

REPORT NO. MCW-DOT-03SN03

**NEW CAR ASSESSMENT PROGRAM
SIDE IMPACT TESTING**

TOYOTA MOTOR CORPORATION
2003 TOYOTA TACOMA PRERUNNER DOUBLE CAB 4X2

NHTSA NUMBER: M3 5111

MEDICAL COLLEGE OF WISCONSIN
5000 WEST NATIONAL AVENUE
MILWAUKEE, WI 53295



08 January 2003

FINAL REPORT

U.S. DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration
Rulemaking
Office of Crashworthiness Standards
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Washington, DC 20590

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Prepared By:

Michael B. Schlick, Project Engineer

Approved By:

Frank A. Pintar, Facility Director

Approval Date:

FINAL REPORT ACCEPTANCE BY:

Accepted By:

Acceptance Date:

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16. Abstract A 55/28 km/h 90° Impact Moving Deformable Barrier NCAP Side Impact Test was conducted on the subject 2003 Toyota Tacoma Prerunner in accordance with the specifications of the Office of Crashworthiness Standards Test Procedure for generation of consumer information on vehicle side crash protection. This test was conducted at the Medical College of Wisconsin Vehicle Crashworthiness Lab in Milwaukee, Wisconsin, on 08 January 2003. The impact velocity of the Moving Deformable Barrier (MDB) was 62.0 km/h, and the ambient temperature at the struck side (driver's) of the target vehicle at the time of impact was 21.5° C. The target vehicle post-test maximum crush was 469 mm at Level 1. The test vehicle's performance follows: <table border="1"> <thead> <tr> <th></th><th><u>DRIVER</u></th><th><u>PASSENGER</u></th></tr> </thead> <tbody> <tr> <td>Left Upper Rib Acceleration G</td><td>38.3</td><td>38.3</td></tr> <tr> <td>Left Lower Rib Acceleration G</td><td>33.2</td><td>40.7</td></tr> <tr> <td>Lower Spine Acceleration G</td><td>36.1</td><td>46.0</td></tr> <tr> <td>Thoracic Trauma Index TTI</td><td>37</td><td>43</td></tr> <tr> <td>Pelvis Acceleration G</td><td>82</td><td>54</td></tr> </tbody> </table> The 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. The test vehicle exceeded the roll portion of the FMVSS301 fuel system integrity test requirements.					<u>DRIVER</u>	<u>PASSENGER</u>	Left Upper Rib Acceleration G	38.3	38.3	Left Lower Rib Acceleration G	33.2	40.7	Lower Spine Acceleration G	36.1	46.0	Thoracic Trauma Index TTI	37	43	Pelvis Acceleration G	82	54
	<u>DRIVER</u>	<u>PASSENGER</u>																			
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17. Key Words New Car Assessment Program (NCAP) Side Impact MDB Side Impact Dummy (SID H3) NHTSA No. M3 5111		18. Distribution Statement <u>Copies of this report are available from:</u> National Highway Traffic Safety Administration Rulemaking Room 5313(NVS-111) 400 Seventh Street, S.W. Washington, D.C. 20590																			
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SECTION 1

PURPOSE AND TEST PROCEDURE

This side impact test was part of the FY03 New Car Assessment Program Side Impact Test Program, sponsored by the National Highway Traffic Safety Administration (NHTSA), under Contract No. DTNH22-01-D-02003. The purpose of this test was to evaluate side impact protection of a 2003 Toyota Tacoma Prerunner Double Cab 4X2. This side impact test was conducted in accordance with the Office of Crashworthiness Standard's Laboratory Test Procedure dated May 1999.

The Medical College of Wisconsin does not endorse or certify products. The manufacturer's name appears solely for identification purposes only.

SECTION 2

SUMMARY OF SIDE IMPACT TEST

A 2003 Toyota Tacoma Prerunner Double Cab 4X2 was impacted on the left or driver's side by a Moving Deformable Barrier (MDB) that was moving forward in a 27° crabbed position to the tow road guidance system at a velocity of 62.0 km/h (38.5 mph). The target vehicle was stationary and positioned at an angle of 63° to the line of forward motion. The side impact test was conducted by the Medical College of Wisconsin in Milwaukee, Wisconsin, on 08 January 2003.

Two restrained Side Impact Hybrid III Dummies (SID H3's) were placed in the driver and left rear designated seating positions, according to instructions specified in the OCWS Side Impact Laboratory Test Procedure, dated May 1999. The side impact event was documented by four high-speed filmcameras, five high-speed video cameras, and one real-time camera. Camera locations and other pertinent camera information can be found in this report.

The SID H3s were instrumented with the following accelerometers.

1. Left Upper Rib (LUR) uniaxial accelerometer (Y-direction)
2. Left Lower Rib (LLR) uniaxial accelerometer (Y-direction)
3. Lower Thoracic Spine (T₁₂) uniaxial accelerometer (Y-direction)
4. Pelvic (PEV) section uniaxial accelerometer (Y-direction)
5. Head Center of Gravity triaxial accelerometers (X-, Y-, and Z-direction)
6. Upper Neck (NKU) six axis load cell (Fx, Fy, Fz, Mx, My, and Mz)

Pre- and post-test photographs of the test vehicle, the MDB, and the side impact dummies (SID H3s) are included in Appendix A. Appendix B contains the vehicle, MDB, and dummy response data traces. A summary of the side impact dummy configuration and performance verification test data is shown in Appendix C. Dummy and vehicle calibration data can be found in Appendix D of this report.

The following table summarizes the results of this test.

Injury Criteria	Front SID H3	Rear SID H3
TTI (G)	37	43
PELVIS (G)	82	54
HIC36	416.1	129.8

The vehicle's airbag information is summarized in the following table

	Frontal	Side-Torso	Side-Torso/Head	Side-Head
Driver	Yes-Steering wheel	None	None	None
Front Pass.	Yes- Dashboard	None	None	None
Left Rear Passenger	None	None	None	None

SECTION 3
SUMMARY OF TEST RESULTS

DATA SHEET NO. 1

GENERAL VEHICLE TEST PARAMETER DATA

TEST VEHICLE INFORMATION

Year/ Make/ Model/ Body Style				<u>2003 Toyota Tacoma Prerunner Double Cab 4X2</u>			
Vehicle NHTSA NO.				<u>M3 5111</u>	VIN	<u>5TEGN92N23Z173729</u>	
Vehicle Body Color				<u>Metallic Grey</u>	Build Date	<u>November 2002</u>	
Engine Data	<u>6</u>	Cylinders	<u>CID</u>	<u>3.4</u>	Liter	<u>cc</u>	
Placement	<u>X</u>	Longitudinal	<u>Lateral</u>				
Transmission	<u>4</u>	Speed	<u>Manual</u>	<u>X</u>	Automatic	<u>X</u>	Overdrive
Final Drive	<u>X</u>	Rear Wheel Drive	<u>Front Wheel Drive</u>	<u>Four Wheel Drive</u>			
Odometer Reading	<u>11</u>	Date	<u>19 December 2002</u>				
Options	<u>X</u>	A/C	<u>X</u>	Power Steering	<u>X</u>	Power Brakes	<u>X</u>
	<u>X</u>	Cruise Control	<u>X</u>	Tilt Wheel	<u>X</u>	Power Locks	

DATA FROM TIRE PLACARD:

Tire Pressure (at Capacity)	<u>26</u>	PSI Front
	<u>26</u>	PSI Rear
Recommended Tire Size	<u>P265 70R16</u>	
Tires on Test Vehicle	<u>P265 70R16</u>	Manufacturer <u>BF Goodrich</u>

TEST VEHICLE AIRBAG INFORMATION:

	<u>Frontal</u>	<u>Side-Torso</u>	<u>Side-Torso/Head</u>	<u>Side-Head</u>
Driver	Yes- Steering Wheel	None	None	None
Front Passenger	Yes-Dashboard	None	None	None
Left Rear Passenger	None	None	None	None

VEHICLE CAPACITY DATA:

Number of Occupants:	<u>2</u>	Front	<u>3</u>	Rear	<u>3rd Seat</u>	<u>5</u>	Total
Type of Front Seats	<u>X</u>	Bucket		Bench	<u>Split Bench</u>		
Type of Front Seat Back		Fixed	<u>X</u>	Adjustable w/	<u>X</u>	Lever	<u>Knob</u>
Vehicle Max Capacity Loading			<u>700.8</u>	kg	(A)		
No. of Occupants X 68.04 kg			<u>340.2</u>	kg	(B)		
Cargo Capacity (A) – (B)			<u>360.6</u>	kg			

TEST VEHICLE DELIVERED WEIGHT WITH MAXIMUM FLUIDS:

Left Front	=	<u>465.8</u>	kg	Left Rear	=	<u>372.9</u>	kg
Right Front	=	<u>460.8</u>	kg	Right Rear	=	<u>349.6</u>	kg
TOTAL FRONT	=	<u>926.6</u>	kg	TOTAL REAR	=	<u>722.5</u>	kg
% Total Weight	=	<u>56.2</u>	%	%Total Weight	=	<u>43.8</u>	%
TOTAL WEIGHT	=	<u>1649.1</u>	kg				

DATA SHEET 1 (continued)**GENERAL VEHICLE TEST PARAMETER DATA**Vehicle: 2003 Toyota Tacoma PrerunnerNHTSA No. M3 5111**CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:**

Total Test Vehicle Delivered Weight with Max Fluids	=	<u>1649.3</u>	kg	(A)
Maximum Cargo Carrying Capacity of Test Vehicle	=	<u>136.1</u>	kg	(B)
Weight of (2) instrumented SID H3's	=	<u>161.5</u>	kg	(C)
TEST VEHICLE TARGET WEIGHT	=	<u>1946.9</u>	kg	(A+B+C)

FULLY LOADED TEST VEHICLE (UDVW + 1 OR 2 SID H3(s) + CARGO)

Left Front	=	<u>499.0</u>	kg	Left Rear	=	<u>501.7</u>	kg
Right Front	=	<u>486.7</u>	kg	Right Rear	=	<u>459.5</u>	kg
TOTAL FRONT	=	<u>985.7</u>	kg	TOTAL REAR	=	<u>961.2</u>	kg
% Total Weight	=	<u>50.6</u>	%	%Total Weight	=	<u>49.4</u>	%
TOTAL WEIGHT	=	<u>1946.9</u>	kg				

AS TESTED WEIGHT OF TEST VEHICLE (UDVW+ SID H3(s)+CARGO+EQUIPMENT & INSTRUMENTATION)

Left Front	=	<u>494.9</u>	kg	Left Rear	=	<u>498.1</u>	kg
Right Front	=	<u>487.7</u>	kg	Right Rear	=	<u>457.3</u>	kg
TOTAL FRONT	=	<u>982.6</u>	kg	TOTAL REAR	=	<u>955.4</u>	kg
% Total Weight	=	<u>50.7</u>	%	%Total Weight	=	<u>49.3</u>	%
TOTAL WEIGHT	=	<u>1938.0</u>	kg				

TEST VEHICLE ATTITUDE (all dimensions in millimeters):**AS DELIVERED**

Left Front	<u>924</u>	Right Front	<u>926</u>	Left Rear	<u>952</u>	Right Rear	<u>953</u>
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FULLY LOADED

Left Front	<u>907</u>	Right Front	<u>920</u>	Left Rear	<u>901</u>	Right Rear	<u>917</u>
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AS TESTED

Left Front	<u>909</u>	Right Front	<u>921</u>	Left Rear	<u>904</u>	Right Rear	<u>921</u>
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Test Vehicle Wheelbase 3117 mmAs Tested CG = 1537 mm rearward of front wheel centerline**TOTAL VEHICLE LENGTH:**

Right Side	=	<u>4917</u>	mm
Left Side	=	<u>4918</u>	mm
Centerline	=	<u>5152</u>	mm

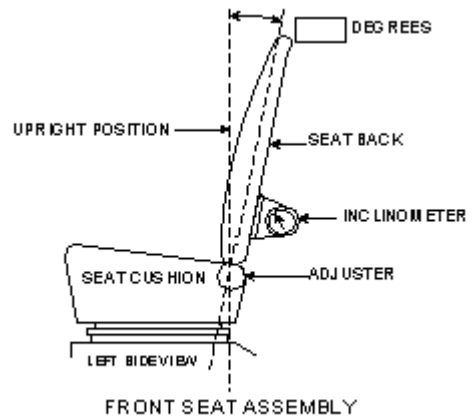
DATA SHEET 1 (continued)

GENERAL TEST VEHICLE PARAMETER DATA

Vehicle: 2003 Toyota Tacoma Prerunner

NHTSA No. M3 5111

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



FRONT SEAT CUSHION PLACEMENT:

Total Length of Adjustment Travel		195 mm	
Total Number of Detents	14	Test Position	8

FRONT SEAT BACK ADJUSTMENT:

Seat Back Angle	<u>4.5 degrees relative to side sill measured at head rest post</u>
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REAR SEAT POSITION:

Total Length Fore/Aft Adjustment	<u>N/A</u>
Seat Back Adjustment Position	<u>N/A</u>

ADJUSTABLE STEERING COLUMN POSITION:

Mid-Position	
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WINDOW POSITIONS:

Left Front	<u>Up</u>	Right Front	<u>Down</u>
Left Rear	<u>Up</u>	Right Rear	<u>Down</u>

AMOUNT OF STODDARD SOLVENT IN FUEL TANK:

Fuel System usable Capacity	<u>70.0 L</u>	
Test Volume	<u>65.1 L</u>	<u>93% usable capacity</u>

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

Wheelbase	<u>3117 mm</u>	
Impact Point is	<u>508 mm rearward</u>	of front axle centerline
Actual Impact Point is	<u>482 mm rearward</u>	of front axle centerline

DATA SHEET 2
TEST VEHICLE SUMMARY

VEHICLE IDENTIFICATION:

Year/Make/Model/Body Style	2003 Toyota Tacoma Prerunner Double Cab 4X2		
Body Color	Metallic Grey	VIN	5TEGN92N23Z173729
NHTSA No.	M3 5111	Test Date	08 January 2003
Overall Length	5152 mm	Overall Width	1655 mm

VEHICLE TEST WEIGHT (Pre-Test):

Left Front	=	494.9	kg	Left Rear	=	498.1	kg
Right Front	=	487.7	kg	Right Rear	=	457.3	kg
TOTAL FRONT	=	982.6	kg	TOTAL REAR	=	955.4	kg
% Total Weight	=	50.7	%	%Total Weight	=	49.3	%
TOTAL WEIGHT	=	1938.0	kg				
Wheelbase				=		3117	mm
Longitudinal CG from Center of Front Axle				=		1537	mm
Impact Angle with Respect to Impactor				=		90	

ACTUAL IMPACT POINT

Actual Impact Point is 26 mm forward of nominal impact reference line (lateral)

Actual Impact Point is 8 mm below nominal impact line (vertical)

MAXIMUM EXTERIOR STATIC CRUSH:

1. LEVEL 1	(478 mm above ground)	=	469	mm
2. LEVEL 2	(798 mm above ground)	=	424	mm
3. LEVEL 3	(824 mm above ground)	=	411	mm
4. LEVEL 4	(1150 mm above ground)	=	296	mm
5. LEVEL 5	(1655 mm above ground)	=	195	mm

Maximum Post-Test intrusion at Level 1 is 469 mm

OCCUPANTS

	<u>Left Front Passenger</u>	<u>Left Rear Passenger</u>
Dummy Identification	SID H3/058	SID H3/056
Restraints Used	3-Point Belt	3-Point Belt

INSTRUMENTATION:

Number of Vehicle Data Channels		25
Number of Cameras	Onboard	3
	Off board	4
	Real Time	1
	MDB	2
	TOTAL	10

DATA SHEET NO. 3

MOVING DEFORMABLE BARRIER (MDB) SUMMARY

Vehicle: 2003 Toyota Tacoma Prerunner

NHTSA No. M3 5111

MDB FACE MANUFACTURER AND SERIAL NUMBER:

Plascore Serial Number 088C1002-2 143A0802

POSITION OF IMPACT (MDB) ON TOW SYSTEM

Crabbed 27° to the left

MDB DETAILS:

Overall Width of Framework Carriage	=	<u>1250 mm</u>
Overall Length of MDB (incl. honeycomb impact face)	=	<u>4116 mm</u>
Wheelbase of Framework Carriage	=	<u>2578 mm</u>
Tread of Framework Carriage (Front & Rear)	=	<u>1880 mm</u>
C.G. Location Rearward of Front Axle	=	<u>1109.3 mm</u>
C.G. Location From Center Line	=	<u>-1.9 mm</u>
C.G. Location Above Ground Level	=	<u>477.2 mm</u>

MDB WEIGHT:

Left Front	=	<u>495.2</u>	kg	Left Rear	=	<u>184.8</u>	kg
Right Front	=	<u>278</u>	kg	Right Rear	=	<u>399.2</u>	kg
TOTAL FRONT	=	<u>773.2</u>	kg	TOTAL REAR	=	<u>584</u>	kg
% Total Weight	=	<u>57.0</u>	%	%Total Weight	=	<u>43.0</u>	%
TOTAL WEIGHT	=	<u>1357.2</u>	kg				

MDB IMPACT:

Impact Angle (MDB C/L to Target Vehicle)		<u>270°</u>	
Impact Speed	Primary	<u>62.0 km/h</u>	<u>38.5 mph</u>
	Secondary	<u>61.8 km/h</u>	<u>38.4 mph</u>
	On-Board	<u>62.0 km/h</u>	<u>38.5 mph</u>

MAXIMUM STATIC CRUSH OF HONEYCOMB IMPACT FACE:

1. Row A Center of Bumper	=	<u>126</u>	mm
2. Row B Top of Bumper	=	<u>151</u>	mm
3. Row C Mid-Level	=	<u>157</u>	mm
4. Row D Top of Stack	=	<u>181</u>	mm

INSTRUMENTATION:

Number of MDB Data Channels	=	<u>5</u>
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DATA SHEET NO. 4**POST-TEST OBSERVATIONS**Vehicle: 2003 Toyota Tacoma PrerunnerNHTSA No. M3 5111**VISIBLE DUMMY CONTACT POINTS:**

	<u>LEFT FRONT SID H3</u>	<u>LEFT REAR SID H3</u>
Head	Back of head to B-Pillar, Side of head to driver side window	Back and top of head to C-Pillar
Upper Torso	To left front door panel at window sill	To left rear door panel below window sill
Lower Torso	To left front door panel at arm rest	To left rear door panel at arm rest
Left Knee	To left front door panel 275 mm below window sill	To left rear door panel and B-Pillar approximately 190 mm below window sill
Left Leg	To left front door panel just below arm rest	To left front door panel in front of arm rest

DOOR OPENING:

	<u>LEFT DOOR</u>	<u>RIGHT DOOR</u>
Front	Closed/latched/inoperable	Closed/latched/operable
Rear	Closed/latched/inoperable	Closed/latched/operable

MDB DISTANCE FROM TARGET IMPACT POINT:

Horizontal	<u>8 mm below</u>	Vertical	<u>26 mm forward</u>
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ARM REST LOCATIONS:

Front	<u>190 mm below arm rest</u>
Rear	<u>215 mm below arm rest</u>

SEAT MOVEMENT:

Front	<u>Seat cushion crushed 20 mm; seat back crushed 30 mm</u>
Rear	<u>Seat cushion crushed 100 mm; seat back crushed 20 mm</u>

GLAZING DAMAGE

Windshield	<u>None</u>
Window	<u>None</u>

PILLAR PERFORMANCE:

<u>None noted</u>

SILL SEPARATION

<u>None noted</u>

AIRBAG DEPLOYMENT STATUS:

	<u>DRIVER</u>	<u>FRONT PASSENGER</u>	<u>REAR PASSENGER</u>
<u>FRONT</u>	<u>Did not deploy</u>	<u>Did not deploy</u>	<u>N/A</u>
<u>SIDE</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>

OTHER NOTABLE IMPACT EFFECTS:

<u>None noted</u>

SECTION 4
OCCUPANT AND VEHICLE INFORMATION

DATA SHEET 5

SID H3 INSTRUMENTATION DATA

Vehicle: 2003 Toyota Tacoma Prerunner

NHTSA No. M3 5111

	Front Dummy ID Accelerations SID H3/058				Rear Dummy Accelerations ID SID H3 056			
	Max		Min		Max		Min	
	G's	msec	G's	msec	G's	msec	G's	msec
HEAD ACCELERATIONS								
Longitudinal (X)	20.4	137.9	-35.5	55.4	7.2	31.4	-23.1	74.6
Lateral (Y)	88.2	55.8	-10.6	44.6	52.1	50.7	-10.8	59.3
Vertical (Z)	38.4	54.1	-20.9	27.3	24.7	47.5	-21.6	76.1
Resultant (R)	98.0	55.2			55.5	49.0		
HIC36	416.1				129.8			
RIB ACCELERATIONS								
Upper Rib Lateral (Y)	38.3	50.0	-0.8	121.9	38.3	56.9	-1.3	166.9
Upper Rib Lateral (Y _R)	38.0	50.0	-0.6	128.1	38.1	56.9	-1.1	165.0
Lower Rib Lateral (Y)	33.2	48.8	-7.6	70.0	40.7	49.4	-2.6	84.4
Lower Rib Lateral (Y _R)	33.4	48.8	-8.3	70.0	39.8	48.8	-2.3	84.4
SPINE ACCELERATIONS								
Lower Lateral (Y)	36.1	41.9	-15.9	65.0	46.0	46.9	-5.0	79.4
Lower Lateral (Y _R)	35.1	33.1	-16.4	65.0	45.7	46.9	-5.3	79.4
PELVIS ACCELERATIONS								
Lateral (Y)	82.1	30.6	-23.0	56.9	53.8	37.5	-7.6	91.2
Lateral (Y _R)	81.4	31.2	-23.8	56.2	53.6	37.5	-7.6	91.9

REFERENCE:

Positive Direction -	Anterior/Posterior	+(X) = anterior
	Lateral	+(Y)= right
	Superior/Inferior	+(Z)= inferior
Negative Direction	Anterior/Posterior	-(X) = posterior
	Lateral	-(Y)= left
	Superior/Inferior	-(Z)= superior

All the above data (except head accelerations) has been filtered using FIR (Version 1.0; July 16, 1990)

Head Accelerations have been filtered at SAE Class 1000

Y_R denotes redundant Y-direction accelerometer

DATA SHEET 5 (continued)

SID H3 INSTRUMENTATION DATA

Vehicle: 2003 Toyota Tacoma Prerunner

NHTSA No. M3 5111

	Front Dummy Forces/Moments ID SID H3/058				Rear Dummy Forces/Moments SID H3/056s			
	Max		Min		Max		Min	
	N	msec	N	msec	N	msec	N	msec
NECK FORCES								
Longitudinal (X)	279.7	27.3	-377.0	61.8	436.1	83.0	-168.3	26.0
Lateral (Y)	274.0	125.2	-743.2	63.6	253.1	27.2	-1453.3	52.3
Vertical (Z)	717.0	43.3	-3729.7	60.6	264.7	15.4	-1927.3	52.0
NECK MOMENTS								
	Nm	msec	Nm	msec	Nm	msec	Nm	msec
Lateral Bending (X)	118.8	58.8	-19.5	120.2	*	*	*	*
Flexion/Extension (Y)	20.9	116.3	-33.1	59.0	5.0	27.2	-71.5	71.3
Rotation (Z)	6.7	83.8	-27.6	61.3	*	*	*	*

* Passenger MX & MZ data questionable

REFERENCE:

Upper neck load cell polarity follows the dummy manipulation table A-1 in the NHTSA Test Reference Guide version 5
Force

Fx positive response: Head rearward, chest forward
Fy positive response: Head leftward, chest rightward
Fz positive response: Head upward, chest downward

Moment

Mx positive response: Left ear to left shoulder
My positive response: Chin to sternum
Mz positive response: Chin to left shoulder

Neck forces have been filtered at SAE Class 1000

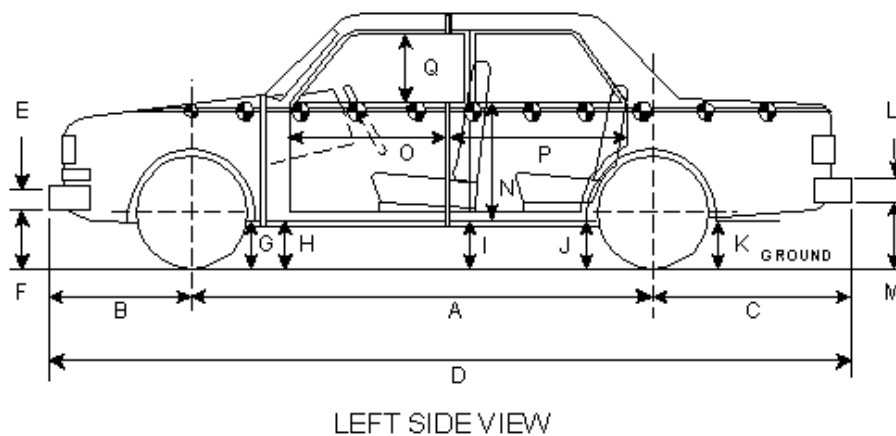
Neck moments have been filtered at SAE Class 600

DATA SHEET 6

VEHICLE PRE- AND POST- MEASUREMENTS

Vehicle: 2003 Toyota Tacoma Prerunner

NHTSA No. M3 5111



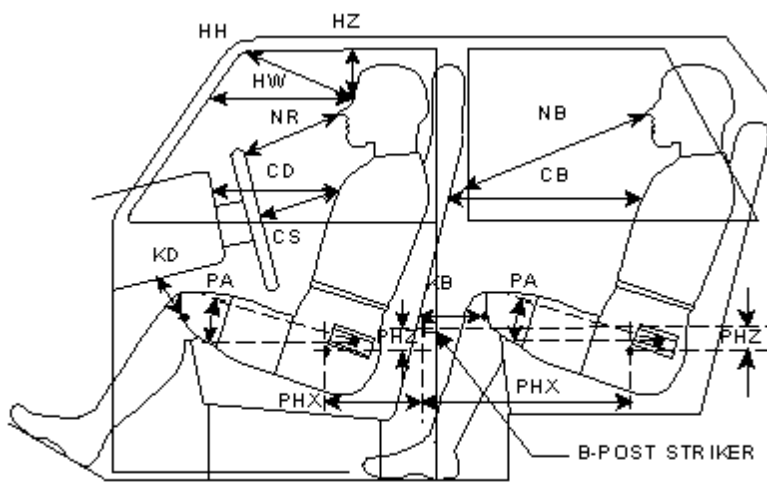
	PRE-TEST As delivered (mm)	PRE-TEST As Tested (mm)	POST-TEST (mm)	Δ CHANGE (mm)
A	3117	-	3079	-38
B	616	-	615	-1
C	1185	-	1144	-41
D	5152	-	5105	-47
E	250	-	250	0
F	470	468	470	2
G	473	451	457	6
H	489	467	494	27
I	509	479	498	19
J1	466	428	422	-6
J2	511	470	467	-3
K	595	540	605	65
L	166	-	166	0
M	556	492	497	5
N	681	-	656	-25
O	1153	-	1142	-11
P	799	-	742	-57
Q	489	-	490	1
R	4917	-	4906	-11
S	4918	-	4838	-80
T	1655	-	1378	-277

DATA SHEET 7

SID H3 LONGITUDINAL CLEARANCE DIMENSIONS

Vehicle: 2003 Toyota Tacoma Prerunner

NHTSA No. M3 5111



LEFT SIDE VIEW

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

	DRIVER ID: SID H3/058	LEFT REAR PASSENGER ID: SID H3/056
HH	496	-
HW	629	-
HZ	191	189
NR/NB	517	689
CD/CB	609	521
CS	386	-
KDL(KDA°)/KBL(KDA°)	195/19	162/27
KDR(KDA°)/KBR(KDA°)	209/25	162/27
PA°	23.2	24.9
PHX	2939	2076
PHZ	-98	-130

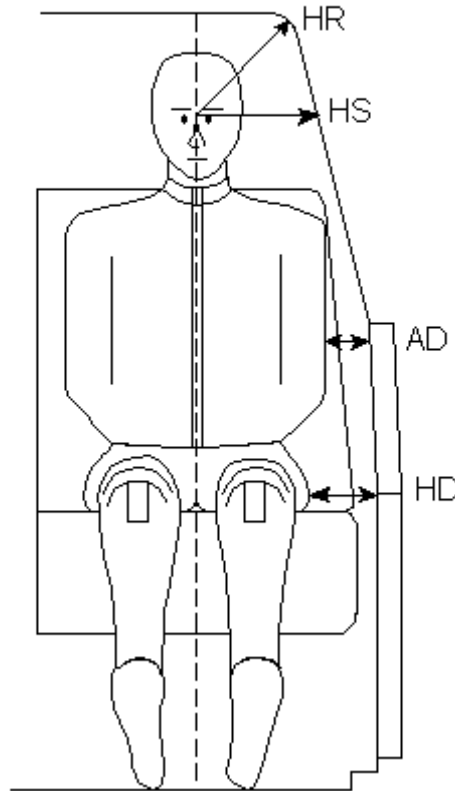
Note: PHX and PHZ use point L(Middle of Rear Bumper) as reference point

DATASHEET 8

SID H3 LATERAL CLEARANCE DIMENSIONS

Vehicle: 2003 Toyota Tacoma Prerunner

NHTSA No. M3 5111



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

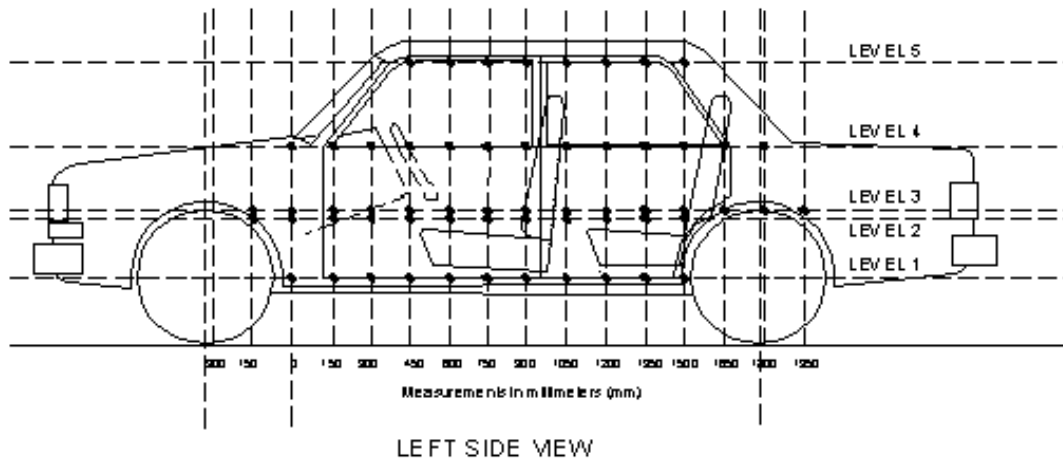
	DRIVER ID: SID H3/058		LEFT REAR PASSENGER ID: SID H3/056	
HR	200		199	
HS	297		299	
AD	Upper 95	Lower 109	Upper 82	Lower 100
HD	125		140	

DATA SHEET 9

VEHICLE SIDE MEASUREMENTS

Vehicle: 2003 Toyota Tacoma Prerunner

NHTSA No. M3 5111



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 as shown

Level 5 @ Window Top	1655 mm
Level 4 @ Window Sill	1150 mm
Level 3 @ Mid-Door	824 mm
Level 2 @ Occupant H-Point	798 mm
Level 1 @ Axle Centerline or Sill Top Height	478 mm

DATA SHEET 10

VEHICLE EXTERIOR CRUSH PROFILES – ALL LEVELS

Vehicle: 2003 Toyota Tacoma Prerunner

NHTSA No. M3 5111

Note: All Dimensions are in millimeters with a tolerance of ± 3 mm

				DISTANCE IN MILLIMETERS (mm) FROM IMPACT POINT																											
HEIGHT				-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	478	PRE								240	286	283	283	283	283	283	283	283	283	283	282	276	266	232							
		POST								420	582	646	688	709	726	740	747	752	752	748	739	737	523	316							
		CRUSH								180	296	363	405	426	443	457	464	469	469	465	457	461	257	84							
LEVEL 2	798	PRE	215						170	233	233	234	234	234	235	235	235	235	235	235	234	228	218	180						175	209
		POST	253						300	460	511	542	573	603	630	655	659	652	642	633	617	569	446	299	257					227	265
		CRUSH	38						130	227	278	308	339	369	395	420	424	417	407	398	382	335	218	81	77					52	56
LEVEL 3	824	PRE	225	185					180	231	232	232	233	233	233	234	234	233	234	234	234	232	226	219	215	174				174	174
		POST	259	242					301	436	493	522	551	580	610	636	641	644	627	614	603	563	444	299	292	245				229	275
		CRUSH	34	57					121	205	261	290	318	347	377	402	407	411	393	380	369	331	218	80	77	71				55	101
LEVEL 4	1150	PRE	333	327	323	317	311	306	302	300	299	297	295	294	295	295	295	297	300	299	300	298	297	299	298	298	297	298	299	300	
		POST	351	362	373	388	399	406	414	413	432	449	470	493	518	542	593	564	532	501	472	492	378	377	378	377	399	381	382		
		CRUSH	18	35	50	71	88	100	112	113	133	152	175	199	223	247	296	264	233	201	174	195	79	79	80	80	101	82	82		
LEVEL 5	1655	PRE											502	499	505	507	510	512	514	514	514	513	530								
		POST											629	633	650	657	669	679	678	687	693	698	725								
		CRUSH											127	134	145	150	159	167	164	173	179	185	195								

DATA SHEET 10 (continued)

VEHICLE EXTERIOR CRUSH PROFILES – ALL LEVELS

Vehicle: 2003 Toyota Tacoma Prerunner

NHTSA No. M3 5111

Note: All Dimensions are in millimeters with a tolerance of ± 3 mm

			DISTANCE IN MILLIMETERS (mm) FROM IMPACT POINT			
HEIGHT			3150	3300	3450	3600
LEVEL 1	478	PRE				
		POST				
		CRUSH				
LEVEL 2	798	PRE	227	235	240	
		POST	281	290	292	
		CRUSH	54	55	52	
LEVEL 3	824	PRE	221	227	236	
		POST	281	290	292	
		CRUSH	60	63	56	
LEVEL 4	1150	PRE	300	302	304	309
		POST	385	386	390	397
		CRUSH	85	84	86	88
LEVEL 5	1655	PRE				
		POST				
		CRUSH				

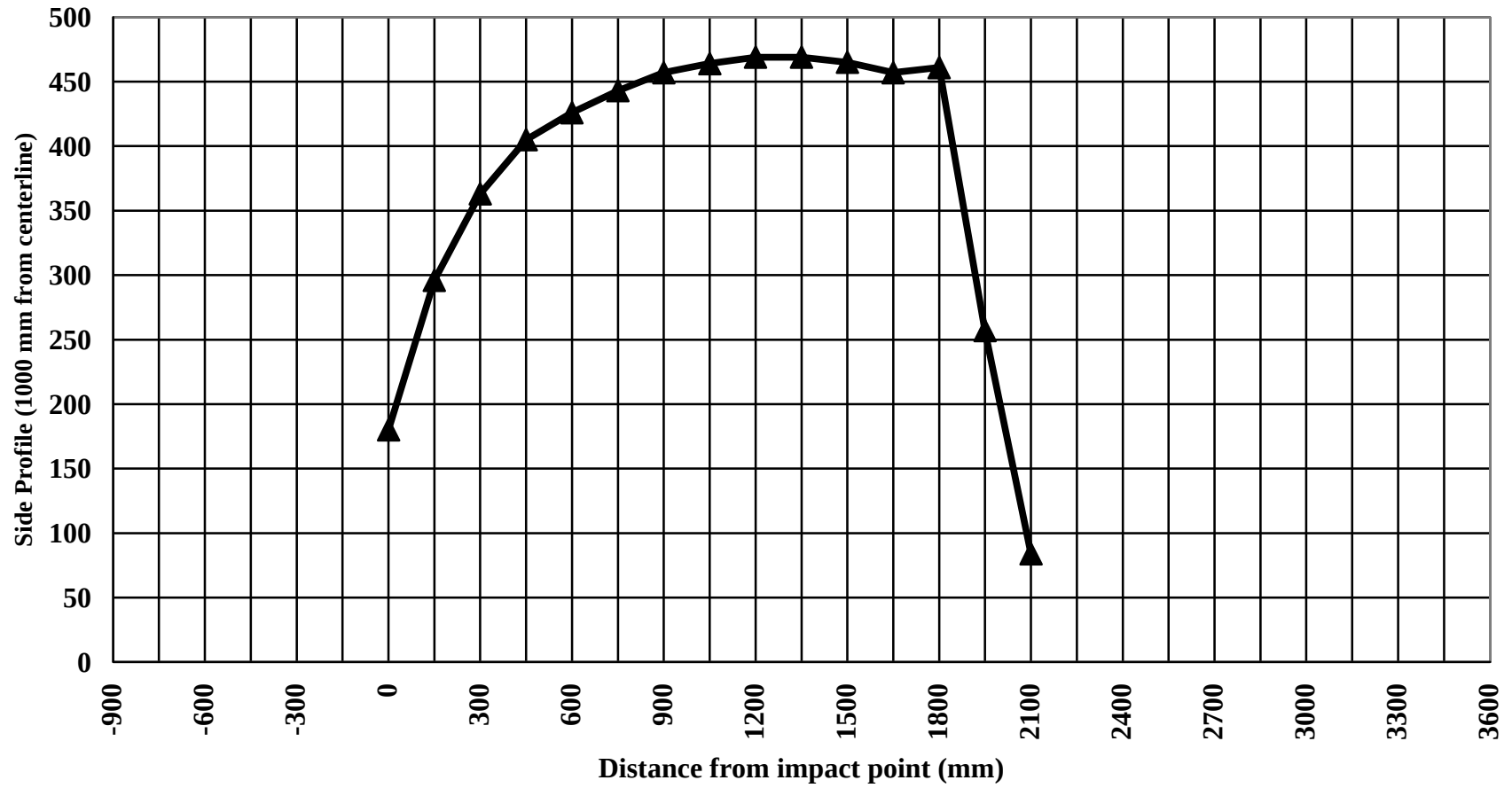
DATA SHEET 10 (continued)

VEHICLE EXTERIOR CRUSH PROFILES

Vehicle: 2003 Toyota Tacoma Prerunner

NHTSA No. M3 5111

SIDE PROFILE LEVEL 1 -478 mm above ground



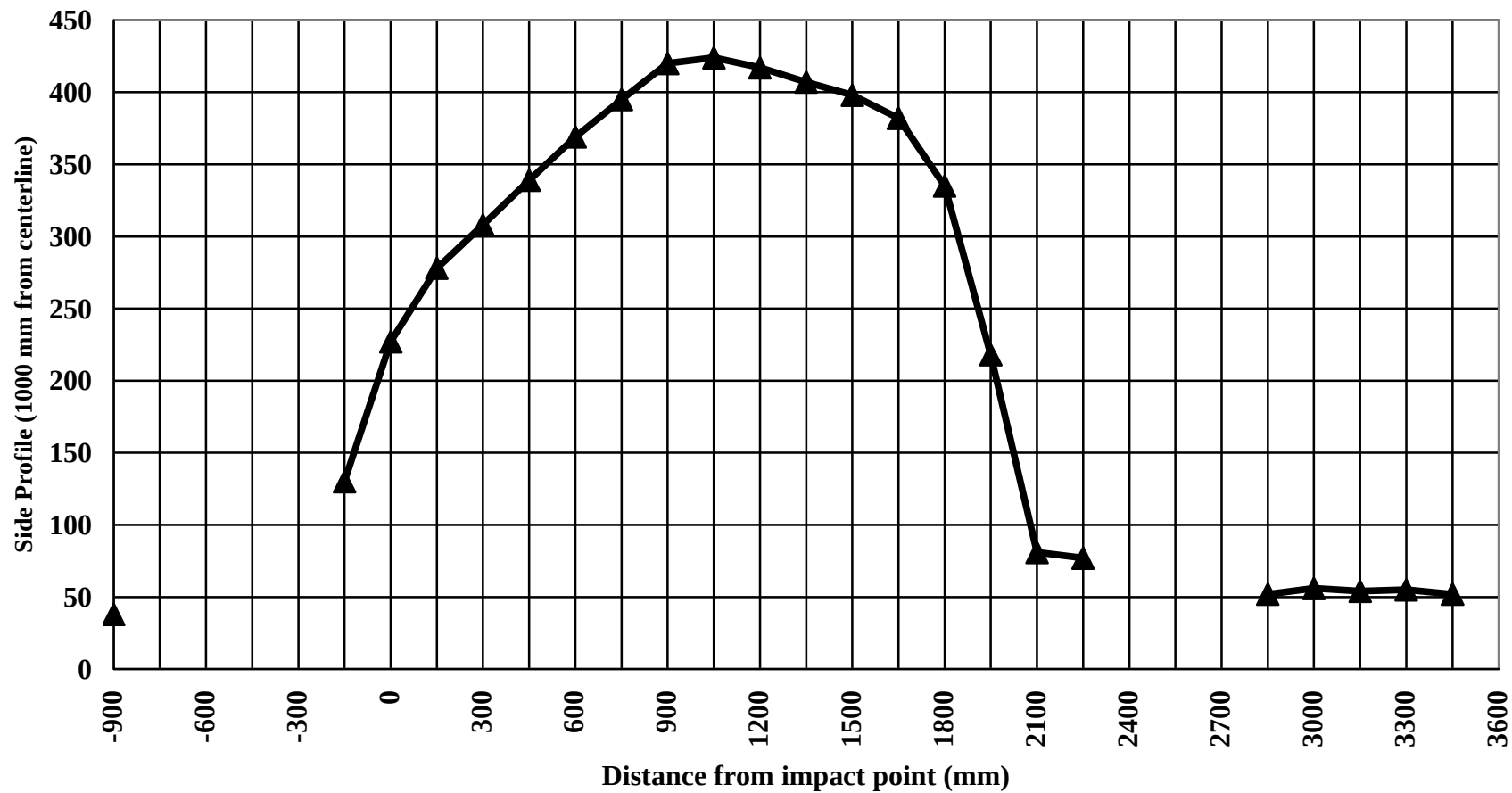
DATA SHEET 10 (continued)

VEHICLE EXTERIOR CRUSH PROFILES

Vehicle: 2003 Toyota Tacoma Prerunner

NHTSA No. M3 5111

SIDE PROFILE LEVEL 2 - 798 mm above ground



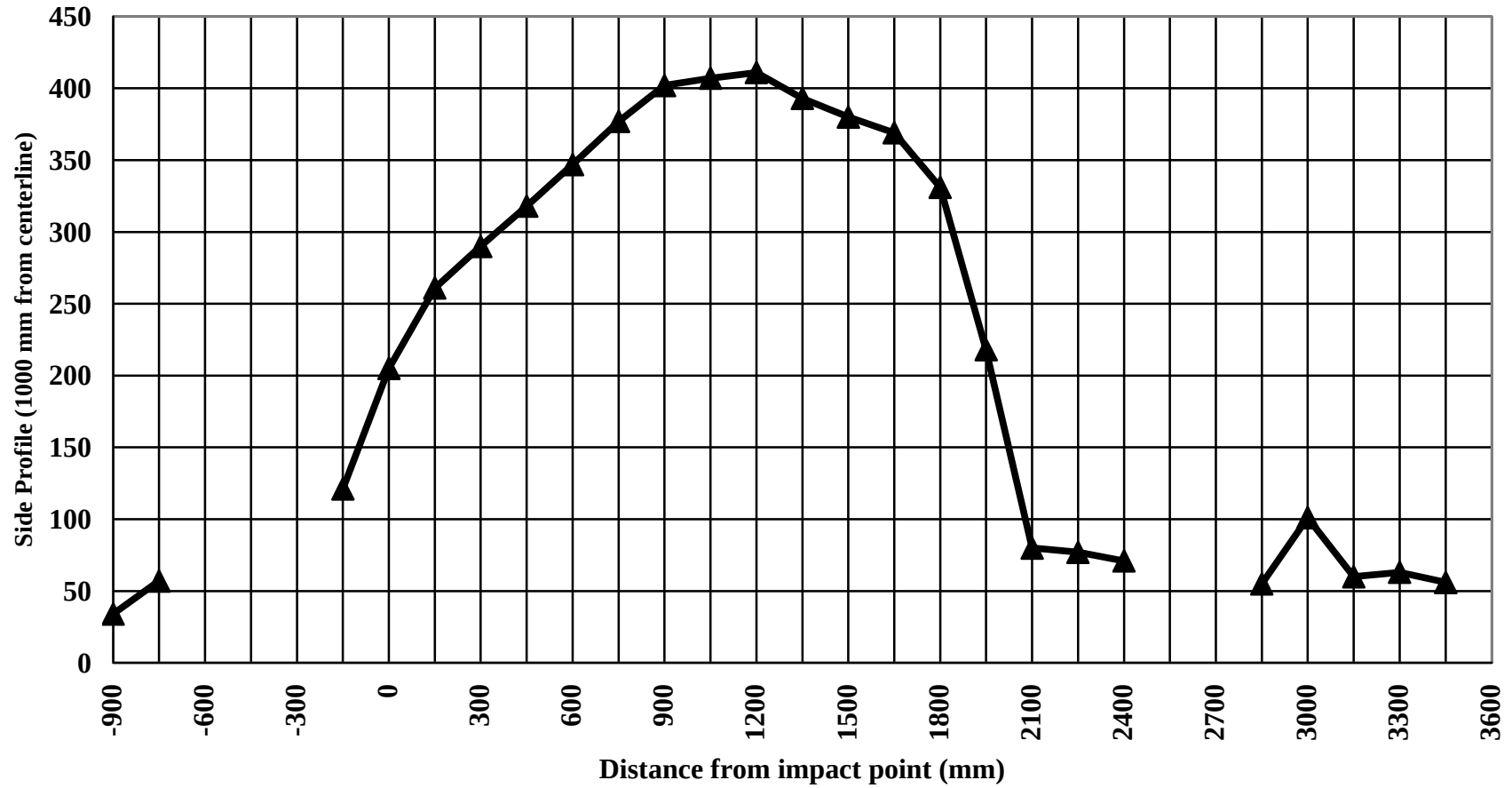
DATA SHEET 10 (continued)

VEHICLE EXTERIOR CRUSH PROFILES

Vehicle: 2003 Toyota Tacoma Prerunner

NHTSA No. M3 5111

SIDE PROFILE LEVEL 3 - 824 mm above ground



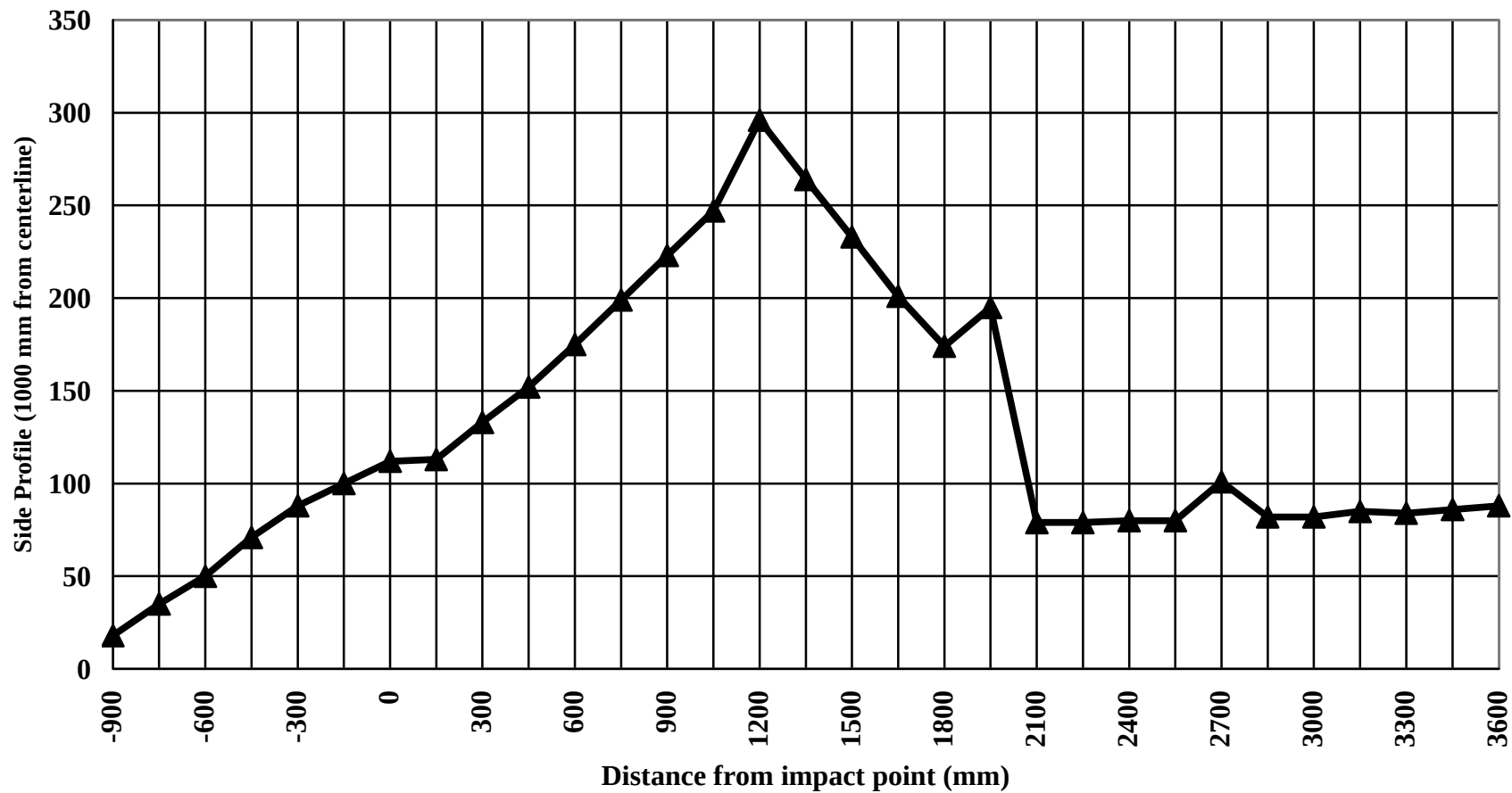
DATA SHEET 10 (continued)

VEHICLE EXTERIOR CRUSH PROFILES

Vehicle: 2003 Toyota Tacoma Prerunner

NHTSA No. M3 5111

SIDE PROFILE LEVEL 4 - 930 mm above ground



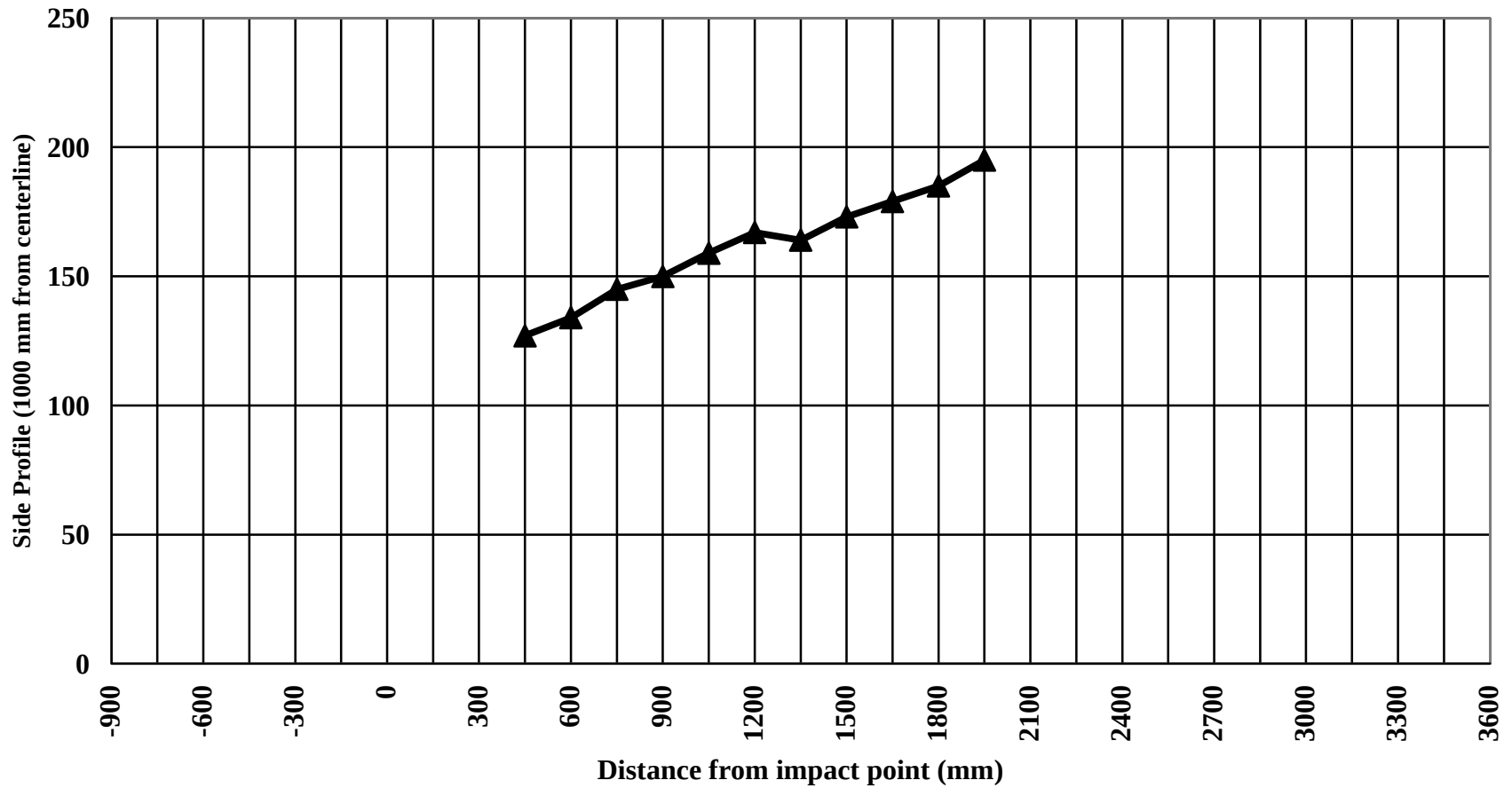
DATA SHEET 10 (continued)

VEHICLE EXTERIOR CRUSH PROFILES

Vehicle: 2003 Toyota Tacoma Prerunner

NHTSA No. M3 5111

SIDE PROFILE LEVEL 5 - 1933 mm above ground

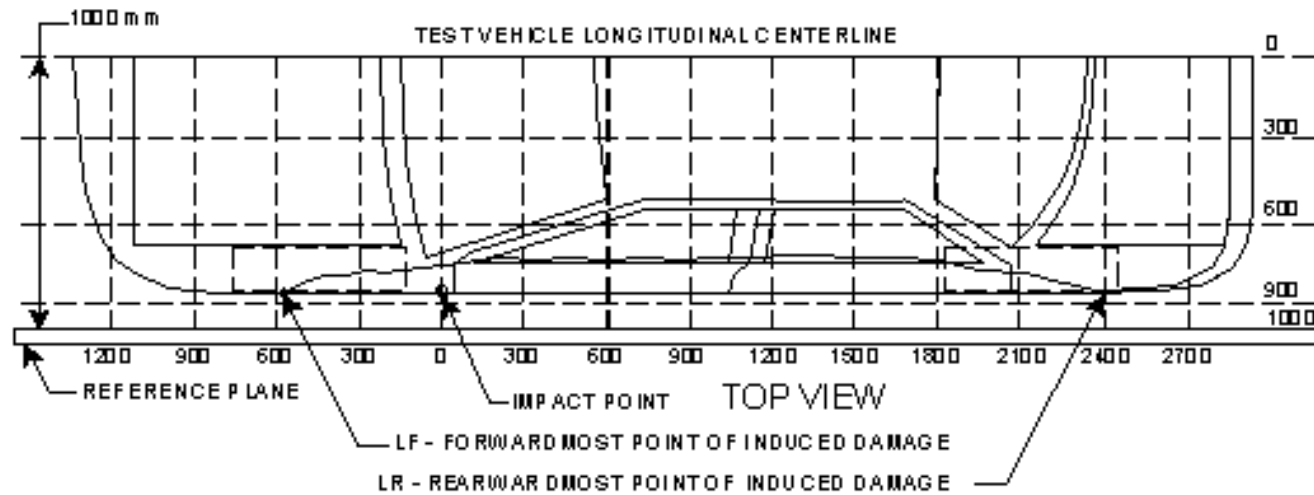


DATA SHEET 11

VEHICLE DAMAGE PROFILE DISTANCES

Vehicle: 2003 Toyota Tacoma Prerunner

NHTSA No. M3 5111



DPD MEASUREMENTS (mm)		POST-TEST (mm)	PRE-TEST (mm)	STATIC CRUSH (mm)
1	1	241	241	0
2	2	645	253	392
3	3	716	265	451
4	4	744	275	469
5	5	730	287	443
6	6	295	295	0

DATA SHEET 12

STATIC CRUSH OF IMPACTOR FACE (Grid as looking at MDB from front)

Vehicle: 2003 Toyota Tacoma Prerunner

NHTSA No. M3 5111

Note: All Dimensions are in millimeters with a tolerance of ± 3 mm

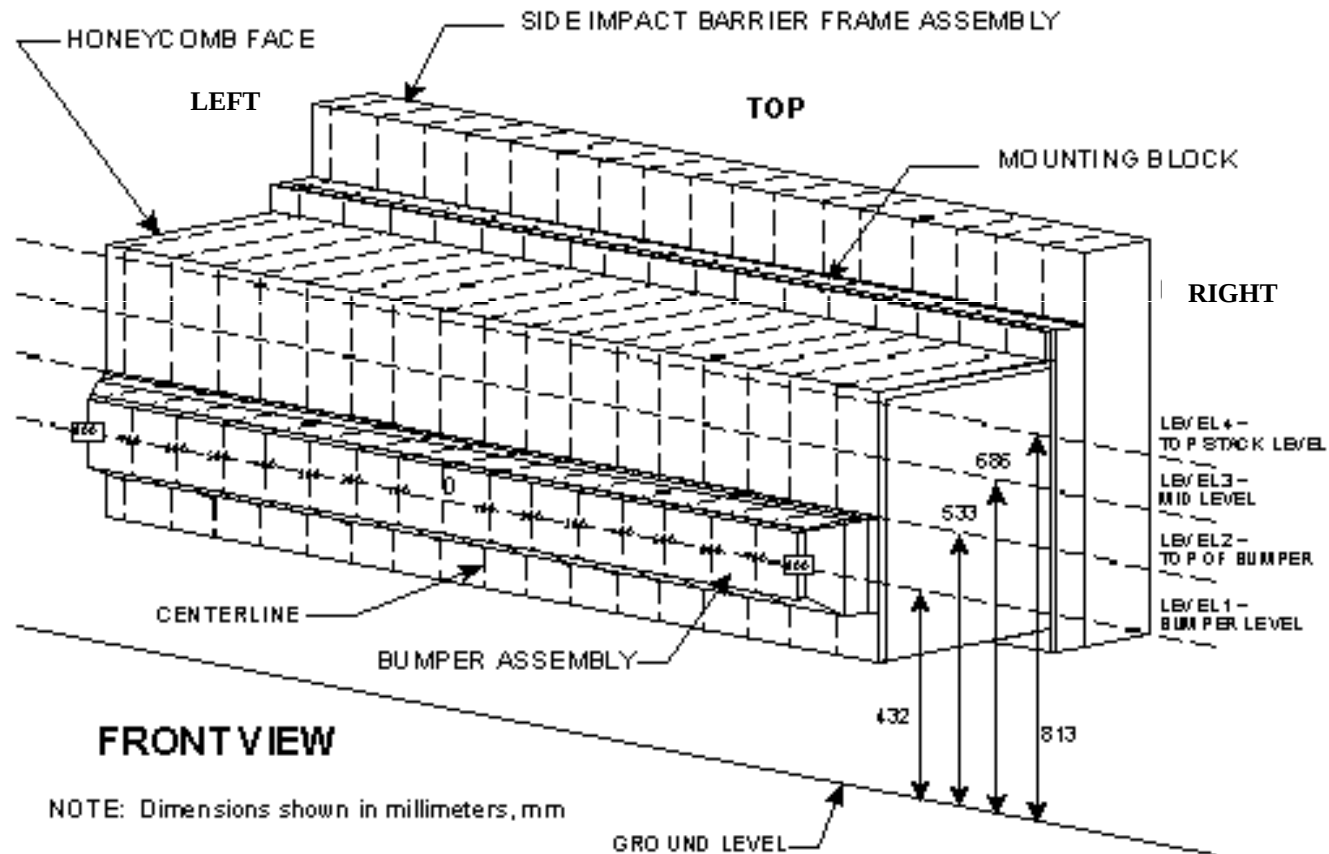
LEVEL	HEIGHT AT CL (mm)		DISTANCE LEFT OF CENTER								0	DISTANCE RIGHT OF CENTER							
			800	700	600	500	400	300	200	100		100	200	300	400	500	600	700	800
LEVEL 4 TOP STACK	810	PRE-	530	530	530	530	530	531	531	531	531	532	532	532	532	532	532	532	532
		POST-	711	659	635	614	593	591	585	555	546	547	553	566	583	600	620	643	662
		CRUSH	181	129	105	84	63	60	54	24	15	15	21	34	51	68	88	111	130
LEVEL 3 MID- LEVEL	685	PRE-	529	529	529	529	529	529	529	529	529	529	529	529	530	530	530	530	530
		POST-	686	617	595	565	546	553	562	541	536	537	540	542	548	560	574	595	654
		CRUSH	157	88	66	36	17	24	33	12	7	8	11	13	18	30	44	65	124
LEVEL 2 TOP BUMPER	560	PRE-	524	524	525	525	525	526	526	526	526	526	526	527	527	527	527	527	527
		POST-	675	629	591	590	582	580	571	571	564	568	575	577	578	583	591	606	643
		CRUSH	151	105	66	65	57	54	45	45	38	42	49	50	51	56	64	79	116
LEVEL 1 MID- BUMPER	432	PRE-	432	422	422	422	422	422	422	422	423	423	423	423	424	424	424	425	436
		POST-	558	518	490	476	466	461	459	457	457	458	459	460	463	472	485	500	525
		CRUSH	126	96	68	54	44	39	37	35	34	35	36	37	39	48	61	75	89

DATA SHEET 12 (continued)

STATIC CRUSH OF IMPACTOR FACE

Vehicle: 2003 Toyota Tacoma Prerunner

NHTSA No. M3 5111

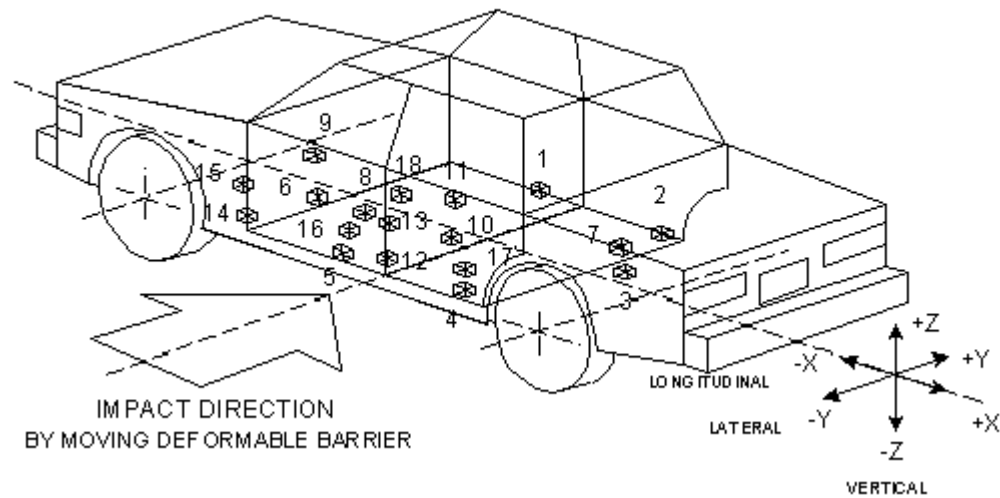


DATA SHEET 13

TEST VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Vehicle: 2003 Toyota Tacoma Prerunner

NHTSA No. M3 5111



1. Right Side Sill at Front Seat	10. Mid-rear of Left Rear Door
2. Right Side Sill at Rear Seat	11. Left Rear Door Upper Centerline
3. Rear Floorpan Above Axle	12. Left Lower B-Pillar
4. Left Side Sill at Rear Seat	13. Left Middle B-Pillar
5. Left Side Sill at Front Seat	14. Left Lower A-Pillar
6. Left Front Door on Centerline	15. Left Middle A-Pillar
7. Right Rear Occupant Compartment	16. Front Seat Track
8. Mid-rear of Left Front Door	17. Rear Seat Track
9. Left Front Door Upper Centerline	18. Vehicle CG

DATASHEET 13(continued)

VEHICLE ACCELEROMETER LOCATIONS AND SUMMARY DATA

Vehicle: 2003 Toyota Tacoma Prerunner

NHTSA No. M3 5111

Location		Coordinates			Longitudinal (X)				Lateral (Y)				Vertical (Z)				Resultant	
		X mm	Y mm	Z mm	Max		Min		Max		Min		Max		Min		Max	
					G's	msec	G's	msec	G's	msec	G's	msec	G's	msec	G's	msec	G's	msec
1	Right Side Sill at Front Seat	3374	570	294	3.7	36.8	-16.5	25.8	58.4	28.7	-20.1	33.6	8.6	97.7	-53.5	28.9	80.6	28.8
2	Right Side Sill at Rear Seat	1982	560	268	4.9	37.4	-27	21.3	69.2	16.2	-33.8	38.0	7.6	99.8	-57.4	21.6	70.5	16.3
3	Rear Floorpan Above Axle	1274	-29	-79	5.5	23.8	-7.2	69.4	22.2	22.7	-1.4	140.6	19.0	70.1	-32.2	56.2	37.6	56.2
4	Left Side Sill at Rear Seat	1798	-687	249					89.1†	20.9†	-44.6†	6.6†						
5	Left Side Sill at Front Seat	3535	-686	278					17.9‡	23.0‡	-106.2‡	14.1‡						
6	Left Front Door on Centerline	3039	-696	79					285.9	9.0	-295.7	16.1						
7	Right Rear Occupant Compartment	2335	340	53					30.1	25.1	-6.7	63.4						
8	Midrear of Left Front Door	2775	-704	60					925.2	16.5	-28.1	31.2						
9	Left Front Door Upper Centerline	3097	-695	-263					134.8	14.6	-131.1	27.0						
10	Midrear of Left Rear Door	2047	-690	-284					98.5	10.1	-90.3	27.8						

Axis Origin X – Point L

Y – Point L

Z – Point L

Axis Orientation

+(X) Forward where x axis is the vector from middle of rear bumper to mid front bumper

+(Y) Right where y axis is parallel to ground reference plane

+(Z) Down where z axis is cross product of +(X) and +(Y)

† Front sill at rear seat accelerometer wire broke ~35 milliseconds after impact

‡ Front sill at front seat accelerometer wire broke ~24 milliseconds after impact

DATASHEET 13 (continued)

VEHICLE ACCELEROMETER LOCATIONS AND SUMMARY DATA

Vehicle: 2003 Toyota Tacoma Prerunner

NHTSA No. M3 5111

Location		Coordinates			Longitudinal (X)				Lateral (Y)				Vertical (Z)				Resultant	
		X mm	Y mm	Z mm	Max		Min		Max		Min		Max		Min		Max	
					G's	msec	G's	msec	G's	msec	G's	msec	G's	msec	G's	msec	G's	msec
11	Left Rear Door Upper Centerline	Accelerometer not requested																
12	Left Lower B- Pillar	2581	-664	-127					199.5	8.6	-54.3	24.9						
13	Left Middle B- Pillar	2567	-674	-358					180.8	9.4	-60.5	26.6						
14	Left Lower A- Pillar	3664	-655	-27					95.3	7.0	-47.7	13.1						
15	Left Middle A- Pillar	3691	-734	-236					70.3	7.5	-21.2	17.2						
16	Front Seat Track	2824	-545	90					40.3	15.1	-38.4	18.8						
17	Rear Seat Track	2341	-185	53					52.9	27.9	-9.6	64.2						
18	Vehicle CG	3010	44	42	8.9	13.2	-9.0	24.9	21.7	5.1	-9.6	41.8	5.5	55.8	-38.9	35.8	39.3	26.0

Axis Origin

X – Point L

Y – Point L

Z – Point L

Axis Orientation

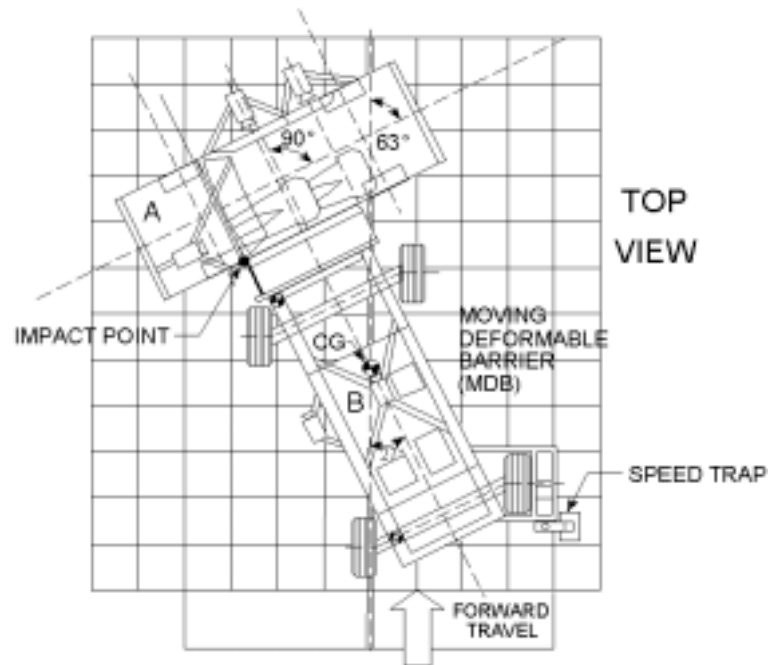
+(X) Forward where x axis is the vector from middle of rear bumper to mid front bumper

+(Y) Right where y axis is parallel to ground reference plane

+(Z) Down where z axis is cross product of +(X) and +(Y)

DATA SHEET 14

MDB ACCELEROMETER LOCATIONS AND DATA SUMMARY



Location		Coordinates			Longitudinal (X)				Lateral (Y)				Vertical (Z)				Resultant	
		X	Y	Z	Max		Min		Max		Min		Max		Min		Max	
		mm	mm	mm	G's	msec	G's	msec	G's	msec	G's	msec	G's	msec	G's	msec	G's	msec
1	MDB Center of Gravity	1113	-1	311	1.2	132.9	-23.7	31.1	1.9	16.9	-9.0	27.1	7.1	47.6	8.2	37.0	24.4	31.0
2	MDB Rear Frame Member	2812	-614	585	1.4	173.2	-24.2	28.0	3.8	37.0	-2.2	78.2						

Axis Origin

X – Rear Bumper
Y – Vehicle Centerline
Z – Middle of rear bumper

Axis Orientation

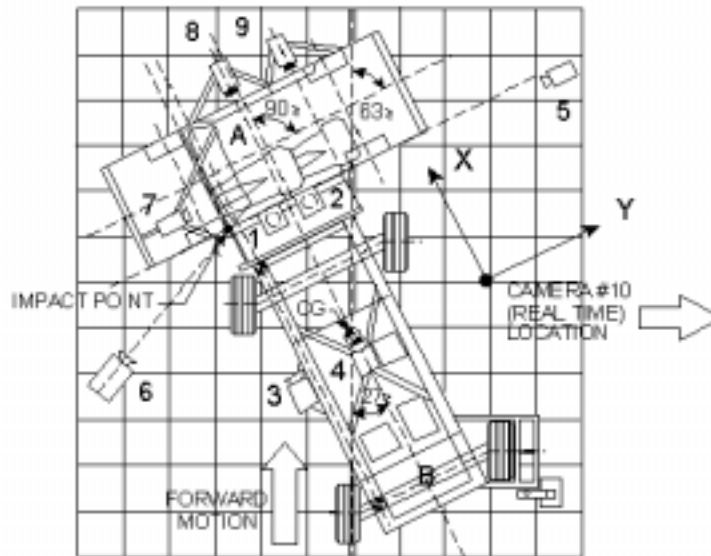
+(X) Forward
+(Y) Right
+(Z) Down

DATA SHEET 15

HIGH-SPEED CAMERA LOCATIONS AND DATA SUMMARY

Vehicle: 2003 Toyota Tacoma Prerunner

NHTSA No. M3 5111



Camera No.	View	Coordinates (mm)*			Angle wrt Horiz.	Lens (mm)	Film Speed (fps)
		X	Y	Z			
1	Overhead view of test vehicle	2154	-677	-3758	-90	12.5	1000
2	Overhead close-up view of impact plane	2839	-757	-3761	-90	25	1000
3	MDB onboard close-up view of impact point	3218	-3393	-212	0	35	1000
4	MDB onboard view of driver dummy	2305	-3348	-676	-5	13	1000
5	Right side ground level overall view	-9956	-1007	-175	0	50	1000
6	Left side ground level overall view	7104	-127	-70	0	12.5	500
7	Test vehicle onboard driver front view	4202	-410	-980	-15	10	1000
8	Test vehicle onboard driver side view	2976	830	-566	-5	7.5	1000
9	Test vehicle onboard passenger side view	2172	819	-599	-5	7.5	1000
10	Real-time film coverage of test	-	-	-	-	-	24

* Reference: Middle of rear bumper on test vehicle (Point L)

+ (X) Forward where x axis is the vector from middle of rear bumper to mid front bumper

+ (Y) Right where y axis is parallel to ground reference plane

+ (Z) Down where z axis is cross product of + (X) and + (Y)

SECTION 5
FUEL SYSTEM INTEGRITY

DATA SHEET 16

FUEL SYSTEM INTEGRITY DATA

Vehicle: 2003 Toyota Tacoma Prerunner

NHTSA No. M3 5111

TEST REQUIREMENTS:

Drain the test vehicle's fuel system and operate the engine until the fuel system is dry. Add Stoddard solvent, which has been dyed purple, until 92-94% of the stated usable capacity is reached. Operate the engine to assure the Stoddard solvent is present throughout the entire fuel system.

TEST VEHICLE IMPACT TYPE: Side impacting Moving Deformable Barrier contacting the driver side.

FUEL SPILLAGE MEASUREMENT:

POST IMPACT TEST	TEST RESULTS	MAXIMUM ALLOWABLE
1. From impact until vehicle motion ceases	0	1 oz.
2. For 5 minute period after vehicle motion ceases	0	5 oz.
3. For next 25 minutes	0	1 oz./minute

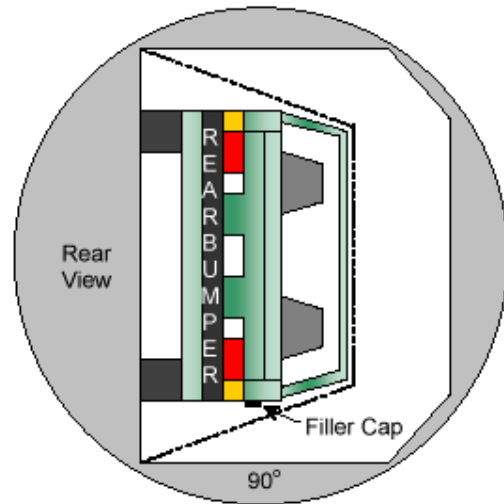
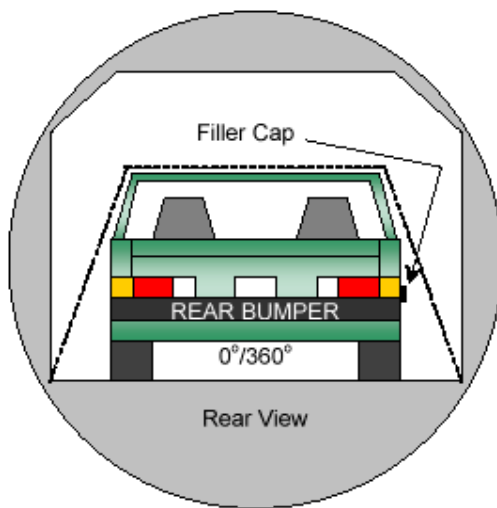
FUEL SPILLAGE LOCATION(S): None

DATA SHEET 17

ROLLOVER DATA

Vehicle: 2003 Toyota Tacoma Prerunner

NHTSA No. M3 5111



0° TO 90°

DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time	1	minutes	3	seconds
(Spec Range =1 to 3 minutes)				
FMVSS 301 Position Hold Time	5	minutes	0	seconds
TOTAL	6	minutes	3	seconds
Next whole minute interval	7	minutes		

FUEL SPILLAGE MEASUREMENT:

0° TO 90° ROTATION	TEST RESULTS	MAXIMUM ALLOWABLE
1. First 5 Minutes From Onset of Rotation	7.7 oz.	5 oz.
2. Sixth Minute From Onset of Rotation	Trace amounts	1 oz.
3. Seventh Minute From Onset of Rotation	Trace amounts	1 oz.
4. Eighth Minute if Required	-	1 oz.

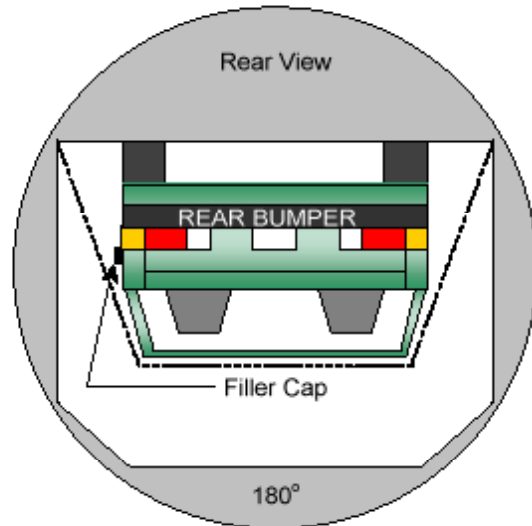
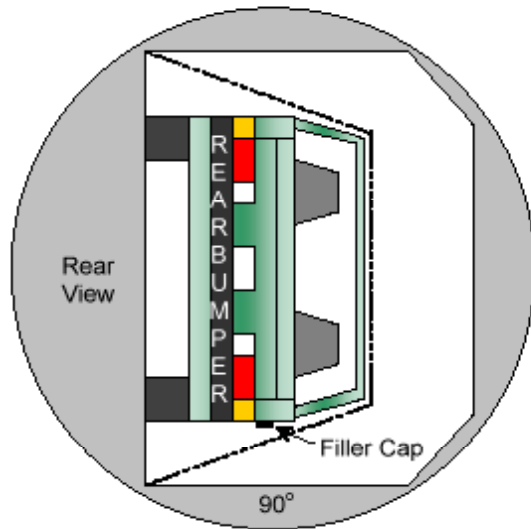
FUEL SPILLAGE LOCATION(S): Filler neck above gas tank.

DATA SHEET 17 (continued)

ROLLOVER VEHICLE

Vehicle: 2003 Toyota Tacoma Prerunner

NHTSA No. M3 5111



90° TO 180°

DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time	<u>1</u> minutes	<u>3</u> seconds
(Spec Range =1 to 3 minutes)		
FMVSS 301 Position Hold Time	<u>5</u> minutes	<u>0</u> seconds
TOTAL	<u>6</u> minutes	<u>3</u> seconds
Next whole minute interval	<u>7</u> minutes	

FUEL SPILLAGE MEASUREMENT:

90° TO 180° ROTATION	TEST RESULTS	MAXIMUM ALLOWABLE
1. First 5 Minutes From Onset of Rotation	0	5 oz.
2. Sixth Minute From Onset of Rotation	0	1 oz.
3. Seventh Minute From Onset of Rotation	0	1 oz.
4. Eighth Minute if Required	-	1 oz.

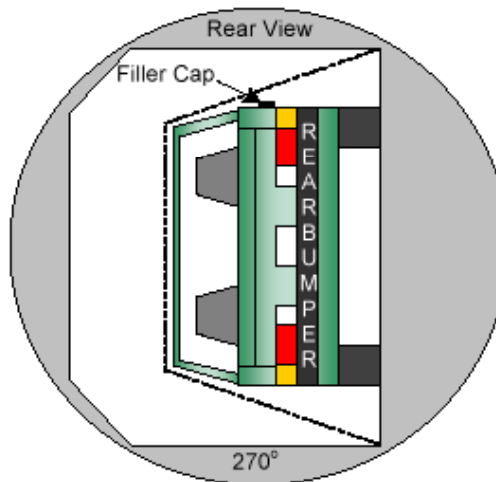
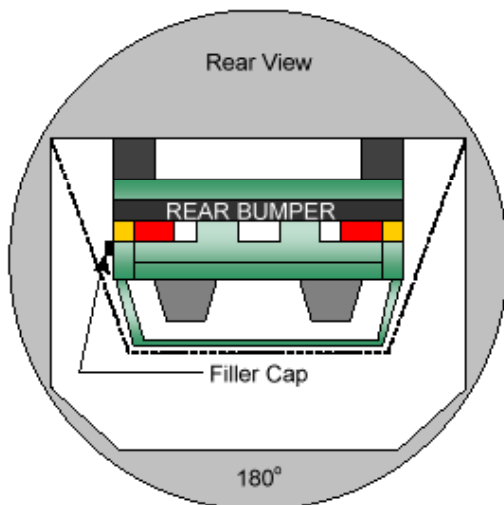
FUEL SPILLAGE LOCATION(S):

DATA SHEET 17 (continued)

ROLLOVER VEHICLE

Vehicle: 2003 Toyota Tacoma Prerunner

NHTSA No. M3 5111



180° TO 270°

DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time	<u>1</u> minutes	<u>2</u> seconds
(Spec Range =1 to 3 minutes)		
FMVSS 301 Position Hold Time	<u>5</u> minutes	<u>0</u> seconds
TOTAL	<u>6</u> minutes	<u>2</u> seconds
Next whole minute interval	<u>7</u> minutes	

FUEL SPILLAGE MEASUREMENT:

180° TO 270° ROTATION	TEST RESULTS	MAXIMUM ALLOWABLE
1. First 5 Minutes From Onset of Rotation	Trace amounts	5 oz.
2. Sixth Minute From Onset of Rotation	0	1 oz.
3. Seventh Minute From Onset of Rotation	0	1 oz.
4. Eighth Minute From Onset of Rotation	-	1 oz.

