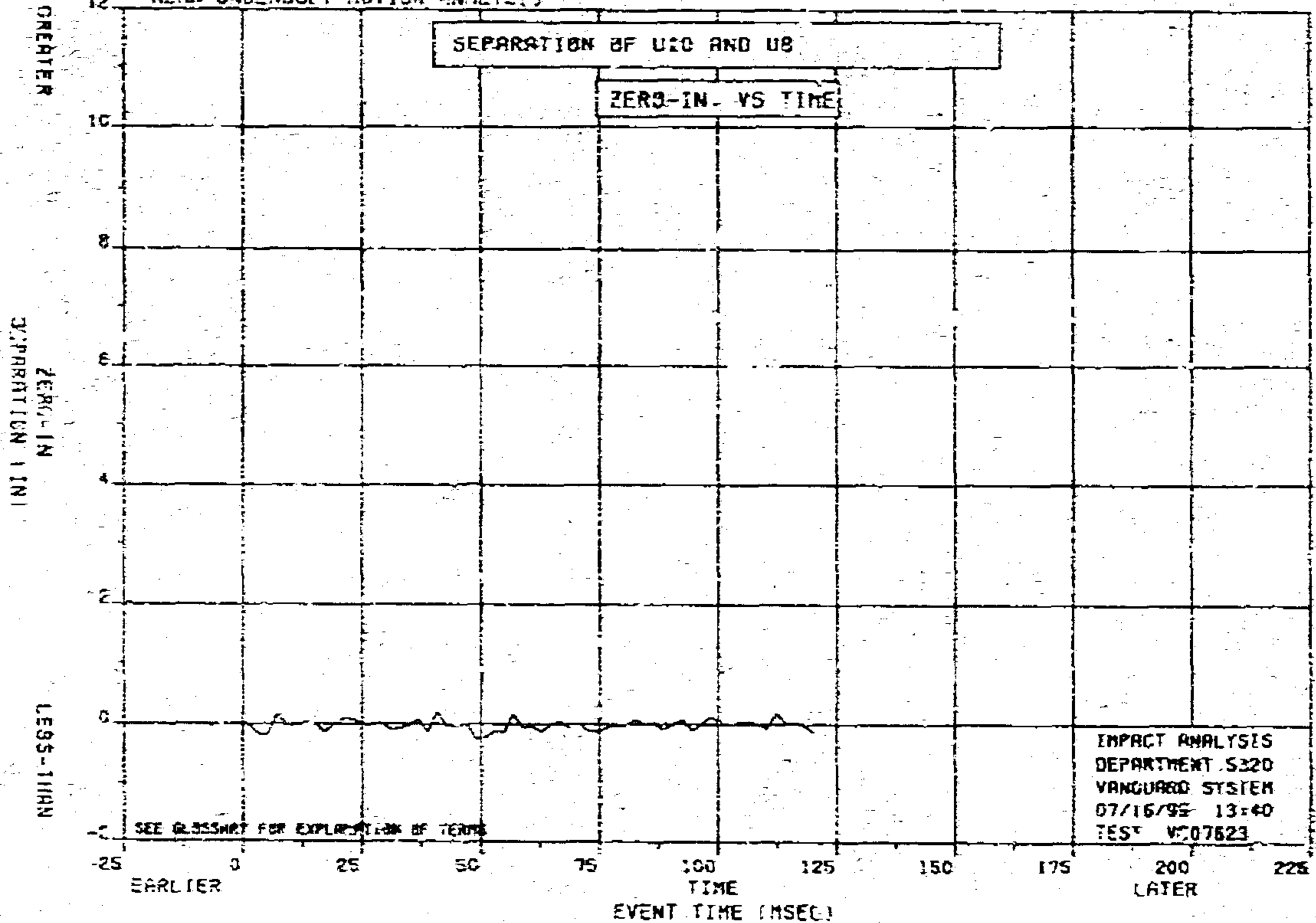


FIGURE 19

VC07623 30-MPH REAR MOVING BARRIER, KJ-3-74 ITEM KJ4003
 2002 WVS 301 REAR IMPACT DEVELOPMENT.

ZERGED PITCH OF U11 TO U9 IN CAR COORD SYSTEM
 VERSUS TIME IN MILLISECONDS

REAR UNDERBODY MOTION ANALYSIS

NOSE-UP
 DEGREES CCR AROUND Y RELATIVE TO X (RT SIDE VIEW) 60HZ FILTER
 CORR-P
 NOSE-DOWN

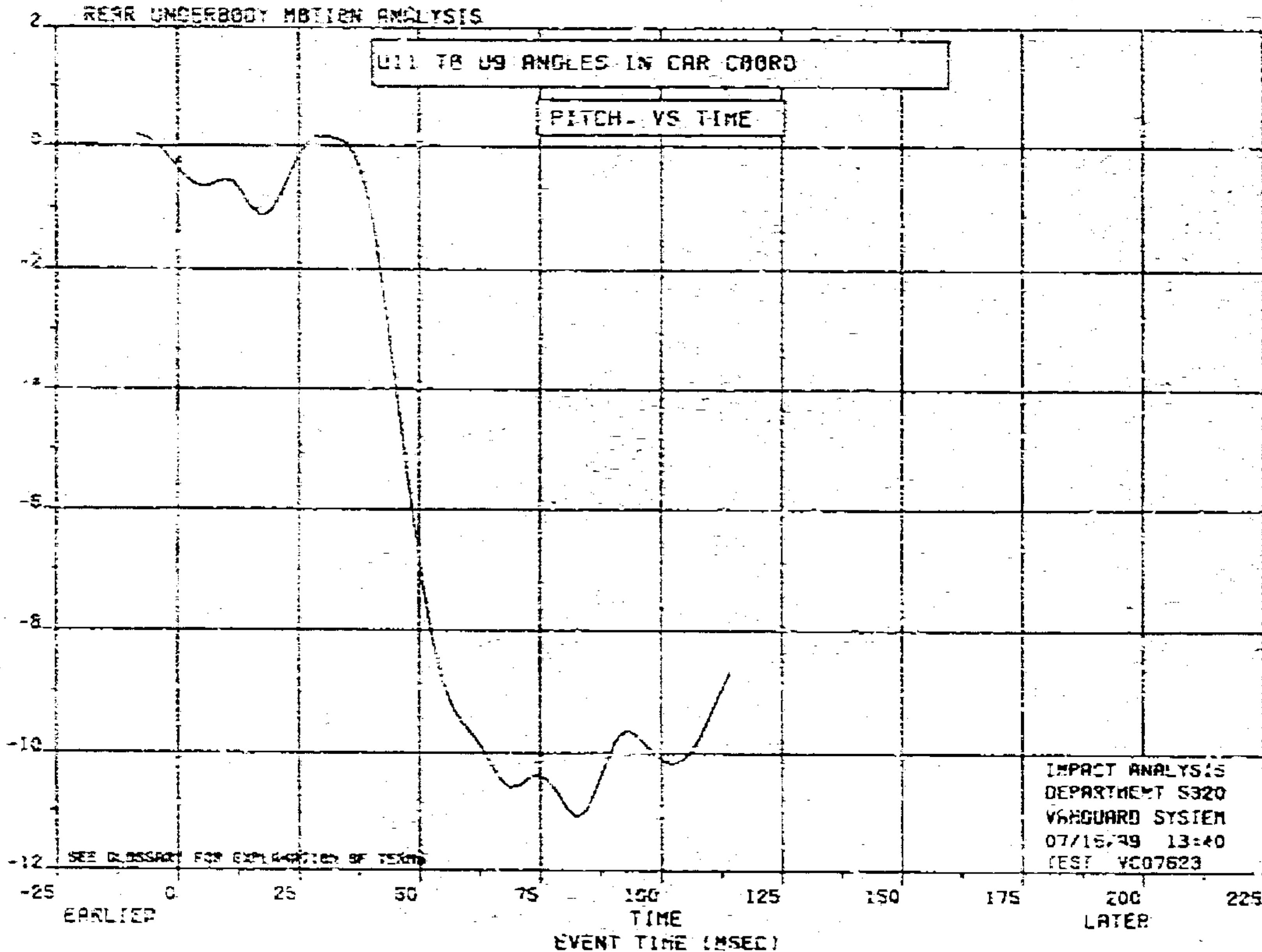


FIGURE 20

VC07623 30-MPH REAR MOVING BARRIER, KJ-3-74 ITEM KJ4003
2002 MVSS 301 REAR IMPACT DEVELOPMENT.

