

REPORT NUMBER: 301-CAL-01-03
SAFETY COMPLIANCE TESTING FOR FMVSS 301
FUEL SYSTEM INTEGRITY

V3754

GENERAL MOTORS DE MEXICO
2001 PONTIAC
AZTEK MPV

NHTSA NUMBER: C10105

VERIDIAN TEST NUMBER: 8606-3

July 31, 2001

VERIDIAN ENGINEERING
P O BOX 400
BUFFALO, NEW YORK 14225



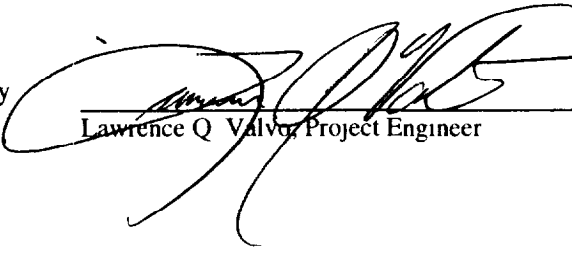
FINAL REPORT

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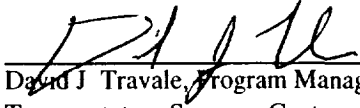
U S Department of Transportation
National Highway Traffic Safety Administration
Safety Assurance
Office of Vehicle Safety Compliance
400 Seventh Street, S. W
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Washington, DC 20590

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Prepared By


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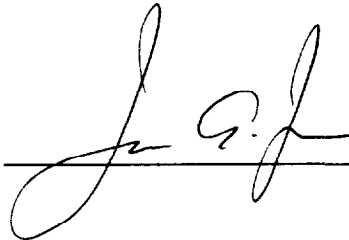

David J. Travale, Program Manager
Transportation Sciences Center

Approval Date

August 14, 2001

FINAL REPORT ACCEPTANCE BY OVSC

Accepted By



Acceptance Date

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TECHNICAL REPORT STANDARD TITLE PAGE

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12 Sponsoring Agency Name and Address U S Department of Transportation National Highway Traffic Safety Administration Office of Vehicle Safety Compliance (NSA-30) 400 Seventh St , S W , Rm 6115, Washington, D C 20590		13 Type of Report and Period Covered Final Test Report July 2001 - August 2001	
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15 Supplementary Notes			
16 Abstract Compliance tests were conducted on the subject 2001 Pontiac Aztek MPV in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No TP-301-01 for the determination of FMVSS 301 compliance. Test failures identified were as follows The test vehicle appeared to comply with all requirements of FMVSS 301 "Fuel System Integrity"			
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Section I

PURPOSE OF COMPLIANCE TEST

This 30 mph rear moving barrier impact test is part of the Federal Motor Vehicle Safety Standard (FMVSS) 301 Compliance Test Program conducted for the National Highway Traffic Safety Administration (NHTSA) by Veridian Engineering under Contract No DTNH22-01-C-01025. The purpose of this test was to determine if the subject vehicle, a 2001 Pontiac Aztek MPV, meets the performance requirements of FMVSS No 301, "Fuel System Integrity." This compliance test was conducted using the requirements found in the OVSC Laboratory Test Procedure No TP-301-01, dated March 28, 1994.

Section 2

COMPLIANCE TEST RESULTS SUMMARY FOR C10105

A 4367 pound 2001 Pontiac Aztek MPV was impacted from the rear by a 3961 pound moving barrier at a velocity of 29.3 mph. The test was performed by Veridian Engineering on July 31, 2001.

One instrumented Part 572 E and one non-instrumented Part 572 B, 50th percentile male Anthropomorphic Test Device (ATD) were placed in the driver and right-front passenger seating positions respectively. Additional ballast (230 pounds) was secured in the vehicle cargo area.

The crash event was recorded by eight high-speed cameras and one real-time camera. Camera locations and other pertinent camera information are found on pages 3-9 and 3-10 of this report. Pre- and post-test photographs of the vehicle can be found in Appendix A. Vehicle and ATD electronic data plots are presented in Appendix B.

The 18.0 gallon fuel tank was filled to 92.5 percent capacity with orange Stoddard fluid prior to the impact. After the impact, there was no fluid leakage for the first 30 minutes nor during any phase of the rollover test. Average vehicle longitudinal crush was 7.97 inches. The vehicle appeared to comply with all the requirements of FMVSS No. 301 "Fuel System Integrity." Section 3 presents the results of these tests.

Table 1

CRASH TEST SUMMARY

Vehicle NHTSA No C10105 Test Mode 30 mph Rear Barrier
 Test Date July 31, 2001 Time 11:39 Temperature 70 °F
 Vehicle Make/Model/Body Style 2001 Pontiac Aztek MPV
 Vehicle Test Weight 4367 lbs Impact Velocity 29.3 mph
 Static Crush
 Left Side 8.3 inches
 Centerline 7.7 inches
 Right Side 7.9 inches
 Average 7.97 inches

TYPE OF FRONT OCCUPANT RESTRAINT SYSTEM INSTALLED IN TEST VEHICLE

Driver's DSP 3-Point Seat Belt, Airbag, Knee Bolster
 Right Passenger's DSP 3-Point Seat Belt, Airbag, Knee Bolster

VISIBLE DUMMY CONTACT POINTS

Driver Back of head to head restraint, back to center of seat back
 Passenger Back of head to head restraint, back to center of seat back

DOOR OPENING DATA

Closed / Operable - Left Front
Closed / Operable - Right Front

Stoddard Solvent Spillage from Vehicle's Fuel System None

Remarks The rear window and right rear quarter window shattered during the impact. The driver and passenger seatbacks reclined approximately 10 degrees during the impact.

Table 2

GENERAL TEST AND VEHICLE PARAMETER DATA

TEST VEHICLE INFORMATION

Year/Make/Model/Body Style	2001 Pontiac Aztek MPV		
NHTSA No	C10105	VIN	3G7DA03E51S509113
Engine Data	6 cylinders,	CID,	34 Liters,
Placement	- Longitudinal or In-Line,	X	Transverse or Lateral
Transmission Data	4 speeds,	- Manual,	X Automatic, X Overdrive
Final Drive	- Rear Wheel Drive,	X	Front Wheel Drive, - Four Wheel Drive
Major Options	X A/C,	X	Power Steering, X Power Brakes
	X Power Windows,	X	Power Door Locks, X Tilt Wheel
Date Received	4/12/01	Odometer Reading	1090 miles
Selling Dealer	Jeff Wyler Buick-Pontiac-GMC		
& Address	7926 Alexandria Pike, Alexandria KY		

DATA FROM TIRE VEHICLE'S CERTIFICATION LABEL

Vehicle Manufactured by	General Motors De Mexico		
Date of Manufacture	08/00		
GVWR	5037 lbs,	GAWR	2667 lbs FRONT, 2370 lbs REAR

DATA FROM TIRE PLACARD

Location of Placard on Vehicle	Driver side B-Pillar		
Tire Pressure with Maximum Capacity Vehicle Load	44 psi	FRONT	44 psi REAR
Recommended Tire Size	P215/70R15		
* Recommended Cold Tire Pressure	35 psi	FRONT,	35 psi REAR
Size of Tires on Test Vehicle	P215/70R15	Manufacturer	Firestone
Type of Spare Tire	Temporary		
Vehicle Capacity Data			
Type of Front Seats	- Bench,	X	Bucket, - Split Bench
Number of Occupants	2	Front,	3 Rear, 5 Total
Vehicle Capacity Weight (VCW) =	1289 lbs		
No of Occupants x 150 lbs =	750 lbs		
Rated Cargo/Luggage Weight (RCLW) =	539 lbs		

*Tire pressure used for test

** Maximum value of 300 lbs used for target weight calculation

Table 2

GENERAL TEST AND VEHICLE PARAMETER DATA (cont)

WEIGHT OF TEST VEHICLE AS RECEIVED FROM DEALER (with maximum fluids)= UDW

Right Front	=	<u>1166</u>	lbs	Right Rear =	<u>707</u>	lbs
Left Front	=	<u>1148</u>	lbs	Left Rear =	<u>727</u>	lbs
TOTAL FRONT	=	<u>2314</u>	lbs	TOTAL REAR =	<u>1434</u>	lbs
TOTAL DELIVERED WEIGHT	=	<u>3748</u>	lbs			
% of Total Front of Vehicle Weight	=	<u>61.7%</u>		of Total Rear Weight	=	<u>38.3%</u>

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT

Total Delivered Weight	=	<u>3748</u>	lbs
Rated Cargo/Luggage Weight (RCLW)	=	<u>300</u>	lbs
Weight of 2 p 572 Dummies, 167 & 164 lbs	=	<u>331</u>	lbs
TARGET TEST WEIGHT	=	<u>4379</u>	lbs

WEIGHT OF TEST VEHICLE WITH TWO DUMMIES AND 288 POUNDS OF CARGO WEIGHT

Right Front	=	<u>1300</u>	lbs	Right Rear =	<u>851</u>	lbs
Left Front	=	<u>1315</u>	lbs	Left Rear =	<u>901</u>	lbs
TOTAL FRONT	=	<u>2615</u>	lbs	TOTAL REAR =	<u>1752</u>	lbs
TOTAL TEST WEIGHT	=	<u>4367</u>	lbs			
% of Total Front of Vehicle Weight	=	<u>59.9%</u>		of Total Rear Weight	=	<u>40.1%</u>

* Weight of Ballast Secured in Vehicle Trunk Area = 230 lbs

Type of Ballast Lead Shot

Method of Securing Ballast Rear seatbelt anchorages

Vehicle Components Removed for Weight Reduction None

VEHICLE ATTITUDE (all dimension in inches)

AS DELIVERED	RF	<u>29.8</u>	LF	<u>29.9</u>	RR	<u>31.4</u>	LR	<u>31.4</u>
AS TESTED	RF	<u>29.1</u>	LF	<u>28.9</u>	RR	<u>30.3</u>	LR	<u>30.3</u>
Vehicle's Wheel Base		<u>108.4</u>	in					
Location of Vehicle's C G		<u>43.49</u>	inches rearward of front wheel center					

FUEL SYSTEM DATA

Fuel System Capacity From Owner's Manual	=	<u>18.0</u>	gallons
Usable Capacity Figure Furnished by COTR	=	<u>18.0</u>	gallons
Test Volume Range (91 to 94% of Usable Capacity)	=	<u>16.38</u>	to <u>16.92</u> gallons
ACTUAL TEST VOLUME	=	<u>16.7</u>	gallons (with entire fuel system filled)

* Ballast weight includes the RCLW, the weight of drained vehicle fluids and the weight of any removed vehicle components less the weight of onboard instrumentation cameras, and hardware

Table 2

GENERAL TEST AND VEHICLE PARAMETER DATA (cont)

FUEL SYSTEM DATA (continued)

Test Fluid Type	Stoddard Solution	
Test Fluid Specific Gravity	0.764	
Test Fluid Kinematic Viscosity	0.96	centistokes
Test Fluid Color	Orange	("red" is preferred)
Type of Vehicle Fuel Pump	Electric	
Electric Fuel Pump Operation with Ignition Switch ON and Engine OFF -		
Fuel pump operated		
Details of Fuel System	Fuel filler located on the left rear quarter panel above the left rear wheel, Fuel tank located on left side of vehicle underbody forward of the rear axle line, Fuel lines are routed along the left side of the vehicle underbody	

Table 3

MOVING BARRIER PARAMETER DATA

WEIGHT OF MOVING BARRIER

Right Front	=	<u>1113</u>	lbs	Right Rear	=	<u>868</u>	lbs
Left Front	=	<u>1102</u>	lbs	Left Rear	=	<u>878</u>	lbs
TOTAL FRONT	=	<u>2215</u>	lbs	TOTAL REAR	=	<u>1746</u>	lbs
TOTAL BARRIER WEIGHT	=	<u>3961</u>	lbs				

MOVING BARRIER DIMENSIONS

Barrier Face Height	<u>60 0</u>	in
Barrier Face Width	<u>78 0</u>	in
Barrier Face		
Ground Clearance	<u>5 0</u>	in
Tread Width	<u>59 5</u>	in
Wheel Base	<u>120 0</u>	in
Location of C G	X	<u>52 9</u> inches rearward of front wheel center
	Y	<u>0 0</u> inches from longitudinal vertical plane of symmetry
	Z	<u>16 3</u> inches above ground

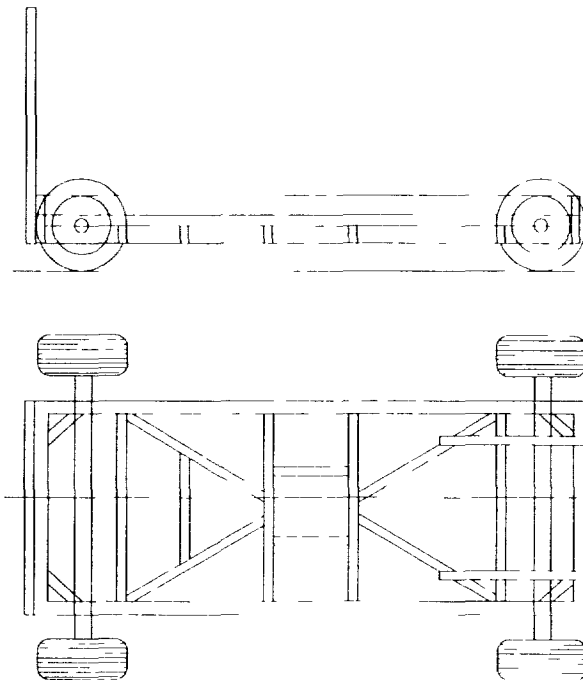


Table 4

POST IMPACT DATA

TYPE OF TEST

Type of Test Rear Barrier Impact Angle 0°
 Test Date July 31, 2001 Time 11 39 Temperature 70 °F
 Vehicle NHTSA No C10105
 Required Impact Velocity Range 28 9 to 29 9 mph

BARRIER IMPACT VELOCITY (Speed traps within 5 feet of impact plane)

Trap No 1 = 29 3 mph, Trap No 2 = 29 3 mph
 Average Impact Speed = 29 3 mph

VEHICLE STATIC CRUSH

Vehicle Length

Pre-Test Left = 177 2, C/L = 182 1 Right = 177 2
 Post-Test Left = 168 9, C/L = 174 4 Right = 169 3
 Crush Left = 8 3, C/L = 7 7 Right = 7 9
 AVERAGE = 7 97 inches

Section 3

COMPLIANCE TEST DATA

Figure 1

PART 572 DUMMY IN-VEHICLE POSITION
(FOR REAR IMPACTS ONLY)

DUMMY MEASUREMENT FOR FRONT SEAT PASSENGERS

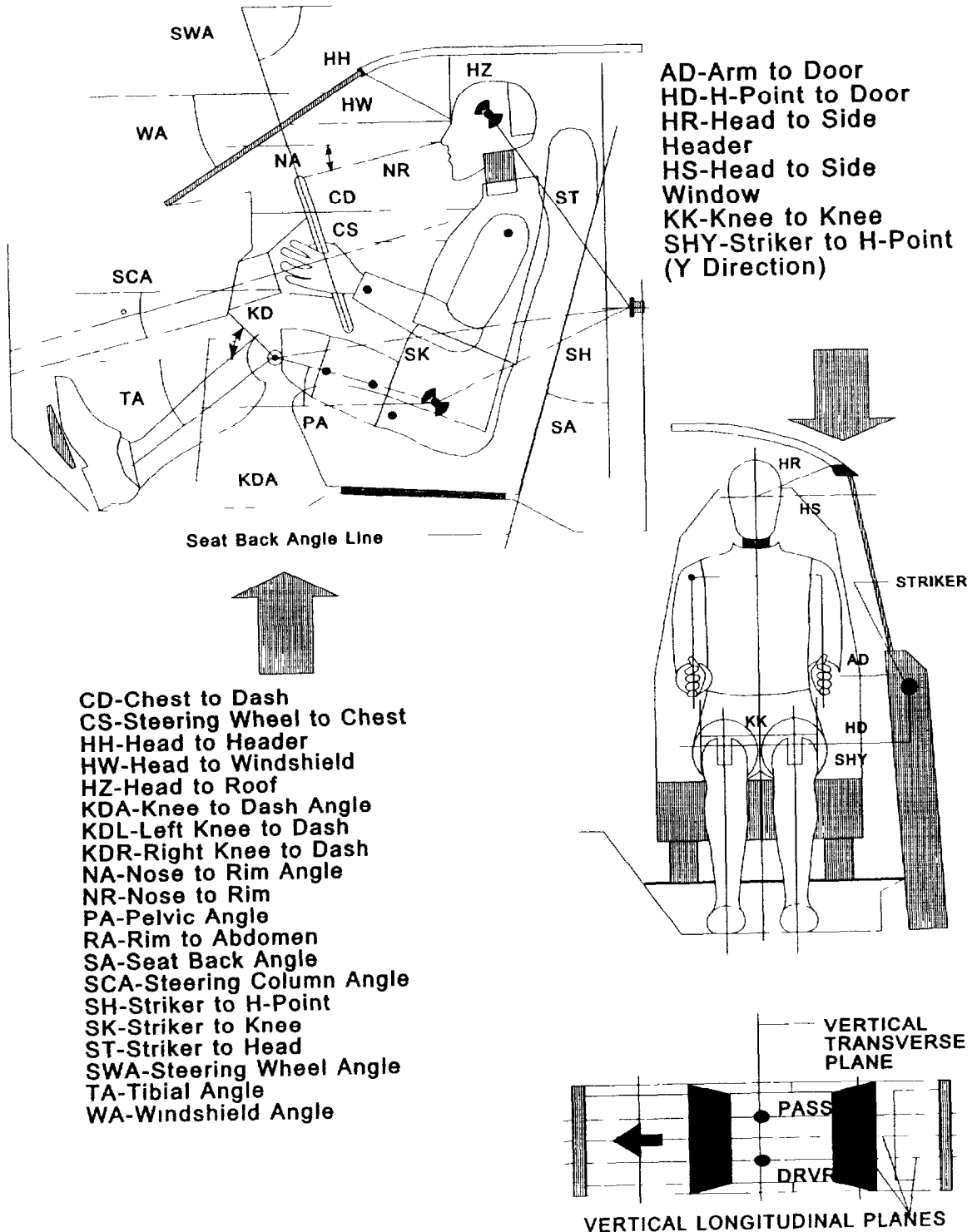


Table 5

**FRONT SEAT OCCUPANT MEASUREMENTS
(FOR REAR IMPACT ONLY)**

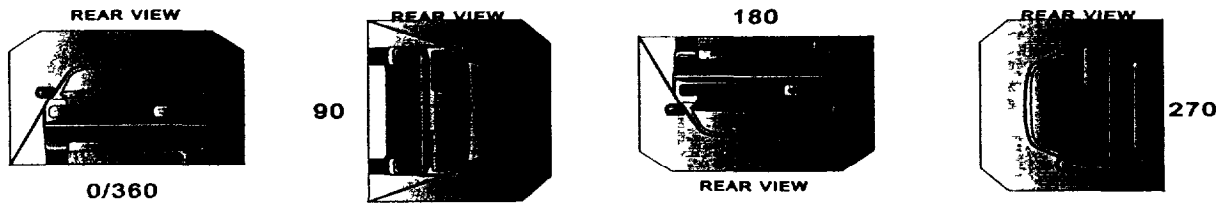
	DRIVER (Serial #116)			
WA°	32			deg
SWA°	63			deg
SCA°	27			deg
SA°	20.5			deg
HZ			9.7	
HH			18.1	
HW			29.2	
HR			12.1	
NR	15.3	Angle	8	deg
CD			21.7	
CS			12.3	
RA			7.6	
KDL	6.8	Angle (KDA)	28	deg
KDR			6.7	
PA°			25	deg
TA°			52.7	deg
KK			8.7	
ST	23.0	Angle	9	deg
SK	23.1	Angle	89	deg
SH	7.7	Angle	111	deg
SHY			9.7	
HS			15.3	
HD			8.7	
AD			4.3	

(Measurements in inches)

Table 7 FMVSS NO 301 - STATIC ROLLOVER DATA SHEET

Vehicle 2001 Pontiac Aztek MPV

NHTSA No C10105



I DETERMINATION OF SOLVENT COLLECTION TIME PERIOD

Rollover Stage	Rotation Time (spec 1-3 min)				FMVSS 301 Hold Time		Total Time				Next Whole Minute Interval	
	1	minutes	seconds	15	5	minutes	6	minutes	seconds	15	seconds	7
0° - 90°	1	minutes	15	seconds	5	minutes	6	minutes	15	seconds	7	minutes
90° - 180°	1	minutes	5	seconds	5	minutes	6	minutes	5	seconds	7	minutes
180°-270°	1	minutes	3	seconds	5	minutes	6	minutes	3	seconds	7	minutes
270°-360°	1	minutes	10	seconds	5	minutes	6	minutes	10	seconds	7	minutes

II FMVSS 301 REQUIREMENTS (Maximum allowable solvent spillage)

First 5 minutes from onset of rotation	6th min	7th min	8th min (if required)
5 ounces	1 ounce	1 ounce	1 ounce

III ACTUAL TEST VEHICLE SOLVENT SPILLAGE

Rollover Stage	First 5 minutes from onset of rotation (oz)	6th min (oz)	7th min (oz)	8th min (if required) (oz)
0° - 90°	0	0	0	N/A
90° - 180°	0	0	0	N/A
180°-270°	0	0	0	N/A
270°-360°	0	0	0	N/A

Note Record spillage for whole minute intervals only as determined above

IV SOLVENT SPILLAGE LOCATION(S)

Rollover Stage	Spillage Location
0° 90°	-
90° - 180°	-
180° 270°	-
270°-360°	-

Figure 2

CAMERA POSITIONS FOR REAR IMPACTS

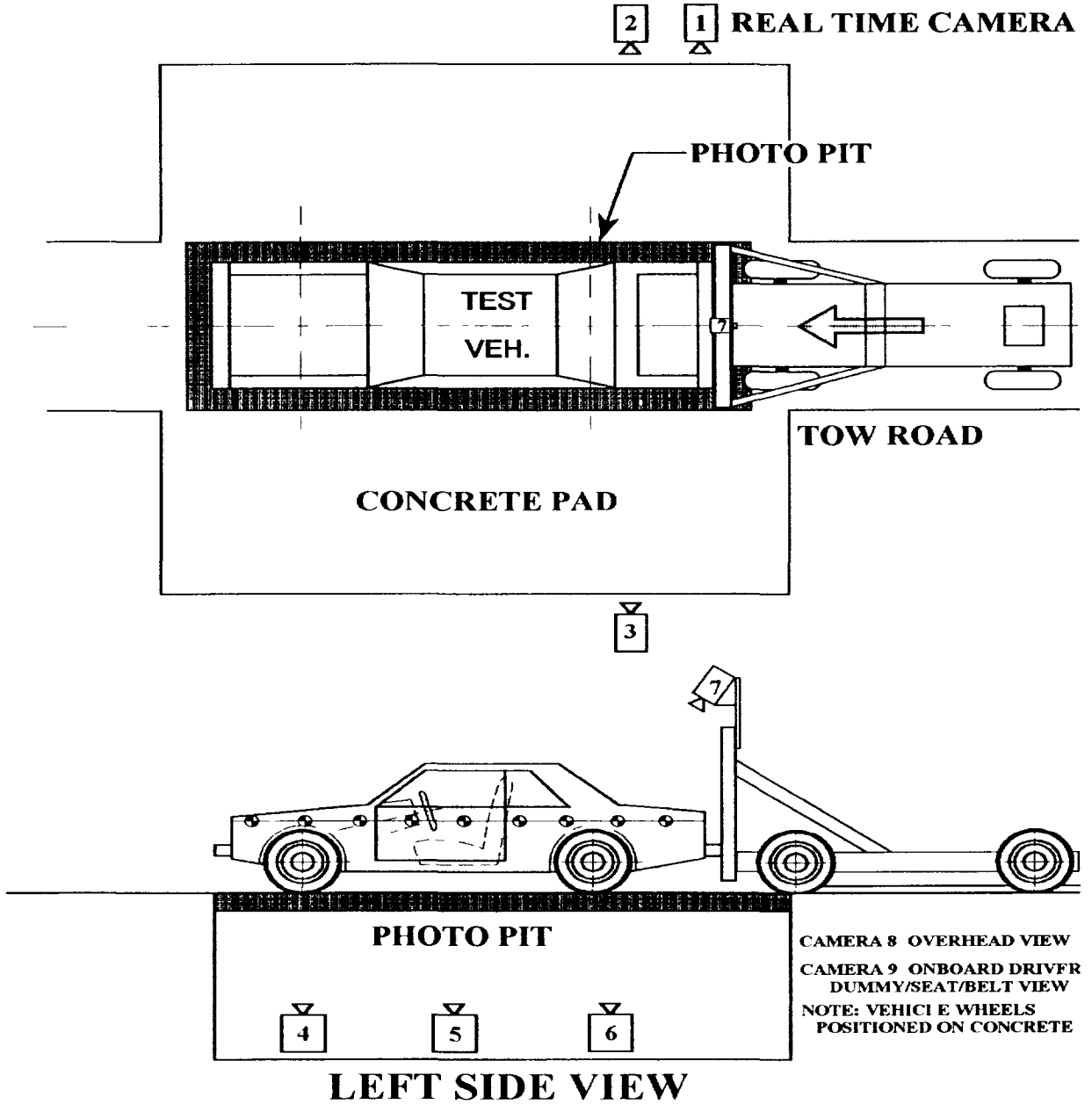


Table 8

HIGH-SPEED CAMERA LOCATIONSNHTSA No C10105Vehicle 2001 Pontiac Aztek MPV

CAMERA NO	VIEW	CAMERA POSITIONS (inches)*			ANGLE** (degrees)	LENS (mm)	SPEED (fps)
		X	Y	Z			
1	Real-Time Camera	-	-	-	-	-	24
2	Right Side View	-539.7	70.0	43.5	0	13	1000
3	Left Side View	536.5	94.7	49.8	0	13	1000
4	Vehicle Front Underbody View	0	140.2	-77.0	90	13	1000
5	Vehicle Mid-Section Underbody View	0	83.0	-77.0	90	13	950
6	Vehicle Rear Underbody View	0	36.5	-77.0	90	13	750
7	Moving Barrier View	0	0	99.0	-105	13	1000
8	Overhead Overall View	-20.0	0	386.0	-90	13	990
9	Onboard Driver Dummy/Seat/Belt View	-	-	-	-	8	1000

* X = film plane to monorail centerline (+ to left of rail)

Y = film plane to impact location (+ ahead of impact location)

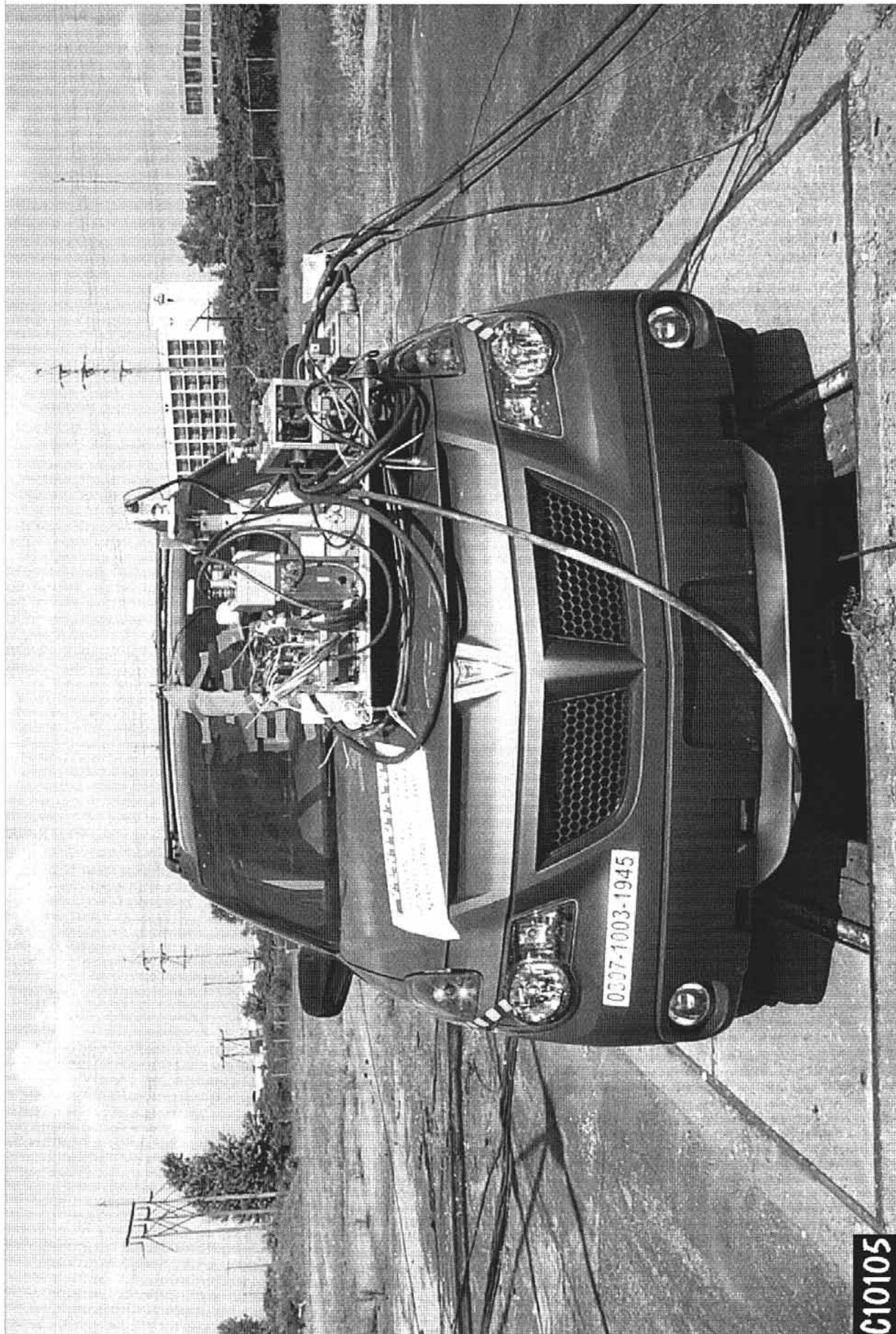
Z = film plane to ground (+ above ground)

