

SAFETY TEST
VEHICLE CRASH TEST LETTER

PAGE 01

VC05339 30 MPH REAR BARRIER, ZJJ74, 5.2L MPI ITEM ZJ8758
1996 MVSS VALIDATION - 301.
TEST DATE 12/31/94

TEST PURPOSE PRIMARY, 1996 USA 301 VALIDATION.
OBSERVE FUEL SYSTEM INTEGRITY.

IMPACT TYPE TARGET SPEED; 30.2 MPH
DAMAGE LOCATION; REAR
BARRIER TYPE; REAR TYPE IV
BARRIER SURFACE; PLYWOOD
DIRECTION; 0 DEGREES

VEHICLE BODY CLASS; ZJ
CAR LINE; J
BODY; 74
ENGINE; 5.2 LITRE
ENGINE NOTE; MPI
TRANSMISSION; 4 SPEED AUTO 4X4
TRANS. NOTE;
VIN AS TESTED; 1J4GZ78Y6RC169162 MOD.
VIN AS BUILT; 1J4GZ78Y6RC169162 MOD.

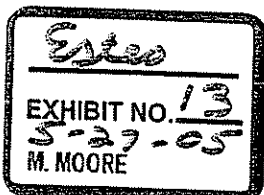
TEST SPEED 30.4 MPH - TRAP TIMER

TEST WEIGHT (LBS) 4805 TOTAL, 2717 FRONT, 2088 REAR

OCCUPANTS LEFT FRONT, HYB II, BALLAST. AD-53
RESTRAINT-UNIBELT-ONLY.
RIGHT FRONT, HYB II, BALLAST. AD-63
RESTRAINT-UNIBELT-ONLY.

BUILD CONDITION 1994 PRODUCTION ZJ GRAND CHEROKEE, ZJ-8758.
5.2L V8 ENGINE, 4 SPEED AUTO TRANS, 4X4
POWER STEERING, A/C, ABS BRAKES, ROOF RACK.
BUCKET SEATS (LEATHER) ON ELECTRIC TRACKS, FULL
CONSOLE, DRIVER FOOT REST.
P235/75R15 TIRES ON ALUMINUM WHEELS & FULL SPARE.
ALUMINUM REAR AXLE.

TARGET WEIGHT (LBS) 4165 TOTAL, 2311 FRONT, 1852 REAR, REP MAX OPT WT.
NOT INCLUDING OCCUPANTS OR LUGGAGE BALLAST.



DC 03992

SAFETY TEST
VEHICLE CRASH TEST LETTER

PAGE 02

VC05339 30 MFH REAR BARRIER, ZJJ74, 5.2L MPI ITEM ZJ8758
1996 MVSS VALIDATION - 301.
TEST DATE 12/31/94

FUEL AND BALLAST 21.8 GALLONS OF STODDARD SOLVENT.
300 LBS OF LUGGAGE BALLAST INCLUDED IN THE
BALLAST DESCRIBED BELOW
200 POUNDS IN REAR SEAT FOOTWELL
50 POUNDS ON RIGHT REAR WHEELWELL
140 POUNDS IN REAR SEAT AREA

POST TEST REMARKS THERE WAS NO FUEL LEAKAGE FROM THE FUEL TANK
DURING IMPACT, POST IMPACT, DURING THE POST TEST
PRESSURE CHECK OR DURING THE POST TEST STATIC

THE FUEL TANK WAS CONTACTED BY THE REAR AXLE, THE
REAR SWAY BAR AND SWAY BAR BRACKET, AND BY THE
REAR EXHAUST SYSTEM.

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

DISTRIBUTION W.A. BREITMOSER, JR. 422-05-01 (AB)
D.J. MCKENZIE 422-05-01 (AB)
S.L. WILLIAMS 514-18-18 (AB)
J.B. ESTES 514-15-58 (AB)

DATE 01/01/95 TIME 15.38.01.

DC 03993

FUEL SYSTEM AND STATIC ROLLOVER SUMMARY

TEST NUMBER VC5339 ITEM NUMBER ZJ6864 TEST ENGINEER BUSS

V.I.N. 1J4GZ78Y6RC169162, TEST DATE 12/31/94 ROLL DATE 1/1/95

TEST TYPE; 30 MPH FRONT FLAT FIXED BARRIER IMPACT

FUEL; TYPE AND QUANTITY - .767 S.G. STODDARD SOLVENT, 21.8 GALLONS

TEST SPEED 30.4 MPH, TEST WEIGHT 4805 POUNDS.

POST TEST FUEL SYSTEM OBSERVATIONS Fuel Tank was contacted by the rear axle, the sway bar & sway bar bracket and the exhaust system.

POST IMPACT LEAKAGE(OZ); AT IMPACT 0
 1ST 5 MIN. 0
 NEXT 25 MIN. 0

POST TEST PRESSURE CHECK 26" WATER for 20 MINUTES

ELECTRIC FUEL PUMP RUN _____

STATIC ROLL LEAKAGE WITH VEHICLE LS SIDE DOWN FIRST

		FUEL LEAKAGE LOCATIONS DURING STATIC ROLL				TOTAL	
ROLL TIME							
0-90	1ST 5 MIN					0	*
2:00	POST 5 MIN					0	**
90-180	1ST 5 MIN					0	*
2:05	POST 5 MIN					0	**
180-270	1ST 5 MIN					0	*
2:06	POST 5 MIN					0	**
270-360	1ST 5 MIN					0	*
2:07	POST 5 MIN					0	**

* OUNCES IN 5 MINUTES, ** OUNCES PER MINUTE

LAST FORM MODIFICATION 5/27/93 - GAB

CHRYSLER MOTORS
SAFETY TEST
VEHICLE CRASH TEST REQUEST

SUPPLEMENT NO. 01

ITEM ZJ8758 CHARGE NO. MASTERCARD ISSUE DATE 12/20/94

VC 5339 30 MPH REAR BARRIER, ZJJ74, 5.2L MPI.
1996 MVSS VALIDATION - 301.

TEST DATE 12/31/94 ENGINEER BUSS
SPEED 30.4 MPH SOURCE TRAP

TEST PURPOSE PRIMARY, 1996 USA 301 VALIDATION.
OBSERVE FUEL SYSTEM INTEGRITY.

IMPACT TYPE TARGET SPEED; 30.2 MPH
DAMAGE LOCATION; REAR
BARRIER TYPE; REAR TYPE IV
BARRIER SURFACE; PLYWOOD
DIRECTION; 0 DEGREES

VEHICLE BODY CLASS; ZJ
CAR LINE; J
BODY; 74
ENGINE; 5.2 LITRE
ENGINE NOTE; MPI
TRANSMISSION; 4 SPEED AUTO 4X4
TRANS. NOTE;
VIN AS TESTED; 1J4GZ78Y6RC169162 MOD.
VIN AS BUILT; 1J4GZ78Y6RC169162 MOD.

BUILD CONDITION 1994 PRODUCTION ZJ GRAND CHEROKEE, ZJ-8758.
5.2L V8 ENGINE, 4 SPEED AUTO TRANS, 4X4
POWER STEERING, A/C, ABS BRAKES, ROOF RACK.
BUCKET SEATS (LEATHER) ON ELECTRIC TRACKS, FULL
CONSOLE, DRIVER FOOT REST.
P235/75R15 TIRES ON ALUMINUM WHEELS & FULL SPARE.
ALUMINUM REAR AXLE.

TARGET WEIGHT (LBS) 4165 TOTAL, 2311 FRONT, 1852 REAR, REP MAX OPT WT.
NOT INCLUDING OCCUPANTS OR LUGGAGE BALLAST.

TEST WEIGHT (LBS) 4805 TOTAL, 2717 FRONT, 2088 REAR

FUEL BALLAST 21.8 GALLONS OF STODDARD SOLVENT.

LUGGAGE BALLAST 300 LBS OF LUGGAGE BALLAST SECURED IN CARGO AREA.

POST TEST REMARKS _____

CHRYSLER MOTORS
SAFETY TEST
VEHICLE CRASH TEST REQUEST

SUPPLEMENT NO. 01

OTHER BALLAST

200# rear seat foot well
140# rear seat area

OCCUPANTS

LEFT FRONT, HYB II, BALLAST.
RESTRAINT-UNIBELT-ONLY.
RIGHT FRONT, HYB II, BALLAST.
RESTRAINT-UNIBELT-ONLY.

AD NO 53AD NO 63

MECHANICAL REQ

PLACE SEATS IN MID TRACK POSITION.
FUEL PUMP TO BE RUNNING DURING TEST.
PRESSURE CHECK PRE AND POST TEST.
PAINT UNDERBODY AND X-MEMBER FOR PIT VIEWING.
PAINT DIFFERENTIAL AND GAS TANK FOR VIEWING.
STATIC ROLL POST TEST IF PRESSURE CHECK PASSES.
PAINT HOOD, FRONT FENDER, ETC FOR FILM COVERAGE.

INSTRUMENTATION REQ

SEE 3RD SHEET NO. 107 FOR ACCELEROMETER REQUIREMENTS AND LOCATIONS (THE 4 SILL ACCELEROMETERS ARE TO BE BI-AXIAL).
MONITOR GAS TANK PRESSURE WITH TRANSDUCER IN TEE ON GAS FILL VENT LINE, PLACE TEE AS CLOSE TO TANK AS POSSIBLE TO INSURE ACCURATE READINGS.

PHOTOGRAPHIC REQ

1-LEFT SIDE OVERALL CAMERA TO VIEW ENTIRE VEHICLE AT IMPACT.
1-RIGHT SIDE OVERALL CAMERA TO VIEW ENTIRE VEHICLE AT IMPACT.
1-CATWALK CAMERA TO VIEW ENTIRE VEHICLE.
1-PIT CAMERA-OVERALL REAR OF VEHICLE.
1-PIT CAMERA-CLOSEUP OF FUEL TANK TO BUMPER.
1-PIT CAMERA-CLOSEUP OF FUEL TANK TO AXLE.

FILM ANALYSIS

VEHICLE VELOCITY, ONLY IF REQUESTED.
DYNAMIC CRUSH.

REMARKS

MAKE 1 FILM COPY AND 1 VHS COPY, SEND TO:
J.B. ESTES 514-15-58
RETURN VEHICLE TO JTE POST TEST.
PLEASE NOTIFY J. B. ESTES FOR HOLIDAY TESTING
CALL 810-684-5503 AND NOTIFY ASAP.

T. E. REPORT

301 FUEL SYSTEMS REPORT REQUIRED.

CHRYSLER MOTORS
SAFETY TEST
VEHICLE CRASH TEST REQUEST

SUPPLEMENT NO. 01

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	

DISTRIBUTION

W.A. BREITMOSER, JR.	422-05-01	(AB)
D.J. MCKENZIE	422-05-01	(AB)
S.L. WILLIAMS	514-18-18	(AB)
J.B. ESTES	514-15-58	(AB)

CHRYSLER MOTORS
SAFETY TEST
VEHICLE CRASH TEST REQUEST

SUPPLEMENT NO. 01

*****CHANGED 12/21/94 AT 10.09.08. SUPPLEMENT NO. 01

BUILD CONDITION

MODIFY 1995 PRODUCTION ZJ GRAND CHEROKEE,
TO READ 1994 PRODUCTION ZJ GRAND CHEROKEE, ZJ-8758.
DELETE ZJ-8758.
MODIFY BUCKET SEATS (CLOTH) ON MANUAL TRACKS, FULL
TO READ BUCKET SEATS (LEATHER) ON ELECTRIC TRACKS, FULL
MODIFY P225/75R15 TIRES ON STEEL WHEELS & FULL SIZE SPARE
TO READ P235/75R15 TIRES ON ALUMINUM WHEELS & FULL SPARE.

MECHANICAL REQ

MODIFY STATIC ROLL POSTEST IS PRESSURE TEST PASSES.
TO READ STATIC ROLL POST TEST IF PRESSURE CHECK PASSES.
ADD PAINT HOOD, FRONT FENDER, ETC FOR FILM COVERAGE.

CHRYSLER MOTORS
SAFETY TEST
VEHICLE CRASH TEST REQUEST

SUPPLEMENT NO. 01

ITEM ZJ8758 CHARGE NO. MASTERCARD ISSUE DATE 12/20/94

VC 30 MPH REAR BARRIER, ZJJ74, 5.2L MPI.
1996 MVSS VALIDATION - 301.

TEST DATE _____/_____/_____ ENGINEER _____
SPEED _____ MPH SOURCE _____

TEST PURPOSE PRIMARY, 1996 USA 301 VALIDATION.
OBSERVE FUEL SYSTEM INTEGRITY.

IMPACT TYPE TARGET SPEED; 30.2 MPH
DAMAGE LOCATION; REAR
BARRIER TYPE; REAR TYPE IV
BARRIER SURFACE; PLYWOOD
DIRECTION; 0 DEGREES

VEHICLE BODY CLASS; ZJ
CAR LINE; J
BODY; 74
ENGINE; 5.2 LITRE
ENGINE NOTE; MPI
TRANSMISSION; 4 SPEED AUTO 4X4
TRANS. NOTE;
VIN AS TESTED; 1J4GZ78Y6RC169162 MOD.
VIN AS BUILT; 1J4GZ78Y6RC169162 MOD.

BUILD CONDITION 1994 PRODUCTION ZJ GRAND CHEROKEE, ZJ-8758.
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BUCKET SEATS (LEATHER) ON ELECTRIC TRACKS, FULL
CONSOLE, DRIVER FOOT REST.
P235/75R15 TIRES ON ALUMINUM WHEELS & FULL SPARE.
ALUMINUM REAR AXLE.

TARGET WEIGHT (LBS) 4165 TOTAL, 2311 FRONT, 1852 REAR, REP MAX OPT WT.
NOT INCLUDING OCCUPANTS OR LUGGAGE BALLAST.

TEST WEIGHT (LBS) _____ TOTAL, _____ FRONT, _____ REAR

FUEL BALLAST 21.8 GALLONS OF STODDARD SOLVENT.

LUGGAGE BALLAST 300 LBS OF LUGGAGE BALLAST SECURED IN CARGO AREA.

POST TEST REMARKS _____

CHRYSLER MOTORS
SAFETY TEST
VEHICLE CRASH TEST REQUEST

SUPPLEMENT NO. 01

OTHER BALLAST

OCCUPANTS

LEFT FRONT, HYB II, BALLAST. AD NO _____
 RESTRAINT-UNIBELT-ONLY.
 RIGHT FRONT, HYB II, BALLAST. AD NO _____
 RESTRAINT-UNIBELT-ONLY.

MECHANICAL REQ

PLACE SEATS IN MID TRACK POSITION.
 FUEL PUMP TO BE RUNNING DURING TEST.
 PRESSURE CHECK PRE AND POST TEST.
 PAINT UNDERBODY AND X-MEMBER FOR PIT VIEWING.
 PAINT DIFFERENTIAL AND GAS TANK FOR VIEWING.
 STATIC ROLL POST TEST IF PRESSURE CHECK PASSES.
 PAINT HOOD, FRONT FENDER, ETC FOR FILM COVERAGE.

INSTRUMENTATION REQ SEE 3RD SHEET NO. 107 FOR ACCELEROMETER REQUIRE-
 MENTS AND LOCATIONS (THE 4 SILL ACCELEROMETERS
 ARE TO BE BI-AXIAL).

MONITOR GAS TANK PRESSURE WITH TRANSDUCER IN TEE
 ON GAS FILL VENT LINE, PLACE TEE AS CLOSE TO TANK
 AS POSSIBLE TO INSURE ACCURATE READINGS.

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 AT IMPACT.
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 DYNAMIC CRUSH.

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VEHICLE CRASH TEST REQUEST

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DC 04001

CHRYSLER MOTORS
SAFETY TEST
VEHICLE CRASH TEST REQUEST

SUPPLEMENT NO. 01

*****CHANGED 12/21/94 AT 10.09.08. SUPPLEMENT NO. 01

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TO READ 1994 PRODUCTION ZJ GRAND CHEROKEE, ZJ-8758.
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TO READ BUCKET SEATS (LEATHER) ON ELECTRIC TRACKS, FULL
MODIFY P225/75R15 TIRES ON STEEL WHEELS & FULL SIZE SPARE
TO READ P235/75R15 TIRES ON ALUMINUM WHEELS & FULL SPARE.

MECHANICAL REQ

MODIFY STATIC ROLL POSTEST IS PRESSURE TEST PASSES.
TO READ STATIC ROLL POST TEST IF PRESSURE CHECK PASSES.
ADD PAINT HOOD, FRONT FENDER, ETC FOR FILM COVERAGE.

X, Y, Z DIMENSIONS

TEST NUMBER VC5339

LOC.	X	Y	Z
LFS	58.0	-32.6	12.2
LMS	88.1	-32.2	12.3
LRA	135.1	-31.7	13.7
		-	
		-	
		-	

LOC.	X	Y	Z

TRAMMEL MEASUREMENTS:

LEFT SILL: PRE 29.94

TUBE COLOR BLUE

FRONT SILL

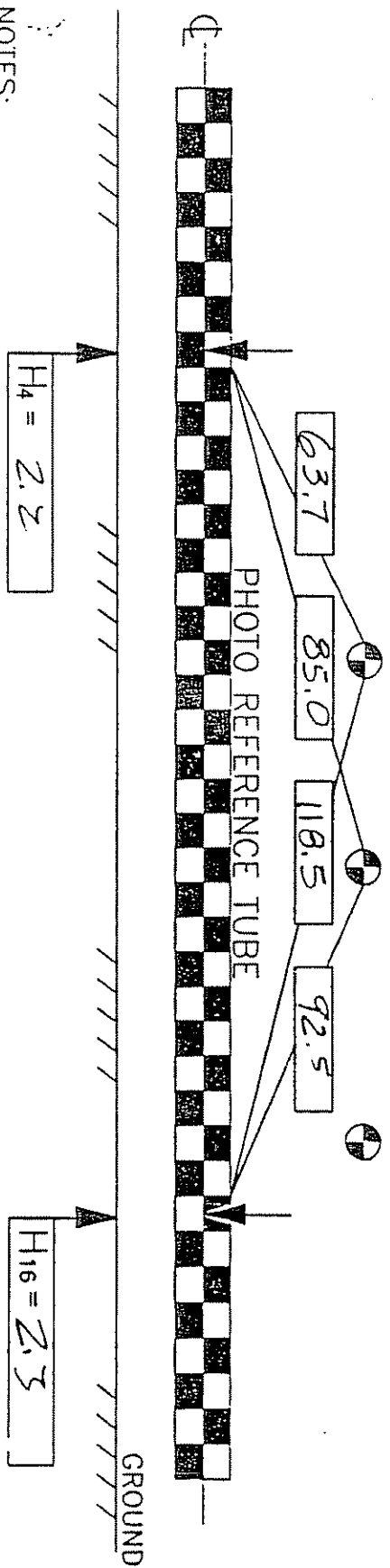
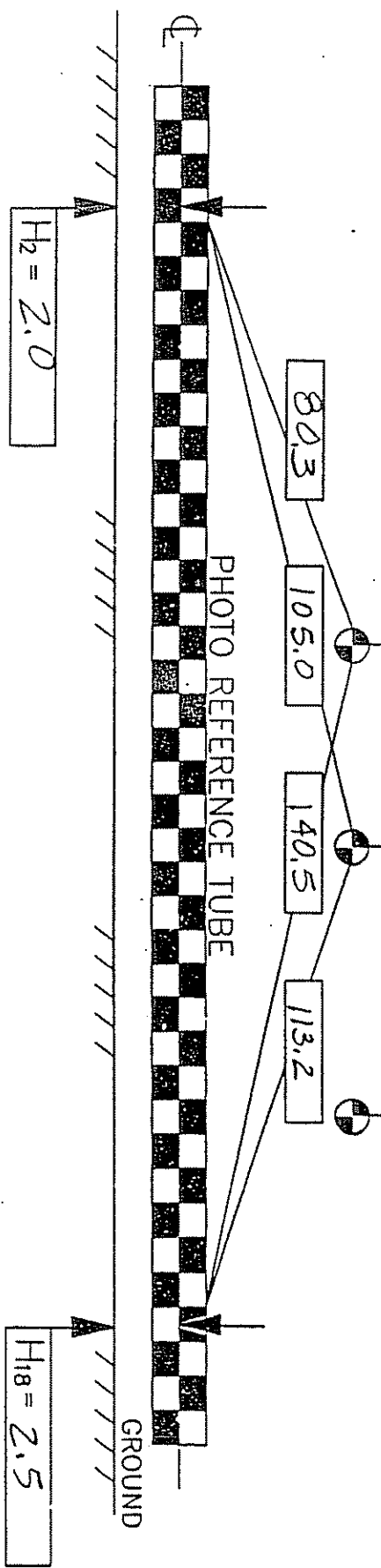
X =	58.0
Y =	-32.6
Z =	12.2

REAR SILL

X =	88.1
Y =	-32.2
Z =	12.3

REAR AXLE

X =	135.1
Y =	-31.7
Z =	13.7



NOTES:

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

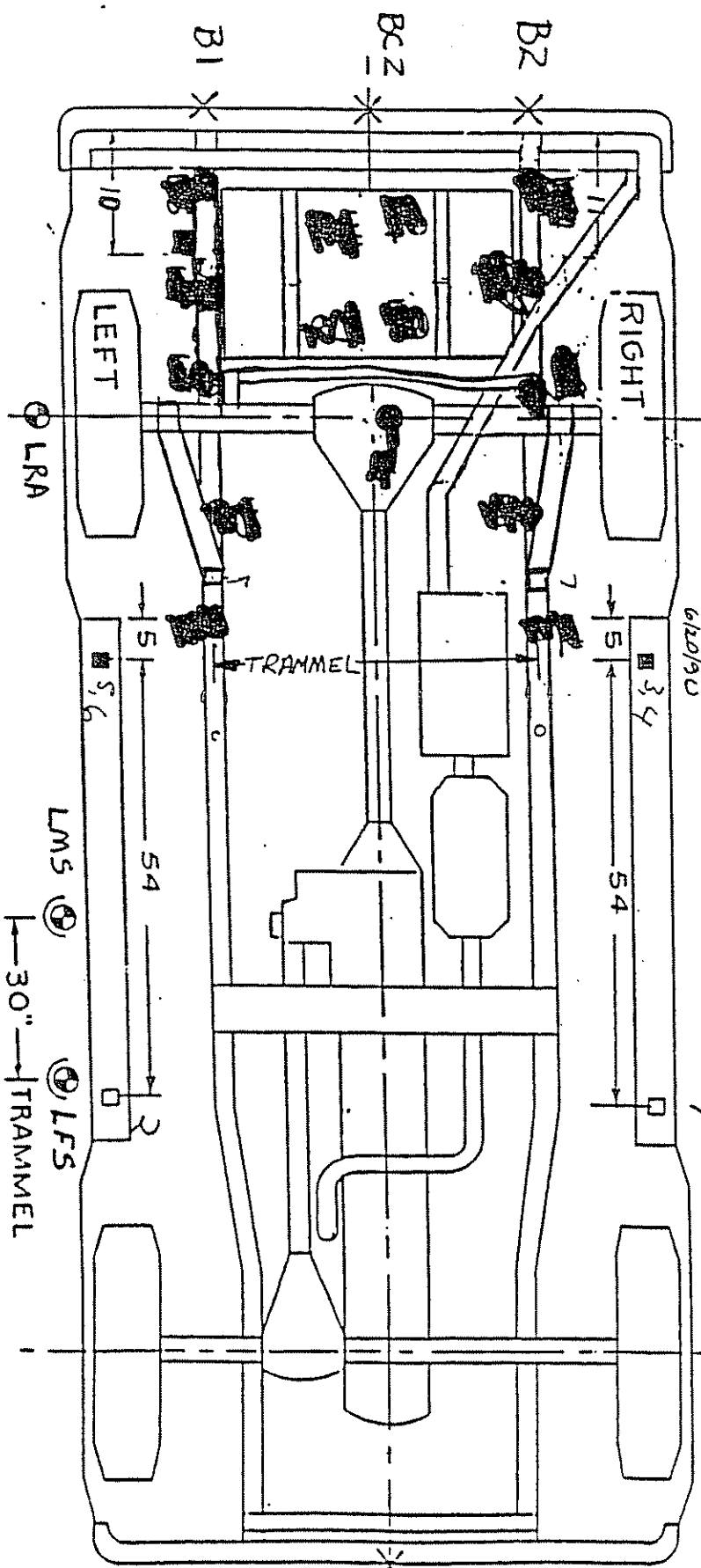
FOR REAR IMPACT TESTS - DIMENSIONING BETWEEN SILL TARGETS AND PHOTO REFERENCE TUBE TEST ENGR BUS
VC 5339