ZERGED SEPARATION OF U11 AND U9 (IN)
VERSUS TIME IN MILLISECONDS

REAR UNDERBODY MOTION ANALYSIS

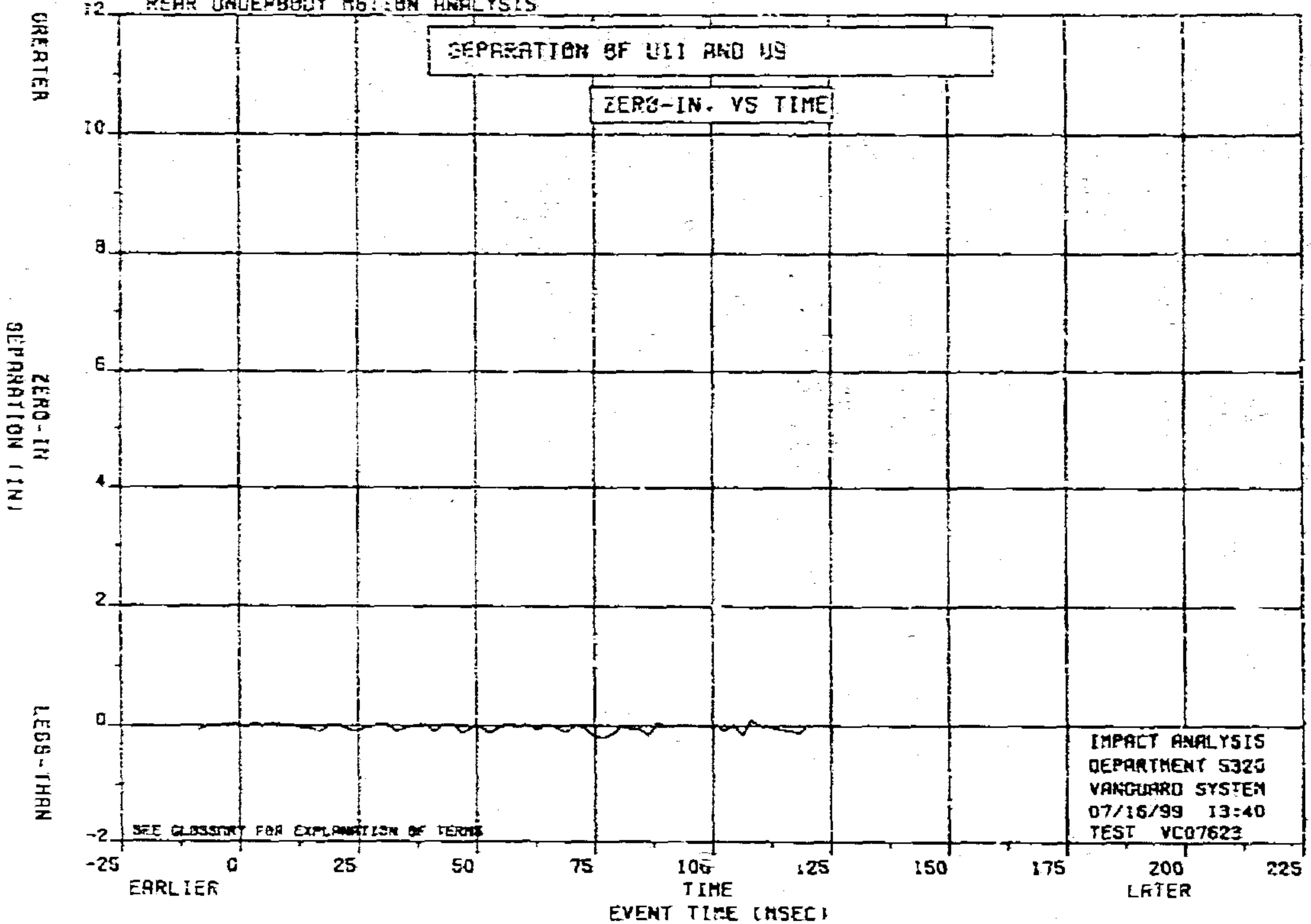


FIGURE 21

VC07623 30-MPH REAR MOVING BARRIER, KJ-J-74 ITEM KJ4003
 2002 MVSS 301 REAR IMPACT DEVELOPMENT.