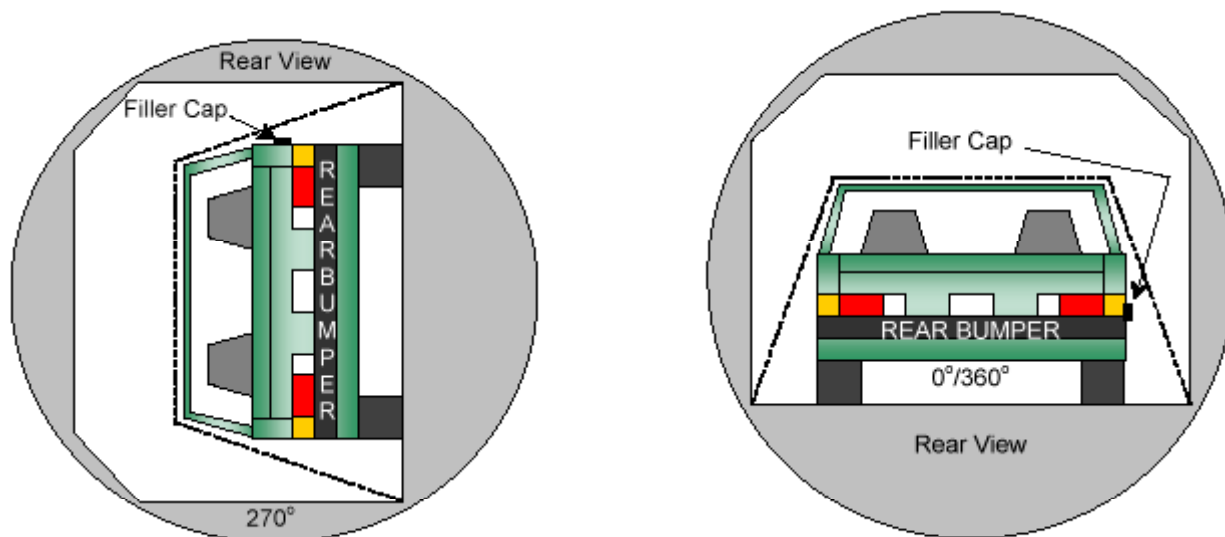
FUEL SPILLAGE LOCATION(S):

DATA SHEET 17 (continued)

ROLLOVER VEHICLE

Vehicle: 2003 Toyota Tacoma Prerunner

NHTSA No. M3 5111



270° TO 360°

DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time	<u>1</u> minutes	<u>3</u> seconds
(Spec Range =1 to 3 minutes)		
FMVSS 301 Position Hold Time	<u>5</u> minutes	<u>0</u> seconds
TOTAL	<u>6</u> minutes	<u>3</u> seconds
Next whole minute interval	<u>7</u> minutes	

FUEL SPILLAGE MEASUREMENT:

270° TO 360° ROTATION	TEST RESULTS	MAXIMUM ALLOWABLE
1. First 5 Minutes From Onset of Rotation	5.2 oz.	5 oz.
2. Sixth Minute From Onset of Rotation	Trace amounts	1 oz.
3. Seventh Minute From Onset of Rotation	0	1 oz.
4. Eighth Minute if Required	-	1 oz.

FUEL SPILLAGE LOCATION(S): Filler neck above gas tank.

APPENDIX A
PHOTOGRAPHS

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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 LEFT FRONT VIEW OF TEST VEHICLE



Figure A-4: POST-TEST LEFT FRONT VIEW OF TEST VEHICLE



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



Figure A-6: POST-TEST LEFT SIDE VIEW OF TEST VEHICLE



Figure A-7: PRE-TEST LEFT REAR VIEW OF TEST VEHICLE



Figure A-8: POST-TEST LEFT REAR VIEW OF TEST VEHICLE



Figure A-9: PRE-TEST REAR VIEW OF TEST VEHICLE



Figure A-10: POST-TEST REAR VIEW OF TEST VEHICLE



Figure A-11 PRE-TEST RIGHT REAR VIEW OF TEST VEHICLE



Figure A-12 POST-TEST RIGHT REAR VIEW OF TEST VEHICLE



Figure A-13: PRE-TEST RIGHT SIDE VIEW OF TEST VEHICLE



Figure A-14: POST-TEST RIGHT SIDE VIEW OF TEST VEHICLE



Figure A-15: PRE-TEST FRONT RIGHT VIEW OF TEST VEHICLE



Figure A-16: POST-TEST FRONT RIGHT VIEW OF TEST 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



Figure A-25: PRE-TEST INTERIOR OF FRONT DOOR



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



Figure A-27: PRE-TEST INTERIOR OF REAR DOOR



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



Figure A-29: PRE-TEST LEFT SIDE VIEW OF MDB IN IMPACT POSITION



Figure A-30: POST-TEST LEFT SIDE VIEW OF MDB



Figure A-31: PRE-TEST RIGHT SIDE VIEW OF MDB IN IMPACT POSITION



Figure A-32: POST-TEST FRONT RIGHT VIEW OF MDB

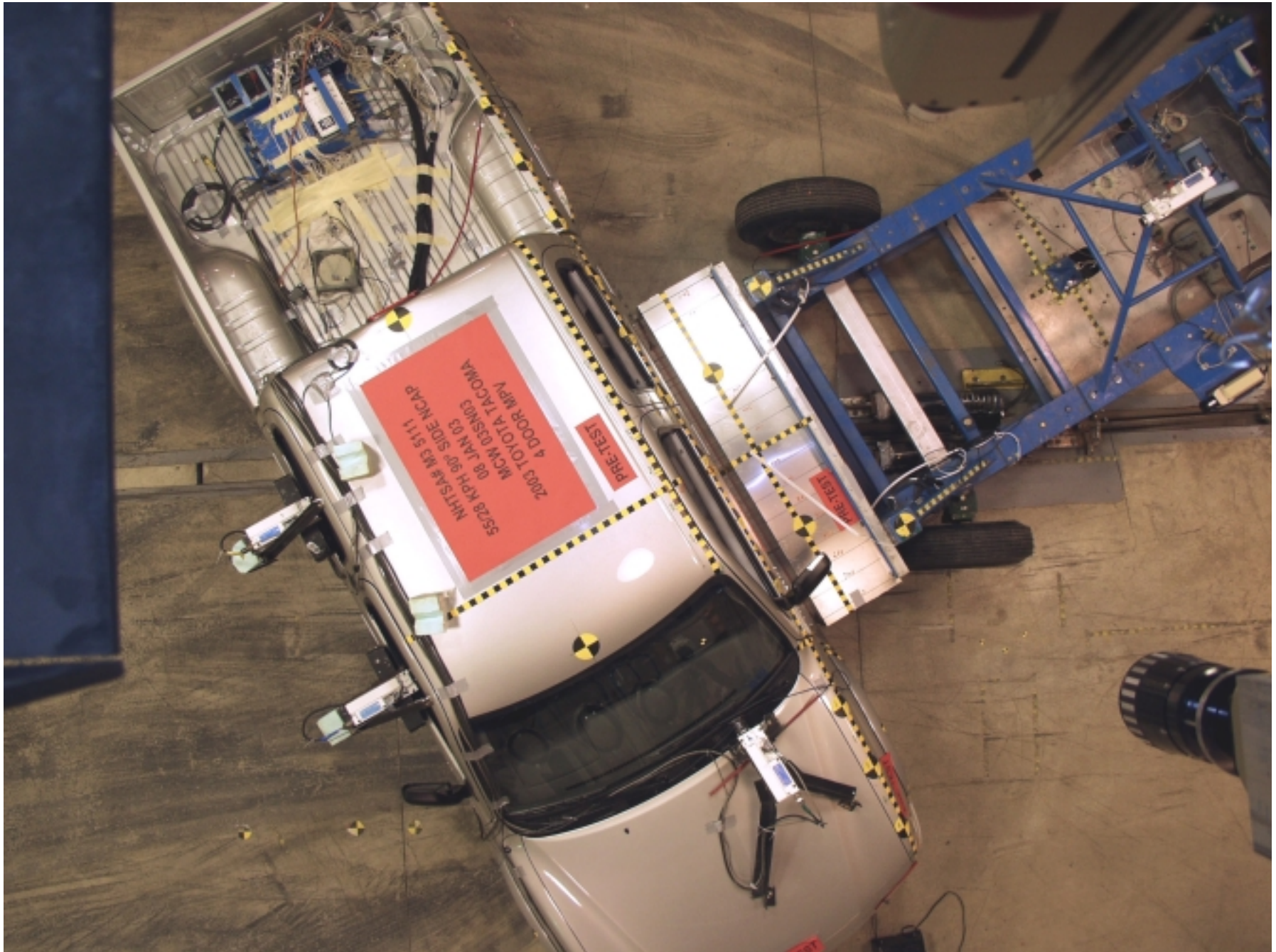


Figure A-33: PRE-TEST OVERHEAD VIEW OF MDB IN IMPACT POSITION



Figure A-34: POST-TEST OVERHEAD VIEW OF MDB



Figure A-35: PRE-TEST CLOSE-UP OF IMPACT POINT TARGET SHOWING WELDING ROD



Figure A-36: POST-TEST CLOSE-UP OF IMPACT POINT TARGET

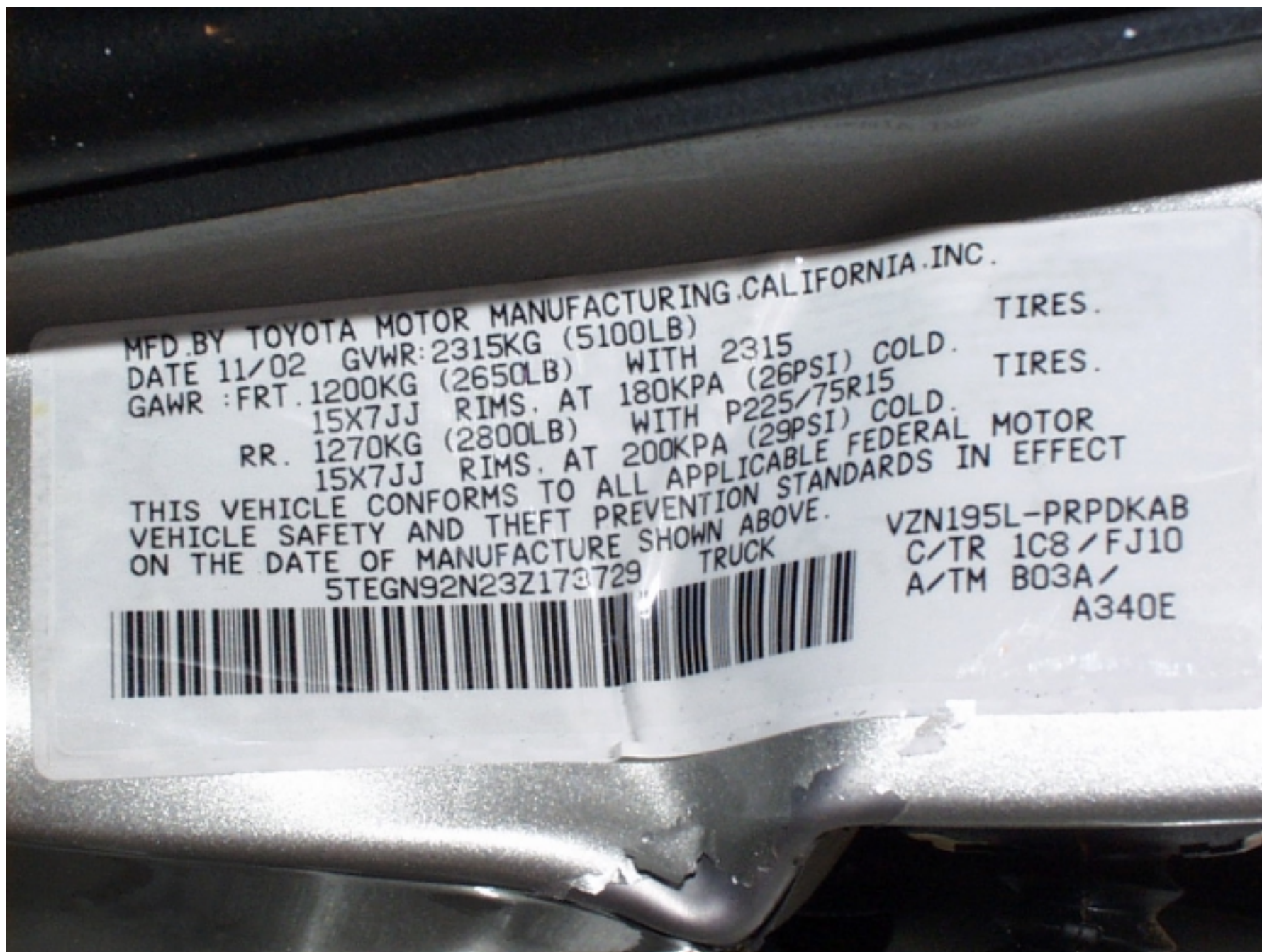


Figure A-37: VEHICLE CERTIFICATION LABEL

RECOMMENDED COLD TIRE INFLATION PRESSURE PRESSION DE PNEUS			(kPa) (psi)
TIRE SIZE DIMENSIONS	FRONT	REAR	
P225/75R15 102S	AV 180 (26)	AR 200 (29)	
P265/70R16 111S	180 (26)	180 (26)	
P265/70R16 111T	180 (26)	180 (26)	
See Owner's Manual for additional information. Voir le Manuel du Propriétaire pour de plus amples informations.			
04040			
KE			

Figure A-38: VEHICLE TIRE PLACARD



Figure A-39: IMPACT



Figure A-40: ROLLOVER 0 DEGREES

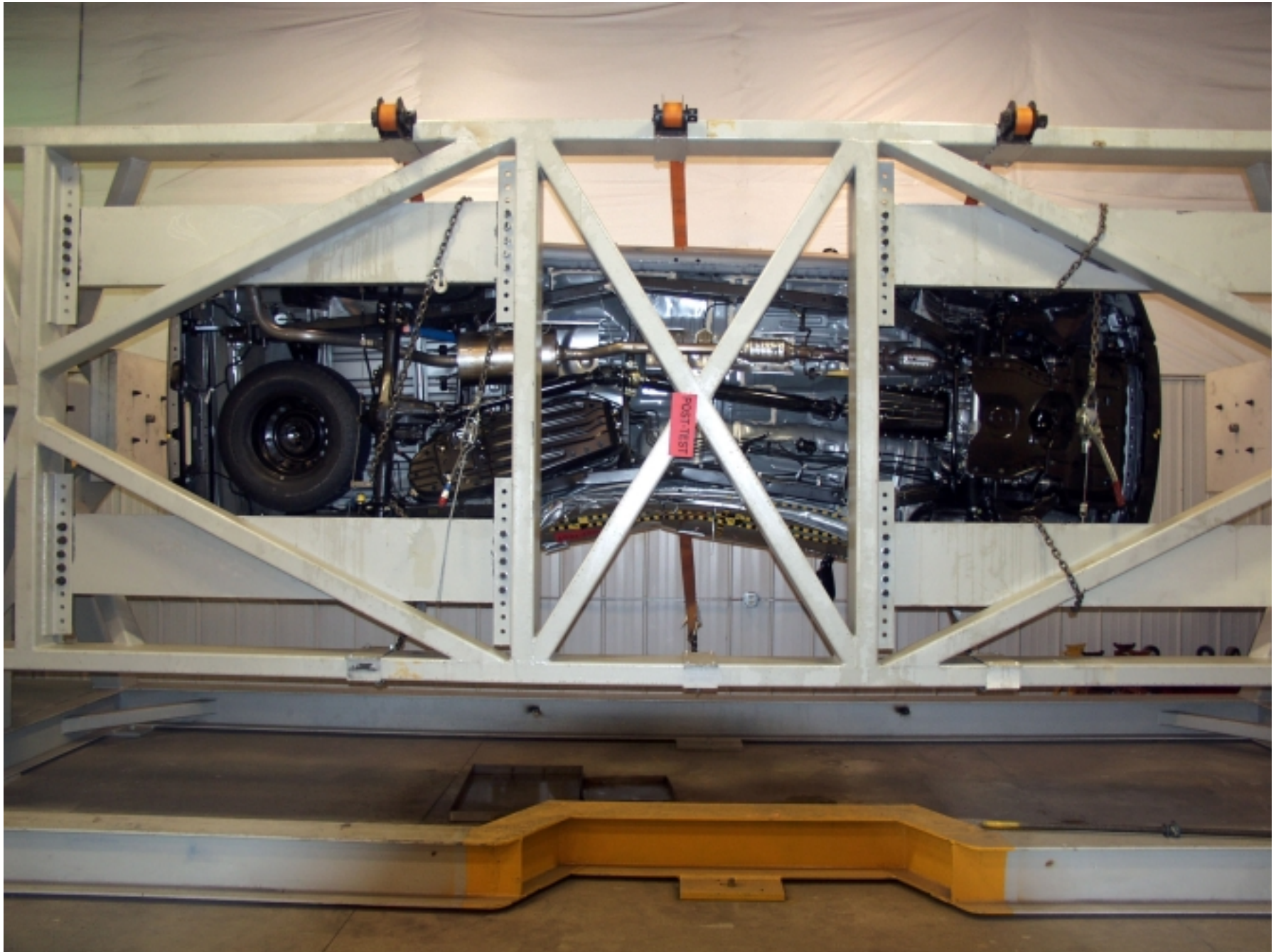


Figure A-41: ROLLOVER 90 DEGREES



Figure A-42: ROLLOVER 180 DEGREES



Figure A-43: ROLLOVER 270 DEGREES



Figure A-44: ROLLOVER 360 DEGREES



Figure A-45: STODDARD LEAK @ 90 DEGREES



Figure A-46: STODDARD LEAK 270-360 DEGREE ROLL



Figure A-47: HOLE IN FILLER NECK



Figure A-48: PRE-TEST ALUMINUM BARRIER FRONT



Figure A-49: POST-TEST ALUMINUM BARRIER FRONT



Figure A-50: PRE-TEST ALUMINUM BARRIER LEFT SIDE



Figure A-51: POST-TEST ALUMINUM BARRIER LEFT SIDE



Figure A-52: PRE-TEST ALUMINUM BARRIER RIGHT SIDE



Figure A-53: POST-TEST ALUMINUM BARRIER RIGHT SIDE



Figure A-54: PRE-TEST ALUMINUM BARRIER OVERHEAD



Figure A-55: POST-TEST ALUMINUM BARRIER OVERHEAD

APPENDIX B

VEHICLE, MDB, AND SID RESPONSE DATA

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UPPER NECK FORCES – FILTER CLASS 1000; UPPER NECK MOMENTS FILTER CLASS 600
INTEGRATION DATA FILTER CLASS 180

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DRIVER AND PASSENGER DUMMY INSTRUMENTATION PLOTS

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DRIVER AND PASSENGER DUMMY INSTRUMENTATION PLOTS (REDUNDANT)

ACCELERATION DATA – FILTER CLASS 1000, LOWER SPINE FILTER CLASS 180

INTEGRATION DATA FILTER CLASS 180

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DRIVER AND PASSENGER DUMMY INSTRUMENTATION PLOT (REDUNDANT)

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138	PASSENGER LOWER SPINE (Y) ACCELERATION-REDUNDANT	B-143
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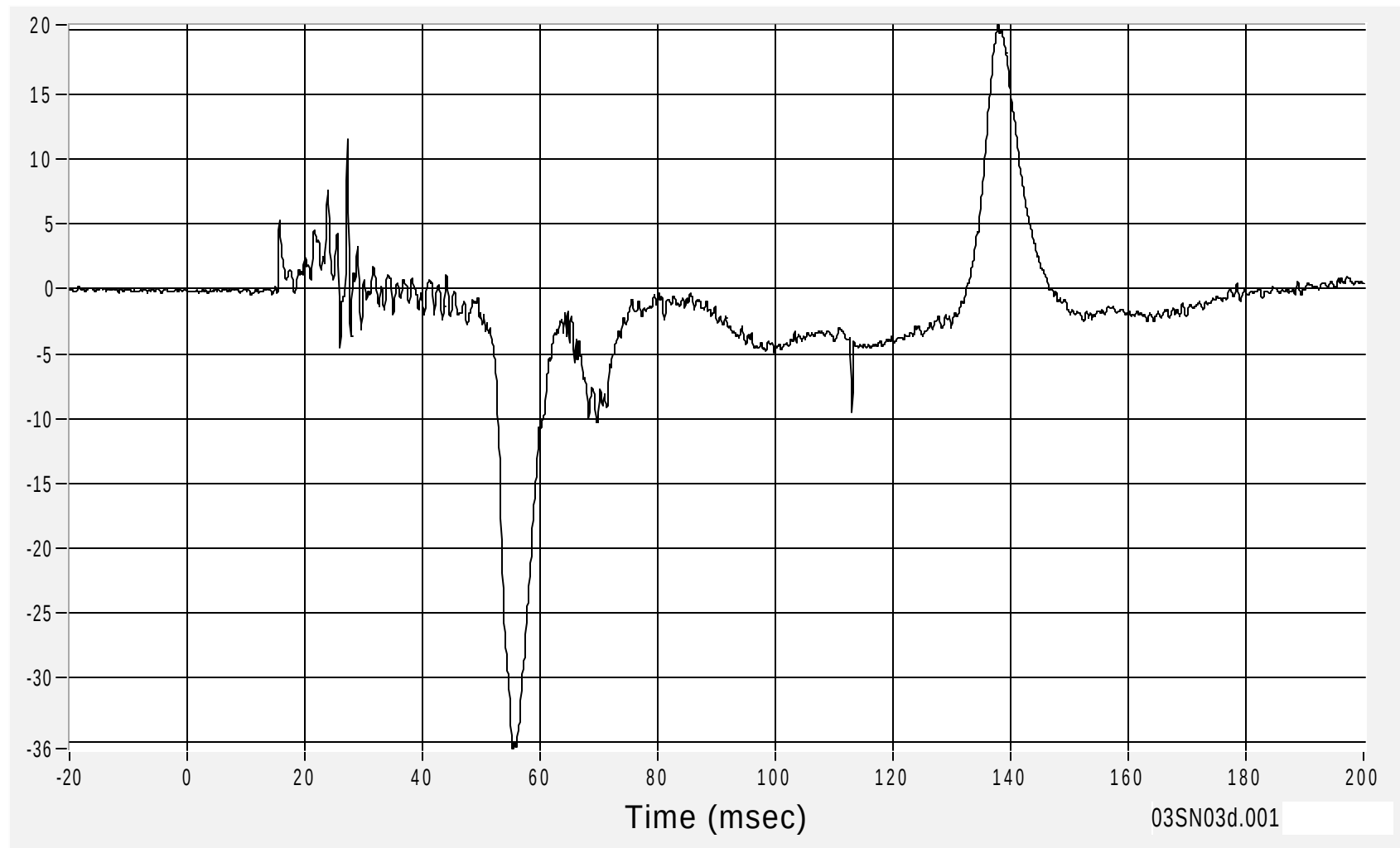
Driver Head CG (X) Acceleration

Acceleration (G's) CFC1000

Max 20.4 G's at 137.9 msec

Min -35.5 G's at 55.4 msec

B-6



03SN03 - 2003 TOYOTA TACOMA PRERUNNER 4 DOOR MPV

8 January 2003

Medical College of Wisconsin
Vehicle Crashworthiness Lab

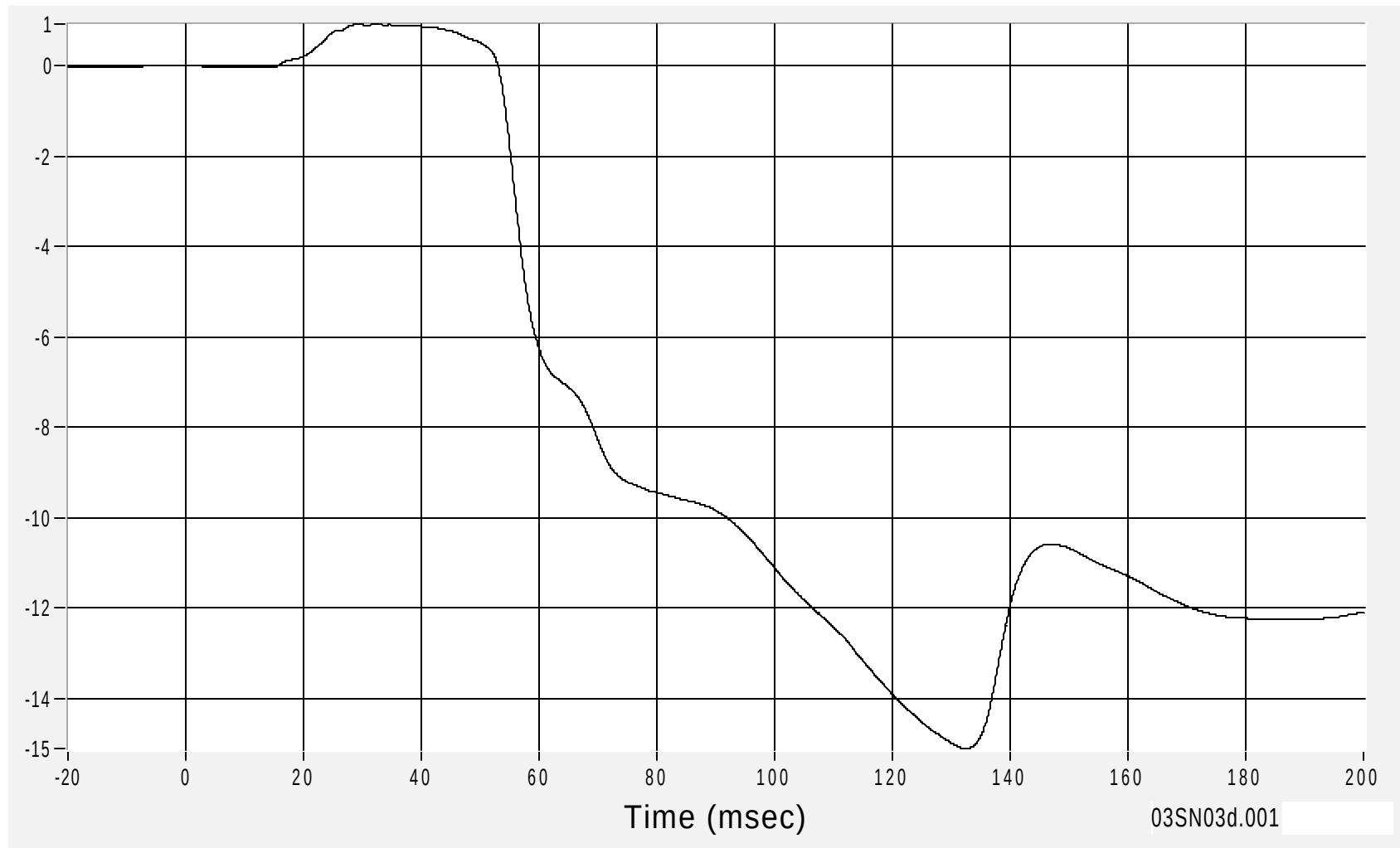
Driver Head CG (X) Velocity

Velocity (km/h) CFC180

Max 0.9 km/h at 29.2 msec

Min -15.1 km/h at 132.5 msec

B-7



03SN03 - 2003 TOYOTA TACOMA PRERUNNER 4 DOOR MPV

8 January 2003

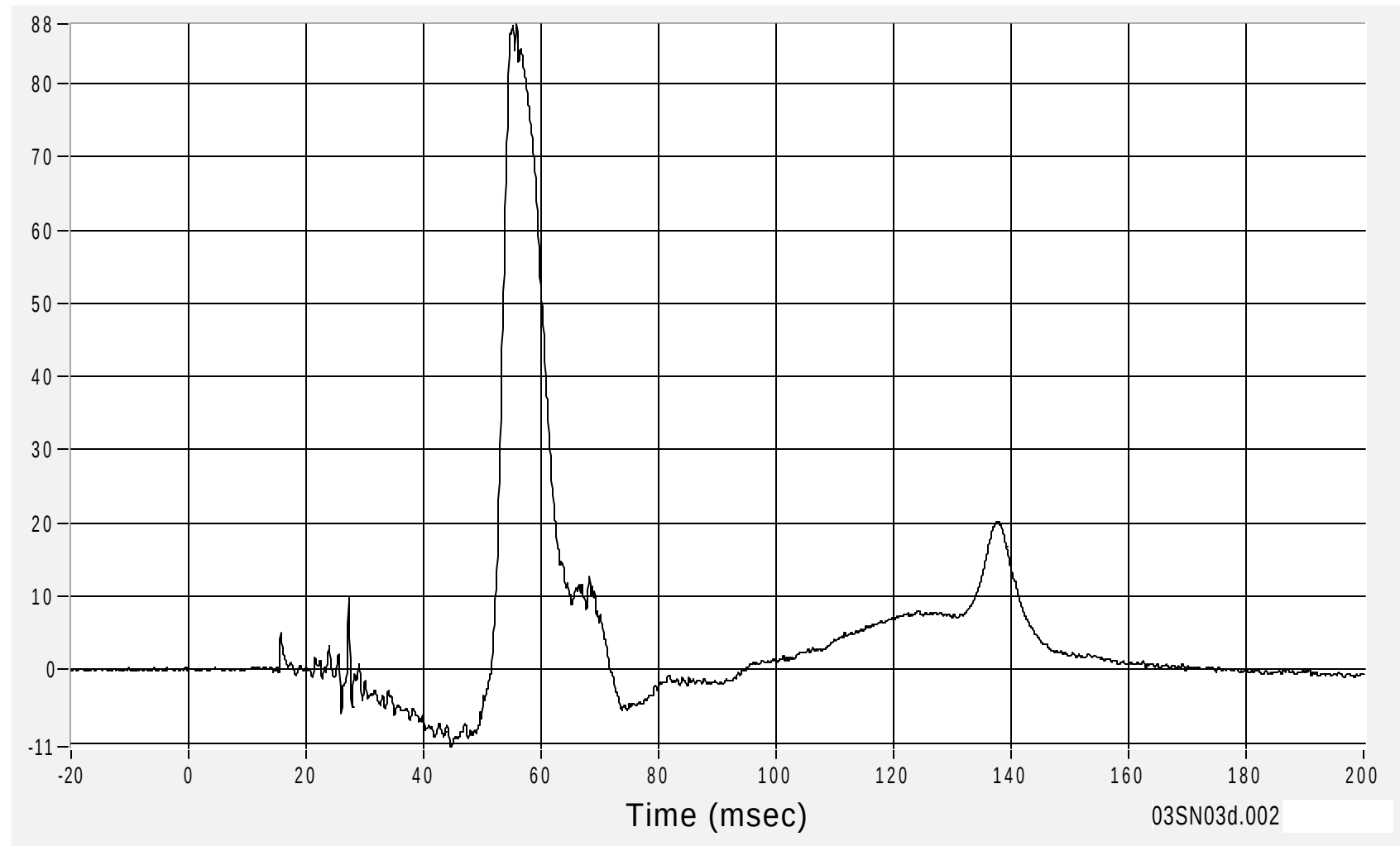
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Driver Head CG (Y) Acceleration

Acceleration (G's) CFC1000

Max 88.2 G's at 55.8 msec
Min -10.6 G's at 44.6 msec

B-8



03SN03 - 2003 TOYOTA TACOMA PRERUNNER 4 DOOR MPV

8 January 2003

Medical College of Wisconsin
Vehicle Crashworthiness Lab

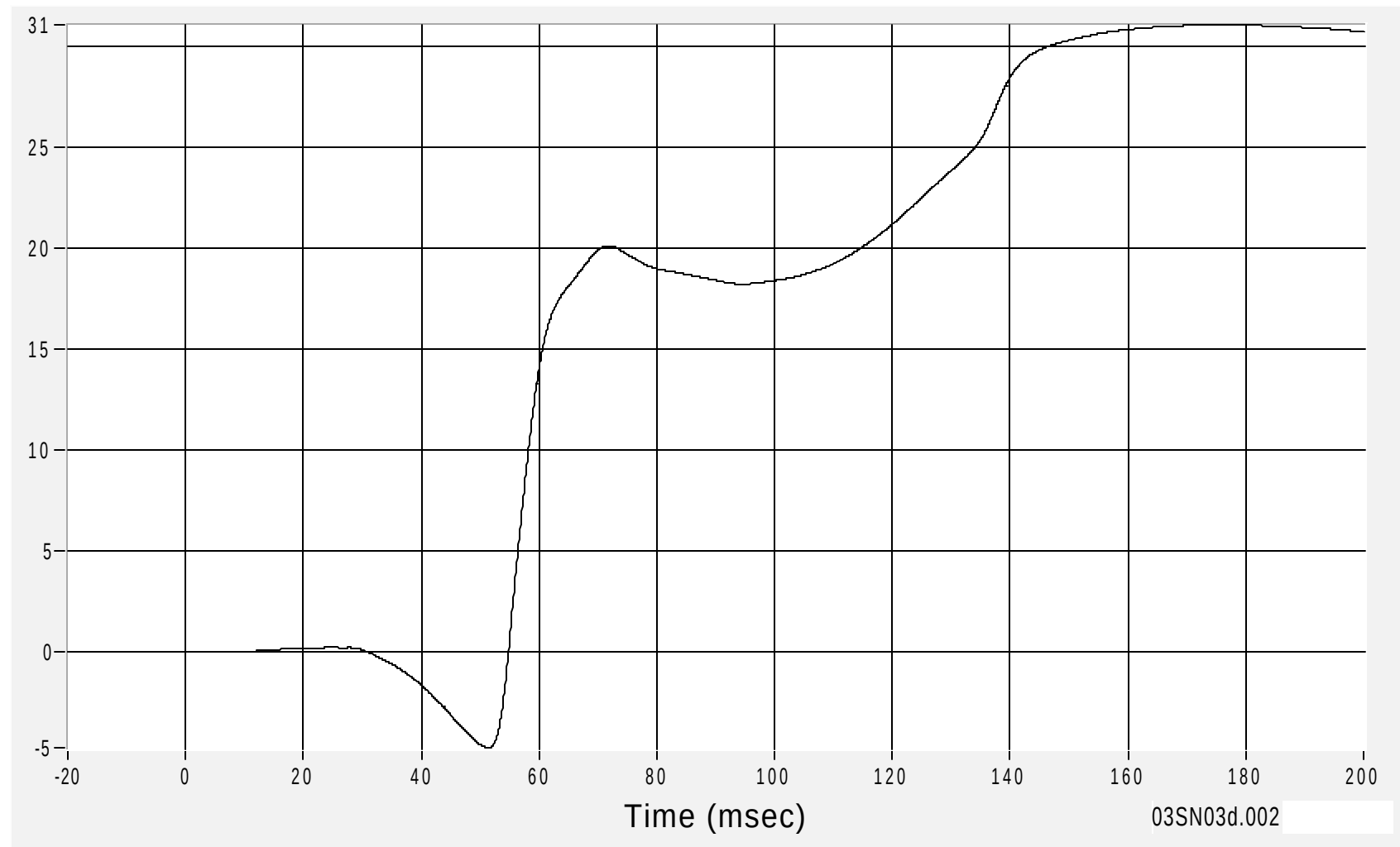
Driver Head CG (Y) Velocity

Velocity (km/h) CFC180

Max 31.1 km/h at 177.0 msec

Min -4.8 km/h at 51.4 msec

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03SN03 - 2003 TOYOTA TACOMA PRERUNNER 4 DOOR MPV

8 January 2003

Medical College of Wisconsin
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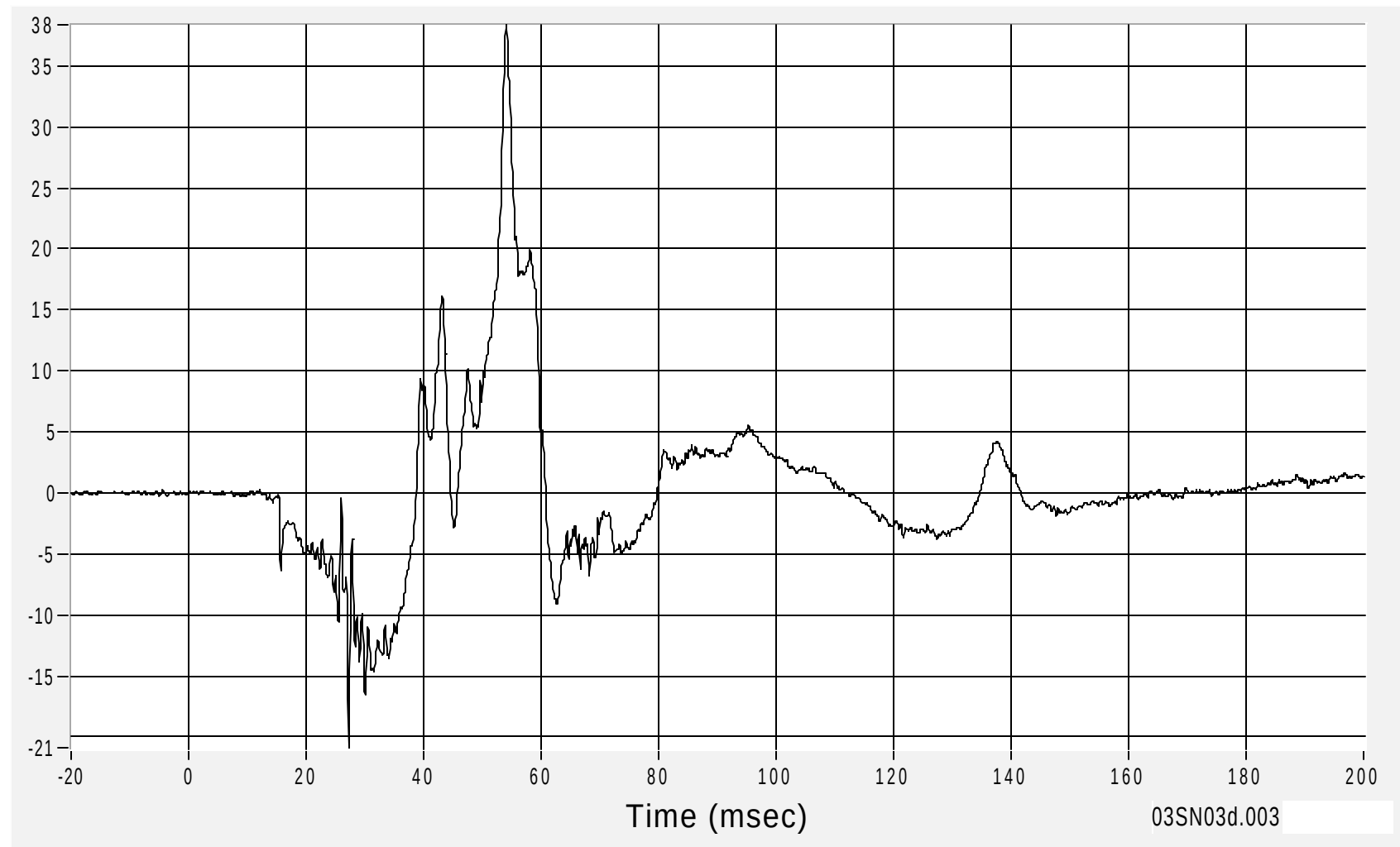
Driver Head CG (Z) Acceleration

Acceleration (G's) CFC1000

Max 38.4 G's at 54.1 msec

Min -20.9 G's at 27.3 msec

B-10



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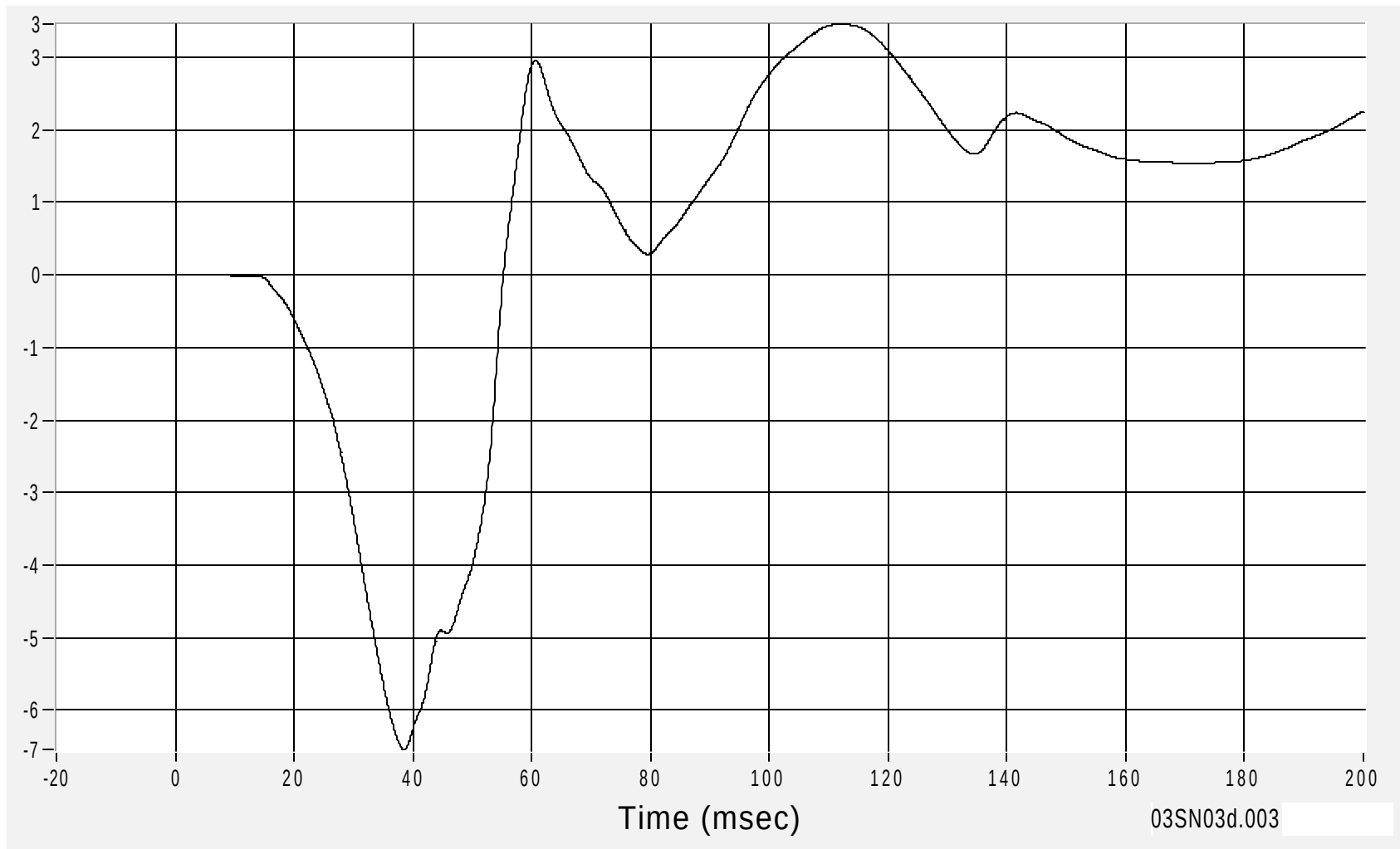
Driver Head CG (Z) Velocity

Velocity (km/h) CFC180

Max 3.5 km/h at 111.9 msec

Min -6.5 km/h at 38.6 msec

B-11



03SN03 - 2003 TOYOTA TACOMA PRERUNNER 4 DOOR MPV

8 January 2003

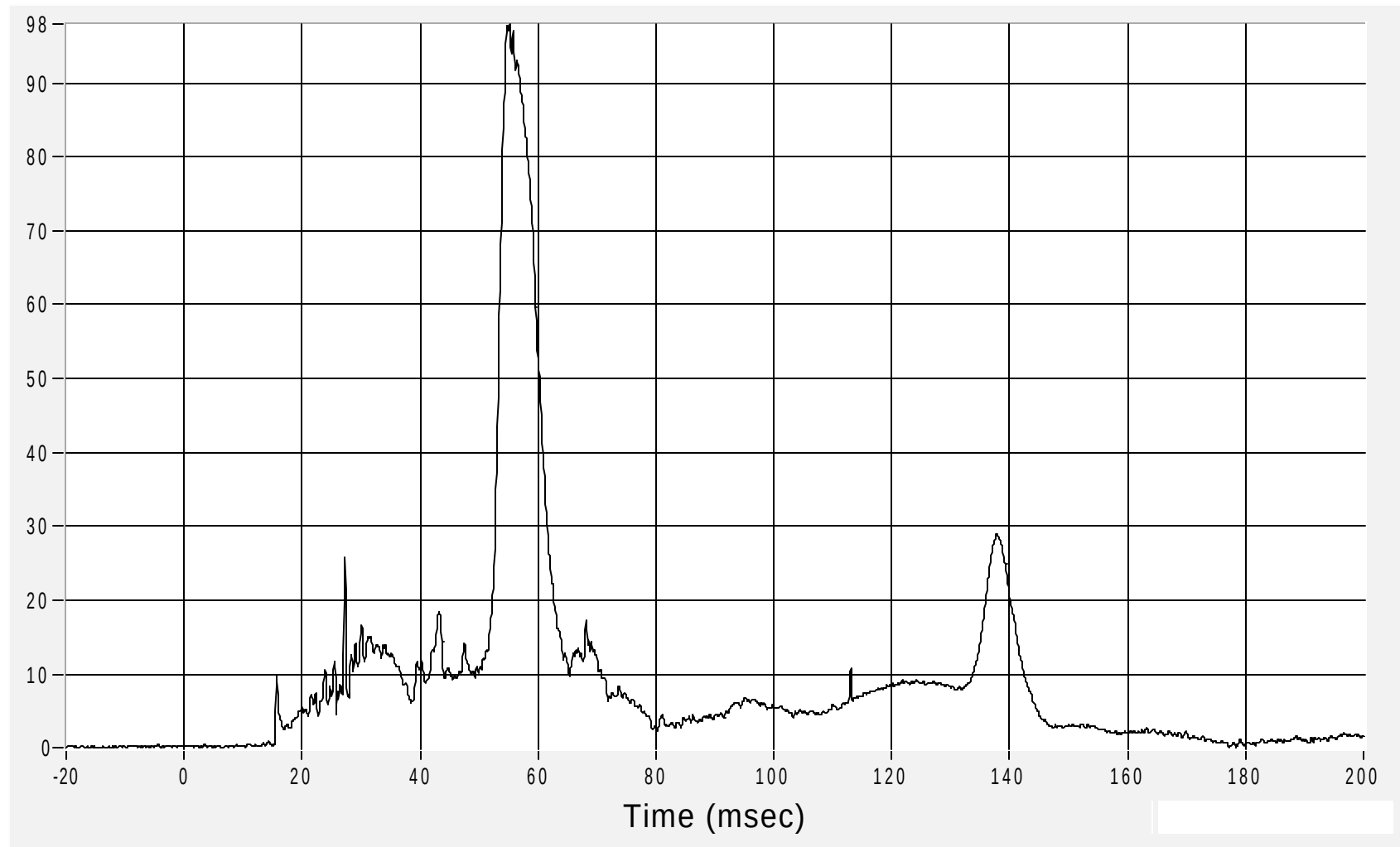
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Driver Head Resultant Acceleration

Acceleration (G's) CFC1000

Max 98.0 G's at 55.2 msec
Min 0.1 G's at 177.2 msec

B-12



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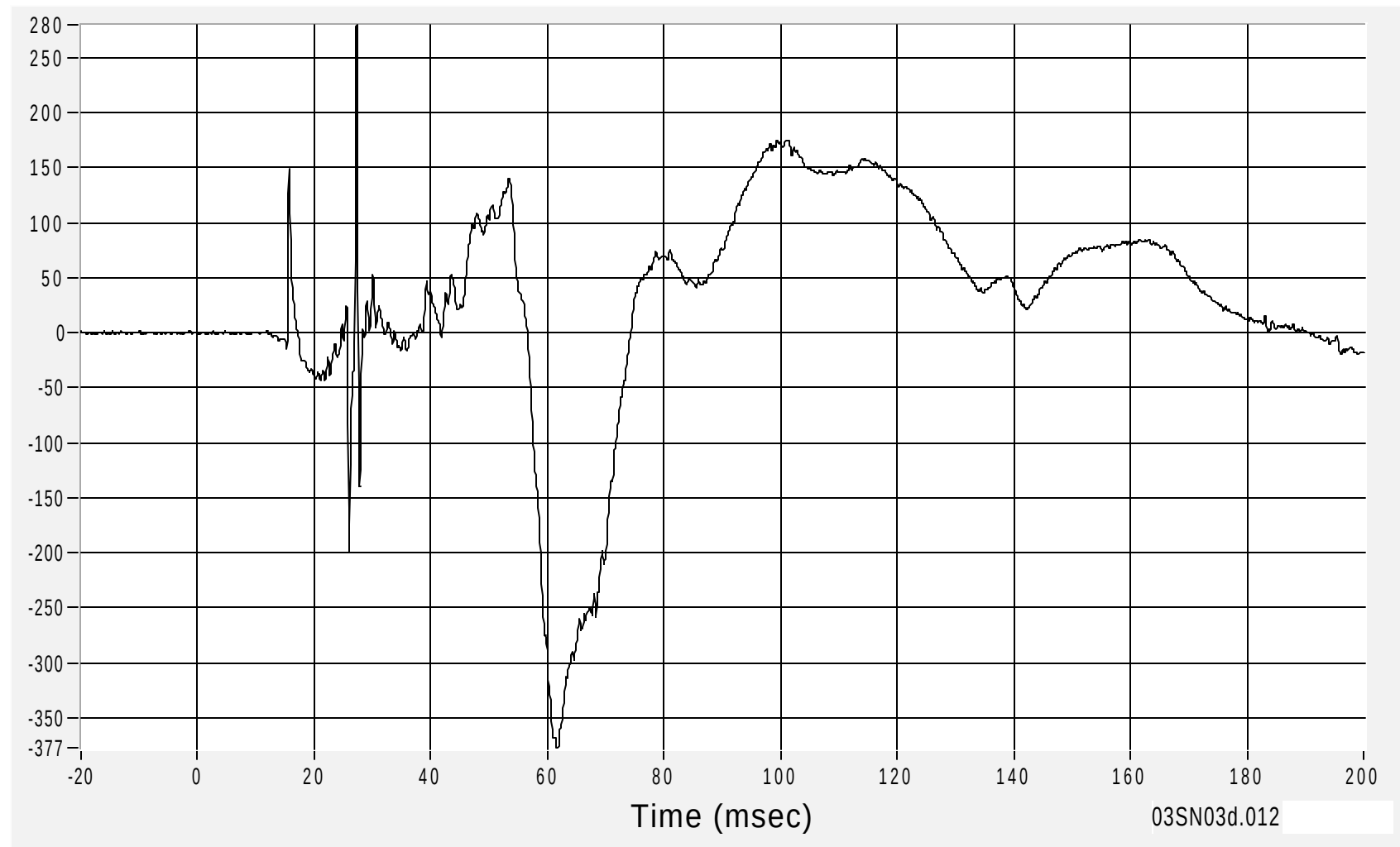
Driver Upper Neck (X) Force

Force (N) CFC1000

Max 279.7 N at 27.3 msec

Min -377.0 N at 61.8 msec

B-13



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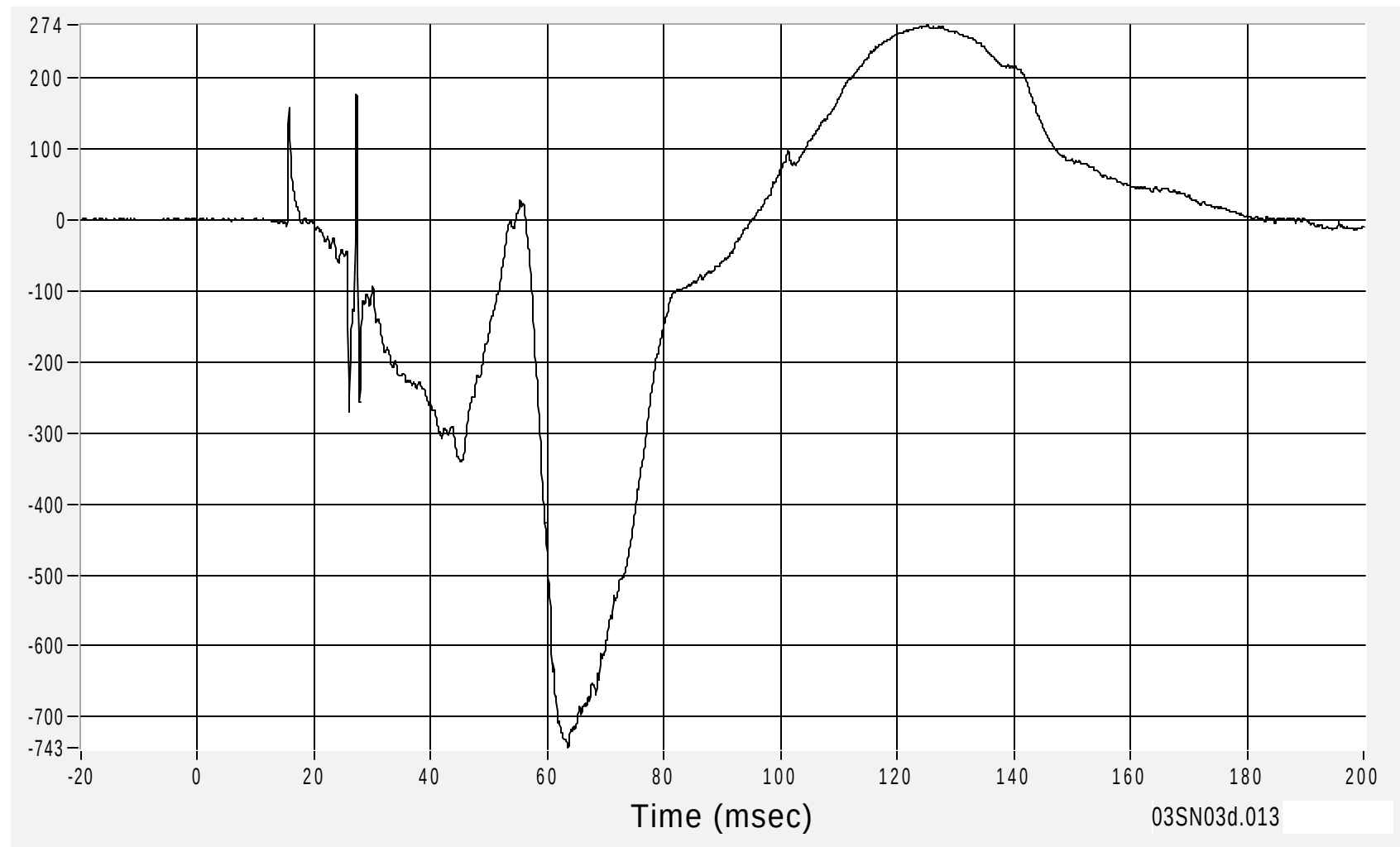
Driver Upper Neck (Y) Force

Force (N) CFC1000

Max 274.0 N at 125.2 msec

Min -743.2 N at 63.6 msec

B-14



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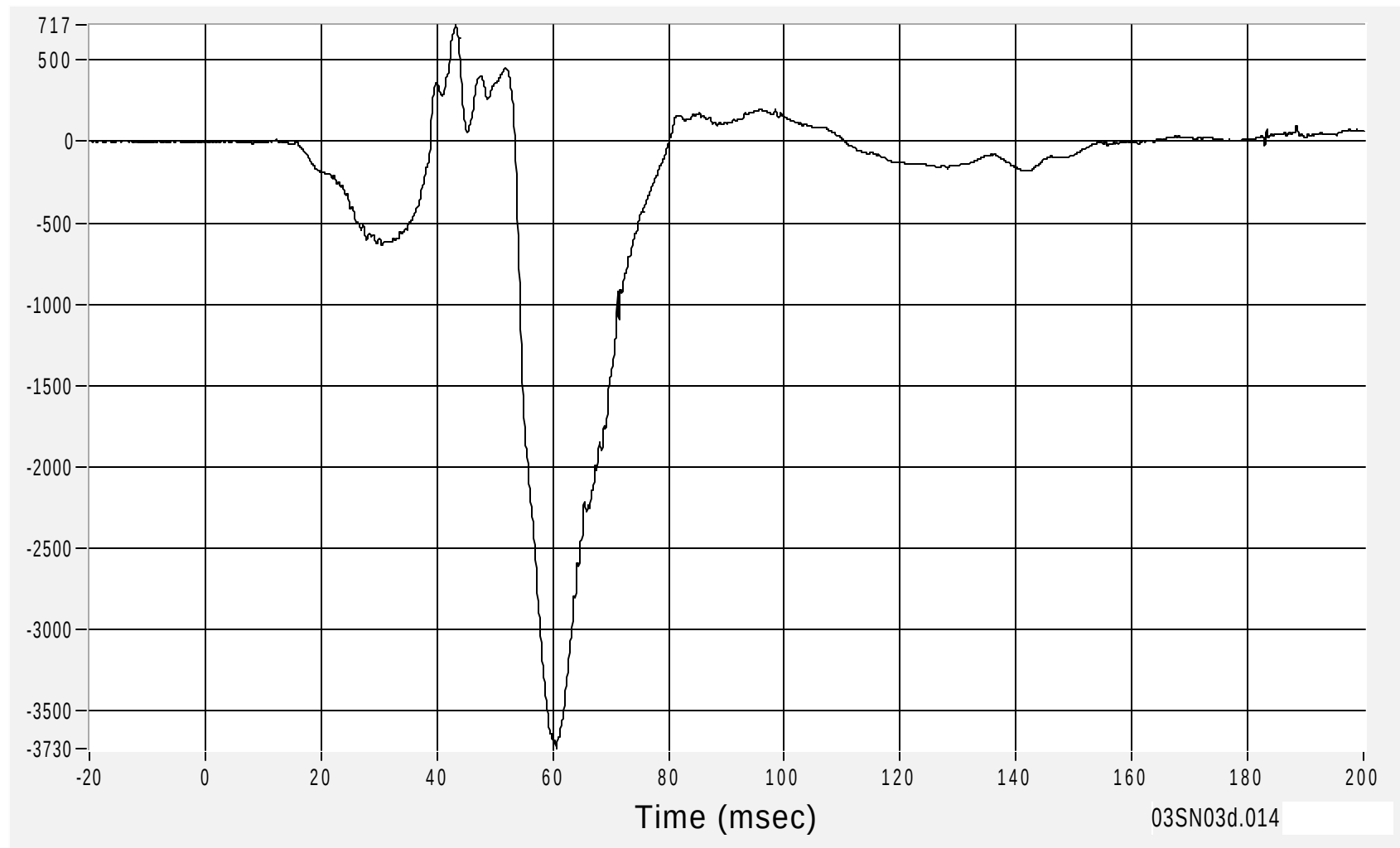
Driver Upper Neck (Z) Force

Force (N) CFC1000

Max 717.0 N at 43.3 msec

Min -3729.7 N at 60.6 msec

B-15



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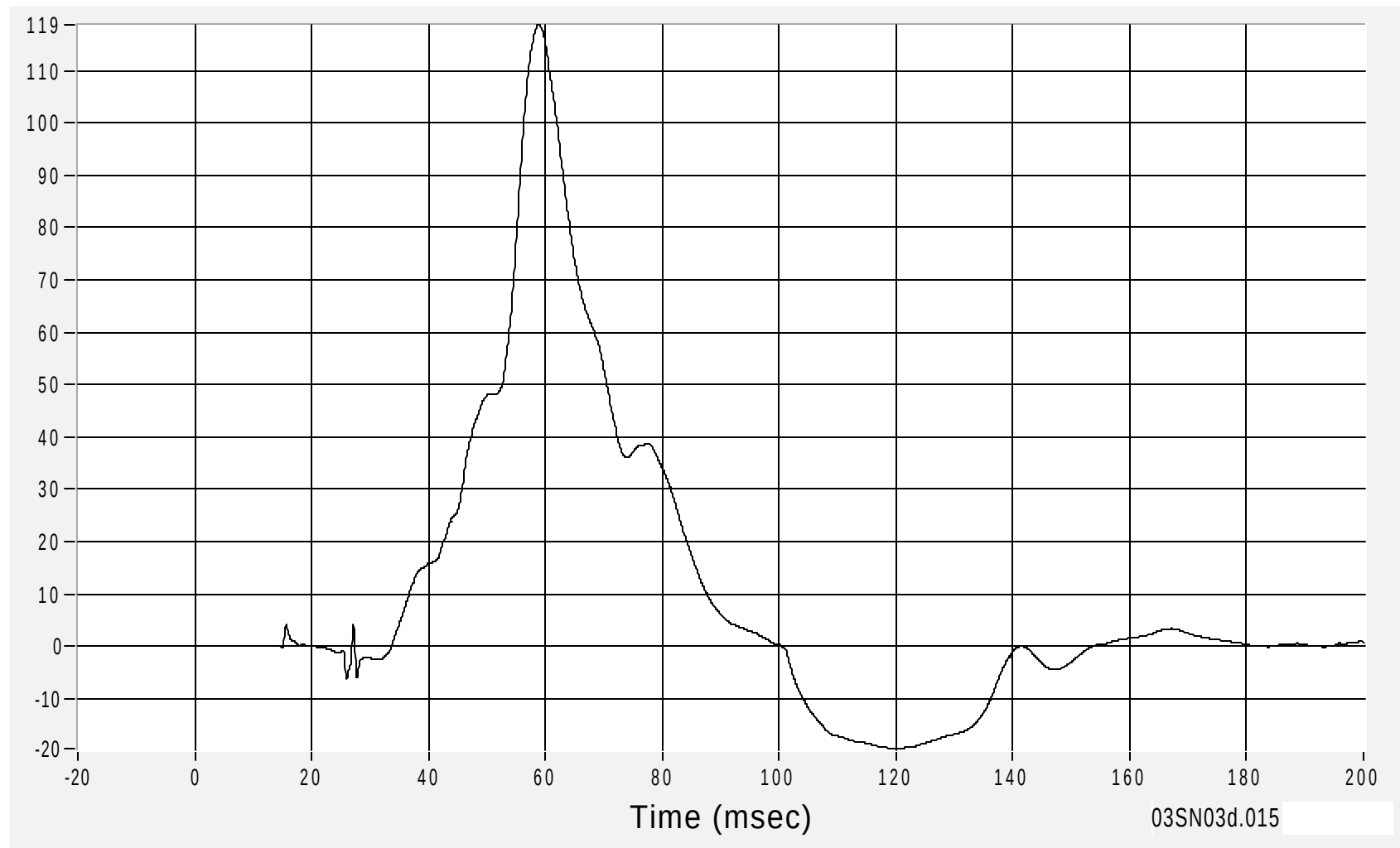
Driver Upper Neck (X) Moment

Moment (Nm) CFC600

Max 118.8 Nm at 58.8 msec

Min -19.5 Nm at 120.2 msec

B-16



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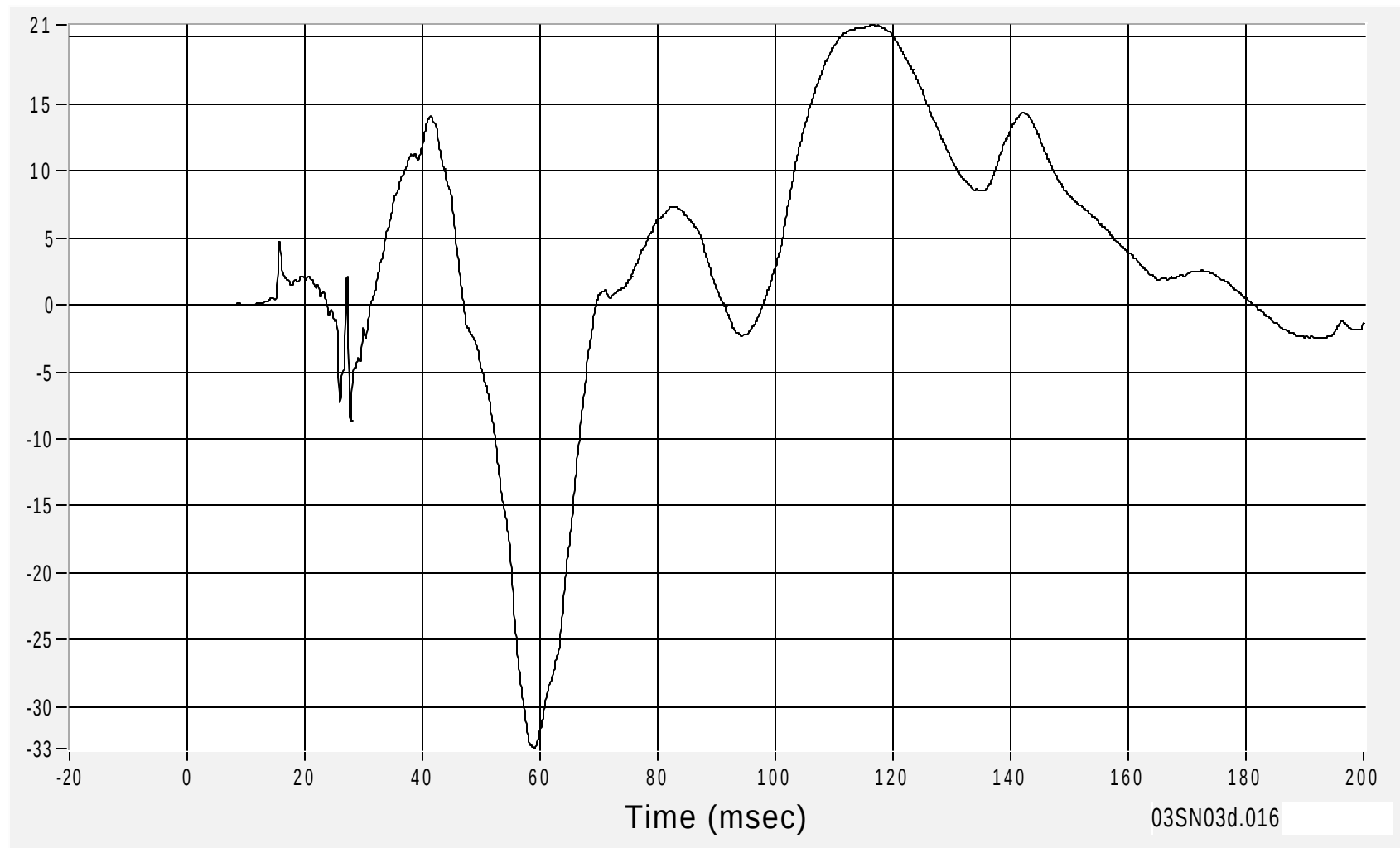
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Driver Upper Neck (Y) Moment

Moment (Nm) CFC600

Max 20.9 Nm at 116.3 msec
Min -33.1 Nm at 59.0 msec

B-17



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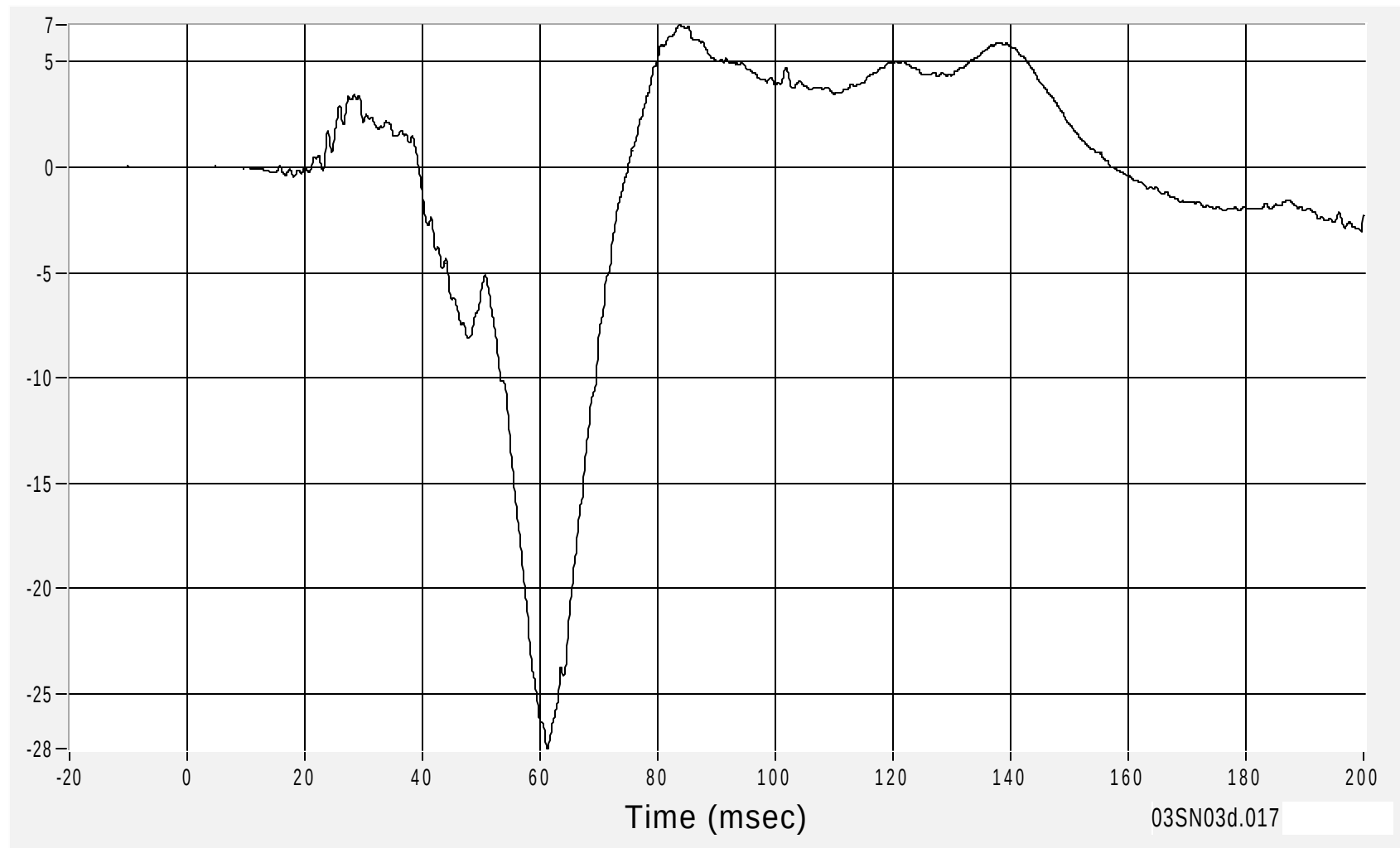
Driver Upper Neck (Z) Moment

Moment (Nm) CFC600

Max 6.7 Nm at 83.8 msec

Min -27.6 Nm at 61.3 msec

B-18



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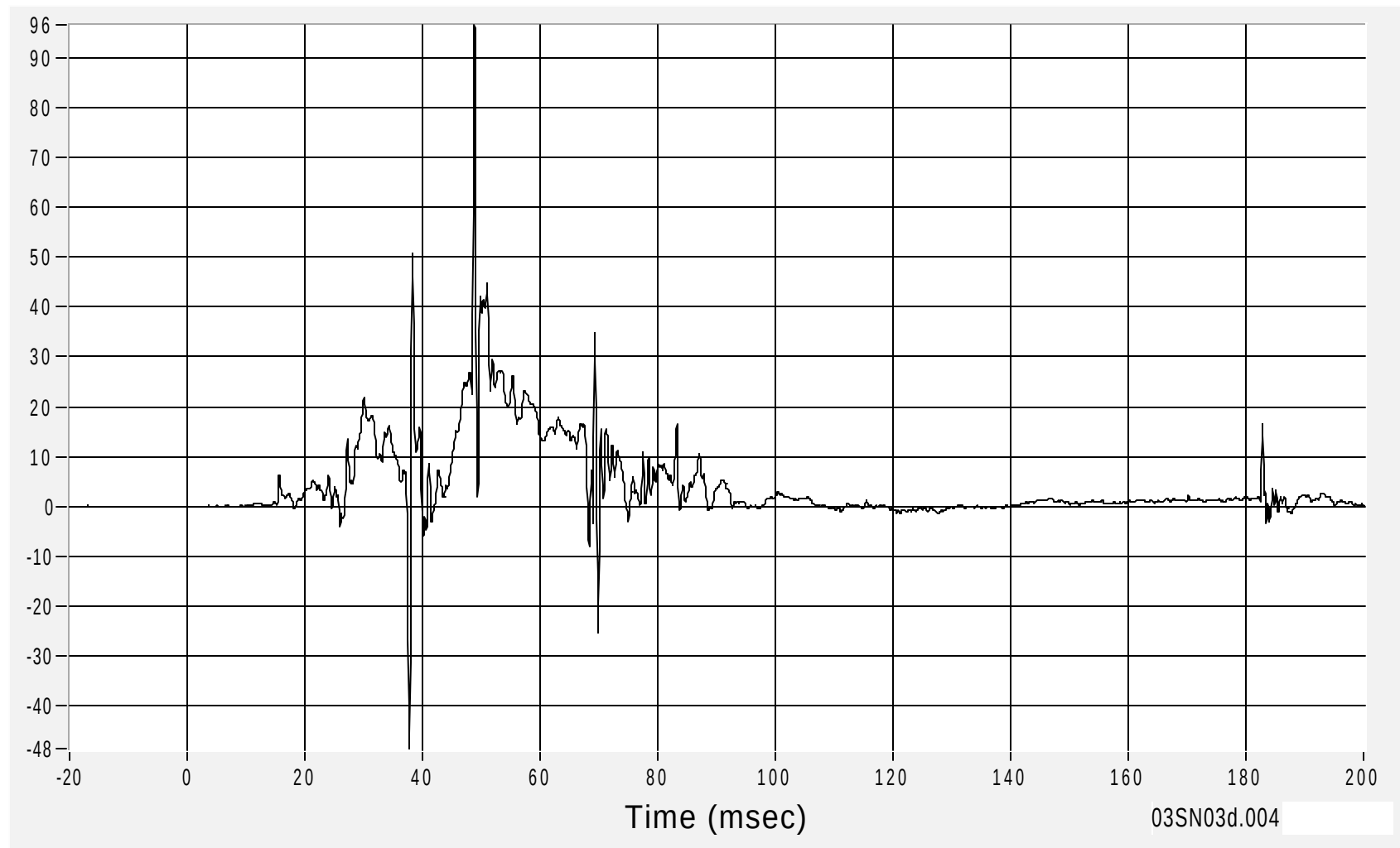
Driver Upper Rib (Y) Acceleration

Acceleration (G's) CFC1000

Max 96.5 G's at 48.8 msec

Min -48.5 G's at 37.8 msec

B-19



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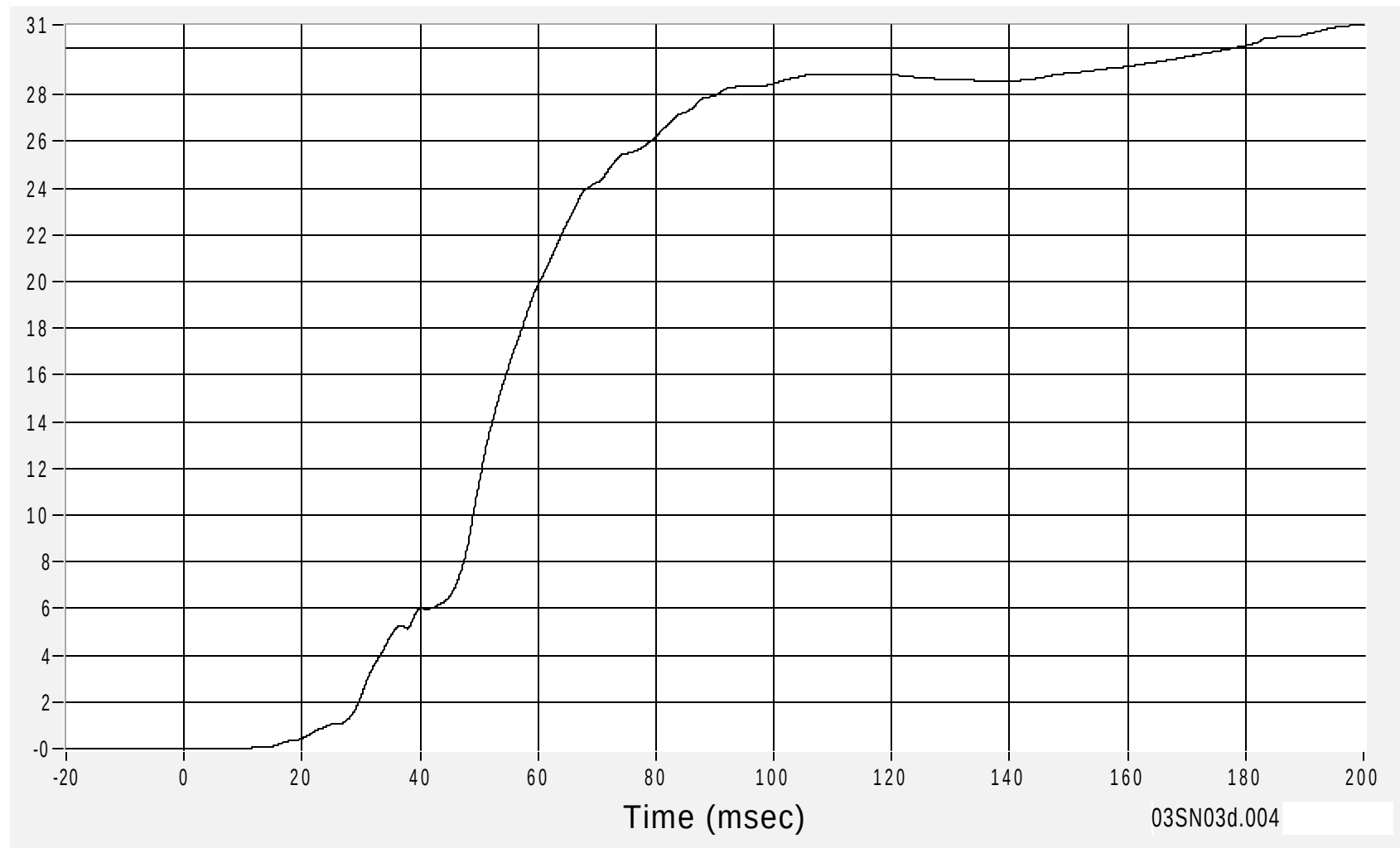
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Driver Upper Rib (Y) Velocity

Velocity (km/h) CFC180

Max 31.0 km/h at 199.9 msec
Min 0.0 km/h at 1.2 msec

B-20



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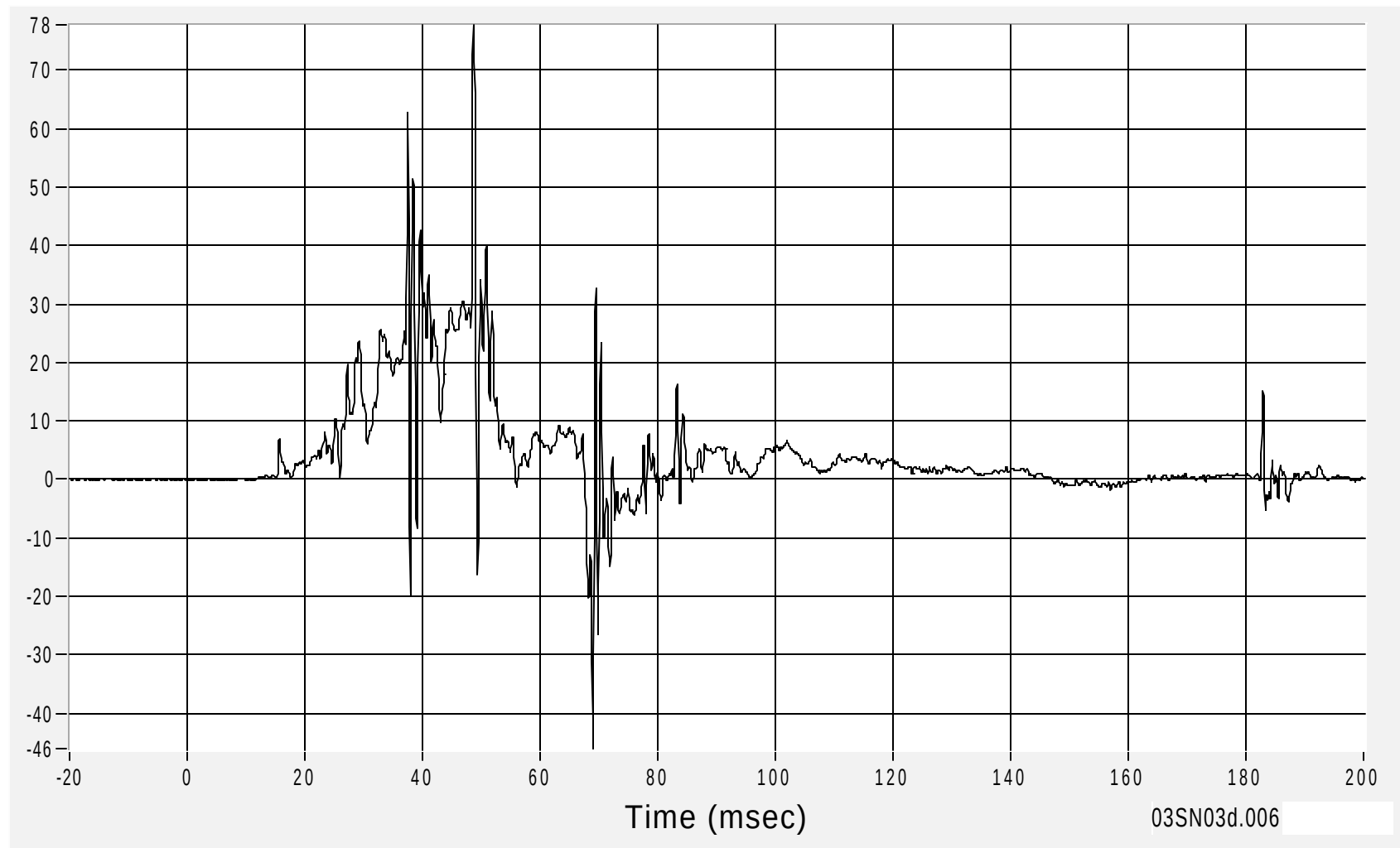
Driver Lower Rib (Y) Acceleration