THIRD SHEET 106, ITEM 208758 VC 5339
 JEEP ZT 4x4
 TARGET AND ACCELEROMETER LOCATIONS
 FOR REAR IMPACTS

ZENONS REQD ON ROOF

ELEC FUEL PUMP TO BE
 RUNNING DURING IMPACT

ACCEL. LOCATIONS ARE XJ (REF. SHEET 102)
 ACTUAL LOCATIONS PER T. MAULE
 GABUSS
 6/20/90



TARGETS

- X PUNCH POINT
- U UNDERBODY
- S SIDE VIEW

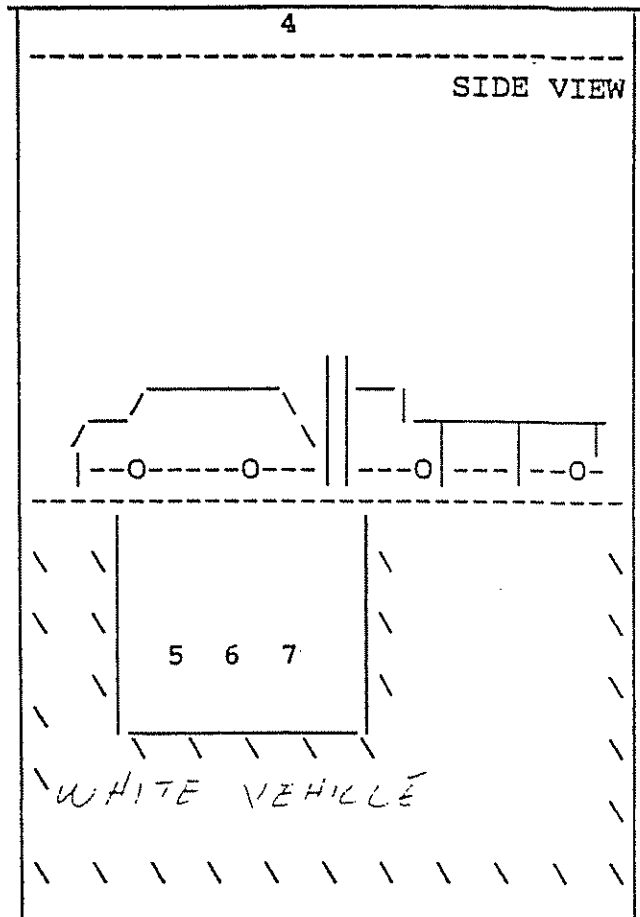
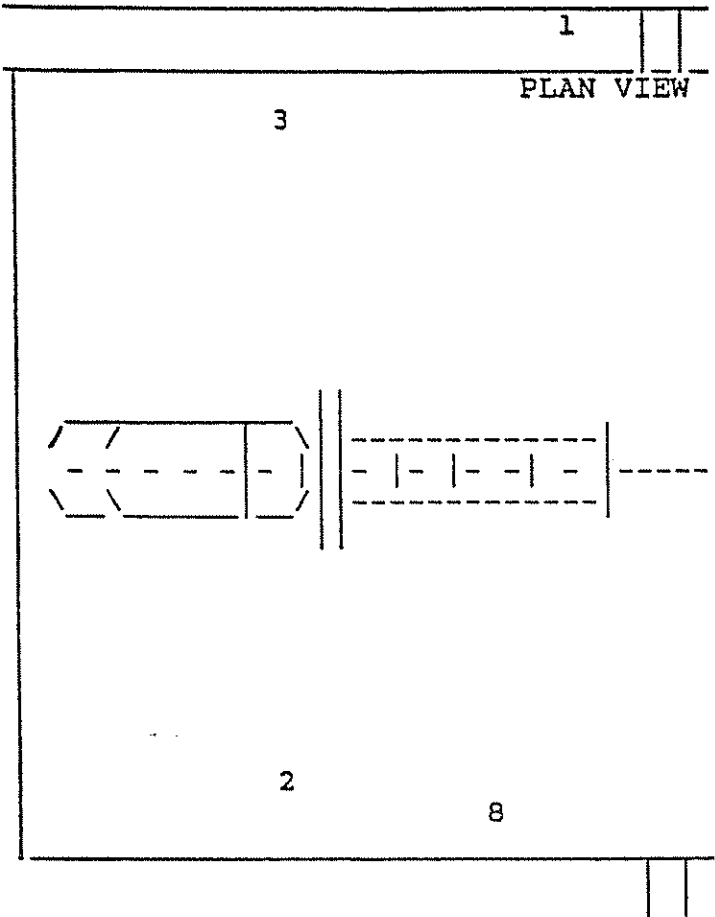
NOTES -

1. PRE AND POST DIMENSIONS ARE REQUIRED PER BREITMOSER LETTER OF 01-04-68
2. NUMBERS ASSIGNED TO EACH TARGET ARE PERMANENT
3. TARGETS MAY BE DELETED BY NUMBER PER TR.
4. ADDITIONAL TARGETS MAY BE REQUESTED BY TR.
5. LOCATIONS SHOWN ARE APPROX TO ± 0.5 IN.

LEGEND

ACCELEROMETERS
 □ SINGLE AXIS, X & Z
 ■ BIAXIAL, X & Z

TUE SATURDAY



TEST NUMBER VC5339 TEST TYPE: 30 MPH TYPE IV MOVING BARRIER REAR IMPACT
 TEST ENGINEER BUSS REQUEST DATE : 12/26/94 VEHICLE BODY CLASS : ZJ

#	VIEW DESCRIPTION A=ANALYSIS	CAM S/N	LENS F.L.	LENS S/N	LENS MFG.	F- STOP	PNL	SKT	CBL	CAM MFG
1	PANNING									
2	LT. OVERALL	1872	18mm	107231	KIN	8				
3	RT. OVERALL	1873	18mm	107233	V	8				
4	CATWALK OVERALL	282	18mm	107230	V	11				
5	PIT REAR STRUCTURE	428	ZOOM	953	sch	5.6x				
6	PIT CLOSE-UP F/TANK & DIF.	429	25mm	53842	cas	5.6x				
7	PIT CLOSE-UP F/TANK & BUMP.	431	25mm	63092	V	5.6x				
8	A-VELOCITY	1874	100mm	63022	elg	5.6x				
9										
10										

ITEM NO ZJ8758

DATA SET
12/31/94BAIMPACT ANALYSIS
DEPARTMENT 5320
CODE EDP

S. MARCHENIA

MICROFICHE INCLUDED - 33 GRAPHS

VC05339 30 MPH REAR BARRIER. ZJJ74, 5.2L MPI ITEM ZJ8758
1996 MVSS VALIDATION - 301.

TEST PURPOSE PRIMARY, 1996 USA 301 VALIDATION.
OBSERVE FUEL SYSTEM INTEGRITY.

IMPACT TYPE TARGET SPEED: 30.2 MPH
DAMAGE LOCATION: REAR
BARRIER TYPE: REAR TYPE IV
BARRIER SURFACE: PLYWOOD
DIRECTION: 0 DEGREES

VEHICLE BODY CLASS: ZJ
CAR LINE: J
BODY: 74
ENGINE: 5.2 LITRE
ENGINE NOTE: MPI
TRANSMISSION: 4 SPEED AUTO 4X4
TRANS. NOTE:
VIN AS TESTED: 1J4GZ78Y6RC169162 MOD.
VIN AS BUILT: 1J4GZ78Y6RC169162 MOD.

TEST SPEED 30.4 MPH - TRAP TIMER

TEST WEIGHT (LBS) 4805 TOTAL, 2717 FRONT, 2088 REAR

OCCUPANTS LEFT FRONT, HYB II, BALLAST. AD-53
RESTRAINT-UNIBELT-ONLY.
RIGHT FRONT, HYB II, BALLAST. AD-63
RESTRAINT-UNIBELT-ONLY.

BUILD CONDITION 1994 PRODUCTION ZJ GRAND CHEROKEE, ZJ-8758.
5.2L V8 ENGINE, 4 SPEED AUTO TRANS, 4X4
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BUCKET SEATS (LEATHER) ON ELECTRIC TRACKS, FULL
CONSOLE, DRIVER FOOT REST.
P235/75R15 TIRES ON ALUMINUM WHEELS & FULL SPARE.
ALUMINUM REAR AXLE.

TARGET WEIGHT (LBS) 4165 TOTAL, 2311 FRONT, 1852 REAR, REP MAX OPT WT.
NOT INCLUDING OCCUPANTS OR LUGGAGE BALLAST.

FUEL AND BALLAST 21.8 GALLONS OF STANDARD SOLVENT.
300 LBS OF LUGGAGE BALLAST INCLUDED IN THE
BALLAST DESCRIBED BELOW
200 POUNDS IN REAR SEAT FOOTWELL
50 POUNDS ON RIGHT REAR WHEELWELL
140 POUNDS IN REAR SEAT AREA

POST TEST REMARKS THERE WAS NO FUEL LEAKAGE FROM THE FUEL TANK
DURING IMPACT, POST IMPACT, DURING THE POST TEST
PRESSURE CHECK OR DURING THE POST TEST STATIC

THE FUEL TANK WAS CONTACTED BY THE REAR AXLE, THE
REAR SWAY BAR AND SWAY BAR BRACKET, AND BY THE
REAR EXHAUST SYSTEM.

ITEM NO ZJ8758

DATA SET
12/31/94BR

IMPACT ANALYSIS
DEPARTMENT 5320
CODE EDP

VC05339 30 MPH REAR BARRIER. ZJJ74, 5.2L MPI ITEM ZJ8758
1996 MVSS VALIDATION - 301.

A MICROFICHE HAS BEEN PREPARED AND IS AVAILABLE UPON
REQUEST WITH THE GRAPHS AT COORDINATES AS FOLLOWS:

MICROFICHE INCLUDED - 33 GRAPHS

- A 4- 5 TRANSDUCER SUMMARY REPORT
- A 6- 7 AVERAGE OF SILLS
- B 1. 2 LEFT FRONT SILL X
- B 3. 4 LEFT FRONT SILL Z
- B 5. 6 RIGHT FRONT SILL X
- B 7. 8 RIGHT FRONT SILL Z
- B 9. 10 LEFT REAR SILL X
- B 11. 12 LEFT REAR SILL Z
- B 13. 14 RIGHT REAR SILL X
- C 1. 2 RIGHT REAR SILL Z
- C 3. 4 LT RAIL TRAIL ARM PIV X
- C 5. 6 RT RAIL TRAIL ARM PIV X
- C 7. 8 RT REAR RAIL MID TANK X
- C 9. 10 RT REAR RAIL MID TANK Z
- C 11 FUEL RET LINE PRESS
- C 12, 13 LT RAIL MBAR MID X
- C 14 RT RAIL MBAR MID X
- D 1 RT RAIL MBAR MID X

- CC W. A. BREITMOSER, JR 422-05-01
- J. B. ESTES 514-15-58
- D. J. MCKENZIE 422-05-01
- S. L. WILLIAMS 514-18-18

S. MARCHENIA

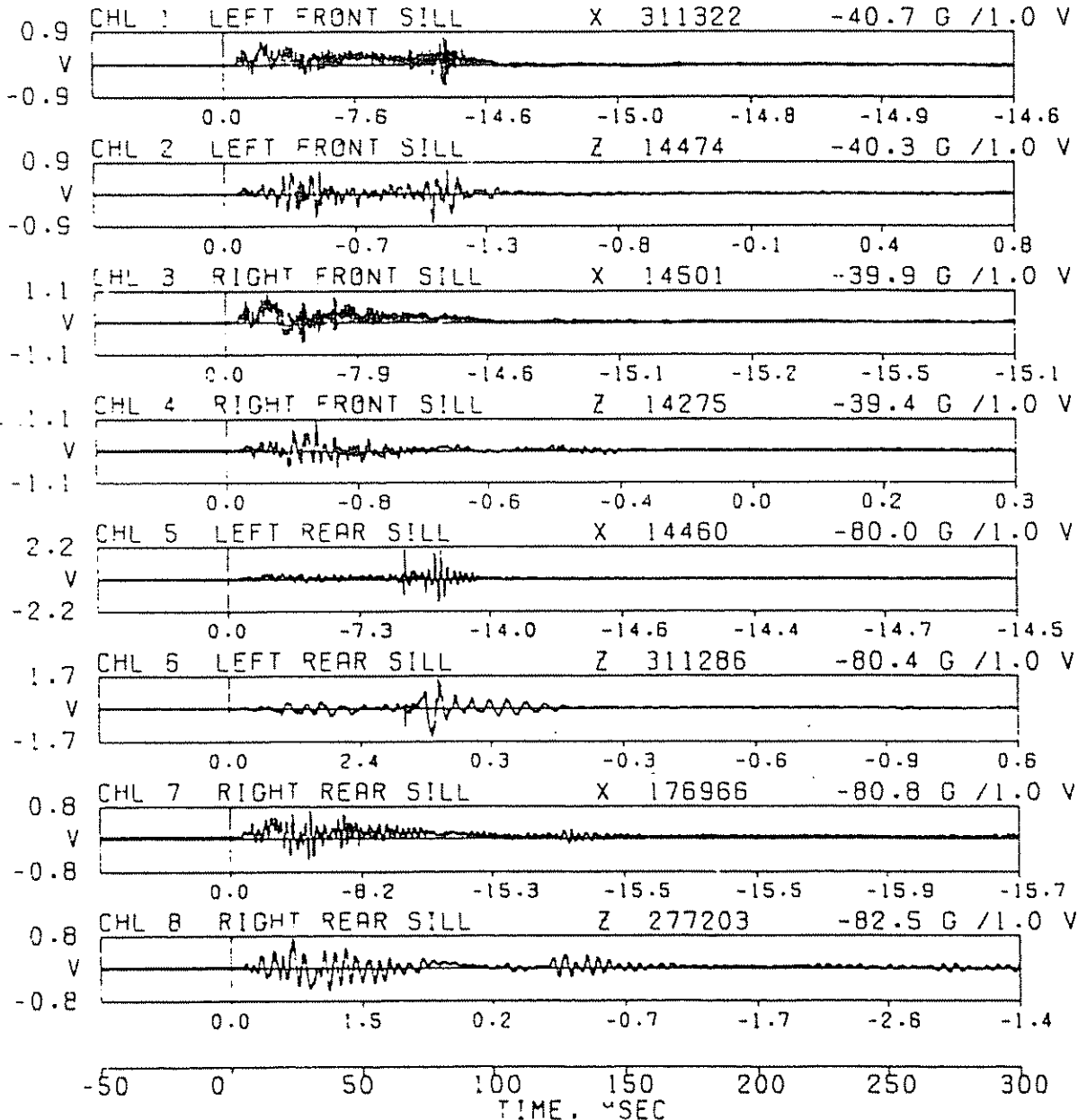
TRANSDUCER SUMMARY REPORT

VC05339 30 MPH REAR BARRIER, ZJJ74, 5.2L MPI. ITEM ZJ8758
 1996 MVSS VALIDATION - 301.
 IMPACT ANALYSIS DEPT. 5320-

DATA SET 12/31/94BA
 ERRATA 1

JAN 2, 1995

-50 0 50 100 150 200 250 300



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

TRANSDUCER SUMMARY REPORT

VC05339 30 MPH REAR BARRIER, ZJJ74, 5.2L MPI. ITEM ZJ8758
 1996 MVSS VALIDATION - 301.

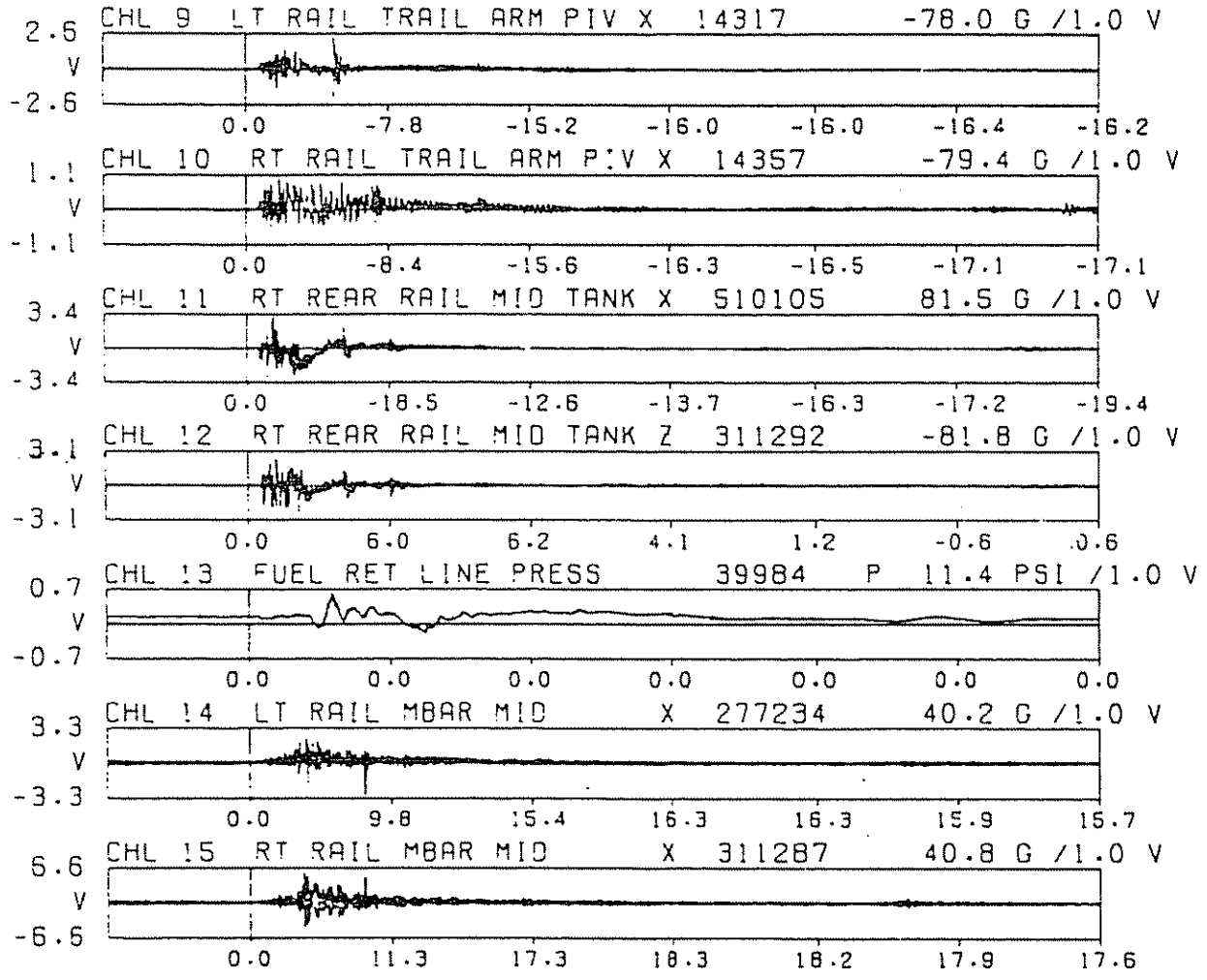
IMPACT ANALYSIS DEPT. 5320

DATA SET 12/31/94BA

JAN 2, 1995

ERRATA 1

-50 0 50 100 150 200 250 300



-50 0 50 100 150 200 250 300
 TIME, MSEC

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

VC05339 30 MPH REAR BARRIER, ZJJ74, 5.2L MPI. ITEM ZJ8758
1996 MVSS VALIDATION - 301.
AVERAGE OF

CHANNEL 001 LEFT FRONT SILL	X	311322
CHANNEL 003 RIGHT FRONT SILL	X	14501
CHANNEL 005 LEFT REAR SILL	X	14460
CHANNEL 007 RIGHT REAR SILL	X	176966

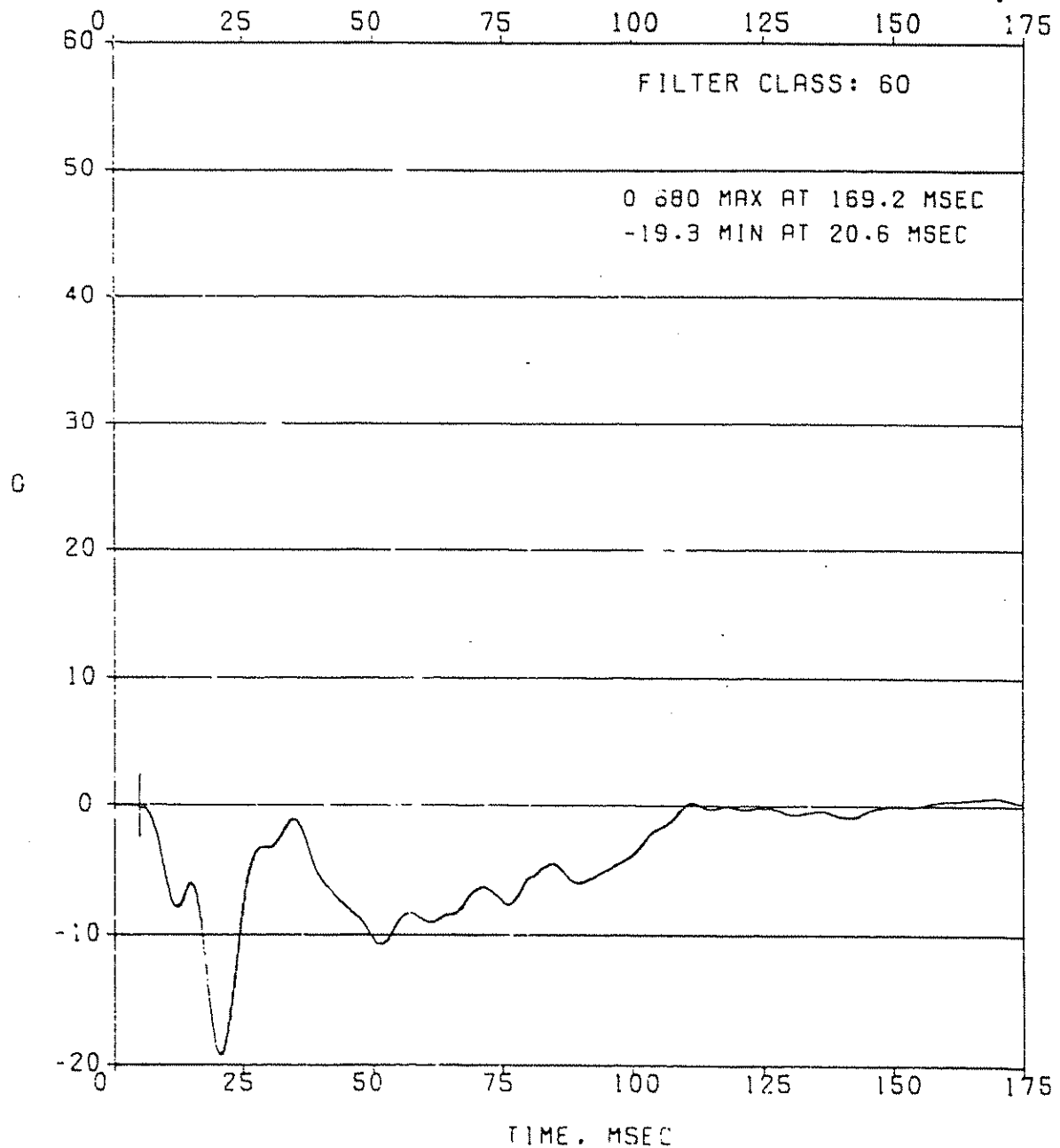
FILTER TYPE: SAE J211B/80 DC C60(TPF-R) EFF 3/24/86

