



U.S. Department
of Transportation
**National Highway
Traffic Safety
Administration**

DOT HS 807 771
Final Report

September 1990

Final Report of 339° Contoured Moving Barrier Impact Into a 1985 Ford Escort 3-Door Hatchback in Support of Crash III Damage Algorithm Reformation

The United States Government does not endorse products or manufactures. Trade or manufacturer's names appear only because they are considered essential to the object of this report.

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15. Supplementary Notes																														
16. Abstract Four 270° contoured moving barrier impact tests were conducted for research and development in support of the crash III damage algorithm reformulation. These tests were conducted on a 1985 Ford Escort 3-door hatchback, VIN 1FABP3293FW300080, at the Transportation Research Center of Ohio. The following four tests were conducted on one vehicle:																														
<table border="1"> <thead> <tr> <th>TEST NO.</th> <th>DATE</th> <th>TIME</th> <th>SPEED (mph)</th> <th>MAXIMUM CUMULATIVE CRUSH</th> </tr> </thead> <tbody> <tr> <td>900830-1</td> <td>8/30/90</td> <td>1103</td> <td>14.2</td> <td>6.7</td> </tr> <tr> <td>900830-2</td> <td>8/30/90</td> <td>1256</td> <td>28.1</td> <td>17.9</td> </tr> <tr> <td>900830-3</td> <td>8/30/90</td> <td>1419</td> <td>28.3</td> <td>NA</td> </tr> <tr> <td>900830-4</td> <td>8/30/90</td> <td>1535</td> <td>39.8</td> <td>NA</td> </tr> </tbody> </table>						TEST NO.	DATE	TIME	SPEED (mph)	MAXIMUM CUMULATIVE CRUSH	900830-1	8/30/90	1103	14.2	6.7	900830-2	8/30/90	1256	28.1	17.9	900830-3	8/30/90	1419	28.3	NA	900830-4	8/30/90	1535	39.8	NA
TEST NO.	DATE	TIME	SPEED (mph)	MAXIMUM CUMULATIVE CRUSH																										
900830-1	8/30/90	1103	14.2	6.7																										
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900830-3	8/30/90	1419	28.3	NA																										
900830-4	8/30/90	1535	39.8	NA																										
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SECTION 1.0
PURPOSE AND TEST SUMMARY

The purpose of the four 339° contoured moving barrier impact tests was research and development in support of the CRASH III damage algorithm reformulation.

The 1985 Ford Escort was equipped with a 1.9 liter, 4-cylinder, transverse, gasoline engine with a 3-speed automatic transmission. The intended total test weight of the vehicle was 2723 pounds. The actual weight was 2715 pounds.

The contoured moving barrier actual weight was 2723 pounds, frontal width was 67.0 inches, barrier height was 31.5 inches, bumper width was 6.0 inches and height of the bumper centerline was 17.5 inches. The contoured moving barrier was intended to impact the left front corner of the vehicle at 339°. The direction of impact was parallel to a line from the left front corner of the vehicle (initial impact point) through the vehicle's center of gravity.

The impacted vehicle was instrumented with four accelerometers to measure vehicle X-axis and Y-axis acceleration and two accelerometers to measure acceleration perpendicular and parallel to the direction of impact.

The moving barrier was instrumented with two accelerometers to measure X-axis and Y-axis acceleration.

The crash test event was recorded by two (2) high speed motion picture cameras.

SECTION 2.0

VEHICLE INFORMATION

TEST VEHICLE INFORMATION

VEHICLE MANUFACTURER: Ford Motor Company

MAKE/MODEL: Ford Escort

VIN: 1FABP3293FW300080

BODY STYLE: 3-door hatchback

MODEL YEAR: 1985

NHTSA NO.: NA

COLOR: Charcoal gray

ENGINE DATA: TYPE: transverse CYLINDERS: 4 DISPLACEMENT: 1.9 liter

TRANSMISSION DATA: 3 SPEED, MANUAL, X AUTOMATIC, X FWD, RWD, 4WD

DATE VEHICLE RECEIVED: 8/13/90

ODOMETER READING: 41,808

DEALER'S NAME AND ADDRESS: NA

ACCESSORIES:

POWER STEERING	Yes	AUTOMATIC TRANSMISSION	Yes
POWER BRAKES	Yes	AUTOMATIC SPEED CONTROL	No
POWER SEATS	No	TILTING STEERING WHEEL	No
POWER WINDOWS	No	TELESCOPING STEERING WHEEL	No
TINTED GLASS	Yes	AIR CONDITIONING	No
RADIO	No	ANTI-SKID BRAKE	No
CLOCK	No	REAR WINDOW DEFROSTER	No
OTHER	None		

REMARKS:

1. IS THE VEHICLE STOCK THROUGHOUT? Yes
2. DOES VEHICLE SHOW EVIDENCE OF PRIOR ACCIDENT HISTORY? No
3. DOES VEHICLE SHOW ANY SIGNIFICANT CORROSION? No
4. CONDITION OF THE FRONT/REAR BUMPER AND FRAME: Good

CERTIFICATION DATA FROM VEHICLE'S LABEL:

VEHICLE MANUFACTURED BY: Ford Motor Company

DATE OF MANUFACTURE: 5/85 VIN: 1FABP3293FW300080

GVWR: 3130 LBS

GAWR: FRONT: 1803 LBS., REAR: 1476 LBS.

TEST VEHICLE INFORMATION CONT'D

TIRES ON VEHICLE (MFR., LINE, SIZE): Triumph P185/80R13

TIRE PRESSURE WITH MAXIMUM CAPACITY VEHICLE LOAD: FRONT: 35 PSI
REAR: 35 PSI

SPARE TIRE (MFR., LINE, SIZE): NA

TYPE OF SEATS: FRONT: Buckets
REAR: Bench

TYPE OF FRONT SEAT BACKS: Manually adjustable

MAXIMUM WIDTH: 66.2 INCHES

WHEELBASE: 94.1 INCHES

LOCATION OF LABEL STATING TIRE & CAPACITY DATA: Passenger door frame

TIRE & CAPACITY DATA FROM VEHICLE'S LABEL:

RECOMMENDED TIRE SIZE: P165/80R13

RECOMMENDED COLD TIRE PRESSURE: FRONT: 35 PSI; REAR: 35 PSI

DESIGNATED SEATING CAPACITY: 2 FRONT 2 REAR 4 TOTAL

VEHICLE CAPACITY WEIGHT: 650 LBS.

TEST VEHICLE ATTITUDE (ALL MEASUREMENTS ARE IN INCHES):

DELIVERED ATTITUDE: LF 26.8 ;RF 27.1 ;LR 26.6 ;RR 26.9

PRE-TEST ATTITUDE: LF 26.1 ;RF 26.3 ;LR 24.3 ;RR 24.9

TEST VEHICLE INFORMATION CONT'D

WEIGHT OF TEST VEHICLE AS RECEIVED (WITHOUT MAXIMUM FLUIDS):

RIGHT FRONT	732 LBS.	RIGHT REAR	391 LBS.
LEFT FRONT	770 LBS.	LEFT REAR	393 LBS.
TOTAL FRONT WEIGHT	1502 LBS.	(65.7% OF TOTAL VEHICLE WEIGHT)	
TOTAL REAR WEIGHT	784 LBS.	(34.3% OF TOTAL VEHICLE WEIGHT)	
TOTAL DELIVERED WEIGHT 2286 LBS.			

TEST VEHICLE'S TARGET TEST WEIGHT: *

TARGET TEST WEIGHT = 2723 LBS

WEIGHT OF TEST VEHICLE:

RIGHT FRONT	759 LBS.	RIGHT REAR	597 LBS.
LEFT FRONT	786 LBS.	LEFT REAR	573 LBS.
TOTAL FRONT WEIGHT	1545 LBS.	(56.9% OF TOTAL VEHICLE WEIGHT)	
TOTAL REAR WEIGHT	1170 LBS.	(43.1% OF TOTAL VEHICLE WEIGHT)	
TOTAL TEST WEIGHT	2715 LBS.	(0.3% UNDER TARGET TEST WEIGHT)	

WEIGHT OF BALLAST SECURED IN VEHICLE: 450 LBS. (150 lbs. in trunk,
300 lbs. behind the front seats)

COMPONENTS REMOVED TO MEET TARGET TEST WEIGHT: None

CG = 40.6 INCHES REARWARD OF FRONT WHEEL CENTERLINE

*Target test weight was established as the weight of the unballasted moving barrier with the contoured barrier face.

VEHICLE FRONT CRUSH MEASUREMENTS AT VEHICLE BUMPER HEIGHT (17.5 INCHES)

LOCATION	0	1	2	3	4	5	6	7	8									
PRE-TEST	17.6	19.8	16.8	22.7	16.2	25.8	15.7	28.4	15.4	31.8	15.1	34.8	14.9	37.8	14.6	40.8	14.1	43.4
POST-TEST 1	23.5	21.9	22.5	24.0	21.6	27.1	20.9	30.0	19.9	32.8	19.1	35.5	18.4	38.4	17.6	41.1	16.9	44.1
POST-TEST 2*	36.4	26.0	34.5	28.5	33.3	31.0	32.2	34.0	30.9	36.8	29.9	39.9	28.8	42.6	27.6	45.4	27.0	47.4
POST-TEST 2	34.1	25.0	32.5	27.5	31.1	30.5	29.9	33.4	28.6	36.2	27.4	39.1	26.5	41.8	25.6	43.9	24.2	46.4
POST-TEST 3*	40.9	27.0	40.1	29.8	40.0	32.2	39.4	35.1	38.5	37.8	37.0	40.8	35.8	43.5	34.5	46.4	33.0	48.4
POST-TEST 4*	NA	NA	NA	NA	NA	NA	46.2	39.8	44.9	42.6	43.6	46.0	42.3	48.6	40.9	51.2	39.6	53.4

LOCATION	9	10	11	12	13	14	15	16	17									
PRE-TEST	14.1	46.8	14.1	49.8	14.1	52.8	14.5	55.8	14.8	58.8	14.9	61.8	15.2	64.8	15.6	67.8	16.1	70.4
POST-TEST 1	16.6	47.0	16.2	50.0	16.0	53.2	16.0	56.5	15.9	59.2	16.0	62.5	15.9	65.4	15.9	68.5	15.9	71.4
POST-TEST 2*	25.9	50.0	24.6	53.6	22.3	55.8	20.2	58.2	19.3	60.8	18.4	63.8	17.8	66.6	16.9	69.5	16.2	72.4
POST-TEST 2	23.1	49.0	22.2	52.1	20.7	54.8	19.2	57.8	18.2	60.5	17.2	63.4	16.8	66.2	16.1	69.1	15.9	72.1
POST-TEST 3*	31.9	51.0	30.9	52.1	28.2	54.8	24.5	56.4	22.4	57.9	20.8	62.6	19.6	65.2	18.0	67.8	17.0	70.4
POST-TEST 4*	38.2	56.0	37.1	58.9	33.9	59.2	30.2	59.6	28.1	60.6	25.6	63.0	23.5	64.7	21.1	66.5	19.0	68.1

LOCATION	18	19	20	21	22	23	24	25	26									
PRE-TEST	16.4	73.8	17.4	76.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
POST-TEST 1	16.1	74.3	16.6	77.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
POST-TEST 2*	15.5	74.9	15.8	77.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
POST-TEST 2	15.6	75.0	15.8	77.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
POST-TEST 3*	15.2	72.8	15.0	75.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
POST-TEST 4*	16.9	70.1	15.0	72.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

All measurements are in inches. Column readings are three inches apart from left to right on vehicle. All X-axis measurements taken from a reference plane 180 inches from and parallel to the rear bumper. All Y-axis measurements taken from a reference plane 48 inches from and parallel to the vehicle longitudinal centerline

VEHICLE LEFT SIDE CRUSH MEASUREMENTS AT MOVING BARRIER BUMPER HEIGHT (17.5 INCHES)

LOCATION	1	2	3	4	5	6	7	8	9										
PRE-TEST	20.6	19.2	23.6	18.9	26.6	18.5	29.6	18.4	32.6	17.9	35.6	17.5	NA	NA	NA	NA	NA	NA	NA
POST-TEST 1	25.6	20.2	26.5	21.1	28.1	19.4	31.0	18.6	33.6	17.5	36.4	16.8	NA	NA	NA	NA	NA	NA	NA
POST-TEST 2	NA	NA	NA	NA	36.1	24.5	37.2	22.1	38.7	19.3	39.3	16.3	NA	NA	39.8	14.6	42.8	14.6	14.6
POST-TEST 3	NA	NA	NA	NA	43.0	22.4	44.1	19.8	45.0	17.0	NA	NA	43.8	14.7	46.2	13.9	NA	NA	NA
POST-TEST 4	NA	NA	NA	NA	49.8	28.9	51.4	26.4	52.2	23.8	52.4	21.0	NA	52.8	19.2	54.0	19.3	NA	NA

LOCATION	10	11	12	13	14	15	16	17	18										
PRE-TEST	NA	NA	NA	NA	NA	NA	65.6	16.8	68.6	17.2	71.6	17.5	NA	NA	NA	NA	NA	NA	NA
POST-TEST 1	NA	NA	NA	NA	NA	NA	65.4	16.8	68.5	17.2	71.6	17.5	NA	NA	NA	NA	NA	NA	NA
POST-TEST 2	45.6	15.1	49.1	15.5	52.0	15.9	55.1	16.2	58.4	16.4	61.4	16.3	64.5	17.2	67.5	17.5	70.5	17.1	17.1
POST-TEST 3	49.0	14.8	52.1	15.6	54.8	15.9	58.2	16.1	61.1	17.0	63.0	16.8	66.5	17.0	69.2	18.1	71.6	17.6	17.6
POST-TEST 4	56.0	20.5	57.8	21.2	59.5	21.4	62.0	21.7	64.0	20.9	66.2	20.1	68.9	19.1	71.8	20.2	72.8	19.5	19.5

LOCATION	19	20	21	22	23	24	25	26	27										
PRE-TEST	74.6	17.5	77.6	17.4	80.6	17.3	83.6	17.4	86.6	17.4	89.6	17.2	92.6	17.1	95.6	17.2	98.6	17.0	17.0
POST-TEST 1	74.6	17.5	77.6	17.4	80.6	17.3	83.6	17.4	86.6	17.4	89.6	17.2	92.6	17.1	95.6	17.2	98.6	17.0	17.0
POST-TEST 2	73.5	17.6	77.6	17.4	80.6	17.6	83.6	17.2	86.6	17.4	89.6	17.2	92.6	17.1	95.6	17.2	98.6	17.0	17.0
POST-TEST 3	74.6	17.4	77.8	17.2	80.6	17.6	83.6	17.2	86.6	17.4	89.6	17.2	92.6	17.1	95.6	17.2	98.6	17.0	17.0
POST-TEST 4	75.6	19.6	78.6	19.2	81.6	19.1	84.6	18.6	87.9	18.8	90.8	17.9	93.8	17.7	96.8	17.8	99.8	17.4	17.4

All measurements are in inches. Column readings are three inches apart from front to rear on vehicle. All X-axis measurements taken from a reference plane 180 inches from and parallel to the rear bumper. All Y-axis measurements taken from a reference plane 48 inches from and parallel to the vehicle longitudinal centerline.

VEHICLE LEFT SIDE CRUSH MEASUREMENTS AT MOVING BARRIER BUMPER HEIGHT (17.5 INCHES) CONTINUED

LOCATION	28	29	30	31	32	33	34	35	36								
PRE-TEST	101.6	17.0	104.6	17.0	107.6	16.9	110.6	17.0	113.6	17.0	116.6	16.9	119.6	17.0	NA	NA	NA
POST-TEST 1	101.6	17.0	104.6	17.0	107.6	16.9	110.6	17.0	113.6	17.0	116.6	16.9	119.6	17.0	NA	NA	NA
POST-TEST 2	101.6	17.0	104.6	17.0	107.6	16.9	110.6	17.0	113.6	17.0	116.6	16.9	119.6	17.0	NA	NA	NA
POST-TEST 3	101.6	17.0	104.6	17.0	107.6	16.9	110.6	17.0	113.6	17.0	116.6	16.9	119.6	17.0	NA	NA	NA
POST-TEST 4	102.9	16.8	106.0	16.9	108.8	16.9	111.8	16.8	114.9	16.6	117.9	16.8	120.0	17.4	NA	NA	NA

LOCATION	37	38	39	40
PRE-TEST	NA	NA	NA	NA
POST-TEST 1	NA	NA	NA	NA
POST-TEST 2	NA	NA	NA	NA
POST-TEST 3	NA	NA	NA	NA
POST-TEST 4	NA	NA	NA	NA

All measurements are in inches. Column readings are three inches apart from front to rear on vehicle.
 All X-axis measurements taken from a reference plane 180 inches from and parallel to the rear bumper.
 All Y-axis measurements taken from a reference plane 48 inches from and parallel to the vehicle longitudinal centerline

VEHICLE LEFT SIDE CRUSH MEASUREMENTS AT SILL HEIGHT (11.0 INCHES)

LOCATION	1	2	3	4	5	6	7	8	9
PRE-TEST	NA	NA	NA	NA	NA	NA	NA	NA	NA
POST-TEST 1	NA	NA	NA	NA	NA	NA	NA	NA	NA
POST-TEST 2	NA	NA	NA	NA	NA	NA	NA	NA	NA
POST-TEST 3	NA	NA	NA	NA	NA	NA	NA	NA	NA
POST-TEST 4	NA	NA	NA	NA	NA	NA	NA	NA	NA

LOCATION	10	11	12	13	14	15	16	17	18
PRE-TEST	NA	NA	NA	NA	NA	NA	65.9	18.5	68.9
POST-TEST 1	NA	NA	NA	NA	NA	NA	65.5	18.4	68.9
POST-TEST 2	NA	NA	NA	NA	NA	NA	64.5	18.6	67.5
POST-TEST 3	NA	NA	NA	NA	NA	NA	66.0	19.1	68.8
POST-TEST 4	NA	NA	NA	NA	NA	NA	69.2	22.4	70.9

LOCATION	19	20	21	22	23	24	25	26	27
PRE-TEST	74.9	18.2	77.9	18.5	80.9	18.6	83.9	18.6	86.9
POST-TEST 1	74.9	18.2	77.9	18.5	80.9	18.6	83.9	18.6	86.9
POST-TEST 2	74.9	18.2	77.9	18.5	80.9	18.6	83.9	18.6	86.9
POST-TEST 3	74.4	19.0	77.1	18.9	80.2	18.8	83.4	18.7	86.4
POST-TEST 4	76.1	21.4	79.0	20.9	81.0	20.2	84.2	19.9	87.2

All measurements are in inches. Column readings are three inches apart from front to rear on vehicle. All X-axis measurements taken from a reference plane 180 inches from and parallel to the rear bumper. All Y-axis measurements taken from a reference plane 48 inches from and parallel to the vehicle longitudinal centerline.

VEHICLE LEFT SIDE CRUSH MEASUREMENTS AT SILL HEIGHT (11.0 INCHES) CONTINUED

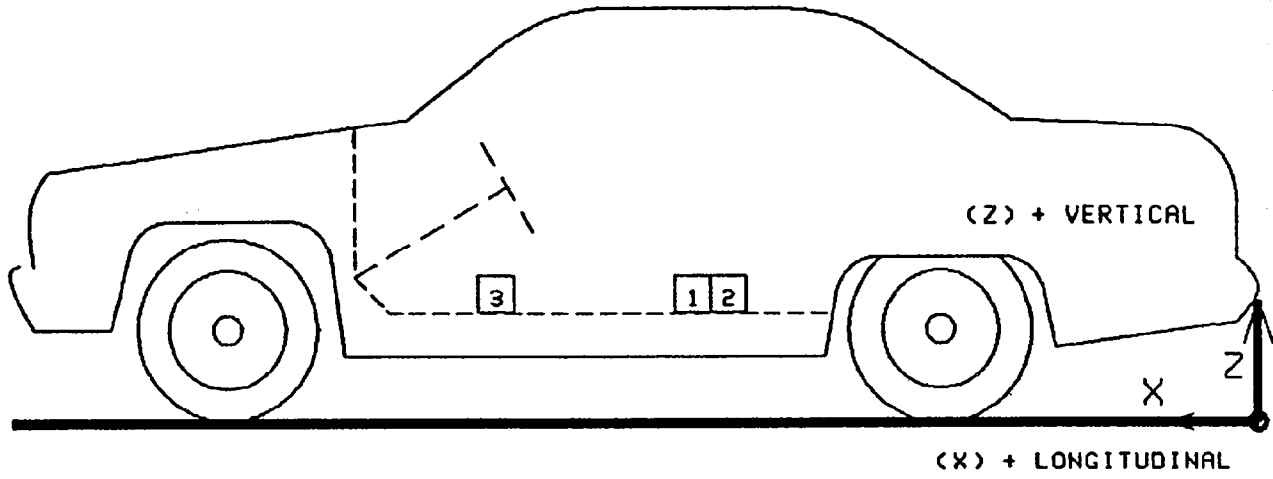
LOCATION	28	29	30	31	32	33	34	35	36								
	X	Y	X	Y	X	Y	X	Y	X								
PRE-TEST	101.9	18.4	104.9	18.5	107.9	18.4	110.9	18.2	113.9	18.5	116.9	18.2	119.9	18.4	NA	NA	NA
POST-TEST 1	101.9	18.4	104.9	18.5	107.9	18.4	110.9	18.2	113.9	18.5	116.9	18.2	119.9	18.4	NA	NA	NA
POST-TEST 2	101.9	18.4	104.9	18.5	107.9	18.4	110.9	18.2	113.9	18.5	116.9	18.2	119.9	18.4	NA	NA	NA
POST-TEST 3	101.4	18.4	104.5	18.5	107.9	18.4	110.9	18.2	113.9	18.5	116.9	18.2	119.9	18.4	NA	NA	NA
POST-TEST 4	102.8	19.2	104.5	19.1	108.6	19.0	111.6	18.9	114.5	18.9	117.5	18.9	120.5	18.9	NA	NA	NA

LOCATION	37	38	39	40
	X	Y	X	Y
PRE-TEST	NA	NA	NA	NA
POST-TEST 1	NA	NA	NA	NA
POST-TEST 2	NA	NA	NA	NA
POST-TEST 3	NA	NA	NA	NA
POST-TEST 4	NA	NA	NA	NA

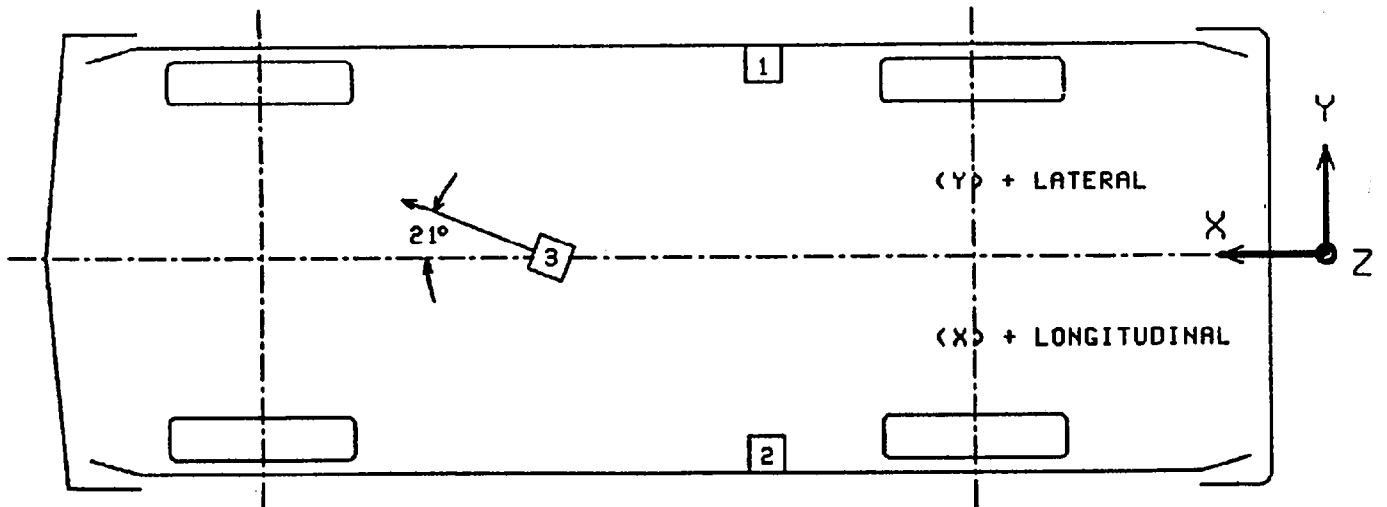
10

All measurements are in inches. Column readings are three inches apart from front to rear on vehicle. All X-axis measurements taken from a reference plane 180 inches from and parallel to the rear bumper. All Y-axis measurements taken from a reference plane 48 inches from and parallel to the vehicle longitudinal centerline. *Measurements taken at maximum crush height.

VEHICLE ACCELEROMETER PLACEMENT

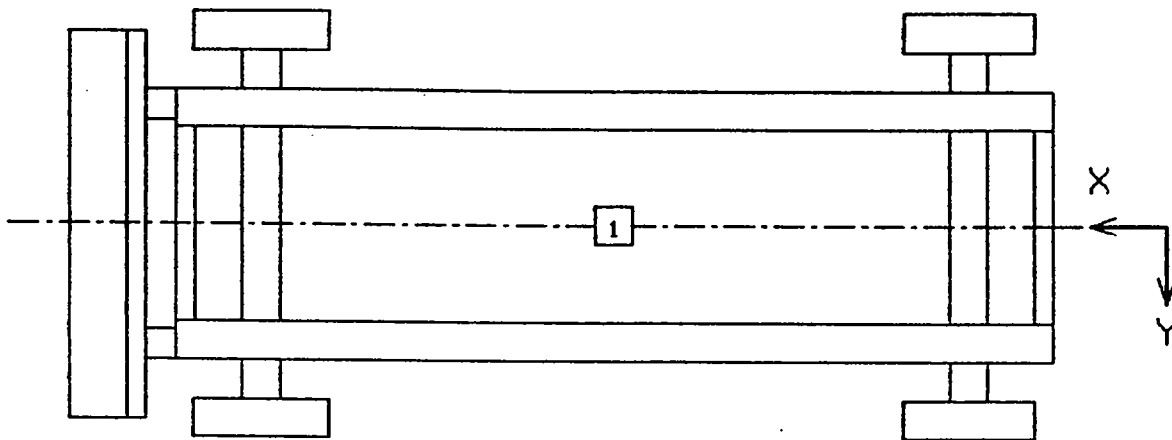


SIDE VIEW

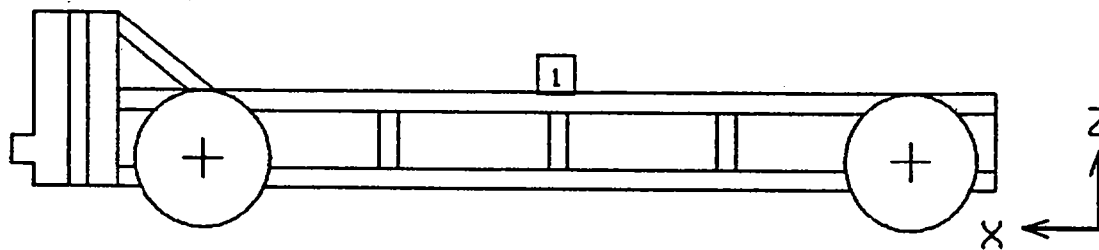


BOTTOM VIEW

MOVING BARRIER
ACCELEROMETER PLACEMENT

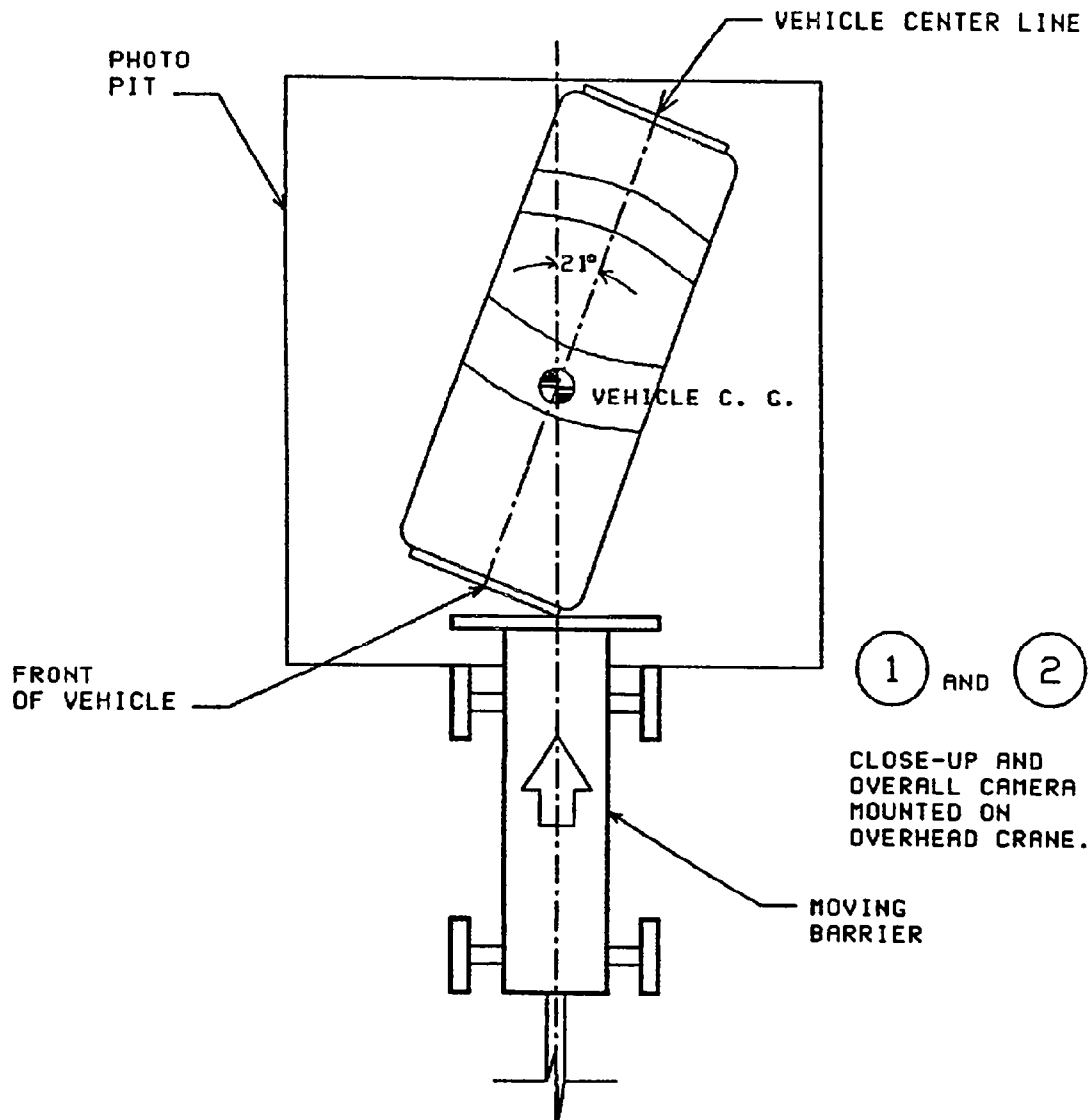


TOP VIEW



SIDE VIEW

CAMERA POSITIONS



SECTION 3.0

TEST 900830-1 SUMMARY

TEST CONDITIONS

TEST NUMBER: 900830-1

DATE OF TEST: 8/30/90

TIME OF TEST: 1103

AMBIENT TEMPERATURE AT IMPACT AREA: 74° F

INTENDED MOVING BARRIER VELOCITY: 14.4 MPH

ACTUAL MOVING BARRIER VELOCITY: 14.2 MPH

SUBJECT VEHICLE DATA

DIRECT CONTACT DAMAGE LENGTH 15.0

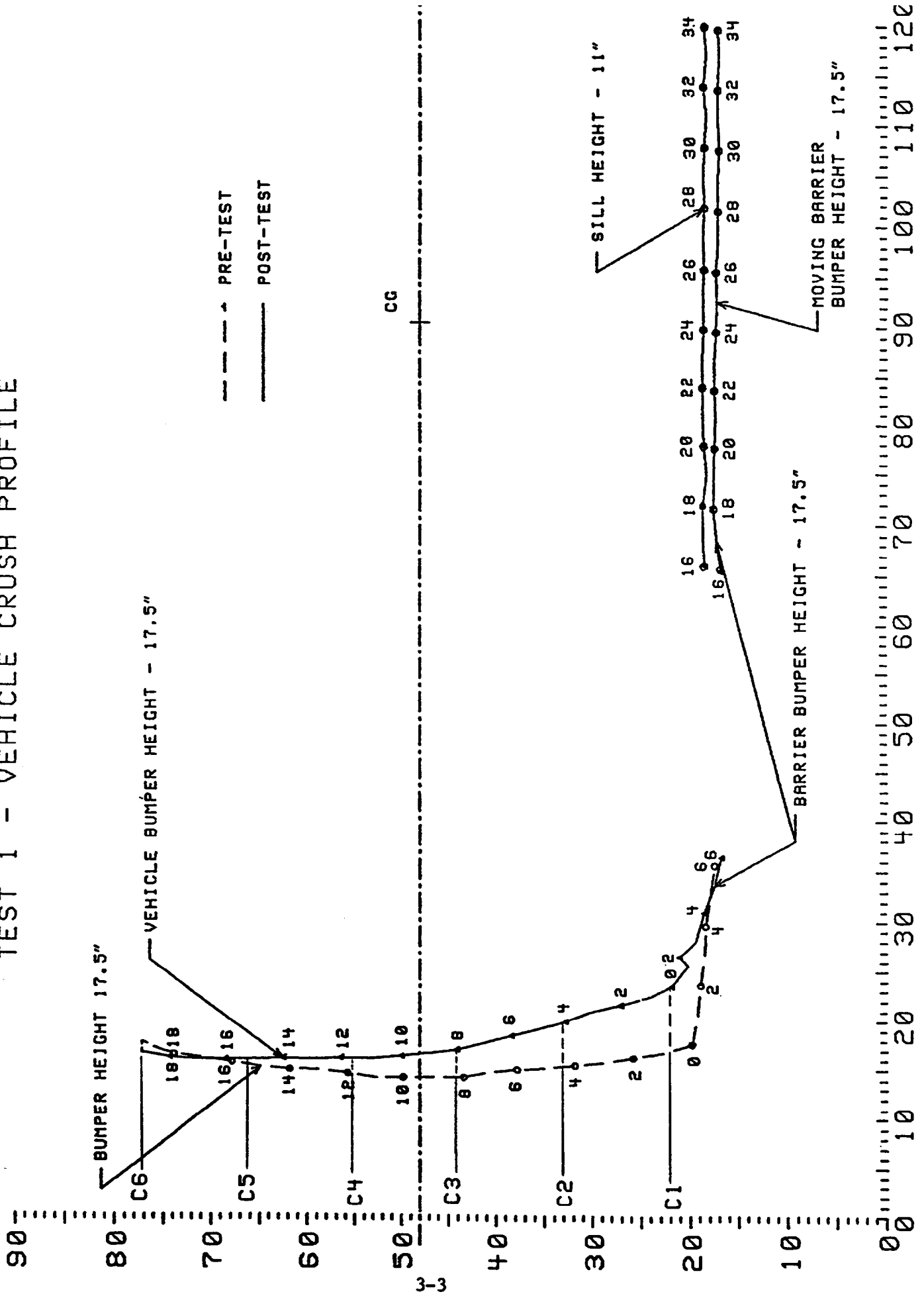
MAXIMUM CUMULATIVE CRUSH AT VEHICLE BUMPER HEIGHT 6.7

VEHICLE ATTITUDES:

POST-TEST: LF: 26.8; RF: 26.2; LR: 24.2; RR: 24.4

ALL DISTANCE MEASUREMENTS ARE IN INCHES.

TEST 1 - VEHICLE CRUSH PROFILE



VEHICLE CRUSH

TEST NO. 900830-1

	PRE-TEST	POST-TEST	CRUSH
L	<u>55.3</u>		
C1	<u>16.8</u>	<u>23.5</u>	<u>6.7</u>
C2	<u>15.4</u>	<u>19.9</u>	<u>4.5</u>
C3	<u>14.1</u>	<u>16.9</u>	<u>2.8</u>
C4	<u>14.5</u>	<u>16.0</u>	<u>1.5</u>
C5	<u>15.2</u>	<u>15.9</u>	<u>0.7</u>
C6	<u>17.4</u>	<u>16.6</u>	<u>-0.8</u>
CL	<u>14.1</u>	<u>16.6</u>	<u>2.5</u>

NOTES: L is Pre-test length of damage surface
C1 through C6 are spaced equally apart
CL is vehicle centerline
ALL MEASUREMENTS ARE IN INCHES

MEASUREMENTS TAKEN FROM A REFERENCE PLANE 180 INCHES FROM AND PARALLEL TO THE
VEHICLE'S REAR BUMPER.

VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

TEST NUMBER 900830-1

No. LOCATION	X*	Y*	Z*	POSITIVE DIRECTION		NEGATIVE DIRECTION	
				MAX G	MSEC	MAX G	MSEC
1 LEFT FRONT SILL	58.1	24.5	10.8				
ACCELERATION							
LONGITUDINAL				0.5	136.4	7.8	33.0
LATERAL				2.3	101.9	3.5	50.0
RESULTANT				7.9	33.0		
2 RIGHT FRONT SILL	58.0	-24.5	10.5				
ACCELERATION							
LONGITUDINAL				1.1	180.3	8.7	38.5
LATERAL				1.7	102.6	3.2	21.5
RESULTANT				8.7	38.5		
3 VEHICLE CG	89.5	0.0	12.5				
ACCELERATION							
PARALLEL TO IMPACT				1.0	125.4	8.6	42.1
PERPENDICULAR TO IMPACT				5.2	35.5	3.2	22.3
RESULTANT				8.7	42.1		

* ALL MEASUREMENTS OF ACCELEROMETER LOCATIONS ARE IN INCHES.

REFERENCE: +X: FORWARD FROM VEHICLE'S REAR BUMPER
 +Y: LEFTWARD FROM VEHICLE'S LONGITUDINAL CENTERLINE
 +Z: UPWARD FROM GROUND LEVEL

MOVING BARRIER ACCELEROMETER LOCATIONS AND DATA SUMMARY

TEST NUMBER 900830-1

No. LOCATION	X*	Y*	Z*	POSITIVE DIRECTION		NEGATIVE DIRECTION	
				MAX G	MSEC	MAX G	MSEC
1 MOVING BARRIER	75.2	0.0	12.3				
CG ACCELERATION							
LONGITUDINAL				0.4	200.3	8.3	57.3
LATERAL				0.9	165.1	0.7	10.0
RESULTANT				8.3	57.3		

* ALL MEASUREMENTS OF ACCELEROMETER LOCATIONS ARE IN INCHES.

REFERENCE: +X: FORWARD FROM VEHICLE'S REAR SURFACE
 +Y: LEFTWARD FROM VEHICLE'S LONGITUDINAL CENTERLINE
 +Z: UPWARD FROM GROUND LEVEL

TEST #900830-1

CAMERA INFORMATION

CAMERA NO.	LOCATION	TYPE	LENS (mm)	SPEED (fps)	PURPOSE OF CAMERA DATA
1	Overhead wide	Photosonic 1B	13	500	Impact overall
2	Overhead tight	Photosonic 1B	25	502	Impact close-up

SECTION 4.0

TEST 900830-2 SUMMARY

TEST CONDITIONS

TEST NUMBER: 900830-2

DATE OF TEST: 8/30/90

TIME OF TEST: 1256

AMBIENT TEMPERATURE AT IMPACT AREA: 74° F

INTENDED MOVING BARRIER VELOCITY: 28.2 MPH

ACTUAL MOVING BARRIER VELOCITY: 28.1 MPH

SUBJECT VEHICLE DATA

DIRECT CONTACT DAMAGE LENGTH 33.0

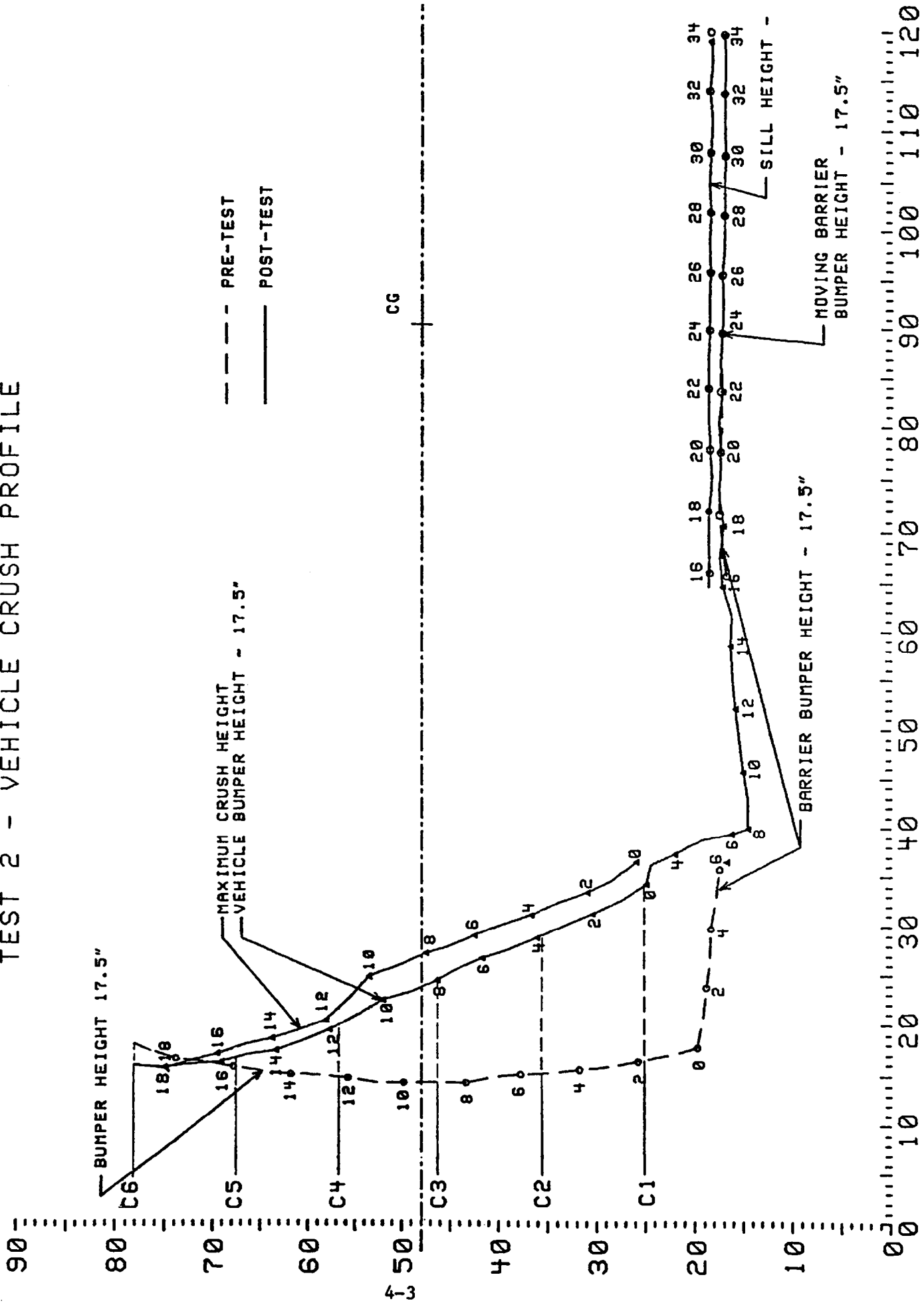
MAXIMUM CUMULATIVE CRUSH AT VEHICLE BUMPER HEIGHT 17.9

VEHICLE ATTITUDES:

POST-TEST: LF: 27.3; RF: 25.2; LR: 24.8; RR: 24.1

ALL DISTANCE MEASUREMENTS ARE IN INCHES.

TEST 2 - VEHICLE CRUSH PROFILE



VEHICLE CRUSH

TEST NO. 900830-2

	PRE-TEST	POST-TEST	CRUSH
L	<u>52.9</u>		
C1	<u>16.2</u>	<u>34.1</u>	<u>17.9</u>
C2	<u>15.1</u>	<u>28.6</u>	<u>13.5</u>
C3	<u>14.1</u>	<u>24.2</u>	<u>10.1</u>
C4	<u>14.5</u>	<u>19.2</u>	<u>4.7</u>
C5	<u>15.6</u>	<u>16.8</u>	<u>1.2</u>
C6	<u>17.4</u>	<u>15.8</u>	<u>-1.6</u>
CL	<u>14.1</u>	<u>23.1</u>	<u>9.0</u>

NOTES: L is Pre-test length of damage surface
C1 through C6 are spaced equally apart
CL is vehicle centerline
ALL MEASUREMENTS ARE IN INCHES

MEASUREMENTS TAKEN FROM A REFERENCE PLANE 180 INCHES FROM AND PARALLEL TO THE
VEHICLE'S REAR BUMPER

VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

TEST NUMBER 900830-2

No.	LOCATION	X*	Y*	Z*	POSITIVE DIRECTION		NEGATIVE DIRECTION	
					MAX G	MSEC	MAX G	MSEC
1	LEFT FRONT SILL	58.1	24.5	10.8				
	ACCELERATION							
	LONGITUDINAL				3.0	80.5	14.4	53.4
	LATERAL				3.0	100.0	8.2	31.0
	RESULTANT				14.6	28.3		
2	RIGHT FRONT SILL	58.0	-24.5	10.5				
	ACCELERATION							
	LONGITUDINAL				1.9	103.6	18.1	46.6
	LATERAL				2.9	105.9	7.1	38.5
	RESULTANT				18.7	46.4		
3	VEHICLE CG	89.5	0.0	12.5				
	ACCELERATION							
	PARALLEL TO IMPACT				5.8	37.1	26.6	32.8
	PERPENDICULAR TO IMPACT				13.5	32.6	12.6	28.1
	RESULTANT				29.8	32.8		

* ALL MEASUREMENTS OF ACCELEROMETER LOCATIONS ARE IN INCHES.

REFERENCE: +X: FORWARD FROM VEHICLE'S REAR BUMPER
 +Y: LEFTWARD FROM VEHICLE'S LONGITUDINAL CENTERLINE
 +Z: UPWARD FROM GROUND LEVEL

MOVING BARRIER ACCELEROMETER LOCATIONS AND DATA SUMMARY

TEST NUMBER 900830-2

No. LOCATION	X*	Y*	Z*	POSITIVE DIRECTION		NEGATIVE DIRECTION	
				MAX G	MSEC	MAX G	MSEC
1 MOVING BARRIER	75.2	0.0	12.3				
CG ACCELERATION							
LONGITUDINAL				0.6	181.8	22.6	26.5
LATERAL				4.3	58.0	3.5	51.4
RESULTANT				22.6	26.5		

* ALL MEASUREMENTS OF ACCELEROMETER LOCATIONS ARE IN INCHES.

REFERENCE: +X: FORWARD FROM VEHICLE'S REAR SURFACE
 +Y: LEFTWARD FROM VEHICLE'S LONGITUDINAL CENTERLINE
 +Z: UPWARD FROM GROUND LEVEL

TEST #900830-2

CAMERA INFORMATION

CAMERA NO.	LOCATION	TYPE	LENS (mm)	SPEED (fps)	PURPOSE OF CAMERA DATA
1	Overhead wide	Photosonic 1B	13	500	Impact overall
2	Overhead tight	Photosonic 1B	25	500	Impact close-up

SECTION 5.0

TEST 900830-3 SUMMARY

TEST CONDITIONS

TEST NUMBER: 900830-3

DATE OF TEST: 8/30/90

TIME OF TEST: 1419

AMBIENT TEMPERATURE AT IMPACT AREA: 76° F

INTENDED MOVING BARRIER VELOCITY: 28.4 MPH

ACTUAL MOVING BARRIER VELOCITY: 28.3 MPH

SUBJECT VEHICLE DATA

DIRECT CONTACT DAMAGE LENGTH 43.9

MAXIMUM CUMULATIVE CRUSH AT VEHICLE BUMPER HEIGHT *

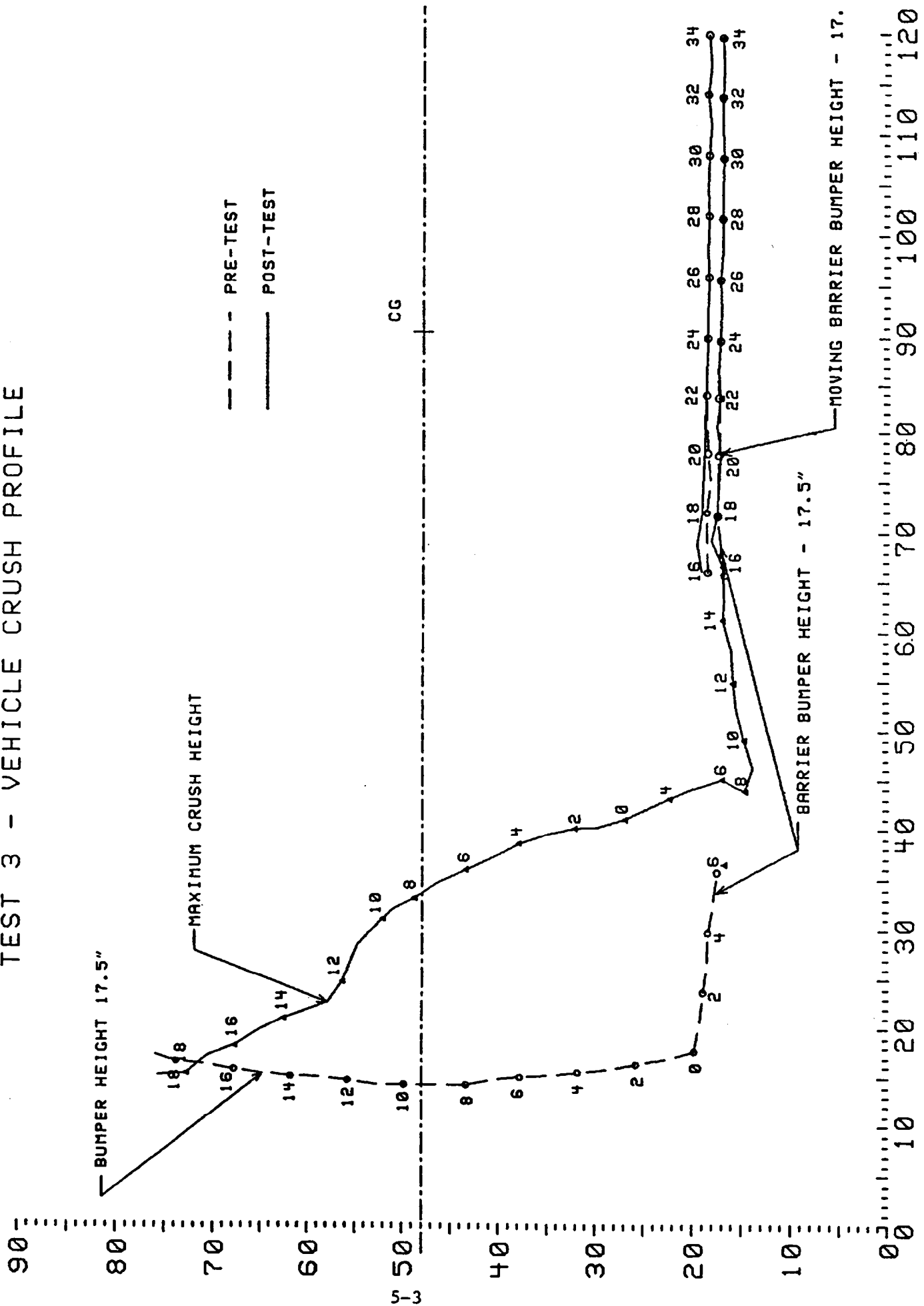
VEHICLE ATTITUDES:

POST-TEST: LF: 28.8; RF: 25.1; LR: 24.3; RR: 23.5

ALL DISTANCE MEASUREMENTS ARE IN INCHES.

*Crush measurements for test 900830-3 are not available. The measurement points were placed on the front bumper molding which was torn off of the vehicle during the third impact. The points used to construct the post-test maximum crush height profile for test 900830-3 were added to the vehicle after the second impact, thus no pre-test coordinates of these points are available.

TEST 3 - VEHICLE CRUSH PROFILE



VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

TEST NUMBER 900830-3

No. LOCATION	X*	Y*	Z*	POSITIVE DIRECTION		NEGATIVE DIRECTION	
				MAX G	MSEC	MAX G	MSEC
1 LEFT FRONT SILL	58.1	24.5	10.8				
ACCELERATION							
LONGITUDINAL				2.1	111.3	15.5	12.4
LATERAL				1.0	7.5	11.0	14.3
RESULTANT				17.4	12.9		
2 RIGHT FRONT SILL	58.0	-24.5	10.5				
ACCELERATION							
LONGITUDINAL				3.8	97.4	23.2	27.1
LATERAL				2.8	90.9	9.0	32.8
RESULTANT				23.3	27.3		
3 VEHICLE CG	89.5	0.0	12.5				
ACCELERATION							
PARALLEL TO IMPACT				3.7	95.3	31.1	12.1
PERPENDICULAR TO IMPACT				11.9	20.0	6.7	14.8
RESULTANT				31.2	12.1		

* ALL MEASUREMENTS OF ACCELEROMETER LOCATIONS ARE IN INCHES.

REFERENCE: +X: FORWARD FROM VEHICLE'S REAR BUMPER
 +Y: LEFTWARD FROM VEHICLE'S LONGITUDINAL CENTERLINE
 +Z: UPWARD FROM GROUND LEVEL

MOVING BARRIER ACCELEROMETER LOCATIONS AND DATA SUMMARY

TEST NUMBER 900830-3

No.	LOCATION	X*	Y*	Z*	POSITIVE DIRECTION		NEGATIVE DIRECTION	
					MAX G	MSEC	MAX G	MSEC
1	MOVING BARRIER	75.2	0.0	12.3				
	CG ACCELERATION							
	LONGITUDINAL				1.7	116.8	24.8	15.6
	LATERAL				5.3	37.1	8.1	20.4
	RESULTANT				24.9	15.5		

* ALL MEASUREMENTS OF ACCELEROMETER LOCATIONS ARE IN INCHES.

REFERENCE: +X: FORWARD FROM VEHICLE'S REAR SURFACE
 +Y: LEFTWARD FROM VEHICLE'S LONGITUDINAL CENTERLINE
 +Z: UPWARD FROM GROUND LEVEL

TEST #900830-3

CAMERA INFORMATION

<u>CAMERA NO.</u>	<u>LOCATION</u>	<u>TYPE</u>	<u>LENS (mm)</u>	<u>SPEED (fps)</u>	<u>PURPOSE OF CAMERA DATA</u>
1	Overhead wide	Photosonic 1B	13	498	Impact overall
2	Overhead tight	Photosonic 1B	25	500	Impact close-up

SECTION 6.0

TEST 900830-4 SUMMARY

TEST CONDITIONS

TEST NUMBER: 900830-4

DATE OF TEST: 8/30/90

TIME OF TEST: 1535

AMBIENT TEMPERATURE AT IMPACT AREA: 78° F

INTENDED MOVING BARRIER VELOCITY: 40.0 MPH

ACTUAL MOVING BARRIER VELOCITY: 39.8 MPH

SUBJECT VEHICLE DATA

DIRECT CONTACT DAMAGE LENGTH 43.9

MAXIMUM CUMULATIVE CRUSH AT VEHICLE BUMPER HEIGHT *

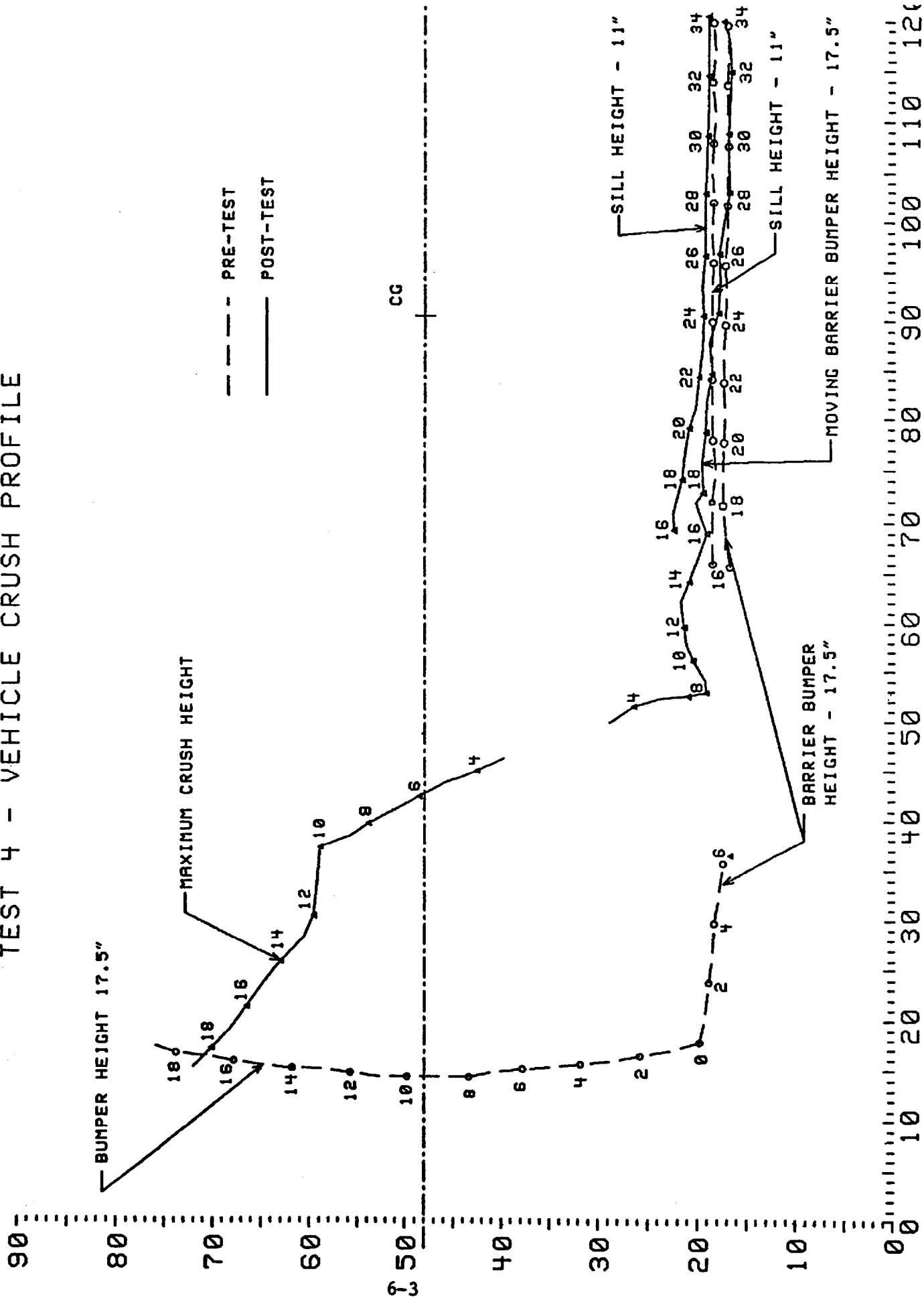
VEHICLE ATTITUDES:

POST-TEST: LF: 27.6; RF: 23.4; LR: 23.4; RR: 25.6

ALL DISTANCE MEASUREMENTS ARE IN INCHES.

