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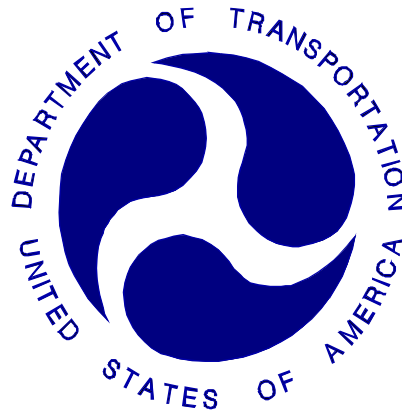
**NEW CAR ASSESSMENT PROGRAM
SIDE IMPACT TEST**

NISSAN MOTOR CO.
2002 NISSAN SENTRA
4-DOOR SEDAN

NHTSA NUMBER: M25203

VERIDIAN ENGINEERING TEST NUMBER: 8652-SNCAP-04

VERIDIAN ENGINEERING
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March 1, 2002

FINAL REPORT

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

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				14. Sponsoring Agency Code NPS-10																			
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16. Abstract A 55/28 kph 90 ⁰ Impact Moving Deformable Barrier NCAP Side Impact Test was conducted on the subject 2002 Nissan Sentra 4-Door Sedan in accordance with the specifications of the Office of Crashworthiness Standards Test Procedure for the generation of consumer information on vehicle side crash protection. This test was conducted at the Veridian Engineering Crash Test Facility in Buffalo, New York, on March 1, 2002. The impact velocity of the Moving Deformable Barrier (MDB) was 61.96 kph, and the ambient temperature at the struck (driver's) side of the target vehicle at the time of impact was 21.1 ⁰ C. The target vehicle post-test maximum crush was 364 mm at level 2. The test or target vehicle's performance is given below: <table align="center"> <tr> <td></td> <td><u>Front SID</u></td> <td></td> </tr> <tr> <td>Left Upper Rib Acceleration:</td> <td><u>93</u></td> <td>g's</td> </tr> <tr> <td>Left Lower Rib Acceleration:</td> <td><u>89</u></td> <td>g's</td> </tr> <tr> <td>Lower Spine Acceleration:</td> <td><u>98</u></td> <td>g's</td> </tr> <tr> <td>Thoracic Trauma Index (TTI):</td> <td><u>95</u></td> <td>g's</td> </tr> <tr> <td>Pelvis Acceleration (PEV):</td> <td><u>106</u></td> <td>g's</td> </tr> </table> The two doors on the struck side of the vehicle did not separate from the body at the hinges or latches and the opposite doors did not open during the side impact event.							<u>Front SID</u>		Left Upper Rib Acceleration:	<u>93</u>	g's	Left Lower Rib Acceleration:	<u>89</u>	g's	Lower Spine Acceleration:	<u>98</u>	g's	Thoracic Trauma Index (TTI):	<u>95</u>	g's	Pelvis Acceleration (PEV):	<u>106</u>	g's
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17. Key Words New Car Assessment Program (NCAP) Side Impact MDB Side Impact Dummy (SID)				18. Distribution Statement <u>Copies of this report are available from:</u> National Highway Traffic Safety Administration Technical Reference Division Room 5108 (NAD-52) 400 Seventh St., S.W. Washington, D.C. 20590 Telephone No. (202) 366-4946 ATTN: Robert Hornicle																			
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SECTION 1

PURPOSE AND TEST PROCEDURE

This side impact test is part of the FY2001 New Car Assessment Program Side Impact Protection sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract No. DTNH22-98-D-02001. The purpose of this test was to generate comparative side impact performance in a 2002 Nissan Sentra 4-Door Sedan. The test was conducted in accordance with the Office of Crashworthiness Standards' Laboratory Test Procedure dated July 1997.

SECTION 2

SUMMARY OF SIDE IMPACT TEST

A 2002 Nissan Sentra 4-Door Sedan was impacted on the left or driver's side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the monorail at a velocity of 61.96 kph (38.5 mph). The target vehicle was stationary and was positioned at an angle of 63° to the line of forward motion. The side impact test was conducted by the Veridian Engineering Transportation Sciences Center in Buffalo, New York on March 1, 2002. Pre- and post-test photographs of the test vehicle, the moving deformable barrier (MDB), and the side impact dummies (SIDs) are included in Appendix A.

One restrained Side Impact Dummy (SID) was placed in the driver (Pos. #1) designated seating position according to the instructions specified in the OCWS Side Impact Laboratory Test Procedure which is dated July, 1997. The side impact test was documented by one real-time camera and 10 high-speed cameras. Camera locations and other pertinent camera information are included in this report.

The SID was instrumented with the following accelerometers:

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

A summary of the side impact dummy (SID) configuration and verification test data can be found in Appendix C. A total of 42 channels of data were recorded. Appendix B contains the vehicle, MDB and dummy response data traces.

The following table summarizes the results of the test.

Injury Criteria	Front SID
TTI (g)	95
PEV (g)	106

SECTION 3

SUMMARY OF TEST RESULTS

DATA SHEET 1

GENERAL TEST AND VEHICLE PARAMETER DATA

TEST VEHICLE INFORMATION:

Year/Make/Model/Body Style: 2002 Nissan Sentra 4-Door Sedan

Vehicle Body Color: Blue VIN: 3N1CB51D02L640627

Vehicle NHTSA No.: M25203 Month & Year of Manufacture: 01/02

Engine Data: 4 Cylinders; - CID; 1.8 Liters; - cc

Engine Placement: - Longitudinal; or X Lateral

Transmission: 5 Speed; X Manual; - Automatic; - Overdrive

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

Odometer Reading 330 km

Options: - A/C; X Power Steering; X Power Brakes; - Power Windows

DATA FROM TIRE PLACARD

Tire Pressure* (at capacity); 230 kPa FRONT
230 kPa REAR

Recommended Tire Size: P185/65R14

Tires on Test Vehicle: P185/65R14 ; Manufacturer: Dunlop

Vehicle Capacity Data:

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

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

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

Vehicle Max Capacity Loading = 374 kg (A)

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

Vehicle Cargo Capacity = 33.8 kg (A-B)

TEST VEHICLE DELIVERED WEIGHT WITH MAXIMUM FLUIDS:

Left Front = 344.5 kg Left Rear = 228.5 kg

Right Front = 353.5 kg Right Rear = 208.5 kg

TOTAL FRONT = 698.0 kg TOTAL REAR = 437.0 kg

% of Total Weight = 61.5% % % of Total Weight = 38.5 %

TOTAL WEIGHT = 1135.0 kg

* Tire pressure used in test.

DATA SHEET 1 (continued)

GENERAL TEST VEHICLE PARAMETER DATA

Vehicle: 2002 Nissan Sentra 4-Door Sedan

NHTSA No. M25203

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:

Total Test Vehicle Delivered Weight with Max. Fluids = 1135.0 kg (A)
Maximum Cargo Carrying Capacity of Test Vehicle = 33.8 kg (B)
Weight of instrumented Side Impact Dummies (2 X 81.2 kg) = 162.4 kg (C)
TEST VEHICLE TARGET WEIGHT: = 1331.2 kg (A+B+C)

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

Left Front = 377.0 kg Left Rear = 315.0 kg
Right Front = 374.5 kg Right Rear = 269.5 kg
TOTAL FRONT = 751.5 kg TOTAL REAR = 584.5 kg
% of Total Weight = 56.3% % % of Total Weight = 43.8% %
TOTAL TEST WEIGHT = 1336.0 kg

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

Left Front = 358.0 kg Left Rear = 306.5 kg
Right Front = 360.5 kg Right Rear = 298.5 kg
TOTAL FRONT = 718.5 kg TOTAL REAR = 605.0 kg
% of Total Weight = 54.3% % % of Total Weight = 45.7% %
TOTAL TEST WEIGHT = 1323.5 kg

TEST VEHICLE ATTITUDE (all dimensions in millimeters):

AS DELIVERED:

Left Front 676 Right Front 681 Left Rear 655 Right Rear 667

FULLY LOADED:

Left Front 660 Right Front 673 Left Rear 616 Right Rear 637

READY FOR TEST:

Left Front 676 Right Front 676 Left Rear 625 Right Rear 627†

Test Vehicle Wheelbase: 2531 millimeters

C.G. = 1157 millimeters rearward of front wheel centerline

TOTAL VEHICLE LENGTH:

Right Side = 4397 millimeters
Left Side = 4403 millimeters
Centerline = 4502 millimeters

† Vehicle manufacturer's representative approved the right rear wheel attitude prior to the test.

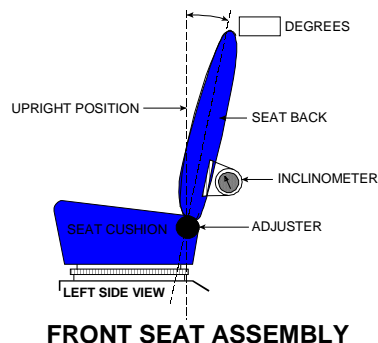
DATA SHEET 1 (continued)

GENERAL TEST VEHICLE PARAMETER DATA

Vehicle: 2002 Nissan Sentra 4-Door Sedan

NHTSA No. M25203

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



FRONT SEAT CUSHION PLACEMENT: With the forward most position defined as detent 0, the seat was positioned in detent 10 (neutral position).

Total Length of Adjustment Travel: 238 millimeters

Total Number of Adjustment Positions or Detents: 21

FRONT SEAT BACK ADJUSTMENT POSITION: With the forward most position defined as 0, the seat back was positioned in detent 5.

Seat Back Torso Angle: 21 degrees

SECOND POSITION SEAT:

Total Length of Fore/Aft Adjustment Travel: 0 millimeters

Seat Back Adjustment Position: fixed

ADJUSTABLE STEERING COLUMN POSITION: Mid-position (column at 24 degrees from horizontal)

WINDOW POSITIONS: Left Front: Closed Left Rear: Closed

Right Front: Removed Right Rear: Removed

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

AMOUNT OF STODDARD SOLVENT IN FUEL TANK:

50 liters (Fuel Tank Usable Capacity)

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

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

Wheelbase = 2531 millimeters

Impact Point is 326 millimeters rearward of front axle centerline
(which is 940 millimeters forward of the wheelbase midpoint)

Actual Impact Point is 323 millimeters rearward of front axle centerline

DATA SHEET 2

TEST VEHICLE SUMMARY OF RESULTS

VEHICLE IDENTIFICATION:

Vehicle Year/Make/Model: 2002 Nissan Sentra

Body Style: 4-Door Sedan

VIN: 3N1CB51D02L640627

NHTSA No.: M25203

Test Date: March 1, 2002

Overall Length = 4502 millimeters; Overall Width = 1700 millimeters

VEHICLE TEST WEIGHT (Pre-Test):

Left Front = 358.0 kg Left Rear = 306.5 kg

Right Front = 360.5 kg Right Rear = 298.5 kg

TOTAL FRONT = 718.5 kg TOTAL REAR = 605.0 kg

TOTAL VEHICLE WEIGHT 1323.5 kg

Wheelbase = 2531 millimeters

Longitudinal C.G. from Center of Front Axle = 1157 millimeters

Impact Angle with Respect to Impactor = 90 degrees

ACTUAL IMPACT POINT

Actual Impact Point is 3 mm forward of nominal impact ref. line (Lateral)

Actual Impact Point is 9 mm below nominal impact point (Vertical)

MAXIMUM EXTERIOR STATIC CRUSH:

1. LEVEL 1 (258 mm above ground) = 195 millimeters

2. LEVEL 2 (464 mm above ground) = 364 millimeters

3. LEVEL 3 (598 mm above ground) = 327 millimeters

4. LEVEL 4 (848 mm above ground) = 304 millimeters

5. LEVEL 5 (1327 mm above ground) = 69 millimeters

Maximum Post-Test Intrusion = 364 millimeters

OCCUPANTS:

Front Passenger:

Rear Passenger:

Dummy Identification 016 / SID

022 / CRABI

Restraints Used 3-point active seat belt

Safety First Forerunner / LATCH

INSTRUMENTATION:

Number of Vehicle Data Channels: = 26

Number of Cameras: Onboard = 5

 Offboard = 8

 TOTAL = 13

DATA SHEET 3

MOVING DEFORMABLE BARRIER (MDB) SUMMARY

Vehicle: 2002 Nissan Sentra 4-Door Sedan

NHTSA No. M25203

MDB FACE MANUFACTURER AND SERIAL NUMBER:

Plascore: 072C1198-3; 021C1001

POSITION OF IMPACT (MDB) ON MONORAIL:

Crabbed 27° to left

MDB DETAILS:

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

MDB WEIGHT:

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

MAXIMUM STATIC CRUSH OF HONEYCOMB IMPACT FACE:

1. Row A at Center of Bumper Level	=	<u>83</u>	millimeters
2. Row B at Top of Bumper Level	=	<u>57</u>	millimeters
3. Row C at Mid Level	=	<u>112</u>	millimeters
4. Row D at Top of Stack Level	=	<u>148</u>	millimeters

INSTRUMENTATION:

Number of MDB Data Channels	=	<u>5</u>
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DATA SHEET 4

POST-TEST OBSERVATIONS

Vehicle: 2002 Nissan Sentra 4-Door Sedan

NHTSA No. M25203

TEST DUMMY INFORMATION AND CONTACT POINTS:

DESCRIPTION	FRONT SEAT	REAR SEAT
ATD Type/Serial No.	SID/016	CRABI/022
Head Contact:	Left side of face to left shoulder and window sill	Left side of head to upper CRS bolster and upper door trim
Upper Torso Contact:	Door trim above arm rest	CRS upper bolster
Lower Torso Contact:	Door trim below arm rest	CRS bolster
Left Knee Contact:	Door trim below window crank	CRS lower bolster
Right Knee Contact:	Left knee	None

POST TEST DOOR OPENING AND SEAT TRACK INFORMATION

DESCRIPTION	FRONT	REAR
Left Side Doors	Closed, latched and Inoperable	Closed, latched and Inoperable
Right Side Doors	Closed, latched and Operable	Closed, latched and Operable
Hatch/Other Door	-	None
Seat Movement (mm)	None	None
Seat Back Failure	None	None

POST TEST STRUCTURAL OBSERVATIONS

CRITICAL AREAS OF PERFORMANCE	
Pillar Performance	No visible tears or separations
Sill Separation	None
Windshield Damage	Left edge of windshield cracked
Window Damage	Left door windows shattered during the event
Other Notable Effects	Trunk lid opened during the event. The roof sheet metal separated from the roof rail above the left rear door. The length of the opening was approximately 220 mm.

AIR BAG DEPLOYMENT STATUS:

	DRIVER	FRONT PASSENGER	REAR PASSENGER
Front Air Bag	Yes	Yes	N/A
Side Air Bag	N/A	N/A	N/A
Side Curtain Bag	N/A	N/A	N/A

MDB LEFT EDGE IMPACT DATA

Measured Parameter	Units	Requirement	Value
Horizontal Offset	mm	± 50 mm	+3
Vertical Offset	mm	± 20 mm	-9

SECTION 4

OCCUPANT AND VEHICLE INFORMATION

DATA SHEET 5

SID INSTRUMENTATION DATA

Vehicle: 2002 Nissan Sentra 4-Door Sedan

NHTSA No. M25203

Front Dummy ID# 016					
Pos. Direction			Neg. Direction		
Max (g)		Time (msec)	Max (g)		Time (msec)
HEAD ACCELERATIONS:					
Longitudinal	X	48.0	182.2	-53.0	72.0
Lateral	Y	62.4	47.4	-22.0	55.0
Vertical	Z	104.9	53.4	-42.5	41.5
Resultant	R	105.6	53.4	-	-
HIC		1059.3			
RIB ACCELERATIONS:					
Upper Rib Lateral	Y	92.7	36.3	-28.4	68.1
Upper Rib Lateral	Y(R)	90.4	35.7	-29.1	68.1
Lower Rib Lateral	Y	88.9	36.3	-19.5	80.0
Lower Rib Lateral	Y(R)	87.2	36.3	-21.0	80.0
SPINE ACCELERATIONS:					
Lower Lateral	Y	98.1	30.0	-21.0	61.3
Lower Lateral	Y(R)	97.4	30.0	-27.4	60.7
PELVIC ACCELERATIONS:					
Lateral	Y	106.0	22.5	-25.5	48.1
Lateral	Y(R)	105.5	22.5	-25.8	47.5

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

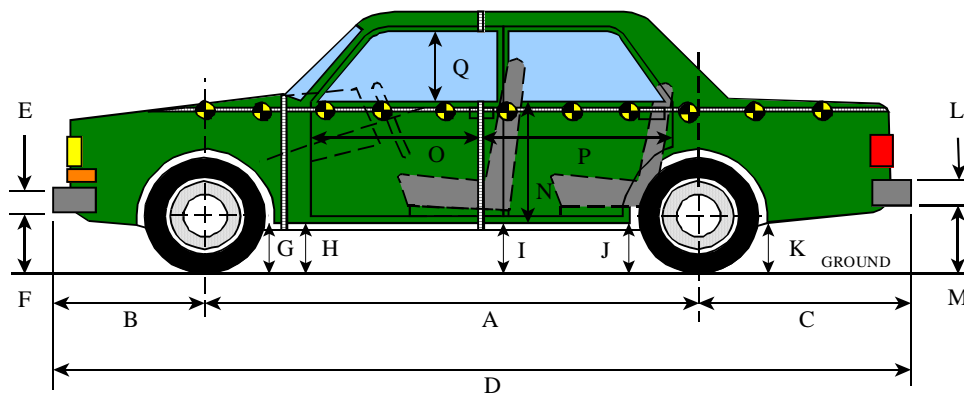
Note: Above data has been FIR filtered, Y(R) denotes redundant Y direction accelerometer.
 Head Accelerations are filtered at SAE Class 1000.

DATA SHEET 6

VEHICLE SIDE MEASUREMENTS

Vehicle: 2002 Nissan Sentra 4-Door Sedan

NHTSA No. M25203



LEFT SIDE VIEW

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

	PRE-TEST (as delivered)	PRE-TEST (as tested)	POST-TEST (as tested)	Δ CHANGE
A	2532	2531	2479	-52
B	931	-	971	971
C	1039	-	1038	1038
D	4502	-	4488	-14
E	330	-	330	0
F	255	250	302	52
G	231	214	268	54
H	232	215	296	81
I	226	203	267	64
J1	216	184	159	-25
J2	234	202	180	-22
K	275	236	255	19
L	290	-	290	0
M	315	278	290	12
N	622	-	565	-57
O	720	-	708	-12
P	1158	-	1051	-107
Q	455	-	436	-19
R	4397	-	4404	7
S	4403	-	4356	-47
T	1700	-	1500	-200

D = Length at Centerline

E&L = Bumper Thickness

R = Right Side Length

S = Left Side Length

T = Width at B-Pillar

J1 = To Pinch Weld

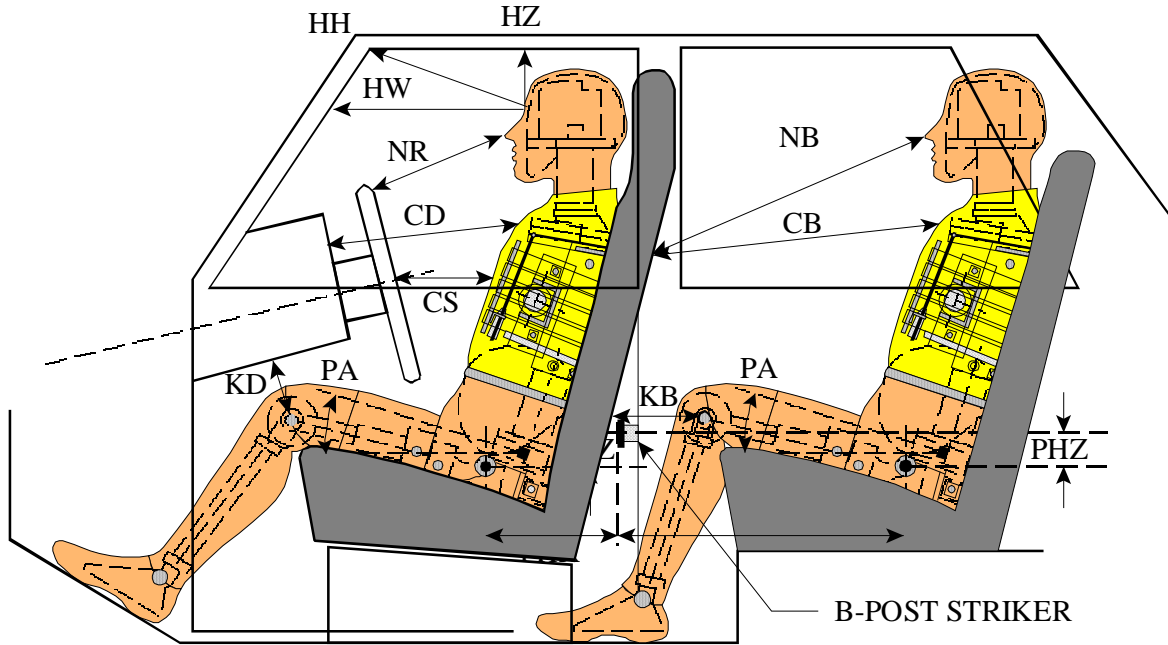
J2 = To Sill

DATA SHEET 7

SID LONGITUDINAL CLEARANCE DIMENSIONS

Vehicle: 2002 Nissan Sentra 4-Door Sedan

NHTSA No. M25203



LEFT SIDE VIEW

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

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

	DRIVER ID# 016
HH	346
HW	610
HZ	180
NR/NB	428
CD/CB	505
CS	288
KDL(KDA°)/KBL(KDA°)	164 / (34 °)
KDR(KBA°)/KBR(KBA°)	153 / (24 °)
PA°	24.5 °
PHX	25
PHZ	140

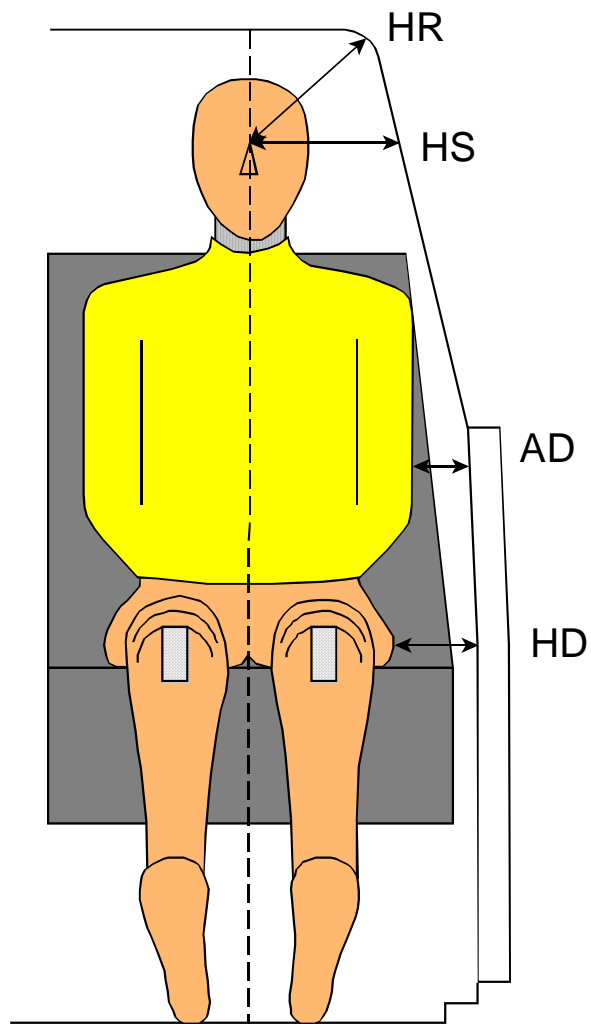
Note: 2-door vehicle shown. Rear dummy PHX & PHZ measurements for 4-door vehicle would use the C-post striker as a reference point.

DATA SHEET 8

SID LATERAL CLEARANCE DIMENSIONS

Vehicle: 2002 Nissan Sentra 4-Door Sedan

NHTSA No. M25203



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

DRIVER ID # 016			
HR	178		
HS	312		
AD*	LOWER:	98	UPPER: 100
HD	148		

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

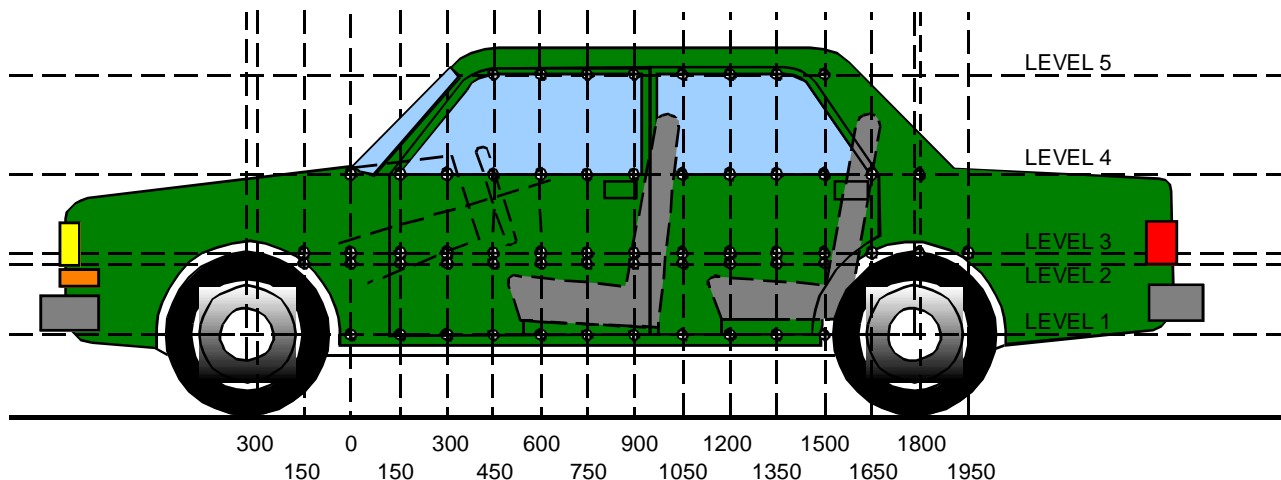
*Upper measurement is taken laterally at the center of the upper rib accelerometer height from the SID arm segment to the closest part of the vehicle side.

DATA SHEET 9

VEHICLE SIDE MEASUREMENTS

Vehicle: 2002 Nissan Sentra 4-Door Sedan

NHTSA No. M25203



LEFT SIDE VIEW

NOTE: All measurements are in millimeters (mm)

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

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

Measurements Along the Vertical 750 mm Line Shown Above:

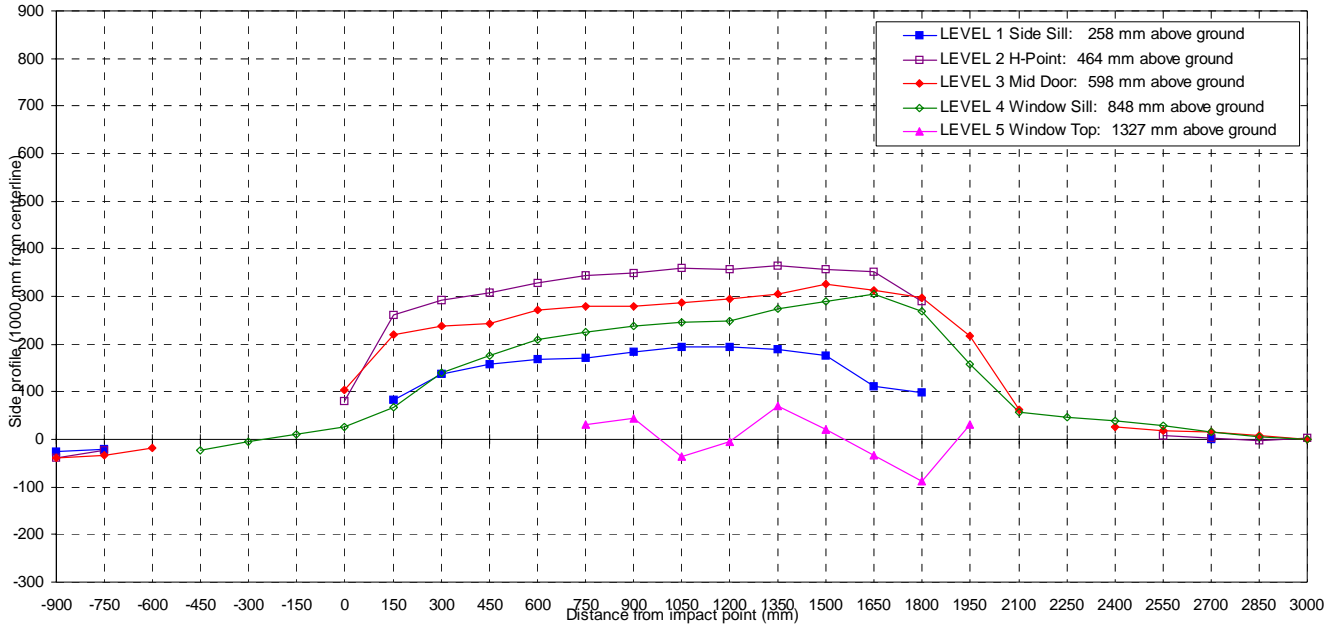
Level 5 @ Window Top	=	<u>1327</u>	millimeters
Level 4 @ Window Sill	=	<u>848</u>	millimeters
Level 3 @ Mid Door	=	<u>598</u>	millimeters
Level 2 @ Occupant H-Point	=	<u>464</u>	millimeters
Level 1 @ Sill Top Height	=	<u>258</u>	millimeters

DATA SHEET 10

VEHICLE EXTERIOR CRUSH PROFILES - ALL LEVELS

Vehicle: 2002 Nissan Sentra 4-Door Sedan

NHTSA No. M25203



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

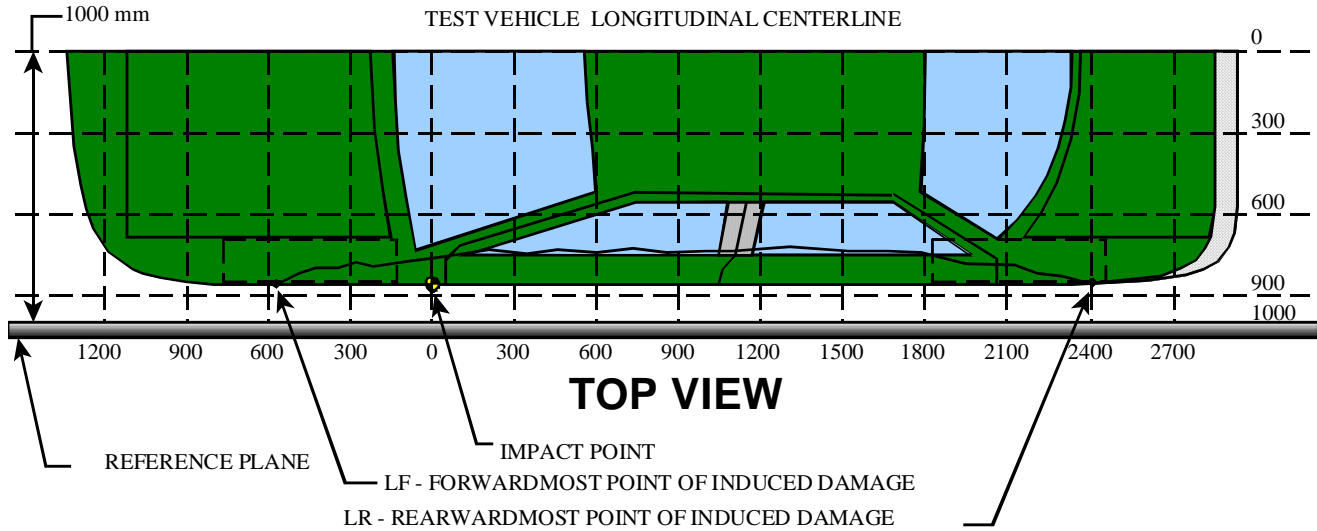
		DISTANCE IN MILLIMETERS (mm) FROM IMPACT POINT																												
LEVEL	HEIGHT (mm)		-900	-750	-600	-450	-300	-150	0	150	300	450	600	750	900	1050	1200	1350	1500	1650	1800	1950	2100	2250	2400	2550	2700	2850	3000	
LEVEL 1 SIDE SILL	258	PRE	278	247	--	--	--	--	--	237	238	233	231	232	229	228	230	226	224	230	217	--	--	--	--	--	245	--	--	
		POST	252	226	--	--	--	--	--	--	320	376	390	398	403	412	421	425	414	399	341	315	--	--	--	--	--	246	--	--
		CRUSH	-26	-21	N/A	N/A	N/A	N/A	N/A	N/A	83	138	157	167	171	183	193	195	188	175	111	98	N/A	N/A	N/A	N/A	N/A	1	N/A	N/A
LEVEL 2 H POINT	464	PRE	232	197	--	--	--	--	176	181	182	179	176	175	174	173	172	172	173	167	162	--	--	--	--	172	189	208	233	
		POST	193	173	--	--	--	--	255	442	473	488	505	519	523	533	528	536	531	519	451	--	--	--	--	180	192	206	236	
		CRUSH	-39	-24	N/A	N/A	N/A	N/A	79	261	291	309	329	344	349	360	356	364	358	352	289	N/A	N/A	N/A	N/A	8	3	-2	3	
LEVEL 3 MID DOOR	598	PRE	252	206	184	--	--	--	172	172	172	174	170	168	166	164	161	161	161	155	156	156	158	--	154	166	181	206	276	
		POST	214	173	165	--	--	--	276	393	410	417	442	448	445	450	457	466	488	468	454	374	219	--	181	185	196	214	277	
		CRUSH	-38	-33	-19	N/A	N/A	N/A	104	221	238	243	272	280	279	286	296	305	327	313	298	218	61	N/A	27	19	15	8	1	
LEVEL 4 WINDOW SILL	848	PRE	--	--	--	278	245	238	231	225	223	216	212	209	207	204	204	200	197	193	194	192	192	192	194	205	221	259	342	
		POST	--	--	--	254	241	248	256	292	362	392	421	435	444	449	453	473	487	497	464	351	248	239	233	234	237	263	342	
		CRUSH	N/A	N/A	N/A	-24	-4	10	25	67	139	176	209	226	237	245	249	273	290	304	270	159	56	47	39	29	16	4	0	
LEVEL 5 WINDOW TOP	1327	PRE	--	--	--	--	--	--	--	--	--	--	--	750	489	468	464	463	464	464	469	529	--	--	--	--	--	--	--	
		POST	--	--	--	--	--	--	--	--	--	--	--	781	533	432	458	532	485	430	381	560	--	--	--	--	--	--	--	
		CRUSH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	31	44	-36	-6	69	21	-34	-88	31	N/A	N/A	N/A	N/A	N/A	N/A	N/A	

DATA SHEET 11

VEHICLE DAMAGE PROFILE DISTANCES

Vehicle: 2002 Nissan Sentra 4-Door Sedan

NHTSA No. M25203



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

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

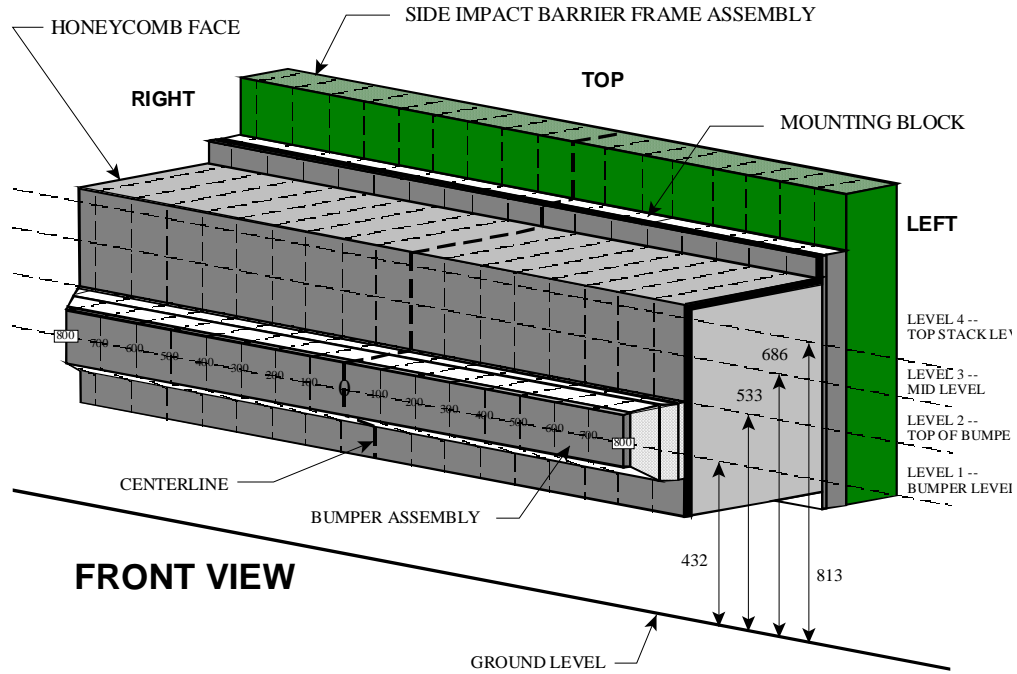
DPD MEASUREMENTS		POST TEST (mm)	PRETEST (mm)	STATIC CRUSH (mm)
1	(LR = 3000 mm)	236	233	3
2	2350	235	193	42
3	1700	496	165	331
4	1050	533	173	360
5	400	483	180	303
6	(LF = -250 mm)	243	243	0

DATA SHEET 12

EXTERIOR STATIC CRUSH FOR IMPACTOR FACE

Vehicle: 2002 Nissan Sentra 4-Door Sedan

NHTSA No. M25203



NOTE: Dimensions are shown in millimeters, mm

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

LEVEL	HEIGHT AT CL (mm)*		DISTANCE RIGHT OF CENTER (mm)									0	DISTANCE LEFT OF CENTER (mm)								
			800	700	600	500	400	300	200	100	100		200	300	400	500	600	700	800		
LEVEL 4 TOP STACK	813	PRE	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619		
		POST	608	597	597	599	606	618	612	613	615	619	622	626	634	653	678	722	767		
		CRUSH	-11	-22	-22	-20	-13	-1	-7	-6	-4	0	3	7	15	34	59	103	148		
LEVEL 3 MID LEVEL	686	PRE	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619		
		POST	625	607	604	610	611	625	621	615	615	617	620	625	625	633	651	681	731		
		CRUSH	6	-12	-15	-9	-8	6	2	-4	-4	-2	1	6	6	14	32	62	112		
LEVEL 2 TOP BUMPER	533	PRE	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619		
		POST	637	619	617	619	624	628	628	627	631	633	635	639	642	642	652	664	676		
		CRUSH	18	0	-2	0	5	9	9	8	12	14	16	20	23	23	33	45	57		
LEVEL 1 MID BUMPER	432	PRE	535	519	518	518	518	518	518	518	518	518	518	518	518	518	518	519	535		
		POST	588	560	550	550	560	560	558	557	559	561	563	564	564	569	580	602	617		
		CRUSH	53	41	32	32	42	42	40	39	41	43	45	46	46	51	62	83	82		

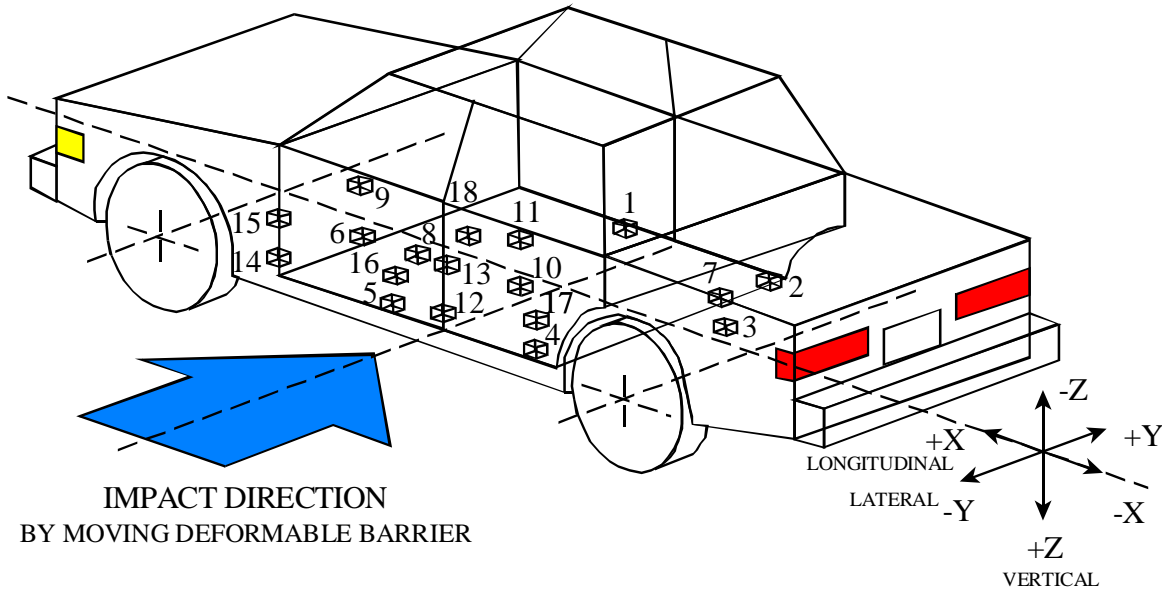
*Heights measured above ground level.

DATA SHEET 13

TEST VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Vehicle: 2002 Nissan Sentra 4-Door Sedan

NHTSA No. M25203



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

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

DATA SHEET 13 (continued)

VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Vehicle: 2002 Nissan Sentra 4-Door Sedan

NHTSA No. M25203

Accel. No.	Location	Coordinates (mm)±3 mm				Long. (x)		Lat. (y)		Vert. (z)		Resultant	
		X*	Y*	Z*		Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)
						pos.	neg.	pos.	neg.	pos.	neg.	pos.	neg.
1	Right Side Sill at Front Seat	2736	728	-261	pos.	2.8	56.4	29.2	9.8	7.0	48.2	29.4	9.8
					neg.	-9.6	15.2	-2.8	66.7	-8.3	14.7	-	-
2	Right Side Sill at Rear Seat	1882	663	-212	pos.	3.0	56.1	28.7	8.7	3.6	64.3	28.9	8.7
					neg.	-8.6	15.3	-2.9	68.8	-6.9	22.0	-	-
3	Rear Floorpan Above Axle	1023	-30	-434	pos.	8.3	40.9	31.9	9.7	21.1	11.0	39.2	10.1
					neg.	-11.6	9.6	-3.2	113.4	-12.1	17.7	-	-
4	Left Side Sill at Rear Seat	1881	-656	-214	pos.	-	-	95.5	7.6	-	-	-	-
					neg.	-	-	-33.4	47.9	-	-	-	-
5	Left Side Sill at Front Seat	2697	-652	-225	pos.	-	-	85.2	9.0	-	-	-	-
					neg.	-	-	-40.8	14.4	-	-	-	-
6	Left Front Door on Centerline	2510	-677	-738	pos.	-	-	153.0	18.0	-	-	-	-
					neg.	-	-	-180.3	25.2	-	-	-	-
7	Right Rear Occupant Compartment	1955	515	-162	pos.	-	-	28.5	8.8	-	-	-	-
					neg.	-	-	-3.3	68.5	-	-	-	-
8	Midrear of Left Front Door	2277	-689	-698	pos.	-	-	177.4	5.7	-	-	-	-
					neg.	-	-	-101.2	22.2	-	-	-	-
9	Left Front Door Upper Centerline	2522	-664	-843	pos.	-	-	269.6	17.5	-	-	-	-
					neg.	-	-	-178.0	27.5	-	-	-	-
10	Midrear of Left Rear Door	1455	-701	-700	Pos.	-	-	93.5	35.0	-	-	-	-
					neg.	-	-	-115.8	30.2	-	-	-	-
11	Left Rear Door Upper Centerline	1609	-673	-893	pos.	-	-	182.1	18.2	-	-	-	-
					neg.	-	-	-92.2	32.5	-	-	-	-

*Reference: X - Rear Bumper (+ Forward)

Y - Vehicle Centerline (+ To Right) Z - Ground Level (+ Down)

**Accelerometer was not requested by COTR.

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8652-SN/CAP-04

DATA SHEET 13 (continued)

VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Vehicle: 2002 Nissan Sentra 4-Door Sedan

NHTSA No. M25203

Accel. No.	Location	Coordinates (mm)±3 mm				Long. (x)		Lat. (y)		Vert. (z)		Resultant	
		X*	Y*	Z*		Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)
12	Left Lower B-Pillar	2083	-652	-363	pos.	-	-	290.2	8.1	-	-	-	-
					neg.	-	-	-224.8	13.8	-	-	-	-
13	Left Middle B-Pillar	2020	-650	-747	pos.	-	-	219.5	5.0	-	-	-	-
					neg.	-	-	-70.9	12.0	-	-	-	-
14**	Left Lower A-Pillar	3061	-670	-460	pos.	-	-	353.5	4.3	-	-	-	-
					neg.	-	-	-181.4	17.1	-	-	-	-
15	Left Middle A-Pillar	2982	-599	-981	pos.	-	-	25.1	17.5	-	-	-	-
					neg.	-	-	-2.4	25.9	-	-	-	-
16	Front Seat Track	2165	-592	-215	pos.	-	-	50.8	6.2	-	-	-	-
					neg.	-	-	-7.1	48.9	-	-	-	-
17	Rear Seat Track	1070	-412	-617	pos.	-	-	38.7	11.5	-	-	-	-
					neg.	-	-	-3.5	121.2	-	-	-	-
18†	Vehicle CG	2188	35	-413	pos.	14.9	186.8	69.5	14.5	20.3	16.7	71.1	14.5
					neg.	-12.6	72.9	-28.3	186.8	-17.4	22.8	-	-

* Reference: X - Rear Bumper (+ Forward)

Y - Vehicle Centerline (+ To Right) Z - Ground Level (+ Down)

** Noise in data, transducer opened during event.

† Accelerometer mount broke from the vehicle at approximately 15 ms.

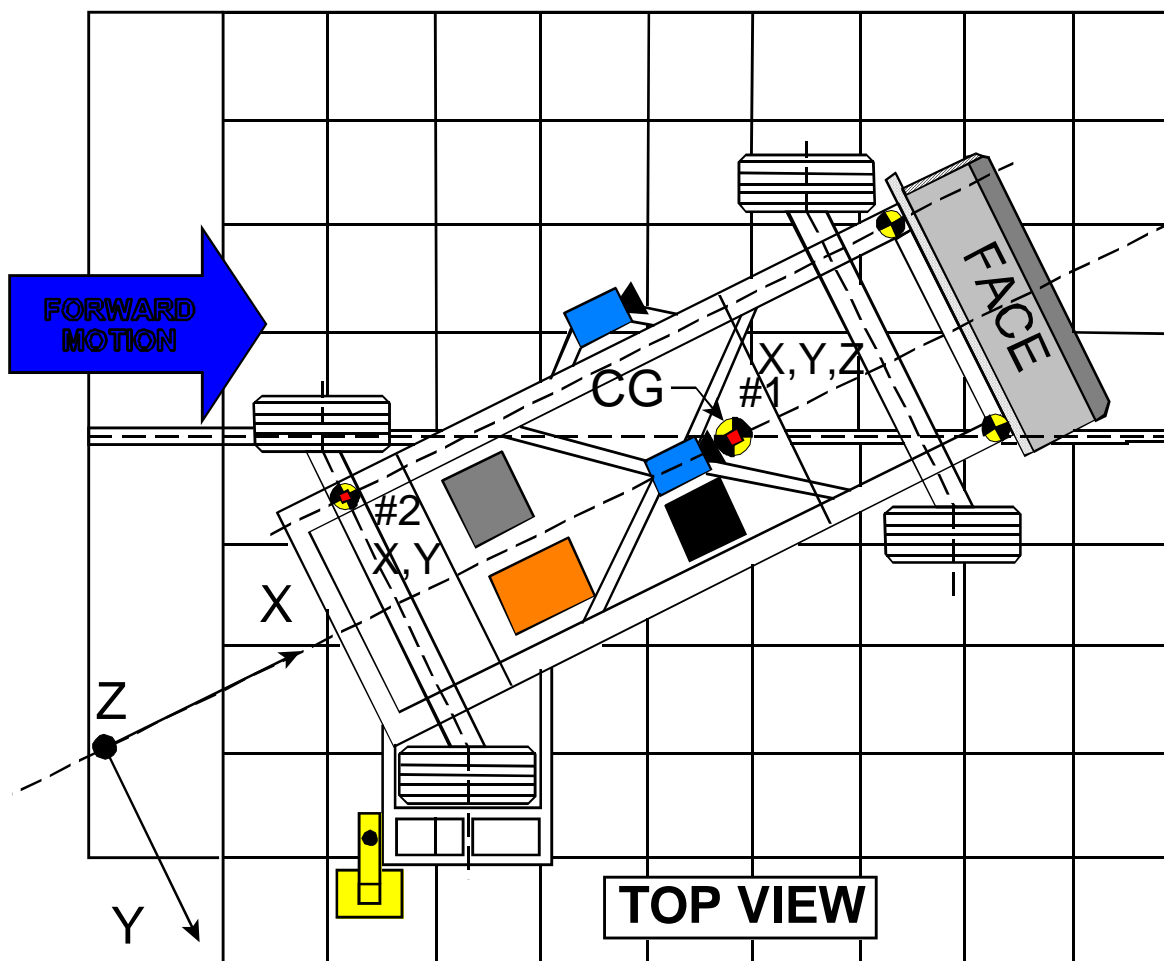
4-12

DATA SHEET 14

MDB ACCELEROMETER LOCATIONS AND DATA SUMMARY

Vehicle: 2002 Nissan Sentra 4-Door Sedan

NHTSA No. M25203



Accel. No.	Location	Coordinates (millimeters)			Pos. Direct.		Neg. Direct.	
		X*	Y*	Z*	Max (g)	Time (msec)	Max (g)	Time (msec)
1	MDB Center of Gravity							
	Longitudinal... X	1859	0	-330	0.9	135.8	-17.9	37.8
	Lateral..... Y				2.6	52.0	-8.8	24.3
	Vertical..... Z				8.8	26.5	-14.9	21.2
	Resultant..... R				22.1	21.0	-	-
2	Rear Frame Member							
	Longitudinal... X	386	-660	-660	2.2	128.5	-20.5	31.5
	Lateral..... Y				5.0	26.5	-1.6	77.3

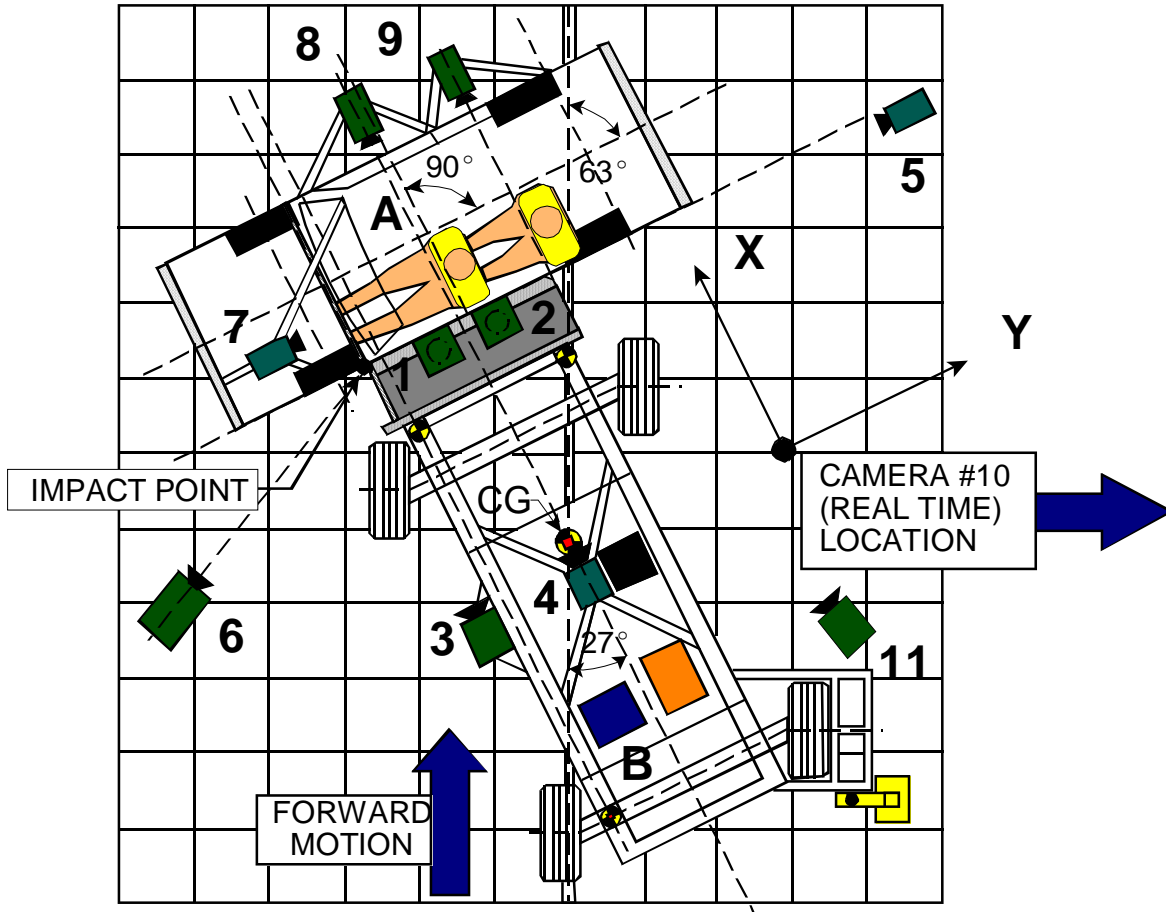
*Reference: X = Rear Bumper (+ Forward)
 Y = Vehicle Centerline (+ To Right)
 Z = Ground Level (+ Down)
 All measurements accurate to within ± 3 mm.

DATA SHEET 15

HIGH SPEED CAMERA LOCATIONS AND DATA SUMMARY

Vehicle: 2002 Nissan Sentra 4-Door Sedan

NHTSA No. M25203



Camera No.	View	Coordinates (millimeters)			Angle (deg.)	Lens (mm)	Film Speed (fps)
		X*	Y*	Z*			
1	Overhead view of test vehicle	290	915	-4880	-90	8	1005
2	Overhead closeup view of impact plane	150	850	-4880	-90	12.5	1005
3	MDB onboard closeup view of impact point	-1470	0	-847	0	13	1025
4	MDB onboard view of driver dummy	-1140	838	-1586	-17	7.5	1010
5	Right side ground level overall view	-100	9180	-1050	-2	25	1010
6	Left side ground level overall view	-1822	-1617	-1065	-5	13	1000
7	Test vehicle onboard driver front view	503	-362	-1255	-9	13	1005
8	Test vehicle onboard driver side view	1741	895	-995	-9	8	1000
9	Test vehicle onboard passenger side view	1732	1660	-1018	-13	8	1010
10	Real time film coverage of test	-	-	-	-	-	24
11	Secondary impact point view	-4025	1975	-1085	-3	25	1015

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

X = (Impact Point) + Forward
 Y = (Impact Point) + To Right
 Z = (Ground Level) + Down

SECTION 5

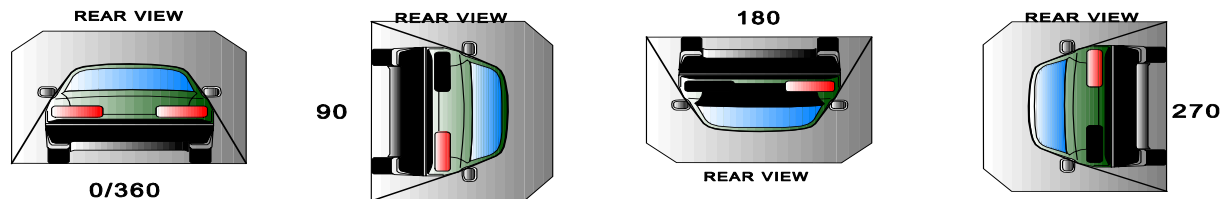
FUEL SYSTEM INTEGRITY

DATA SHEET 17

ROLLOVER DATA

Vehicle: 2002 Nissan Sentra 4-Door Sedan

NHTSA No.: M25203



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Stage	Rotation Time (spec. 1 -3 min)				FMVSS 301 Hold Time		Total Time				Next Whole Minute Interval	
	minutes	seconds	minutes	seconds	minutes	seconds	minutes	seconds	minutes	seconds	minutes	seconds
0° - 90°	1	19	5	5	6	19	7	19	6	19	7	19
90° - 180°	1	6	5	5	6	6	7	6	6	6	7	6
180°-270°	1	0	5	5	6	0	7	6	6	0	7	6
270°-360°	1	10	5	5	6	10	7	6	6	10	7	10

II. FMVSS 301 REQUIREMENTS: (Maximum allowable solvent spillage):

First 5 minutes from onset of rotation	6th min.	7th min.	8th min. (if required)
142 g	28 g	28 g	28 g

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

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

Note: Record spillage for whole minute intervals only as determined above.

IV. SOLVENT SPILLAGE LOCATION(S):

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

APPENDIX A

PHOTOGRAPHS

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



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8652-SNCAP-04

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



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M25203

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



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



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M25203

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



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



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



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8652-SNCCAP-04

M25203

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



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



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8652-SNCAP-04

M25203

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



Figure A-11: PRE-TEST RIGHT FRONT VIEW OF TEST VEHICLE



Figure A-12: POST-TEST RIGHT FRONT VIEW OF TEST VEHICLE



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



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



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8652-SNCAIP-04

Figure A-15: PRE-TEST FRONTAL VIEW OF IMPACTOR FACE



Figure A-16: POST-TEST FRONTAL VIEW OF IMPACTOR FACE



M25203

Figure A-17: PRE-TEST LEFT SIDE VIEW OF IMPACTOR FACE



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Figure A-18: POST-TEST LEFT SIDE VIEW OF IMPACTOR FACE



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8652-SNCAP-04

Figure A-19: PRE-TEST RIGHT SIDE VIEW OF IMPACTOR FACE



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8652-SNCAP-04

Figure A-20: POST-TEST RIGHT SIDE VIEW OF IMPACTOR FACE

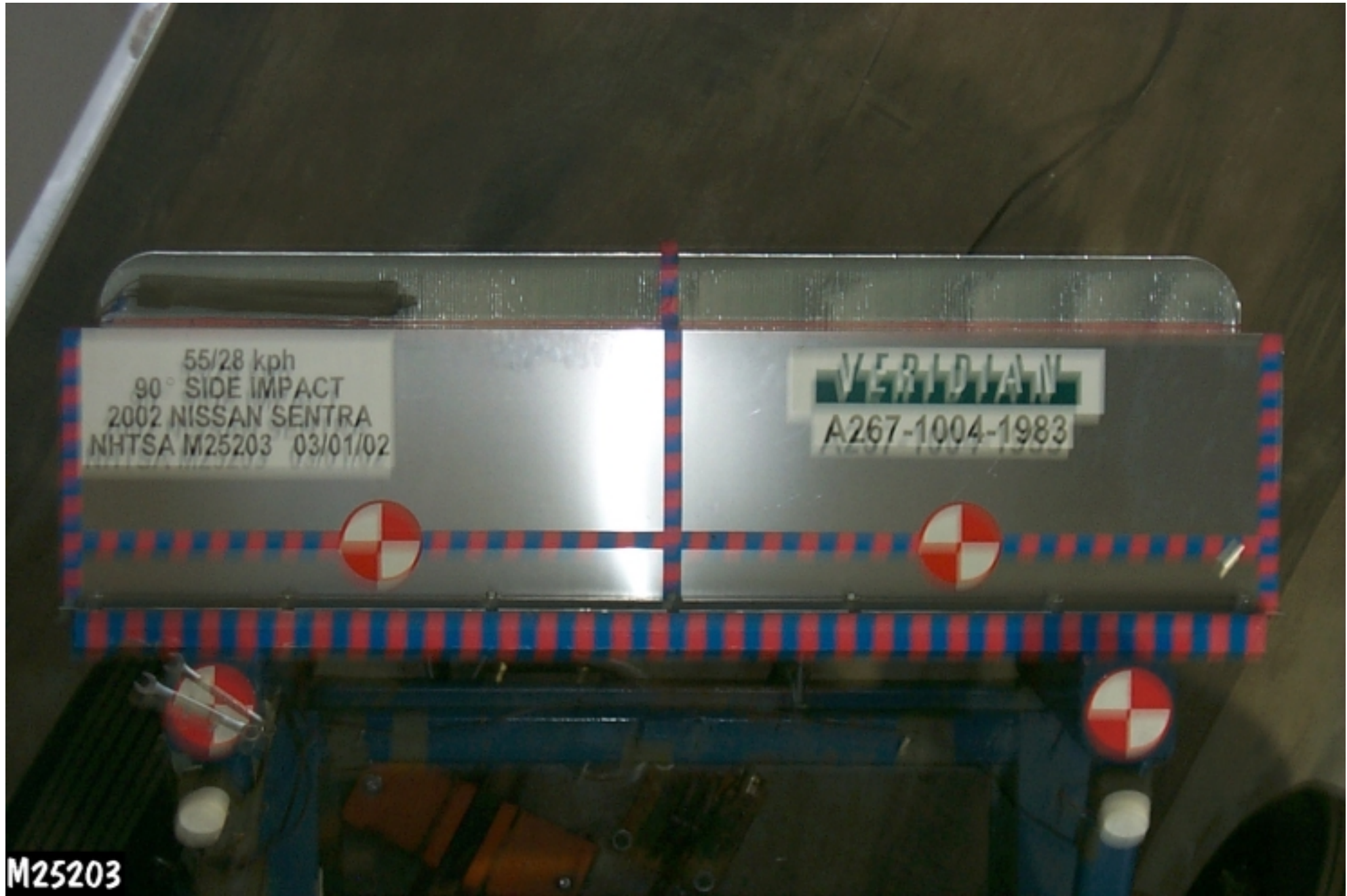


Figure A-21: PRE-TEST TOP VIEW OF IMPACTOR FACE



Figure A-22: POST-TEST TOP VIEW OF IMPACTOR FACE

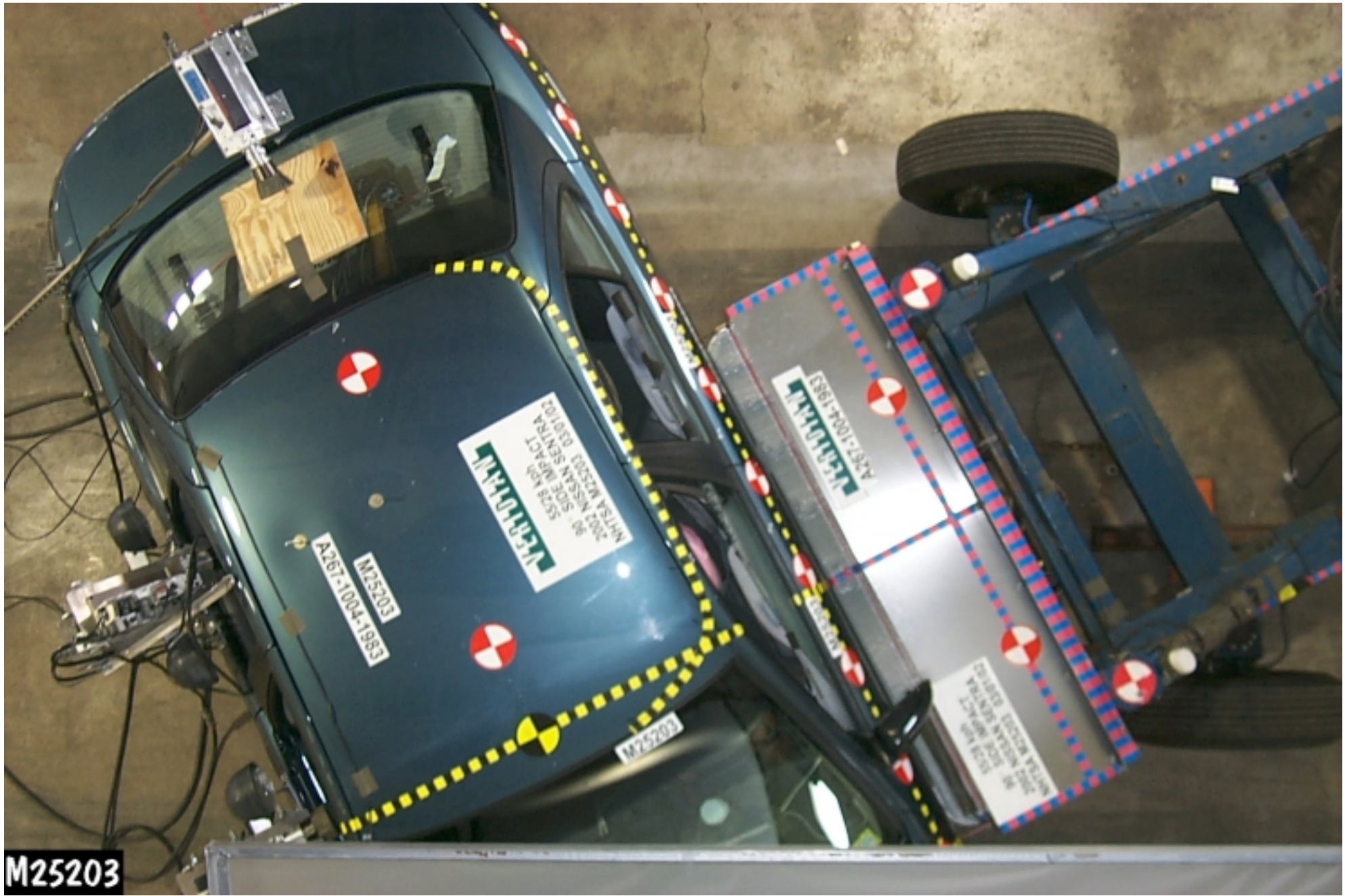


Figure A-23: PRE-TEST OVERHEAD VIEW OF ALIGNED MDB AND VEHICLE

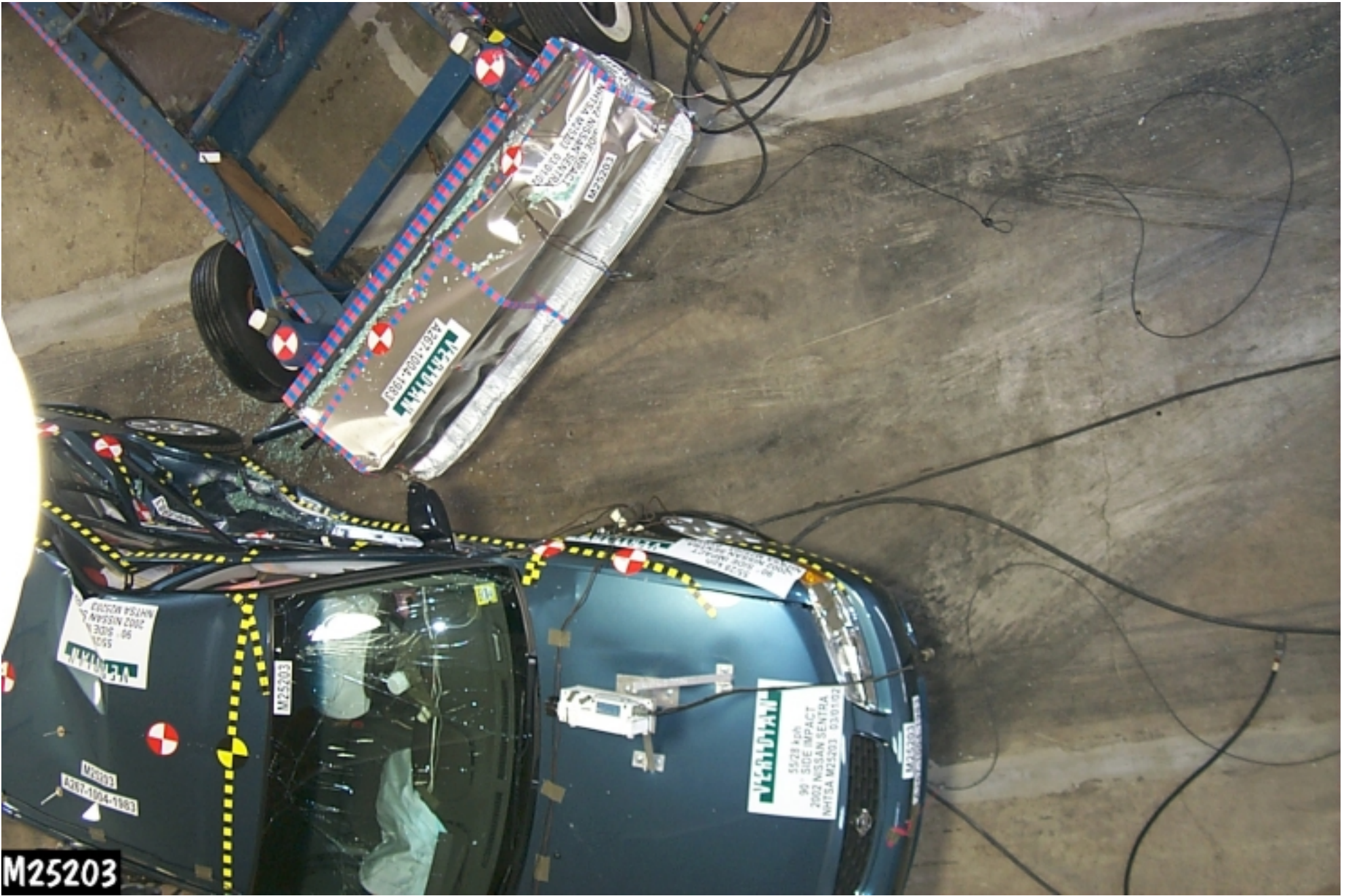


Figure A-24: POST-TEST OVERHEAD VIEW OF MDB AND VEHICLE



A-27

8652-SNCAP-04

M25203

Figure A-25: PRE-TEST RIGHT OCCUPANT COMPARTMENT VIEW OF FRONT SID



Figure A-26: POST-TEST RIGHT OCCUPANT COMPARTMENT VIEW OF FRONT SID



Figure A-27: PRE-TEST LEFT OCCUPANT COMPARTMENT VIEW OF FRONT SID



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Figure A-28: POST-TEST LEFT OCCUPANT COMPARTMENT VIEW OF FRONT SID



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Figure A-29: PRE-TEST INTERIOR OF FRONT DOOR



Figure A-30: POST-TEST INTERIOR OF FRONT DOOR SHOWING SID IMPACT LOCATIONS



M25203

Figure A-31: PRE-TEST LEFT SIDE VIEW OF MDB WITH IMPACTOR FACE IN POSITION



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Figure A-32: PRE-TEST RIGHT SIDE VIEW OF MDB WITH IMPACTOR FACE IN POSITION

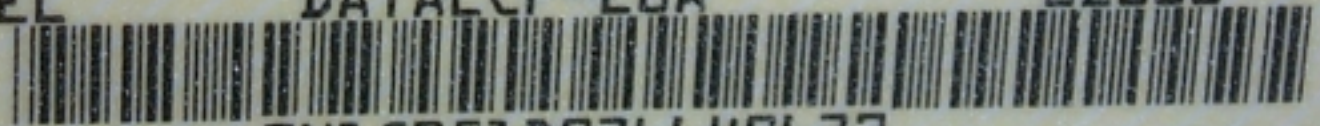


Figure A-33: POST-TEST CLOSE-UP VIEW OF IMPACT POINT TARGET

MANUFACTURED BY NISSAN MOTOR CO., LTD.
DATE 01/02. GVWR. 3549 LB
GAWR FR. 1922 LB GAWR RR. 1689 LB

THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR,
VEHICLE SAFETY, BUMPER AND THEFT PREVENTION STANDARDS
IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE.
SEE OWNER'S MANUAL FOR ADDITIONAL INFORMATION.