Acceleration (G's) CFC1000

Max 77.7 G's at 48.6 msec

Min -46.0 G's at 69.0 msec

B-21



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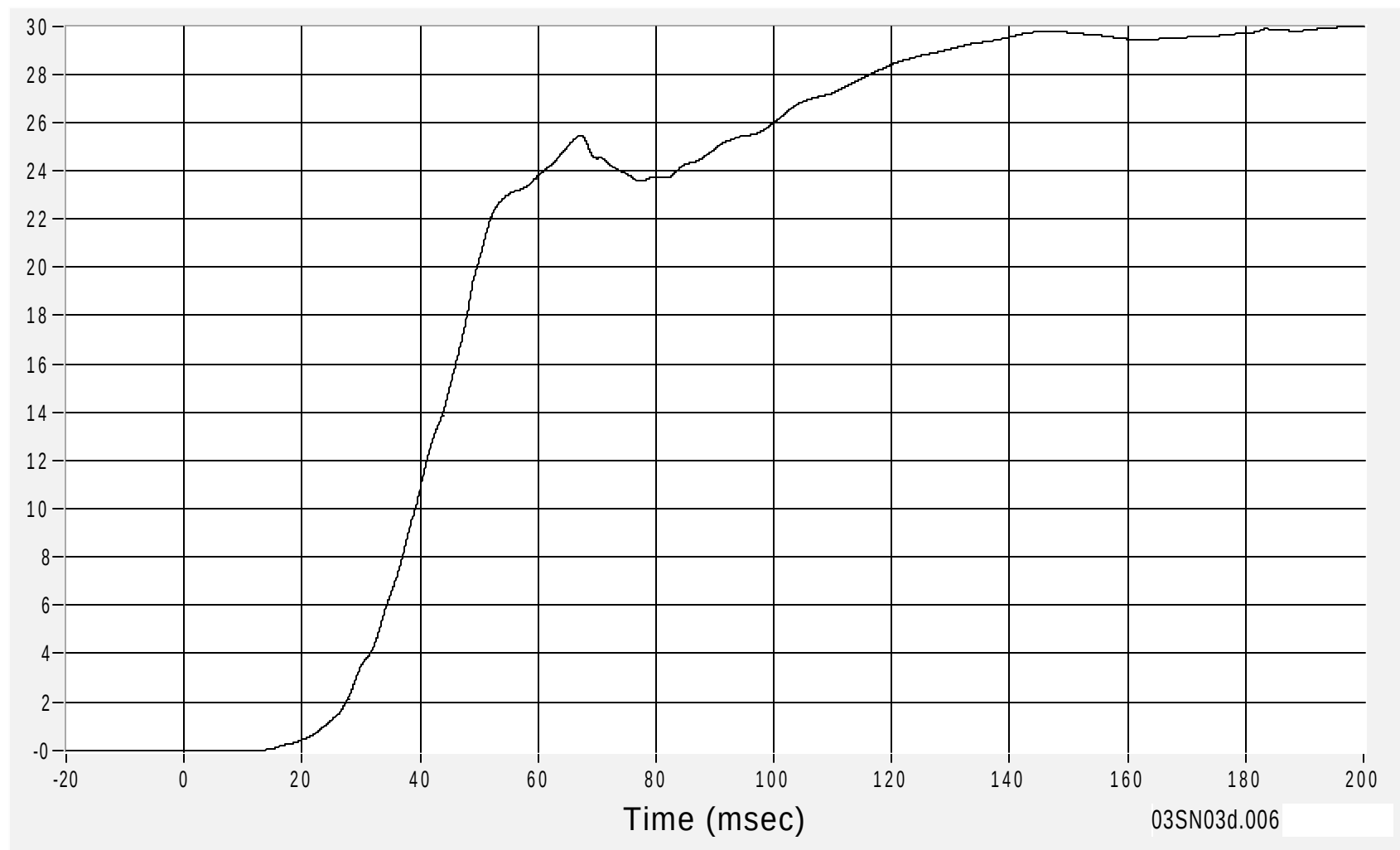
Driver Lower Rib (Y) Velocity

Velocity (km/h) CFC180

Max 30.0 km/h at 199.9 msec

Min 0.0 km/h at 8.0 msec

B-22



03SN03 - 2003 TOYOTA TACOMA PRERUNNER 4 DOOR MPV

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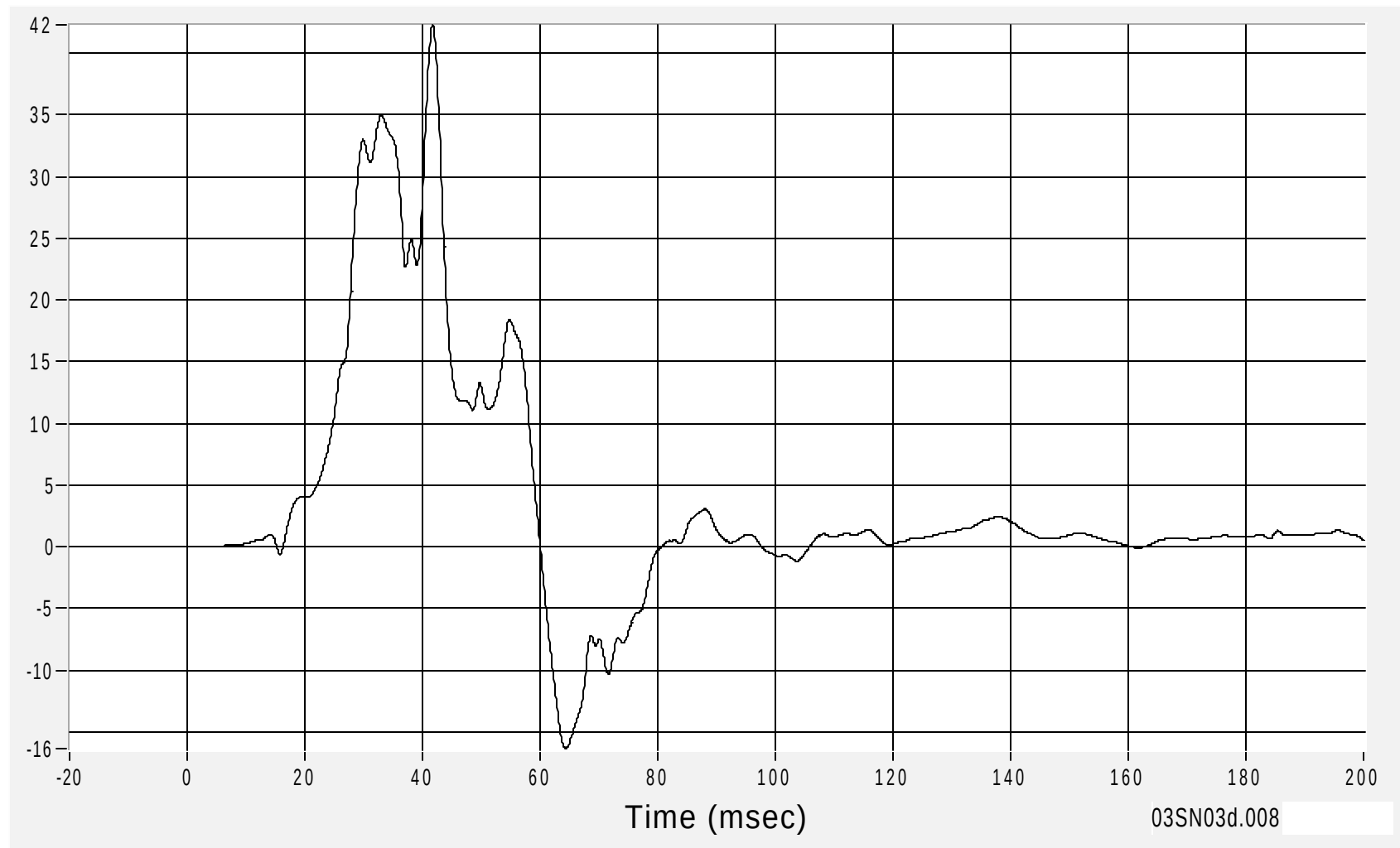
Driver Lower Spine (Y) Acceleration

Acceleration (G's) CFC180

Max 42.3 G's at 41.7 msec

Min -16.4 G's at 64.4 msec

B-23



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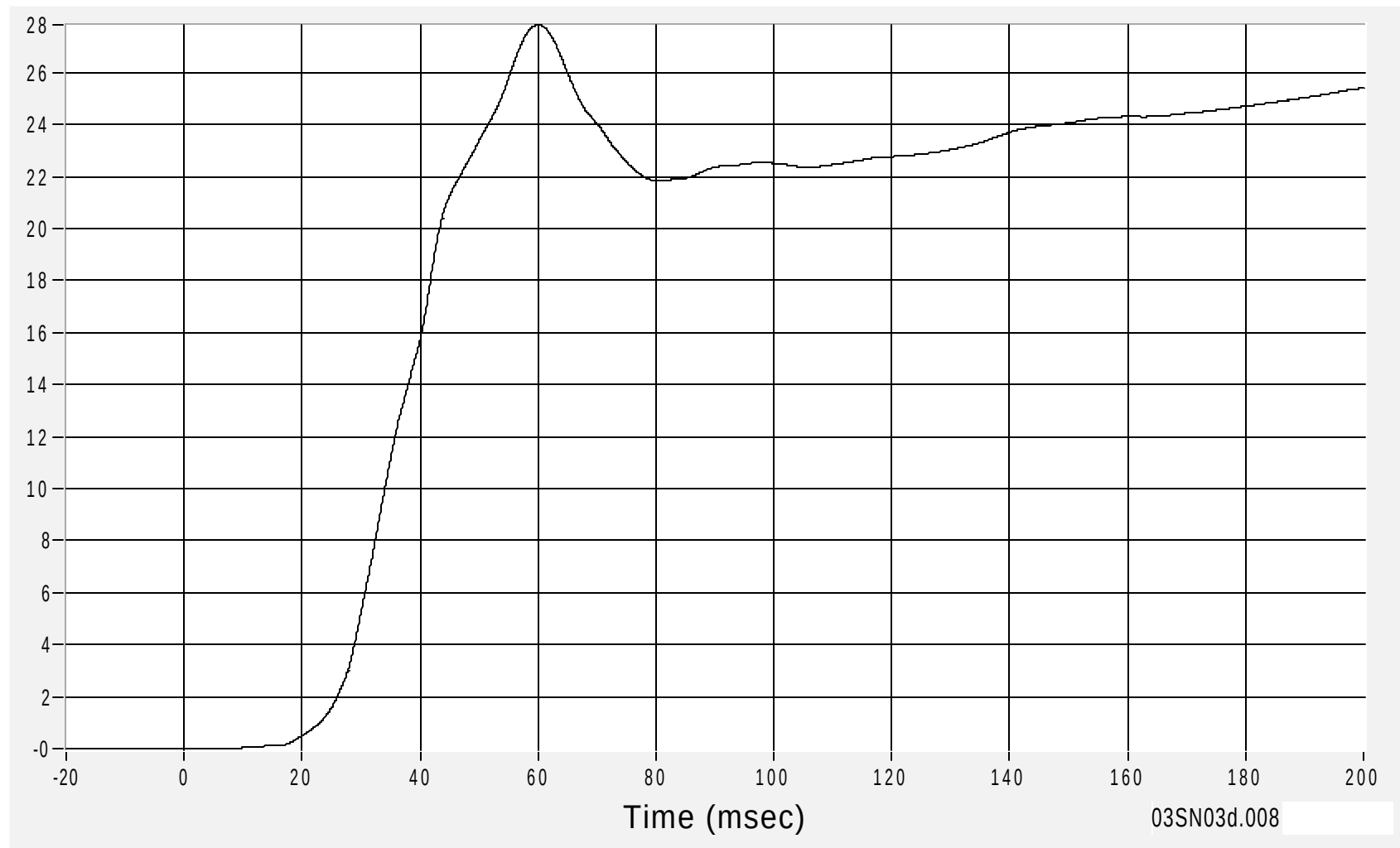
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Driver Lower Spine (Y) Velocity

Velocity (km/h) CFC180

Max 27.8 km/h at 60.0 msec
Min 0.0 km/h at 0.0 msec

B-24



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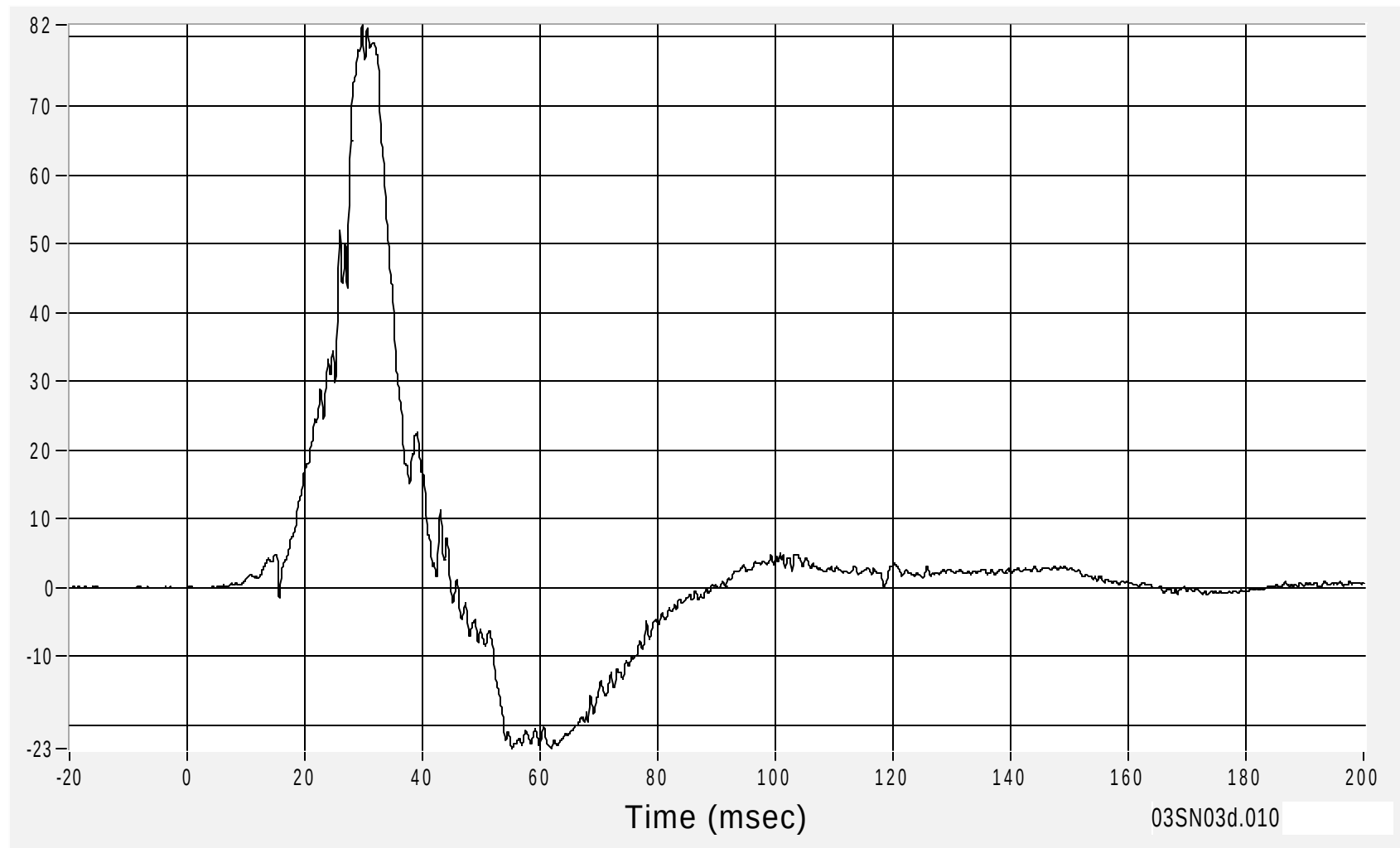
Driver Pelvic (Y) Acceleration

Acceleration (G's) CFC1000

Max 81.8 G's at 29.8 msec

Min -23.4 G's at 61.9 msec

B-25



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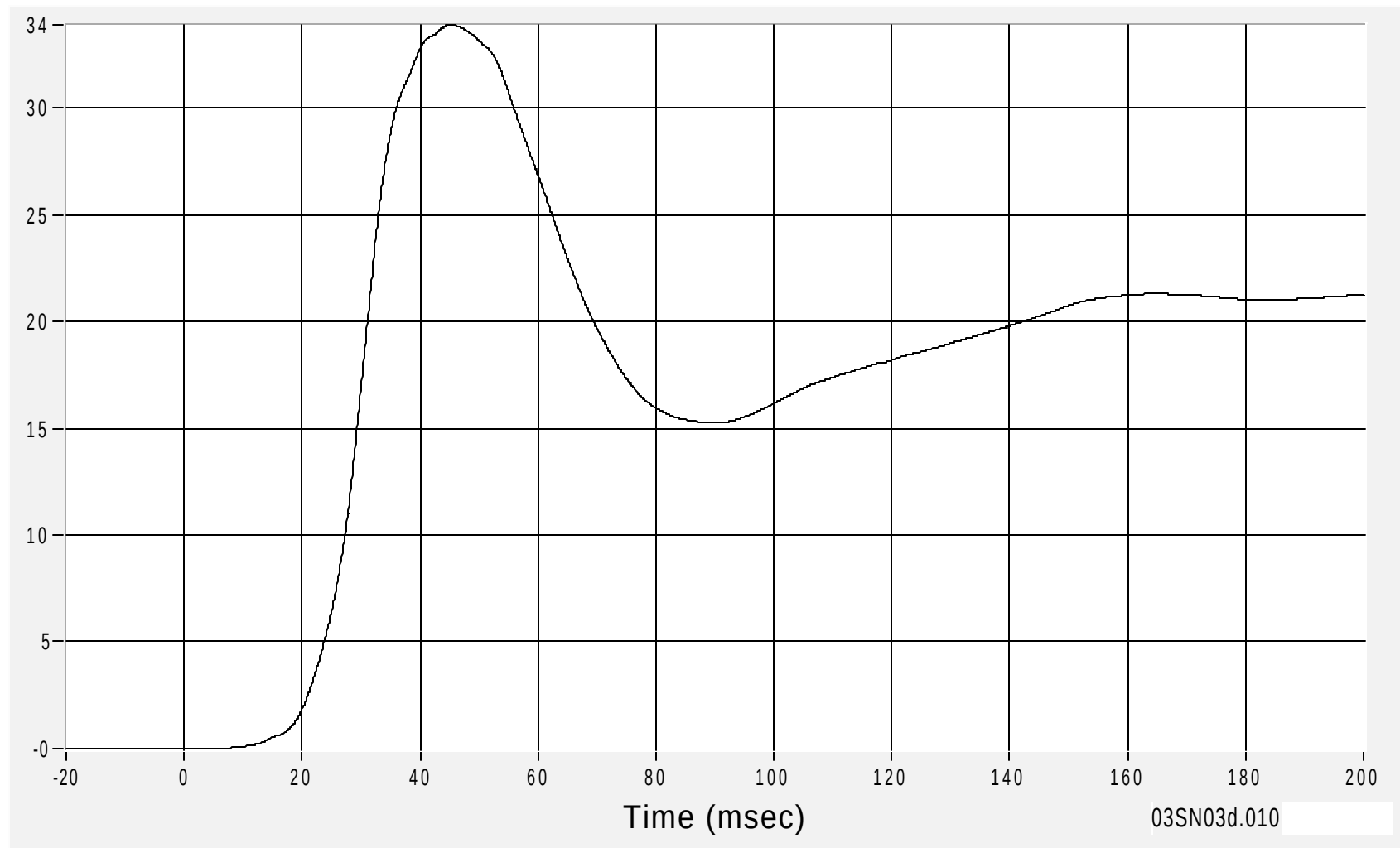
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Driver Pelvic (Y) Velocity

Velocity (km/h) CFC180

Max 33.9 km/h at 45.1 msec
Min 0.0 km/h at 0.0 msec

B-26



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8 January 2003

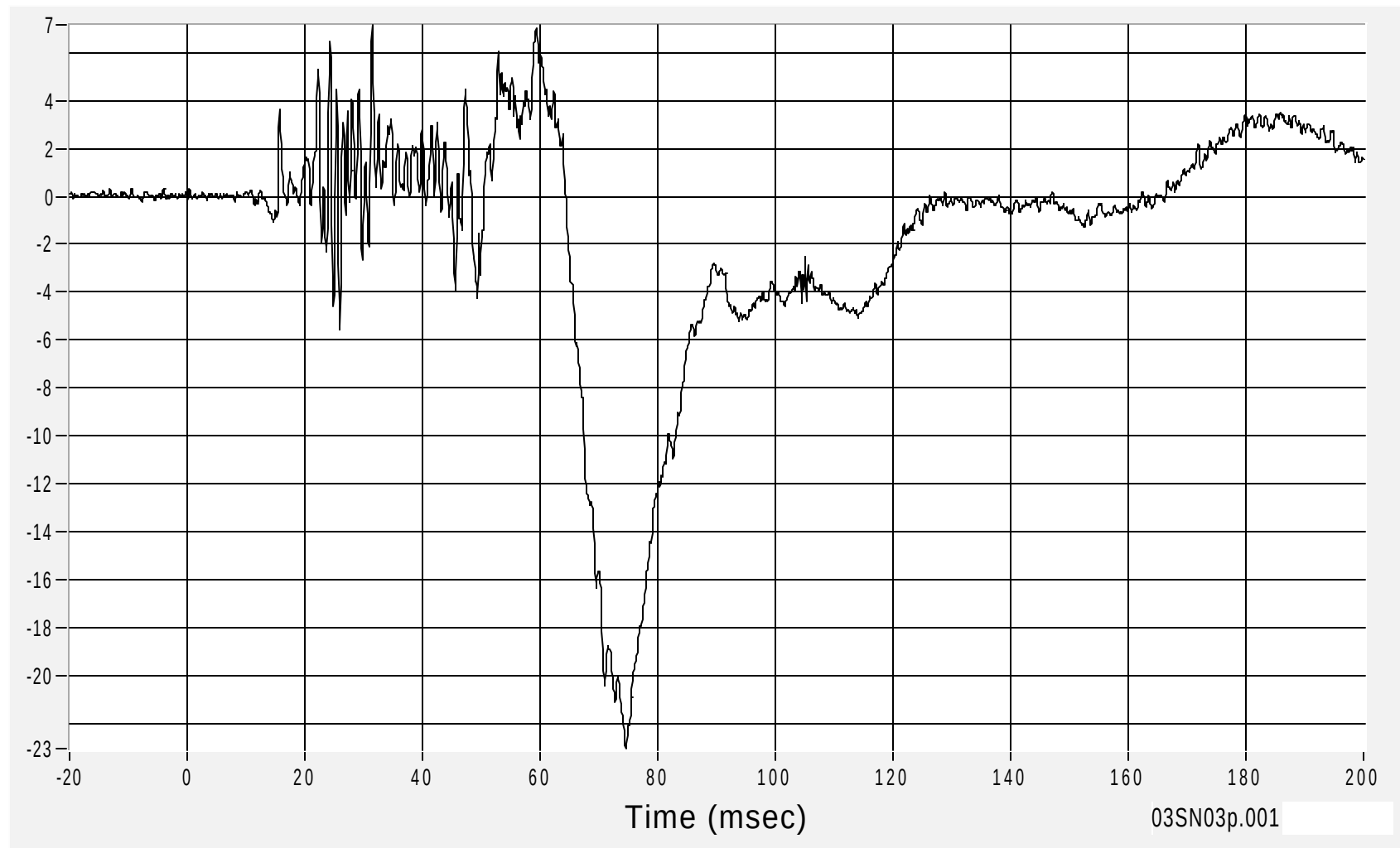
Medical College of Wisconsin
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Passenger Head CG (X) Acceleration

Acceleration (G's) CFC1000

Max 7.2 G's at 31.4 msec

Min -23.1 G's at 74.6 msec



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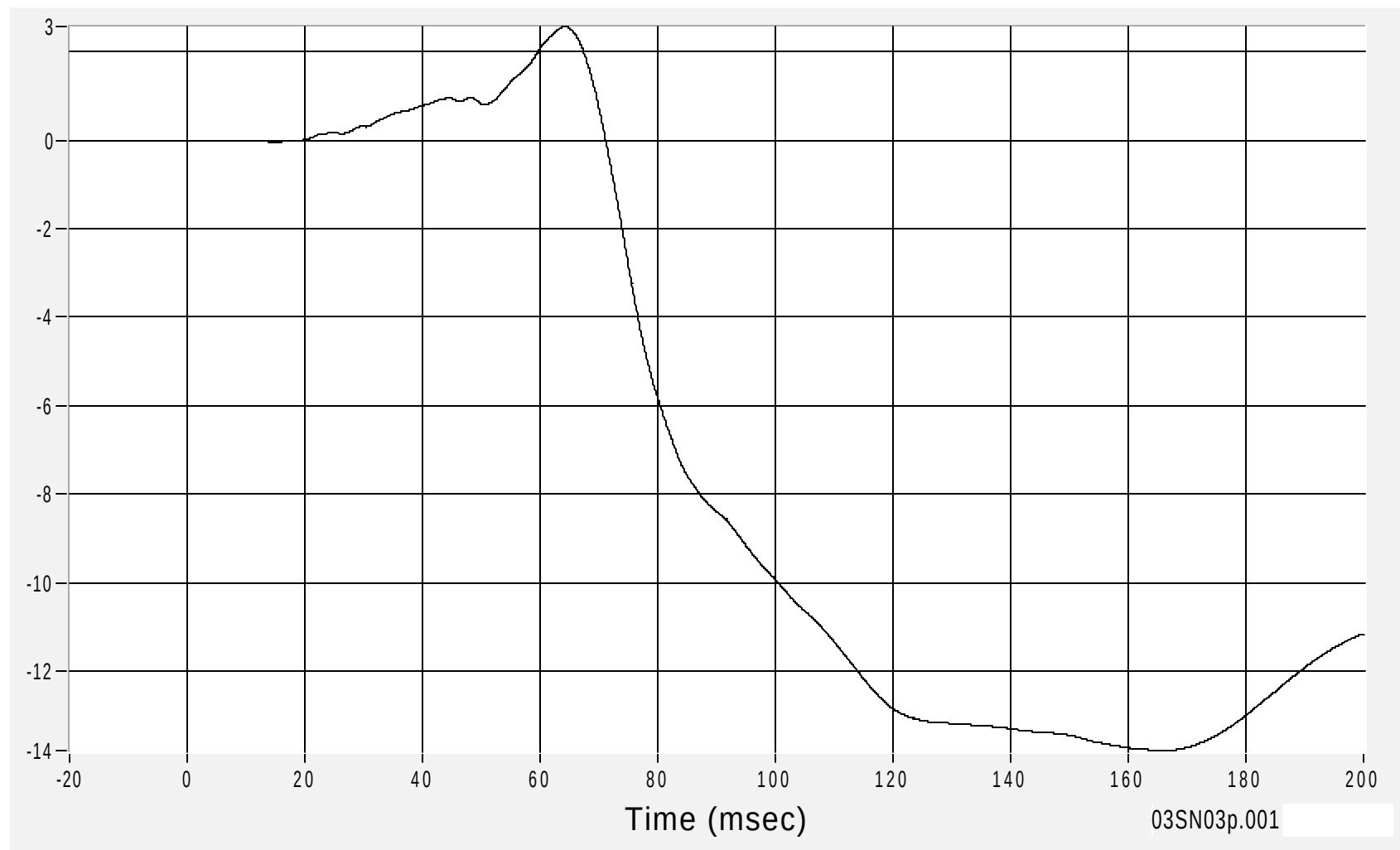
Passenger Head CG (X) Velocity

Velocity (km/h) CFC180

Max 2.6 km/h at 64.2 msec

Min -13.8 km/h at 166.0 msec

B-28



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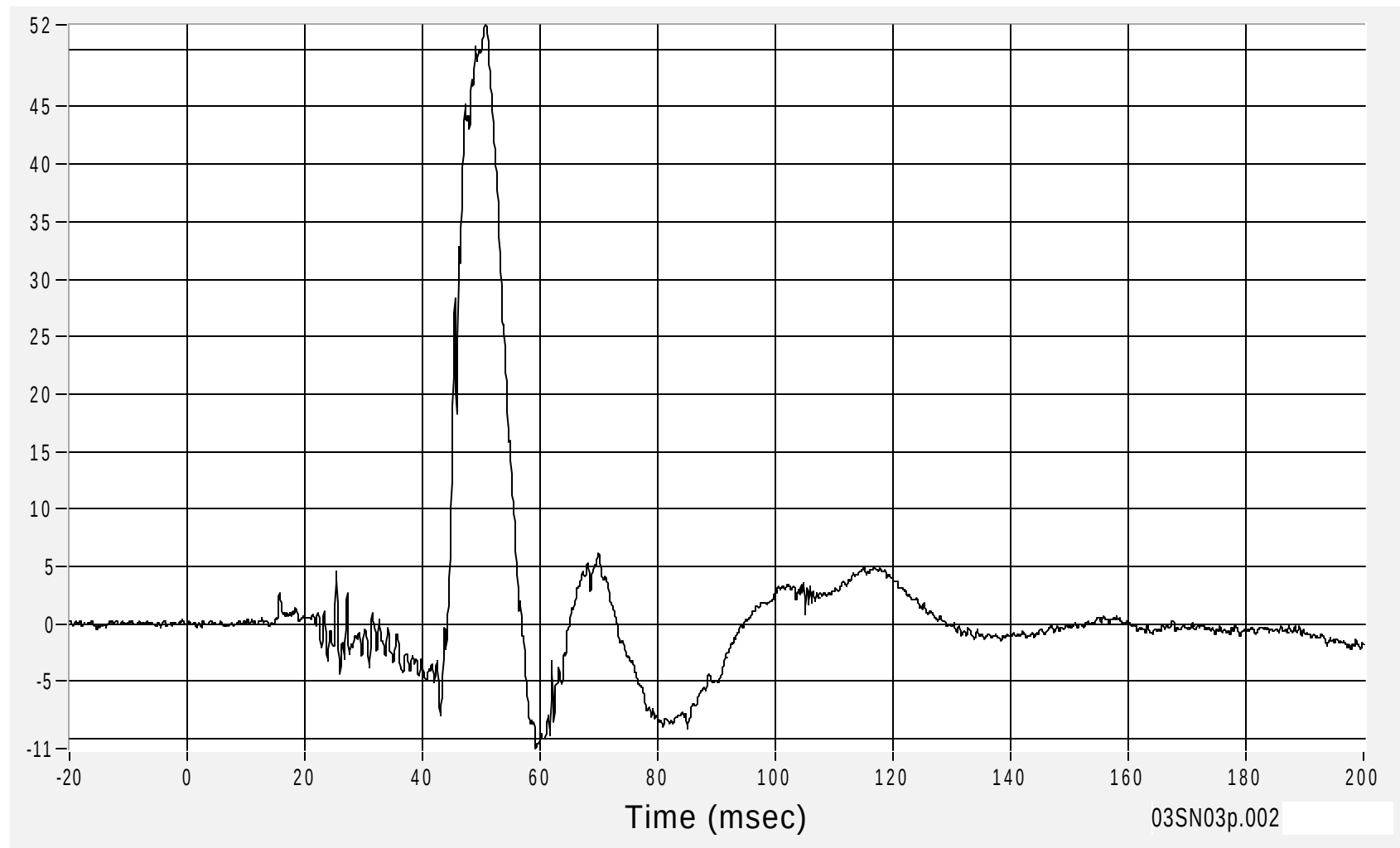
Medical College of Wisconsin
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Passenger Head CG (Y) Acceleration

Acceleration (G's) CFC1000

Max 52.1 G's at 50.7 msec
Min -10.8 G's at 59.3 msec

B-29



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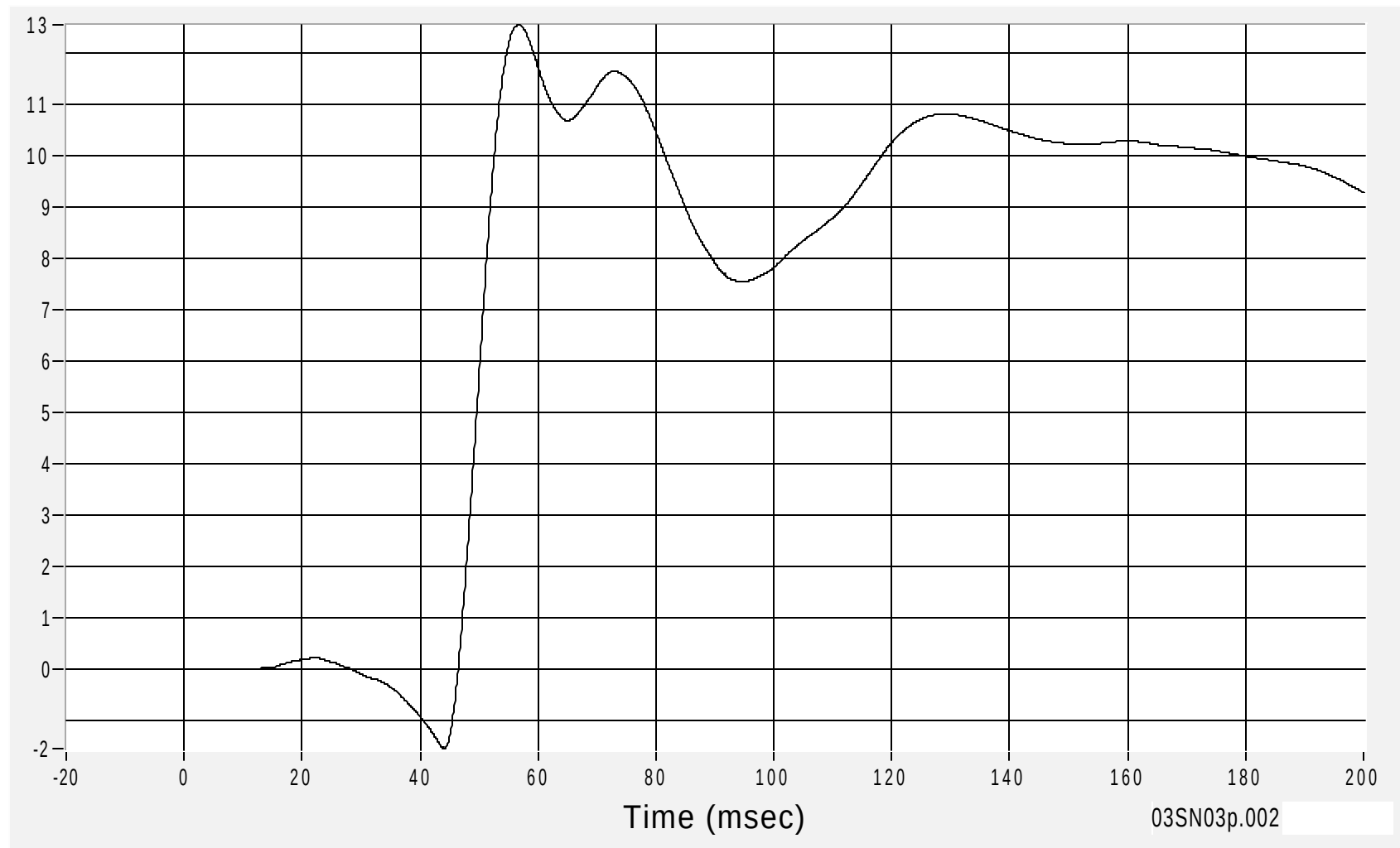
Passenger Head CG (Y) Velocity

Velocity (km/h) CFC180

Max 12.5 km/h at 56.7 msec

Min -1.5 km/h at 44.1 msec

B-30



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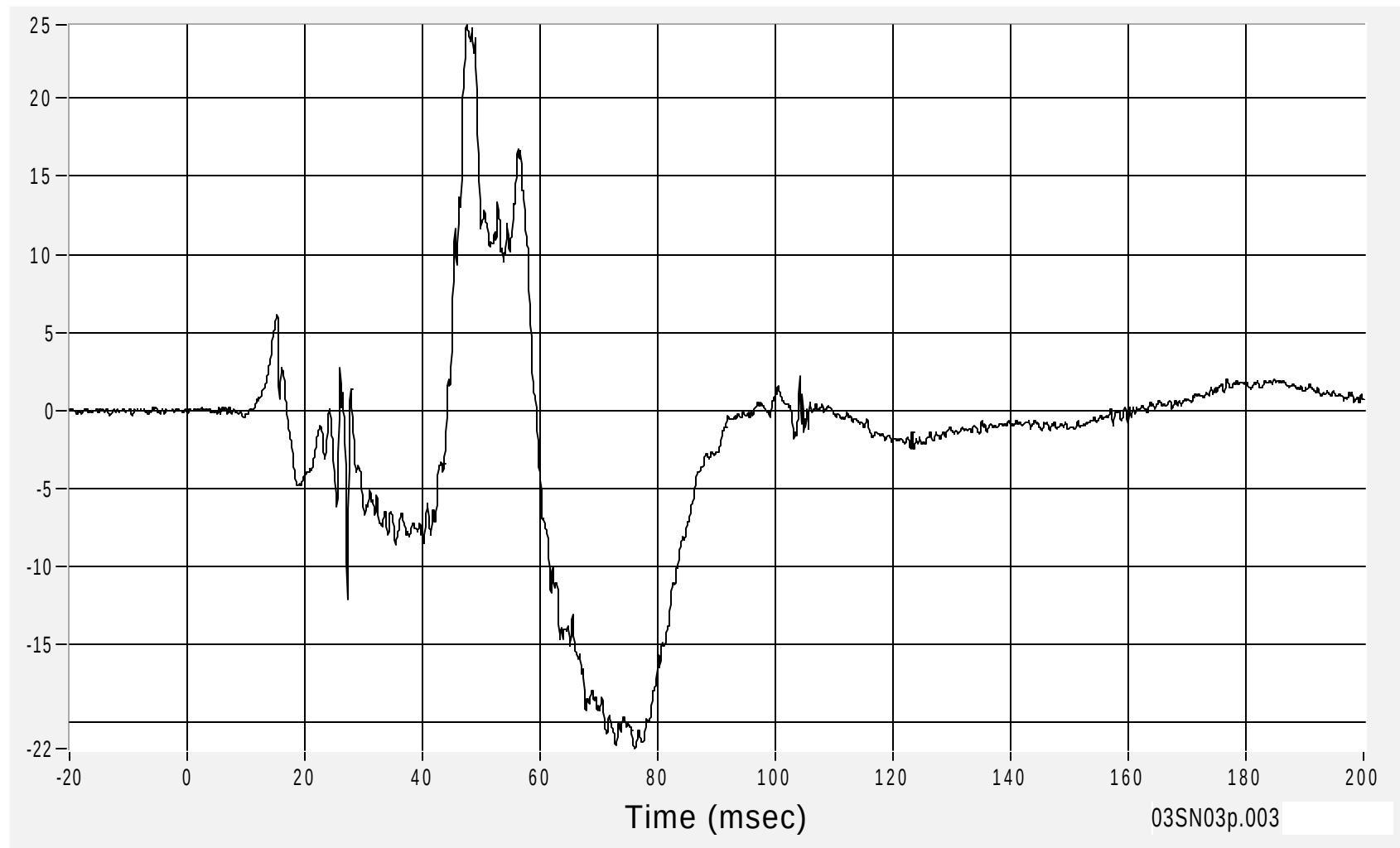
Passenger Head CG (Z) Acceleration

Acceleration (G's) CFC1000

Max 24.7 G's at 47.5 msec

Min -21.6 G's at 76.1 msec

B-31



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8 January 2003

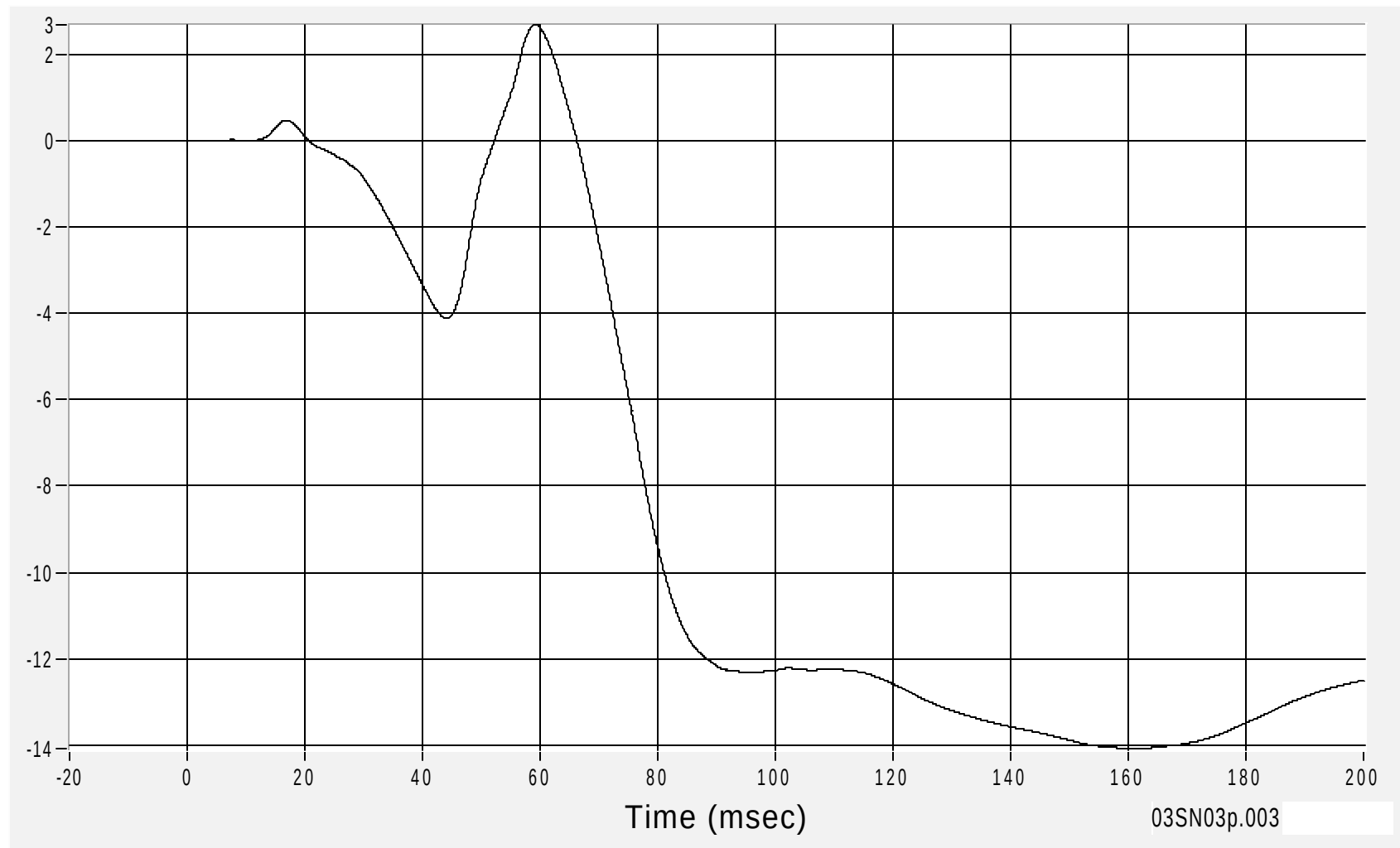
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Passenger Head CG (Z) Velocity

Velocity (km/h) CFC180

Max 2.7 km/h at 59.2 msec
Min -14.1 km/h at 161.0 msec

B-32



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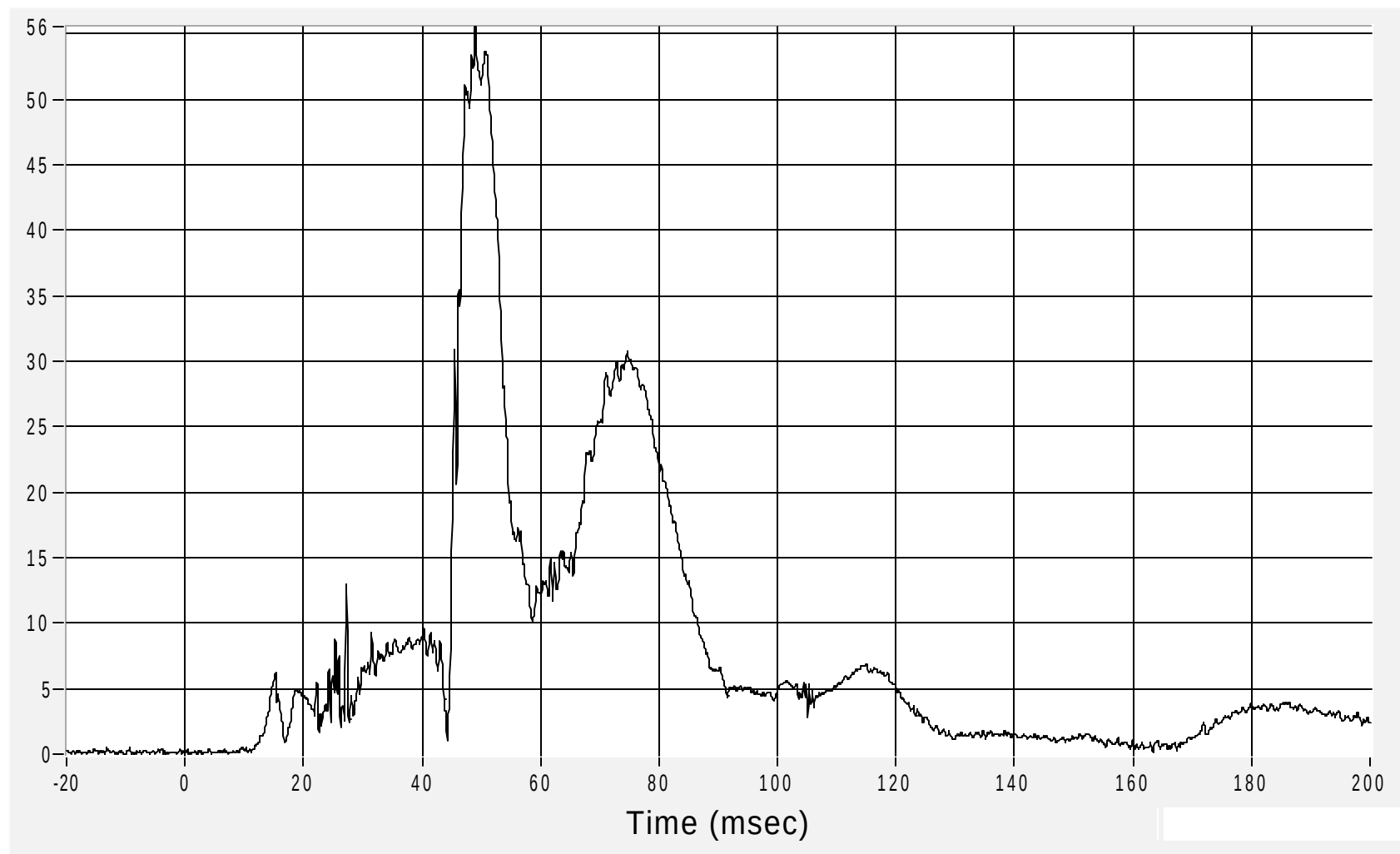
Passenger Head Resultant Acceleration

Acceleration (G's) CFC1000

Max 55.5 G's at 49.0 msec

Min 0.1 G's at 2.9 msec

B-33



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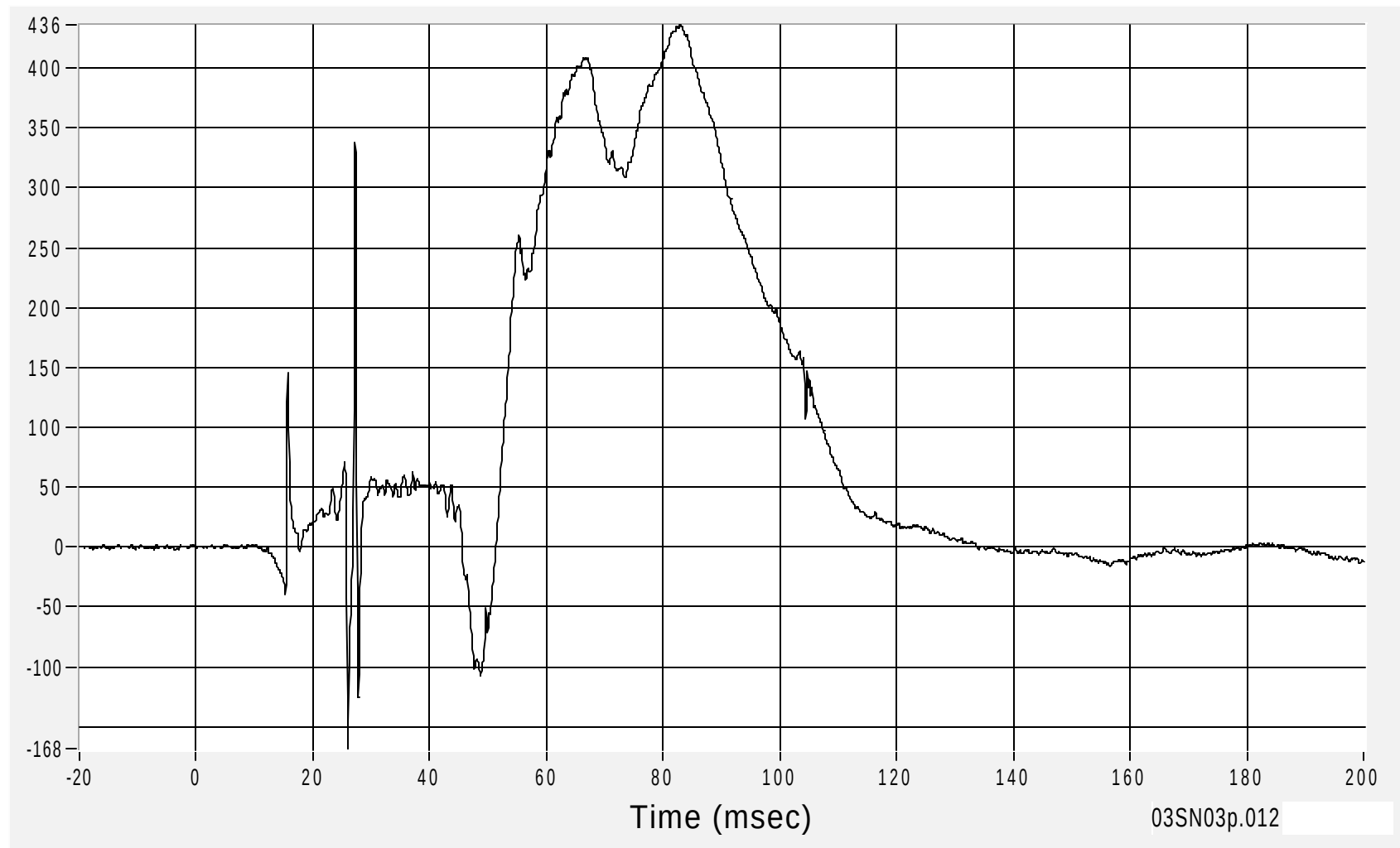
Passenger Upper Neck (X) Force

Force (N) CFC1000

Max 436.1 N at 83.0 msec

Min -168.3 N at 26.0 msec

B-34



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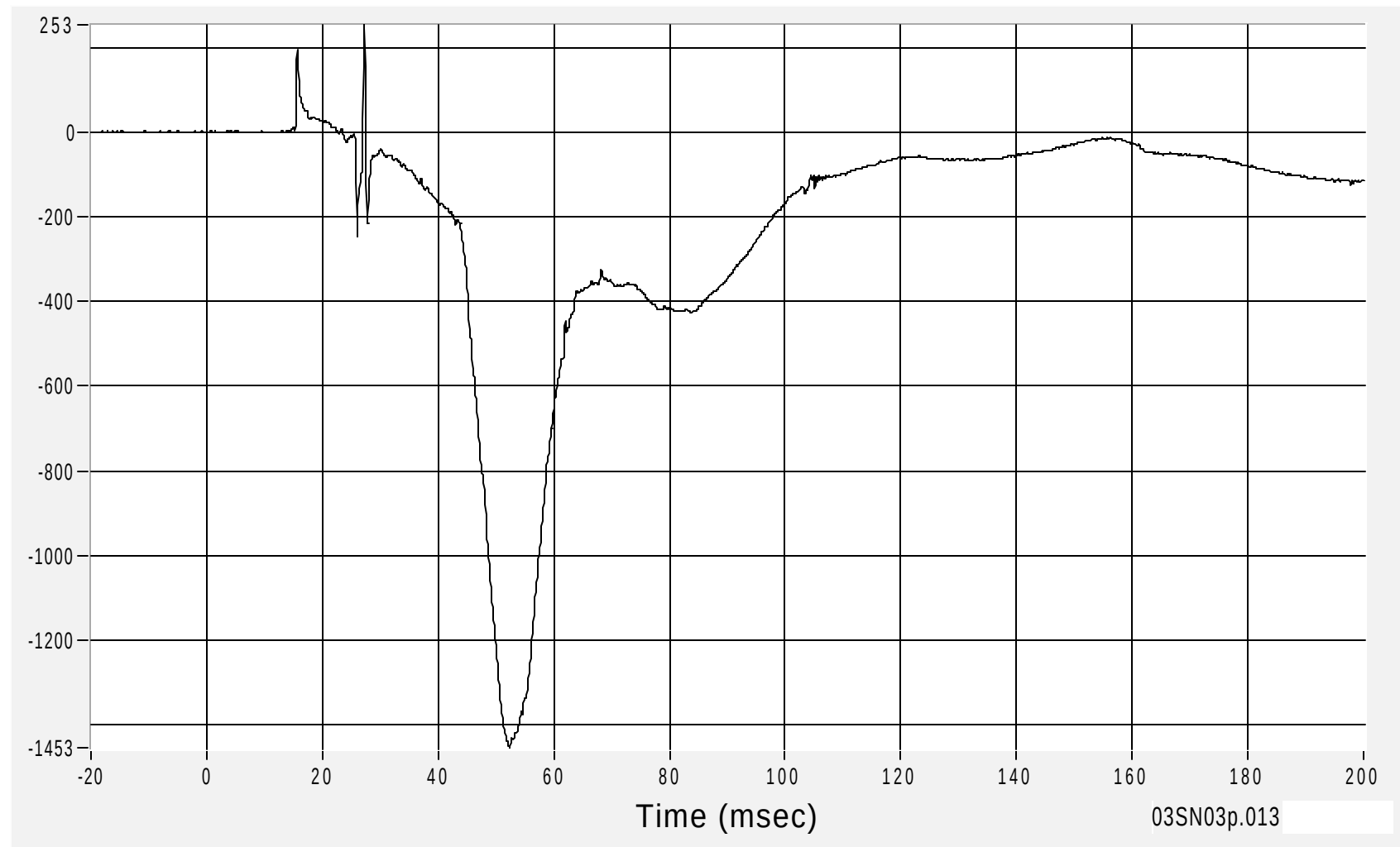
Passenger Upper Neck (Y) Force

Force (N) CFC1000

Max 253.1 N at 27.2 msec

Min -1453.3 N at 52.3 msec

B-35



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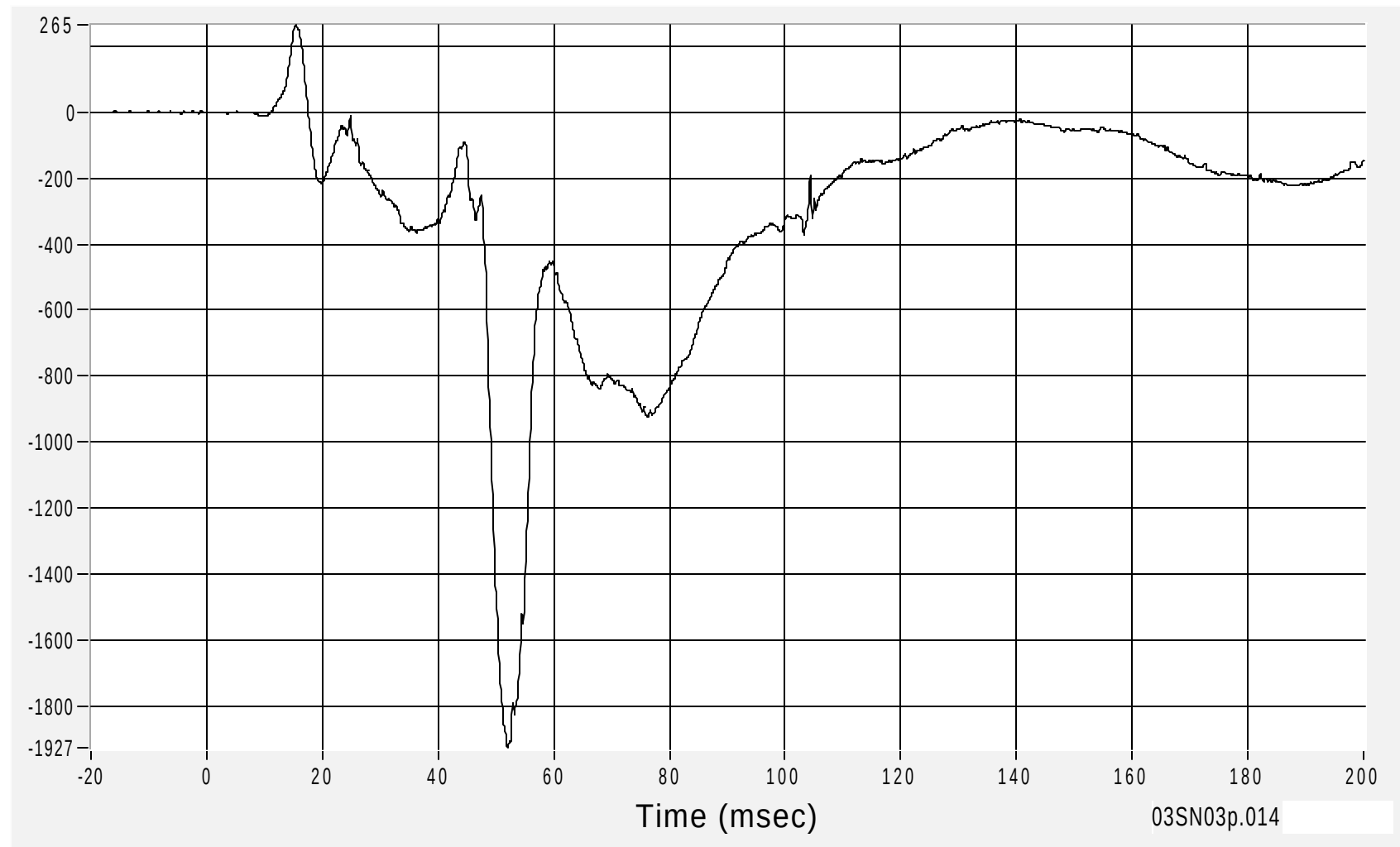
Passenger Upper Neck (Z) Force

Force (N) CFC1000

Max 264.7 N at 15.4 msec

Min -1927.3 N at 52.0 msec

B-36



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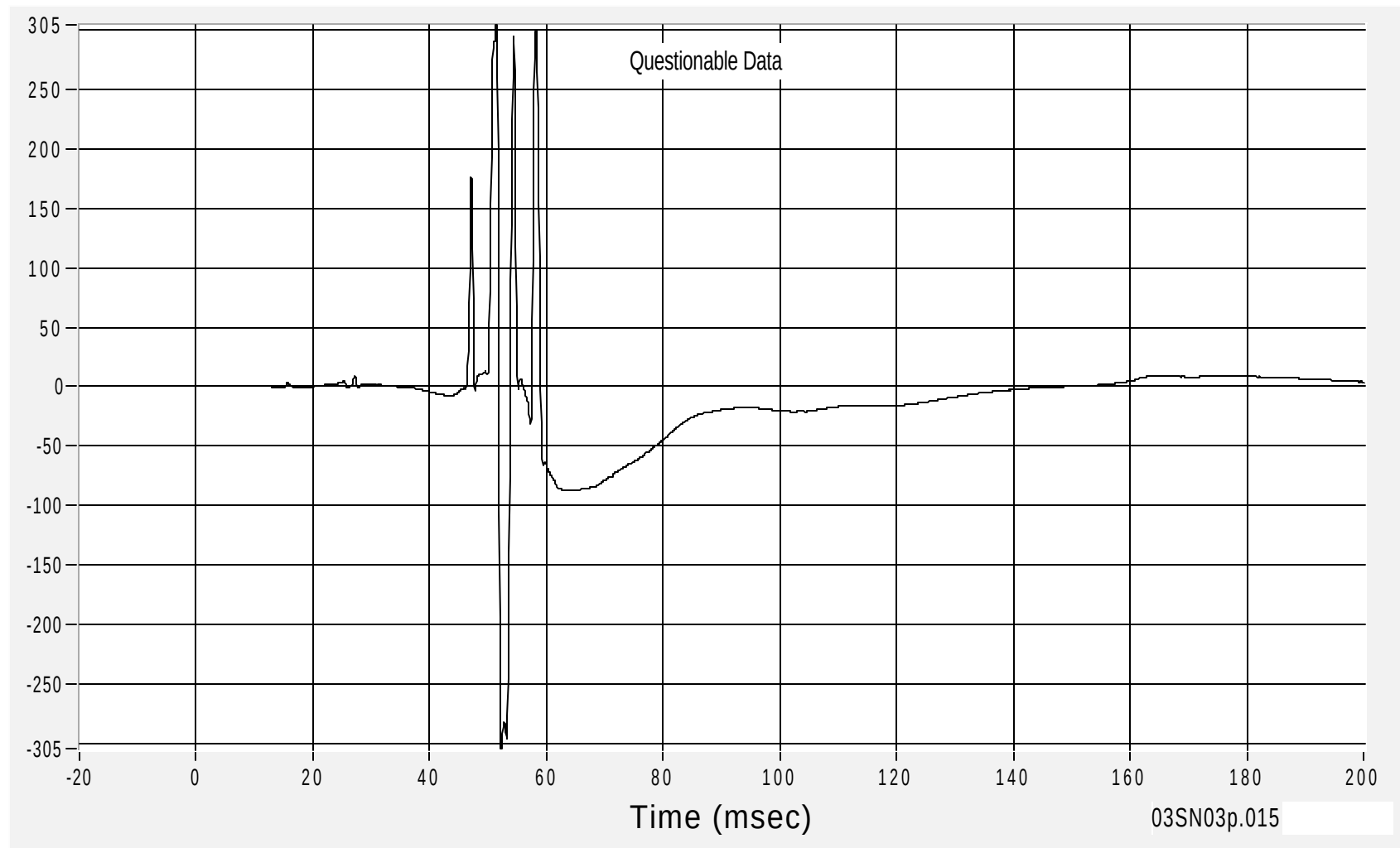
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Passenger Upper Neck (X) Moment

Moment (Nm) CFC600

Max 304.6 Nm at 51.4 msec

Min -304.8 Nm at 52.2 msec



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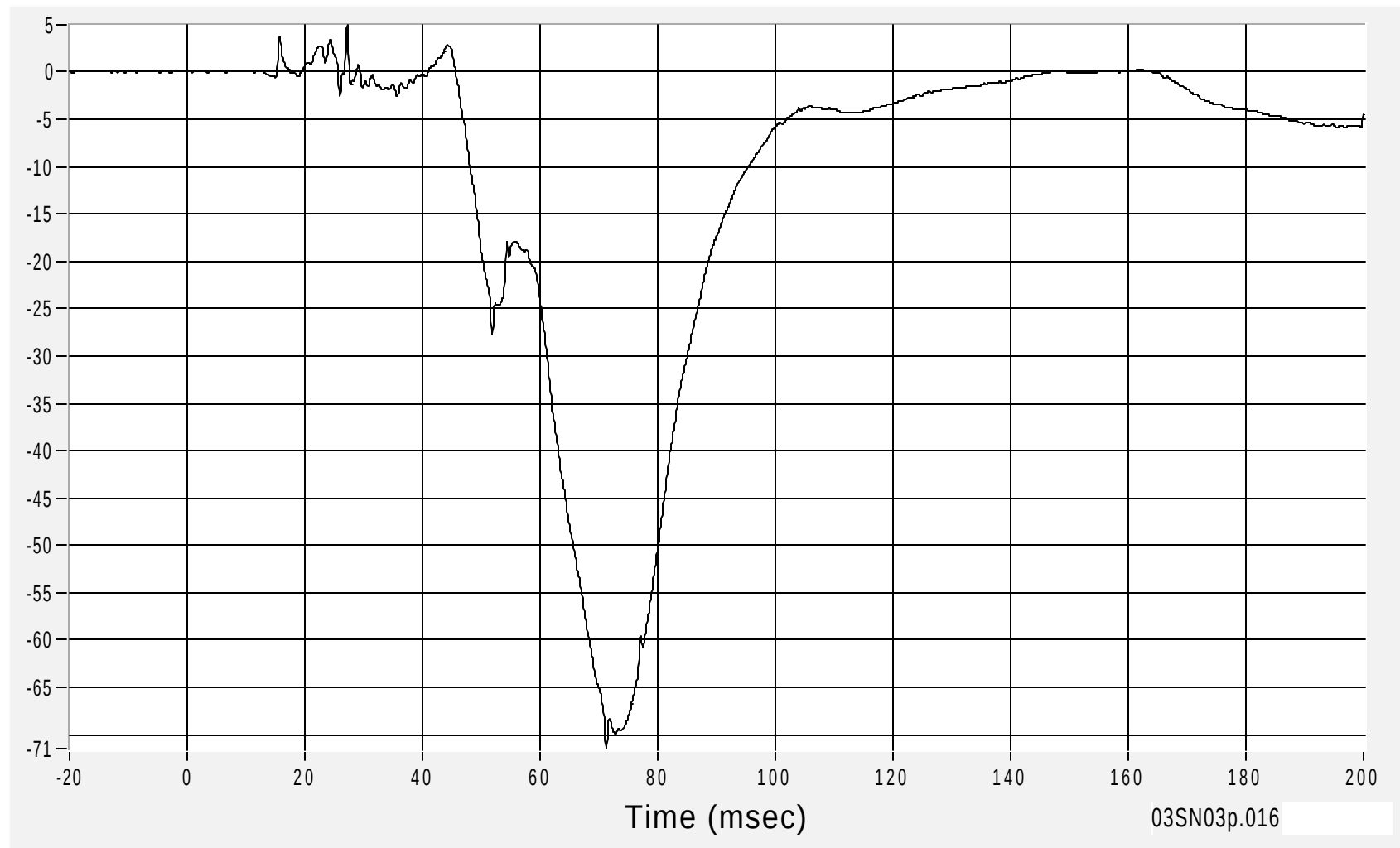
Passenger Upper Neck (Y) Moment

Moment (Nm) CFC600

Max 5.0 Nm at 27.2 msec

Min -71.5 Nm at 71.3 msec

B-38



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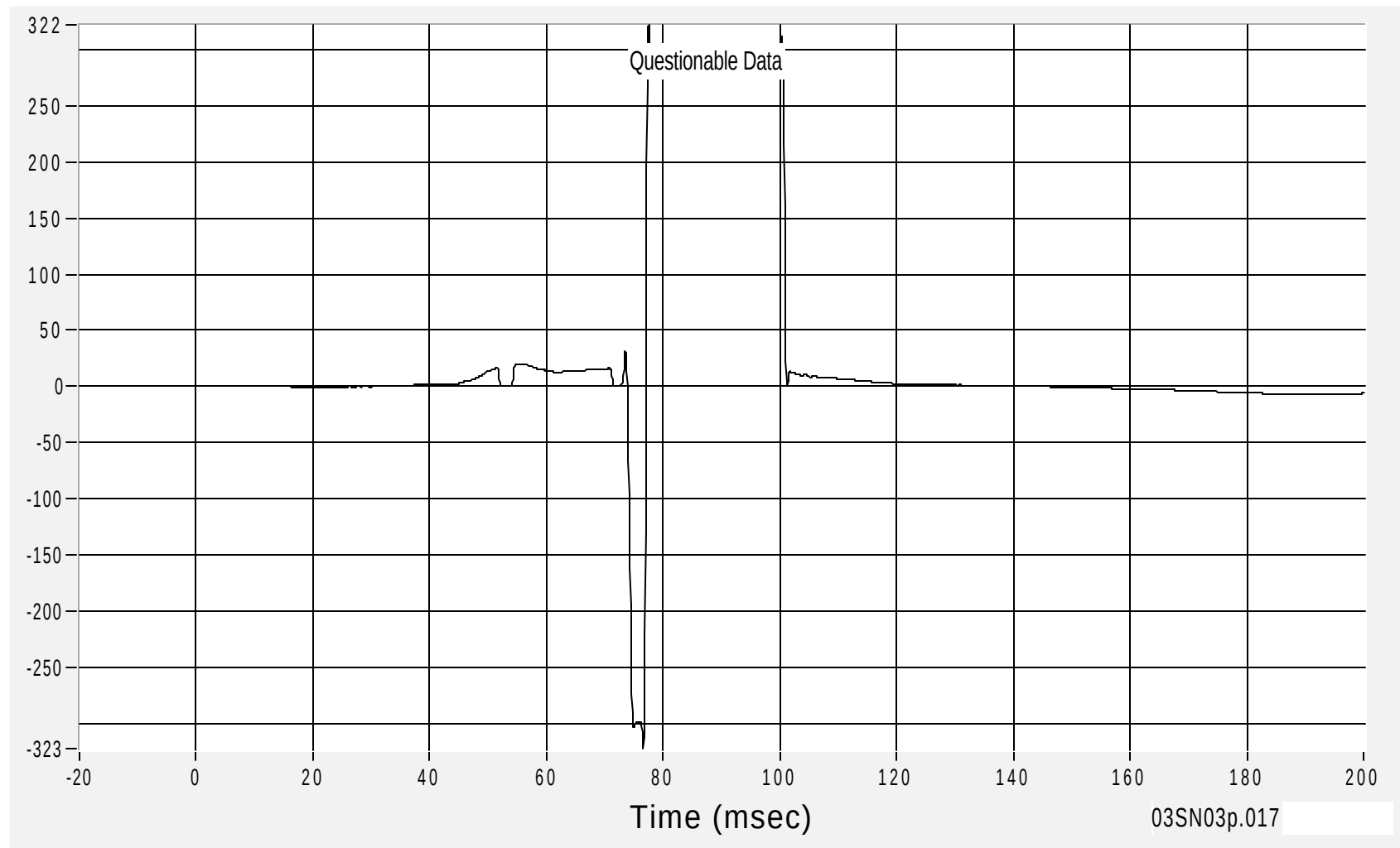
Medical College of Wisconsin
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Passenger Upper Neck (Z) Moment

Moment (Nm) CFC600

Max 322.1 Nm at 77.5 msec

Min -322.7 Nm at 76.6 msec



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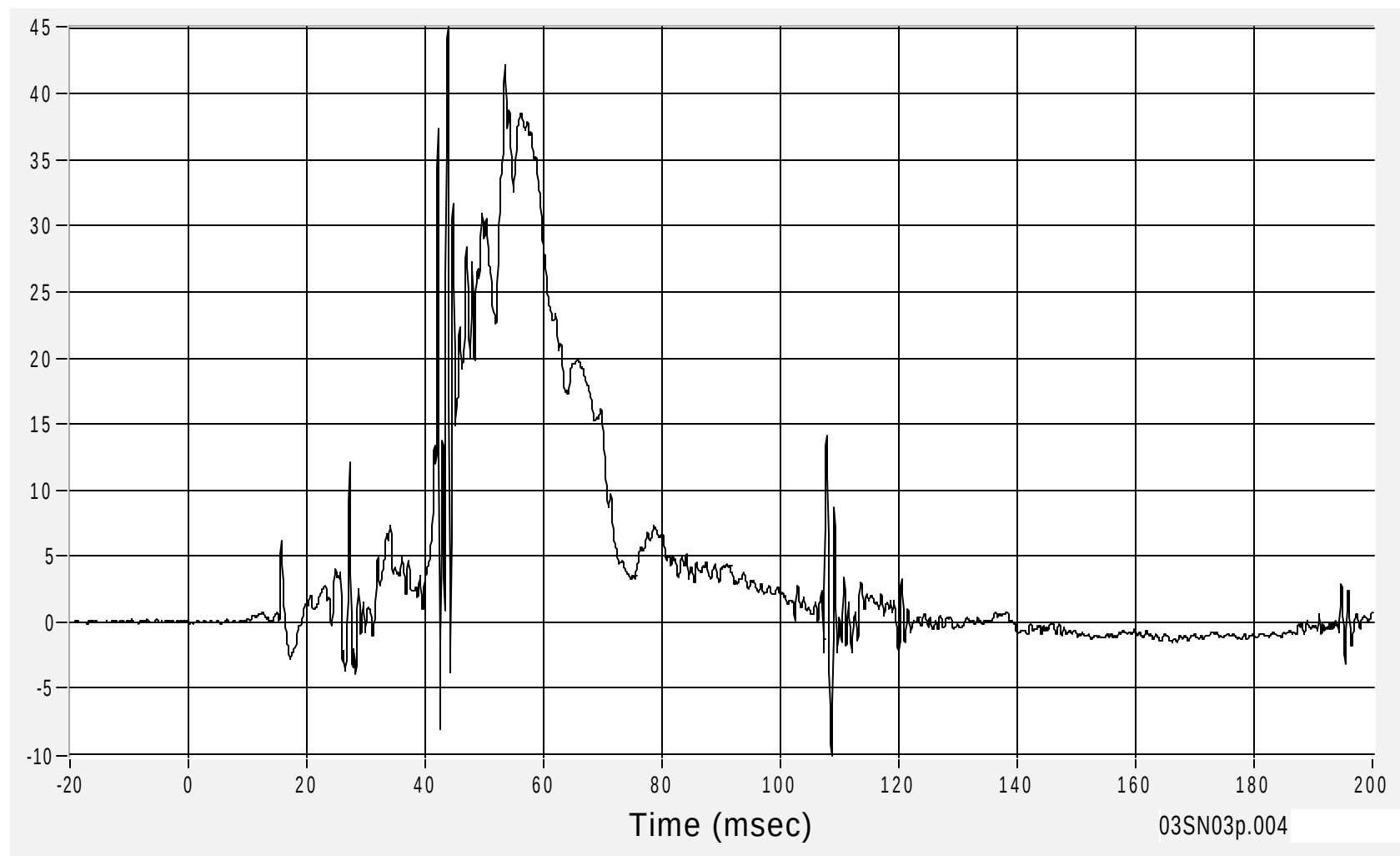
Passenger Upper Rib (Y) Acceleration

Acceleration (G's) CFC1000

Max 45.1 G's at 43.8 msec

Min -10.2 G's at 108.6 msec

B-40



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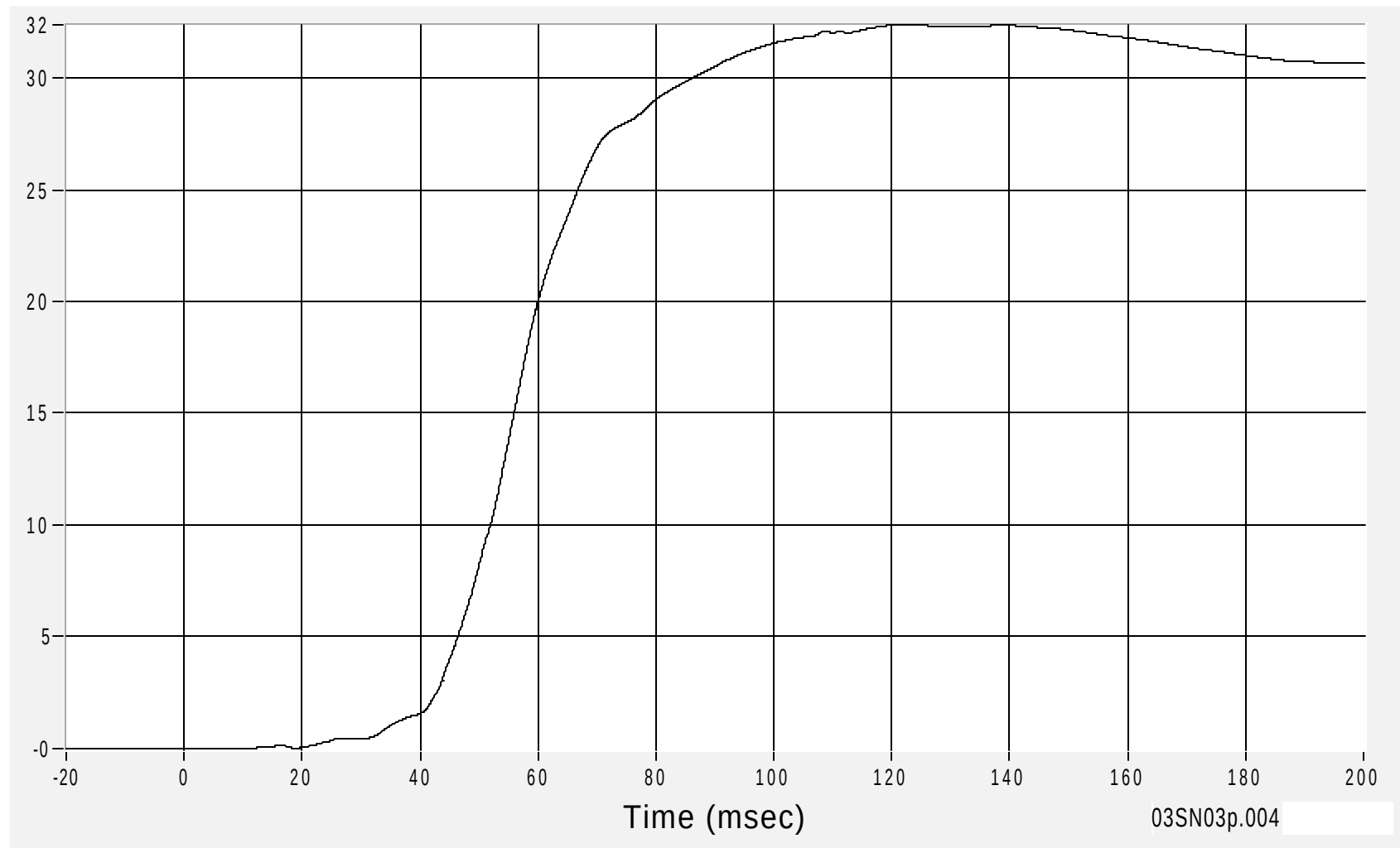
Medical College of Wisconsin
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Passenger Upper Rib (Y) Velocity

Velocity (km/h) CFC180

Max 32.4 km/h at 139.0 msec
Min 0.0 km/h at 8.3 msec

B-41



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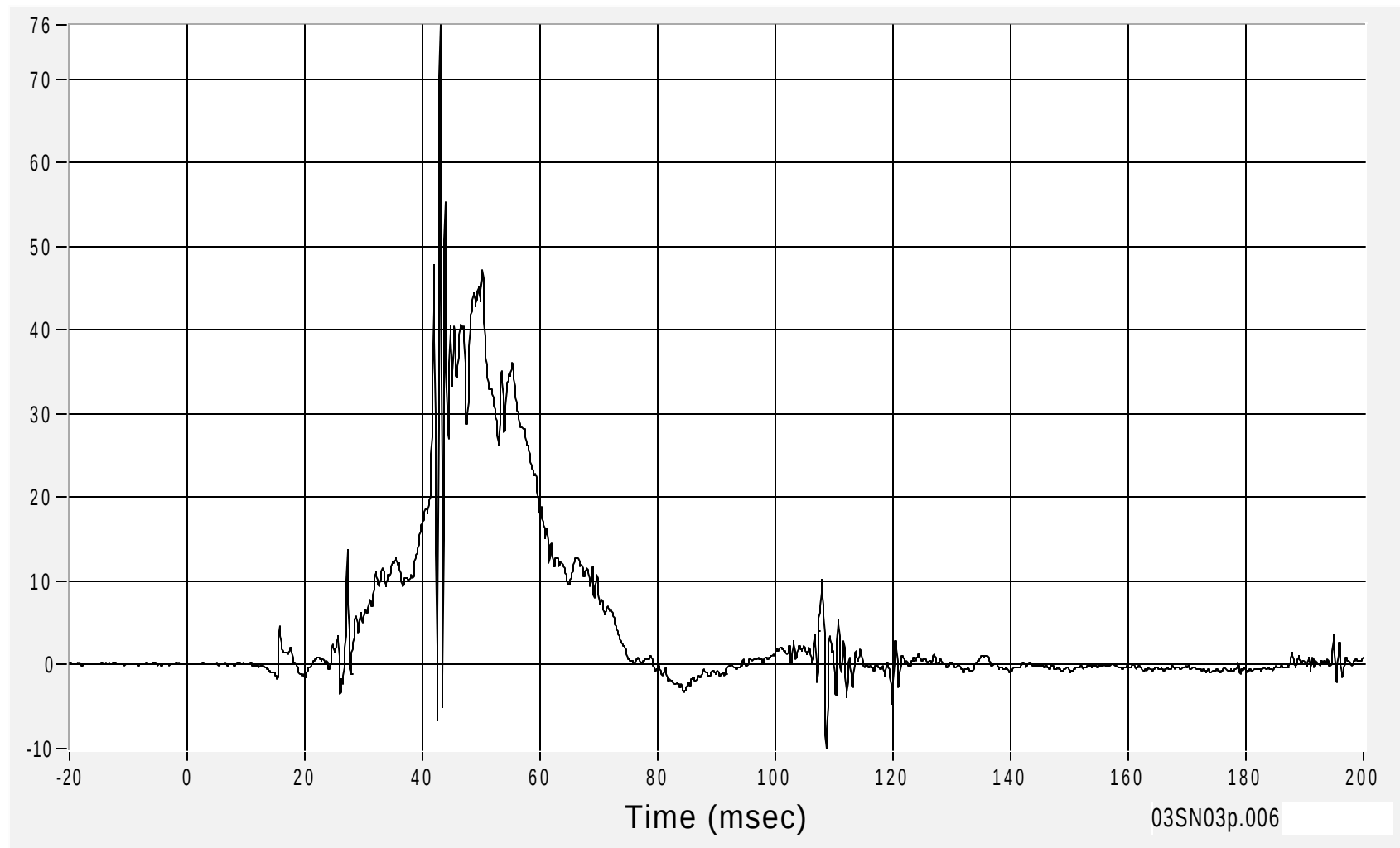
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Passenger Lower Rib (Y) Acceleration

Acceleration (G's) CFC1000

Max 76.4 G's at 43.0 msec
Min -10.1 G's at 108.6 msec

B-42



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8 January 2003

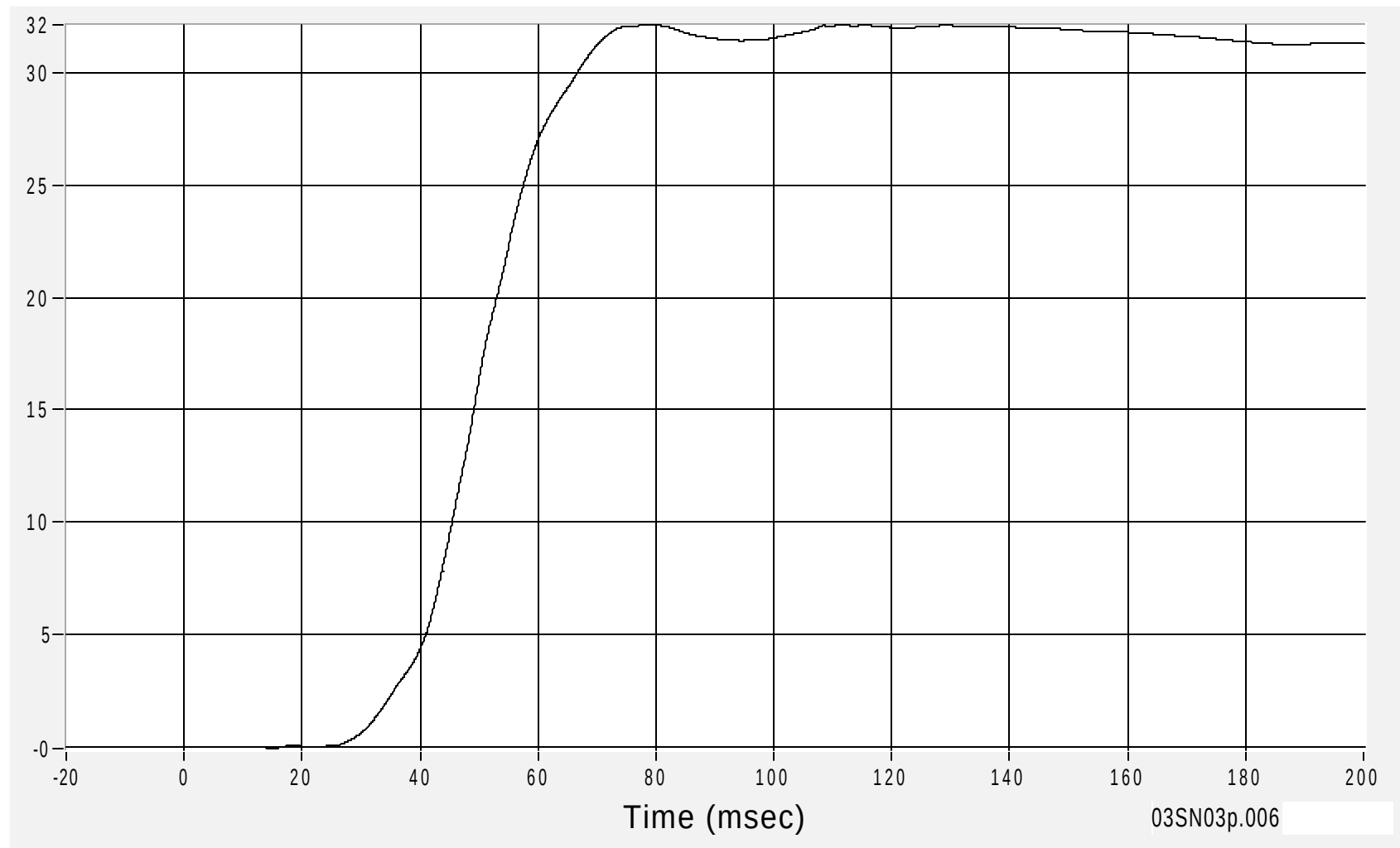
Medical College of Wisconsin
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Passenger Lower Rib (Y) Velocity