IMPACT ANALYSIS DEPT. 5320

DATA SET 12/31/94BA

JAN 2, 1995

ERRATA 1

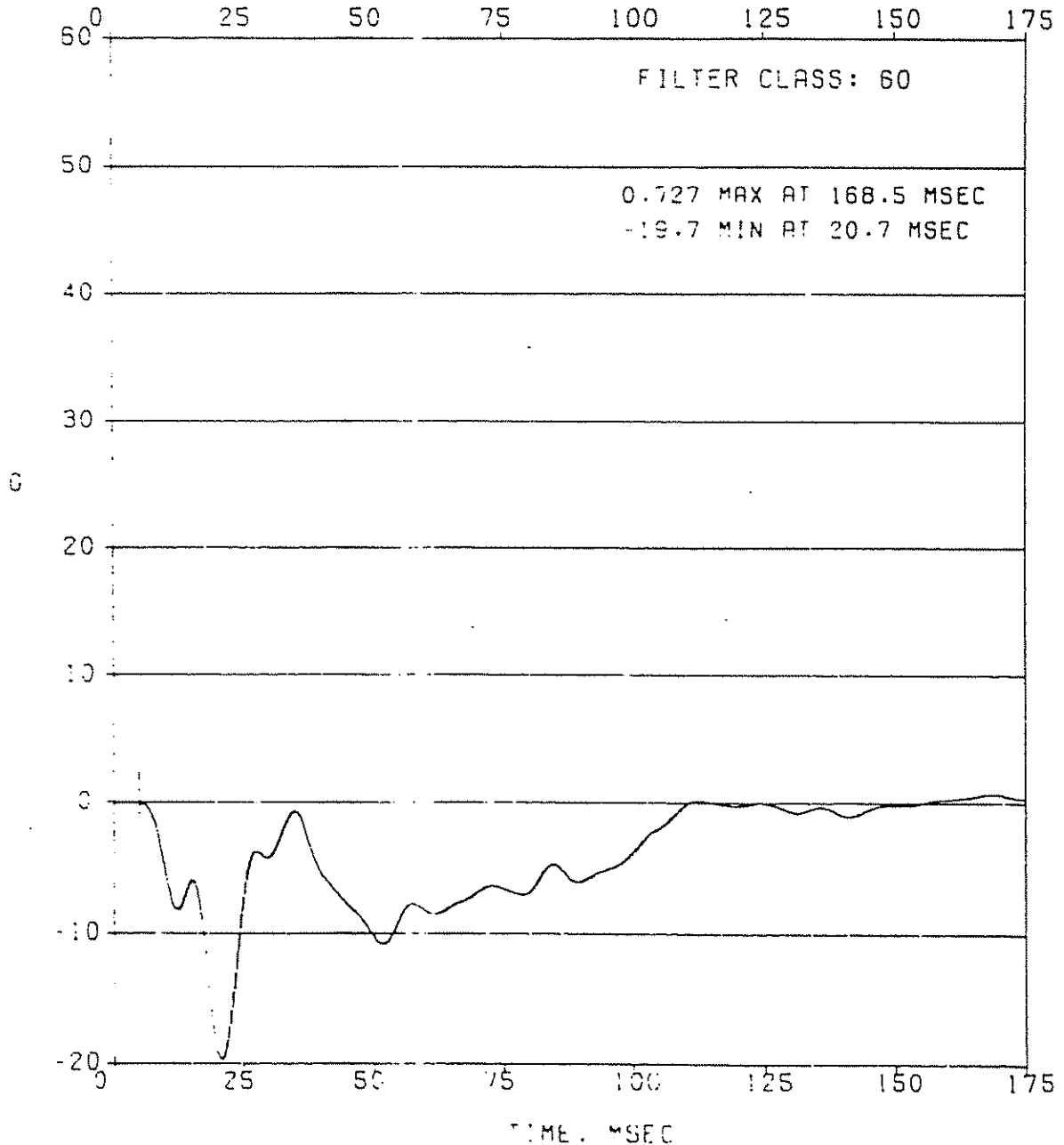


DC 04011

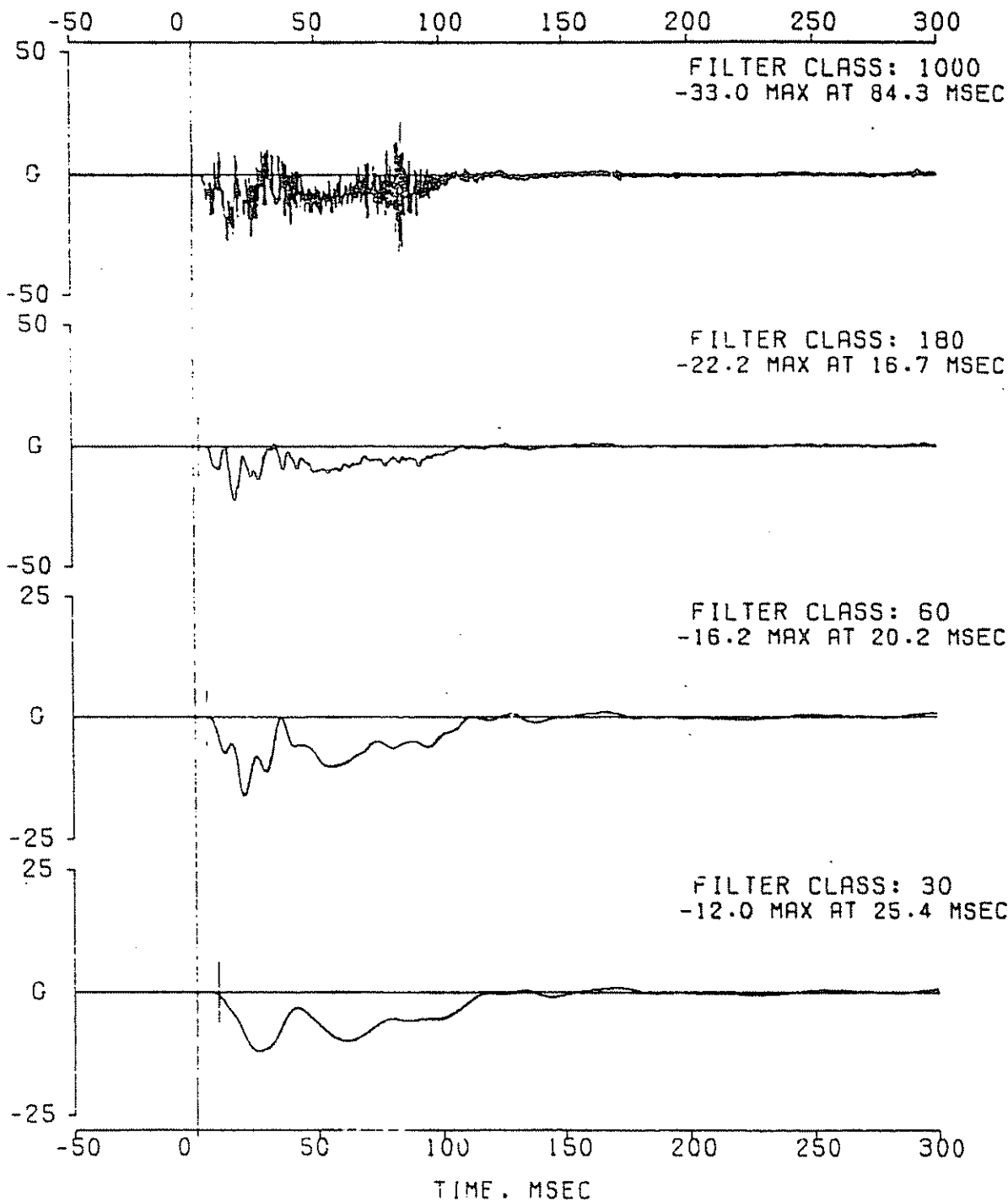
VC05339 30 MPH REAR BARRIER. ZJJ74. 5.2L MPI. ITEM ZJ8758
1996 MVSS VALIDATION - 301.
AVERAGE OF

CHANNEL 001 LEFT FRONT SILL X 311322
CHANNEL 003 RIGHT FRONT SILL X 14501

FILTER TYPE: SAE J211B/80 DC C60(TPF-R) EFF 3/24/86
IMPACT ANALYSIS DEPT. 5320 DATA SET 12/31/94BA
JAN 2, 1995 ERRATA 1



VC05339 30 MPH REAR BARRIER. ZJJ74. 5.2L MPI. ITEM ZJ8753
1996 MVSS VALIDATION - 301.
CHANNEL 001 LEFT FRONT SILL X 311322
FILTER TYPE: CBDS-III RESPONSE CORRECTION. CLASS 1000 FILTER(1650)
IMPACT ANALYSIS DEPT. 5320 DATA SET 12/31/94BA
JAN 2, 1995 ERRATA 1

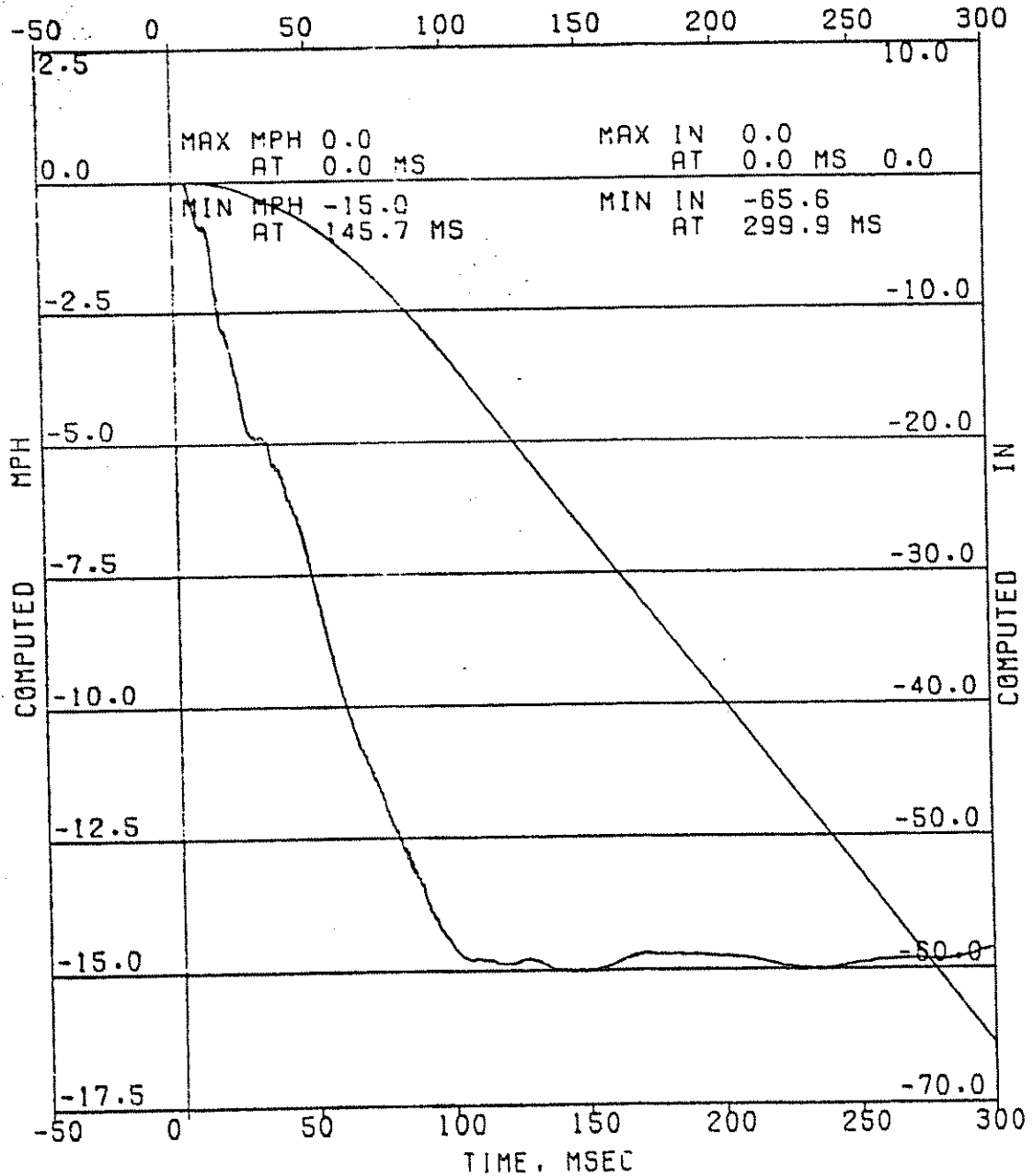


VC05339 30 MPH REAR BARRIER. ZJJ74. 5.2L MPI. ITEM ZJ8758
 1996 MVSS VALIDATION - 301.
 CHANNEL 001 LEFT FRONT SILL X 311322

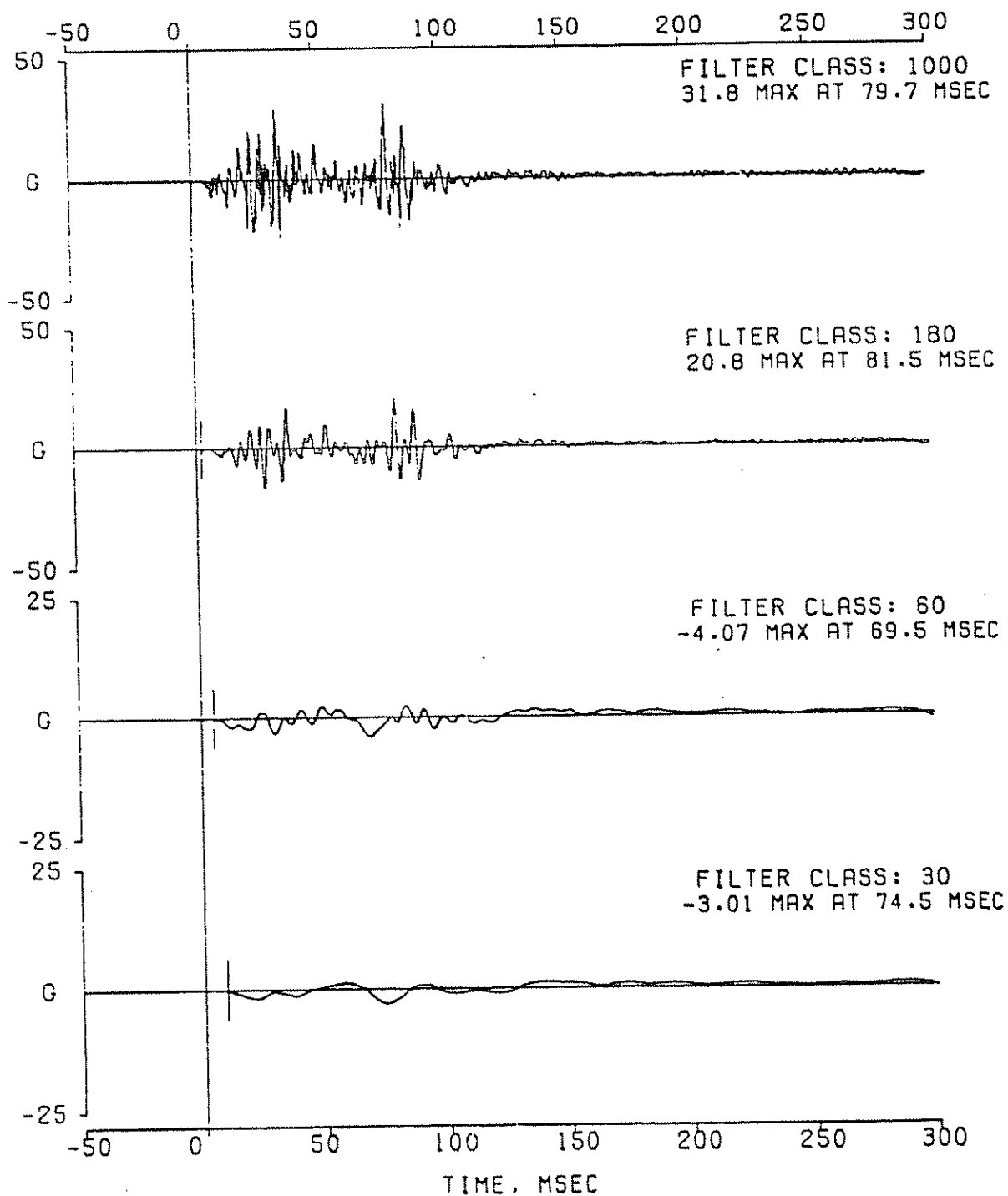
FILTER TYPE: 08DAS-III RESPONSE CORRECTION. CLASS 1000 FILTER(1650)
 FILTER CLASS: 1000

IMPACT ANALYSIS DEPT. 5320
 JAN 2.1995

DATA SET 12/31/94BA
 ERRATA 1



VC05339 30 MPH REAR BARRIER, ZJJ74, 5.2L MPI. ITEM ZJ8758
1996 MVSS VALIDATION - 30!
CHANNEL 002 LEFT FRONT SILL Z 14474
FILTER TYPE: 0BDAS-III RESPONSE CORRECTION. CLASS 1000 FILTER(1350)
IMPACT ANALYSIS DEPT. 5320 DATA SET 12/31/94BA
JAN 2, 1995 ERRATA 1

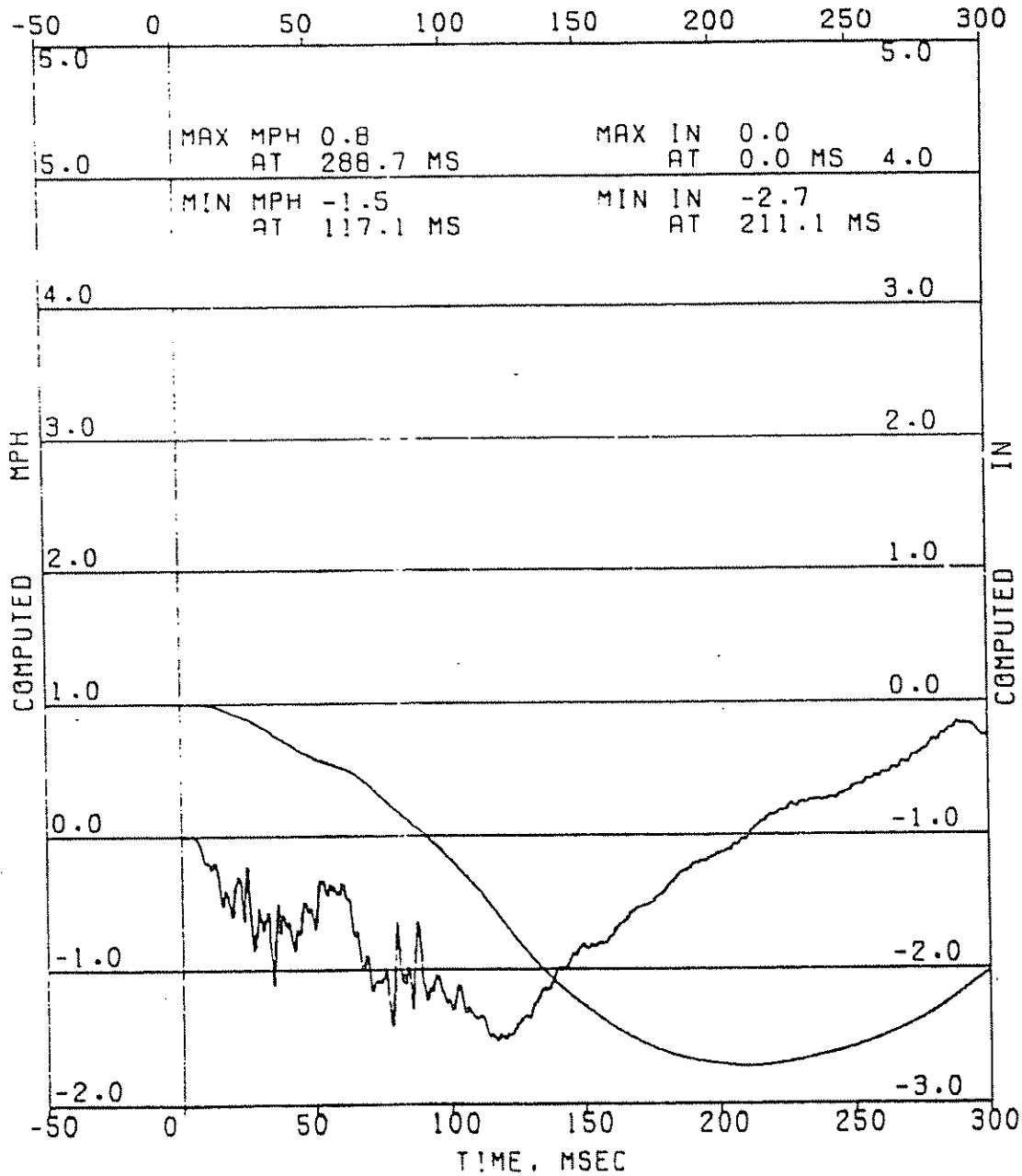


VC05339 30 MPH REAR BARRIER. ZJJ74. 5.2L MPI. ITEM ZJ8758
 1996 MVSS VALIDATION - 301.
 CHANNEL 002 LEFT FRONT SILL Z 14474

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

IMPACT ANALYSIS DEPT. 5320
 JAN 2, 1995

DATA SET 12/31/94BA
 ERRATA 1



VC05339 30 MPH REAR BARRIER, ZJJ74, 5.2L MPI, ITEM ZJ8758

1996 MVSS VALIDATION - 301.

CHANNEL 003 RIGHT FRONT SILL X 14501

FILTER TYPE: OBOAS-!!! RESPONSE CORRECTION, CLASS 1000 FILTER(1650)

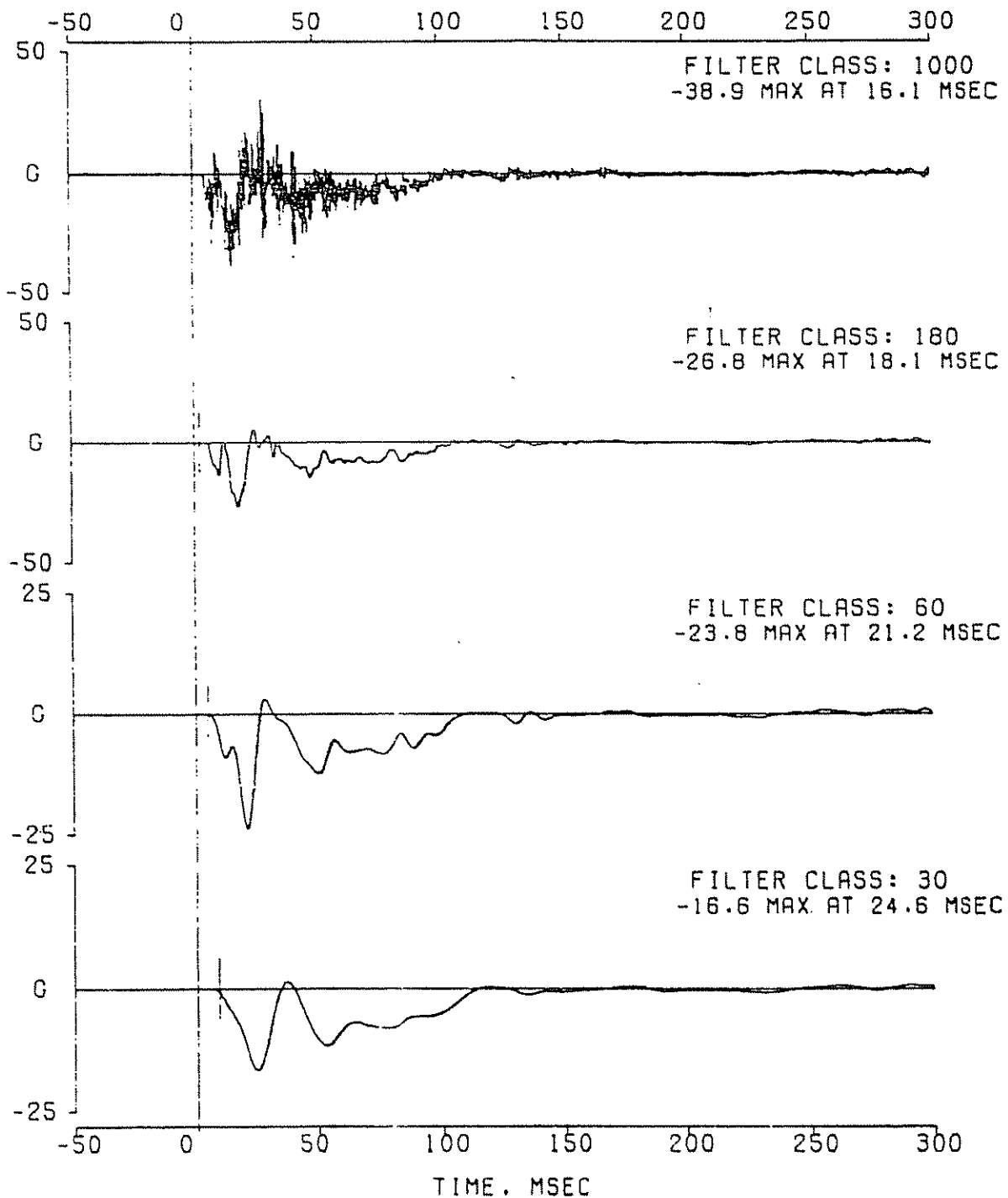
IMPACT ANALYSIS DEPT. 5320

DATA SET 12/31/94BA

JAN 2, 1995

ERRATA

1



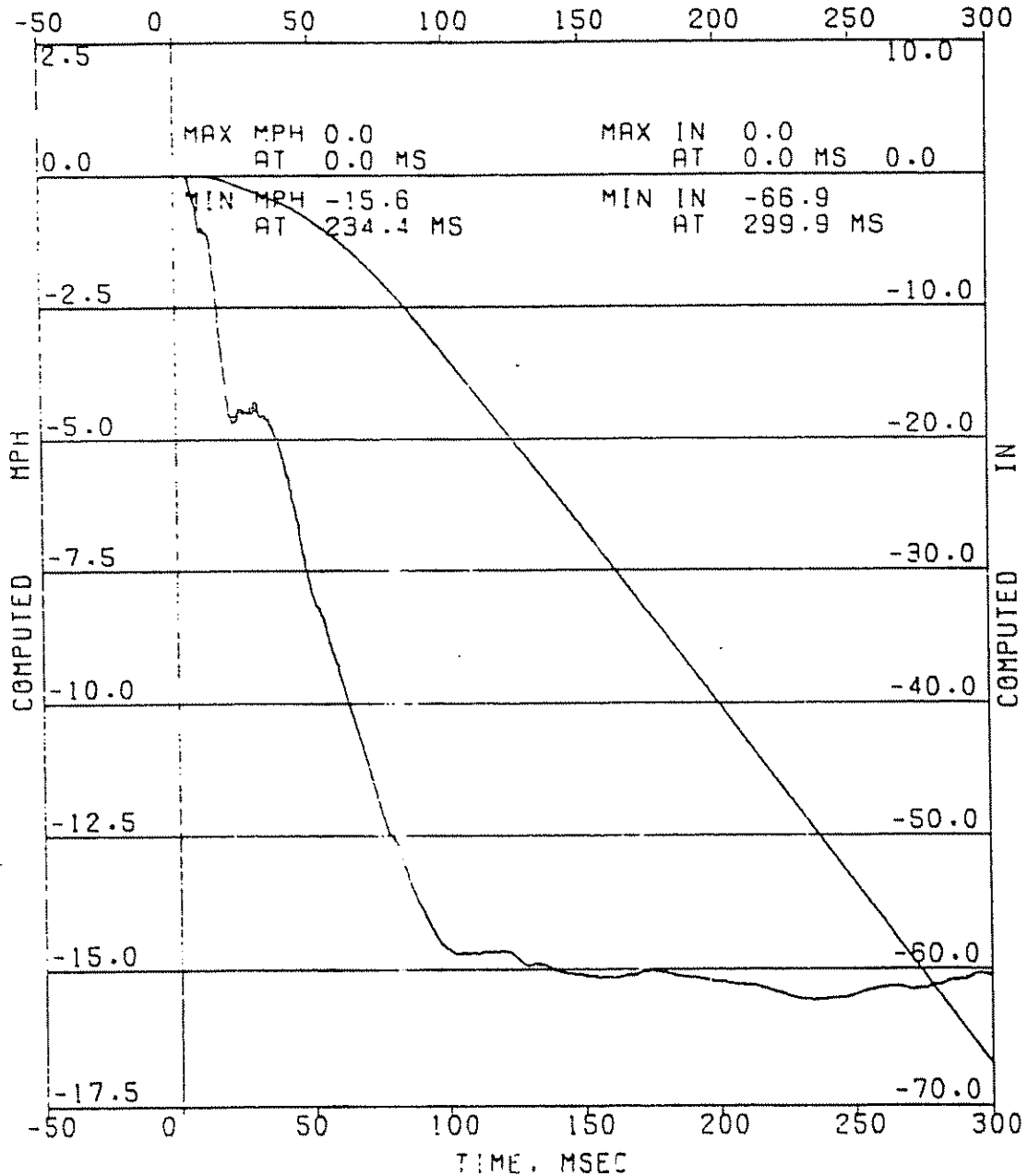
DC 04017

VC05339 30 MPH REAR BARRIER, ZJJ74, 5.2L MPI, ITEM ZJ8758
 1995 MVSS VALIDATION - 301.
 CHANNEL 003 RIGHT FRONT SILL X 14501