VIN 3N1CB51D02L640627 PASSENGER CAR.
COLOR TRIM TRANS AXLE ENGINE
BX6 X 'RS5F70A FR41 'QG18DE 1769 CC
MODEL DATA LCF-EUA 0Z000



3N1CB51D02L640627

M25203

Figure A-34: CLOSE-UP VIEW OF VEHICLE'S CERTIFICATION LABEL

VEHICLE CAPACITY WEIGHT	825 lbs.	SEATING CAPACITY	FRONT AVANT 2	TOTAL TOTAL	SPARE TIRE ROUE DE SECOURS	kPa (psi)
POIDS UTILE DU VEHICULE	374 kg	NOMBRE DE PLACES	REAR ARRIERE 3	5	T115/70*14	420 (60)
RECOMMENDED COLD TIRE INFLATION PRESSURE. PRESSION DE GONFLAGE RECOMMANDEE DES PNEUS FROIDS.					DO NOT USE IN EXCESS OF 50 MPH, 80 km/h. SEE OWNER'S MANUAL FOR ADDITIONAL INFORMATION. UTILISATION A UNE VITESSE MAX 50 MPH, 80 km/h. POUR LES DETAILS SE REFERER AU MANUEL DU CONDUCTEUR.	
TIRE SIZE DIMENSIONS	FRONT AVANT	kPa (psi)	REAR ARRIERE	kPa (psi)		
P185/65R14	230	(33)	230	(33)		

4Z012

M25203

Figure A-35: CLOSE-UP VIEW OF VEHICLE'S TIRE PLACARD LABEL



Figure A-36: IMPACT PHOTO

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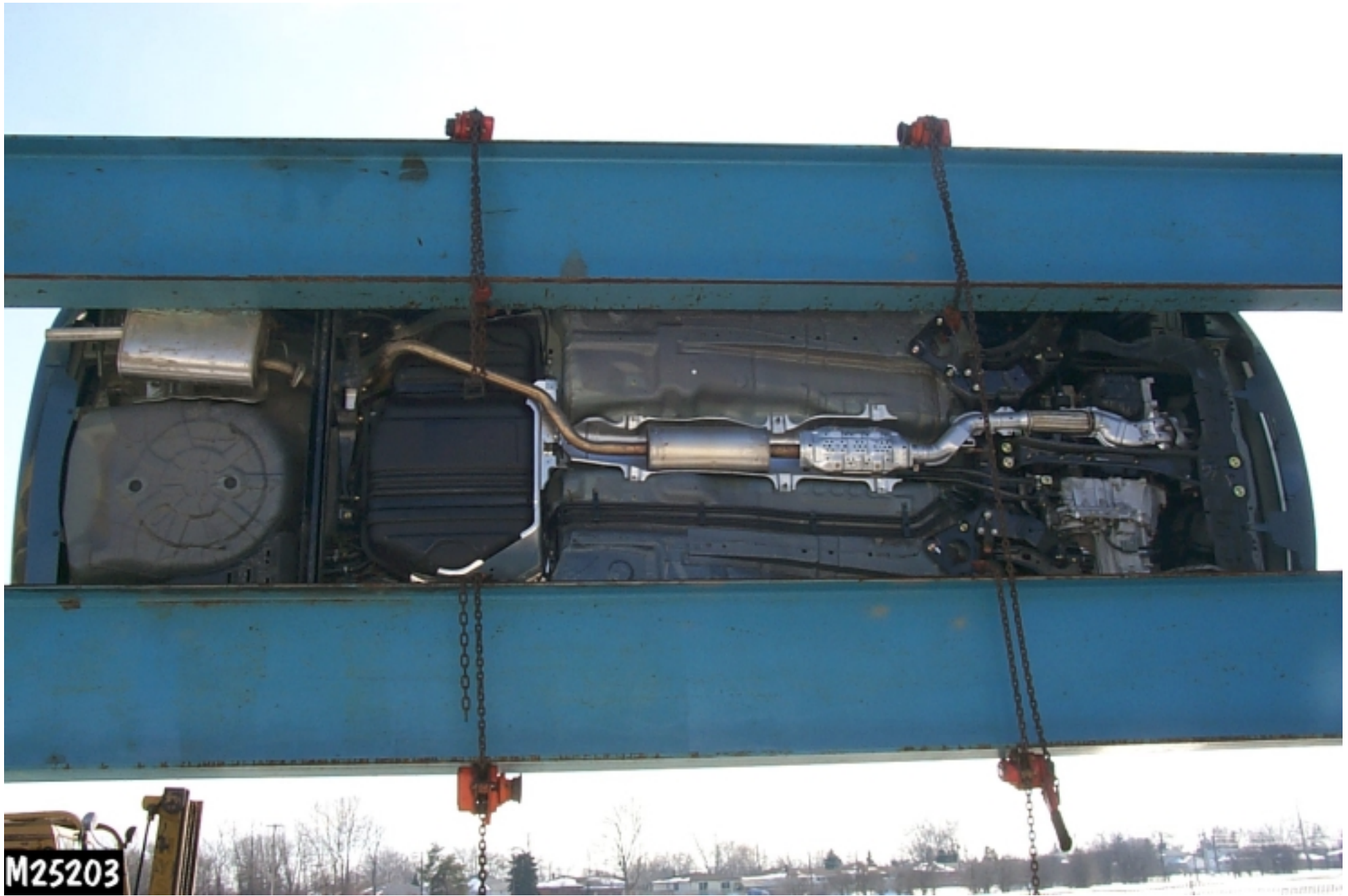
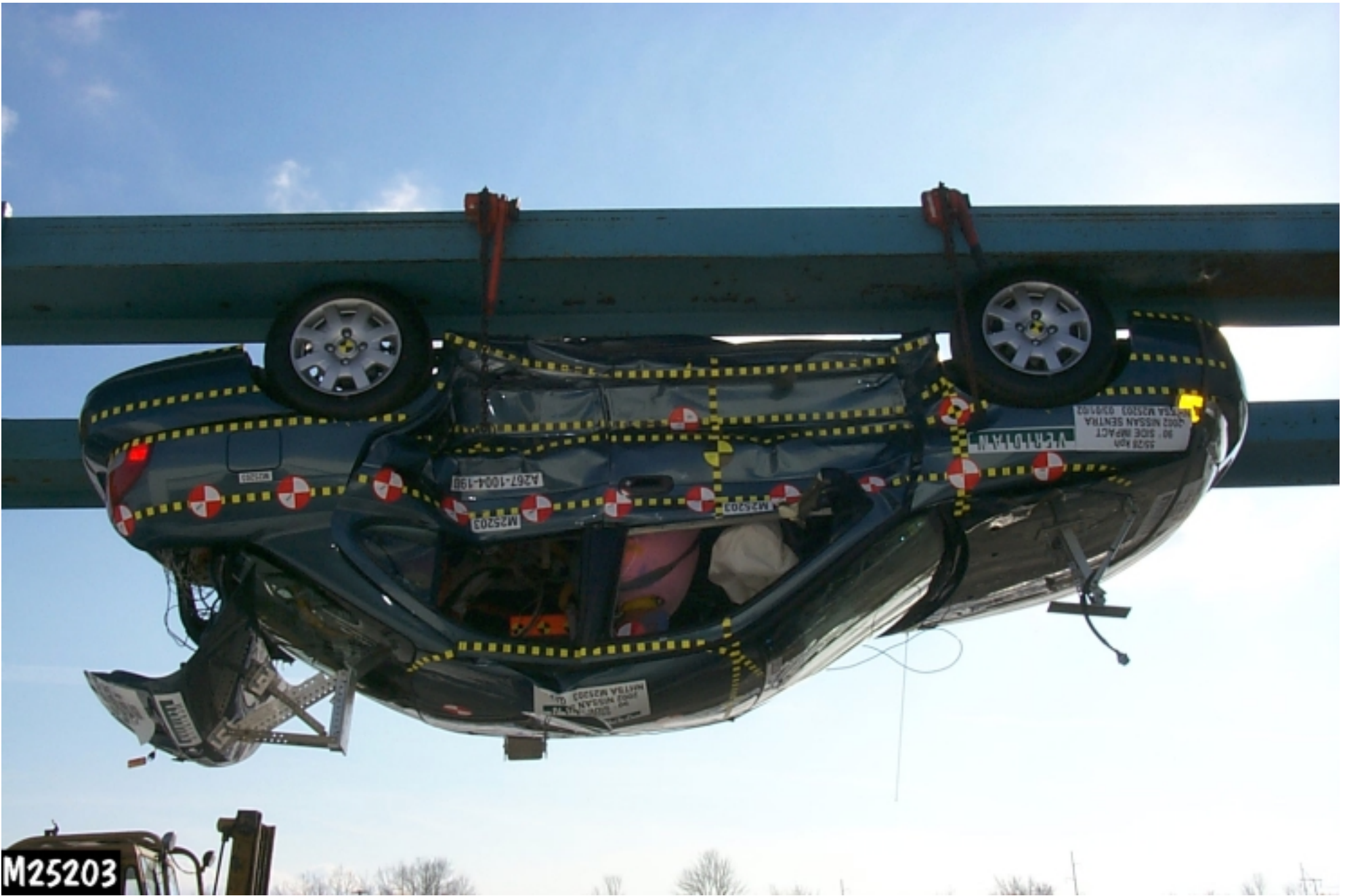


Figure A-37: ROLLOVER 90 DEGREES



A-40

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Figure A-38: ROLLOVER 180 DEGREES



Figure A-39: ROLLOVER 270 DEGREES



Figure A-40: ROLLOVER 360 DEGREES

APPENDIX B

VEHICLE, MDB AND SID RESPONSE DATA

TABLE OF DATA PLOTS

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

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
1	DRIVER HEAD (X) ACCELERATION VS TIME	B- 6
2	DRIVER HEAD (X) VELOCITY VS TIME	B- 7
3	DRIVER HEAD (Y) ACCELERATION VS TIME	B- 8
4	DRIVER HEAD (Y) VELOCITY VS TIME	B- 9
5	DRIVER HEAD (Z) ACCELERATION VS TIME	B- 10
6	DRIVER HEAD (Z) VELOCITY VS TIME	B- 11
7	DRIVER HEAD RESULTANT ACCELERATION VS TIME	B- 12
8	DRIVER UPPER RIB (Y) ACCELERATION VS TIME	B- 13
9	DRIVER UPPER RIB (Y) VELOCITY VS TIME	B- 14
10	DRIVER LOWER RIB (Y) ACCELERATION VS TIME	B- 15
11	DRIVER LOWER RIB (Y) VELOCITY VS TIME	B- 16
12	DRIVER LOWER SPINE (Y) ACCELERATION VS TIME	B- 17
13	DRIVER LOWER SPINE (Y) VELOCITY VS TIME	B- 18
14	DRIVER PELVIC (Y) ACCELERATION VS TIME	B- 19
15	DRIVER PELVIC (Y) VELOCITY VS TIME	B- 20

DRIVER DUMMY INSTRUMENTATION PLOTS ACCELERATION DATA - FIR FILTERED

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
16	DRIVER UPPER RIB (Y) ACCELERATION VS TIME	B- 21
17	DRIVER LOWER RIB (Y) ACCELERATION VS TIME	B- 22
18	DRIVER LOWER SPINE (Y) ACCELERATION VS TIME	B- 23
19	DRIVER PELVIC (Y) ACCELERATION VS TIME	B- 24

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

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
20	RIGHT SIDE SILL AT FRONT SEAT (X) ACCELERATION VS TIME	B- 25
21	RIGHT SIDE SILL AT FRONT SEAT (X) VELOCITY VS TIME	B- 26
22	RIGHT SIDE SILL AT FRONT SEAT (Y) ACCELERATION VS TIME	B- 27
23	RIGHT SIDE SILL AT FRONT SEAT (Y) VELOCITY VS TIME	B- 28
24	RIGHT SIDE SILL AT FRONT SEAT (Z) ACCELERATION VS TIME	B- 29
25	RIGHT SIDE SILL AT FRONT SEAT (Z) VELOCITY VS TIME	B- 30
26	RIGHT SIDE SILL AT FRONT SEAT RESULTANT ACCELERATION VS TIME	B- 31
27	RIGHT SIDE SILL AT REAR SEAT (X) ACCELERATION VS TIME	B- 32
28	RIGHT SIDE SILL AT REAR SEAT (X) VELOCITY VS TIME	B- 33
29	RIGHT SIDE SILL AT REAR SEAT (Y) ACCELERATION VS TIME	B- 34
30	RIGHT SIDE SILL AT REAR SEAT (Y) VELOCITY VS TIME	B- 35
31	RIGHT SIDE SILL AT REAR SEAT (Z) ACCELERATION VS TIME	B- 36
32	RIGHT SIDE SILL AT REAR SEAT (Z) VELOCITY VS TIME	B- 37
33	RIGHT SIDE SILL AT REAR SEAT RESULTANT ACCELERATION VS TIME	B- 38
34	REAR FLOORPAN ABOVE AXLE (X) ACCELERATION VS TIME	B- 39
35	REAR FLOORPAN ABOVE AXLE (X) VELOCITY VS TIME	B- 40
36	REAR FLOORPAN ABOVE AXLE (Y) ACCELERATION VS TIME	B- 41
37	REAR FLOORPAN ABOVE AXLE (Y) VELOCITY VS TIME	B- 42
38	REAR FLOORPAN ABOVE AXLE (Z) ACCELERATION VS TIME	B- 43
39	REAR FLOORPAN ABOVE AXLE (Z) VELOCITY VS TIME	B- 44
40	REAR FLOORPAN ABOVE AXLE RESULTANT ACCELERATION VS TIME	B- 45
41	LEFT SIDE SILL AT REAR SEAT (Y) ACCELERATION VS TIME	B- 46
42	LEFT SIDE SILL AT REAR SEAT (Y) VELOCITY VS TIME	B- 47
43	LEFT SIDE SILL AT FRONT SEAT (Y) ACCELERATION VS TIME	B- 48
44	LEFT SIDE SILL AT FRONT SEAT (Y) VELOCITY VS TIME	B- 49
45	LEFT FRONT DOOR ON CENTERLINE (Y) ACCELERATION VS TIME	B- 50
46	LEFT FRONT DOOR ON CENTERLINE (Y) VELOCITY VS TIME	B- 51
47	RIGHT REAR OCCUPANT COMPARTMENT (Y) ACCELERATION VS TIME	B- 52
48	RIGHT REAR OCCUPANT COMPARTMENT (Y) VELOCITY VS TIME	B- 53
49	MID REAR OF LEFT FRONT DOOR (Y) ACCELERATION VS TIME	B- 54
50	MID REAR OF LEFT FRONT DOOR (Y) VELOCITY VS TIME	B- 55
51	LEFT FRONT DOOR UPPER CENTERLINE (Y) ACCELERATION VS TIME	B- 56
52	LEFT FRONT DOOR UPPER CENTERLINE (Y) VELOCITY VS TIME	B- 57
53	MID REAR OF LEFT REAR DOOR (Y) ACCELERATION VS TIME	B- 58
54	MID REAR OF LEFT REAR DOOR (Y) VELOCITY VS TIME	B- 59
55	LEFT REAR DOOR UPPER CENTERLINE (Y) ACCELERATION VS TIME	B- 60
56	LEFT REAR DOOR UPPER CENTERLINE (Y) VELOCITY VS TIME	B- 61
57	LOWER B-POST (Y) ACCELERATION VS TIME	B- 62
58	LOWER B-POST (Y) VELOCITY VS TIME	B- 63
59	UPPER B-POST (Y) ACCELERATION VS TIME	B- 64
60	UPPER B-POST (Y) VELOCITY VS TIME	B- 65
61	LOWER A-POST (Y) ACCELERATION VS TIME	B- 66

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

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
62	LOWER A-POST (Y) VELOCITY VS TIME	B- 67
63	UPPER A-POST (Y) ACCELERATION VS TIME	B- 68
64	UPPER A-POST (Y) VELOCITY VS TIME	B- 69
65	FRONT SEAT TRACK (Y) ACCELERATION VS TIME	B- 70
66	FRONT SEAT TRACK (Y) VELOCITY VS TIME	B- 71
67	REAR SEAT TRACK (Y) ACCELERATION VS TIME	B- 72
68	REAR SEAT TRACK (Y) VELOCITY VS TIME	B- 73
69	VEHICLE CENTER OF GRAVITY (X) ACCELERATION VS TIME	B- 74
70	VEHICLE CENTER OF GRAVITY (X) VELOCITY VS TIME	B- 75
71	VEHICLE CENTER OF GRAVITY (Y) ACCELERATION VS TIME	B- 76
72	VEHICLE CENTER OF GRAVITY (Y) VELOCITY ACCELERATION VS TIME	B- 77
73	VEHICLE CENTER OF GRAVITY (Z) ACCELERATION VS TIME	B- 78
74	VEHICLE CENTER OF GRAVITY (Z) VELOCITY VS TIME	B- 79
75	VEHICLE CENTER OF GRAVITY RESULTANT ACCELERATION VS TIME	B- 80

MDB INSTRUMENTATION PLOTS
 ACCELERATION DATA - FILTER CLASS 60
 INTEGRATION DATA - FILTER CLASS 180

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
76	MDB CENTER OF GRAVITY (X) ACCELERATION VS TIME	B- 81
77	MDB CENTER OF GRAVITY (X) VELOCITY VS TIME	B- 82
78	MDB CENTER OF GRAVITY (Y) ACCELERATION VS TIME	B- 83
79	MDB CENTER OF GRAVITY (Y) VELOCITY VS TIME	B- 84
80	MDB CENTER OF GRAVITY (Z) ACCELERATION VS TIME	B- 85
81	MDB CENTER OF GRAVITY (Z) VELOCITY VS TIME	B- 86
82	MDB CENTER OF GRAVITY RESULTANT ACCELERATION VS TIME	B- 87
83	MDB REAR (X) ACCELERATION VS TIME	B- 88
84	MDB REAR (X) VELOCITY VS TIME	B- 89
85	MDB REAR (Y) ACCELERATION VS TIME	B- 90
86	MDB REAR (Y) VELOCITY VS TIME	B- 91

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

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
87	DRIVER UPPER RIB (Y) ACCELERATION VS TIME	B- 92
88	DRIVER UPPER RIB (Y) VELOCITY VS TIME	B- 93
89	DRIVER LOWER RIB (Y) ACCELERATION VS TIME	B- 94
90	DRIVER LOWER RIB (Y) VELOCITY VS TIME	B- 95
91	DRIVER LOWER SPINE (Y) ACCELERATION VS TIME	B- 96
92	DRIVER LOWER SPINE (Y) VELOCITY VS TIME	B- 97
93	DRIVER PELVIC (Y) ACCELERATION VS TIME	B- 98
94	DRIVER PELVIC (Y) VELOCITY VS TIME	B- 99

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

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
95	DRIVER UPPER RIB (Y) ACCELERATION VS TIME	B- 100
96	DRIVER LOWER RIB (Y) ACCELERATION VS TIME	B- 101
97	DRIVER LOWER SPINE (Y) ACCELERATION VS TIME	B- 102
98	DRIVER PELVIC (Y) ACCELERATION VS TIME	B- 103

SNCAP #4 - 2002 Nissan Sentra

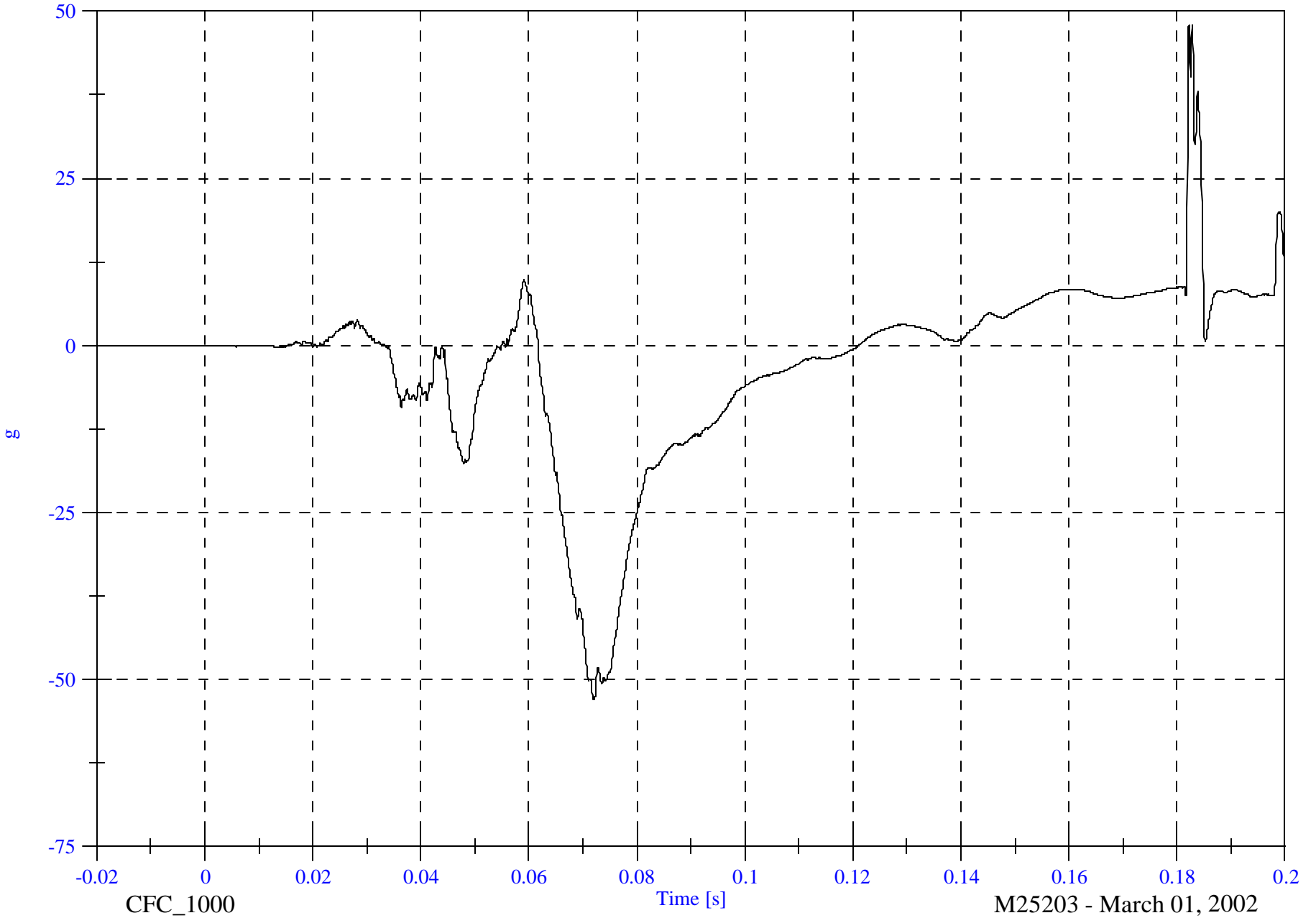
P1 Head x

Max: 48.0 [g] at 0.182 [s]

Min: -53.0 [g] at 0.072 [s]

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CFC_1000

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

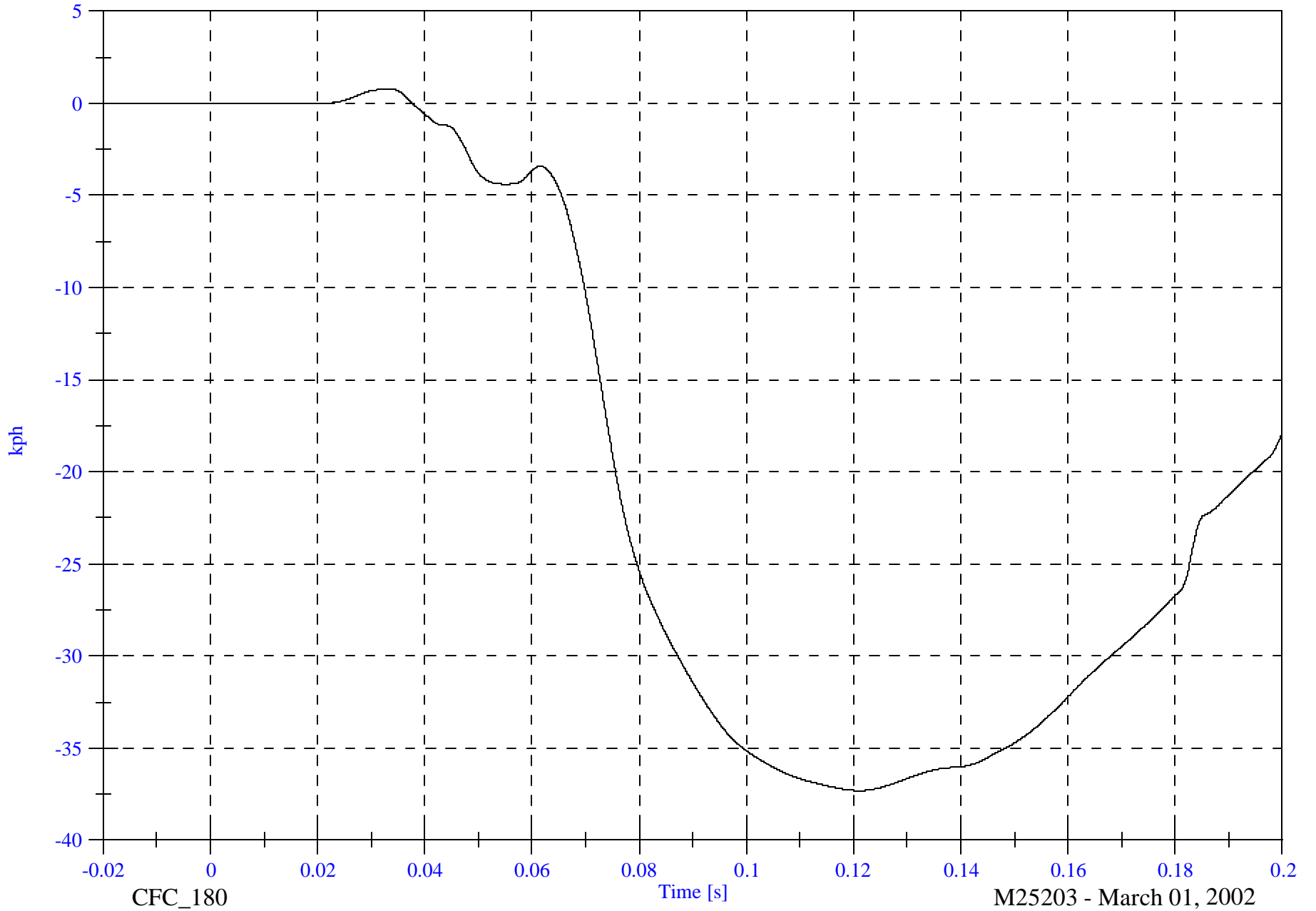
P1 Head x Velocity

Max: 0.8 [kph] at 0.033 [s]

Min: -37.3 [kph] at 0.121 [s]

B-7

8652-SNCAP-04



CFC_180

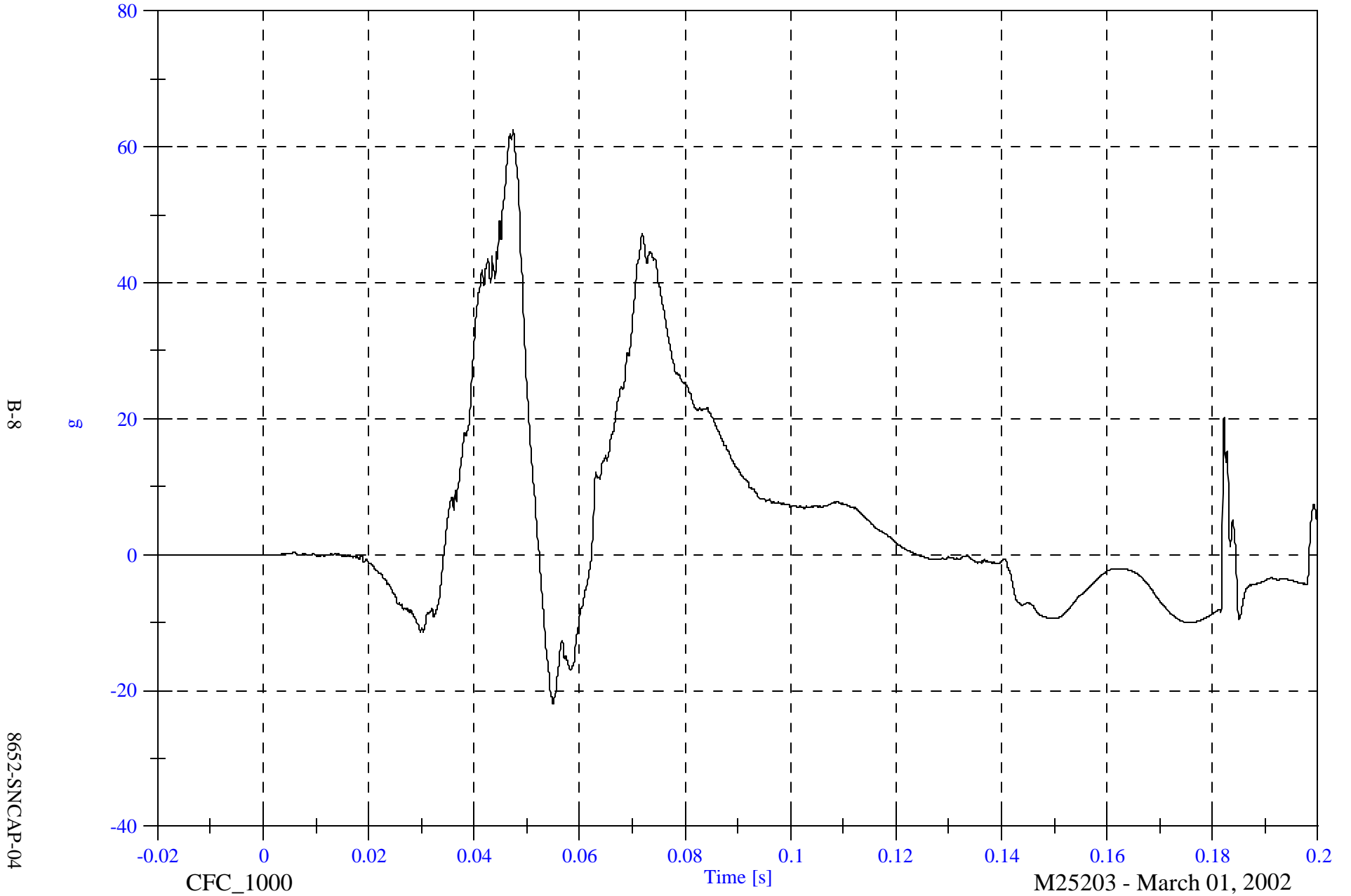
M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

Max: 62.4 [g] at 0.047 [s]

Min: -22.0 [g] at 0.055 [s]

P1 Head y



B-8

8652-SNCAP-04

CFC_1000

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

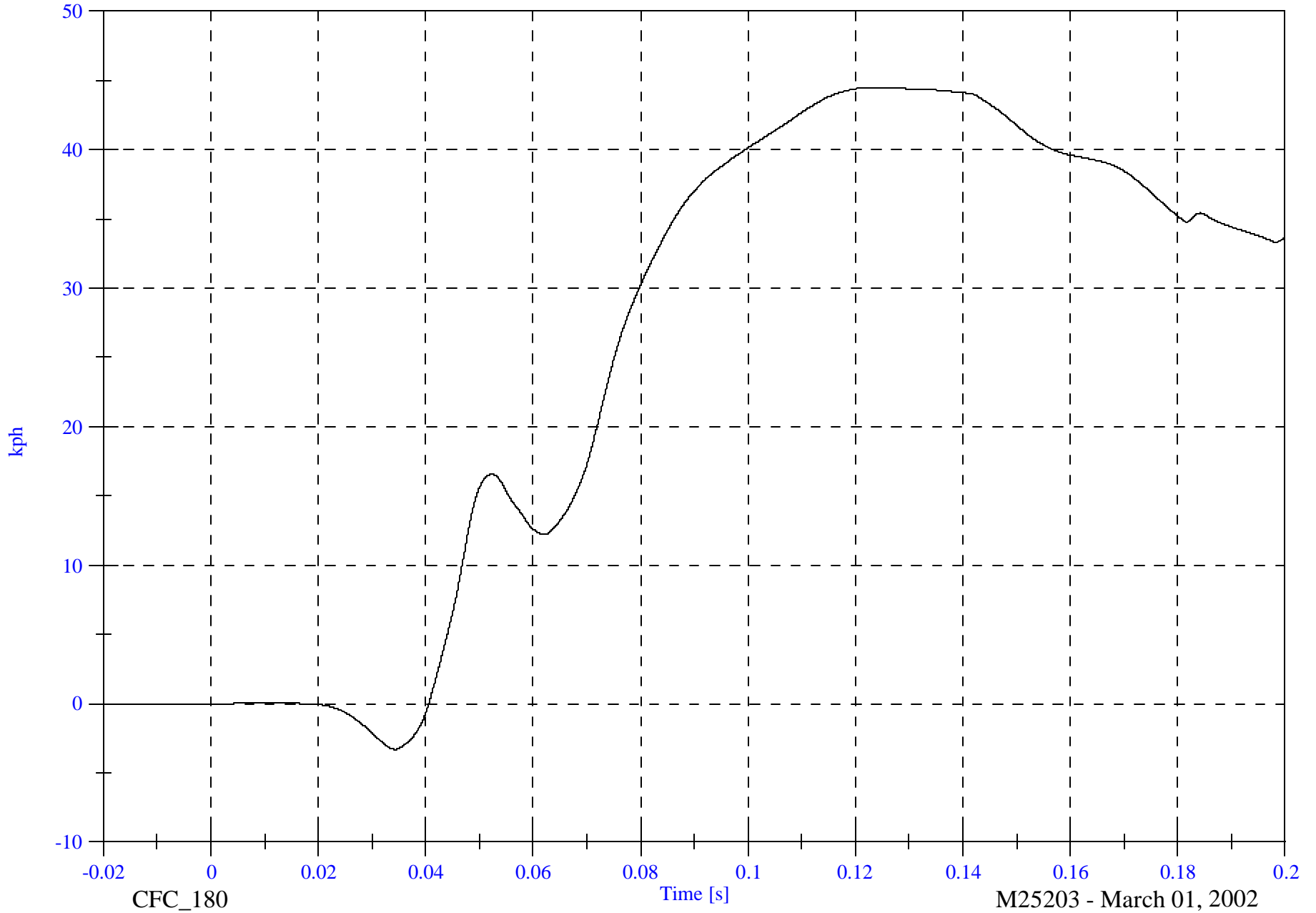
P1 Head y Velocity

Max: 44.5 [kph] at 0.124 [s]

Min: -3.3 [kph] at 0.034 [s]

B-9

8652-SNCAP-04



CFC_180

Time [s]

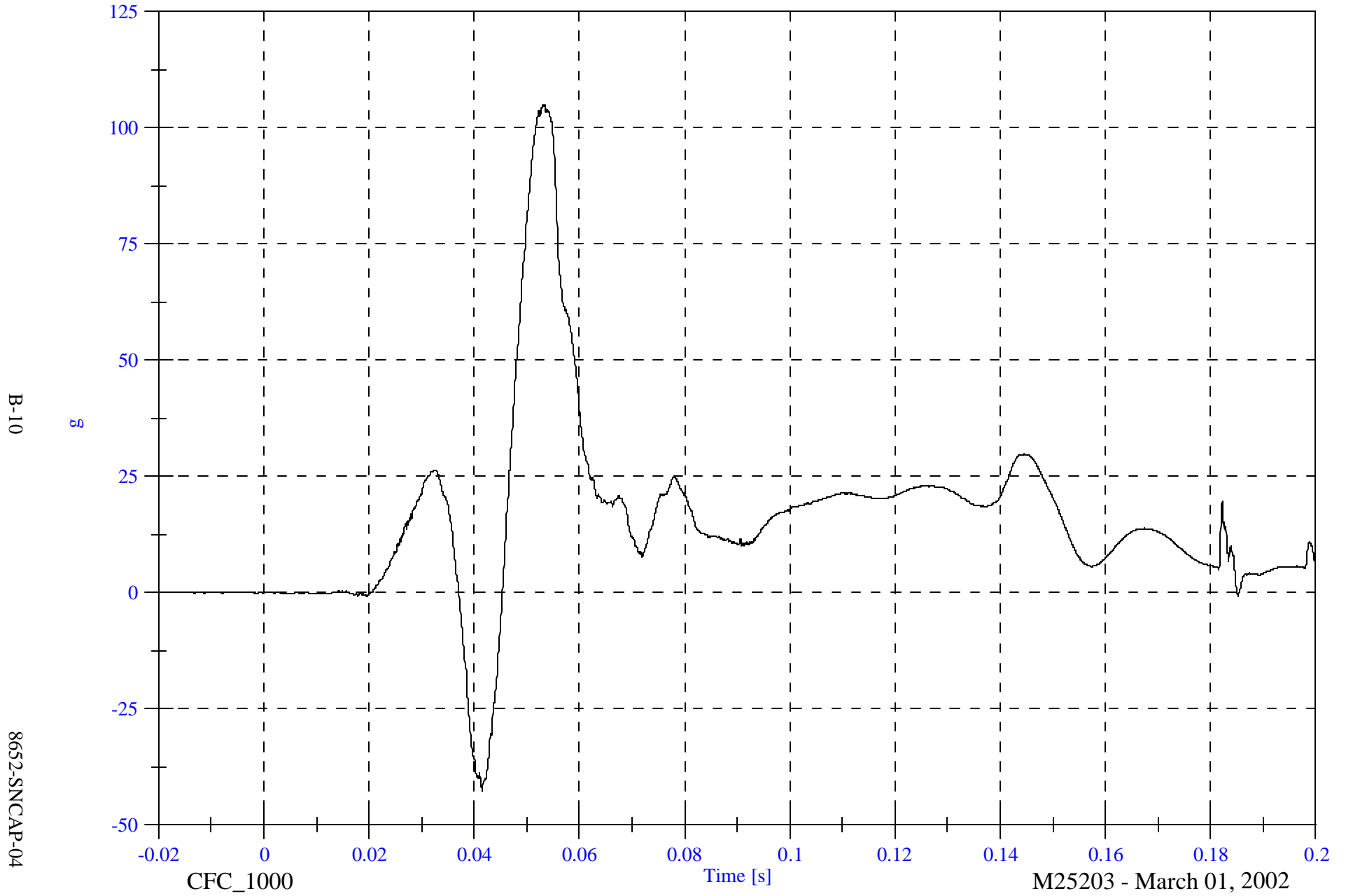
M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

P1 Head z

Max: 104.9 [g] at 0.053 [s]

Min: -42.5 [g] at 0.041 [s]



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8652-SNCAP-04

CFC_1000

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

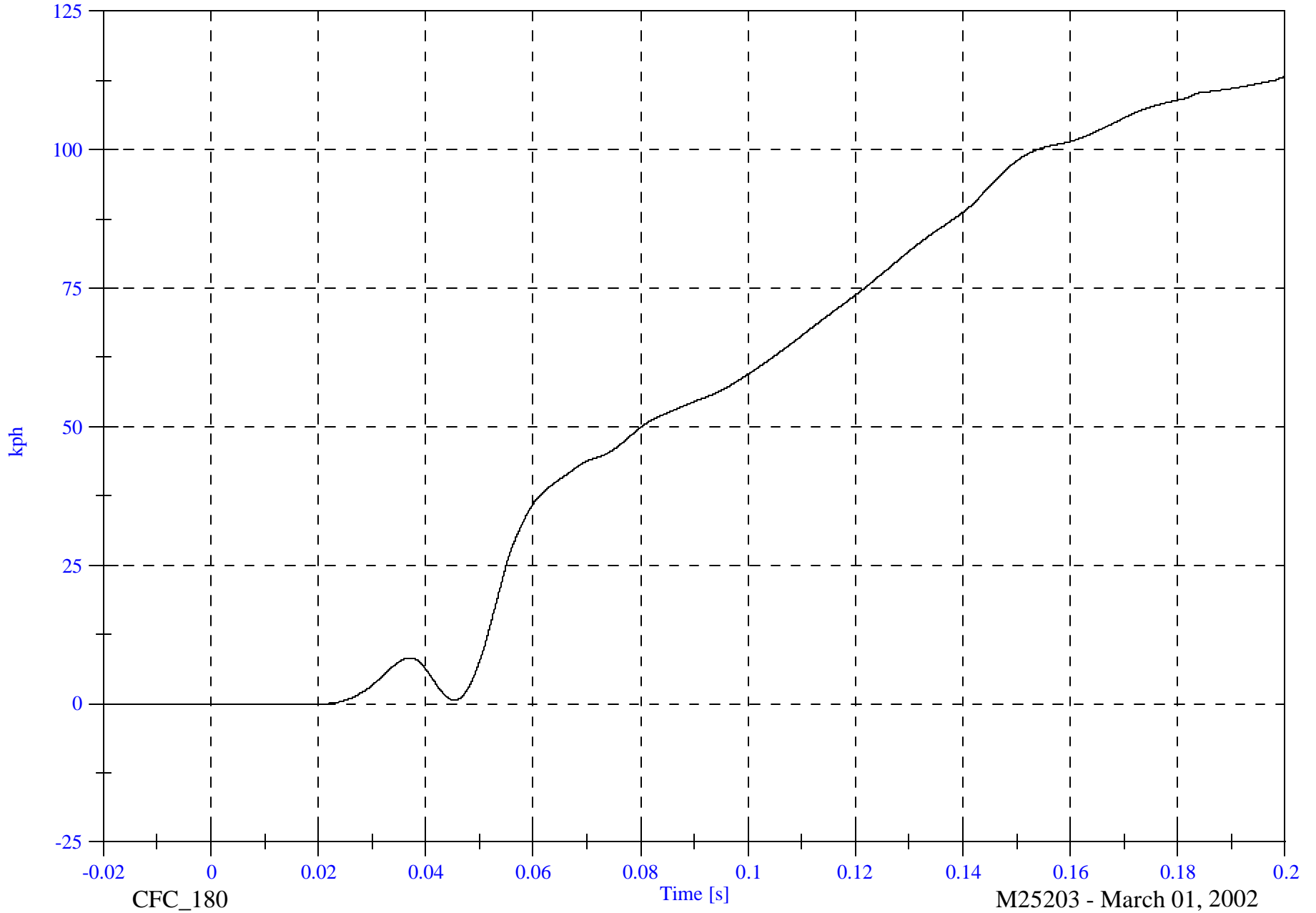
P1 Head z Velocity

Max: 113.1 [kph] at 0.200 [s]

Min: -0.1 [kph] at 0.020 [s]

B-11

8652-SNCAP-04



SNCAP #4 - 2002 Nissan Sentra

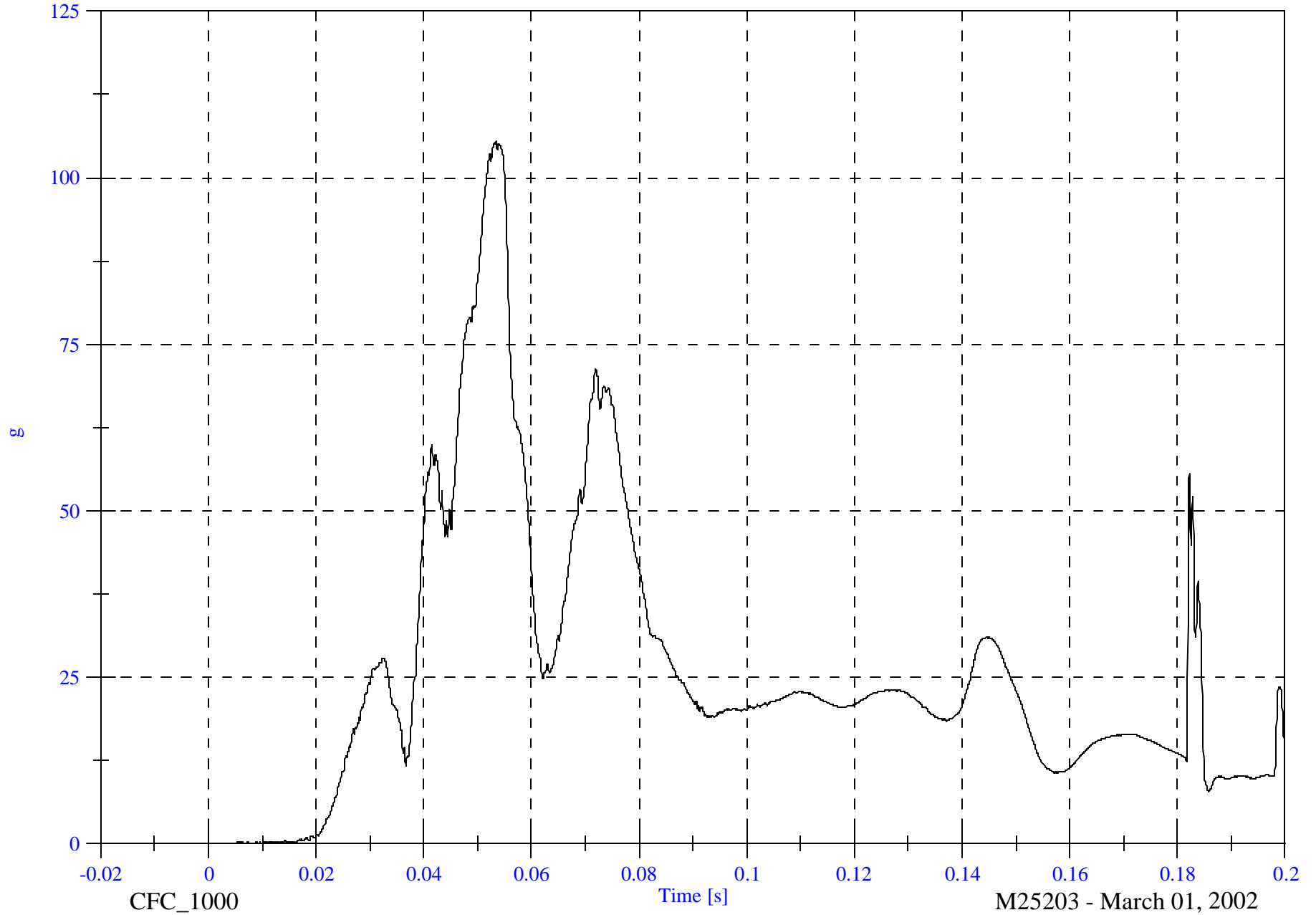
P1 Head Resultant

Max: 105.6 [g] at 0.053 [s]

Min: 0.0 [g] at -0.007 [s]

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8652-SNCAP-04



CFC_1000

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

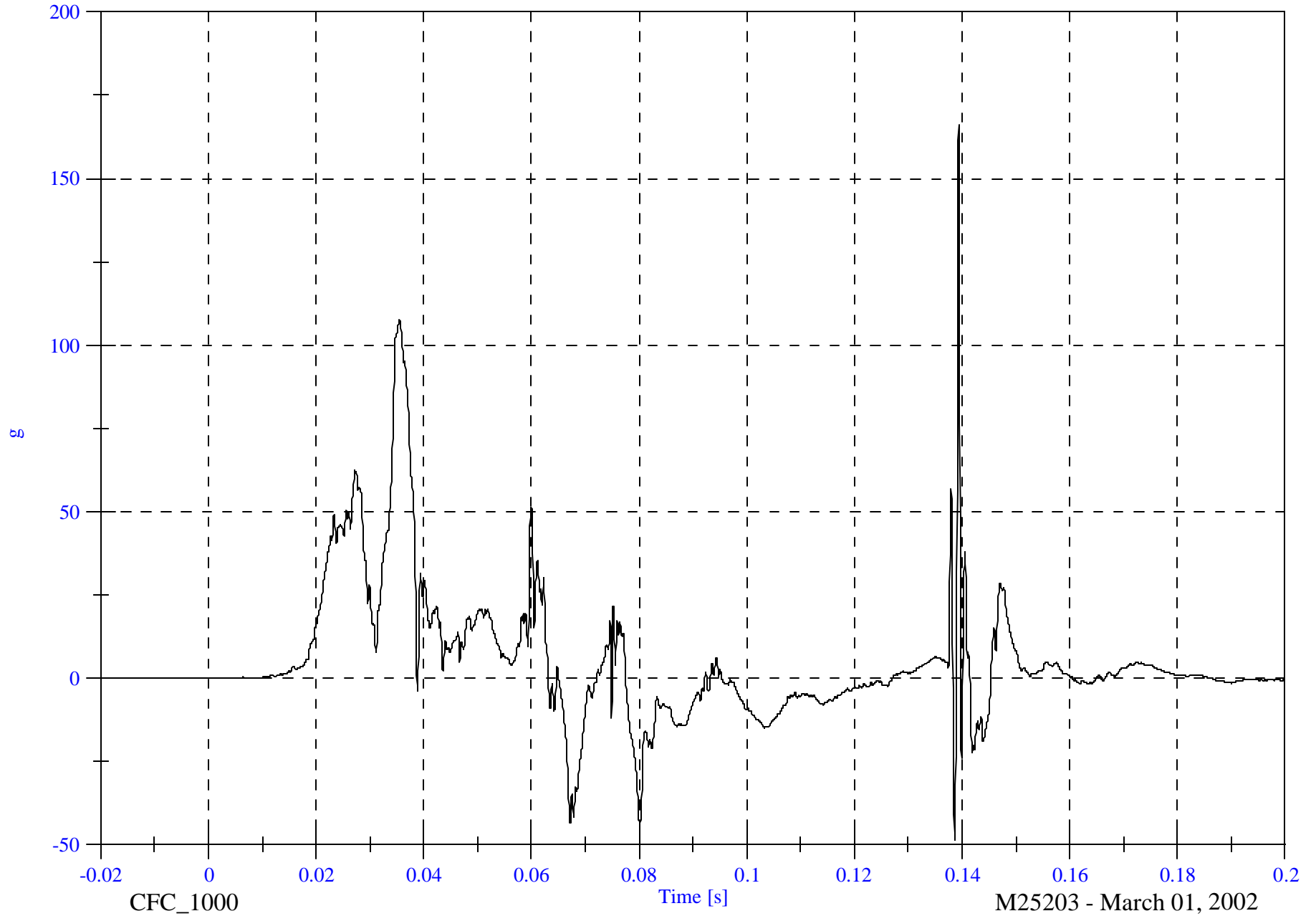
P1 Upper Rib y

Max: 166.1 [g] at 0.139 [s]

Min: -48.5 [g] at 0.139 [s]

B-13

8652-SNCAP-04

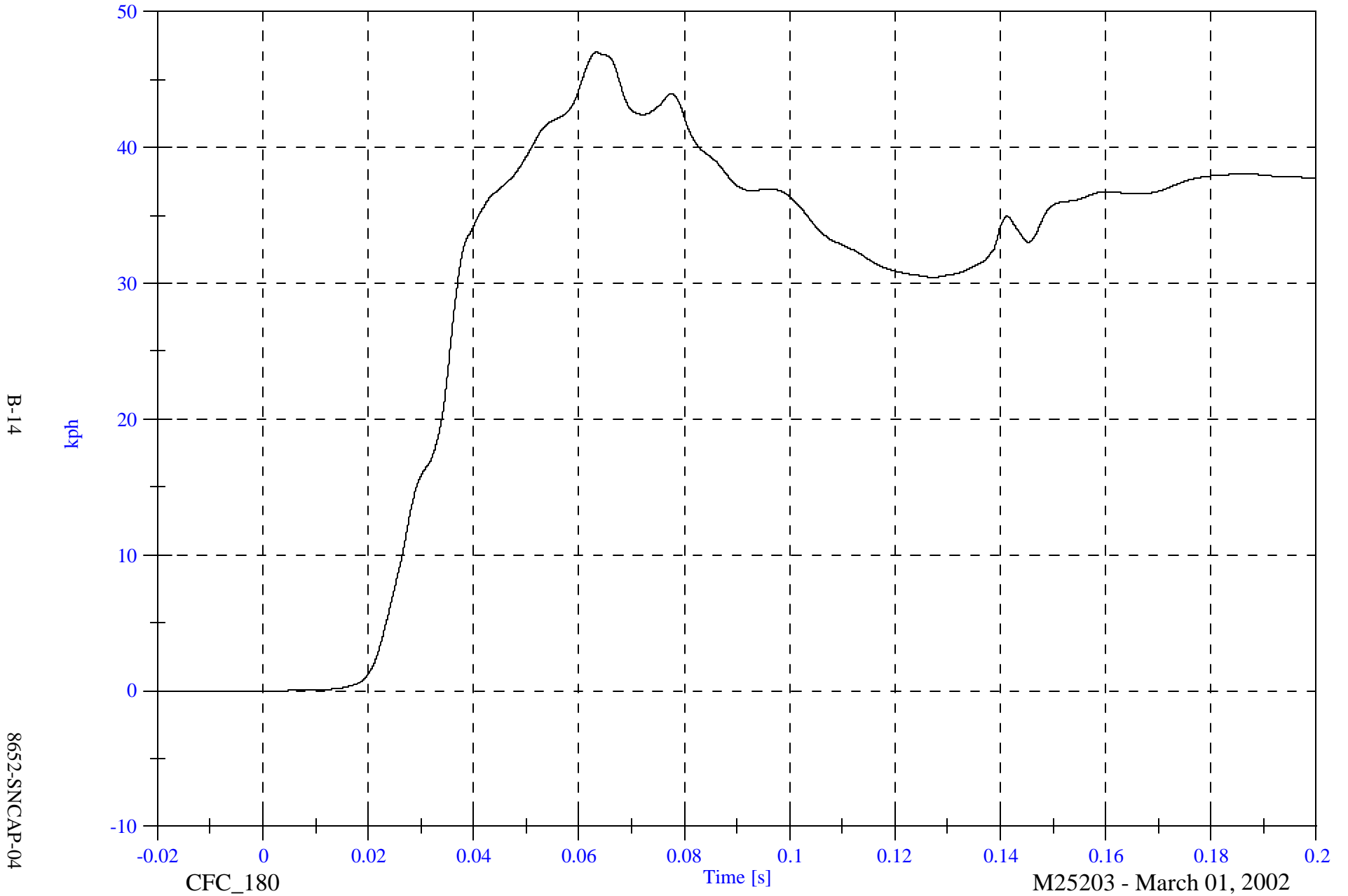


SNCAP #4 - 2002 Nissan Sentra

Max: 47.0 [kph] at 0.063 [s]

Min: -0.0 [kph] at -0.007 [s]

P1 Upper Rib y Velocity



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CFC_180

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

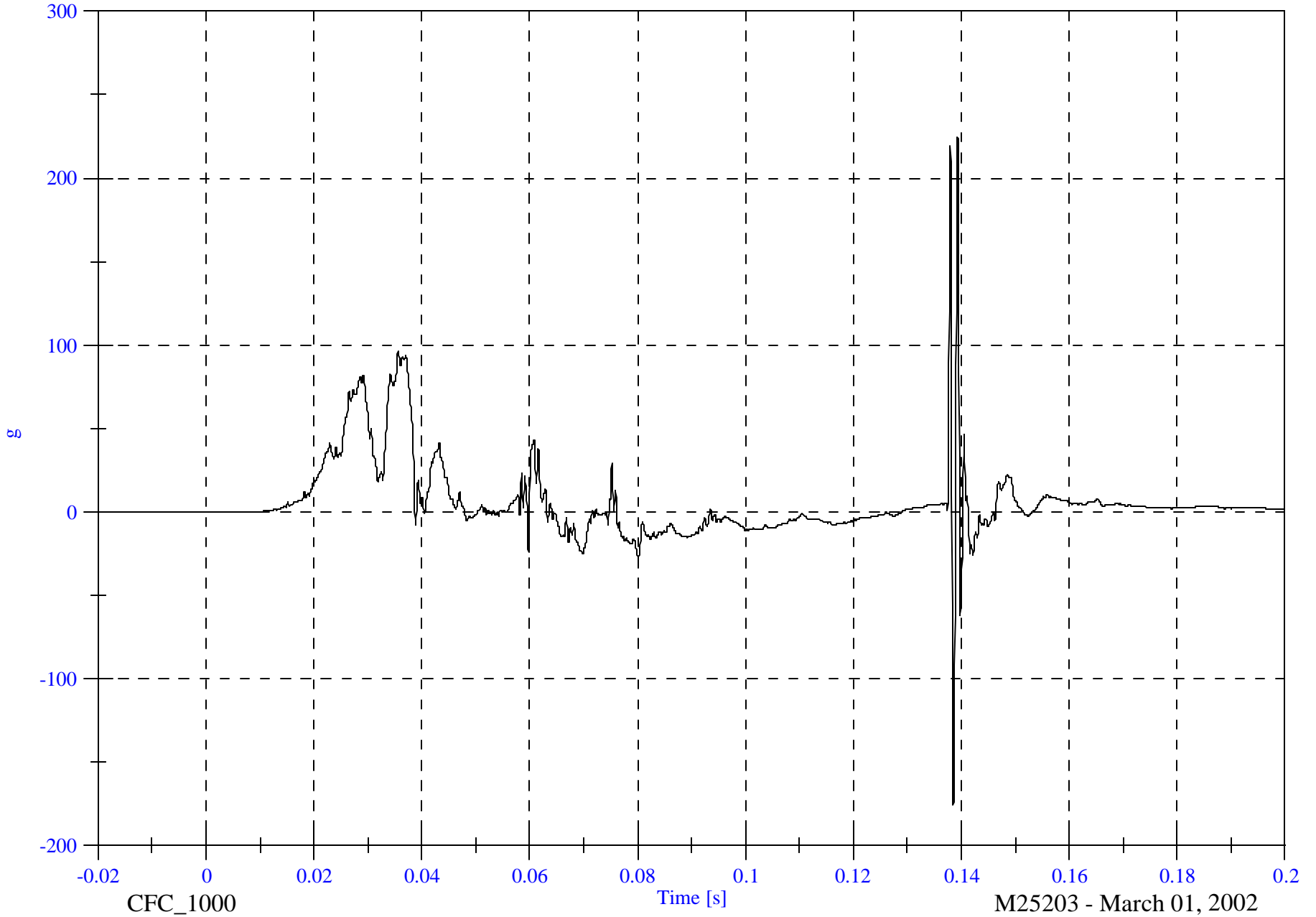
P1 Lower Rib y

Max: 224.2 [g] at 0.139 [s]

Min: -176.0 [g] at 0.138 [s]

B-15

8652-SNCAP-04



SNCAP #4 - 2002 Nissan Sentra

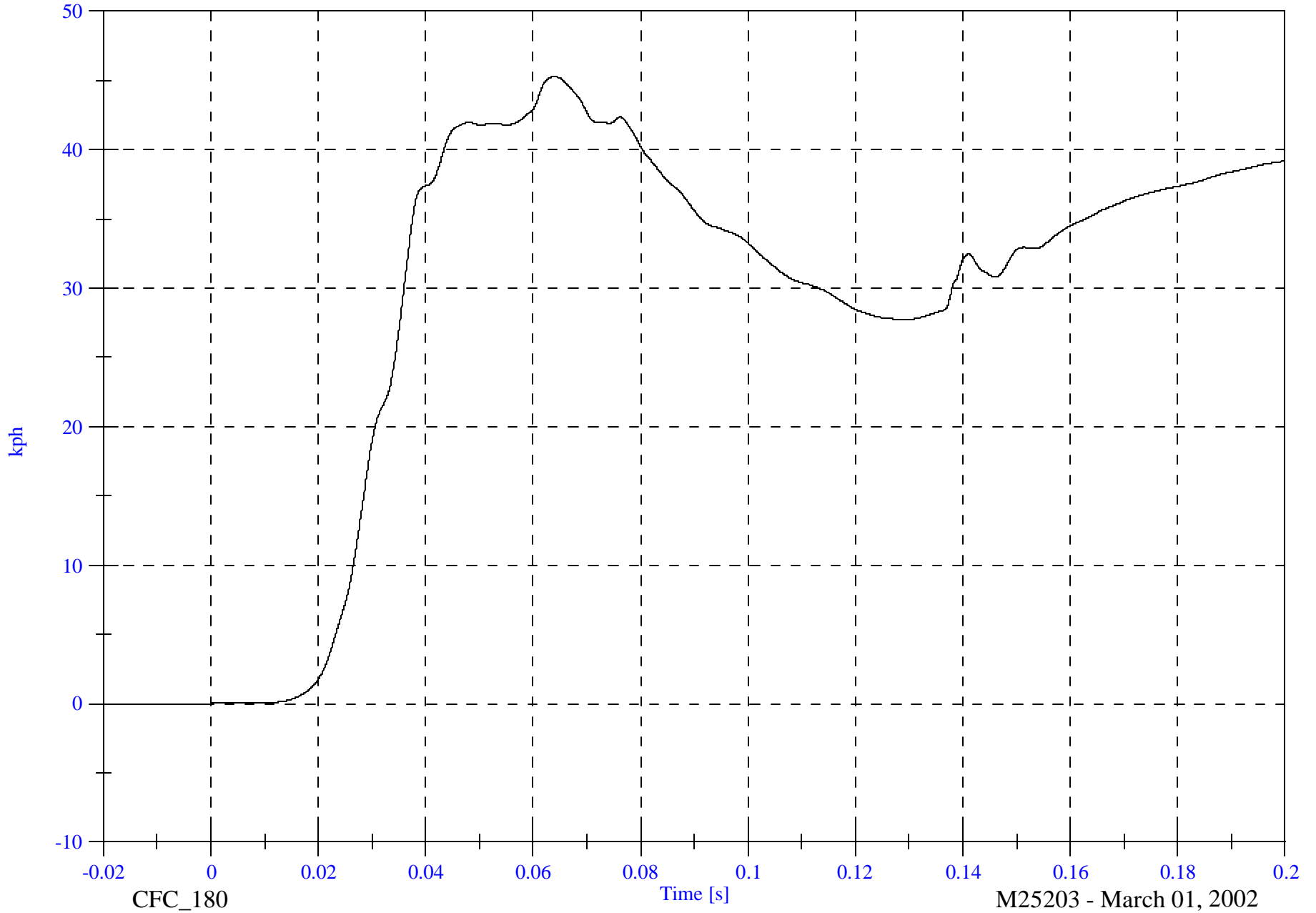
Max: 45.3 [kph] at 0.064 [s]

P1 Lower Rib y Velocity

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

B-16

8652-SNCAP-04



SNCAP #4 - 2002 Nissan Sentra

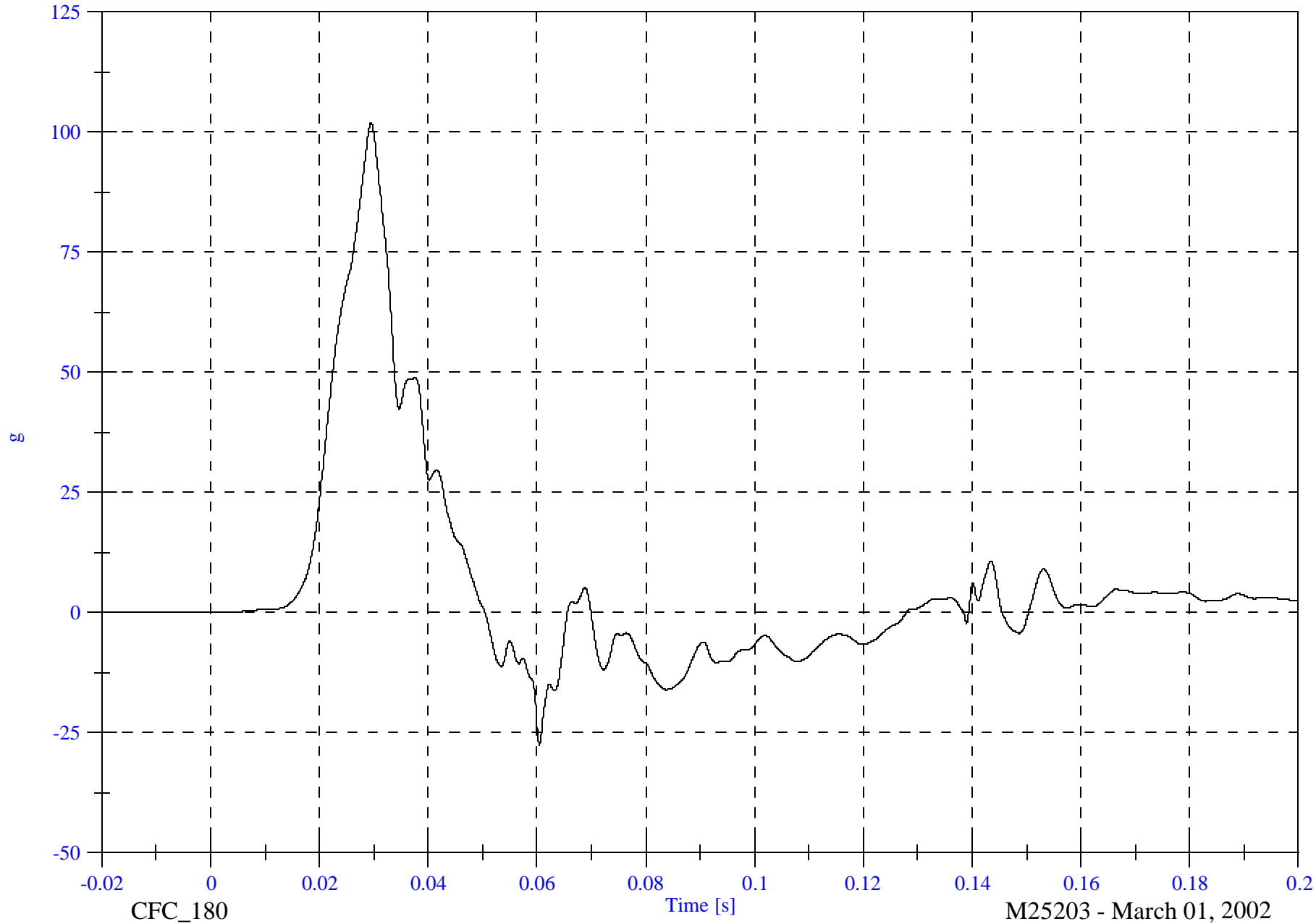
P1 Lower Spine y

Max: 102.0 [g] at 0.029 [s]

Min: -27.5 [g] at 0.060 [s]

B-17

8652-SNCAP-04



SNCAP #4 - 2002 Nissan Sentra

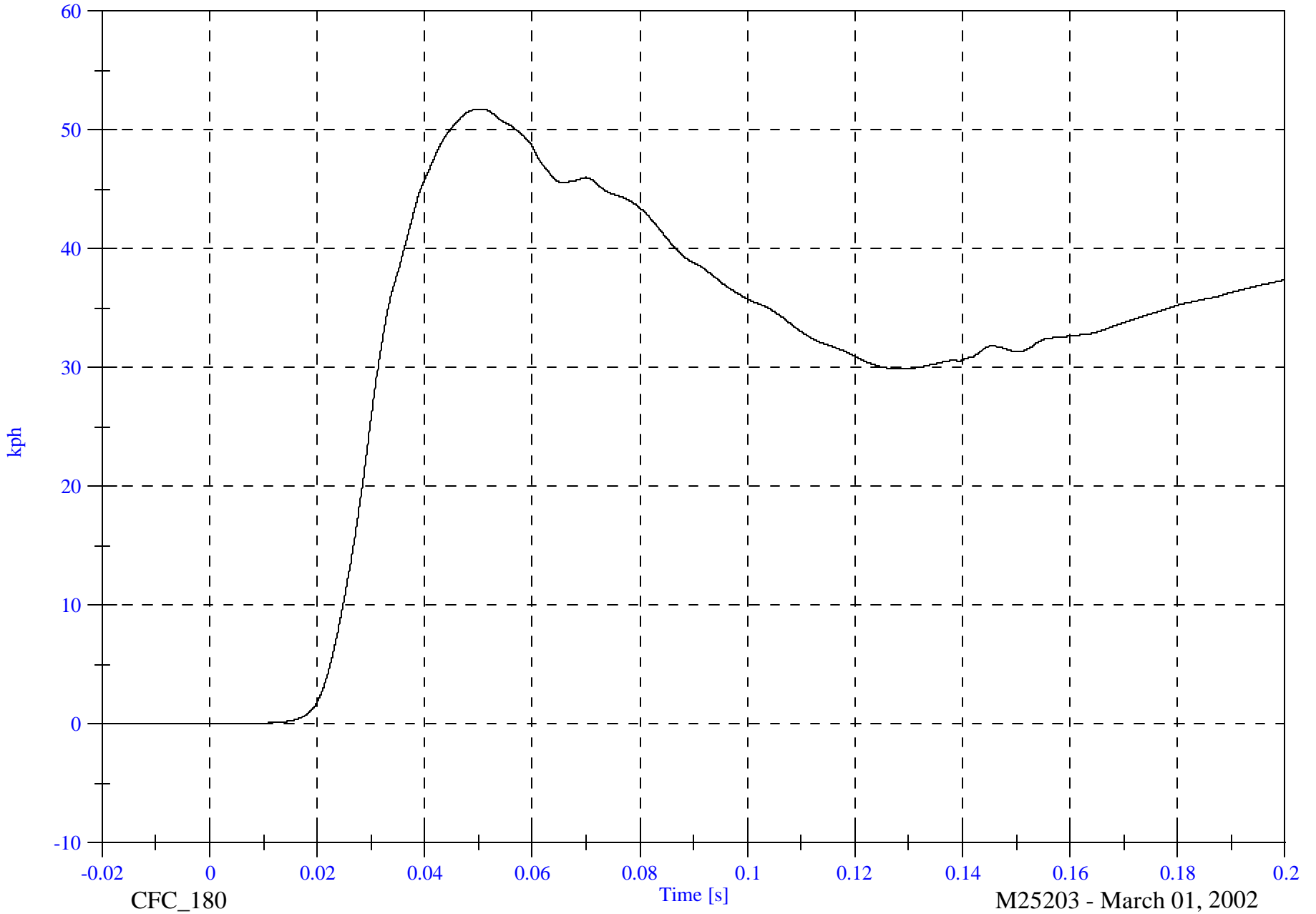
Max: 51.8 [kph] at 0.050 [s]

P1 Lower Spine y Velocity

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

B-18

8652-SNCAP-04

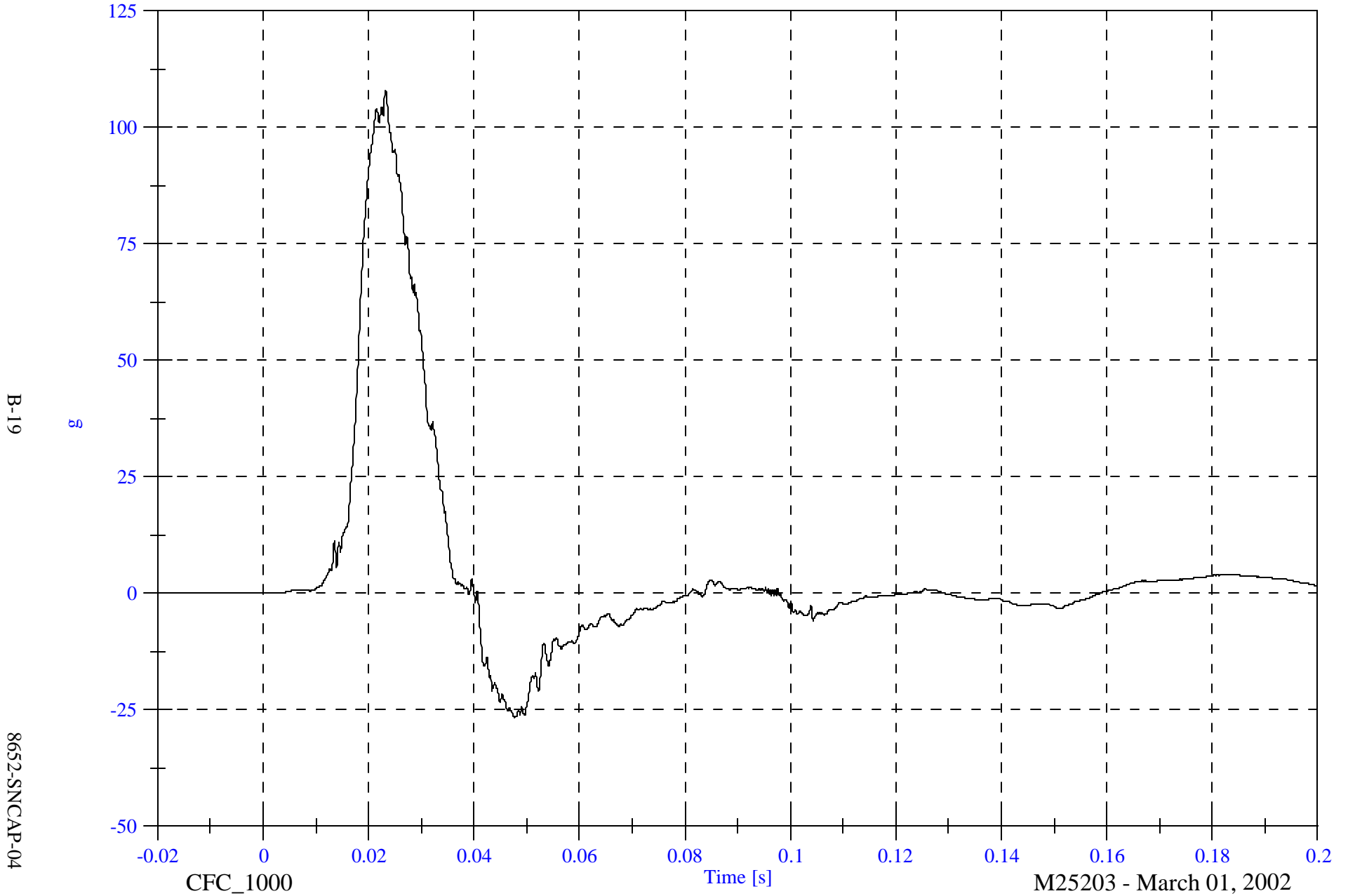


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P1 Pelvic y

Max: 107.9 [g] at 0.023 [s]

Min: -26.7 [g] at 0.048 [s]



B-19

8652-SNCAP-04

CFC_1000

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

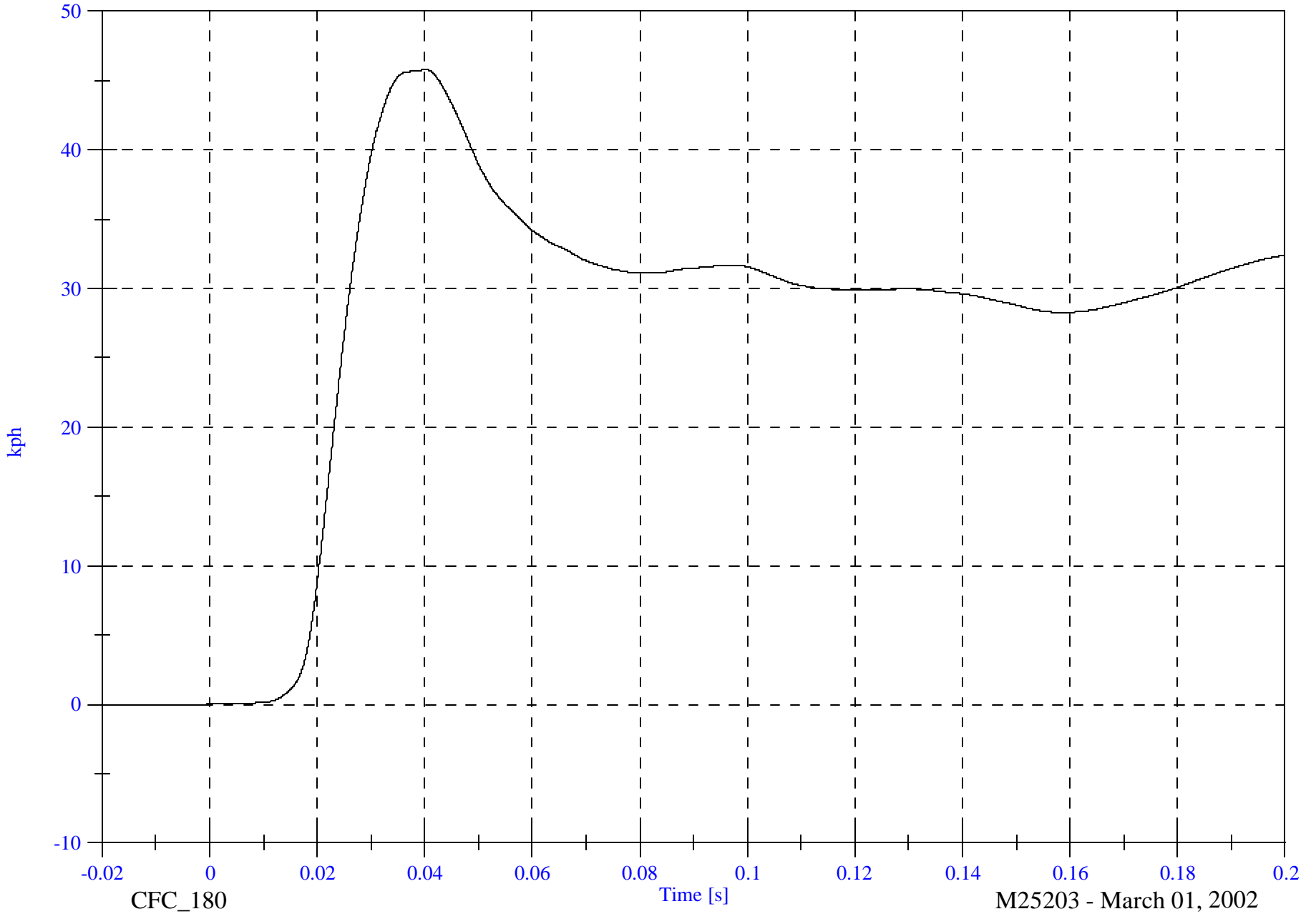
P1 Pelvic y Velocity

Max: 45.8 [kph] at 0.040 [s]