*Crush measurements for test 900830-4 are not available. The measurement points were placed on the front bumper molding which was torn off of the vehicle during the third impact. The points used to construct the post-test maximum crush height profile for test 900830-4 were added to the vehicle after the second impact, thus no pre-test coordinates of these points are available.

TEST 4 - VEHICLE CRUSH PROFILE



VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

TEST NUMBER 900B30-4

No.	LOCATION	X*	Y*	Z*	POSITIVE DIRECTION		NEGATIVE DIRECTION	
					MAX G	MSEC	MAX G	MSEC
1	LEFT FRONT SILL	58.1	24.5	10.8				
	ACCELERATION							
	LONGITUDINAL				2.0	123.0	24.6	26.3
	LATERAL				2.6	97.3	14.6	34.1
	RESULTANT				26.1	26.4		
2	RIGHT FRONT SILL	58.0	-24.5	10.5				
	ACCELERATION							
	LONGITUDINAL				2.8	86.8	37.8	30.8
	LATERAL				10.8	31.4	13.4	15.9
	RESULTANT				39.1	31.0		
3	VEHICLE CG	89.5	0.0	12.5				
	ACCELERATION							
	PARALLEL TO IMPACT				4.1	100.9	48.9	19.4
	PERPENDICULAR TO IMPACT				17.1	9.9	19.6	13.9
	RESULTANT				49.2	19.4		

* ALL MEASUREMENTS OF ACCELEROMETER LOCATIONS ARE IN INCHES.

REFERENCE: +X: FORWARD FROM VEHICLE'S REAR BUMPER
 +Y: LEFTWARD FROM VEHICLE'S LONGITUDINAL CENTERLINE
 +Z: UPWARD FROM GROUND LEVEL

MOVING BARRIER ACCELEROMETER LOCATIONS AND DATA SUMMARY

TEST NUMBER 900830-4

No. LOCATION	X*	Y*	Z*	POSITIVE DIRECTION		NEGATIVE DIRECTION	
				MAX G	MSEC	MAX G	MSEC
1 MOVING BARRIER CG ACCELERATION	75.2	0.0	12.3				
LONGITUDINAL				-1.6	90.5	60.6	8.1
LATERAL				17.2	27.6	28.5	16.5
RESULTANT				60.9	8.1		

* ALL MEASUREMENTS OF ACCELEROMETER LOCATIONS ARE IN INCHES.

REFERENCE: +X: FORWARD FROM VEHICLE'S REAR SURFACE
 +Y: LEFTWARD FROM VEHICLE'S LONGITUDINAL CENTERLINE
 +Z: UPWARD FROM GROUND LEVEL

TEST #900830-4

CAMERA INFORMATION

<u>CAMERA NO.</u>	<u>LOCATION</u>	<u>TYPE</u>	<u>LENS (mm)</u>	<u>SPEED (fps)</u>	<u>PURPOSE OF CAMERA DATA</u>
1	Overhead wide	Photosonic 1B	13	500	Impact overall
2	Overhead tight	Photosonic 1B	25	500	Impact overall

APPENDIX A

PHOTOGRAPHS

TEST #900830-1
LIST OF PHOTOGRAPHS

1. PRE-TEST FRONT VIEW
2. POST-TEST FRONT VIEW
3. PRE-TEST LEFT SIDE - VIEW 1
4. PRE-TEST LEFT SIDE - VIEW 2
5. POST-TEST LEFT SIDE VIEW
6. PRE-TEST LEFT SIDE CLOSEUP VIEW
7. POST-TEST LEFT SIDE CLOSEUP VIEW
8. PRE-TEST RIGHT SIDE VIEW
9. POST-TEST RIGHT SIDE VIEW
10. PRE-TEST RIGHT SIDE CLOSEUP VIEW
11. POST-TEST RIGHT SIDE CLOSEUP VIEW
12. PRE-TEST REAR VIEW
13. POST-TEST REAR VIEW
14. POST-TEST LEFT FRONT THREE-QUARTER VIEW
15. PRE-TEST RIGHT FRONT THREE-QUARTER VIEW
16. POST-TEST RIGHT FRONT THREE-QUARTER VIEW



Figure A-1. PRE-TEST FRONT VIEW



Figure A-2. POST-TEST FRONT VIEW



Figure A-3. PRE-TEST LEFT SIDE - VIEW 1



Figure A-4. PRE-TEST LEFT SIDE - VIEW 2



Figure A-5. POST-TEST LEFT SIDE VIEW



Figure A-6. PRE-TEST LEFT SIDE CLOSE-UP VIEW



Figure A-7. POST-TEST LEFT SIDE CLOSE-UP VIEW



Figure A-8. PRE-TEST RIGHT SIDE VIEW



Figure A-9. POST-TEST RIGHT SIDE VIEW



Figure A-10. PRE-TEST RIGHT SIDE CLOSE-UP VIEW



Figure A-11. POST-TEST RIGHT SIDE CLOSE-UP VIEW



Figure A-12. PRE-TEST REAR VIEW



Figure A-13. POST-TEST REAR VIEW



Figure A-14. POST-TEST LEFT FRONT THREE-QUARTER VIEW



Figure A-15. PRE-TEST RIGHT FRONT THREE-QUARTER VIEW



Figure A-16. POST-TEST RIGHT FRONT THREE-QUARTER VIEW

TEST #900830-2
LIST OF PHOTOGRAPHS

1. POST-TEST FRONT VIEW
2. PRE-TEST LEFT SIDE VIEW
3. POST-TEST LEFT SIDE VIEW
4. POST-TEST LEFT SIDE CLOSEUP VIEW
5. POST-TEST RIGHT SIDE VIEW
6. POST-TEST RIGHT SIDE CLOSEUP VIEW
7. POST-TEST REAR VIEW
8. PRE-TEST LEFT FRONT THREE-QUARTER VIEW
9. POST-TEST LEFT FRONT THREE-QUARTER VIEW
10. PRE-TEST RIGHT FRONT THREE-QUARTER VIEW
11. POST-TEST RIGHT FRONT THREE-QUARTER VIEW



Figure A-1. POST-TEST FRONT VIEW



Figure A-2. PRE-TEST LEFT SIDE VIEW



Figure A-3. POST-TEST LEFT SIDE VIEW



Figure A-4. POST-TEST LEFT SIDE CLOSE-UP VIEW



Figure A-5. POST-TEST RIGHT SIDE VIEW



Figure A-6. POST-TEST RIGHT SIDE CLOSE-UP VIEW



Figure A-7. POST-TEST REAR VIEW



Figure A-8. PRE-TEST LEFT FRONT THREE-QUARTER VIEW



Figure A-9. POST-TEST LEFT FRONT THREE-QUARTER VIEW



Figure A-10. PRE-TEST RIGHT FRONT THREE-QUARTER VIEW



Figure A-11. POST-TEST RIGHT FRONT THREE-QUARTER VIEW

TEST #900830-3
LIST OF PHOTOGRAPHS

- 1 POST-TEST FRONT VIEW
2. POST-TEST LEFT SIDE VIEW
3. POST-TEST LEFT SIDE CLOSEUP VIEW
4. POST-TEST RIGHT SIDE VIEW
5. POST-TEST RIGHT SIDE CLOSEUP VIEW
6. POST-TEST REAR VIEW
7. PRE-TEST LEFT FRONT THREE-QUARTER VIEW
8. POST-TEST LEFT FRONT THREE-QUARTER VIEW
9. PRE-TEST RIGHT FRONT THREE-QUARTER VIEW
10. POST-TEST RIGHT FRONT THREE-QUARTER VIEW



Figure A-1. POST-TEST FRONT VIEW



Figure A-2. POST-TEST LEFT SIDE VIEW



Figure A-3. POST-TEST LEFT SIDE CLOSE-UP VIEW



Figure A-4. POST-TEST RIGHT SIDE VIEW



Figure A-5. POST-TEST RIGHT SIDE CLOSE-UP VIEW



Figure A-6. POST-TEST REAR VIEW

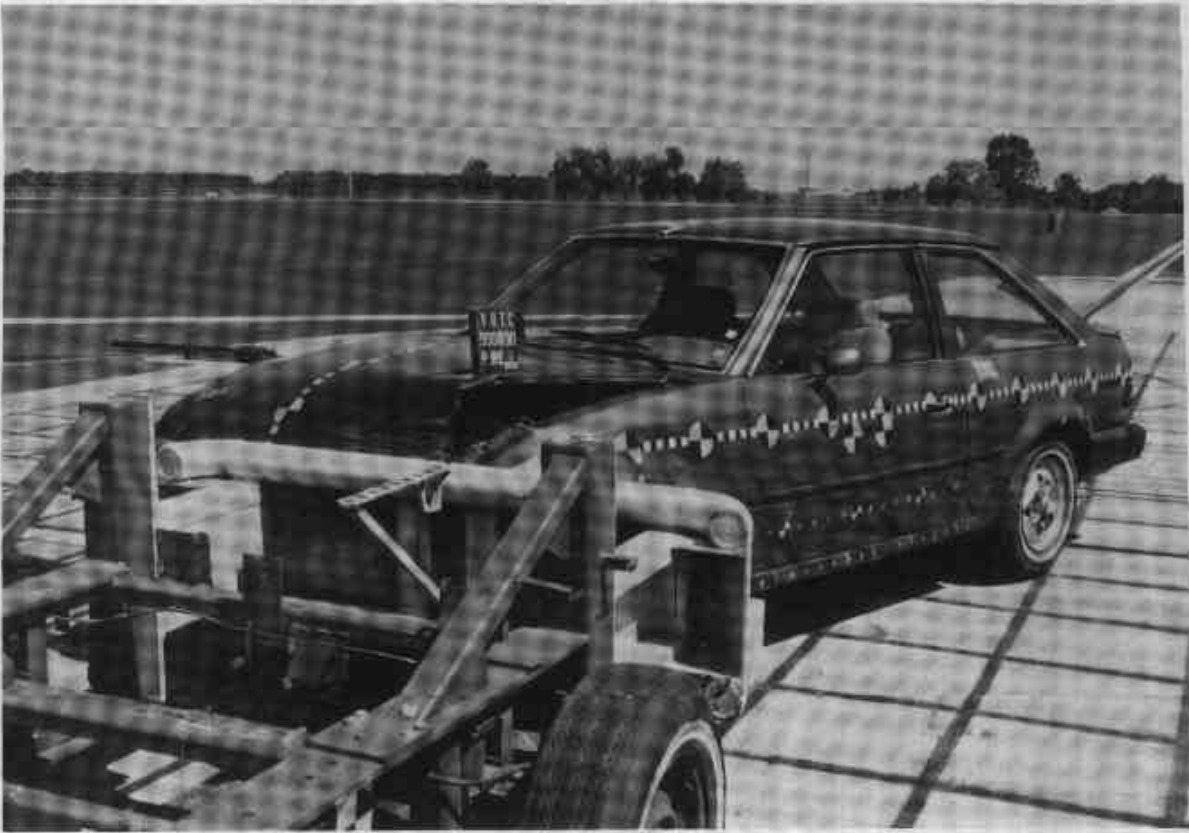


Figure A-7. PRE-TEST LEFT FRONT THREE-QUARTER VIEW



Figure A-8. POST-TEST LEFT FRONT THREE-QUARTER VIEW



Figure A-9. PRE-TEST RIGHT FRONT THREE-QUARTER VIEW



Figure A-10. POST-TEST RIGHT FRONT THREE-QUARTER VIEW

TEST #900830-4
LIST OF PHOTOGRAPHS

1. POST-TEST FRONT VIEW
2. PRE-TEST LEFT SIDE VIEW
3. POST-TEST LEFT SIDE CLOSEUP VIEW
4. POST-TEST RIGHT SIDE VIEW
5. POST-TEST RIGHT SIDE CLOSEUP VIEW
6. POST-TEST REAR VIEW
7. PRE-TEST LEFT FRONT THREE-QUARTER VIEW
8. POST-TEST LEFT FRONT THREE-QUARTER VIEW
9. PRE-TEST RIGHT FRONT THREE-QUARTER VIEW



Figure A-1. POST-TEST FRONT VIEW



Figure A-2. PRE-TEST LEFT SIDE VIEW



Figure A-3. POST-TEST LEFT SIDE CLOSE-UP VIEW





Figure A-5. POST-TEST RIGHT SIDE CLOSE-UP VIEW



Figure A-6. POST-TEST REAR VIEW



Figure A-7. PRE-TEST LEFT FRONT THREE-QUARTER VIEW



Figure A-8. POST-TEST LEFT FRONT THREE-QUARTER VIEW



Figure A-9. PRE-TEST RIGHT FRONT THREE-QUARTER VIEW

APPENDIX B

DATA PLOTS

TEST #900830-1

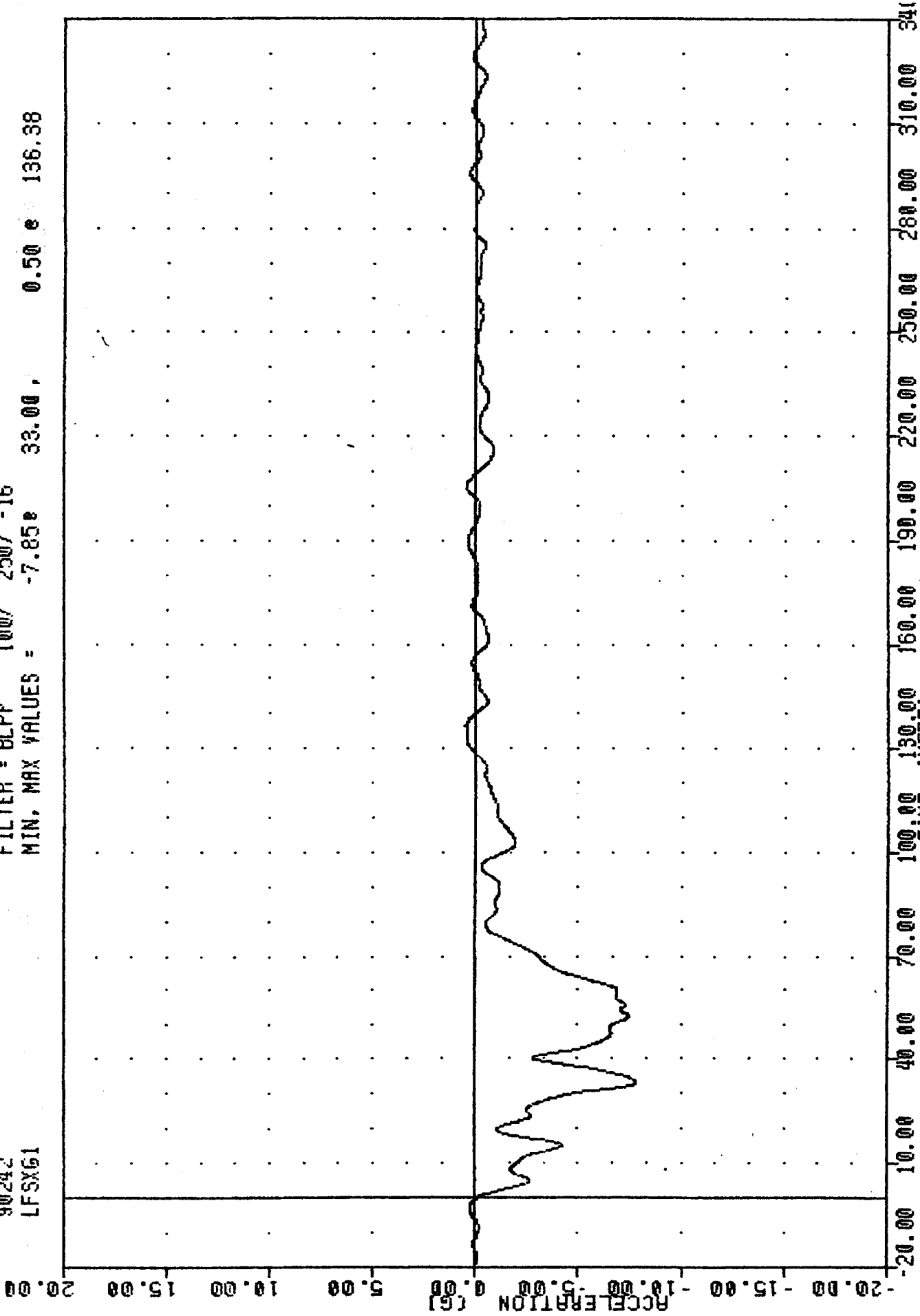
B2

CRASH III DAMAGE ALGORITHM

90242
LFSX61

FILTER = BLPP 100/ 250/ -16
MIN, MAX VALUES = -7.85e 33.00,

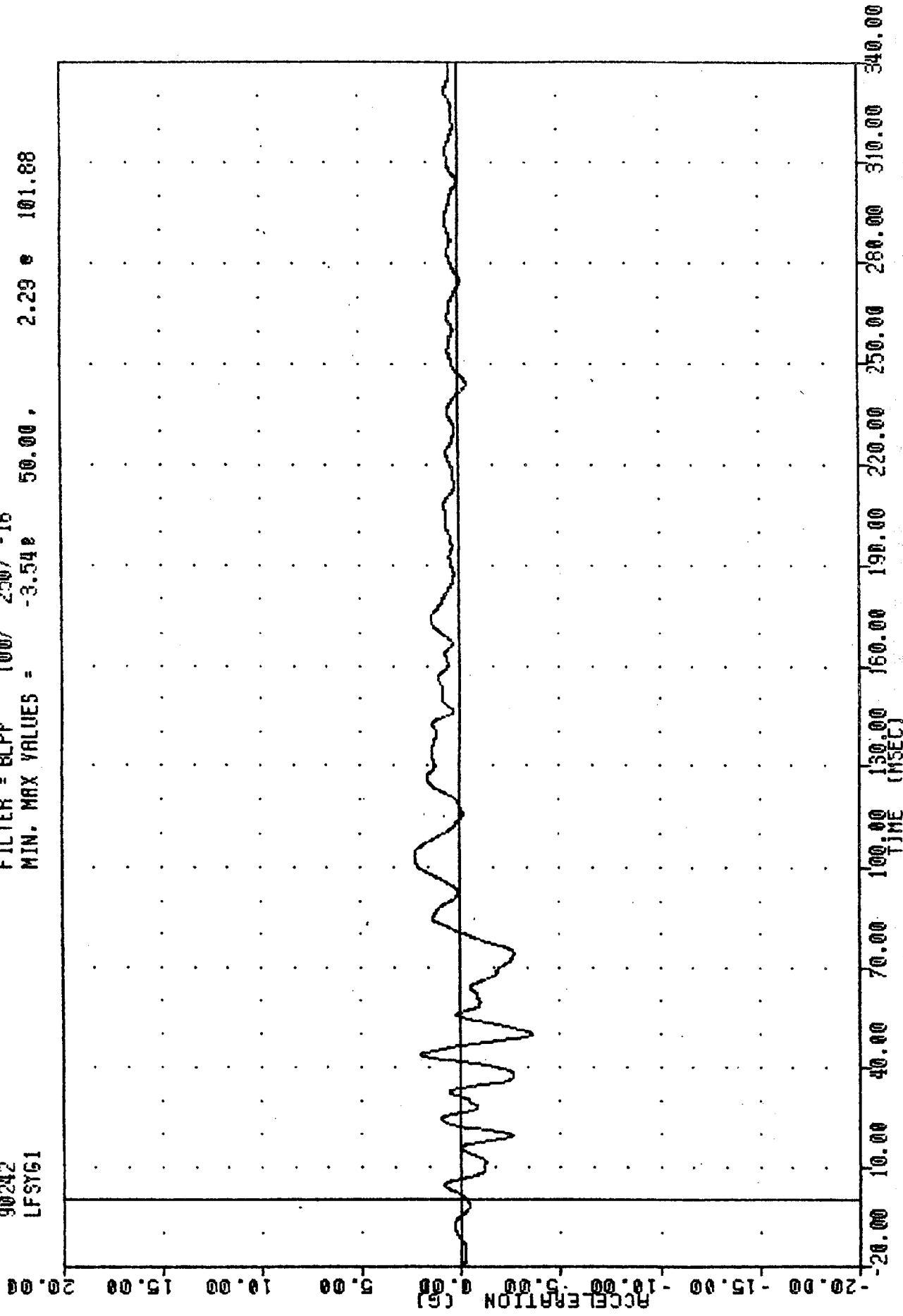
0.50 e 136.38



CONTOURED MOVING BARRIER INTO FORD ESCORT AT 14.2 MPH #1
LEFT FRONT SILL X-AXIS ACCELERATION

900830-1 , TRC
CRASH III DAMAGE ALGORITHM
90242
LFSY61

FILTER = BLPP 100/ 250/ -16
MIN. MAX VALUES = -3.54 50.00 2.29 101.88

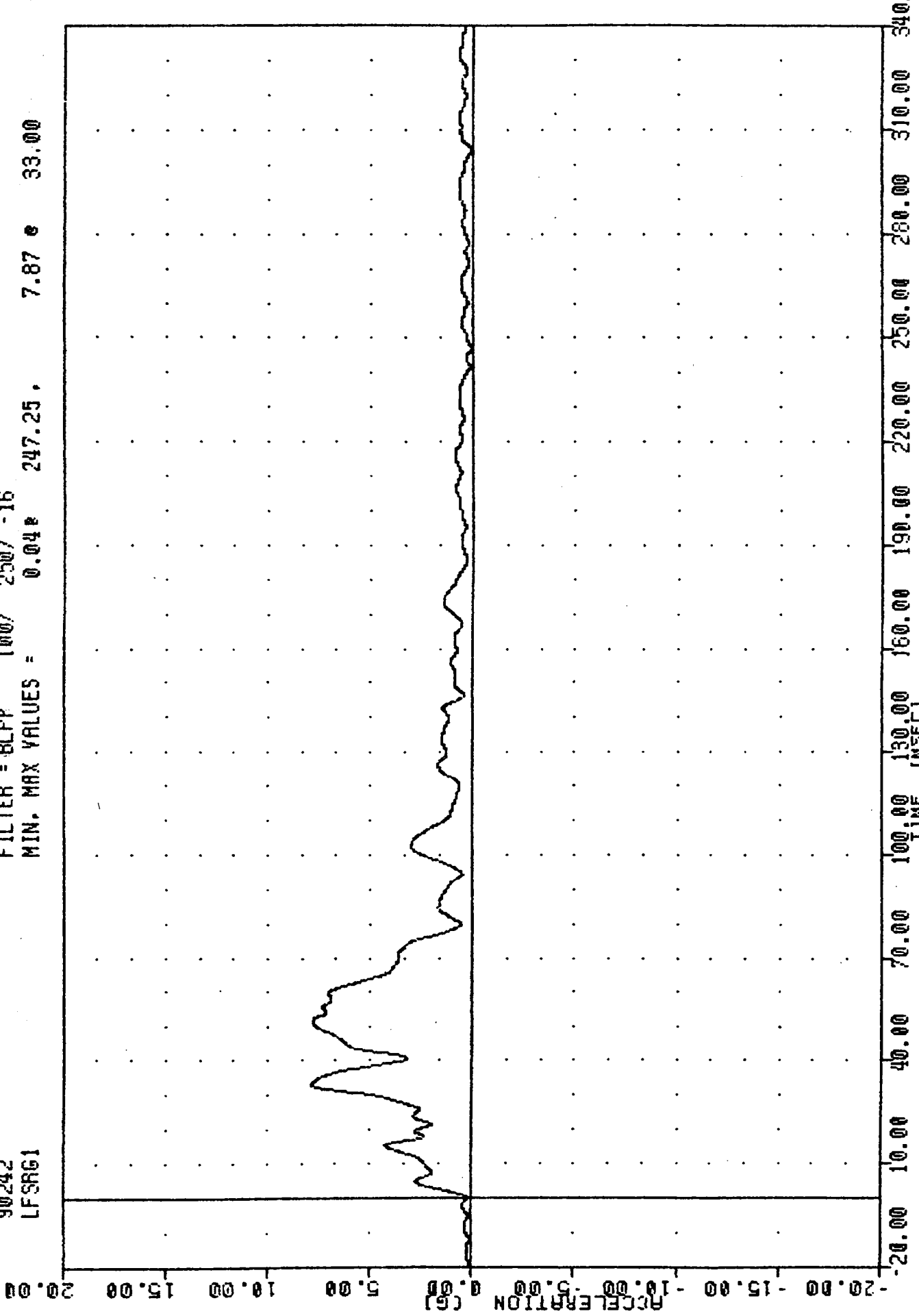


CONToured MOVING BARRIER INTO FORD ESCORT AT 14.2 MPH #1
LEFT FRONT SILL Y-AXIS ACCELERATION

CRASH III DAMAGE ALGORITHM

90242
LFSRG1

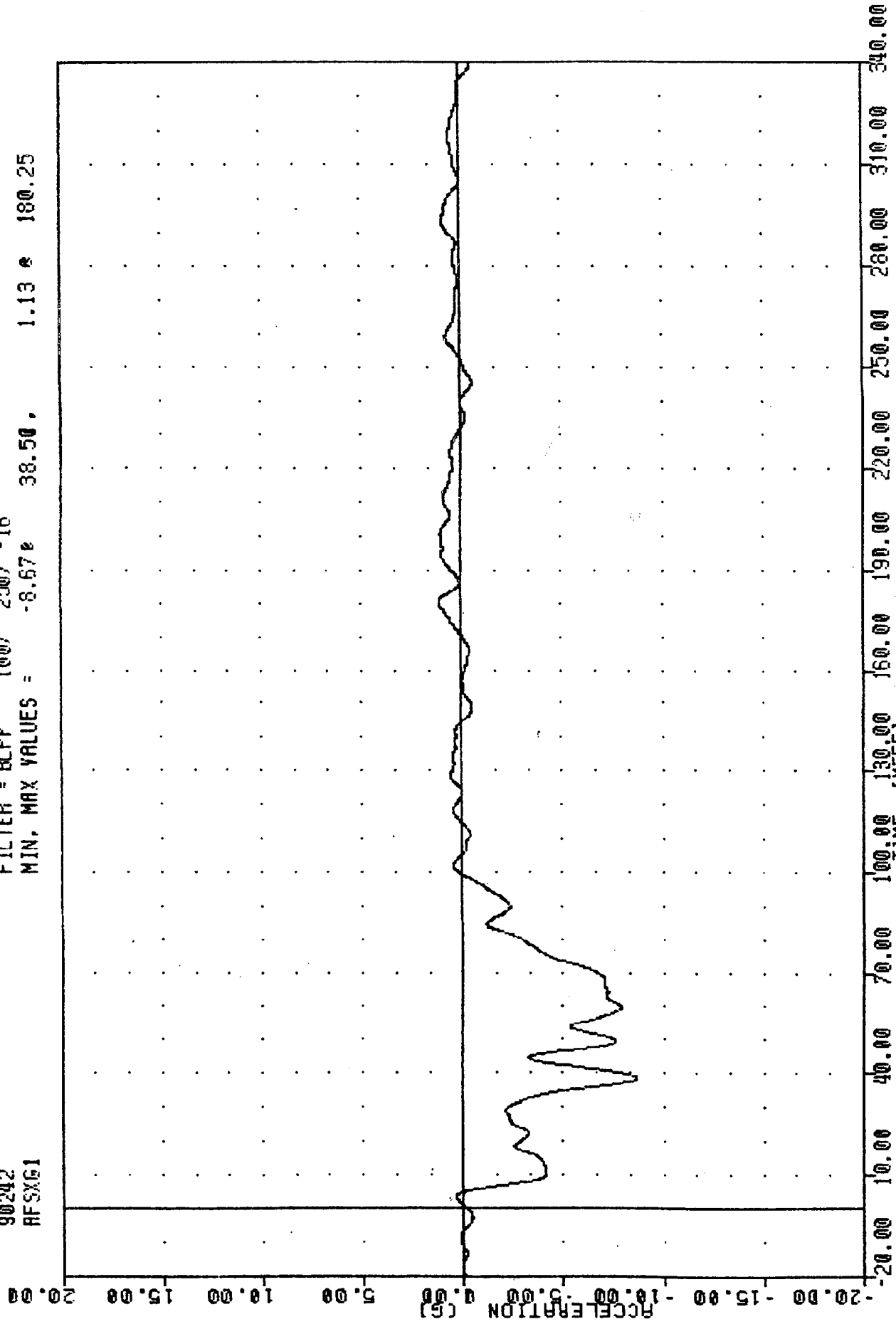
FILTER = BLPP 100/ 250/ -16
MIN. MAX VALUES = 0.04 247.25, 7.87 33.00



CONTOURED MOVING BARRIER INTO FORD ESCORT AT 14.2 MPH #1
LEFT FRONT SILL RESULTANT ACCELERATION

900830-1 . TRC
CRASH III DAMAGE ALGORITHM
90242
RFSXG1

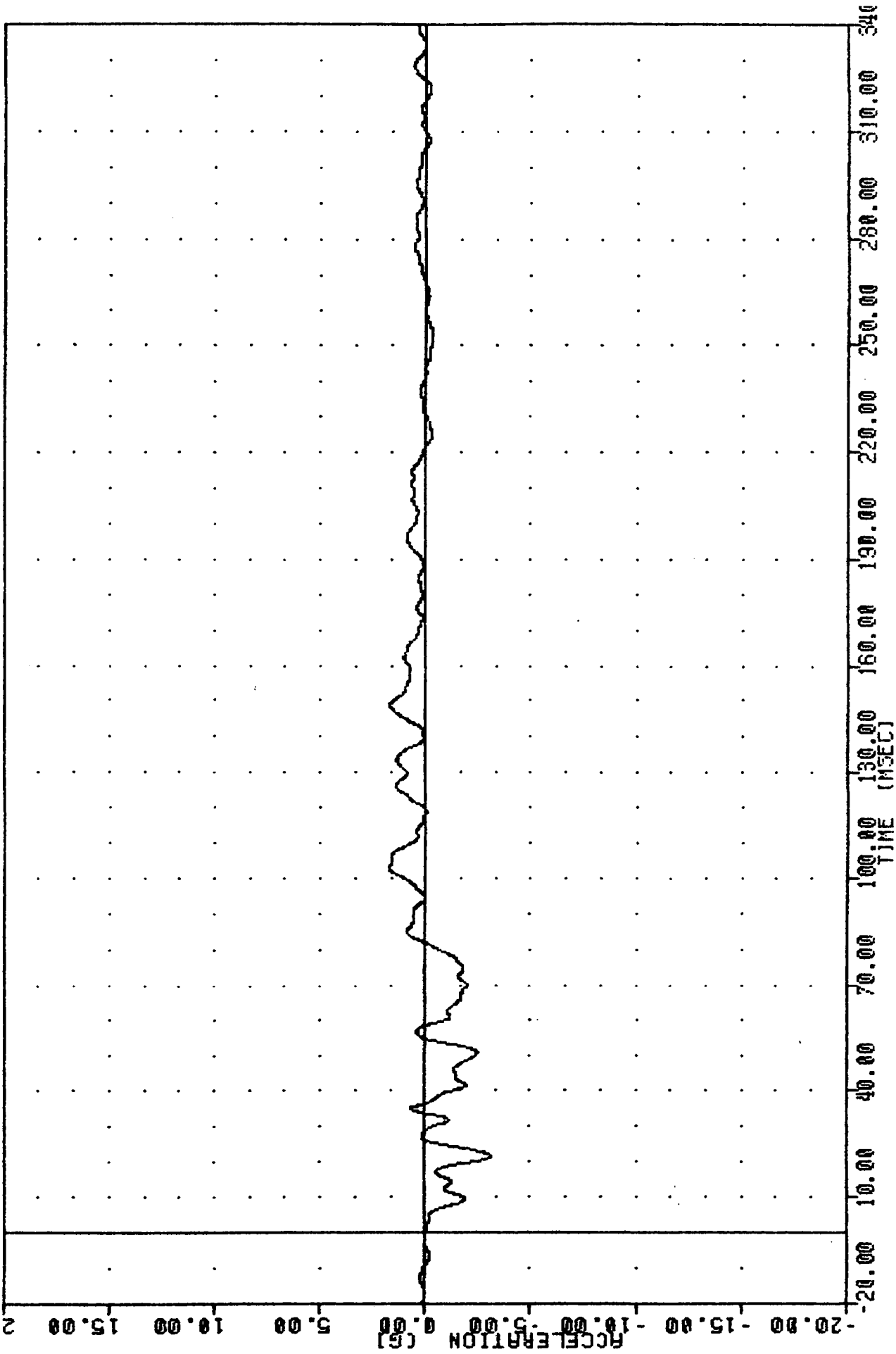
FILTER = BLPP 100/ 250/ -16
MIN, MAX VALUES = -8.57% 38.50, 1.13% 180.25



CONTOURED MOVING BARRIER INTO FORD ESCORT AT 14.2 MPH #1
RIGHT FRONT SILL X-AXIS ACCELERATION

3000001 P INC
CRASH III DAMAGE ALGORITHM
90242
RFSYG1

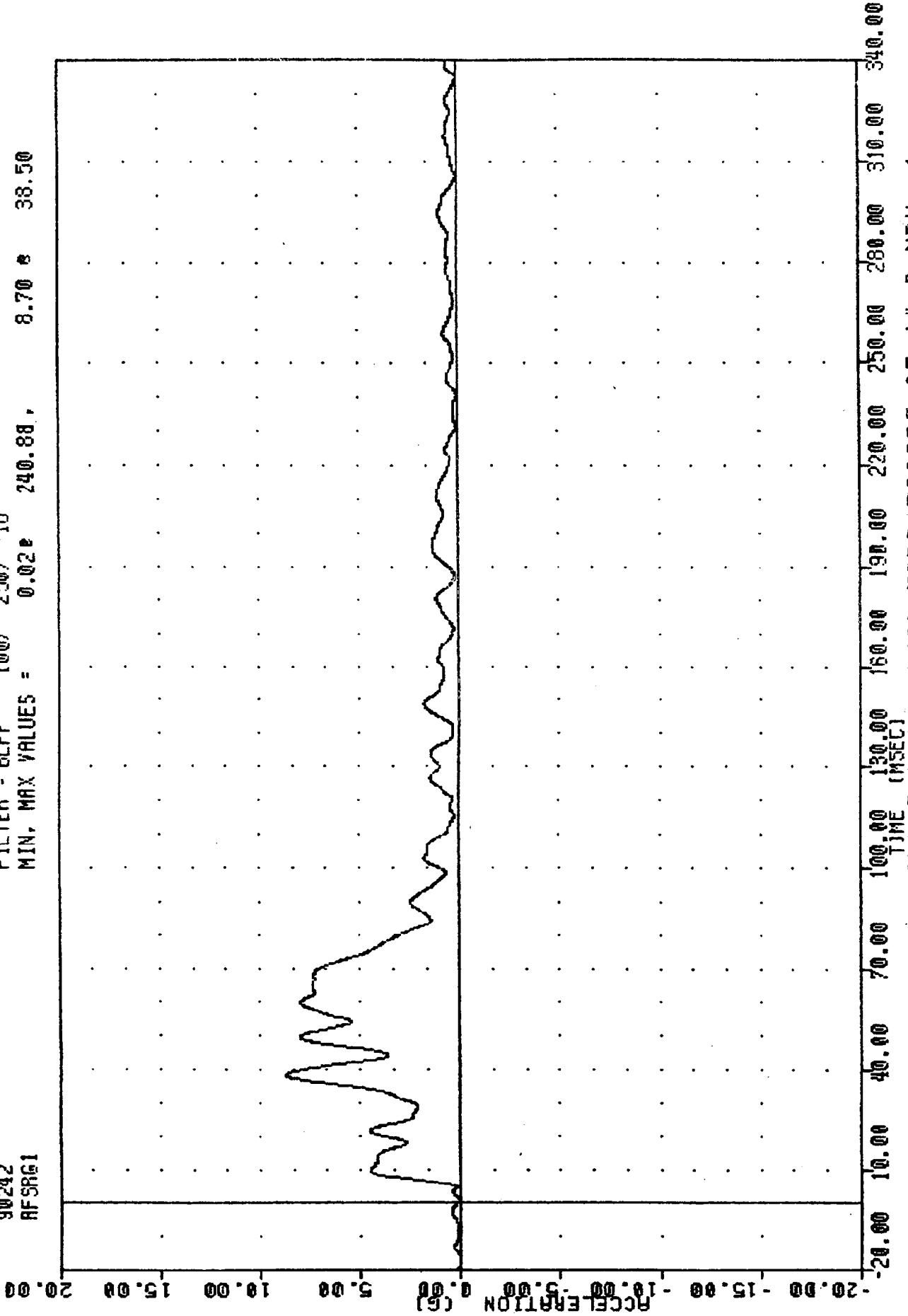
FILTER = BLPP 100/ 250/ -16
MIN. MAX VALUES = -3.17e 21.50, 1.74 e 102.63



CONTOURED MOVING BARRIER INTO FORD ESCORT AT 14.2 MPH #1
RIGHT FRONT SILL Y-AXIS ACCELERATION

900830-1 . TRC
CRASH III DAMAGE ALGORITHM
90242
AFSR61

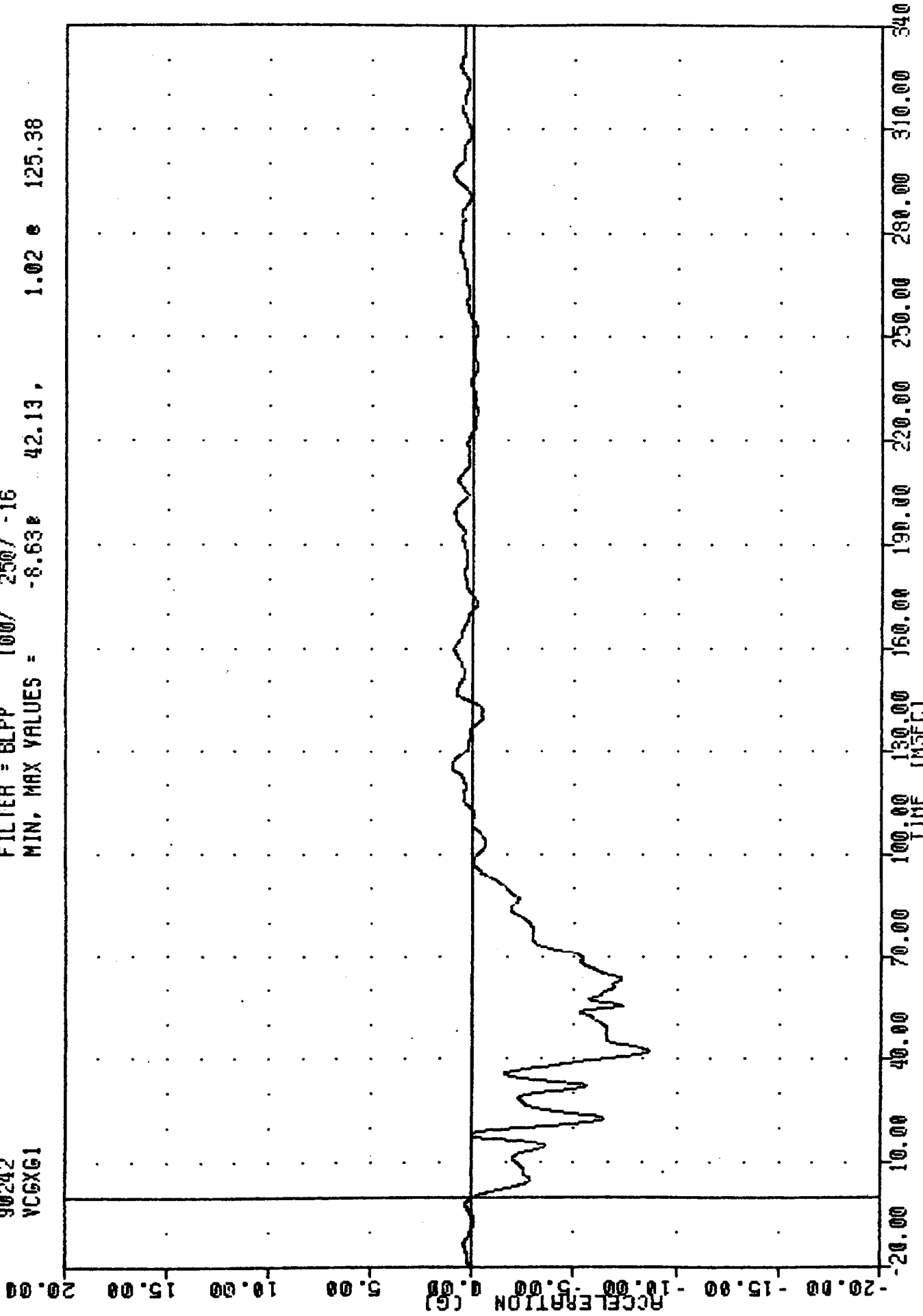
FILTER = BLPP 100/ 250/ -16
MIN, MAX VALUES = 0.02e 240.88, 8.70 e 38.50



CONTOURED MOVING BARRIER INTO FORD ESCORT AT 14.2 MPH #1
RIGHT FRONT SILL RESULTANT ACCELERATION

SWW0001 P INC
CRASH III DAMAGE ALGORITHM
90242
VCGXG1

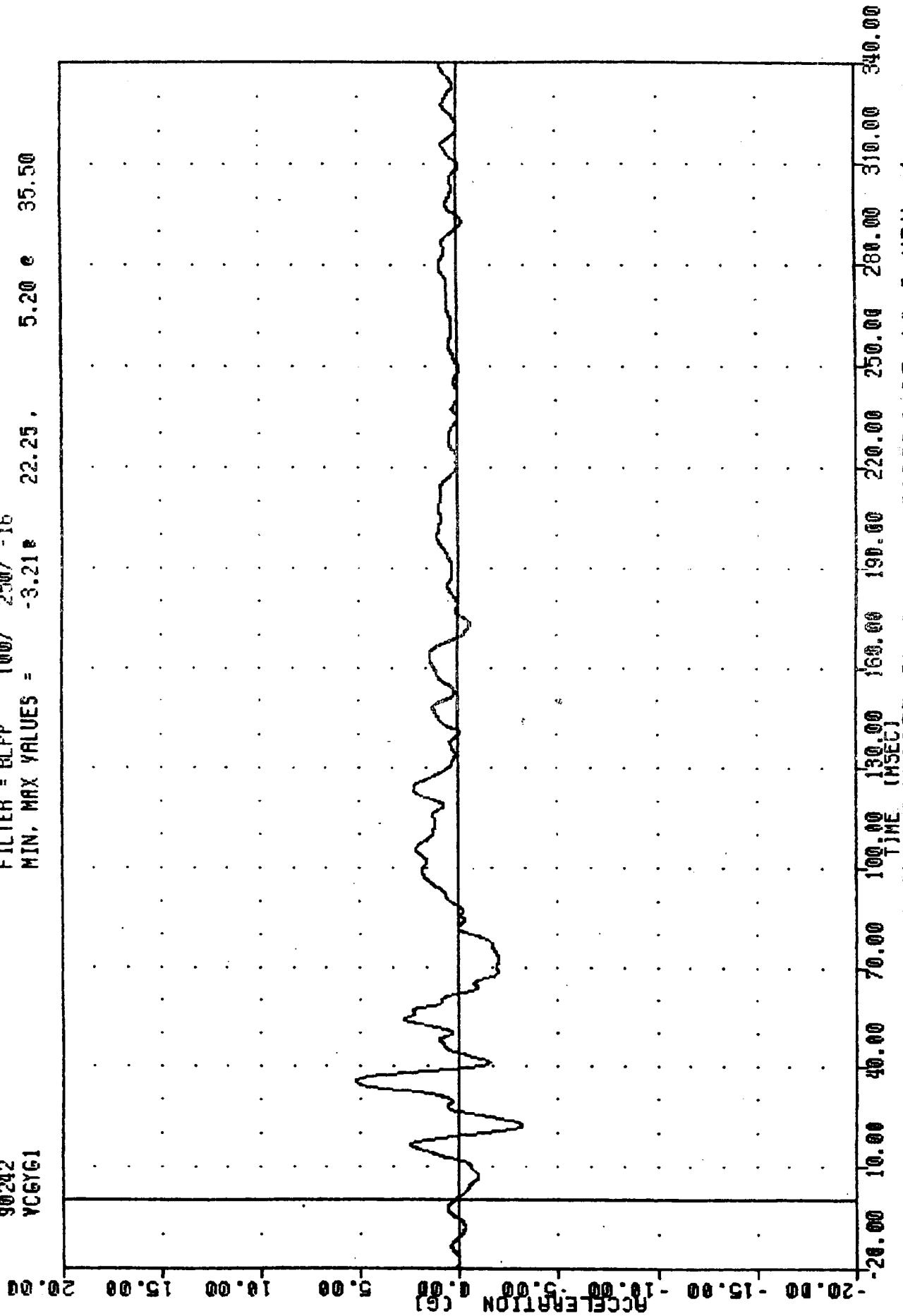
FILTER = BLPP 100/ 250/ -16
MIN, MAX VALUES = -8.63E 42.13, 1.02E 125.38



CONTOURED MOVING BARRIER INTO FORD ESCORT AT 14.2 MPH #1
VEHICLE CG X-AXIS ACCELERATION (IMPACT DIRECTION)

900330-1 TRC
CRASH III DAMAGE ALGORITHM
90242
YCGYG1

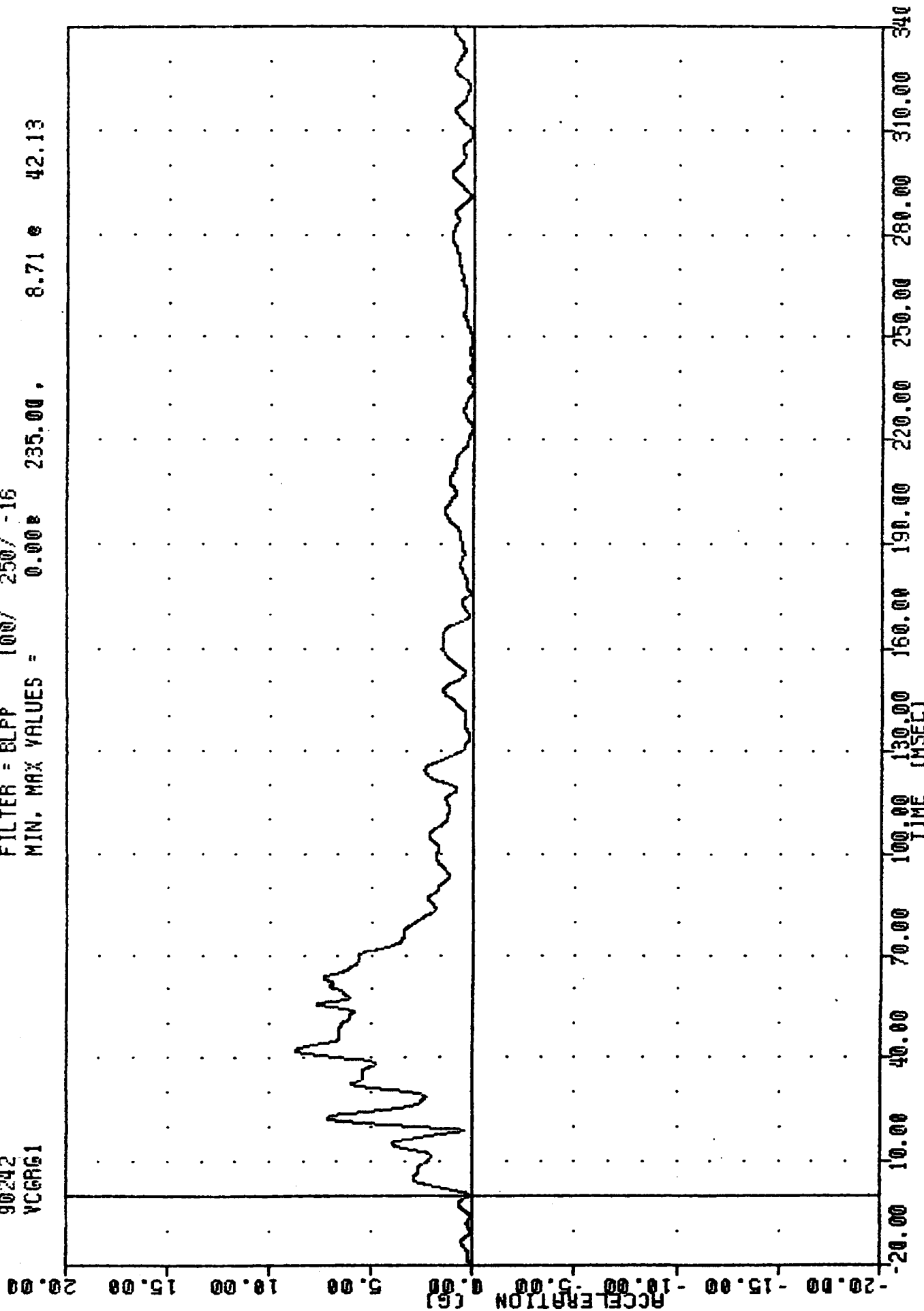
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MIN, MAX VALUES = -3.21e 5.20 e 35.50



CONTOURED MOVING BARRIER INTO FORD ESCORT AT 14.2 MPH #1
VEHICLE CG Y-AXIS ACCELERATION (PERPENDICULAR TO IMPACT DIRECTION)

CRASH III DAMAGE ALGORITHM
90242
YCGRG1

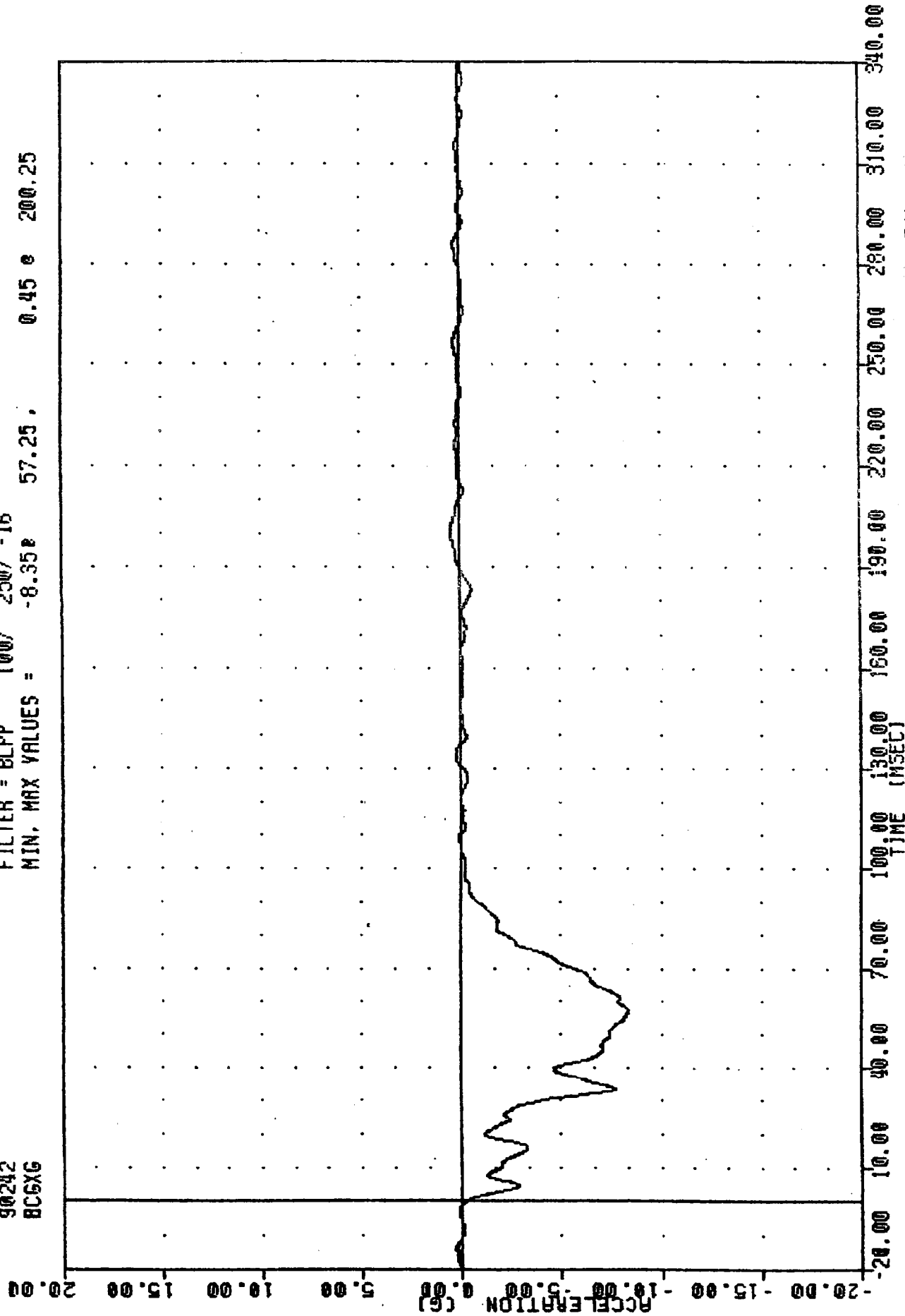
FILTER = 8LPP 100/ 250/ -16
MIN. MAX VALUES = 0.00 235.00, 8.71 42.13



CONTOURED MOVING BARRIER INTO FORD ESCORT AT 14.2 MPH #1
VEHICLE CG RESULTANT ACCELERATION

900630-1 TRC
 CRASH III DAMAGE ALGORITHM
 90242
 BC6XG

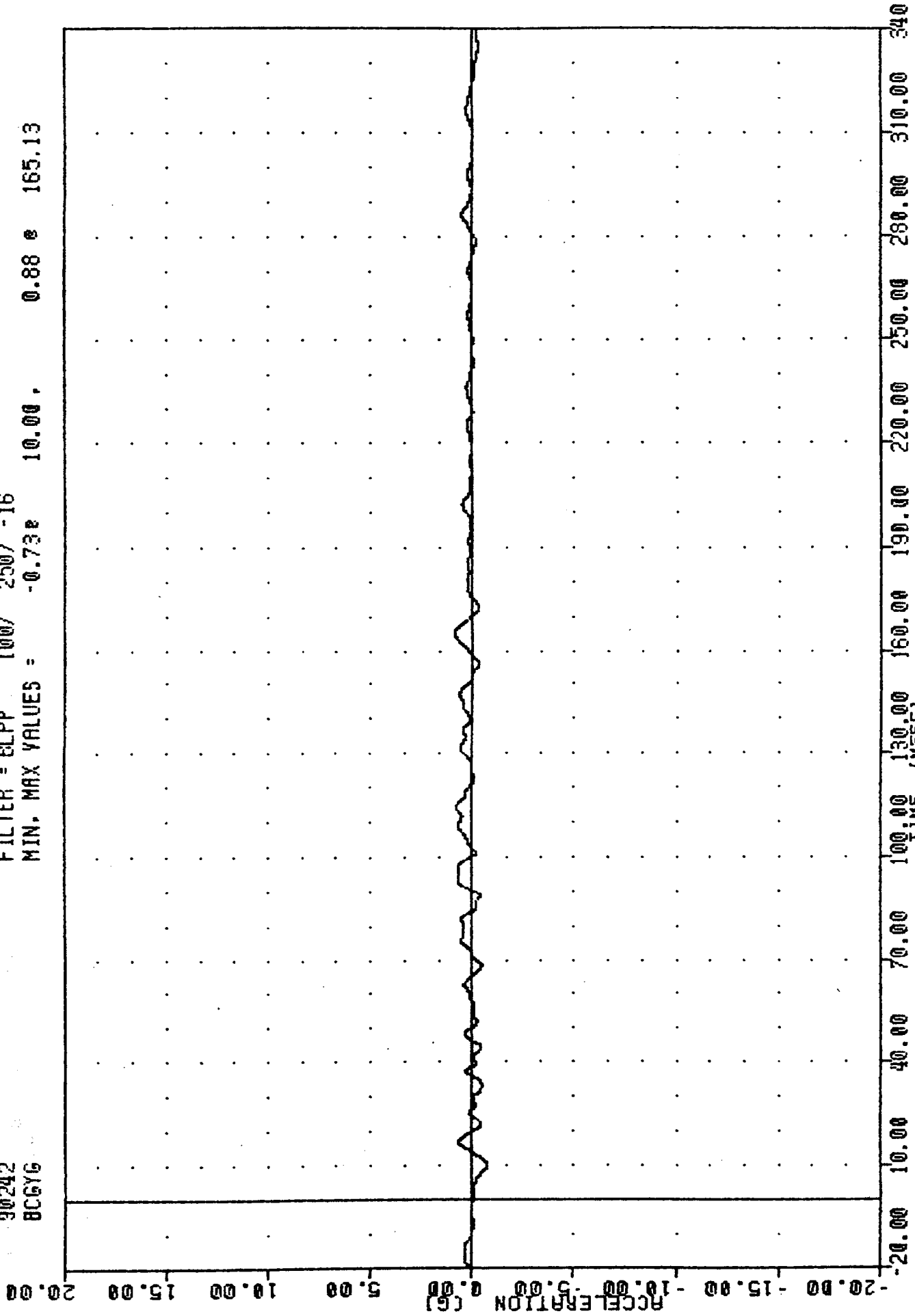
FILTER = BLPP 100/ 250/ -16
 MIN. MAX VALUES = -8.35 57.25 0.45 e 200.25



