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

DOT HS 807 912
Final Report

March 1992

Final Report of a 90° Moving Barrier Impact Into a 1985 Ford Escort 3-Door Hatchback in Support of Crash III Damage Algorithm Reformulation

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SECTION 1.0

PURPOSE AND TEST SUMMARY

The purpose of the four (4) 90° moving pole barrier impact tests was for 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 4-speed manual transmission. The test weight of the vehicle was 2170 pounds.

The contoured moving barrier's test weight was 2675 pounds. The barrier's frontal width was 67.0 inches, the height of the barrier face was 31.5 inches, and the bumper centerline height was 17.5 inches. The contoured moving barrier, longitudinal centerline was intended to impact the right side of the vehicle at a point 49.0 inches to the rear of the vehicle's front wheel centerline.

The impacted vehicle was instrumented with six (6) accelerometers to measure vehicle X-axis and Y-axis acceleration.

The contoured moving barrier was instrumented with two (2) 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

3

TEST VEHICLE INFORMATION

VEHICLE MANUFACTURER: Ford Motor Company

MAKE/MODEL: Ford/Escort

VIN: 1FABP3195FW348357

BODY STYLE: 3-door hatchback

MODEL YEAR: 1985

COLOR: White

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

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

DATE VEHICLE RECEIVED: 02/18/92

ODOMETER READING: 48,660.0

DEALER'S NAME AND ADDRESS: NA

ACCESSORIES:

POWER STEERING	Yes	AUTOMATIC TRANSMISSION	No
POWER BRAKES	Yes	AUTOMATIC SPEED CONTROL	No
POWER SEATS	No	TILTING STEERING WHEEL	No
POWER WINDOWS	No	TELESCOPING STEERING WHEEL	No
TINTED GLASS	No	AIR CONDITIONING	Yes
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: 07/85

VIN: 1FABP3195FW348357

GVWR: 3130 LBS

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

TEST VEHICLE INFORMATION. CONT'D.

TIRES ON VEHICLE (MFR., LINE, SIZE):

RR: Goodyear, Corsa GT, P175/80R13

LR: Firestone, Supreme, P125/80R13

LF & RF: Frontier, Golden Jet, P175/80R13

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

SPARE TIRE (MFR., LINE, SIZE): Firestone, Service Spare, P155/80R13

TYPE OF SEATS: FRONT: Bucket
REAR: Bench

TYPE OF FRONT SEAT BACKS: Manually adjustable

MAXIMUM WIDTH: 65.4 INCHES

WHEELBASE: 93.6 INCHES

LOCATION OF LABEL STATING TIRE & CAPACITY DATA:

The label was located in the passenger door opening.

TIRE & CAPACITY DATA FROM VEHICLE'S LABEL:

RECOMMENDED TIRE SIZE: P175/80R13

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

DESIGNATED SEATING CAPACITY: 2 FRONT 2 REAR 4 TOTAL

VEHICLE CAPACITY WEIGHT: 650 LBS. LUGGAGE: 50 LBS.

TEST VEHICLE ATTITUDE (ALL MEASUREMENTS ARE IN INCHES):

DELIVERED ATTITUDE: LF 26.0; RF 25.6; LR 26.0; RR 25.5

PRE-TEST ATTITUDE: LF 26.7; RF 26.8; LR 25.9; RR 26.0

TEST VEHICLE INFORMATION, CONT'D.

WEIGHT OF TEST VEHICLE AS RECEIVED (WITH MAXIMUM FLUIDS):

RIGHT FRONT	675 LBS.	RIGHT REAR	419 LBS.
LEFT FRONT	739 LBS.	LEFT REAR	357 LBS.
TOTAL FRONT WEIGHT	1414 LBS.	(64.6% OF TOTAL VEHICLE WEIGHT)	
TOTAL REAR WEIGHT	776 LBS.	(35.4% OF TOTAL VEHICLE WEIGHT)	
TOTAL DELIVERED WEIGHT 2190 LBS.			

WEIGHT OF TEST VEHICLE:

RIGHT FRONT	672 LBS.	RIGHT REAR	403 LBS.
LEFT FRONT	709 LBS.	LEFT REAR	386 LBS.
TOTAL FRONT WEIGHT	1381 LBS.	(63.6% OF TOTAL VEHICLE WEIGHT)	
TOTAL REAR WEIGHT	789 LBS.	(36.4% OF TOTAL VEHICLE WEIGHT)	
TOTAL TEST WEIGHT	2170 LBS *		

WEIGHT OF BALLAST SECURED IN VEHICLE: 0 LBS.

COMPONENTS REMOVED TO MEET TARGET TEST WEIGHT: None

CG = 34.0 INCHES REARWARD OF FRONT WHEEL CENTERLINE

*There was no target test weight established for this vehicle. The test weight was the weight of the vehicle as delivered plus instrumentation.

SIDE CRUSH MEASUREMENTS AT MOVING BARRIER BUMPER HEIGHT

LOCATION	X ⁰	Y	X ¹	Y	X ²	Y	X ³	Y	X ⁴	Y	X ⁵	Y	X ⁶	Y	X ⁷	Y	X ⁸	Y
PRE-TEST	6.6	76.5	3.3	48.6	6.3	19.9	9.5	18.9	12.5	18.4	15.5	18.9	18.4	18.8	21.3	18.6	24.6	17.8
POST-TEST 1	3.1	73.2	1.3	45.4	5.6	16.8	8.2	15.6	11.4	15.2	14.6	15.9	17.9	15.8	20.4	15.6	23.7	15.5
POST-TEST 2	10.2	76.2	7.8	48.5	11.5	20.6	14.5	18.6	17.2	18.2	21.1	19.1	24.0	19.1	26.9	18.9	30.2	18.7
POST-TEST 3	19.6	72.1	8.1	44.2	12.9	15.9	15.8	14.9	18.9	14.9	22.6	15.6	25.5	15.8	28.5	15.9	31.8	16.0
POST-TEST 4	11.1	65.6	13.0	37.5	21.6	9.9	24.9	9.1	27.9	9.5	34.6	10.6	37.2	12.2	39.2	14.0	41.9	15.8
LOCATION	X ⁹	Y	X ¹⁰	Y	X ¹¹	Y	X ¹²	Y	X ¹³	Y	X ¹⁴	Y	X ¹⁵	Y	X ¹⁶	Y	X ¹⁷	Y
PRE-TEST	27.8	17.0	30.3	16.6	33.3	16.1	36.3	15.9	39.3	15.8	42.3	15.5	45.4	15.6	48.4	15.6	51.3	16.0
POST-TEST 1	26.6	14.8	29.5	14.6	32.6	14.4	35.6	14.2	38.6	14.6	41.6	14.5	44.5	15.6	47.4	17.0	49.8	19.4
POST-TEST 2	32.9	17.8	35.9	17.5	38.8	17.6	42.0	17.4	44.9	17.8	48.0	18.6	50.8	19.5	53.1	21.4	55.3	24.6
POST-TEST 3	34.5	15.1	37.4	15.5	40.5	16.2	43.4	16.9	46.1	17.9	48.9	19.0	51.4	20.8	53.5	23.1	55.2	25.8
POST-TEST 4	44.6	16.8	47.2	18.7	50.1	19.6	52.2	21.0	55.1	23.1	56.2	25.4	57.8	28.1	60.5	31.6	62.1	34.9
LOCATION	X ¹⁸	Y	X ¹⁹	Y	X ²⁰	Y	X ²¹	Y	X ²²	Y	X ²³	Y	X ²⁴	Y	X ²⁵	Y	X ²⁶	Y
PRE-TEST	44.3	16.8	57.3	17.1	60.5	17.2	63.3	17.1	66.4	16.9	69.4	16.9	72.3	16.9	75.3	16.8	78.3	16.8
POST-TEST 1	52.4	22.4	53.1	23.6	59.2	23.6	62.1	24.1	65.1	24.2	68.0	24.4	70.9	24.2	74.0	24.4	77.0	24.9
POST-TEST 2	57.9	27.6	59.2	29.2	64.4	28.9	67.2	29.0	70.4	29.4	73.5	29.2	76.4	29.5	79.4	29.4	82.4	29.2
POST-TEST 3	57.2	29.1	58.8	30.8	63.8	31.2	67.0	31.4	69.9	31.5	73.1	31.1	75.9	31.7	78.8	31.6	81.9	31.6
POST-TEST 4	63.5	39.5	63.6	41.2	69.1	44.8	72.0	44.2	75.1	44.3	78.1	44.5	81.0	44.0	84.0	44.2	86.1	44.6

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 160 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.

SIDE CRUSH MEASUREMENTS AT MOVING BARRIER BUMPER HEIGHT

LOCATION	27		28		29		30		31		32		33		34		35	
	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
PRE-TEST	81.3	16.8	84.4	16.6	87.3	16.8	90.3	16.7	93.3	16.8	96.3	16.8	99.3	16.8	102.4	16.8	105.3	16.8
	80.1	24.5	83.1	24.5	86.1	24.6	89.1	24.5	92.1	24.6	94.9	24.4	98.0	24.5	101.1	24.3	104.0	24.5
	85.4	29.2	88.4	29.2	91.4	29.2	94.4	29.3	97.1	29.1	100.1	29.3	103.1	29.4	106.1	29.1	109.1	28.6
	84.9	31.6	87.8	31.6	91.0	31.4	93.9	31.2	97.0	31.3	99.8	31.0	103.0	31.1	105.9	31.1	108.8	31.0
	88.5	44.6	91.5	43.9	94.2	44.5	97.0	44.5	99.8	44.2	102.7	44.1	105.6	44.3	108.7	44.8	111.6	44.5
LOCATION	36	37	38	39	40	41	42	43	44									
	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
	108.4	16.8	111.3	16.9	114.6	17.1	117.6	17.0	120.3	16.1	123.3	15.2	126.3	14.9	129.3	14.9	132.3	14.9
	107.1	24.7	109.9	24.9	113.2	24.6	116.2	24.4	118.9	24.2	121.5	20.9	124.0	19.4	126.8	18.7	130.0	17.9
	112.1	28.8	115.1	29.0	118.2	28.6	121.5	28.8	124.2	28.0	126.1	24.1	129.1	22.5	131.8	21.4	134.6	20.5
POST-TEST 3	112.5	31.2	115.0	31.1	118.0	30.4	120.6	29.6	123.0	28.9	126.1	24.9	128.5	23.2	131.4	21.9	134.2	21.0
	114.8	44.6	117.6	44.2	120.8	44.8	123.8	43.6	126.2	42.2	127.5	37.1	129.0	33.9	131.0	31.2	133.3	29.3
LOCATION	45	46	47	48	49	50	51	52	53									
	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
	135.3	15.1	138.3	14.9	141.4	14.9	144.4	15.6	147.1	16.9	150.1	17.2	153.3	17.1	156.3	17.5	159.3	17.8
	133.0	17.6	135.8	17.1	138.9	16.6	141.9	16.8	144.6	17.6	147.9	17.9	150.9	18.0	154.0	18.0	157.1	17.9
	137.5	19.9	140.4	18.5	143.4	17.6	146.5	17.6	149.4	18.1	152.5	18.6	155.4	18.1	158.5	17.9	161.6	17.9
POST-TEST 3	137.2	20.0	139.1	19.0	143.2	18.4	146.2	17.7	148.9	18.2	152.2	18.6	155.4	17.9	158.5	17.7	161.5	17.8
	135.8	27.9	138.3	26.1	141.3	24.4	144.0	22.9	146.9	22.5	149.1	21.5	152.2	20.4	155.1	19.6	158.4	18.6

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 160 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.

SIDE CRUSH MEASUREMENTS AT MOVING BARRIER BUMPER HEIGHT

LOCATION	54		55		56		57		58	
	X	Y	X	Y	X	Y	X	Y	X	Y
PRE-TEST	162.3	17.8	165.3	16.9	168.2	17.5	170.2	48.4	169.2	77.0
POST-TEST 1	160.2	18.1	163.1	17.2	166.1	17.9	168.0	48.9	166.6	77.4
POST-TEST 2	164.8	18.1	168.0	16.9	171.0	17.6	173.8	48.1	173.2	76.9
POST-TEST 3	166.5	17.9	167.9	16.7	170.7	17.5	173.4	48.4	172.9	77.0
POST-TEST 4	161.6	18.0	166.4	16.6	169.2	16.8	173.6	46.6	173.6	75.4

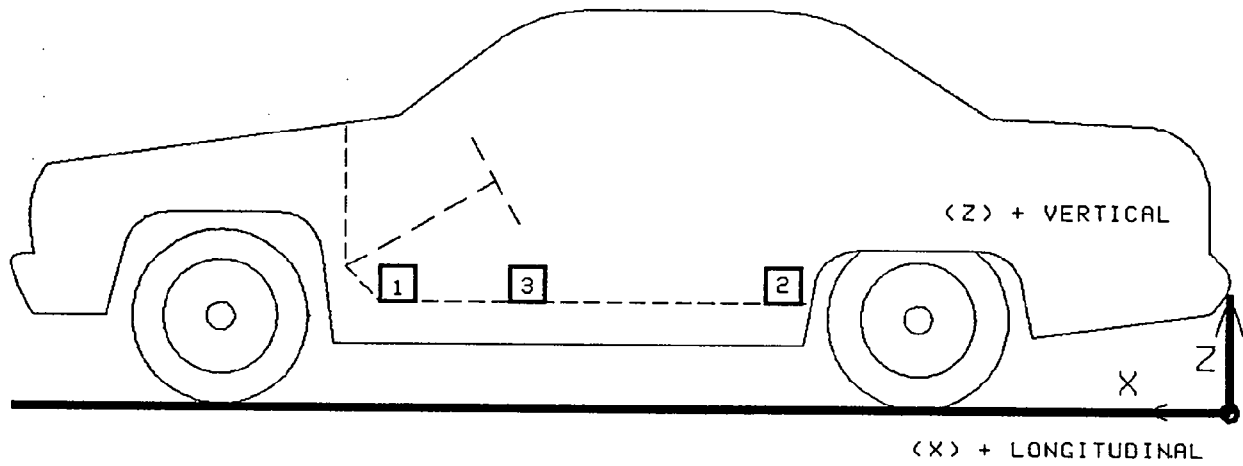
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SIDE CRUSH MEASUREMENTS AT VEHICLE SILL HEIGHT

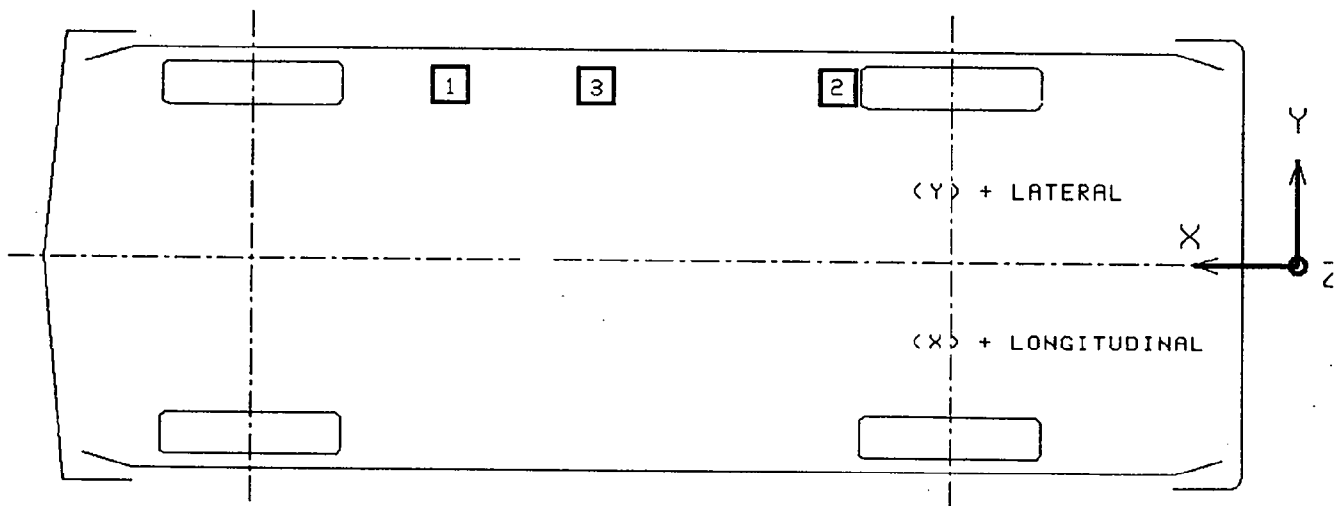
LOCATION	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
PRE-TEST	54.8	18.1	57.3	18.6	60.3	18.6	63.2	18.6	66.2	18.6	69.2	18.4	72.2	18.5	75.2	18.4	78.2	18.2		
POST-TEST 1	51.5	20.4	54.6	19.9	57.7	20.2	61.2	20.8	64.2	20.5	67.2	20.7	70.1	20.8	73.2	20.4	76.2	20.7		
POST-TEST 2	57.9	26.2	61.0	26.2	64.0	26.8	67.4	26.3	70.2	26.4	73.2	26.3	76.2	26.0	79.2	25.9	82.2	25.8		
POST-TEST 3	56.6	29.8	59.8	30.0	62.5	30.9	66.2	30.4	69.2	30.2	72.4	30.2	75.4	30.1	78.4	30.1	81.1	30.0		
POST-TEST 4	62.8	44.0	64.8	46.4	67.0	46.8	71.8	46.5	74.5	46.1	77.5	46.1	80.4	46.0	83.4	45.8	86.4	45.2		
LOCATION	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
PRE-TEST	81.2	18.2	84.2	18.4	87.2	18.4	90.2	18.5	93.2	18.5	96.2	18.4	99.1	18.3	102.2	18.3	105.2	18.4		
POST-TEST 1	79.3	20.5	82.2	20.0	85.2	20.8	88.1	20.6	91.2	20.6	94.2	20.6	97.1	20.8	100.2	20.8	103.1	20.8		
POST-TEST 2	85.2	25.6	87.9	25.4	90.6	25.4	93.5	25.3	97.1	25.1	99.9	25.1	103.0	25.0	106.1	24.9	108.8	25.0		
POST-TEST 3	84.4	29.9	87.5	29.9	90.6	29.8	93.5	29.8	96.9	29.6	99.8	29.9	102.5	29.8	105.3	29.9	108.2	29.9		
POST-TEST 4	89.4	45.3	92.4	44.9	95.4	45.1	98.4	44.6	101.4	45.0	104.4	44.6	107.3	45.0	110.4	44.5	113.2	44.5		
LOCATION	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
PRE-TEST	108.2	18.2	111.2	18.2	114.6	18.1	117.3	18.2												
POST-TEST 1	106.2	20.8	109.1	21.0	112.6	21.0	115.2	21.1												
POST-TEST 2	112.0	24.9	114.9	24.8	118.1	24.7	120.9	24.8												
POST-TEST 3	111.1	29.8	114.0	29.9	117.3	29.9	120.1	29.7												
POST-TEST 4	116.4	44.4	119.2	43.8	122.8	44.6	125.2	45.0												

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 160 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 ACCELEROMETER PLACEMENT

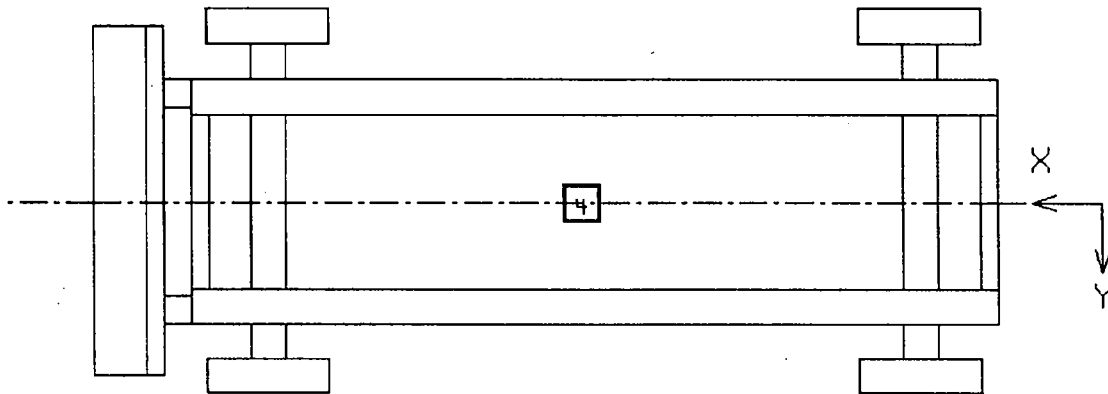


SIDE VIEW

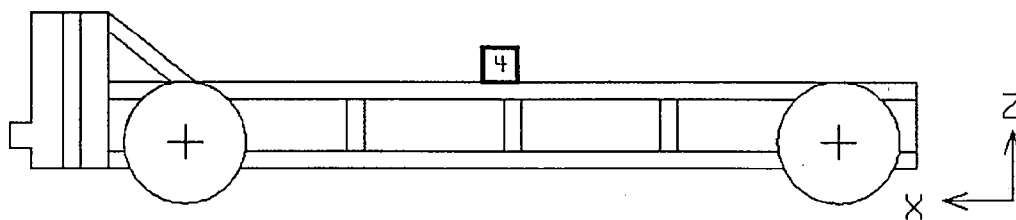


BOTTOM VIEW

MOVING BARRIER ACCELEROMETER PLACEMENT

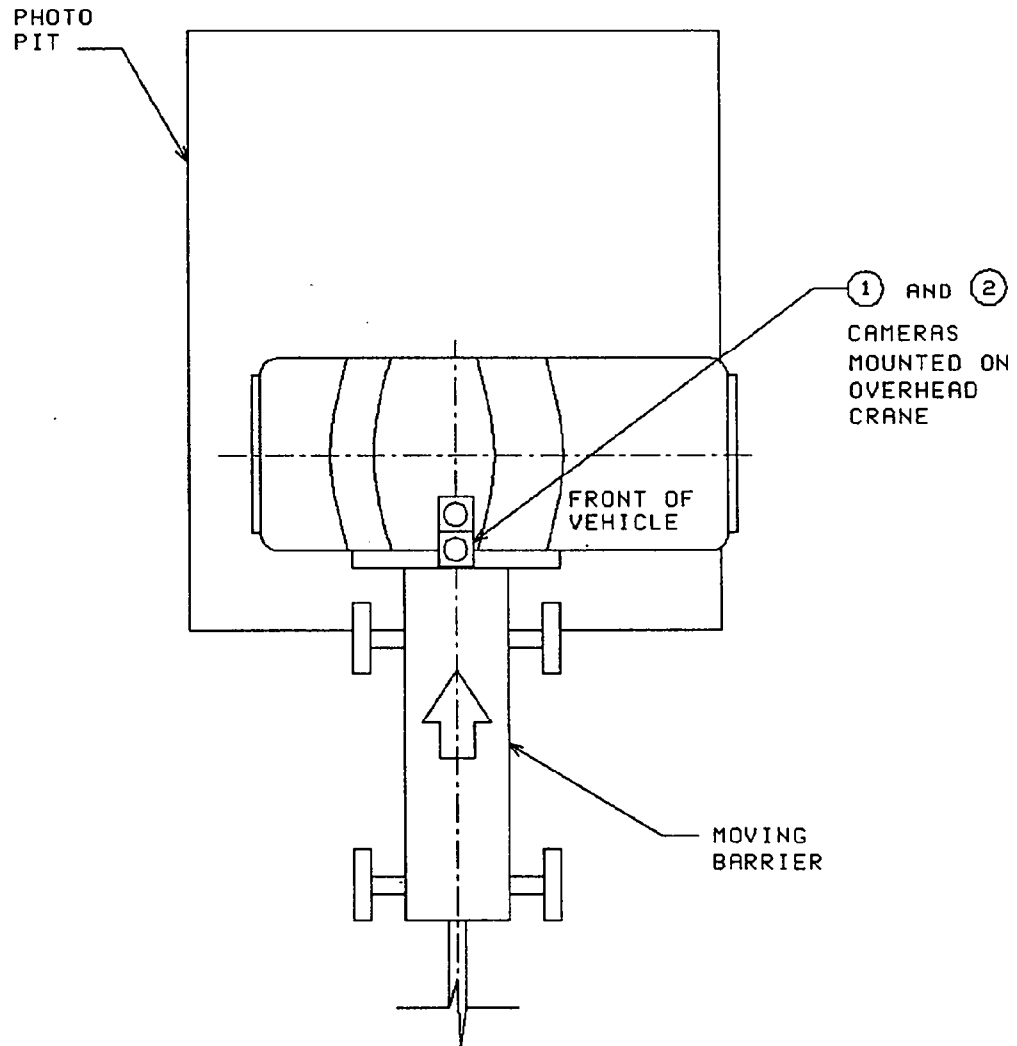


TOP VIEW



SIDE VIEW

CAMERA POSITIONS



TEST ANOMALIES

TEST NUMBER 920225-2:

The moving barrier center of gravity X-axis accelerometer recorded an anomalous data spike at approximately 312 milliseconds. This anomaly affected the moving barrier center of gravity resultant acceleration, X-axis velocity, and resultant velocity calculations.

SECTION 3.0

TEST 920225-1 SUMMARY

TEST CONDITIONS

TEST NUMBER: 920225-1

DATE OF TEST: 02/25/92

TIME OF TEST: 1103

AMBIENT TEMPERATURE AT IMPACT AREA: 42° F

INTENDED MOVING BARRIER VELOCITY: 20.0 MPH

ACTUAL MOVING BARRIER VELOCITY: 20.0 MPH

SUBJECT VEHICLE DATA

LENGTH OF DIRECT CONTACT DAMAGE: 67.0

MAXIMUM CUMULATIVE CRUSH
AT MOVING BARRIER BUMPER HEIGHT: 8.2

MAXIMUM CUMULATIVE CRUSH
AT VEHICLE SILL HEIGHT: 3.0

VEHICLE ATTITUDES:

POST-TEST: LF: NA RF: NA LR: NA RR: NA

ALL DISTANCE MEASUREMENTS ARE IN INCHES.

VEHICLE CRUSH

TEST NO. 920225-1

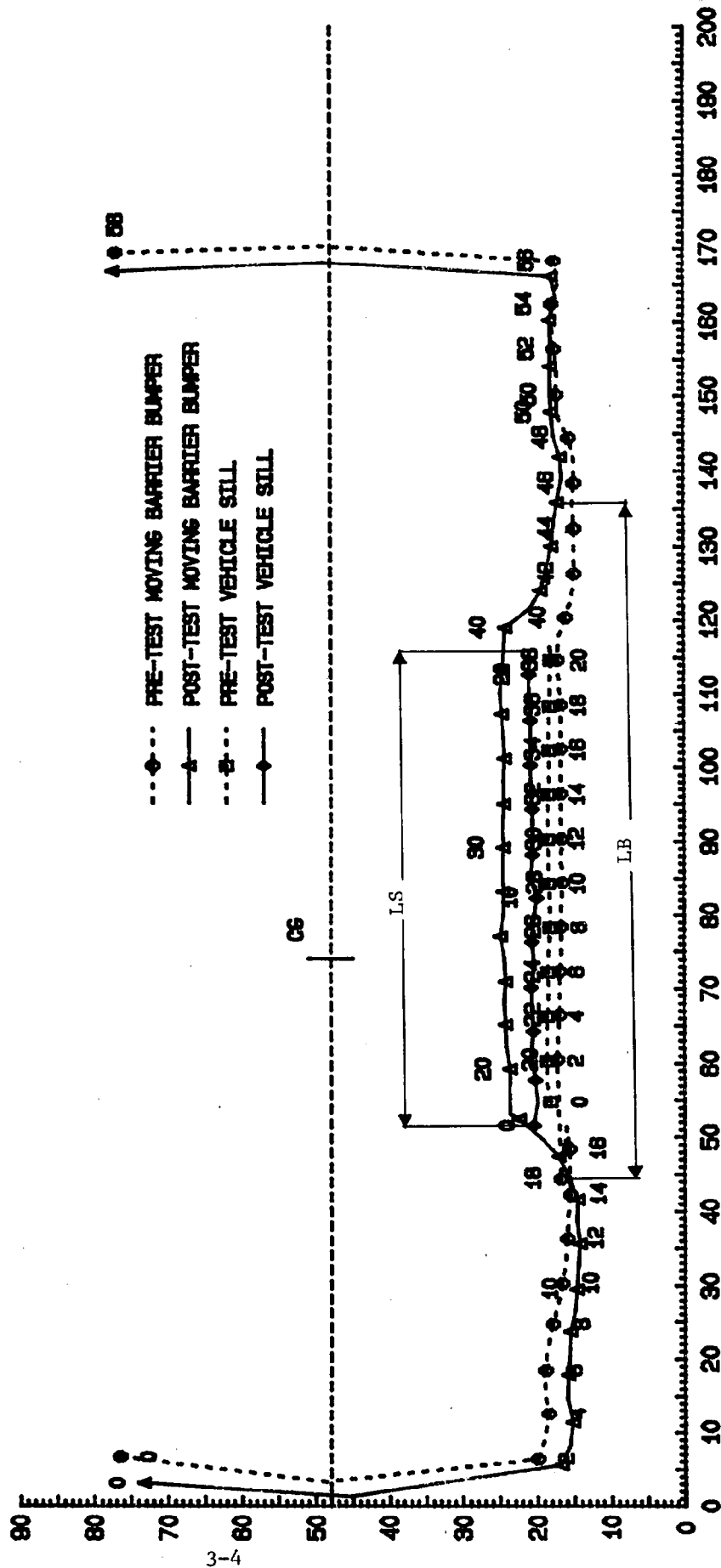
AT MOVING BARRIER		AT VEHICLE	
BUMPER HEIGHT		SILL HEIGHT	
LB	<u>86.9</u>	LS	<u>64.2</u>
C1	<u>0.0</u>	S1	<u>3.0</u>
C2	<u>7.1</u>	S2	<u>2.3</u>
C3	<u>7.8</u>	S3	<u>2.0</u>
C4	<u>7.8</u>	S4	<u>2.1</u>
C5	<u>7.0</u>	S5	<u>2.0</u>
C6	<u>0.0</u>	S6	<u>1.6</u>

DETERMINATION OF VEHICLE CRUSH:

A reference line was constructed connecting the end points of the vehicle's damaged surface. Six equally spaced points were defined along the reference line and labeled C1 through C6 (or S1 through S6 for sill height crush) with the rearmost point of the damaged surface defined as C1 (or S1) and the forwardmost point defined as C6 (or S6). The actual crush distance is a measurement taken perpendicular to the reference line at each point (C1 through C6 or S1 through S6) from the vehicles undeformed surface to the vehicle's damaged surface. LB and LS represent the total length of the damaged surfaces at the moving barrier bumper height and at the vehicle's sill height, respectively.

NOTES: C1 through C6 and S1 through S6 are spaced equally apart
All distance measurements are in inches.

TEST 1 -- VEHICLE CRUSH PROFILE



VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

TEST NUMBER 920225-1

No. LOCATION	X*	Y*	Z*	POSITIVE DIRECTION		NEGATIVE DIRECTION	
				MAX G	MSEC	MAX G	MSEC
1 LEFT FRONT SILL	110.9	25.2	12.2				
LONGITUDINAL				3.4	48.9	2.6	6.1
LATERAL				21.9	7.3	3.4	56.4
RESULTANT				22.0	7.3		
2 LEFT REAR SILL	70.8	24.0	12.8				
LONGITUDINAL				4.3	51.0	3.0	5.9
LATERAL				17.7	27.8	1.6	113.1
RESULTANT				17.8	27.5		
3 LEFT SILL AT	101.5	24.6	13.4				
LONGITUDINAL CG							
LONGITUDINAL				3.9	51.0	2.1	5.5
LATERAL				20.7	7.5	2.0	116.0
RESULTANT				20.7	7.5		

* 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 920225-1

No.	LOCATION	X*	Y*	Z*	POSITIVE	NEGATIVE		
					DIRECTION	DIRECTION		
					MAX G	MSEC	MAX G	MSEC
4	MOVING BARRIER	75.2	0.0	12.3				
	CENTER OF GRAVITY							
	LONGITUDINAL				0.7	107.6	11.9	30.9
	LATERAL				3.3	34.0	2.6	28.4
	RESULTANT				12.0	30.5		

* ALL MEASUREMENTS OF ACCELEROMETER LOCATIONS ARE IN INCHES.

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

CAMERA INFORMATION

TEST NO. 920225-1

CAMERA NUMBER	LOCATION	TYPE	LENS (mm)	SPEED (fps)	PURPOSE OF CAMERA DATA
1	Overall wide	Photosonic 1B	13	498	Impact overall
2	Overall tight	Stalex	25	525	Impact overall

SECTION 4.0

TEST 920225-2 SUMMARY

TEST CONDITIONS

TEST NUMBER: 920225-2

DATE OF TEST: 02/25/92

TIME OF TEST: 1326

AMBIENT TEMPERATURE AT IMPACT AREA: 42° F

INTENDED MOVING BARRIER VELOCITY: 20.0 MPH

ACTUAL MOVING BARRIER VELOCITY: 20.0 MPH

SUBJECT VEHICLE DATA

LENGTH OF DIRECT CONTACT DAMAGE: 67.0

MAXIMUM CUMULATIVE CRUSH
AT MOVING BARRIER BUMPER HEIGHT: 13.2

MAXIMUM CUMULATIVE CRUSH
AT VEHICLE SILL HEIGHT: 7.8

VEHICLE ATTITUDES:

POST-TEST: LF: 26.1 RF: 26.8 LR: 25.1 RR: 25.8

ALL DISTANCE MEASUREMENTS ARE IN INCHES.

VEHICLE CRUSH

TEST NO. 920225-2

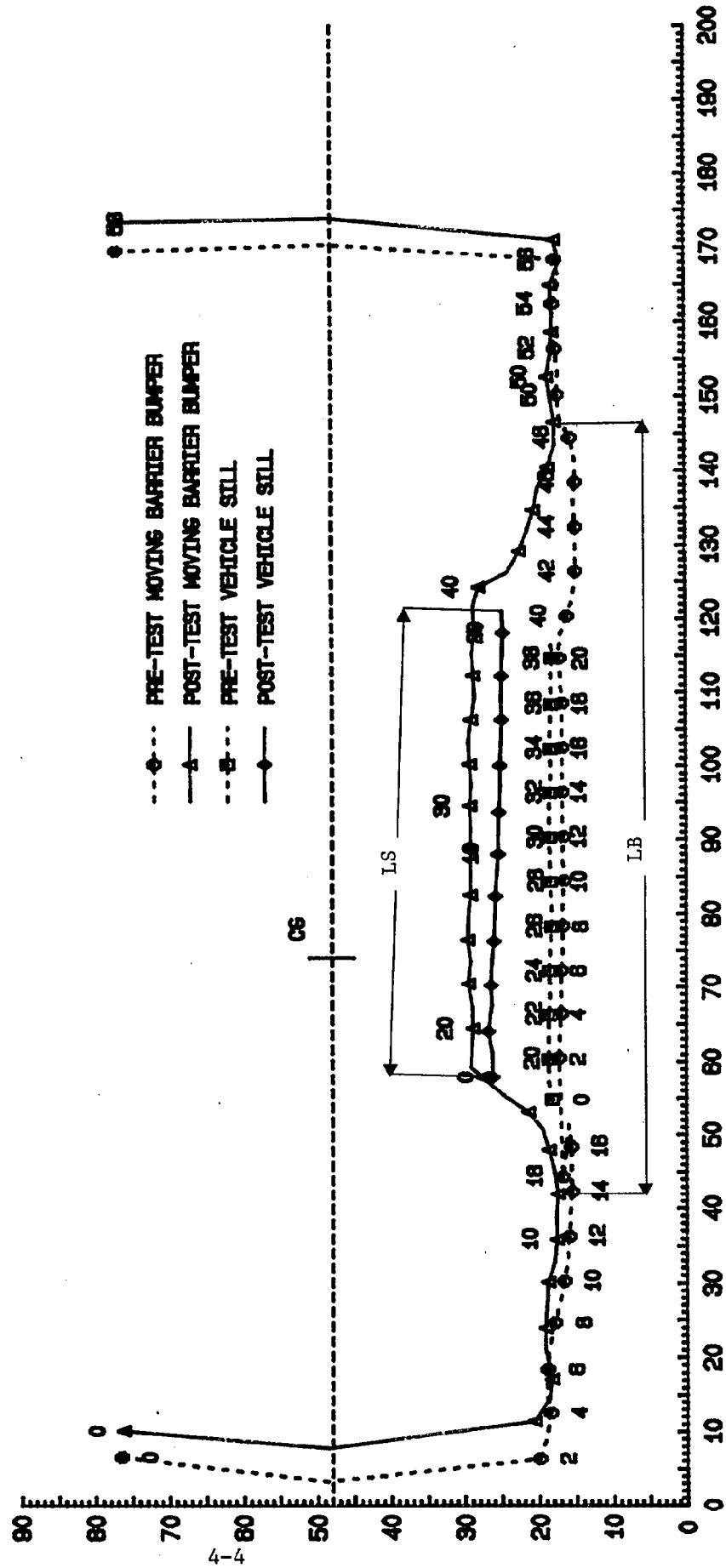
AT MOVING BARRIER		AT VEHICLE	
BUMPER HEIGHT		SILL HEIGHT	
LB	<u>103.7</u>	LS	<u>62.6</u>
C1	<u>0.0</u>	S1	<u>6.7</u>
C2	<u>12.5</u>	S2	<u>6.7</u>
C3	<u>12.9</u>	S3	<u>7.0</u>
C4	<u>11.7</u>	S4	<u>7.8</u>
C5	<u>11.7</u>	S5	<u>7.8</u>
C6	<u>0.0</u>	S6	<u>7.0</u>

DETERMINATION OF VEHICLE CRUSH:

A reference line was constructed connecting the end points of the vehicle's damaged surface. Six equally spaced points were defined along the reference line and labeled C1 through C6 (or S1 through S6 for sill height crush) with the rearmost point of the damaged surface defined as C1 (or S1) and the forwardmost point defined as C6 (or S6). The actual crush distance is a measurement taken perpendicular to the reference line at each point (C1 through C6 or S1 through S6) from the vehicles undeformed surface to the vehicle's damaged surface. LB and LS represent the total length of the damaged surfaces at the moving barrier bumper height and at the vehicle's sill height, respectively.

NOTES: C1 through C6 and S1 through S6 are spaced equally apart
All distance measurements are in inches.

TEST 2 - VEHICLE CRUSH PROFILE



VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

TEST NUMBER 920225-2

No. LOCATION	X*	Y*	Z*	POSITIVE DIRECTION		NEGATIVE DIRECTION	
				MAX	G MSEC	MAX	G MSEC
1 LEFT FRONT SILL	110.9	25.2	12.2				
LONGITUDINAL				7.6	32.9	6.2	20.8
LATERAL				34.6	19.3	2.3	65.0
RESULTANT				35.0	19.4		
2 LEFT REAR SILL	70.8	24.0	12.8				
LONGITUDINAL				7.9	32.6	6.3	21.0
LATERAL				32.8	18.1	2.2	88.0
RESULTANT				32.9	18.1		
3 LEFT SILL AT	101.5	24.6	13.4				
LONGITUDINAL CG							
LONGITUDINAL				8.0	31.8	3.7	21.0
LATERAL				33.5	19.3	2.1	215.6
RESULTANT				33.5	19.3		

* 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 920225-2

No. LOCATION	X*	Y*	Z*	POSITIVE	MAX G	Negative	MAX G
				DIRECTION		DIRECTION	
					MSEC		MSEC
4 MOVING BARRIER	75.2	0.0	12.3				
CENTER OF GRAVITY							
LONGITUDINAL				44.2	311.5 Y	15.5	21.8
LATERAL				3.9	26.6	2.2	85.4
RESULTANT				44.2	311.5 Y		

* ALL MEASUREMENTS OF ACCELEROMETER LOCATIONS ARE IN INCHES.

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

Y See TEST ANOMALIES

CAMERA INFORMATION

TEST NO. 920225-2

CAMERA NUMBER	LOCATION	TYPE	LENS (mm)	SPEED (fps)	PURPOSE OF CAMERA DATA
1	Overall wide	Photosonic 1B	13	500	Impact overall
2	Overall tight	Stalex	25	480	Impact overall

SECTION 5.0

TEST 920225-3 SUMMARY

TEST CONDITIONS

TEST NUMBER: 920225-3

DATE OF TEST: 02/25/92

TIME OF TEST: 1516

AMBIENT TEMPERATURE AT IMPACT AREA: 42° F

INTENDED MOVING BARRIER VELOCITY: 20.0 MPH

ACTUAL MOVING BARRIER VELOCITY: 20.0 MPH

SUBJECT VEHICLE DATA

LENGTH OF DIRECT CONTACT DAMAGE: 67.0

MAXIMUM CUMULATIVE CRUSH
AT MOVING BARRIER BUMPER HEIGHT: 15.7

MAXIMUM CUMULATIVE CRUSH
AT VEHICLE SILL HEIGHT: 11.8

VEHICLE ATTITUDES:

POST-TEST: LF: 26.2 RF: 26.8 LR: 25.1 RR: 26.4

ALL DISTANCE MEASUREMENTS ARE IN INCHES.

VEHICLE CRUSH

TEST NO. 920225-3

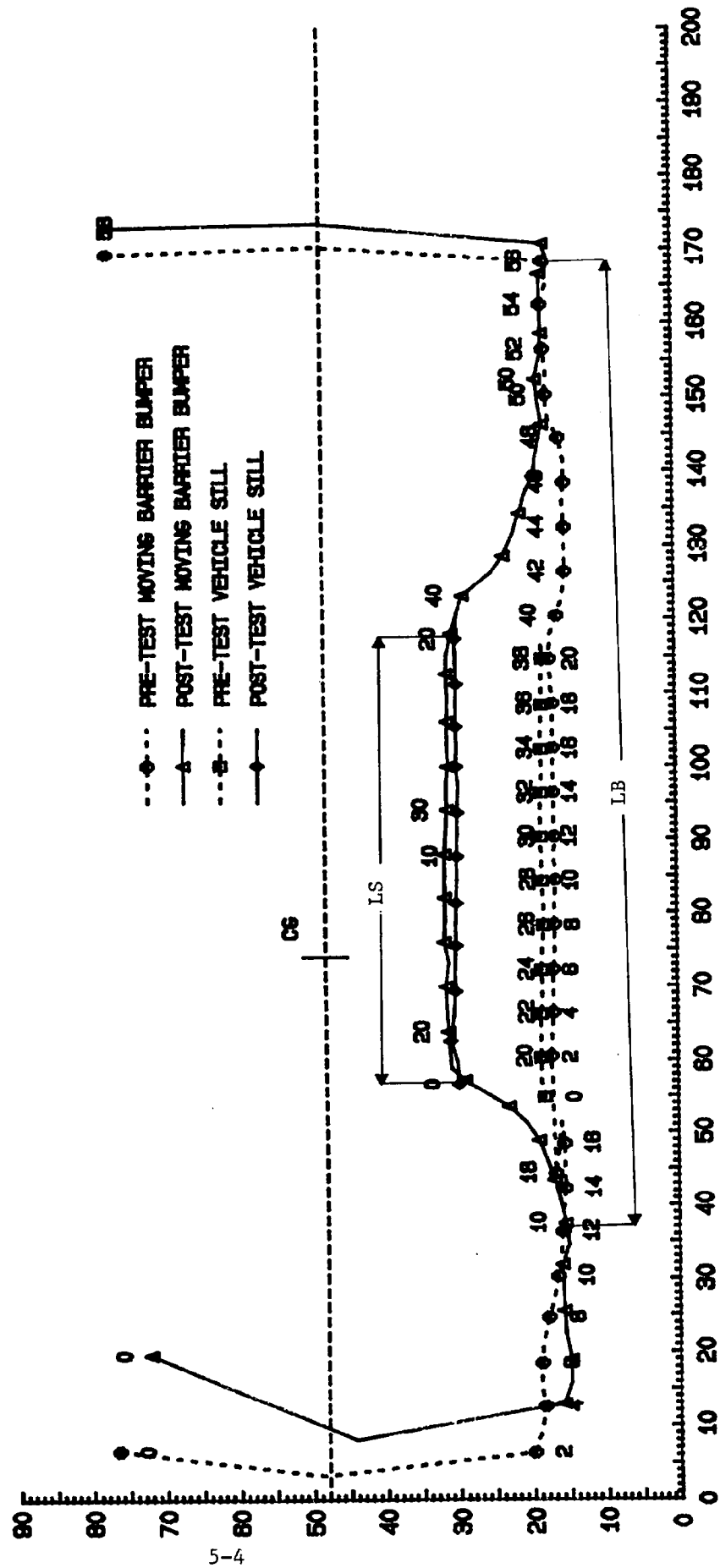
AT MOVING BARRIER		AT VEHICLE	
BUMPER HEIGHT		SILL HEIGHT	
LB	<u>129.9</u>	LS	<u>56.4</u>
C1	<u>0.0</u>	S1	<u>11.7</u>
C2	<u>1.1</u>	S2	<u>11.7</u>
C3	<u>14.1</u>	S3	<u>11.4</u>
C4	<u>14.9</u>	S4	<u>11.7</u>
C5	<u>14.1</u>	S5	<u>11.8</u>
C6	<u>0.0</u>	S6	<u>11.0</u>

DETERMINATION OF VEHICLE CRUSH:

A reference line was constructed connecting the end points of the vehicle's damaged surface. Six equally spaced points were defined along the reference line and labeled C1 through C6 (or S1 through S6 for sill height crush) with the rearmost point of the damaged surface defined as C1 (or S1) and the forwardmost point defined as C6 (or S6). The actual crush distance is a measurement taken perpendicular to the reference line at each point (C1 through C6 or S1 through S6) from the vehicles undeformed surface to the vehicle's damaged surface. LB and LS represent the total length of the damaged surfaces at the moving barrier bumper height and at the vehicle's sill height, respectively.

NOTES: C1 through C6 and S1 through S6 are spaced equally apart
All distance measurements are in inches.

TEST 3 - VEHICLE CRUSH PROFILE



VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

TEST NUMBER 920225-3

No.	LOCATION	X*	Y*	Z*	POSITIVE DIRECTION		NEGATIVE DIRECTION	
					MAX G	MSEC	MAX G	MSEC
1	LEFT FRONT SILL	110.9	25.2	12.2				
	LONGITUDINAL				4.0	27.9	3.2	6.3
	LATERAL				33.1	3.1	2.1	58.8
	RESULTANT				33.2	3.1		
2	LEFT REAR SILL	70.8	24.0	12.8				
	LONGITUDINAL				5.7	33.5	4.6	7.1
	LATERAL				26.1	3.1	2.2	119.1
	RESULTANT				26.1	3.1		
3	LEFT SILL AT	101.5	24.6	13.4				
	LONGITUDINAL CG							
	LONGITUDINAL				4.8	33.5	2.7	7.0
	LATERAL				36.1	3.4	2.0	77.9
	RESULTANT				36.1	3.4		

* 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 920225-3

No. LOCATION	X*	Y*	Z*	POSITIVE	MSEC	NEGATIVE	MSEC
				DIRECTION		DIRECTION	
				MAX G		MAX G	
4 MOVING BARRIER	75.2	0.0	12.3				
CENTER OF GRAVITY							
LONGITUDINAL				0.6	112.9	11.3	4.4
LATERAL				2.4	9.1	20.5	20.3
RESULTANT				23.2	20.3		

* ALL MEASUREMENTS OF ACCELEROMETER LOCATIONS ARE IN INCHES.

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

CAMERA INFORMATION

TEST NO. 920225-3

CAMERA NUMBER	LOCATION	TYPE	LENS (mm)	SPEED (fps)	PURPOSE OF CAMERA DATA
1	Overall wide	Photosonic 1B	13	498	Impact overall
2	Overall tight	Stalex	25	523	Impact overall

SECTION 6.0

TEST 920225-4 SUMMARY

TEST CONDITIONS

TEST NUMBER: 920225-4

DATE OF TEST: 02/25/92

TIME OF TEST: 1536

AMBIENT TEMPERATURE AT IMPACT AREA: 42° F

INTENDED MOVING BARRIER VELOCITY: 35.0 MPH

ACTUAL MOVING BARRIER VELOCITY: 34.7 MPH

SUBJECT VEHICLE DATA

LENGTH OF DIRECT CONTACT DAMAGE: 67.0

MAXIMUM CUMULATIVE CRUSH
AT MOVING BARRIER BUMPER HEIGHT: 27.4

MAXIMUM CUMULATIVE
CRUSH AT VEHICLE SILL HEIGHT: 29.0

VEHICLE ATTITUDES:

POST-TEST: LF: 25.9 RF: 25.5 LR: 25.4 RR: 26.9

ALL DISTANCE MEASUREMENTS ARE IN INCHES.

VEHICLE CRUSH

TEST NO. 920225-4

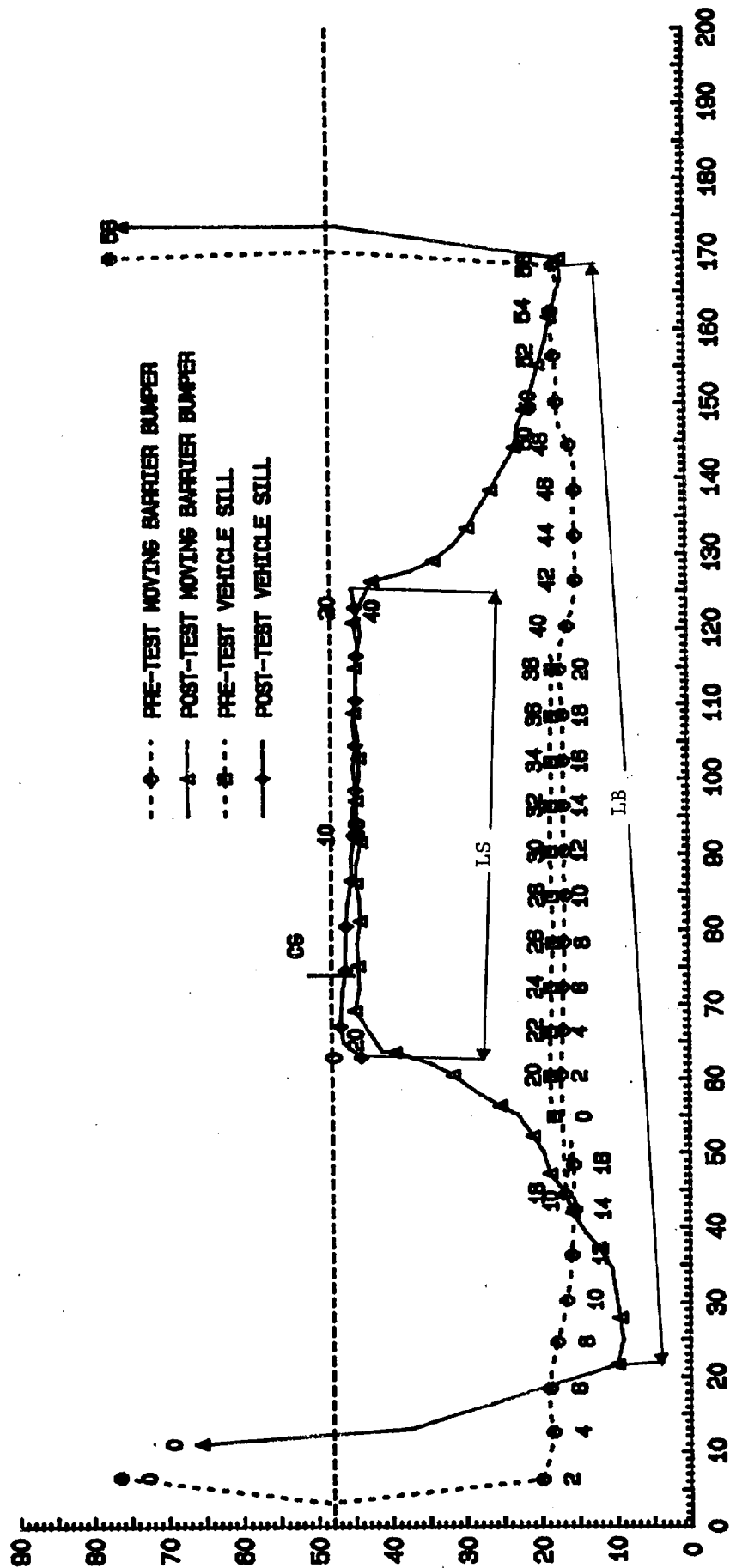
AT MOVING BARRIER		AT VEHICLE	
BUMPER HEIGHT		SILL HEIGHT	
LB	<u>146.0</u>	LS	<u>61.8</u>
C1	<u>0.0</u>	S1	<u>25.8</u>
C2	<u>10.2</u>	S2	<u>25.8</u>
C3	<u>26.6</u>	S3	<u>25.8</u>
C4	<u>27.0</u>	S4	<u>27.8</u>
C5	<u>3.1</u>	S5	<u>29.0</u>
C6	<u>0.0</u>	S6	<u>25.8</u>

DETERMINATION OF VEHICLE CRUSH:

A reference line was constructed connecting the end points of the vehicle's damaged surface. Six equally spaced points were defined along the reference line and labeled C1 through C6 (or S1 through S6 for sill height crush) with the rearmost point of the damaged surface defined as C1 (or S1) and the forwardmost point defined as C6 (or S6). The actual crush distance is a measurement taken perpendicular to the reference line at each point (C1 through C6 or S1 through S6) from the vehicles undeformed surface to the vehicle's damaged surface. LB and LS represent the total length of the damaged surfaces at the moving barrier bumper height and at the vehicle's sill height, respectively.

NOTES: C1 through C6 and S1 through S6 are spaced equally apart
All distance measurements are in inches.

TEST 4 -- VEHICLE CRUSH PROFILE



VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

TEST NUMBER 920225-4

No.	LOCATION	X*	Y*	Z*	POSITIVE DIRECTION		NEGATIVE DIRECTION	
					MAX G	MSEC	MAX G	MSEC
1	LEFT FRONT SILL	110.9	25.2	12.2				
	LONGITUDINAL				6.0	23.4	4.3	59.5
	LATERAL				37.0	12.9	3.5	266.5
	RESULTANT				37.0	12.9		
2	LEFT REAR SILL	70.8	24.0	12.8				
	LONGITUDINAL				7.8	24.3	2.5	10.0
	LATERAL				32.8	15.4	5.3	84.8
	RESULTANT				33.2	15.3		
3	LEFT SILL AT	101.5	24.6	13.4				
	LONGITUDINAL CG							
	LONGITUDINAL				6.6	22.9	3.4	59.3
	LATERAL				35.1	13.1	3.4	50.9
	RESULTANT				35.4	13.1		

* 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 920225-4

No. LOCATION	X*	Y*	Z*	POSITIVE DIRECTION		NEGATIVE DIRECTION	
				MAX G	MSEC	MAX G	MSEC
4 MOVING BARRIER	75.2	0.0	12.3				
CENTER OF GRAVITY							
LONGITUDINAL				1.9	192.8	22.4	11.1
LATERAL				6.3	26.6	5.2	33.3
RESULTANT				22.8	11.1		

* ALL MEASUREMENTS OF ACCELEROMETER LOCATIONS ARE IN INCHES.