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

B-20

8652-SNCAP-04



SNCAP #4 - 2002 Nissan Sentra

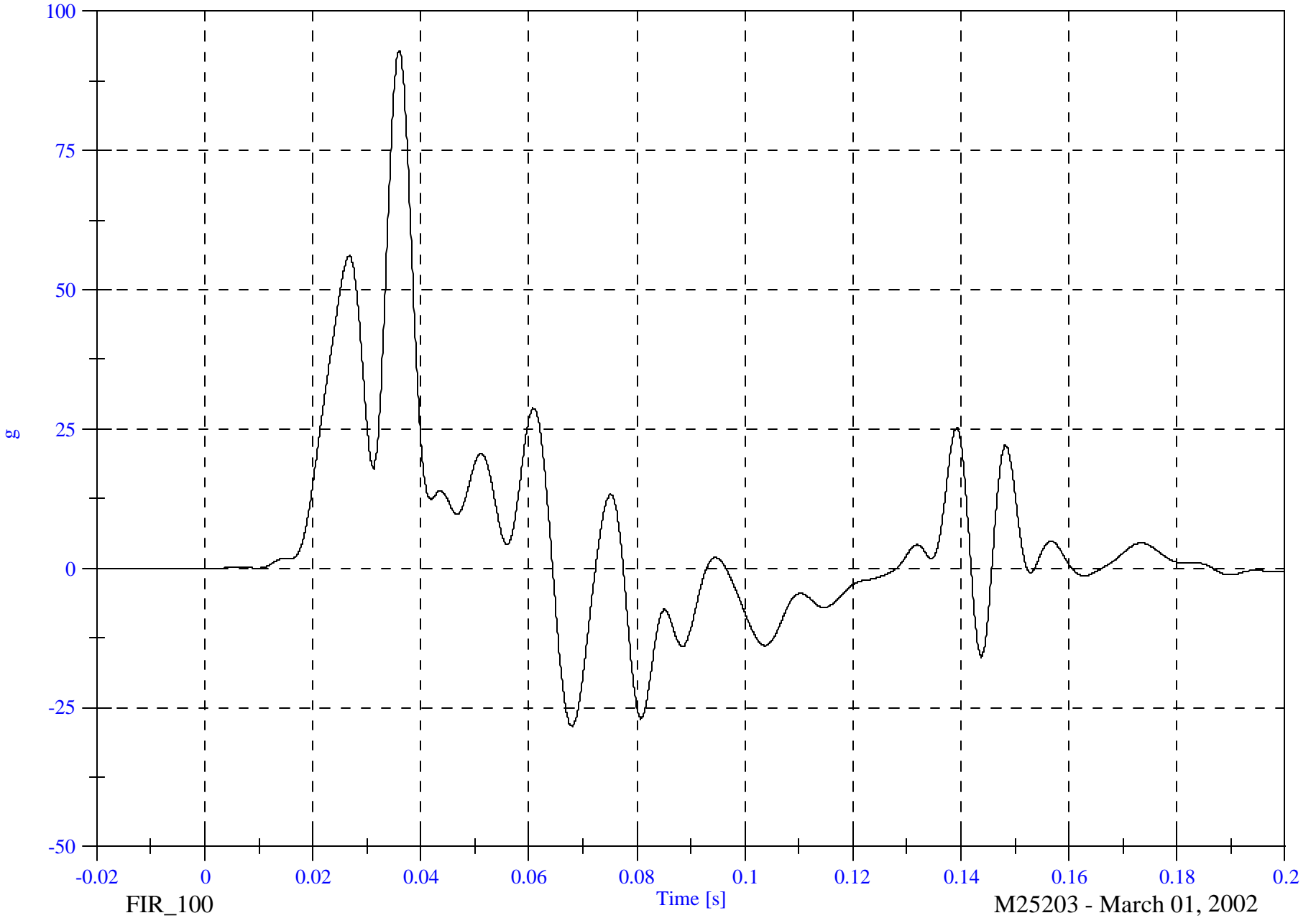
P1 Upper Rib y

Max: 92.7 [g] at 0.036 [s]

Min: -28.4 [g] at 0.068 [s]

B-21

8652-SNCAP-04



SNCAP #4 - 2002 Nissan Sentra

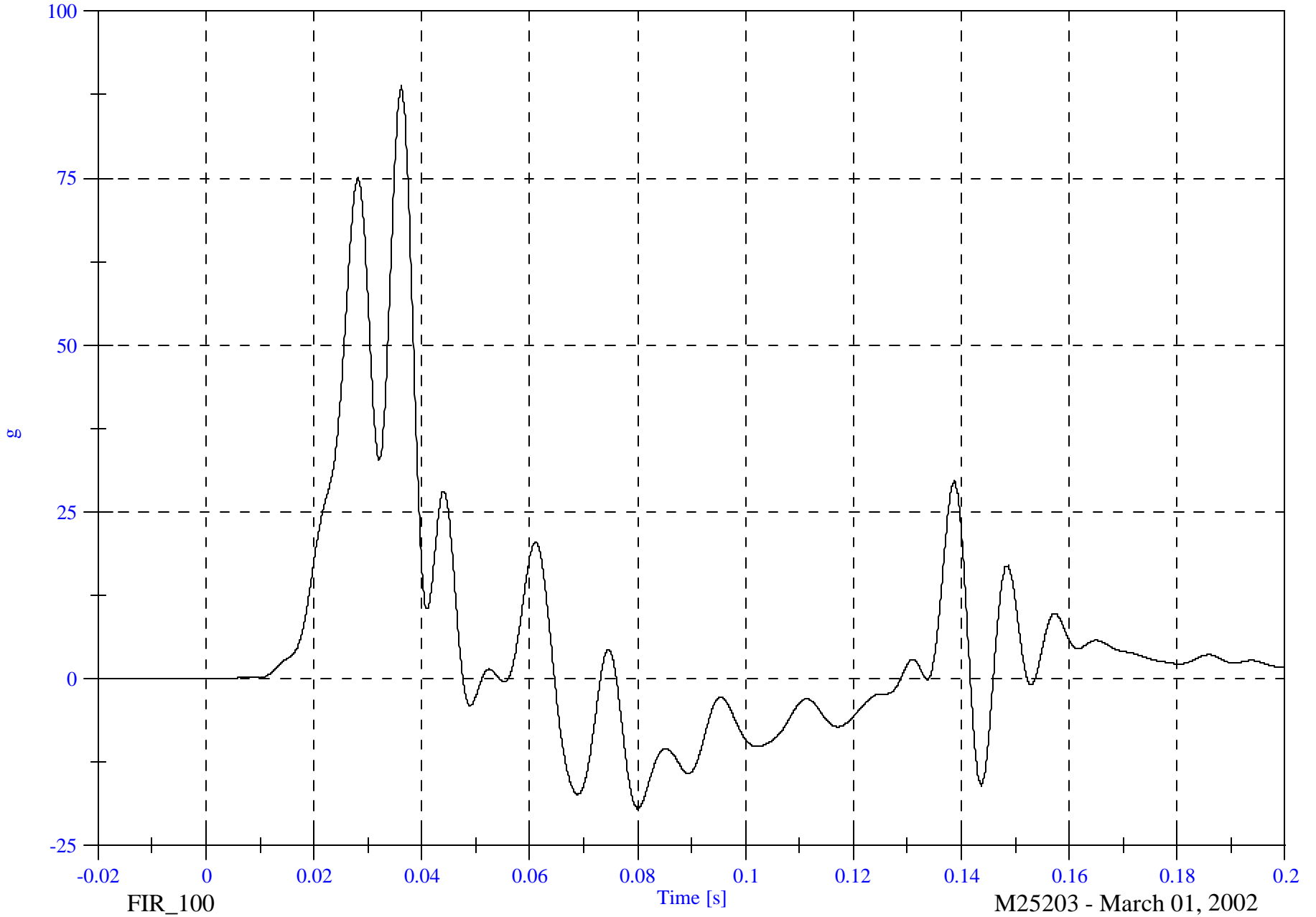
P1 Lower Rib y

Max: 88.9 [g] at 0.036 [s]

Min: -19.5 [g] at 0.080 [s]

B-22

8652-SNCAP-04



SNCAP #4 - 2002 Nissan Sentra

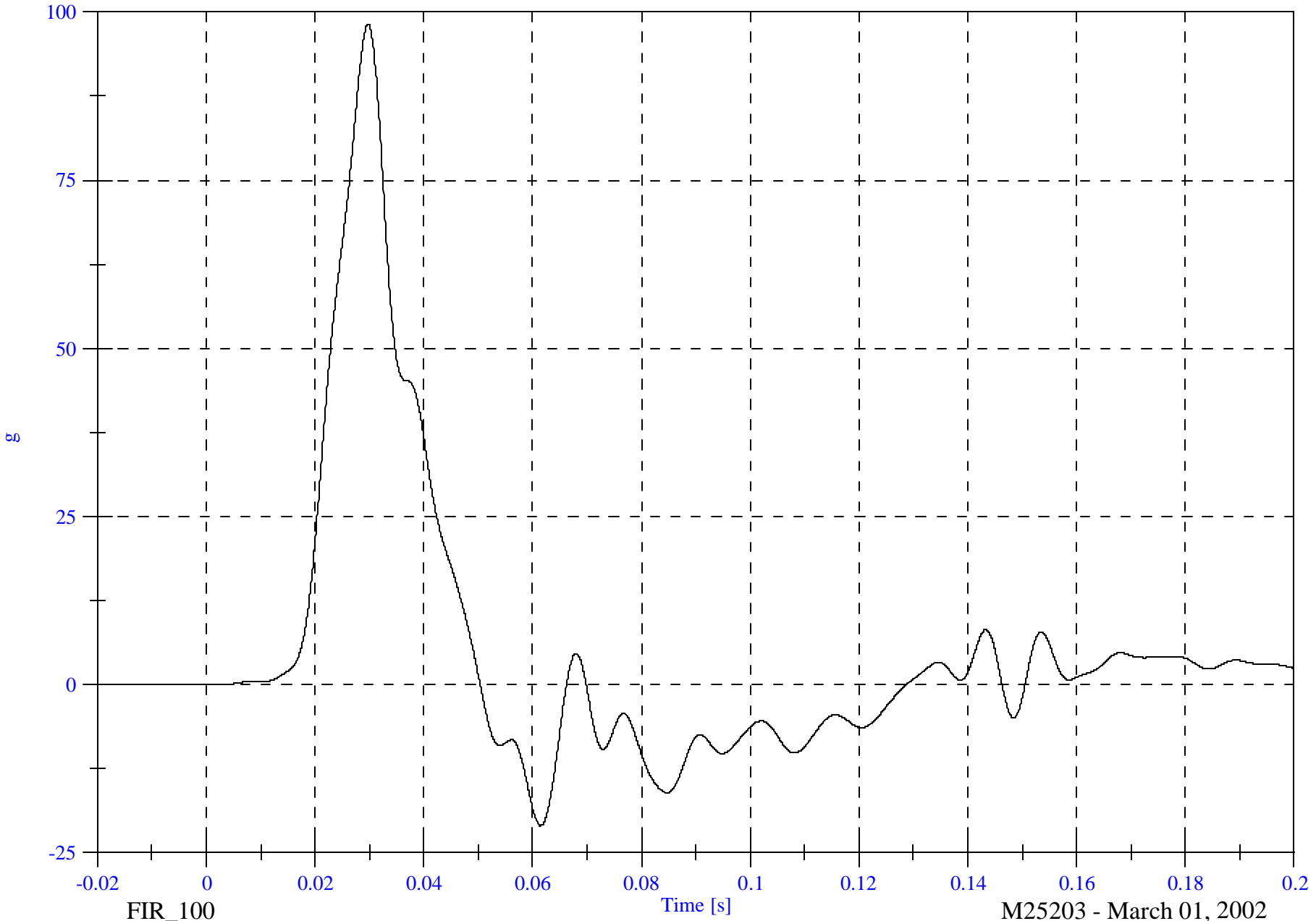
P1 Lower Spine y

Max: 98.1 [g] at 0.030 [s]

Min: -21.0 [g] at 0.061 [s]

B-23

8652-SNCAP-04



FIR_100

Time [s]

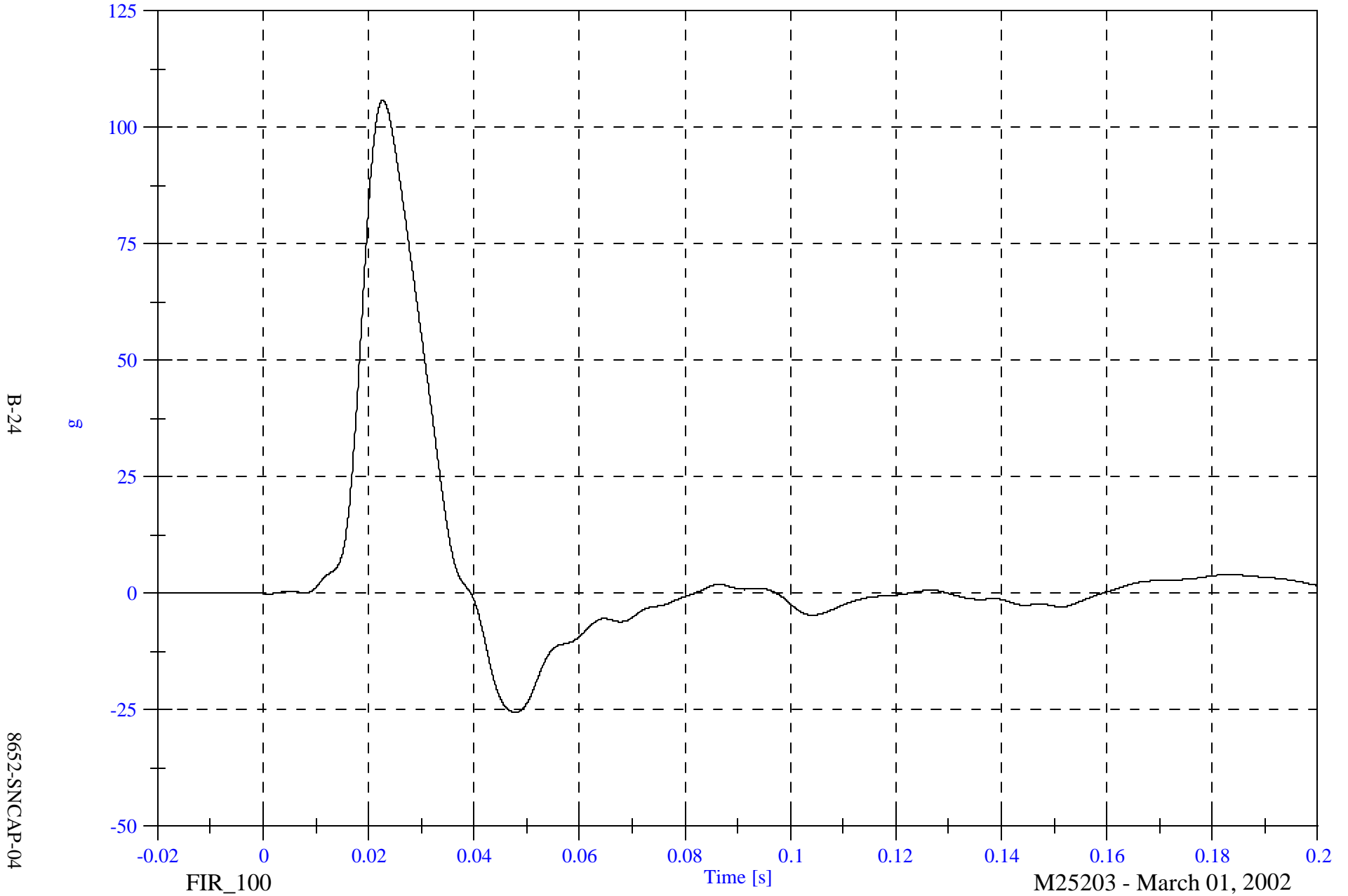
M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

Max: 106.0 [g] at 0.023 [s]

P1 Pelvic y

Min: -25.5 [g] at 0.048 [s]



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FIR_100

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

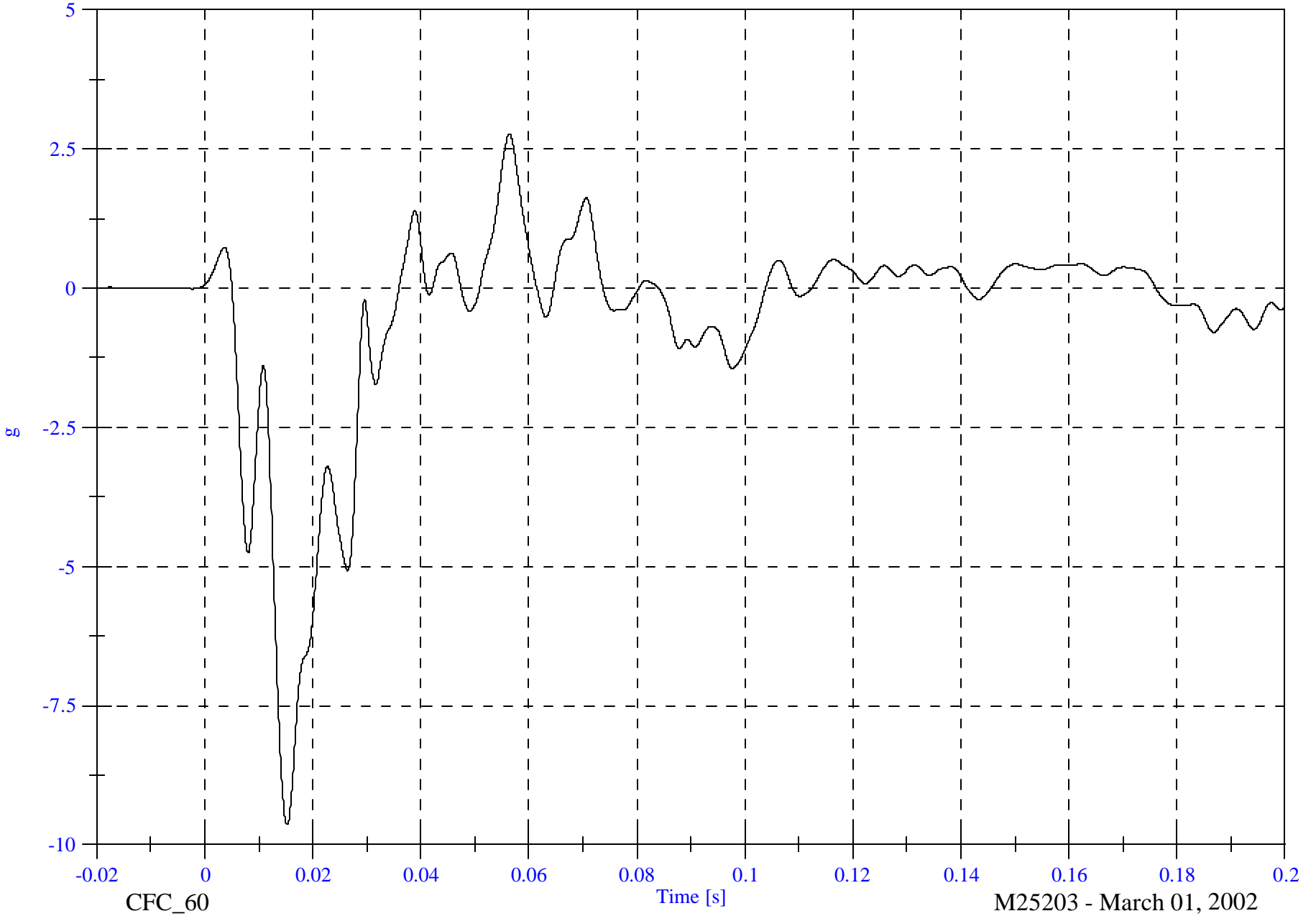
A1 Right Front Sill X

Max: 2.8 [g] at 0.056 [s]

Min: -9.6 [g] at 0.015 [s]

B-25

8652-SNCAP-04



CFC_60

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

A1 Right Front Sill X Velocity

Max: 0.2 [kph] at 0.006 [s]

Min: -4.2 [kph] at 0.038 [s]

B-26

8652-SNCAP-04



CFC_180

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

A1 Right Front Sill Y

Max: 29.2 [g] at 0.010 [s]

Min: -2.8 [g] at 0.067 [s]

B-27

8652-SNCAP-04



SNCAP #4 - 2002 Nissan Sentra

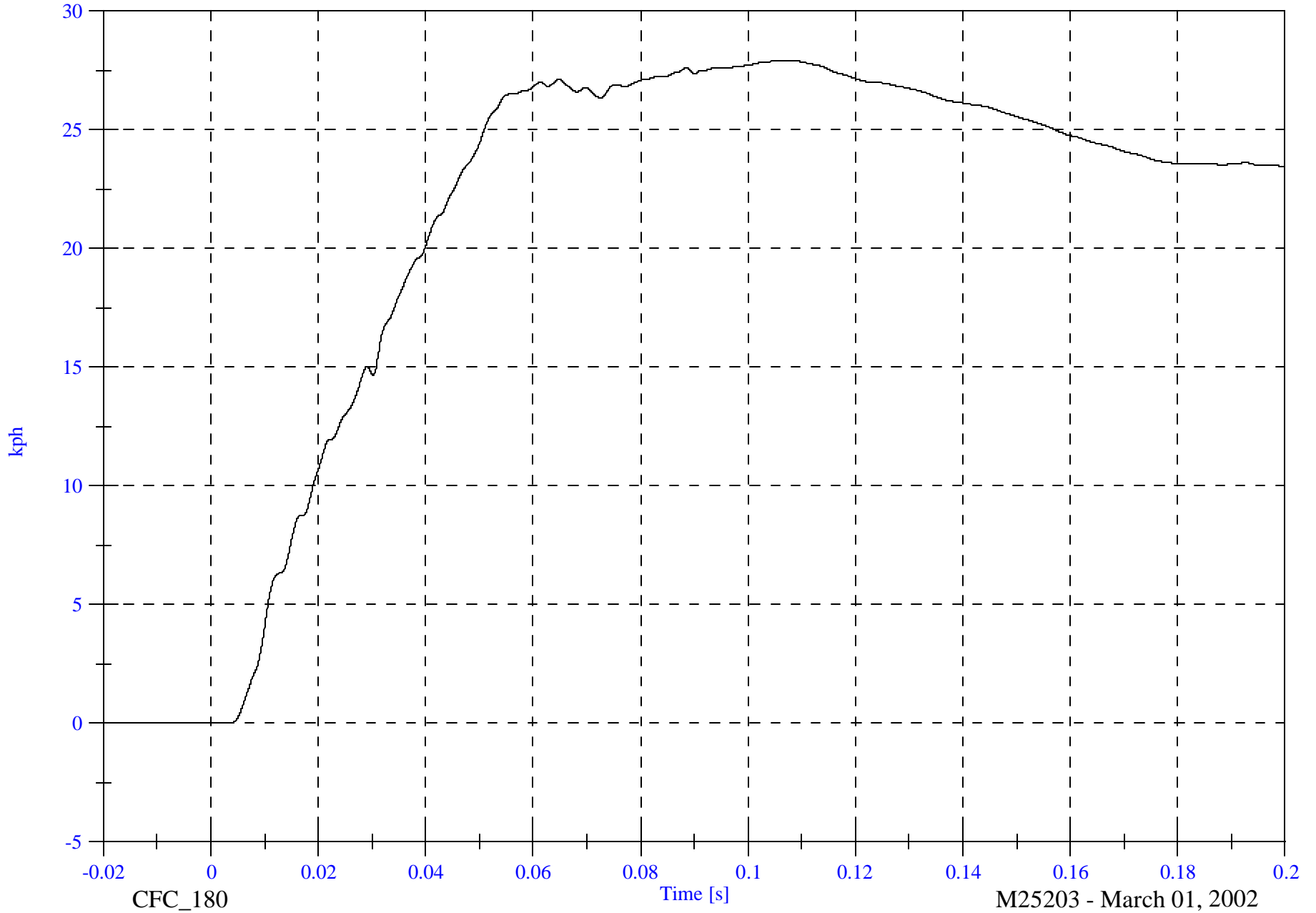
A1 Right Front Sill Y Velocity

Max: 27.9 [kph] at 0.107 [s]

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

B-28

8652-SNCAP-04



CFC_180

Time [s]

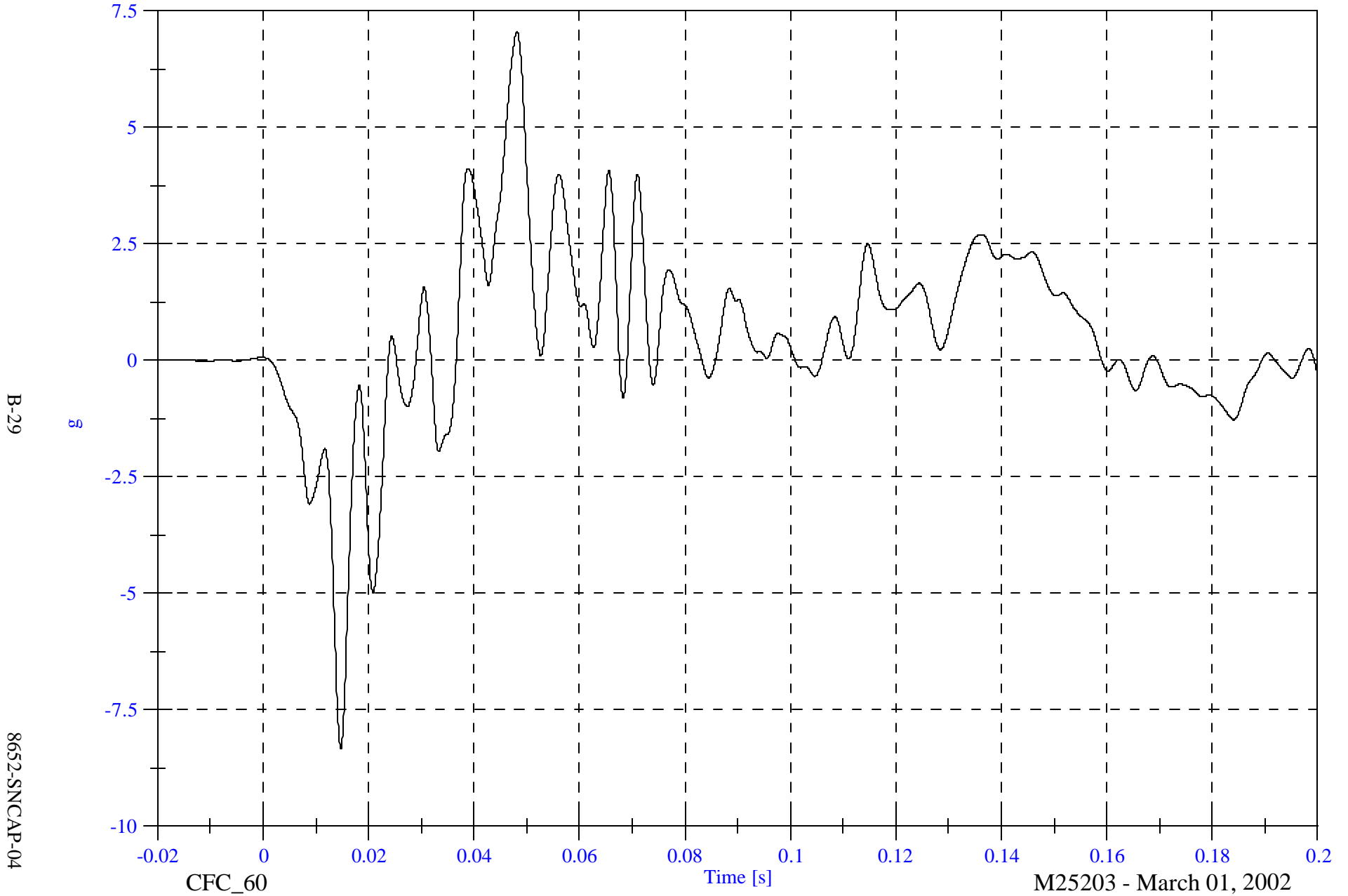
M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

A1 Right Front Sill Z

Max: 7.0 [g] at 0.048 [s]

Min: -8.3 [g] at 0.015 [s]



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8652-SNCAP-04

CFC_60

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

A1 Right Front Sill Z Velocity

Max: 4.4 [kph] at 0.159 [s]

Min: -2.6 [kph] at 0.037 [s]

B-30

8652-SNCAP-04



CFC_180

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

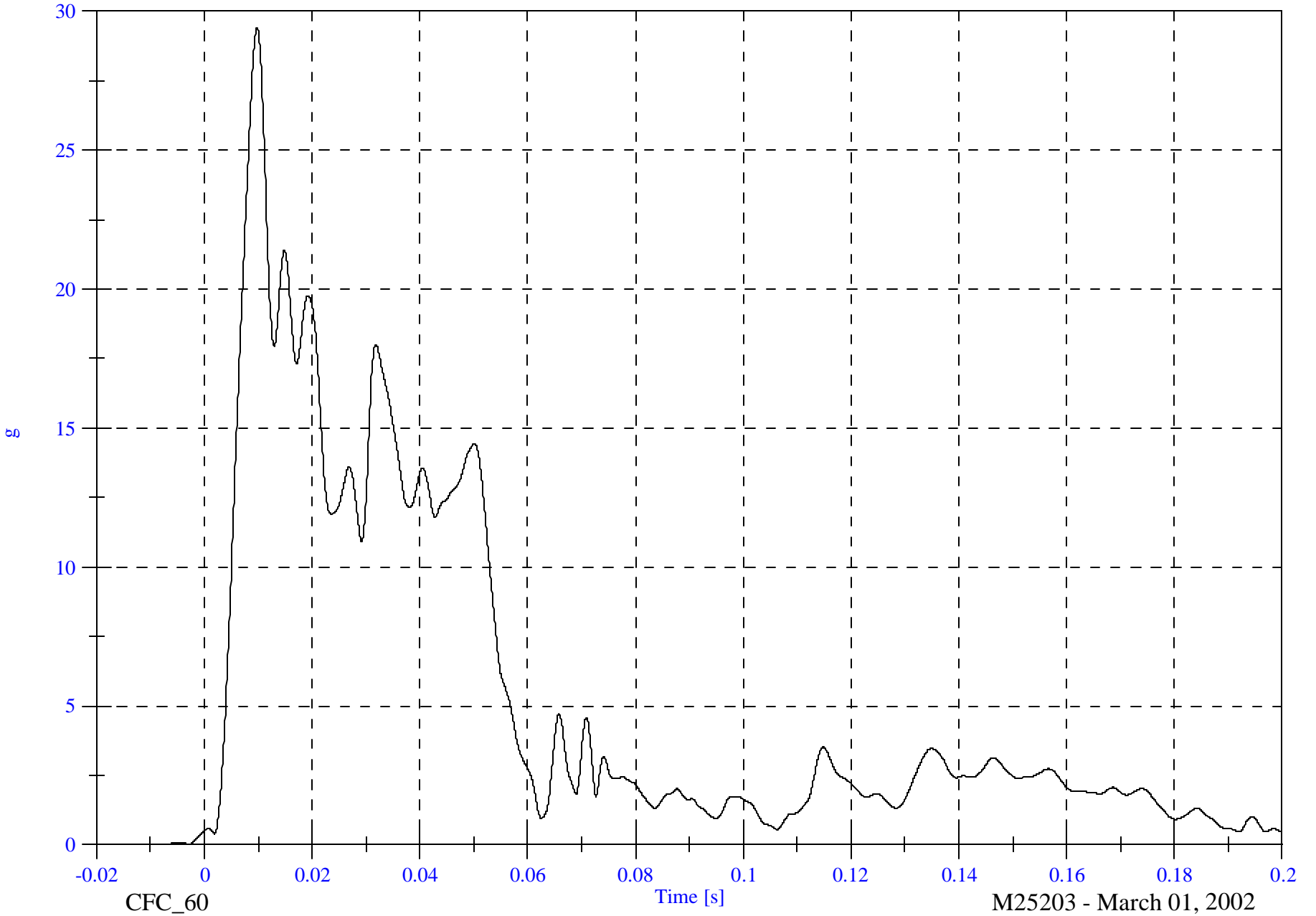
A1 Right Front Sill Resultant

Max: 29.4 [g] at 0.010 [s]

Min: 0.0 [g] at -0.009 [s]

B-31

8652-SNCAP-04



SNCAP #4 - 2002 Nissan Sentra

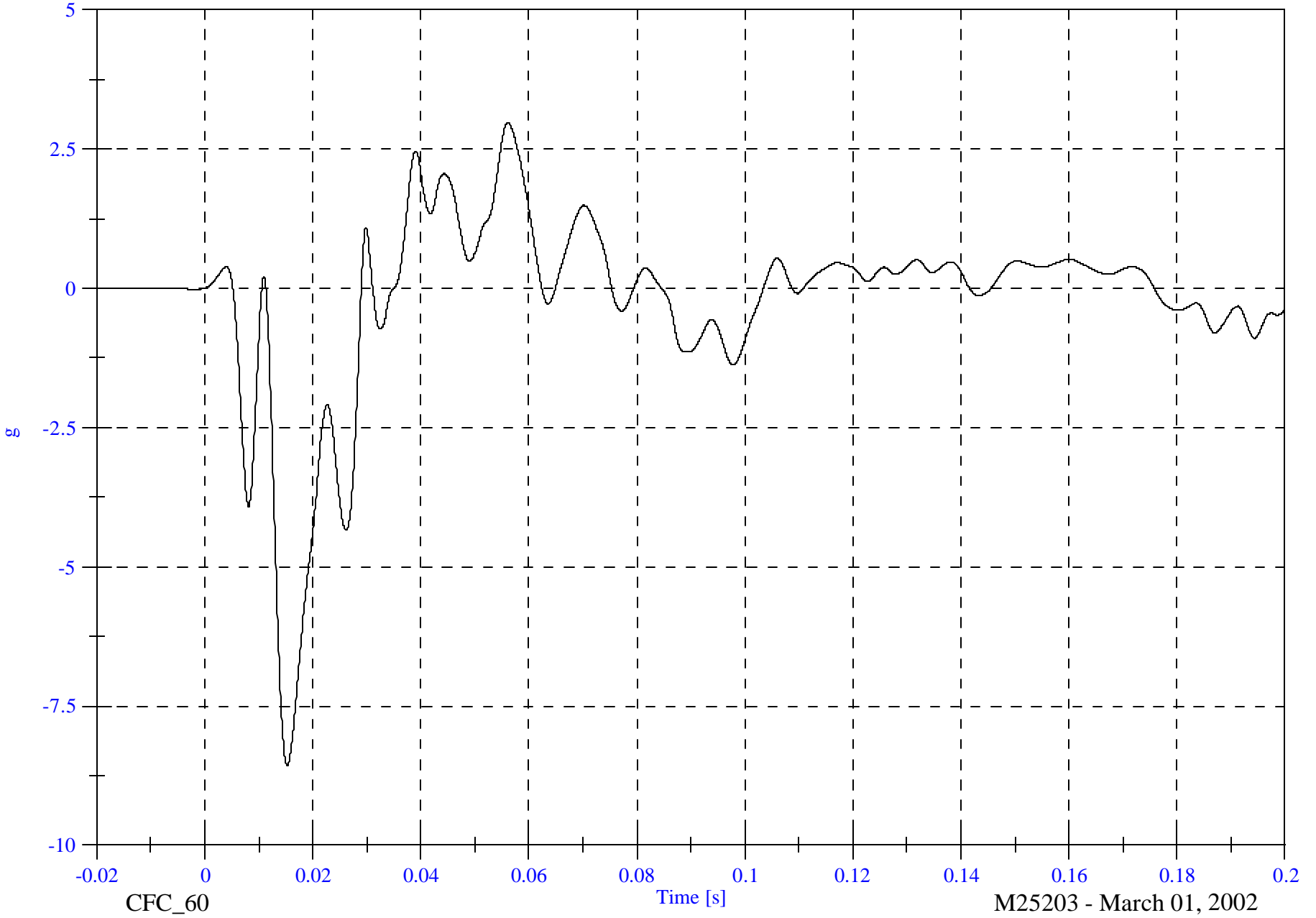
A2 Right Rear Sill X

Max: 3.0 [g] at 0.056 [s]

Min: -8.6 [g] at 0.015 [s]

B-32

8652-SNCAP-04



SNCAP #4 - 2002 Nissan Sentra

A2 Right Rear Sill X Velocity

Max: 0.1 [kph] at 0.007 [s]

Min: -3.4 [kph] at 0.029 [s]

B-33

8652-SNCAP-04



SNCAP #4 - 2002 Nissan Sentra

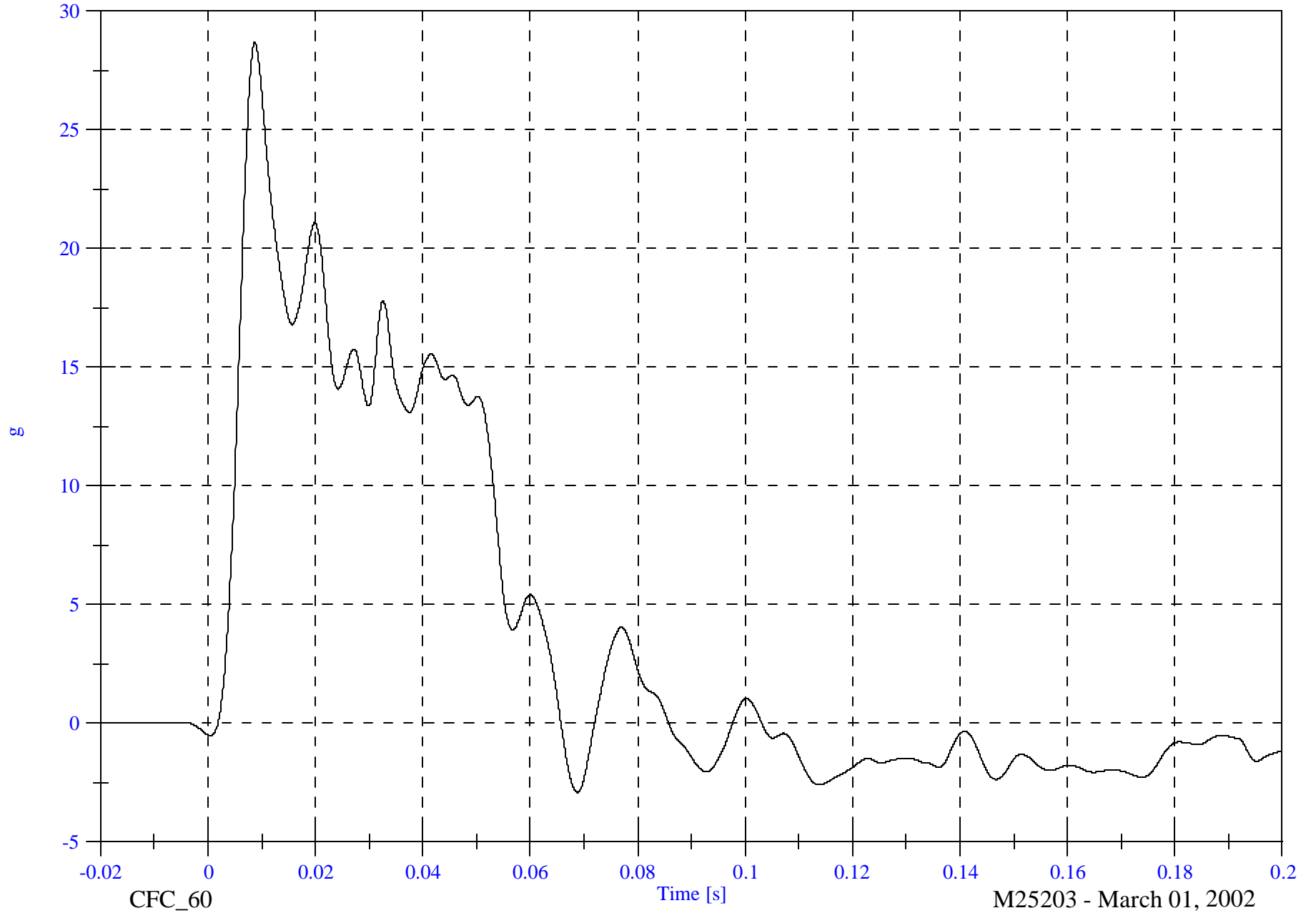
A2 Right Rear Sill Y

Max: 28.7 [g] at 0.009 [s]

Min: -2.9 [g] at 0.069 [s]

B-34

8652-SNCAP-04



CFC_60

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

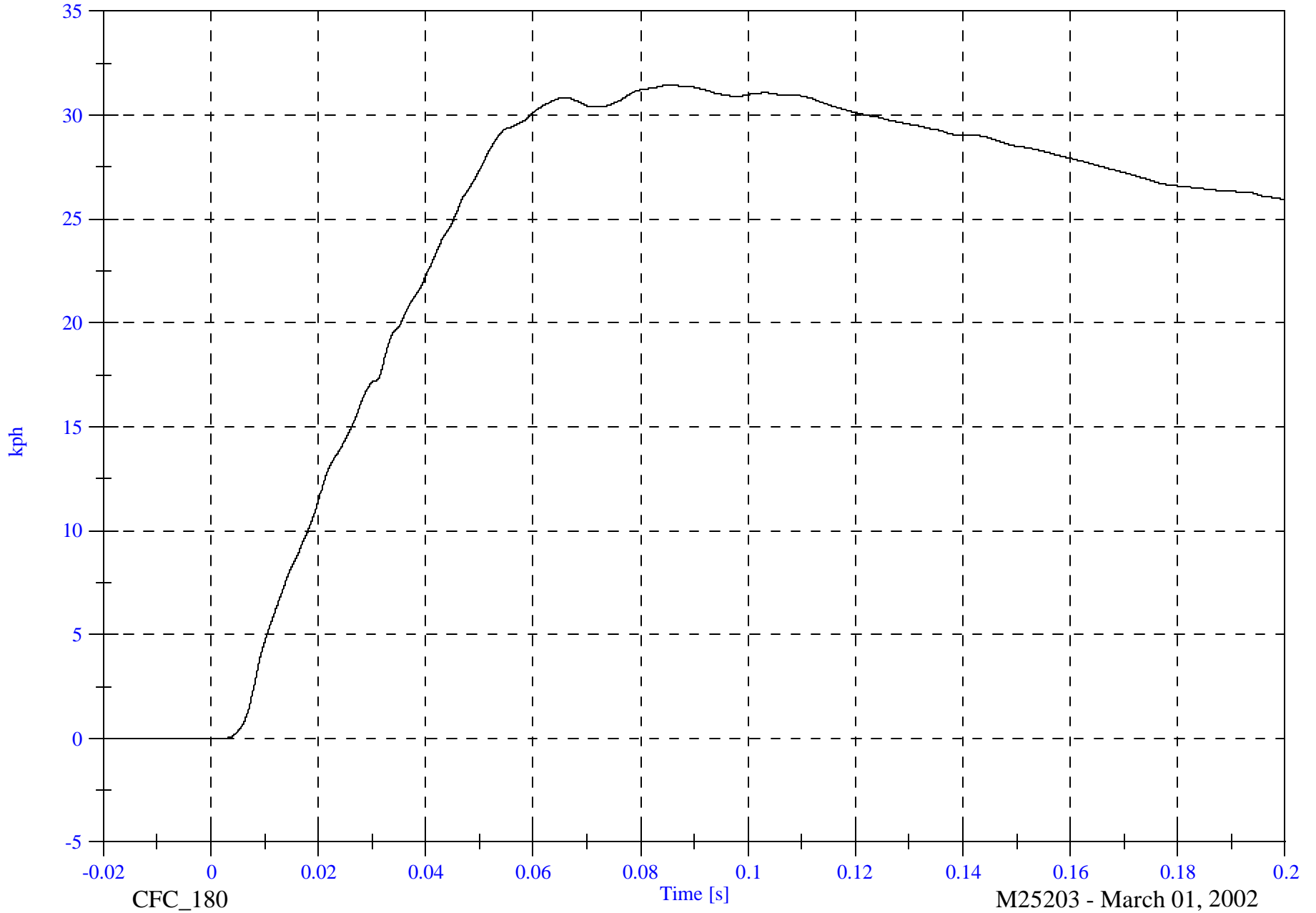
A2 Right Rear Sill Y Velocity

Max: 31.5 [kph] at 0.085 [s]

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

B-35

8652-SNCAP-04



CFC_180

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

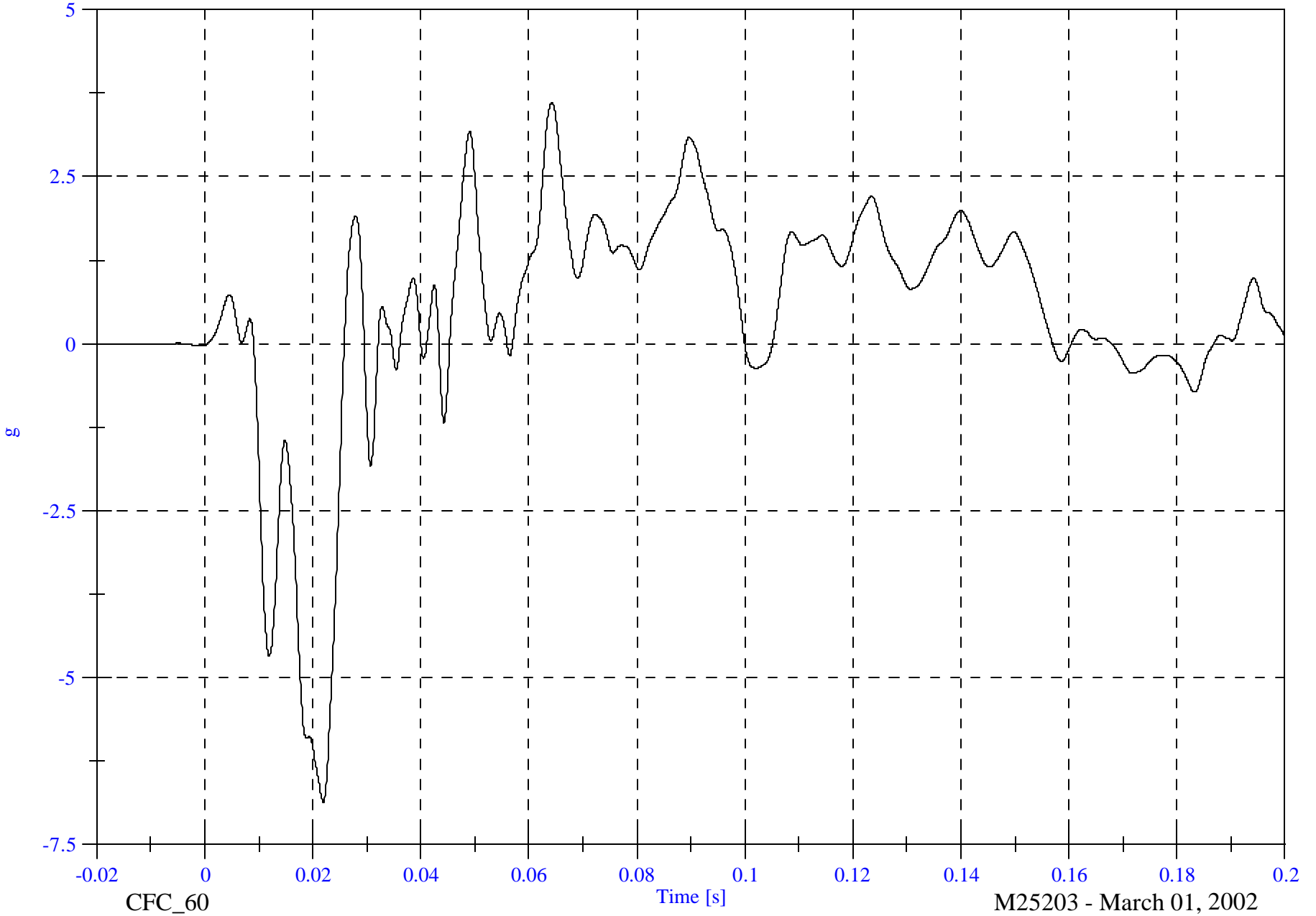
A2 Right Rear Sill Z

Max: 3.6 [g] at 0.064 [s]

Min: -6.9 [g] at 0.022 [s]

B-36

8652-SNCAP-04



SNCAP #4 - 2002 Nissan Sentra

A2 Right Rear Sill Z Velocity

Max: 3.5 [kph] at 0.157 [s]

Min: -2.5 [kph] at 0.032 [s]

B-37

8652-SNCAP-04



CFC_180

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

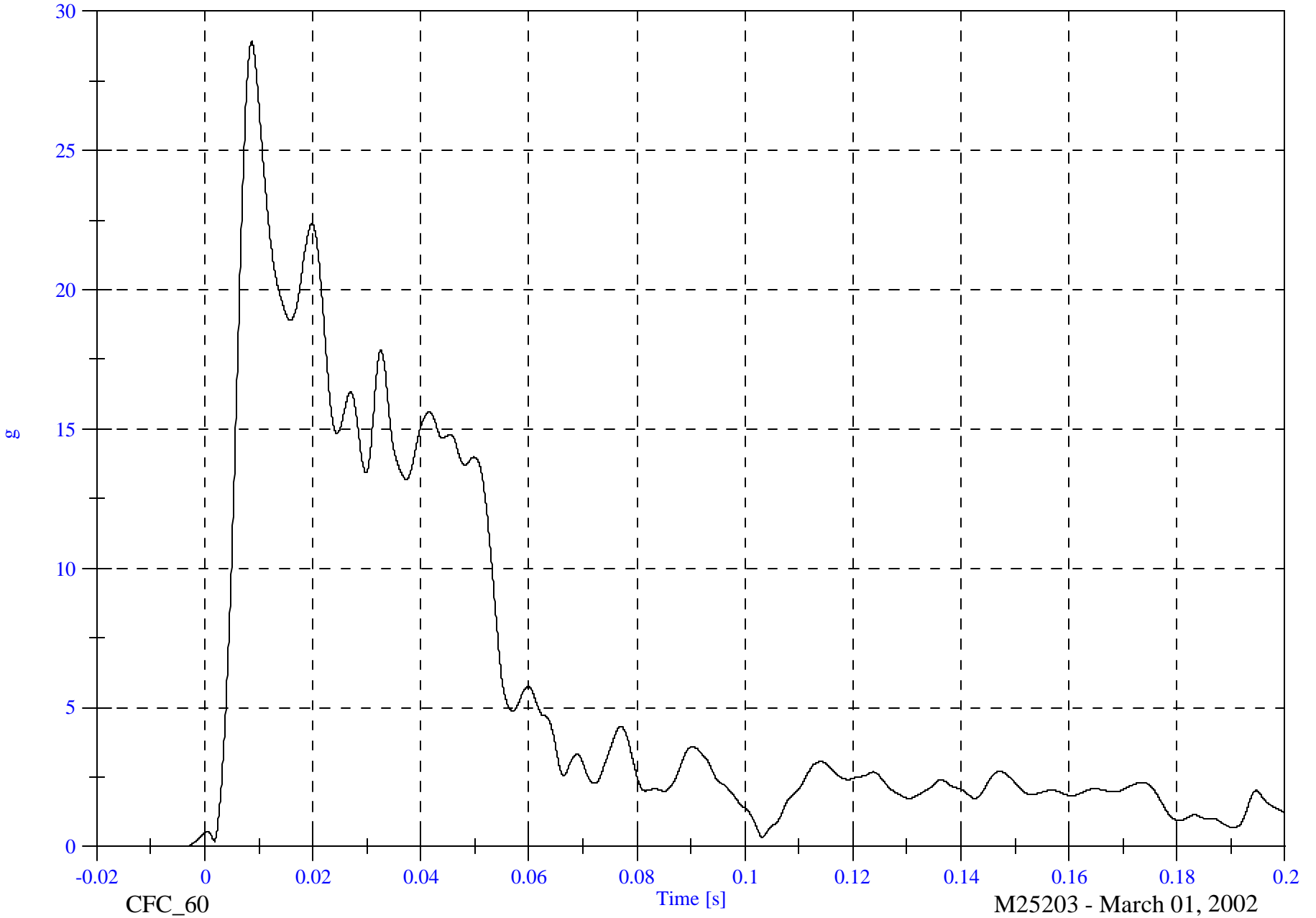
A2 Right Rear Sill Resultant

Max: 28.9 [g] at 0.009 [s]

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

B-38

8652-SNCAP-04



SNCAP #4 - 2002 Nissan Sentra

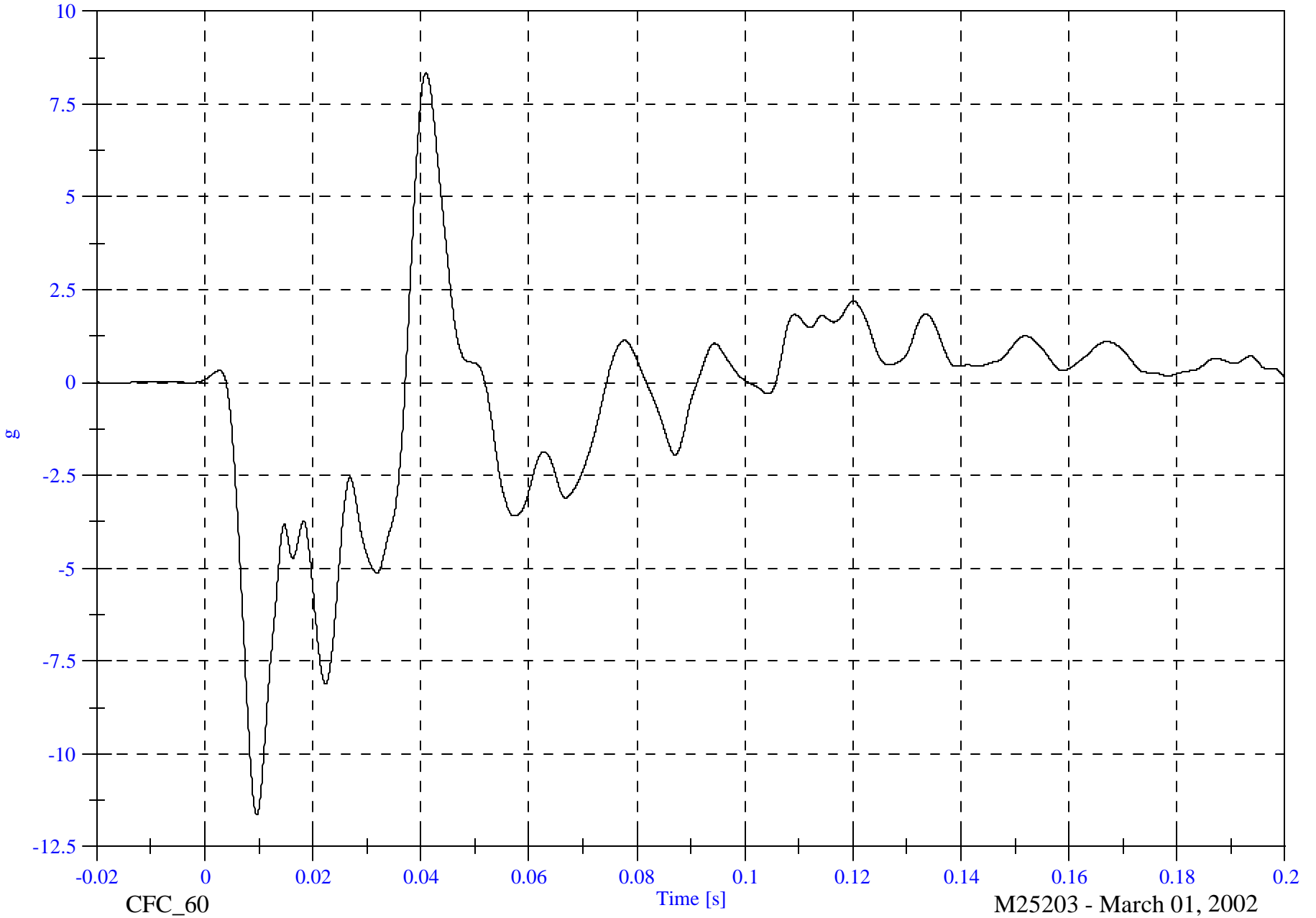
A3 Rear Floorpan X

Max: 8.3 [g] at 0.041 [s]

Min: -11.6 [g] at 0.010 [s]

B-39

8652-SNCAP-04



CFC_60

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

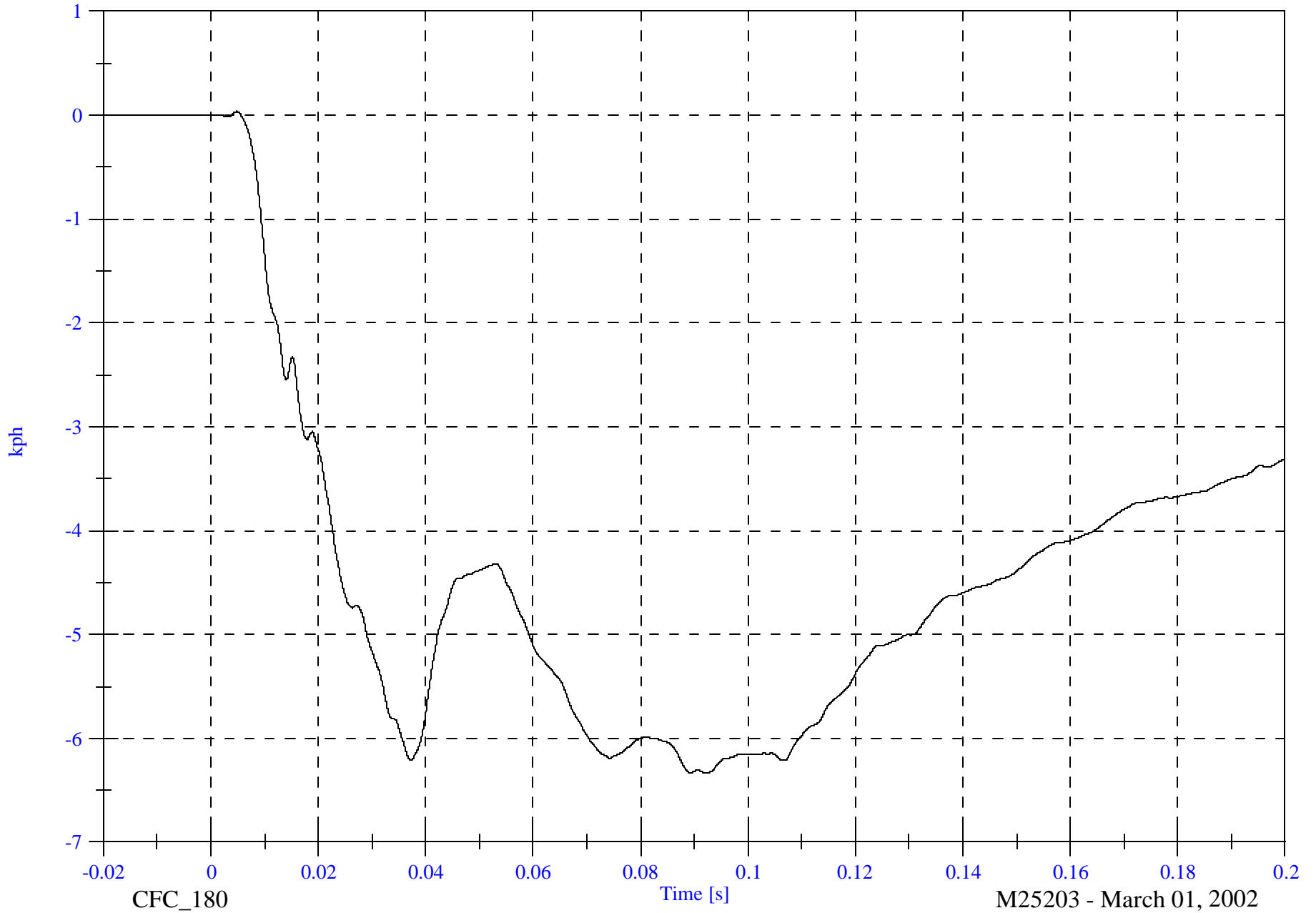
A3 Rear Floorpan X Velocity

Max: 0.0 [kph] at 0.005 [s]

Min: -6.3 [kph] at 0.089 [s]

B-40

8652-SNCAP-04



CFC_180

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

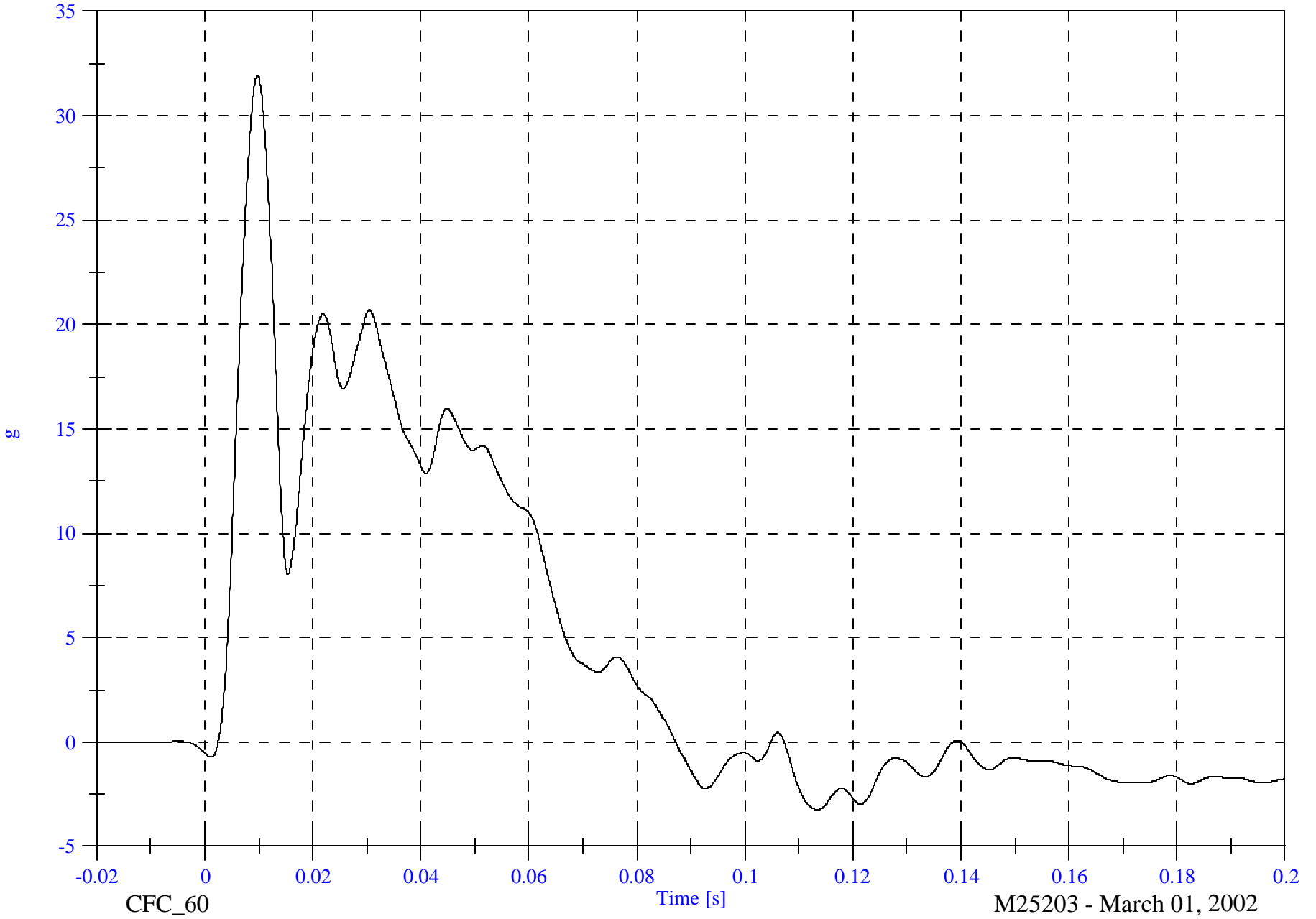
A3 Rear Floorpan Y

Max: 31.9 [g] at 0.010 [s]

Min: -3.2 [g] at 0.113 [s]

B-41

8652-SNCAP-04



M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

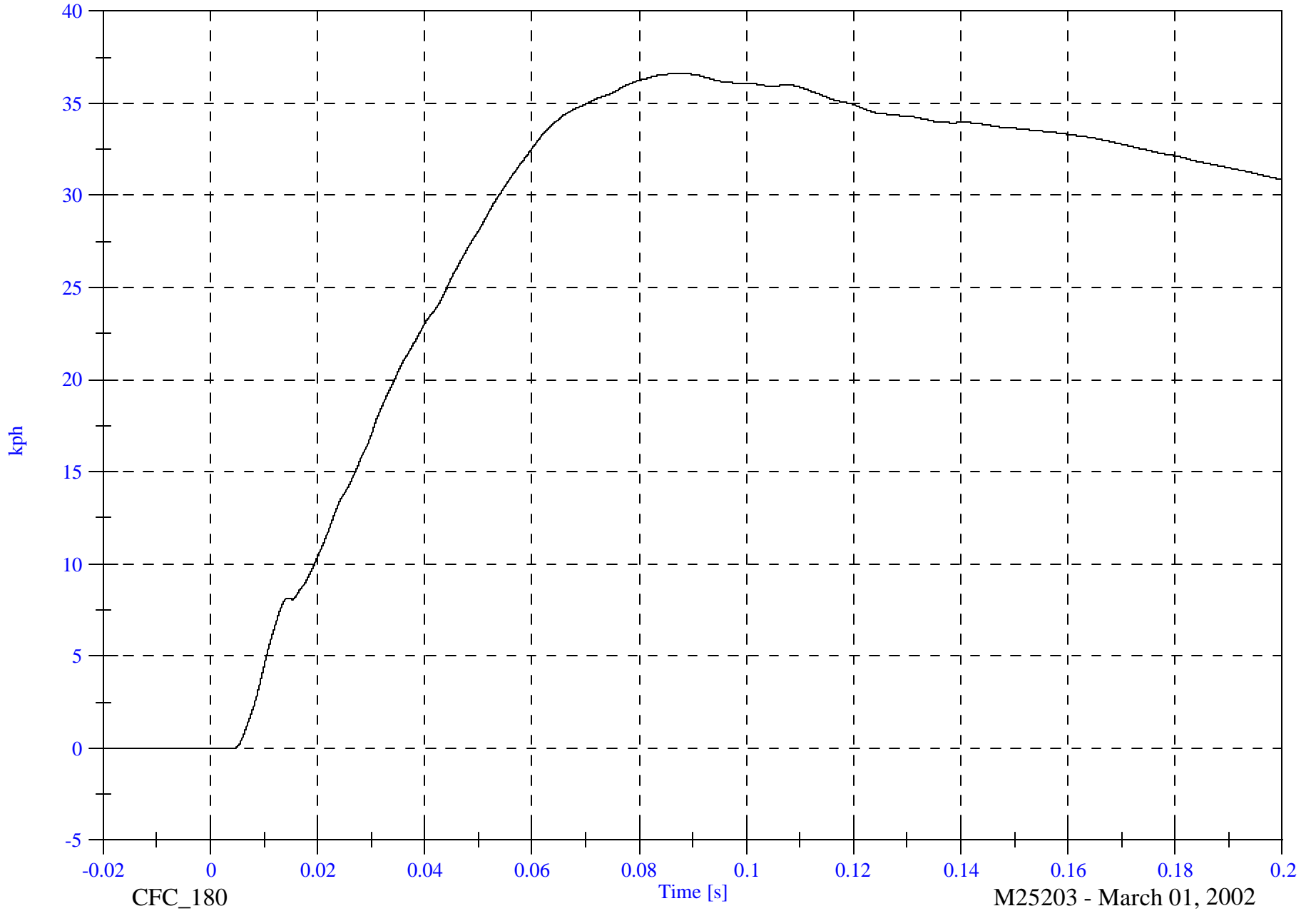
Max: 36.6 [kph] at 0.087 [s]

A3 Rear Floorpan Y Velocity

Min: -0.0 [kph] at 0.004 [s]

B-42

8652-SNCAP-04



CFC_180

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

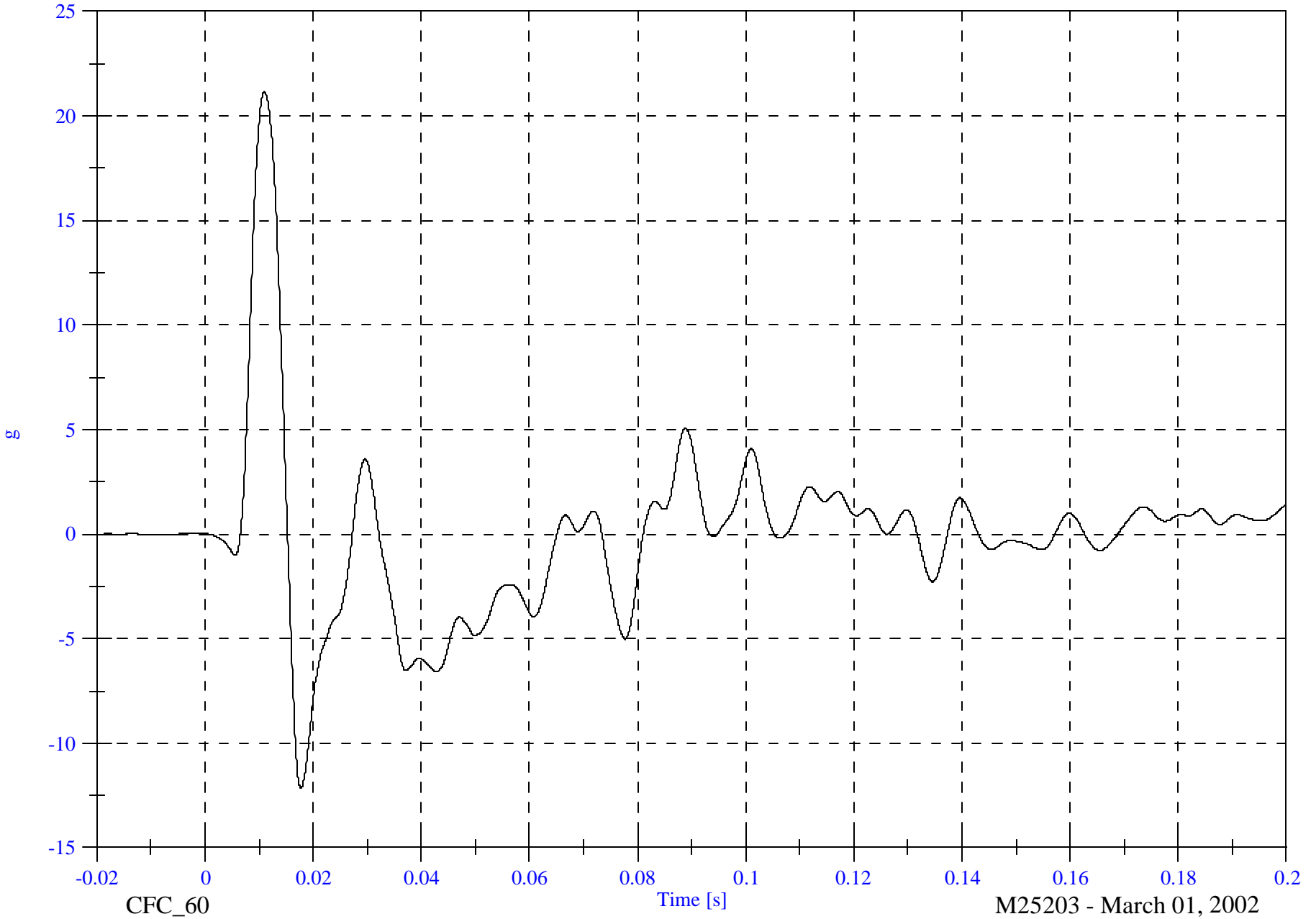
A3 Rear Floorplan Z

Max: 21.1 [g] at 0.011 [s]

Min: -12.1 [g] at 0.018 [s]

B-43

8652-SNCAP-04



CFC_60

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

A3 Rear Floorplan Z Velocity

Max: 4.1 [kph] at 0.016 [s]

Min: -3.8 [kph] at 0.080 [s]