Velocity (km/h) CFC180

Max 32.1 km/h at 111.7 msec

Min 0.0 km/h at 15.1 msec



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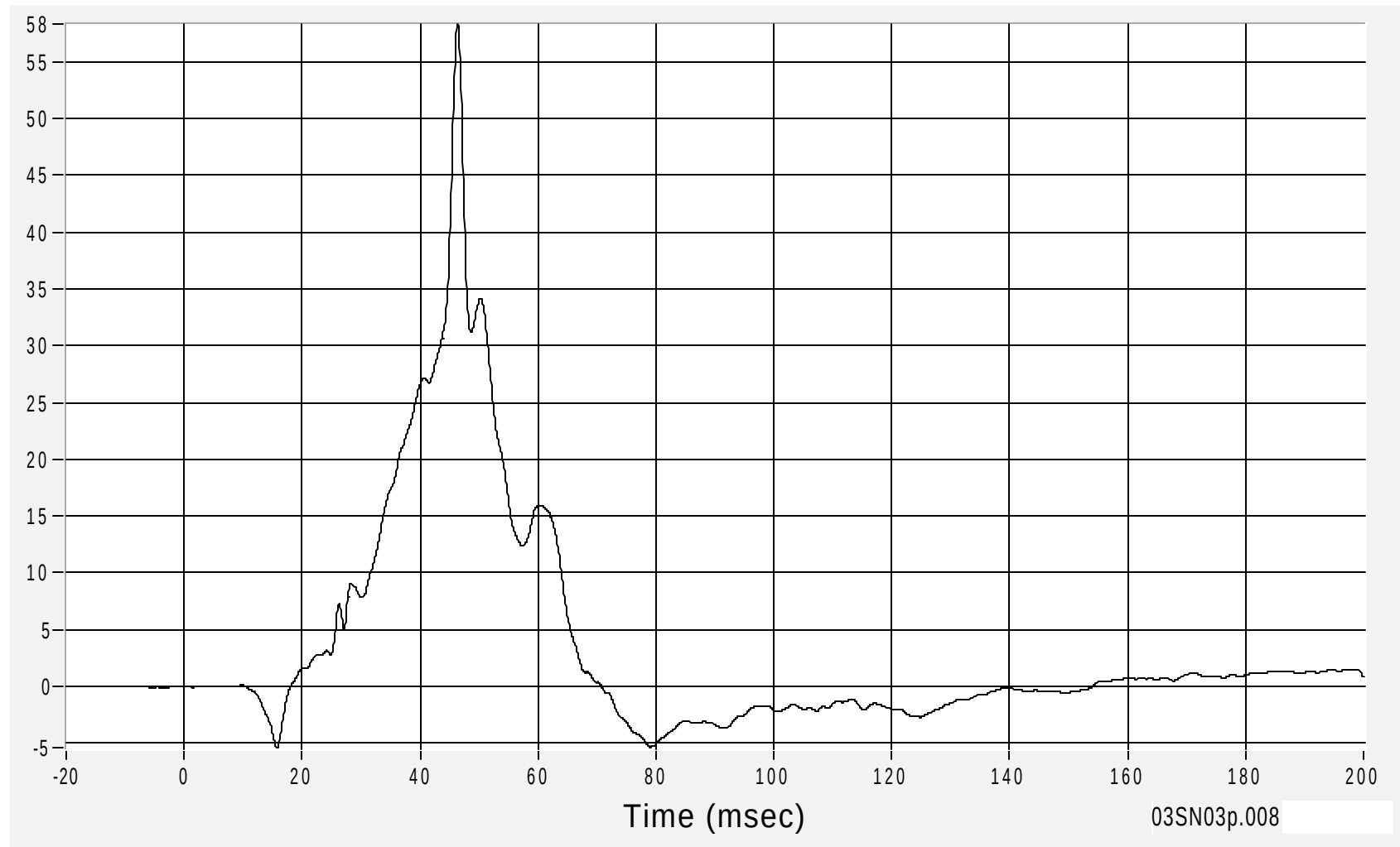
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Passenger Lower Spine (Y) Acceleration

Acceleration (G's) CFC180

Max 58.3 G's at 46.4 msec
Min -5.4 G's at 15.7 msec

B-44



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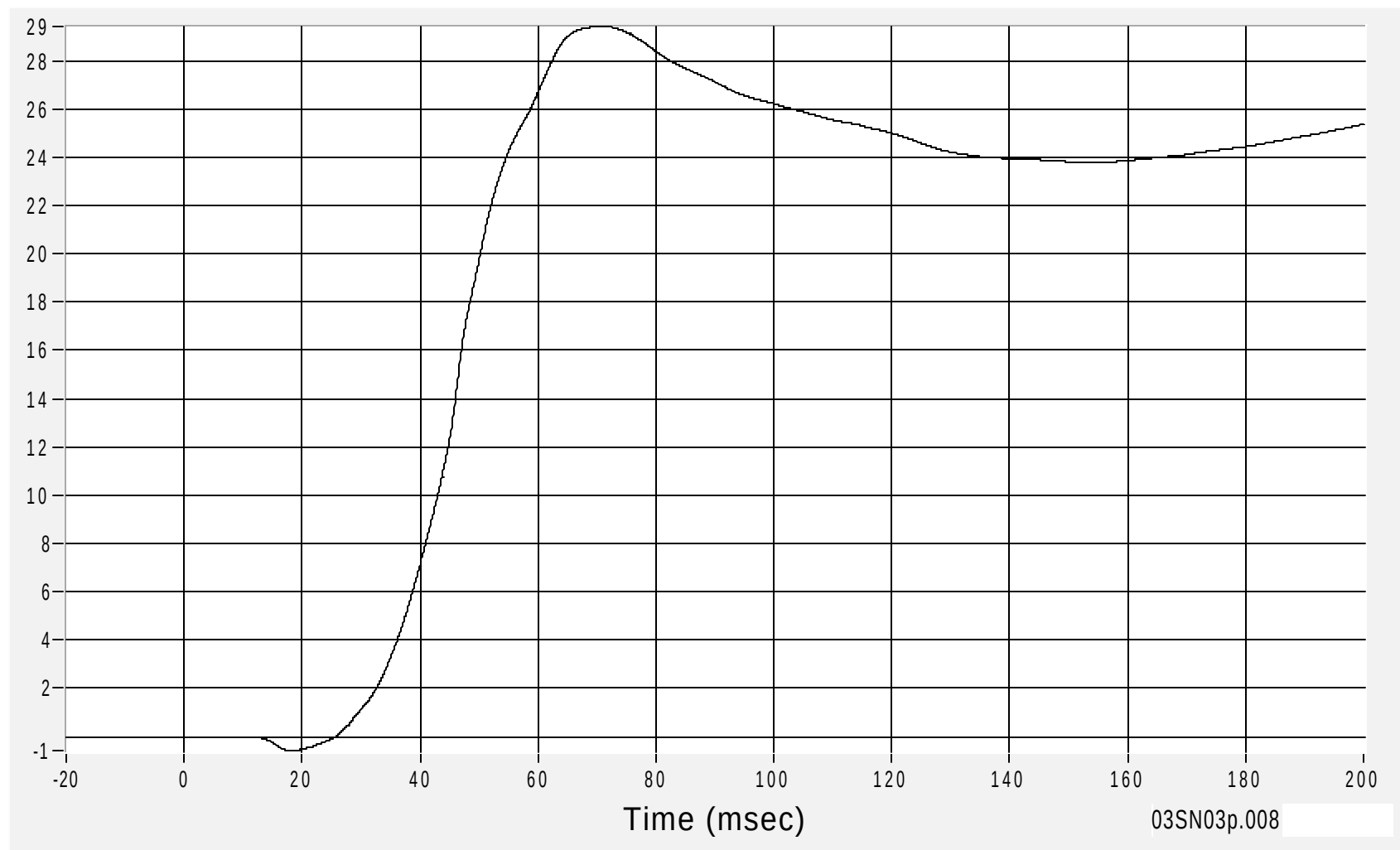
Passenger Lower Spine (Y) Velocity

Velocity (km/h) CFC180

Max 29.4 km/h at 70.8 msec

Min -0.6 km/h at 18.1 msec

B-45



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8 January 2003

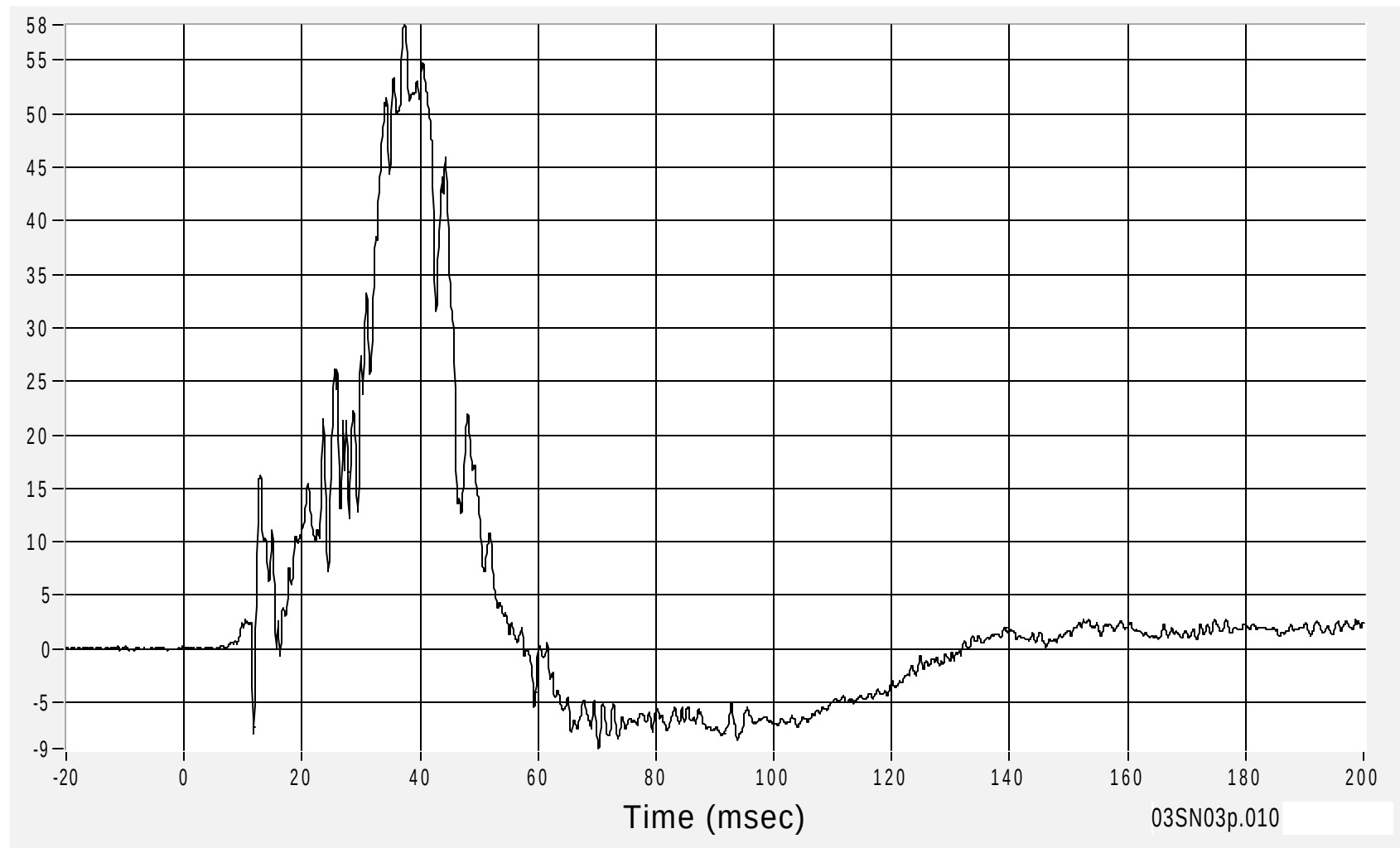
Medical College of Wisconsin
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Passenger Pelvic (Y) Acceleration

Acceleration (G's) CFC1000

Max 58.3 G's at 37.4 msec
Min -9.3 G's at 70.3 msec

B-46



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8 January 2003

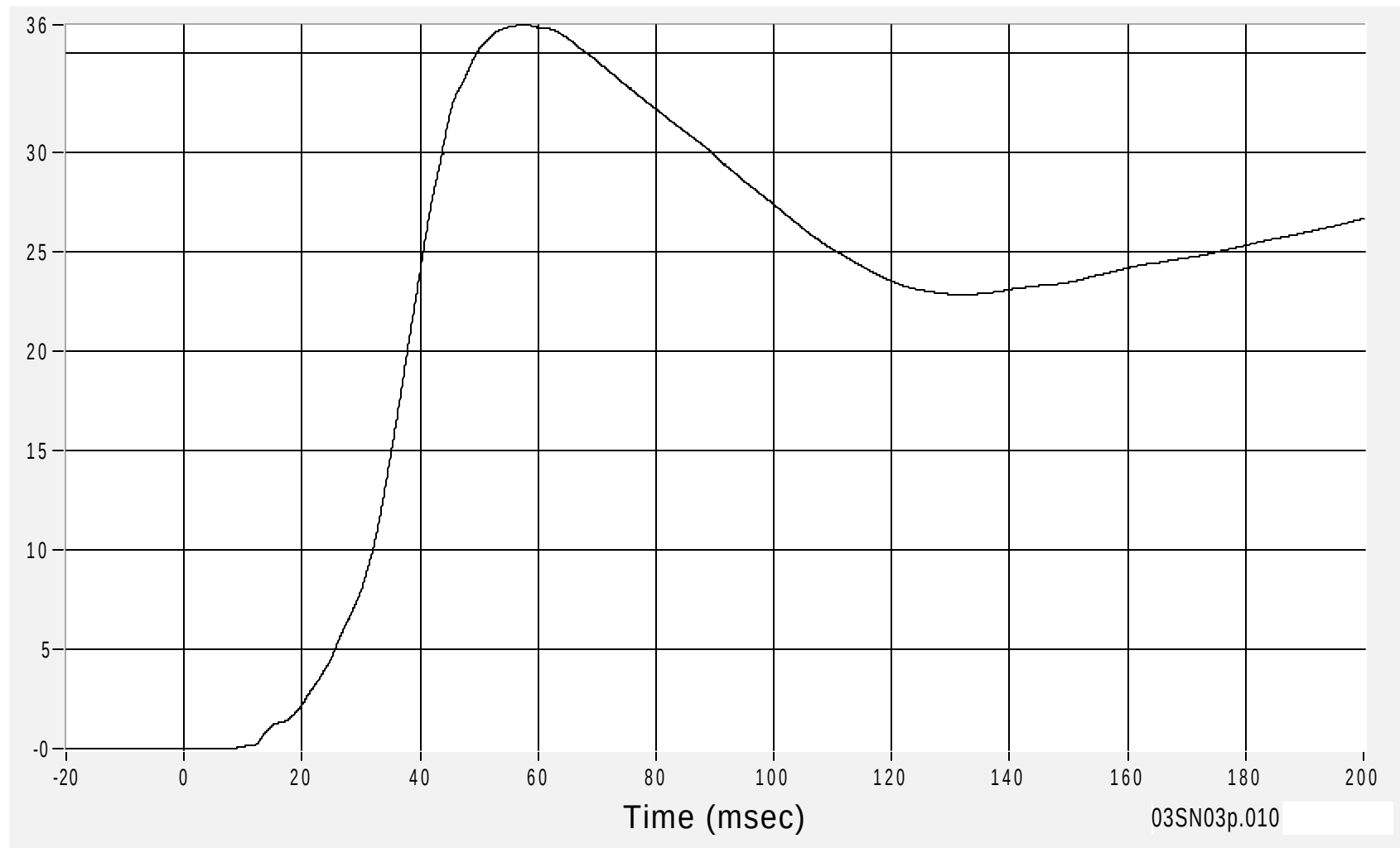
Medical College of Wisconsin
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Passenger Pelvic (Y) Velocity

Velocity (km/h) CFC180

Max 36.4 km/h at 57.8 msec
Min 0.0 km/h at 0.0 msec

B-47



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8 January 2003

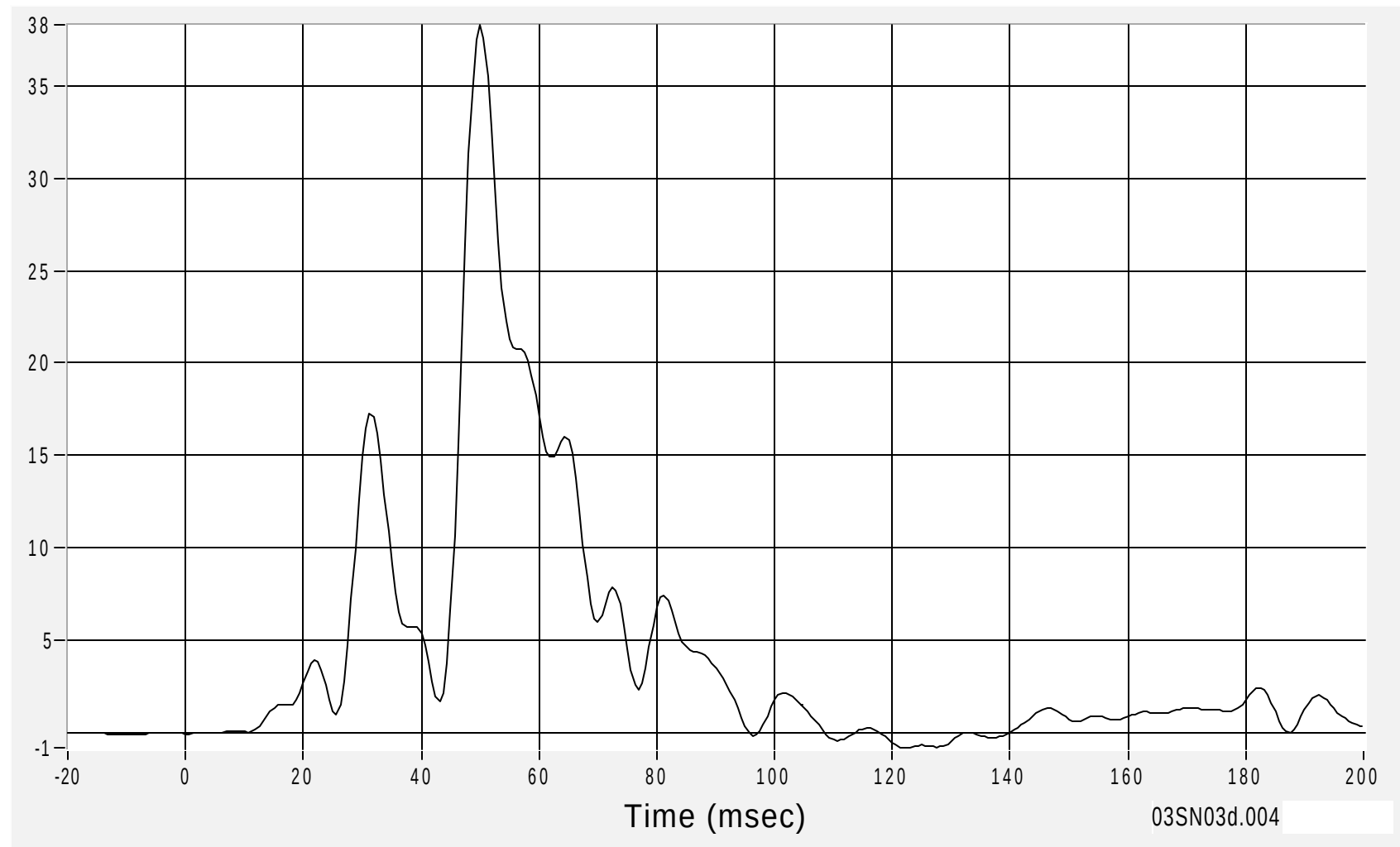
Medical College of Wisconsin
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Driver Upper Rib (Y) Acceleration

Acceleration (G's) FIR100

Max 38.3 G's at 50.0 msec
Min -0.8 G's at 121.9 msec

B-48



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8 January 2003

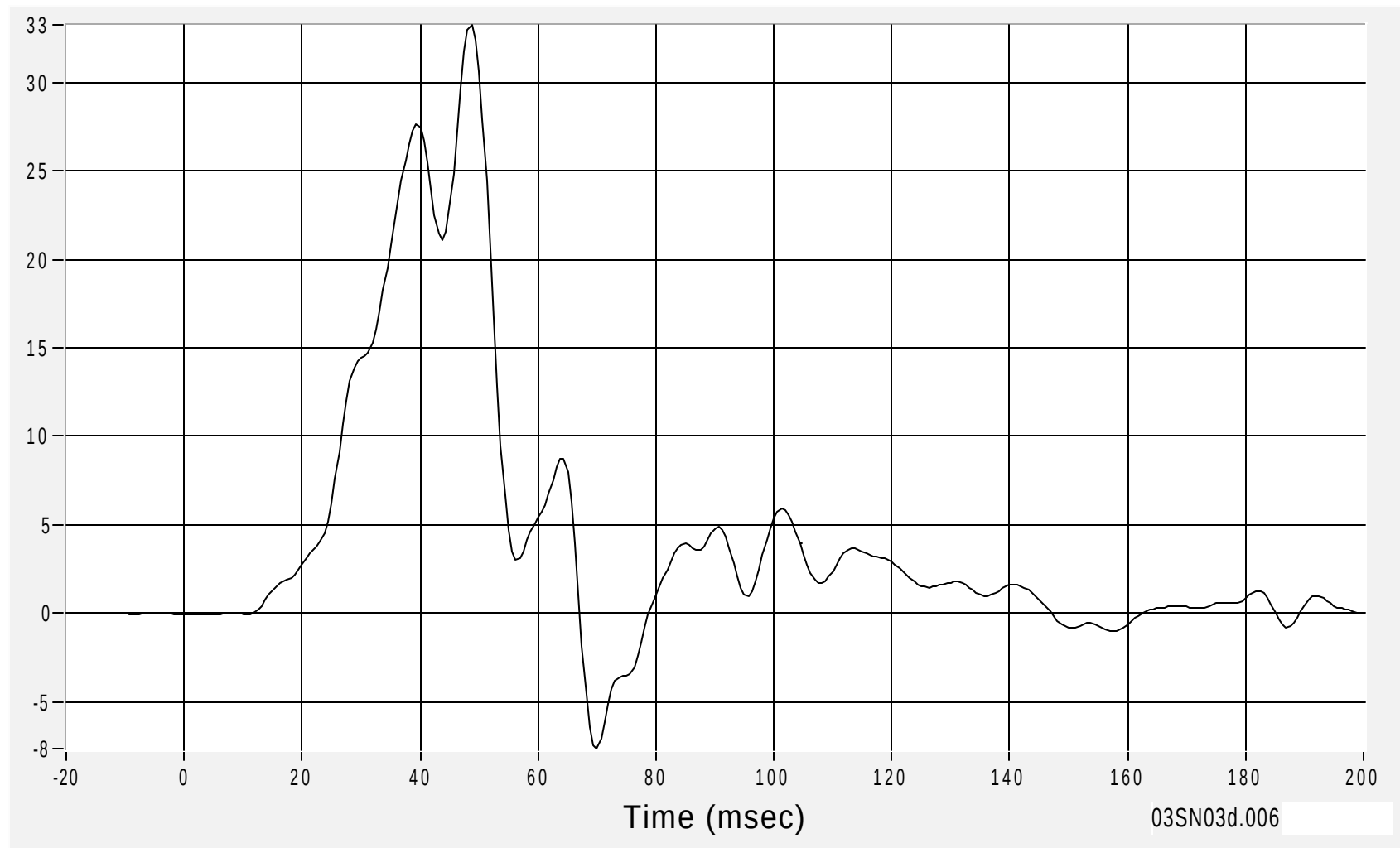
Medical College of Wisconsin
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Driver Lower Rib (Y) Acceleration

Acceleration (G's) FIR100

Max 33.2 G's at 48.8 msec
Min -7.6 G's at 70.0 msec

B-49



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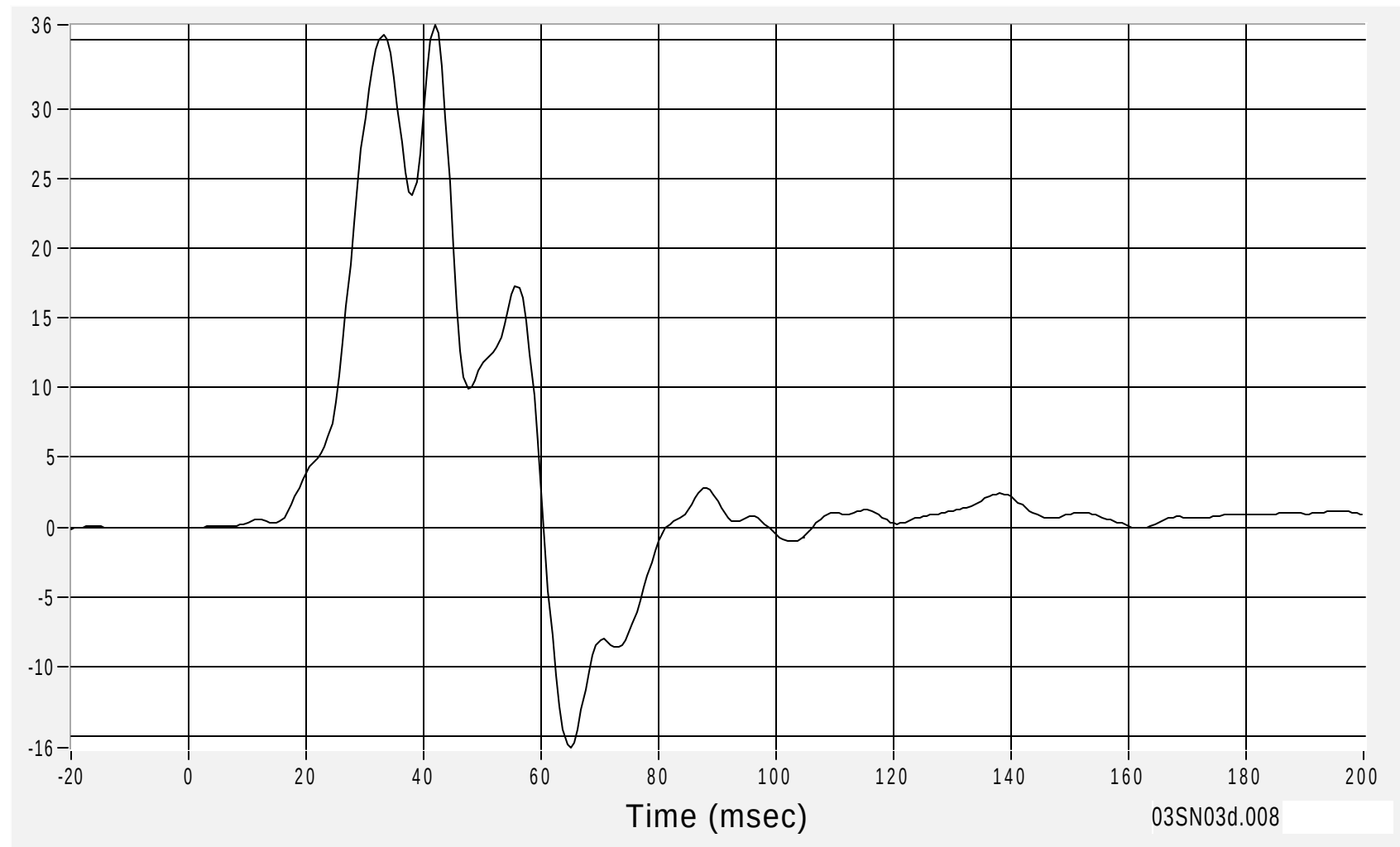
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Driver Lower Spine (Y) Acceleration

Acceleration (G's) FIR100

Max 36.1 G's at 41.9 msec
Min -15.9 G's at 65.0 msec

B-50



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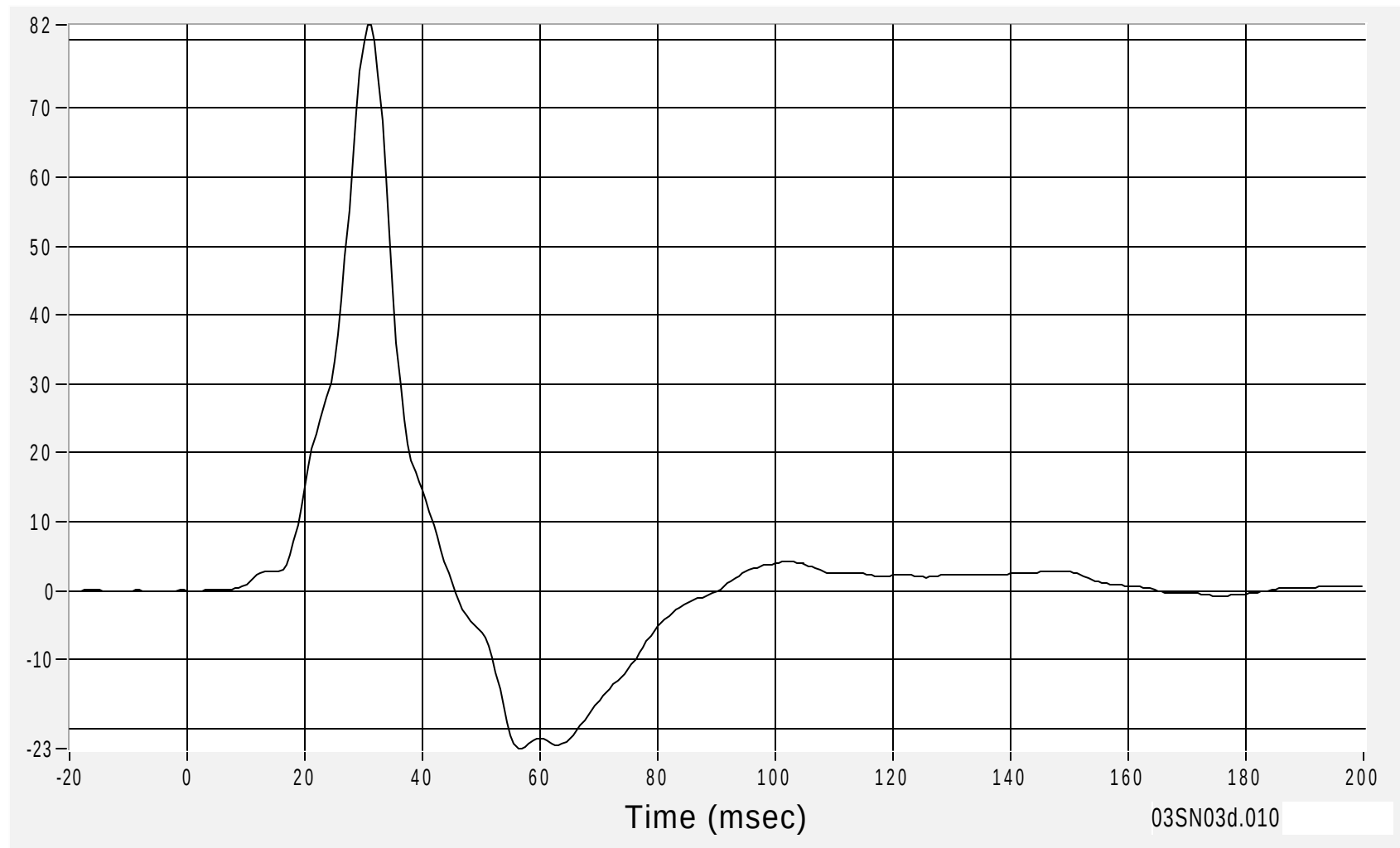
Driver Pelvic (Y) Acceleration

Acceleration (G's) FIR100

Max 82.1 G's at 30.6 msec

Min -23.0 G's at 56.9 msec

B-51



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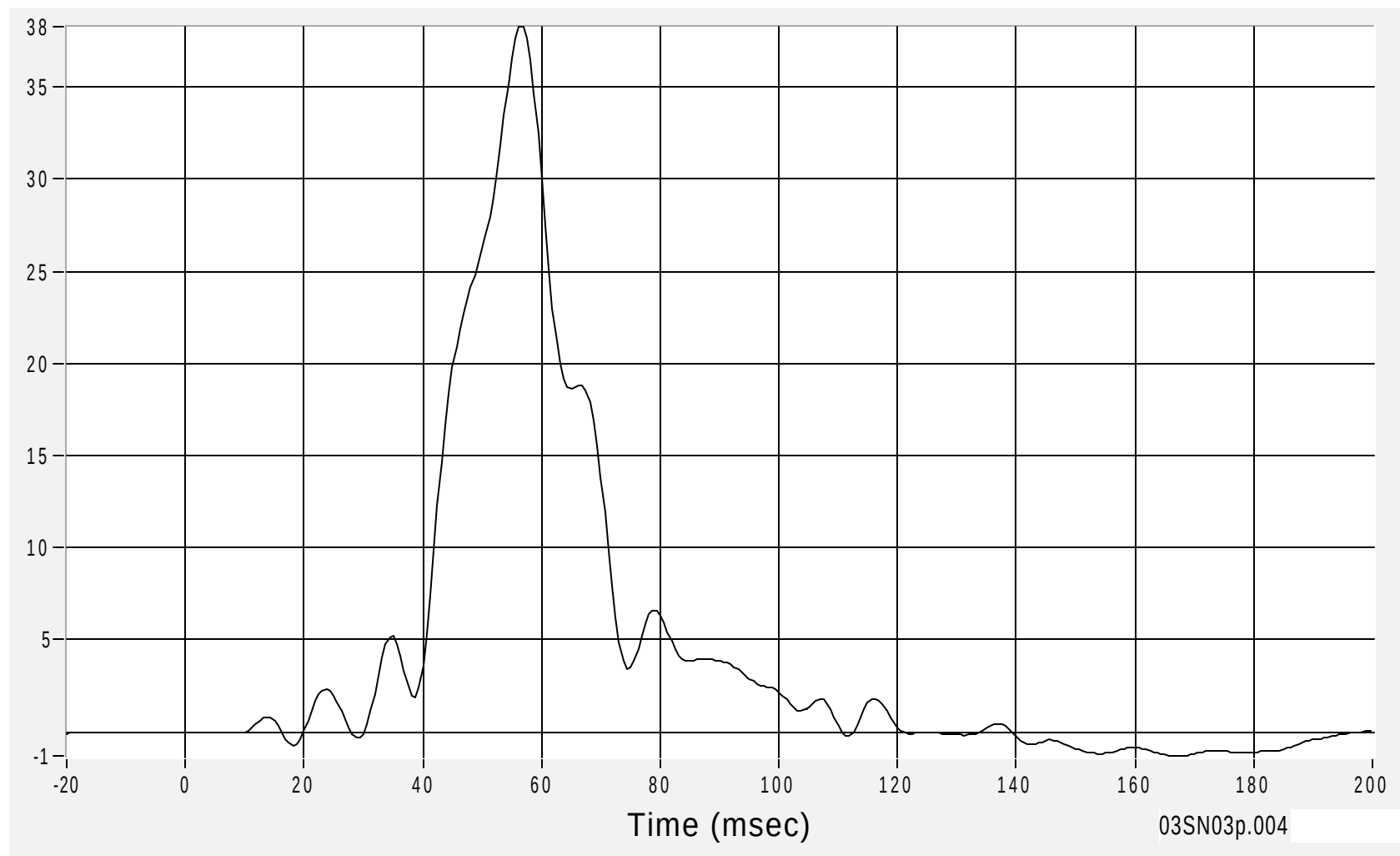
Passenger Upper Rib (Y) Acceleration

Acceleration (G's) FIR100

Max 38.3 G's at 56.9 msec

Min -1.3 G's at 166.9 msec

B-52



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8 January 2003

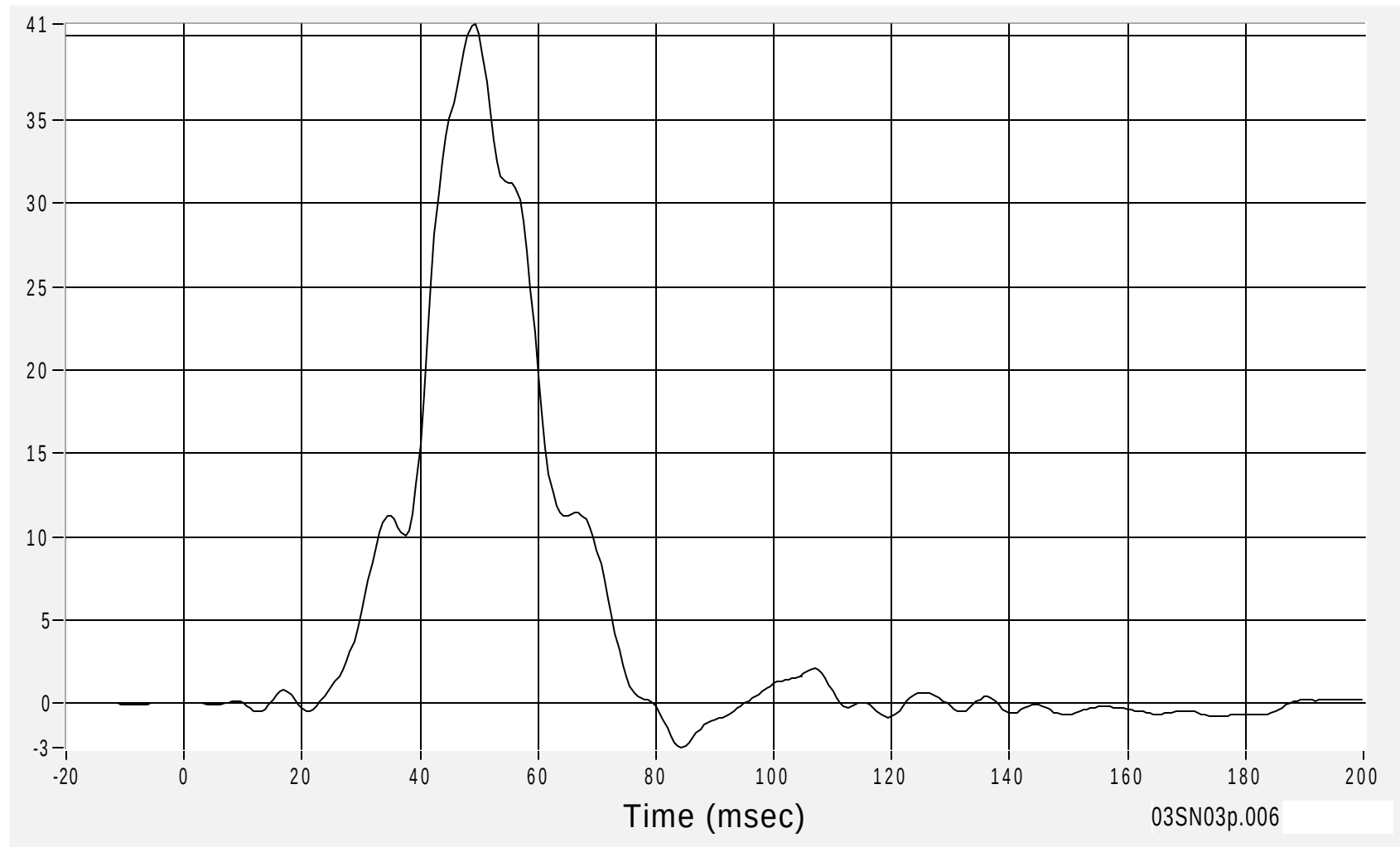
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Passenger Lower Rib (Y) Acceleration

Acceleration (G's) FIR100

Max 40.7 G's at 49.4 msec
Min -2.6 G's at 84.4 msec

B-53



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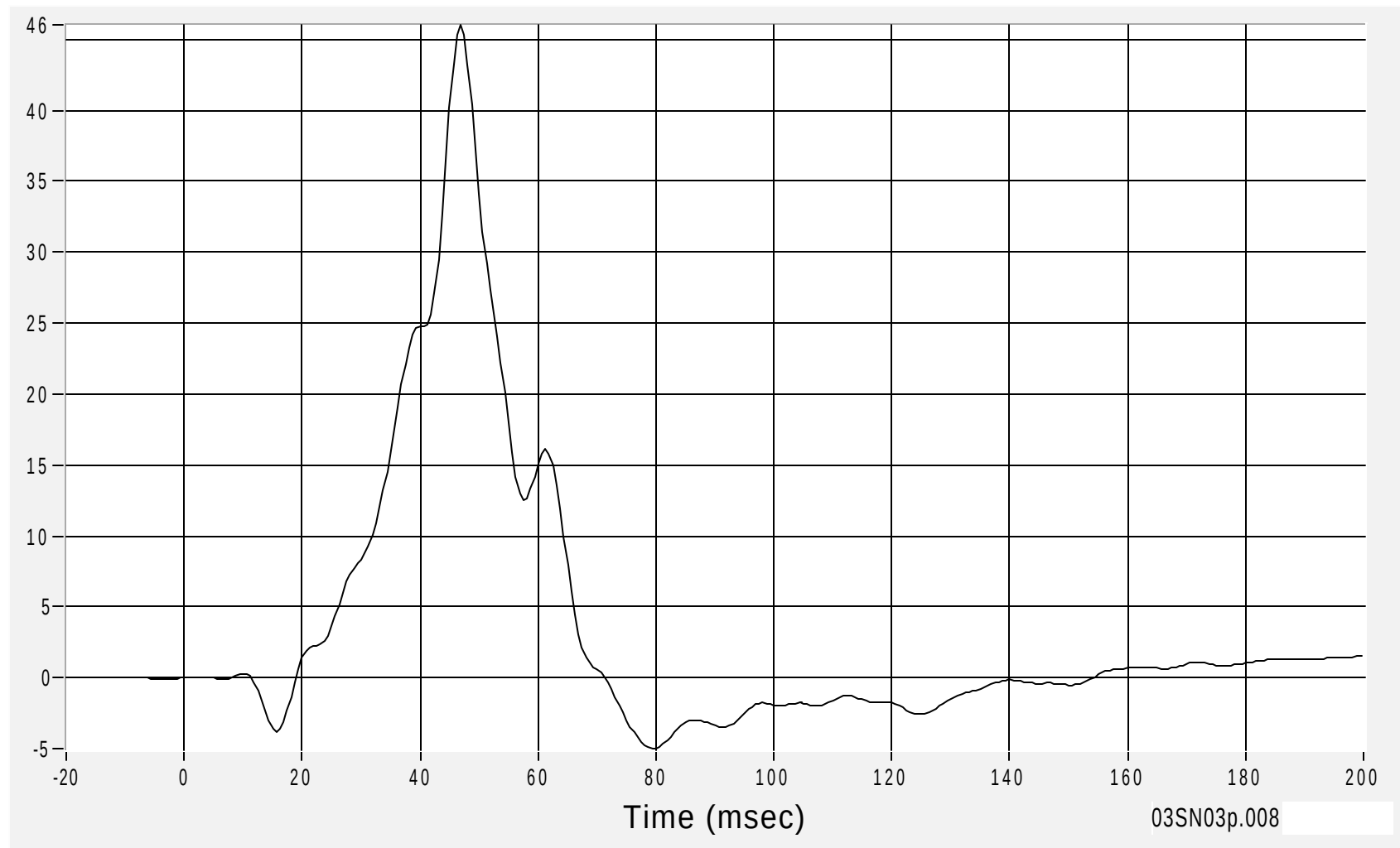
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Passenger Lower Spine (Y) Acceleration

Acceleration (G's) FIR100

Max 46.0 G's at 46.9 msec
Min -5.0 G's at 79.4 msec

B-54



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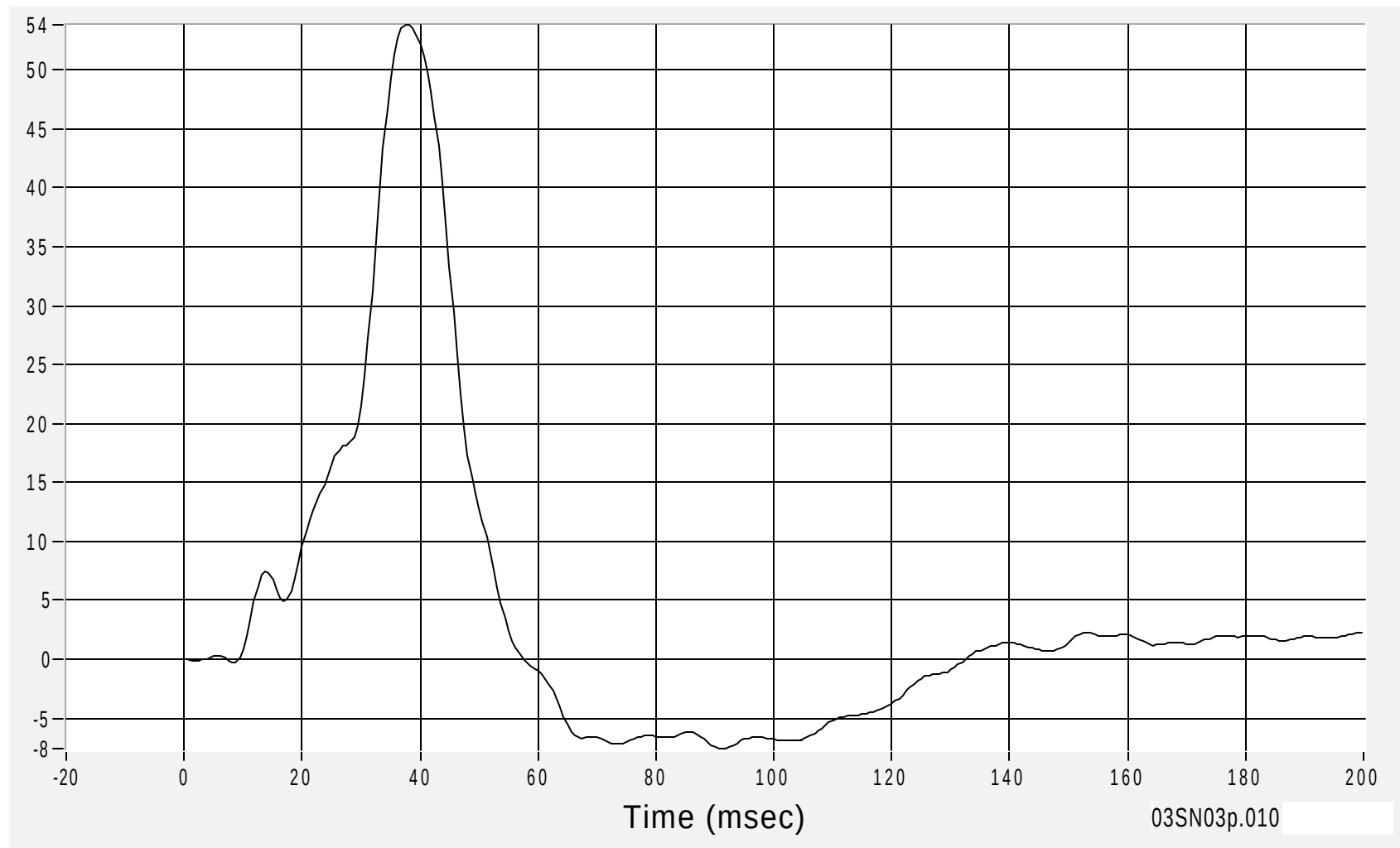
Medical College of Wisconsin
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Passenger Pelvic (Y) Acceleration

Acceleration (G's) FIR100

Max 53.8 G's at 37.5 msec
Min -7.6 G's at 91.2 msec

B-55



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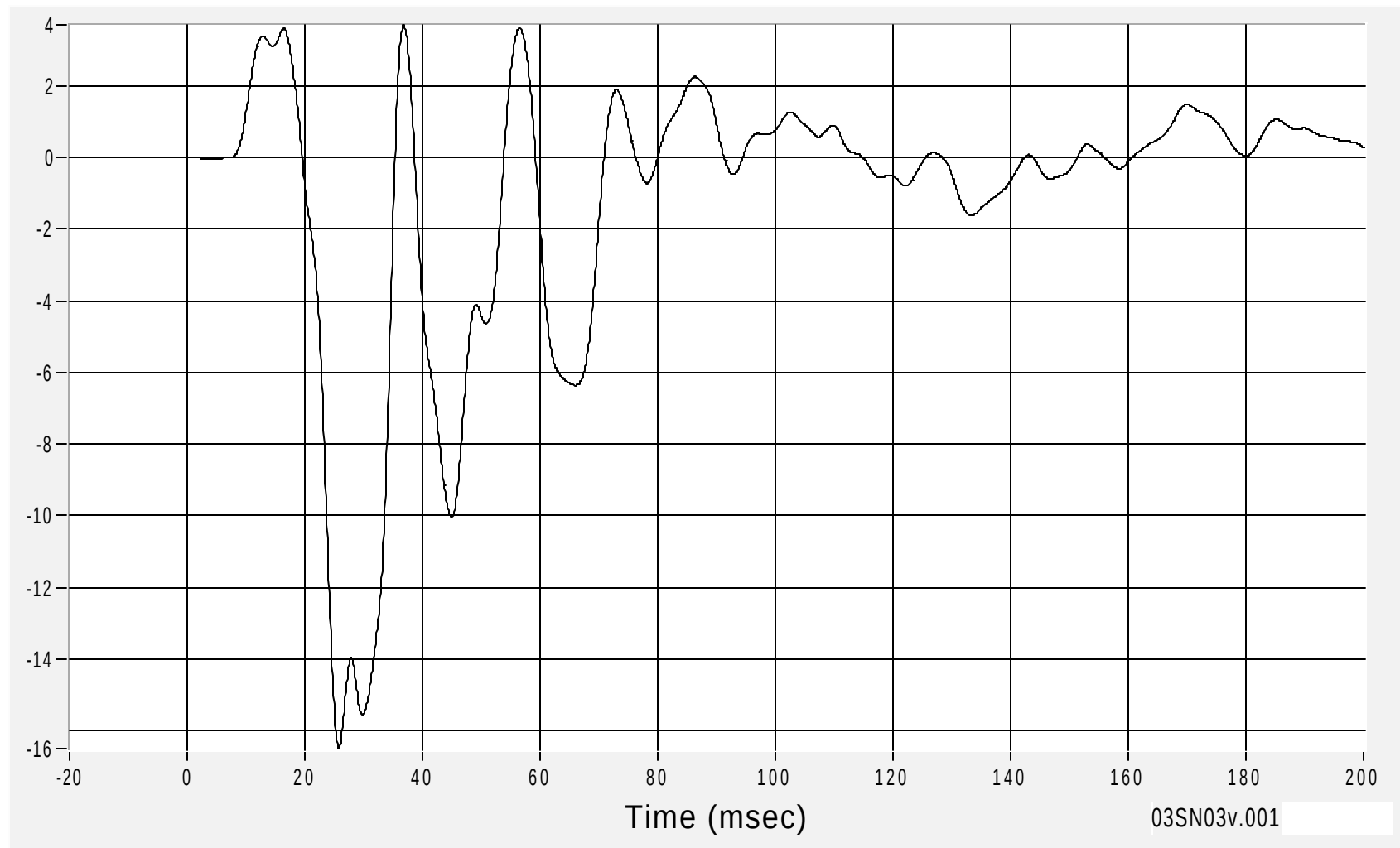
Right Side Sill at Front Seat (X) Acceleration

Acceleration (G's) CFC60

Max 3.7 G's at 36.8 msec

Min -16.5 G's at 25.8 msec

B-56



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8 January 2003

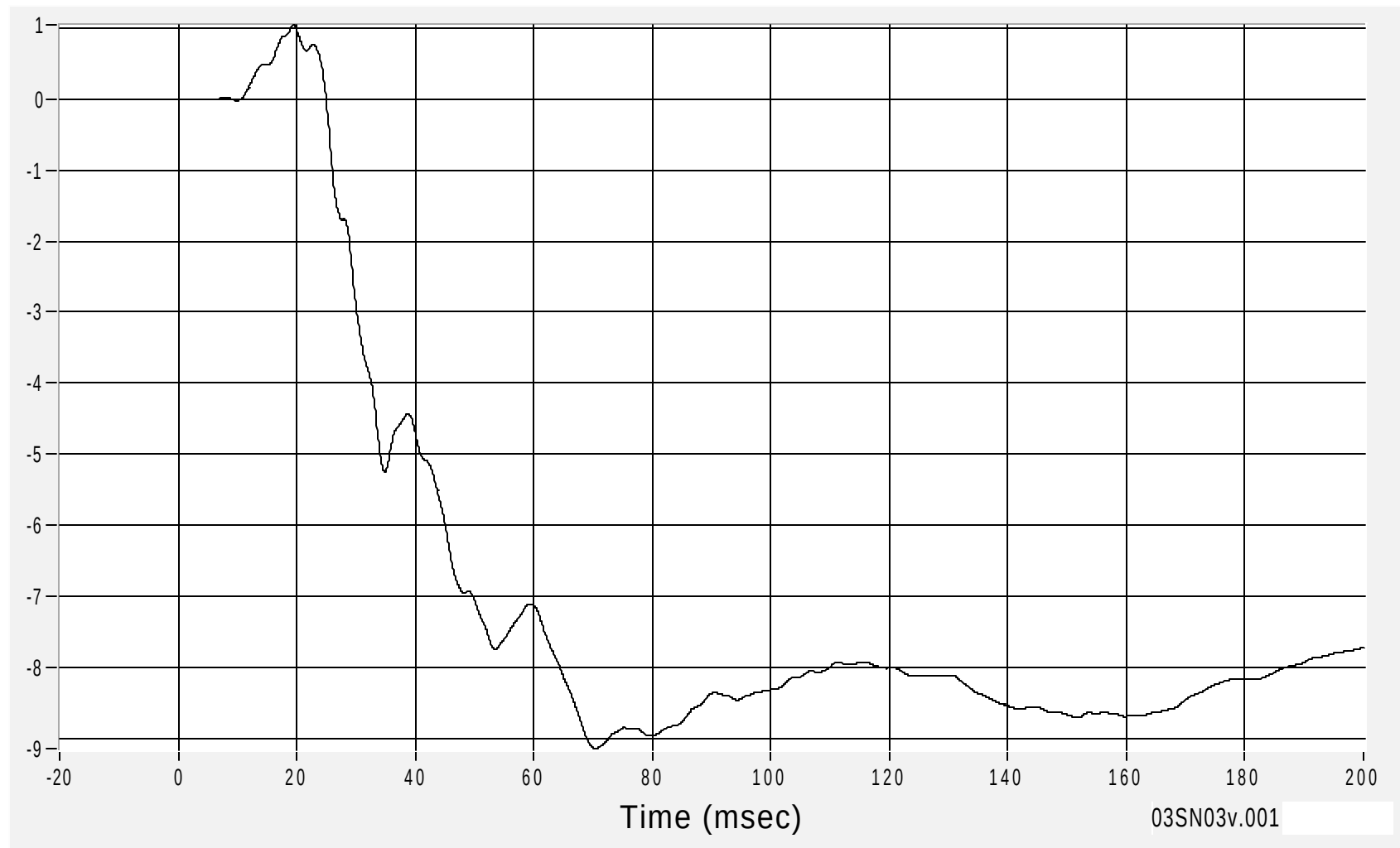
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Right Side Sill at Front Seat (X) Velocity

Velocity (km/h) CFC180

Max 1.0 km/h at 19.4 msec
Min -9.1 km/h at 70.3 msec

B-57



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8 January 2003

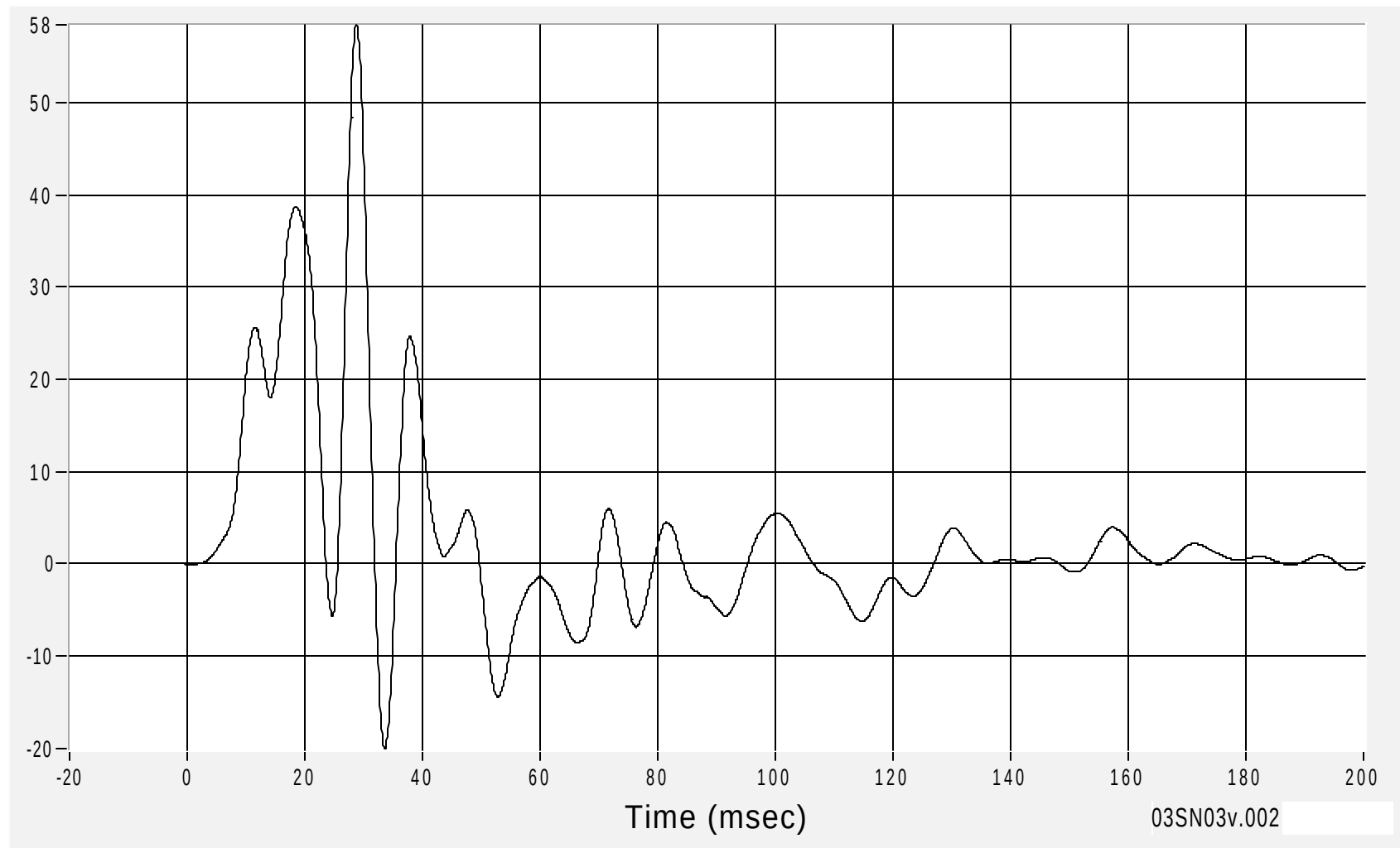
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Right Side Sill at Front Seat (Y) Acceleration

Acceleration (G's) CFC60

Max 58.4 G's at 28.7 msec
Min -20.1 G's at 33.6 msec

B-58



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8 January 2003

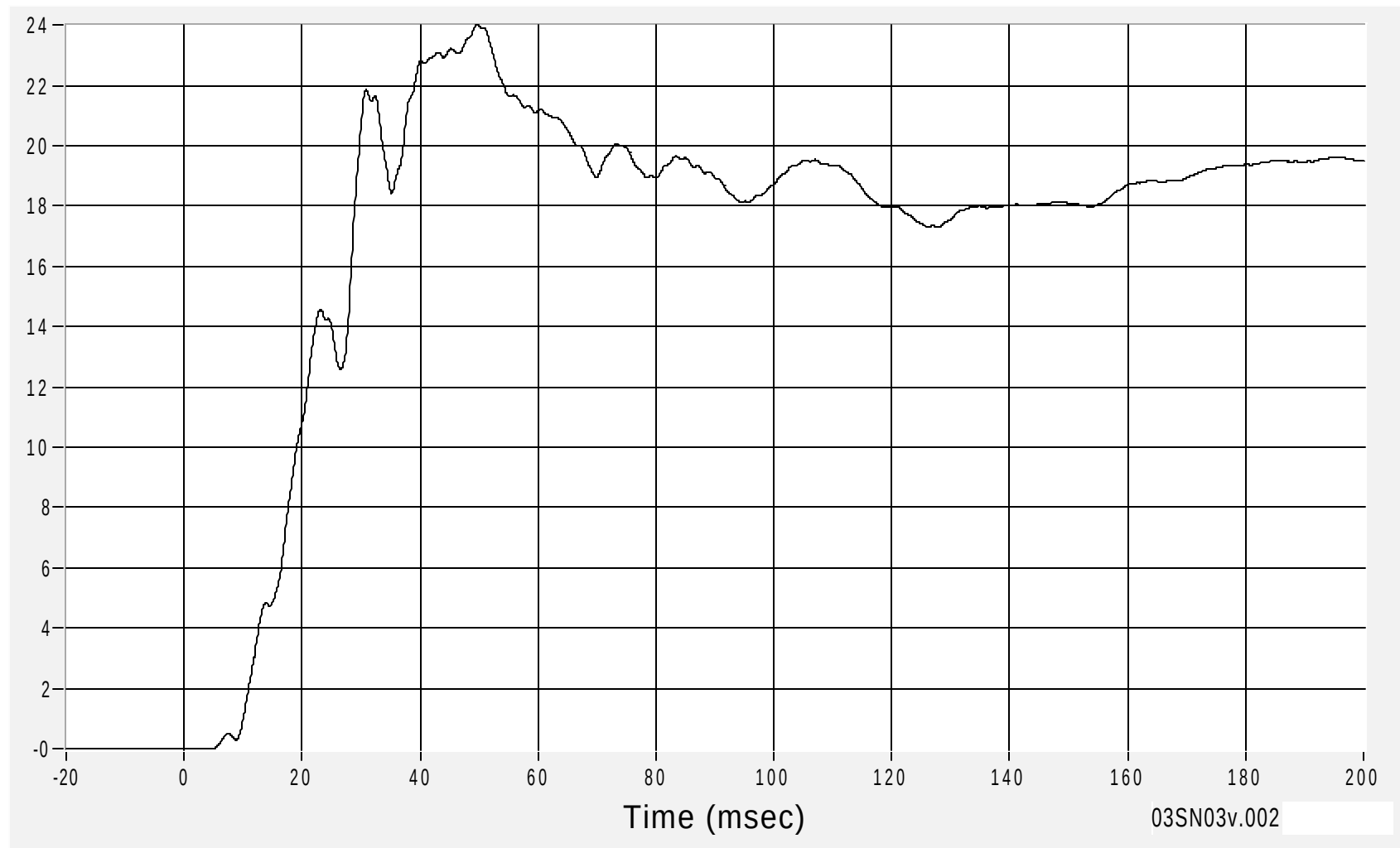
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Right Side Sill at Front Seat (Y) Velocity

Velocity (km/h) CFC180

Max 24.0 km/h at 49.6 msec
Min 0.0 km/h at 0.2 msec

B-59



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8 January 2003

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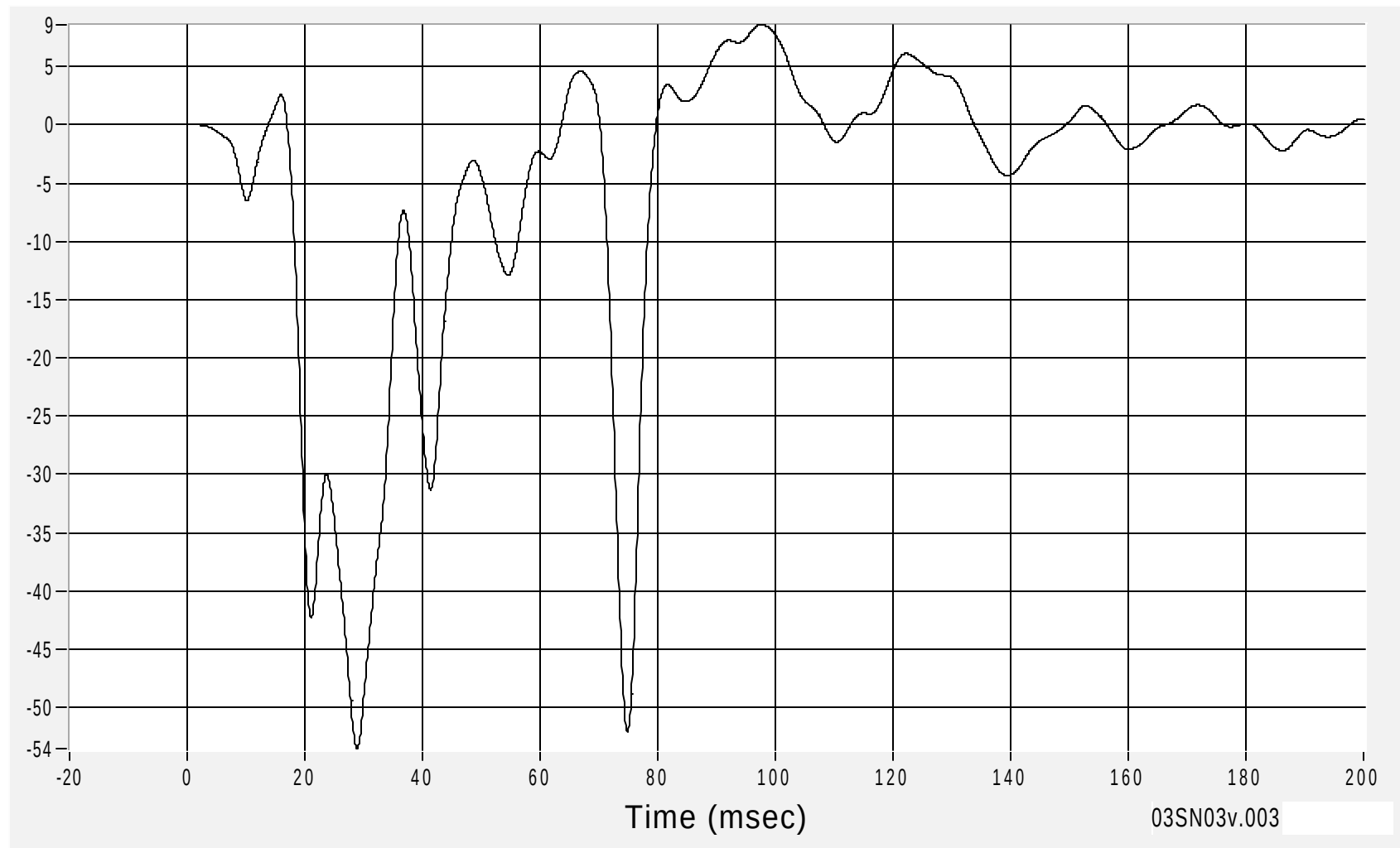
Right Side Sill at Front Seat (Z) Acceleration

Acceleration (G's) CFC60

Max 8.6 G's at 97.7 msec

Min -53.5 G's at 28.9 msec

B-60



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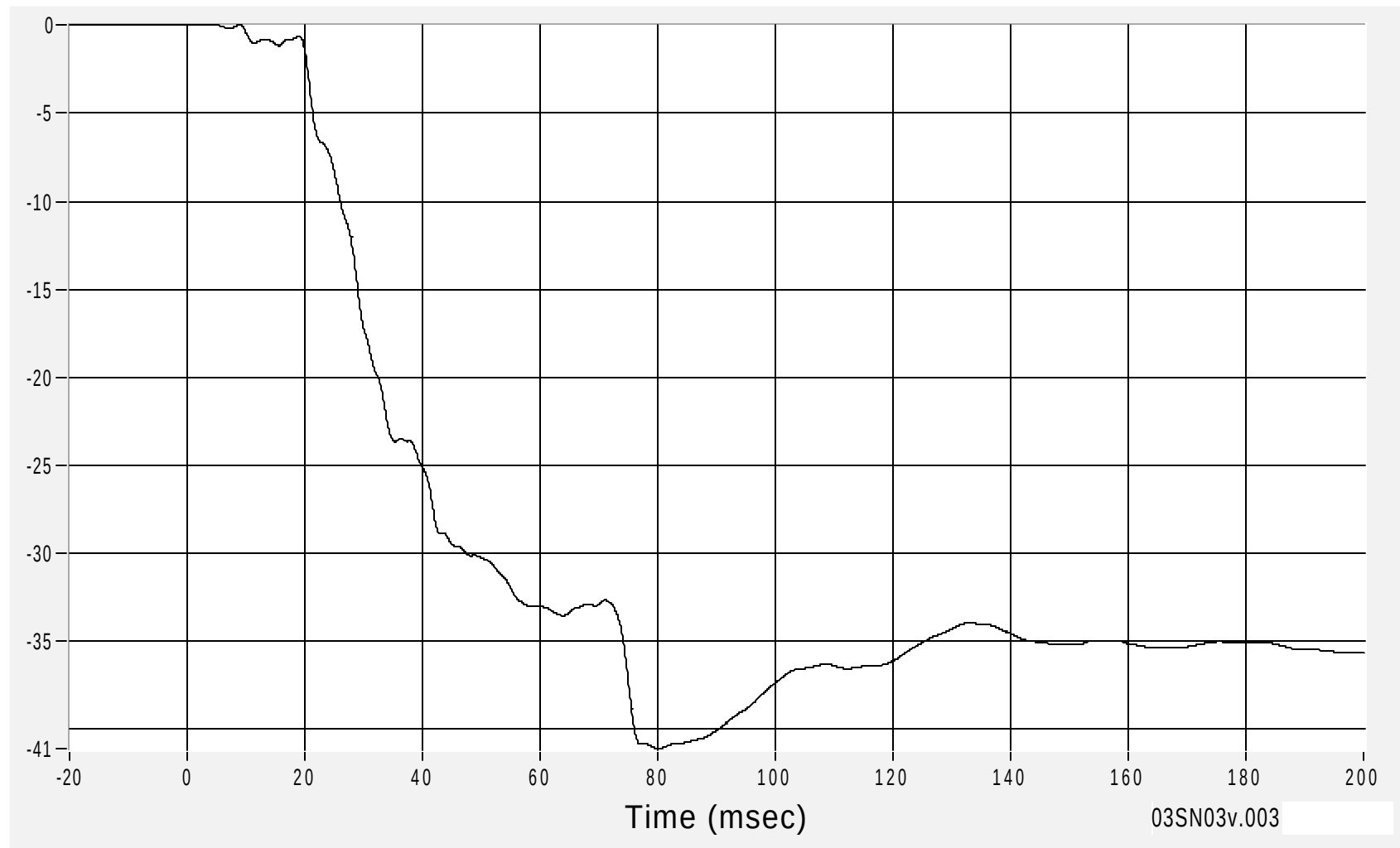
Medical College of Wisconsin
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Right Side Sill at Front Seat (Z) Velocity

Velocity (km/h) CFC180

Max 0.0 km/h at 8.8 msec
Min -41.1 km/h at 80.1 msec

B-61



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8 January 2003

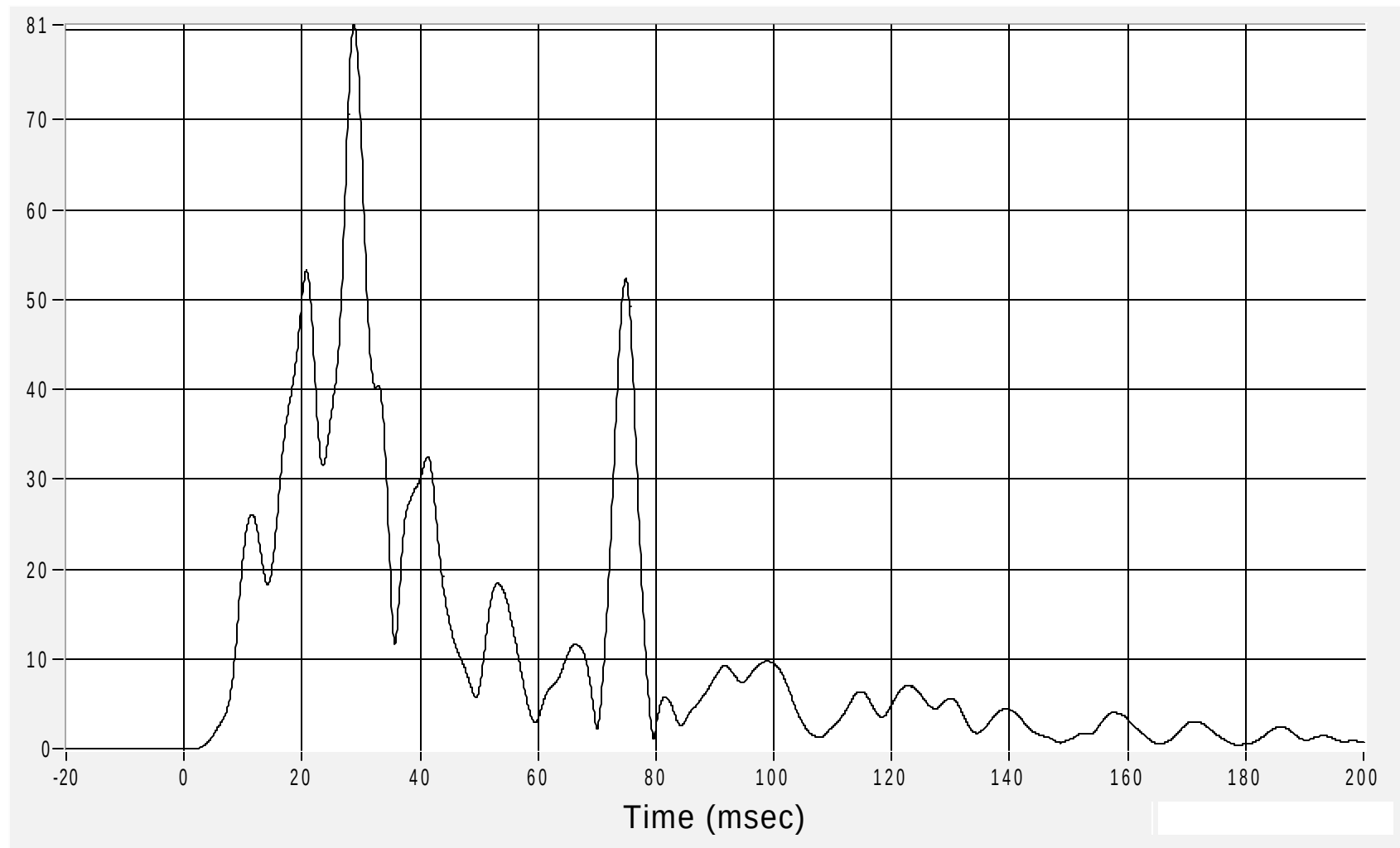
Medical College of Wisconsin
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Right Side Sill at Front Seat Resultant Acceleration

Acceleration (G's) CFC60

Max	80.6	G's	at	28.8	msec
Min	0.0	G's	at	2.2	msec

B-62



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8 January 2003

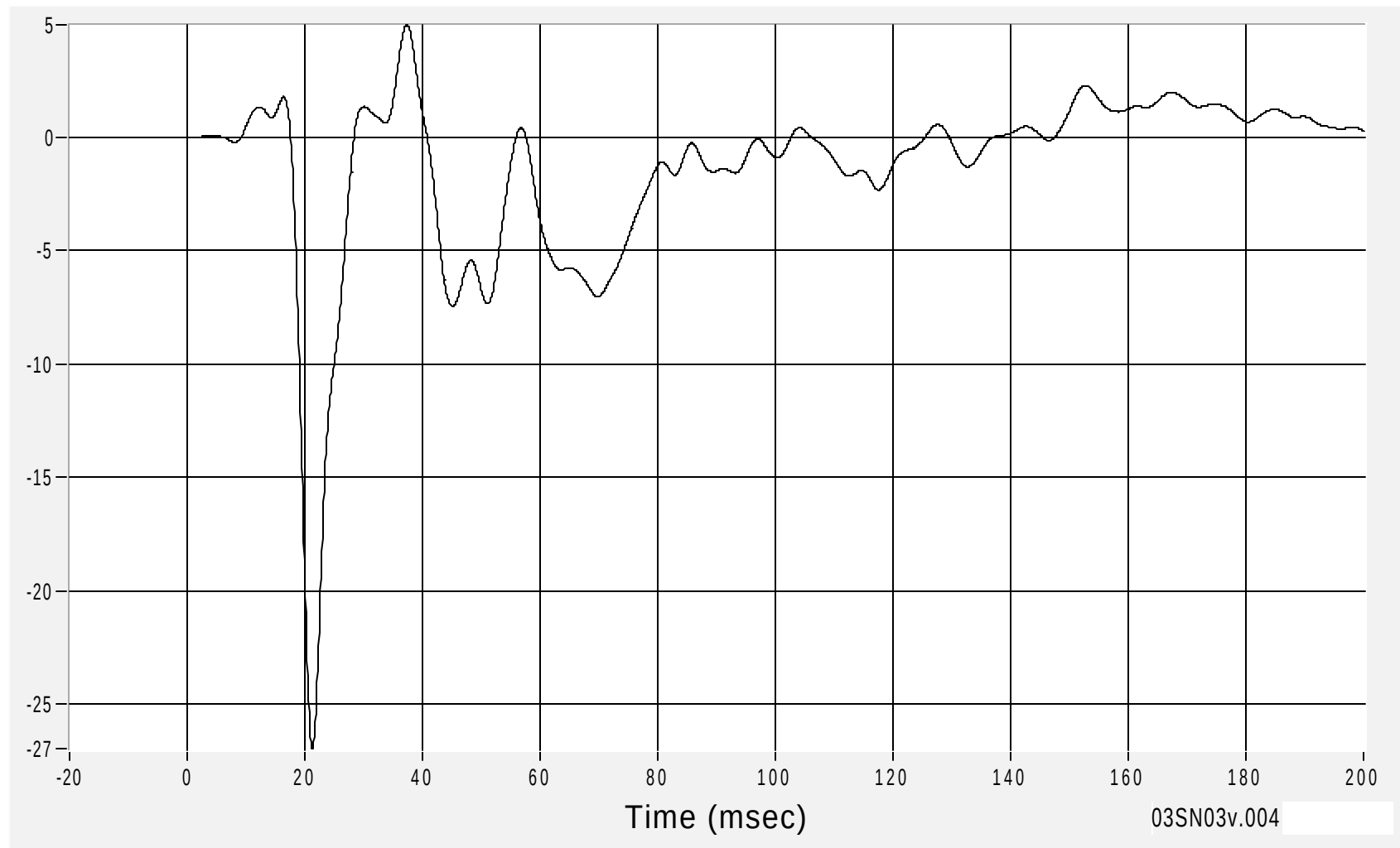
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Right Side Sill at Rear Seat (X) Acceleration

Acceleration (G's) CFC60

Max 4.9 G's at 37.4 msec
Min -27.0 G's at 21.3 msec

B-63



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8 January 2003

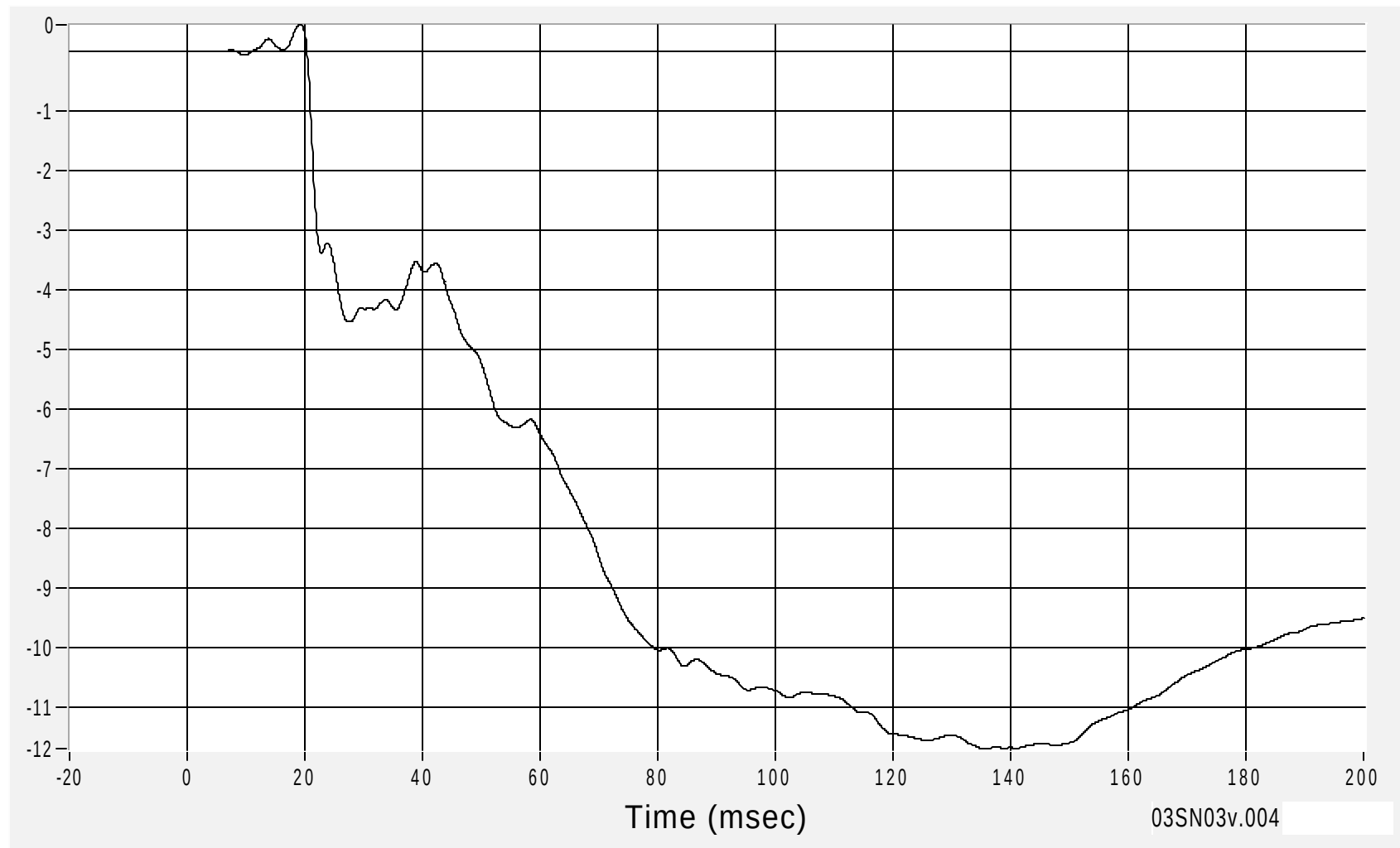
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Right Side Sill at Rear Seat (X) Velocity