** = referenced to horizontal plane

Appendix A
PHOTOGRAPHS

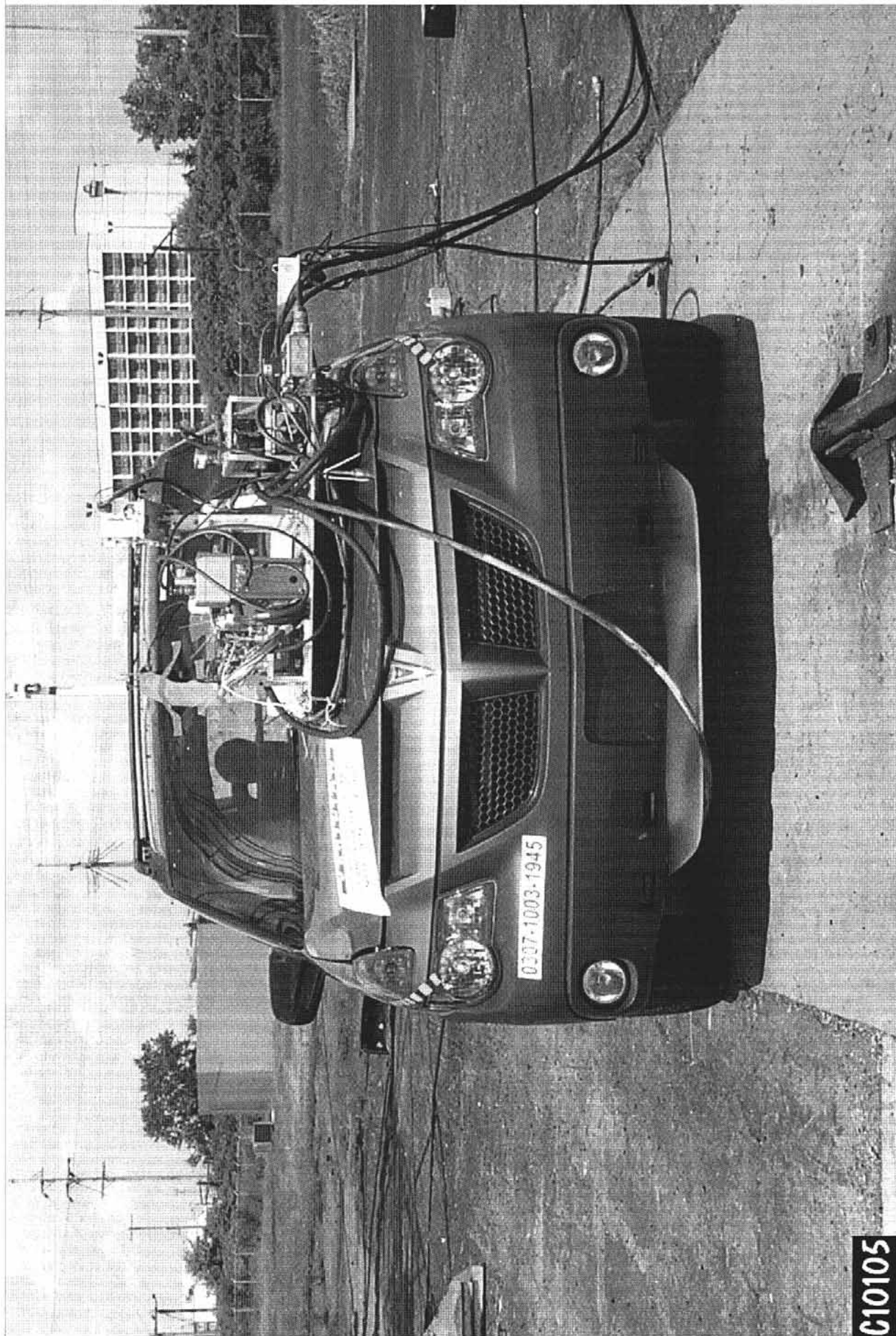
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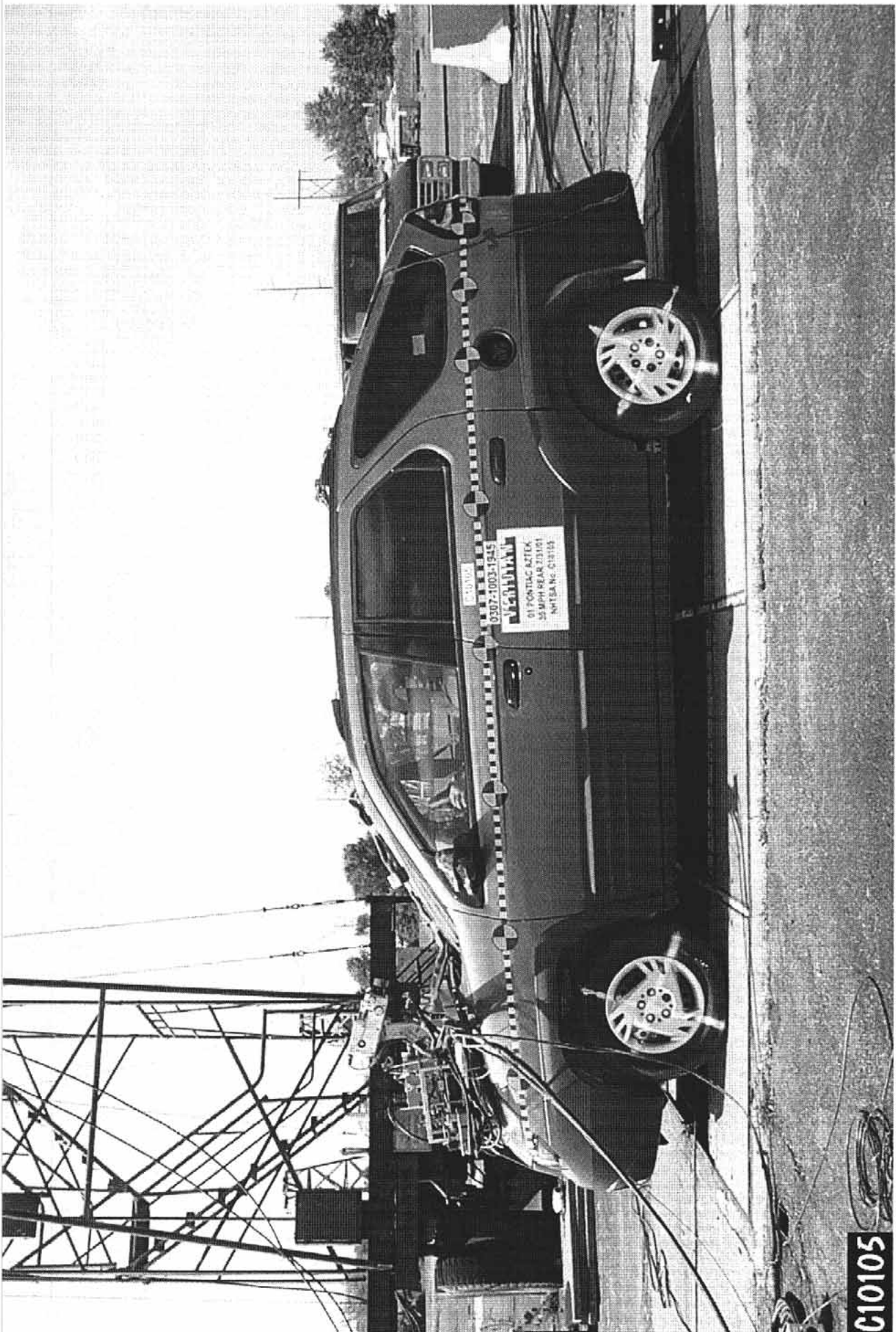
C10105

Figure A-1: PRE-TEST FRONT VIEW



C10105

Figure A-2: POST-TEST FRONT VIEW



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Figure A-3: PRE-TEST LEFT SIDE VIEW



Figure A-4: POST-TEST LEFT SIDE VIEW



Figure A-5: PRE-TEST RIGHT SIDE VIEW

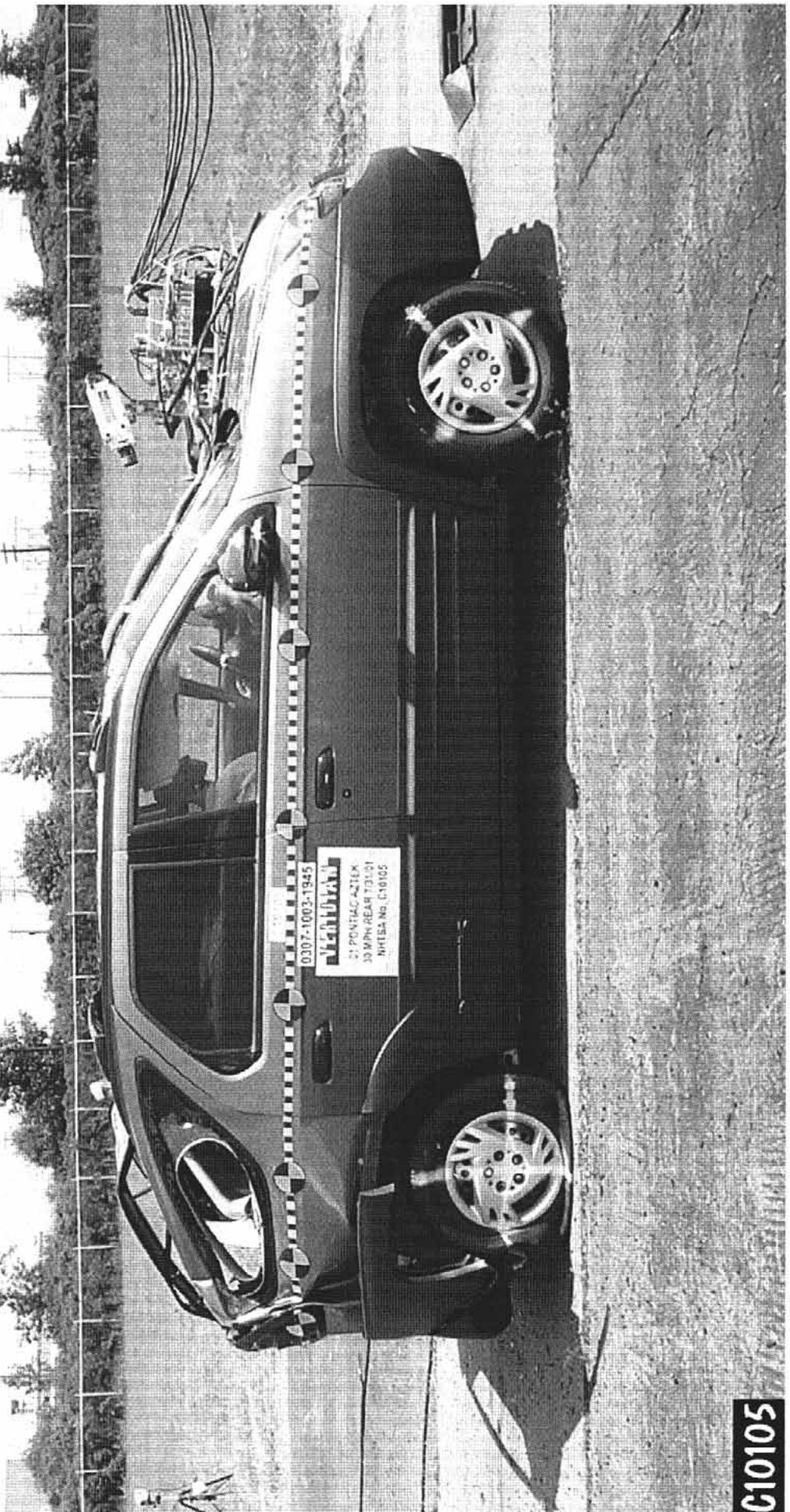


Figure A-6: POST-TEST RIGHT SIDE VIEW



Figure A-7: PRE-TEST REAR VIEW



Figure A-8: POST-TEST REAR VIEW

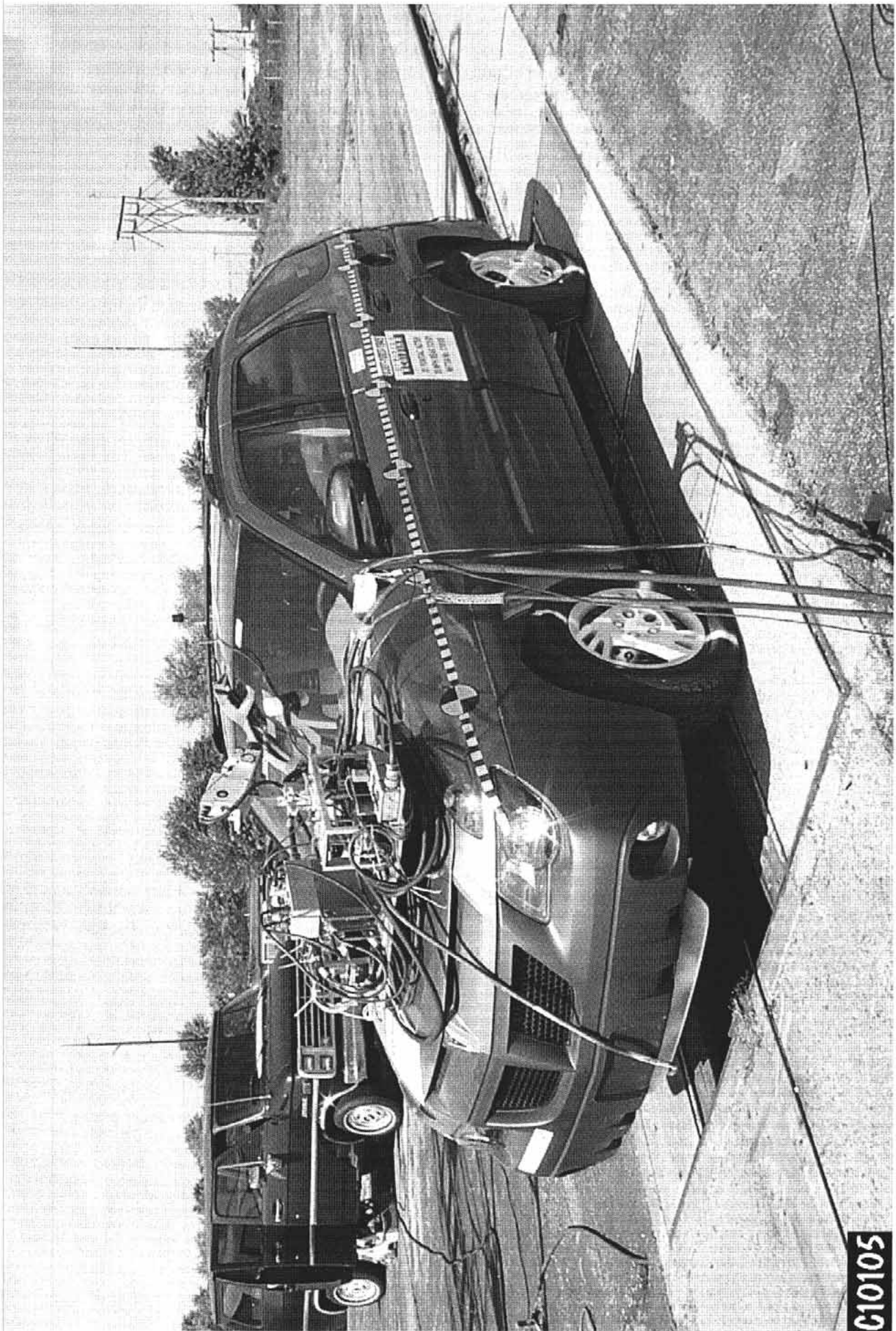


Figure A-9: PRE-TEST LEFT FRONT THREE-QUARTER VIEW



Figure A-10: POST-TEST LEFT FRONT THREE-QUARTER VIEW

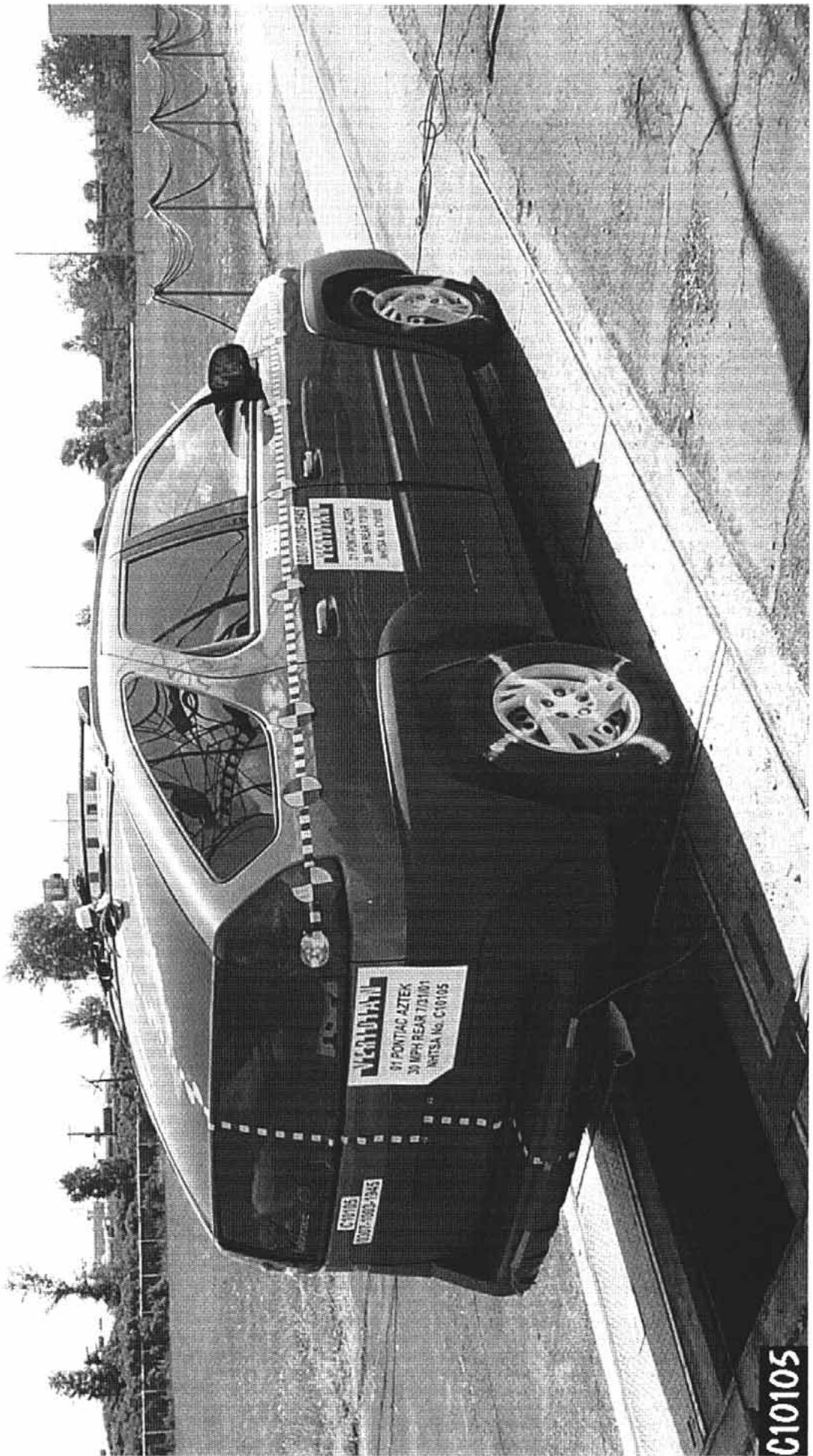


Figure A-11: PRE-TEST RIGHT REAR THREE-QUARTER VIEW

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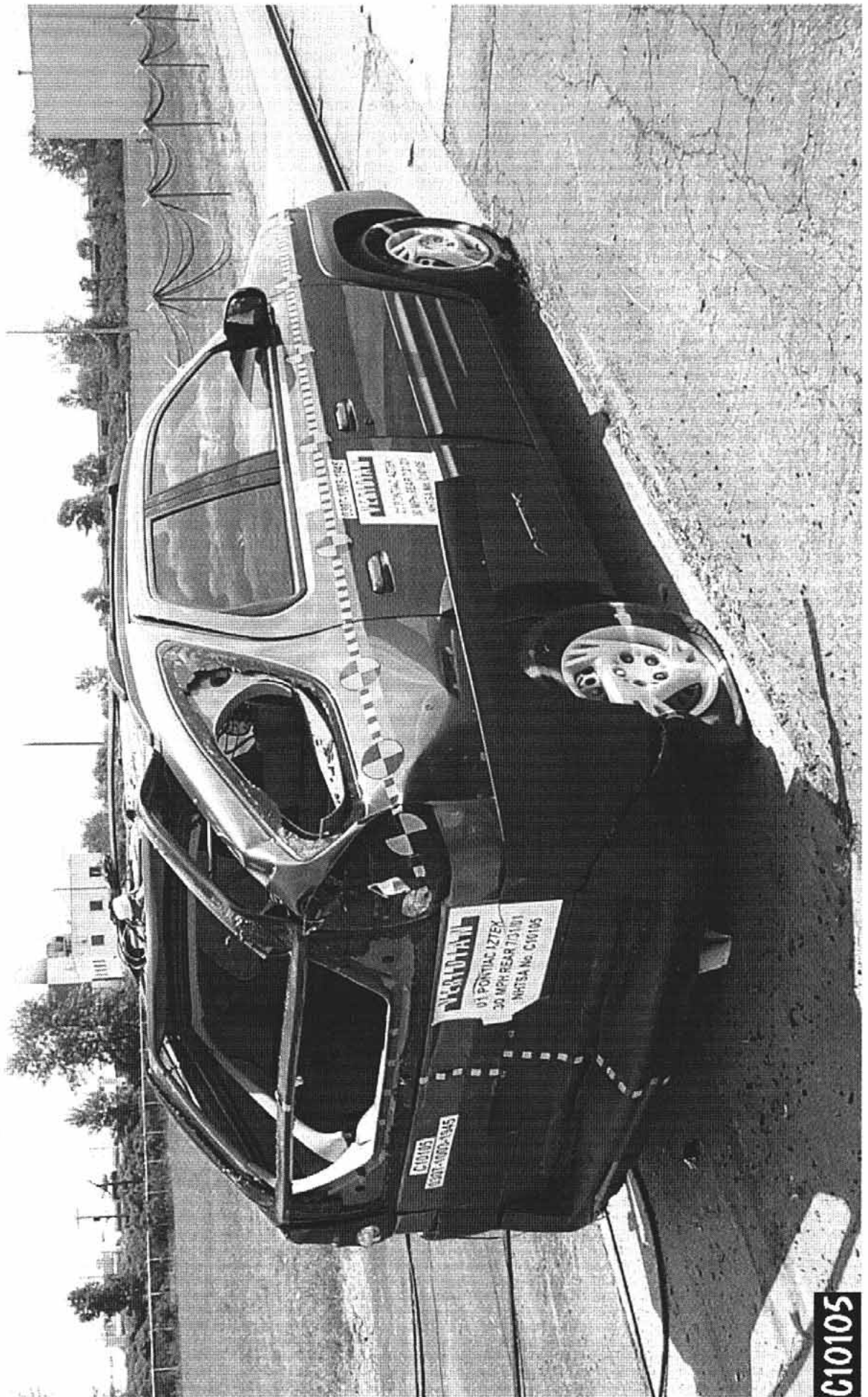