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

CAMERA INFORMATION

TEST NO. 920225-4

CAMERA NUMBER	LOCATION	TYPE	LENS (mm)	SPEED (fps)	PURPOSE OF CAMERA DATA
1	Overall wide	Photosonic 1B	13	498	Impact overall
2	Overall tight	Stalex	25	NA*	Impact overall

*No film due to camera malfunction

APPENDIX A

PHOTOGRAPHS

LIST OF PHOTOGRAPHS

TEST NO. 920225-1

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

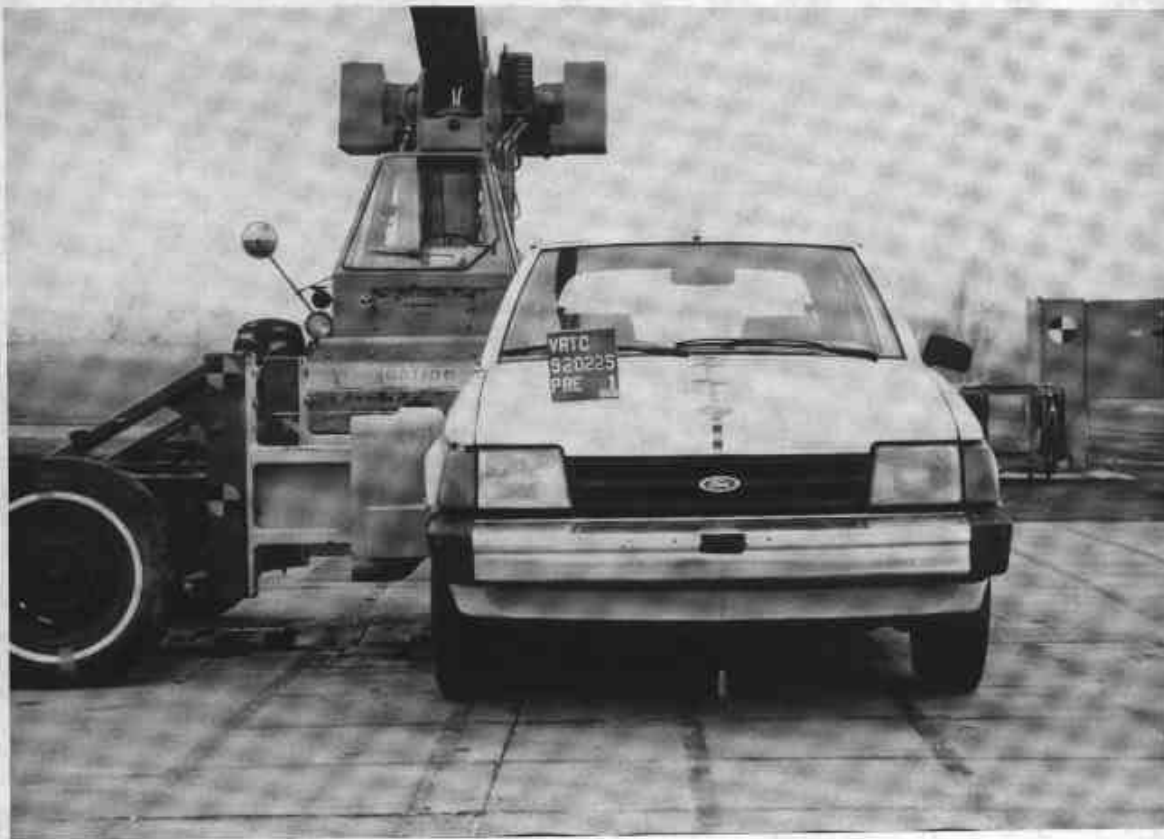


Figure A-1. PRE-TEST FRONT VIEW



Figure A-2. POST-TEST FRONT VIEW
A-3



Figure A-3. PRE-TEST LEFT SIDE VIEW



Figure A-4. POST-TEST LEFT SIDE VIEW



Figure A-5. PRE-TEST RIGHT SIDE VIEW



Figure A-6. POST-TEST RIGHT SIDE VIEW
A-5



Figure A-7. PRE-TEST REAR VIEW



Figure A-8. POST-TEST REAR VIEW
A-6



Figure A-9. PRE-TEST RIGHT FRONT THREE-QUARTER - VIEW 1



Figure A-10. POST-TEST RIGHT FRONT THREE-QUARTER - VIEW 1
A-7



Figure A-11. PRE-TEST RIGHT FRONT THREE-QUARTER - VIEW 2



Figure A-12. POST-TEST RIGHT FRONT THREE-QUARTER - VIEW 2

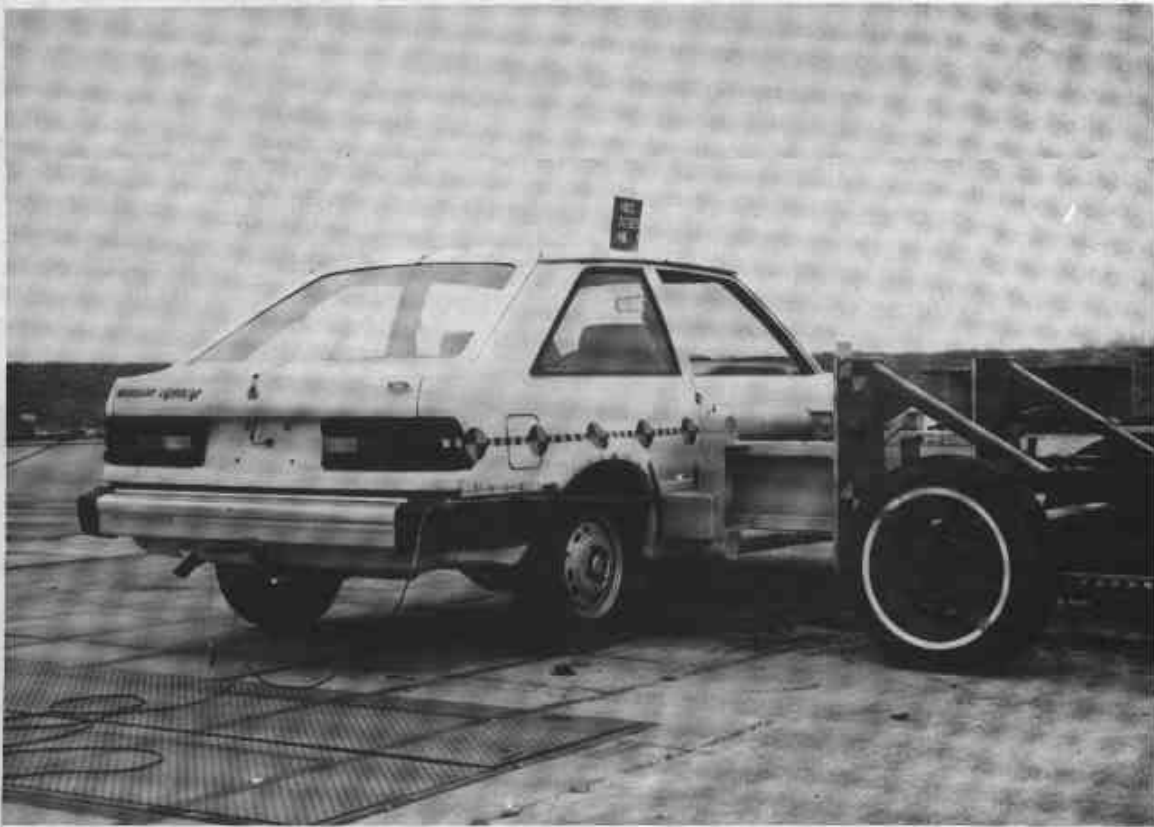


Figure A-13. PRE-TEST RIGHT REAR THREE-QUARTER - VIEW 1



Figure A-14. POST-TEST RIGHT REAR THREE-QUARTER - VIEW 1



Figure A-15. PRE-TEST RIGHT REAR THREE-QUARTER - VIEW 2



Figure A-16. POST-TEST RIGHT REAR THREE-QUARTER - VIEW 2

LIST OF PHOTOGRAPHS

TEST NO. 920225-2

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



Figure A-1. POST-TEST FRONT VIEW



Figure A-2. POST-TEST LEFT SIDE VIEW
A-12



Figure A-3. POST-TEST RIGHT SIDE VIEW



Figure A-4. POST-TEST REAR VIEW
A-13



Figure A-5. POST-TEST RIGHT FRONT THREE-QUARTER - VIEW 1



Figure A-6. POST-TEST RIGHT FRONT THREE-QUARTER - VIEW 2



Figure A-7. POST-TEST RIGHT REAR THREE-QUARTER VIEW

LIST OF PHOTOGRAPHS

TEST NO. 920225-3

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



Figure A-1. POST-TEST FRONT VIEW



Figure A-2. POST-TEST LEFT SIDE VIEW
A-17



Figure A-3. POST-TEST RIGHT SIDE VIEW



Figure A-4. POST-TEST REAR VIEW
A-18



Figure A-5. PRE-TEST RIGHT FRONT THREE-QUARTER VIEW



Figure A-6. POST-TEST RIGHT FRONT THREE-QUARTER VIEW



Figure A-7. PRE-TEST RIGHT REAR THREE-QUARTER VIEW



Figure A-8. POST-TEST RIGHT REAR THREE-QUARTER VIEW

LIST OF PHOTOGRAPHS

TEST NO. 920225-4

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

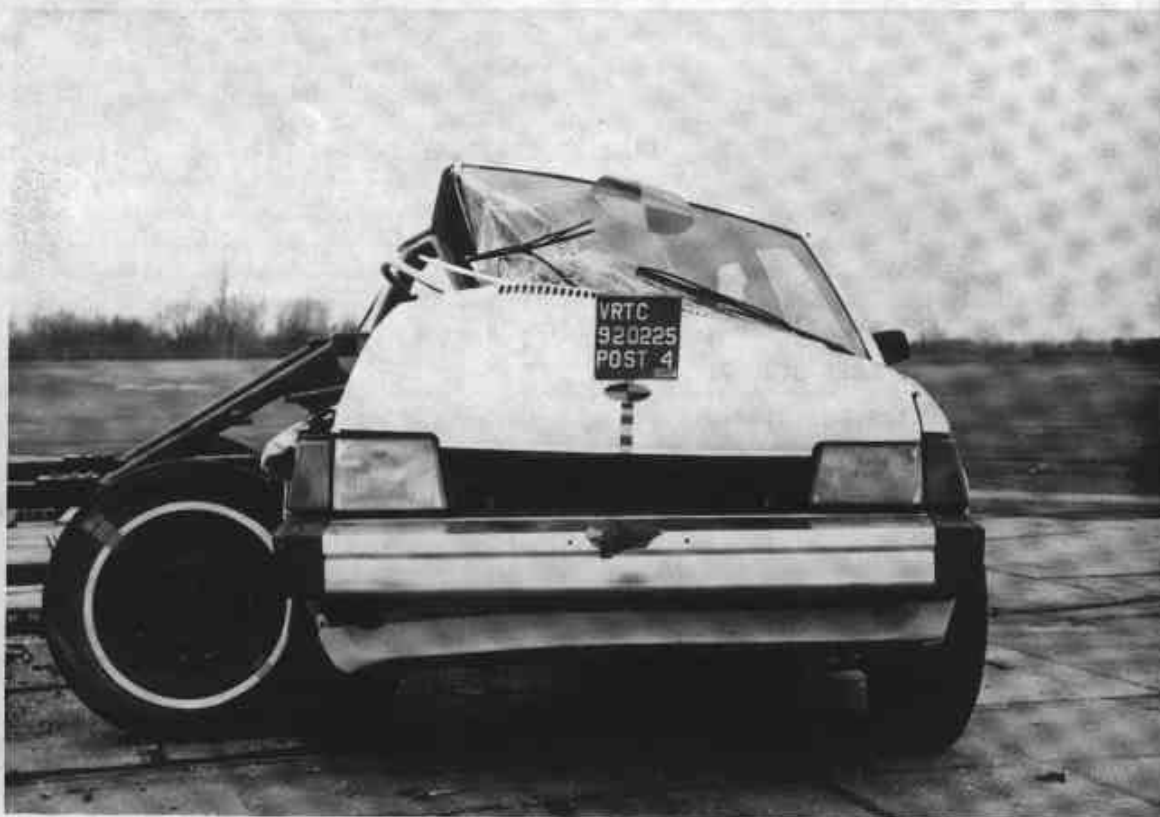


Figure A-1. POST-TEST FRONT VIEW



Figure A-2. POST-TEST LEFT SIDE VIEW
A-22



Figure A-3. POST-TEST RIGHT SIDE VIEW



Figure A-4. POST-TEST REAR VIEW
A-23



Figure A-5. POST-TEST RIGHT FRONT THREE-QUARTER - VIEW 1



Figure A-6. PRE-TEST RIGHT FRONT THREE-QUARTER - VIEW 2



Figure A-7. POST-TEST RIGHT REAR THREE-QUARTER - VIEW 1



Figure A-8. POST-TEST RIGHT REAR THREE-QUARTER - VIEW 2
A-25

APPENDIX B

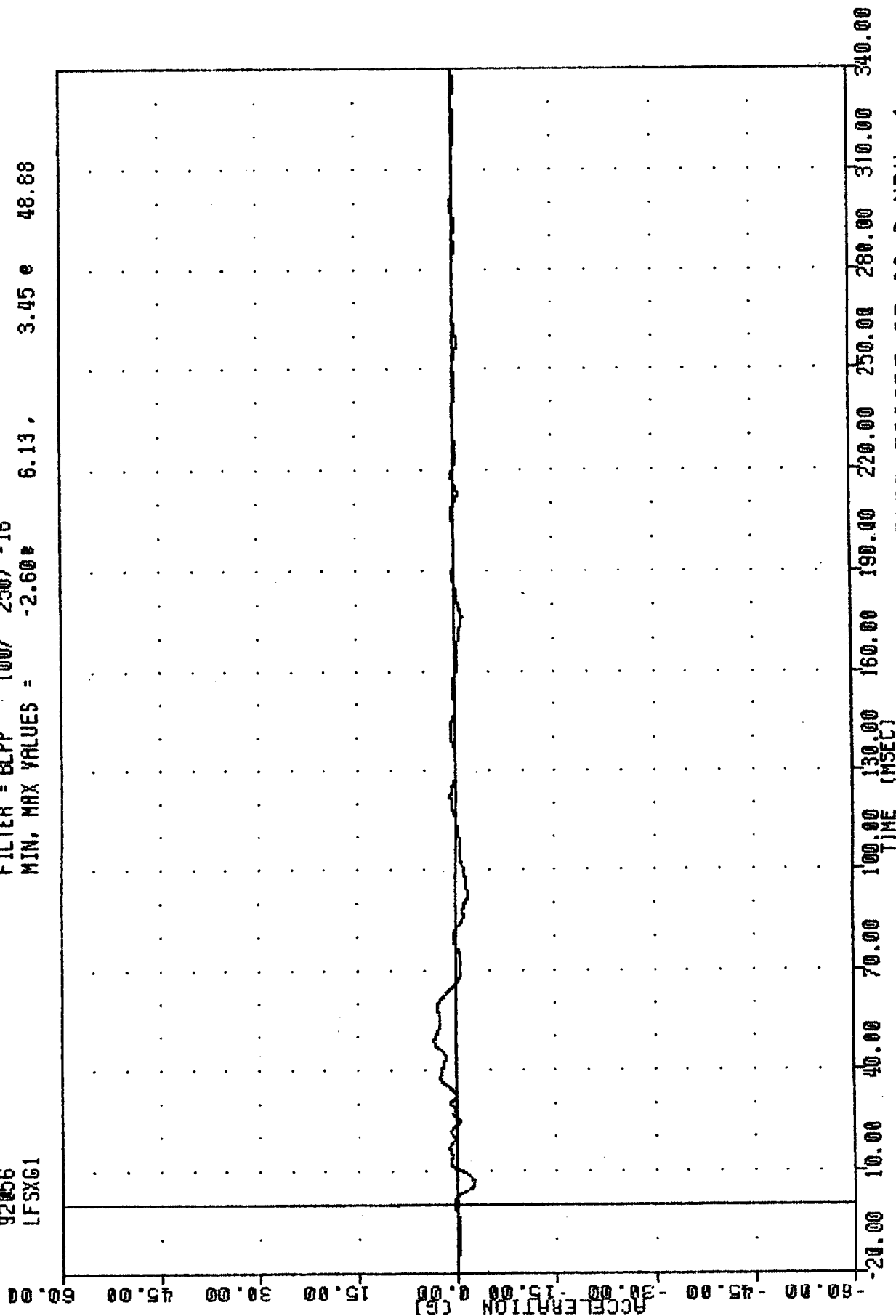
DATA PLOTS

DATA PLOTS

TEST NO. 920225-1

TRC , 920225-1
 CRASH III DAMAGE ALGORITHM
 92056
 LFSXG1

FILTER = BLPP 100/ 250/ -16
 MIN. MAX VALUES = -2.60 3.45 e 48.88

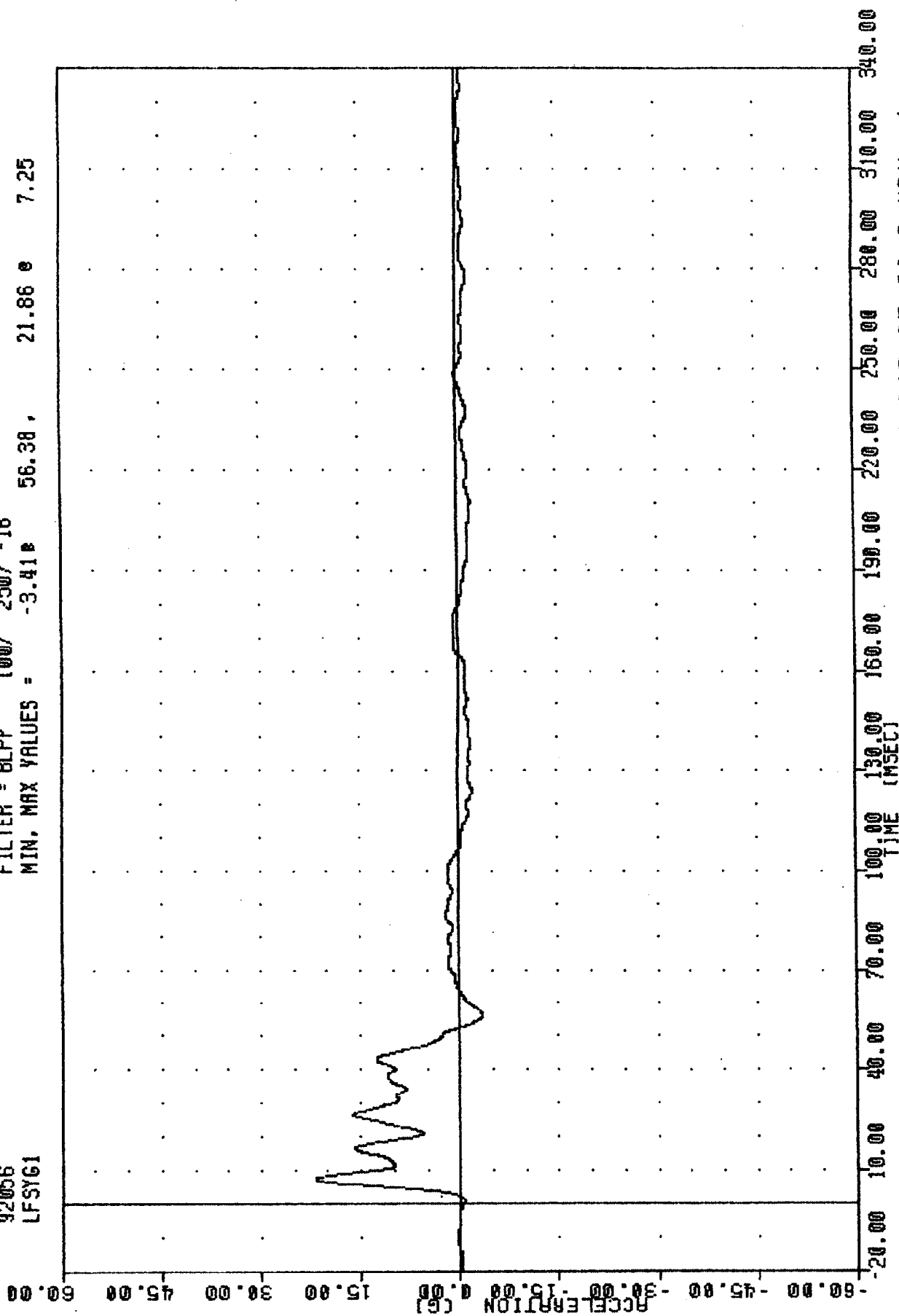


B-3

MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH *1
 LEFT FRONT DOOR SILL X-AXIS ACCELERATION

TRC , 920225-1
 CRASH III DAMAGE ALGORITHM
 92056
 LFSYG1

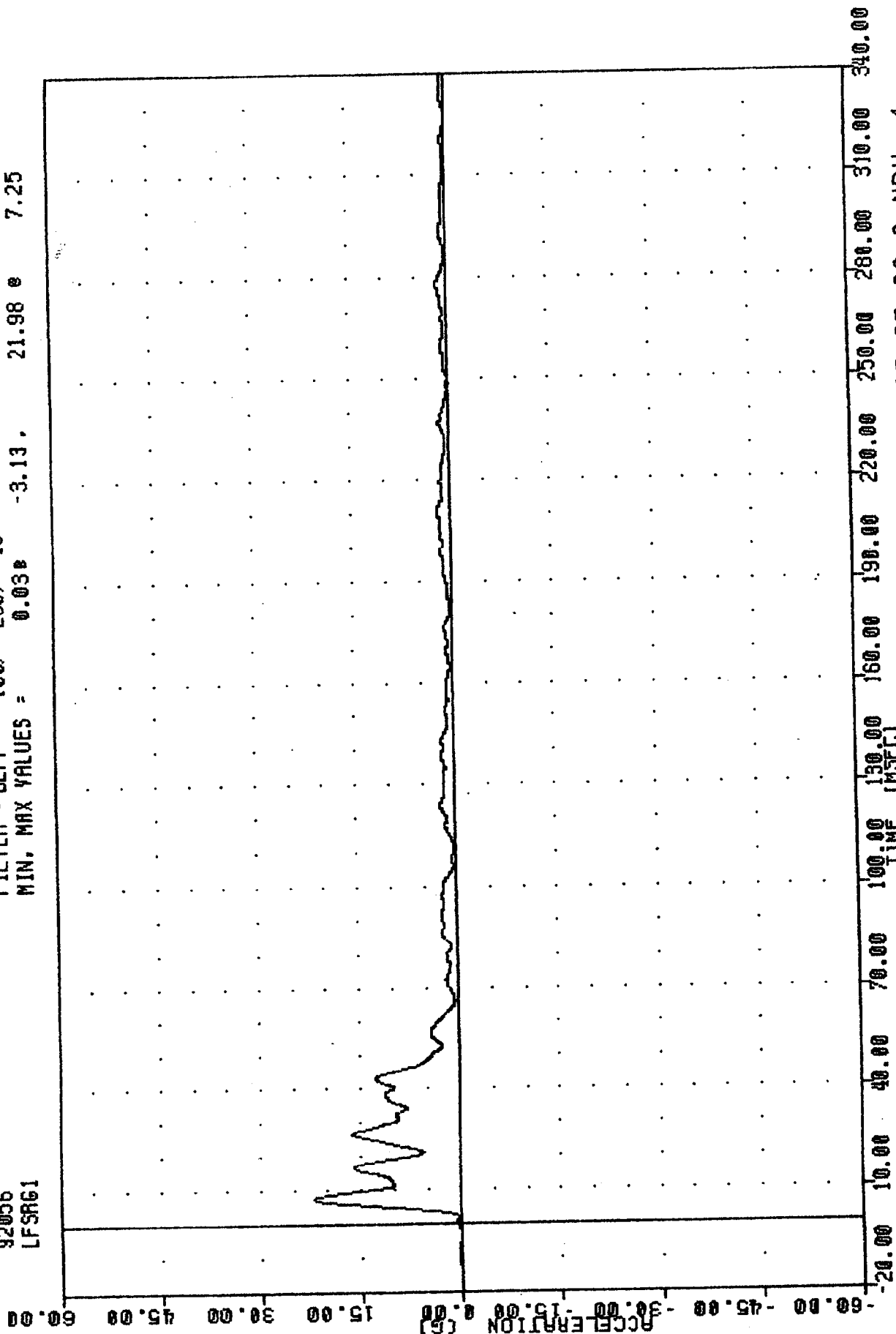
FILTER = BLPP 100/ 250/ -16
 MIN. MAX VALUES = -3.41B 56.38 , 21.86 @ 7.25



MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH ±1
 LEFT FRONT DOOR SILL Y-AXIS ACCELERATION

TRC
 CRASH III DAMAGE ALGORITHM
 92056
 LFSRG1

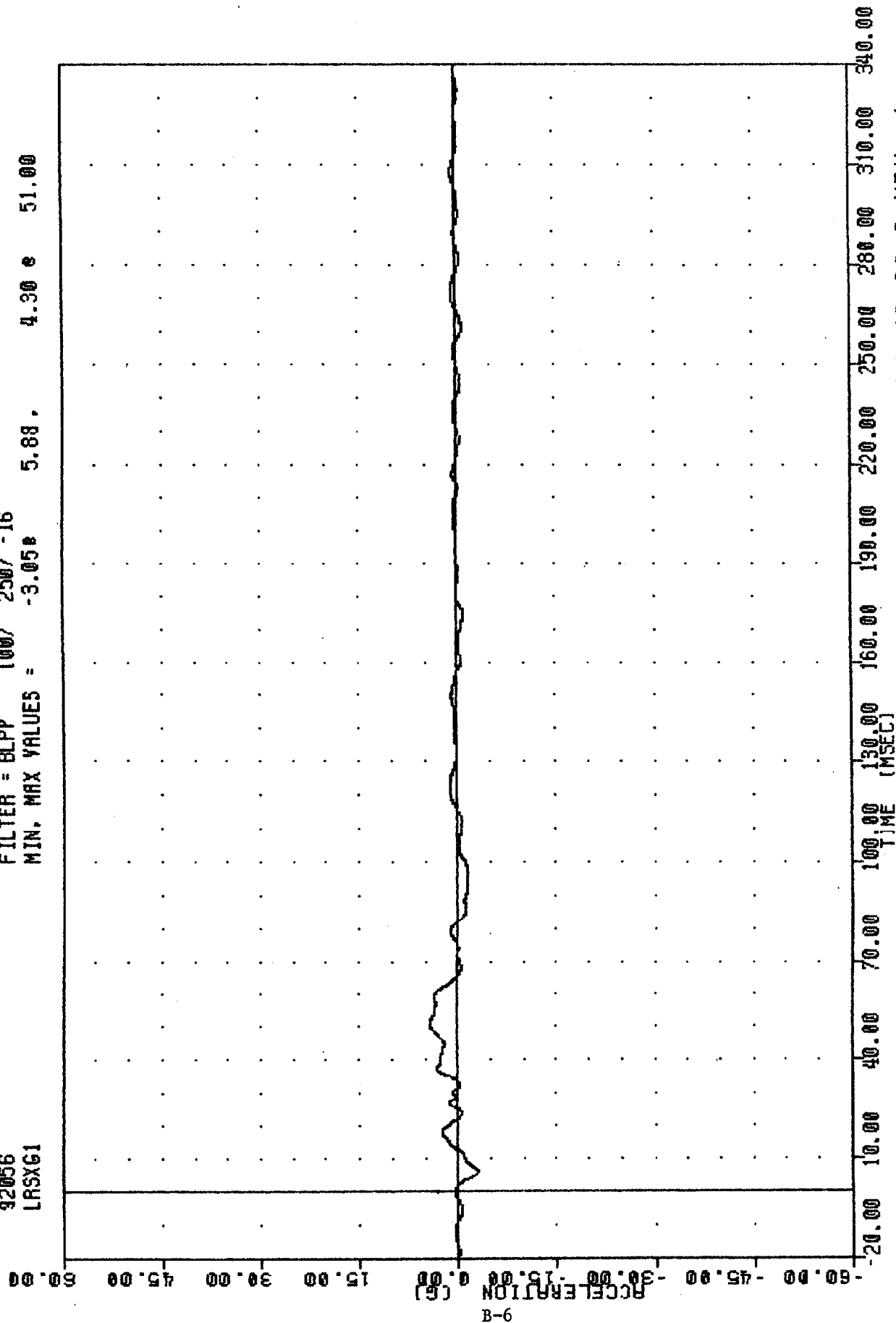
FILTER = BLPP 100/ 250/ -16
 MIN, MAX VALUES = -3.13, 21.98 e 7.25



MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #1
 LEFT FRONT DOOR SILL RESULTANT ACCELERATION

TRC , 920225-1
 CRASH III DAMAGE ALGORITHM
 92056
 LRSXG1

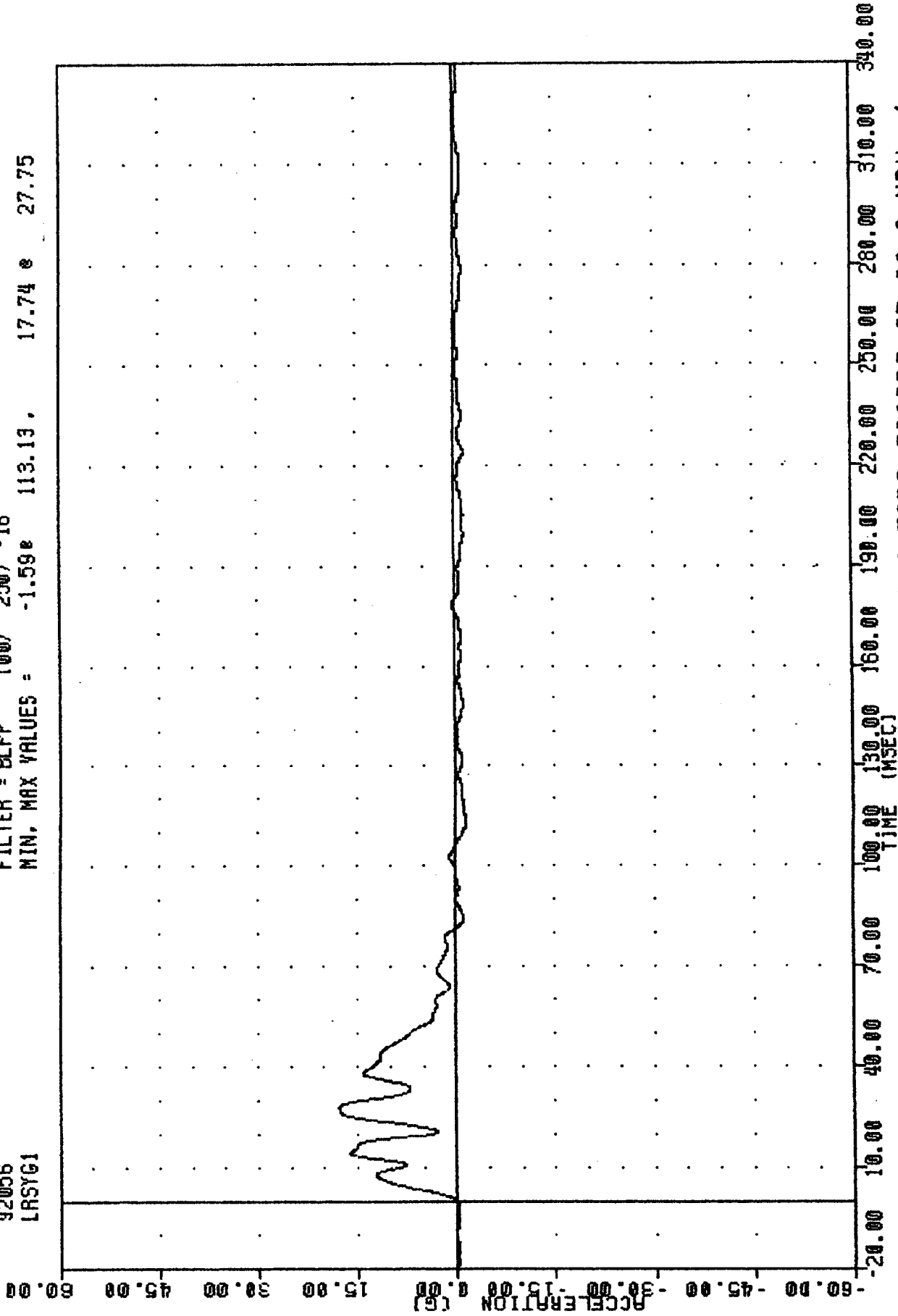
FILTER = BLPP 100/ 250/ -16
 MIN. MAX VALUES = -3.05 5.88 4.30 e 51.00



MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #1
 LEFT REAR DOOR SILL X-AXIS ACCELERATION

TRC . 920225-1
 CRASH III DAMAGE ALGORITHM
 92056
 LRSYG1

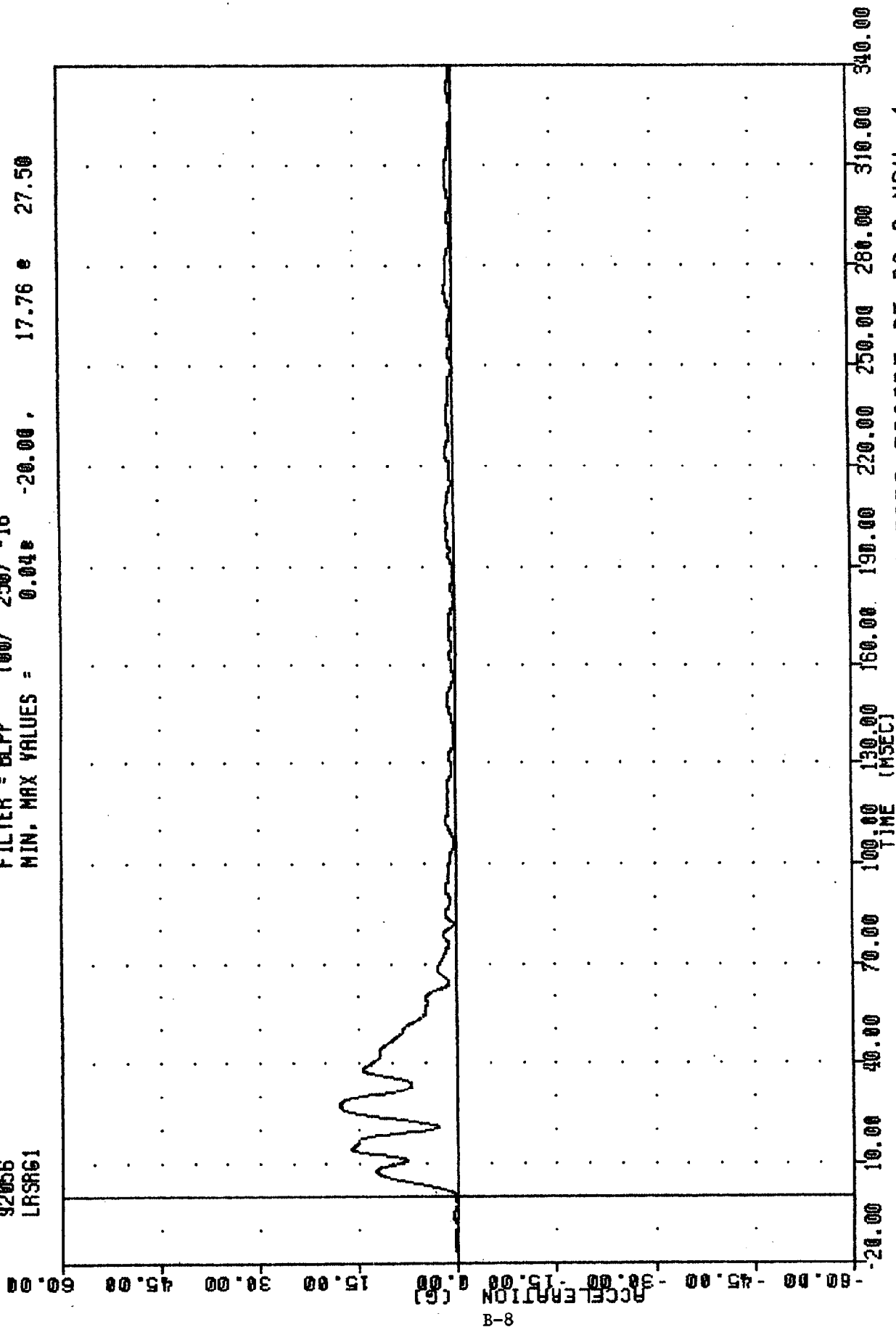
FILTER = BLFP 100/ 250/ -16
 MIN, MAX VALUES = -1.59e 113.13, 17.74 e 27.75



MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH ±1
 LEFT REAR DOOR SILL Y-AXIS ACCELERATION

TRC , 920225-1
 CRASH III DAMAGE ALGORITHM
 92056
 LRSRG1

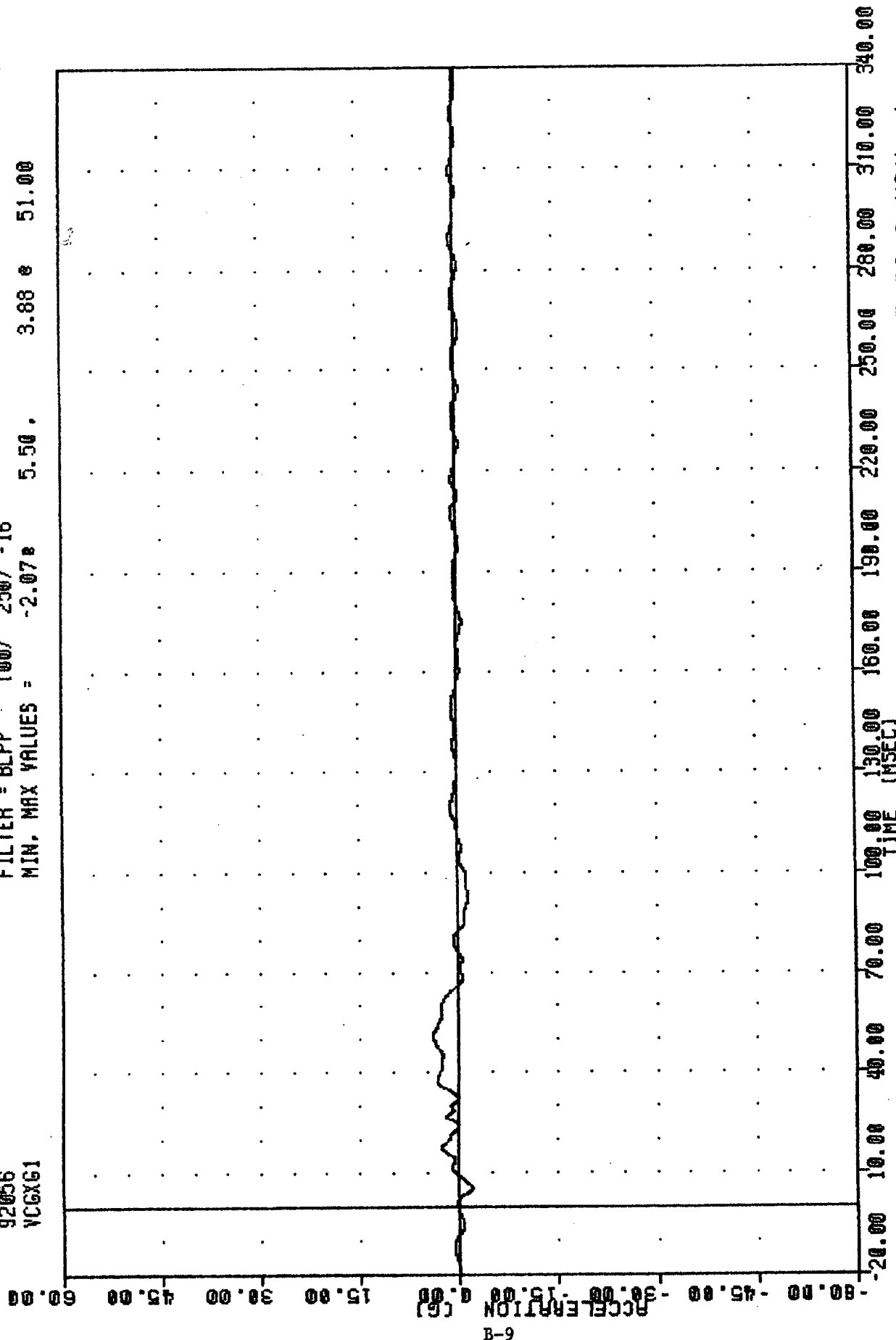
FILTER = BLPP 100/ 250/ -16
 MIN. MAX VALUES = 0.04e -20.00 , 17.76 e 27.50



MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #1
 LEFT REAR DOOR SILL RESULTANT ACCELERATION

TRC . 920225-1
 CRASH III DAMAGE ALGORITHM
 92056
 VCGXG1

FILTER = BLPP 100/ 250/ -16
 MIN. MAX VALUES = -2.07e 3.88 e 51.00

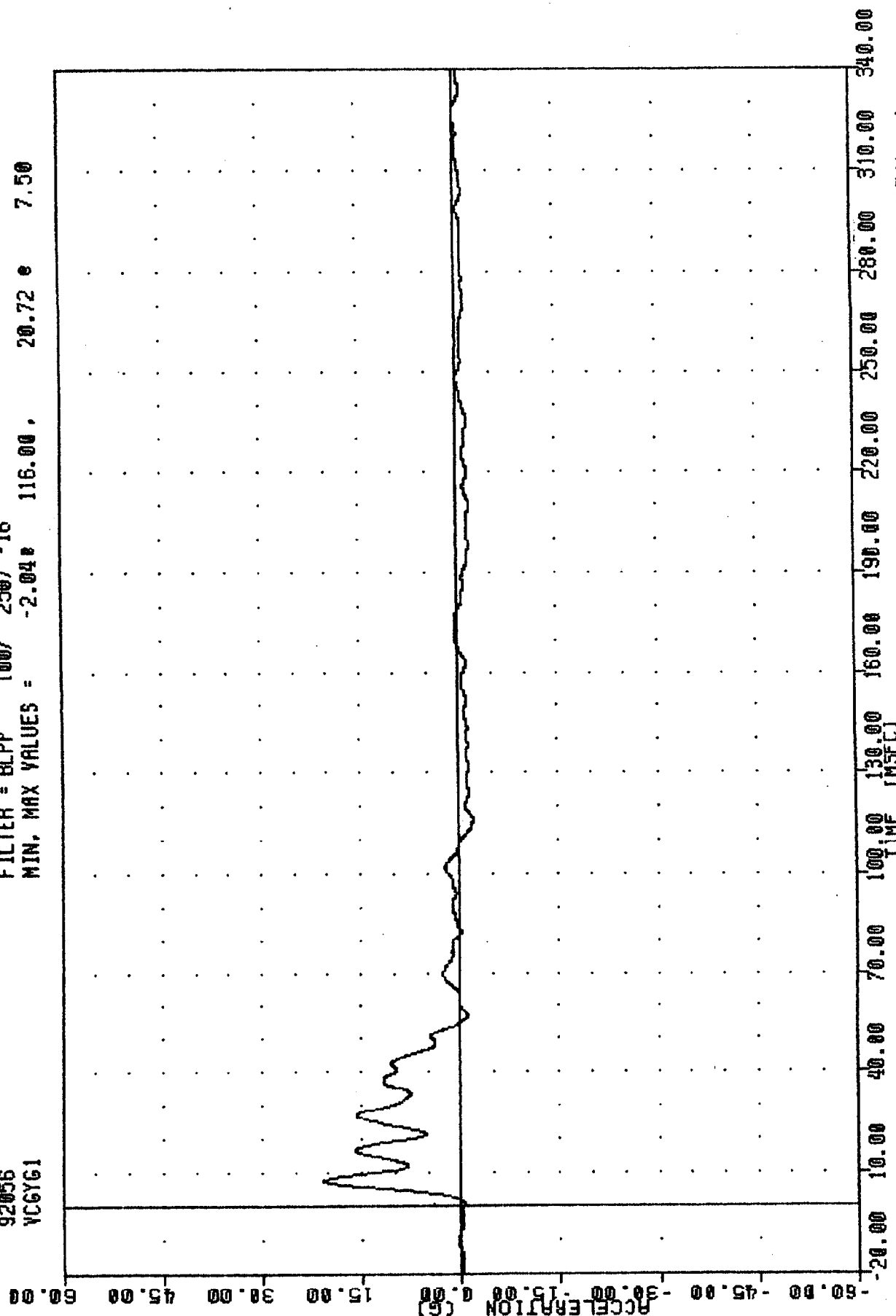


B-9

MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #1
 LEFT SILL AT LONGITUDINAL CG X-AXIS ACCELERATION

TRC , 920225-1
 CRASH III DAMAGE ALGORITHM
 92056
 VCCYG1

FILTER = BLPP 100/ 250/ -16
 MIN, MAX VALUES = -2.048 116.00 , 20.72 e 7.50

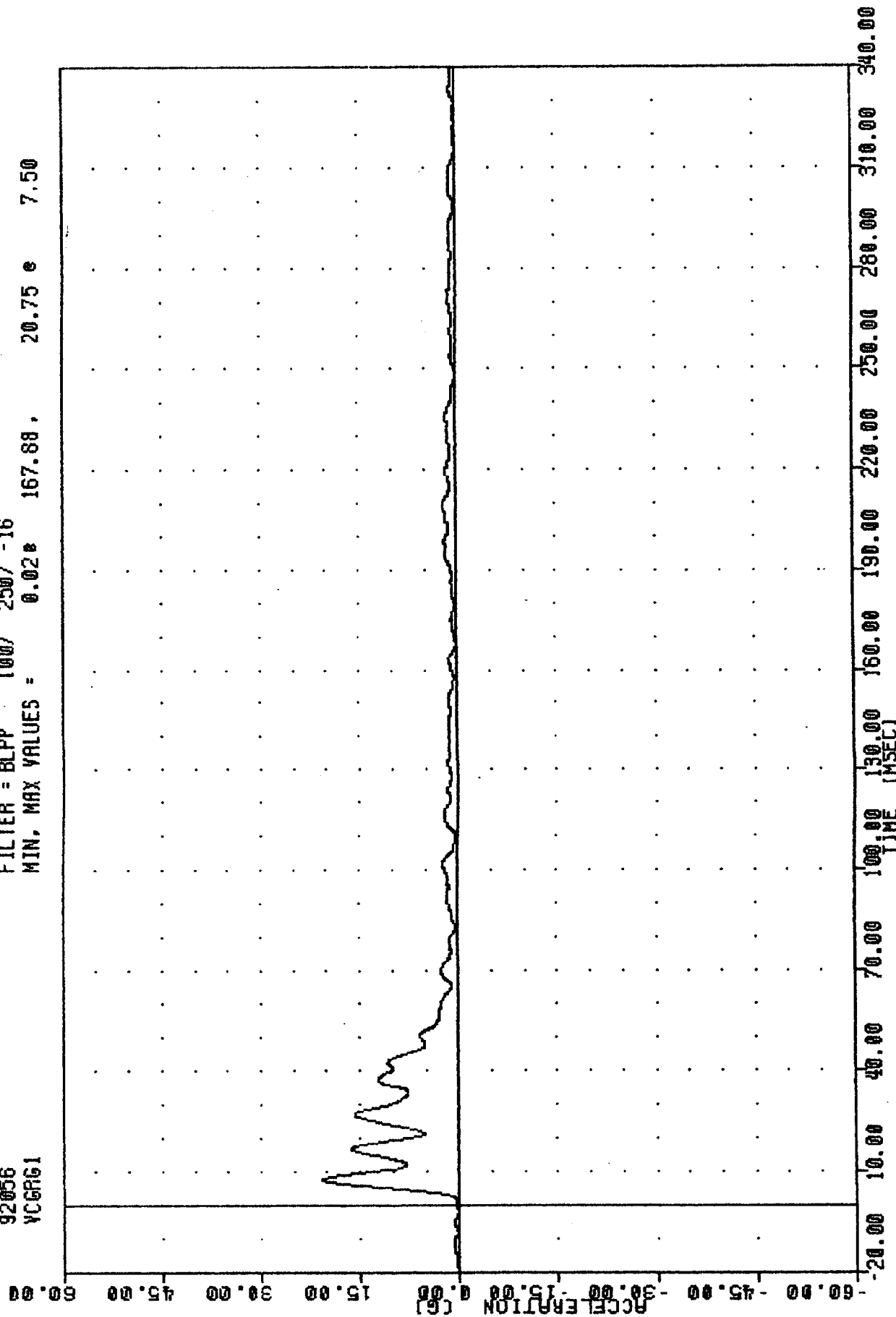


B-10

MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #1
 LEFT SILL AT LONGITUDINAL CG Y-AXIS ACCELERATION

TRC , 920225-1
 CRASH III DAMAGE ALGORITHM
 92056
 VCGRG1

FILTER = BLPP 100/ 250/ -16
 MIN. MAX VALUES = 0.028 167.88, 20.75 e 7.50

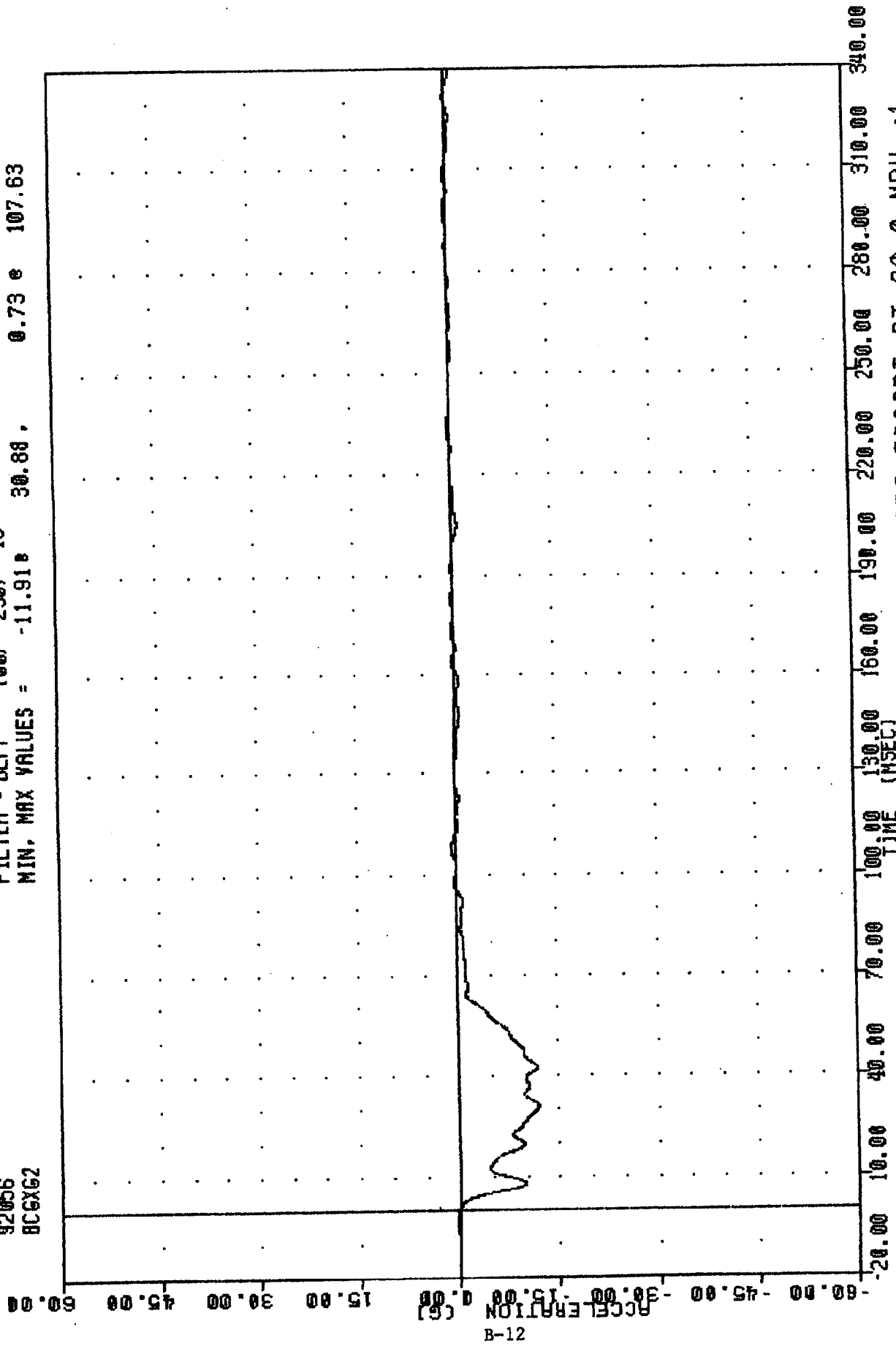


B-11

MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #1
 LEFT SILL AT LONGITUDINAL CG RESULTANT ACCELERATION

TRC , 920225-1
 CRASH III DAMAGE ALGORITHM
 92056
 BCXG2

FILTER = BLPP 100/ 250/ -16
 MIN, MAX VALUES = -11.91 30.88 0.73 107.63

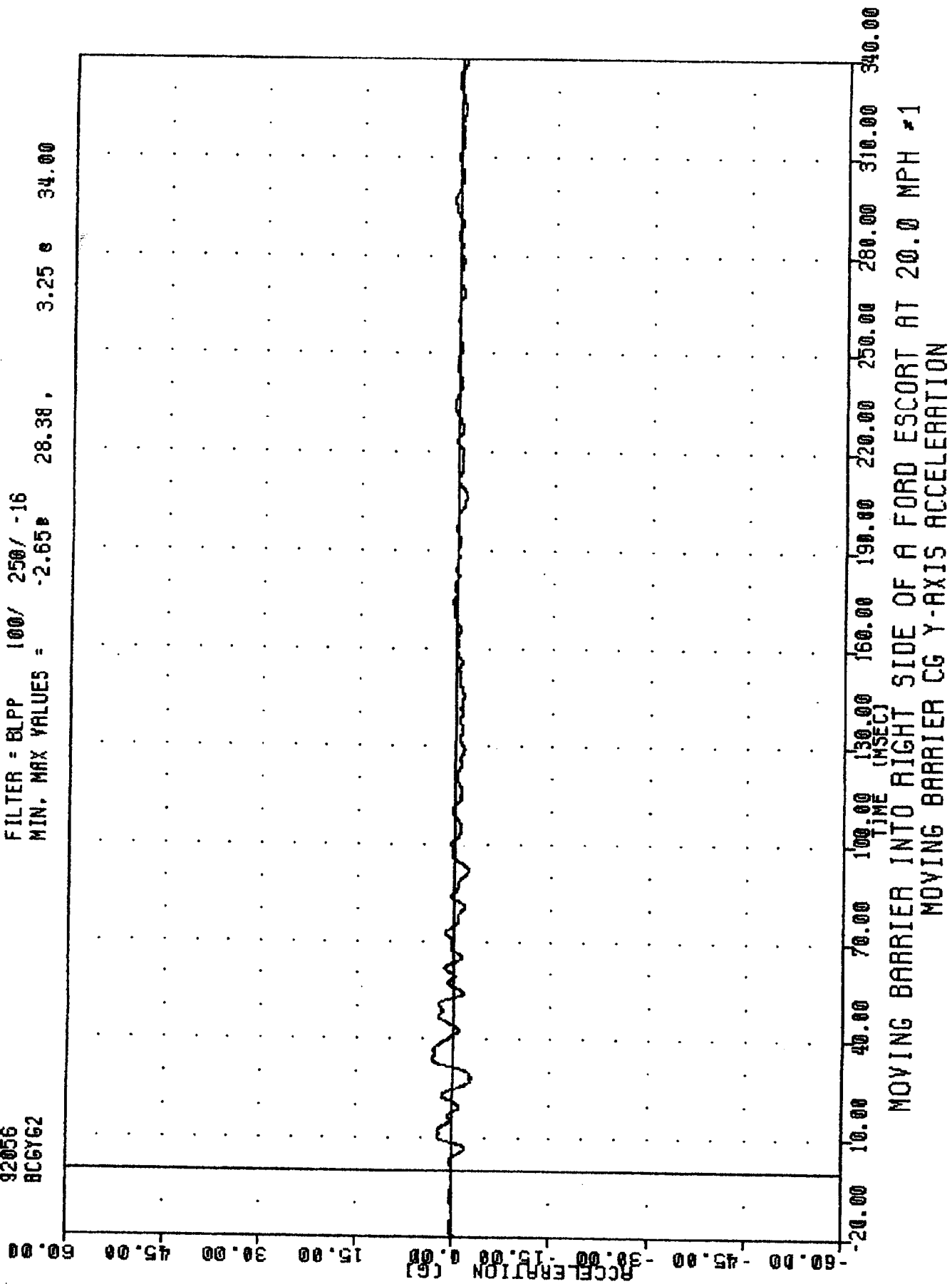


B-12

MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #1
 MOVING BARRIER CG X-AXIS ACCELERATION