CONTOURED MOVING BARRIER INTO FORD ESCORT AT 14.2 MPH *1
 MOVING BARRIER CENTER OF GRAVITY X-AXIS ACCELERATION

30000000
 CRASH III DAMAGE ALGORITHM
 30242
 BCCYG

FILTER = ELPP 100/ 250/ -16
 MIN. MAX VALUES = -0.73e 10.00. 0.88 e 165.13

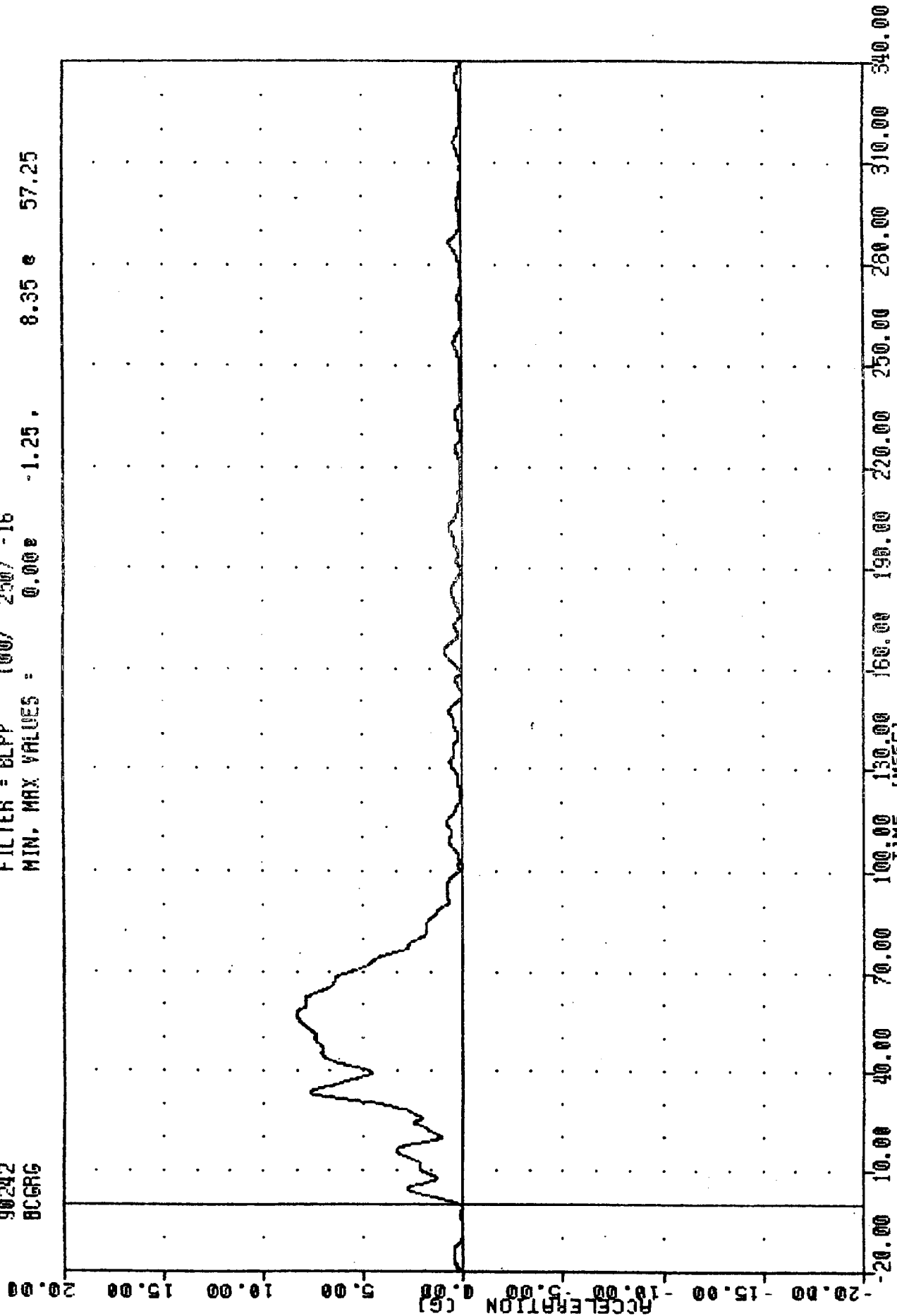


CONTOURED MOVING BARRIER INTO FORD ESCORT AT 14.2 MPH #1
 MOVING BARRIER CENTER OF GRAVITY Y-AXIS ACCELERATION

900830-1 TRC
CRASH III DAMAGE ALGORITHM

90242
BCGRG

FILTER = BLPP 100/ 250/ -16
MIN. MAX VALUES = 0.00e -1.25, 8.35 e 57.25

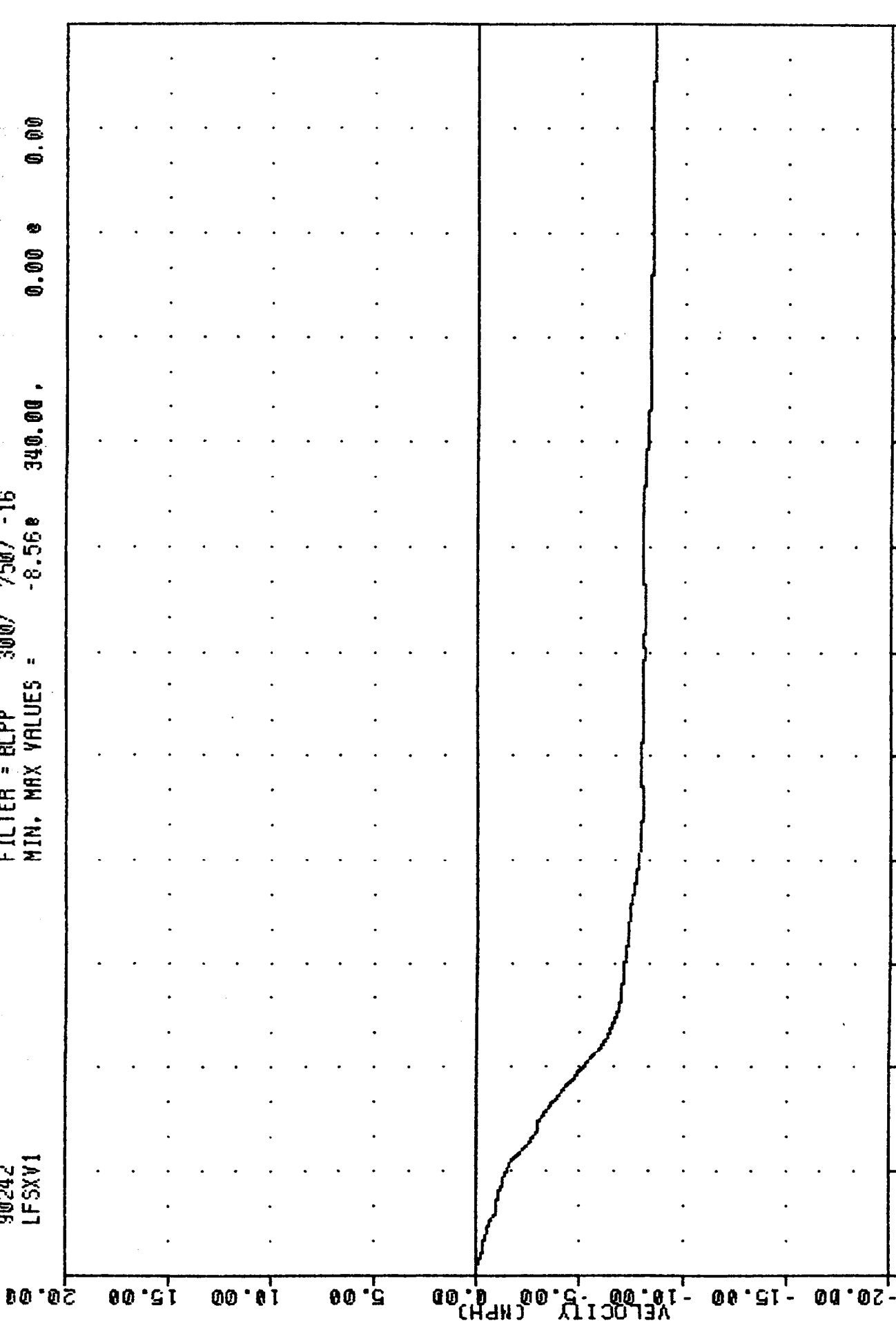


CONTOURED MOVING BARRIER INTO FORD ESCORT AT 14.2 MPH #1
MOVING BARRIER CENTER OF GRAVITY RESULTANT ACCELERATION

CRASH III DAMAGE ALGORITHM

90242
LFSXV1

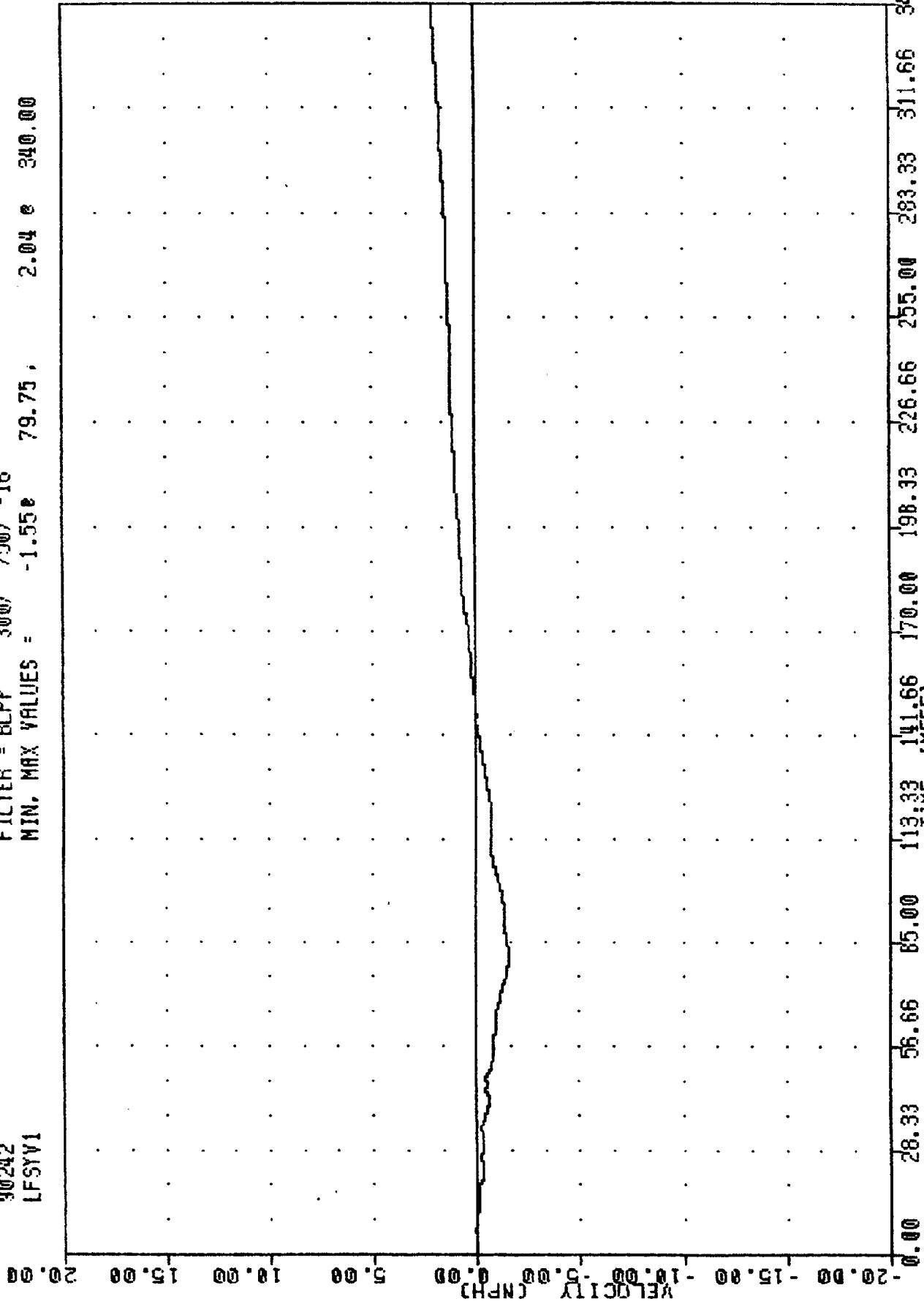
FILTER = BLPP 300/ 750/ -16
MIN. MAX VALUES = -8.56e 340.00, 0.00 e 0.00



CONTOURED MOVING BARRIER INTO FORD ESCORT AT 14.2 MPH #1
LEFT FRONT SILL X-AXIS VELOCITY

300850-1 TRC
 CRASH III DAMAGE ALGORITHM
 30242
 LFSYV1

FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = -1.55e 79.75, 2.04 e 340.00

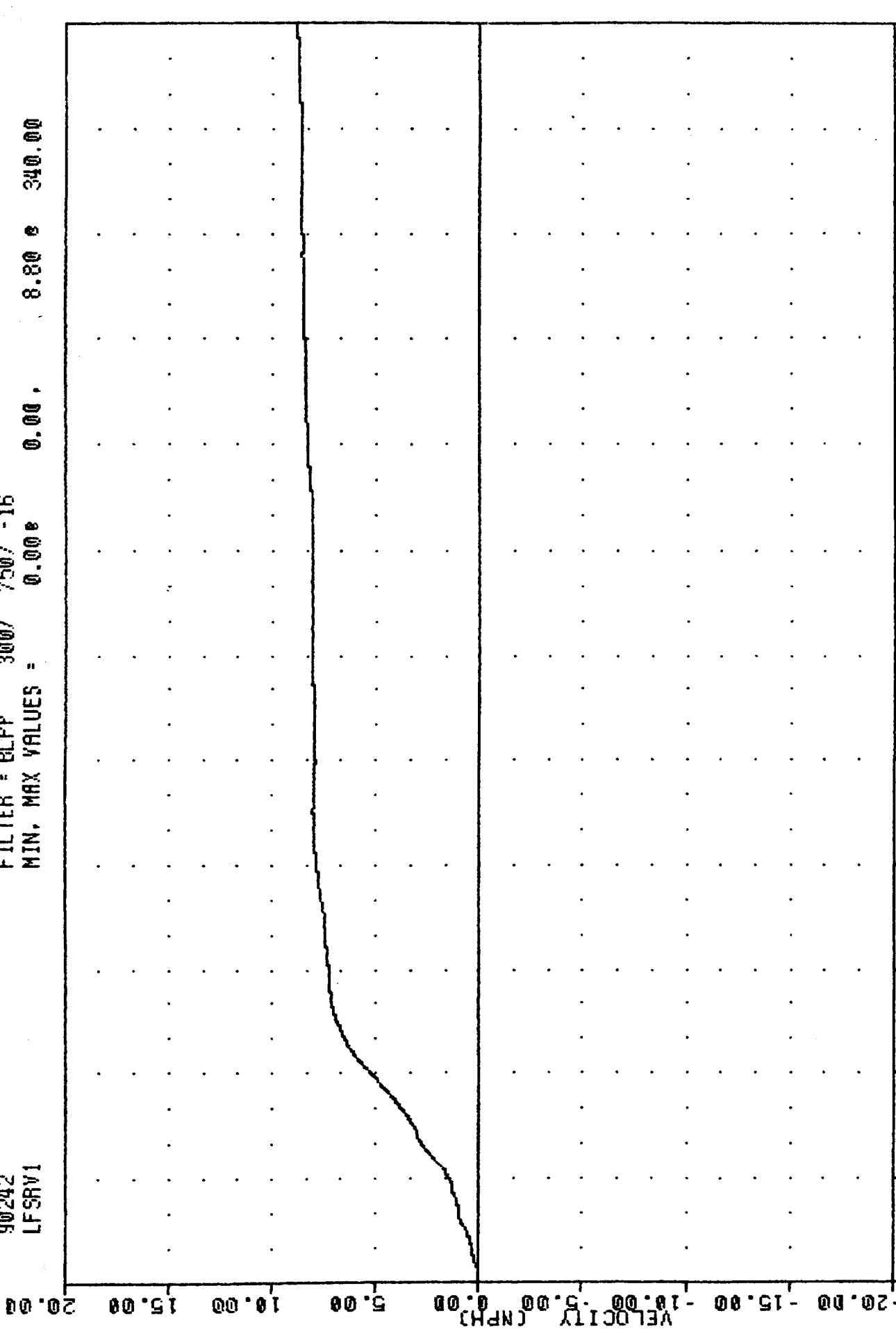


CONTOURED MOVING BARRIER INTO FORD ESCORT AT 14.2 MPH #1
 LEFT FRONT SILL Y-AXIS VELOCITY

CRASH III DAMAGE ALGORITHM

90242
LFSRV1

FILTER = BLPP 300/ 750/ -16
MIN, MAX VALUES = 0.00e 0.00, 8.80 e 340.00



0.00 28.33 56.66 85.00 113.33 141.66 170.00 198.33 226.66 255.00 283.33 311.66 340.00

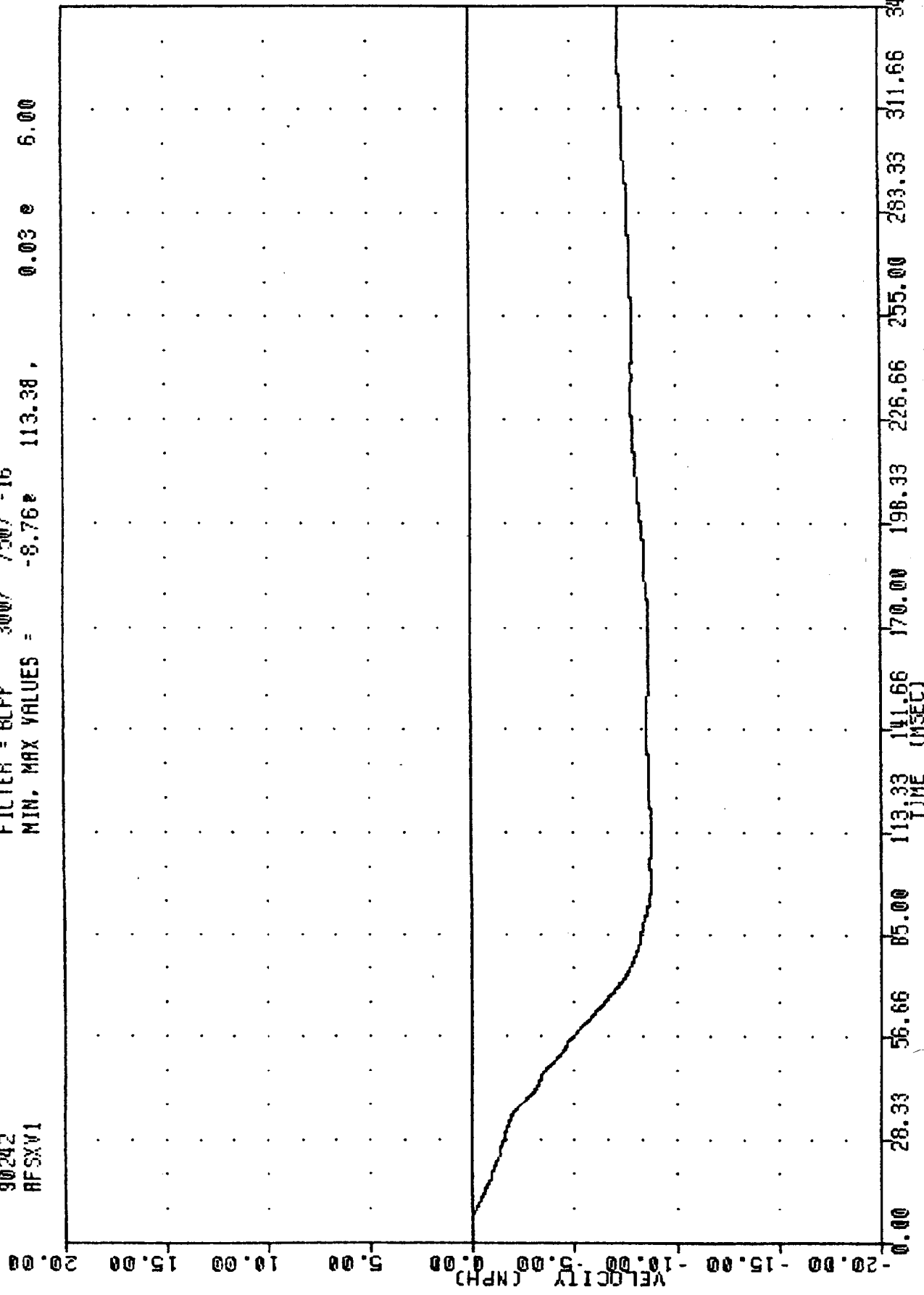
VELOCITY (MPH)

TIME (MSEC)

CONTOURED MOVING BARRIER INTO FORD ESCORT AT 14.2 MPH #1
LEFT FRONT SILL RESULTANT VELOCITY

900230-1 , TRC
 CRASH III DAMAGE ALGORITHM
 90242
 AFSXV1

FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = -8.76e 113.38 , 0.03 e 5.00



CONTOURED MOVING BARRIER INTO FORD ESCORT AT 14.2 MPH #1
 RIGHT FRONT SILL X-AXIS VELOCITY

CRASH III DAMAGE ALGORITHM

90242
RFSYV1

FILTER = BLPP 300/ 750/ -16
MIN. MAX VALUES = -1.95e 82.38,

0.37 e 340.00

20.00

15.00

10.00

5.00

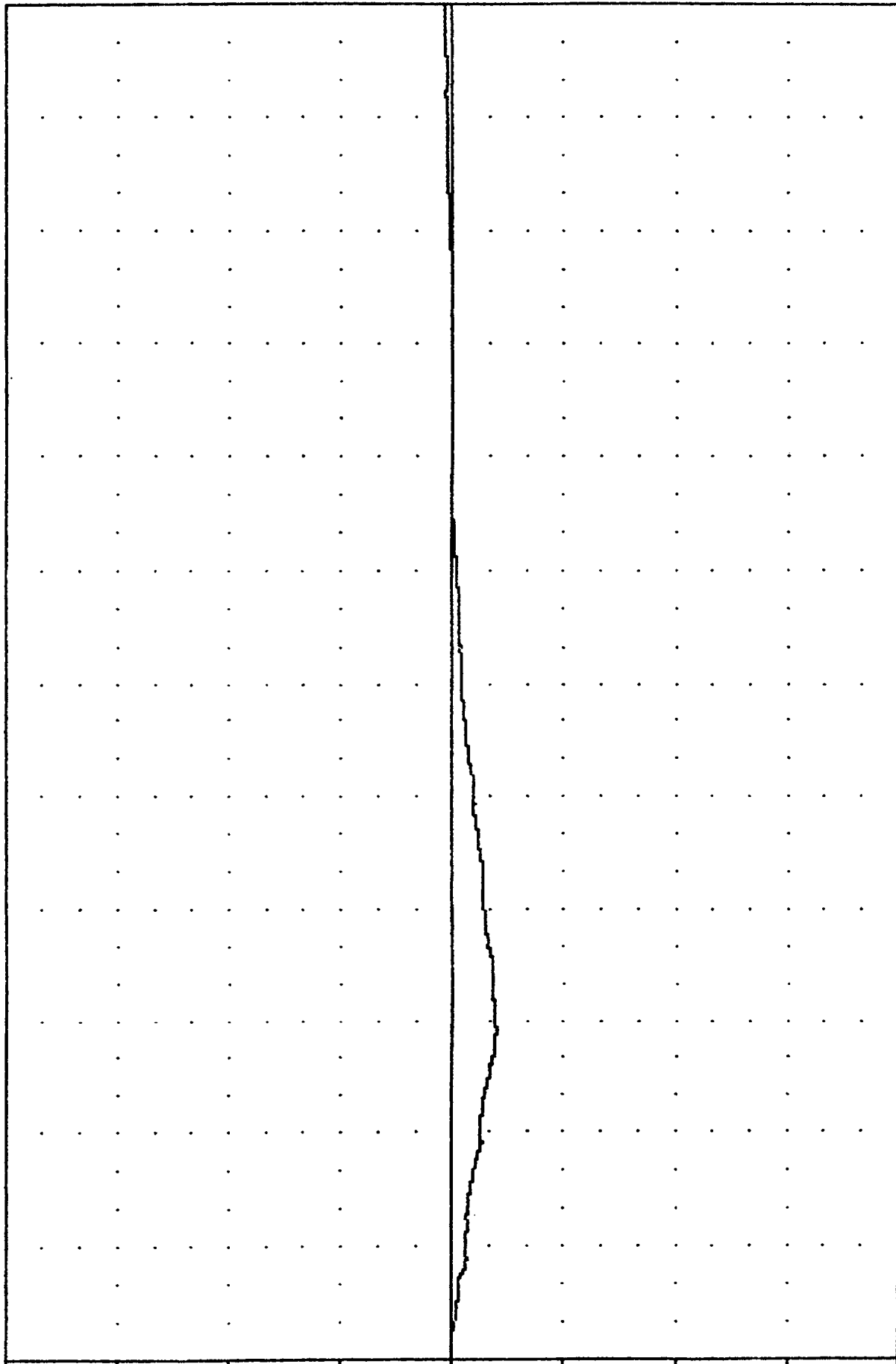
0.00

-5.00

-10.00

-15.00

-20.00

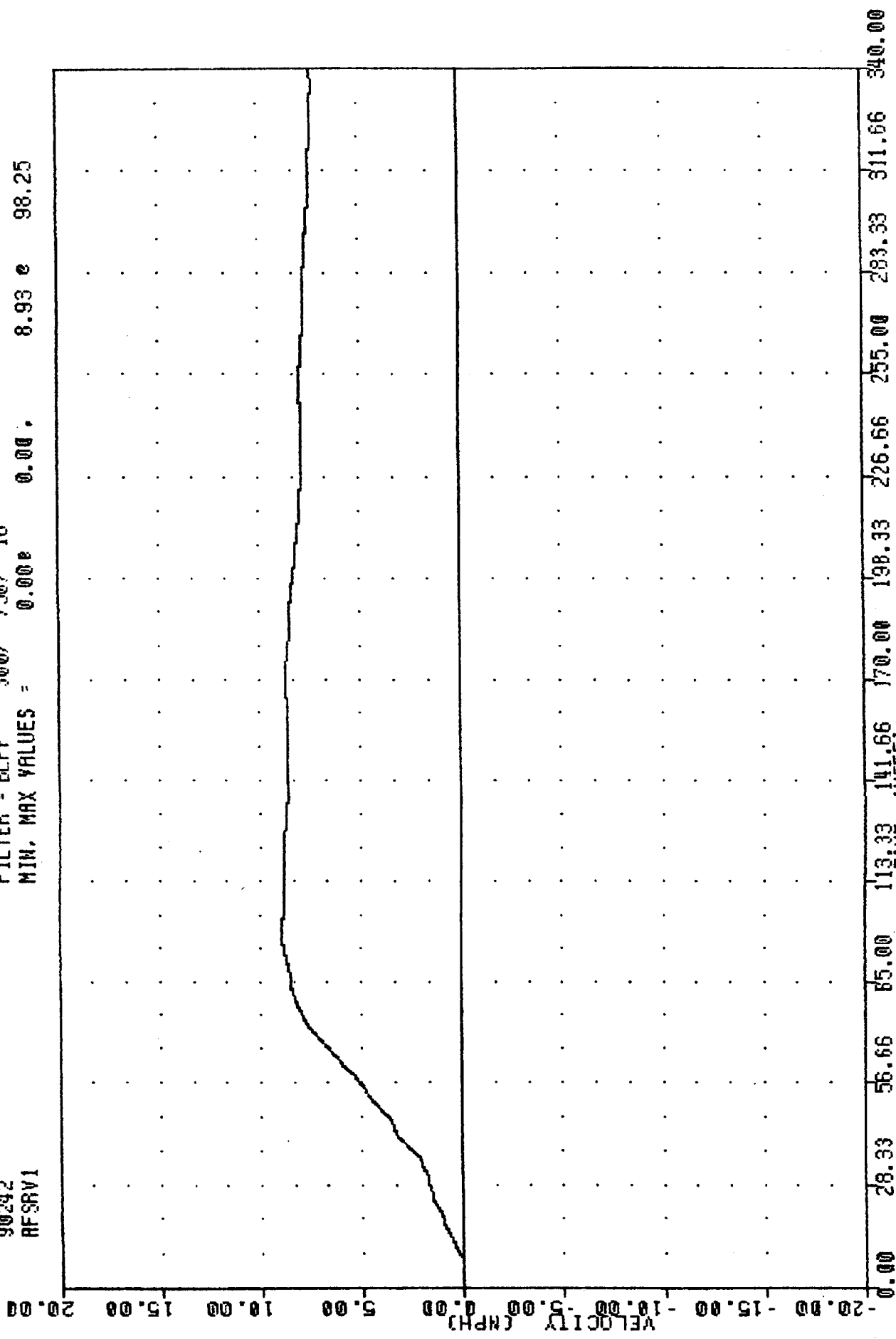


0.00 28.33 56.66 85.00 113.33 141.66 170.00 198.33 226.66 255.00 283.33 311.66 340

CONToured MOVING BARRIER INTO FORD ESCORT AT 14.2 MPH #1
RIGHT FRONT SILL Y-AXIS VELOCITY

900830-1 .TRC
 CRASH III DAMAGE ALGORITHM
 90242
 AFSRV1

FILTER = BLPP 300/ 750/ -16
 MIN, MAX VALUES = 0.00e 0.00, 8.93 e 98.25

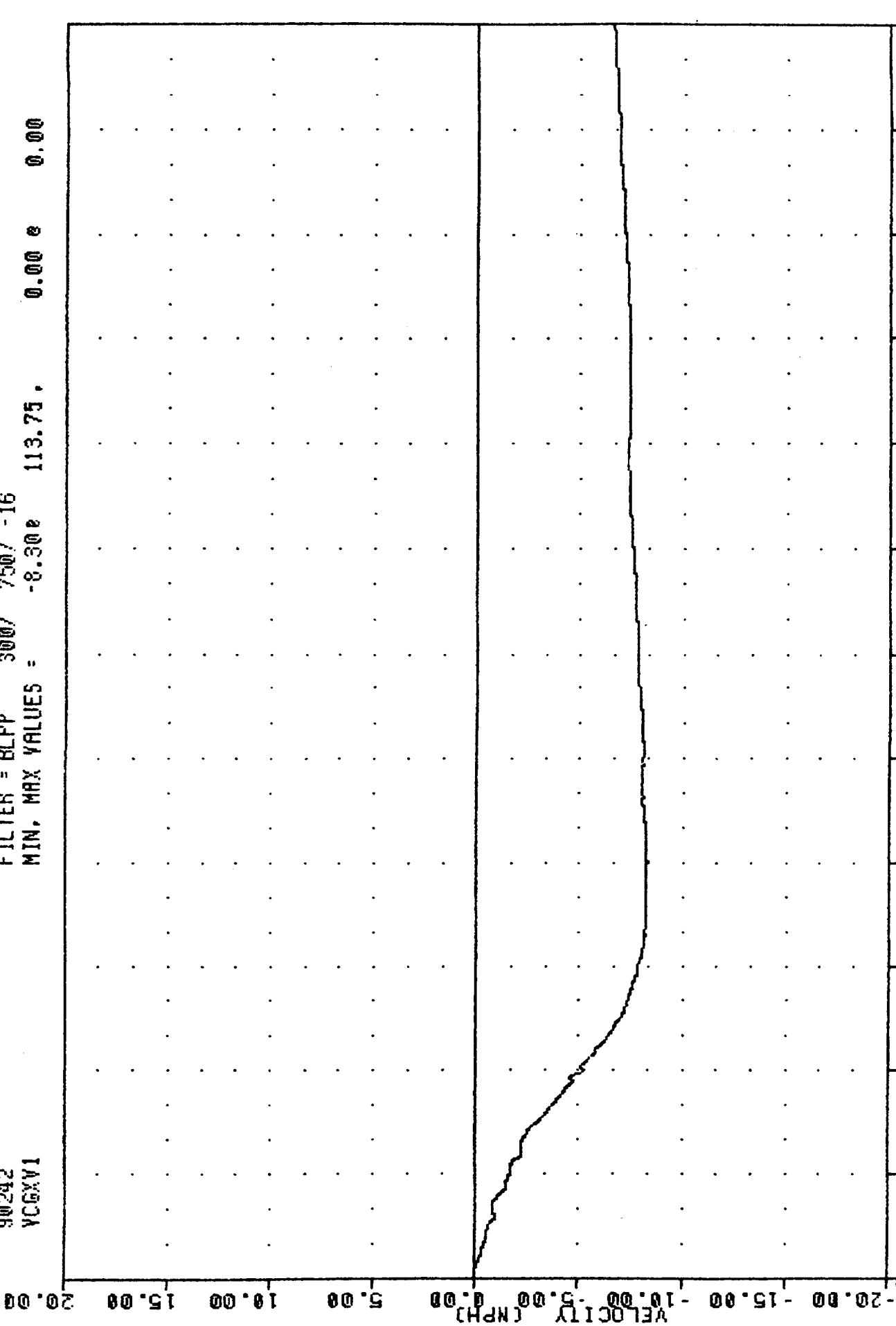


CONTOURED MOVING BARRIER INTO FORD ESCORT AT 14.2 MPH #1
 RIGHT FRONT SILL RESULTANT VELOCITY

CRASH III DAMAGE ALGORITHM

90242
YCGXV1

FILTER = BLPP 300/ 750/ -16
MIN, MAX VALUES = -8.30e 113.75. 0.00 e 0.00

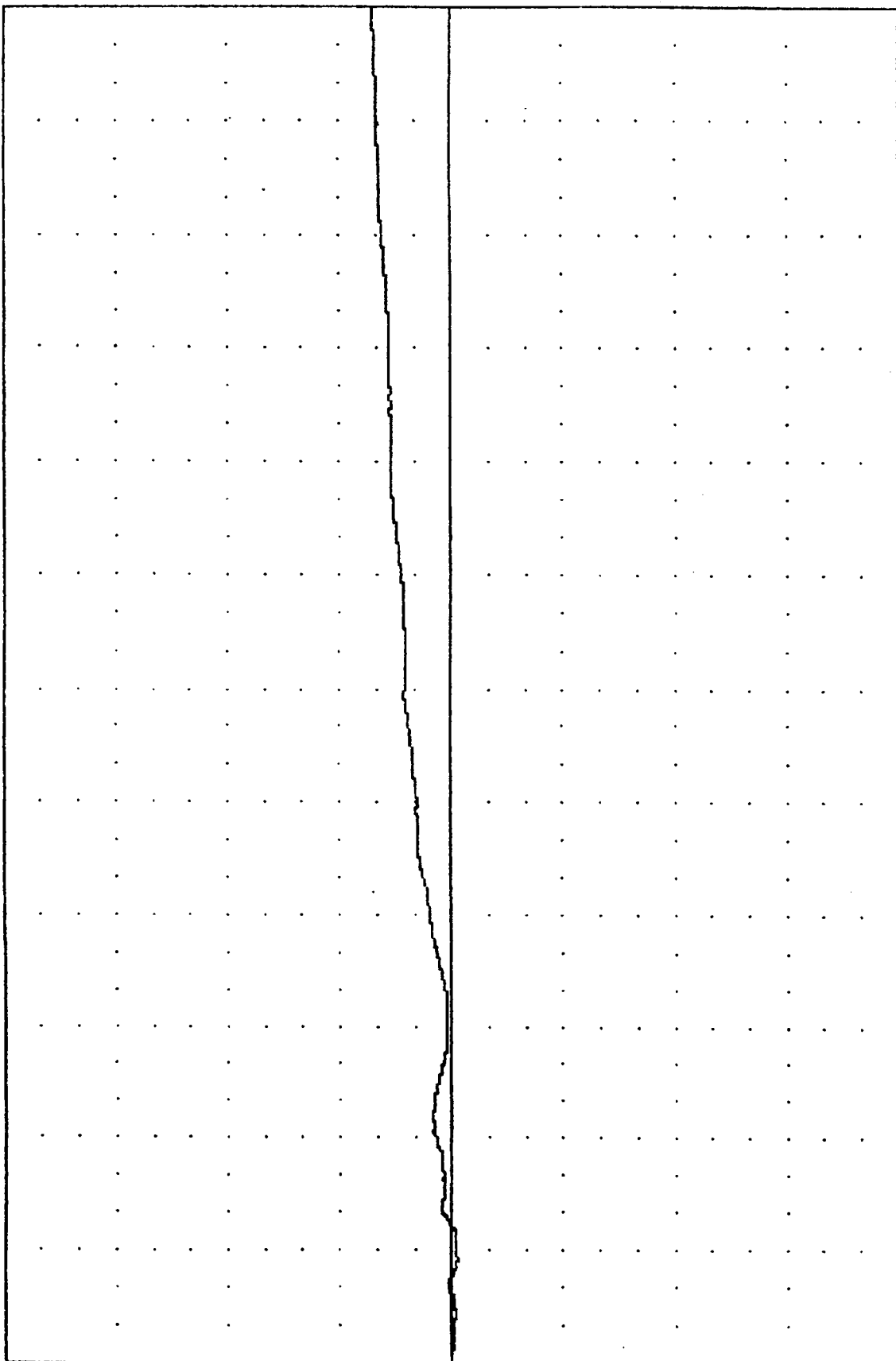


0.00 26.33 56.66 85.00 113.33 141.66 170.00 198.33 226.66 255.00 283.33 311.66 340
 TIME (MSEC)
 CONTOURED MOVING BARRIER INTO FORD ESCORT AT 14.2 MPH *1
 VEHICLE CG X-AXIS VELOCITY (IMPACT DIRECTION)

900830-1 , TRC
 CRASH III DAMAGE ALGORITHM
 90242
 VCGYV1

FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = -0.25e 25.75 , 3.57 e 340.00

0.00 28.33 56.66 85.00 113.33 141.66 170.00 198.33 226.66 255.00 283.33 311.66 340.00



CONTOURED MOVING BARRIER INTO FORD ESCORT AT 14.2 MPH *1
 VEHICLE CG Y-AXIS VELOCITY (PERPENDICULAR TO IMPACT DIRECTION)

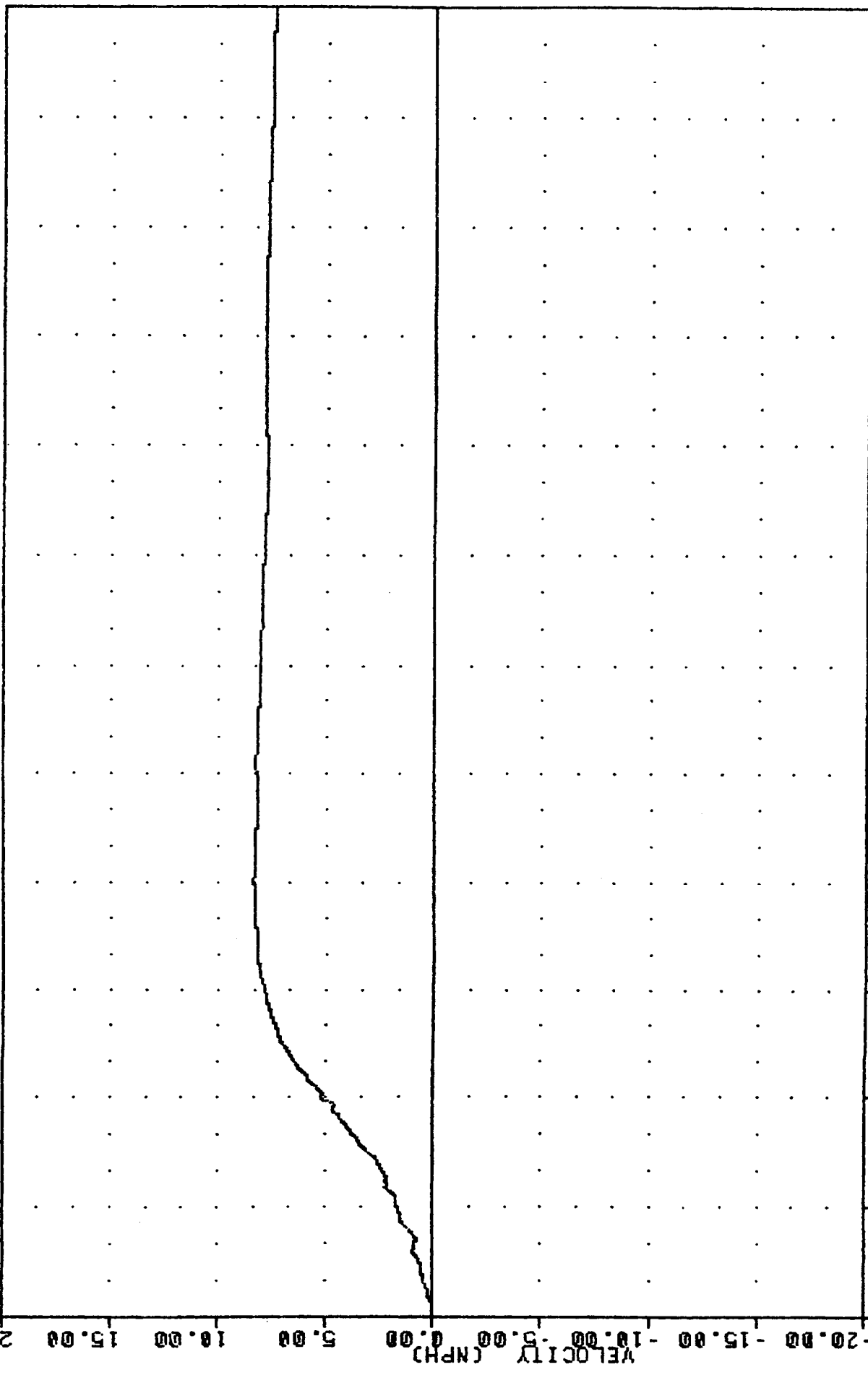
CRASH III DAMAGE ALGORITHM

90242
YCGRV1

FILTER = BLPP 300/ 750/ -16
MIN. MAX VALUES = 0.00e 0.00e

8.36 e 113.88

20.00
15.00
10.00
5.00
0.00

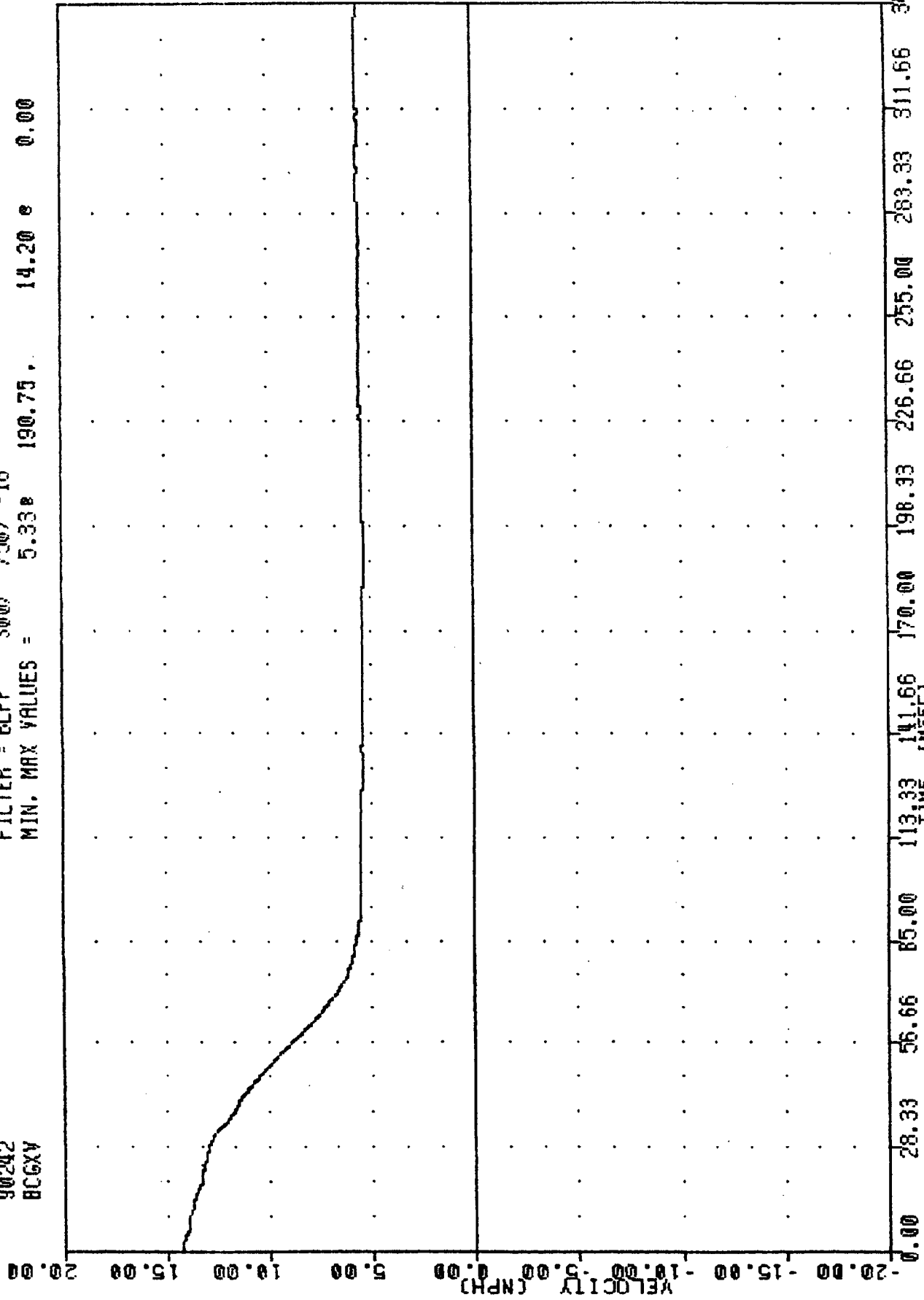


0.00 28.33 56.66 85.00 113.33 141.66 170.00 198.33 226.66 255.00 283.33 311.66 340

CONTOURED MOVING BARRIER INTO FORD ESCORT AT 14.2 MPH #1
VEHICLE CG RESULTANT VELOCITY

900630-1 . TRC
 CRASH III DAMAGE ALGORITHM
 90242
 BCGXY

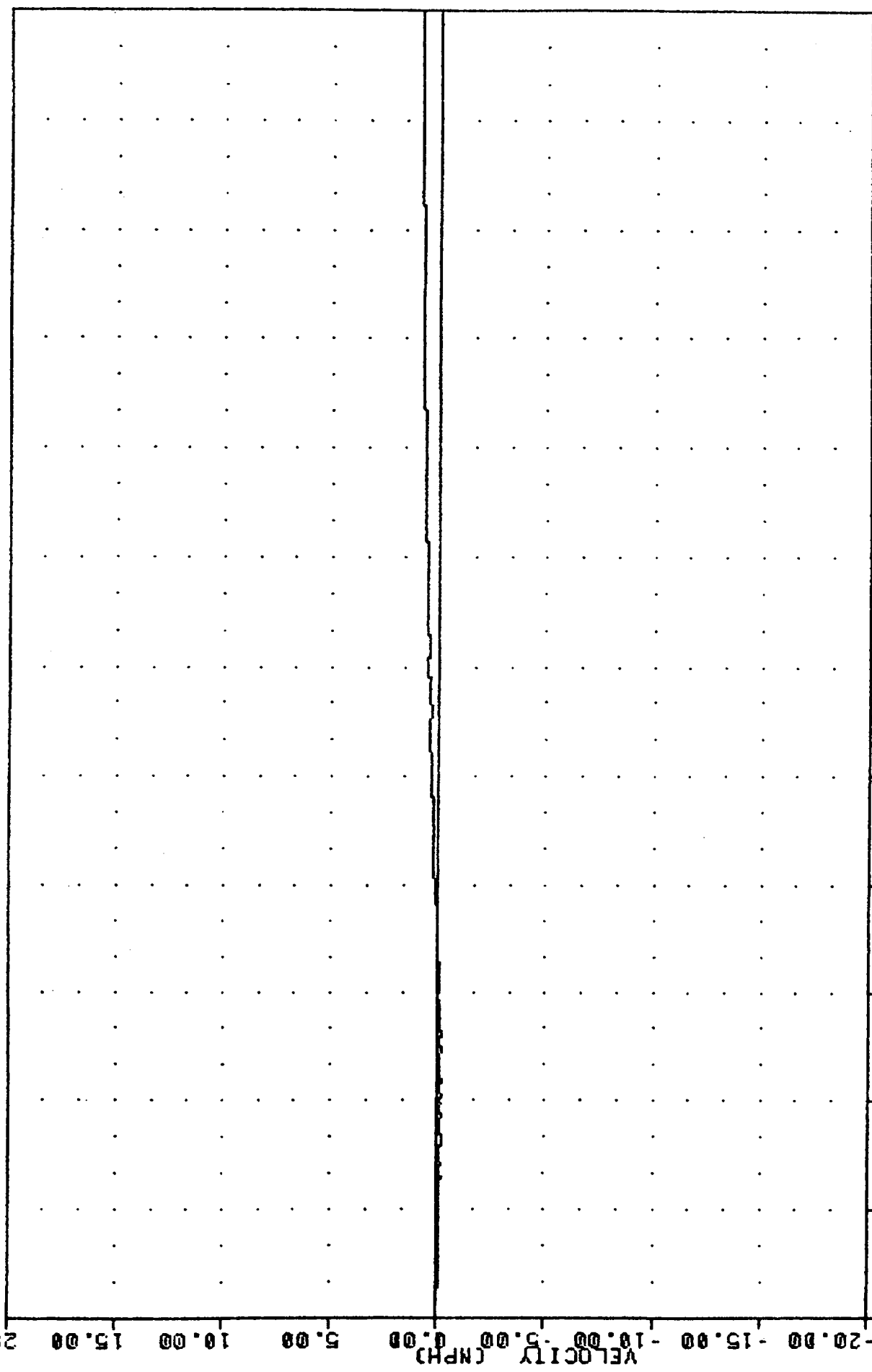
FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = 5.33e 190.75 . 14.20 e 0.00



CONTOURED MOVING BARRIER INTO FORD ESCORT AT 14.2 MPH #1
 MOVING BARRIER CENTER OF GRAVITY X-AXIS VELOCITY.