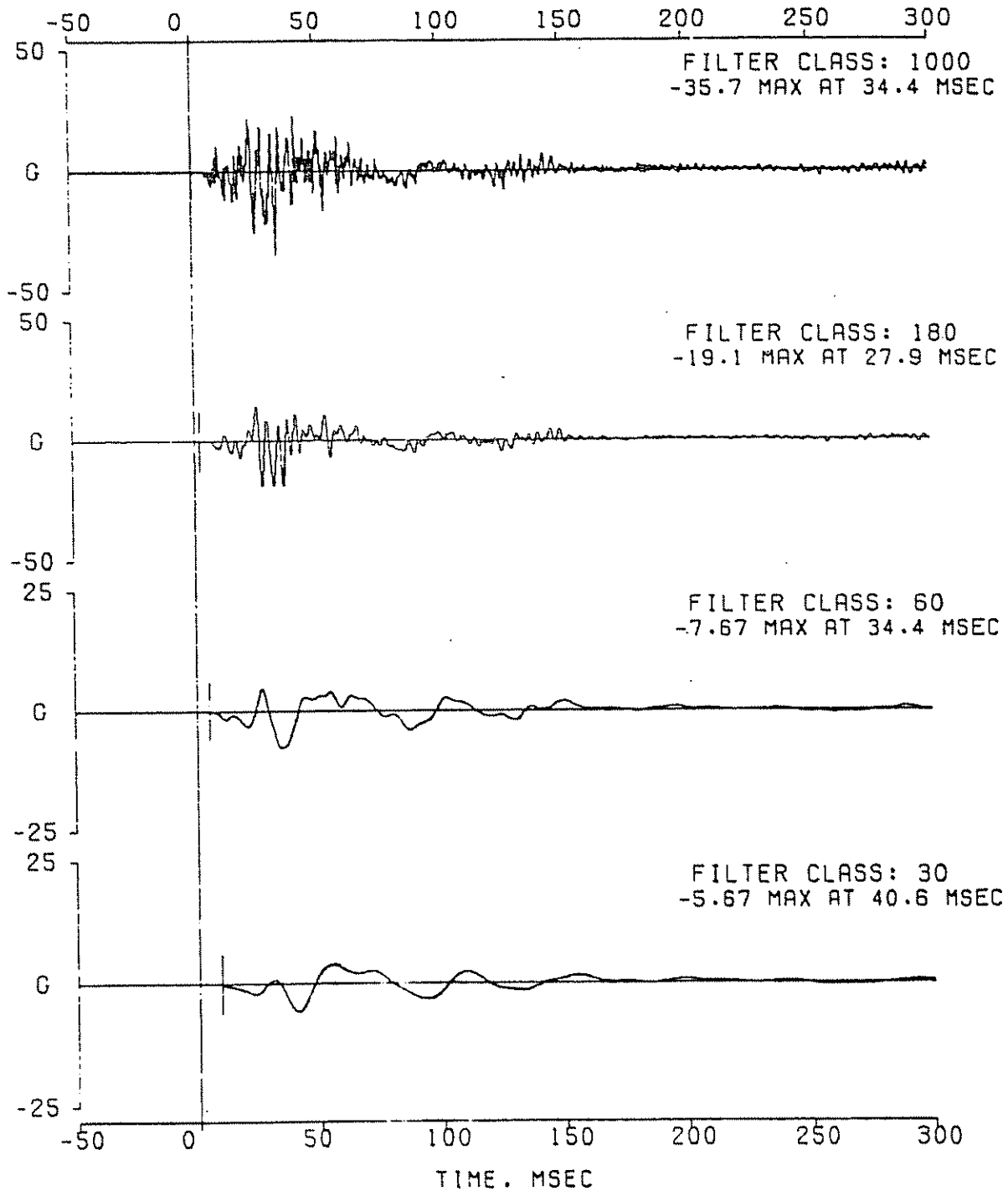
FILTER TYPE: OBDAS-III RESPONSE CORRECTION, CLASS 1000 FILTER(1650)
 FILTER CLASS: 1000

IMPACT ANALYSIS DEPT. 5320
 JAN 2, 1995

DATA SET 12/31/948A
 ERRATA 1



VC05339 30 MPH REAR BARRIER, ZJJ74, 5.2L MPI. ITEM ZJ8758
1996 MVSS VALIDATION - 301.
CHANNEL 004 RIGHT FRONT SILL Z 14275
FILTER TYPE: OBDAS-III RESPONSE CORRECTION, CLASS 1000 FILTER(1650)
IMPACT ANALYSIS DEPT. 5320 DATA SET 12/31/94BA
JAN 2,1995 ERRATA 1

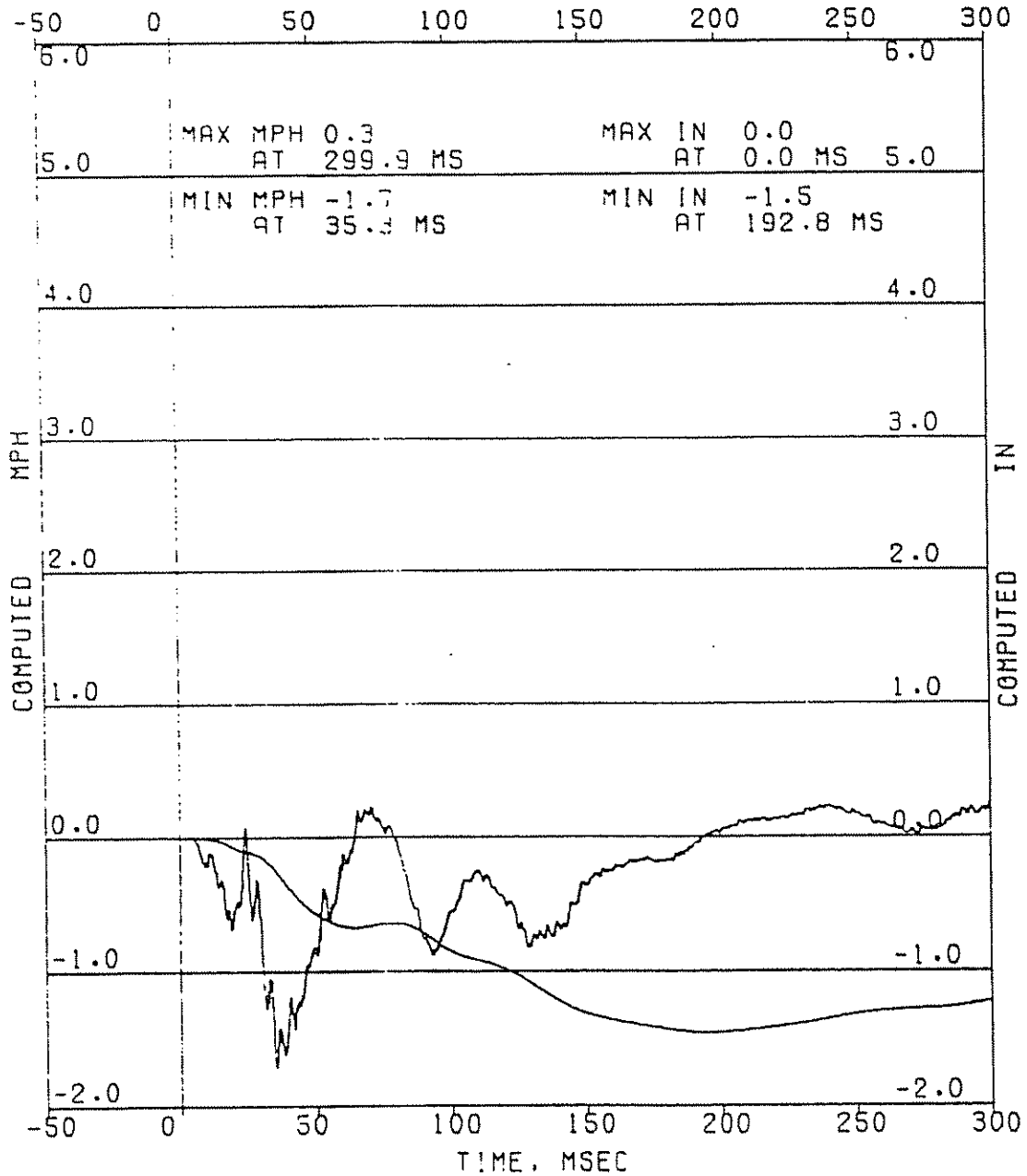


VC05339 30 MPH REAR BARRIER, ZJJ74, 5.2L MPI, ITEM ZJ8758
 1995 MVSS VALIDATION - 301.
 CHANNEL 004 RIGHT FRONT SILL Z 14275

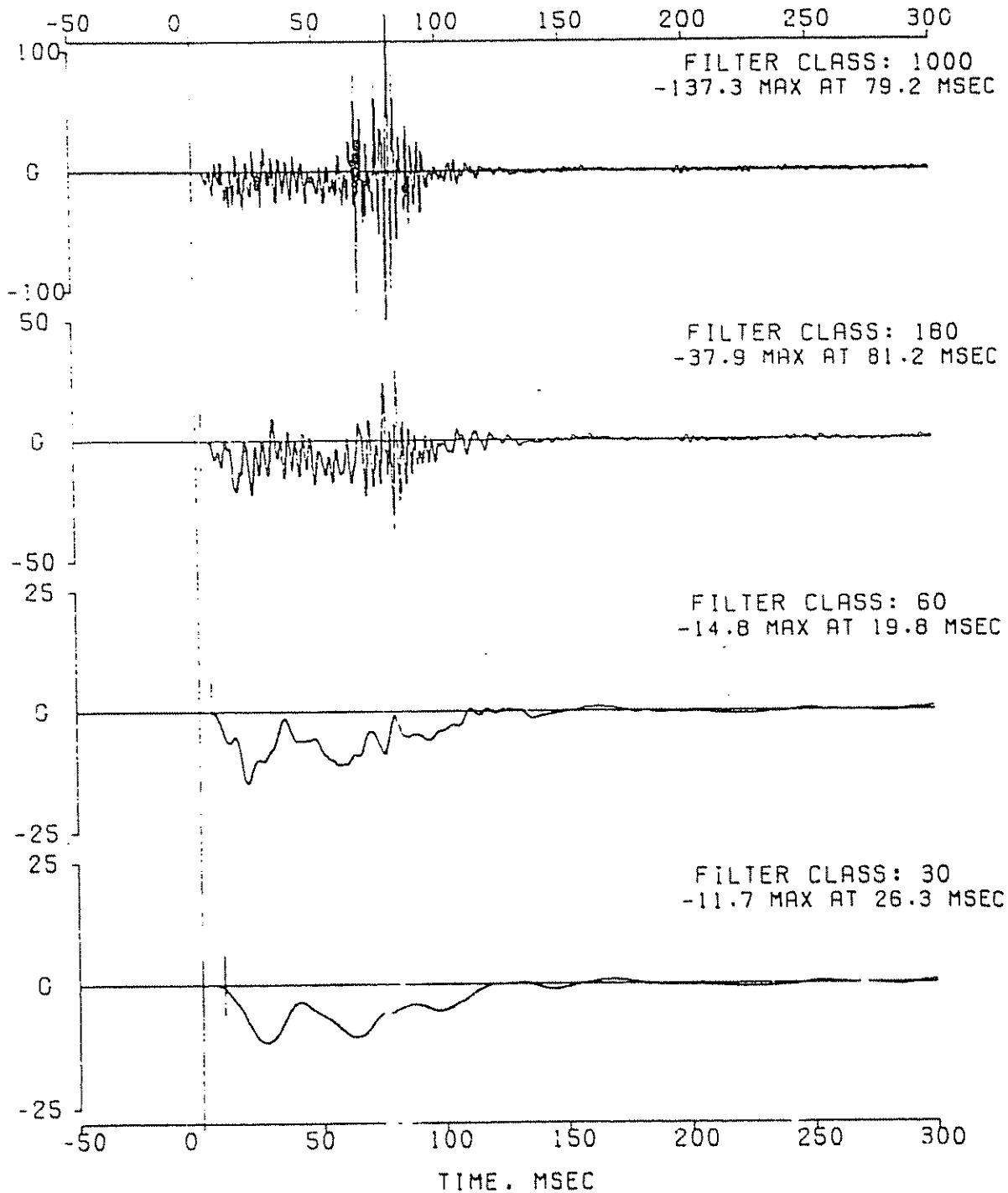
FILTER TYPE: C9DAS-III RESPONSE CORRECTION, CLASS 1000 FILTER(1650)
 FILTER CLASS: 1000

IMPACT ANALYSIS DEPT. 5320
 JAN 2.1995

DATA SET 12/31/94BA
 ERRATA 1



VC05339 30 MPH REAR BARRIER, ZJJ74, 5.2L MPI, ITEM ZJ8758
1996 MVSS VALIDATION - 301.
CHANNEL 005 LEFT REAR SILL X 14460
FILTER TYPE: 330AS-!!! RESPONSE CORRECTION, CLASS 1000 FILTER(1650)
IMPACT ANALYSIS DEPT. 5320 DATA SET 12/31/948A
JAN 2, 1995 ERRATA 1

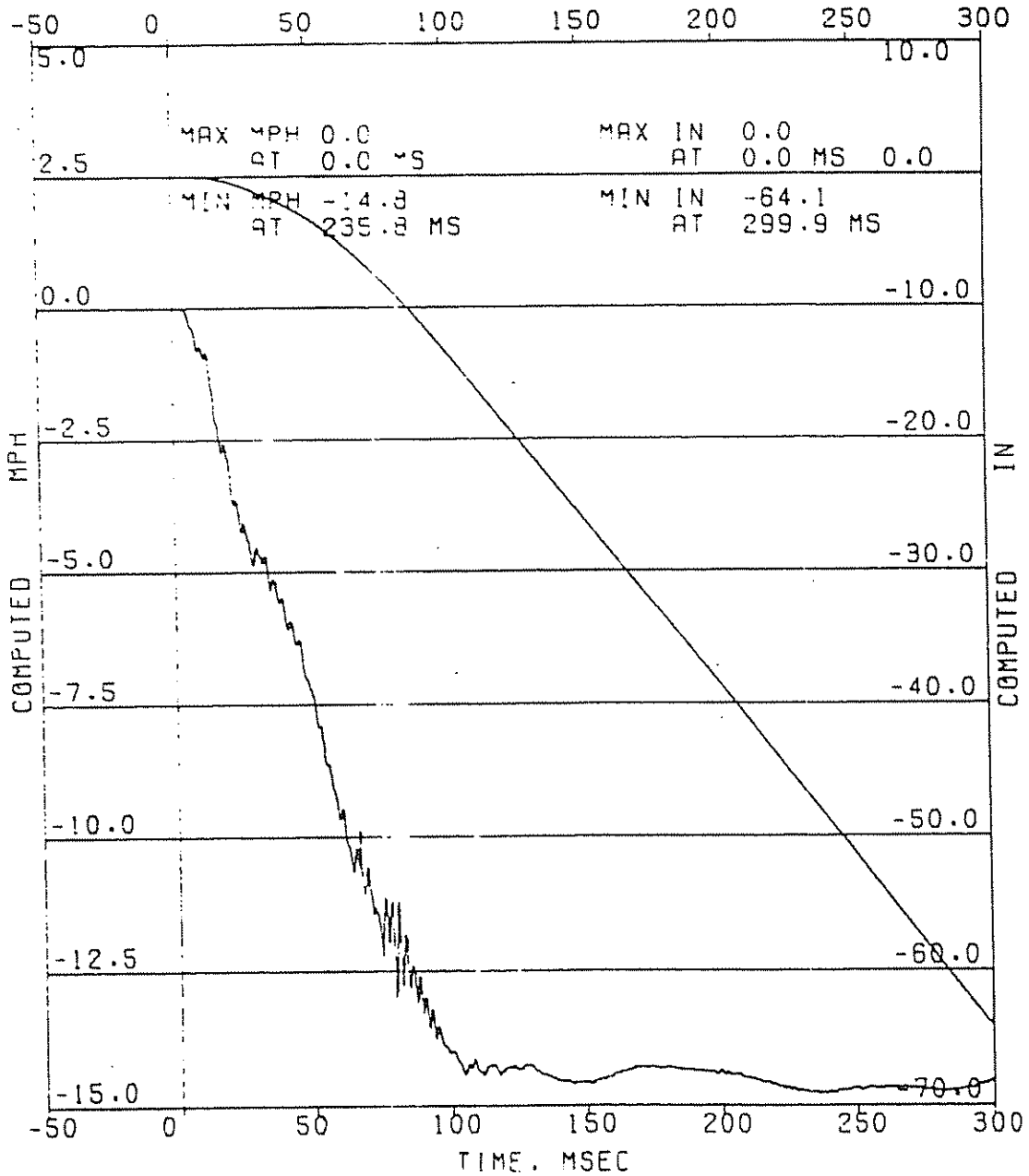


V005339 30 MPH REAR BARRIER, ZJU74, 5.2L MPI, ITEM ZJ8758
 1995 MVSS VALIDATION - 301
 CHANNEL 005 LEFT REAR HILL X 14450

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

IMPACT ANALYSIS DEPT. 5320
 JAN 2, 1995

DATA SET 12/31/948A
 ERRATA 1



VC05339 30 MPH REAR BARRIER, ZJJ74, 5.2L MPI, ITEM ZJ8758

1996 MVSS VALIDATION - 301.

CHANNEL 006 LEFT REAR SILL, Z 311286

FILTER TYPE: 3BDAS-III RESPONSE CORRECTION, CLASS 1000 FILTER(1650)

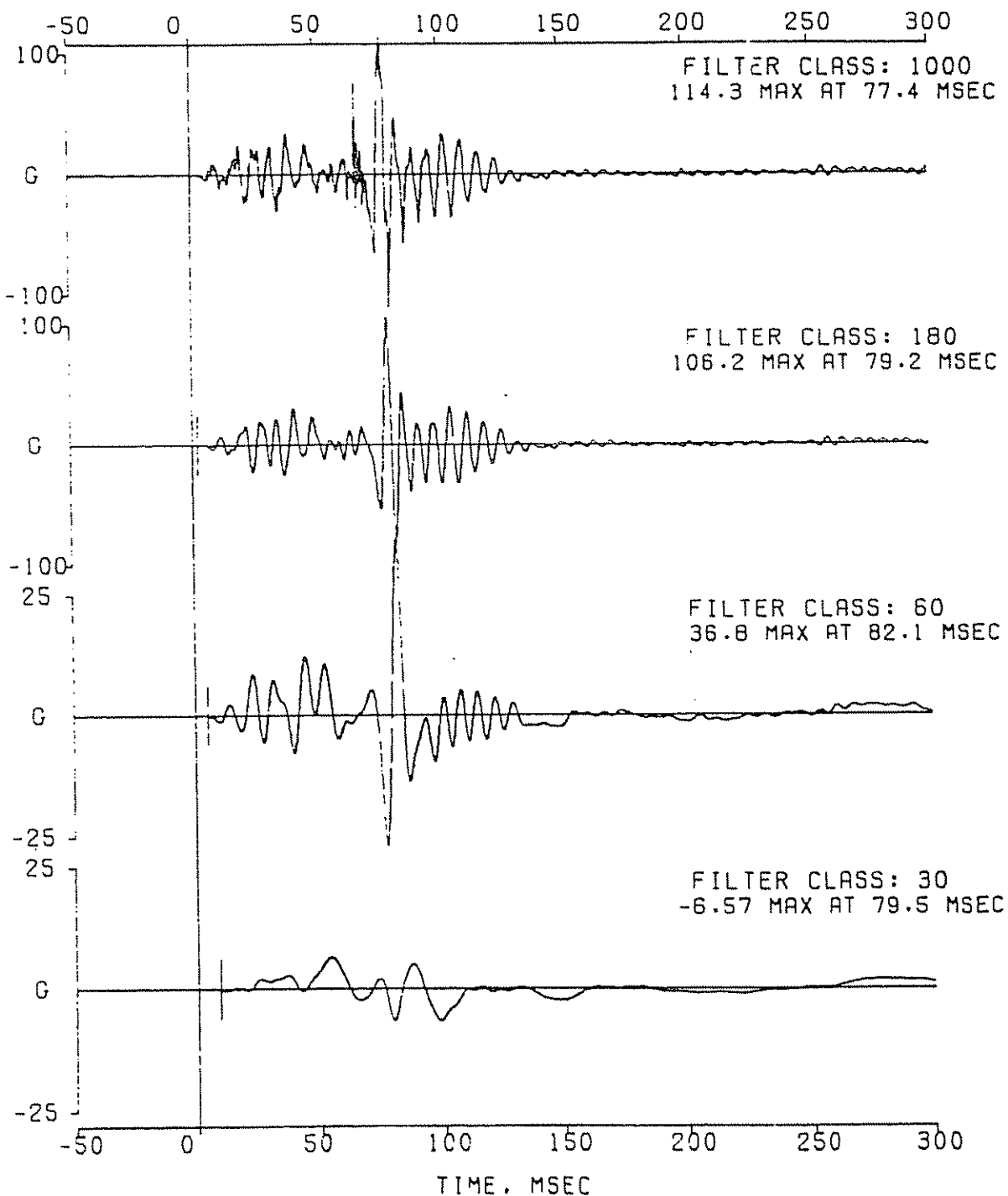
IMPACT ANALYSIS DEPT. 5320

DATA SET 12/31/94BA

JAN 2, 1995

ERRATA

1



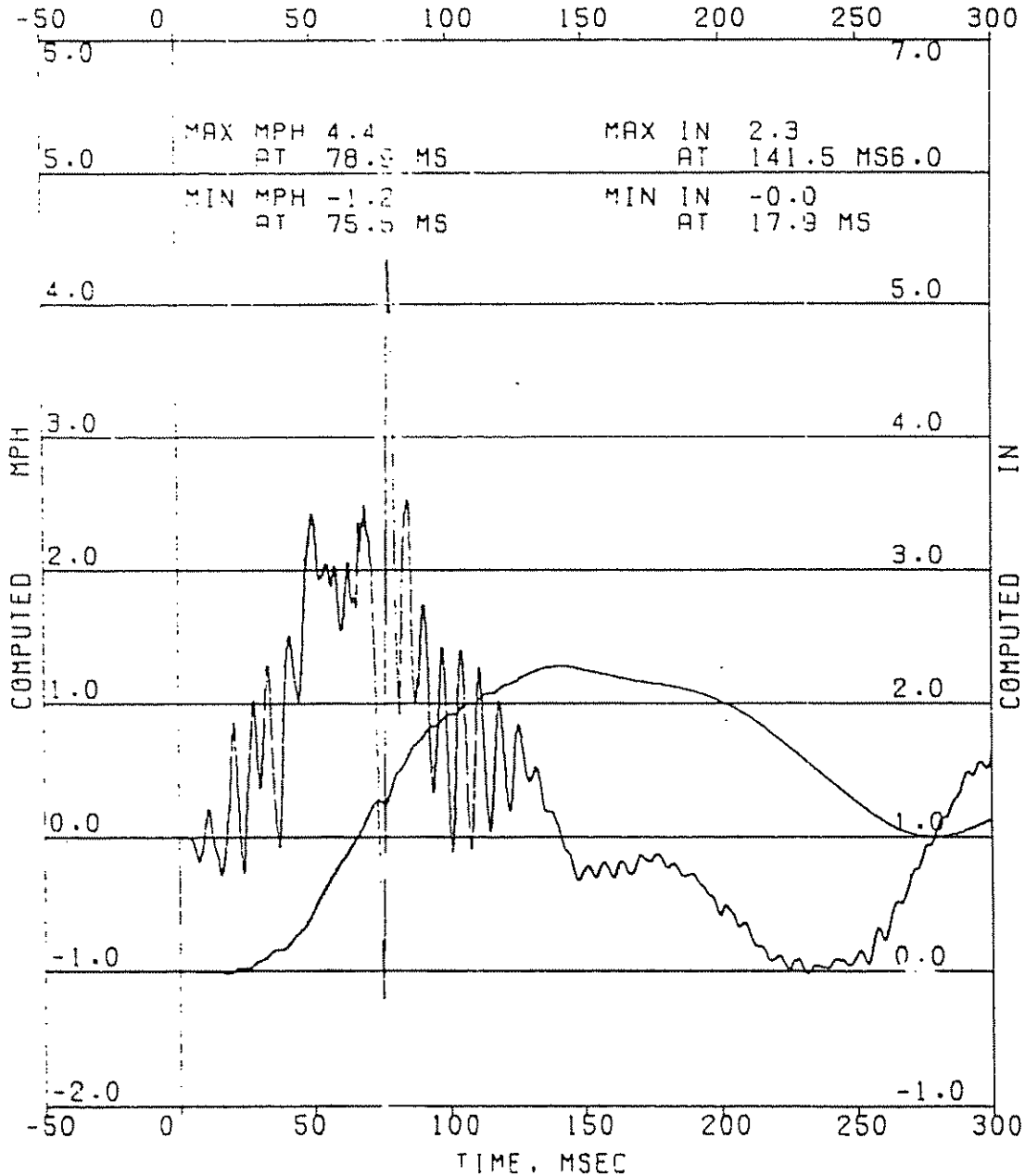
DC 04023

VC05339 30 MPH REAR BARRIER, ZJJ74, 5.2L MPI, ITEM ZJ8758
 1996 MVSS VALIDATION - 30%
 CHANNEL 006 LEFT REAR SILL Z 311286