B-44

8652-SNCAP-04



CFC_180

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

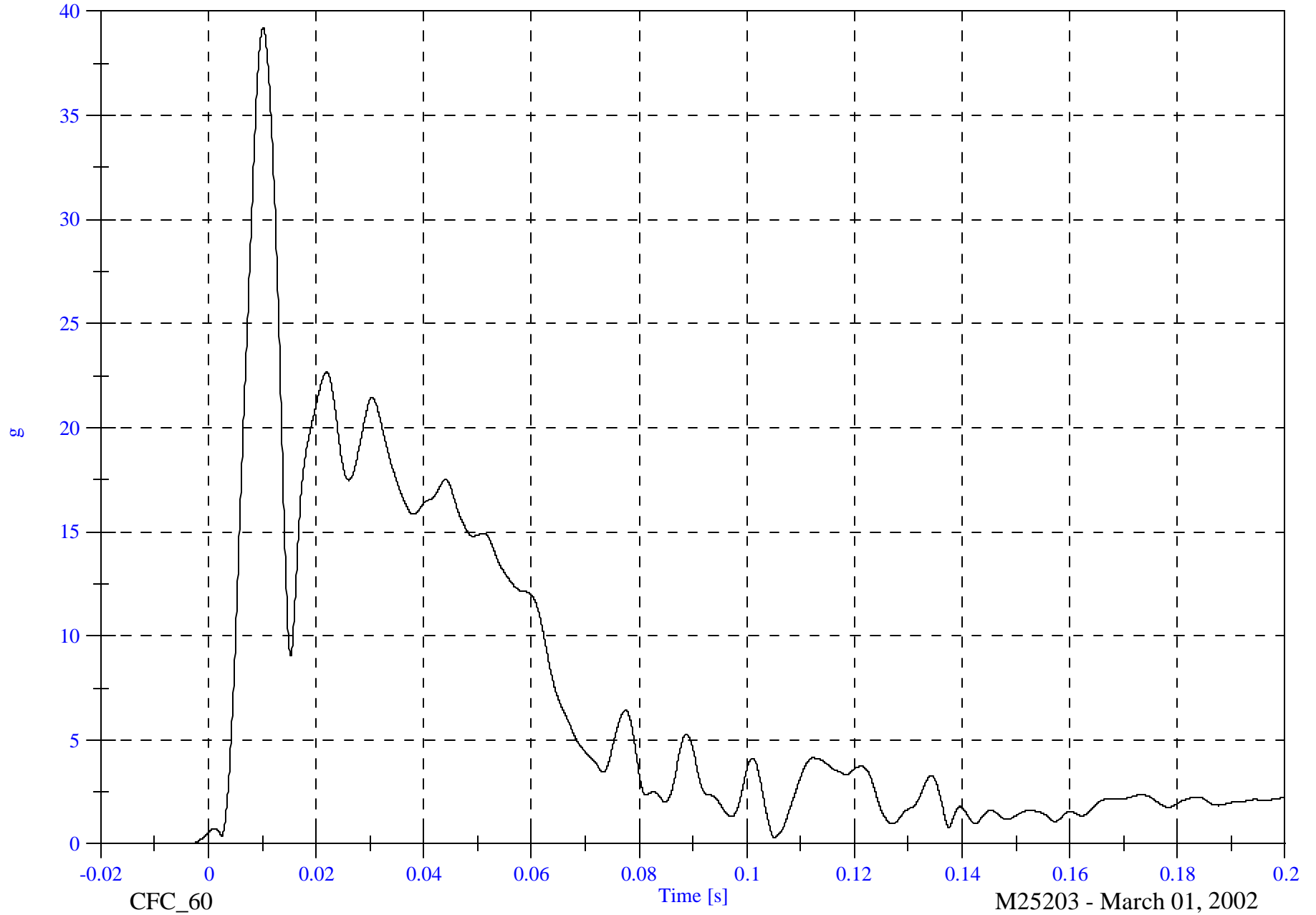
A3 Rear Floorpan Resultant

Max: 39.2 [g] at 0.010 [s]

Min: 0.0 [g] at -0.014 [s]

B-45

8652-SNCAP-04



CFC_60

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

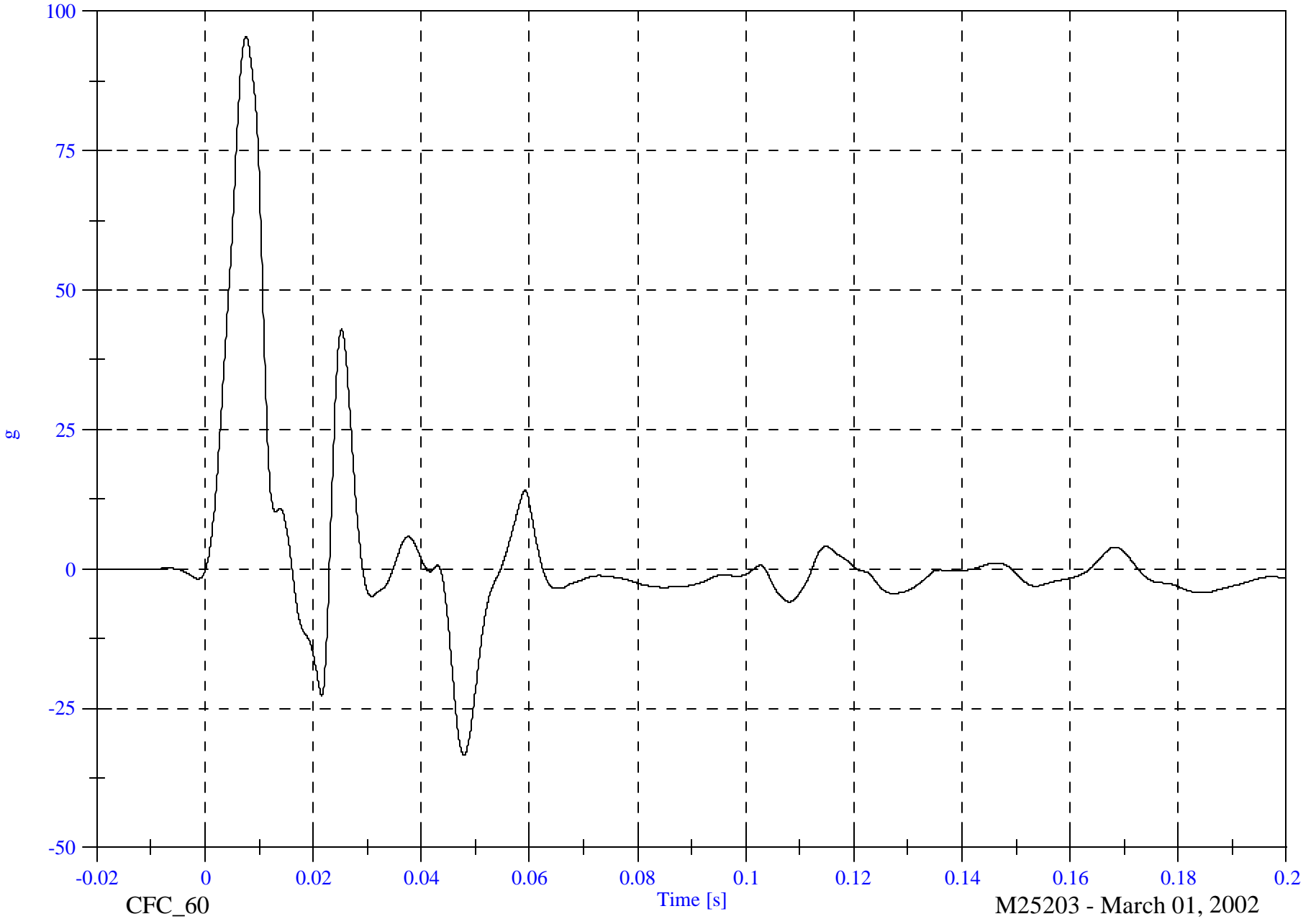
A4 Left Rear Sill Y

Max: 95.5 [g] at 0.008 [s]

Min: -33.4 [g] at 0.048 [s]

B-46

8652-SNCAP-04



SNCAP #4 - 2002 Nissan Sentra

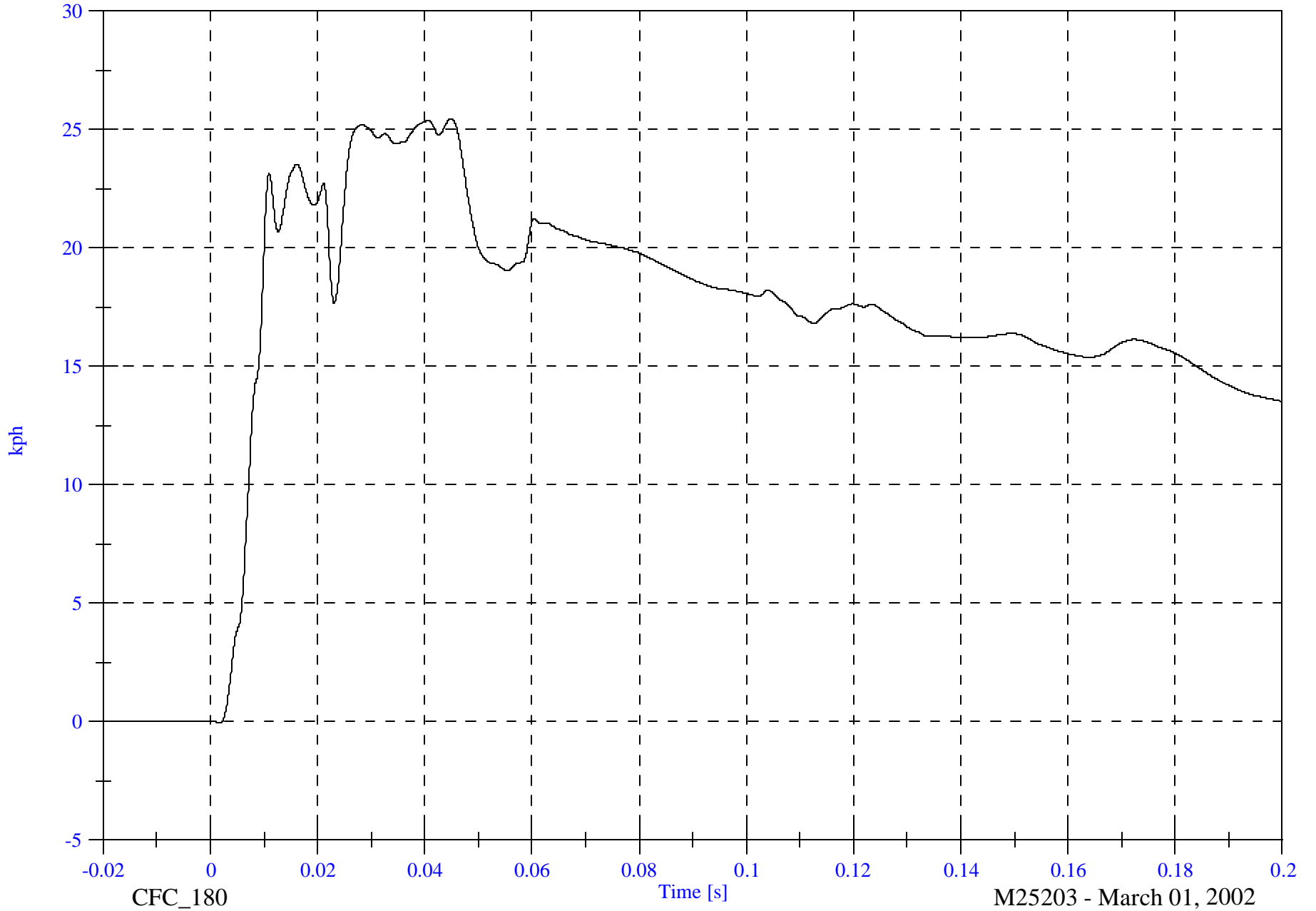
A4 Left Rear Sill Y Velocity

Max: 25.5 [kph] at 0.045 [s]

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

B-47

8652-SNCAP-04



SNCAP #4 - 2002 Nissan Sentra

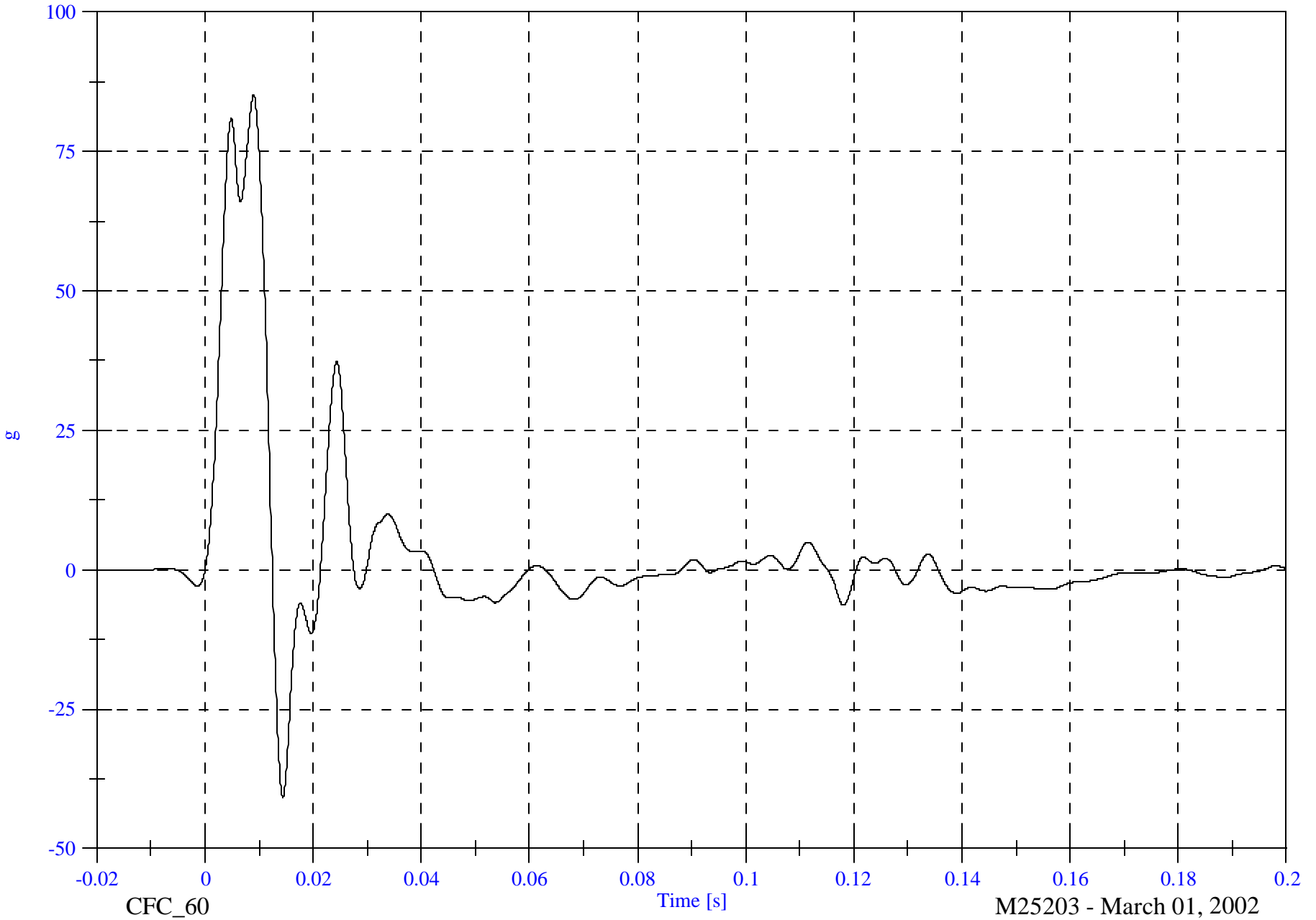
A5 Left Front Sill Y

Max: 85.2 [g] at 0.009 [s]

Min: -40.8 [g] at 0.014 [s]

B-48

8652-SNCAP-04



SNCAP #4 - 2002 Nissan Sentra

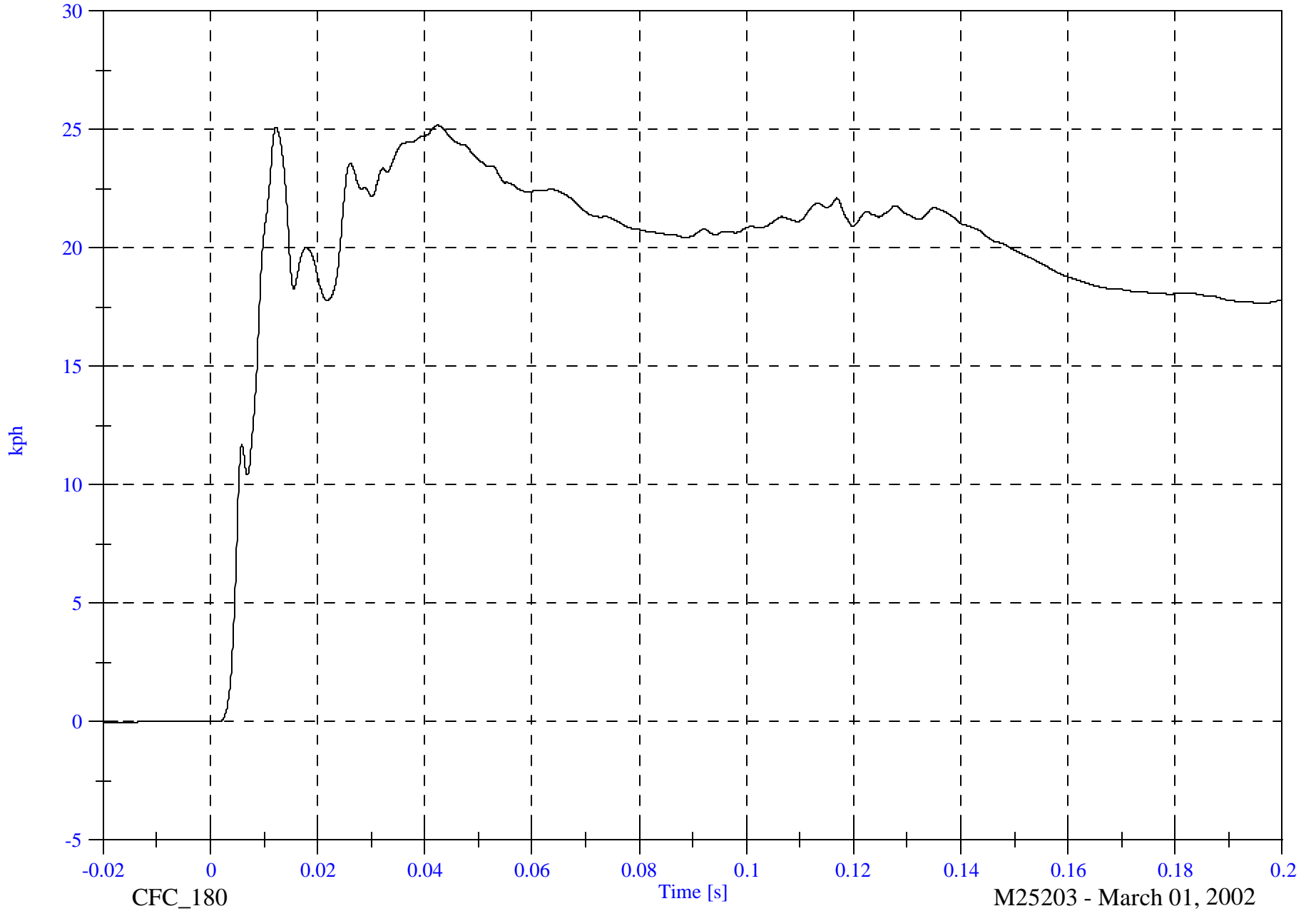
Max: 25.2 [kph] at 0.042 [s]

A5 Left Front Sill Y Velocity

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

B-49

8652-SNCAP-04

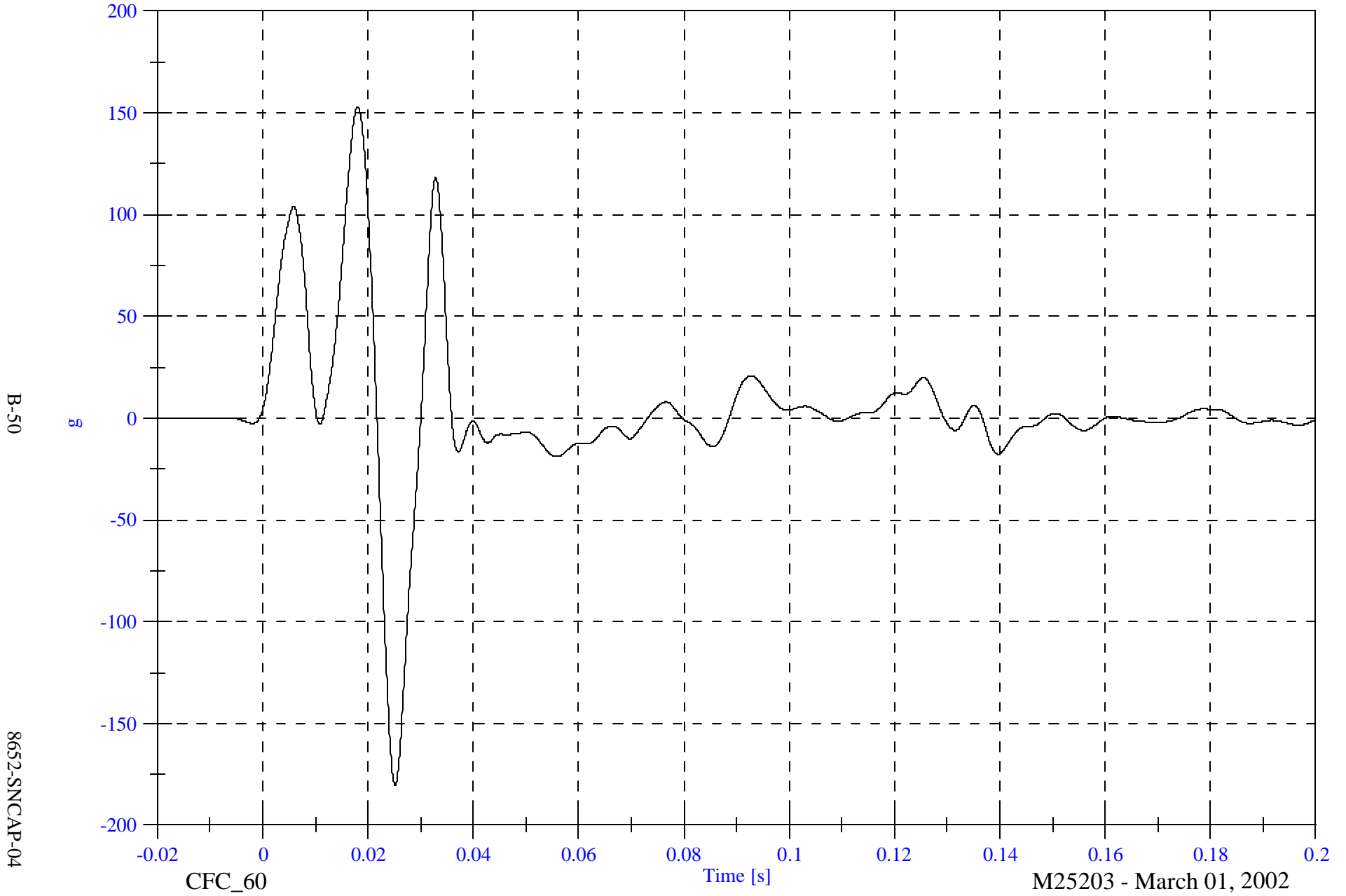


SNCAP #4 - 2002 Nissan Sentra

A6 Left Front Door CL Y

Max: 153.0 [g] at 0.018 [s]

Min: -180.3 [g] at 0.025 [s]



SNCAP #4 - 2002 Nissan Sentra

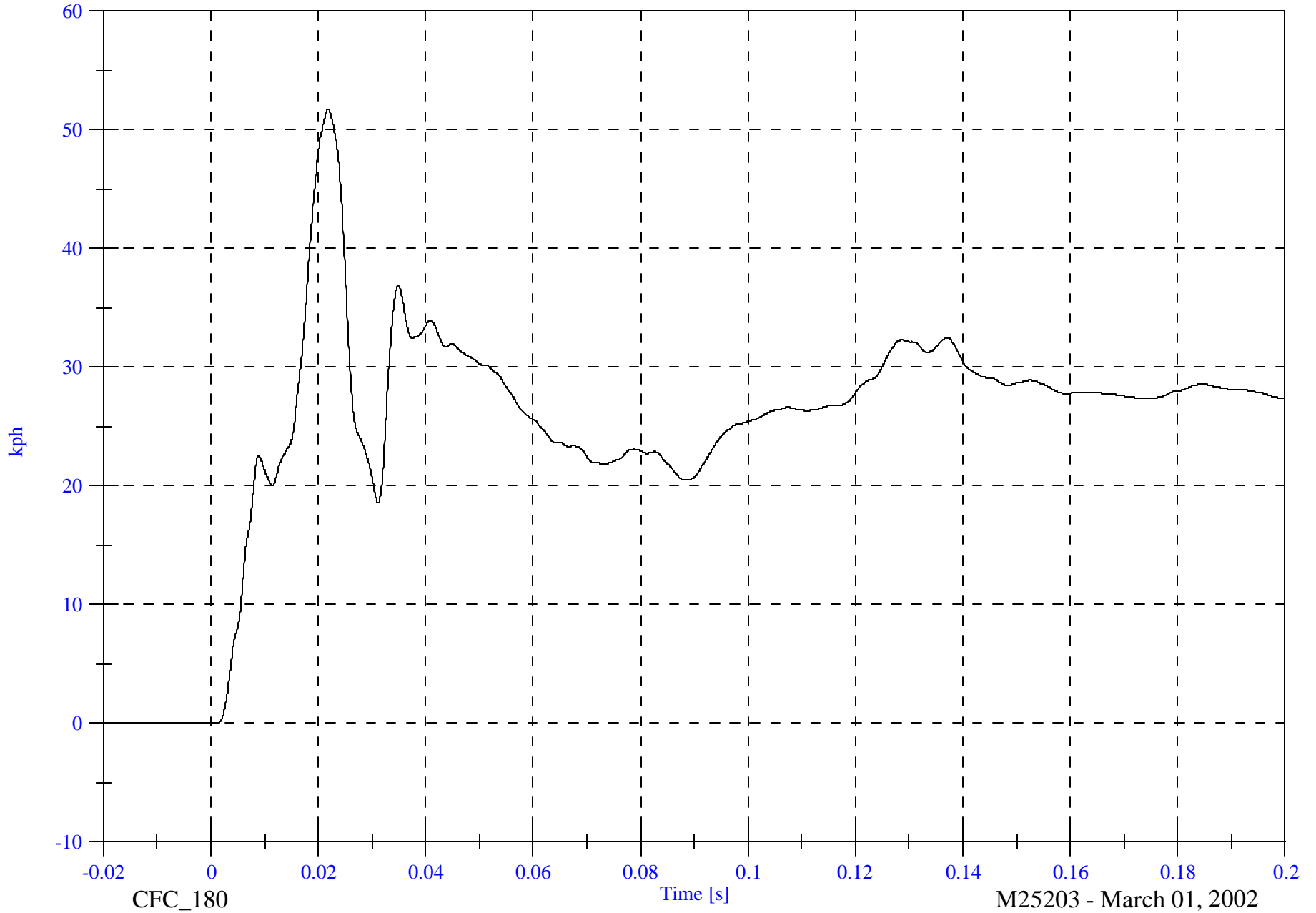
A6 Left Front Door CL Y Velocity

Max: 51.7 [kph] at 0.022 [s]

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

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8652-SNCAP-04



CFC_180

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

A7 Right Rear Compartment Y

Max: 28.5 [g] at 0.009 [s]

Min: -3.3 [g] at 0.068 [s]

B-52

8652-SNCAP-04



SNCAP #4 - 2002 Nissan Sentra

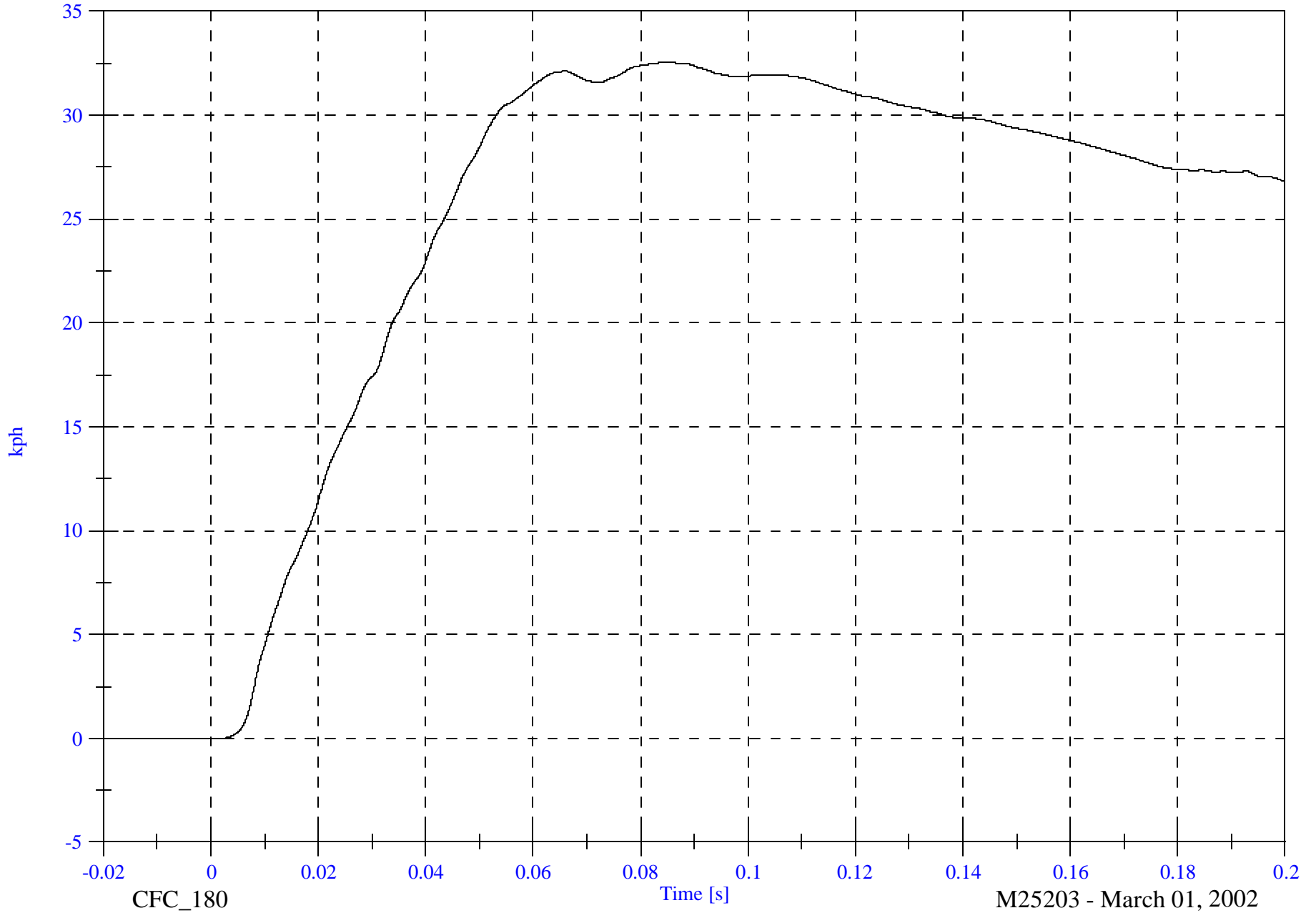
A7 Right Rear Compartment Y Velocity

Max: 32.6 [kph] at 0.085 [s]

Min: -0.0 [kph] at -0.012 [s]

B-53

8652-SNCAP-04



CFC_180

Time [s]

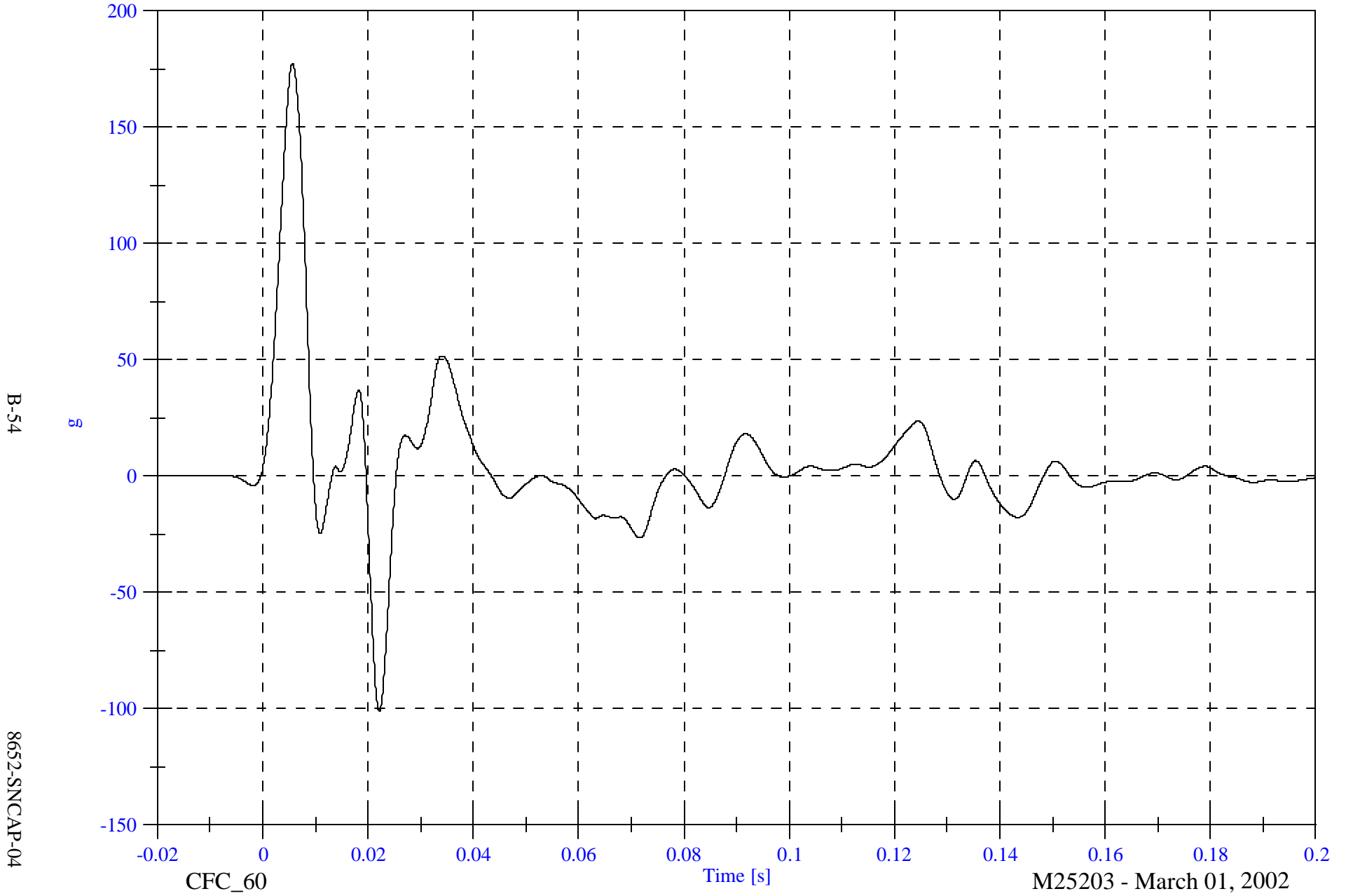
M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

A8 Left Front Door Midrear Y

Max: 177.4 [g] at 0.006 [s]

Min: -101.2 [g] at 0.022 [s]



SNCAP #4 - 2002 Nissan Sentra

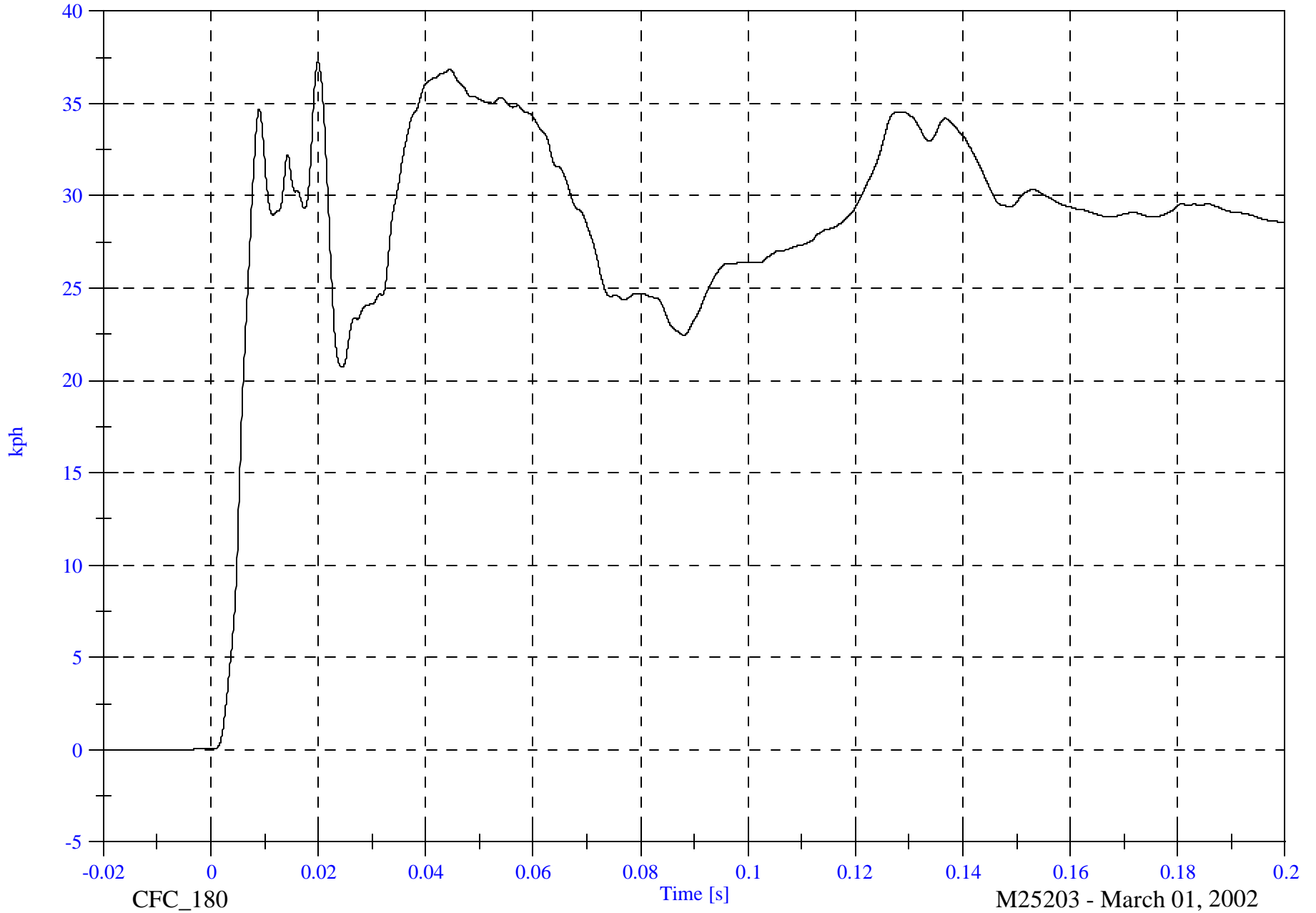
Max: 37.3 [kph] at 0.020 [s]

A8 Left Front Door Midrear Y Velocity

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

B-55

8652-SNCAP-04



CFC_180

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

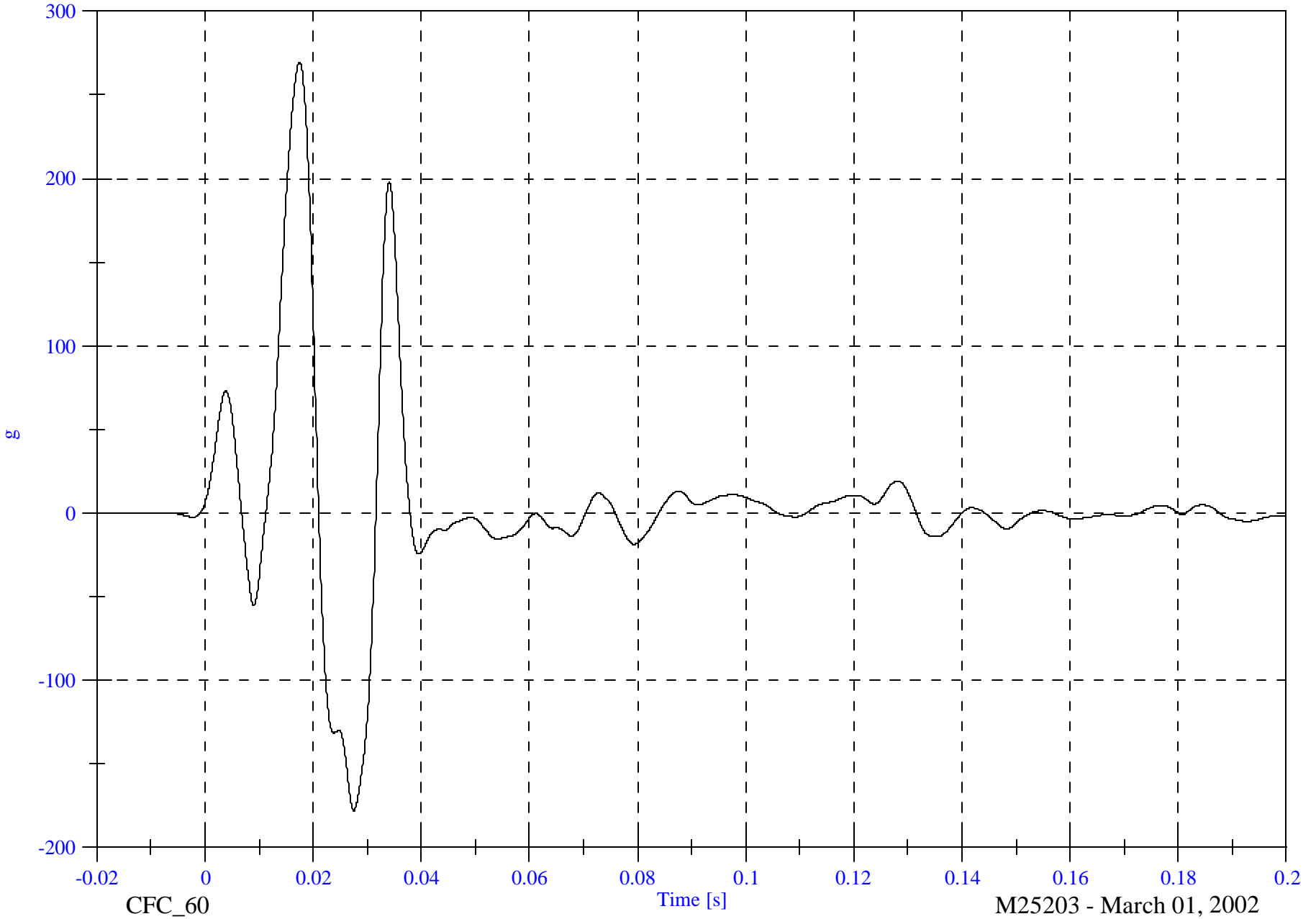
A9 Left Front Door Upper C/L Y

Max: 269.6 [g] at 0.017 [s]

Min: -178.0 [g] at 0.028 [s]

B-56

8652-SNCAP-04



CFC_60

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

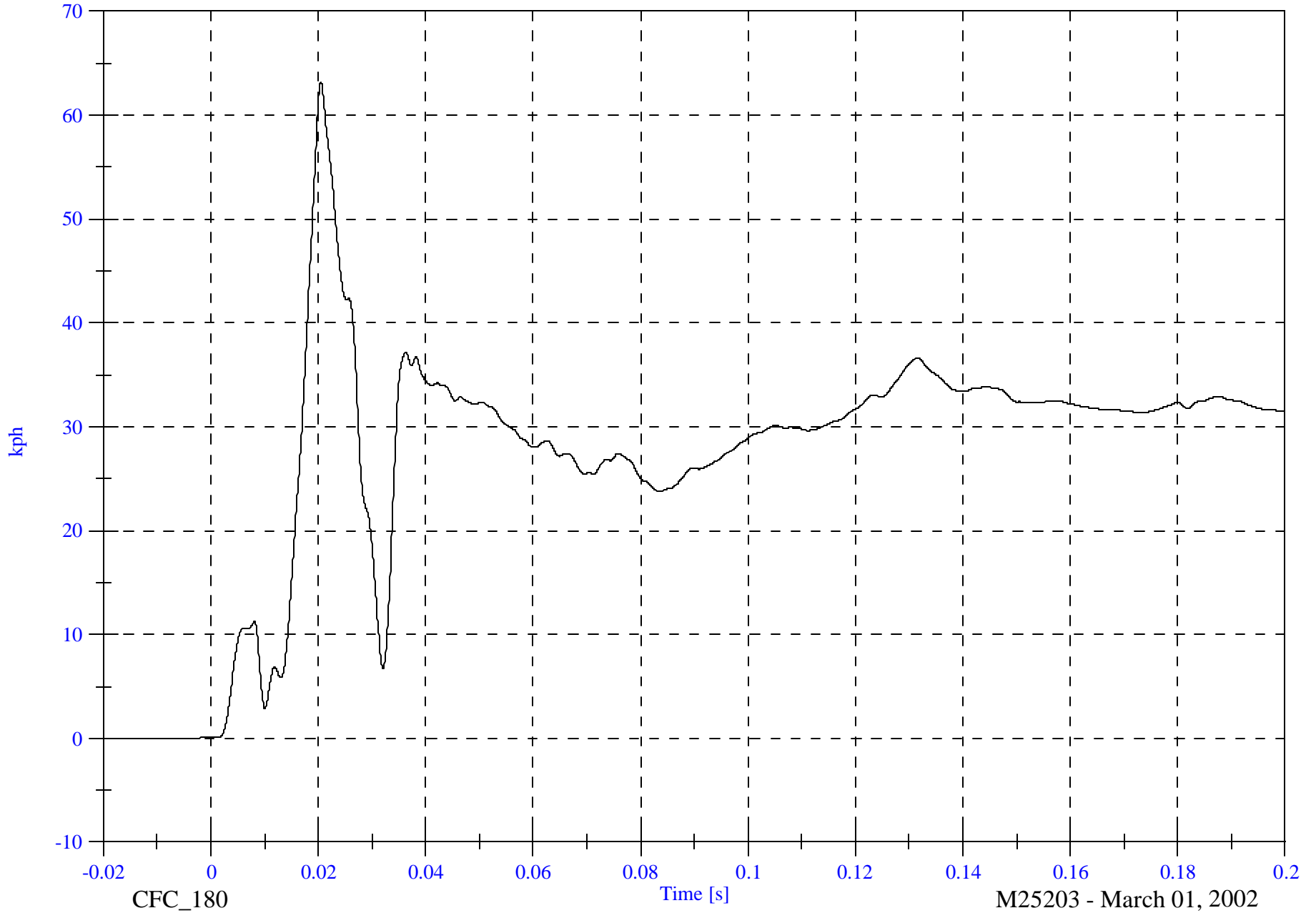
A9 Left Front Door Upper C/L Y Velocity

Max: 63.1 [kph] at 0.020 [s]

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

B-57

8652-SNCAP-04



CFC_180

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

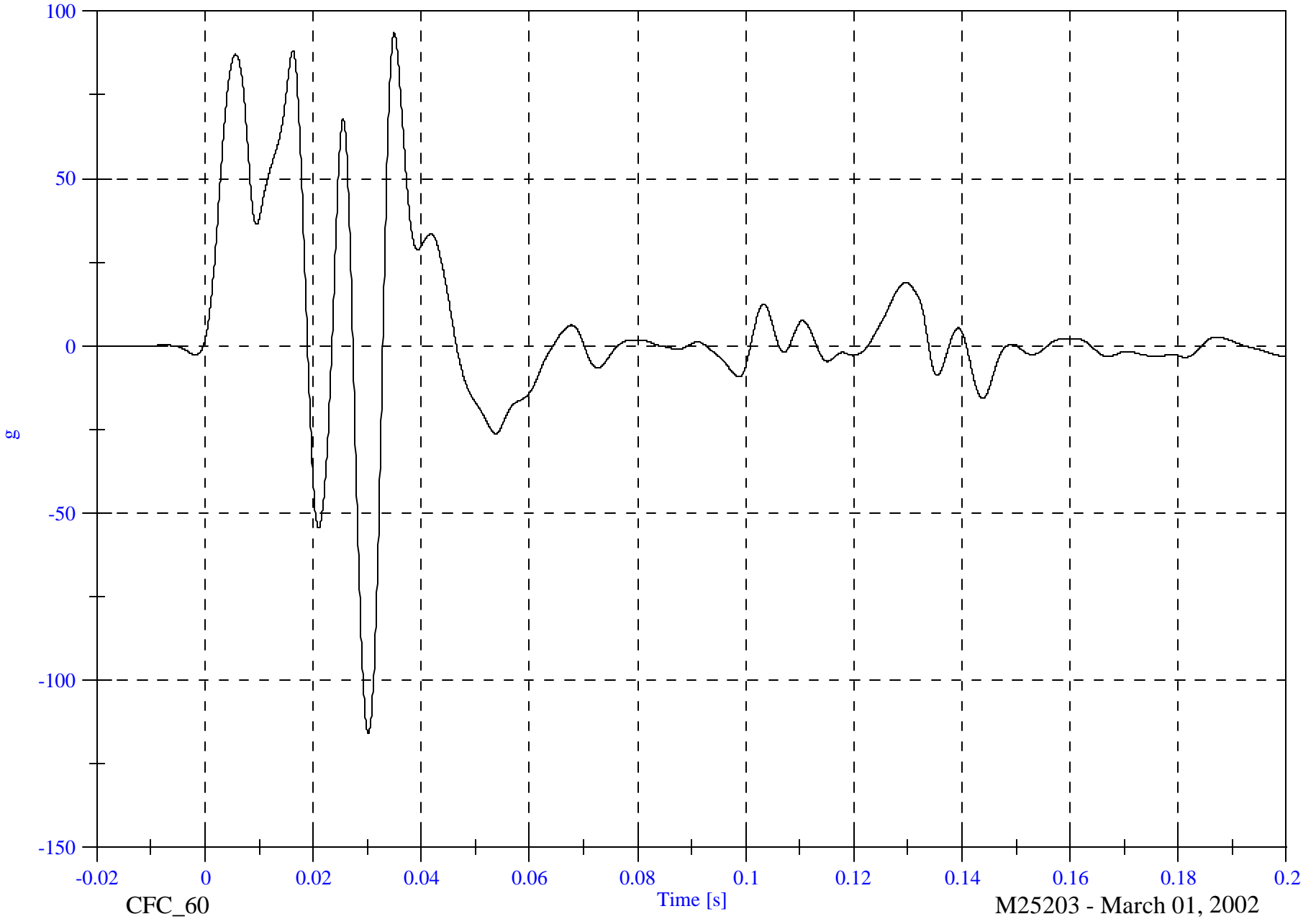
A10 Left Rear Door Midrear Y

Max: 93.5 [g] at 0.035 [s]

Min: -115.8 [g] at 0.030 [s]

B-58

8652-SNCAP-04



CFC_60

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

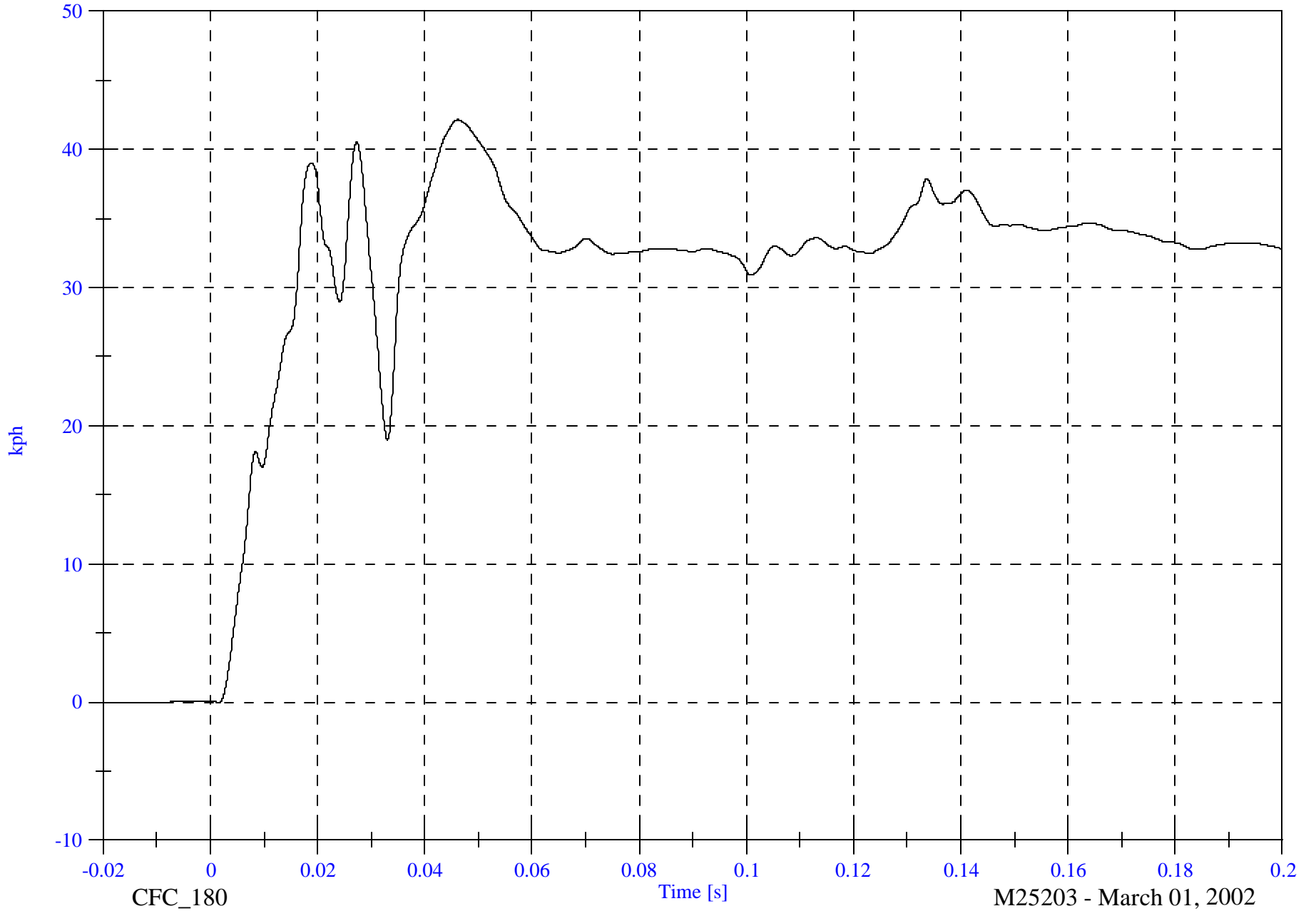
A10 Left Rear Door Midrear Y Velocity

Max: 42.2 [kph] at 0.046 [s]

Min: -0.0 [kph] at 0.001 [s]

B-59

8652-SNCAP-04



CFC_180

Time [s]

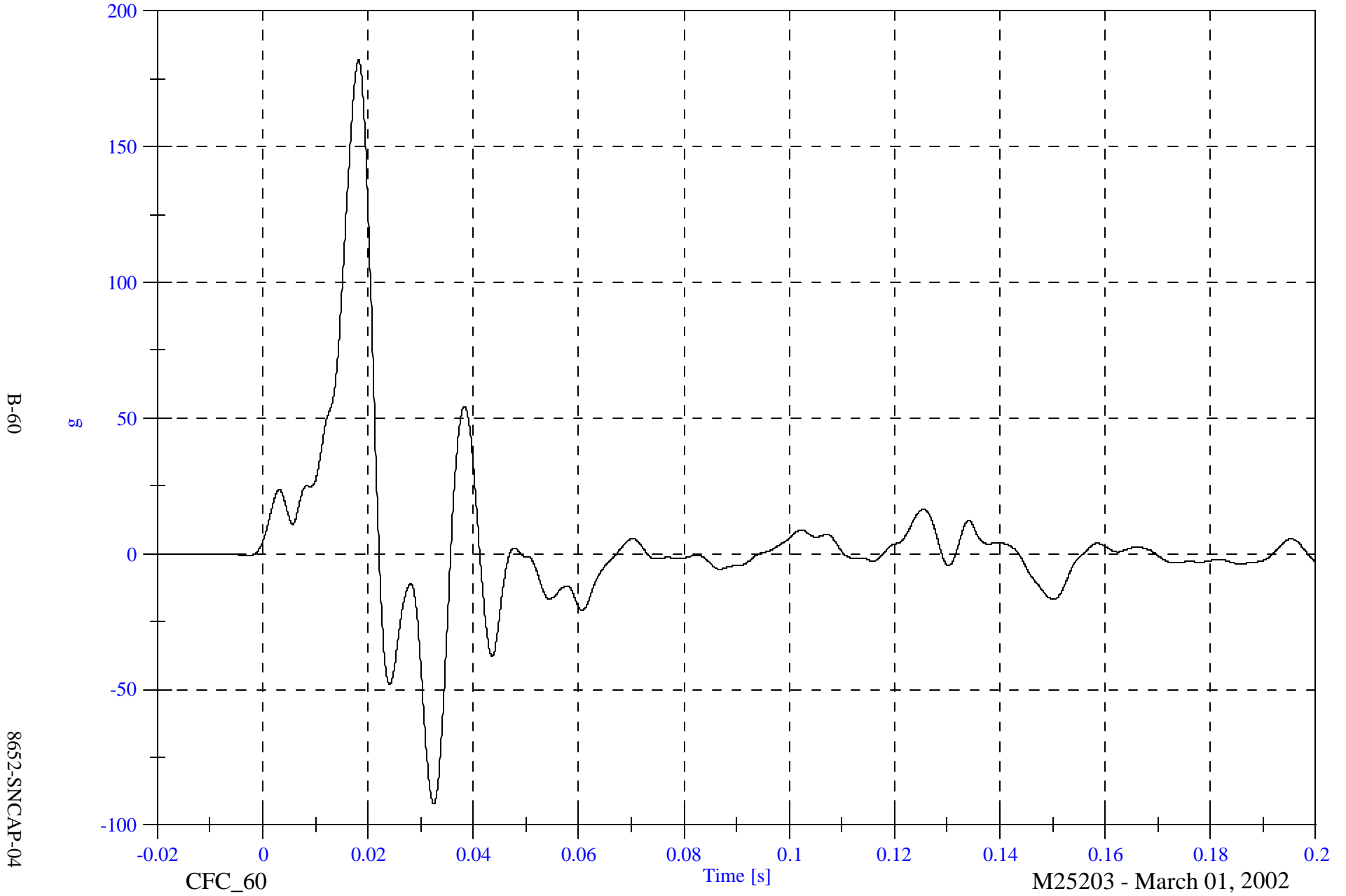
M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

A11 Left Rear Door Upper C/L Y

Max: 182.1 [g] at 0.018 [s]

Min: -92.2 [g] at 0.032 [s]



SNCAP #4 - 2002 Nissan Sentra

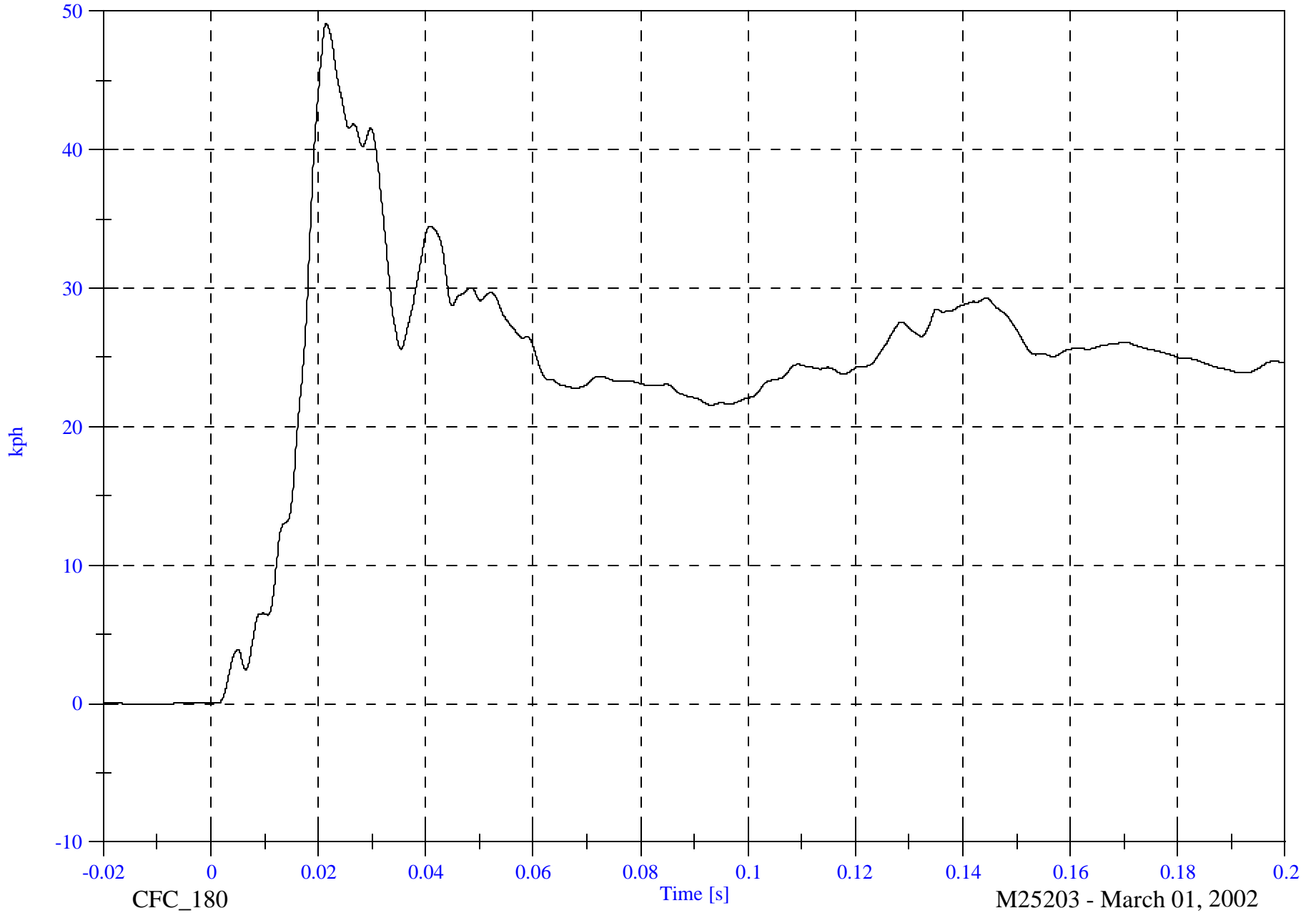
A11 Left Rear Door Upper C/L Y Velocity

Max: 49.1 [kph] at 0.021 [s]

Min: -0.0 [kph] at -0.012 [s]

B-61

8652-SNCAP-04



CFC_180

Time [s]

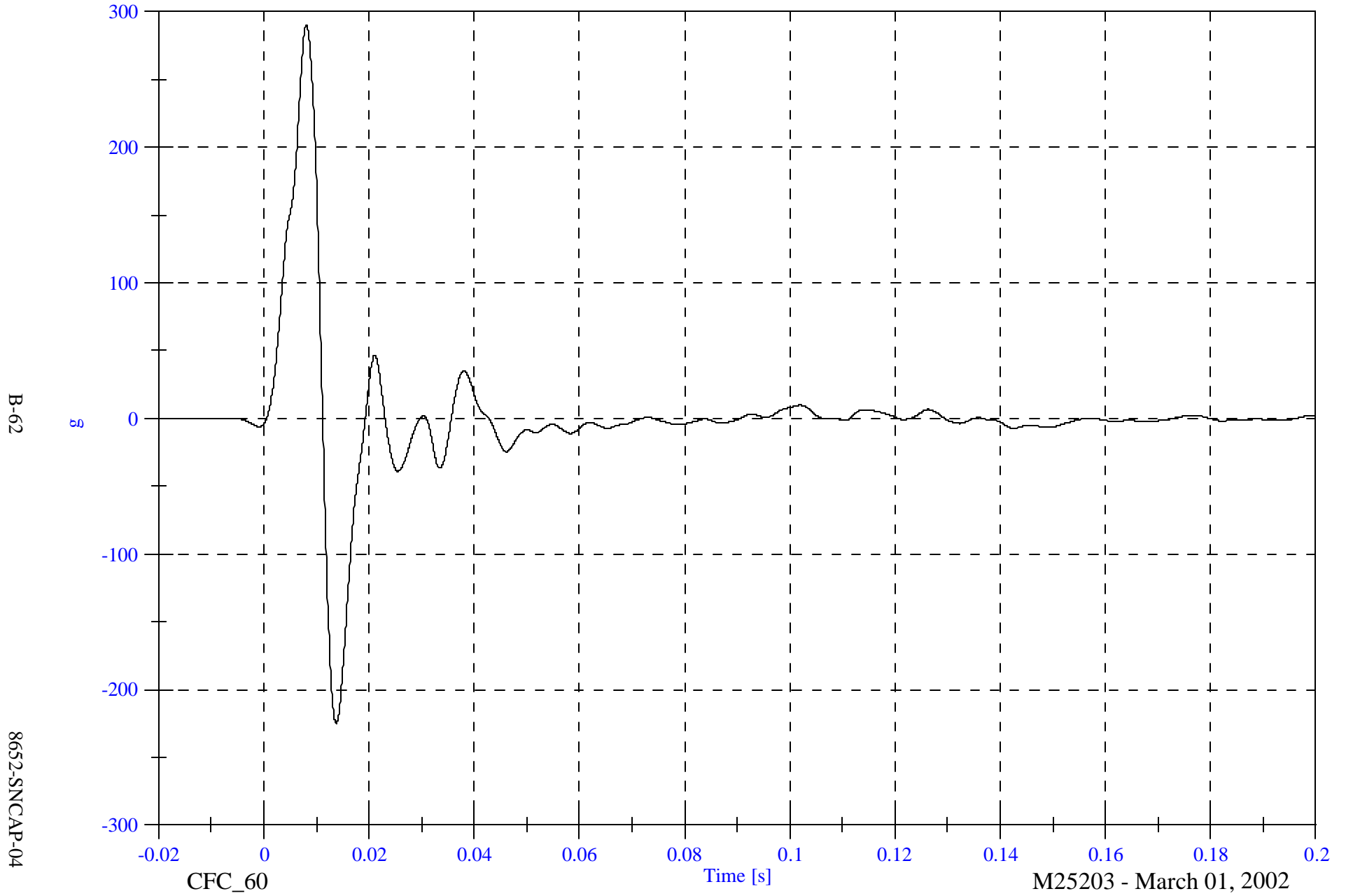
M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

A12 Left Lower B Post Y

Max: 290.2 [g] at 0.008 [s]

Min: -224.8 [g] at 0.014 [s]



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CFC_60

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

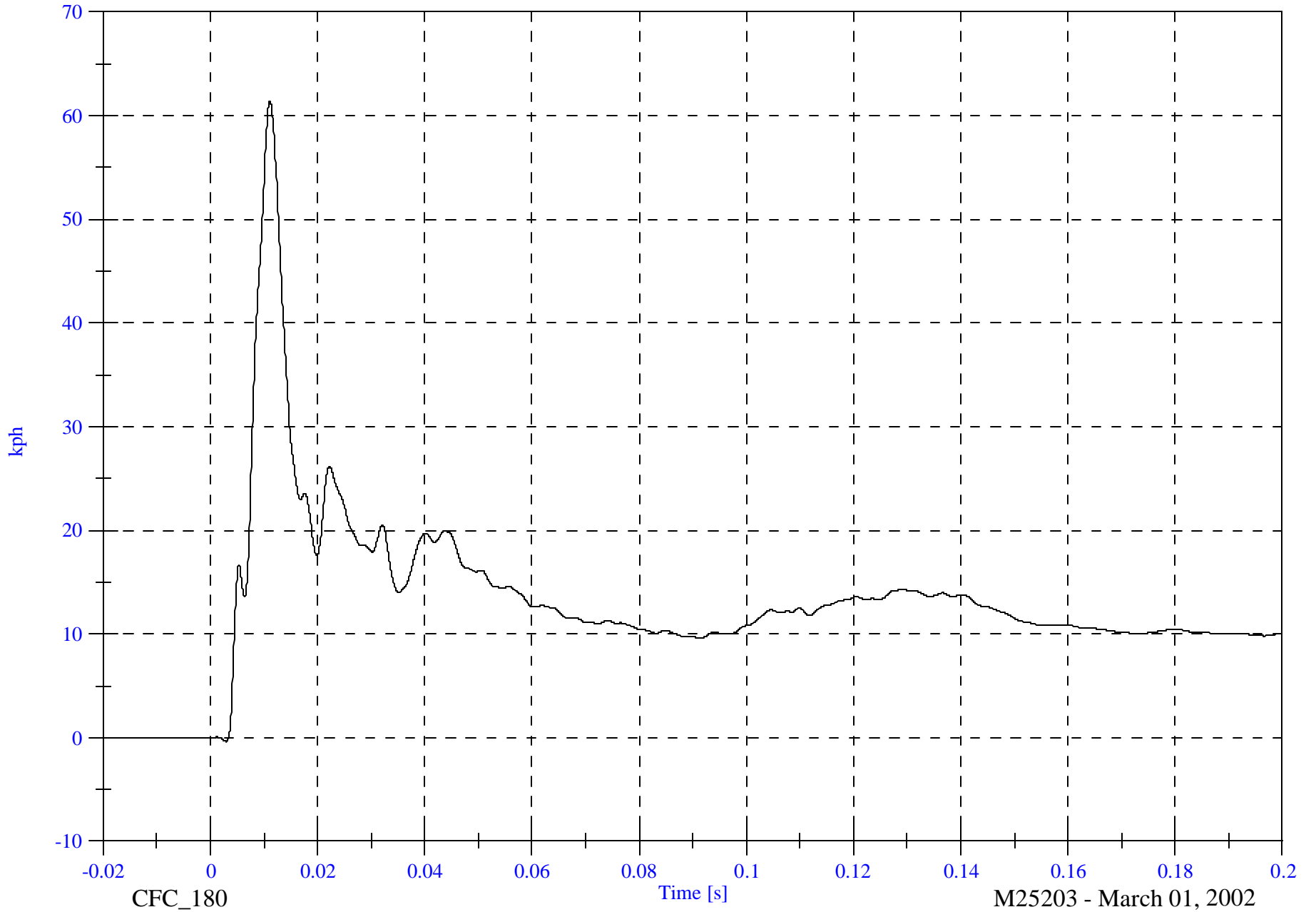
A12 Left Lower B Post Y Velocity

Max: 61.4 [kph] at 0.011 [s]

Min: -0.4 [kph] at 0.003 [s]

B-63

8652-SNCAP-04



CFC_180

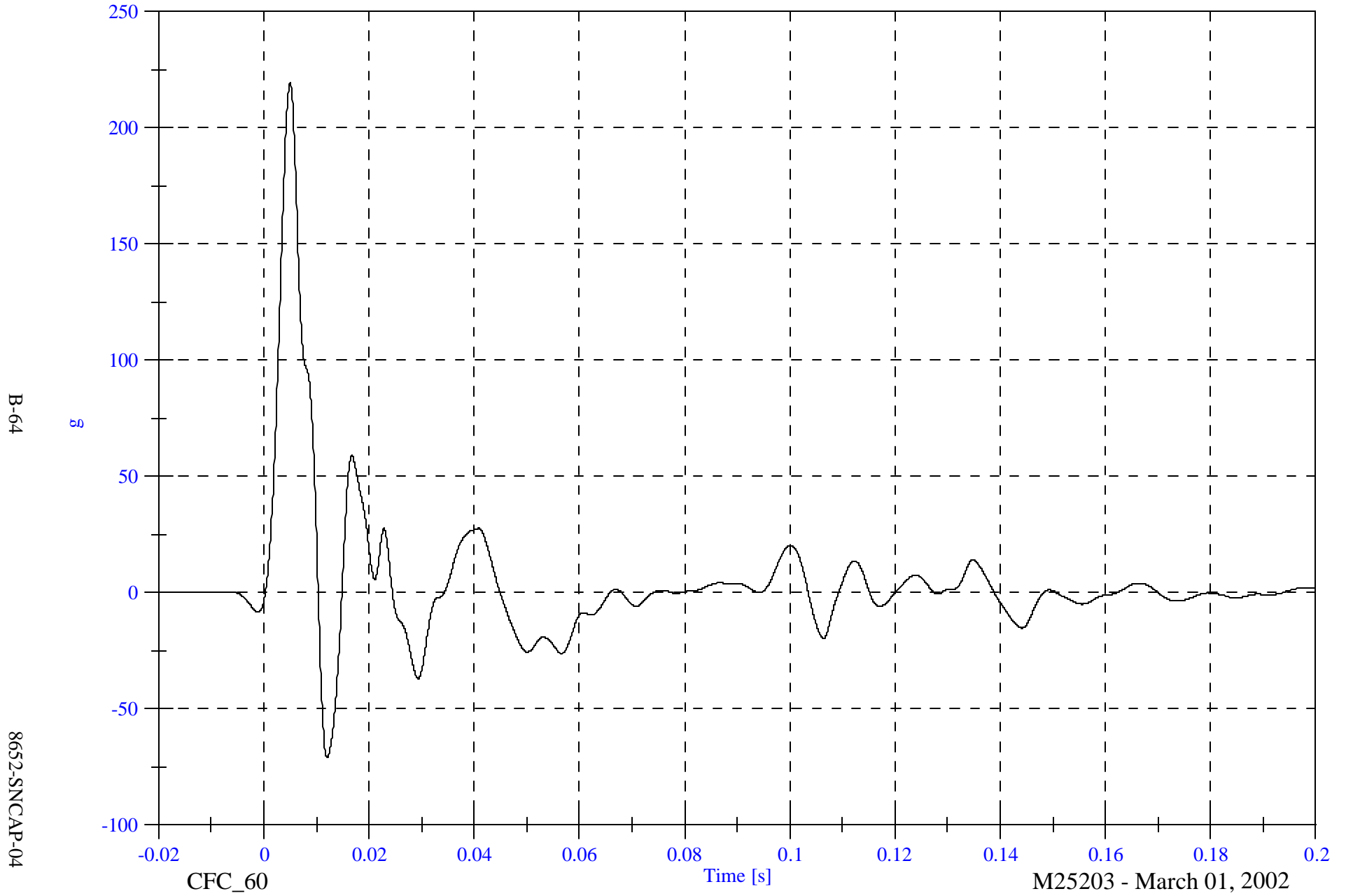
M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