CRASH III DAMAGE ALGORITHM
 90242
 BCGYV

FILTER = BLPP 300/ 750/ -16
 MIN, MAX VALUES = -0.16e 45.50, 0.92 e 324.63

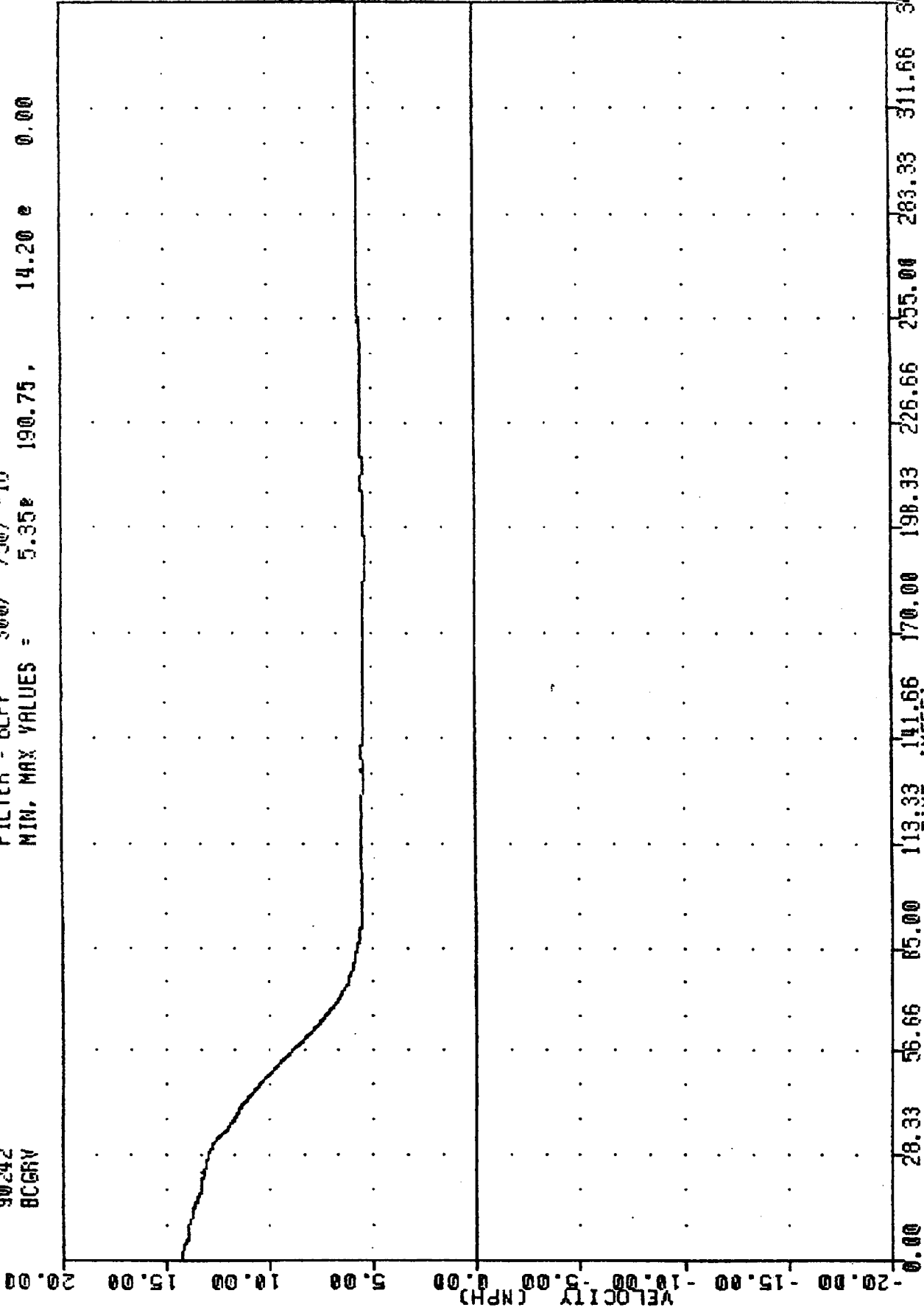


0.00	28.33	56.66	85.00	113.33	141.66	170.00	198.33	226.66	255.00	283.33	311.66	340
												TIME (MSEC)

CONTOURED MOVING BARRIER INTO FORD ESCORT AT 14.2 MPH #1
 MOVING BARRIER CENTER OF GRAVITY Y-AXIS VELOCITY

900830-1 .TRC
 CRASH III DAMAGE ALGORITHM
 90242
 BCGRY

FILTER = BLFP 300/ 750/ -16
 MIN. MAX VALUES = 5.35e 190.75, 14.20 e 0.00



CONTOURED MOVING BARRIER INTO FORD ESCORT AT 14.2 MPH #1
 MOVING BARRIER CENTER OF GRAVITY RESULTANT VELOCITY

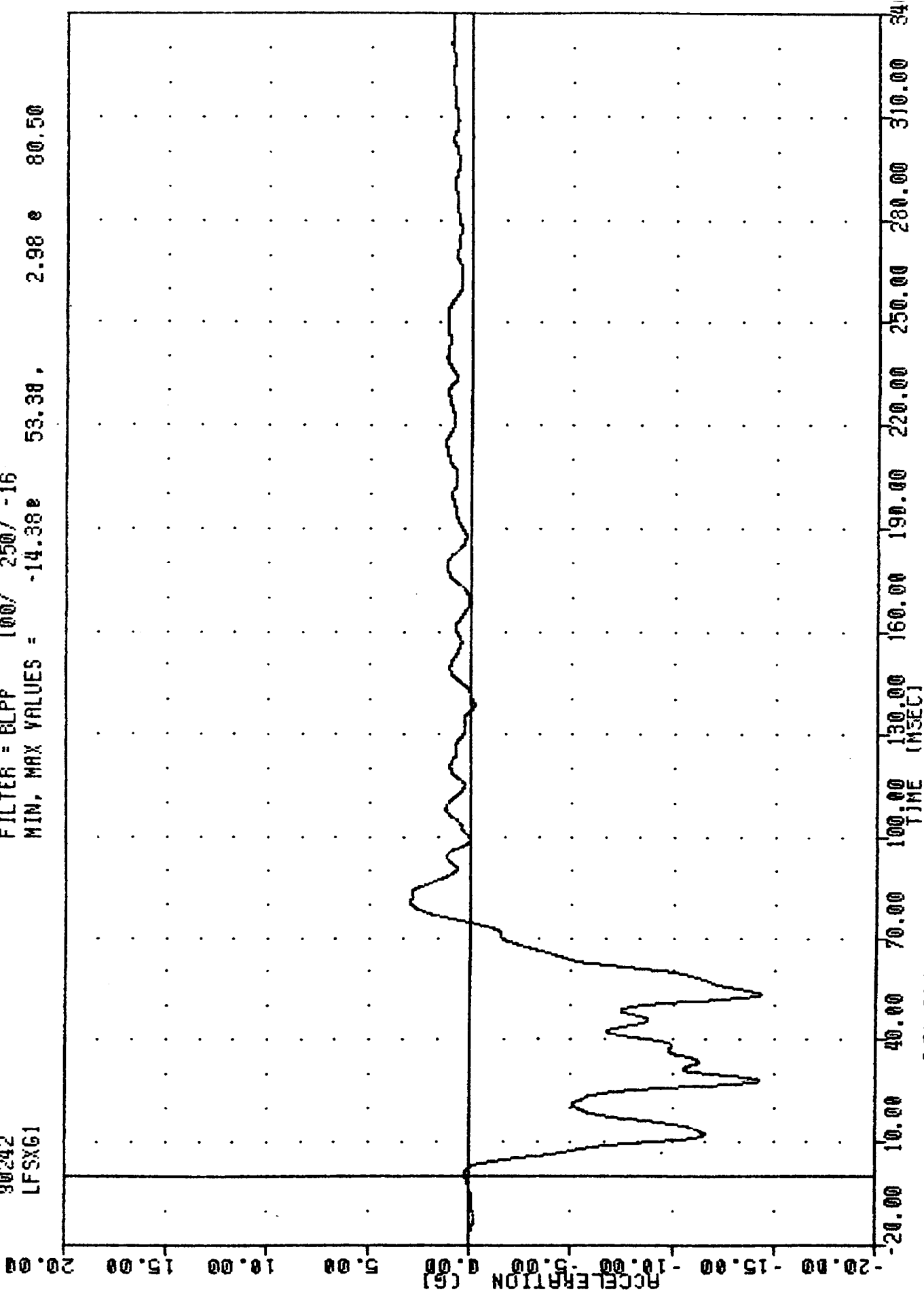
CRASH III DAMAGE ALGORITHM

90242

LFSXG1

FILTER = BLPP 100/ 250/ -16

MIN, MAX VALUES = -14.38e 53.38, 2.98 e 80.50

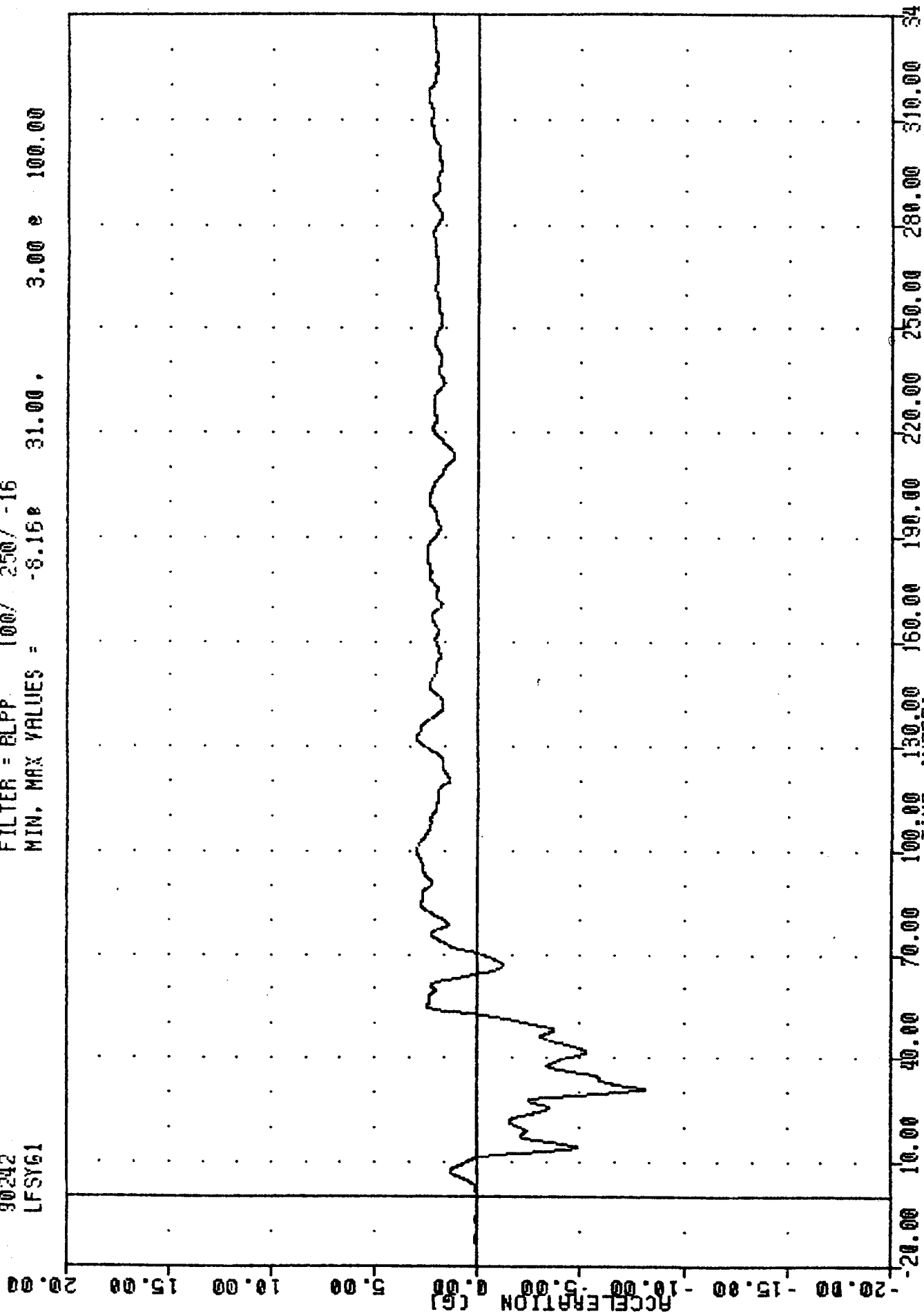


CONTOURED MOVING BARRIER INTO FORD ESCORT AT 28.1 MPH #2
LEFT FRONT SILL X-AXIS ACCELERATION

TEST #900830-2

CRASH III DAMAGE ALGORITHM
90242
LFSY61

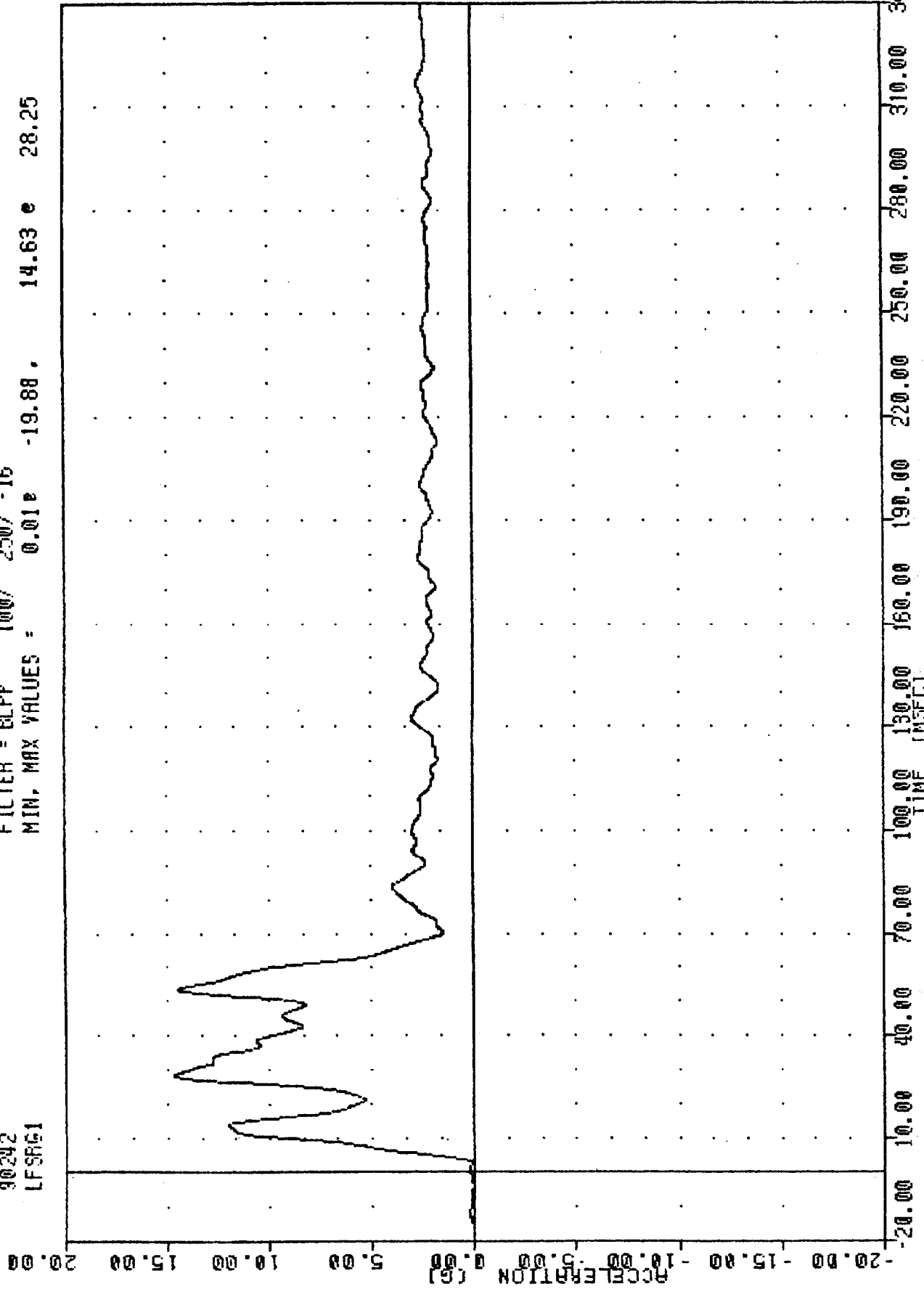
FILTER = BLPP 100/ 250/ -16
MIN, MAX VALUES = -8.15e 31.00, 3.00 e 100.00



CONTOURED MOVING BARRIER INTO FORD ESCORT AT 28.1 MPH #2
LEFT FRONT SILL Y-AXIS ACCELERATION

900630-2 , TRC
 CRASH III DAMAGE ALGORITHM
 90242
 LFSRG1

FILTER = BLPP 100/ 250/ -16
 MIN. MAX VALUES = 0.01e -19.88. 14.63 e 28.25



B30

CONTOURED MOVING BARRIER INTO FORD ESCORT AT 28.1 MPH #2
 LEFT FRONT SILL RESULTANT ACCELERATION

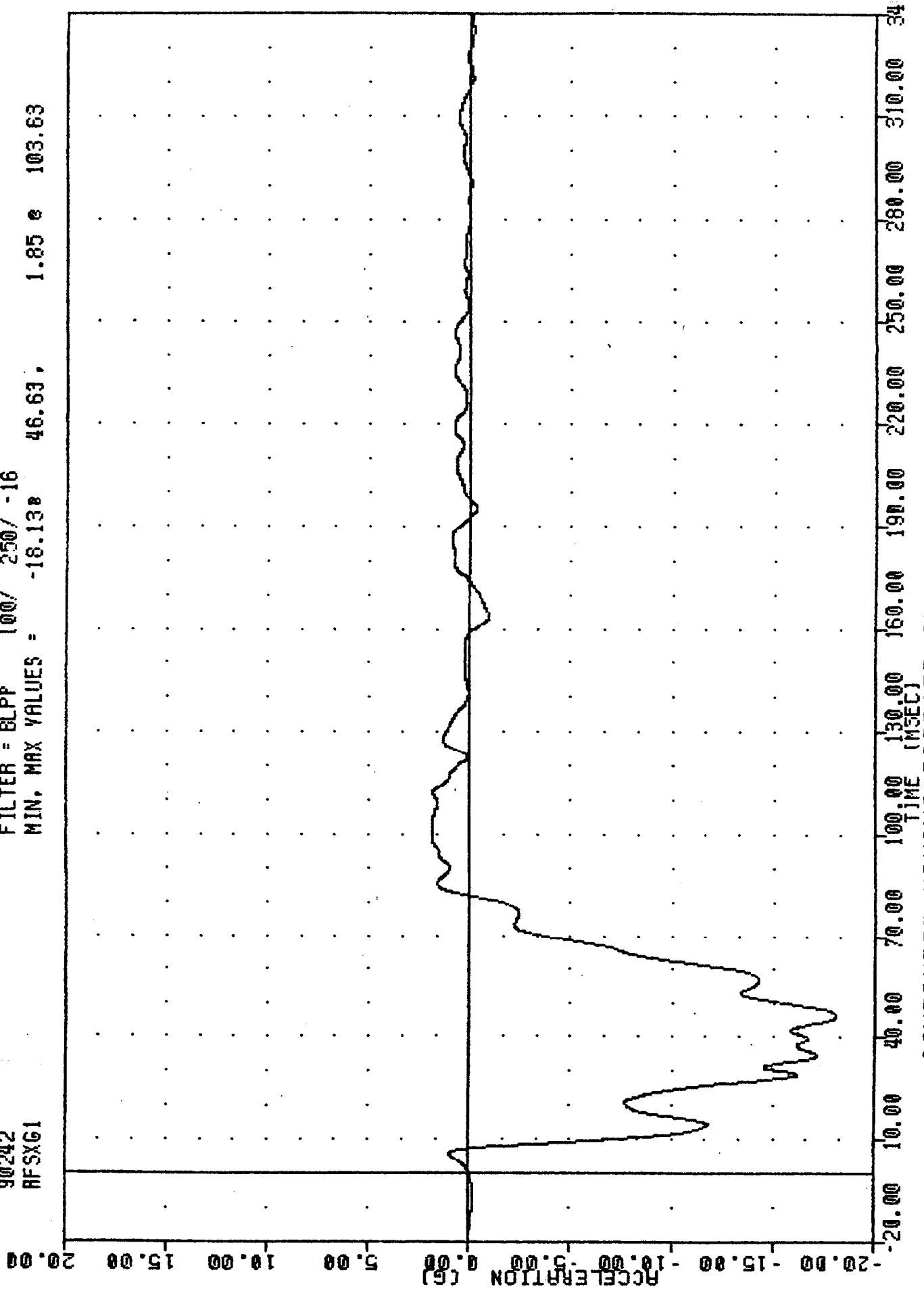
CRASH III DAMAGE ALGORITHM

90242

RFSXG1

FILTER = BLPP 100/ 250/ -16

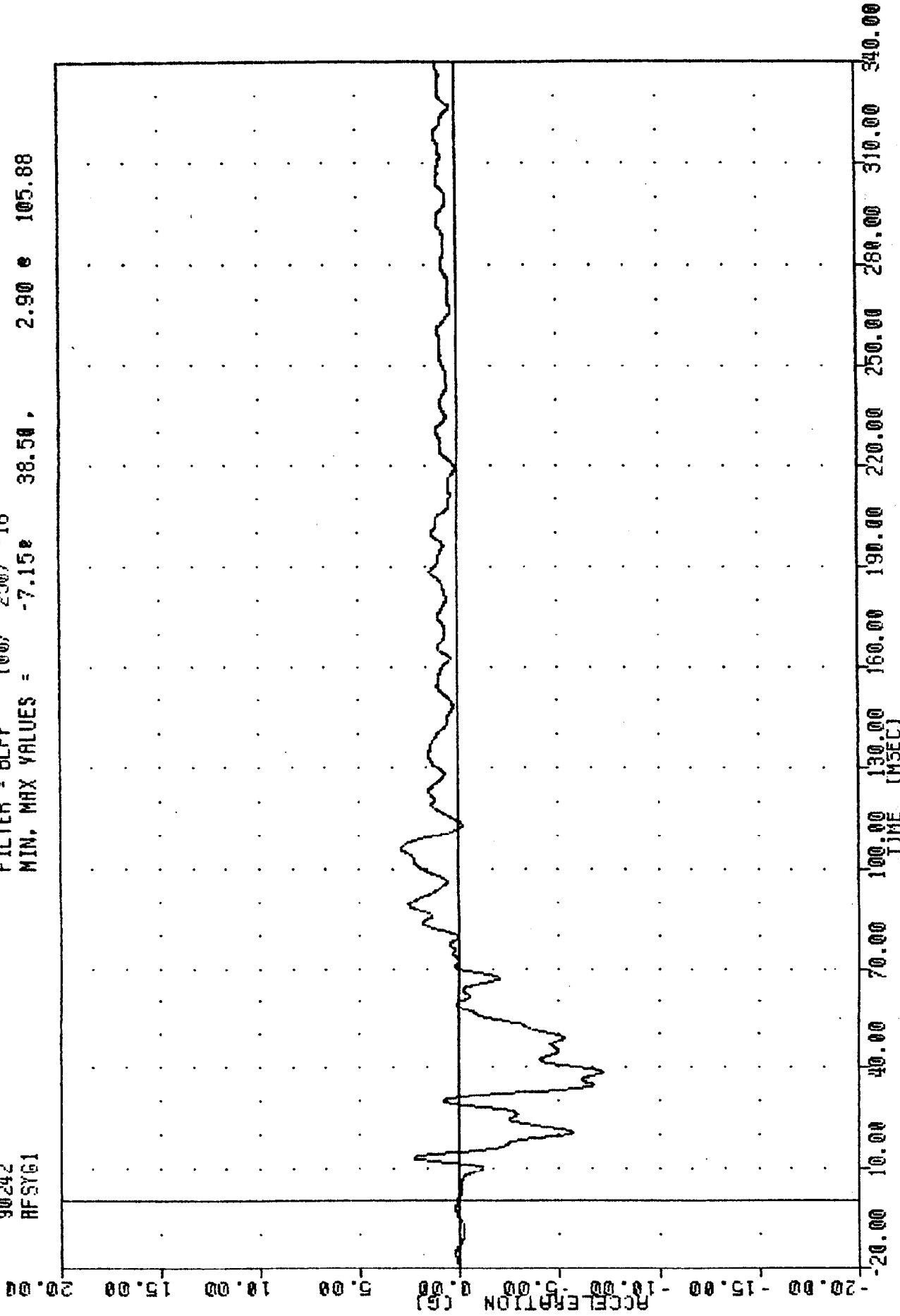
MIN. MAX VALUES = -18.138 46.631 1.85 e 103.63



CONTOURED MOVING BARRIER INTO FORD ESCORT AT 28.1 MPH #2
RIGHT FRONT SILL X-AXIS ACCELERATION

900830-2 . TRC
CRASH III DAMAGE ALGORITHM
90242
RFSYG1

FILTER = BLPP 100/ 250/ -16
MIN. MAX VALUES = -7.15e 38.50 , 2.90 e 105.88



CONToured MOVING BARRIER INTO FORD ESCORT AT 28.1 MPH #2
RIGHT FRONT SILL Y-AXIS ACCELERATION

CRASH III DAMAGE ALGORITHM

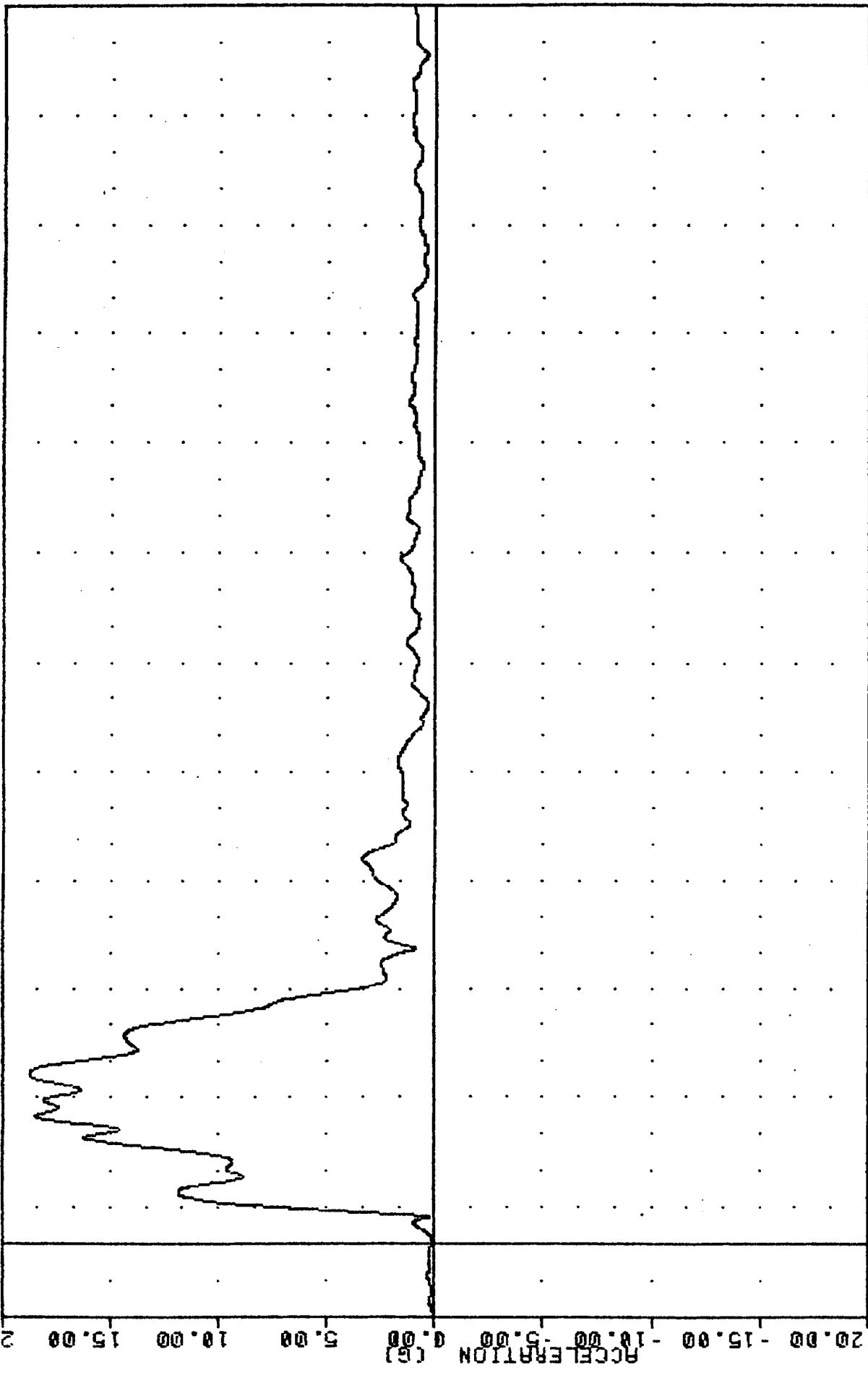
90242

RF SRG1

FILTER = BLPP 100/ 250/ -16

MIN. MAX VALUES = 0.01e -19.75, 18.71 e 46.38

20.00

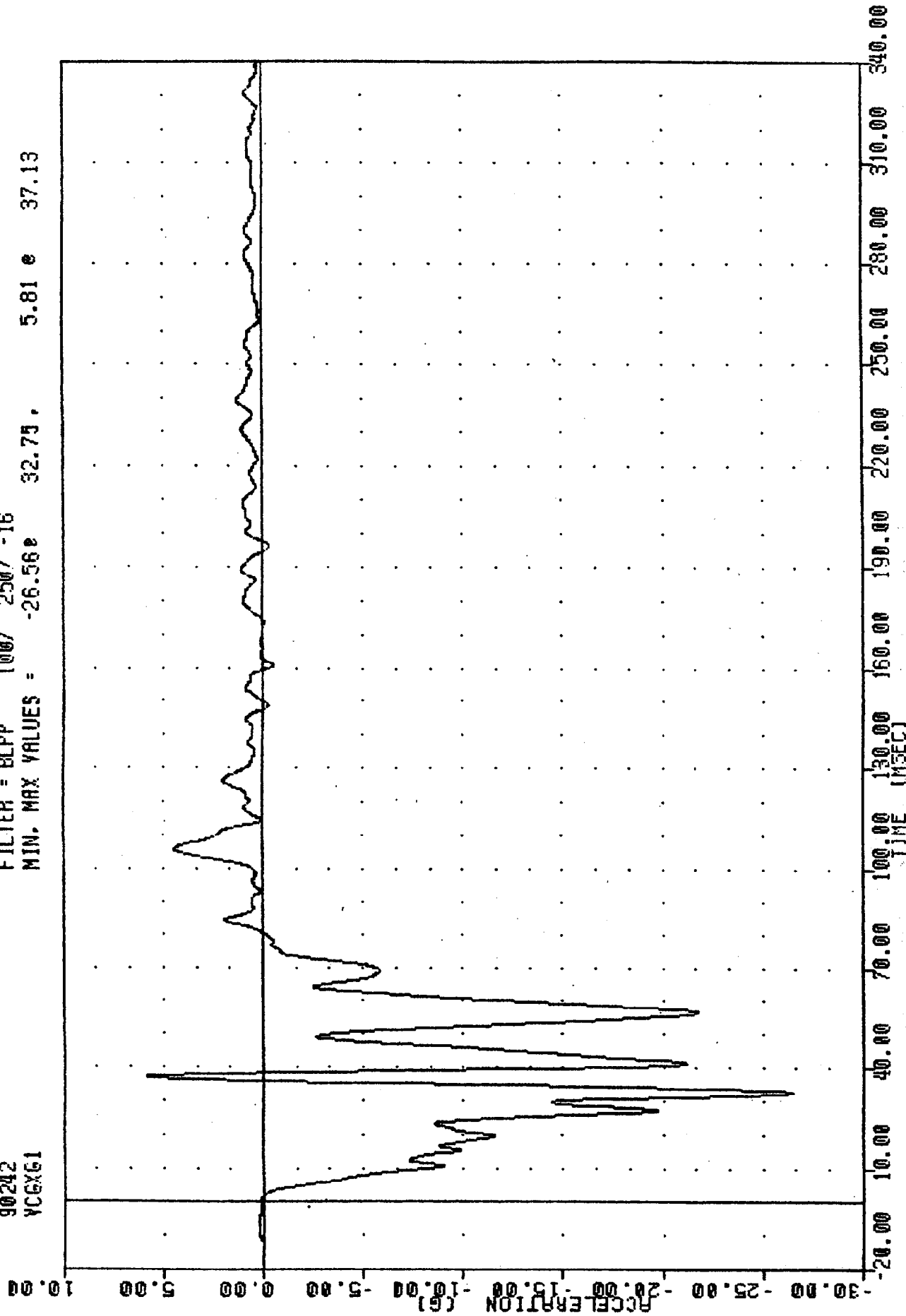


-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340

CONTOURED MOVING BARRIER INTO FORD ESCORT AT 28.1 MPH #2
RIGHT FRONT SILL RESULTANT ACCELERATION

900630-2 , TAC
CRASH III DAMAGE ALGORITHM
90242
YCGXG1

FILTER = BLPP 100/ 250/ -16
MIN. MAX VALUES = -26.560 32.75 , 5.81 e 37.13



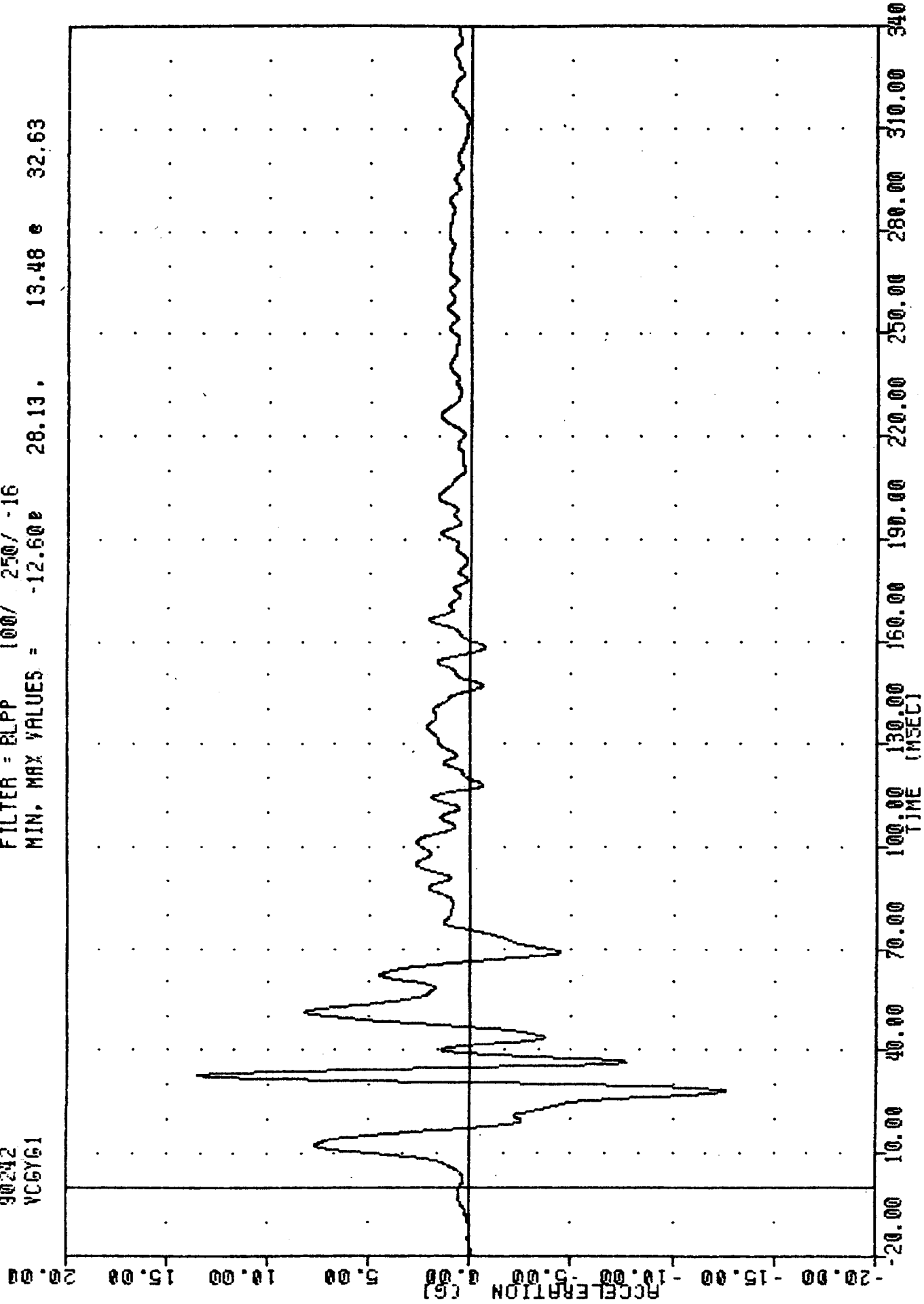
CONTOURED MOVING BARRIER INTO FORD ESCORT AT 28.1 MPH #2
VEHICLE CG X-AXIS ACCELERATION (IMPACT DIRECTION)

CRASH III DAMAGE ALGORITHM

90242
VCGY61

FILTER = BLPP 100/ 250/ -16
MIN. MAX VALUES = -12.60e 28.13.

13.48 e 32.63

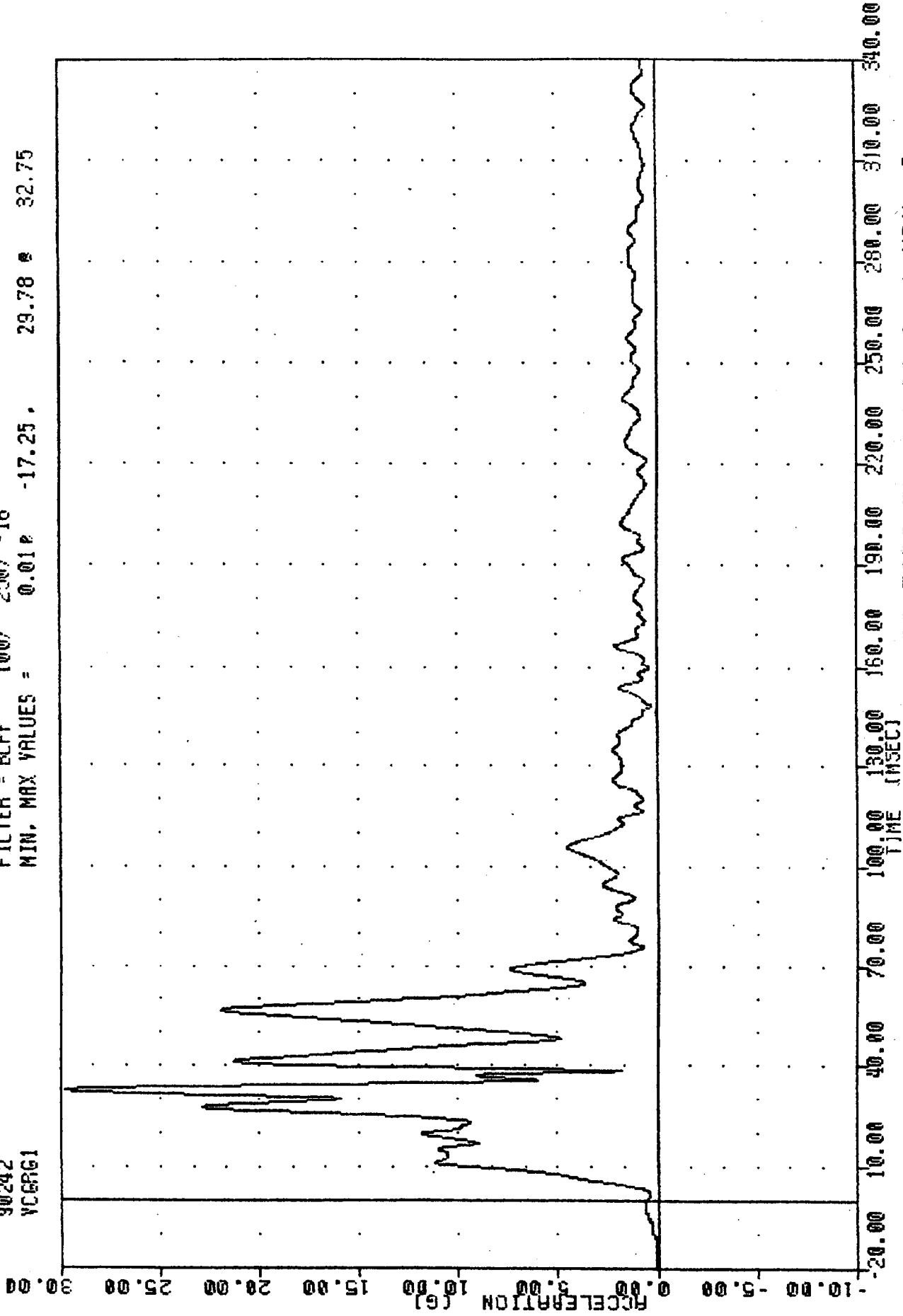


B35

CONTOURED MOVING BARRIER INTO FORD ESCORT AT 28.1 MPH #2
VEHICLE CG Y-AXIS ACCELERATION (PERPENDICULAR TO IMPACT DIRECTION)

900530-2 , TRC
 CRASH III DAMAGE ALGORITHM
 90242
 YCGRG1

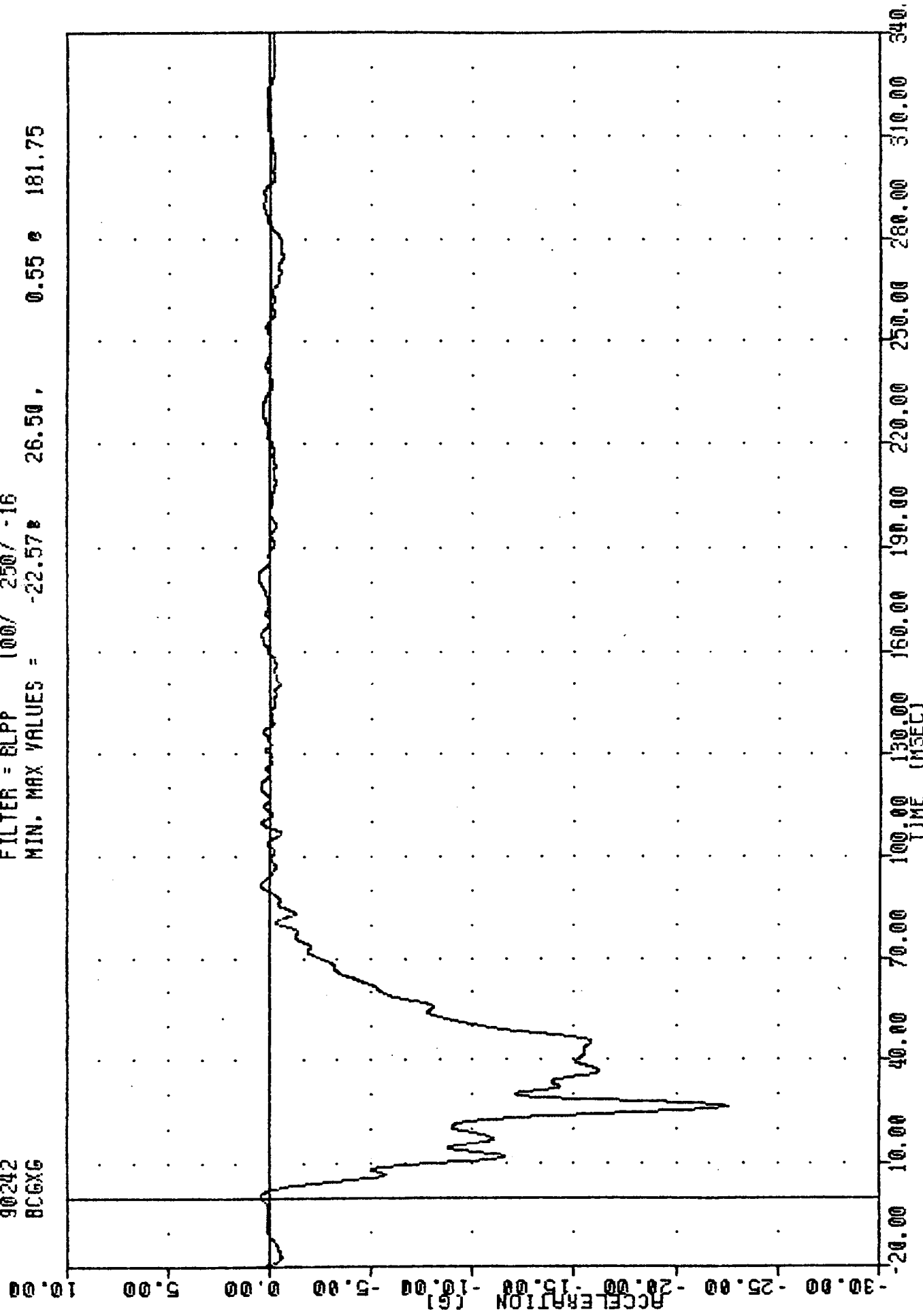
FILTER = BLPP 100/ 250/ -16
 MIN. MAX VALUES = 0.01P -17.25. 29.78 e 32.75



CONTOURED MOVING BARRIER INTO FORD ESCORT AT 28.1 MPH #2
 VEHICLE CG RESULTANT ACCELERATION

CRASH III DAMAGE ALGORITHM
90242
BCGXG

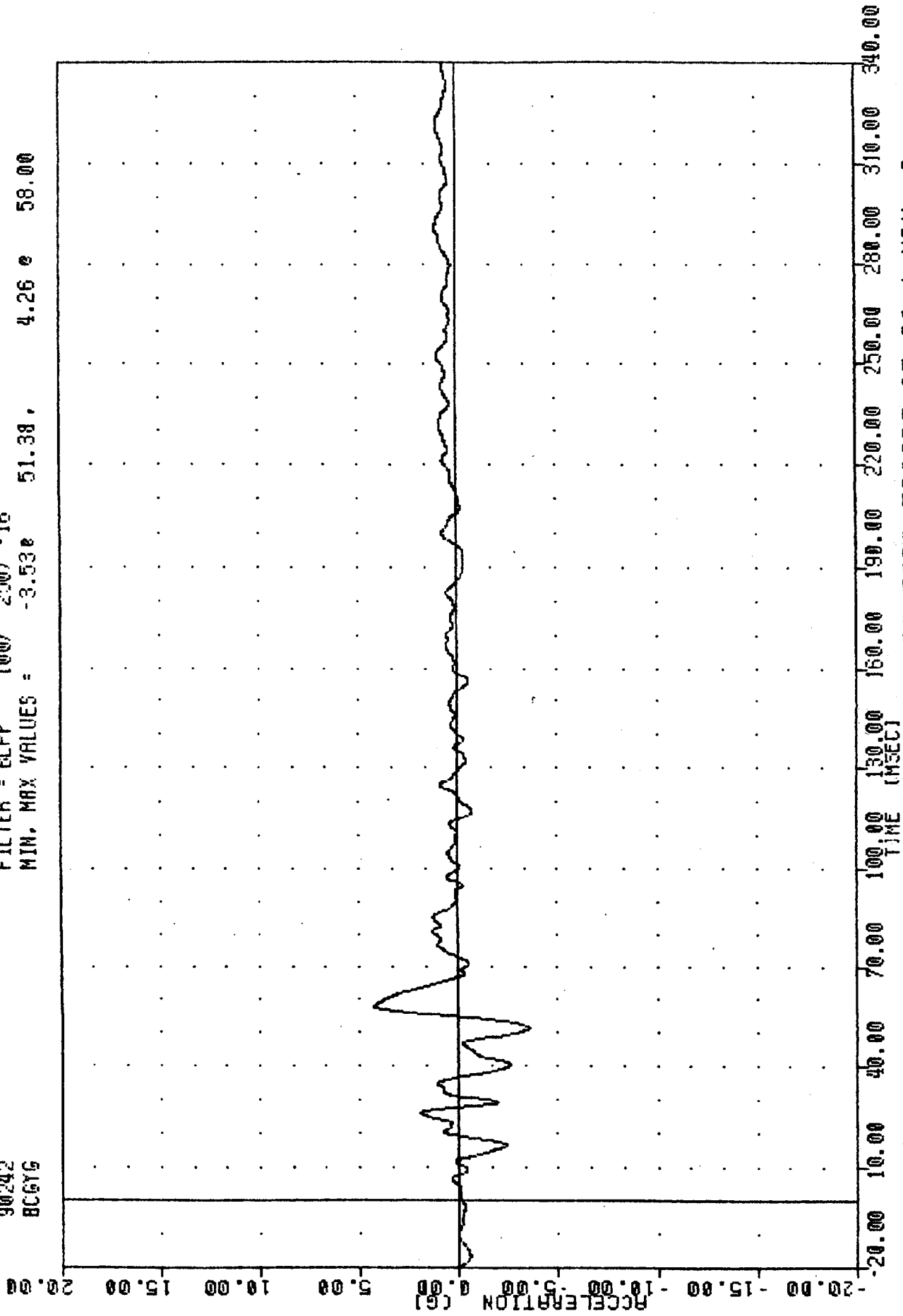
FILTER = BLPP 100/ 250/ -16
MIN. MAX VALUES = -22.57 26.50, 0.55 181.75



CONTOURED MOVING BARRIER INTO FORD ESCORT AT 28.1 MPH #2
MOVING BARRIER CENTER OF GRAVITY X-AXIS ACCELERATION

900830-2 , TRC
CRASH III DAMAGE ALGORITHM
90242
BCGYG

FILTER = BLPP 100/ 250/ -16
MIN. MAX VALUES = -3.53e 51.38, 4.26 e 58.00



B38

CONTOURED MOVING BARRIER INTO FORD ESCORT AT 28.1 MPH *2
. MOVING BARRIER CENTER OF GRAVITY Y-AXIS ACCELERATION

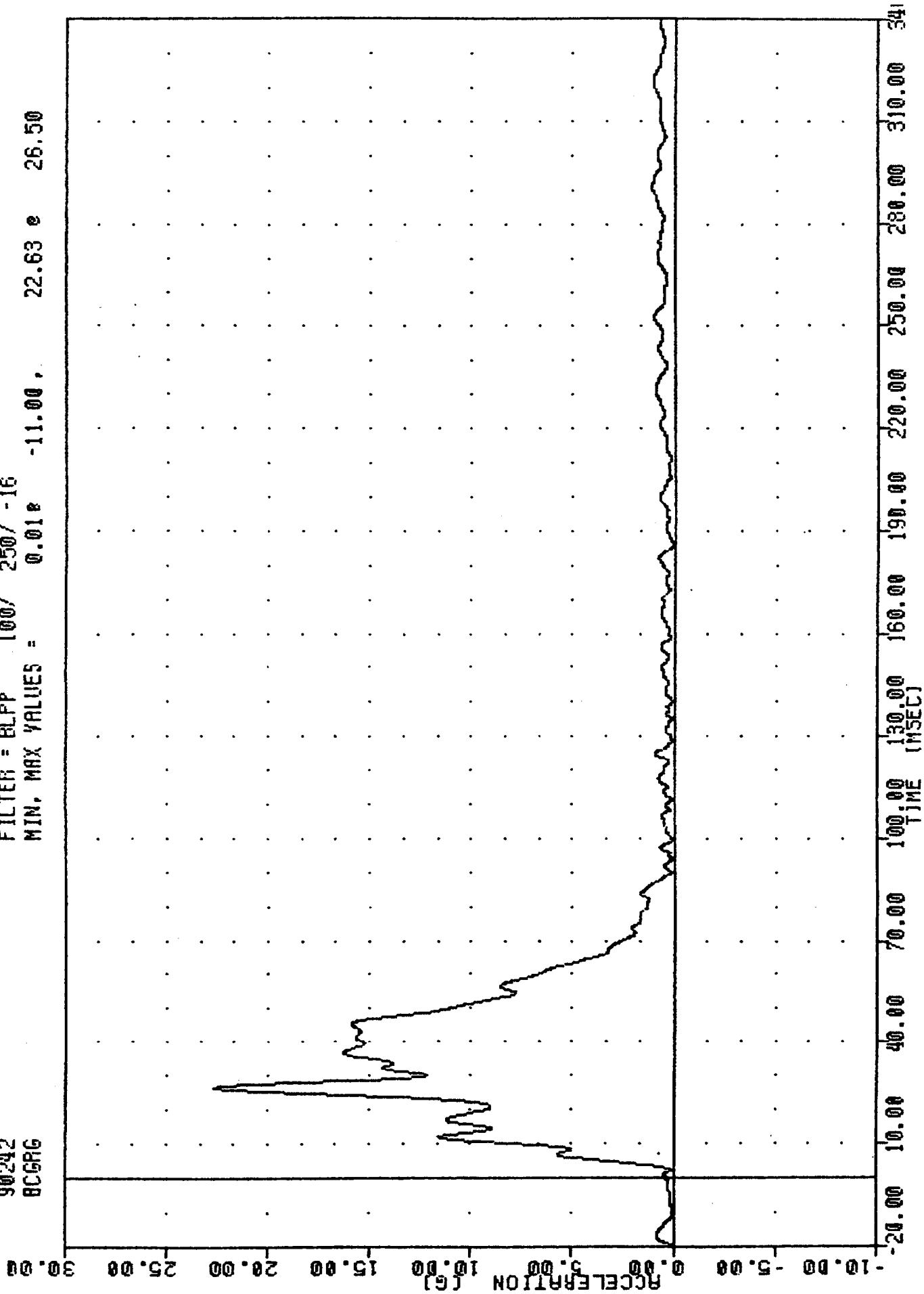
CRASH III DAMAGE ALGORITHM

90242

BCGRG

FILTER = BLP 100/ 250/ -16

MIN, MAX VALUES = 0.01e -11.00, 22.63 e 26.50

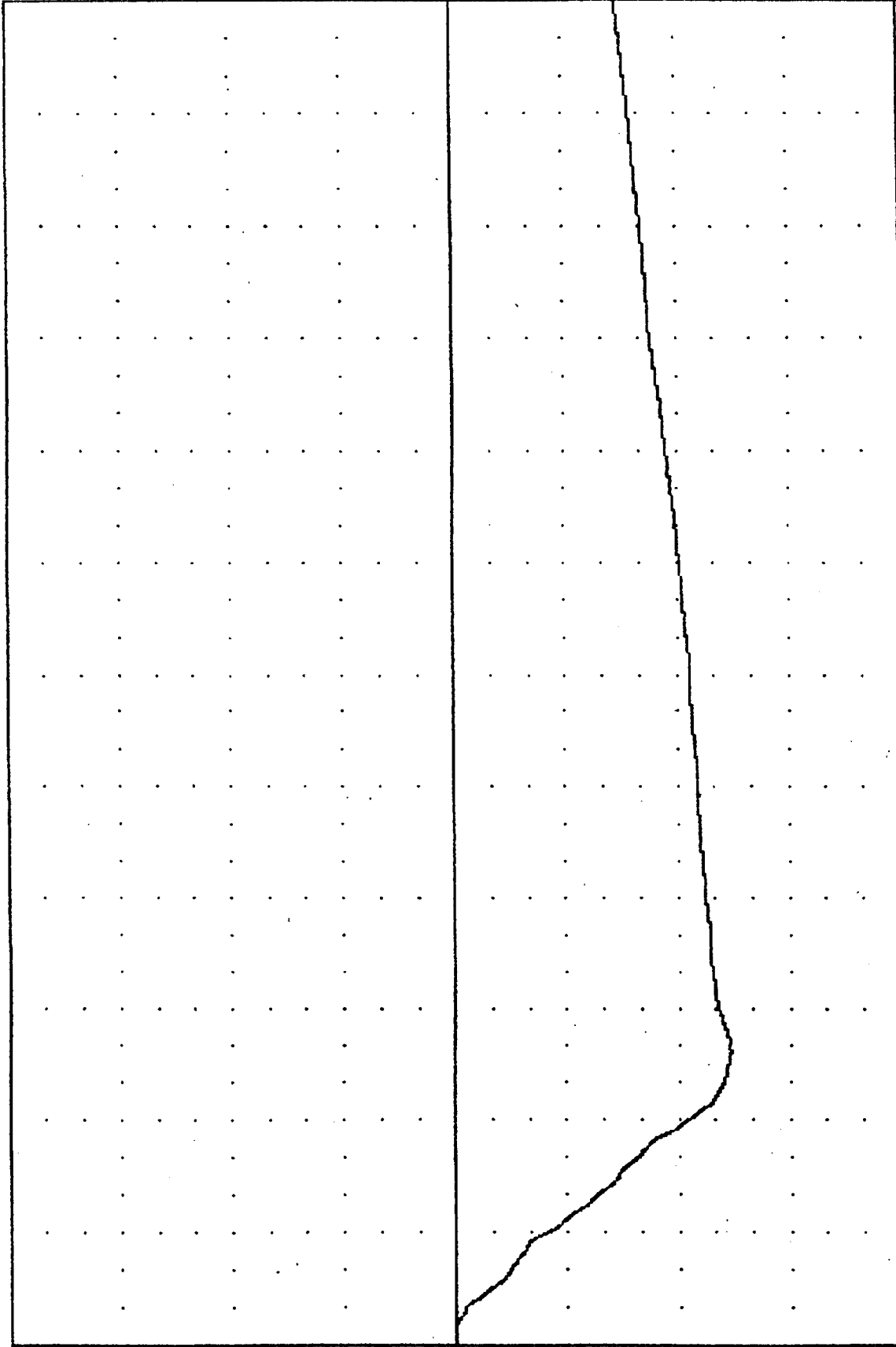


CONTOURED MOVING BARRIER INTO FORD ESCORT AT 28.1 MPH #2
MOVING BARRIER CENTER OF GRAVITY RESULTANT ACCELERATION

900830-2 , TRC
 CRASH III DAMAGE ALGORITHM
 90242
 LFSXV1

FILTER = BLPP 300/ 750/ -16
 MIN, MAX VALUES = -12.33# 74.13, 0.00 # 3.38

20.00
15.00
10.00
5.00
0.00
-5.00
-10.00
-15.00
-20.00



B40

CONTOURED MOVING BARRIER INTO FORD ESCORT AT 28.1 MPH #2
 LEFT FRONT SILL X-AXIS VELOCITY

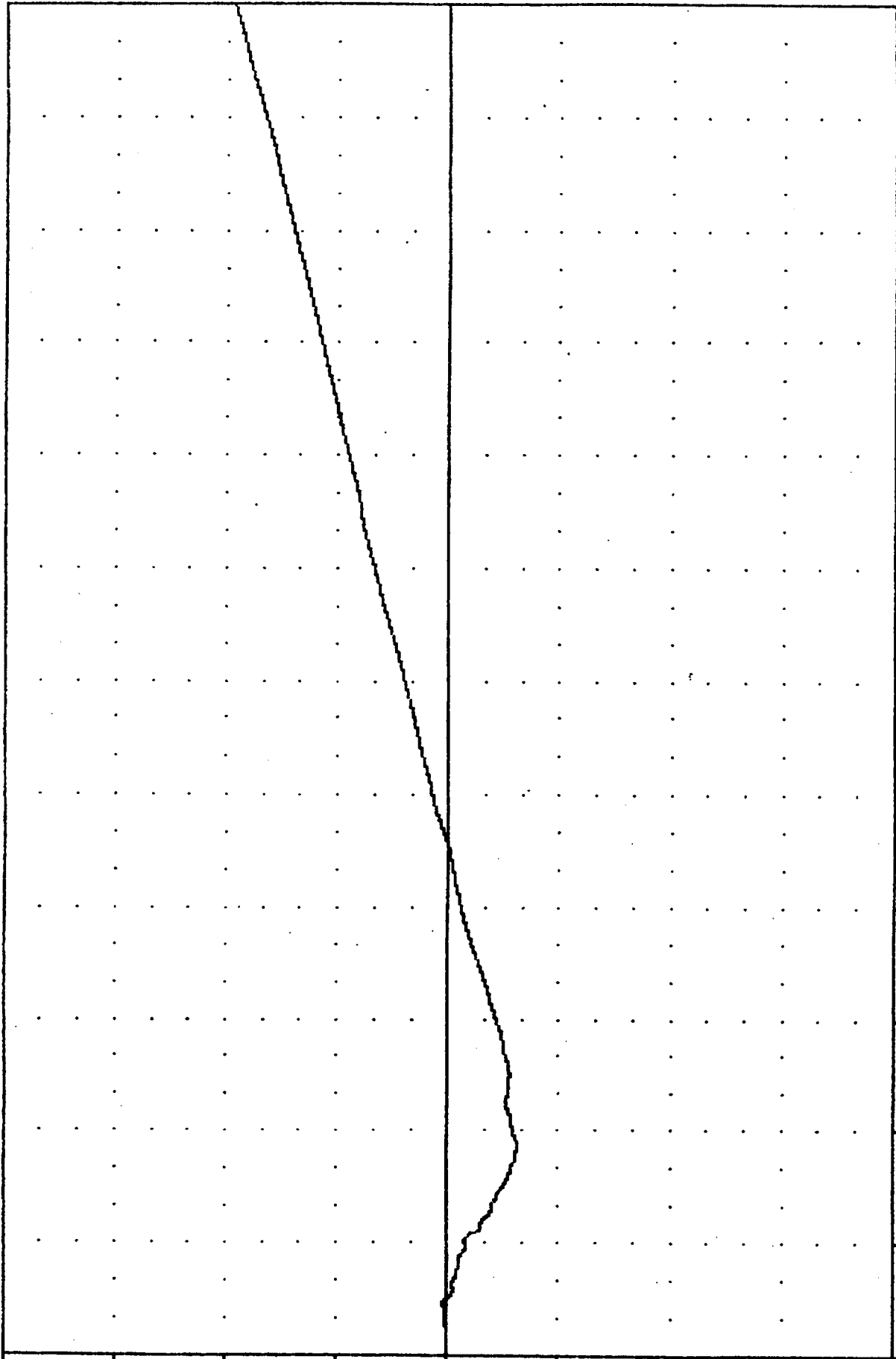
CRASH III DAMAGE ALGORITHM

90242
LFSYV1

FILTER = BLPP 300/ 750/ -16
MIN. MAX VALUES = -3.20E 52.88 .