Figure A-12: POST-TEST RIGHT REAR THREE-QUARTER VIEW

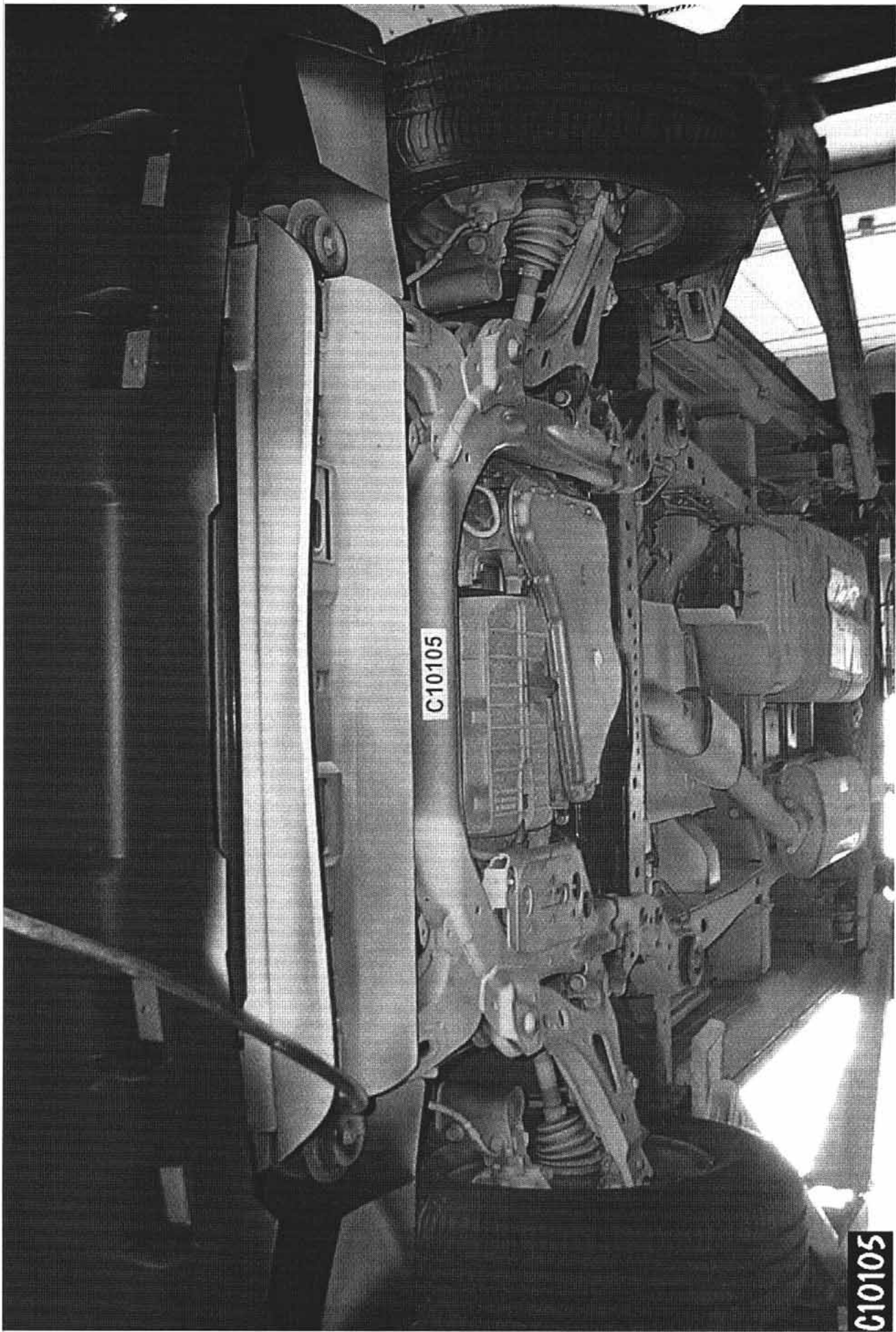


Figure A-13: PRE-TEST FRONT UNDERBODY VIEW

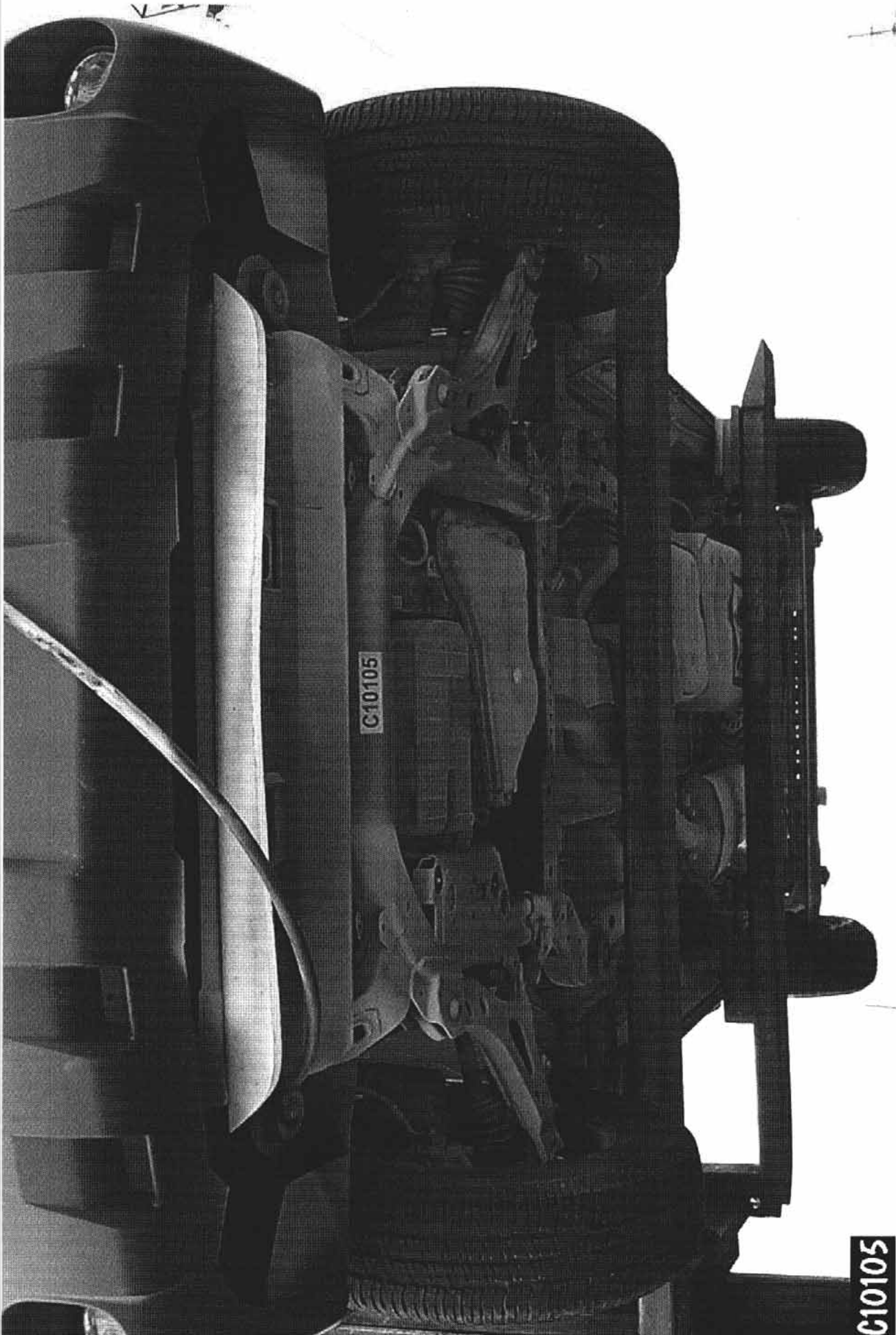


Figure A-14: POST-TEST FRONT UNDERBODY VIEW

C10105

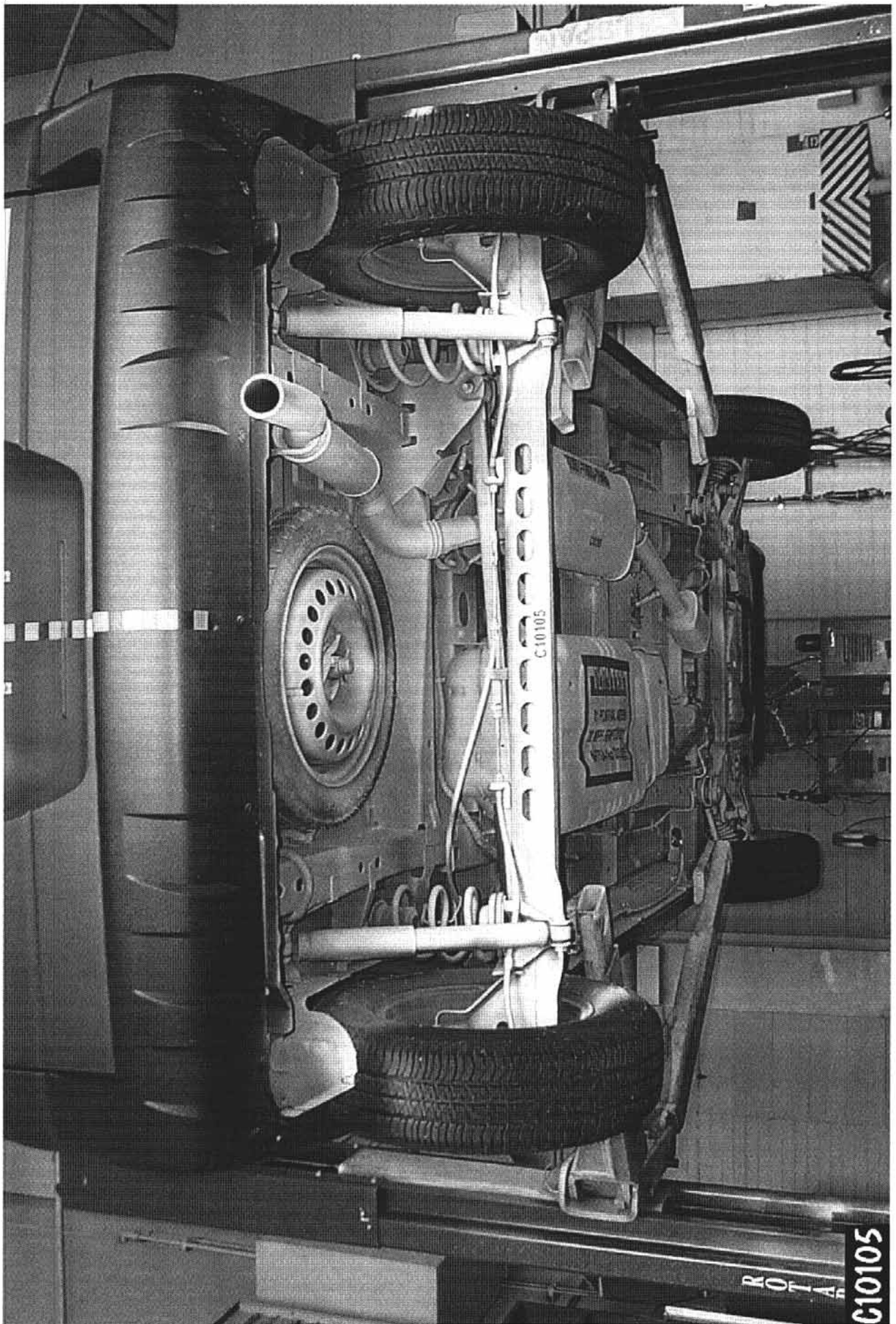


Figure A-15: PRE-TEST REAR UNDERBODY VIEW

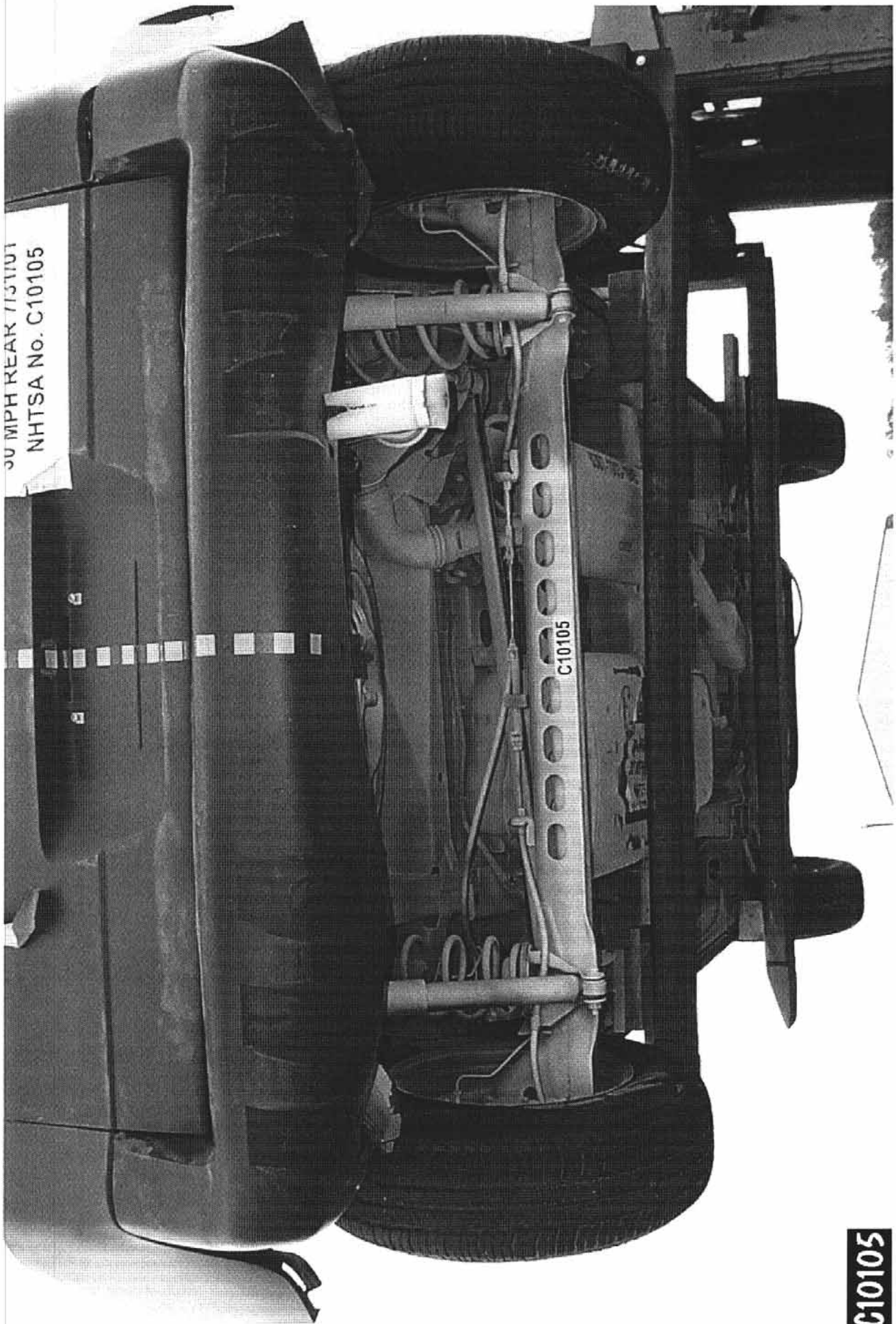
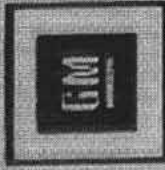


Figure A-16: POST-TEST REAR UNDERBODY VIEW

C10105



MFD BY GENERAL MOTORS DE MEXICO, S. DE R.L. DE C.V. 08/00

GVWR 2285KG(5037LB) GAWR FRT 1210KG(2667LB) GAWR RR 1075KG(2370LB)

THIS VEHICLE CONFORMS TO ALL APPLICABLE U.S. FEDERAL MOTOR VEHICLE SAFETY AND THEFT PREVENTION STANDARDS IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE.

3G7DA03E51S509113 TYPE: M.P.V.

MODEL: BK46

BPAS	TIRE SIZE	SPEED RTG	RIM	COLD TIRE PRESSURE
FRT	P215/70R15	S	15X6J	240KPA(35PSI)
RR	P215/70R15	S	15X6J	240KPA(35PSI)
SPA	T125/70R15	M	15X4T	420KPA(60PSI)

SEE OWNER'S MANUAL FOR MORE INFORMATION.

C10105

Figure A-17: CERTIFICATION PLACARD

NOT APPLICABLE

Figure A-18: TIRE PLACARD

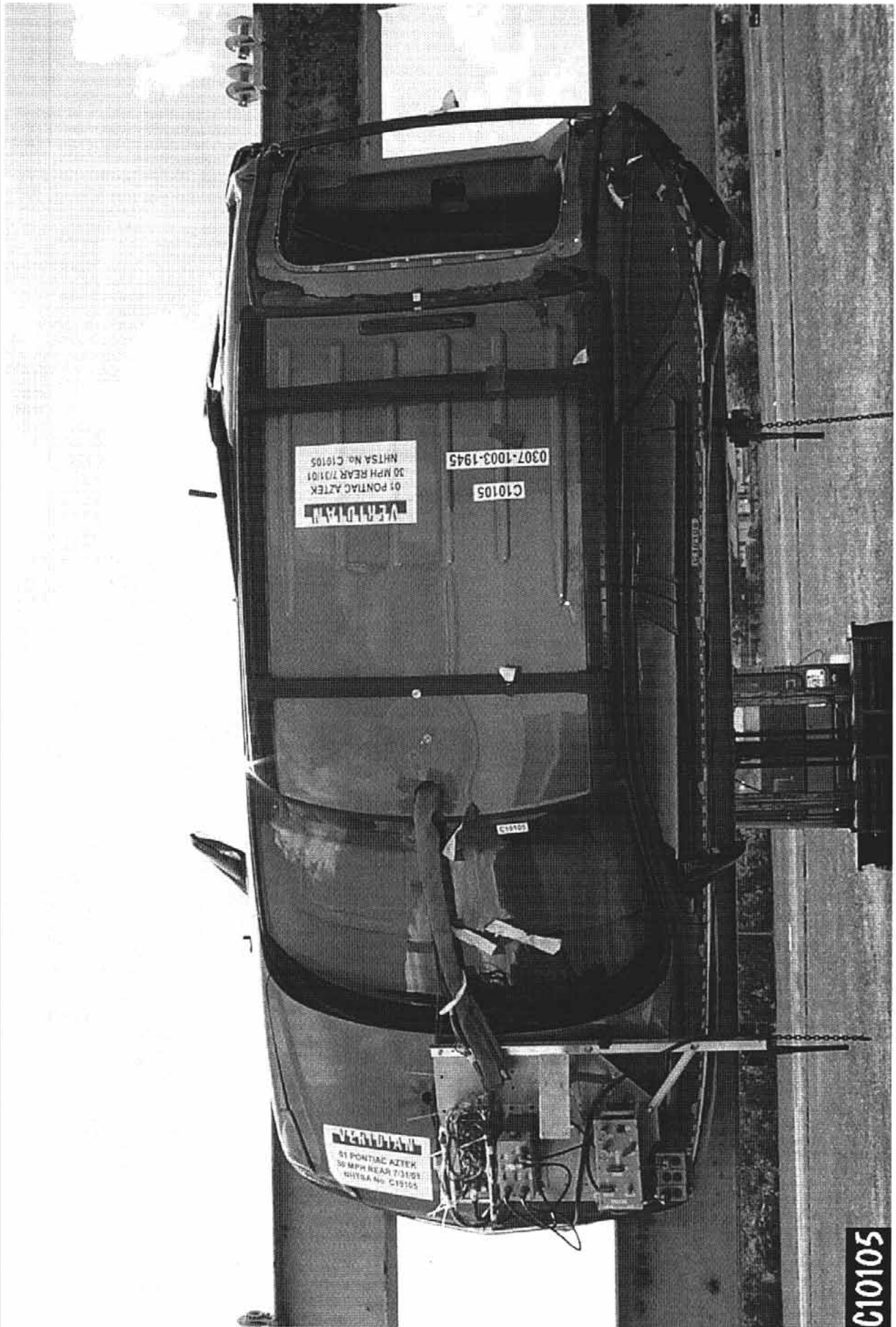


Figure A-19: ROLLOVER 90°



Figure A-20: ROLLOVER 180°

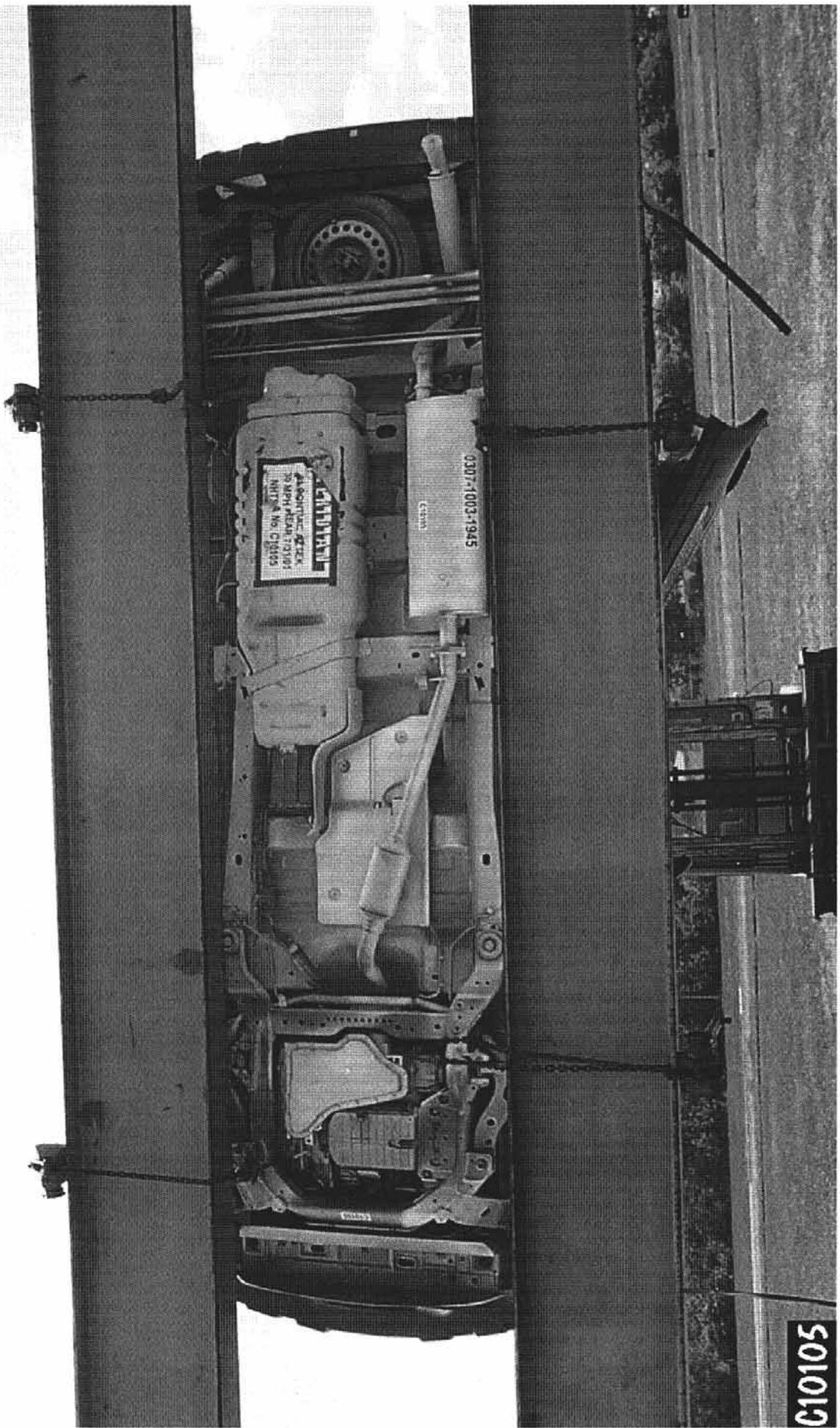


Figure A-21: ROLLOVER 270°

C10105

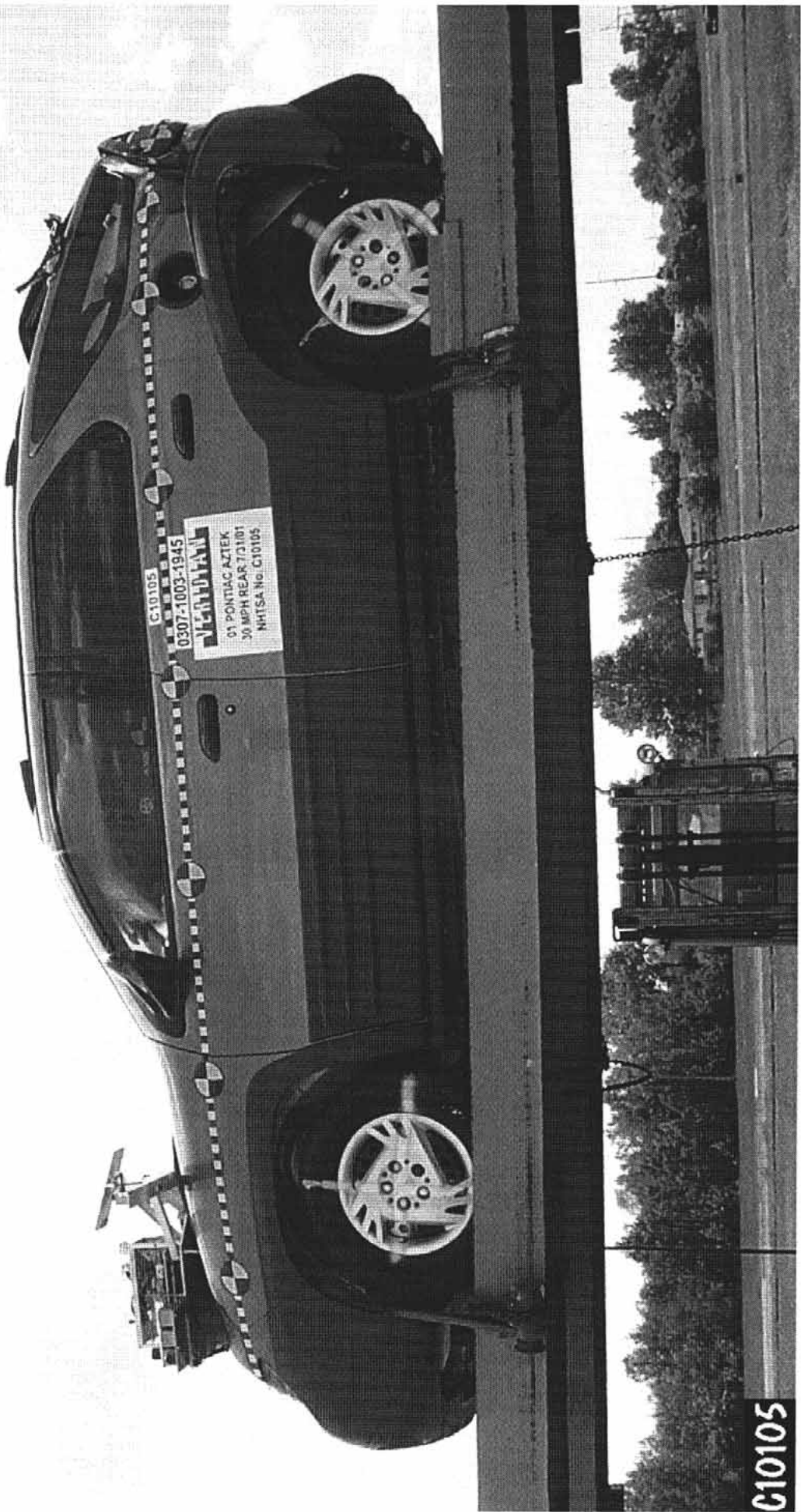


Figure A-22: ROLLOVER 360°

Appendix B
VEHICLE AND DUMMY RESPONSE DATA

FACILITY VERF
 TEST# 307-1003-1945
 TITLE NHTSA FMVSS 301 Test #3 - 2001 Pontiac Aztek C10105

DATE July 31, 2001

NAME	Unit	Max	msec	Min	msec	Filt
P1 Head x	g	36.3	115.4	-4.7	339.8	CFC_1000
P1 Head y	g	2.6	126.3	-4.1	109.8	CFC_1000
P1 Head z	g	23.5	101.4	0.0	-48.5	CFC_1000
P1 Head Resultant	g	41.0	114.5	0.0	-12.5	CFC_1000
P1 Upper Neck Fx	lbf	90.9	117.3	-41.7	341.0	CFC_1000
P1 Upper Neck Fy	lbf	24.0	124.7	-15.7	340.2	CFC_1000
P1 Upper Neck Fz	lbf	246.7	102.3	-15.8	127.8	CFC_1000
P1 Upper Neck F Resultant	lbf	252.1	106.6	0.0	-13.0	CFC_1000
P1 Upper Neck Mx	in-lb	57.6	80.8	48.4	128.8	CFC_600
P1 Upper Neck My	in-lb	183.9	206.1	-270.4	136.1	CFC_600
P1 Upper Neck Mz	in lb	33.9	111.9	-32.7	177.5	CFC_600
P1 Upper Neck M Resultant	in lb	271.5	136.1	0.0	-6.7	CFC_600
P1 Chest x	g	15.1	74.2	-2.9	272.8	CFC_180
P1 Chest y	g	2.2	37.2	-1.8	76.5	CFC_180
P1 Chest z	g	6.3	63.8	6.4	94.1	CFC_180
P1 Chest Resultant	g	15.5	83.8	0.0	-16.5	CFC_180
P1 Chest Compression	in	0.0	120.5	-0.2	312.5	CFC_600
P1 Pelvic x	g	19.0	63.4	-3.9	129.2	CFC_1000
P1 Pelvic y	g	3.2	73.6	-3.6	95.0	CFC_1000
P1 Pelvic z	g	11.5	60.9	4.8	93.6	CFC_1000
P1 Pelvic Resultant	g	22.3	63.4	0.0	-42.0	CFC_1000
P1 Left Femur	lbf	38.7	331.6	-328.7	129.1	CFC_600
P1 Right Femur	lbf	66.0	91.8	-99.7	53.6	CFC_600
P1 Lap Belt	lbf	49.0	47.0	-31.9	58.2	CFC_60
P1 Belt Spoolout	in	0.0	7.0	-3.1	124.4	CFC_180
Acc #1 Left Rear Xmember X	g	18.1	15.2	-3.9	68.4	CFC_60
Acc #2 Right Rear Xmember X	g	18.1	14.7	-3.1	79.7	CFC_60
Acc #3 Upper Seatback X	g	15.8	79.3	-20.9	35.8	CFC_60
Acc #4 Lower Seatback X	g	15.5	44.5	-6.9	36.6	CFC_60
Seatback Angular Position	deg	19.3	93.9	0.0	-50.0	CFC_180

P1 HIC(36 ms) 184.3
 t1 95.9 msec
 t2 126.7 msec
 Duration 30.7 msec
 Average Acceleration 32.4 g