ZERGED X OF U3 RELATIVE TO U1 IN CAR COORD
 VERSUS TIME IN MILLISECONDS

REAR UNDERBODY MOTION ANALYSIS

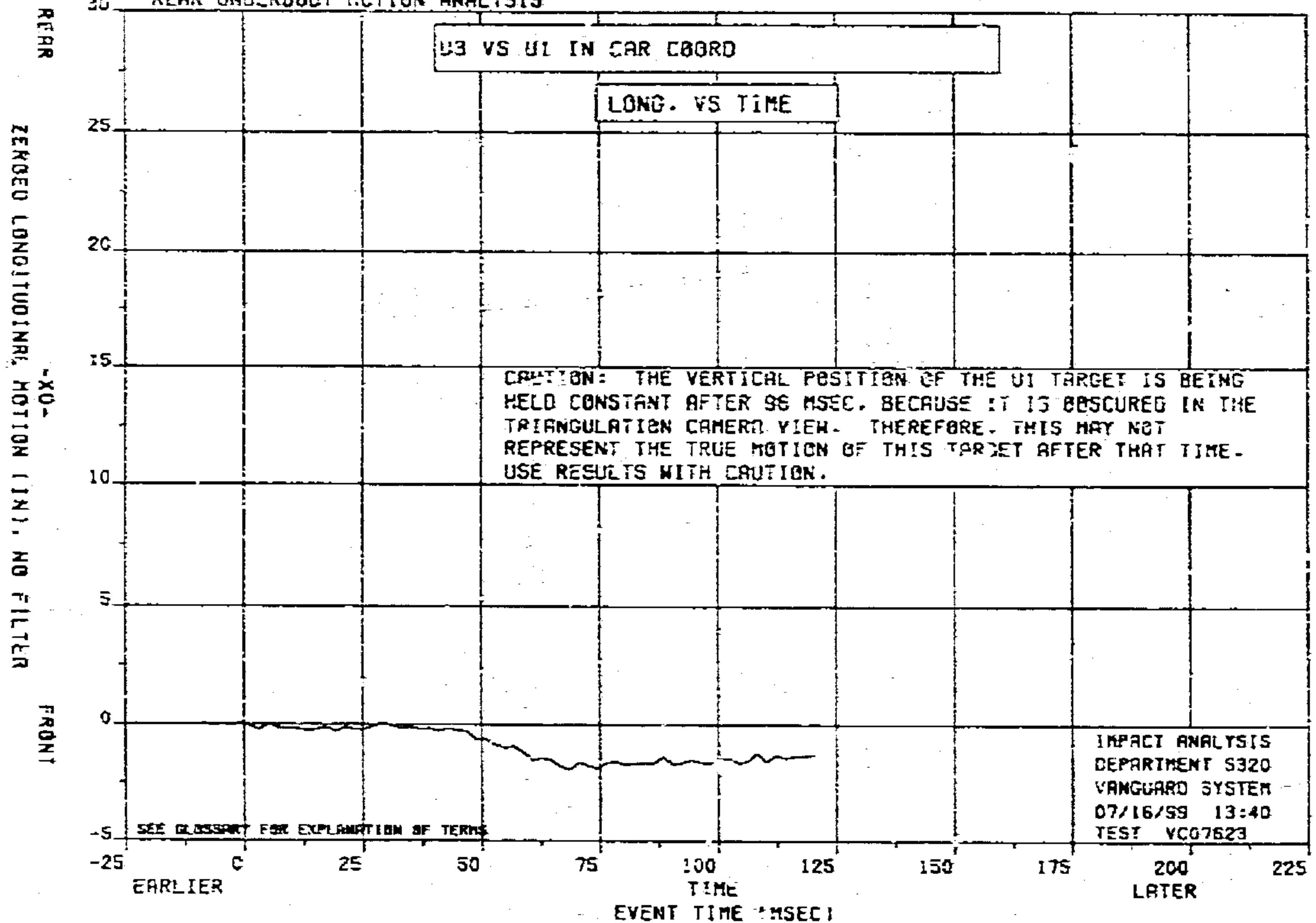


FIGURE 22

VC07623 50-MFH REAR MOVING BARRIER. KJ-J-74 ITEM KJ4003
 2002 MYSS 301 REAR IMPACT DEVELOPMENT.

ZERGED X OF U4 RELATIVE TO U1 IN CAR COORD
 VERSUS TIME IN MILLISECONDS

REAR UNDERBODY MOTION ANALYSIS

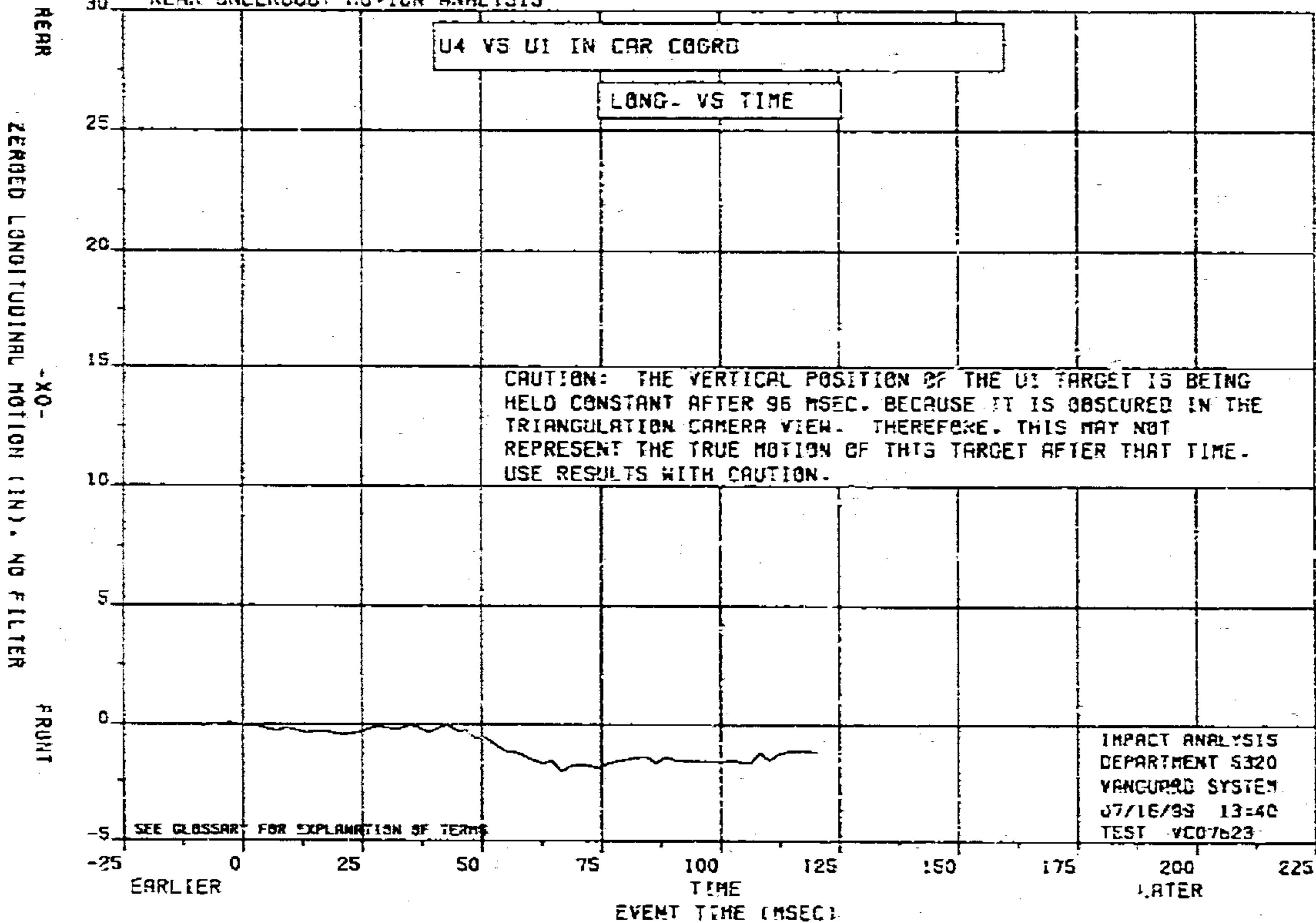


FIGURE 23

VC07623 30-MPH REAR MOVING BARRIER, KJ-J-74 ITEM KJ4003
 2002 MVSS 301 REAR IMPACT DEVELOPMENT.

