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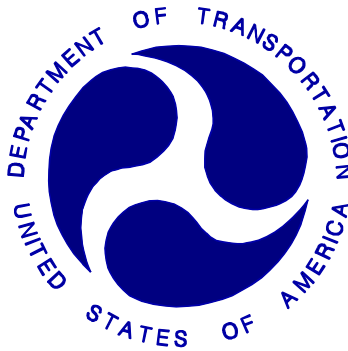
**NEW CAR ASSESSMENT PROGRAM
SIDE IMPACT TEST**

GENERAL MOTORS OF CANADA LTD.
2001 CHEVROLET IMPALA
4-DOOR SEDAN

NHTSA NUMBER: M10120

VERIDIAN ENGINEERING TEST NUMBER: 8506-19

VERIDIAN ENGINEERING
TRANSPORTATION SCIENCES CENTER
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March 15, 2001

FINAL REPORT

U. S. DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration
Safety Performance Standards
Office of Crashworthiness Standards
Mail Code: NPS-10
400 Seventh Street, SW, Room No. 5313
Washington, DC 20590

This Final Test Report was prepared for the U.S. Department of Transportation, National Highway Traffic Safety Administration, under Contract No. DTNH22-98-C-02001. This document is disseminated under the sponsorship of the U.S. Department of Transportation in the interest of information exchange. The United States Government assumes no liability for its contents or use thereof.

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		14. Sponsoring Agency Code NPS-10																															
15. Supplementary Notes																																	
16. Abstract <p>A 55/28 kph 90⁰Impact Moving Deformable Barrier NCAP Side Impact Test was conducted on the subject 2001 Chevrolet Impala 4-Door Sedan in accordance with the specifications of the Office of Crashworthiness Standards Test Procedure for the generation of consumer information on vehicle side crash protection. This test was conducted at the Veridian Engineering Crash Test Facility in Buffalo, New York, on March 15, 2001.</p> <p>The impact velocity of the Moving Deformable Barrier (MDB) was 61.96 kph, and the ambient temperature at the struck (driver's) side of the target vehicle at the time of impact was 21.1⁰C. The target vehicle post-test maximum crush was 411mm at level 2.</p> <p>The test or target vehicle's performance is given below:</p> <table border="0" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th style="text-align: center;"><u>Front SID</u></th> <th></th> <th style="text-align: center;"><u>Rear SID</u></th> <th></th> </tr> </thead> <tbody> <tr> <td>Left Upper Rib Acceleration:</td> <td style="text-align: center;"><u>52</u></td> <td style="text-align: center;">g's</td> <td style="text-align: center;"><u>70</u></td> <td style="text-align: center;">g's</td> </tr> <tr> <td>Left Lower Rib Acceleration:</td> <td style="text-align: center;"><u>44</u></td> <td style="text-align: center;">g's</td> <td style="text-align: center;"><u>71</u></td> <td style="text-align: center;">g's</td> </tr> <tr> <td>Lower Spine Acceleration:</td> <td style="text-align: center;"><u>88</u></td> <td style="text-align: center;">g's</td> <td style="text-align: center;"><u>72</u></td> <td style="text-align: center;">g's</td> </tr> <tr> <td>Thoracic Trauma Index (TTI):</td> <td style="text-align: center;"><u>70</u></td> <td style="text-align: center;">g's</td> <td style="text-align: center;"><u>71</u></td> <td style="text-align: center;">g's</td> </tr> <tr> <td>Pelvis Acceleration (PEV):</td> <td style="text-align: center;"><u>87</u></td> <td style="text-align: center;">g's</td> <td style="text-align: center;"><u>94</u></td> <td style="text-align: center;">g's</td> </tr> </tbody> </table> <p>The two doors on the struck side of the vehicle did not separate from the body at the hinges or latches and the opposite doors did not open during the side impact event.</p>					<u>Front SID</u>		<u>Rear SID</u>		Left Upper Rib Acceleration:	<u>52</u>	g's	<u>70</u>	g's	Left Lower Rib Acceleration:	<u>44</u>	g's	<u>71</u>	g's	Lower Spine Acceleration:	<u>88</u>	g's	<u>72</u>	g's	Thoracic Trauma Index (TTI):	<u>70</u>	g's	<u>71</u>	g's	Pelvis Acceleration (PEV):	<u>87</u>	g's	<u>94</u>	g's
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17. Key Words New Car Assessment Program (NCAP) Side Impact MDB Side Impact Dummy (SID)		18. Distribution Statement <u>Copies of this report are available from:</u> National Highway Traffic Safety Administration Technical Reference Division Room 5108 (NAD-52) 400 Seventh St., S.W. Washington, D.C. 20590 Telephone No. (202) 366-4946 ATTN: Robert Hornicle																															
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SECTION 1

PURPOSE AND TEST PROCEDURE

This side impact test is part of the FY2001 New Car Assessment Program Side Impact Protection sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract No. DTNH22-98-C-02001. The purpose of this test was to generate comparative side impact performance in a 2001 Chevrolet Impala 4-Door Sedan. The test was conducted in accordance with the Office of Crashworthiness Standards's Laboratory Test Procedure dated July, 1997.

SECTION 2

SUMMARY OF SIDE IMPACT TEST

A 2001 Chevrolet Impala 4-Door Sedan was impacted on the left or driver's side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the monorail at a velocity of 61.96 kph (38.5 mph). The target vehicle was stationary and was positioned at an angle of 63° to the line of forward motion. The side impact test was conducted by the Veridian Engineering Transportation Sciences Center in Buffalo, New York on March 15, 2001. Pre- and post-test photographs of the test vehicle, the moving deformable barrier (MDB), and the side impact dummies (SIDs) are included in Appendix A.

Two restrained Side Impact Dummies (SIDs) were placed in the driver (Pos. #1) and left rear (Pos. #4) designated seating positions according to the instructions specified in the OCWS Side Impact Laboratory Test Procedure which is dated July, 1997. The side impact test was documented by one real-time camera and 9 high-speed cameras. Camera locations and other pertinent camera information are included in this report.

The SIDs were instrumented with the following accelerometers:

1. Left Upper Rib (LUR) uniaxial and redundant accelerometer (Y-direction)
2. Left Lower Rib (LLR) uniaxial and redundant accelerometer (Y-direction)
3. Lower Thoracic Spine (T₁₂) uniaxial and redundant accelerometer (Y-direction)
4. Pelvic (PEV) section uniaxial and redundant accelerometer (Y-direction)
5. Head triaxial accelerometers (X-, Y- and Z-direction)

A summary of the side impact dummy (SID) configuration and verification test data can be found in Appendix C. A total of 53 channels of data were recorded. Appendix B contains the vehicle, MDB and dummy response data traces.

The following table summarizes the results of the test.

Injury Criteria	Front SID	Rear SID
TTI (g)	70	71
PEV (g)	87	94

SECTION 3

SUMMARY OF TEST RESULTS

DATA SHEET 1

GENERAL TEST AND VEHICLE PARAMETER DATA

TEST VEHICLE INFORMATION:

Year/Make/Model/Body Style: 2001 Chevrolet Impala 4-Door Sedan

Vehicle Body Color: Silver VIN: 2G1WH55K419225483

Vehicle NHTSA No.: M10120 Month & Year of Manufacture: 11/00

Engine Data: 6 Cylinders; - CID; 3.8 Liters; - cc

Engine Placement: - Longitudinal; or X Lateral

Transmission: 4 Speed; - Manual; X Automatic; X Overdrive

Final Drive: - Rear Wheel Drive; X Front Wheel Drive; - Four Wheel

Odometer Reading 208 km

Options: X A/C; X Power Steering; X Pwr.Brakes; X Pwr. Windows

DATA FROM TIRE PLACARD

Tire Pressure* (at capacity); 210 kPa FRONT
210 kPa REAR

Recommended Tire Size: P225/60 R16

Tires on Test Vehicle: P225/60 R16 ; Manufacturer: Goodyear

Vehicle Capacity Data:

Number of Occupants: 2 Front; 3 Rear; - 3rd Seat; 5 Total

Type of Front Seats: X Bucket; - Bench; - Split Bench

Type of Front Seat Back: - Fixed; X Adjustable with X Lever or - Knob

Vehicle Max Capacity Loading = 420 kg (A)

No. of Occupants x 68.04 kg. = 340.2 kg (B)

Vehicle Cargo Capacity = 79.8 kg (A-B)

TEST VEHICLE DELIVERED WEIGHT WITH MAXIMUM FLUIDS:

Left Front	=	<u>490.5</u> kg	Left Rear	=	<u>295.5</u> kg
Right Front	=	<u>494.0</u> kg	Right Rear	=	<u>305.5</u> kg
TOTAL FRONT	=	<u>984.5</u> kg	TOTAL REAR	=	<u>601.0</u> kg
% of Total Weight	=	<u>62.1</u> %	% of Total Weight	=	<u>37.9</u> %
TOTAL WEIGHT	=	<u>1585.5</u> kg			

* Tire pressure used in test.

DATA SHEET 1 (continued)

GENERAL TEST VEHICLE PARAMETER DATA

Vehicle: 2001 Chevrolet Impala

NHTSA No. M10120

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:

Total Test Vehicle Delivered Weight with Max. Fluids	=	<u>1585.5</u>	kg (A)
Maximum Cargo Carrying Capacity of Test Vehicle	=	<u>79.8</u>	kg (B)
Weight of instrumented Side Impact Dummies (1 or 2 X <u>81.2</u> kg)	=	<u>162.4</u>	kg (C)
TEST VEHICLE TARGET WEIGHT:	=	<u>1827.7</u>	kg (A+B+C)

FULLY LOADED TEST VEHICLE (UDVW + 1 or 2 SID(s) + CARGO):

Left Front	=	<u>537.5</u>	kg	Left Rear	=	<u>412.0</u>	kg
Right Front	=	<u>493.5</u>	kg	Right Rear	=	<u>385.0</u>	kg
TOTAL FRONT	=	<u>1031.0</u>	kg	TOTAL REAR	=	<u>797.0</u>	kg
% of Total Weight	=	<u>56.4</u>	%	% of Total Weight	=	<u>43.6</u>	%
TOTAL TEST WEIGHT	=	<u>1828.0</u>	kg				

AS TESTED WEIGHT OF TEST VEHICLE (1 OR 2 SID(s) + CARGO + EQUIPMENT & INSTRUMENTATION):

Left Front	=	<u>539.0</u>	kg	Left Rear	=	<u>398.0</u>	kg
Right Front	=	<u>495.0</u>	kg	Right Rear	=	<u>387.0</u>	kg
TOTAL FRONT	=	<u>1034.0</u>	kg	TOTAL REAR	=	<u>785.0</u>	kg
% of Total Weight	=	<u>56.8</u>	%	% of Total Weight	=	<u>43.2</u>	%
TOTAL TEST WEIGHT	=	<u>1819.0</u>	kg				

TEST VEHICLE ATTITUDE (all dimensions in millimeters):

AS DELIVERED:

Left Front	<u>759</u>	Right Front	<u>752</u>	Left Rear	<u>740</u>	Right Rear	<u>738</u>
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FULLY LOADED:

Left Front	<u>741</u>	Right Front	<u>750</u>	Left Rear	<u>687</u>	Right Rear	<u>700</u>
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READY FOR TEST:

Left Front	<u>745</u>	Right Front	<u>751</u>	Left Rear	<u>692</u>	Right Rear	<u>701</u>
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Test Vehicle Wheelbase: 2818 millimeters

C.G. = 1216 millimeters rearward of front wheel centerline

TOTAL VEHICLE LENGTH:

Right Side	=	<u>4928</u>	millimeters
Left Side	=	<u>4928</u>	millimeters
Centerline	=	<u>5089</u>	millimeters

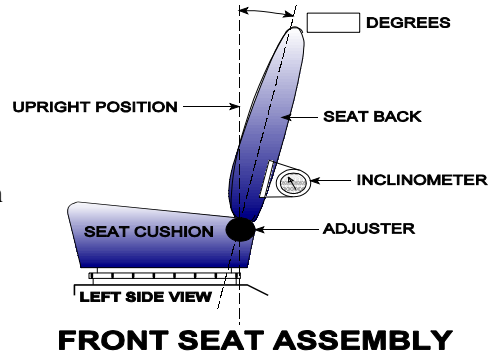
DATA SHEET 1 (continued)

GENERAL TEST VEHICLE PARAMETER DATA

Vehicle: 2001 Chevrolet Impala

NHTSA No. M10120

Nominal Design Riding Position for adjustable driver and passenger seat backs. Please describe how to position the inclinometer to measure the seat back angle. Include description of the location of the adjustment latch detent, if applicable.



FRONT SEAT CUSHION PLACEMENT: Mid-position

Total Length of Adjustment Travel: 239 millimeters

Total Number of Adjustment Positions or Detents: Infinite (power adjustment)

FRONT SEAT BACK ADJUSTMENT POSITION: Seat back positioned so that the outer frame was 26 degrees back from vertical when measured approximately 240 mm above the seat back pivot point.

Seat Back Torso Angle: 26 degrees

SECOND POSITION SEAT:

Total Length of Fore/Aft Adjustment Travel: 0 millimeters

Seat Back Adjustment Position: Fixed

ADJUSTABLE STEERING COLUMN POSITION: Mid-position

WINDOW POSITIONS: Left Front: Closed Left Rear: Closed

Right Front: Removed Right Rear: Removed

Note: Windows will be in closed position on struck side of test vehicle and in open position on opposite side.

AMOUNT OF STODDARD SOLVENT IN FUEL TANK:

65.1 liters (Fuel Tank Usable Capacity)

60.2 liters used for test (92%-94% of Fuel Tank Usable Capacity)

LOCATION OF IMPACT POINT ON TEST VEHICLE SIDE TO BE IMPACTED:

Wheelbase = 2818 millimeters

Impact Point is 469 millimeters rearward of front axle centerline
(which is 940 millimeters forward of the wheelbase midpoint)

Actual Impact Point is 471 millimeters rearward of front axle centerline

DATA SHEET 2

TEST VEHICLE SUMMARY OF RESULTS

VEHICLE IDENTIFICATION:

Vehicle Year/Make/Model: 2001 Chevrolet Impala

Body Style: 4-Door Sedan

VIN: 2G1WH55K419225483

NHTSA No.: M10120

Test Date: March 15, 2001

Overall Length = 5089 millimeters; Overall Width = 1849 millimeters

VEHICLE TEST WEIGHT (Pre-Test):

Left Front = 539.0 kg Left Rear = 398.0 kg

Right Front = 495.0 kg Right Rear = 387.0 kg

TOTAL FRONT = 1034.0 kg TOTAL REAR = 785.0 kg

TOTAL VEHICLE WEIGHT 1819.0 kg

Wheelbase = 2818 millimeters

Longitudinal C.G. from Center of Front Axle = 1216 millimeters

Impact Angle with Respect to Impactor = 90 degrees

ACTUAL IMPACT POINT

Actual Impact Point is 2 mm rearward of nominal impact ref. line (Lateral)

Actual Impact Point is 4 mm below nominal impact point (Vertical)

MAXIMUM EXTERIOR STATIC CRUSH:

1. LEVEL 1 (222 mm above ground) = 288 millimeters

2. LEVEL 2 (506 mm above ground) = 411 millimeters

3. LEVEL 3 (610 mm above ground) = 354 millimeters

4. LEVEL 4 (859 mm above ground) = 341 millimeters

5. LEVEL 5 (1367 mm above ground) = 164 millimeters

Maximum Post-Test Intrusion = 411 millimeters

OCCUPANTS:

Front Passenger:

Rear Passenger:

Dummy Identification 026 268

Restraints Used Side Airbag, 3-Point Seat Belt 3-Point Seat Belt

INSTRUMENTATION:

Number of Vehicle Data Channels: = 47

Number of Cameras: Onboard = 3

Offboard = 8

TOTAL = 11

DATA SHEET 3

MOVING DEFORMABLE BARRIER (MDB) SUMMARY

Vehicle: 2001 Chevrolet Impala

NHTSA No. M10120

MDB FACE MANUFACTURER AND SERIAL NUMBER:

Plascore Inc.: 010B1100-4; 144C1000

POSITION OF IMPACT (MDB ON MONORAIL):

Crabbed 27° to left

MDB DETAILS:

Overall Width of Framework Carriage	=	<u>1250</u>	millimeters
Overall Length of MDB (incl. honeycomb impact face)	=	<u>4120</u>	millimeters
Wheelbase of Framework Carriage	=	<u>2590</u>	millimeters
Tread of Framework Carriage (Front & Rear)	=	<u>1875</u>	millimeters
C.G. Location Rearward of Front Axle	=	<u>1104</u>	millimeters

MDB WEIGHT:

Left Front	=	<u>409.5</u>	kg	Left Rear	=	<u>281.5</u>	kg
Right Front	=	<u>372.5</u>	kg	Right Rear	=	<u>299.0</u>	kg
TOTAL FRONT =		<u>782.0</u>	kg	TOTAL REAR =		<u>580.5</u>	kg
TOTAL MDB WEIGHT =		<u>1362.5</u>	kg				
Impact Angle (MDB C/L to Target Vehicle C/L)	=	<u>90</u>	degrees				
Impact Speed	=	<u>61.96</u>	kph				

MAXIMUM STATIC CRUSH OF HONEYCOMB IMPACT FACE:

1. Row A at Center of Bumper Level	=	<u>141</u>	millimeters
2. Row B at Top of Bumper Level	=	<u>105</u>	millimeters
3. Row C at Mid Level	=	<u>105</u>	millimeters
4. Row D at Top of Stack Level	=	<u>131</u>	millimeters

INSTRUMENTATION:

Number of MDB Data Channels = 5

DATA SHEET 4

POST-TEST OBSERVATIONS

Vehicle: 2001 Chevrolet Impala

NHTSA No. M10120

VISIBLE DUMMY CONTACT POINTS:

	<u>LEFT FRONT SID</u>	<u>LEFT REAR SID</u>
Head:	<u>Head to side impact airbag</u>	<u>Head to C-pillar trim</u>
Upper Torso:	<u>Left arm to side impact airbag</u>	<u>Left arm to rear section of door trim above armrest</u>
Lower Torso:	<u>Left side of pelvis to rear section of door trim below armrest</u>	<u>Left side of pelvis to rear section of door trim below armrest</u>
Left Knee:	<u>Left knee to front section of door trim below armrest</u>	<u>Left knee to front section of door trim below armrest</u>
Right Knee:	<u>Right knee to left knee</u>	<u>Right knee to left knee</u>

DOOR OPENING:

	<u>LEFT DOOR</u>	<u>RIGHT DOOR</u>
Front:	<u>Closed / Inoperable</u>	<u>Closed / Operable</u>
Rear:	<u>Closed / Inoperable</u>	<u>Closed / Operable</u>

MDB DISTANCE FROM TARGET IMPACT POINT:

Vertical: 4 mm below target
Horizontal: 2 mm rearward of target

ARM REST LOCATIONS:

Front:	<u>245 mm below side window opening</u>
Rear:	<u>295 mm below side window opening</u>

SEAT MOVEMENT:

Front:	<u>Seat deformed inboard against the center console</u>
Rear:	<u>None</u>

GLAZING DAMAGE:

Windshield:	<u>Windshield cracked along top and left edge</u>
Window:	<u>Left door windows and left rear quarter window shattered during the impact</u>

PILLAR PERFORMANCE:

No visible tears or separations

SILL SEPARATION:

None

AIR BAG DEPLOYMENT STATUS:

	DRIVER	FRONT PASSENGER	REAR PASSENGER
FRONT	No	No	N/A
SIDE	Yes	No	N/A

OTHER NOTABLE IMPACT EFFECTS:

The driver position SID neck bracket welds failed during the impact causing the head to fully detach from the torso.

SECTION 4

OCCUPANT AND VEHICLE INFORMATION

DATA SHEET 5

SID INSTRUMENTATION DATA

Vehicle: 2001 Chevrolet Impala

NHTSA No. M10120

	Front Dummy ID# 026				Rear Dummy ID# 268			
	Pos. Direction		Neg. Direction		Pos. Direction		Neg. Direction	
	Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)
HEAD ACCELERATIONS:								
Longitudinal X	13.2	38.2	-17.0	84.7	7.4	165.7	-17.5	56.9
Lateral Y	19.0	48.9	-11.7	92.2	156.5	55.7	-12.8	41.6
Vertical Z	30.6	49.0	-25.8	91.7	19.9	45.3	-44.1	60.6
Resultant R	37.5	49.0	-	-	157.3	55.8	-	-
HIC	140.9 †				1001.3			
RIB ACCELERATIONS:								
Upper Rib Lateral . . Y	51.8	28.1	-13.2	92.5	69.8	41.9	-6.5	89.4
Upper Rib Lateral . . Y(R)	53.1	28.1	-13.5	92.5	67.1	41.9	-6.8	89.4
Lower Rib Lateral . . Y	43.7	38.1	-13.0	78.8	70.9	42.5	-9.7	68.2
Lower Rib Lateral . . Y(R)	43.0	37.5	-13.1	78.8	70.0	42.5	-11.1	68.8
SPINE ACCELERATIONS:								
Lower Lateral Y	88.1	33.1	-26.7	71.9	71.8	40.0	-24.8	65.0
Lower Lateral Y(R)	87.2	33.1	-26.7	71.9	71.9	40.0	-25.1	65.0
PELVIC ACCELERATIONS:								
Lateral Y	87.4	30.7	-17.6	71.3	93.9	33.8	-16.8	81.3
Lateral Y(R)	85.7	30.7	-17.8	71.3	98.3	33.8	-18.1	81.9

REFERENCE: Positive Direction - Longitudinal (X) = forward
 Lateral (Y) = to right
 Vertical (Z) = up
 Negative Direction - Longitudinal (X) = rearward
 Lateral (Y) = to left
 Vertical (Z) = down

Note: Above data has been FIR filtered, Y(R) denotes redundant Y direction accelerometer.
 Head Accelerations are filtered at SAE Class 1000.

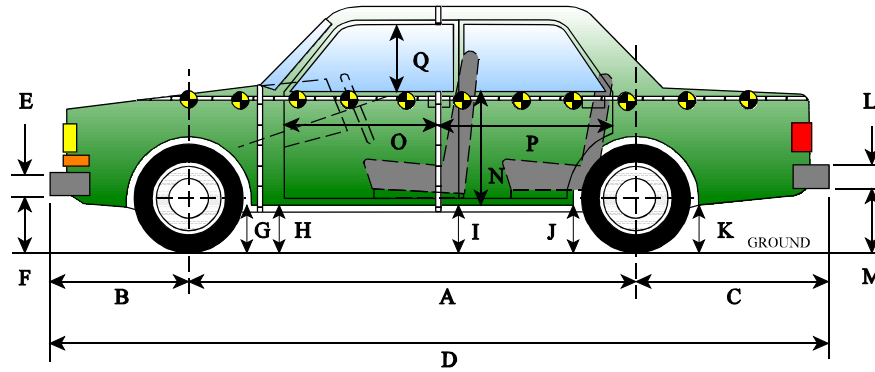
† Data is questionable. Welds on the left side front SID (driver) neck bracket failed approximately 84 ms into the impact.

DATA SHEET 6

VEHICLE SIDE MEASUREMENTS

Vehicle: 2001 Chevrolet Impala

NHTSA No. M10120



LEFT SIDE VIEW

NOTE: all dimensions are in millimeters with tolerance of ± 3 mm

	PRE-TEST (as delivered)	PRE-TEST (as tested)	POST-TEST (as tested)	Δ CHANGE
A	2815	2818	2736	-82
B	1068	1067	1102	35
C	1206	1204	1212	8
D	5089	-	5050	-39
E	303	-	303	0
F	287	278	318	40
G	205	185	203	18
H	205	183	204	21
I	211	176	196	20
J1	212	166	208	42
J2	235	189	229	40
K	253	198	216	18
L	381	-	381	0
M	367	303	318	15
N	702	-	585	-117
O	824	-	785	-39
P	1187	-	1112	-75
Q	442	-	436	-6
R	4928	-	4868	-60
S	4928	-	4932	4
T	1849	-	1556	-293

D = Length at Centerline
T = Width at B-Pillar

E&L = Bumper Thickness
J1 = To Pinch Weld

R = Right Side Length
J2 = To Sill

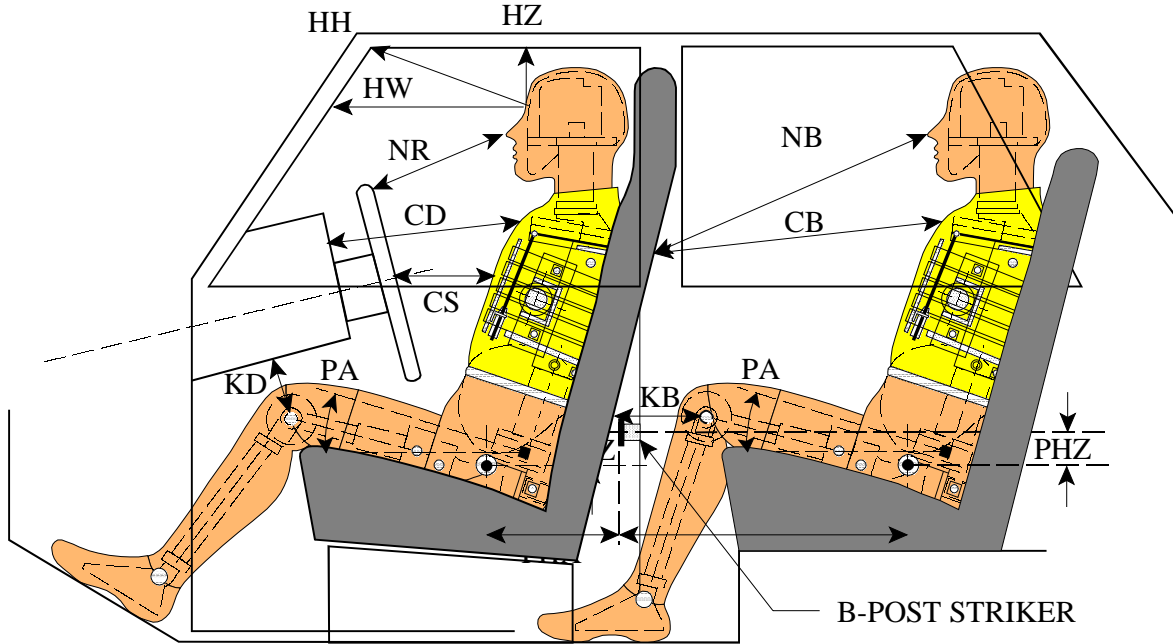
S = Left Side Length

DATA SHEET 7

SID LONGITUDINAL CLEARANCE DIMENSIONS

Vehicle: 2001 Chevrolet Impala

NHTSA No. M10120



LEFT SIDE VIEW

NOTE: 2-DOOR VEHICLE SHOWN.
REAR DUMMY PHX & PHZ
MEASUREMENTS FOR A 4-DOOR
VEHICLE WOULD USE THE C-POST
STRIKER AS A REFERENCE POINT

NOTE: All dimensions are in millimeters with tolerance of ± 3 mm

	DRIVER ID# <u>026</u>	LEFT REAR PASS. ID# <u>268</u>
HH	415	N/A
HW	692	N/A
HZ	193	166
NR/NB	451	628
CD/CB	539	543
CS	306	N/A
KDL(KDA°)/KBL(KBA°)	168 / (37 °)	210 / (27 °)
KDR(KBA°)/KBR(KBA°)	173 / (40 °)	210 / (27 °)
PA°	23.7 °	23.9 °
PHX	190	299
PHZ	106	295

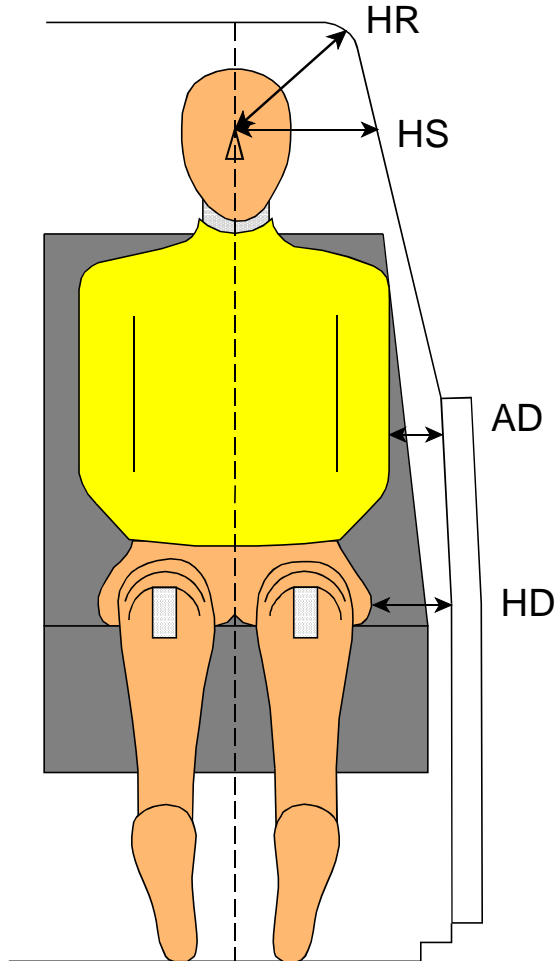
Note: 2-door vehicle shown. Rear dummy PHX & PHZ measurements for 4-door vehicle would use the C-post striker as a reference point.

DATA SHEET 8

SID LATERAL CLEARANCE DIMENSIONS

Vehicle: 2001 Chevrolet Impala

NHTSA No. M10120



NOTE: All dimensions are in millimeters with tolerance of ± 3 mm

	DRIVER ID # <u>026</u>		LEFT REAR PASS. ID # <u>268</u>	
HR	207		205	
HS	337		343	
AD*	LOWER: 143	UPPER: 126	LOWER: 142	UPPER: 140
HD	213		163	

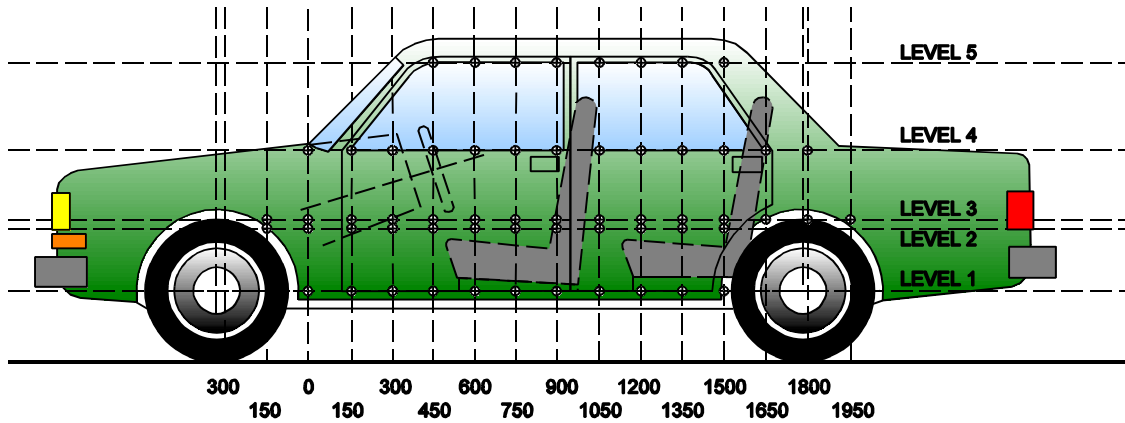
* Lower measurement is taken laterally at the center of the lower rib accelerometer height from the SID arm segment to the closest part of the vehicle side.
 Upper measurement is taken laterally at the center of the upper rib accelerometer height from the SID arm segment to the closest part of the vehicle side.

DATA SHEET 9

VEHICLE SIDE MEASUREMENTS

Vehicle: 2001 Chevrolet Impala

NHTSA No. M10120



LEFT SIDE VIEW

NOTE: All measurements are in millimeters (mm)

- LEVEL 5 - WINDOW TOP**
- LEVEL 4 - WINDOW SILL**
- LEVEL 3 - MID-DOOR**
- LEVEL 2 - OCCUPANT H-POINT**
- LEVEL 1 - AXLE CENTERLINE HEIGHT OR SILL TOP HEIGHT**

MEASUREMENTS ARE TAKEN WHEN THE VEHICLE IS IN THE "AS TESTED" CONFIGURATION.

Measurements Along the Vertical 750 mm Line Shown Above:

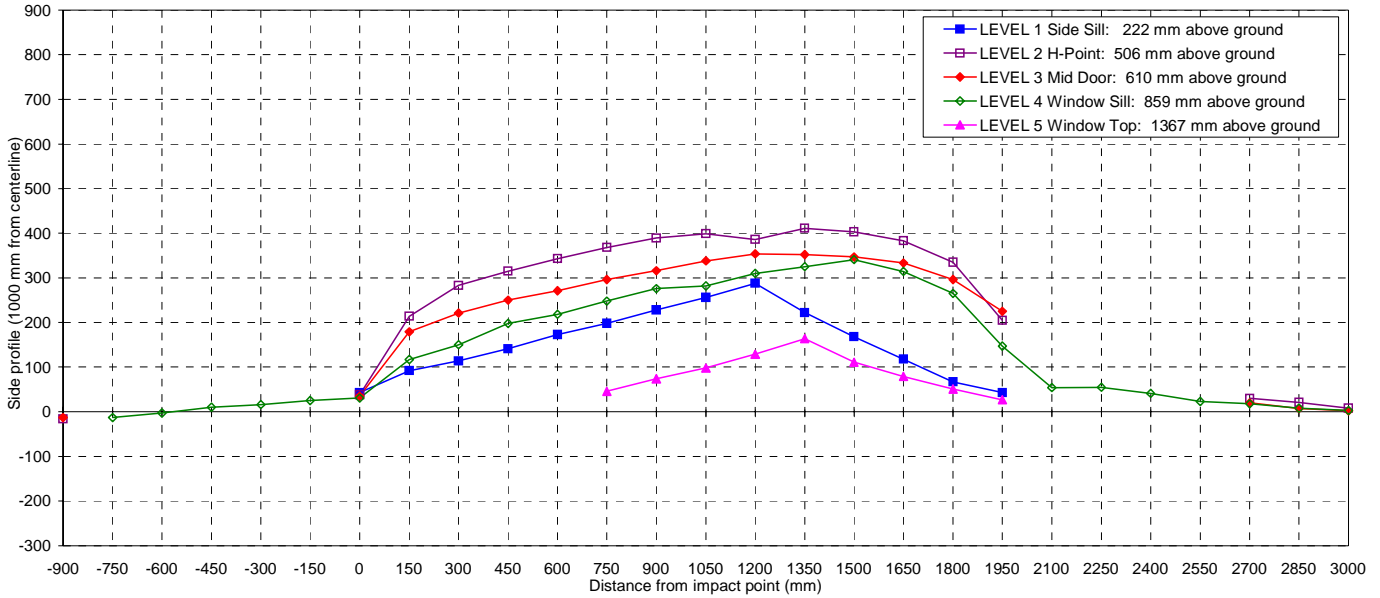
Level 5 @ Window Top	=	<u>1367</u>	millimeters
Level 4 @ Window Sill	=	<u>859</u>	millimeters
Level 3 @ Mid Door	=	<u>610</u>	millimeters
Level 2 @ Occupant H-Point	=	<u>506</u>	millimeters
Level 1 @ Axle Centerline Height (or Sill Top Height)	=	<u>222</u>	millimeters

DATA SHEET 10

VEHICLE EXTERIOR CRUSH PROFILES - ALL LEVELS

Vehicle: 2001 Chevrolet Impala

NHTSA No. M10120



NOTE: All dimensions are in millimeters with a tolerance of ±3 mm

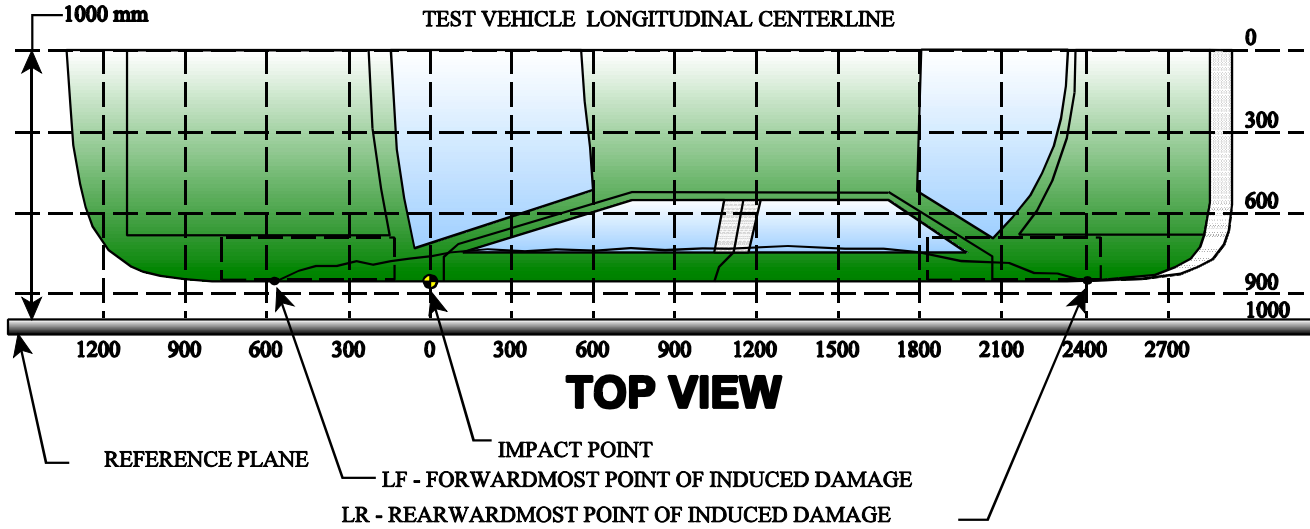
LEVEL	HEIGHT (mm)		DISTANCE IN MILLIMETERS (mm) FROM IMPACT POINT																											
			-900	-750	-600	-450	-300	-150	0	150	300	450	600	750	900	1050	1200	1350	1500	1650	1800	1950	2100	2250	2400	2550	2700	2850	3000	
LEVEL 1 SIDE SILL	222	PRE	--	--	--	--	--	--	148	150	152	152	149	153	150	153	158	155	156	155	156	156	--	--	--	--	--	--	--	
		POST	--	--	--	--	--	--	191	242	266	293	322	351	378	409	446	377	324	273	223	199	--	--	--	--	--	--	--	
		CRUSH	N/A	N/A	N/A	N/A	N/A	N/A	43	92	114	141	173	198	228	256	288	222	168	118	67	43	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
LEVEL 2 H POINT	506	PRE	126	--	--	--	--	--	96	97	99	98	95	92	92	96	95	93	96	100	100	101	--	--	--	--	119	135	159	
		POST	110	--	--	--	--	--	134	311	382	413	438	460	481	495	481	504	499	483	435	306	--	--	--	--	149	156	167	
		CRUSH	-16	N/A	N/A	N/A	N/A	N/A	38	214	283	315	343	368	389	399	386	411	403	383	335	205	N/A	N/A	N/A	N/A	30	21	8	
LEVEL 3 MID DOOR	610	PRE	128	--	--	--	--	--	94	94	95	92	92	90	89	87	86	87	90	92	96	95	--	--	--	--	110	133	156	
		POST	115	--	--	--	--	--	129	273	316	342	363	386	405	425	440	439	437	425	392	320	--	--	--	--	130	140	158	
		CRUSH	-13	N/A	N/A	N/A	N/A	N/A	35	179	221	250	271	296	316	338	354	352	347	333	296	225	N/A	N/A	N/A	N/A	20	7	2	
LEVEL 4 WINDOW SILL	859	PRE	--	218	187	166	154	147	142	138	132	126	124	123	113	110	109	109	108	107	108	105	111	118	127	141	154	176	204	
		POST	--	205	184	176	170	172	173	255	282	324	342	371	389	392	419	434	449	421	373	252	165	173	168	164	172	184	207	
		CRUSH	N/A	-13	-3	10	16	25	31	117	150	198	218	248	276	282	310	325	341	314	265	147	54	55	41	23	18	8	3	
LEVEL 5 WINDOW TOP	1367	PRE	--	--	--	--	--	--	--	--	--	--	--	418	371	363	360	361	365	369	376	401	--	--	--	--	--	--	--	
		POST	--	--	--	--	--	--	--	--	--	--	--	464	445	461	489	525	476	448	427	428	--	--	--	--	--	--	--	
		CRUSH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	46	74	98	129	164	111	79	51	27	N/A	N/A	N/A	N/A	N/A	N/A	N/A	

DATA SHEET 11

VEHICLE DAMAGE PROFILE DISTANCES

Vehicle: 2001 Chevrolet Impala

NHTSA No. M10120



MEASUREMENT CONVENTIONS:
 Forward of the impact point (towards front of vehicle) is considered negative (—).
 Rearward of the impact point (toward rearend of vehicle) is considered positive (+).

NOTE: All dimensions are in millimeters with tolerance of ± 3 mm.

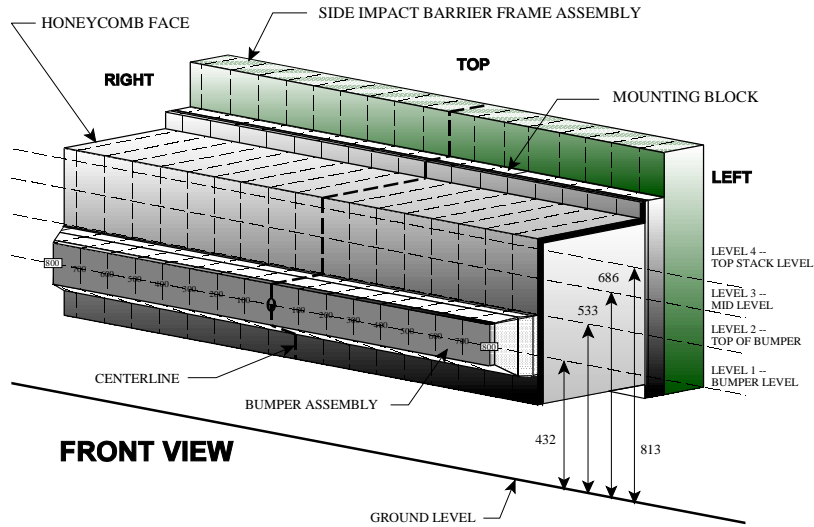
DPD MEASUREMENTS	POST TEST (mm)	PRETEST (mm)	STATIC CRUSH (mm)
1 (LR = <u>3000</u> mm)	167	159	8
2	2288	120	52
3	1576	98	393
4	864	92	384
5	152	97	215
6 (LF = <u>-560</u> mm)	182	181	1

DATA SHEET 12

EXTERIOR STATIC CRUSH FOR IMPACTOR FACE

Vehicle: 2001 Chevrolet Impala

NHTSA No. M10120



NOTE: Dimensions are shown in millimeters, mm

NOTE: All dimensions are in millimeters with a tolerance of ± 3 mm

LEVEL	HEIGHT AT CL (mm)*		DISTANCE RIGHT OF CENTER (mm)									DISTANCE LEFT OF CENTER (mm)								
			800	700	600	500	400	300	200	100	0	100	200	300	400	500	600	700	800	
LEVEL 4 TOP STACK	813	PRE	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	
		POST	702	655	622	615	615	623	639	646	628	625	629	639	651	663	682	705	750	
		CRUSH	83	36	3	-4	-4	4	20	27	9	6	10	20	32	44	63	86	131	
LEVEL 3 MID LEVEL	686	PRE	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	
		POST	688	646	625	620	615	614	624	624	618	619	621	626	630	640	660	681	724	
		CRUSH	69	27	6	1	-4	-5	5	5	-1	0	2	7	11	21	41	62	105	
LEVEL 2 TOP BUMPER	533	PRE	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	
		POST	720	687	657	633	640	654	647	631	627	632	637	648	660	671	684	701	724	
		CRUSH	101	68	38	14	21	35	28	12	8	13	18	29	41	52	65	82	105	
LEVEL 1 MID BUMPER	432	PRE	535	519	518	518	518	518	518	518	518	518	518	518	518	518	518	519	535	
		POST	594	557	537	527	536	558	554	544	538	541	552	563	573	585	600	623	676	
		CRUSH	59	38	19	9	18	40	36	26	20	23	34	45	55	67	82	104	141	

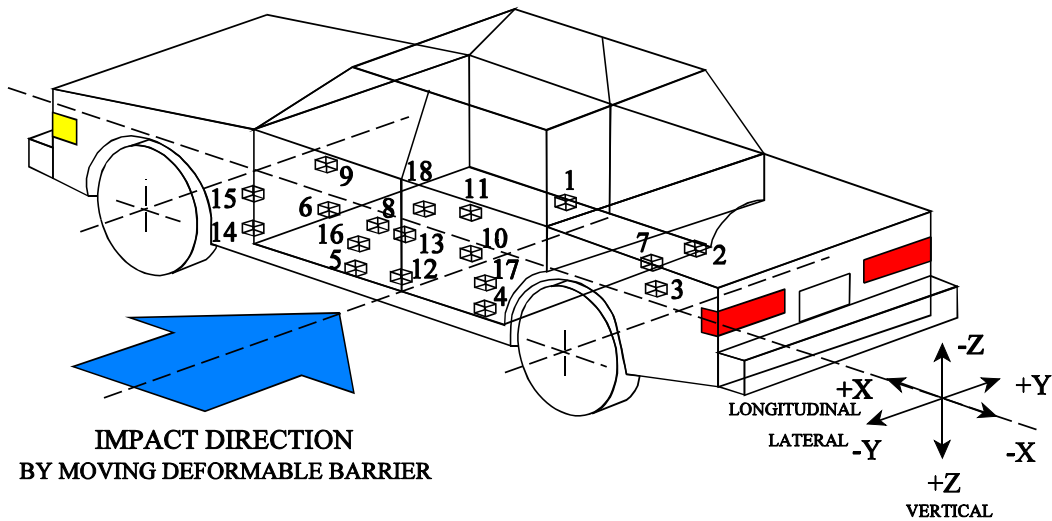
*Heights measured above ground level.

DATA SHEET 13

TEST VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Vehicle: 2001 Chevrolet Impala

NHTSA No. M10120



- 1-Right Side Sill @ Front Seat
- 2-Right Side Sill @ Rear Seat
- 3-Rear Floorpan Above Axle
- 4-Left Side Sill @ Rear Seat
- 5-Left Side Sill @ Front Seat
- 6-Left Front Door on Centerline
- 7-Right Rear Occupant Compartment
- 8-Midrear of Left Front Door
- 9-Left Front Door Upper Centerline

- 10-Midrear of Left Rear Door
- 11-Left Rear Door Upper Centerline
- 12-Left Lower B-Pillar
- 13-Left Middle B-Pillar
- 14-Left Lower A-Pillar
- 15-Left Middle A-Pillar
- 16-Front Seat Track
- 17-Rear Seat Track
- 18-Vehicle CG

DATA SHEET 13 (continued)

VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Vehicle: 2001 Chevrolet Impala

NHTSA No. M10120

Accel. No.	Location	Coordinates (mm)±3 mm				Long. (x)		Lat. (y)		Vert. (z)		Resultant	
		X*	Y*	Z*		Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)
1	Right Side Sill at Front Seat	3112	707	-306	pos.	3.7	58.4	26.0	9.1	2.4	24.4	27.0	9.2
					neg.	-4.9	15.6	-1.9	183.8	-7.3	10.8	-	-
2	Right Side Sill at Rear Seat	2193	711	-311	pos.	3.3	58.5	21.4	8.1	3.1	26.0	21.8	8.2
					neg.	-4.3	12.6	-2.0	150.6	-9.2	17.4	-	-
3	Rear Floorpan Above Axle	1185	20	-490	pos.	3.1	49.3	18.5	26.4	7.3	21.5	19.5	26.7
					neg.	-9.2	42.5	-2.8	125.9	-4.5	26.9	-	-
4	Left Side Sill at Rear Seat	2214	-690	-277	pos.	-	-	75.7	8.6	-	-	-	-
					neg.	-	-	-23.8	22.2	-	-	-	-
5	Left Side Sill at Front Seat	3139	-693	-292	pos.	-	-	119.6	3.8	-	-	-	-
					neg.	-	-	-43.3	10.3	-	-	-	-
6	Left Front Door on Centerline	2883	-751	-674	pos.	-	-	149.8	6.4	-	-	-	-
					neg.	-	-	-94.4	27.9	-	-	-	-
7	Right Rear Occupant Compartment	2194	401	-224	pos.	-	-	21.0	7.7	-	-	-	-
					neg.	-	-	-1.8	157.8	-	-	-	-
8	Midrear of Left Front Door	-	-	-	pos.	-	-	†	-	-	-	-	-
					neg.	-	-	†	-	-	-	-	-
9	Left Front Door Upper Centerline	2883	-756	-902	pos.	-	-	120.9	12.5	-	-	-	-
					neg.	-	-	-80.4	31.5	-	-	-	-
10	Midrear of Left Rear Door	1861	-732	-669	pos.	-	-	211.3	6.8	-	-	-	-
					neg.	-	-	-66.7	27.4	-	-	-	-
11	Left Rear Door Upper Centerline	1882	-732	-924	pos.	-	-	152.2	20.5	-	-	-	-
					neg.	-	-	-266.8	34.0	-	-	-	-

*Reference: X - Rear Bumper (+ Forward) Y - Vehicle Centerline (+ To Right) Z - Ground Level (+ Down)

† Accelerometer was not installed to prevent potential interference with side impact airbag deployment.

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DATA SHEET 13 (continued)

VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Vehicle: 2001 Chevrolet Impala

NHTSA No. M10120

Accel. No.	Location	Coordinates (mm)±3 mm				Long. (x)		Lat. (y)		Vert. (z)		Resultant	
		X*	Y*	Z*		Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)
12	Left Lower B-Pillar	2425	-698	-460	pos.	-	-	198.1	4.0	-	-	-	-
					neg.	-	-	-201.3	17.4	-	-	-	-
13	Left Middle B-Pillar	2357	-691	-724	pos.	-	-	207.3	3.6	-	-	-	-
					neg.	-	-	†	-	-	-	-	-
14	Left Lower A-Pillar	3492	-646	-518	pos.	-	-	58.7	5.6	-	-	-	-
					neg.	-	-	-18.6	14.0	-	-	-	-
15	Left Middle A-Pillar	3341	-680	-966	pos.	-	-	26.2	11.2	-	-	-	-
					neg.	-	-	-6.2	18.5	-	-	-	-
16	Front Seat Track	2632	-597	-249	pos.	-	-	61.0	16.9	-	-	-	-
					neg.	-	-	-33.5	26.0	-	-	-	-
17	Rear Seat Track	1247	-450	-469	pos.	-	-	17.1	8.9	-	-	-	-
					neg.	-	-	-2.1	126.4	-	-	-	-
18	Vehicle CG	2746	-1	-494	pos.	12.7	89.9	142.5	20.8	18.2	40.5	143.5	20.8
					neg.	-15.8	21.5	-67.6	31.1	-22.3	35.2	-	-

*Reference: X - Rear Bumper (+ Forward)

Y - Vehicle Centerline (+ To Right)

Z - Ground Level (+ Down)

†Transducer cable was cut approximately 7 ms into the impact.

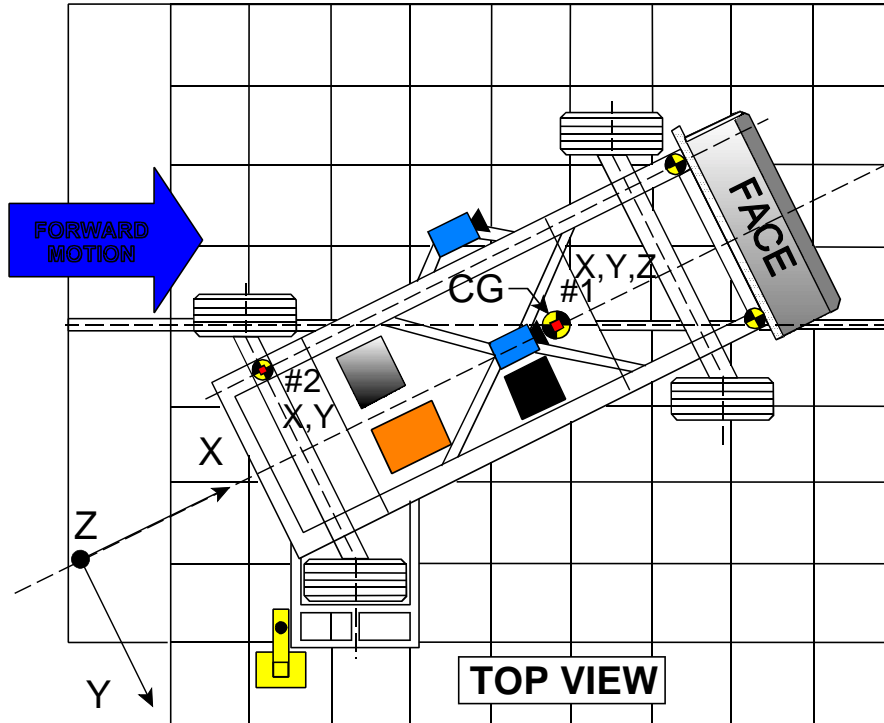
4-12

DATA SHEET 14

MDB ACCELEROMETER LOCATIONS AND DATA SUMMARY

Vehicle: 2001 Chevrolet Impala

NHTSA No. M10120



Accel. No.	Location	Coordinates (millimeters)			Pos. Direct.		Neg. Direct.	
		X*	Y*	Z*	Max (g)	Time (msec)	Max (g)	Time (msec)
1	MDB Center of Gravity							
	Longitudinal... X				1.0	124.5	-17.4	39.5
	Lateral..... Y	1859	0	-330	2.9	55.9	-8.6	33.7
	Vertical..... Z				11.6	38.3	-13.1	21.5
	Resultant..... R				20.9	21.4	-	-
2	Rear Frame Member							
	Longitudinal... X	386	-660	-660	1.8	144.8	-20.1	26.6
	Lateral..... Y				3.9	30.4	-1.4	109.9

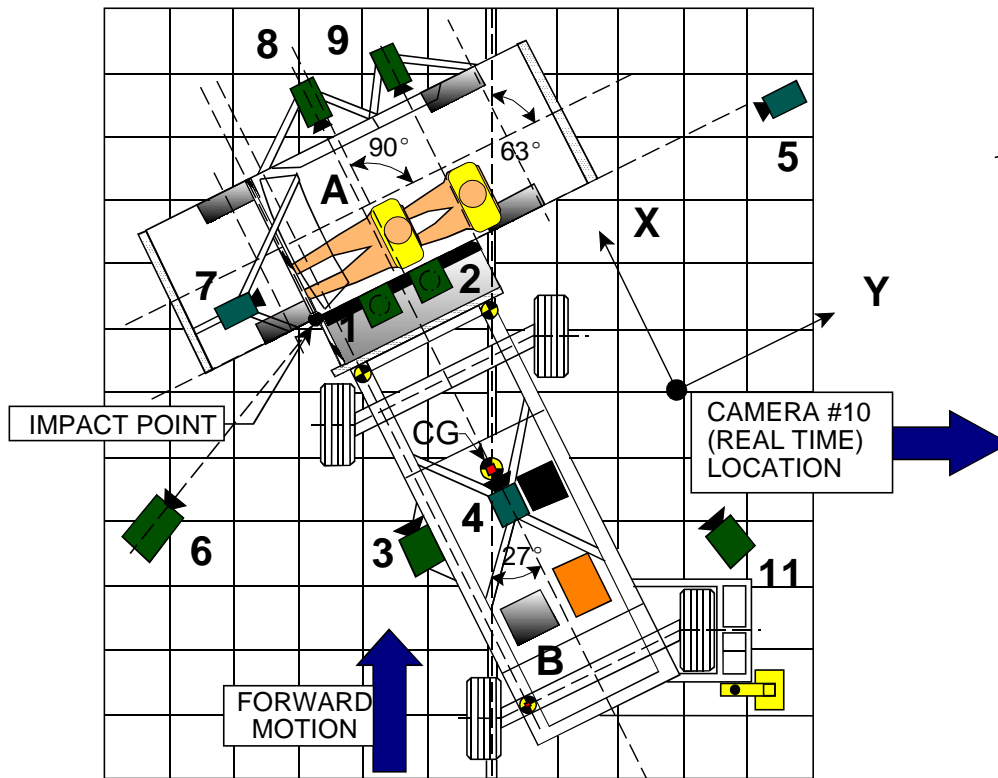
*Reference: X = Rear Bumper (+ Forward)
 Y = Vehicle Centerline (+ To Right)
 Z = Ground Level (+ Down)
 All measurements accurate to within ± 3 mm.

DATA SHEET 15

HIGH SPEED CAMERA LOCATIONS AND DATA SUMMARY

Vehicle: 2001 Chevrolet Impala

NHTSA No. M10120



Camera No.	View	Coordinates (millimeters)			Angle (deg.)	Lens (mm)	Film Speed (fps)
		X*	Y*	Z*			
1	Overhead view of test vehicle	70	806	-4880	-90	8	1000
2	Overhead closeup view of impact plane	205	870	-4880	-90	12.5	1005
3	MDB onboard closeup view of impact point	-1470	0	-847	0	13	1030
4	MDB onboard view of driver dummy	-1140	838	-1586	-17	7.5	1030
5	Right side ground level overall view	-298	9375	-1084	-3	25	1010
6	Left side ground level overall view	-1760	-1687	-1052	-7	13	1010
7	Test vehicle onboard driver front view	532	-427	-1270	-12	13	1015
8	Test vehicle onboard driver side view	1794	742	-1015	-10	8	950
9	Test vehicle onboard passenger side view	1778	1676	-1042	-14	8	1010
10	Real time film coverage of test	-	-	-	-	-	24
11	Secondary impact point view	-3900	3710	-1082	-5	25	1055

* Reference (from point of impact); all measurements accurate to within ±6 mm.

X = (Impact Point) + Forward

Y = (Impact Point) + To Right

Z = (Ground Level) + Down

SECTION 5

FUEL SYSTEM INTEGRITY

DATA SHEET 16

FMVSS 301 FUEL SYSTEM INTEGRITY DATA

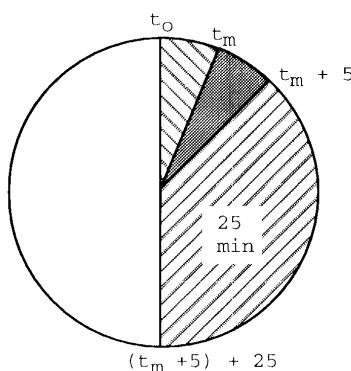
NHTSA No.: M10120 TEST DATE: March 15, 2001

Vehicle Mfgr./Make/Model : 2001 Chevrolet Impala 4-Door Sedan

TEST VEHICLE IMPACT TYPE :

- Frontal (48.28 kph)
- Oblique (48.28 kph) with - ° barrier face first
 contacting the - side
 (driver/passenger)
- Rear Moving Barrier (48.28 kph)
- Lateral Moving Barrier (32.19 kph)
- X Side Impact Moving Deformable Barrier (62.0 kph)
 contacting the driver side side
 (driver/passenger)

FUEL SPILLAGE MEASUREMENT:



1. From impact until vehicle motion ceases
2. For five minute period after vehicle motion ceases
3. For next 25 minutes

ACTUAL	MAX ALLOWED
0 g	28 g
0 g	142 g
0 g	28 g/1 min.

SOLVENT SPILLAGE DETAILS :

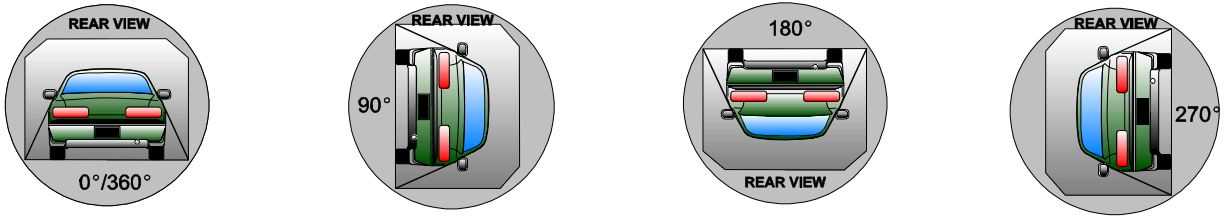
A trace of stoddard solvent was visible along the bottom edge of the fuel filler cap immediately following the impact. There was no measurable spillage during the rollover phase of the FMVSS 301 test.

DATA SHEET 17

ROLLOVER DATA

Vehicle: 2001 Chevrolet Impala

NHTSA No. M10120



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	18	seconds	5	minutes	6	minutes	18	seconds	7	minutes
0° - 90°	1	minutes	6	seconds	5	minutes	6	minutes	6	seconds	7	minutes
90° - 180°	1	minutes	2	seconds	5	minutes	6	minutes	2	seconds	7	minutes
180° - 270°	1	minutes	18	seconds	5	minutes	6	minutes	18	seconds	7	minutes
270° - 360°	1	minutes	18	seconds	5	minutes	6	minutes	18	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)
142 g	28 g	28 g	28 g

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

Rollover Stage	First 5 minutes from onset of rotation (g)	6th min. (g)	7th min. (g)	8th min. (if required) (g)
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°	-

APPENDIX A

PHOTOGRAPHS

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Figure A- 22	POST-TEST LEFT OCCUPANT COMPARTMENT VIEW OF FRONT SID	A- 24
Figure A- 23	PRE-TEST LEFT OCCUPANT COMPARTMENT VIEW OF REAR SID	A- 25
Figure A- 24	POST-TEST LEFT OCCUPANT COMPARTMENT VIEW OF REAR SID	A- 26
Figure A- 25	PRE-TEST INTERIOR OF FRONT DOOR	A- 27
Figure A- 26	POST-TEST INTERIOR OF FRONT DOOR SHOWING SID IMPACT LOCATIONS	A- 28
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Figure A- 38	ROLLOVER 360 DEGREES	A- 40



Figure A-1: PRE-TEST FRONTAL VIEW OF TEST VEHICLE



Figure A-2: POST-TEST FRONTAL VIEW OF TEST VEHICLE



Figure A-3: PRE-TEST REAR VIEW OF TEST VEHICLE



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Figure A-4: POST-TEST REAR VIEW OF TEST VEHICLE



Figure A-5: PRE-TEST IMPACTED SIDE VIEW OF TEST VEHICLE

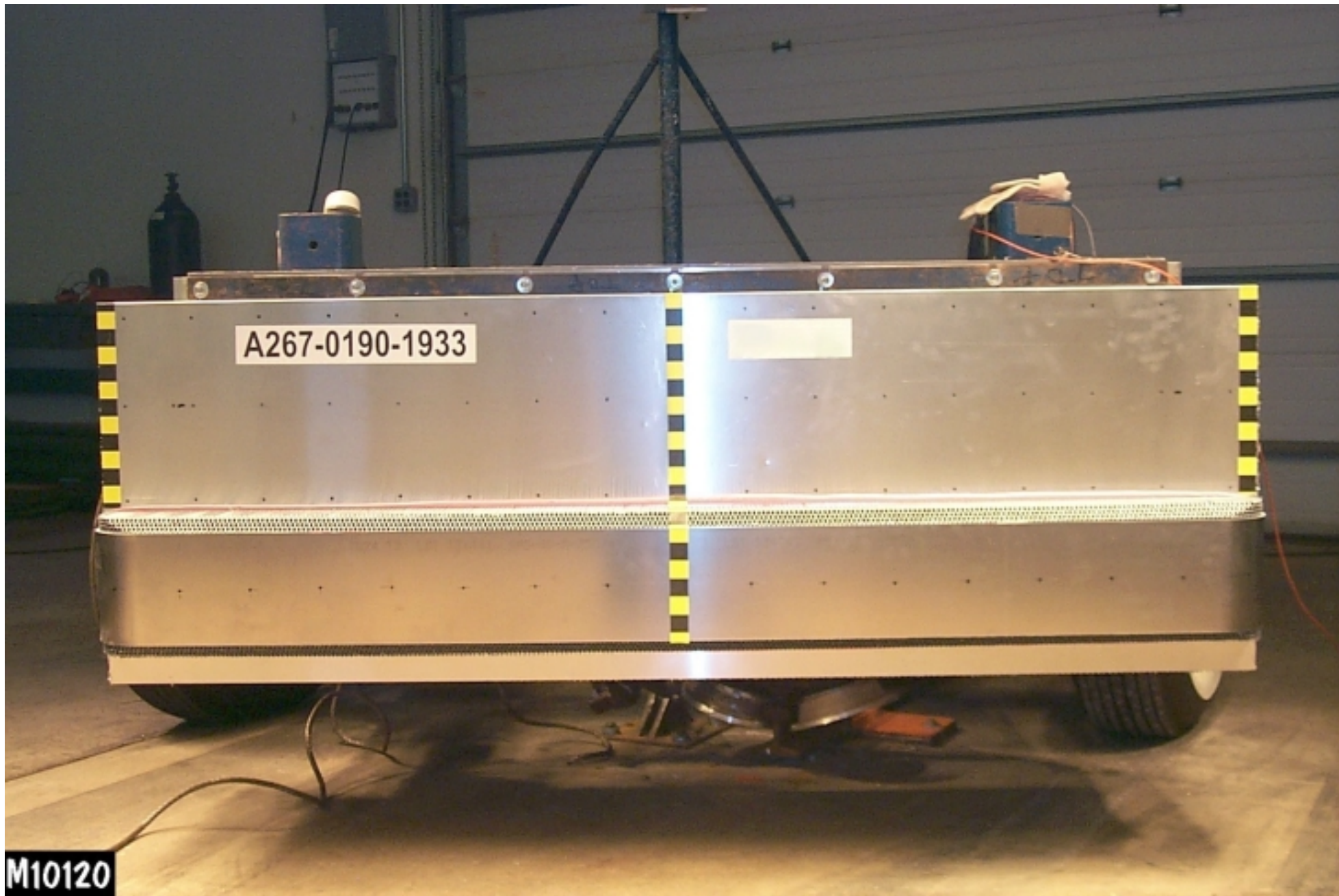


Figure A-7: PRE-TEST FRONTAL VIEW OF IMPACTOR FACE



Figure A-8: POST-TEST FRONTAL VIEW OF IMPACTOR FACE



Figure A-9: PRE-TEST LEFT SIDE VIEW OF IMPACTOR FACE



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Figure A-10: POST-TEST LEFT SIDE VIEW OF IMPACTOR FACE

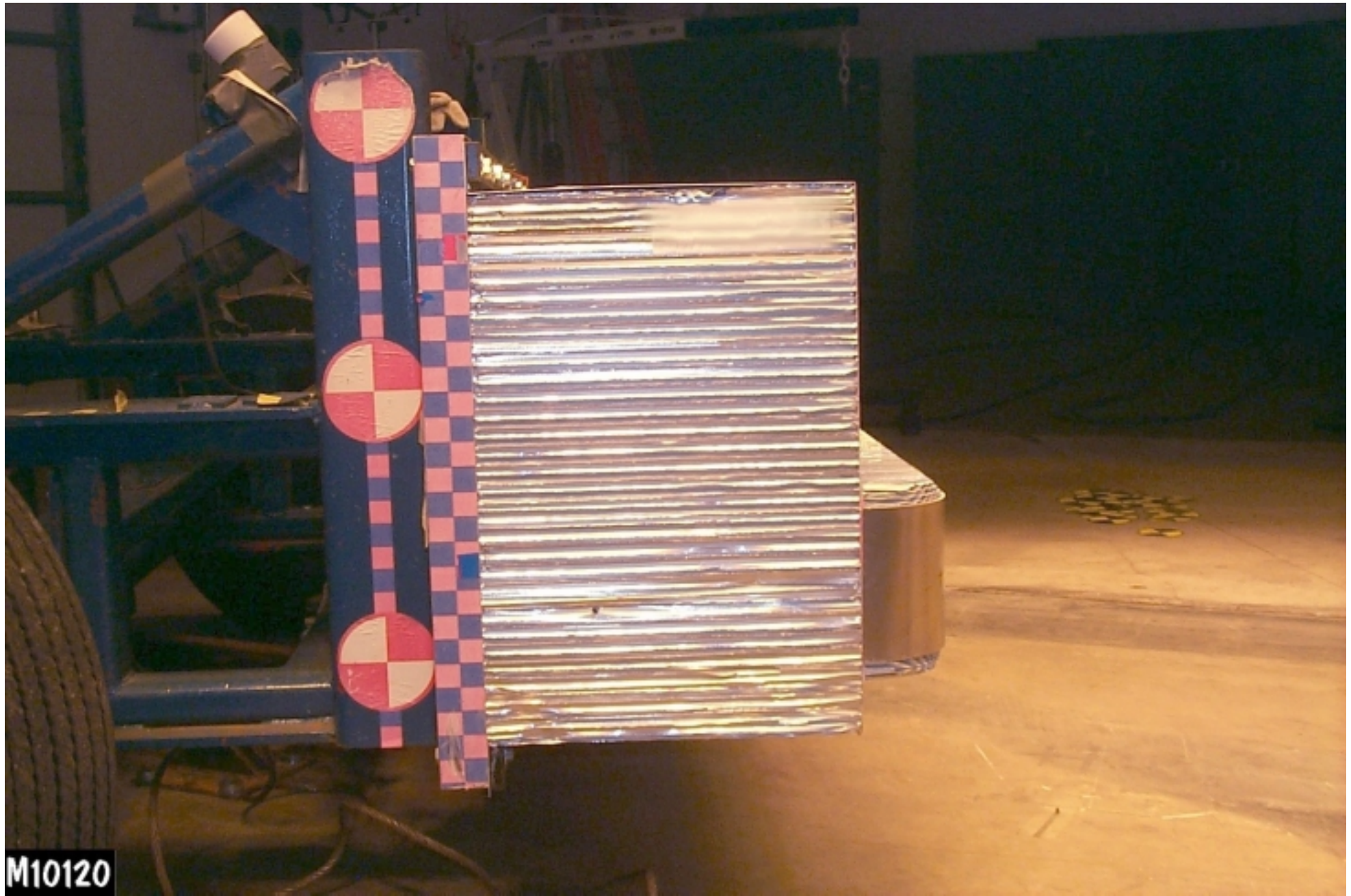


Figure A-11: PRE-TEST RIGHT SIDE VIEW OF IMPACTOR FACE



Figure A-12: POST-TEST RIGHT SIDE VIEW OF IMPACTOR FACE



Figure A-13: PRE-TEST TOP VIEW OF IMPACTOR FACE



Figure A-14: POST-TEST TOP VIEW OF IMPACTOR FACE



Figure A-15: PRE-TEST OVERHEAD VIEW OF ALIGNED MDB AND VEHICLE



Figure A-17: PRE-TEST RIGHT OCCUPANT COMPARTMENT VIEW OF FRONT SID



Figure A-18: POST-TEST RIGHT OCCUPANT COMPARTMENT VIEW OF FRONT SID



Figure A-19: PRE-TEST RIGHT OCCUPANT COMPARTMENT VIEW OF REAR SID



Figure A-20: POST-TEST RIGHT OCCUPANT COMPARTMENT VIEW OF REAR SID



Figure A-21: PRE-TEST LEFT OCCUPANT COMPARTMENT VIEW OF FRONT SID



Figure A-22: POST-TEST LEFT OCCUPANT COMPARTMENT VIEW OF FRONT SID



Figure A-23: PRE-TEST LEFT OCCUPANT COMPARTMENT VIEW OF REAR SID



Figure A-24: POST-TEST LEFT OCCUPANT COMPARTMENT VIEW OF REAR SID



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Figure A-25: PRE-TEST FRONT INTERIOR TRIM



Figure A-26: POST-TEST FRONT INTERIOR TRIM SHOWING SID IMPACT LOCATIONS



A-29

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M10120

Figure A-27: PRE-TEST REAR INTERIOR TRIM



Figure A-28: POST-TEST REAR INTERIOR TRIM SHOWING SID IMPACT LOCATIONS



Figure A-29: PRE-TEST LEFT SIDE VIEW OF MDB WITH IMPACTOR FACE IN POSITION



Figure A-30: PRE-TEST RIGHT SIDE VIEW OF MDB WITH IMPACTOR FACE IN POSITION



Figure A-31: POST-TEST CLOSE-UP VIEW OF IMPACT POINT TARGET



MFD BY GENERAL MOTORS OF CANADA LTD.

DATE	GVWR	GAWR FRT	GAWR RR
11/00	2013 KG 4438 LB	1100 KG 2425 LB	913 KG 2013 LB

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

2G1WH55K419225483

TYPE: PASS CAR

A-34

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Figure A-32: CLOSE-UP VIEW OF VEHICLE'S CERTIFICATION LABEL



TIRE - LOADING INFORMATION

OCCUPANTS				VEHICLE CAP. WT.	
FRT.	CTR.	RR.	TOTAL	KG	LBS
2	0	3	5	420	926

MAX. LOADING @ GVWR SAME AS VEHICLE CAPACITY WEIGHT.

2G1WH55K419225483

MODEL: WH19 WAJ

	TIRE SIZE	SPEED RTG	COLD TIRE PRESSURE
FRT	P225/60R16	S	210KPA(30PSI)
RR	P225/60R16	S	210KPA(30PSI)
SPA	T125/70D16	M	420KPA(60PSI)

IF TIRES ARE HOT, ADD 28KPA(4PSI)

SEE OWNER'S MANUAL FOR MORE INFORMATION

M10120

Figure A-33: CLOSE-UP VIEW OF VEHICLE'S TIRE PLACARD LABEL



Figure A-34: IMPACT PHOTO



A-37

8506-19

Figure A-35: ROLLOVER 90 DEGREES



Figure A-36: ROLLOVER 180 DEGREES

A-39

8506-19

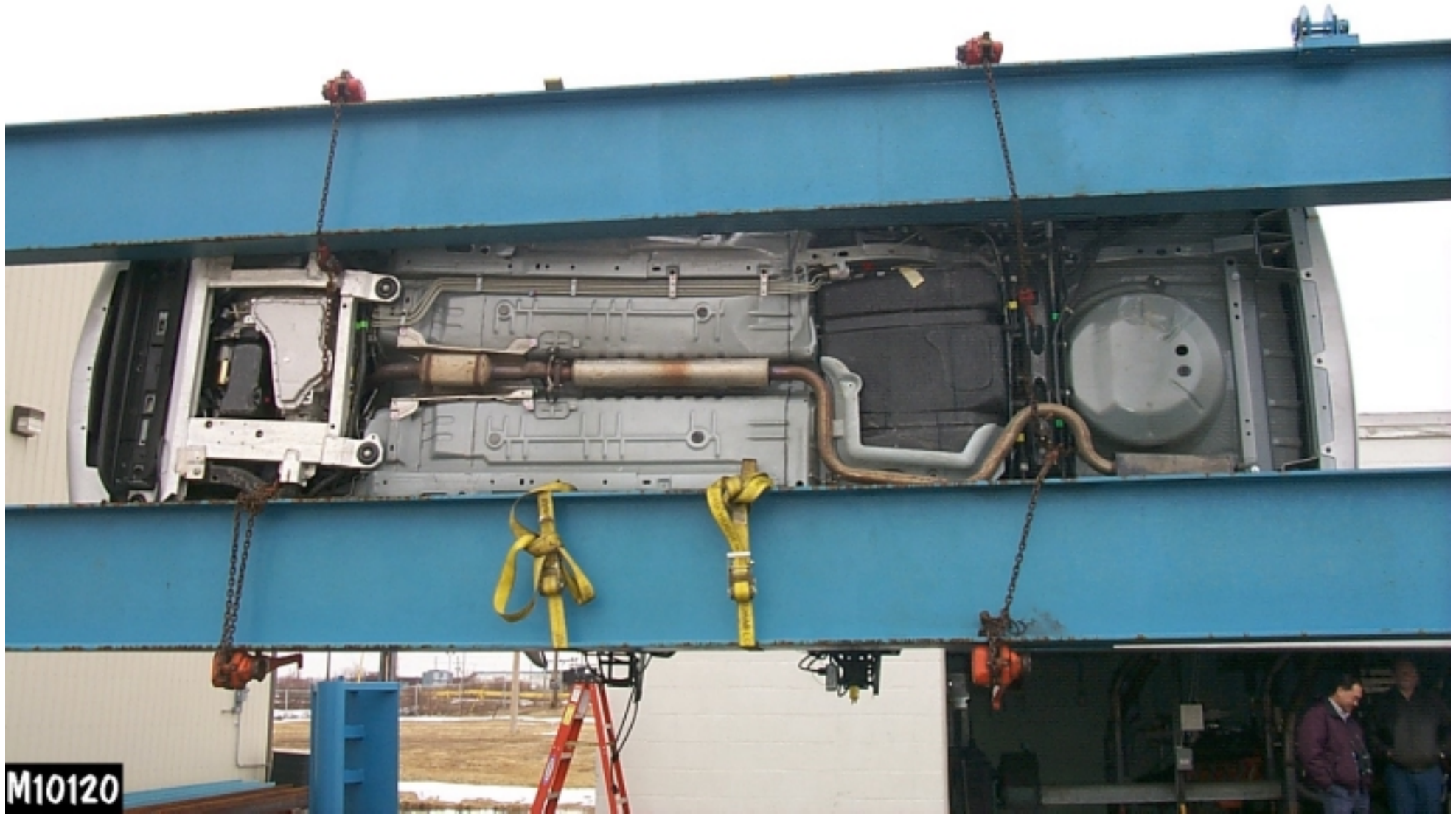


Figure A-37: ROLLOVER 270 DEGREES



Figure A-38: ROLLOVER 360 DEGREES

APPENDIX B

VEHICLE, MDB AND SID RESPONSE DATA

TABLE OF DATA PLOTS

DRIVER AND PASSENGER DUMMY INSTRUMENTATION PLOTS
 ACCELERATION DATA - FILTER CLASS 1000, LOWER SPINE - FILTER CLASS 180
 INTEGRATION DATA - FILTER CLASS 180

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
1	DRIVER HEAD (X) ACCELERATION VS TIME	B- 6
2	DRIVER HEAD (X) VELOCITY VS TIME	B- 7
3	DRIVER HEAD (Y) ACCELERATION VS TIME	B- 8
4	DRIVER HEAD (Y) VELOCITY VS TIME	B- 9
5	DRIVER HEAD (Z) ACCELERATION VS TIME	B- 10
6	DRIVER HEAD (Z) VELOCITY VS TIME	B- 11
7	DRIVER HEAD RESULTANT ACCELERATION VS TIME	B- 12
8	DRIVER UPPER RIB (Y) ACCELERATION VS TIME	B- 13
9	DRIVER UPPER RIB (Y) VELOCITY VS TIME	B- 14
10	DRIVER LOWER RIB (Y) ACCELERATION VS TIME	B- 15
11	DRIVER LOWER RIB (Y) VELOCITY VS TIME	B- 16
12	DRIVER LOWER SPINE (Y) ACCELERATION VS TIME	B- 17
13	DRIVER LOWER SPINE (Y) VELOCITY VS TIME	B- 18
14	DRIVER PELVIC (Y) ACCELERATION VS TIME	B- 19
15	DRIVER PELVIC (Y) VELOCITY VS TIME	B- 20
16	PASSENGER HEAD (X) ACCELERATION VS TIME	B- 21
17	PASSENGER HEAD (X) VELOCITY VS TIME	B- 22
18	PASSENGER HEAD (Y) ACCELERATION VS TIME	B- 23
19	PASSENGER HEAD (Y) VELOCITY VS TIME	B- 24
20	PASSENGER HEAD (Z) ACCELERATION VS TIME	B- 25
21	PASSENGER HEAD (Z) VELOCITY VS TIME	B- 26
22	PASSENGER HEAD RESULTANT ACCELERATION VS TIME	B- 27
23	PASSENGER UPPER RIB (Y) ACCELERATION VS TIME	B- 28
24	PASSENGER UPPER RIB (Y) VELOCITY VS TIME	B- 29
25	PASSENGER LOWER RIB (Y) ACCELERATION VS TIME	B- 30
26	PASSENGER LOWER RIB (Y) VELOCITY VS TIME	B- 31
27	PASSENGER LOWER SPINE (Y) ACCELERATION VS TIME	B- 32
28	PASSENGER LOWER SPINE (Y) VELOCITY VS TIME	B- 33
29	PASSENGER PELVIC (Y) ACCELERATION VS TIME	B- 34
30	PASSENGER PELVIC (Y) VELOCITY VS TIME	B- 35

DRIVER & PASSENGER DUMMY INSTRUMENTATION PLOTS
 ACCELERATION DATA - FIR FILTERED

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
31	DRIVER UPPER RIB (Y) ACCELERATION VS TIME	B- 36
32	DRIVER LOWER RIB (Y) ACCELERATION VS TIME	B- 37
33	DRIVER LOWER SPINE (Y) ACCELERATION VS TIME	B- 38
34	DRIVER PELVIC (Y) ACCELERATION VS TIME	B- 39
35	PASSENGER UPPER RIB (Y) ACCELERATION VS TIME	B- 40
36	PASSENGER LOWER RIB (Y) ACCELERATION VS TIME	B- 41
37	PASSENGER LOWER SPINE (Y) ACCELERATION VS TIME	B- 42
38	PASSENGER PELVIC (Y) ACCELERATION VS TIME	B- 43

TEST VEHICLE INSTRUMENTATION PLOTS
ACCELERATION DATA - FILTER CLASS 60
INTEGRATION DATA - FILTER CLASS 180

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
39	RIGHT SIDE SILL AT FRONT SEAT (X) ACCELERATION VS TIME	B- 44
40	RIGHT SIDE SILL AT FRONT SEAT (X) VELOCITY VS TIME	B- 45
41	RIGHT SIDE SILL AT FRONT SEAT (Y) ACCELERATION VS TIME	B- 46
42	RIGHT SIDE SILL AT FRONT SEAT (Y) VELOCITY VS TIME	B- 47
43	RIGHT SIDE SILL AT FRONT SEAT (Z) ACCELERATION VS TIME	B- 48
44	RIGHT SIDE SILL AT FRONT SEAT (Z) VELOCITY VS TIME	B- 49
45	RIGHT SIDE SILL AT FRONT SEAT RESULTANT ACCELERATION VS TIME	B- 50
46	RIGHT SIDE SILL AT REAR SEAT (X) ACCELERATION VS TIME	B- 51
47	RIGHT SIDE SILL AT REAR SEAT (X) VELOCITY VS TIME	B- 52
48	RIGHT SIDE SILL AT REAR SEAT (Y) ACCELERATION VS TIME	B- 53
49	RIGHT SIDE SILL AT REAR SEAT (Y) VELOCITY VS TIME	B- 54
50	RIGHT SIDE SILL AT REAR SEAT (Z) ACCELERATION VS TIME	B- 55
51	RIGHT SIDE SILL AT REAR SEAT (Z) VELOCITY VS TIME	B- 56
52	RIGHT SIDE SILL AT REAR SEAT RESULTANT ACCELERATION VS TIME	B- 57
53	REAR FLOORPAN ABOVE AXLE (X) ACCELERATION VS TIME	B- 58
54	REAR FLOORPAN ABOVE AXLE (X) VELOCITY VS TIME	B- 59
55	REAR FLOORPAN ABOVE AXLE (Y) ACCELERATION VS TIME	B- 60
56	REAR FLOORPAN ABOVE AXLE (Y) VELOCITY VS TIME	B- 61
57	REAR FLOORPAN ABOVE AXLE (Z) ACCELERATION VS TIME	B- 62
58	REAR FLOORPAN ABOVE AXLE (Z) VELOCITY VS TIME	B- 63
59	REAR FLOORPAN ABOVE AXLE RESULTANT ACCELERATION VS TIME	B- 64
60	LEFT SIDE SILL AT REAR SEAT (Y) ACCELERATION VS TIME	B- 65
61	LEFT SIDE SILL AT REAR SEAT (Y) VELOCITY VS TIME	B- 66
62	LEFT SIDE SILL AT FRONT SEAT (Y) ACCELERATION VS TIME	B- 67
63	LEFT SIDE SILL AT FRONT SEAT (Y) VELOCITY VS TIME	B- 68
64	LEFT FRONT DOOR ON CENTERLINE (Y) ACCELERATION VS TIME	B- 69
65	LEFT FRONT DOOR ON CENTERLINE (Y) VELOCITY VS TIME	B- 70
66	RIGHT REAR OCCUPANT COMPARTMENT (Y) ACCELERATION VS TIME	B- 71
67	RIGHT REAR OCCUPANT COMPARTMENT (Y) VELOCITY VS TIME	B- 72
68	LEFT FRONT DOOR UPPER CENTERLINE (Y) ACCELERATION VS TIME	B- 73
69	LEFT FRONT DOOR UPPER CENTERLINE (Y) VELOCITY VS TIME	B- 74
70	MID REAR OF LEFT REAR DOOR (Y) ACCELERATION VS TIME	B- 75
71	MID REAR OF LEFT REAR DOOR (Y) VELOCITY VS TIME	B- 76
72	LEFT REAR DOOR UPPER CENTERLINE (Y) ACCELERATION VS TIME	B- 77
73	LEFT REAR DOOR UPPER CENTERLINE (Y) VELOCITY VS TIME	B- 78
74	LOWER B-POST (Y) ACCELERATION VS TIME	B- 79
75	LOWER B-POST (Y) VELOCITY VS TIME	B- 80
76	UPPER B-POST (Y) ACCELERATION VS TIME	B- 81
77	UPPER B-POST (Y) VELOCITY VS TIME	B- 82
78	LOWER A-POST (Y) ACCELERATION VS TIME	B- 83

TEST VEHICLE INSTRUMENTATION PLOTS

ACCELERATION DATA - FILTER CLASS 60

INTEGRATION DATA - FILTER CLASS 180

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
79	LOWER A-POST (Y) VELOCITY VS TIME	B- 84
80	UPPER A-POST (Y) ACCELERATION VS TIME	B- 85
81	UPPER A-POST (Y) VELOCITY VS TIME	B- 86
82	FRONT SEAT TRACK (Y) ACCELERATION VS TIME	B- 87
83	FRONT SEAT TRACK (Y) VELOCITY VS TIME	B- 88
84	REAR SEAT TRACK (Y) ACCELERATION VS TIME	B- 89
85	REAR SEAT TRACK (Y) VELOCITY VS TIME	B- 90
86	VEHICLE CENTER OF GRAVITY (X) ACCELERATION VS TIME	B- 91
87	VEHICLE CENTER OF GRAVITY (X) VELOCITY VS TIME	B- 92
88	VEHICLE CENTER OF GRAVITY (Y) ACCELERATION VS TIME	B- 93
89	VEHICLE CENTER OF GRAVITY (Y) VELOCITY ACCELERATION VS TIME	B- 94
90	VEHICLE CENTER OF GRAVITY (Z) ACCELERATION VS TIME	B- 95
91	VEHICLE CENTER OF GRAVITY (Z) VELOCITY VS TIME	B- 96
92	VEHICLE CENTER OF GRAVITY RESULTANT ACCELERATION VS TIME	B- 97

MDB INSTRUMENTATION PLOTS

ACCELERATION DATA - FILTER CLASS 60

INTEGRATION DATA - FILTER CLASS 180

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
93	MDB CENTER OF GRAVITY (X) ACCELERATION VS TIME	B- 98
94	MDB CENTER OF GRAVITY (X) VELOCITY VS TIME	B- 99
95	MDB CENTER OF GRAVITY (Y) ACCELERATION VS TIME	B- 100
96	MDB CENTER OF GRAVITY (Y) VELOCITY VS TIME	B- 101
97	MDB CENTER OF GRAVITY (Z) ACCELERATION VS TIME	B- 102
98	MDB CENTER OF GRAVITY (Z) VELOCITY VS TIME	B- 103
99	MDB CENTER OF GRAVITY RESULTANT ACCELERATION VS TIME	B- 104
100	MDB REAR (X) ACCELERATION VS TIME	B- 105
101	MDB REAR (X) VELOCITY VS TIME	B- 106
102	MDB REAR (Y) ACCELERATION VS TIME	B- 107
103	MDB REAR (Y) VELOCITY VS TIME	B- 108

DRIVER & PASSENGER DUMMY INSTRUMENTATION PLOTS (REDUNDANT)
 ACCELERATION DATA - FILTER CLASS 1000, LOWER SPINE - FILTER CLASS 180
 INTEGRATION DATA - FILTER CLASS 180

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
104	DRIVER UPPER RIB (Y) ACCELERATION VS TIME	B- 109
105	DRIVER UPPER RIB (Y) VELOCITY VS TIME	B- 110
106	DRIVER LOWER RIB (Y) ACCELERATION VS TIME	B- 111
107	DRIVER LOWER RIB (Y) VELOCITY VS TIME	B- 112
108	DRIVER LOWER SPINE (Y) ACCELERATION VS TIME	B- 113
109	DRIVER LOWER SPINE (Y) VELOCITY VS TIME	B- 114
110	DRIVER PELVIC (Y) ACCELERATION VS TIME	B- 115
111	DRIVER PELVIC (Y) VELOCITY VS TIME	B- 116
112	PASSENGER UPPER RIB (Y) ACCELERATION VS TIME	B- 117
113	PASSENGER UPPER RIB (Y) VELOCITY VS TIME	B- 118
114	PASSENGER LOWER RIB (Y) ACCELERATION VS TIME	B- 119
115	PASSENGER LOWER RIB (Y) VELOCITY VS TIME	B- 120
116	PASSENGER LOWER SPINE (Y) ACCELERATION VS TIME	B- 121
117	PASSENGER LOWER SPINE (Y) VELOCITY VS TIME	B- 122
118	PASSENGER PELVIC (Y) ACCELERATION VS TIME	B- 123
119	PASSENGER PELVIC (Y) VELOCITY VS TIME	B- 124

DRIVER & PASSENGER DUMMY INSTRUMENTATION PLOTS (REDUNDANT)
 ACCELERATION DATA - FIR FILTERED

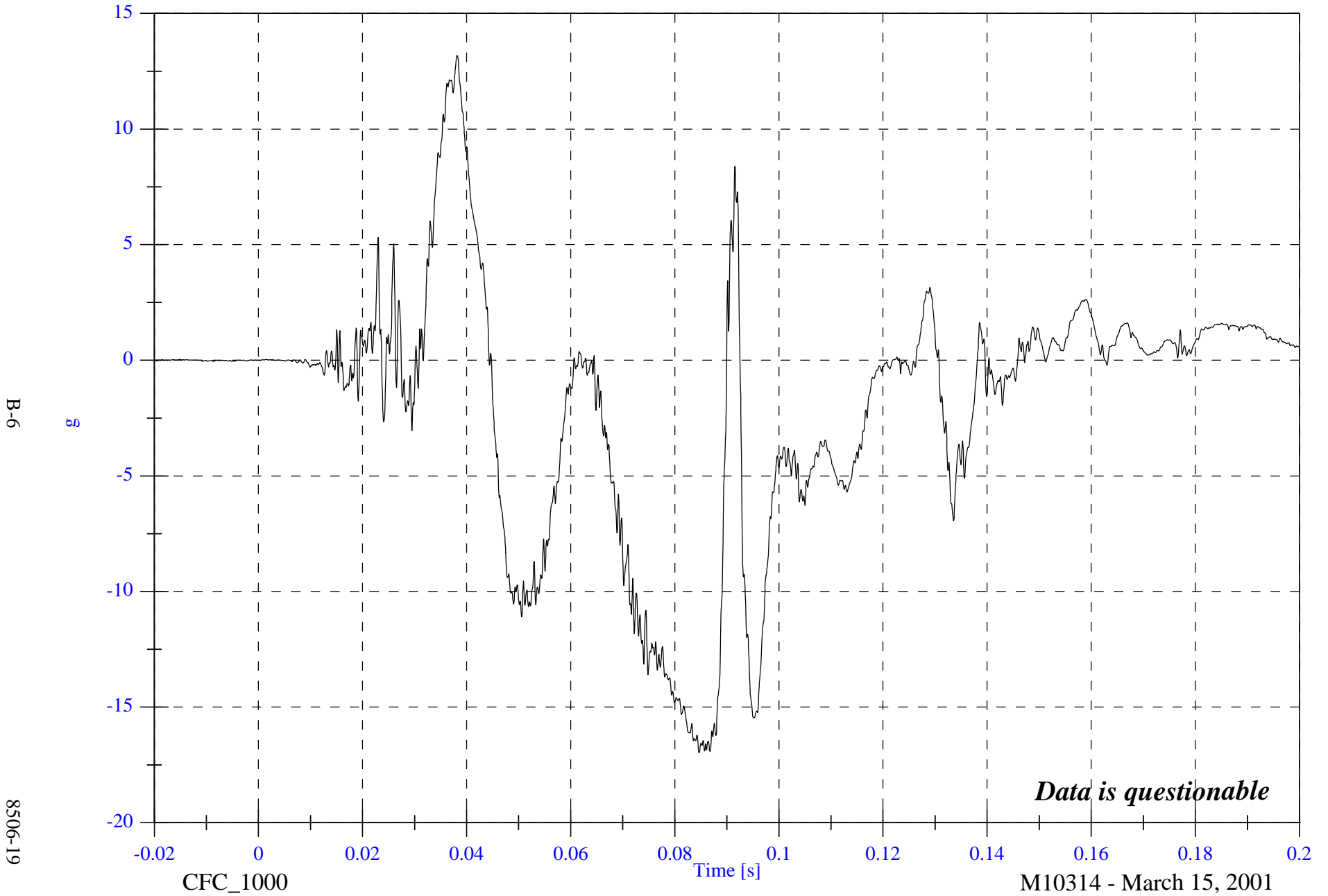
<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
120	DRIVER UPPER RIB (Y) ACCELERATION VS TIME	B- 125
121	DRIVER LOWER RIB (Y) ACCELERATION VS TIME	B- 126
122	DRIVER LOWER SPINE (Y) ACCELERATION VS TIME	B- 127
123	DRIVER PELVIC (Y) ACCELERATION VS TIME	B- 128
124	PASSENGER UPPER RIB (Y) ACCELERATION VS TIME	B- 129
125	PASSENGER LOWER RIB (Y) ACCELERATION VS TIME	B- 130
126	PASSENGER LOWER SPINE (Y) ACCELERATION VS TIME	B- 131
127	PASSENGER PELVIC (Y) ACCELERATION VS TIME	B- 132

SNCAP Test 19 - 2001 Chevrolet Impala

Max: 13.2 [g] at 0.038 [s]

P1 Head x

Min: -17.0 [g] at 0.085 [s]



B-6

8506-19

CFC_1000

M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

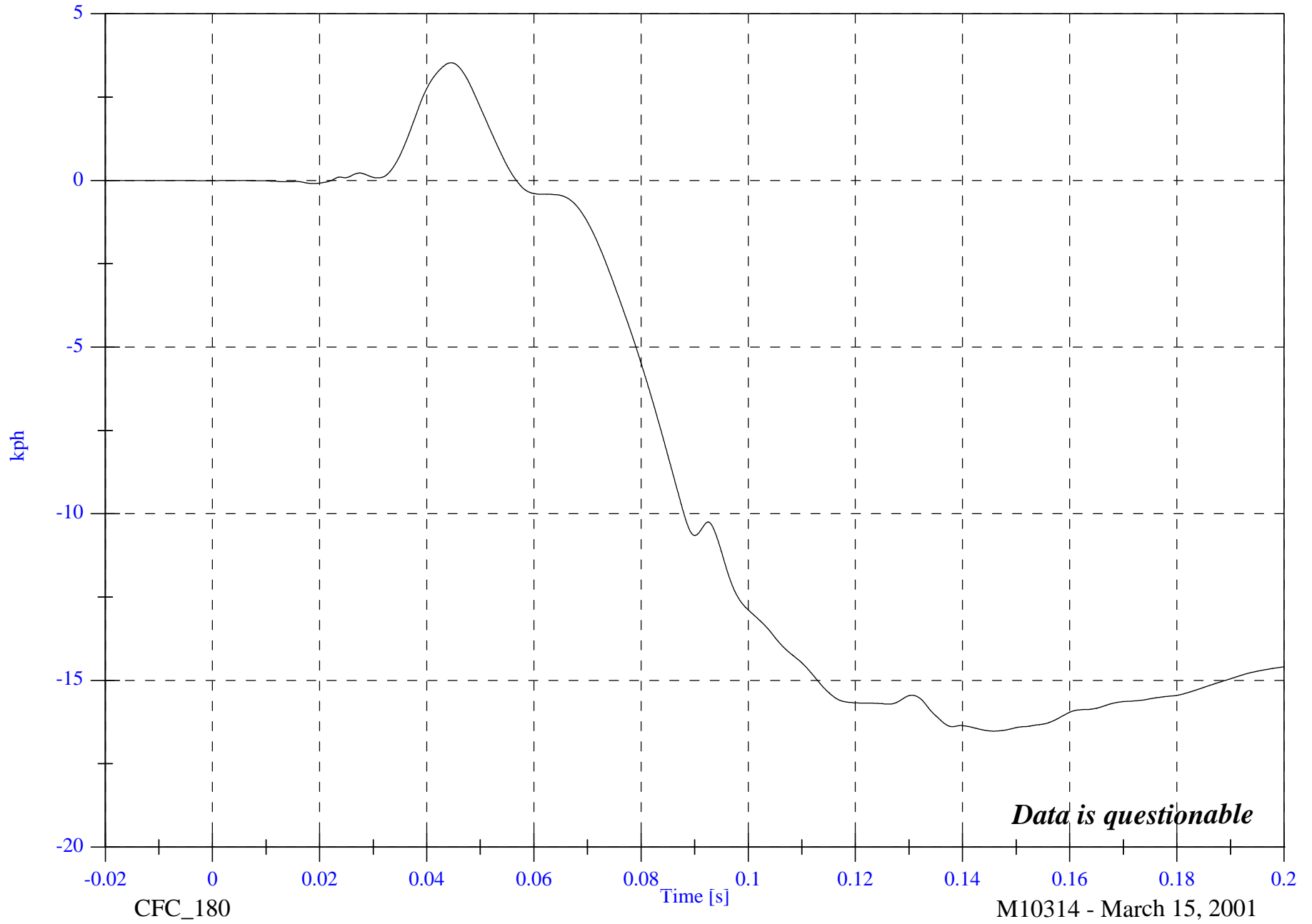
P1 Head x Velocity

Max: 3.5 [kph] at 0.045 [s]

Min: -16.5 [kph] at 0.146 [s]

B-7

8506-19



Data is questionable

CFC_180

Time [s]

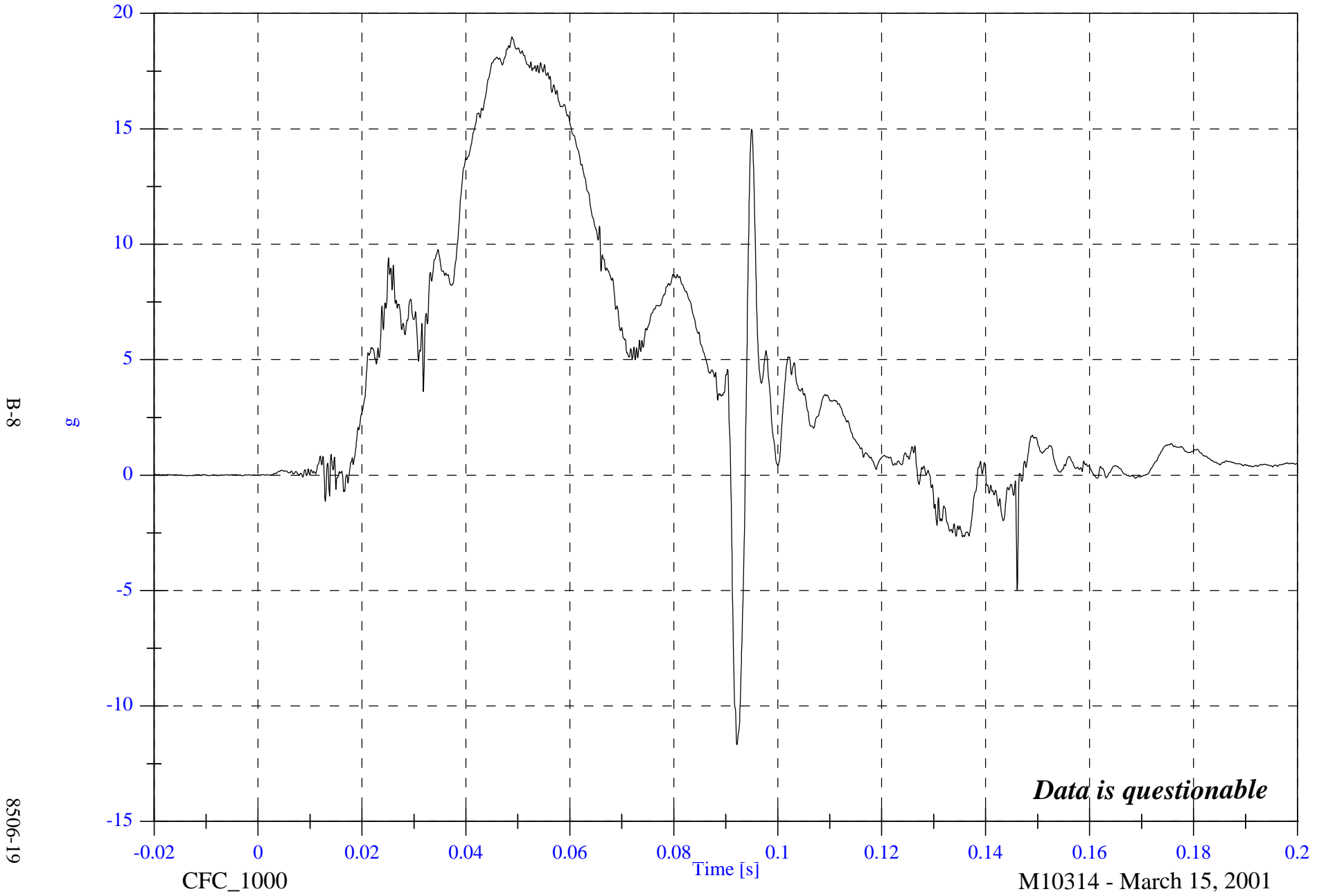
M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

Max: 19.0 [g] at 0.049 [s]

Min: -11.7 [g] at 0.092 [s]

P1 Head y



B-8

g

8506-19

CFC_1000

Time [s]