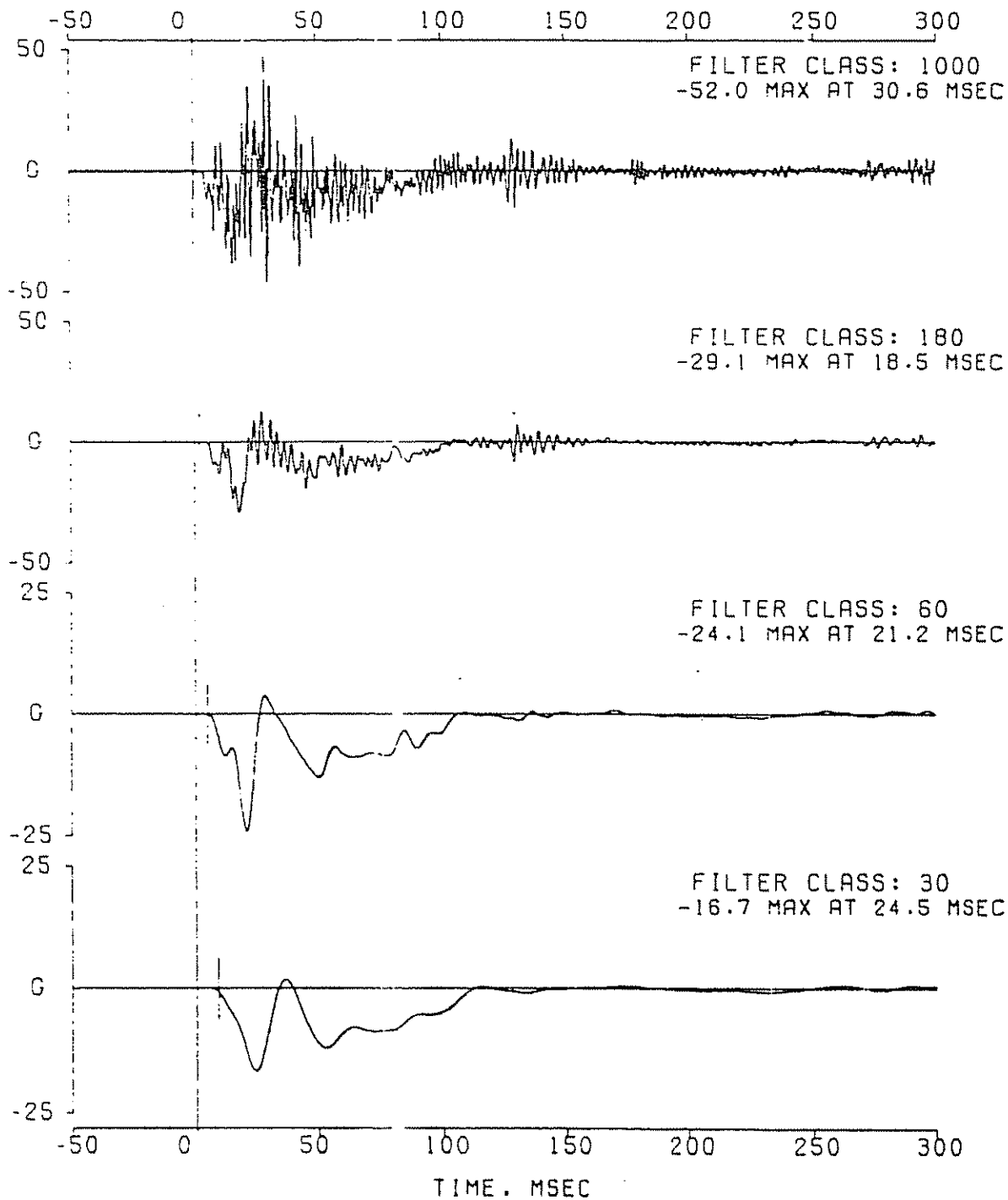
FILTER TYPE: 9BDAS-!!! RESPONSE CORRECTION, CLASS 1000 FILTER(1650)
 FILTER CLASS: 1000

IMPACT ANALYSIS DEPT. 5320
 JAN 2, 1995

DATA SET 12/31/94BA
 ERRATA 1



V005339 30 MPH REAR BARRIER, ZJJ74, 5.2L MPI, ITEM ZJ8758
1996 MVSS VALIDATION - 30%.
CHANNEL 007 RIGHT REAR SIDE X 176966
FILTER TYPE: 330AS-III RESPONSE CORRECTION, CLASS 1000 FILTER(1650)
IMPACT ANALYSIS DEPT. 5320 DATA SET 12/31/94BA
JAN 2, 1995 ERRATA 1

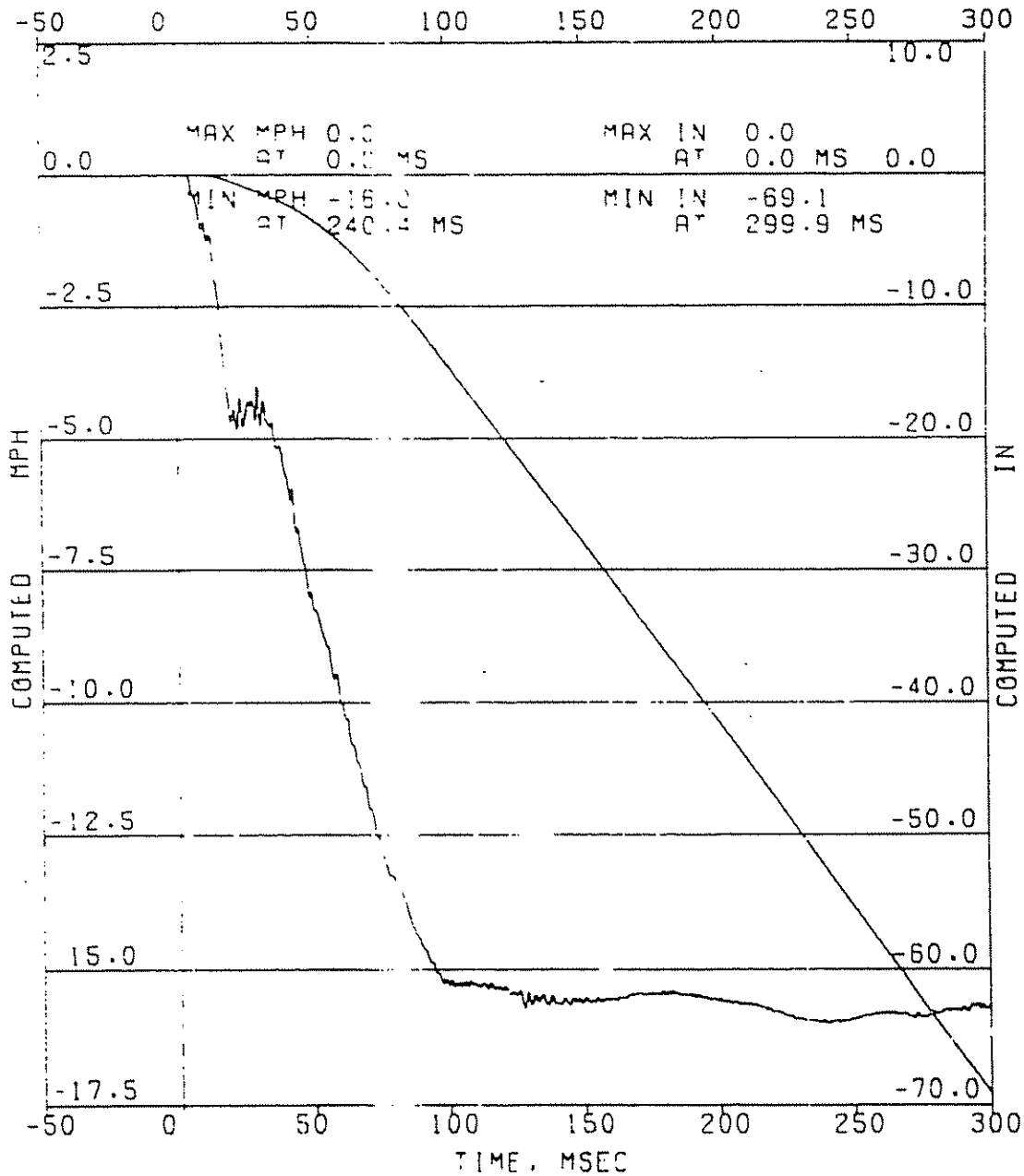


VC05339 30 MPH REAR BARRIER, ZJJ74, 5.2L MPI, ITEM ZJ8758
 1996 MVSS VALIDATION - 301.
 CHANNEL 007 RIGHT REAR SILL X 176966

FILTER TYPE: 09DAS-III RESPONSE CORRECTION, CLASS 1000 FILTER(1650)
 FILTER CLASS: 1000

IMPACT ANALYSIS DEPT. 5300
 JAN 2, 1995

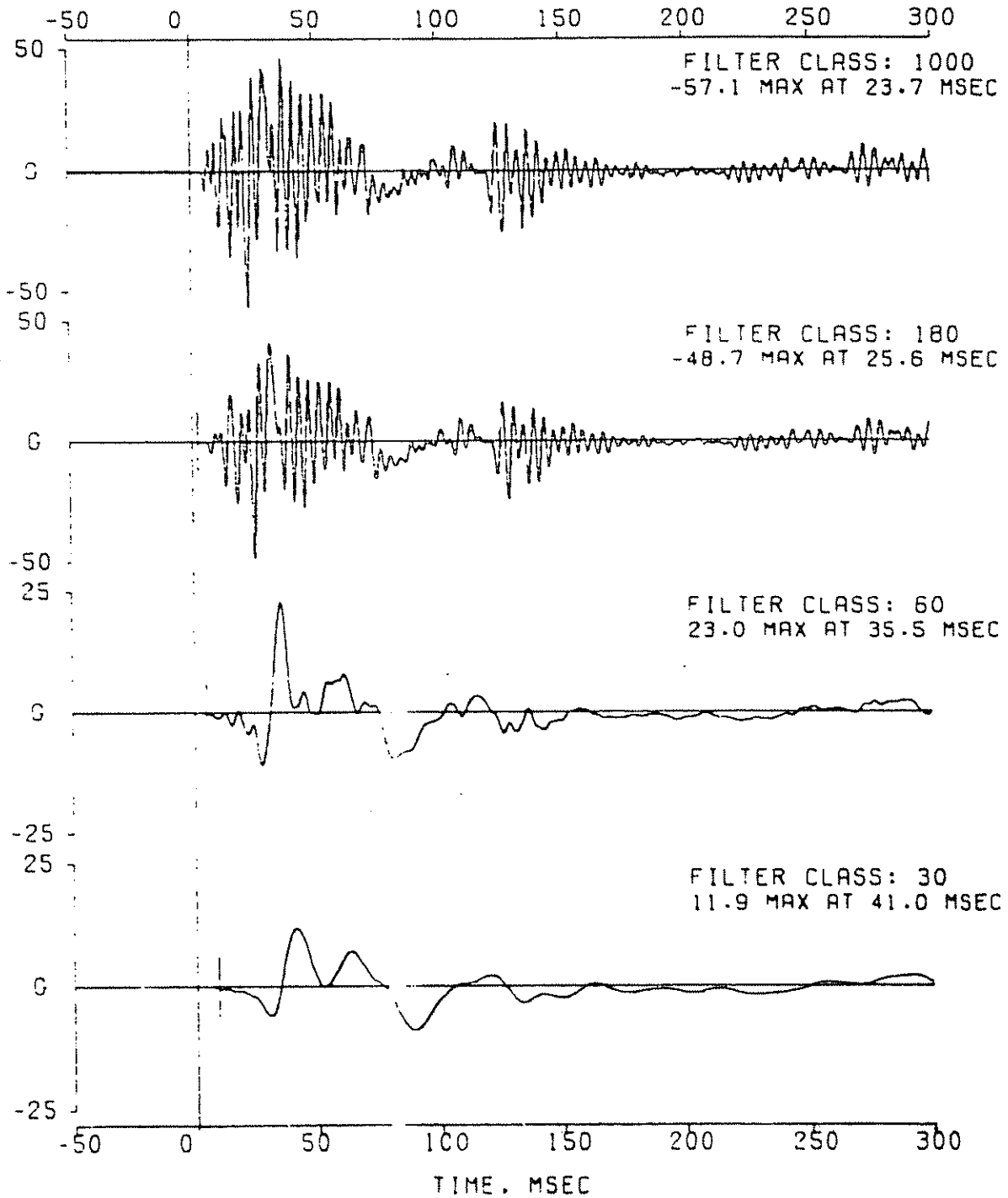
DATA SET 12/31/94BA
 ERRATA 1



COMPUTED MPH

DC 04026

VC05339 30 MPH REAR BARRIER, ZJJ74, 5.2L MPI, ITEM ZJ8758
1996 MVSS VALIDATION - 301.
CHANNEL 008 RIGHT REAR SILL Z 277203
FILTER TYPE: QBDAS-III RESPONSE CORRECTION, CLASS 1000 FILTER(1650)
IMPACT ANALYSIS DEPT. 5320 DATA SET 12/31/94BA
JAN 2, 1995 ERRATA 1



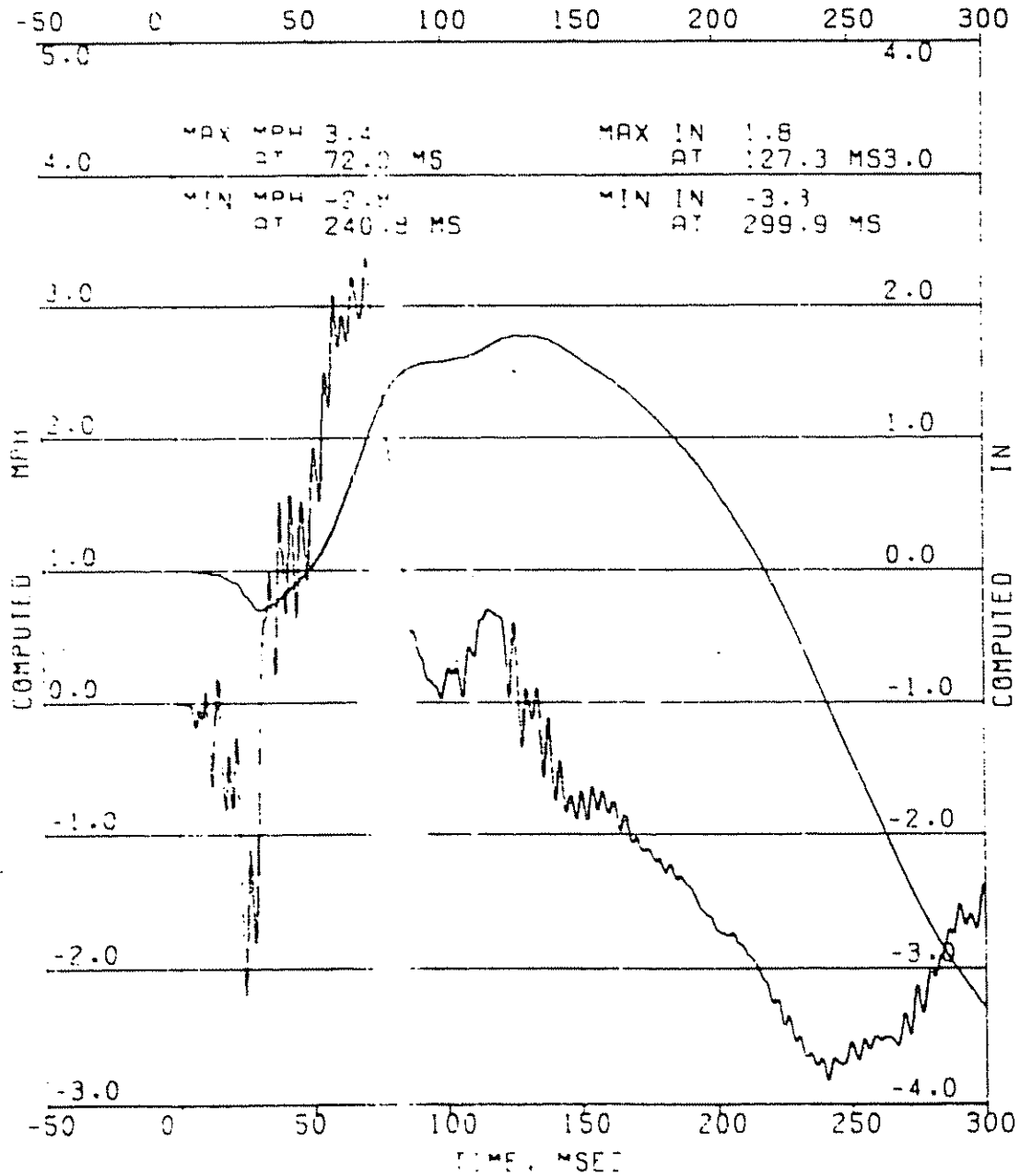
DC 04027

VC05339 30 MPH REAR BARRIER, ZJJ74, 5.2L MPI, ITEM ZJB758
 1995 MVSS VALIDATION - 301.
 CHANNEL 008 RIGHT REAR SILL Z 277203

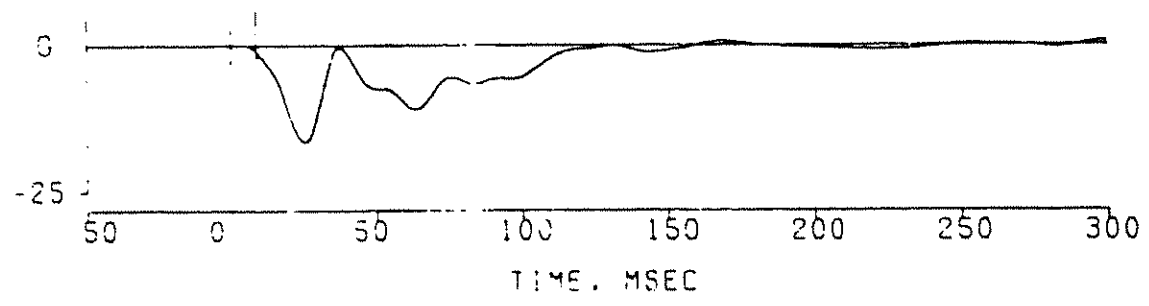
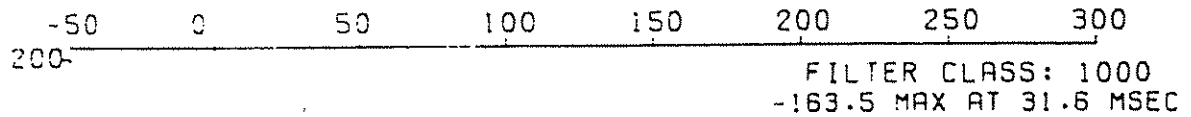
FILTER TYPE: CBDS-III RESPONSE CORRECTION, CLASS 1000 FILTER(1650)
 FILTER CLASS: 1000

IMPACT ANALYSIS DEPT. 5320
 JAN 2, 1995

DATA SET 12/31/94BA
 ERRATA 1



VC05339 30 MPH REAR BARRIER, ZJJ74, 5.2L MPI, ITEM ZJ8758
1996 MVSS VALIDATION - 301.
CHANNEL 009 LT RAIL TRAIL ARM PIV X 14317
FILTER TYPE: 03DAS-III RESPONSE CORRECTION, CLASS 1000 FILTER(1650)
IMPACT ANALYSIS DEPT. 5320 DATA SET 12/31/94BA
JAN 2, 1995 ERRATA 1

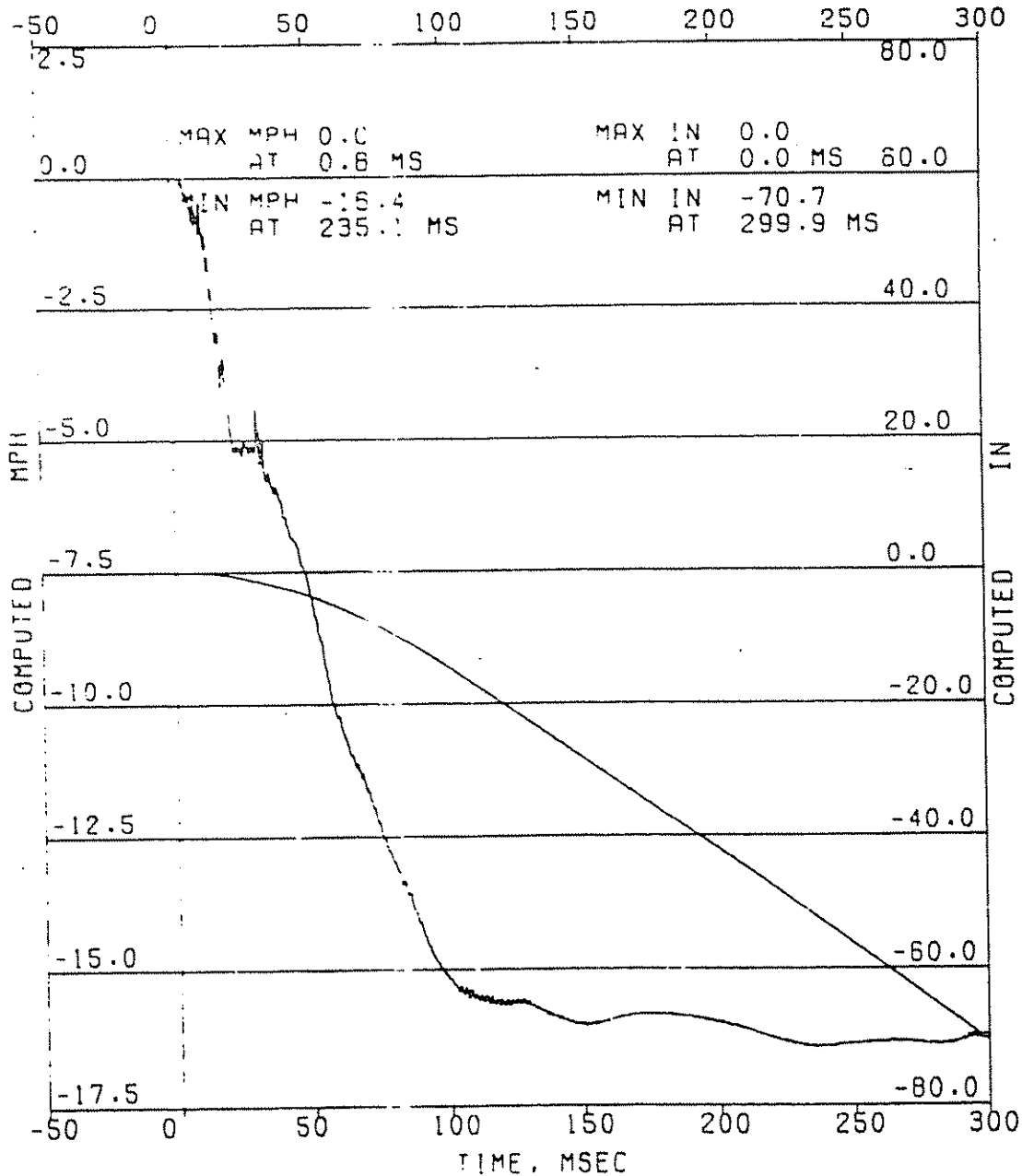


VC05339 30 MPH REAR BARRIER. ZJJ74. 5.2L MPI. ITEM ZJ8758
 1995 MVSS VALIDATION - 301.
 CHANNEL 009 LT RAIL TRAIL ARM PIV X 14317