Velocity (km/h) CFC180

Max 0.5 km/h at 19.3 msec
Min -11.7 km/h at 135.6 msec

B-64



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8 January 2003

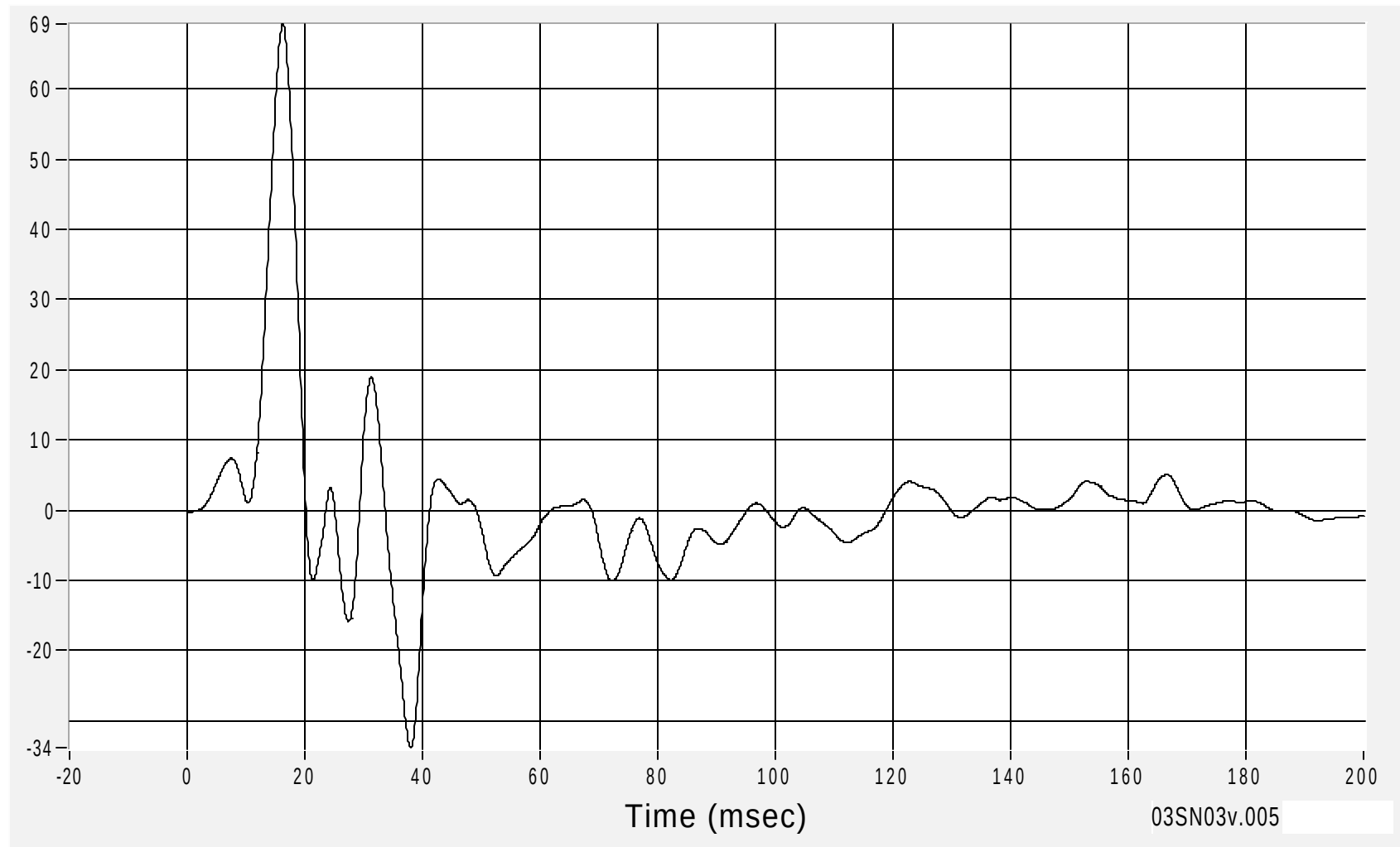
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Right Side Sill at Rear Seat (Y) Acceleration

Acceleration (G's) CFC60

Max 69.2 G's at 16.2 msec
Min -33.8 G's at 38.0 msec

B-65



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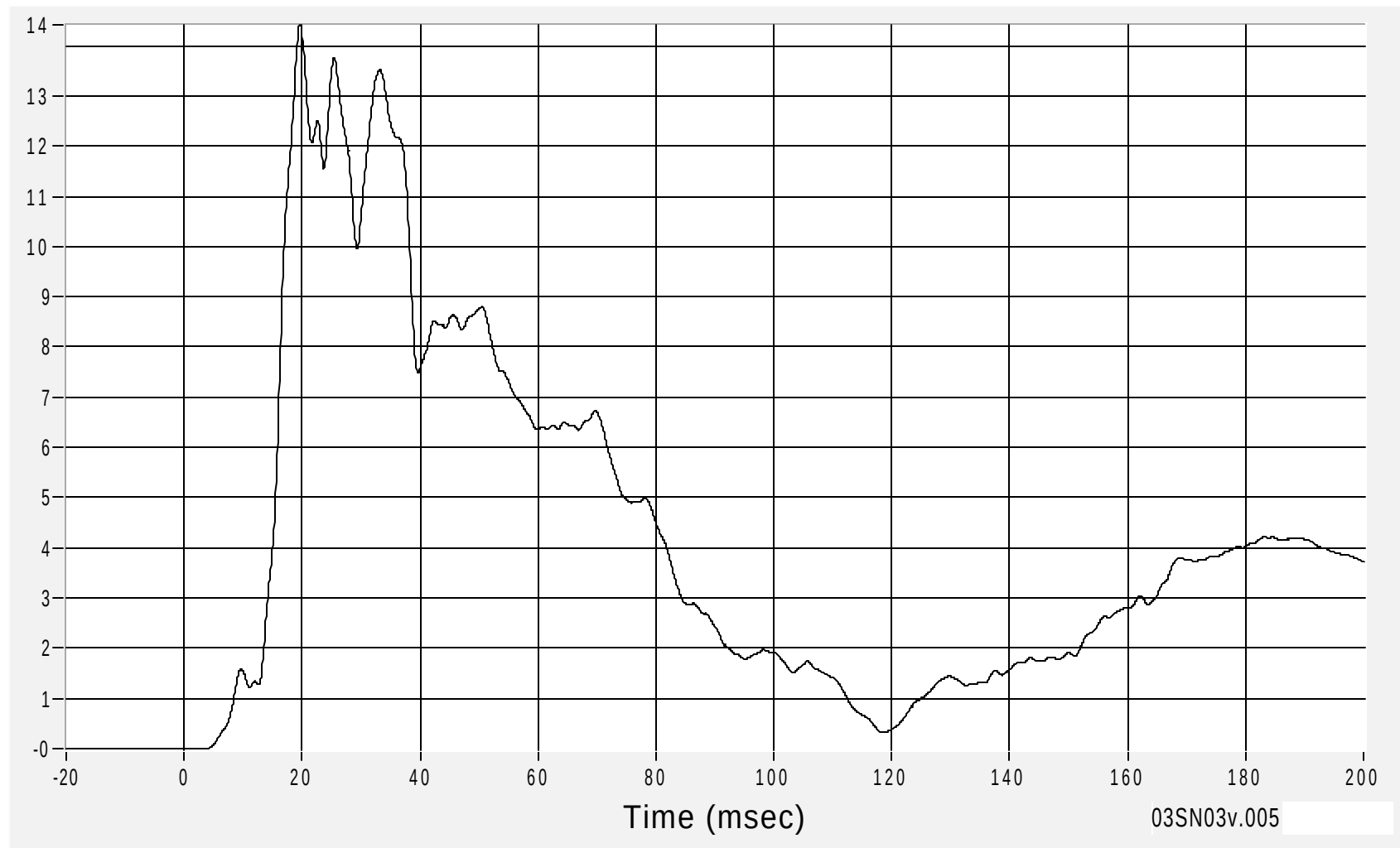
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Right Side Sill at Rear Seat (Y) Velocity

Velocity (km/h) CFC180

Max 14.4 km/h at 19.6 msec
Min 0.0 km/h at 3.4 msec

B-66



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8 January 2003

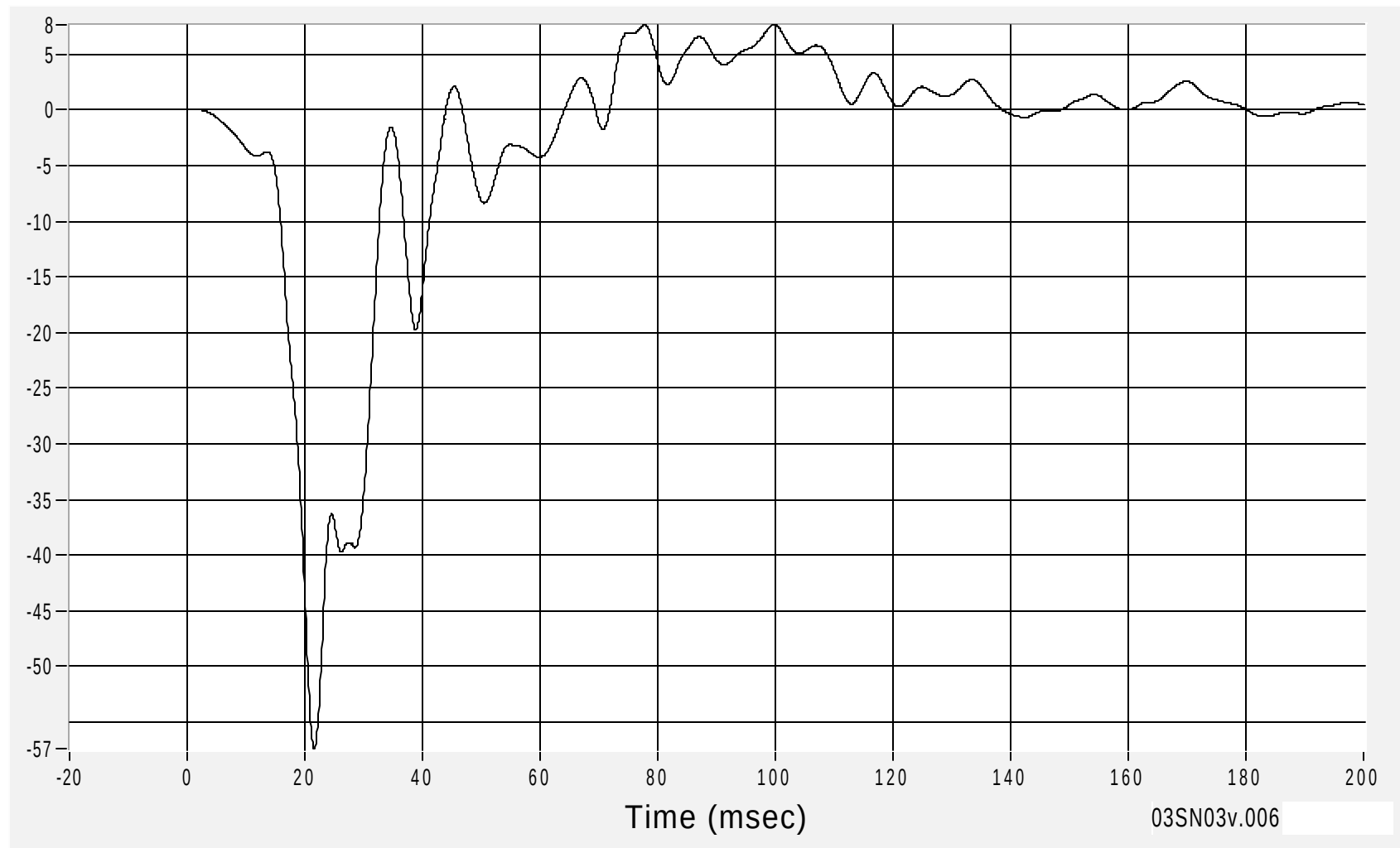
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Right Side Sill at Rear Seat (Z) Acceleration

Acceleration (G's) CFC60

Max 7.6 G's at 99.8 msec
Min -57.4 G's at 21.6 msec

B-67



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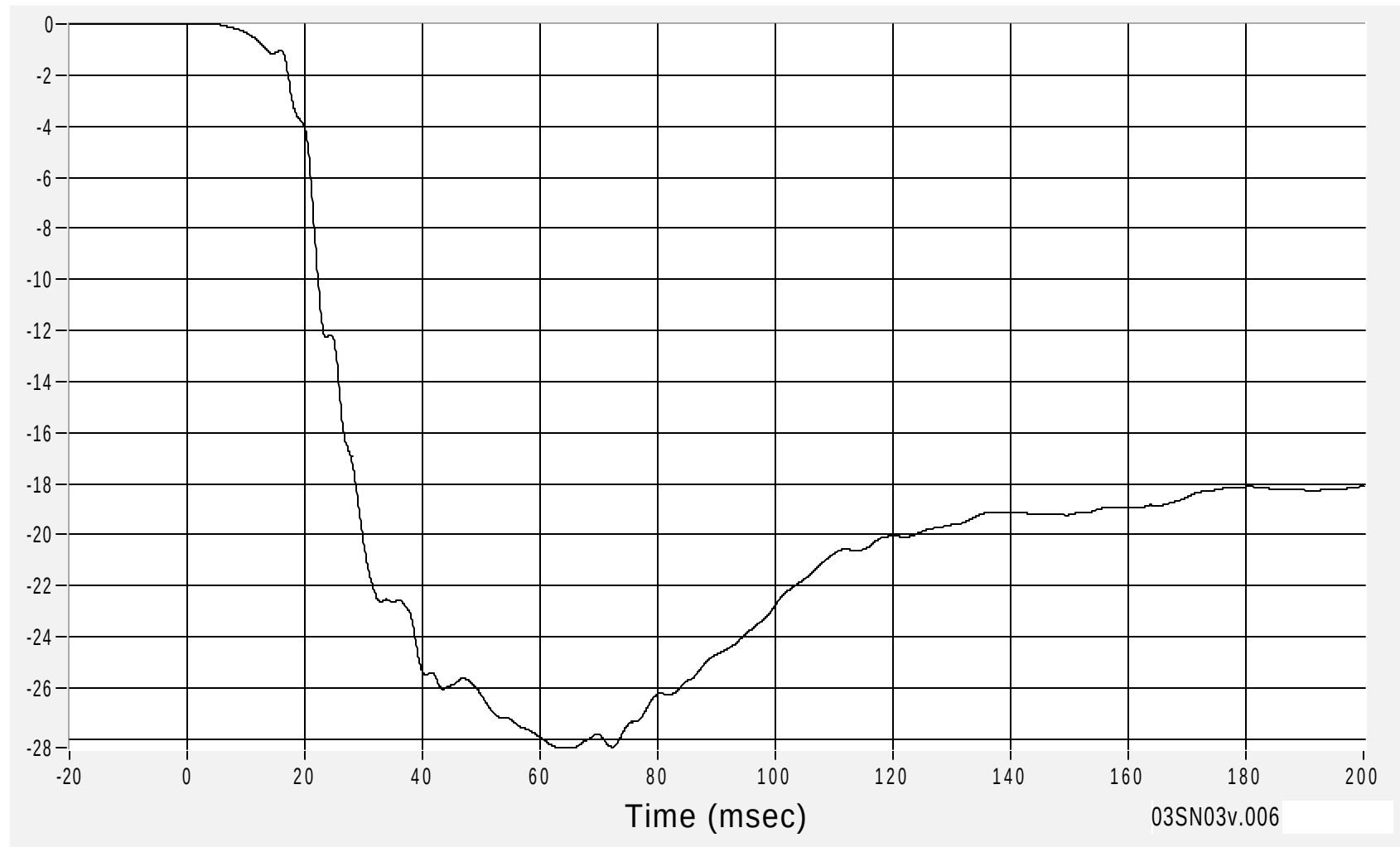
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Right Side Sill at Rear Seat (Z) Velocity

Velocity (km/h) CFC180

Max 0.0 km/h at 0.0 msec
Min -28.3 km/h at 64.7 msec

B-68



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8 January 2003

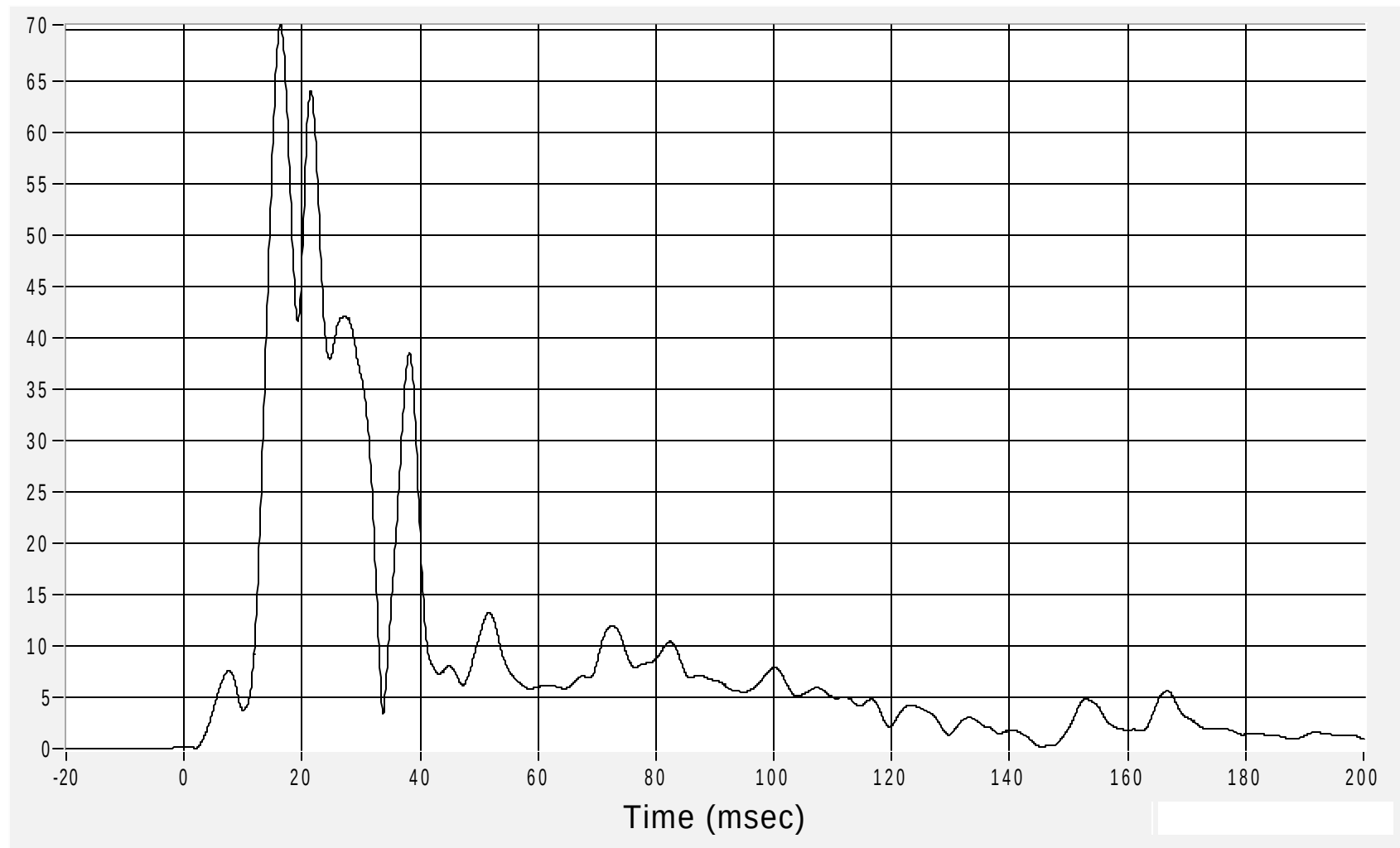
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Right Side Sill at Rear Seat Resultant Acceleration

Acceleration (G's) CFC60

Max	70.5	G's	at	16.3	msec
Min	0.0	G's	at	2.0	msec

B-69



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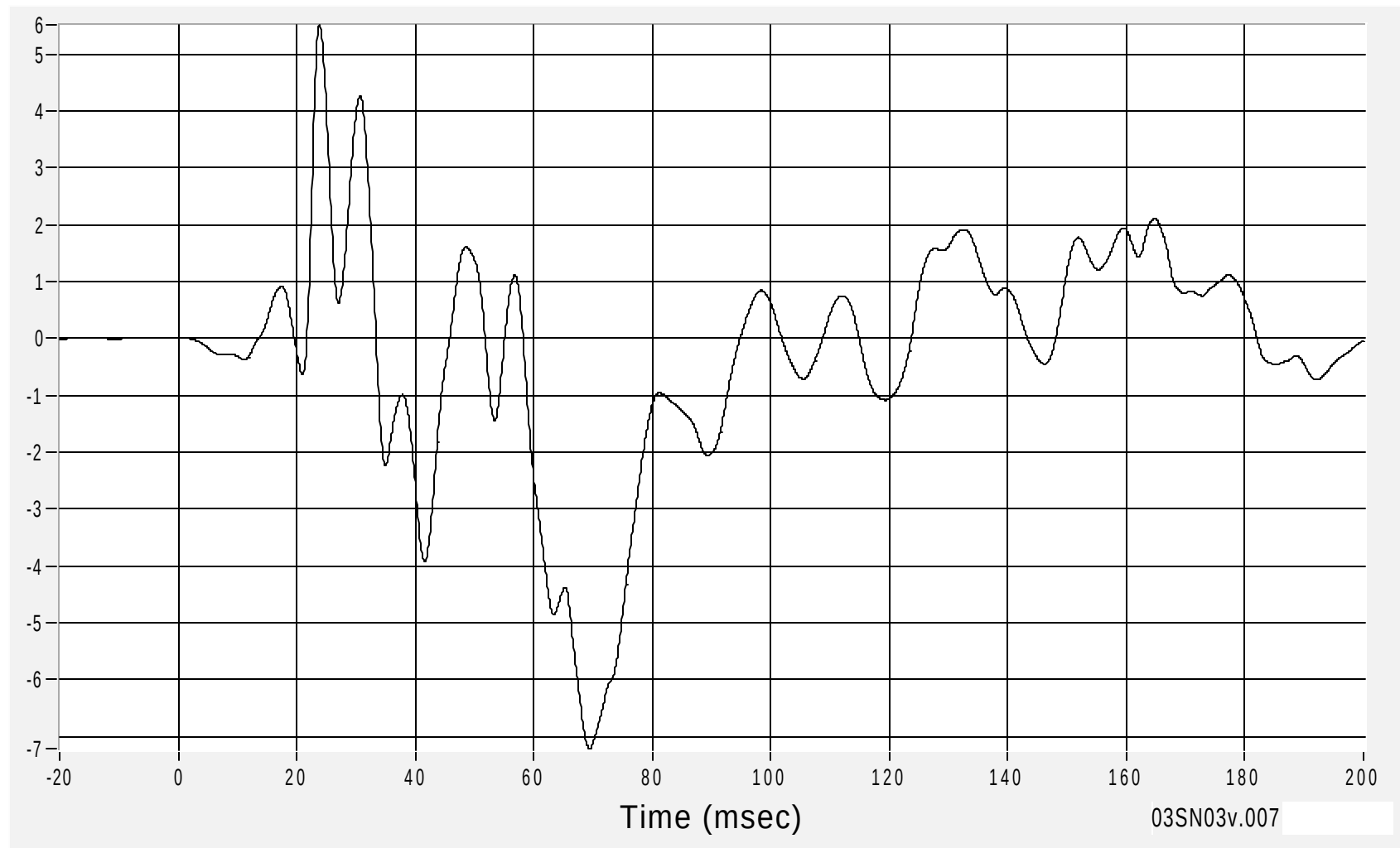
Rear Floorpan Above Axle (X) Acceleration

Acceleration (G's) CFC60

Max 5.5 G's at 23.8 msec

Min -7.2 G's at 69.4 msec

B-70



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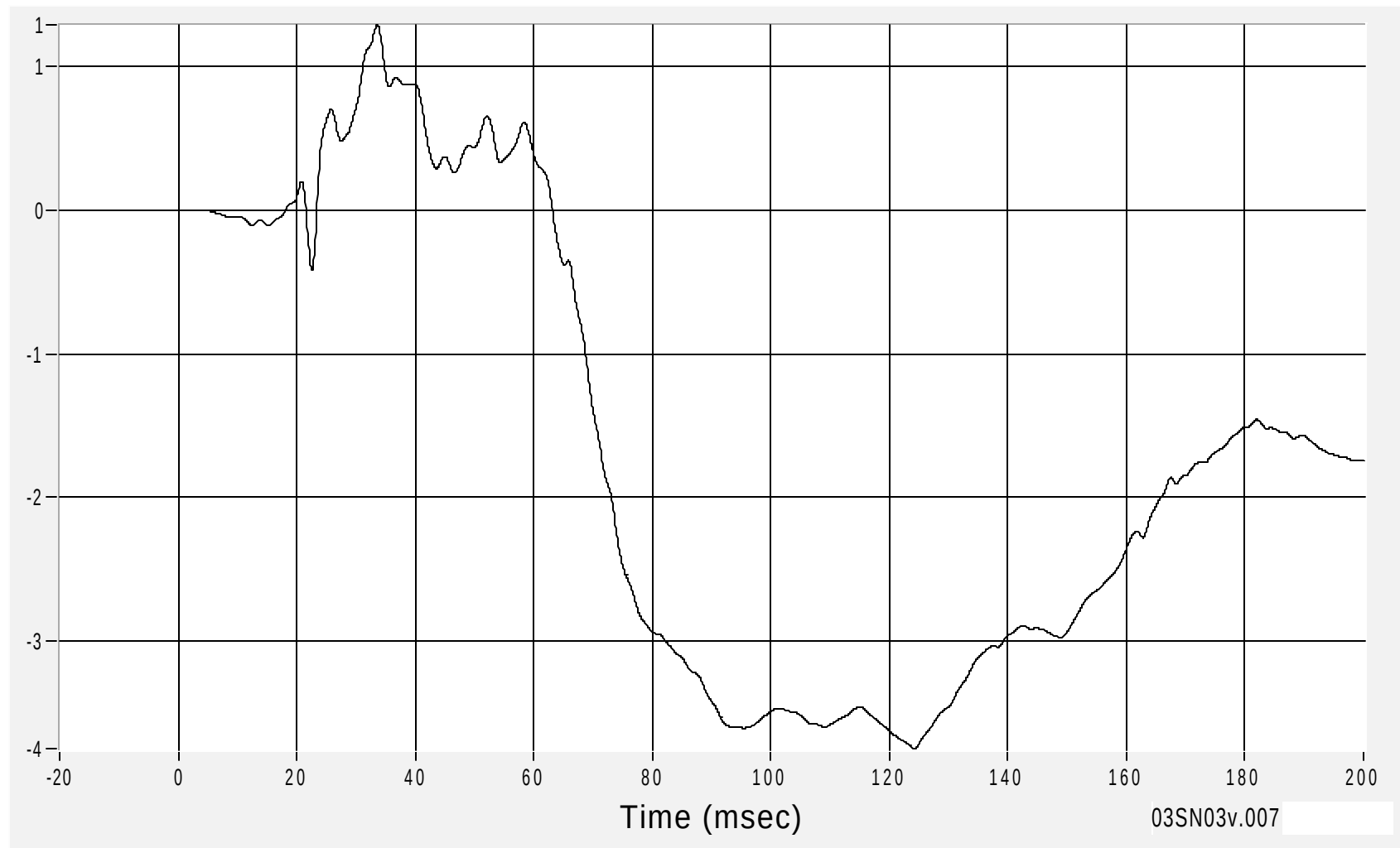
Rear Floorpan Above Axle (X) Velocity

Velocity (km/h) CFC180

Max 1.3 km/h at 33.6 msec

Min -3.8 km/h at 124.2 msec

B-71



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8 January 2003

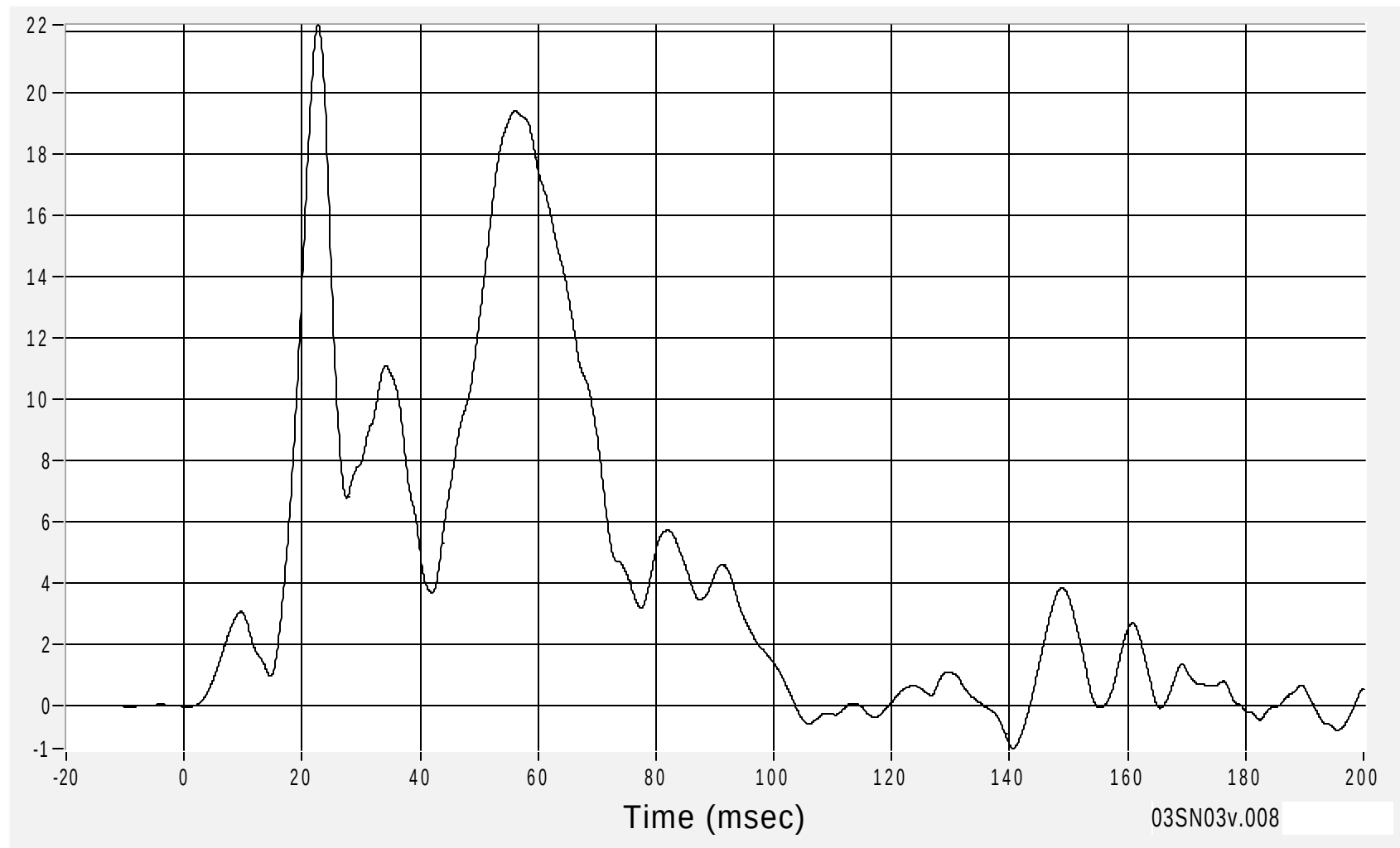
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Rear Floorpan Above Axle (Y) Acceleration

Acceleration (G's) CFC60

Max 22.2 G's at 22.7 msec
Min -1.4 G's at 140.6 msec

B-72



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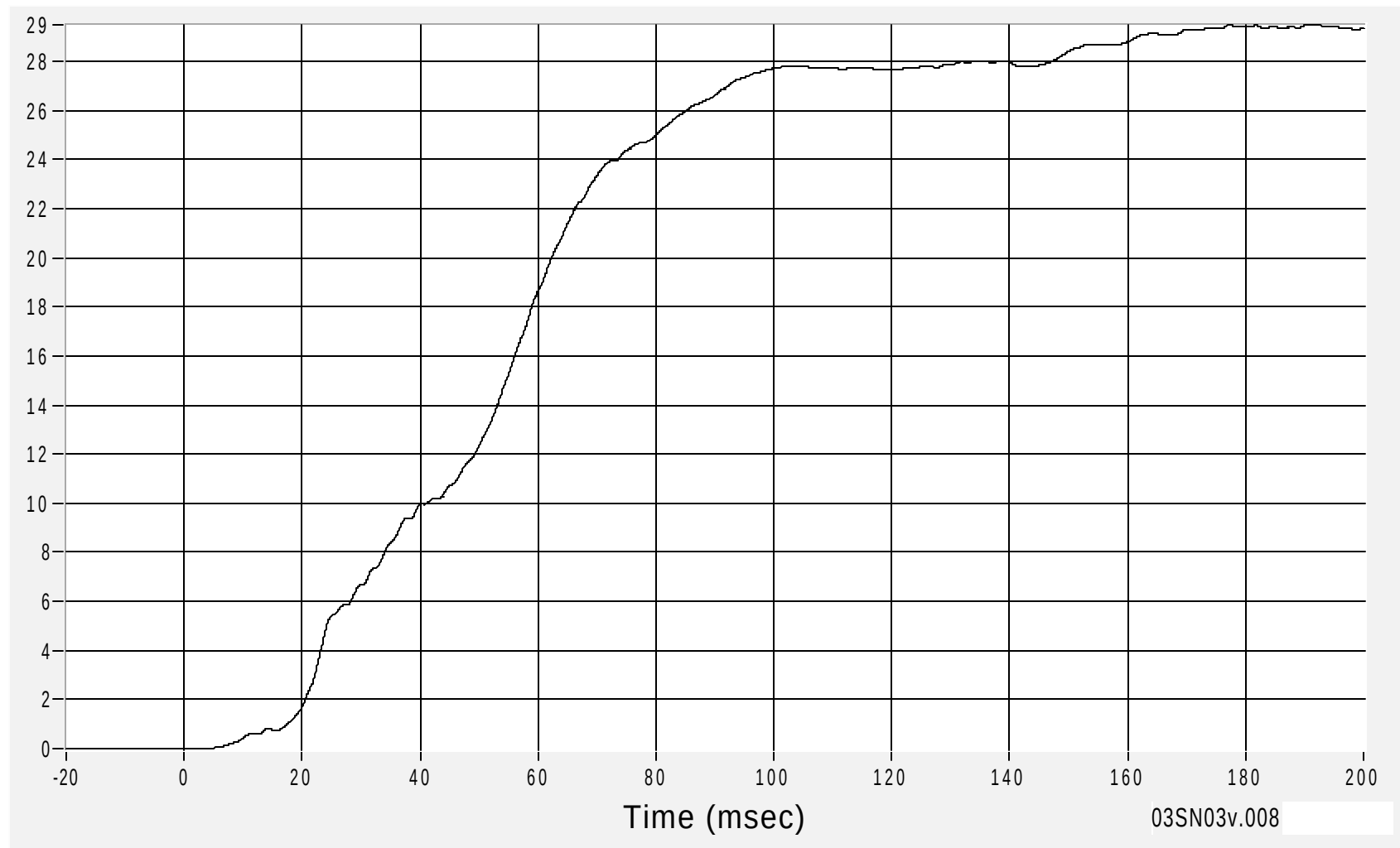
Rear Floorpan Above Axle (Y) Velocity

Velocity (km/h) CFC180

Max 29.5 km/h at 190.3 msec

Min 0.0 km/h at 0.0 msec

B-73



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8 January 2003

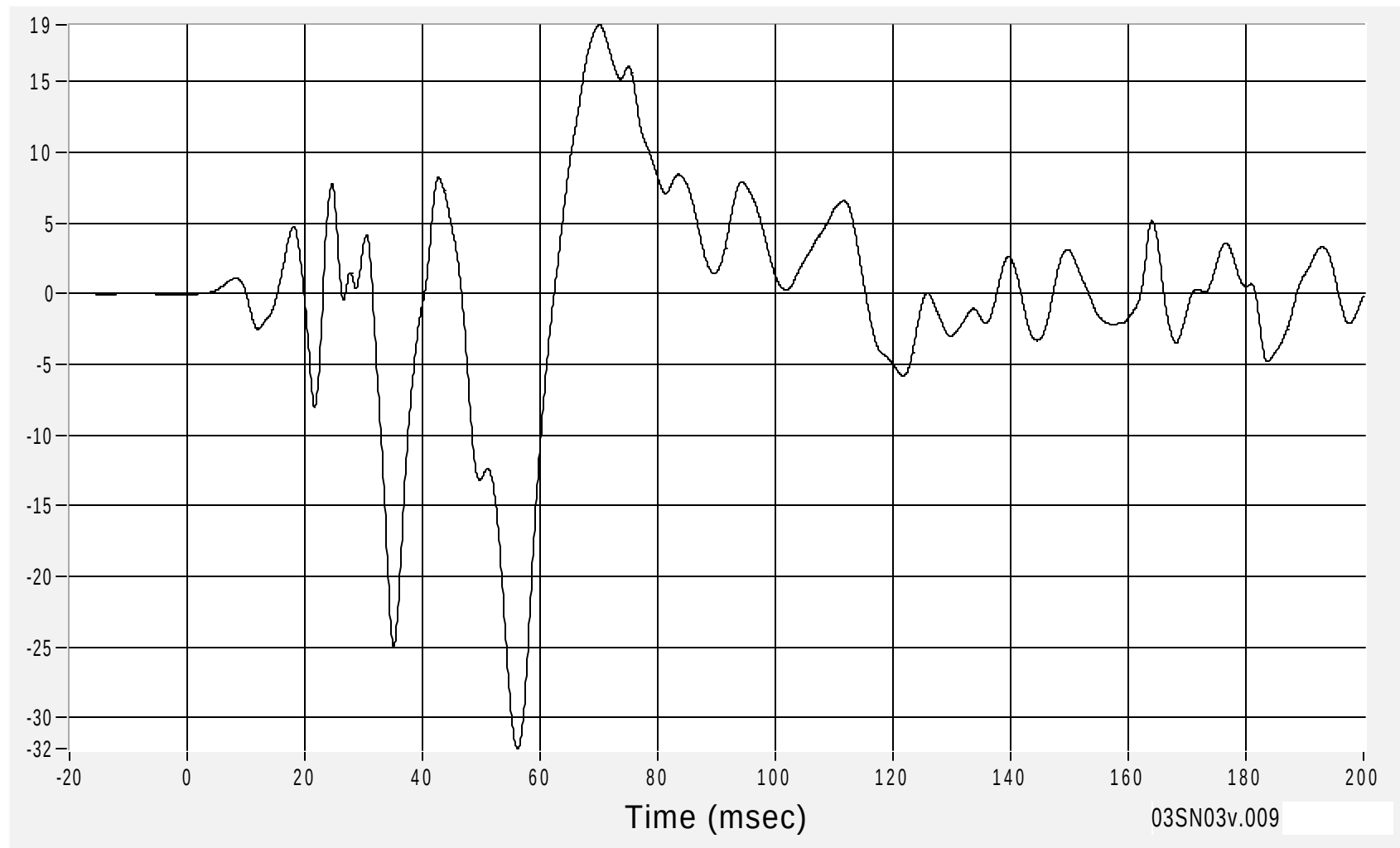
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Rear Floorpan Above Axle (Z) Acceleration

Acceleration (G's) CFC60

Max 19.0 G's at 70.1 msec
Min -32.2 G's at 56.2 msec

B-74



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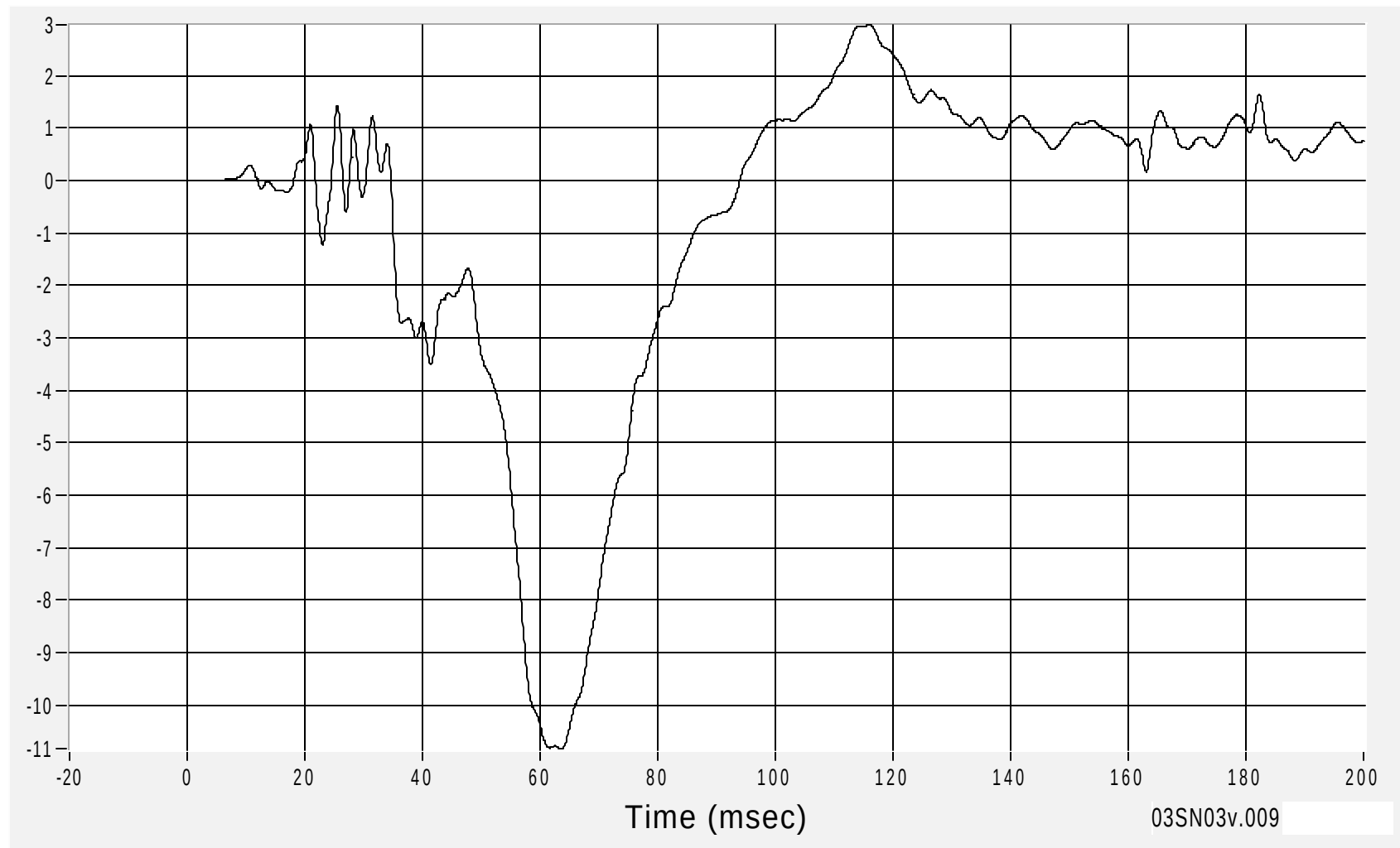
Rear Floorpan Above Axle (Z) Velocity

Velocity (km/h) CFC180

Max 3.0 km/h at 115.9 msec

Min -10.8 km/h at 63.6 msec

B-75



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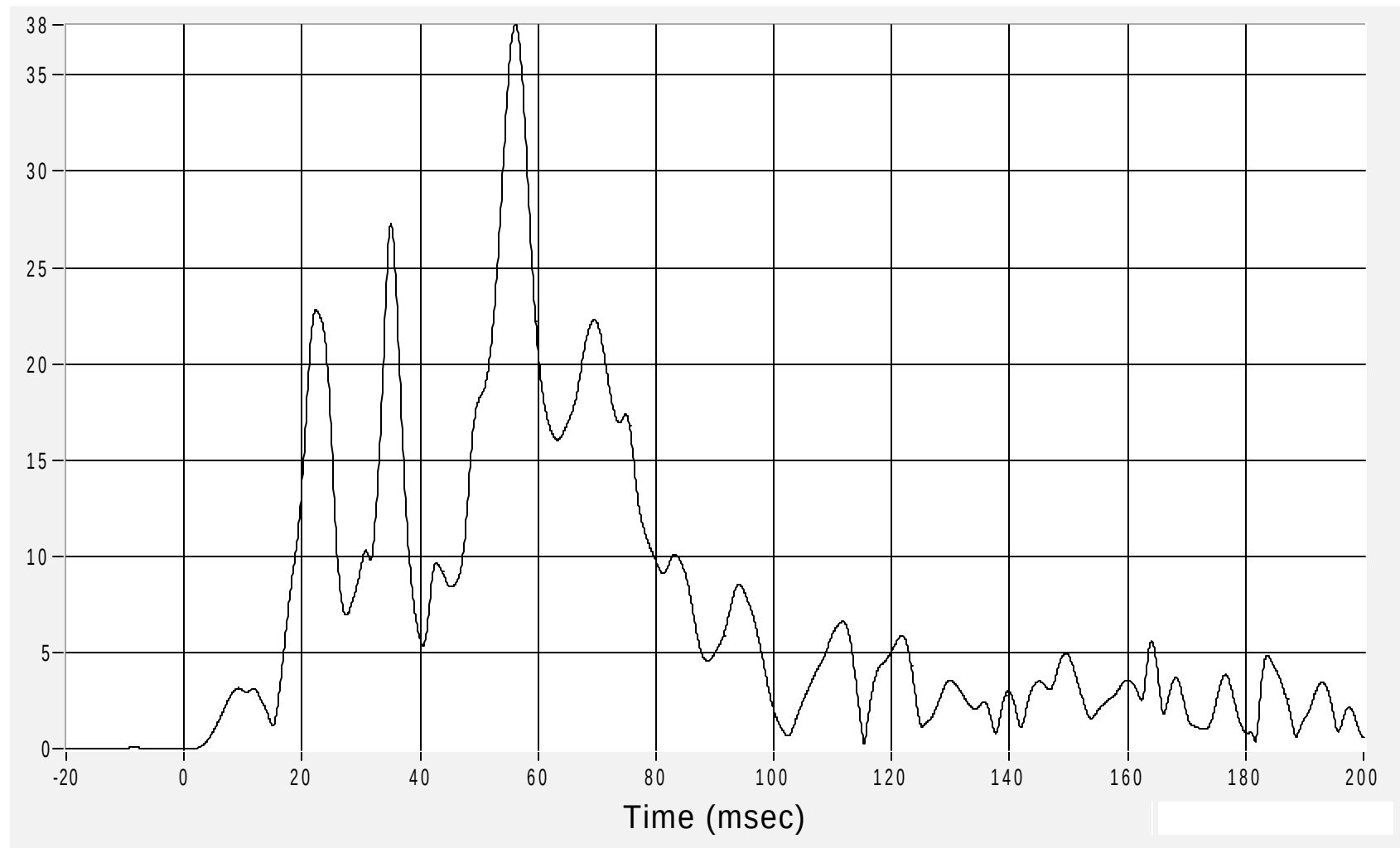
Medical College of Wisconsin
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Rear Floorpan Above Axle Resultant Acceleration

Acceleration (G's) CFC60

Max 37.6 G's at 56.2 msec
Min 0.0 G's at 1.8 msec

B-76



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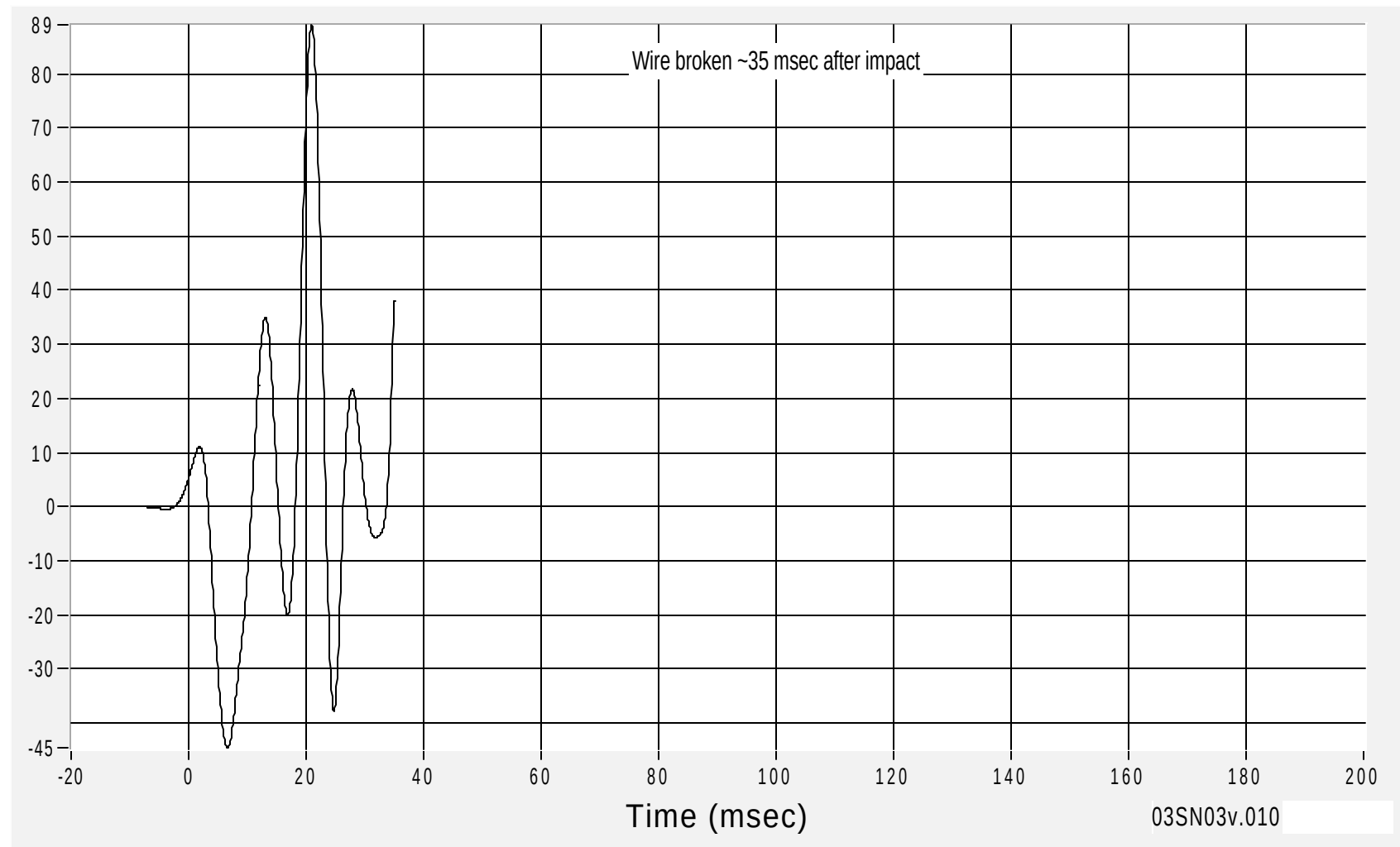
Left Side Sill at Rear Seat (Y) Acceleration

Acceleration (G's) CFC60

Max 89.1 G's at 20.9 msec

Min -44.6 G's at 6.6 msec

B-77



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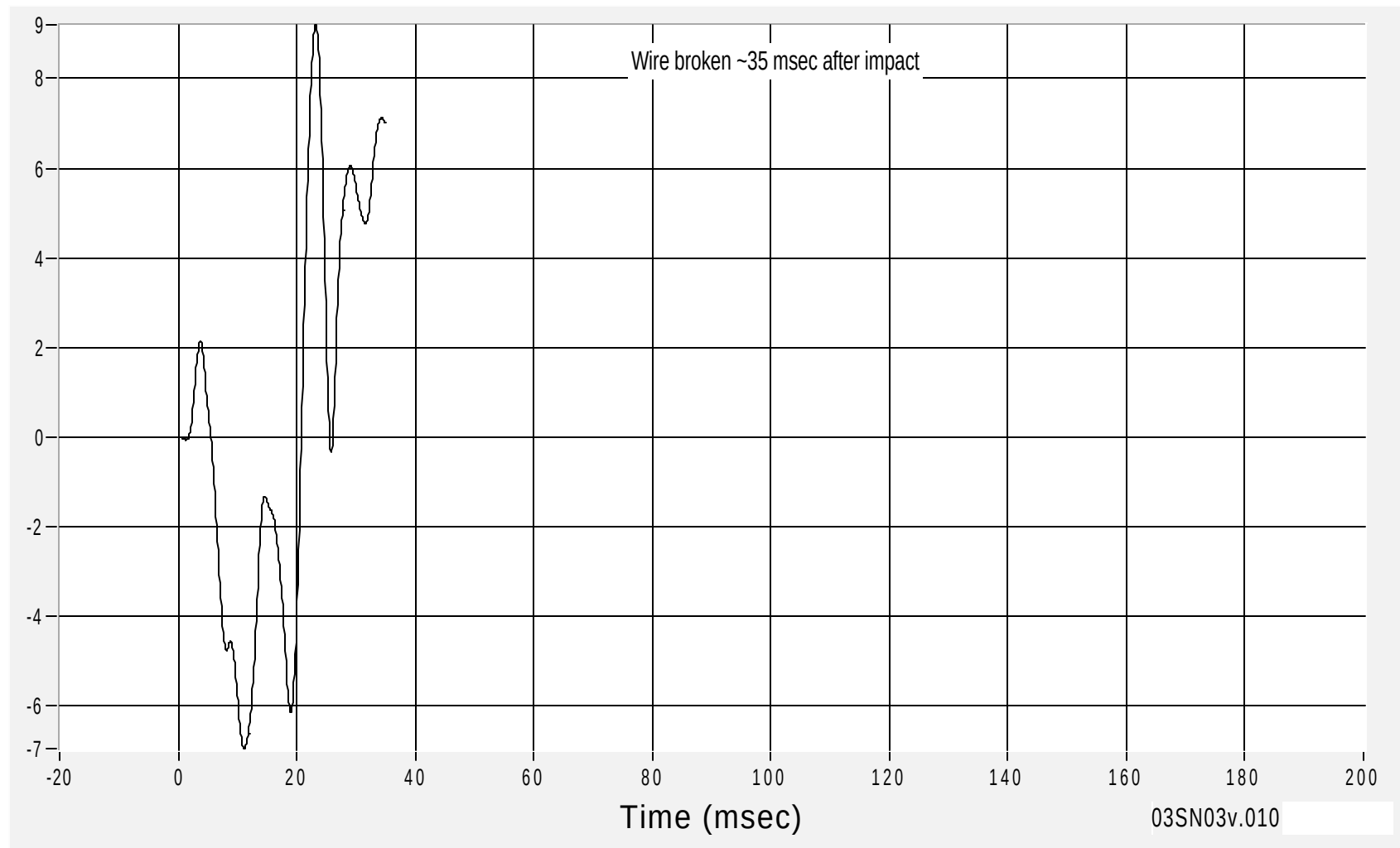
Left Side Sill at Rear Seat (Y) Velocity

Velocity (km/h) CFC180

Max 9.2 km/h at 23.2 msec

Min -7.0 km/h at 11.1 msec

B-78



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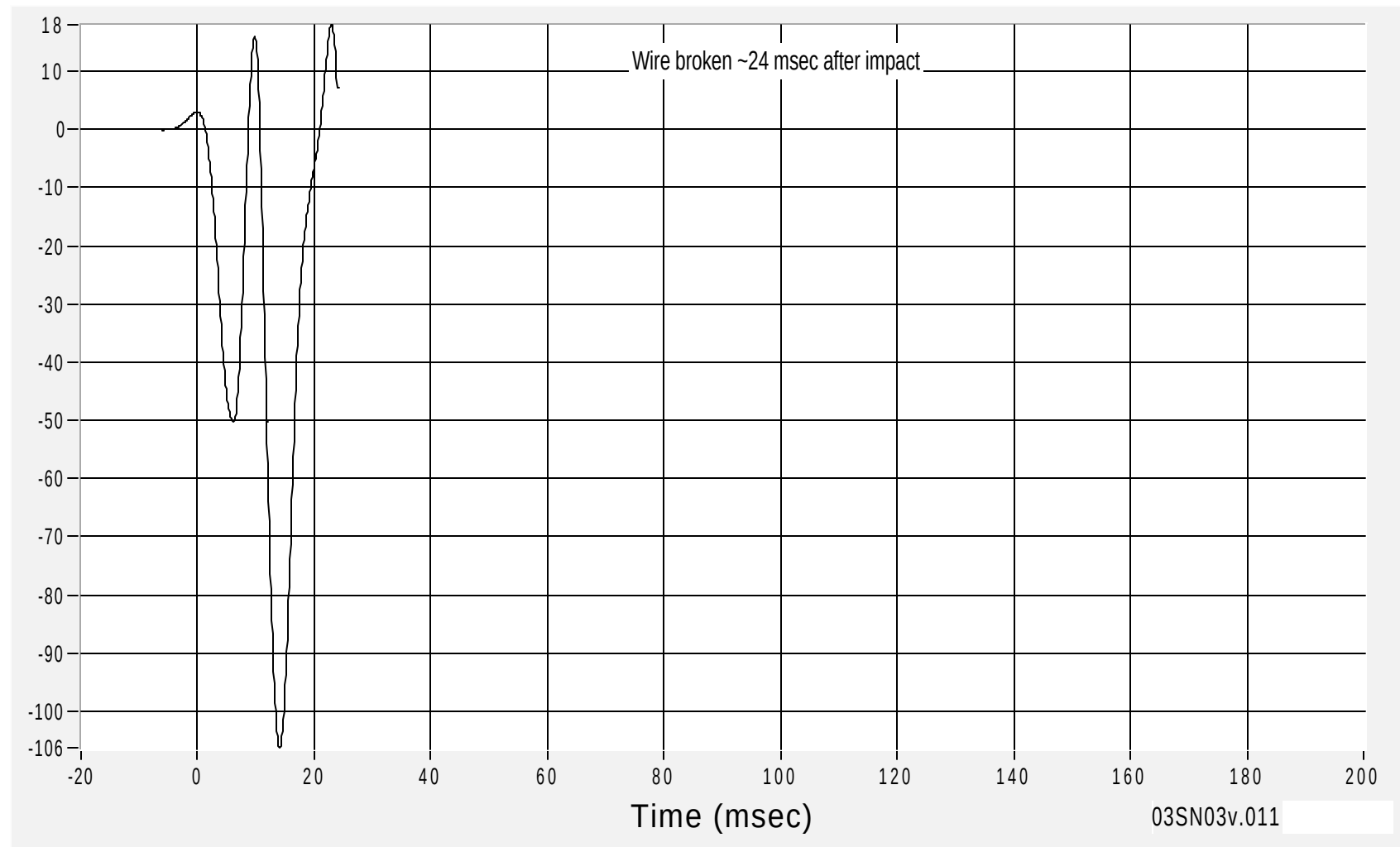
Left Side Sill at Front Seat (Y) Acceleration

Acceleration (G's) CFC60

Max 17.9 G's at 23.0 msec

Min -106.2 G's at 14.1 msec

B-79



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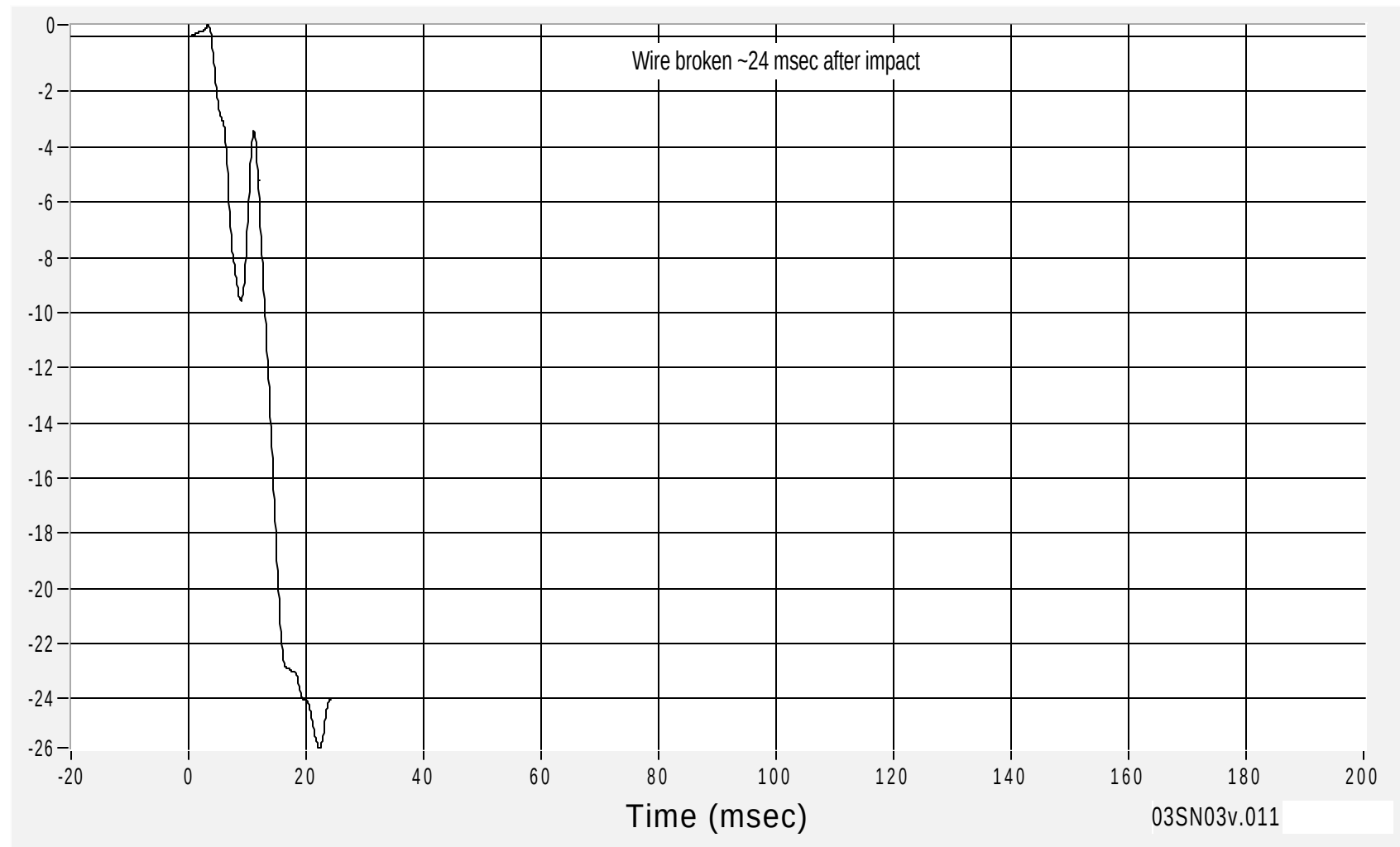
Left Side Sill at Front Seat (Y) Velocity

Velocity (km/h) CFC180

Max 0.4 km/h at 3.4 msec

Min -25.8 km/h at 22.2 msec

B-80



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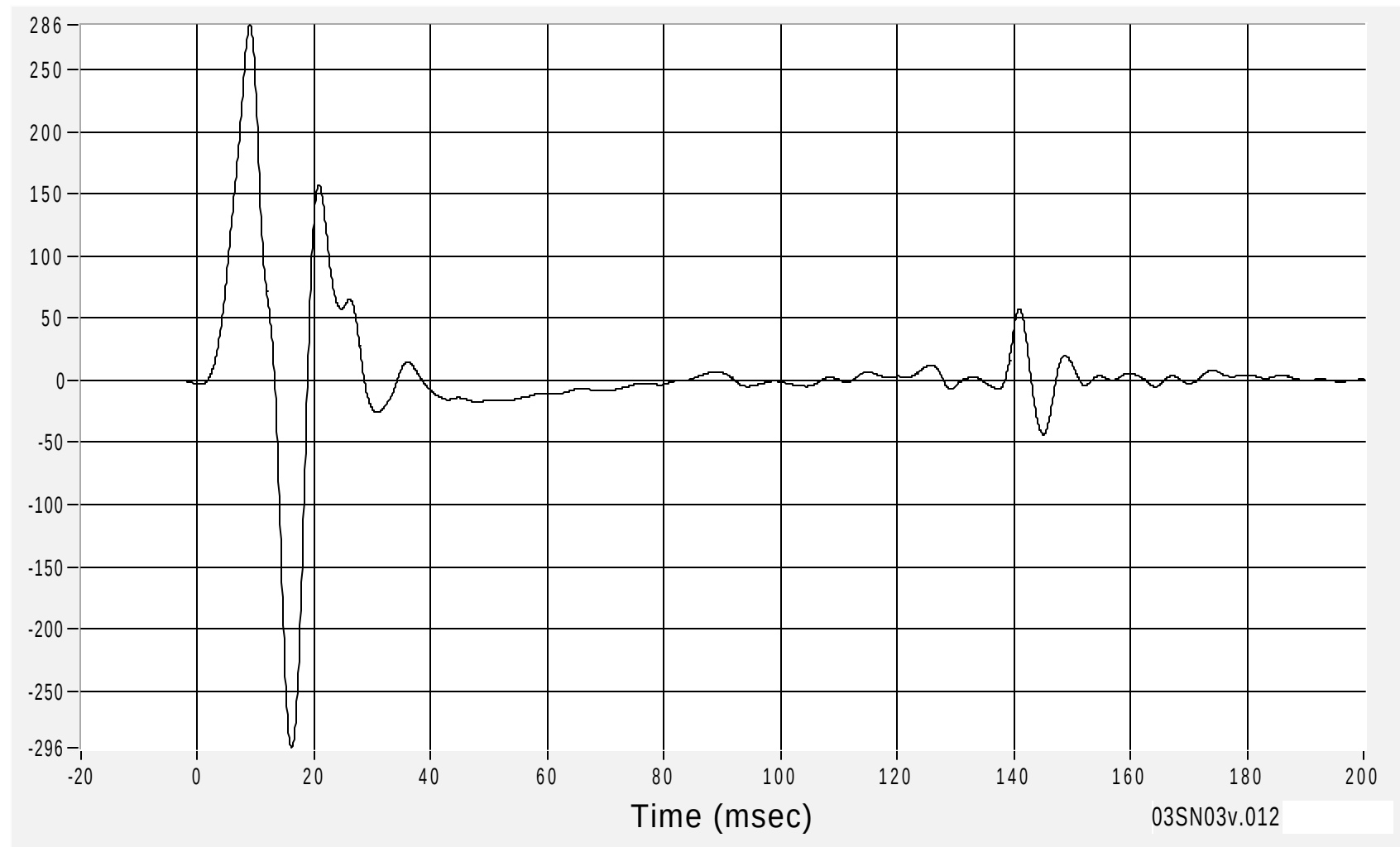
Left Front Door on Centerline (Y) Acceleration

Acceleration (G's) CFC60

Max 285.9 G's at 9.0 msec

Min -295.7 G's at 16.1 msec

B-81



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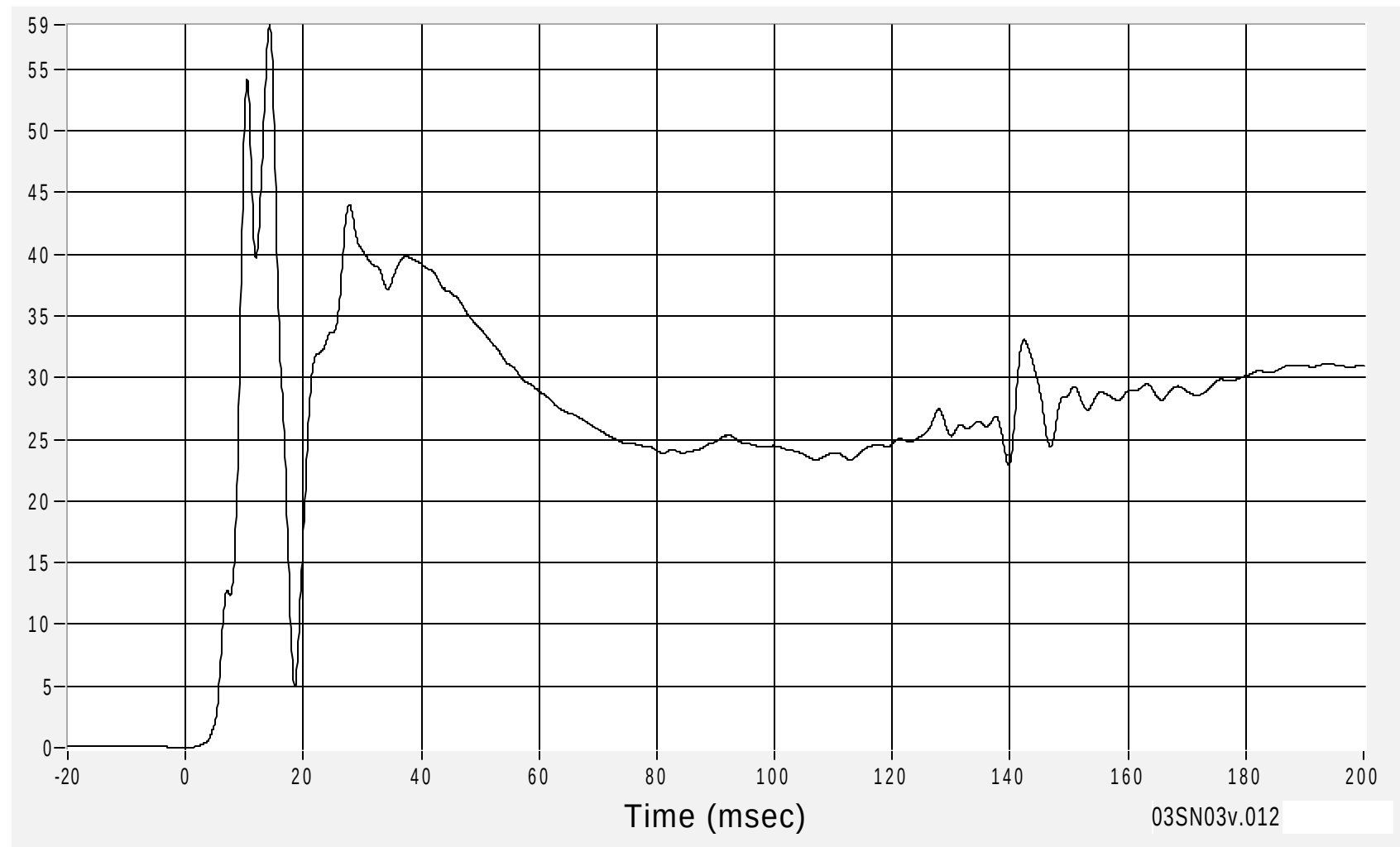
Left Front Door on Centerline (Y) Velocity

Velocity (km/h) CFC180

Max 58.6 km/h at 14.2 msec

Min 0.0 km/h at 0.0 msec

B-82



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8 January 2003

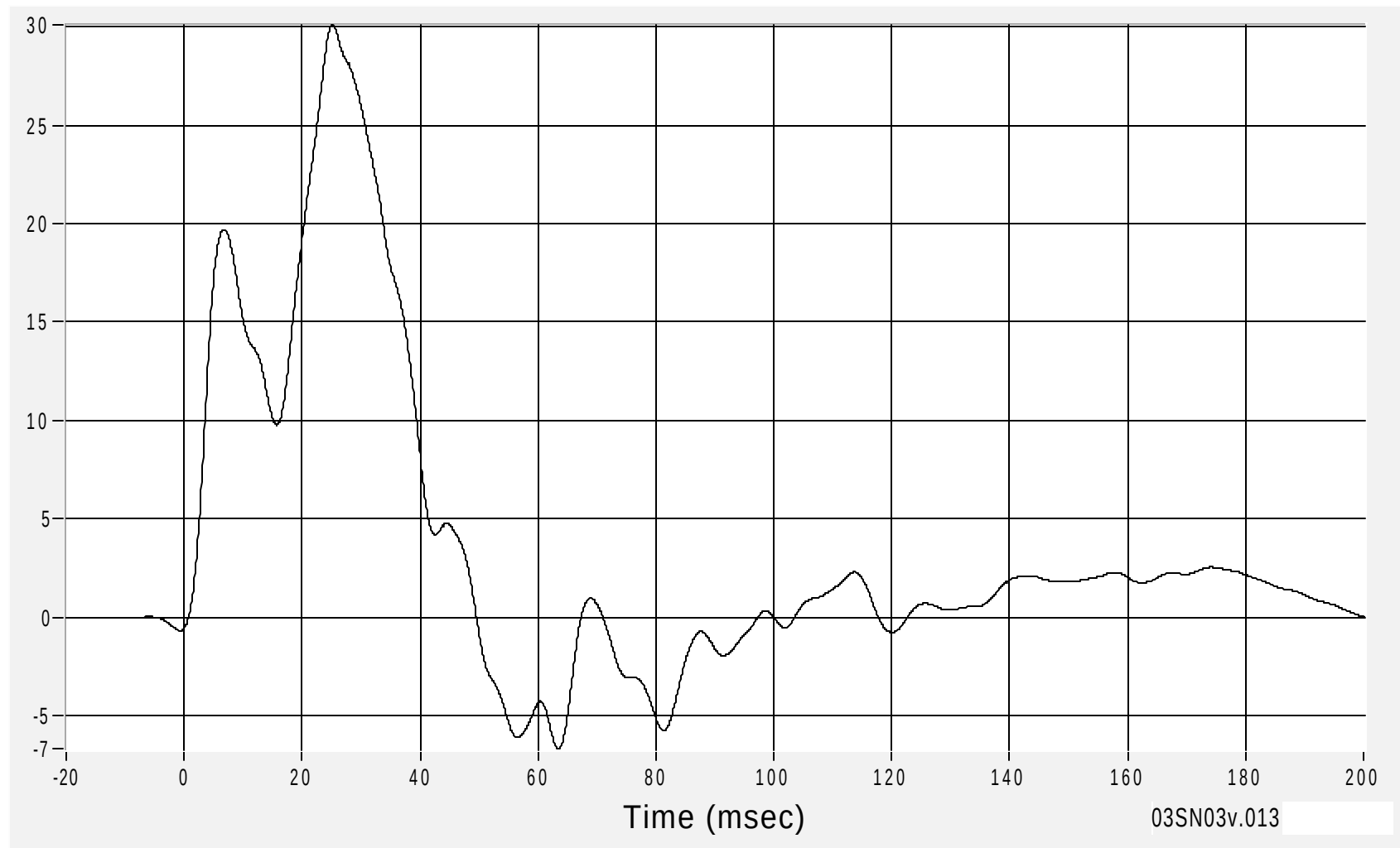
Medical College of Wisconsin
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Right Rear Occupant Compartment (Y) Acceleration

Acceleration (G's) CFC60

Max 30.1 G's at 25.1 msec
Min -6.7 G's at 63.4 msec

B-83



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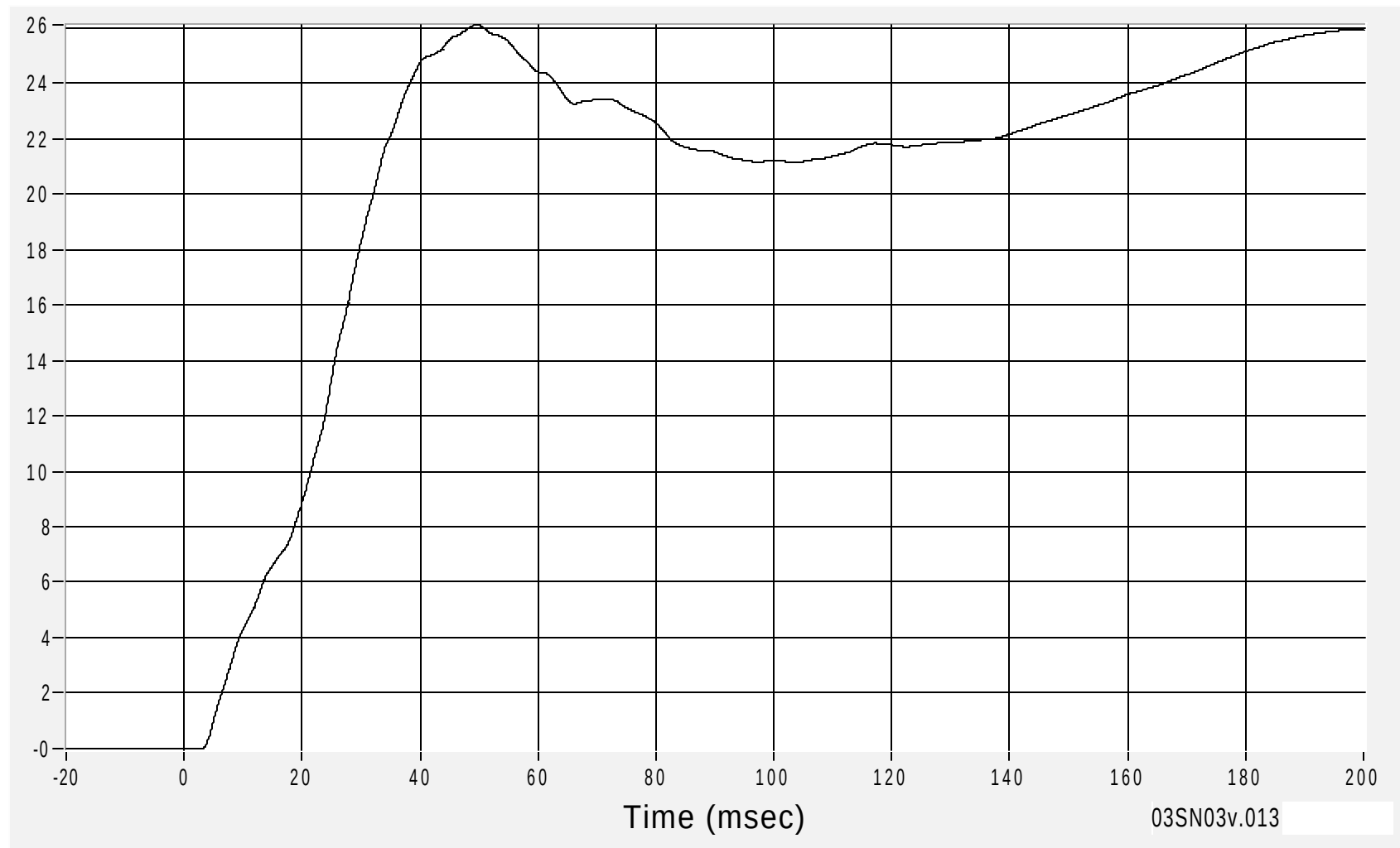
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Right Rear Occupant Compartment (Y) Velocity

Velocity (km/h) CFC180

Max 26.1 km/h at 49.6 msec
Min 0.0 km/h at 2.7 msec

B-84



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8 January 2003

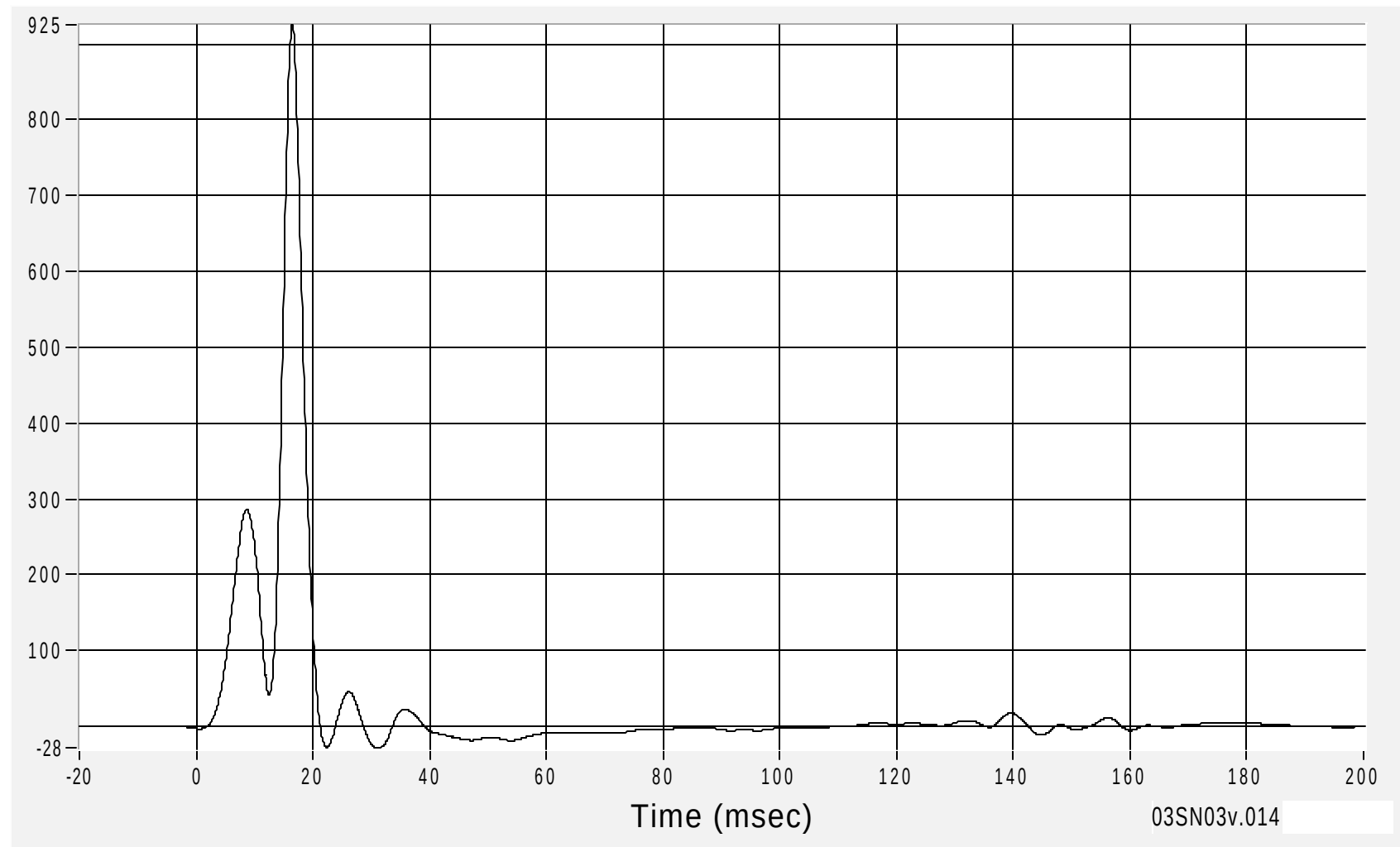
Medical College of Wisconsin
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Mid-Rear of Left Front Door (Y) Acceleration