Data is questionable

M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

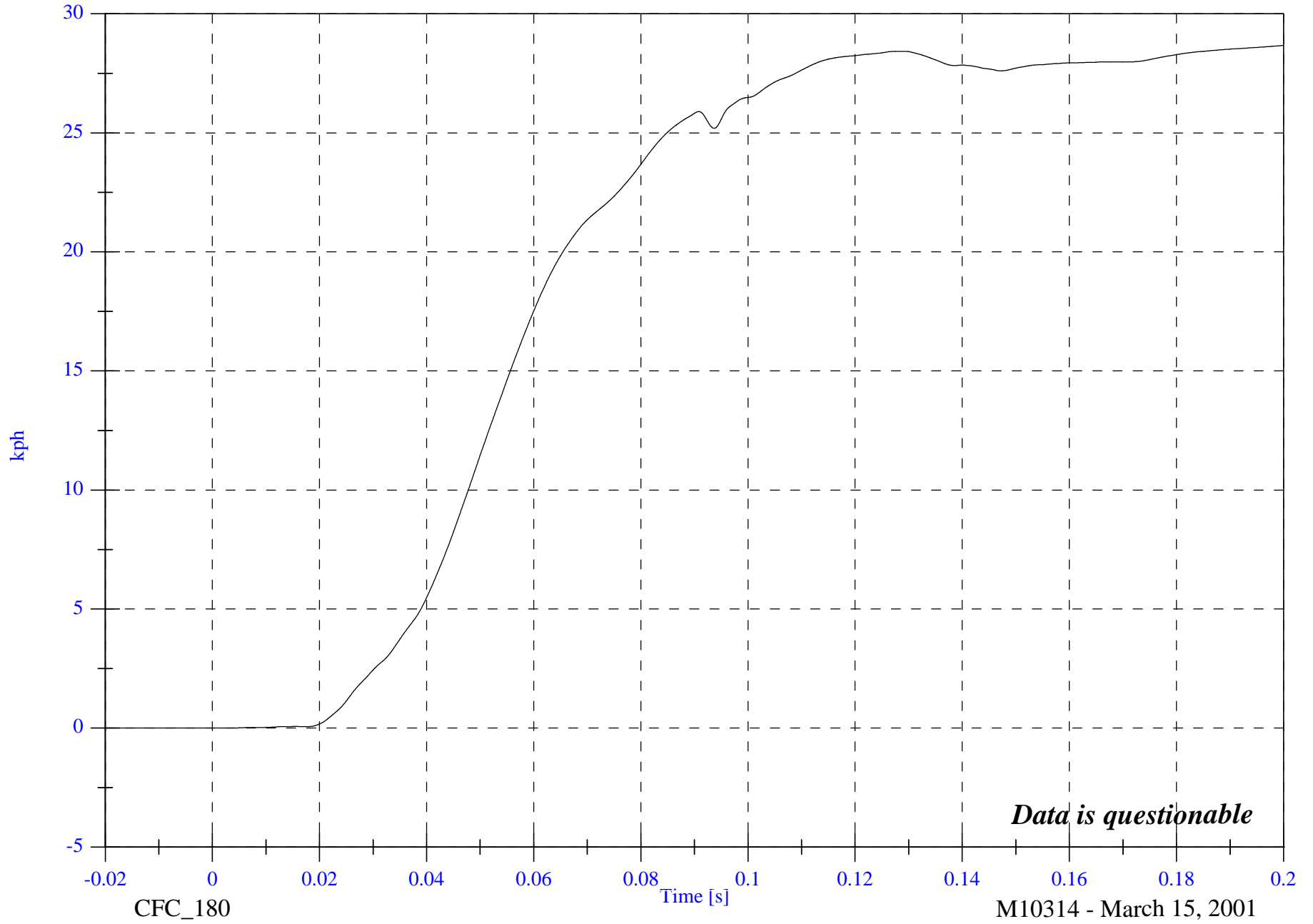
P1 Head y Velocity

Max: 28.7 [kph] at 0.200 [s]

Min: -0.0 [kph] at -0.020 [s]

B-9

8506-19



Data is questionable

M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

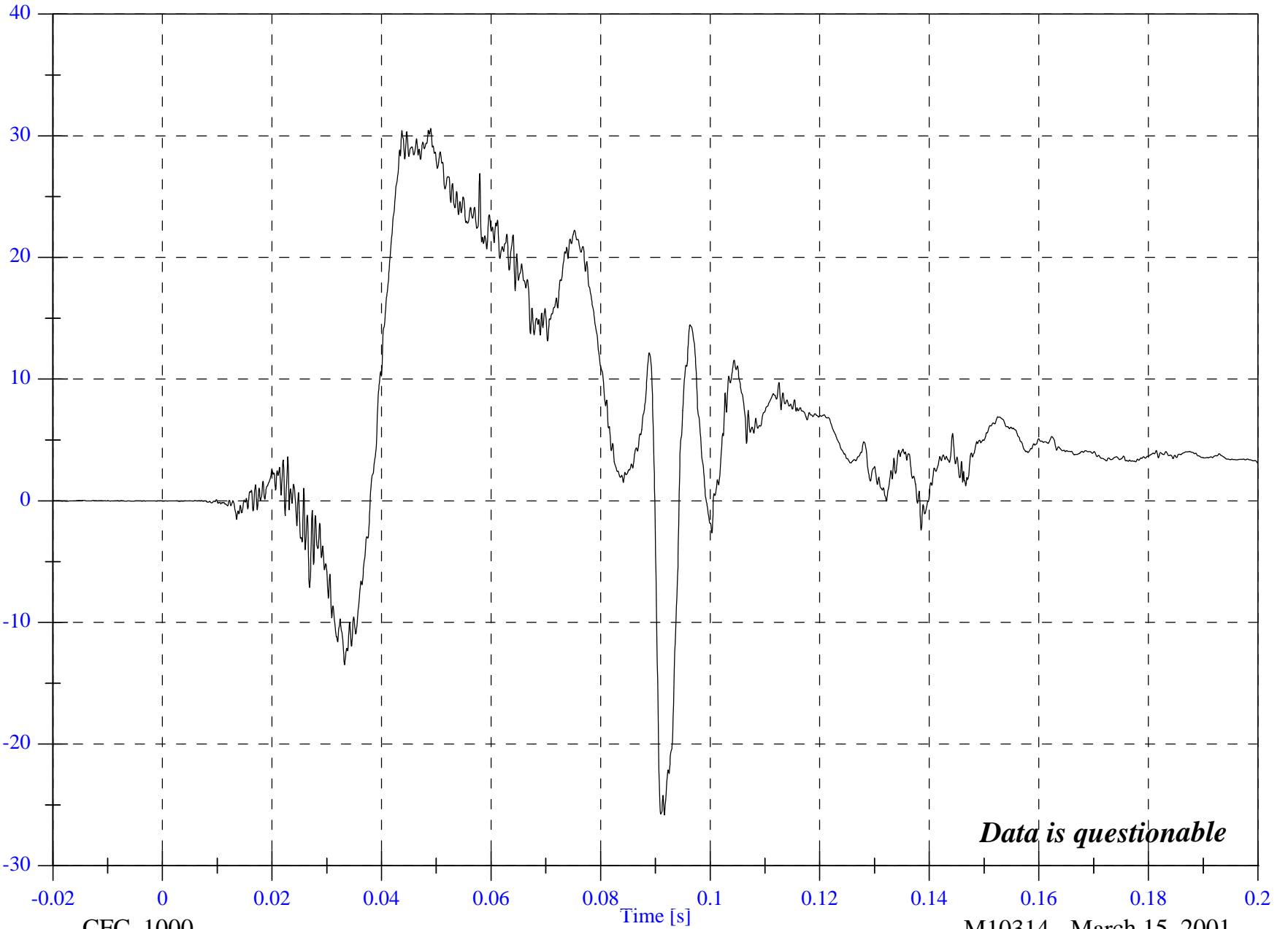
P1 Head z

Max: 30.6 [g] at 0.049 [s]

Min: -25.8 [g] at 0.092 [s]

B-10

g



Data is questionable

8506-19

CFC_1000

M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

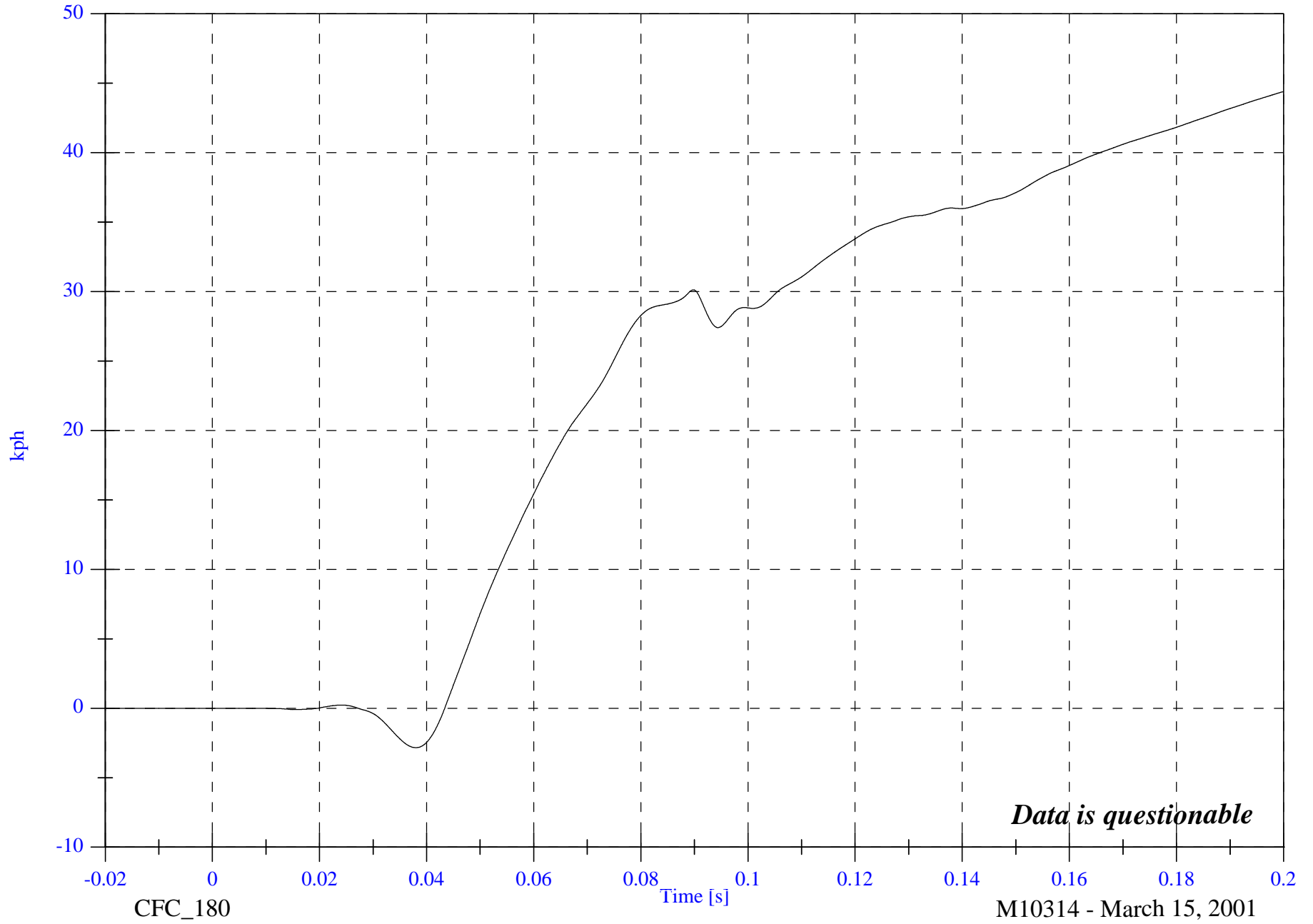
P1 Head z Velocity

Max: 44.4 [kph] at 0.200 [s]

Min: -2.8 [kph] at 0.038 [s]

B-11

8506-19



Data is questionable

CFC_180

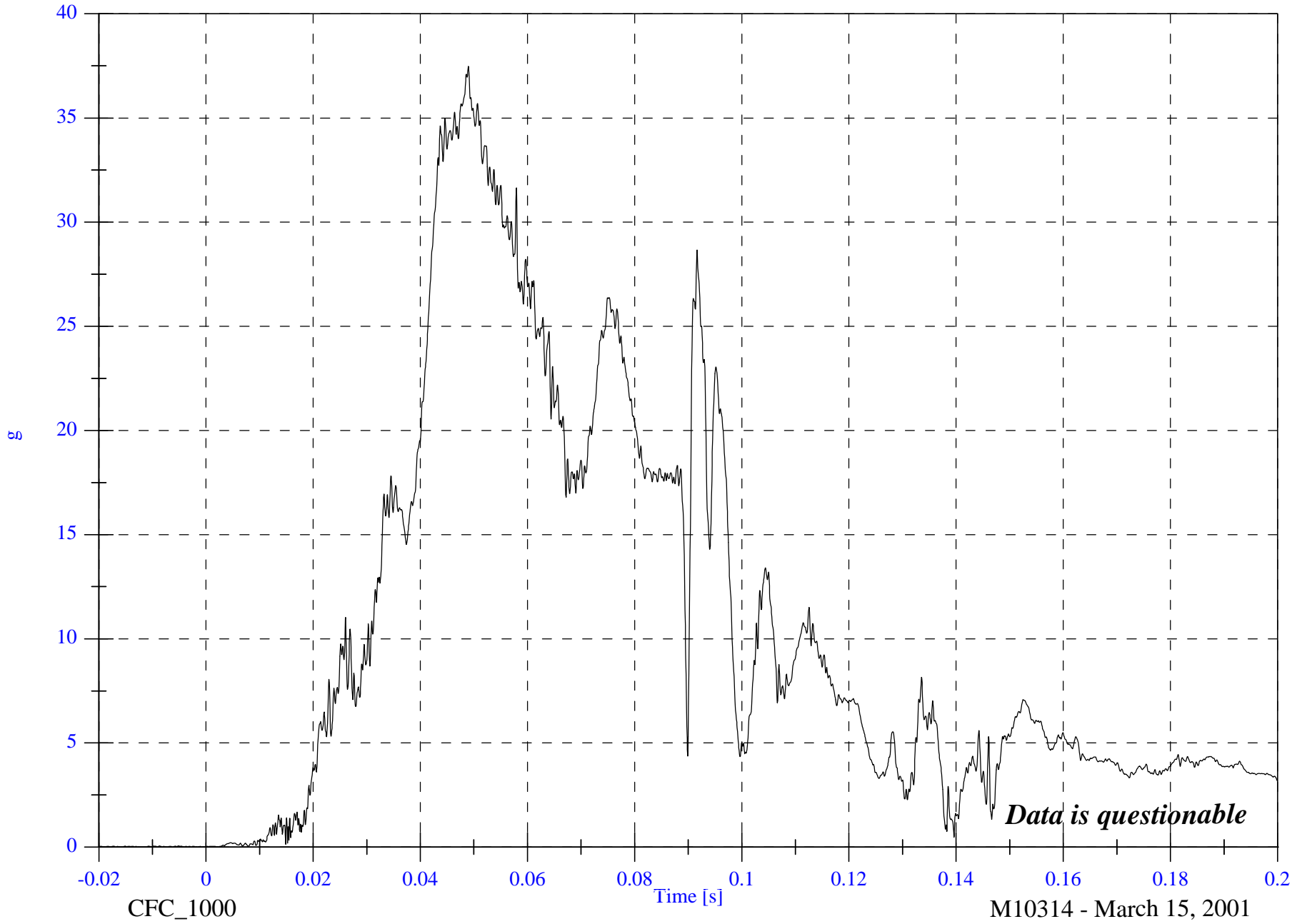
M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

P1 Head Resultant

Max: 37.5 [g] at 0.049 [s]

Min: 0.0 [g] at -0.003 [s]



B-12

8506-19

CFC_1000

Time [s]

M10314 - March 15, 2001

Data is questionable

SNCAP Test 19 - 2001 Chevrolet Impala

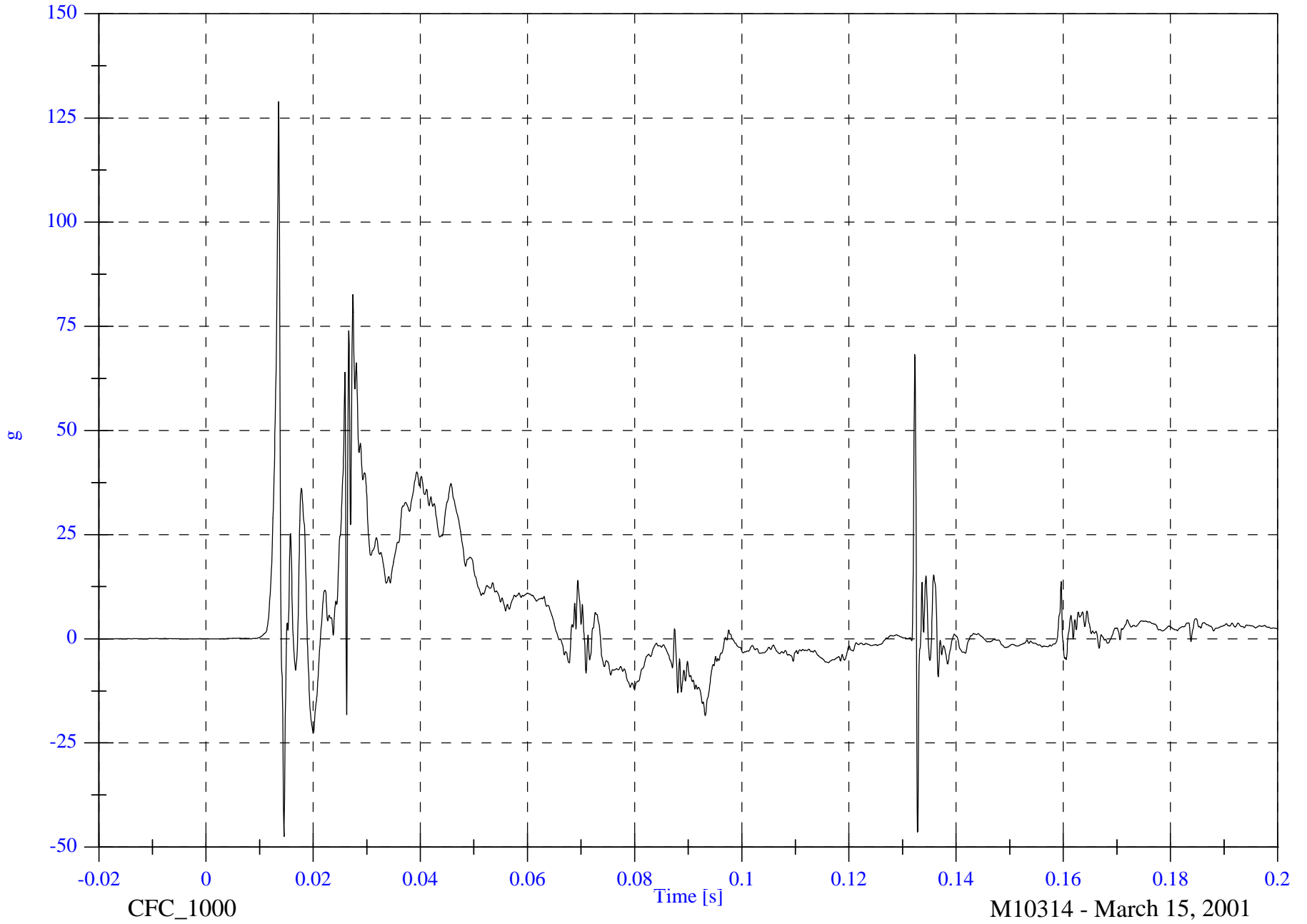
P1 Upper Rib y

Max: 128.9 [g] at 0.014 [s]

Min: -47.5 [g] at 0.015 [s]

B-13

8506-19



CFC_1000

M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

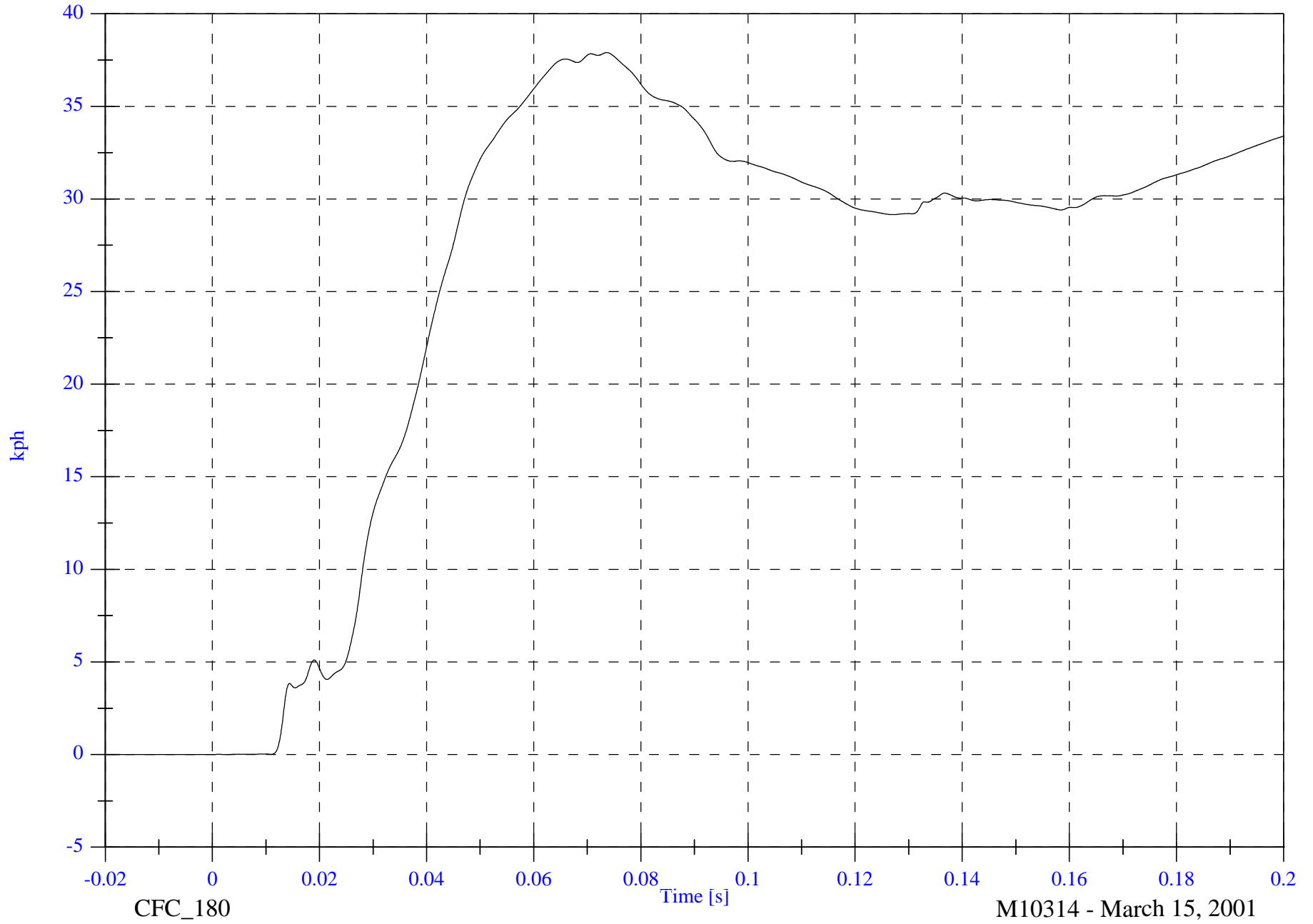
Max: 37.9 [kph] at 0.074 [s]

P1 Upper Rib y Velocity

Min: -0.0 [kph] at -0.017 [s]

B-14

8506-19



CFC_180

M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

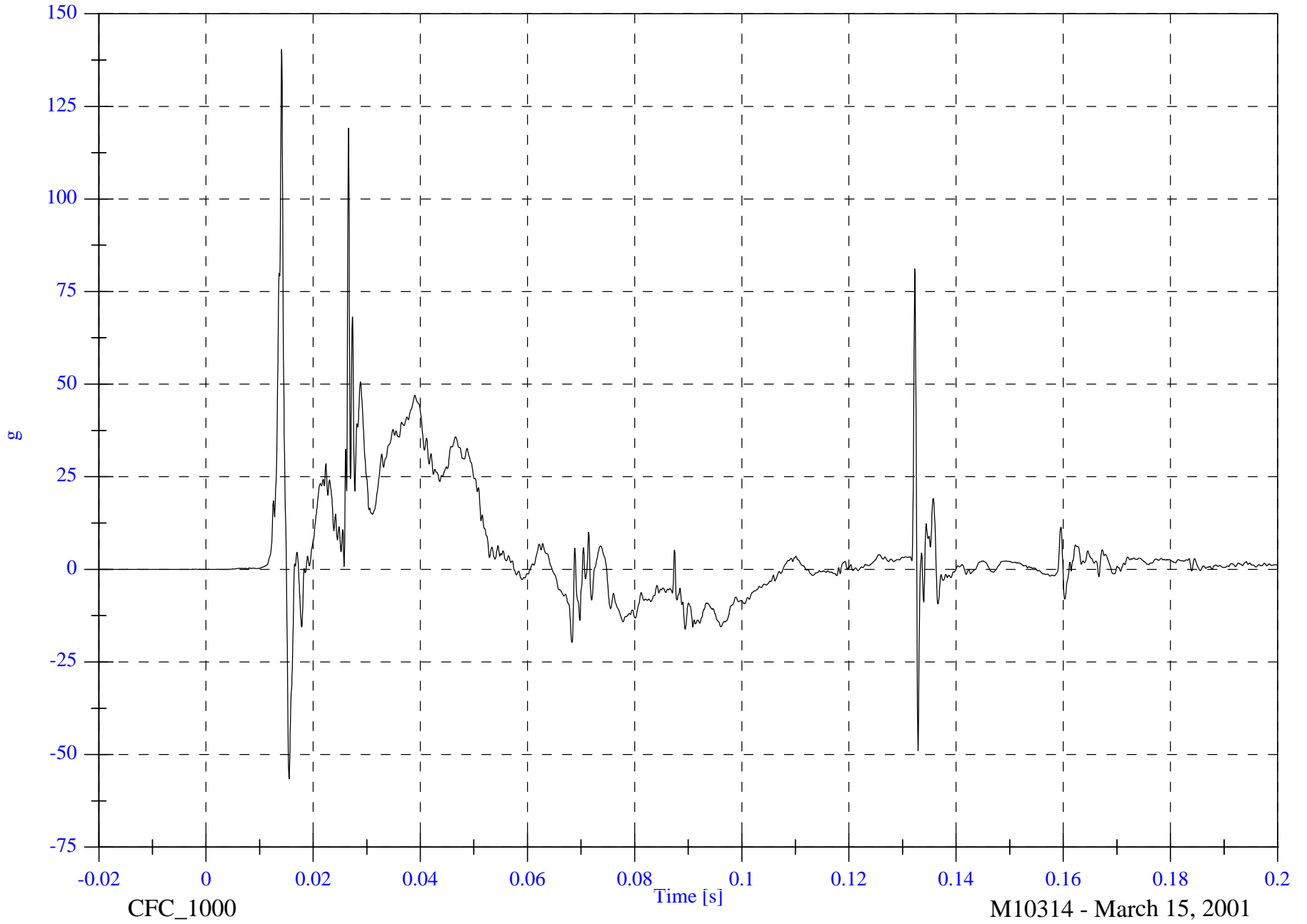
P1 Lower Rib y

Max: 140.4 [g] at 0.014 [s]

Min: -56.6 [g] at 0.016 [s]

B-15

8506-19



SNCAP Test 19 - 2001 Chevrolet Impala

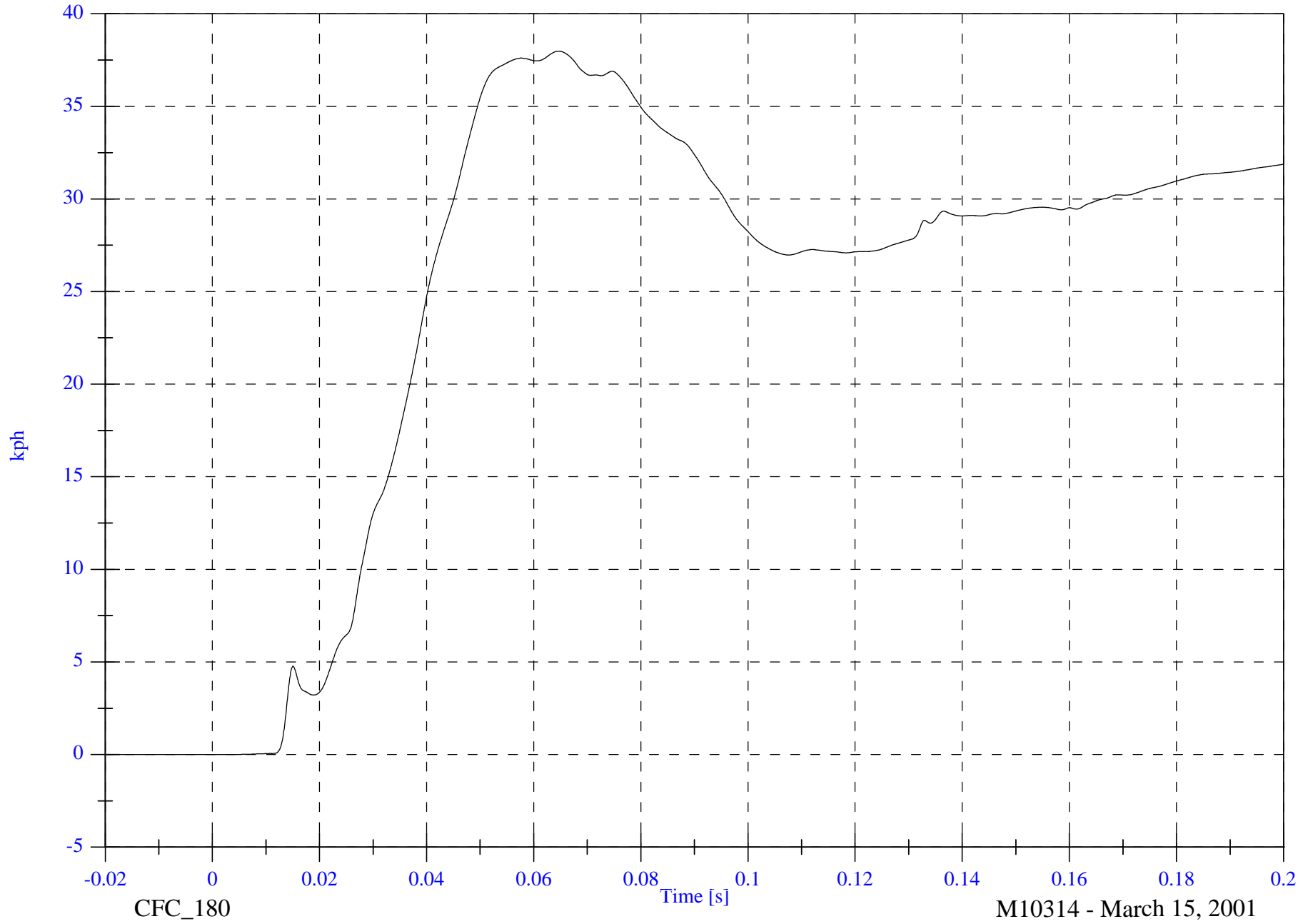
Max: 38.0 [kph] at 0.065 [s]

P1 Lower Rib y Velocity

Min: -0.0 [kph] at -0.016 [s]

B-16

8506-19



CFC_180

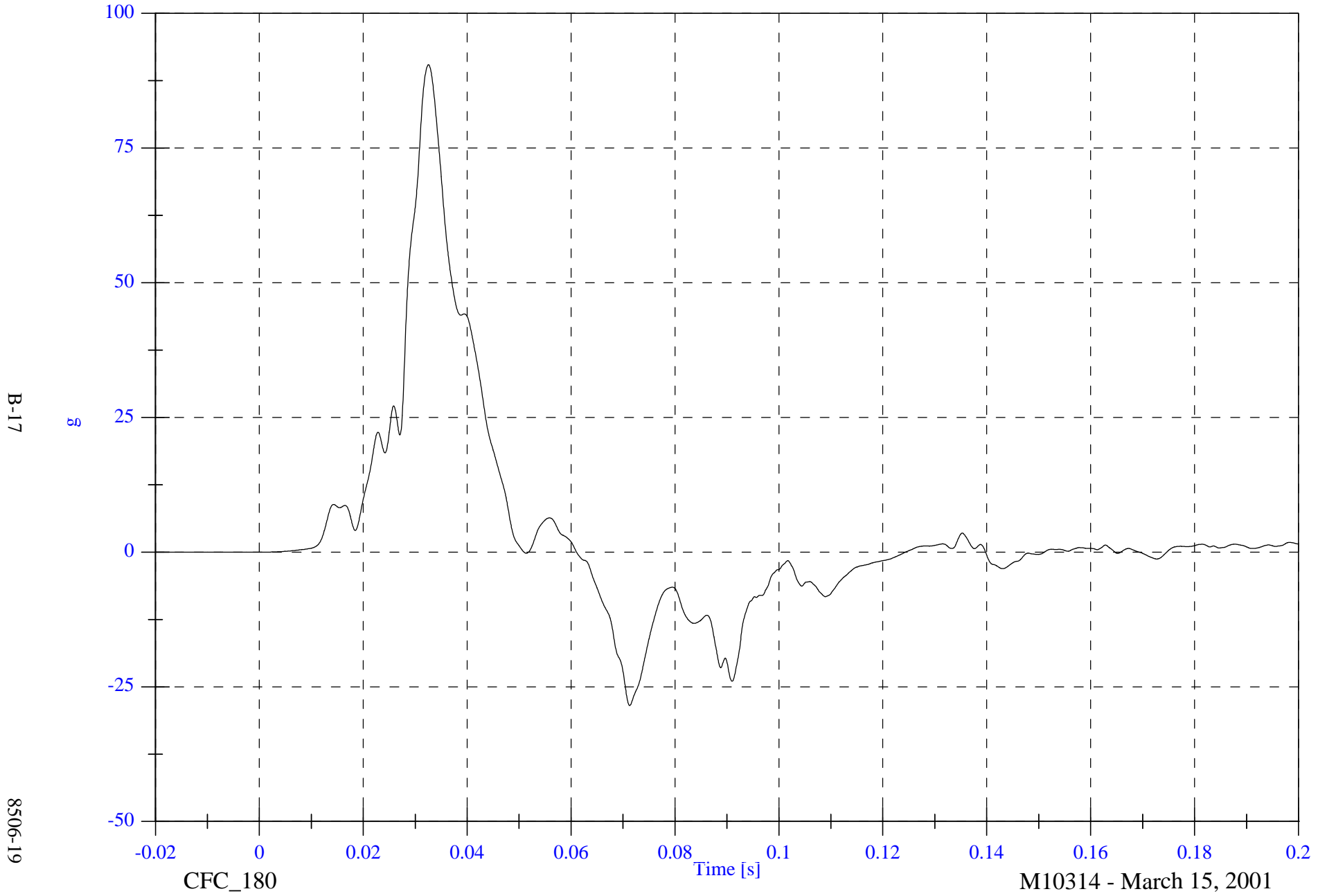
M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

P1 Lower Spine y

Max: 90.5 [g] at 0.033 [s]

Min: -28.5 [g] at 0.071 [s]



B-17

8506-19

CFC_180

Time [s]

M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

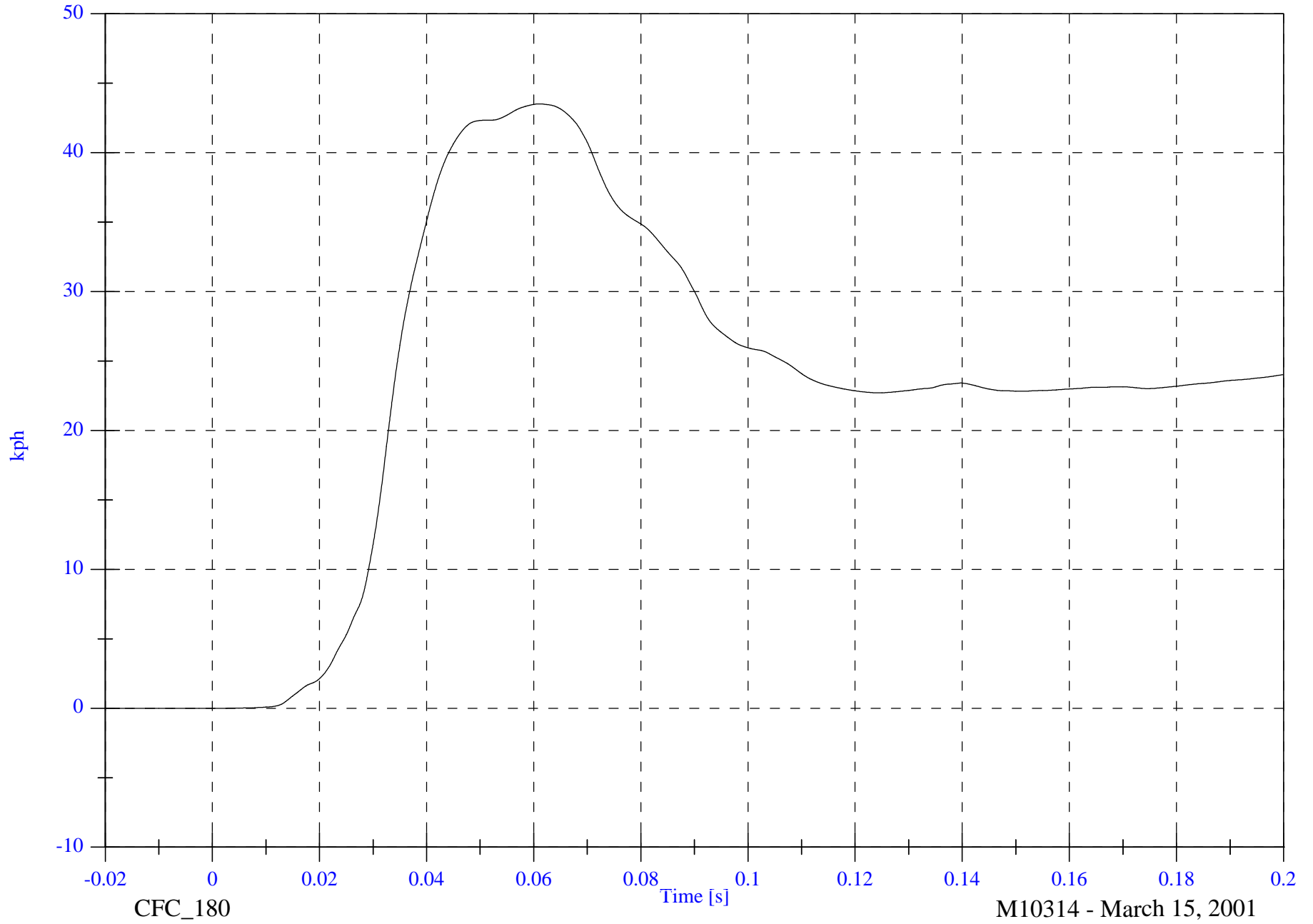
Max: 43.5 [kph] at 0.061 [s]

P1 Lower Spine y Velocity

Min: -0.0 [kph] at -0.020 [s]

B-18

8506-19

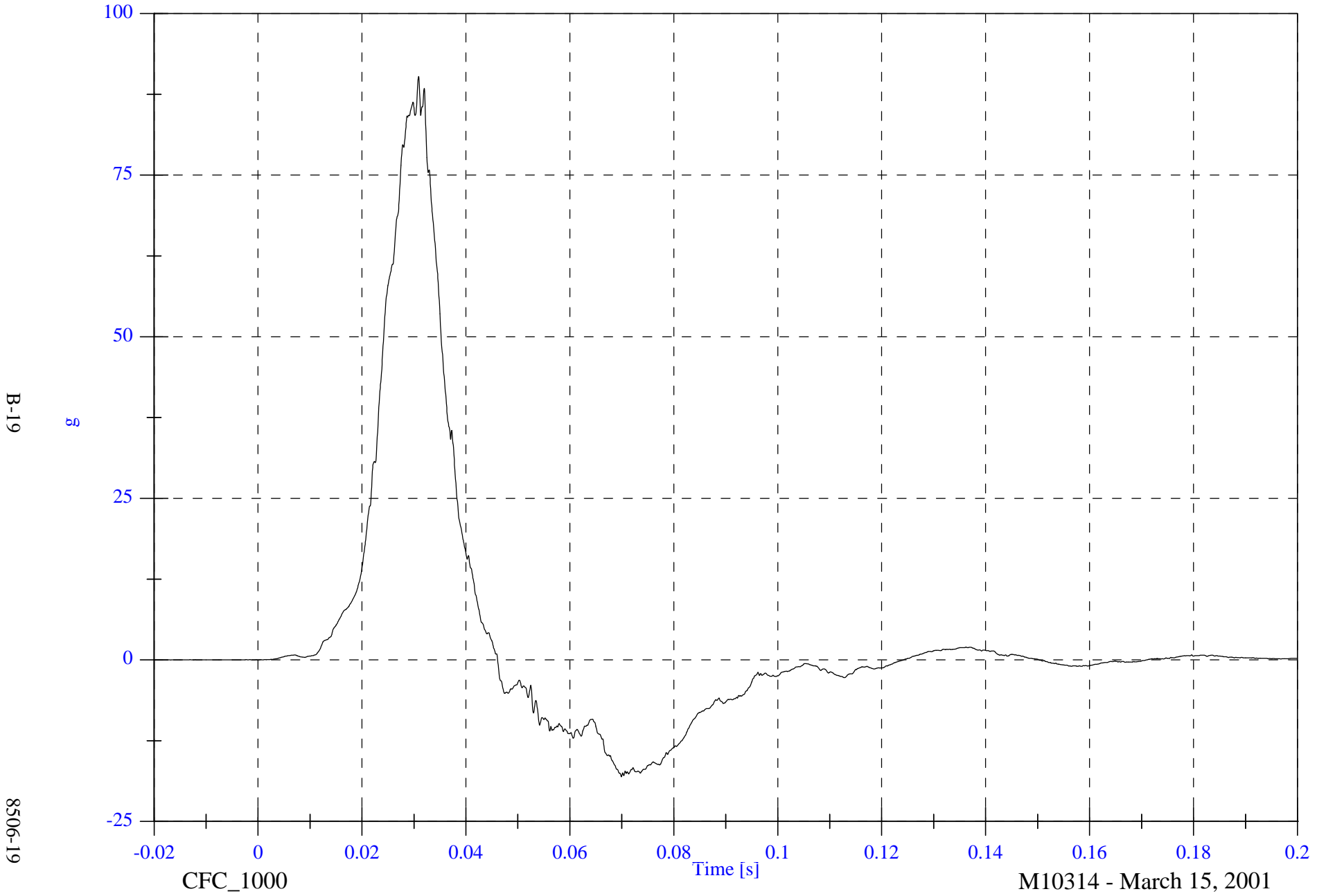


SNCAP Test 19 - 2001 Chevrolet Impala

Max: 90.3 [g] at 0.031 [s]

Min: -18.1 [g] at 0.070 [s]

P1 Pelvic y



B-19

8506-19

CFC_1000

Time [s]

M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

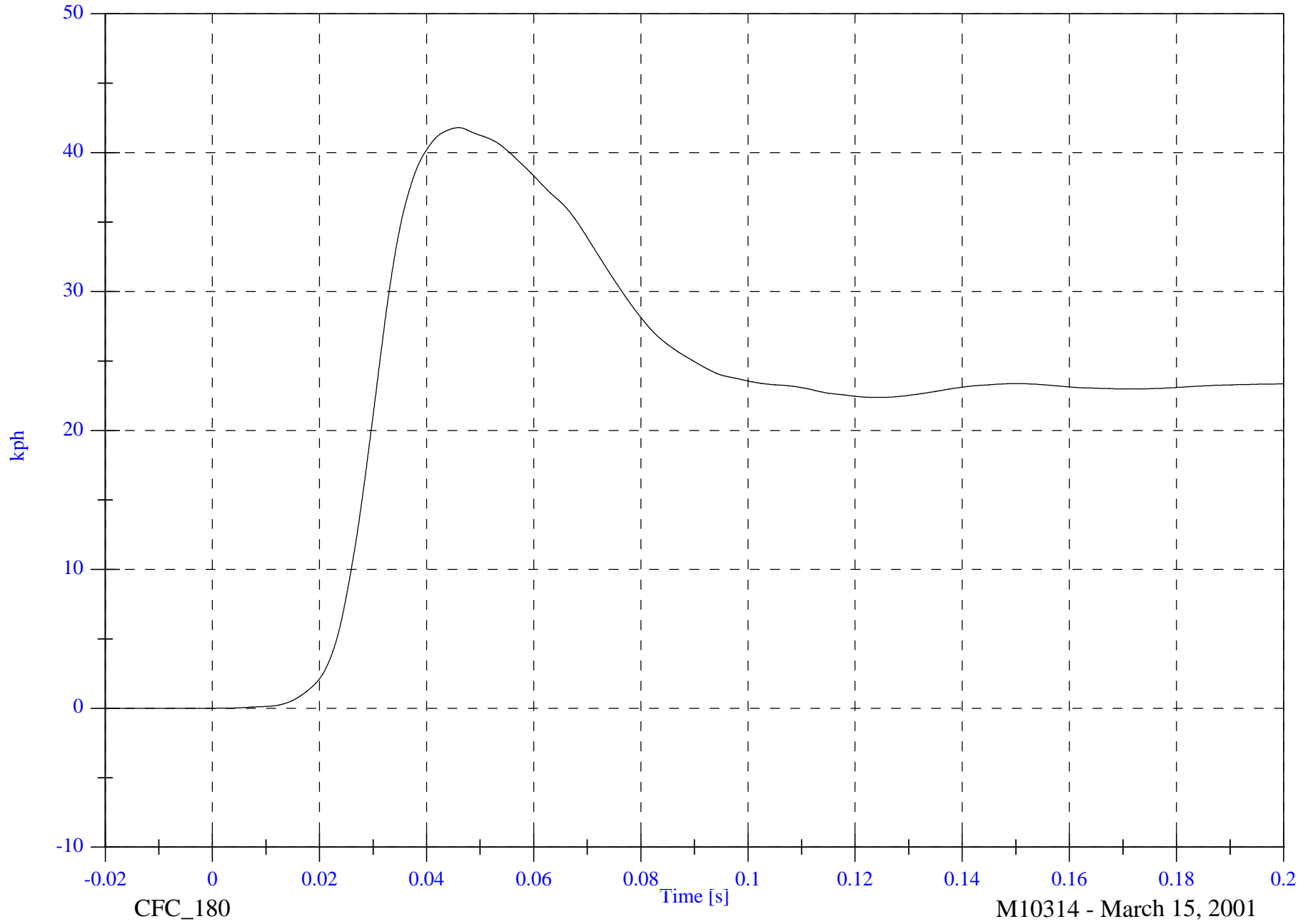
P1 Pelvic y Velocity

Max: 41.8 [kph] at 0.046 [s]

Min: -0.0 [kph] at -0.020 [s]

B-20

8506-19

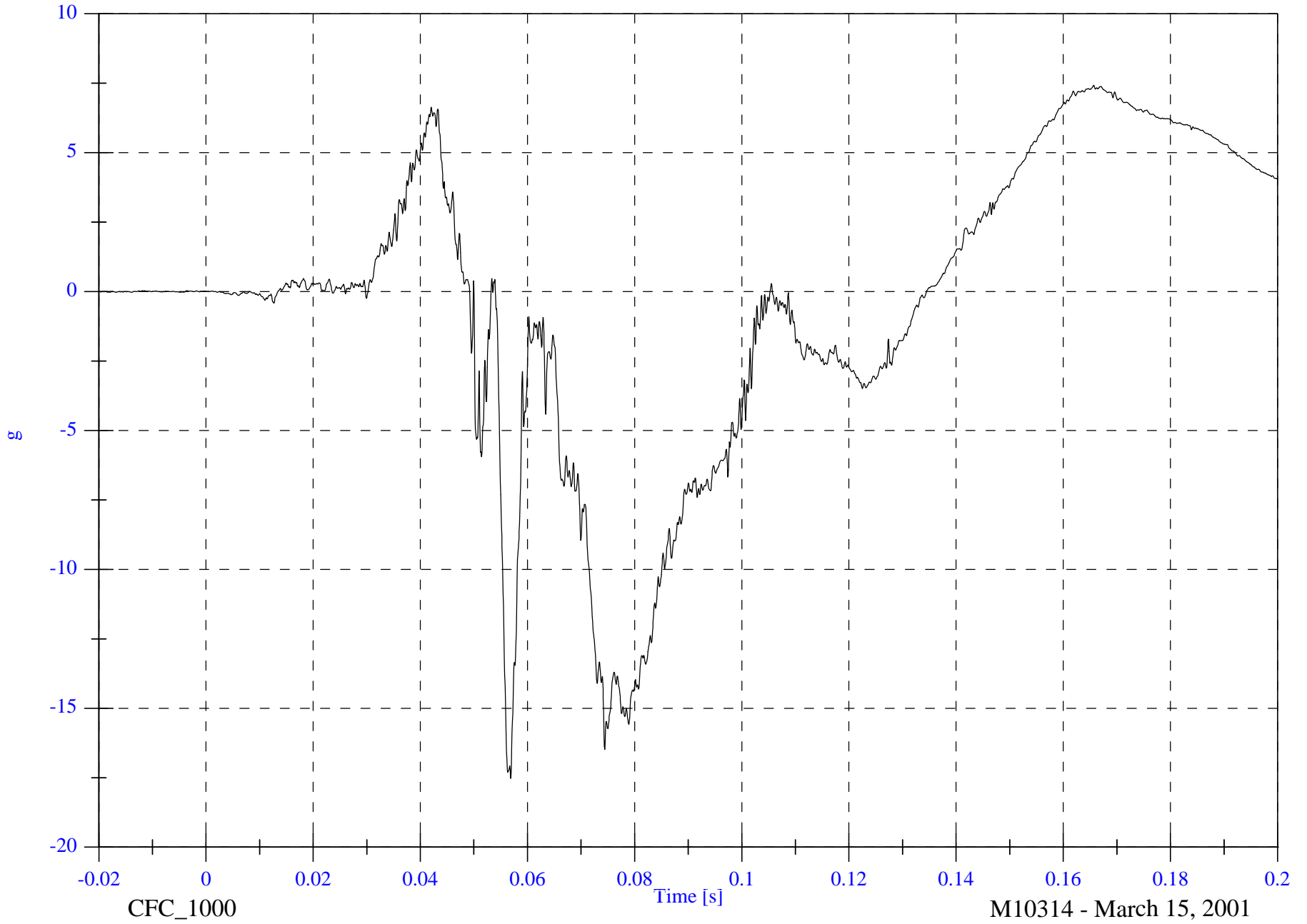


SNCAP Test 19 - 2001 Chevrolet Impala

P4 Head x

Max: 7.4 [g] at 0.166 [s]

Min: -17.5 [g] at 0.057 [s]



B-21

8506-19

CFC_1000

Time [s]

M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

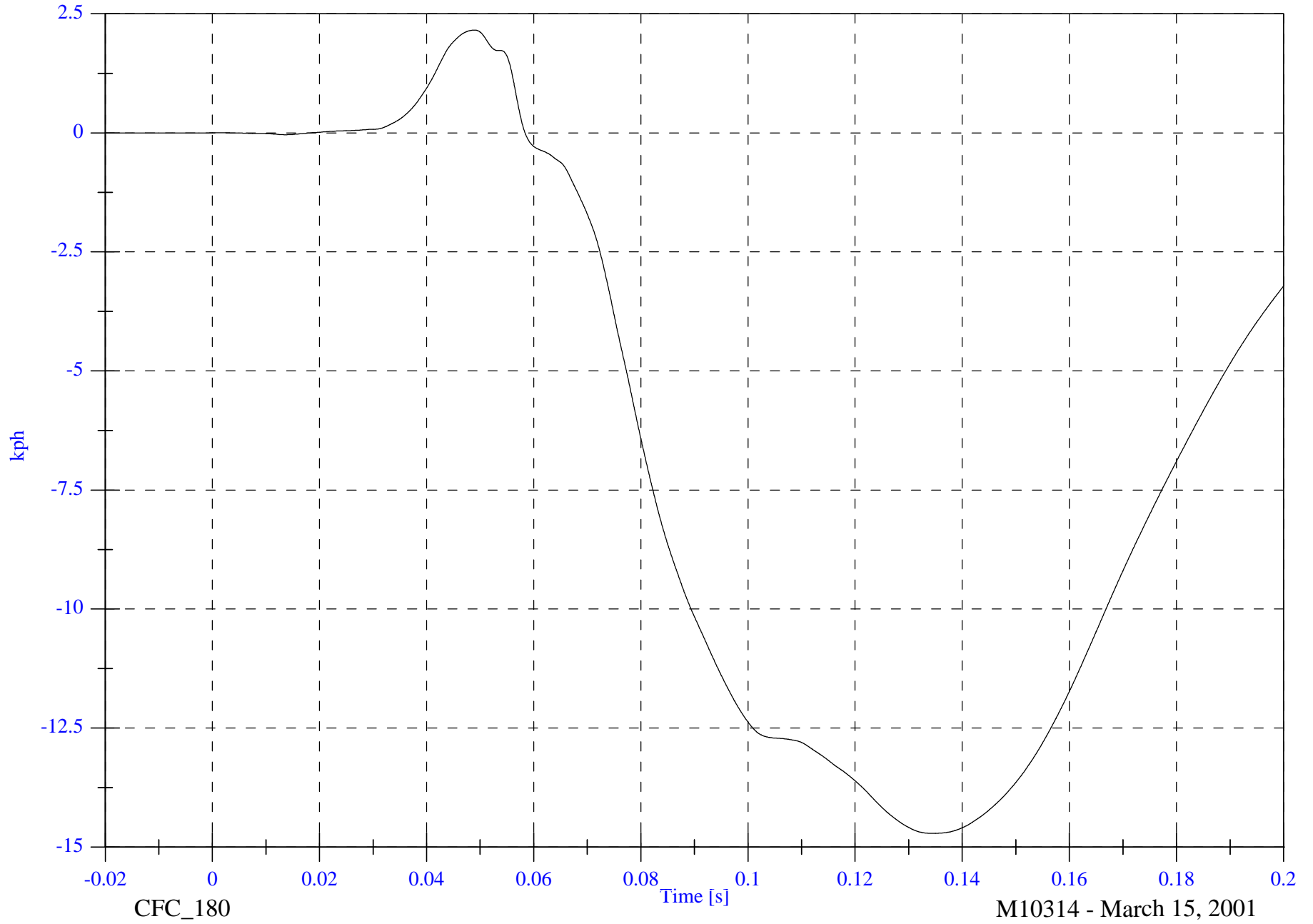
P4 Head x Velocity

Max: 2.2 [kph] at 0.049 [s]

Min: -14.7 [kph] at 0.135 [s]

B-22

8506-19

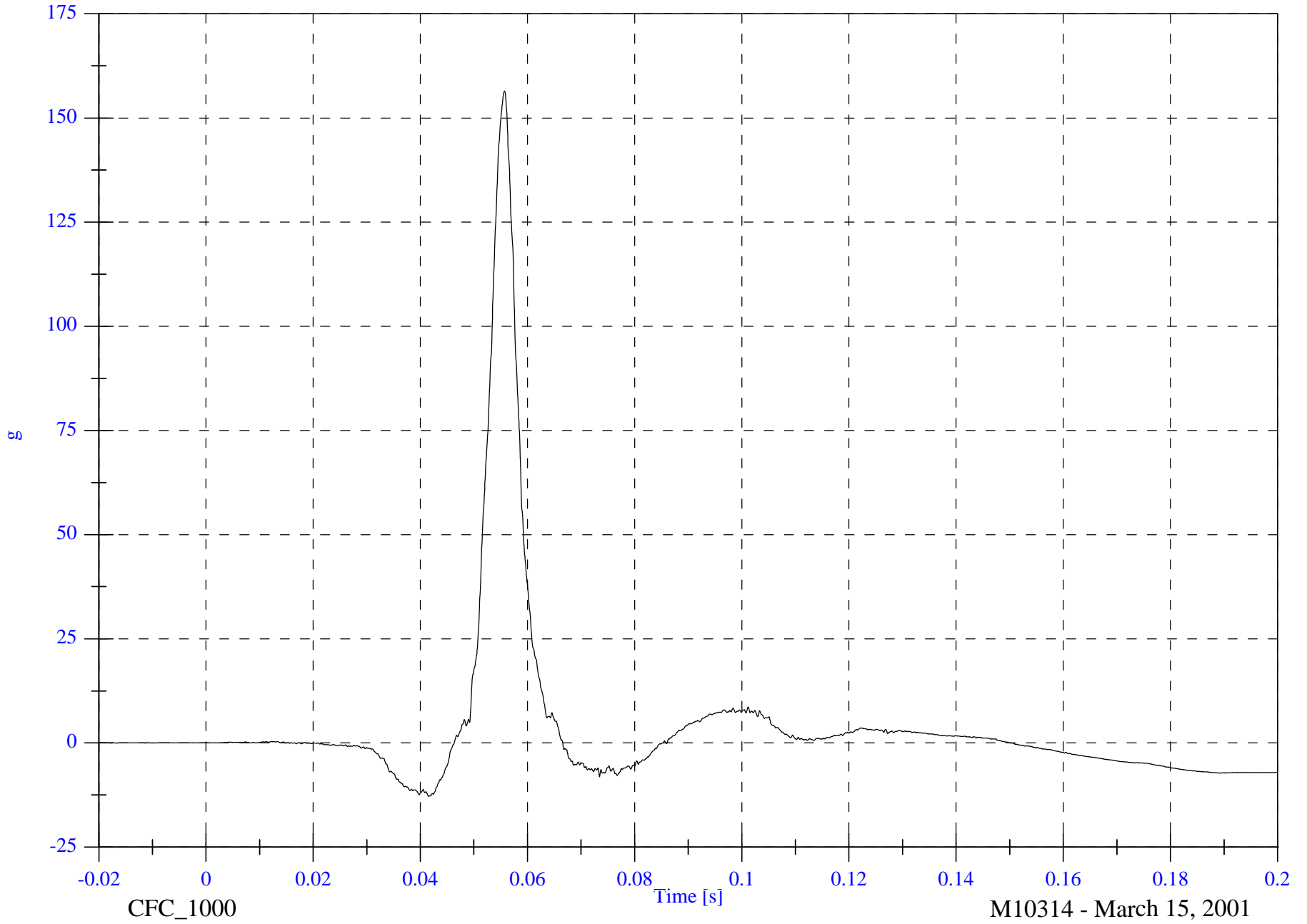


SNCAP Test 19 - 2001 Chevrolet Impala

P4 Head y

Max: 156.5 [g] at 0.056 [s]

Min: -12.8 [g] at 0.042 [s]



B-23

8506-19

CFC_1000

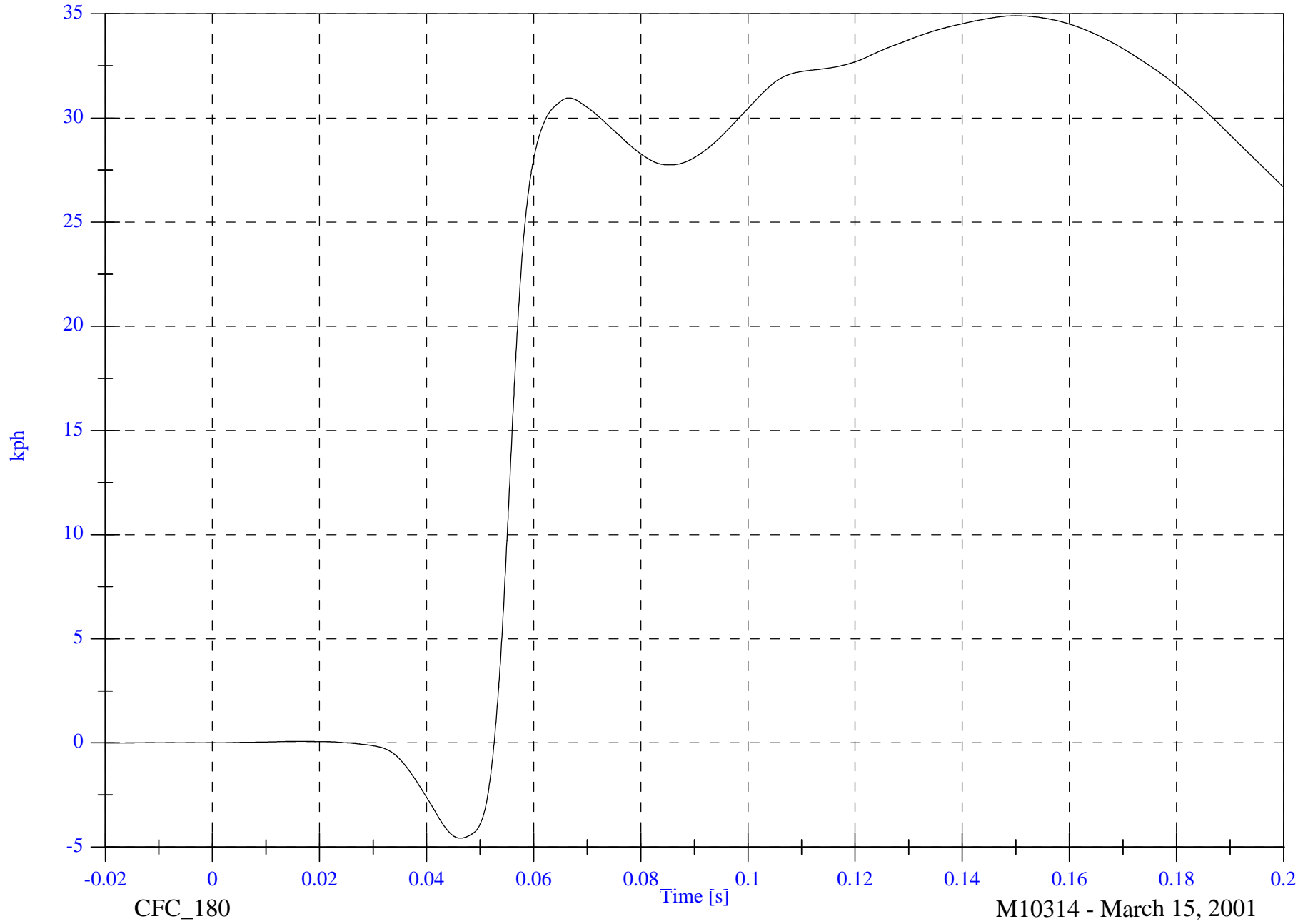
M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

P4 Head y Velocity

Max: 34.9 [kph] at 0.150 [s]

Min: -4.6 [kph] at 0.046 [s]



B-24

8506-19

CFC_180

M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

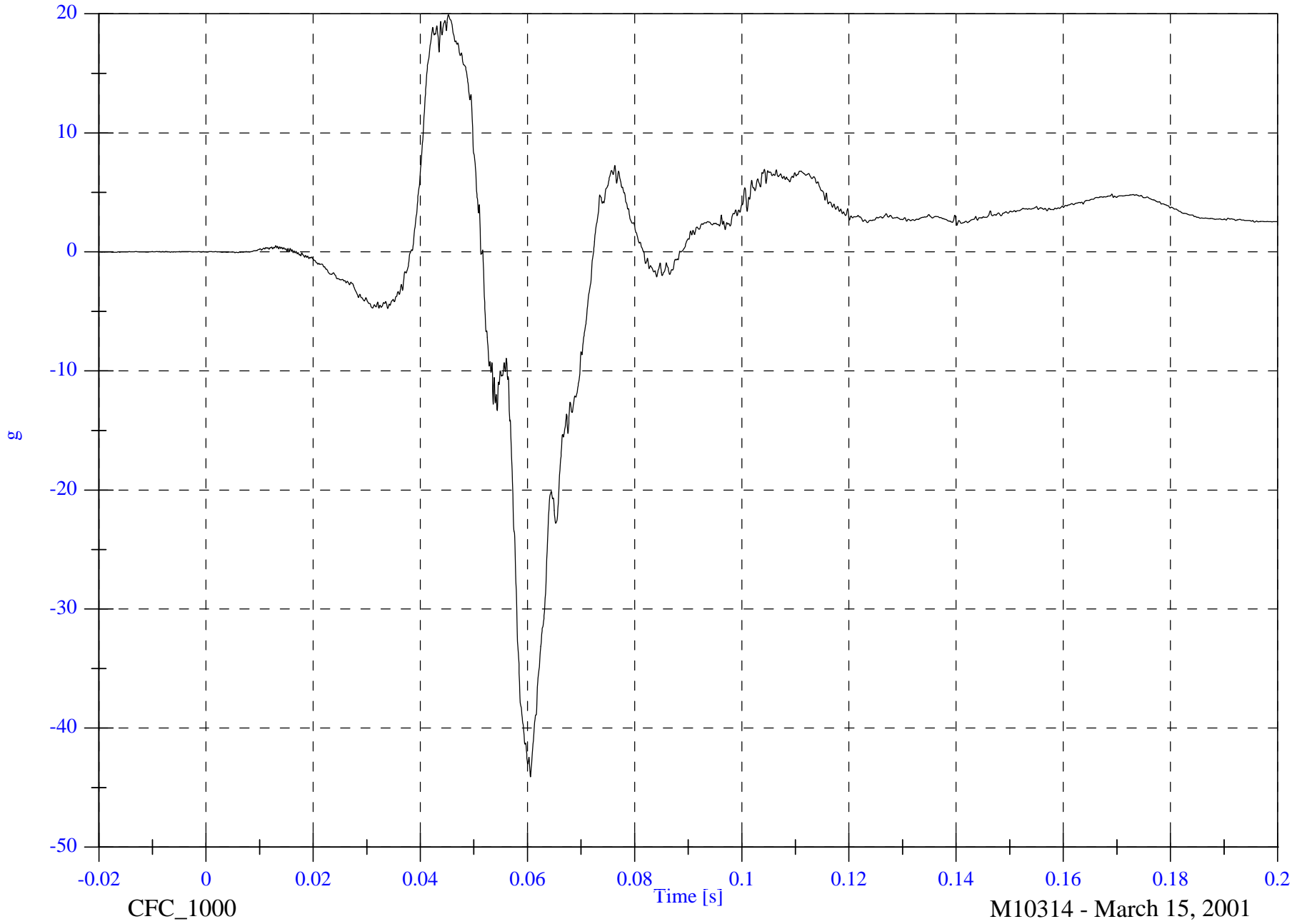
P4 Head z

Max: 19.9 [g] at 0.045 [s]

Min: -44.1 [g] at 0.061 [s]

B-25

8506-19



CFC_1000

M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

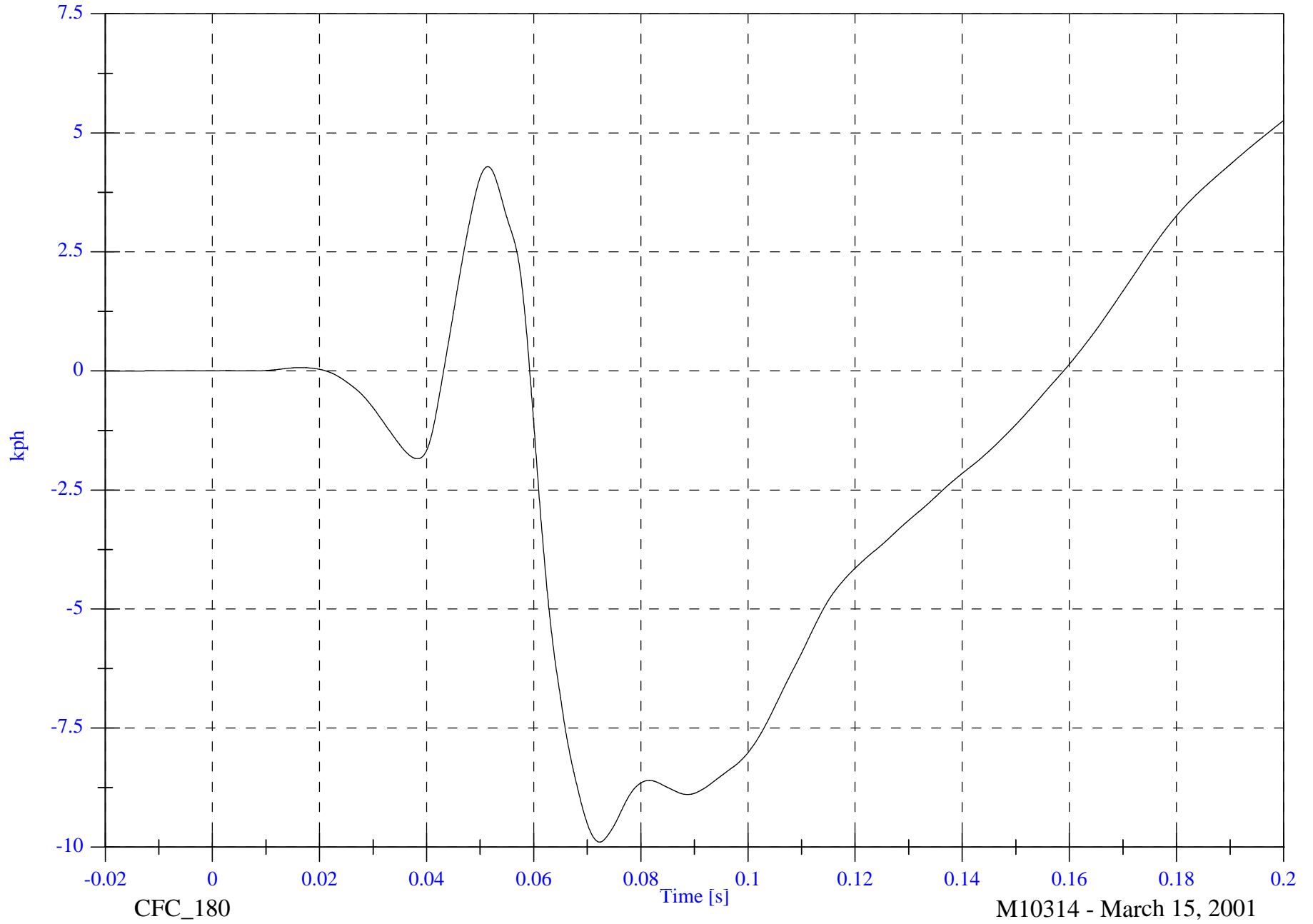
P4 Head z Velocity

Max: 5.3 [kph] at 0.200 [s]

Min: -9.9 [kph] at 0.072 [s]

B-26

8506-19



CFC_180

M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

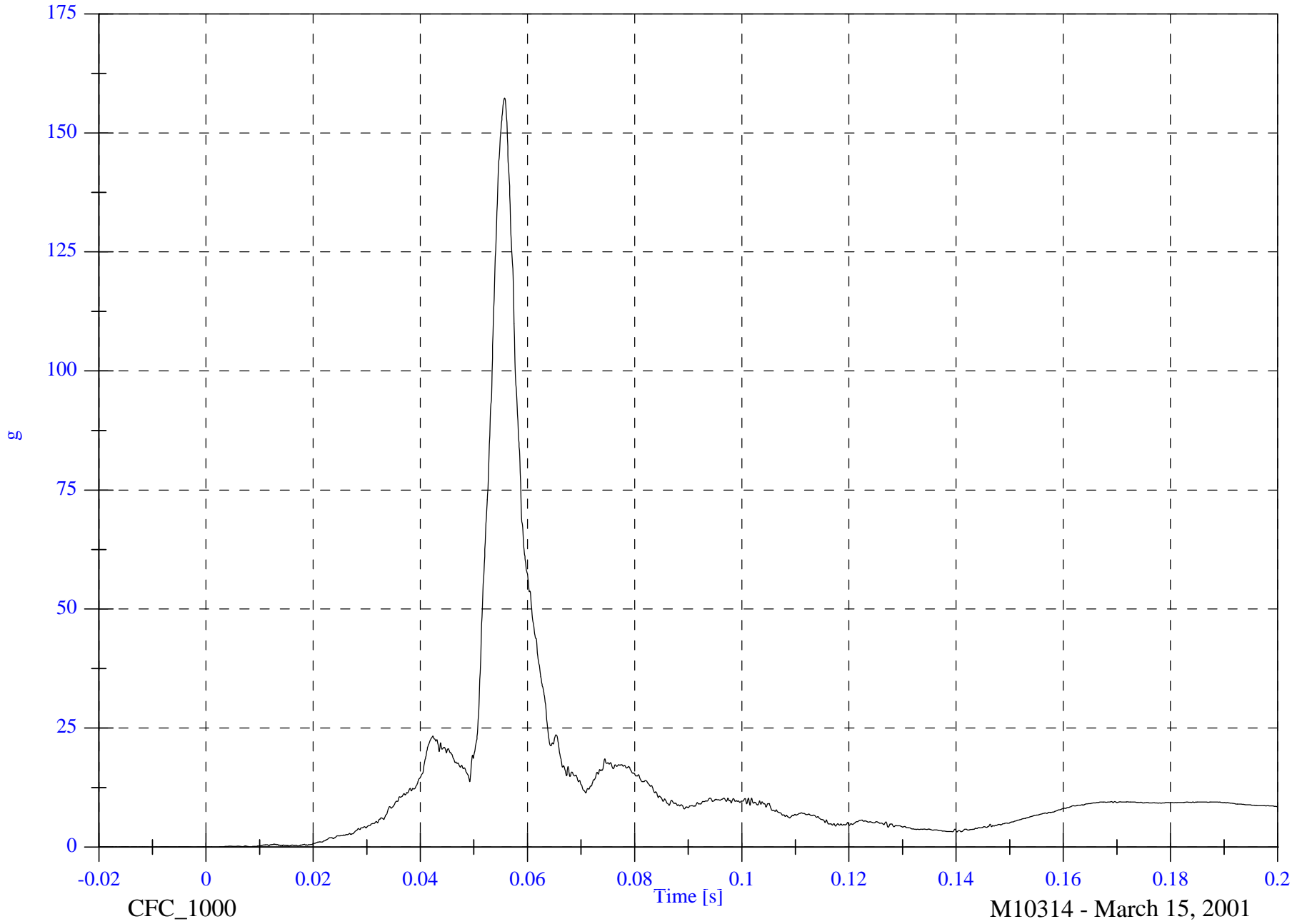
P4 Head Resultant

Max: 157.3 [g] at 0.056 [s]

Min: 0.0 [g] at -0.019 [s]

B-27

8506-19



SNCAP Test 19 - 2001 Chevrolet Impala

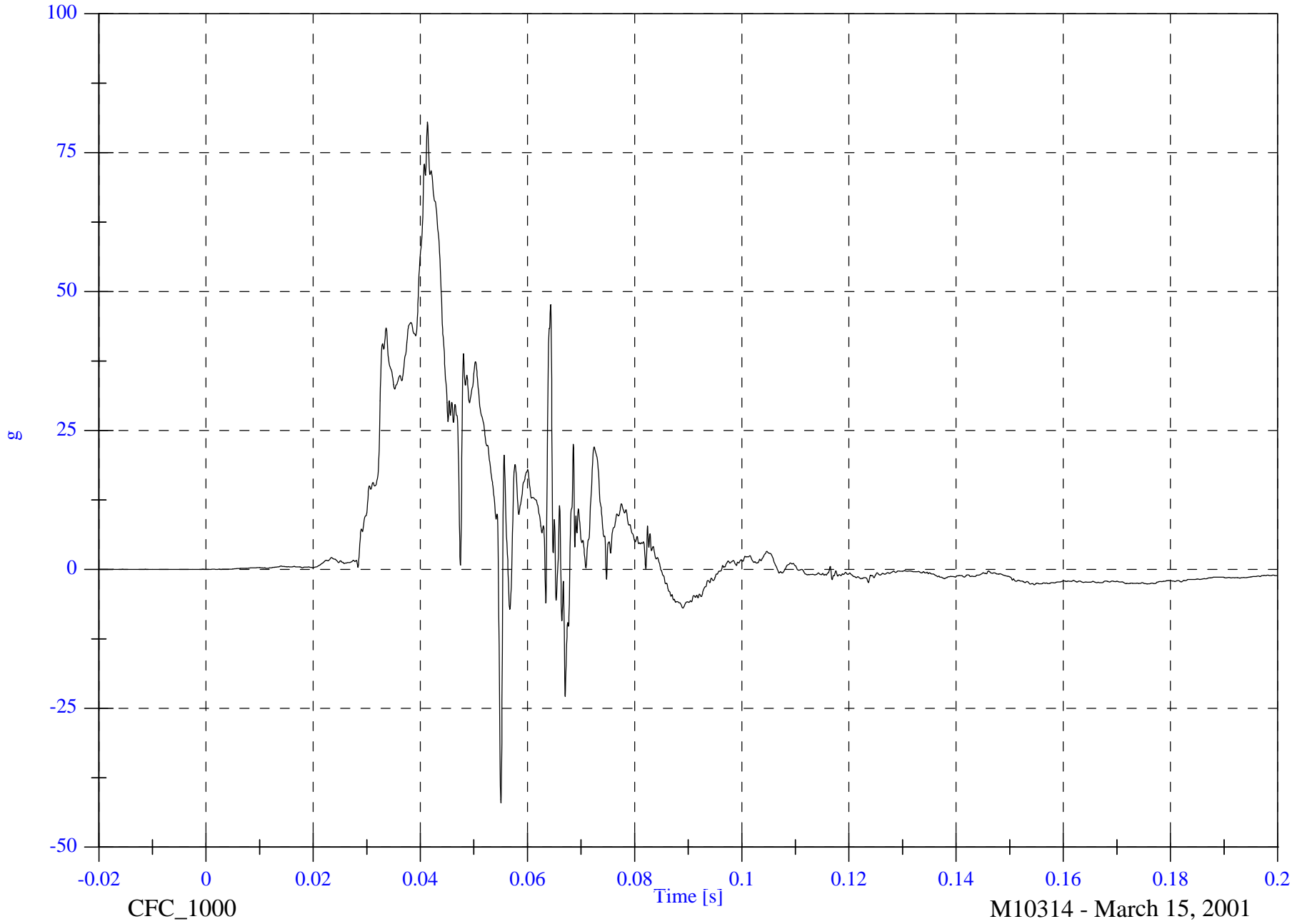
P4 Upper Rib y

Max: 80.6 [g] at 0.041 [s]

Min: -42.0 [g] at 0.055 [s]

B-28

8506-19



CFC_1000

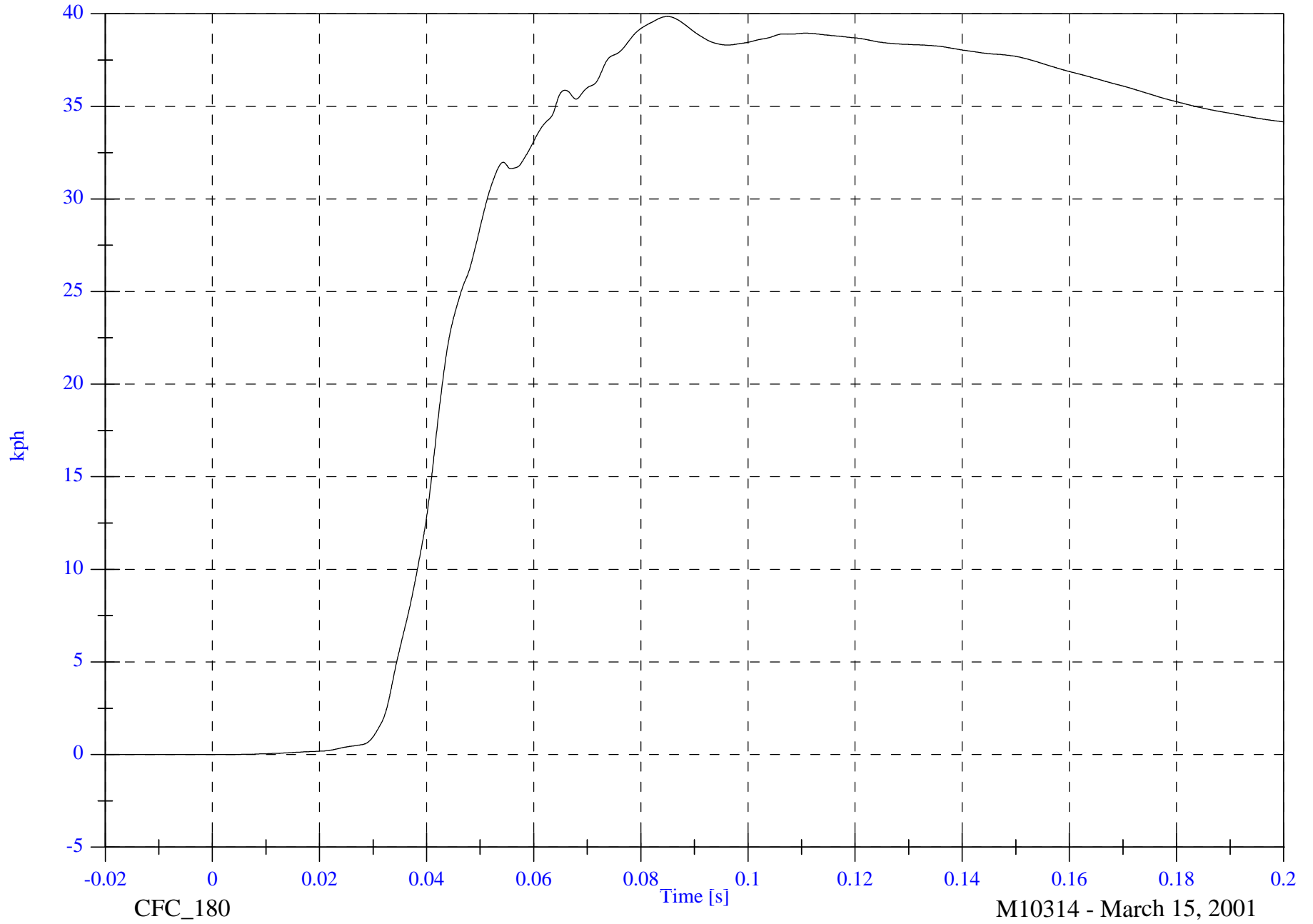
M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

Max: 39.9 [kph] at 0.085 [s]

P4 Upper Rib y Velocity

Min: -0.0 [kph] at -0.019 [s]



B-29

8506-19

CFC_180

Time [s]

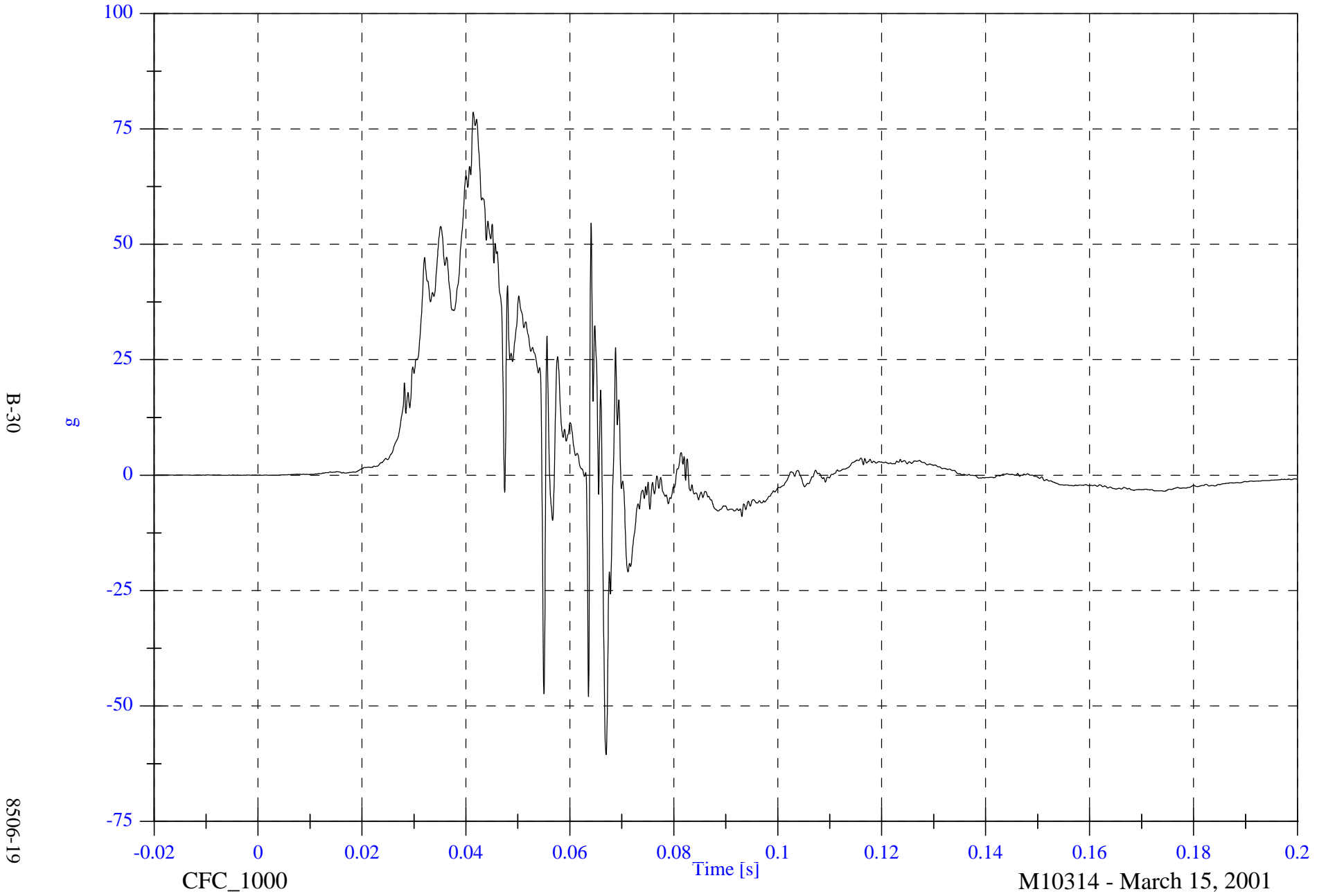
M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

P4 Lower Rib y

Max: 78.6 [g] at 0.041 [s]

Min: -60.6 [g] at 0.067 [s]



SNCAP Test 19 - 2001 Chevrolet Impala

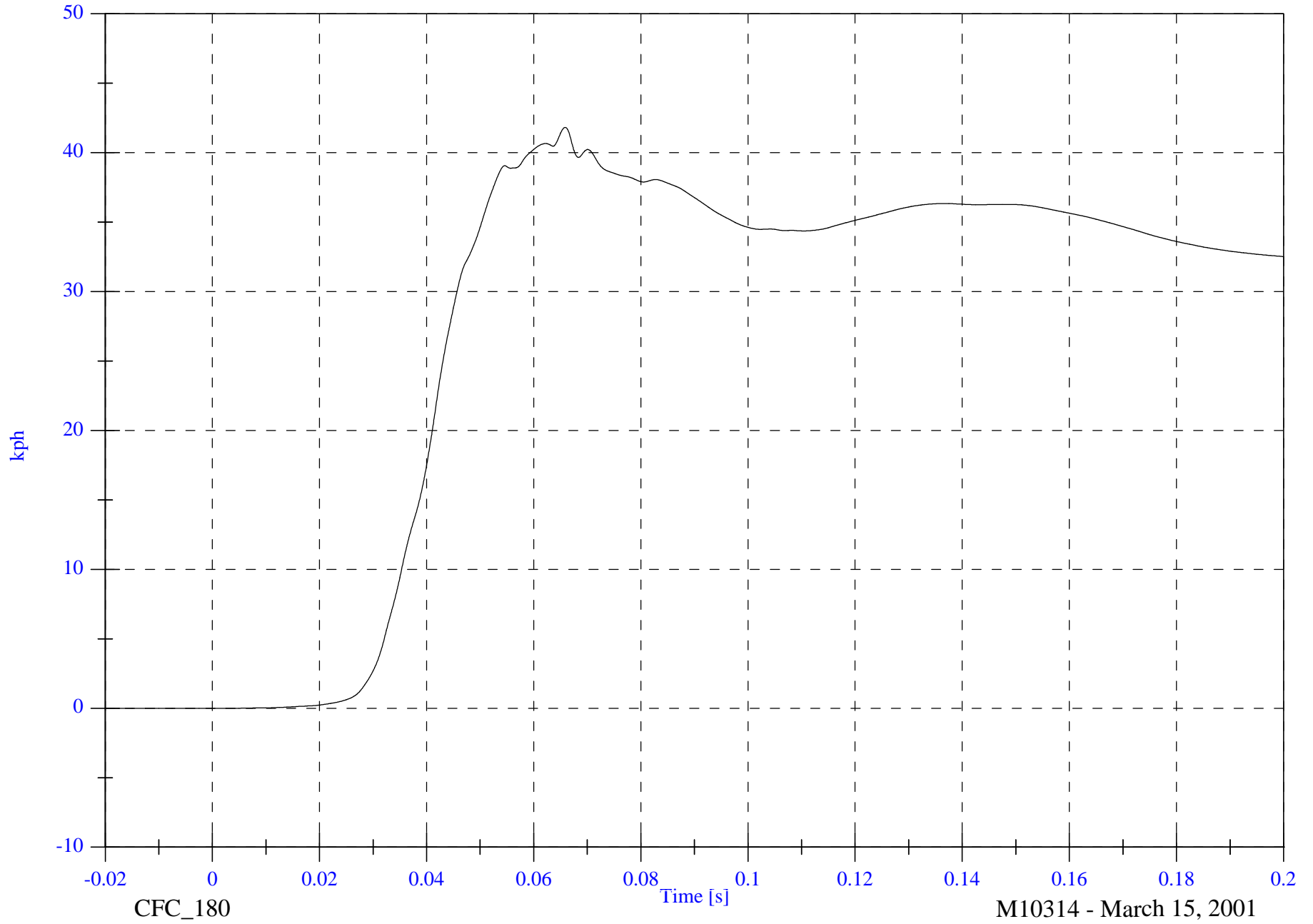
Max: 41.8 [kph] at 0.066 [s]

P4 Lower Rib y Velocity

Min: -0.0 [kph] at -0.020 [s]

B-31

8506-19



CFC_180

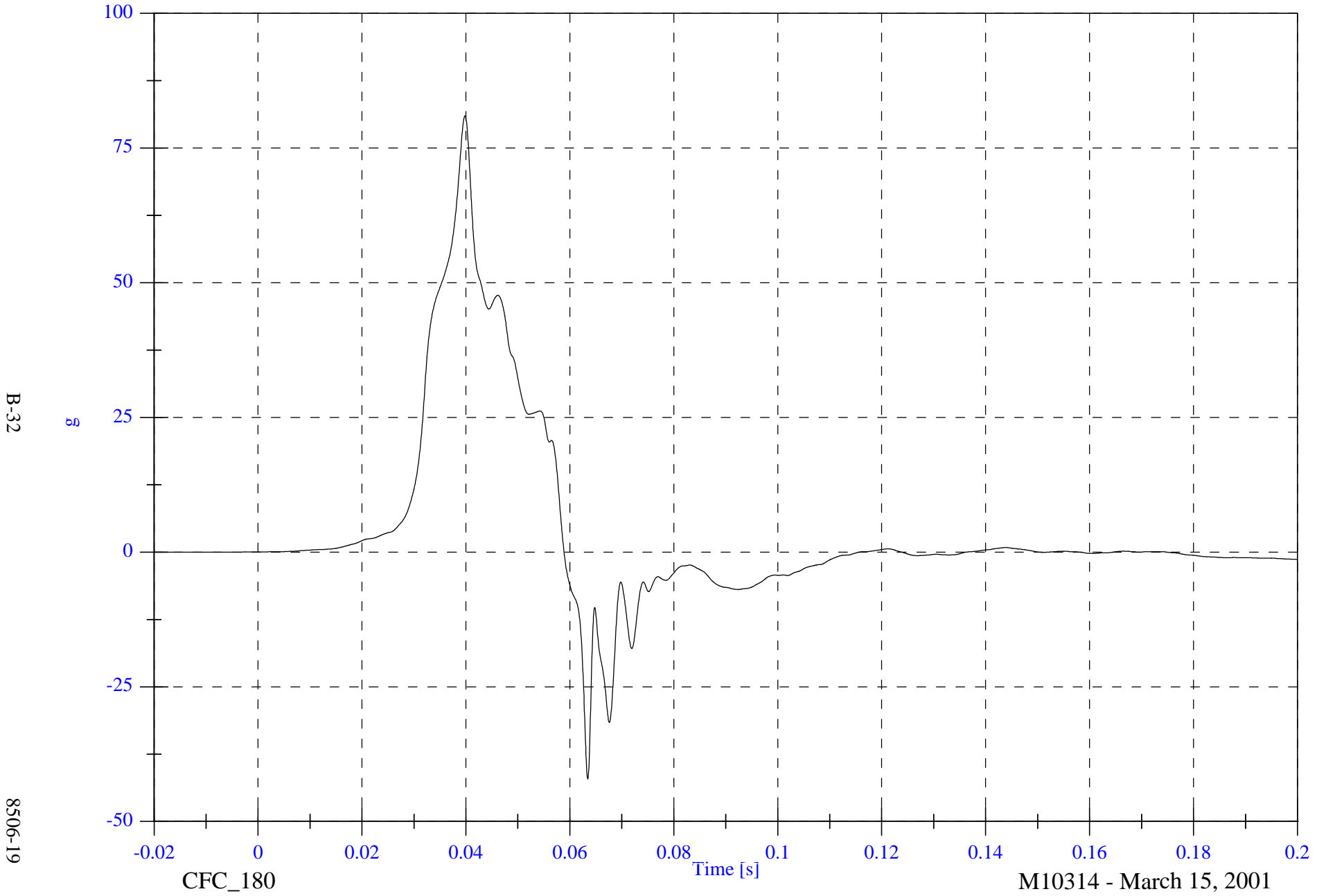
M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

P4 Lower Spine y

Max: 81.0 [g] at 0.040 [s]

Min: -42.1 [g] at 0.063 [s]



B-32

8506-19

CFC_180

Time [s]

M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

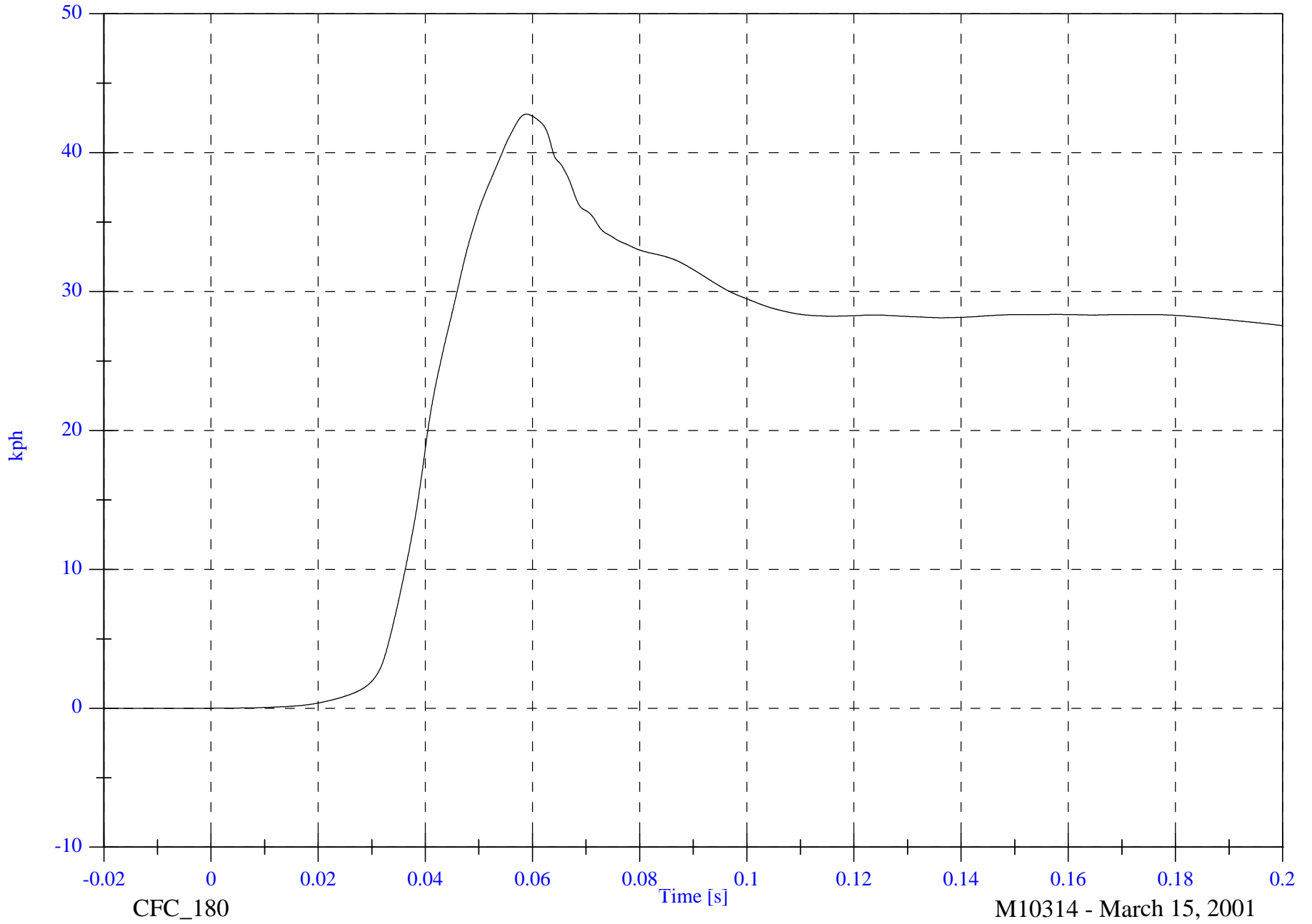
P4 Lower Spine y Velocity

Max: 42.8 [kph] at 0.059 [s]

Min: -0.0 [kph] at -0.006 [s]

B-33

8506-19



SNCAP Test 19 - 2001 Chevrolet Impala

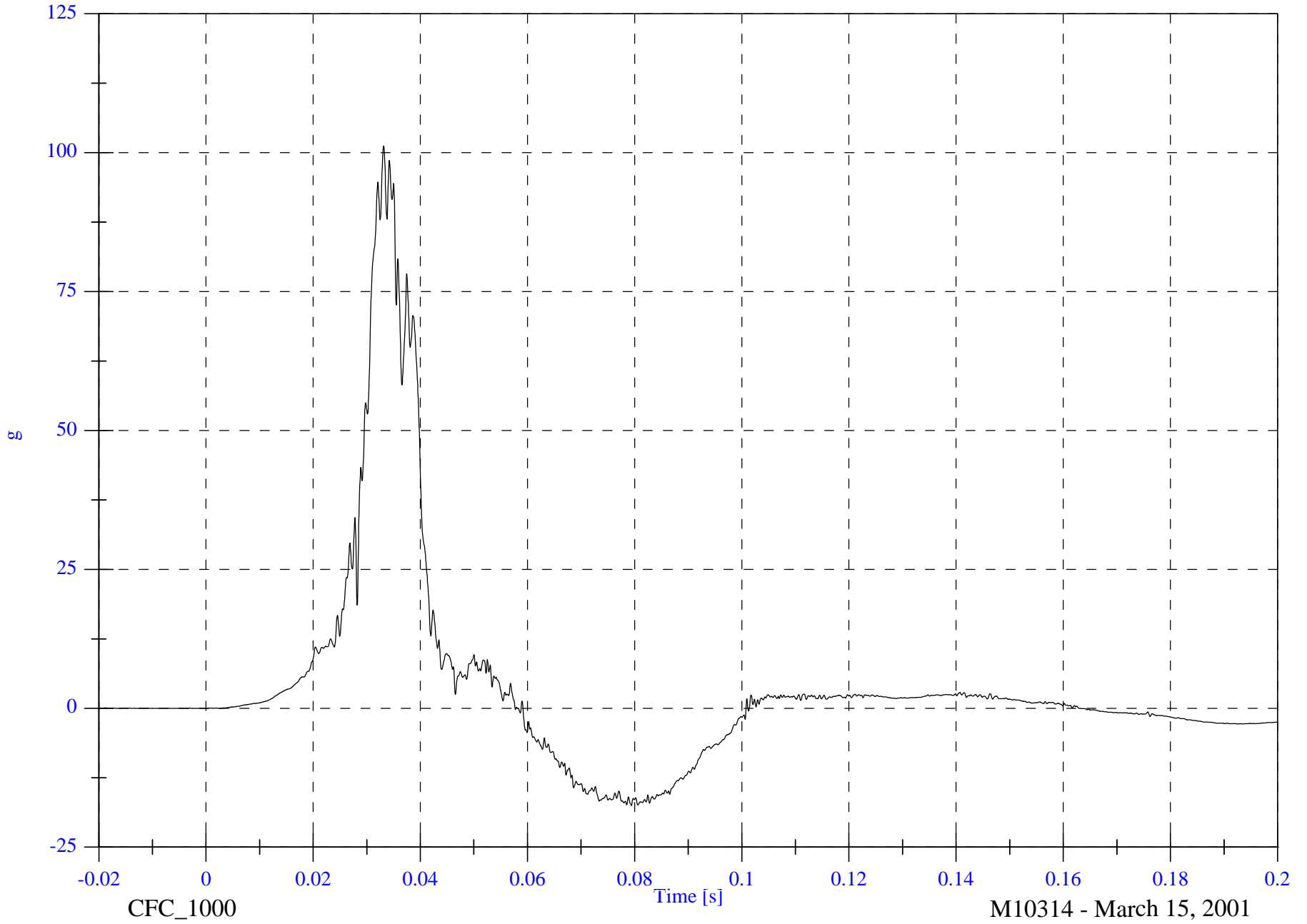
P4 Pelvic y

Max: 101.2 [g] at 0.033 [s]

Min: -17.5 [g] at 0.079 [s]