9.65 e 340.00

0.00 28.33 56.66 85.00 113.33 141.66 170.00 198.33 226.66 255.00 283.33 311.66 340.00

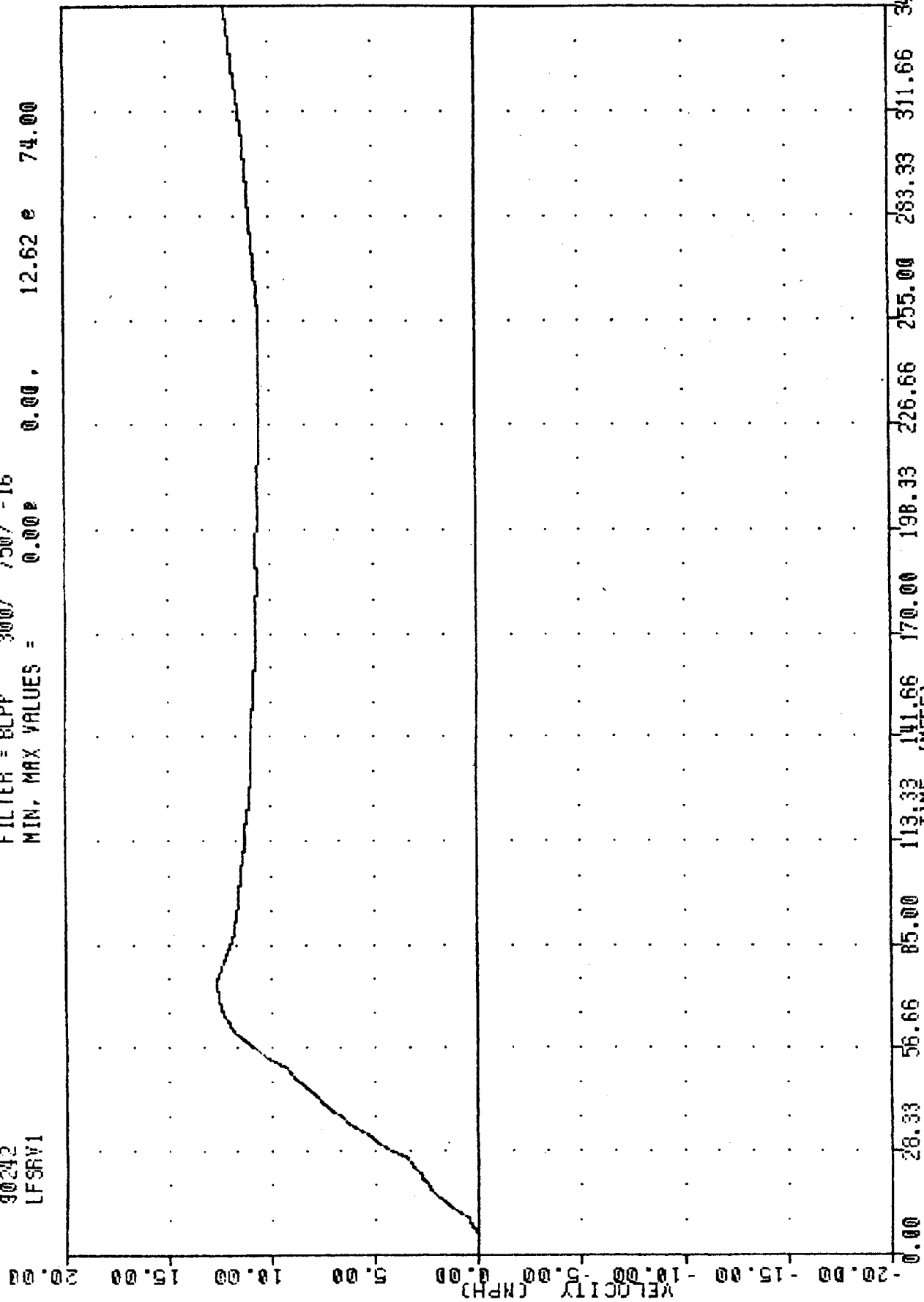


TIME (MSEC)

CONTOURED MOVING BARRIER INTO FORD ESCORT AT 28.1 MPH #2
LEFT FRONT SILL Y-AXIS VELOCITY

900830-2 , TRC
 CRASH III DAMAGE ALGORITHM
 90242
 LFSRV1

FILTER = BLPP 300/ 750/ -16
 MIN, MAX VALUES = 0.00, 12.62 e 74.00



CONTOURED MOVING BARRIER INTO FORD ESCORT AT 28.1 MPH *2
 LEFT FRONT SILL RESULTANT VELOCITY

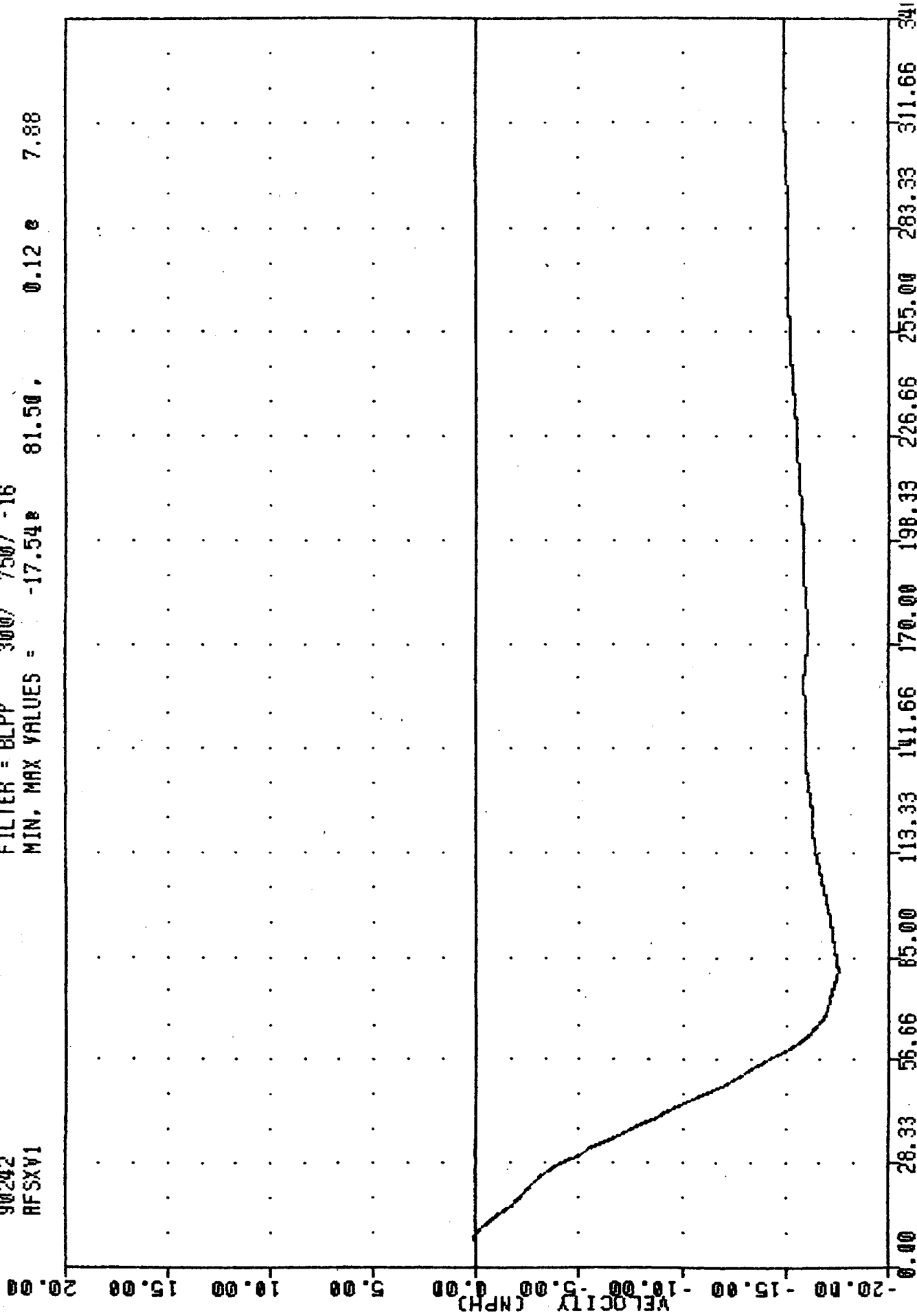
CRASH III DAMAGE ALGORITHM

90242

AFSXV1

FILTER = BLPP 300/ 750/ -16

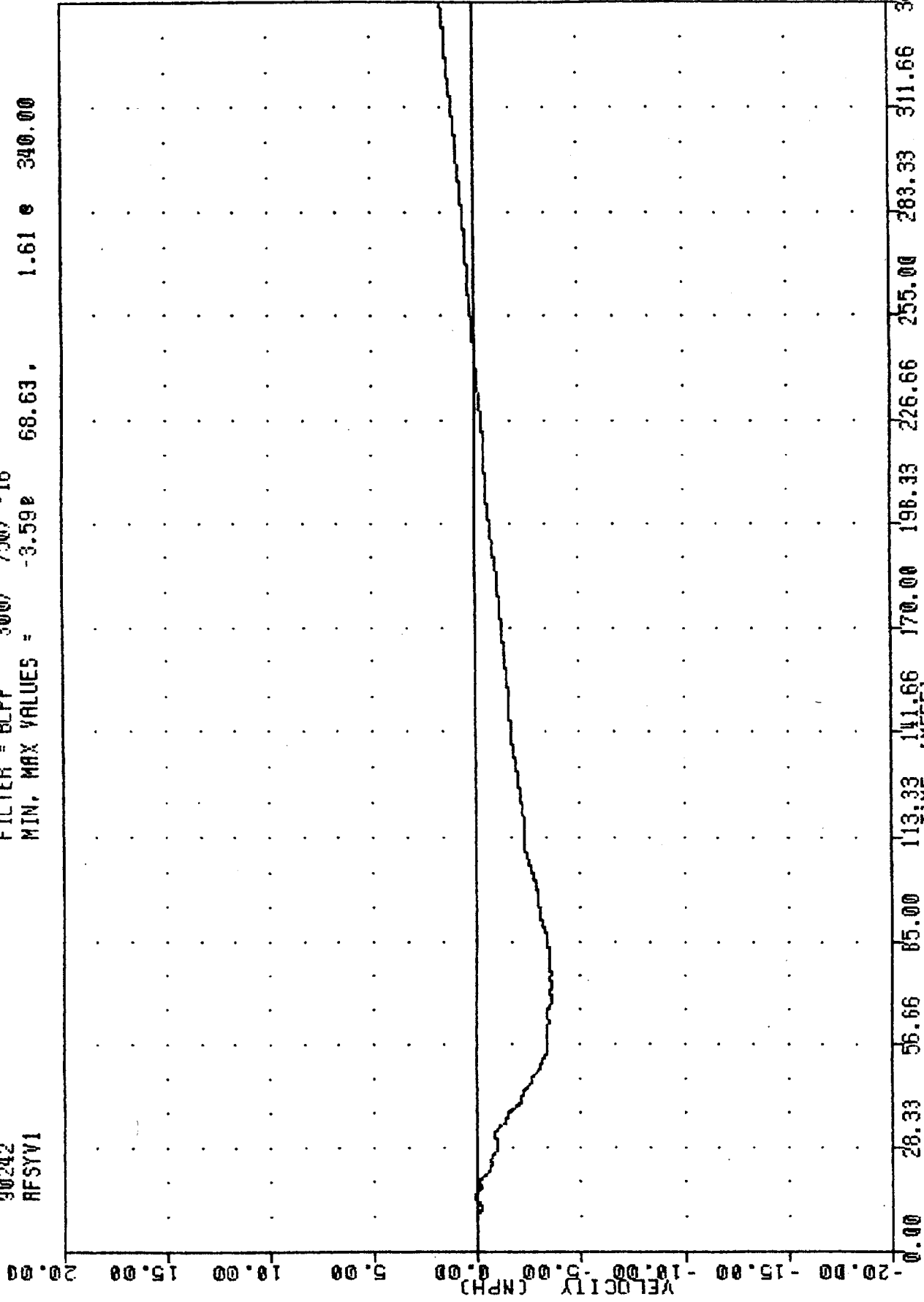
MIN, MAX VALUES = -17.548 81.50, 0.12 e 7.88



CONTOURED MOVING BARRIER INTO FORD ESCORT AT 28.1 MPH #2
RIGHT FRONT SILL X-AXIS VELOCITY

900830-2 . TRC
 CRASH III DAMAGE ALGORITHM
 90242
 RFSYV1

FILTER = BLPP 300/ 750/ -16
 MIN, MAX VALUES = -3.59E 68.63, 1.61 e 340.00



CONTOURED MOVING BARRIER INTO FORD ESCORT AT 28.1 MPH #2
 RIGHT FRONT SILL Y-AXIS VELOCITY

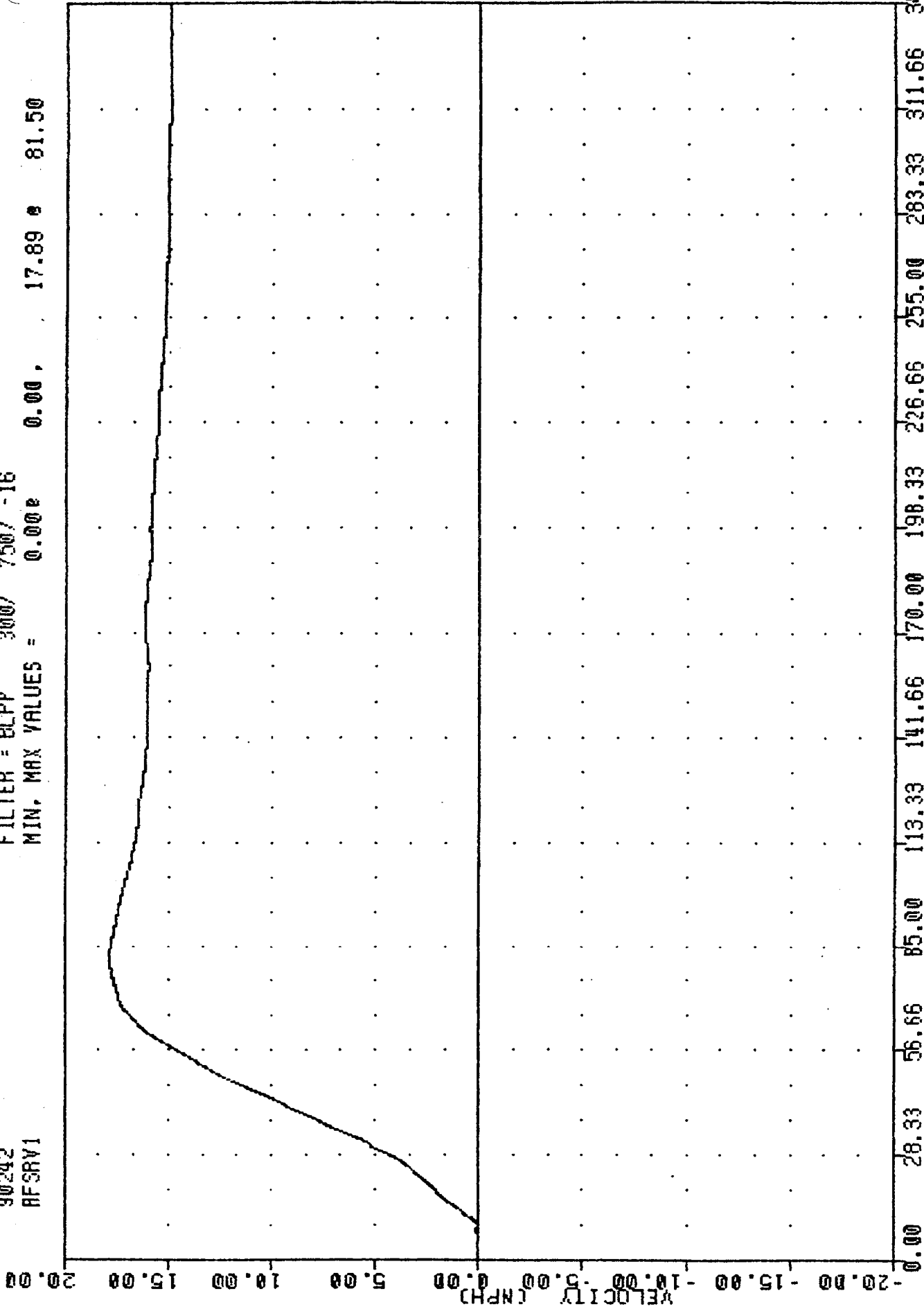
CRASH III DAMAGE ALGORITHM

90242

RFSRV1

FILTER = BLPP 300/ 750/ -16

MIN, MAX VALUES = 0.00e 0.00, 17.89 e 81.50



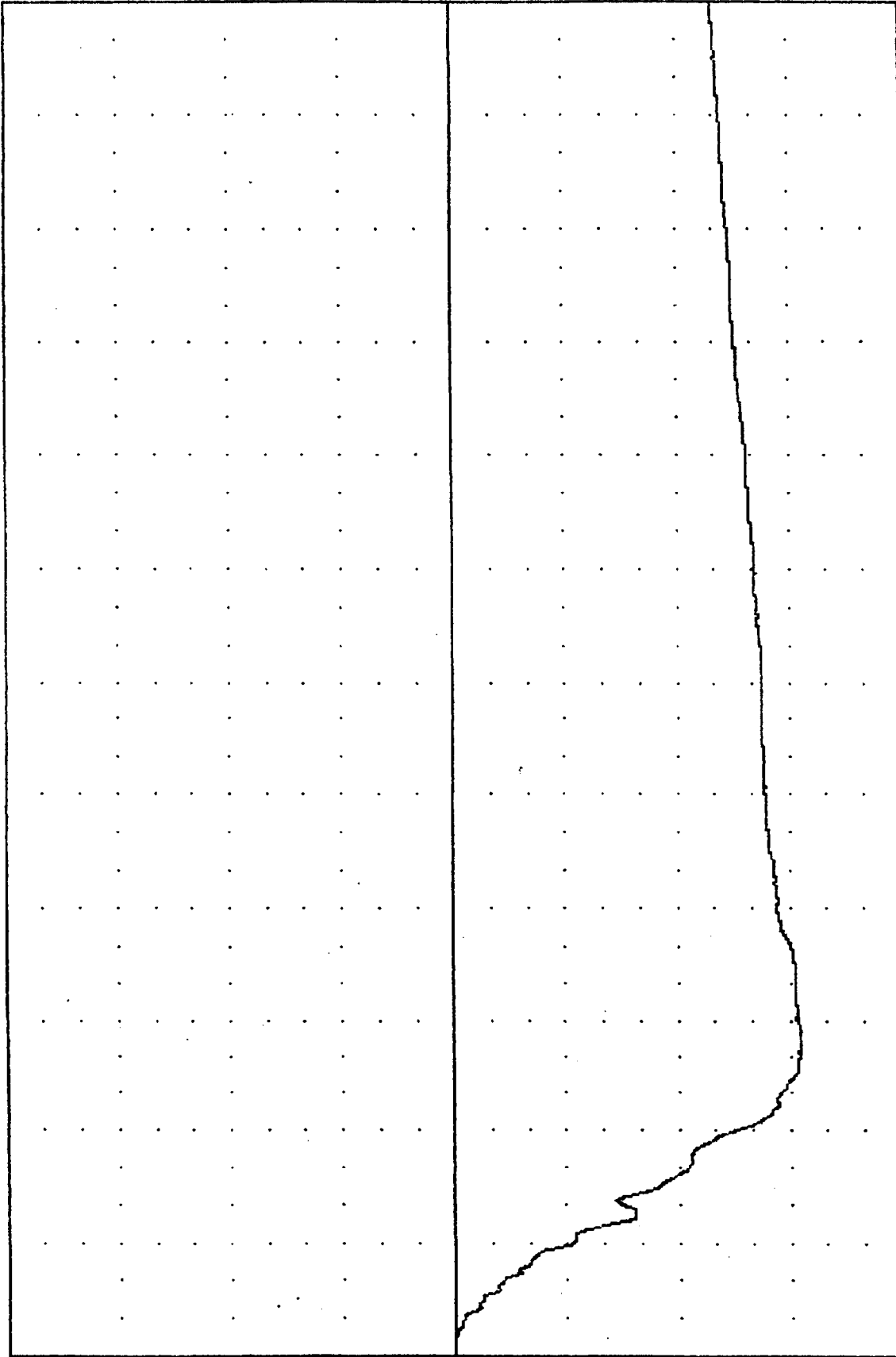
113.33 141.66 170.00 198.33 226.66 255.00 283.33 311.66 341

CONTOURED MOVING BARRIER INTO FORD ESCORT AT 28.1 MPH #2
RIGHT FRONT SILL RESULTANT VELOCITY

900330-2 , TRC
 CRASH III DAMAGE ALGORITHM
 90242
 YCGXV1

FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = -15.47e 82.75 , 0.00 e 0.00

20.00
15.00
10.00
5.00
0.00
-5.00
-10.00
-15.00
-20.00

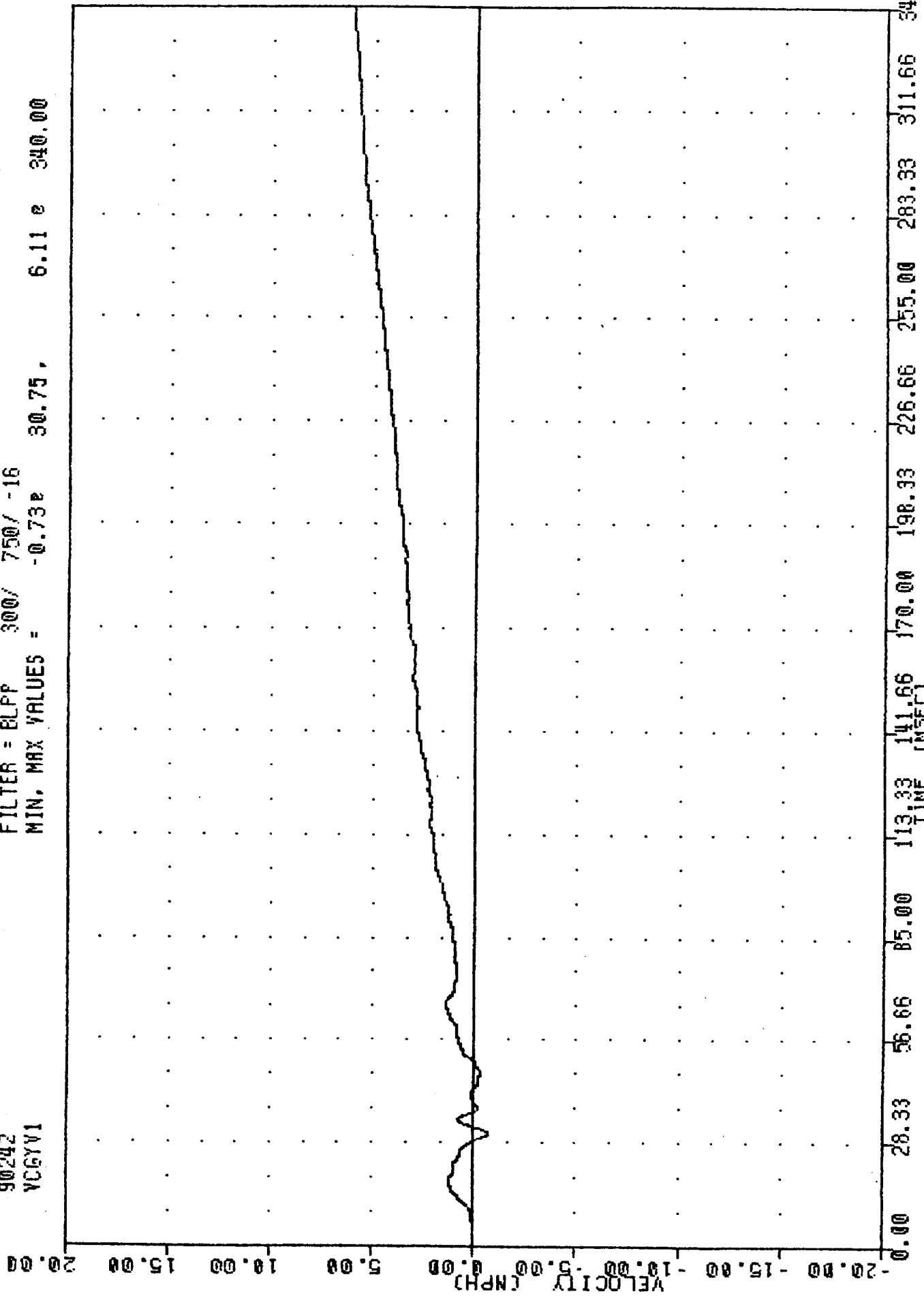


0.00 28.33 56.66 85.00 113.33 141.66 170.00 198.33 226.66 255.00 283.33 311.66 340.00

CONToured MOVING BARRIER INTO FORD ESCORT AT 28.1 MPH *2
 VEHICLE CG X-AXIS VELOCITY (IMPACT DIRECTION)

CRASH III DAMAGE ALGORITHM
 90242
 YCGYV1

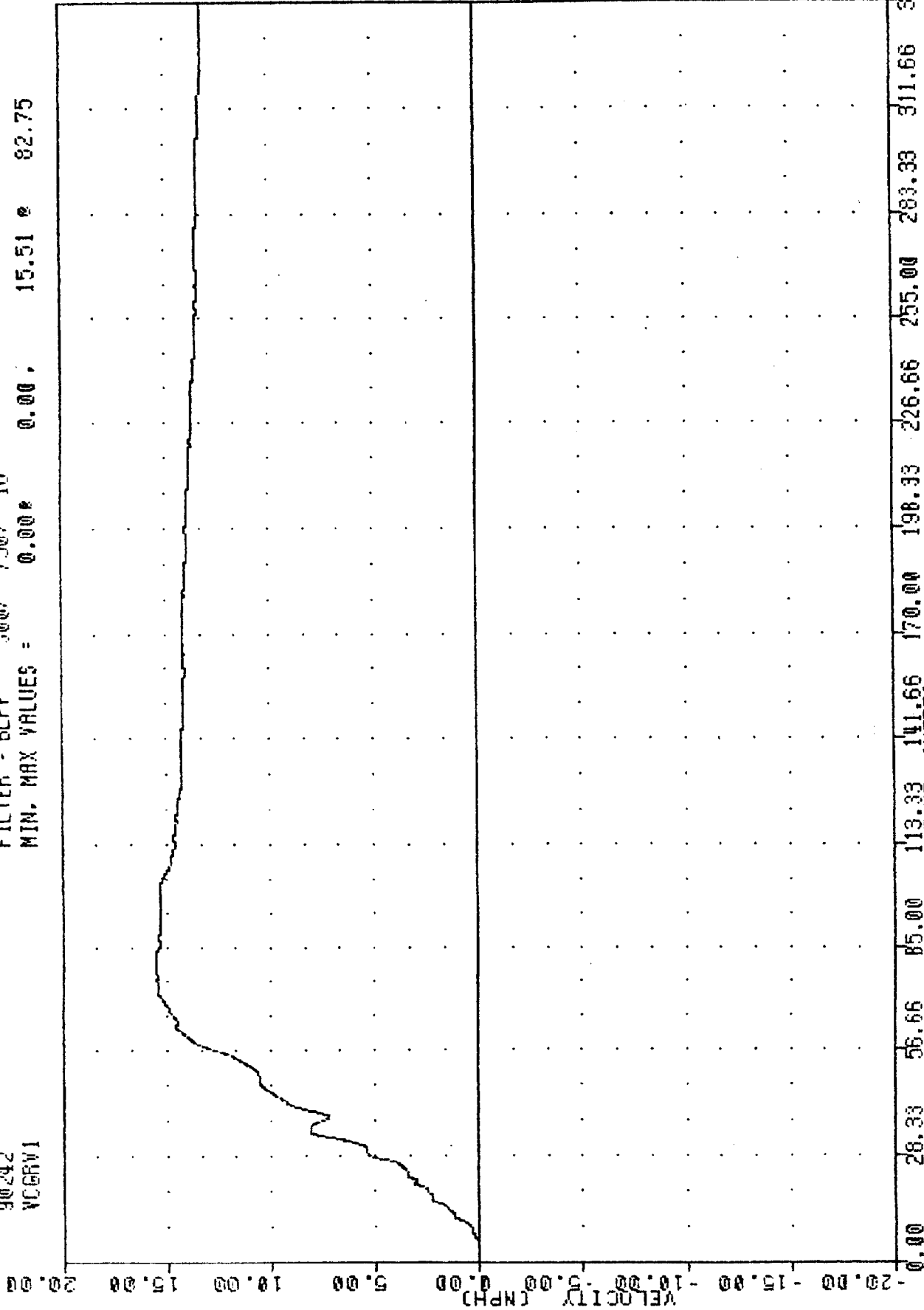
FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = -0.73e 30.75, 6.11 e 340.00



CONTOURED MOVING BARRIER INTO FORD ESCORT AT 28.1 MPH #2
 VEHICLE CG Y-AXIS VELOCITY (PERPENDICULAR TO IMPACT DIRECTION)

900638-2 , TRC
 CRASH III DAMAGE ALGORITHM
 90242
 YCGRV1

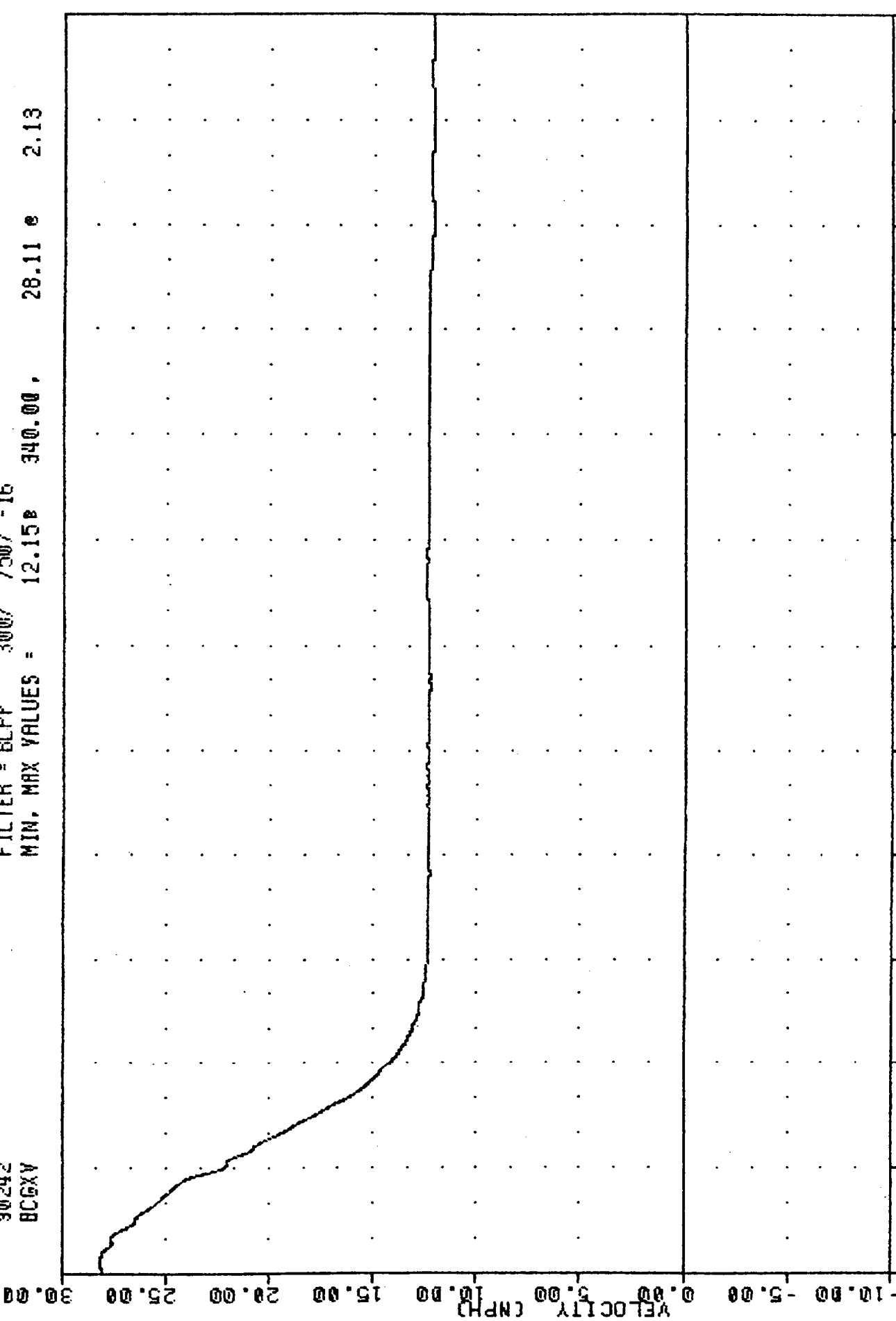
FILTER = 6LPP 300/ 750/ -16
 MIN. MAX VALUES = 0.00 15.51 82.75



CONTOURED MOVING BARRIER INTO FORD ESCORT AT 28.1 MPH *2
 VEHICLE CG RESULTANT VELOCITY

30000072
 CRASH III DAMAGE ALGORITHM
 90242
 BCGXV

FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = 12.15 340.00 28.11 2.13

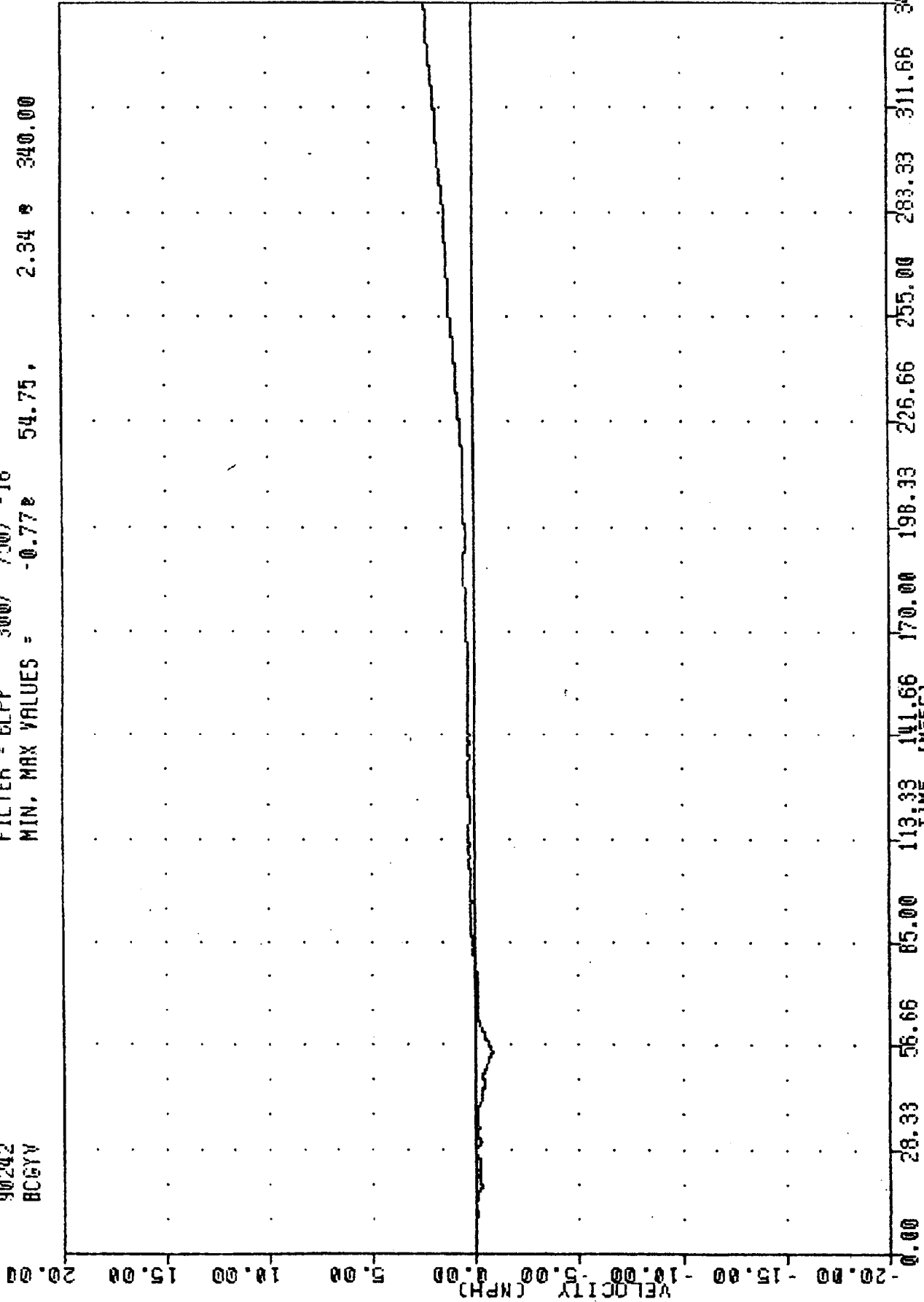


0.00 28.33 56.66 85.00 113.33 141.66 170.00 198.33 226.66 255.00 283.33 311.66 341.00
 VELOCITY (MPH)
 TIME (MSEC)

CONTOURED MOVING BARRIER INTO FORD ESCORT AT 28.1 MPH #2
 MOVING BARRIER CENTER OF GRAVITY X-AXIS VELOCITY

900830-2 . TRC
 CRASH III DAMAGE ALGORITHM
 90242
 BCGYV

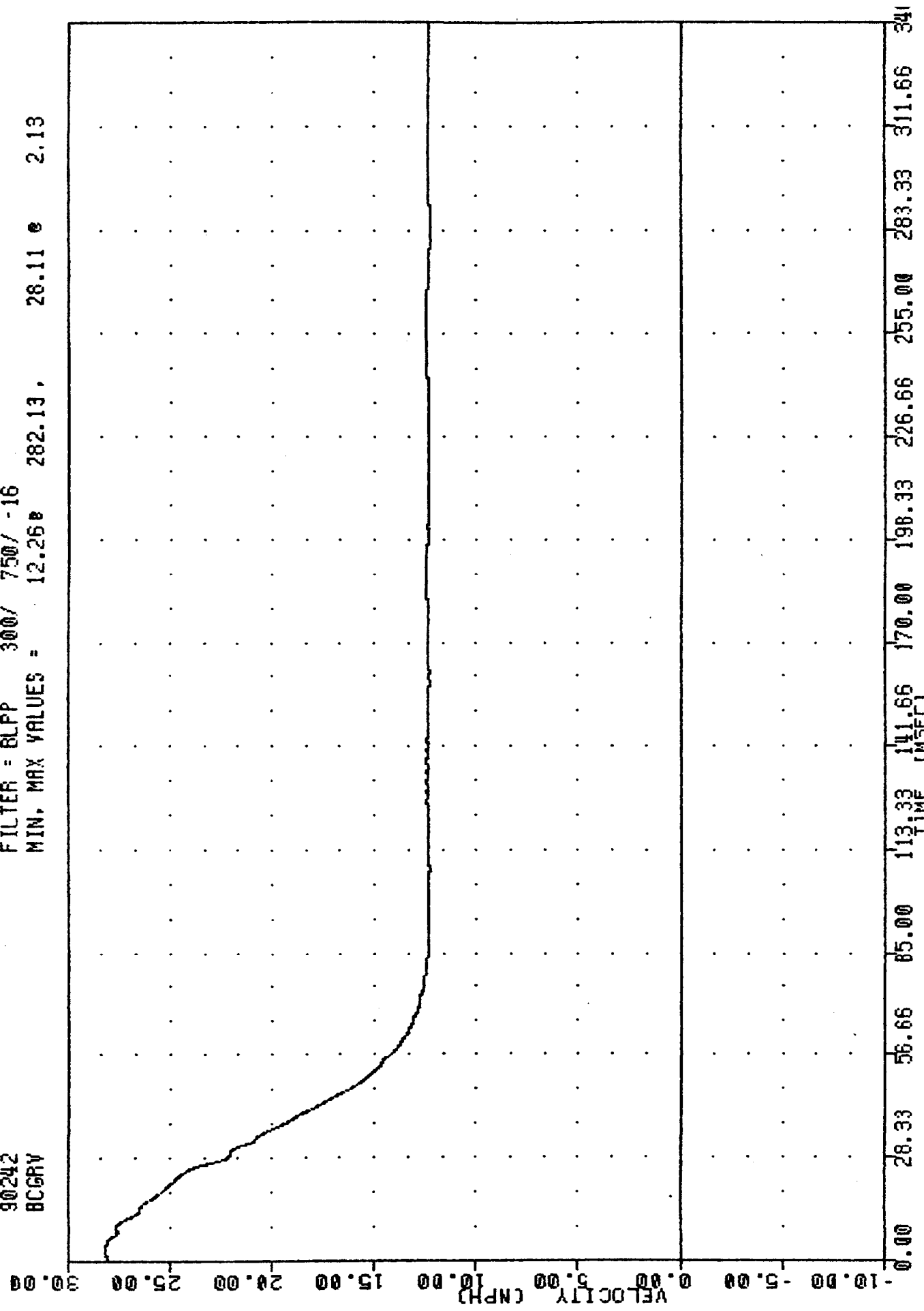
FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = -0.77e 54.75, 2.34 e 340.00



CONTOURED MOVING BARRIER INTO FORD ESCORT AT 28.1 MPH #2
 MOVING BARRIER CENTER OF GRAVITY Y-AXIS VELOCITY

CRASH III DAMAGE ALGORITHM
 90242
 BCGRY

FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = 12.26 282.13, 28.11 2.13

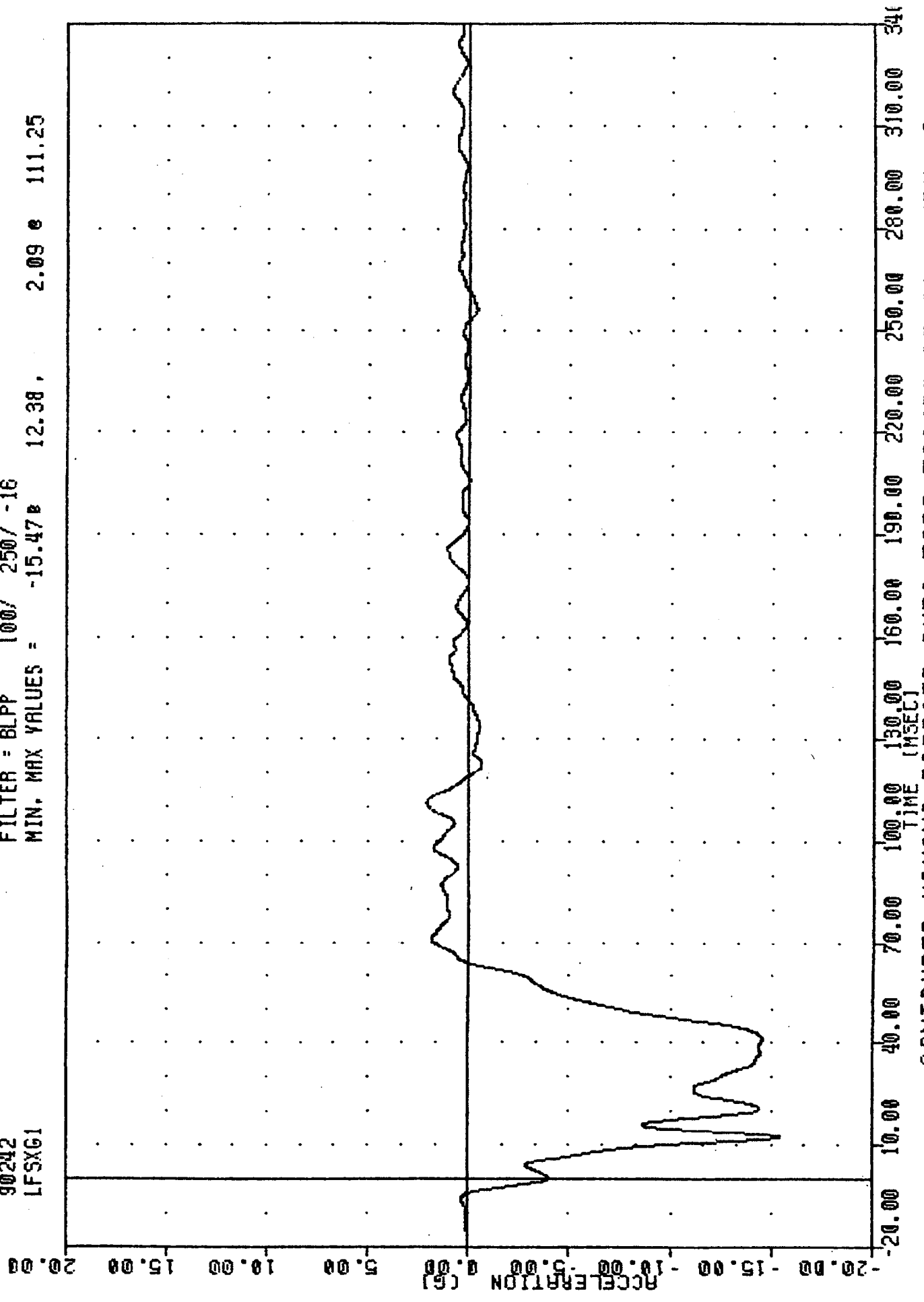


CONTOURED MOVING BARRIER INTO FORD ESCORT AT 28.1 MPH #2
 MOVING BARRIER CENTER OF GRAVITY RESULTANT VELOCITY

TEST #900830-3

CRASH III DAMAGE ALGORITHM
90242
LFSXG1

FILTER = BLPP 100/ 250/ -16
MIN. MAX VALUES = -15.47 12.38, 2.09 111.25

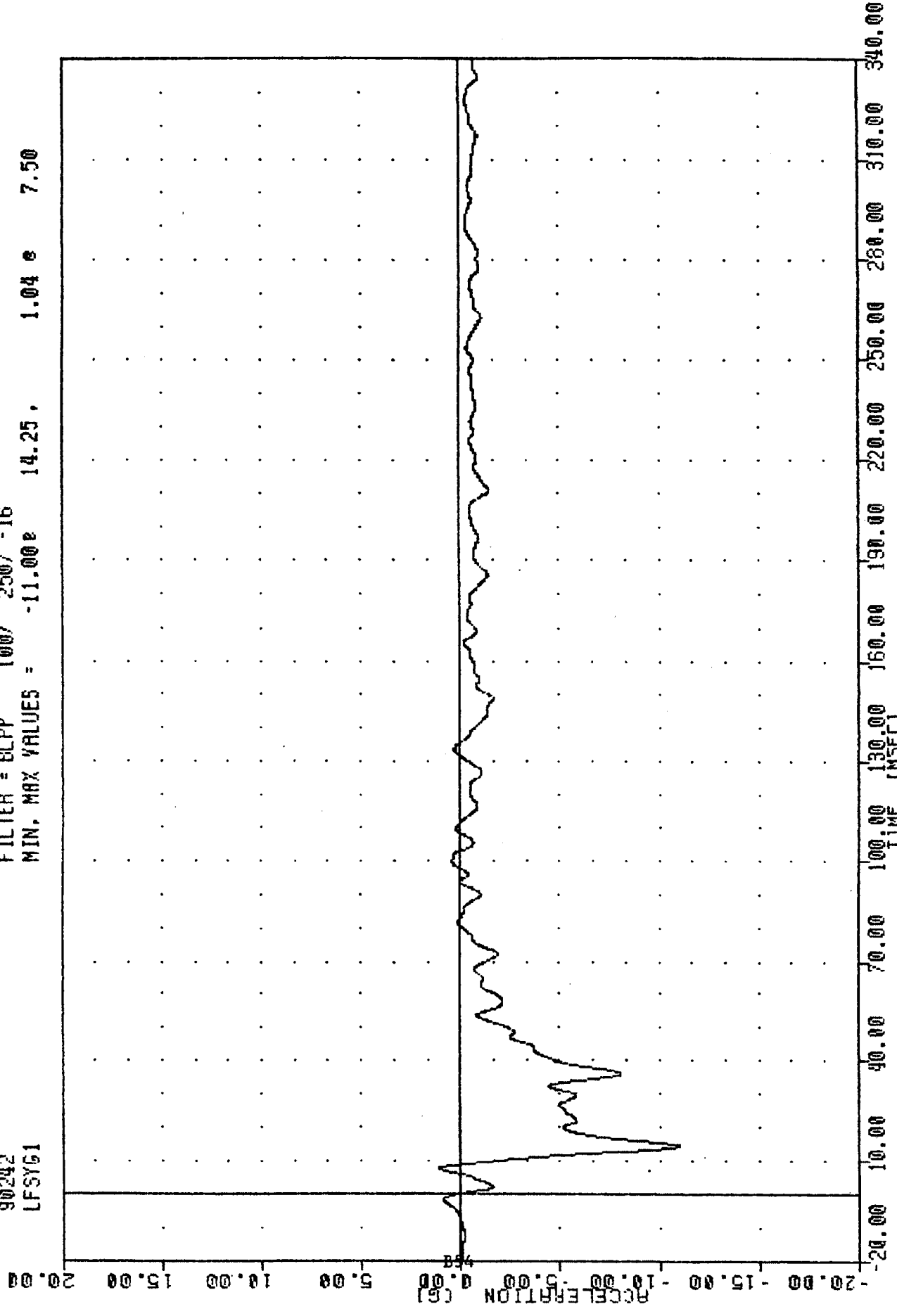


B53

CONTOURED MOVING BARRIER INTO FORD ESCORT AT 28.3 MPH #3
LEFT FRONT SILL X-AXIS ACCELERATION

900830-3 , TRC
CRASH III DAMAGE ALGORITHM
90242
LFSY61

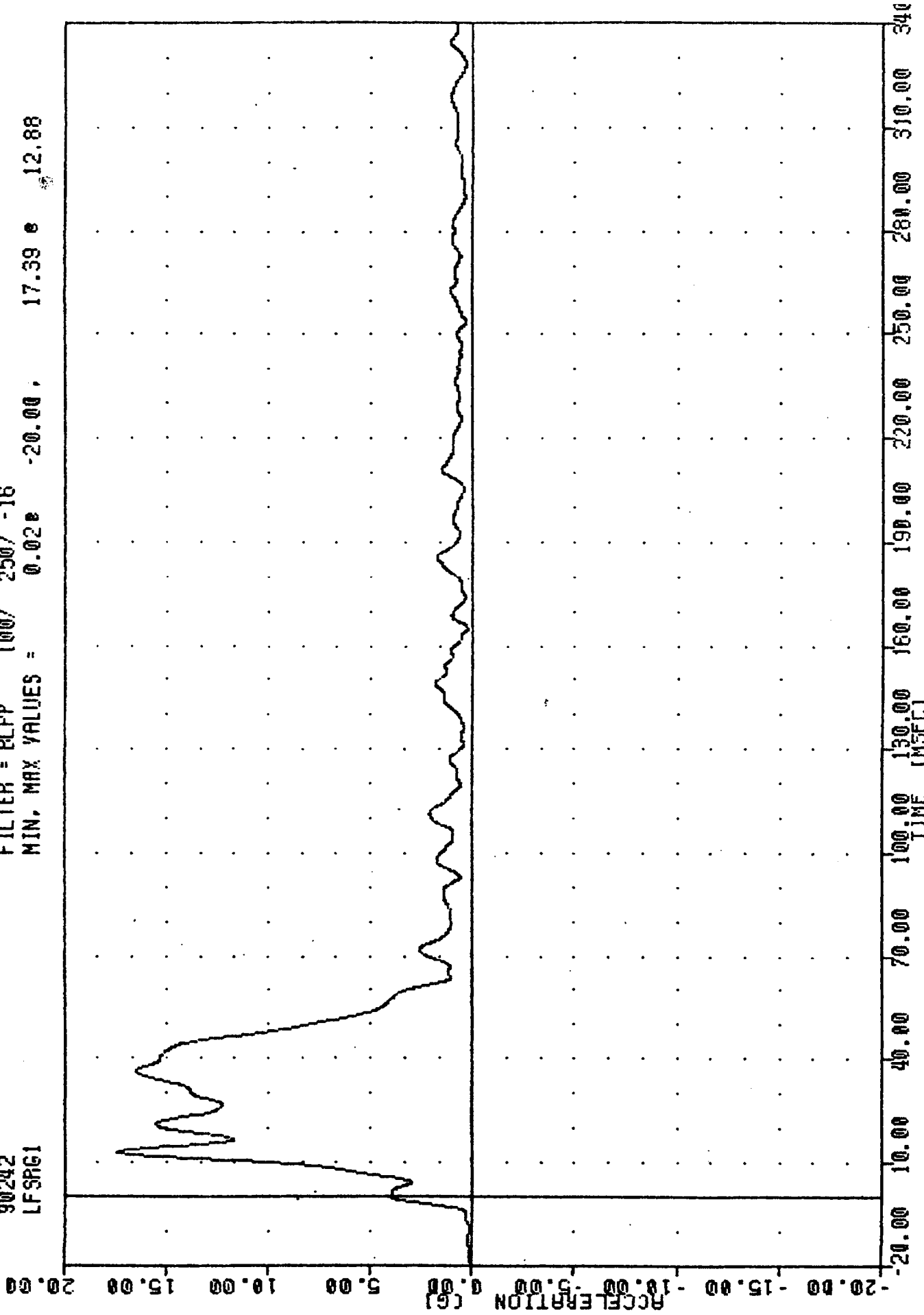
FILTER = BLPP 100/ 250/ -16
MIN. MAX VALUES = -11.00e 14.25 . 1.04 e 7.50



CONTOURED MOVING BARRIER INTO FORD ESCORT AT 28.3 MPH #3
LEFT FRONT SILL Y-AXIS ACCELERATION

3MWOODS & CO., INC.
CRASH III DAMAGE ALGORITHM
90242
LFSRG1

FILTER = BLPP 100/ 250/ -16
MIN. MAX VALUES = 0.02e -20.00, 17.39 e 12.88

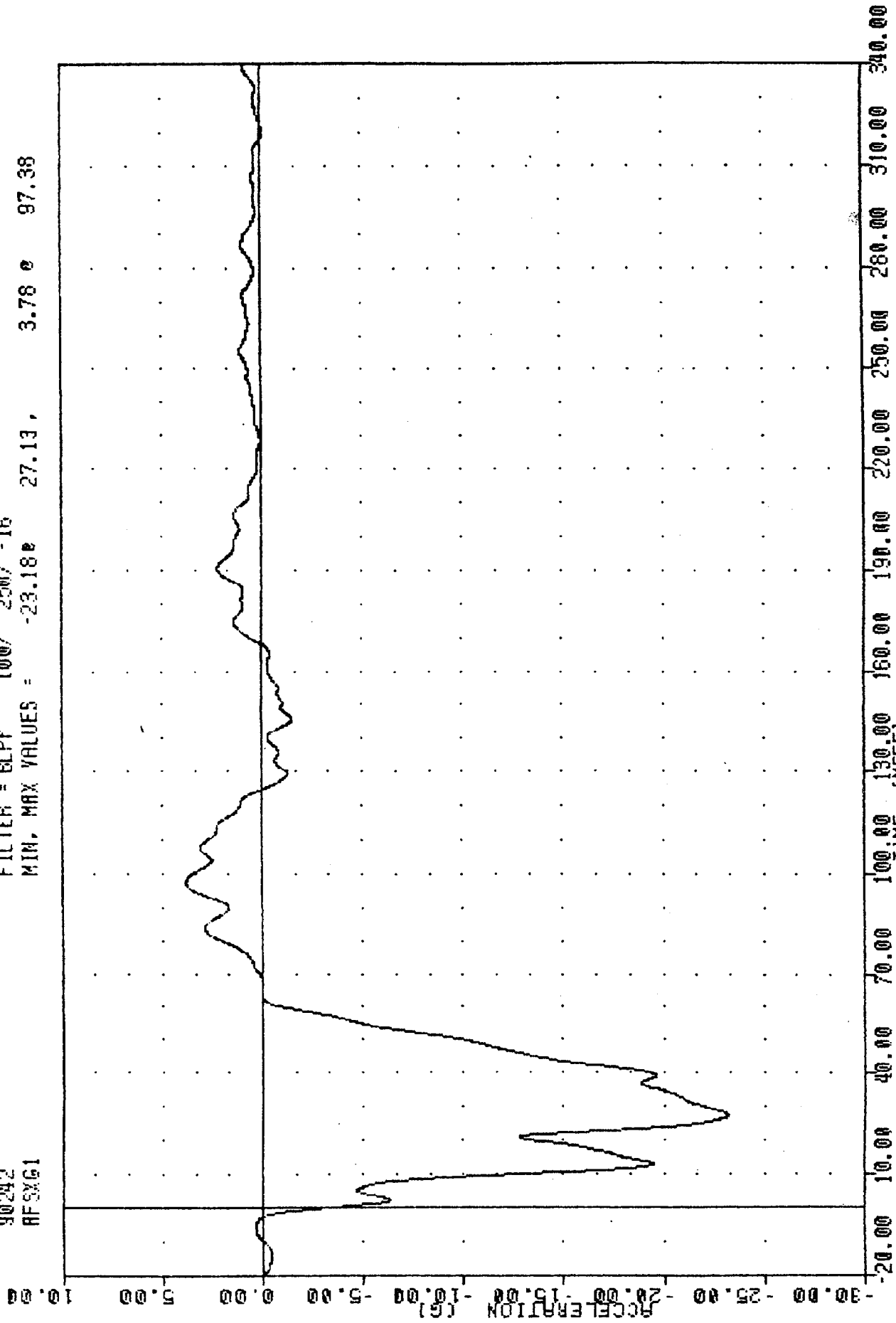


B55

CONTOURED MOVING BARRIER INTO FORD ESCORT AT 28.3 MPH #3
LEFT FRONT SILL RESULTANT ACCELERATION

900830-3 . TRC
CRASH III DAMAGE ALGORITHM
90242
AF5XG1

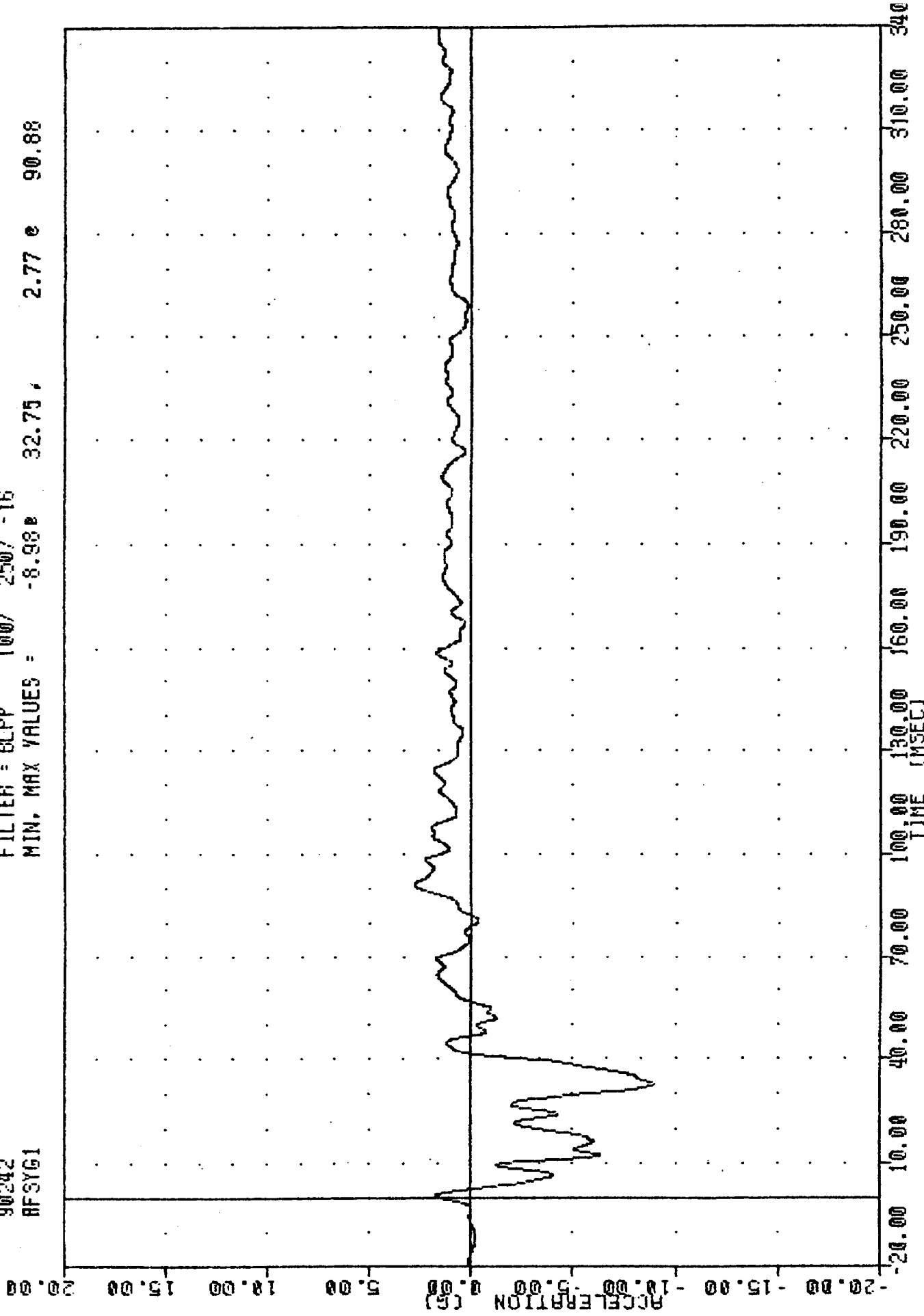
FILTER = 6LPF 100/ 250/ -16
MIN. MAX VALUES = -23.18e 27.13, 3.78 e 97.38