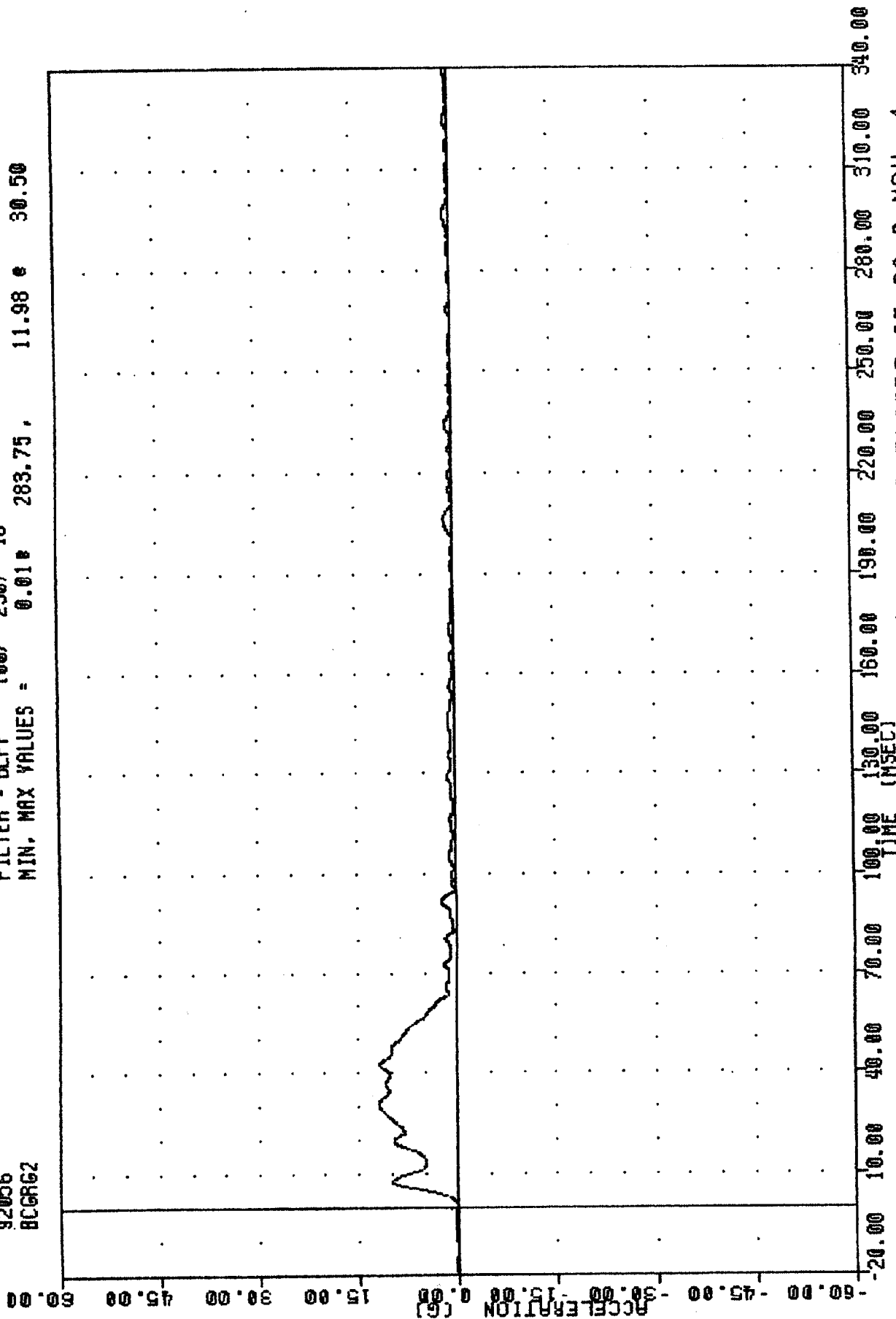
TRC , 920225-1
 CRASH III DAMAGE ALGORITHM
 92056
 BCCY62

FILTER = BLPP 100/ 250/ -16
 MIN. MAX VALUES = -2.65 28.38 3.25 34.00



TRC 920225-1
 CRASH III DAMAGE ALGORITHM
 92056
 BCGRG2

FILTER = BLPP 100/ 250/ -16
 MIN. MAX VALUES = 0.01 283.75, 11.98 30.50

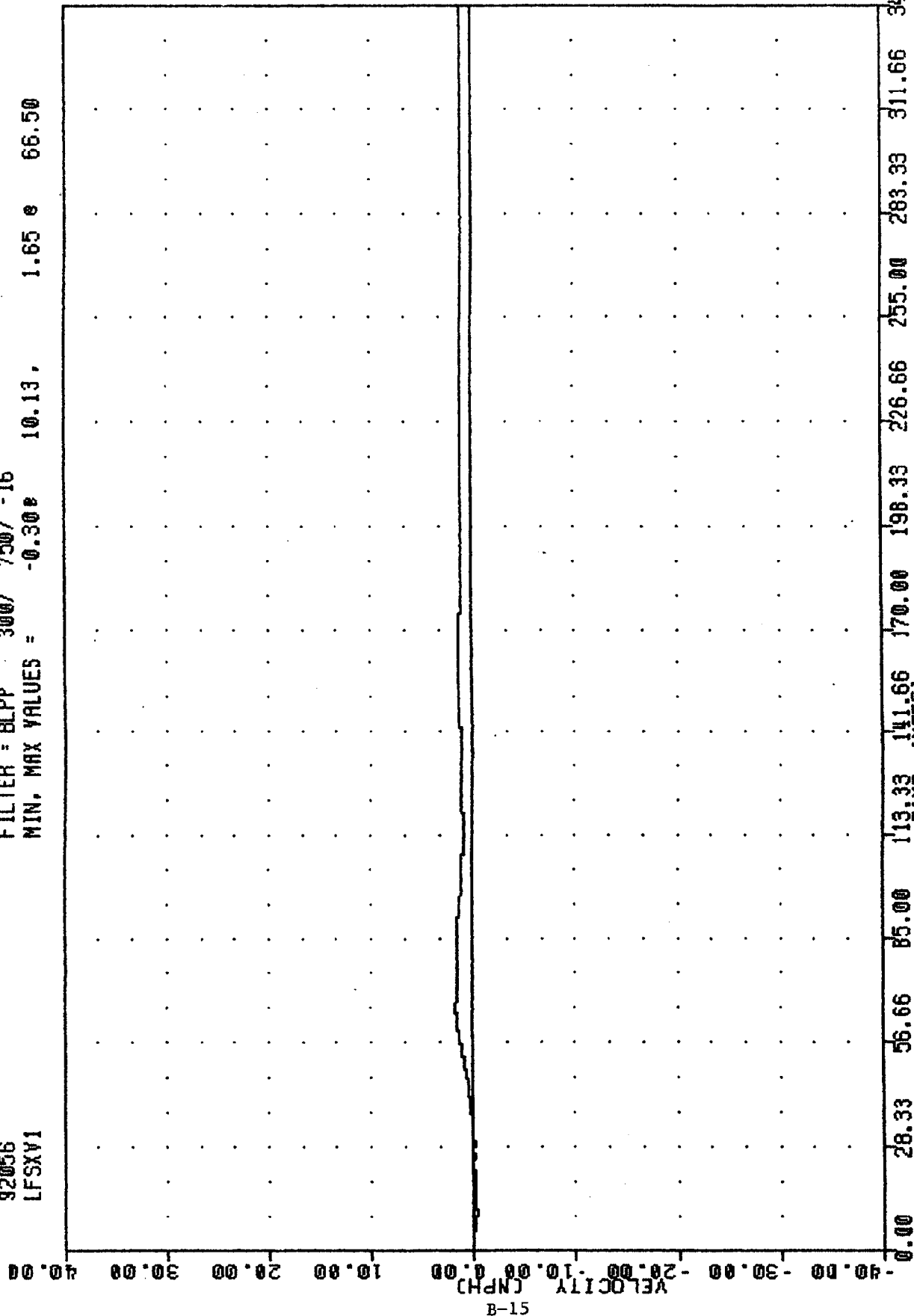


B-14

MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #1
 MOVING BARRIER CG RESULTANT ACCELERATION

TRC
 CRASH III DAMAGE ALGORITHM
 92056
 LFSXV1

FILTER = BLPP 300/ 750/ -16
 MIN, MAX VALUES = -0.30e 10.13, 1.65 e 66.50

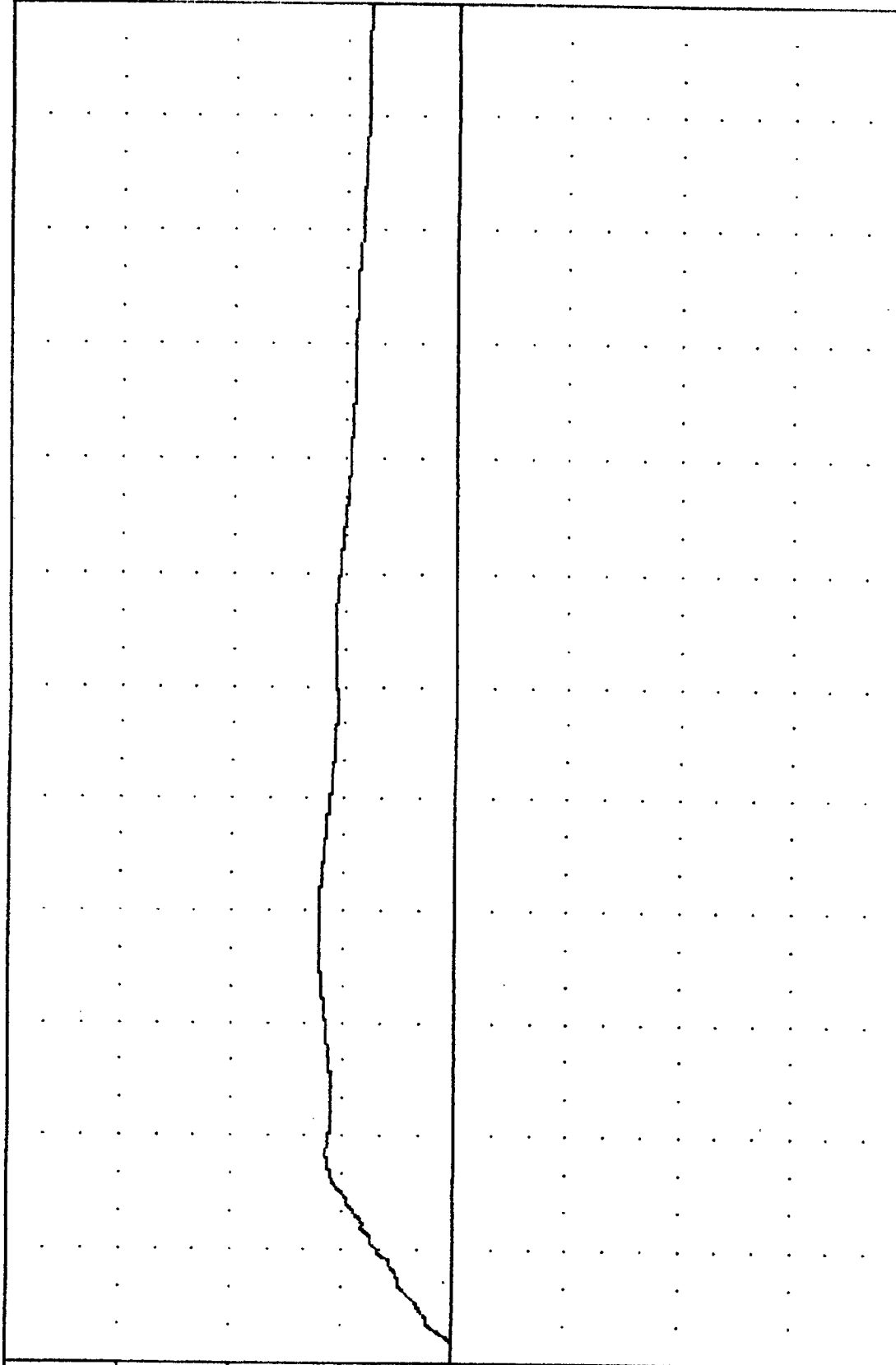


MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #1
 LEFT FRONT DOOR SILL X-AXIS VELOCITY

TRC , 920225-1
 CRASH III DAMAGE ALGORITHM
 92056
 LFSYV1

FILTER = BLPP 300/ 750/ -16
 MIN, MAX VALUES = 0.00 0.00, 12.25 107.38

40.00
 30.00
 20.00
 10.00
 0.00
 -10.00
 -20.00
 -30.00
 -40.00
 VELOCITY (MPH)



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)

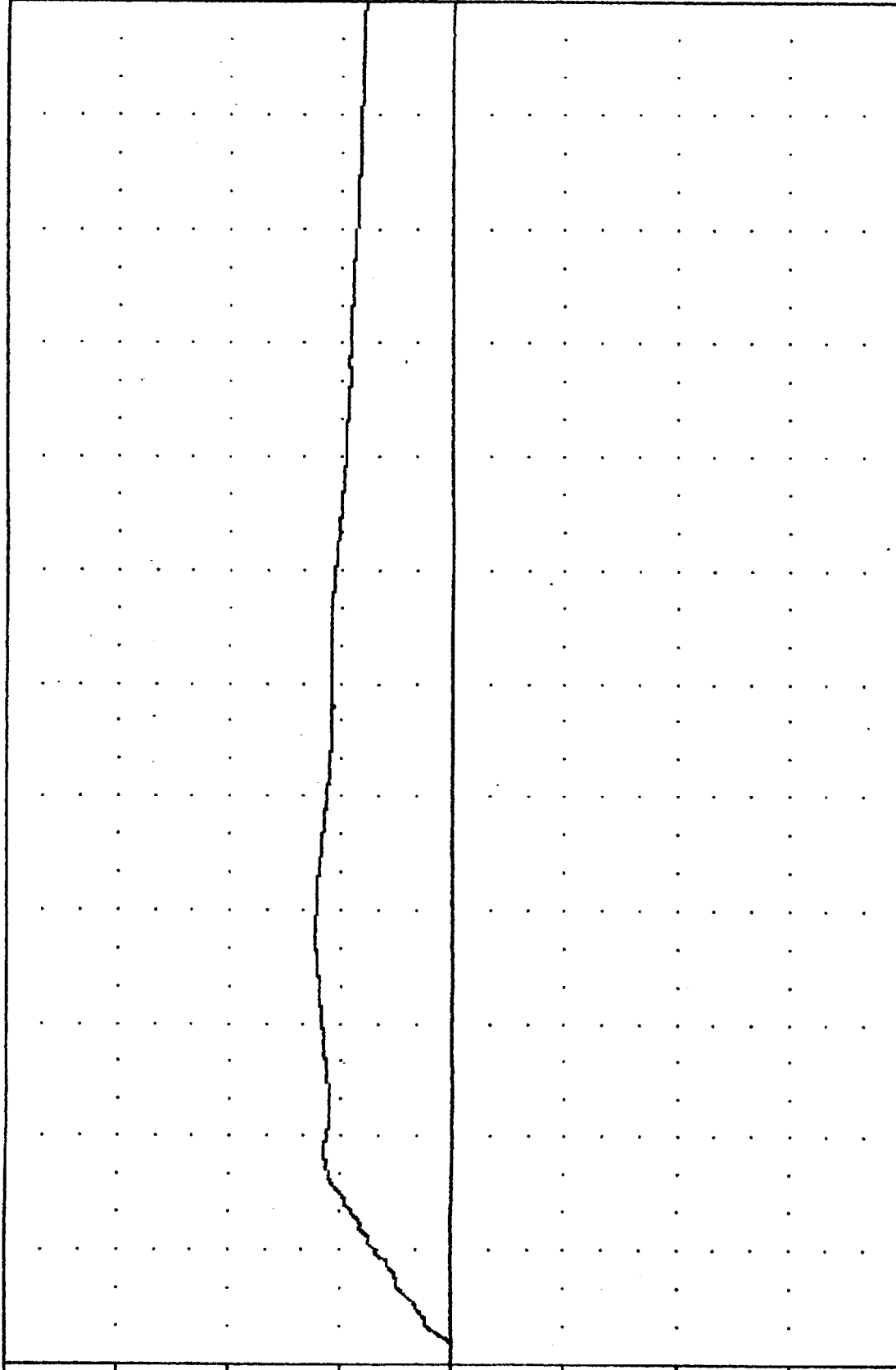
MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH ±1
 LEFT FRONT DOOR SILL Y-AXIS VELOCITY

TRC , 920225-1
 CRASH III DAMAGE ALGORITHM
 92056
 LFSRV1

FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = 0.00 0.00 12.29 e 107.25

40.00
 30.00
 20.00
 10.00
 0.00
 -10.00
 -20.00
 -30.00
 -40.00
 VELOCITY (MPH)

B-17

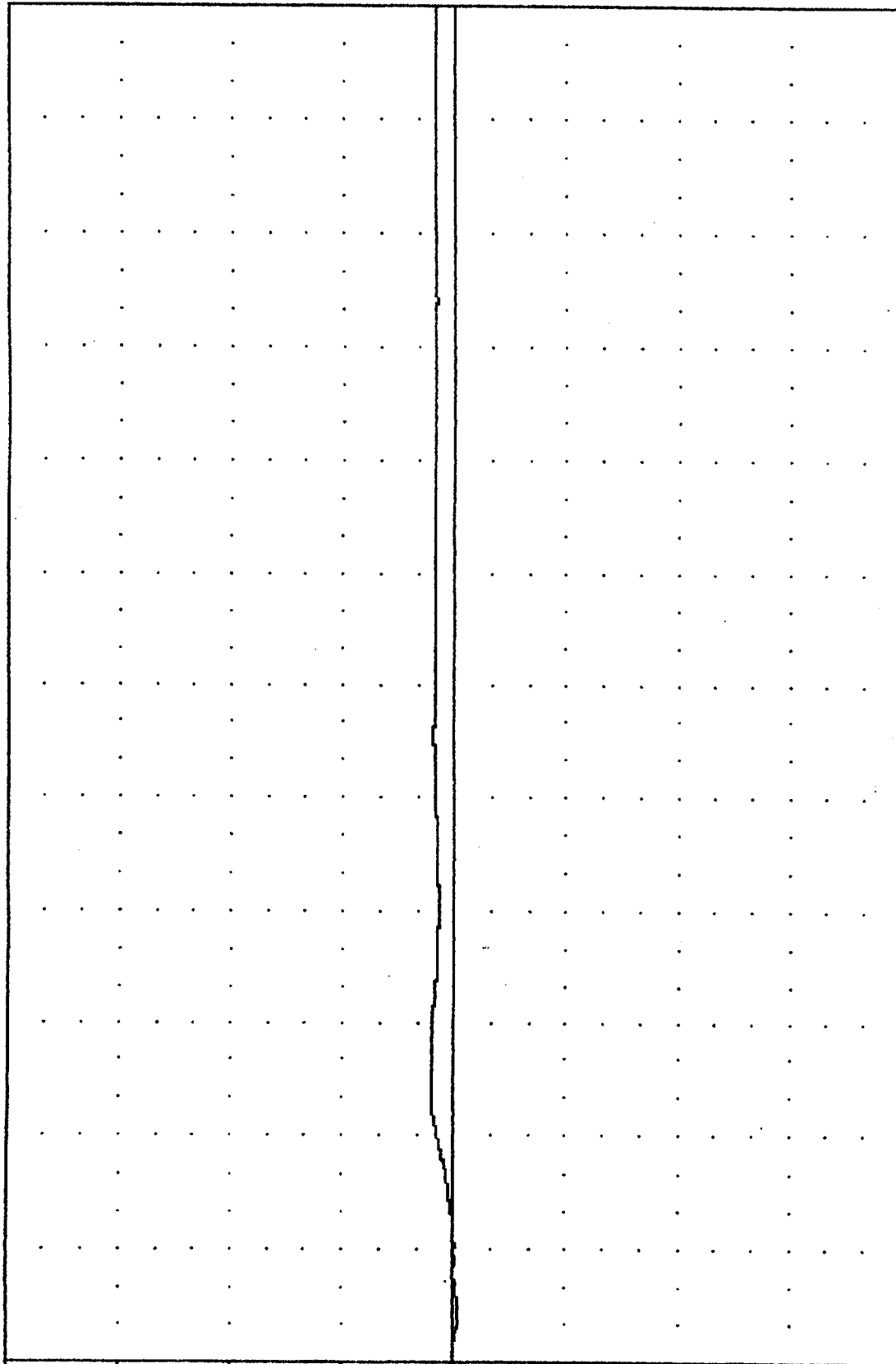


0.00 28.33 56.66 85.00 113.33 141.66 170.00 198.33 226.66 255.00 283.33 311.66 340.00
 TIME (MSEC)
 MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #1
 LEFT FRONT DOOR SILL RESULTANT VELOCITY

TRC , 920225-1
 CRASH III DAMAGE ALGORITHM
 92056
 LRSXV1

FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = -0.38 2.02 82.63

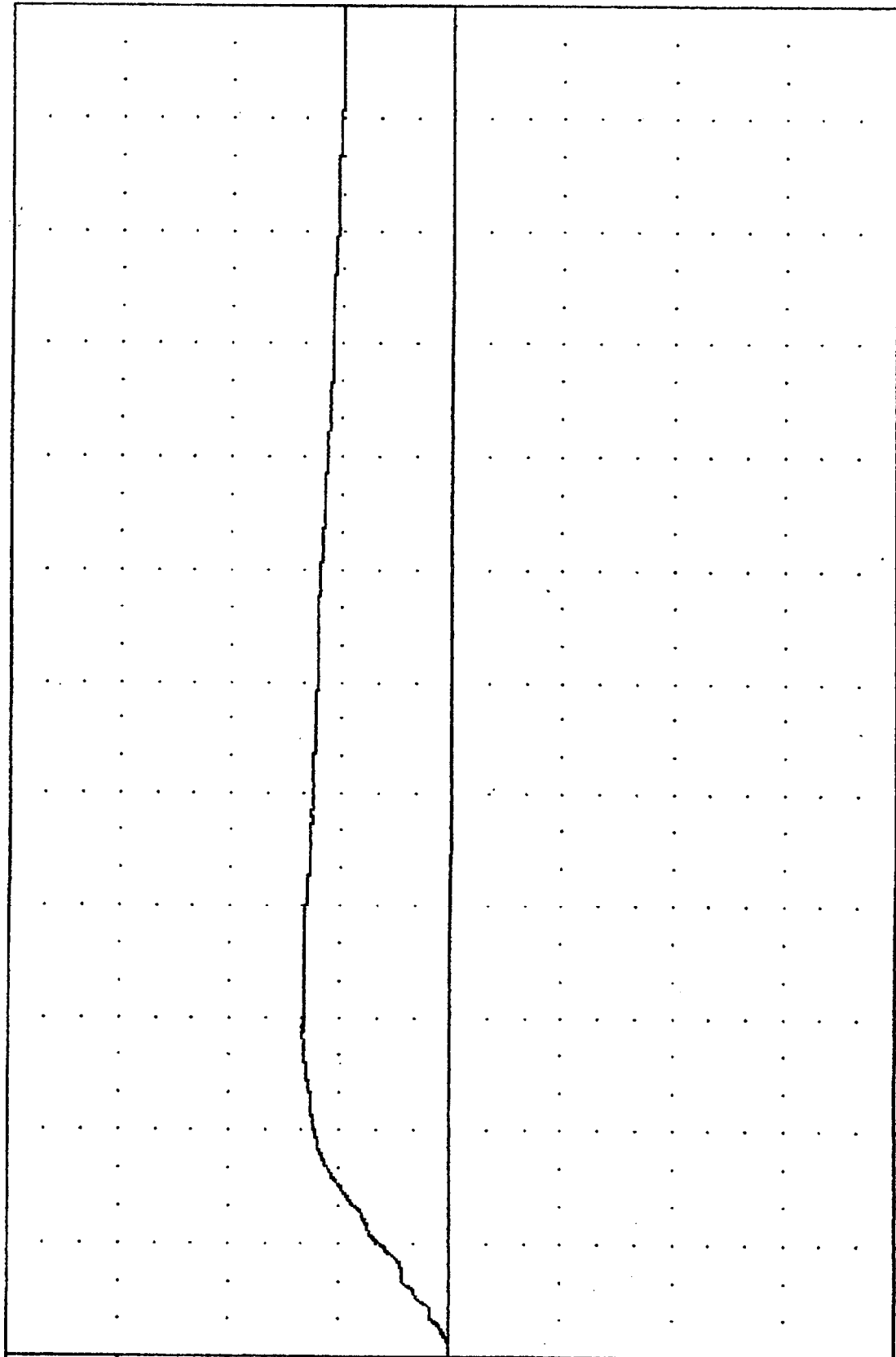
VELOCITY (MPH)



TRC , 920225-1
 CRASH III DAMAGE ALGORITHM
 92056
 LRSYV1

FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = 0.00 1.63 13.32 80.25

VELOCITY (MPH)

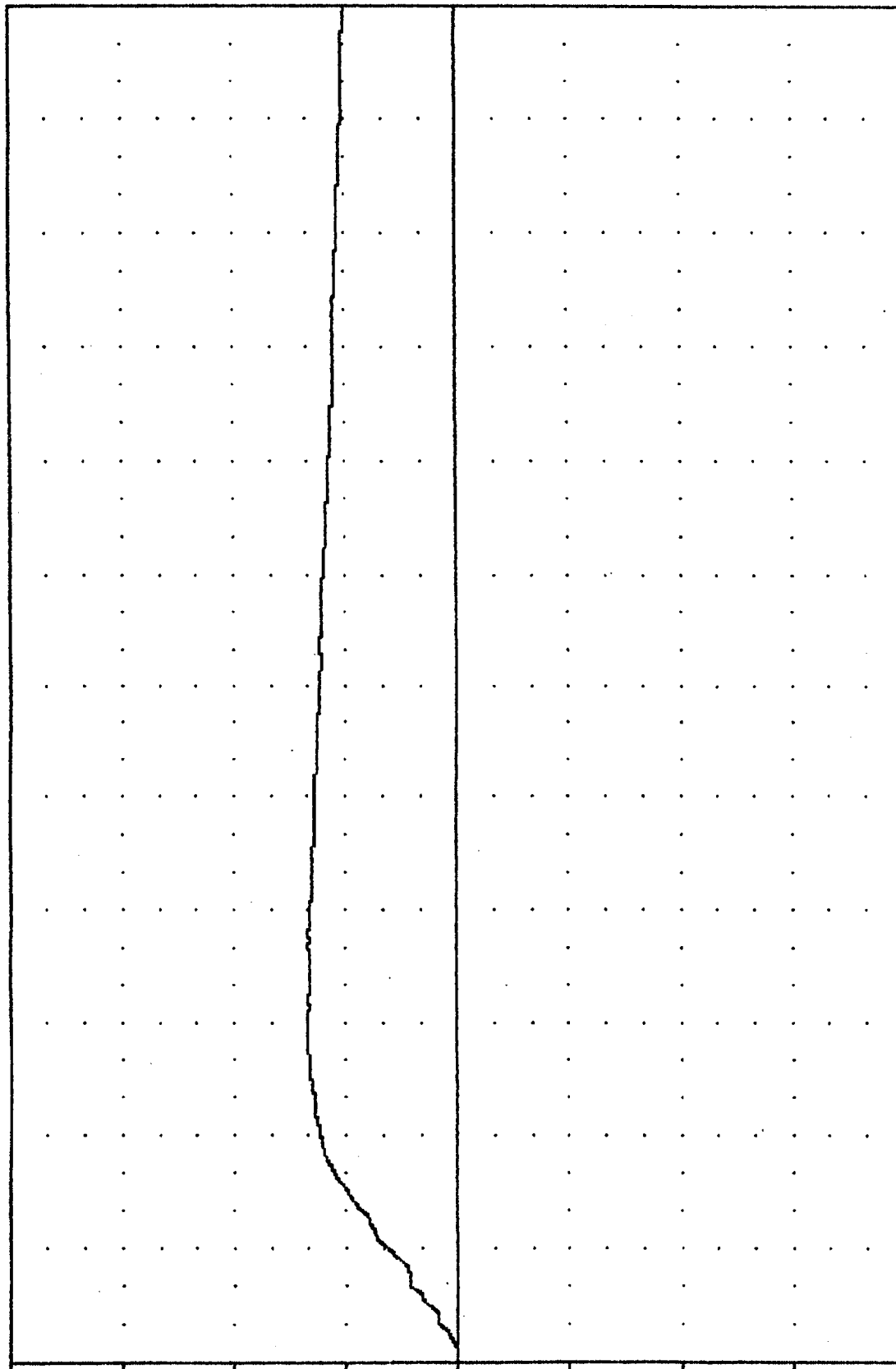


MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #1
 LEFT REAR DOOR SILL Y-AXIS VELOCITY

TRC , 920225-1
 CRASH III DAMAGE ALGORITHM
 92056
 LRSRV1

FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = 0.00 0.00 13.47 80.38

VELOCITY (MPH)



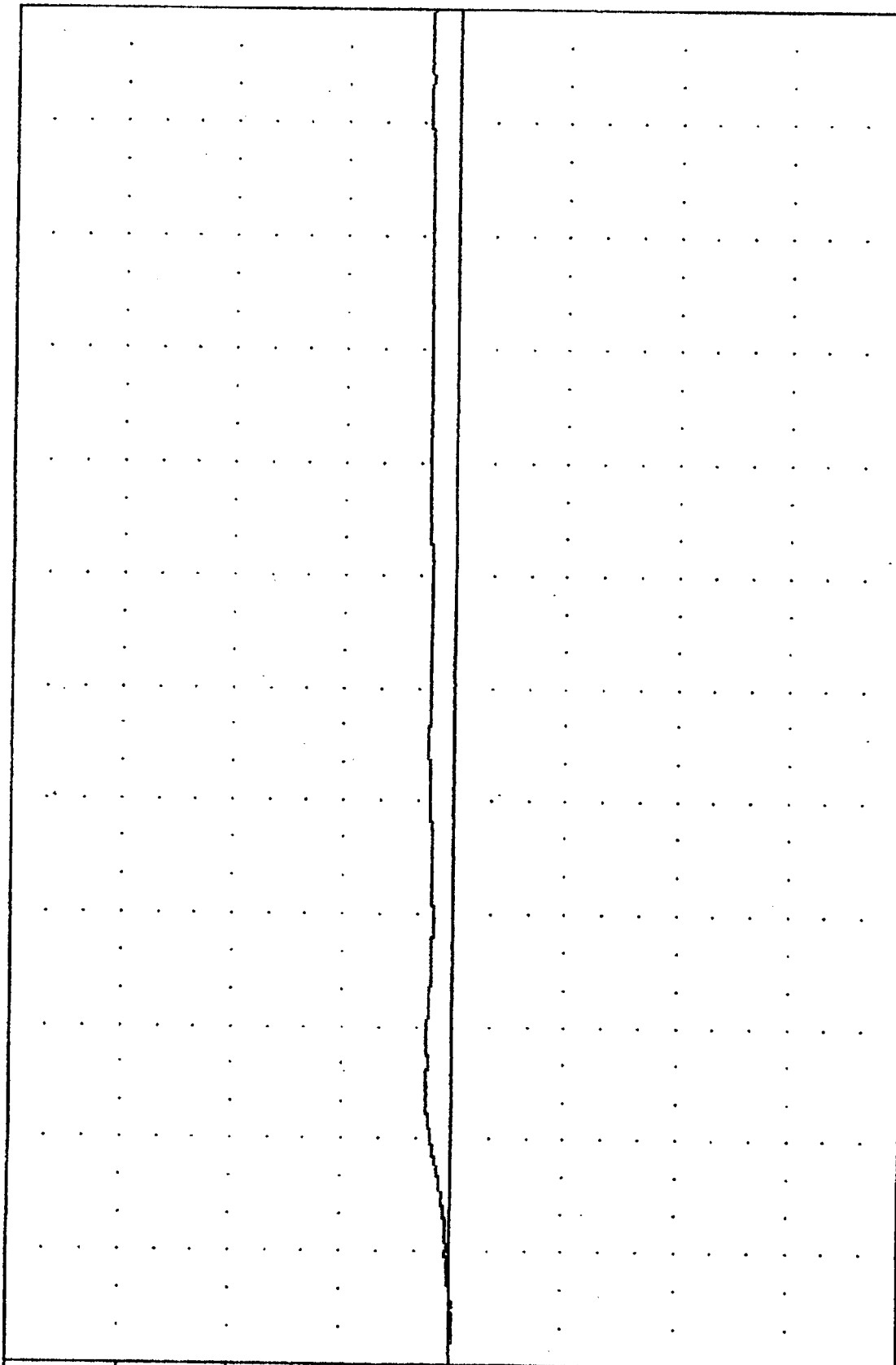
0.00 28.33 56.66 85.00 113.33 141.66 170.00 198.33 226.66 255.00 283.33 311.66 340.00

MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH ±1
 LEFT REAR DOOR SILL RESULTANT VELOCITY

TRC
 CRASH III DAMAGE ALGORITHM
 92056
 YCGXV1

FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = -0.16 9.75, 2.53 330.25

VELOCITY (MPH)



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)

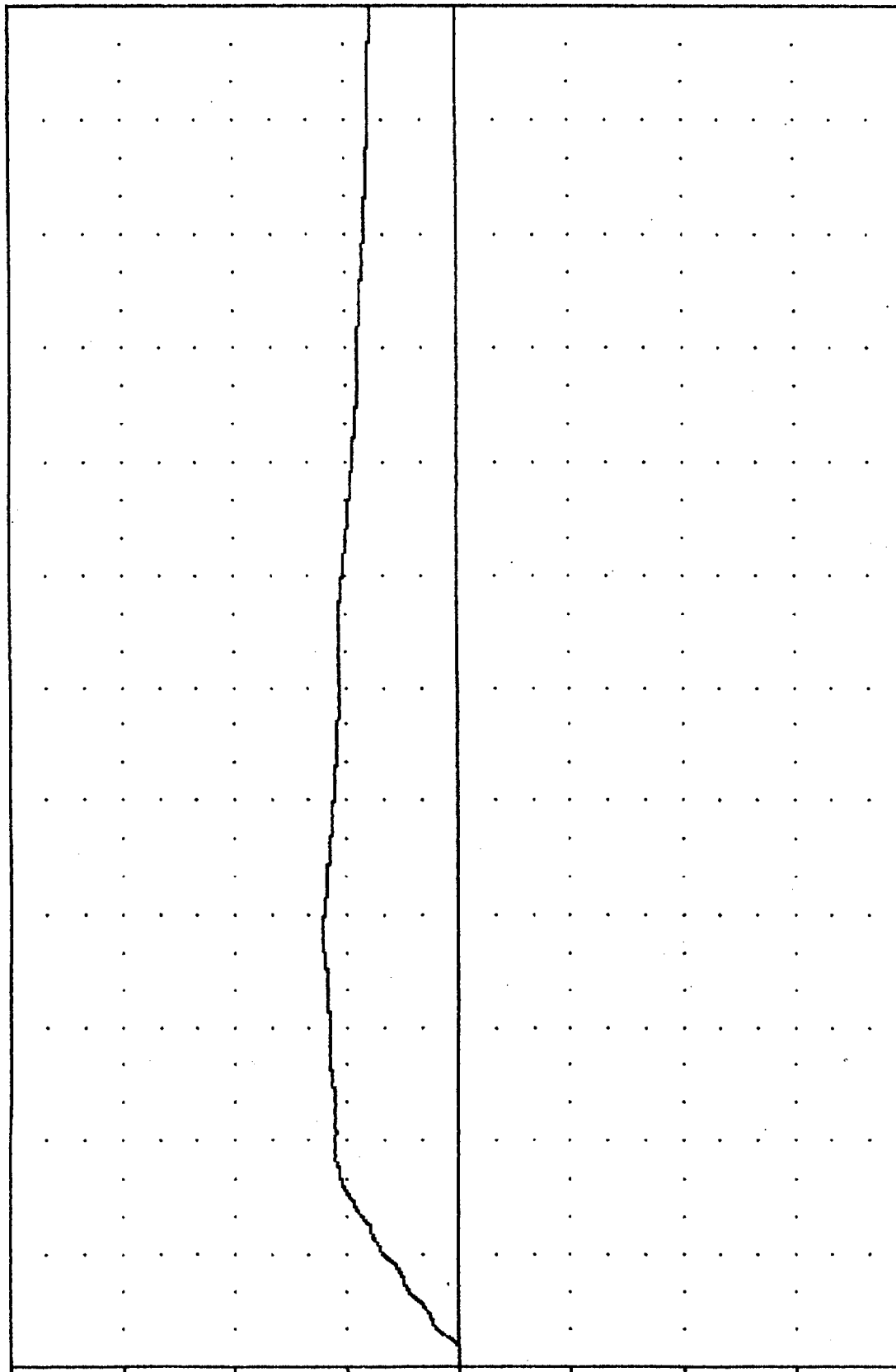
MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #1
 LEFT SILL AT LONGITUDINAL CG X-AXIS VELOCITY

TRC
 CRASH III DAMAGE ALGORITHM
 92056
 YCGYV1

, 920225-1

FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = -0.01 1.63, 12.09 108.63

VELOCITY (MPH)



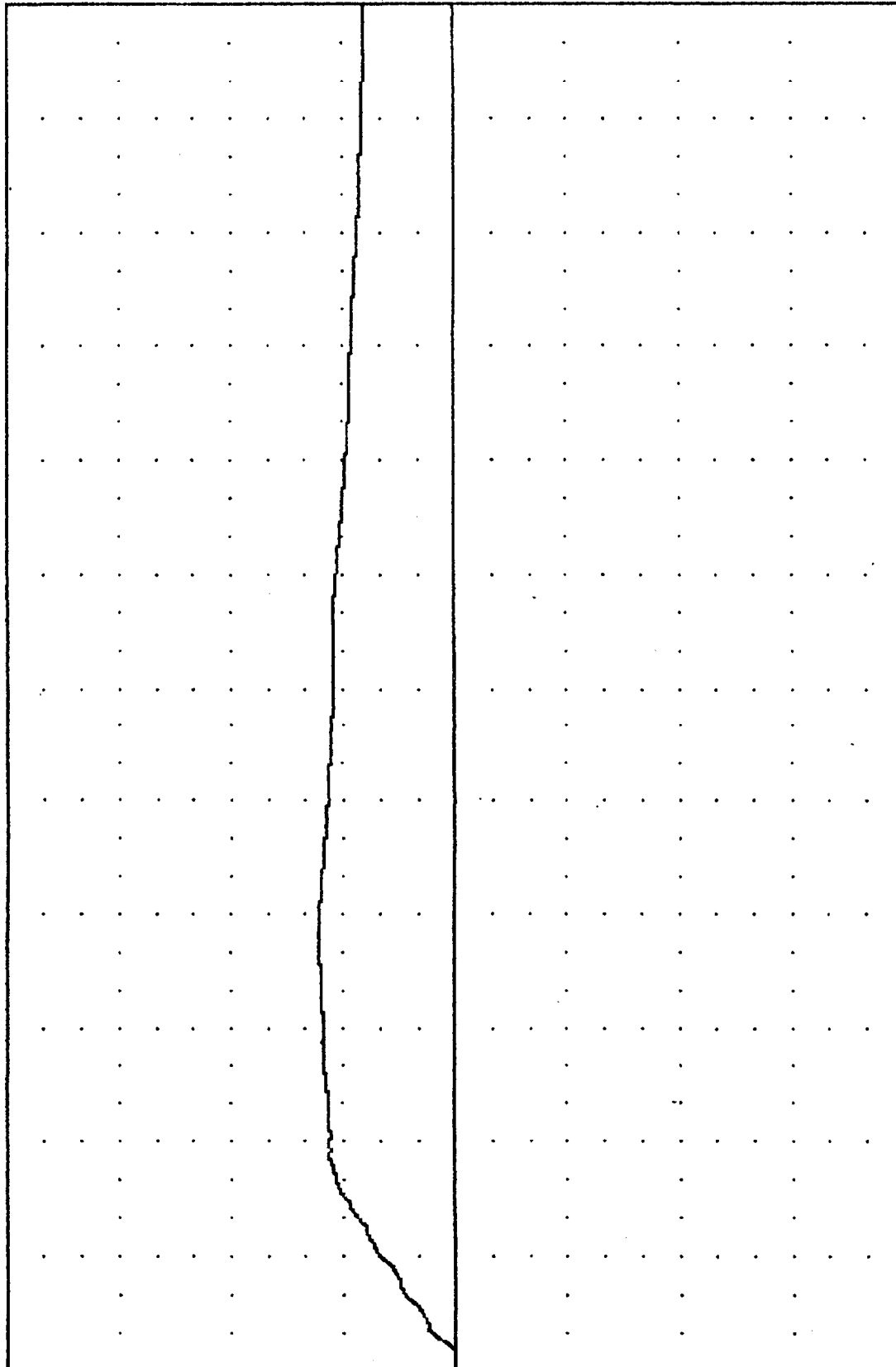
0.00 28.33 56.66 85.00 113.33 141.66 170.00 198.33 226.66 255.00 283.33 311.66 340.00

MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #1
 LEFT SILL AT LONGITUDINAL CG Y-AXIS VELOCITY

TRC , 920225-1
 CRASH III DAMAGE ALGORITHM
 92056
 VCGRY1

FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = 0.000 0.00 12.23 e 108.63

VELOCITY (MPH)



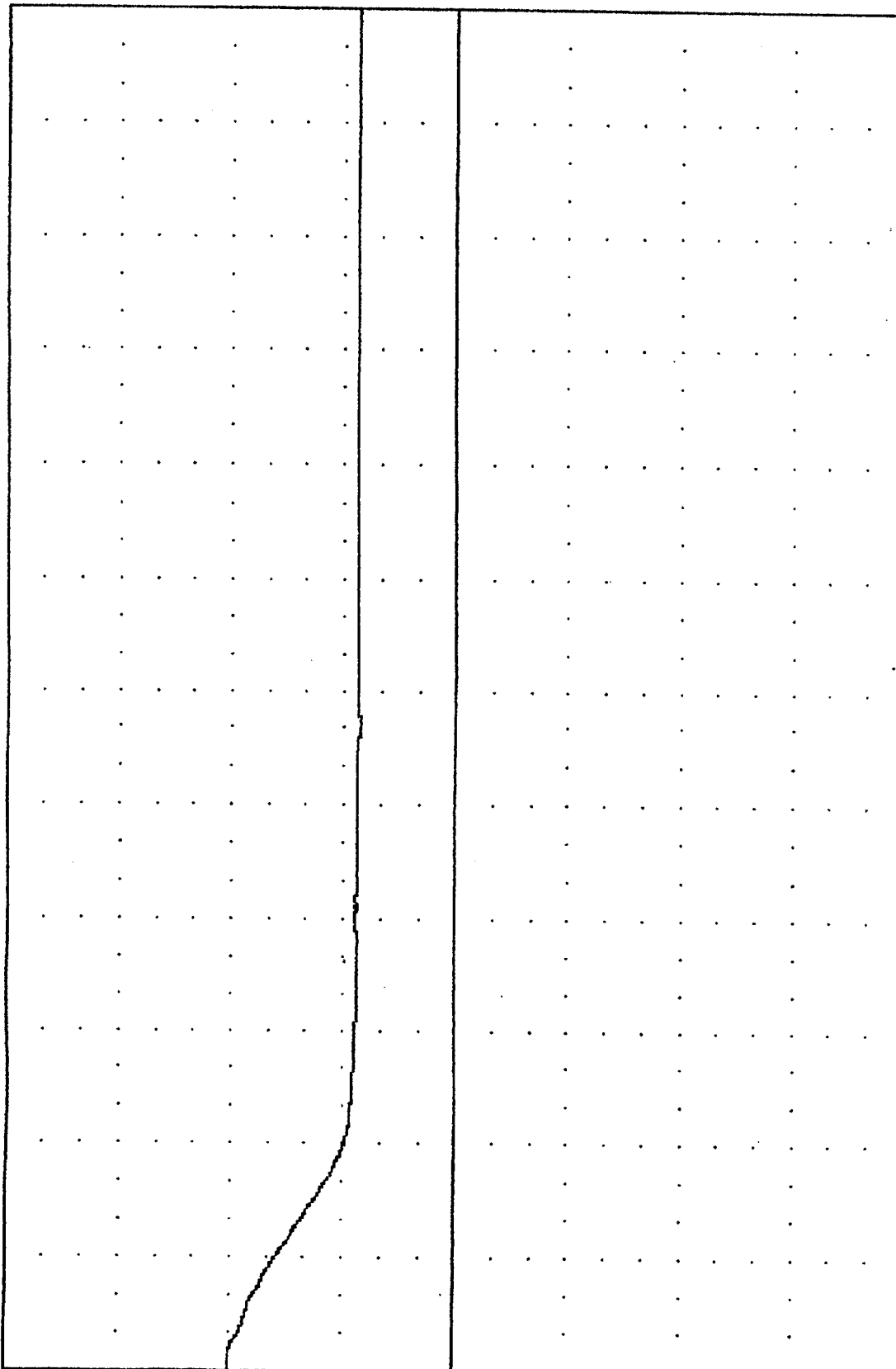
0.00 28.33 56.66 85.00 113.33 141.66 170.00 198.33 226.66 255.00 283.33 311.66 340.00

MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #1
 LEFT SILL AT LONGITUDINAL CG RESULTANT VELOCITY

TRC . 920225-1
 CRASH III DAMAGE ALGORITHM
 92056
 BCGXV2

FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = 8.61 161.00, 20.00 0.63

40.00
 30.00
 20.00
 10.00
 0.00
 -10.00
 -20.00
 -30.00
 -40.00
 VELOCITY (MPH)



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)

MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH $\approx$ 1
 MOVING BARRIER CG X-AXIS VELOCITY

TAC , 920225-1
 CRASH III DAMAGE ALGORITHM
 92056
 BCGYV2

FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = -0.418 231.63. 0.90 e 74.25

40.00

30.00

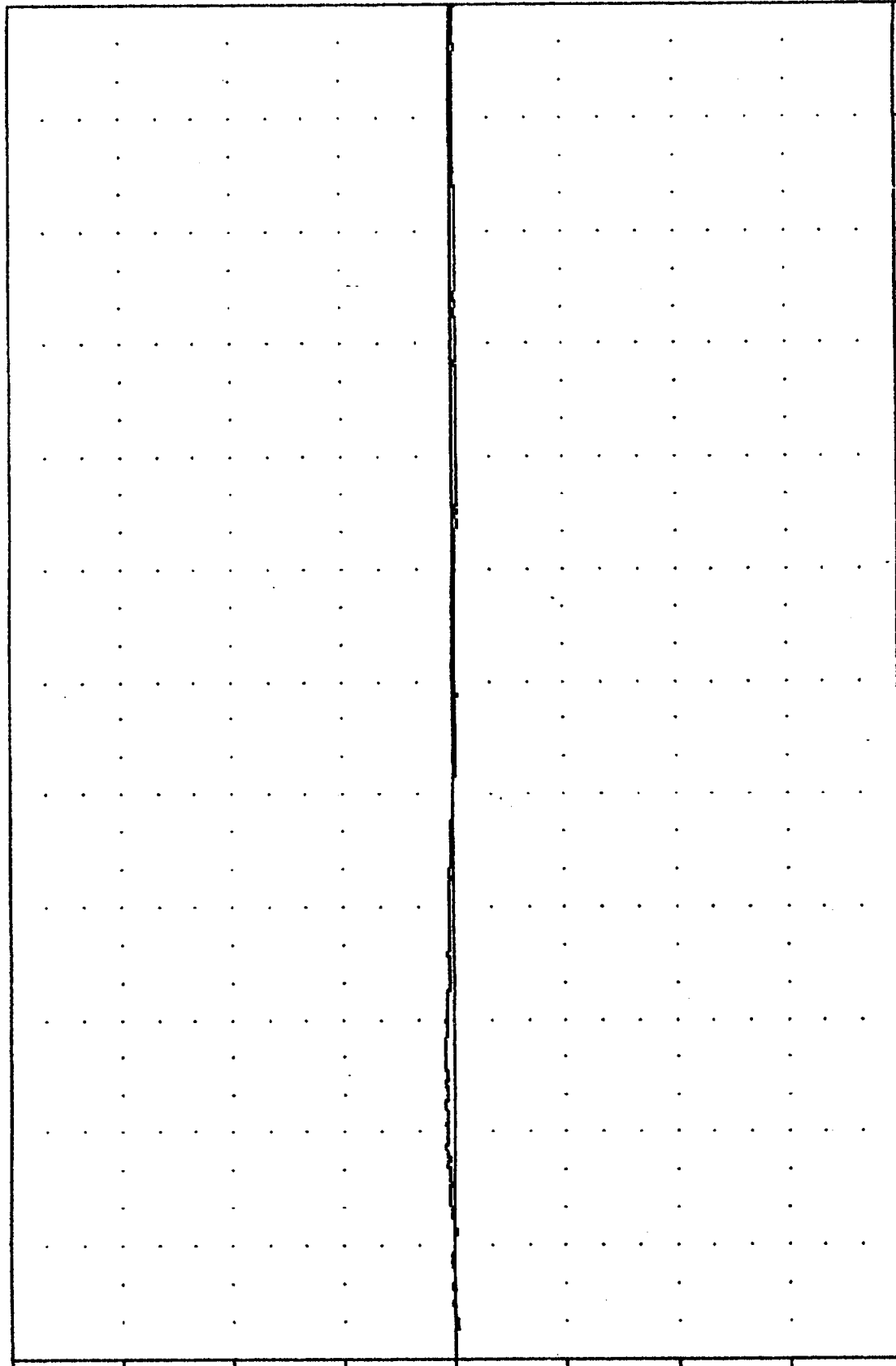
20.00

10.00

0.00

VELOCITY (MPH)

B-25

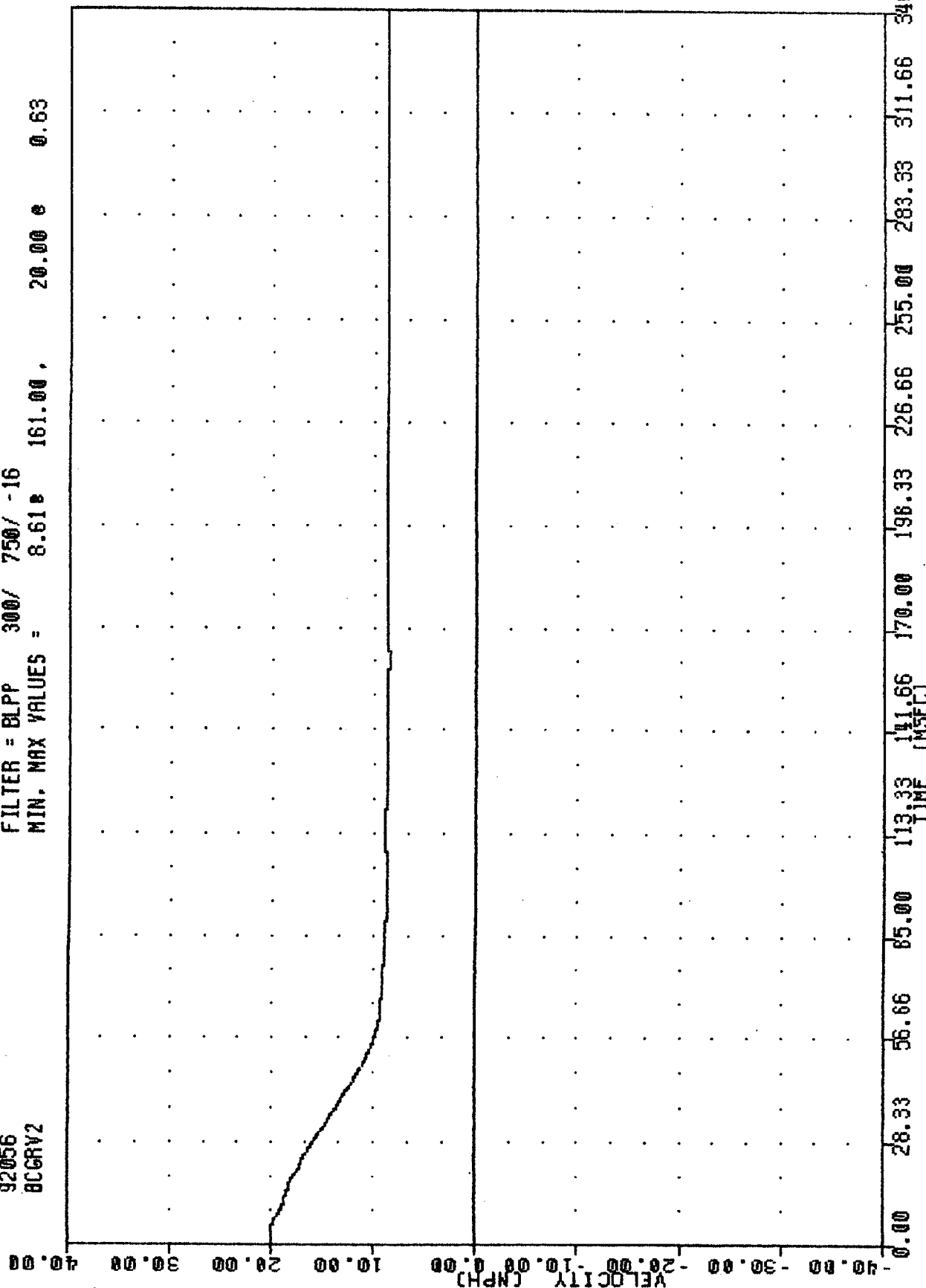


0.00 28.33 56.66 85.00 113.33 141.66 170.00 198.33 226.66 255.00 283.33 311.66 340.00

MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #1
 MOVING BARRIER CG Y-AXIS VELOCITY

TRC
 CRASH III DAMAGE ALGORITHM
 92056
 BCCRY2

FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = 8.61e 161.00, 20.00 e 0.63



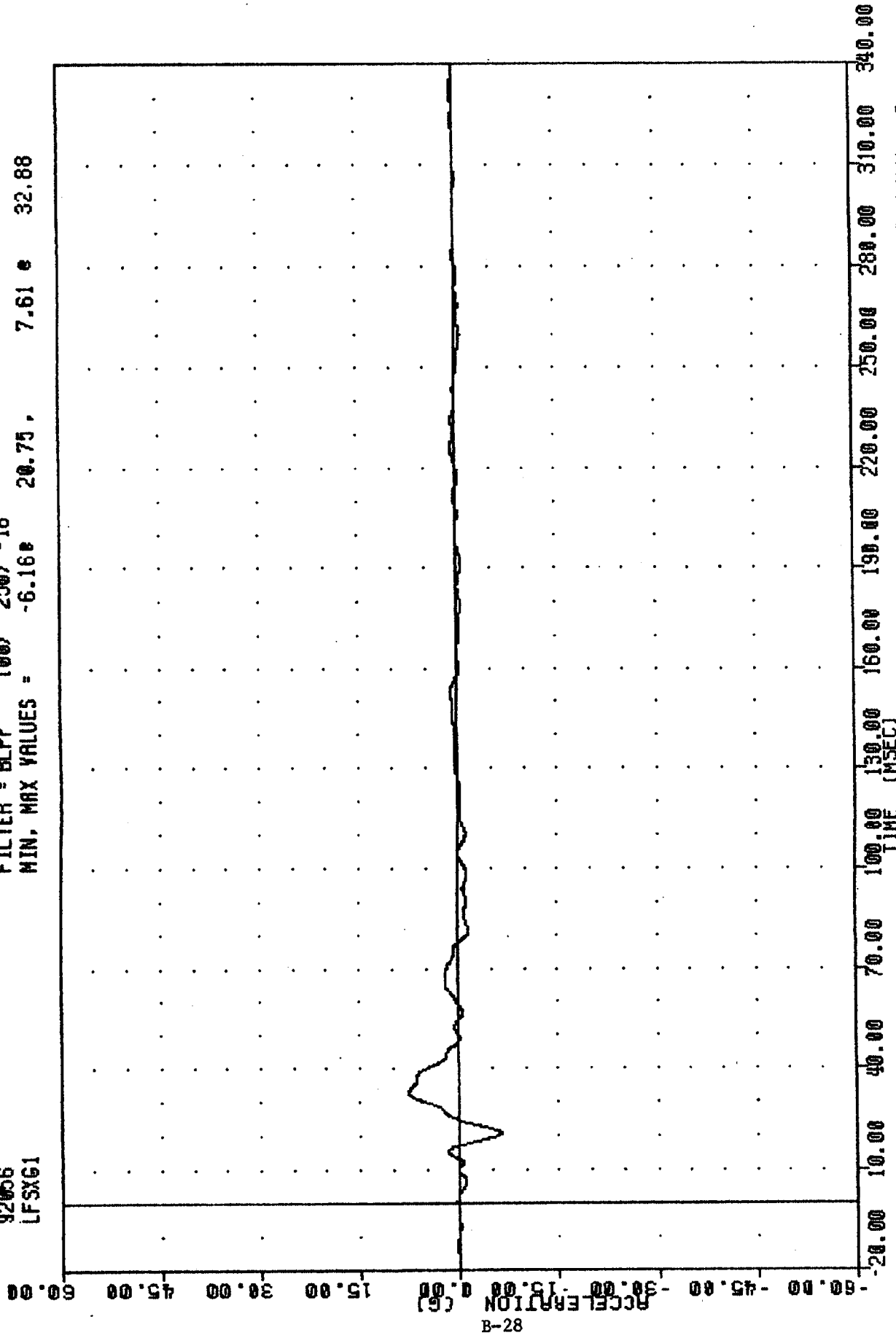
MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH *1
 MOVING BARRIER CG RESULTANT VELOCITY