B-34

8506-19



CFC_1000

M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

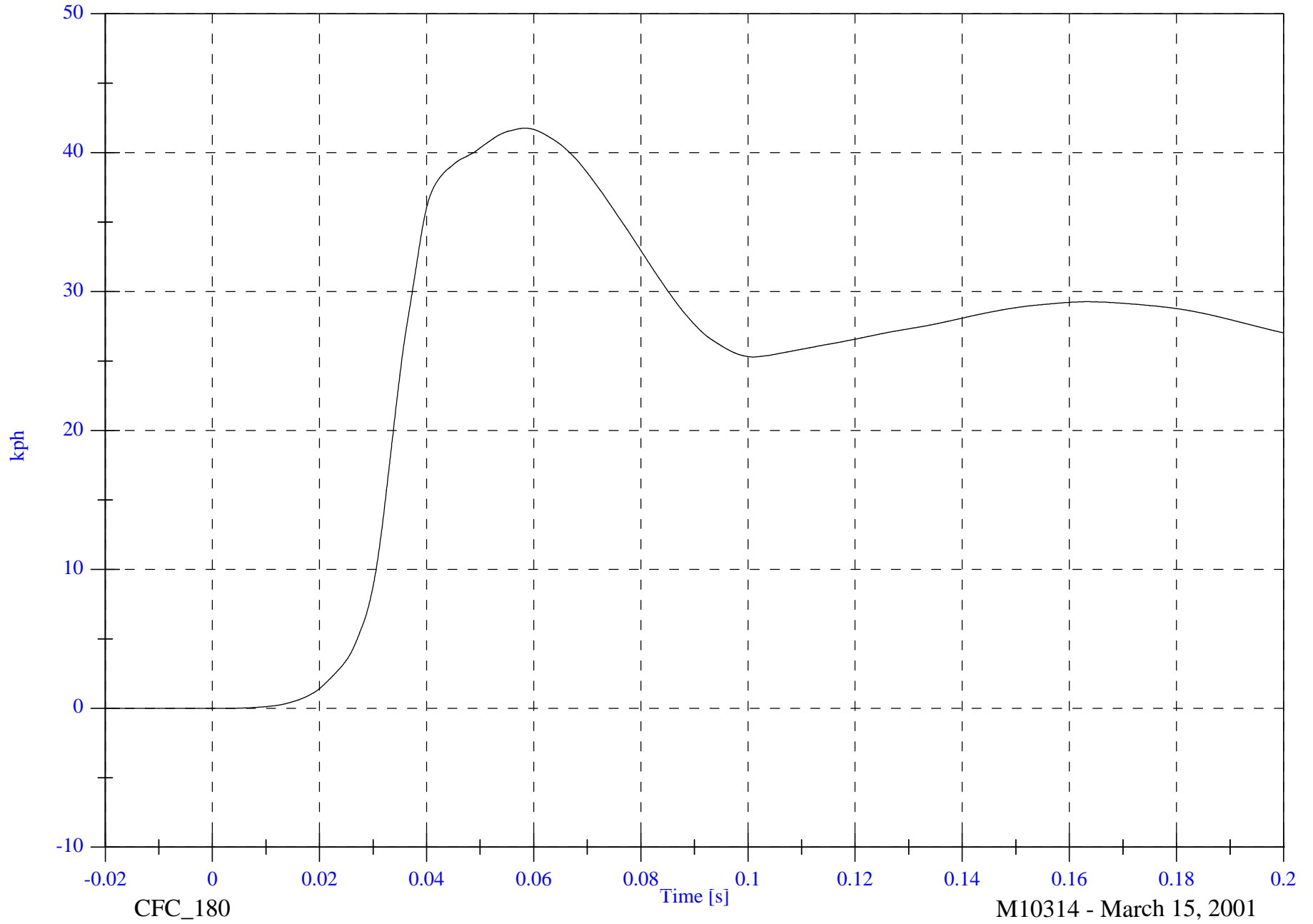
Max: 41.8 [kph] at 0.058 [s]

P4 Pelvic y Velocity

Min: -0.0 [kph] at -0.020 [s]

B-35

8506-19



SNCAP Test 19 - 2001 Chevrolet Impala

P1 Upper Rib y

Max: 51.8 [g] at 0.028 [s]

Min: -13.2 [g] at 0.093 [s]

B-36

8506-19



SNCAP Test 19 - 2001 Chevrolet Impala

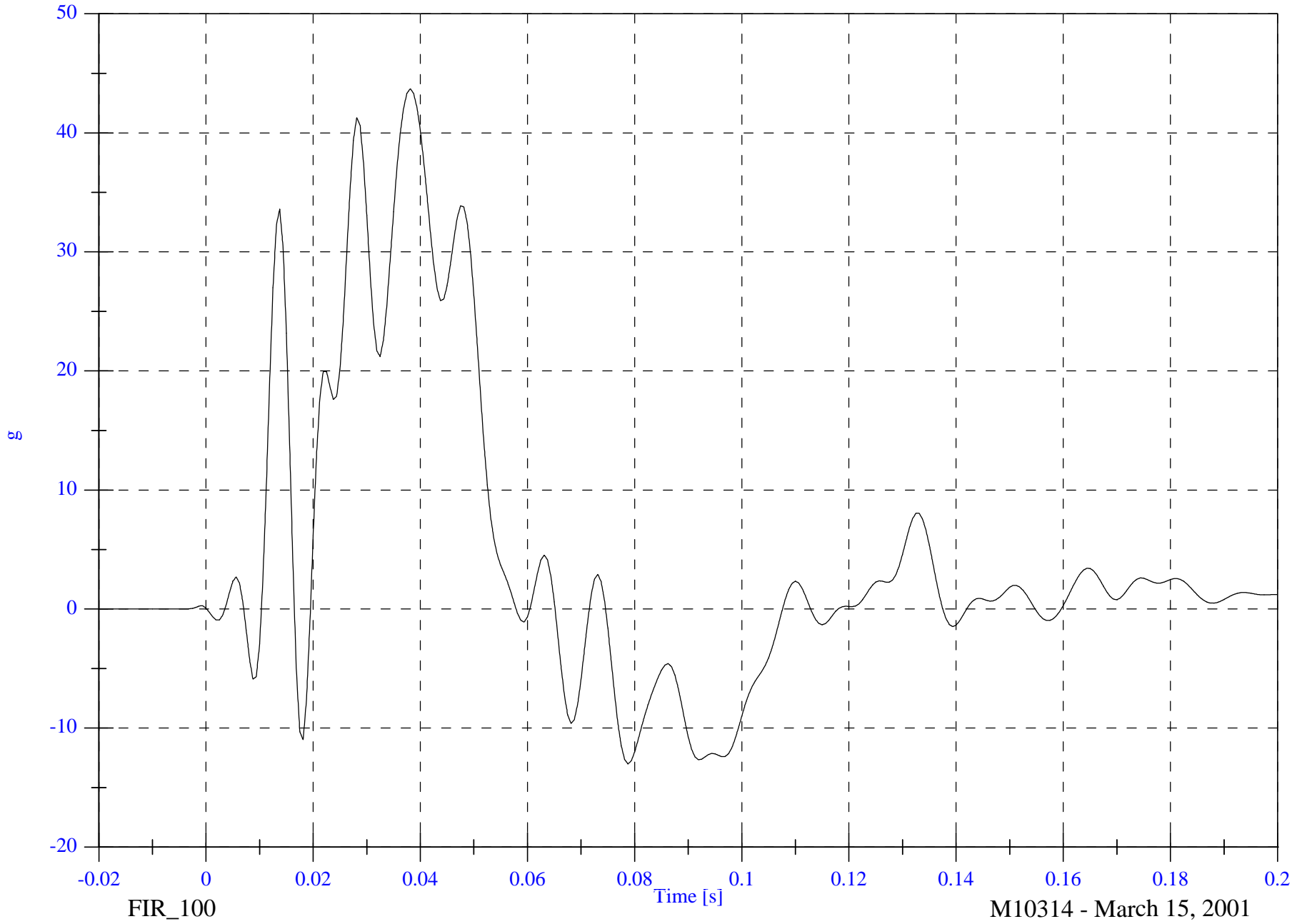
P1 Lower Rib y

Max: 43.7 [g] at 0.038 [s]

Min: -13.0 [g] at 0.079 [s]

B-37

8506-19

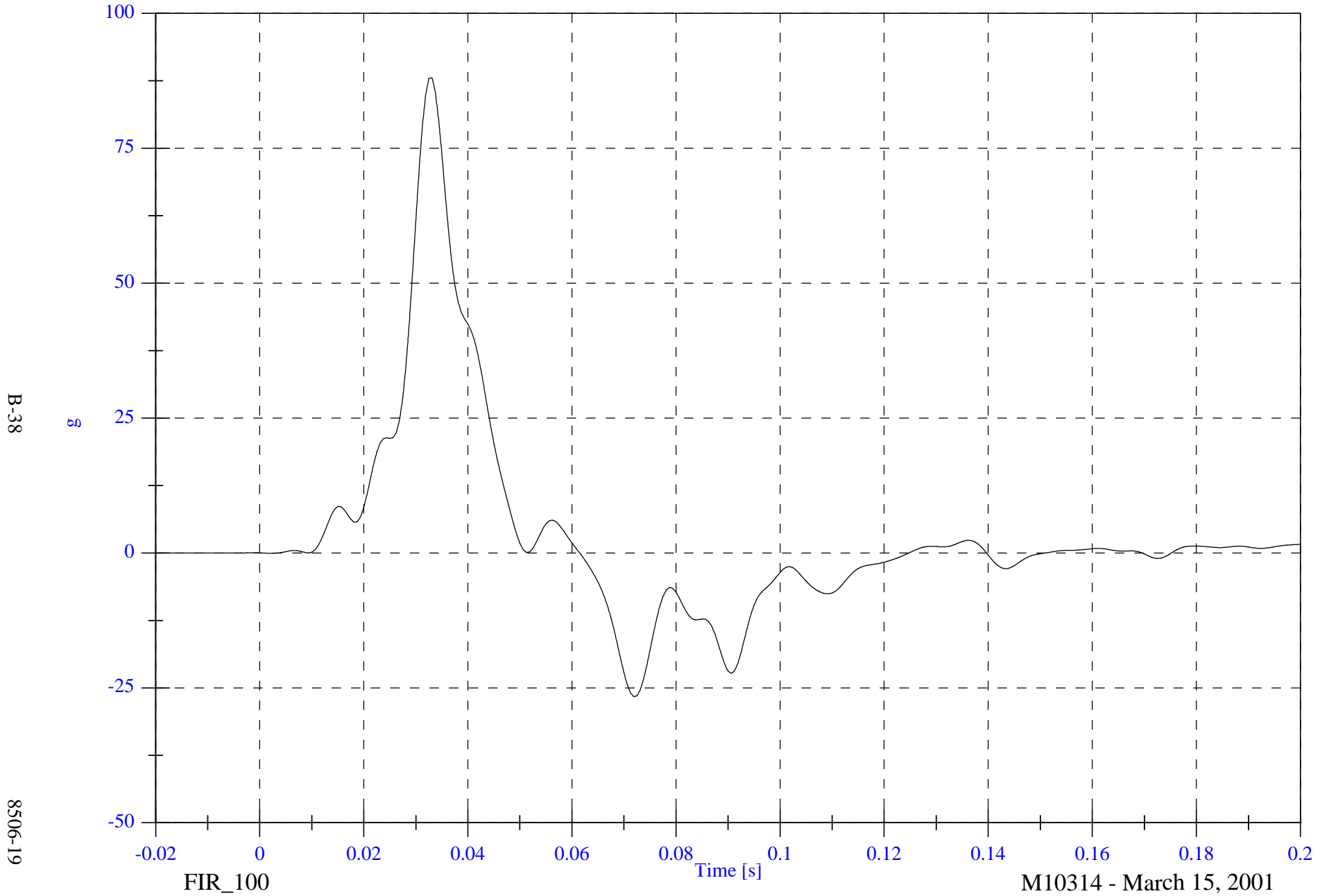


SNCAP Test 19 - 2001 Chevrolet Impala

P1 Lower Spine y

Max: 88.1 [g] at 0.033 [s]

Min: -26.7 [g] at 0.072 [s]



SNCAP Test 19 - 2001 Chevrolet Impala

Max: 87.4 [g] at 0.031 [s]

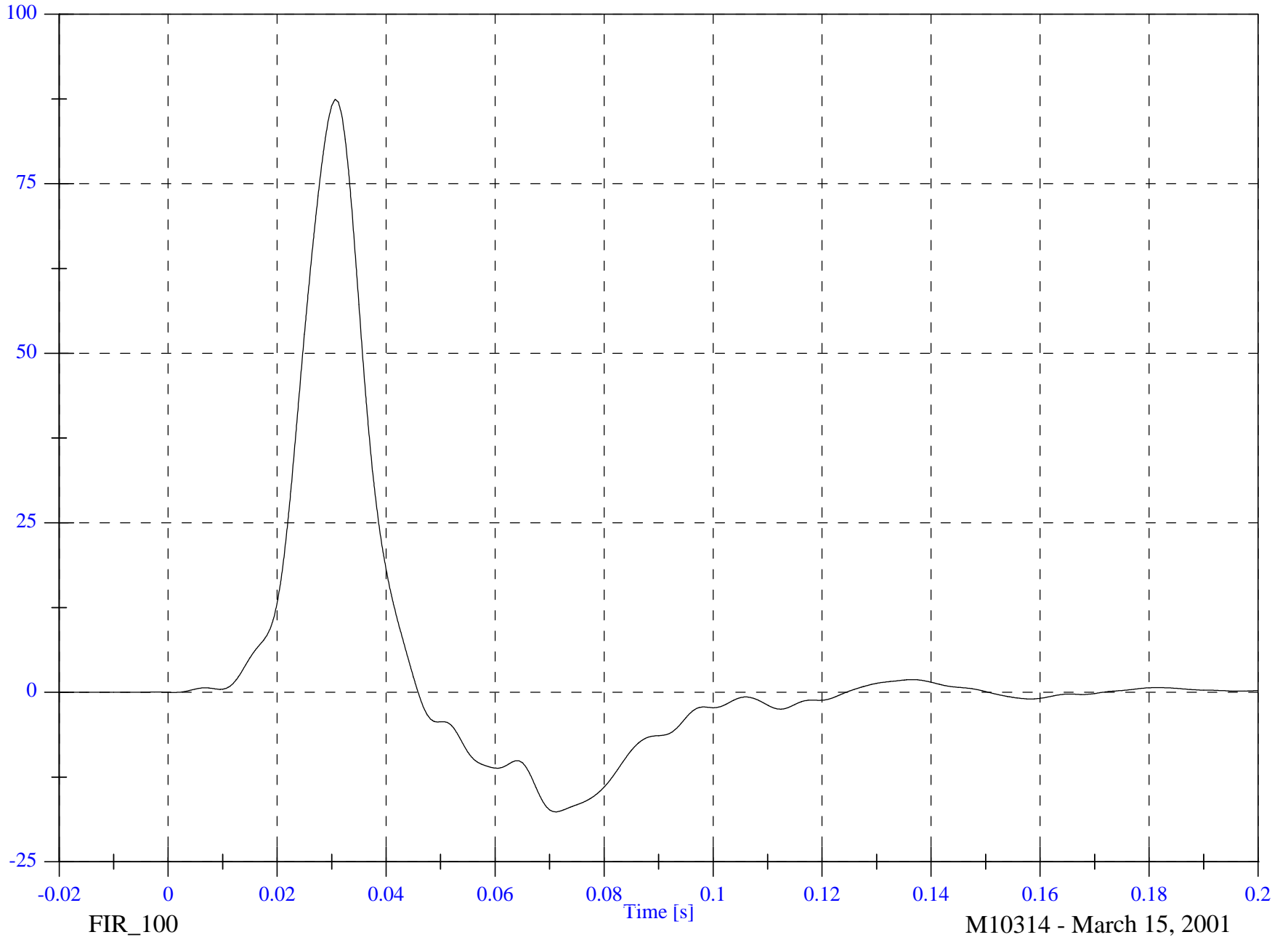
P1 Pelvic y

Min: -17.6 [g] at 0.071 [s]

B-39

g

8506-19



FIR_100

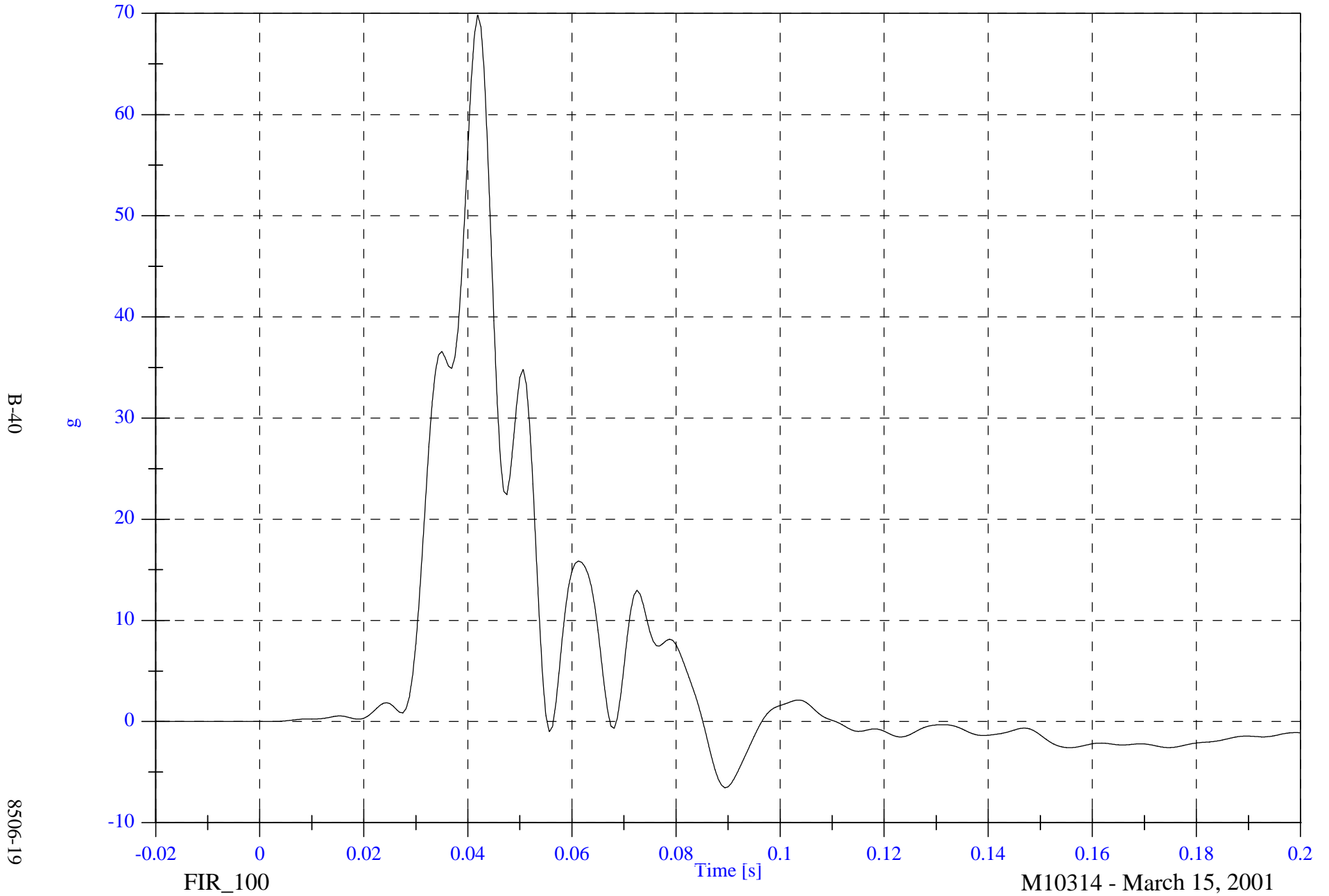
M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

P4 Upper Rib y

Max: 69.8 [g] at 0.042 [s]

Min: -6.5 [g] at 0.089 [s]



B-40

g

8506-19

FIR_100

Time [s]

M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

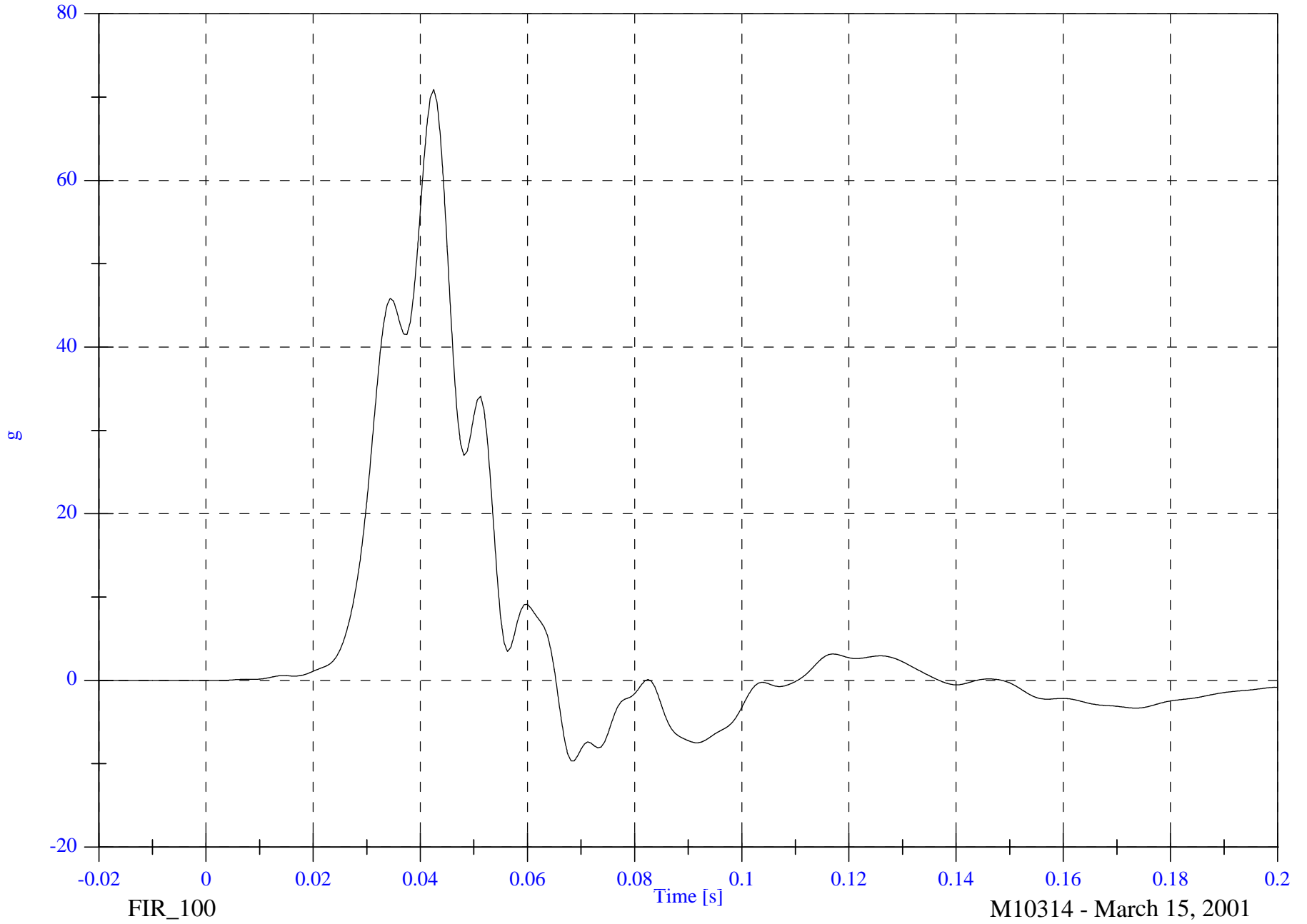
P4 Lower Rib y

Max: 70.9 [g] at 0.043 [s]

Min: -9.7 [g] at 0.068 [s]

B-41

8506-19



SNCAP Test 19 - 2001 Chevrolet Impala

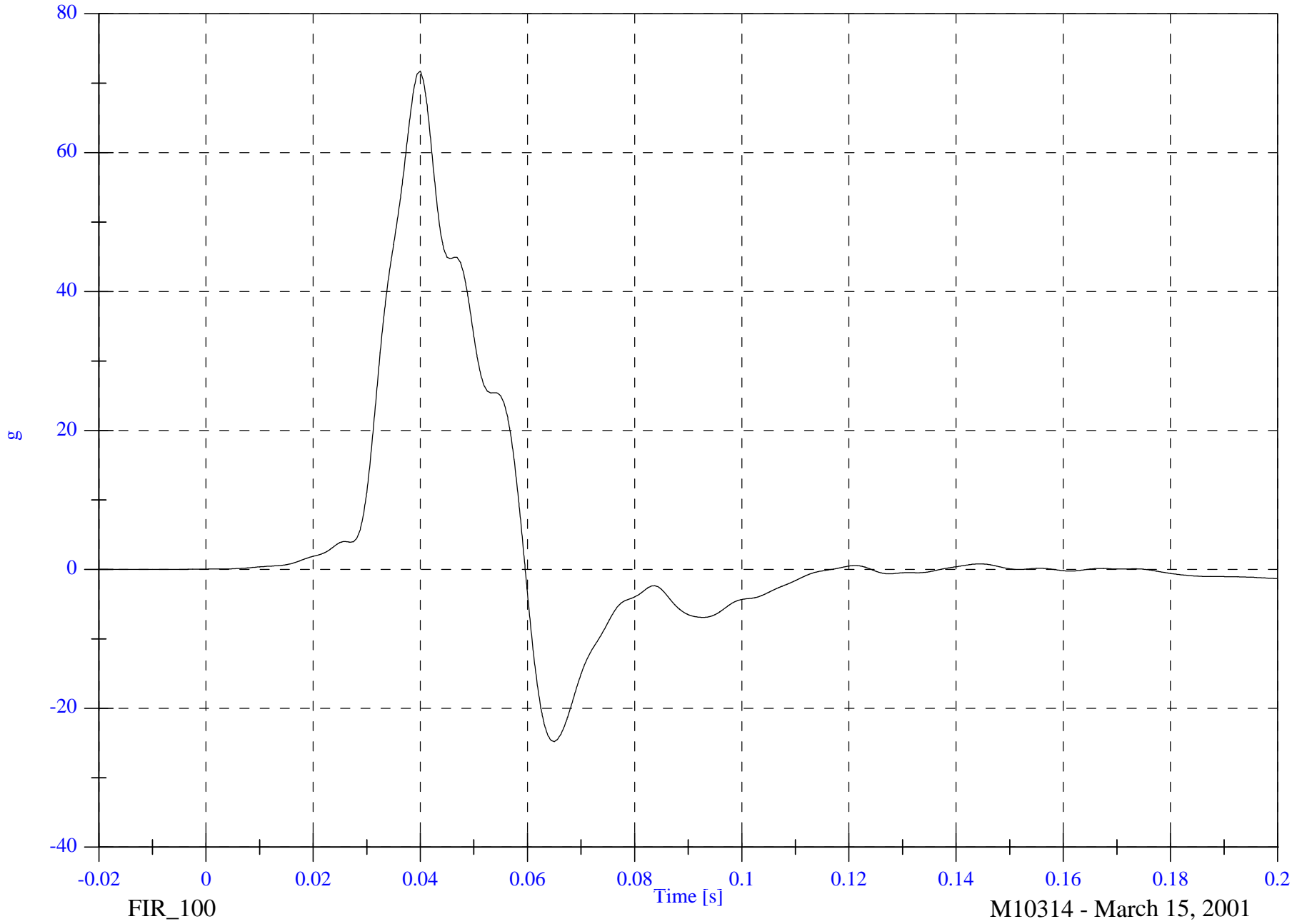
P4 Lower Spine y

Max: 71.8 [g] at 0.040 [s]

Min: -24.8 [g] at 0.065 [s]

B-42

8506-19



FIR_100

M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

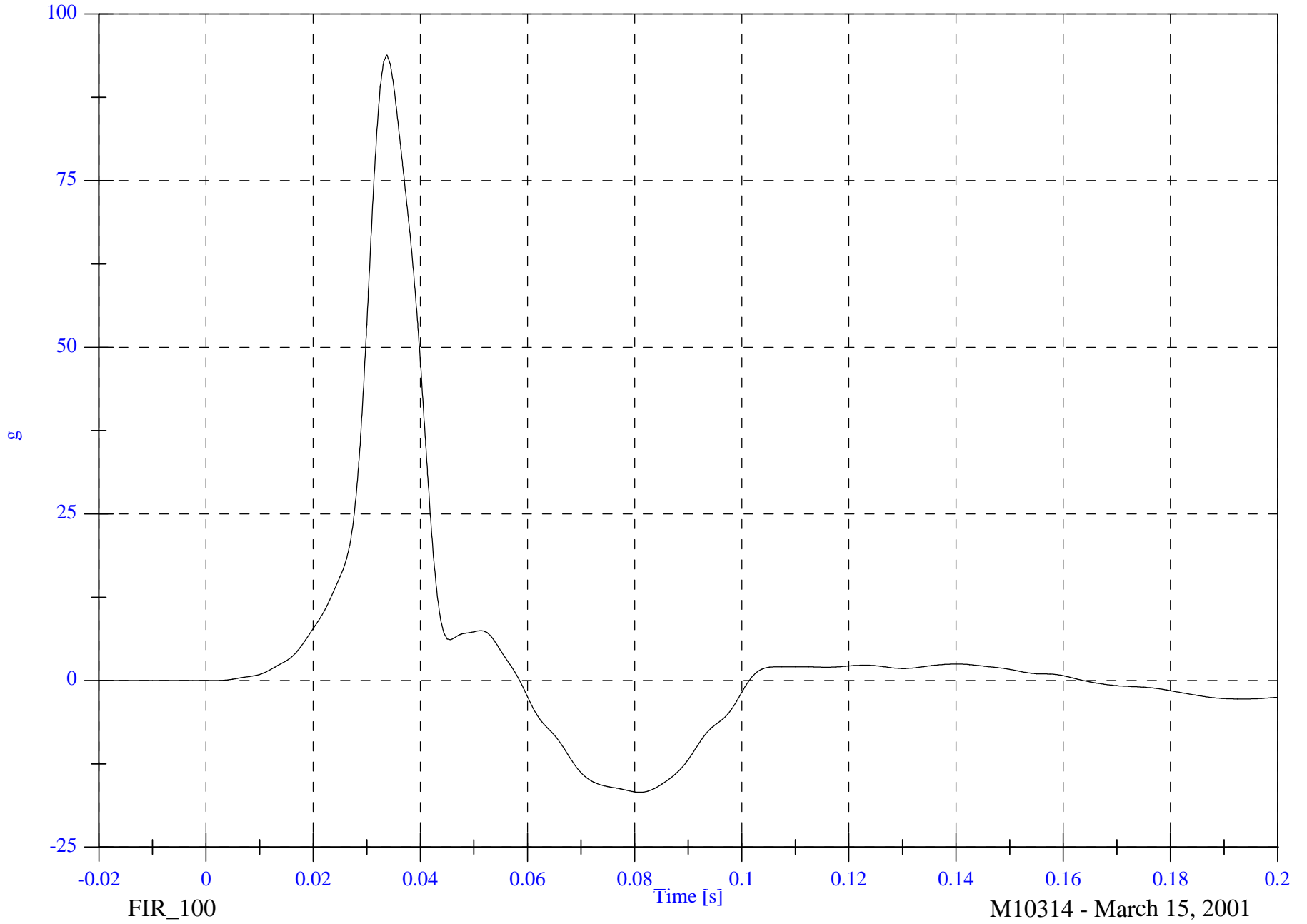
P4 Pelvic y

Max: 93.9 [g] at 0.034 [s]

Min: -16.8 [g] at 0.081 [s]

B-43

8506-19



SNCAP Test 19 - 2001 Chevrolet Impala

A1 Right Front Sill X

Max: 3.7 [g] at 0.058 [s]

Min: -4.9 [g] at 0.016 [s]



B-44

g

8506-19

CFC_60

Time [s]

M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

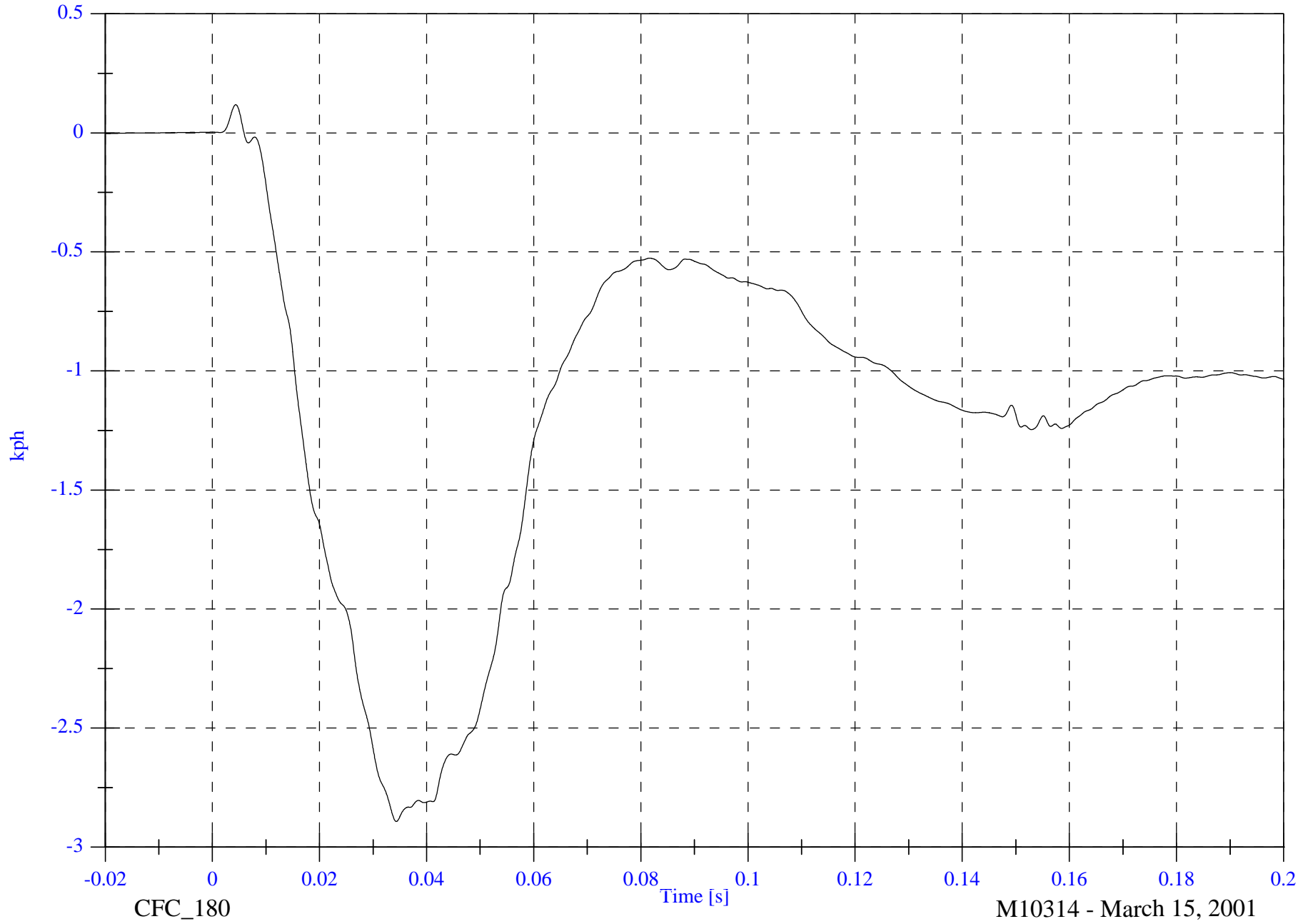
A1 Right Front Sill X Velocity

Max: 0.1 [kph] at 0.004 [s]

Min: -2.9 [kph] at 0.034 [s]

B-45

8506-19



CFC_180

M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

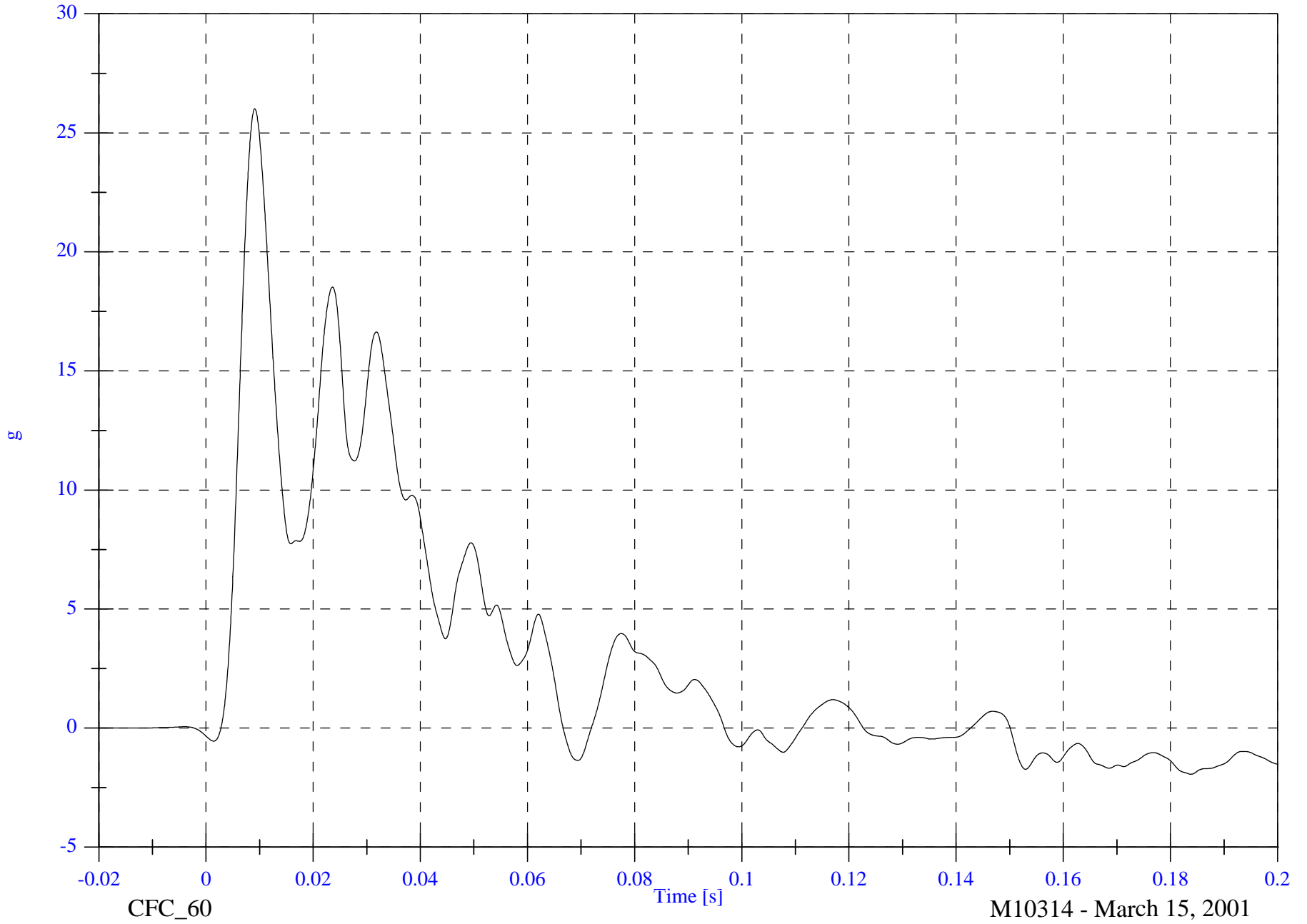
A1 Right Front Sill Y

Max: 26.0 [g] at 0.009 [s]

Min: -1.9 [g] at 0.184 [s]

B-46

8506-19



SNCAP Test 19 - 2001 Chevrolet Impala

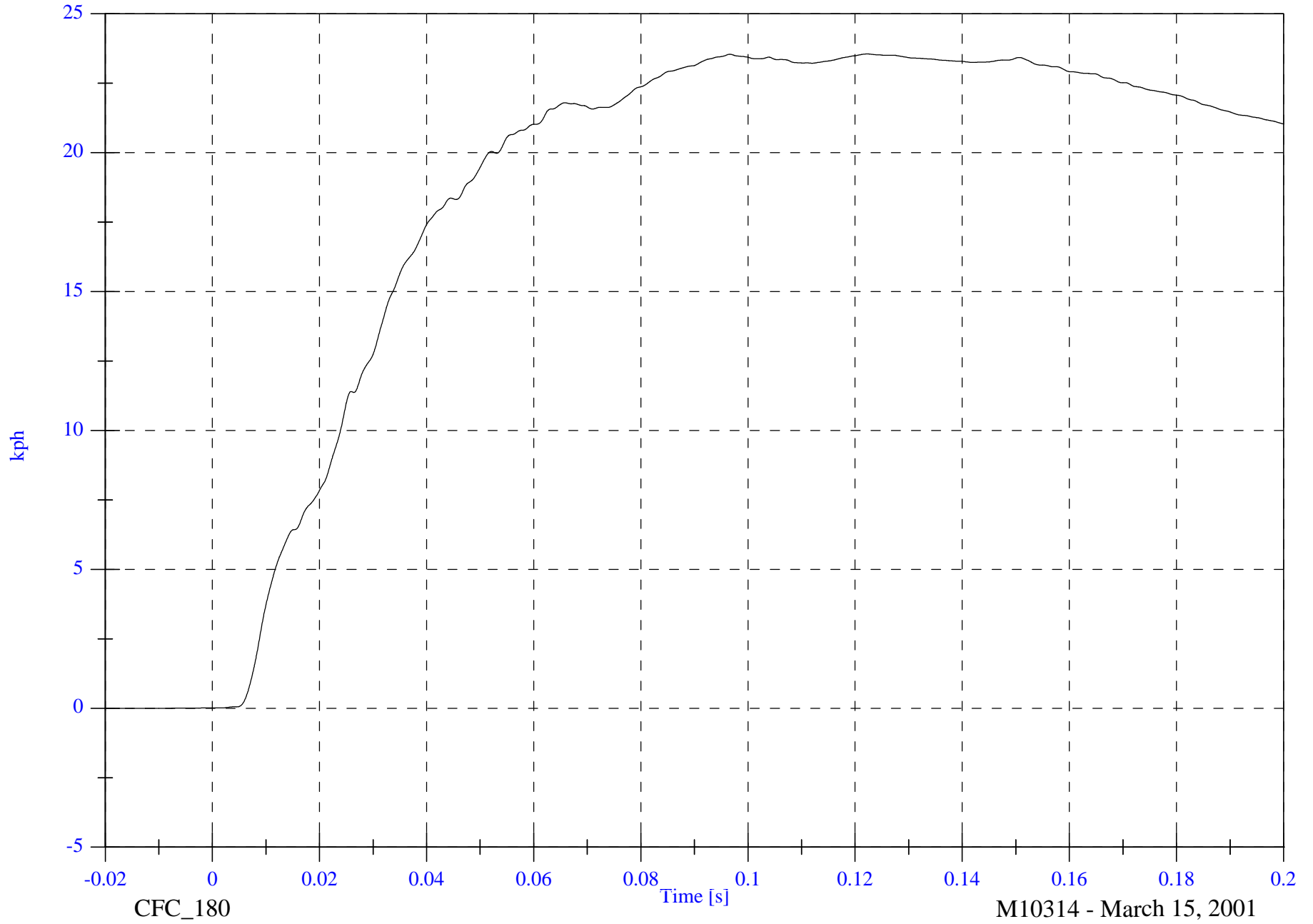
A1 Right Front Sill Y Velocity

Max: 23.6 [kph] at 0.122 [s]

Min: -0.0 [kph] at -0.019 [s]

B-47

8506-19



CFC_180

M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

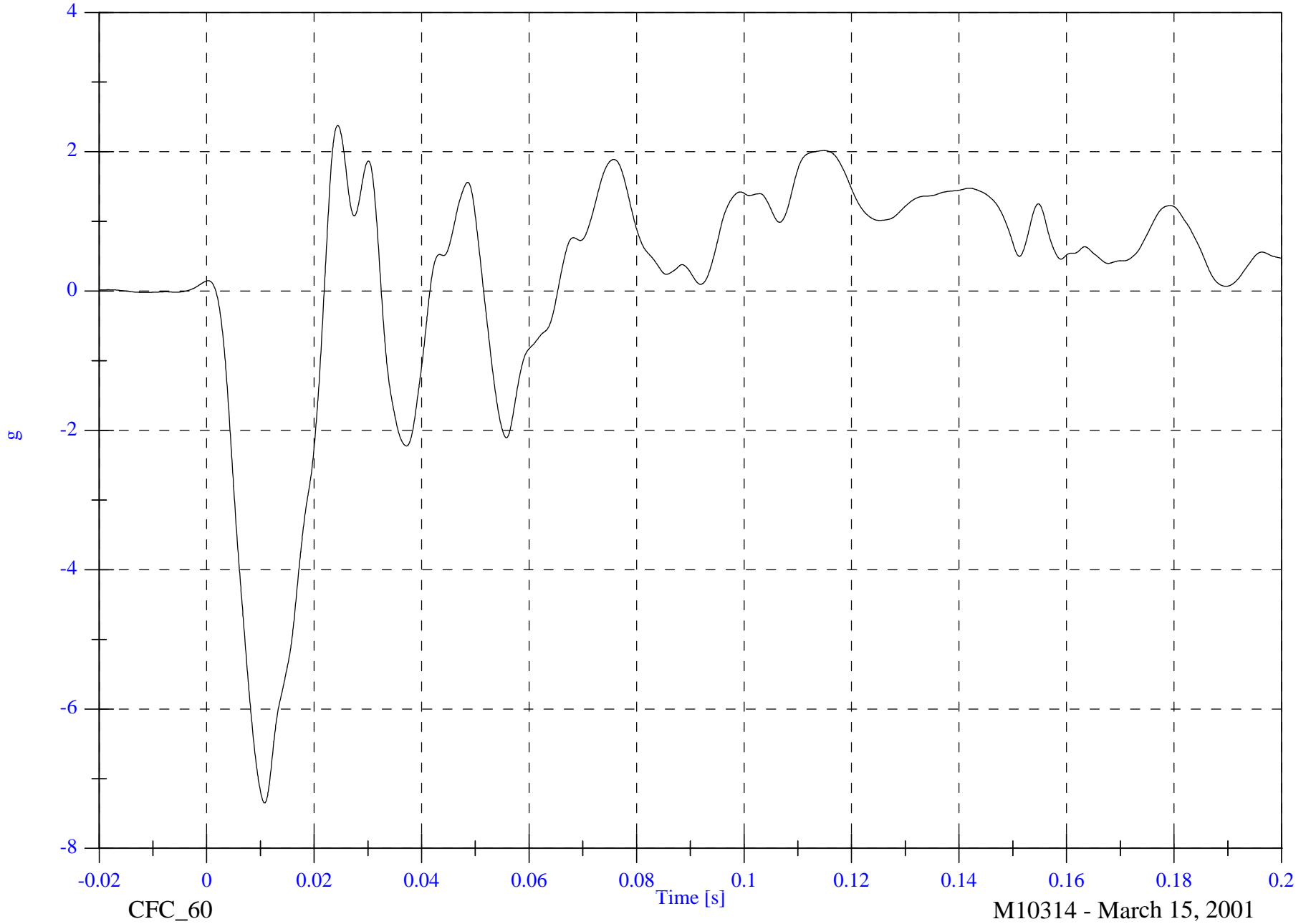
A1 Right Front Sill Z

Max: 2.4 [g] at 0.024 [s]

Min: -7.3 [g] at 0.011 [s]

B-48

8506-19



CFC_60

Time [s]

M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

A1 Right Front Sill Z Velocity

Max: 1.5 [kph] at 0.200 [s]

Min: -3.1 [kph] at 0.065 [s]

B-49

8506-19



SNCAP Test 19 - 2001 Chevrolet Impala

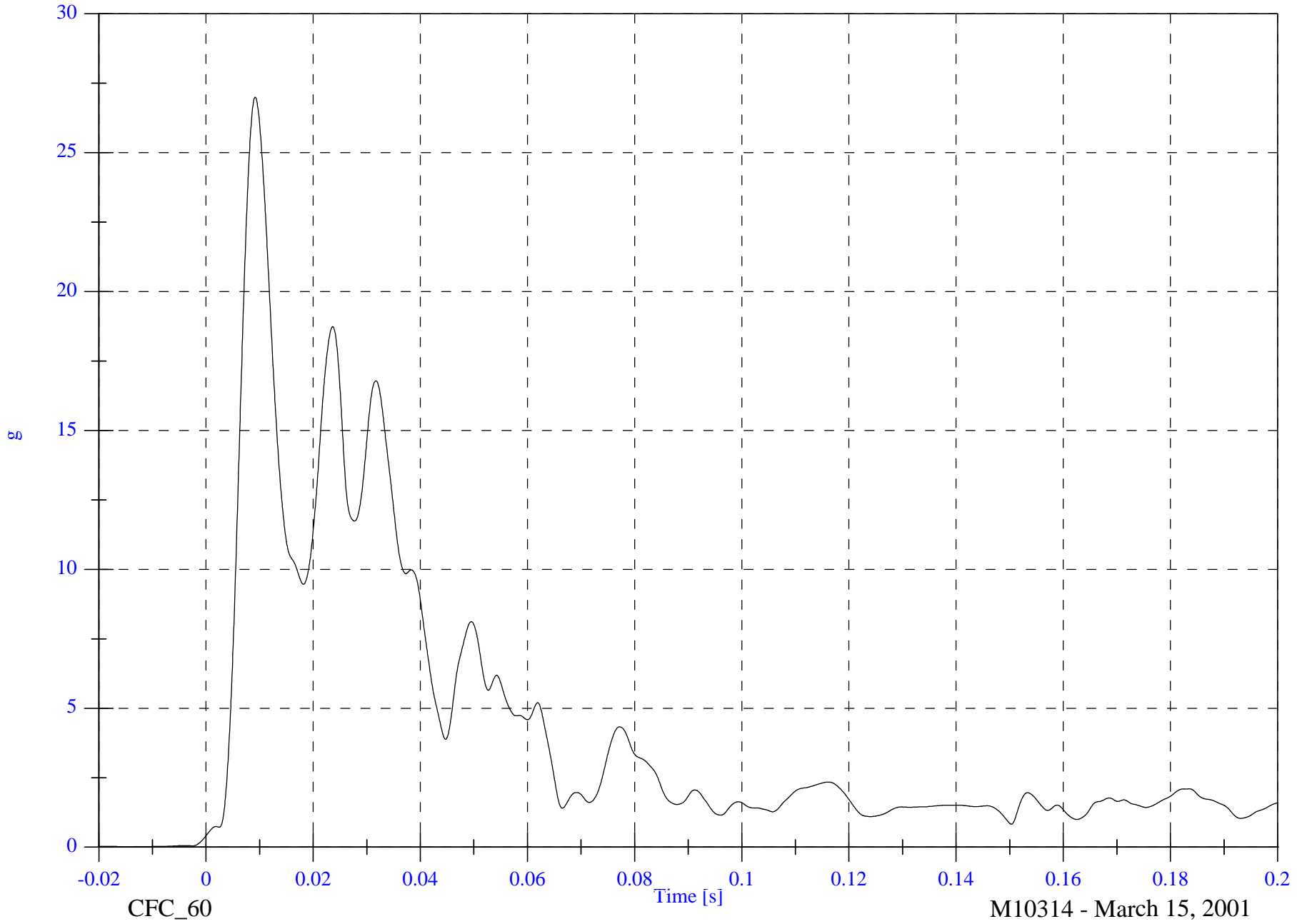
A1 Right Front Sill Resultant

Max: 27.0 [g] at 0.009 [s]

Min: 0.0 [g] at -0.015 [s]

B-50

8506-19



M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

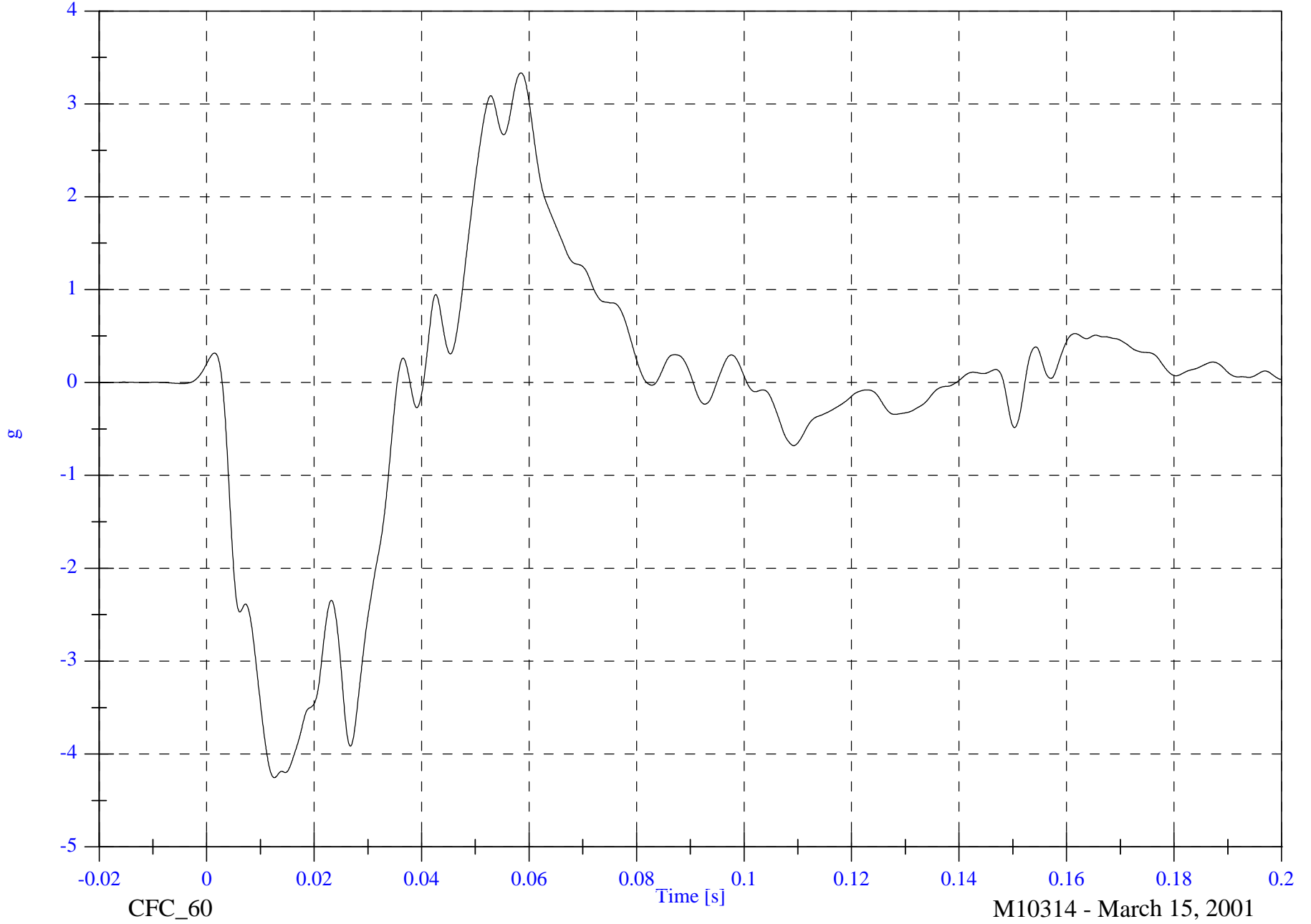
A2 Right Rear Sill X

Max: 3.3 [g] at 0.059 [s]

Min: -4.3 [g] at 0.013 [s]

B-51

8506-19



CFC_60

M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

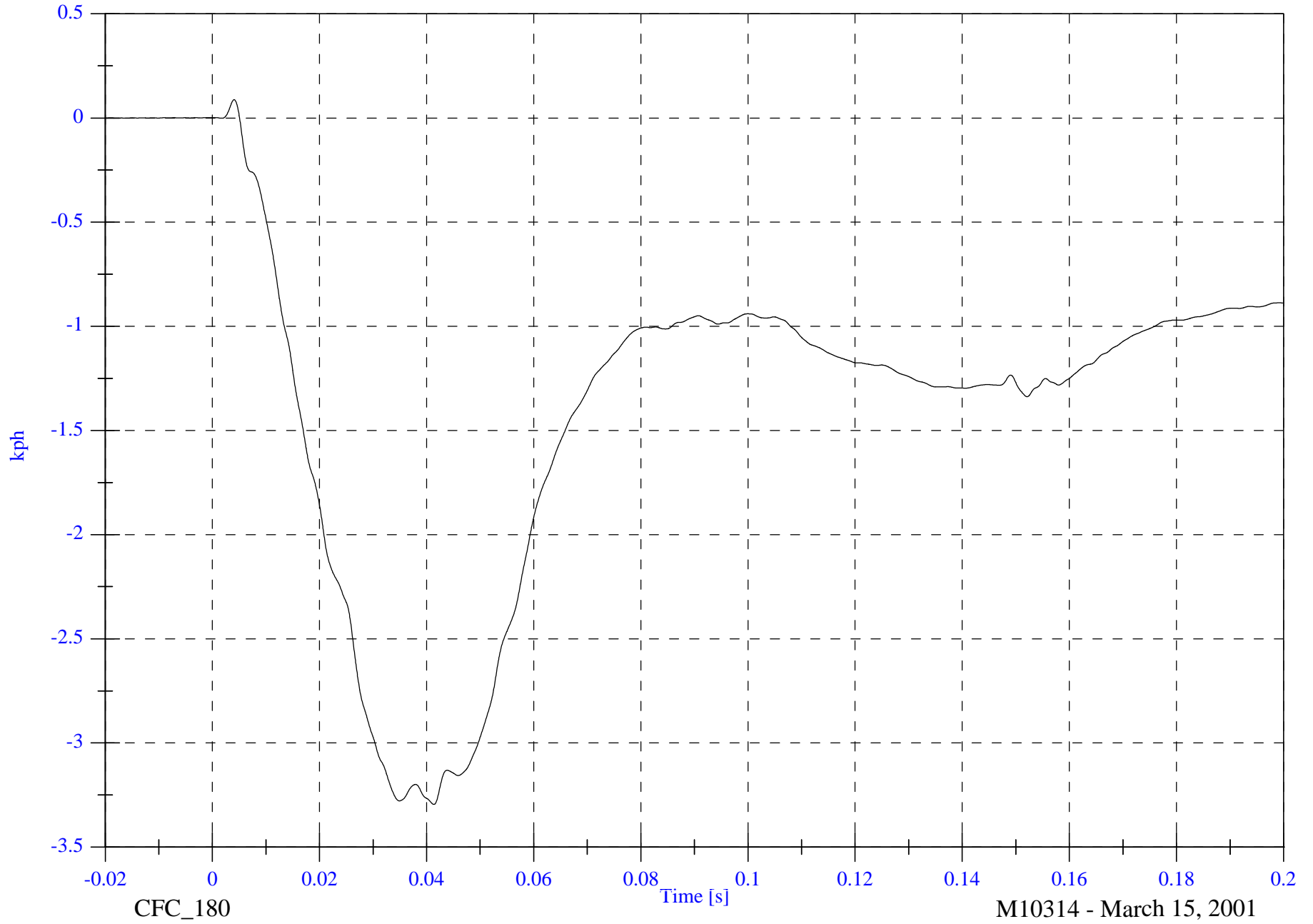
A2 Right Rear Sill X Velocity

Max: 0.1 [kph] at 0.004 [s]

Min: -3.3 [kph] at 0.041 [s]

B-52

8506-19



CFC_180

Time [s]

M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

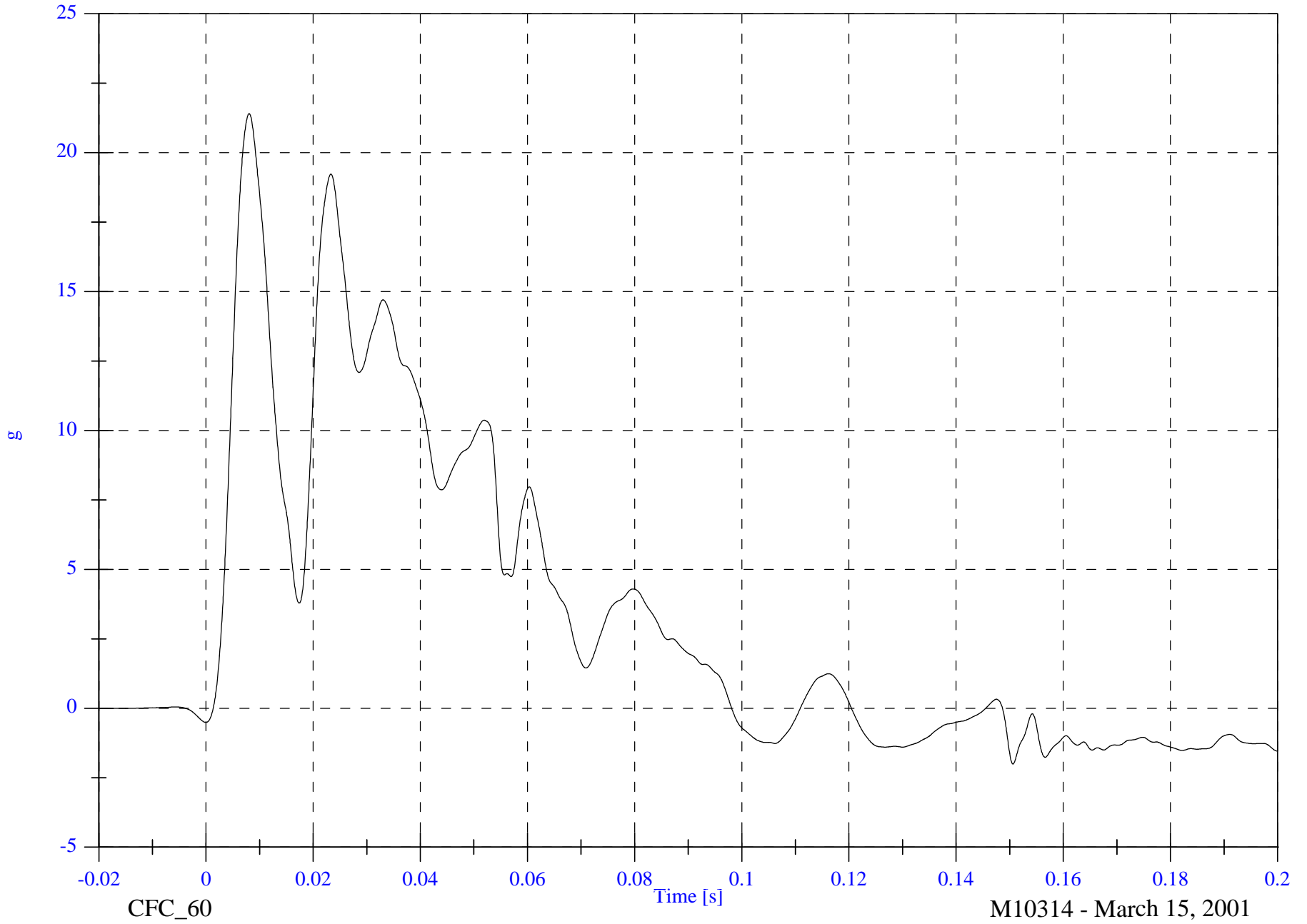
A2 Right Rear Sill Y

Max: 21.4 [g] at 0.008 [s]

Min: -2.0 [g] at 0.151 [s]

B-53

8506-19



SNCAP Test 19 - 2001 Chevrolet Impala

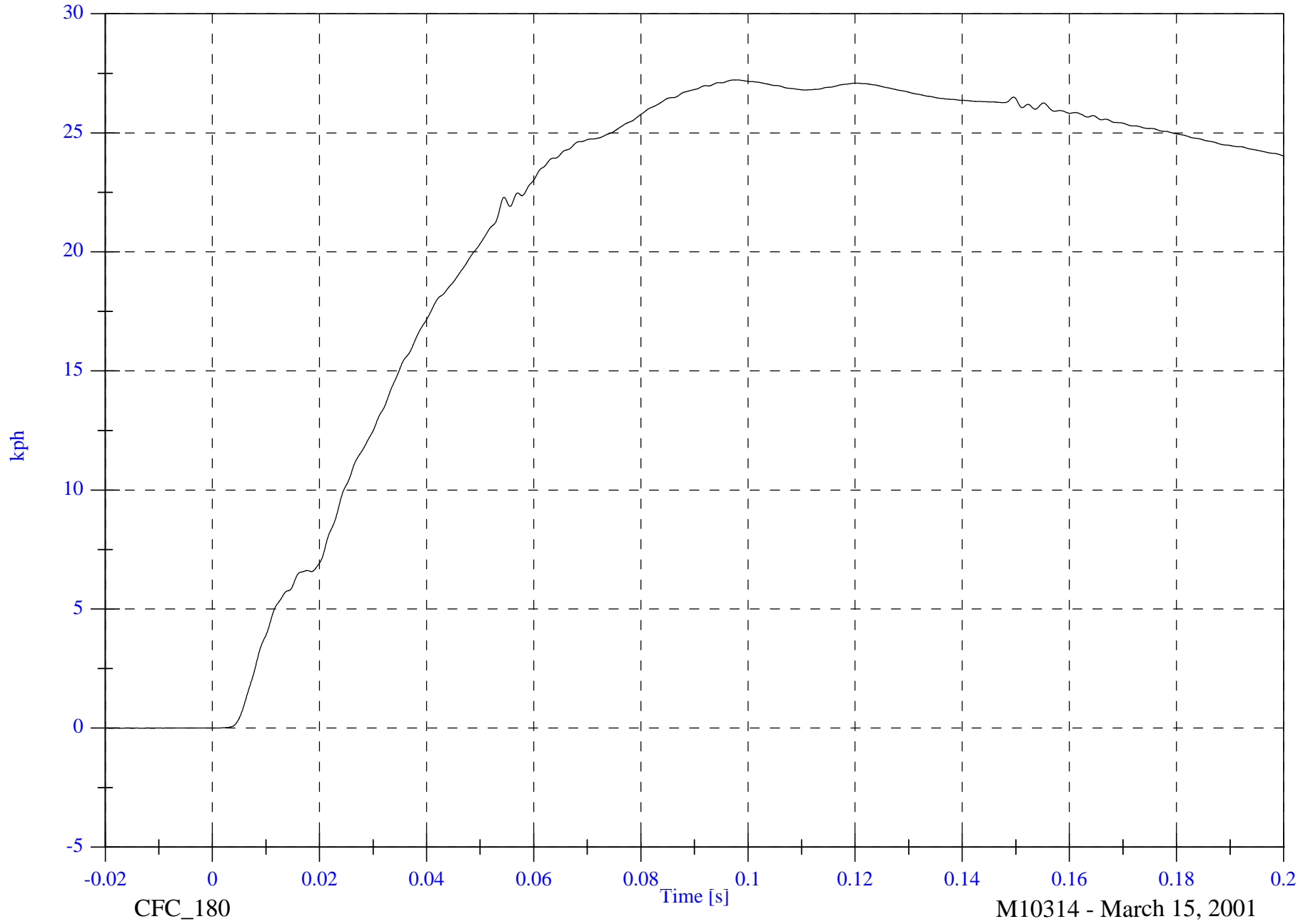
A2 Right Rear Sill Y Velocity

Max: 27.2 [kph] at 0.098 [s]

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

B-54

8506-19



CFC_180

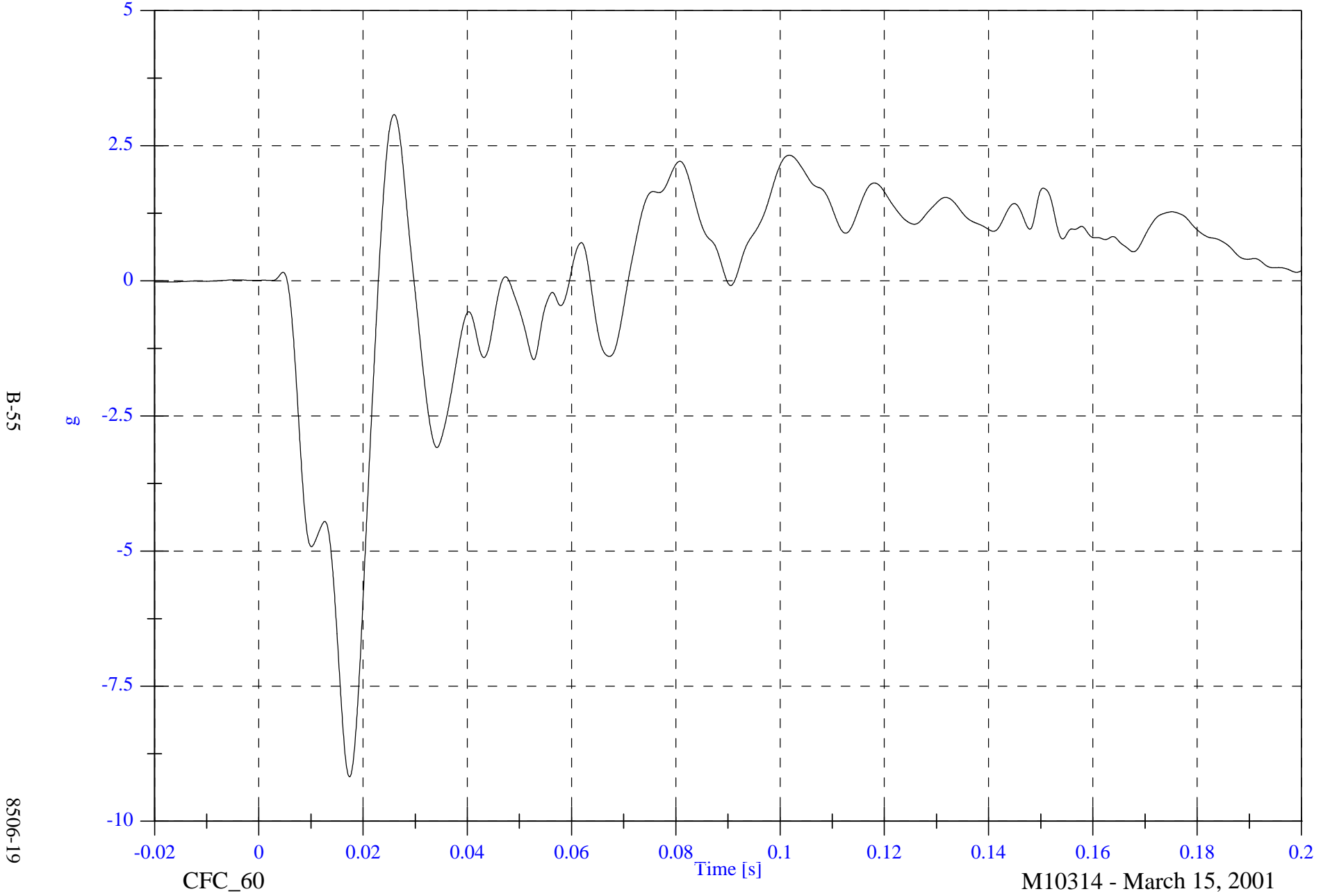
M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

A2 Right Rear Sill Z

Max: 3.1 [g] at 0.026 [s]

Min: -9.2 [g] at 0.017 [s]



B-55

8506-19

CFC_60

Time [s]

M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

A2 Right Rear Sill Z Velocity

Max: 1.2 [kph] at 0.200 [s]

Min: -3.9 [kph] at 0.070 [s]

B-56

8506-19



CFC_180

Time [s]

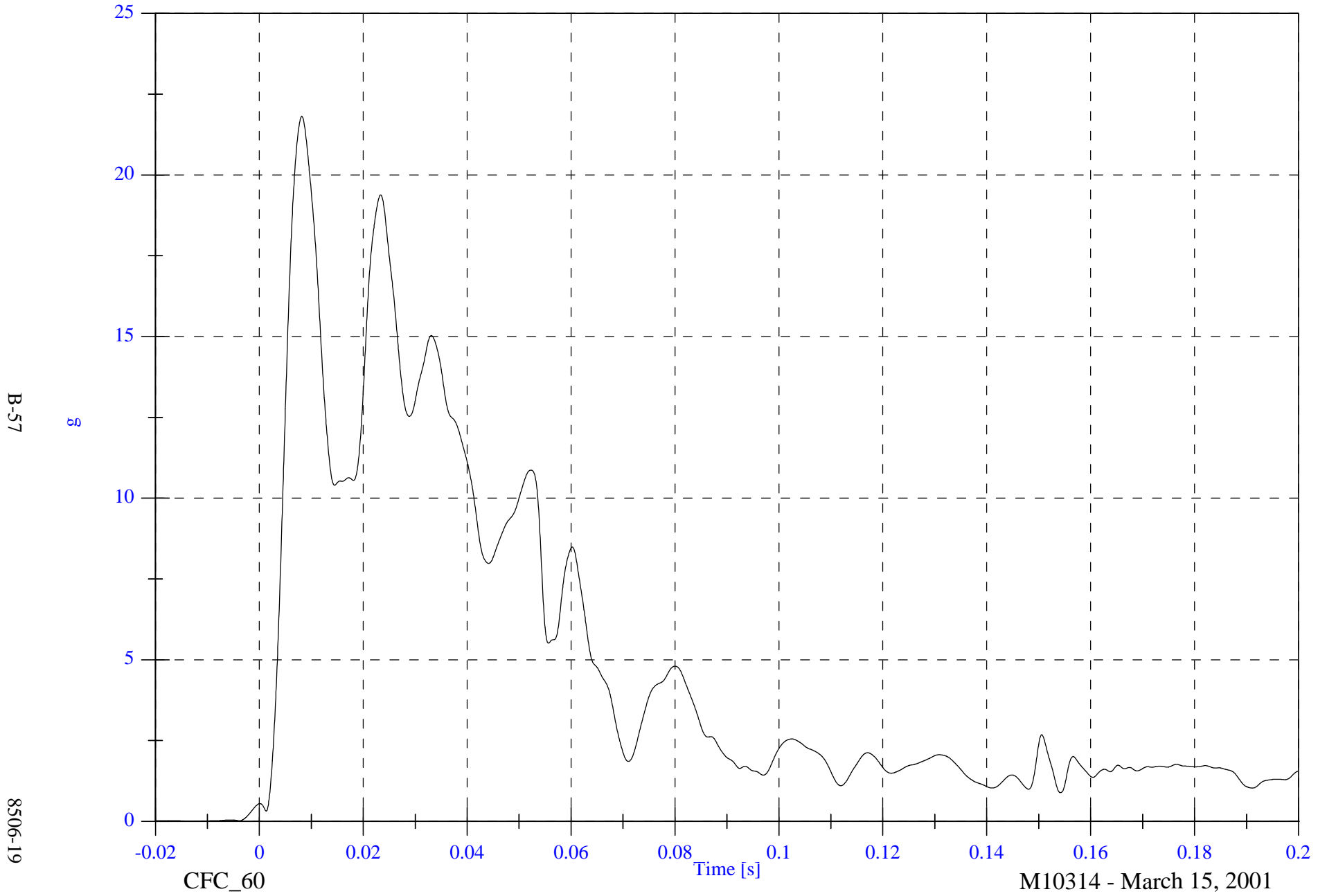
M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

A2 Right Rear Sill Resultant

Max: 21.8 [g] at 0.008 [s]

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



B-57

8506-19

CFC_60

Time [s]

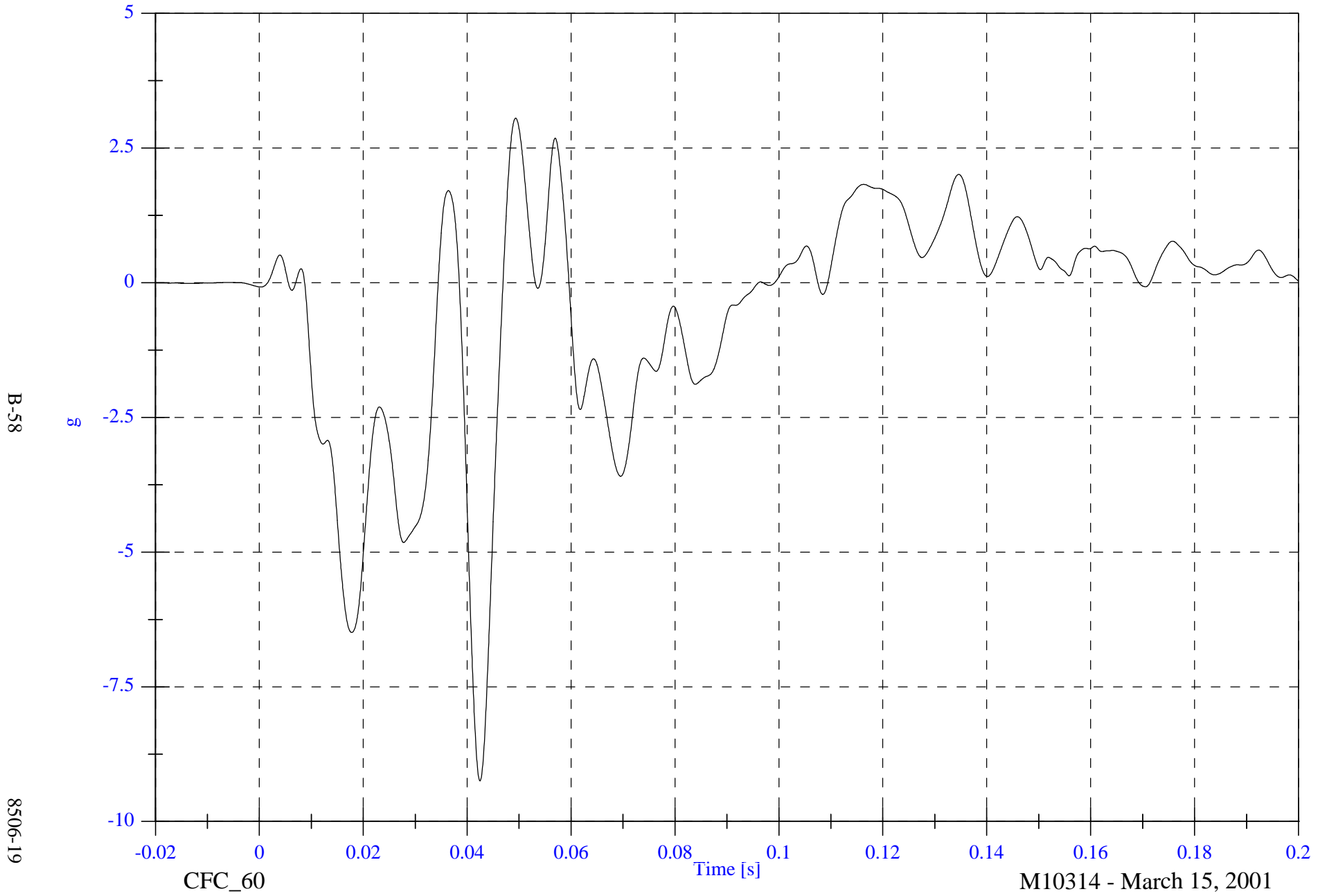
M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

A3 Rear Floorpan X

Max: 3.1 [g] at 0.049 [s]

Min: -9.2 [g] at 0.042 [s]



B-58

8506-19

CFC_60

M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

A3 Rear Floorpan X Velocity

Max: 0.2 [kph] at 0.009 [s]

Min: -6.0 [kph] at 0.095 [s]

B-59

8506-19



CFC_180

M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

A3 Rear Floorpan Y

Max: 18.5 [g] at 0.026 [s]

Min: -2.8 [g] at 0.126 [s]



B-60

g

8506-19

CFC_60

Time [s]

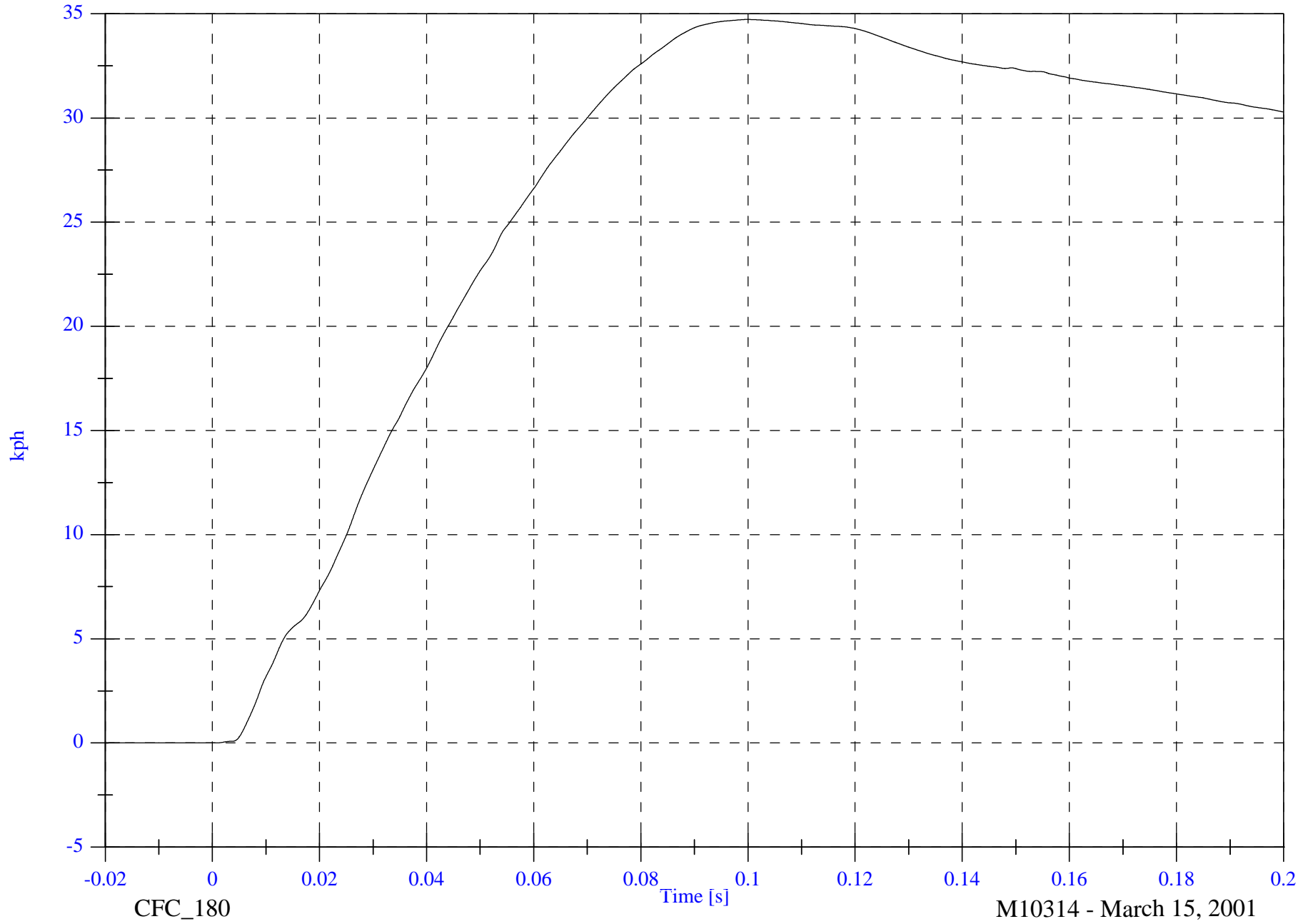
M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

A3 Rear Floorpan Y Velocity

Max: 34.7 [kph] at 0.100 [s]

Min: -0.0 [kph] at -0.020 [s]



B-61

8506-19

CFC_180

Time [s]

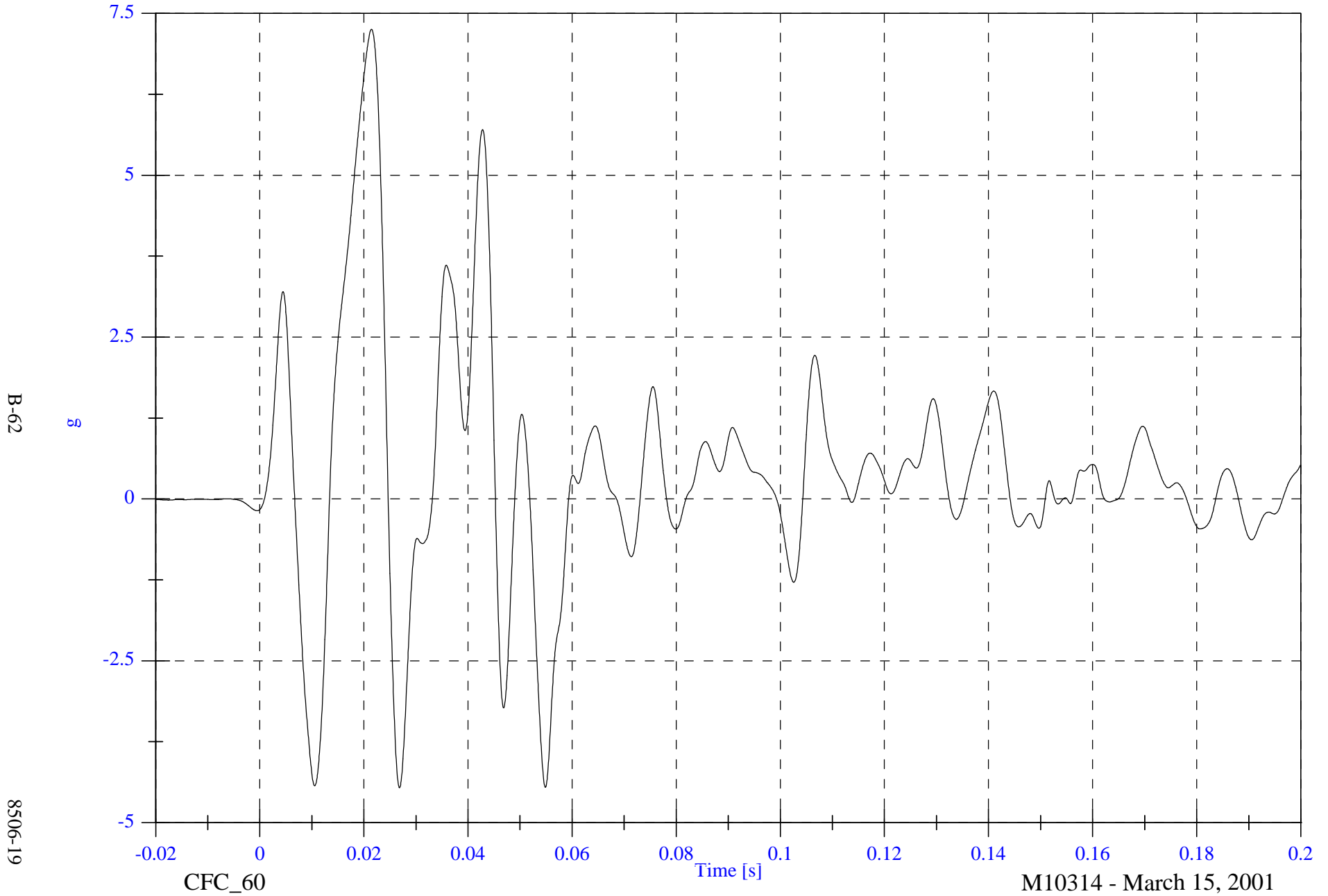
M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

A3 Rear Floorplan Z

Max: 7.3 [g] at 0.021 [s]

Min: -4.5 [g] at 0.027 [s]



B-62

8506-19

CFC_60

Time [s]

M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

A3 Rear Floorplan Z Velocity

Max: 3.0 [kph] at 0.179 [s]

Min: -0.5 [kph] at 0.013 [s]

B-63

8506-19



CFC_180

M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

A3 Rear Floorpan Resultant

Max: 19.5 [g] at 0.027 [s]

Min: 0.0 [g] at -0.016 [s]

B-64

8506-19

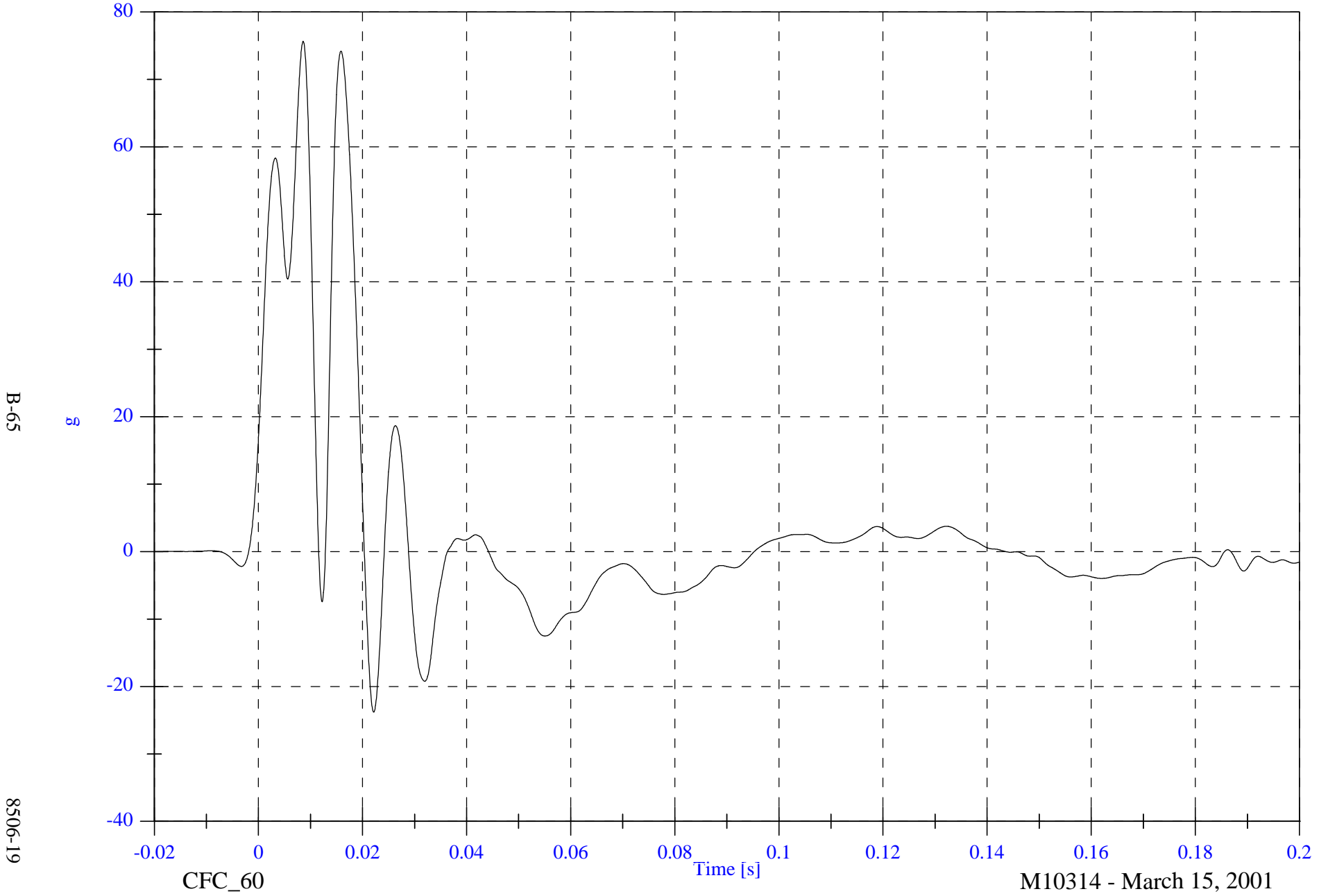


SNCAP Test 19 - 2001 Chevrolet Impala

A4 Left Rear Sill Y

Max: 75.7 [g] at 0.009 [s]

Min: -23.8 [g] at 0.022 [s]



B-65

8506-19

CFC_60

Time [s]

M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

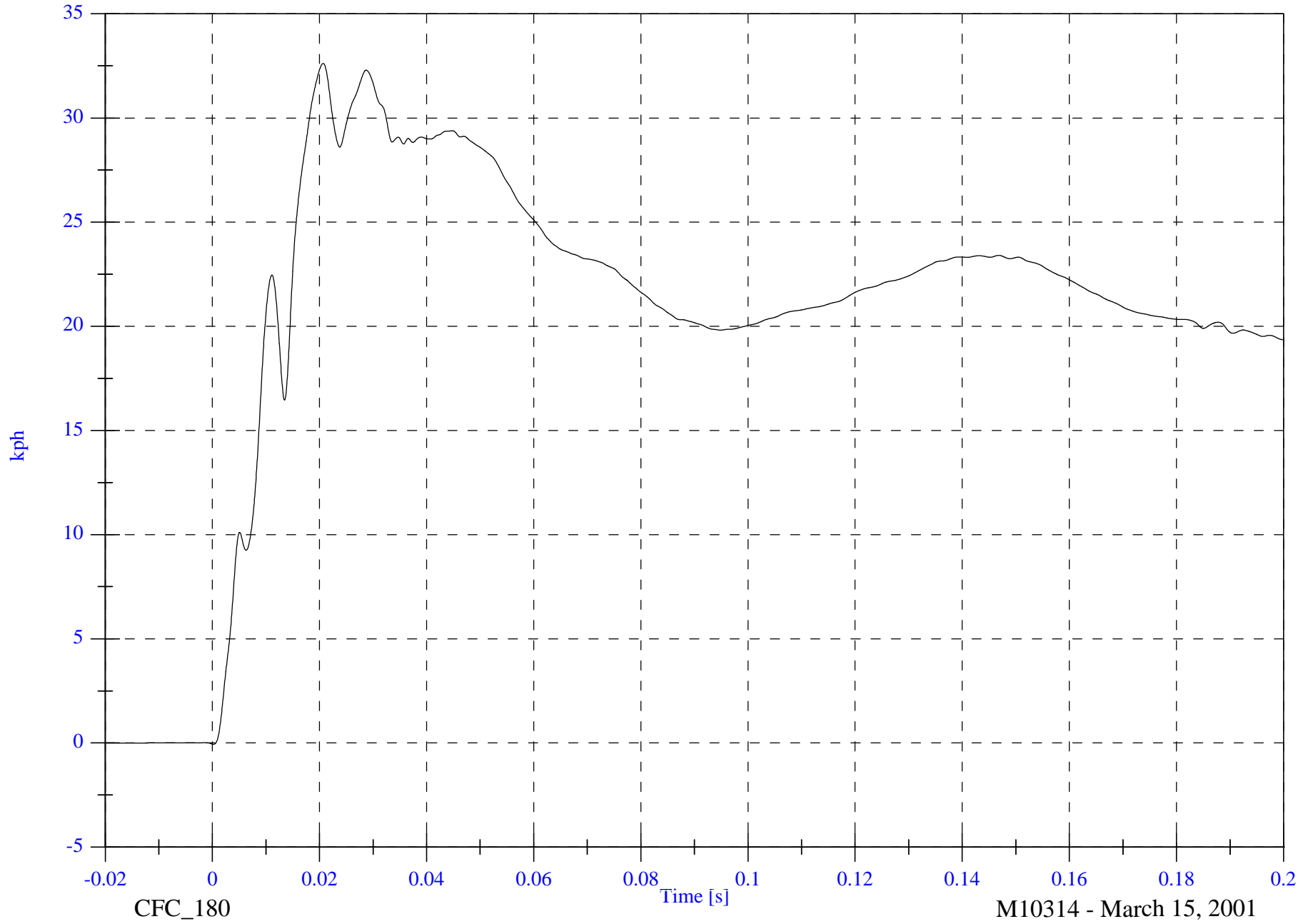
A4 Left Rear Sill Y Velocity

Max: 32.6 [kph] at 0.021 [s]

Min: -0.1 [kph] at 0.000 [s]

B-66

8506-19



CFC_180

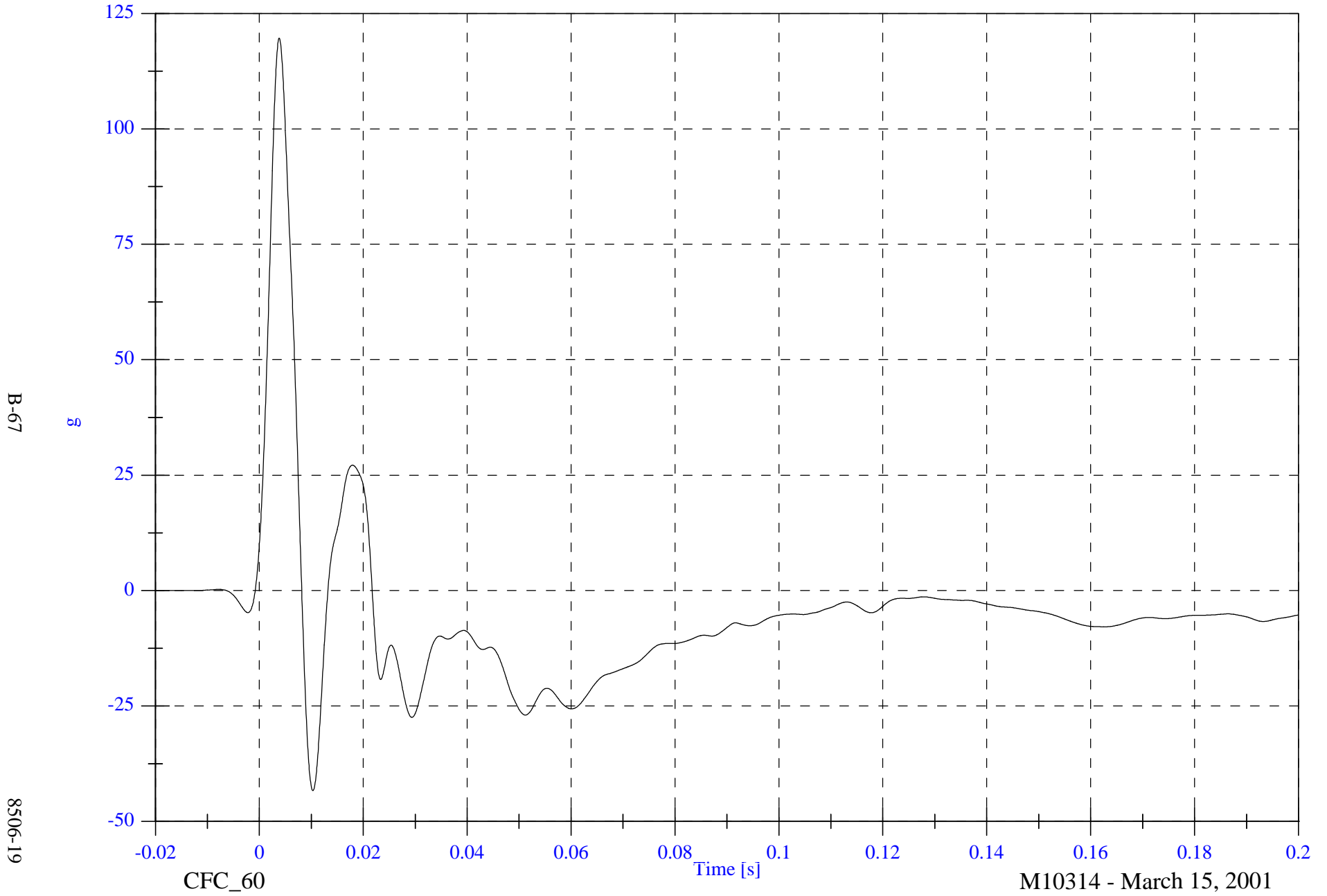
M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

A5 Left Front Sill Y

Max: 119.6 [g] at 0.004 [s]

Min: -43.3 [g] at 0.010 [s]



B-67

8506-19

CFC_60

Time [s]

M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

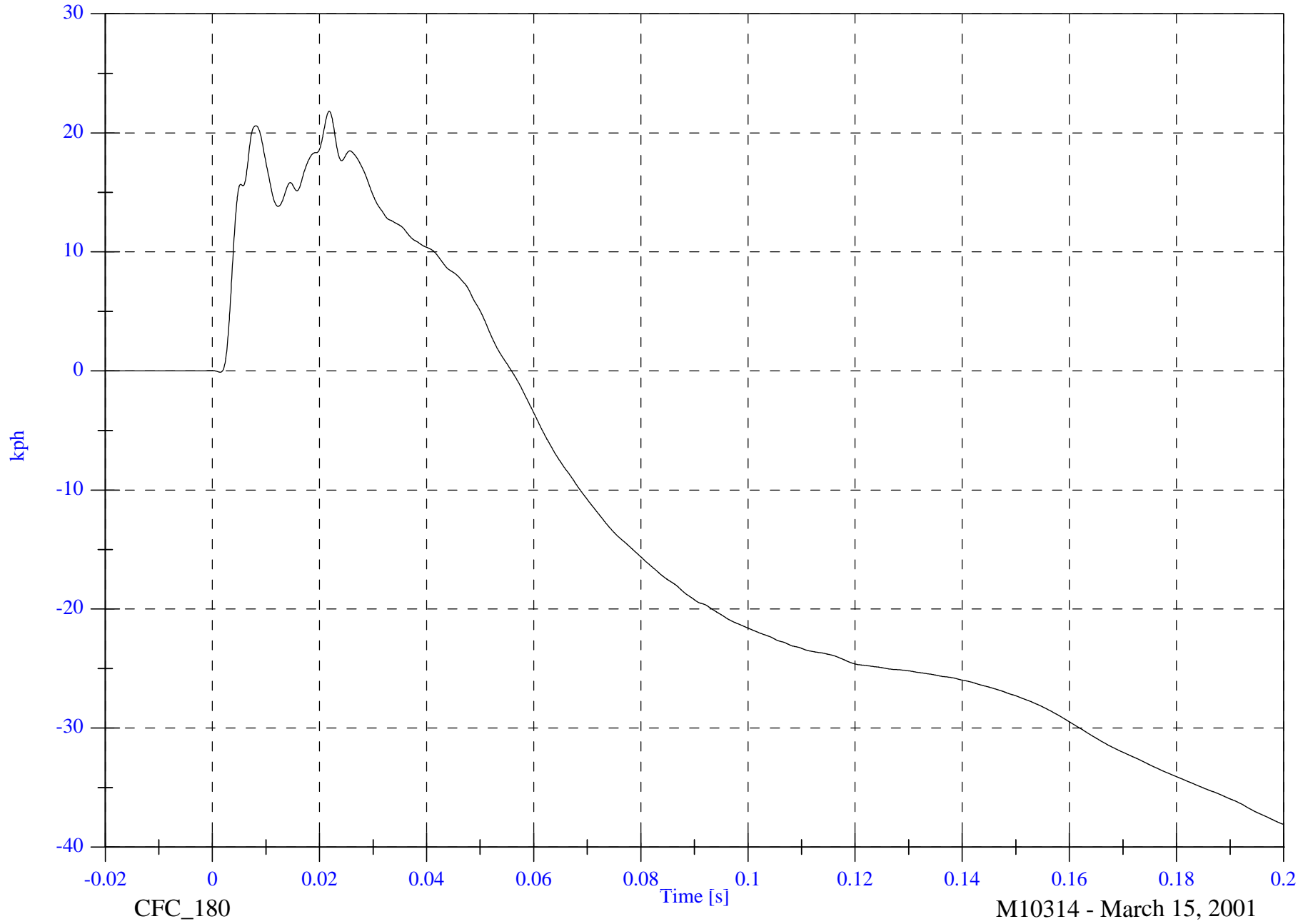
A5 Left Front Sill Y Velocity

Max: 21.8 [kph] at 0.022 [s]