ZERGED YAW OF U1 TO U2 IN BASE COORD SYSTEM
 VERSUS TIME IN MILLISECONDS

REAR UNDERBODY MOTION ANALYSIS

YAW-LEFT
 DEGREES CCW AROUND Z RELATIVE TO X (PLAN VIEW) 50HZ FILTER
 COSP-Y
 YAW-RIGHT

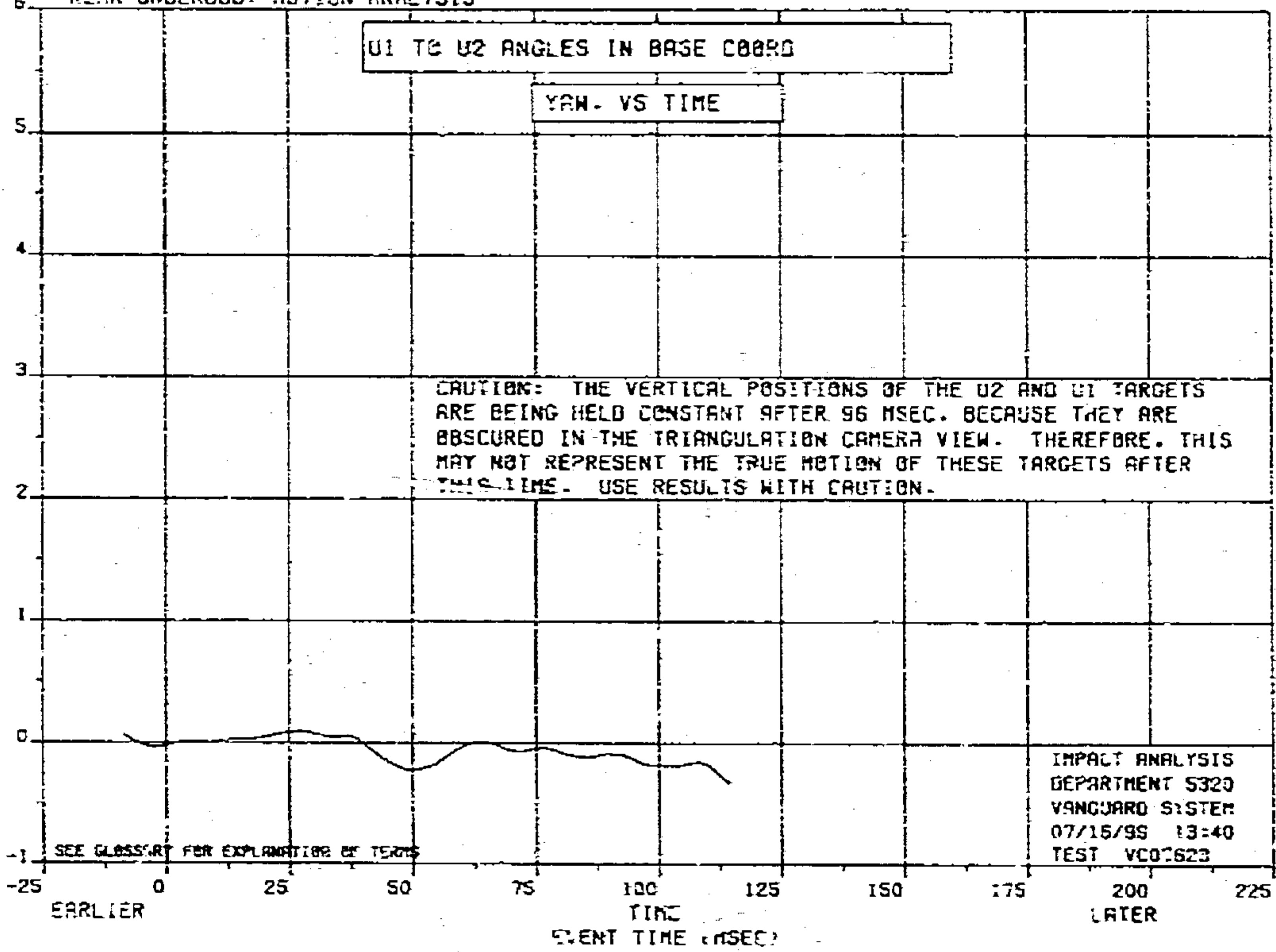


FIGURE 24

VC07623 30-MPH REAR MOVING BARRIER, KJ-J-74 ITEM KJ4003
2002 MVSS 30: REAR IMPACT DEVELOPMENT-

MB1 TO MB2 DISTANCE -37.66 INCHES (INITIAL DIST) (IN)
VERSUS TIME IN MILLISECONDS

REAR UNDERBODY MOTION ANALYSIS

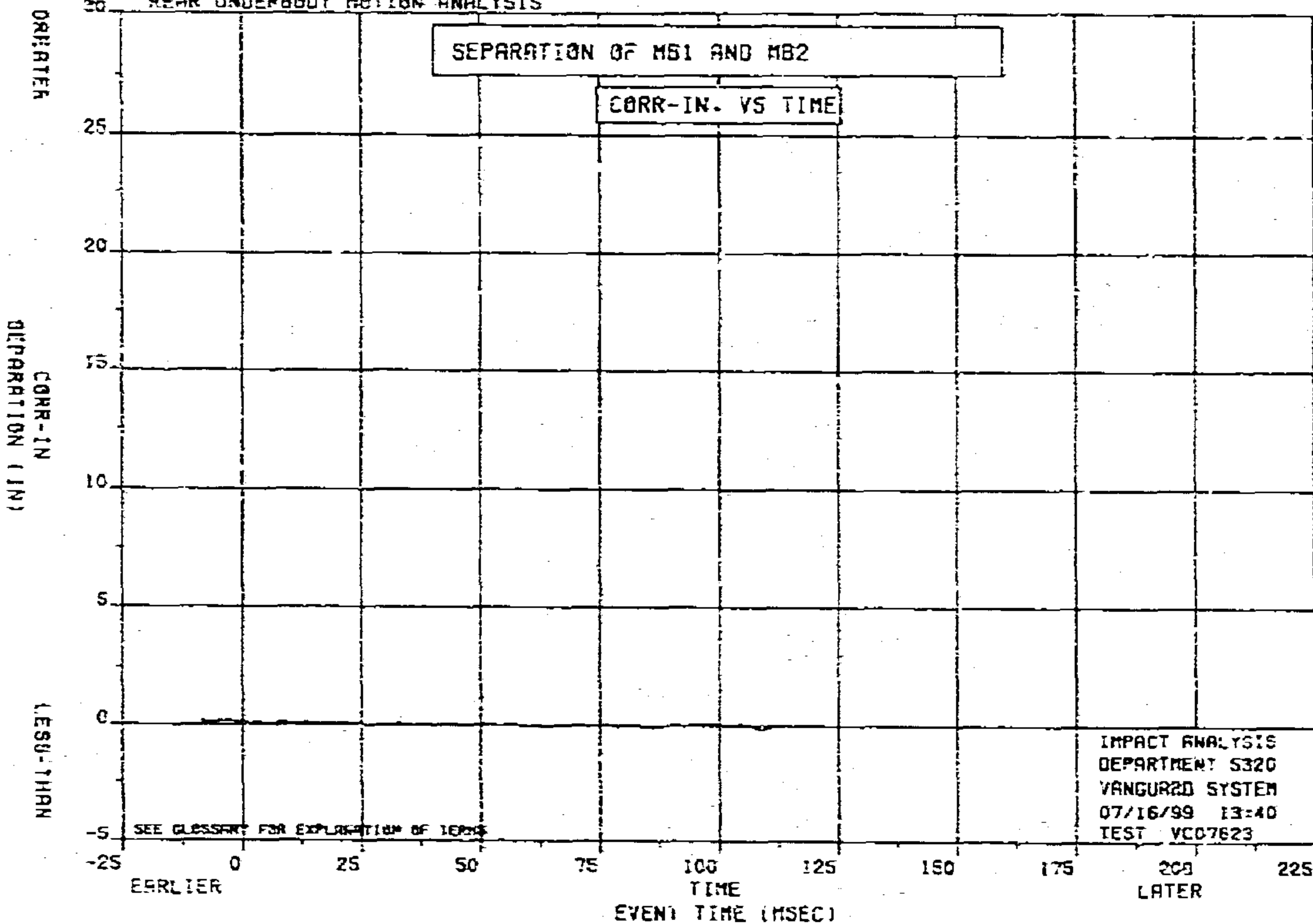


FIGURE 25

VC07623 30-MPH REAR MOVING BARRIER, KJ-J-74 ITEM KJ4003
 2002 HVSS 301 REAR IMPACT DEVELOPMENT.