DATA PLOTS

TEST NO. 920225-2

TRC , 920225-2
 CRASH III DAMAGE ALGORITHM
 92056
 LFSXG1

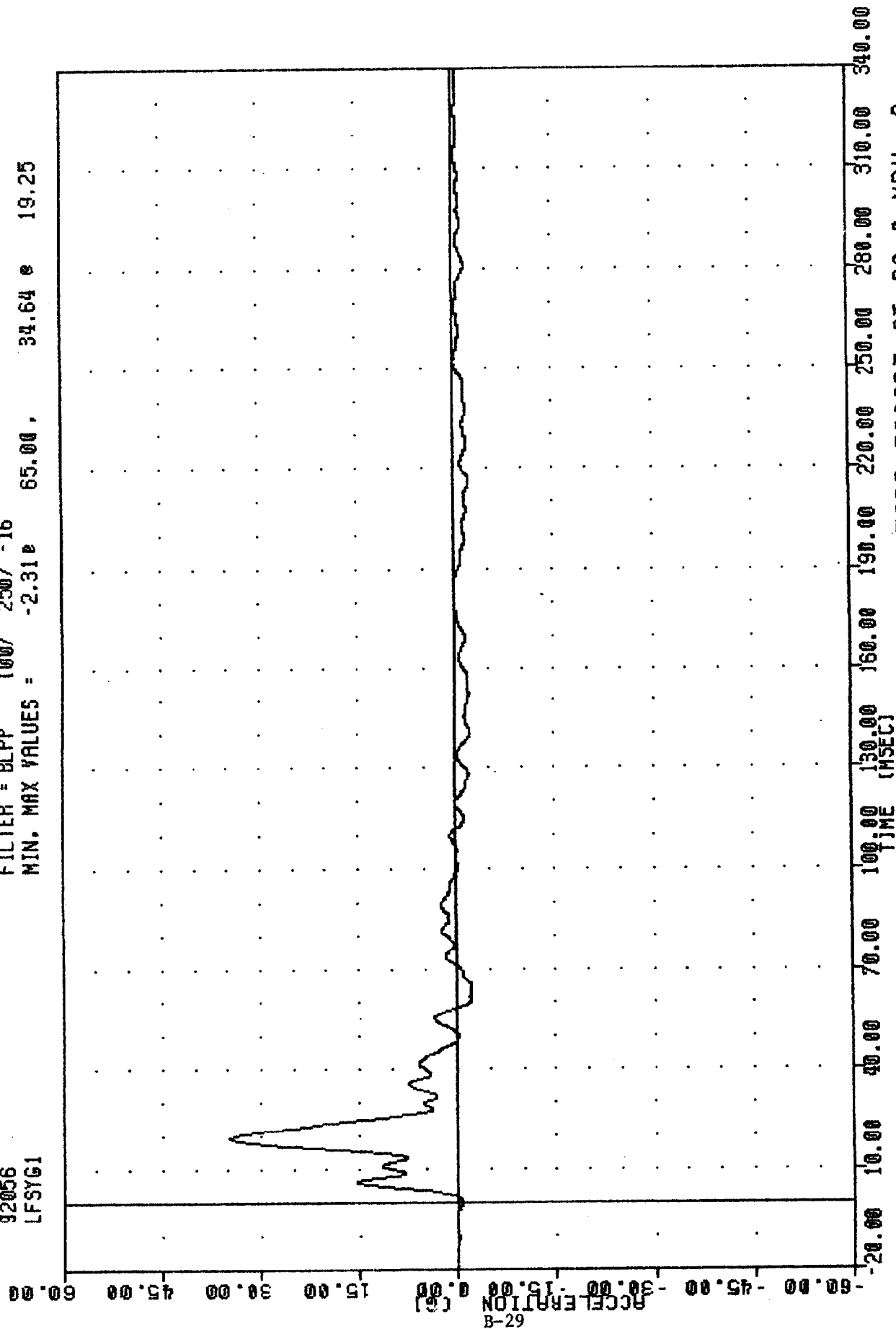
FILTER = BLPP 100/ 250/ -16
 MIN, MAX VALUES = -6.16e 20.75, 7.61 e 32.88



MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #2
 LEFT FRONT DOOR SILL X-AXIS ACCELERATION

TRC
 CRASH III DAMAGE ALGORITHM
 92056
 LFSYG1

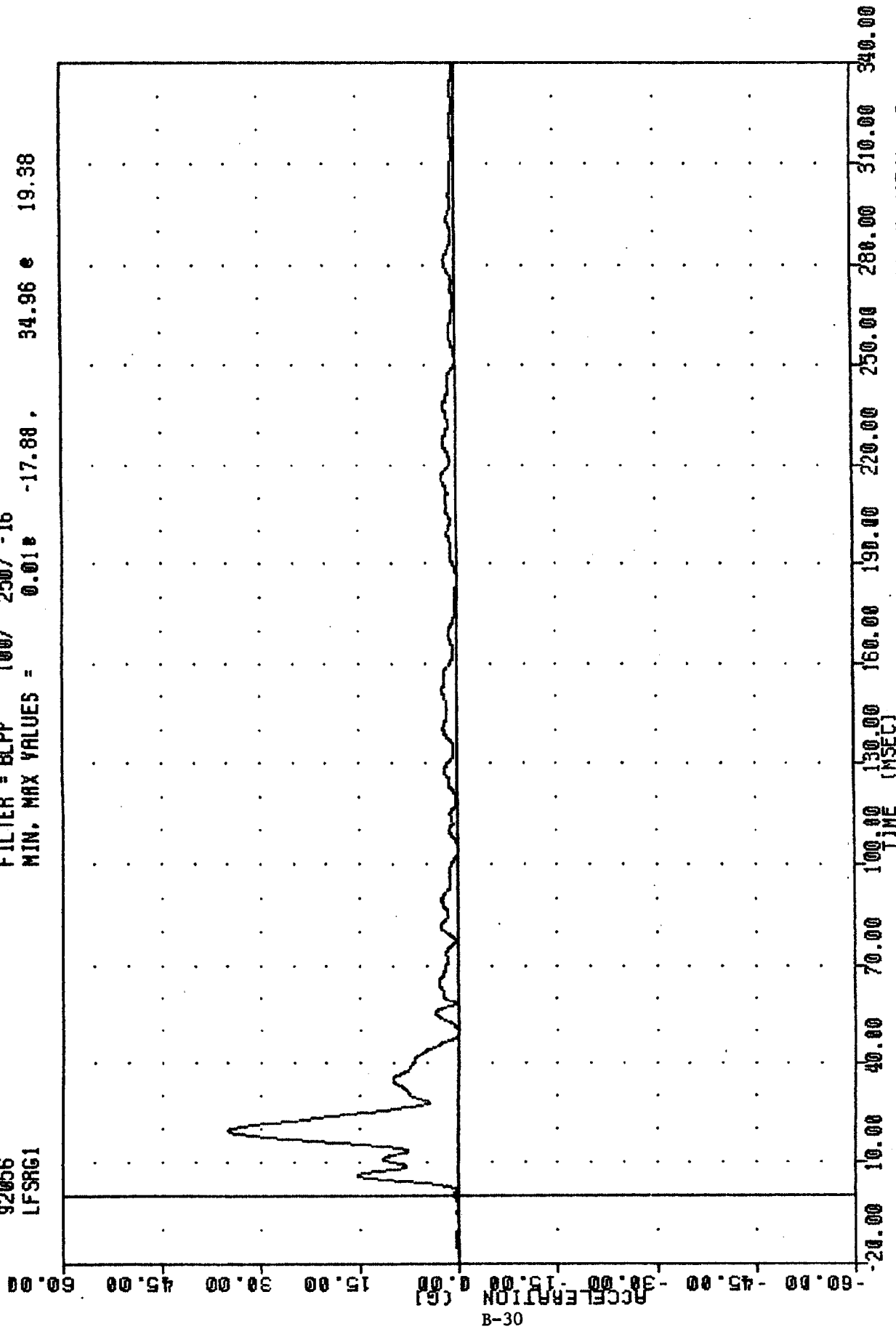
FILTER = BLPP 100/ 250/ -16
 MIN. MAX VALUES = -2.31e 65.00, 34.64 e 19.25



MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #2
 LEFT FRONT DOOR SILL Y-AXIS ACCELERATION

TRC , 920225-2
 CRASH III DAMAGE ALGORITHM
 92056
 LFSRG1

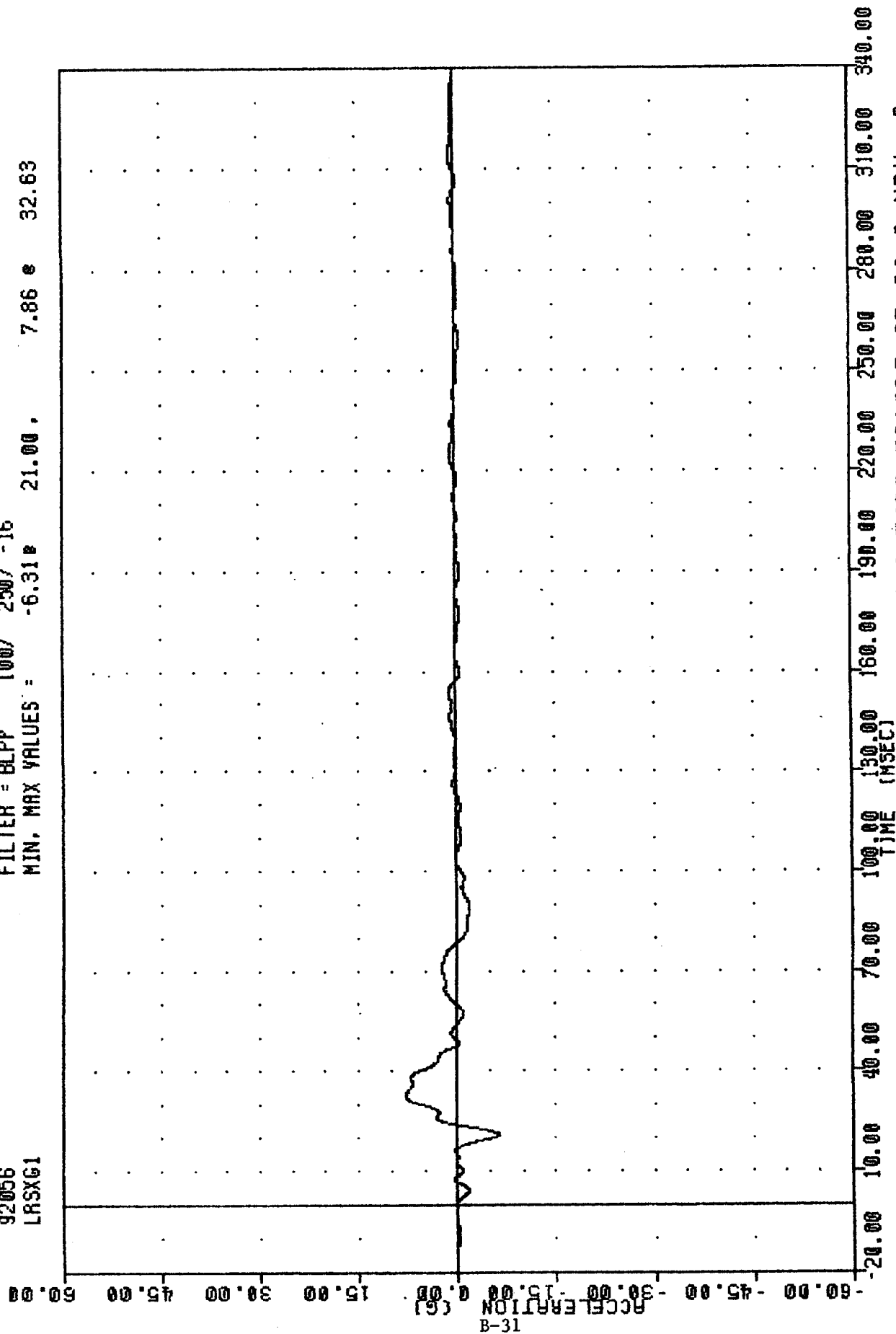
FILTER = BLPP 100/ 250/ -16
 MIN. MAX VALUES = 0.018 -17.88, 34.96 e 19.38



MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #2
 LEFT FRONT DOOR SILL RESULTANT ACCELERATION

TRC , 920225-2
 CRASH III DAMAGE ALGORITHM
 92056
 LRSXG1

FILTER = BLPP 100/ 250/ -16
 MIN, MAX VALUES = -6.31# 21.00, 7.86# 32.63

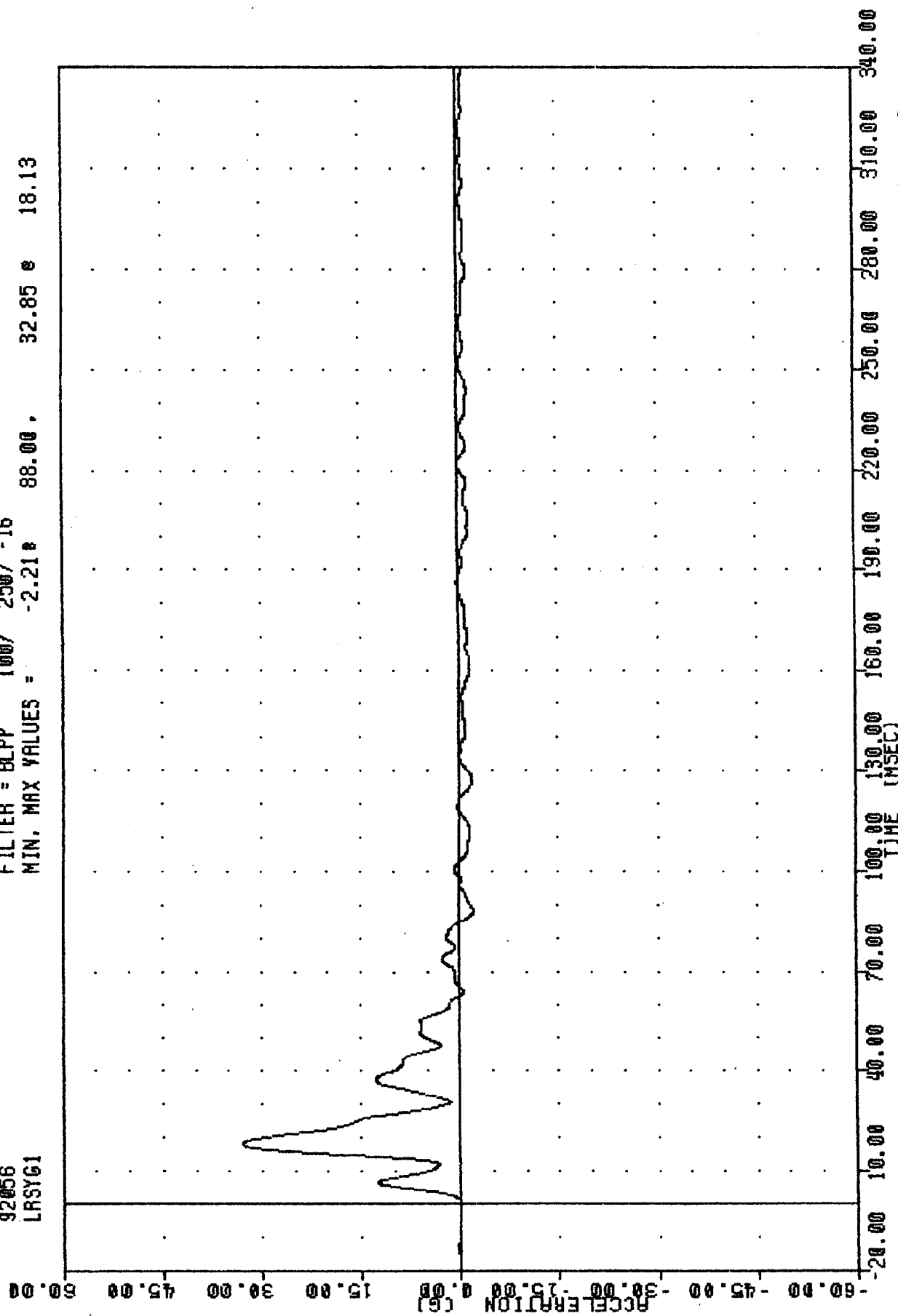


MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH *2
 LEFT REAR DOOR SILL X-AXIS ACCELERATION

TRC
 CRASH III DAMAGE ALGORITHM
 92056
 LRSYG1

, 920225-2

FILTER = BLPP 100/ 250/ -16
 MIN. MAX VALUES = -2.21 88.00 32.85 18.13



MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #2
 LEFT REAR DOOR SILL Y-AXIS ACCELERATION

TRC
 CRASH III DAMAGE ALGORITHM
 92056
 LRSRG1

, 920225-2

FILTER = BLPP 100/ 250/ -16
 MIN. MAX VALUES = 0.03e 0.50, 32.89 e 18.13

60.00

45.00

30.00

15.00

0.00

-15.00

-30.00

-45.00

-60.00

ACCELERATION (G)

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

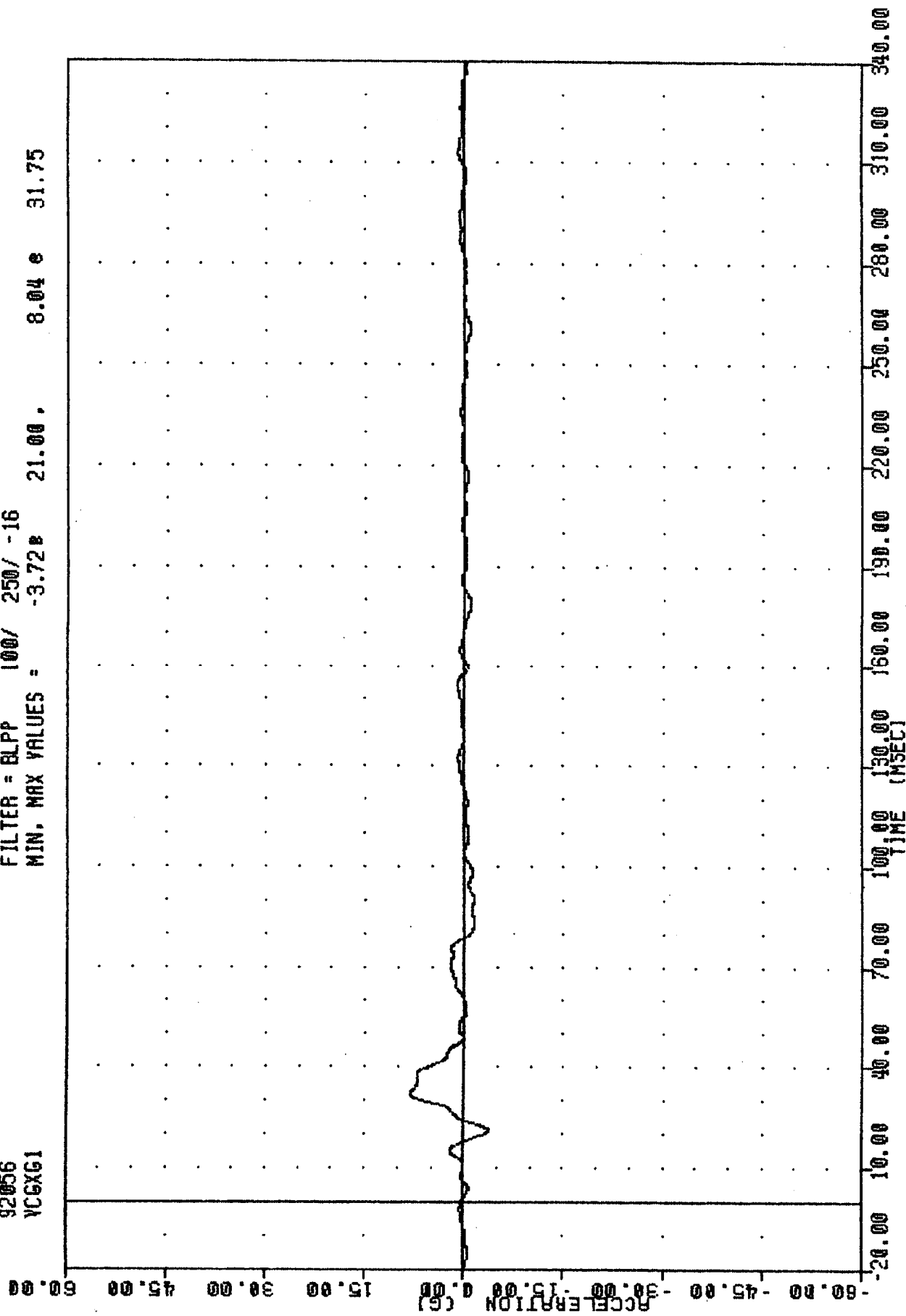
MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #2

LEFT REAR DOOR SILL RESULTANT ACCELERATION

TAC
CRASH III DAMAGE ALGORITHM
92056
YCCXG1

, 920225-2

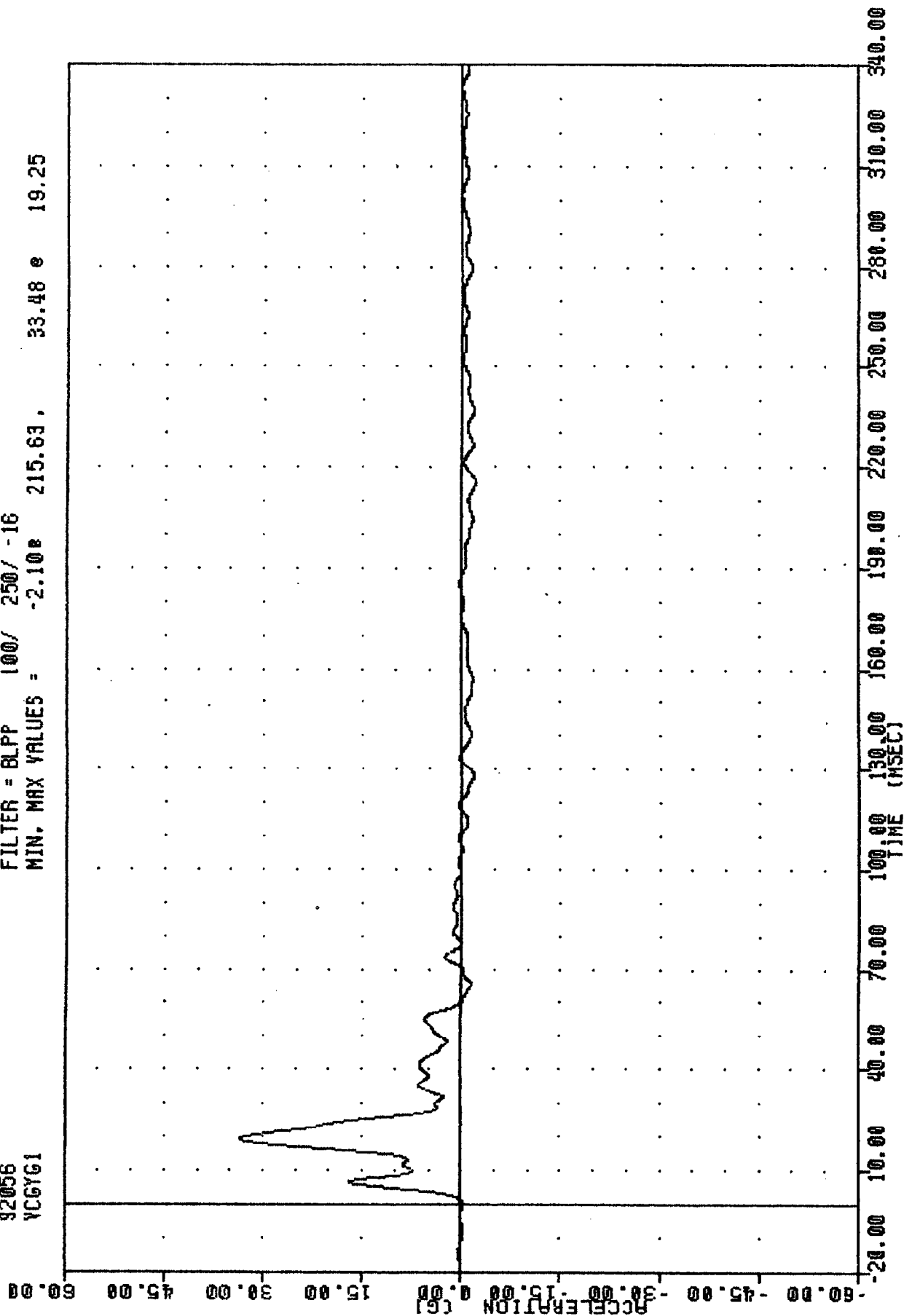
FILTER = BLPP 100/ 250/ -16
MIN. MAX VALUES = -3.72 8.04 e 31.75



MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #2
LEFT SILL AT LONGITUDINAL CG X-AXIS ACCELERATION

TRC
 CRASH III DAMAGE ALGORITHM
 92056
 VCCY61

FILTER = BLPP 100/ 250/ -16
 MIN. MAX VALUES = -2.10e 215.63. 33.48 e 19.25

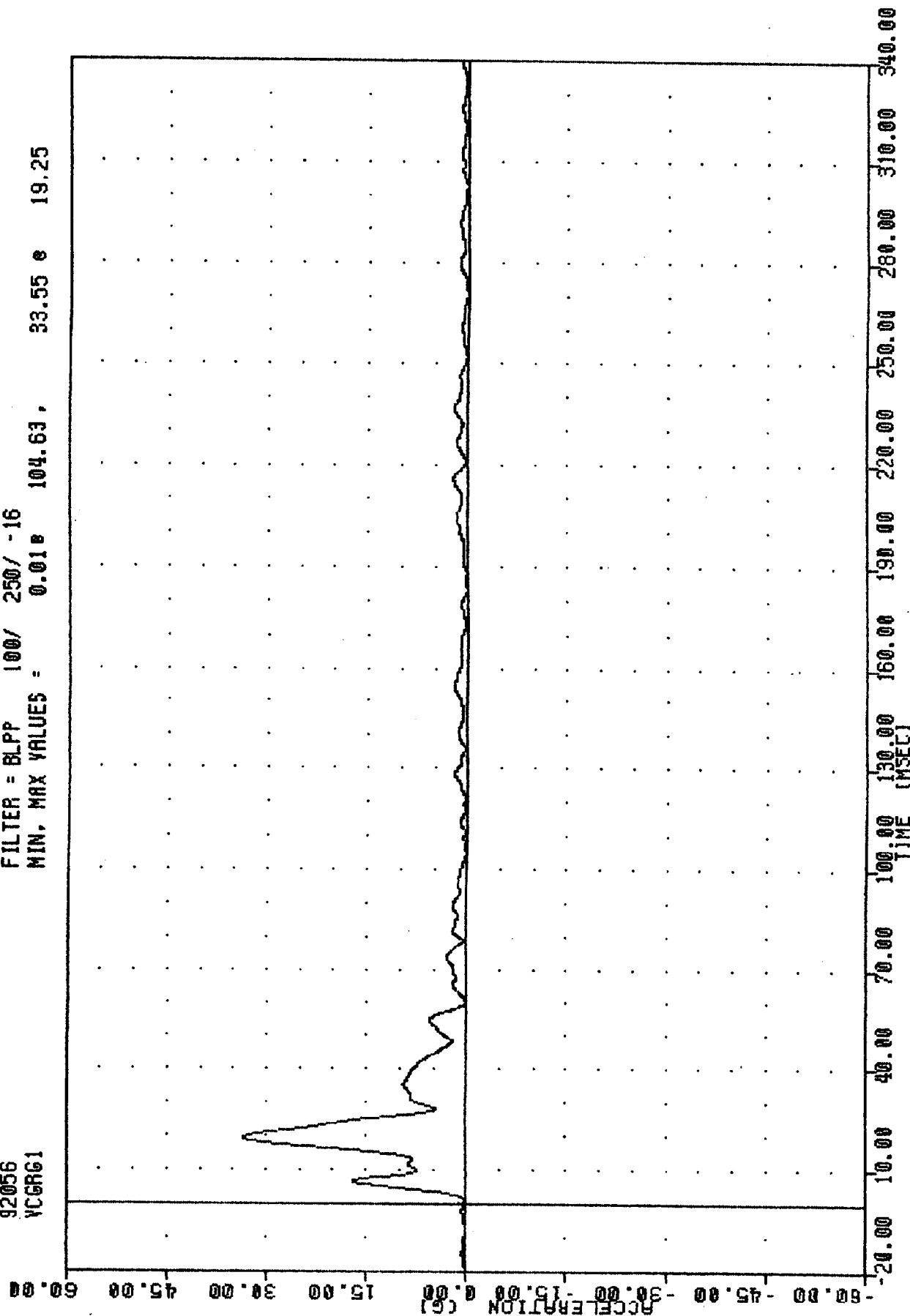


MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #2
 LEFT SILL AT LONGITUDINAL CG Y-AXIS ACCELERATION

TRC
 CRASH III DAMAGE ALGORITHM
 92056
 VCGRG1

, 920225-2

FILTER = BLPP 100/ 250/ -16
 MIN, MAX VALUES = 0.01 104.63, 33.55 19.25

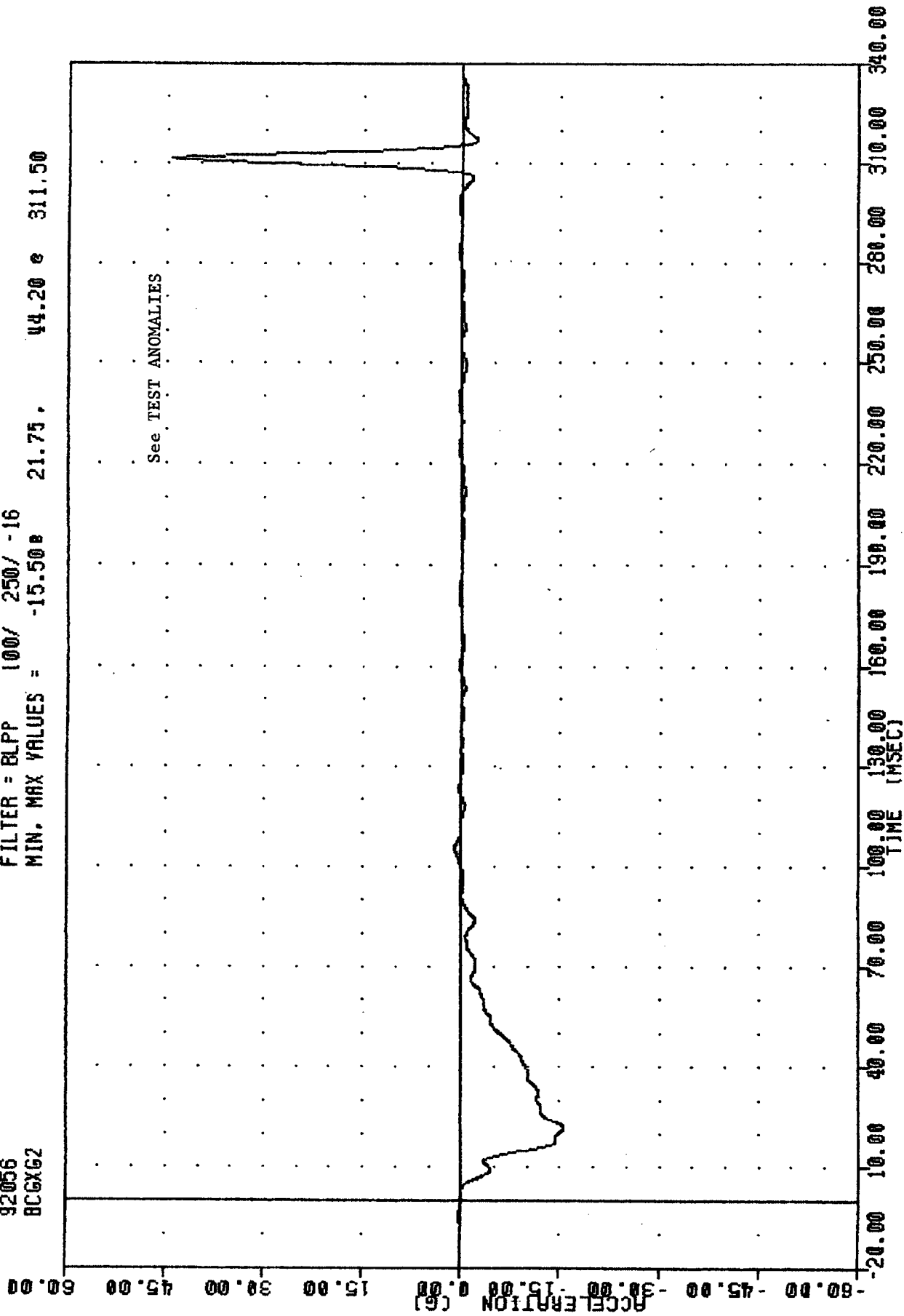


MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH *2
 LEFT SILL AT LONGITUDINAL CG RESULTANT ACCELERATION

TRC
 CRASH III DAMAGE ALGORITHM
 92056
 BCGXG2

FILTER = BLPP 100/ 250/ -16
 MIN. MAX VALUES = -15.50 21.75

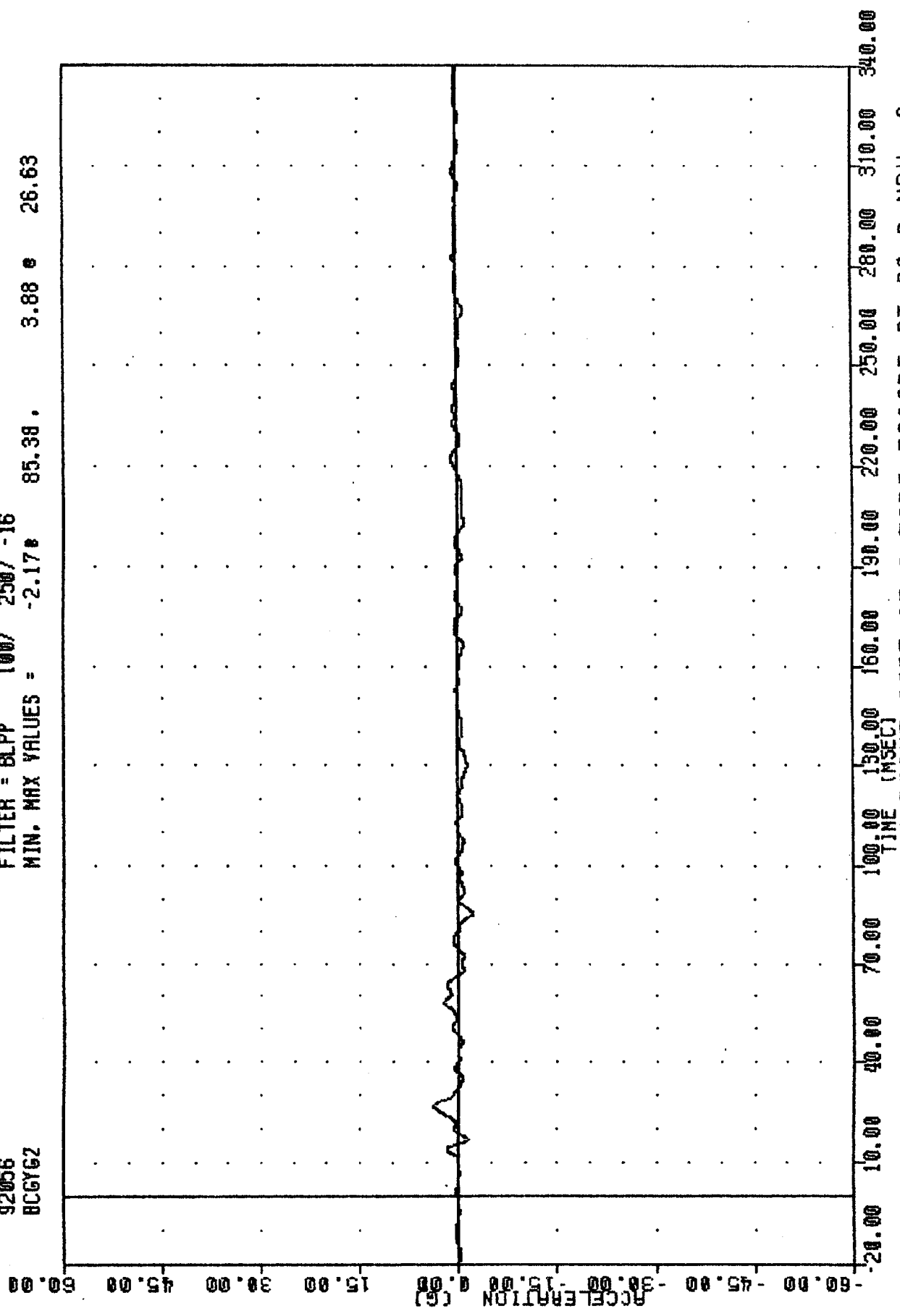
44.20 e 311.50



MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #2
 MOVING BARRIER CG X-AXIS ACCELERATION

TRC , 920225-2
 CRASH III DAMAGE ALGORITHM
 92056
 BCGY62

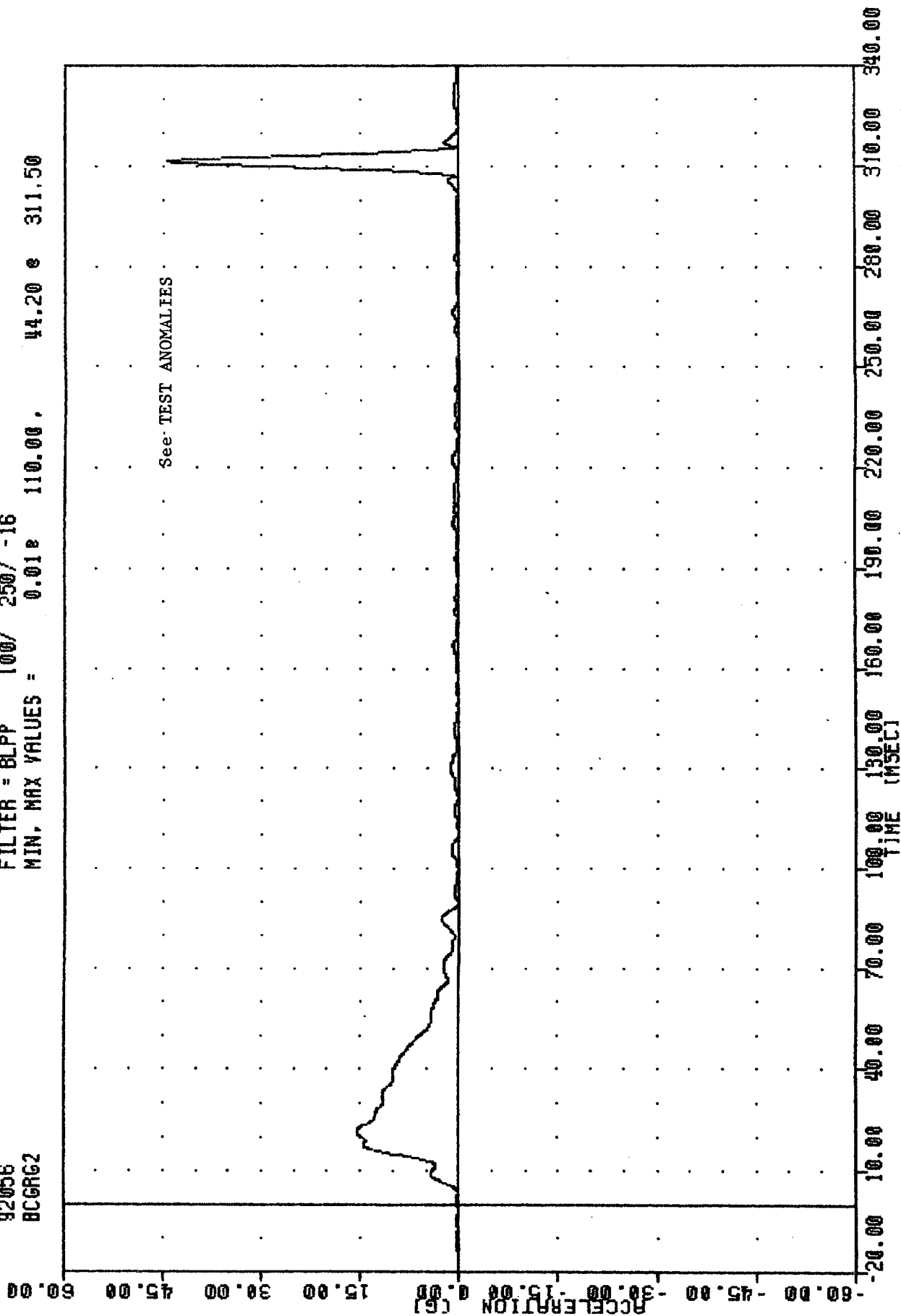
FILTER = BLPP 100/ 250/ -16
 MIN. MAX VALUES = -2.17 85.38 3.88 26.63



MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #2
 MOVING BARRIER CG Y-AXIS ACCELERATION

TRC , 920225-2
 CRASH III DAMAGE ALGORITHM
 92056
 BCGR62

FILTER = BLPP 100/ 250/ -16
 MIN. MAX VALUES = 0.018 110.00, 44.20 & 311.50

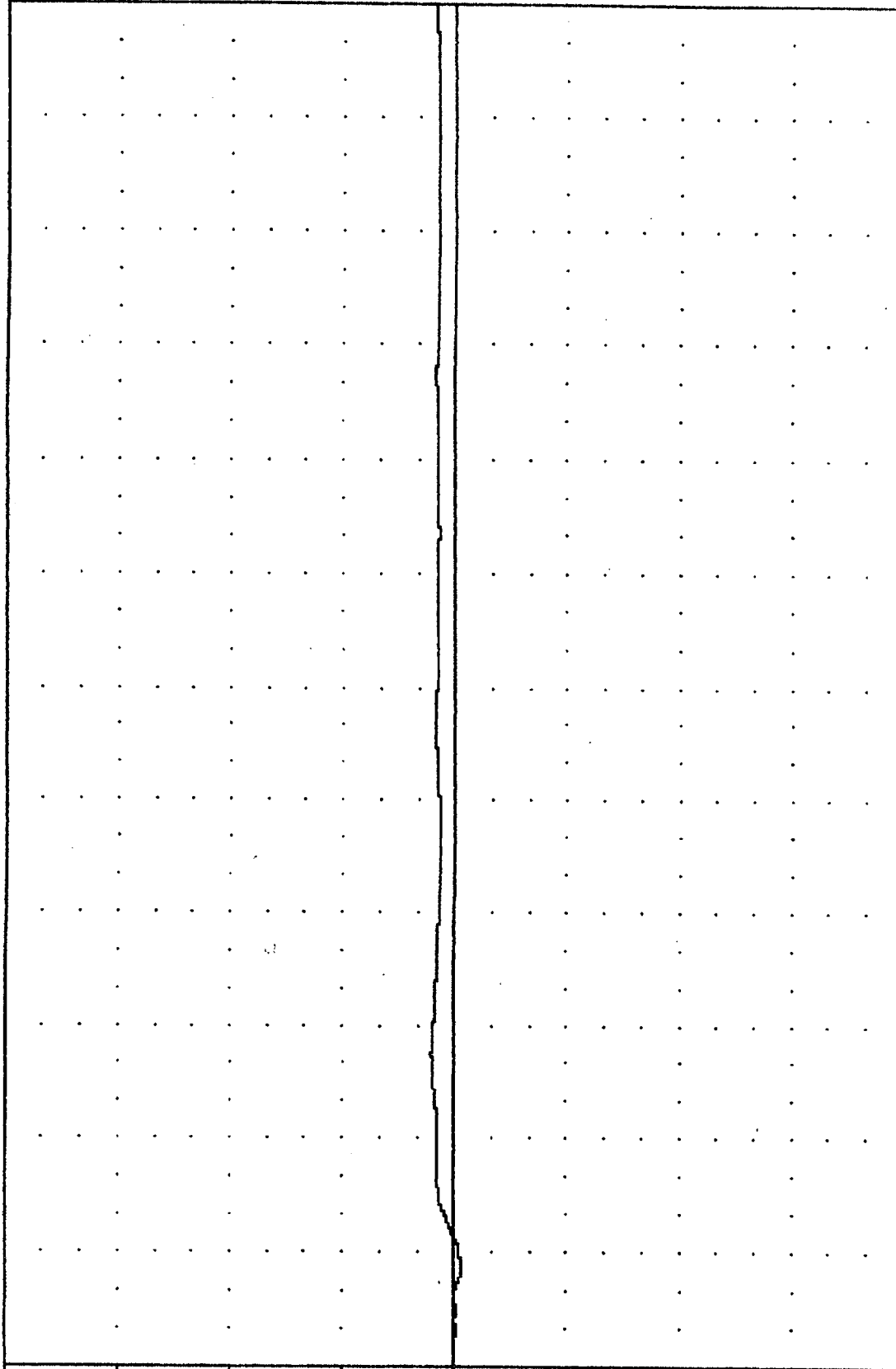


MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #2
 MOVING BARRIER CG RESULTANT ACCELERATION

TRC , 920225-2
 CRASH III DAMAGE ALGORITHM
 92056
 LFSXV1

FILTER = BLPP 300/ 750/ -16
 MIN, MAX VALUES = -0.618 23.25, 2.08 77.88

40.00
 30.00
 20.00
 10.00
 0.00
 -10.00
 -20.00
 -30.00
 -40.00
 VELOCITY (MPH)
 B-40

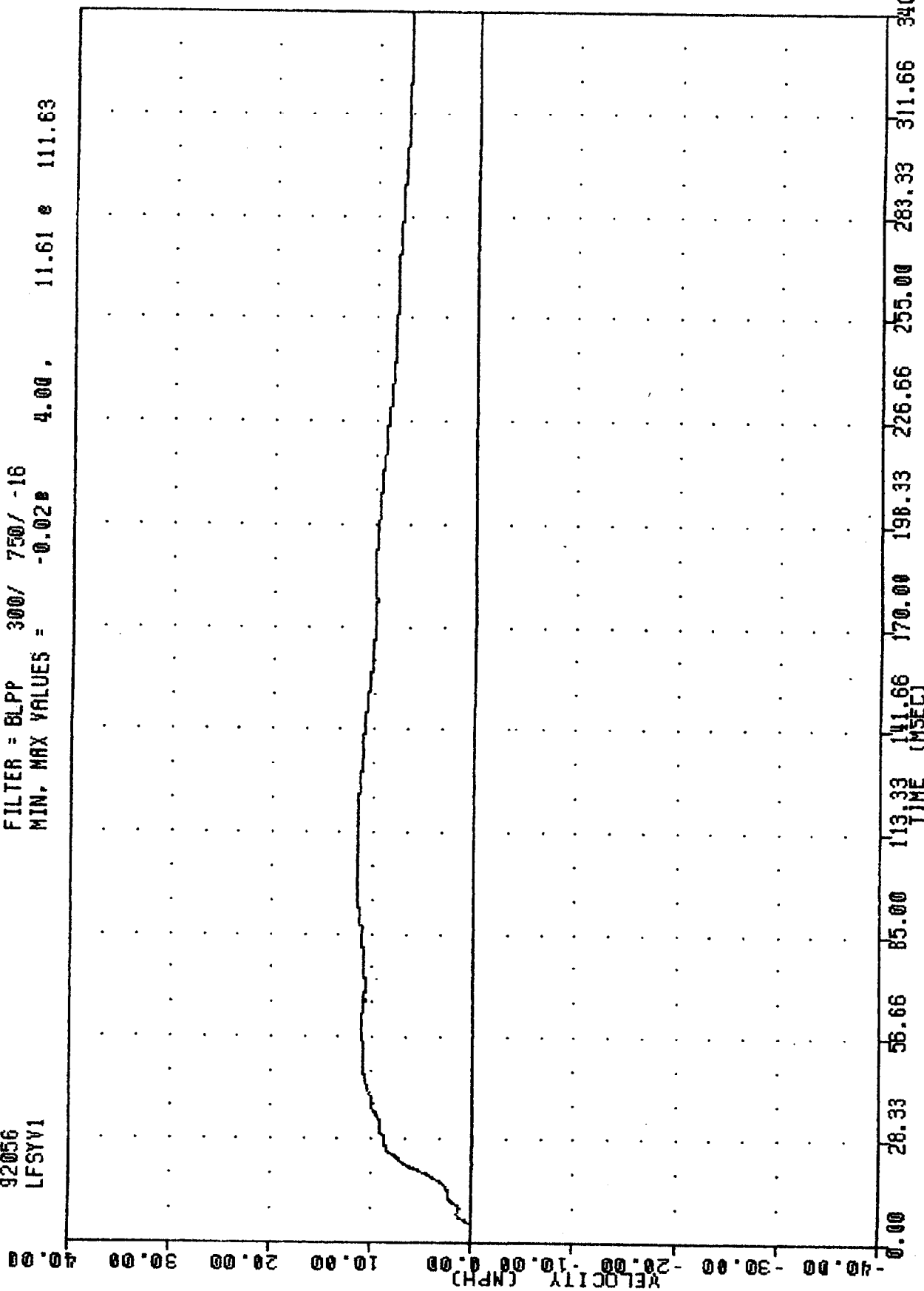


TIME (msec)	113.33	141.66	170.00	198.33	226.66	255.00	283.33	311.66	340.00
0.00	28.33	56.66	85.00	113.33	141.66	170.00	198.33	226.66	255.00

MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #2
 LEFT FRONT DOOR SILL X-AXIS VELOCITY

TRC
 CRASH III DAMAGE ALGORITHM
 92056
 LFSYV1

FILTER = BLPP 300/ 750/ -18
 MIN, MAX VALUES = -0.02 4.00, 11.61 e 111.63

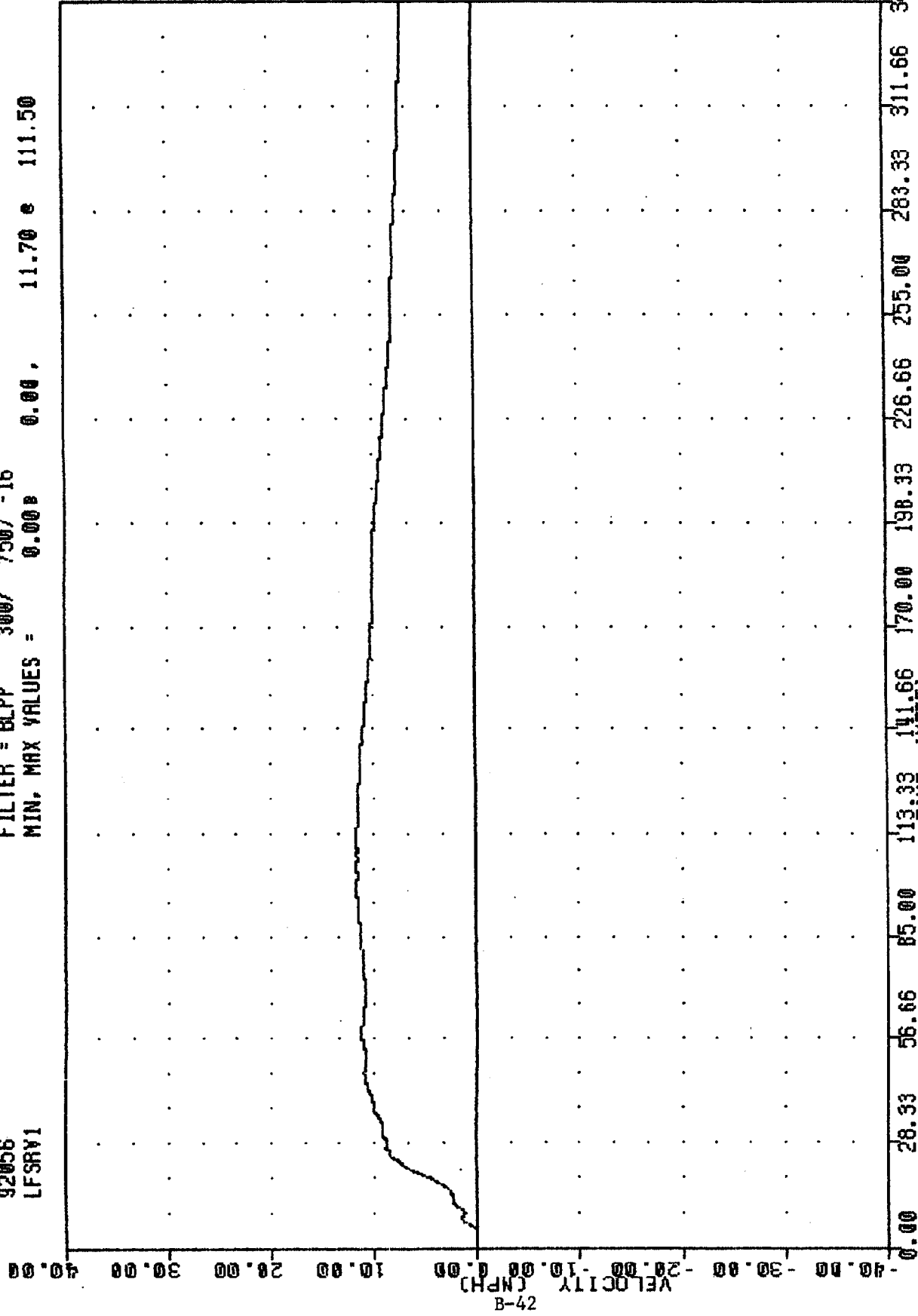


B-41

MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #2
 LEFT FRONT DOOR SILL Y-AXIS VELOCITY

TRC , 920225-2
 CRASH III DAMAGE ALGORITHM
 92056
 LFSRV1

FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = 0.00 0.00 , 11.70 e 111.50

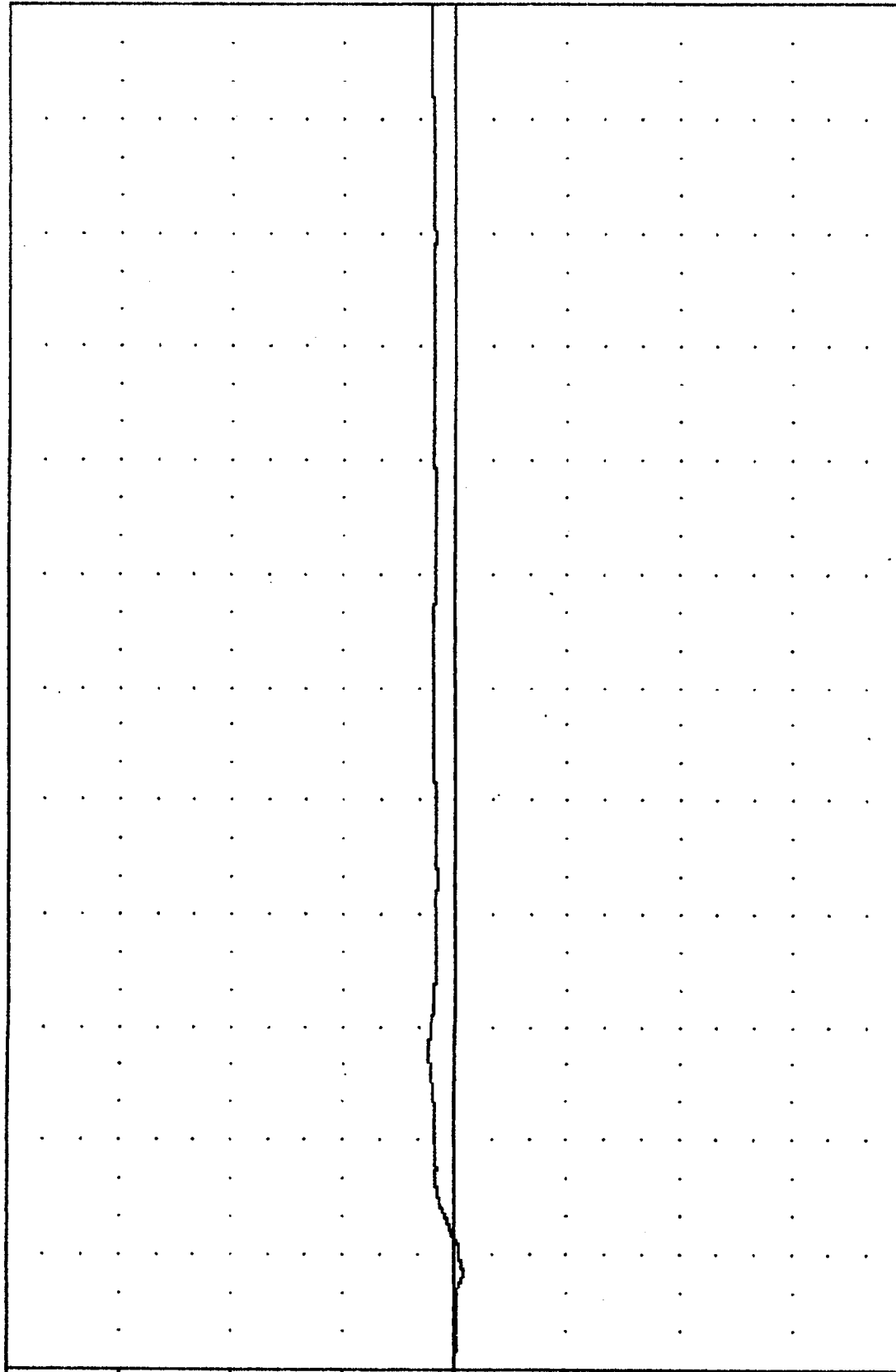


MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #2
 LEFT FRONT DOOR SILL RESULTANT VELOCITY