Min: -38.1 [kph] at 0.200 [s]

B-68

8506-19

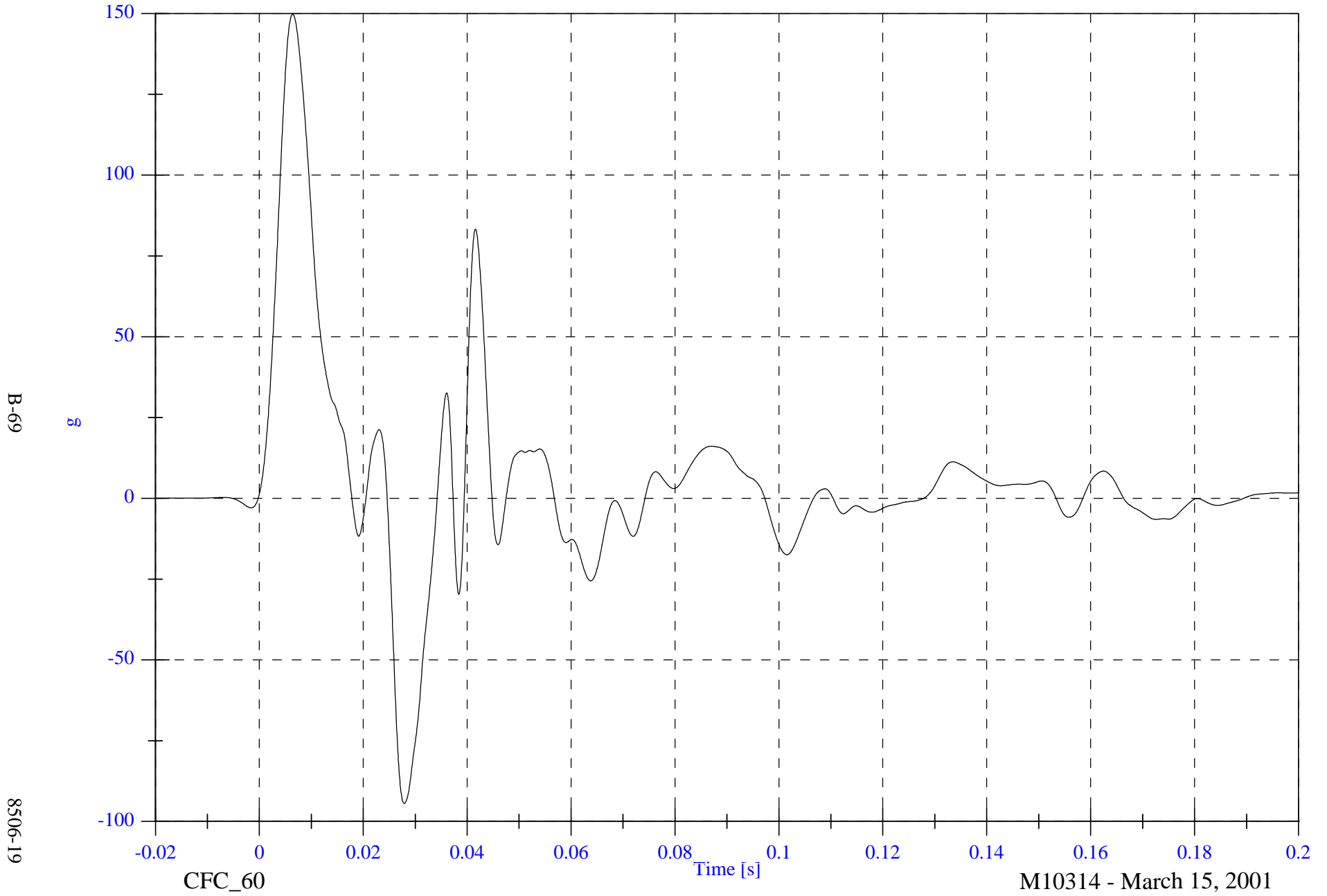


SNCAP Test 19 - 2001 Chevrolet Impala

A6 Left Front Door CL Y

Max: 149.8 [g] at 0.006 [s]

Min: -94.4 [g] at 0.028 [s]



SNCAP Test 19 - 2001 Chevrolet Impala

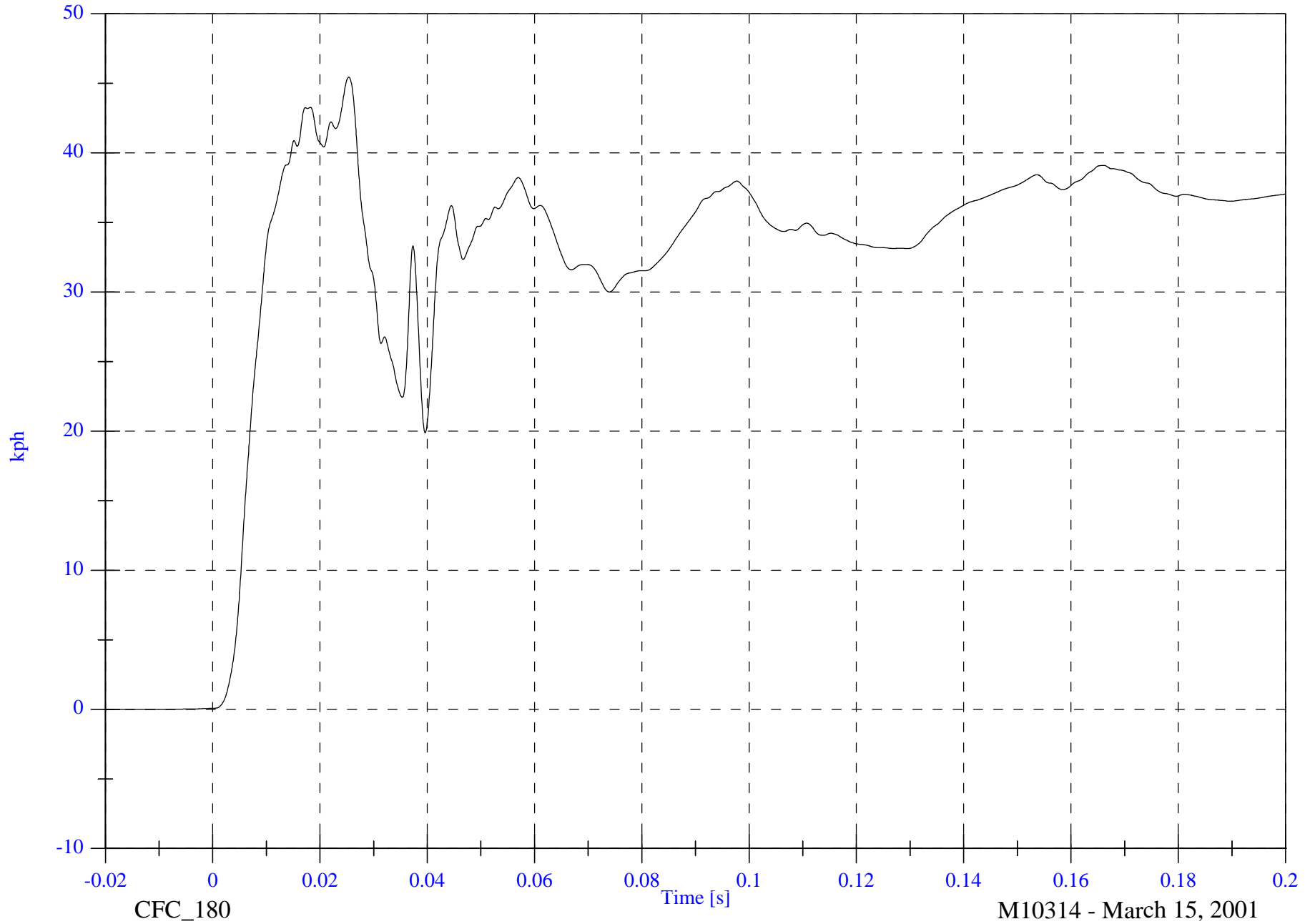
A6 Left Front Door CL Y Velocity

Max: 45.5 [kph] at 0.025 [s]

Min: -0.0 [kph] at -0.020 [s]

B-70

8506-19



CFC_180

M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

A7 Right Rear Compartment Y

Max: 21.0 [g] at 0.008 [s]

Min: -1.8 [g] at 0.158 [s]

B-71

8506-19



SNCAP Test 19 - 2001 Chevrolet Impala

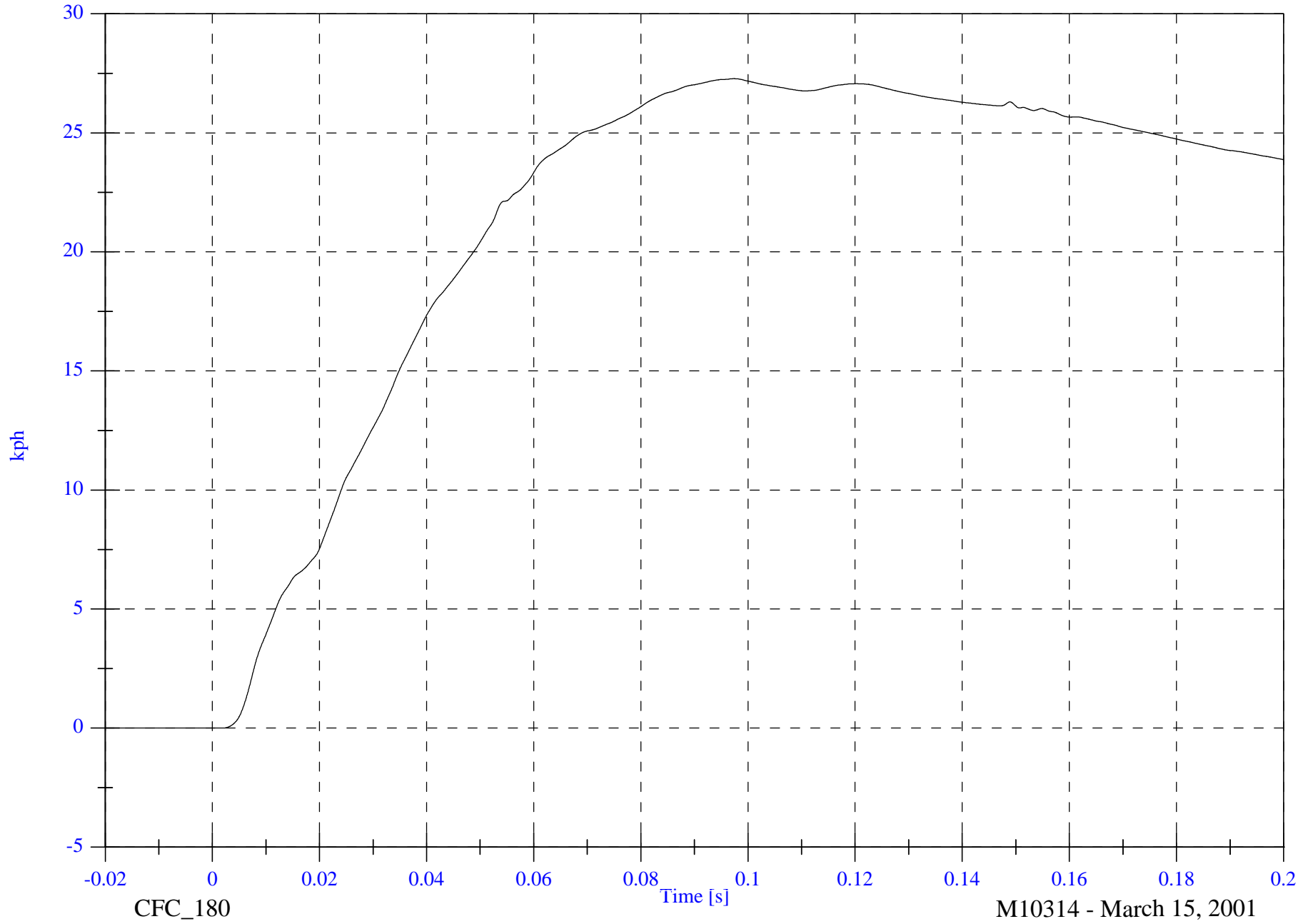
A7 Right Rear Compartment Y Velocity

Max: 27.3 [kph] at 0.097 [s]

Min: -0.0 [kph] at -0.019 [s]

B-72

8506-19



CFC_180

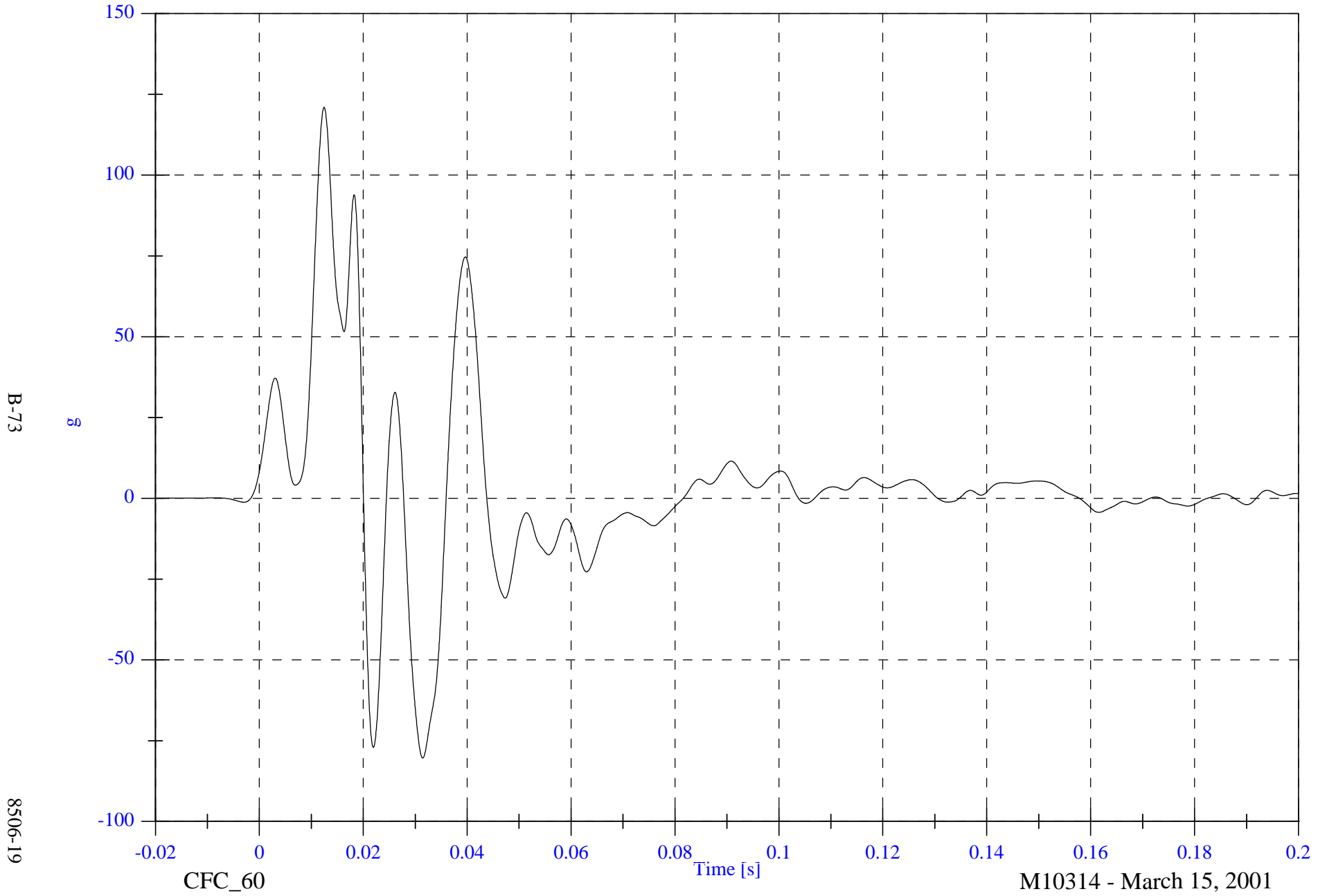
M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

A9 Left Front Door Upper C/L Y

Max: 120.9 [g] at 0.012 [s]

Min: -80.4 [g] at 0.031 [s]



M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

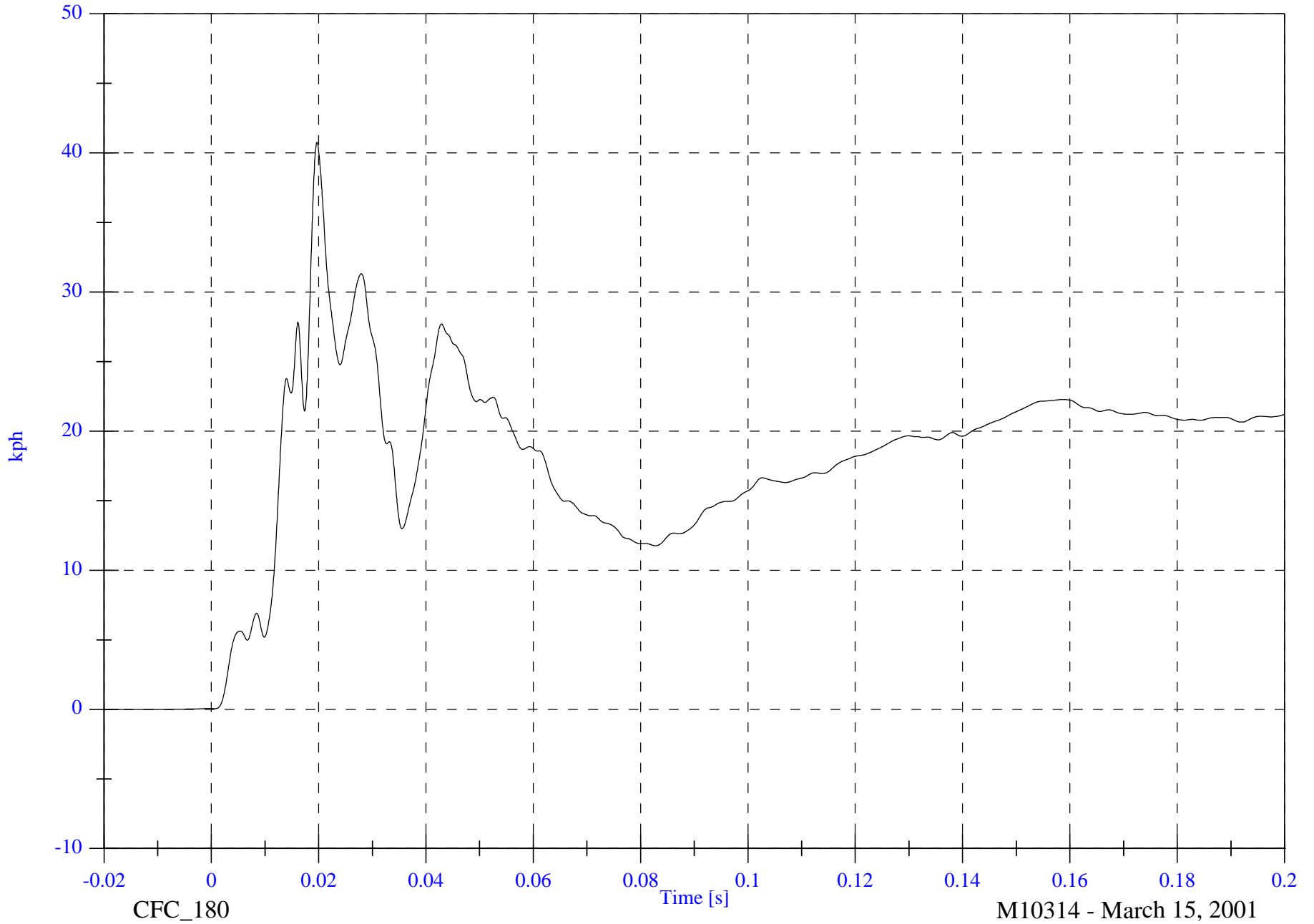
A9 Left Front Door Upper C/L Y Velocity

Max: 40.8 [kph] at 0.020 [s]

Min: -0.0 [kph] at -0.020 [s]

B-74

8506-19



CFC_180

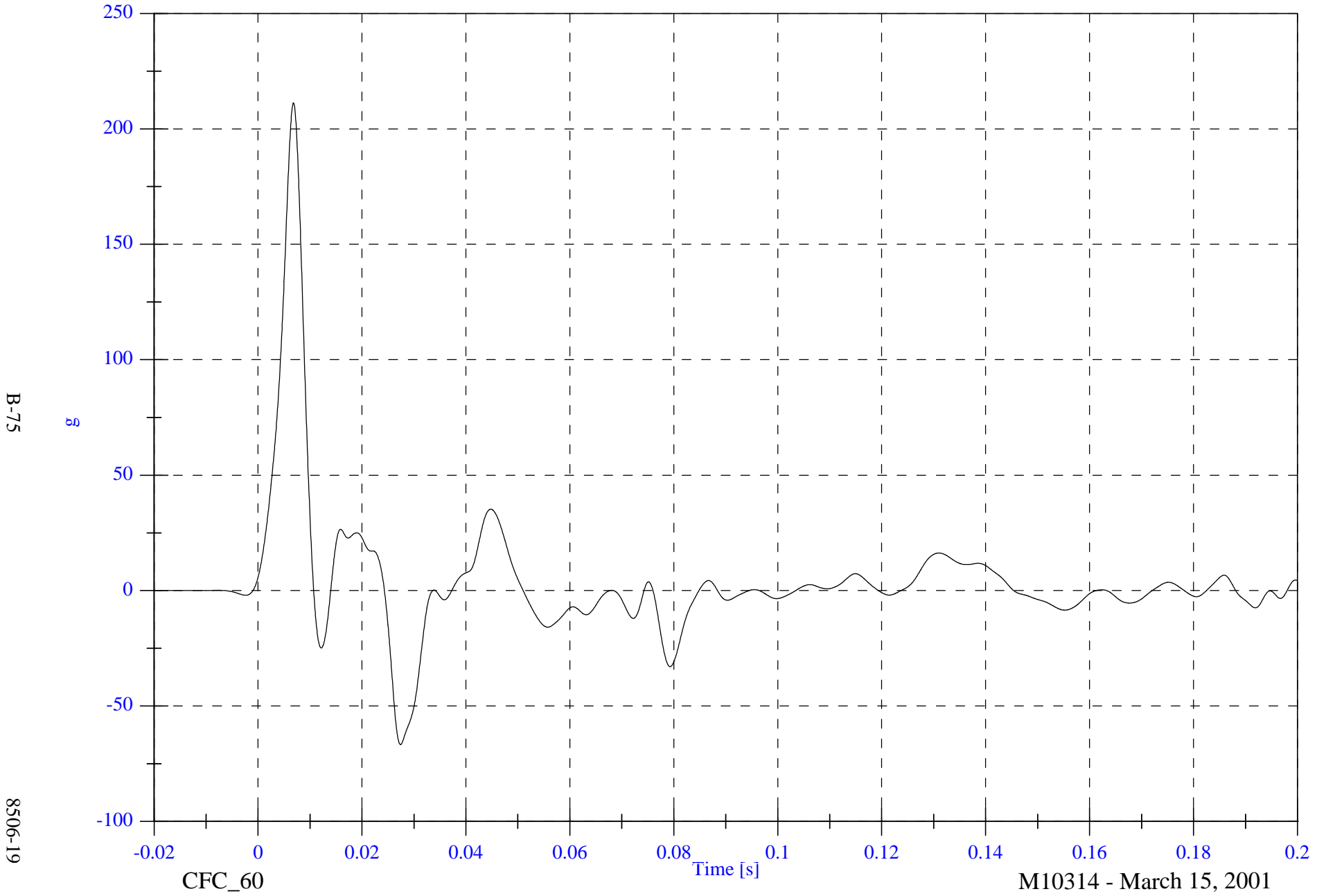
M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

A10 Left Rear Door Midrear Y

Max: 211.3 [g] at 0.007 [s]

Min: -66.7 [g] at 0.027 [s]



B-75

8506-19

CFC_60

M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

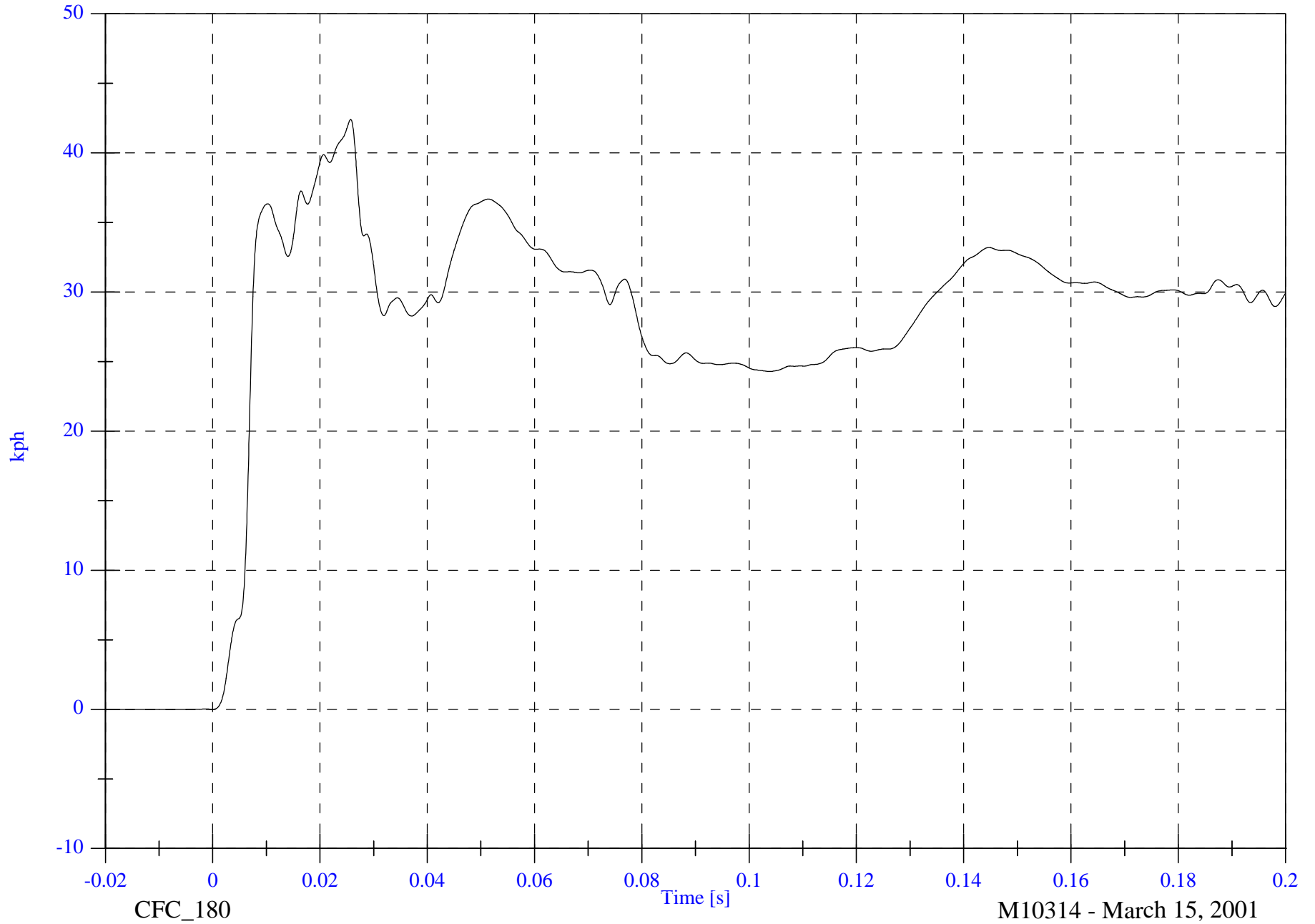
A10 Left Rear Door Midrear Y Velocity

Max: 42.4 [kph] at 0.026 [s]

Min: -0.0 [kph] at -0.020 [s]

B-76

8506-19



CFC_180

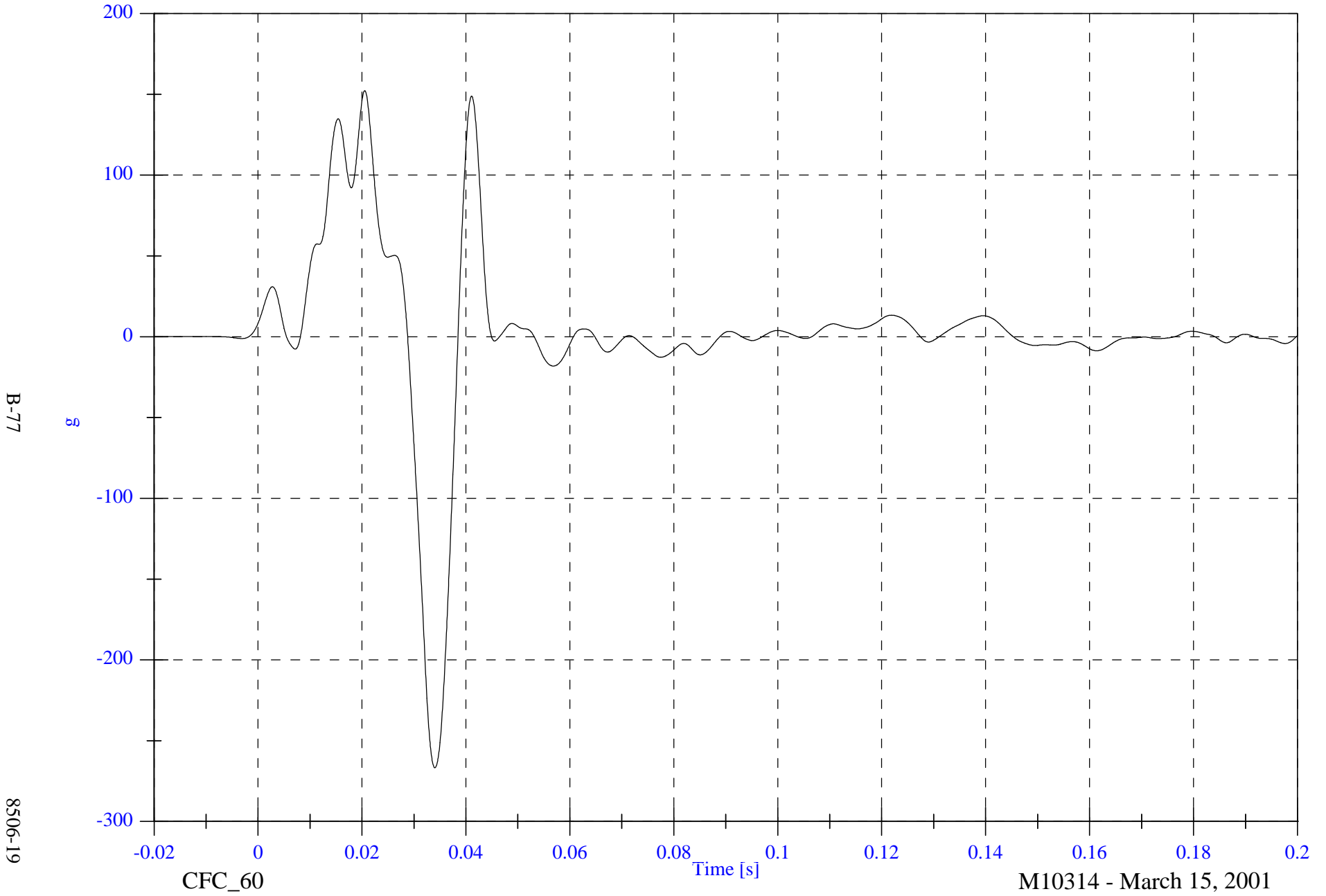
M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

A11 Left Rear Door Upper C/L Y

Max: 152.2 [g] at 0.021 [s]

Min: -266.8 [g] at 0.034 [s]



B-77

8506-19

CFC_60

Time [s]

M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

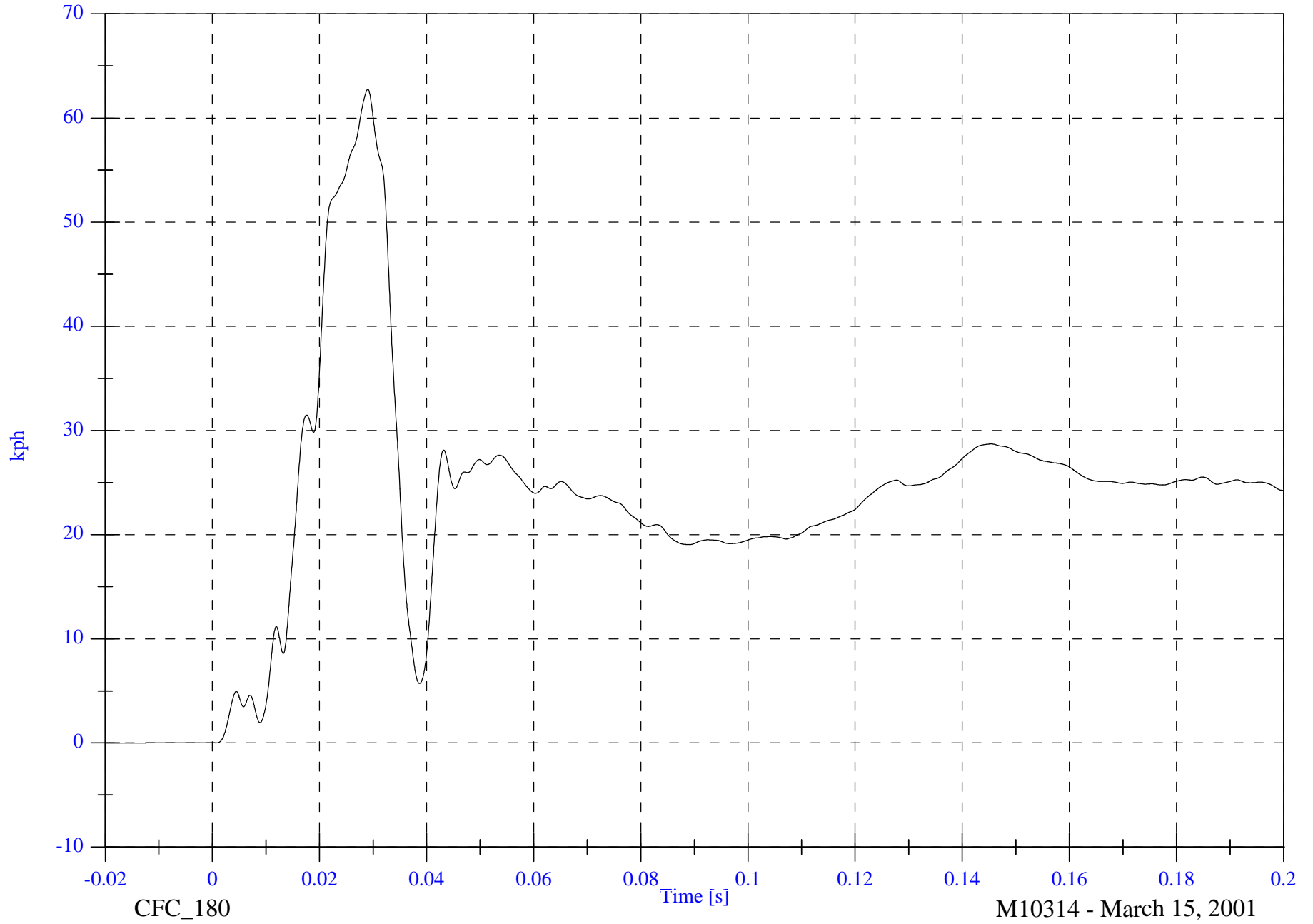
A11 Left Rear Door Upper C/L Y Velocity

Max: 62.8 [kph] at 0.029 [s]

Min: -0.0 [kph] at -0.020 [s]

B-78

8506-19



CFC_180

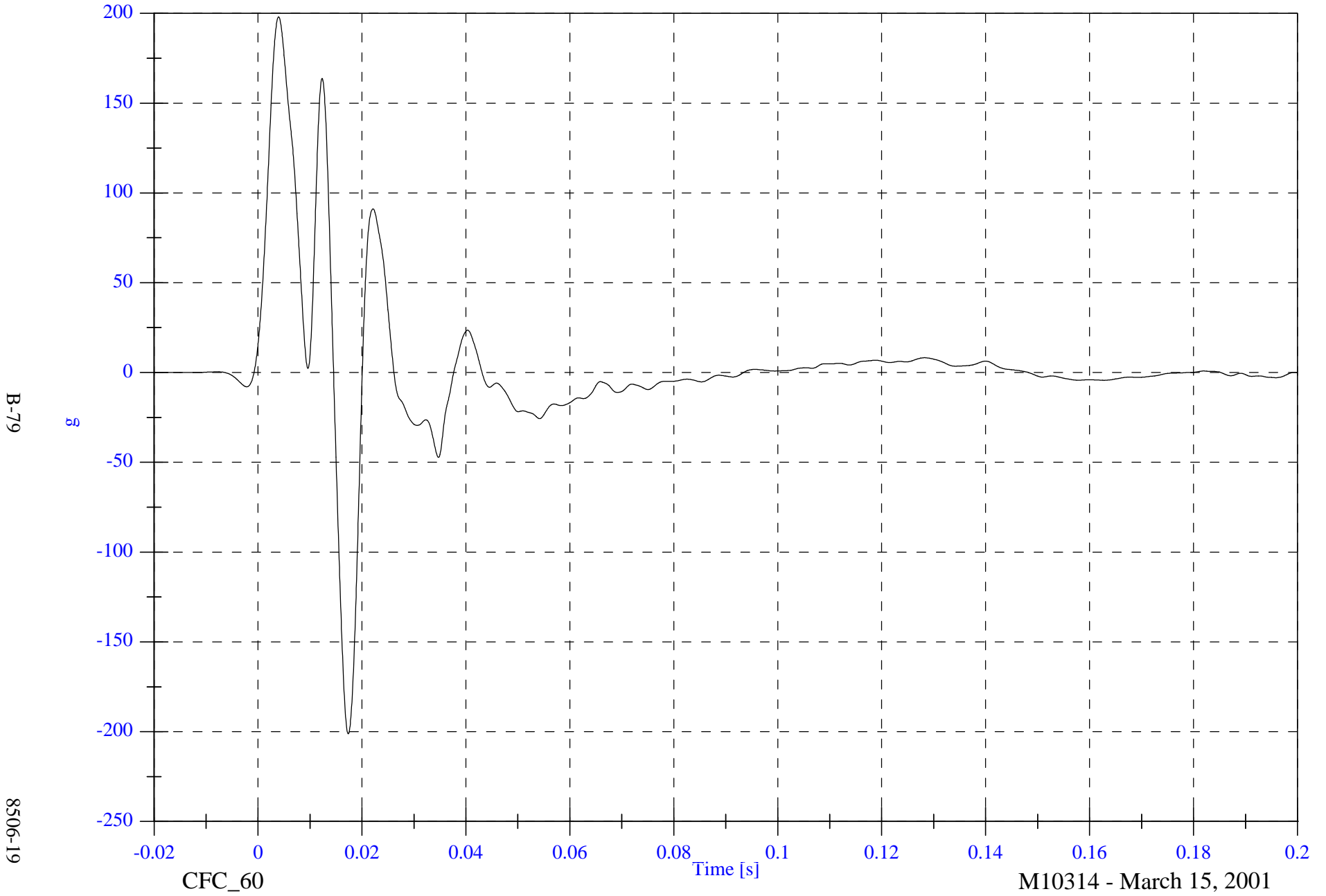
M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

A12 Left Lower B Post Y

Max: 198.1 [g] at 0.004 [s]

Min: -201.3 [g] at 0.017 [s]



B-79

8506-19

CFC_60

Time [s]

M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

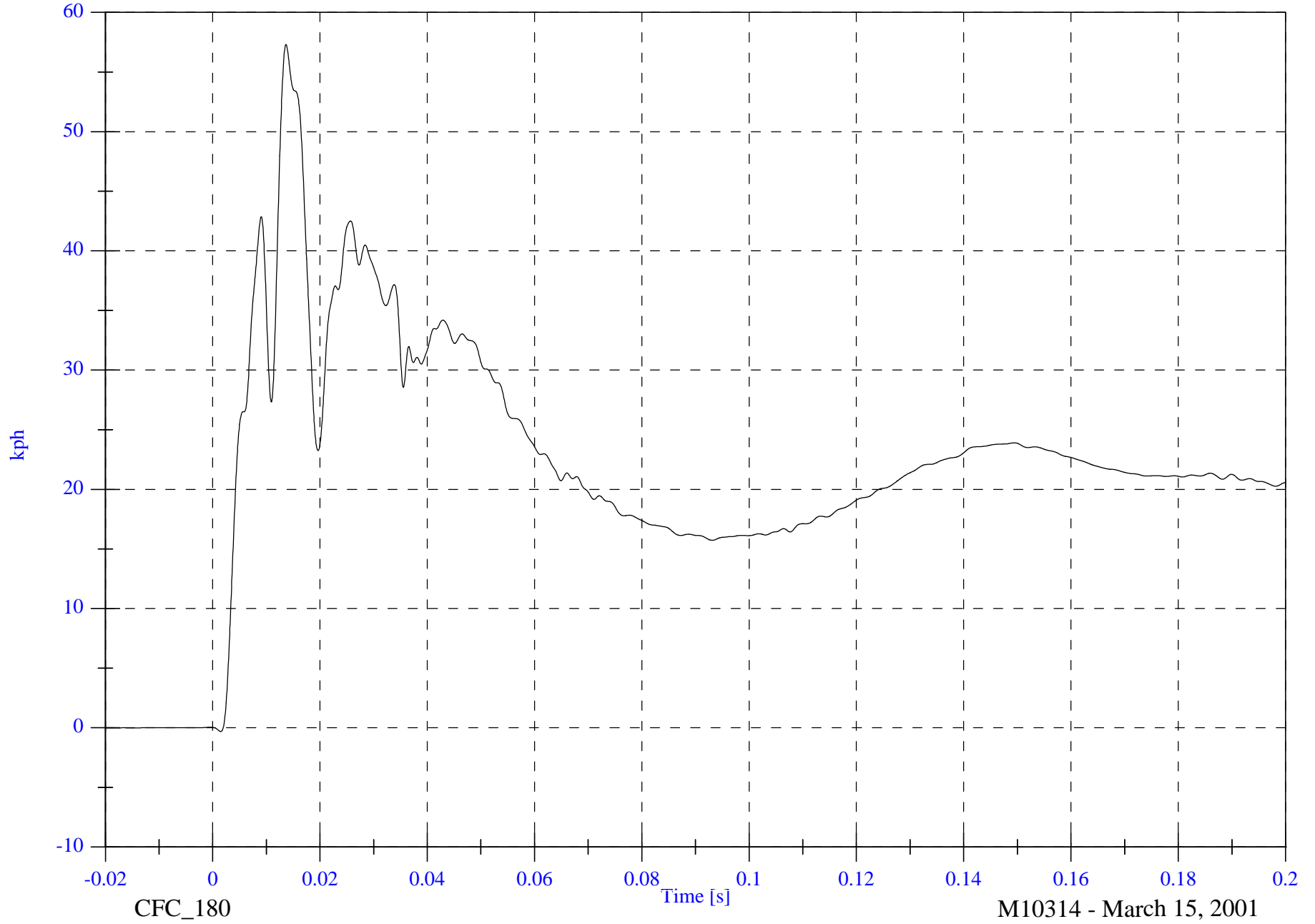
A12 Left Lower B Post Y Velocity

Max: 57.3 [kph] at 0.014 [s]

Min: -0.3 [kph] at 0.002 [s]

B-80

8506-19



CFC_180

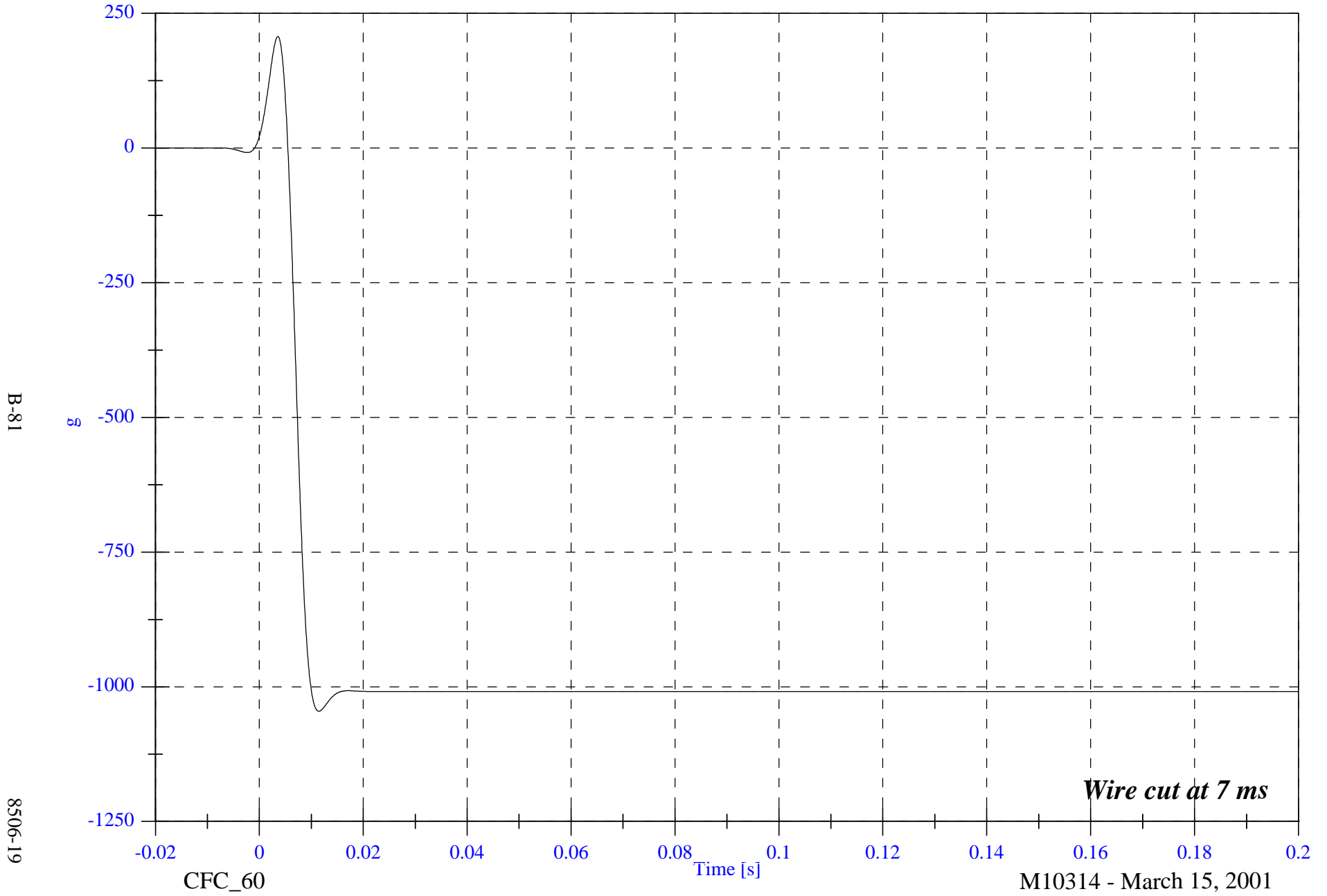
M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

A13 Left Mid B Post Y

Max: 207.3 [g] at 0.004 [s]

Min: -1045.4 [g] at 0.011 [s]



B-81

8506-19

Wire cut at 7 ms

CFC_60

Time [s]

M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

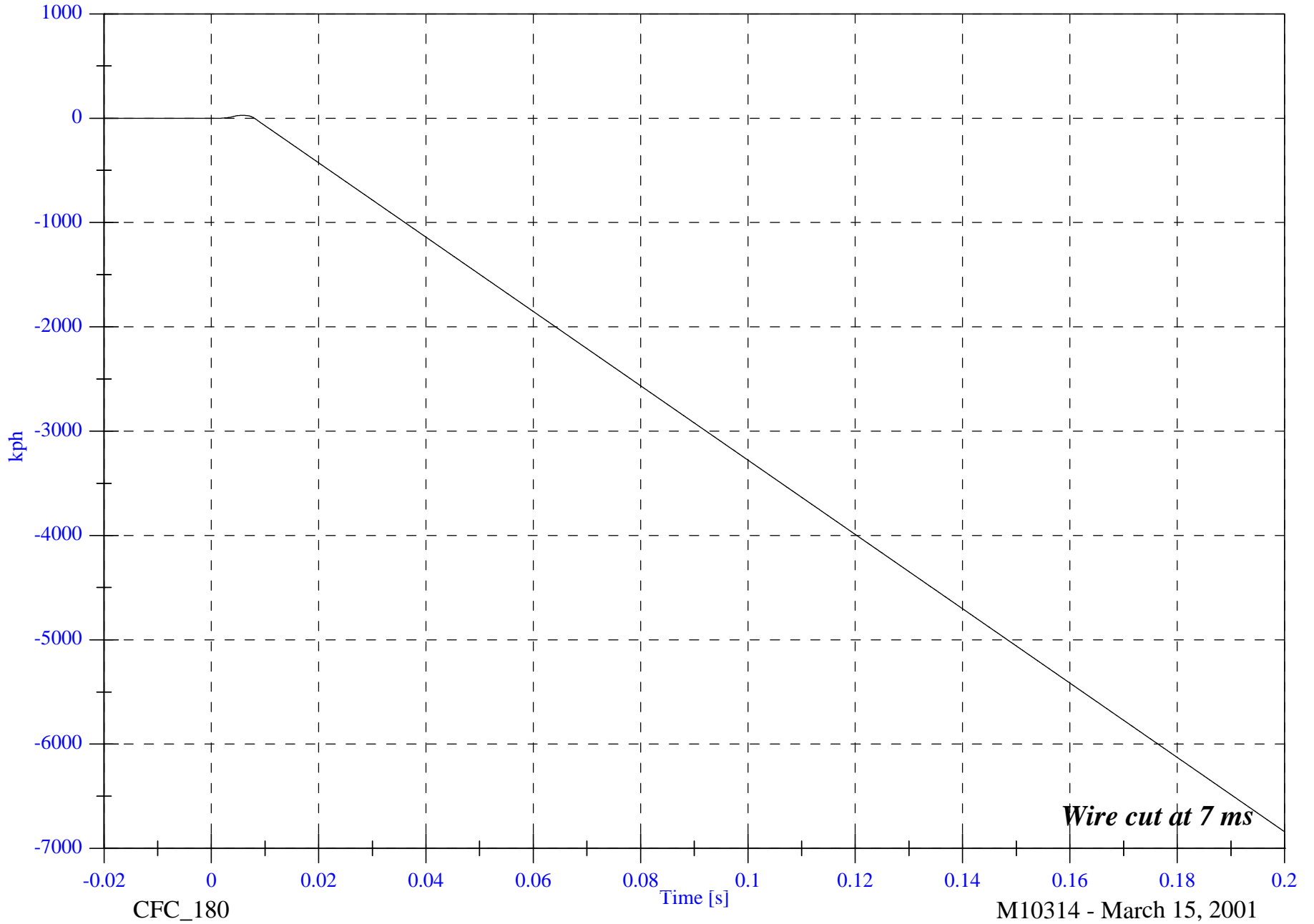
A13 Left Mid B Post Y Velocity

Max: 27.5 [kph] at 0.006 [s]

Min: -6837.8 [kph] at 0.200 [s]

B-82

8506-19



Wire cut at 7 ms

CFC_180

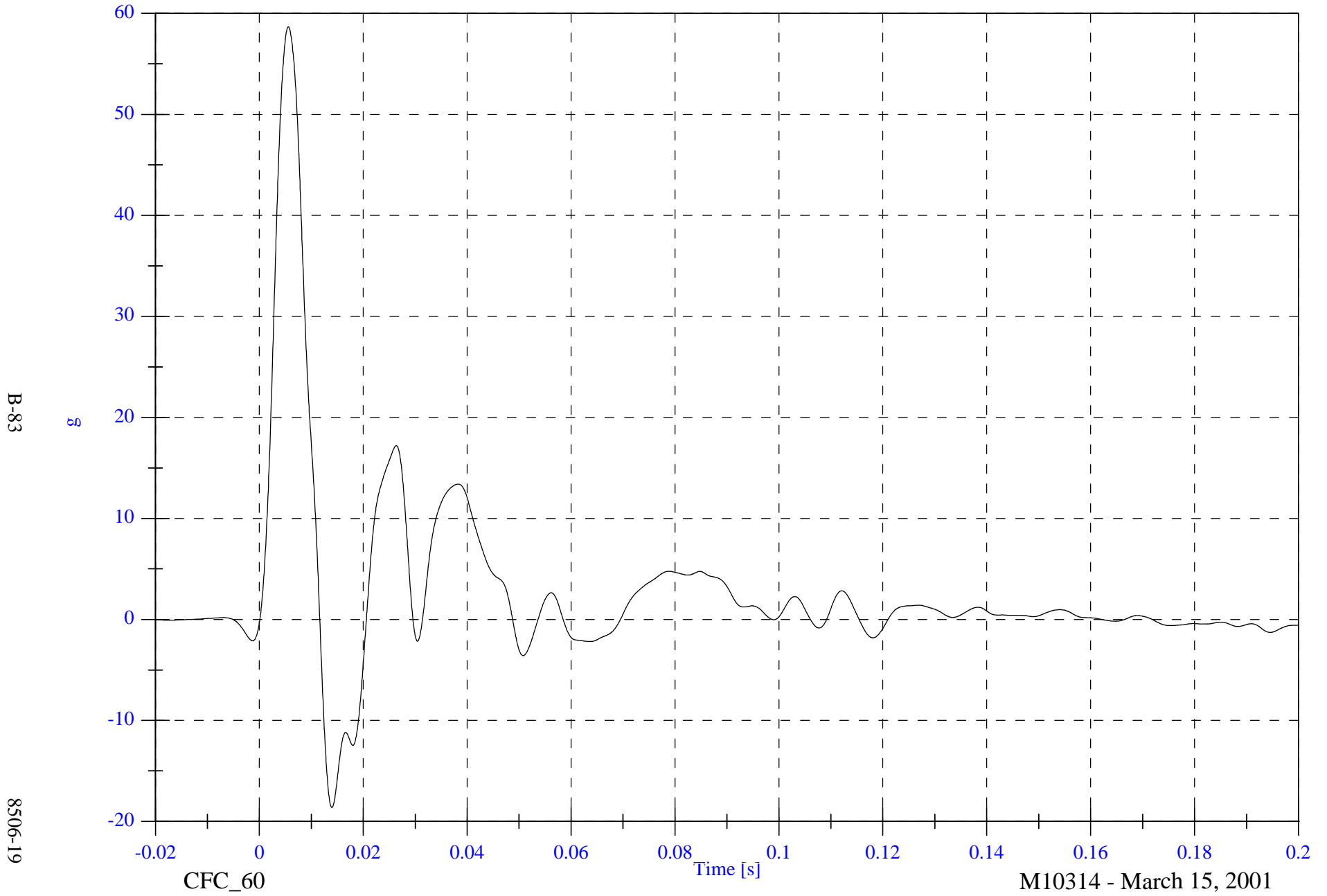
M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

A14 Left Lower A Post Y

Max: 58.7 [g] at 0.006 [s]

Min: -18.6 [g] at 0.014 [s]



B-83

8506-19

CFC_60

Time [s]

M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

A14 Left Lower A Post Y Velocity

Max: 21.4 [kph] at 0.172 [s]

Min: -0.1 [kph] at 0.002 [s]

B-84

8506-19

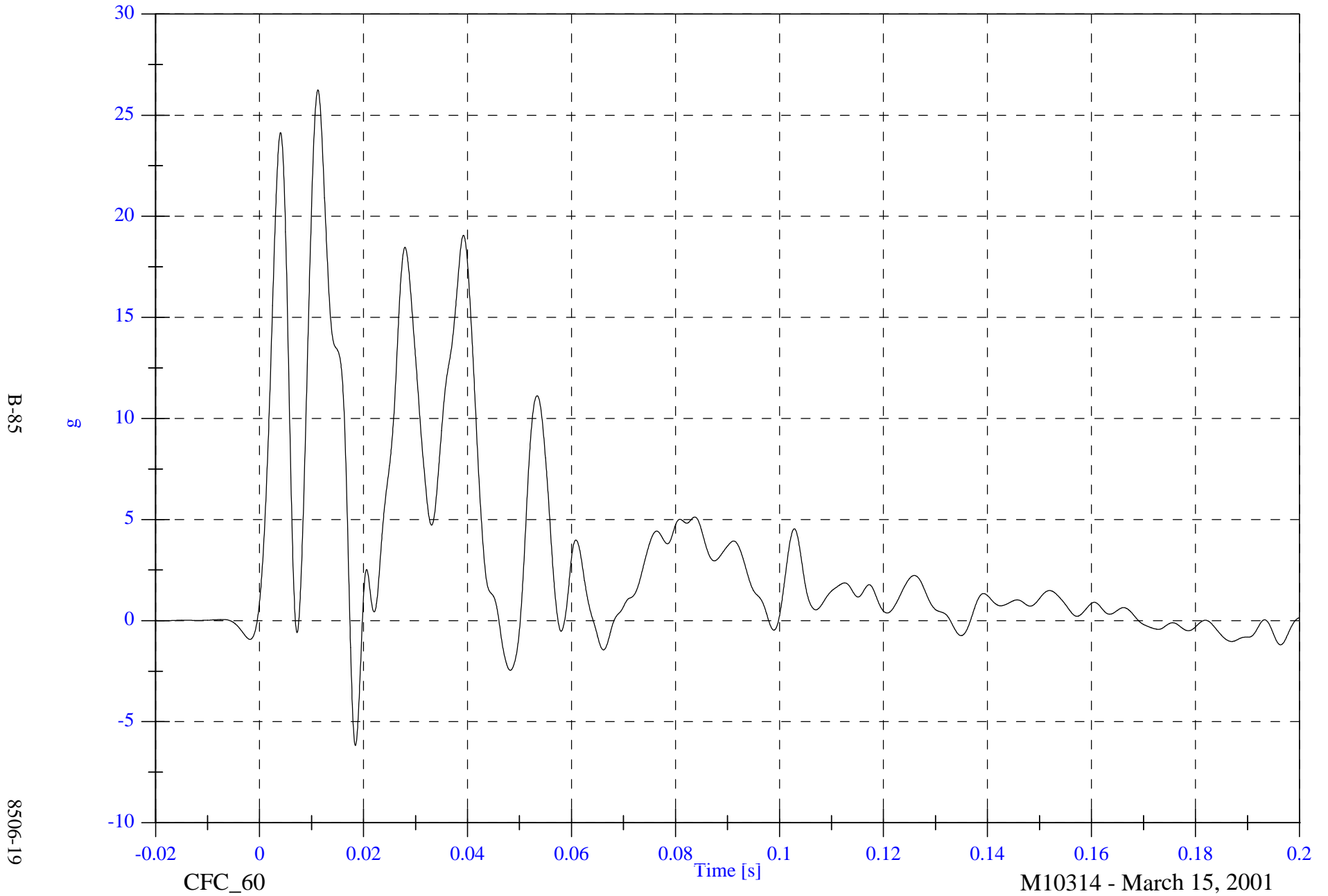


SNCAP Test 19 - 2001 Chevrolet Impala

A15 Left Mid A Post Y

Max: 26.2 [g] at 0.011 [s]

Min: -6.2 [g] at 0.018 [s]



B-85

g

8506-19

CFC_60

Time [s]

M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

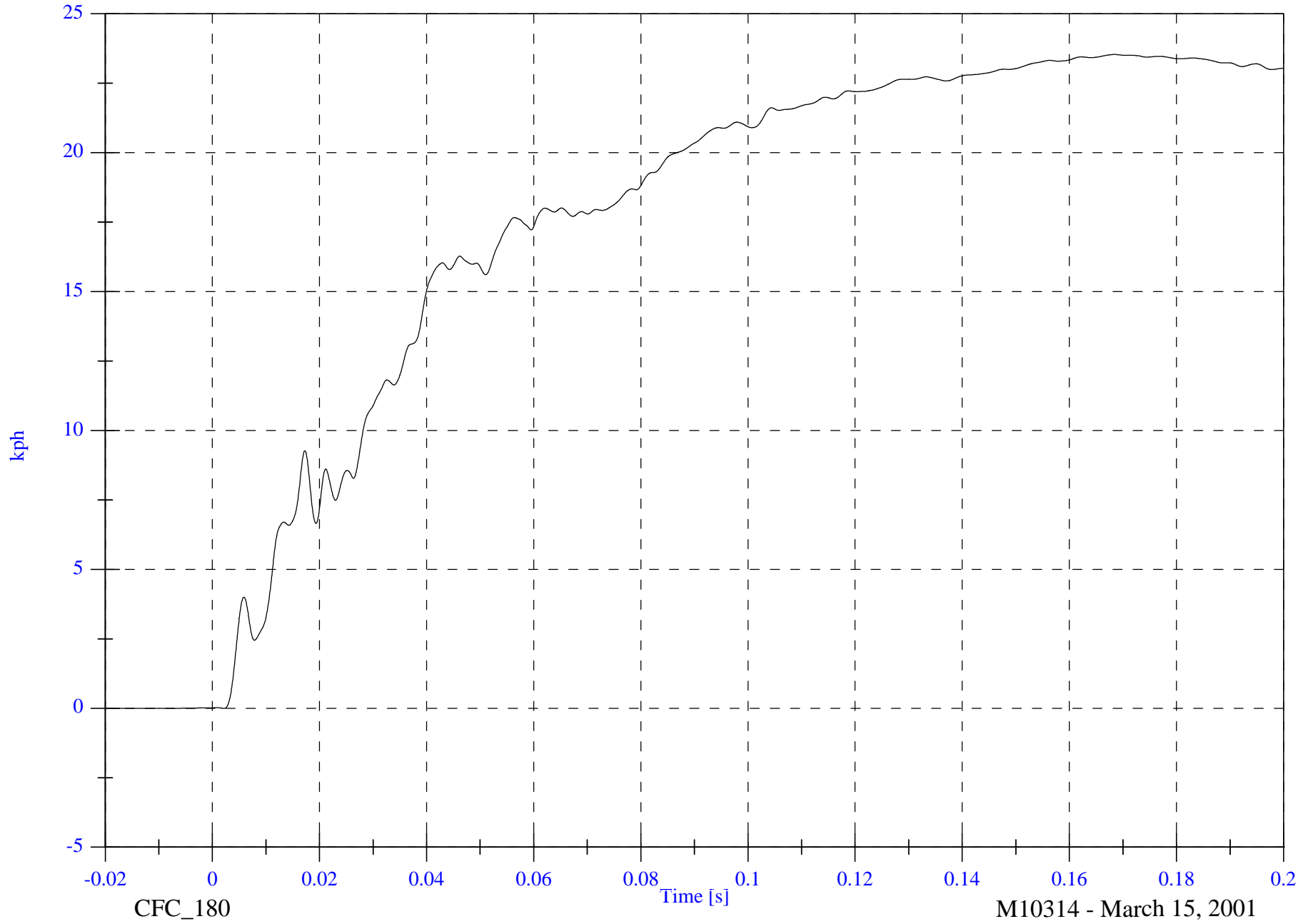
A15 Left Mid A Post Y Velocity

Max: 23.5 [kph] at 0.168 [s]

Min: -0.0 [kph] at 0.002 [s]

B-86

8506-19



SNCAP Test 19 - 2001 Chevrolet Impala

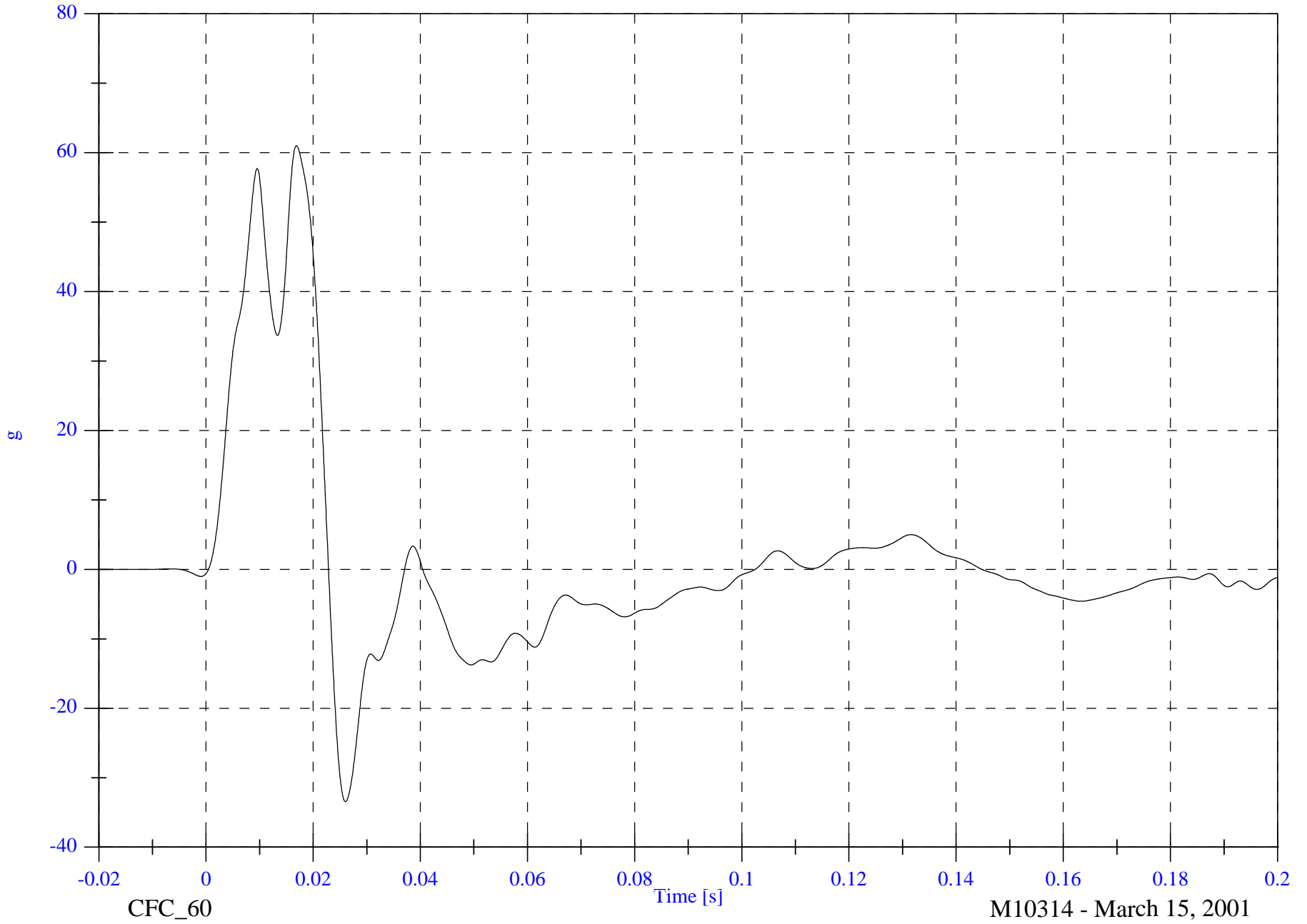
A16 Front Seat Track Y

Max: 61.0 [g] at 0.017 [s]

Min: -33.5 [g] at 0.026 [s]

B-87

8506-19



CFC_60

Time [s]

M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

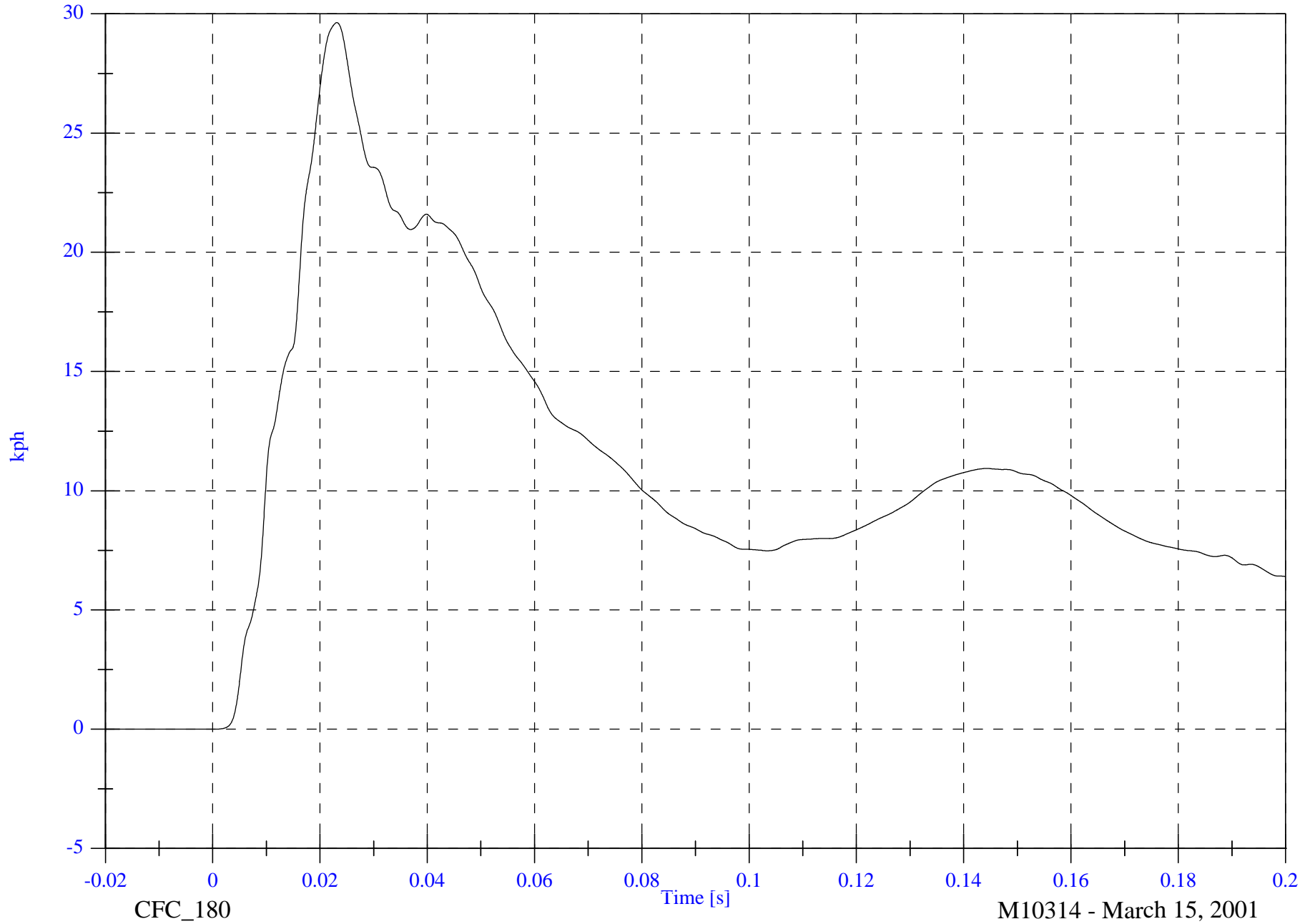
A16 Front Seat Track Y Velocity

Max: 29.6 [kph] at 0.023 [s]

Min: -0.0 [kph] at -0.019 [s]

B-88

8506-19



CFC_180

M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

A17 Rear Seat Track Y

Max: 17.1 [g] at 0.009 [s]

Min: -2.1 [g] at 0.126 [s]



B-89

8506-19

CFC_60

Time [s]

M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

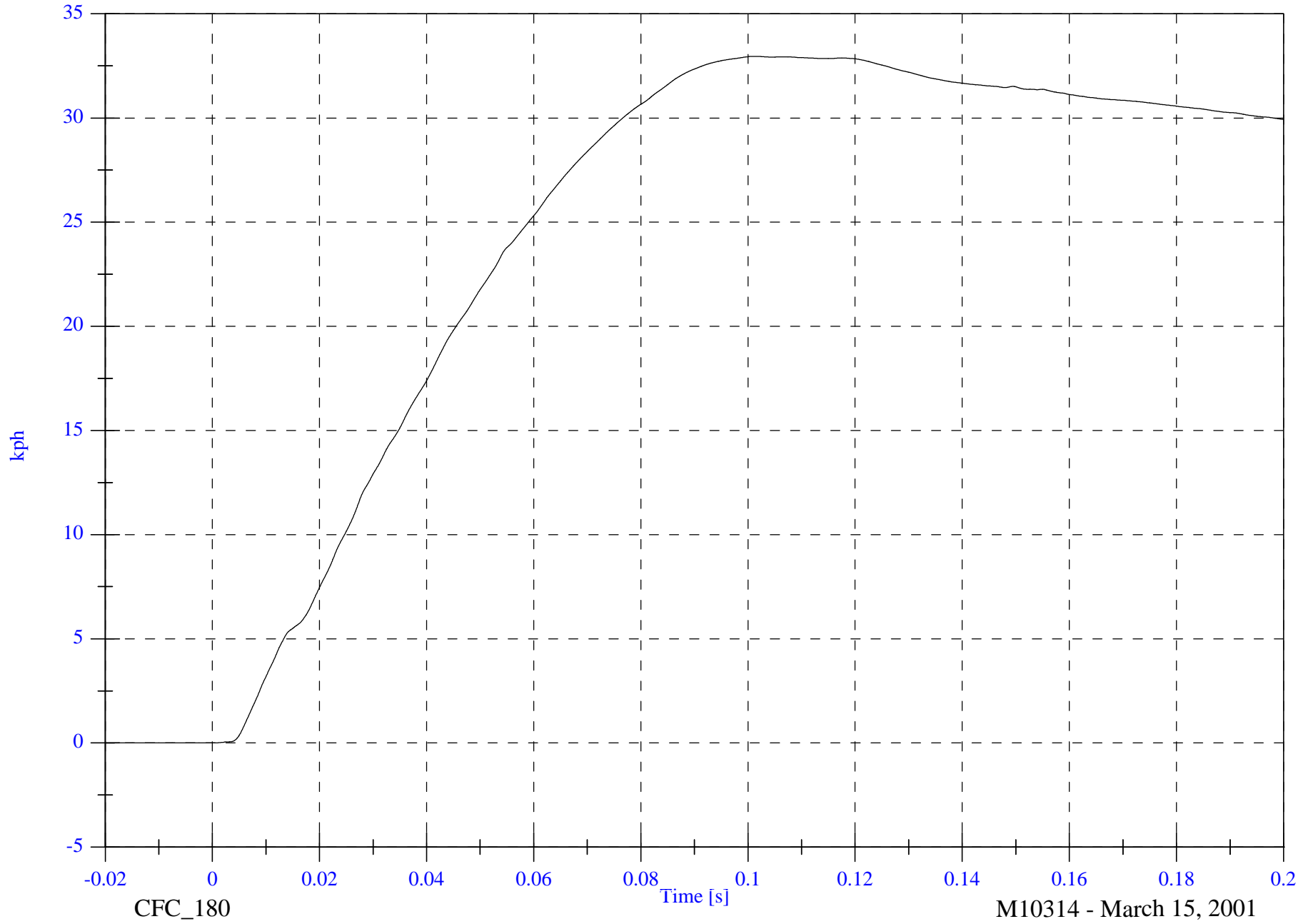
A17 Rear Seat Track Y Velocity

Max: 33.0 [kph] at 0.101 [s]

Min: -0.0 [kph] at -0.020 [s]

B-90

8506-19



CFC_180

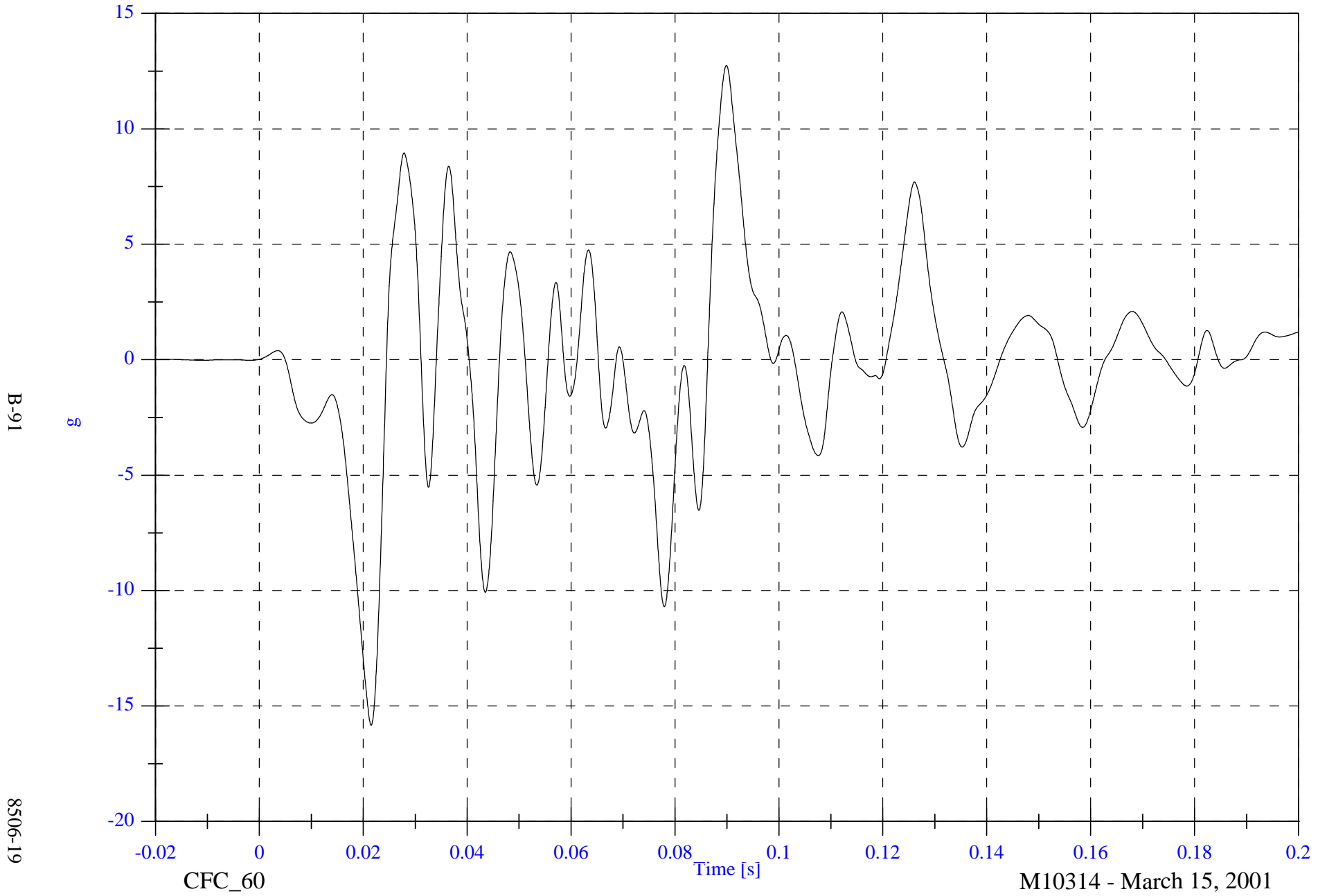
M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

A18 Target CG X

Max: 12.7 [g] at 0.090 [s]

Min: -15.8 [g] at 0.022 [s]



SNCAP Test 19 - 2001 Chevrolet Impala

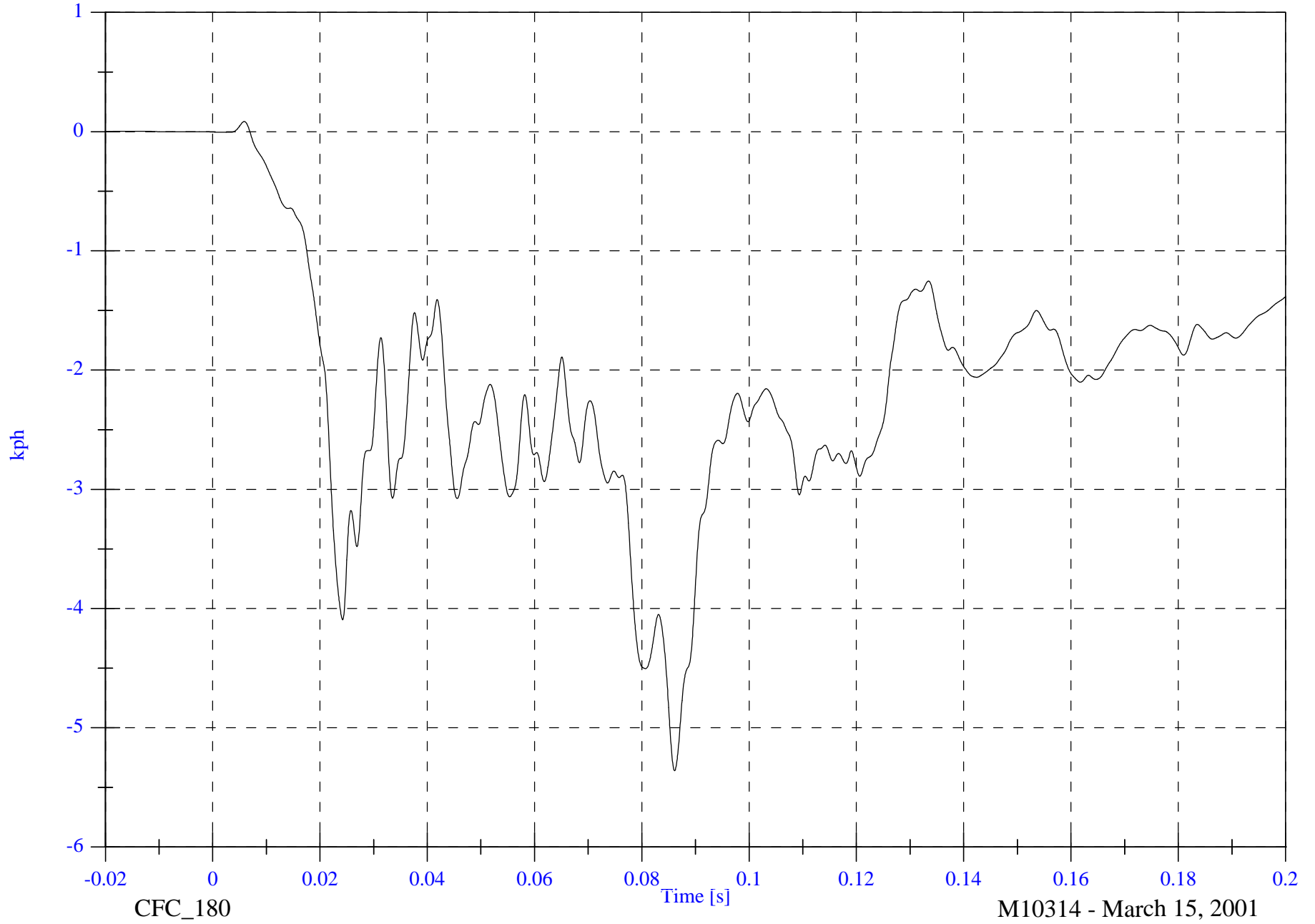
A18 Target CG X Velocity

Max: 0.1 [kph] at 0.006 [s]

Min: -5.4 [kph] at 0.086 [s]

B-92

8506-19



CFC_180

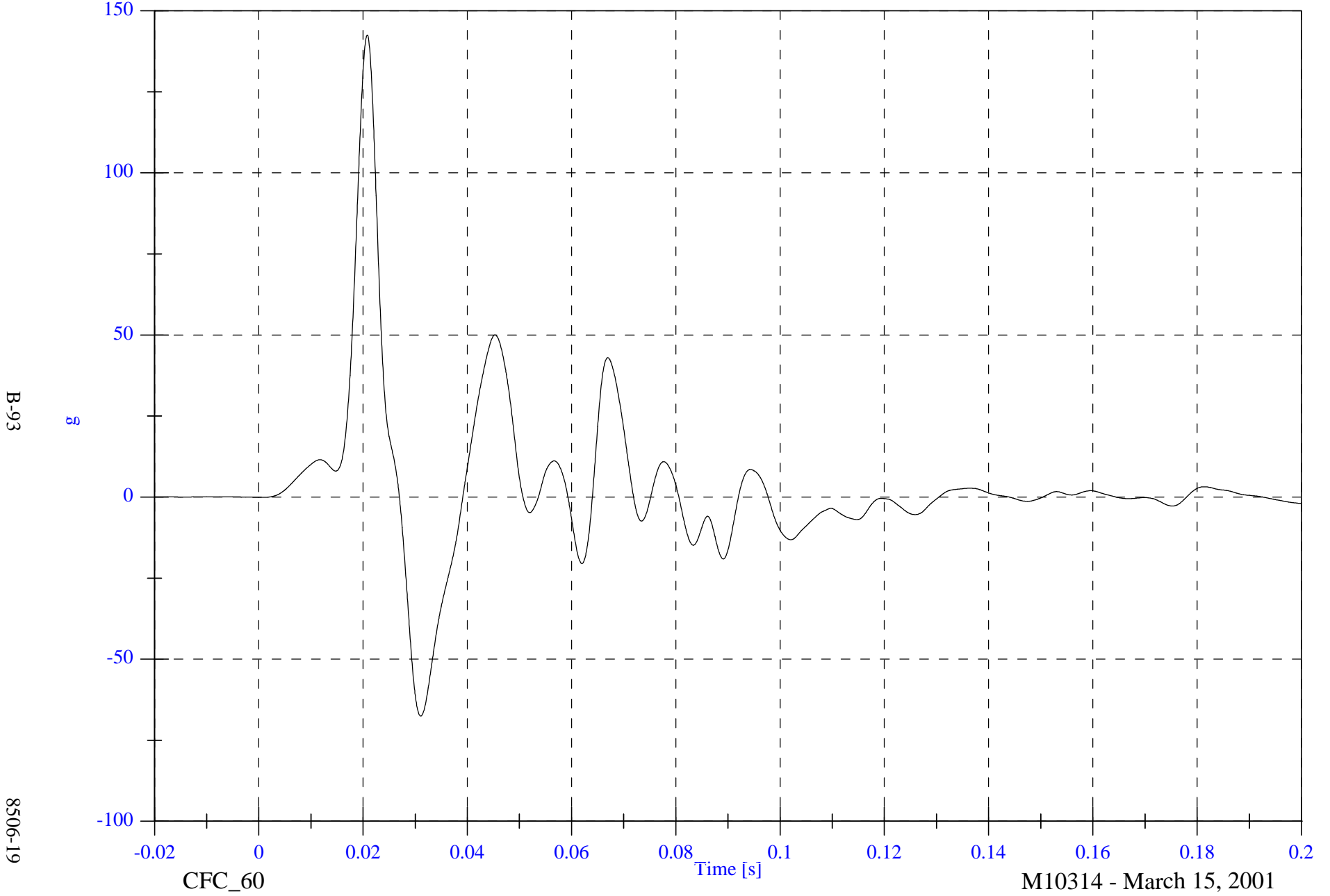
M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

A18 Target CG Y

Max: 142.5 [g] at 0.021 [s]

Min: -67.6 [g] at 0.031 [s]



B-93

g

8506-19

CFC_60

Time [s]

M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

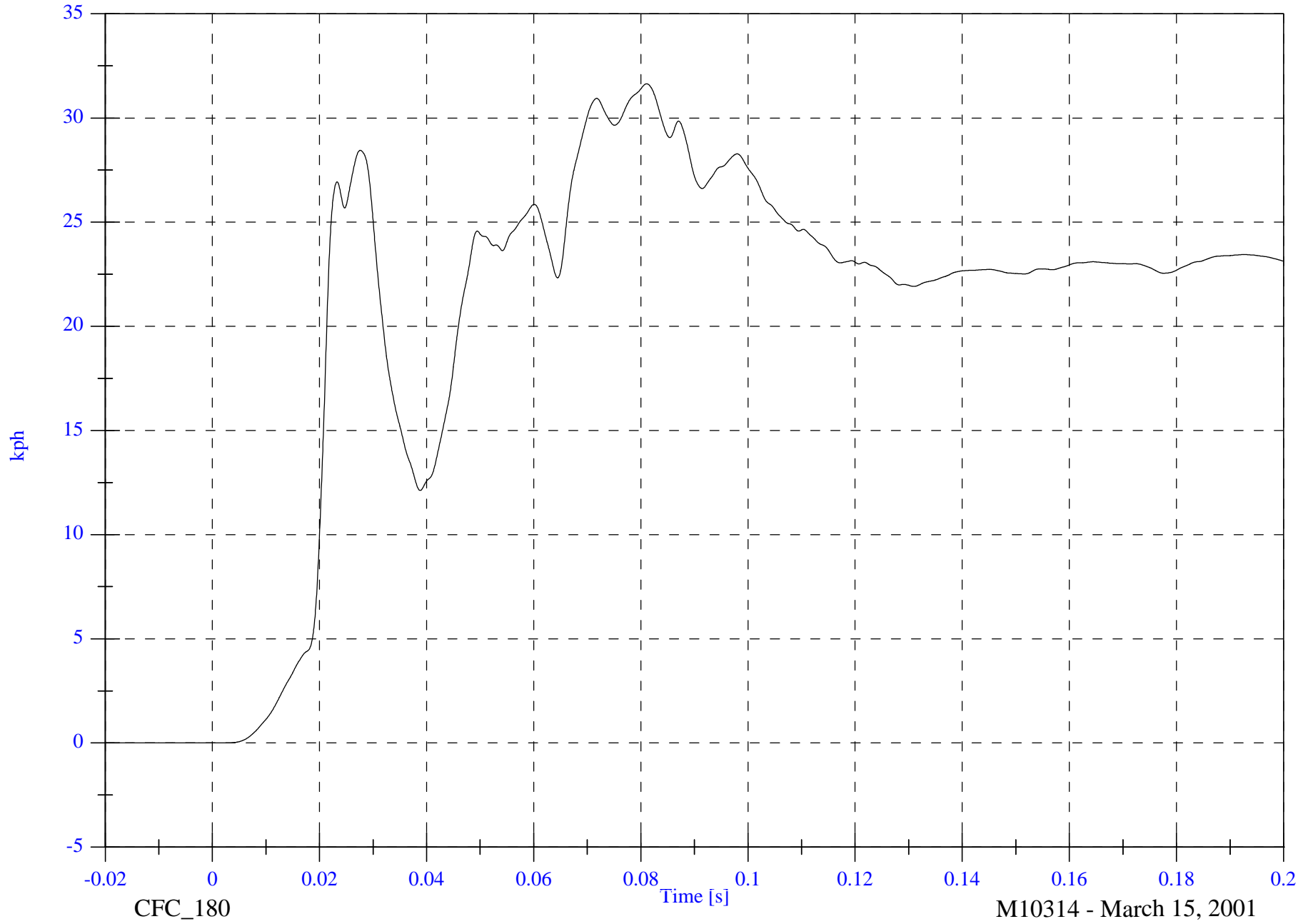
A18 Target CG Y Velocity

Max: 31.6 [kph] at 0.081 [s]

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

B-94

8506-19



CFC_180

M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

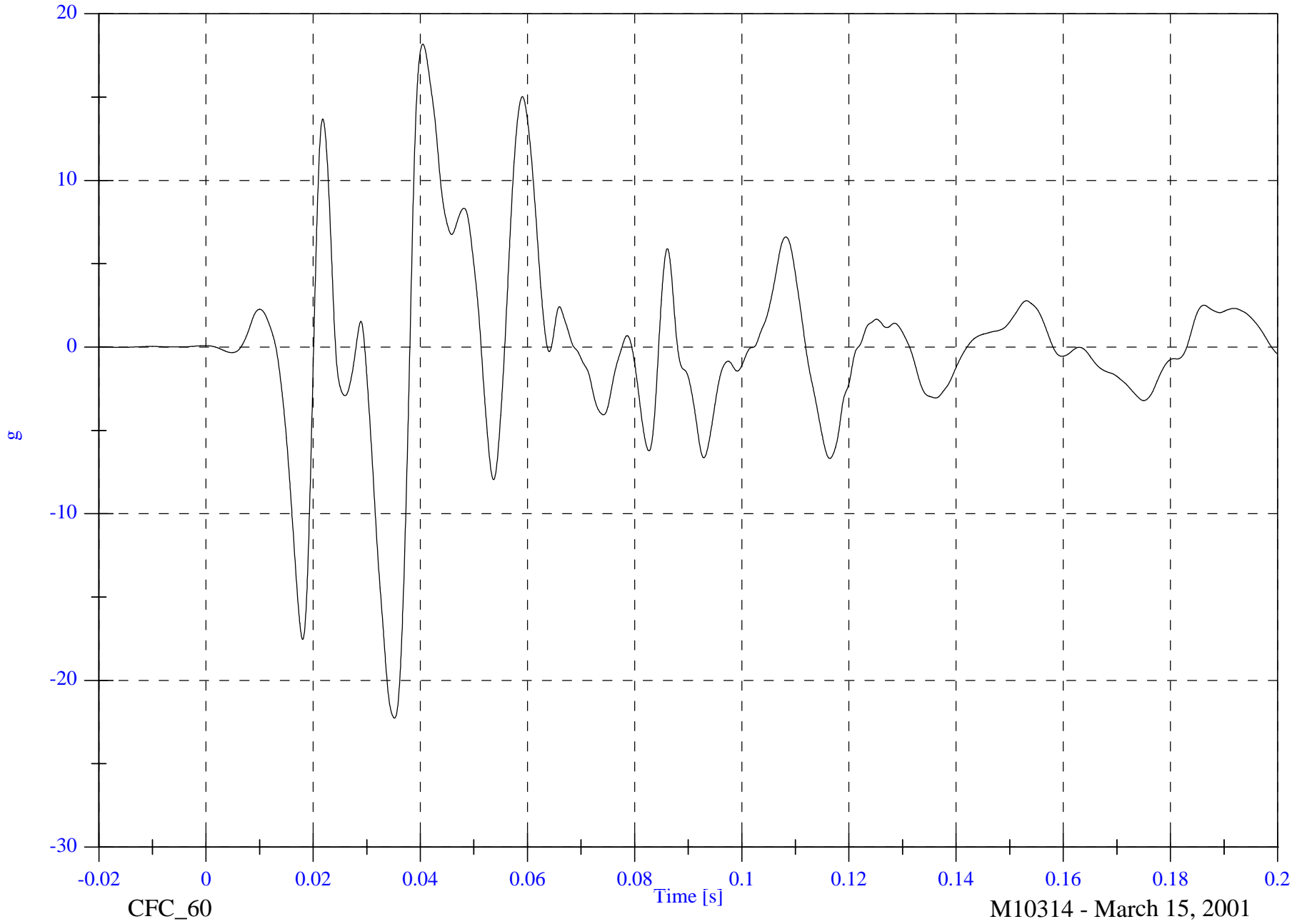
A18 Target CG Z

Max: 18.2 [g] at 0.040 [s]

Min: -22.3 [g] at 0.035 [s]

B-95

8506-19



SNCAP Test 19 - 2001 Chevrolet Impala

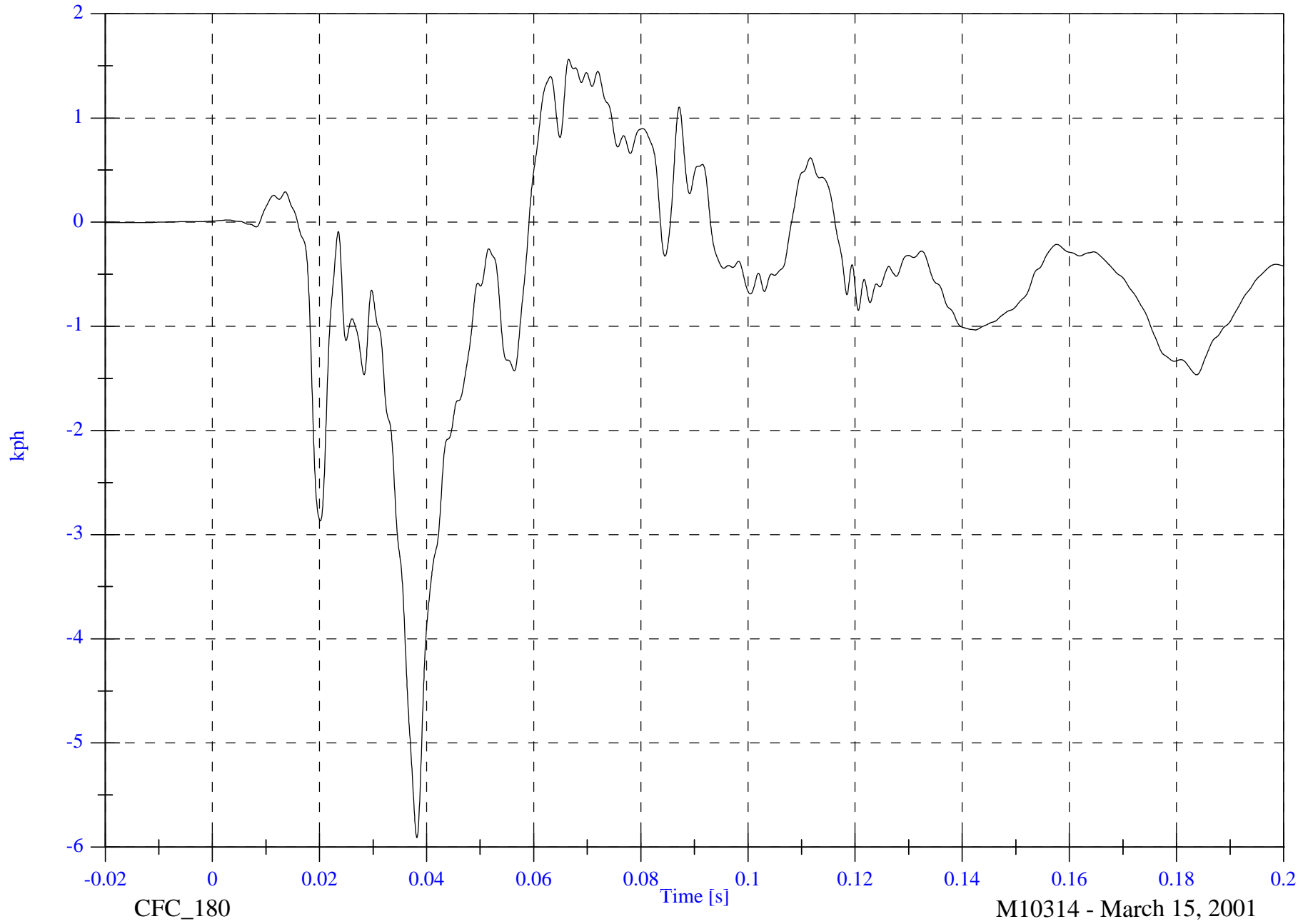
A18 Target CG Z Velocity

Max: 1.6 [kph] at 0.067 [s]

Min: -5.9 [kph] at 0.038 [s]

B-96

8506-19



CFC_180

M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

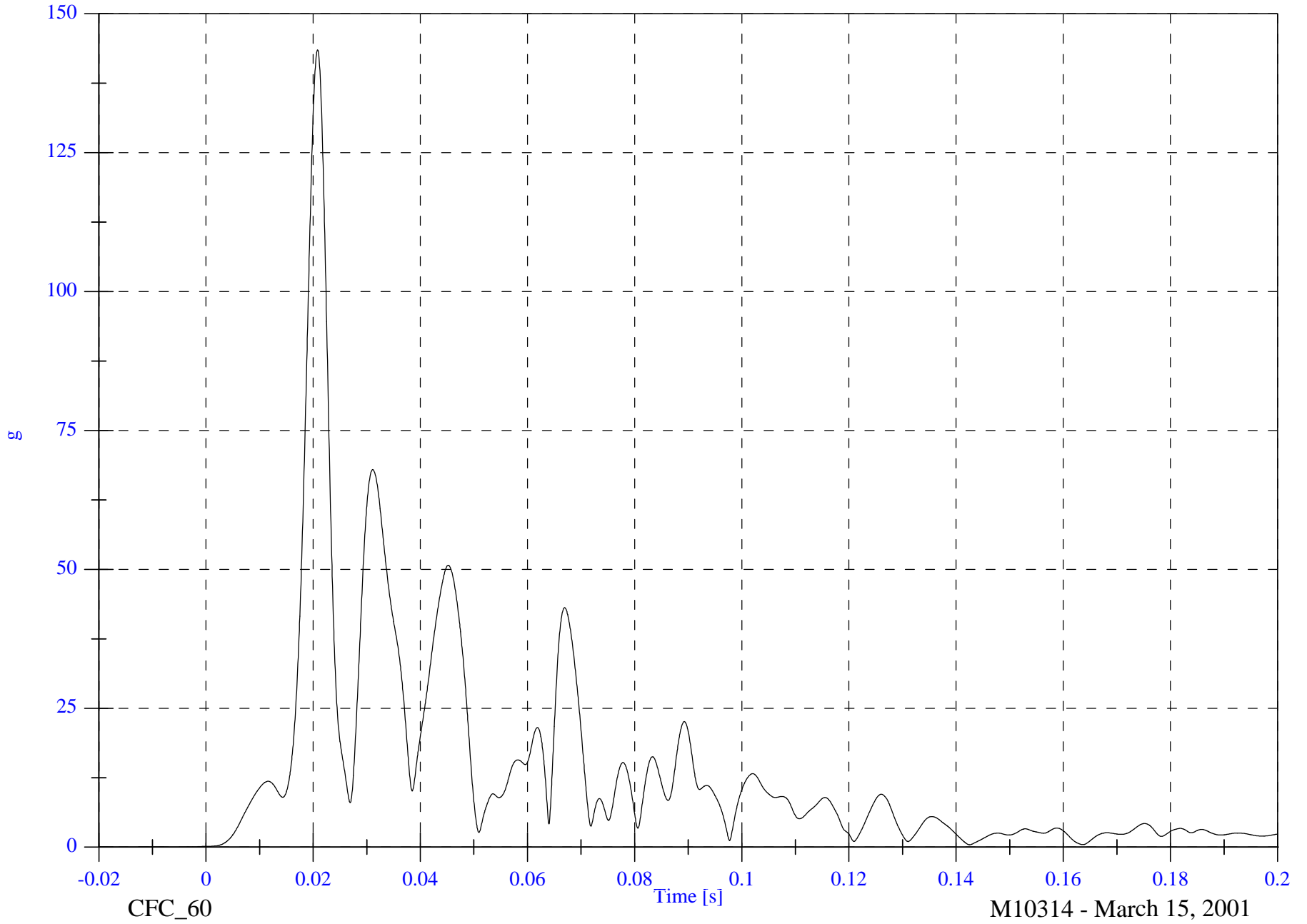
A18 Target CG Resultant

Max: 143.5 [g] at 0.021 [s]