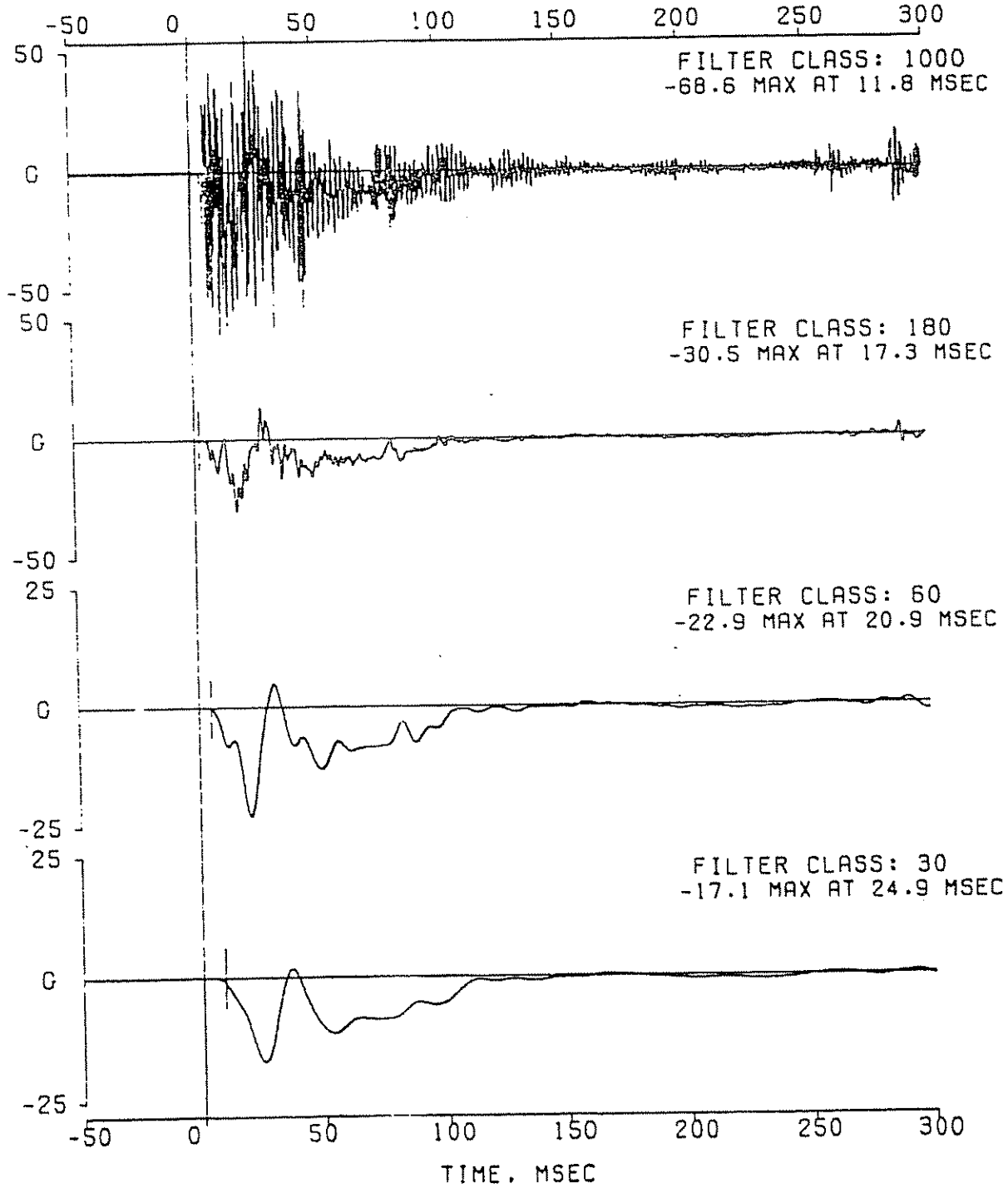
FILTER TYPE: 09DAS-III RESPONSE CORRECTION. CLASS 1000 FILTER(1650)
 FILTER CLASS: 1000

IMPACT ANALYSIS DEPT. 5320
 JAN 2, 1995

DATA SET 12/31/94BA
 ERRATA 1



VC05339 30 MPH REAR BARRIER. ZJJ74. 5.2L MPI. ITEM ZJ8758
1996 MVSS VALIDATION - 301.
CHANNEL 010 RT RAIL TRAIL ARM PIV X 14357
FILTER TYPE: 090AS-III RESPONSE CORRECTION. CLASS 1000 FILTER(1650)
IMPACT ANALYSIS DEPT. 5320 DATA SET 12/31/94BA
JAN 2.1995 ERRATA 1

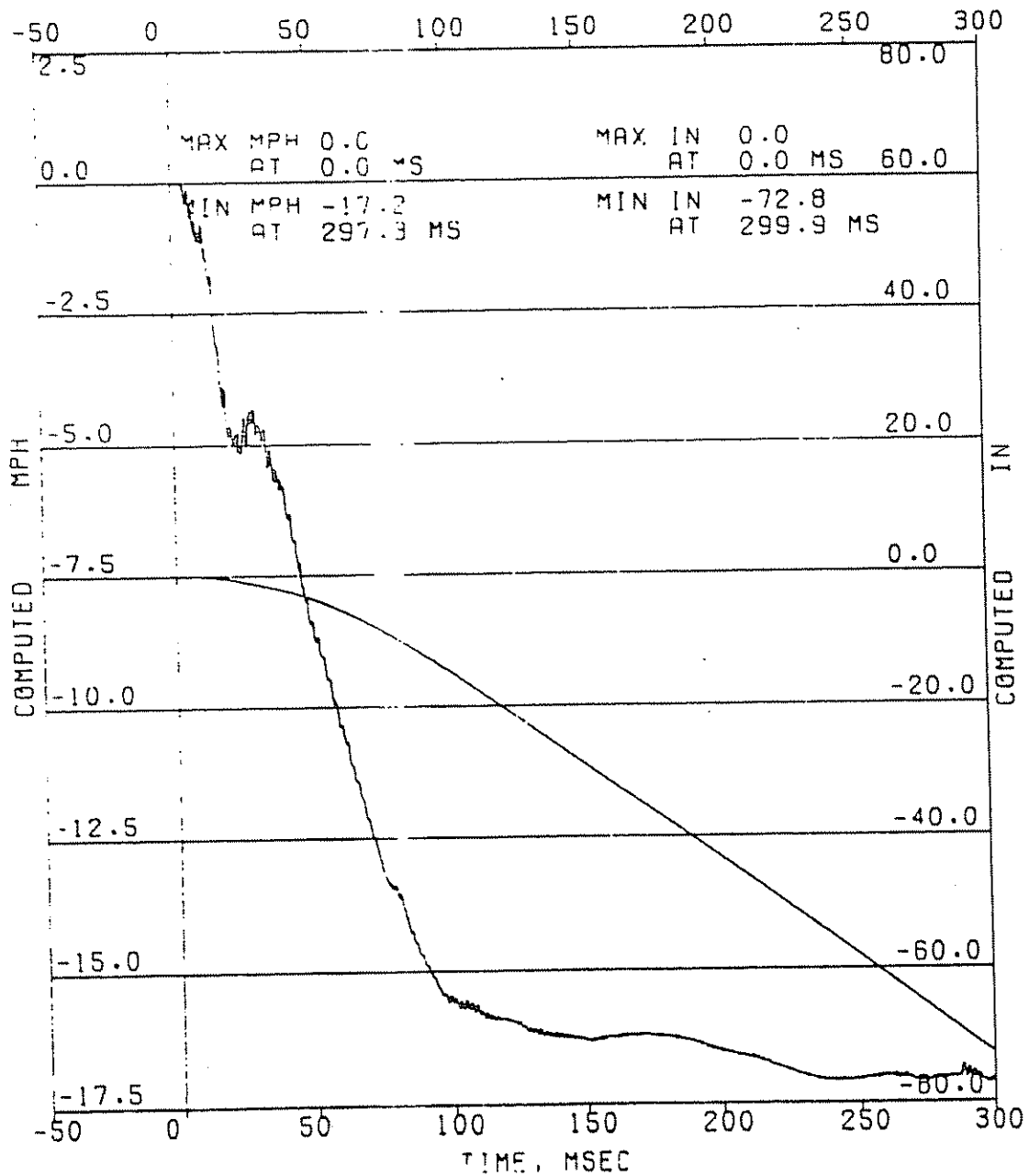


VC05339 30 MPH REAR BARRIER, ZJJ74, S.2L MPI, ITEM ZJ8758
 1995 MVSS VALIDATION - 301.
 CHANNEL C10 RT RAIL TRAIL ARM PIV X 14357

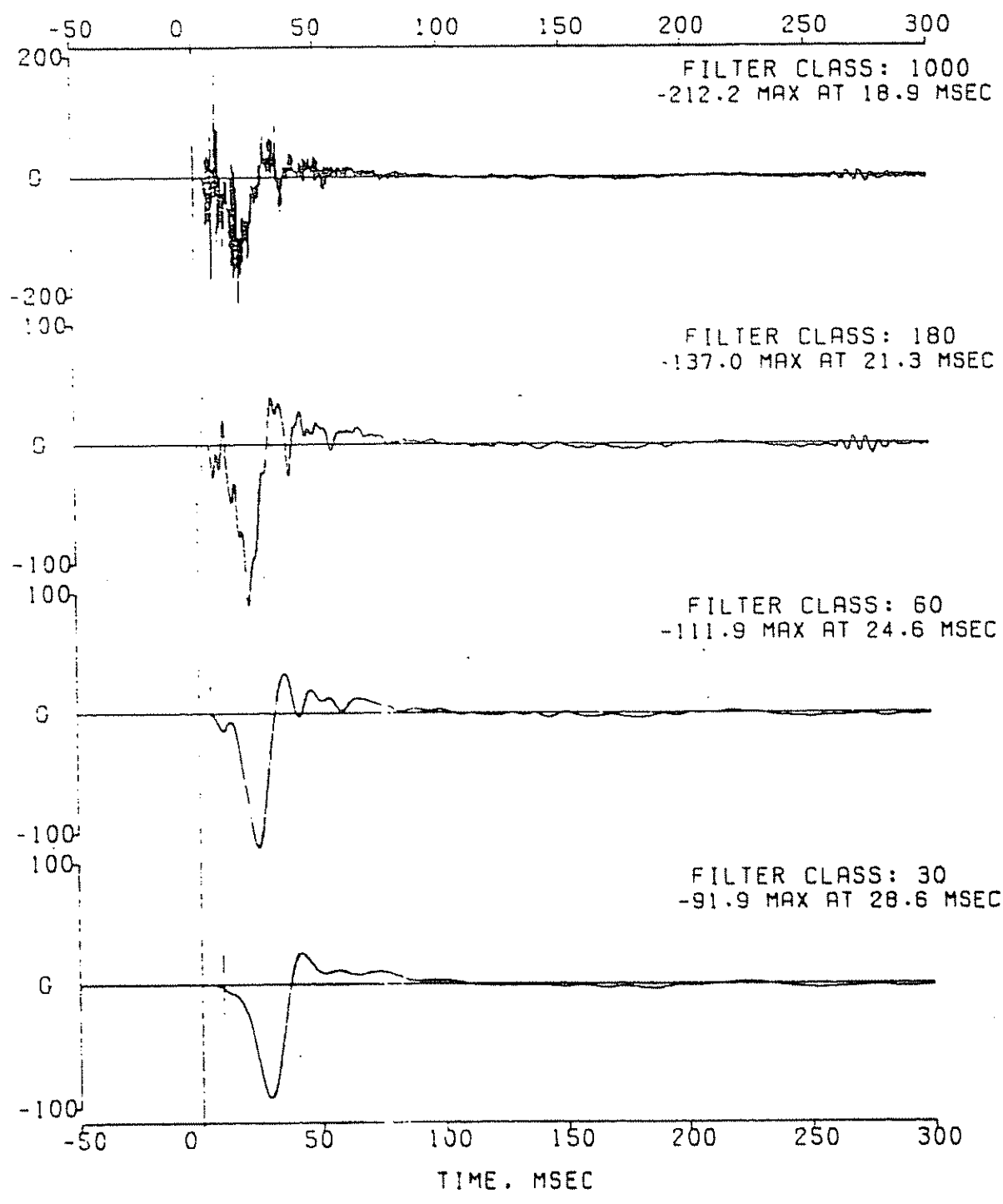
FILTER TYPE: 09DAS-III RESPONSE CORRECTION, CLASS 1000 FILTER(1650)
 FILTER CLASS: 1000

IMPACT ANALYSIS DEPT. 532C
 JAN 2, 1995

DATA SET 12/31/94BA
 ERRATA 1



VC05339 30 MPH REAR BARRIER. ZJJ74. S.2L MPI. ITEM ZJ8758
1996 MVSS VALIDATION - 301.
CHANNEL 01: RT REAR RAIL MID TANK X 510105
FILTER TYPE: LB0AS-1111 RESPONSE CORRECTION. CLASS 1000 FILTER(1650)
IMPACT ANALYSIS DEPT. 5320 DATA SET 12/31/94BA
JAN 2, 1995 ERRATA 1

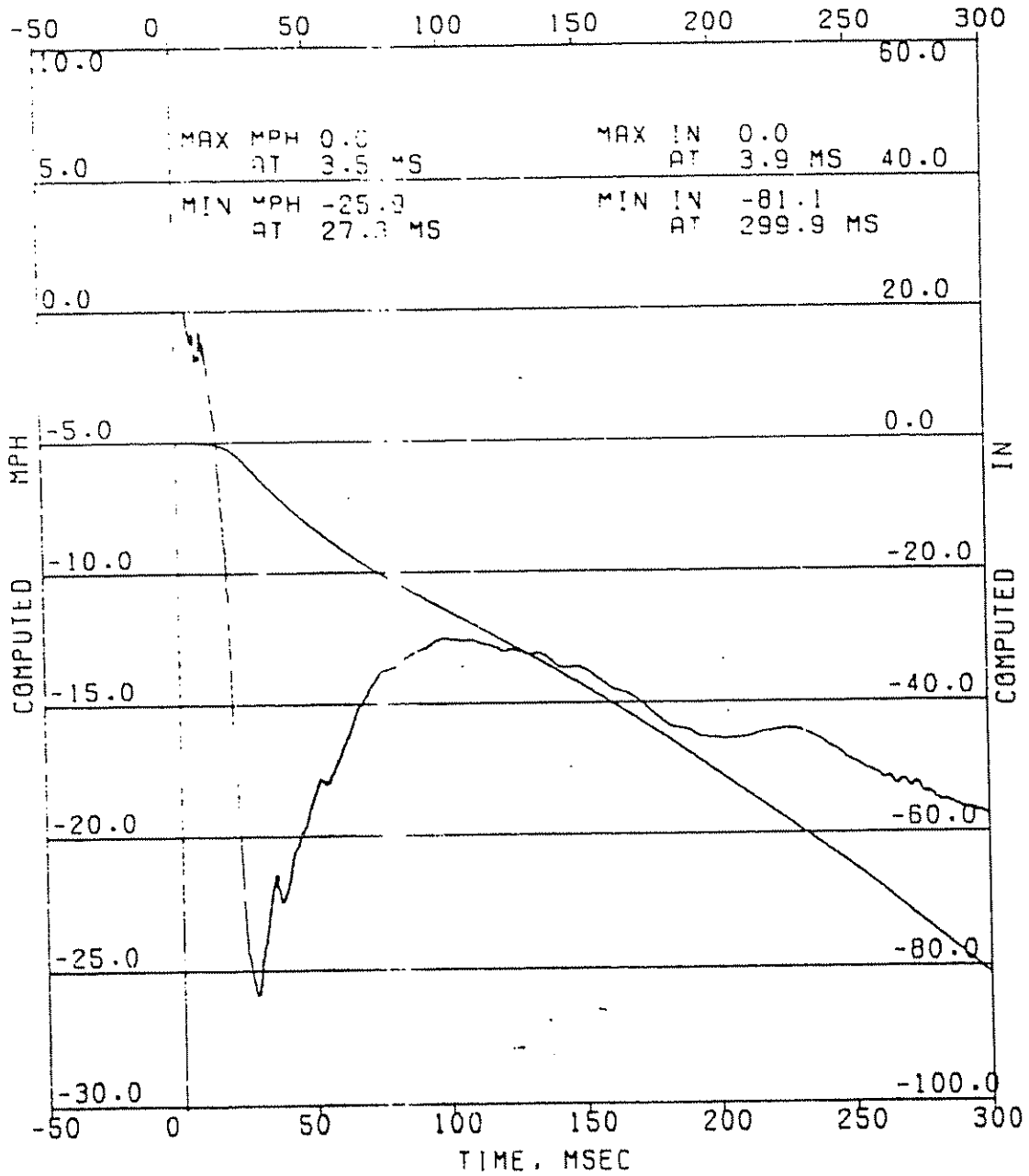


VC05339 30 MPH REAR BARRIER, ZJJ74, 5.2L MPI, ITEM ZJ8758
 1995 MVSS VALIDATION - 301.
 CHANNEL 011 R1 REAR RAIL MID TANK X SIC105

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

IMPACT ANALYSIS DEPT. 5320
 JAN 2, 1995

DATA SET 12/31/94BA
 ERRATA 1



VC05339 30 MPH REAR BARRIER. ZJJ74. 5.2L MPI. ITEM ZJ8758

1996 MVSS VALIDATION - 301.

CHANNEL 012 RT REAR RAIL MID TANK Z 311292

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

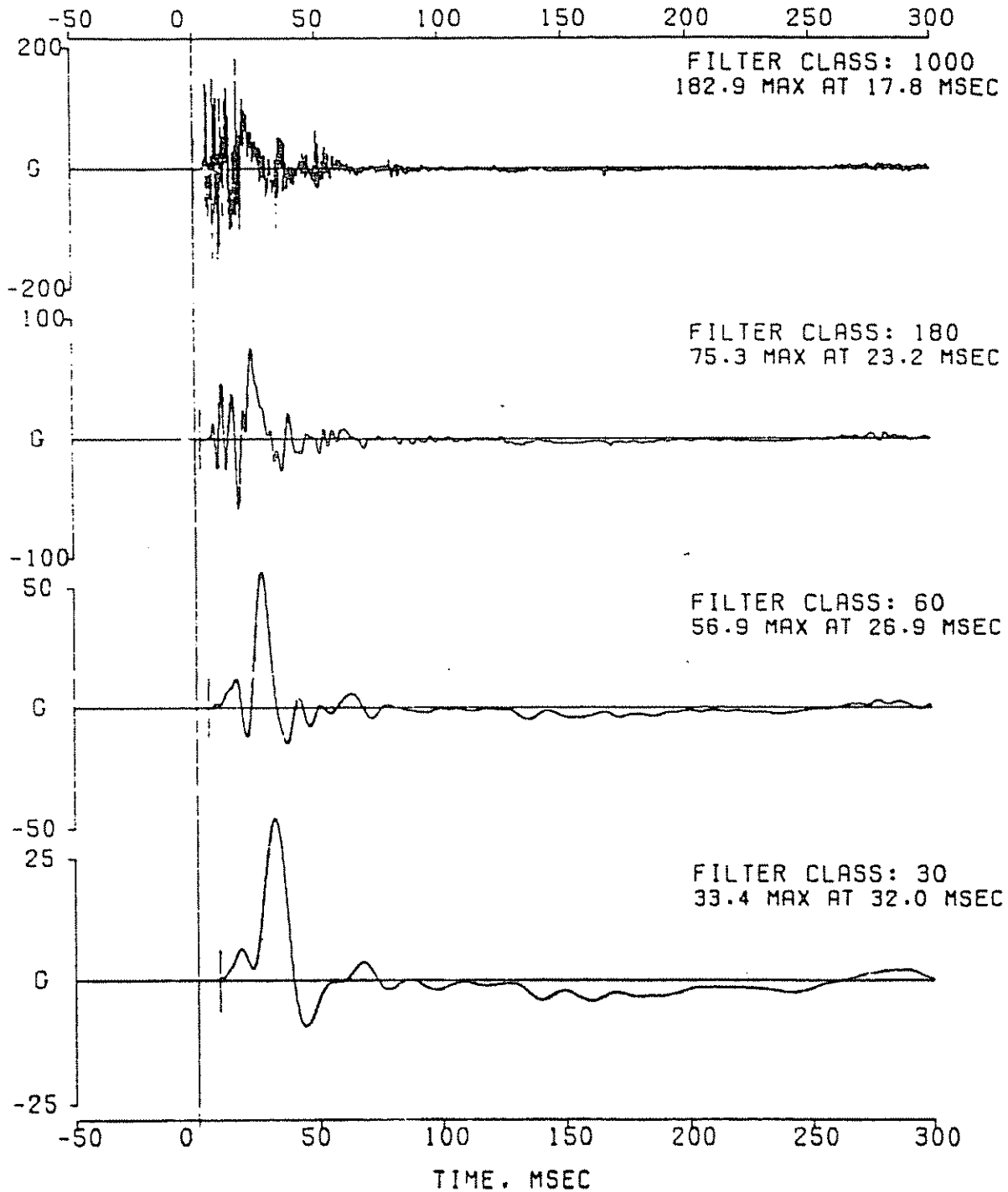
IMPACT ANALYSIS DEPT. 5320

DATA SET 12/31/94BA

JAN 2, 1995

ERRATA

1



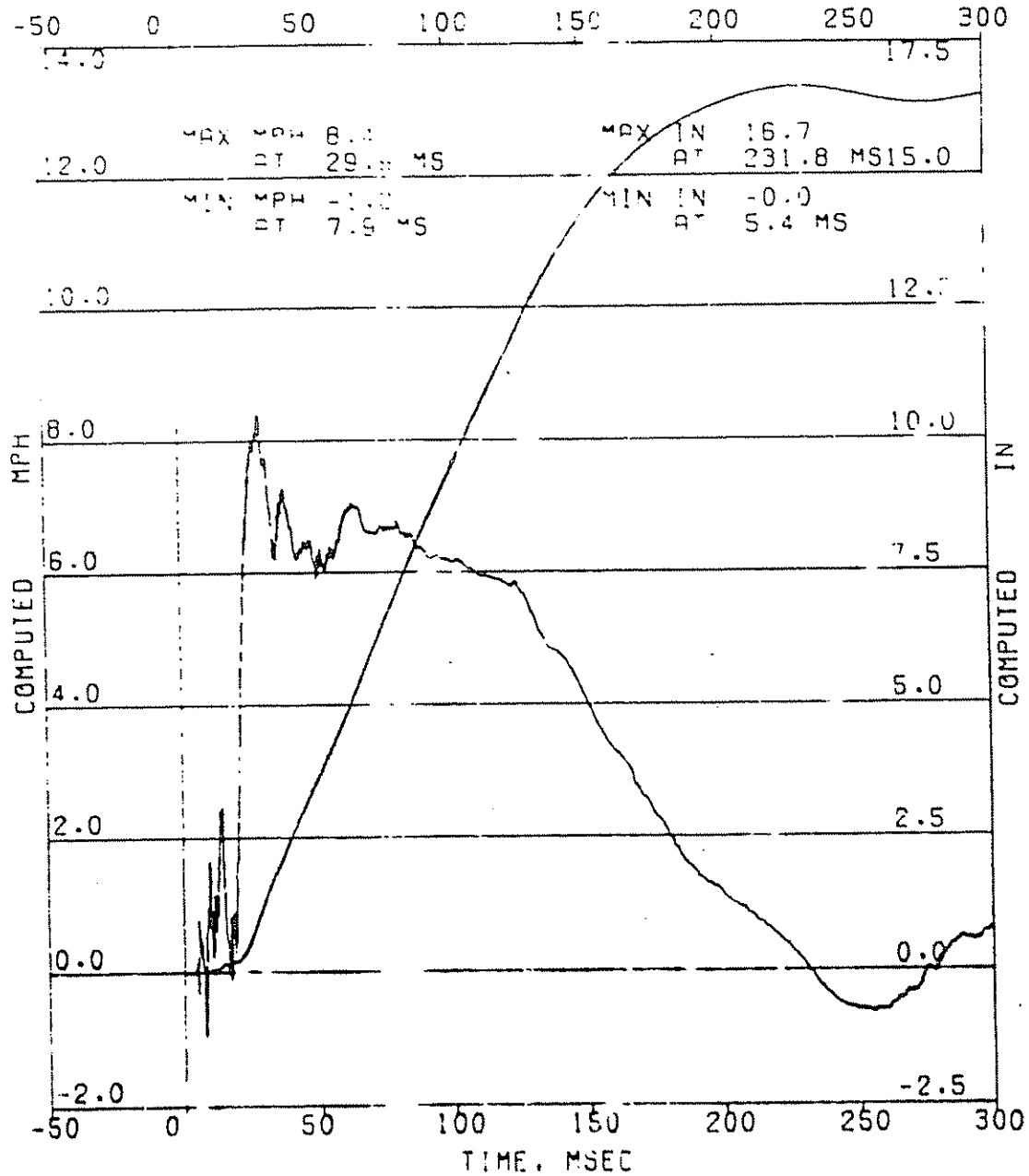
DC 04035

VC05339 30 MPH REAR BARRIER, ZJ874, 5.2L M... ITEM ZJ8758
 1996 MVSS VALIDATION - 301
 CHANNEL 012 AT REAR RAIL MID TANK Z 31092