TRC , 920225-2
 CRASH III DAMAGE ALGORITHM
 92056
 LRSXV1

FILTER = BLPP 300/ 750/ -16
 MIN, MAX VALUES = -0.81 23.63, 2.34 e 78.25

40.00
 30.00
 20.00
 10.00
 0.00
 -10.00
 -20.00
 -30.00
 -40.00
 VELOCITY (MPH)



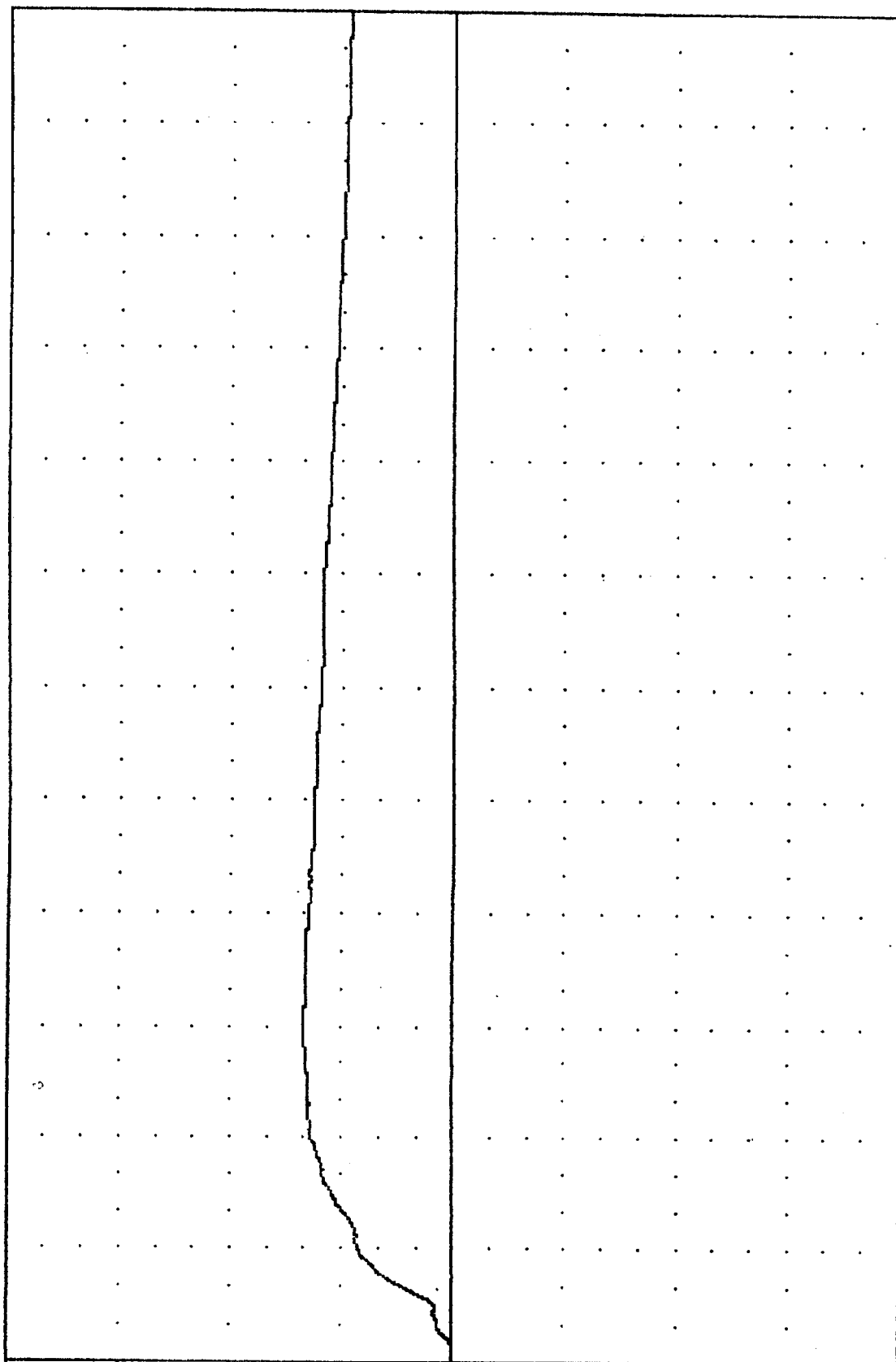
0.00 28.33 56.66 85.00 113.33 141.66 170.00 198.33 226.66 255.00 283.33 311.66 340.00
 TIME (MSEC)

MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #2
 LEFT REAR DOOR SILL X-AXIS VELOCITY

TRC 920225-2
 CRASH III DAMAGE ALGORITHM
 92056
 LRSYV1

FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = 0.00 0.00 13.51 e 85.25

VELOCITY (MPH)

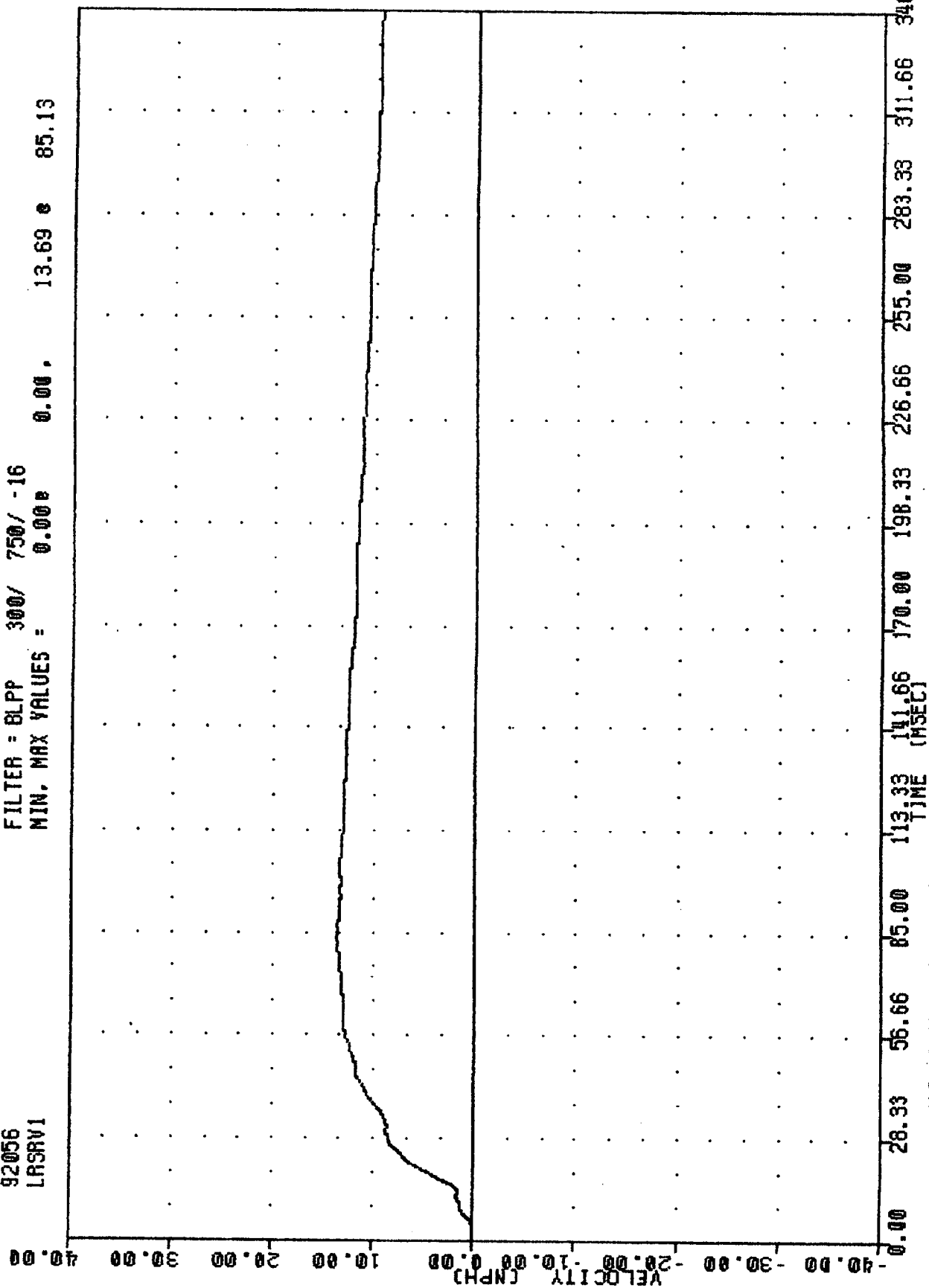


0.00 28.33 56.66 85.00 113.33 141.66 170.00 198.33 226.66 255.00 283.33 311.66 340.00

MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #2
 LEFT REAR DOOR SILL Y-AXIS VELOCITY

TRC
CRASH III DAMAGE ALGORITHM
92056
LRSRV1

FILTER = BLPP 300/ 750/ -16
MIN. MAX VALUES = 0.00 0.00 13.69 85.13

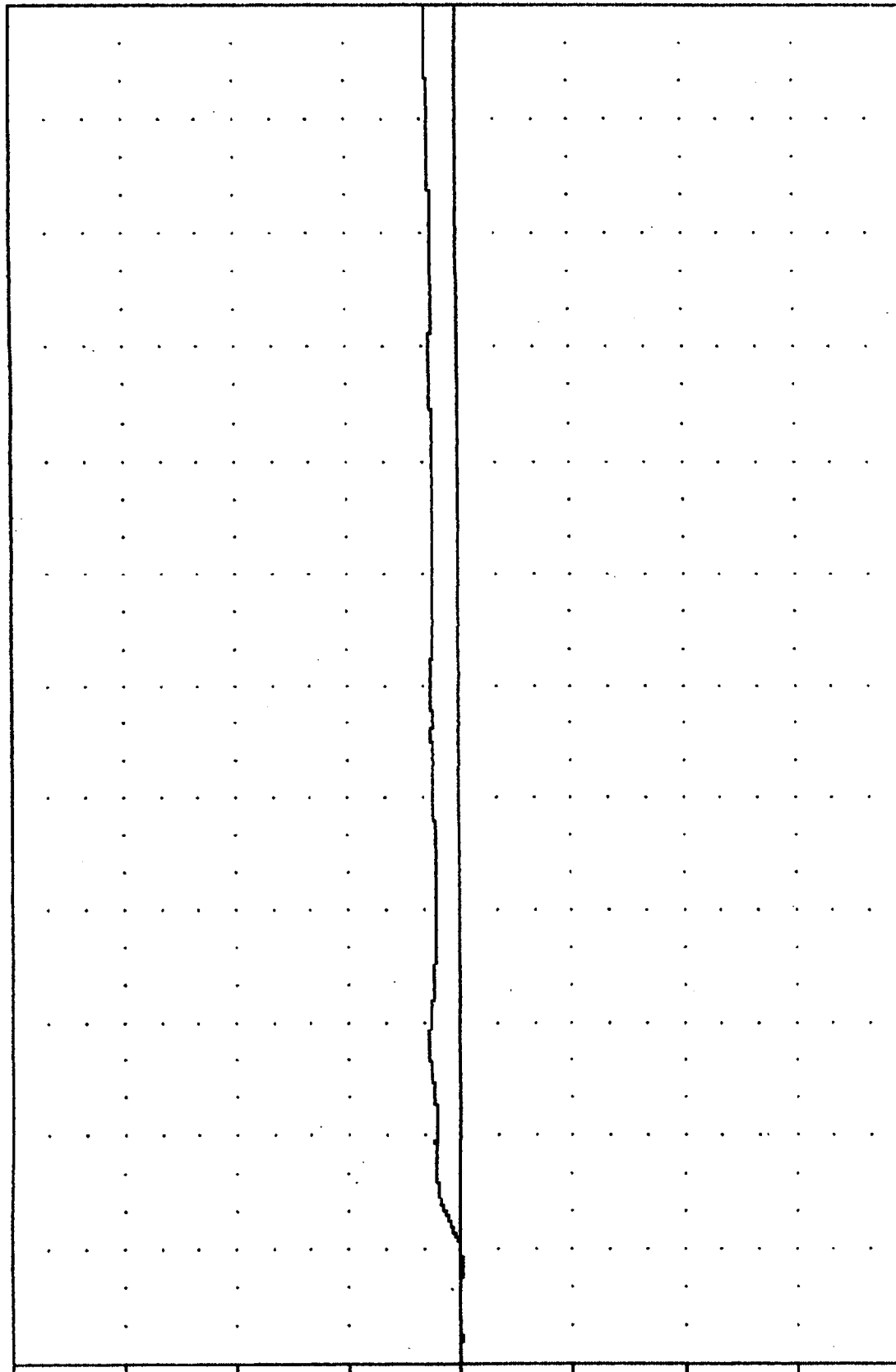


MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #2
LEFT REAR DOOR SILL RESULTANT VELOCITY

TRC
 CRASH III DAMAGE ALGORITHM
 92056
 YCGXV1

FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = -0.23 23.38 2.84 78.38

40.00
 30.00
 20.00
 10.00
 0.00
 -10.00
 -20.00
 -30.00
 -40.00
 VELOCITY (MPH)

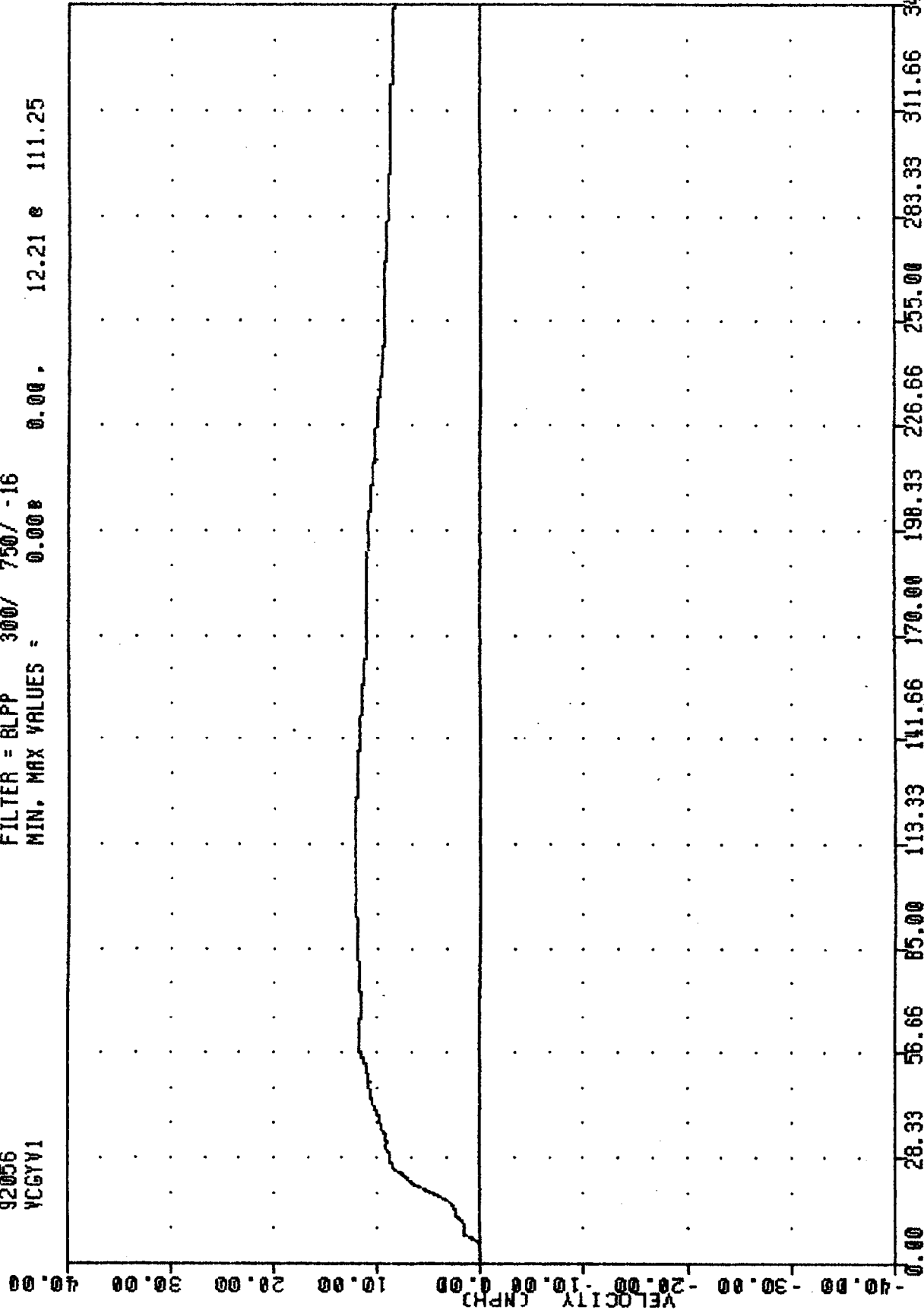


0.00 28.33 56.66 85.00 113.33 141.66 170.00 198.33 226.66 255.00 283.33 311.66 340.00
 TIME (MSEC)

MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #2
 LEFT SILL AT LONGITUDINAL CG X-AXIS VELOCITY

TRC
 CRASH III DAMAGE ALGORITHM
 92056
 YCGYV1

FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = 0.000 0.000 12.21 e 111.25



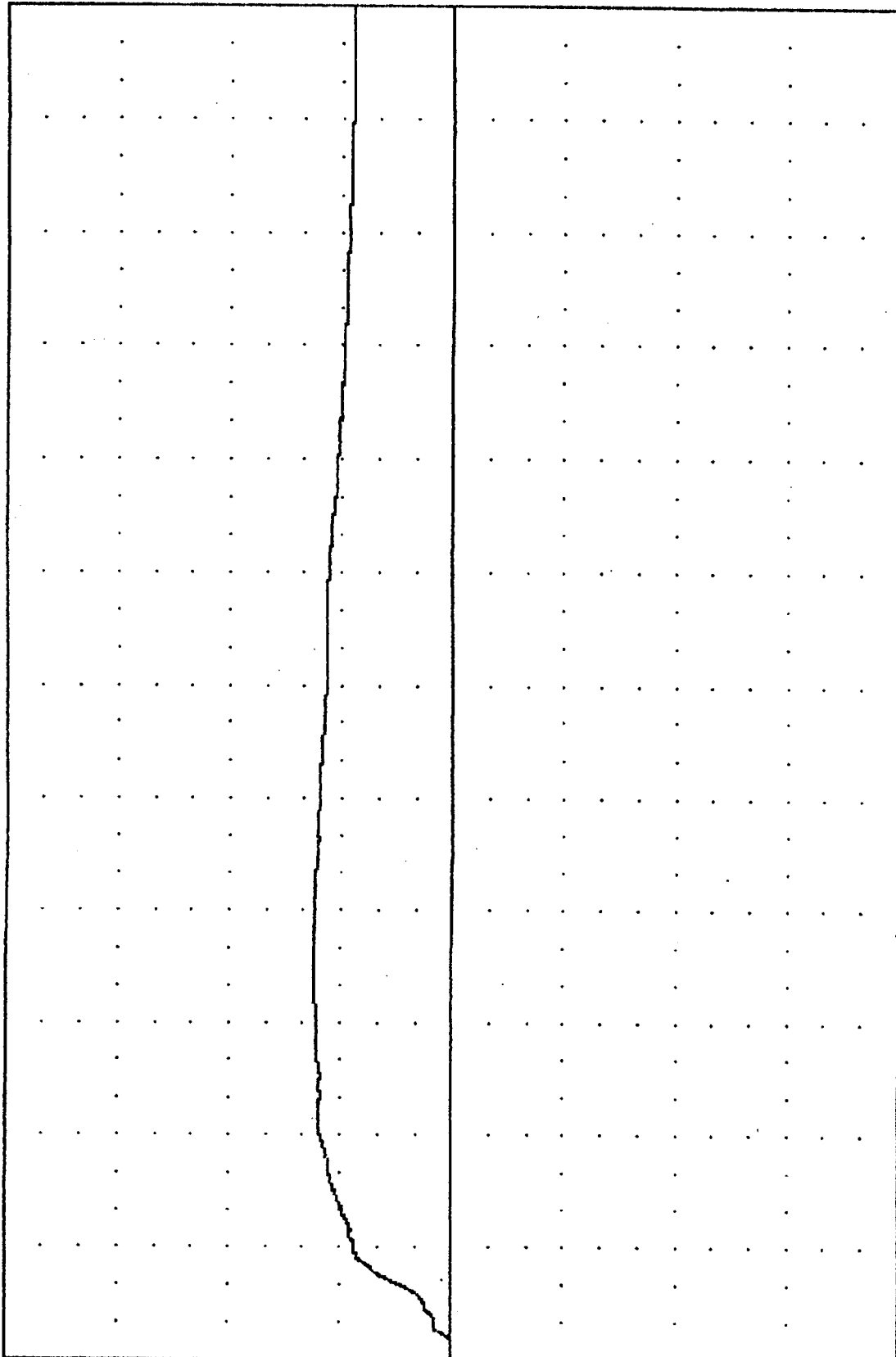
B-47

MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #2
 LEFT SILL AT LONGITUDINAL CG Y-AXIS VELOCITY

TRC , 920225-2
 CRASH III DAMAGE ALGORITHM
 92056
 VCCRV1

FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = 0.00 0.00 12.40 e 111.25

VELOCITY (MPH)

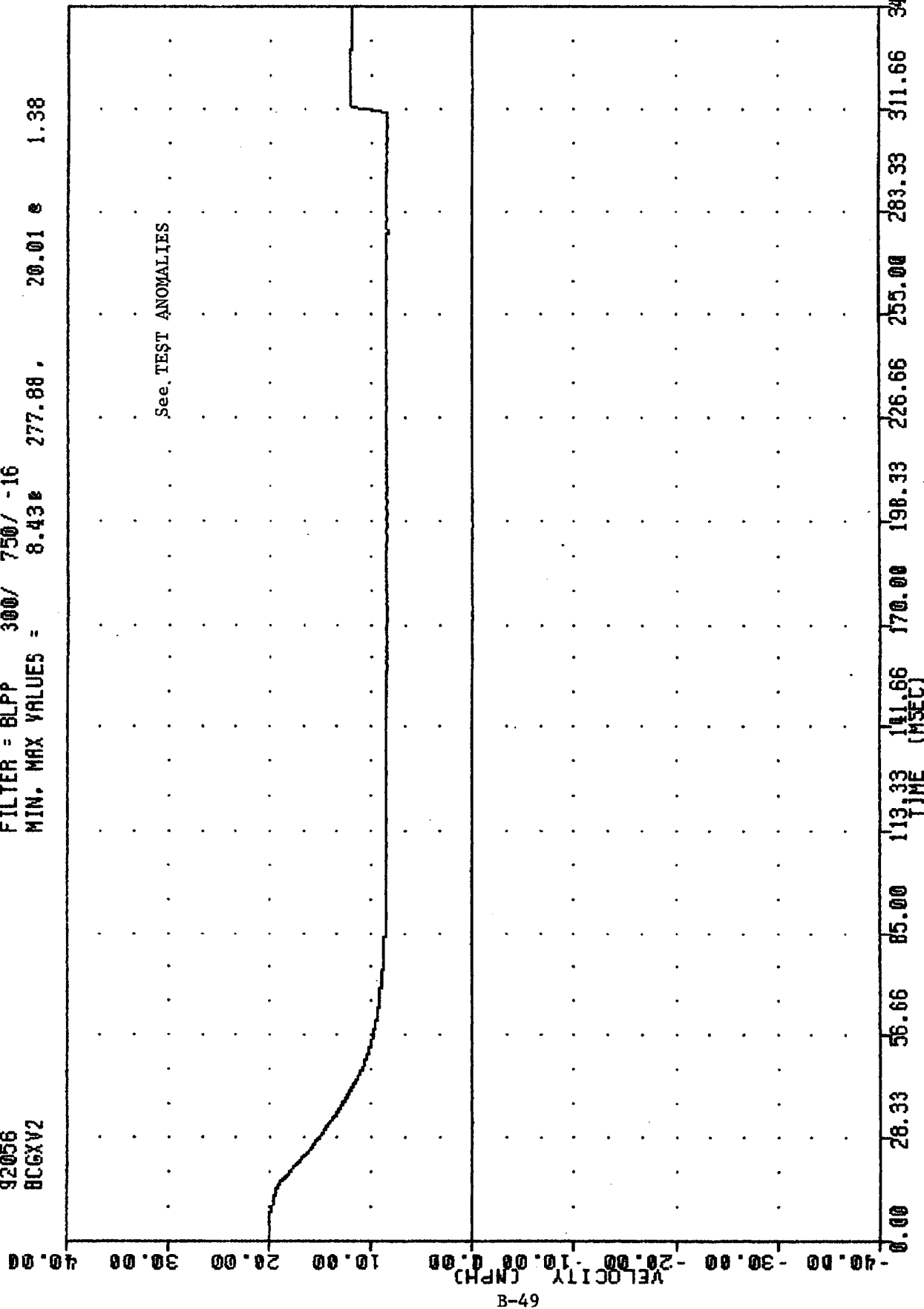


B-48

MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #2
 LEFT SILL AT LONGITUDINAL CG RESULTANT VELOCITY

TRC
 CRASH III DAMAGE ALGORITHM
 92056
 BC6XV2

FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = 8.43 277.88 , 20.01 1.38



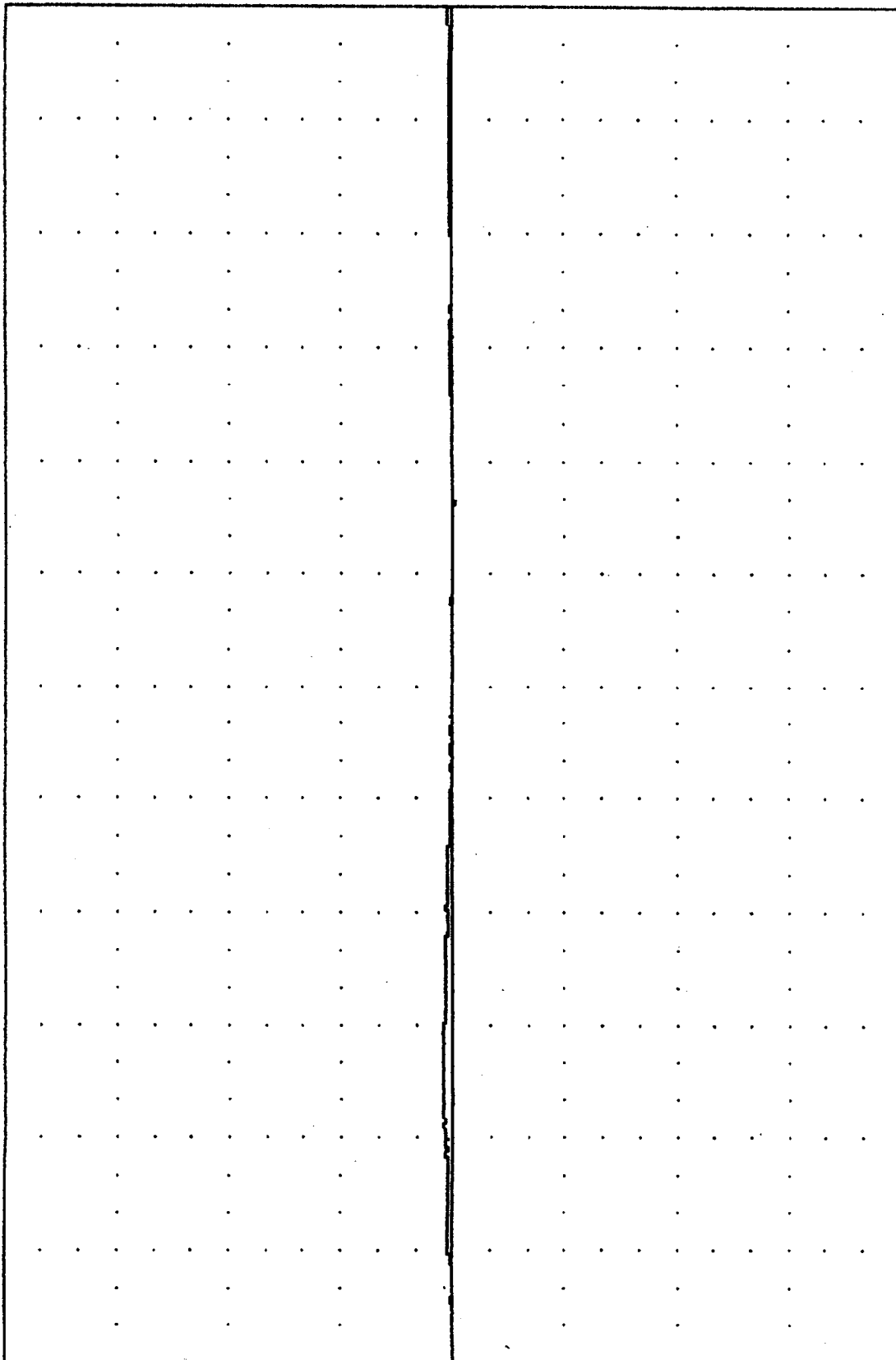
MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #2
 MOVING BARRIER CG X-AXIS VELOCITY

TFC
CRASH III DAMAGE ALGORITHM
92056
8CGYV2

, 920225-2

FILTER = BLPP 300/ 750/ -16
MIN. MAX VALUES = -0.06 215.88 0.99 e 66.38

40.00
30.00
20.00
10.00
0.00
-10.00
-20.00
-30.00
-40.00
VELOCITY (MPH)



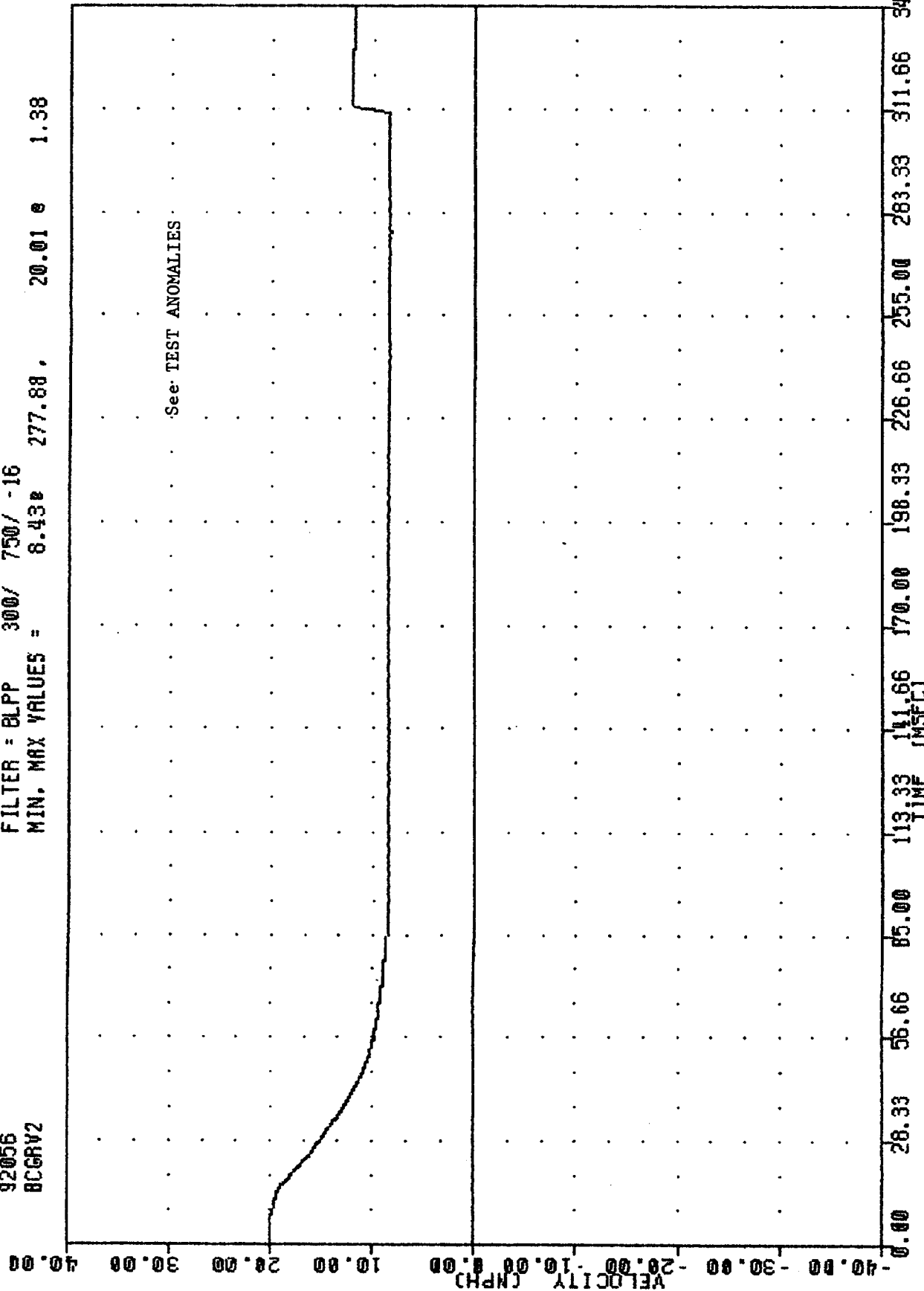
B-50

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

MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #2
MOVING BARRIER CG Y-AXIS VELOCITY

TRC
 CRASH III DAMAGE ALGORITHM
 92056
 BCGRV2

FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = 8.43 277.88, 20.01 1.38



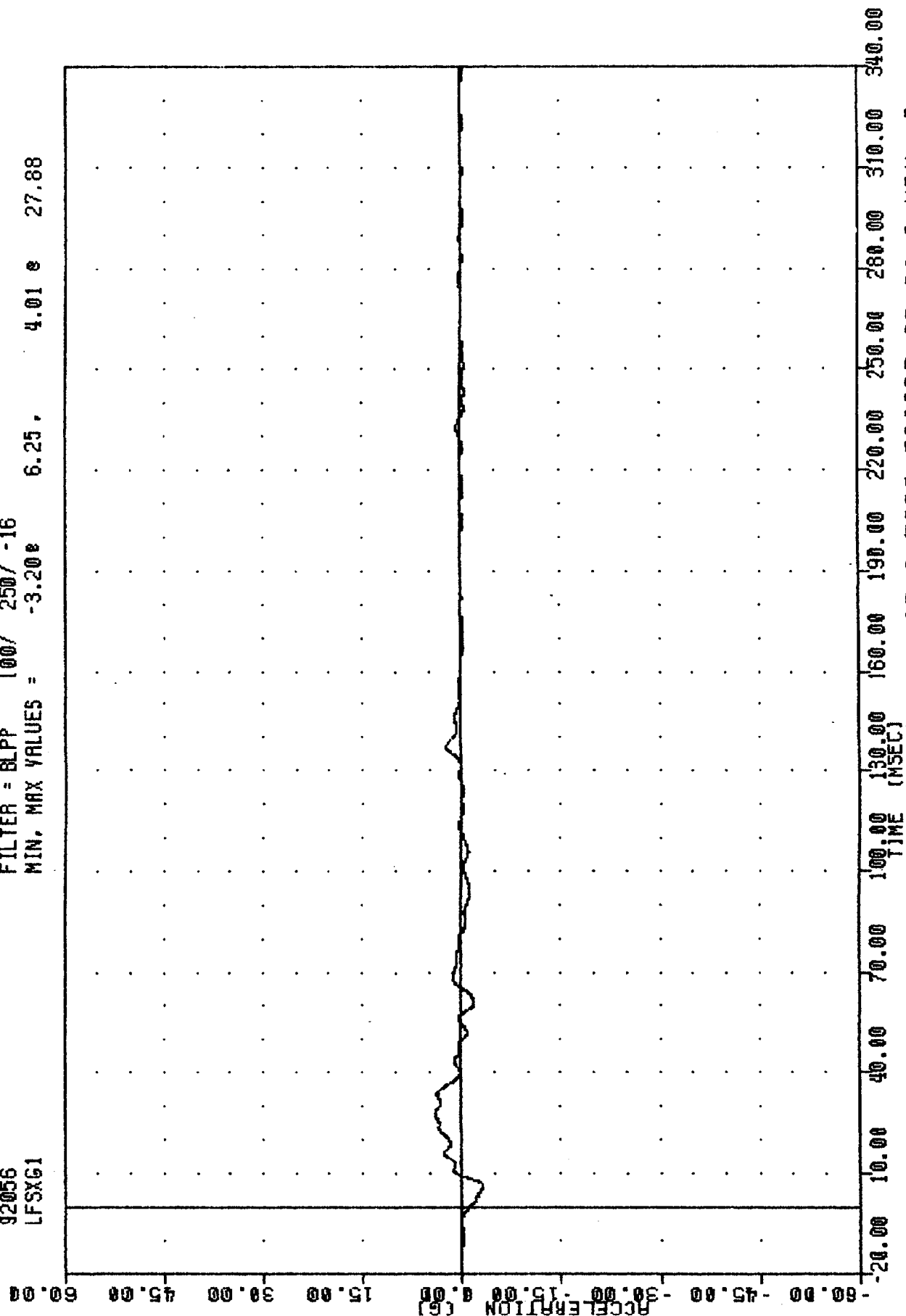
MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #2
 MOVING BARRIER CG RESULTANT VELOCITY

DATA PLOTS

TEST NO. 920225-3

TRC
 CRASH III DAMAGE ALGORITHM
 92056
 LFSXG1

FILTER = BLPP 100/ 250/ -16
 MIN. MAX VALUES = -3.20e 6.25, 4.01 e 27.88



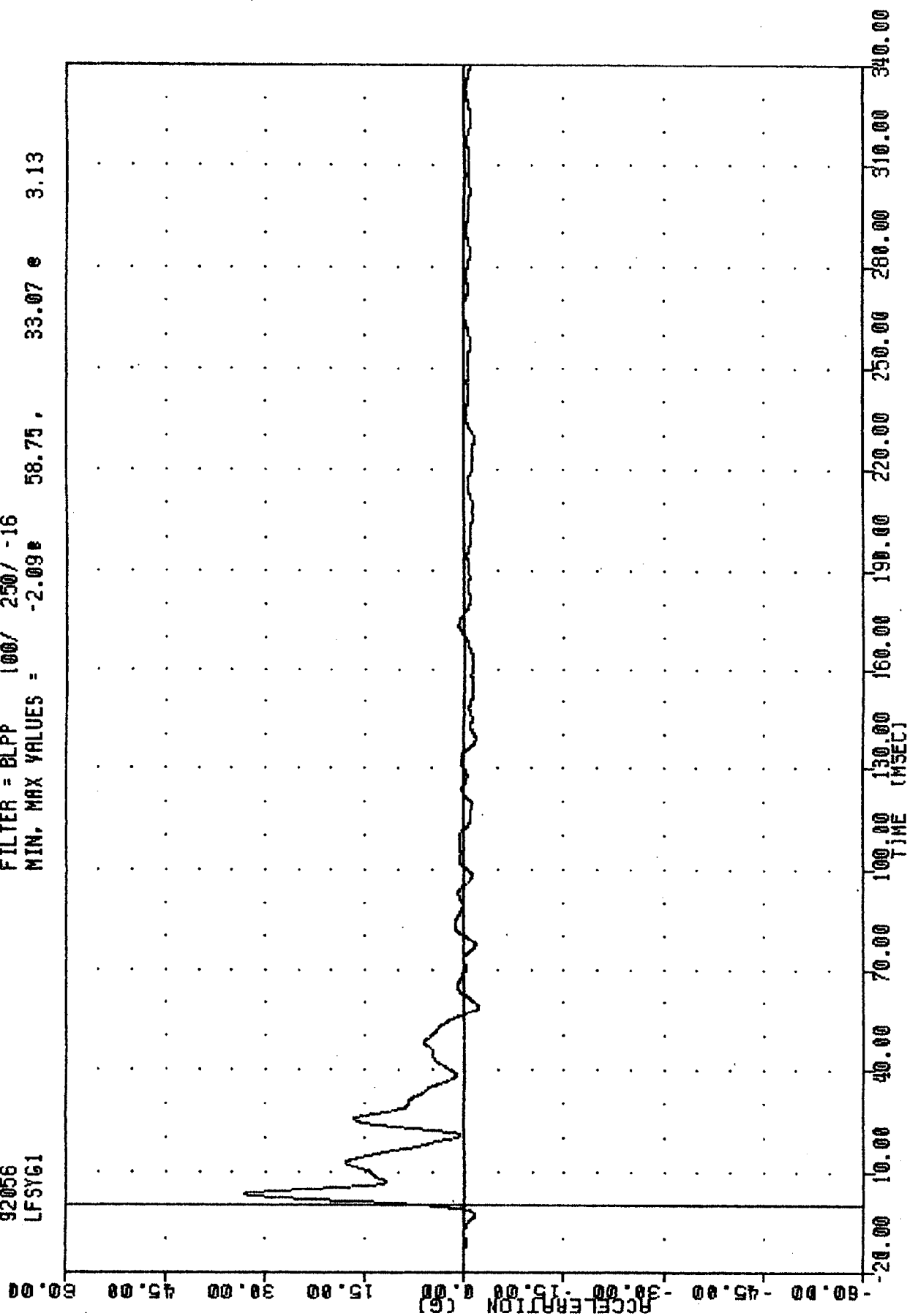
B-53

MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #3
 LEFT FRONT DOOR SILL X-AXIS ACCELERATION

TRC
 CRASH III DAMAGE ALGORITHM
 92056
 LFSYG1

, 920225-3

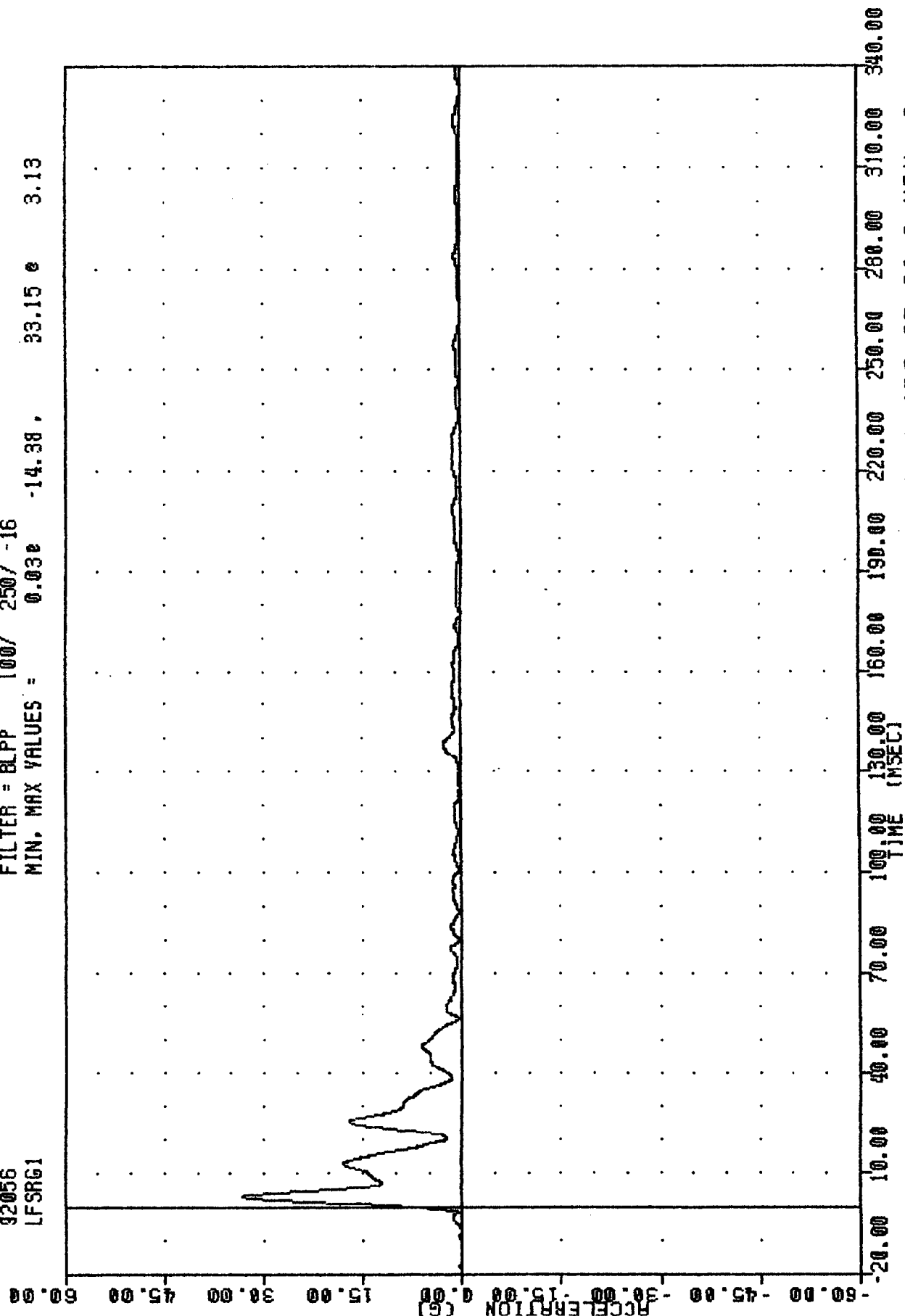
FILTER = BLPP 100/ 250/ -16
 MIN. MAX VALUES = -2.09 58.75 33.07 3.13



MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH ±3
 LEFT FRONT DOOR SILL Y-AXIS ACCELERATION

TRC , 920225-3
 CRASH III DAMAGE ALGORITHM
 92056
 LFSRG1

FILTER = BLPP 100/ 250/ -16
 MIN. MAX VALUES = 0.03e -14.38, 33.15 e 3.13



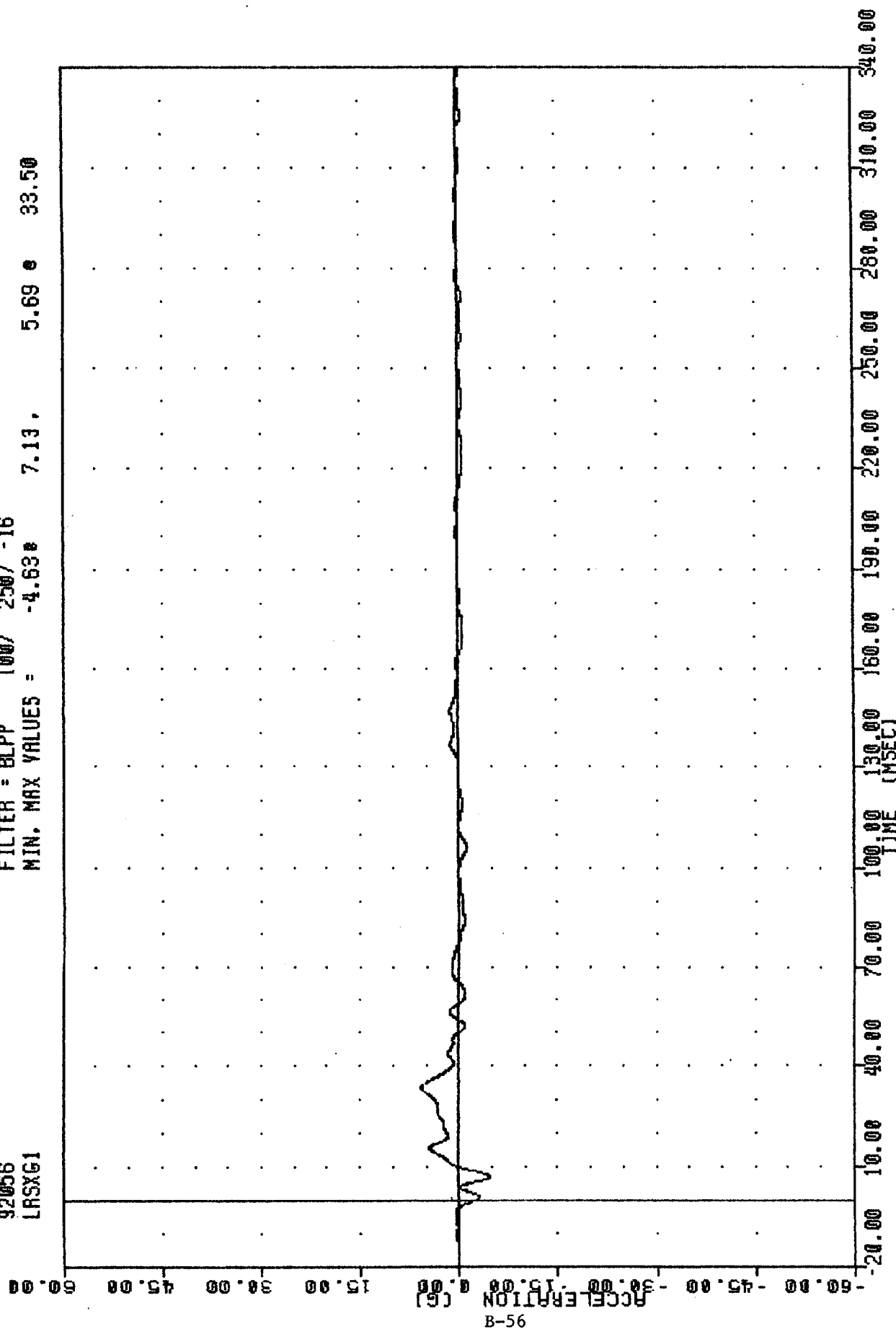
B-55

MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #3
 LEFT FRONT DOOR SILL RESULTANT ACCELERATION

TRC
 CRASH III DAMAGE ALGORITHM
 92056
 LRSXG1

, 920225-3

FILTER = BLPP 100/ 250/ -16
 MIN. MAX VALUES = -4.63 7.13 5.69 33.50

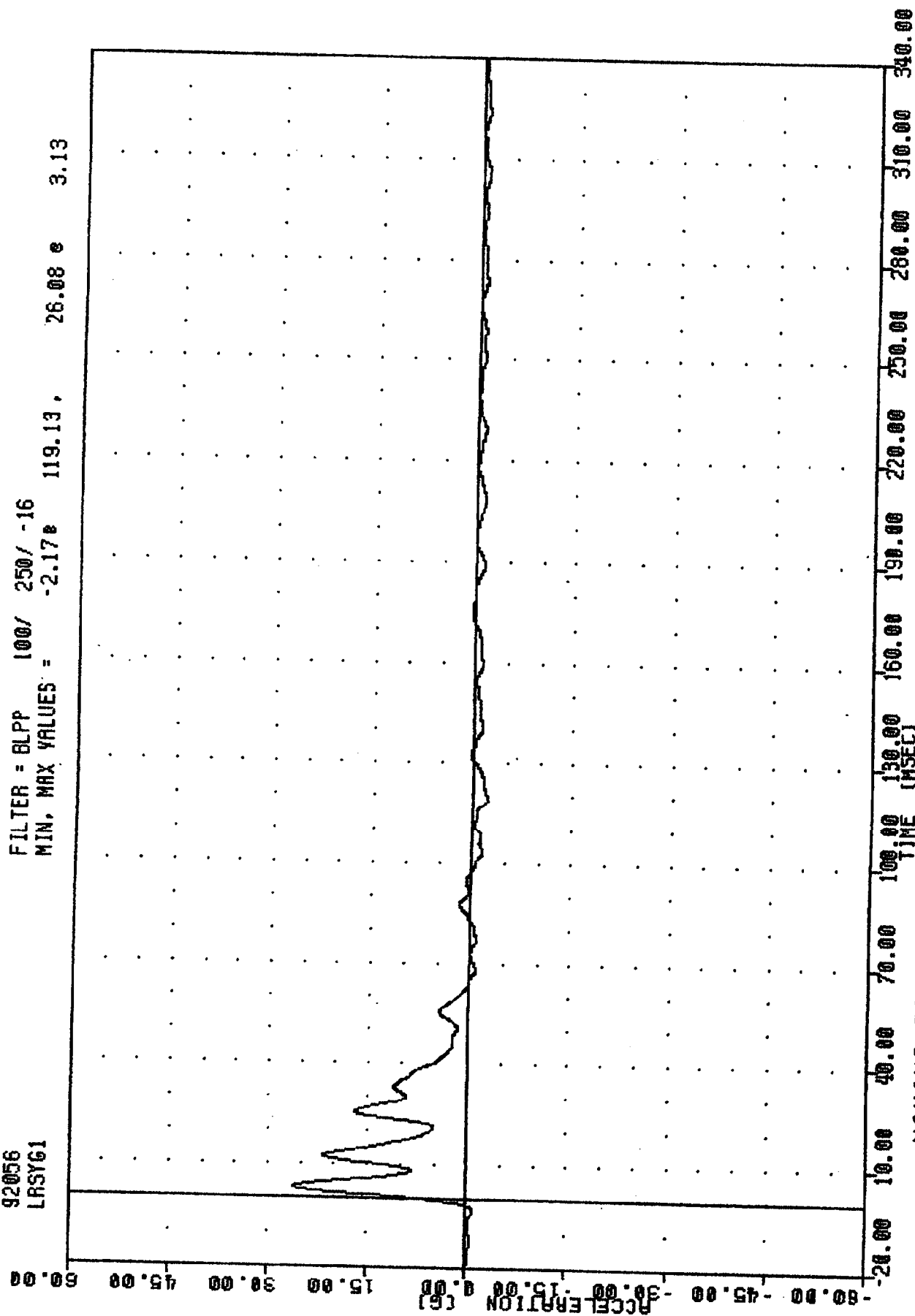


B-56

MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #3
 LEFT REAR DOOR SILL X-AXIS ACCELERATION

TRC
 CRASH III DAMAGE ALGORITHM
 92056
 LRSY61

FILTER = BLPP 100/ 250/ -16
 MIN, MAX VALUES = -2.17e 119.13, 26.08 e 3.13



MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #3
 LEFT REAR DOOR SILL Y-AXIS ACCELERATION

TRC
 CRASH III DAMAGE ALGORITHM
 92056
 LRSRG1

, 920225-3

FILTER = BLPP 100/ 250/ -16
 MIN. MAX VALUES = 0.012 -19.75. 26.09 e 3.13

60.00

45.00

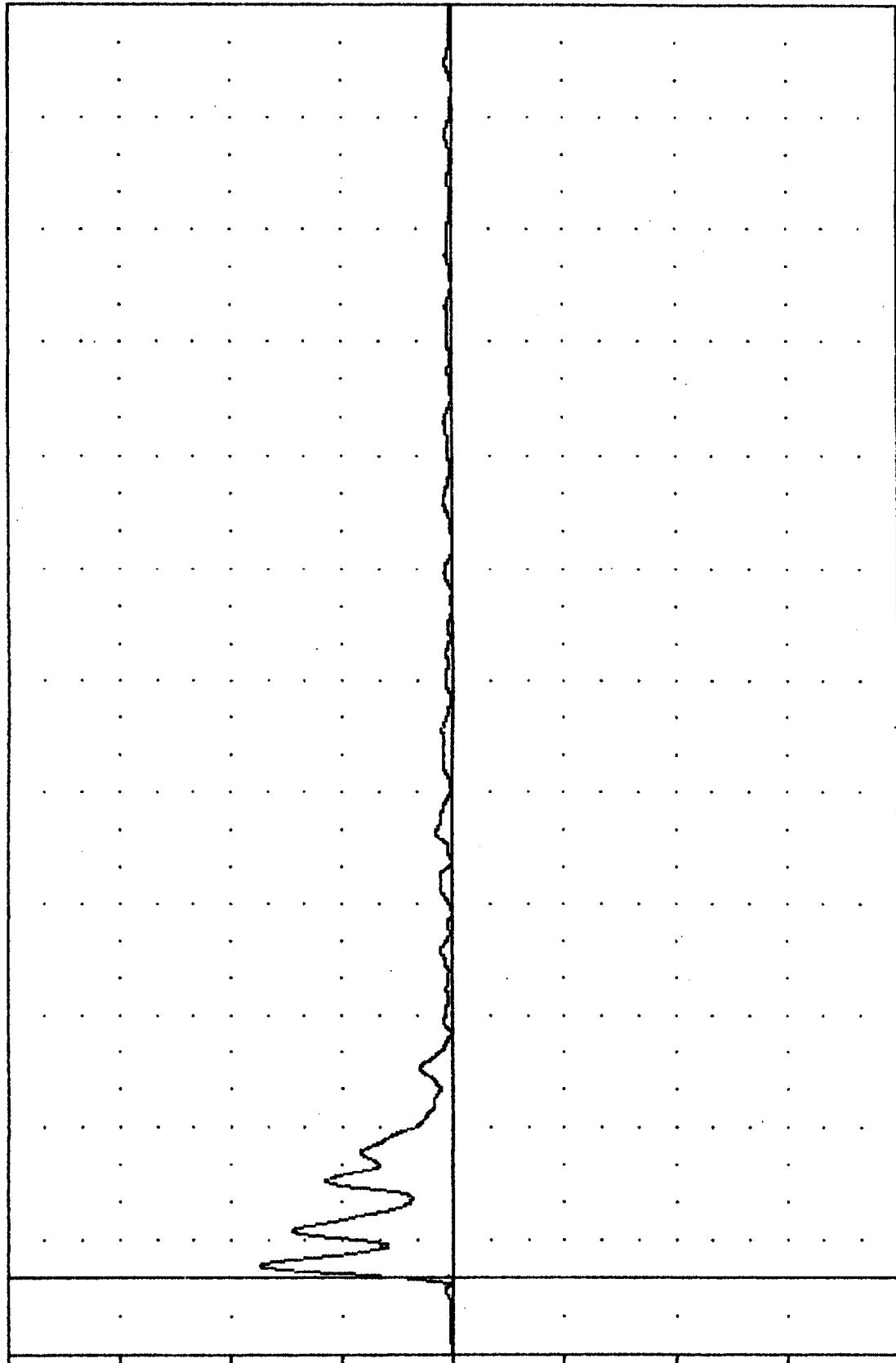
30.00

15.00

0.00

ACCELERATION (G)