Min: 0.0 [g] at -0.015 [s]

B-97

8506-19



SNCAP Test 19 - 2001 Chevrolet Impala

Moving Barrier CG X

Max: 1.0 [g] at 0.124 [s]

Min: -17.4 [g] at 0.040 [s]



B-98

8506-19

CFC_60

Time [s]

M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

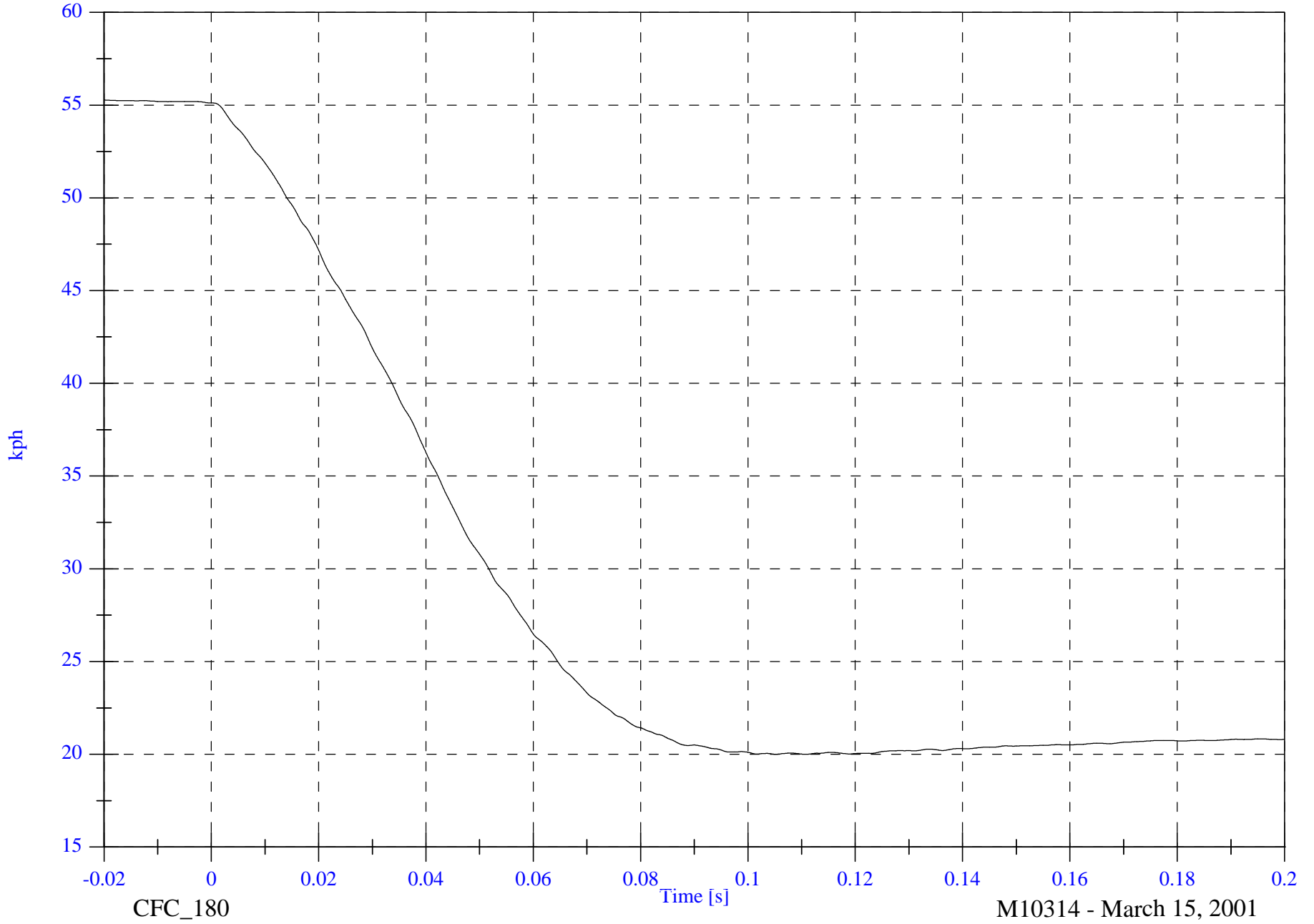
Moving Barrier CG X Velocity

Max: 55.3 [kph] at -0.020 [s]

Min: 20.0 [kph] at 0.111 [s]

B-99

8506-19



CFC_180

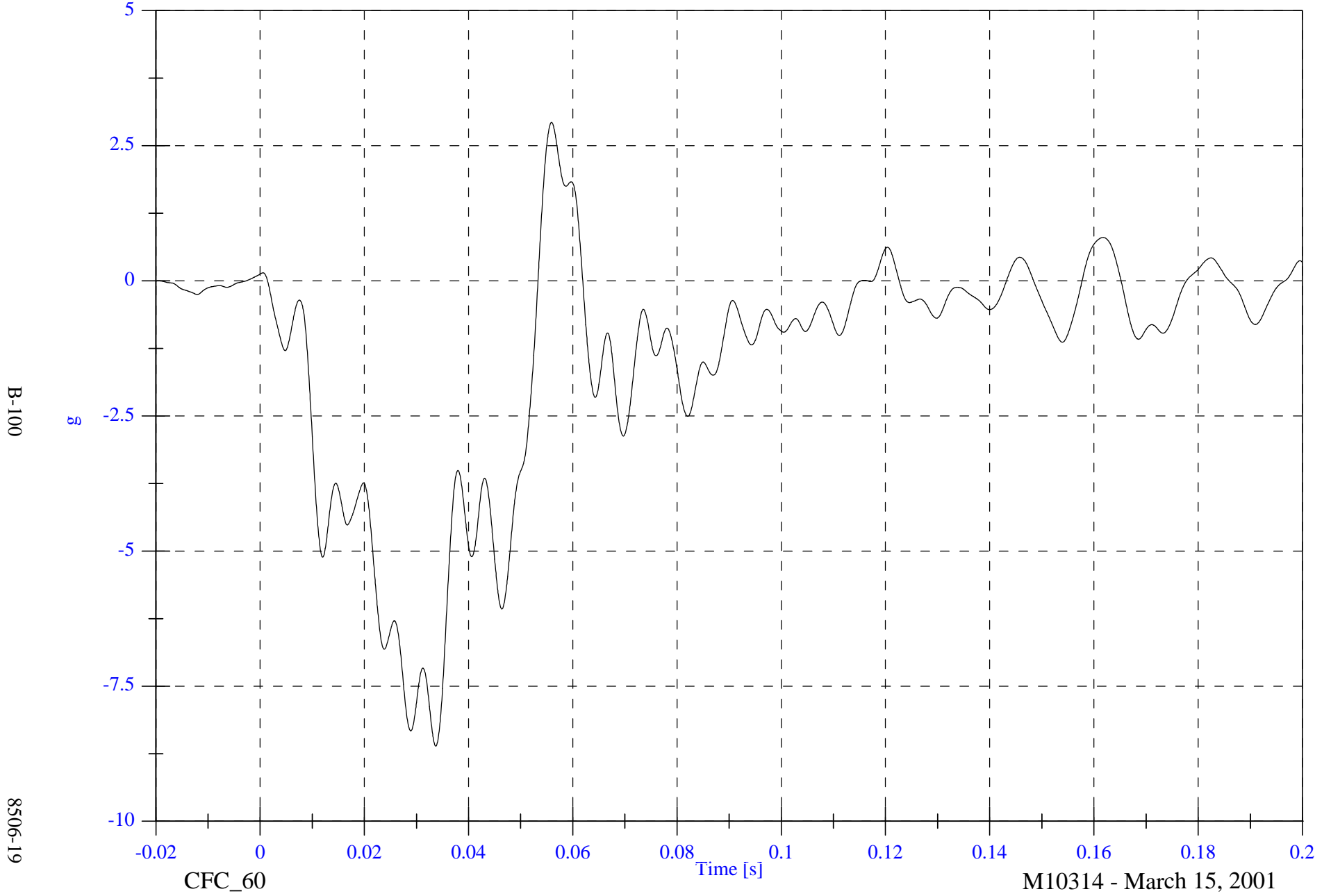
M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

Moving Barrier CG Y

Max: 2.9 [g] at 0.056 [s]

Min: -8.6 [g] at 0.034 [s]



B-100

8506-19

CFC_60

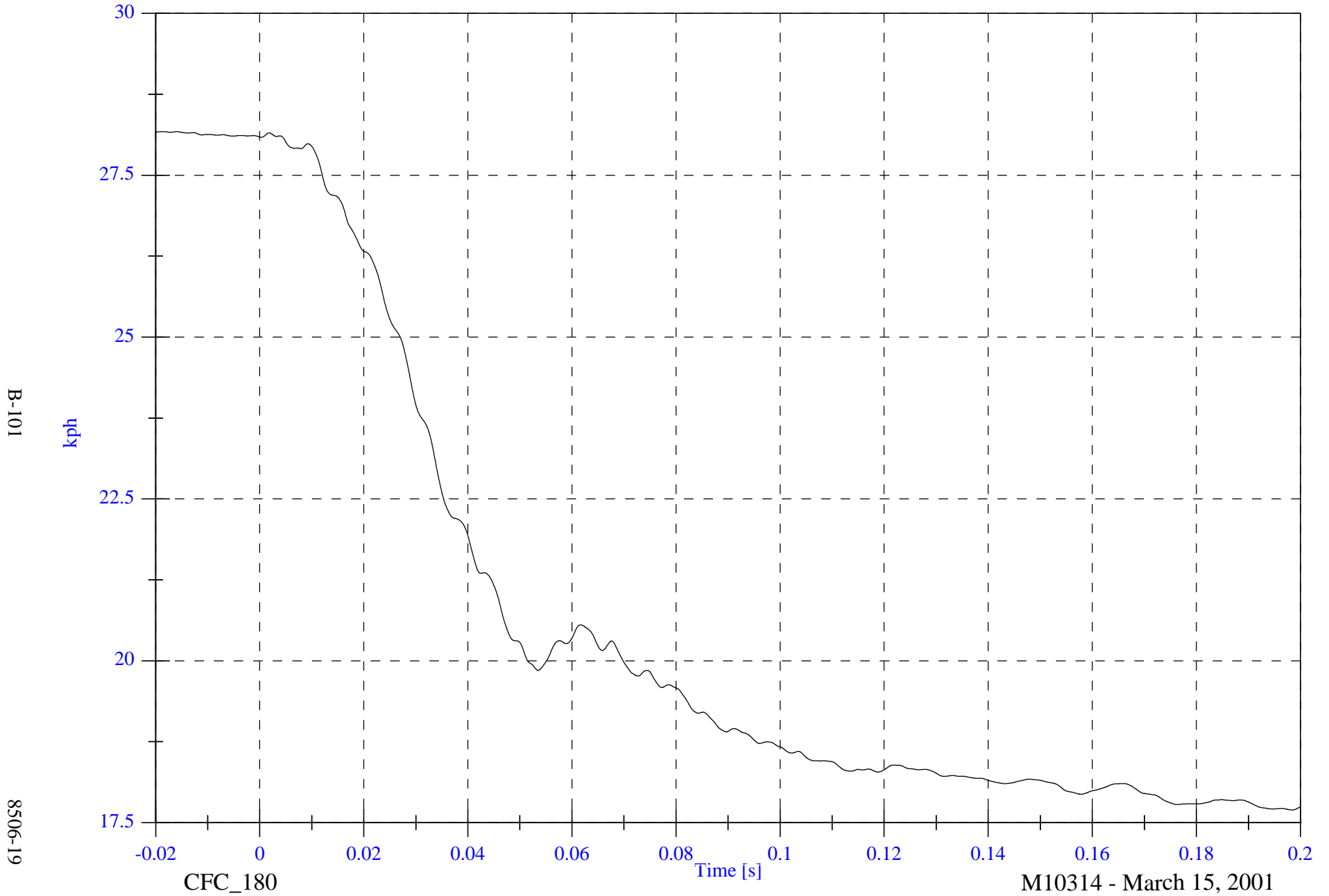
M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

Max: 28.2 [kph] at -0.016 [s]

Moving Barrier CG Y Velocity

Min: 17.7 [kph] at 0.198 [s]



B-101

8506-19

CFC_180

Time [s]

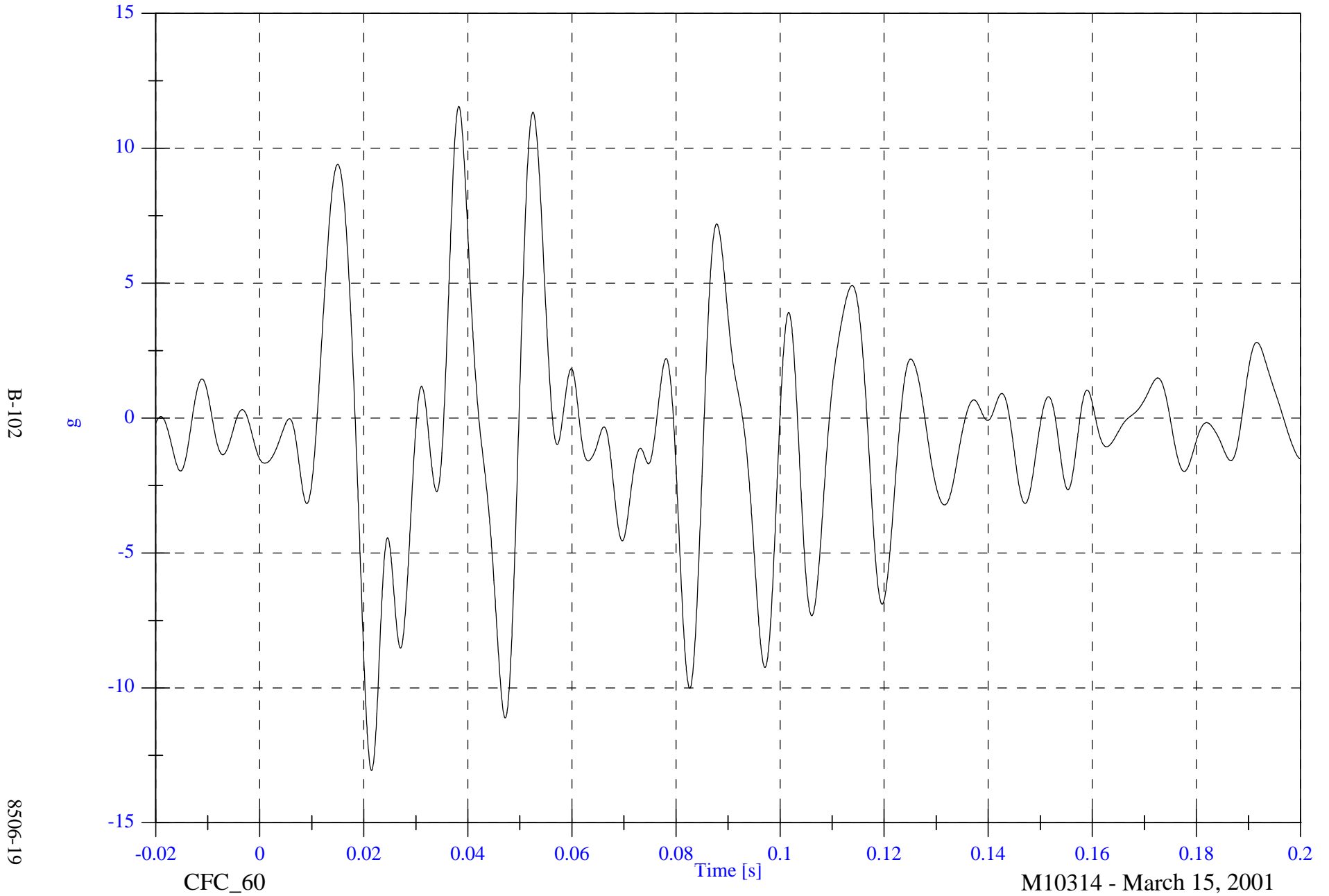
M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

Moving Barrier CG Z

Max: 11.6 [g] at 0.038 [s]

Min: -13.1 [g] at 0.022 [s]

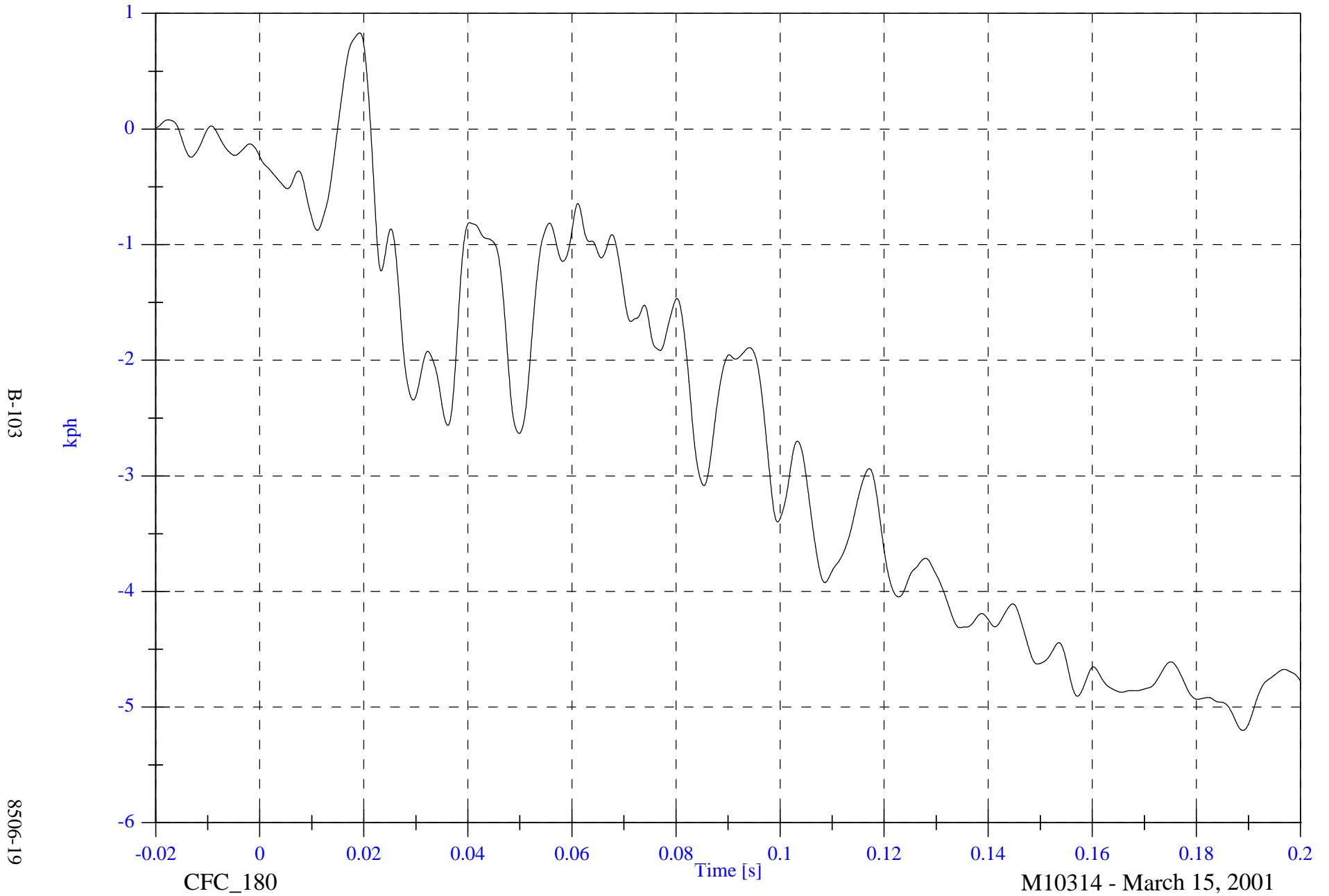


SNCAP Test 19 - 2001 Chevrolet Impala

Moving Barrier CG Z Velocity

Max: 0.8 [kph] at 0.019 [s]

Min: -5.2 [kph] at 0.189 [s]



B-103

8506-19

CFC_180

Time [s]

M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

Moving Barrier CG Resultant

Max: 20.9 [g] at 0.021 [s]

Min: 0.1 [g] at 0.158 [s]



SNCAP Test 19 - 2001 Chevrolet Impala

Moving Barrier Left Rail X

Max: 1.8 [g] at 0.145 [s]

Min: -20.1 [g] at 0.027 [s]



B-105

g

8506-19

CFC_60

Time [s]

M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

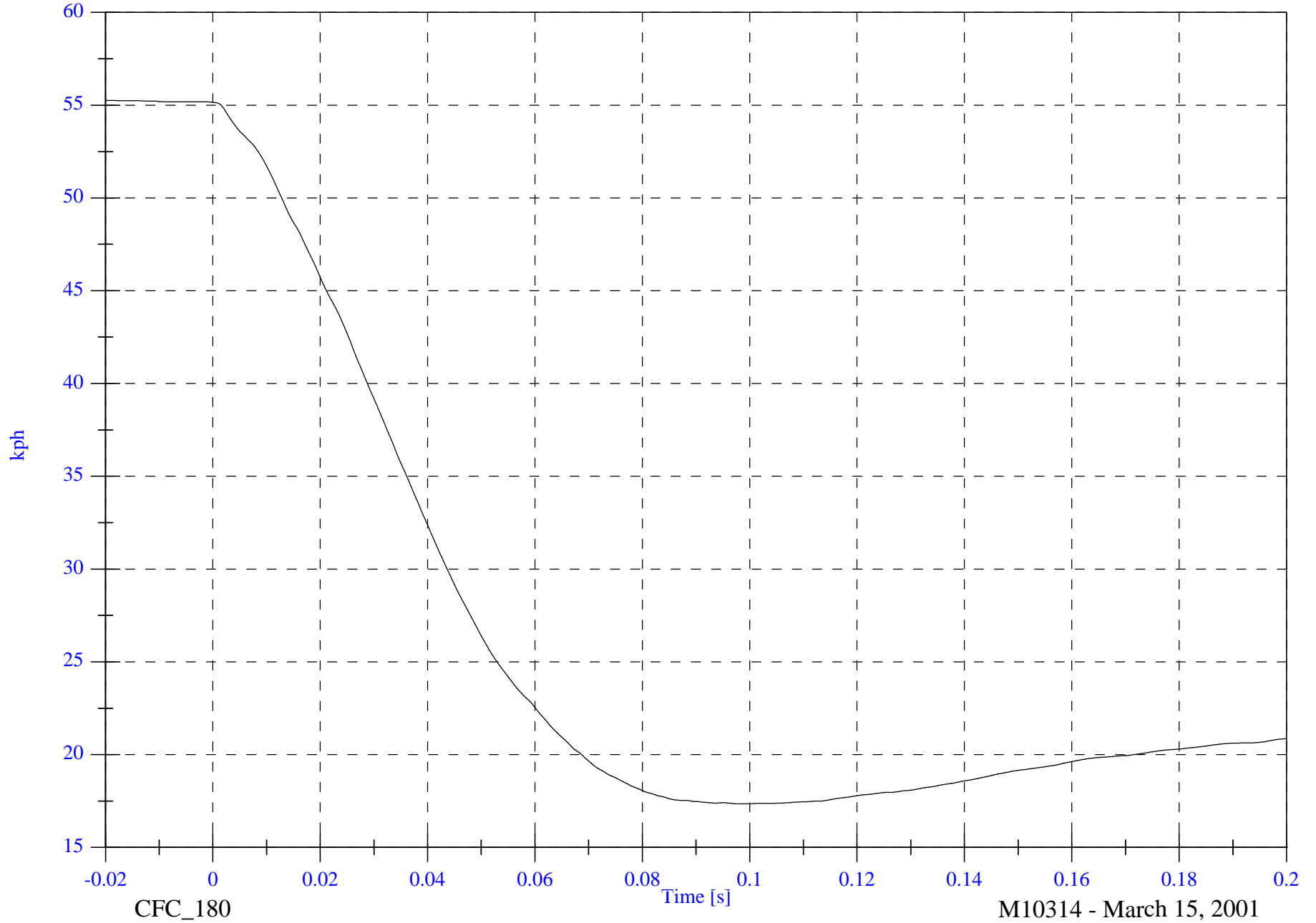
Moving Barrier Left Rail X Velocity

Max: 55.3 [kph] at -0.020 [s]

Min: 17.3 [kph] at 0.098 [s]

B-106

8506-19



CFC_180

M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

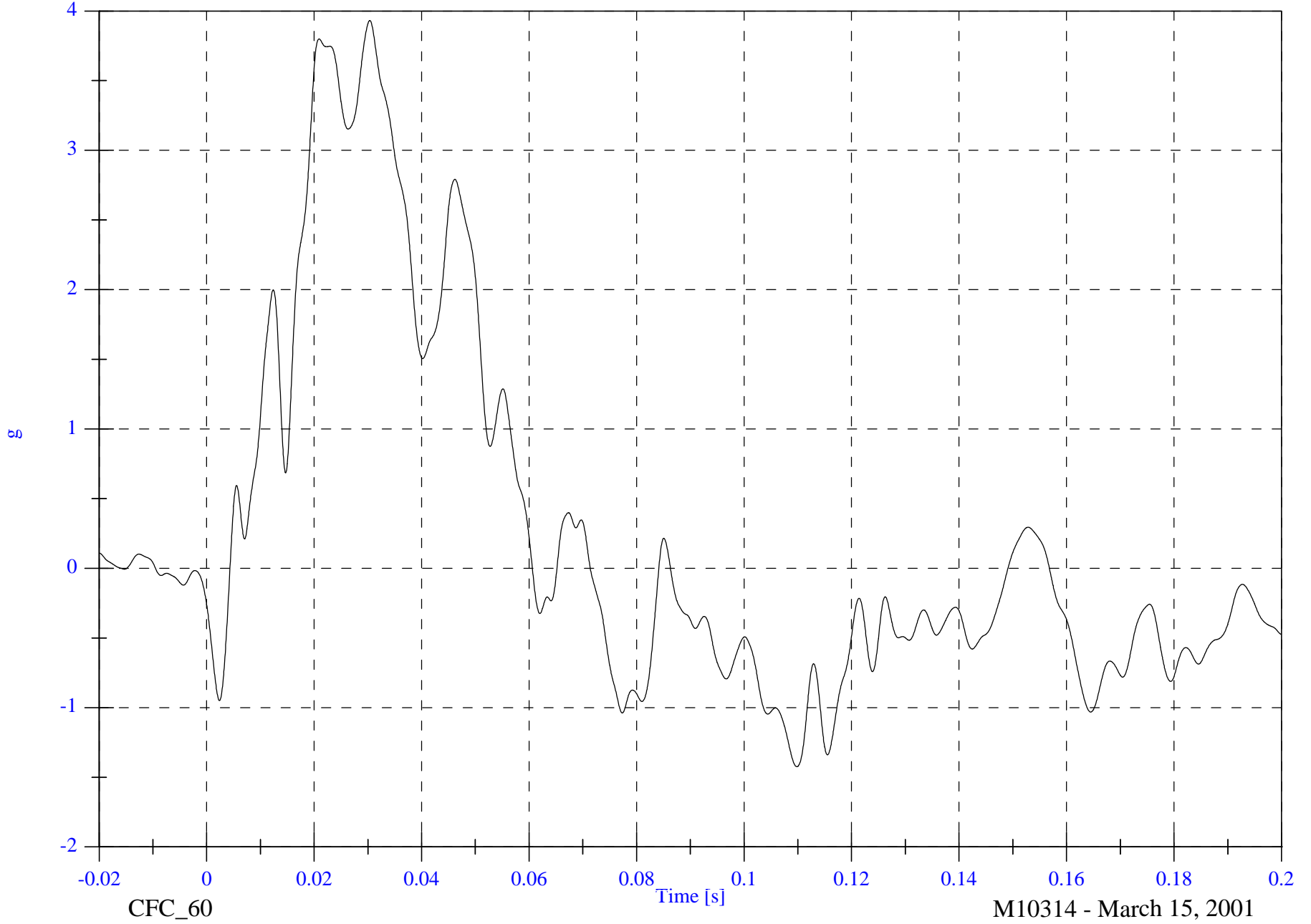
Moving Barrier Left Rail Y

Max: 3.9 [g] at 0.030 [s]

Min: -1.4 [g] at 0.110 [s]

B-107

8506-19



SNCAP Test 19 - 2001 Chevrolet Impala

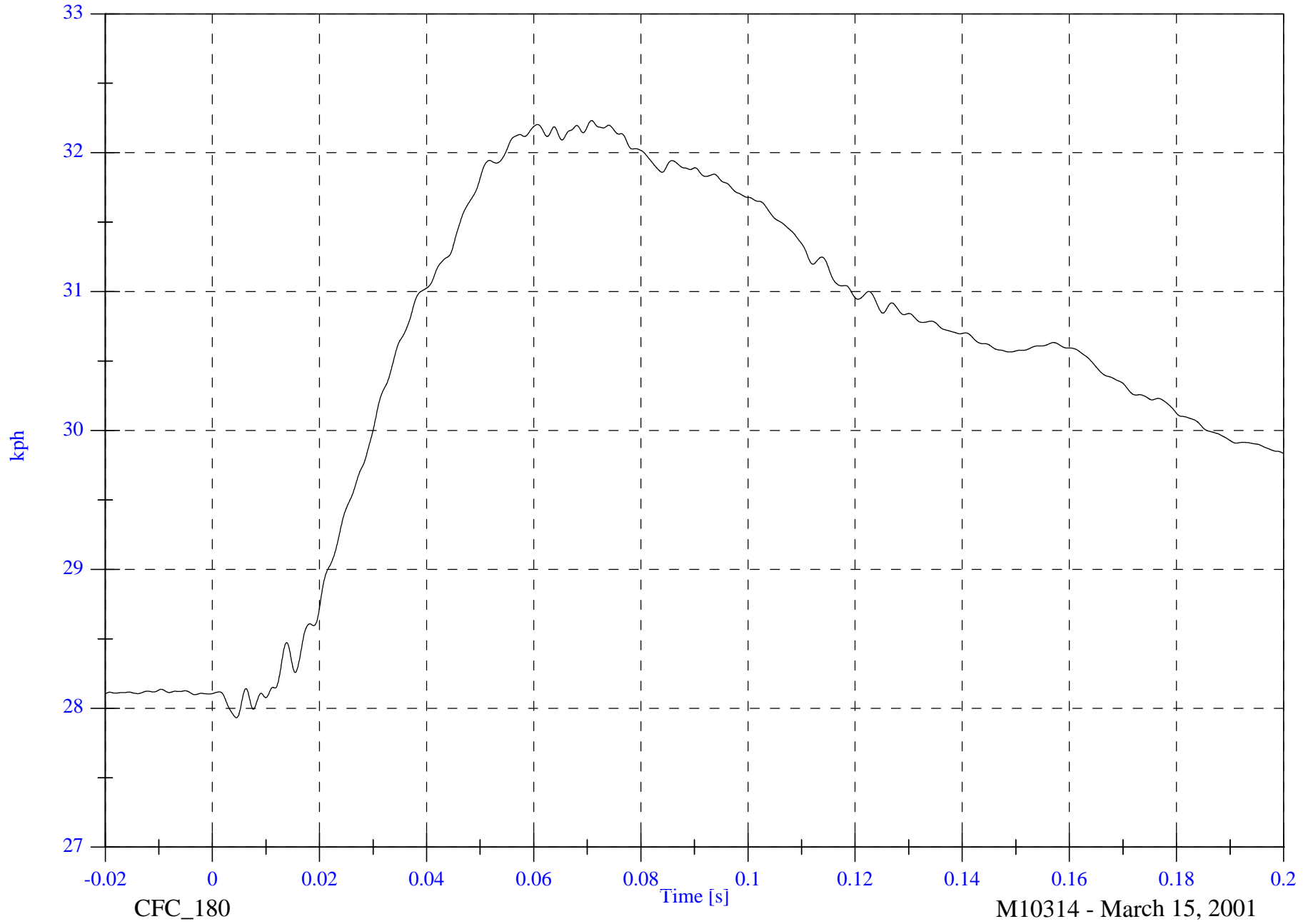
Moving Barrier Left Rail Y Velocity

Max: 32.2 [kph] at 0.071 [s]

Min: 27.9 [kph] at 0.005 [s]

B-108

8506-19



CFC_180

M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

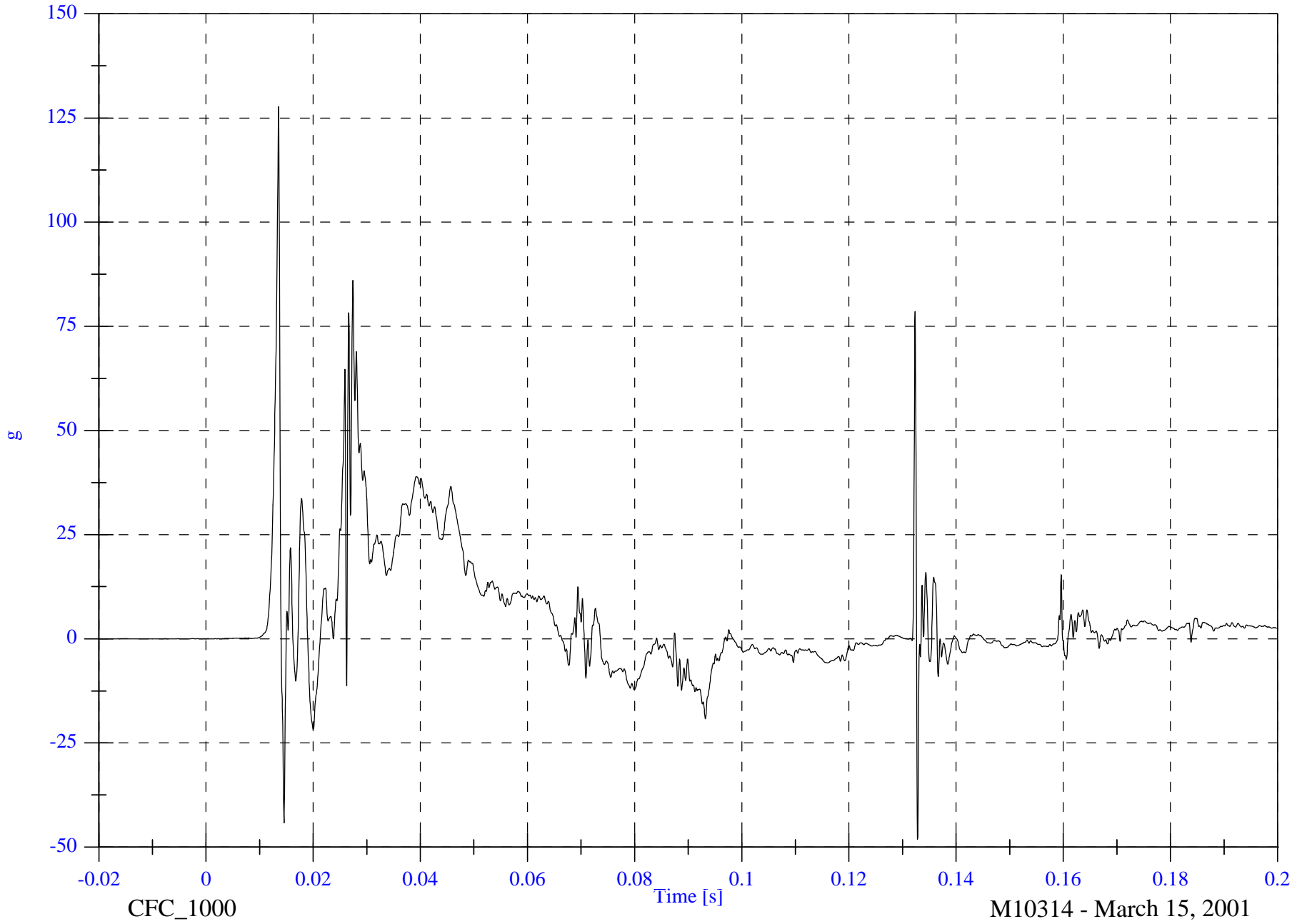
P1 Upper Rib Ry

Max: 127.7 [g] at 0.014 [s]

Min: -48.1 [g] at 0.133 [s]

B-109

8506-19



SNCAP Test 19 - 2001 Chevrolet Impala

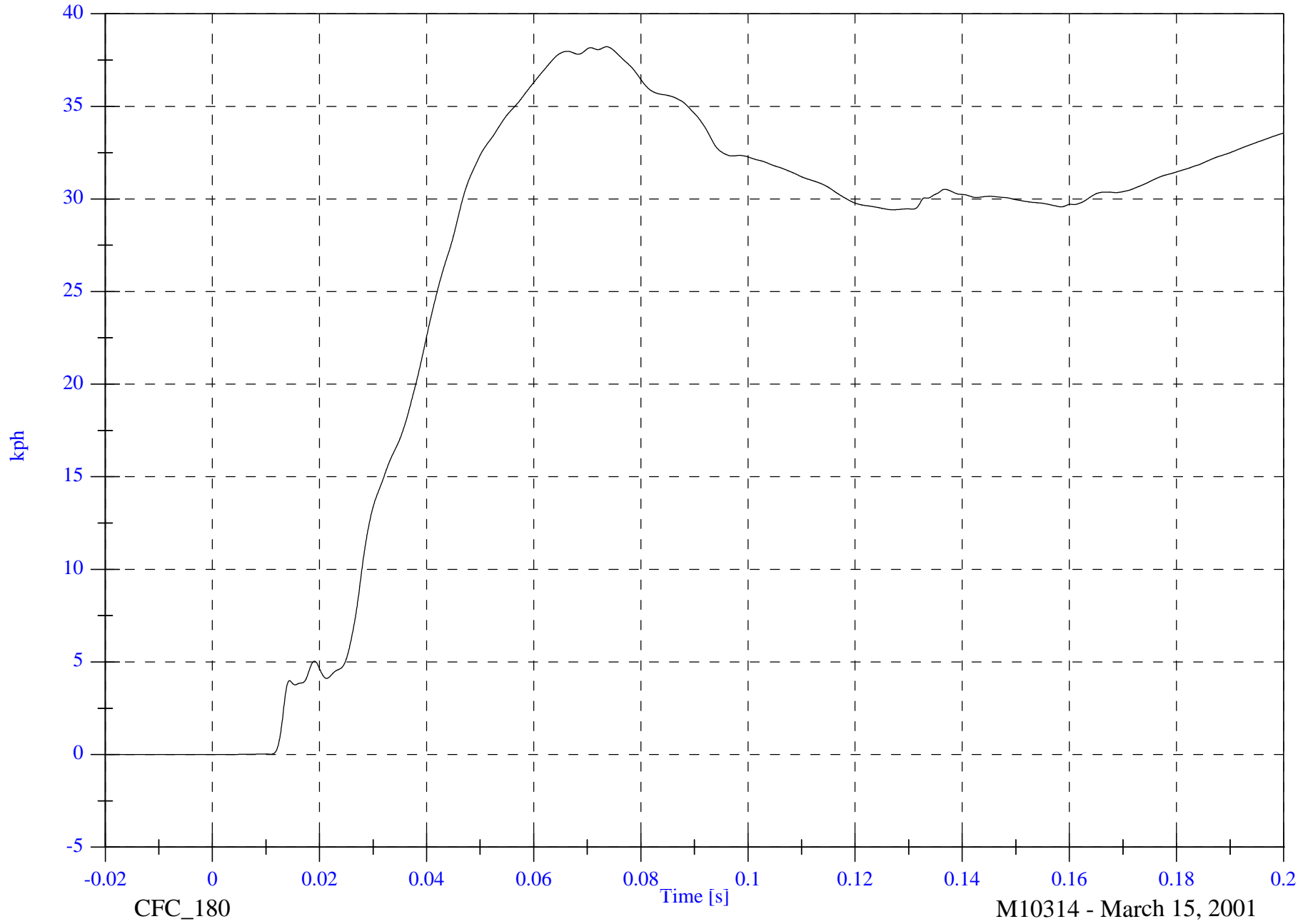
Max: 38.2 [kph] at 0.074 [s]

P1 Upper Rib Ry Velocity

Min: -0.0 [kph] at -0.008 [s]

B-110

8506-19



CFC_180

M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

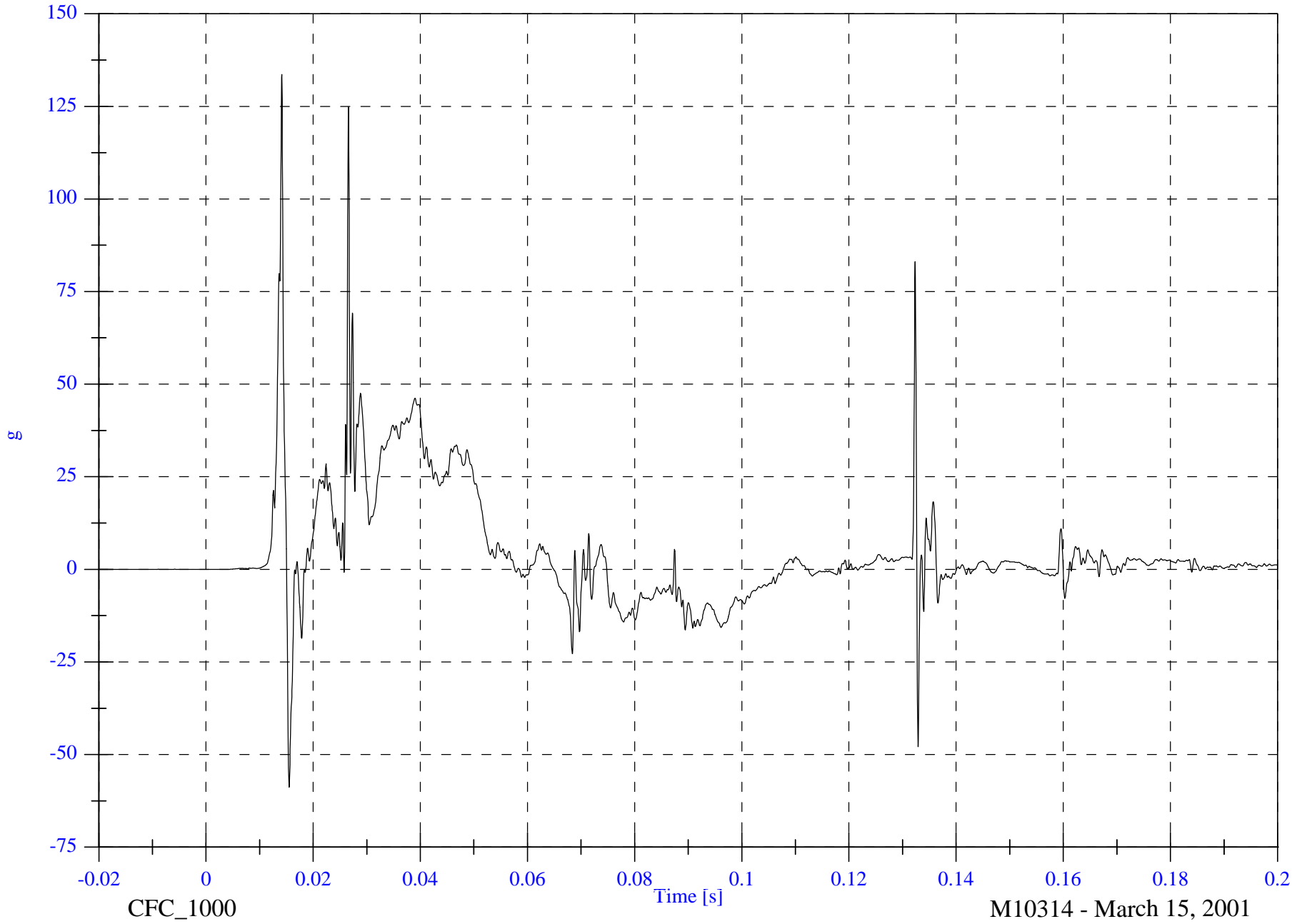
P1 Lower Rib Ry

Max: 133.6 [g] at 0.014 [s]

Min: -58.8 [g] at 0.016 [s]

B-111

8506-19



SNCAP Test 19 - 2001 Chevrolet Impala

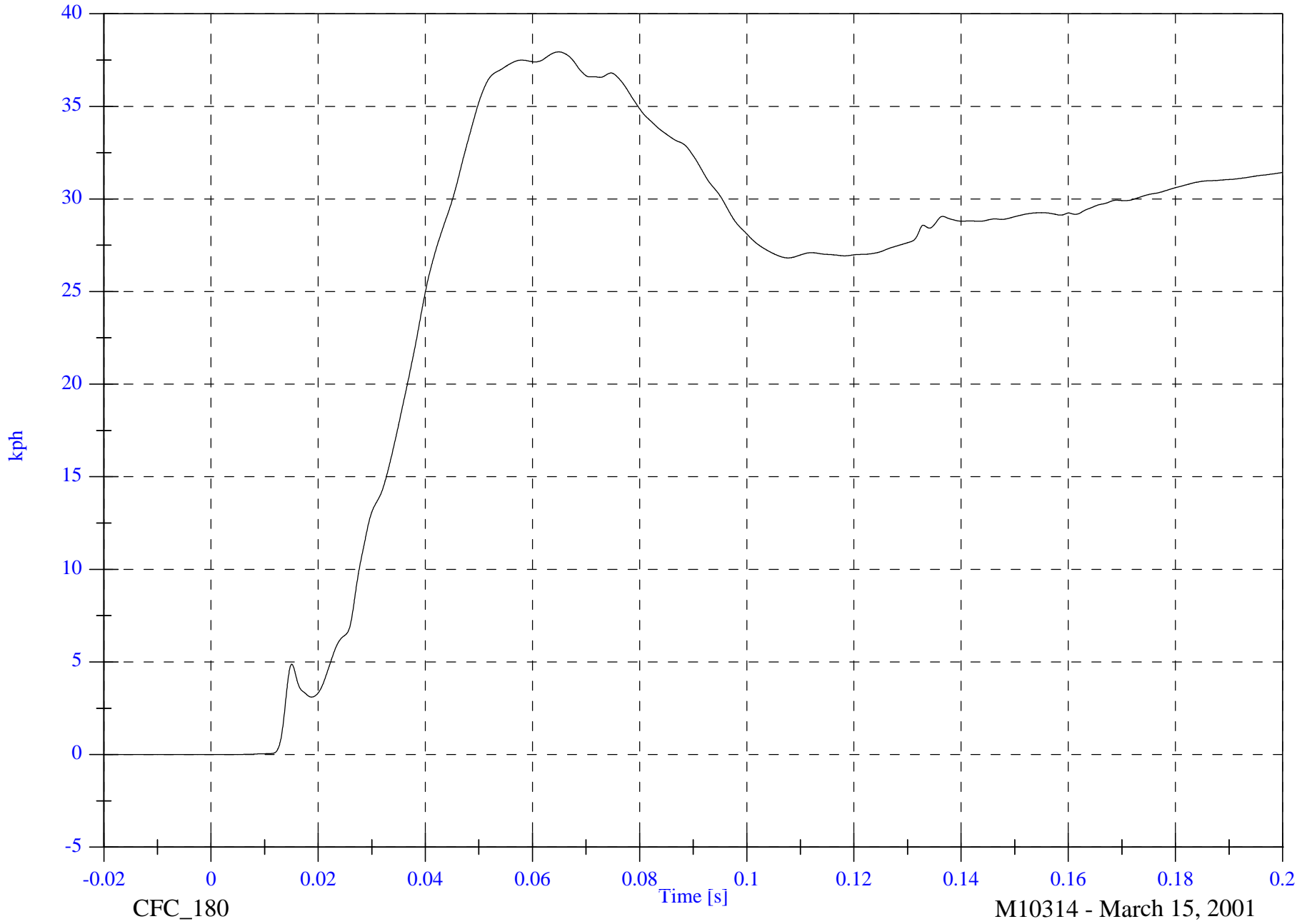
Max: 37.9 [kph] at 0.065 [s]

P1 Lower Rib Ry Velocity

Min: -0.0 [kph] at -0.011 [s]

B-112

8506-19



CFC_180

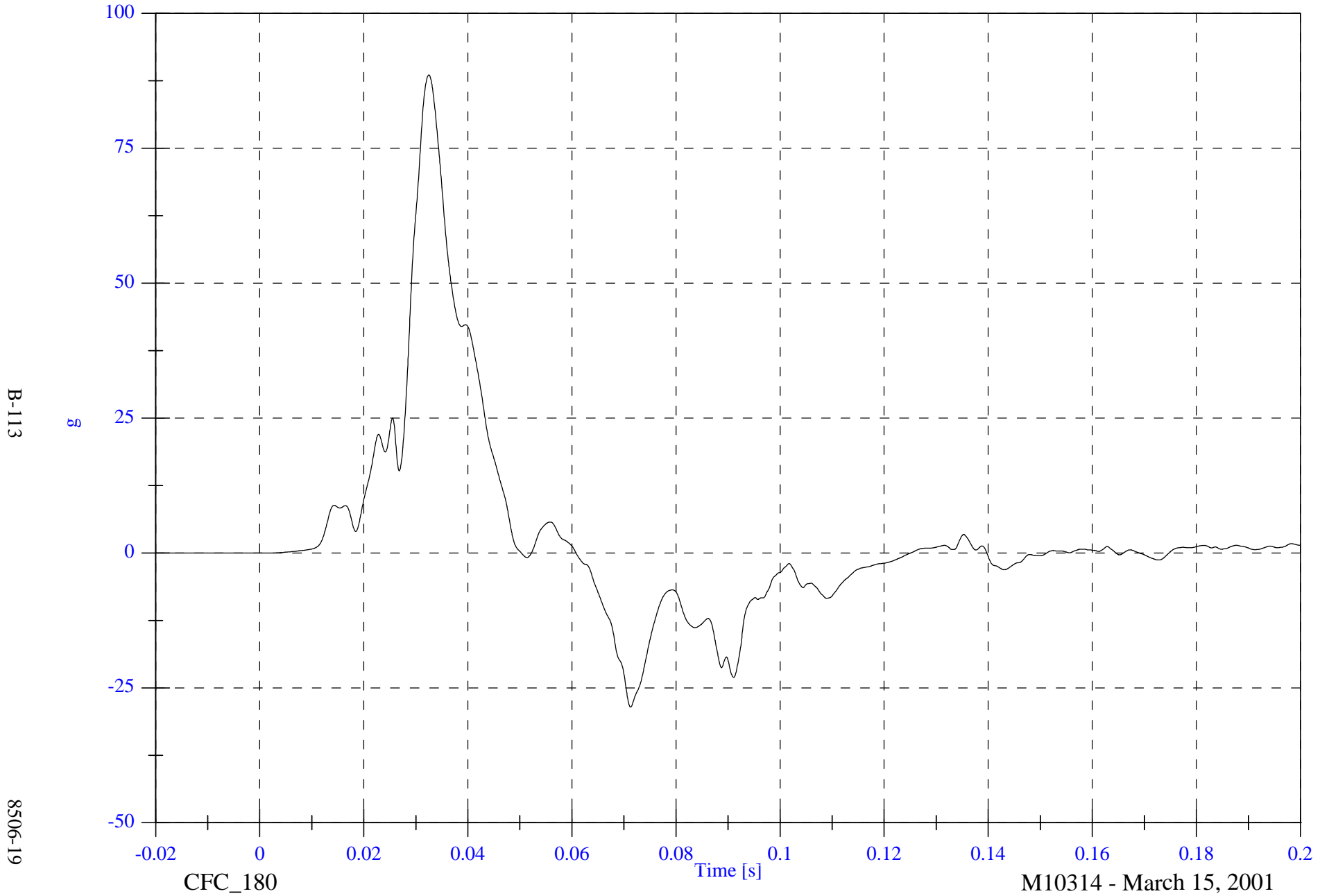
M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

P1 Lower Spine Ry

Max: 88.6 [g] at 0.033 [s]

Min: -28.6 [g] at 0.071 [s]



SNCAP Test 19 - 2001 Chevrolet Impala

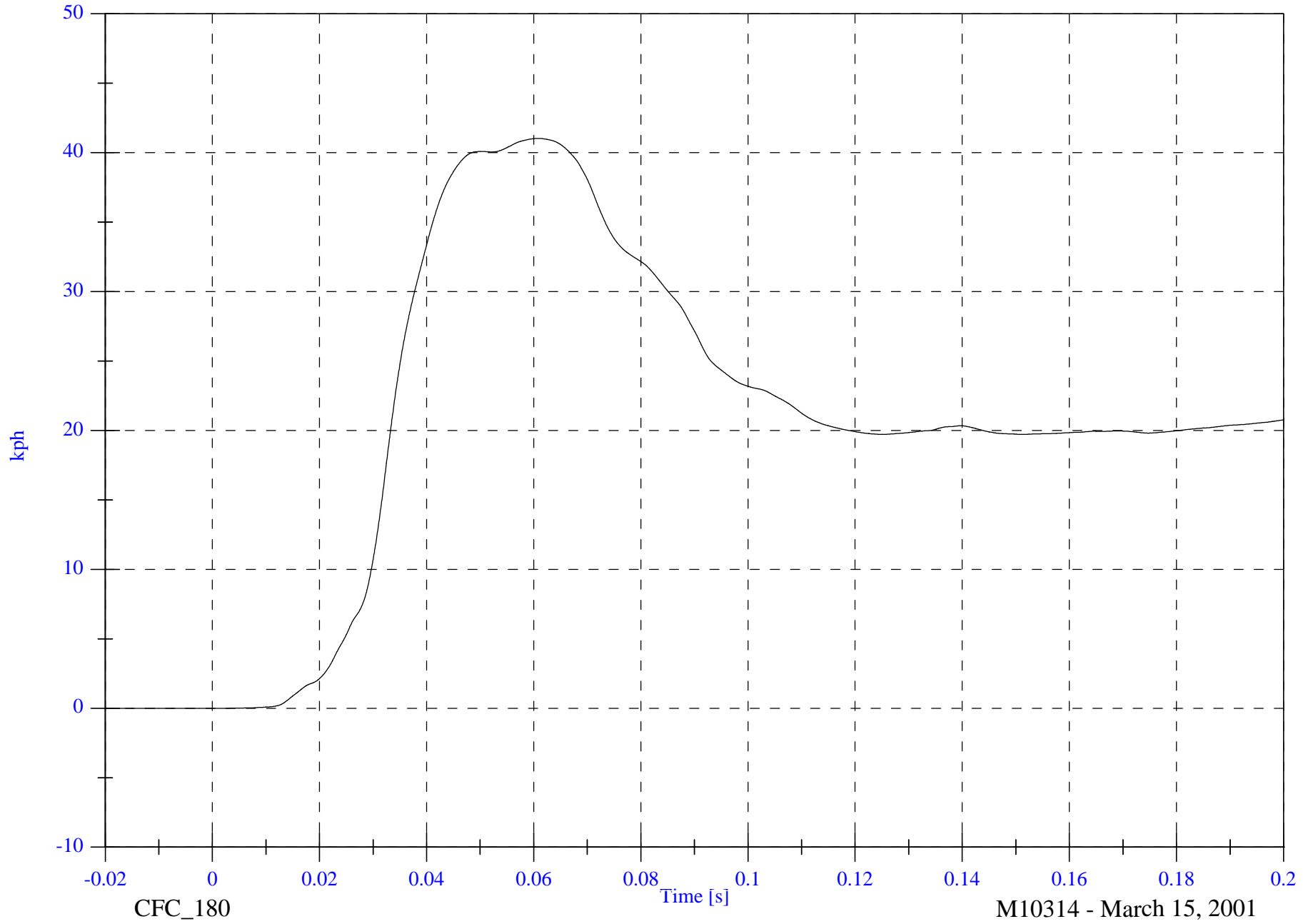
P1 Lower Spine Ry Velocity

Max: 41.0 [kph] at 0.061 [s]

Min: -0.0 [kph] at -0.020 [s]

B-114

8506-19

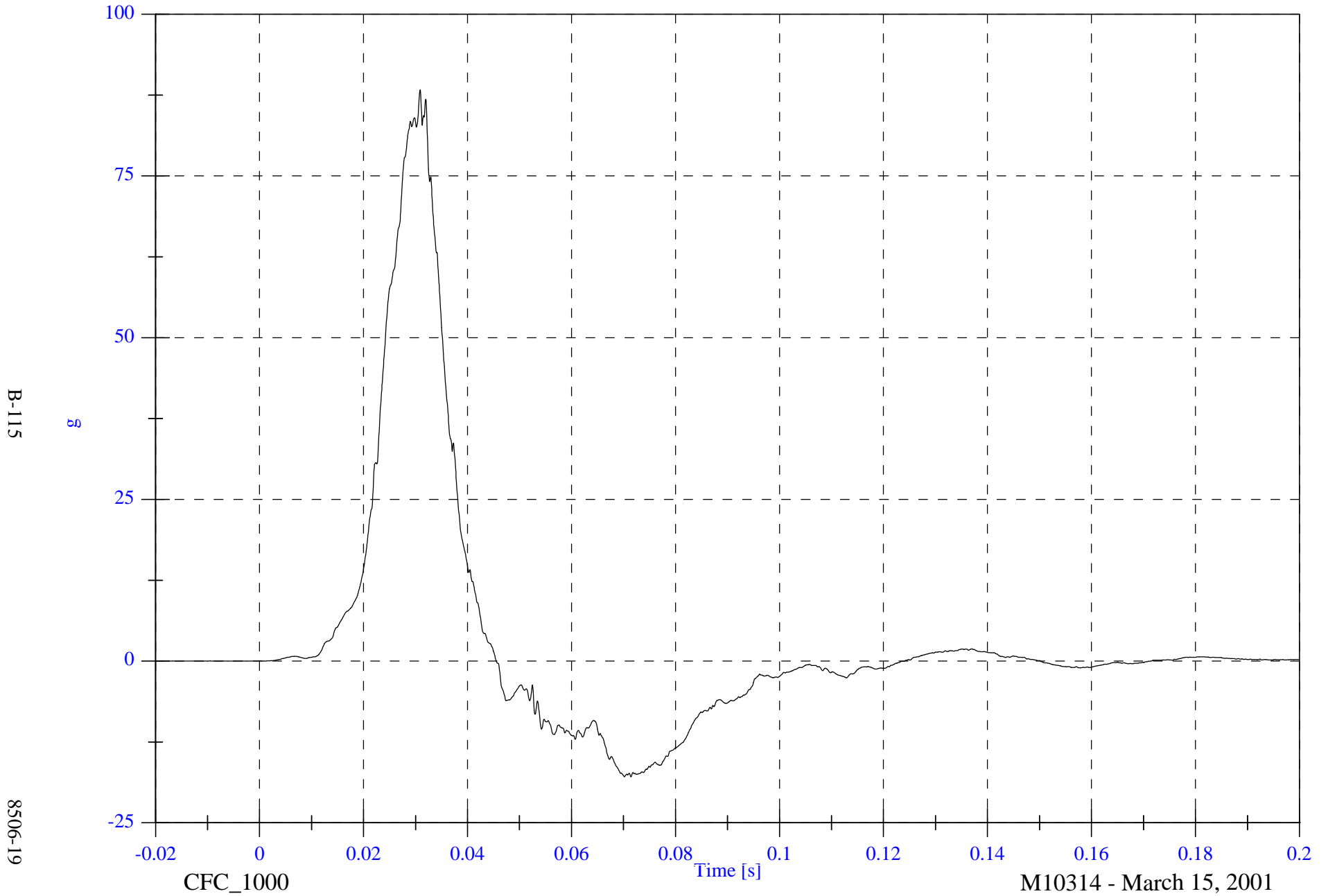


SNCAP Test 19 - 2001 Chevrolet Impala

P1 Pelvic Ry

Max: 88.3 [g] at 0.031 [s]

Min: -17.9 [g] at 0.070 [s]



SNCAP Test 19 - 2001 Chevrolet Impala

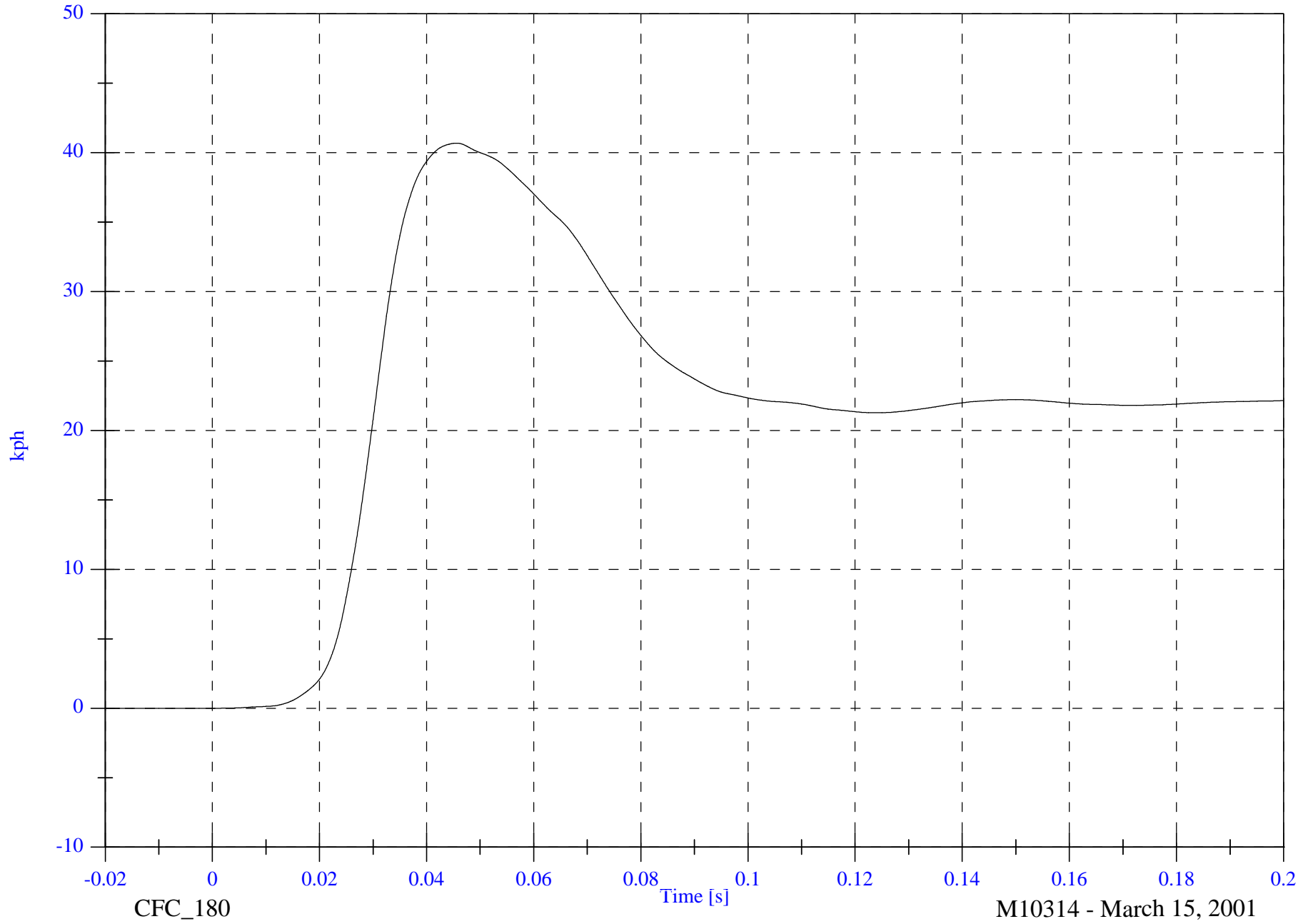
P1 Pelvic Ry Velocity

Max: 40.7 [kph] at 0.046 [s]

Min: -0.0 [kph] at -0.018 [s]

B-116

8506-19

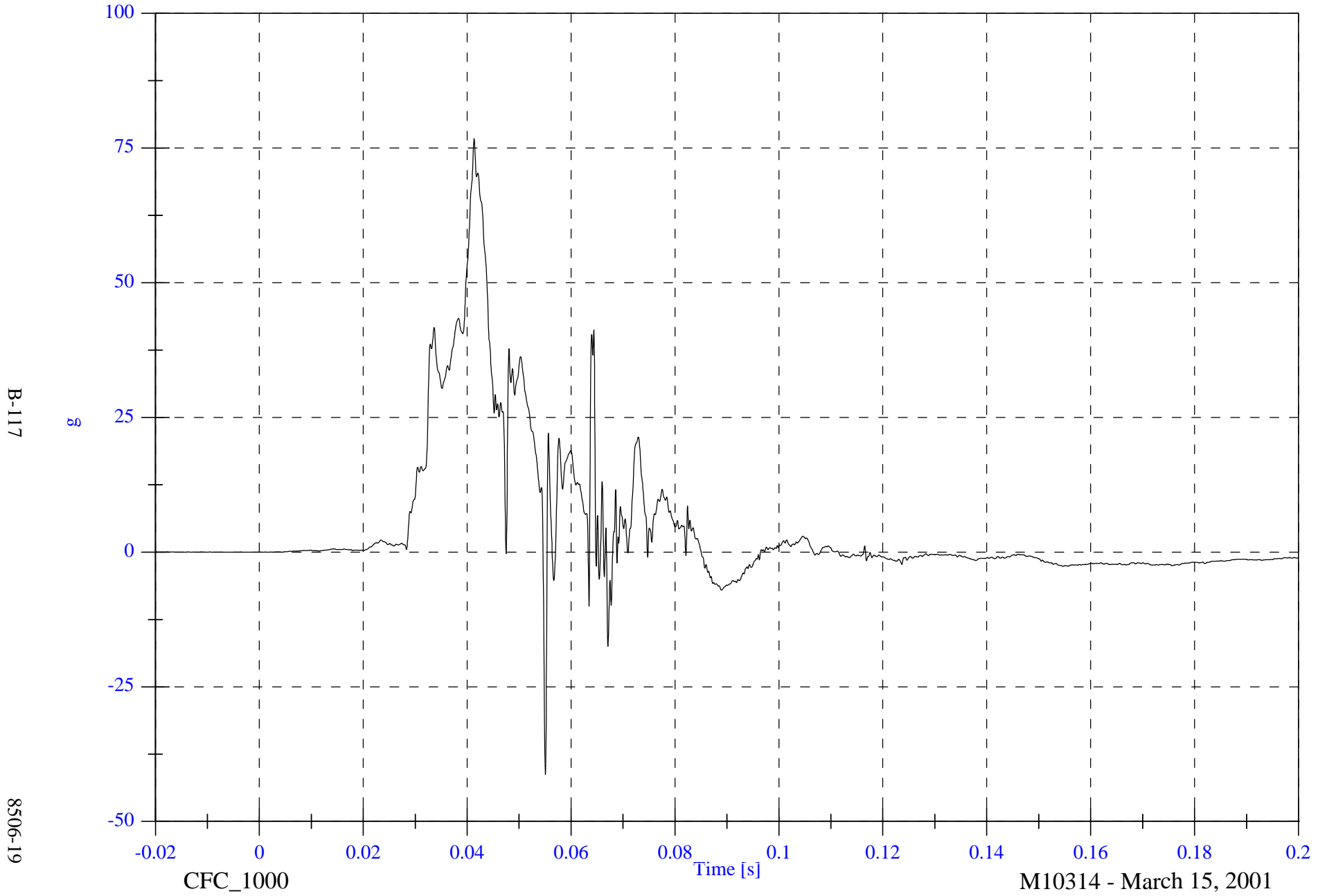


SNCAP Test 19 - 2001 Chevrolet Impala

P4 Upper Rib Ry

Max: 76.8 [g] at 0.041 [s]

Min: -41.3 [g] at 0.055 [s]



SNCAP Test 19 - 2001 Chevrolet Impala

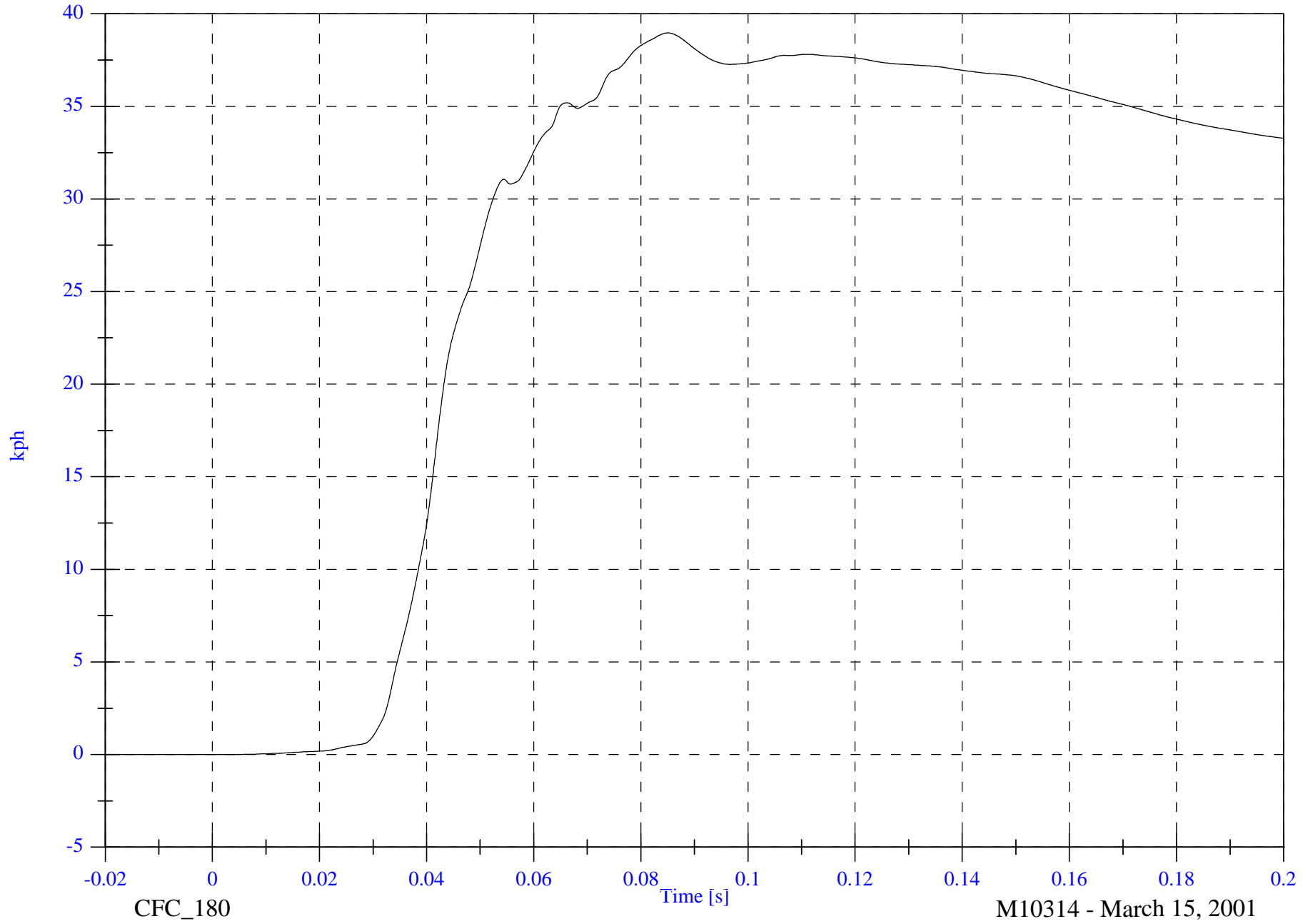
Max: 39.0 [kph] at 0.085 [s]

P4 Upper Rib Ry Velocity

Min: -0.0 [kph] at -0.020 [s]

B-118

8506-19



CFC_180

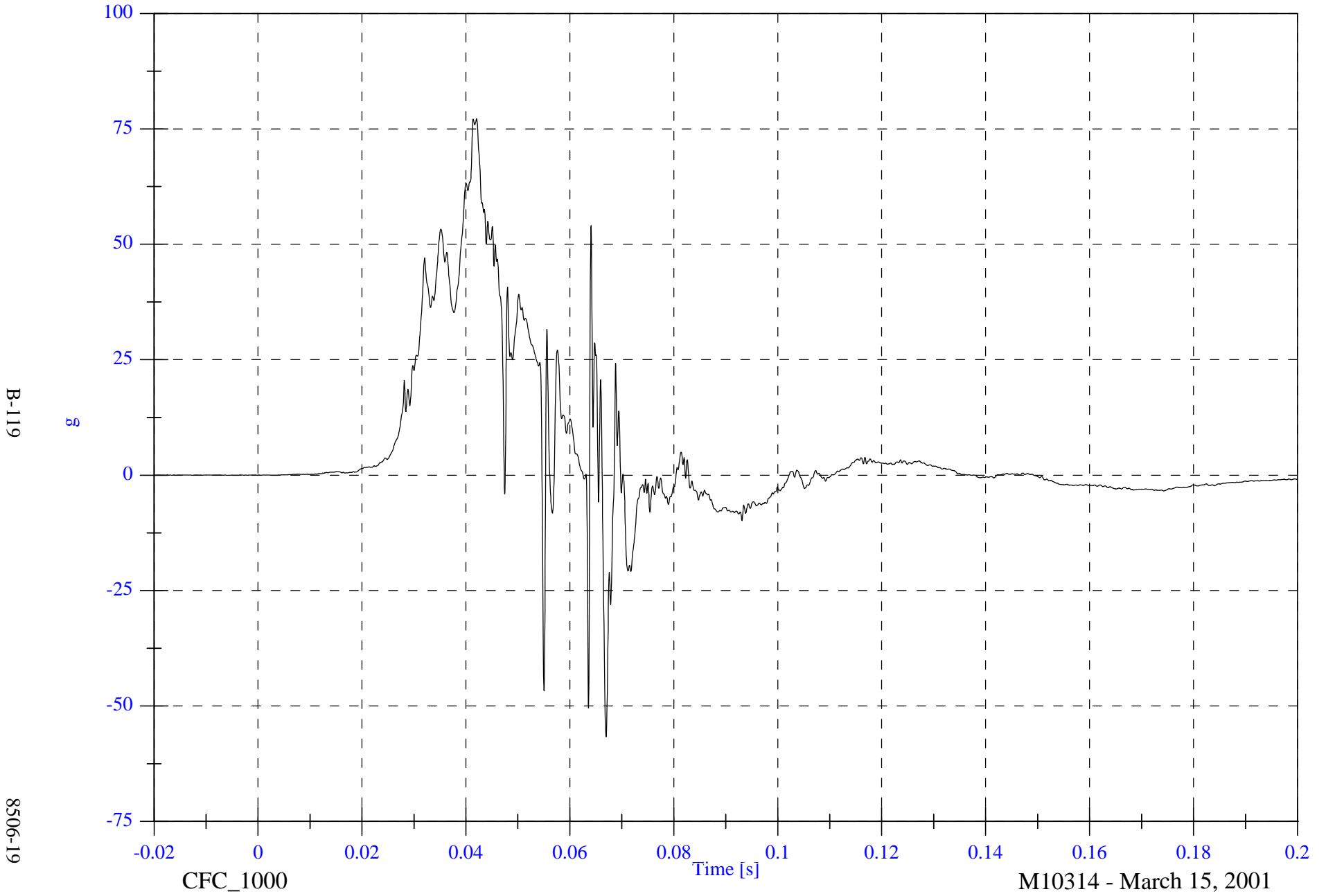
M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

P4 Lower Rib Ry

Max: 77.2 [g] at 0.042 [s]

Min: -56.7 [g] at 0.067 [s]



SNCAP Test 19 - 2001 Chevrolet Impala

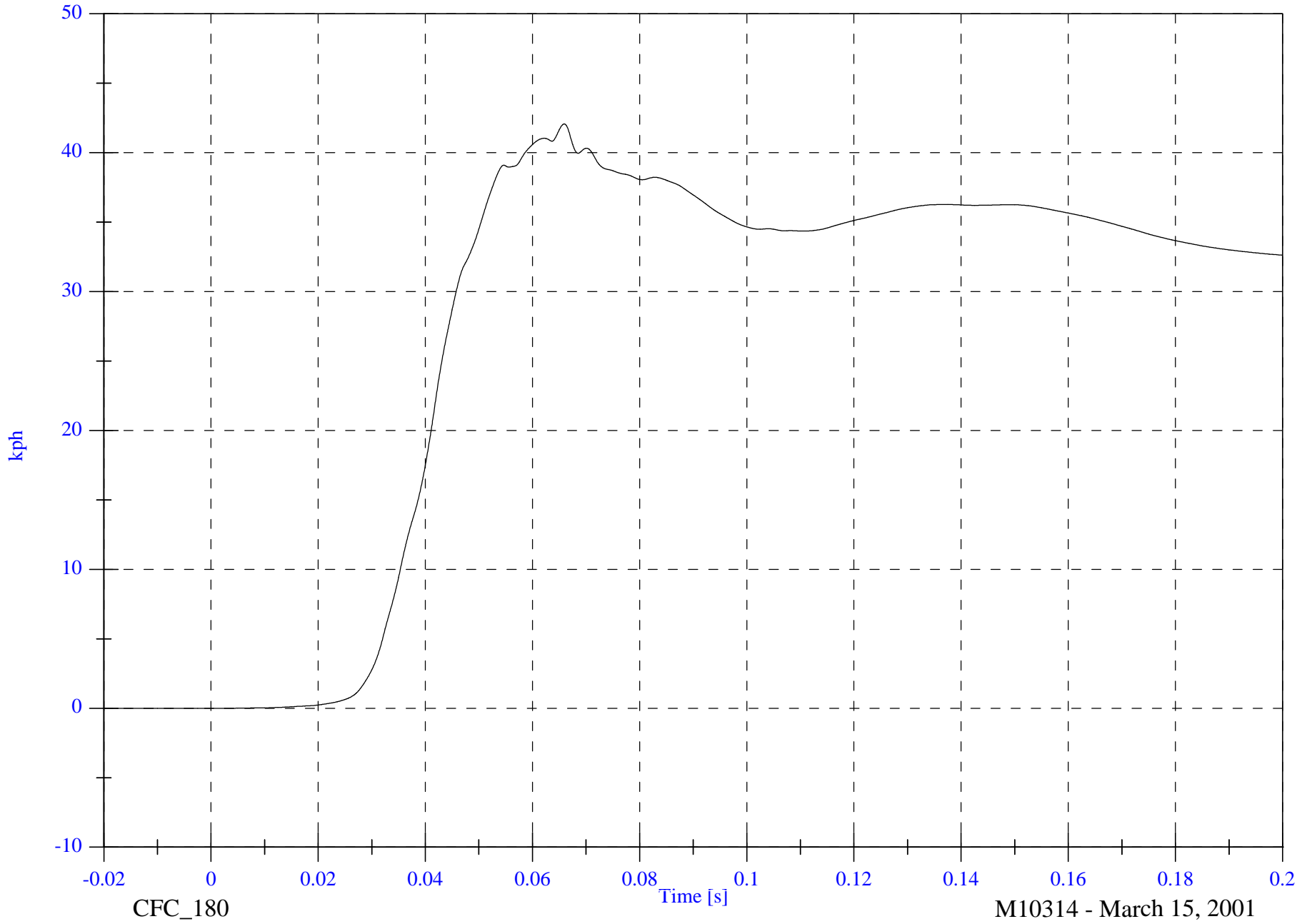
P4 Lower Rib Ry Velocity

Max: 42.1 [kph] at 0.066 [s]

Min: -0.0 [kph] at -0.019 [s]

B-120

8506-19



SNCAP Test 19 - 2001 Chevrolet Impala

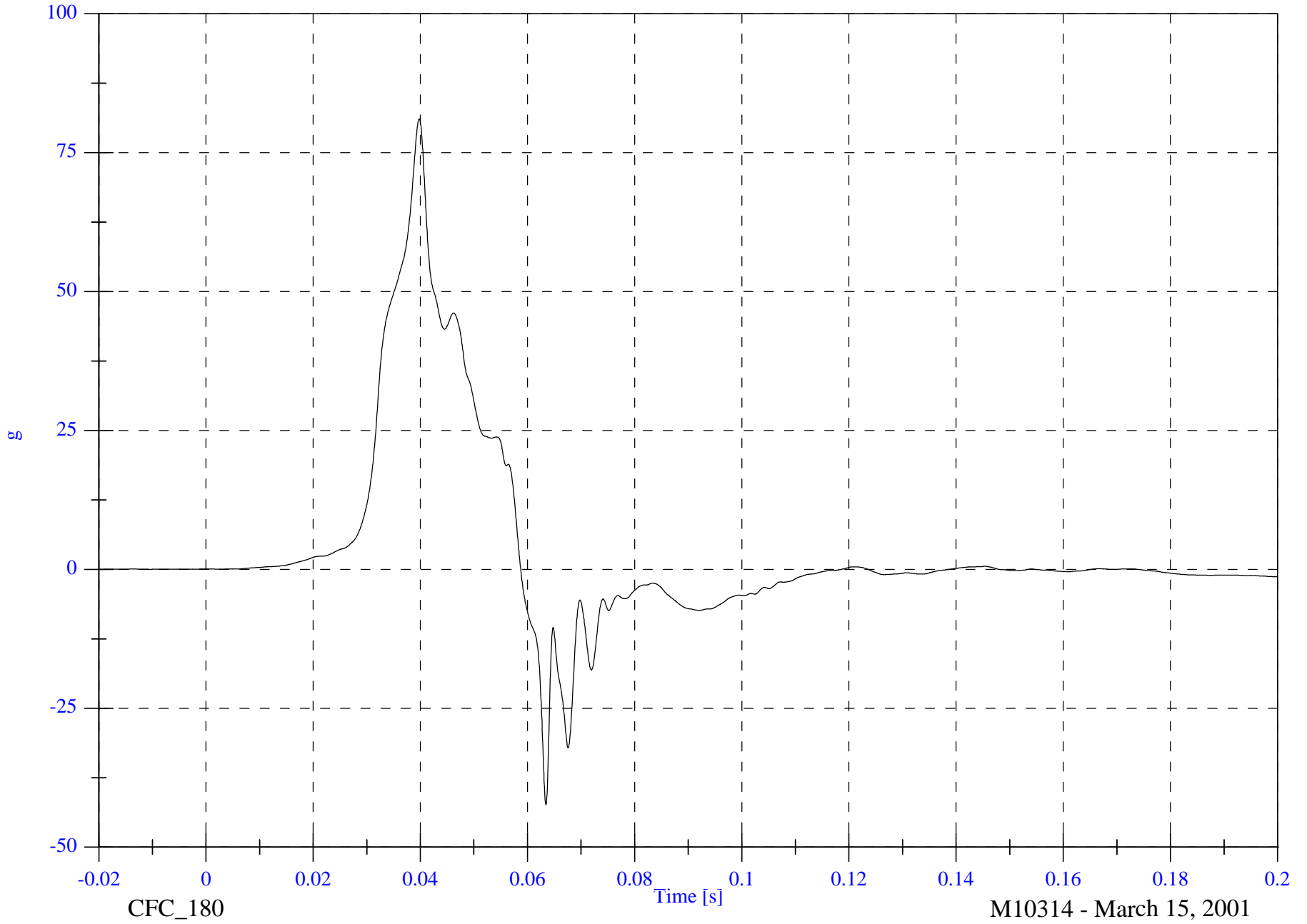
P4 Lower Spine Ry

Max: 81.1 [g] at 0.040 [s]

Min: -42.4 [g] at 0.063 [s]

B-121

8506-19



SNCAP Test 19 - 2001 Chevrolet Impala

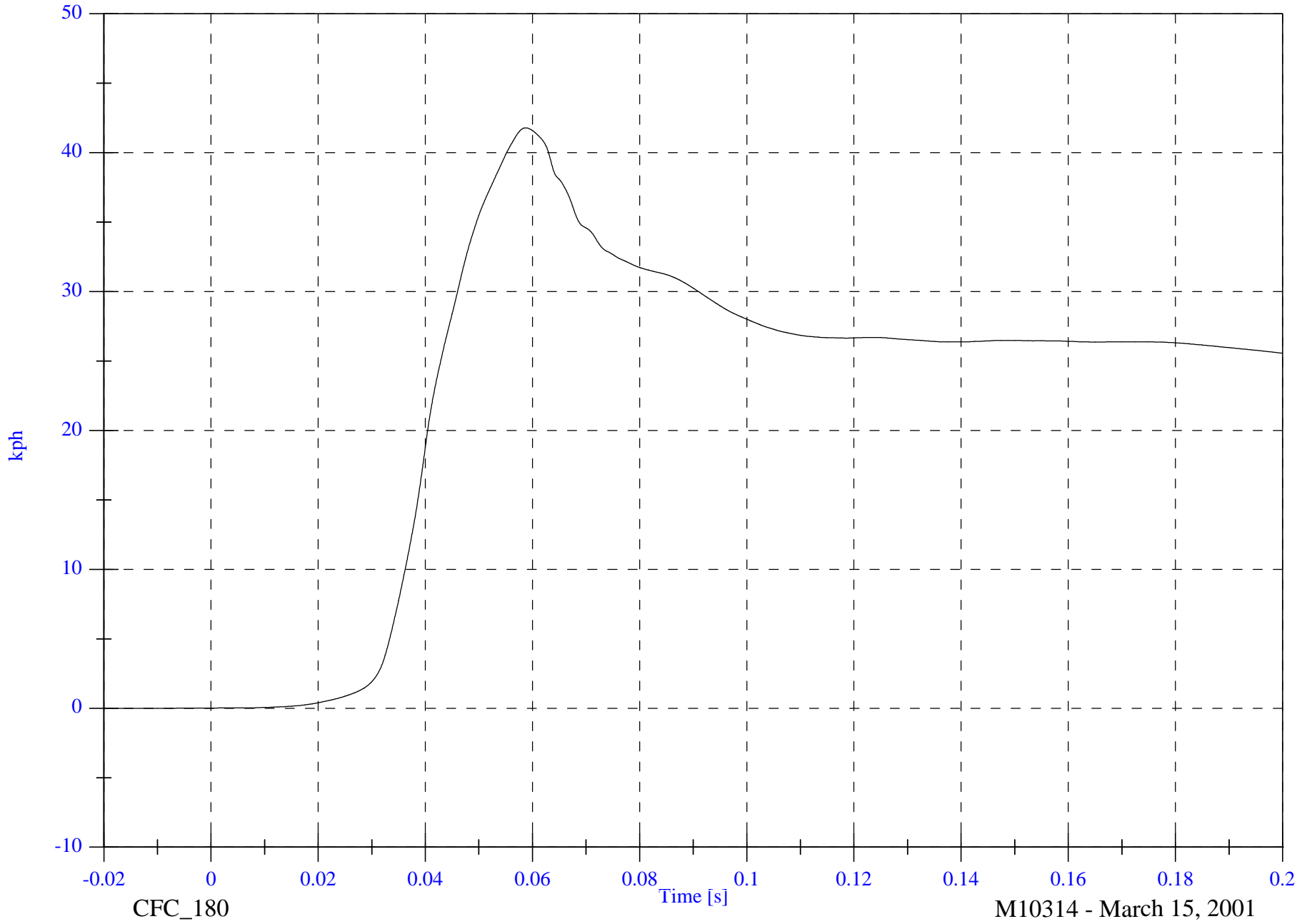
P4 Lower Spine Ry Velocity

Max: 41.8 [kph] at 0.059 [s]

Min: -0.0 [kph] at -0.020 [s]

B-122

8506-19



CFC_180

M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

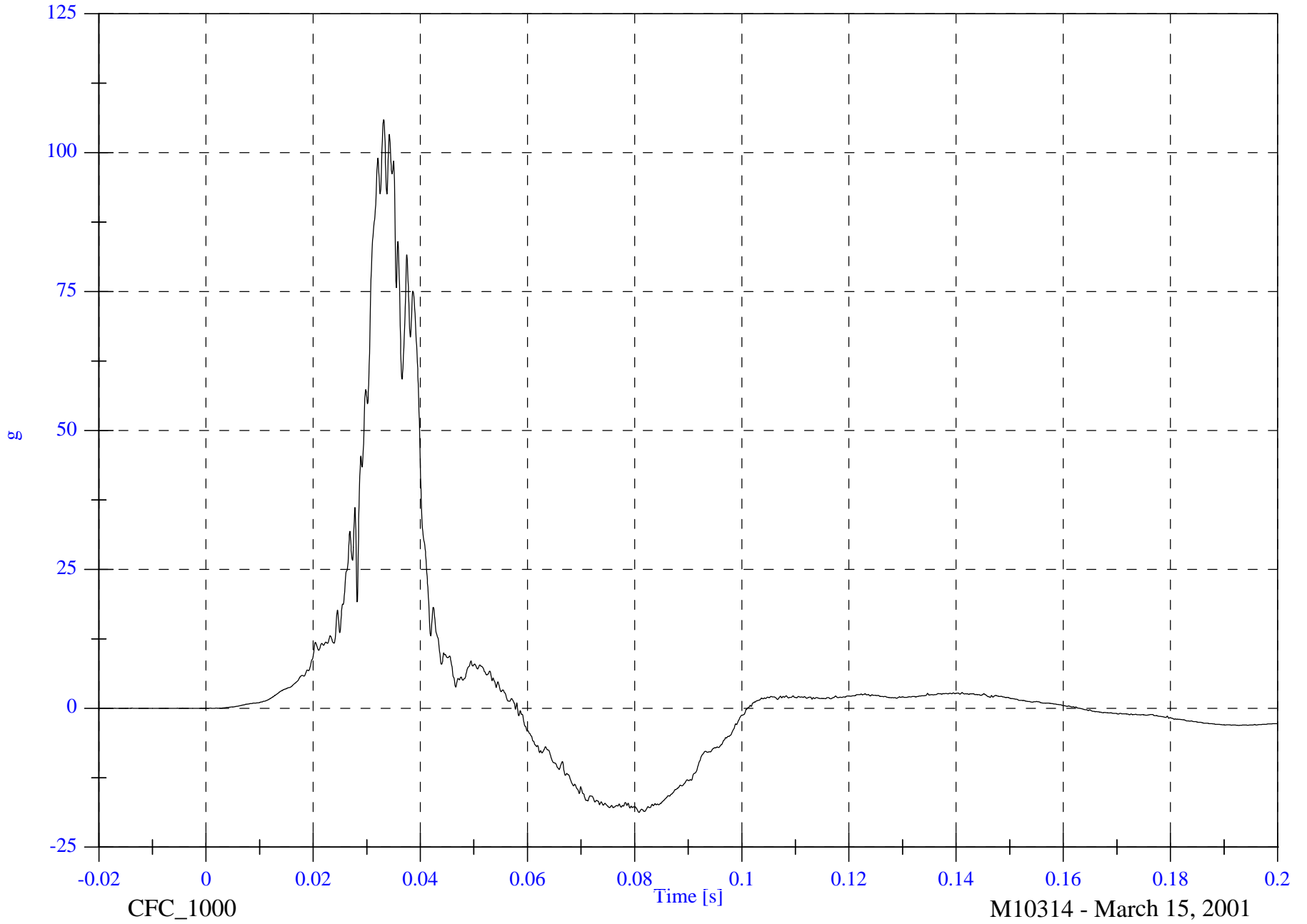
P4 Pelvic Ry

Max: 106.0 [g] at 0.033 [s]

Min: -18.8 [g] at 0.081 [s]

B-123

8506-19



CFC_1000

M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

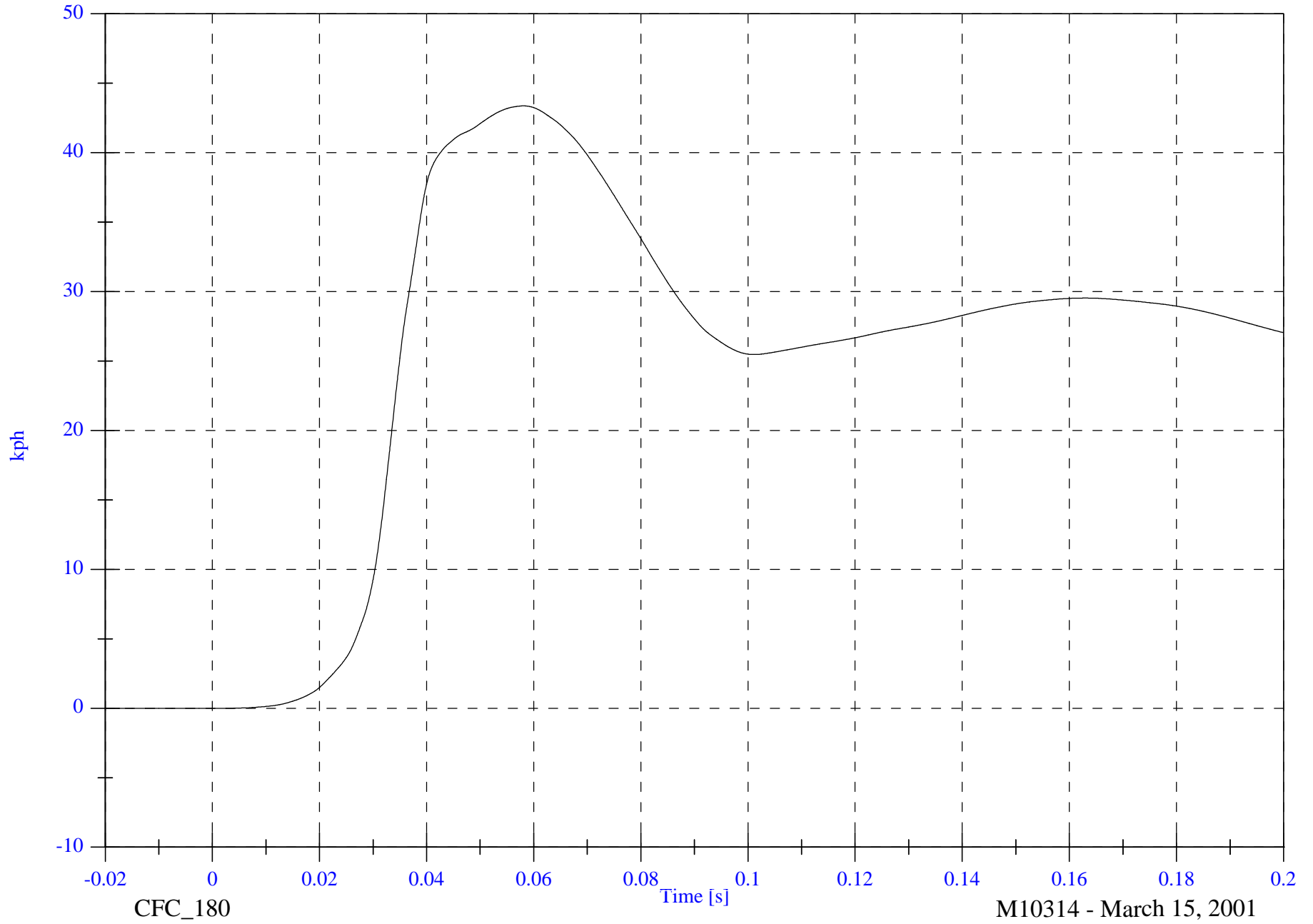
P4 Pelvic Ry Velocity

Max: 43.4 [kph] at 0.058 [s]

Min: -0.0 [kph] at -0.002 [s]

B-124

8506-19



SNCAP Test 19 - 2001 Chevrolet Impala

P1 Upper Rib Ry

Max: 53.1 [g] at 0.028 [s]

Min: -13.5 [g] at 0.093 [s]

B-125

8506-19



SNCAP Test 19 - 2001 Chevrolet Impala

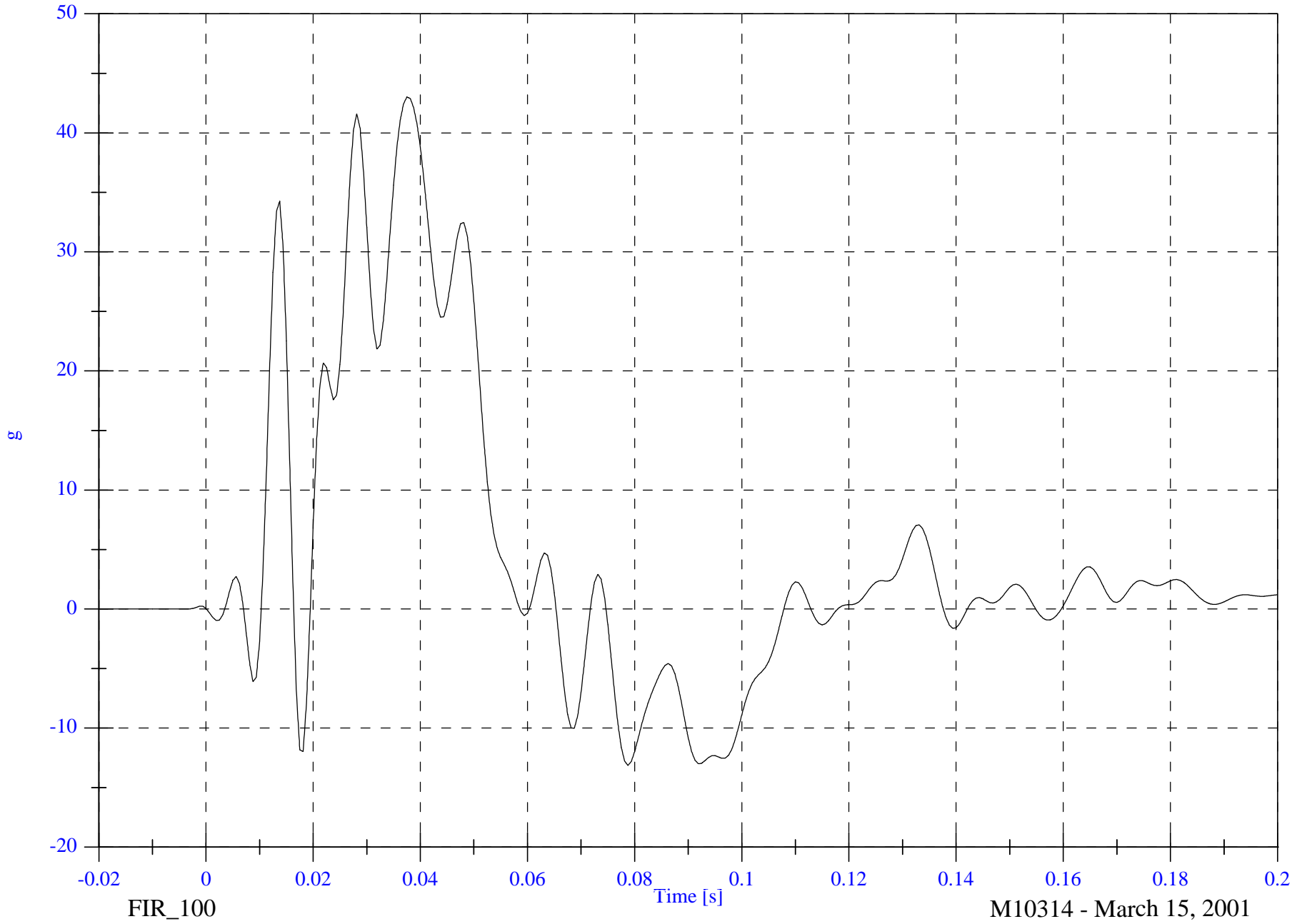
P1 Lower Rib Ry

Max: 43.0 [g] at 0.038 [s]

Min: -13.1 [g] at 0.079 [s]

B-126

8506-19



FIR_100

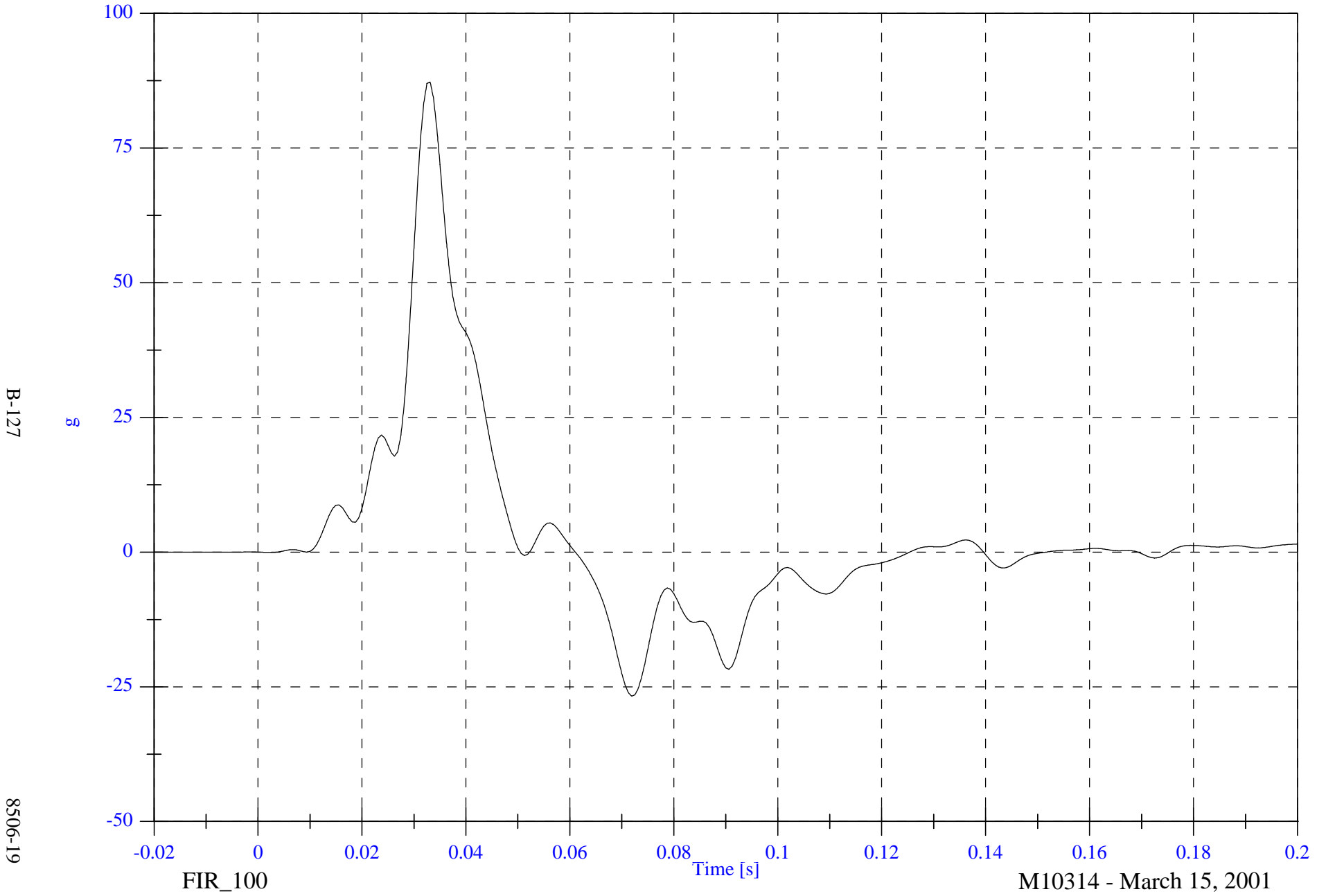
M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