FILTER TYPE: 380AS-III RESPONSE CORRECTION, LOSS 1000 FILTER(1650)
 FILTER CLASS: 1000

IMPACT ANALYSIS DEPT. 532
 JAN 2, 1995

DATA SET 12/31/94B4
 ERRATA 1



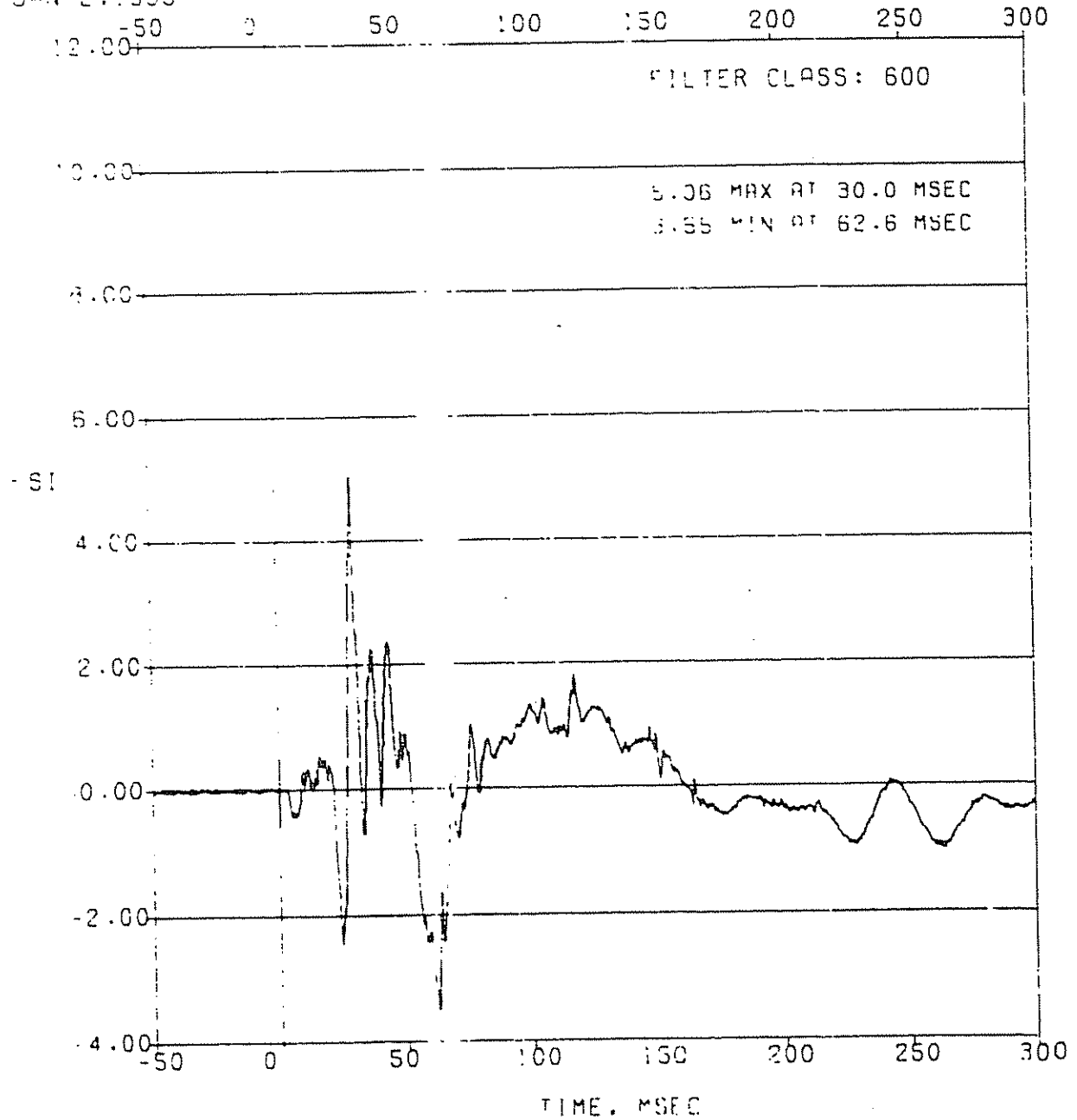
COMPUTED MPH

DC 04036

W005330 30 MP REAR BARRIER, ZJJ74, 5.2L MPI, ITEM ZJ8758
1996 MVSS VALIDATION - 301

CHANNEL 013 FUEL RET LINE PRESS 39984 °

FILTER TYPE: ISOAS III RESPONSE CORRECTION, CLASS 600 FILTER(1000)
IMPACT ANALYSIS DEPT. 5370 DATA SET 12/31/94BA
JAN 2, 1995 ERRATA 1



DC 04037

VC05339 30 MPH REAR BARRIER, ZJJ74, 5.22 MPI, ITEM ZJ8758

1996 MVSS VALIDATION - 301

CHANNEL 014 LT RAIL MBAR MID X 277234

FILTER TYPE: 39DAS-III RESPONSE CORRECTION, CLASS 1000 FILTER(1650)

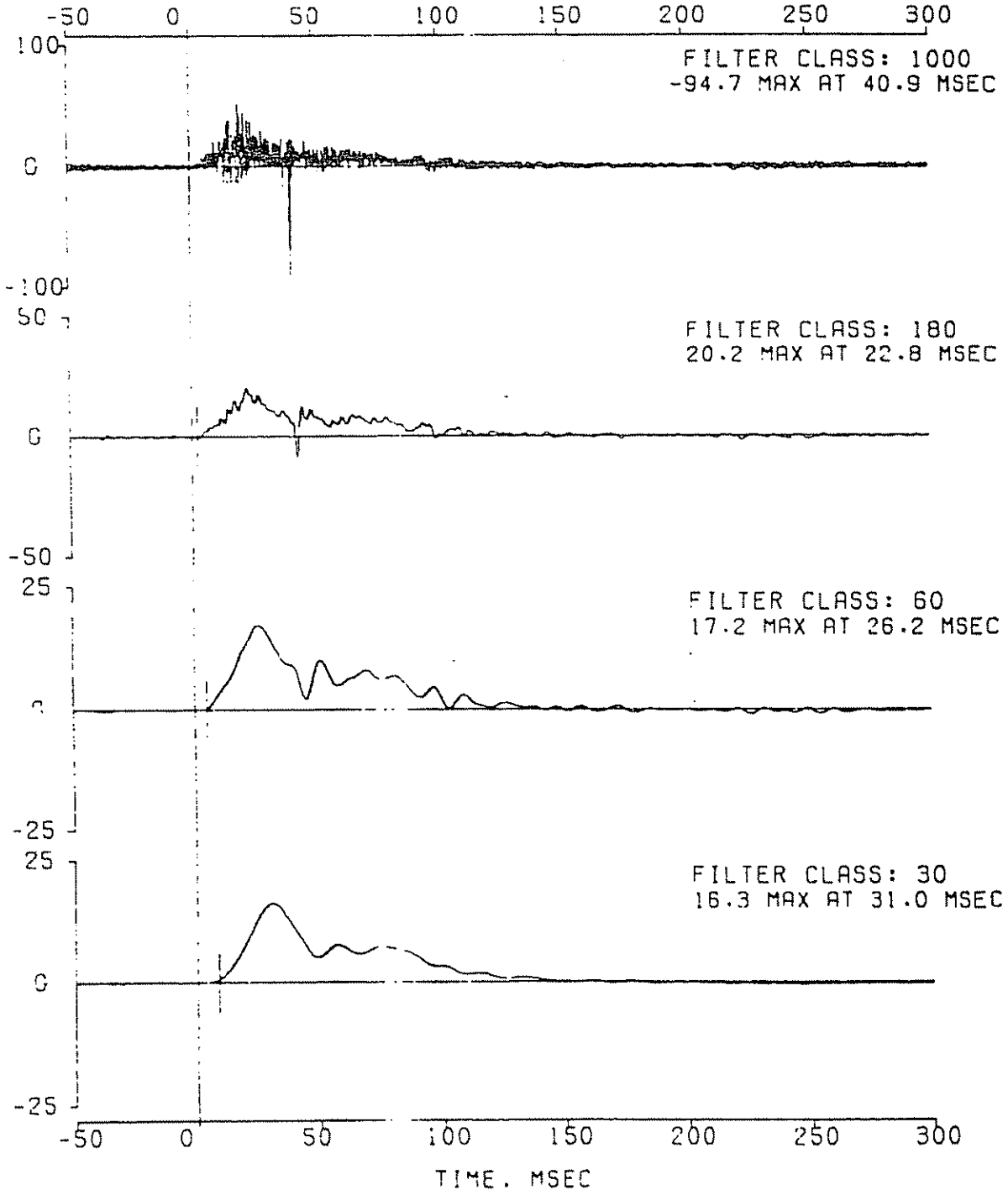
IMPACT ANALYSIS DEPT. 5320

DATA SET 12/31/948A

JAN 2, 1995

ERRATA

1



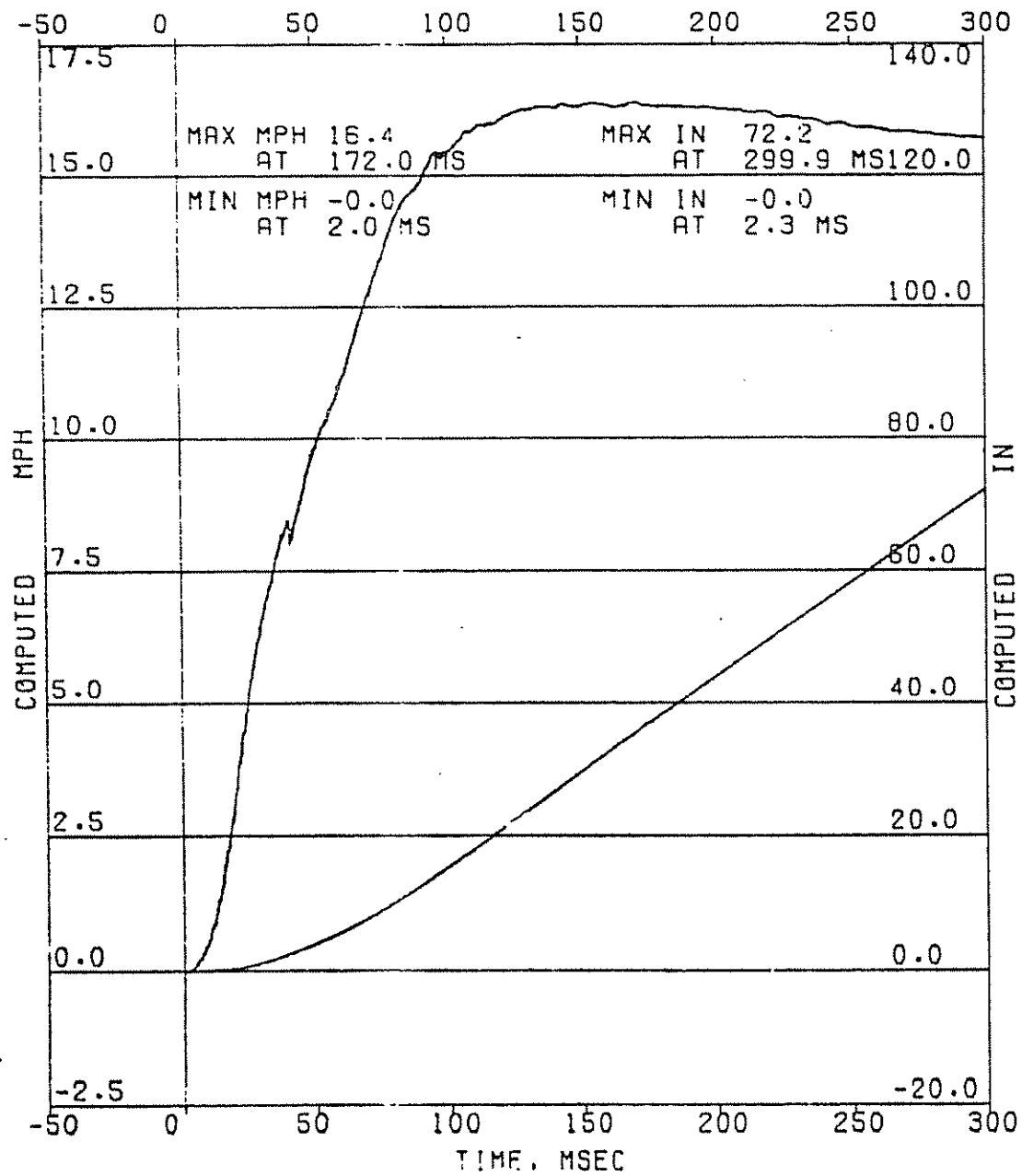
DC 04038

VC05339 30 MPH REAR BARRIER, ZJJ74, 5.2L MPI. ITEM ZJ8758
 1996 MVSS VALIDATION - 30!
 CHANNEL 014 LT RAIL MBAR MID X 277234

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

IMPACT ANALYSIS DEPT. 5320
 JAN 2, 1995

DATA SET 12/31/948A
 ERRATA 1



DC 04039

COMPUTED MPH

VC05339 30 MPH REAR BARRIER, ZJJ74, 5.2L MPI, ITEM ZJ8758

1996 MVSS VALIDATION - 301.

CHANNEL 015 RT RAIL MBAR MID X 311287

FILTER TYPE: 390AS-III RESPONSE CORRECTION, CLASS 1000 FILTER(1650)

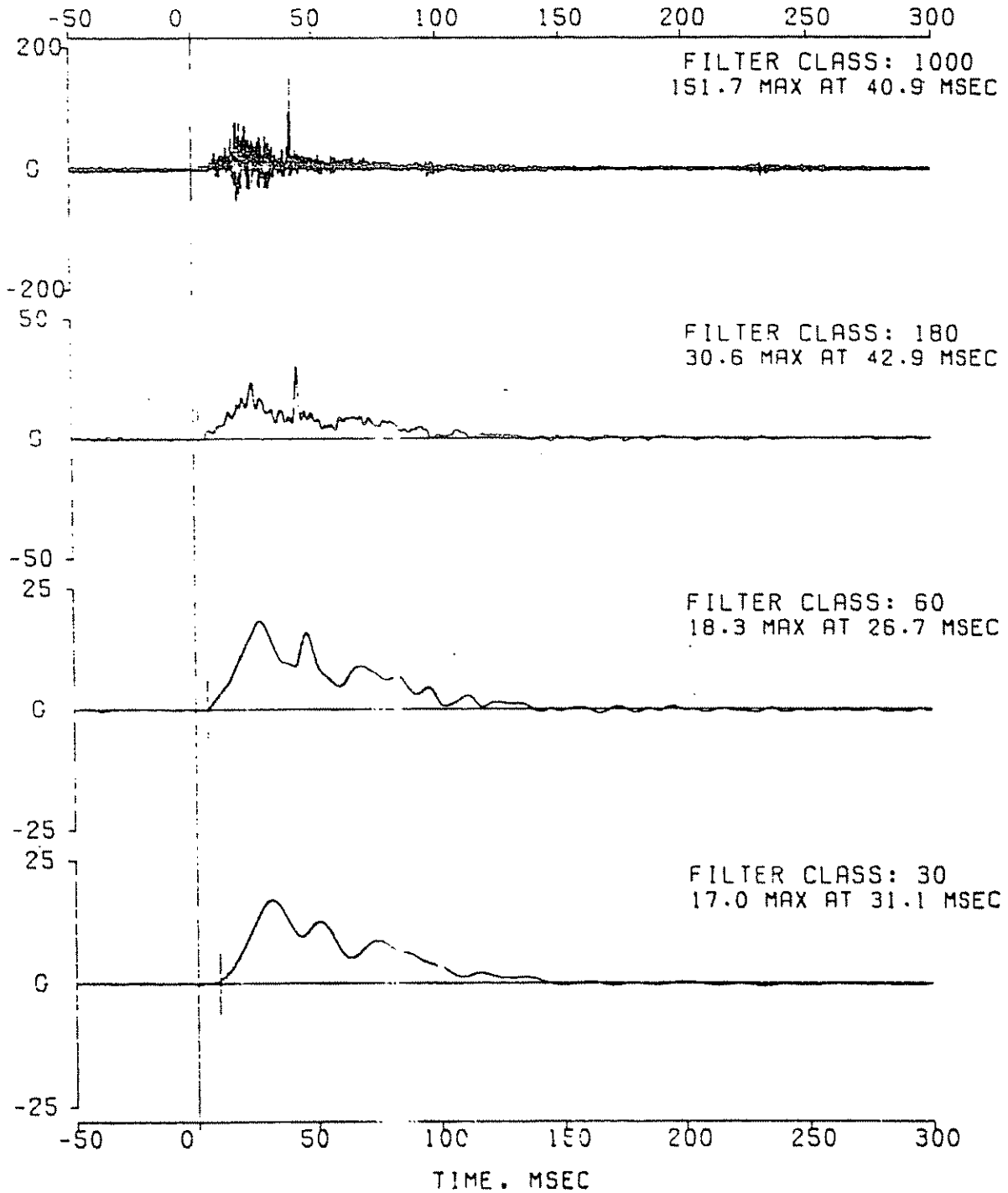
IMPACT ANALYSIS DEPT. 5320

DATA SET 12/31/94BA

JAN 2, 1995

ERRATA

!



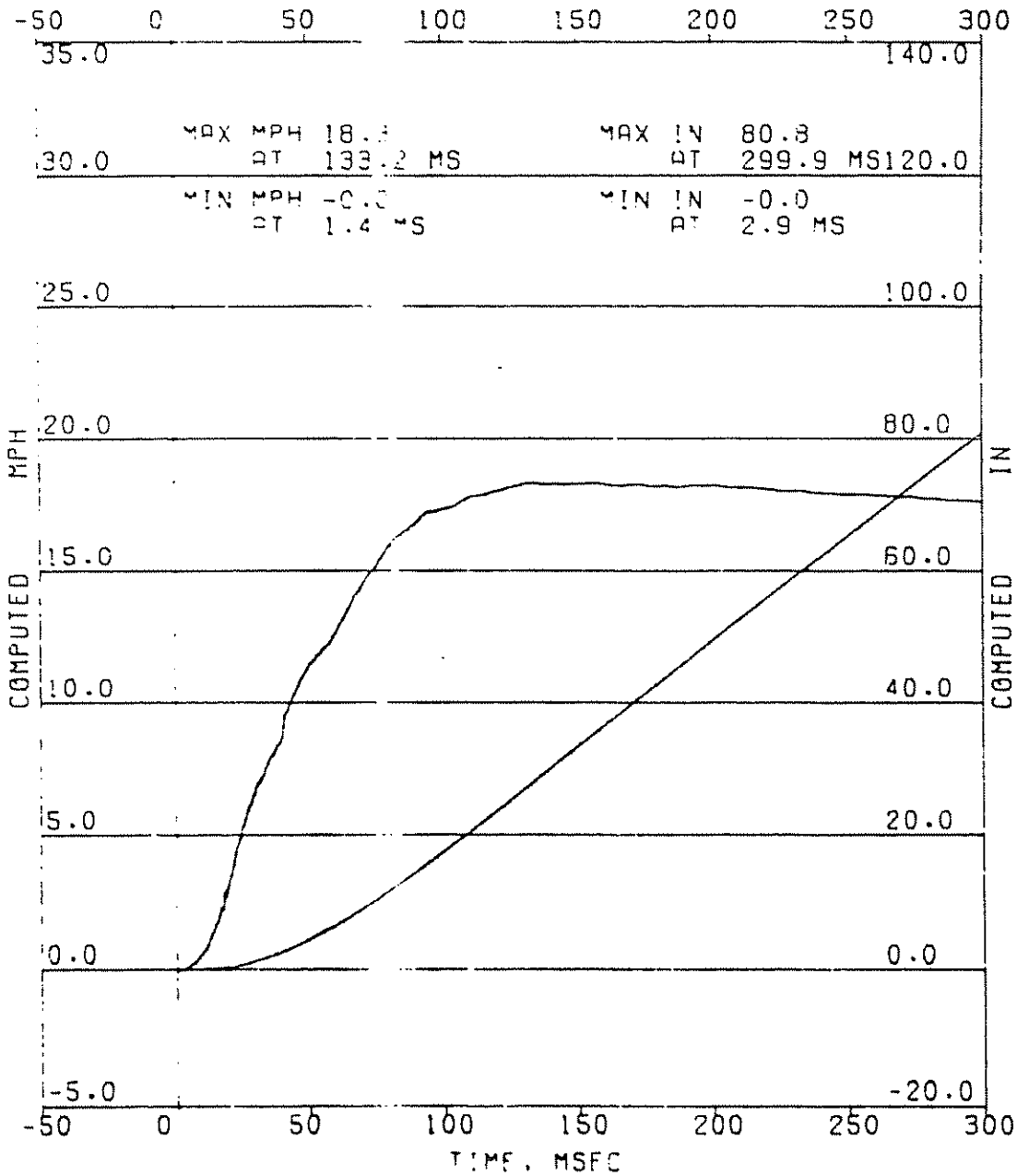
DC 04040

VC05339 30 MPH REAR BARRIER, ZJ074, 5.2L MPI, ITEM ZJ8758
 1996 MVSS VALIDATION - 301.
 CHANNEL 016 RT RAIL MBR MID X 311287

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

IMPACT ANALYSIS DEPT. 530
 JAN 2, 1995

DATA SET 12/31/94BA
 ERRATA 1



COMPUTED MPH

DC 04041

INTER COMPANY CORRESPONDENCE

FILE OCR123194

DATE 01/18/95

TO
DISTRIBUTION

FROM
B. D. CARLISLE

DEPARTMENT
5320

PLANT/OFFICE
CTC

CIMS NUMBER
481-02-18

SUBJECT:

REAR DYNAMIC CRUSH ANALYSIS
VC05339 30 MPH REAR BARRIER. ZJJ74. 5.2L MPI ITEM ZJ8758
1996 MVSS VALIDATION - 301.
TEST DATE 12/31/94

TEST PURPOSE

PRIMARY. 1996 USA 301 VALIDATION.
OBSERVE FUEL SYSTEM INTEGRITY.

IMPACT TYPE

TARGET SPEED: 30.2 MPH
DAMAGE LOCATION: REAR
BARRIER TYPE: REAR TYPE IV
BARRIER SURFACE: PLYWOOD
DIRECTION: 0 DEGREES

VEHICLE

BODY CLASS: ZJ
CAR LINE: J
BODY: 74
ENGINE: 5.2 LITRE
ENGINE NOTE: MPI
TRANSMISSION: 4 SPEED AUTO 4X4
TRANS. NOTE:
VIN AS TESTED: 1J4GZ78Y6RC169162 MOD.
VIN AS BUILT: 1J4GZ78Y6RC169162 MOD.

TEST SPEED

30.4 MPH - TRAP TIMER

TEST WEIGHT (LBS)

4805 TOTAL, 2717 FRONT, 2088 REAR

OCCUPANTS

LEFT FRONT, HYB II, BALLAST. AD-53
RESTRAINT-UNIBELT-ONLY.
RIGHT FRONT, HYB II, BALLAST. AD-63
RESTRAINT-UNIBELT-ONLY.

BUILD CONDITION

1994 PRODUCTION ZJ GRAND CHEROKEE, ZJ-8758.
5.2L V8 ENGINE, 4 SPEED AUTO TRANS, 4X4
POWER STEERING, A/C, ABS BRAKES, ROOF RACK,
BUCKET SEATS (LEATHER) ON ELECTRIC TRACKS, FULL
CONSOLE, DRIVER FOOT REST.
P235/75R15 TIRES ON ALUMINUM WHEELS & FULL SPARE.
ALUMINUM REAR AXLE.

TARGET WEIGHT (LBS)

4165 TOTAL, 2311 FRONT, 1852 REAR, REP MAX OPT WT.
NOT INCLUDING OCCUPANTS OR LUGGAGE BALLAST.

FUEL AND BALLAST

21.8 GALLONS OF STANDARD SOLVENT.

TEST VC05339

01/18/95 08.55

PAGE 1 OF 2

DC 04042

300 LBS OF LUGGAGE BALLAST INCLUDED IN THE
BALLAST DESCRIBED BELOW
200 POUNDS IN REAR SEAT FOOTWELL
50 POUNDS ON RIGHT REAR WHEELWELL
140 POUNDS IN REAR SEAT AREA

POST TEST REMARKS THERE WAS NO FUEL LEAKAGE FROM THE FUEL TANK
DURING IMPACT, POST IMPACT, DURING THE POST TEST
PRESSURE CHECK OR DURING THE POST TEST STATIC

THE FUEL TANK WAS CONTACTED BY THE REAR AXLE, THE
REAR SWAY BAR AND SWAY BAR BRACKET, AND BY THE
REAR EXHAUST SYSTEM.

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.

DYNAMIC CRUSH 22.2 +OR- 1 INCH AT 88. +OR- 5 MSEC.

L. G. PLATA

Bryan D. Carlisle

B. D. CARLISLE

GRAPHIC - 4

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
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
CW	CLOCKWISE
EFI	ELECTRONIC FUEL INJECTOR
ENG	ENGINE
ENGPY	ENGINE PITCH AND YAW
FESM	FRONT END SHEET METAL
FIDUCIAL	REFERENCE POINT OR TARGET
FS	FRONT SILL TARGET
FWD	FORWARD
IP	INSTRUMENT PANEL TARGET
LBS	POUNDS
LCP,LQP	LEFT C-POST & QUARTER PANEL TARGETS
LFS,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 END BELOW TRAILING
NOSE-UP	LEADING END ABOVE TRAILING
PERF	PERFORMANCE
REF	REFERENCE
REL	RELATIVE TO (ONE-DIMENSIONAL)
RCP,RQP	RIGHT C-POST & QUARTER PANEL TARGETS
RFS,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
01/18/95 08.55
TEST VC05339

DC 04044

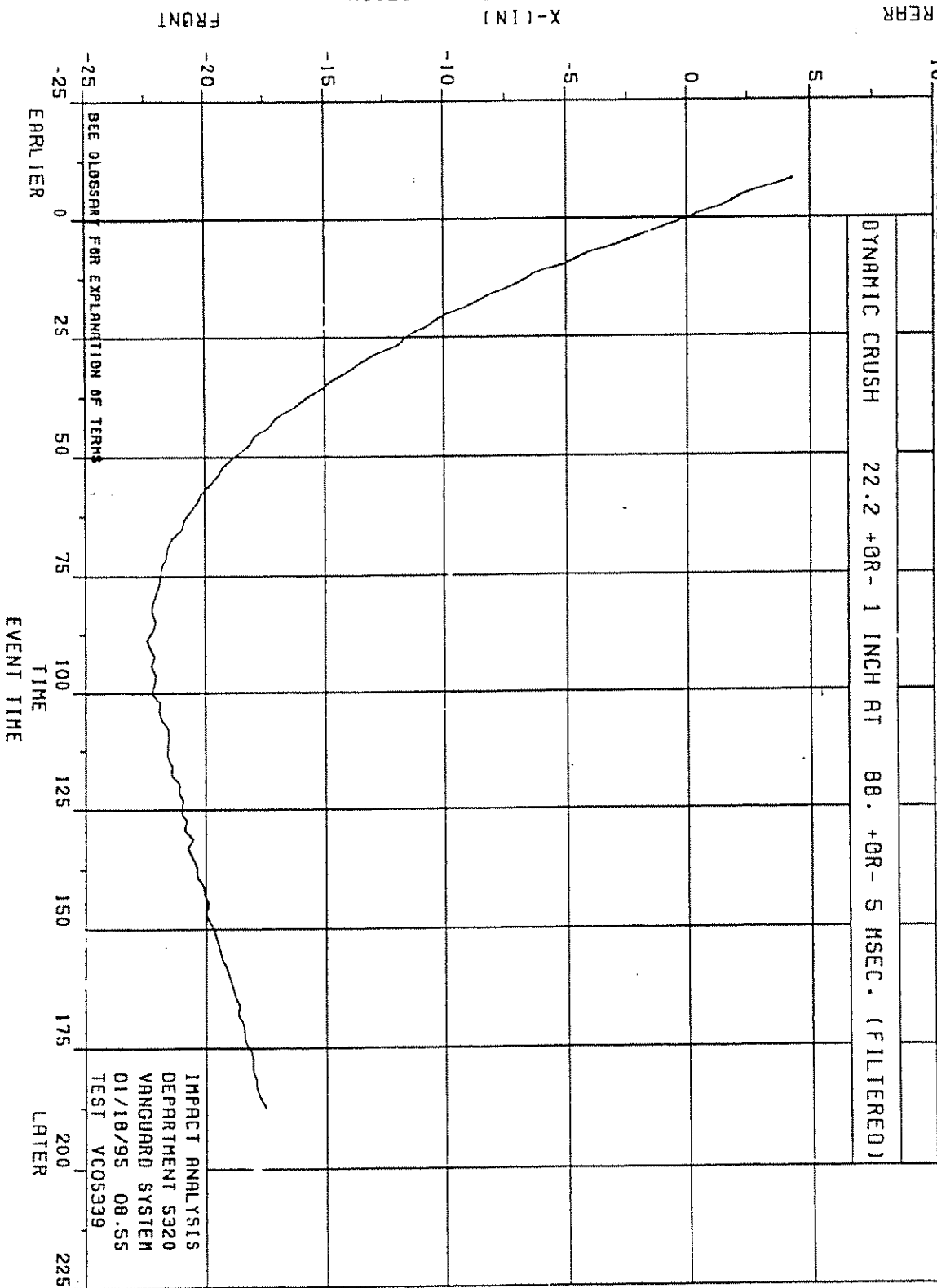
VC05339 30 MPH REAR BARRIER, ZJJ74, S-2L MPI ITEM ZJ8758
 1996 MVSS VALIDATION - 301.