CONTOURED MOVING BARRIER INTO FORD ESCORT AT 28.3 MPH #3
RIGHT FRONT SILL X-AXIS ACCELERATION

CRASH III DAMAGE ALGORITHM
90242
BF3Y61

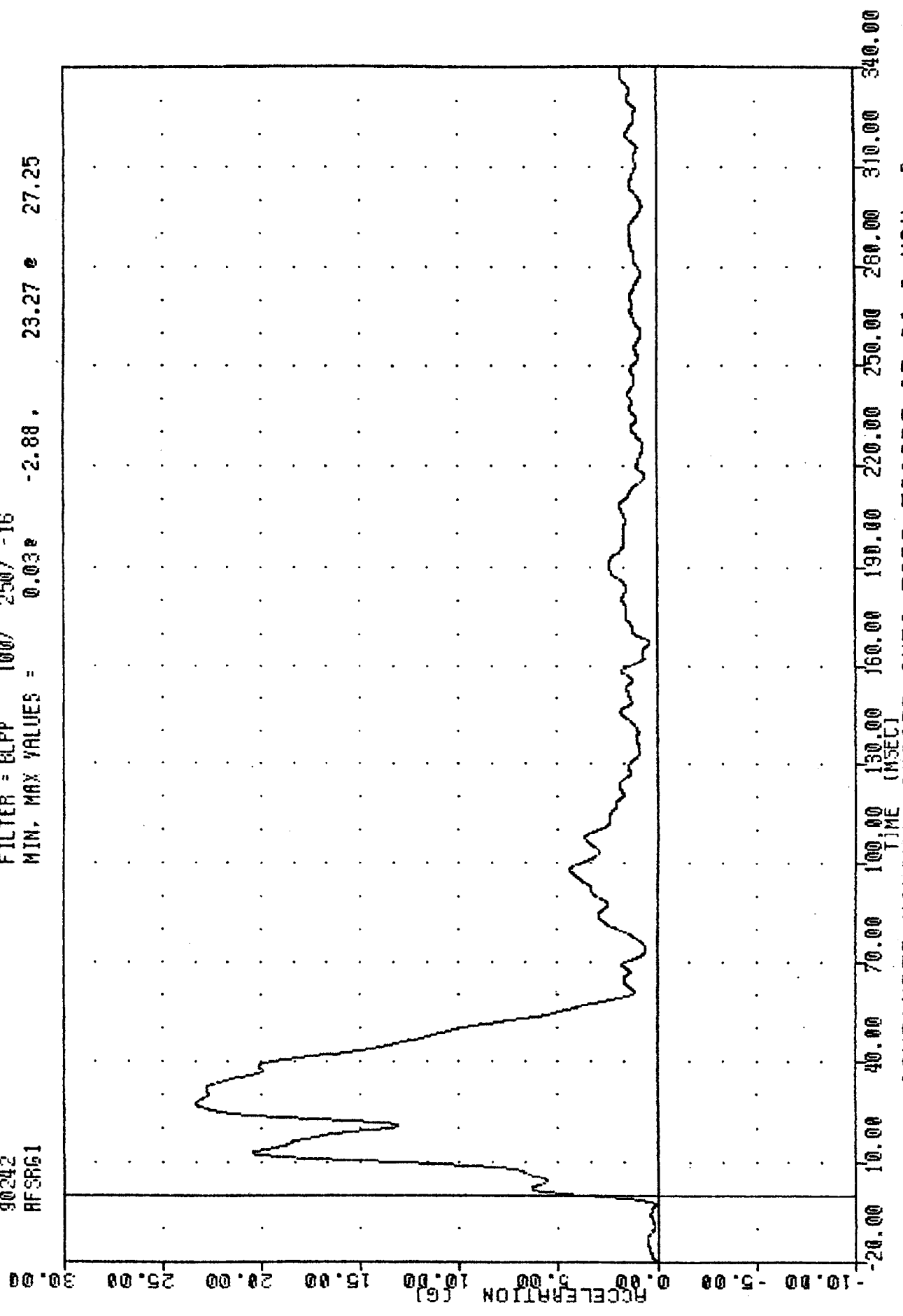
FILTER = BLPP 100/ 250/ -16
MIN, MAX VALUES = -8.98 32.75 2.77 90.88



CONTOURED MOVING BARRIER INTO FORD ESCORT AT 28.3 MPH #3
RIGHT FRONT SILL Y-AXIS ACCELERATION

900830-3 . TRC
 CRASH III DAMAGE ALGORITHM
 90242
 RFS961

FILTER = BLPP 100/ 250/ -16
 MIN. MAX VALUES = 0.03e -2.88 . 23.27 e 27.25



B58

CONTOURED MOVING BARRIER INTO FORD ESCORT AT 28.3 MPH #3
 RIGHT FRONT SILL RESULTANT ACCELERATION

CRASH III DAMAGE ALGORITHM

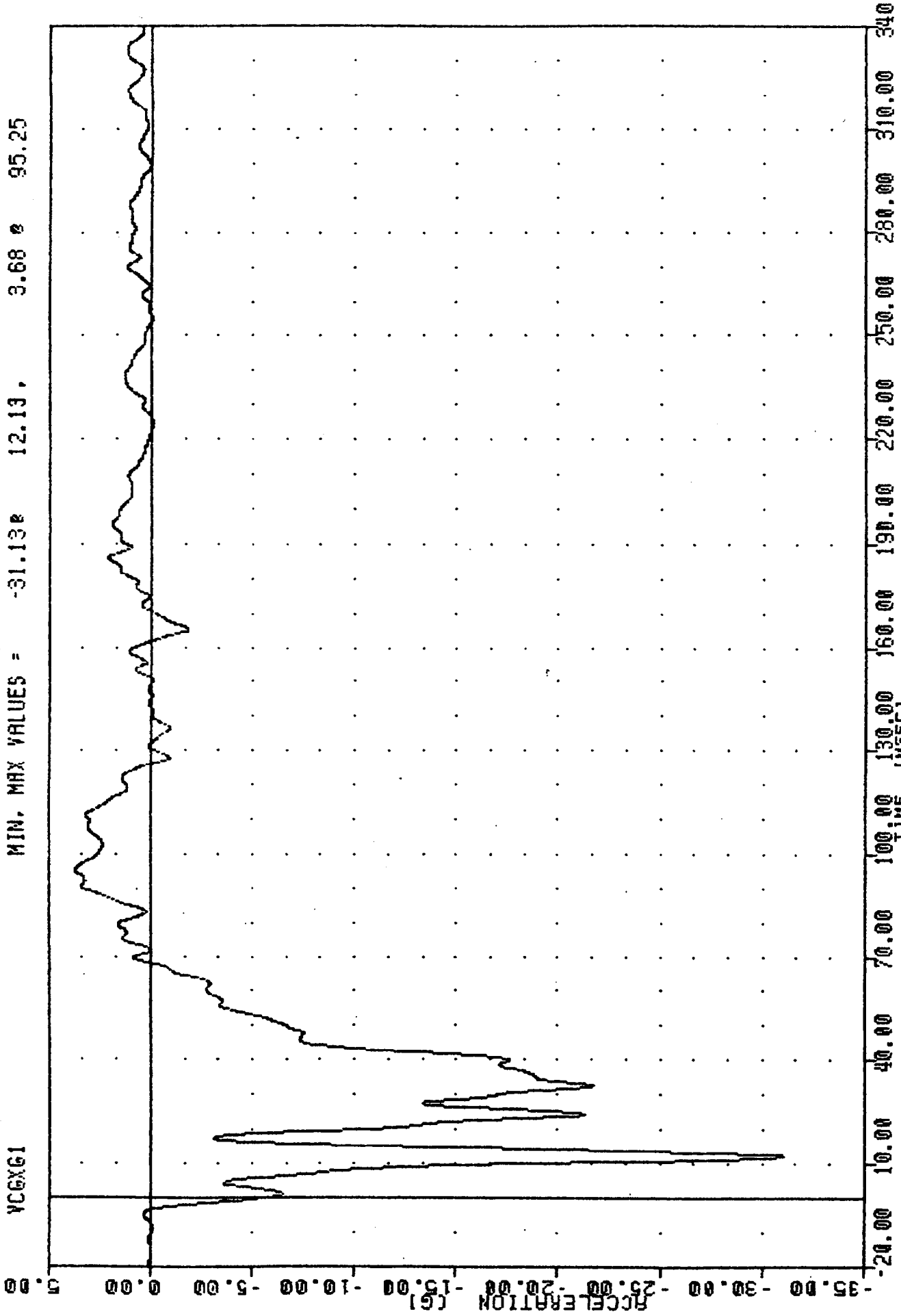
90242

YCGXG1

FILTER = BLPP 100/ 250/ -16

MIN. MAX VALUES = -31.13 12.13

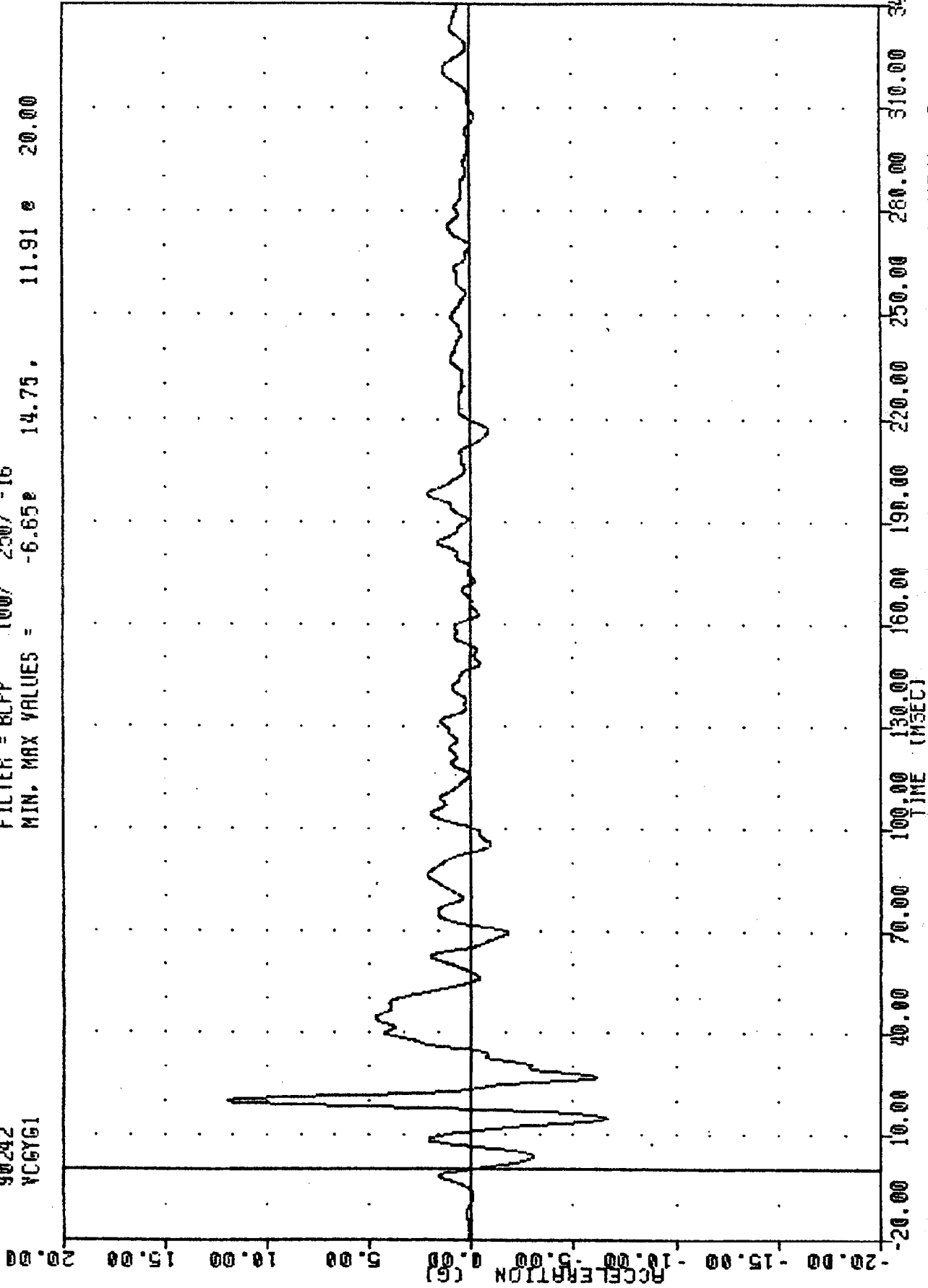
3.68 95.25



CONToured MOVING BARRIER INTO FORD ESCORT AT 28.3 MPH #3
VEHICLE CG X-AXIS ACCELERATION (IMPACT DIRECTION)

900630-3 , TRC
CRASH III DAMAGE ALGORITHM
90242
VCGYG1

FILTER = BLPP 100/ 250/ -16
MIN. MAX VALUES = -6.65e 14.75 , 11.91 e 20.00



860

CONTOURED MOVING BARRIER INTO FORD ESCORT AT 28.3 MPH *3
VEHICLE CG Y-AXIS ACCELERATION (PERPENDICULAR TO IMPACT DIRECTION)

CASH III DAMAGE ALGORITHM

90242

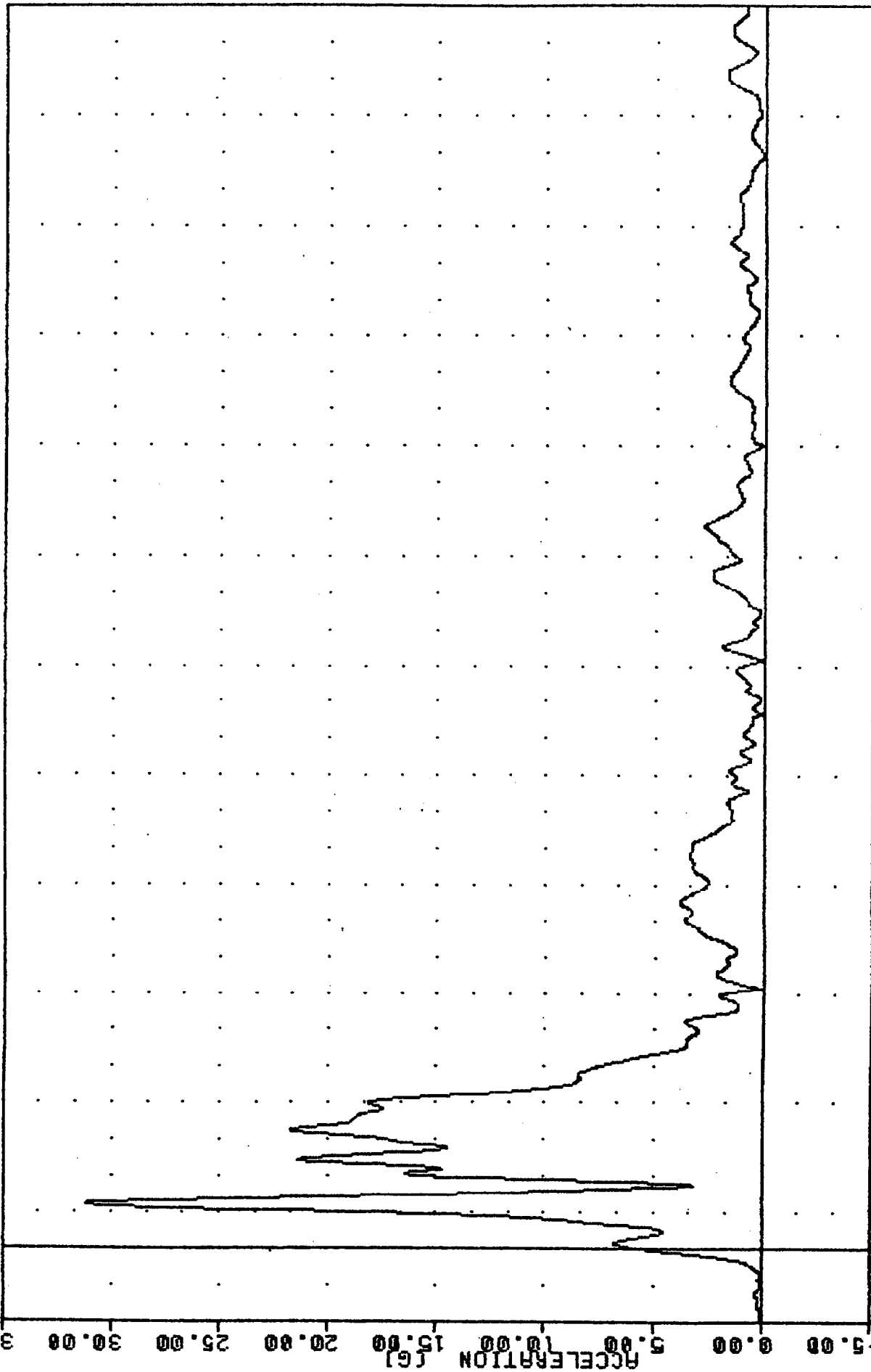
YCGRG1

FILTER = BLPP 100/ 250/ -16

MIN, MAX VALUES = 0.068 -7.13, 31.19 0 12.13

31.19 0 12.13

35.00

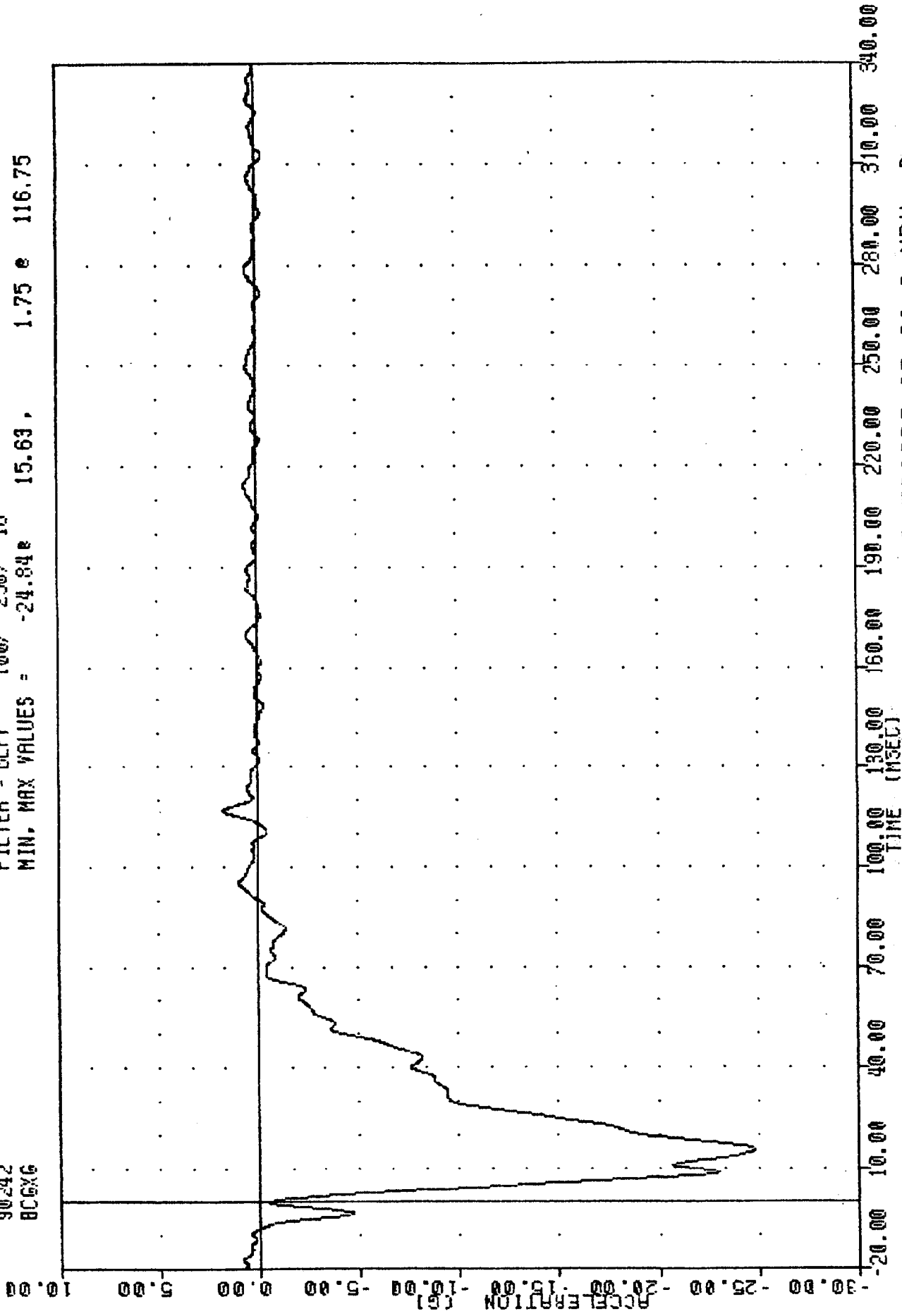


-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 341

CONTOURED MOVING BARRIER INTO FORD ESCORT AT 28.3 MPH #3
VEHICLE CG RESULTANT ACCELERATION

900830-3 .TRC
CRASH III DAMAGE ALGORITHM
90242
BC6XG

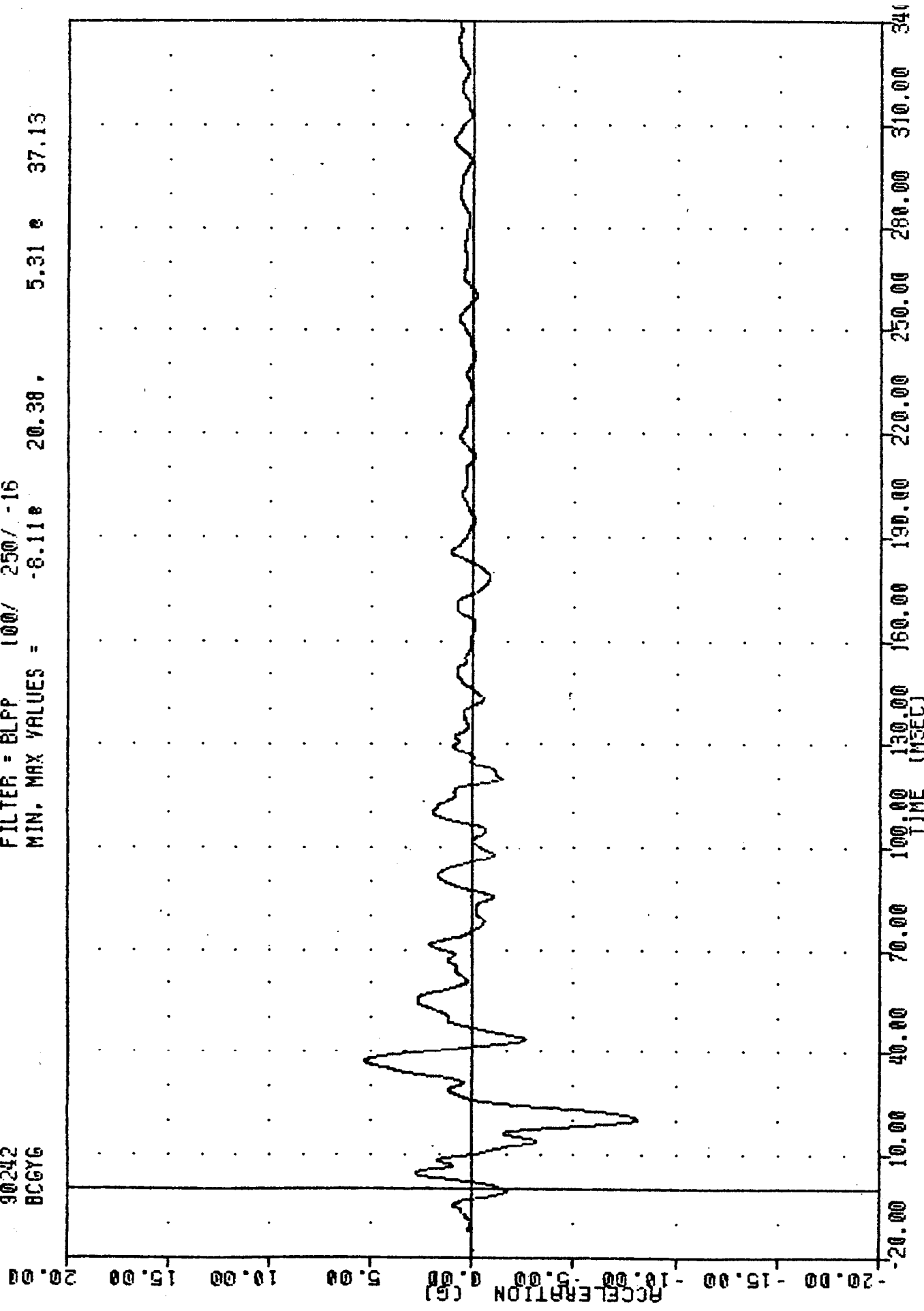
FILTER = BLPP 100/ 250/ -16
MIN. MAX VALUES = -24.84e 15.63, 1.75 e 116.75



CONTOURED MOVING BARRIER INTO FORD ESCORT AT 28.3 MPH *3
MOVING BARRIER CENTER OF GRAVITY X-AXIS ACCELERATION

CRASH III DAMAGE ALGORITHM
90242
BCGY6

FILTER = BLPP 100/ 250/ -16
MIN. MAX VALUES = -8.11e 20.30, 5.31e 37.13



B63

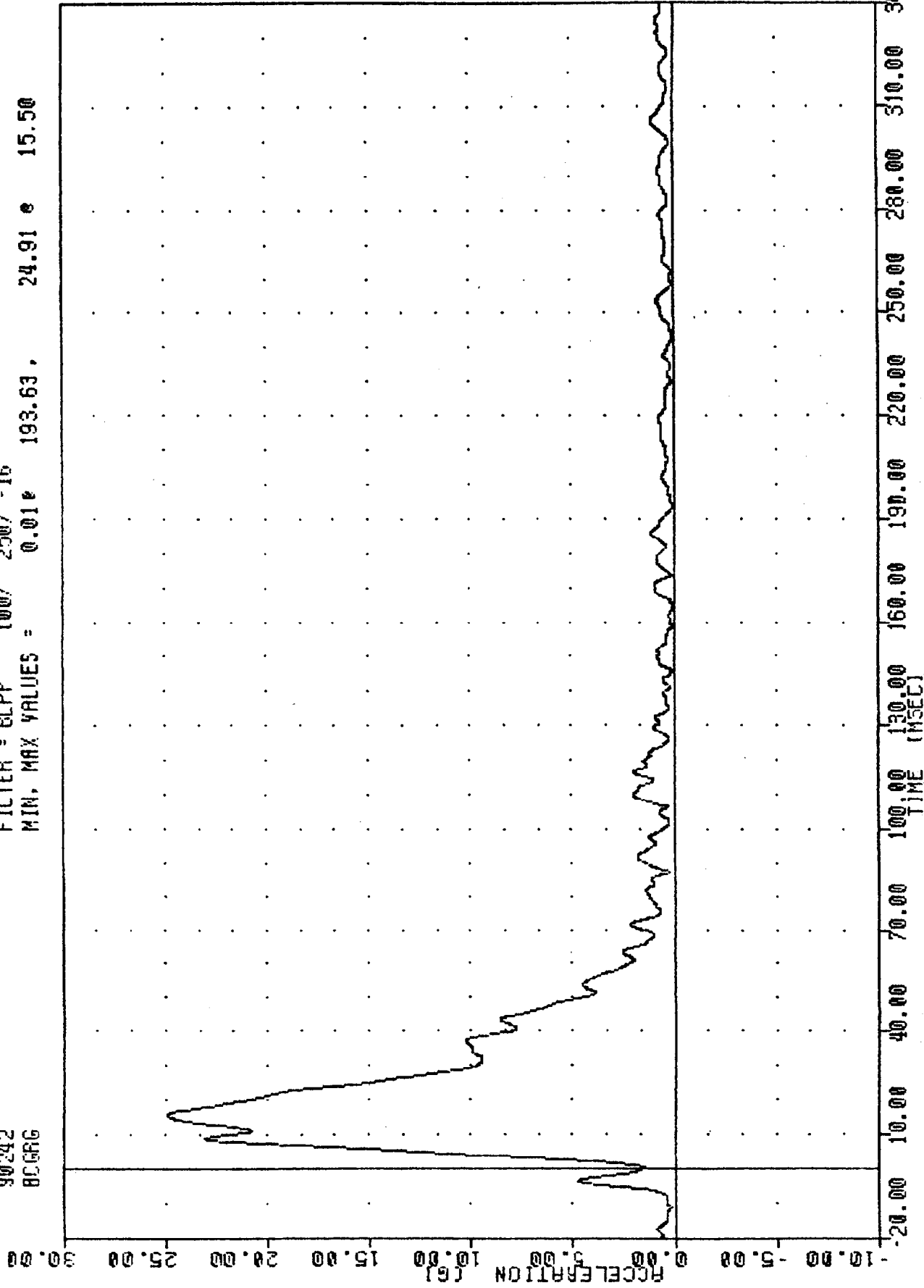
CONTOURED MOVING BARRIER INTO FORD ESCORT AT 28.3 MPH #3
MOVING BARRIER CENTER OF GRAVITY Y-AXIS ACCELERATION

900830-3 . TRC
CRASH III DAMAGE ALGORITHM

90242
BCGRG

FILTER = BLPP 100/ 250/ -16

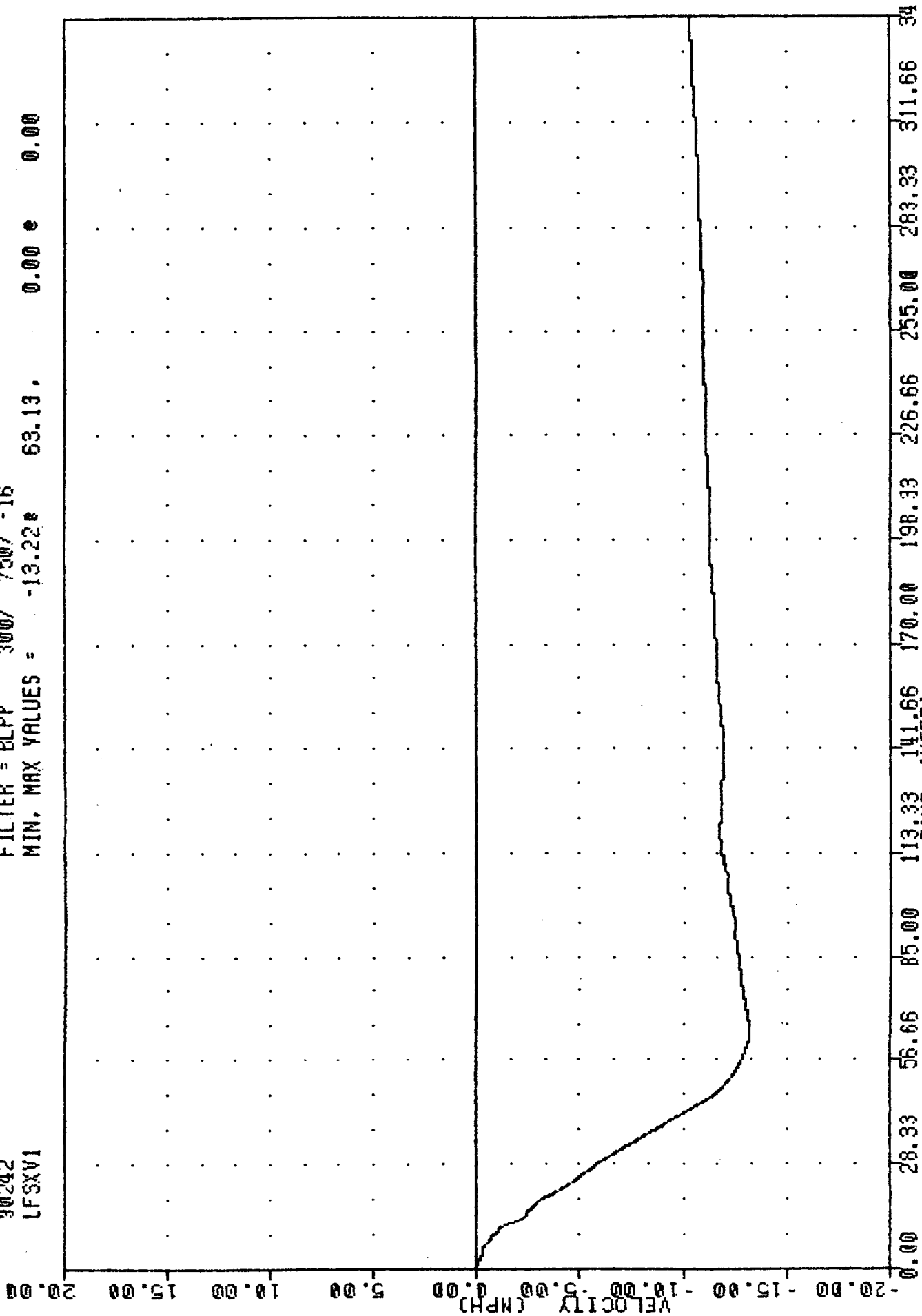
MIN. MAX VALUES = 0.01e 193.63, 24.91 e 15.50



CONTOURED MOVING BARRIER INTO FORD ESCORT AT 28.3 MPH #3
MOVING BARRIER CENTER OF GRAVITY RESULTANT ACCELERATION

CRASH III DAMAGE ALGORITHM
 90242
 LFSXV1

FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = -13.22 63.13 0.00 e 0.00

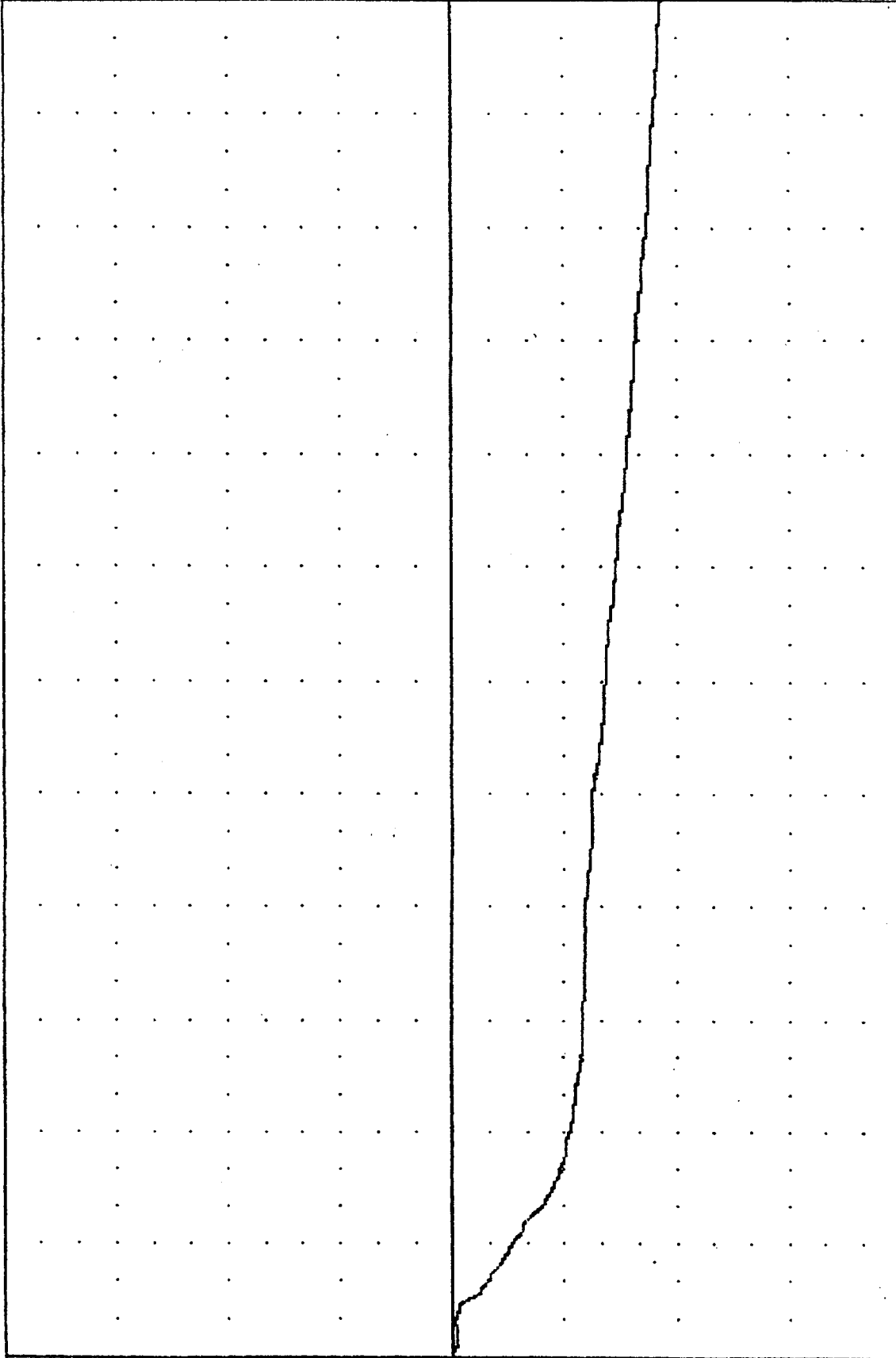


CONTOURED MOVING BARRIER INTO FORD ESCORT AT 28.3 MPH #3
 LEFT FRONT SILL X-AXIS VELOCITY

900830-3 , TRC
 CRASH III DAMAGE ALGORITHM
 90242
 LFSYV1

FILTER = BLPP 300/ 750/ -16
 MIN, MAX VALUES = -9.36e 340.00 . 0.00 e 0.38

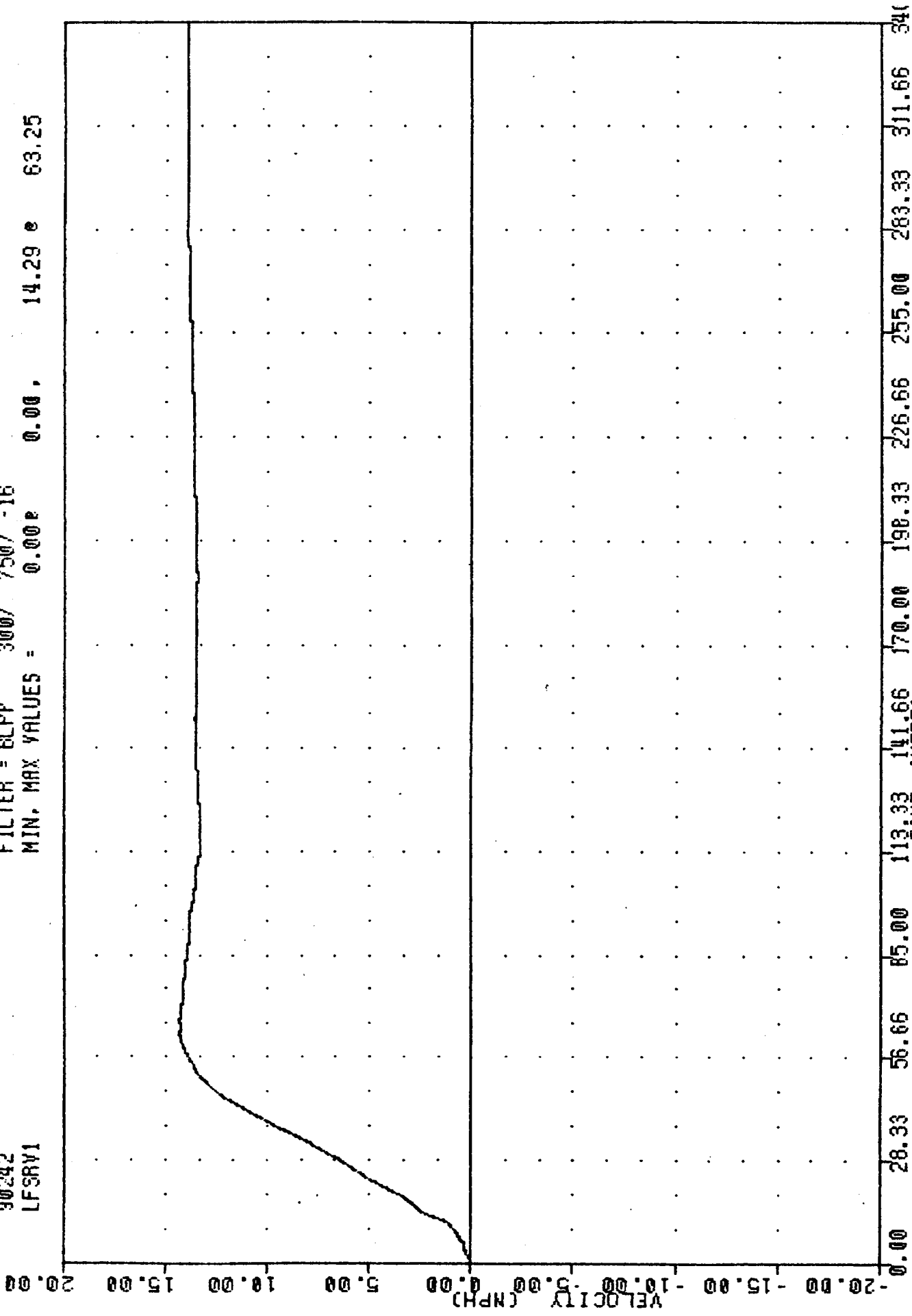
20.00
15.00
10.00
5.00
0.00
-5.00
-10.00
-15.00
-20.00



0.00 28.33 56.66 85.00 113.33 141.66 170.00 198.33 226.66 255.00 283.33 311.66 340.00
 TIME (MSEC)
 CONTOURED MOVING BARRIER INTO FORD ESCORT AT 28.3 MPH #3
 LEFT FRONT SILL Y-AXIS VELOCITY

CRASH III DAMAGE ALGORITHM
 30242
 LFSRV1

FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = 0.00e 0.00, 14.29 e 63.25

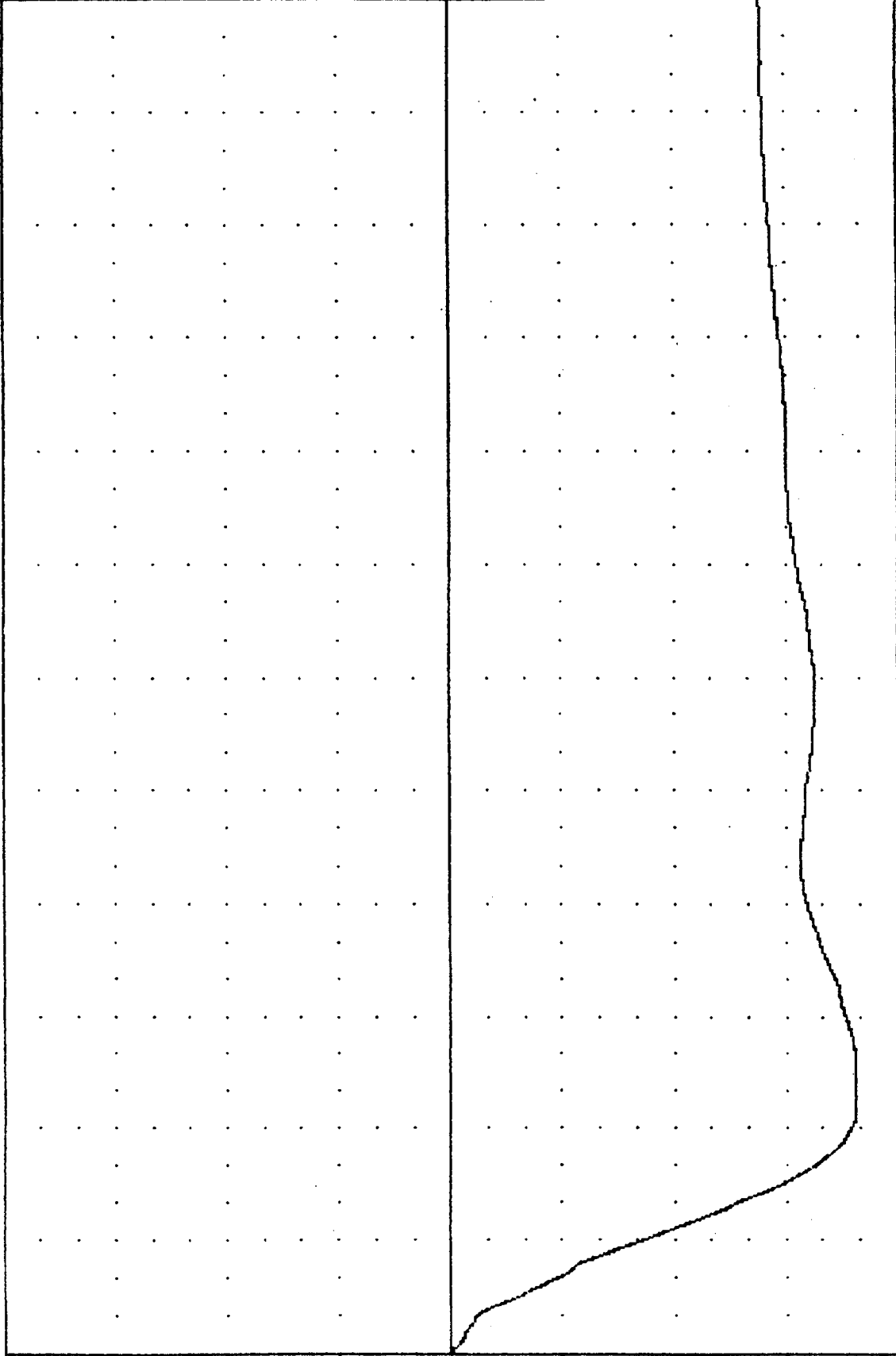


CONTOURED MOVING BARRIER INTO FORD ESCORT AT 28.3 MPH #3
 LEFT FRONT SILL RESULTANT VELOCITY

900890-3 . TRC
 CRASH III DAMAGE ALGORITHM
 90242
 RFSXV1

FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = -18.13e 70.50, 0.00 e 0.00

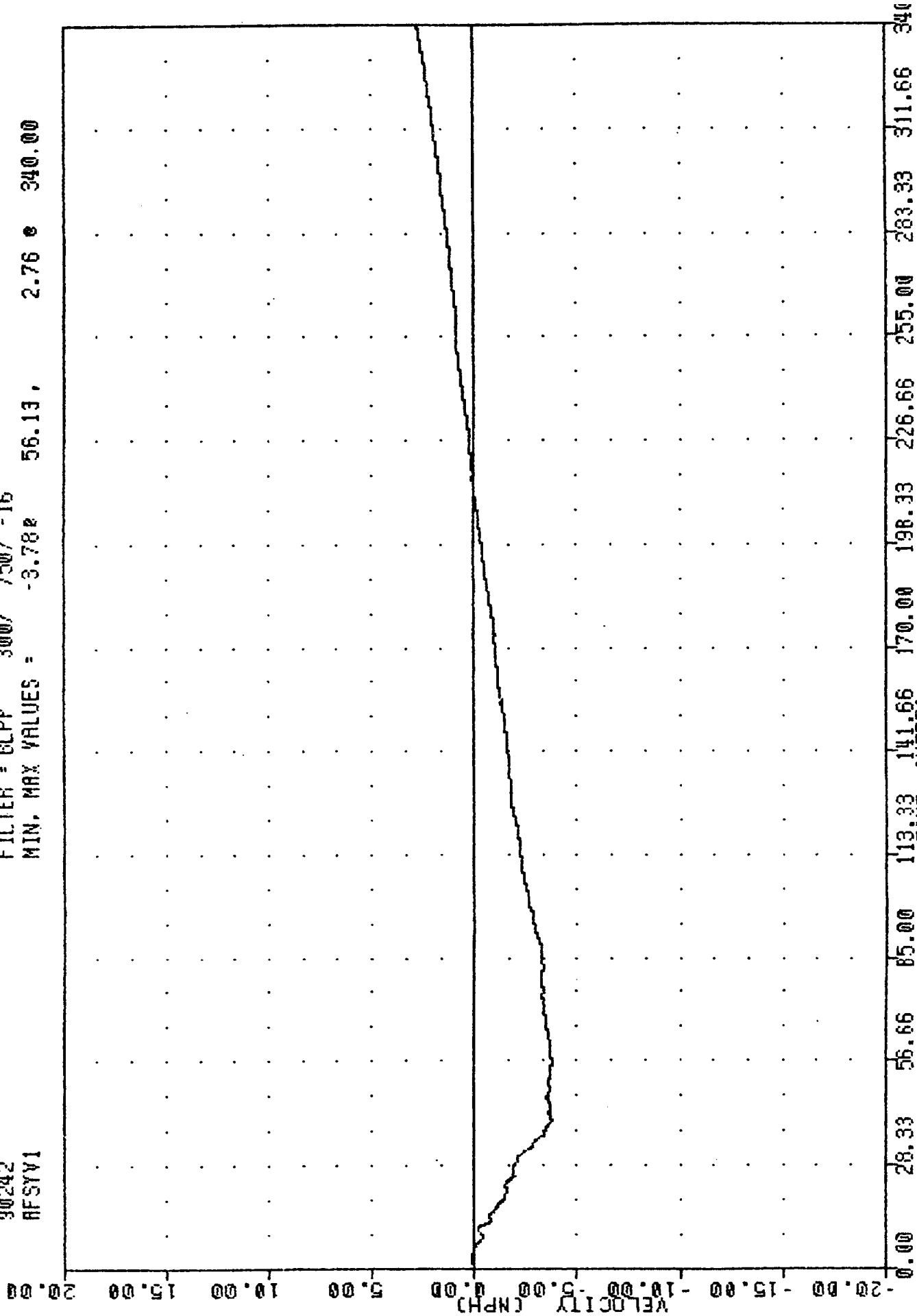
20.00
15.00
10.00
5.00
0.00
-5.00
-10.00
-15.00
-20.00



CONToured MOVING BARRIER INTO FORD ESCORT AT 28.3 MPH #3
 RIGHT FRONT SILL X-AXIS VELOCITY

CRASH III DAMAGE ALGORITHM
 90242
 RFSYV1

FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = -3.782 56.13, 2.76 e 340.00

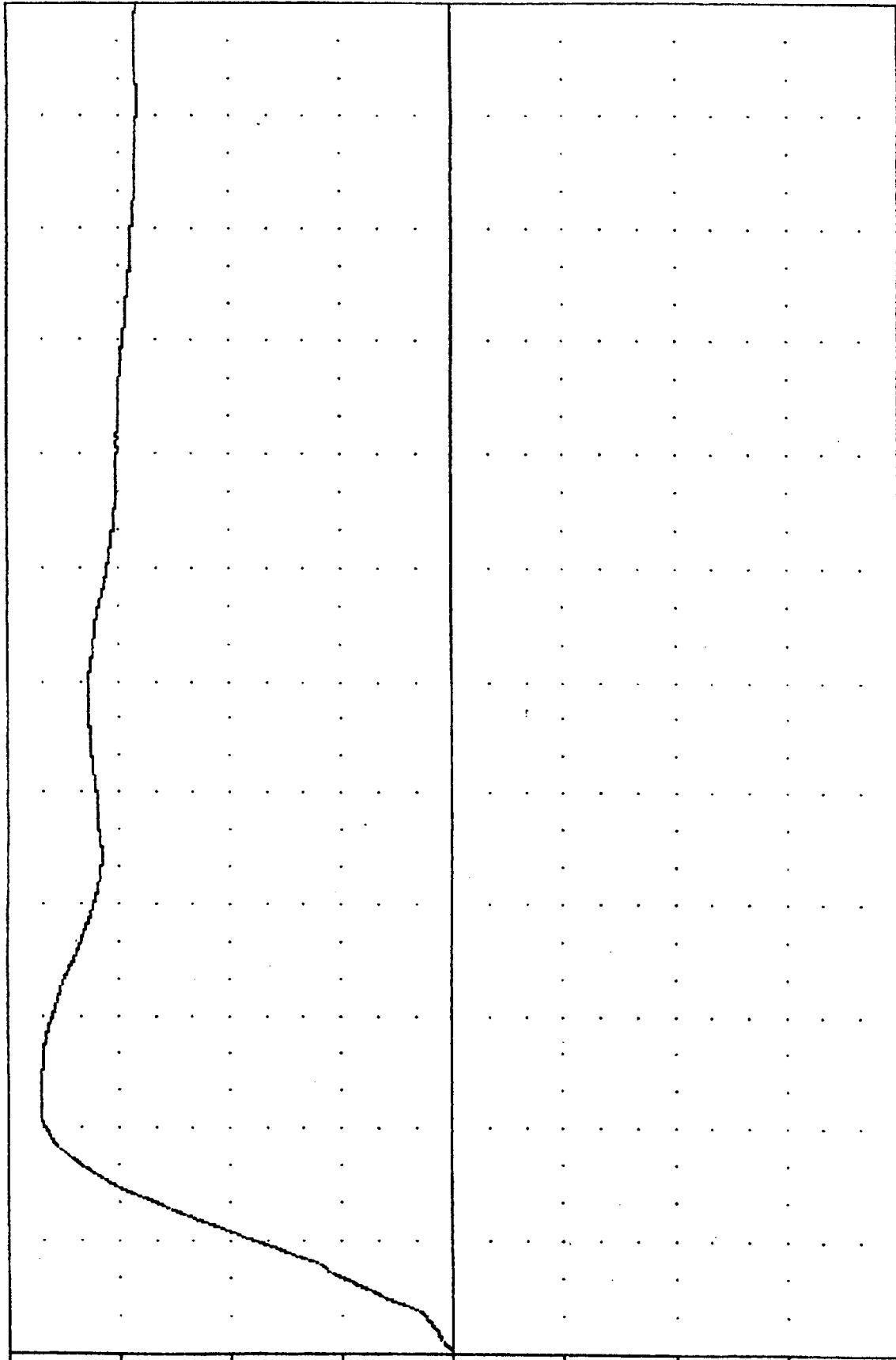


CONTOURED MOVING BARRIER INTO FORD ESCORT AT 28.3 MPH #3
 RIGHT FRONT SILL Y-AXIS VELOCITY

900230-3 . TRC
 CRASH III DAMAGE ALGORITHM
 90242
 AFSRV1

FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = 0.00e 0.00 , 18.49 e 60.25

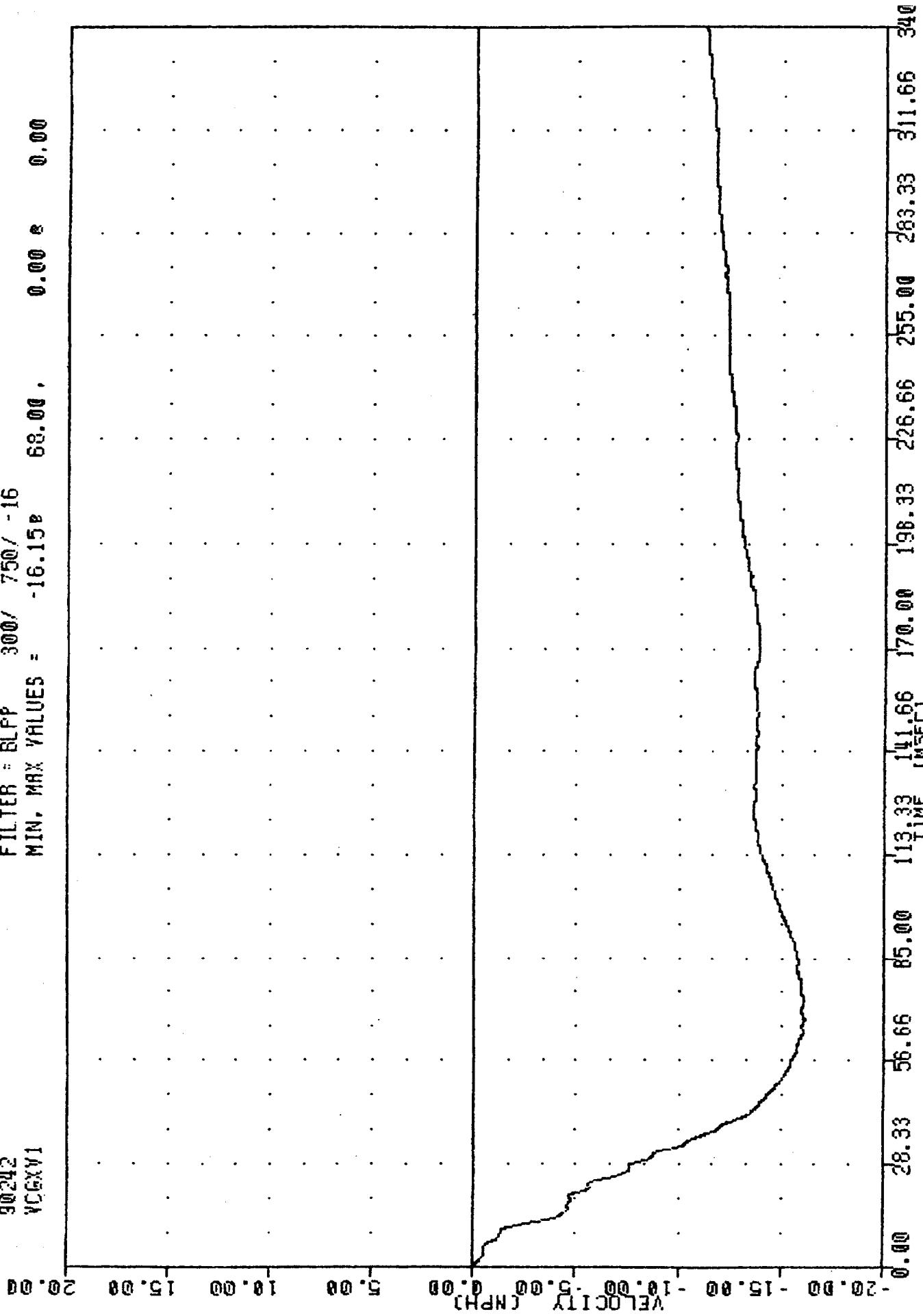
20.00
 15.00
 10.00
 5.00
 0.00
 -5.00
 -10.00
 -15.00
 -20.00



0.00 28.33 55.66 85.00 113.33 141.66 170.00 198.33 226.66 255.00 283.33 311.66 340.00
 TIME (MSEC)
 CONTOURED MOVING BARRIER INTO FORD ESCORT AT 28.3 MPH #3
 RIGHT FRONT SILL RESULTANT VELOCITY