P1 Lower Spine Ry

Max: 87.2 [g] at 0.033 [s]

Min: -26.7 [g] at 0.072 [s]



B-127

8506-19

FIR_100

Time [s]

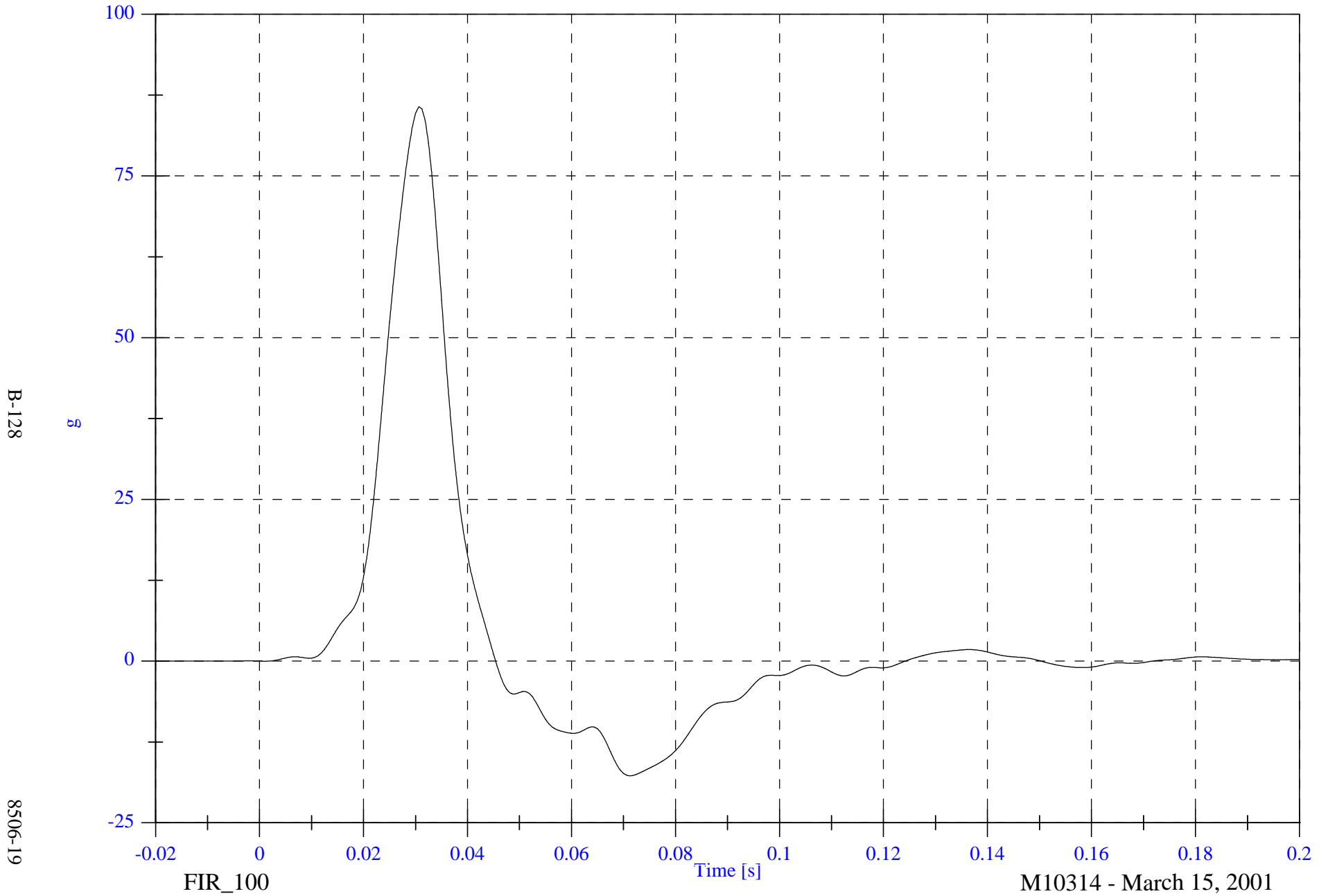
M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

P1 Pelvic Ry

Max: 85.7 [g] at 0.031 [s]

Min: -17.8 [g] at 0.071 [s]



B-128

8506-19

FIR_100

M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

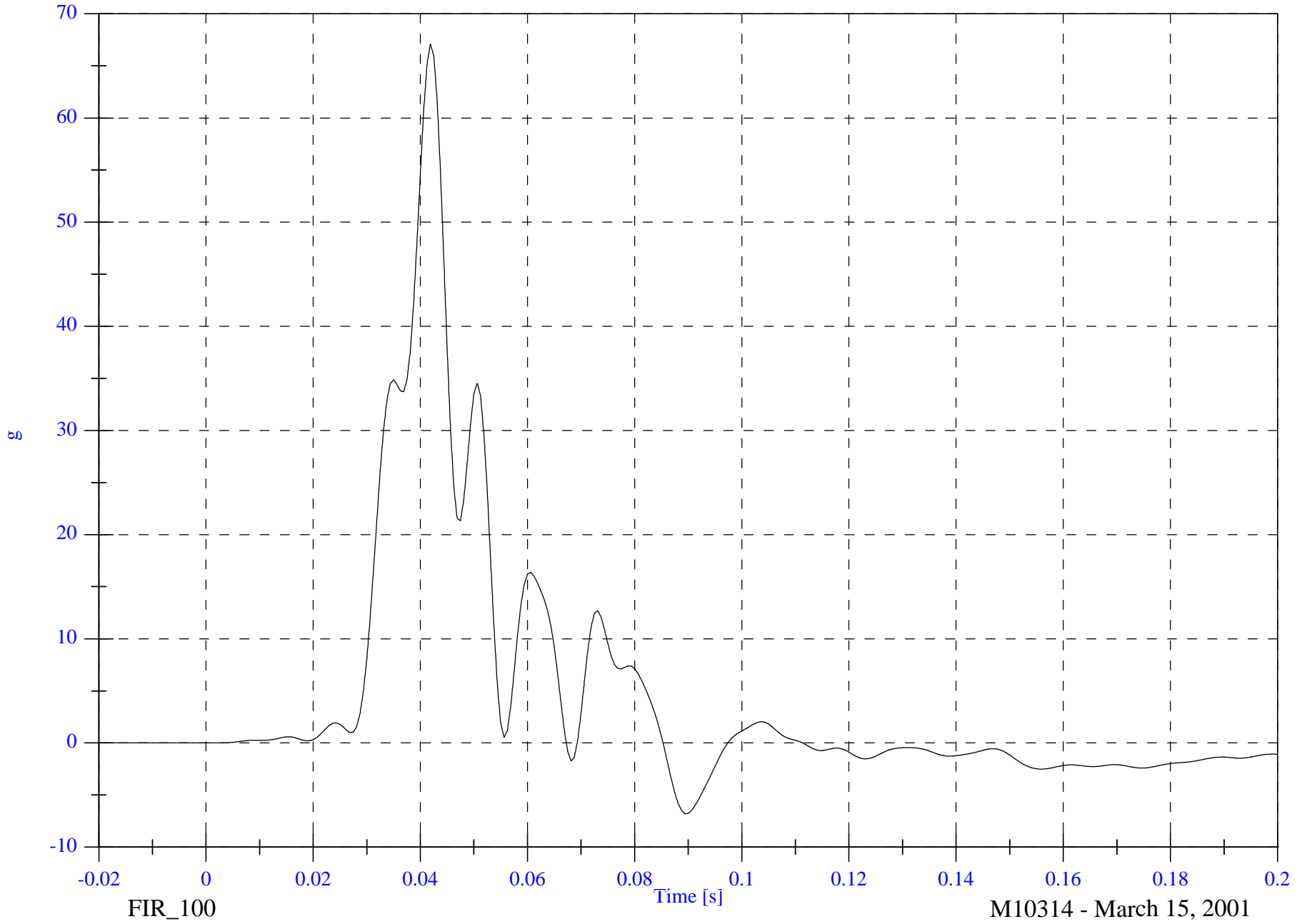
P4 Upper Rib Ry

Max: 67.1 [g] at 0.042 [s]

Min: -6.8 [g] at 0.089 [s]

B-129

8506-19



FIR_100

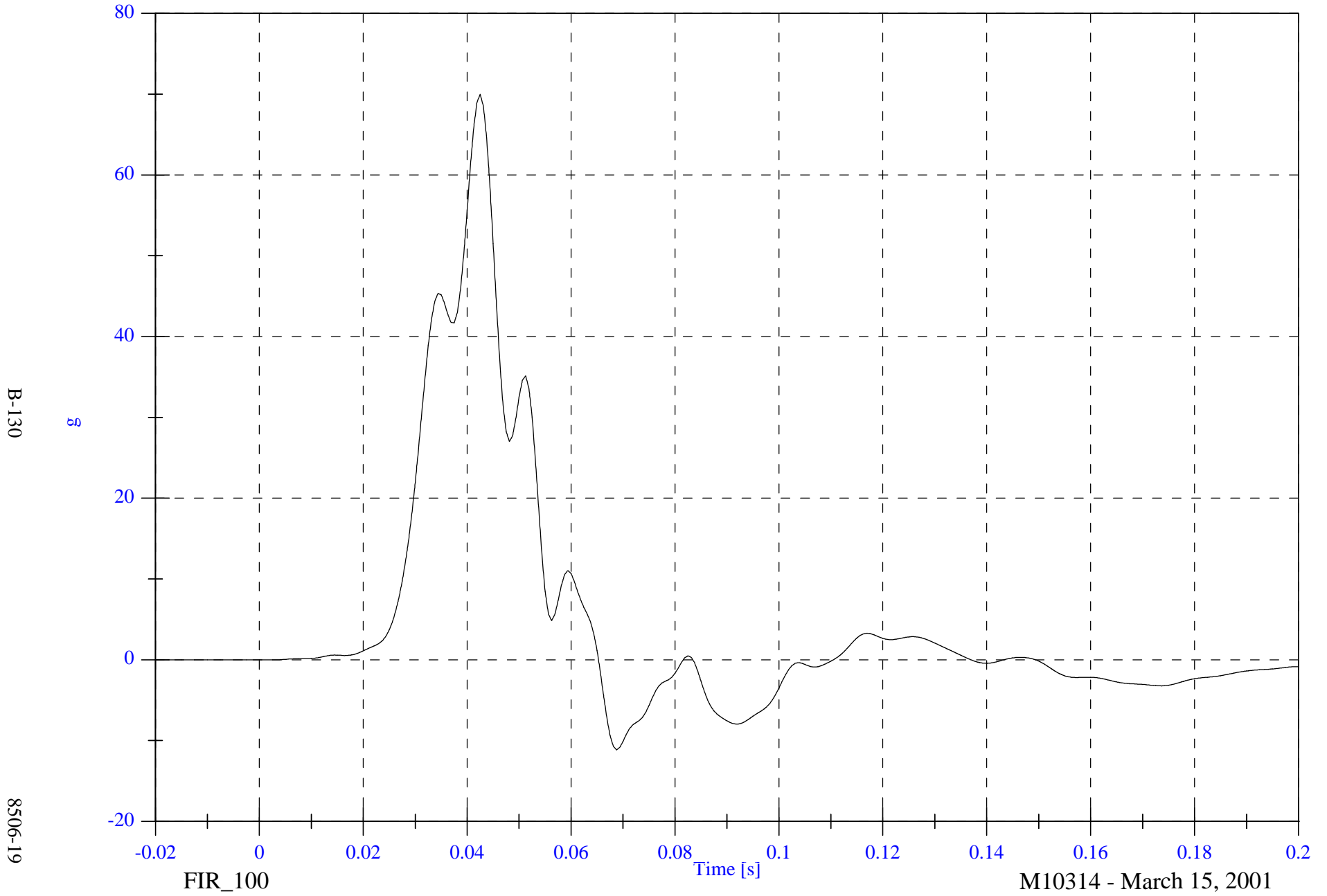
M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

P4 Lower Rib Ry

Max: 70.0 [g] at 0.043 [s]

Min: -11.1 [g] at 0.069 [s]



B-130

8506-19

FIR_100

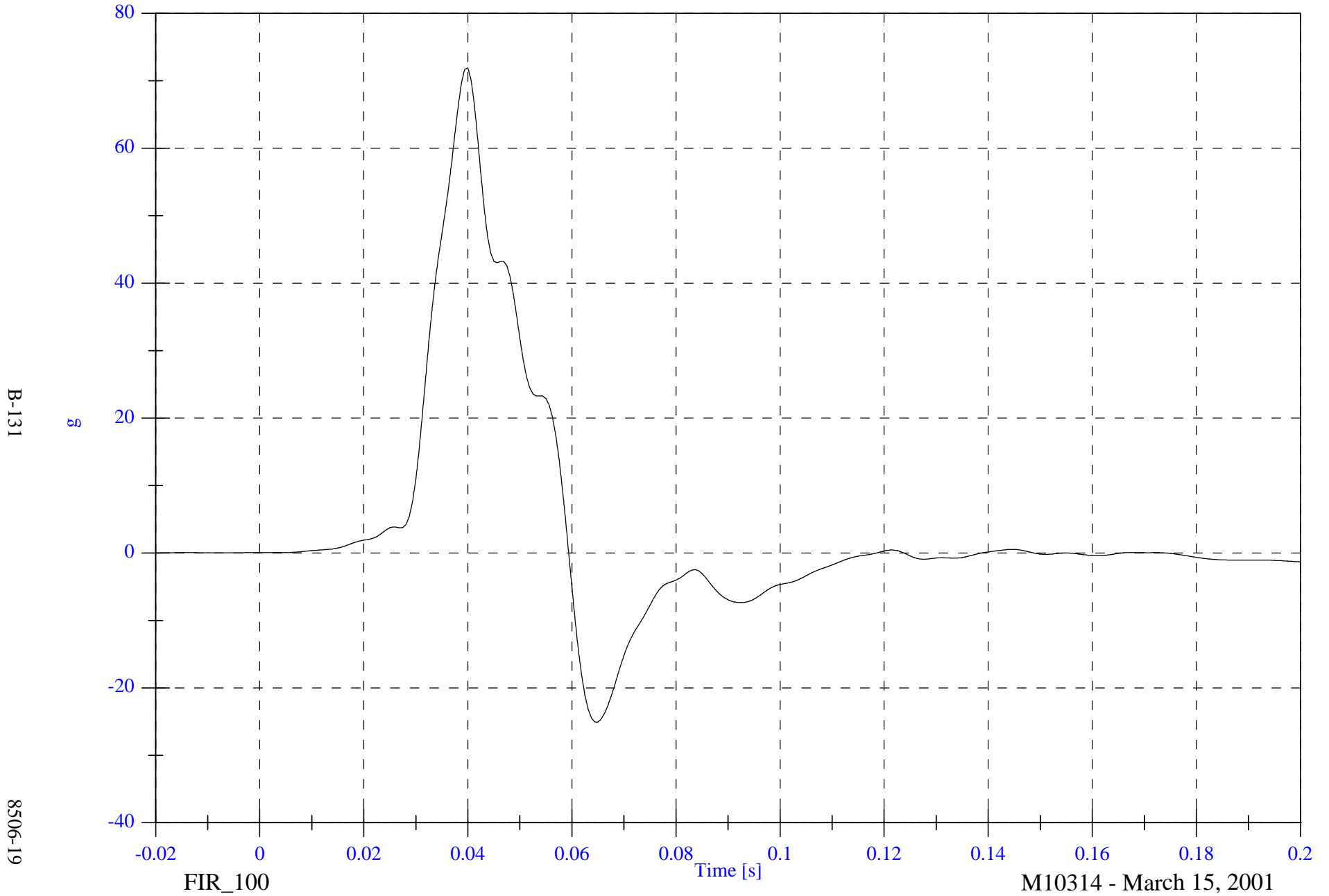
M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

P4 Lower Spine Ry

Max: 71.9 [g] at 0.040 [s]

Min: -25.1 [g] at 0.065 [s]



B-131

8506-19

FIR_100

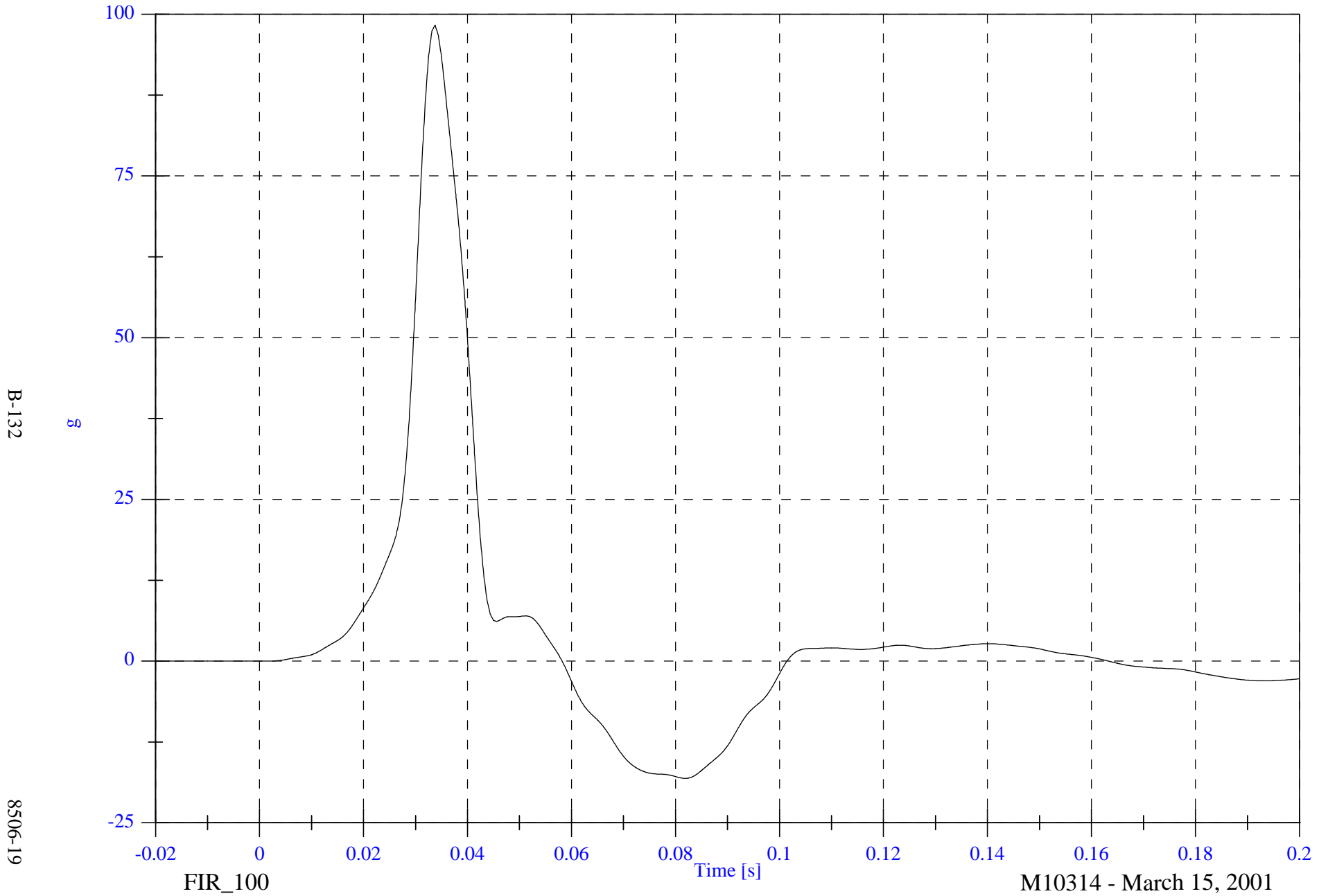
M10314 - March 15, 2001

SNCAP Test 19 - 2001 Chevrolet Impala

P4 Pelvic Ry

Max: 98.3 [g] at 0.034 [s]

Min: -18.1 [g] at 0.082 [s]



B-132

8506-19

FIR_100

M10314 - March 15, 2001

APPENDIX C

SID CONFIGURATION AND PERFORMANCE VERIFICATION DATA

**SUMMARY
SID PRE & POST TEST CALIBRATION**

CONFIGURED FOR LEFT SIDE IMPACT

Date: 4/3/01; 4/4/01 Sequential Test Number: 1.2; 1.5
 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	SID NO.: 026		SID NO.: 268	
		PRE TEST	POST TEST	PRE TEST	POST TEST
SH- Seated Height (mm)	889 - 909	902	902	899	899
RH- Rib Height (mm)	501 - 521	518	518	511	516
HP- Hip Pivot Height (mm)	99 ref.	99	99	99	99
RD- Rib from Back Line (mm)	229 - 241	236	236	236	236
KV- Knee Pivot from Back Line (mm)	511 - 526	518	518	518	518
SW- Knee Pivot to Floor (mm)	490 - 505	493	493	495	495
HW- Hip Width (mm)	356 - 391	371	371	379	378
THORAX IMPACTS					
TEMPERATURE (°C)	18.9 - 25.5	21.7	21.1	21.7	21.1
RELATIVE HUMIDITY (%)	10 - 70	32	31	30	31
PROBE SPEED (m/s)	4.27 - 4.33	4.30	4.27	4.32	4.27
UPPER RIB (g's)	37 - 46	37.4	38.7	42.6	41.1
LOWER RIB (g's)	37 - 46	38.3	38.2	41.3	39.2
LOWER SPINE (g's)	15 - 22	20.3	21.1	20.7	19.0
PELVIS IMPACT					
TEMPERATURE (°C)	18.9 - 25.5	21.7	21.1	21.7	21.1
RELATIVE HUMIDITY (%)	10 - 70	32	31	30	31
PROBE SPEED (m/s)	4.27 - 4.33	4.29	4.32	4.27	4.33
PELVIS (g's)	40 - 60	40.6	48.9	49.2	38.3

REMARKS: SID 268 did not meet the post test lateral pelvis impact test criteria. This SID has been removed from service until affected components are repaired or replaced and the SID passes certification.

**CALIBRATION TEST RESULTS
PRE-TEST**

SID NO.: 026

CONFIGURED FOR LEFT SIDE IMPACT

**CALIBRATION TEST RESULTS SUMMARY
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 026 Sequential Test Number: 1
Date: 3/2/01 Laboratory Technician: B. Swiecicki

TEST	COMMENTS
EXTERNAL DIMENSIONS	Passed all requirements.
THORACIC SHOCK ABSORBER TEST	Passed all requirements.
LATERAL THORAX IMPACT TEST	Passed all requirements.
LATERAL PELVIS IMPACT TEST	Passed all requirements.
HEAD DROP TEST*	Passed all requirements.
ABDOMINAL COMPRESSION TEST*	Passed all requirements.
LUMBAR FLEXION TEST*	Passed all requirements.

* Test not required for SID certification.

REMARKS: None

**EXTERNAL DIMENSIONS
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 026 Sequential Test Number: 1
Date: 3/2/01 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 - 909	902
RH- Rib Height (mm)	502 - 520	518
HP- Hip Pivot Height (mm)	99 ref.	99
RD- Rib from Back Line (mm)	229 - 241	236
KH- Knee Pivot from Back Line (mm)	511 - 526	518
KV- Knee Pivot to Floor (mm)	490 - 505	493
HW- Hip Width (mm)	356 - 391	371

REMARKS: None

**THORACIC SHOCK ABSORBER TESTS
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 026 Sequential Test Number: 1.2
 Date: 1/16/01 Laboratory Technician: B. Swiecicki

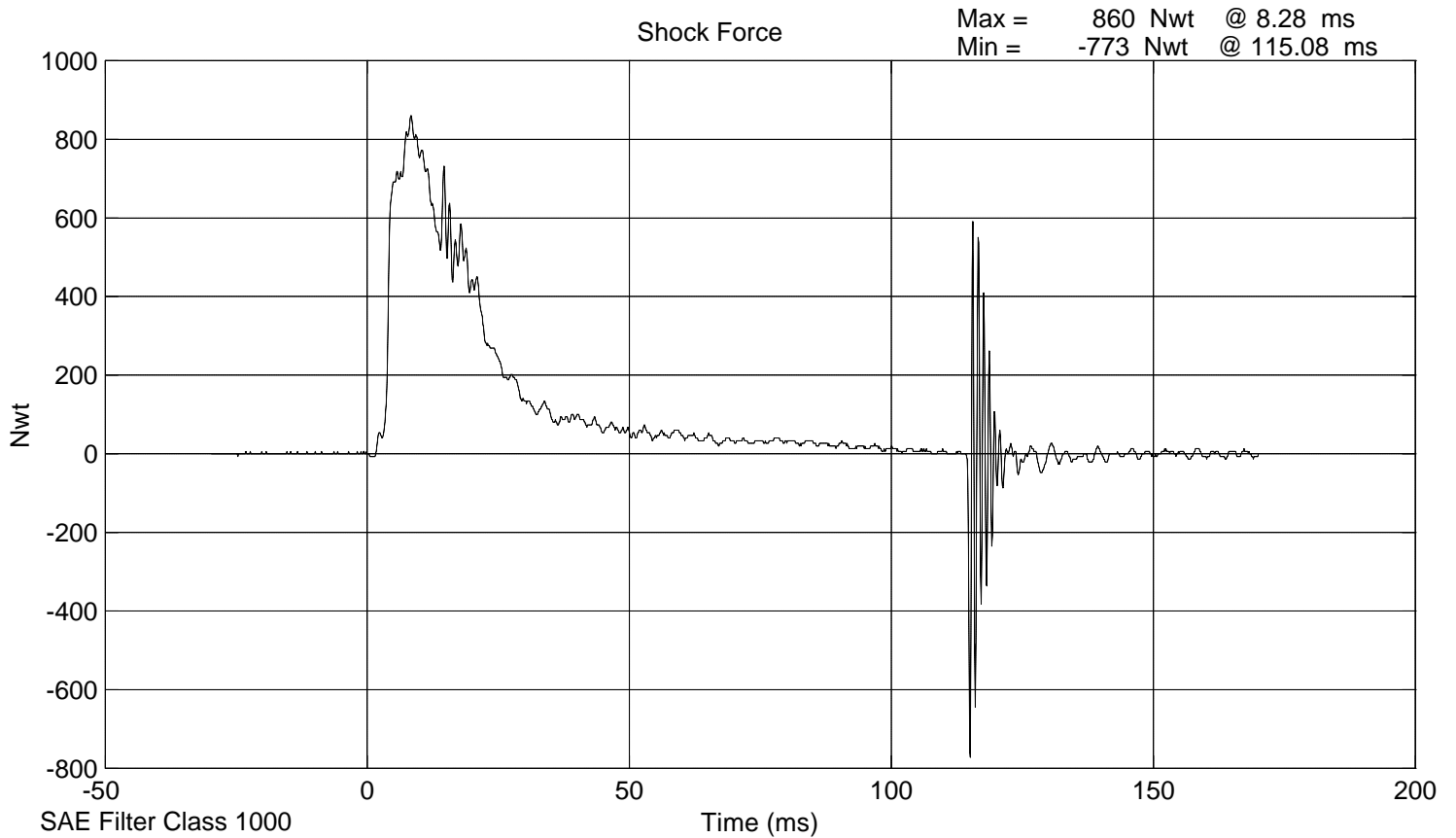
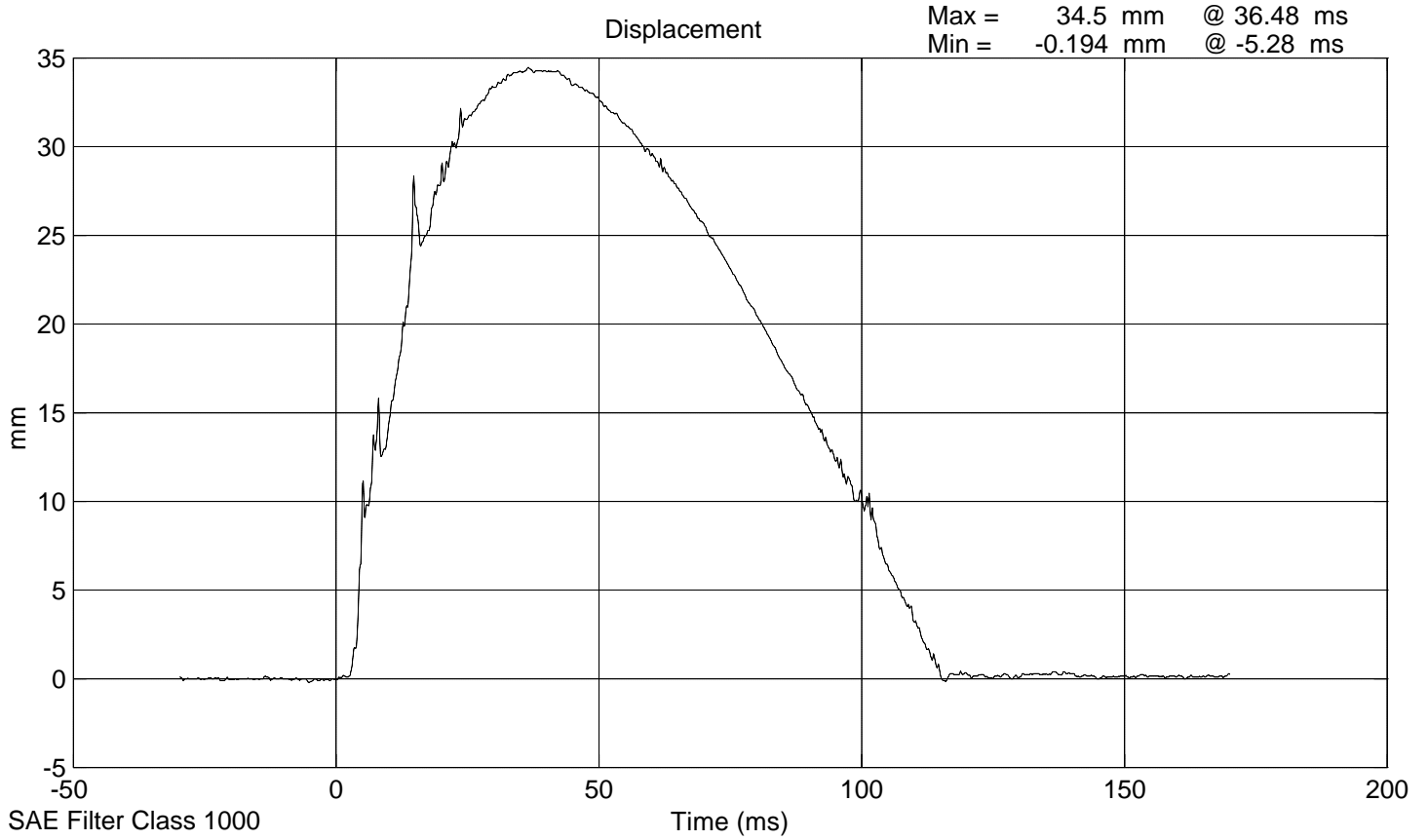
DAMPER IDENTIFICATION: 026

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)		18.9 - 25.5	21.1
RELATIVE HUMIDITY (%)		10 - 70	30
VELOCITY 3.05 m/s	FORCE (N)	836 - 1125	859.7
	DISPLACEMENT (mm)	30 - 35	34.5
VELOCITY 4.27 m/s	FORCE (N)	1730 - 2099	1845.0
	DISPLACEMENT (mm)	32 - 37	35.8
VELOCITY 6.10 m/s	FORCE (N)	3741 - 4448	3917.8
	DISPLACEMENT (mm)	33 - 40	37.7

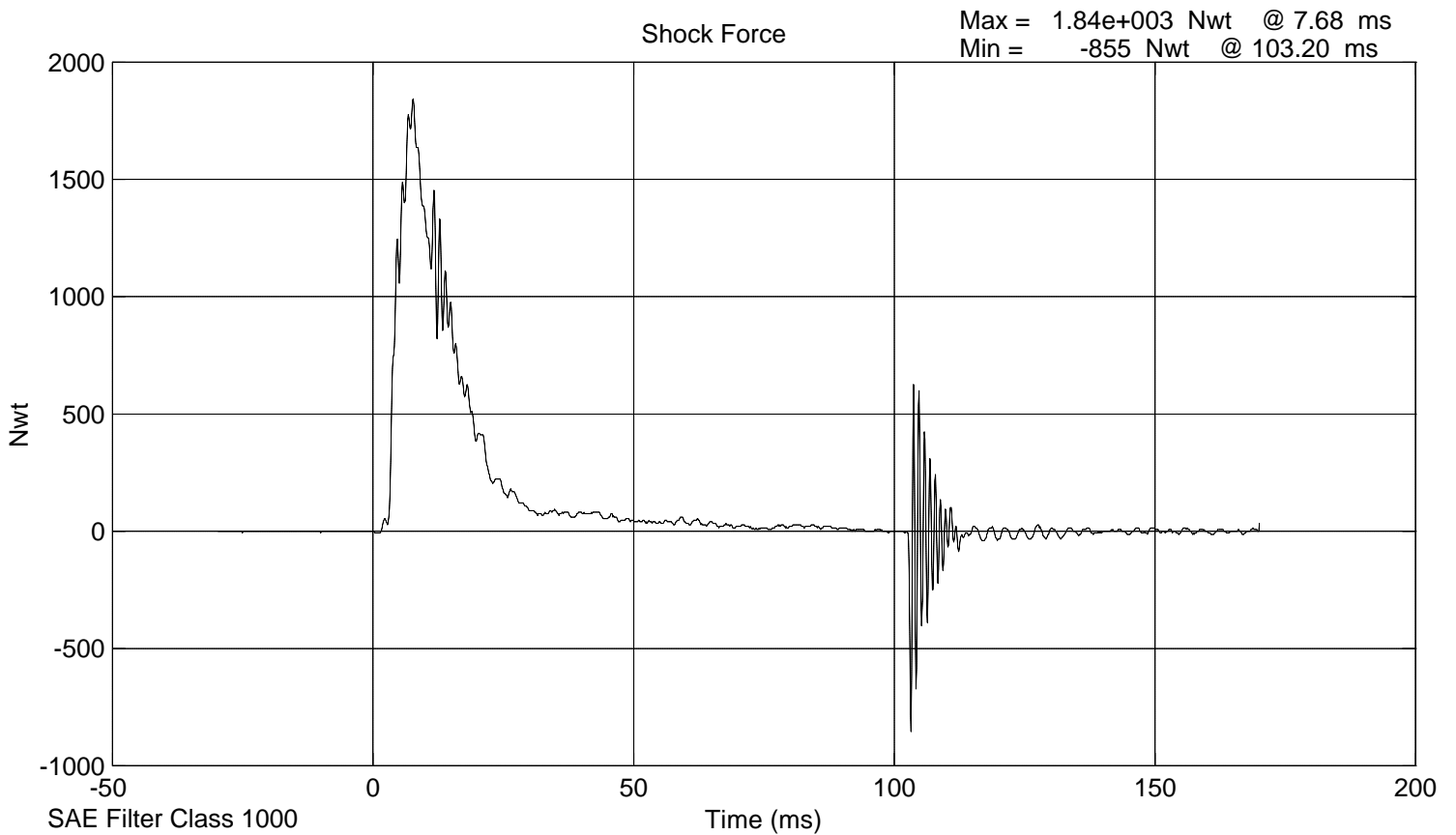
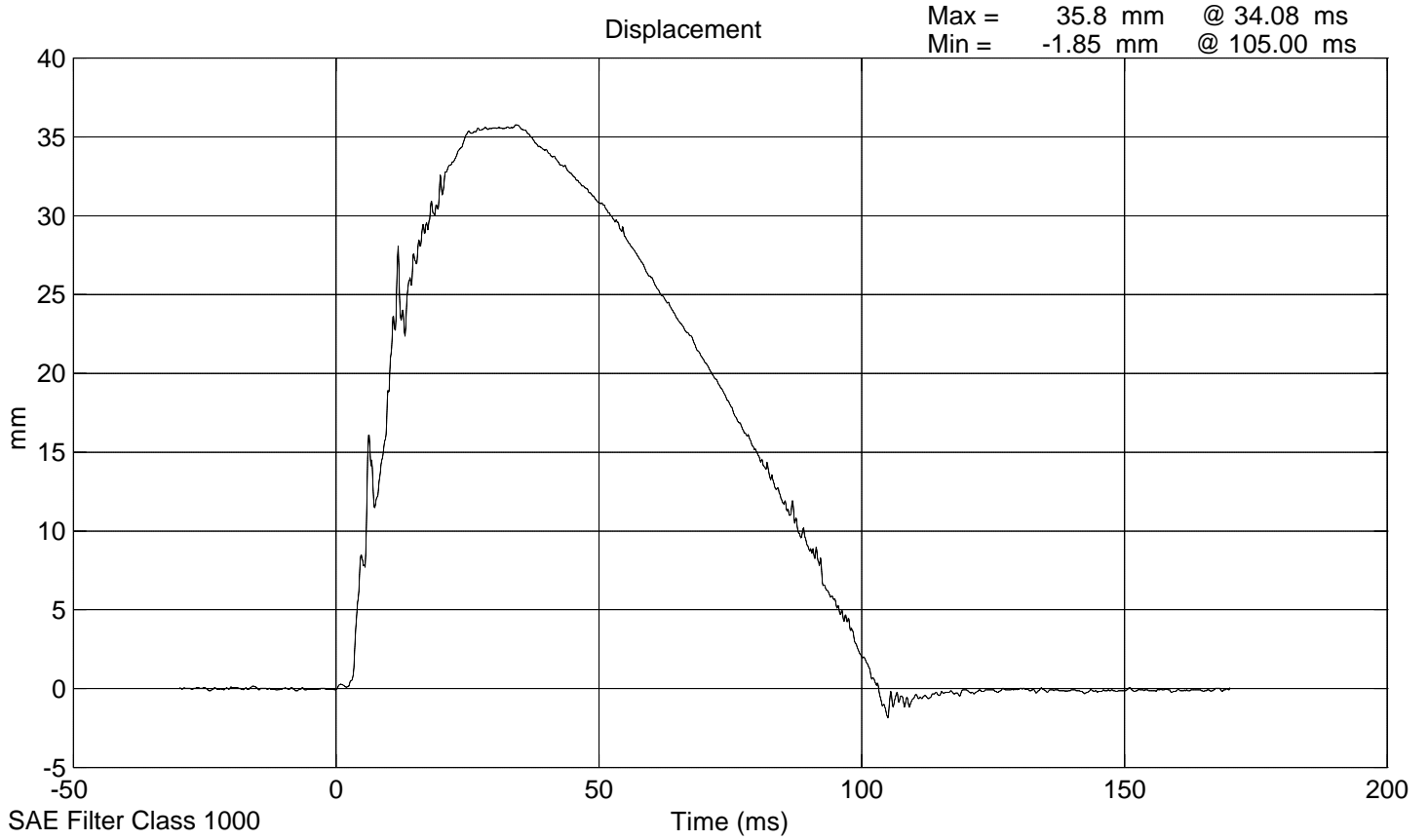
DAMPER SETTING: 5

REMARKS: None

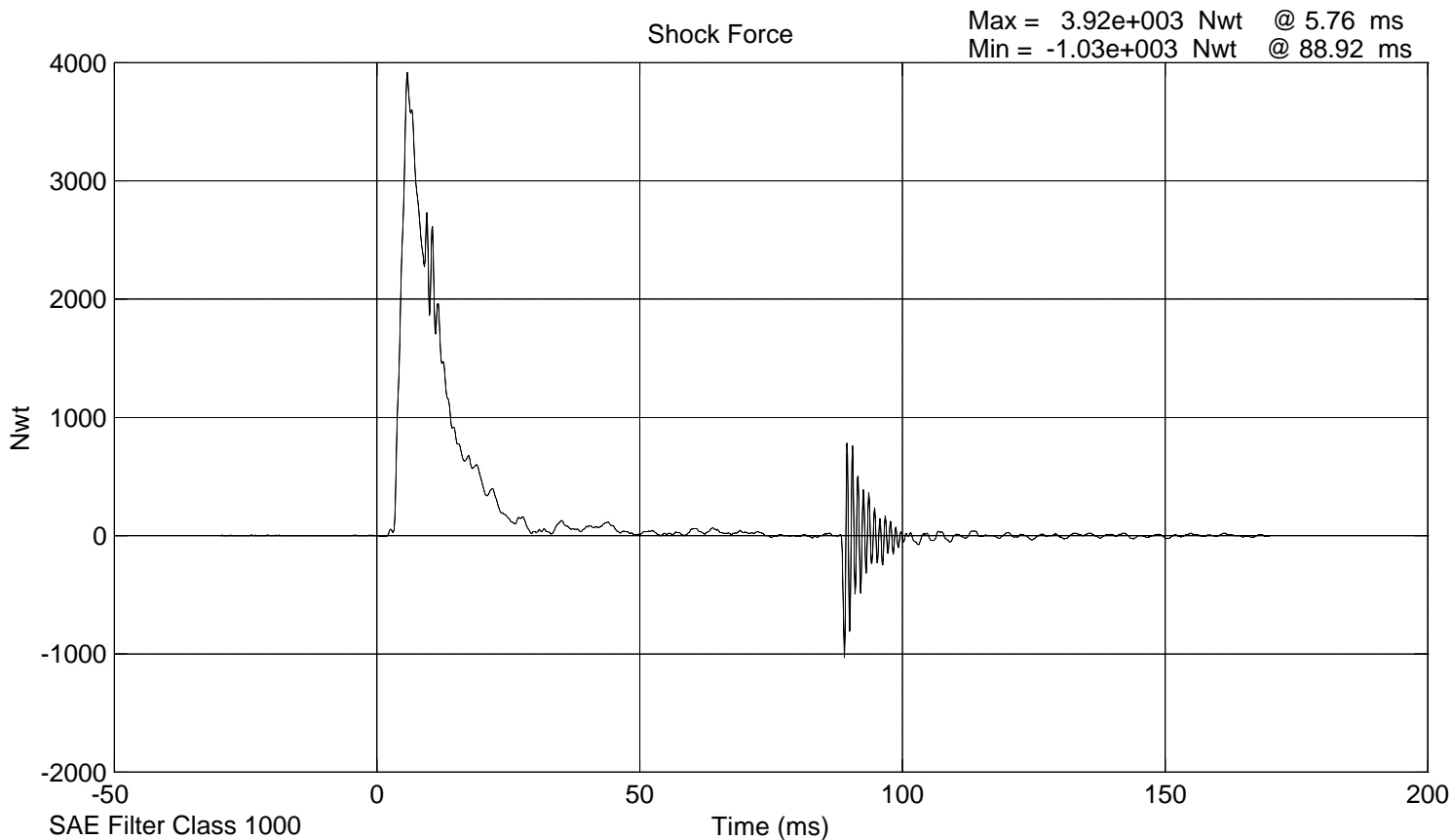
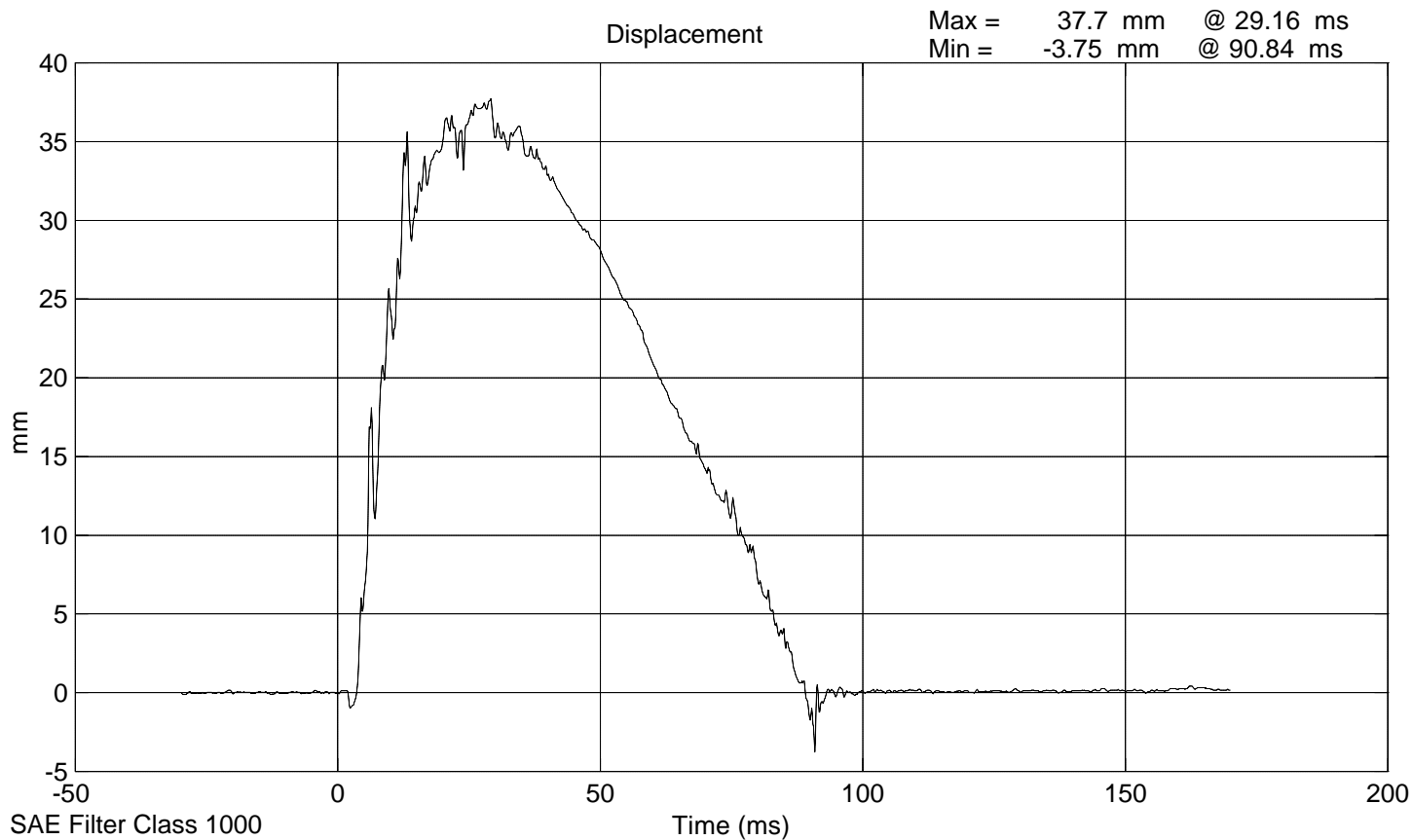
sid 026 shock absorber impact test @ 3.048 m/s



sid 026 shock absorber impact test @ 4.2672 m/s



sid 026 shock absorber impact test @ 6.096 m/s



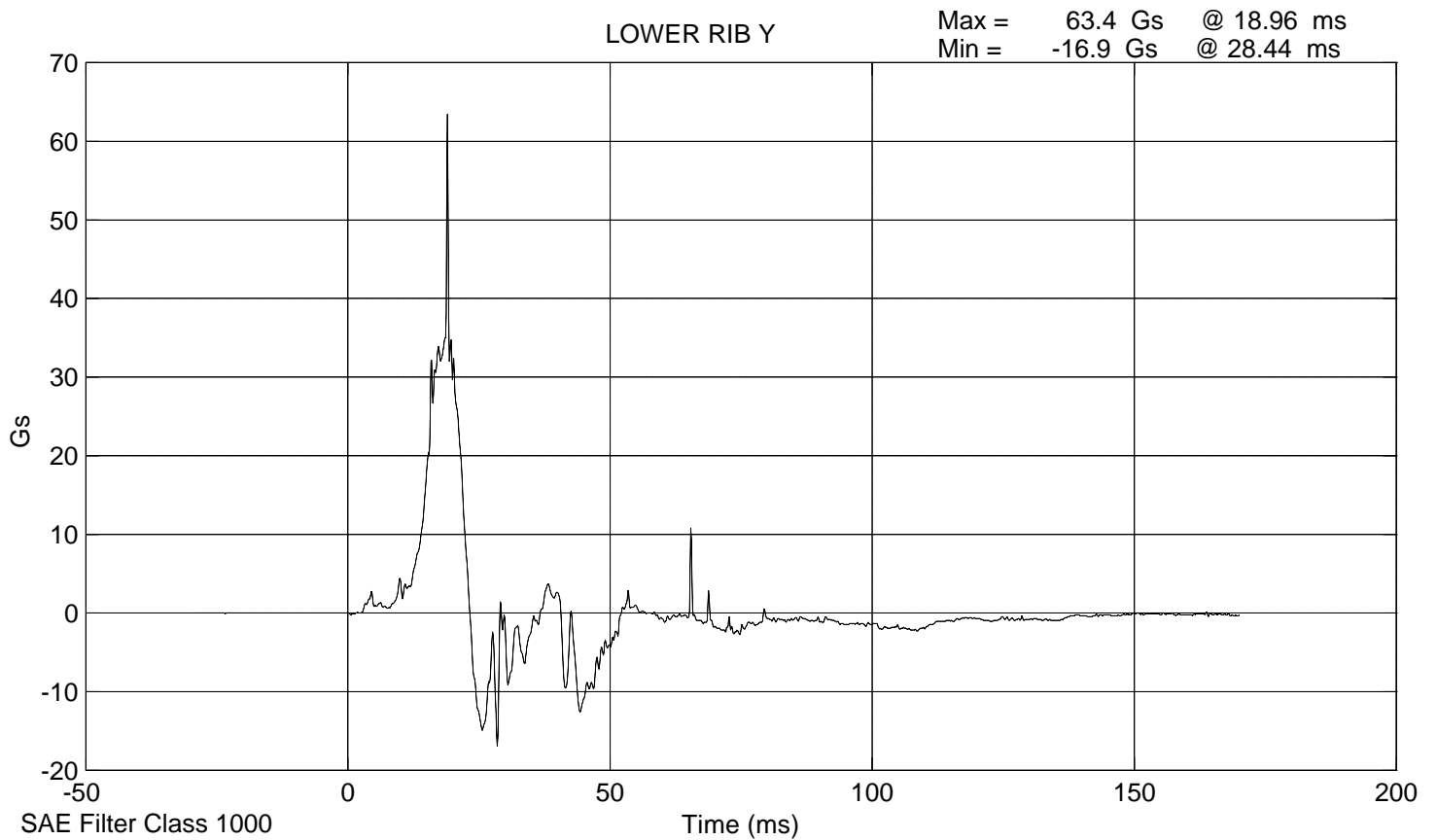
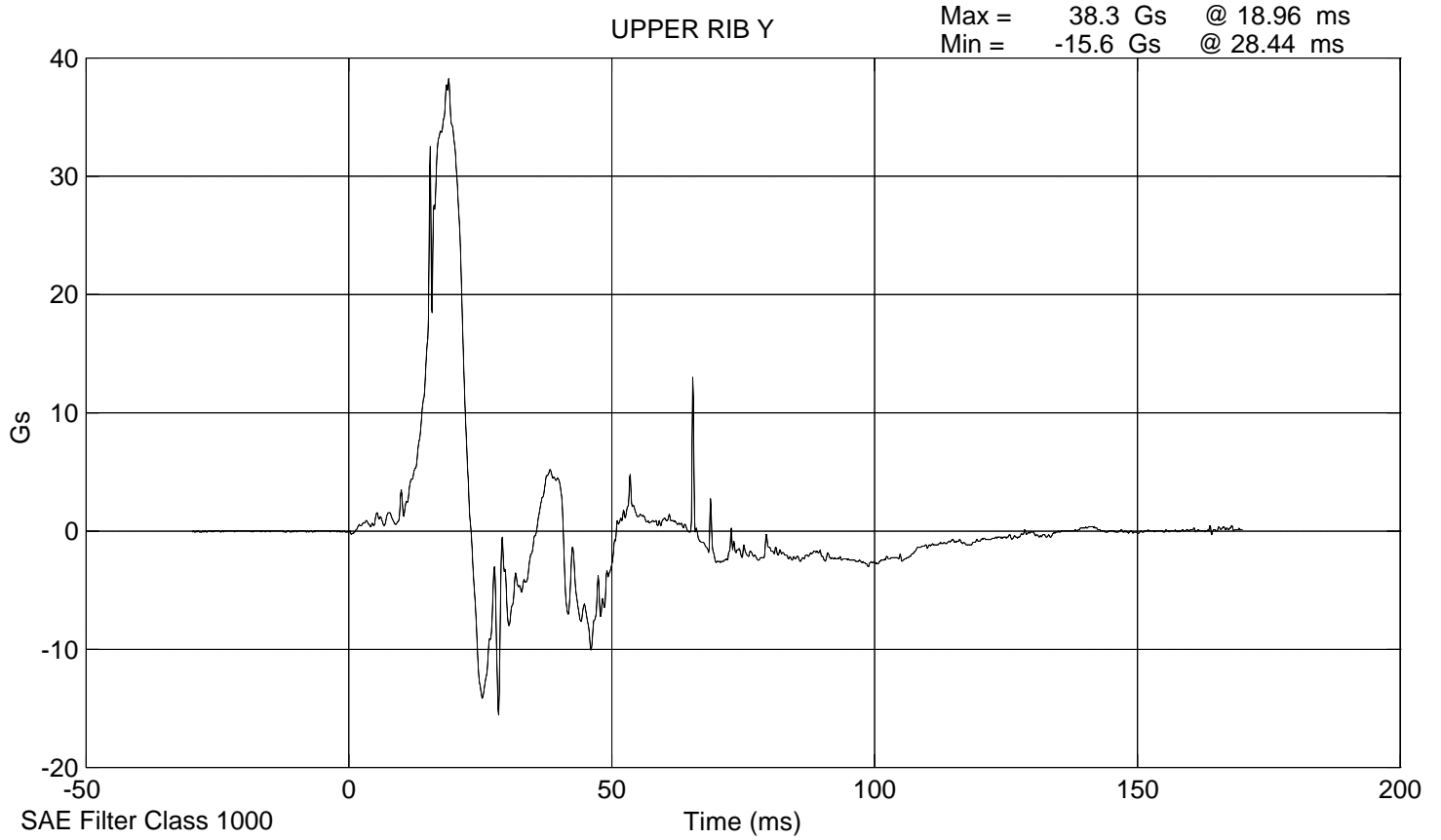
**LATERAL THORAX IMPACT TEST
PRE-TEST**

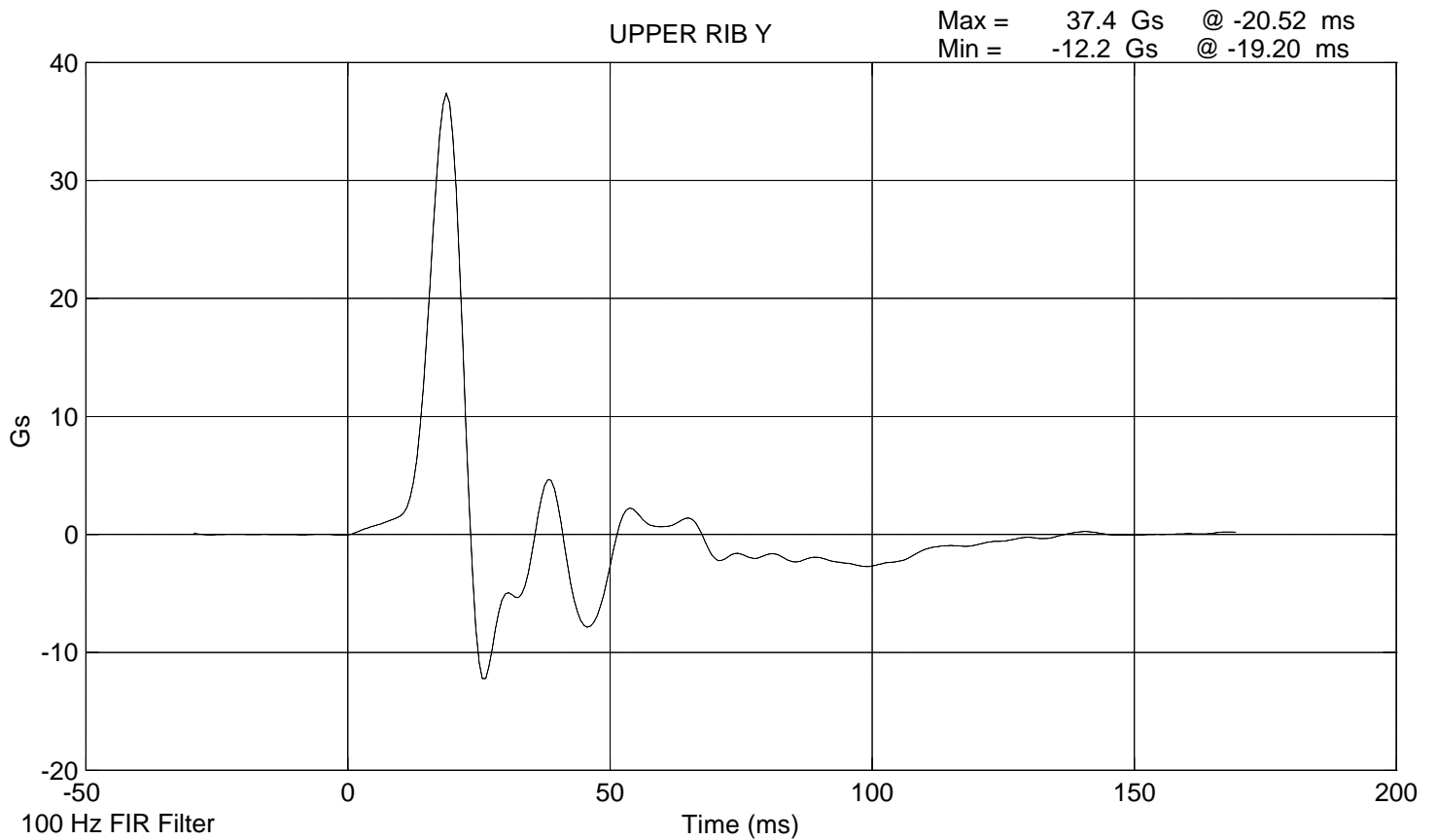
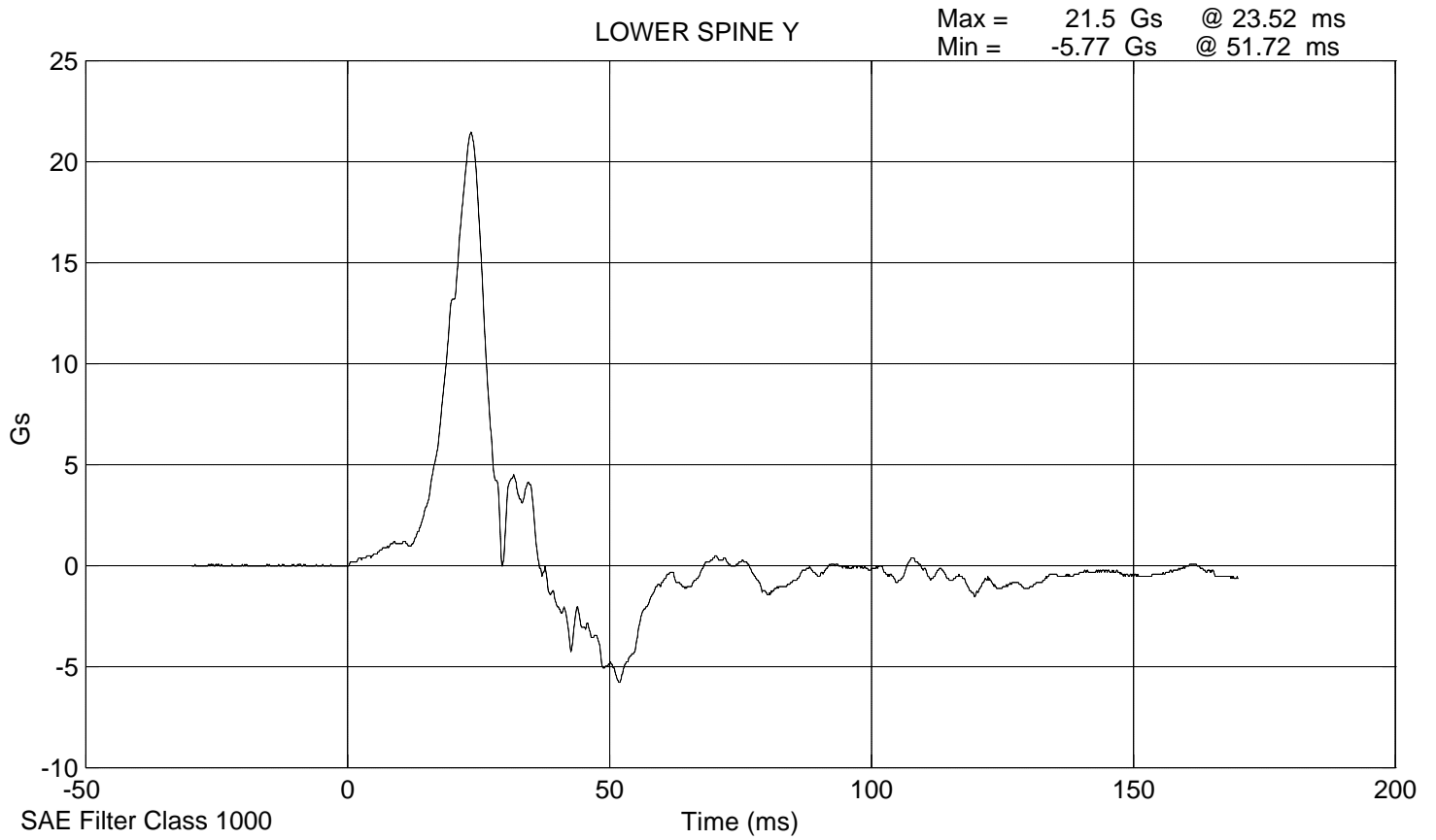
CONFIGURED FOR LEFT SIDE IMPACT

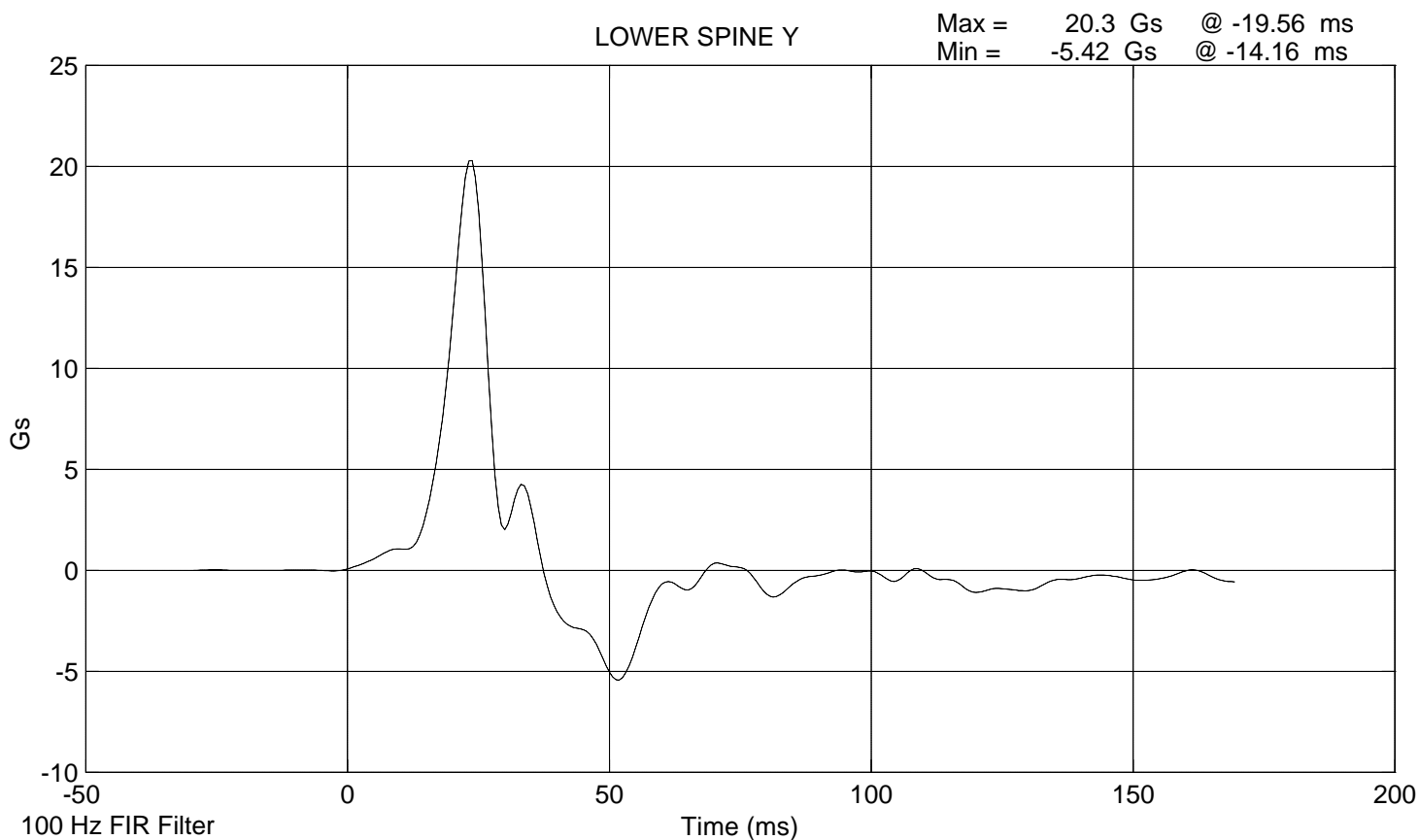
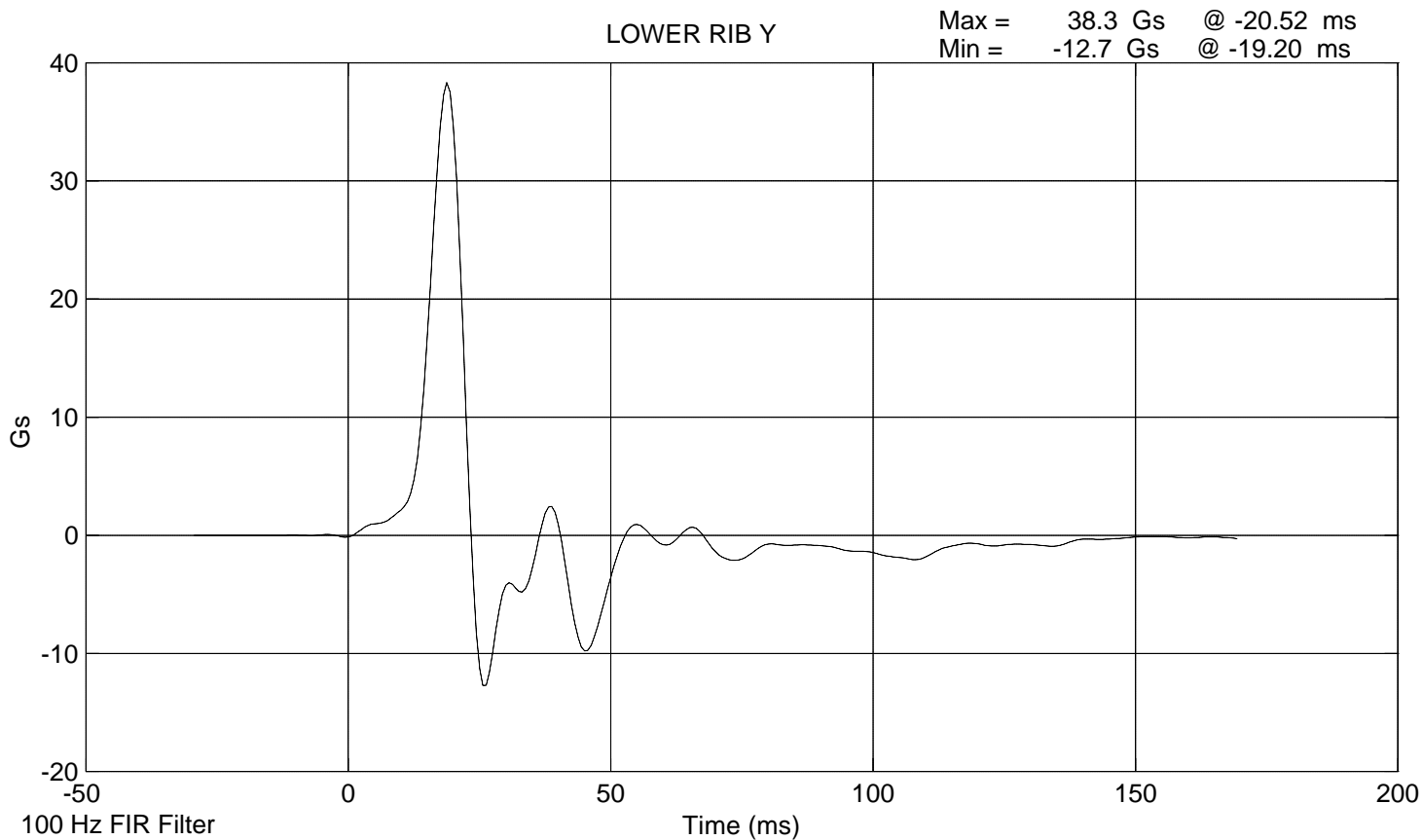
SID Serial No.: 026 Sequential Test Number: 1
Date: 3/1/01 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	32
PROBE SPEED (m/s)	4.27 - 4.33	4.30
UPPER RIB (g's)	37 - 46	37.4
LOWER RIB (g's)	37 - 46	38.3
LOWER SPINE (g's)	15 - 22	20.3

REMARKS: None







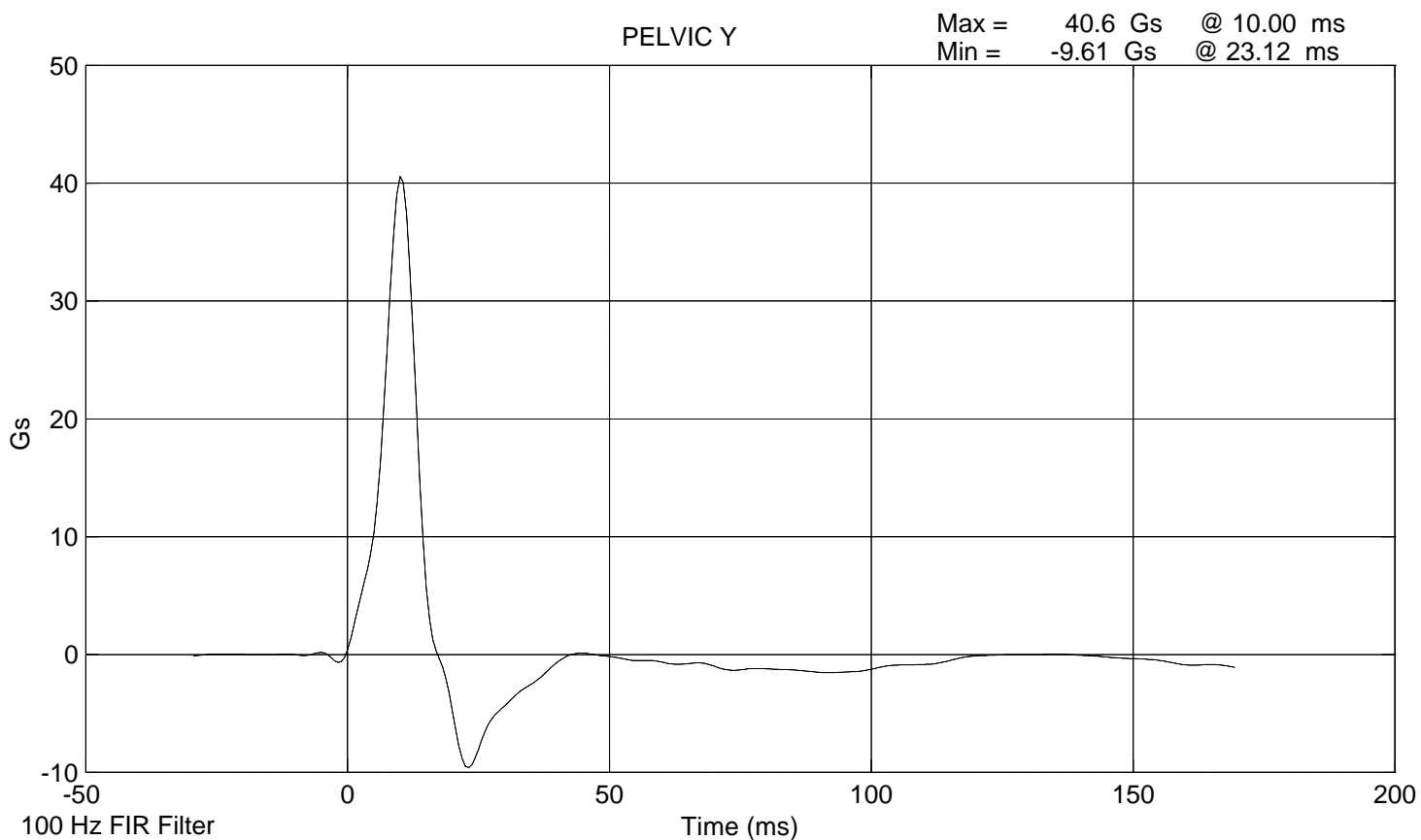
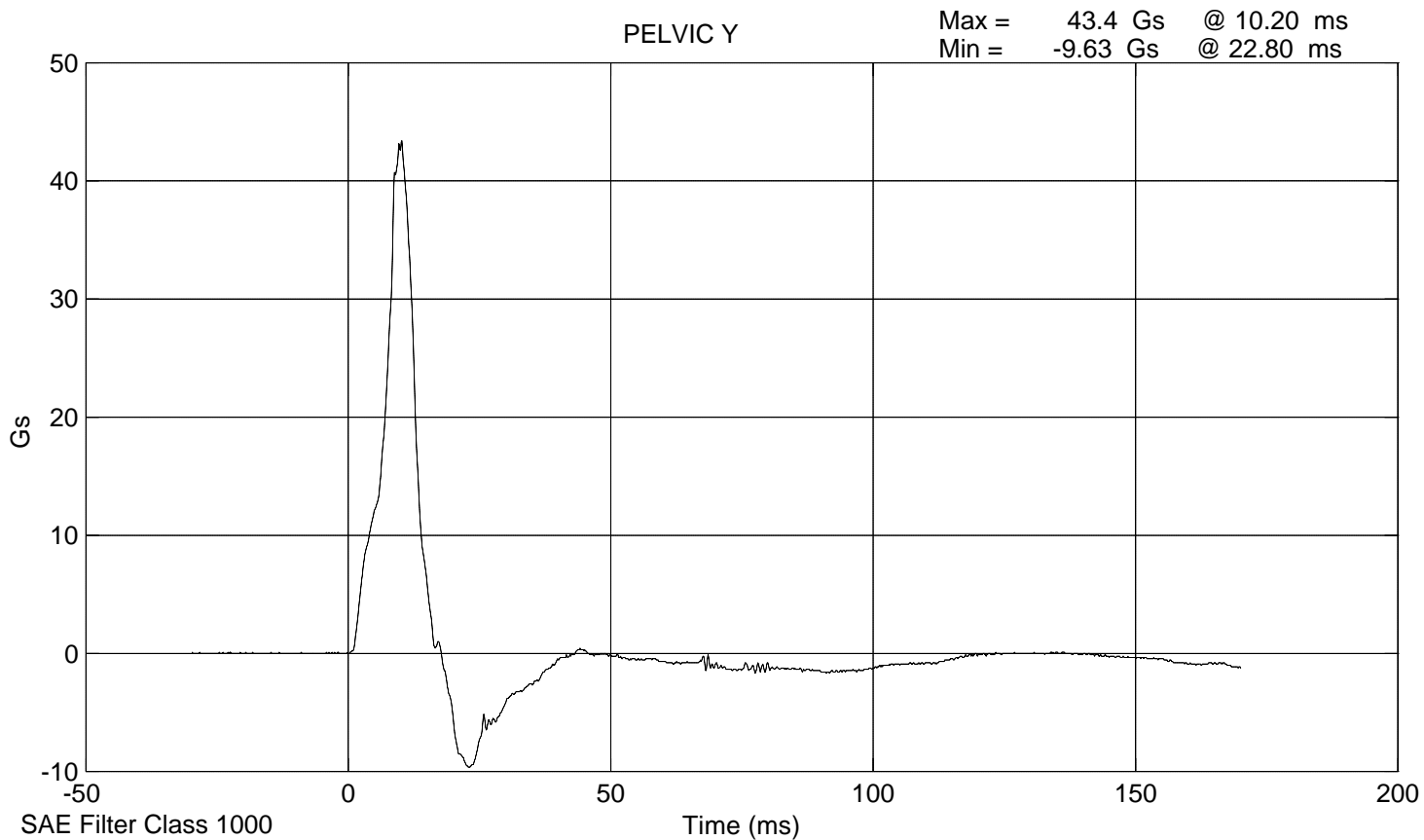
**LATERAL PELVIS IMPACT TEST
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 026 Sequential Test Number: 1
Date: 3/1/01 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	32
PROBE SPEED (m/s)	4.27 - 4.33	4.29
PELVIS ACCELERATION (g's)	40 - 60	40.6

REMARKS: None



HEAD DROP TEST

PRE-TEST

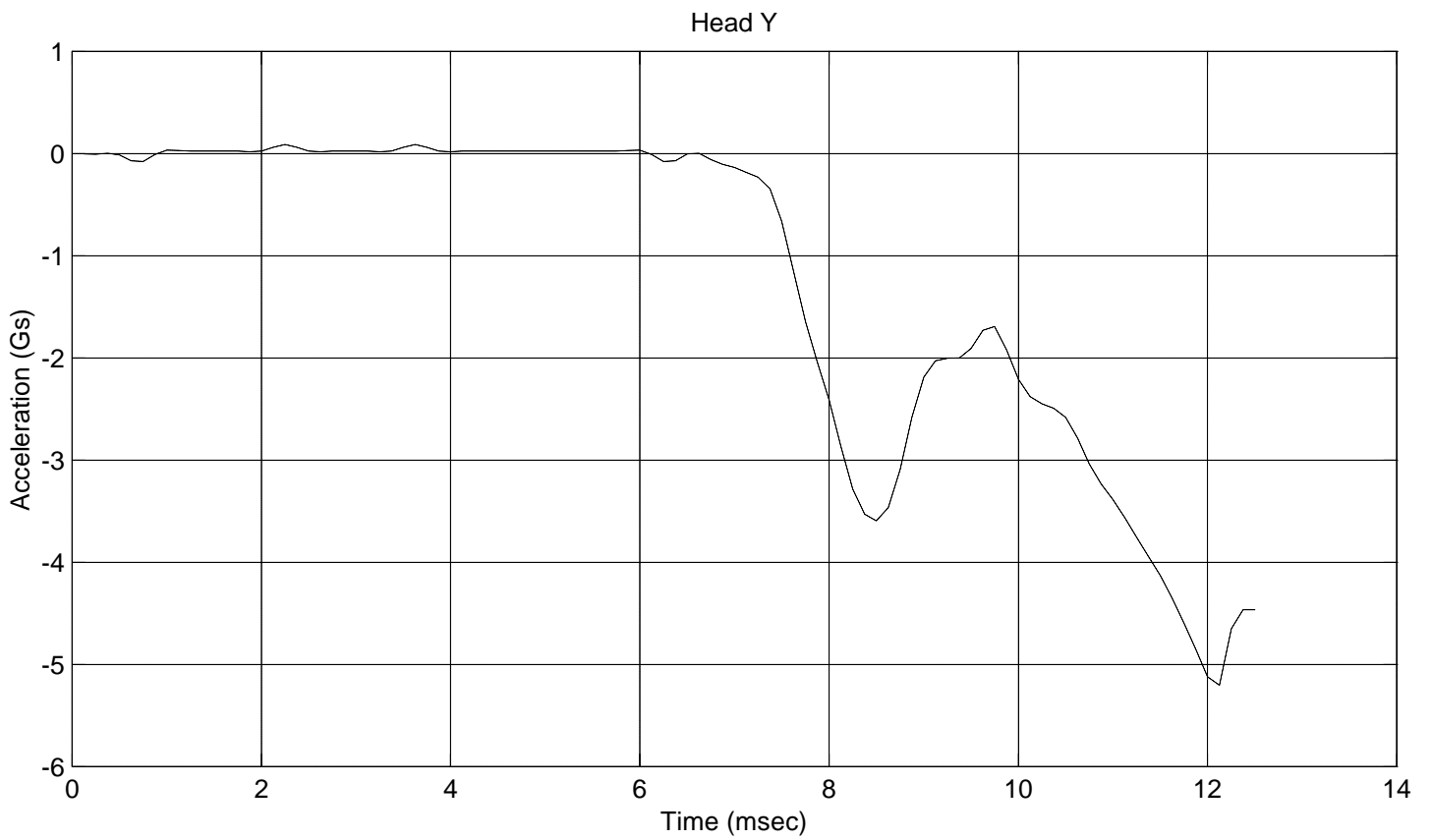
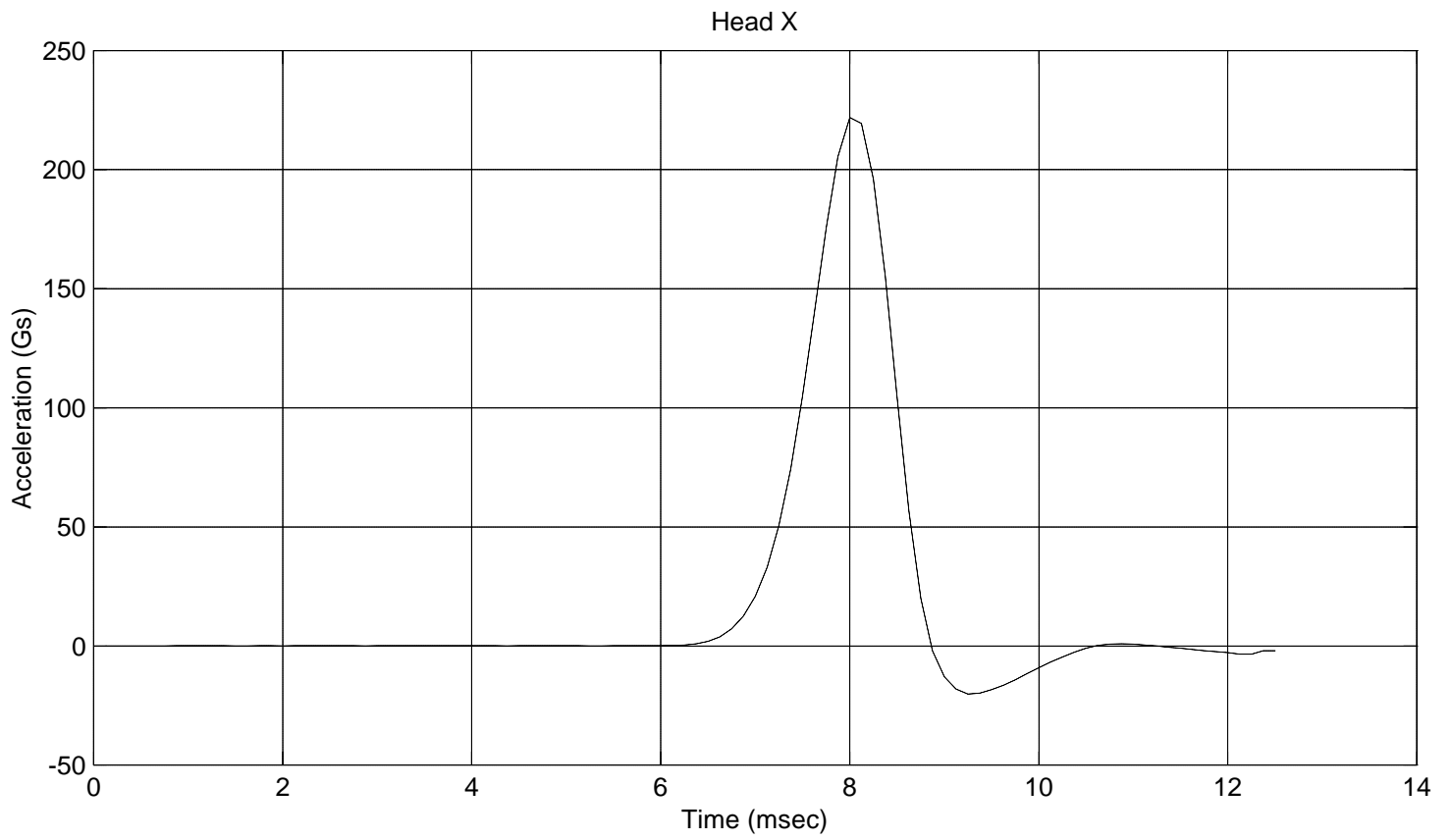
(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

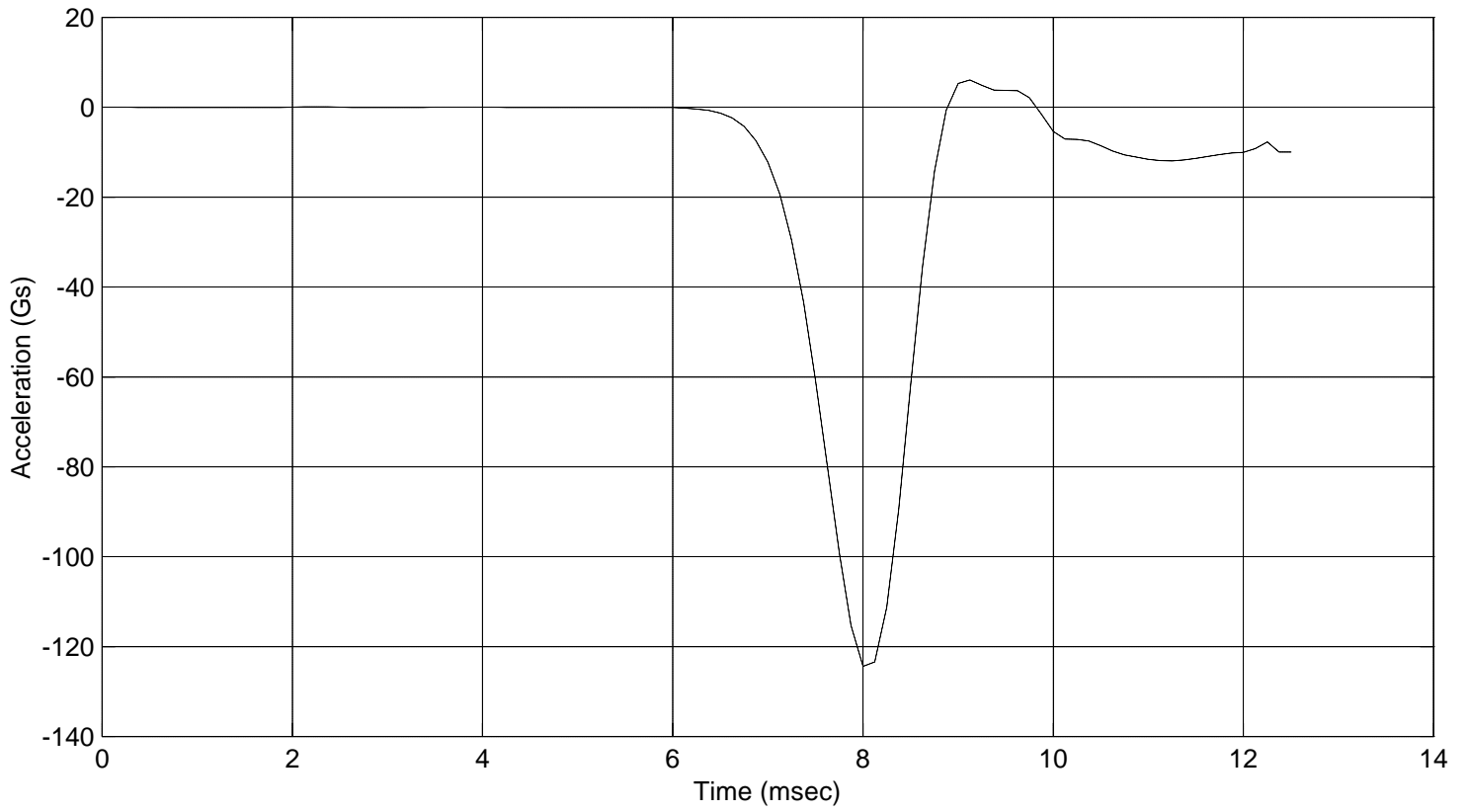
SID Serial No.: 026 Sequential Test Number: 1
Date: 3/1/01 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	32.0
PEAK RESULTANT ACCELERATION (Gs)	210 - 260	254.4
PEAK LATERAL ACCELERATION (Gs)	Not to Exceed 10	5.2
UNIMODAL CRITERIA ABOVE 100 Gs (ms)	0.9 - 1.5	1.1

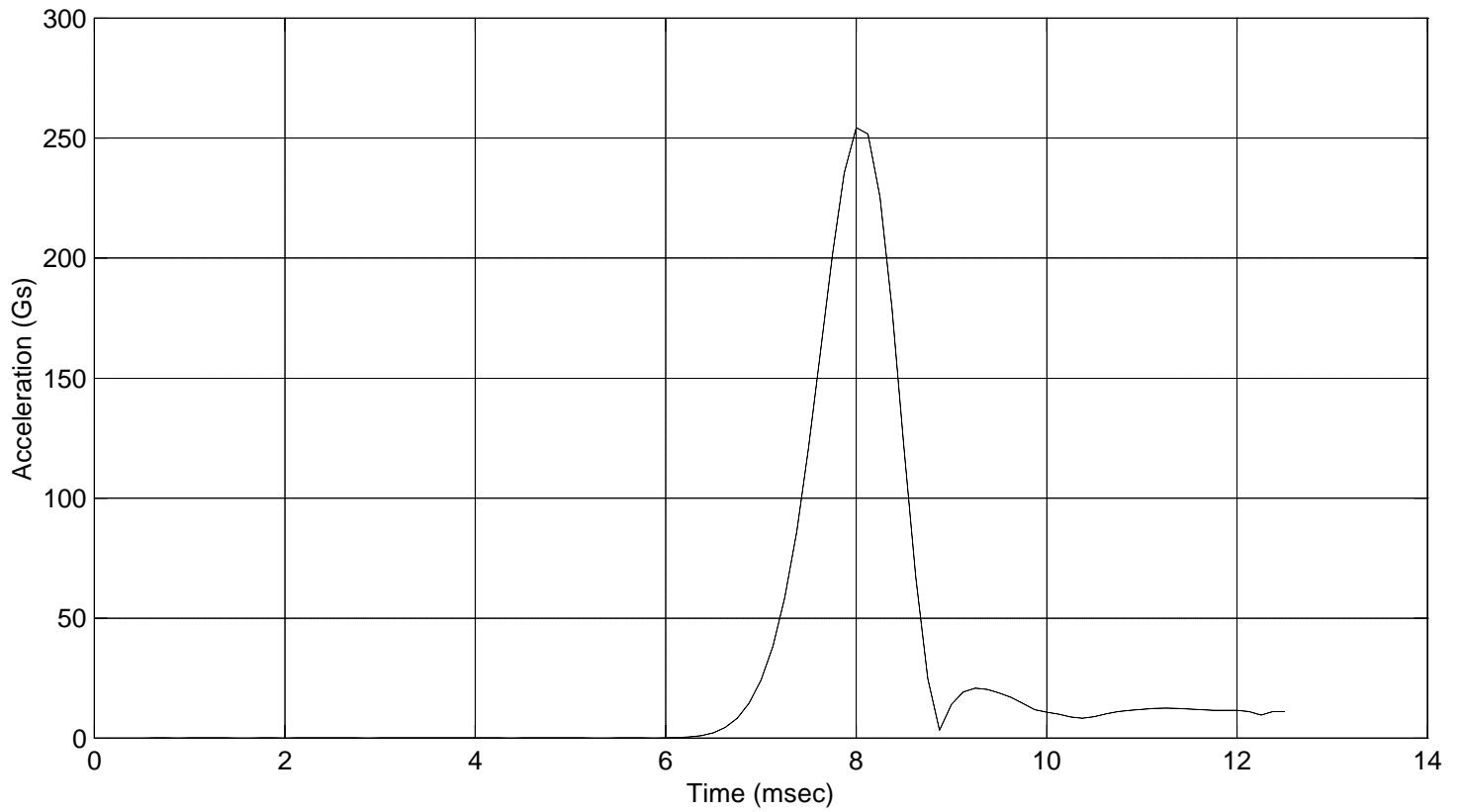
REMARKS: None



Head Z



Head Resultant



**ABDOMINAL COMPRESSION TEST
PRE-TEST**

(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 026 Sequential Test Number: 1
Date: 3/2/01 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.1
RELATIVE HUMIDITY (%)	10 - 70	32
FORCE @ 13 mm (N)	104 - 162	110
FORCE @ 19 mm (N)	163 - 221	173
FORCE @ 25 mm (N)	222 - 280	248
FORCE @ 33 mm (N)	325 - 391	369

REMARKS: None

Dummy S/N 026

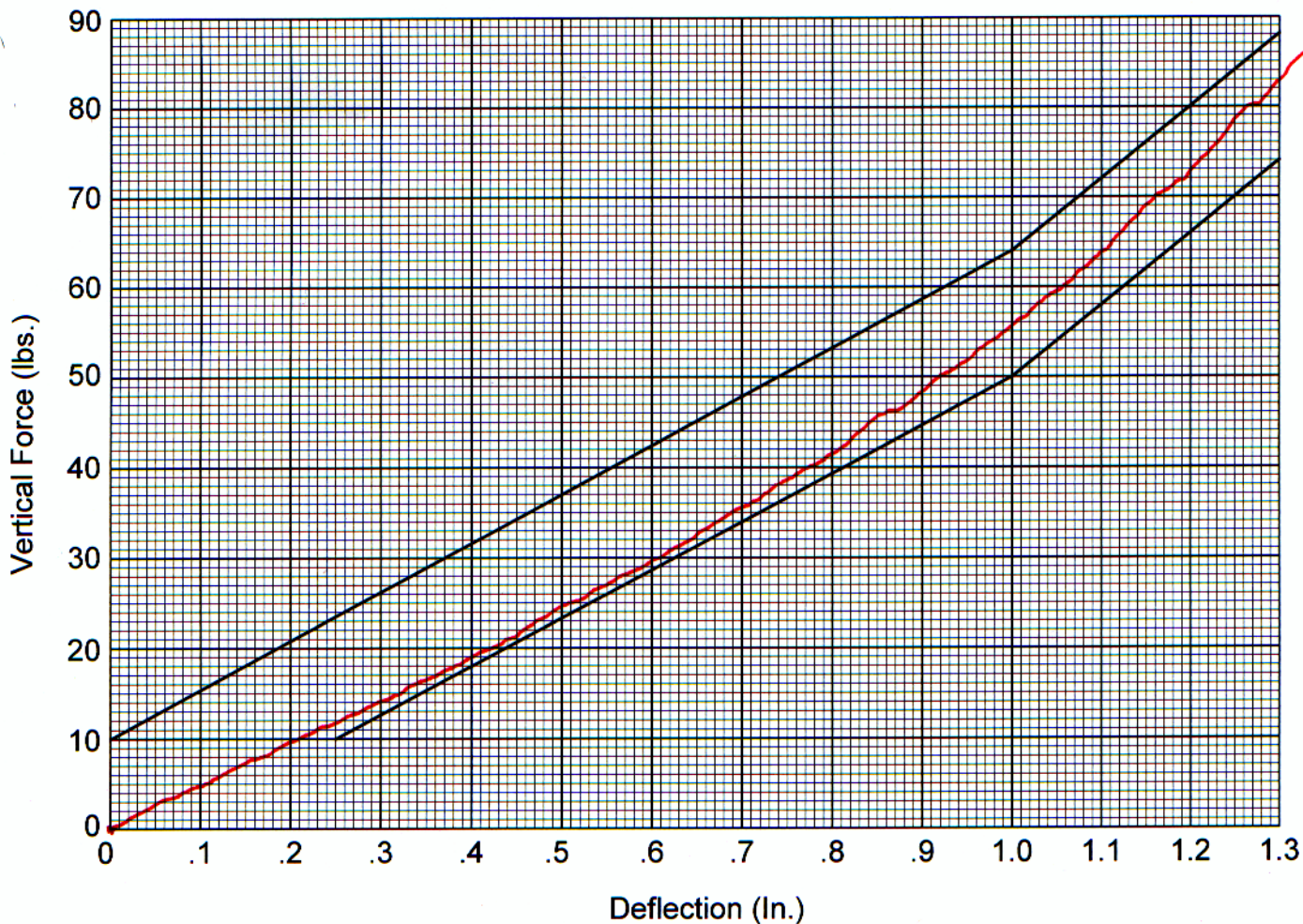
W/A _____

Date 3-2-2001

Performed By PE

Temp. 70°

Humidity 32%



Hybrid II
Abdomen Static Press

LUMBAR FLEXION TEST
PRE-TEST
 (Test not required for SID certification)

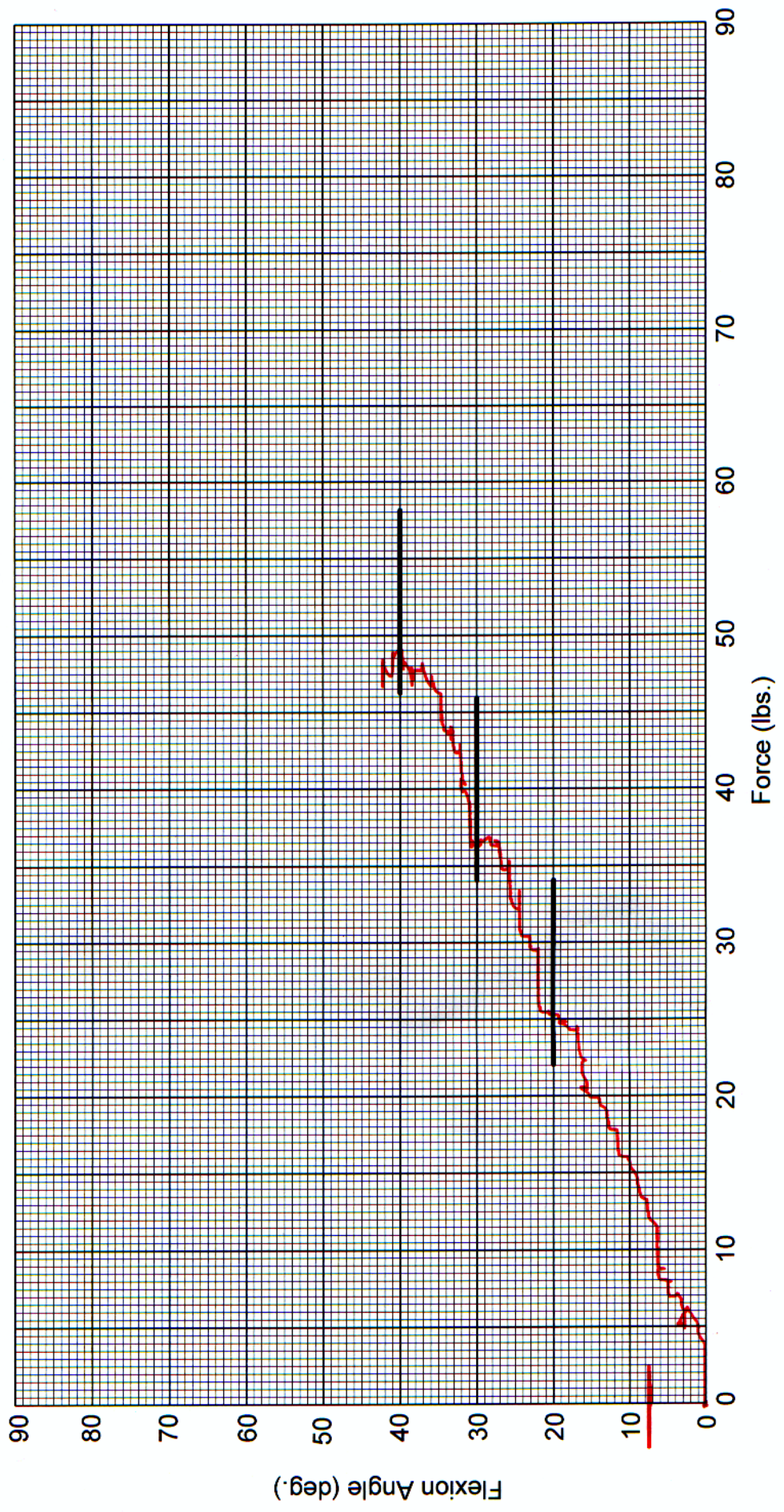
CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 026 Sequential Test Number: 1
 Date: 3/2/01 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.1
RELATIVE HUMIDITY (%)	10 - 70	32
FORCE @ 0° (N)	0 - 26.7	0.0
FORCE @ 20° (N)	97.8 - 151.2	112.5
FORCE @ 30° (N)	151.2 - 204.6	161.9
FORCE @ 40° (N)	204.6 - 258	217.5
RETURN ANGLE	12° max.	7.4°

REMARKS: None

Dummy S/N 026
 W/A _____
 Date 3-2-2001
 Performed By [Signature]
 Temp. 70°
 Humidity 32%



Hybrid II Lumbar Spine Flexion Test

PRE-TEST DUMMY INSPECTION LIST

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 026 Sequential Test Number: 1
 Date: 3/2/01 Laboratory Technician: B. Swiecicki

PART	ITEMS CHECKED	COMMENTS
SKIN	VISUAL INSPECTION	OK
HEAD	VISUAL, BALLAST, ACCELEROMETER MOUNT	OK
NECK	VISUAL, CABLE TORQUE	OK
SPINE BOX	VISUAL, BALLAST, WELDMENT, ACCELEROMETER MOUNT	OK
RIB CAGE	VISUAL, MEASURE, STIFFENERS	OK
STERNUM	VISUAL	OK
LUMBAR SPINE	VISUAL	OK
ABDOMEN	VISUAL	OK
PELVIS	VISUAL, PALPATE, ACCELEROMETER MOUNT	OK
UPPER LEGS	VISUAL	OK
KNEES	VISUAL, STOPS, INSERTS	OK
LOWER LEGS	VISUAL, RANGE OF MOTION	OK
ANKLES	VISUAL, RANGE OF MOTION	OK
FEET	VISUAL, RANGE OF MOTION	OK
JOINTS	1 TO 2 g RANGE	OK
OTHER	NONE	-

REMARKS: None

**CALIBRATION TEST RESULTS
PRE-TEST**

SID NO.: 268

CONFIGURED FOR LEFT SIDE IMPACT

**CALIBRATION TEST RESULTS SUMMARY
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 268 Sequential Test Number: 1
Date: 3/13/01 Laboratory Technician: B. Swiecicki

TEST	COMMENTS
EXTERNAL DIMENSIONS	Passed all requirements.
THORACIC SHOCK ABSORBER TEST	Passed all requirements.
LATERAL THORAX IMPACT TEST	Passed all requirements.
LATERAL PELVIS IMPACT TEST	Passed all requirements.
HEAD DROP TEST*	Passed all requirements.
ABDOMINAL COMPRESSION TEST*	Passed all requirements.
LUMBAR FLEXION TEST*	Passed all requirements.