Acceleration (G's) CFC60

Max 925.2 G's at 16.5 msec
Min -28.1 G's at 31.2 msec

B-85



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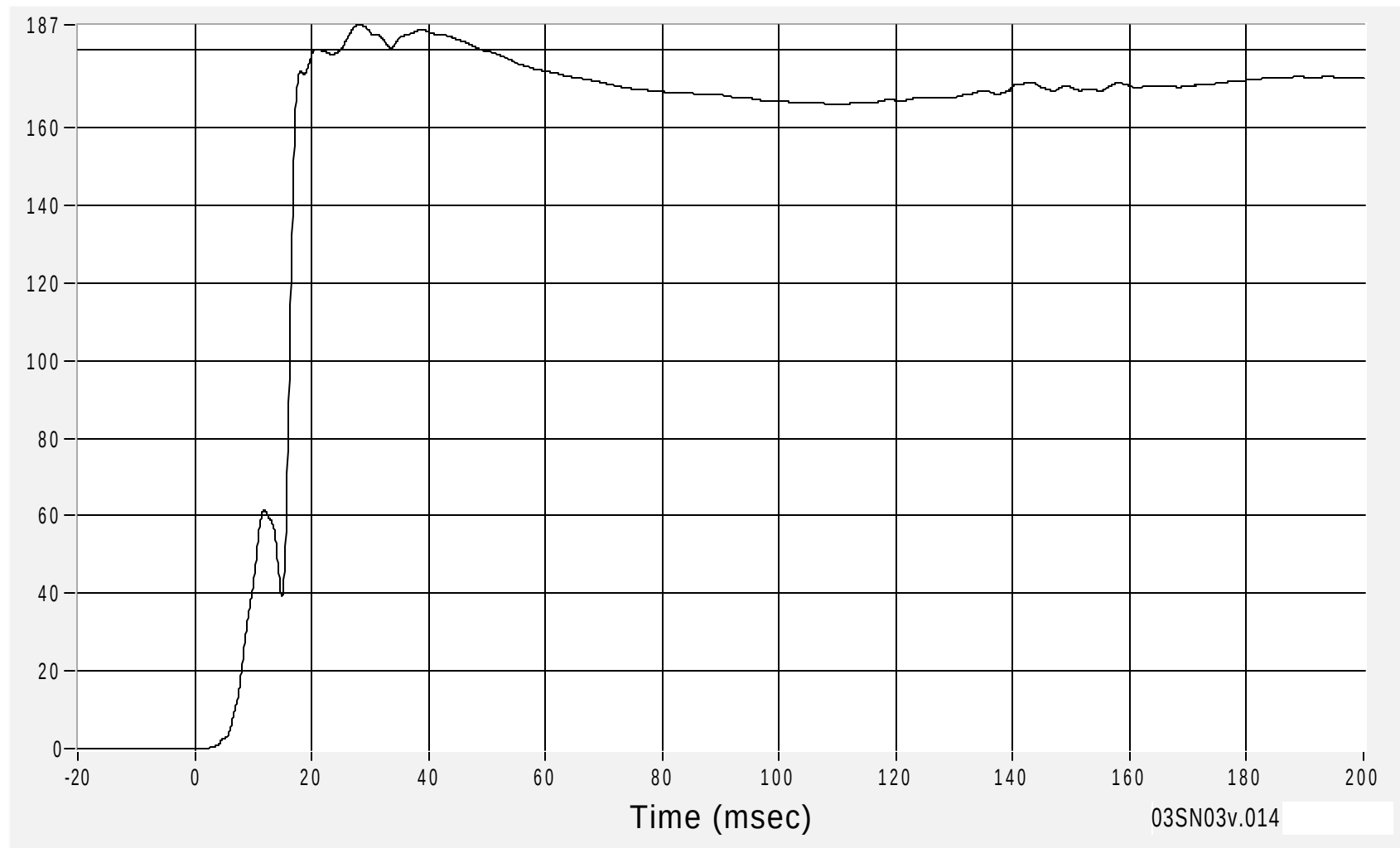
Mid-Rear of Left Front Door (Y) Velocity

Velocity (km/h) CFC180

Max 186.6 km/h at 28.0 msec

Min 0.0 km/h at 0.0 msec

B-86



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8 January 2003

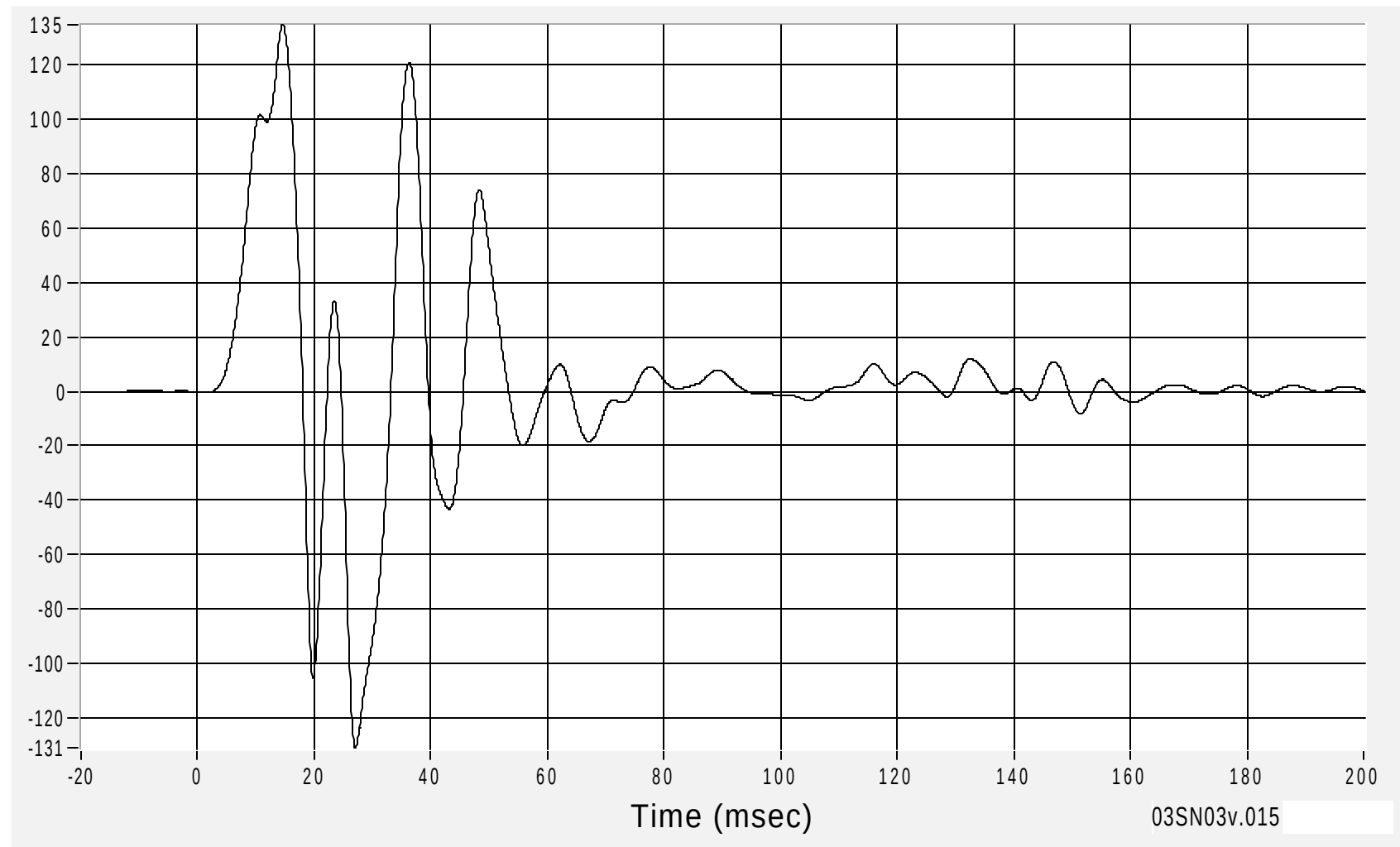
Medical College of Wisconsin
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Left Front Door Upper Centerline (Y) Acceleration

Acceleration (G's) CFC60

Max 134.8 G's at 14.6 msec
Min -131.1 G's at 27.0 msec

B-87



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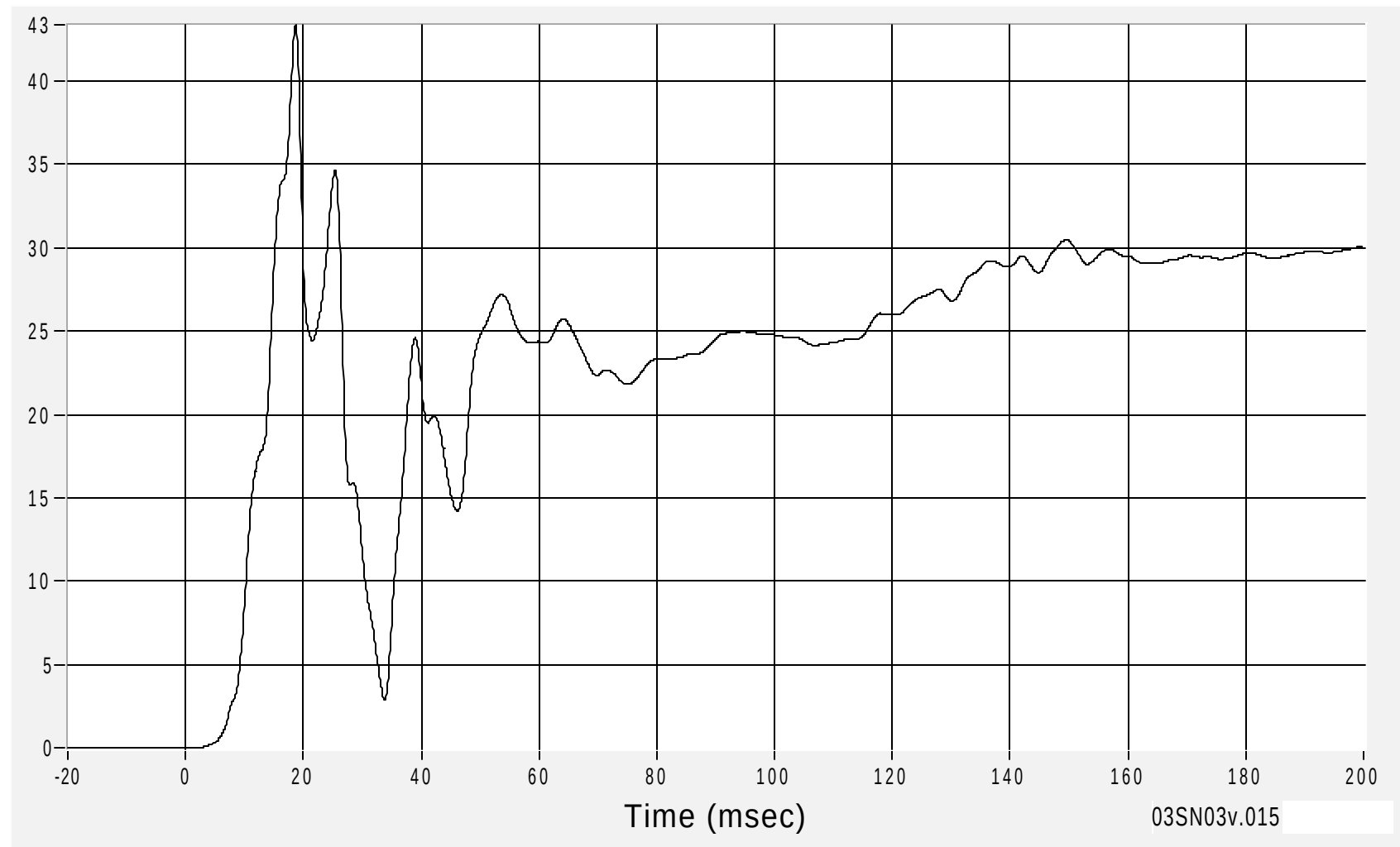
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Left Front Door Upper Centerline (Y) Velocity

Velocity (km/h) CFC180

Max 43.4 km/h at 18.6 msec
Min 0.0 km/h at 0.0 msec

B-88



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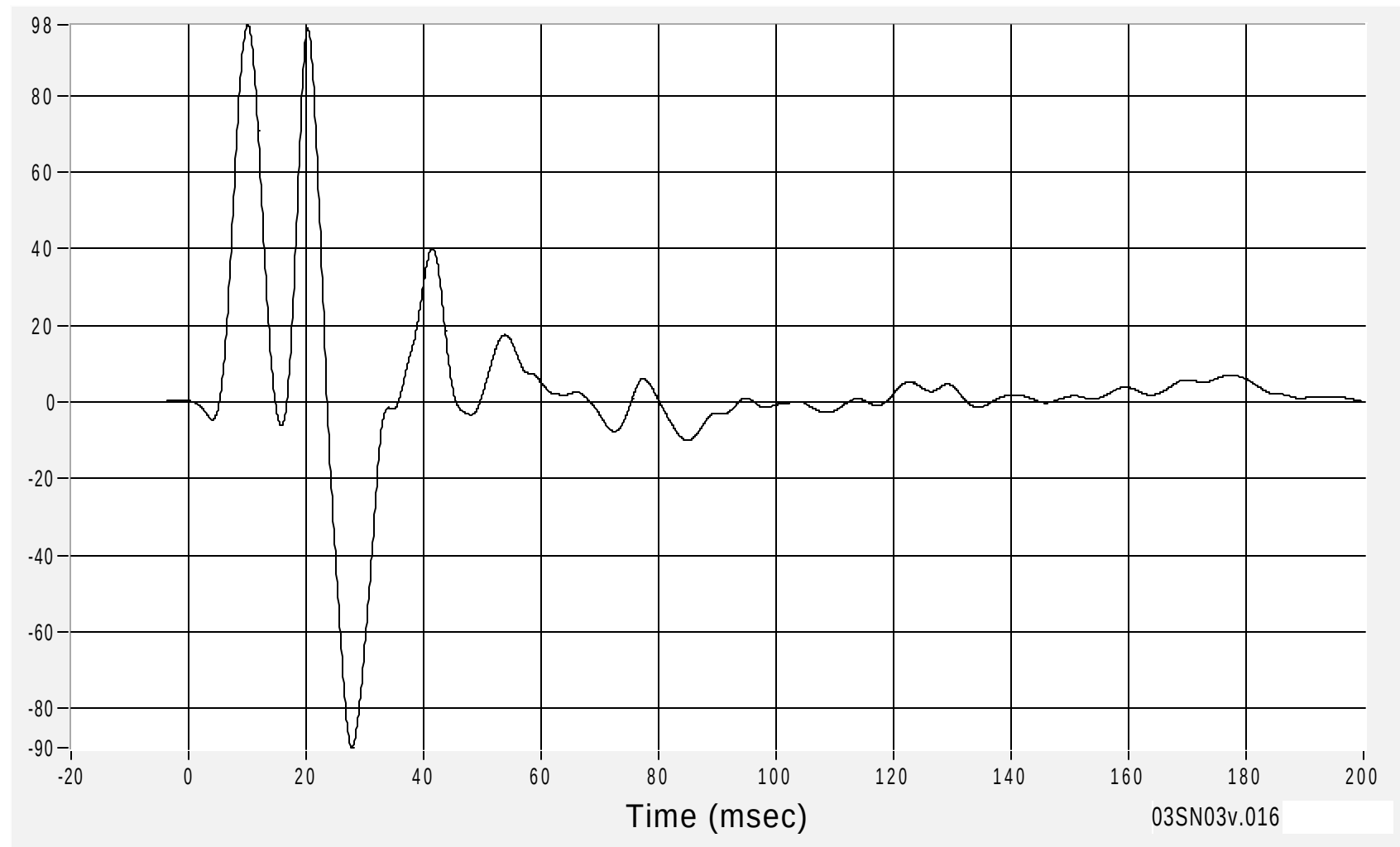
Mid-Rear of Left Rear Door (Y) Acceleration

Acceleration (G's) CFC60

Max 98.5 G's at 10.1 msec

Min -90.3 G's at 27.8 msec

B-89



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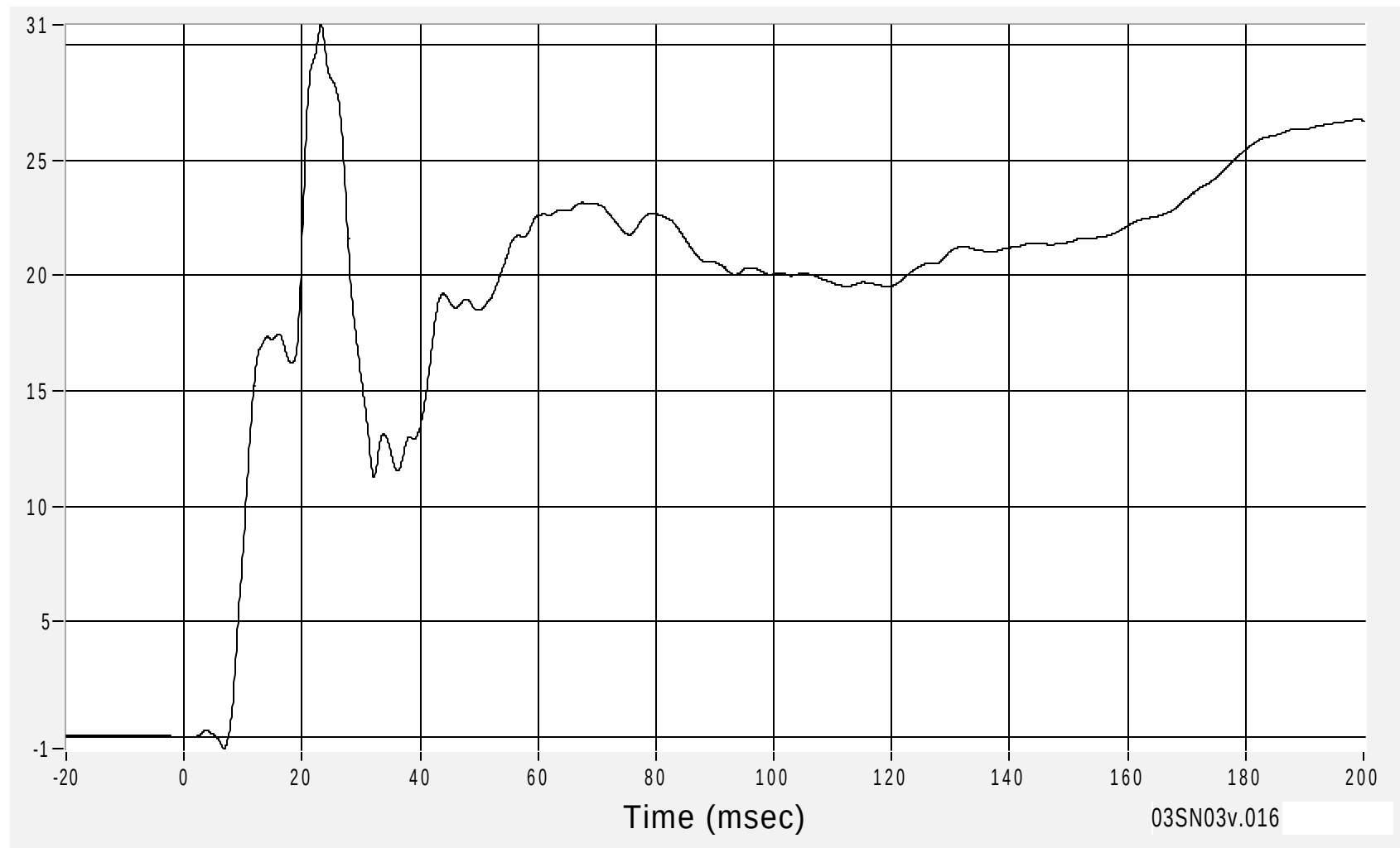
Mid-Rear of Left Rear Door (Y) Velocity

Velocity (km/h) CFC180

Max 30.9 km/h at 23.2 msec

Min -0.5 km/h at 6.7 msec

B-90



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8 January 2003

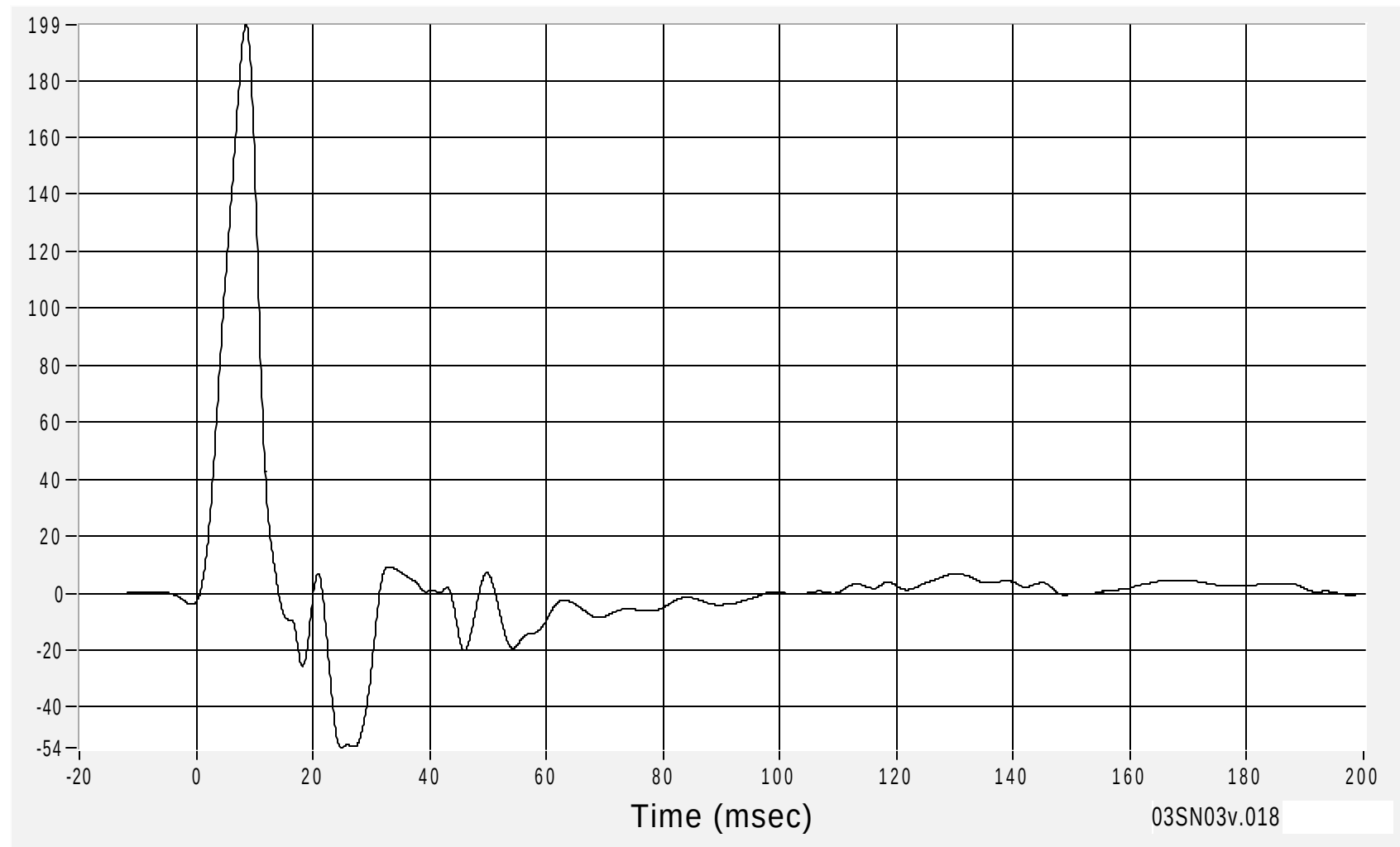
Medical College of Wisconsin
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Left Lower B-Pillar (Y) Acceleration

Acceleration (G's) CFC60

Max 199.5 G's at 8.6 msec
Min -54.3 G's at 24.9 msec

B-91



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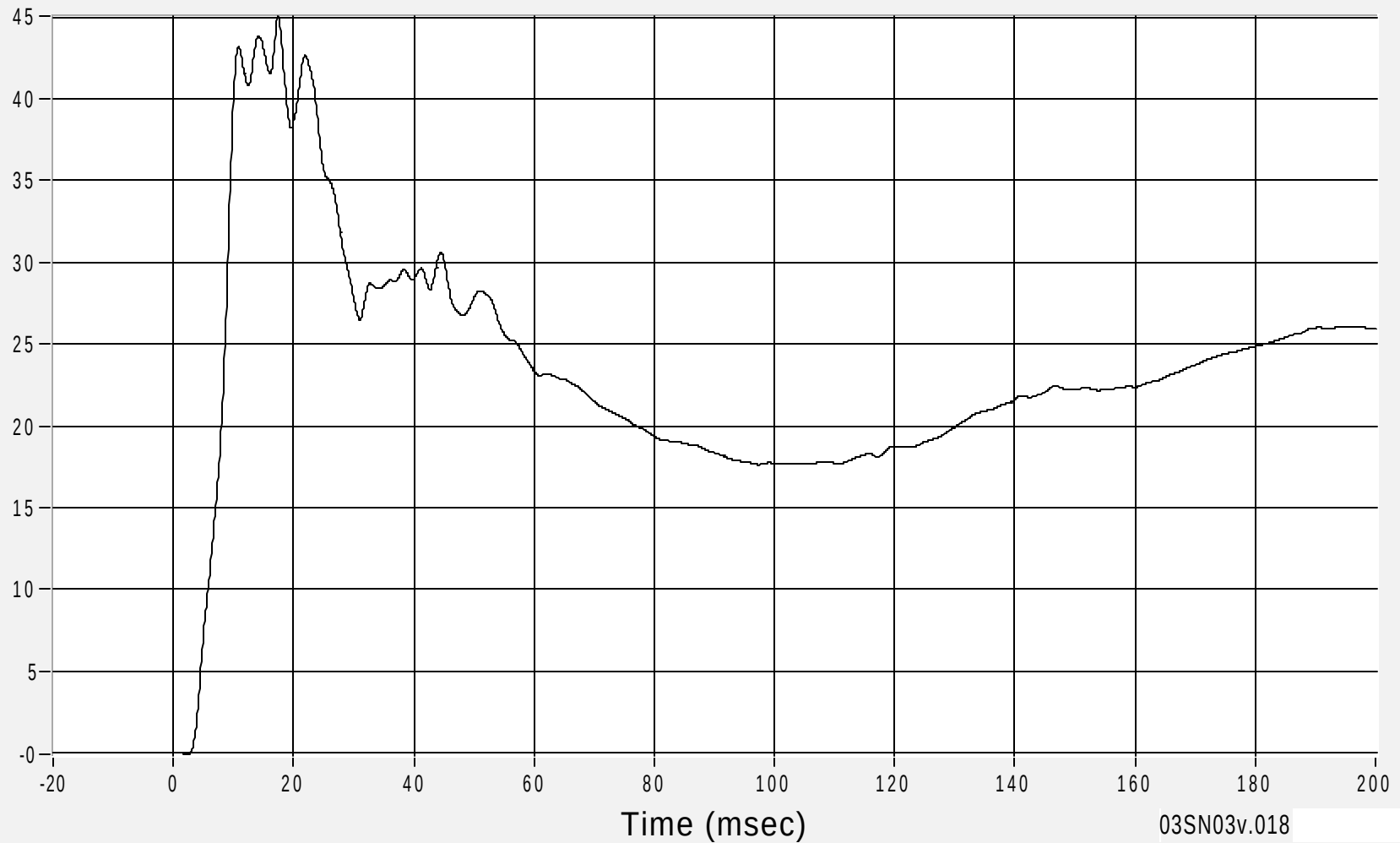
Left Lower B-Pillar (Y) Velocity

Velocity (km/h) CFC180

Max 45.1 km/h at 17.4 msec

Min 0.0 km/h at 2.3 msec

B-92



03SN03 - 2003 TOYOTA TACOMA PRERUNNER 4 DOOR MPV

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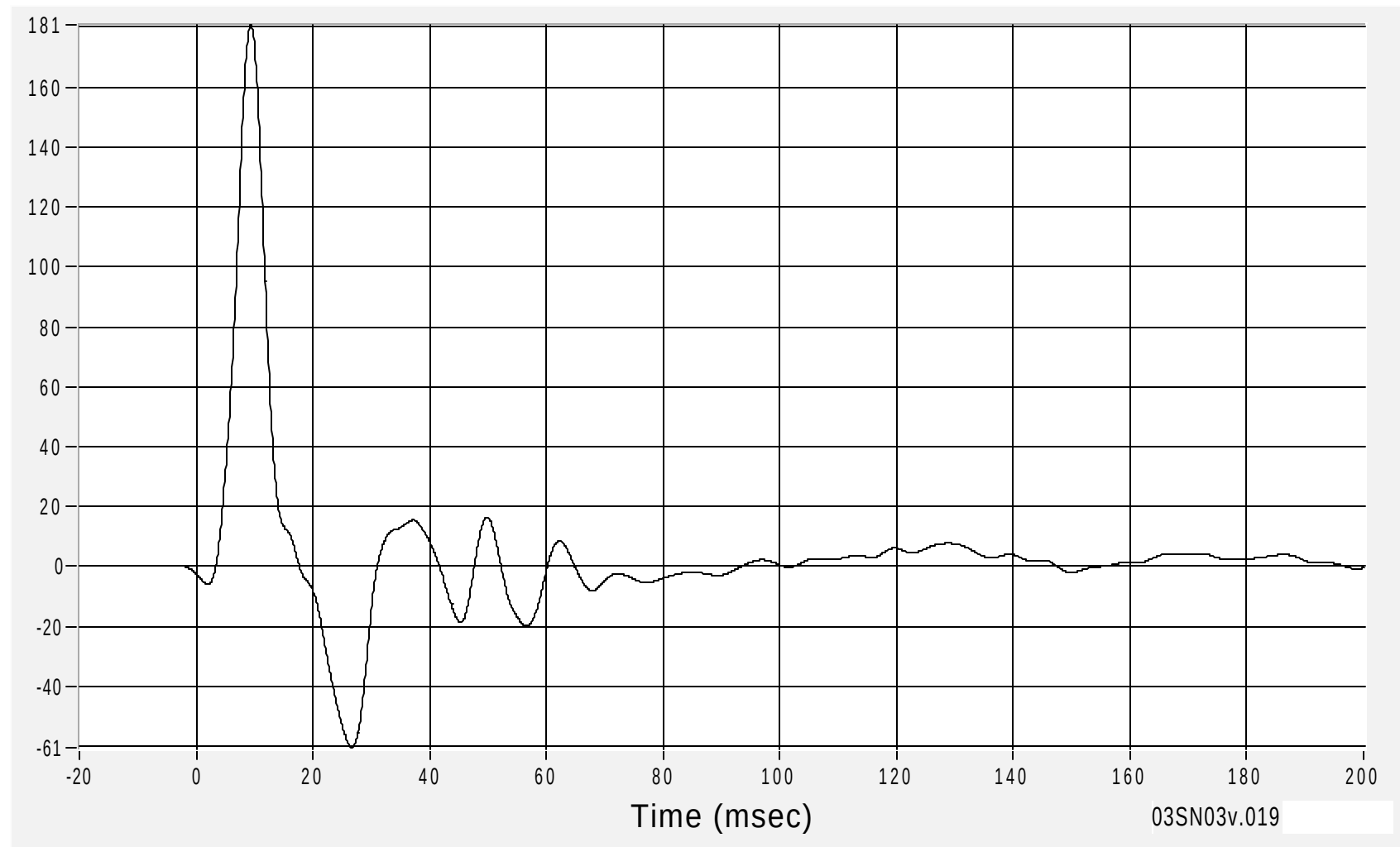
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Left Middle B-Pillar (Y) Acceleration

Acceleration (G's) CFC60

Max 180.8 G's at 9.4 msec
Min -60.5 G's at 26.6 msec

B-93



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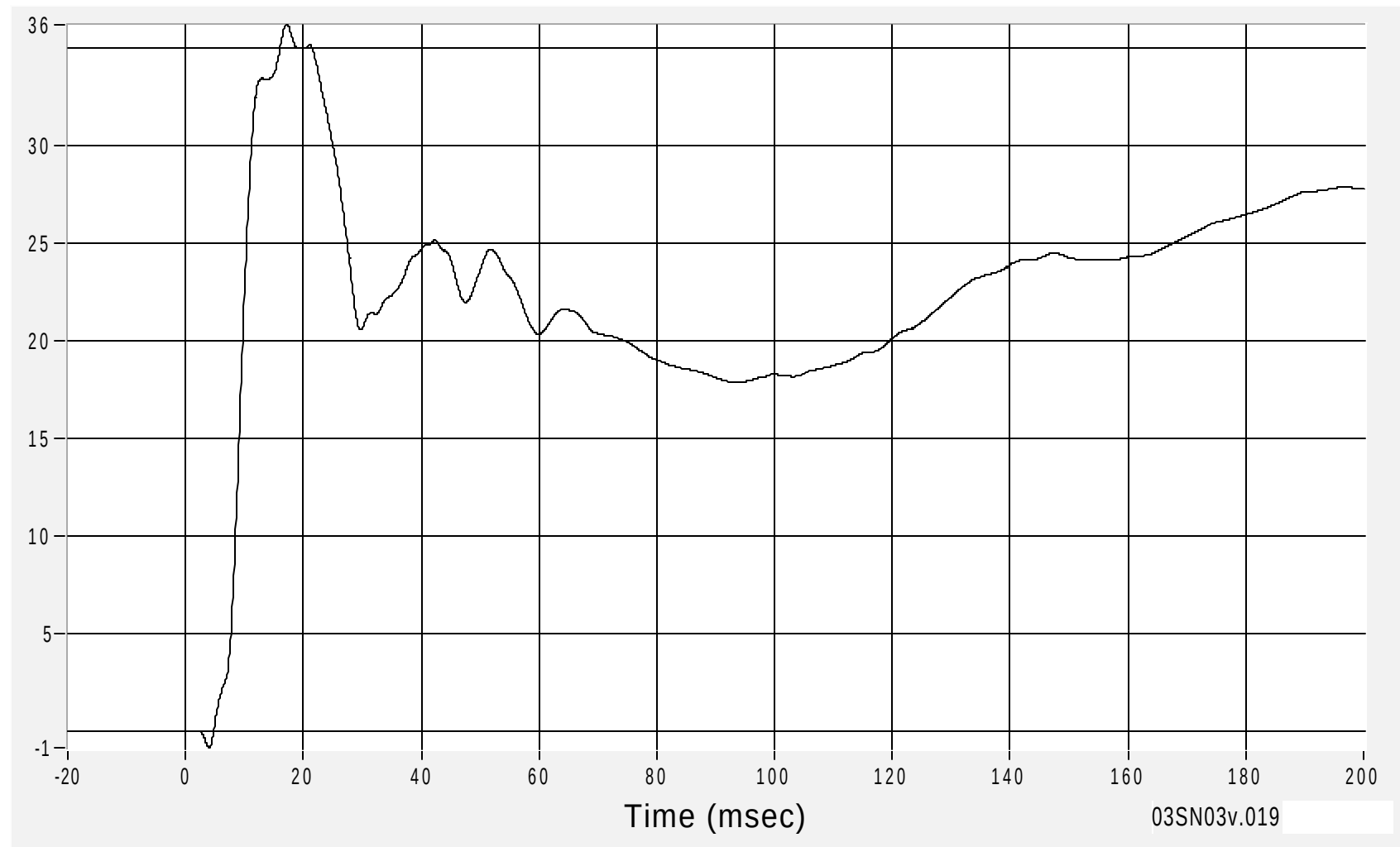
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Left Middle B-Pillar (Y) Velocity

Velocity (km/h) CFC180

Max 36.2 km/h at 17.2 msec
Min -0.8 km/h at 4.0 msec

B-94



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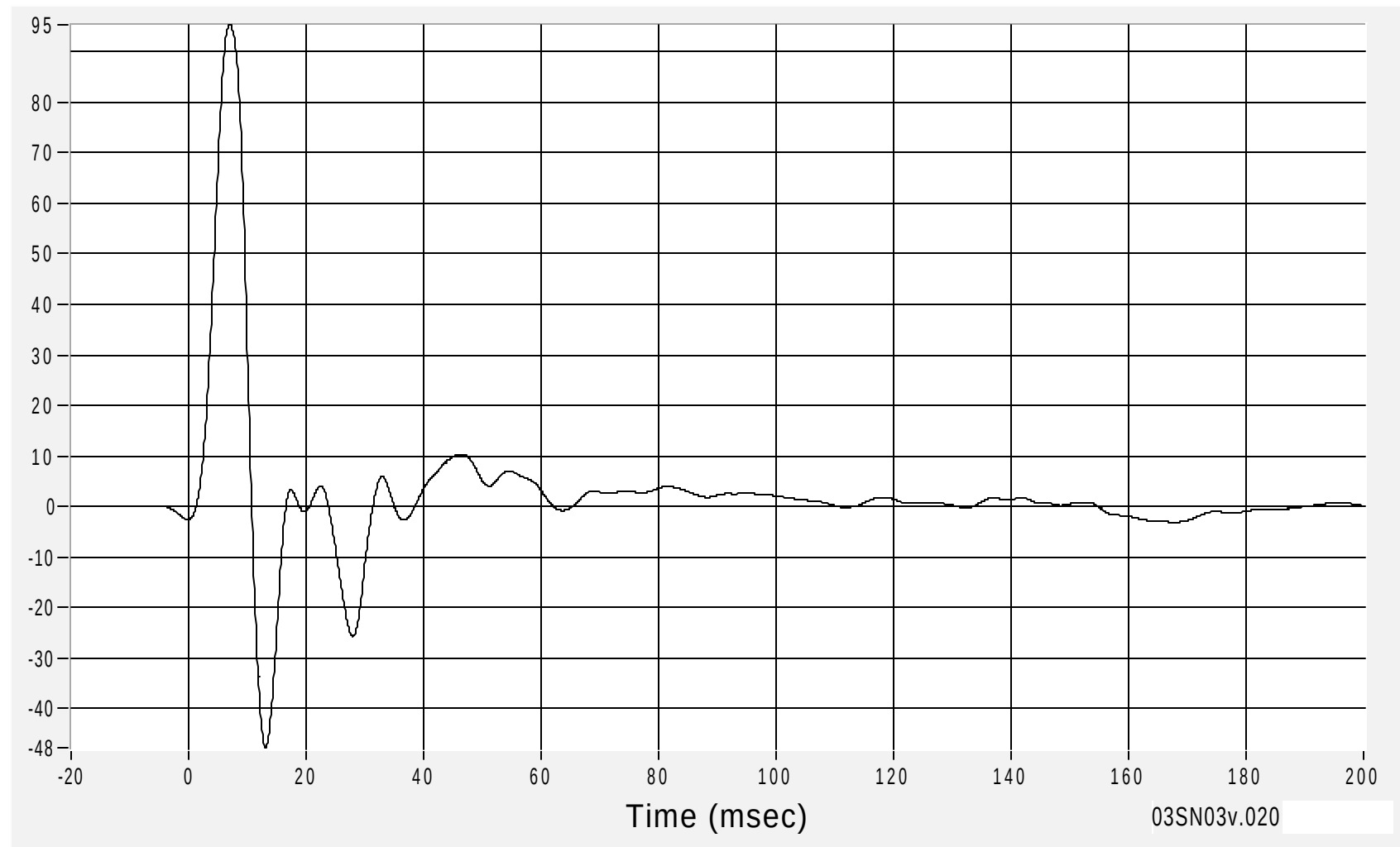
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Left Lower A-Pillar (Y) Acceleration

Acceleration (G's) CFC60

Max 95.3 G's at 7.0 msec
Min -47.7 G's at 13.1 msec

B-95



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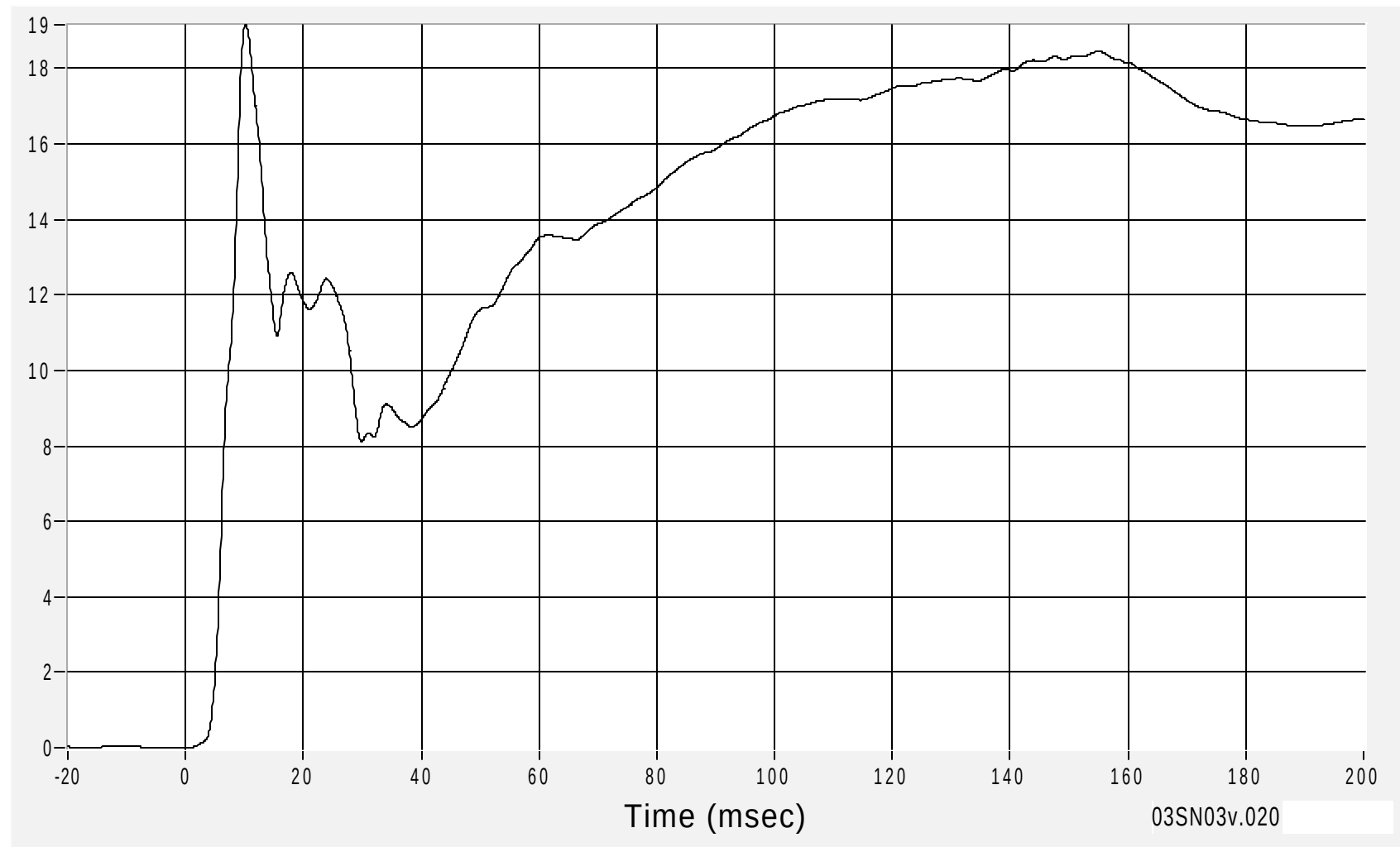
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Left Lower A-Pillar (Y) Velocity

Velocity (km/h) CFC180

Max 19.2 km/h at 10.2 msec
Min 0.0 km/h at 0.0 msec

B-96



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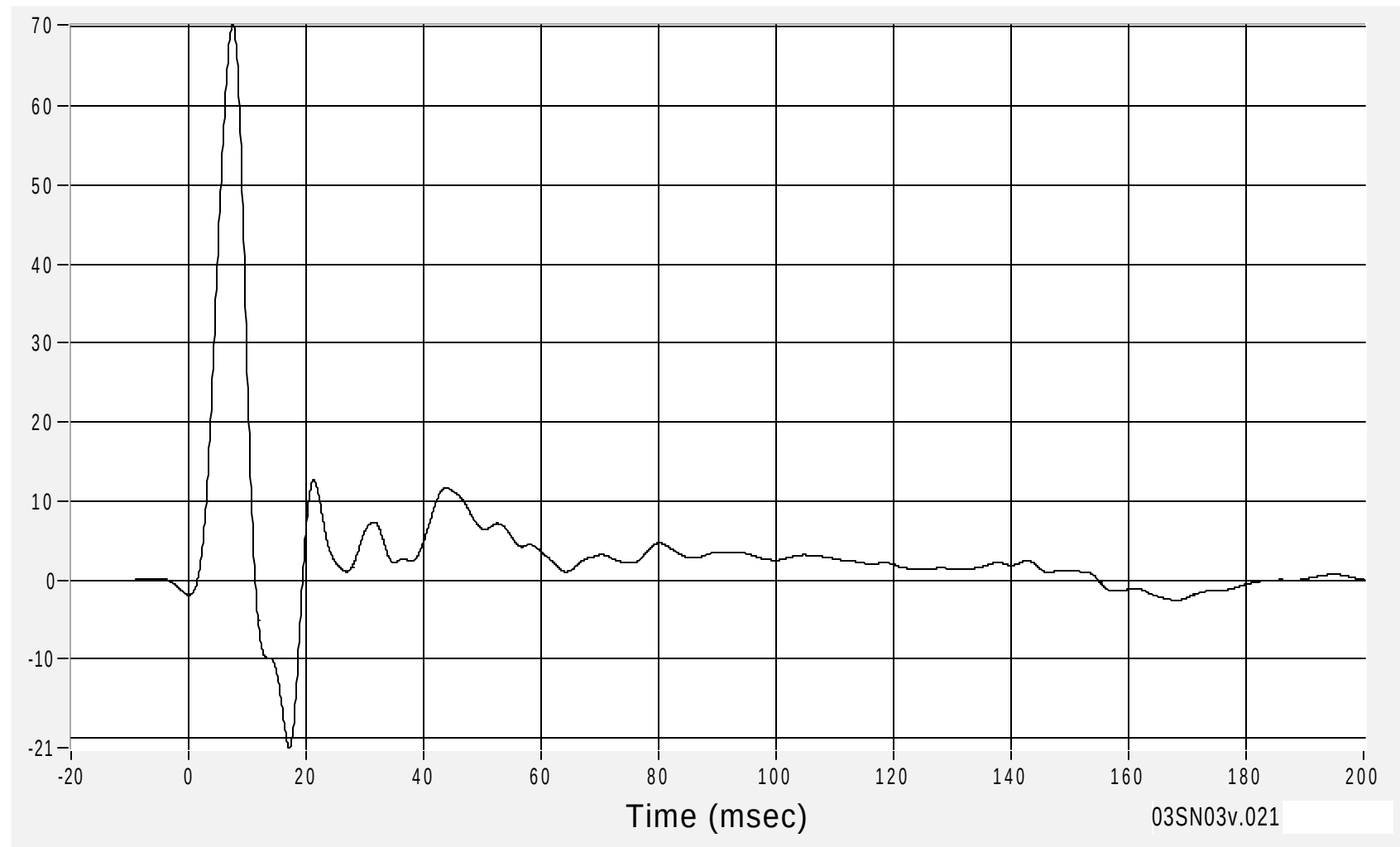
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Left Middle A-Pillar (Y) Acceleration

Acceleration (G's) CFC60

Max 70.3 G's at 7.5 msec
Min -21.2 G's at 17.2 msec

B-97



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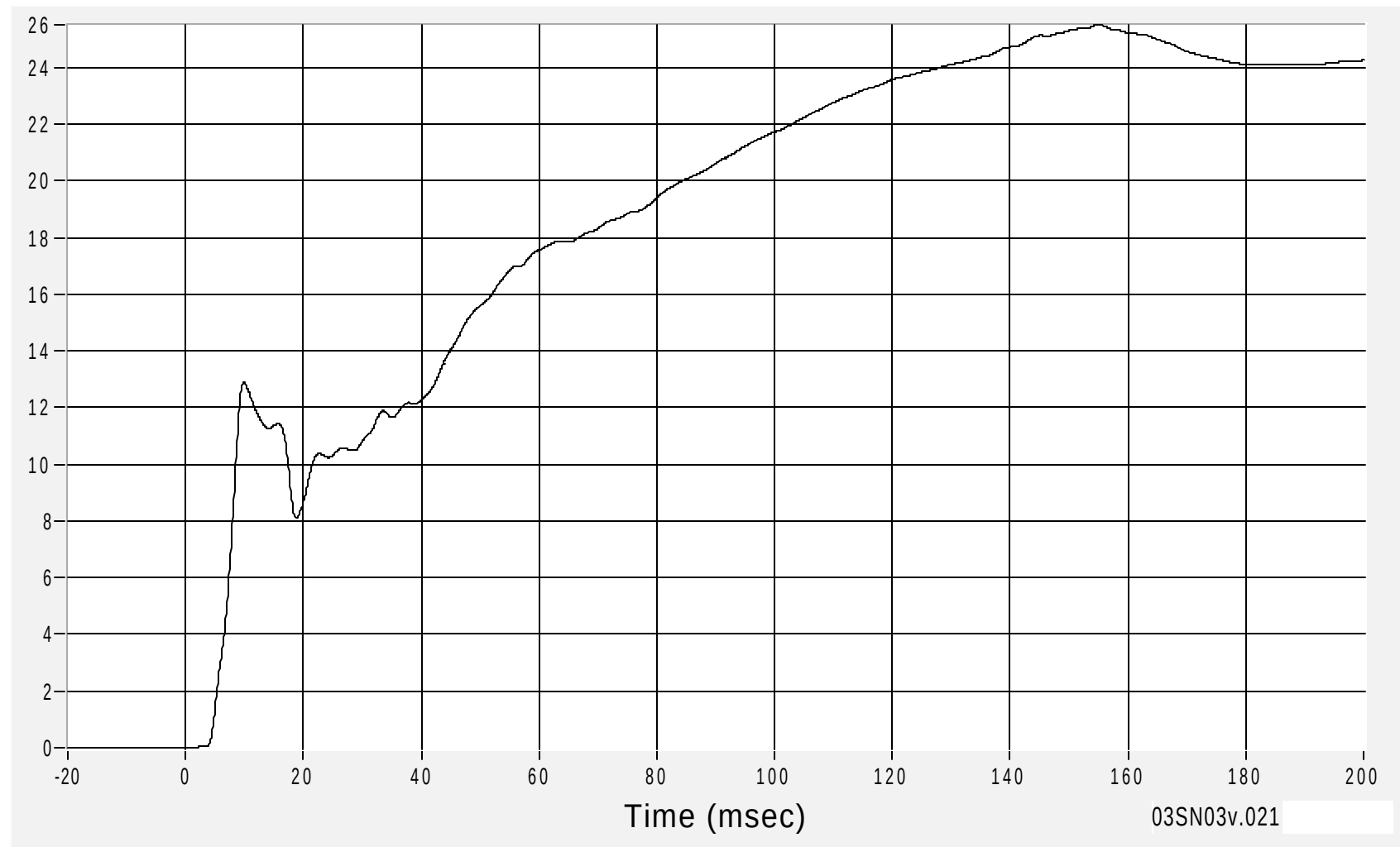
Medical College of Wisconsin
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Left Middle A-Pillar (Y) Velocity

Velocity (km/h) CFC180

Max 25.5 km/h at 155.0 msec
Min 0.0 km/h at 0.0 msec

B-98



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8 January 2003

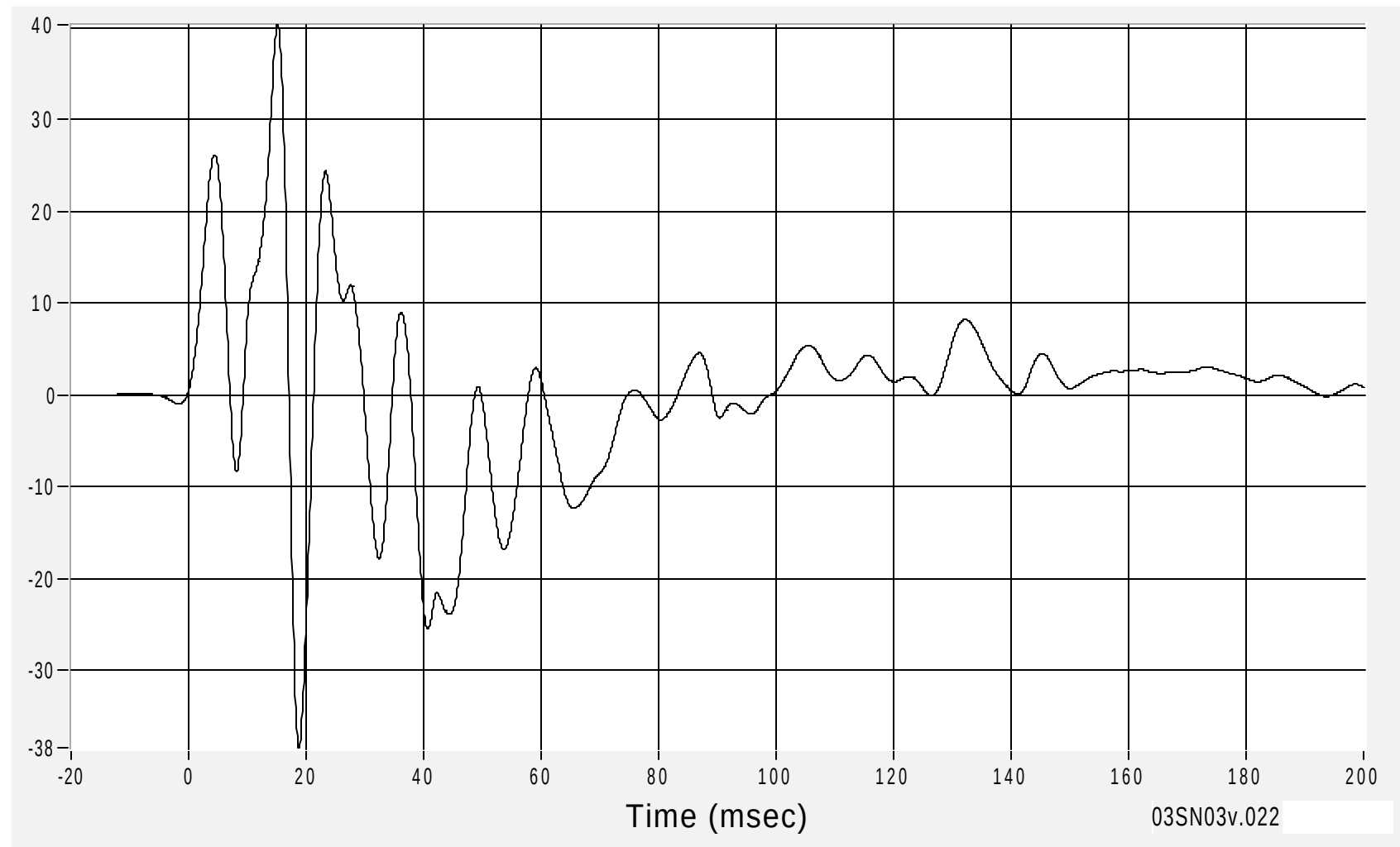
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Front Seat Track (Y) Acceleration

Acceleration (G's) CFC60

Max 40.3 G's at 15.1 msec
Min -38.4 G's at 18.8 msec

B-99



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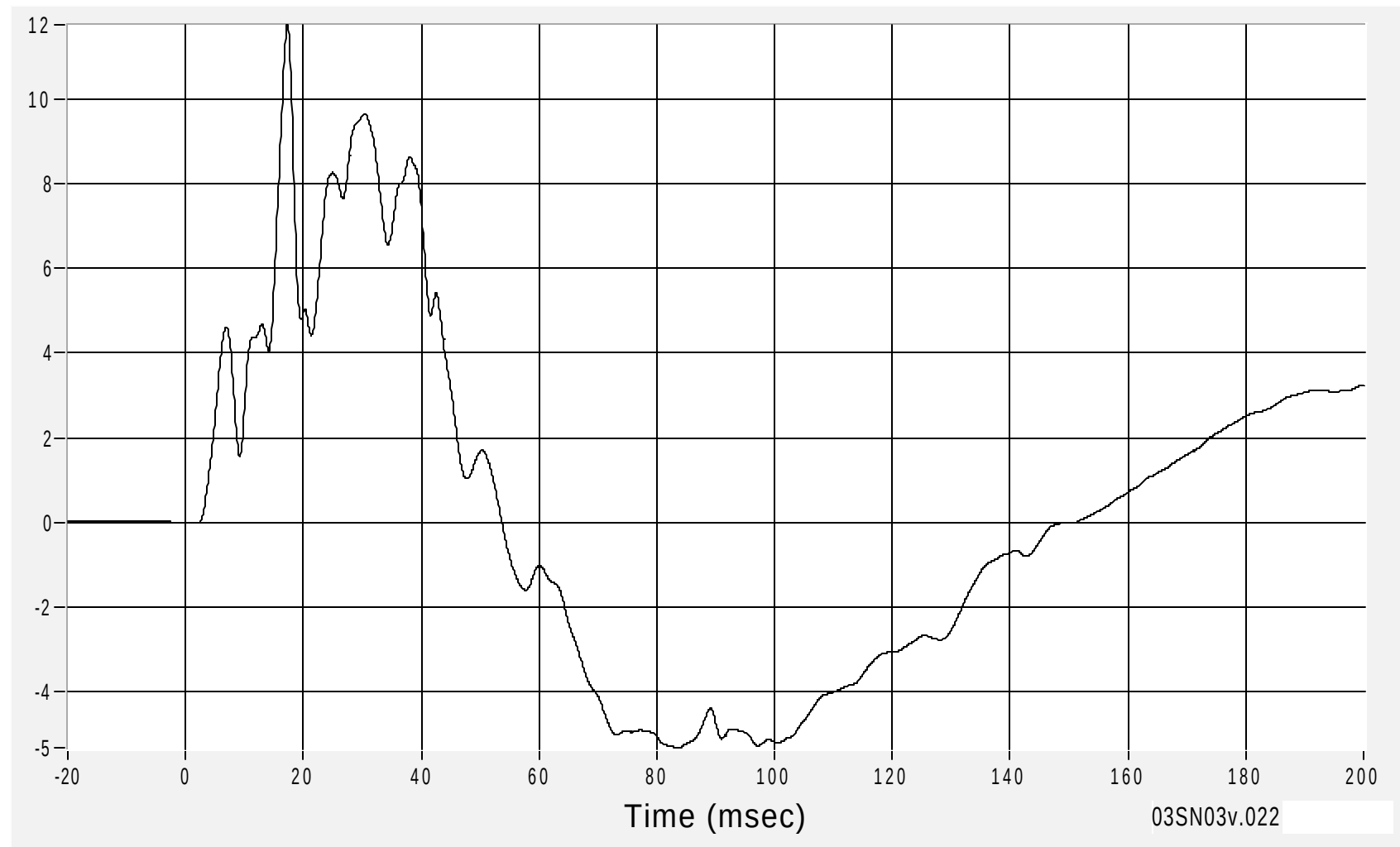
Front Seat Track (Y) Velocity

Velocity (km/h) CFC180

Max 11.8 km/h at 17.3 msec

Min -5.3 km/h at 83.7 msec

B-100



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8 January 2003

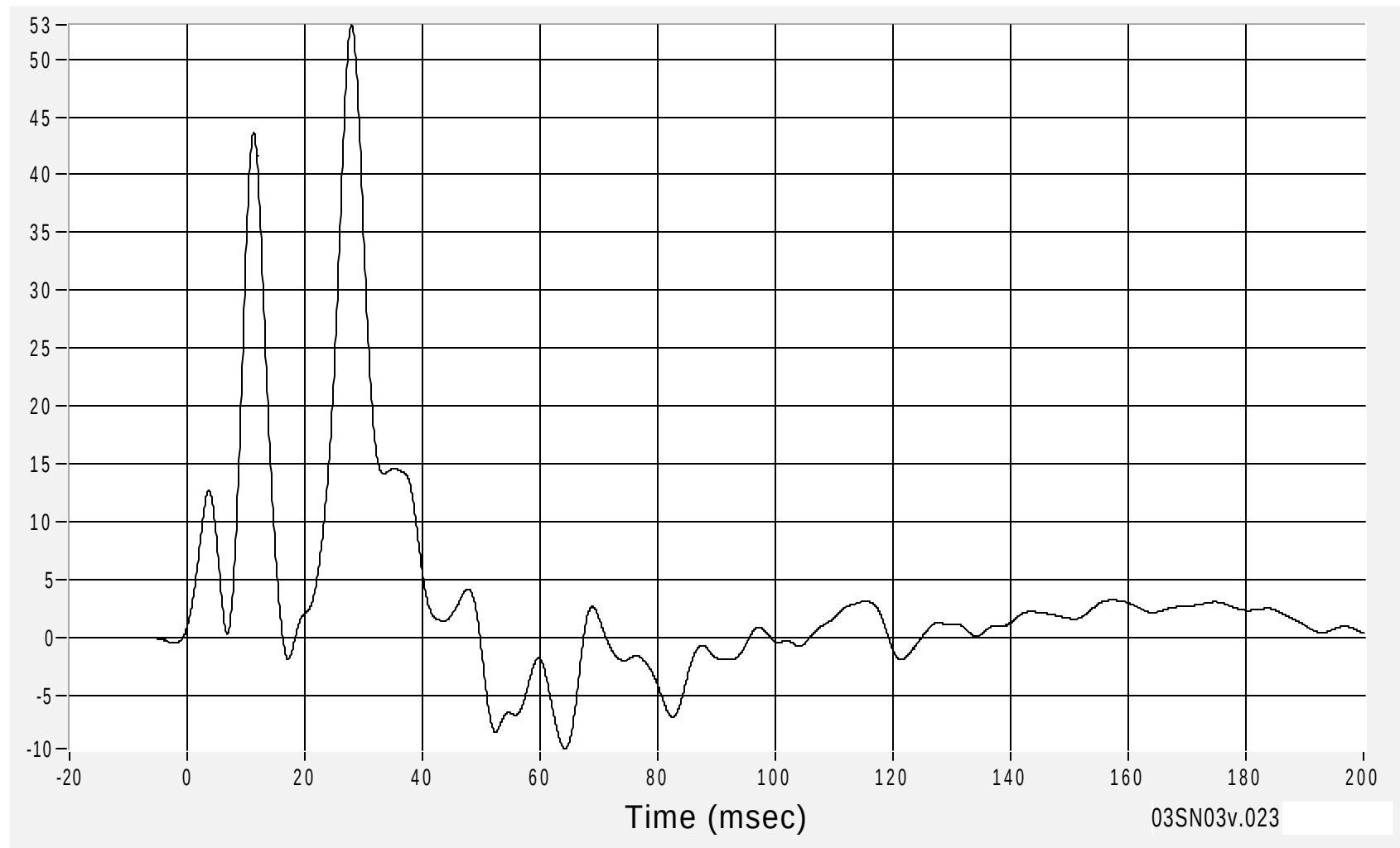
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Rear Seat Track (Y) Acceleration

Acceleration (G's) CFC60

Max	52.9	G's	at	27.9	msec
Min	-9.6	G's	at	64.2	msec

B-101



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8 January 2003

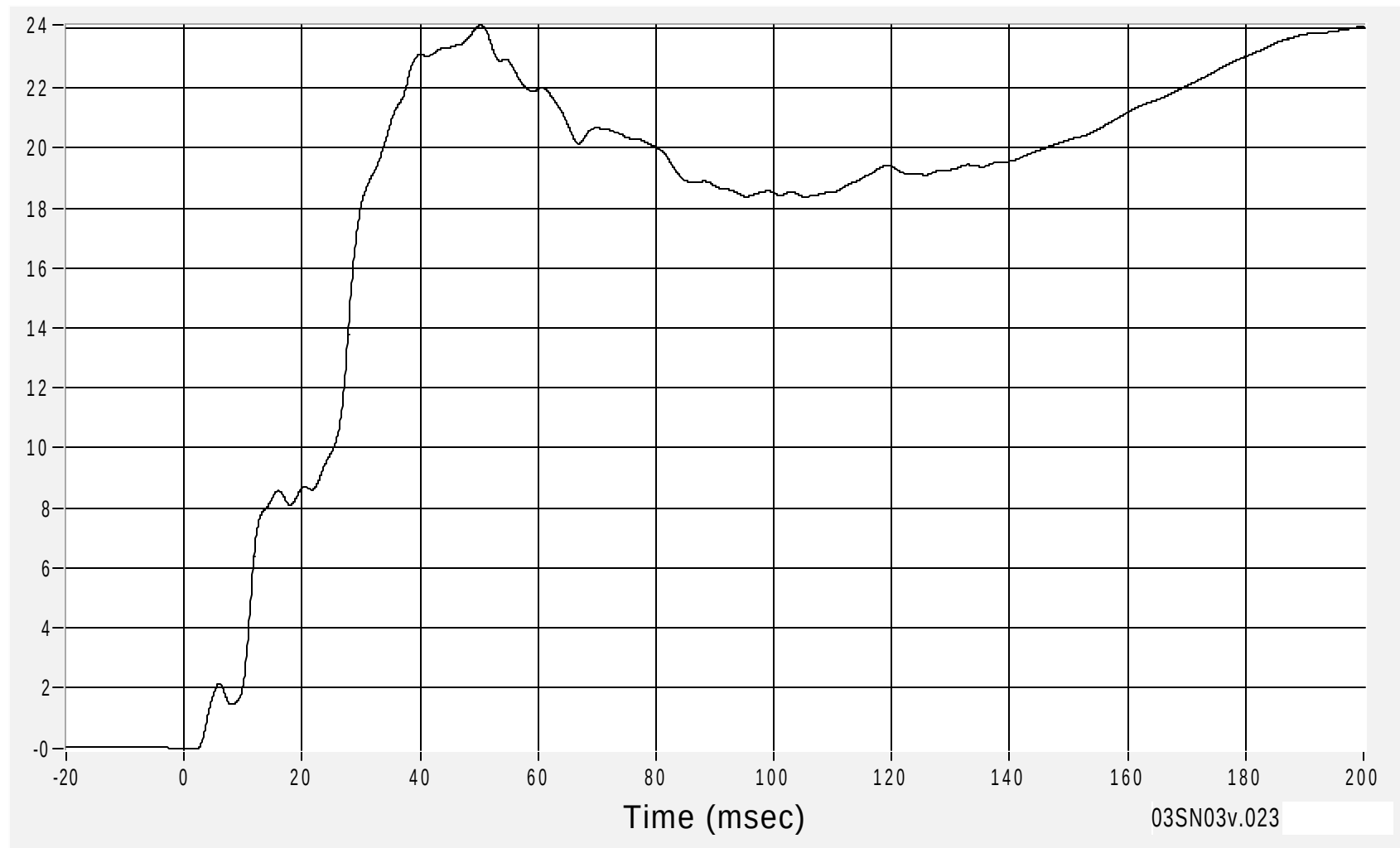
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Rear Seat Track (Y) Velocity

Velocity (km/h) CFC180

Max 24.1 km/h at 50.2 msec
Min 0.0 km/h at 1.9 msec

B-102



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8 January 2003

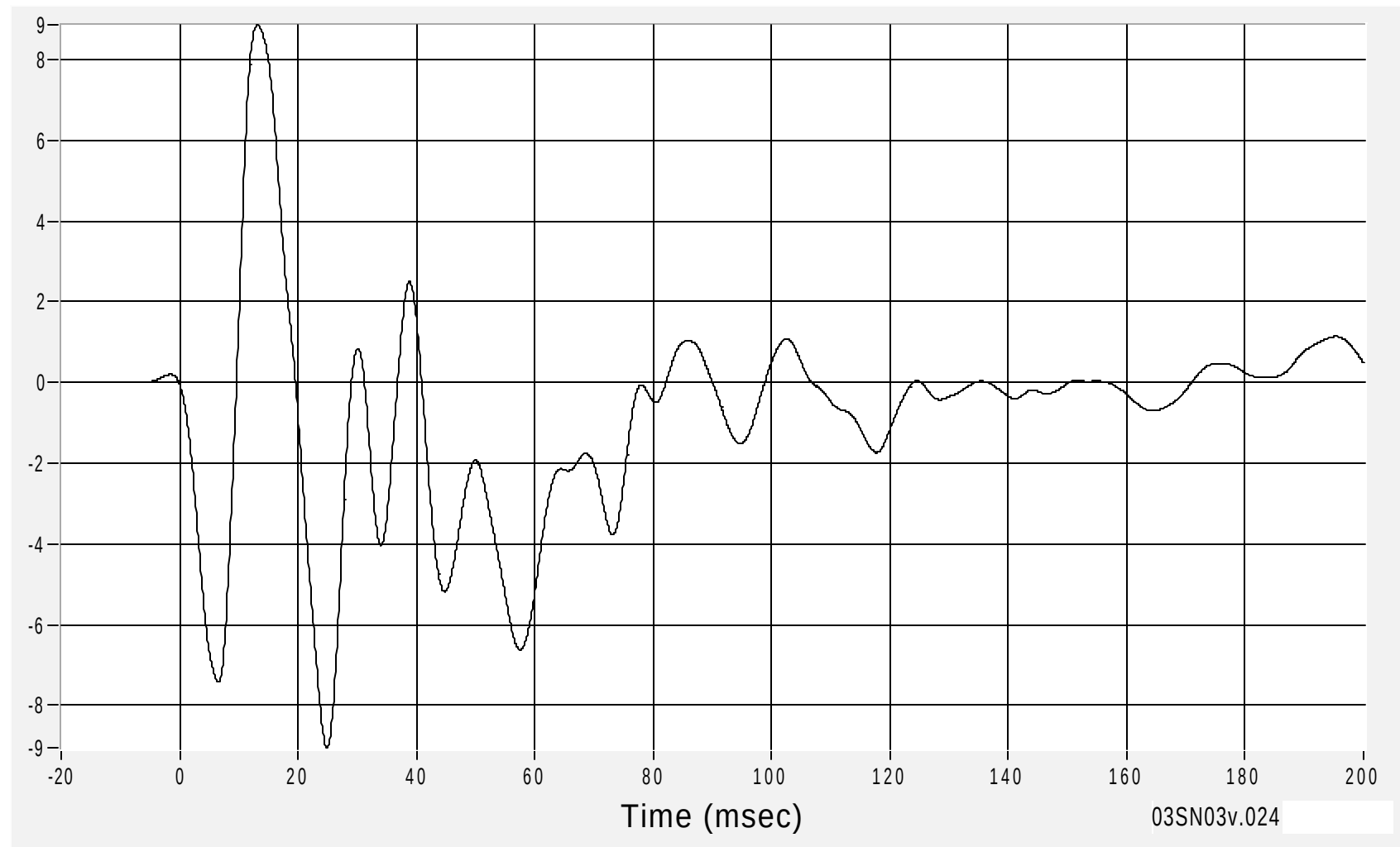
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Vehicle Center of Gravity (X) Acceleration

Acceleration (G's) CFC60

Max 8.9 G's at 13.2 msec
Min -9.0 G's at 24.9 msec

B-103



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8 January 2003

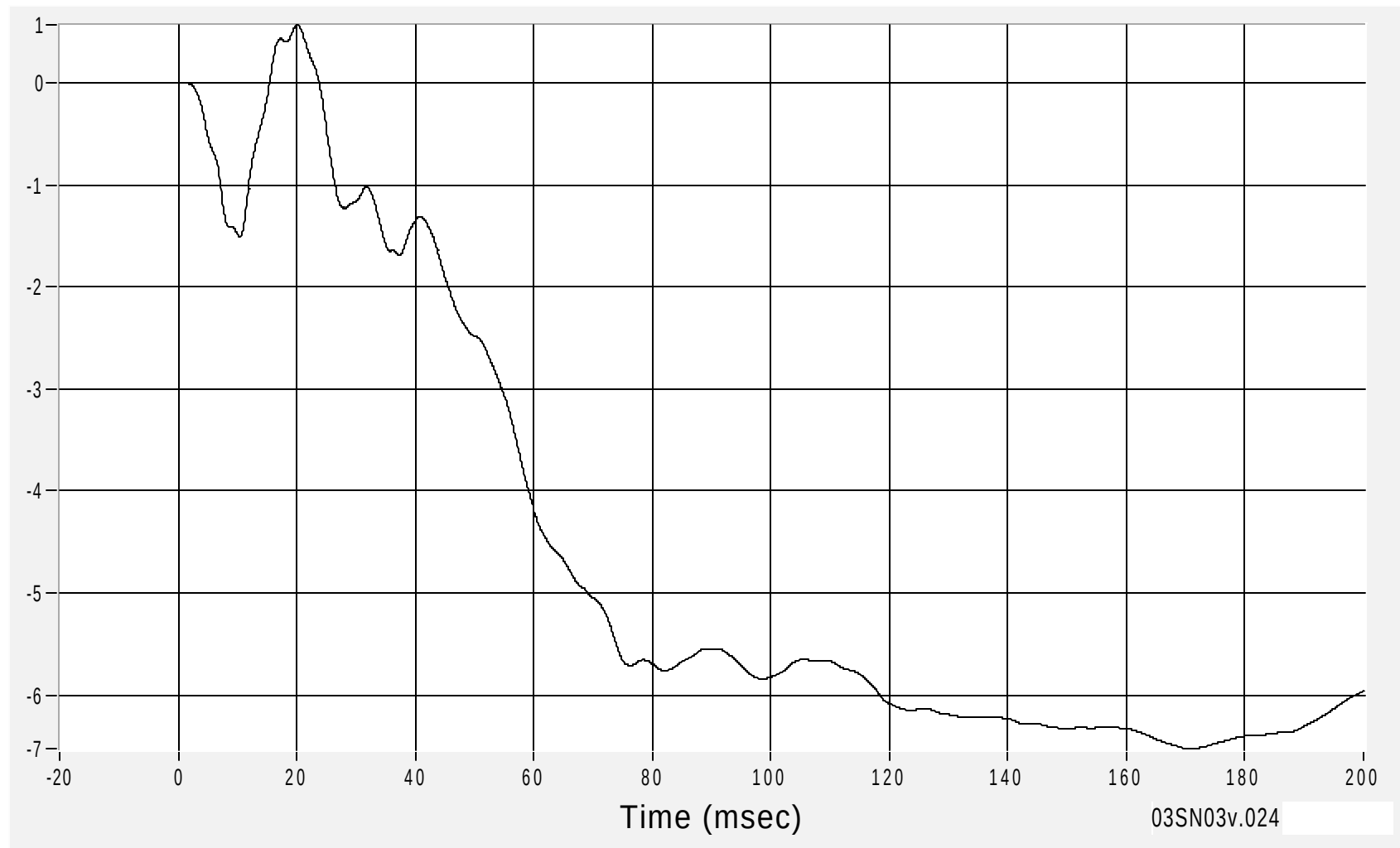
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Vehicle Center of Gravity (X) Velocity

Velocity (km/h) CFC180

Max 0.6 km/h at 20.1 msec
Min -6.5 km/h at 170.7 msec

B-104



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8 January 2003

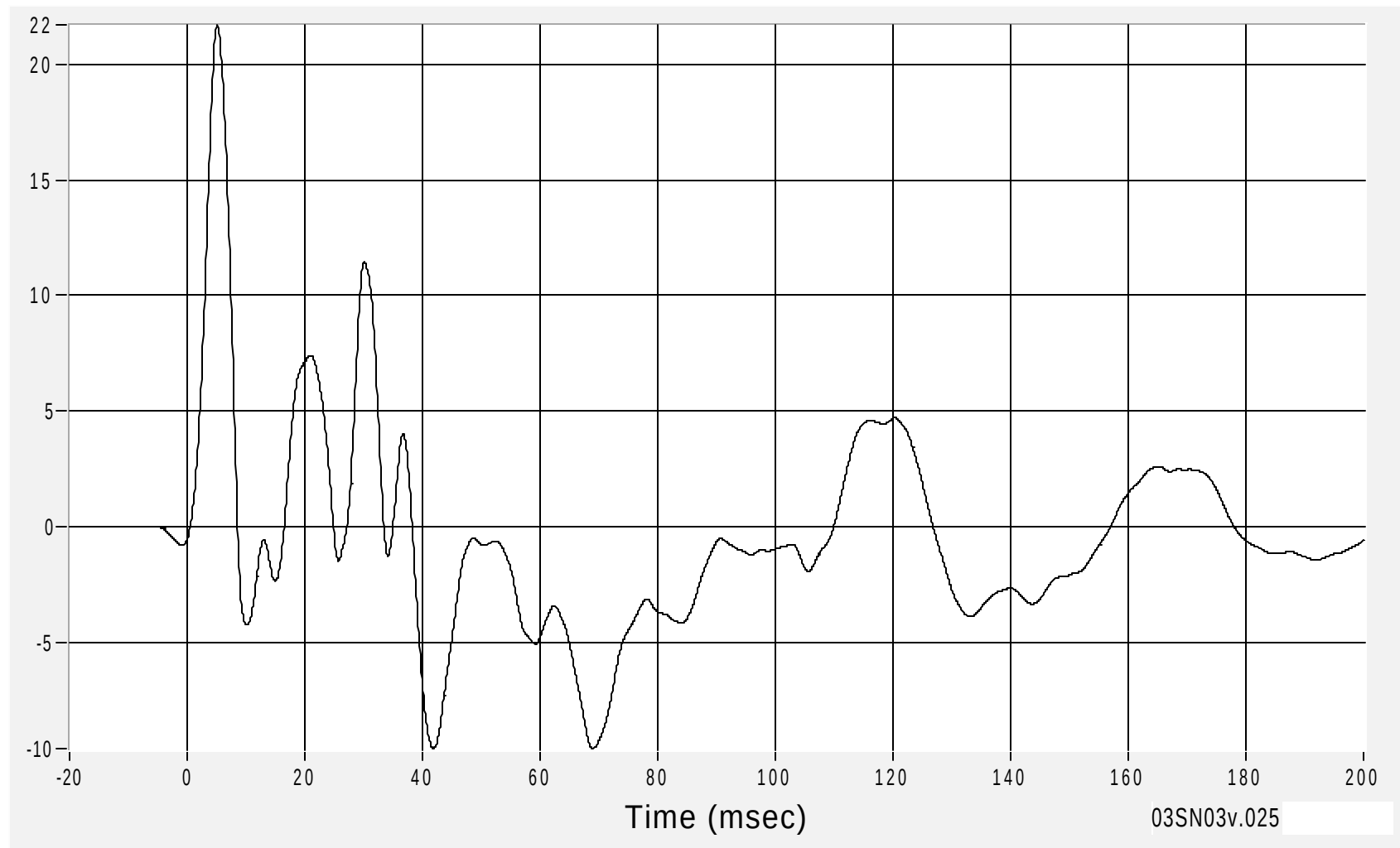
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Vehicle Center of Gravity (Y) Acceleration

Acceleration (G's) CFC60

Max 21.7 G's at 5.1 msec
Min -9.6 G's at 41.8 msec

B-105



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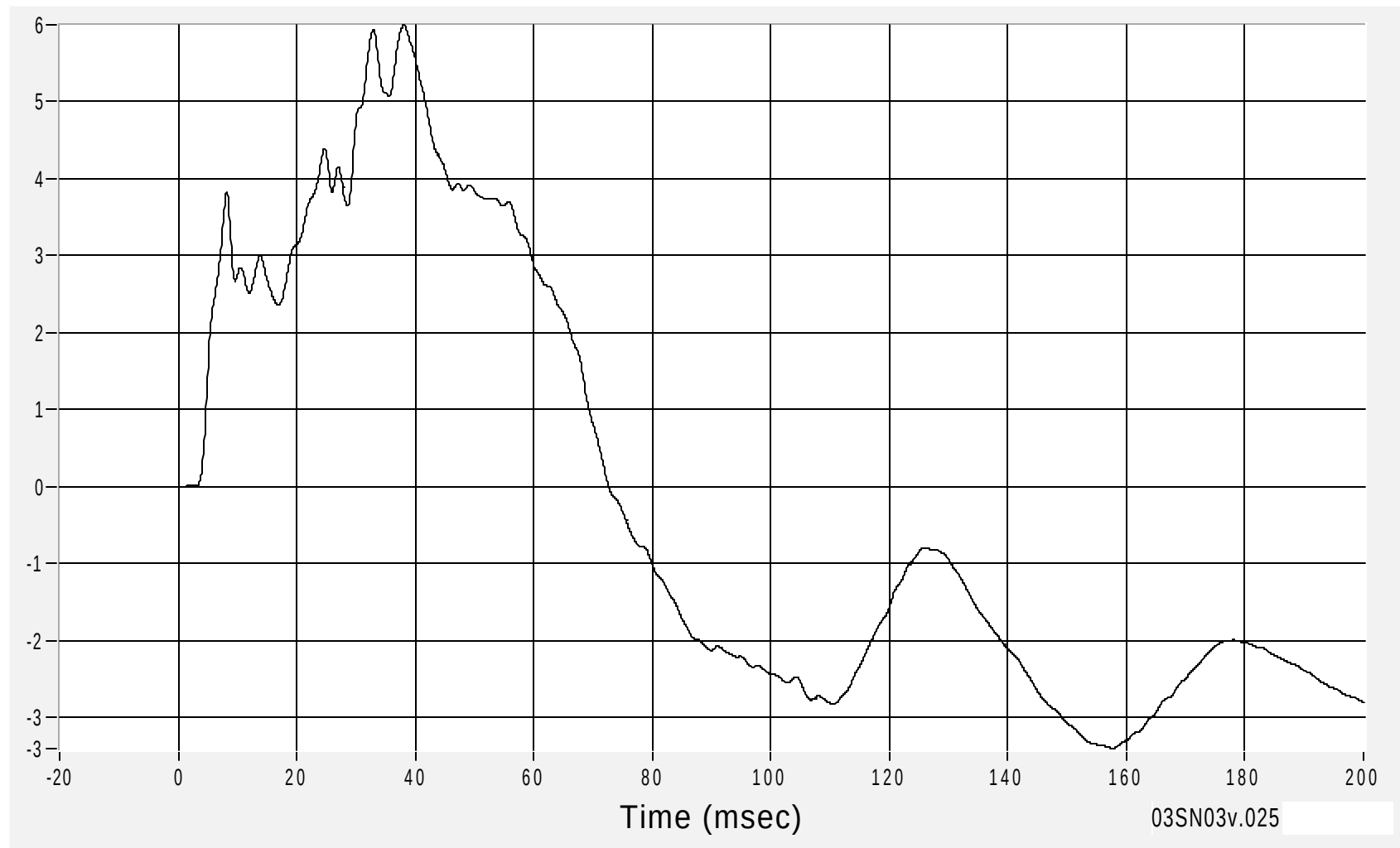
Vehicle Center of Gravity (Y) Velocity