P1 CLIP(3 ms) 15.2 g
 t1 82.1 msec
 t2 85.1 msec
 Duration 3.0 msec
 P1 CSI 43.3

TEST NO C10105

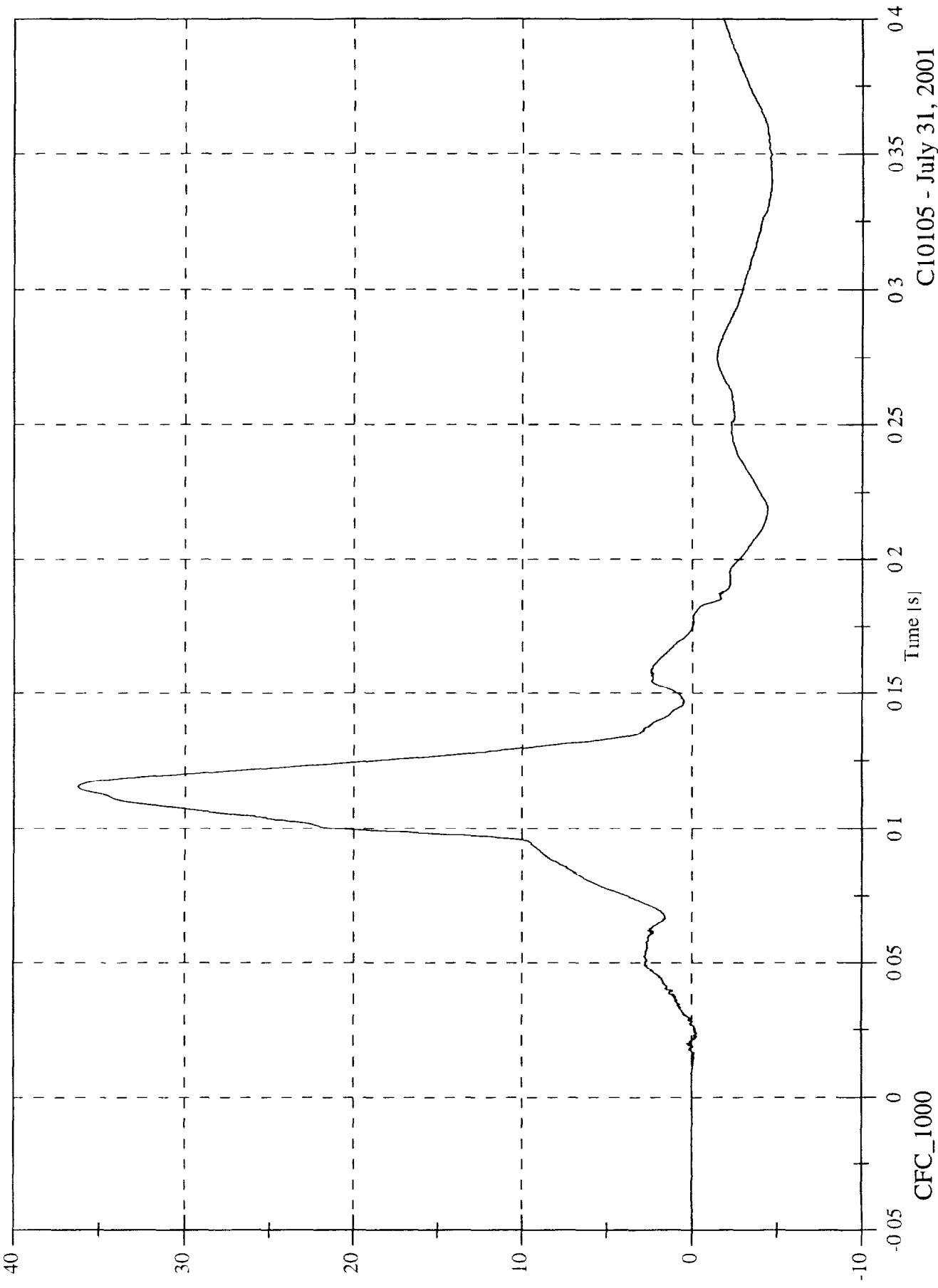
DRIVER DUMMY (Pos 1)	SAE FILTER CHANNEL CLASS
Head Accelerations	1000
Chest Accelerations	180
Pelvic Accelerations	1000
Upper Neck Forces	1000
Upper Neck Moments	600
Belt Forces	60
Belt Spoolout	60
Vehicle	60

Note Angular seatback position is measured in degrees of rotation from the initial (design) position

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Max: 36.3 [g] at 0.115 [s]
Min: -4.7 [g] at 0.340 [s]

P1 Head x

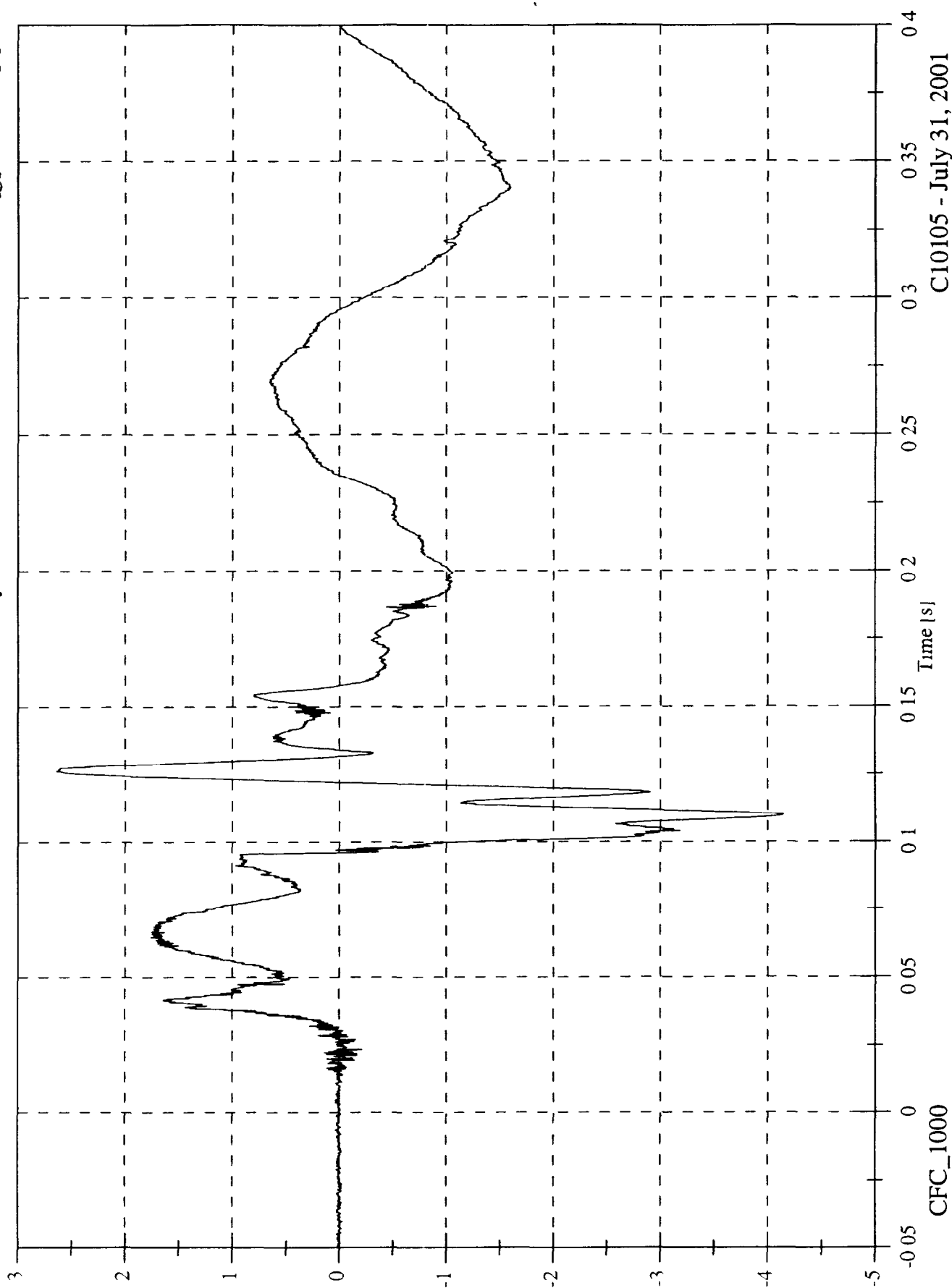


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NHTSA FMVSS 301 Test #3 - 2001 Pontiac Aztek

Max: 2.6 [g] at 0.126 [s]
Min: -4.1 [g] at 0.110 [s]

PI Head y

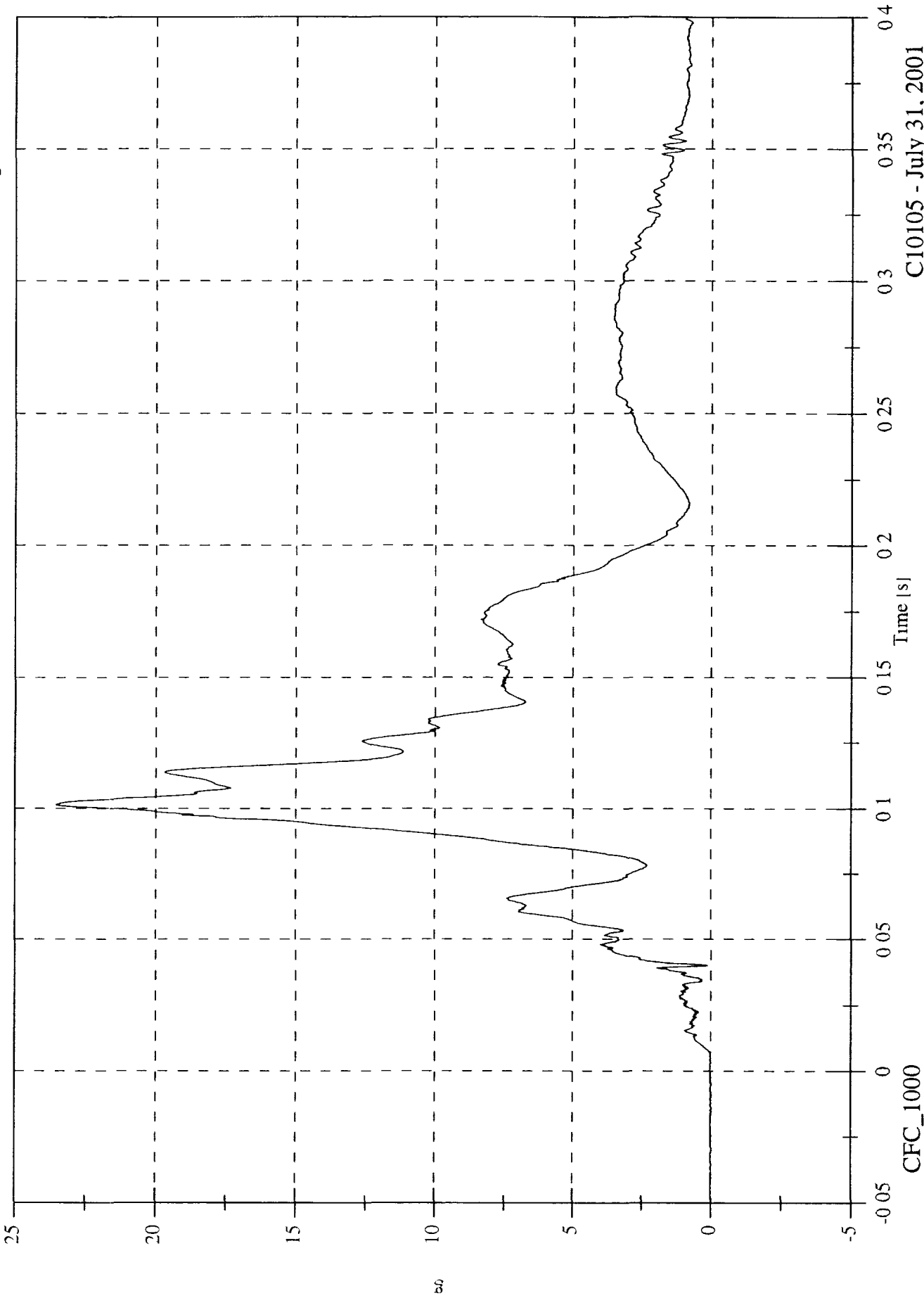


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NHTSA FMVSS 301 Test #3 - 2001 Pontiac Aztek

Max. 23.5 [g] at 0.101 [s]
Min: -0.0 [g] at -0.048 [s]

P1 Head z

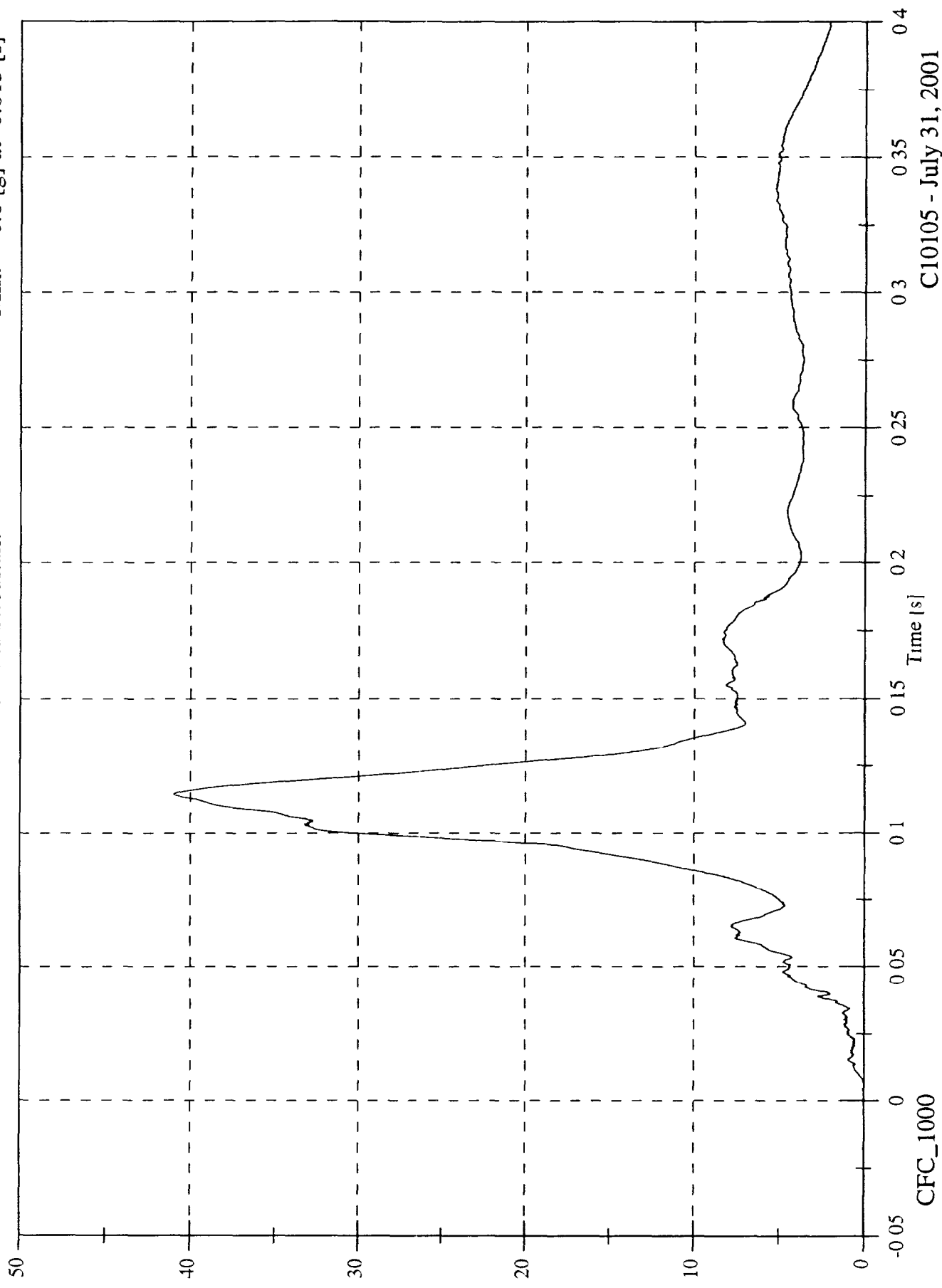


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NHTSA FMVSS 301 Test #3 - 2001 Pontiac Aztek

P1 Head Resultant

Max: 41.0 [g] at 0.114 [s]
Min: 0.0 [g] at -0.013 [s]



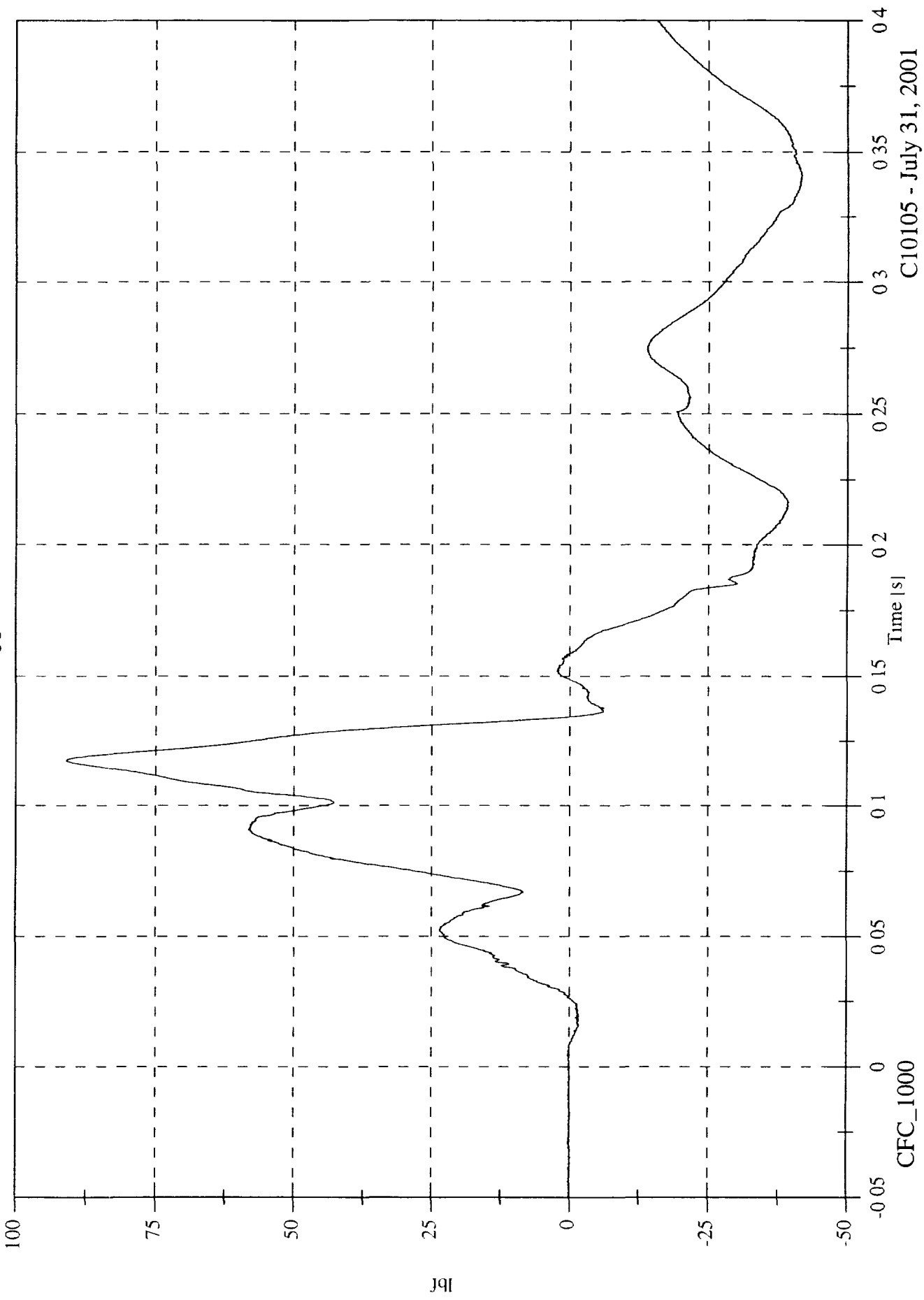
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Max: 90.9 [lbf] at 0.117 [s]

Min: -41.7 [lbf] at 0.341 [s]

P1 Upper Neck Fx



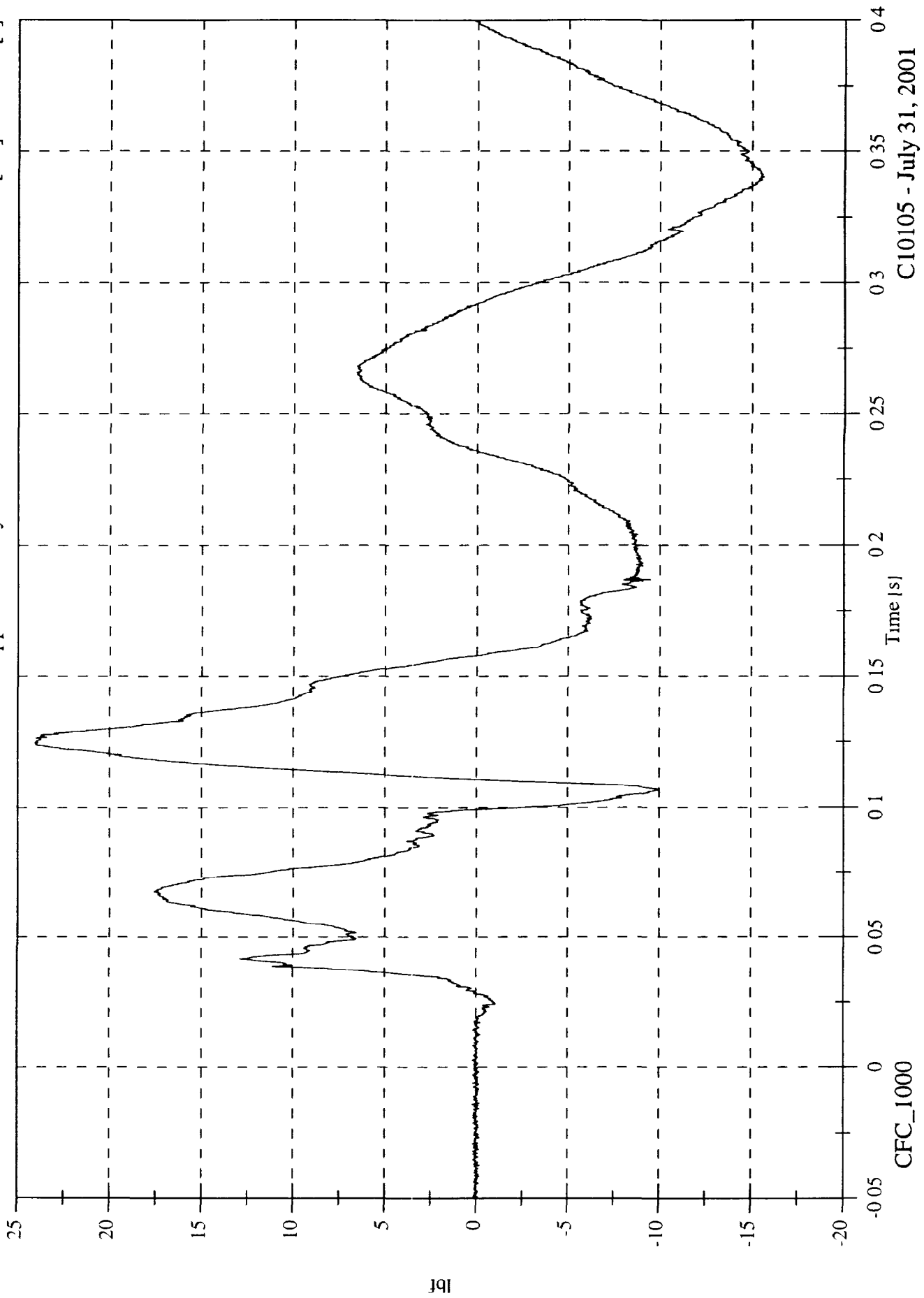
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NHTSA FMVSS 301 Test #3 - 2001 Pontiac Aztek

Max: 24.0 [lbf] at 0.125 [s]

Min: -15.7 [lbf] at 0.340 [s]

P1 Upper Neck Fy



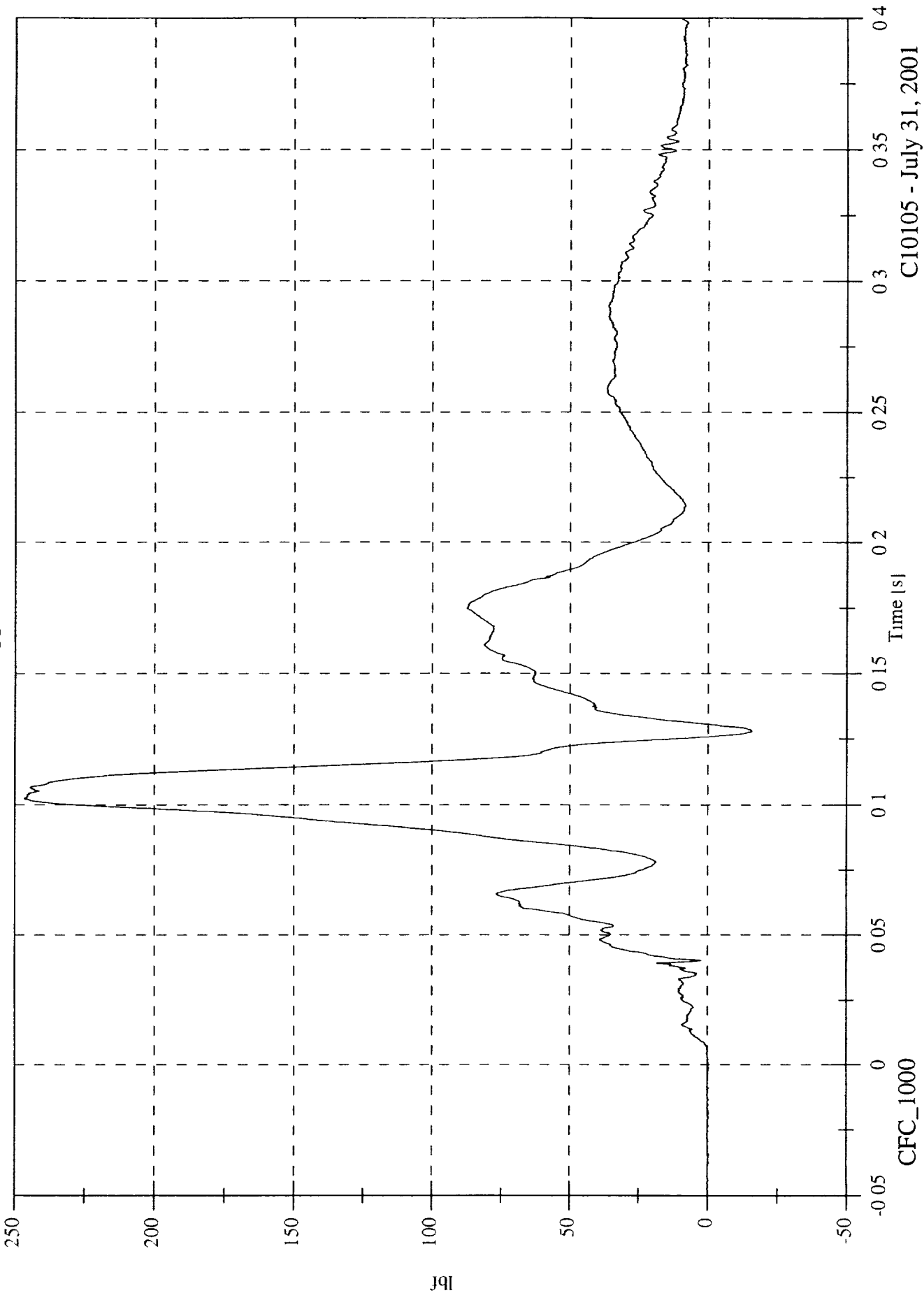
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NHTSA FMVSS 301 Test #3 - 2001 Pontiac Aztek

Max: 246.7 [lbf] at 0.102 [s]

Min: -15.8 [lbf] at 0.128 [s]