* Test not required for SID certification.

REMARKS: None

**EXTERNAL DIMENSIONS
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 268 Sequential Test Number: 1
Date: 3/13/01 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 - 909	899
RH- Rib Height (mm)	502 - 520	511
HP- Hip Pivot Height (mm)	99 ref.	99
RD- Rib from Back Line (mm)	229 - 241	236
KH- Knee Pivot from Back Line (mm)	511 - 526	518
KV- Knee Pivot to Floor (mm)	490 - 505	495
HW- Hip Width (mm)	356 - 391	379

REMARKS: None

**THORACIC SHOCK ABSORBER TESTS
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 268 Sequential Test Number: 1.5
 Date: 4/19/00 Laboratory Technician: B. Swiecicki

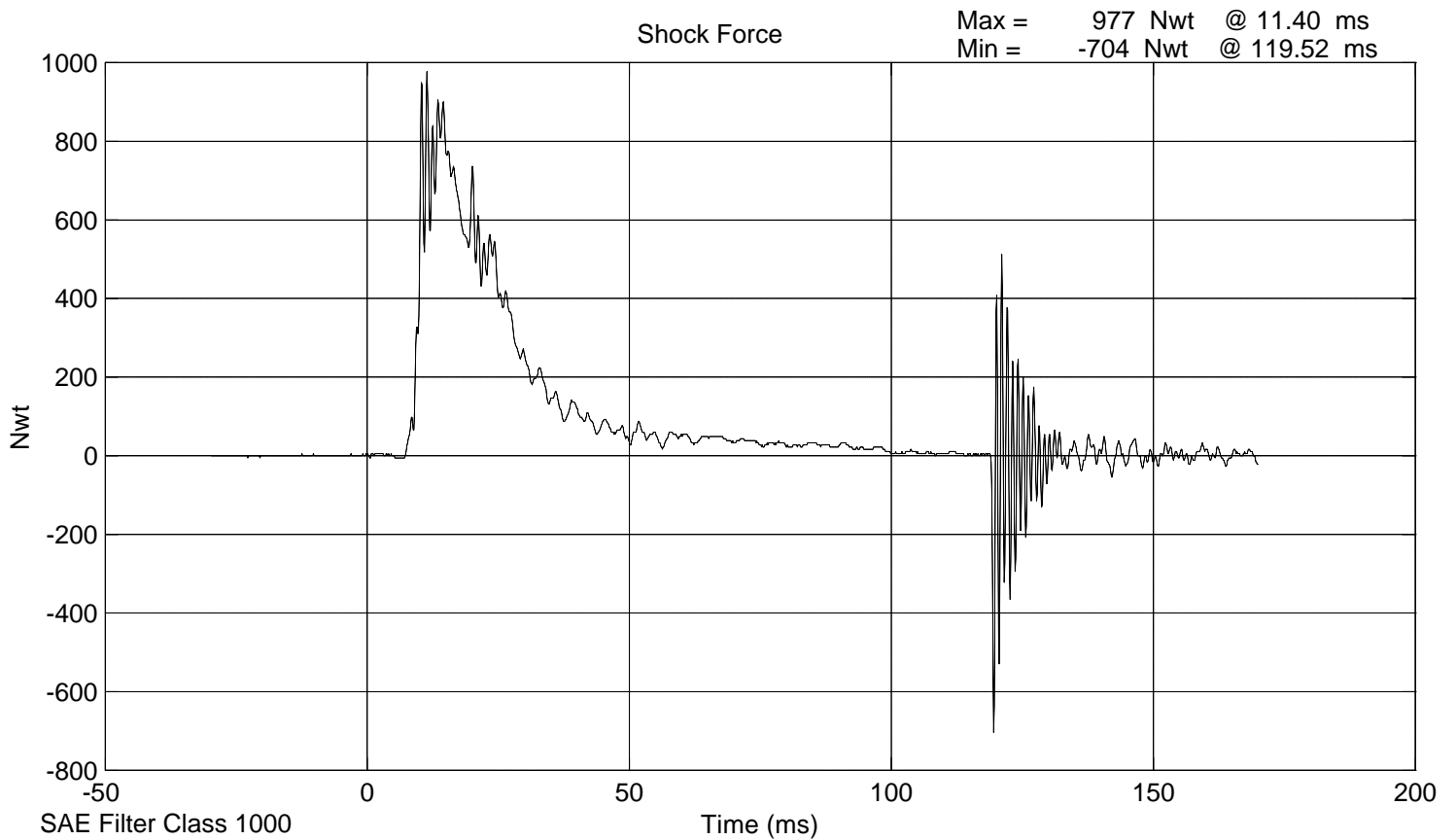
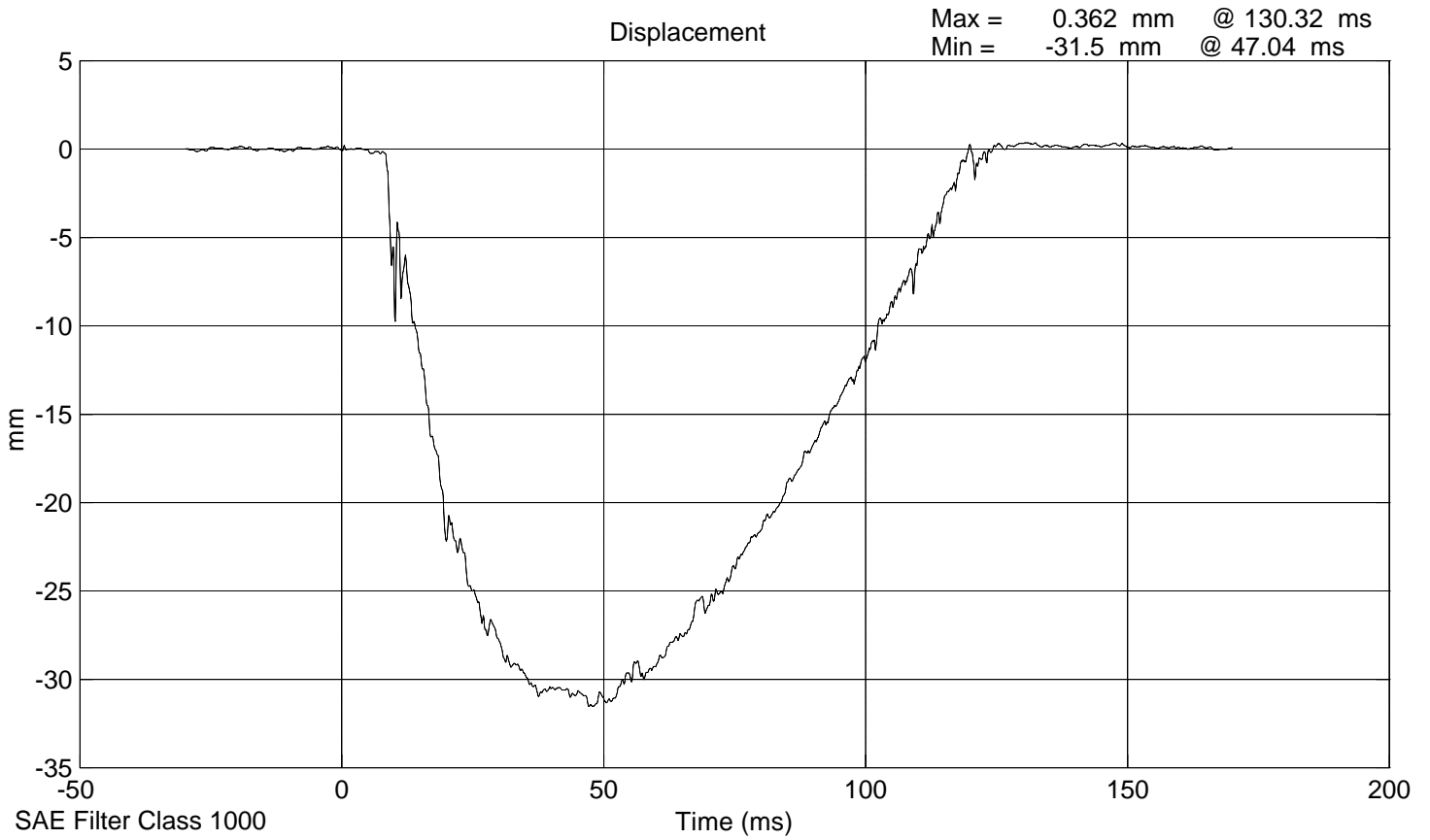
DAMPER IDENTIFICATION: 268

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)		18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)		10 - 70	31
VELOCITY 3.05 m/s	FORCE (N)	836 - 1125	976.7
	DISPLACEMENT (mm)	30 - 35	31.5
VELOCITY 4.27 m/s	FORCE (N)	1730 - 2099	1811.0
	DISPLACEMENT (mm)	32 - 37	34.7
VELOCITY 6.10 m/s	FORCE (N)	3741 - 4448	3872.7
	DISPLACEMENT (mm)	33 - 40	35.3

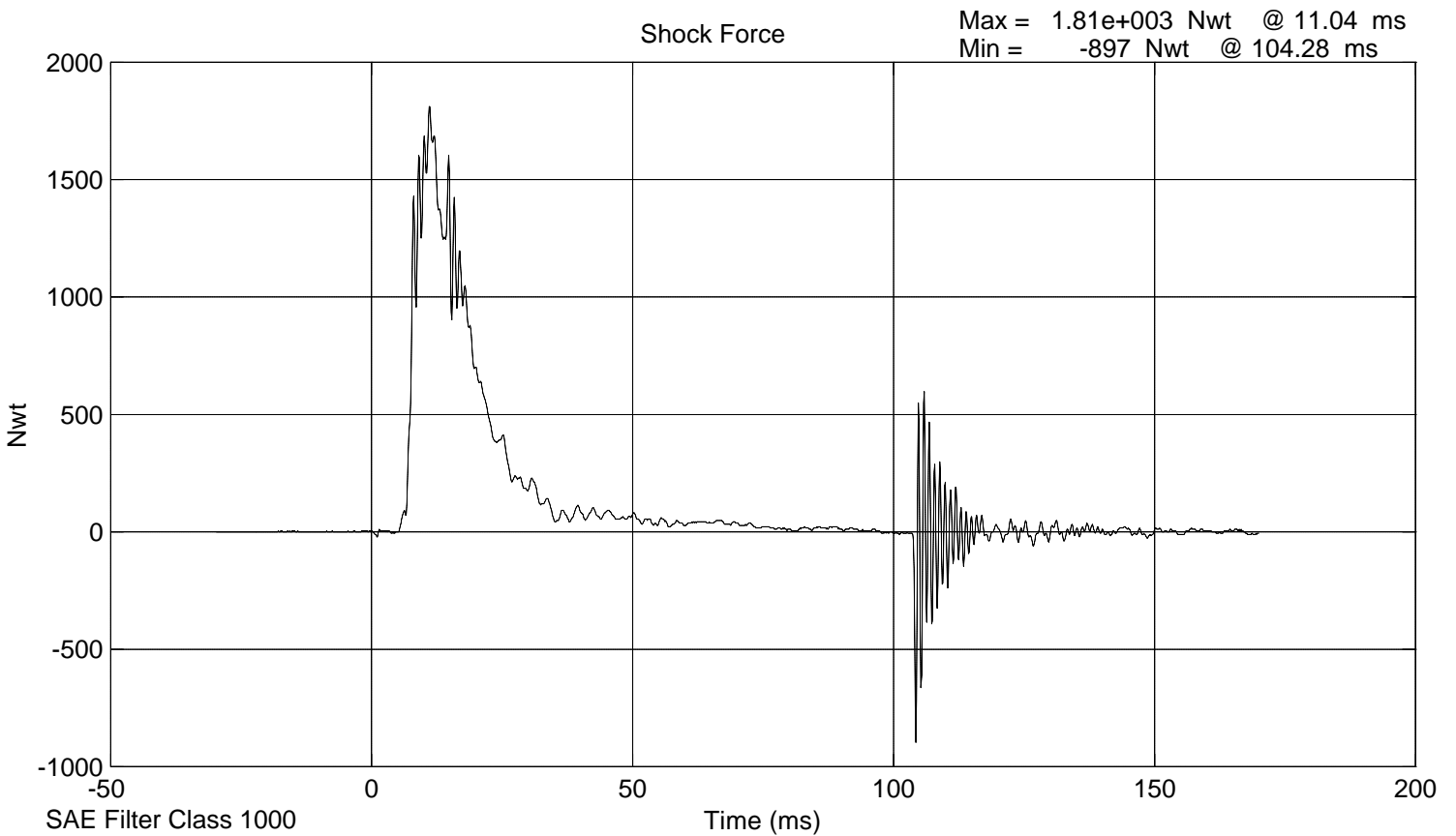
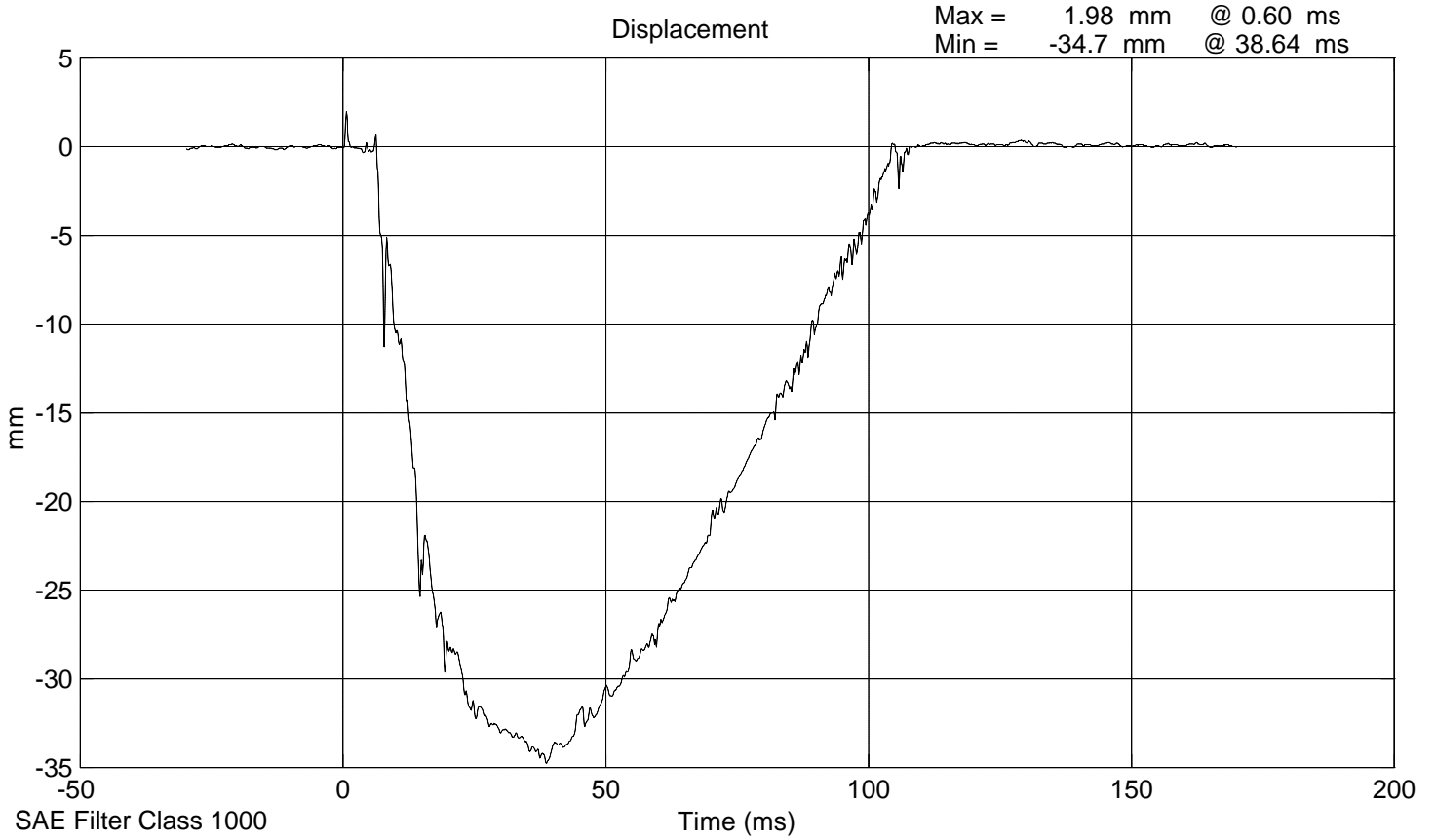
DAMPER SETTING: 5

REMARKS: None

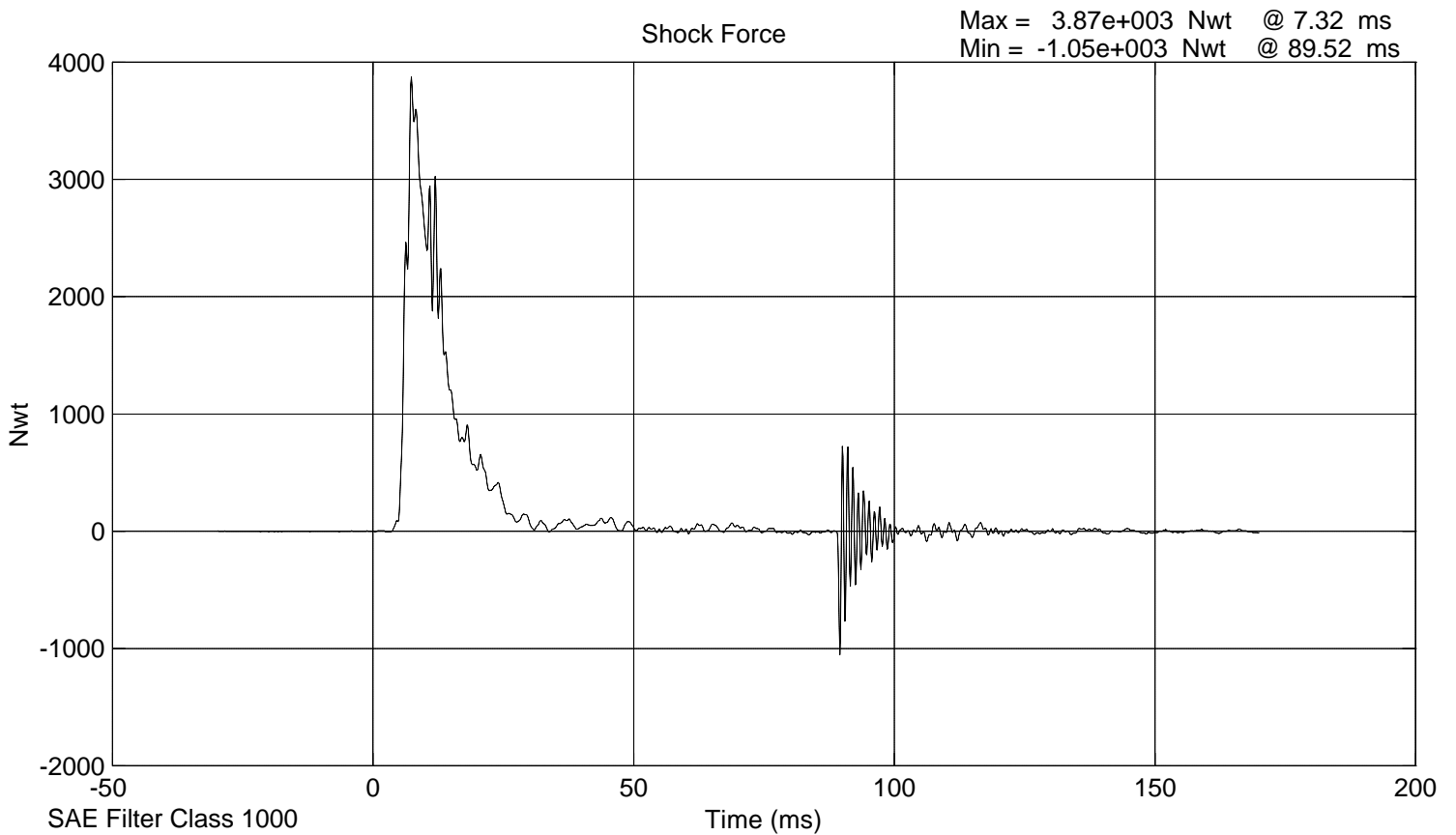
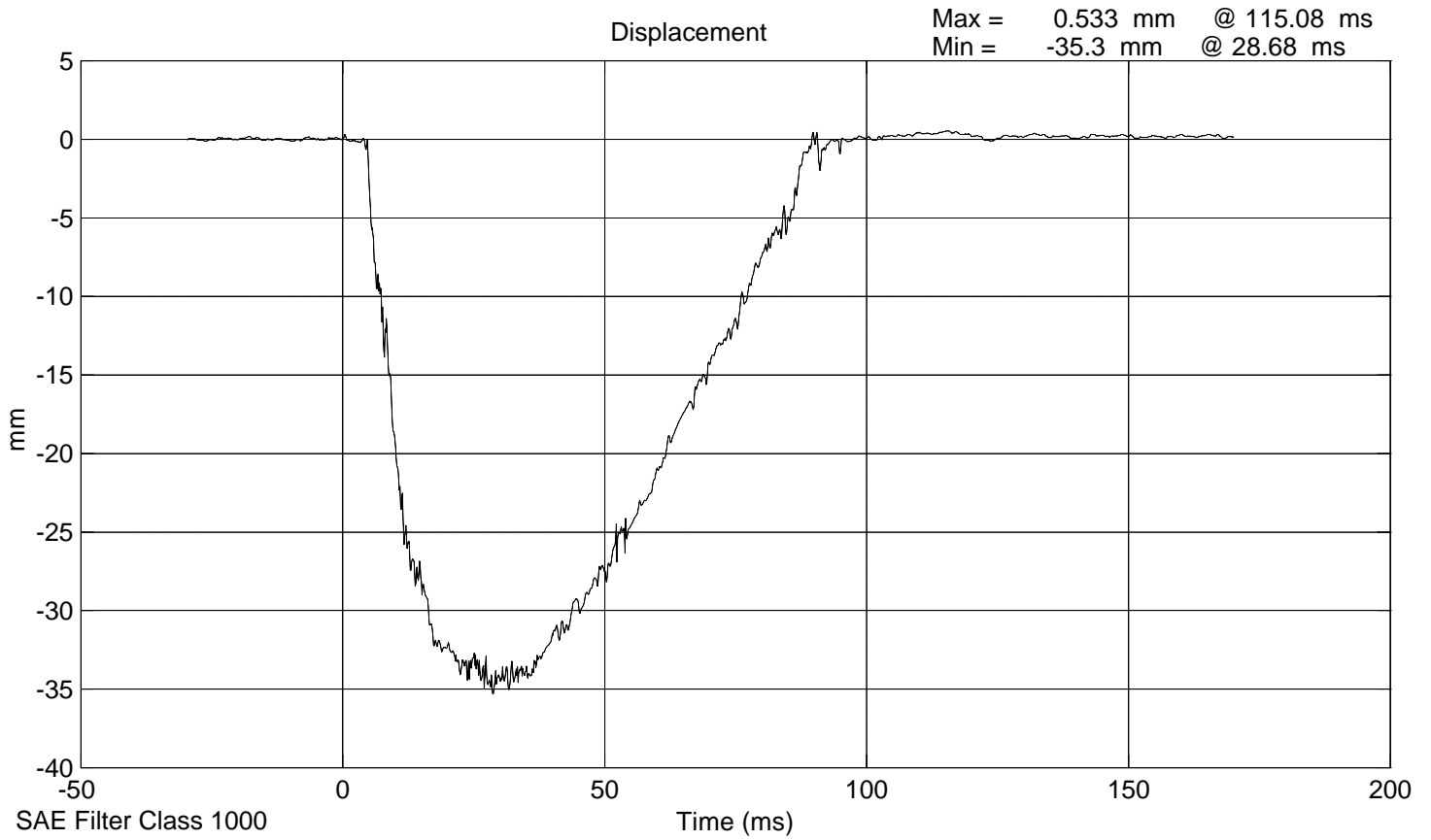
SID 268 Shock Absorber Impact Test @ 3.048 m/s



SID 268 Shock Absorber Impact Test @ 4.572 m/s



SID 268 Shock Absorber Impact Test @ 6.096 m/s



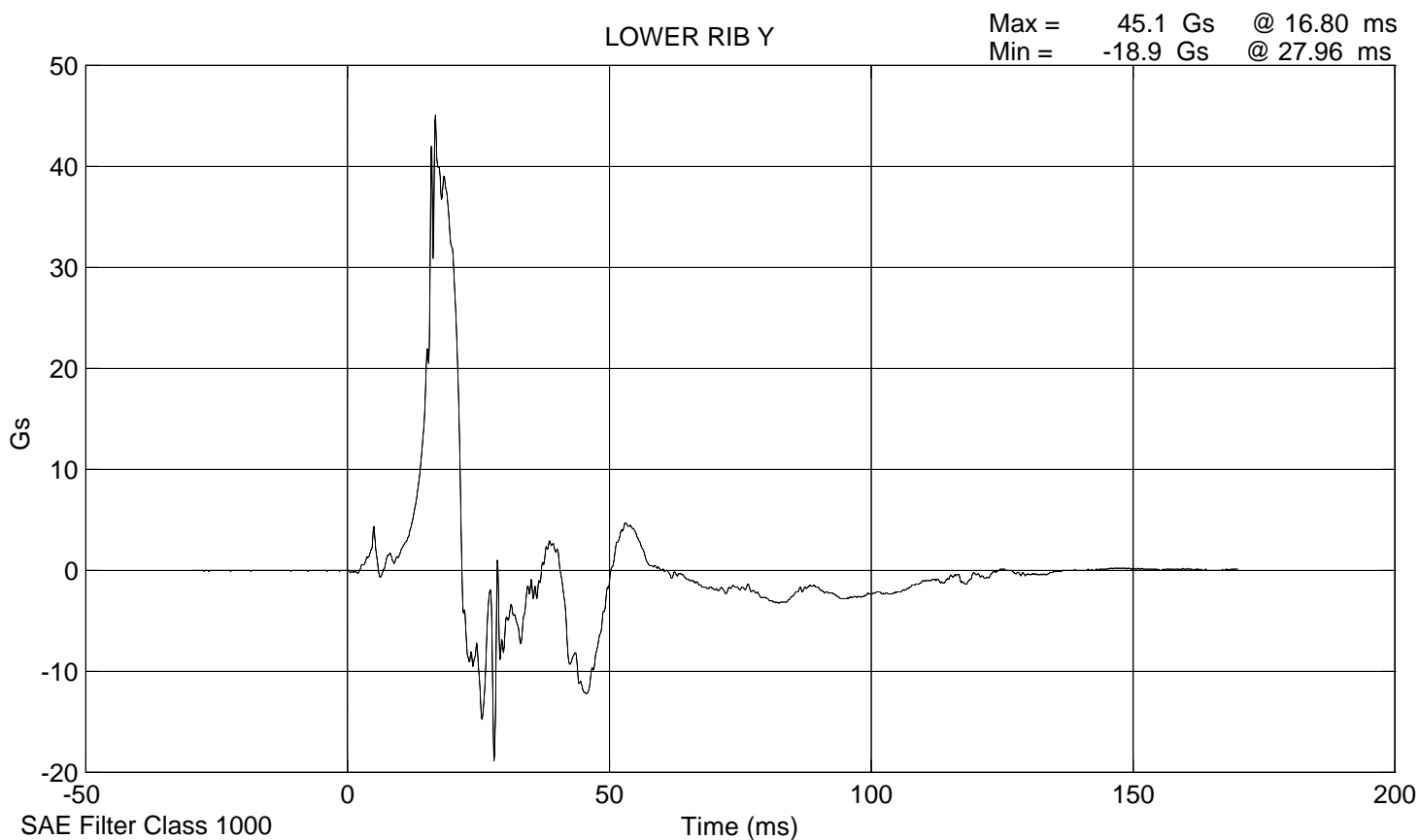
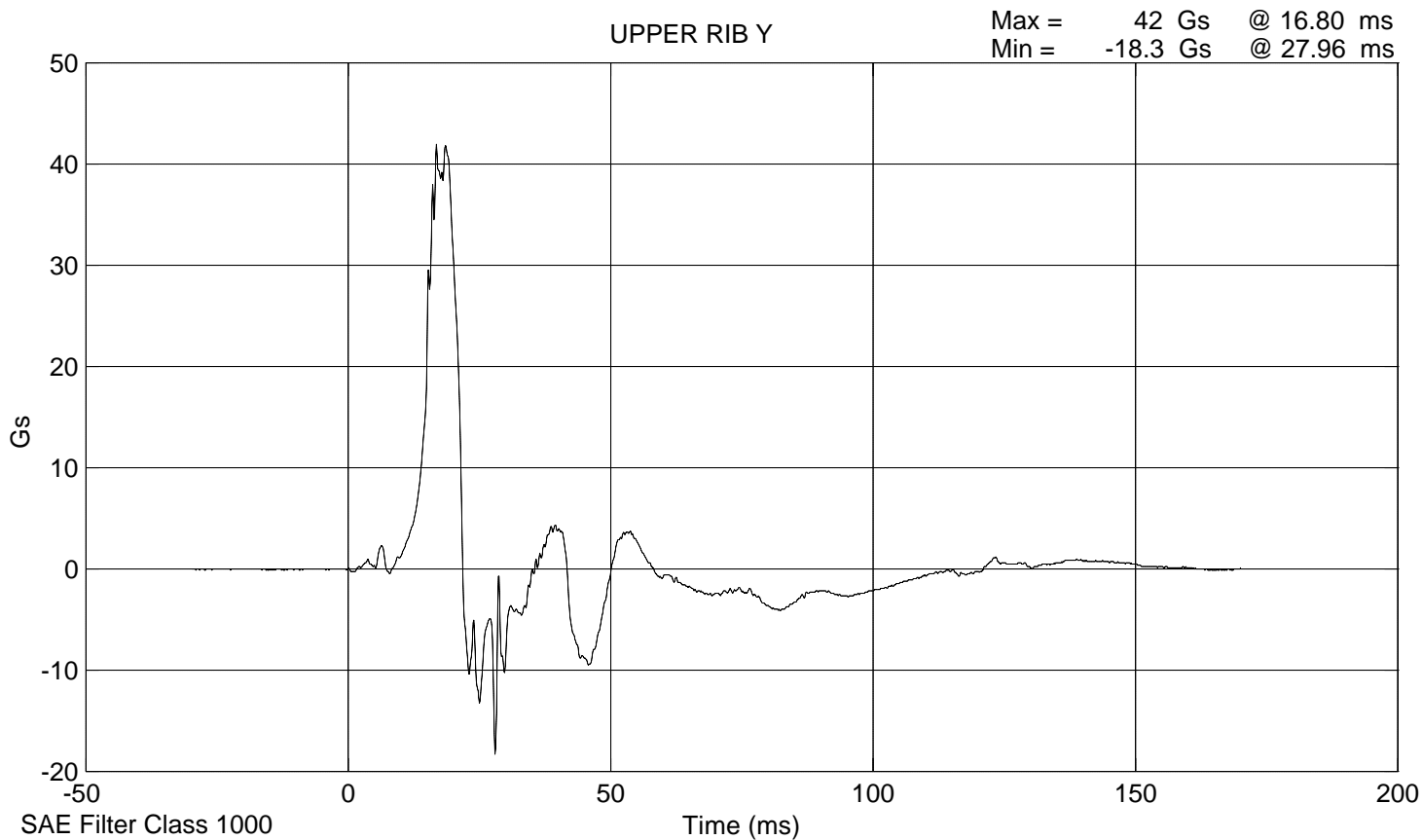
**LATERAL THORAX IMPACT TEST
PRE-TEST**

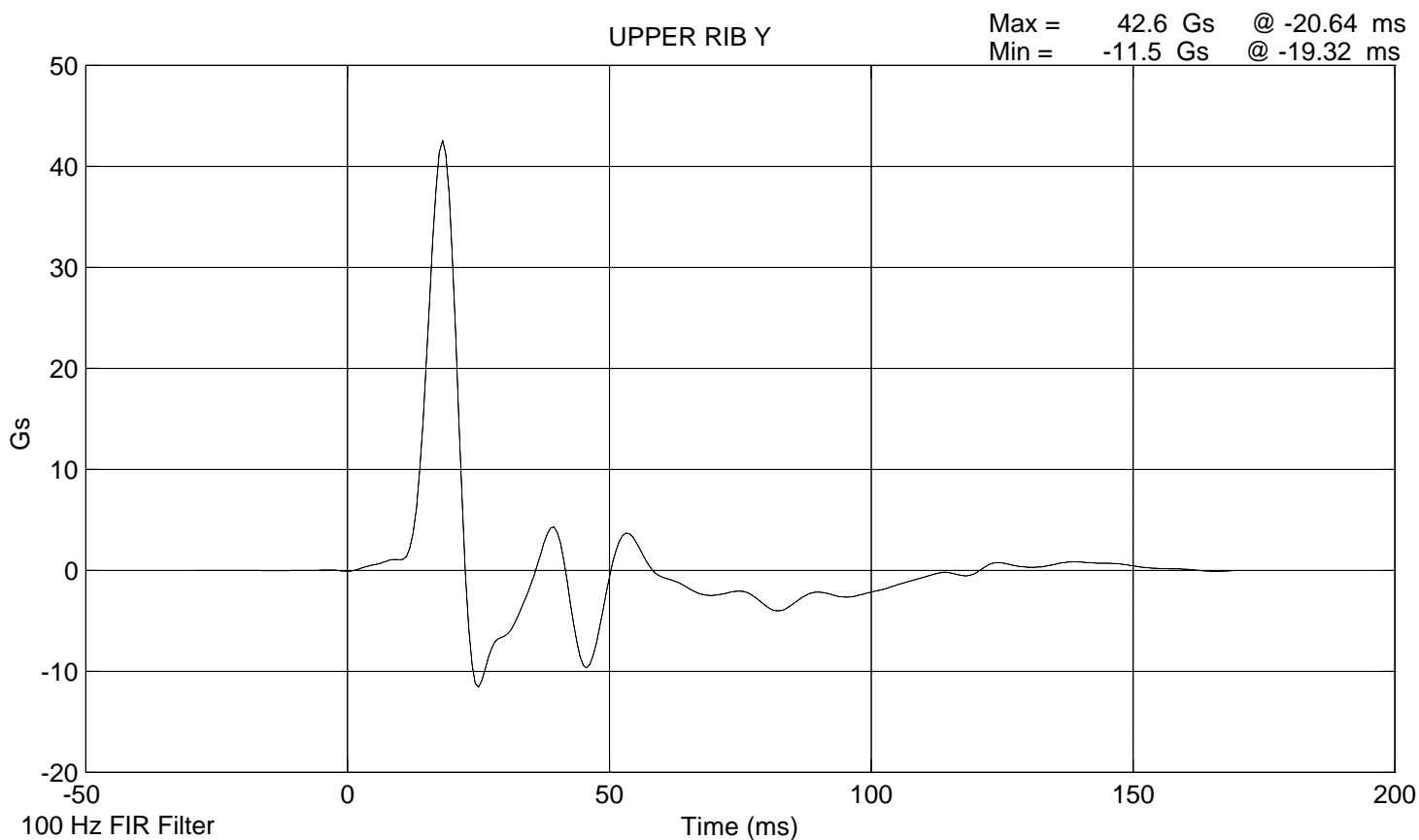
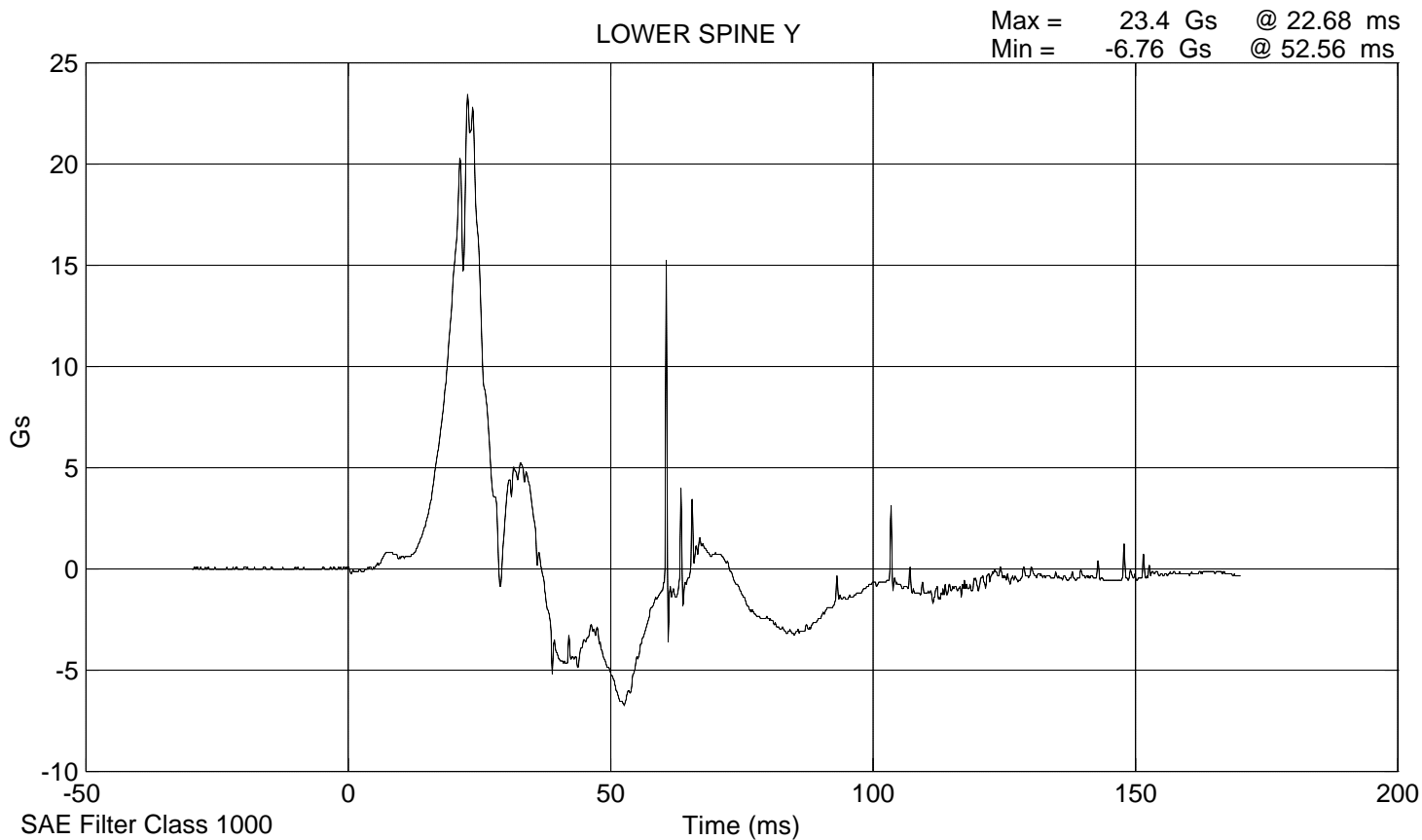
CONFIGURED FOR LEFT SIDE IMPACT

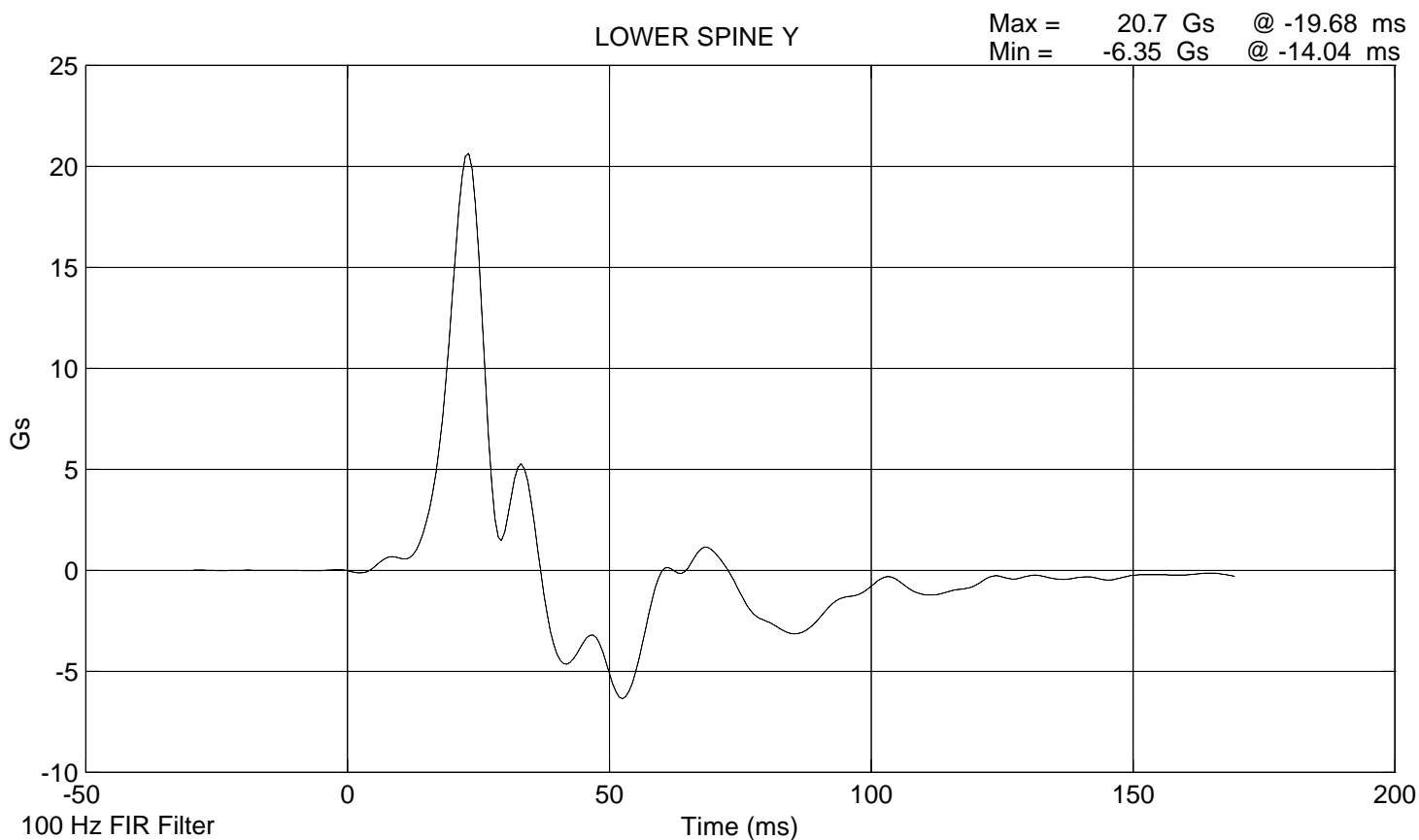
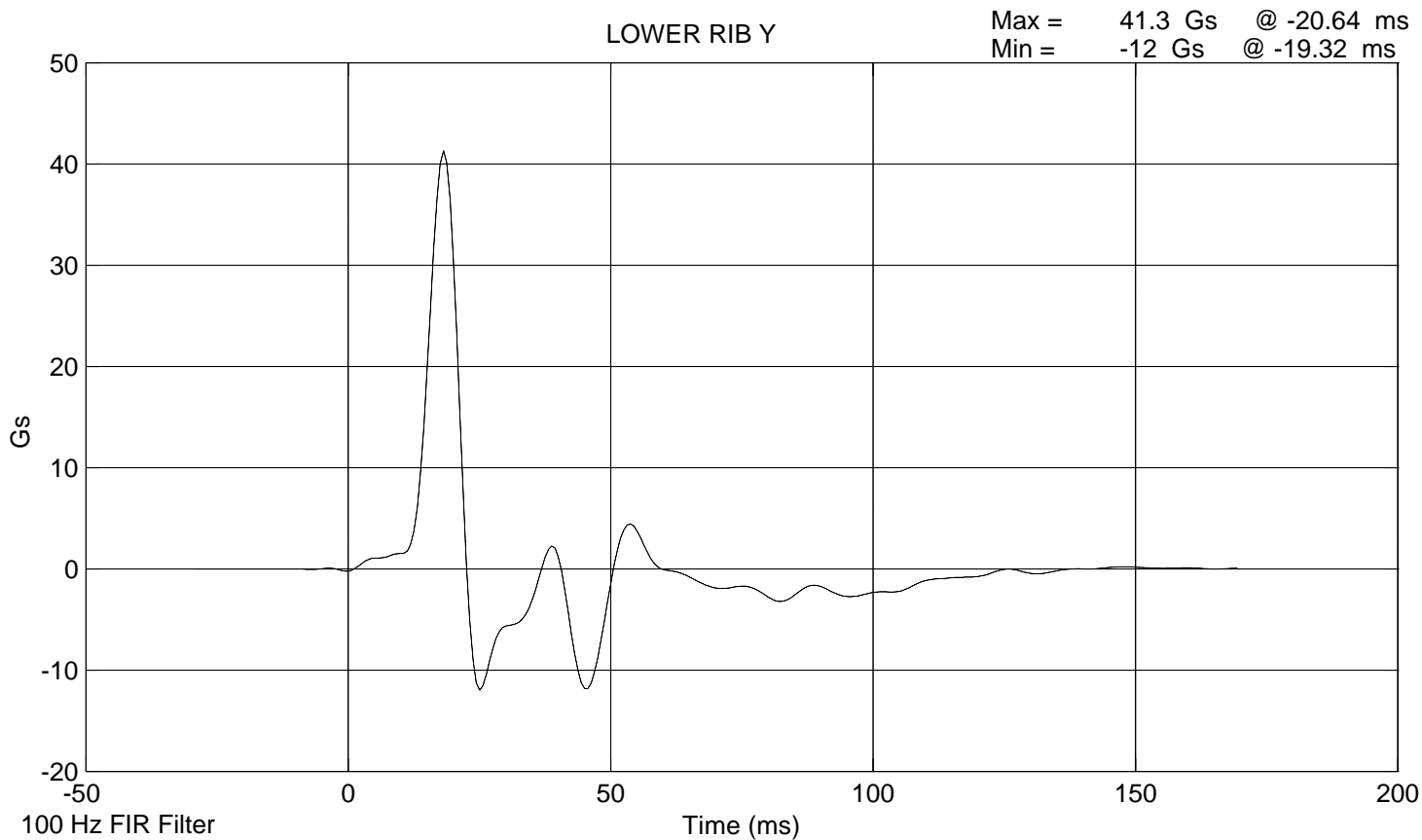
SID Serial No.: 268 Sequential Test Number: 1
Date: 3/12/01 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	30
PROBE SPEED (m/s)	4.27 - 4.33	4.32
UPPER RIB (g's)	37 - 46	42.6
LOWER RIB (g's)	37 - 46	41.3
LOWER SPINE (g's)	15 - 22	20.7

REMARKS: None







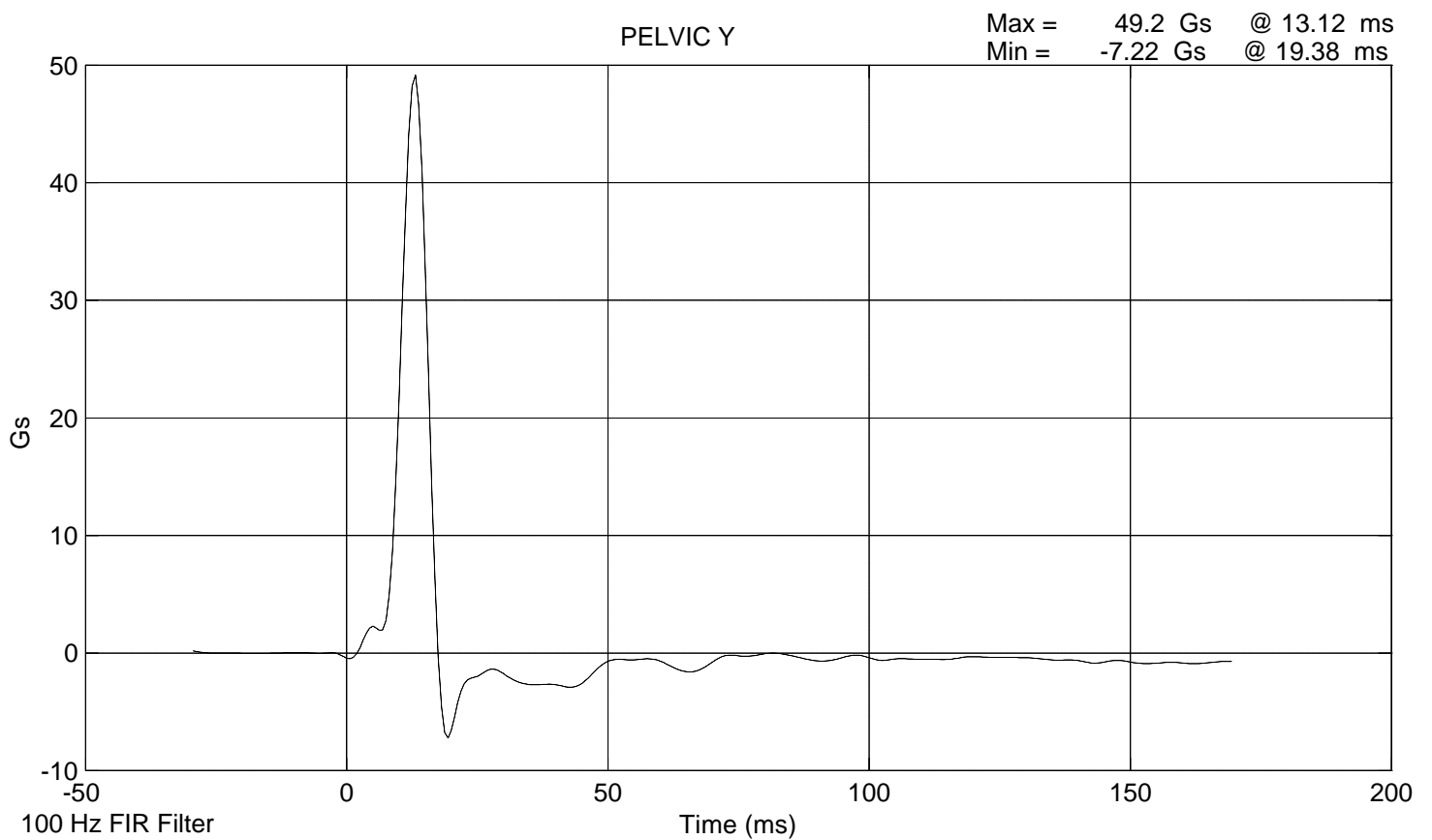
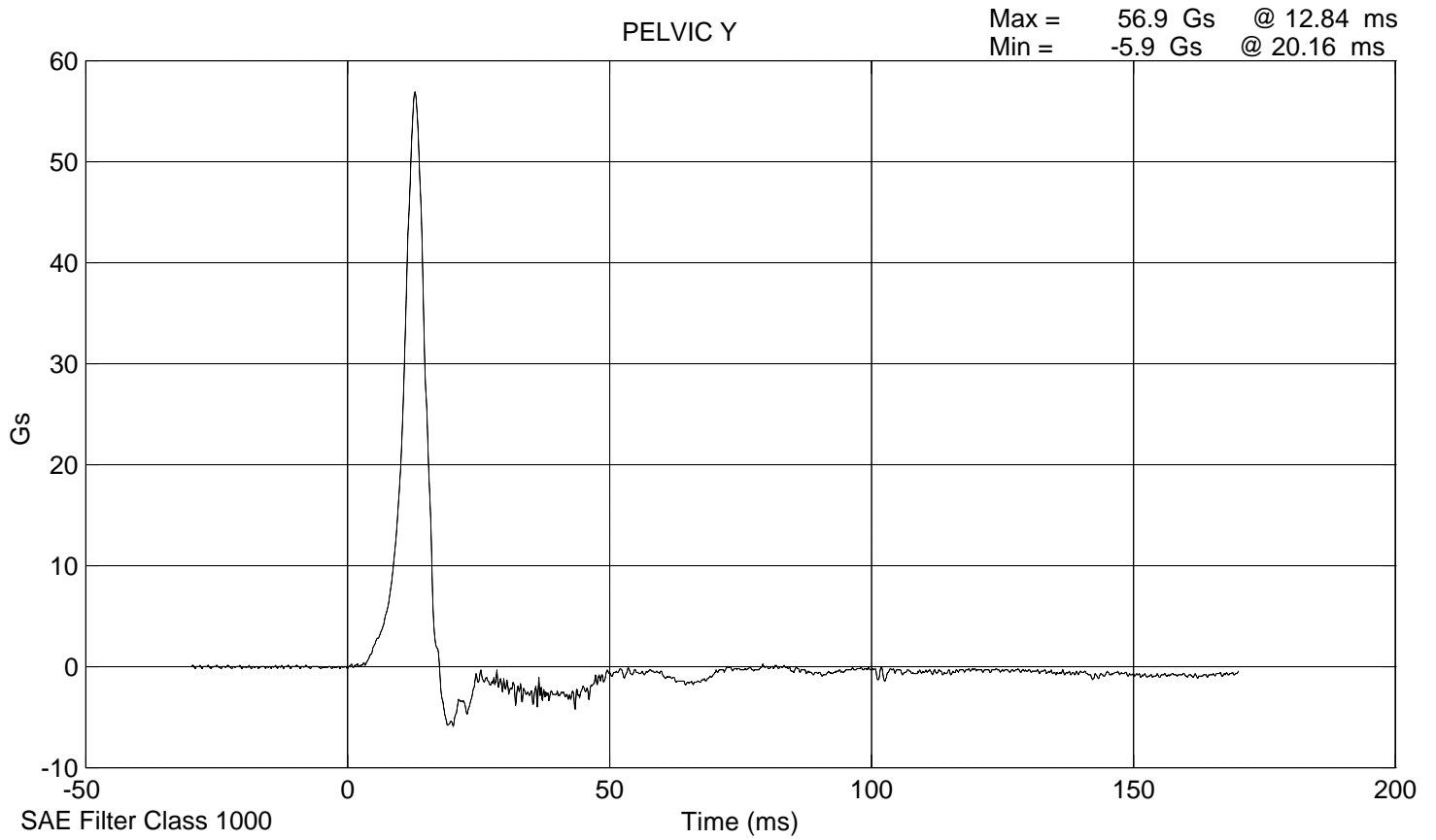
**LATERAL PELVIS IMPACT TEST
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 268 Sequential Test Number: 1
Date: 3/12/01 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	30
PROBE SPEED (m/s)	4.27 - 4.33	4.27
PELVIS ACCELERATION (g's)	40 - 60	49.2

REMARKS: None



HEAD DROP TEST

PRE-TEST

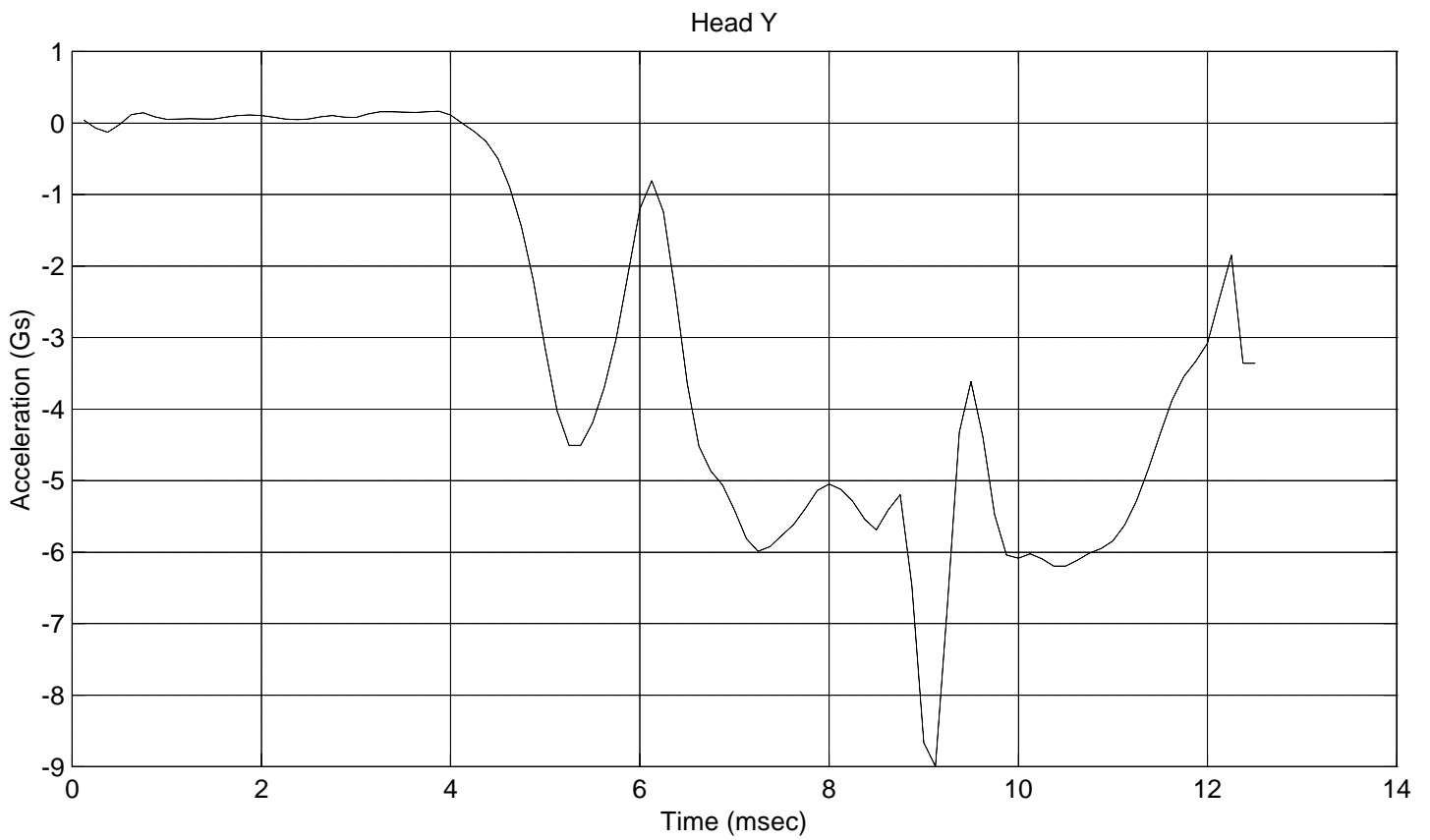
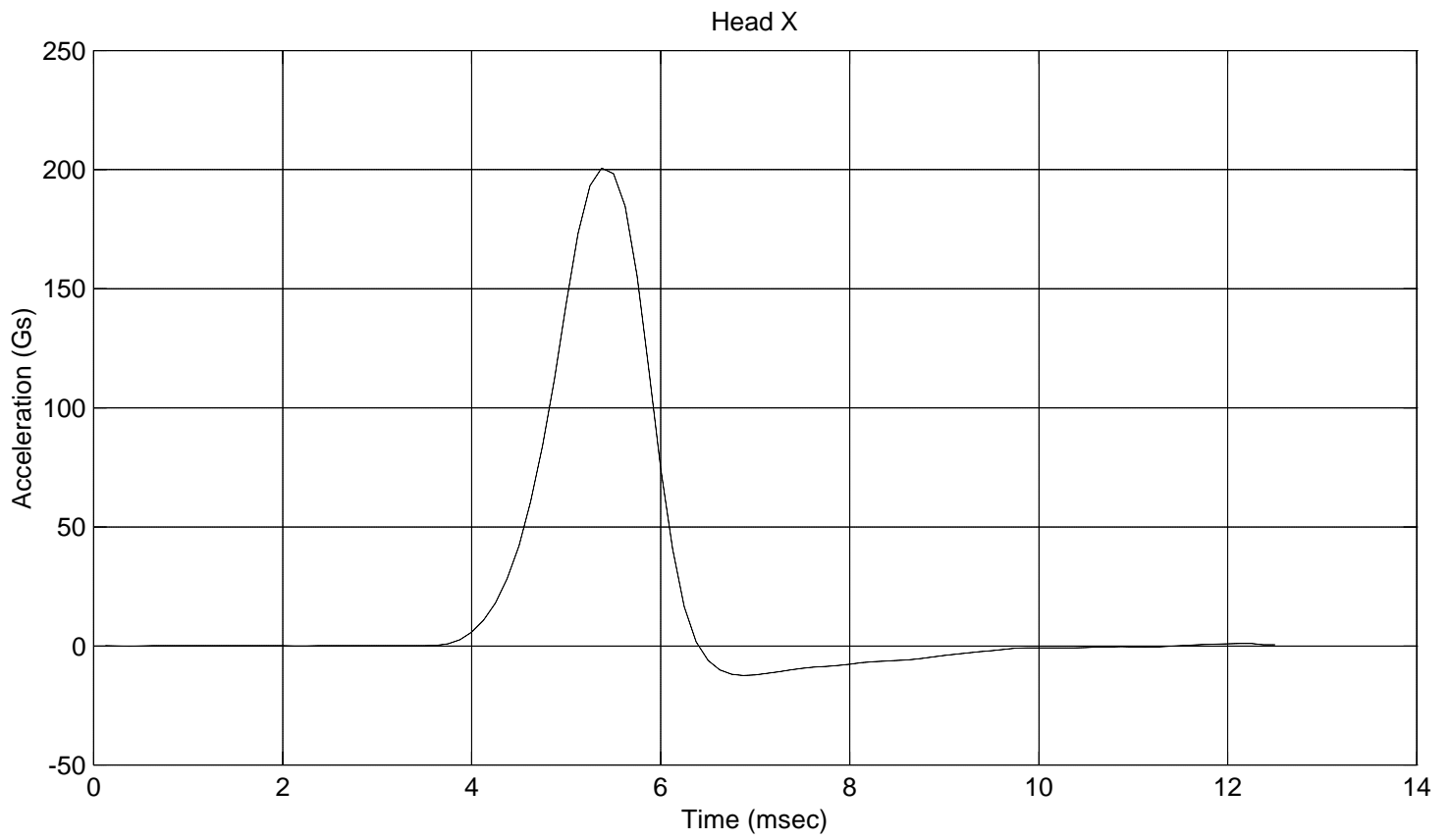
(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

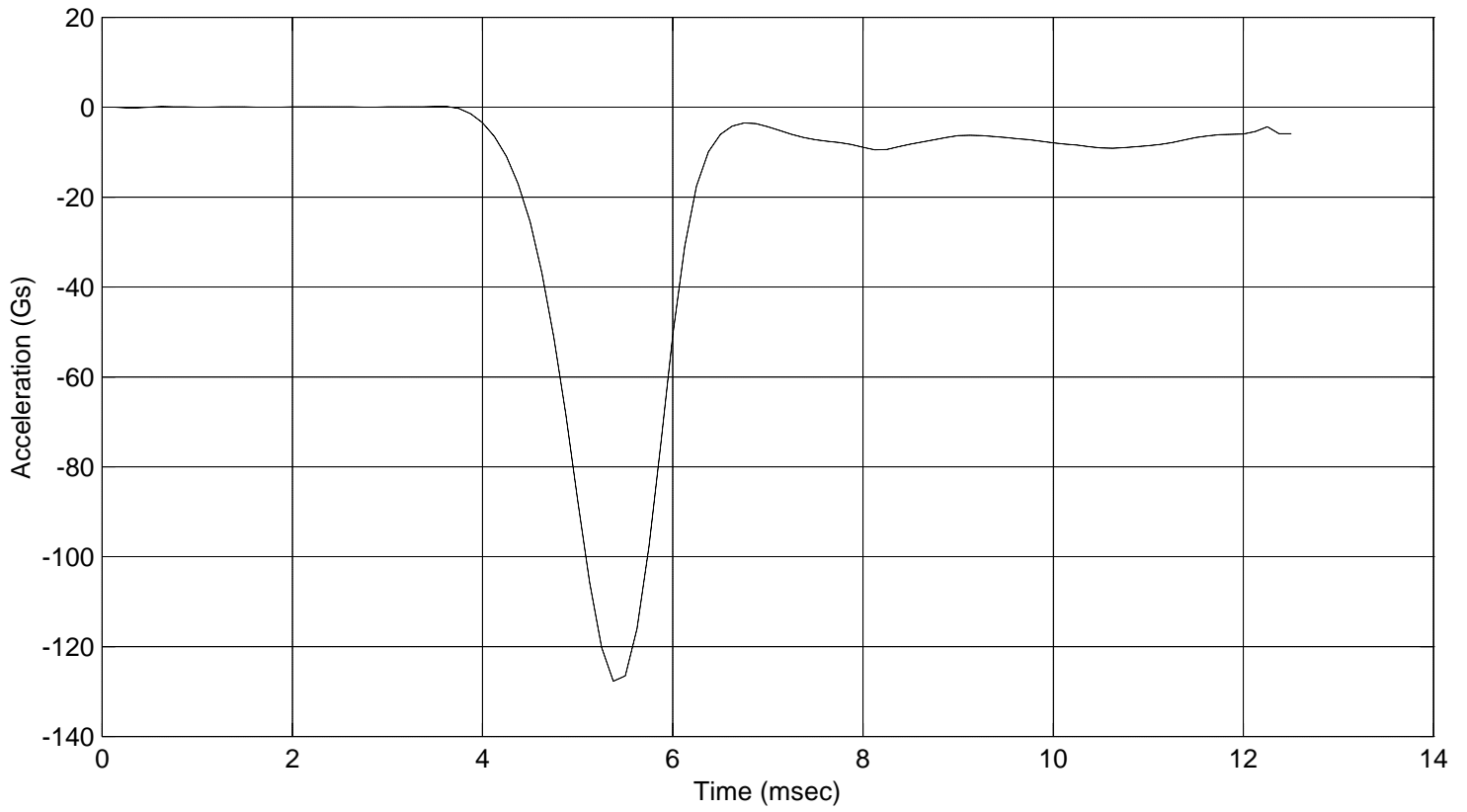
SID Serial No.: 268 Sequential Test Number: 1
Date: 3/9/01 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	31.0
PEAK RESULTANT ACCELERATION (Gs)	210 - 260	237.88
PEAK LATERAL ACCELERATION (Gs)	Not to Exceed 10	9.00
UNIMODAL CRITERIA ABOVE 100 Gs (ms)	0.9 - 1.5	1.25

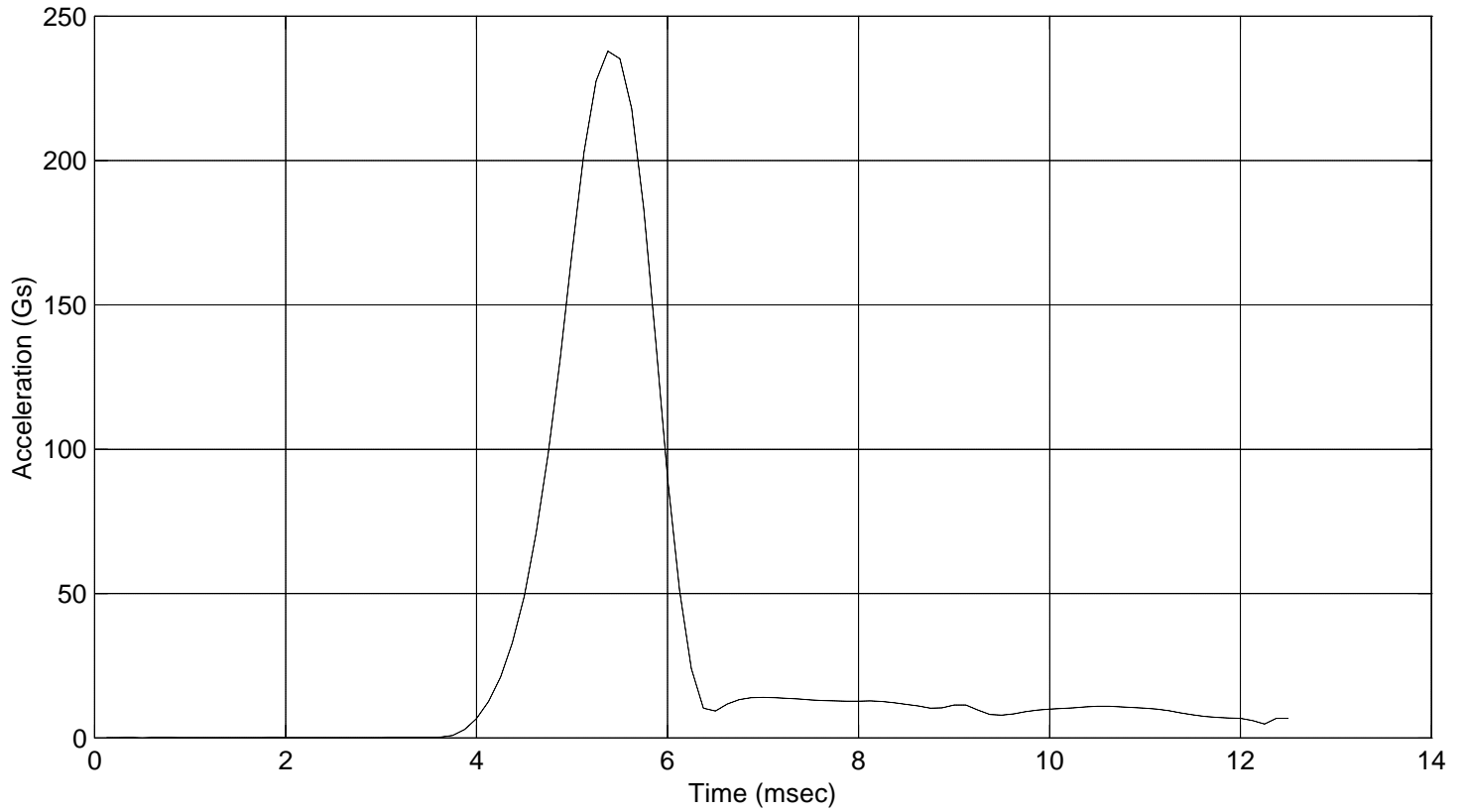
REMARKS: None



Head Z



Head Resultant



**ABDOMINAL COMPRESSION TEST
PRE-TEST**

(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 268 Sequential Test Number: 1
Date: 3/13/01 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.1
RELATIVE HUMIDITY (%)	10 - 70	33
FORCE @ 13 mm (N)	104 - 162	106.8
FORCE @ 19 mm (N)	163 - 221	177.5
FORCE @ 25 mm (N)	222 - 280	258.0
FORCE @ 33 mm (N)	325 - 391	382.5

REMARKS: None

Dummy S/N 268

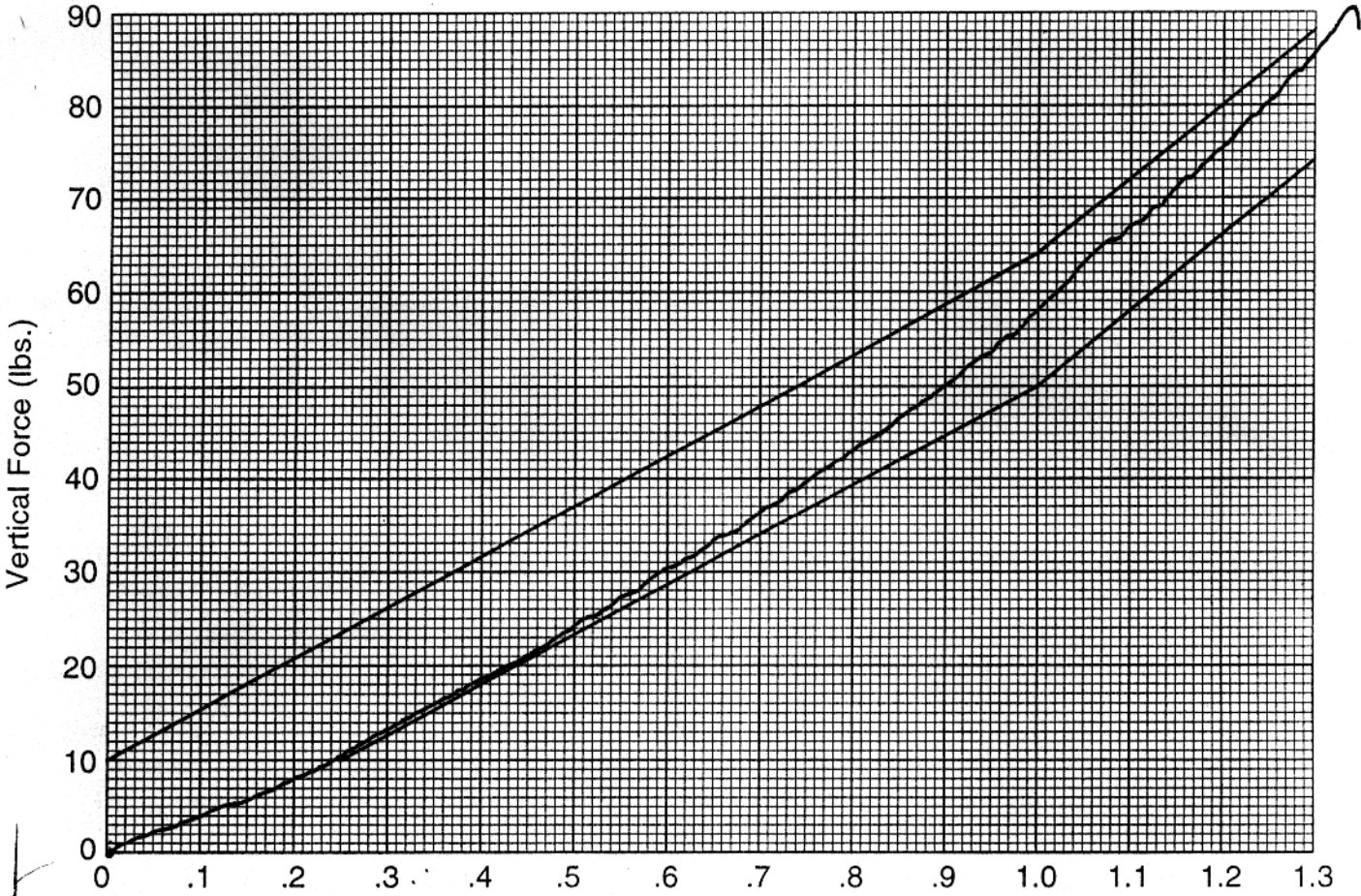
W/A _____

Date 3-13-2001

Performed By ES

Temp. 70°

Humidity 33%



Hybrid II
Abdomen Static Press

LUMBAR FLEXION TEST
PRE-TEST
(Test not required for SID certification)

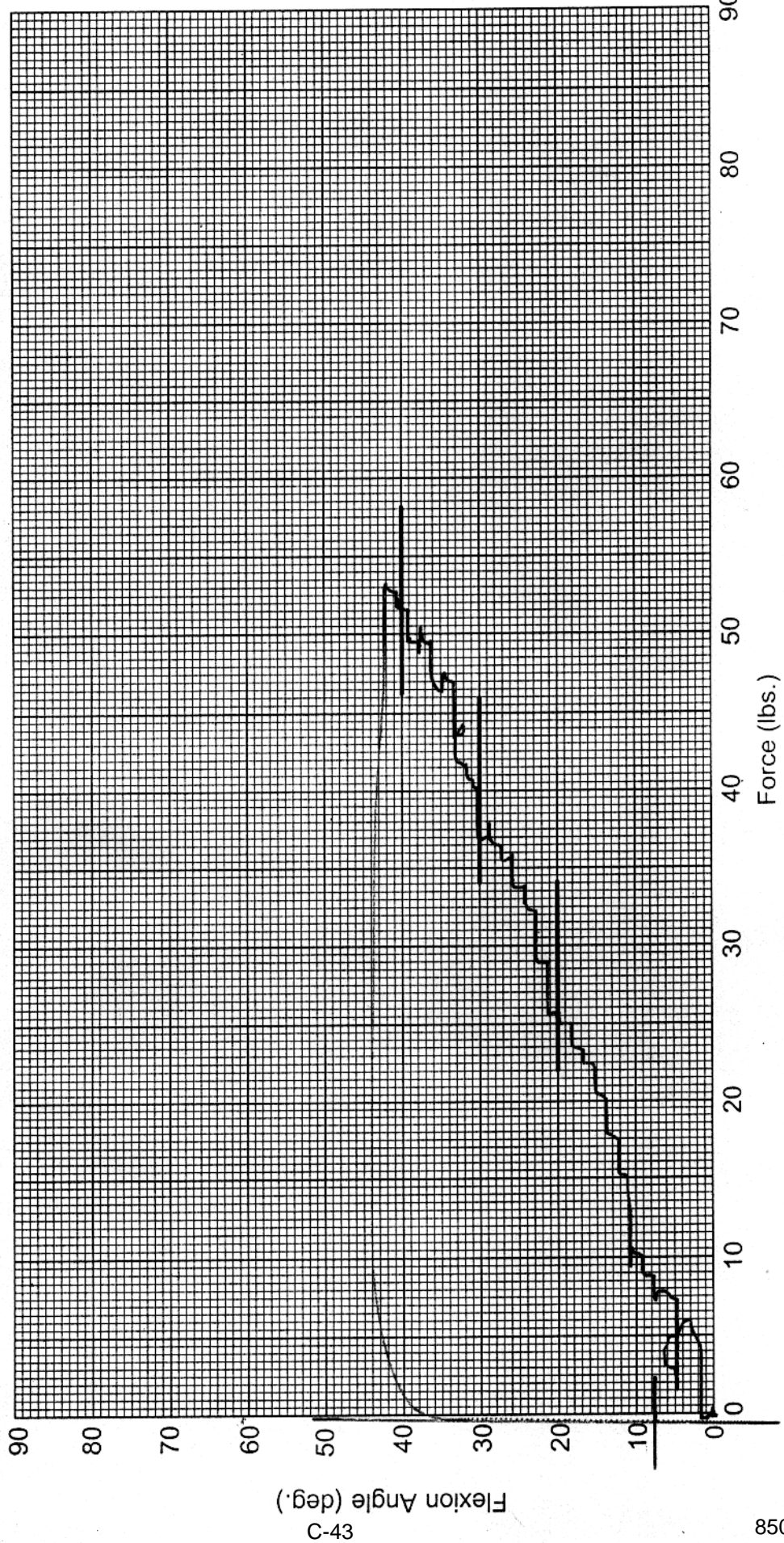
CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 268 Sequential Test Number: 1
Date: 3/13/01 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.1
RELATIVE HUMIDITY (%)	10 - 70	32.0
FORCE @ 0° (N)	0 - 26.7	0
FORCE @ 20° (N)	97.8 - 151.2	113.4
FORCE @ 30° (N)	151.2 - 204.6	164.6
FORCE @ 40° (N)	204.6 - 258	229.1
RETURN ANGLE	12° max.	7.9°

REMARKS: None

Dummy S/N 268
 W/A _____
 Date 3-13-2001
 Performed By [Signature]
 Temp. 70°
 Humidity 32%



Hybrid II Lumbar Spine Flexion Test

C-43
Flexion Angle (deg.)

8506-19

PRE-TEST DUMMY INSPECTION LIST

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 268 Sequential Test Number: 1
 Date: 3/13/01 Laboratory Technician: B. Swiecicki

PART	ITEMS CHECKED	COMMENTS
SKIN	VISUAL INSPECTION	OK
HEAD	VISUAL, BALLAST, ACCELEROMETER MOUNT	OK
NECK	VISUAL, CABLE TORQUE	OK
SPINE BOX	VISUAL, BALLAST, WELDMENT, ACCELEROMETER MOUNT	OK
RIB CAGE	VISUAL, MEASURE, STIFFENERS	OK
STERNUM	VISUAL	OK
LUMBAR SPINE	VISUAL	OK
ABDOMEN	VISUAL	OK
PELVIS	VISUAL, PALPATE, ACCELEROMETER MOUNT	OK
UPPER LEGS	VISUAL	OK
KNEES	VISUAL, STOPS, INSERTS	OK
LOWER LEGS	VISUAL, RANGE OF MOTION	OK
ANKLES	VISUAL, RANGE OF MOTION	OK
FEET	VISUAL, RANGE OF MOTION	OK
JOINTS	1 TO 2 g RANGE	OK
OTHER	NONE	-

REMARKS: None

**CALIBRATION TEST RESULTS
POST TEST**

SID NO.: 026

CONFIGURED FOR LEFT SIDE IMPACT

**CALIBRATION TEST RESULTS SUMMARY
POST TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 026 Sequential Test Number: 1
Date: 4/3/01 Laboratory Technician: B. Swiecicki

TEST	COMMENTS
EXTERNAL DIMENSIONS	Passed all requirements.
LATERAL THORAX IMPACT TEST	Passed all requirements.
LATERAL PELVIS IMPACT TEST	Passed all requirements.
HEAD DROP TEST*	Passed all requirements.
ABDOMINAL COMPRESSION TEST*	Passed all requirements.
LUMBAR FLEXION TEST*	Passed all requirements.

* Test not required for SID certification.

REMARKS: None

**EXTERNAL DIMENSIONS
POST TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 026 Sequential Test Number: 1
Date: 4/3/01 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 - 909	902
RH- Rib Height (mm)	502 - 520	518
HP- Hip Pivot Height (mm)	99 ref.	99
RD- Rib from Back Line (mm)	229 - 241	236
KH- Knee Pivot from Back Line (mm)	511 - 526	518
KV- Knee Pivot to Floor (mm)	490 - 505	493
HW- Hip Width (mm)	356 - 391	371

REMARKS: None

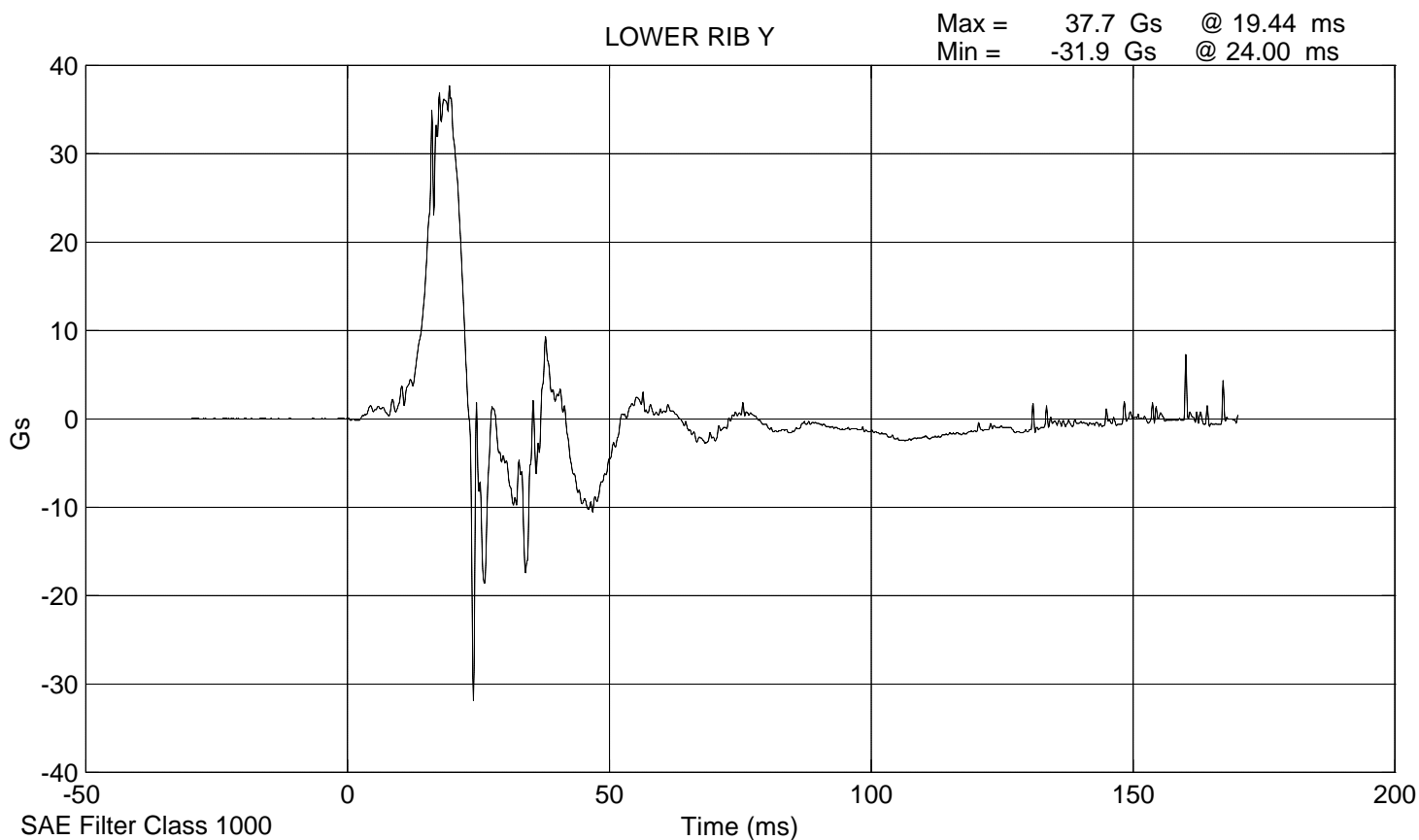
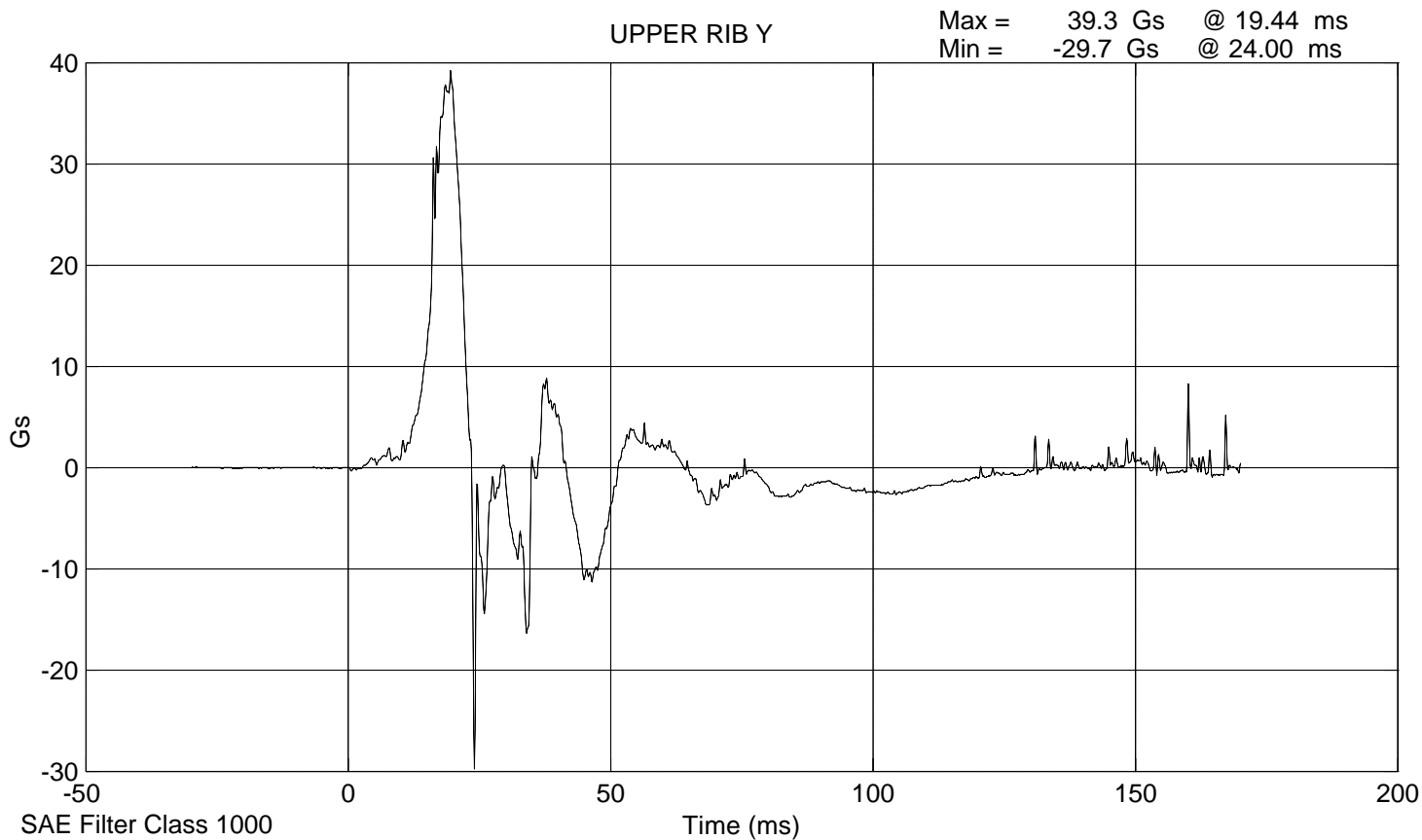
**LATERAL THORAX IMPACT TEST
POST TEST**

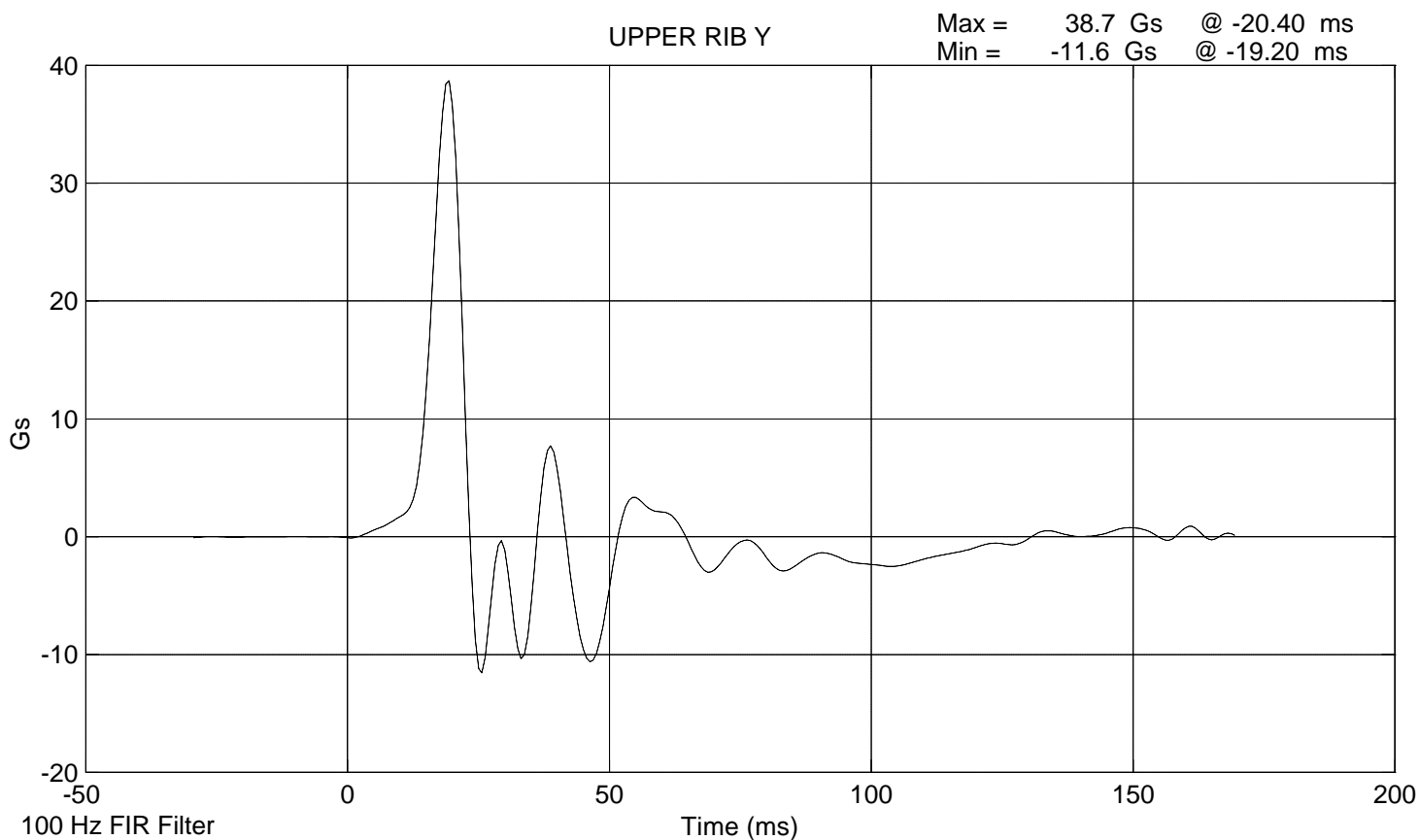
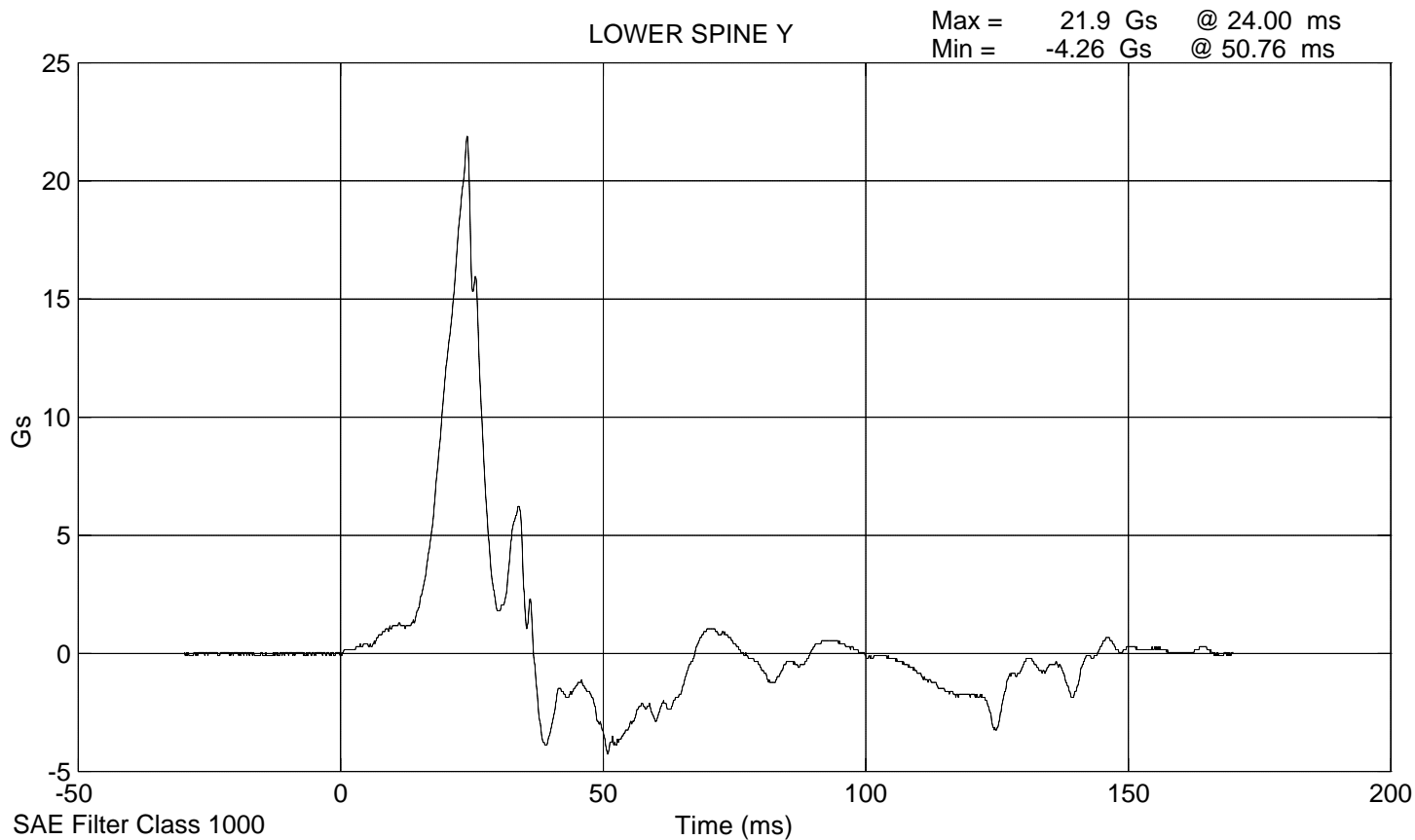
CONFIGURED FOR LEFT SIDE IMPACT

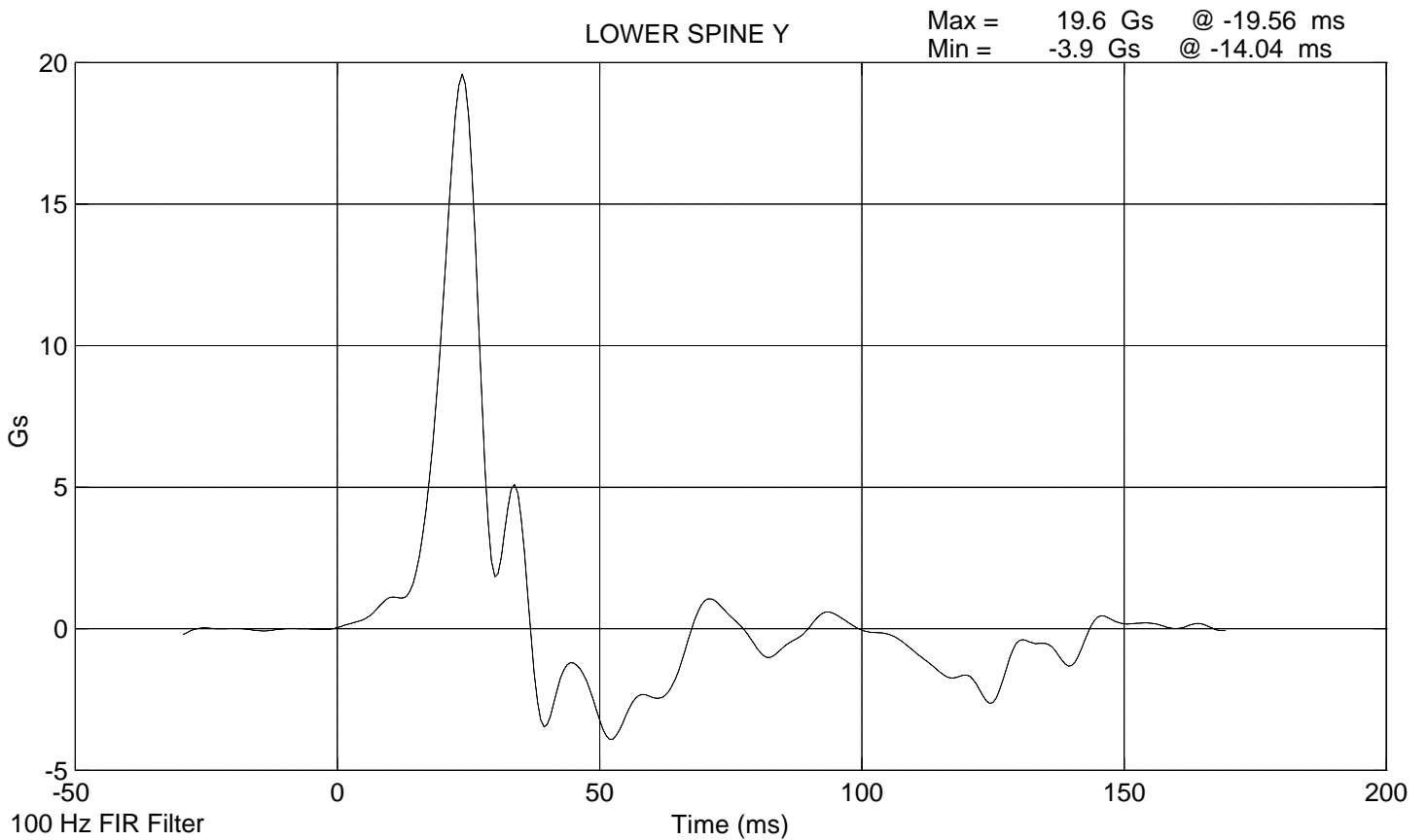
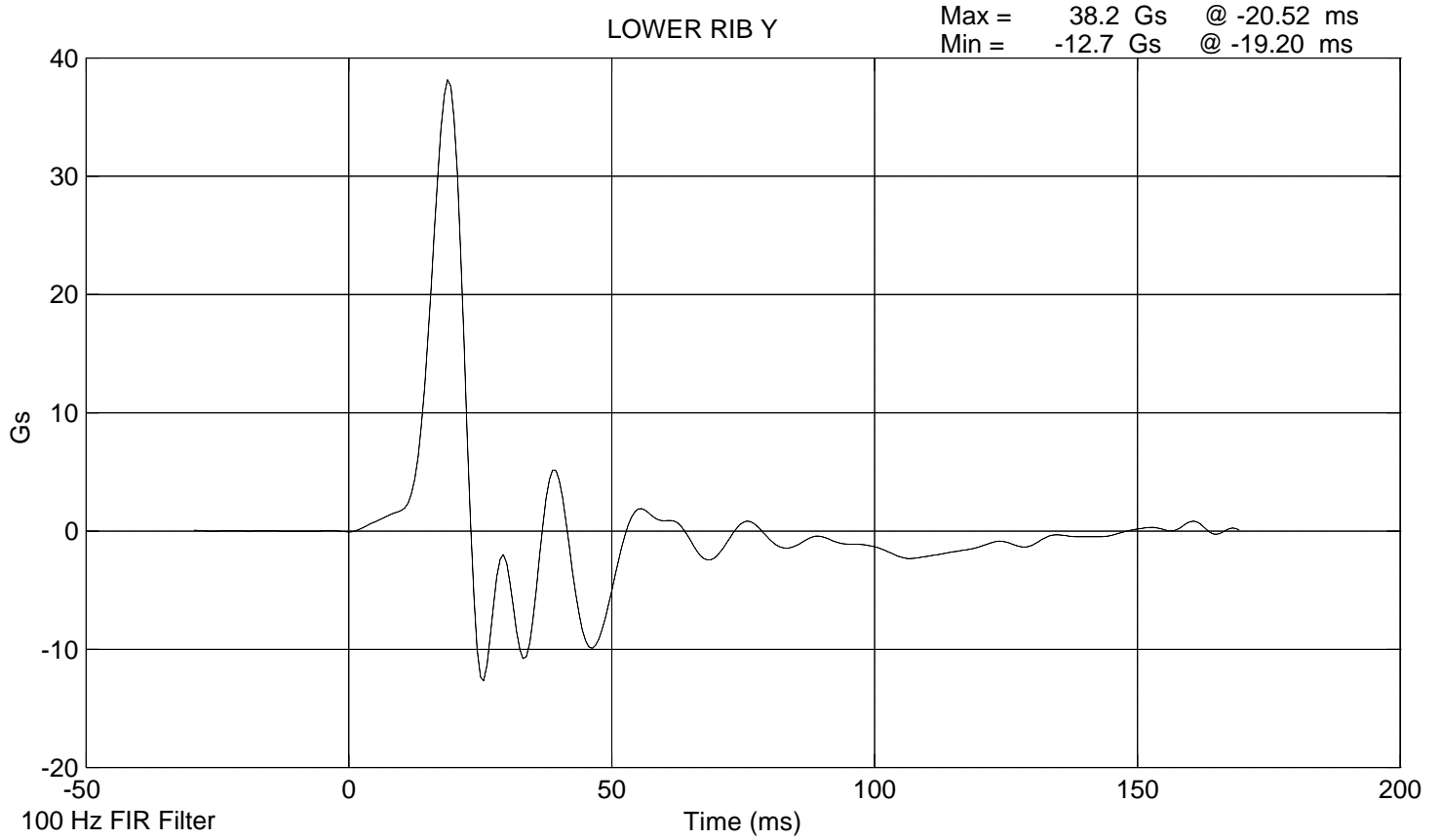
SID Serial No.: 026 Sequential Test Number: 1
Date: 4/3/01 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.1
RELATIVE HUMIDITY (%)	10 - 70	31
PROBE SPEED (m/s)	4.27 - 4.33	4.27
UPPER RIB (g's)	37 - 46	38.7
LOWER RIB (g's)	37 - 46	38.2
LOWER SPINE (g's)	15 - 22	19.6