ZERGED PITCH OF SILL VECTOR IN BASE COORD SYSTEM
 VERSUS TIME IN MILLISECONDS

REAR UNDERBODY MOTION ANALYSIS

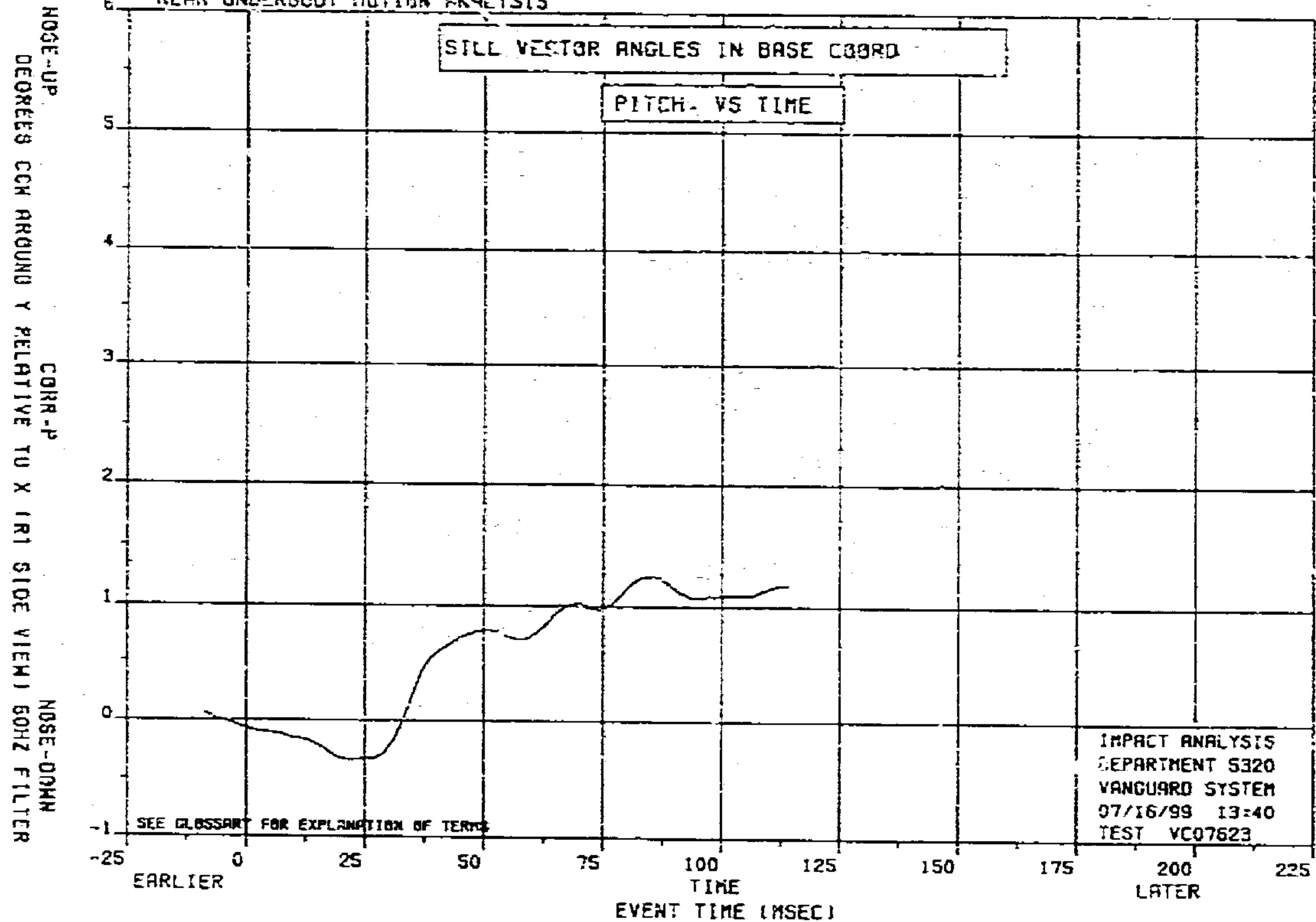


FIGURE 26

VC07623 30-~~MM~~ REAR MOVING BARRIER, KJ-J-74 ITEM KJ4003
 2002 MVSS REAR IMPACT DEVELOPMENT.

ZERGED YAW OF SILL VECTOR IN BASE COORD SYSTEM
 VERSUS TIME IN MILLISECONDS

REAR UNDERBODY MOTION ANALYSIS

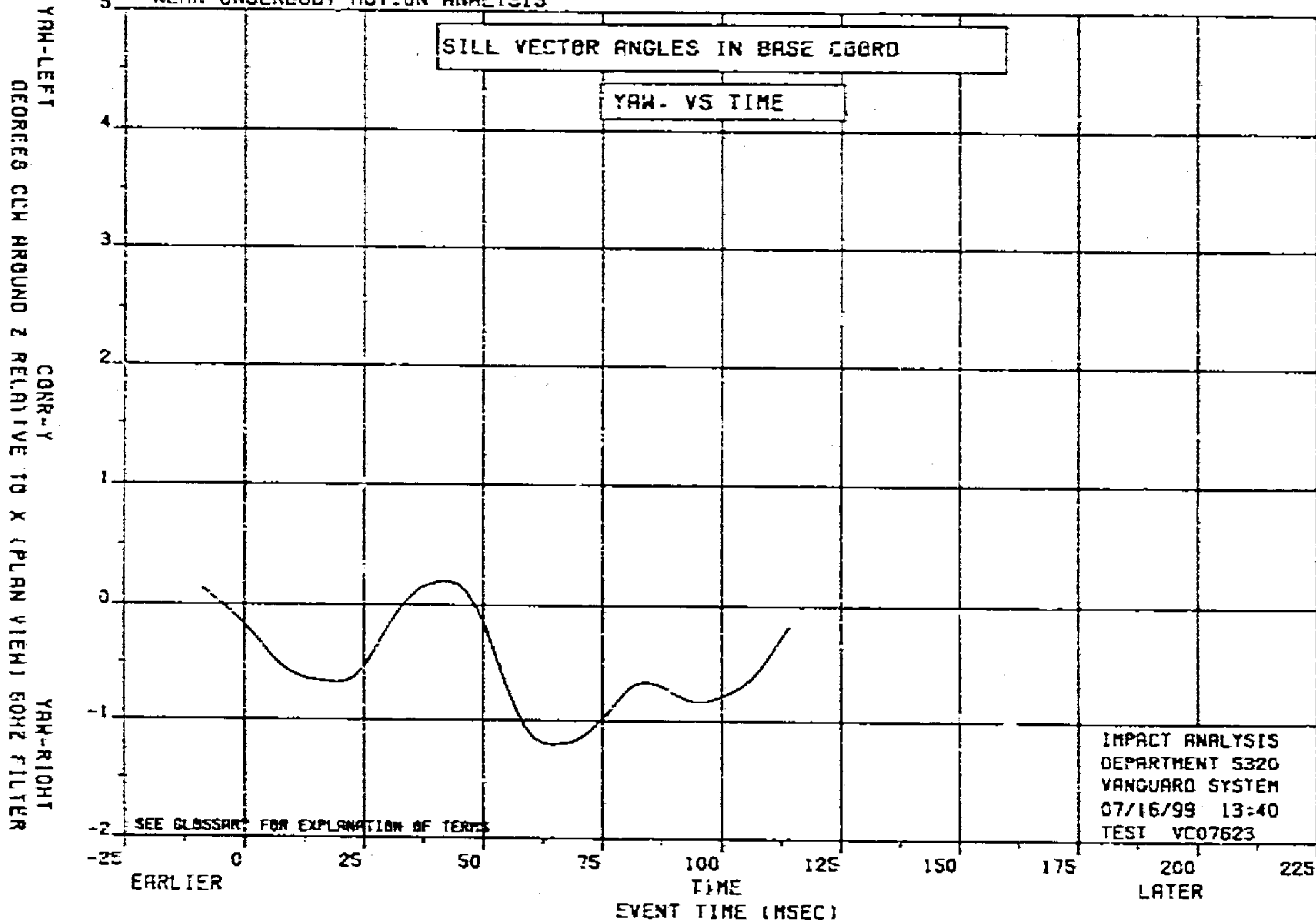


FIGURE 27

VC07623 30-MPH REAR MOVING BARRIER, KJ-J-74 ITEM KJ4003
 2002 MVSS 301 REAR IMPACT DEVELOPMENT.