P1 Upper Neck Fz



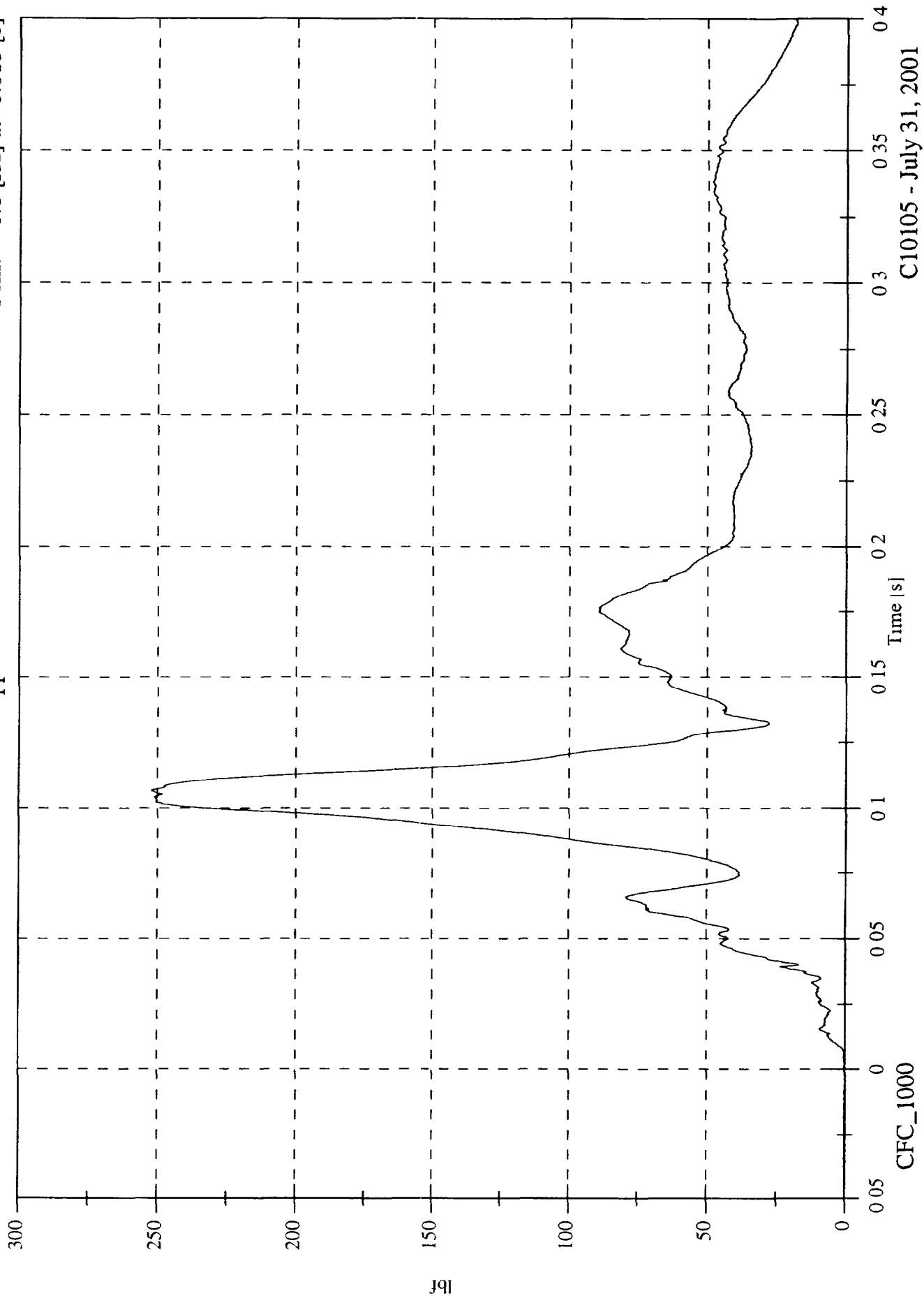
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P1 Upper Neck F Resultant

Max: 252.1 [lbf] at 0.107 [s]

Min: 0.0 [lbf] at -0.013 [s]



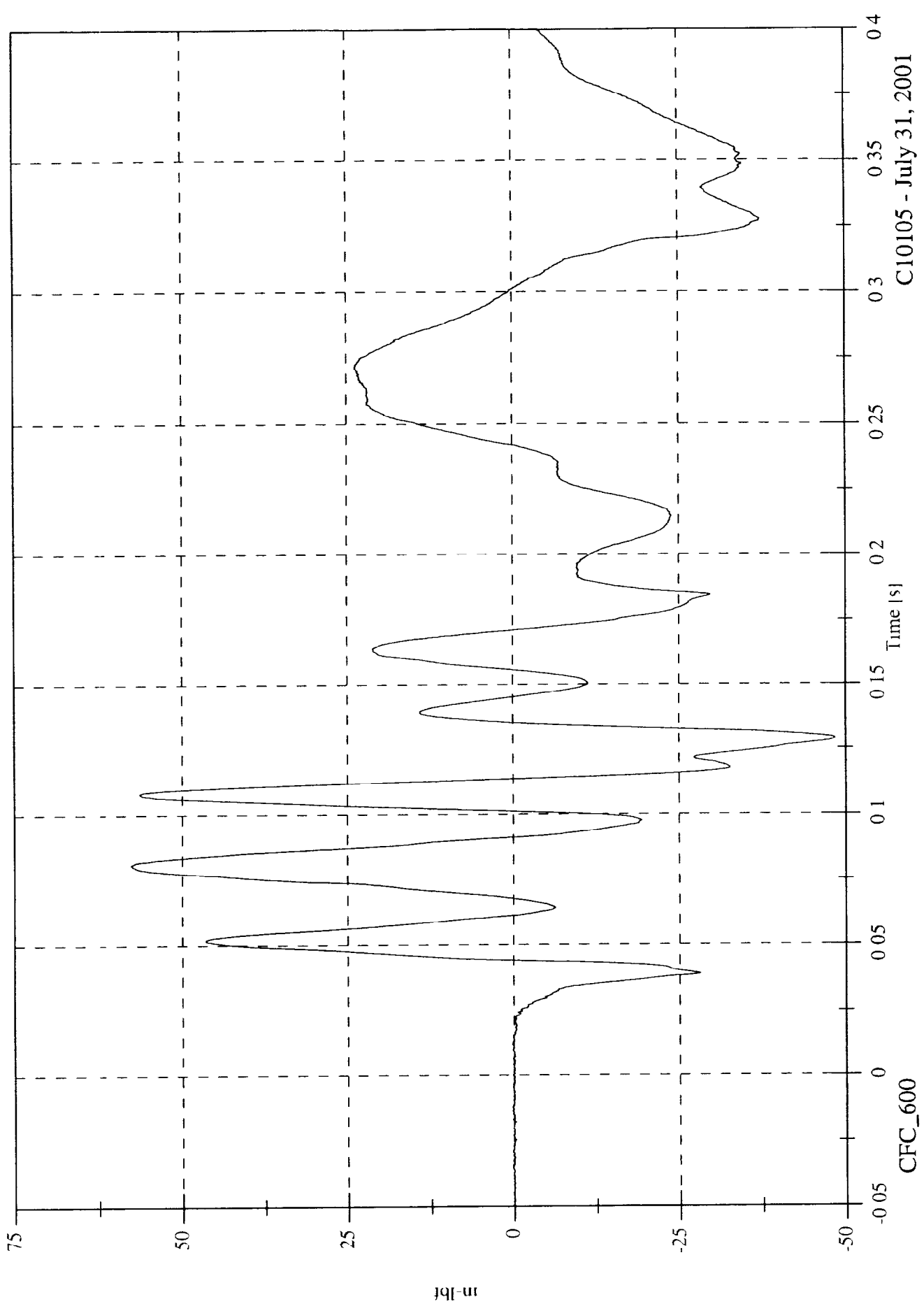
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P1 Upper Neck Mx

Max: 57.6 [in-lbf] at 0.081 [s]

Min: -48.4 [in-lbf] at 0.129 [s]

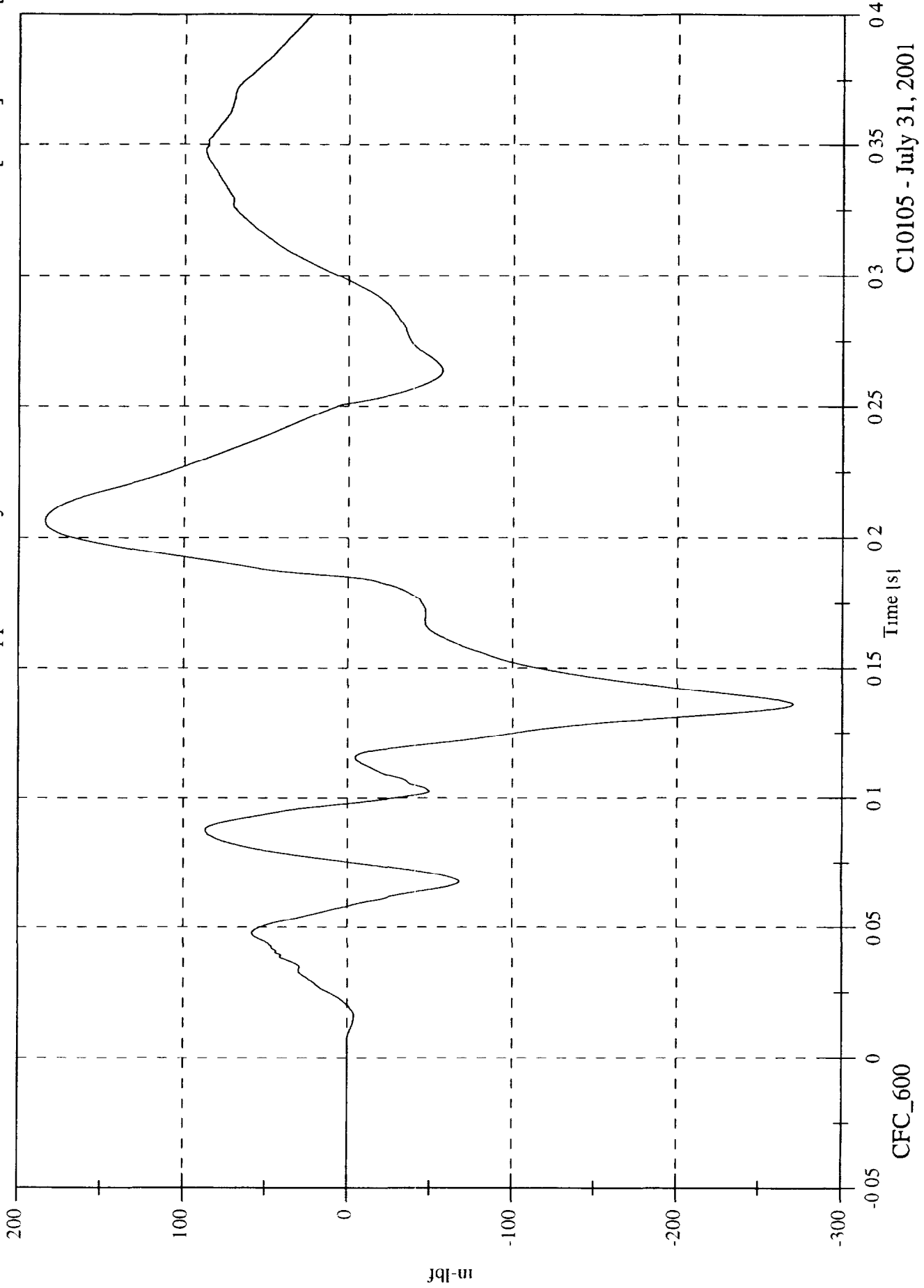


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NHTSA FMVSS 301 Test #3 - 2001 Pontiac Aztek

Max: 183.9 [in-lbf] at 0.206 [s]
Min: -270.4 [in-lbf] at 0.136 [s]

P1 Upper Neck My

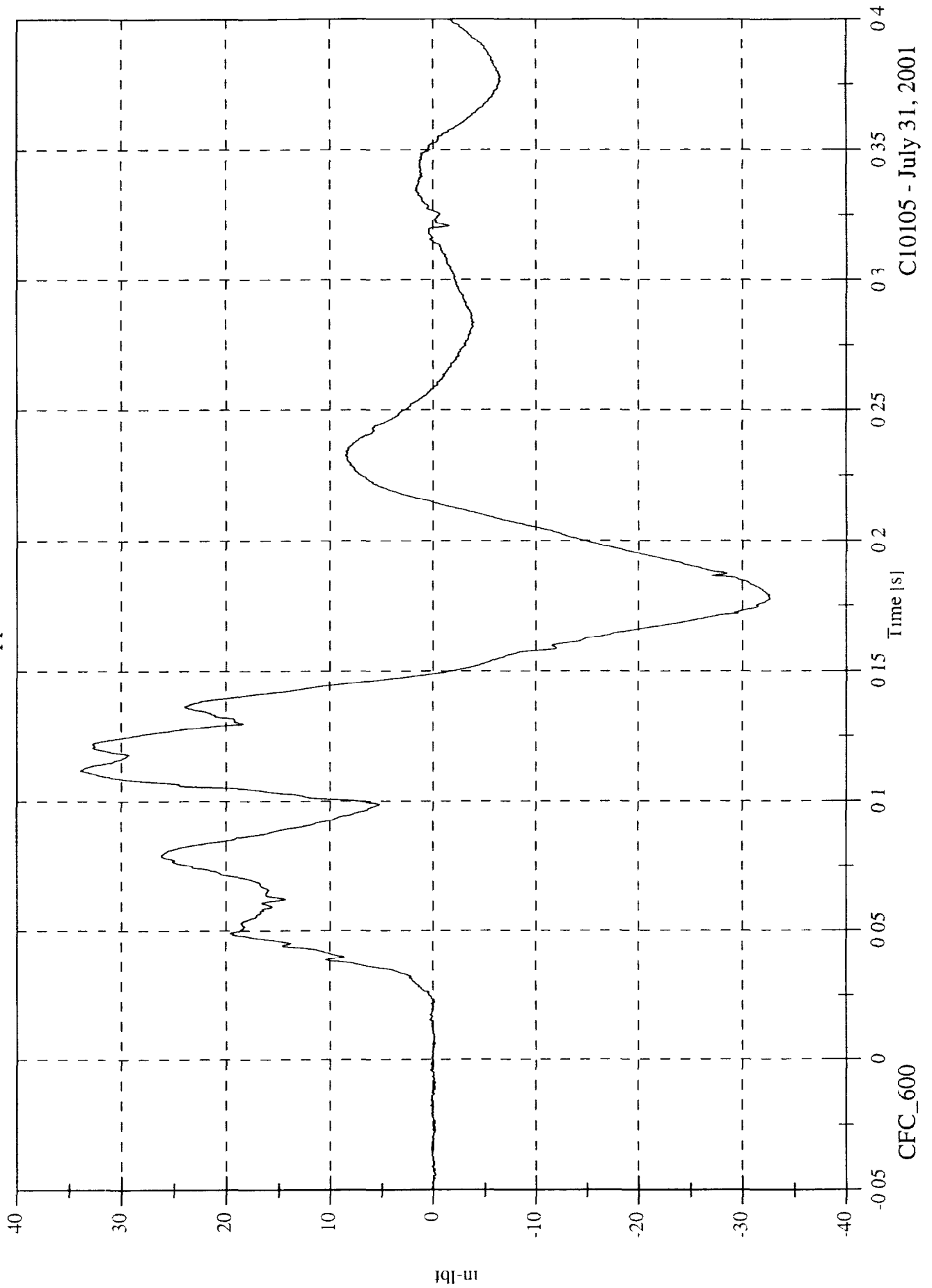


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NHTSA FMVSS 301 Test #3 - 2001 Pontiac Aztek

Max: 33.9 [in-lbf] at 0.112 [s]
Min: -32.7 [in-lbf] at 0.177 [s]

P1 Upper Neck Mz



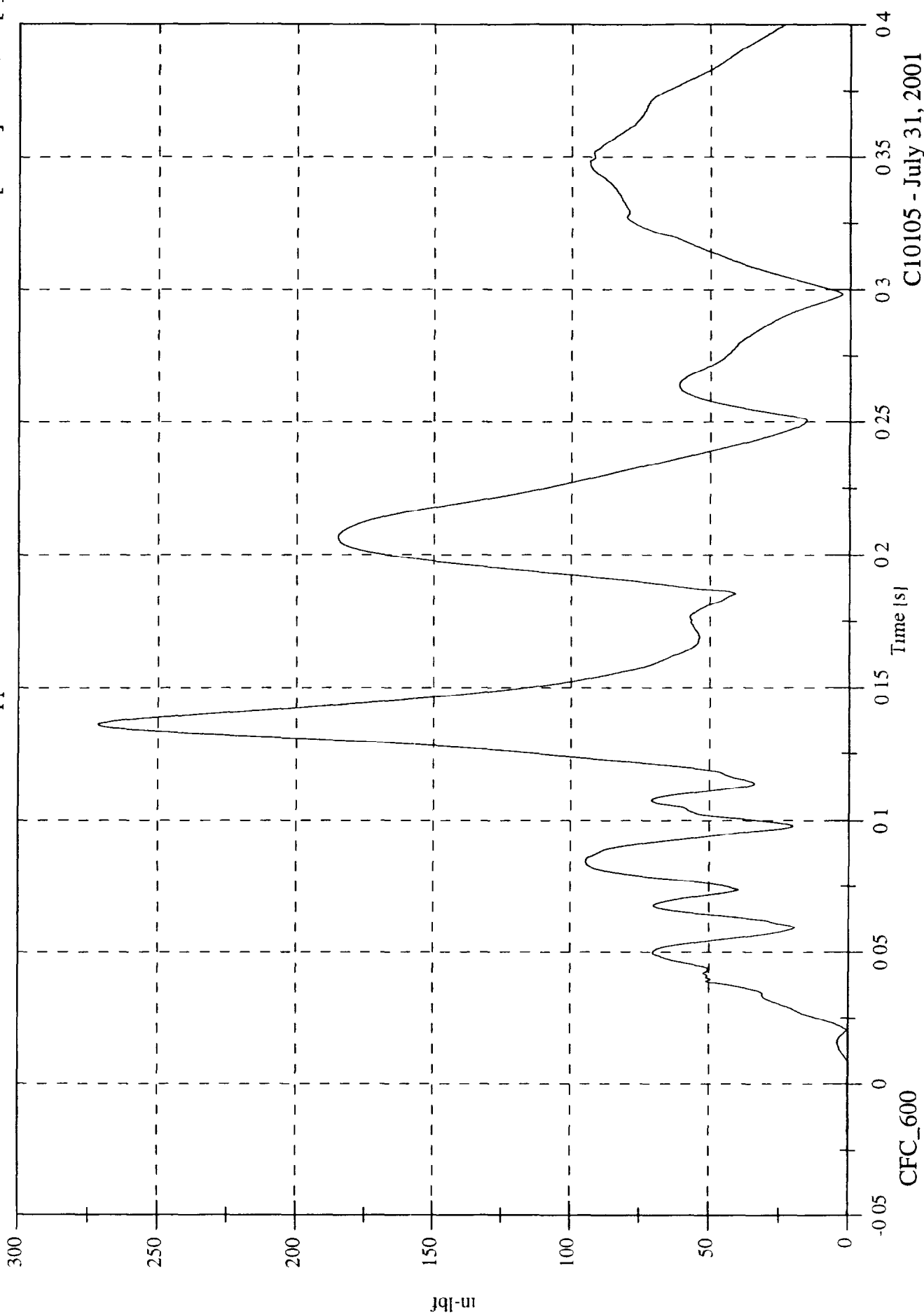
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Max: 271.5 [in-lbf] at 0.136 [s]

Min: 0.0 [in-lbf] at -0.007 [s]

P1 Upper Neck M Resultant

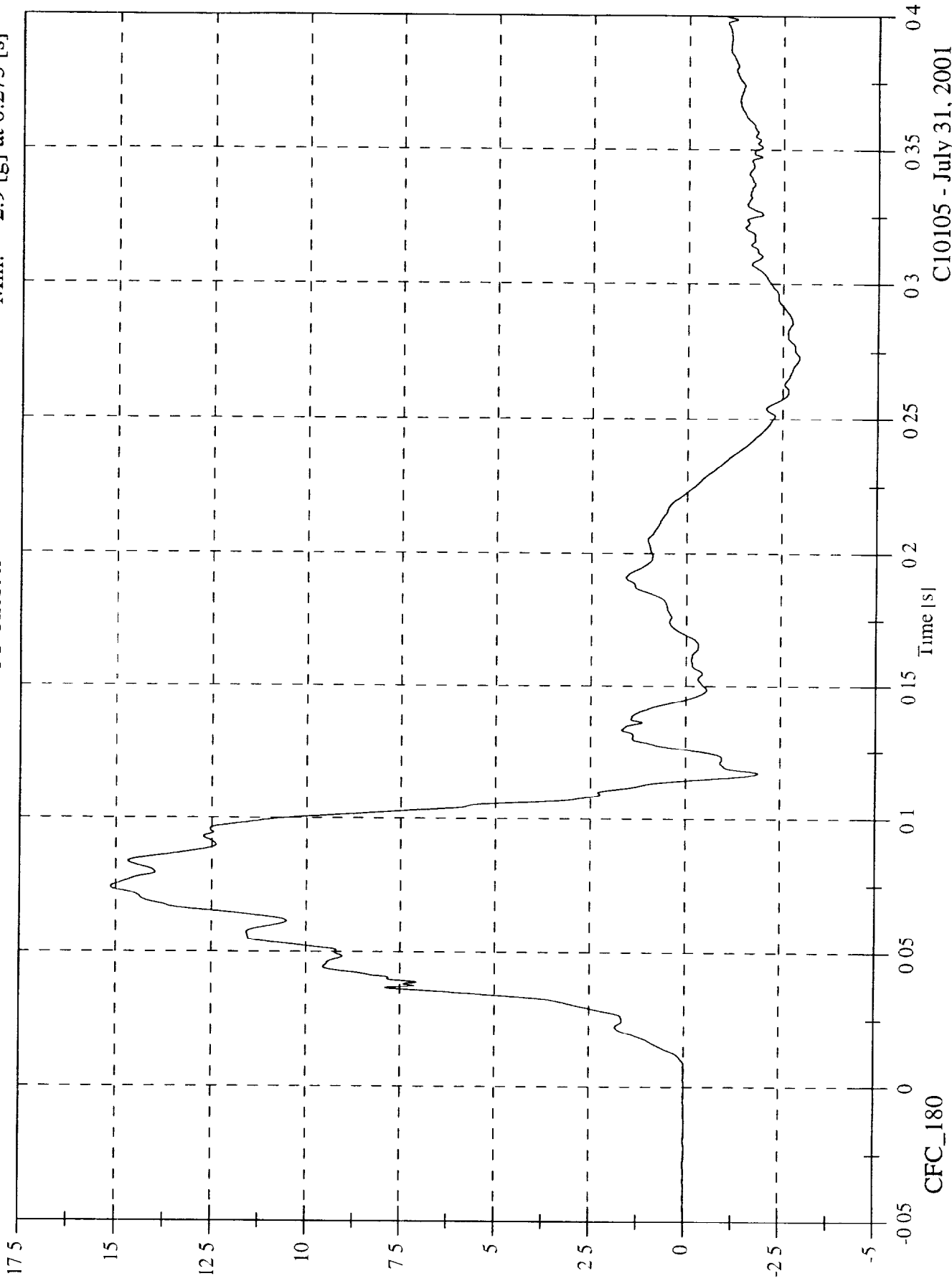


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Max: 15.1 [g] at 0.074 [s]
Min: -2.9 [g] at 0.273 [s]

PI Chest x

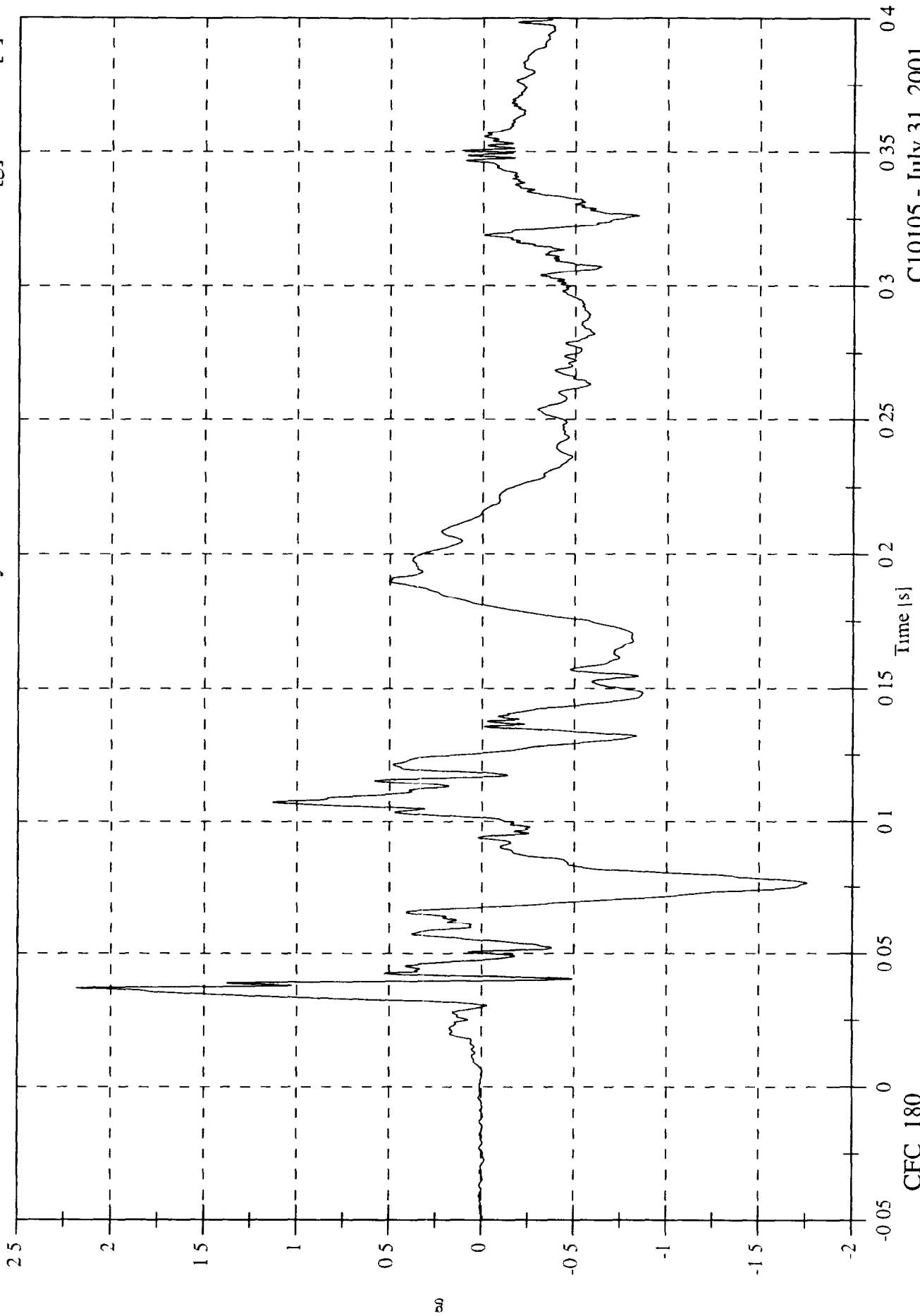


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NHTSA FMVSS 301 Test #3 - 2001 Pontiac Aztek

Max: 2.2 [g] at 0.037 [s]
Min: -1.8 [g] at 0.076 [s]

PI Chest y

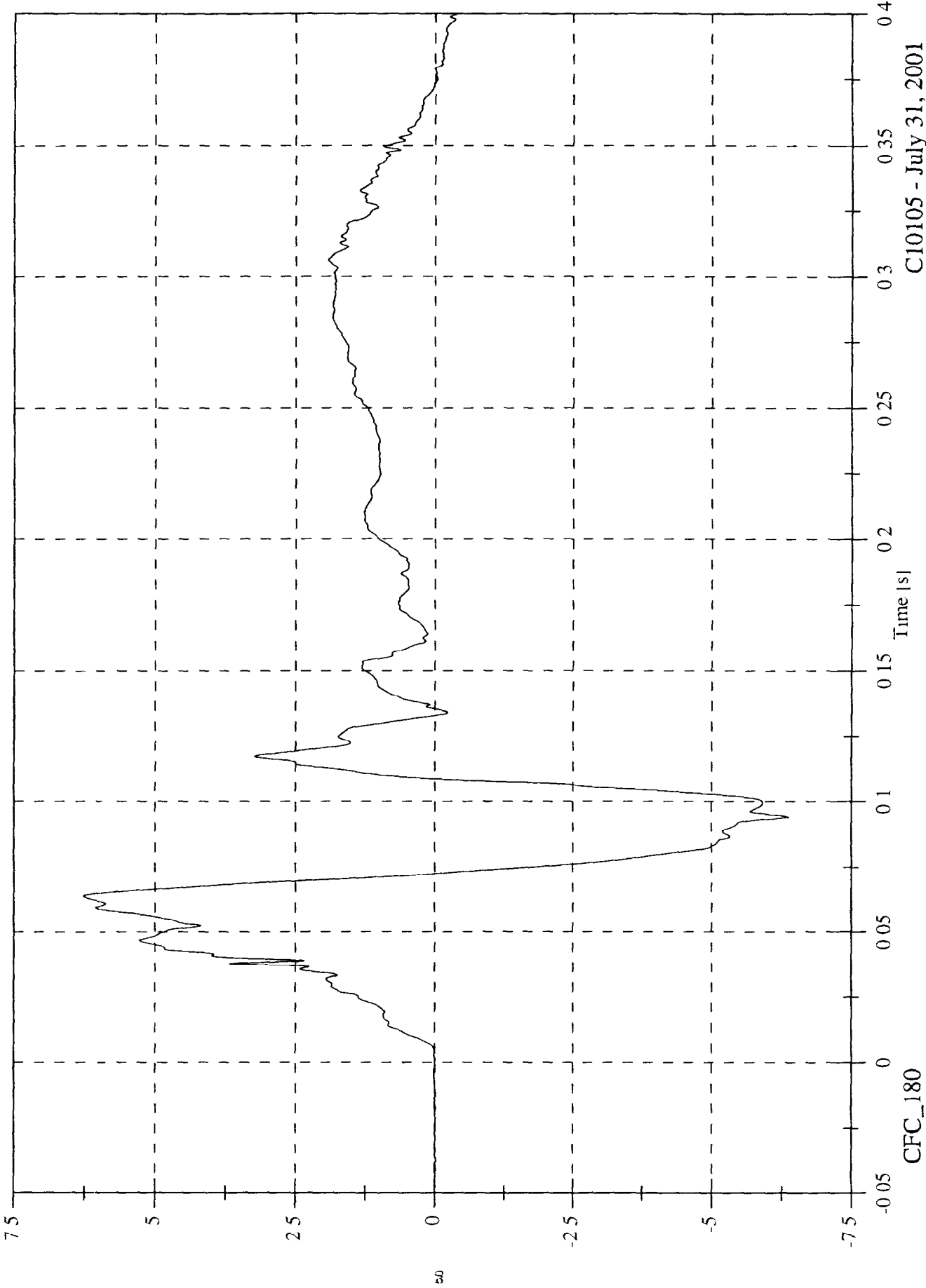


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NHTSA FMVSS 301 Test #3 - 2001 Pontiac Aztek