A13 Left Mid B Post Y

Max: 219.5 [g] at 0.005 [s]

Min: -70.9 [g] at 0.012 [s]



SNCAP #4 - 2002 Nissan Sentra

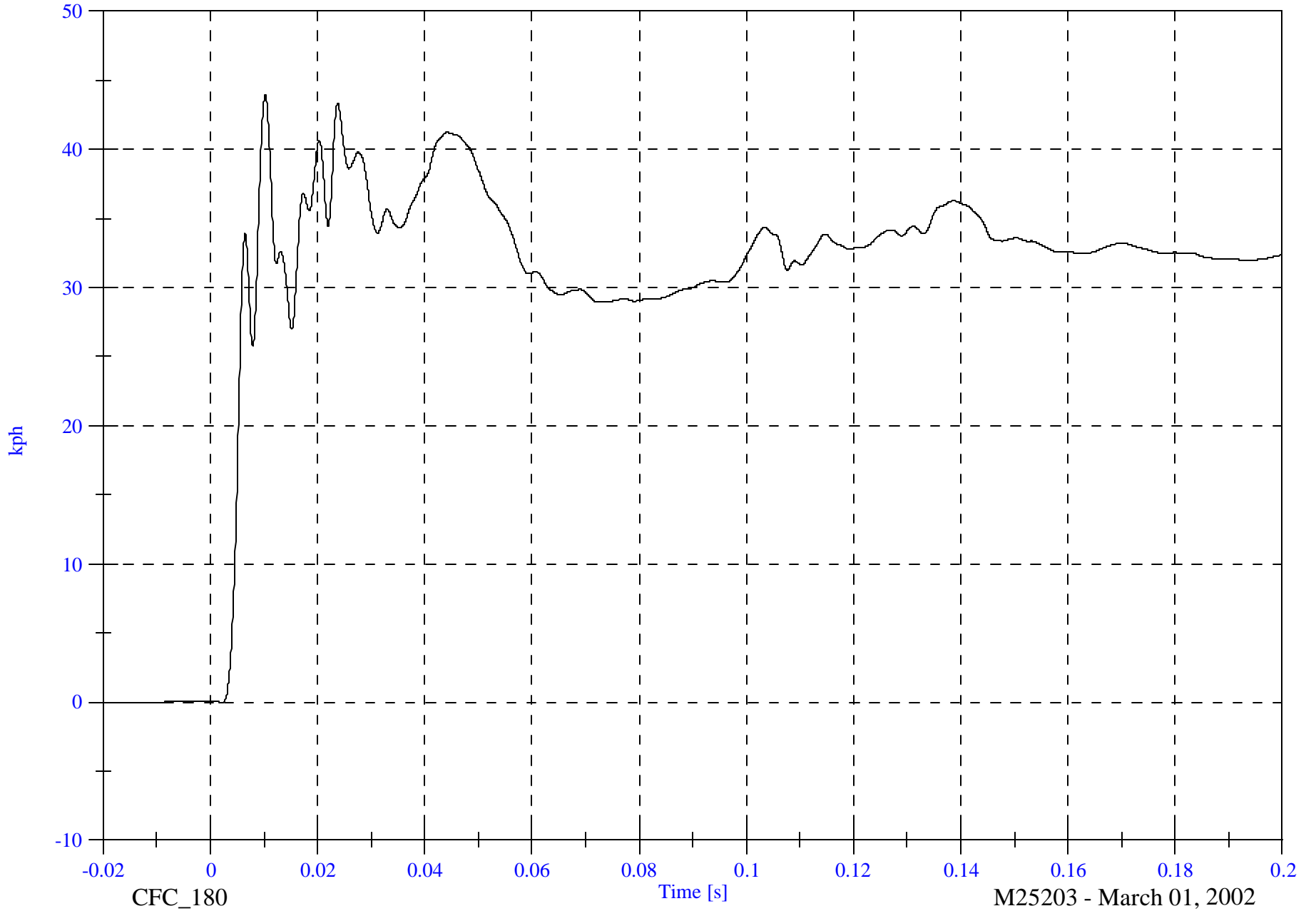
A13 Left Mid B Post Y Velocity

Max: 43.9 [kph] at 0.010 [s]

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

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8652-SNCAP-04



CFC_180

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

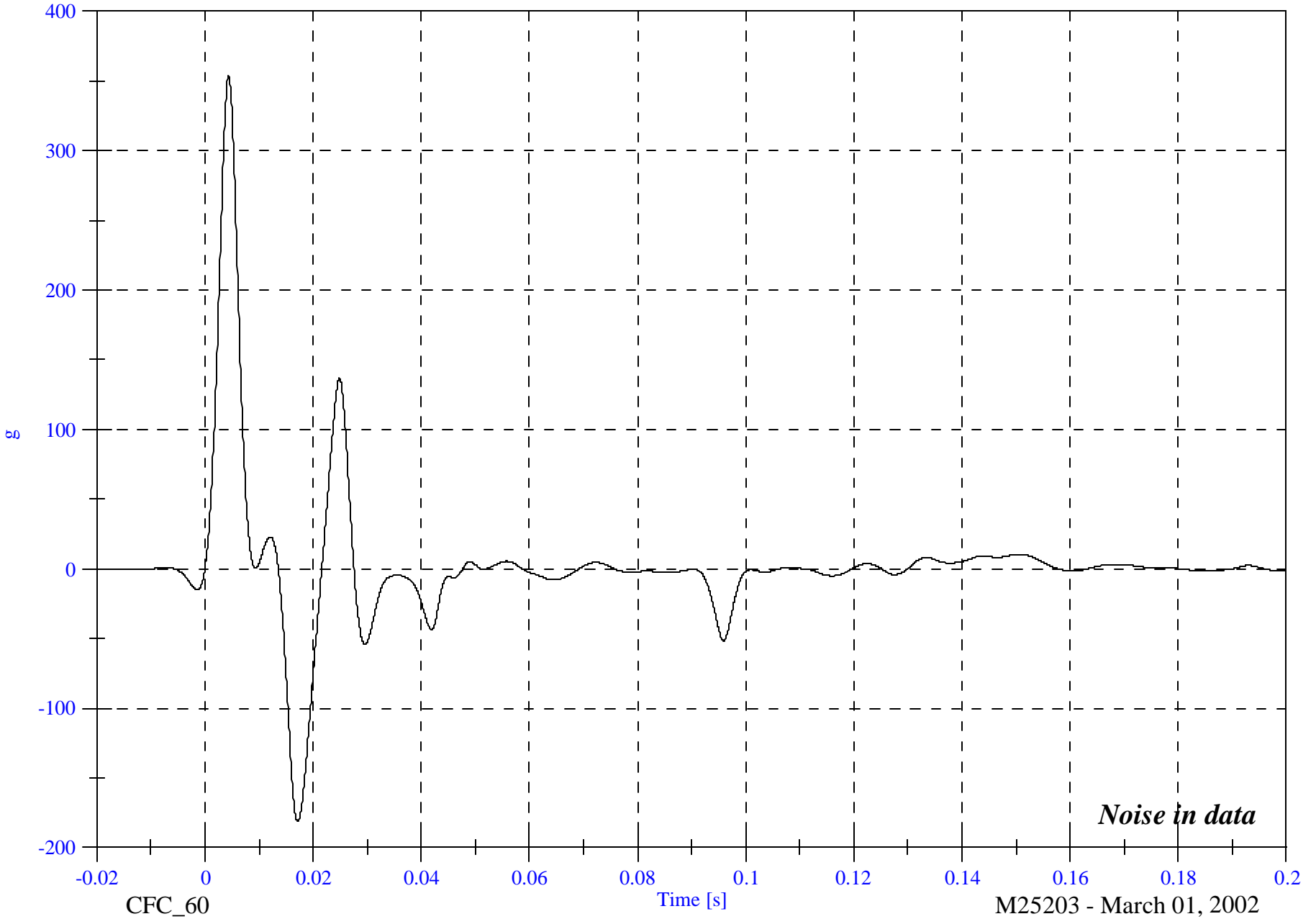
A14 Left Lower A Post Y

Max: 353.5 [g] at 0.004 [s]

Min: -181.4 [g] at 0.017 [s]

B-66

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M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

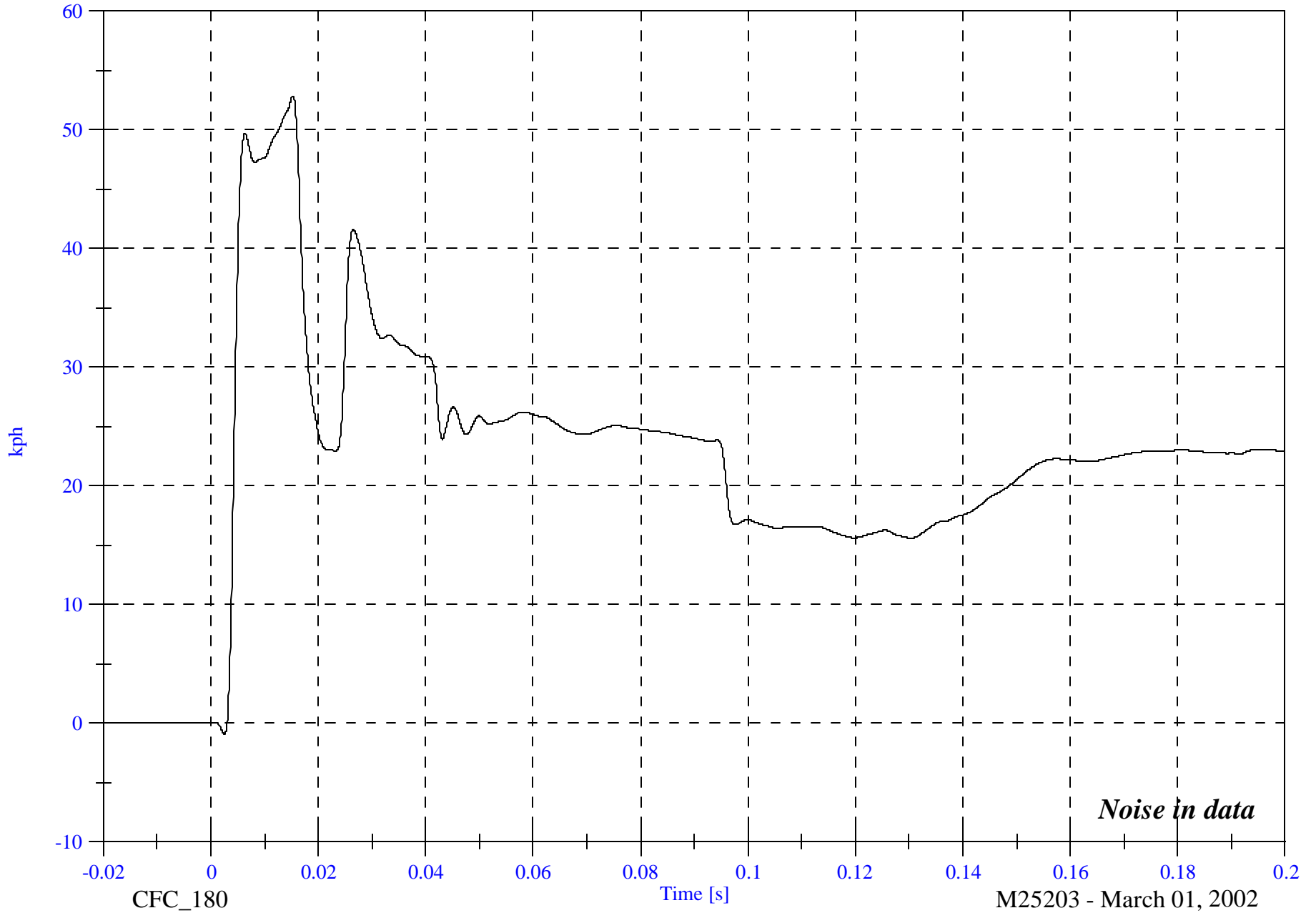
A14 Left Lower A Post Y Velocity

Max: 52.9 [kph] at 0.015 [s]

Min: -0.9 [kph] at 0.003 [s]

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8652-SNCAP-04



CFC_180

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

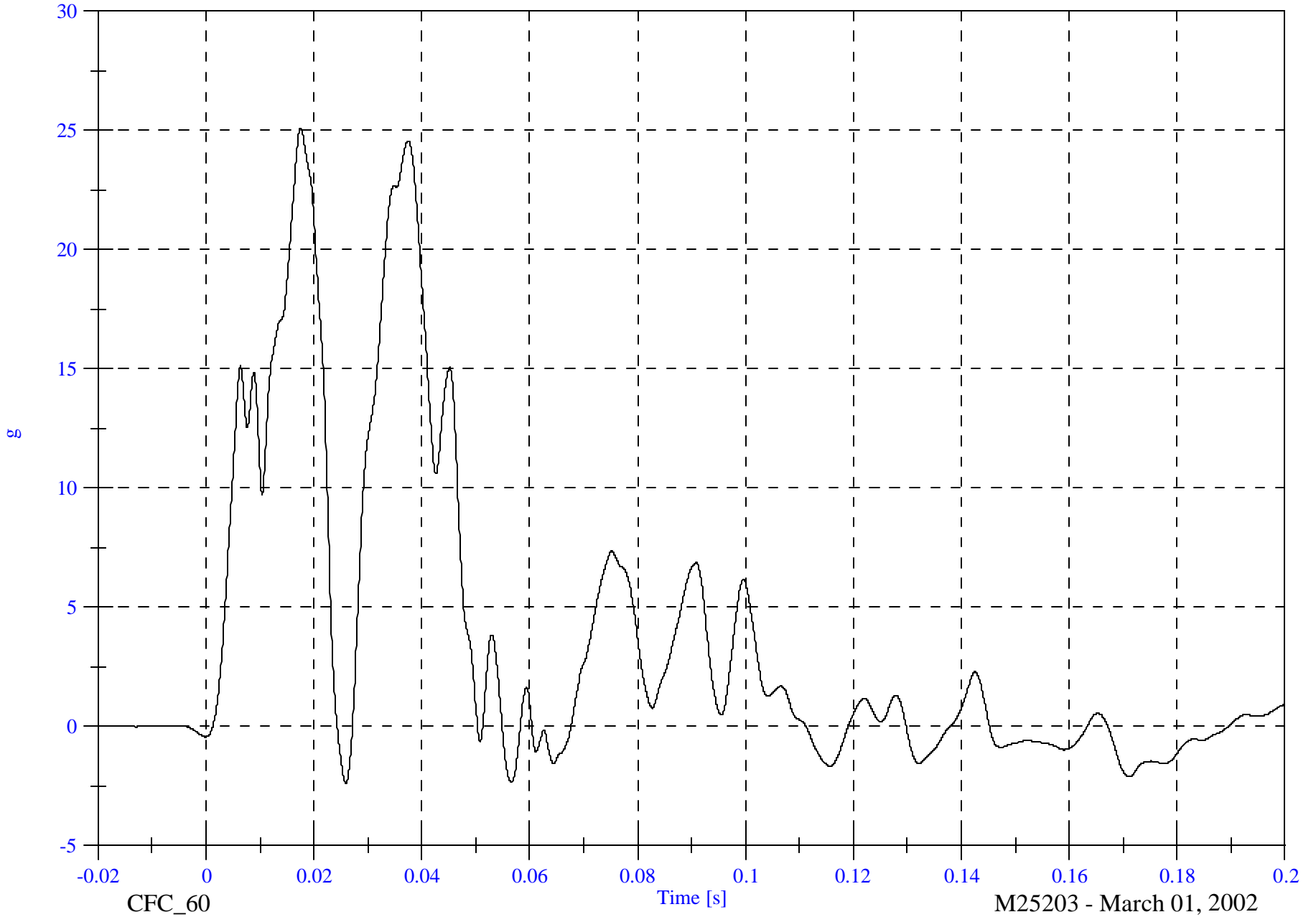
A15 Left Mid A Post Y

Max: 25.1 [g] at 0.018 [s]

Min: -2.4 [g] at 0.026 [s]

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CFC_60

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

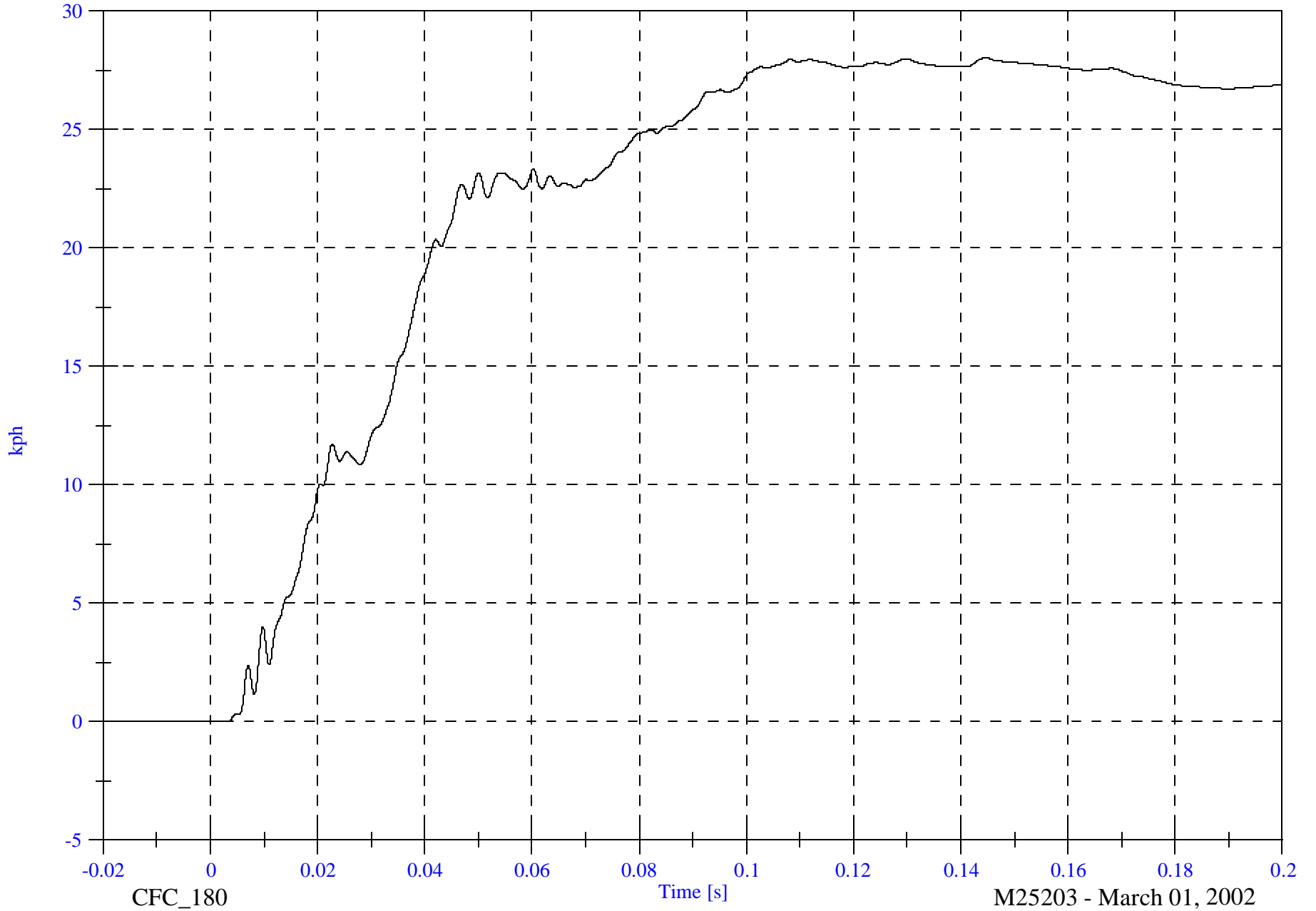
A15 Left Mid A Post Y Velocity

Max: 28.0 [kph] at 0.145 [s]

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

B-69

8652-SNCAP-04



CFC_180

Time [s]

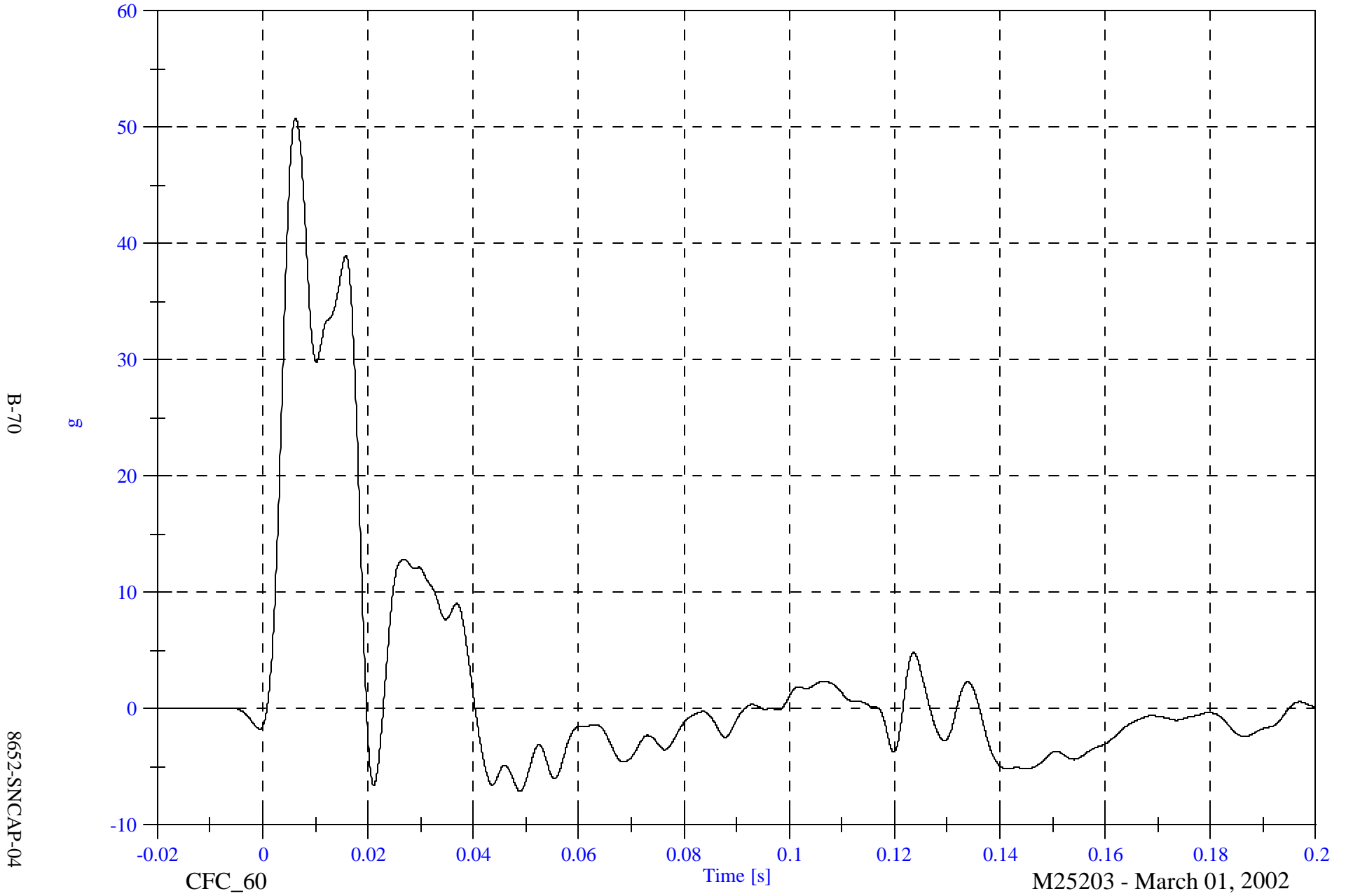
M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

A16 Front Seat Track Y

Max: 50.8 [g] at 0.006 [s]

Min: -7.1 [g] at 0.049 [s]



SNCAP #4 - 2002 Nissan Sentra

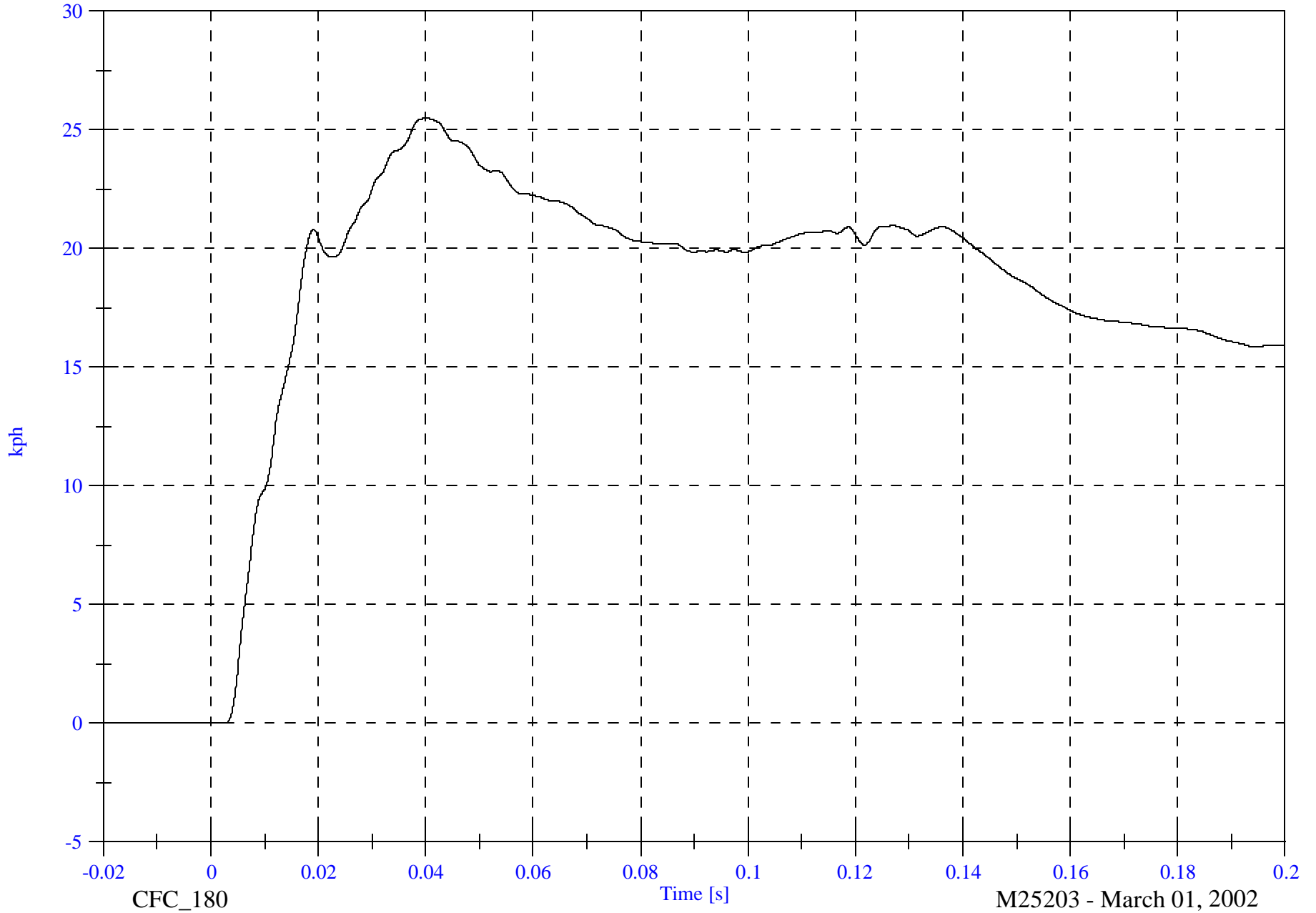
A16 Front Seat Track Y Velocity

Max: 25.5 [kph] at 0.040 [s]

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

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CFC_180

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

A17 Rear Seat Track Y

Max: 38.7 [g] at 0.012 [s]

Min: -3.5 [g] at 0.121 [s]

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8652-SNCAP-04



SNCAP #4 - 2002 Nissan Sentra

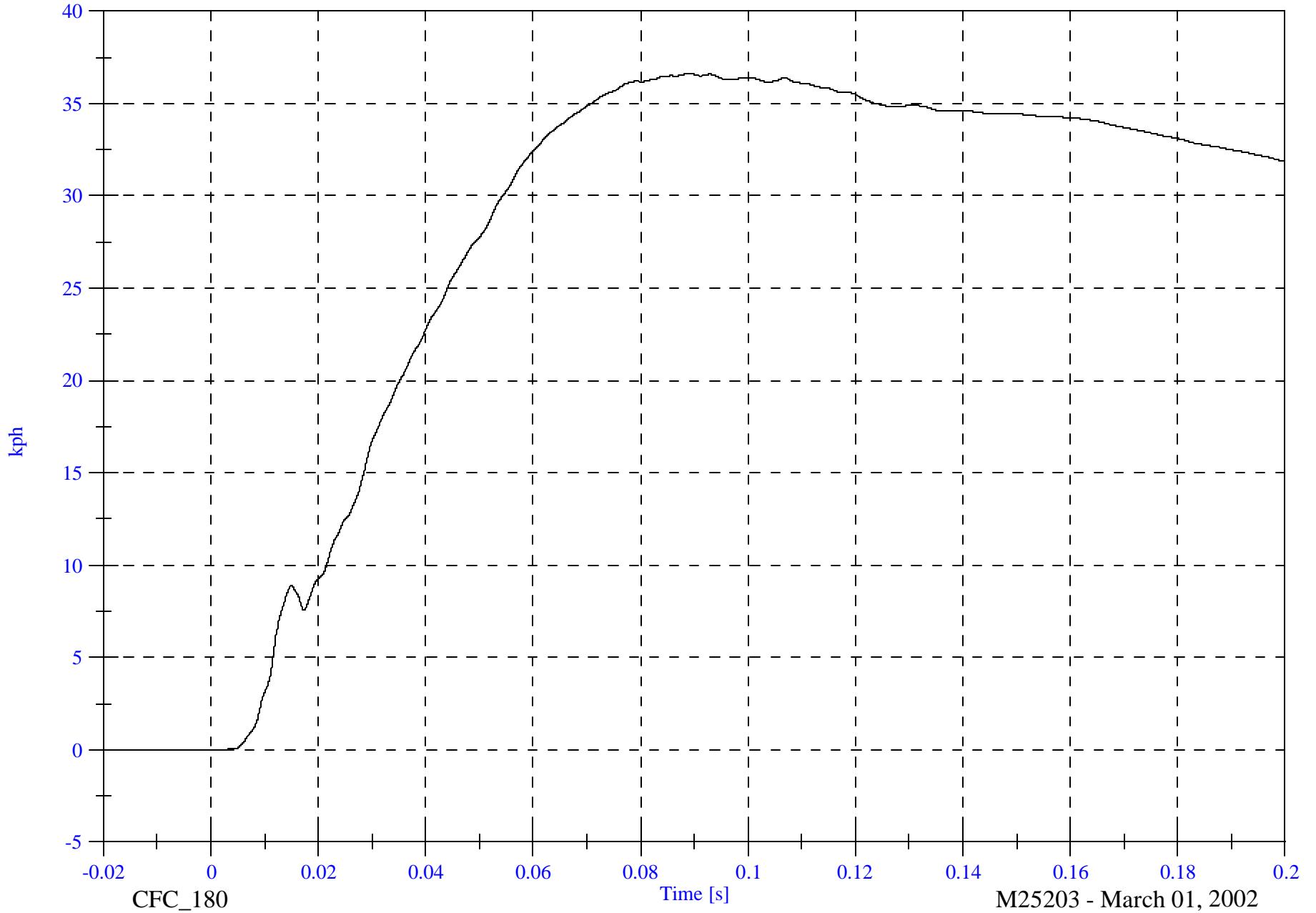
A17 Rear Seat Track Y Velocity

Max: 36.6 [kph] at 0.089 [s]

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

B-73

8652-SNCAP-04



CFC_180

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

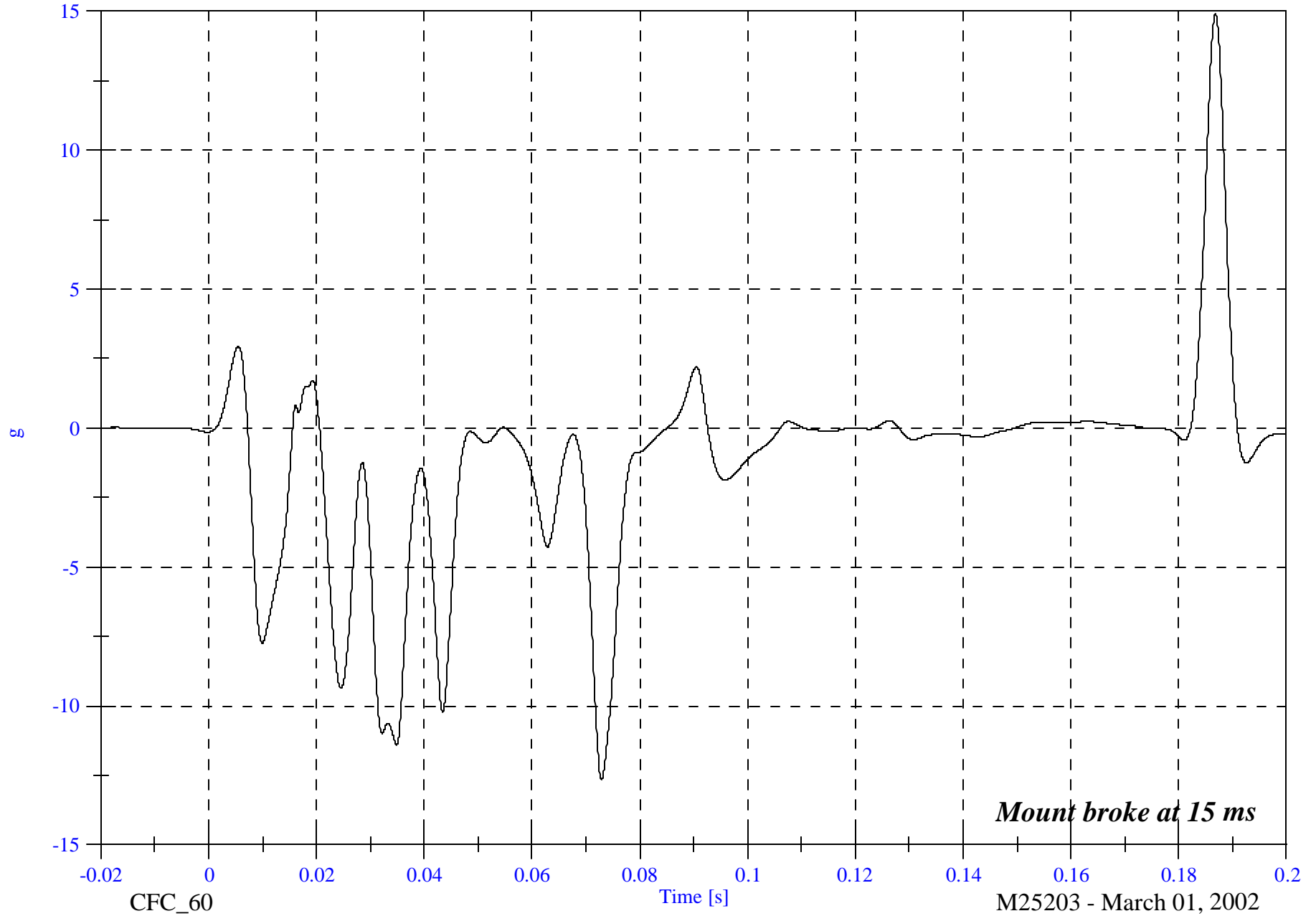
A18 Target CG X

Max: 14.9 [g] at 0.187 [s]

Min: -12.6 [g] at 0.073 [s]

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8652-SNCAP-04



Mount broke at 15 ms

CFC_60

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

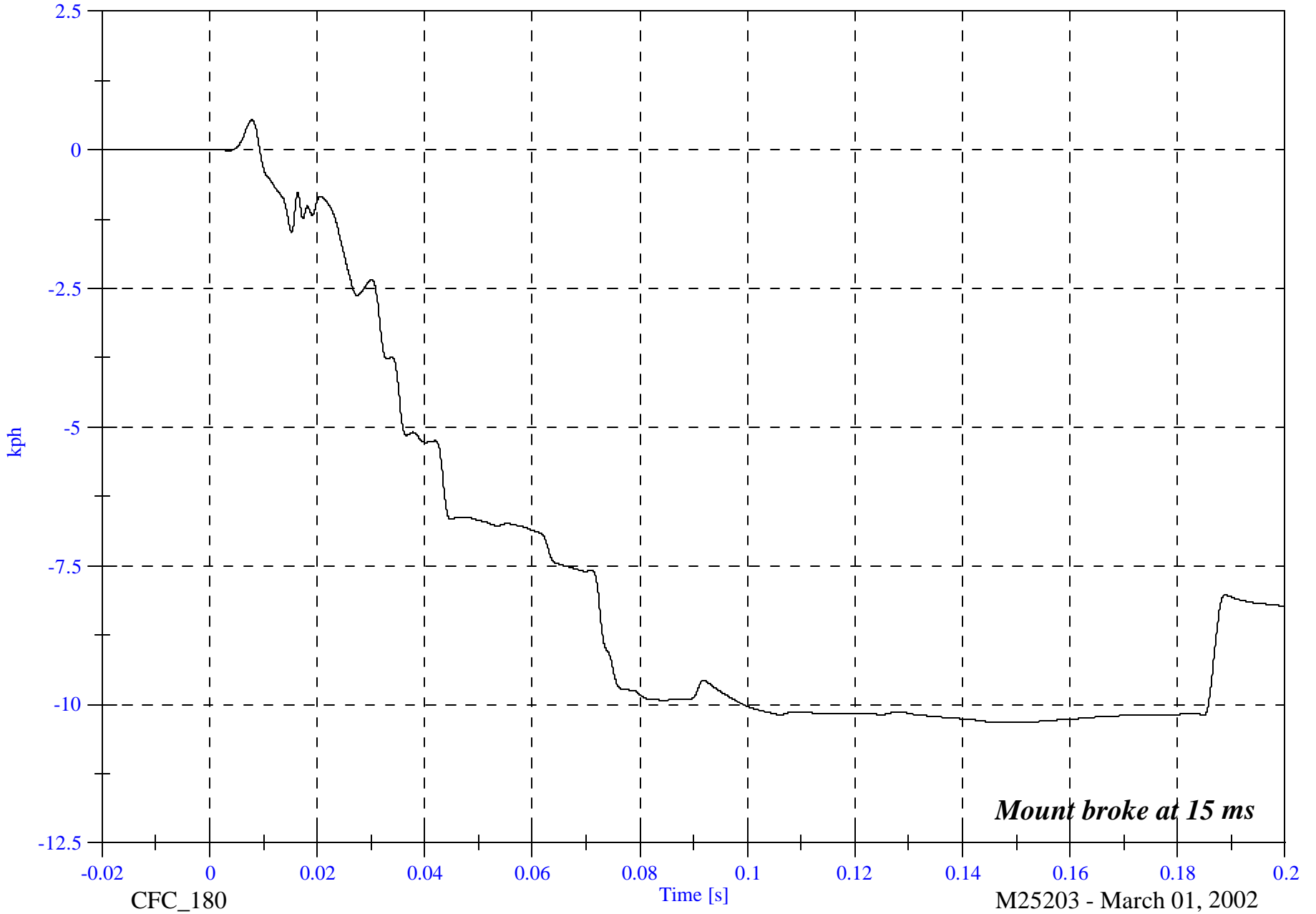
A18 Target CG X Velocity

Max: 0.5 [kph] at 0.008 [s]

Min: -10.3 [kph] at 0.150 [s]

B-75

8652-SNCAP-04



Mount broke at 15 ms

CFC_180

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

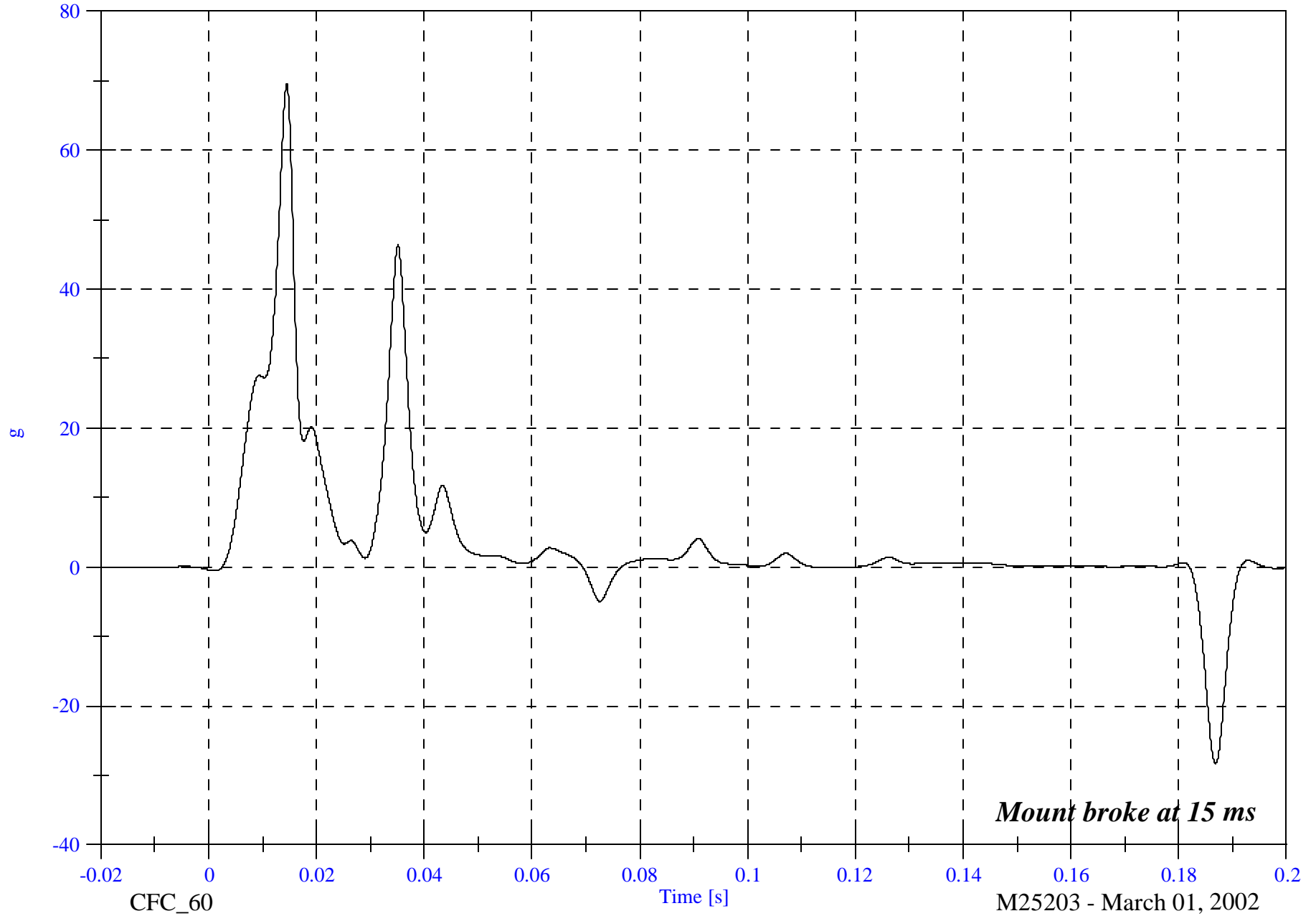
A18 Target CG Y

Max: 69.5 [g] at 0.015 [s]

Min: -28.3 [g] at 0.187 [s]

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8652-SNCAP-04



Mount broke at 15 ms

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

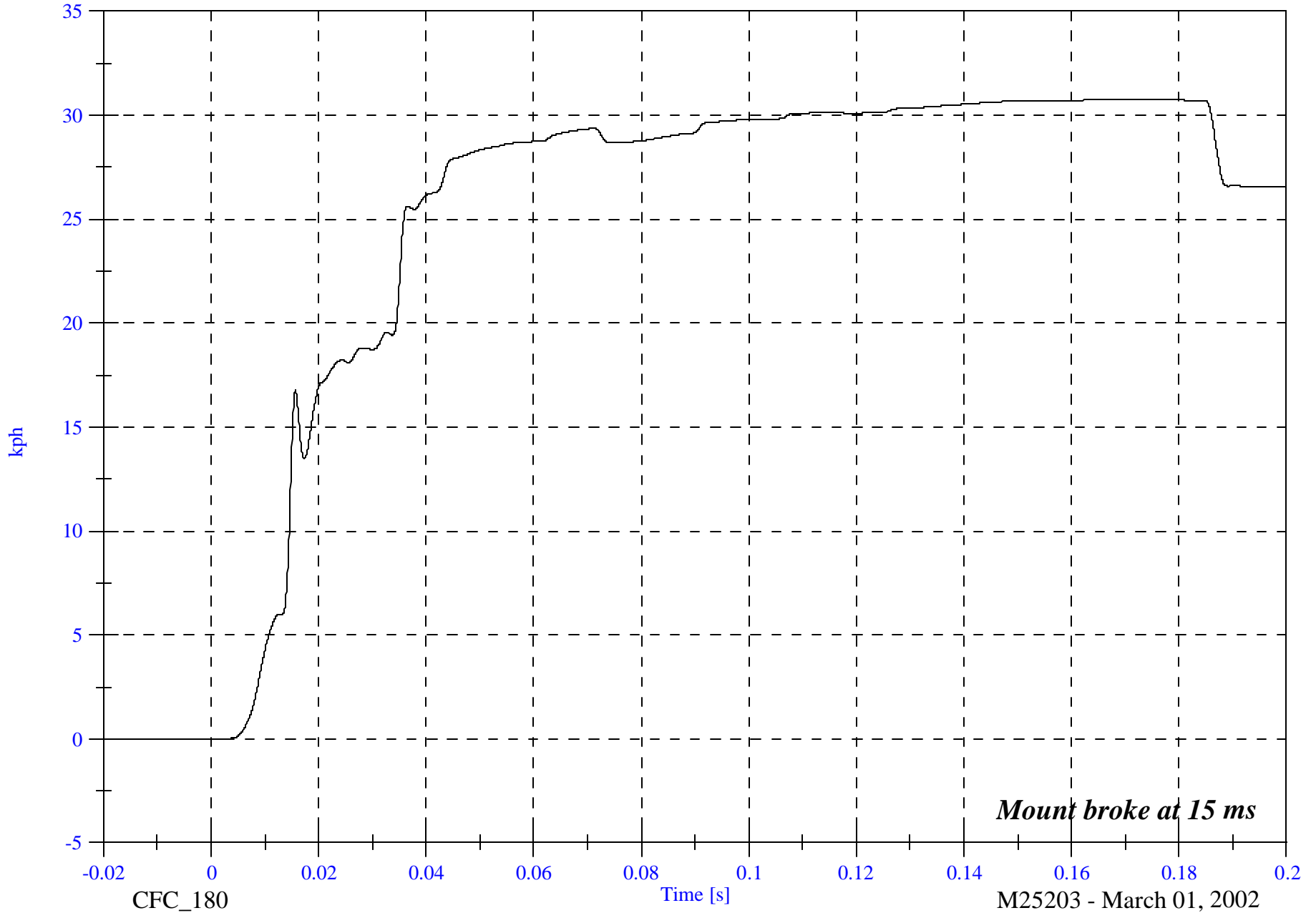
A18 Target CG Y Velocity

Max: 30.8 [kph] at 0.178 [s]

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

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8652-SNCAP-04



Mount broke at 15 ms

CFC_180

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

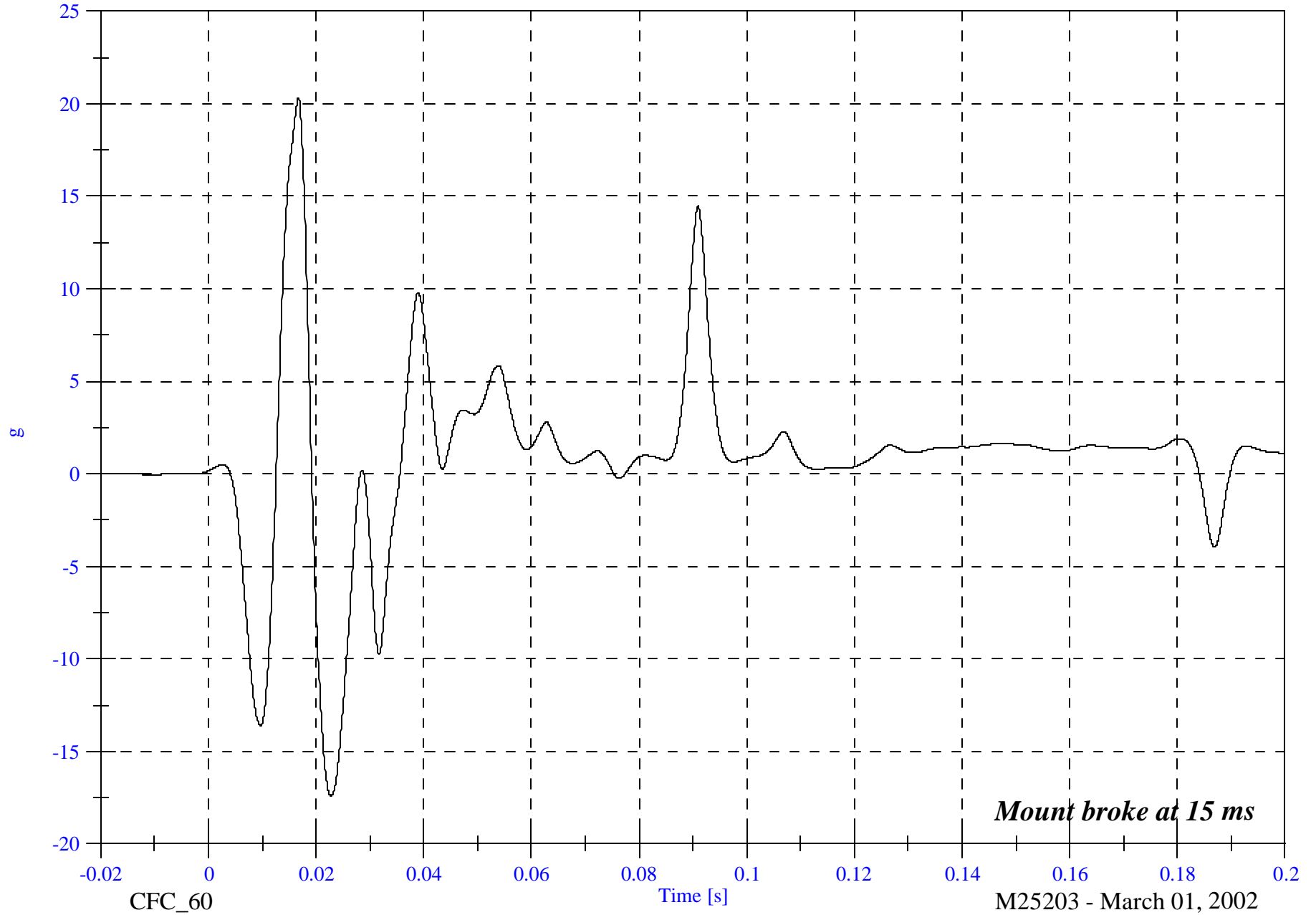
A18 Target CG Z

Max: 20.3 [g] at 0.017 [s]

Min: -17.4 [g] at 0.023 [s]

B-78

8652-SNCAP-04



Mount broke at 15 ms

CFC_60

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

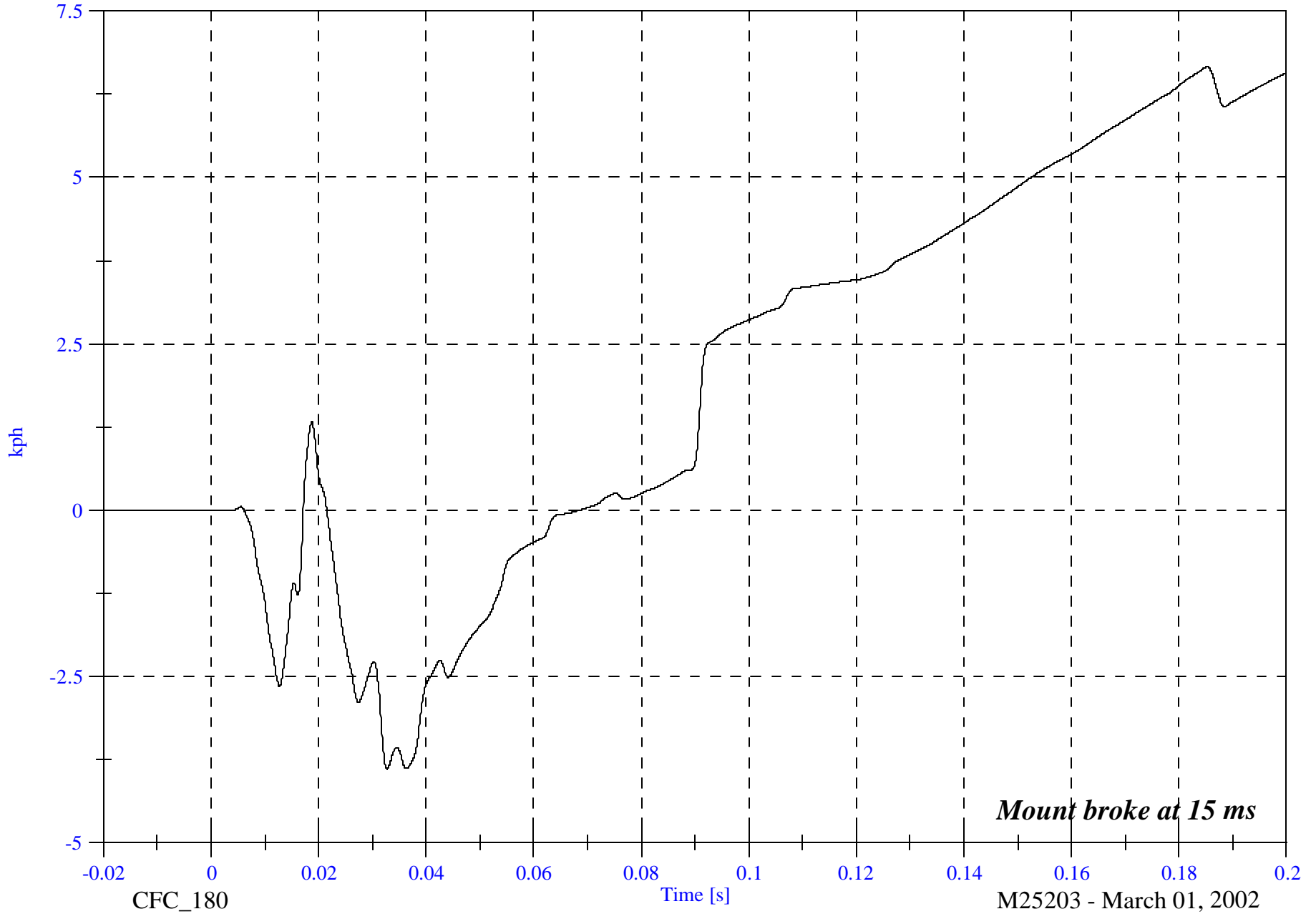
A18 Target CG Z Velocity

Max: 6.7 [kph] at 0.185 [s]

Min: -3.9 [kph] at 0.033 [s]

B-79

8652-SNCAP-04



Mount broke at 15 ms

CFC_180

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

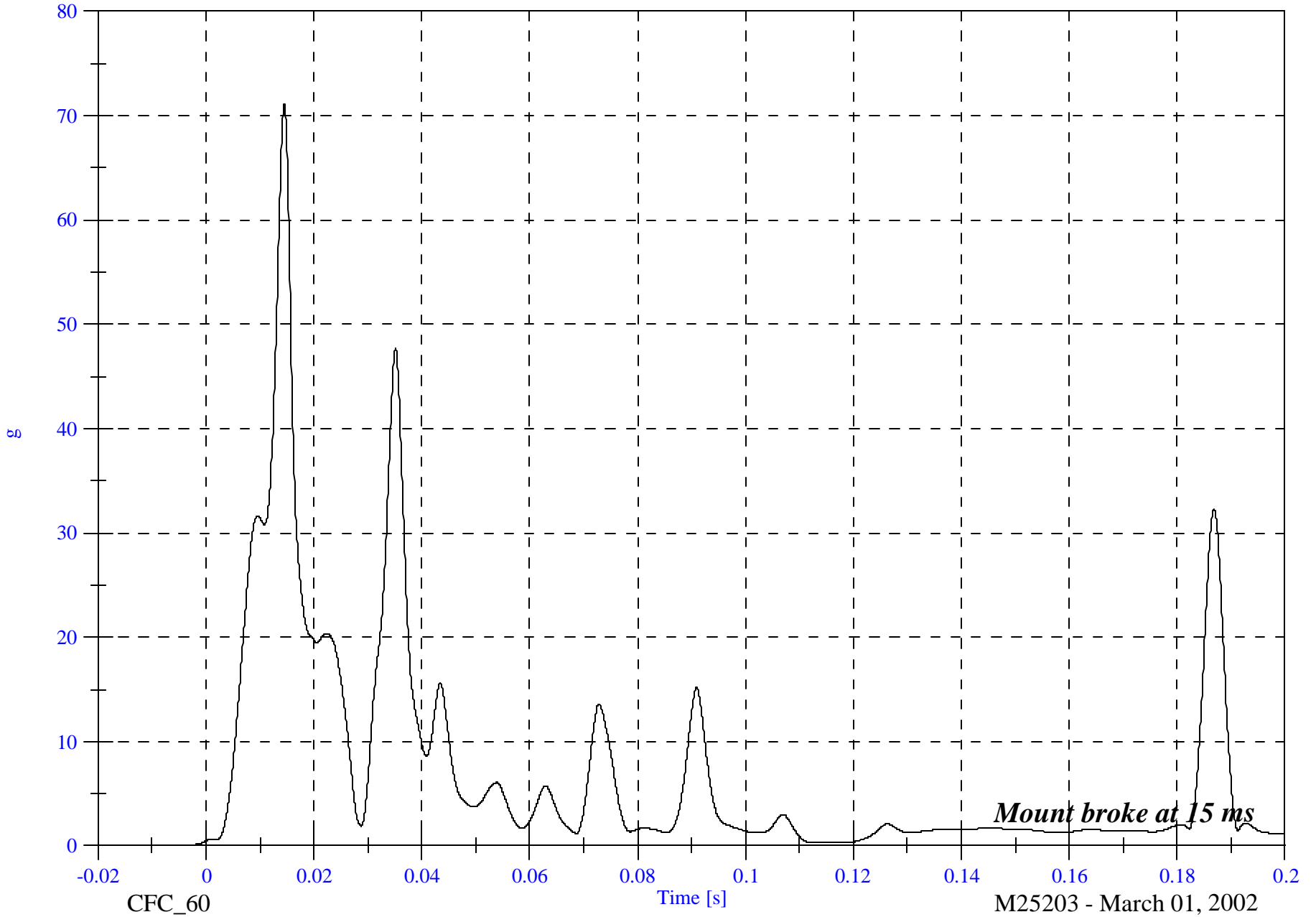
A18 Target CG Resultant

Max: 71.1 [g] at 0.015 [s]

Min: 0.0 [g] at -0.014 [s]

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8652-SNCAP-04



M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

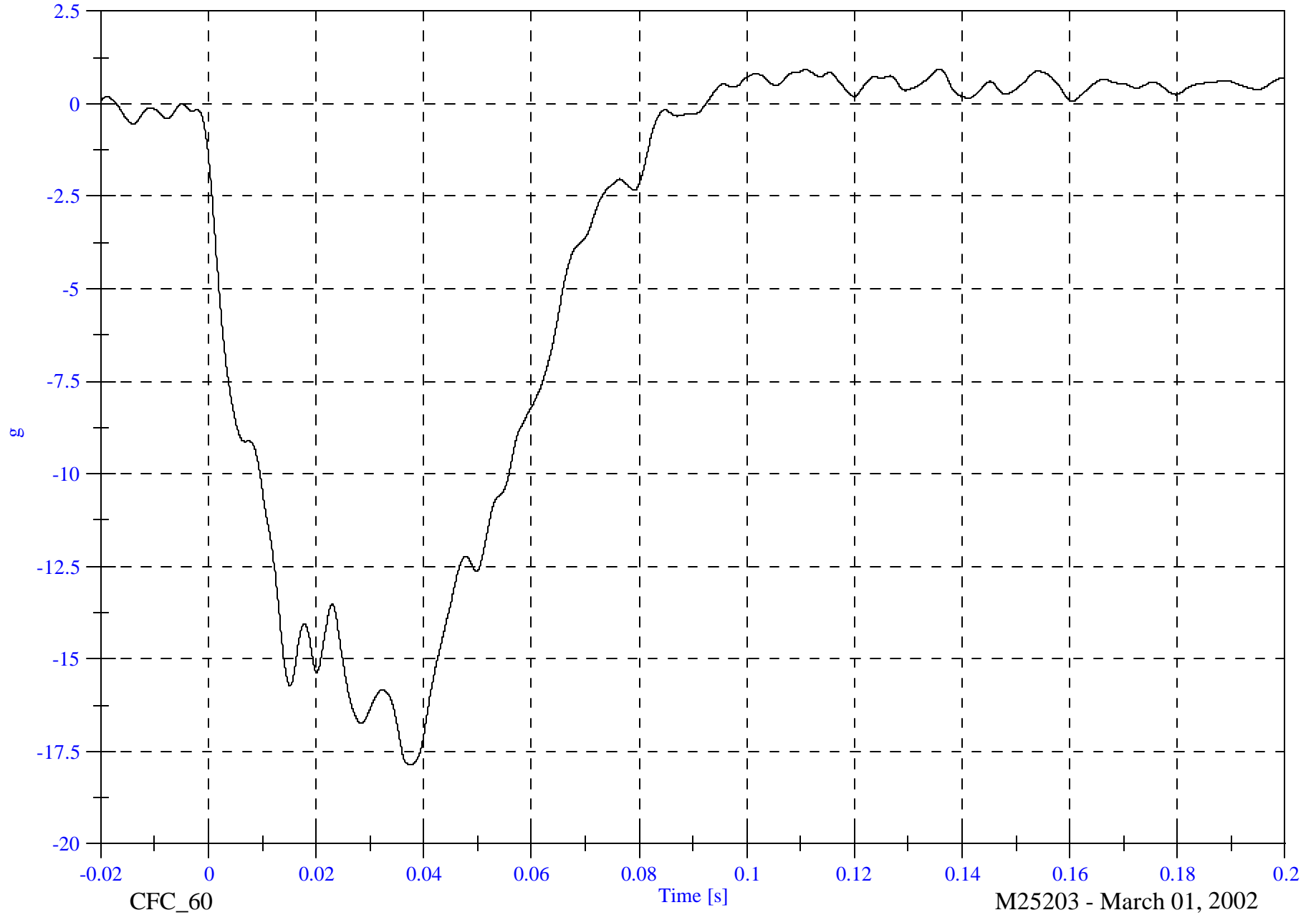
Moving Barrier CG X

Max: 0.9 [g] at 0.136 [s]

Min: -17.9 [g] at 0.038 [s]

B-81

8652-SNCAP-04



CFC_60

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

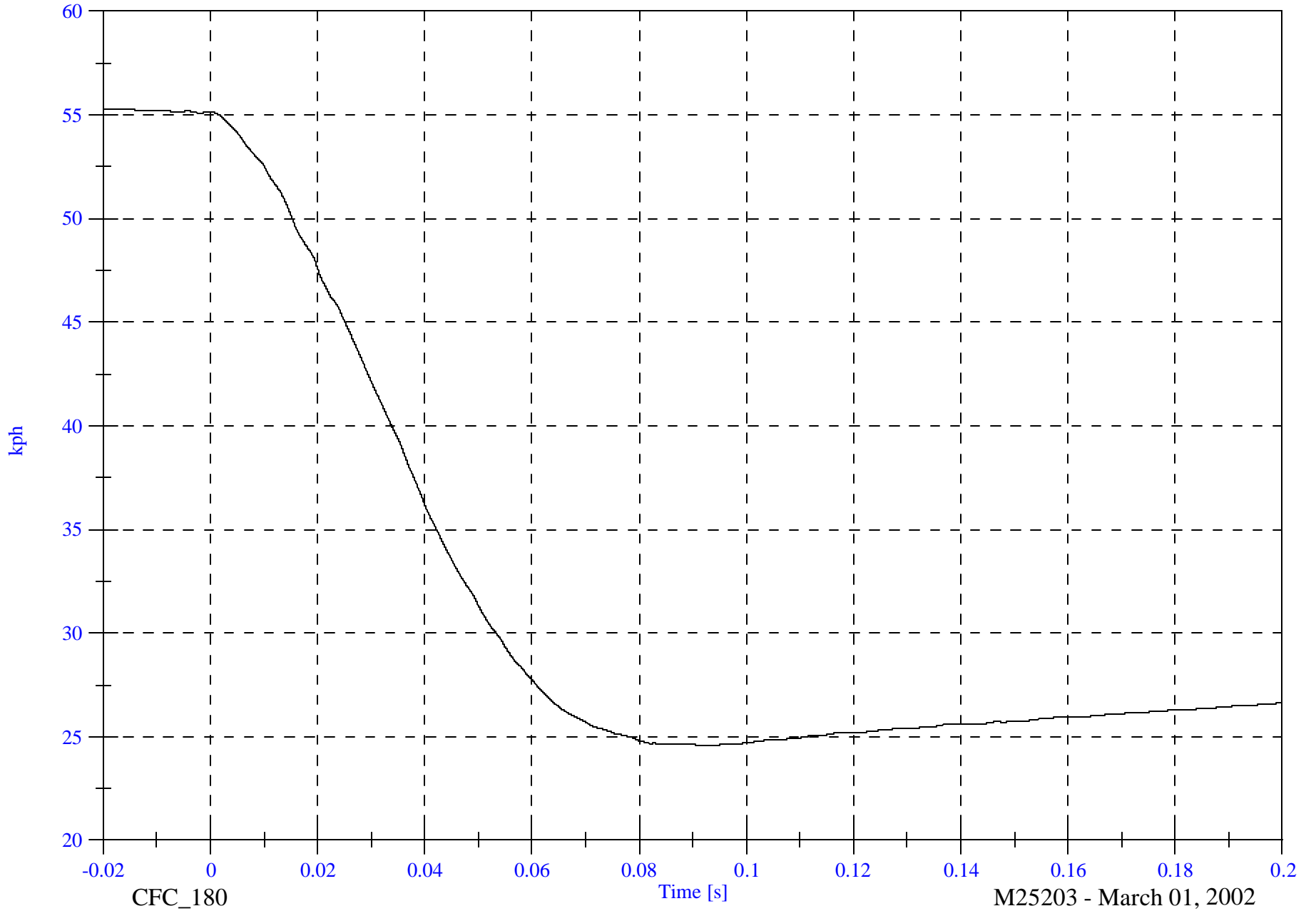
Moving Barrier CG X Velocity

Max: 55.3 [kph] at -0.016 [s]

Min: 24.6 [kph] at 0.092 [s]

B-82

8652-SNCAP-04



CFC_180

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

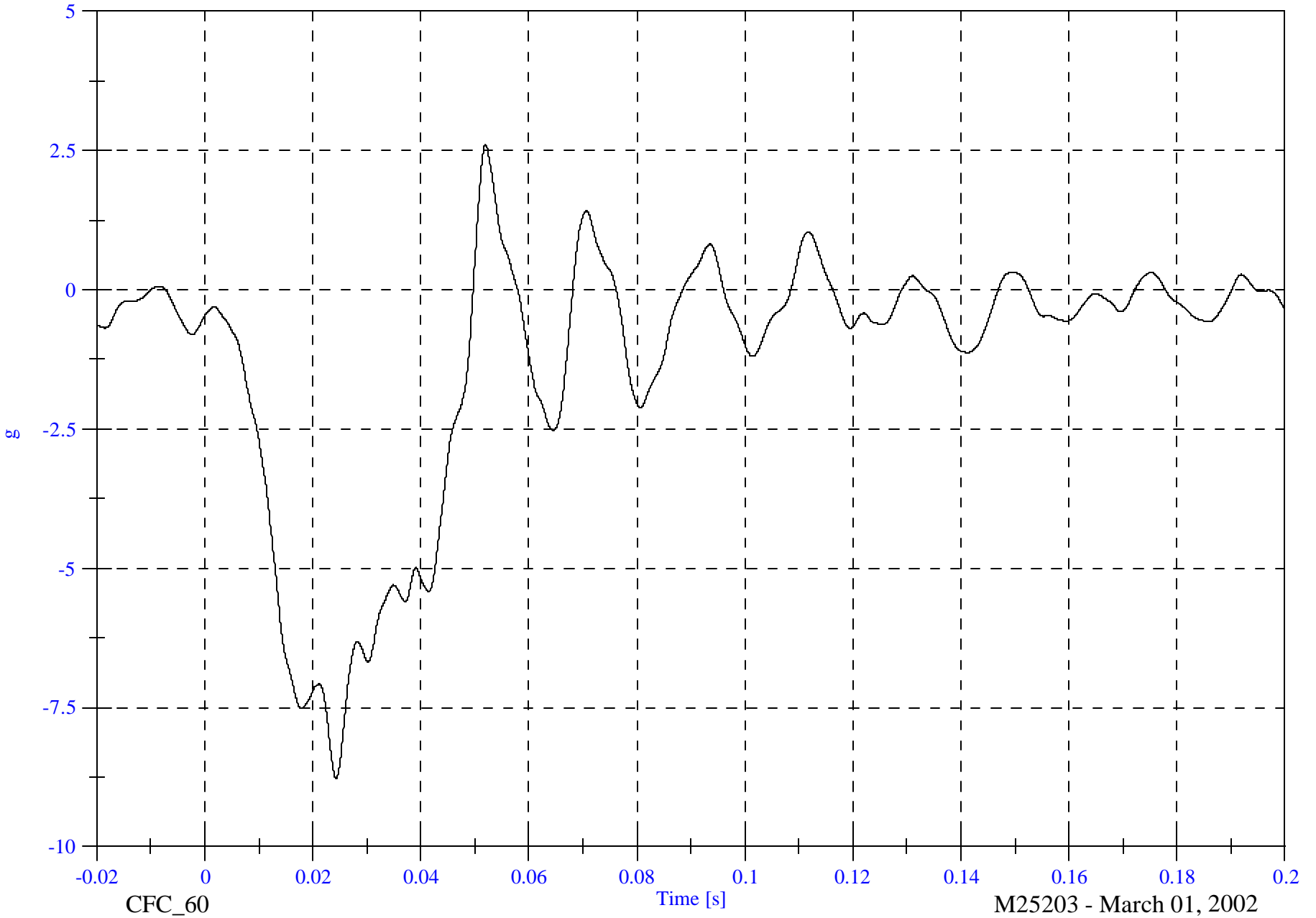
Moving Barrier CG Y

Max: 2.6 [g] at 0.052 [s]

Min: -8.8 [g] at 0.024 [s]

B-83

8652-SNCAP-04



CFC_60

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

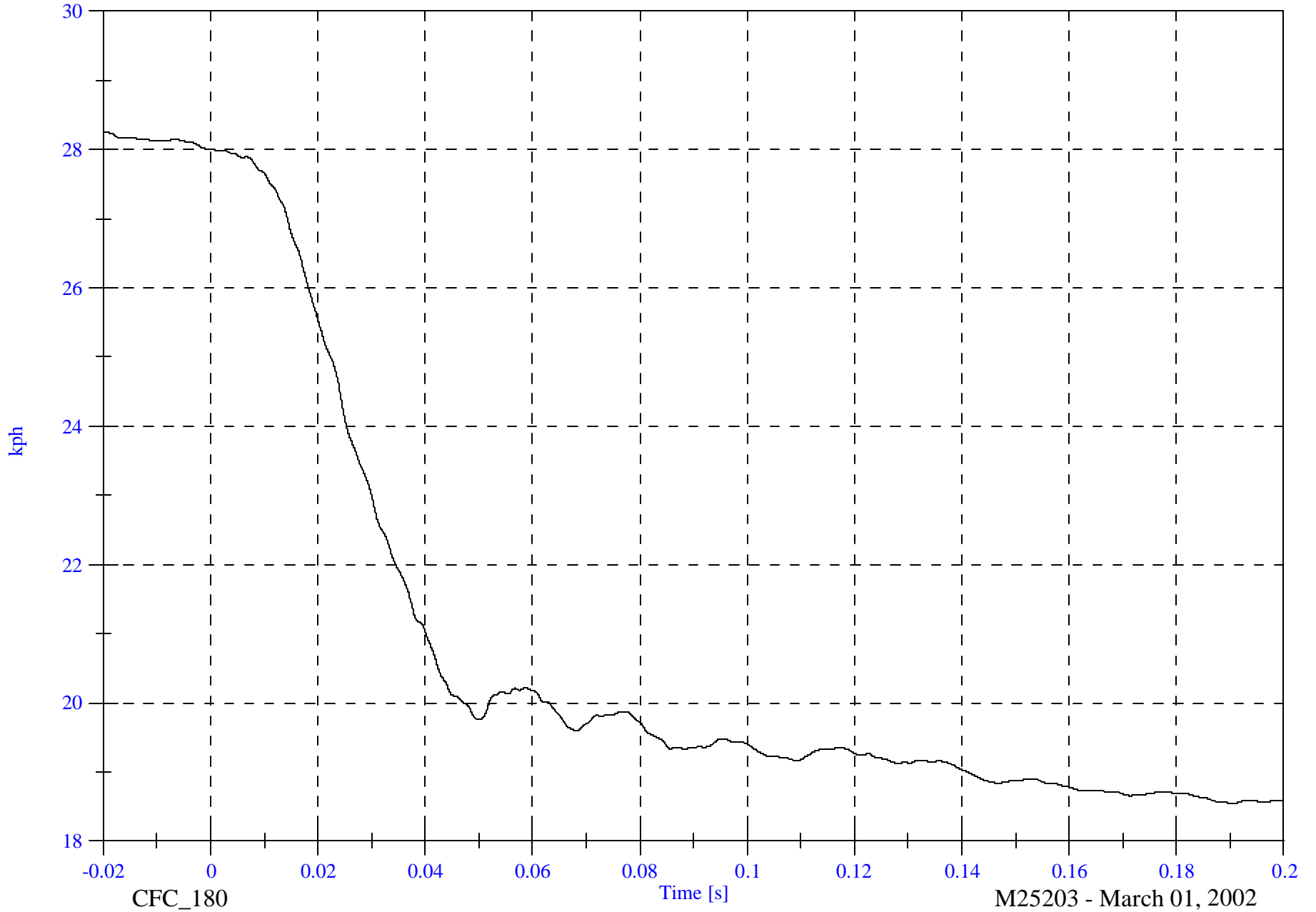
Moving Barrier CG Y Velocity

Max: 28.3 [kph] at -0.020 [s]