CRASH III DAMAGE ALGORITHM
 30242
 YCGXV1

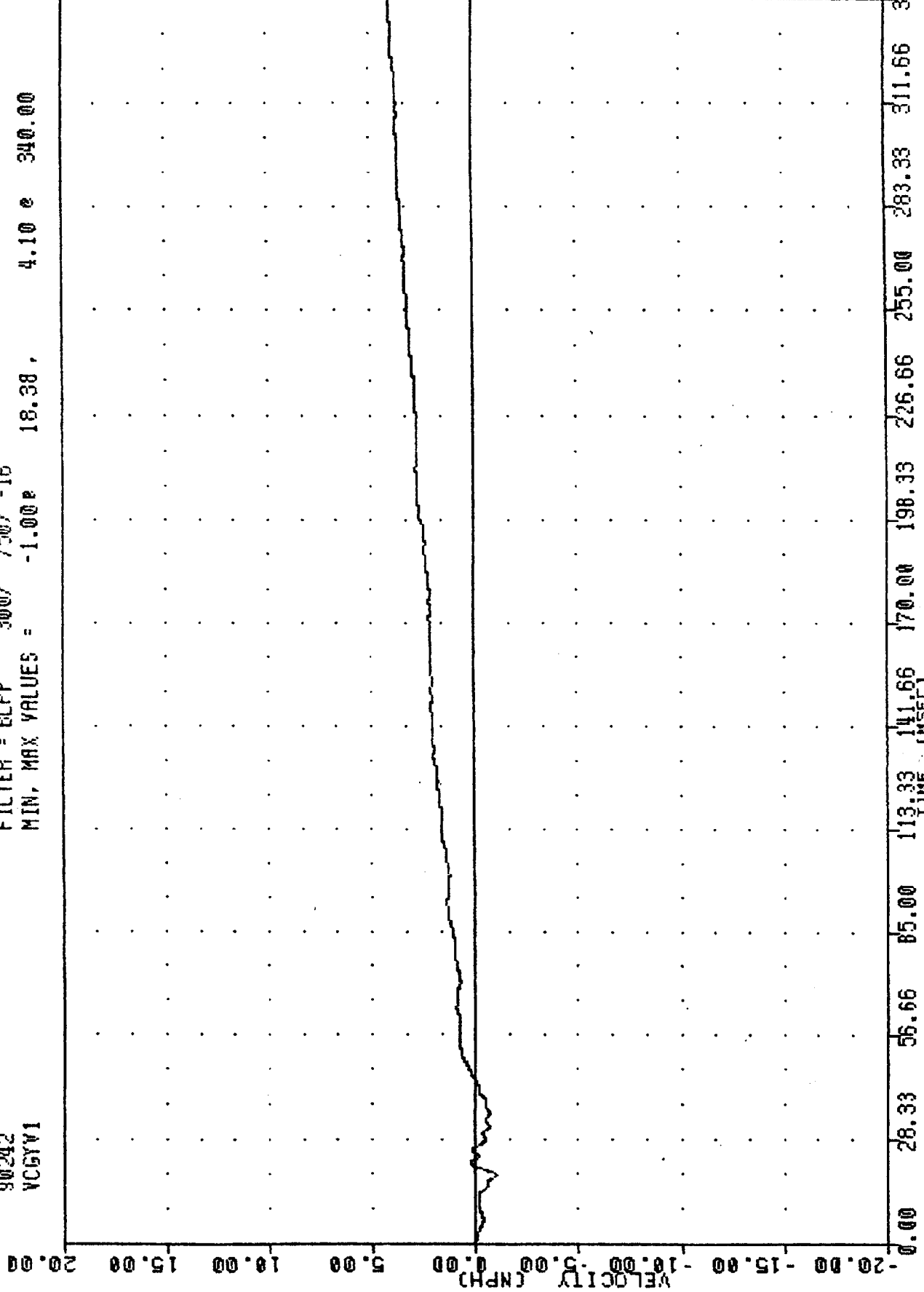
FILTER = BLFP 300/ 750/ -16
 MIN. MAX VALUES = -16.15e 68.00, 0.00 e 0.00



CONTOURED MOVING BARRIER INTO FORD ESCORT AT 28.3 MPH #3
 VEHICLE CG X-AXIS VELOCITY (IMPACT DIRECTION)

900630-3 , TRC
 CRASH III DAMAGE ALGORITHM
 90242
 YCGY1

FILTER = BLPP 300/ 750/ -16
 MIN, MAX VALUES = 18.38 , 4.10 e 340.00



CONTOURED MOVING BARRIER INTO FORD ESCORT AT 28.3 MPH #3
 VEHICLE CG Y-AXIS VELOCITY (PERPENDICULAR TO IMPACT DIRECTION)

CRASH III DAMAGE ALGORITHM

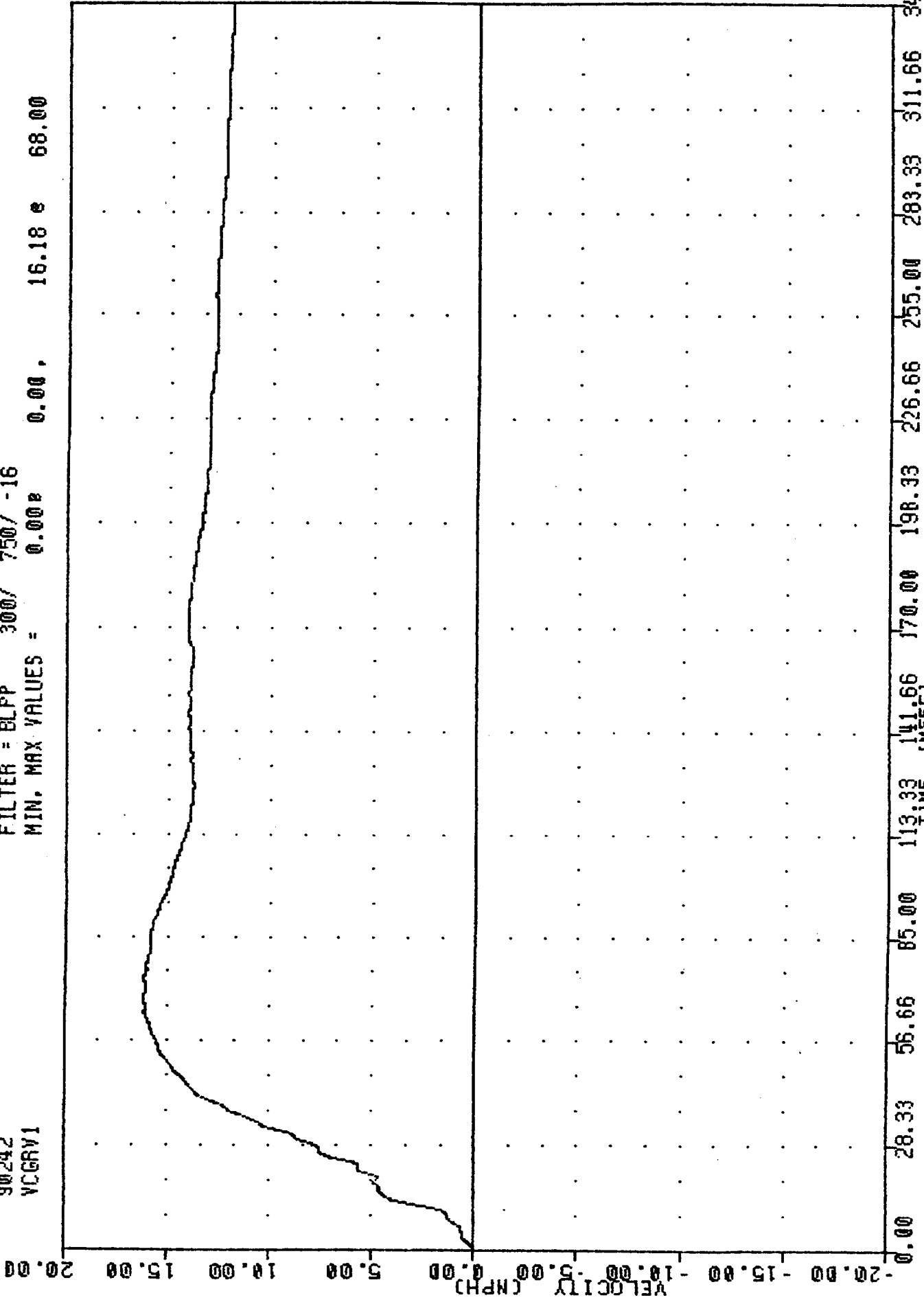
90242

VCGRV1

FILTER = BLPP 300/ 750/ -16

MIN. MAX VALUES = 0.00e 0.00e

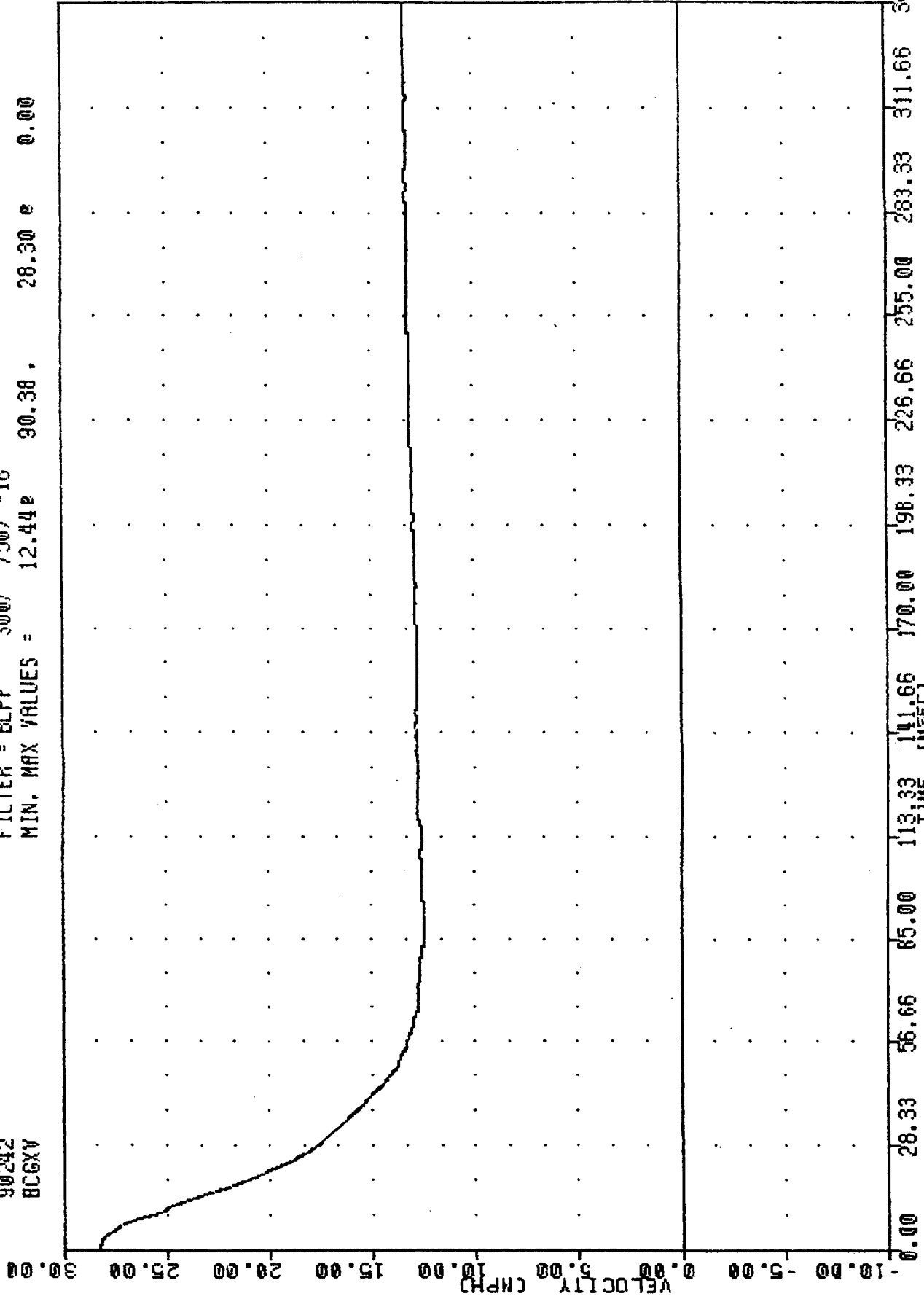
16.18 e 68.00



CONToured MOVING BARRIER INTO FORD ESCORT AT 28.3 MPH #3
VEHICLE CG RESULTANT VELOCITY

900830-3 . TRC
 CRASH III DAMAGE ALGORITHM
 90242
 BCGXV

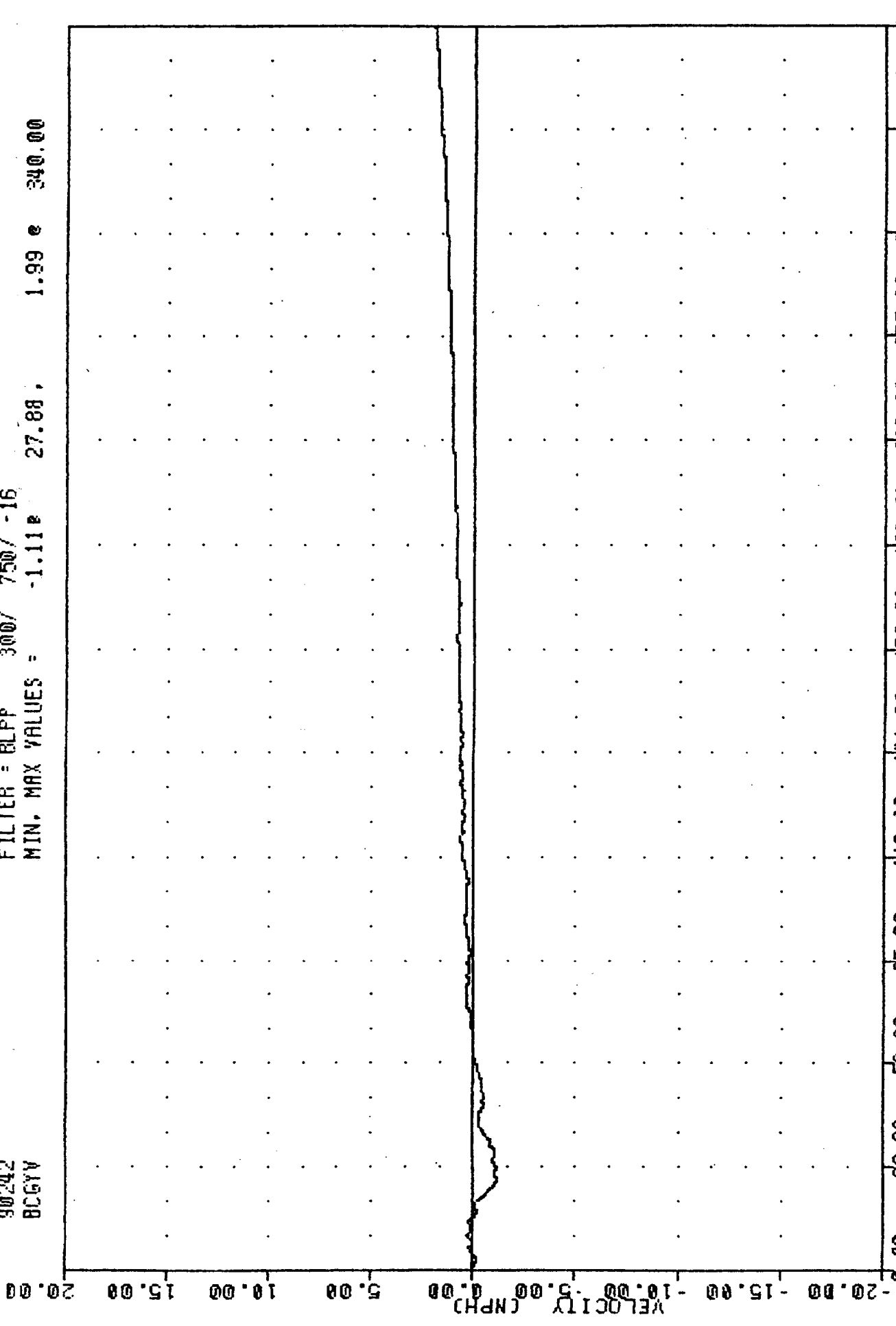
FILTER = 6LPP 300/ 750/ -16
 MIN. MAX VALUES = 12.44e 90.38 . 28.30 e 0.00



CONTOURED MOVING BARRIER INTO FORD ESCORT AT 28.3 MPH #3
 MOVING BARRIER CENTER OF GRAVITY X-AXIS VELOCITY

CRASH III DAMAGE ALGORITHM
 90242
 BCGYV

FILTER = BLFF 300/ 750/ -16
 MIN. MAX VALUES = -1.11e 27.88, 1.99 e 340.00

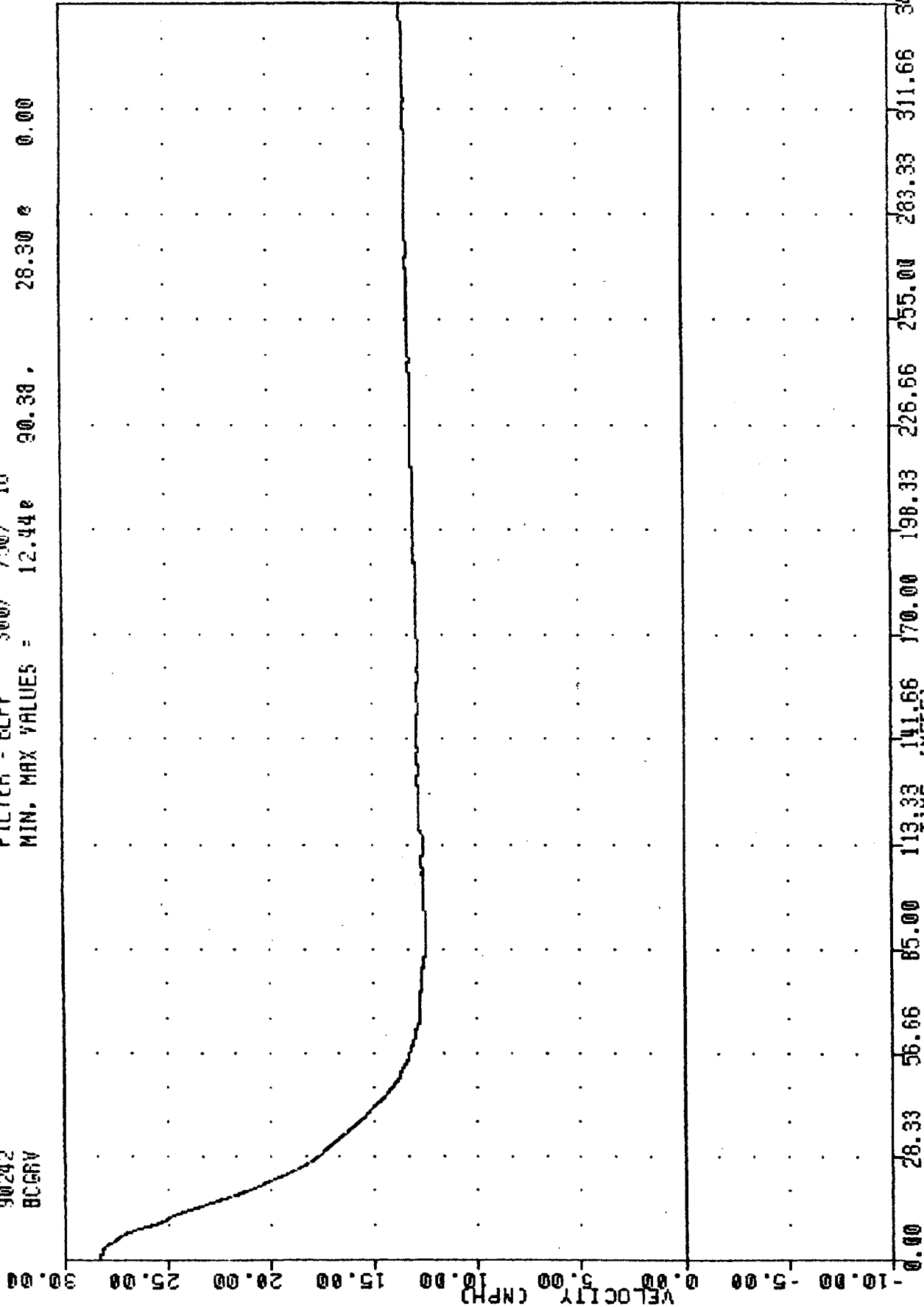


0.00	28.33	56.66	85.00	113.33	141.66	170.00	198.33	226.66	255.00	283.33	311.66	340
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CONTOURED MOVING BARRIER INTO FORD ESCORT AT 28.3 MPH #3
 MOVING BARRIER CENTER OF GRAVITY Y-AXIS VELOCITY

900830-3 , TRC
 CRASH III DAMAGE ALGORITHM
 90242
 BCGRV

FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = 12.44e 90.38 , 28.30 e 0.00

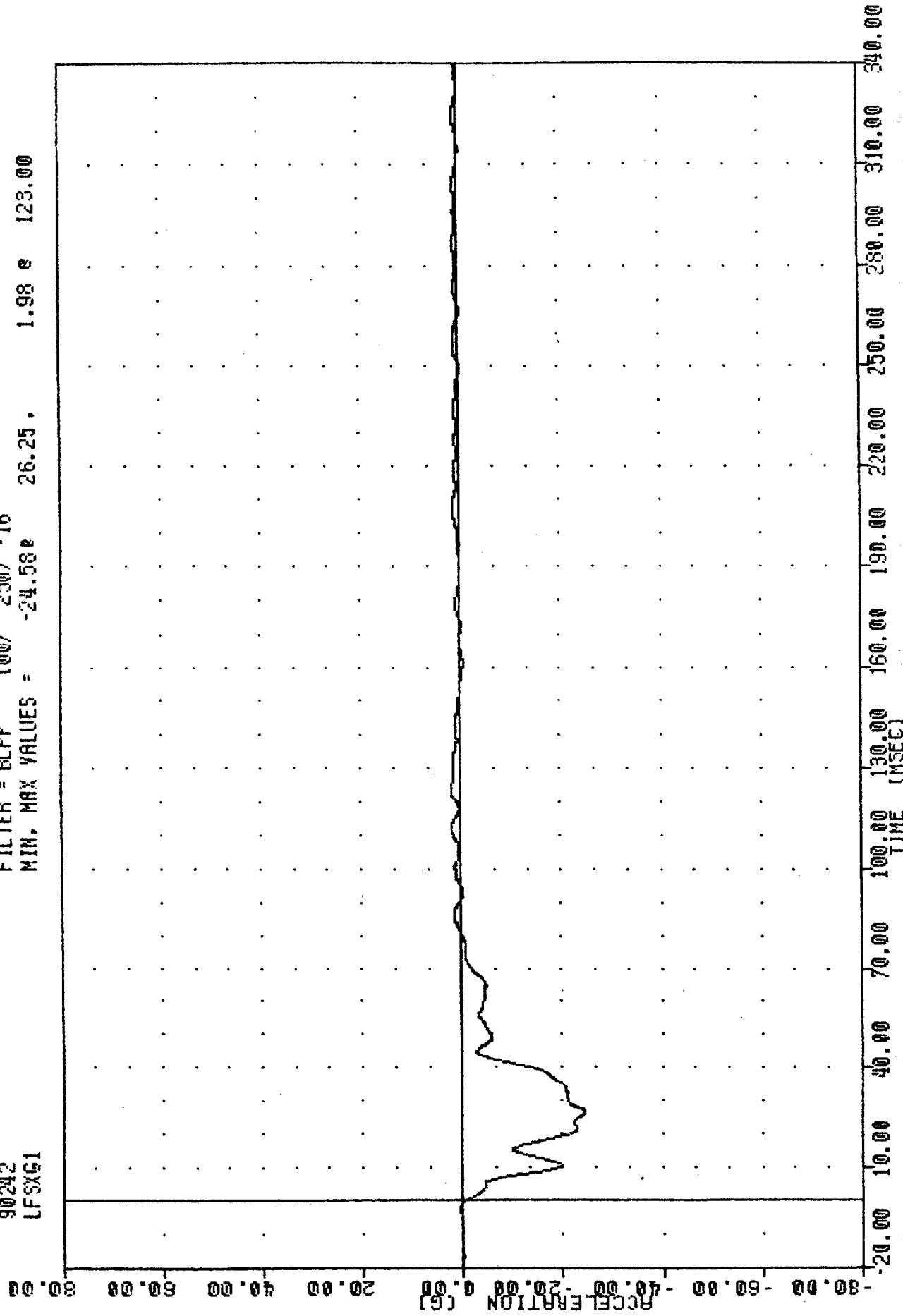


CONTOURED MOVING BARRIER INTO FORD ESCORT AT 28.3 MPH #3
 MOVING BARRIER CENTER OF GRAVITY RESULTANT VELOCITY

TEST #900830-4

900330-4 , TRC
CRASH III DAMAGE ALGORITHM
90242
LFSXG1

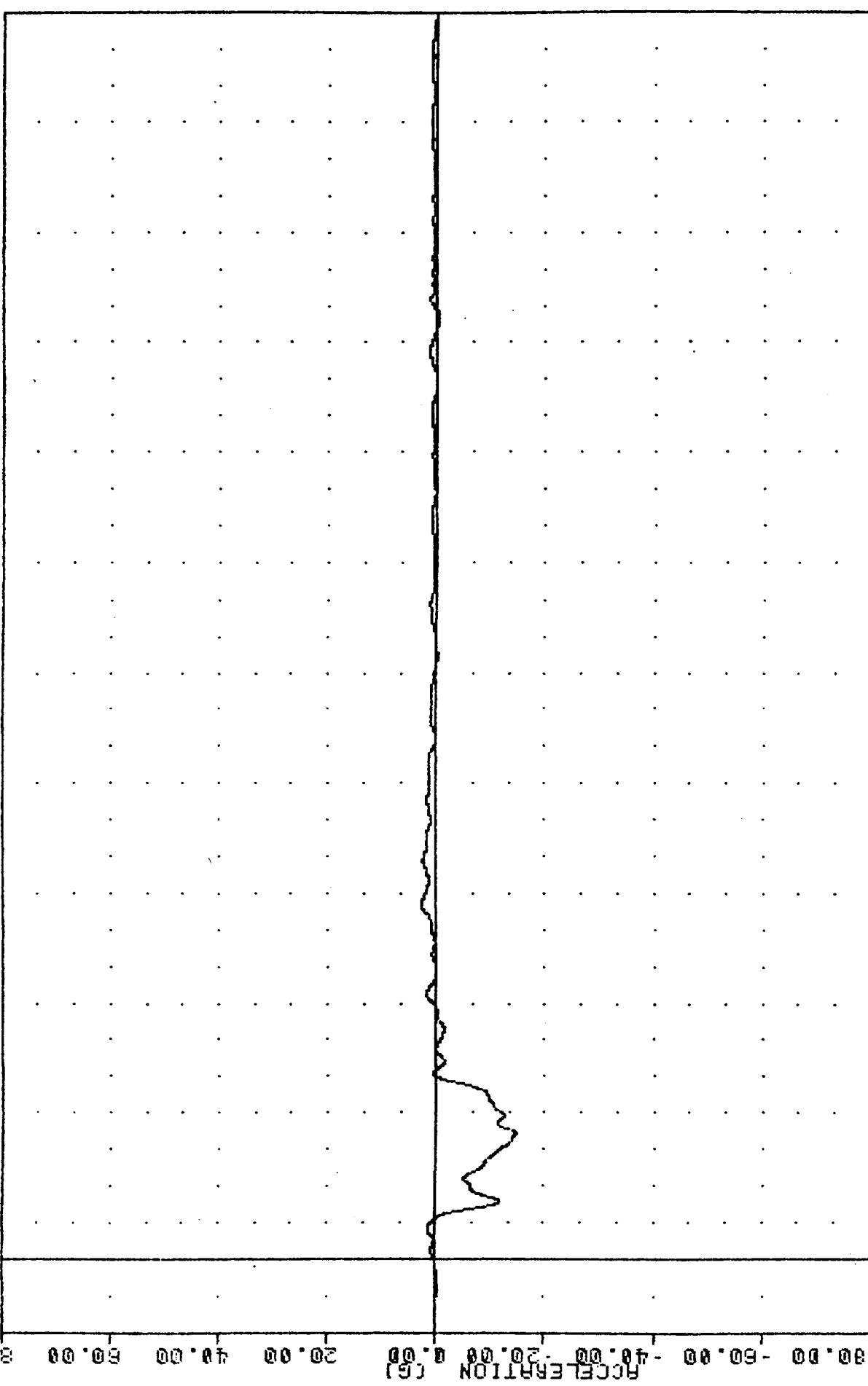
FILTER = BLPP 100/ 250/ -16
MIN, MAX VALUES = -24.58 26.25 1.98 e 123.00



CONTOURED MOVING BARRIER INTO FORD ESCORT AT 39.8 MPH #4
LEFT FRONT SILL X-AXIS ACCELERATION

CRASH III DAMAGE ALGORITHM
90242
LFSY61

FILTER = BLPP 100/ 250/ = 16
MIN. MAX VALUES = -14.56e 34.13. 2.61 e 97.25



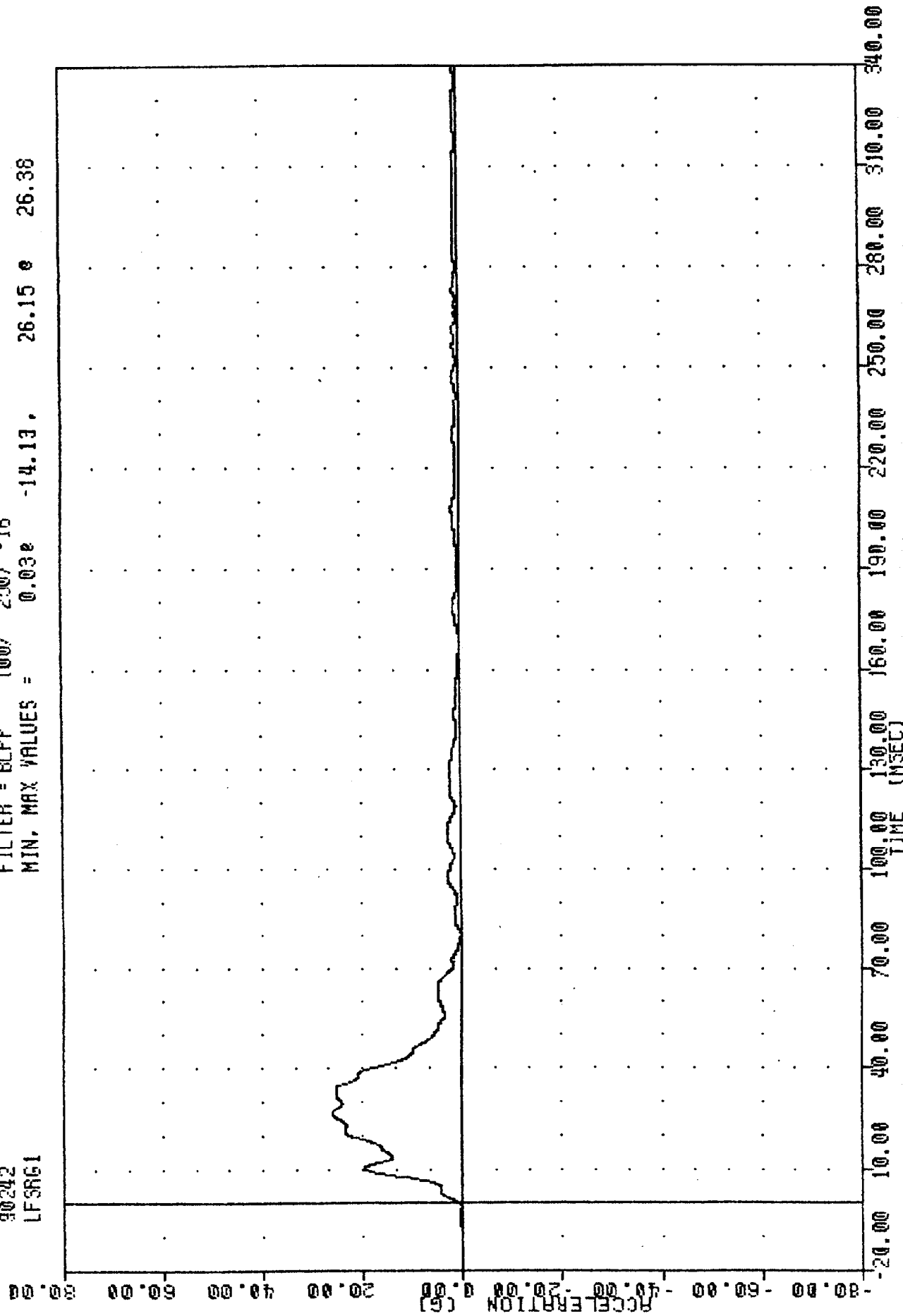
ACCELERATION (G)
-80.00
-60.00
-40.00
-20.00
0.00
20.00
40.00
60.00
80.00

TIME (MSEC)
-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00

CONTOURED MOVING BARRIER INTO FORD ESCORT AT 39.8 MPH #4
LEFT FRONT SILL Y-AXIS ACCELERATION

900630-4 , TRC
 CRASH III DAMAGE ALGORITHM
 90242
 LFSRG1

FILTER = BLPP 100/ 250/ -16
 MIN, MAX VALUES = 0.03e -14.13, 26.15 e 26.38

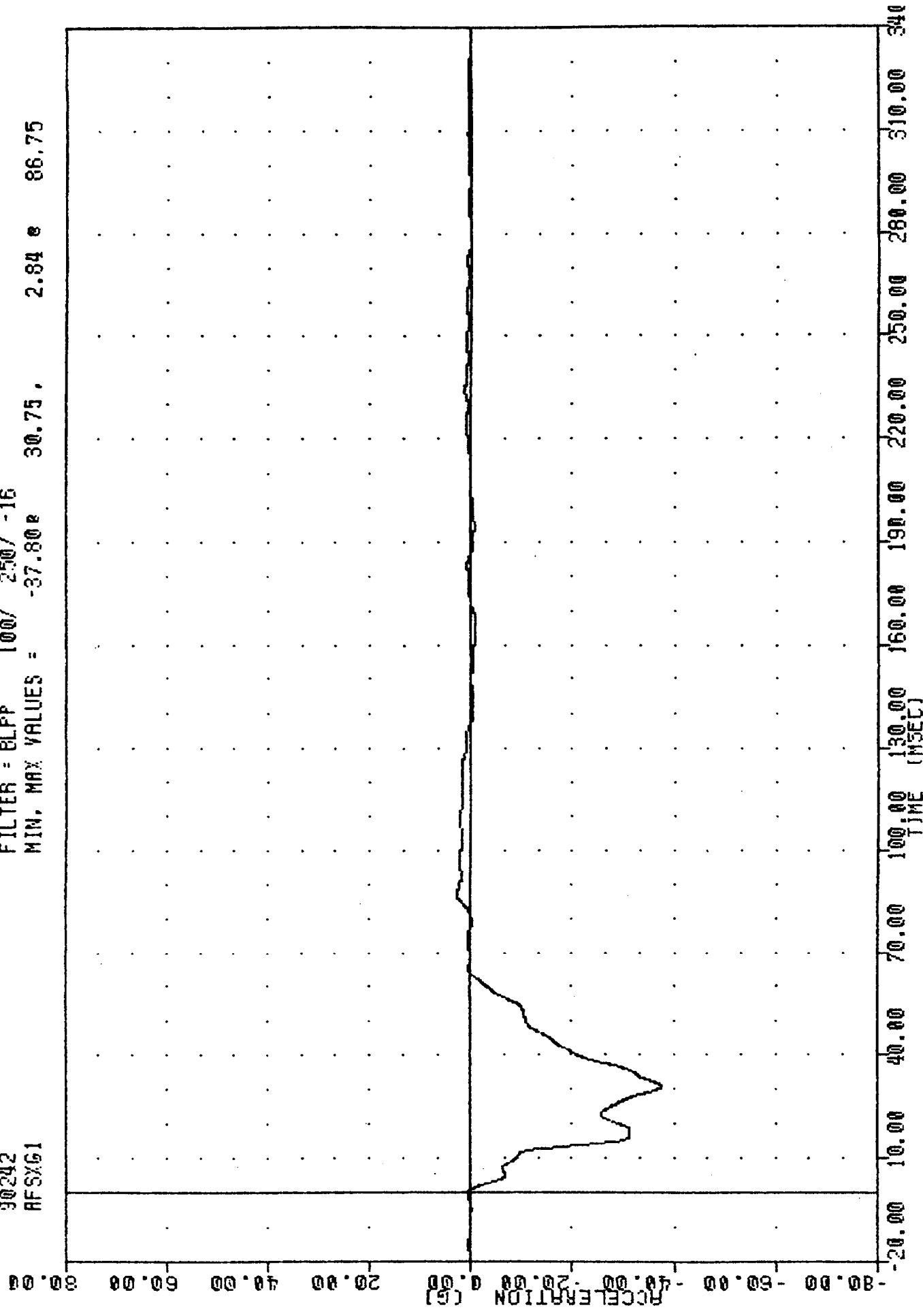


B80

CONTOURED MOVING BARRIER INTO FORD ESCORT AT 39.8 MPH #4
 LEFT FRONT SILL RESULTANT ACCELERATION

30000004
 CRASH III DAMAGE ALGORITHM
 30242
 RFSXG1

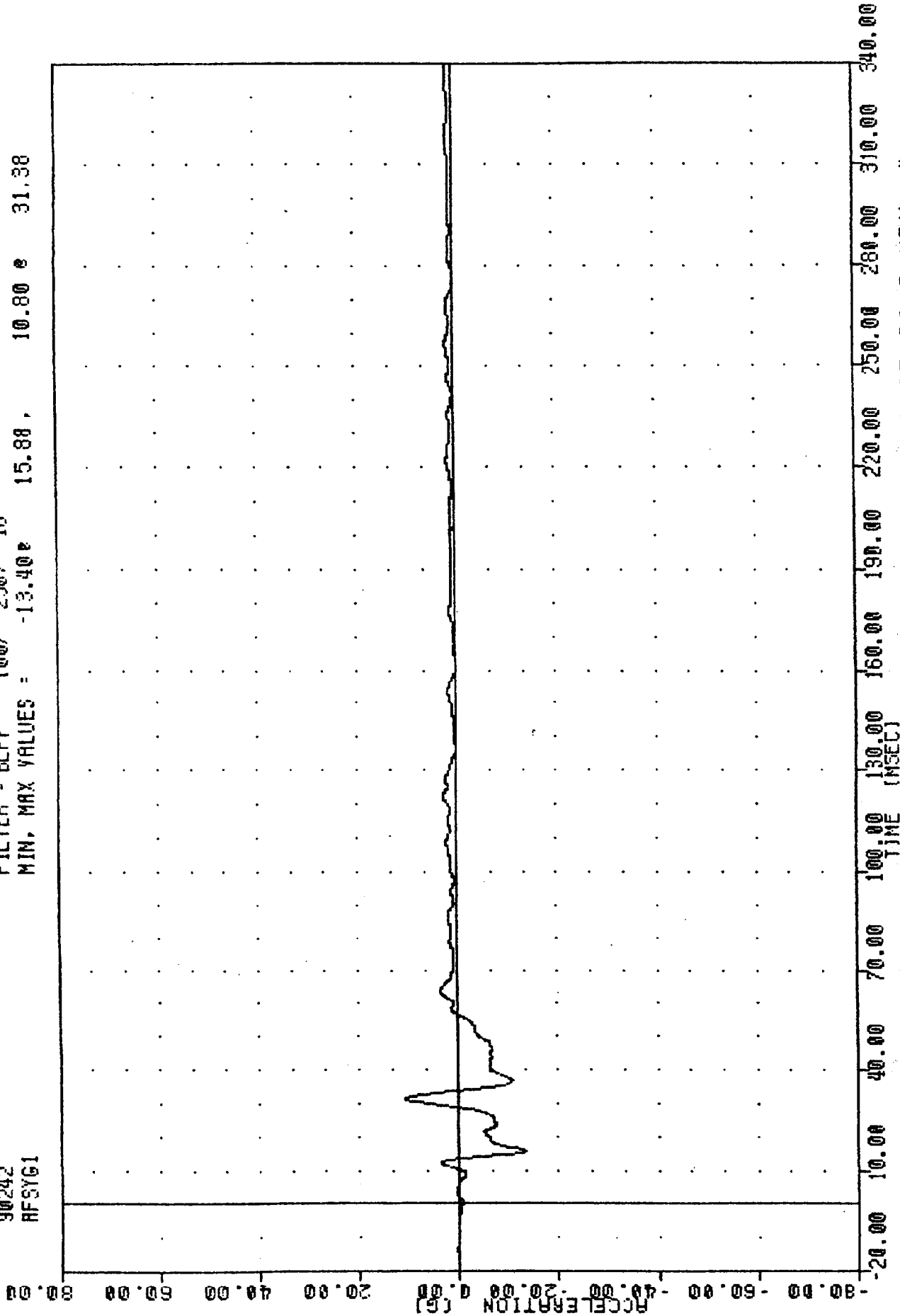
FILTER = BLPP 100/ 250/ -16
 MIN. MAX VALUES = -37.80e 30.75. 2.84 e 86.75



CONTOURED MOVING BARRIER INTO FORD ESCORT AT 39.8 MPH #4
 RIGHT FRONT SILL X-AXIS ACCELERATION

900630-4 , TRC
 CRASH III DAMAGE ALGORITHM
 90242
 RFSY61

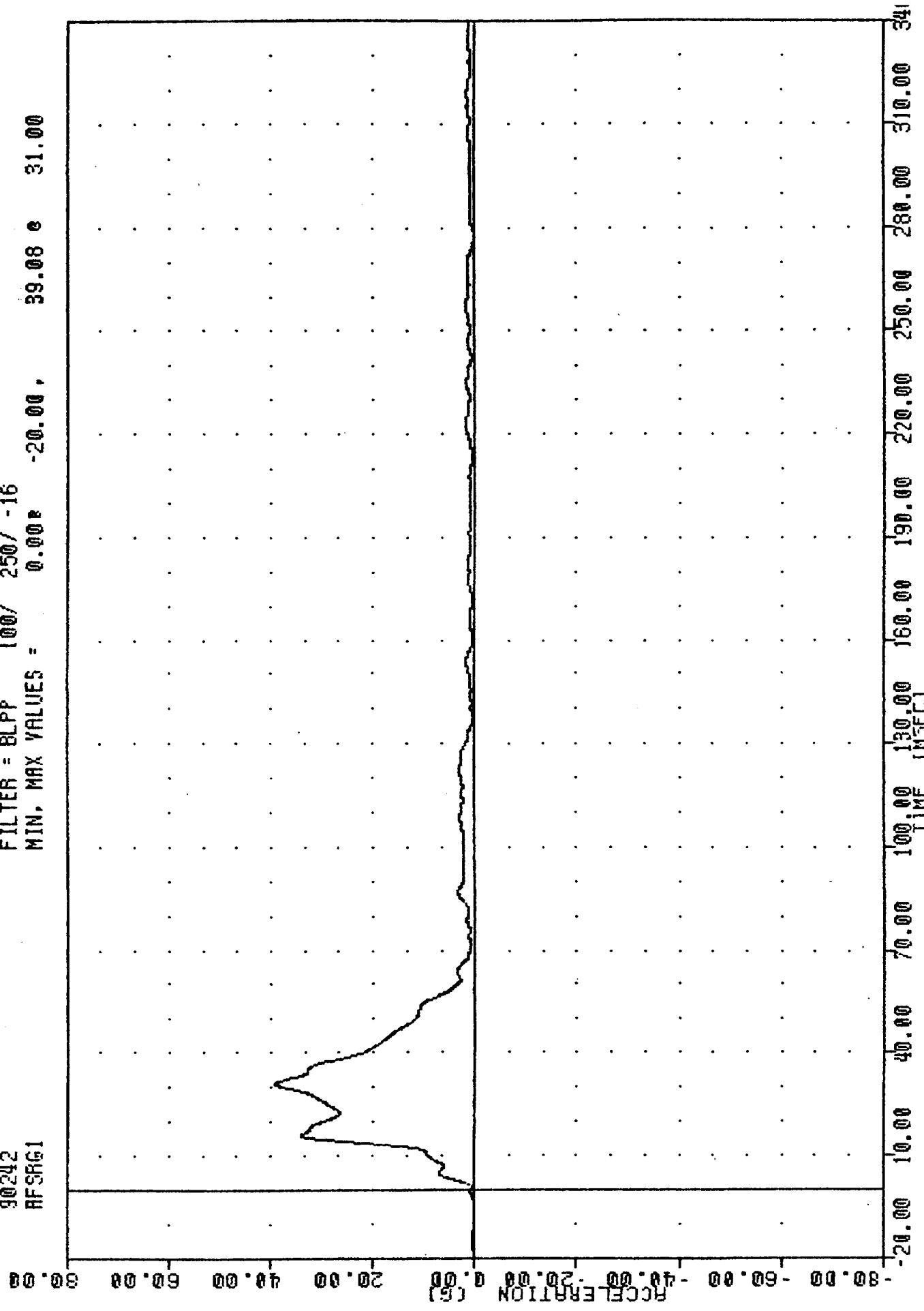
FILTER = BLPF 100/ 250/ -16
 MIN. MAX VALUES = -13.40e 10.80 e 31.38



CONTOURED MOVING BARRIER INTO FORD ESCORT AT 39.8 MPH #4
 RIGHT FRONT SILL Y-AXIS ACCELERATION

CRASH III DAMAGE ALGORITHM
 90242
 RFSRG1

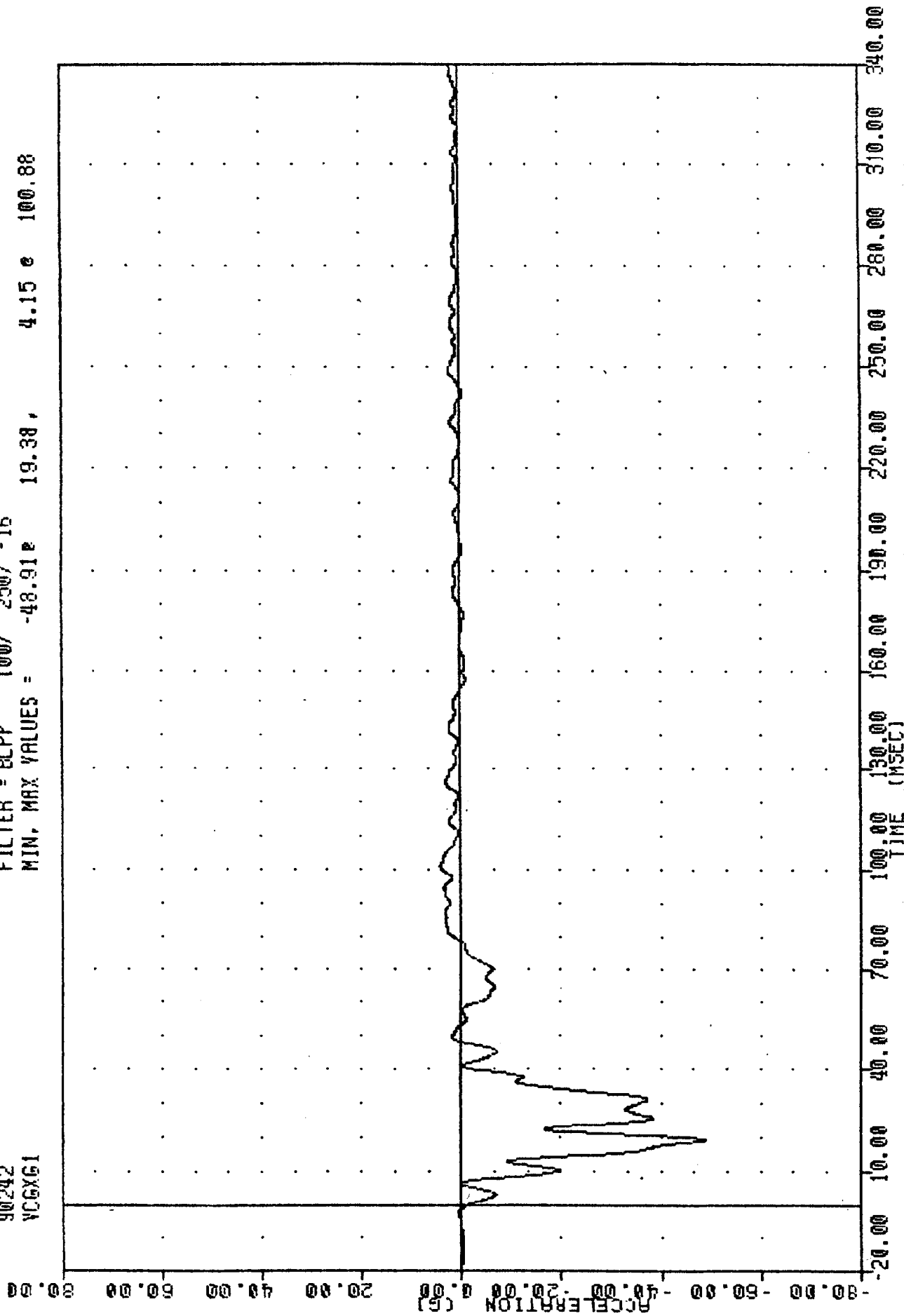
FILTER = BLPP 100/ 250/ -16
 MIN, MAX VALUES = 0.000 -20.00, 39.08 e 31.00



CONTOURED MOVING BARRIER INTO FORD ESCORT AT 39.8 MPH #4
 RIGHT FRONT SILL RESULTANT ACCELERATION

900930-4 , TRC
CRASH III DAMAGE ALGORITHM
90242
VCGX61

FILTER = BLPP 100/ 250/ -16
MIN. MAX VALUES = -48.91 e 19.38 , 4.15 e 100.88



CONTOURED MOVING BARRIER INTO FORD ESCORT AT 39.8 MPH #4
VEHICLE CG X-AXIS ACCELERATION (IMPACT DIRECTION)

3000520-4

TRC

CRASH III DAMAGE ALGORITHM

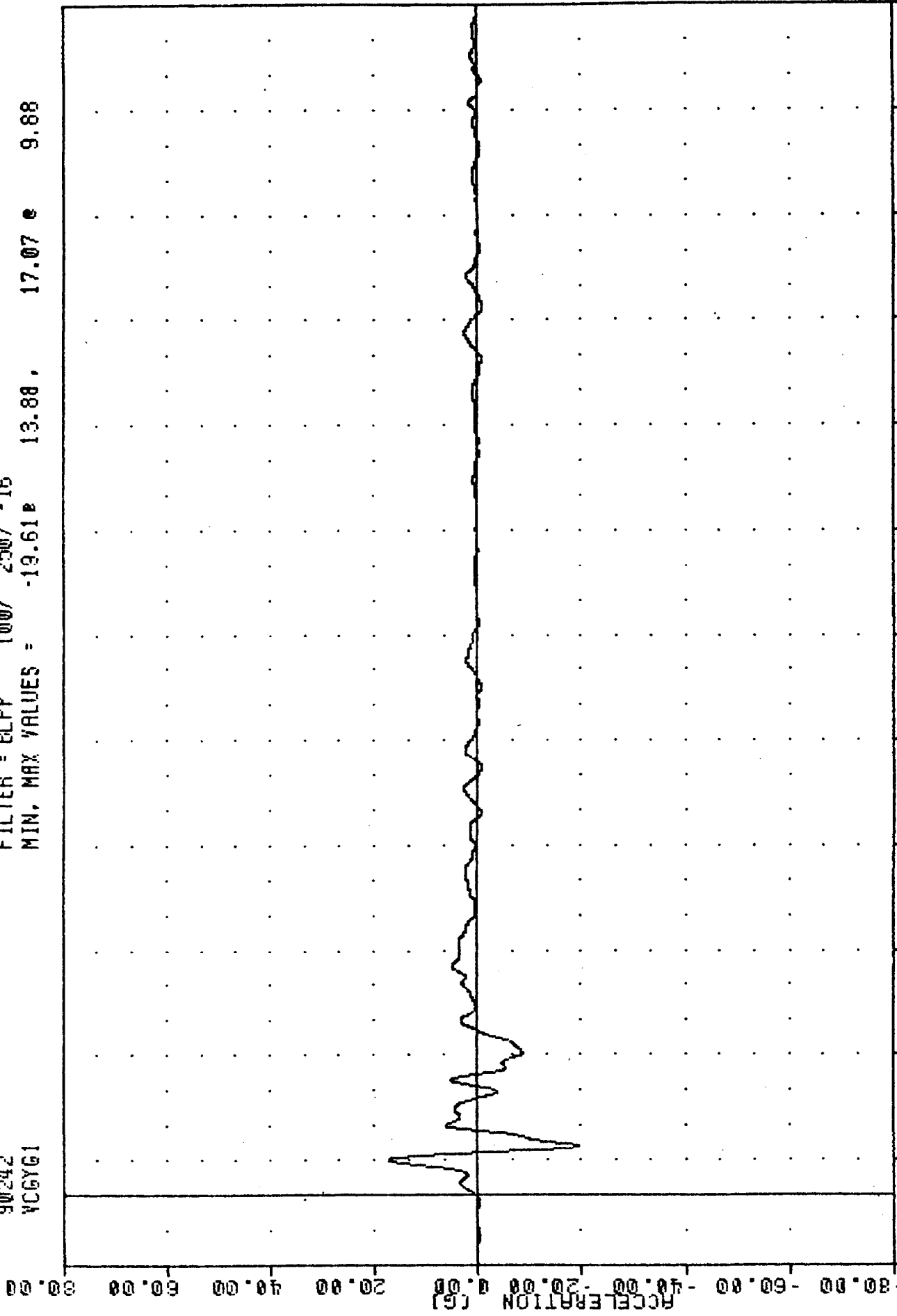
90242

YCGYG1

FILTER = BLPP 100/ 250/ -16

MIN. MAX VALUES = -19.61 13.88

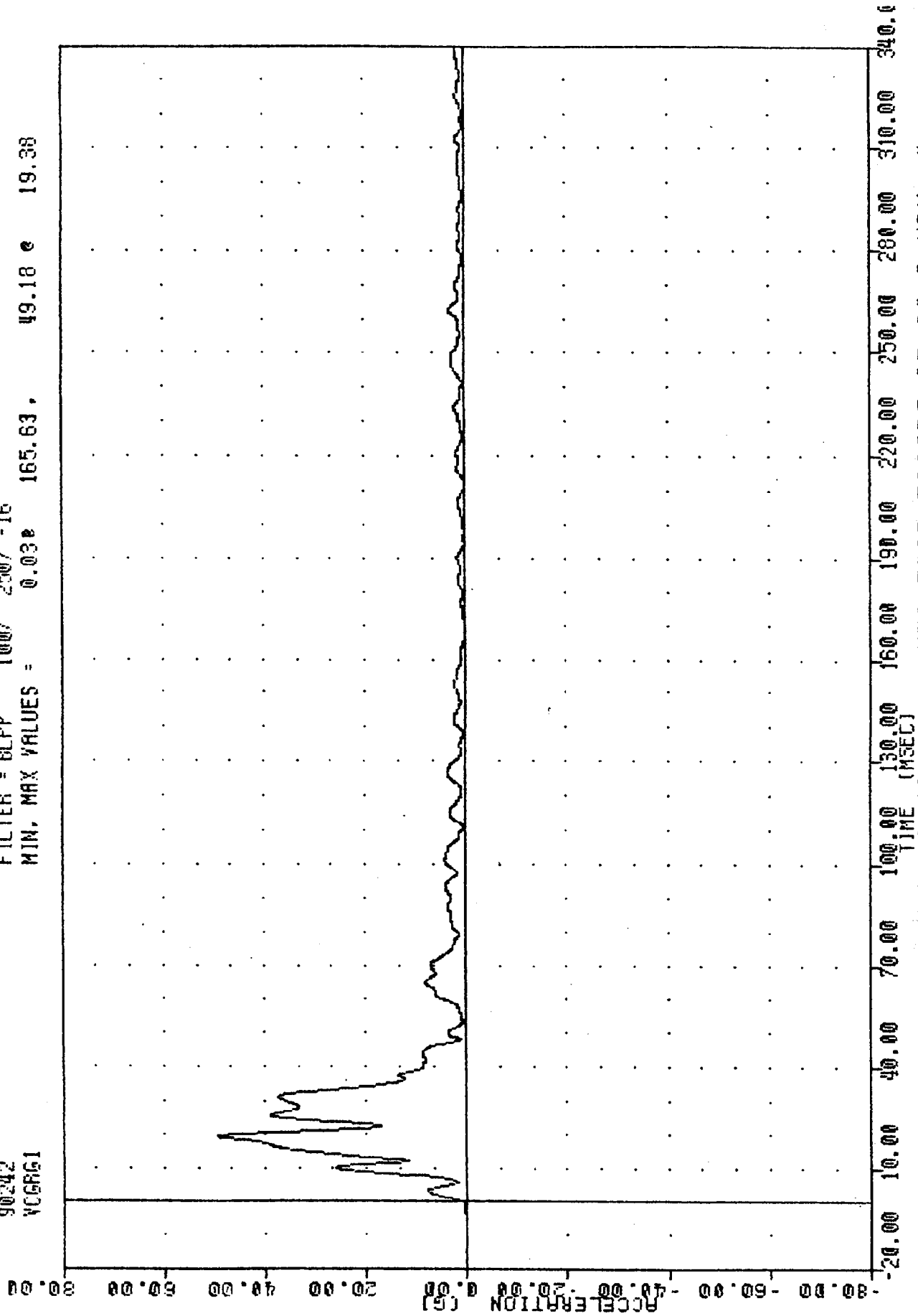
17.07 e 9.88



CONTOURED MOVING BARRIER INTO FORD ESCORT AT 39.8 MPH #4
VEHICLE CG Y-AXIS ACCELERATION (PERPENDICULAR TO IMPACT DIRECTION)

900830-4 TRC
CRASH III DAMAGE ALGORITHM
90242
VCGRG1

FILTER = BLPP 100/ 250/ -16
MIN, MAX VALUES = 0.038 165.63, 49.18 e 19.38



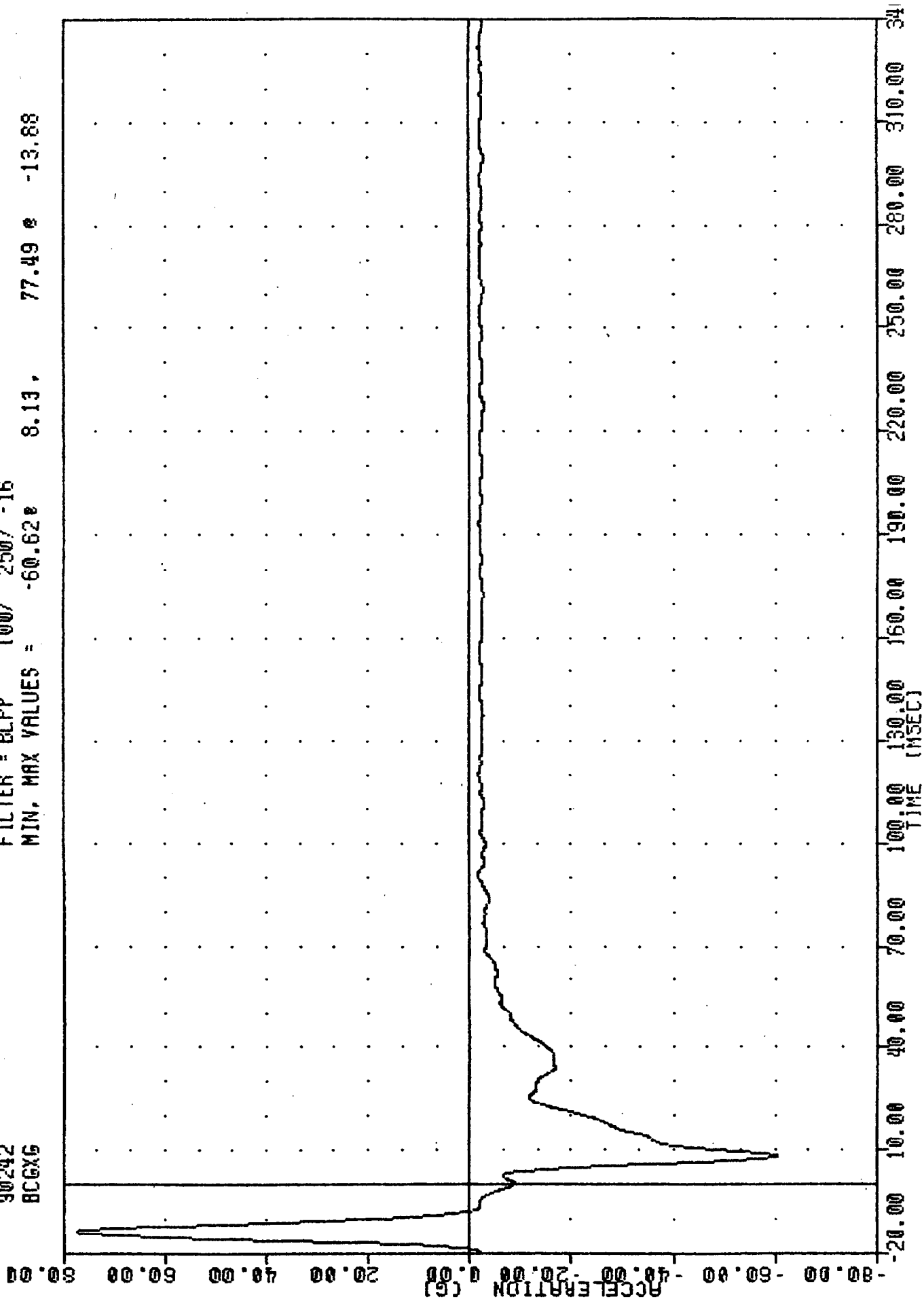
CONTOURED MOVING BARRIER INTO FORD ESCORT AT 39.8 MPH #4
VEHICLE CG RESULTANT ACCELERATION