ZERGED ROLL OF ROLL VECTOR IN BASE COORD SYSTEM
 VERSUS TIME IN MILLISECNDOS

REAR UNDERBODY MOTION ANALYSIS

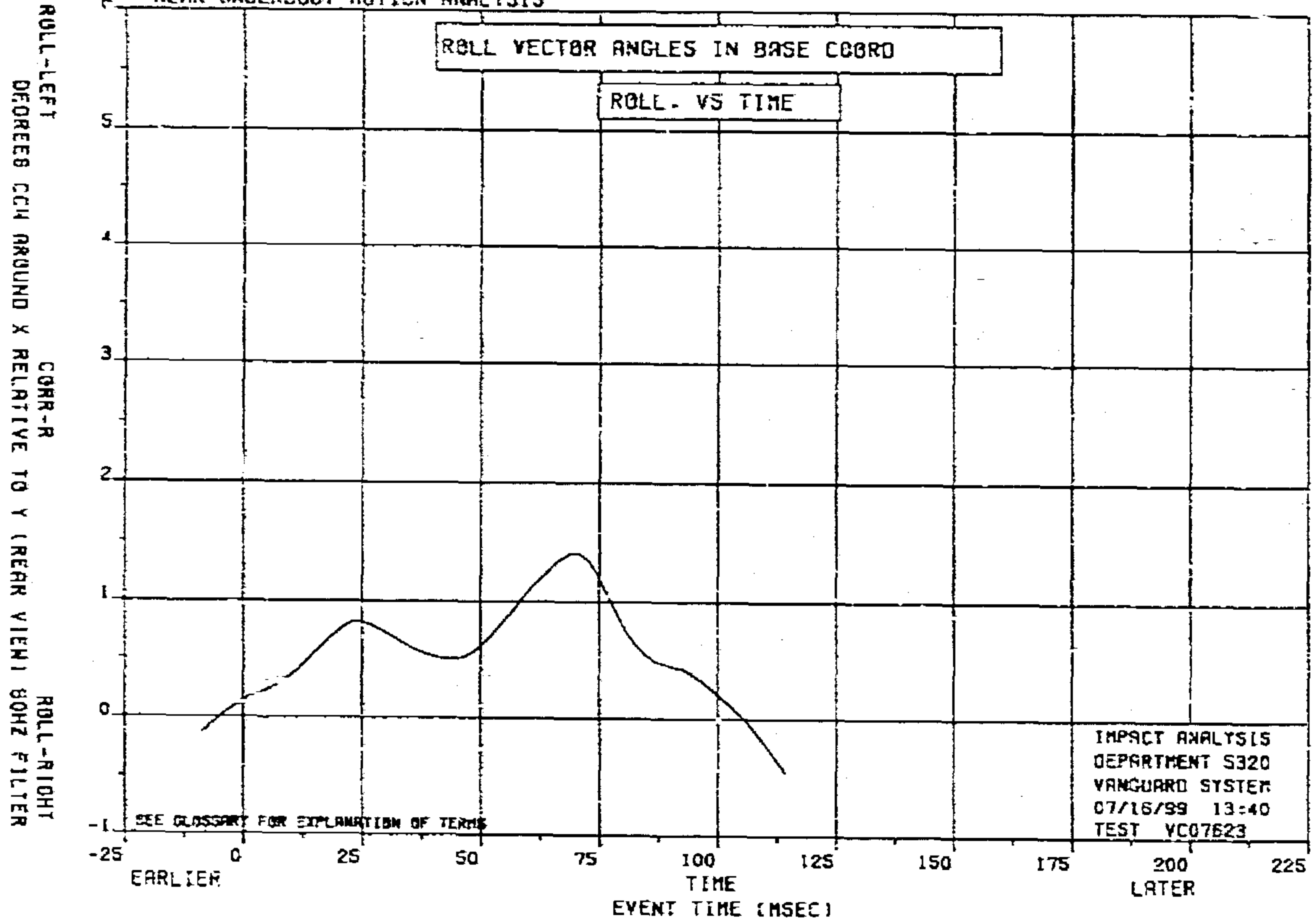


FIGURE 28

VC07623 30-MPH REAR MOVING BARRIER. KJ-J-74 ITEM KJ4003
 2002 MVSS 301 REAR IMPACT DEVELOPMENT.

U1 TO U2 DISTANCE -37.43 INCHES (INITIAL DIST) (IN)
 VERSUS TIME IN MILLISECONDS

REAR UNDERBODY MOTION ANALYSIS

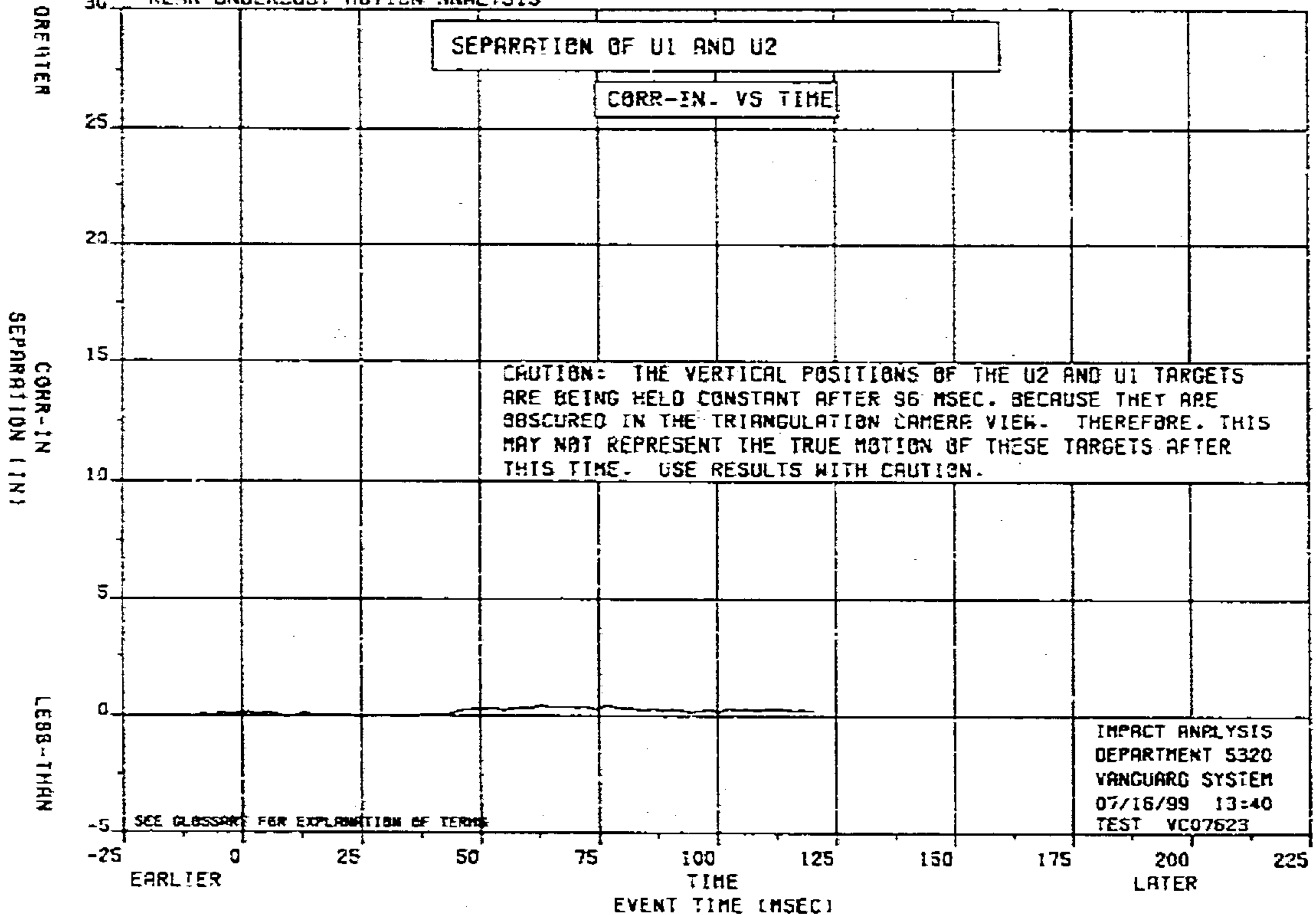


FIGURE 29

VC07623 30-MPH REAR MOVING BARRIER, KJ-J-74 ITEM KJ4003
 2002 MYSS 301 REAR IMPACT DEVELOPMENT.