Min: 18.5 [kph] at 0.191 [s]

B-84

8652-SNCAP-04



CFC_180

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

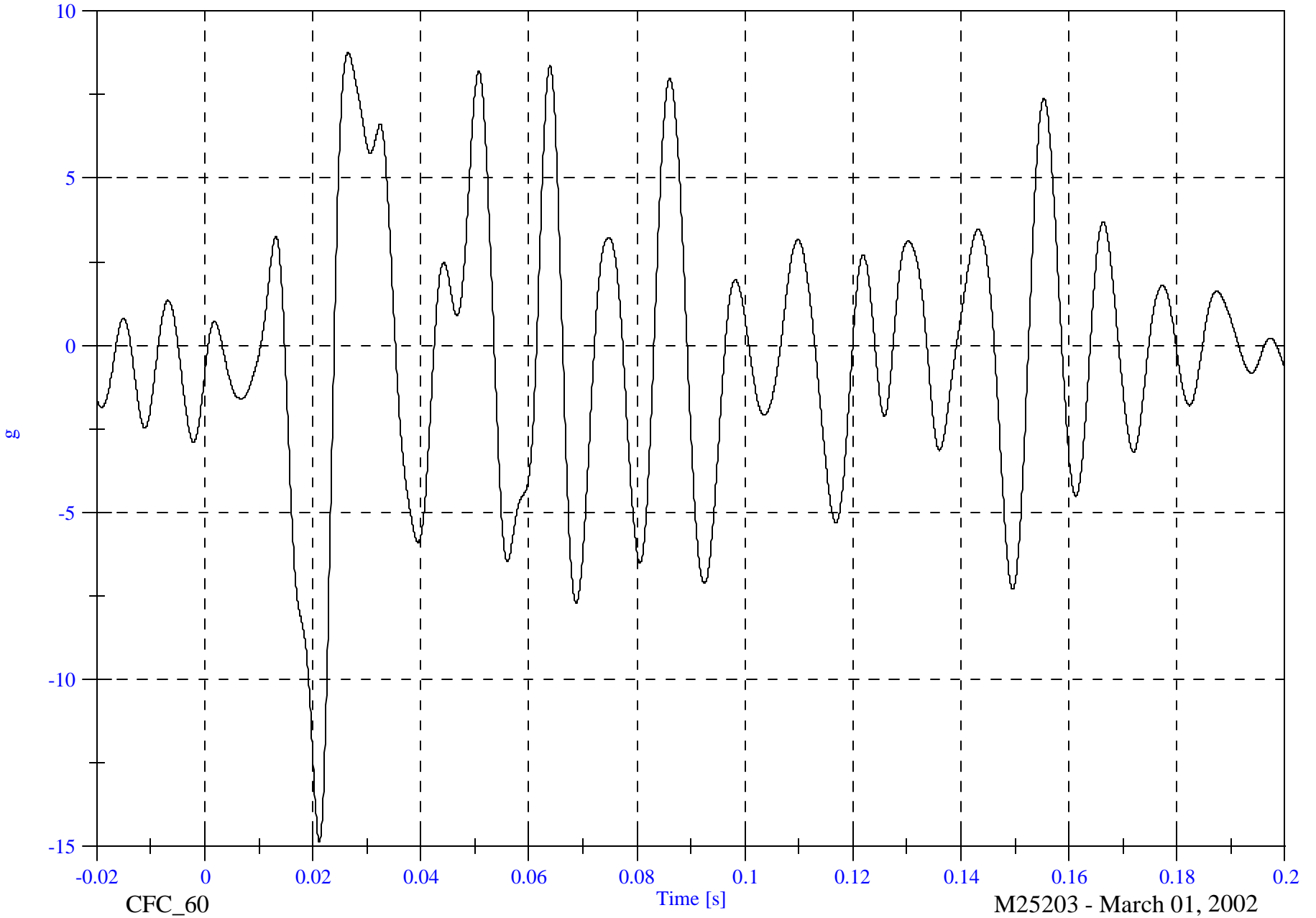
Moving Barrier CG Z

Max: 8.8 [g] at 0.027 [s]

Min: -14.9 [g] at 0.021 [s]

B-85

8652-SNCAP-04



SNCAP #4 - 2002 Nissan Sentra

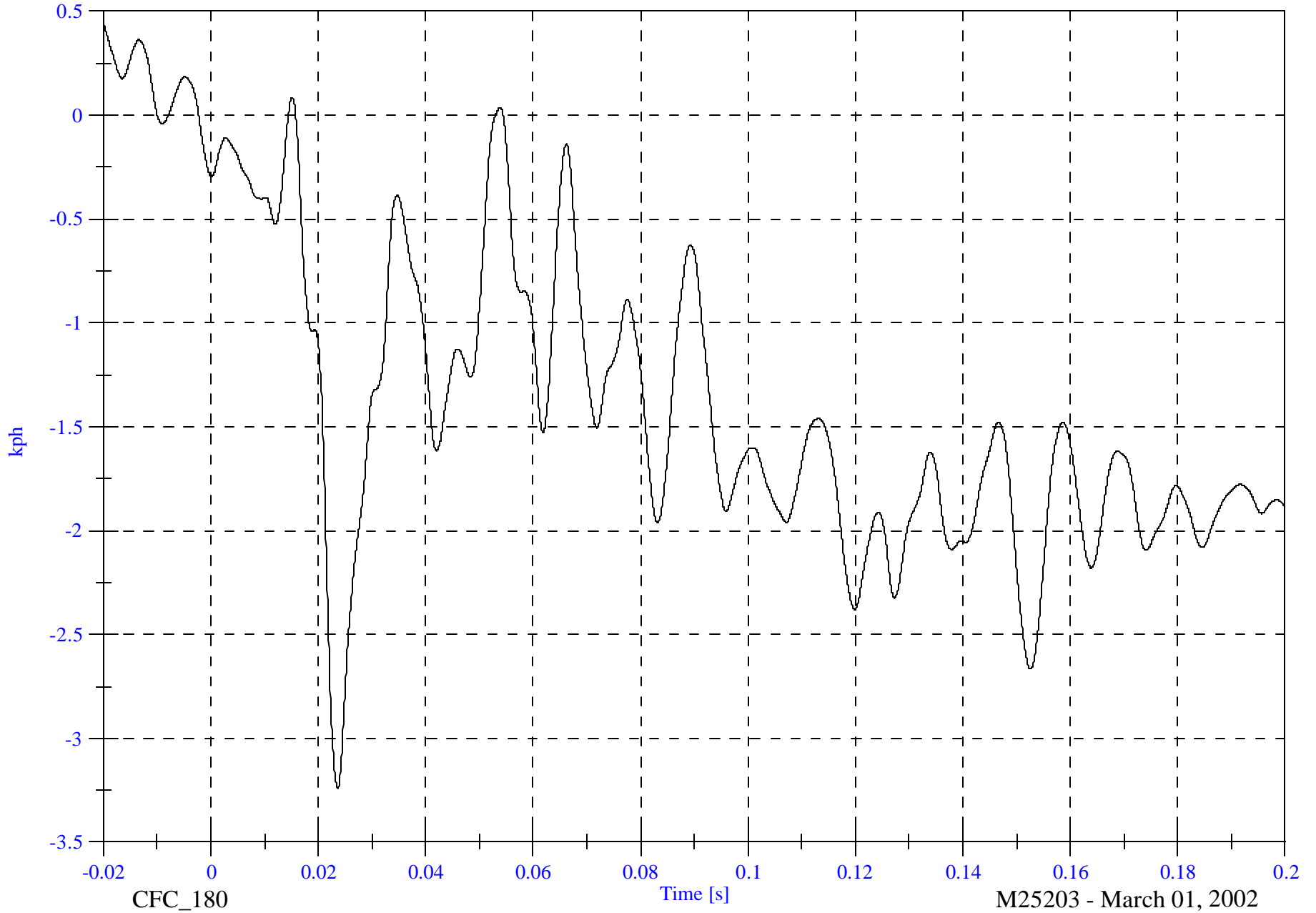
Moving Barrier CG Z Velocity

Max: 0.4 [kph] at -0.020 [s]

Min: -3.2 [kph] at 0.024 [s]

B-86

8652-SNCAP-04



SNCAP #4 - 2002 Nissan Sentra

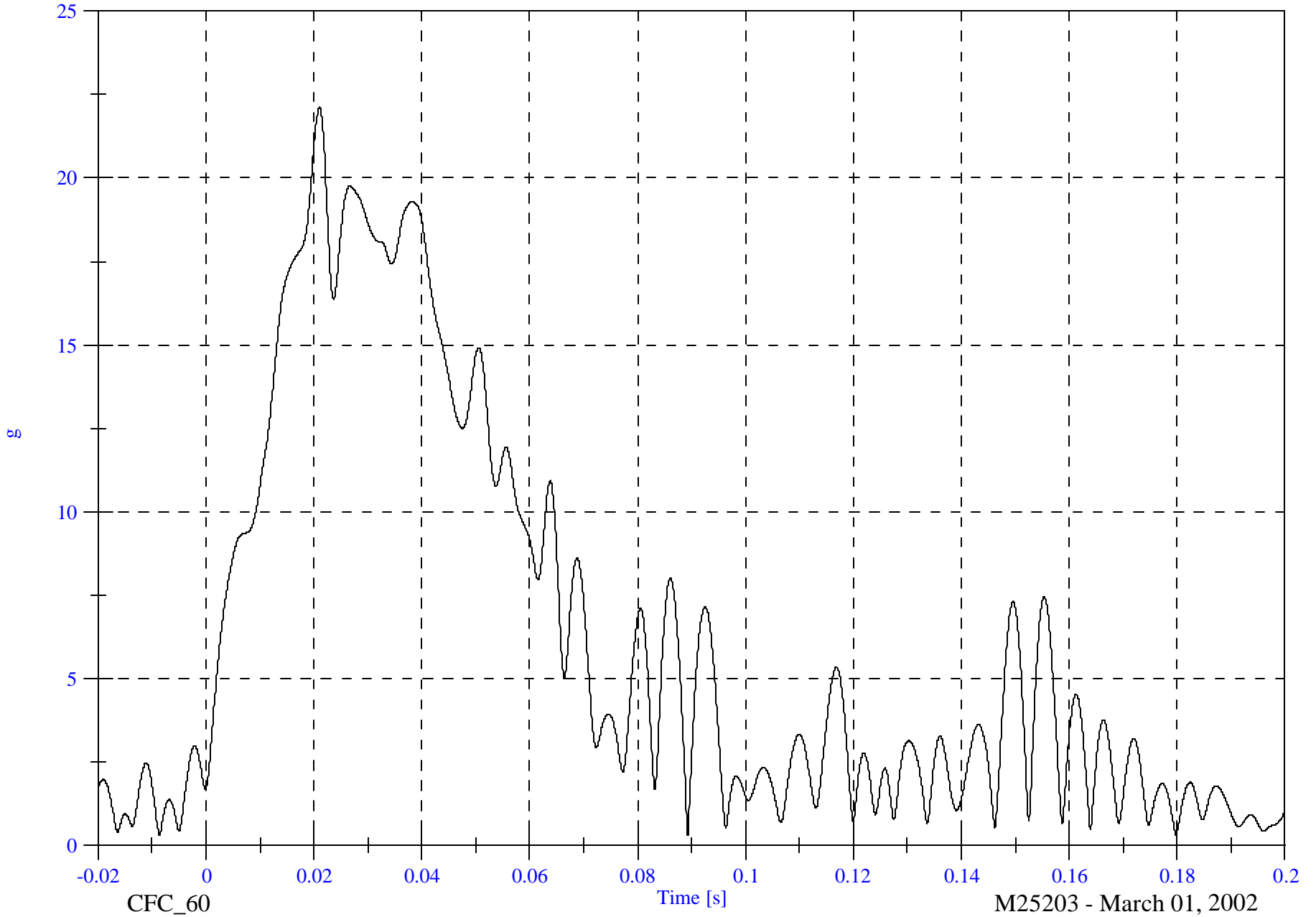
Moving Barrier CG Resultant

Max: 22.1 [g] at 0.021 [s]

Min: 0.3 [g] at -0.009 [s]

B-87

8652-SNCAP-04



SNCAP #4 - 2002 Nissan Sentra

Moving Barrier Left Rail X

Max: 2.2 [g] at 0.129 [s]

Min: -20.5 [g] at 0.032 [s]

B-88

8652-SNCAP-04



SNCAP #4 - 2002 Nissan Sentra

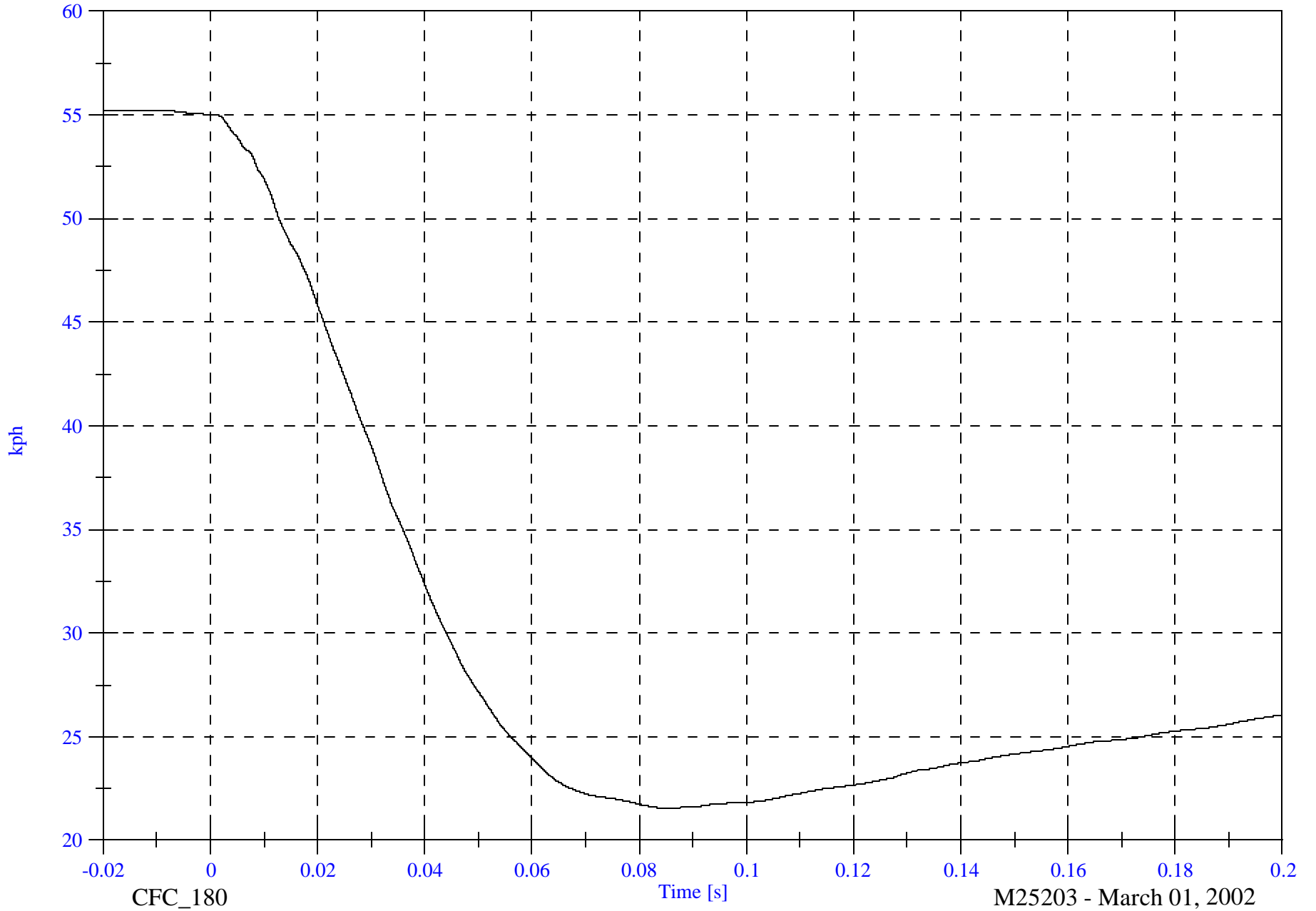
Max: 55.2 [kph] at -0.020 [s]

Moving Barrier Left Rail X Velocity

Min: 21.5 [kph] at 0.084 [s]

B-89

8652-SNCAP-04



CFC_180

Time [s]

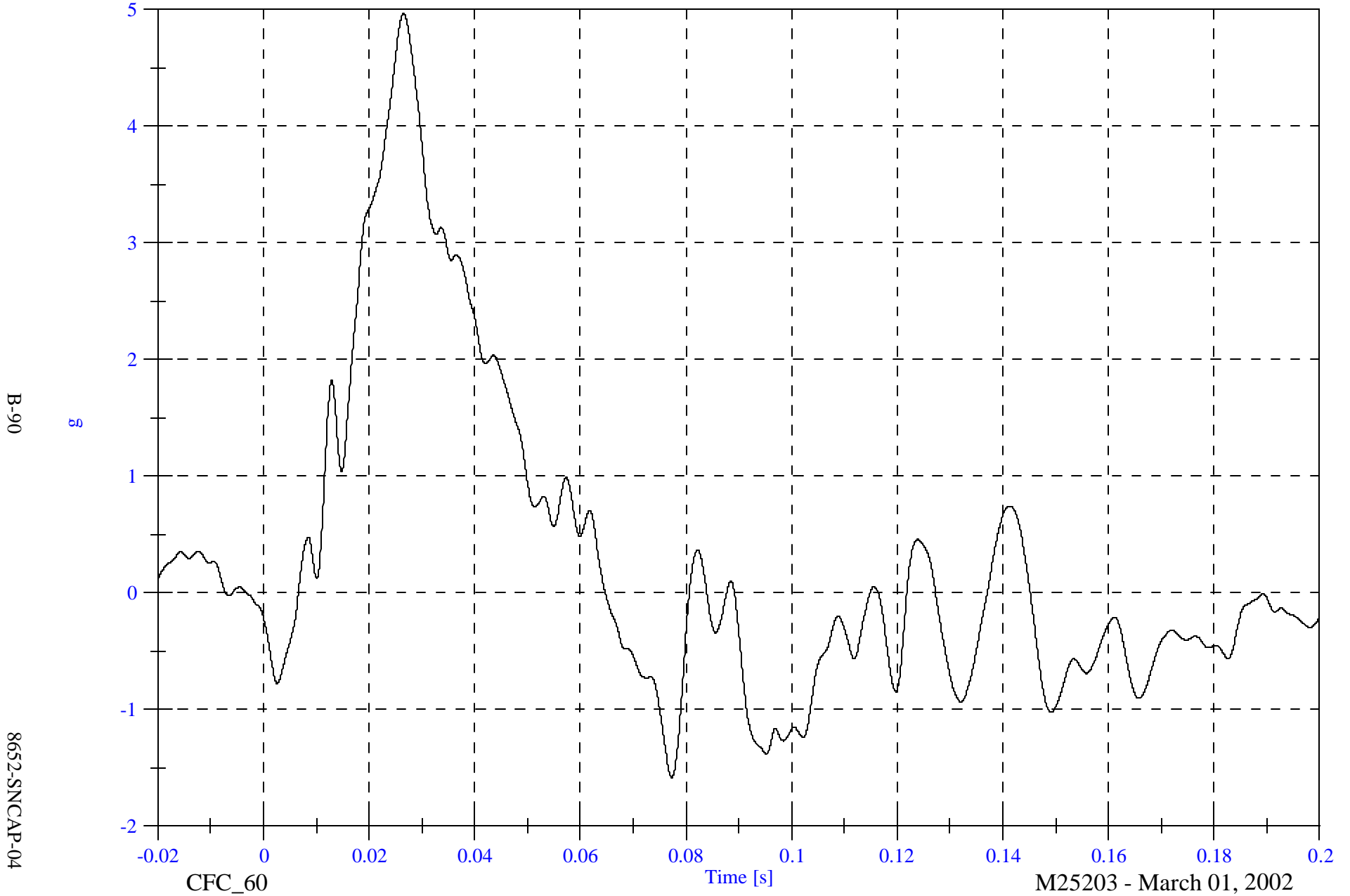
M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

Moving Barrier Left Rail Y

Max: 5.0 [g] at 0.026 [s]

Min: -1.6 [g] at 0.077 [s]



B-90

8652-SNCAP-04

CFC_60

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

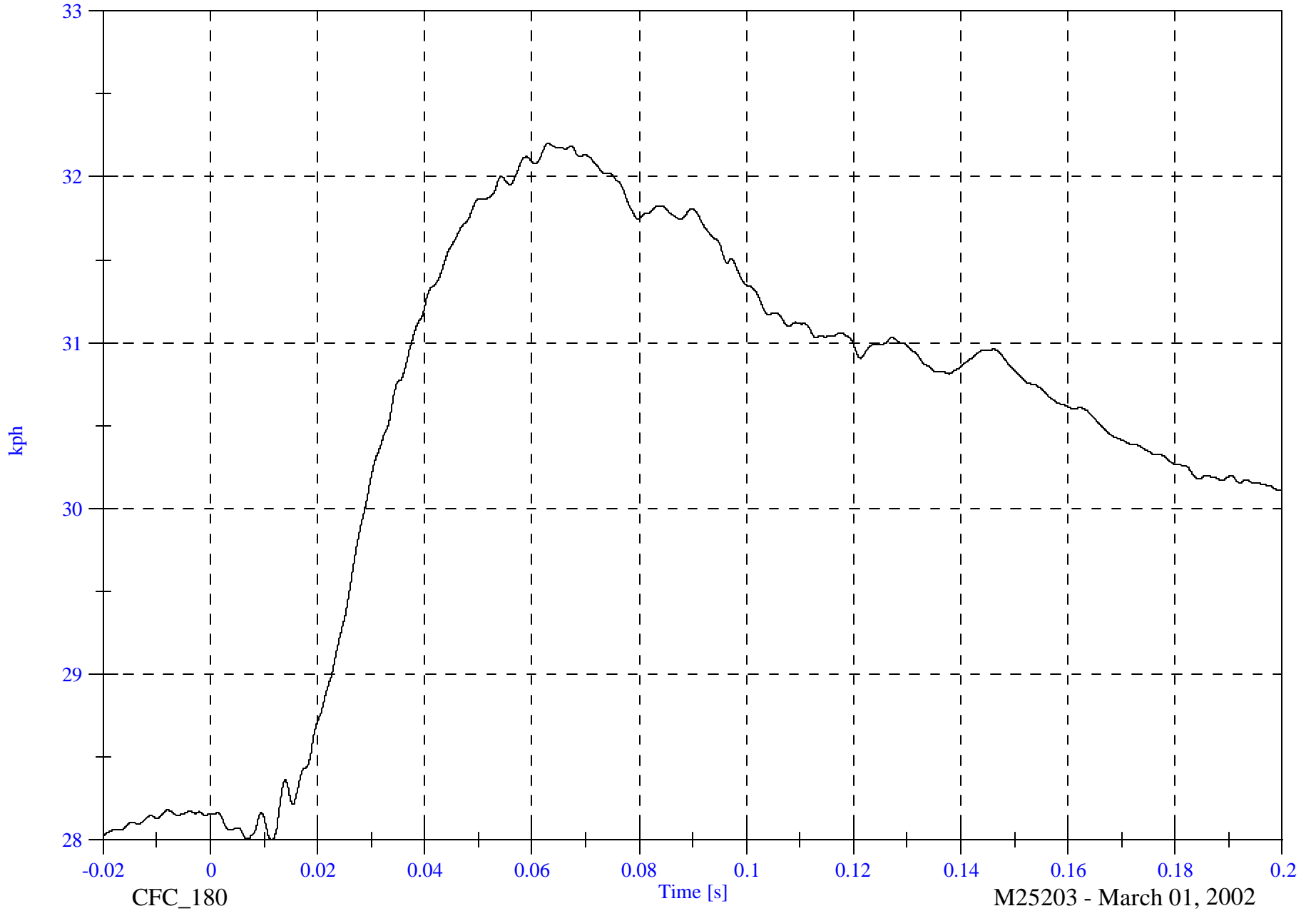
Max: 32.2 [kph] at 0.063 [s]

Moving Barrier Left Rail Y Velocity

Min: 28.0 [kph] at 0.011 [s]

B-91

8652-SNCAP-04



CFC_180

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

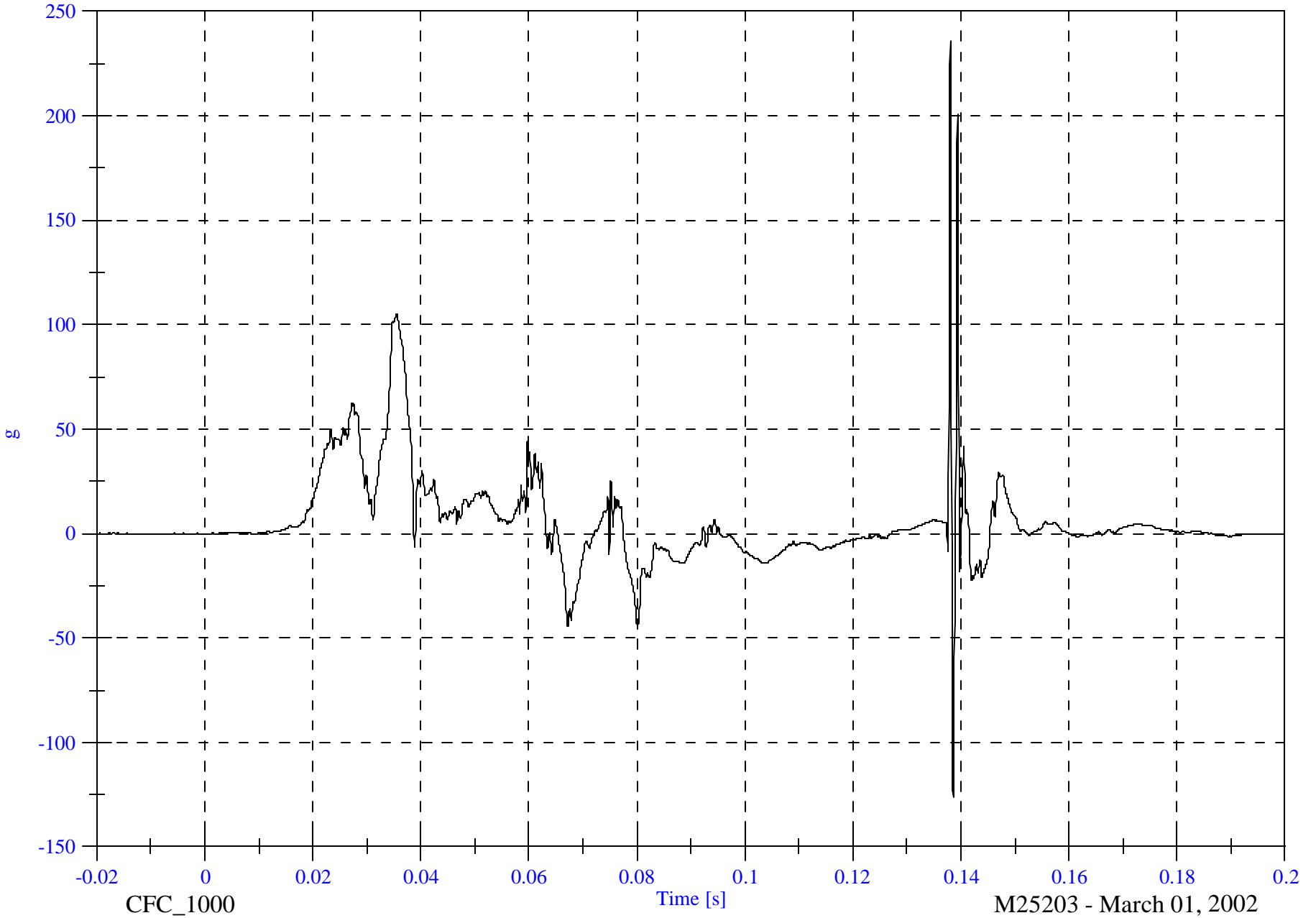
P1 Upper Rib Ry

Max: 235.9 [g] at 0.138 [s]

Min: -126.2 [g] at 0.139 [s]

B-92

8652-SNCAP-04



SNCAP #4 - 2002 Nissan Sentra

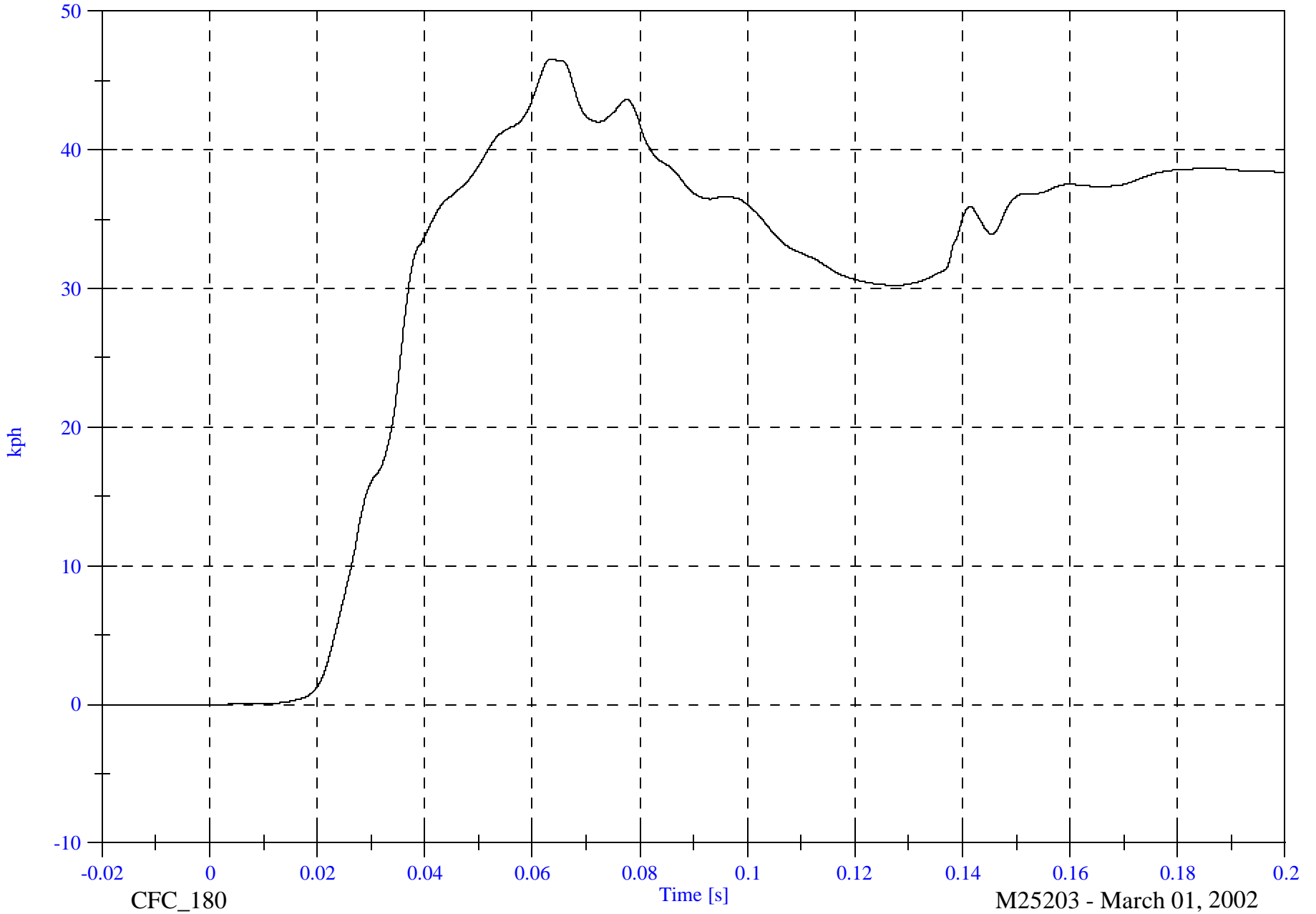
P1 Upper Rib Ry Velocity

Max: 46.6 [kph] at 0.063 [s]

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

B-93

8652-SNCAP-04



CFC_180

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

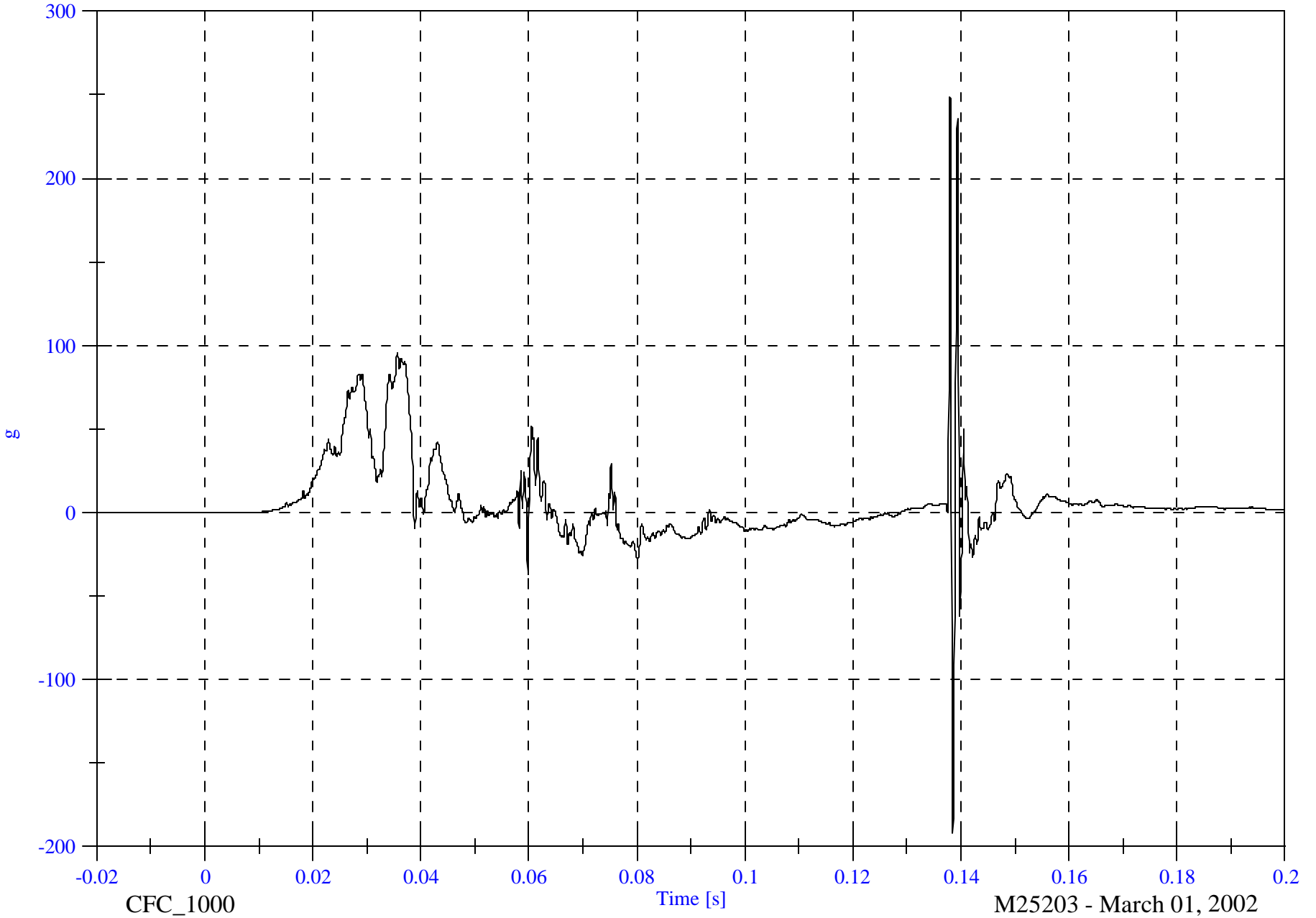
P1 Lower Rib Ry

Max: 248.9 [g] at 0.138 [s]

Min: -191.5 [g] at 0.138 [s]

B-94

8652-SNCAP-04



CFC_1000

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

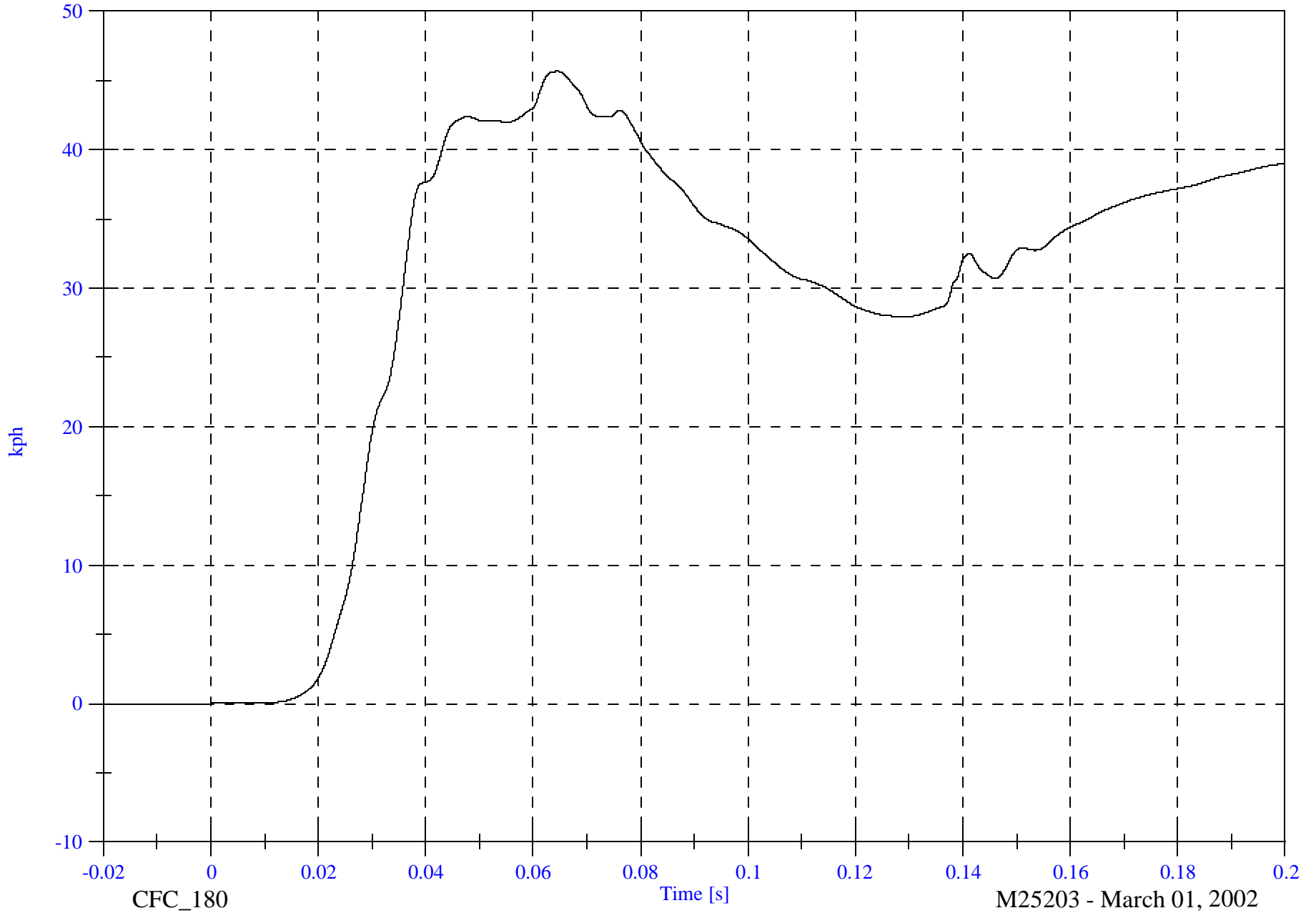
Max: 45.7 [kph] at 0.064 [s]

P1 Lower Rib Ry Velocity

Min: -0.0 [kph] at -0.009 [s]

B-95

8652-SNCAP-04

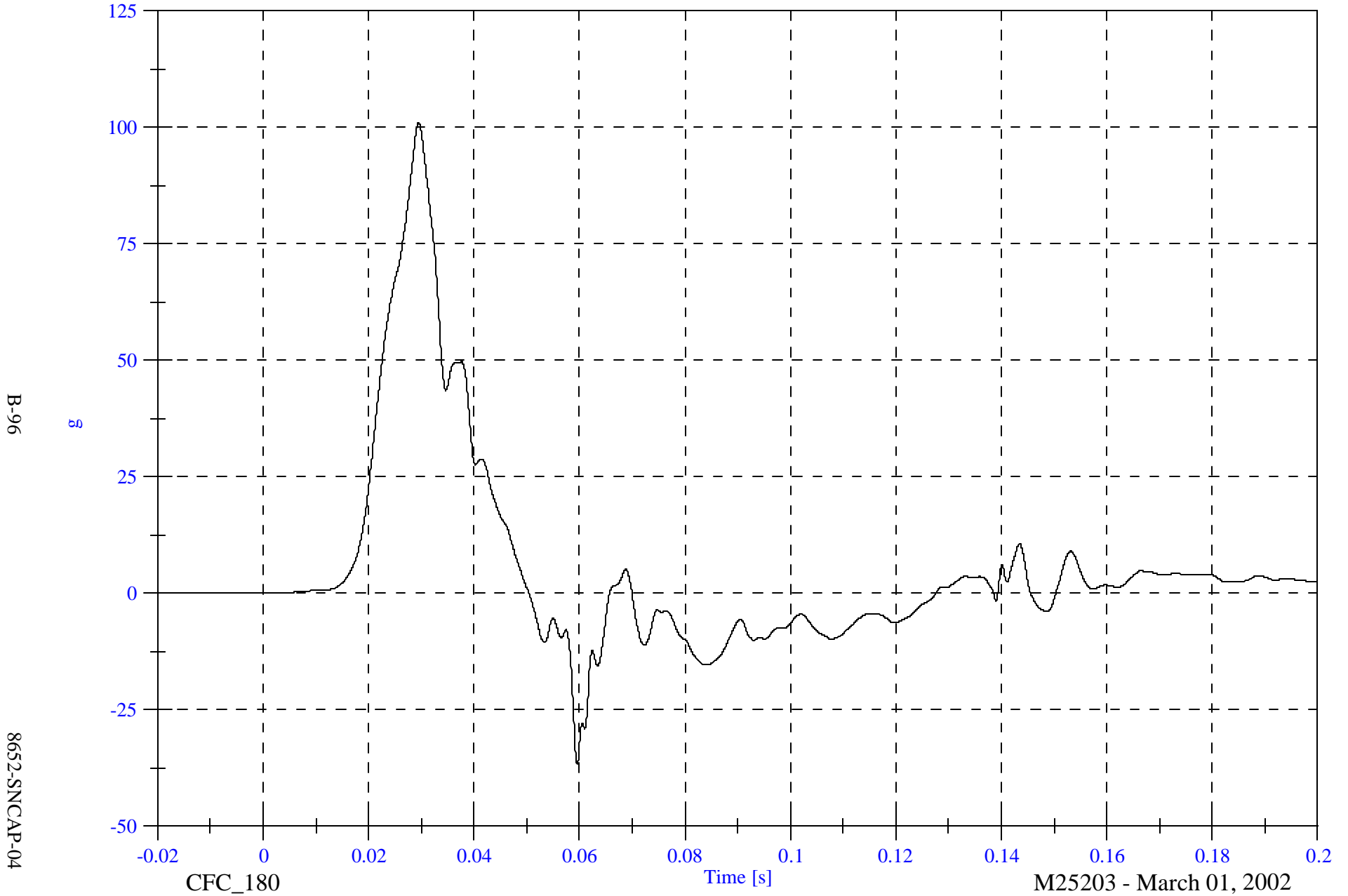


SNCAP #4 - 2002 Nissan Sentra

P1 Lower Spine Ry

Max: 101.1 [g] at 0.030 [s]

Min: -36.7 [g] at 0.060 [s]



B-96

8652-SNCAP-04

CFC_180

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

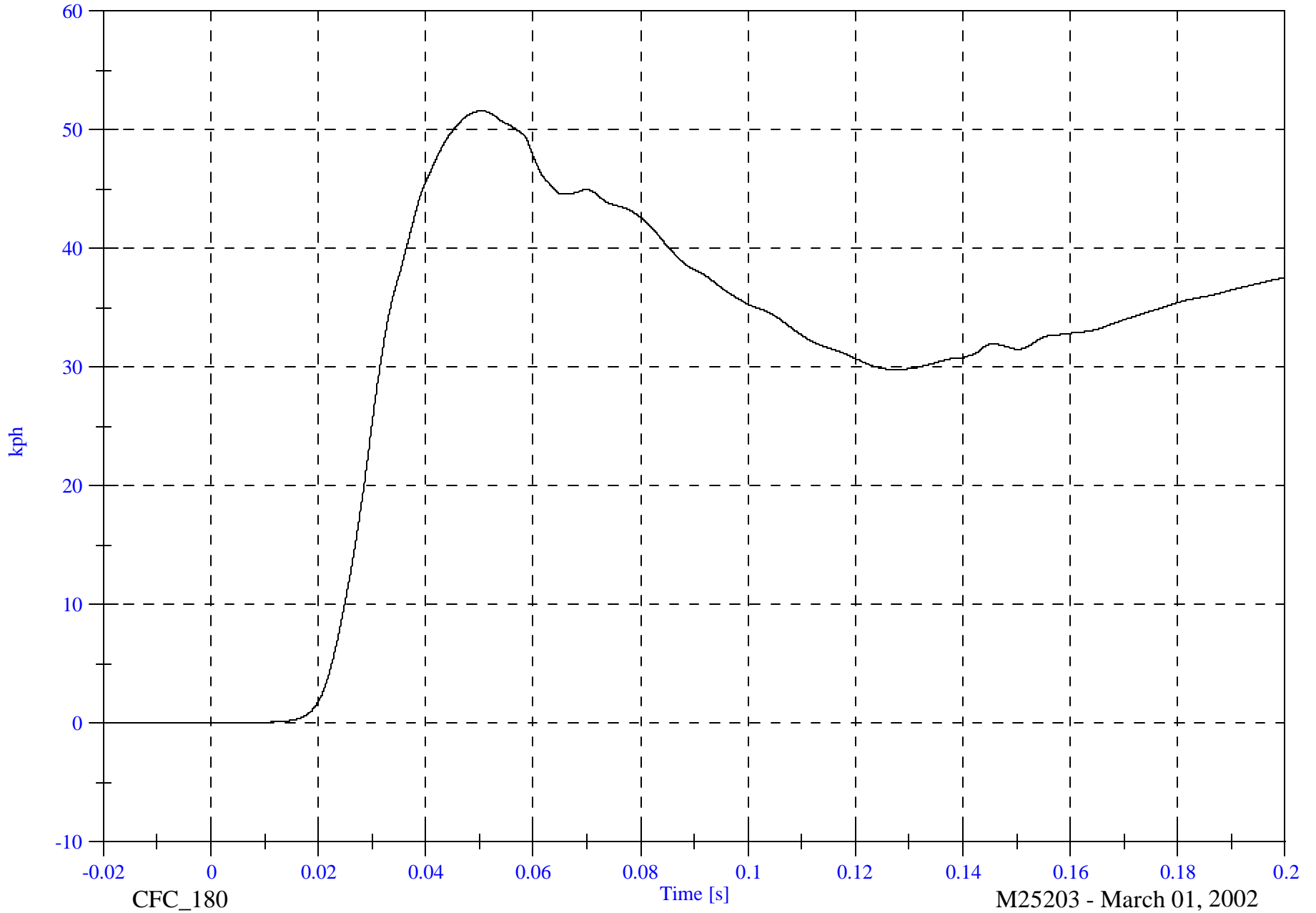
P1 Lower Spine Ry Velocity

Max: 51.6 [kph] at 0.050 [s]

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

B-97

8652-SNCAP-04



SNCAP #4 - 2002 Nissan Sentra

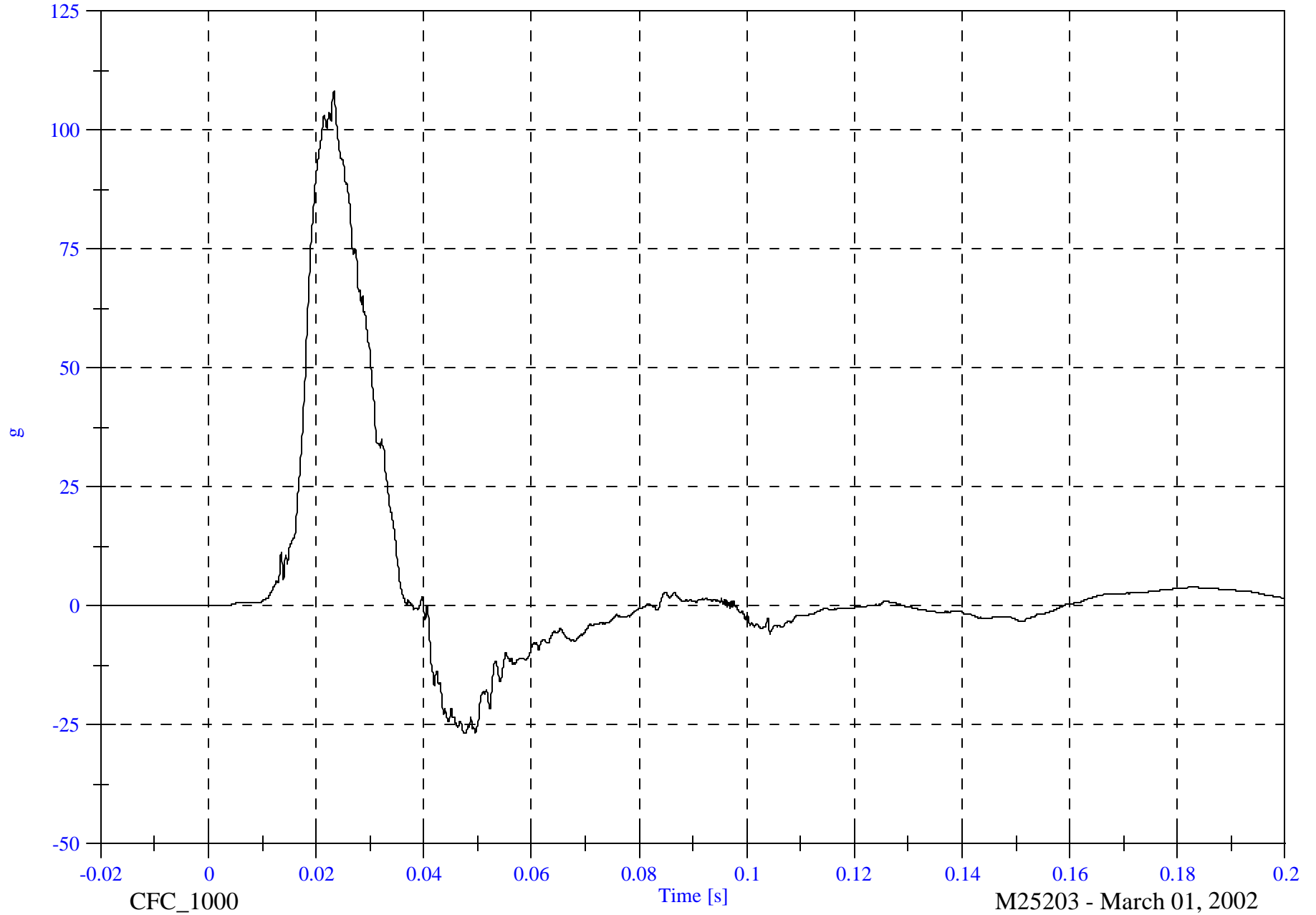
P1 Pelvic Ry

Max: 108.1 [g] at 0.023 [s]

Min: -26.8 [g] at 0.048 [s]

B-98

8652-SNCAP-04



CFC_1000

Time [s]

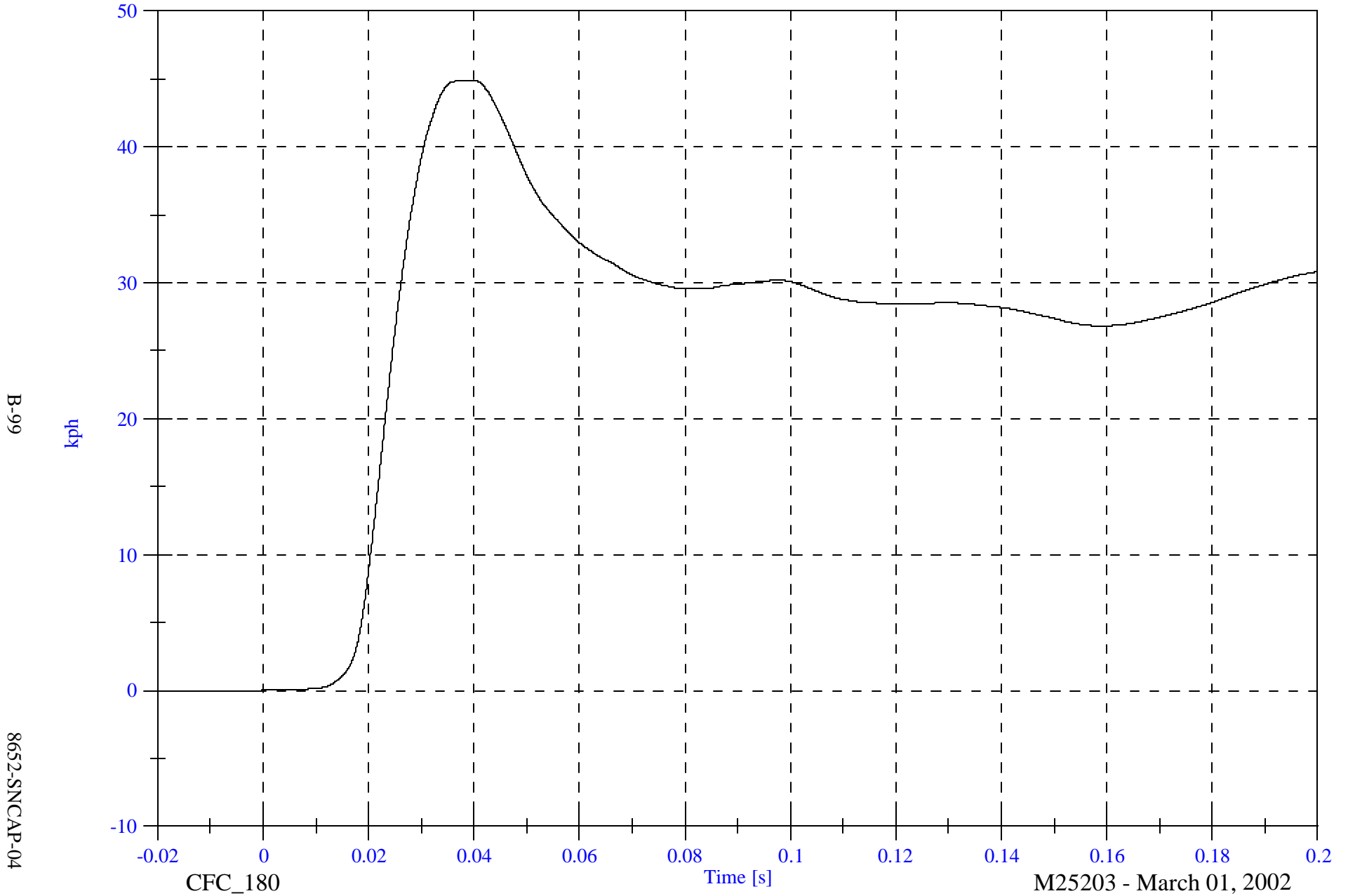
M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

Max: 44.9 [kph] at 0.040 [s]

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

P1 Pelvic Ry Velocity



B-99

8652-SNCAP-04

CFC_180

Time [s]

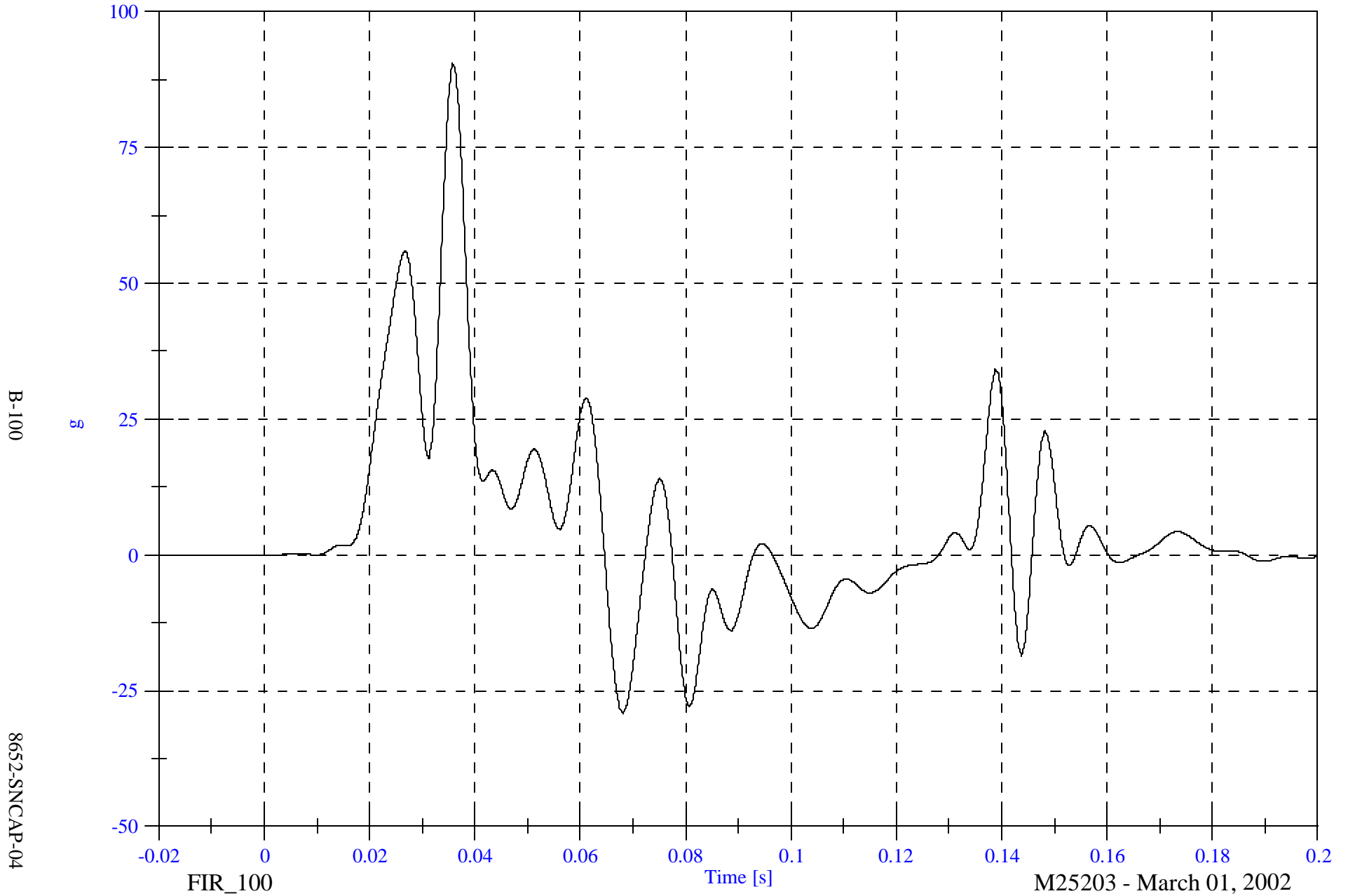
M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

P1 Upper Rib Ry

Max: 90.4 [g] at 0.036 [s]

Min: -29.1 [g] at 0.068 [s]



B-100

8652-SNCAP-04

FIR_100

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

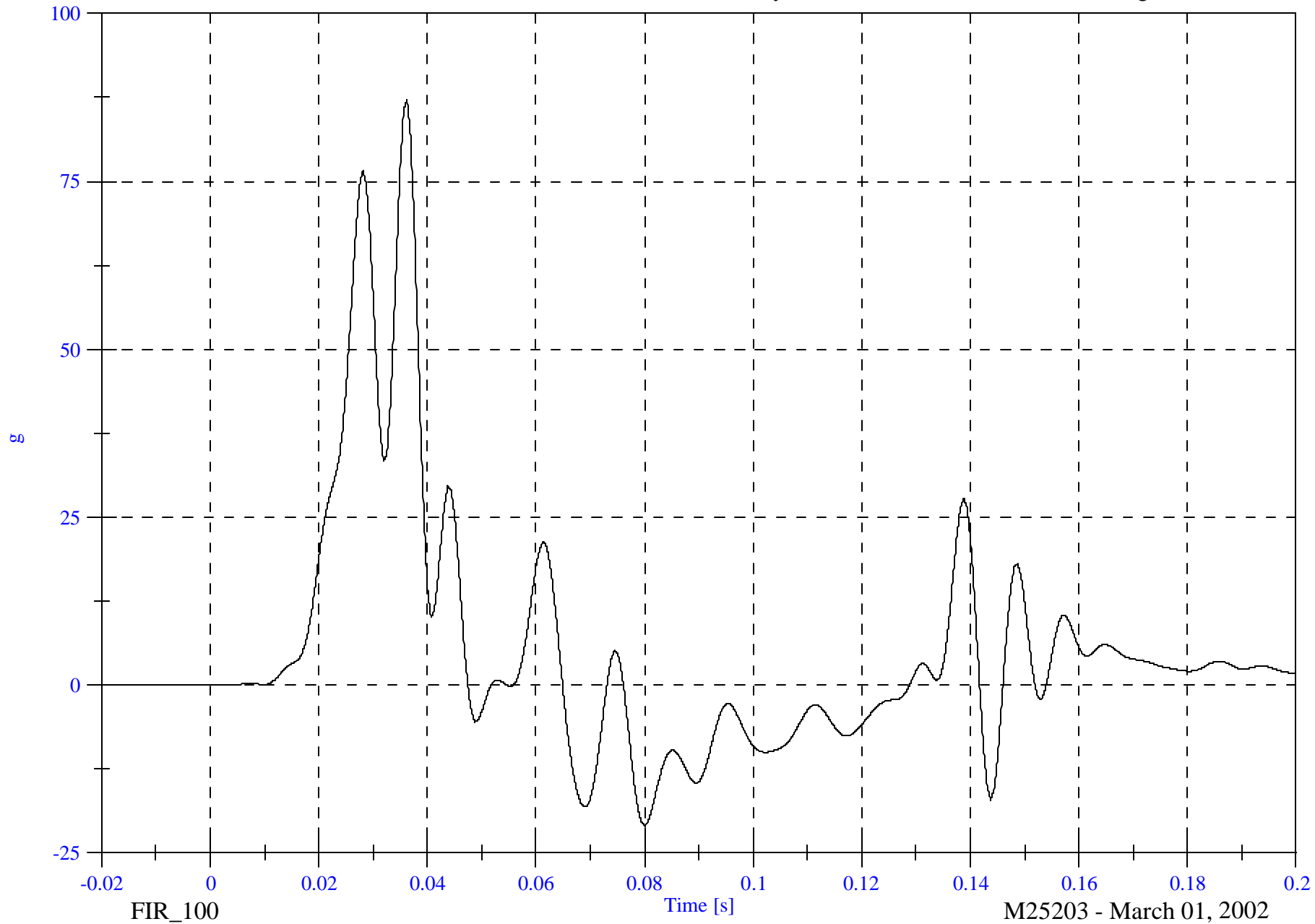
P1 Lower Rib Ry

Max: 87.2 [g] at 0.036 [s]

Min: -21.0 [g] at 0.080 [s]

B-101

8652-SNCAP-04



SNCAP #4 - 2002 Nissan Sentra

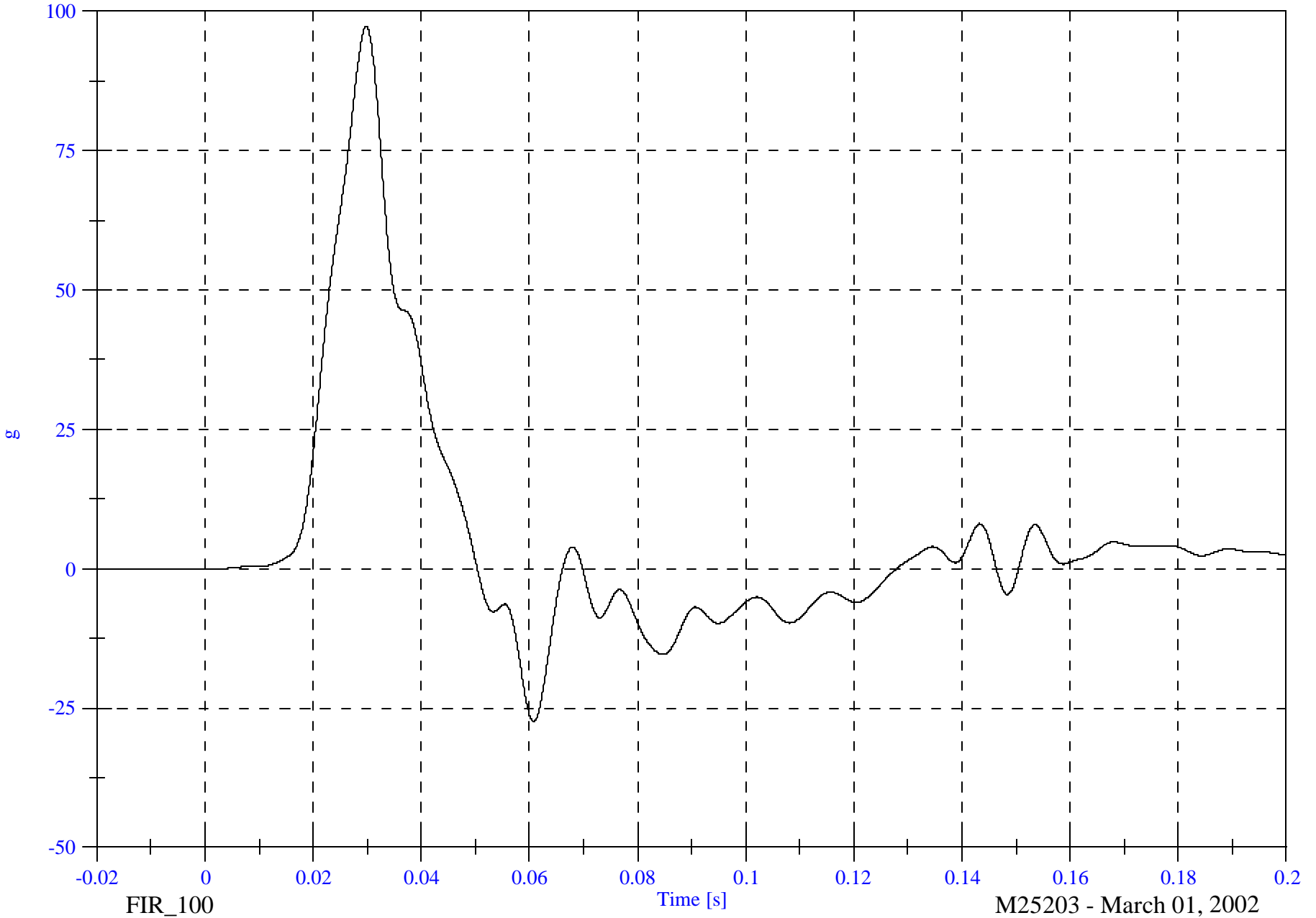
P1 Lower Spine Ry

Max: 97.4 [g] at 0.030 [s]

Min: -27.4 [g] at 0.061 [s]

B-102

8652-SNCAP-04



FIR_100

Time [s]

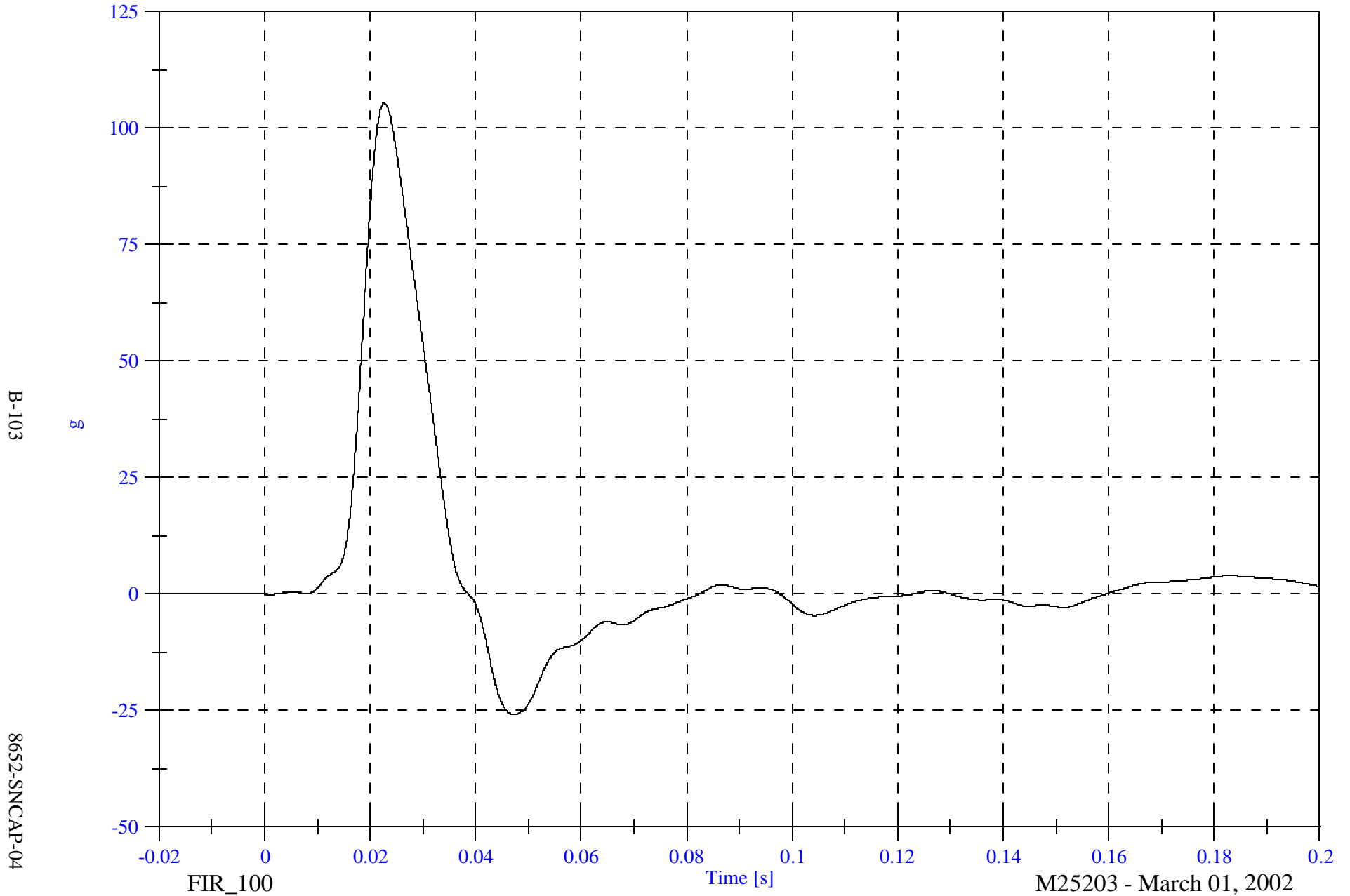
M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

P1 Pelvic Ry

Max: 105.5 [g] at 0.023 [s]

Min: -25.8 [g] at 0.048 [s]



B-103

8652-SNCAP-04

FIR_100

Time [s]

M25203 - March 01, 2002

APPENDIX C

SID CONFIGURATION AND PERFORMANCE VERIFICATION DATA

**SUMMARY
SID PRE & POST TEST CALIBRATION**

CONFIGURED FOR LEFT SIDE IMPACT

Date: 1/30/02 Sequential Test Number: 3
 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	SID NO.: 016	
		PRE TEST	POST TEST
SH- Seated Height (mm)	889 - 909	902	902
RH- Rib Height (mm)	501 - 521	513	513
HP- Hip Pivot Height (mm)	99 ref.	99	99
RD- Rib from Back Line (mm)	229 - 241	239	239
KV- Knee Pivot from Back Line (mm)	511 - 526	526	526
SW- Knee Pivot to Floor (mm)	490 - 505	495	495
HW- Hip Width (mm)	356 - 391	366	366
THORAX IMPACTS			
TEMPERATURE (°C)	18.9 - 25.5	21.1	21.7
RELATIVE HUMIDITY (%)	10 - 70	30	30
PROBE SPEED (m/s)	4.27 - 4.33	4.31	4.32
UPPER RIB (g's)	37 - 46	39.7	41.74
LOWER RIB (g's)	37 - 46	40.01	37.74
LOWER SPINE (g's)	15 - 22	20.38	21.19
PELVIS IMPACT			
TEMPERATURE (°C)	18.9 - 25.5	21.1	21.1
RELATIVE HUMIDITY (%)	10 - 70	30	30
PROBE SPEED (m/s)	4.27 - 4.33	4.32	4.33
PELVIS (g's)	40 - 60	50.6	57.82

REMARKS: None

CALIBRATION TEST RESULTS

PRE-TEST

SID NO.: 016

CONFIGURED FOR LEFT SIDE IMPACT

**CALIBRATION TEST RESULTS SUMMARY
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 3
Date: 1/30/02 Laboratory Technician: B. Swiecicki

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

* Test not required for SID certification.