Max: 6.3 [g] at 0.064 [s]
Min: -6.4 [g] at 0.094 [s]

P1 Chest z

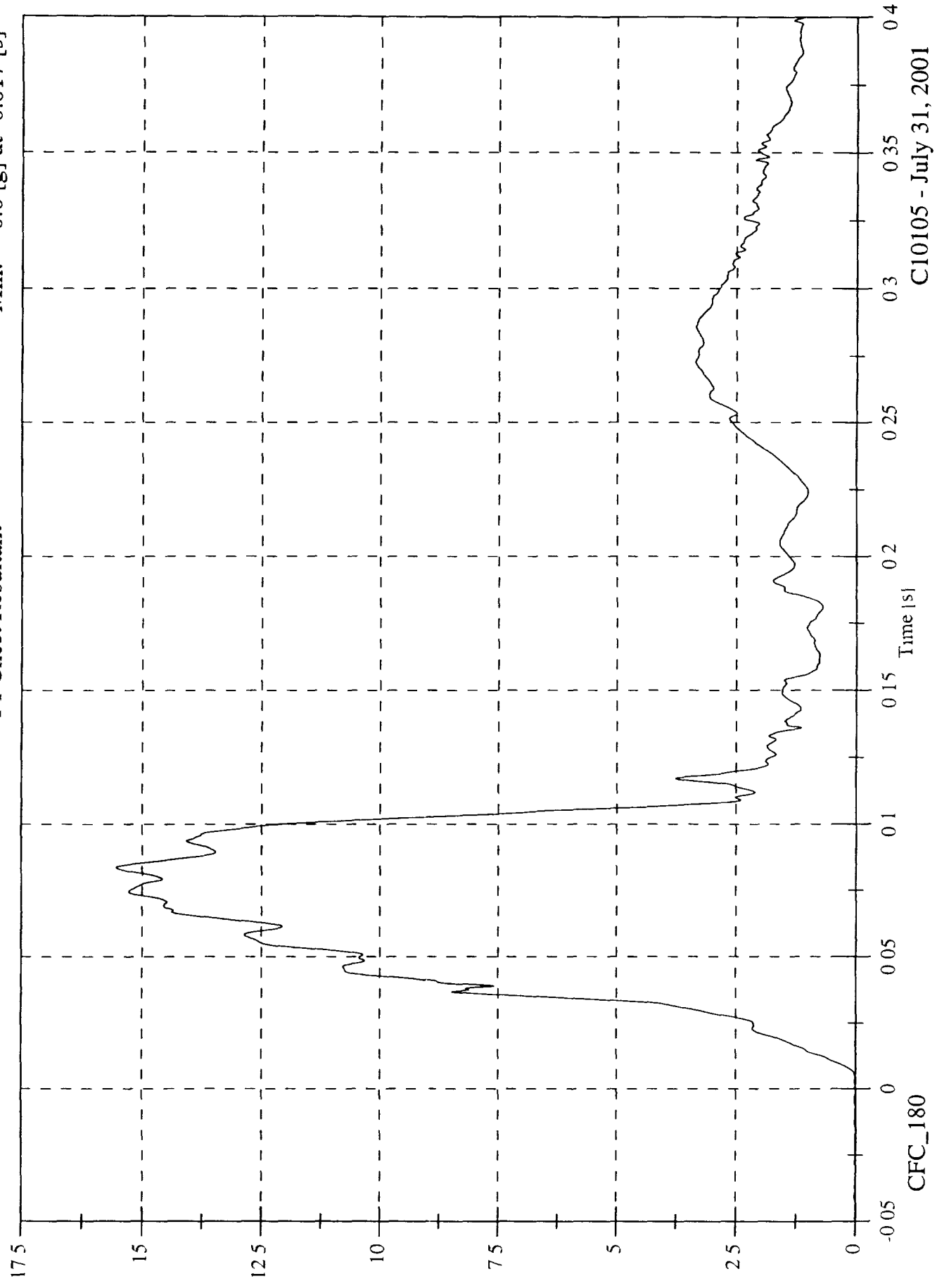


C10105 - July 31, 2001

NHTSA FMVSS 301 Test #3 - 2001 Pontiac Aztek

Max: 15.5 [g] at 0.084 [s]
Min: 0.0 [g] at -0.017 [s]

P1 Chest Resultant

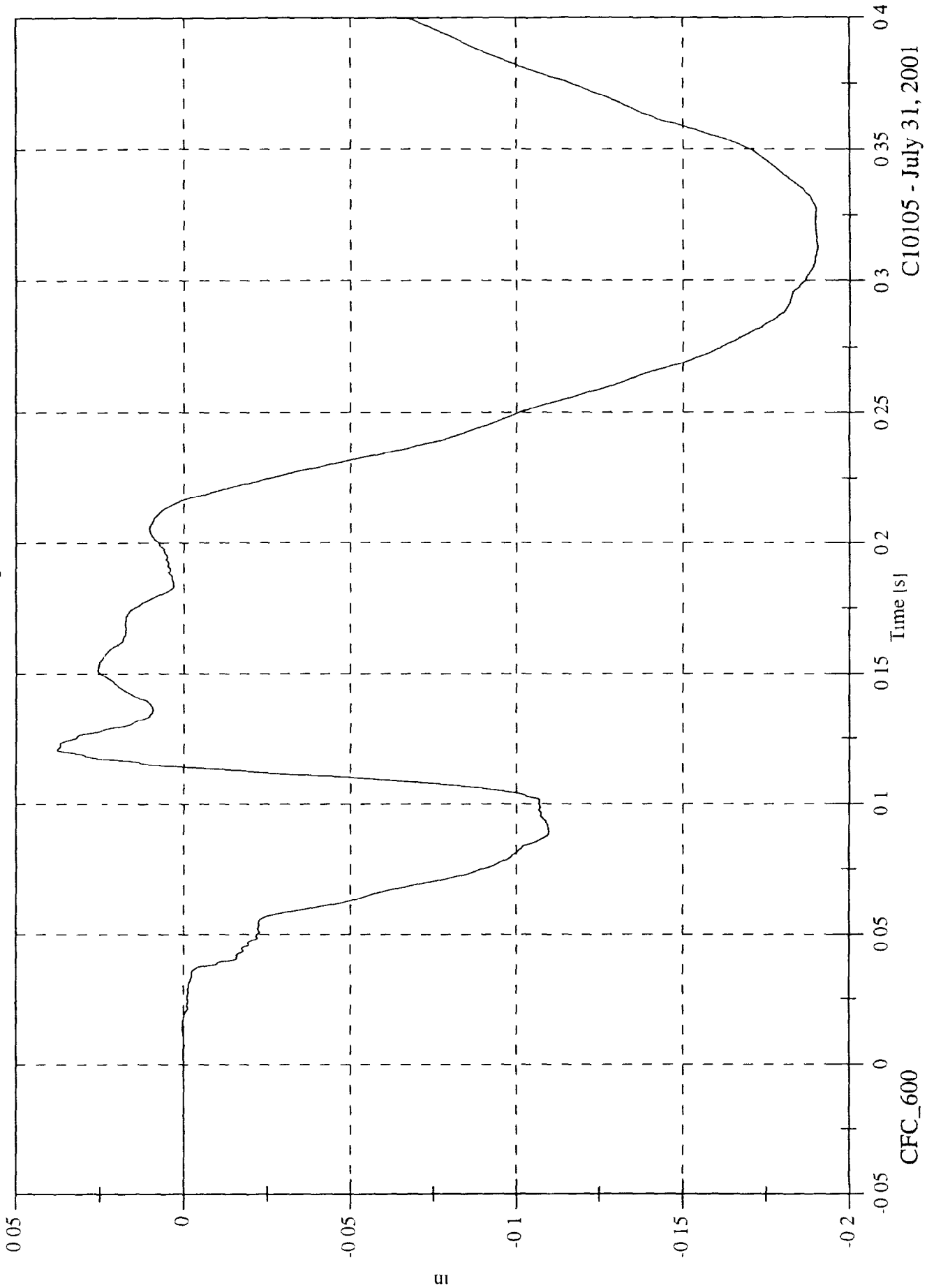


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P1 Chest Compression

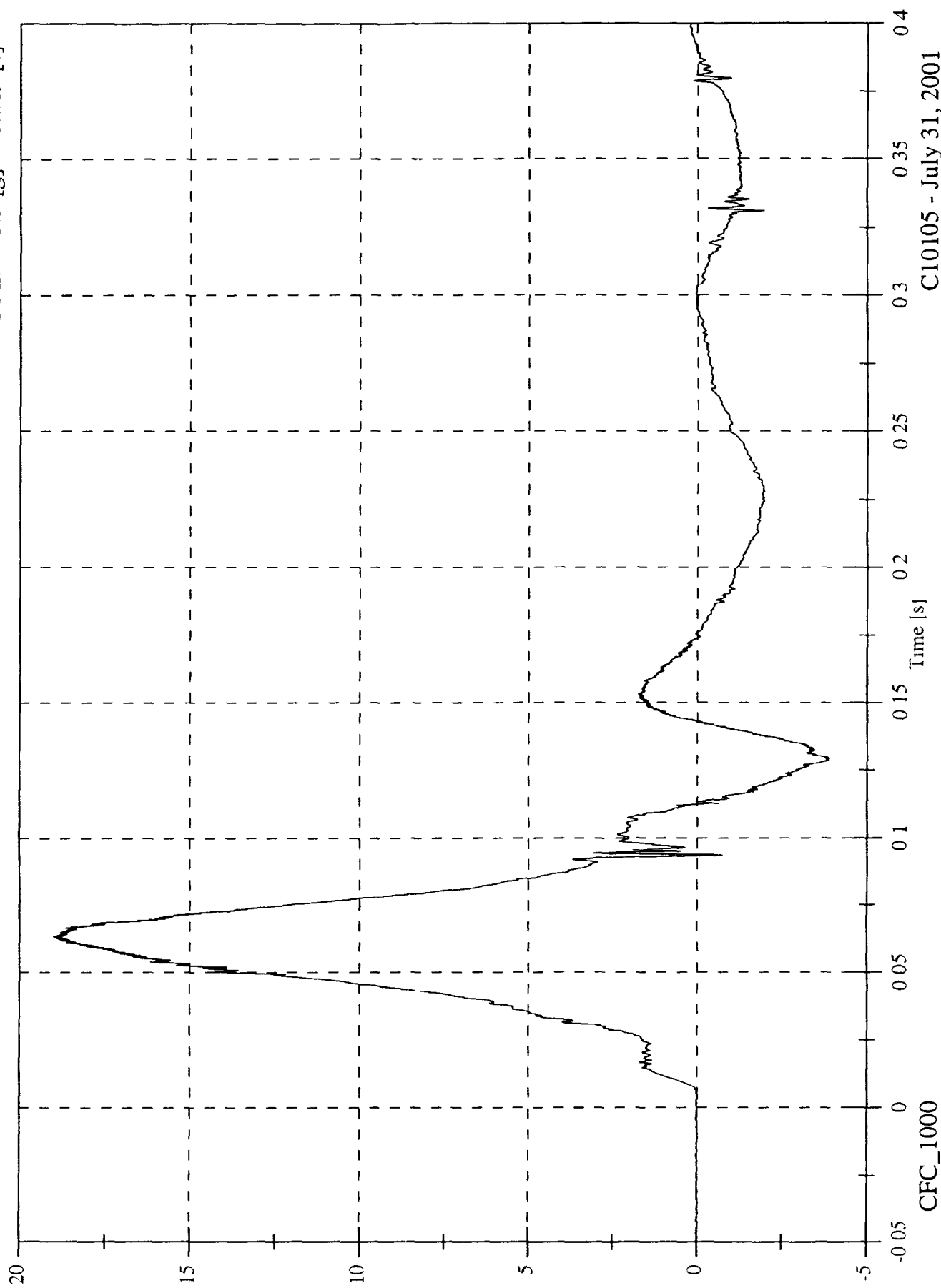
Max: 0.0 [in] at 0.120 [s]
Min: -0.2 [in] at 0.313 [s]



NHTSA FMVSS 301 Test #3 - 2001 Pontiac Aztek

Max: 19.0 [g] at 0.063 [s]
Min: -3.9 [g] at 0.129 [s]

P1 Pelvic x

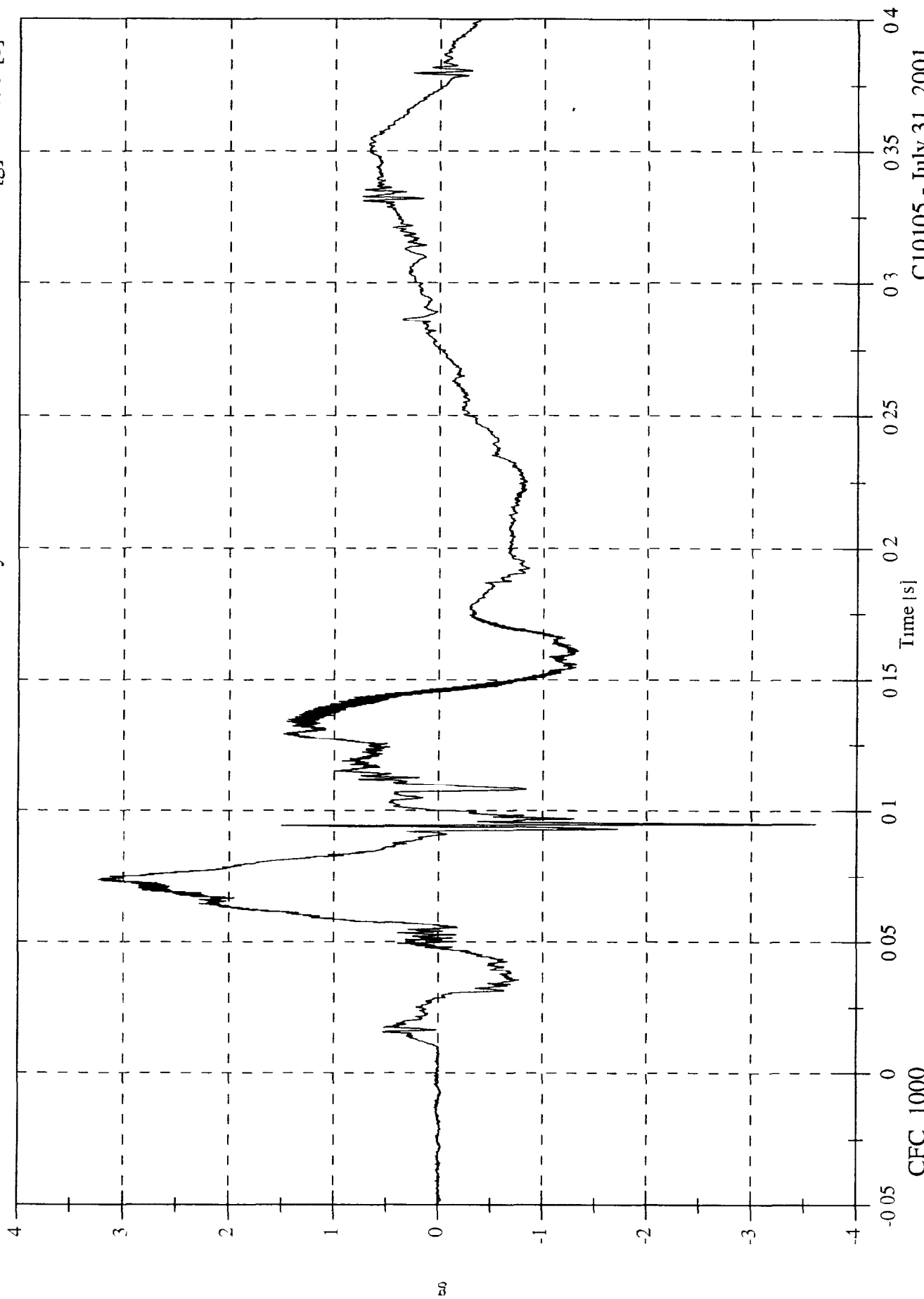


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NHTSA FMVSS 301 Test #3 - 2001 Pontiac Aztek

Max: 3.2 [g] at 0.074 [s]
Min: -3.6 [g] at 0.095 [s]

P1 Pelvic y

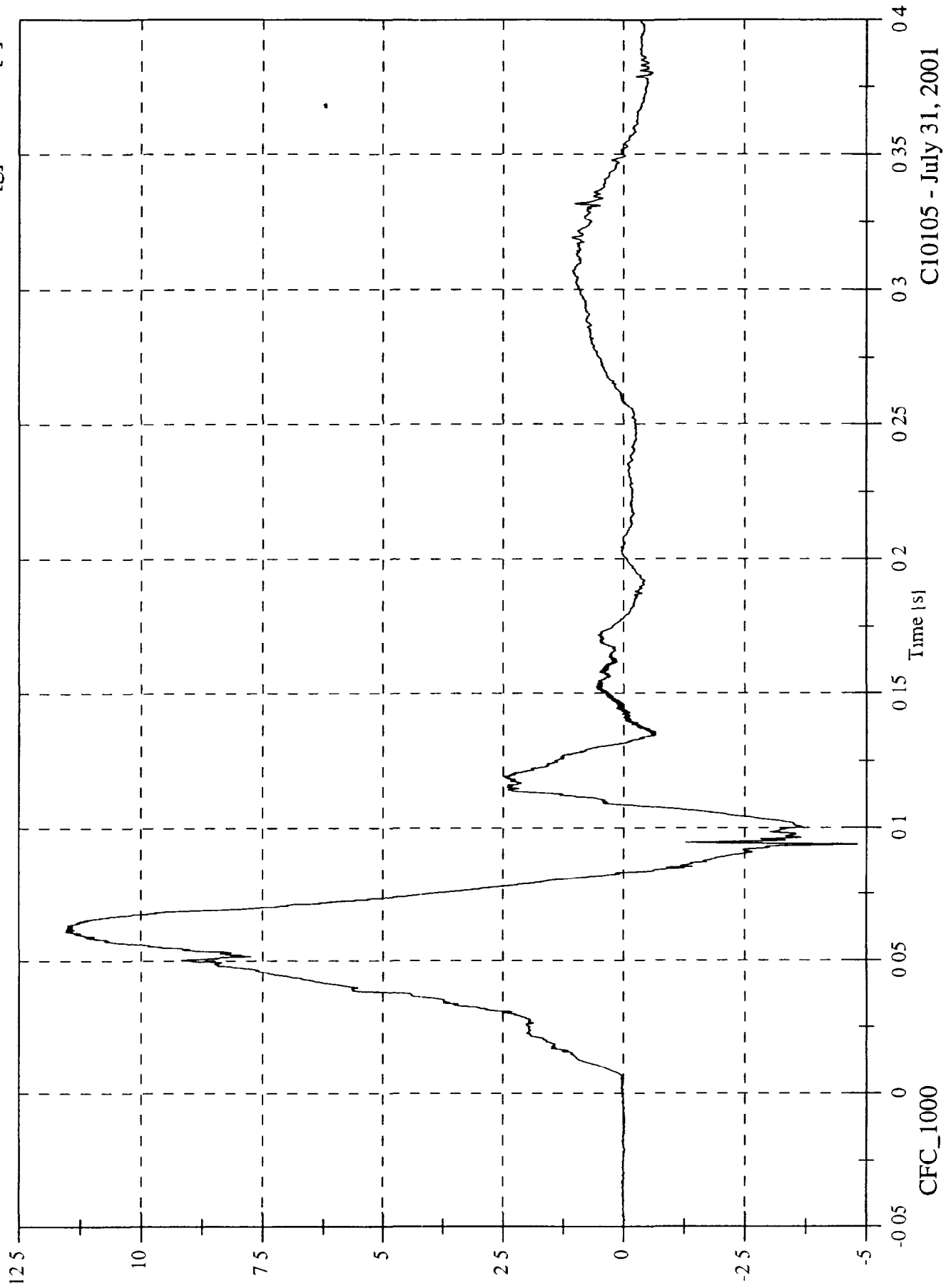


C10105 - July 31, 2001

NHTSA FMVSS 301 Test #3 - 2001 Pontiac Aztek

Max: 11.5 [g] at 0.061 [s]
Min: -4.8 [g] at 0.094 [s]

P1 Pelvic z

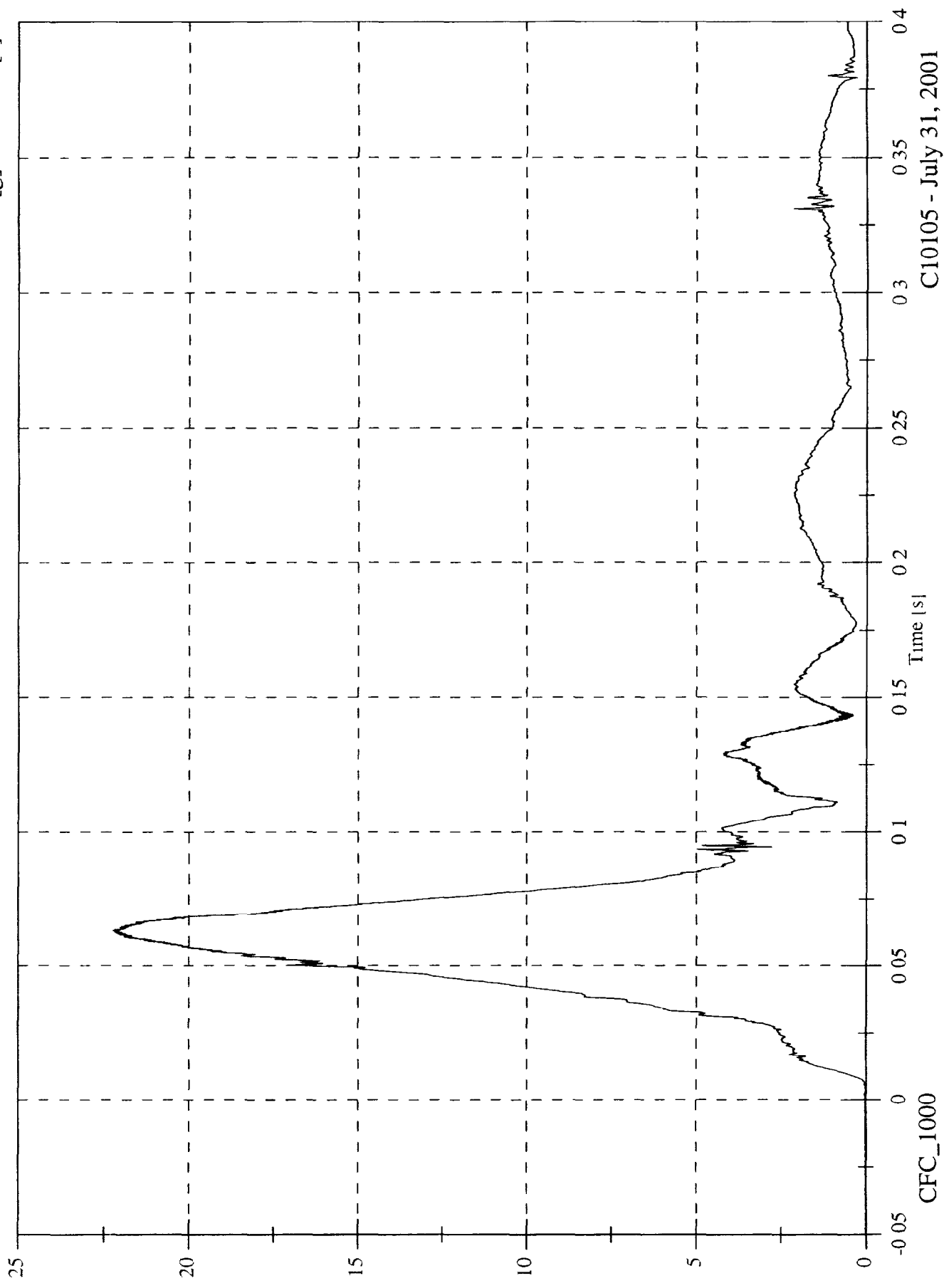


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NHTSA FMVSS 301 Test #3 - 2001 Pontiac Aztek

P1 Pelvic Resultant

Max. 22.3 [g] at 0.063 [s]
Min. 0.0 [g] at -0.042 [s]



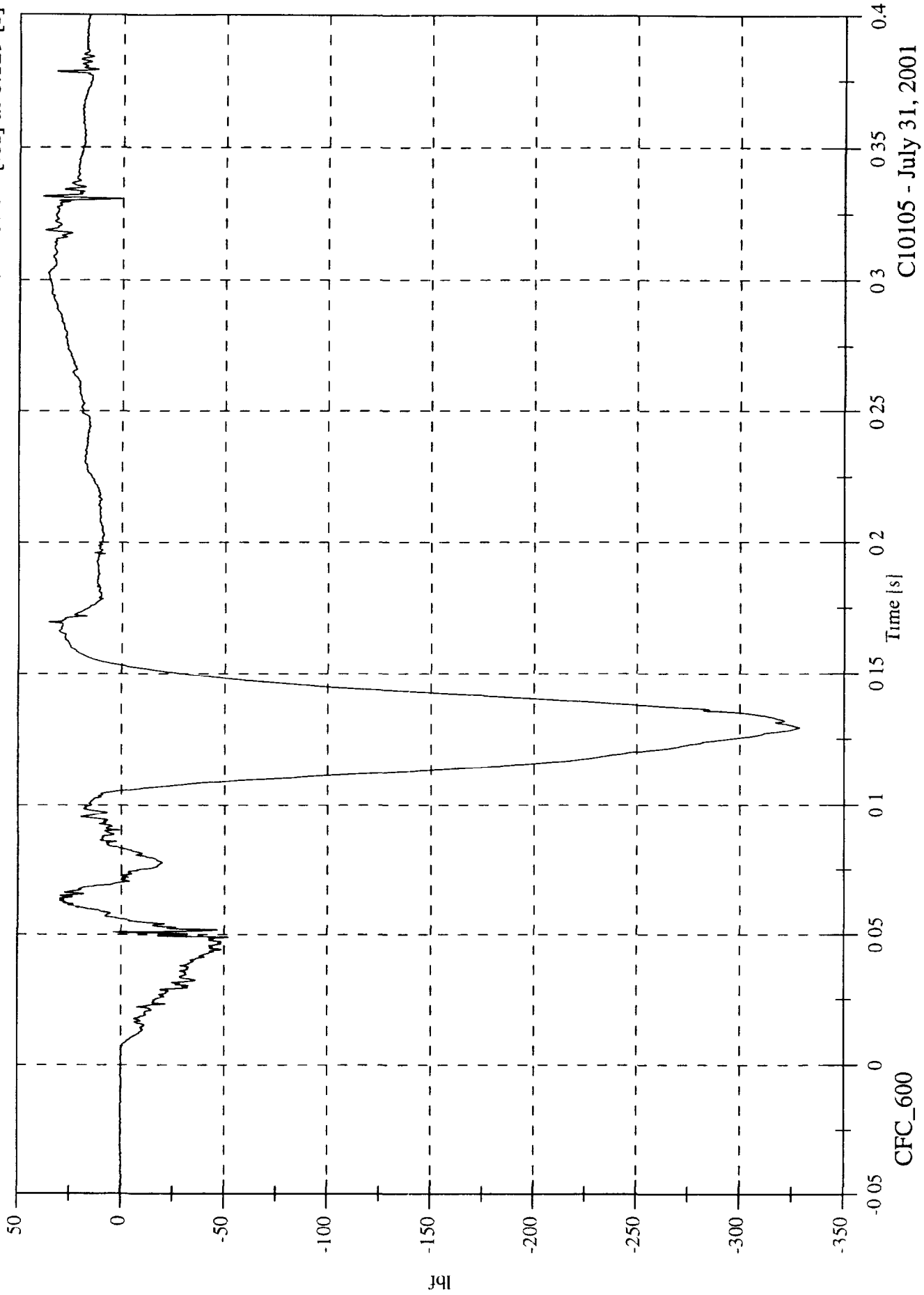
C10105 - July 31, 2001

NHTSA FMVSS 301 Test #3 - 2001 Pontiac Aztek

Max: 38.7 [lbf] at 0.332 [s]