B-58

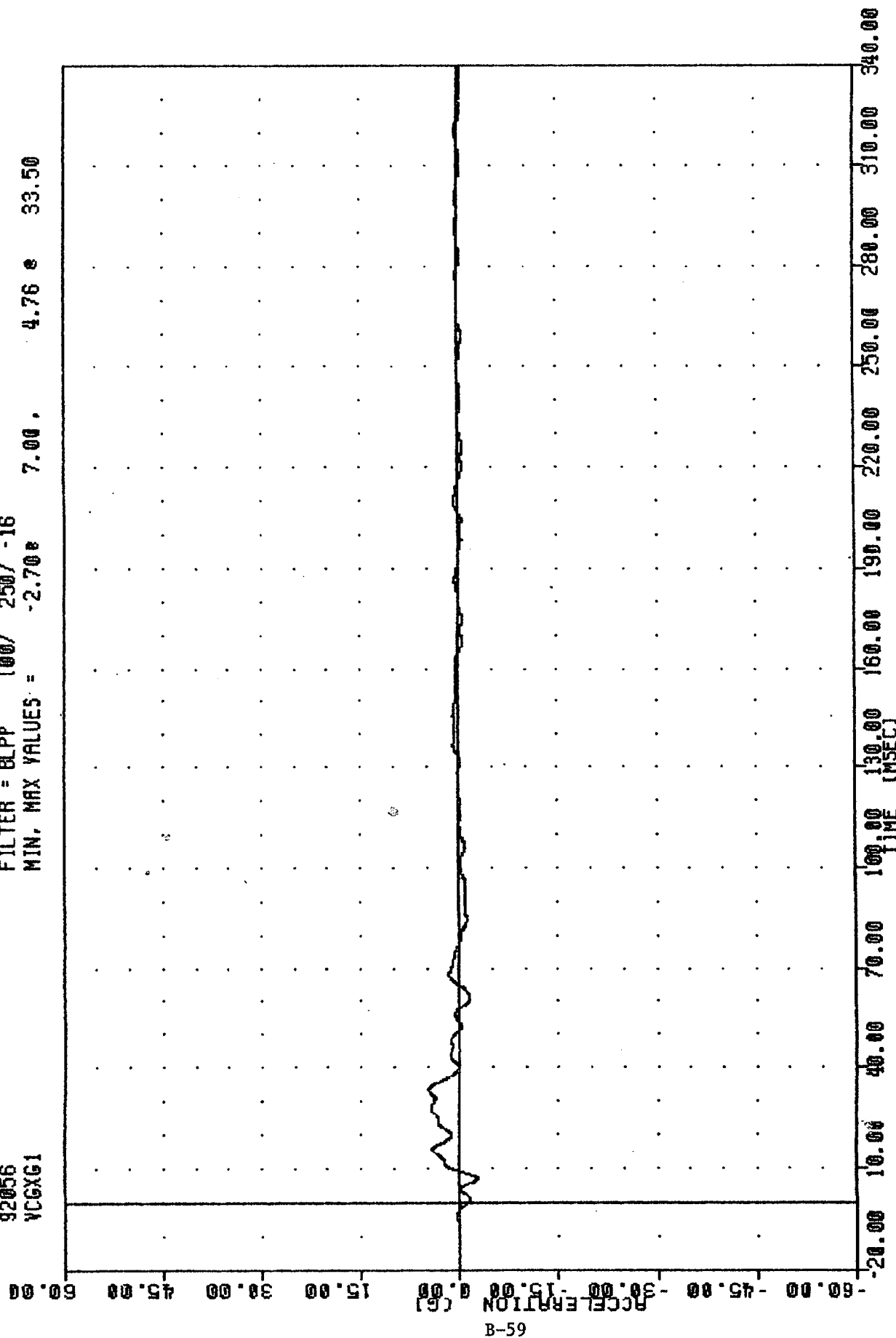


-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00
 TIME (msec)

MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #3
 LEFT REAR DOOR SILL RESULTANT ACCELERATION

TRC , 920225-3
 CRASH III DAMAGE ALGORITHM
 92056
 VCGXG1

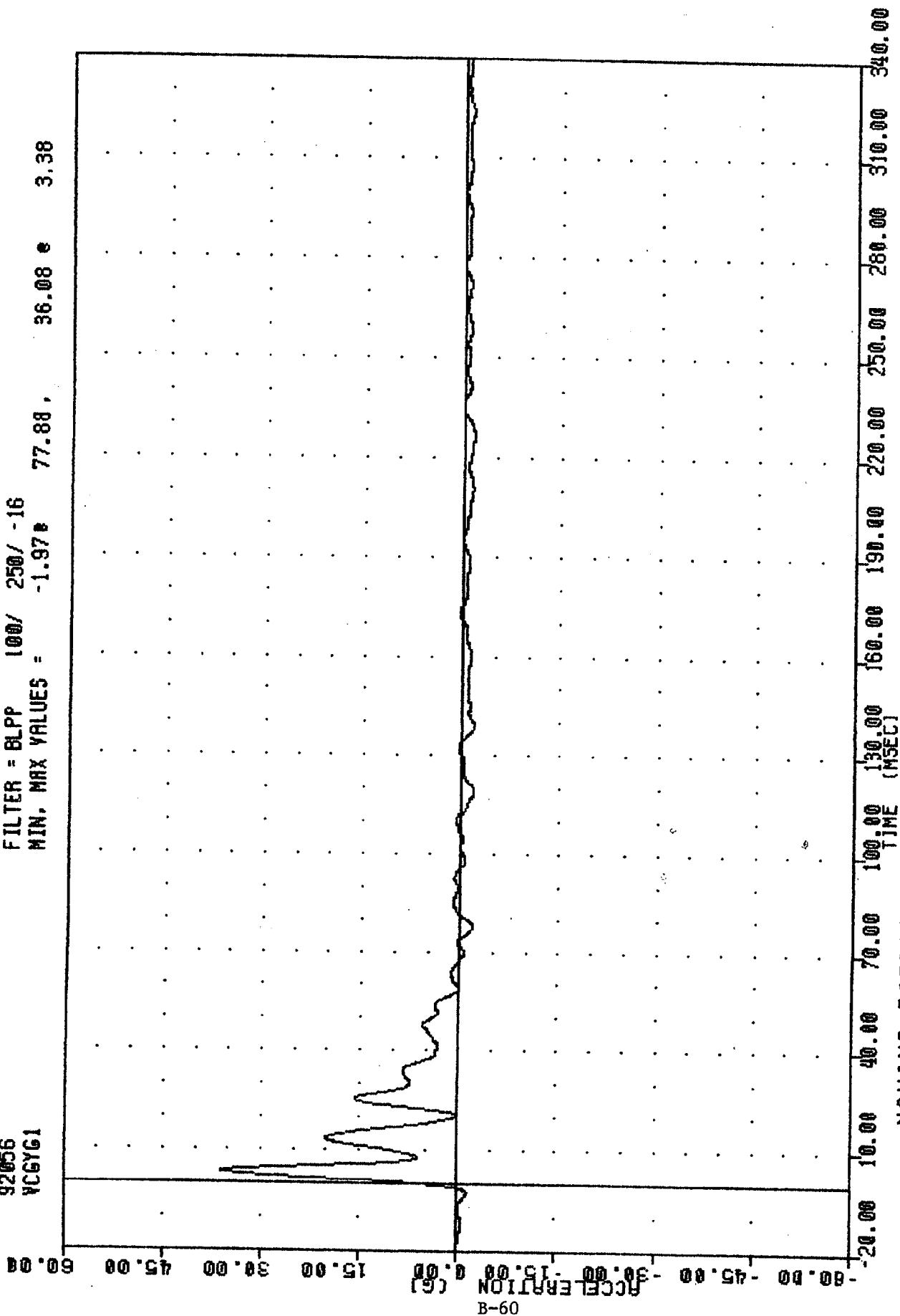
FILTER = BLPP 100/ 250/ -16
 MIN, MAX VALUES = -2.70e 7.00, 4.76e 33.50



MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #3
 LEFT SILL AT LONGITUDINAL CG X-AXIS ACCELERATION

TRC , 920225-3
CRASH III DAMAGE ALGORITHM
92056
VC6Y61

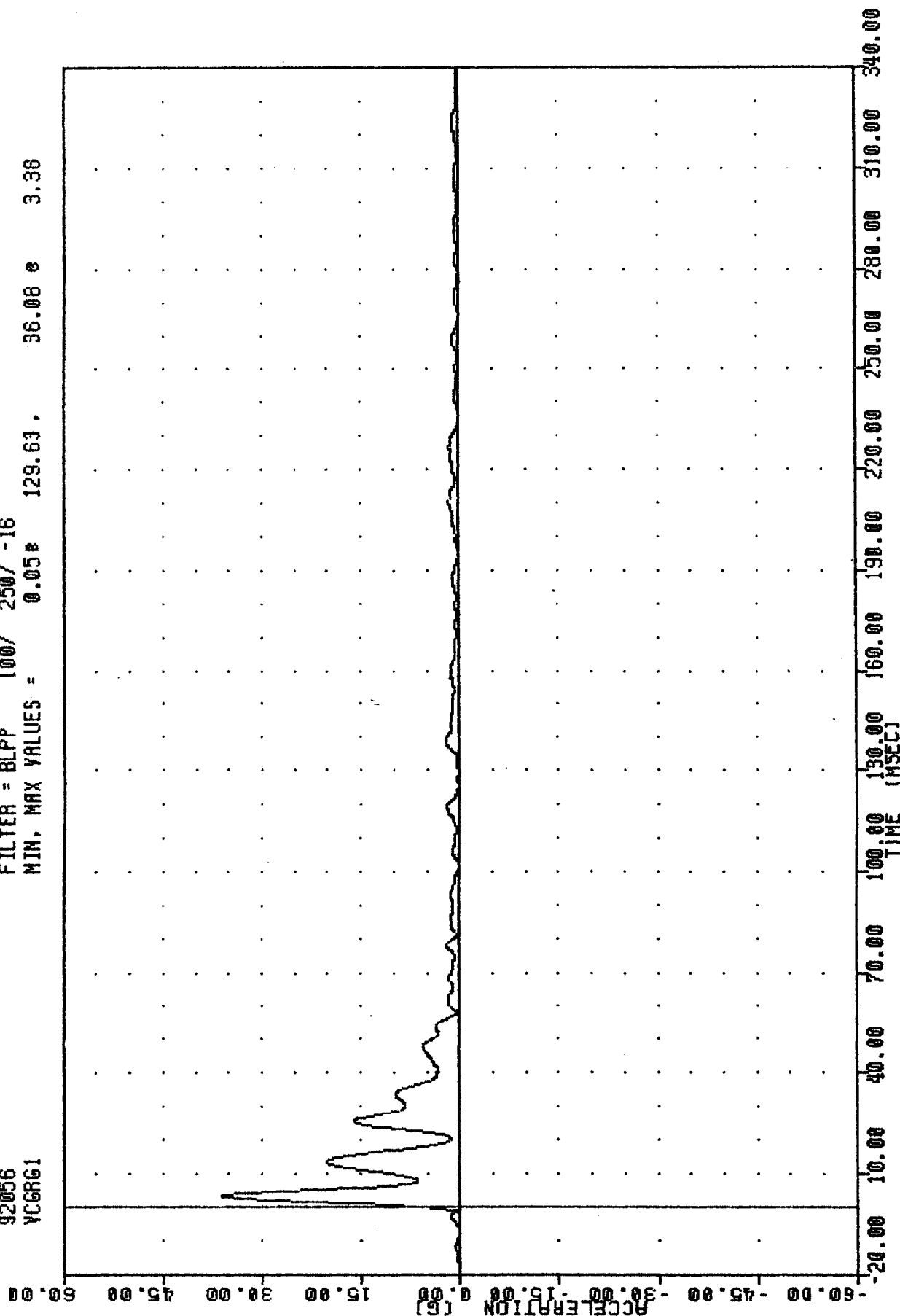
FILTER = BLPP 100/ 250/ -16
MIN. MAX VALUES = -1.97 77.88 36.08 3.38



MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #3
LEFT SILL AT LONGITUDINAL CG Y-AXIS ACCELERATION

TRC 920225-3
 CRASH III DAMAGE ALGORITHM
 92056
 YCGR61

FILTER = BLPP 100/ 250/ -16
 MIN. MAX VALUES = 0.05 129.63 36.08 3.38

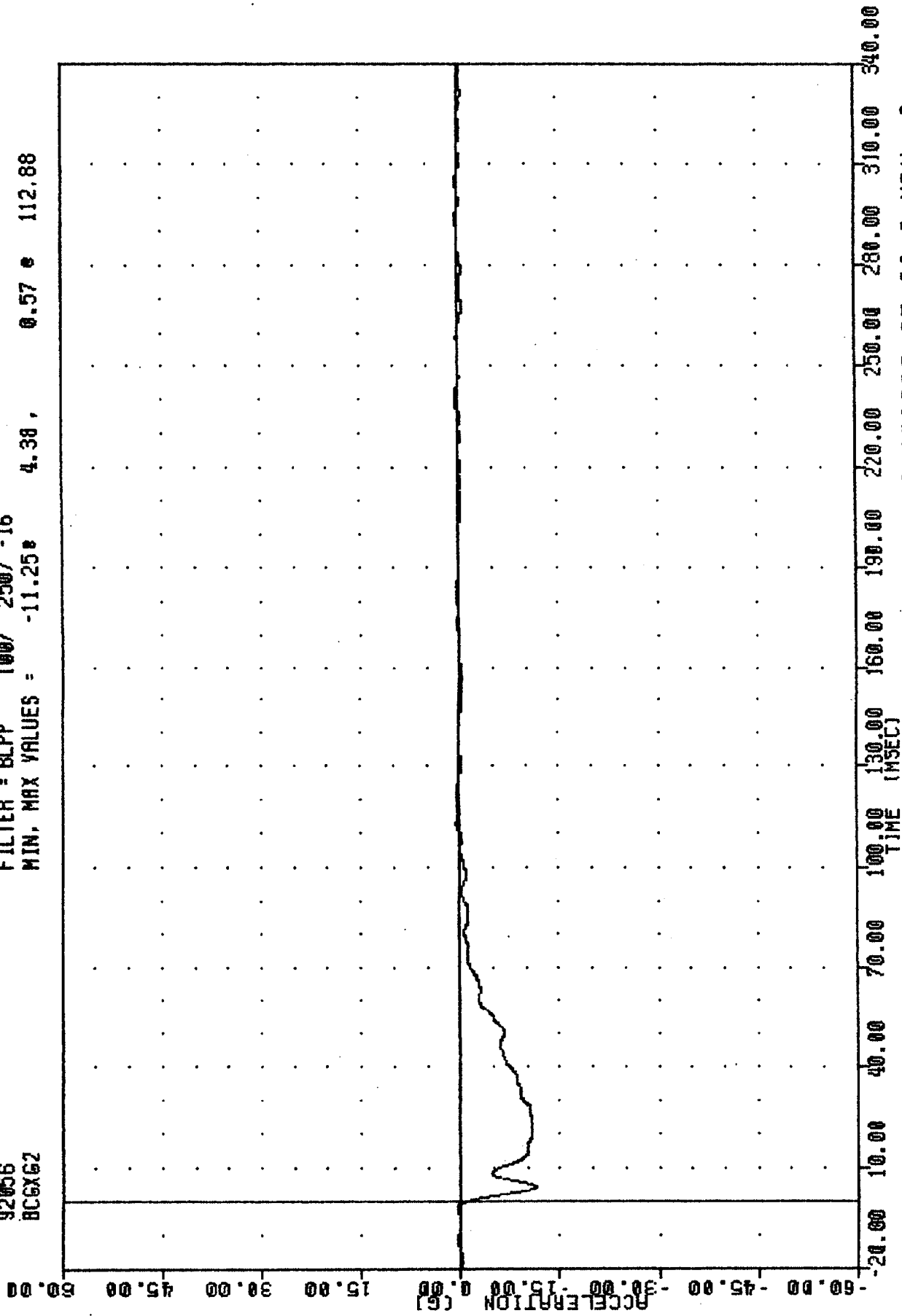


MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH *3
 LEFT SILL AT LONGITUDINAL CG RESULTANT ACCELERATION

TRC
CRASH III DAMAGE ALGORITHM
92056
BCGXG2

, 920225-3

FILTER = BLPP 100/ 250/ -16
MIN, MAX VALUES = -11.25 4.38, 0.57 112.88



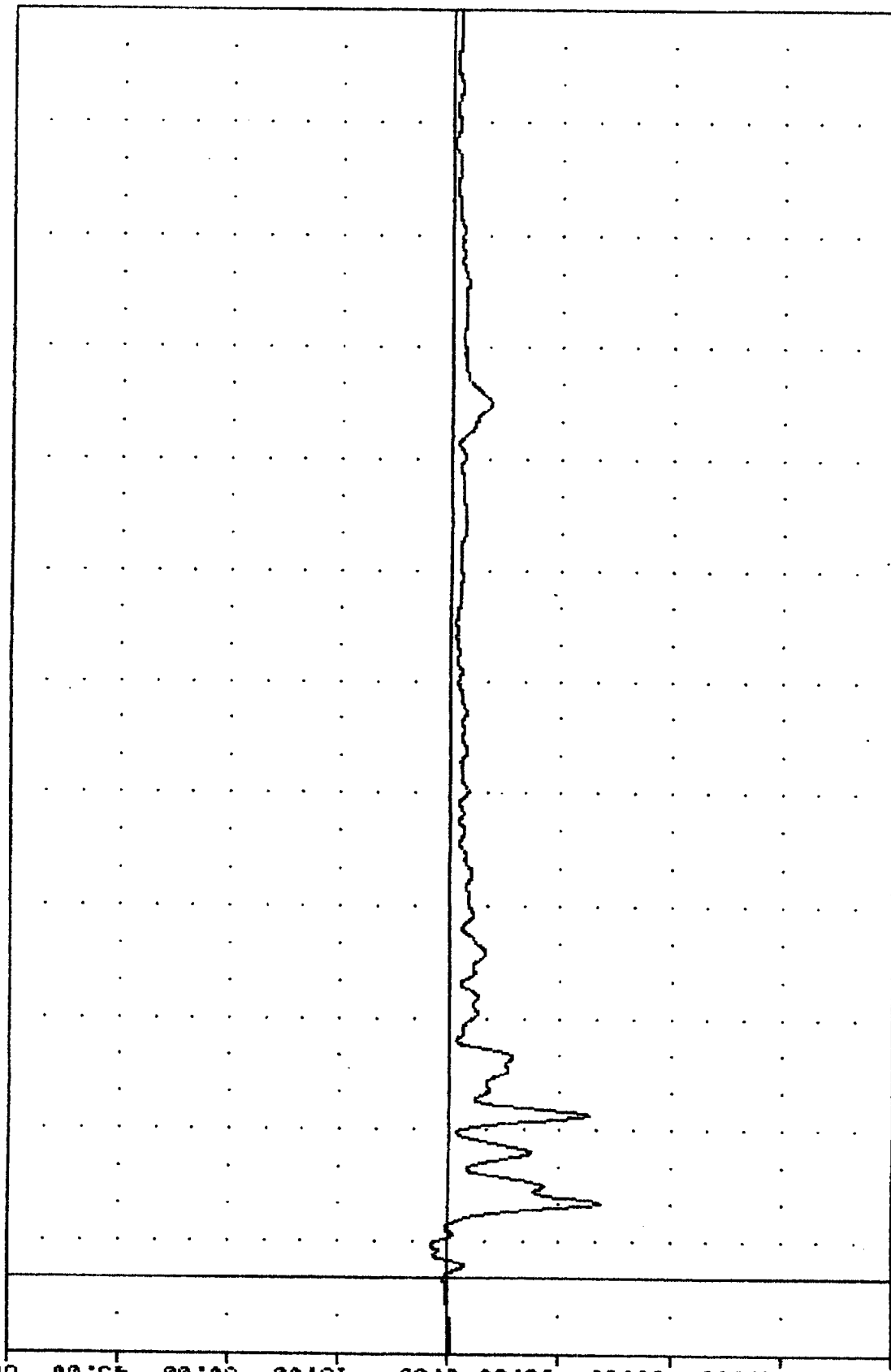
MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #3
MOVING BARRIER CG X-AXIS ACCELERATION

TRC
CRASH III DAMAGE ALGORITHM
92056
BCGCG2

920225-3

FILTER = BLPP 100/ 250/ -16
MIN. MAX VALUES = -20.48 20.25 2.36 9.13

ACCELERATION (G)

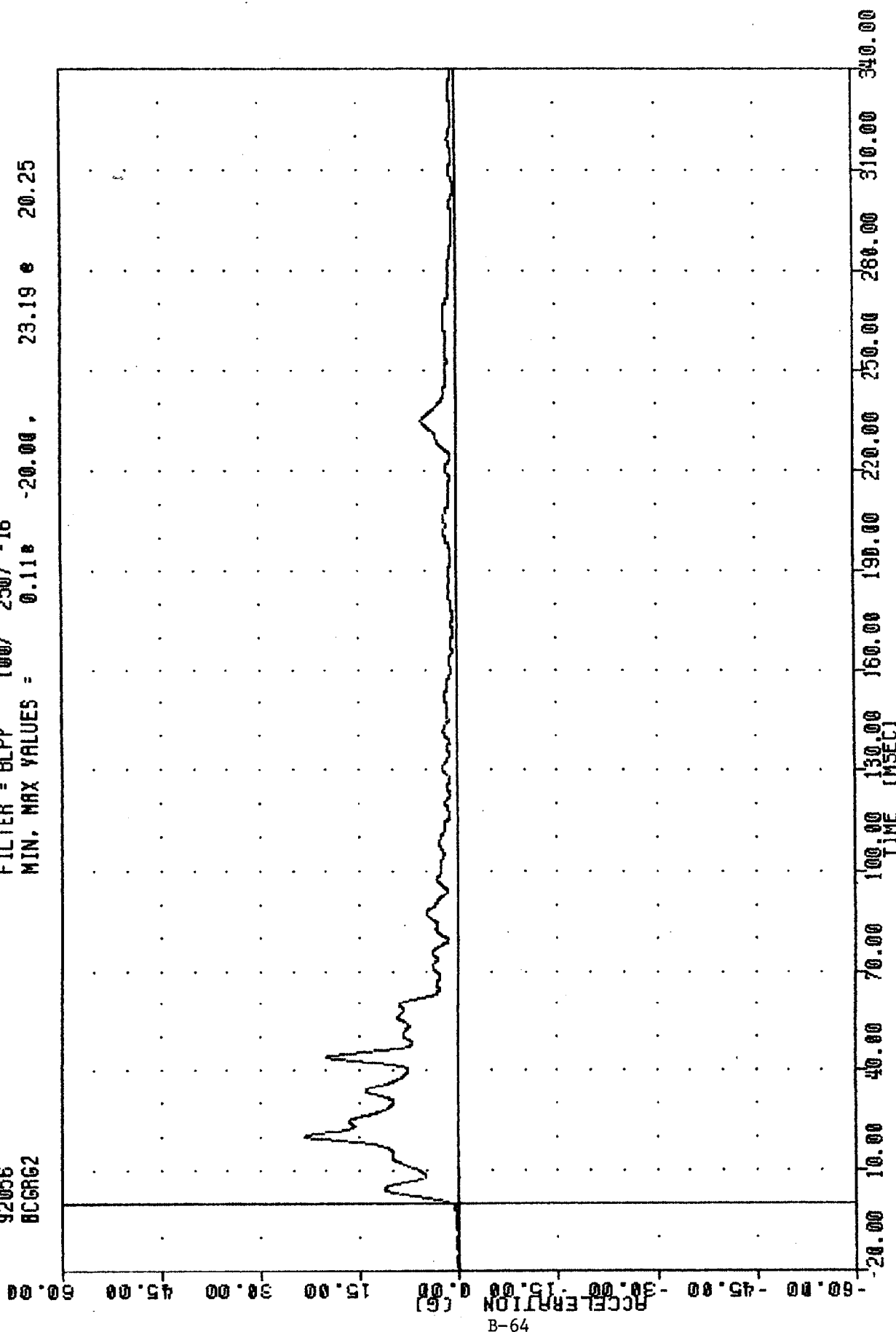


20.00 10.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00
TIME (MSEC)

MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #3
MOVING BARRIER CG Y-AXIS ACCELERATION

TRC , 920225-3
 CRASH III DAMAGE ALGORITHM
 92056
 BCGRG2

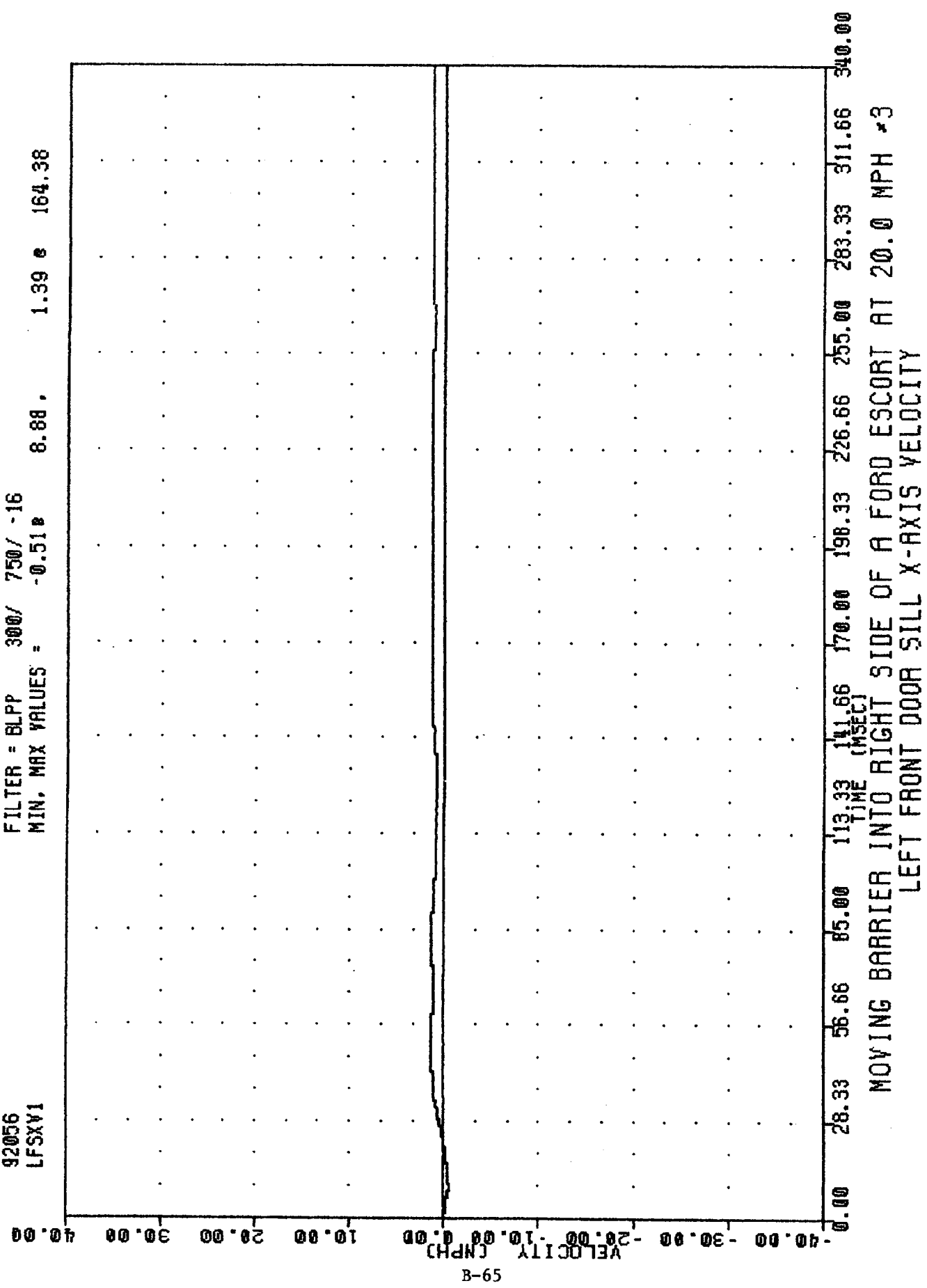
FILTER = BLPP 100/ 250/ -16
 MIN. MAX VALUES = 0.118 -20.00 , 23.19 e 20.25



MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #3
 MOVING BARRIER CG RESULTANT ACCELERATION

TAC
 CRASH III DAMAGE ALGORITHM
 92056
 LFSXV1

FILTER = BLPP 300/ 750/ -16
 MIN, MAX VALUES = -0.518 8.88 1.39 e 164.38

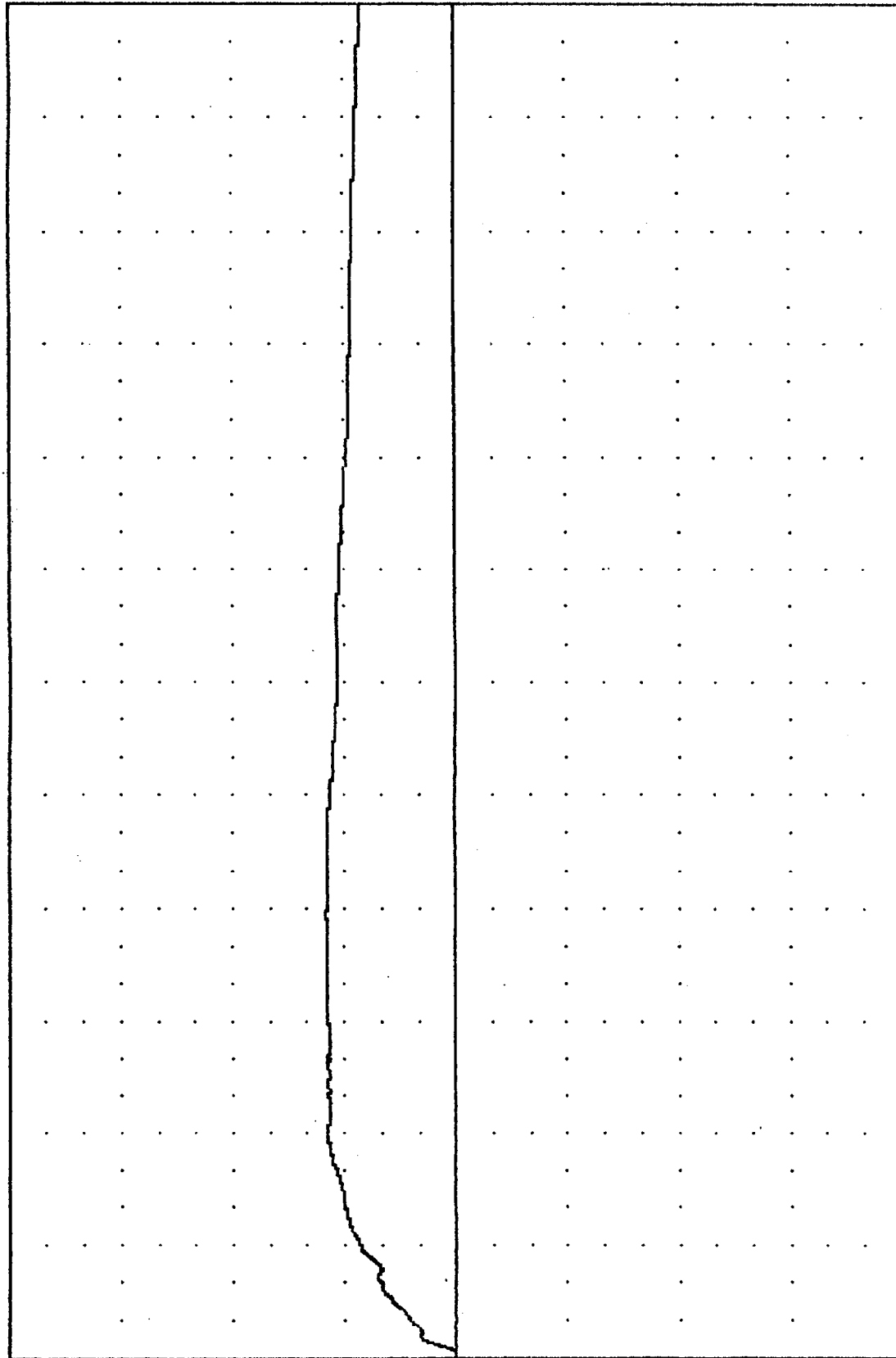


MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH *3
 LEFT FRONT DOOR SILL X-AXIS VELOCITY

TRC , 920225-3
 CRASH III DAMAGE ALGORITHM
 92056
 LFSYV1

FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = -0.028 0.63, 11.63 e 111.75

99-66
 VELOCITY (MPH)

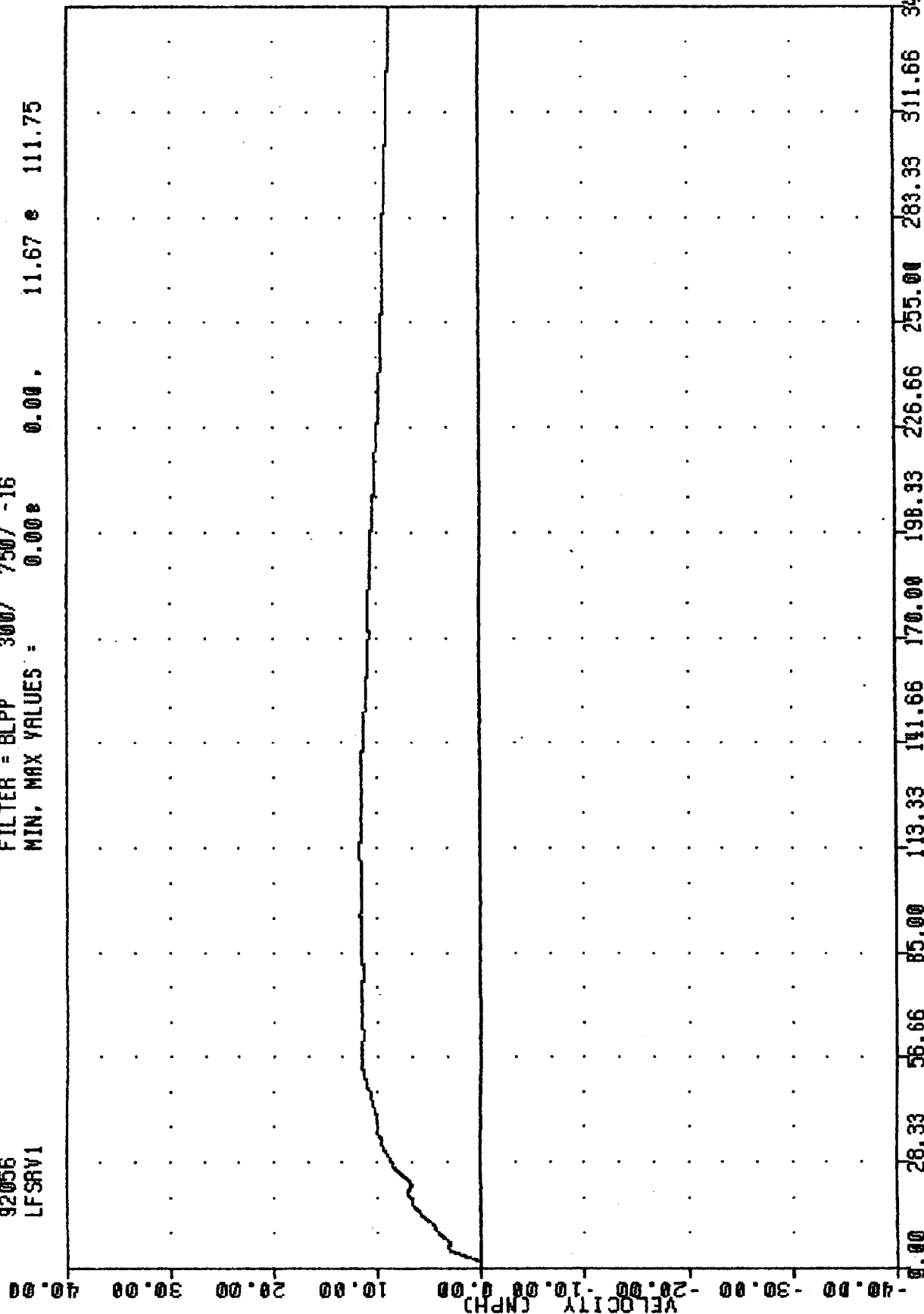


MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #3
 LEFT FRONT DOOR SILL Y-AXIS VELOCITY

TRC
 CRASH III DAMAGE ALGORITHM
 920516
 LFSRV1

920225-3

FILTER = BLPP 300/ 750/ -16
 MIN, MAX VALUES = 0.00 0.00 11.67 e 111.75



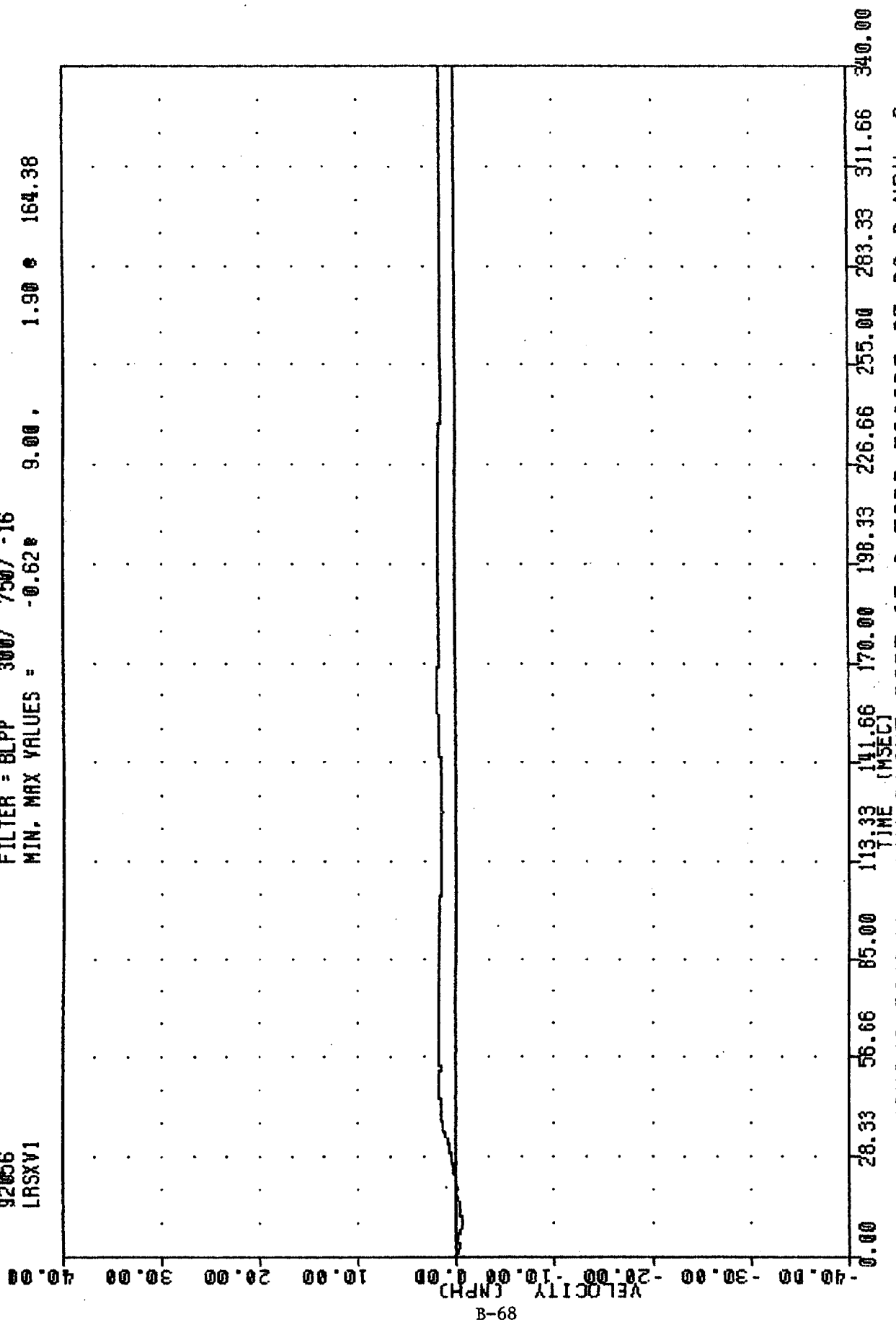
B-67

MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #3
 LEFT FRONT DOOR SILL RESULTANT VELOCITY

TRC
 CRASH III DAMAGE ALGORITHM
 92056
 LRSXV1

920225-3

FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = -0.62 9.00 1.90 164.38

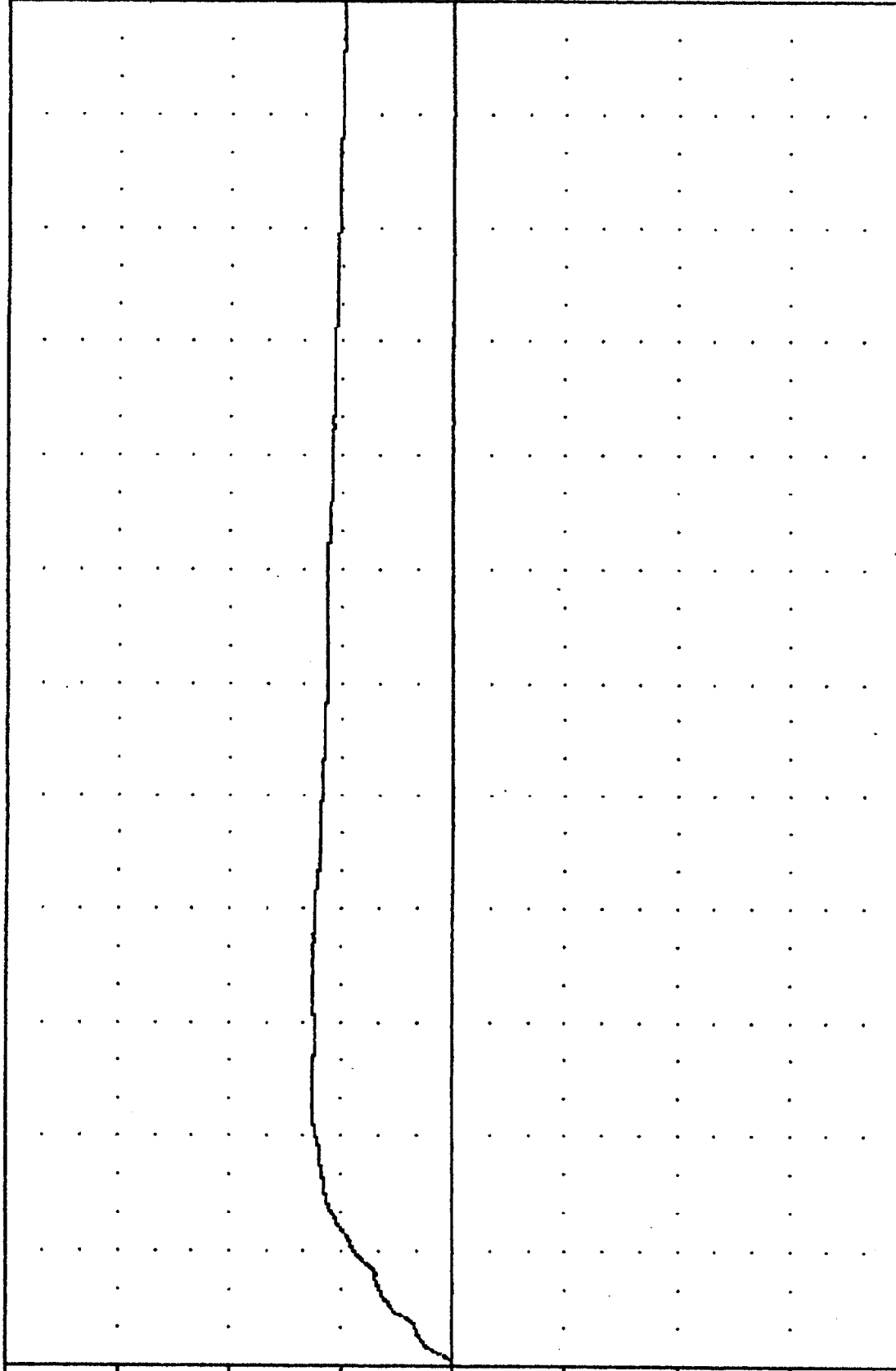


MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH
 LEFT REAR DOOR SILL X-AXIS VELOCITY

TRC
CRASH III DAMAGE ALGORITHM
92056
LRSYV1

FILTER = BLPP 300/ 750/ -16
MIN. MAX VALUES = 0.00 0.00 12.63 95.88

69-B
VELOCITY (MPH)



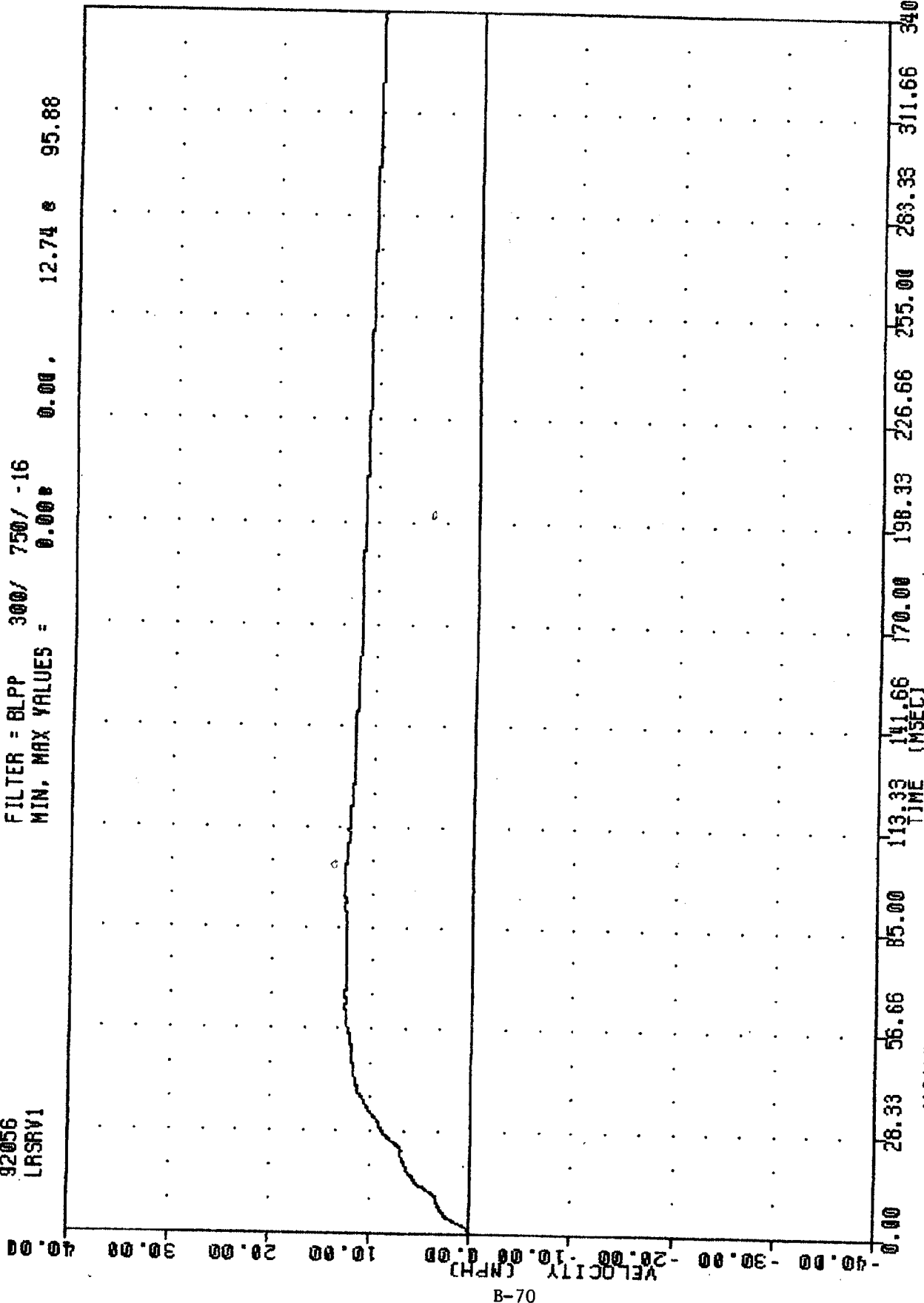
0.00 28.33 56.66 85.00 113.33 141.66 170.00 198.33 226.66 255.00 283.33 311.66 340.00

MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #3
LEFT REAR DOOR SILL Y-AXIS VELOCITY

TRC
CRASH III DAMAGE ALGORITHM
92056
LRSRV1

, 920225-3

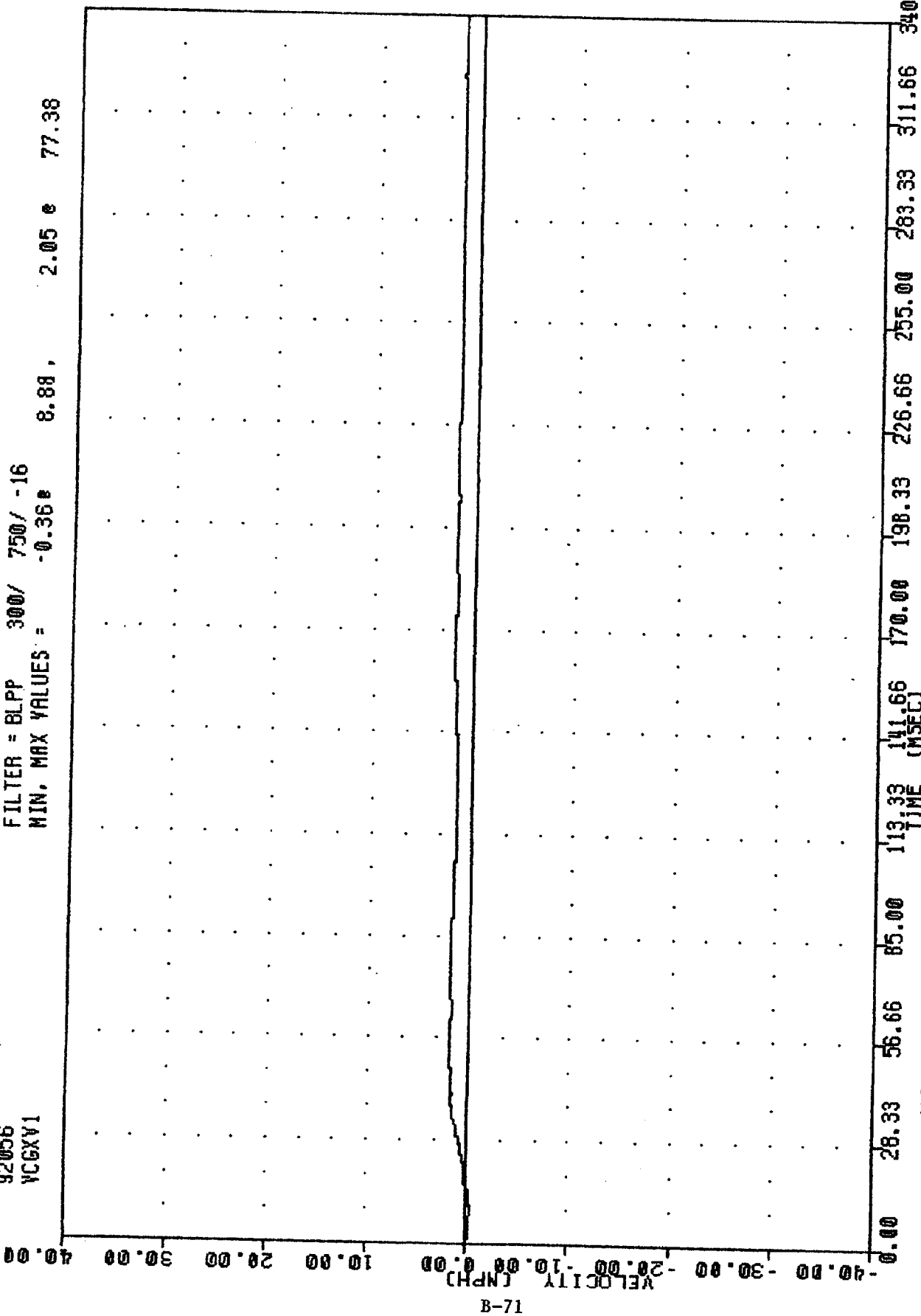
FILTER = BLPP 300/ 750/ -16
MIN, MAX VALUES = 0.00 0.00 12.74 95.88



MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #3
LEFT REAR DOOR SILL RESULTANT VELOCITY

TRC
CRASH III DAMAGE ALGORITHM
92056
YCGXV1

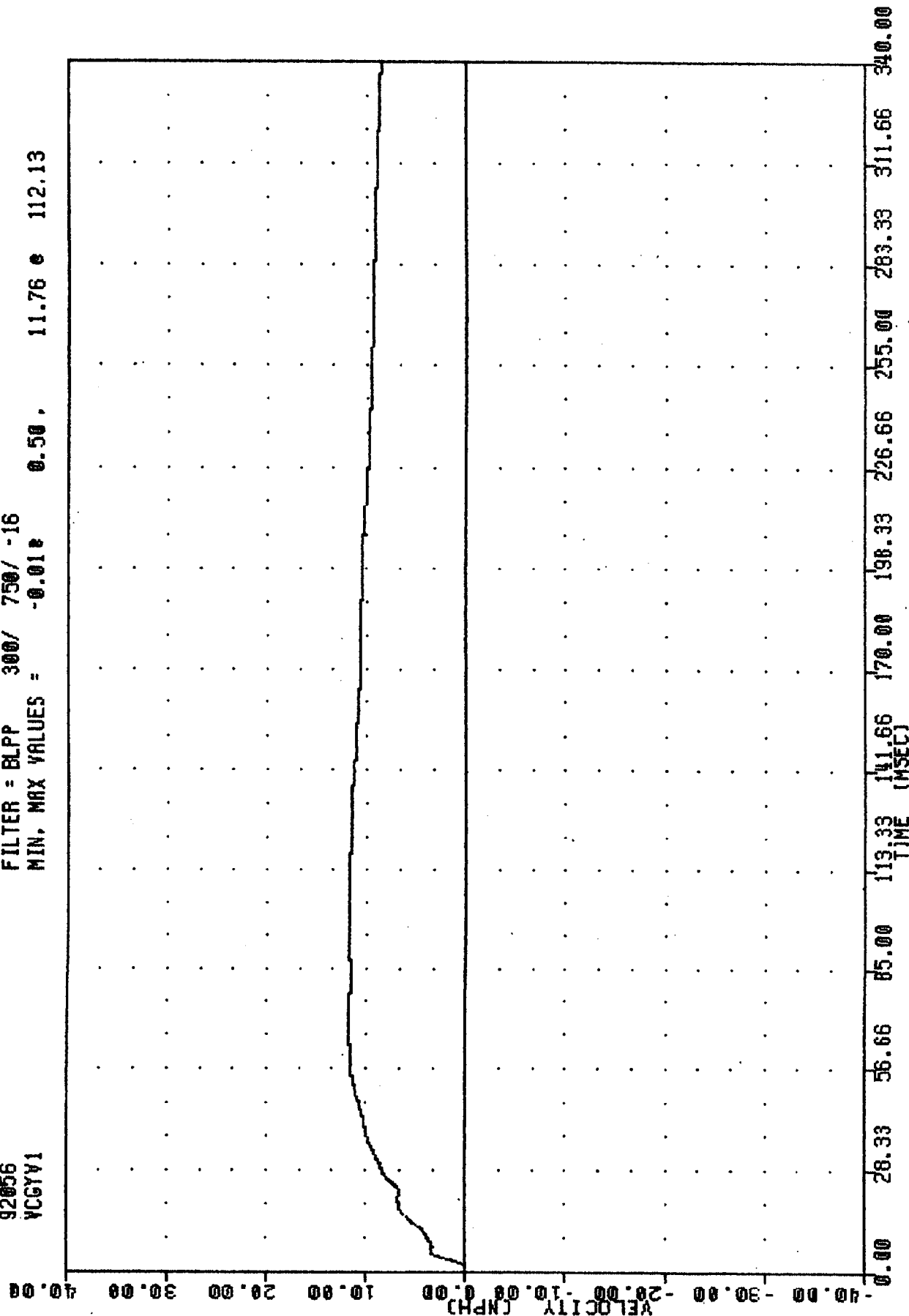
FILTER = BLPP 300/ 750/ -16
MIN, MAX VALUES = -0.36 8.88, 2.05 e 77.38



MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH *3
LEFT SILL AT LONGITUDINAL CG X-AXIS VELOCITY

TRC , 920225-3
 CRASH III DAMAGE ALGORITHM
 92056
 YCGYV1

FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = -0.012 0.50 11.76 112.13



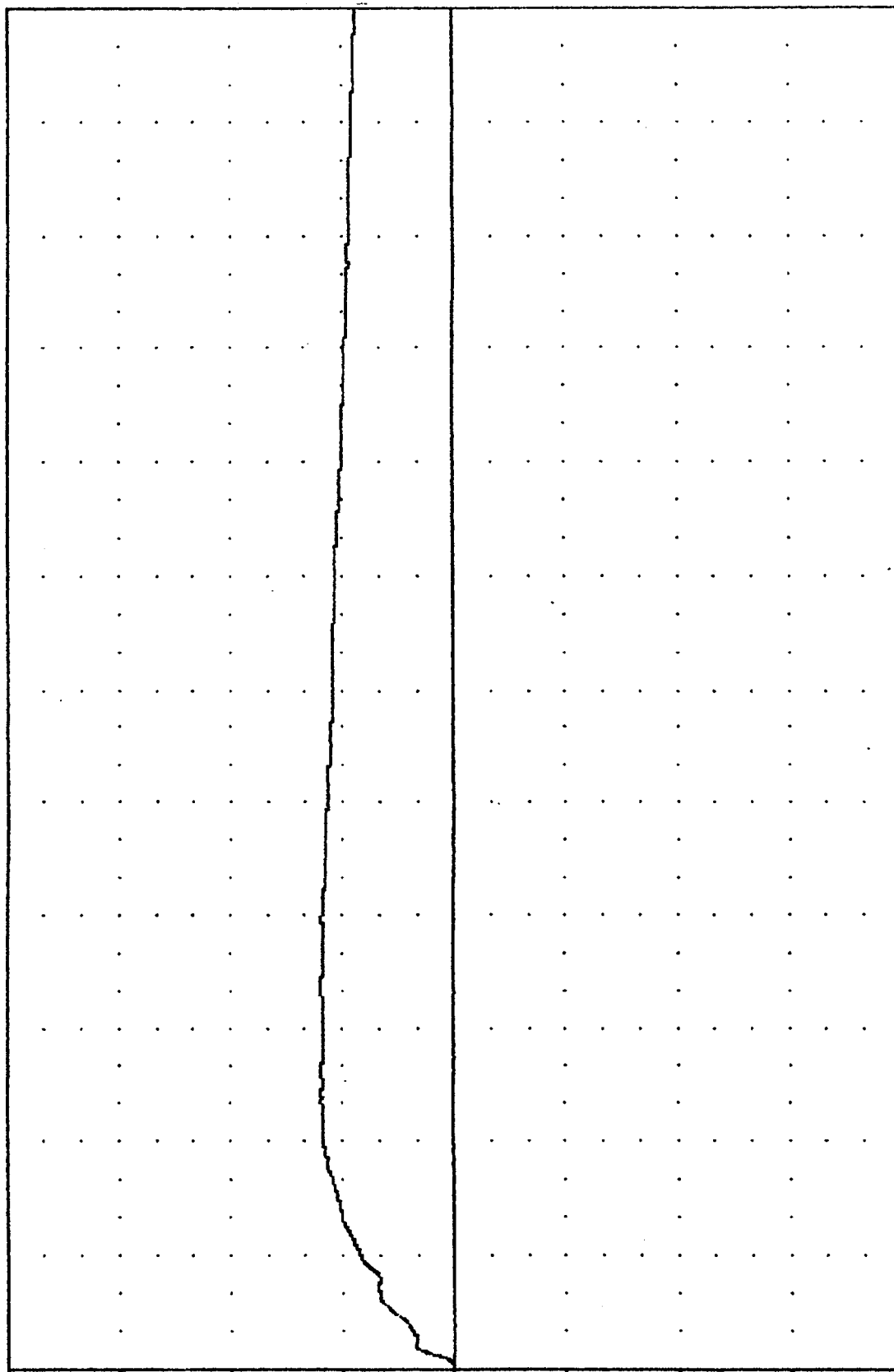
MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #3
 LEFT SILL AT LONGITUDINAL CG Y-AXIS VELOCITY

TRC
CRASH III DAMAGE ALGORITHM
92056
YCGRV1

920225-3

FILTER = BLPP 300/ 750/ -16
MIN, MAX VALUES = 0.00 11.87 73.50

VELOCITY (MPH)

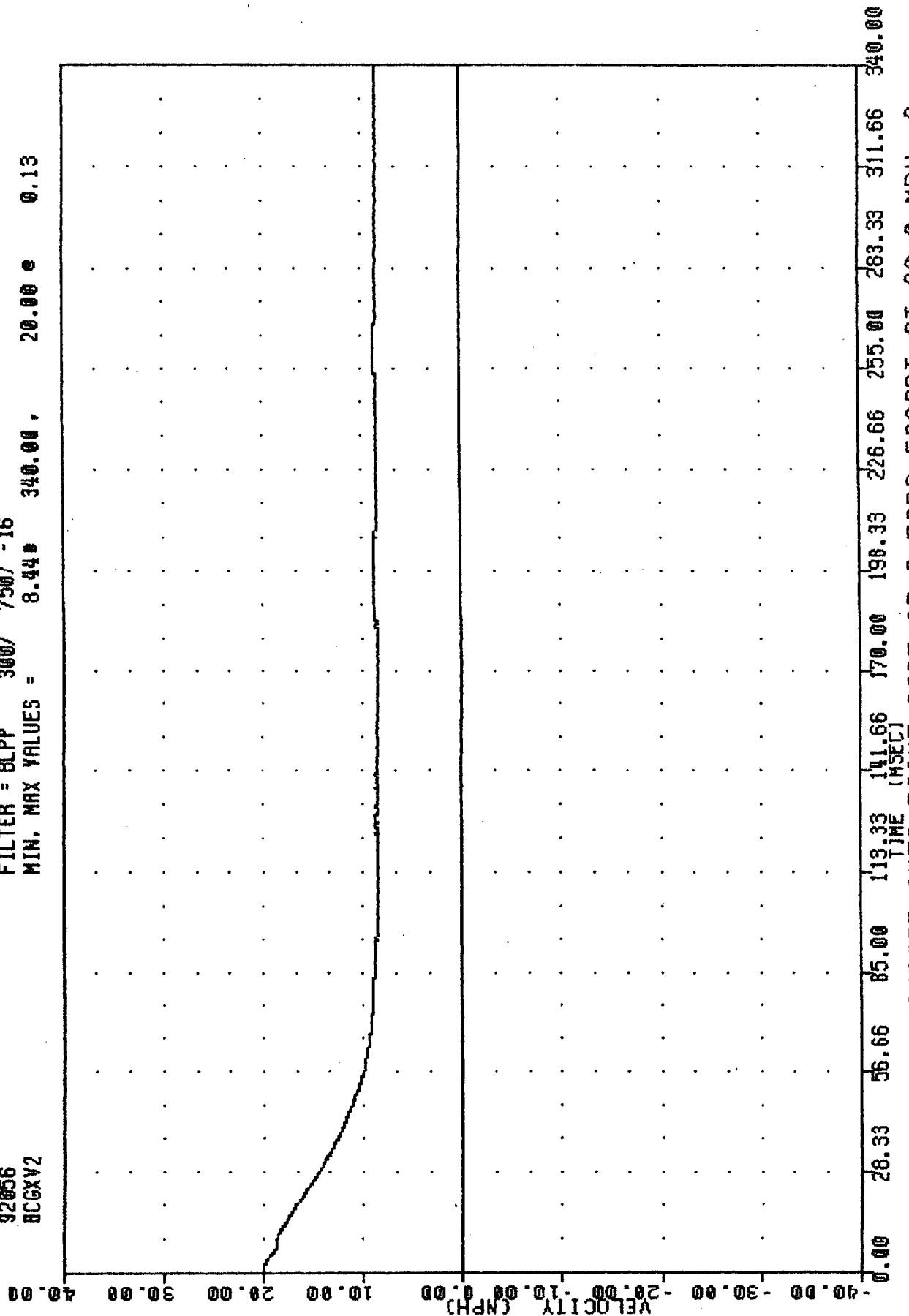


0.00 28.33 56.66 85.00 113.33 141.66 170.00 198.33 226.66 255.00 283.33 311.66 340.00

MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #3
LEFT SILL AT LONGITUDINAL CG RESULTANT VELOCITY

TRC , 920225-3
 CRASH III DAMAGE ALGORITHM
 92056
 BCGXV2

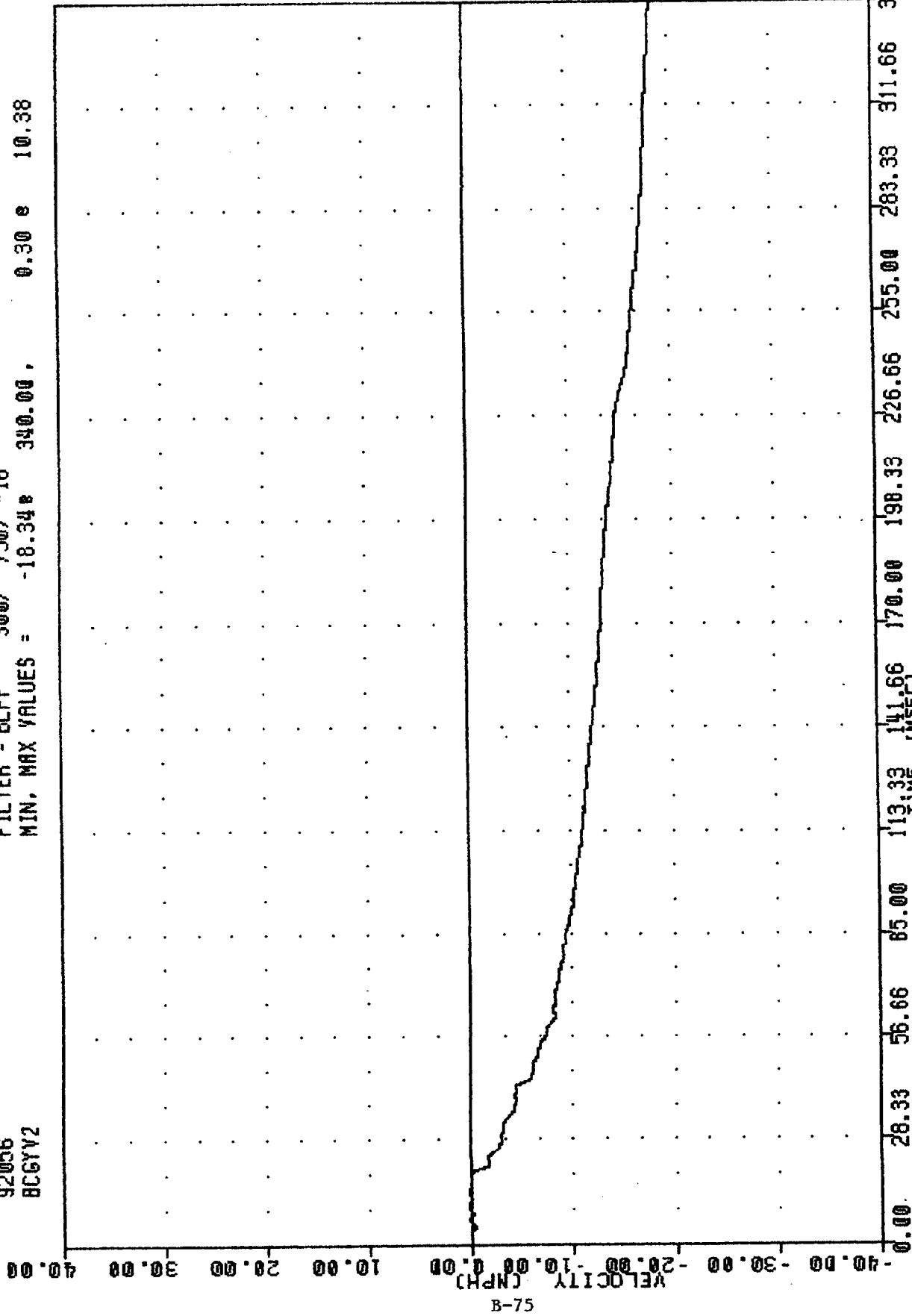
FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = 8.44 340.00, 20.00 e 0.13



MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #3
 MOVING BARRIER CG X-AXIS VELOCITY

TRC , 920225-3
 CRASH III DAMAGE ALGORITHM
 92056
 BCGYV2

FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = -18.34 340.00, 0.30 10.38

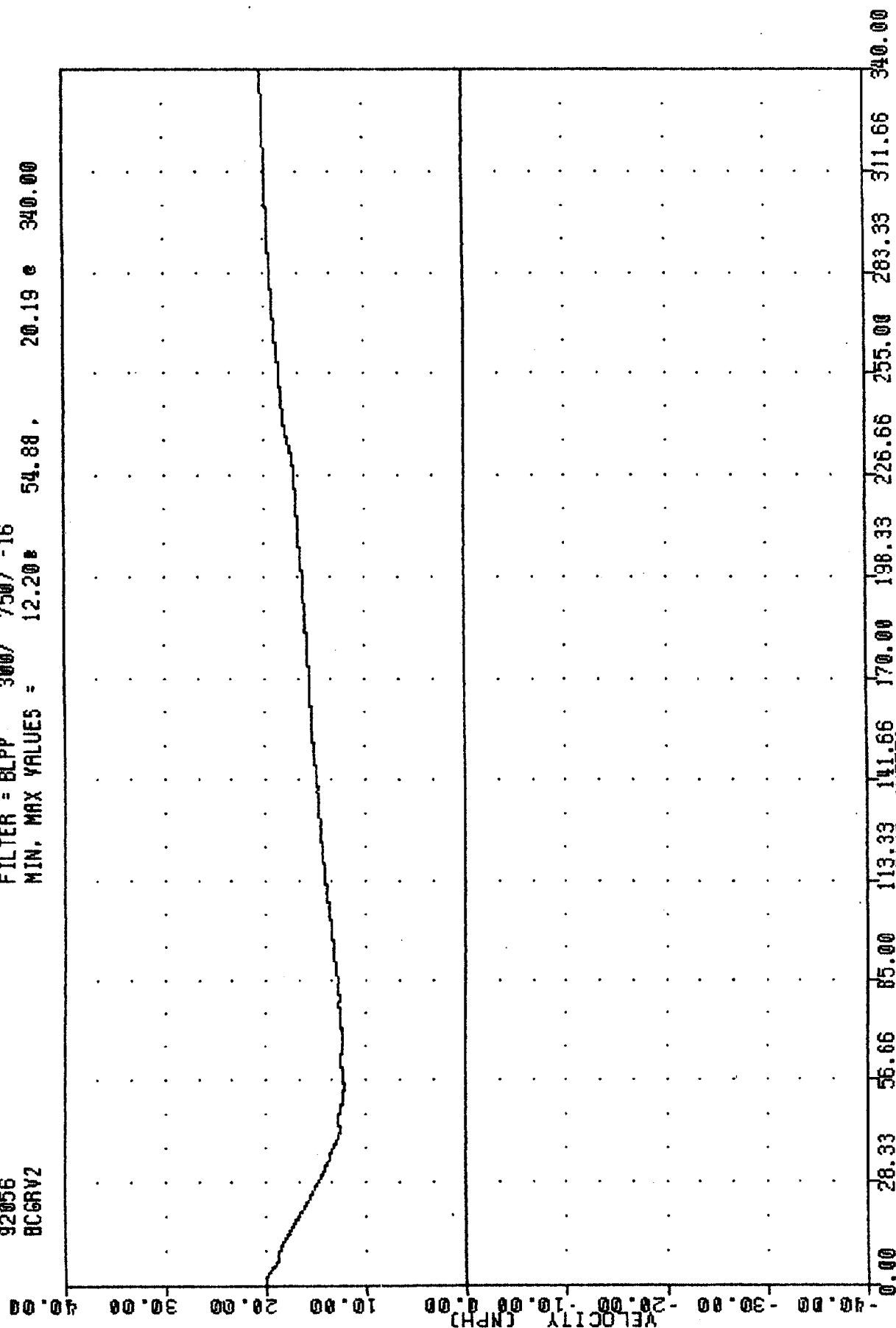


B-75

MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH *3
 MOVING BARRIER CG Y-AXIS VELOCITY

TRC
 CRASH III DAMAGE ALGORITHM
 92056
 BCGRV2

FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = 12.20 54.88 20.19 340.00



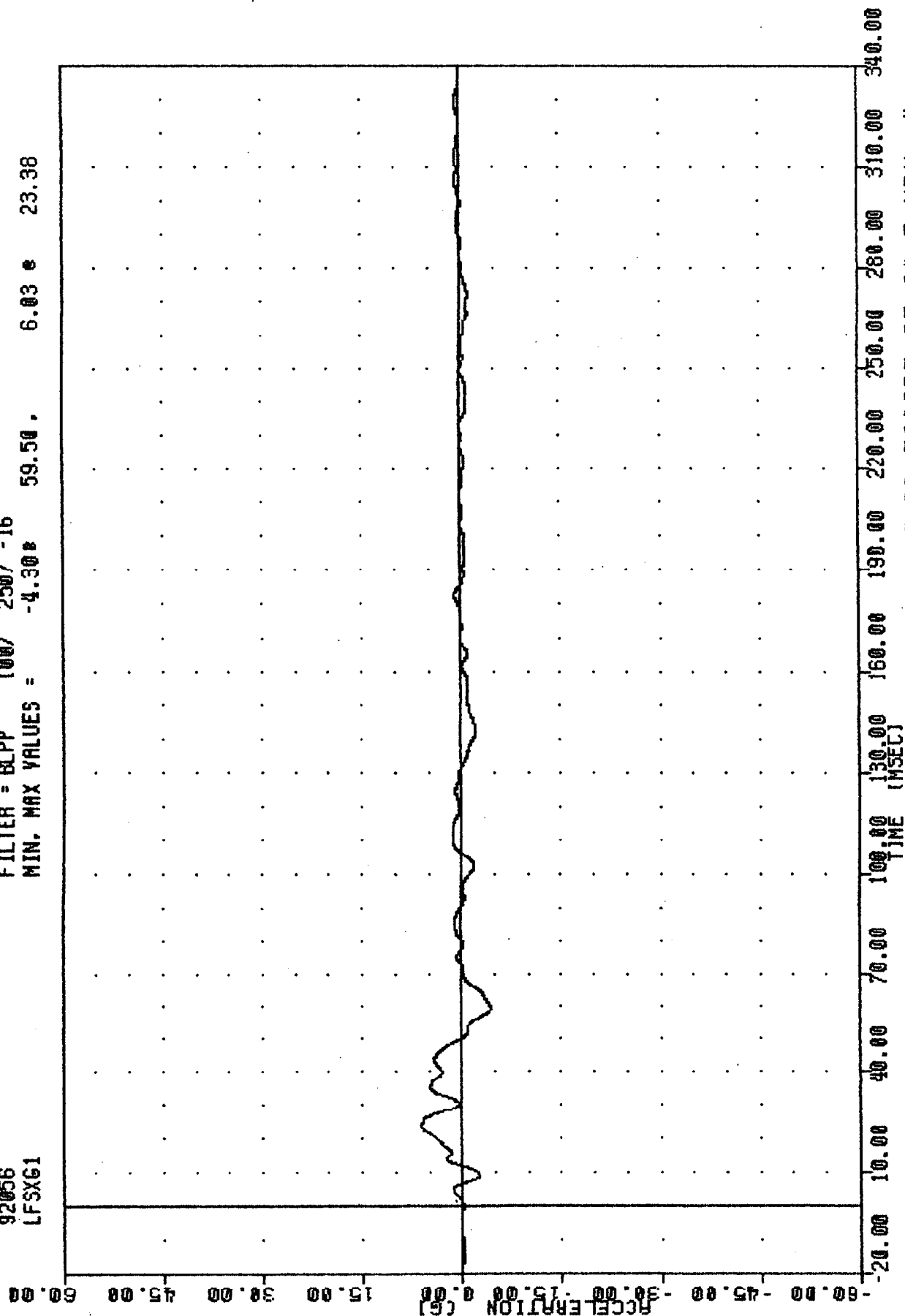
MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH *3
 MOVING BARRIER CG RESULTANT VELOCITY

DATA PLOTS

TEST NO. 920225-4

TRC , 920225-4
 CRASH III DAMAGE ALGORITHM
 92056
 LFSXG1

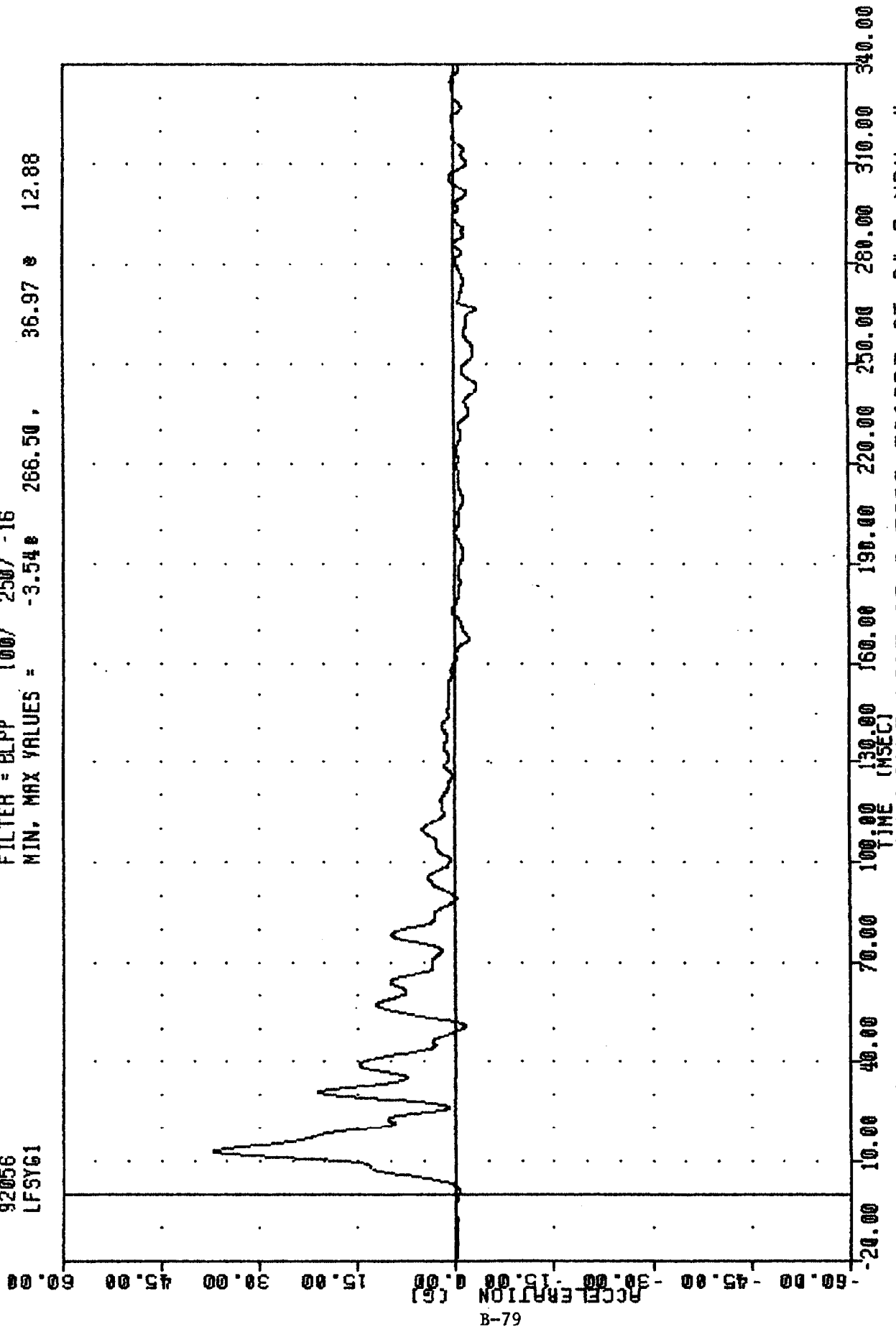
FILTER = BLPP 100/ 250/ -16
 MIN, MAX VALUES = -4.30 59.50 6.03 23.38



MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 34.7 MPH #4
 LEFT FRONT DOOR SILL X-AXIS ACCELERATION

TRC
 CRASH III DAMAGE ALGORITHM
 92056
 LFSYG1

FILTER = BLPP 100/ 250/ -16
 MIN, MAX VALUES = -3.54 266.50, 36.97 12.88

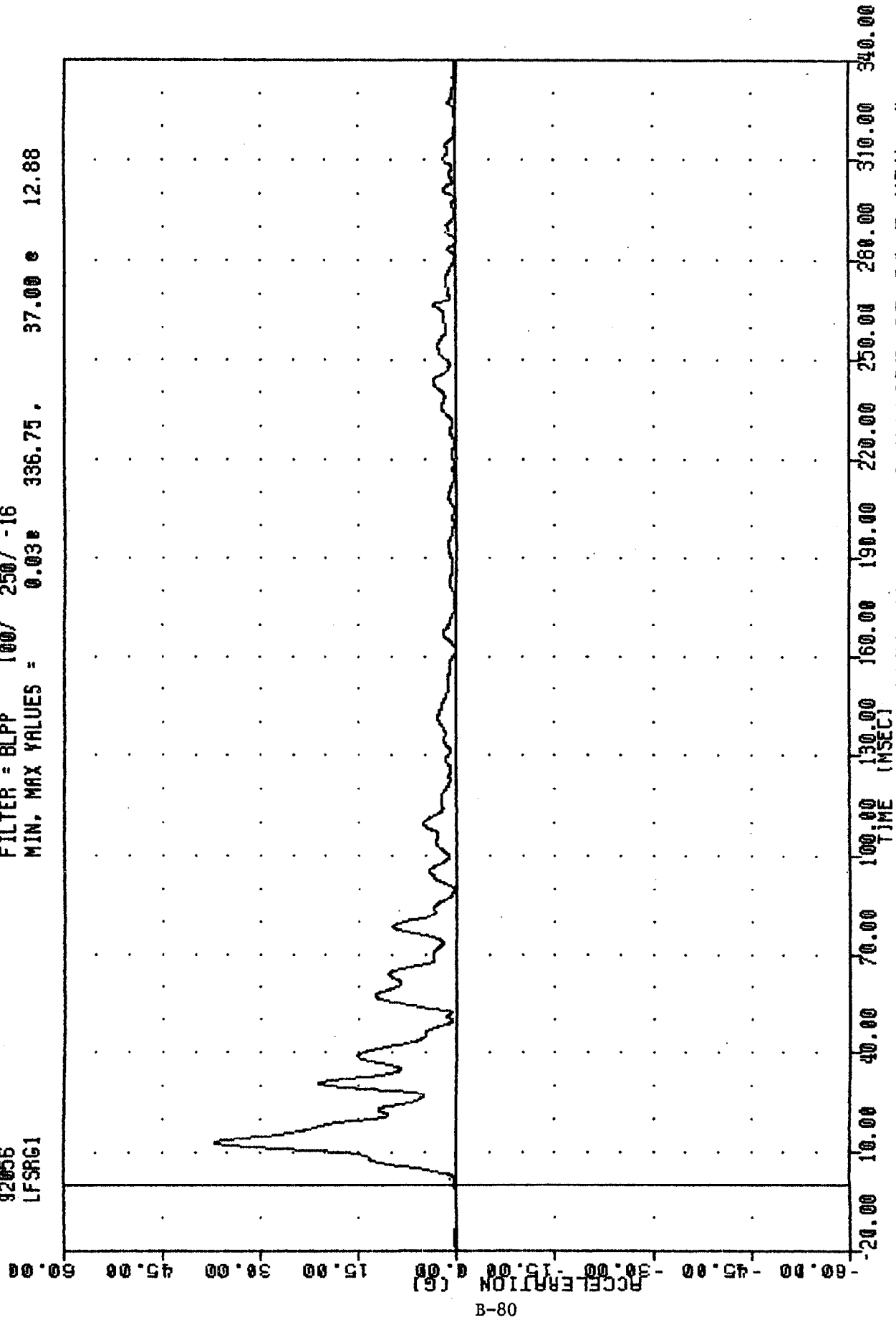


B-79

MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 34.7 MPH #4
 LEFT FRONT DOOR SILL Y-AXIS ACCELERATION

TRC 920225-4
 CRASH III DAMAGE ALGORITHM
 92056
 LFSRG1

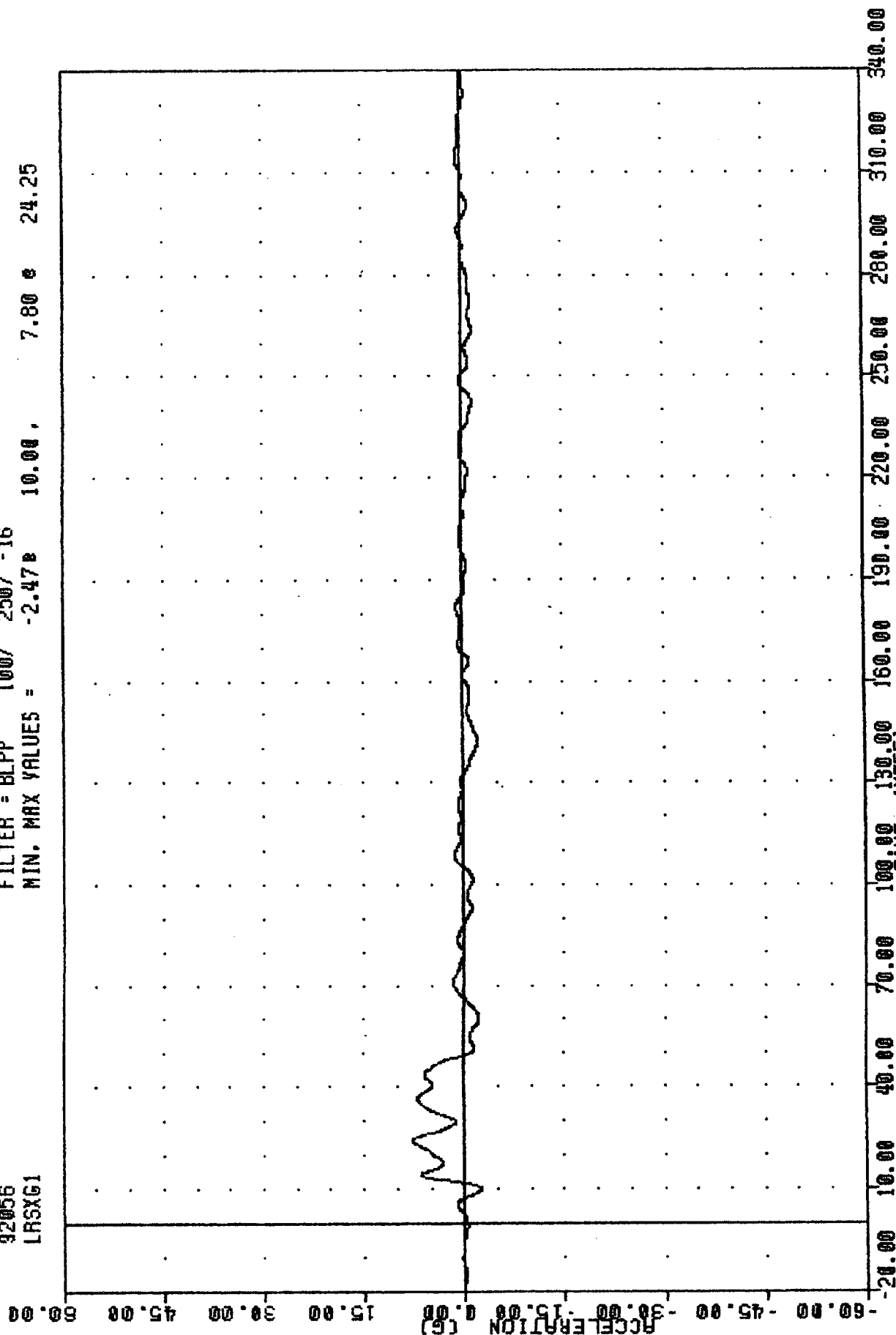
FILTER = BLPP 100/ 250/ -16
 MIN. MAX VALUES = 0.03 336.75 37.00 12.88



MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 34.7 MPH #4
 LEFT FRONT DOOR SILL RESULTANT ACCELERATION

TRC
 CRASH III DAMAGE ALGORITHM
 92056
 LRSXG1

FILTER = BLPP 100/ 250/ -16
 MIN. MAX VALUES = -2.47 10.00 7.80 24.25

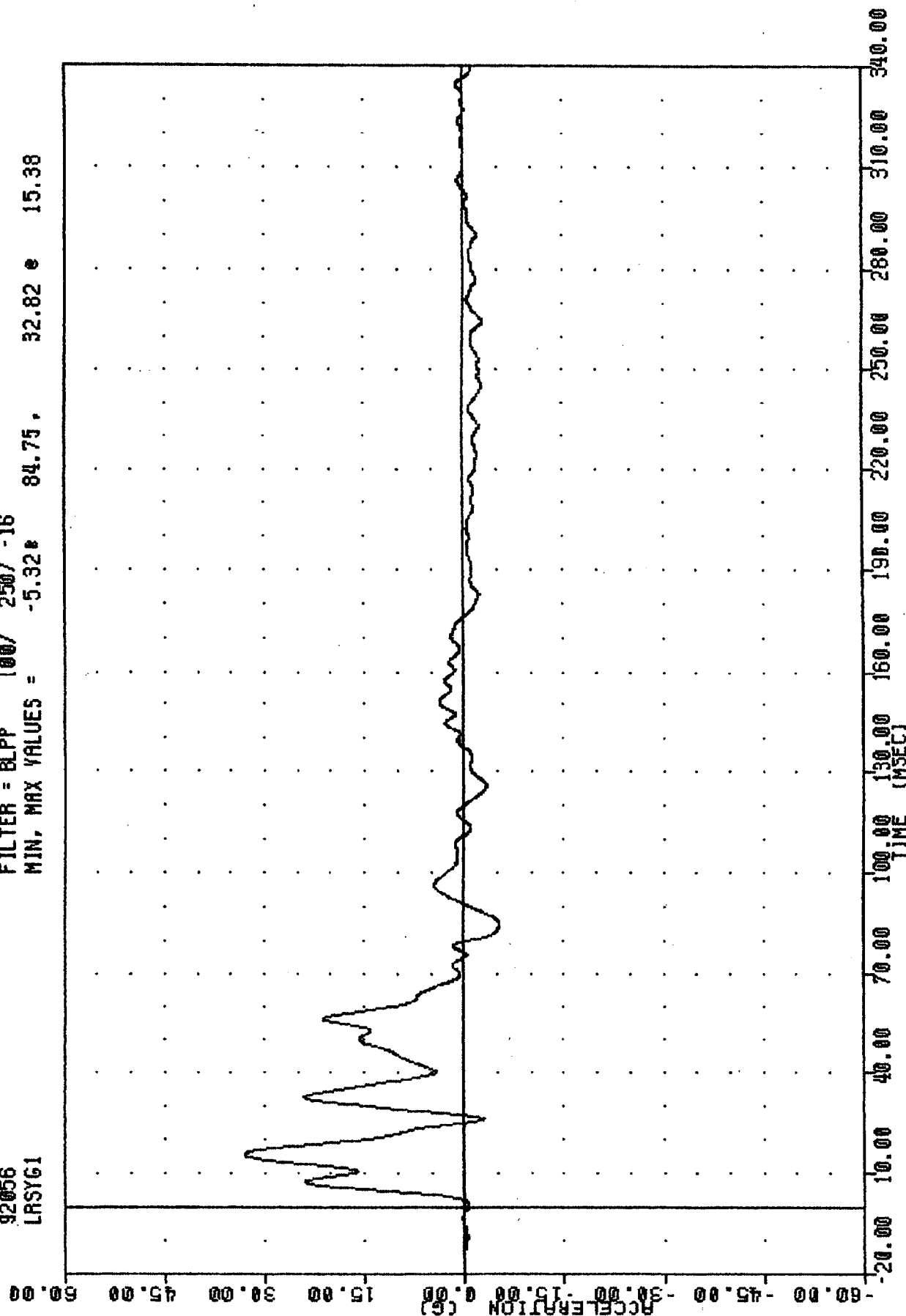


B-81

MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 34.7 MPH #4
 LEFT REAR DOOR SILL X-AXIS ACCELERATION

TAC , 920225-4
 CRASH III DAMAGE ALGORITHM
 92056
 LRSYG1

FILTER = BLPP 100/ 250/ -16
 MIN, MAX VALUES = -5.32 84.75, 32.82 15.38

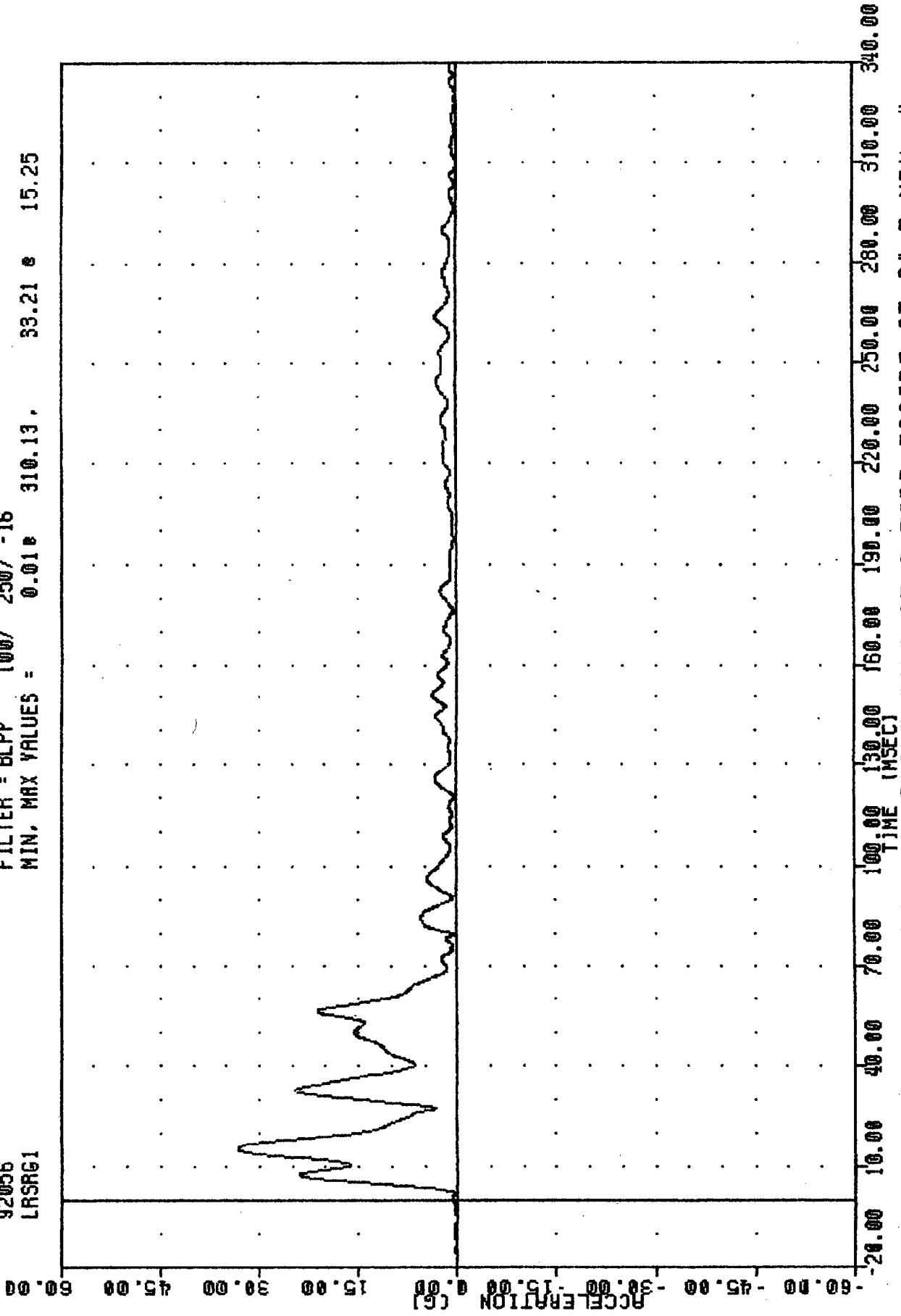


B-82

MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 34.7 MPH #4
 LEFT REAR DOOR SILL Y-AXIS ACCELERATION

TRC
 CRASH III DAMAGE ALGORITHM
 92056
 LRSRG1

FILTER = BLPP 100/ 250/ -16
 MIN. MAX VALUES = 0.01e 310.13, 33.21 e 15.25

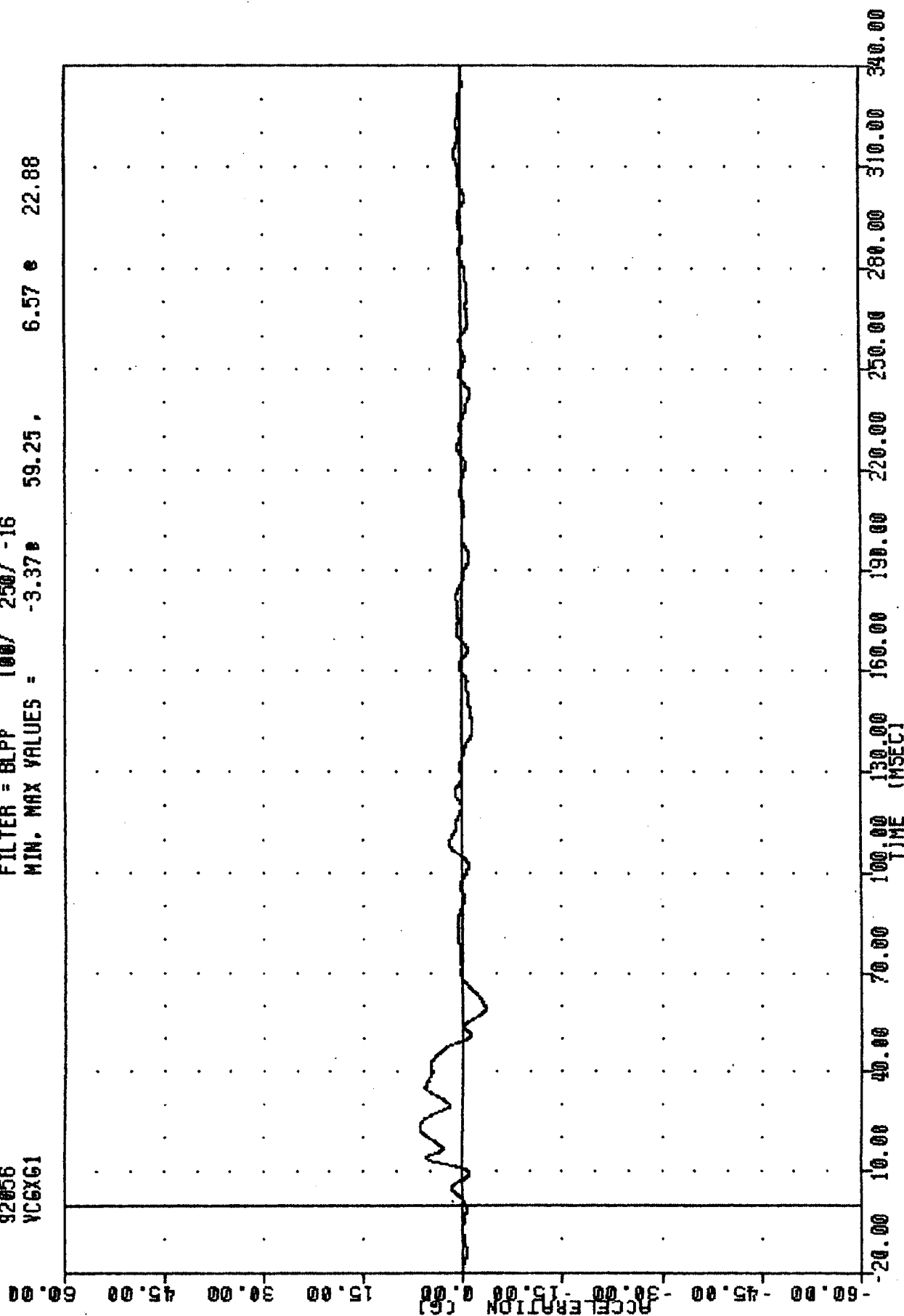


B-83

MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 34.7 MPH #4
 LEFT REAR DOOR SILL RESULTANT ACCELERATION

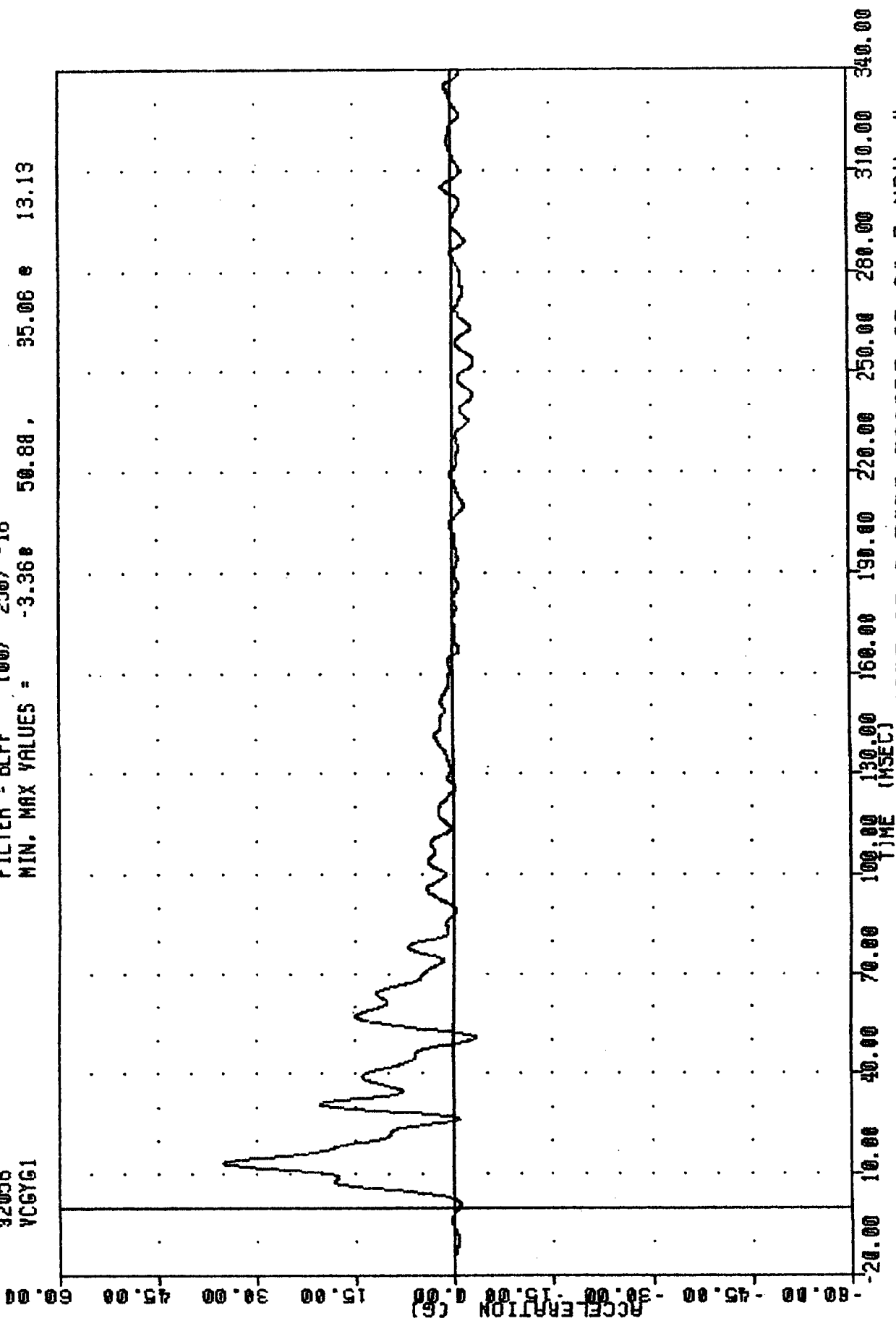
TRC , 920225-4
 CRASH III DAMAGE ALGORITHM
 92056
 VC6X61

FILTER = BLPP 100/ 250/ -16
 MIN. MAX VALUES = -3.37 59.25 6.57 22.88



TRC , 920225-4
CRASH III DAMAGE ALGORITHM
92056
VCCYG1

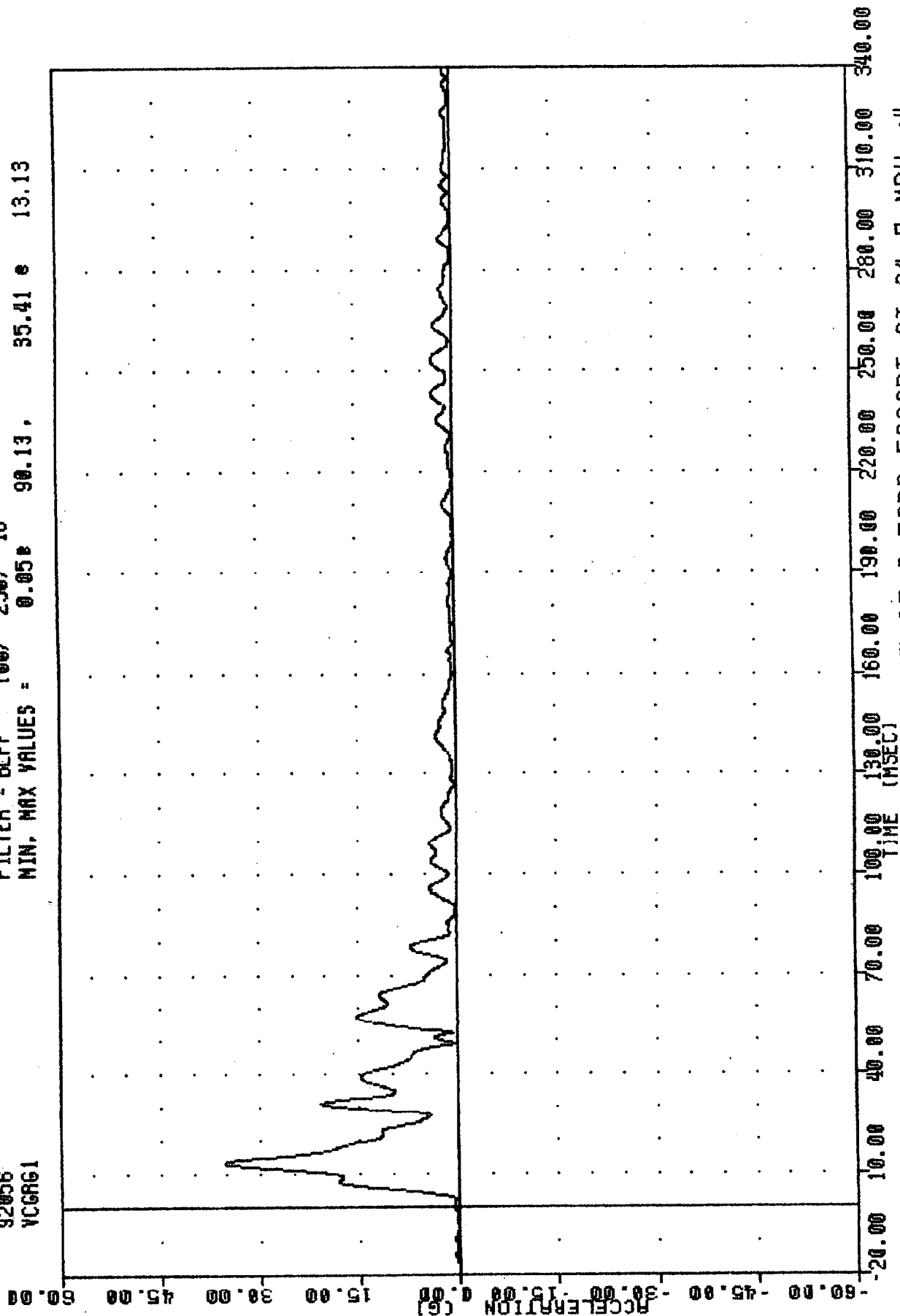
FILTER = BLPP 100/ 250/ -16
MIN. MAX VALUES = -3.36 50.88 , 35.06 13.13



MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 34.7 MPH #4
LEFT SILL AT LONGITUDINAL CG Y-AXIS ACCELERATION

TRC , 920225-4
CRASH III DAMAGE ALGORITHM
92056
VCCRG1

FILTER = BLPP 100/ 250/ -16
MIN, MAX VALUES = 0.050 90.13, 35.41 e 13.13

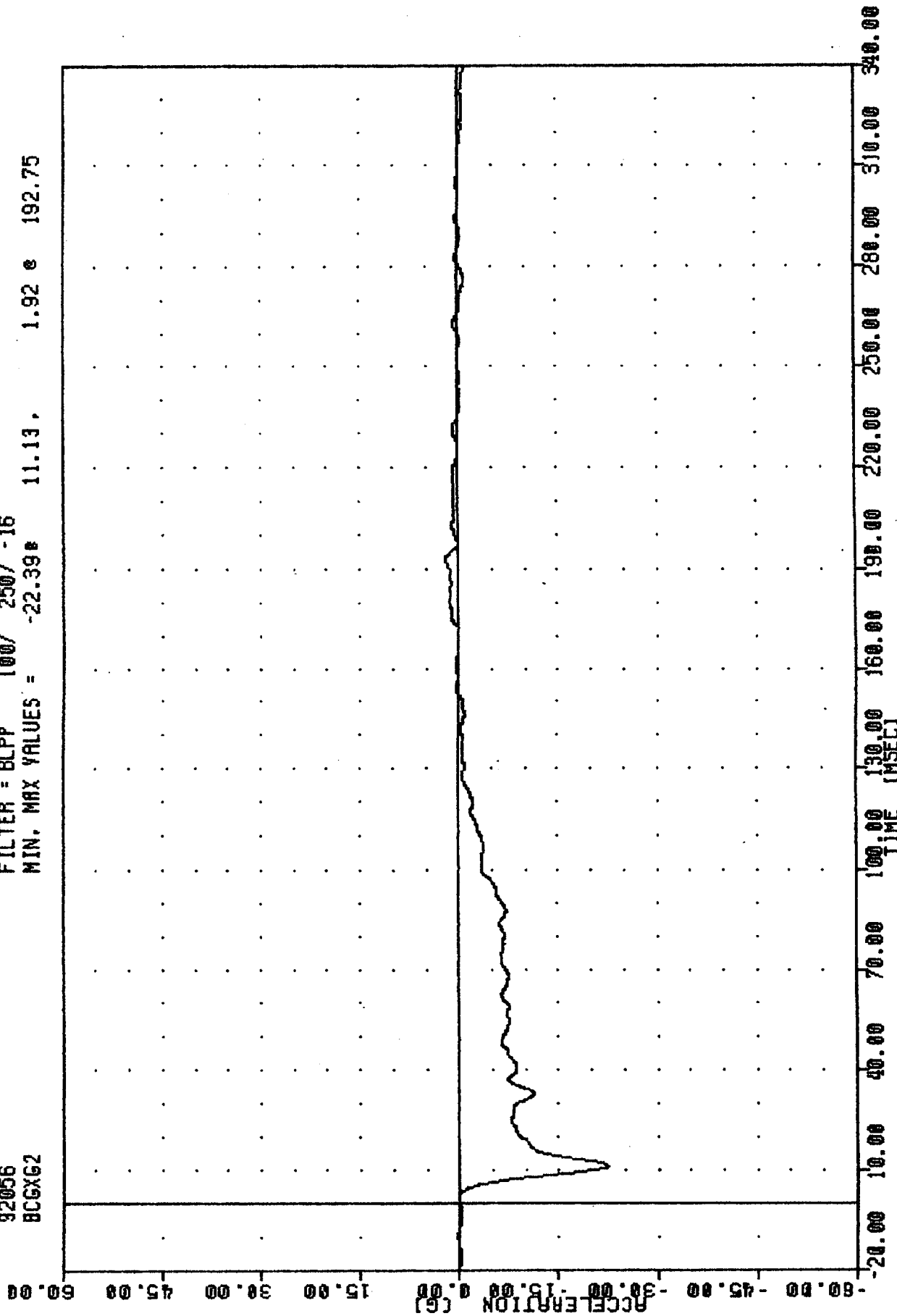


B-86

MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 34.7 MPH #4
LEFT SILL AT LONGITUDINAL CG RESULTANT ACCELERATION

TAC
 CRASH III DAMAGE ALGORITHM
 92056
 BCGXG2

FILTER = BLPP 100/ 250/ -16
 MIN. MAX VALUES = -22.39 11.13 1.92 192.75

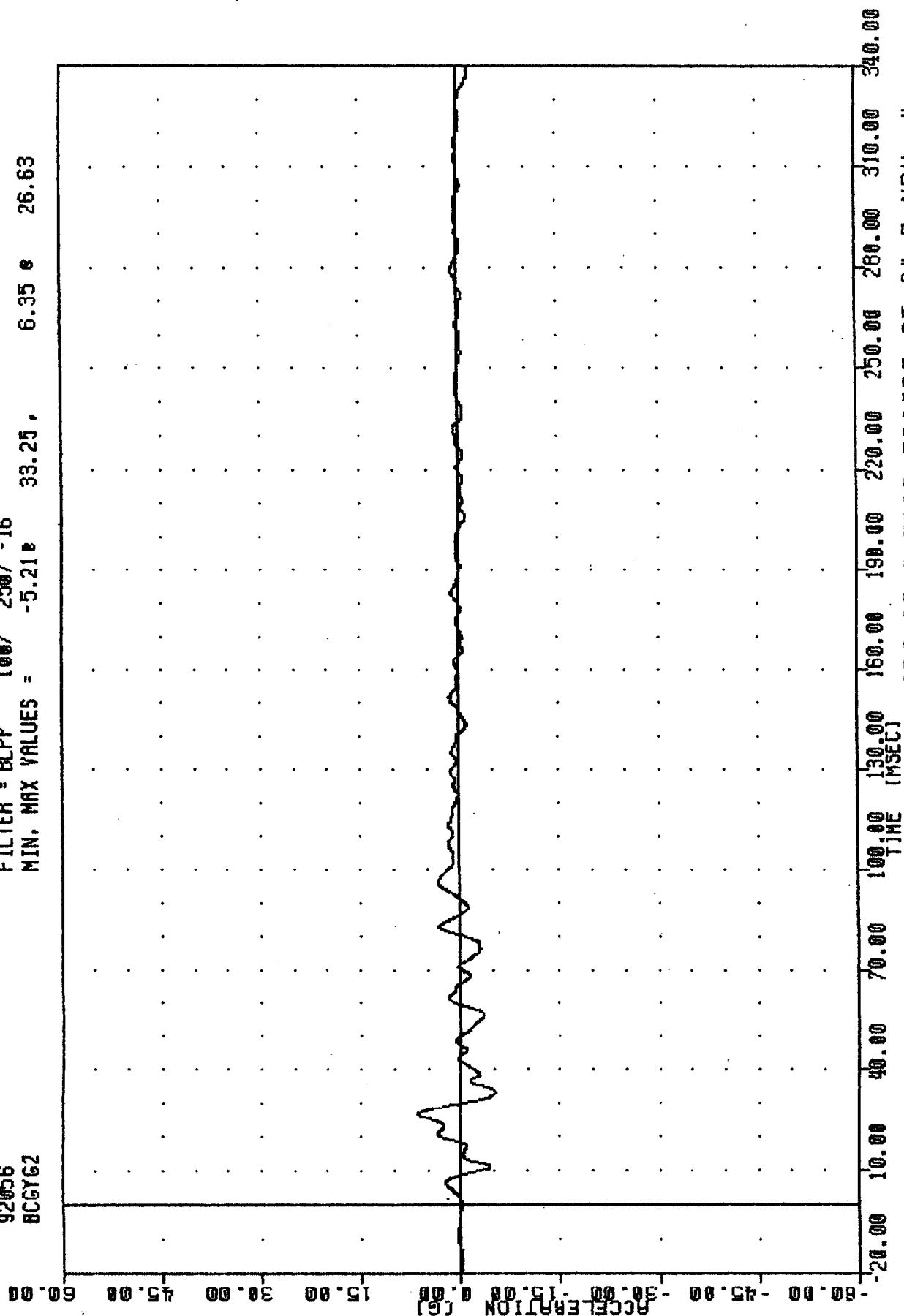


B-87

MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 34.7 MPH #4
 MOVING BARRIER CG X-AXIS ACCELERATION

TRC , 920225-4
CRASH III DAMAGE ALGORITHM
92056
BCGY62

FILTER = BLPP 100/ 250/ -16
MIN, MAX VALUES = -5.21e 33.25, 6.35 e 26.63

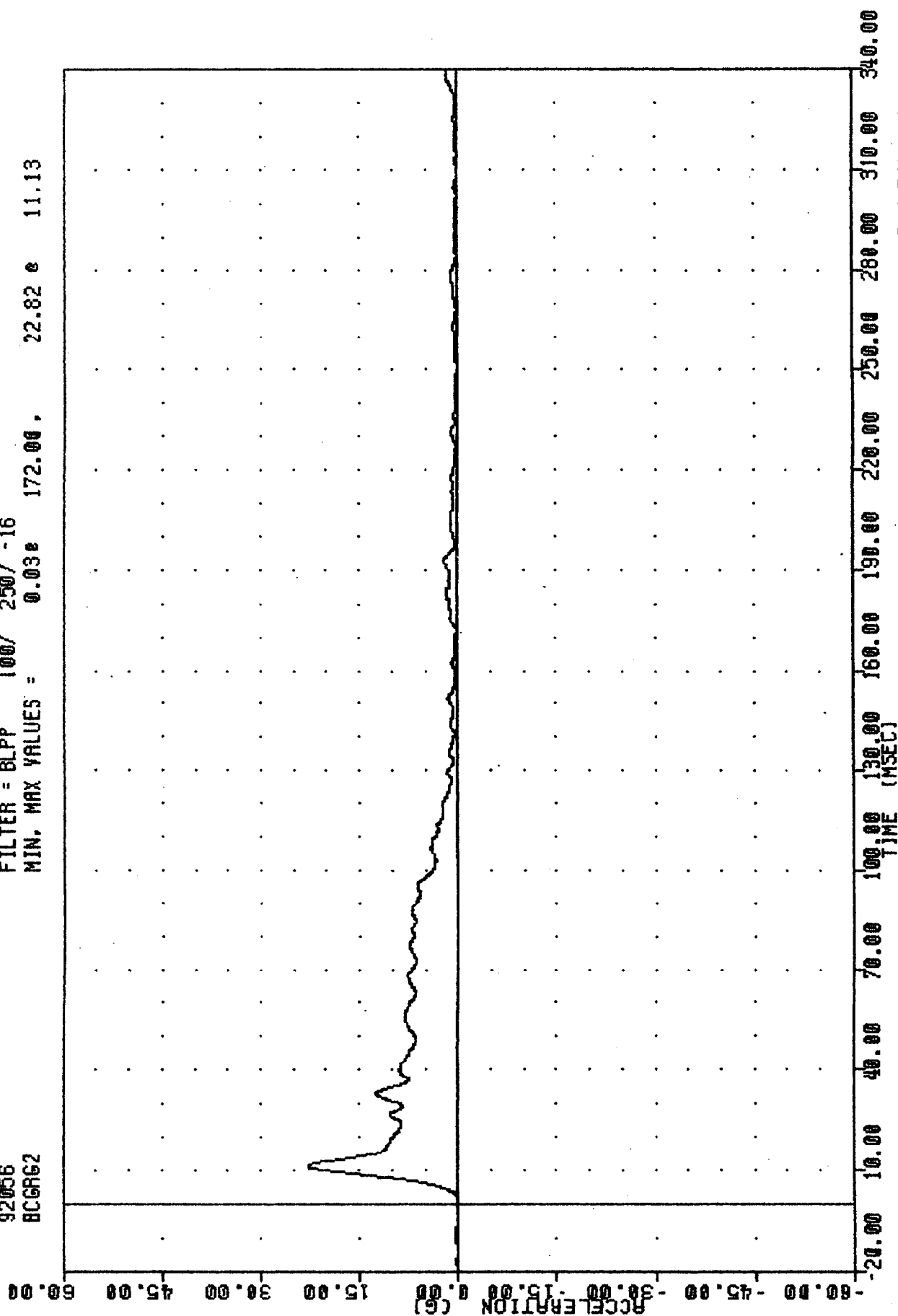


B-88

MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 34.7 MPH #4
MOVING BARRIER CG Y-AXIS ACCELERATION

TRC
 CRASH III DAMAGE ALGORITHM
 92056
 BCGRG2

FILTER = BLPP 100/ 250/ -16
 MIN. MAX VALUES = 0.03e 172.00. 22.82 e 11.13



MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 34.7 MPH #4
 MOVING BARRIER CG RESULTANT ACCELERATION

TRC 920225-4
 CRASH III DAMAGE ALGORITHM
 92056
 LFSXY1

FILTER = BLPP 300/ 750/ -16
 MIN, MAX VALUES = -0.15 12.00, 2.68 e 50.00

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30.00

20.00

10.00

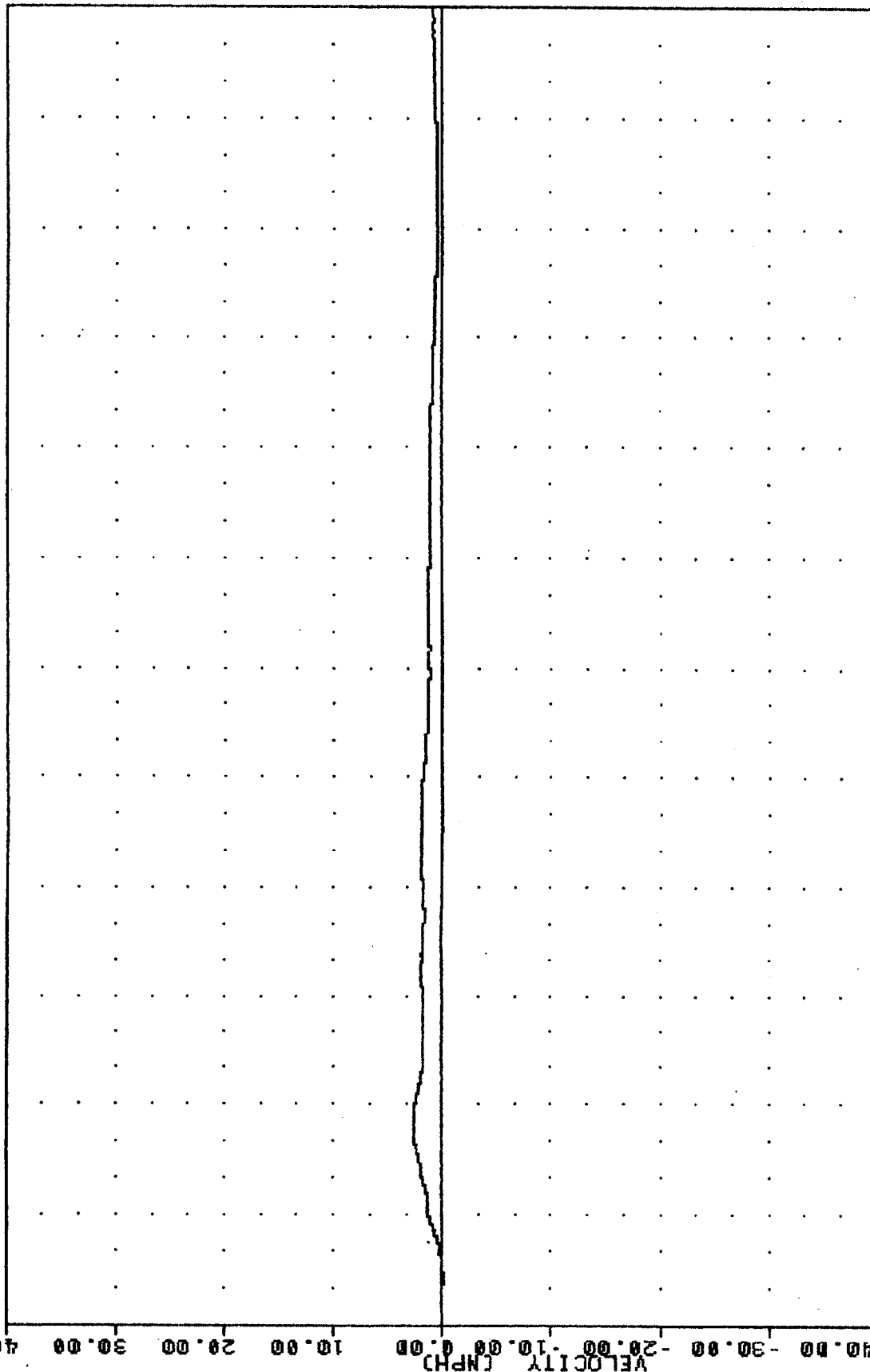
0.00

-10.00

-20.00

-30.00

-40.00



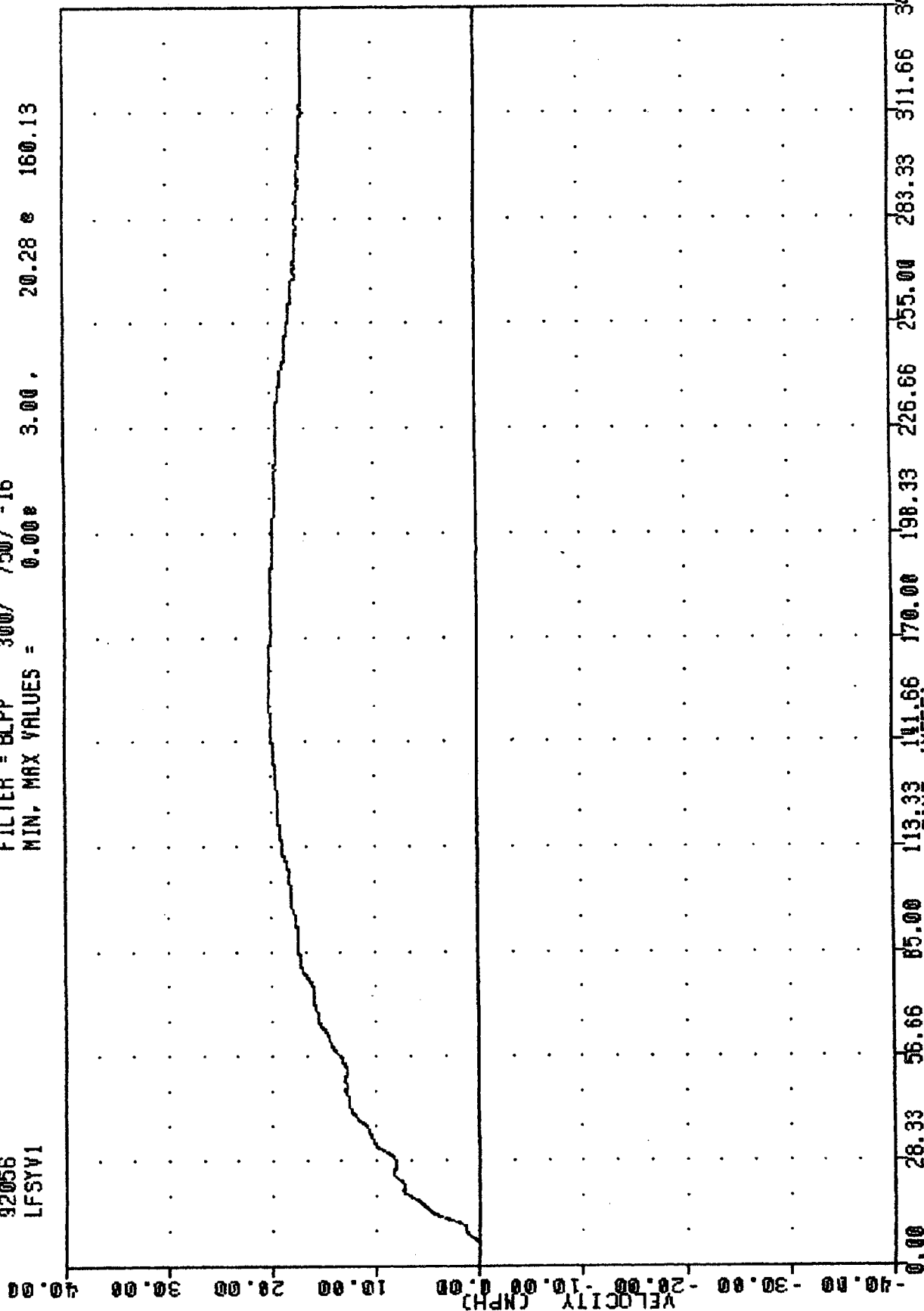
B-90

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

MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #4
 LEFT FRONT DOOR SILL X-AXIS VELOCITY

TRC . 920225-4
 CRASH III DAMAGE ALGORITHM
 92056
 LFSYV1

FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = 0.00e 3.00, 20.28 e 160.13



B-91

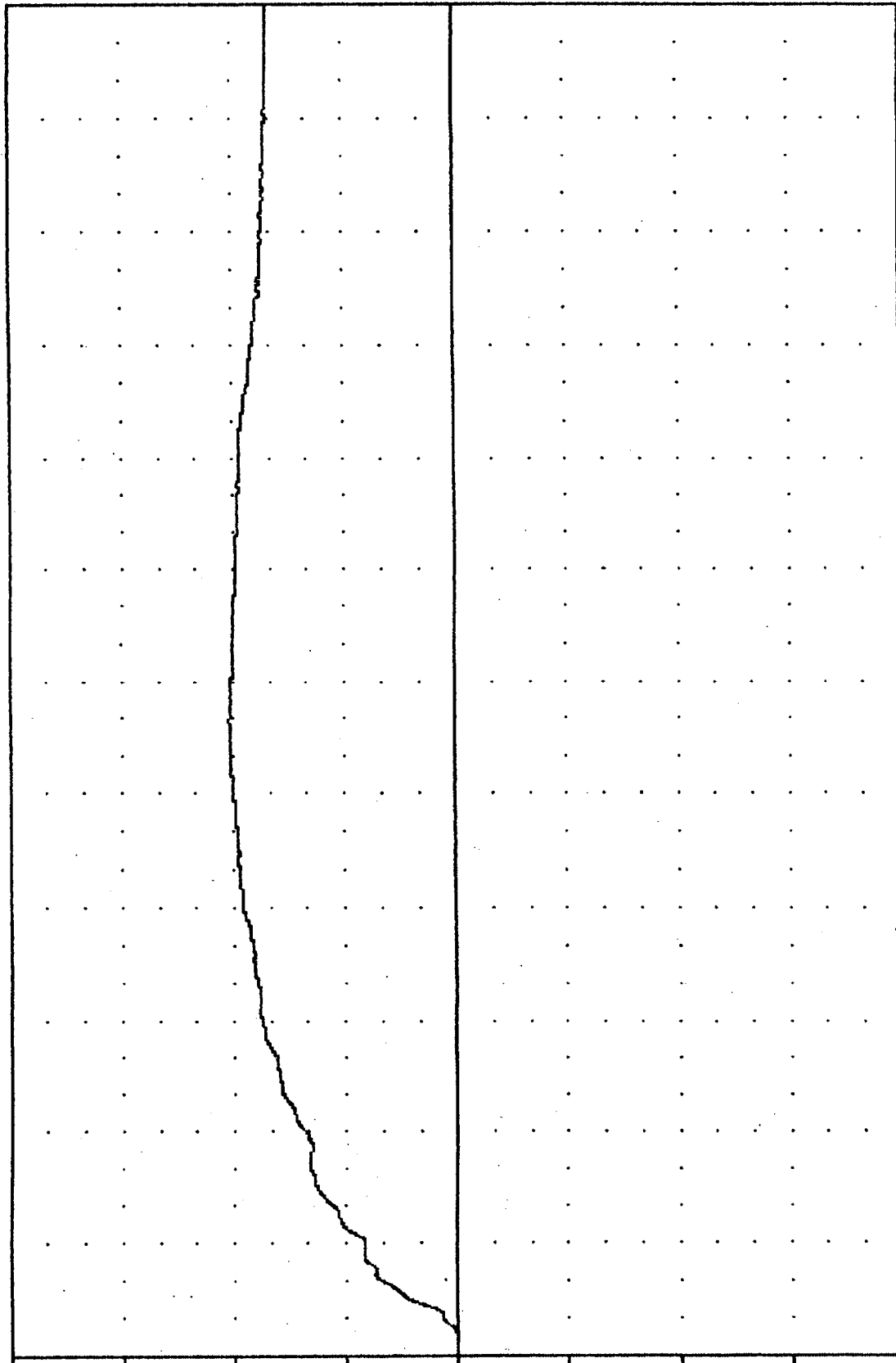
MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #4
 LEFT FRONT DOOR SILL Y-AXIS VELOCITY

TRC
 CRASH III DAMAGE ALGORITHM
 92056
 LFSRV1

920225-4

FILTER = BLPP 300/ 750/ -16
 MIN, MAX VALUES = 0.00 0.00 20.32 160.13

VELOCITY (NPH)

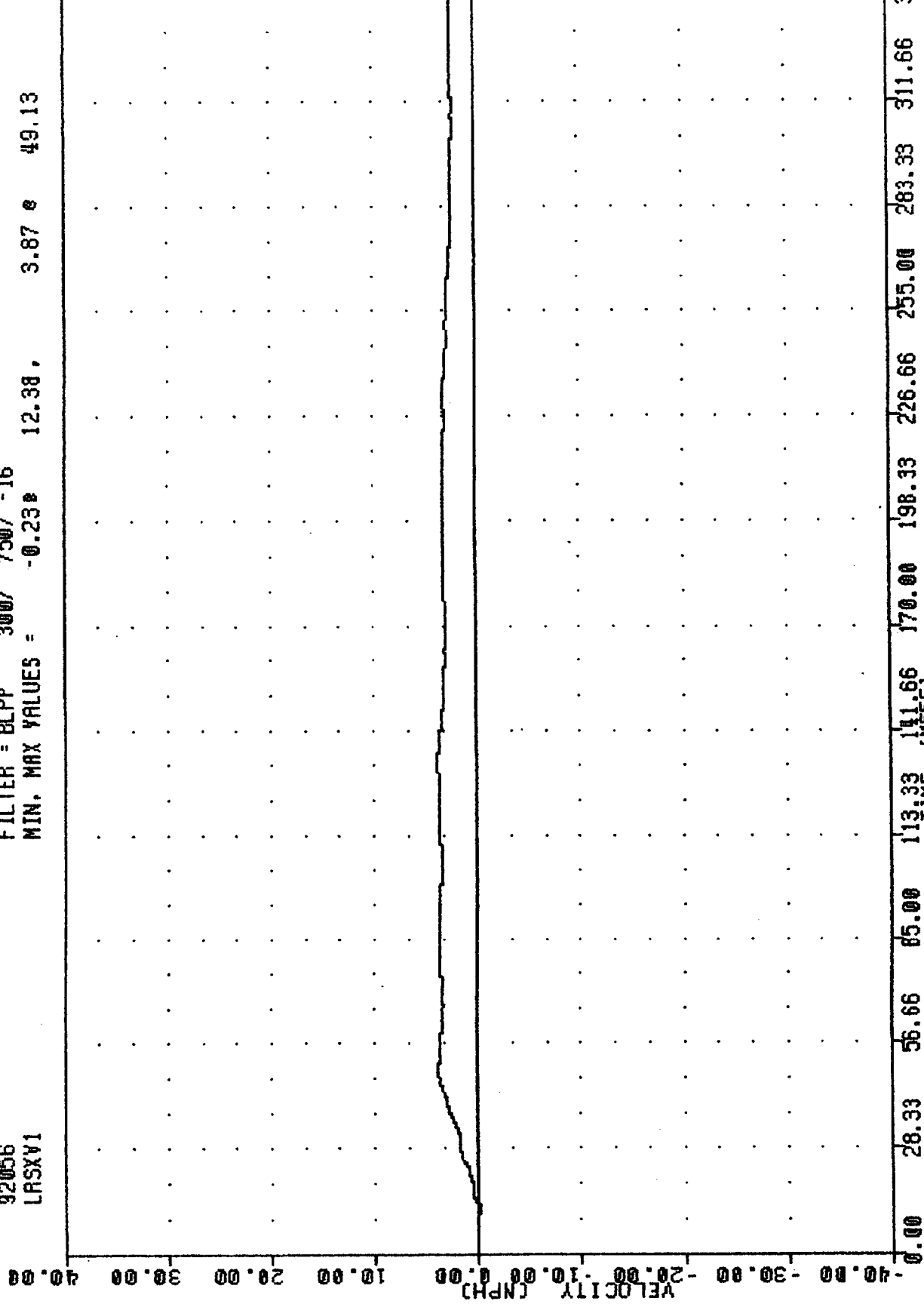


0.00 20.33 56.66 85.00 113.33 141.66 170.00 198.33 226.66 255.00 283.33 311.66 340.00

MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #4
 LEFT FRONT DOOR SILL RESULTANT VELOCITY

TAC
 CRASH III DAMAGE ALGORITHM
 92056
 LRSXV1

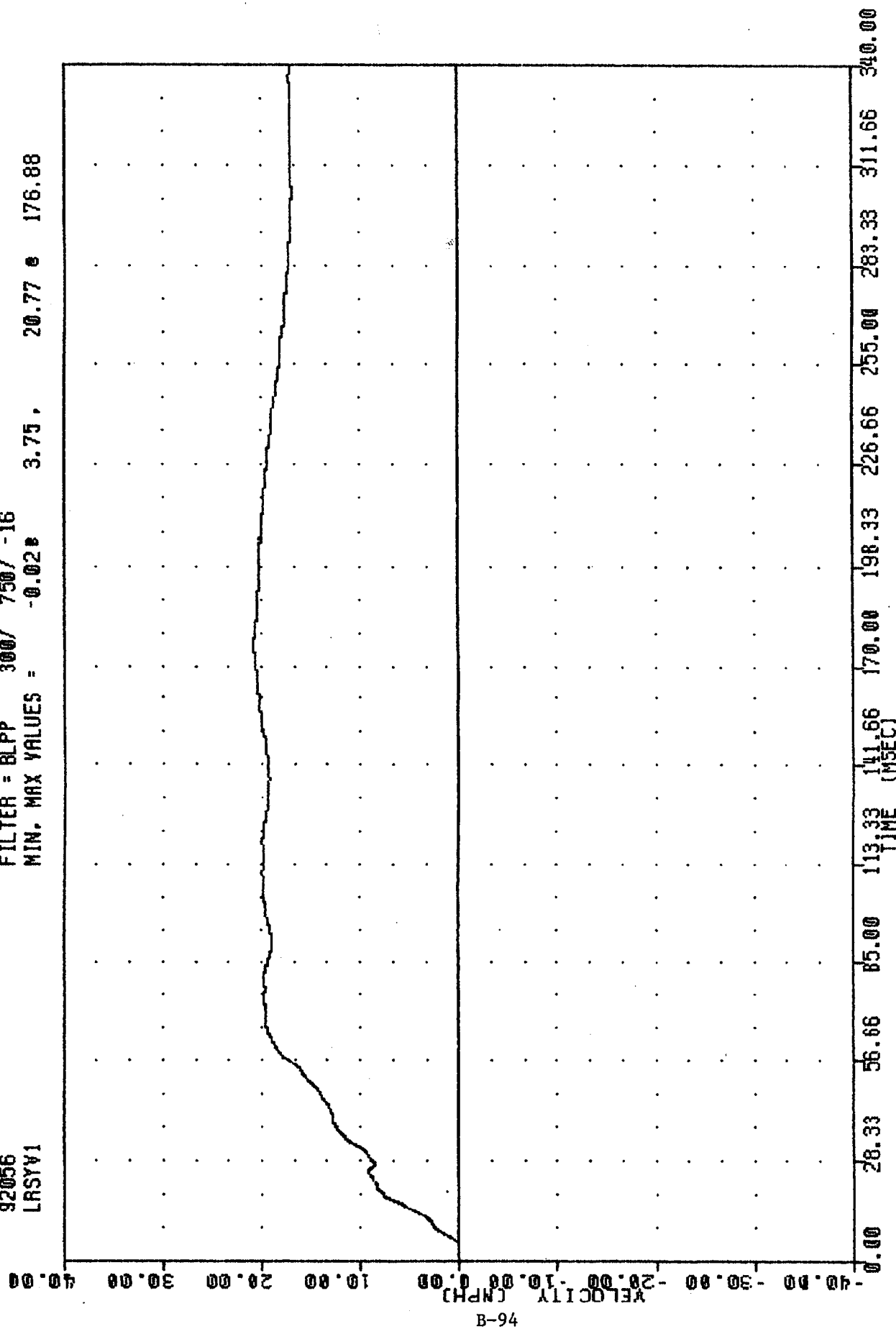
FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = -0.23 12.38 3.87 49.13



MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #4
 LEFT REAR DOOR SILL X-AXIS VELOCITY

TRC , 920225-4
 CRASH III DAMAGE ALGORITHM
 92056
 LRSYV1

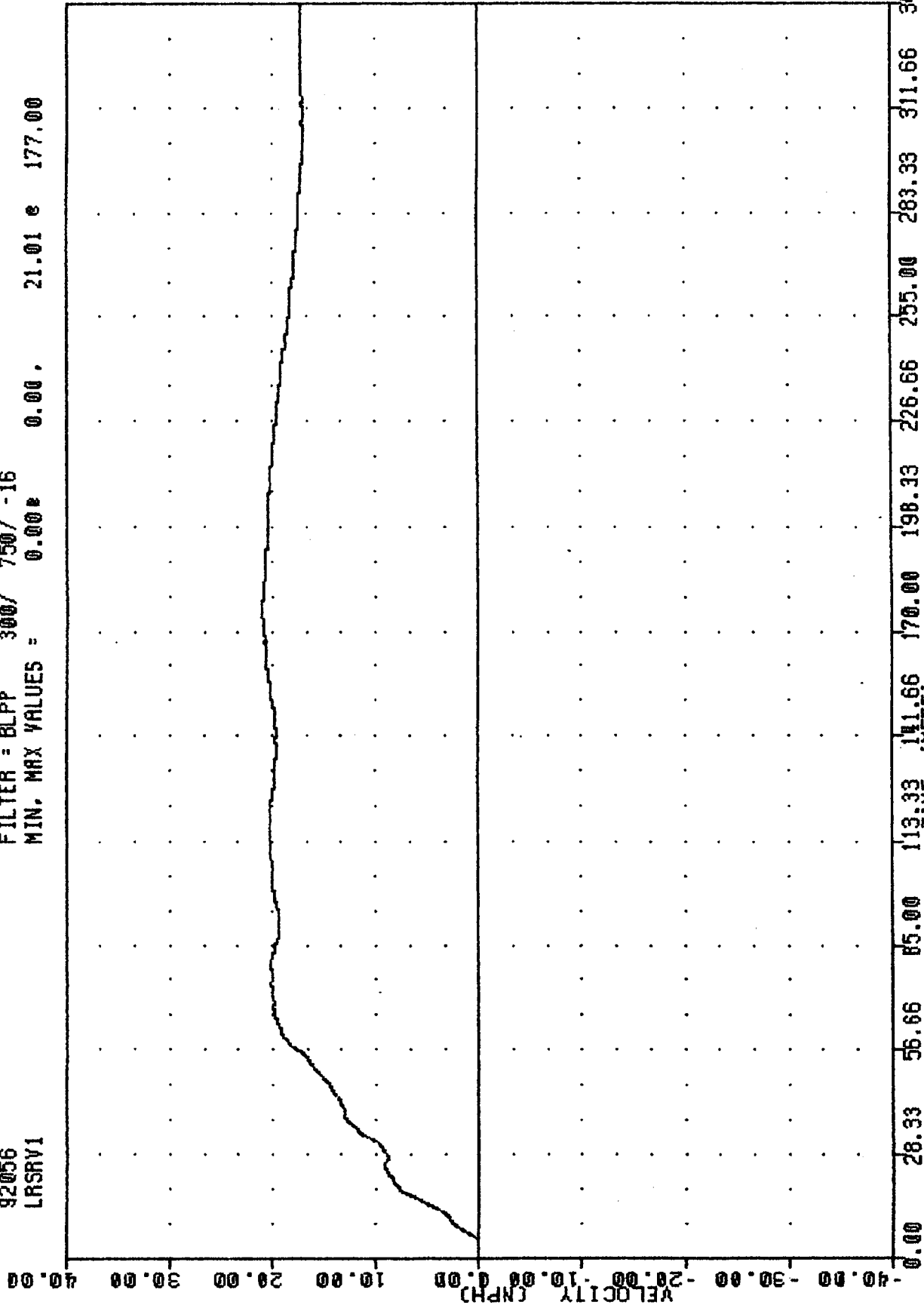
FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = -0.028 3.75, 20.77 176.88



MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #4
 LEFT REAR DOOR SILL Y-AXIS VELOCITY

TRC
 CRASH III DAMAGE ALGORITHM
 92056
 LRSRV1

FILTER = BLPP 300/ 750/ -16
 MIN, MAX VALUES = 0.00 0.00 21.01 e 177.00



B-95

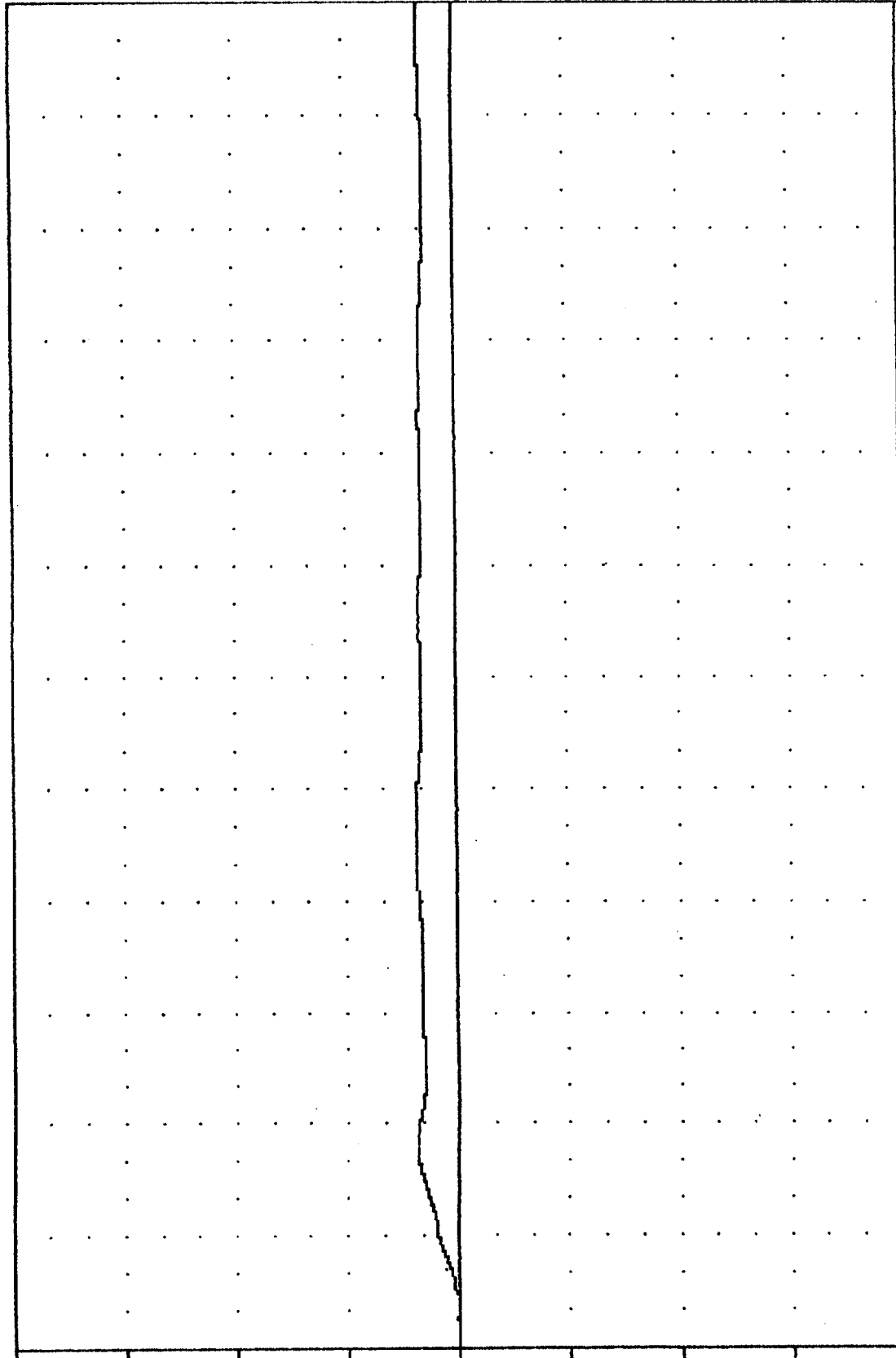
MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH ±4
 LEFT REAR DOOR SILL RESULTANT VELOCITY

TRC , 920225-4
 CRASH III DAMAGE ALGORITHM
 92056
 VCGXV1

FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = -0.01e 3.13, 3.72 e 133.88

VELOCITY (MPH)

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-40.00

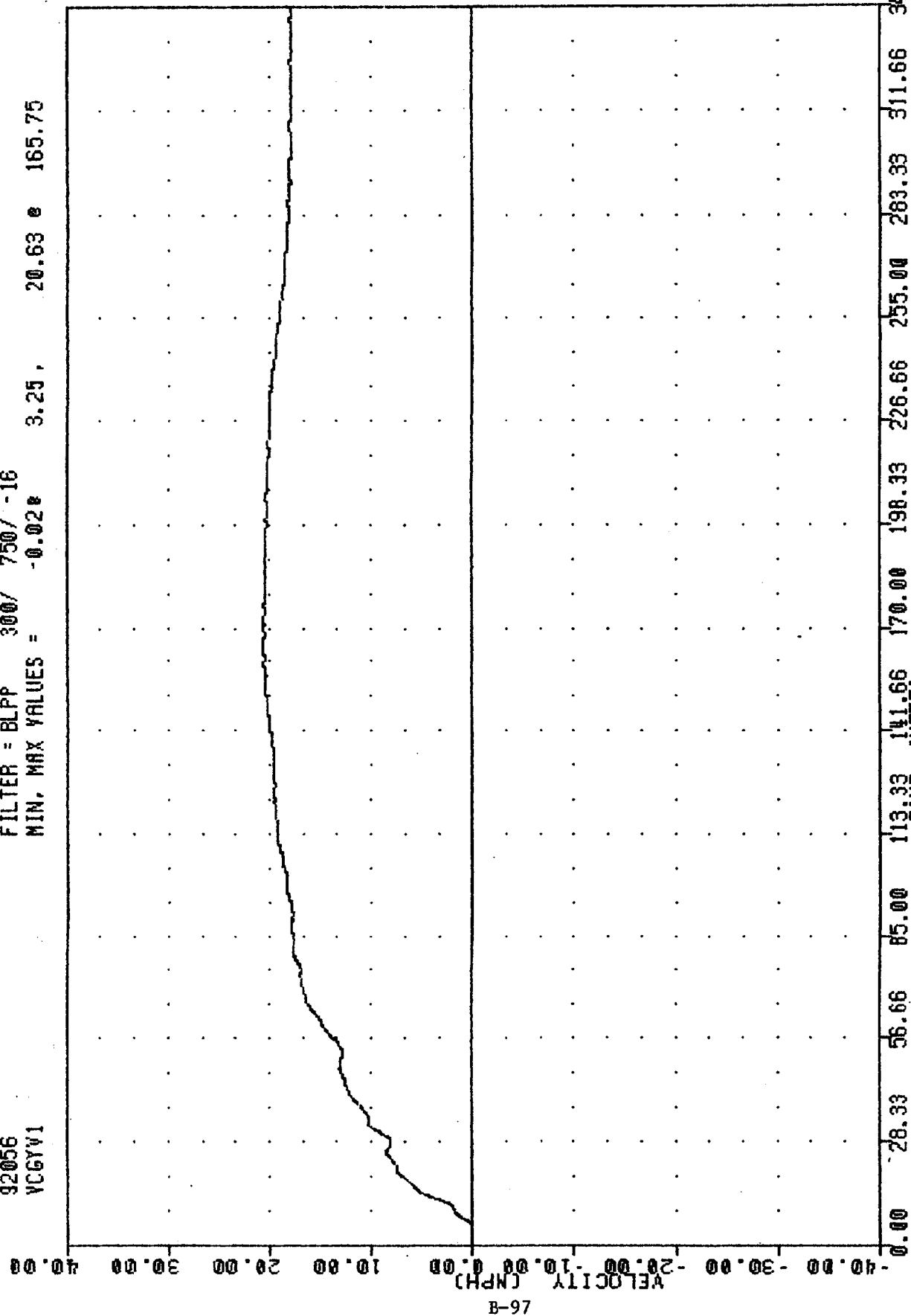


0.00 28.33 56.66 85.00 113.33 141.66 170.00 198.33 226.66 255.00 283.33 311.66 340.00

MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #4
 LEFT SILL AT LONGITUDINAL CG X-AXIS VELOCITY

TRC
 CRASH III DAMAGE ALGORITHM
 92056
 VCCYV1

FILTER = BLPP 300/ 750/ -16
 MIN, MAX VALUES = -0.028 3.25, 20.63 e 165.75



MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #4
 LEFT SILL AT LONGITUDINAL CG Y-AXIS VELOCITY

TRC
 CRASH III DAMAGE ALGORITHM
 92056
 VCGRY1

920225-4

FILTER = BLPP 300/ 750/ -16

MIN. MAX VALUES = 0.00 20.88 165.75

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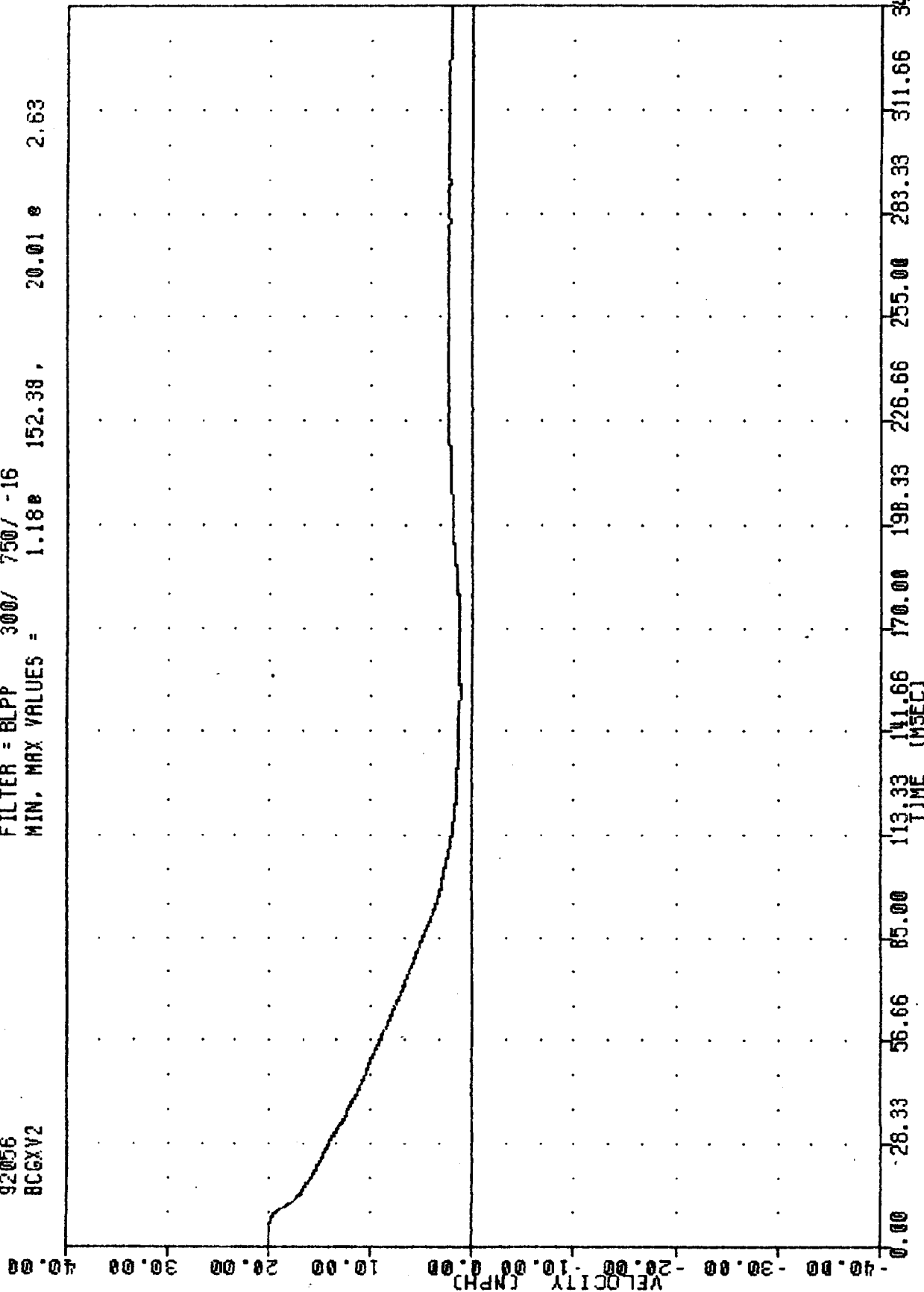
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</

TRC 920225-4
 CRASH III DAMAGE ALGORITHM
 92056
 BCGXV2

FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = 1.18 152.38 20.01 2.63



B-99

MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #4
 MOVING BARRIER CG X-AXIS VELOCITY

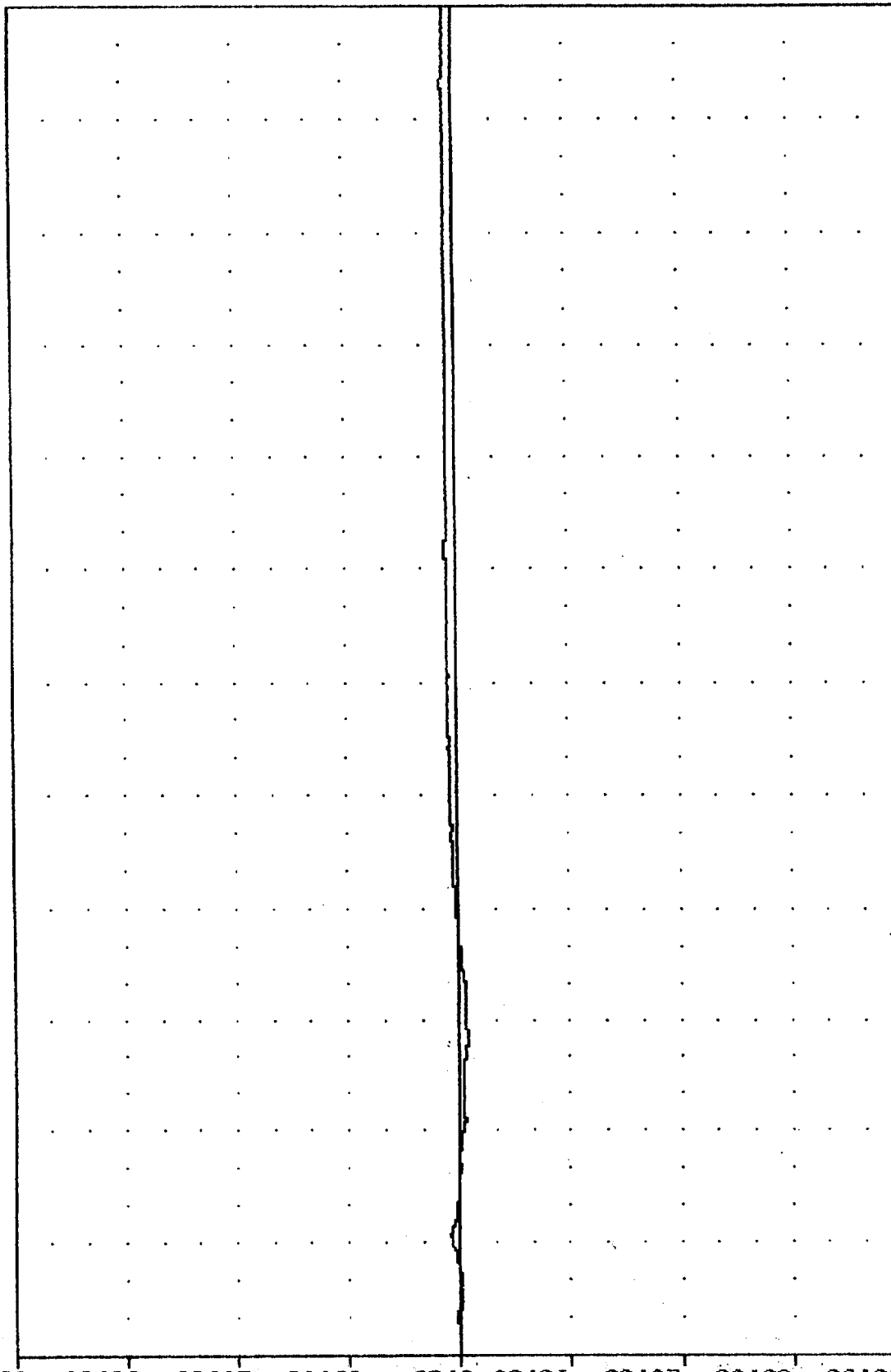
TRC
 CRASH III DAMAGE ALGORITHM
 92056
 BCGYV2

, 920225-4

FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = -0.81 80.75, 1.02 320.38

VELOCITY (MPH)

B-100

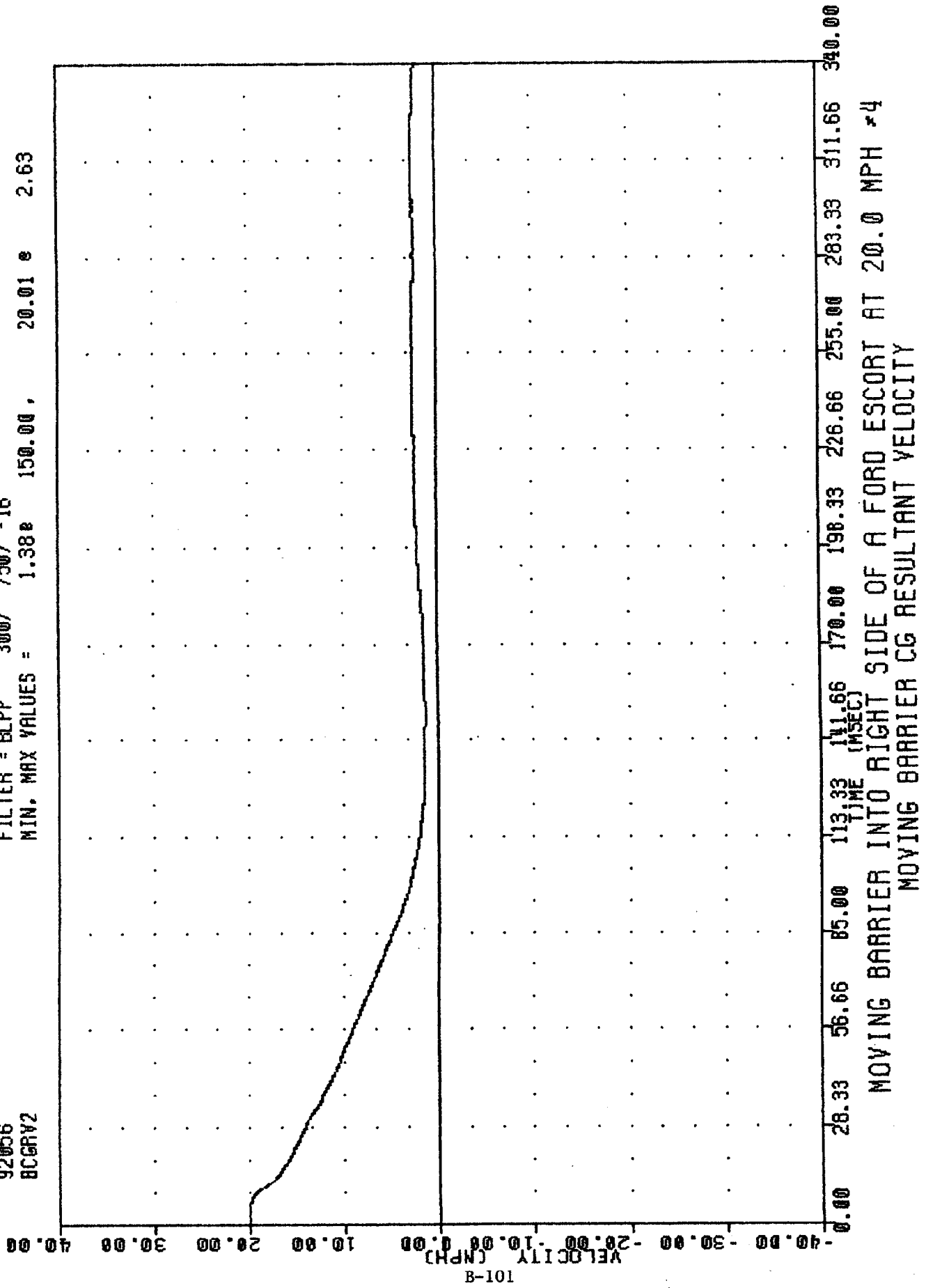


0.00 28.33 56.66 85.00 113.33 141.66 170.00 198.33 226.66 255.00 283.33 311.66 340.00

MOVING BARRIER INTO RIGHT SIDE OF A FORD ESCORT AT 20.0 MPH #4
 MOVING BARRIER CG Y-AXIS VELOCITY

TRC
 CRASH III DAMAGE ALGORITHM
 92056
 BCGRV2

FILTER = BLPP 300/ 750/ -16
 MIN. MAX VALUES = 1.38 150.00 20.01 2.63



APPENDIX C

MISCELLANEOUS TEST INFORMATION

VEHICLE ACCELEROMETER INFORMATION

NO.	LOCATION	AXIS	MFR	MODEL	S/N	ORIENTATION (+ SENSING)
1	LEFT FRONT DOOR SILL	X	ENDEVCO	7264	CY78H	REAR
	LEFT FRONT DOOR SILL	Y	ENDEVCO	7264	CK87H	RIGHT
2	LEFT REAR DOOR SILL	X	ENDEVCO	7264	DA39H	REAR
	LEFT REAR DOOR SILL	Y	ENDEVCO	7264	EA59J	RIGHT
3	LEFT SILL AT					
	LONGITUDINAL C.G.	X	ENDEVCO	7264	DA99H	REAR
	LEFT SILL AT					
	LONGITUDINAL C.G.	Y	ENDEVCO	7264	DA97H	RIGHT

MOVING BARRIER ACCELEROMETER INFORMATION

NO.	LOCATION	AXIS	MFR	MODEL	ORIENTATION	
					S/N	(+ SENSING)
4	MOVING BARRIER					
	CENTER OF GRAVITY	X	ENDEVCO	7264	CW82H	FRONT
	MOVING BARRIER					
	CENTER OF GRAVITY	Y	ENDEVCO	7264	CY12H	LEFT

SIGN CONVENTION

ALL DUMMY, BARRIER AND VEHICLE CHANNELS:

+X: FORWARD
+Y: LEFTWARD
+Z: UPWARD
+FORCE: TENSION