REMARKS: None







**LATERAL PELVIS IMPACT TEST
POST TEST**

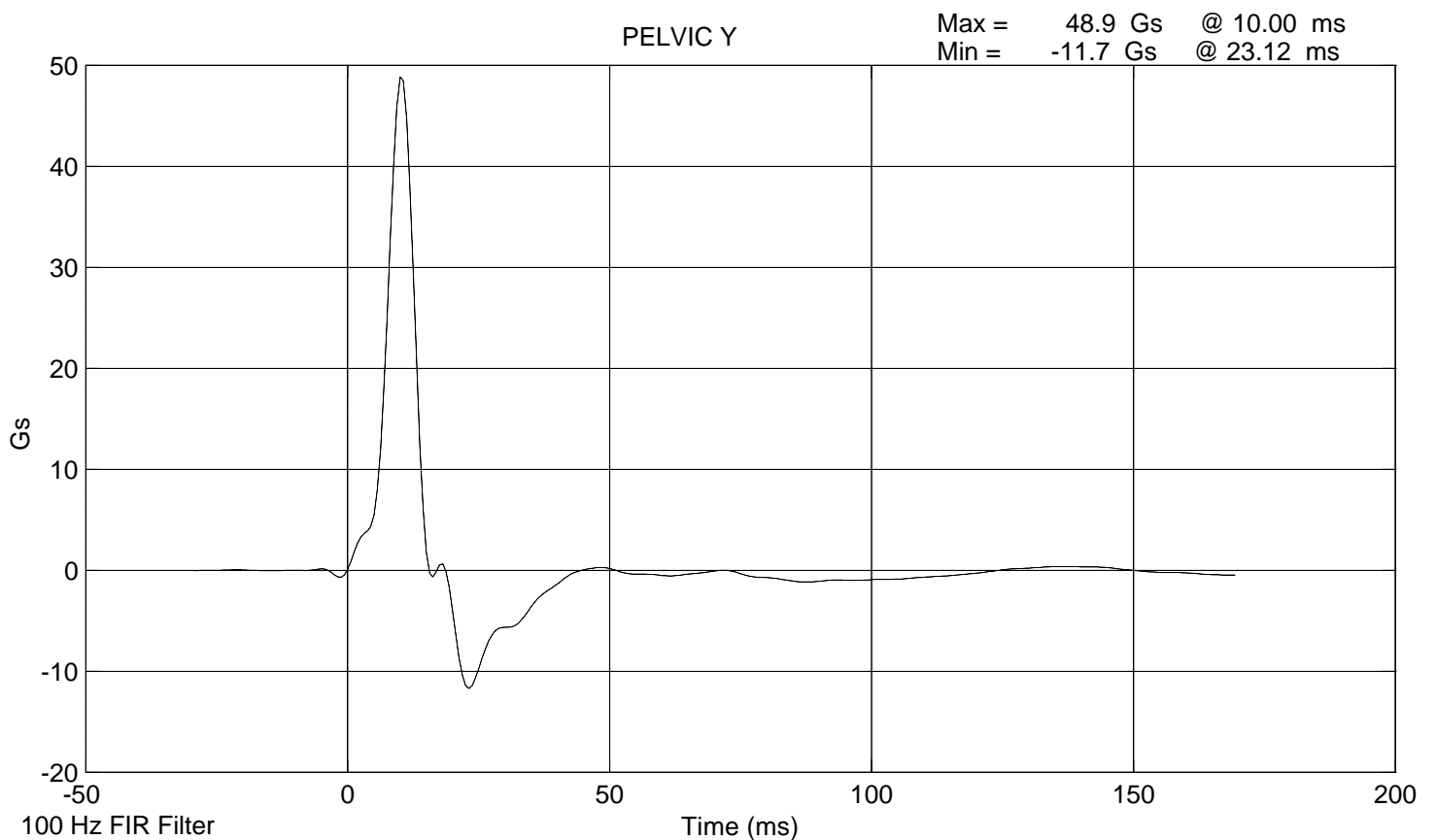
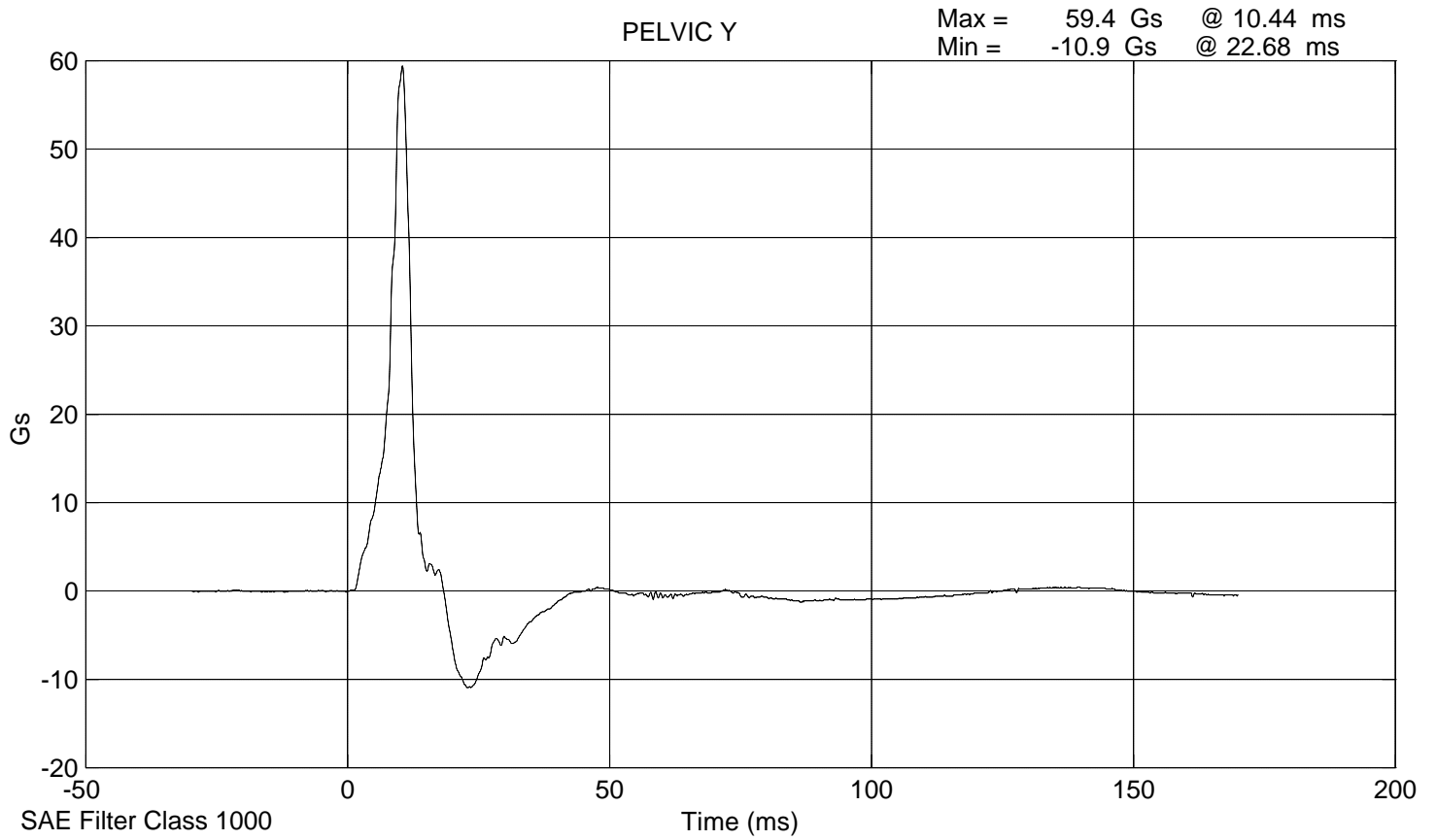
CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 026 Sequential Test Number: 1
Date: 4/3/01 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.1
RELATIVE HUMIDITY (%)	10 - 70	31
PROBE SPEED (m/s)	4.27 - 4.33	4.32
PELVIS ACCELERATION (g's)	40 - 60	48.9

REMARKS: None

SID 026 Pelvic Impact Test @ 4.316 m/s



HEAD DROP TEST

POST-TEST

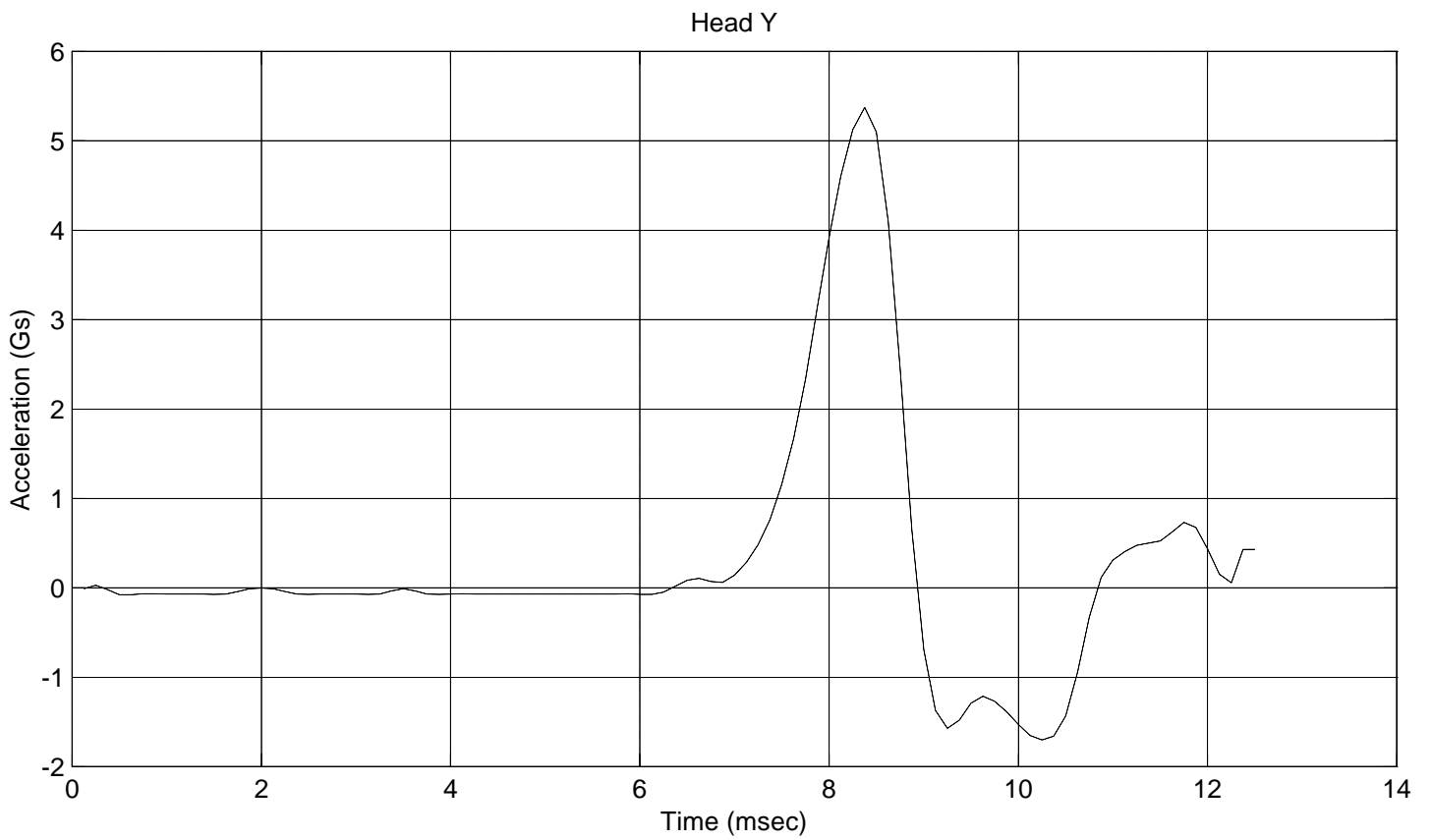
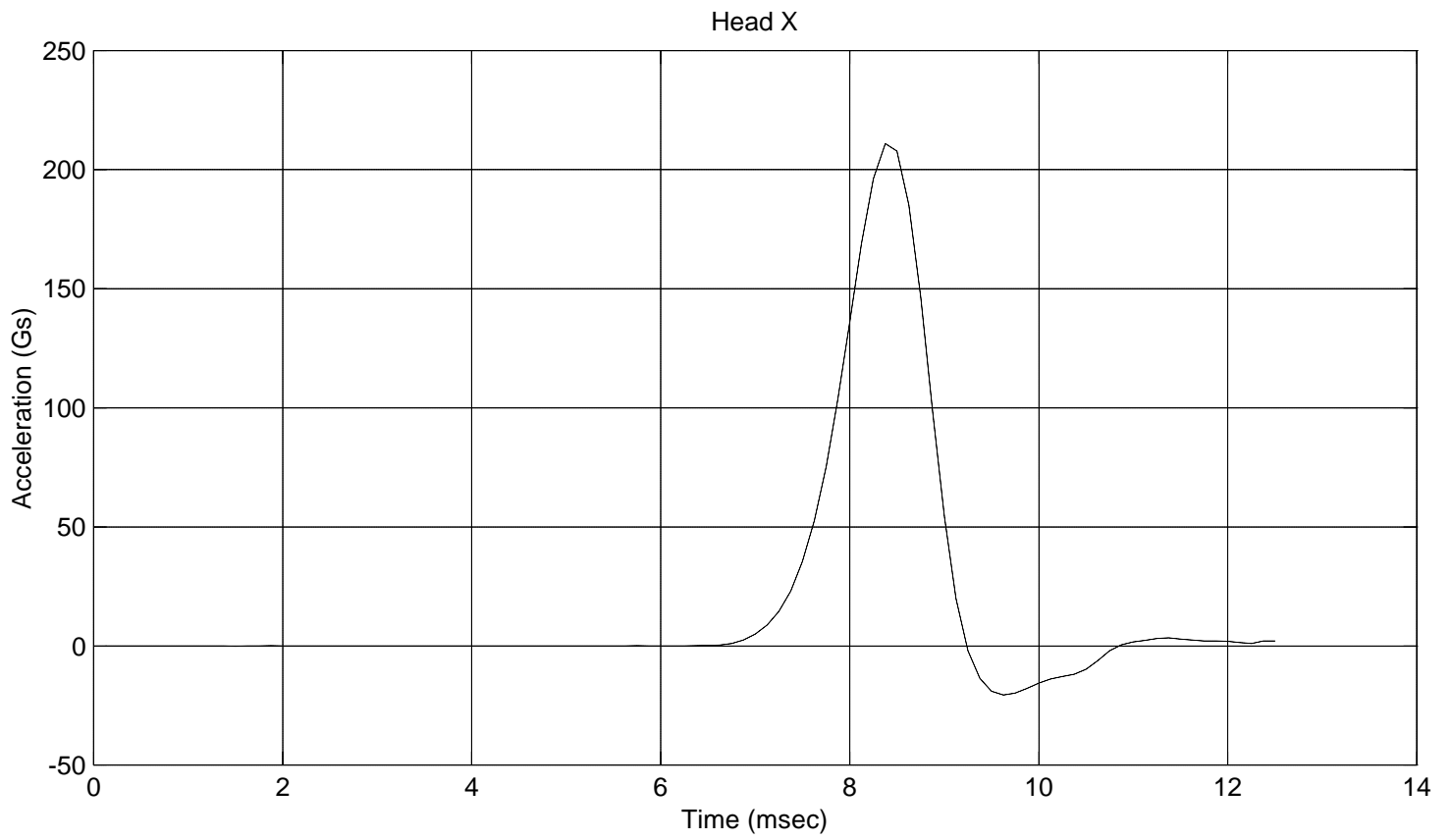
(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

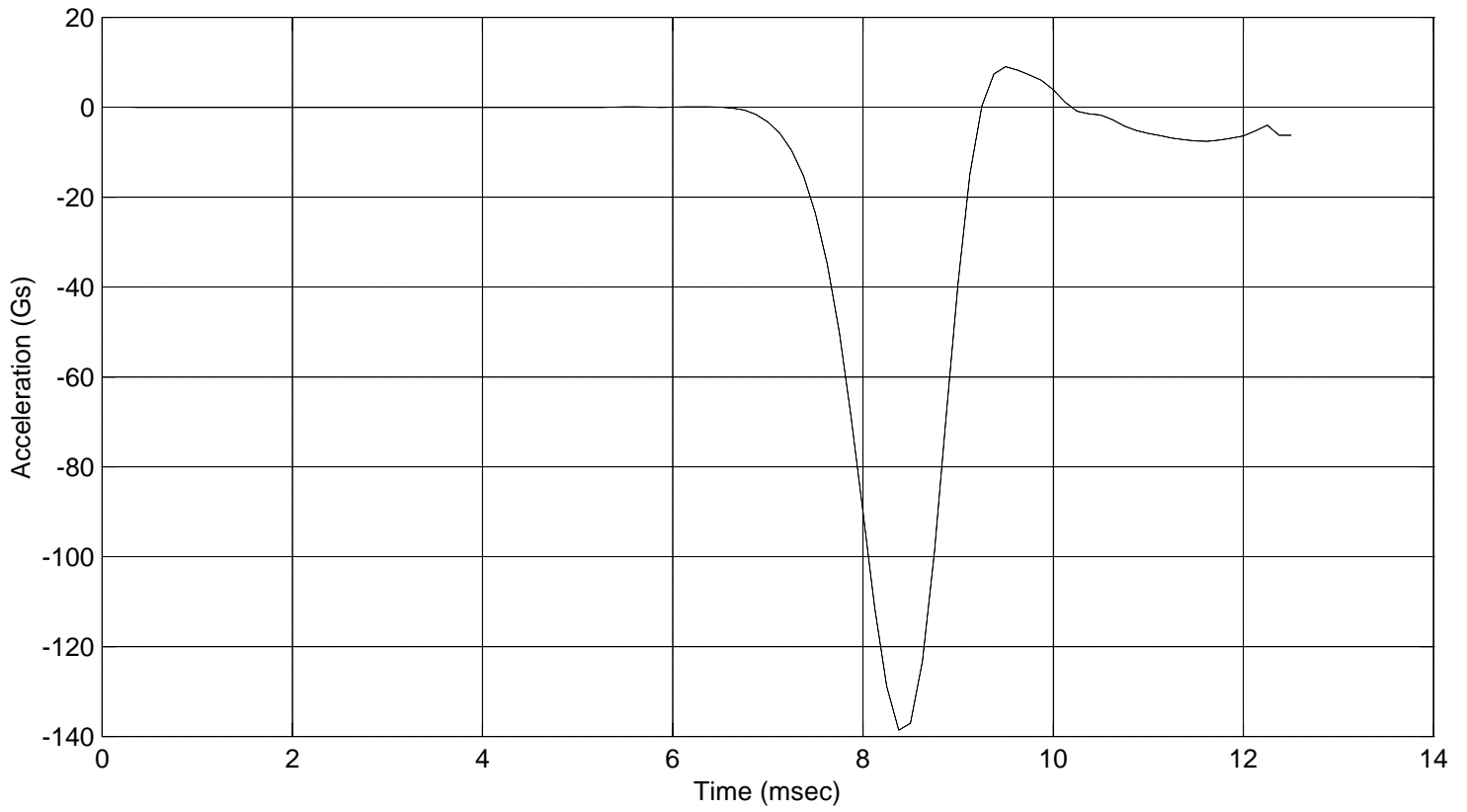
SID Serial No.: 026 Sequential Test Number: 1
Date: 4/2/01 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	32.0
PEAK RESULTANT ACCELERATION (Gs)	210 - 260	252.5
PEAK LATERAL ACCELERATION (Gs)	Not to Exceed 10	5.4
UNIMODAL CRITERIA ABOVE 100 Gs (ms)	0.9 - 1.5	1.1

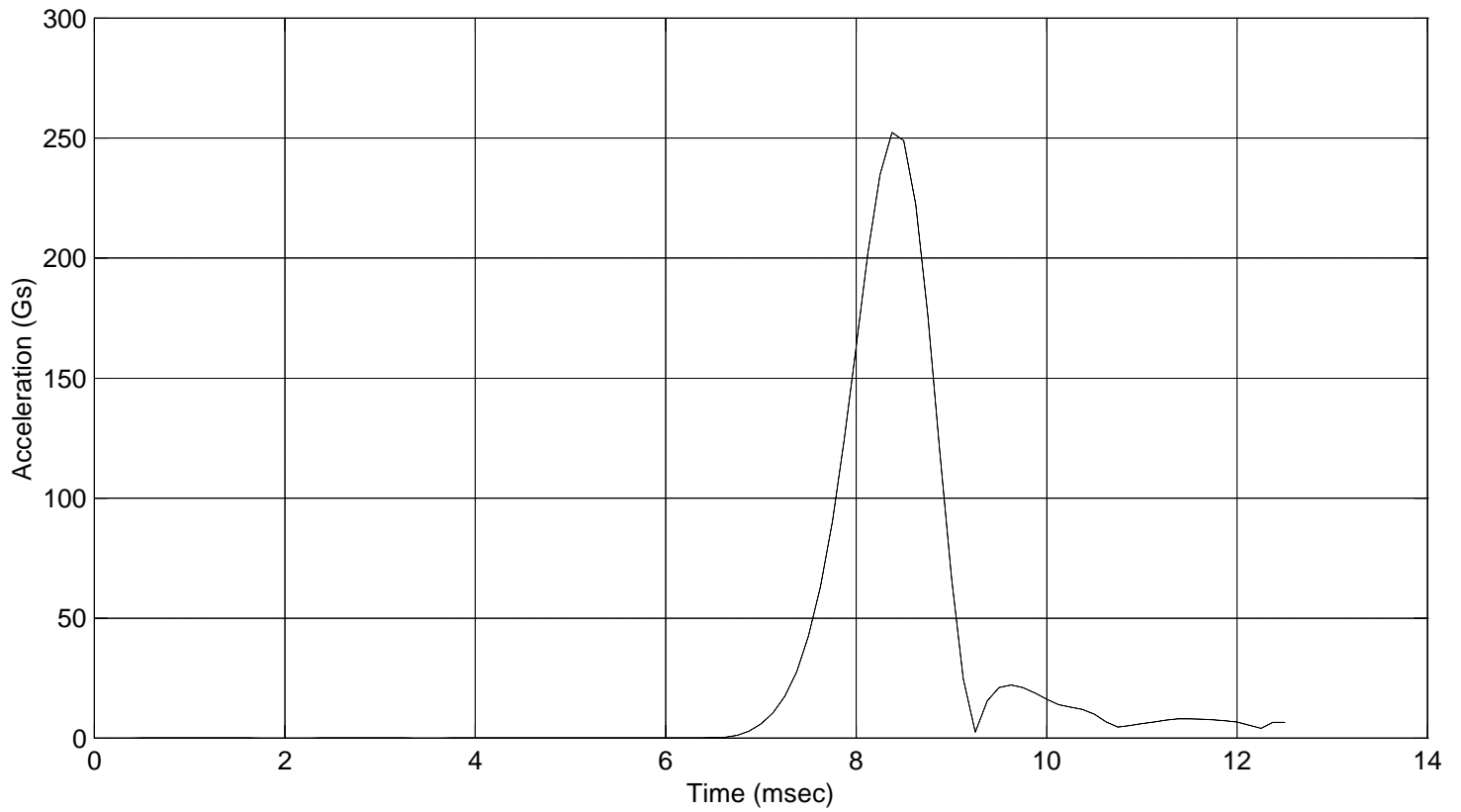
REMARKS: None



Head Z



Head Resultant



**ABDOMINAL COMPRESSION TEST
POST TEST**

(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 026 Sequential Test Number: 1
Date: 4/3/01 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.1
RELATIVE HUMIDITY (%)	10 - 70	31.0
FORCE @ 13 mm (N)	104 - 162	110.8
FORCE @ 19 mm (N)	163 - 221	170.3
FORCE @ 25 mm (N)	222 - 280	244.2
FORCE @ 33 mm (N)	325 - 391	359.9

REMARKS: None

Dummy S/N 026

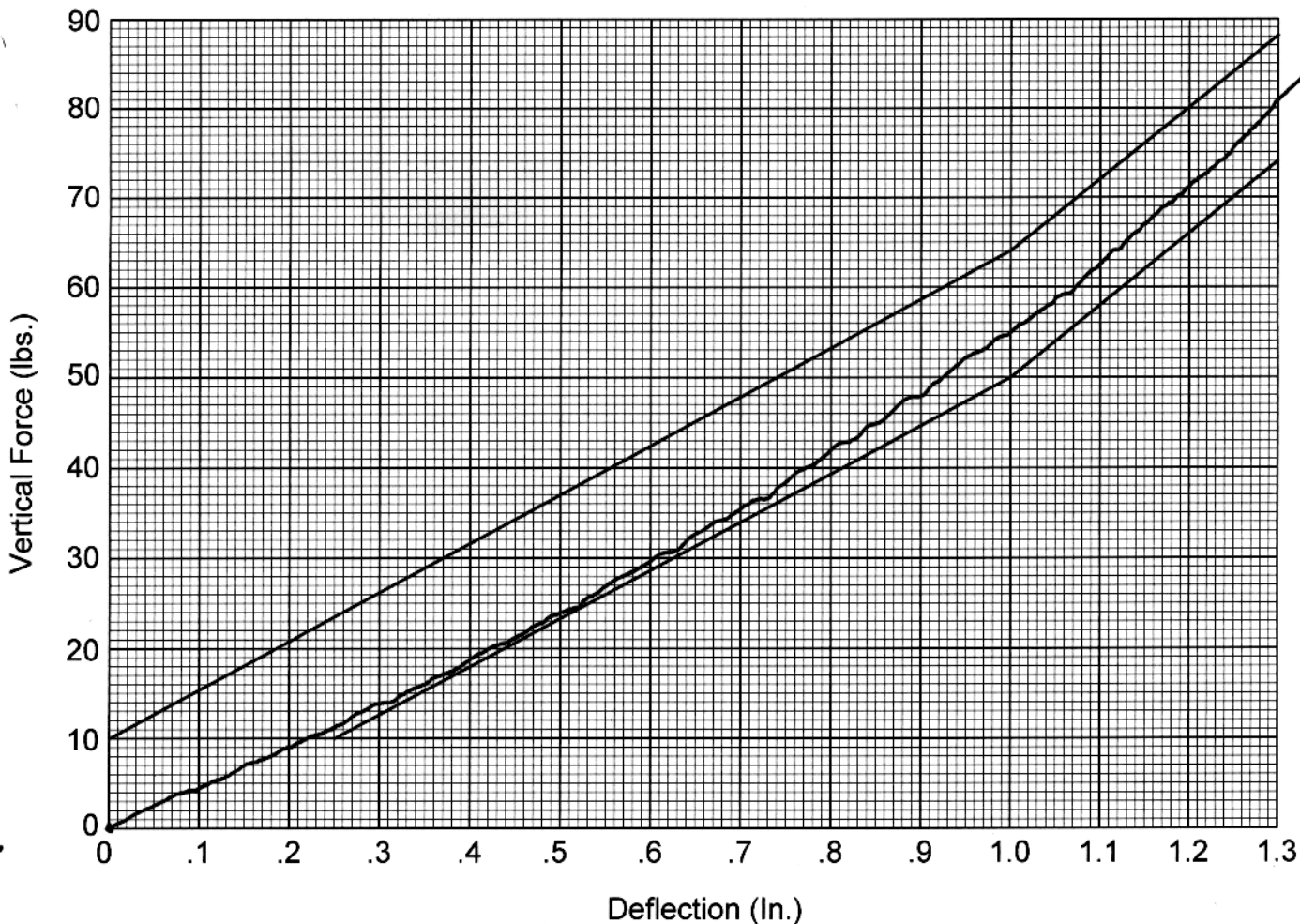
W/A _____

Date 4-3-2001

Performed By [Signature]

Temp. 70°

Humidity 31%



Hybrid II
Abdomen Static Press

LUMBAR FLEXION TEST
POST TEST
(Test not required for SID certification)

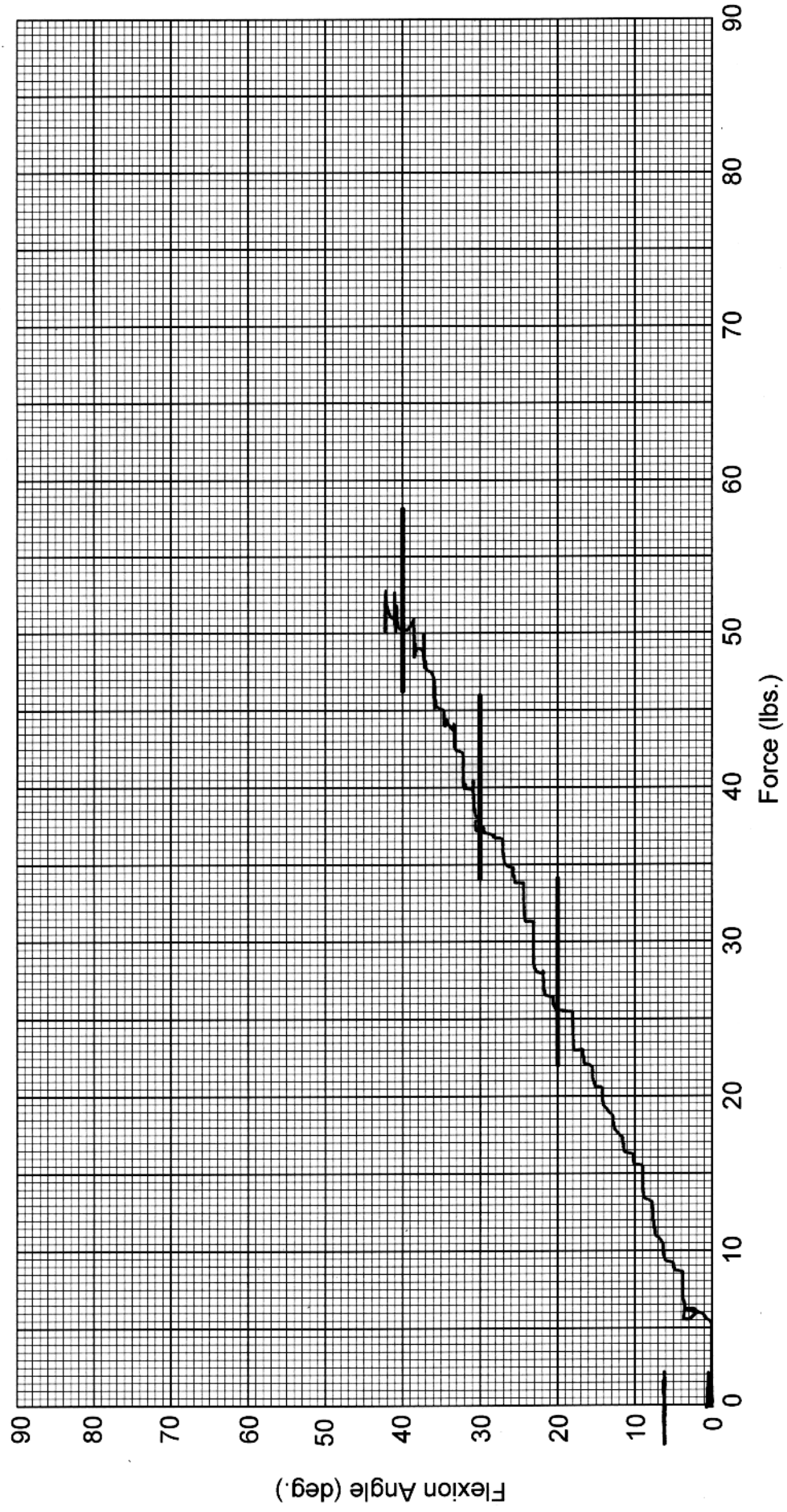
CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 026 Sequential Test Number: 1
Date: 4/3/01 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.1
RELATIVE HUMIDITY (%)	10 - 70	31.0
FORCE @ 0° (N)	0 - 26.7	0.0
FORCE @ 20° (N)	97.8 - 151.2	113.9
FORCE @ 30° (N)	151.2 - 204.6	165.9
FORCE @ 40° (N)	204.6 - 258	223.7
RETURN ANGLE	12° max.	6.2°

REMARKS: None

Dummy S/N 024
 W/A _____
 Date 4-3-2001
 Performed By [Signature]
 Temp. 76°
 Humidity 31%



Hybrid II Lumbar Spine Flexion Test

POST TEST DUMMY INSPECTION LIST

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 026 Sequential Test Number: 1
 Date: 4/3/01 Laboratory Technician: B. Swiecicki

PART	ITEMS CHECKED	COMMENTS
SKIN	VISUAL INSPECTION	OK
HEAD	VISUAL, BALLAST, ACCELEROMETER MOUNT	OK
NECK	VISUAL, CABLE TORQUE	OK
SPINE BOX	VISUAL, BALLAST, WELDMENT, ACCELEROMETER MOUNT	OK
RIB CAGE	VISUAL, MEASURE, STIFFENERS	OK
STERNUM	VISUAL	OK
LUMBAR SPINE	VISUAL	OK
ABDOMEN	VISUAL	OK
PELVIS	VISUAL, PALPATE, ACCELEROMETER MOUNT	OK
UPPER LEGS	VISUAL	OK
KNEES	VISUAL, STOPS, INSERTS	OK
LOWER LEGS	VISUAL, RANGE OF MOTION	OK
ANKLES	VISUAL, RANGE OF MOTION	OK
FEET	VISUAL, RANGE OF MOTION	OK
JOINTS	1 TO 2 g RANGE	OK
OTHER	NONE	-

REMARKS: None

**CALIBRATION TEST RESULTS
POST TEST**

SID NO.: 268

CONFIGURED FOR LEFT SIDE IMPACT

**CALIBRATION TEST RESULTS SUMMARY
POST TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 268 Sequential Test Number: 1
Date: 4/4/01 Laboratory Technician: B. Swiecicki

TEST	COMMENTS
EXTERNAL DIMENSIONS	Passed all requirements.
LATERAL THORAX IMPACT TEST	Passed all requirements.
LATERAL PELVIS IMPACT TEST	Passed all requirements.
HEAD DROP TEST*	Passed all requirements.
ABDOMINAL COMPRESSION TEST*	Passed all requirements.
LUMBAR FLEXION TEST*	Passed all requirements.

* Test not required for SID certification.

REMARKS: None

**EXTERNAL DIMENSIONS
POST TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 268 Sequential Test Number: 1
Date: 4/4/01 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 - 909	899
RH- Rib Height (mm)	502 - 520	516
HP- Hip Pivot Height (mm)	99 ref.	99
RD- Rib from Back Line (mm)	229 - 241	236
KH- Knee Pivot from Back Line (mm)	511 - 526	518
KV- Knee Pivot to Floor (mm)	490 - 505	495
HW- Hip Width (mm)	356 - 391	378

REMARKS: None

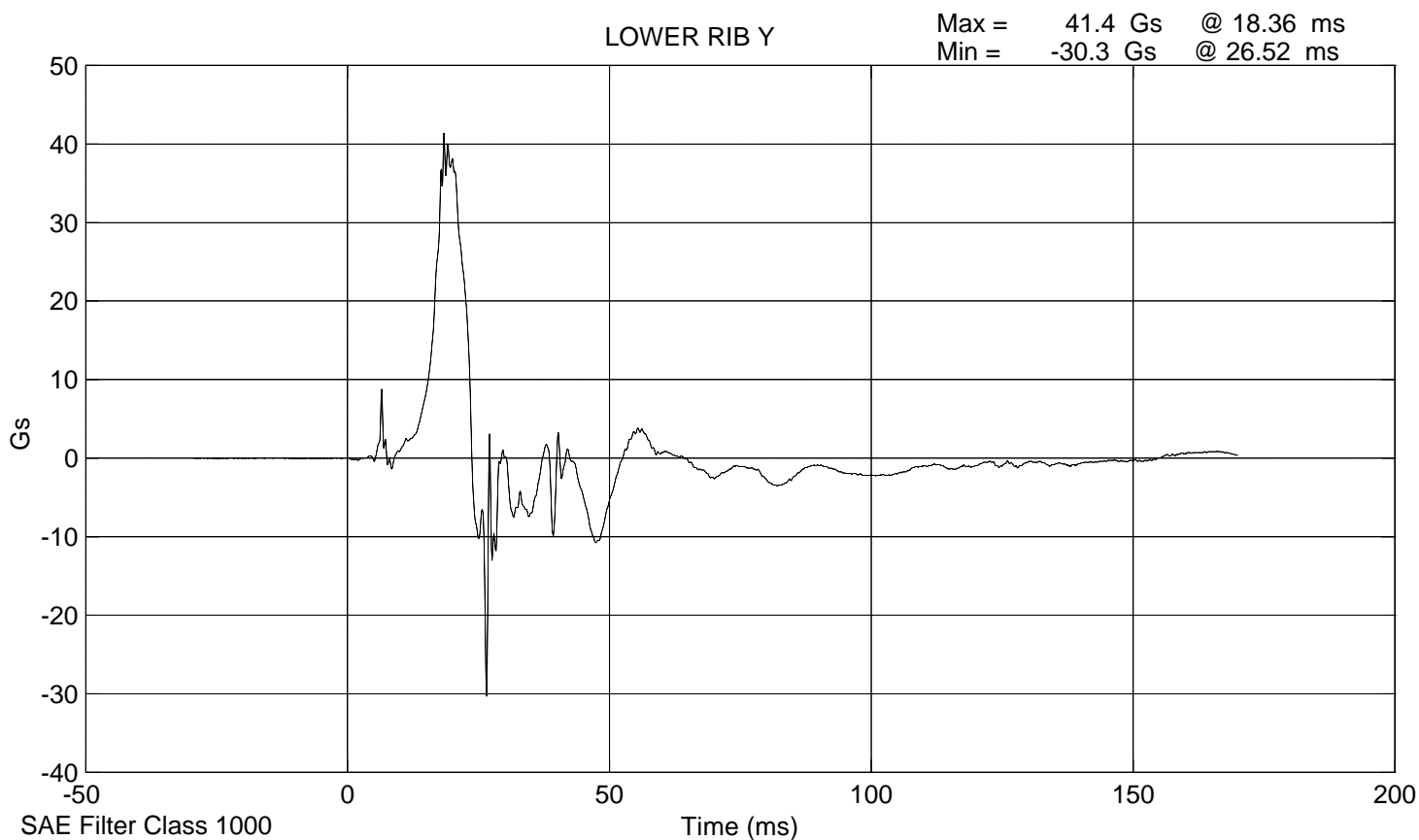
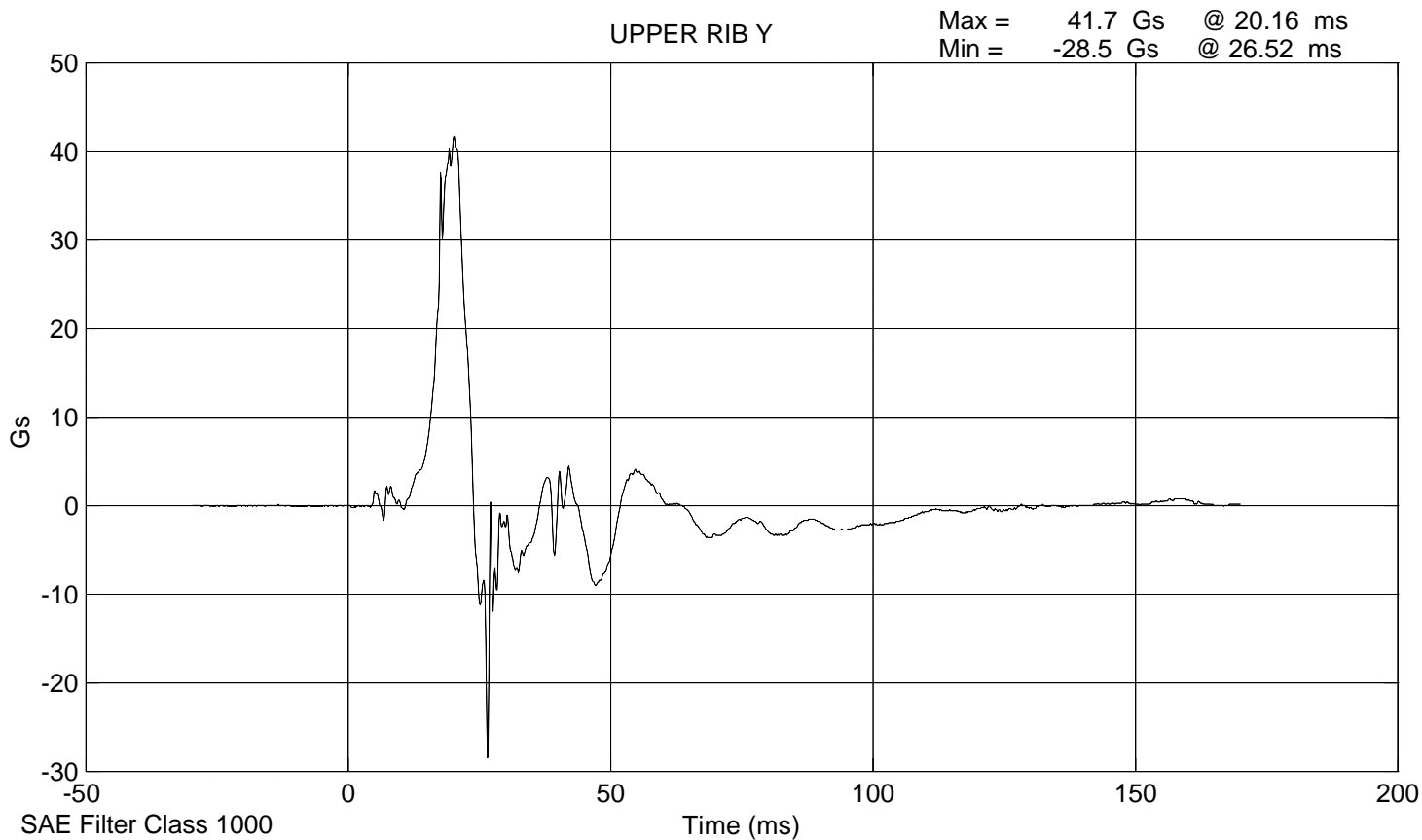
**LATERAL THORAX IMPACT TEST
POST TEST**

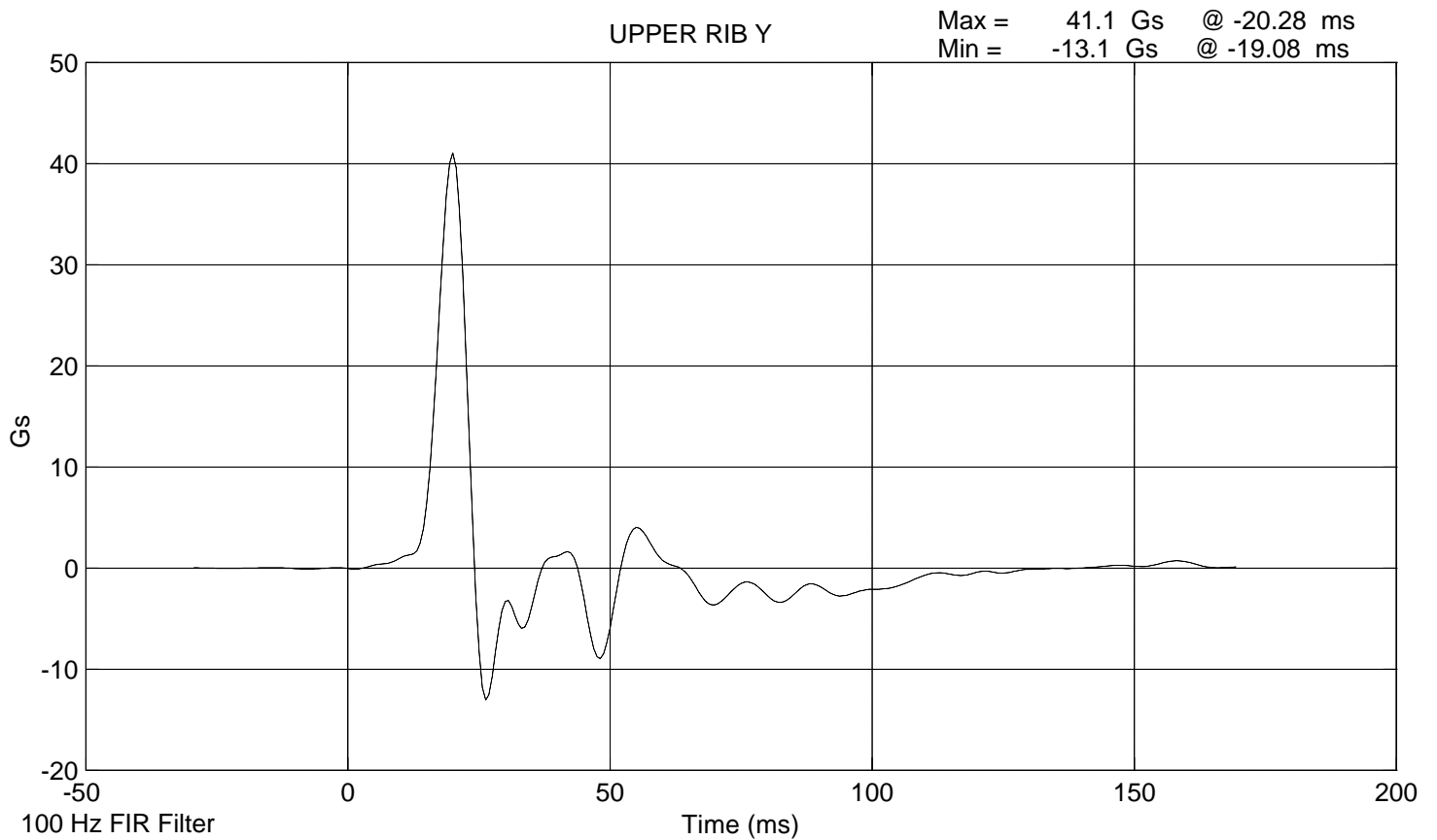
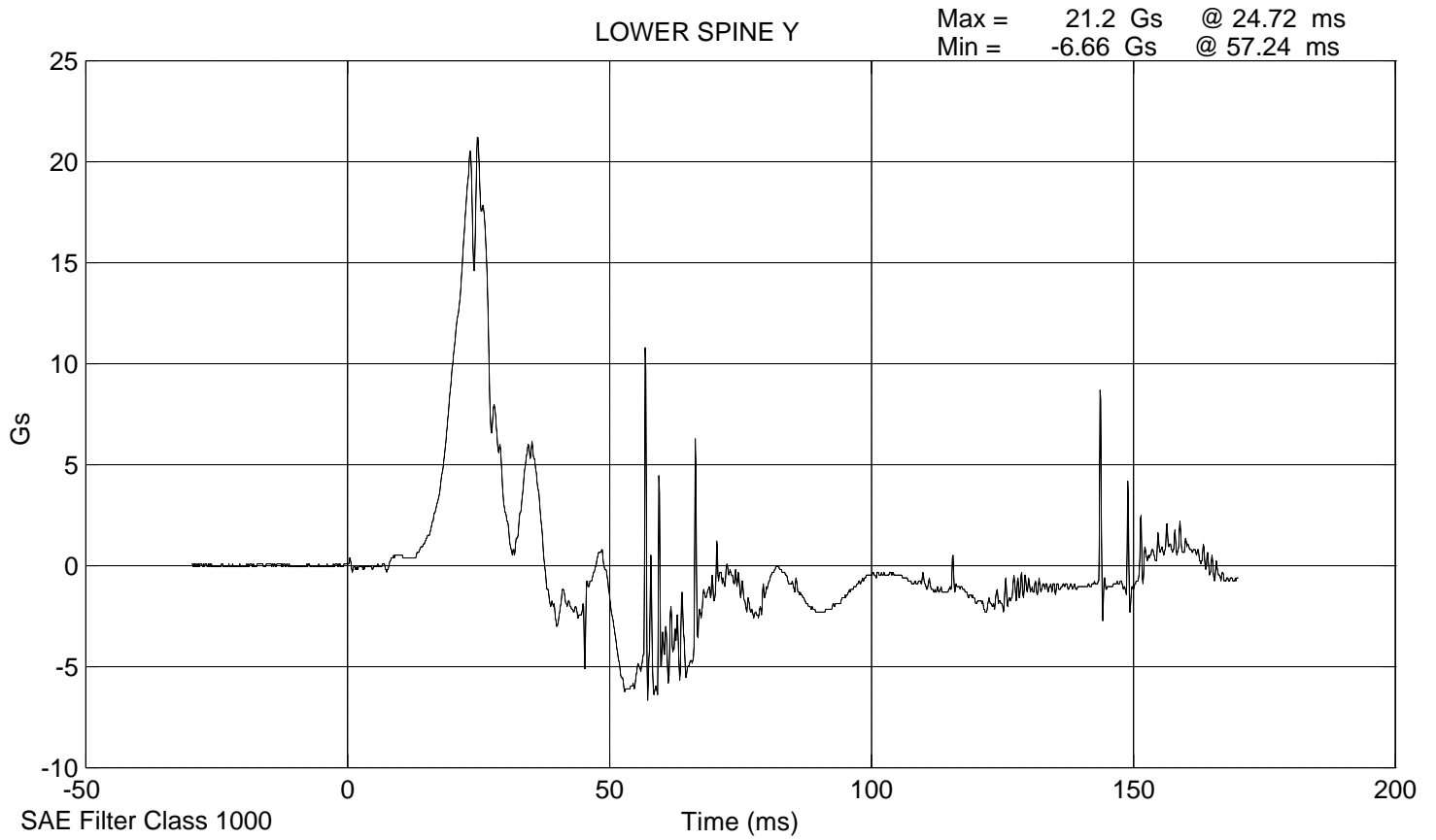
CONFIGURED FOR LEFT SIDE IMPACT

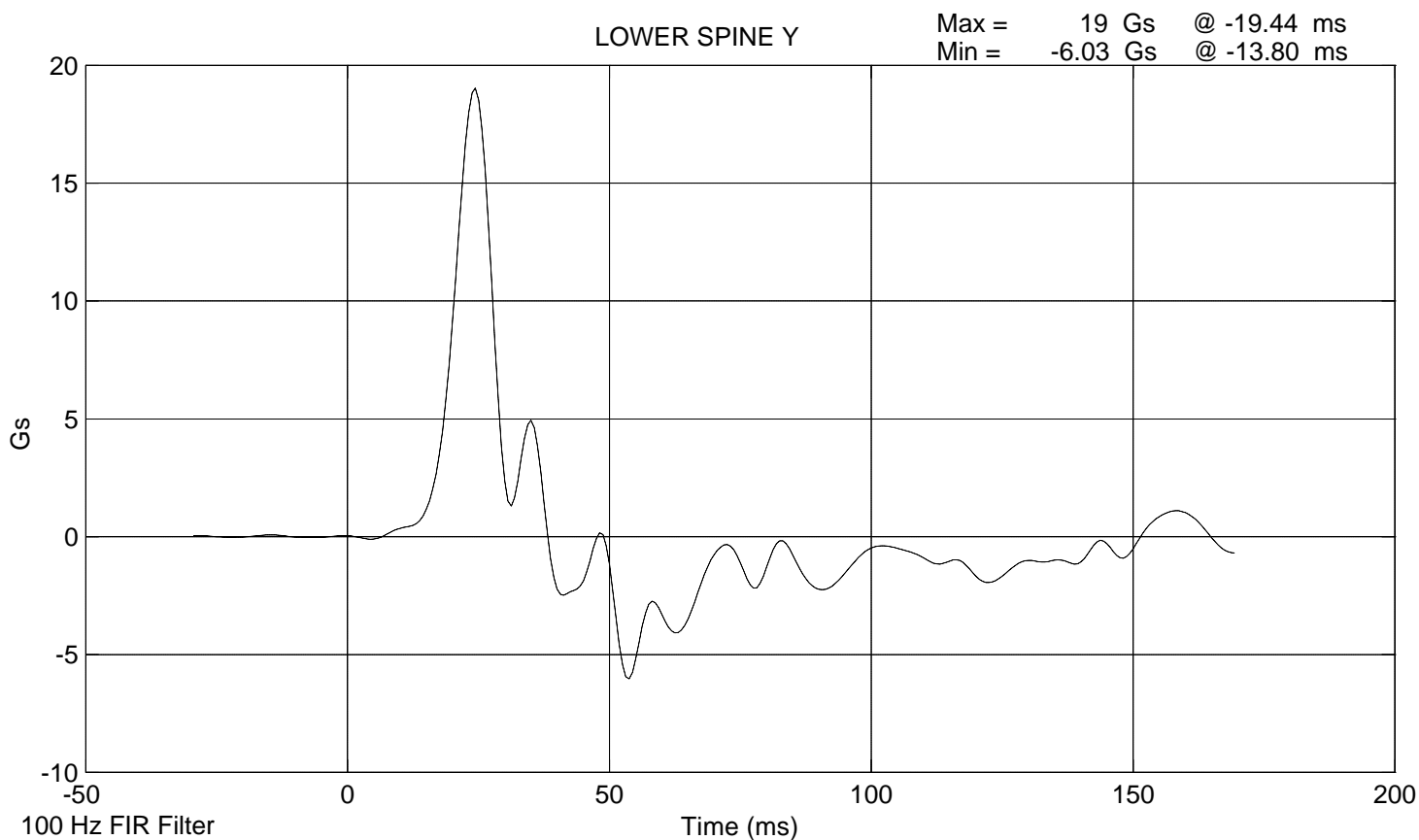
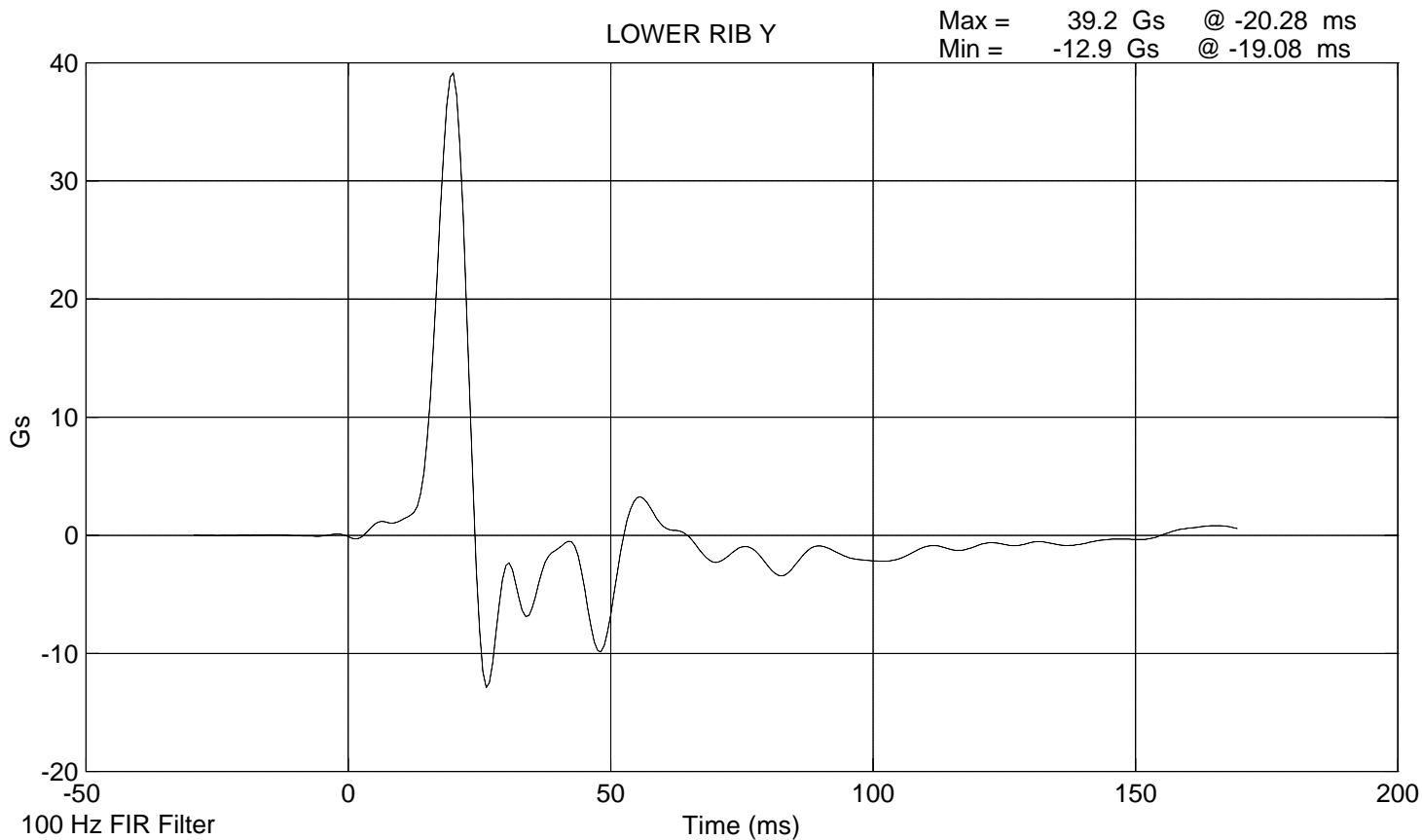
SID Serial No.: 268 Sequential Test Number: 1
Date: 4/3/01 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.1
RELATIVE HUMIDITY (%)	10 - 70	31
PROBE SPEED (m/s)	4.27 - 4.33	4.27
UPPER RIB (g's)	37 - 46	41.1
LOWER RIB (g's)	37 - 46	39.2
LOWER SPINE (g's)	15 - 22	19.0

REMARKS: None







**LATERAL PELVIS IMPACT TEST
POST TEST**

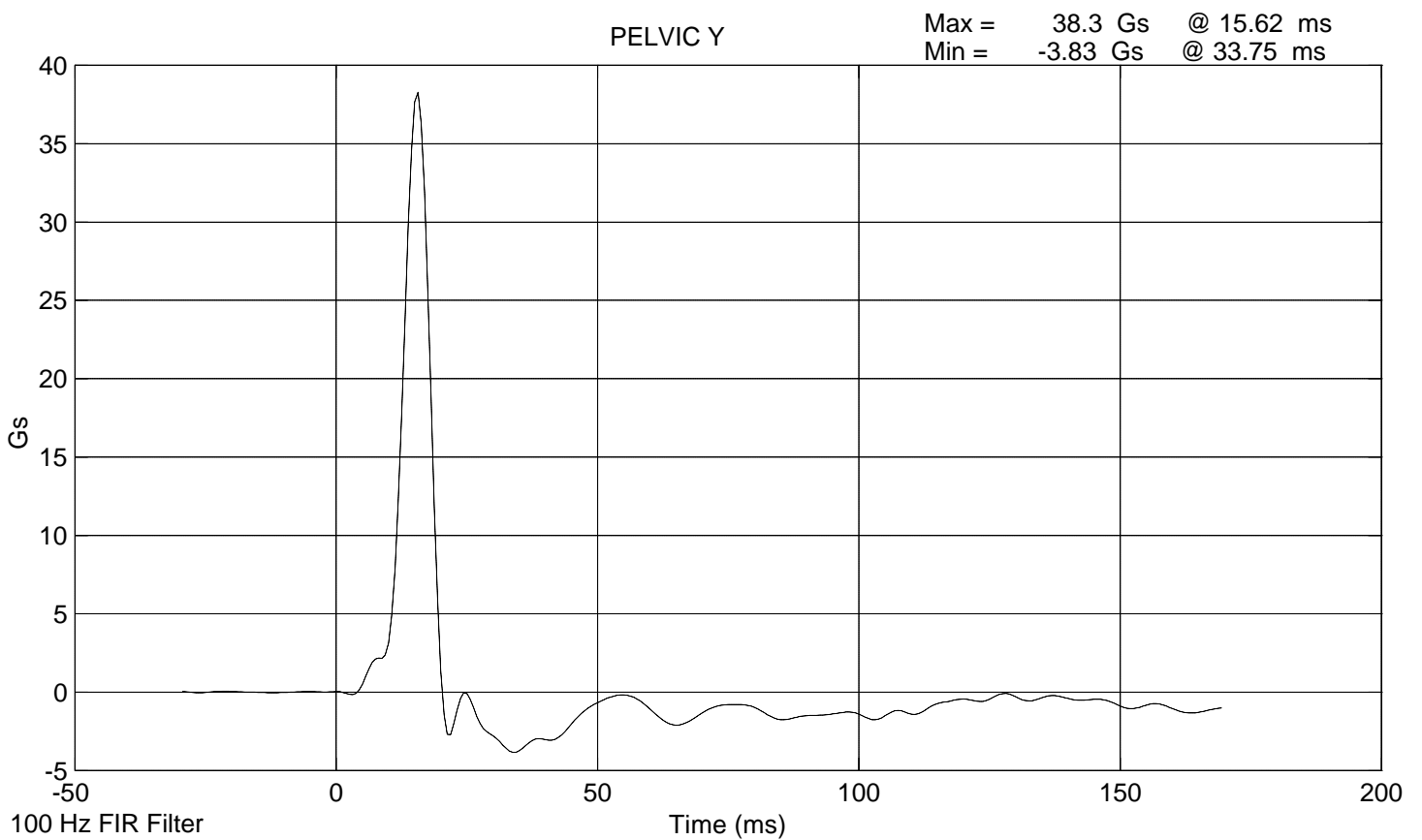
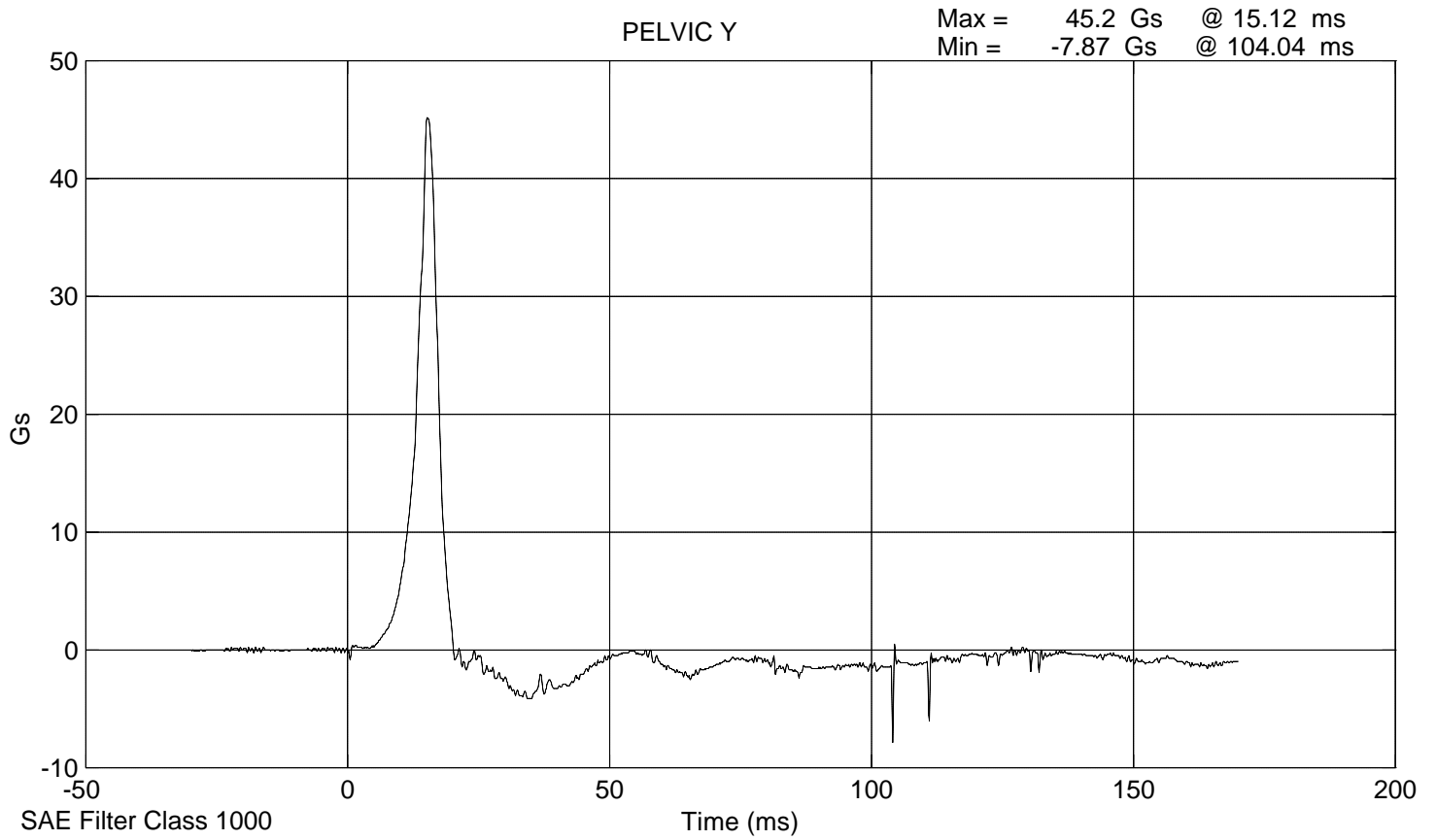
CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 268 Sequential Test Number: 1
Date: 4/4/01 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.1
RELATIVE HUMIDITY (%)	10 - 70	31.0
PROBE SPEED (m/s)	4.27 - 4.33	4.33
PELVIS ACCELERATION (g's)	40 - 60	38.3

REMARKS: SID 268 did not meet the post test lateral pelvis impact test criteria. This SID has been removed from service until affected components are repaired or replaced and the SID passes certification.

SID 268 Pelvic Impact Test @ 4.3251 m/s



HEAD DROP TEST

POST-TEST

(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 268

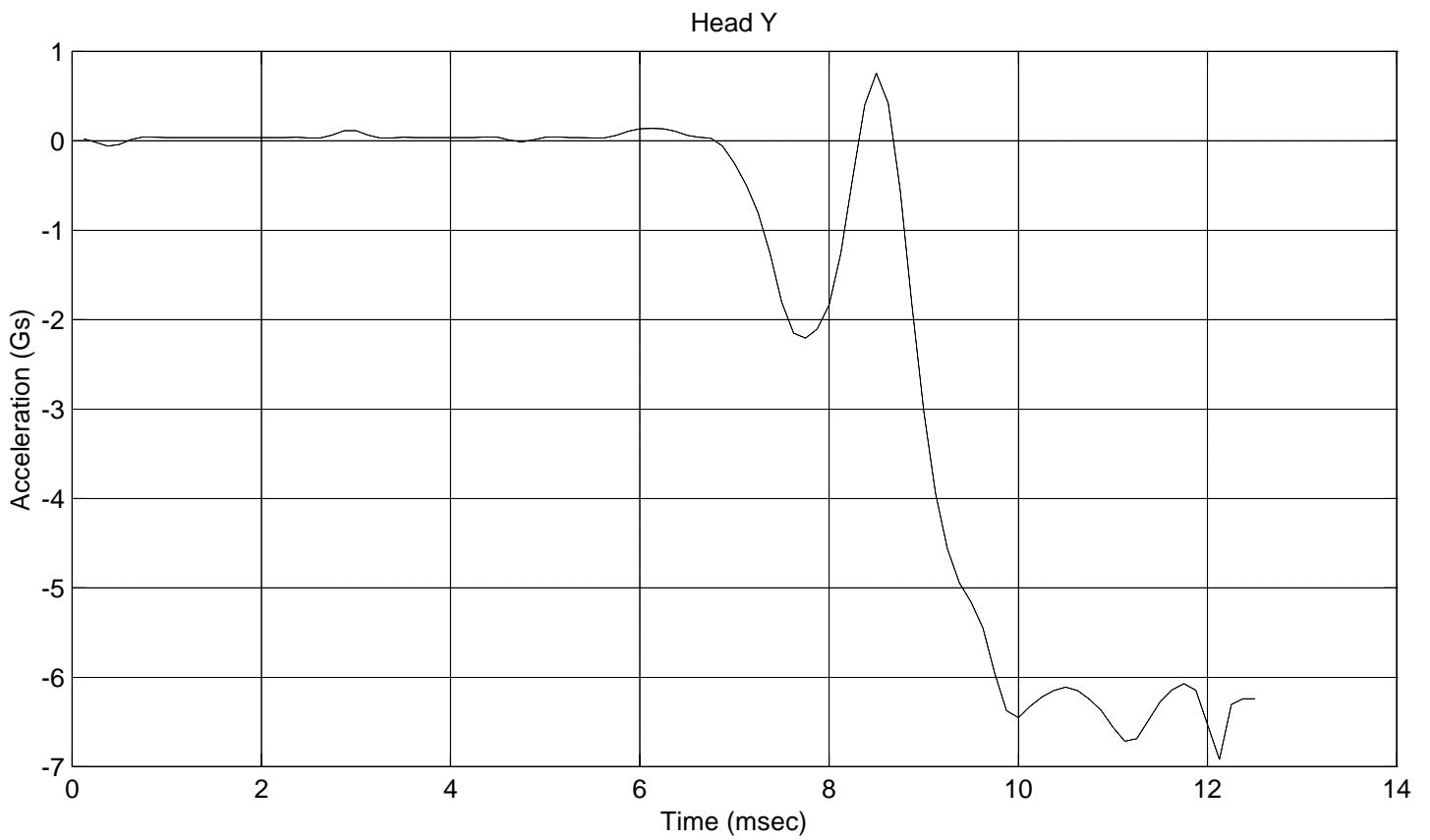
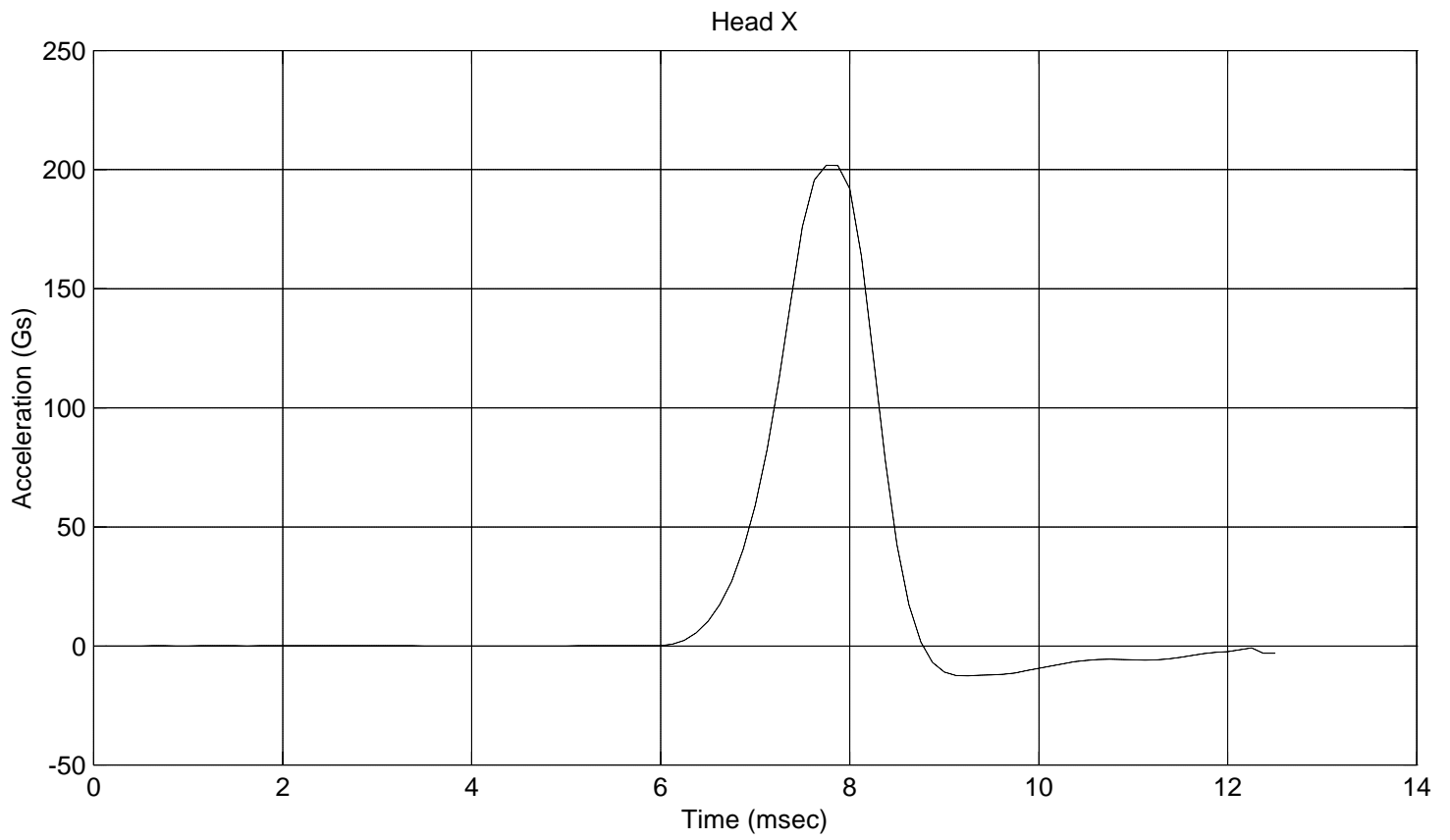
Sequential Test Number: 1

Date: 4/2/01

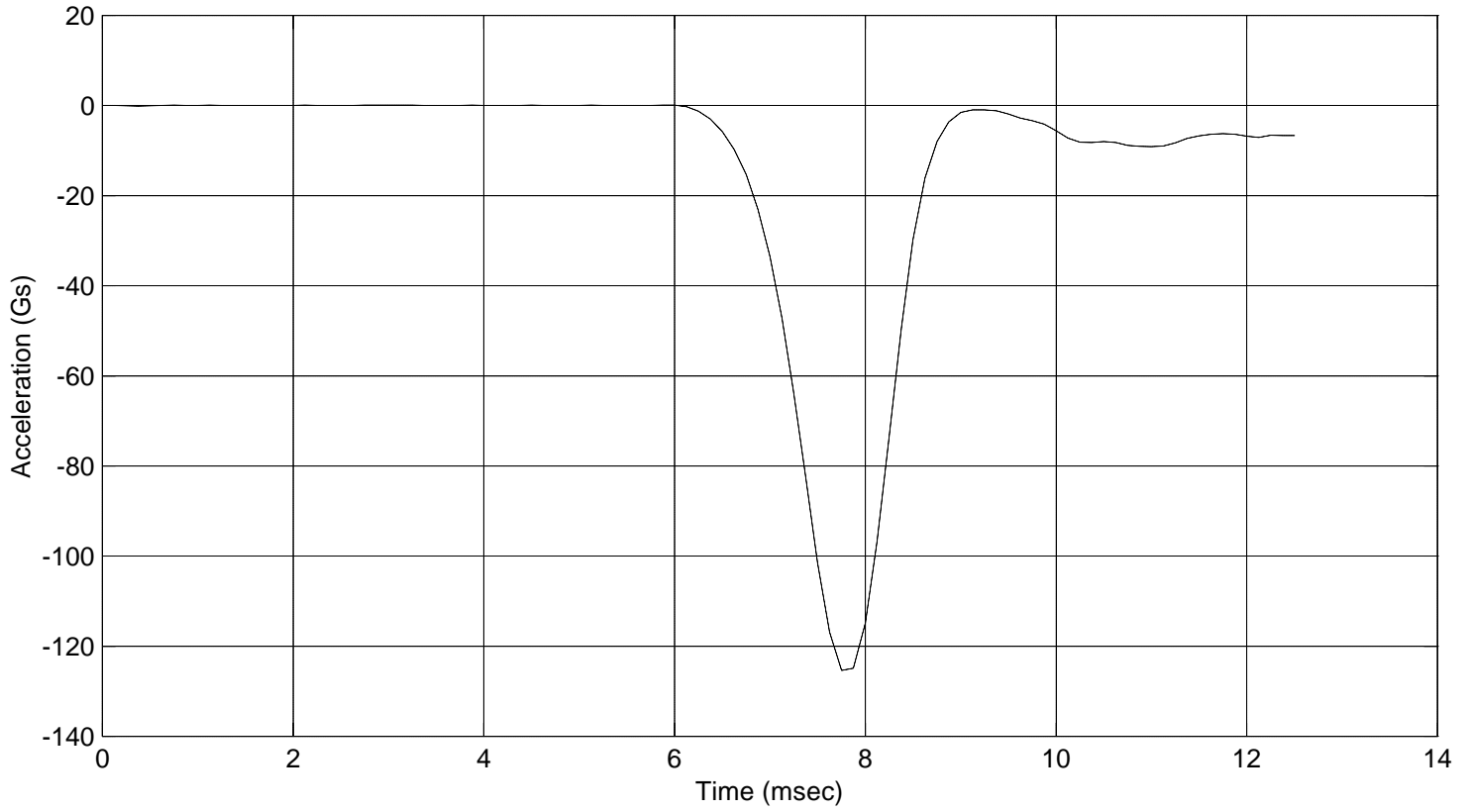
Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	32.0
PEAK RESULTANT ACCELERATION (Gs)	210 - 260	237.7
PEAK LATERAL ACCELERATION (Gs)	Not to Exceed 10	6.9
UNIMODAL CRITERIA ABOVE 100 Gs (ms)	0.9 - 1.5	1.3

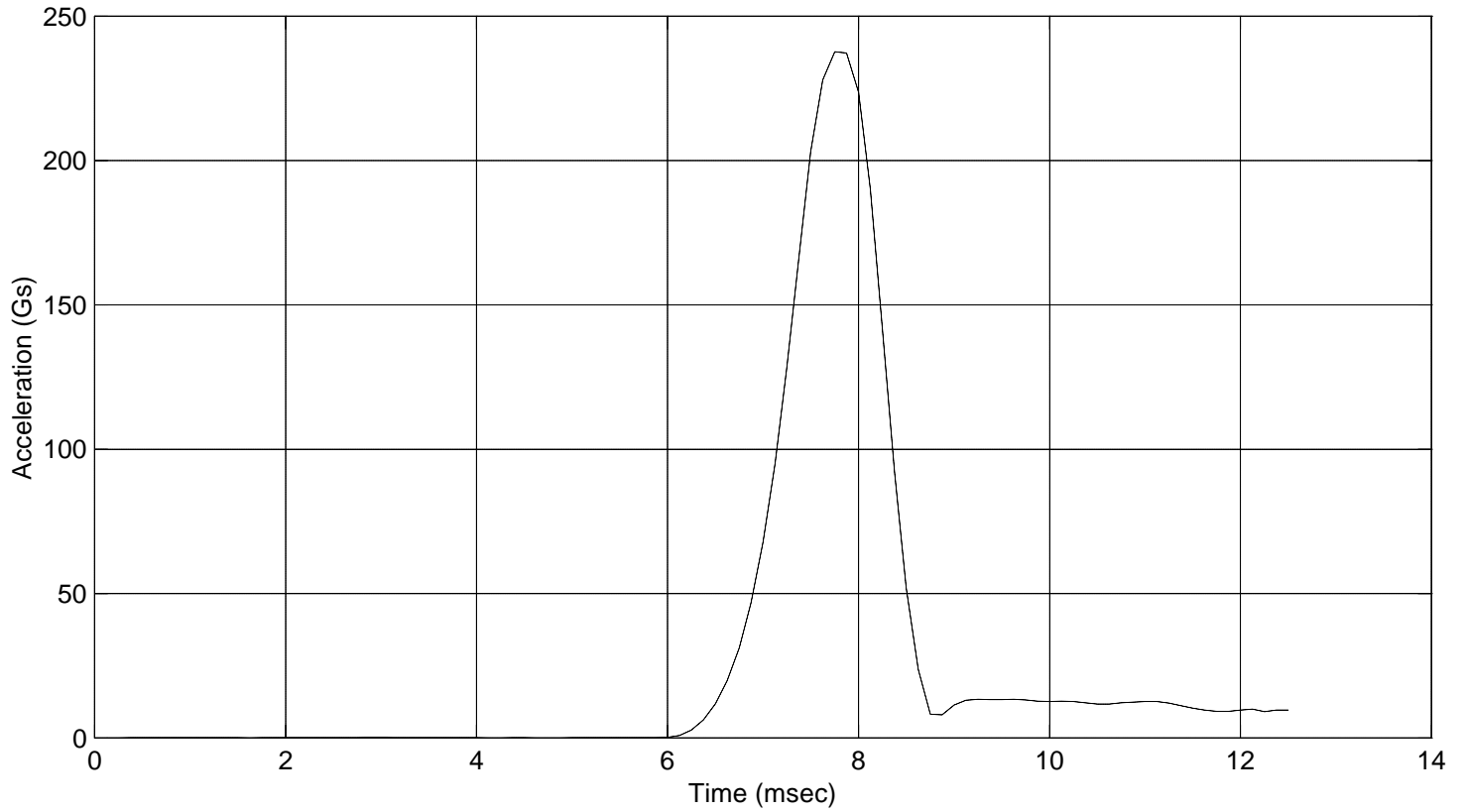
REMARKS: None



Head Z



Head Resultant



**ABDOMINAL COMPRESSION TEST
POST TEST**

(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 268 Sequential Test Number: 1
Date: 4/3/01 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.1
RELATIVE HUMIDITY (%)	10 - 70	31.0
FORCE @ 13 mm (N)	104 - 162	110.3
FORCE @ 19 mm (N)	163 - 221	176.1
FORCE @ 25 mm (N)	222 - 280	250.4
FORCE @ 33 mm (N)	325 - 391	370.0

REMARKS: None

Dummy S/N 268

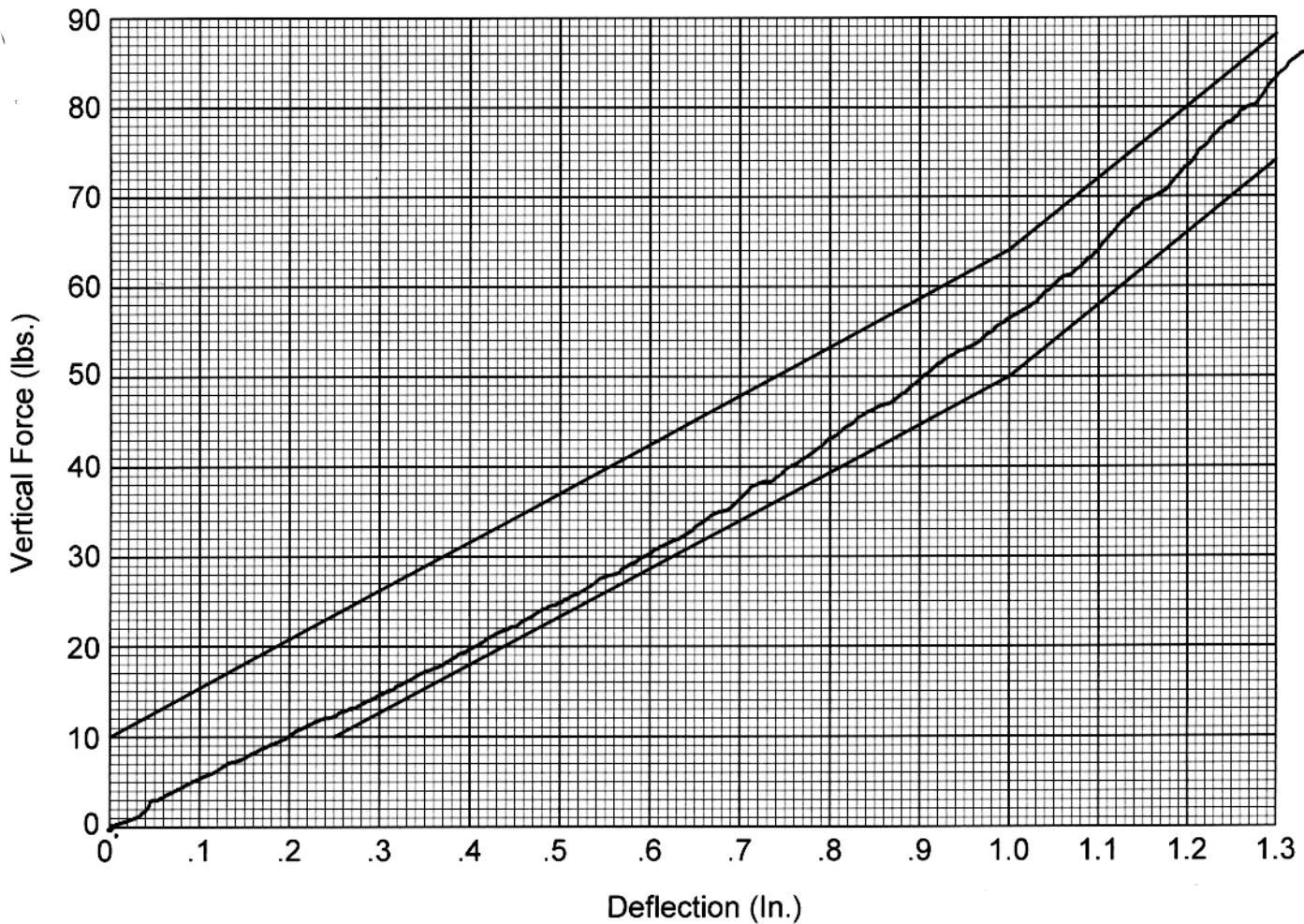
W/A _____

Date 4-3-2001

Performed By [Signature]

Temp. 70°

Humidity 31%



**Hybrid II
Abdomen Static Press**

LUMBAR FLEXION TEST
POST TEST
(Test not required for SID certification)

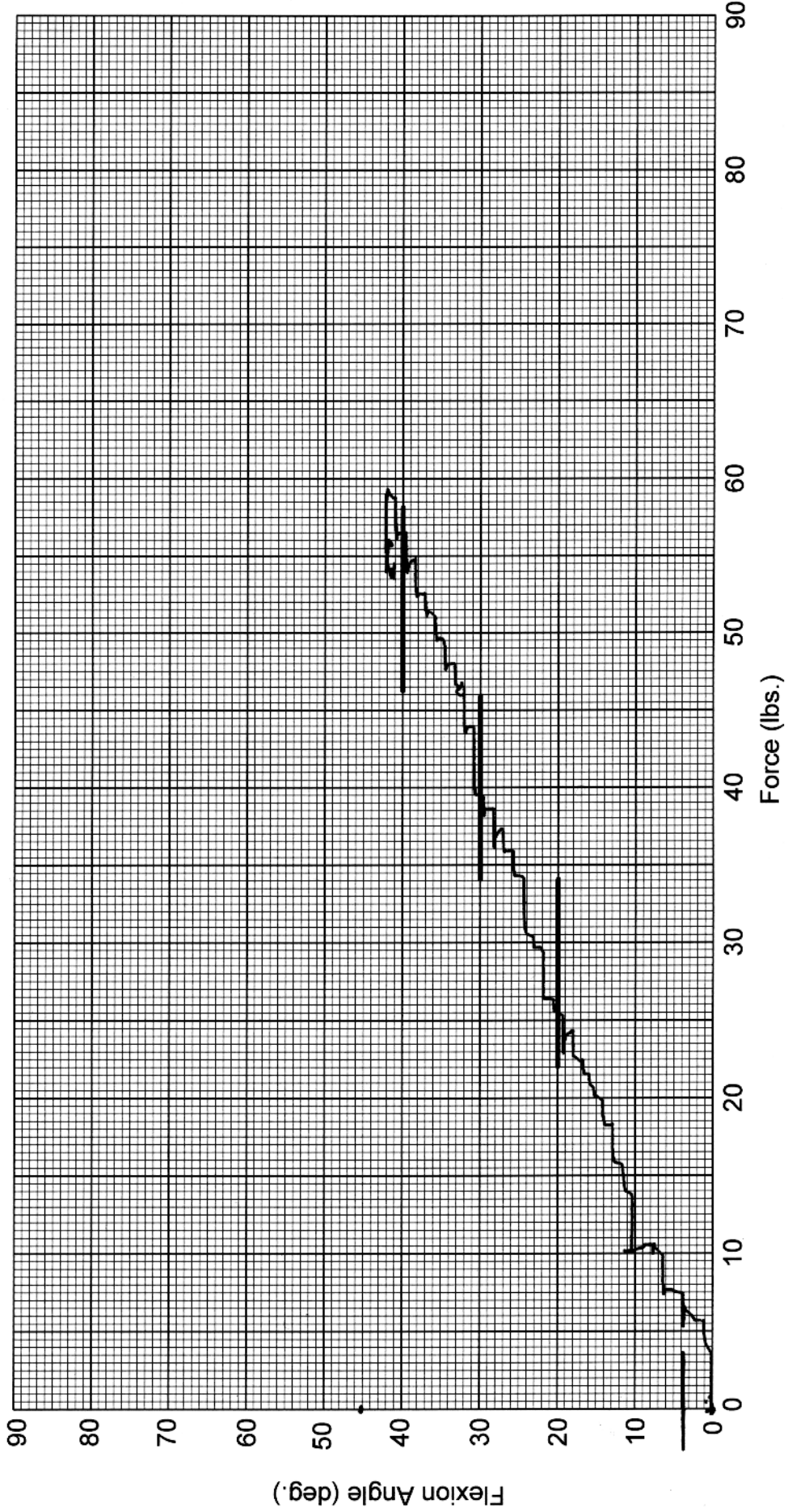
CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 268 Sequential Test Number: 1
Date: 4/3/01 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.1
RELATIVE HUMIDITY (%)	10 - 70	31.0
FORCE @ 0° (N)	0 - 26.7	0.0
FORCE @ 20° (N)	97.8 - 151.2	113.4
FORCE @ 30° (N)	151.2 - 204.6	175.7
FORCE @ 40° (N)	204.6 - 258	251.3
RETURN ANGLE	12° max.	3.8°

REMARKS: None

Dummy S/N 268
 W/A _____
 Date 4-3-2001
 Performed By [Signature]
 Temp. 70°
 Humidity 31%



Hybrid II Lumbar Spine Flexion Test

POST TEST DUMMY INSPECTION LIST

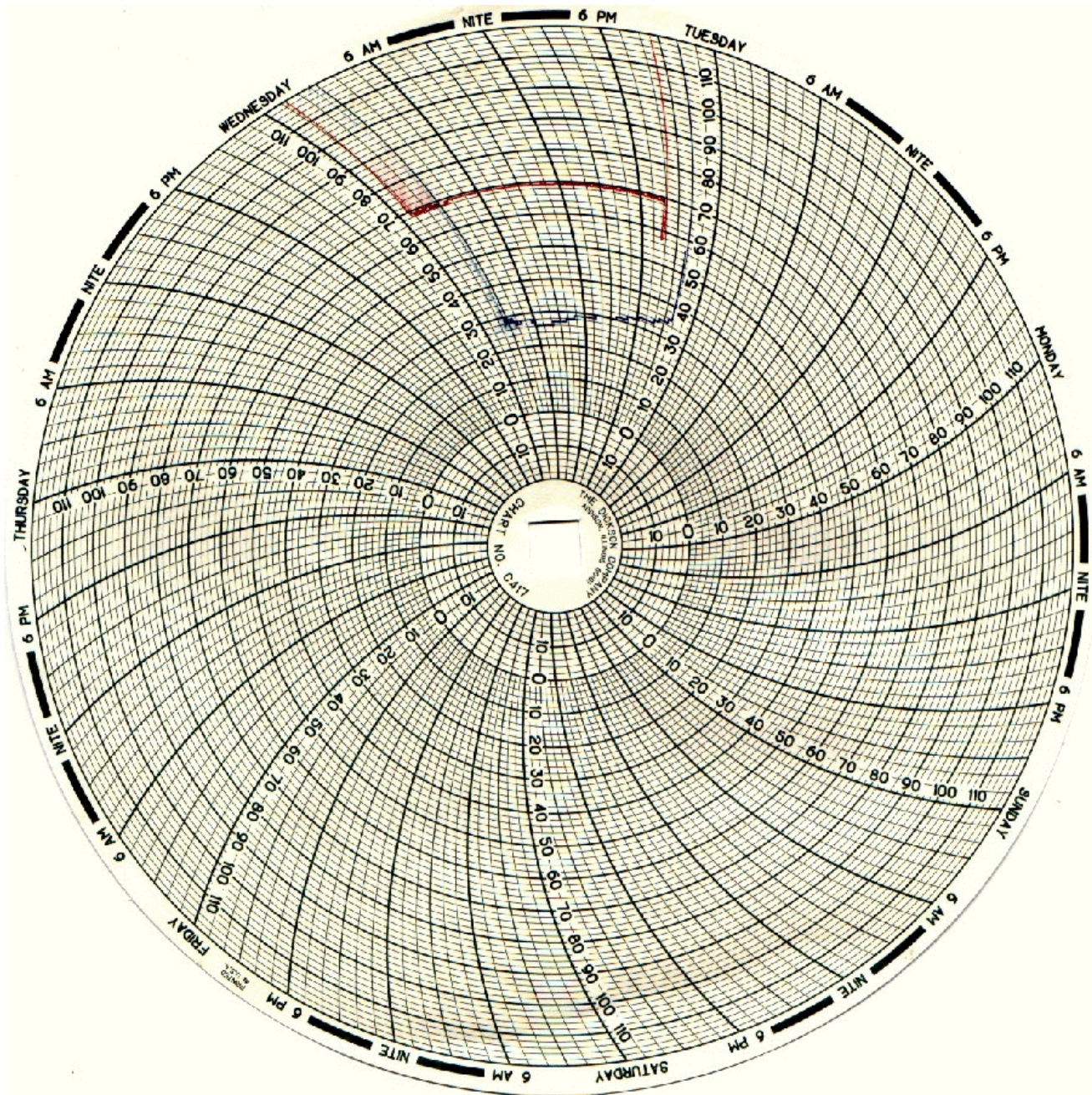
CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 268 Sequential Test Number: 1
 Date: 4/4/01 Laboratory Technician: B. Swiecicki

PART	ITEMS CHECKED	COMMENTS
SKIN	VISUAL INSPECTION	OK
HEAD	VISUAL, BALLAST, ACCELEROMETER MOUNT	OK
NECK	VISUAL, CABLE TORQUE	OK
SPINE BOX	VISUAL, BALLAST, WELDMENT, ACCELEROMETER MOUNT	OK
RIB CAGE	VISUAL, MEASURE, STIFFENERS	OK
STERNUM	VISUAL	OK
LUMBAR SPINE	VISUAL	OK
ABDOMEN	VISUAL	OK
PELVIS	VISUAL, PALPATE, ACCELEROMETER MOUNT	OK
UPPER LEGS	VISUAL	OK
KNEES	VISUAL, STOPS, INSERTS	OK
LOWER LEGS	VISUAL, RANGE OF MOTION	OK
ANKLES	VISUAL, RANGE OF MOTION	OK
FEET	VISUAL, RANGE OF MOTION	OK
JOINTS	1 TO 2 g RANGE	OK
OTHER	NONE	-

REMARKS: None

TEMPERATURE TRACE



APPENDIX D

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

SID INSTRUMENTATION

FRONT SID NO.: 026			
	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
HEAD AX	AC-J33019	ENDEVCO	11/30/00
HEAD AY	AC-J32782	ENDEVCO	11/30/00
HEAD AZ	AC-J33127	ENDEVCO	11/30/00
UPPER RIB	AC-J32787	ENDEVCO	11/30/00
LOWER RIB	AC-J33156	ENDEVCO	11/30/00
LOWER SPINE	AC-P15534	ENDEVCO	2/23/01
PELVIS	AC-P16585	ENDEVCO	2/23/01
UPPER RIB REDUNDANT	AC-J33020	ENDEVCO	11/30/00
LOWER RIB REDUNDANT	AC-J32791	ENDEVCO	11/30/00
LOWER SPINE REDUNDANT	AC-P15526	ENDEVCO	2/23/01
PELVIS REDUNDANT	AC-P16576	ENDEVCO	2/23/01

REAR SID NO.: 268			
	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
HEAD AX	AC-J32186	ENDEVCO	3/1/01
HEAD AY	AC-J32098	ENDEVCO	3/1/01
HEAD AZ	AC-J32383	ENDEVCO	3/1/01
UPPER RIB	AC-P14388	ENDEVCO	3/1/01
LOWER RIB	AC-P17236	ENDEVCO	3/1/01
LOWER SPINE	AC-J31060	ENDEVCO	3/1/01
PELVIS	AC-J33032	ENDEVCO	3/1/01
UPPER RIB REDUNDANT	AC-P12587	ENDEVCO	3/1/01
LOWER RIB REDUNDANT	AC-P16625	ENDEVCO	3/1/01
LOWER SPINE REDUNDANT	AC-J31050	ENDEVCO	3/1/01
PELVIS REDUNDANT	AC-P16593	ENDEVCO	3/1/01

REMARKS: None

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

VEHICLE AND MDB INSTRUMENTATION

	VEHICLE AND MDB INSTRUMENTS		
	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
RIGHT FRONT SILL (X)	AC-AP064	ENDEVCO	9/18/00
RIGHT FRONT SILL (Y)	AC-B10955	ENDEVCO	9/18/00
RIGHT FRONT SILL (Z)	AC-BB14	ENDEVCO	9/18/00
RIGHT REAR SILL (X)	AC-J32174	ENDEVCO	10/5/00
RIGHT REAR SILL (Y)	AC-J32838	ENDEVCO	11/30/00
RIGHT REAR SILL (Z)	AC-J32143	ENDEVCO	11/30/00
REAR FLOORPAN ABOVE AXLE (X)	AC-B11407	ENDEVCO	2/14/01
REAR FLOORPAN ABOVE AXLE (Y)	AC-B10827	ENDEVCO	2/14/01
REAR FLOORPAN ABOVE AXLE (Z)	AC-B11408	ENDEVCO	2/14/01
LEFT REAR SILL (Y)	AC-Y171	ICS	2/20/01
LEFT FRONT SILL (Y)	AC-B10951	ENDEVCO	9/28/00
LEFT FRONT DOOR CENTERLINE (Y)	AC-P18743	ENDEVCO	2/21/01
RIGHT REAR SEAT OCCUPANT COMP. (Y)	AC-D32	ICS	2/15/01
MID REAR OF LEFT FRONT DOOR (Y)	-	-	-
LEFT FRONT DOOR UPPER C\L (Y)	AC-P18728	ENDEVCO	2/21/01
MID REAR OF LEFT REAR DOOR (Y)	AC-P19343	ENDEVCO	2/21/01
LEFT REAR DOOR UPPER C\L (Y)	AC-P18741	ENDEVCO	2/21/01
LOWER LEFT B- PILLAR (Y)	AC-B11073	ENDEVCO	2/15/01
MIDDLE LEFT B-PILLAR (Y)	AC-P16964	ENDEVCO	10/13/00
LOWER LEFT A-PILLAR (Y)	AC-AP1A2	ENDEVCO	12/10/00
UPPER LEFT A-PILLAR (Y)	AC-P16583	ENDEVCO	10/6/00
FRONT SEAT TRACK (Y)	AC-P16587	ENDEVCO	10/6/00
REAR SEAT TRACK (Y)	AC-D23	ICS	10/15/00
VEHICLE CG (X)	AC-J33021	ENDEVCO	1/16/01
VEHICLE CG (Y)	AC-J33030	ENDEVCO	1/16/01
VEHICLE CG (Z)	AC-J27941	ENDEVCO	2/15/01
MDB CG (X)	AC-C16682	ENDEVCO	2/28/01
MDB CG (Y)	AC-CJ54	ENDEVCO	2/28/01
MDB CG (Z)	AC-GK12	ENDEVCO	2/28/01
MDB REAR FRAME MEMBER (X)	AC-CX05	ENDEVCO	2/28/01
MDB REAR FRAME MEMBER (Y)	AC-C16685	ENDEVCO	2/28/01

REMARKS: None