Min: -328.7 [lbf] at 0.129 [s]

P1 Left Femur



CFC_600

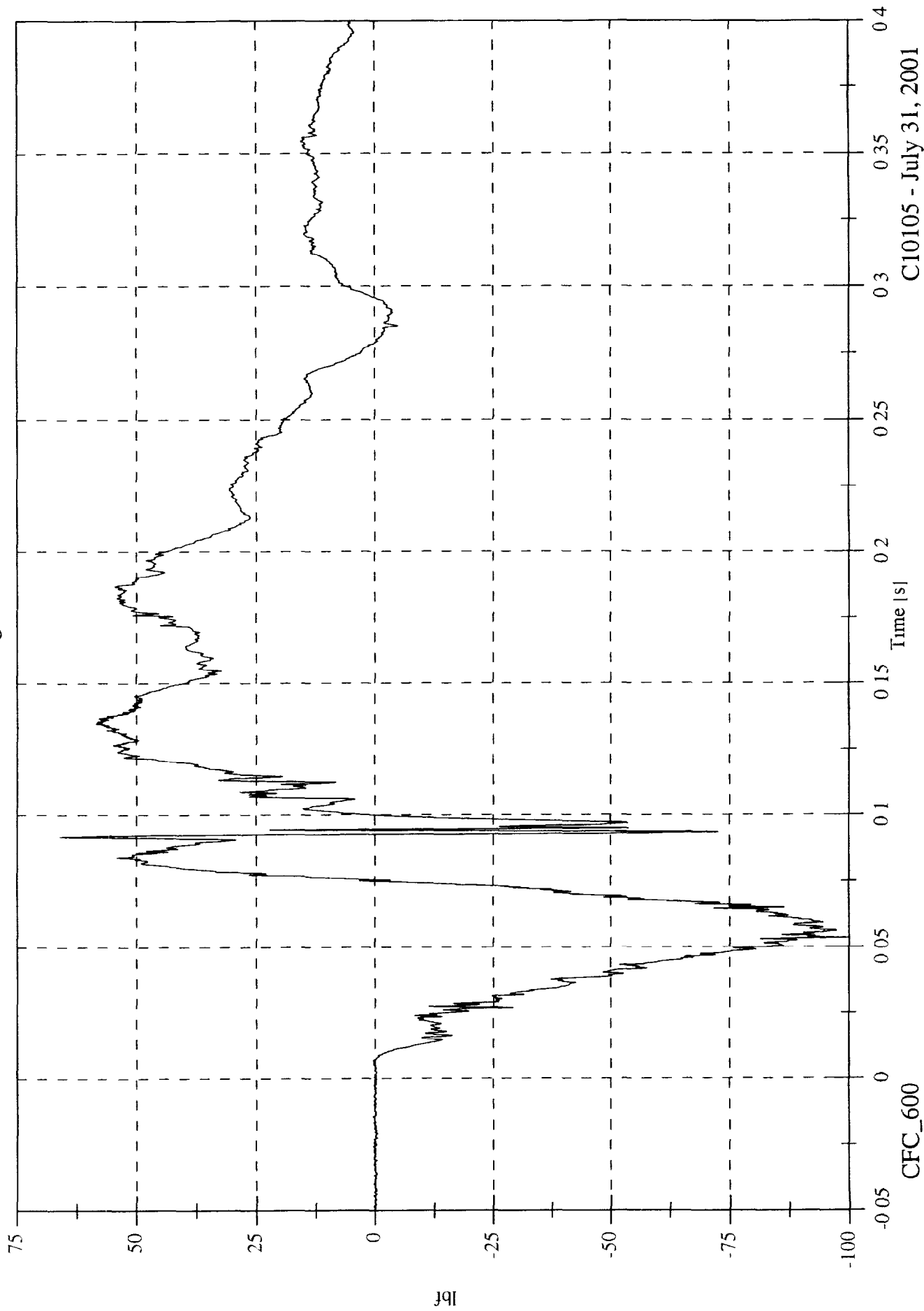
C10105 - July 31, 2001

NHTSA FMVSS 301 Test #3 - 2001 Pontiac Aztek

Max: 66.0 [lbf] at 0.092 [s]

Min: -99.7 [lbf] at 0.054 [s]

P1 Right Femur

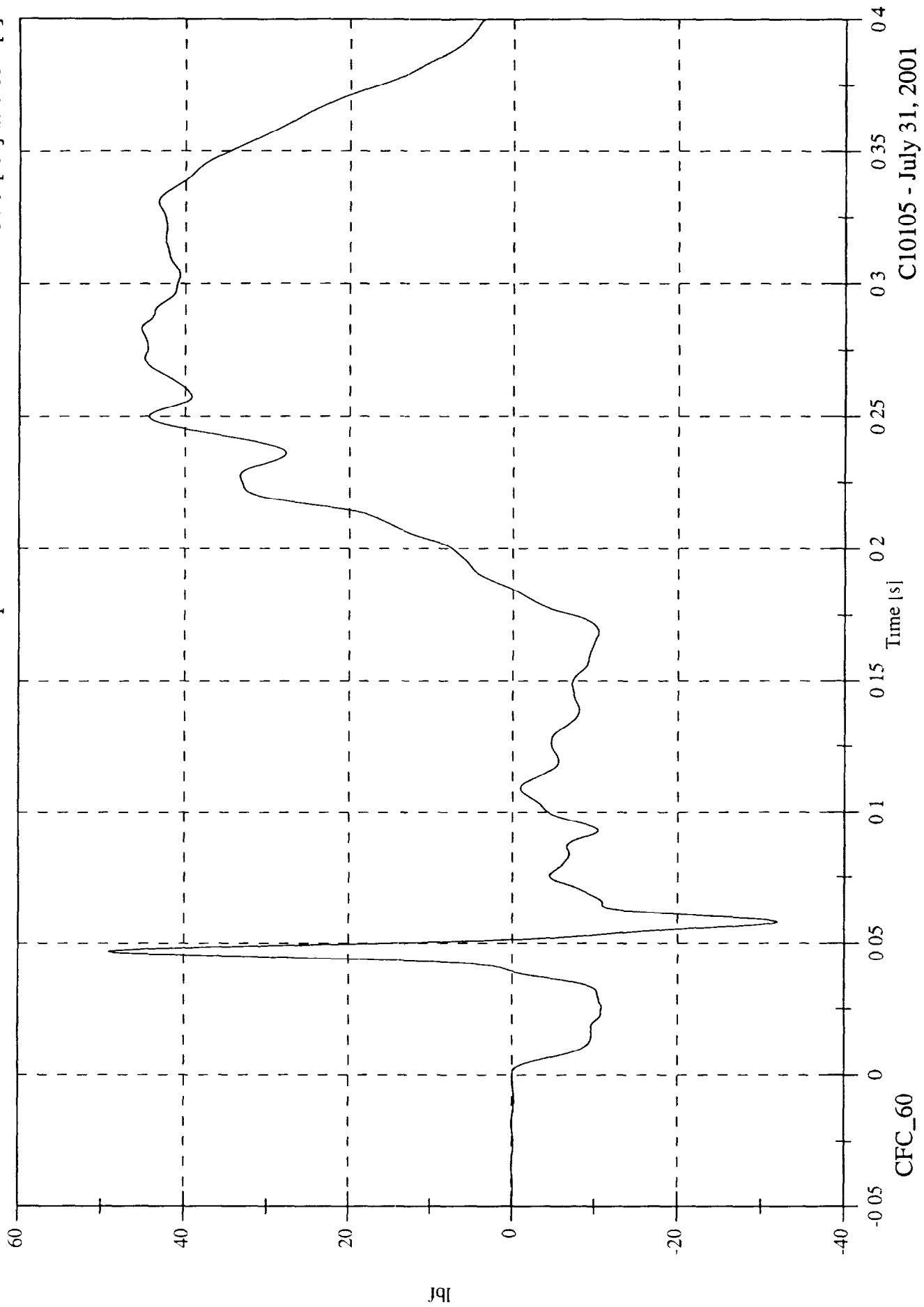


C10105 - July 31, 2001

NHTSA FMVSS 301 Test #3 - 2001 Pontiac Aztek

P1 Lap Belt

Max: 49.0 [lbf] at 0.047 [s]
Min: -31.9 [lbf] at 0.058 [s]

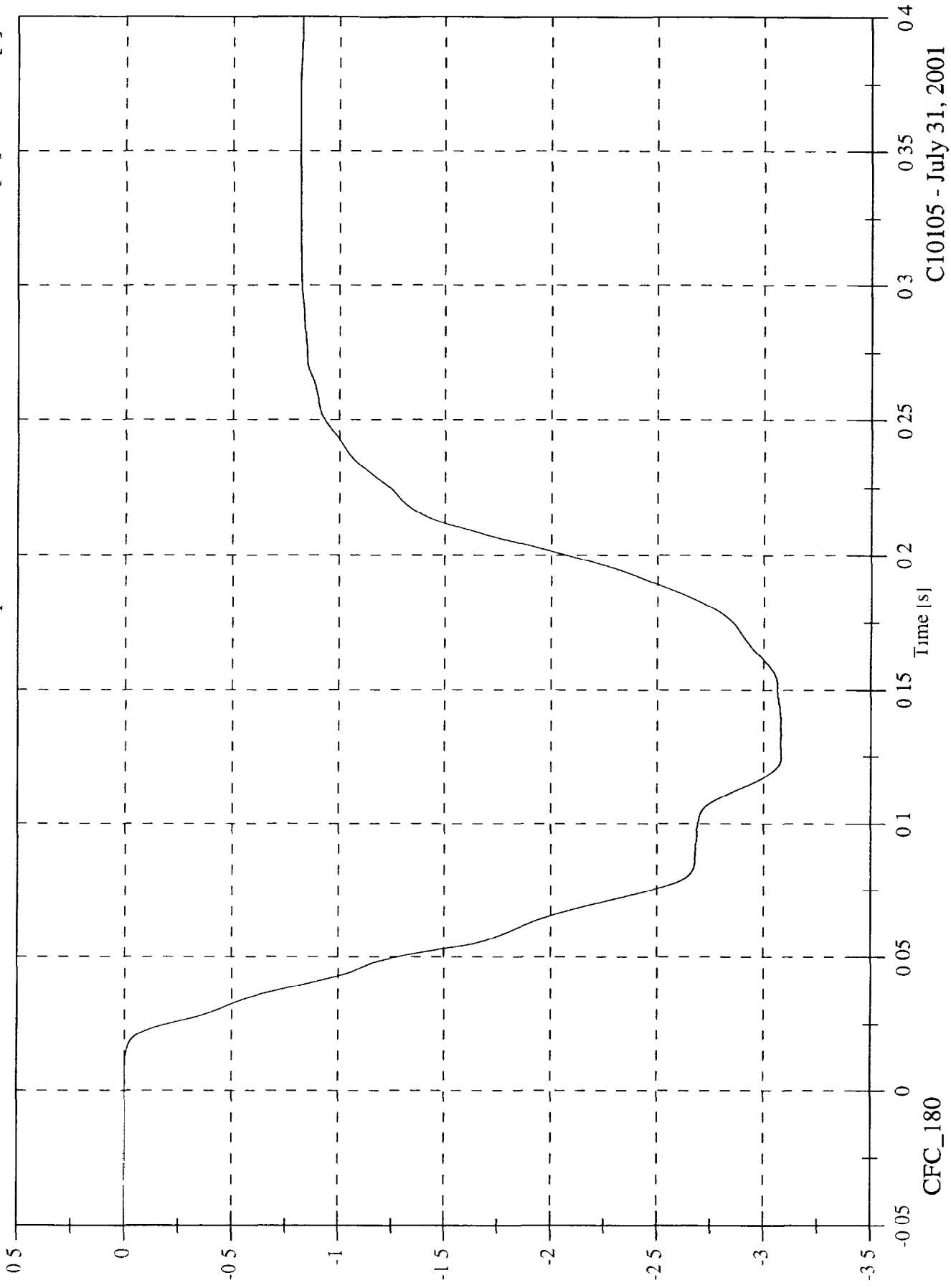


C10105 - July 31, 2001

NHTSA FMVSS 301 Test #3 - 2001 Pontiac Aztek

Max: 0.0 [in] at 0.007 [s]
Min: -3.1 [in] at 0.124 [s]

P1 Belt Spoolout



CFC_180

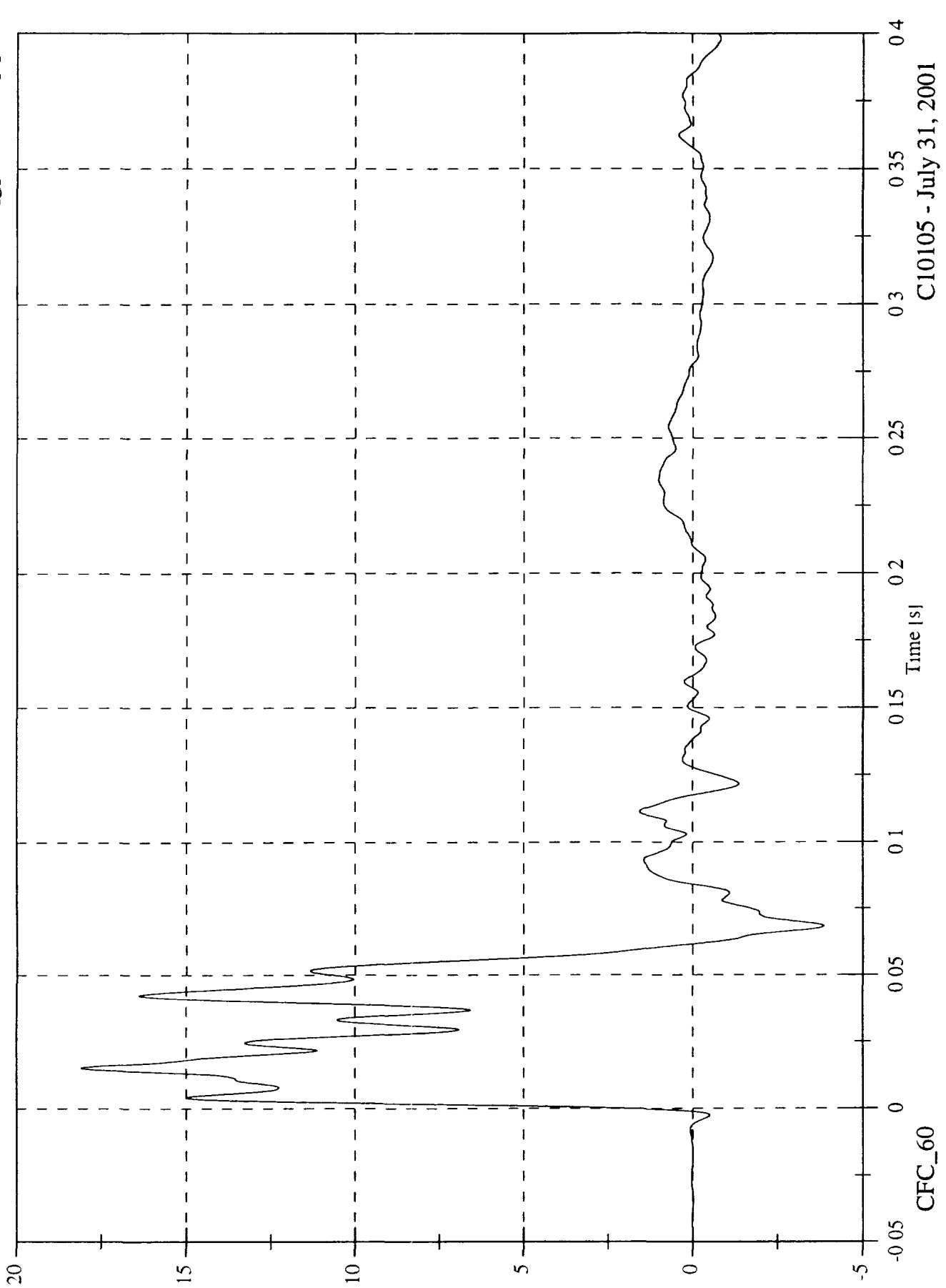
C10105 - July 31, 2001

NHTSA FMVSS 301 Test #3 - 2001 Pontiac Aztek

Acc #1 Left Rear Xmember X

Max: 18.1 [g] at 0.015 [s]

Min: -3.9 [g] at 0.068 [s]

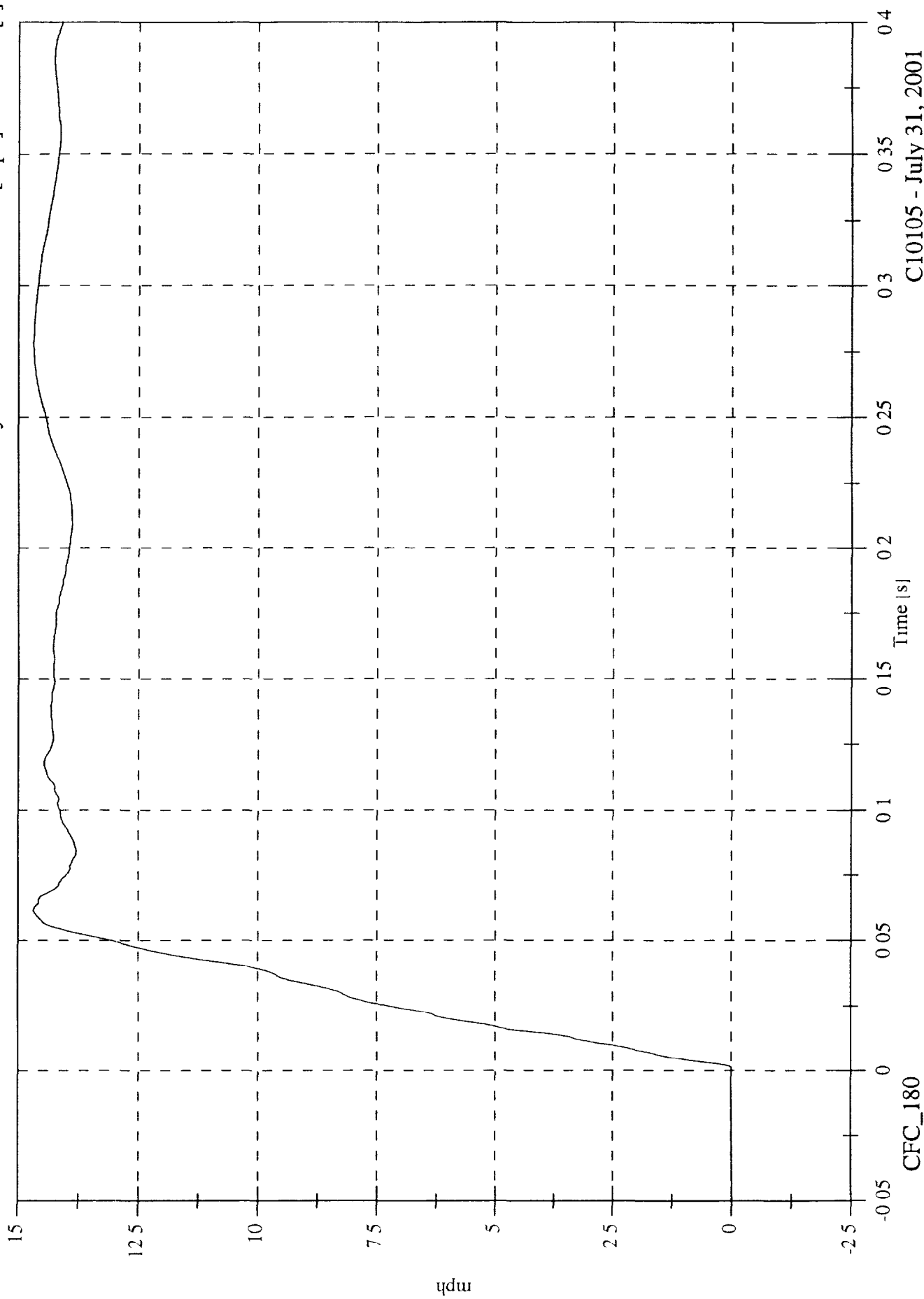


C10105 - July 31, 2001

NHTSA FMVSS 301 Test #3 - 2001 Pontiac Aztek

Max: 14.7 [mph] at 0.278 [s]
Min: -0.0 [mph] at -0.030 [s]

Acc #1 Left Rear Xmember X Velocity

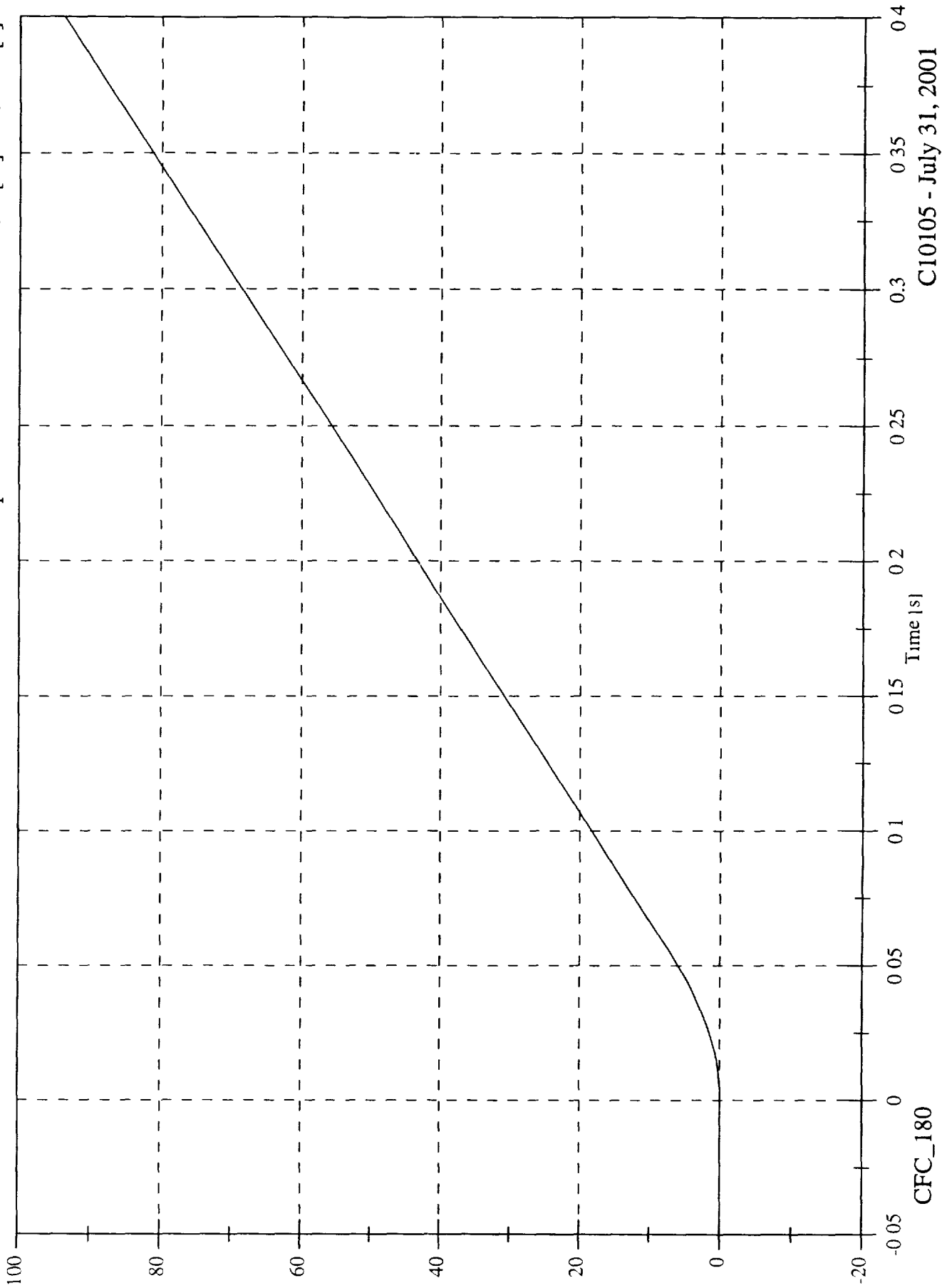


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NHTSA FMVSS 301 Test #3 - 2001 Pontiac Aztek

Max: 93.7 [in] at 0.400 [s]
Min: -0.0 [in] at -0.010 [s]

Acc #1 Left Rear Xmember X Displacement

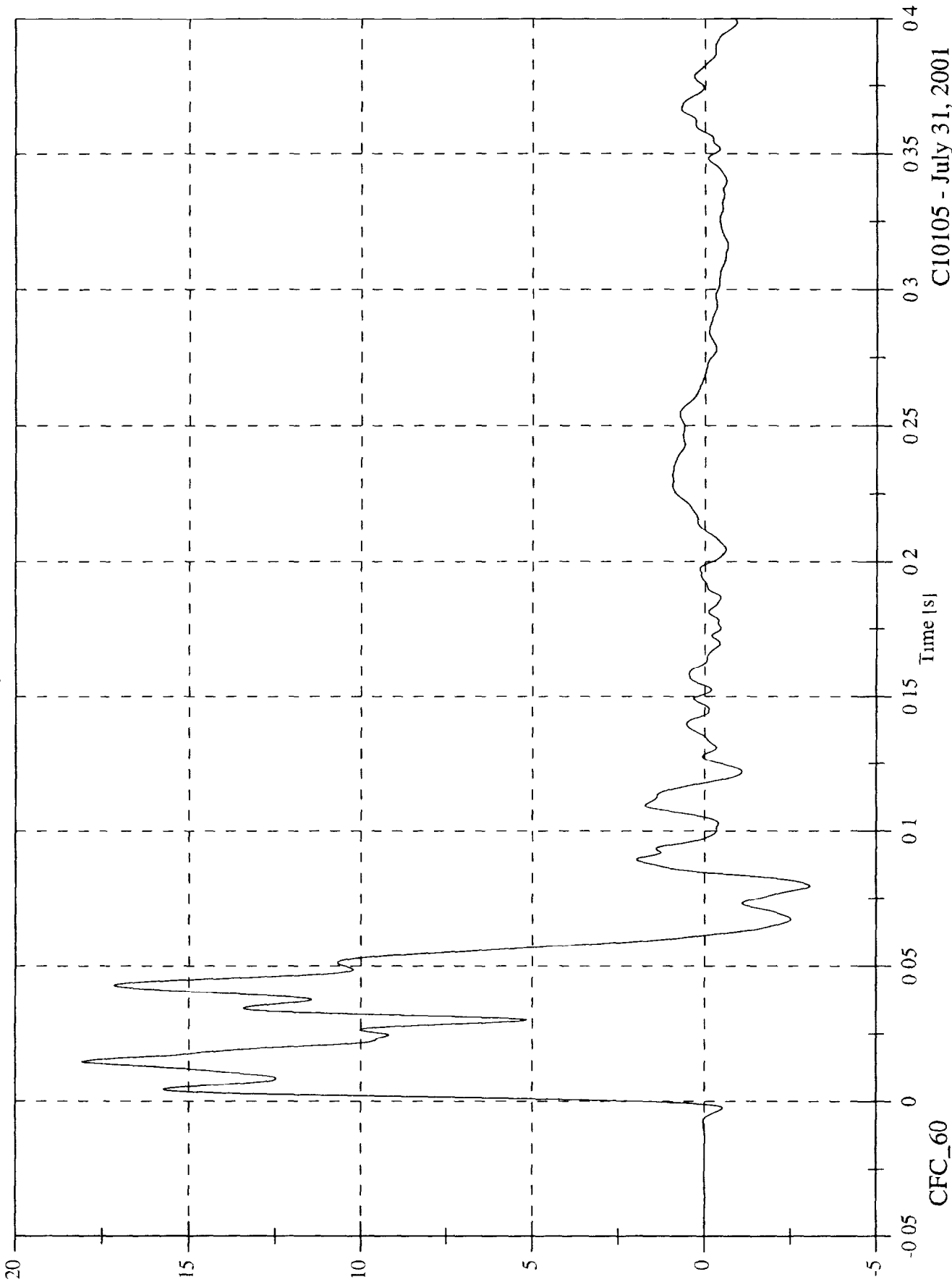


C10105 - July 31, 2001

NHTSA FMVSS 301 Test #3 - 2001 Pontiac Aztek

Acc #2 Right Rear Xmember X

Max. 18.1 [g] at 0.015 [s]
Min: -3.1 [g] at 0.080 [s]