LFS TO LMS DISTANCE -24.10 INCHES (INITIAL DIST) (IN)
 VERSUS TIME IN MILLISECONDS

REAR UNDERBODY MOTION ANALYSIS

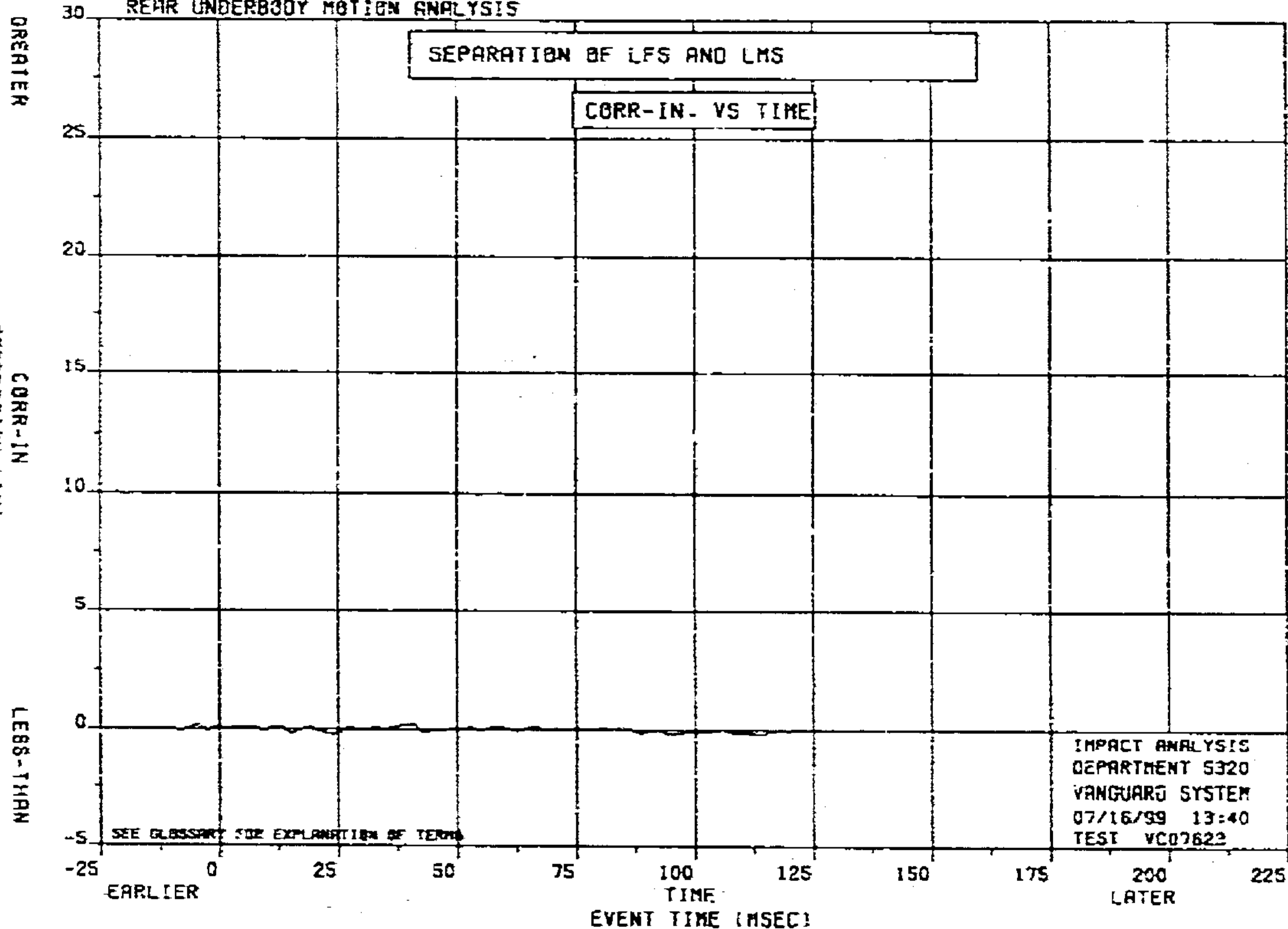
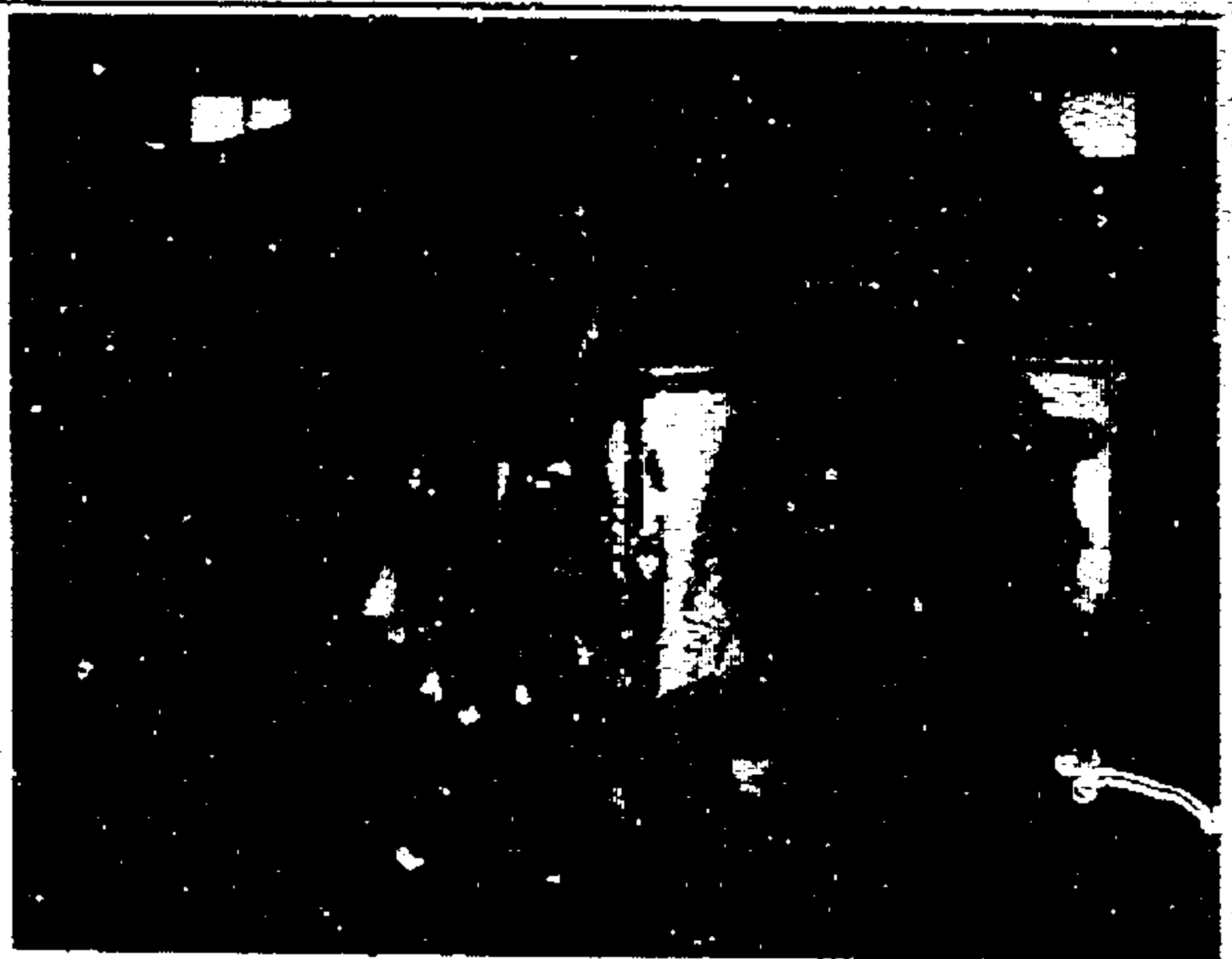