Velocity (km/h) CFC180

Max 6.0 km/h at 38.1 msec

Min -3.4 km/h at 157.7 msec

B-106



03SN03 - 2003 TOYOTA TACOMA PRERUNNER 4 DOOR MPV

8 January 2003

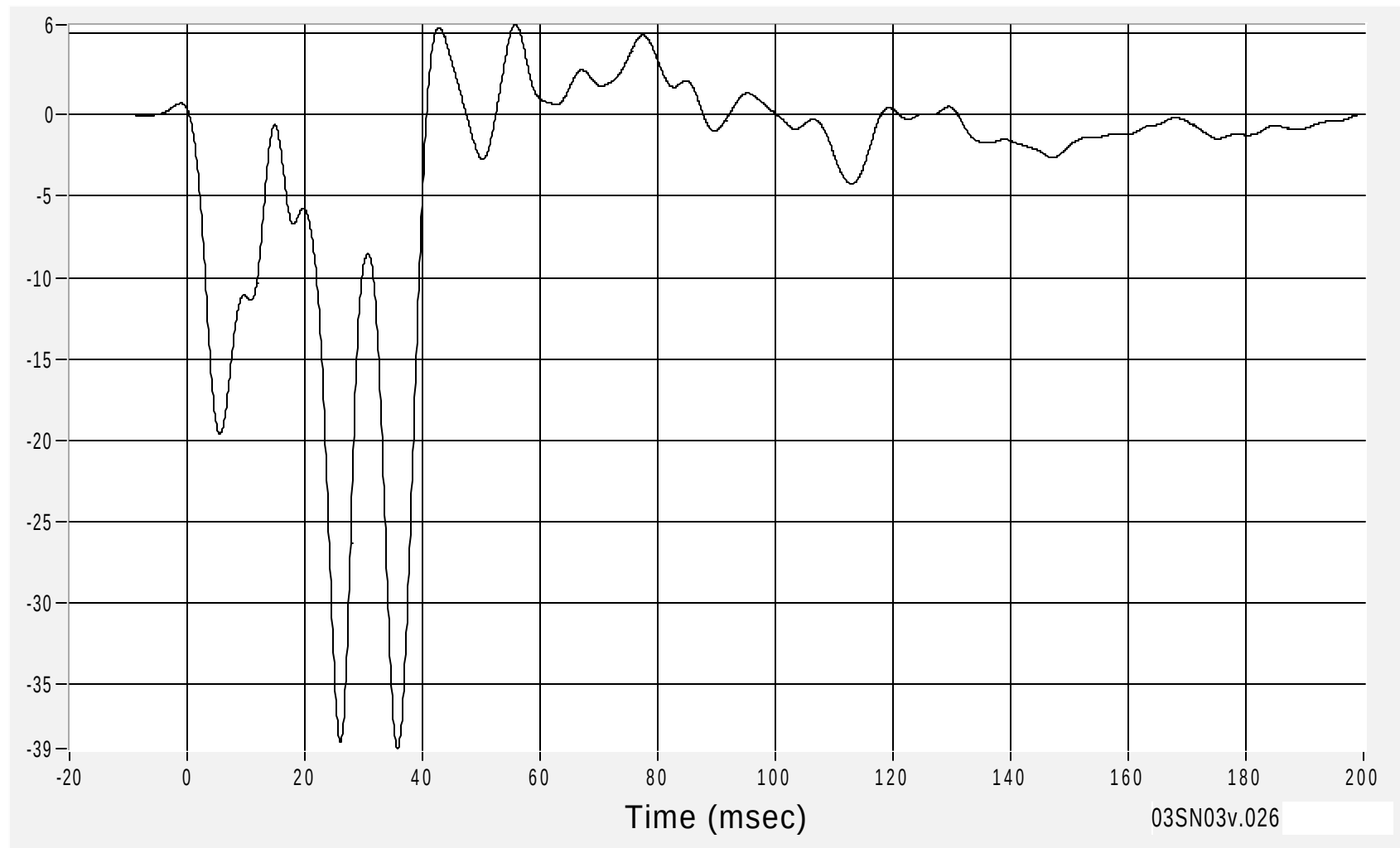
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Vehicle Center of Gravity (Z) Acceleration

Acceleration (G's) CFC60

Max 5.5 G's at 55.8 msec
Min -38.9 G's at 35.8 msec

B-107



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8 January 2003

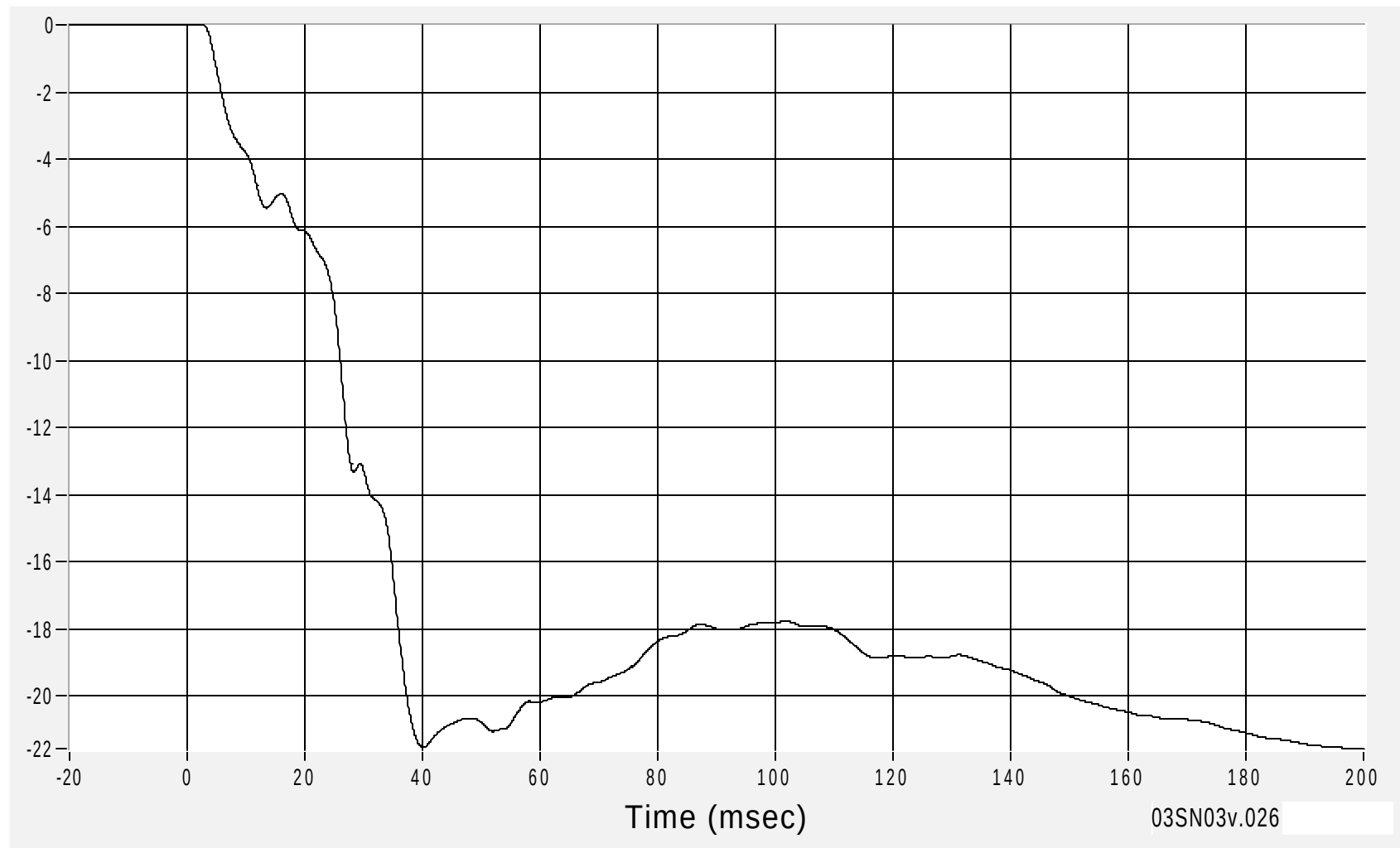
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Vehicle Center of Gravity (Z) Velocity

Velocity (km/h) CFC180

Max 0.0 km/h at 0.0 msec
Min -21.6 km/h at 198.3 msec

B-108



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8 January 2003

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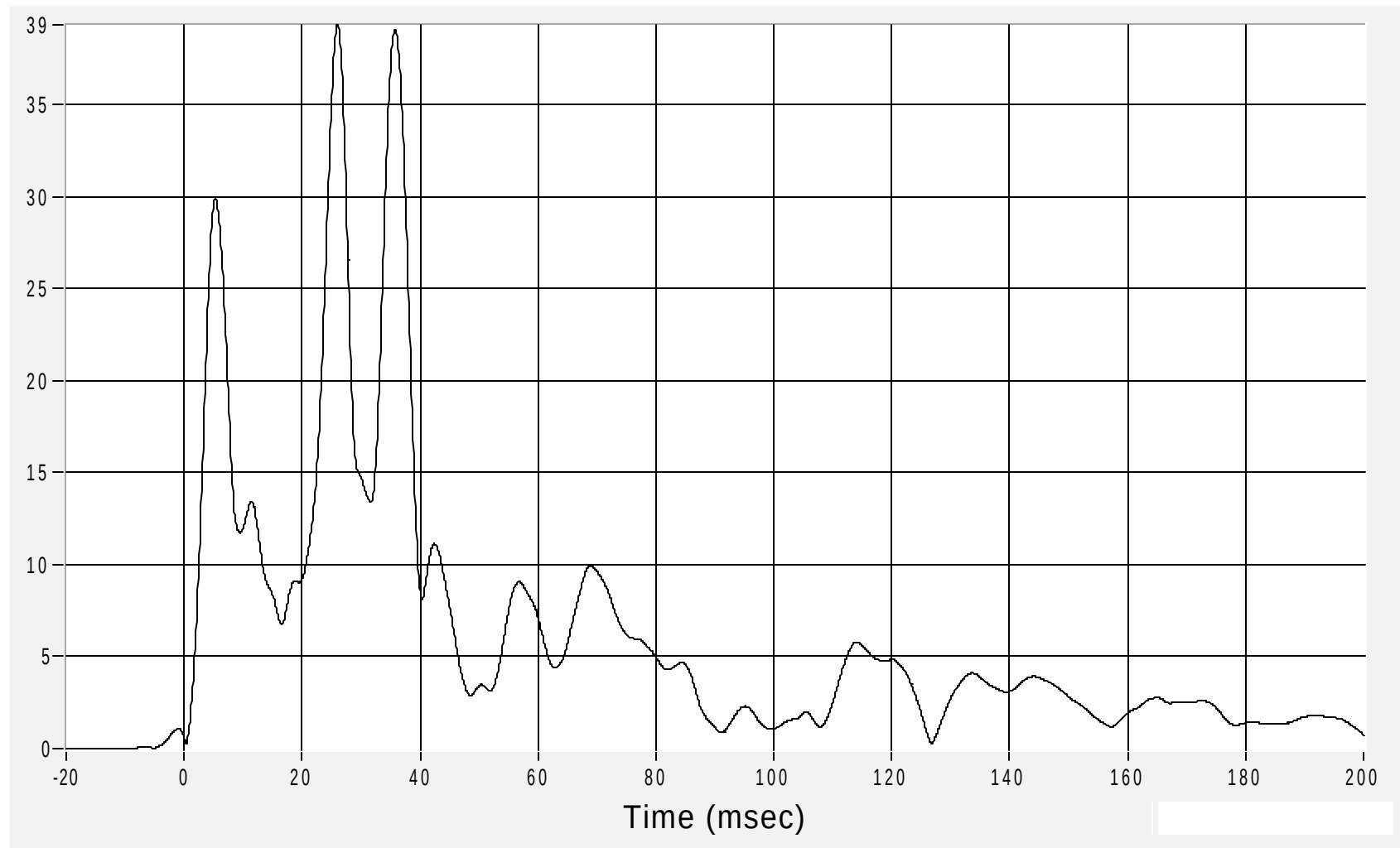
Vehicle Center of Gravity Resultant Acceleration

Acceleration (G's) CFC60

Max 39.3 G's at 26.0 msec

Min 0.3 G's at 126.8 msec

B-109



03SN03 - 2003 TOYOTA TACOMA PRERUNNER 4 DOOR MPV

8 January 2003

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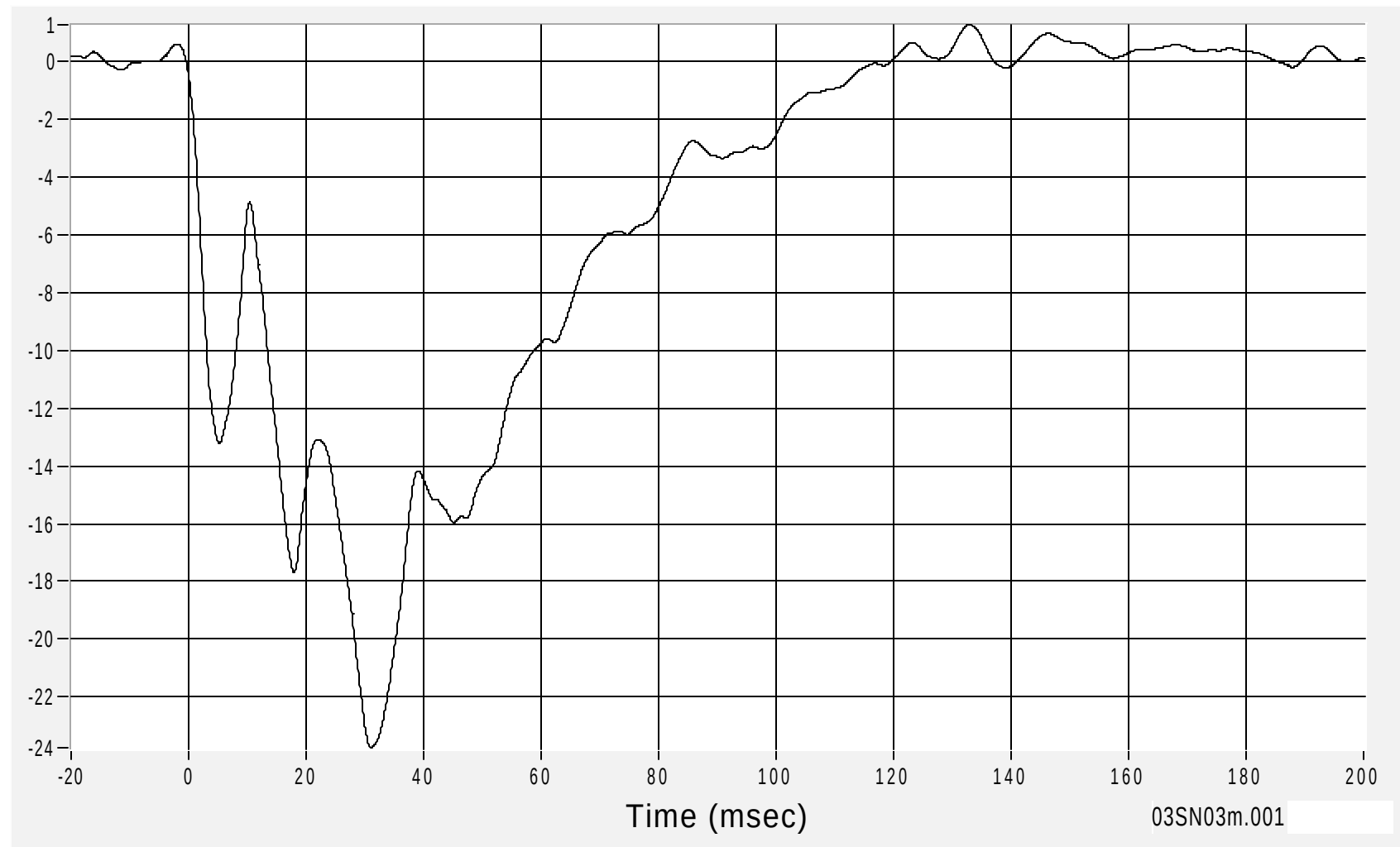
MDB Center of Gravity (X) Acceleration

Acceleration (G's) CFC60

Max 1.2 G's at 132.9 msec

Min -23.7 G's at 31.1 msec

B-110



03SN03 - 2003 TOYOTA TACOMA PRERUNNER 4 DOOR MPV

8 January 2003

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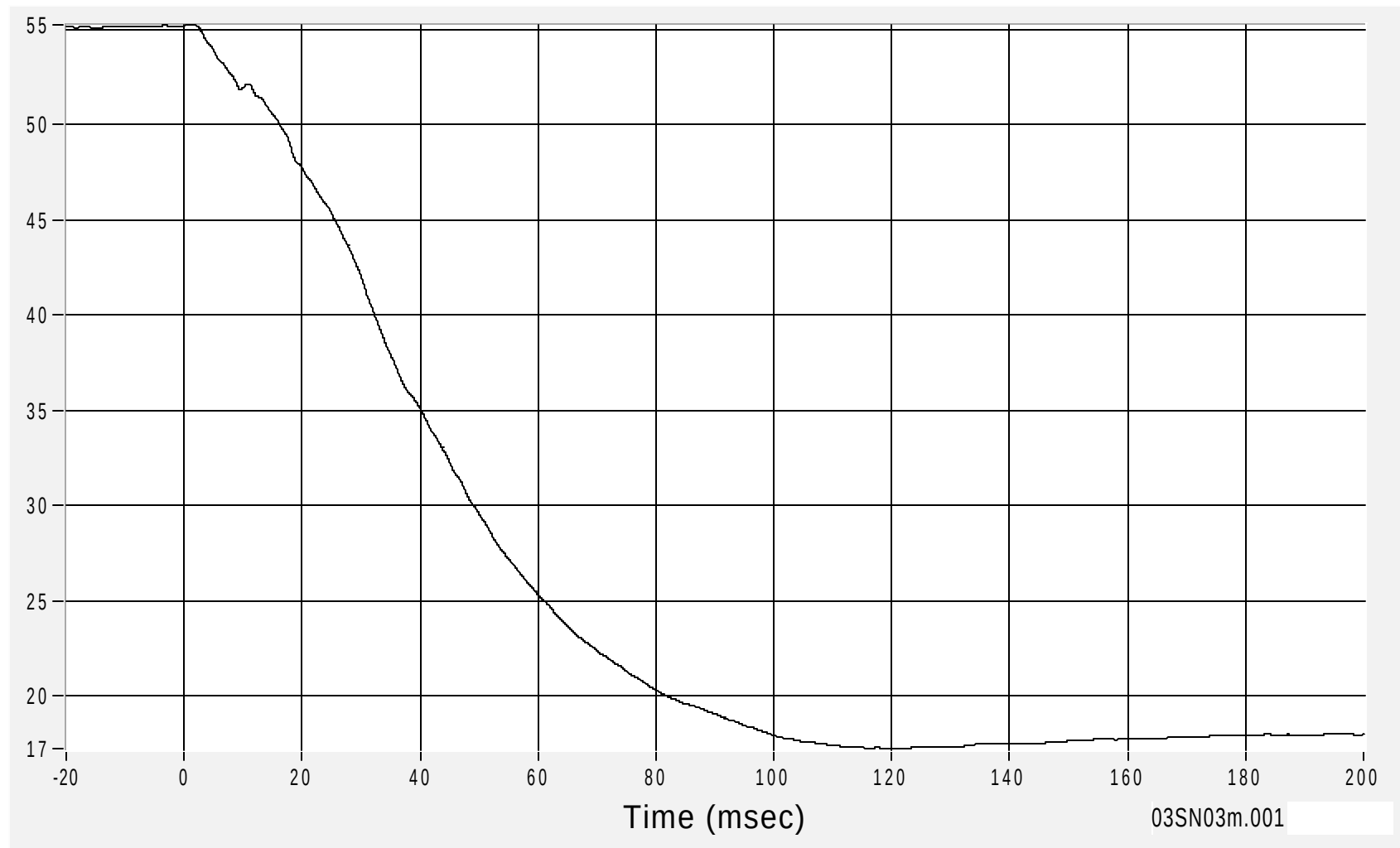
MDB Center of Gravity (X) Velocity

Velocity (km/h) CFC180

Max 55.2 km/h at 1.5 msec

Min 17.2 km/h at 119.4 msec

B-111



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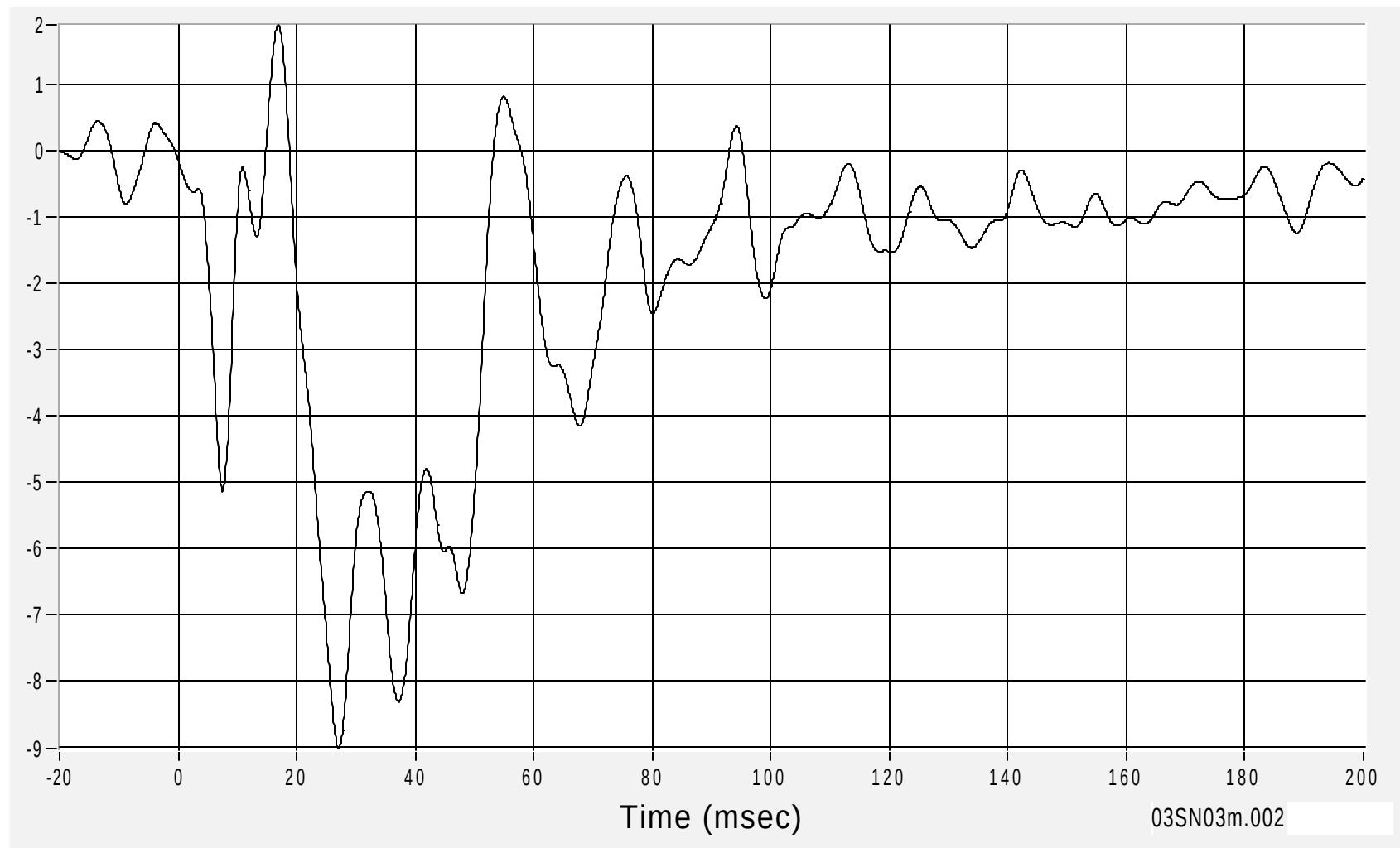
MDB Center of Gravity (Y) Acceleration

Acceleration (G's) CFC60

Max 1.9 G's at 16.9 msec

Min -9.0 G's at 27.1 msec

B-112



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8 January 2003

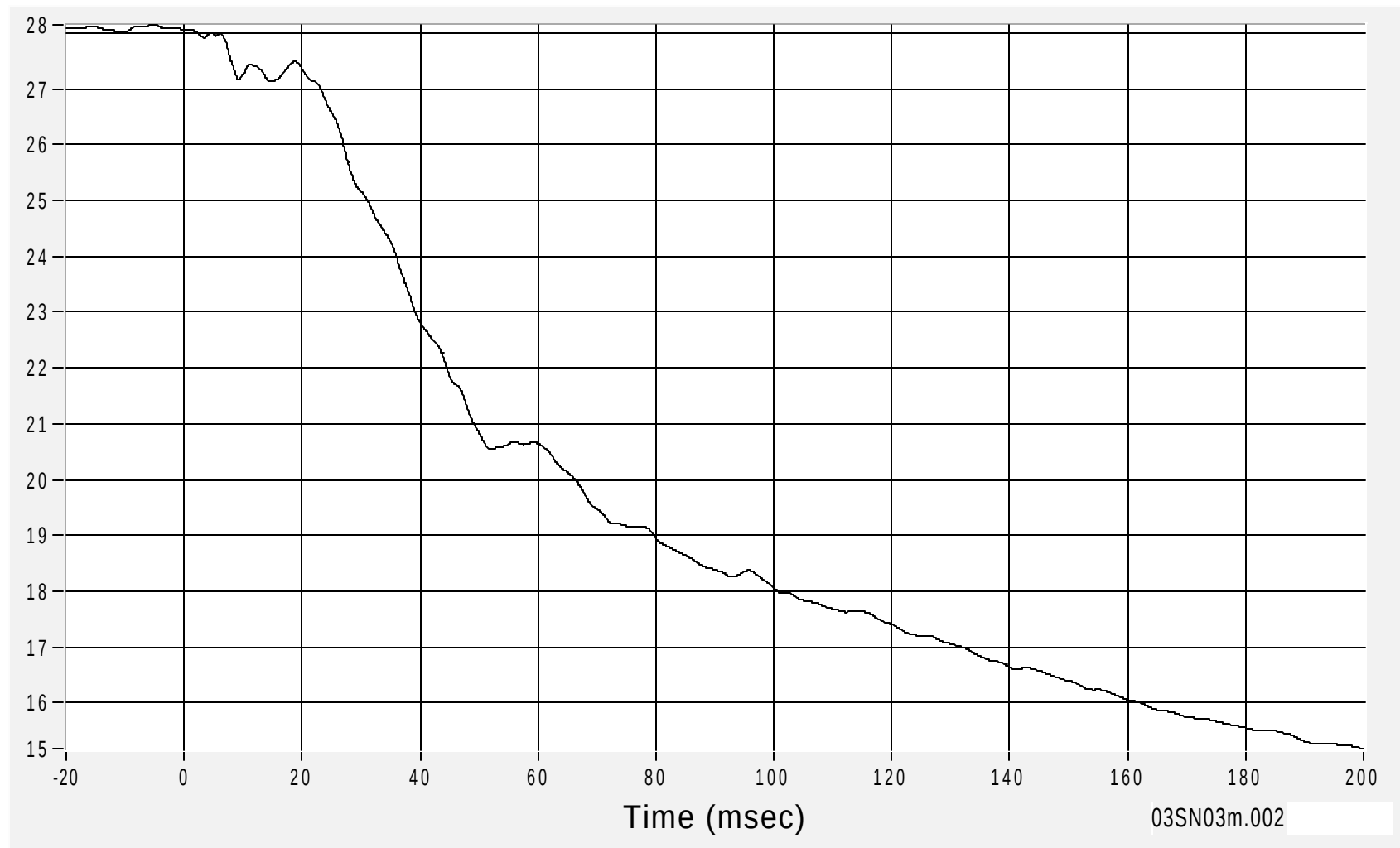
Medical College of Wisconsin
Vehicle Crashworthiness Lab

MDB Center of Gravity (Y) Velocity

Velocity (km/h) CFC180

Max 28.1 km/h at 0.1 msec
Min 15.2 km/h at 199.9 msec

B-113



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8 January 2003

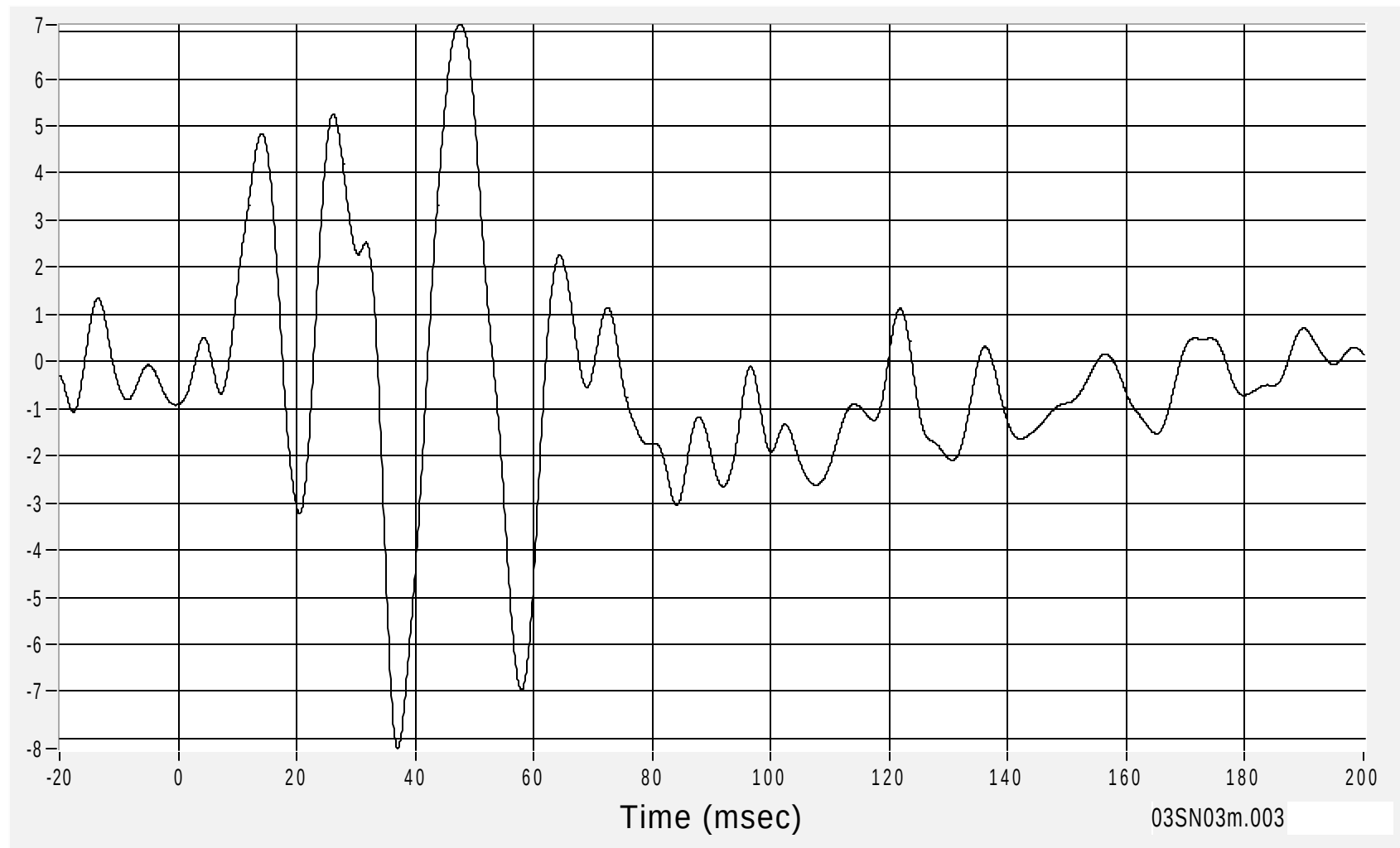
Medical College of Wisconsin
Vehicle Crashworthiness Lab

MDB Center of Gravity (Z) Acceleration

Acceleration (G's) CFC60

Max 7.1 G's at 47.6 msec
Min -8.2 G's at 37.0 msec

B-114



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8 January 2003

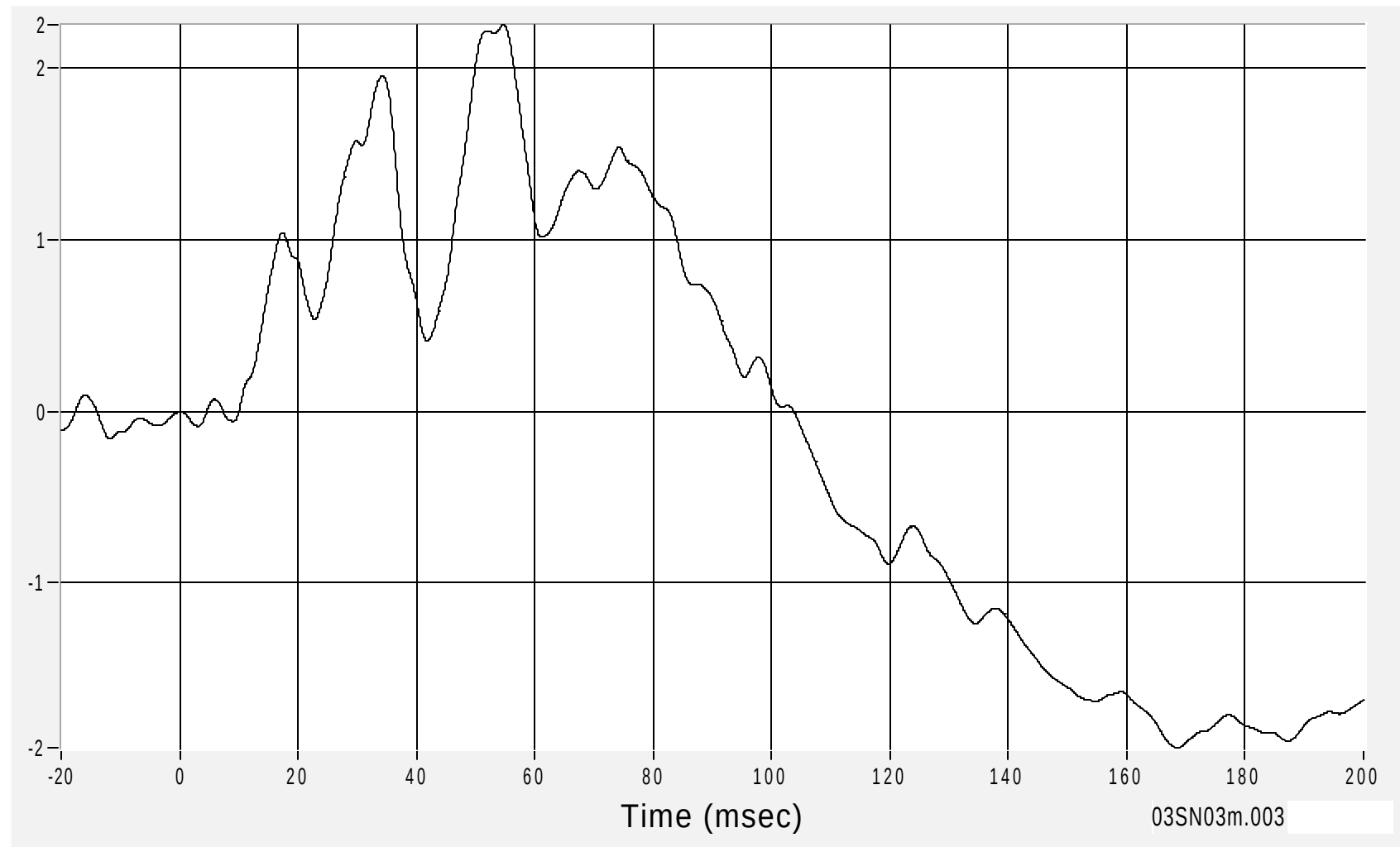
Medical College of Wisconsin
Vehicle Crashworthiness Lab

MDB Center of Gravity (Z) Velocity

Velocity (km/h) CFC180

Max 2.3 km/h at 54.7 msec
Min -2.0 km/h at 168.5 msec

B-115



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8 January 2003

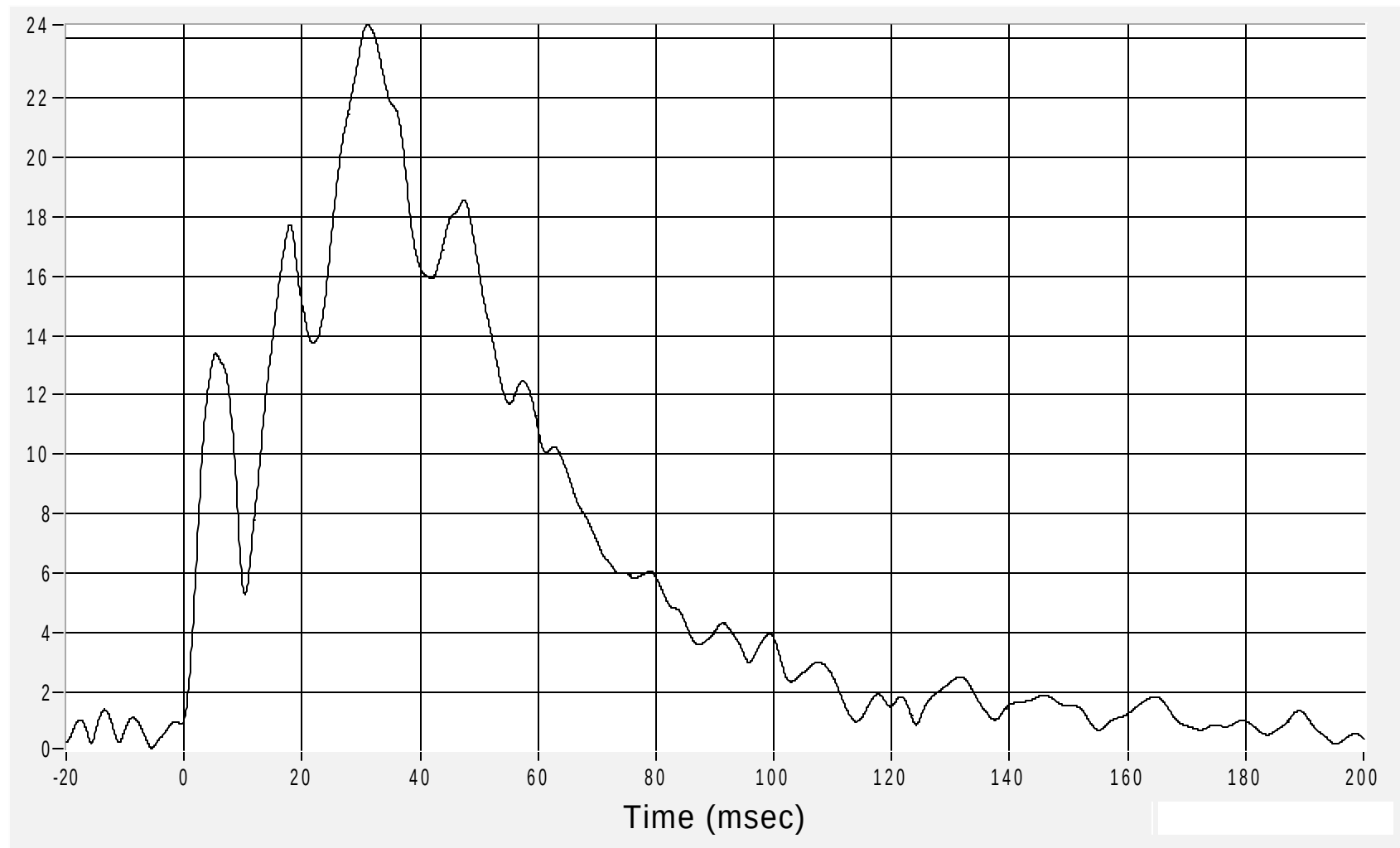
Medical College of Wisconsin
Vehicle Crashworthiness Lab

MDB Center of Gravity Resultant Acceleration

Acceleration (G's) CFC60

Max 24.4 G's at 31.0 msec
Min 0.3 G's at 195.4 msec

B-116



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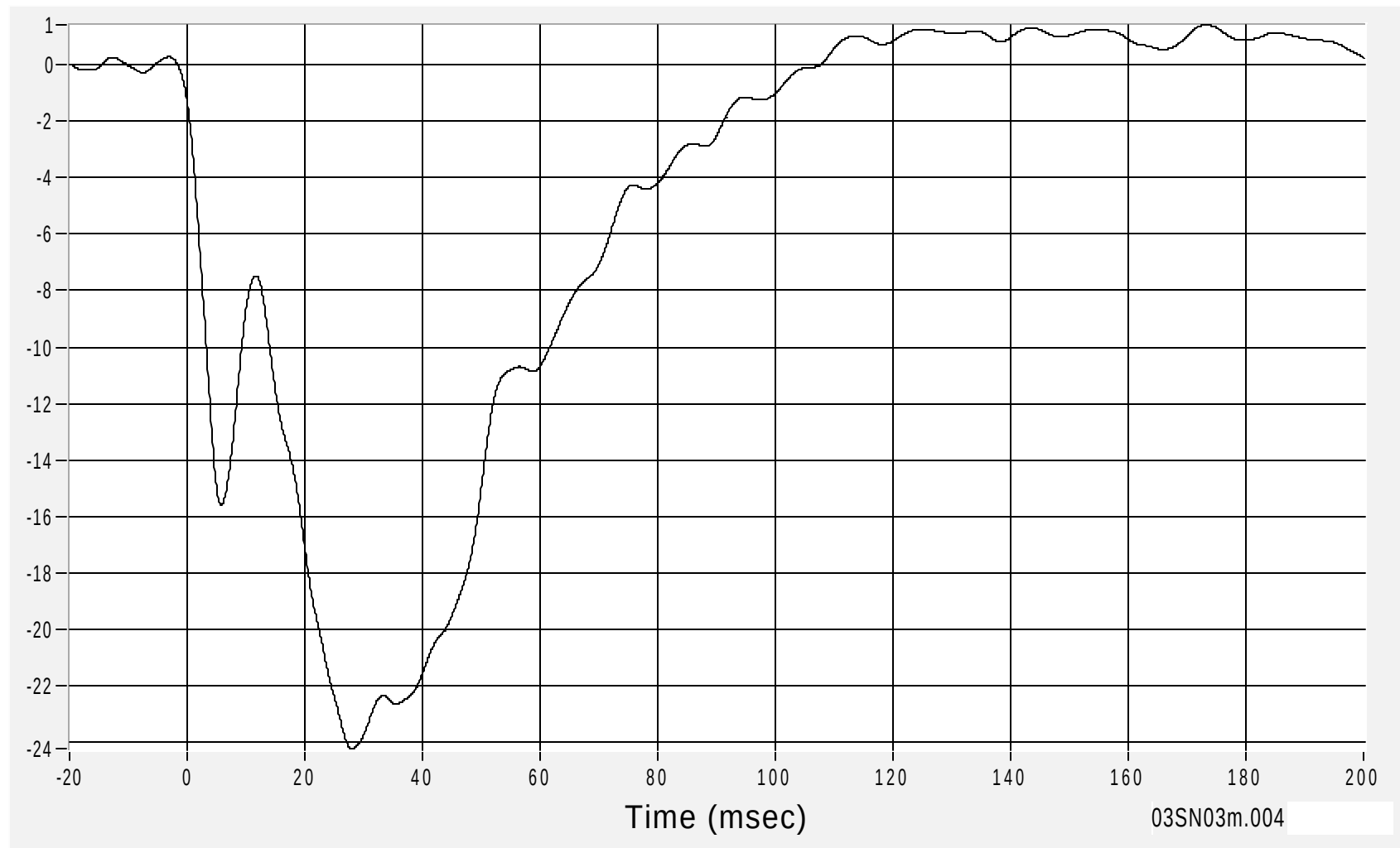
MDB Rear (X) Acceleration

Acceleration (G's) CFC60

Max 1.4 G's at 173.2 msec

Min -24.2 G's at 28.0 msec

B-117



03SN03 - 2003 TOYOTA TACOMA PRERUNNER 4 DOOR MPV

8 January 2003

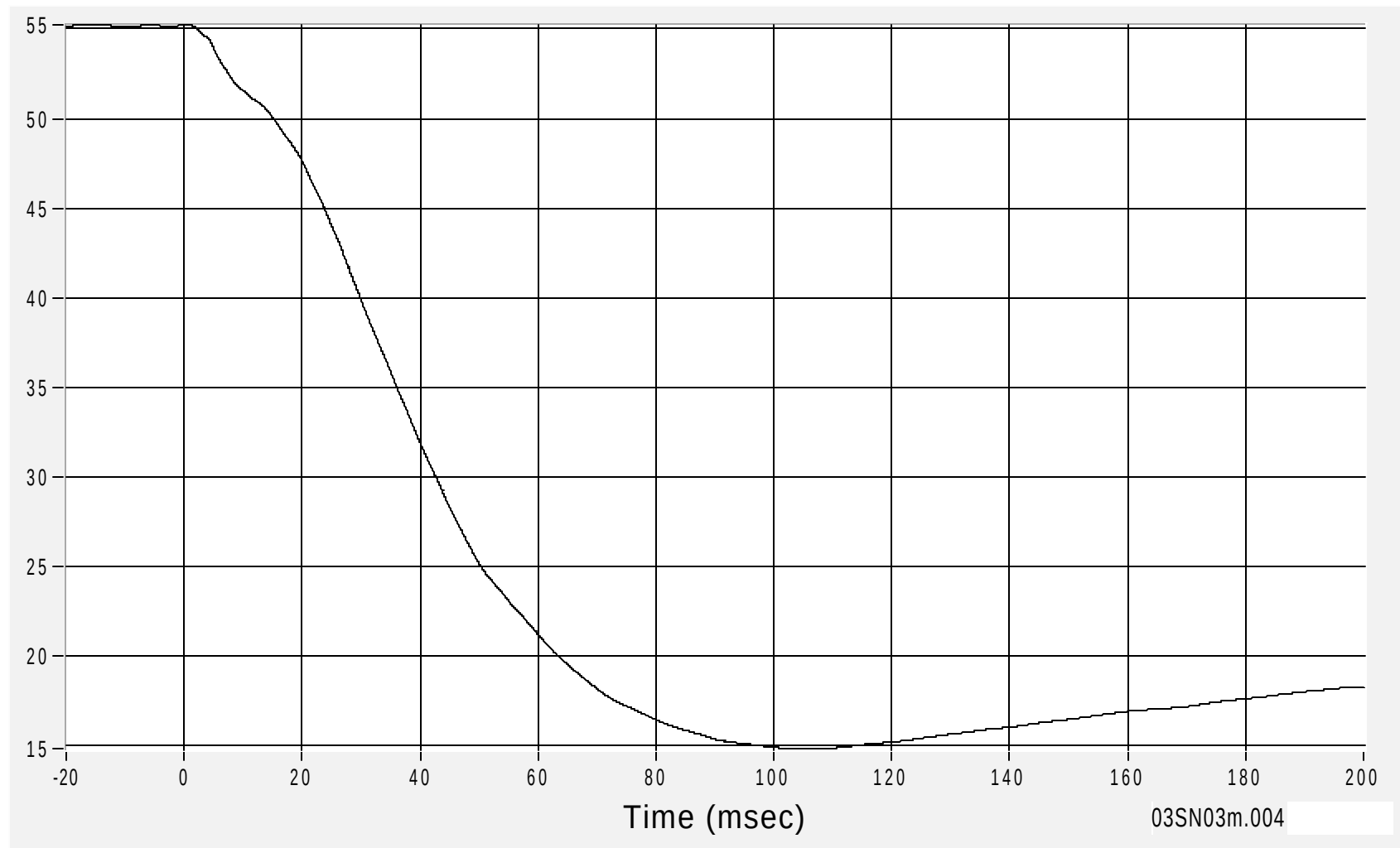
Medical College of Wisconsin
Vehicle Crashworthiness Lab

MDB Rear (X) Velocity

Velocity (km/h) CFC180

Max 55.2 km/h at 0.0 msec
Min 14.8 km/h at 108.4 msec

B-118



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8 January 2003

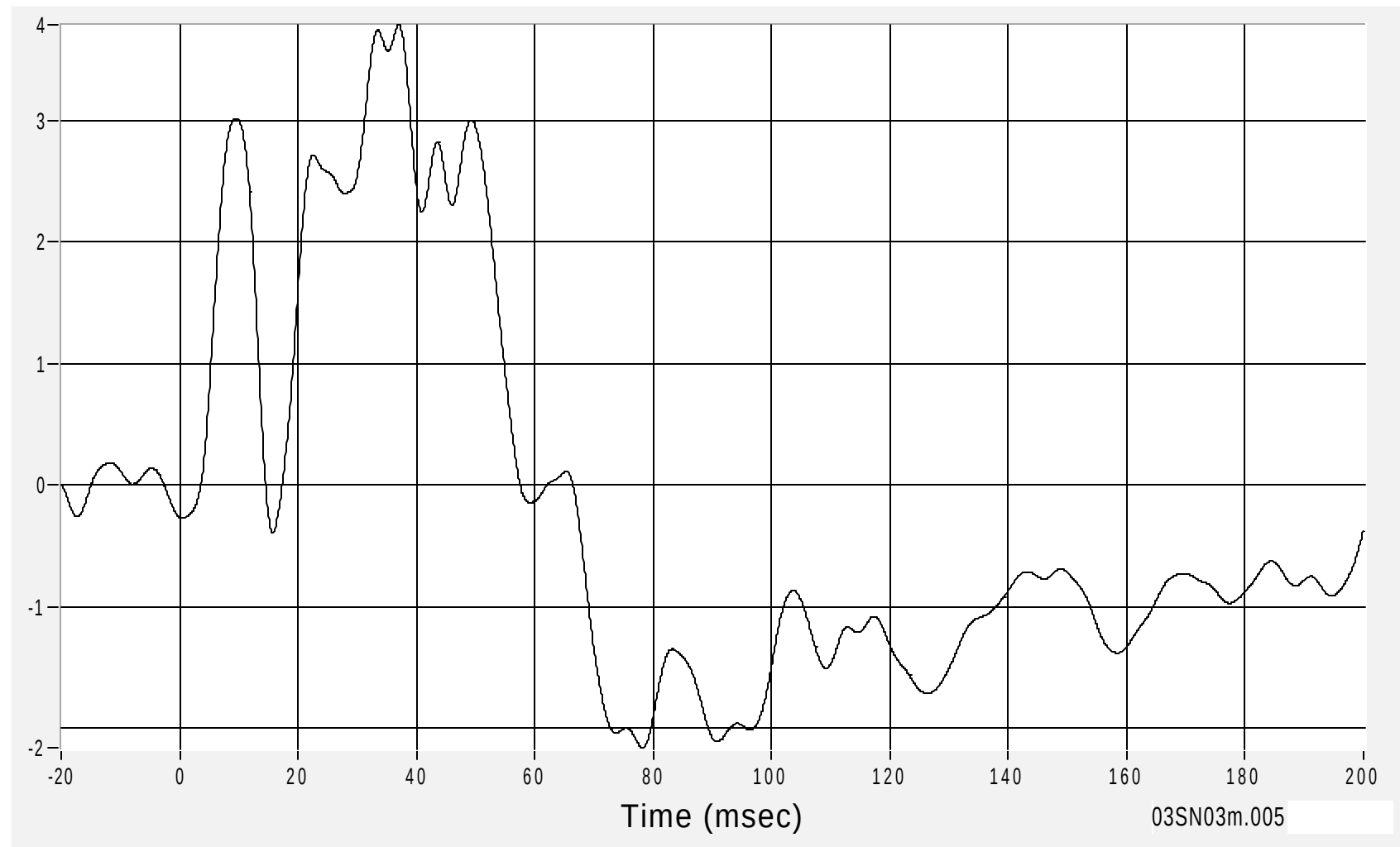
Medical College of Wisconsin
Vehicle Crashworthiness Lab

MDB Rear (Y) Acceleration

Acceleration (G's) CFC60

Max 3.8 G's at 37.0 msec
Min -2.2 G's at 78.2 msec

B-119



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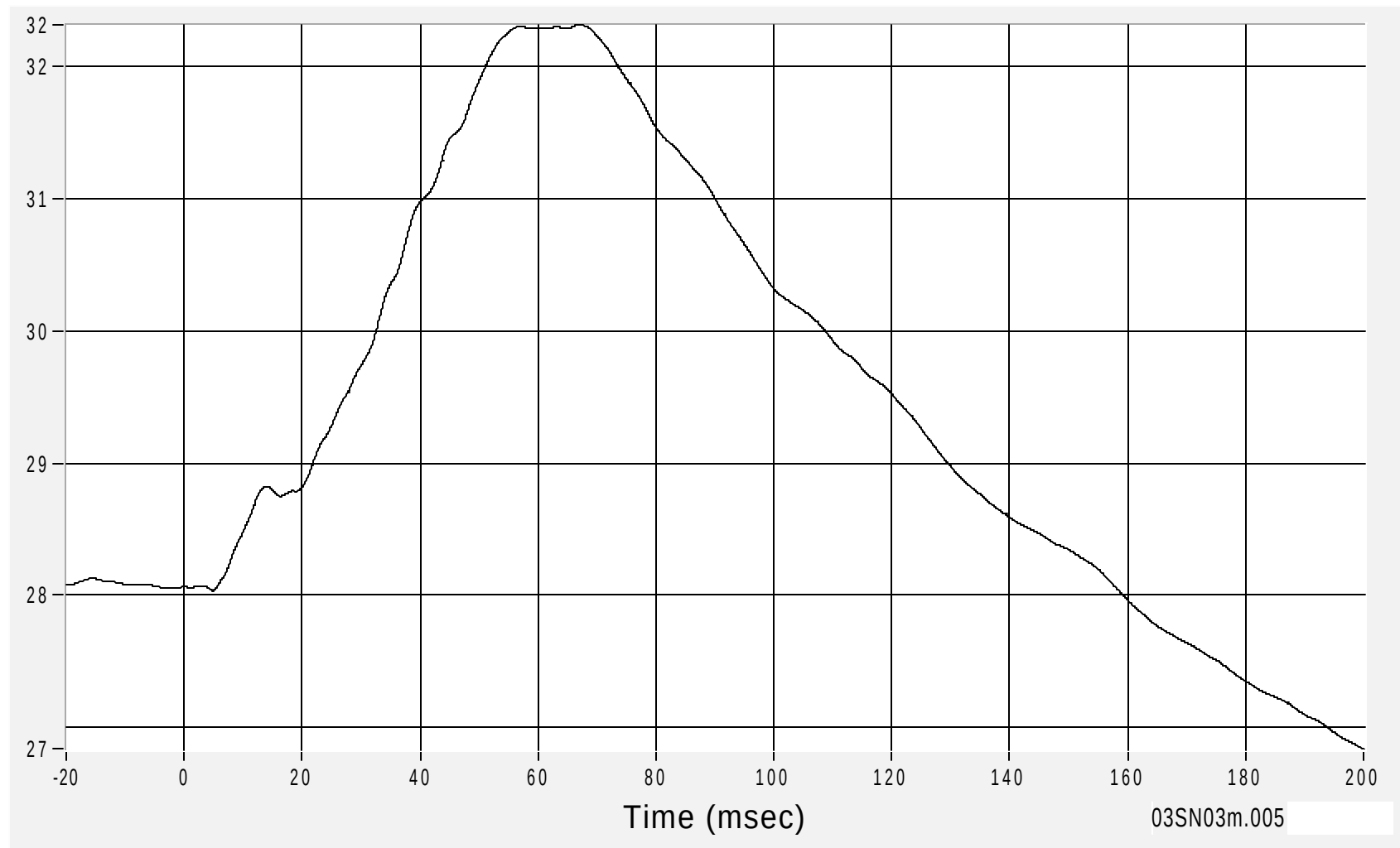
MDB Rear (Y) Velocity

Velocity (km/h) CFC180

Max 32.3 km/h at 67.0 msec

Min 26.8 km/h at 199.9 msec

B-120



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8 January 2003

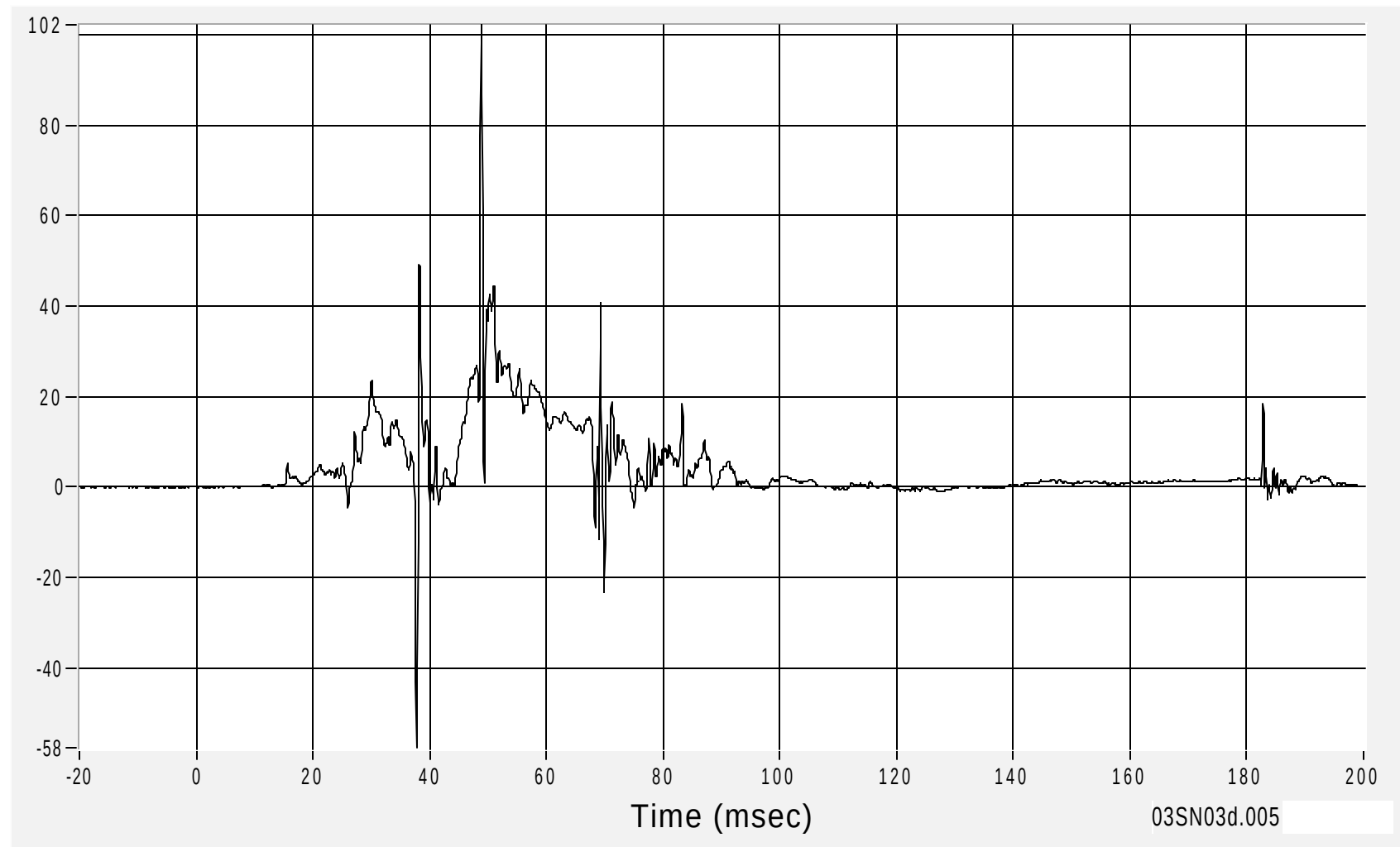
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Driver Upper Rib (Y) Acceleration - Redundant

Acceleration (G's) CFC1000

Max 102.2 G's at 48.9 msec
Min -57.6 G's at 37.8 msec

B-121



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8 January 2003

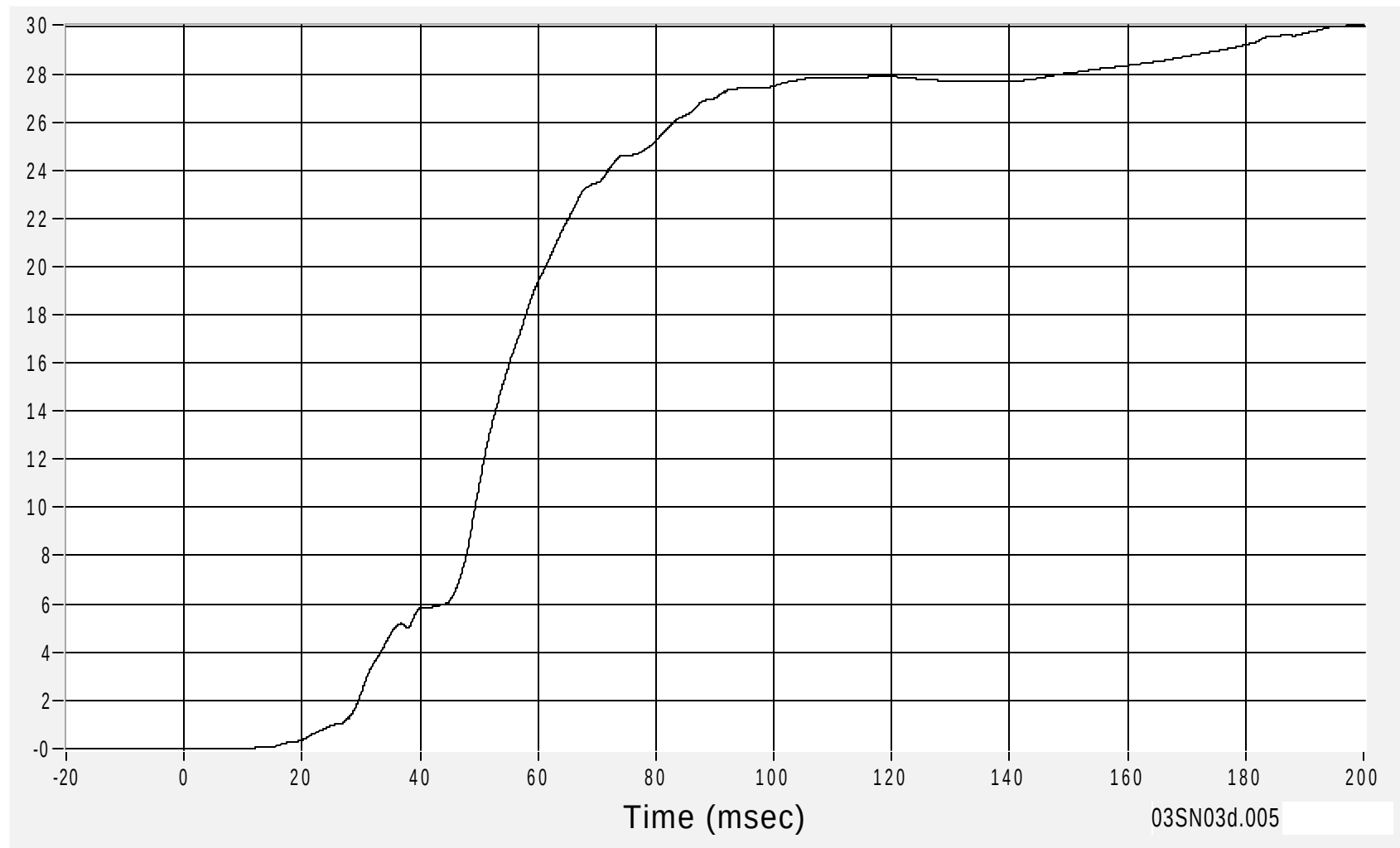
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Driver Upper Rib (Y) Velocity - Redundant

Velocity (km/h) CFC180

Max 30.0 km/h at 199.9 msec
Min 0.0 km/h at 3.9 msec

B-122



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8 January 2003

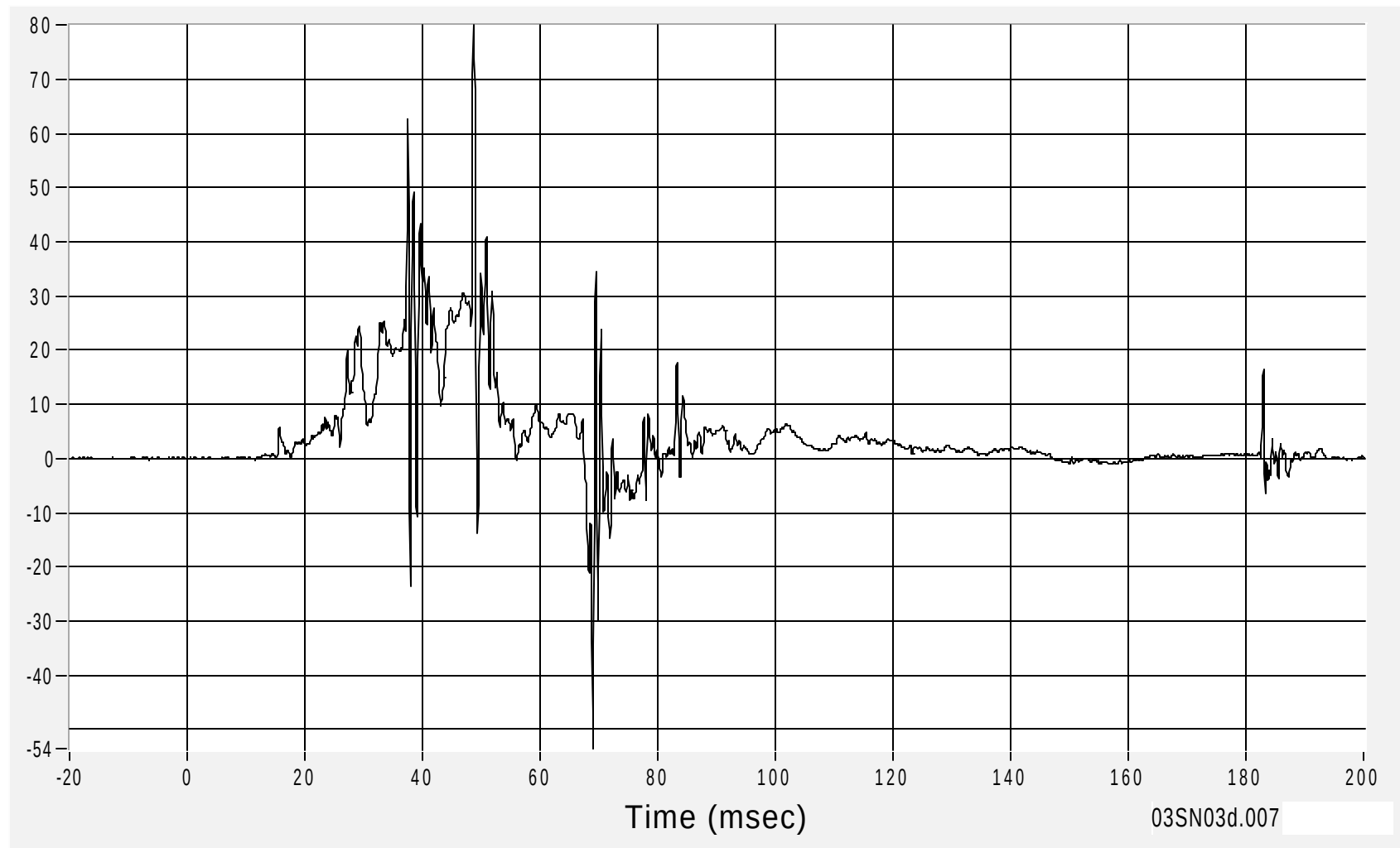
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Driver Lower Rib (Y) Acceleration - Redundant

Acceleration (G's) CFC1000

Max 80.1 G's at 48.6 msec
Min -53.6 G's at 69.0 msec

B-123



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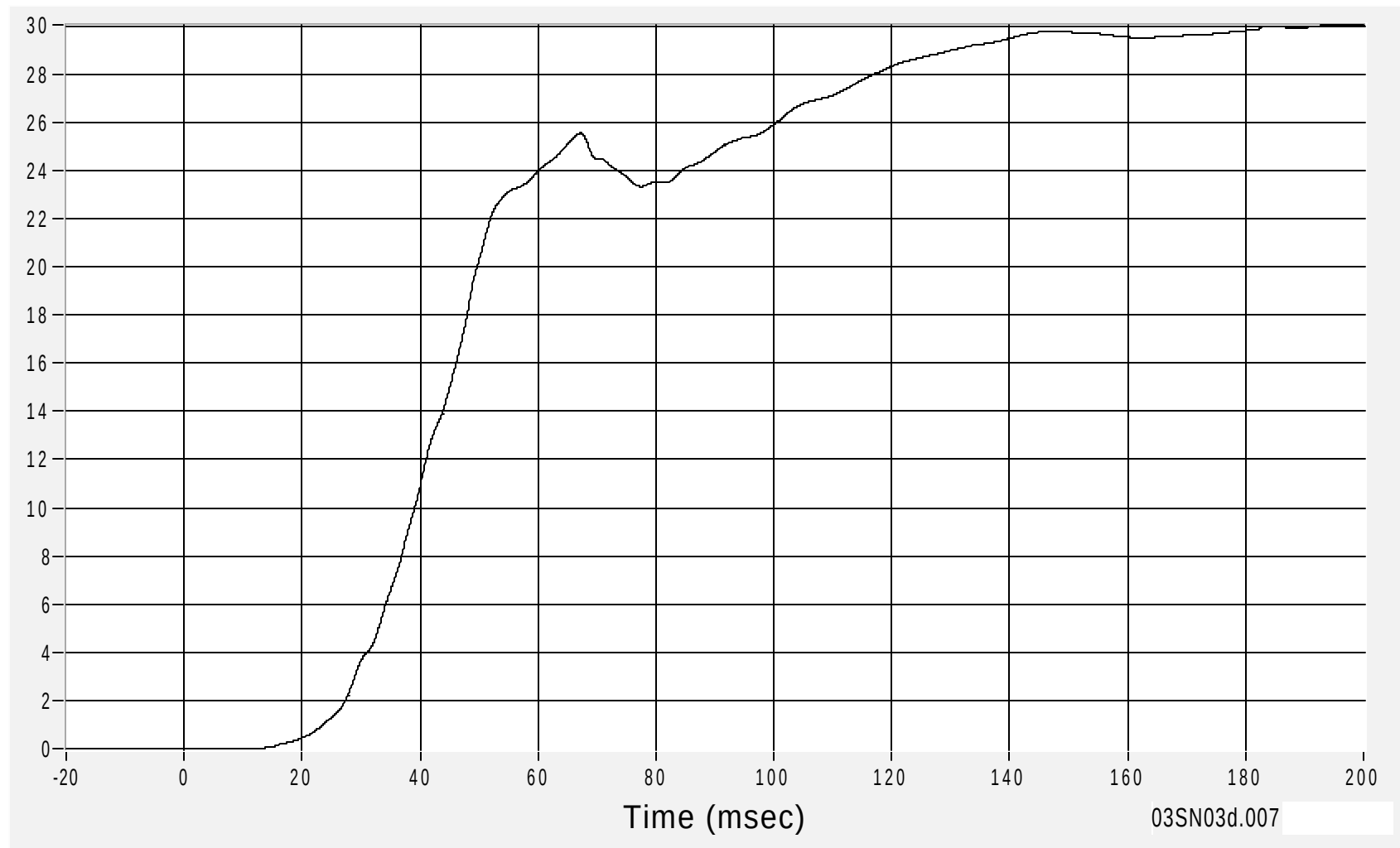
Driver Lower Rib (Y) Velocity - Redundant

Velocity (km/h) CFC180

Max 30.0 km/h at 196.6 msec

Min 0.0 km/h at 0.0 msec

B-124



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8 January 2003

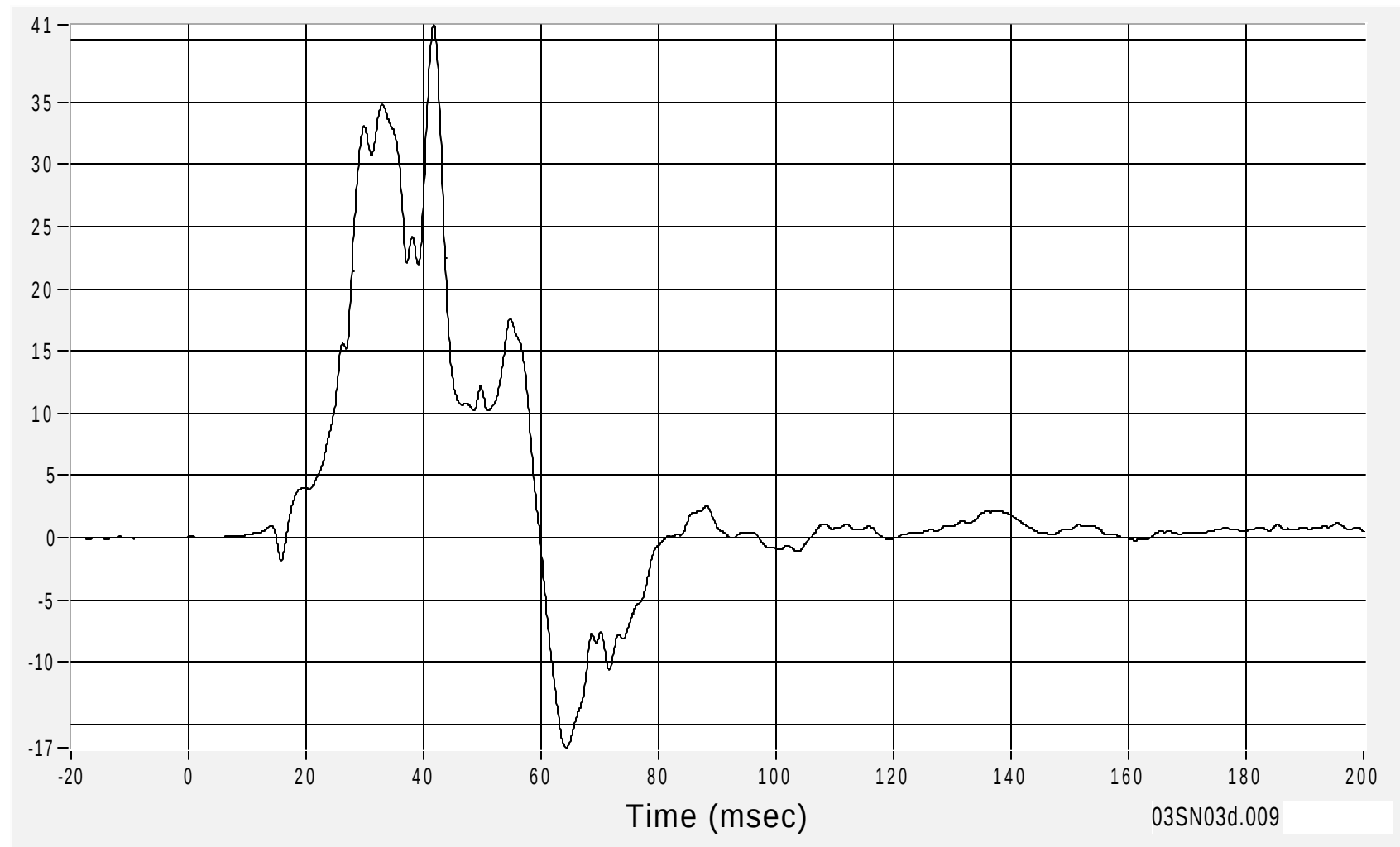
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Driver Lower Spine (Y) Acceleration - Redundant

Acceleration (G's) CFC180

Max 41.2 G's at 41.7 msec
Min -16.9 G's at 64.3 msec

B-125



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8 January 2003

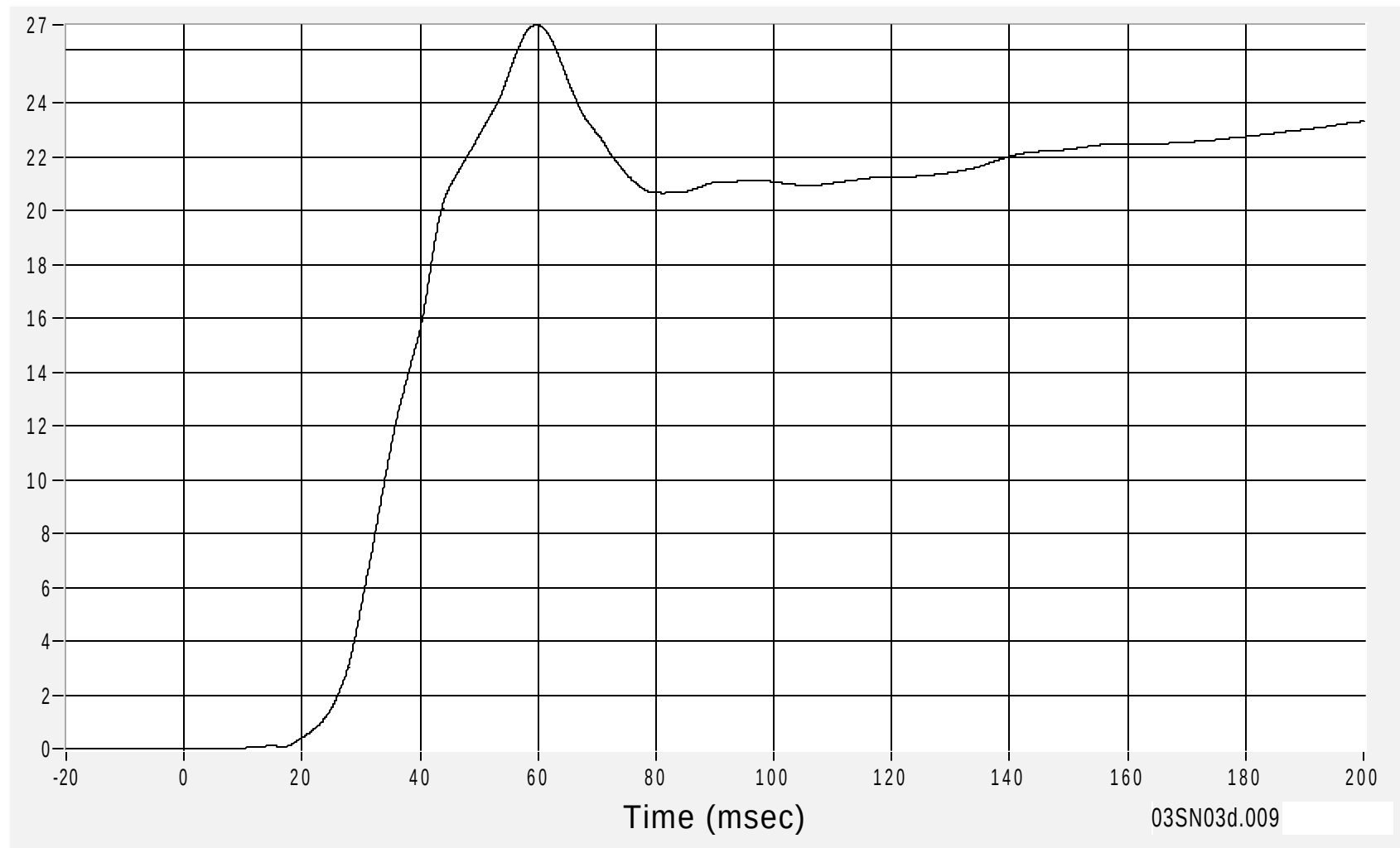
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Driver Lower Spine (Y) Velocity - Redundant

Velocity (km/h) CFC180

Max	26.9	km/h	at	59.8	msec
Min	0.0	km/h	at	0.0	msec

B-126



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8 January 2003

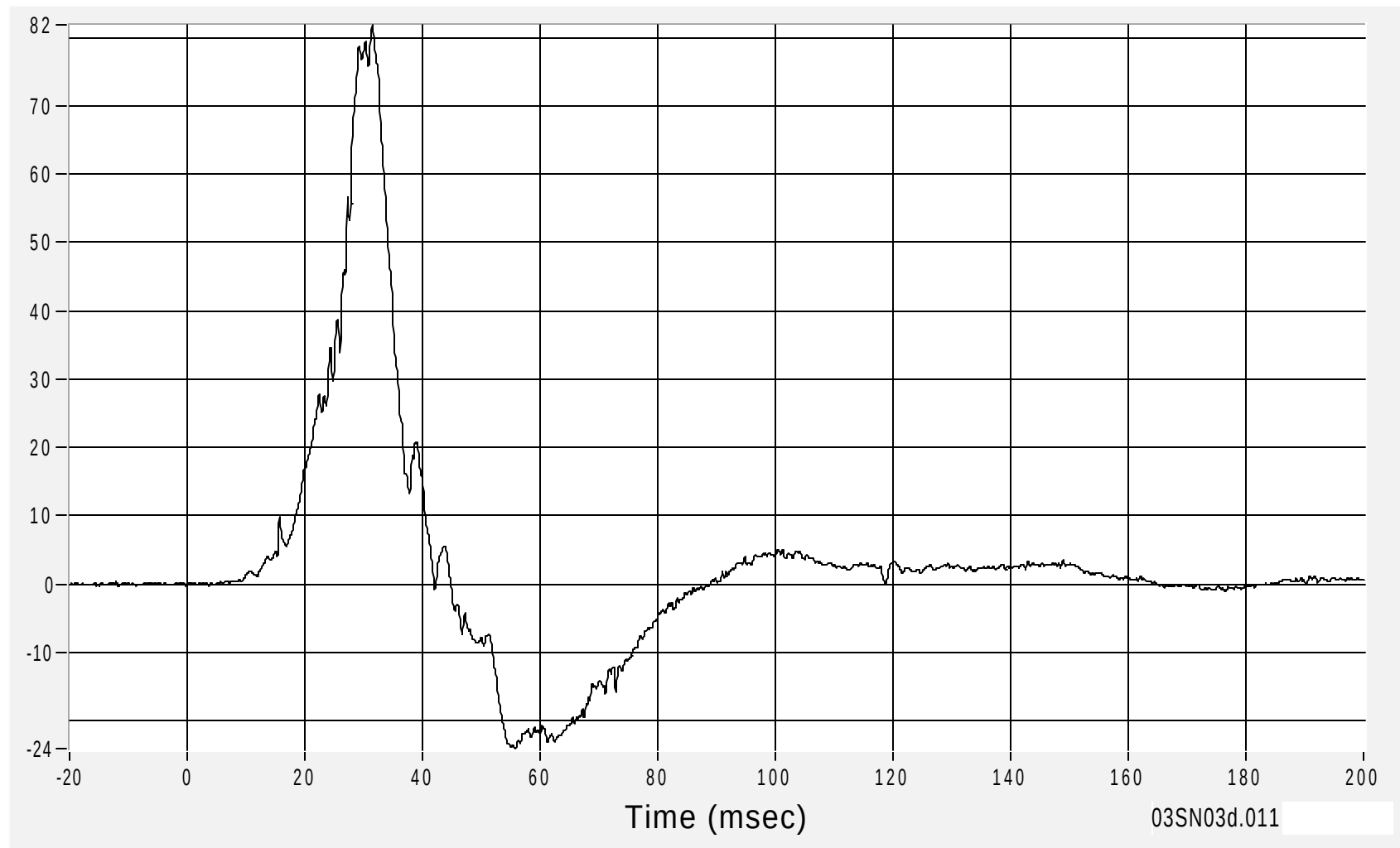
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Driver Pelvic (Y) Acceleration - Redundant