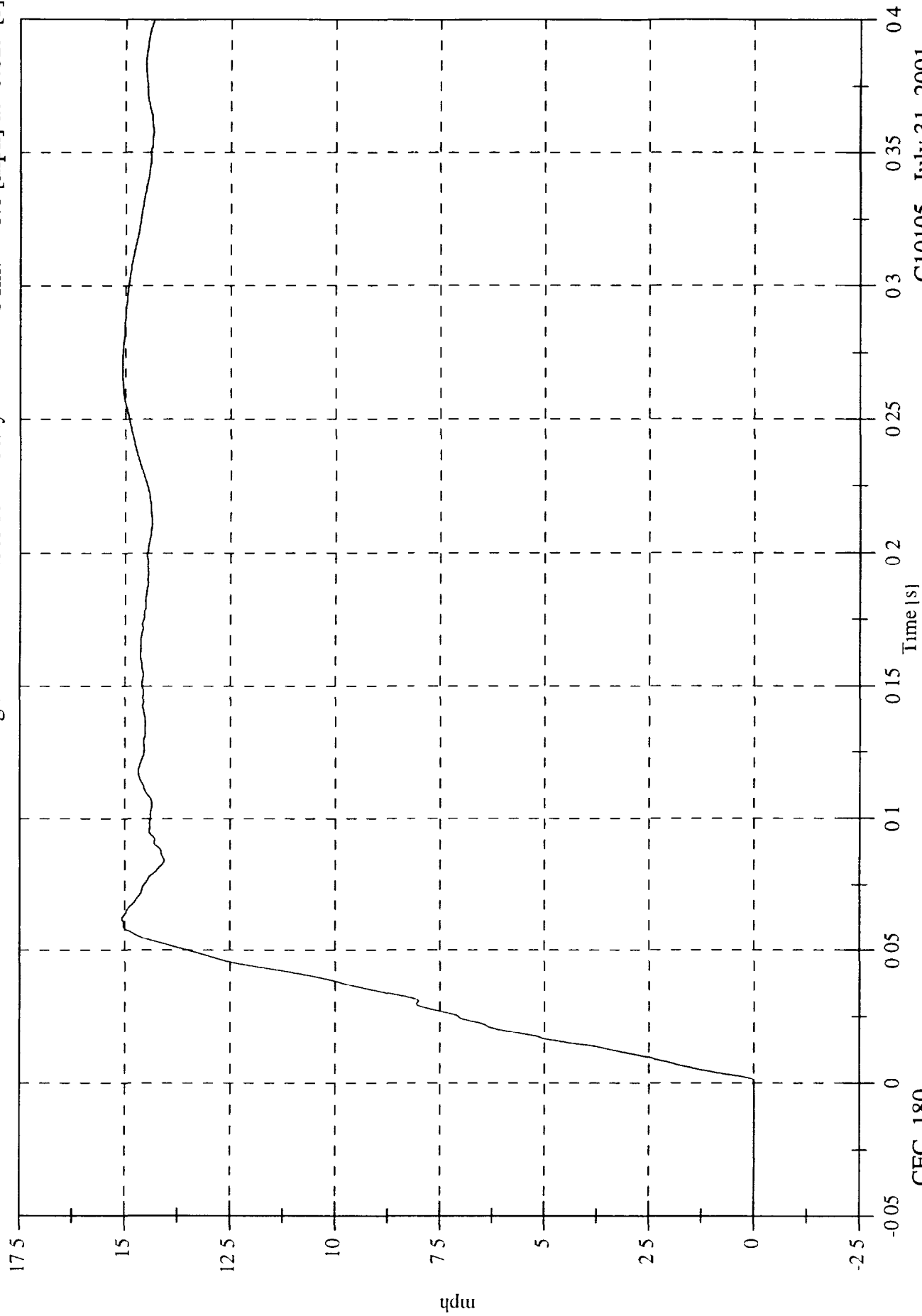
C10105 - July 31, 2001

NHTSA FMVSS 301 Test #3 - 2001 Pontiac Aztek

Acc #2 Right Rear Xmember X Velocity

Max: 15.1 [mph] at 0.270 [s]

Min: -0.0 [mph] at -0.029 [s]



CFC_180

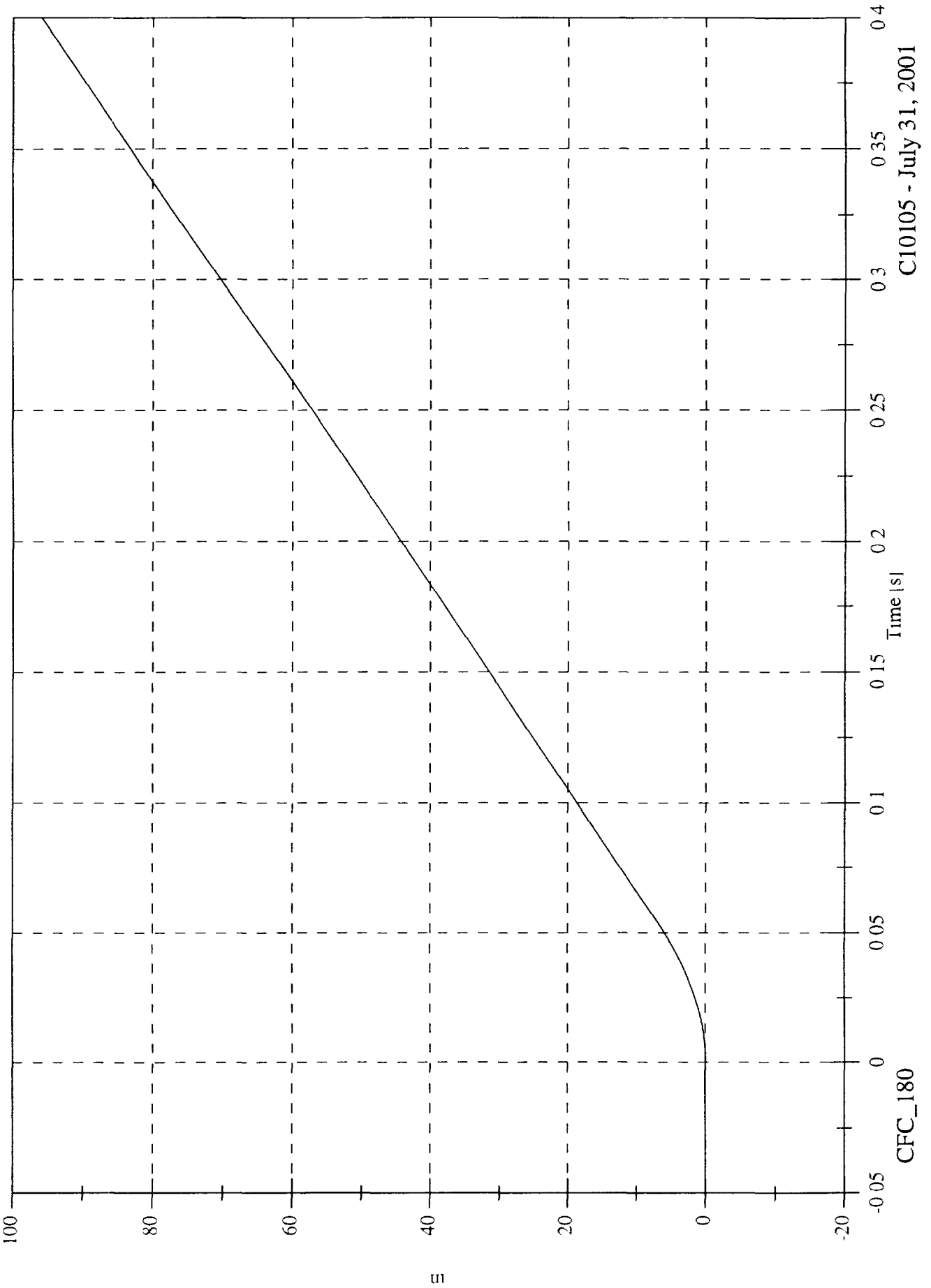
C10105 - July 31, 2001

NHTSA FMVSS 301 Test #3 - 2001 Pontiac Aztek

Max: 95.9 [in] at 0.400 [s]

Acc #2 Right Rear Xmember X Displacement

Min: -0.0 [in] at -0.021 [s]



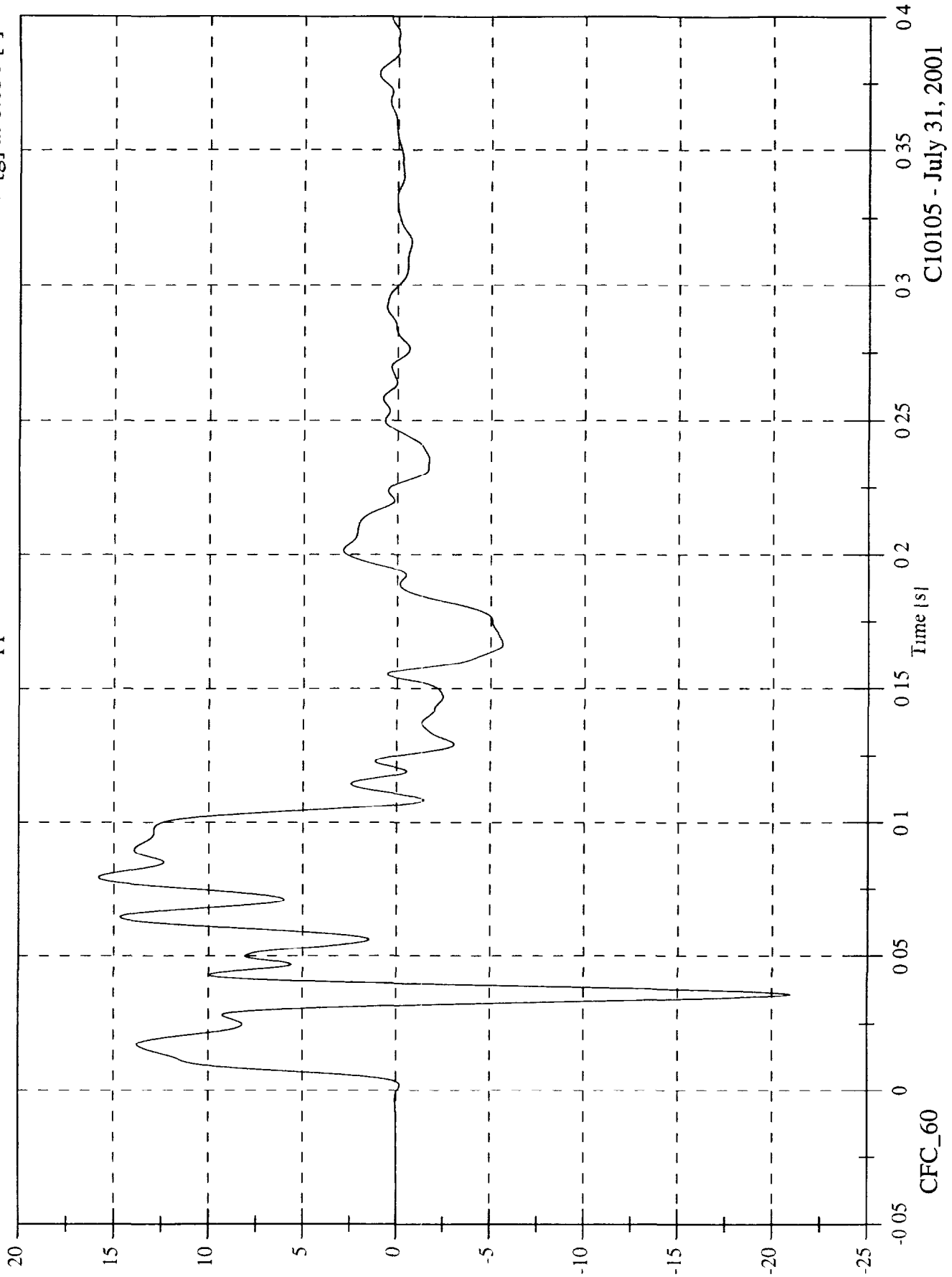
C10105 - July 31, 2001

NHTSA FMVSS 301 Test #3 - 2001 Pontiac Aztek

Acc #3 Upper Seatback X

Max: 15.8 [g] at 0.079 [s]

Min: -20.9 [g] at 0.036 [s]

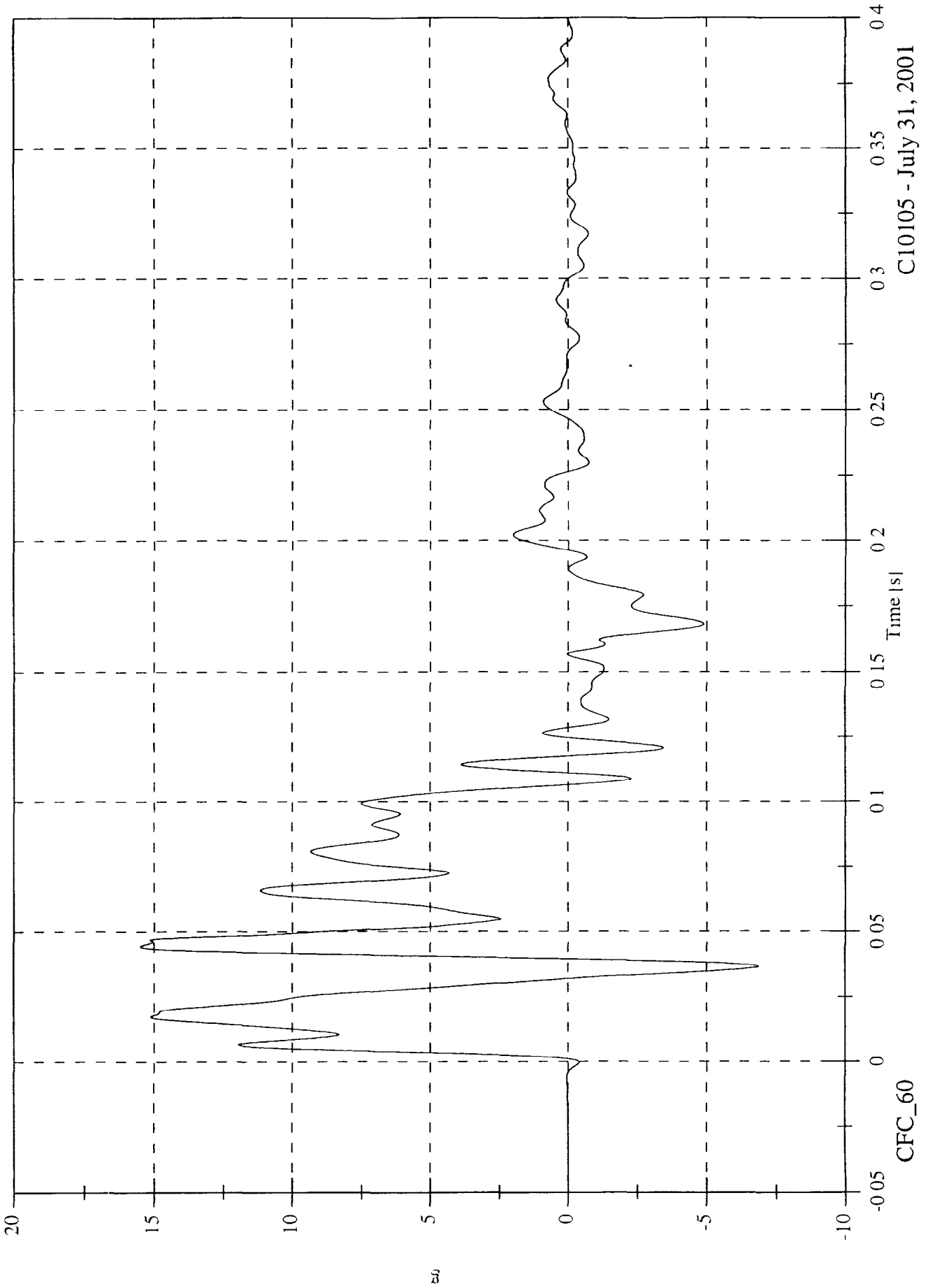


C10105 - July 31, 2001

NHTSA FMVSS 301 Test #3 - 2001 Pontiac Aztek

Max: 15.5 [g] at 0.044 [s]
Min: -6.9 [g] at 0.037 [s]

Acc #4 Lower Seatback X

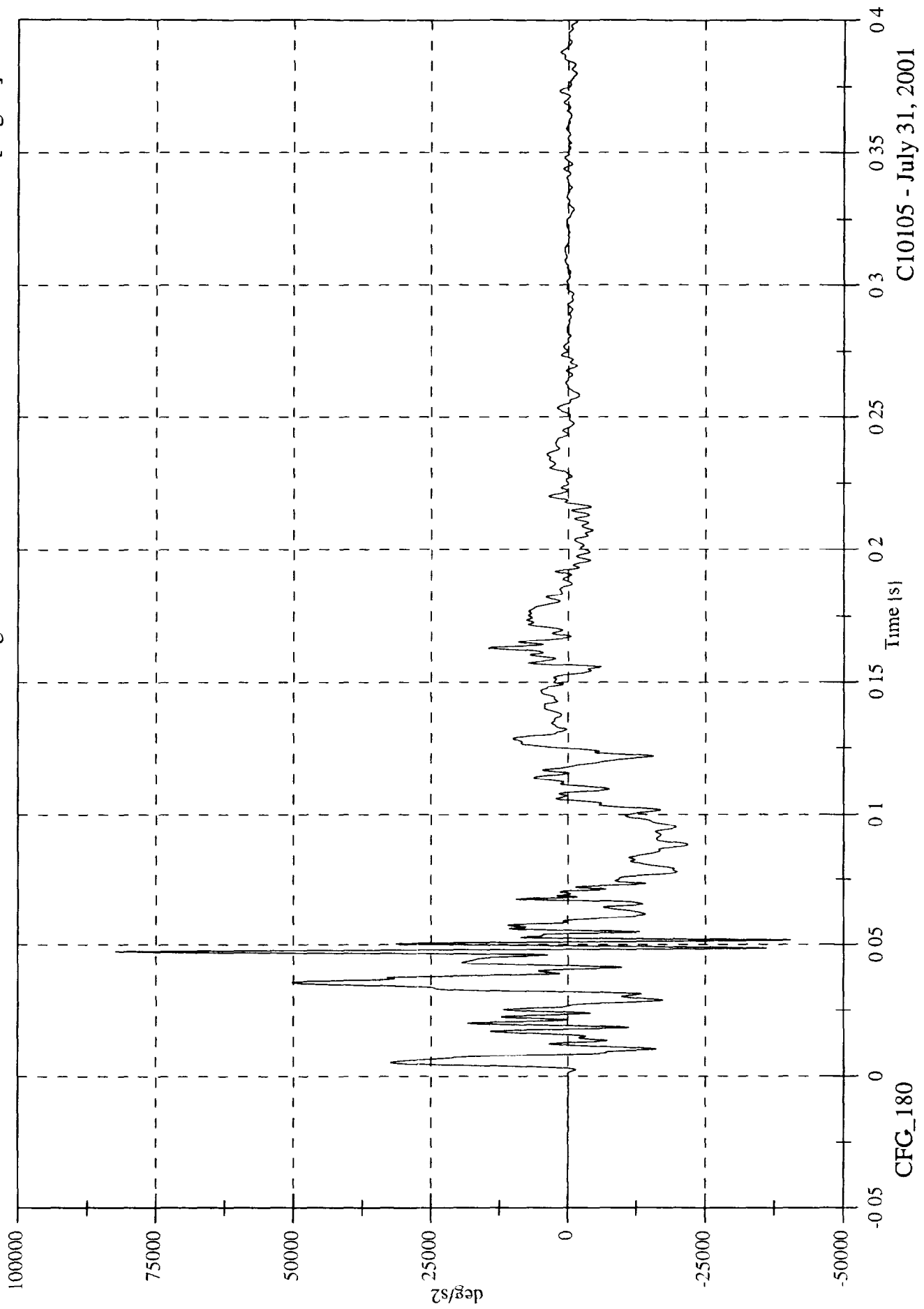


C10105 - July 31, 2001

NHTSA FMVSS 301 Test #3 - 2001 Pontiac Aztek

Seatback Angular Acceleration

Max: 82361.1 [deg/s²] at 0.047 [s]
Min: -40382.7 [deg/s²] at 0.052 [s]

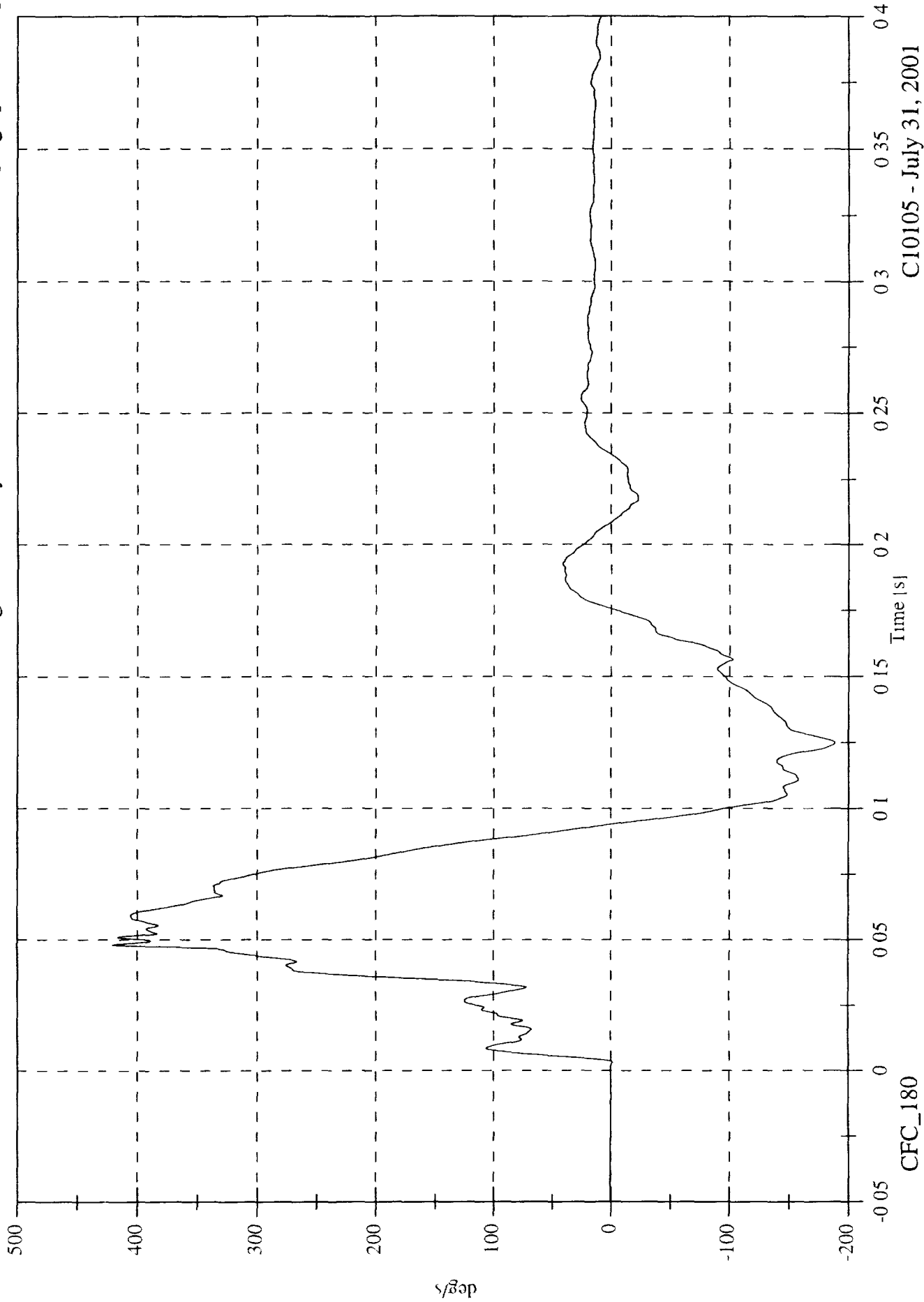


C10105 - July 31, 2001

NHTSA FMVSS 301 Test #3 - 2001 Pontiac Aztek

Max. 420.4 [deg/s] at 0.048 [s]
Min: -188.5 [deg/s] at 0.125 [s]

Seatback Angular Velocity



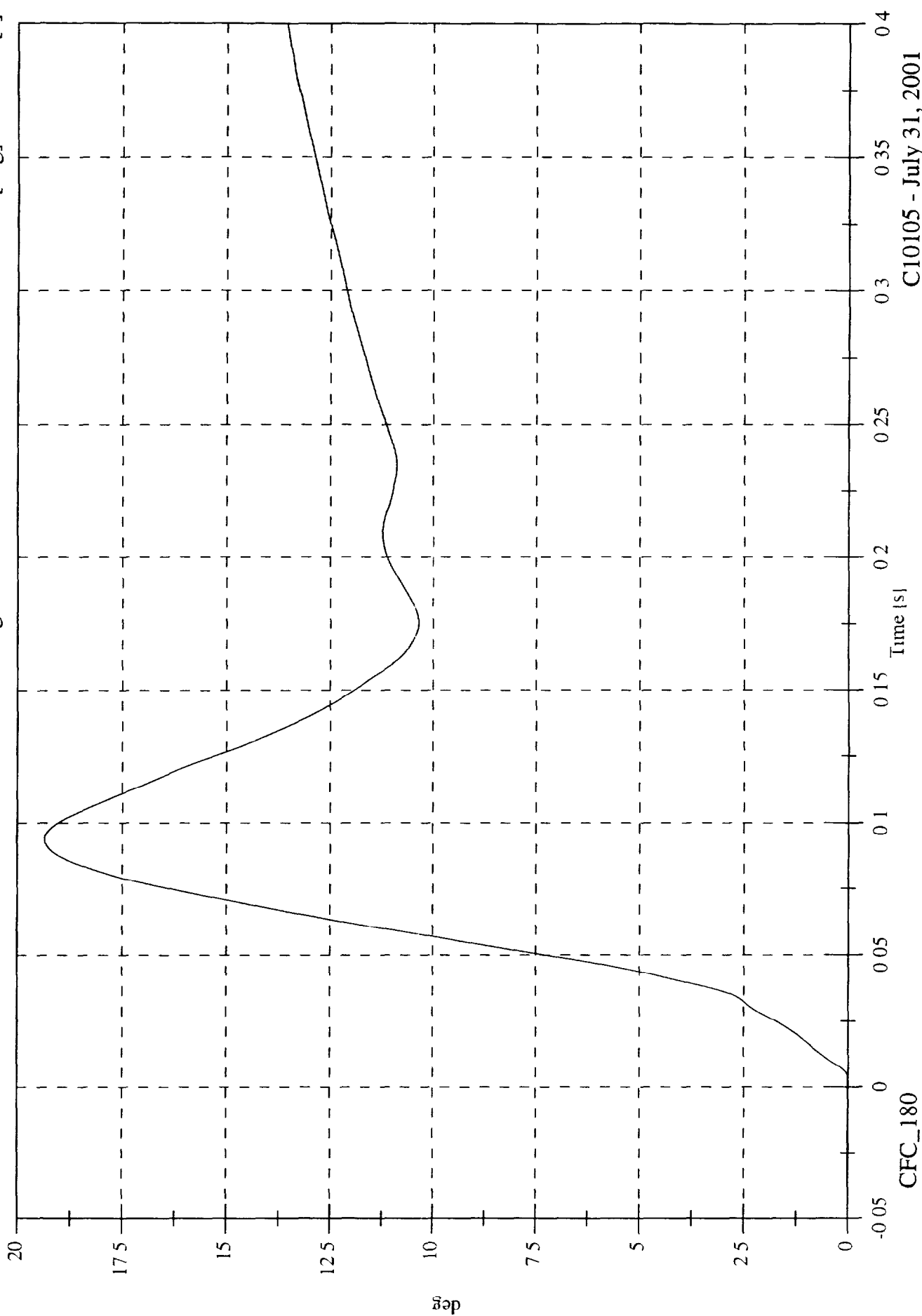
CI0105 - July 31, 2001

NHTSA FMVSS 301 Test #3 - 2001 Pontiac Aztek

Max: 19.3 [deg] at 0.094 [s]

Min: 0.0 [deg] at -0.050 [s]

Seatback Angular Position



CFC_180

C10105 - July 31, 2001