REMARKS: None

**EXTERNAL DIMENSIONS
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 3
Date: 1/30/02 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 – 909	902
RH- Rib Height (mm)	502 – 520	513
HP- Hip Pivot Height (mm)	99 ref.	99
RD- Rib from Back Line (mm)	229 – 241	239
KH- Knee Pivot from Back Line (mm)	511 – 526	526
KV- Knee Pivot to Floor (mm)	490 – 505	495
HW- Hip Width (mm)	356 - 391	366

REMARKS: None

**THORACIC SHOCK ABSORBER TESTS
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 1.3
Date: September 19, 2001 Laboratory Technician: B. Swiecicki

DAMPER IDENTIFICATION: 016

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)		18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)		10 - 70	32
VELOCITY	FORCE (N)	836 - 1125	934
3.05 m/s	DISPLACEMENT (mm)	30 - 35	32.7
VELOCITY	FORCE (N)	1730 - 2099	1828.5
4.27 m/s	DISPLACEMENT (mm)	32 - 37	36.1
VELOCITY	FORCE (N)	3741 - 4448	3876.1
6.10 m/s	DISPLACEMENT (mm)	33 - 40	36.7

DAMPER SETTING: 5

REMARKS: None

**LATERAL THORAX IMPACT TEST
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 3
Date: 1/29/02 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.1
RELATIVE HUMIDITY (%)	10 - 70	30
PROBE SPEED (m/s)	4.27 - 4.33	4.31
UPPER RIB (g's)	37 - 46	39.70
LOWER RIB (g's)	37 - 46	40.01
LOWER SPINE (g's)	15 - 22	20.38

REMARKS: None

**LATERAL PELVIS IMPACT TEST
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 3
Date: 1/29/02 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.1
RELATIVE HUMIDITY (%)	10 - 70	30.0
PROBE SPEED (m/s)	4.27 - 4.33	4.32
PELVIS ACCELERATION (g's)	40 - 60	50.6

REMARKS: None

**HEAD DROP TEST
PRE-TEST**

(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 3
Date: 1/29/02 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	29.0
PEAK RESULTANT ACCELERATION (Gs)	210 - 260	212.9
PEAK LATERAL ACCELERATION (Gs)	Not to Exceed 10	3.28
UNIMODAL CRITERIA ABOVE 100 Gs (ms)	0.9 - 1.5	1.27

REMARKS: None

**ABDOMINAL COMPRESSION TEST
PRE-TEST**

(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 3
Date: 1/29/02 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	29
FORCE @ 13 mm (N)	104 - 162	104.5
FORCE @ 19 mm (N)	163 - 221	168.6
FORCE @ 25 mm (N)	222 - 280	241.5
FORCE @ 33 mm (N)	325 - 391	355.9

REMARKS: None

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

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 3
 Date: 1/30/02 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	29
FORCE @ 0° (N)	0 - 26.7	0.0
FORCE @ 20° (N)	97.8 - 151.2	122.8
FORCE @ 30° (N)	151.2 - 204.6	171.7
FORCE @ 40° (N)	204.6 - 258	231.3
RETURN ANGLE	12° max.	4.5°

REMARKS: None

PRE-TEST DUMMY INSPECTION LIST

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 3
 Date: 1/30/02 Laboratory Technician: B. Swiecicki

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

REMARKS: None

CALIBRATION TEST RESULTS

POST TEST

SID NO.: 016

CONFIGURED FOR LEFT SIDE IMPACT

**CALIBRATION TEST RESULTS SUMMARY
POST TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 4
Date: 3/15/02 Laboratory Technician: B. Swiecicki

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

* Test not required for SID certification.

REMARKS: None

**EXTERNAL DIMENSIONS
POST TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 4
Date: 3/15/02 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 - 909	902
RH- Rib Height (mm)	502 - 520	513
HP- Hip Pivot Height (mm)	99 ref.	99
RD- Rib from Back Line (mm)	229 - 241	239
KH- Knee Pivot from Back Line (mm)	511 - 526	526
KV- Knee Pivot to Floor (mm)	490 - 505	495
HW- Hip Width (mm)	356 - 391	366

REMARKS: None

**LATERAL THORAX IMPACT TEST
POST TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 4
Date: 3/15/02 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	30
PROBE SPEED (m/s)	4.27 - 4.33	4.32
UPPER RIB (g's)	37 - 46	41.74
LOWER RIB (g's)	37 - 46	37.74
LOWER SPINE (g's)	15 - 22	21.19

REMARKS: None

**LATERAL PELVIS IMPACT TEST
POST TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 4
Date: 3/14/02 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.1
RELATIVE HUMIDITY (%)	10 - 70	30
PROBE SPEED (m/s)	4.27 - 4.33	4.33
PELVIS ACCELERATION (g's)	40 - 60	57.82

REMARKS: None

**HEAD DROP TEST
POST-TEST**

(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 4
Date: 3/13/02 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.1
RELATIVE HUMIDITY (%)	10 - 70	29
PEAK RESULTANT ACCELERATION (Gs)	210 - 260	214.33
PEAK LATERAL ACCELERATION (Gs)	Not to Exceed 10	1.94
UNIMODAL CRITERIA ABOVE 100 Gs (ms)	0.9 - 1.5	1.32

REMARKS: None

**ABDOMINAL COMPRESSION TEST
POST TEST**

(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 4
Date: 3/15/02 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	31
FORCE @ 13 mm (N)	104 - 162	118.8
FORCE @ 19 mm (N)	163 - 221	178.8
FORCE @ 25 mm (N)	222 - 280	257.1
FORCE @ 33 mm (N)	325 - 391	375.9

REMARKS: None

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

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 4
 Date: 3/15/02 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	31
FORCE @ 0° (N)	0 - 26.7	0.0
FORCE @ 20° (N)	97.8 - 151.2	113.4
FORCE @ 30° (N)	151.2 - 204.6	166.8
FORCE @ 40° (N)	204.6 - 258	236.6
RETURN ANGLE	12° max.	2.3

REMARKS: None

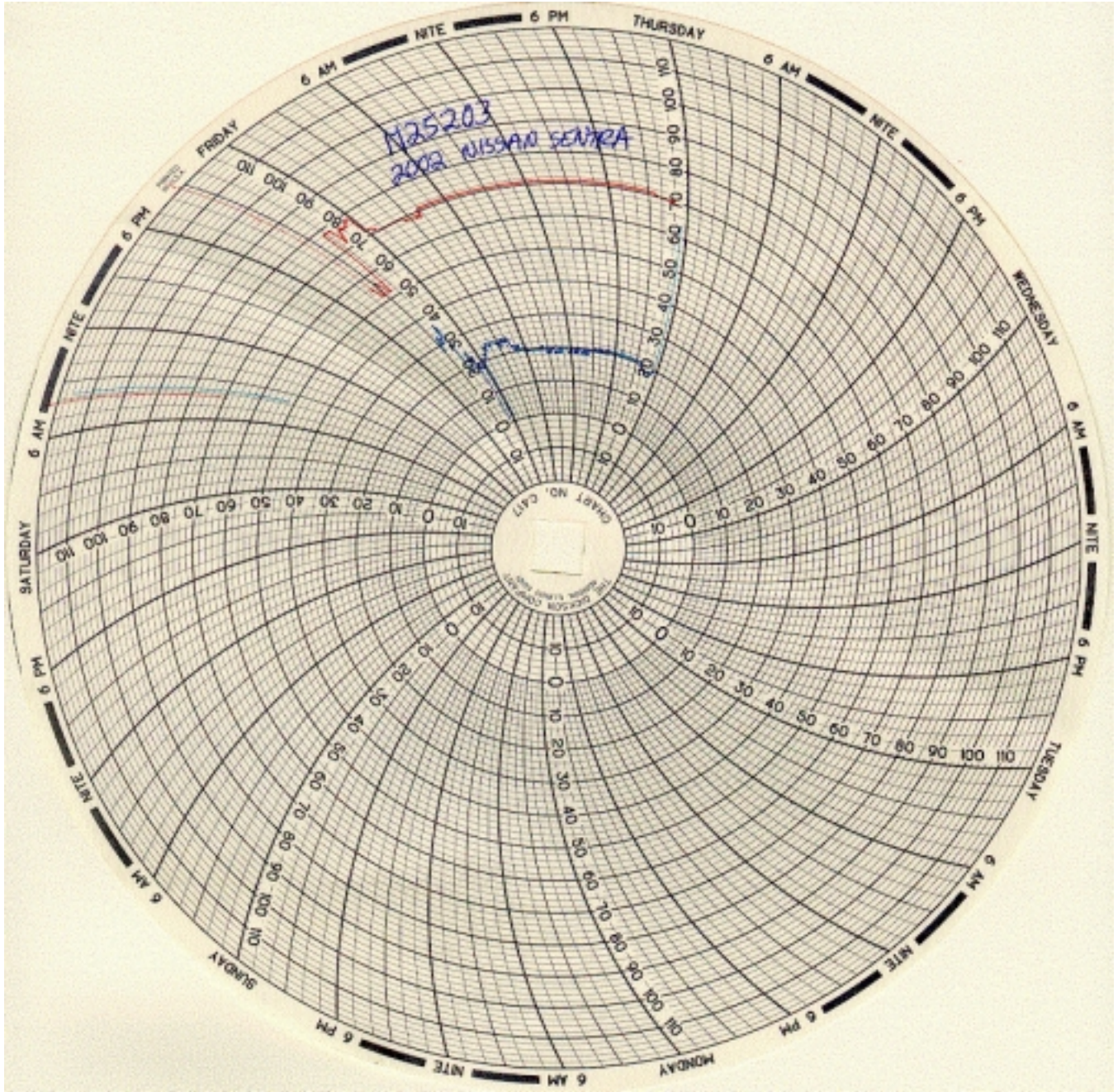
POST TEST DUMMY INSPECTION LIST
CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 4
 Date: 3/15/02 Laboratory Technician: B. Swiecicki

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

REMARKS: None

TEMPERATURE TRACE



APPENDIX D

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

SID INSTRUMENTATION

	FRONT SID NO.: 016		
	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
HEAD AX	AC-P17237	ENDEVCO	08/21/01
HEAD AY	AC-P15747	ENDEVCO	08/21/01
HEAD AZ	AC-P14438	ENDEVCO	08/21/01
UPPER RIB	AC-P18545	ENDEVCO	08/16/01
LOWER RIB	AC-P18532	ENDEVCO	08/16/01
LOWER SPINE	AC-P18525	ENDEVCO	08/16/01
PELVIS	AC-P18531	ENDEVCO	08/16/01
UPPER RIB REDUNDANT	AC-P18536	ENDEVCO	08/16/01
LOWER RIB REDUNDANT	AC-P18792	ENDEVCO	08/16/01
LOWER SPINE REDUNDANT	AC-P18682	ENDEVCO	08/16/01
PELVIS REDUNDANT	AC-P18519	ENDEVCO	08/16/01

REMARKS: None

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

VEHICLE AND MDB INSTRUMENTATION

	VEHICLE AND MDB INSTRUMENTS		
	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
RIGHT FRONT SILL (X)	AC-J32143	ENDEVCO	01/07/02
RIGHT FRONT SILL (Y)	AC-J32838	ENDEVCO	01/07/02
RIGHT FRONT SILL (Z)	AC-J32174	ENDEVCO	01/07/02
RIGHT REAR SILL (X)	AC-B10827	ENDEVCO	08/29/01
RIGHT REAR SILL (Y)	AC-A13513	ENDEVCO	08/29/01
RIGHT REAR SILL (Z)	AC-B11408	ENDEVCO	08/29/01
REAR FLOORPAN ABOVE AXLE (X)	AC-J33019	ENDEVCO	08/28/01
REAR FLOORPAN ABOVE AXLE (Y)	AC-J32782	ENDEVCO	08/28/01
REAR FLOORPAN ABOVE AXLE (Z)	AC-J33127	ENDEVCO	08/28/01
LEFT REAR SILL (Y)	AC-D61	ICS	10/30/01
LEFT FRONT SILL (Y)	AC-D41	ICS	09/25/01
LEFT FRONT DOOR CENTERLINE (Y)	AC-P23134	ENDEVCO	09/24/01
RIGHT REAR SEAT OCCUPANT COMP. (Y)	AC-J32383	ENDEVCO	09/05/01
MID REAR OF LEFT FRONT DOOR (Y)	AC-J33032	ENDEVCO	09/04/01
LEFT FRONT DOOR UPPER C\L (Y)	AC-J32186	ENDEVCO	09/05/01
MID REAR OF LEFT REAR DOOR (Y)	AC-J27927	ENDEVCO	10/05/01
LEFT REAR DOOR UPPER C\L (Y)	AC-J33156	ENDEVCO	08/20/01
LOWER LEFT B- PILLAR (Y)	AC-J24754	ENDEVCO	09/25/01
MIDDLE LEFT B-PILLAR (Y)	AC-B11073	ENDEVCO	01/07/02
LOWER LEFT A-PILLAR (Y)	AC-A14433	ENDEVCO	09/25/01
UPPER LEFT A-PILLAR (Y)	AC-P23276	ENDEVCO	10/01/01
FRONT SEAT TRACK (Y)	AC-AP064	ENDEVCO	08/29/01
REAR SEAT TRACK (Y)	AC-X86	ICS	10/30/01
VEHICLE CG (X)	AC-J27941	ENDEVCO	08/16/01
VEHICLE CG (Y)	AC-J26604	ENDEVCO	10/05/01
VEHICLE CG (Z)	AC-ACC06	ENDEVCO	09/25/01
MDB CG (X)	AC-C16682	ENDEVCO	09/06/01
MDB CG (Y)	AC-CJ54	ENDEVCO	09/06/01
MDB CG (Z)	AC-GK12	ENDEVCO	09/06/01
MDB REAR FRAME MEMBER (X)	AC-CX05	ENDEVCO	09/06/01
MDB REAR FRAME MEMBER (Y)	AC-C16685	ENDEVCO	09/06/01

REMARKS: None

REPORT NUMBER: SNCAP-CAL-02-04

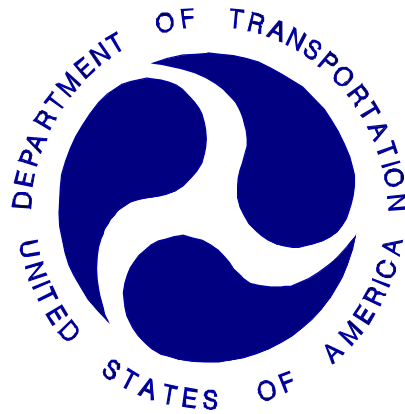
**NEW CAR ASSESSMENT PROGRAM
SIDE IMPACT TEST**

SAFETY FIRST FORERUNNER LATCH

NHTSA NUMBER: M25203

VERIDIAN ENGINEERING TEST NUMBER: 8652-SNCAP-04

VERIDIAN ENGINEERING
TRANSPORTATION SCIENCES CENTER
P.O. BOX 400
BUFFALO, NEW YORK 14225



March 1, 2002

FINAL REPORT

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

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		14. Sponsoring Agency Code NPS-10	
15. Supplementary Notes			
16. Abstract A 55/28 kph 90 ⁰ Impact Moving Deformable Barrier NCAP Side Impact Test was conducted on the subject CRS Safety First Forerunner LATCH in accordance with the specifications of the Office of Crashworthiness Standards Test Procedure for the determination of CRS crashworthiness. This test was conducted at the Veridian Engineering Crash Test Facility in Buffalo, New York, on March 1, 2002.			
17. Key Words New Car Assessment Program (NCAP) Side Impact		18. Distribution Statement <u>Copies of this report are available from:</u> National Highway Traffic Safety Administration Technical Reference Division Room 5108 (NAD-52) 400 Seventh St., S.W. Washington, D.C. 20590 Telephone No. (202) 366-4946 ATTN: Robert Hornicle	
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SECTION 1

PURPOSE AND SUMMARY OF TEST M25203

The purpose of this test was to obtain CRS performance data in a side impact NCAP condition.

The 61.96 kph side impact NCAP moving deformable barrier (MDB) test was conducted in accordance with the Office of Crashworthiness Standards (OCS) Side Impact NCAP Laboratory Test Procedure.

SUMMARY

Both child dummies were instrumented with head, chest, and pelvic triaxial accelerometers. In addition, redundant head z acceleration, chest displacement and upper and lower six axial neck force and moment load cell sensors were utilized.

The right rear (Position 3) child dummy (serial no. 017) and left rear (Position 4) child dummy (serial no. 022) were calibrated previous to this test. Child dummy certification information is found in section 5.

The right rear child dummy's HIC was 303.5, maximum chest deceleration over 3 ms was 35.7 g's. The left rear child dummy's HIC was 679.3, maximum chest deceleration over 3 ms was 93.7 g's.

SECTION 2
DATA SHEET NO. 1
CRASH TEST SUMMARY

TEST DUMMY INFORMATION:

DESCRIPTION	Position #3 CRS	Position #4 CRS
ATD Type/Serial No.	CRABI P572R/017	CRABI P572R /022
Restraint System:	Safety First Forerunner LATCH	Safety First Forerunner LATCH

Number of Data Channels _____ 68
 Number of Cameras: _____ 1 _____ Real Time
 _____ 3 _____ High Speed

POST TEST DOOR OPENING

DESCRIPTION	FRONT	REAR
Left Side Doors	Closed, Latched and Inoperable	Closed, Latched and Inoperable
Right Side Doors	Closed, Latched and Operable	Closed, Latched and Operable
Hatch/Other Door	N/A	N/A

POST TEST SEAT DATA

LOCATION	SEAT MOVEMENT (mm)	SEAT BACK FAILURE
P1 (Left Front)	0	None
P2 (Right Front)	0	None
P3 (Right Rear)	0	None
P4 (Left Rear)	0	None

VISIBLE DUMMY CONTACT POINTS

	Position #3 CRS	Position #4 CRS
Head Contact:	Left side of head to CRS upper bolster; Left and top of head to P4 CRS bolster	Left side of head to CRS upper bolster; Left side of head to upper door trim
Upper Torso Contact:	CRS upper bolster	CRS upper bolster
Lower Torso Contact:	CRS bolster	CRS bolster
Left Knee Contact:	CRS lower bolster	CRS lower bolster
Right Knee Contact:	None	None

DATA SHEET NO. 2

CRS PARAMETER DATA

CRS: Safety First Forerunner LATCH

NHTSA No. M25203

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:

Delivered Weight of Vehicle with Maximum Fluids = 1135.0 kg (A)

AS TESTED WEIGHT OF VEHICLE (1 SID + 2 P572C w/ CRS +CARGO + EQUIPMENT & INSTRUMENTATION):

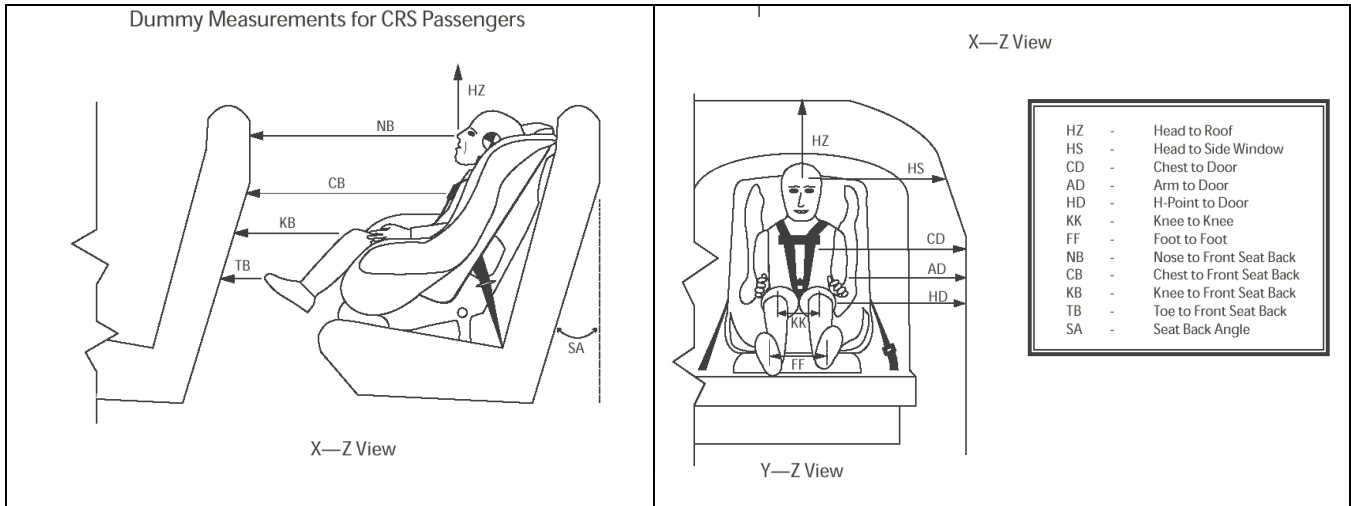
Left Front	=	<u>358.0</u>	kg	Left Rear	=	<u>306.5</u>	kg
Right Front	=	<u>360.5</u>	kg	Right Rear	=	<u>298.5</u>	kg
TOTAL FRONT	=	<u>718.5</u>	kg	TOTAL REAR	=	<u>605.0</u>	kg
TOTAL TEST WEIGHT =		<u>1323.5</u>	kg				

DATA SHEET NO. 3

CHILD DUMMY POSITIONING IN VEHICLE

CRS: Safety First Forerunner LATCH

NHTSA No. M25203



Measurement	Pre-Test (mm)		Post Test (mm)	
	P3 CRS (017)	P4 CRS (022)	P3 CRS (017)	P4 CRS (022)
SA	27°	27°	21°	20°
HS	265	275	220	268
CD	326	340	234	256
AD	220	220	154	143
HD	274	268	220	193
HZ	382	385	382	371
NB	574	555	580	550
CB	502	509	522	462
KK	102	100	98	80
FF	102	105	98	75
KB – LEFT	394	405	358	325
KB – RIGHT	392	405	412	408
TB – LEFT	239	240	231	198
TB – RIGHT	236	245	253	262

All dimensions in mm (unless noted)
P3 – Right Rear Passenger (CRS #1)
P4 – Left Rear Passenger (CRS #2)

DATA SHEET 4

CHILD DUMMY INJURY CRITERIA VALUES

CRS: Safety First Forerunner LATCH

NHTSA No. M25203

DESCRIPTION	Unit	MAXIMUM VALUE							
		Position #3				Position #4			
		Pos	msec	Neg	msec	Pos	msec	Neg	msec
Head X	g	0.1	-2.1	-22.0	84.4	11.6	127.8	-32.6	47.7
Head Y	g	43.2	80.9	-2.4	183.9	83.4	47.7	-18.0	123.5
Head Z	g	41.5	79.3	-3.7	124.6	48.2	42.7	-7.4	94.0
Head Resultant	g	59.0	80.4	-	-	94.1	47.7	-	-
Redundant Head Z	g	42.2	81.7	-6.4	42.4	34.2	45.3	-10.3	127.5
Upper Neck Fx	N	0.1	8.2	-351.4	78.3	34.0	103.8	-441.9	44.7
Upper Neck Fy	N	281.2	78.3	-54.4	186.9	494.8	42.0	-93.1	129.9
Upper Neck Fz	N	1097.5	75.7	-39.1	39.4	1519.9	44.9	-214.7	90.0
Upper Neck F Resultant	N	1171.5	76.3	-	-	1636.7	44.7	-	-
Upper Neck Mx	N-m	23.3	80.4	-5.7	62.3	1.7	60.7	-13.9	39.3
Upper Neck My	N-m	6.2	123.3	-5.4	170.7	15.6	89.3	-12.0	44.8
Upper Neck Mz	N-m	8.1†	94.3	-3.3†	47.9	3.2	60.7	-4.4	95.2
Upper Neck M Resultant	N-m	23.5†	80.6	-	-	16.4	41.9	-	-
Lower Neck Fx	N	0.1	-0.7	-397.9	80.0	161.5	93.5	-203.3	43.2
Lower Neck Fy	N	97.3	66.2	-95.4	52.0	804.3	43.0	-121.8	127.8
Lower Neck Fz	N	1013.9	75.8	-53.8	37.6	1479.5	44.4	-201.7	33.2
Lower Neck F Resultant	N	1079.9	76.3	-	-	1674.4	44.3	-	-
Lower Neck Mx	N-m	37.4	79.4	-7.3	185.3	33.3	43.3	-13.6	125.2
Lower Neck My	N-m	20.8	109.6	0.0	6.7	10.4	74.3	-3.3	128.3
Lower Neck Mz	N-m	6.8	92.7	-0.3	29.9	2.3	45.0	-3.5	96.7
Lower Neck M Resultant	N-m	42.0	79.5	-	-	34.7	43.3	-	-
Chest X	g	8.8	110.4	-12.6	83.4	12.9	86.0	-26.0	38.2
Chest Y	g	36.5	62.9	-2.2	123.5	95.2	40.4	-16.5	73.6
Chest Z	g	15.5	85.5	-5.7	104.7	25.6	54.0	-26.8	41.0
Chest Resultant	g	36.7	62.9	-	-	100.2	40.4	-	-
Lumbar Fx	N	81.8	106.3	-44.3	73.3	74.3	75.6	-116.2	40.2
Lumbar Fy	N	187.6	47.9	-58.3	123.0	318.4	35.6	-101.7	49.8
Lumbar Fz	N	294.0	68.7	-96.6	39.4	708.1	44.2	-158.2	64.9
Lumbar F Resultant	N	296.6	68.7	-	-	715.0	44.2	-	-
Lumbar Mx	N-m	2.1	90.4	-4.4	44.8	9.1	59.7	-5.1	30.6
Lumbar My	N-m	2.8	73.3	-1.5	42.4	4.1	45.7	-2.0	77.0
Lumbar Mz	N-m	2.1	83.2	-2.3	47.9	3.5	54.2	-2.5	39.5
Lumbar M Resultant	N-m	4.9	44.8	-	-	9.4	59.6	-	-
Pelvic X	g	11.5	103.5	-16.0	43.4	27.3	65.0	-41.0	30.9
Pelvic Y	g	44.9	44.5	-11.3	102.3	135.7	30.5	-55.3	65.5
Pelvic Z	g	11.0	87.2	-5.1	40.7	32.4	65.6	-34.6	43.3
Pelvic Resultant	g	47.4	44.5	-	-	141.8	31.4	-	-

† Transducer wire was damaged

DATA SHEET 4

CHILD DUMMY INJURY CRITERIA VALUES (CONTINUED)

CRS: Safety First Forerunner LATCH

NHTSA No. M25203

	HEAD INJURY CRITERIA (HIC)			
	HIC**	t ₁ (msec)	t ₂ (msec)	Average Acceleration (g's) t ₁ to t ₂
Position #3 - Right	303.5	60.3	96.3	37.2
Position #4 - Left	679.3	40.6	54.5	75.2

** HIC is as defined in FMVSS 208. The maximum time interval from t₁ to t₂ is 36 milliseconds.

	CLIP SUMMARY*			
	CLIP (g's)	t ₁ (msec)	t ₂ (msec)	CSI
Position #3 - Right	35.7	60.7	63.7	172.8
Position #4 - Left	93.7	36.3	41.4	953.7

* The maximum chest resultant acceleration is defined as the maximum acceleration which exceeds 0.003 seconds in duration.

Position 3 Neck Injury Summary (CRABI- In Position)

Nij V10	Nij	Time (ms)	Z Force (N)	X Force (N)	Y Moment (N-m)
Ntf	0.8	74.8	1091.7	-288.3	0.1
Nte	0.9	75.2	1096.8	-298.5	-1.6
Ncf	0.2	125.1	-34.1	-163.8	7.1
Nce	0.1	42.8	-21.2	-87.8	-2.0

Peak Tension (CFC1000) 1097.5 N

Peak Compression (CFC1000) 39.1 N

Critical Values

Nij Intercepts				Peak Limits	
Tension (CVt)	1460 N	Extension (mCVe)	17 N-m	Tension	780 N
Compression (CVc)	1460 N	Flexion (mCVf)	43 N-m	Compression	-960 N

Condyle Offset -0.0058

Position 4 Neck Injury Summary (CRABI - In Position)

Nij V10	Nij	Time (ms)	Z Force (N)	X Force (N)	Y Moment (N-m)
Ntf	0.2	82.5	0.8	-24.7	9.5
Nte	1.6	44.7	1519.3	-441.4	-9.5
Ncf	0.5	89.9	-214.6	-15.5	15.7
Nce	0.2	34.0	-152.7	-46.6	-1.3

Peak Tension (CFC1000) 1519.9 N

Peak Compression (CFC1000) 214.7 N

Critical Values

Nij Intercepts				Peak Limits	
Tension (CVt)	1460 N	Extension (mCVe)	17 N-m	Tension	780 N
Compression (CVc)	1460 N	Flexion (mCVf)	43 N-m	Compression	-960 N

Condyle Offset -0.0058

DATA SHEET NO. 5

CRS PERFORMANCE DATA

CRS: Safety First Forerunner LATCH

NHTSA No. M25203

DESCRIPTION	Unit	MAXIMUM VALUE			
		Positive	Time (ms)	Negative	Time (ms)
Right Rear Compartment YR	g	28.5	8.8	-3.3	68.4
Right Rear Compartment X	g	2.1	56.2	-6.7	15.0
Right Rear Compartment Ang 63 Deg	g	27.6	8.6	-3.5	68.5
Right Rear Compartment Ang 45 Deg	g	24.0	8.4	-3.5	68.6
P3 CRS X	g	6.4	82.5	-17.1	63.5
P3 CRS Y	g	40.6	59.3	-9.6	90.5
P3 CRS Z	g	12.6	61.3	-14.7	28.0
P3 CRS Resultant	g	42.7	59.7	-	-
P4 CRS X	g	12.7	58.9	-24.1	20.7
P4 CRS Y	g	105.4	19.5	-40.4	57.5
P4 CRS Z	g	23.5	47.0	-26.6	30.7
P4 CRS Resultant	g	107.6	19.6	-	-

DATA SHEET NO. 5

CRS PERFORMANCE DATA (CONTINUED)

CRS: Safety First Forerunner LATCH

NHTSA No. M25203

POSITION #3 CRS POST-TEST INSPECTION (Serial No. 02-925-BRD)

LOCATION	DAMAGE	REMARKS
Upper Tether Strap	No	None
Upper Tether Buckle	No	None
Upper Tether Hook	No	None
Vehicle Upper Tether Anchor	No	None
Lower Anchor Strap	No	None
Lower Anchor Buckle	No	None
Lower Anchor Hooks	No	None
Vehicle Lower CRS Anchors	No	None
Five Point Harness Connections	No	None
Cracks on CRS	No	None
Fabric Tears on CRS	No	None
Vehicle Seat Structure	No	None
Vehicle Seat Fabric Tears	No	None
Child Dummy	No	None

POSITION #4 CRS POST-TEST INSPECTION (Serial No. 02-925-BRD)

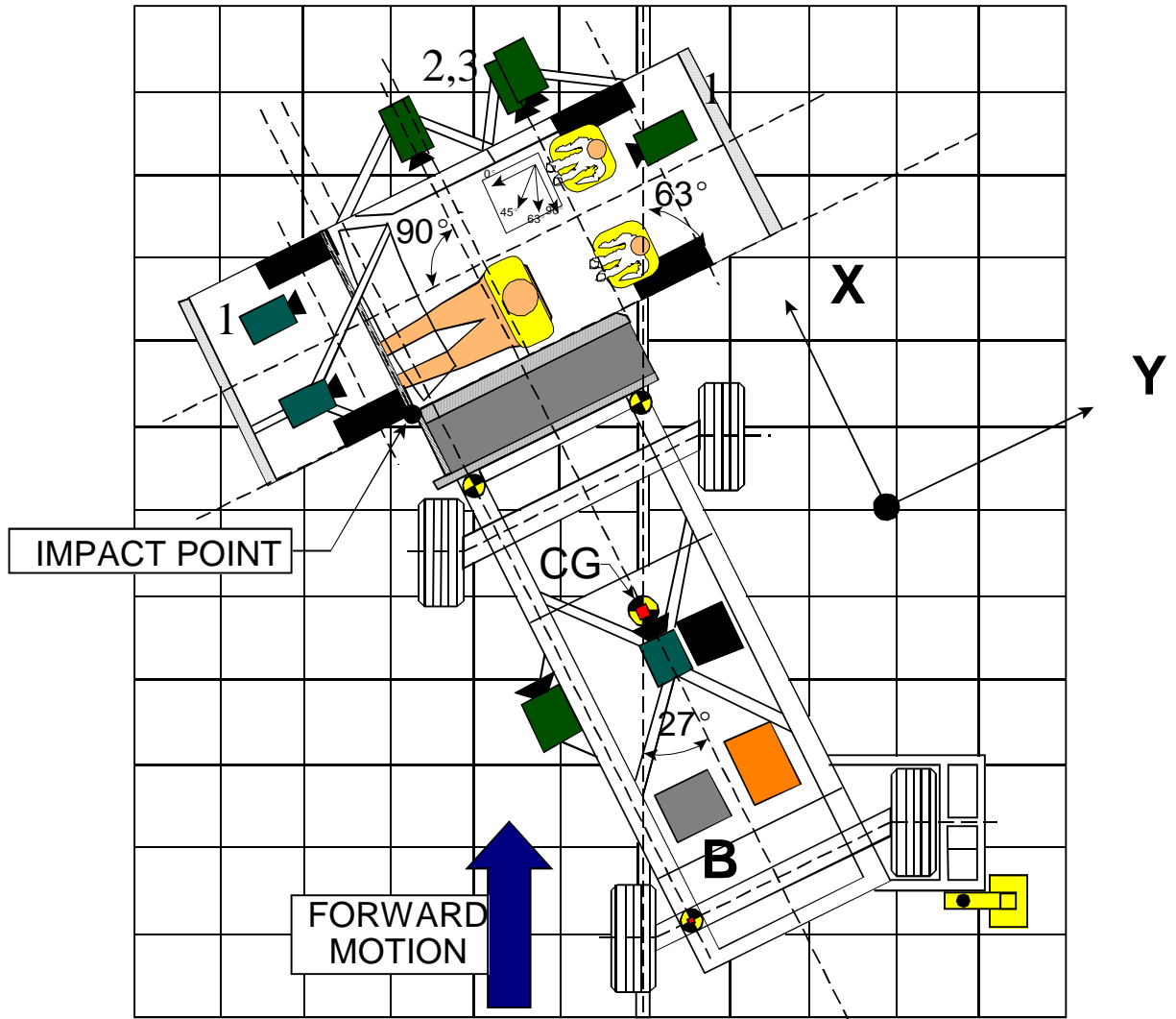
LOCATION	DAMAGE	REMARKS
Upper Tether Strap	No	None
Upper Tether Buckle	No	None
Upper Tether Hook	No	None
Vehicle Upper Tether Anchor	No	None
Lower Anchor Strap	No	None
Lower Anchor Buckle	No	None
Lower Anchor Hooks	No	None
Vehicle Lower CRS Anchors	No	None
Five Point Harness Connections	No	None
Cracks on CRS	No	None
Fabric Tears on CRS	No	None
Vehicle Seat Structure	No	None
Vehicle Seat Fabric Tears	No	None
Child Dummy	No	None

DATA SHEET NO. 6

CRS CAMERA DATA

CRS: Safety First Forerunner LATCH

NHTSA No. M25203



Camera No.	View	Coordinates (millimeters)			Angle (deg.)	Lens (mm)	Film Speed (fps)
		X*	Y*	Z*			
1**	Overall longitudinal view of child restraints	865	2623	-1340	-23	8	1010
2	Right side CRS lower lateral view	1732	1660	-1018	-13	8	1010
3	Right side CRS upper lateral view	1602	1660	-1202	-43	8	955

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

X = (Impact Point) + Forward

Y = (Impact Point) + To Right

Z = (Ground Level) + Down

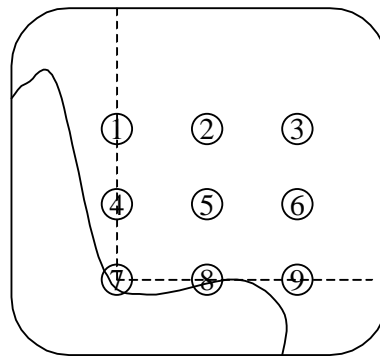
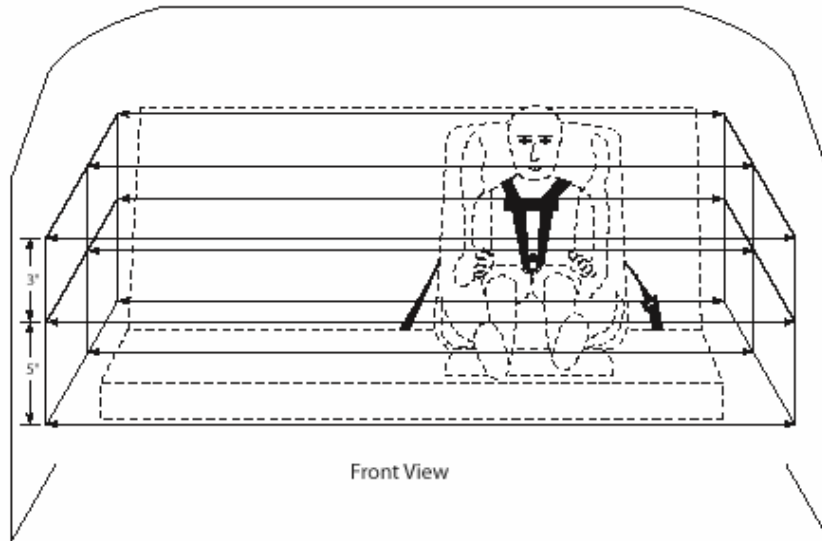
** Camera can be mounted for front or rear view

DATA SHEET NO. 7

REAR SEAT LATERAL DIMENSIONS

CRS: Safety First Forerunner LATCH

NHTSA No. M25203



Side View

Location	Pre-Test (mm)	Post-Test (mm)	Crush (mm)
1	1370	1159	211
2	1380	1157	223
3	1391	1166	225
4	1381	1193	188
5	1396	1180	216
6	1356	1116	240
7	1328	1100	228
8	1387	1149	238
9	1399	1147	252

- Origin taken from intersection of seat bight and horizontal of uppermost point on bottom seat cushion.
- Rows heights and column widths are at 200 mm intervals

SECTION 3

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P3



Forward-facing
lap belt here



Manufactured in:

02-925-BRD

1/9/2002

TO3B

4359-3454

M25203

M25203

Figure 3-1: CLOSE-UP VIEW OF POSITION 3CRS LABEL



Figure 3-2: PRE-TEST FRONTAL VIEW OF POSITION 3CRS



Figure 3-3: POST-TEST FRONTAL VIEW OF POSITION 3CRS



Figure 3-4: PRE-TEST REAR VIEW OF POSITION 3CRS

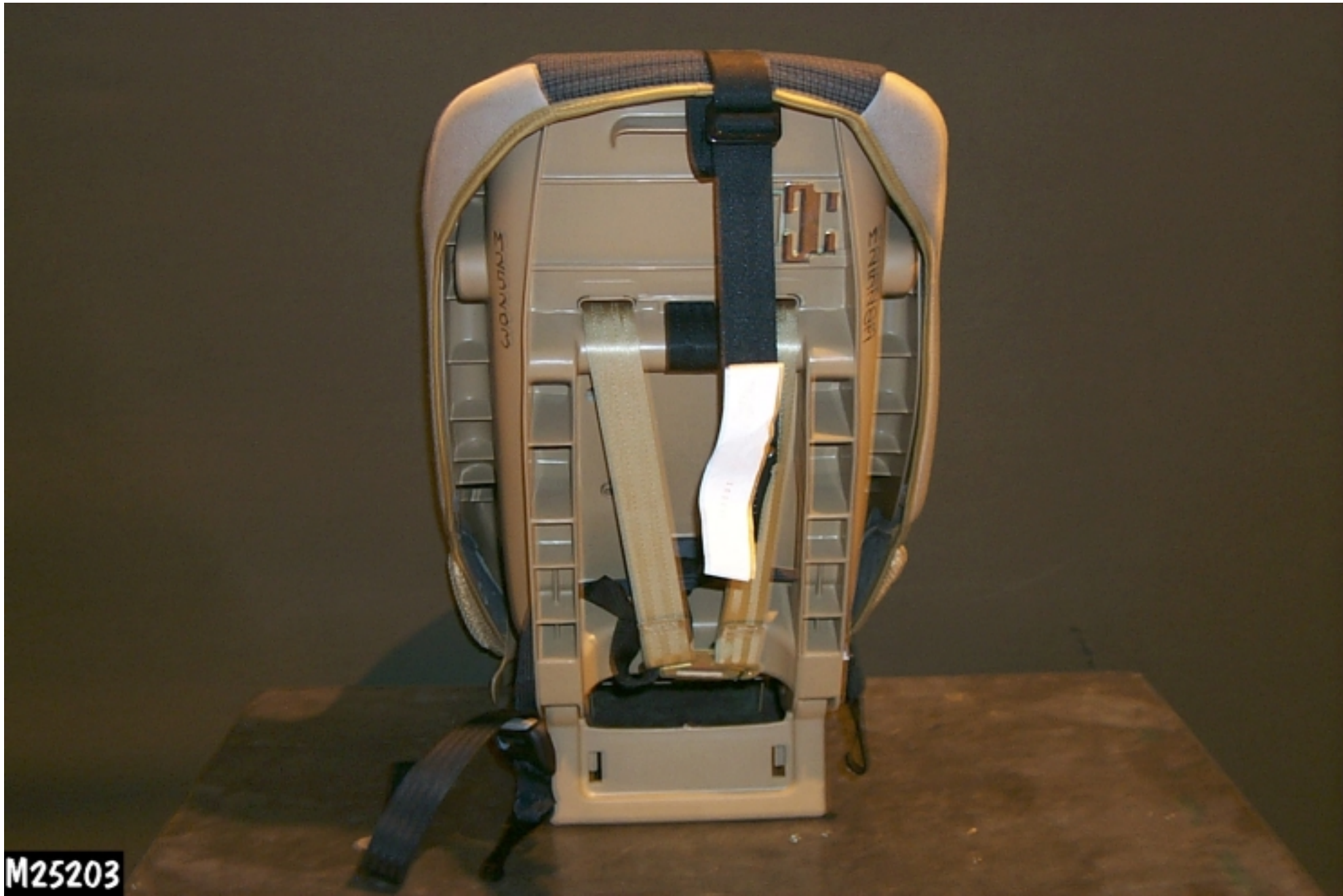


Figure 3-5: POST-TEST REAR VIEW OF POSITION 3CRS



Figure 3-6: PRE-TEST LEFT SIDE VIEW OF POSITION 3CRS



Figure 3-7: POST-TEST LEFT SIDE VIEW OF POSITION 3CRS



Figure 3-8: PRE-TEST RIGHT SIDE VIEW OF POSITION 3CRS



Figure 3-9: POST-TEST RIGHT SIDE VIEW OF POSITION 3CRS

P4

↑ Forward-facing lap belt here ↑

4359-3454

Manufactured in:

02-925-BRD

1/9/2002 TO3B

M25203

M25203

Figure 3-10: CLOSE-UP VIEW OF POSITION 4CRS LABEL

M25203



Figure 3-11: PRE-TEST FRONTAL VIEW OF POSITION 4CRS

M25203



Figure 3-12: POST-TEST FRONTAL VIEW OF POSITION 4CRS

M25203



Figure 3-13: PRE-TEST REAR VIEW OF POSITION 4CRS

M25203

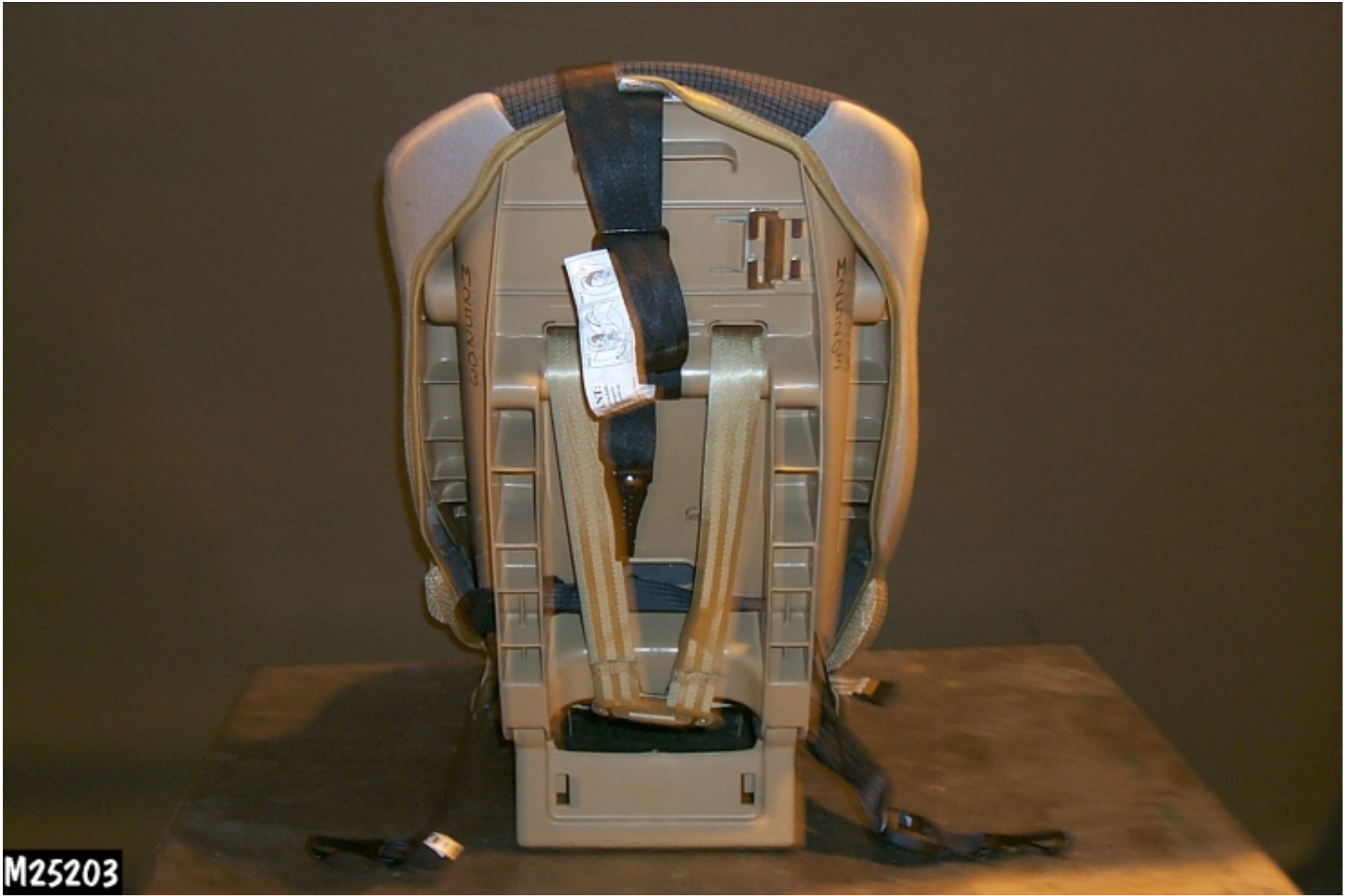


Figure 3-14: POST-TEST REAR VIEW OF POSITION 4CRS



Figure 3-15: PRE-TEST LEFT SIDE VIEW OF POSITION 4CRS



Figure 3-16: POST-TEST LEFT SIDE VIEW OF POSITION 4CRS



Figure 3-17: PRE-TEST RIGHT SIDE VIEW OF POSITION 4CRS

M25203



Figure 3-18: POST-TEST RIGHT SIDE VIEW OF POSITION 4CRS



Figure 3-19: PRE-TEST POSITION 3 LEFT SIDE VIEW



Figure 3-20: POST-TEST POSITION 3 LEFT SIDE VIEW



Figure 3-21: PRE-TEST POSITION 4 LEFT SIDE VIEW



Figure 3-22: POST-TEST POSITION 4 LEFT SIDE VIEW



M25203

Figure 3-23: PRE-TEST POSITION 3 RIGHT SIDE VIEW



Figure 3-24: POST-TEST POSITION 3 RIGHT SIDE VIEW



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8652-SNCAP-04

Figure 3-25: PRE-TEST POSITION 4 RIGHT SIDE VIEW



Figure 3-26: POST-TEST POSITION 4 RIGHT SIDE VIEW

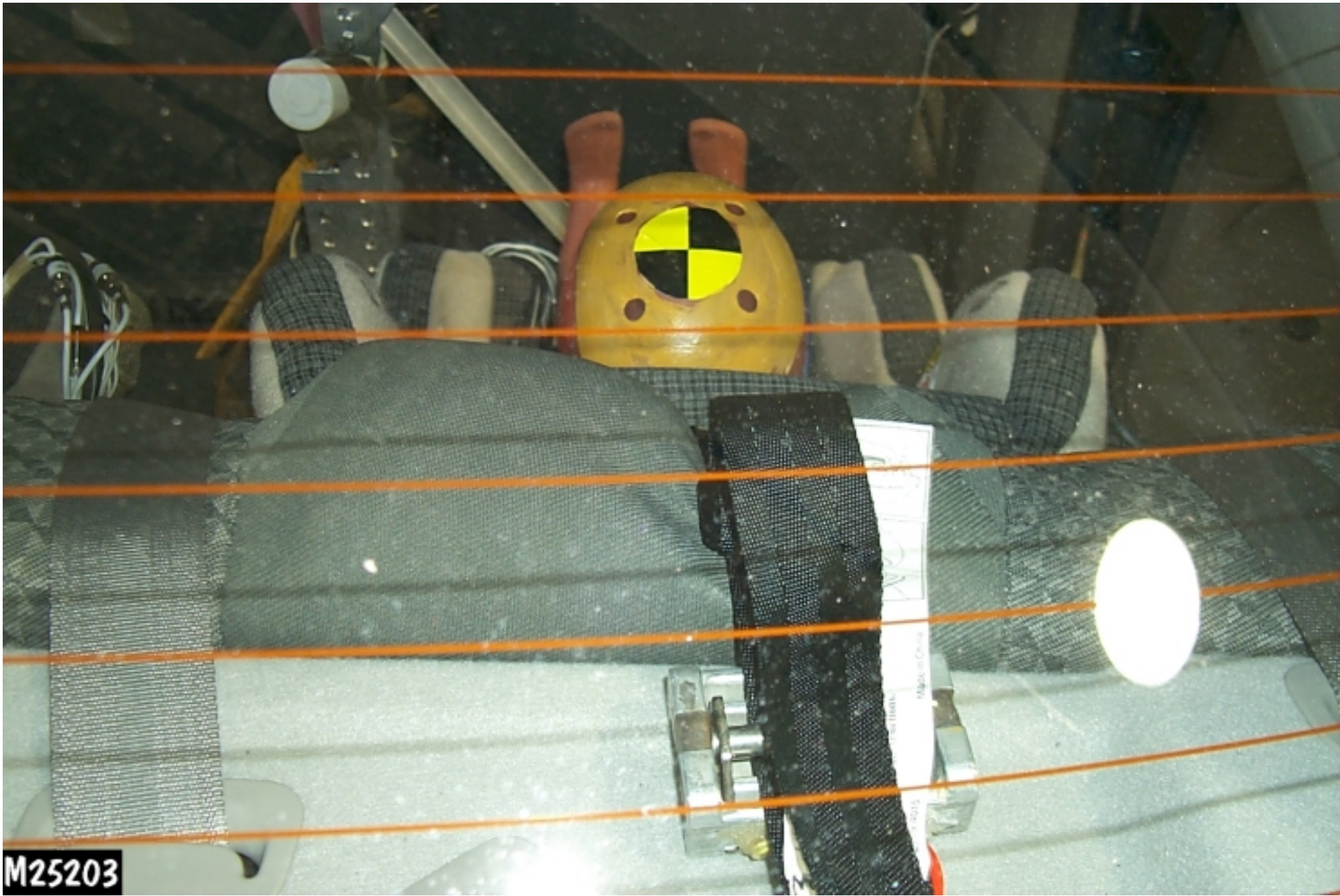
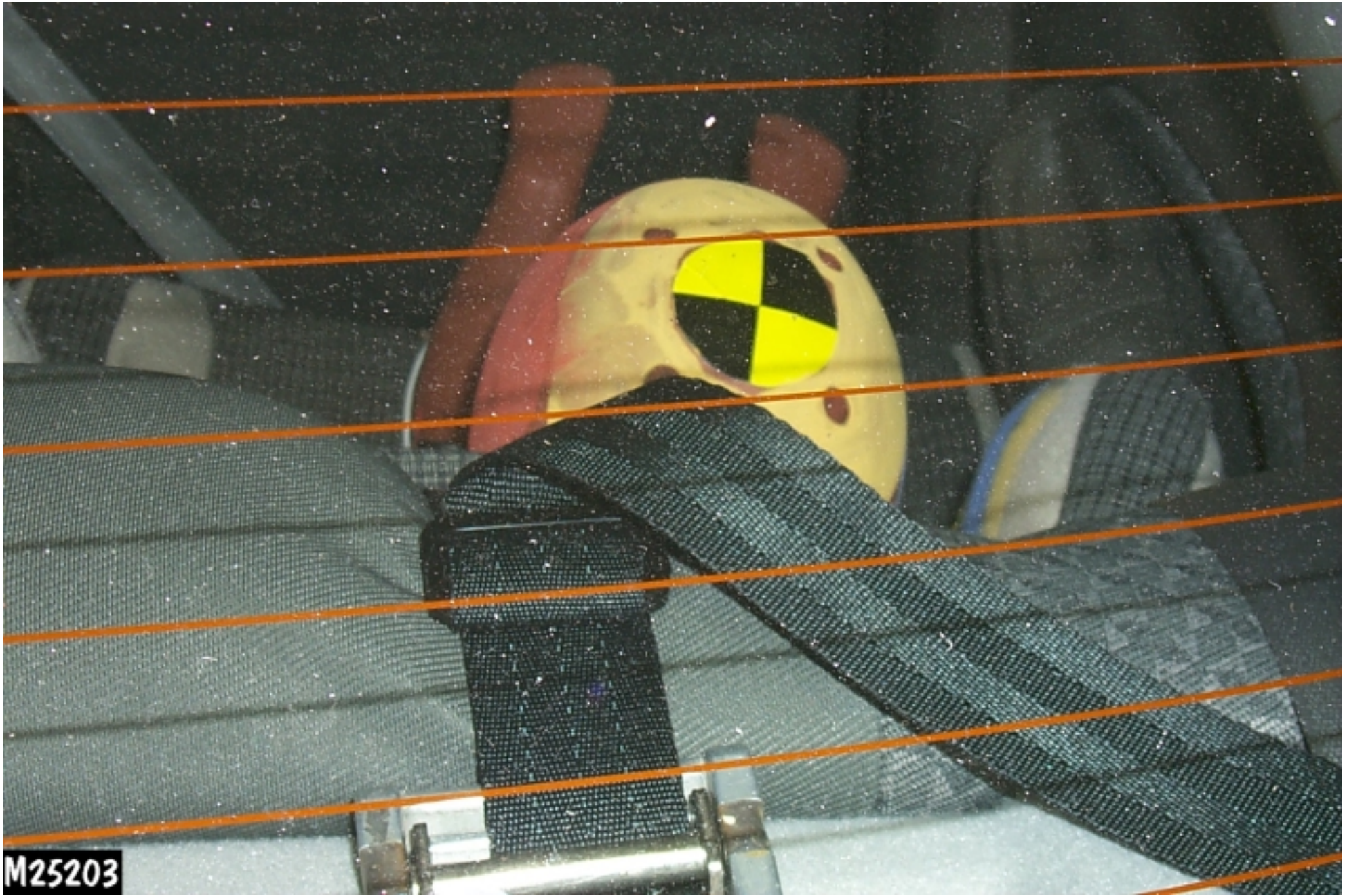


Figure 3-27: PRE-TEST POSITION 3 REAR VIEW

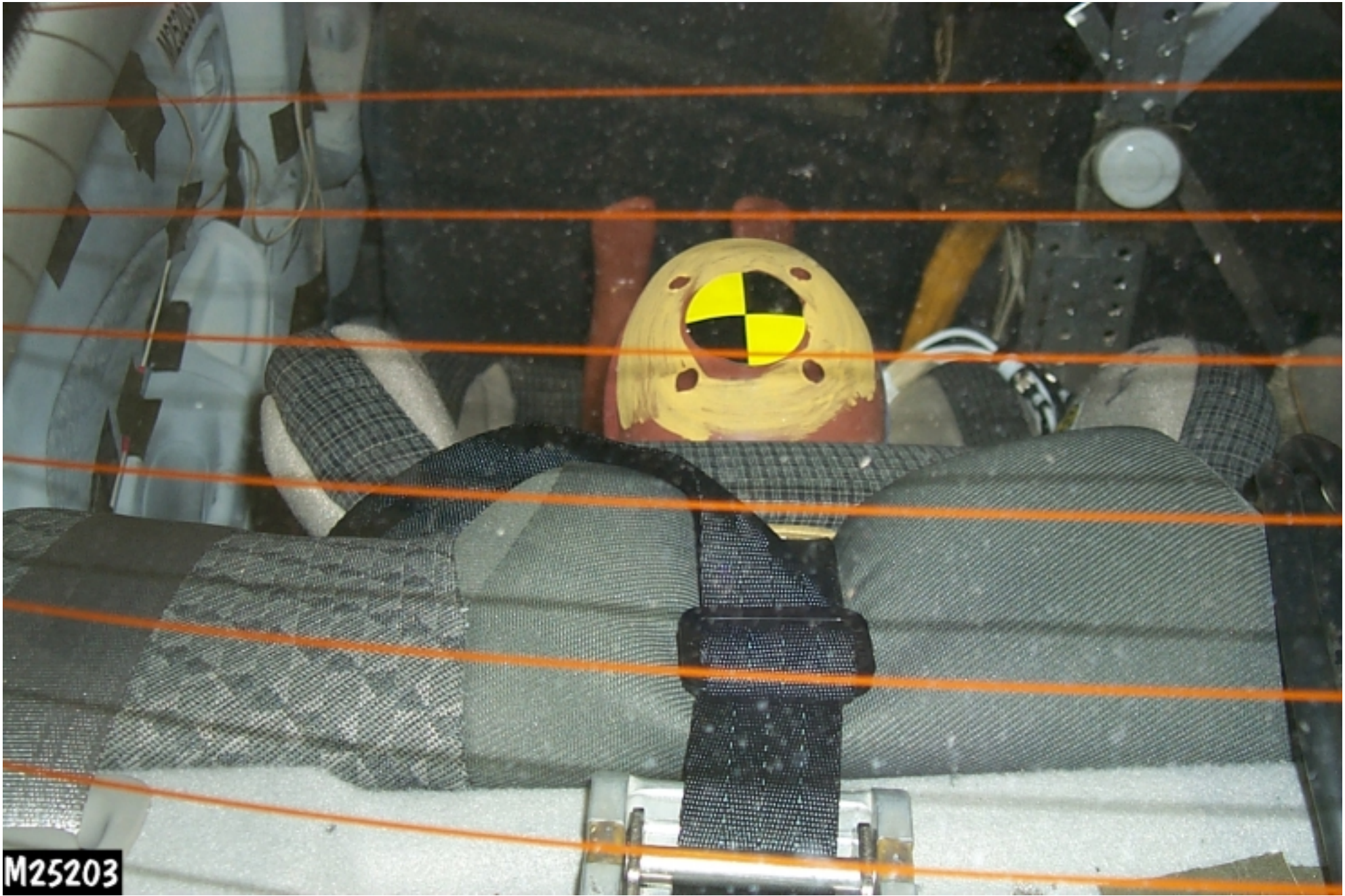


3-30

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M25203

Figure 3-28: POST-TEST POSITION 3 REAR VIEW



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8652-SNCA-P-04

Figure 3-29: PRE-TEST POSITION 4 REAR VIEW



Figure 3-30: POST-TEST POSITION 4 REAR VIEW

SECTION 4

CHILD DUMMY RESPONSE AND CRS DATA TRACES

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3	P3 Head z [g, CFC_1000]	4-6
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15	P3 Lower Neck Fy [N, CFC_1000]	4-18
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21	P3 Lower Neck M Resultant [N-m, CFC_600]	4-24
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35	P3 Pelvic Resultant [g, CFC_1000]	4-38
36	P4 Head x [g, CFC_1000]	4-39
37	P4 Head y [g, CFC_1000]	4-40
38	P4 Head z [g, CFC_1000]	4-41
39	P4 Head Resultant [g, CFC_1000]	4-42
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50	P4 Lower Neck Fy [N, CFC_1000]	4-53
51	P4 Lower Neck Fz [N, CFC_1000]	4-54
52	P4 Lower Neck F Resultant [N, CFC_1000]	4-55
53	P4 Lower Neck Mx [N-m, CFC_600]	4-56
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59	P4 Chest z [g, CFC_180]	4-62
60	P4 Chest Resultant [g, CFC_180]	4-63
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86	P4 Child Seat x [g, CFC_60]	4-89
87	P4 Child Seat x Velocity [kph, CFC_180]	4-90
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89	P4 Child Seat y Velocity [kph, CFC_180]	4-92
90	P4 Child Seat z [g, CFC_60]	4-93
91	P4 Child Seat z Velocity [kph, CFC_180]	4-94
92	P4 Child Seat Resultant [g, CFC_60]	4-95

SNCAP #4 - 2002 Nissan Sentra

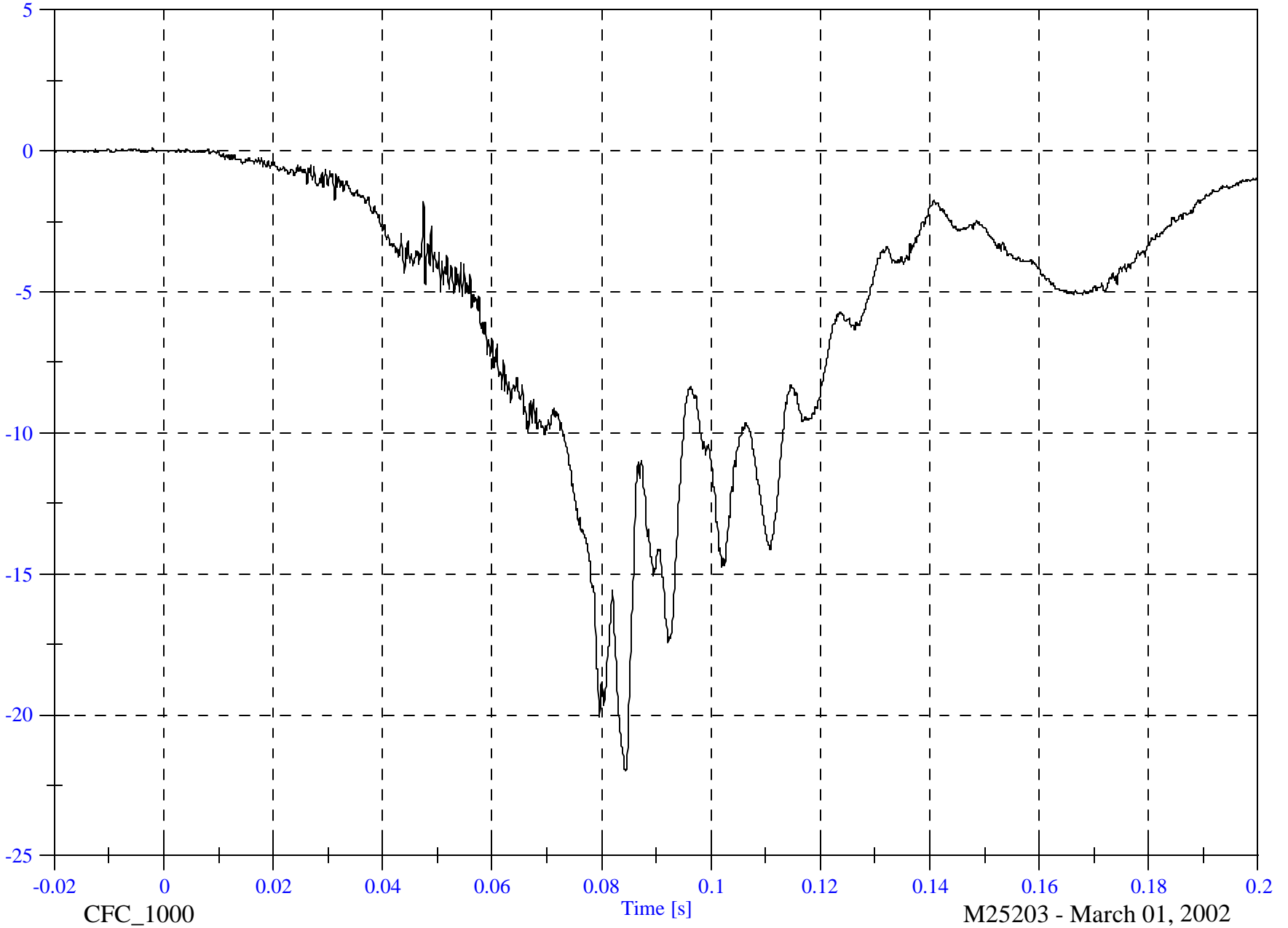
Max: 0.1 [g] at -0.002 [s]

P3 Head x

Min: -22.0 [g] at 0.084 [s]

4-4

g



8652-SNCAP-04

CFC_1000

Time [s]

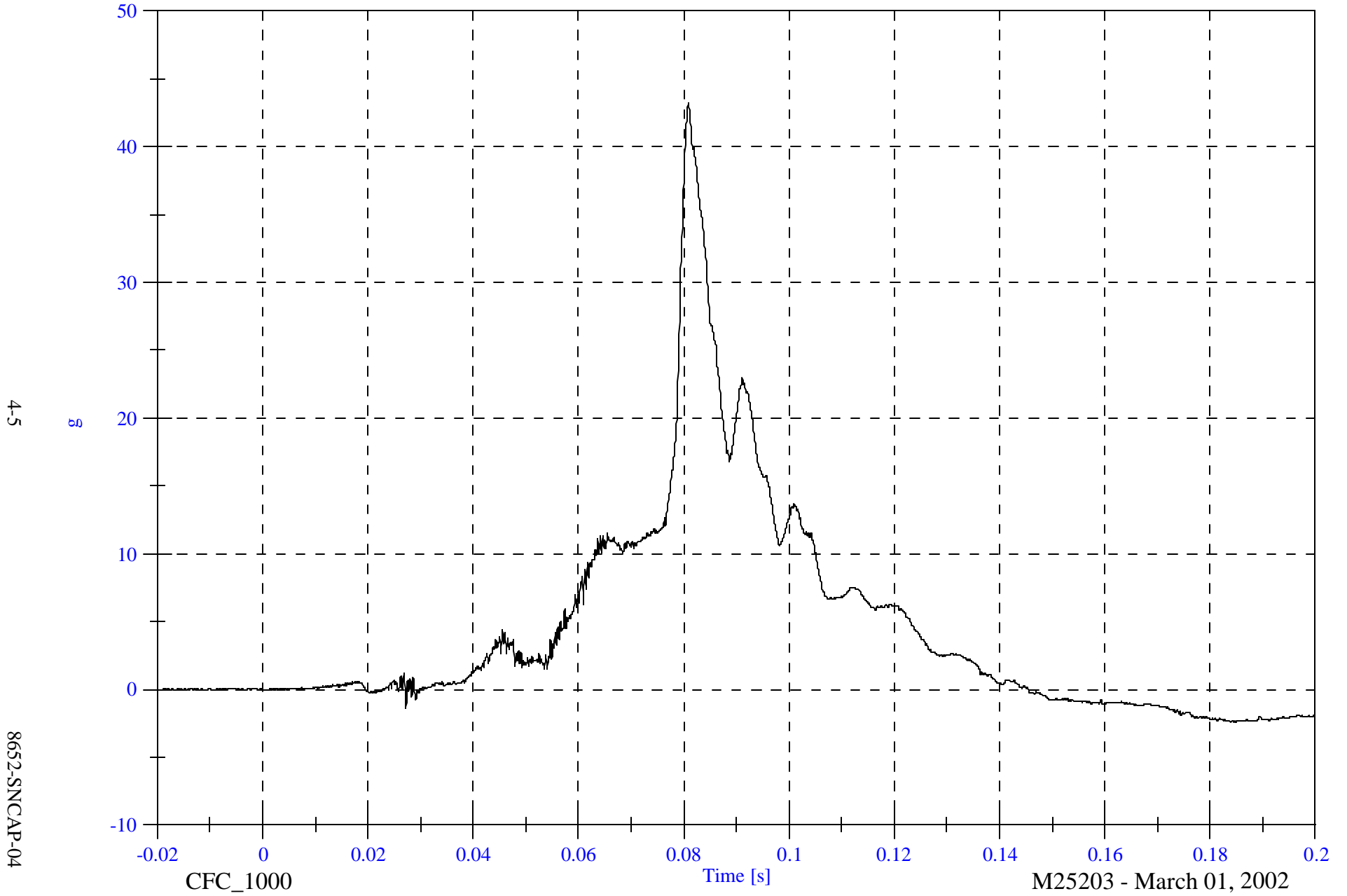
M25203 - March 01, 2002

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Max: 43.2 [g] at 0.081 [s]

Min: -2.4 [g] at 0.184 [s]

P3 Head y

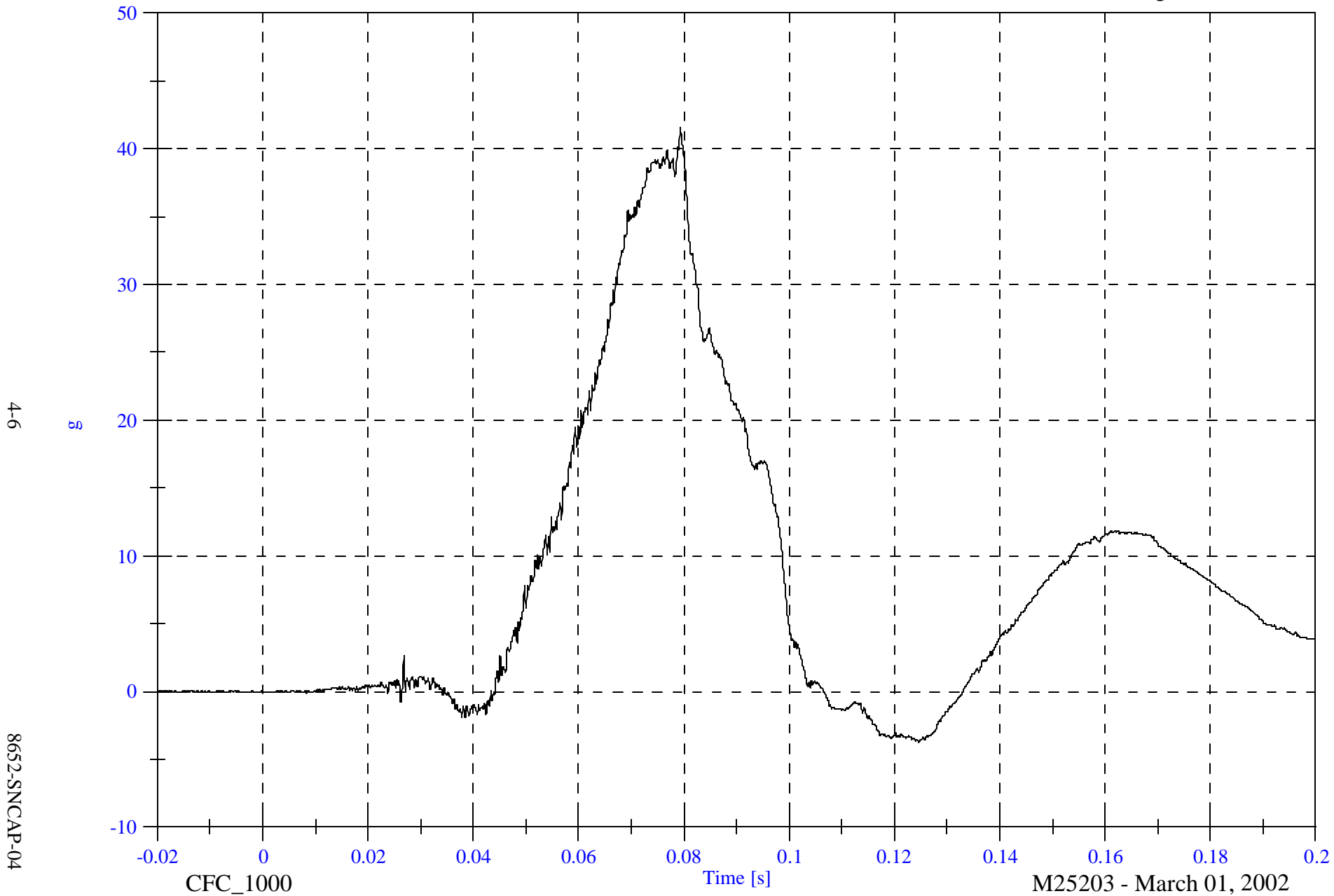


SNCAP #4 - 2002 Nissan Sentra

Max: 41.5 [g] at 0.079 [s]

Min: -3.7 [g] at 0.125 [s]

P3 Head z



SNCAP #4 - 2002 Nissan Sentra

P3 Head Red z

Max: 42.2 [g] at 0.082 [s]

Min: -6.4 [g] at 0.042 [s]

4-7

8652-SNCAP-04



CFC_1000

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

P3 Head Resultant

Max: 59.0 [g] at 0.080 [s]

Min: 0.0 [g] at -0.012 [s]

4-8

8652-SNCAP-04



M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

P3 Upper Neck Fx

Max: 0.1 [N] at 0.008 [s]
Min: -351.4 [N] at 0.078 [s]