FIGURE 30

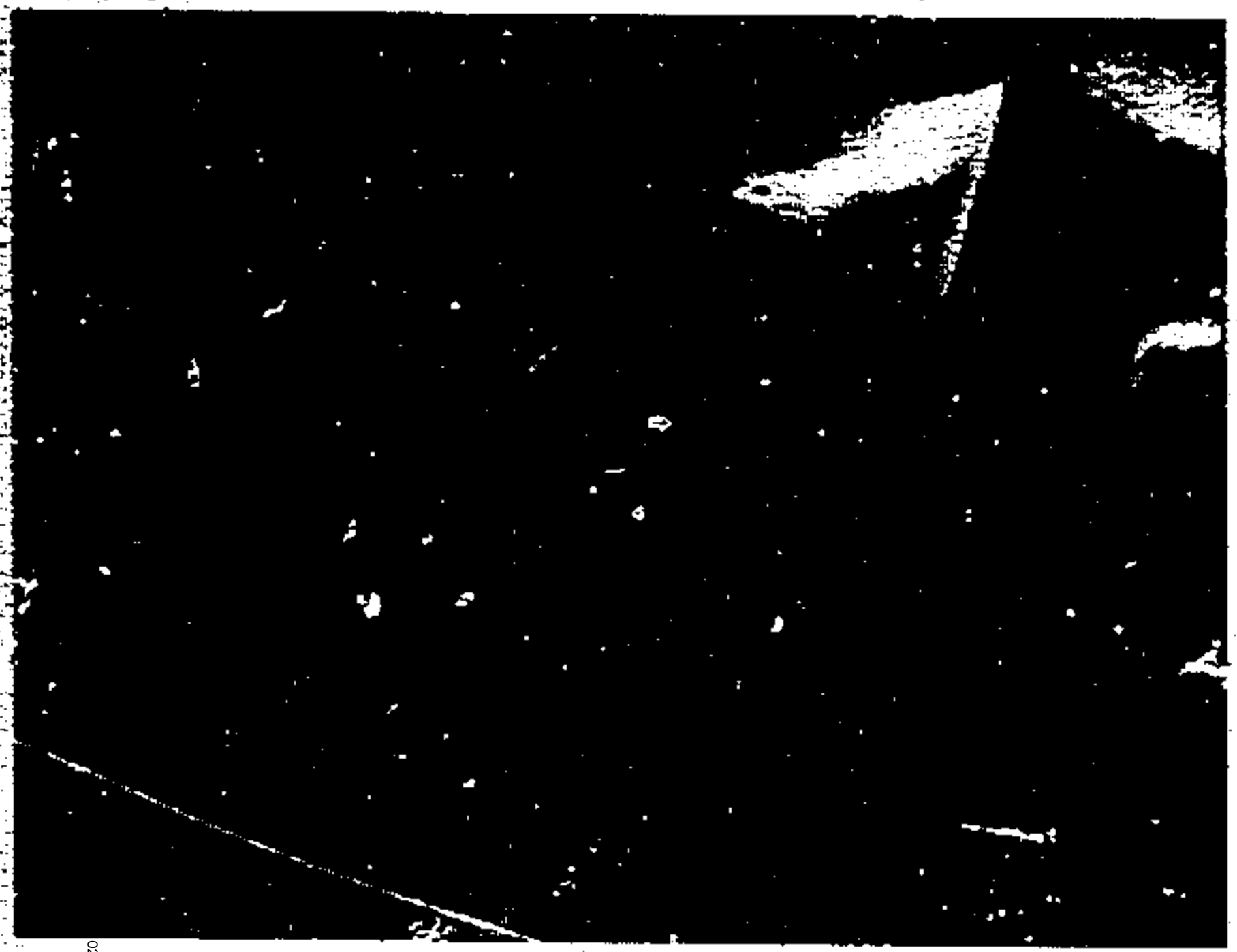
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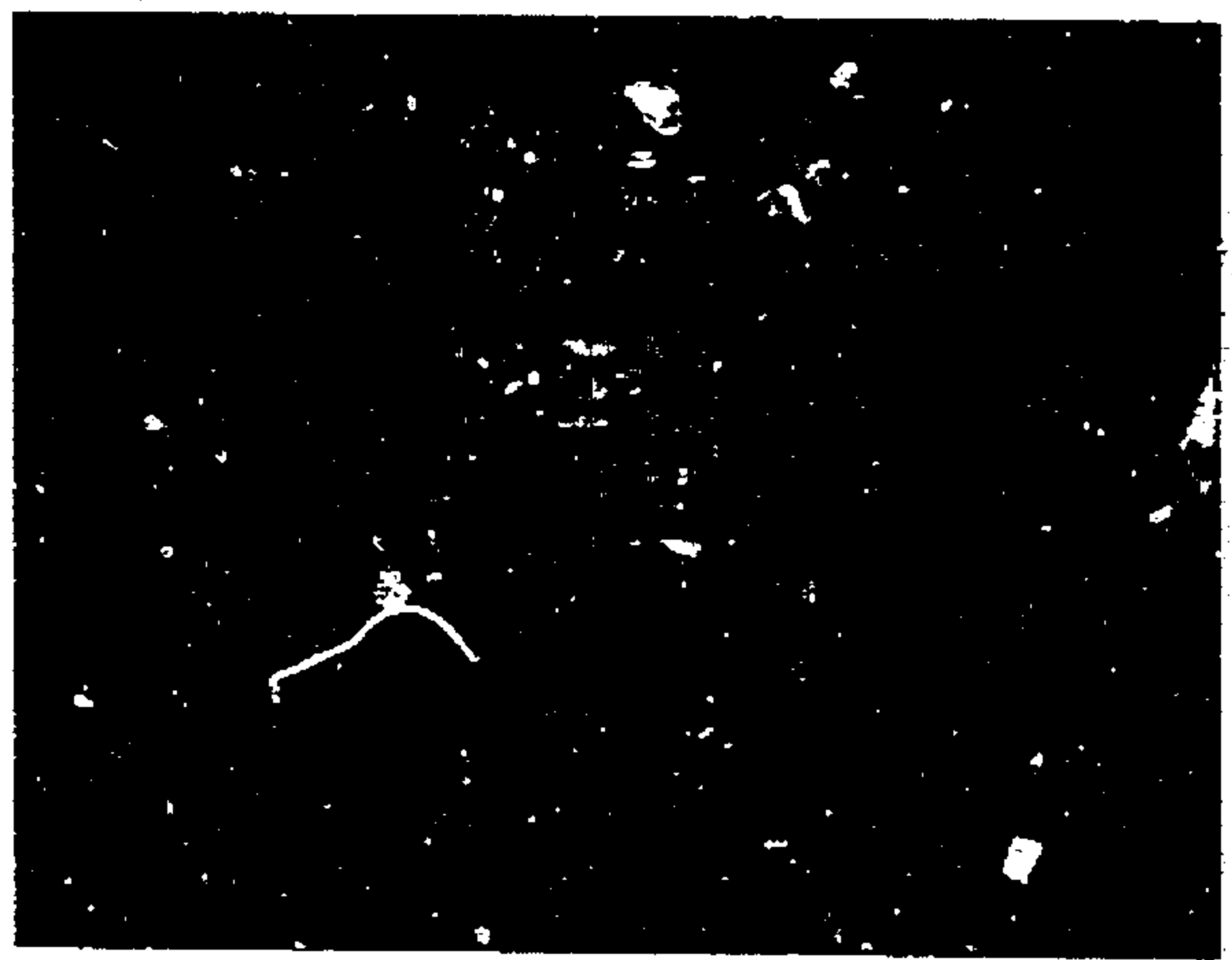
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Retrieval Methods Inc.
1142 E. Big Beaver Rd.
Troy, MI 48083

Declaration of Intent and Purpose

I David G. Venier,

Employed by Retrieval Methods Inc., do hereby declare that the records microfiched herein are actual records of DaimlerChrysler Corp. created during its normal course of business and that it is the express intent and purpose of this organization to return all original records microphotographed herein.

Date: 10 MAR 03

Microfiche Operator David Venier