Acceleration (G's) CFC1000

Max 81.9 G's at 31.5 msec
Min -24.1 G's at 55.8 msec

B-127



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8 January 2003

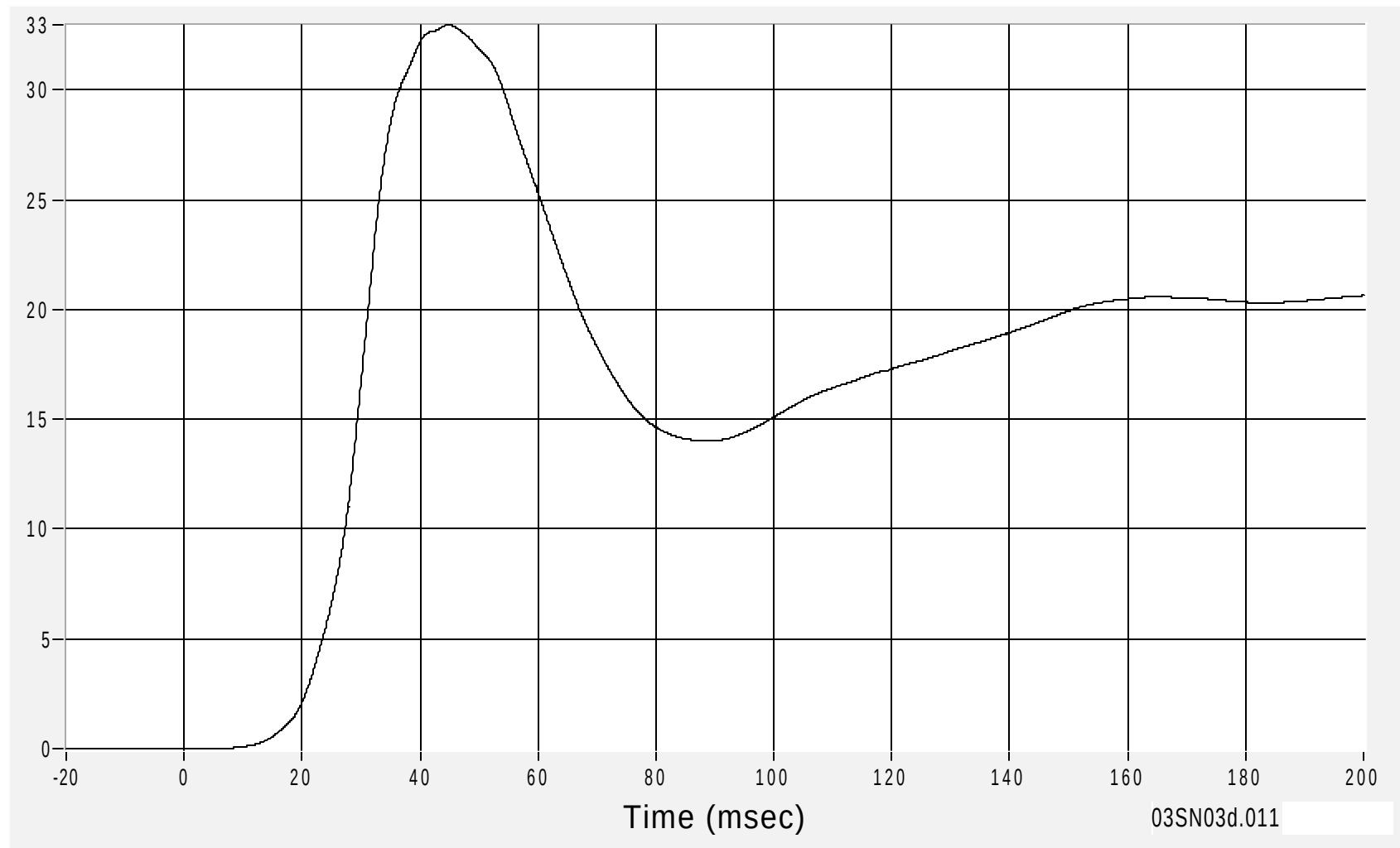
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Driver Pelvic (Y) Velocity - Redundant

Velocity (km/h) CFC180

Max	33.0	km/h	at	44.8	msec
Min	0.0	km/h	at	0.0	msec

B-128



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8 January 2003

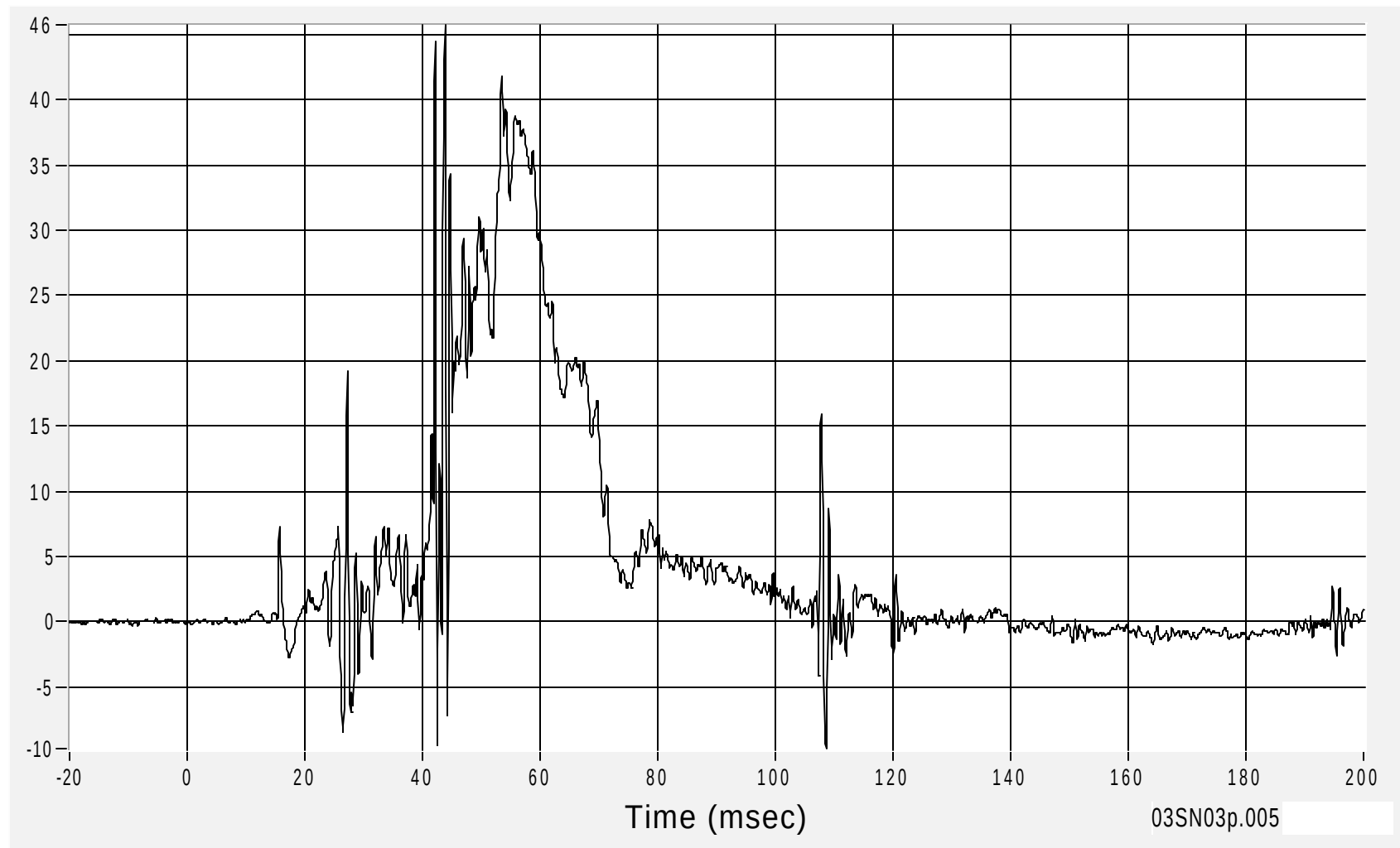
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Passenger Upper Rib (Y) Acceleration - Redundant

Acceleration (G's) CFC1000

Max 45.7 G's at 43.8 msec
Min -9.7 G's at 108.6 msec

B-129



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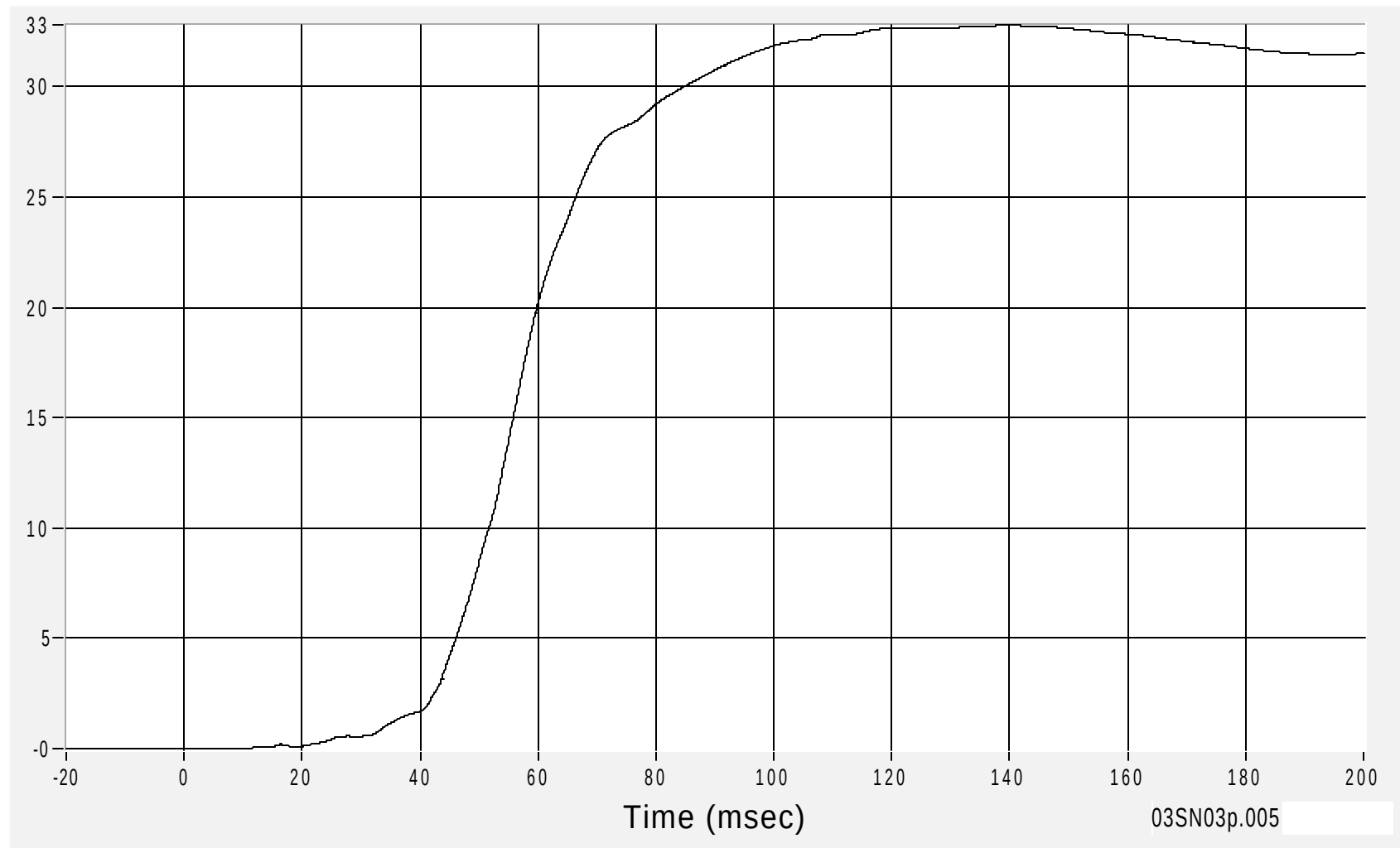
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Passenger Upper Rib (Y) Velocity - Redundant

Velocity (km/h) CFC180

Max 32.8 km/h at 139.4 msec
Min 0.0 km/h at 1.3 msec

B-130



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8 January 2003

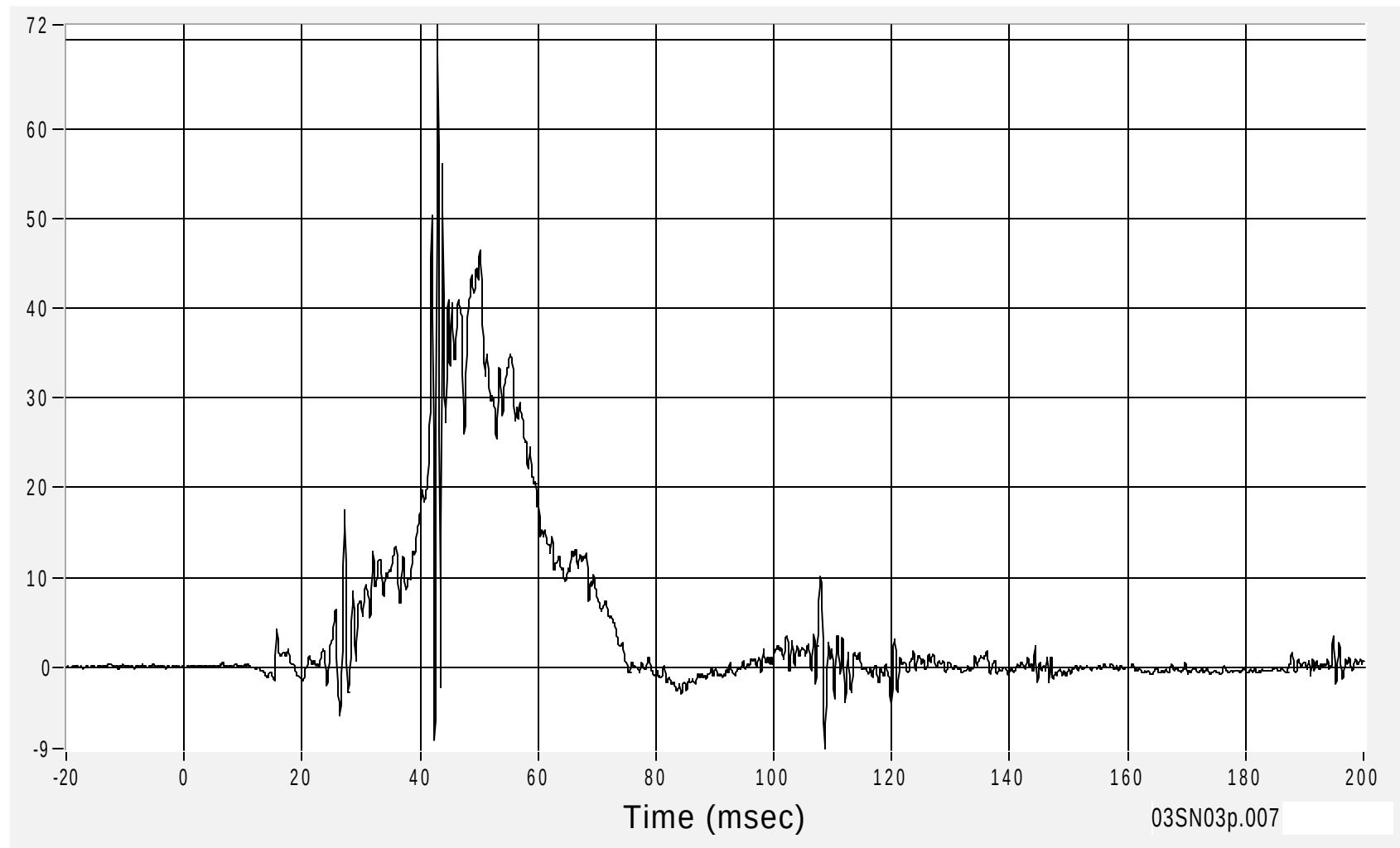
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Passenger Lower Rib (Y) Acceleration - Redundant

Acceleration (G's) CFC1000

Max 71.7 G's at 43.0 msec
Min -9.1 G's at 108.6 msec

B-131



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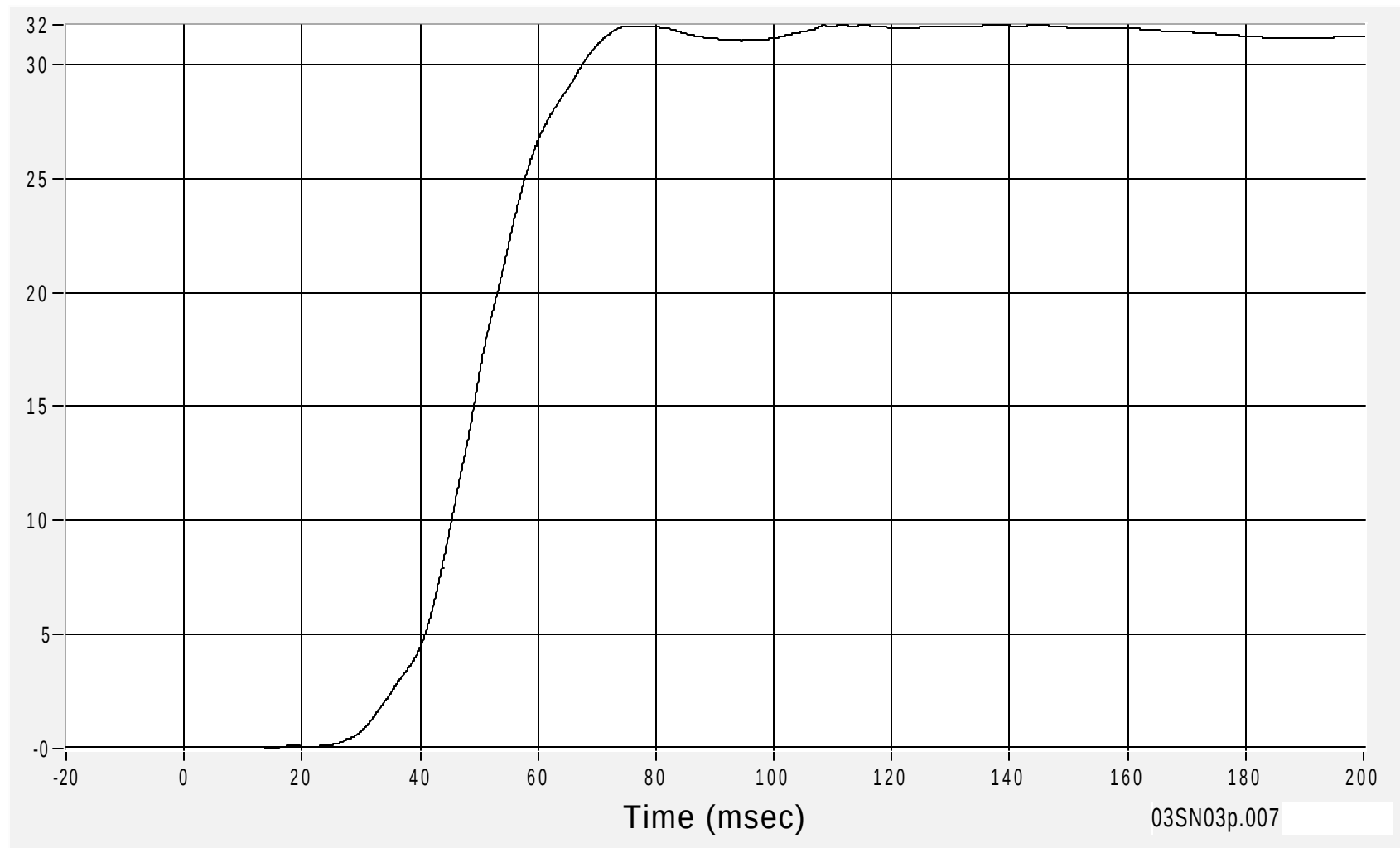
Passenger Lower Rib (Y) Velocity - Redundant

Velocity (km/h) CFC180

Max 31.8 km/h at 137.1 msec

Min 0.0 km/h at 15.1 msec

B-132



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8 January 2003

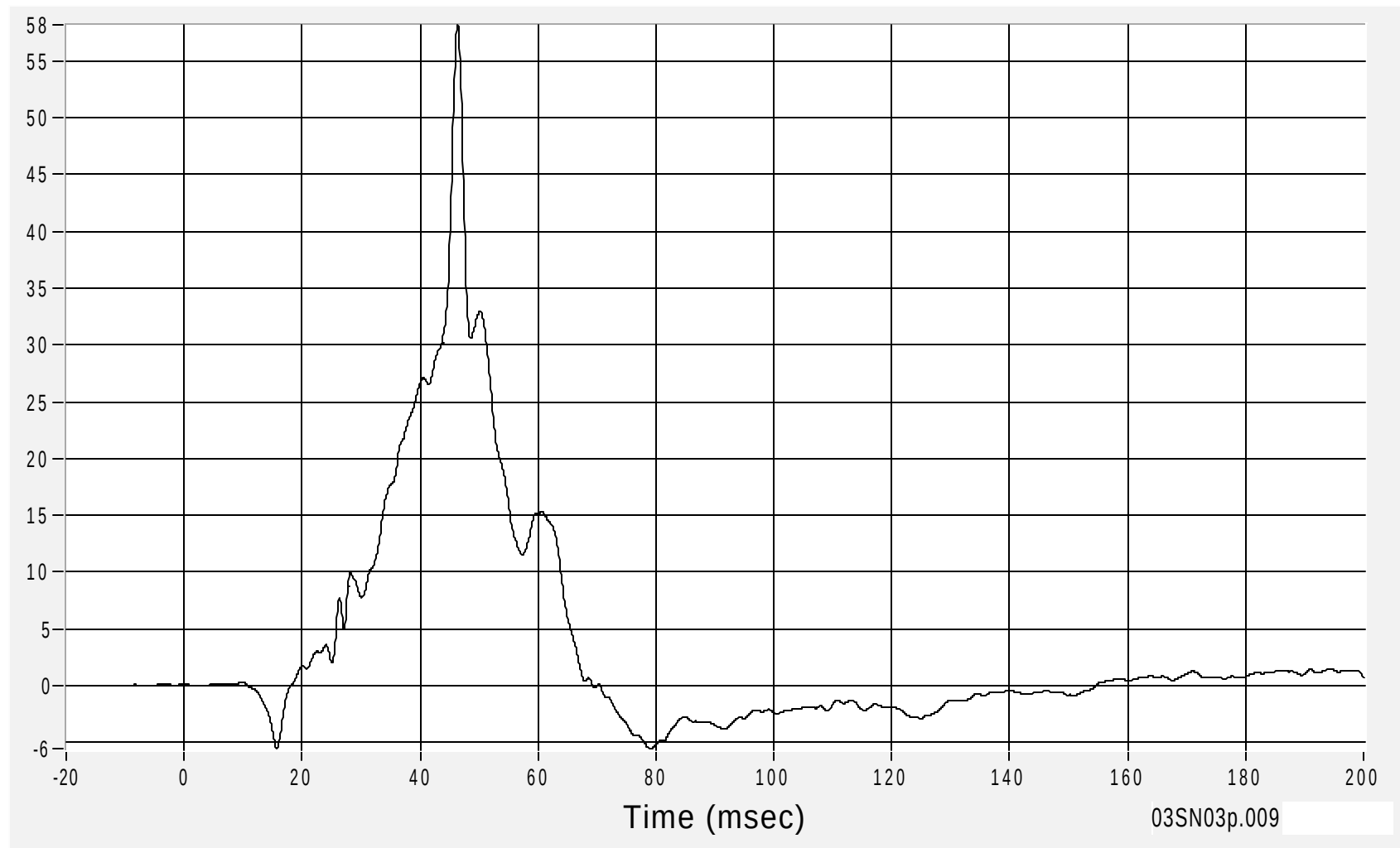
Medical College of Wisconsin
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Passenger Lower Spine (Y) Acceleration - Redundant

Acceleration (G's) CFC180

Max	58.2	G's	at	46.4	msec
Min	-5.6	G's	at	15.7	msec

B-133



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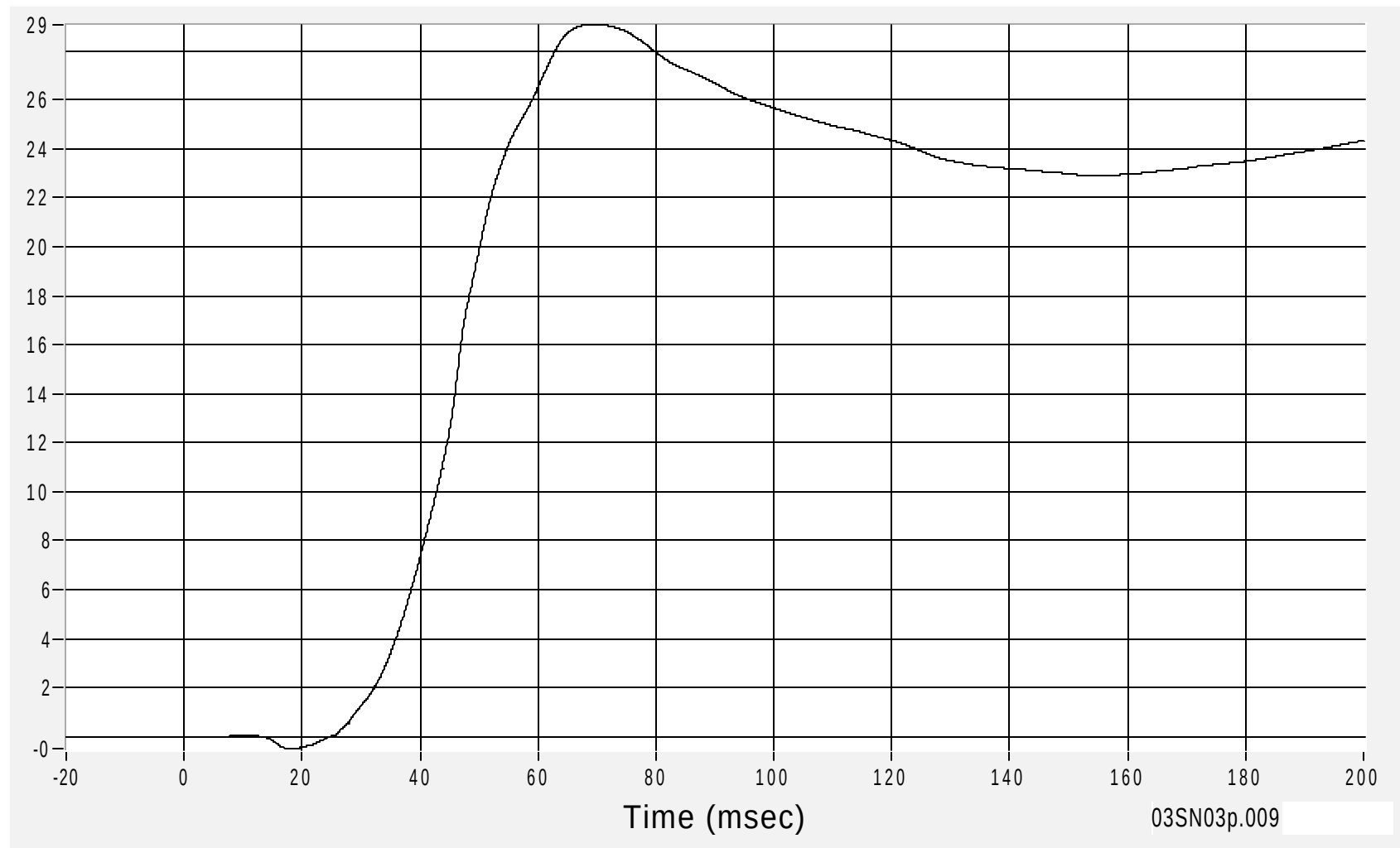
Passenger Lower Spine (Y) Velocity - Redundant

Velocity (km/h) CFC180

Max 29.1 km/h at 69.3 msec

Min -0.5 km/h at 18.1 msec

B-134



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8 January 2003

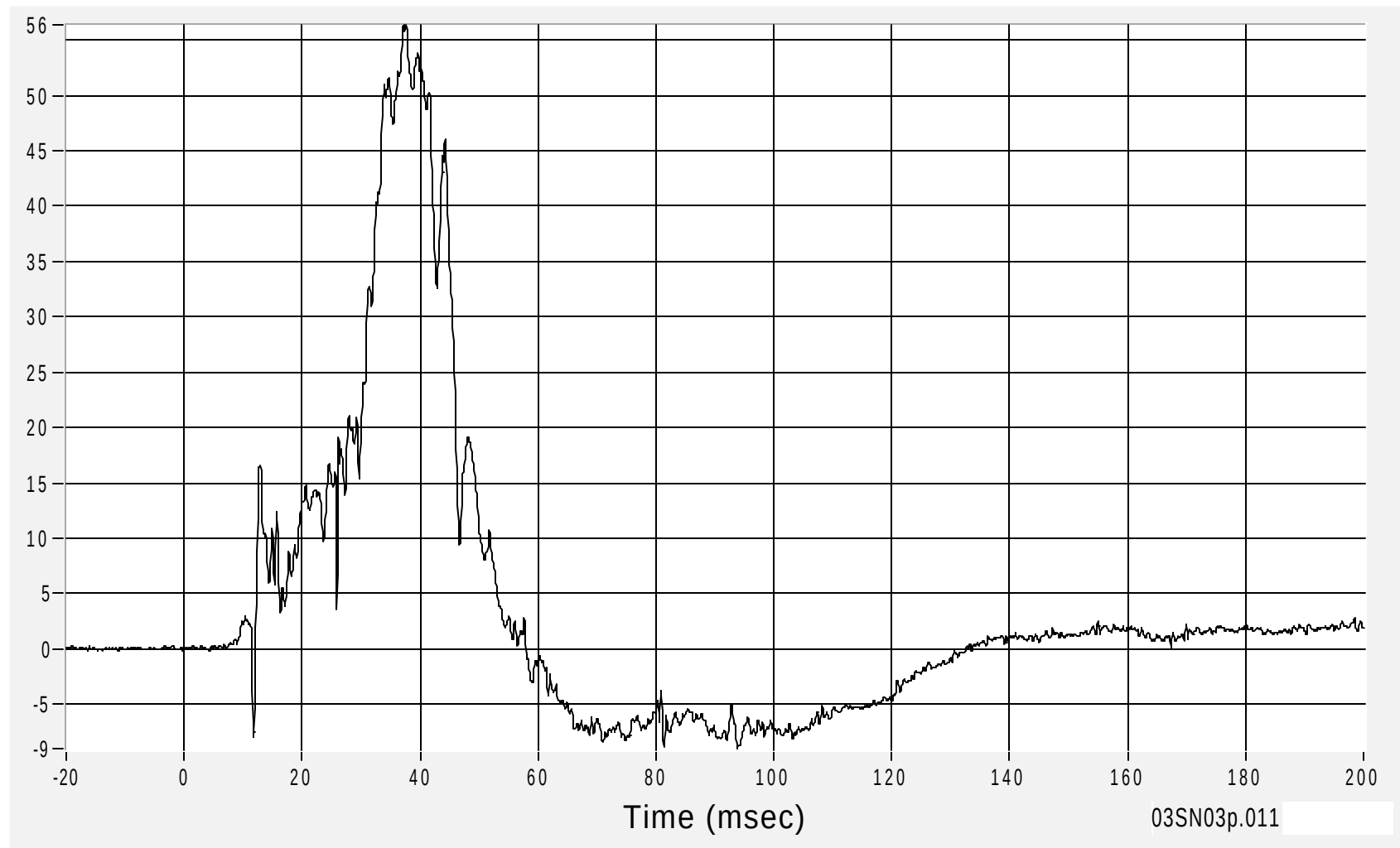
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Passenger Pelvic (Y) Acceleration - Redundant

Acceleration (G's) CFC1000

Max 56.4 G's at 37.2 msec
Min -9.0 G's at 93.8 msec

B-135



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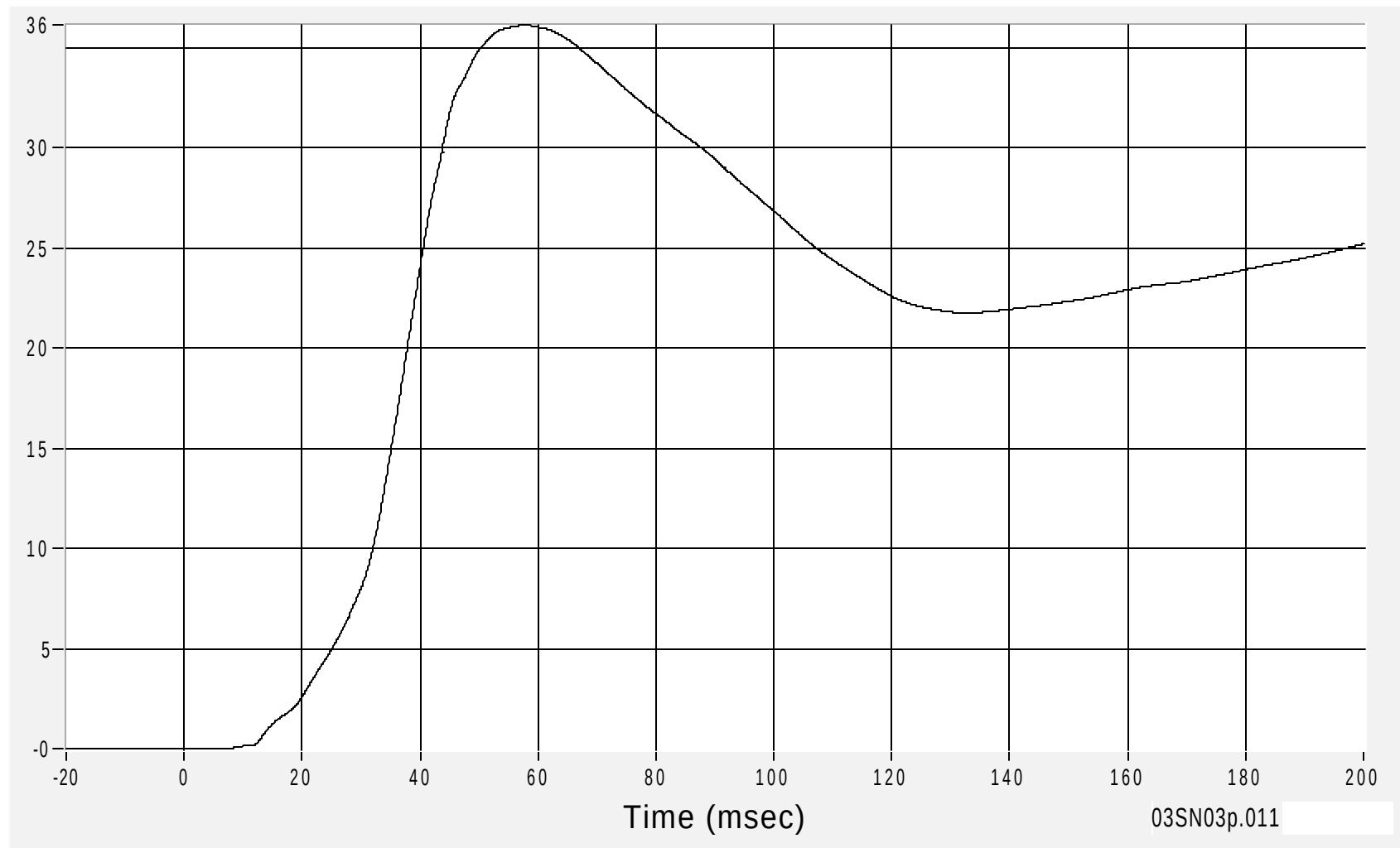
Passenger Pelvic (Y) Velocity - Redundant

Velocity (km/h) CFC180

Max 36.1 km/h at 57.9 msec

Min 0.0 km/h at 0.2 msec

B-136



03SN03 - 2003 TOYOTA TACOMA PRERUNNER 4 DOOR MPV

8 January 2003

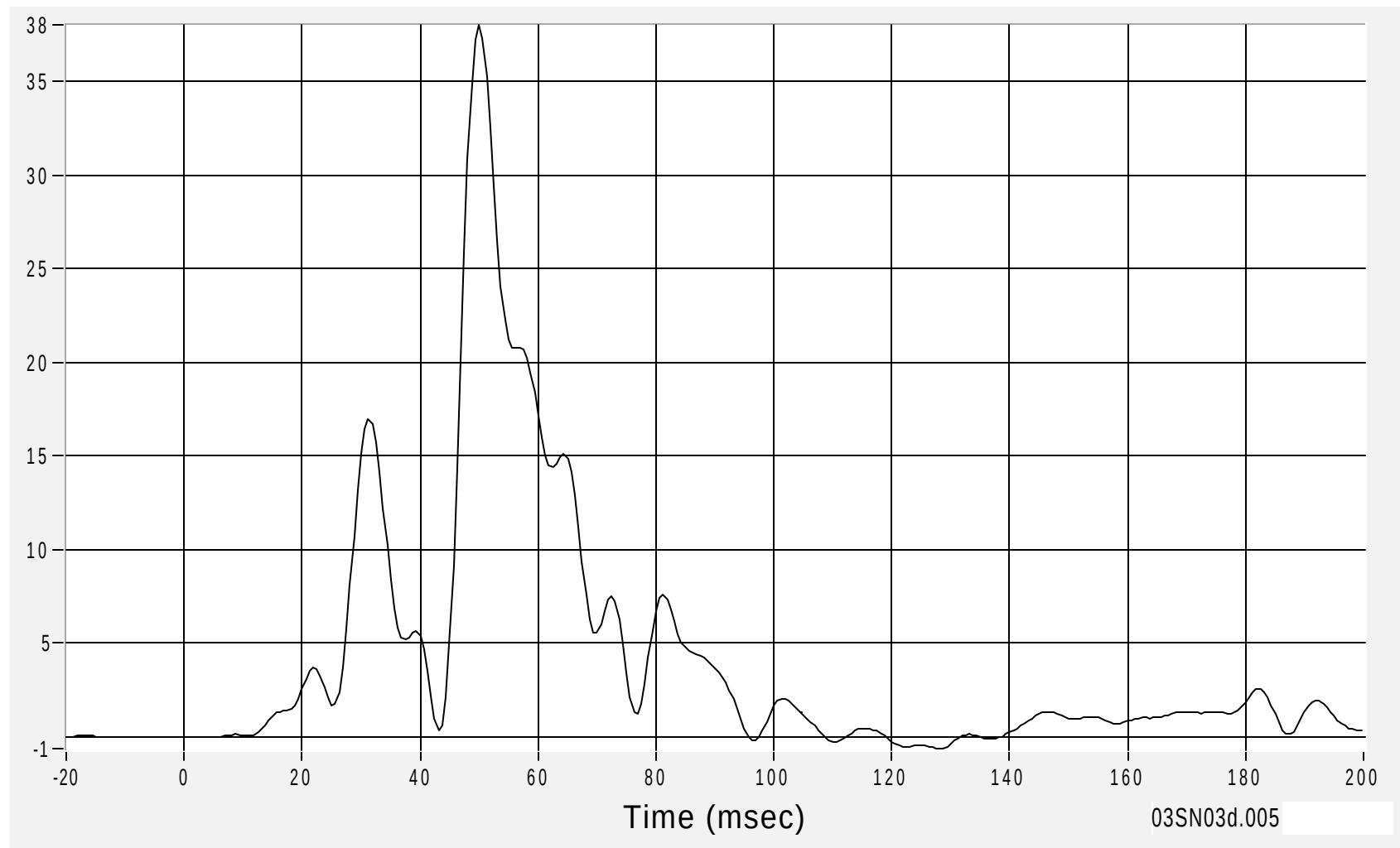
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Driver Upper Rib (Y) Acceleration - Redundant

Acceleration (G's) FIR100

Max 38.0 G's at 50.0 msec
Min -0.6 G's at 128.1 msec

B-137



03SN03 - 2003 TOYOTA TACOMA PRERUNNER 4 DOOR MPV

8 January 2003

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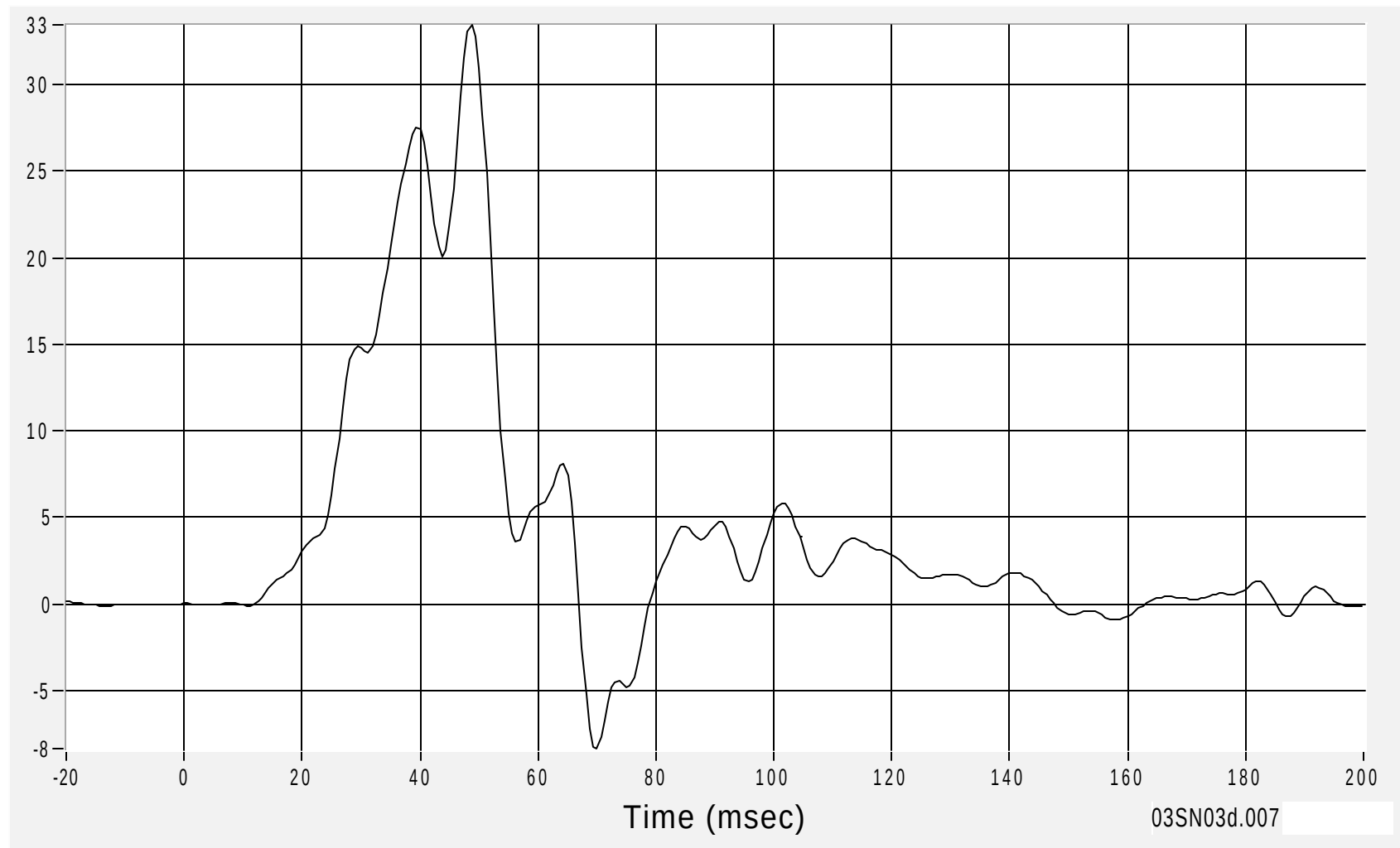
Driver Lower Rib (Y) Acceleration - Redundant

Acceleration (G's) FIR100

Max 33.4 G's at 48.8 msec

Min -8.3 G's at 70.0 msec

B-138



03SN03 - 2003 TOYOTA TACOMA PRERUNNER 4 DOOR MPV

8 January 2003

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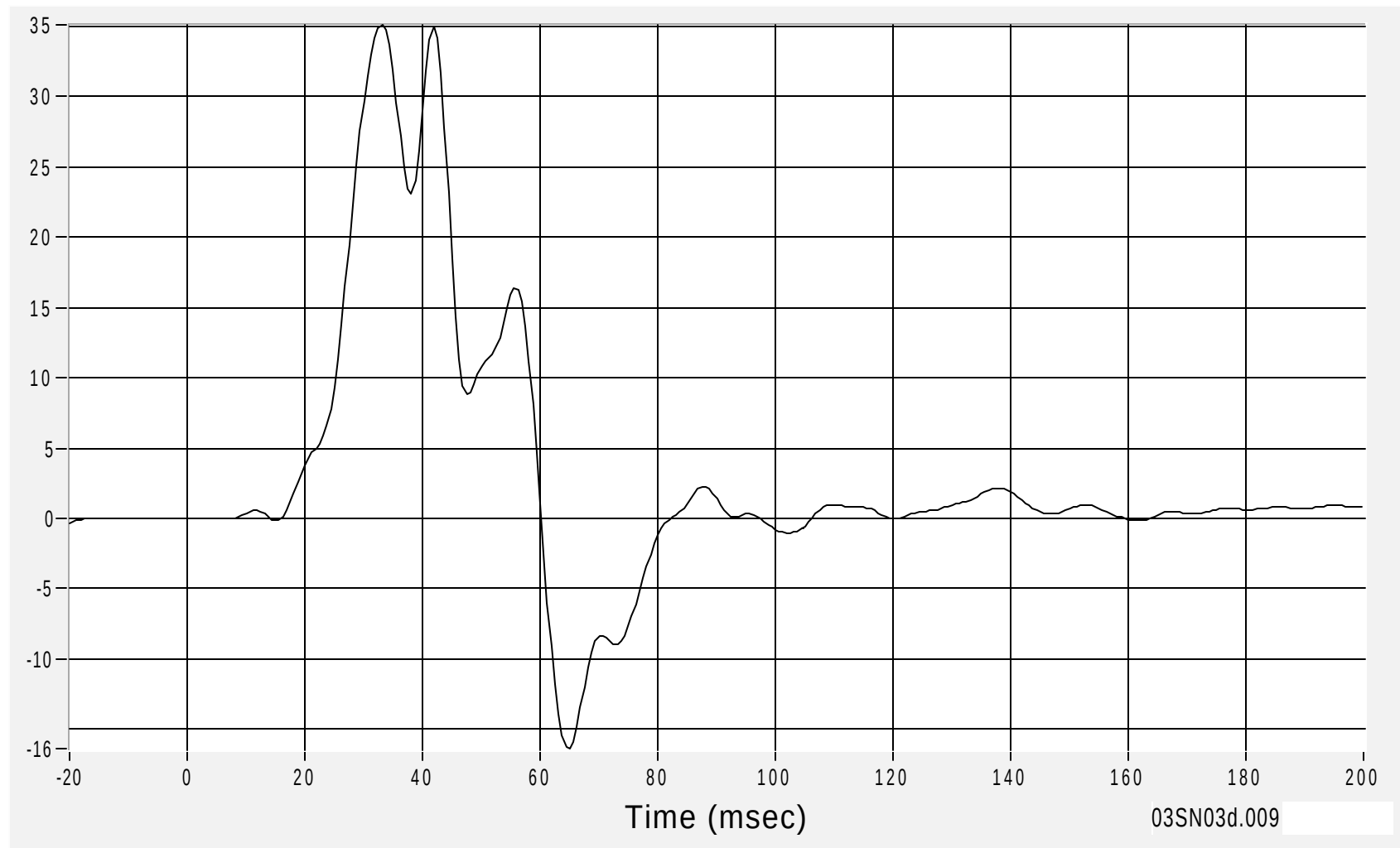
Driver Lower Spine (Y) Acceleration - Redundant

Acceleration (G's) FIR100

Max 35.1 G's at 33.1 msec

Min -16.4 G's at 65.0 msec

B-139



03SN03 - 2003 TOYOTA TACOMA PRERUNNER 4 DOOR MPV

8 January 2003

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Vehicle Crashworthiness Lab

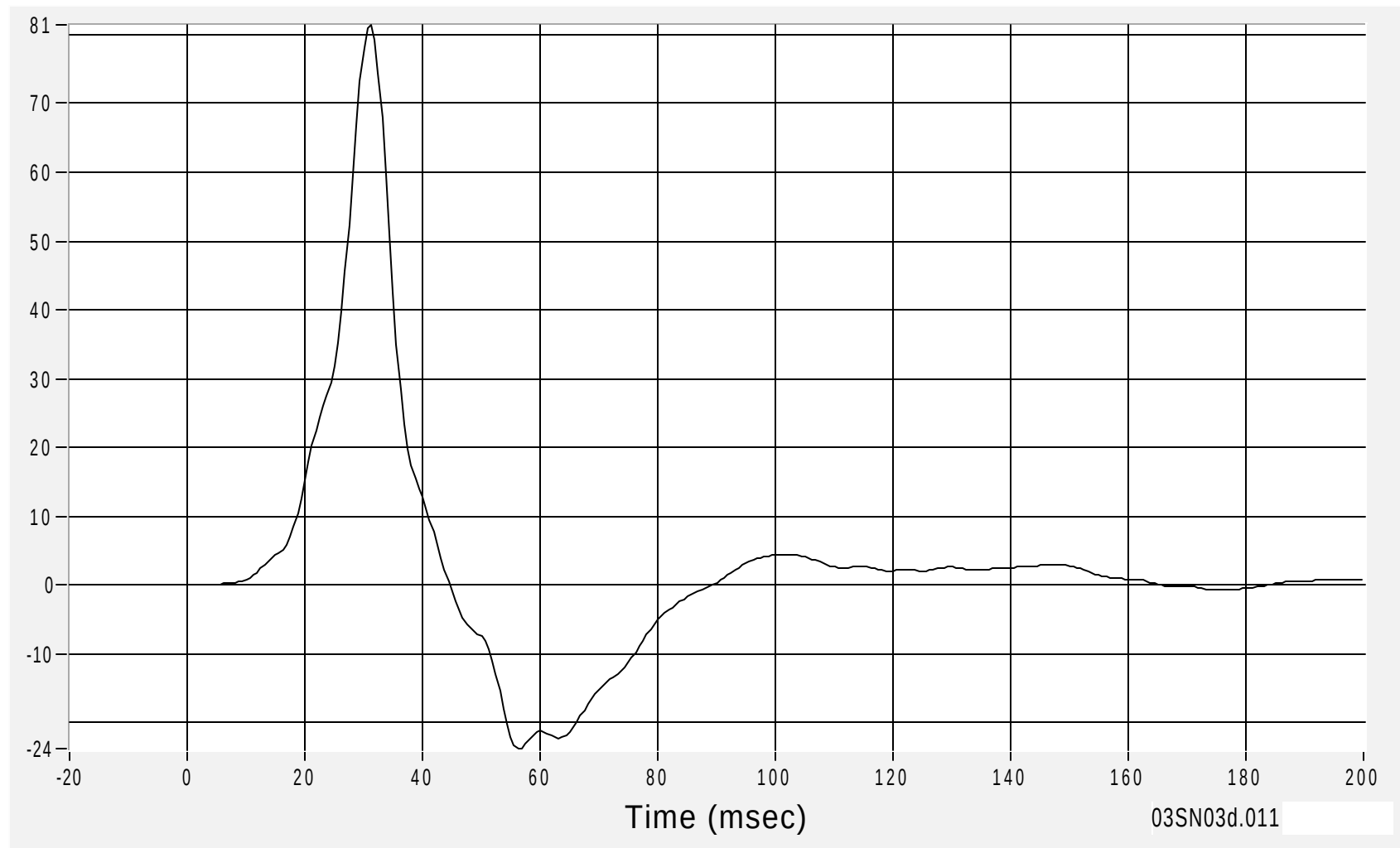
Driver Pelvic (Y) Acceleration - Redundant

Acceleration (G's) FIR100

Max 81.4 G's at 31.2 msec

Min -23.8 G's at 56.2 msec

B-140



03SN03 - 2003 TOYOTA TACOMA PRERUNNER 4 DOOR MPV

8 January 2003

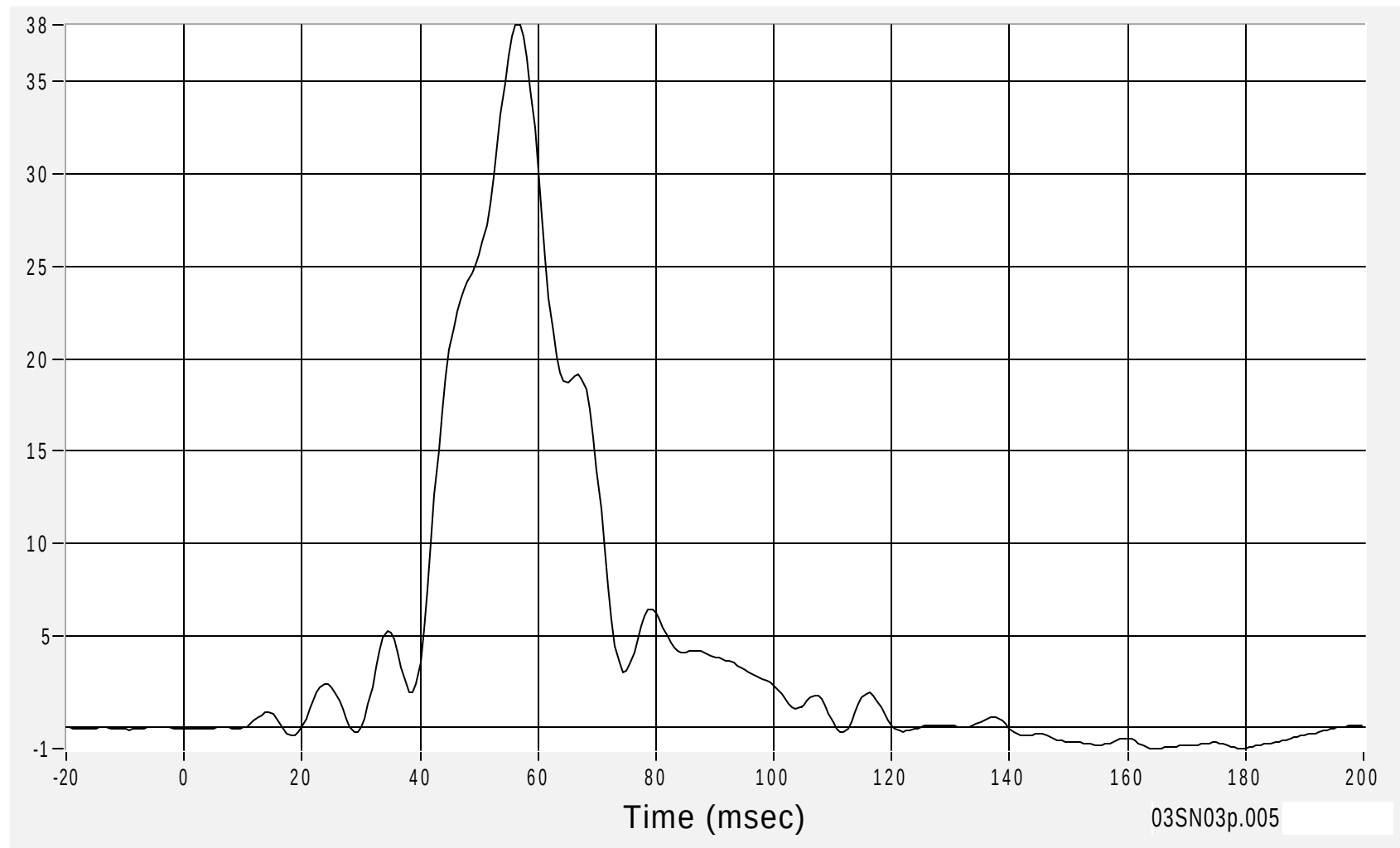
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Passenger Upper Rib (Y) Acceleration - Redundant

Acceleration (G's) FIR100

Max 38.1 G's at 56.9 msec
Min -1.1 G's at 165.0 msec

B-141



03SN03 - 2003 TOYOTA TACOMA PRERUNNER 4 DOOR MPV

8 January 2003

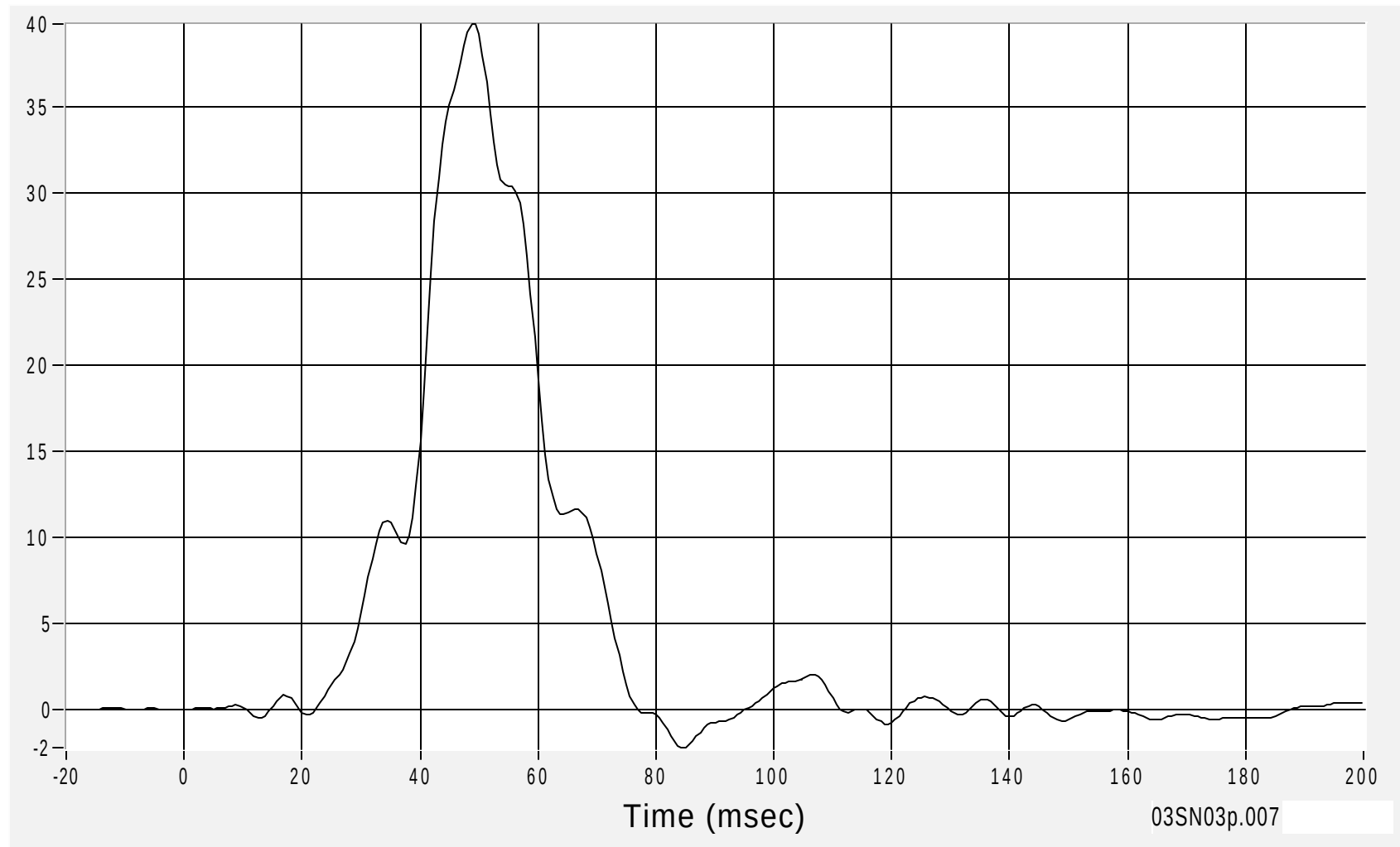
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Passenger Lower Rib (Y) Acceleration - Redundant

Acceleration (G's) FIR100

Max 39.8 G's at 48.8 msec
Min -2.3 G's at 84.4 msec

B-142



03SN03 - 2003 TOYOTA TACOMA PRERUNNER 4 DOOR MPV

8 January 2003

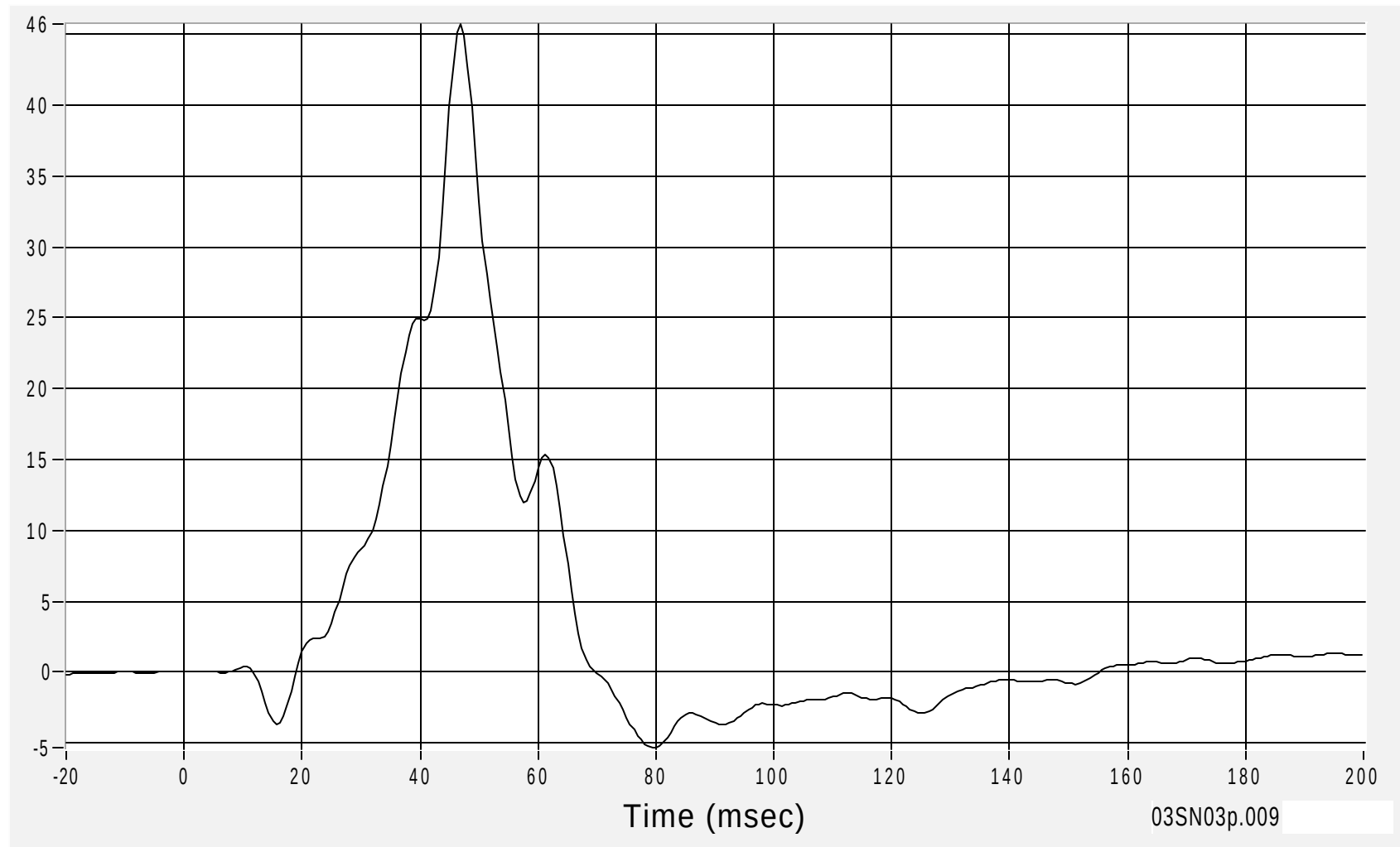
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Passenger Lower Spine (Y) Acceleration - Redundant

Acceleration (G's) FIR100

Max	45.7	G's	at	46.9	msec
Min	-5.3	G's	at	79.4	msec

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03SN03 - 2003 TOYOTA TACOMA PRERUNNER 4 DOOR MPV

8 January 2003

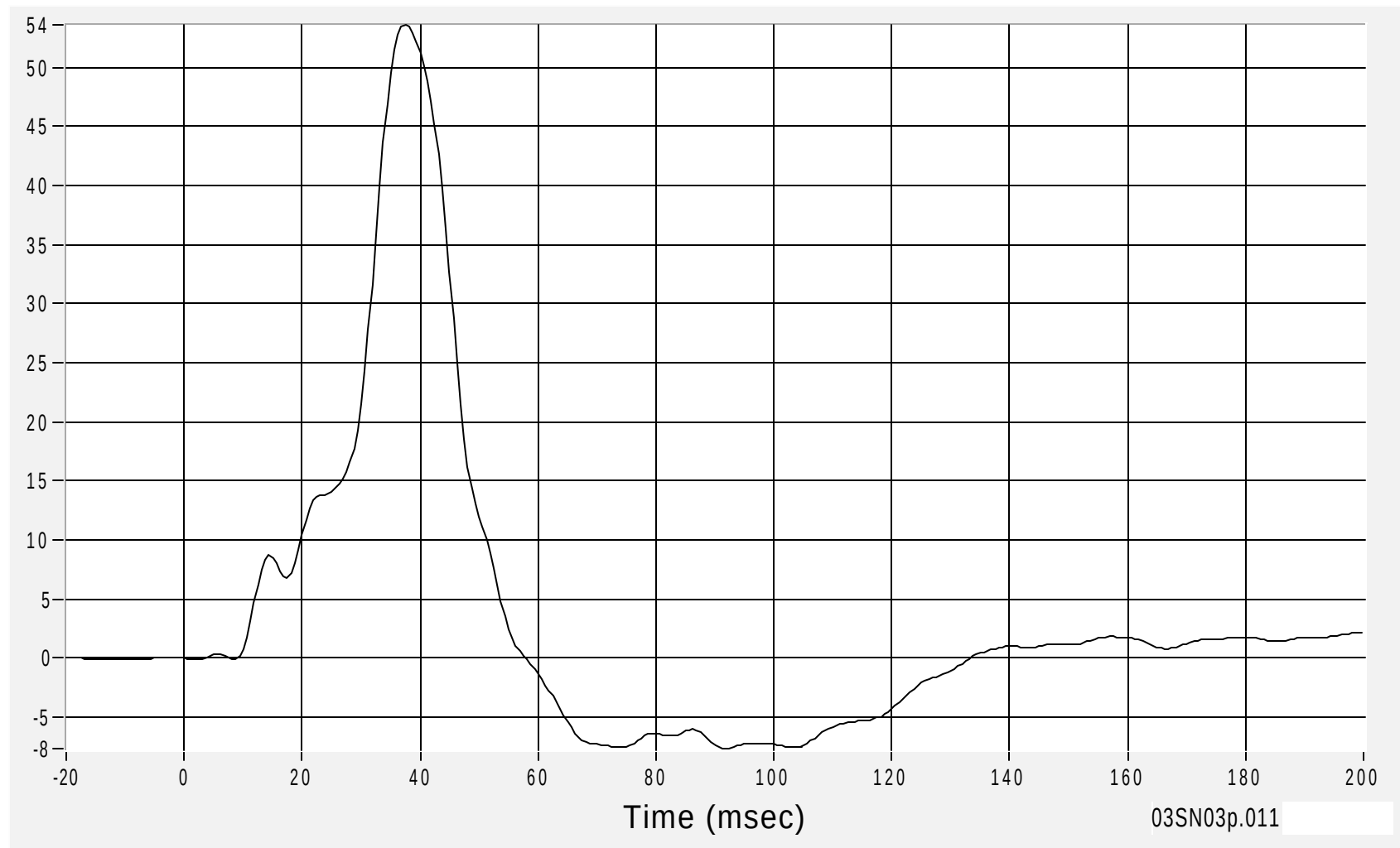
Medical College of Wisconsin
Vehicle Crashworthiness Lab

Passenger Pelvic (Y) Acceleration - Redundant

Acceleration (G's) FIR100

Max	53.6	G's	at	37.5	msec
Min	-7.6	G's	at	91.9	msec

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03SN03 - 2003 TOYOTA TACOMA PRERUNNER 4 DOOR MPV

8 January 2003

Medical College of Wisconsin
Vehicle Crashworthiness Lab

APPENDIX C

SID CONFIGURATION AND VERIFICATION RESULTS

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**VERIFICATION TEST RESULTS SUMMARY
PRE AND POST TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial Number SID H3 056 Test Sequences 02 and 03

TEST	PRE		POST	
	COMMENTS	BY	COMMENTS	BY
EXTERNAL DIMENSIONS	Pass all requirements	Mark Meyer	Pass all requirements	Mark Meyer
THORACIC SHOCK ABSORBER TEST	Pass all requirements	John Humm		
LATERAL THORAX IMPACT TEST	Pass all requirements	Mark Meyer	Pass all requirements	Mark Meyer
LATERAL PELVIS IMPACT TEST	Pass all requirements	Mark Meyer	Pass all requirements	Mark Meyer
ABDOMINAL COMPRESSION	Pass all requirements	John Humm		
LUMBAR FLEXION	Pass all requirements	Mark Meyer		
HYBRID III LATERAL NECK TEST	Pass all requirements	Mark Meyer	Pass all requirements	Mark Meyer
HYBRID III LATERAL HEAD DROP	Pass all requirements	Mark Meyer	Pass all requirements	Mark Meyer

SID Serial Number SID H3 058 Test Sequences 03 and 04

TEST	PRE		POST	
	COMMENTS	BY	COMMENTS	BY
EXTERNAL DIMENSIONS	Pass all requirements	Mark Meyer	Pass all requirements	Mark Meyer
THORACIC SHOCK ABSORBER TEST	Pass all requirements	John Humm		
LATERAL THORAX IMPACT TEST	Pass all requirements	Mark Meyer	Pass all requirements	Mark Meyer
LATERAL PELVIS IMPACT TEST	Pass all requirements	Mark Meyer	Pass all requirements	Mark Meyer
ABDOMINAL COMPRESSION	Pass all requirements	John Humm		
LUMBAR FLEXION	Pass all requirements	Mark Meyer		
HYBRID III LATERAL NECK TEST	Pass all requirements	Mark Meyer	Pass all requirements	Mark Meyer
HYBRID III LATERAL HEAD DROP	Pass all requirements	Mark Meyer	Pass all requirements	Mark Meyer

SUMMARY
SID PRE AND POST VERIFICATION

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial Number	SID H3 056 SID H3 058	Test Sequences	02 and 03 (056) 03 and 04 (058)
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TEST PARAMETER	SPECIFICATION	SID H3 056		SID H3 058	
		PRE	POST	PRE	POST
MEASUREMENTS					
Date	-	06Jan03	20Jan03	06Jan03	20Jan03
Sequential Test Number	-	02	03	03	04
Temperature (°C)	18.9-25.5	21.2	20.5	21.2	20.5
Relative Humidity (%)	10-70	32.3	12.0	32.3	12.0
SH – Seated Height (mm)	889-909	908	905	902	909
RH – Rib Height (mm)	501-521	507	506	504	509
HP – Hip Pivot Height (mm)	99	99/99	99/99	99/99	99/99
RD – Rib From Back Line (mm)	229-241	230	229	232	233
KH – Knee Pivot from Back Line (mm)	511-526	526/513	525/522	524/526	524/526
KV – Knee Pivot to Floor (mm)	490-505	502/495	505/493	496/495	502/495
HW – Hip Width (mm)	356-391	365	364	357	356
THORAX IMPACTS					
Date	-	06Jan03	20Jan03	06Jan03	20Jan03
Sequential Test Number	-	02	03	03	04
Temperature (°C)	18.9-25.5	20.5	20.5	20.5	20.5
Relative Humidity (%)	10-70	26.0	12.0	26.0	12.0
Probe Speed (m/s)	4.21-4.33	4.27	4.26	4.27	4.27
Upper Rib Acceleration (G)	37-46	42.1	40.0	44.0	42.2
Lower Rib Acceleration (G)	37-46	41.3	38.9	42.8	41.2
Lower Spine Acceleration (G)	15-22	20.5	19.1	19.6	19.1
PELVIS IMPACTS					
Date	-	06Jan03	20Jan03	06Jan03	20Jan03
Sequential Test Number	-	02	03	03	04
Temperature (°C)	18.9-25.5	20.5	20.5	20.5	20.5
Relative Humidity (%)	10-70	26.0	12.0	26.0	12.0
Probe Speed (m/s)	4.21-4.33	4.27	4.27	4.27	4.28
Pelvis Acceleration (G)	40-60	50.3	43.1	43.2	41.8
THORACIC SHOCK ABSORBER					
Shock Absorber ID Number	-	406	-	03130164	-
Damper Setting	1-10	6	-	5	-
Date	-	11Nov02		11Nov02	-
Sequential Test Number	-	01		01	-
Temperature	18.9-25.5	23.1	-	23.1	-
Relative Humidity	10-70	18.9	-	18.9	-
Probe Speed (m/s) Low	3.05	3.05	-	3.05	-
Force (N)	836 – 1125	1070.7	-	929.5	-
Displacement (mm)	30 – 35	30.1	-	30.6	-
Probe Speed (m/s) Middle	4.27	4.27	-	4.27	-
Force (N)	1730 – 2099	1880.6	-	1745.5	-
Displacement (mm)	32 – 37	33.2	-	34.3	-
Probe Speed (m/s) High	6.10	6.10	-	6.10	-
Force (N)	3741 – 4448	3797.5	-	36.0	-
Displacement (mm)	33 - 40	39.1	-	4026.9	-

TEST PARAMETER	SPECIFICATION	SID H3 056		SID H3 058	
		PRE	POST	PRE	POST
ABDOMINAL COMPRESSION					
Date	-	12Nov02	-	12Nov02	-
Sequential Test Number	-	01	-	01	-
Temperature (°C)	18.9-25.5	24.2	-	24.2	-
Relative Humidity (%)	10-70	27.6	-	27.6	-
Force at 13 mm (N)	104-162	116.8	-	114.6	-
Force at 19 mm (N)	163-221	163.8	-	163.1	-
Force at 25 mm (N)	222-280	224.8	-	233.8	-
Force at 33 mm (N)	325-391	335.1	-	362.3	-
LUMBAR FLEXION					
Date	-	12Nov02	-	12Nov02	-
Sequential Test Number	-	01	-	01	-
Temperature (°C)	18.9-25.5	24.2	-	24.2	-
Relative Humidity (%)	10-70	27.6	-	27.6	-
Force at 0° (N)	0-26.7	0	-	0	-
Force at 0° (N)	97.8-151.2	142	-	103	-
Force at 0° (N)	151.2-204.6	161	-	166	-
Force at 0° (N)	204.6-258	206	-	217	-
Return Angle	12° Maximum	0.9	-	3.2	-
HYBRID III LATERAL NECK					
Date	-	04Jan03	17Jan03	04Jan03	17Jan03
Sequential Test Number	-	02	03	03	04
Temperature (°C)	18.9-25.5	21.5	20.7	21.5	20.7
Relative Humidity (%)	10-70	30.3	32.5	30.3	32.5
Pendulum Speed (m/s)	6.89-7.13	7.10	7.11	7.10	7.10
Pendulum Pulse 10ms (m/s)	1.96-2.55	2.01	2.44	1.96	2.44
Pendulum Pulse 20ms (m/s)	4.12-5.10	4.44	4.93	4.12	5.09
Pendulum Pulse 30ms (m/s)	5.73-7.01	6.82	6.77	6.04	6.96
Pendulum Pulse 40 –70 ms (m/s)	6.27-7.64	7.22	6.72	7.39	6.88
Max Head rotation (deg)	64-78	72.1	72.6	77.4	71.6
Head angle crosses zero (ms)	50-70	53.8	55.0	58.2	50.6
Peak Moment (Nm)	88-108	89.1	88.3	92.3	90.3
Moment crosses zero (ms)	40-60	45.8	50.0	43.3	44.9
Max rotation wrt peak moment (ms)	0-20	14.3	10.7	7.7	7.0
HYBRID III LATERAL HEAD DROP					
Date	-	02Jan03	09Jan03	02Jan03	09Jan03
Sequential Test Number	-	02	03	03	04
Temperature (°C)	18.9-25.5	21.2	20.6	21.2	20.6
Relative Humidity (%)	10-70	32.3	31.4	32.3	31.4
Resultant Max (G)	120-150	122.4	126.0	141.8	145.0
Longitudinal Max (G)	<15	13.5	10.5	10.5	10.1

DUMMY INSPECTION LIST**PRE AND POST TEST****CONFIGURED FOR LEFT SIDE IMPACT**

SID Serial Number

SID H3 056

SID H3 058

Test Sequences

02 and 03 (056)

03 and 04 (058)

		SID H3 056		SID H3 058	
		PRE	POST	PRE	POST
	Date	06Jan03	20Jan03	06Jan03	20Jan03
	Performed By	Mark Meyer	Mark Meyer	Mark Meyer	Mark Meyer
PART	INSPECTION	Pass	Pass	Pass	Pass
Skin	Visual	Pass	Pass	Pass	Pass
Head	Visual, Ballast, Accelerometer Mount	Pass	Pass	Pass	Pass
Neck	Visual and Palpated, Cable Torque	Pass	Pass	Pass	Pass
Spine Box	Visual, Ballast, Weldment, Accelerometer Mount	Pass	Pass	Pass	Pass
Rib Cage	Visual, Palpated, Measured, Stiffness	Pass	Pass	Pass	Pass
Sternum	Visual	Pass	Pass	Pass	Pass
Lumbar Spine	Visual	Pass	Pass	Pass	Pass
Abdomen	Visual	Pass	Pass	Pass	Pass
Pelvis	Visual, Palpated, Accelerometer Mount	Pass	Pass	Pass	Pass
Upper Legs	Visual	Pass	Pass	Pass	Pass
Knees	Visual, Stops, Inserts	Pass	Pass	Pass	Pass
Lower Legs	Visual, Range of Motion	Pass	Pass	Pass	Pass
Ankles	Visual, Range of Motion	Pass	Pass	Pass	Pass
Feet	Visual, Range of Motion	Pass	Pass	Pass	Pass
Joints	1 to 2 G Range	Pass	Pass	Pass	Pass
Other		None	None	None	None

APPENDIX D

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

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MDB INSTRUMENTATION	D-4

SID INSTRUMENTATION**FRONT SID NO. 058**

	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
HEAD X ACCELERATION	J35641	ENDEVCO	01Nov02
HEAD Y ACCELERATION	J19089	ENDEVCO	05Nov02
HEAD Z ACCELERATION	J34364	ENDEVCO	05Nov02
SIX AXIS UPPER NECK LOAD CELL (FX, FY, FZ, MX, MY, MZ)	0452	DENTON ATD	18Nov02
UPPER RIB ACCELERATION	J36031	ENDEVCO	04Nov02
LOWER RIB ACCELERATION	J35932	ENDEVCO	06Nov02
LOWER SPINE ACCELERATION	J21552	ENDEVCO	05Nov02
PELVIS ACCELERATION	J35937	ENDEVCO	04Nov02
UPPER RIB REDUNDANT ACCELERATION	J18553	ENDEVCO	01Nov02
LOWER RIB REDUNDANT ACCELERATION	J36616	ENDEVCO	05Nov02
LOWER SPINE REDUNDANT ACCELERATION	J35839	ENDEVCO	04Nov02
PELVIS REDUNDANT ACCELERATION	J32565	ENDEVCO	15Nov02

REAR SID NO. 056

	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
HEAD X ACCELERATION	P16867	ENDEVCO	13Dec02
HEAD Y ACCELERATION	J36018	ENDEVCO	04Nov02
HEAD Z ACCELERATION	J35768	ENDEVCO	14Nov02
SIX AXIS UPPER NECK LOAD CELL (FX, FY, FZ, MX, MY, MZ)	274	FTSS	12Nov02
UPPER RIB ACCELERATION	J21551	ENDEVCO	05Nov02
LOWER RIB ACCELERATION	J36614	ENDEVCO	05Nov02
LOWER SPINE ACCELERATION	J36603	ENDEVCO	01Nov02
PELVIS ACCELERATION	J36617	ENDEVCO	04Nov02
UPPER RIB REDUNDANT ACCELERATION	J32665	ENDEVCO	01Nov02
LOWER RIB REDUNDANT ACCELERATION	J22318	ENDEVCO	15Nov02
LOWER SPINE REDUNDANT ACCELERATION	J32662	ENDEVCO	04Nov02
PELVIS REDUNDANT ACCELERATION	J22189	ENDEVCO	14Nov02

VEHICLE INSTRUMENTATION

	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
RIGHT FRONT SILL X	P12825	ENDEVCO	15Nov02
RIGHT FRONT SILL Y	P21820	ENDEVCO	06Nov02
RIGHT FRONT SILL Z	P22993	ENDEVCO	06Nov02
RIGHT REAR SILL X	P22230	ENDEVCO	14Nov02
RIGHT REAR SILL Y	P13725	ENDEVCO	14Nov02
RIGHT REAR SILL Z	P13846	ENDEVCO	15Nov02
REAR FLOORPAN ABOVE AXLE X	98G98D22-Z04	ENTRAN	15Nov02
REAR FLOORPAN ABOVE AXLE Y	98B98A26-D05	ENTRAN	15Nov02
REAR FLOORPAN ABOVE AXLE Z	98G98E11-K02	ENTRAN	15Nov02
LEFT REAR SILL Y	P22318	ENDEVCO	13Dec02
LEFT FRONT SILL Y	P21137	ENDEVCO	13Dec02
LEFT FRONT DOOR CENTERLINE Y	P23573	ENDEVCO	14Nov02
RIGHT REAR OCCUPANT COMP Y	P23595	ENDEVCO	15Nov02
MID-REAR OF LEFT FRONT DOOR Y	98F98E11-K10	ENTRAN	13Dec02
LEFT FRONT DOOR UPPER C/L Y	98F98C27-B04	ENTRAN	15Nov02
MID-REAR OF LEFT REAR DOOR Y	P21898	ENDEVCO	13Dec02
LEFT REAR DOOR UPPER C/L Y	N/A	N/A	N/A
LEFT LOWER B-PILLAR Y	P22298	ENDEVCO	13Dec02
LEFT MIDDLE B-PILLAR Y	P22323	ENDEVCO	13Dec02
LEFT LOWER A-PILLAR Y	P23025	ENDEVCO	13Dec02
LEFT UPPER A-PILLAR	P22965	ENDEVCO	13Dec02
FRONT SEAT TRACK Y	P22315	ENDEVCO	13Dec02
REAR SEAT TRACK Y	P22312	ENDEVCO	13Dec02
VEHICLE CG X	P13598	ENDEVCO	14Nov02
VEHICLE CG Y	P13868	ENDEVCO	15Nov02
VEHICLE CG Z	P13869	ENDEVCO	14Nov02

MDB INSTRUMENTATION

MDB CG X	P22322	ENDEVCO	14Nov02
MDB CG Y	P21151	ENDEVCO	27Nov02
MDB CG Z	98B98A26-D10	ENTRAN	14Nov02
MDB REAR FRAME MEMBER X	P22350	ENDEVCO	27Nov02
MDB REAR FRAME MEMBER Y	P22978	ENDEVCO	27Nov02