CRASH III DAMAGE ALGORITHM

90242
BCCXG

FILTER = BLPP 100/ 250/ -16

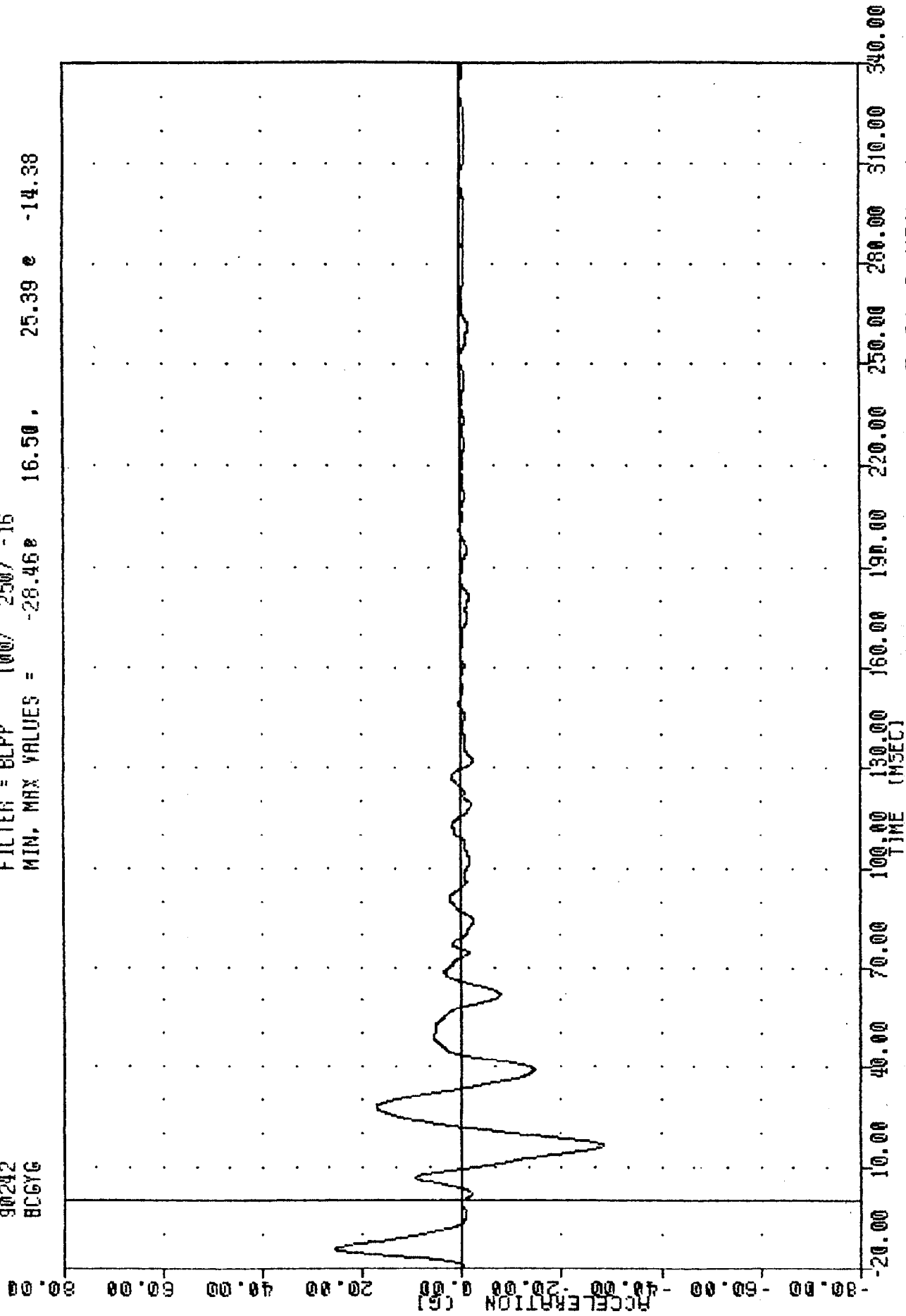
MIN, MAX VALUES = -60.62e 8.13, 77.49 e -13.88



CONTOURED MOVING BARRIER INTO FORD ESCORT AT 39.8 MPH *4
MOVING BARRIER CENTER OF GRAVITY X-AXIS ACCELERATION

900830-4 . TRC
 CRASH III DAMAGE ALGORITHM
 90242
 BCGYG

FILTER = BLPP 100/ 250/ -16
 MIN, MAX VALUES = -28.46 16.50 25.39 e -14.38

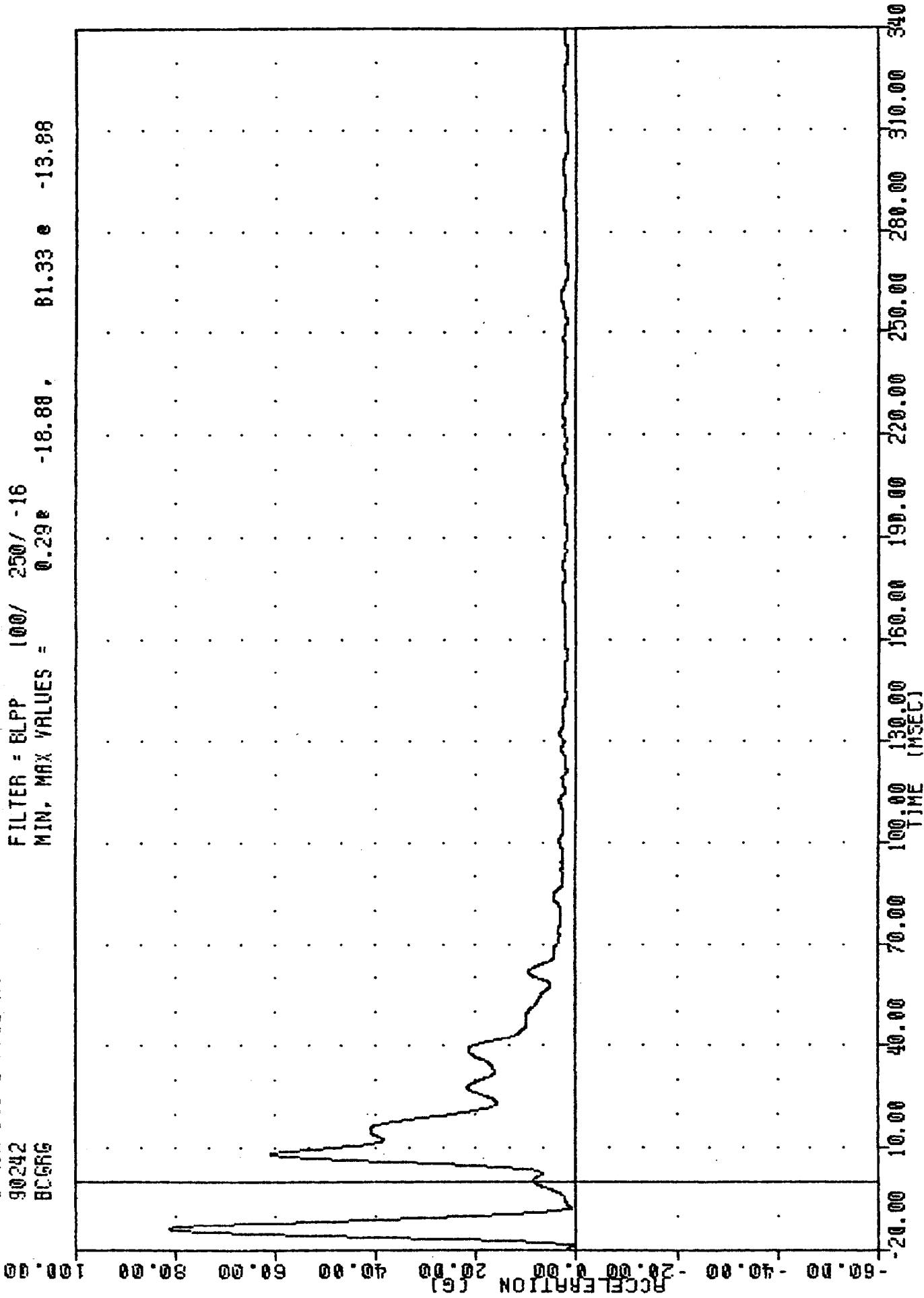


CONTOURED MOVING BARRIER INTO FORD ESCORT AT 39.8 MPH #4
 MOVING BARRIER CENTER OF GRAVITY Y-AXIS ACCELERATION

CRASH III DAMAGE ALGORITHM

90242
BC6RG

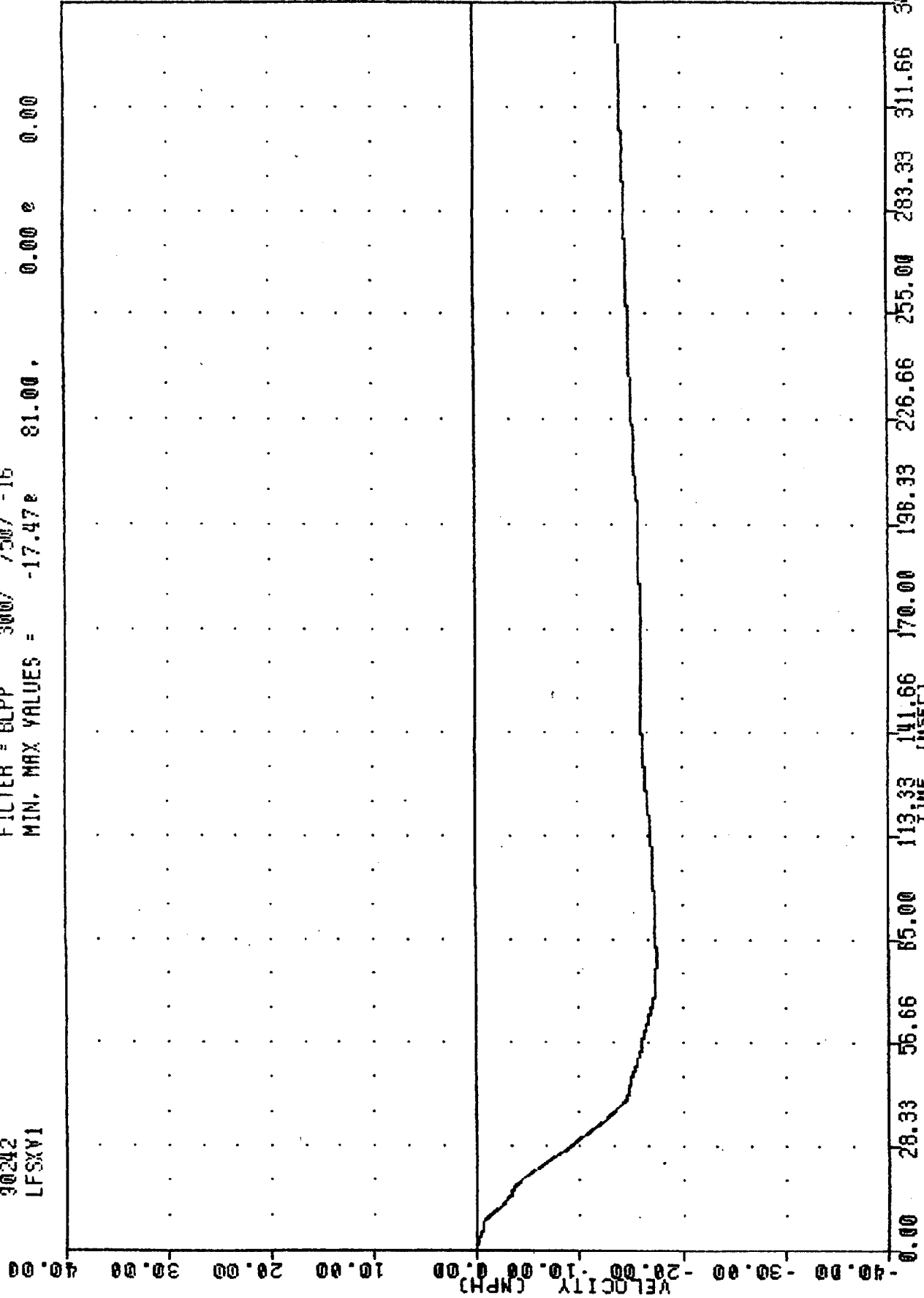
FILTER = BLPP 100/ 250/ -16
MIN. MAX VALUES = 0.29E -18.88 81.33 e -13.88



CONTOURED MOVING BARRIER INTO FORD ESCORT AT 39.8 MPH #4
MOVING BARRIER CENTER OF GRAVITY RESULTANT ACCELERATION

300630-4 , TRC
 CRASH III DAMAGE ALGORITHM
 30242
 LFSXV1

FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = -17.47e 81.00 , 0.00 e 0.00



B90

CONTOURED MOVING BARRIER INTO FORD ESCORT AT 39.8 MPH *4
 LEFT FRONT SILL X-AXIS VELOCITY

CRASH III DAMAGE ALGORITHM

90242

LFSYV1

FILTER = BLPP 300/ 750/ -16

MIN. MAX VALUES = -7.77e 69.75,

0.27 e 13.50

40.00

30.00

20.00

10.00

0.00

VELOCITY (MPH)

-10.00

-20.00

-30.00

-40.00

0.00

28.33

56.66

85.00

113.33

141.66

170.00

198.33

226.66

255.00

283.33

311.66

340

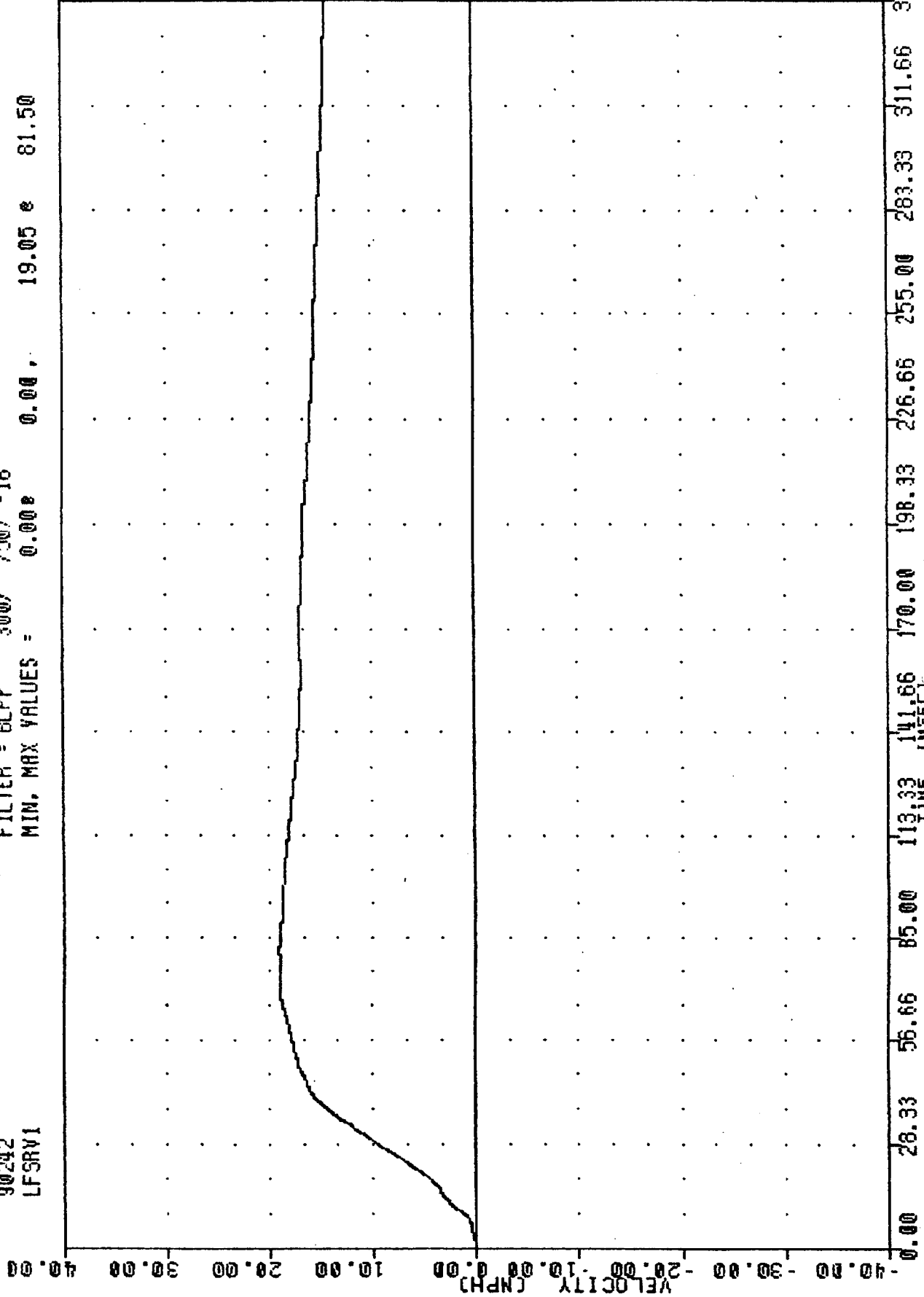
TIME (MSEC)

CONTOURED MOVING BARRIER INTO FORD ESCORT AT 39.8 MPH #4

LEFT FRONT SILL Y-AXIS VELOCITY

900830-4 , TRC
 CRASH III DAMAGE ALGORITHM
 90242
 LFSRV1

FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = 0.00 19.05 e 81.50



CONTOURED MOVING BARRIER INTO FORD ESCORT AT 39.8 MPH #4
 LEFT FRONT SILL RESULTANT VELOCITY

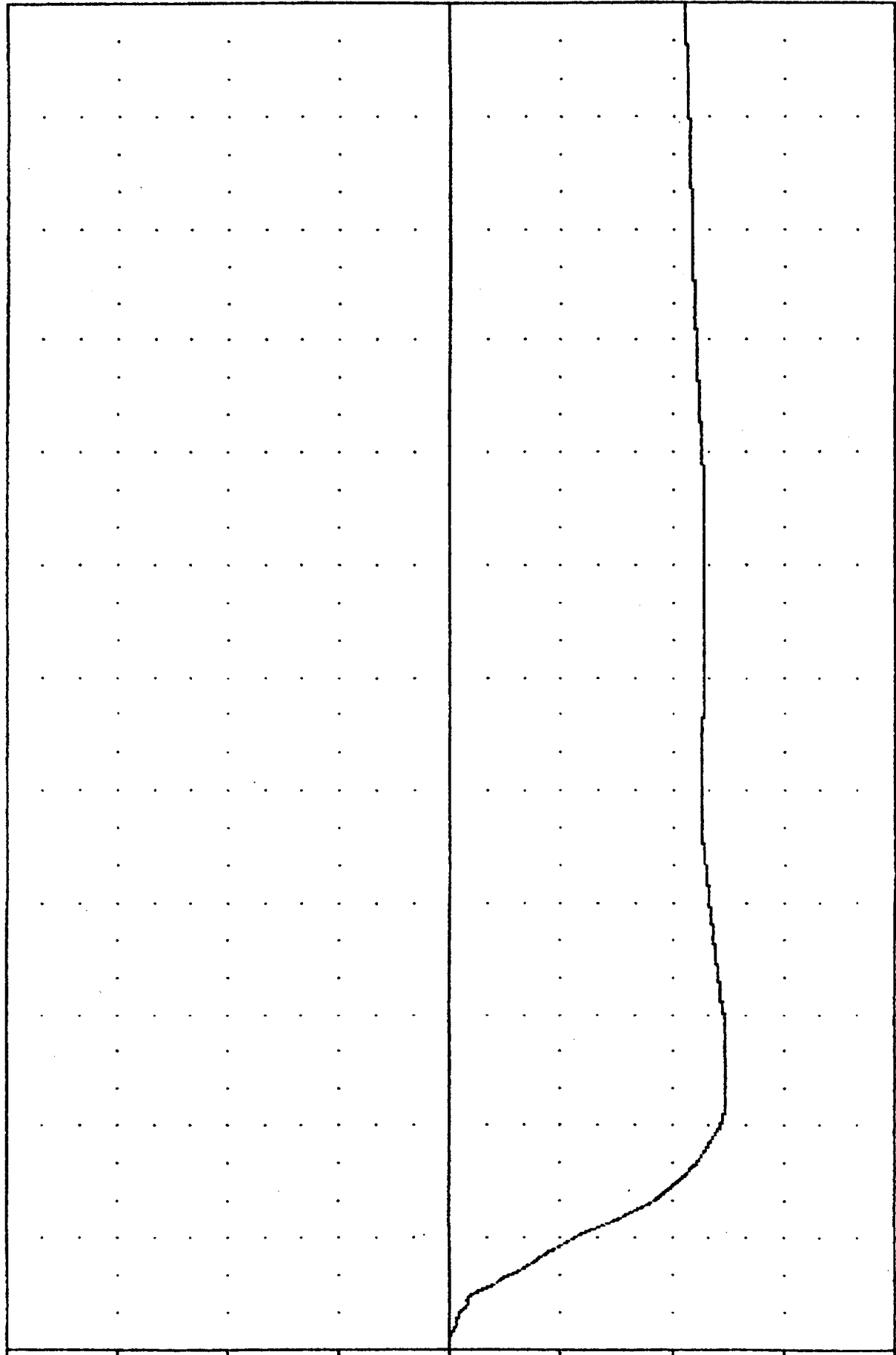
CRAASH III DAMAGE ALGORITHM

90242
RFSXV1

FILTER = ELPP 300/ 750/ -16
MIN. MAX VALUES = -24.82e 63.75,

0.05 e 2.38

40.00
30.00
20.00
10.00
0.00
-10.00
-20.00
-30.00
-40.00

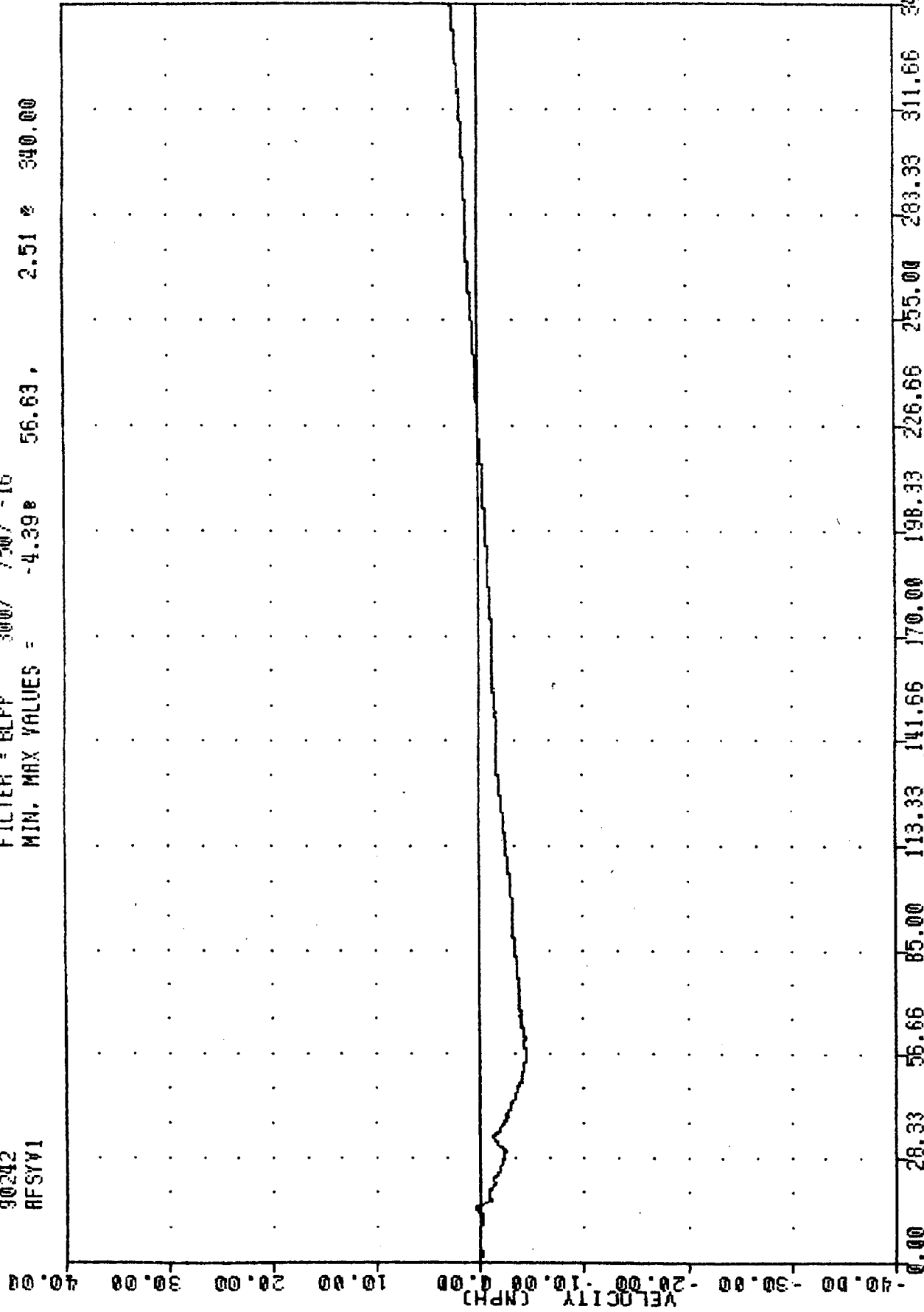


0.00 28.33 56.66 85.00 113.33 141.66 170.00 198.33 226.66 255.00 283.33 311.66 340

CONTOURED MOVING BARRIER INTO FORD ESCORT AT 39.8 MPH #4
RIGHT FRONT SILL X-AXIS VELOCITY

900330-4 . TAC
 CRASH III DAMAGE ALGORITHM
 90242
 AFSYV1

FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = -4.398 56.63, 2.51 340.00



CONTOURED MOVING BARRIER INTO FORD ESCORT AT 39.8 MPH #4
 RIGHT FRONT SILL Y-AXIS VELOCITY

311000074 7 1100

CRASH III DAMAGE ALGORITHM

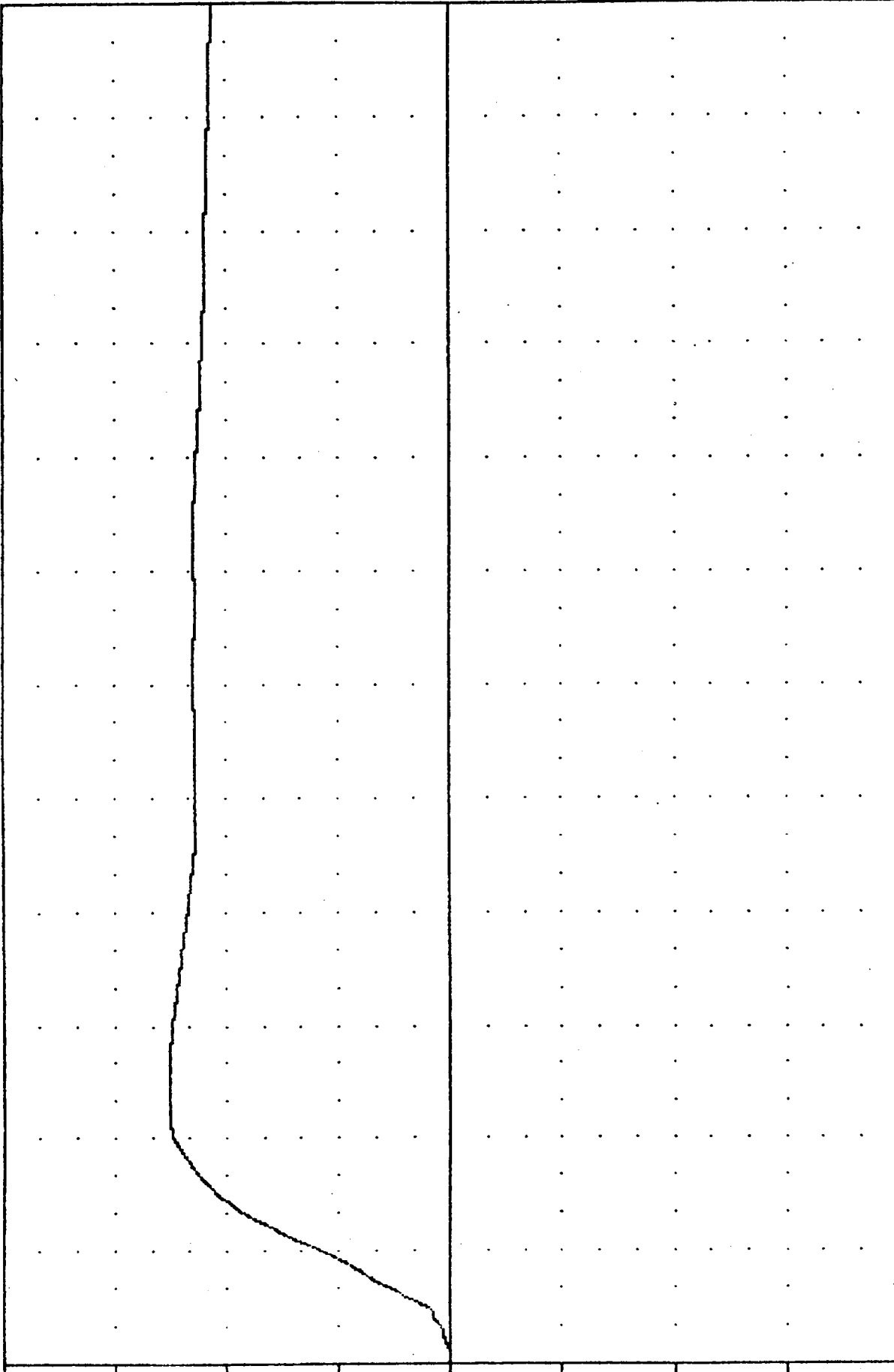
90242

AFSRV1

FILTER = BLPP 300/ 750/ -16

MIN, MAX VALUES = 0.00e 0.00, 25.16 e 63.00

VELOCITY (MPH)

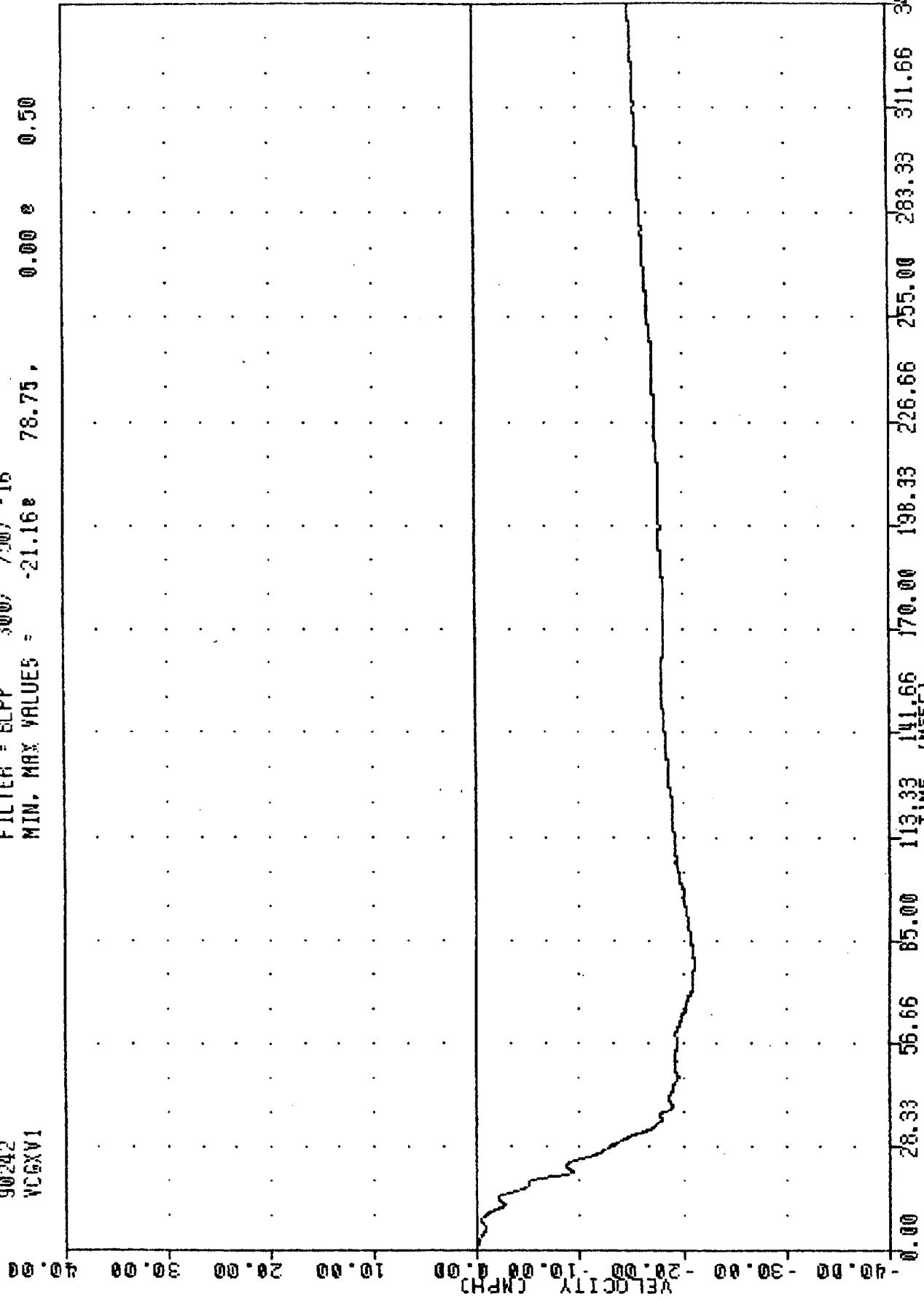


Time (ms)	Velocity (MPH)
0.00	0.00
28.33	0.00
56.66	0.00
85.00	0.00
113.33	0.00
141.66	0.00
170.00	0.00
198.33	0.00
226.66	0.00
255.00	25.16
283.33	25.16
311.66	25.16

CONTOURED MOVING BARRIER INTO FORD ESCORT AT 39.8 MPH #4
 RIGHT FRONT SILL RESULTANT VELOCITY

300630-4 : TRC
 CRASH III DAMAGE ALGORITHM
 90242
 WCGXV1

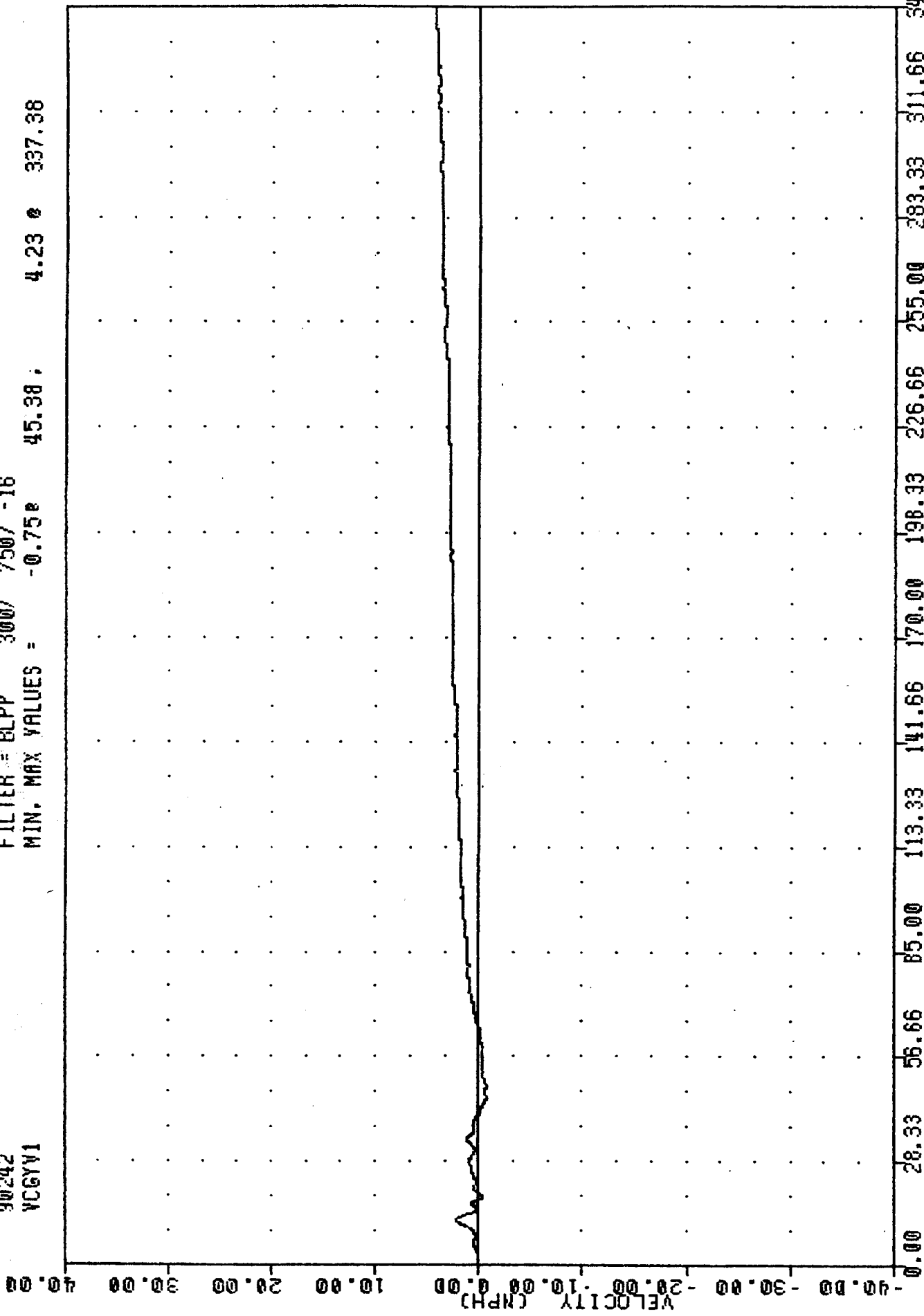
FILTER = BLPP 300/ 750/ -16
 MIN, MAX VALUES = -21.16e 78.75, 0.00 e 0.50



CONToured MOVING BARRIER INTO FORD ESCORT AT 39.8 MPH *4
 VEHICLE CG X-AXIS VELOCITY (IMPACT DIRECTION)

CRASH III DAMAGE ALGORITHM
 90242
 YCGYV1

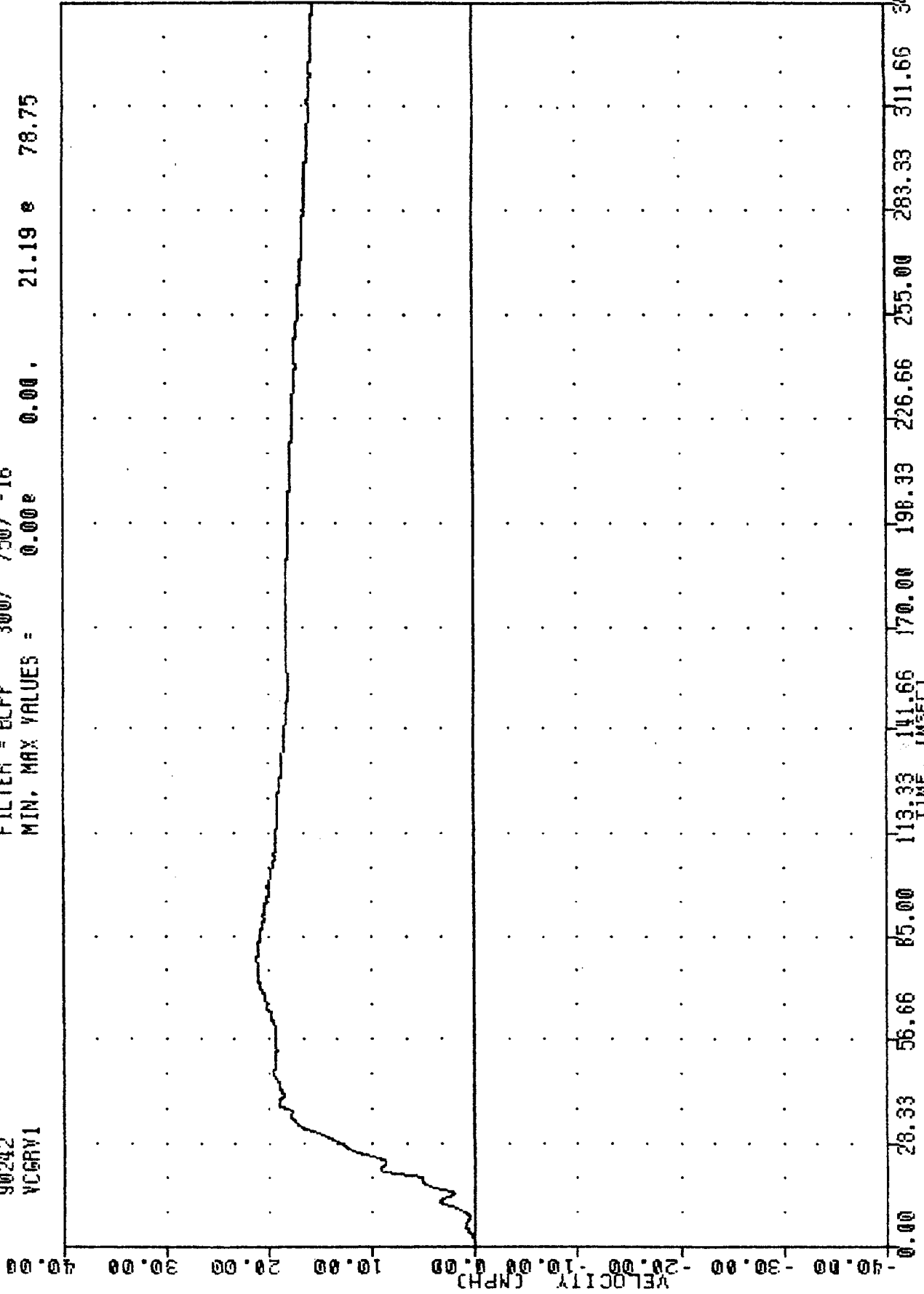
FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = -0.75e 45.38 ; 4.23 e 337.38



CONTOURED MOVING BARRIER INTO FORD ESCORT AT 39.8 MPH #4
 VEHICLE CG Y-AXIS VELOCITY (PERPENDICULAR TO IMPACT DIRECTION)

900630-4 , TRC
 CRASH III DAMAGE ALGORITHM
 90242
 YCGRY1

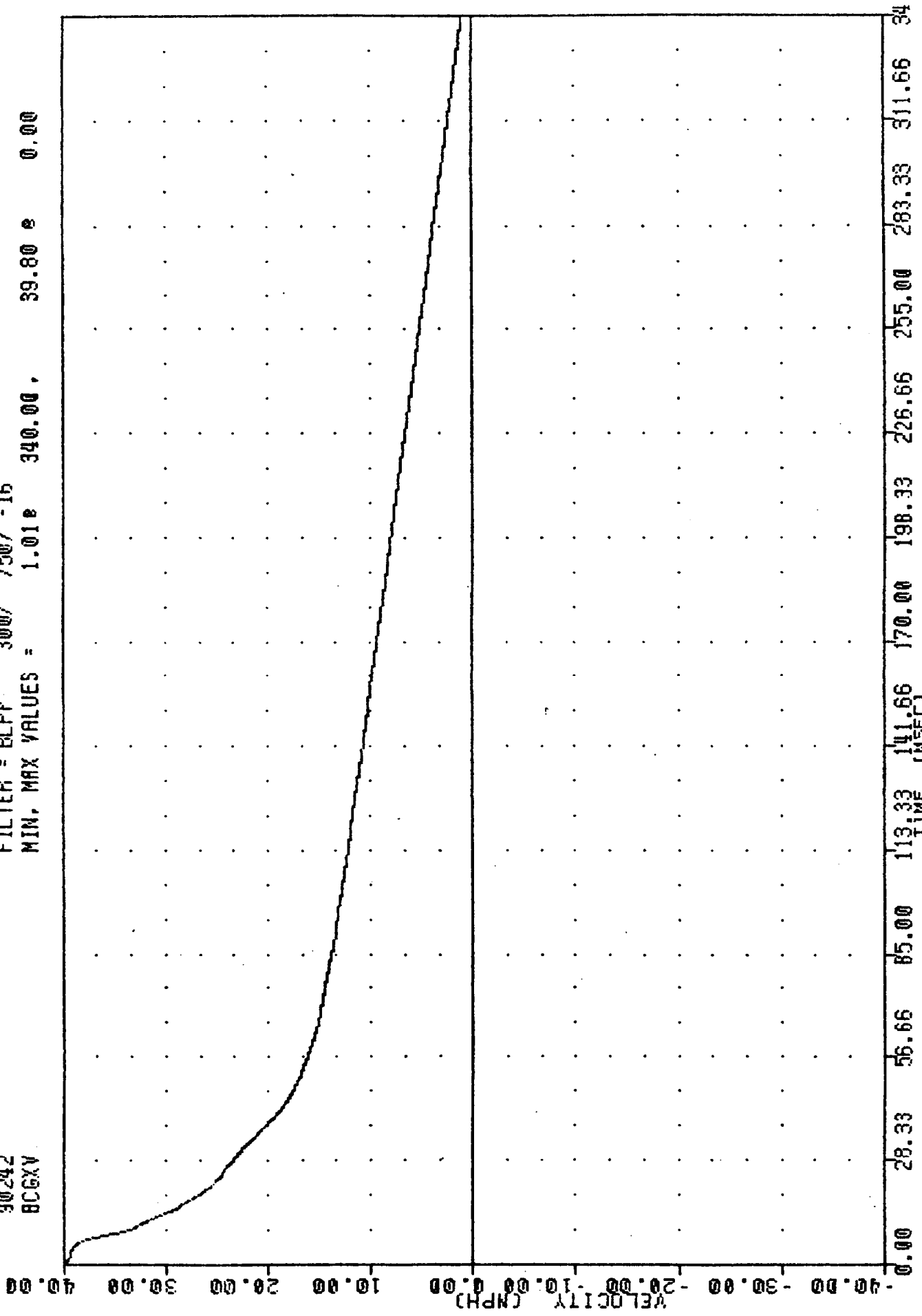
FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = 0.00e 21.19 e 78.75



CONTOURED MOVING BARRIER INTO FORD ESCORT AT 39.8 MPH #4
 VEHICLE CG RESULTANT VELOCITY

300030-4 , INL
 CRASH III DAMAGE ALGORITHM
 90242
 BCGXV

FILTER = BLPP 300/ 750/ -16
 MIN, MAX VALUES = 1.01e 340.00, 39.80 e 0.00

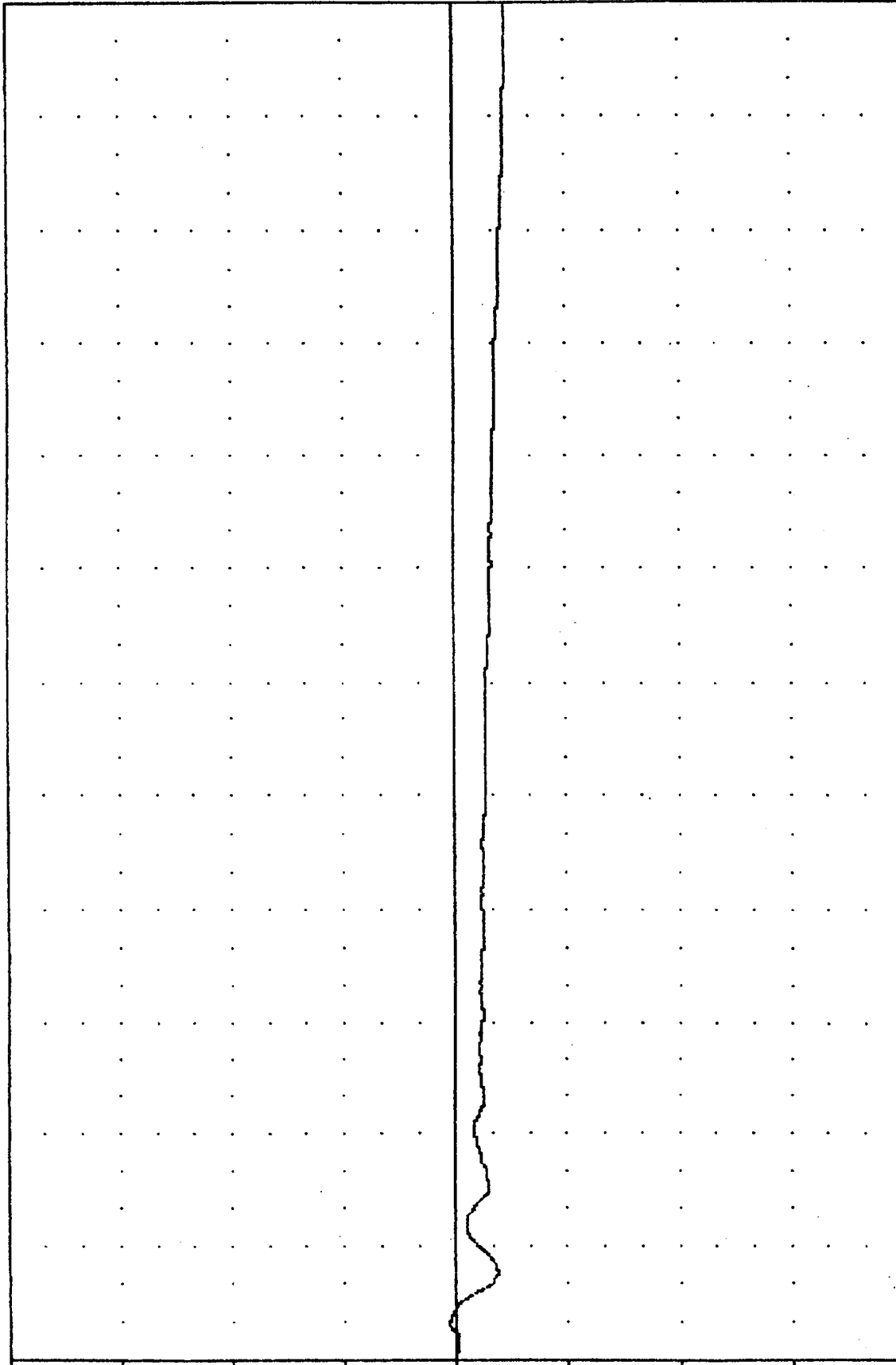


CONTOURED MOVING BARRIER INTO FORD ESCORT AT 39.8 MPH #4
 MOVING BARRIER CENTER OF GRAVITY X-AXIS VELOCITY

900830-4 , TRC
 CRASH III DAMAGE ALGORITHM
 90242
 BCGYW

FILTER = BLFF 300/ 750/ -16
 MIN, MAX VALUES = -4.69e 340.00 , 0.63 e 8.63

40.00
 30.00
 20.00
 10.00
 00
 -10.00
 -20.00
 -30.00
 -40.00



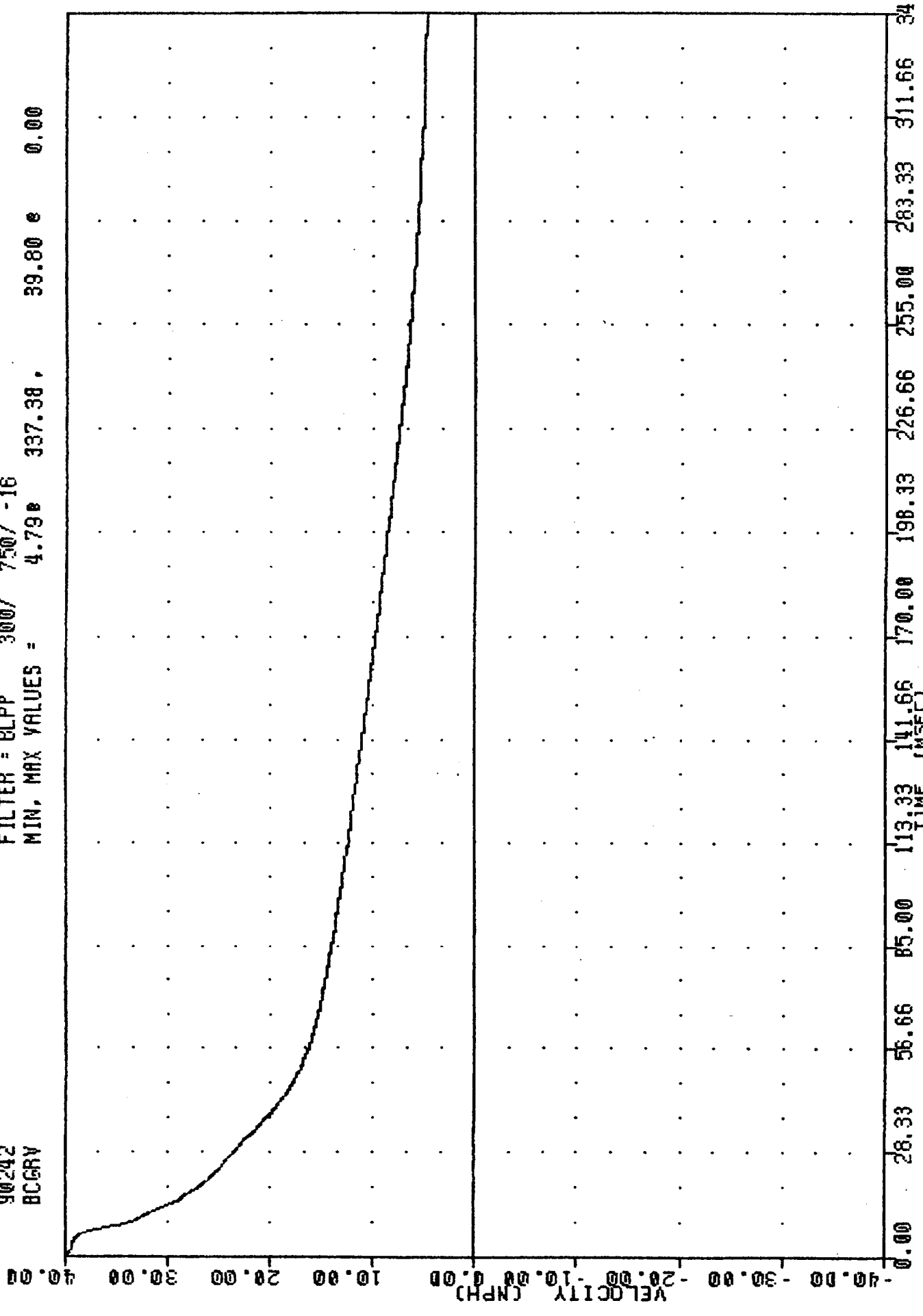
0.00 26.33 56.66 85.00 113.33 141.66 170.00 198.33 226.66 255.00 283.33 311.66 340.00
 TIME (MSEC)

B100

CONTOURED MOVING BARRIER INTO FORD ESCORT AT 39.8 MPH #4
 MOVING BARRIER CENTER OF GRAVITY Y-AXIS VELOCITY

CRASH III DAMAGE ALGORITHM
 90242
 BCGRY

FILTER = BLPP 300/ 750/ -16
 MIN, MAX VALUES = 4.79 337.38 39.80 e 0.00



CONTOURED MOVING BARRIER INTO FORD ESCORT AT 39.8 MPH *4
 MOVING BARRIER CENTER OF GRAVITY RESULTANT VELOCITY

APPENDIX C

MISCELLANEOUS TEST INFORMATION

VEHICLE ACCELEROMETER INFORMATION

NO.	LOCATION	AXIS	MFR	MODEL	S/N	ORIENTATION (+ SENSING)
1	LEFT FRONT SILL	X	ENDEVCO	7264	CH11H	FORWARD
	LEFT FRONT SILL	Y	ENDEVCO	7264	CB25H	RIGHT
2	RIGHT FRONT SILL	X	ENDEVCO	7264	BP34J	REAR
	RIGHT FRONT SILL	Y	ENDEVCO	7264	CC83H	LEFT
3	VEHICLE CENTER/GRAVITY	IMPACT DIRECTION		7264	CJ34H	FORWARD
	VEHICLE CENTER/GRAVITY	PERPENDICULAR TO IMPACT DIRECTION		7264	CL73H	LEFT

MOVING BARRIER ACCELEROMETER INFORMATION

NO.	LOCATION	AXIS	MFR	MODEL	S/N	ORIENTATION (+ SENSING)
1	MOVING BARRIER					
	CENTER OF GRAVITY	X	ENDEVCO	7264	CH97H	FORWARD
	MOVING BARRIER					
	CENTER OF GRAVITY	Y	ENDEVCO	7264	CJ04H	LEFT

SIGN CONVENTION

ALL DUMMY, BARRIER AND VEHICLE CHANNELS:

+X: FORWARD

+Y: LEFTWARD

+Z: UPWARD

+FORCE: TENSION