ZERØED X MOTION OF F3 REL TO FS IN BASE COORD SYS
 VERSUS TIME IN MILLISECONDS

LEFT SIDE DYNAMIC CRUSH AND REAR WHEEL MOTION ANALYSIS

REAR

DYNAMIC CRUSH 22.2 +ØR- 1 INCH AT 88. +ØR- 5 MSEC. (FILTERED)



X-LIN
 ZEROED LONGITUDINAL MOTION

FRONT

BEE CLOSURE FOR EXPLANATION OF TERMS

IMPACT ANALYSIS
 DEPARTMENT 5320
 VANGUARD SYSTEM
 01/18/95 08.55
 TEST VC05339

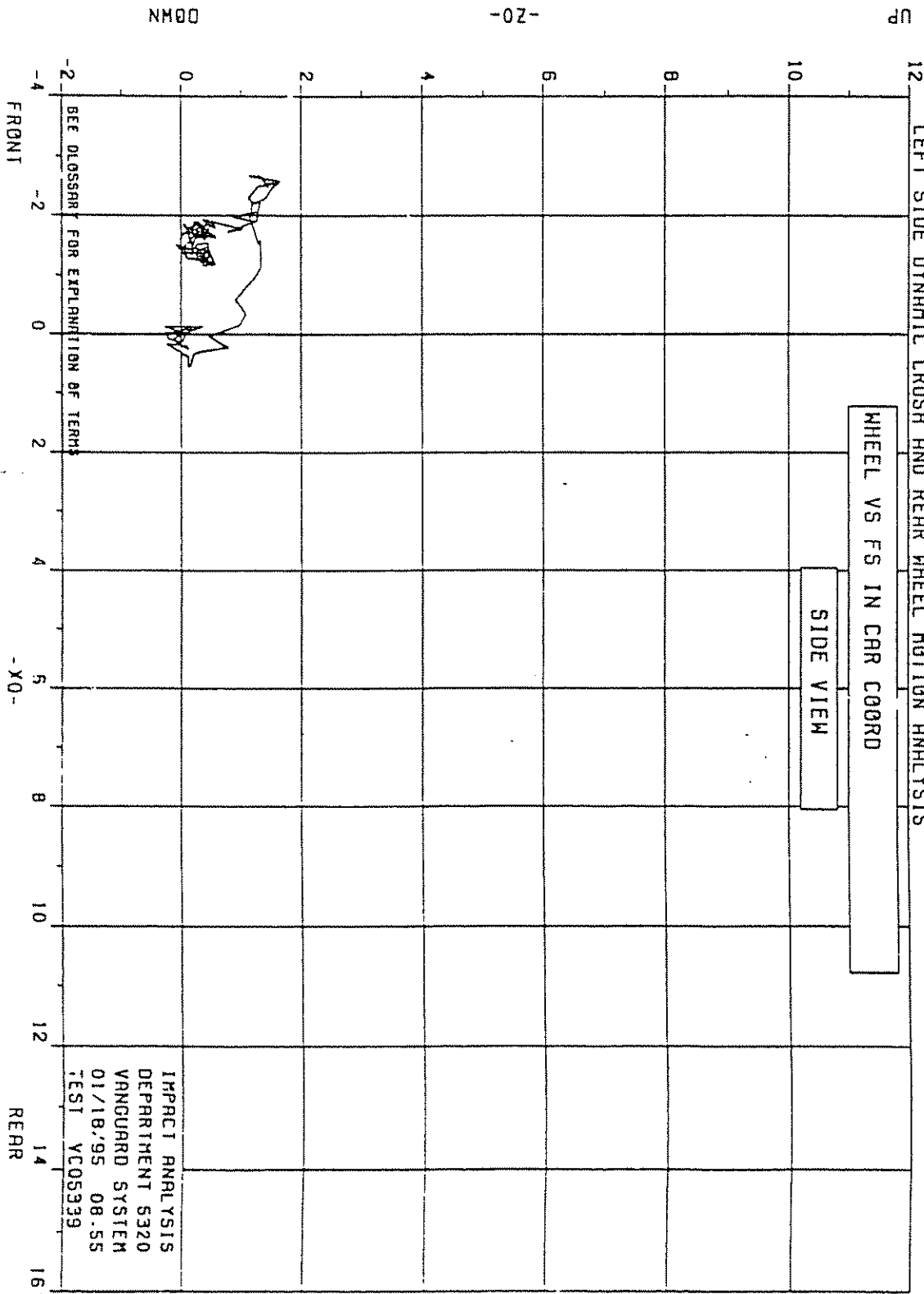
FIGURE 1

VC05339 30 MPH REAR BARRIER, ZJ74, 5.2L MPI ITEM ZJ8758
 1996 MVSS VALIDATION - 301.

ZERGED Z OF WHEEL RELATIVE TO FS IN CAR COORD
 VERSUS ZERGED X OF WHEEL RELATIVE TO FS IN CAR COORD
 LEFT SIDE DYNAMIC CRUSH AND REAR WHEEL MOTION ANALYSIS

WHEEL VS FS IN CAR COORD

SIDE VIEW



ZERGED VERTICAL MOTION (IN), NO FILTER

BEZ DROSSAR FOR EXPLANATION OF TERMS

ZERGED LONGITUDINAL MOTION (IN), NO FILTER

IMPACT ANALYSIS
 DEPARTMENT 5320
 VANGUARD SYSTEM
 01/18/95 08.55
 TEST VC05339

FIGURE 2

VC05339 30 MPH REAR BARRIER, ZJJ74, 5.2L MPI ITC, J08758
 1998 NVSS VALIDATION - 301.

ZERGED PITCH OF MS T0 FS IN BRSE COORD SYSTEM
 VERSUS TIME IN MILLISECOND

LEFT SIDE DYNAMIC CRUSH AND REAR WHEEL MOTION ANALYSIS

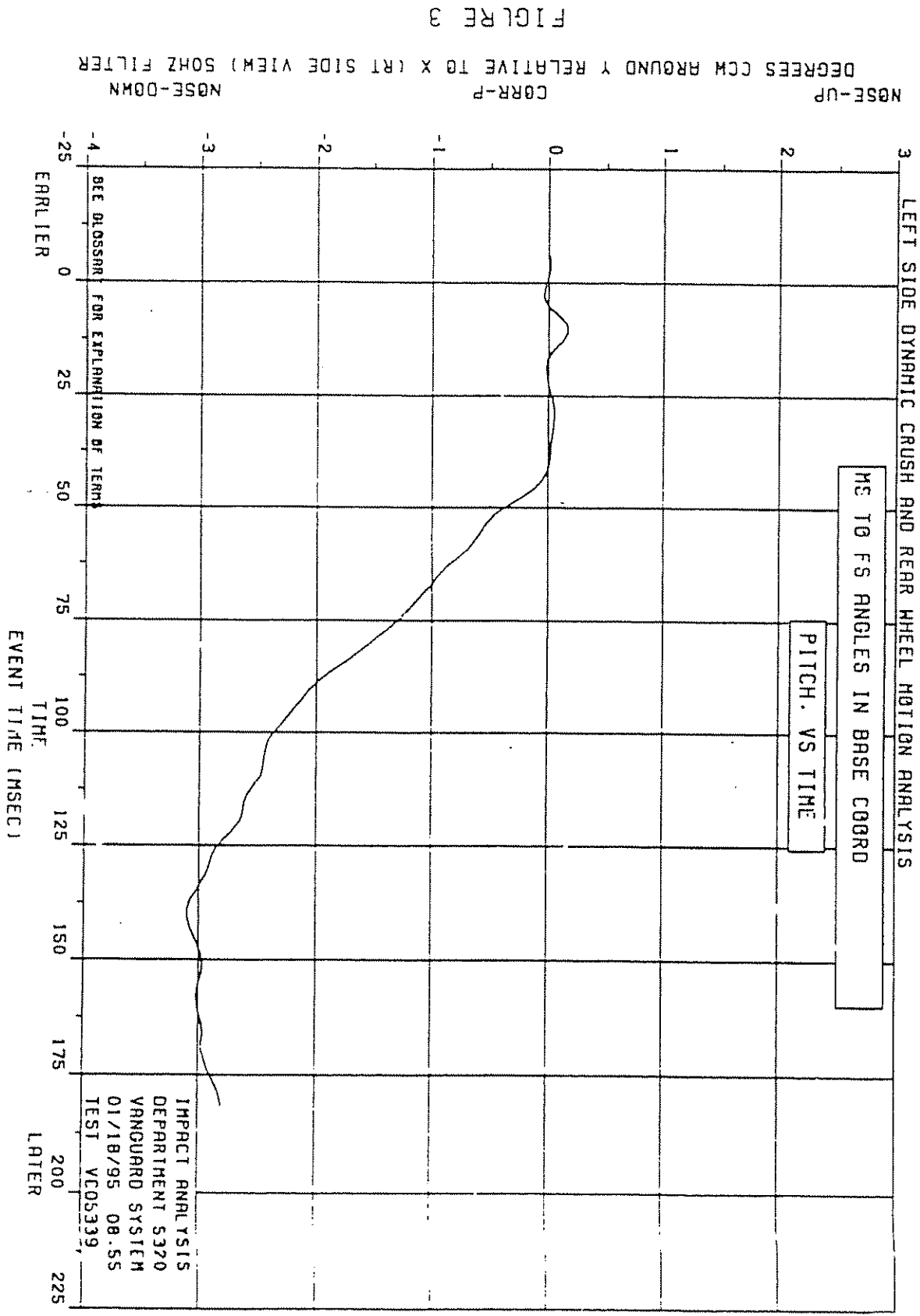


FIGURE 3

DEGREES CCW AROUND Y RELATIVE TO X (RT SIDE VIEW) 50HZ FILTER

VC05339 30 MPH REAR BARRIER, ZJJ74, S.2L MPI ITEM ZJ0758
 1996 MVSS VALIDATION - 301.

MS 10 FS DISTANCE -29.94 INCHES (INITIAL DIST) (IN)
 VERSUS TIME IN MILLISECONDS

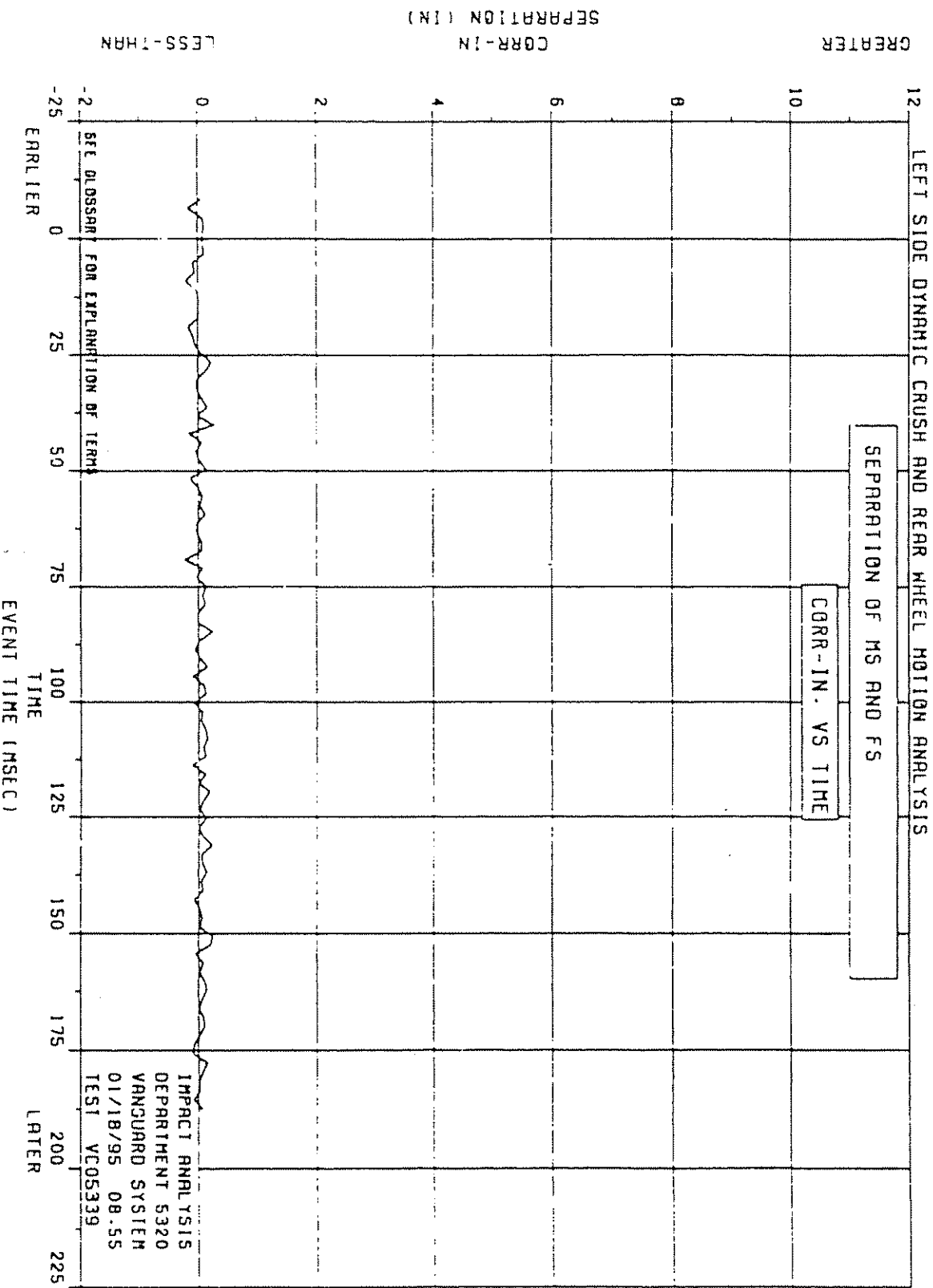
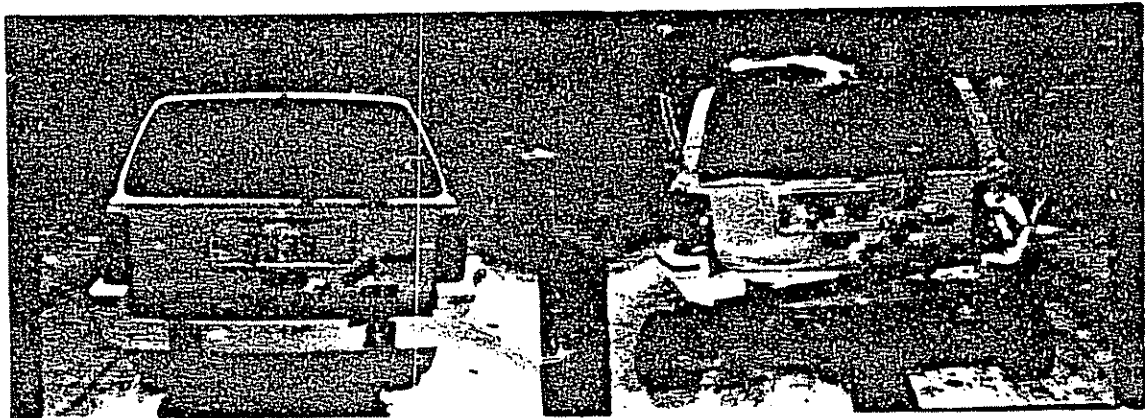
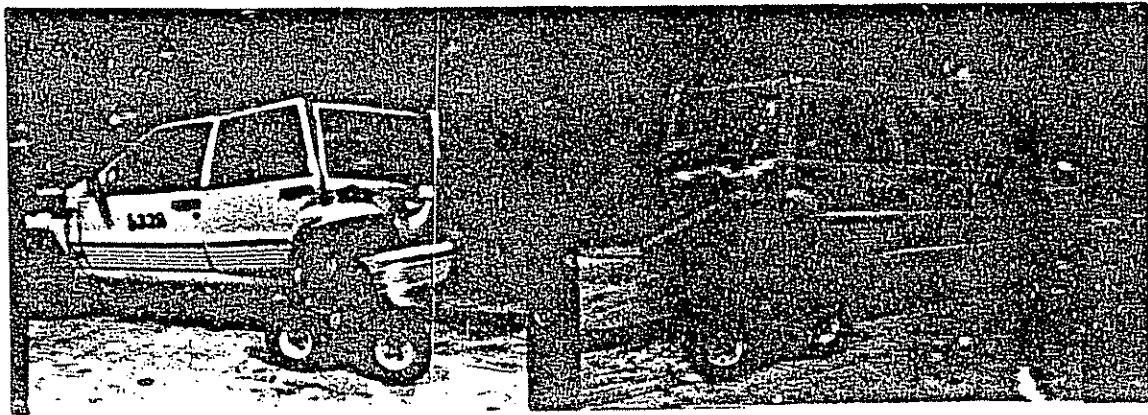
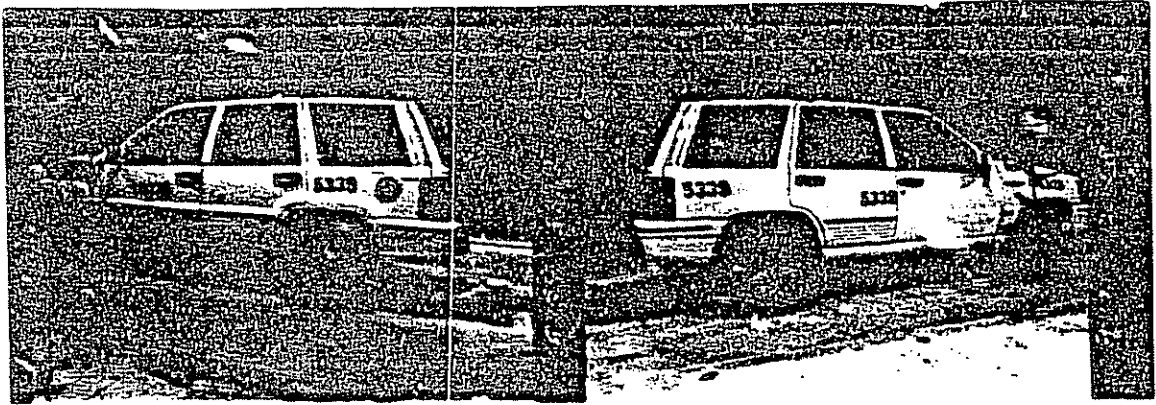
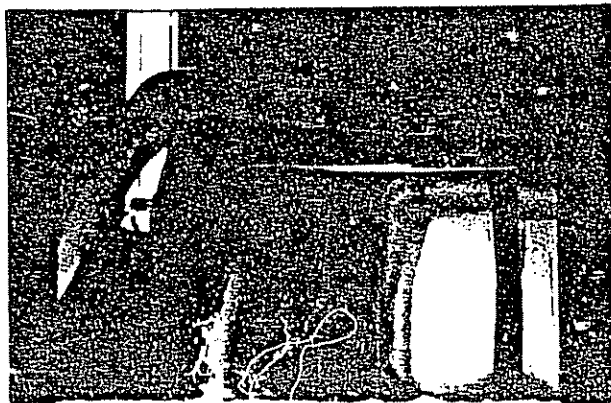
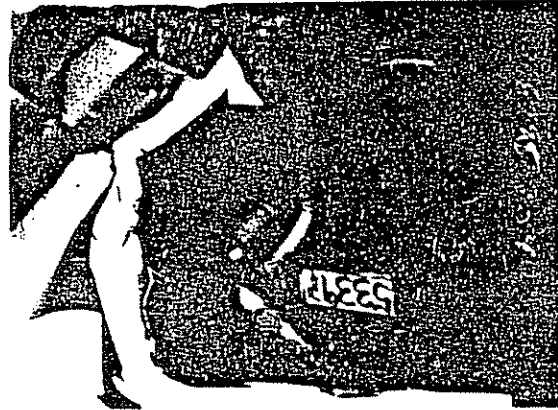
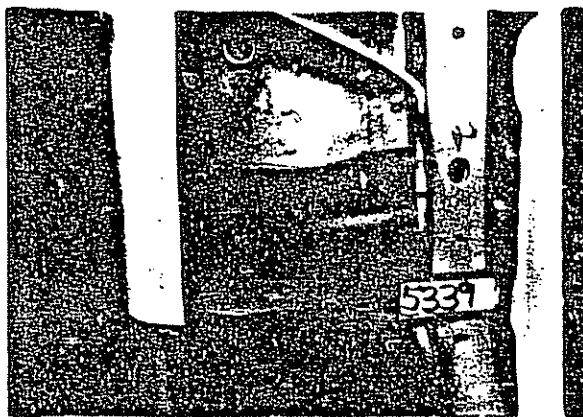
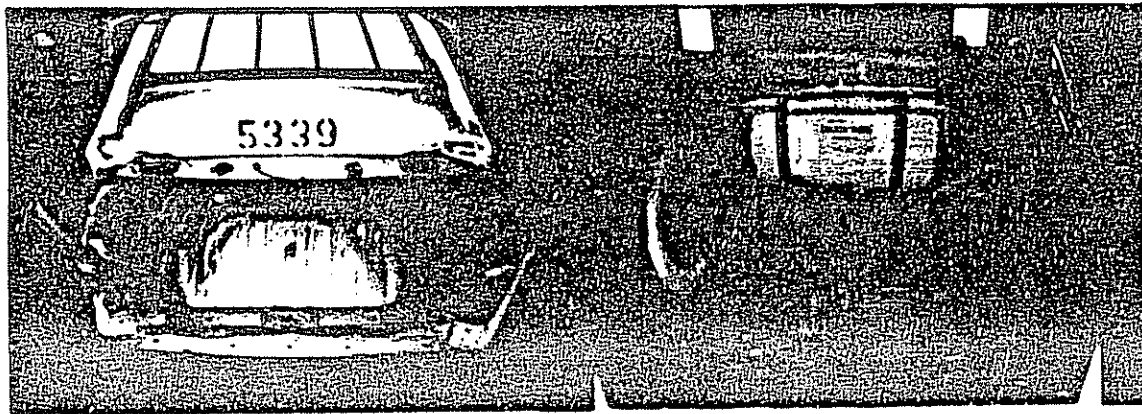
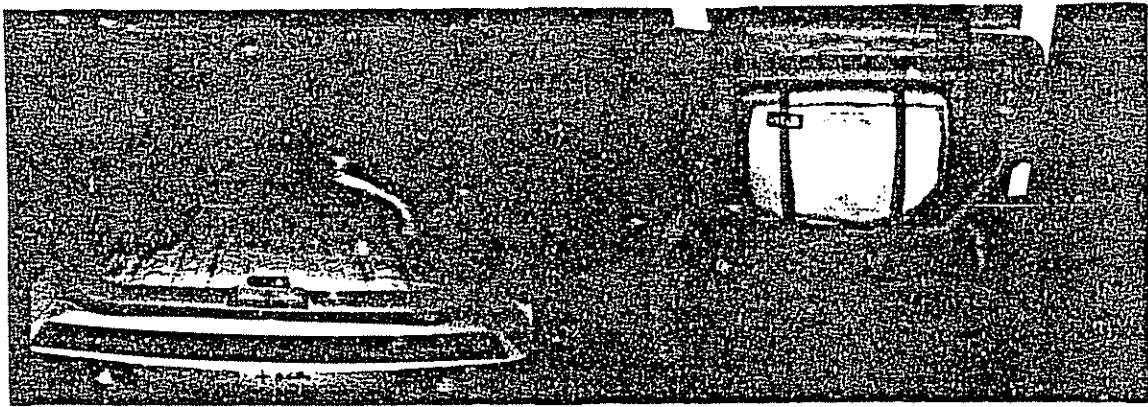


FIGURE 4





DC 04050