4-9

N

8652-SNCAP-04

CFC_1000

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

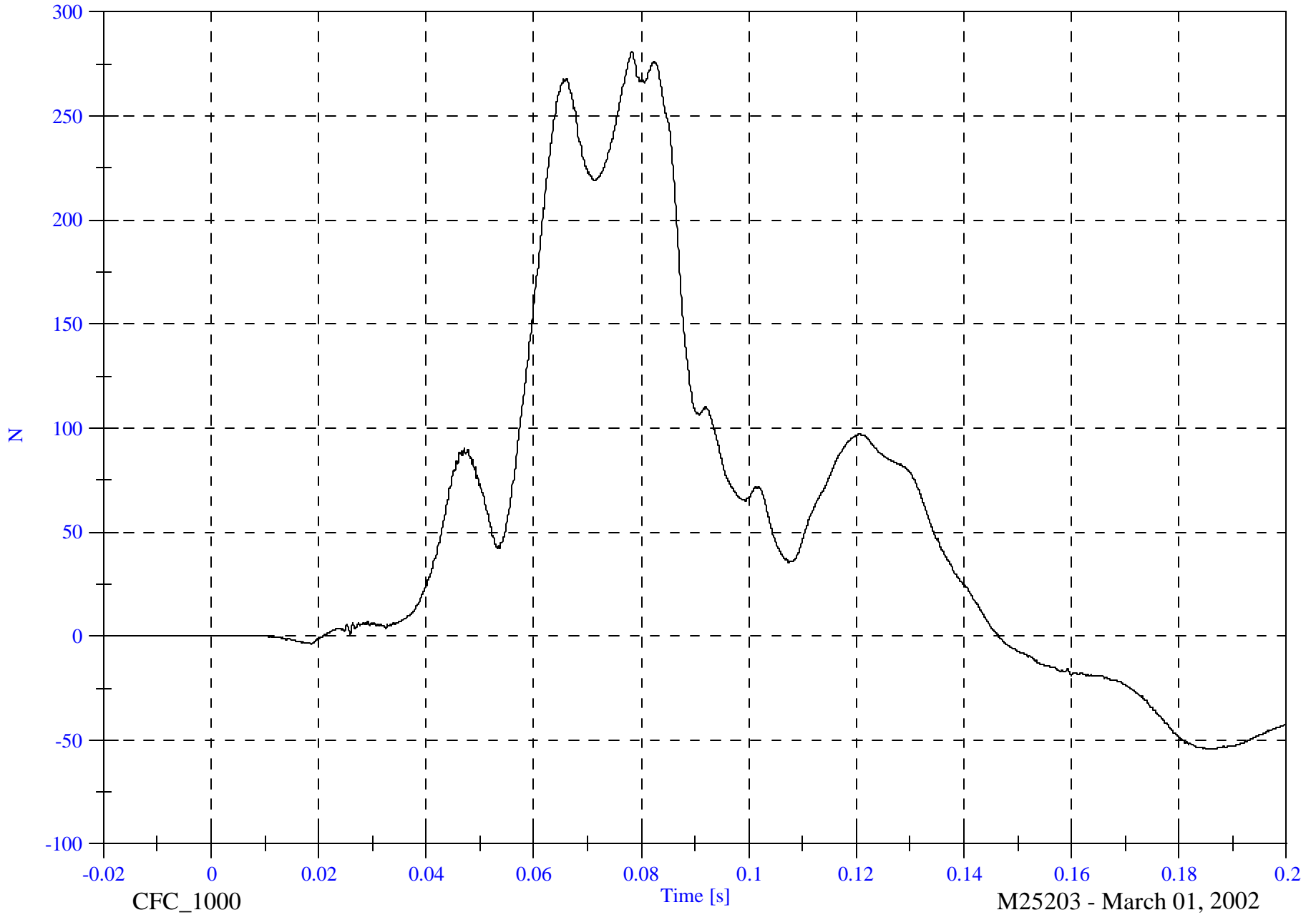
P3 Upper Neck Fy

Max: 281.2 [N] at 0.078 [s]

Min: -54.4 [N] at 0.187 [s]

4-10

8652-SNCAP-04

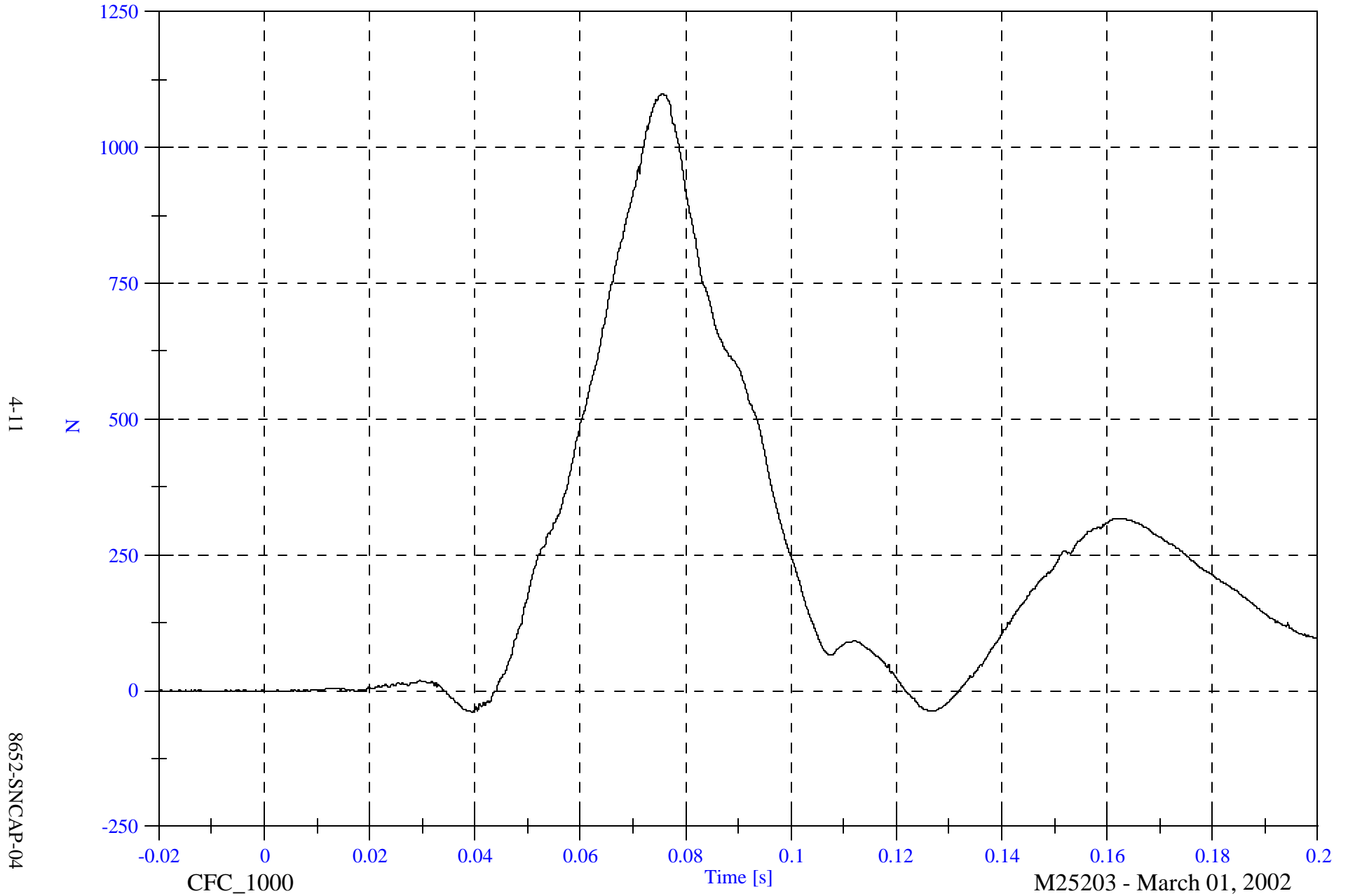


SNCAP #4 - 2002 Nissan Sentra

Max: 1097.5 [N] at 0.076 [s]

Min: -39.1 [N] at 0.039 [s]

P3 Upper Neck Fz



4-11

8652-SNCAP-04

CFC_1000

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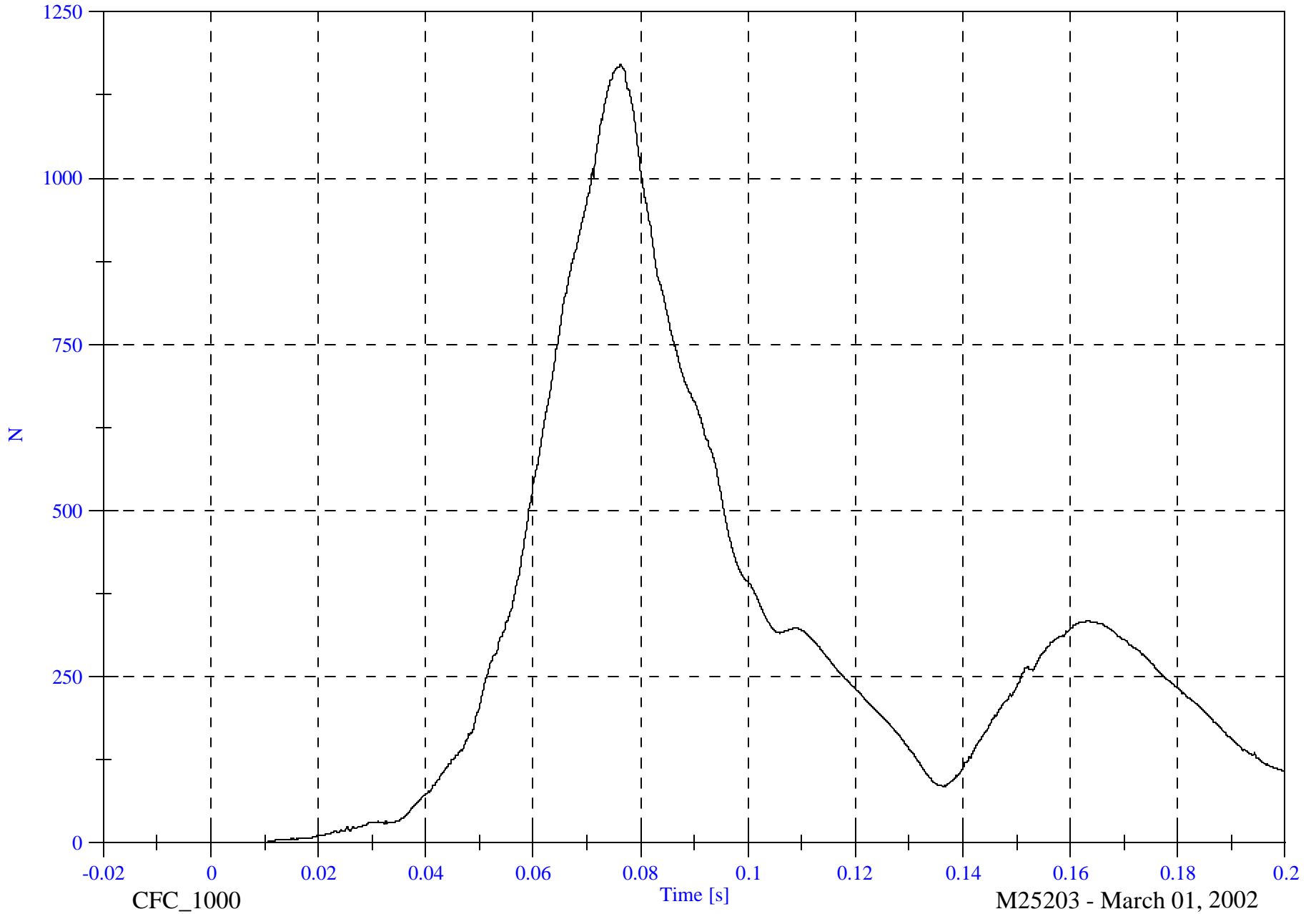
Max: 1171.5 [N] at 0.076 [s]

P3 Upper Neck F Resultant

Min: 0.1 [N] at -0.011 [s]

4-12

8652-SNCAP-04



SNCAP #4 - 2002 Nissan Sentra

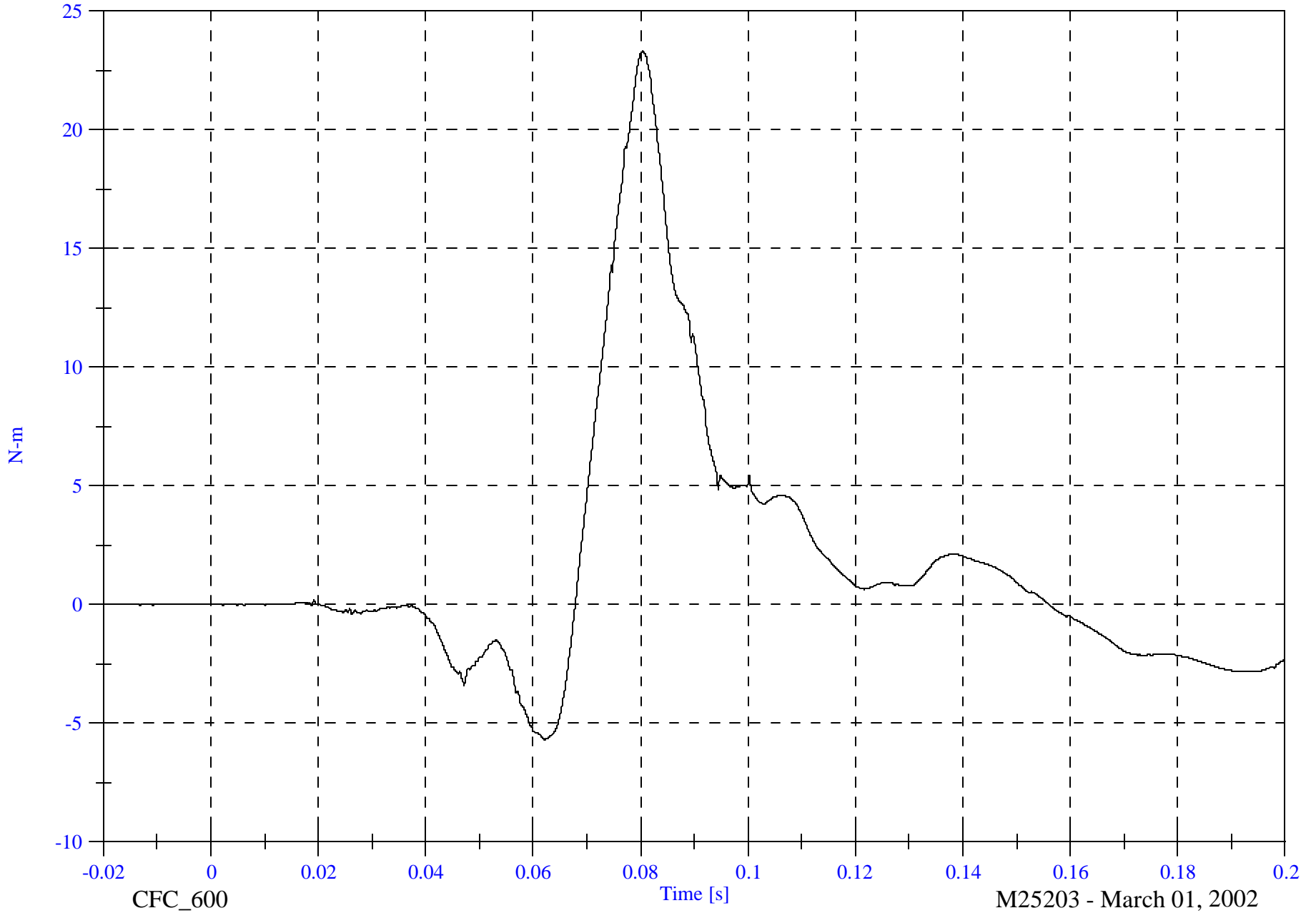
P3 Upper Neck Mx

Max: 23.3 [N-m] at 0.080 [s]

Min: -5.7 [N-m] at 0.062 [s]

4-13

8652-SNCAP-04



CFC_600

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

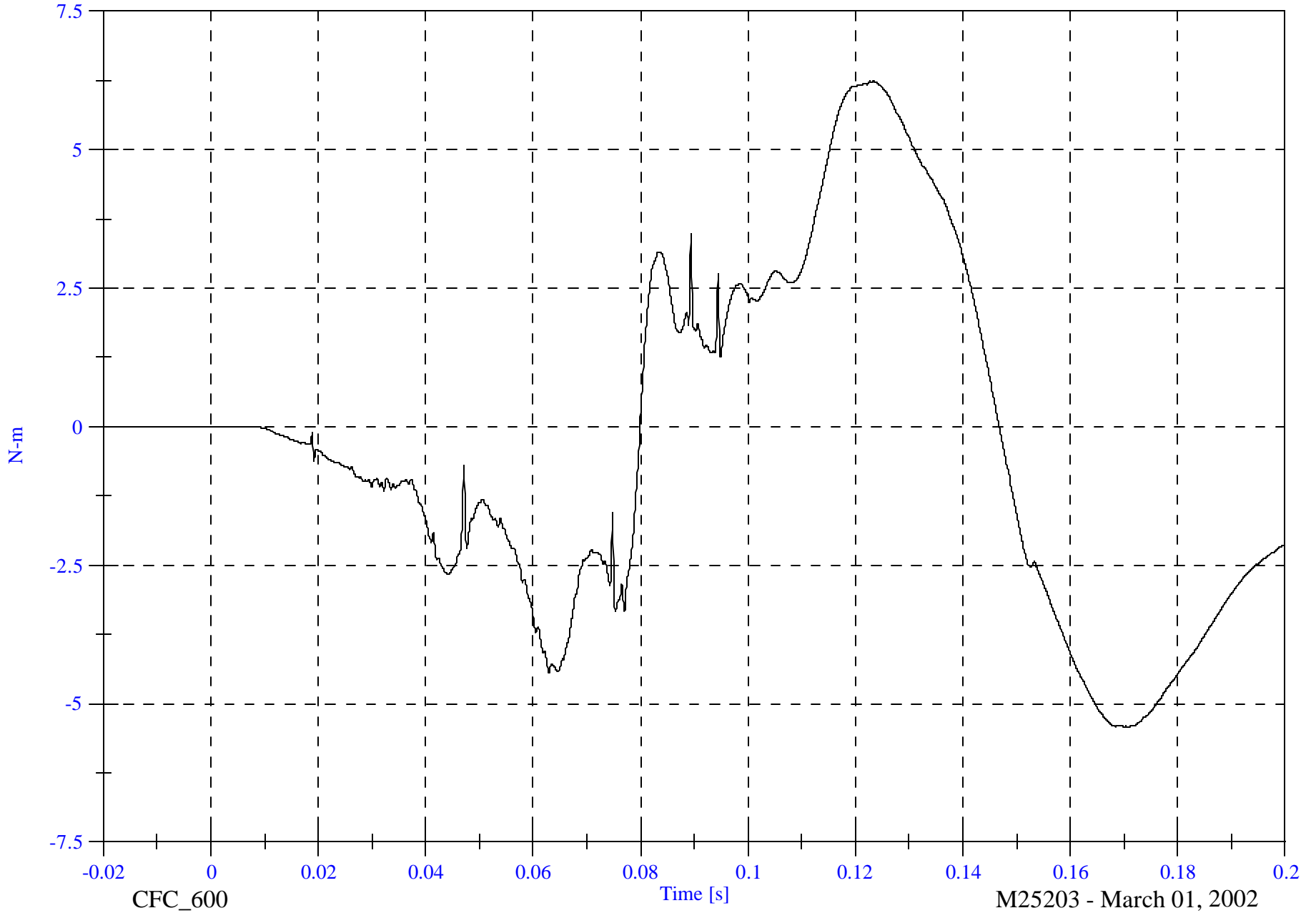
P3 Upper Neck My

Max: 6.2 [N-m] at 0.123 [s]

Min: -5.4 [N-m] at 0.171 [s]

4-14

8652-SNCAP-04



CFC_600

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

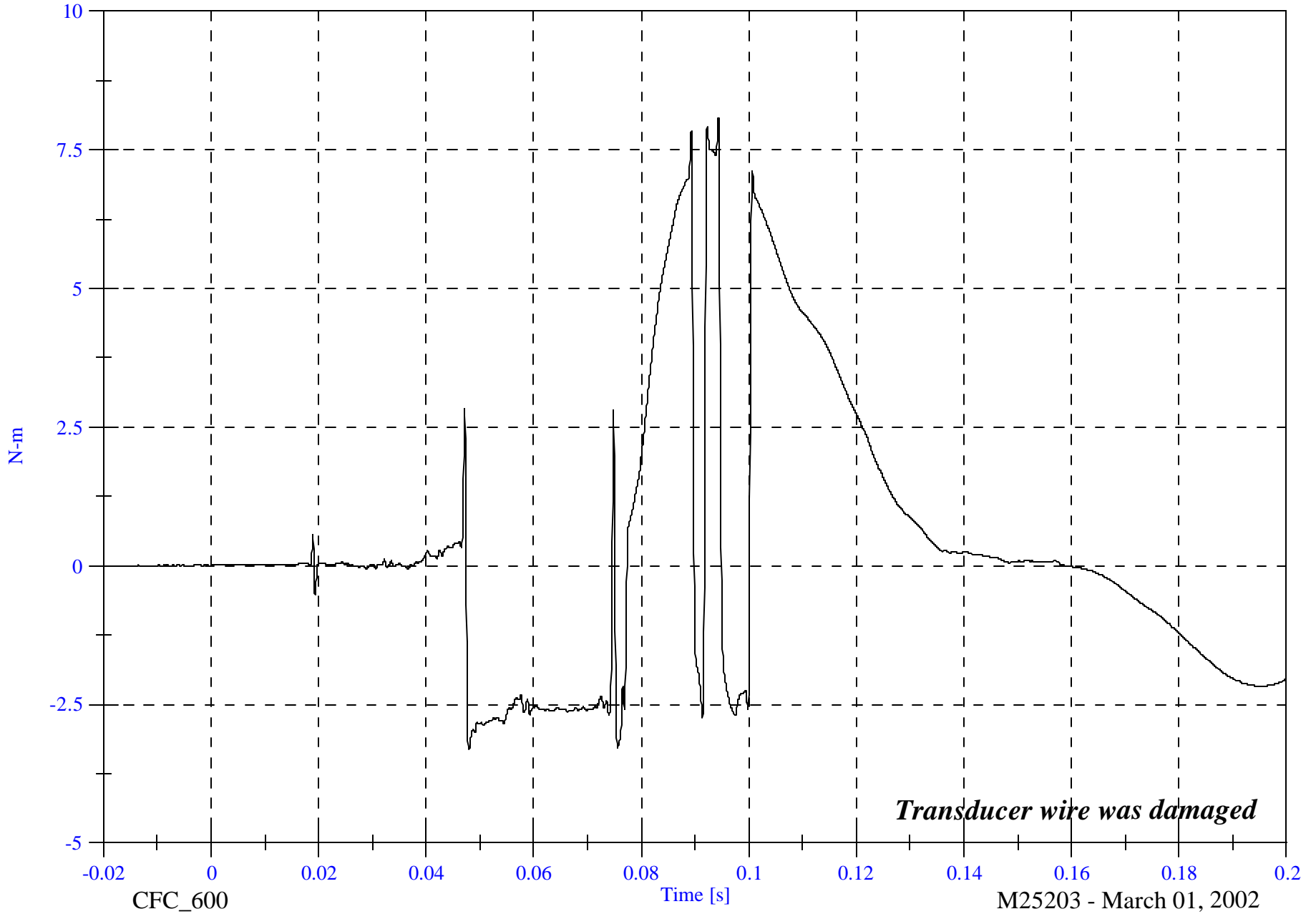
P3 Upper Neck Mz

Max: 8.1 [N-m] at 0.094 [s]

Min: -3.3 [N-m] at 0.048 [s]

4-15

8652-SNCAP-04

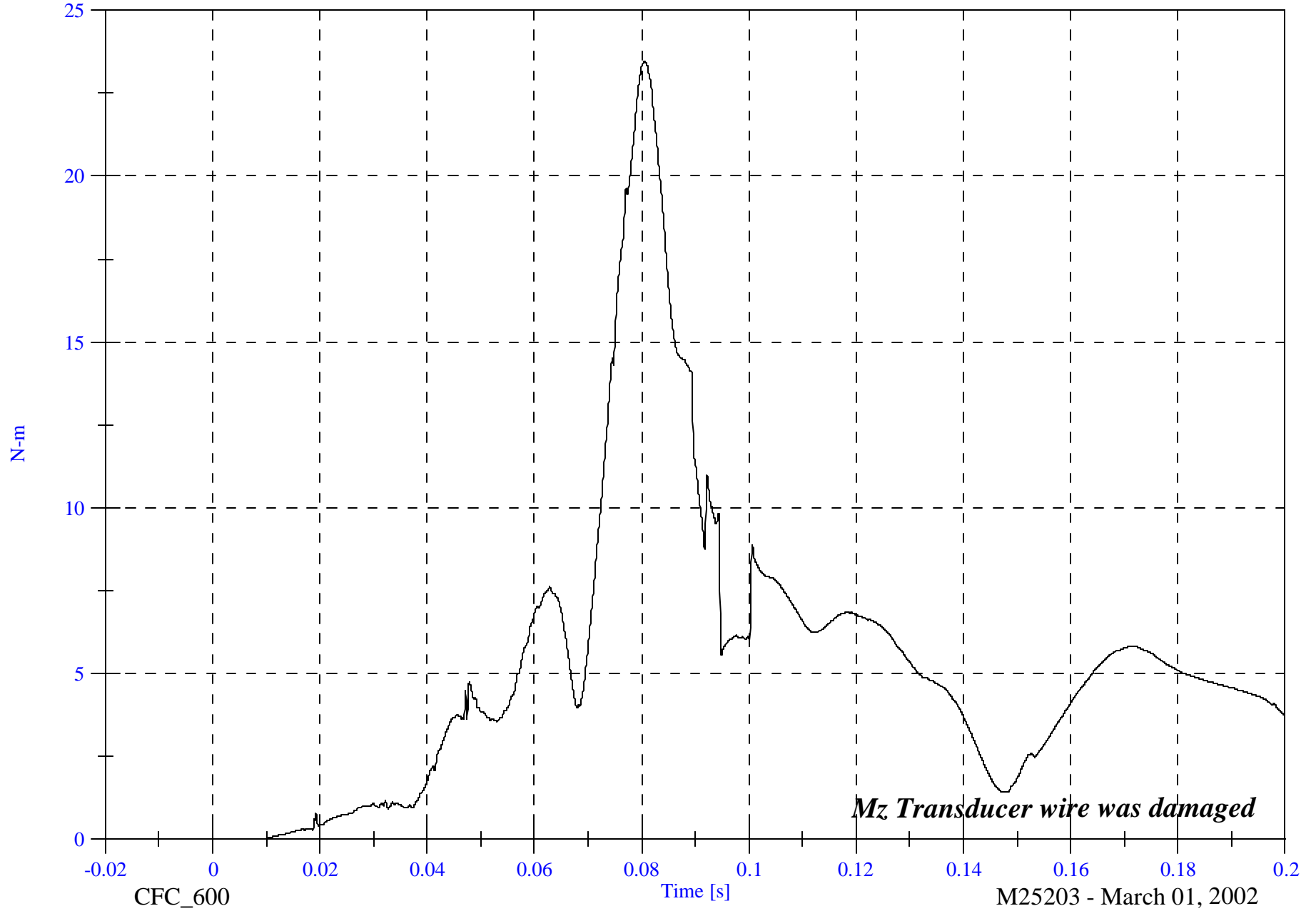


Transducer wire was damaged

M25203 - March 01, 2002

4-16

8652-SNCAP-04



SNCAP #4 - 2002 Nissan Sentra

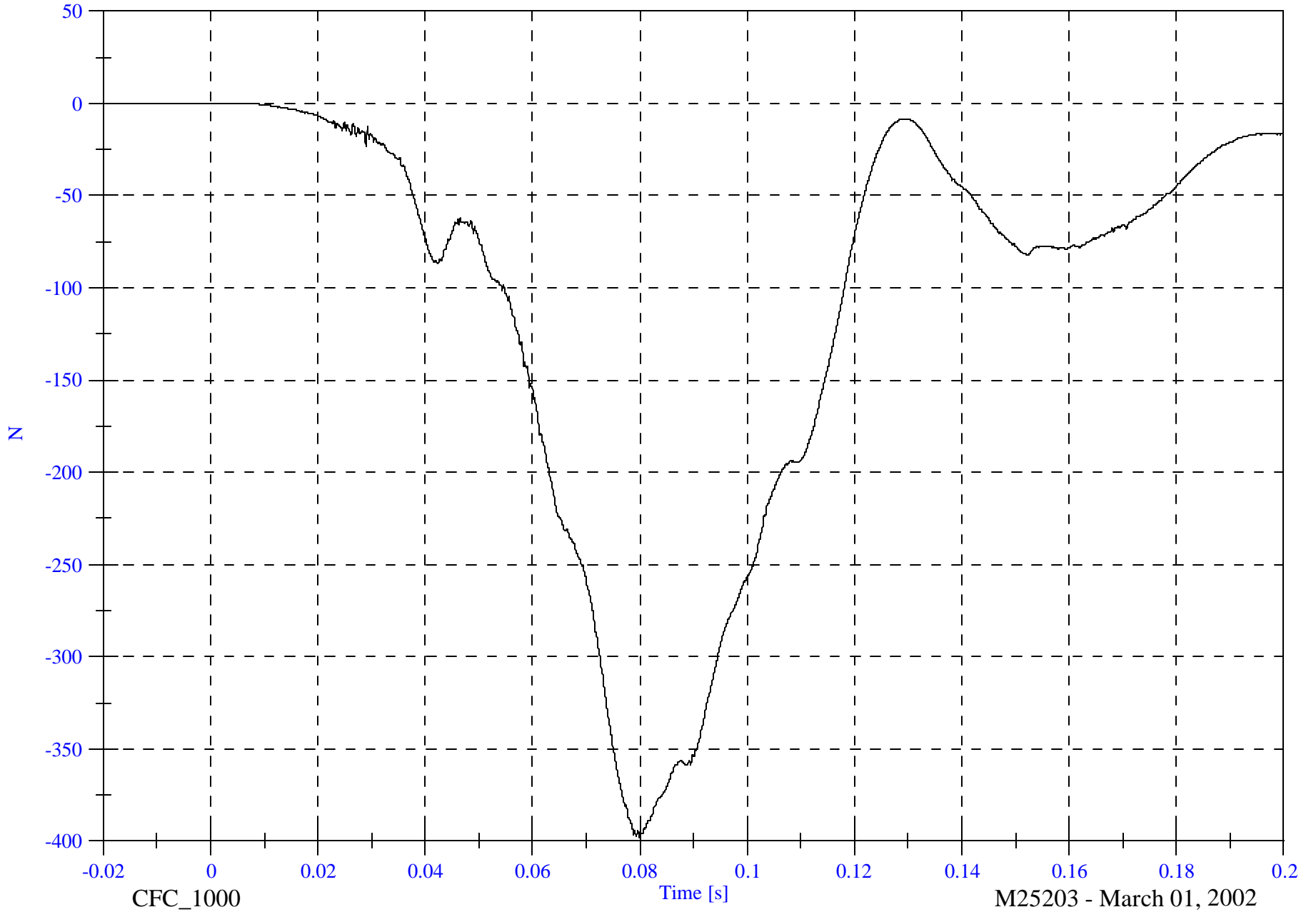
P3 Lower Neck Fx

Max: 0.1 [N] at -0.001 [s]

Min: -397.9 [N] at 0.080 [s]

4-17

8652-SNCAP-04



CFC_1000

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

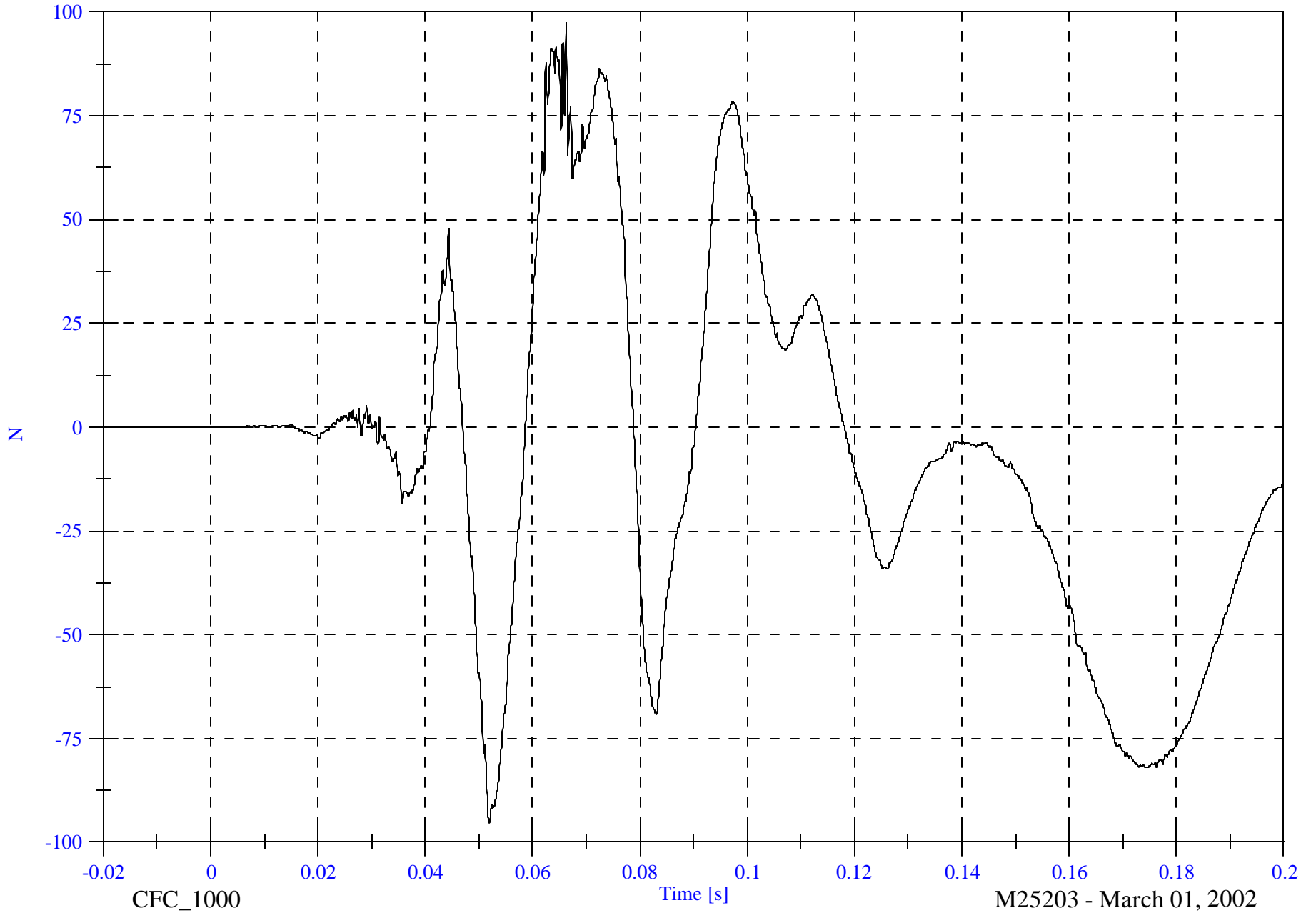
P3 Lower Neck Fy

Max: 97.3 [N] at 0.066 [s]

Min: -95.4 [N] at 0.052 [s]

4-18

8652-SNCAP-04



SNCAP #4 - 2002 Nissan Sentra

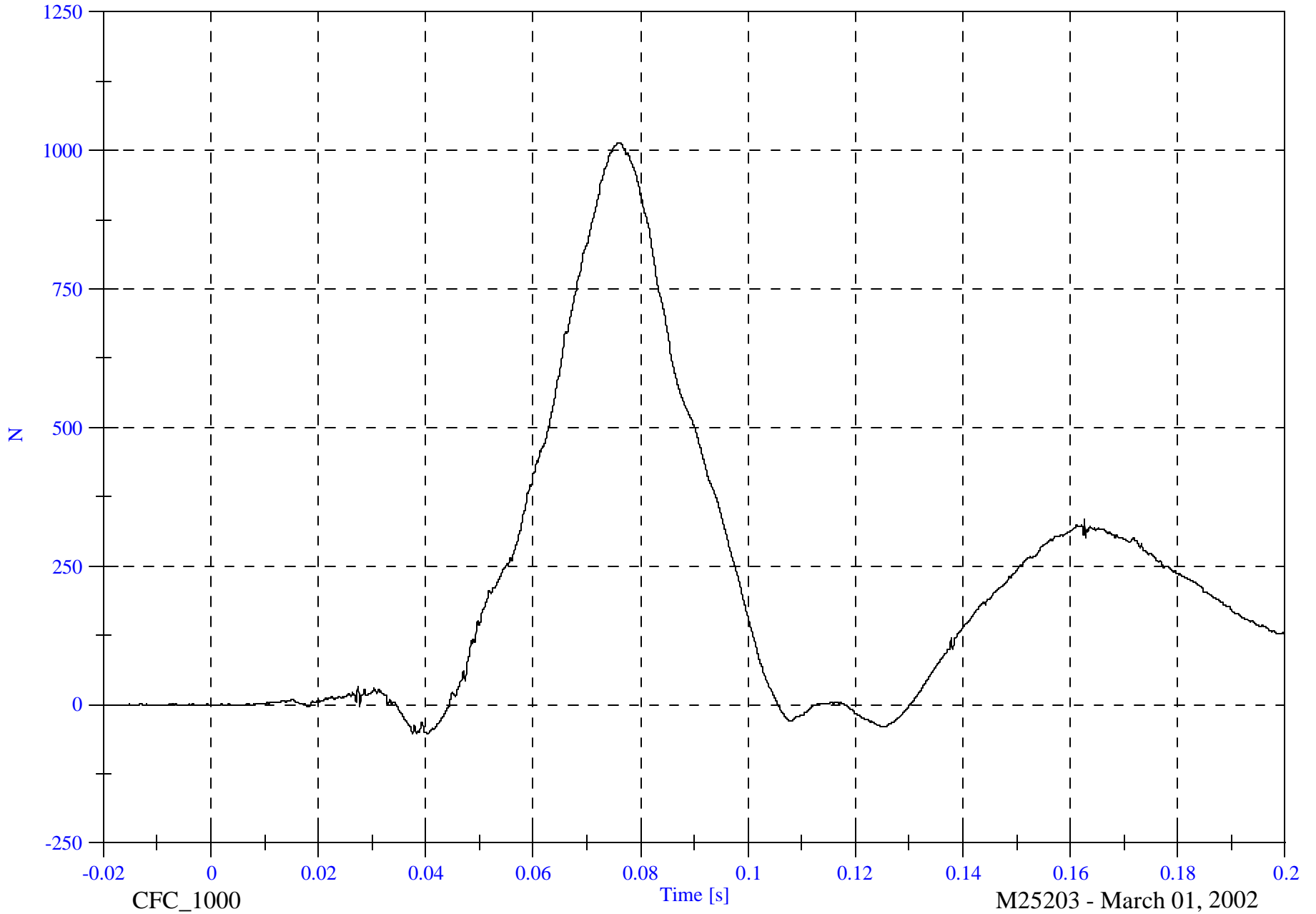
P3 Lower Neck Fz

Max: 1013.9 [N] at 0.076 [s]

Min: -53.8 [N] at 0.038 [s]

4-19

8652-SNCAP-04



SNCAP #4 - 2002 Nissan Sentra

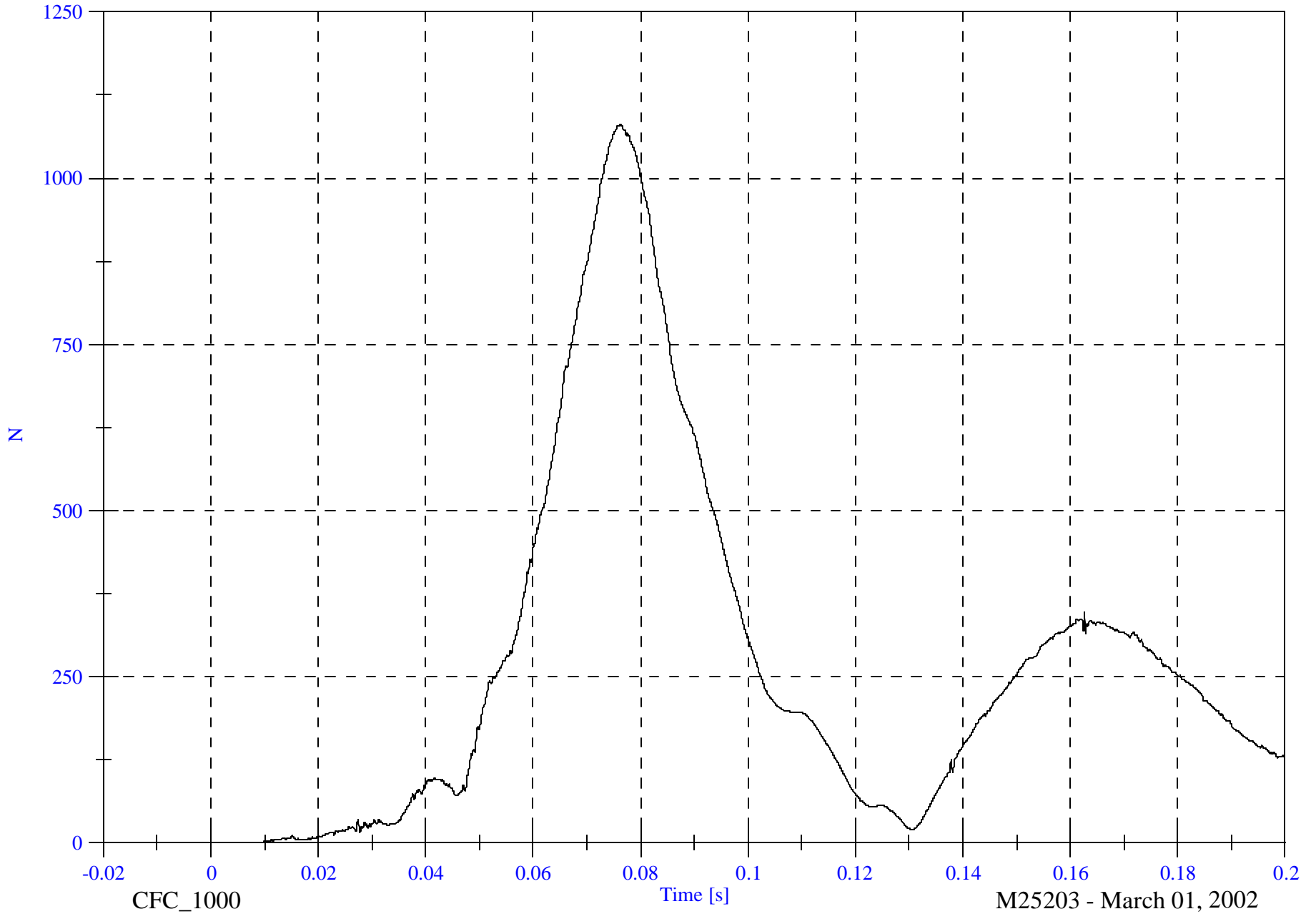
P3 Lower Neck F Resultant

Max: 1079.9 [N] at 0.076 [s]

Min: 0.0 [N] at -0.014 [s]

4-20

8652-SNCAP-04



SNCAP #4 - 2002 Nissan Sentra

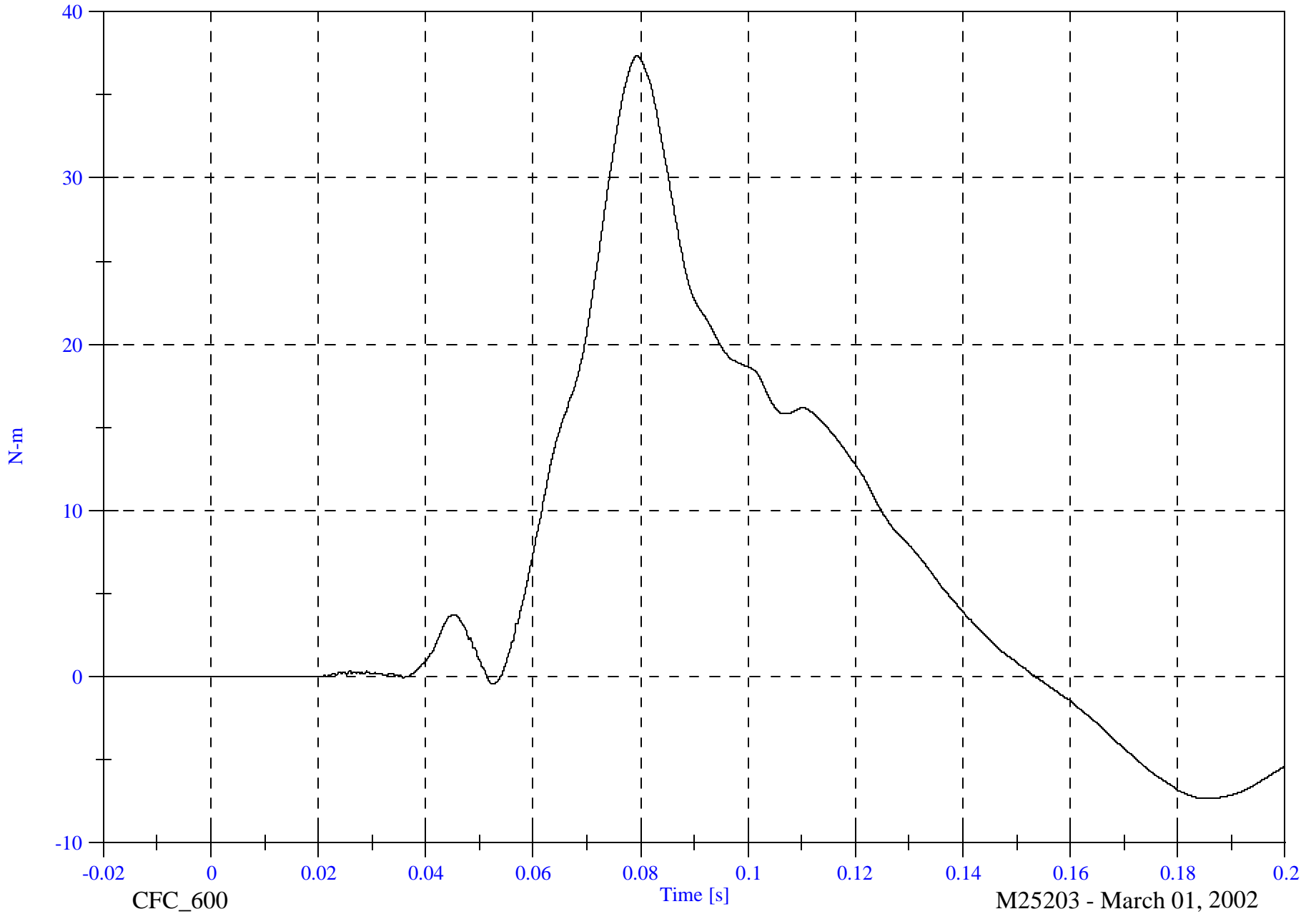
P3 Lower Neck Mx

Max: 37.4 [N-m] at 0.079 [s]

Min: -7.3 [N-m] at 0.185 [s]

4-21

8652-SNCAP-04



CFC_600

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

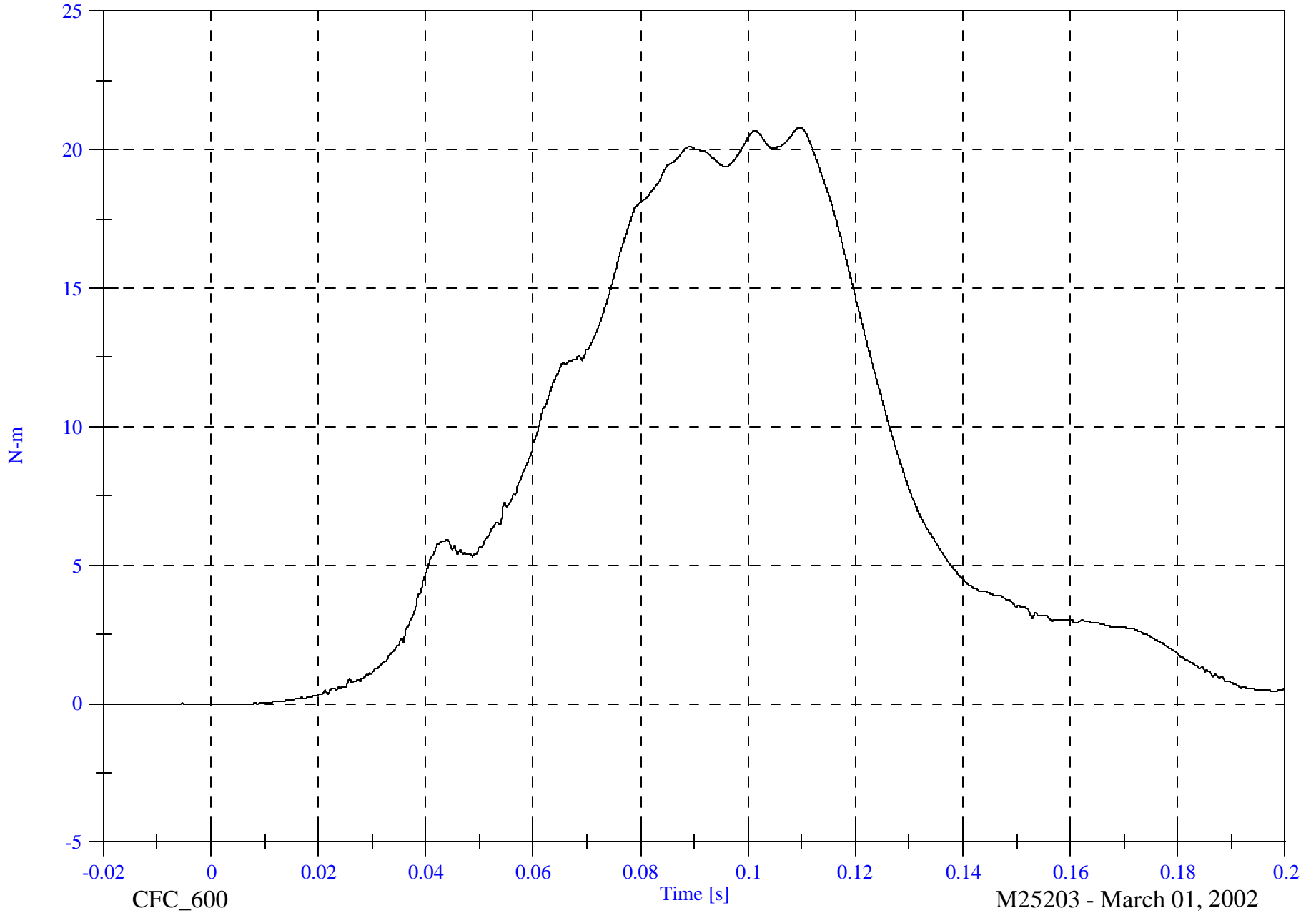
P3 Lower Neck My

Max: 20.8 [N-m] at 0.110 [s]

Min: -0.0 [N-m] at 0.007 [s]

4-22

8652-SNCAP-04



SNCAP #4 - 2002 Nissan Sentra

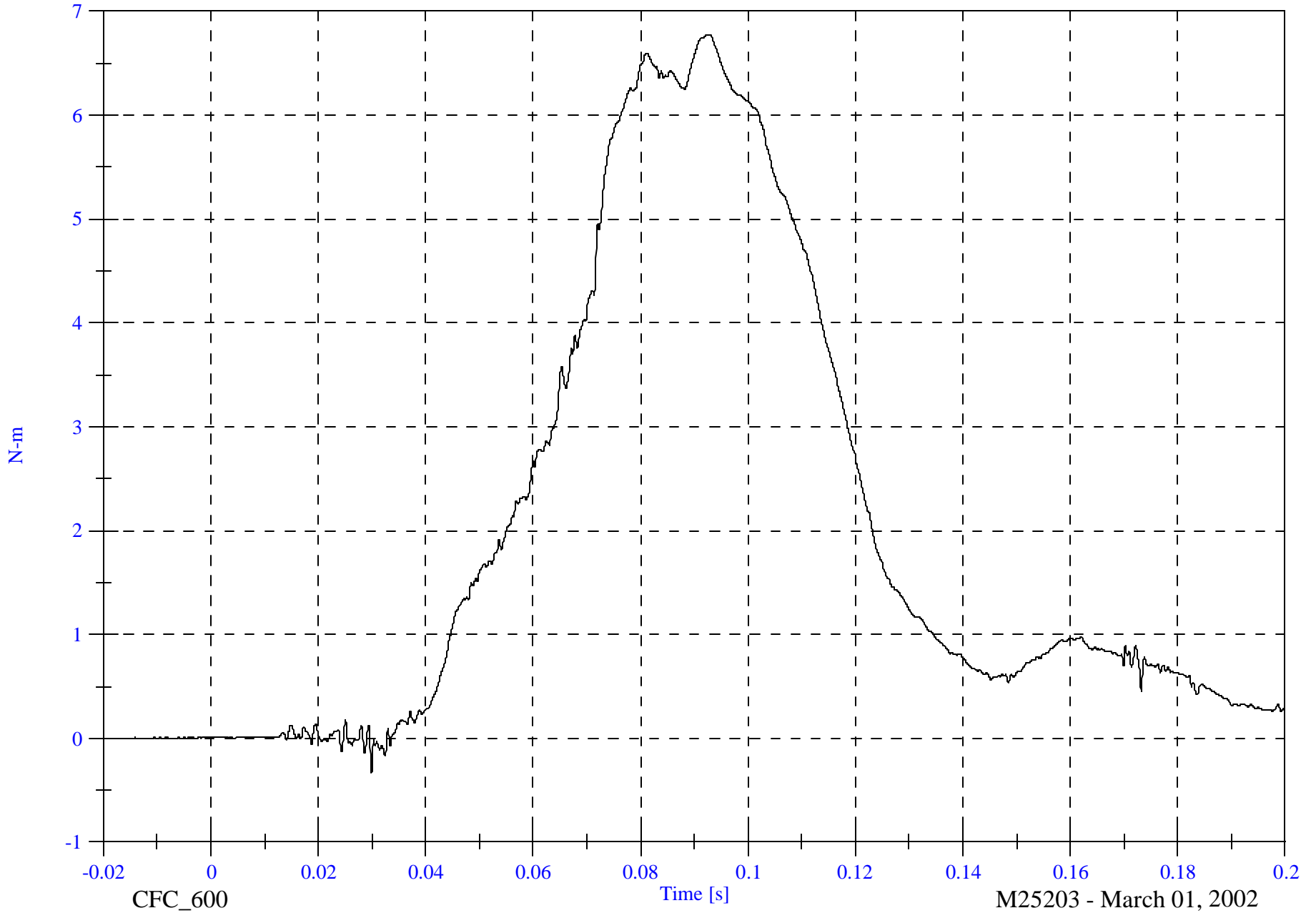
Max: 6.8 [N-m] at 0.093 [s]

Min: -0.3 [N-m] at 0.030 [s]

P3 Lower Neck Mz

4-23

8652-SNCAP-04



CFC_600

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

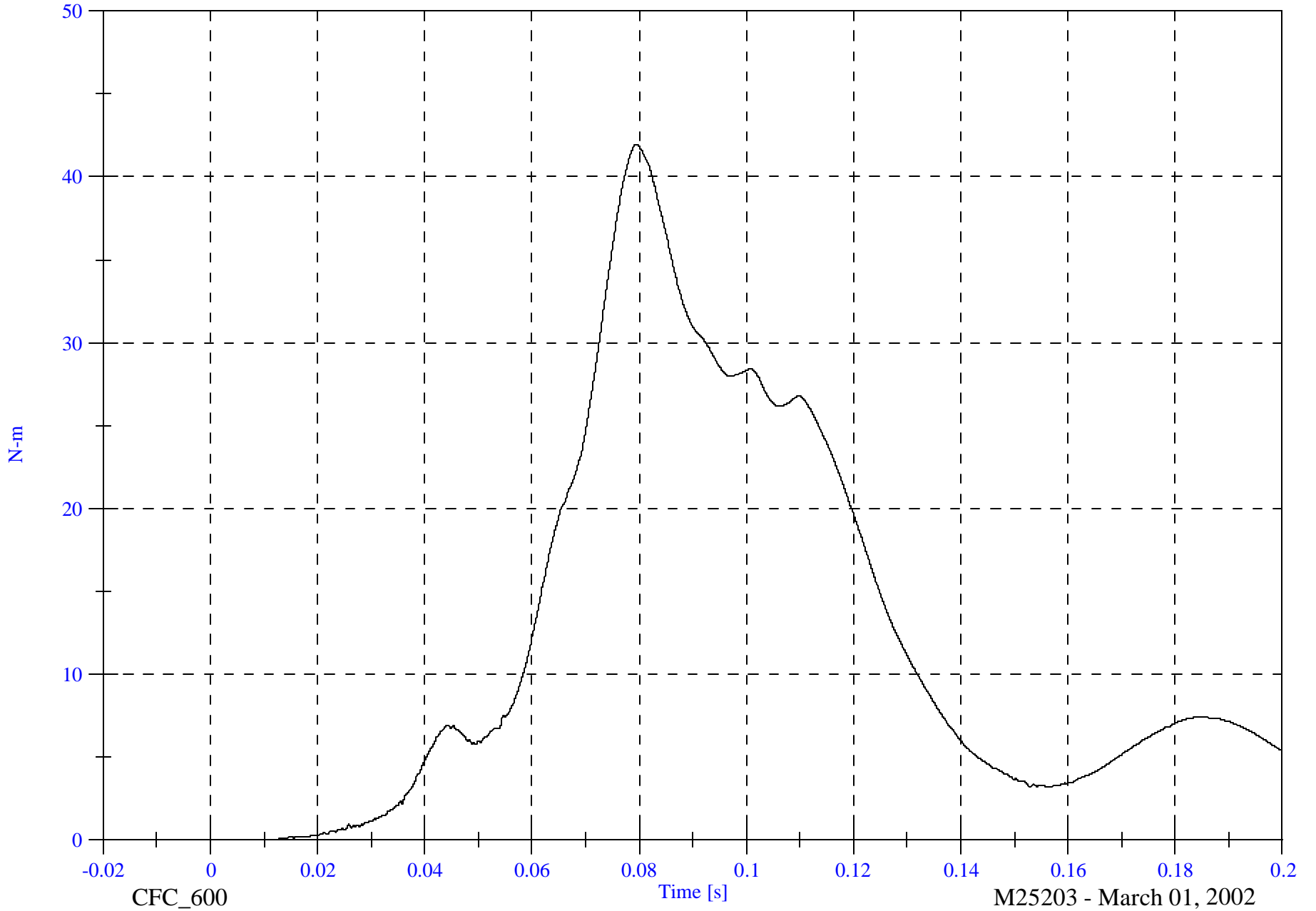
P3 Lower Neck M Resultant

Max: 42.0 [N-m] at 0.079 [s]

Min: 0.0 [N-m] at -0.020 [s]

4-24

8652-SNCAP-04



CFC_600

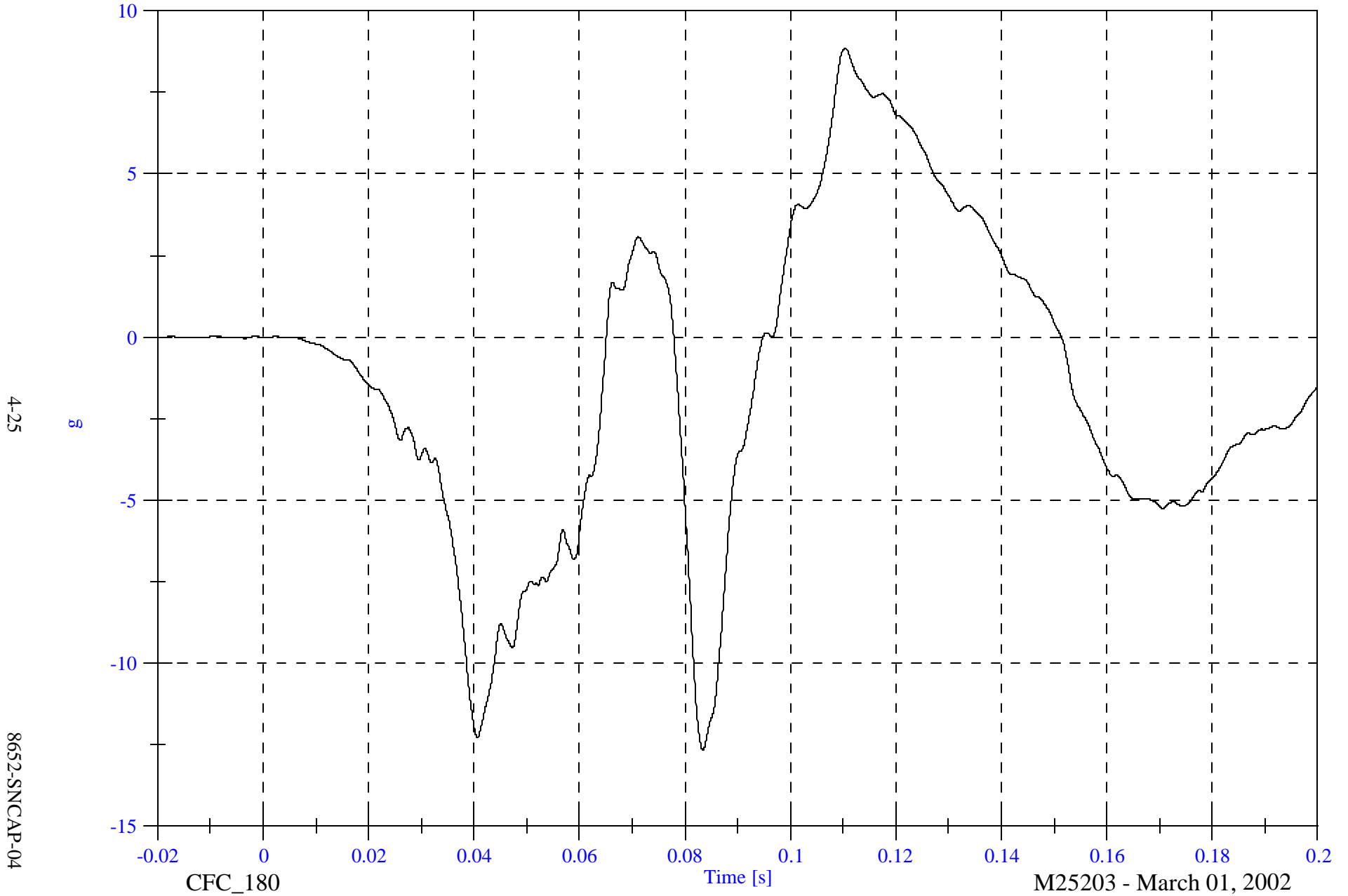
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SNCAP #4 - 2002 Nissan Sentra

Max: 8.8 [g] at 0.110 [s]

Min: -12.6 [g] at 0.083 [s]

P3 Chest x



4-25

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CFC_180

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

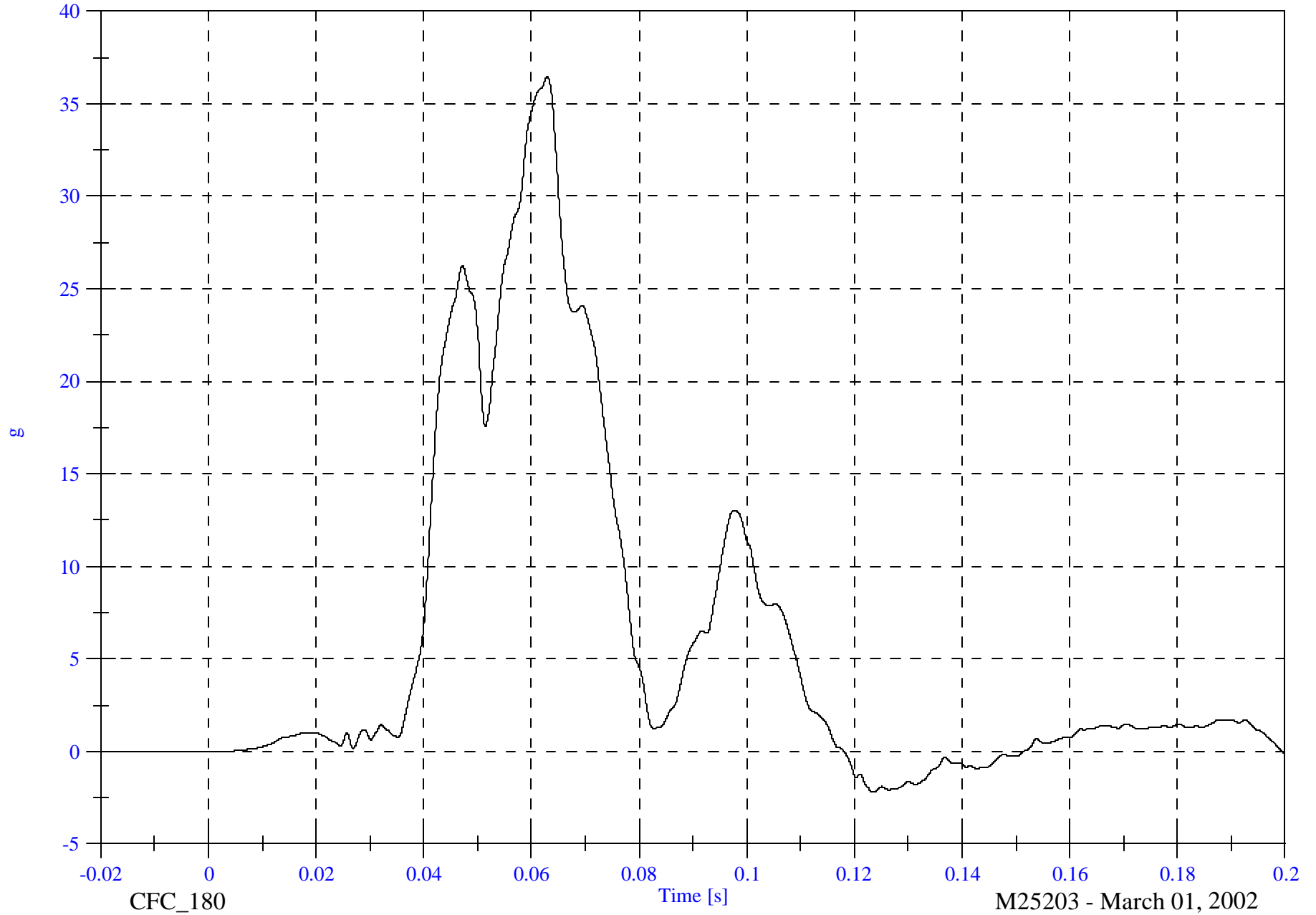
P3 Chest y

Max: 36.5 [g] at 0.063 [s]

Min: -2.2 [g] at 0.123 [s]

4-26

8652-SNCAP-04



CFC_180

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

P3 Chest z

Max: 15.5 [g] at 0.086 [s]

Min: -5.7 [g] at 0.105 [s]

4-27

8652-SNCAP-04



CFC_180

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

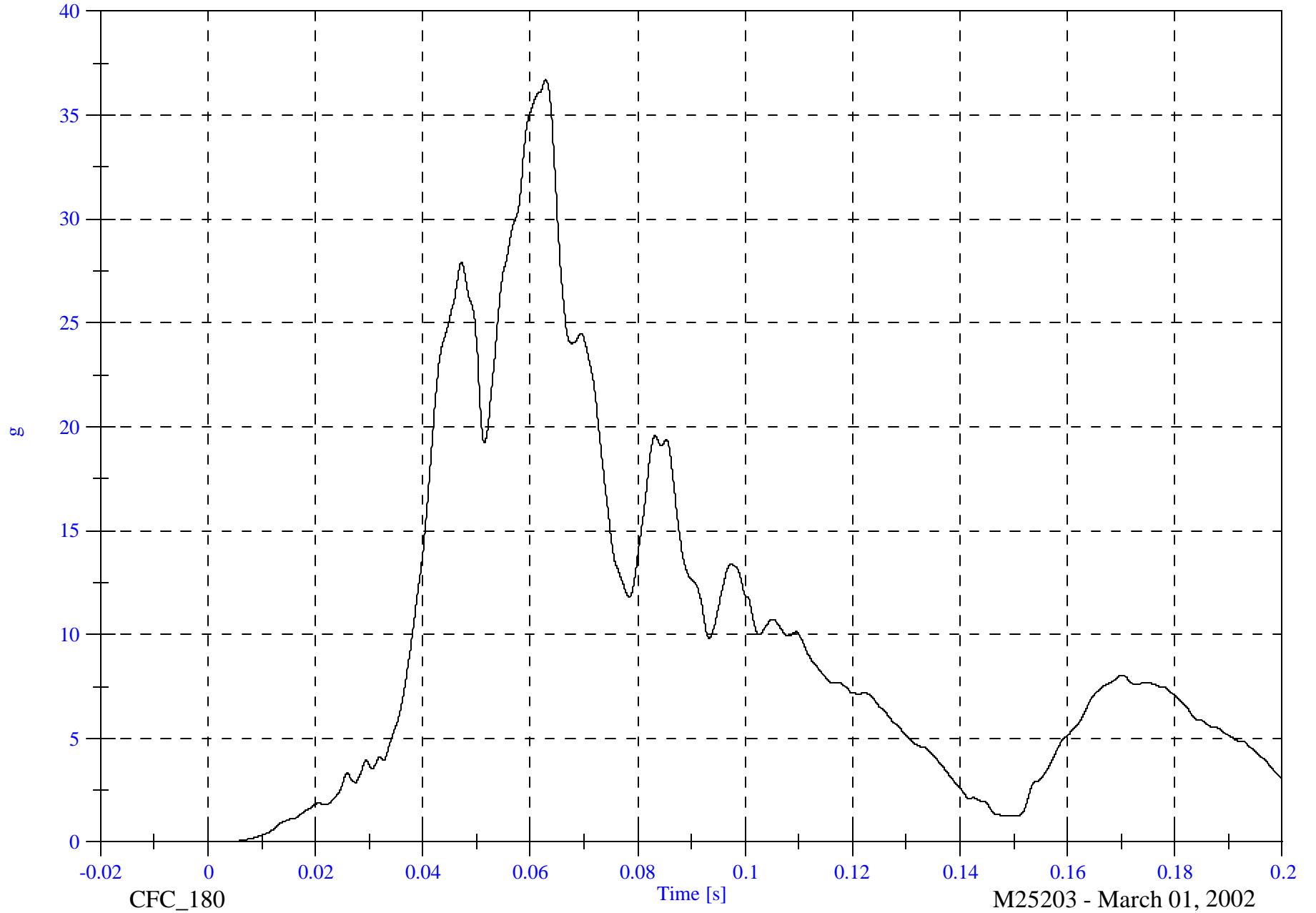
P3 Chest Resultant

Max: 36.7 [g] at 0.063 [s]

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

4-28

8652-SNCAP-04



CFC_180

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

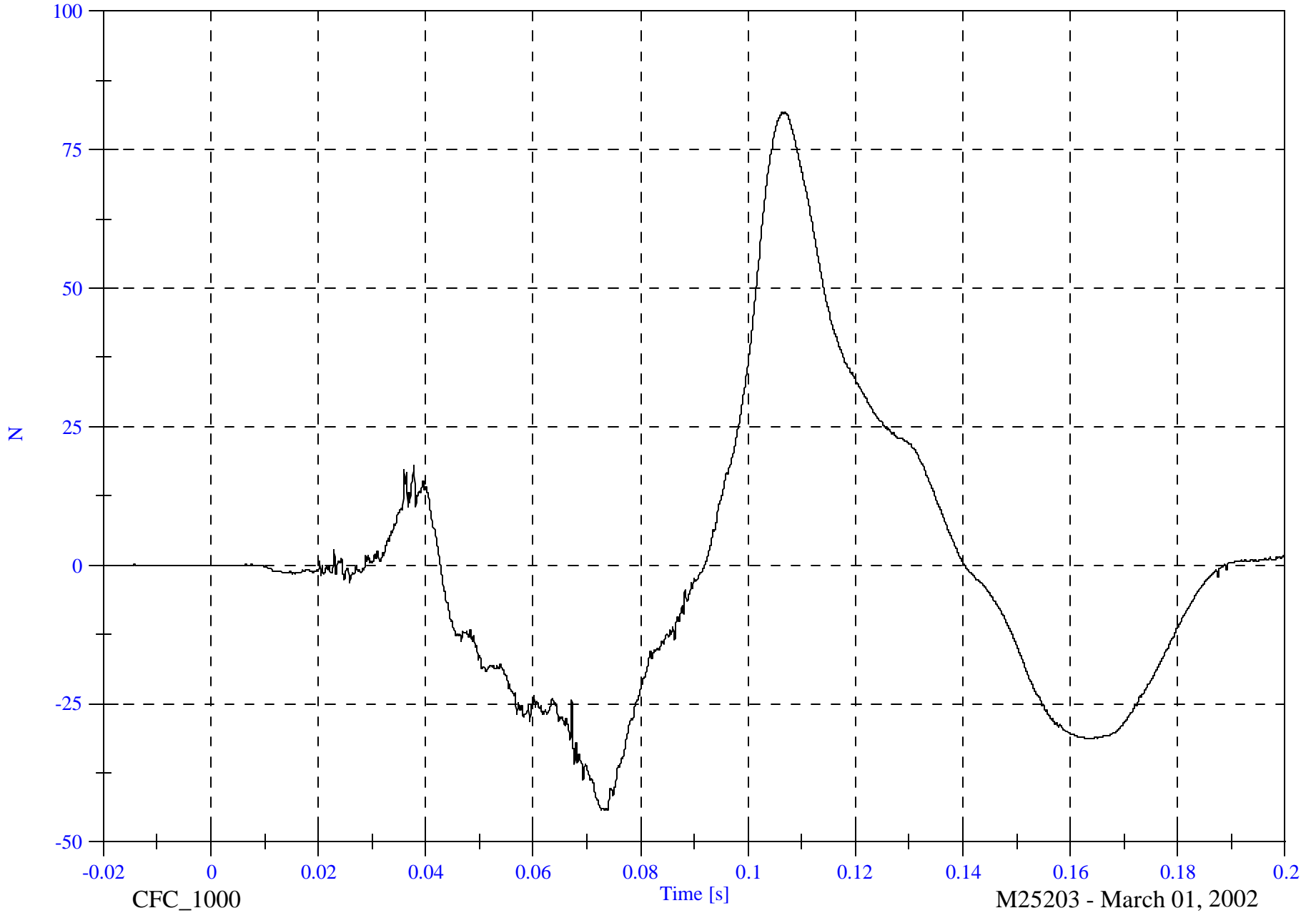
P3 Lumbar Fx

Max: 81.8 [N] at 0.106 [s]

Min: -44.3 [N] at 0.073 [s]

4-29

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SNCAP #4 - 2002 Nissan Sentra

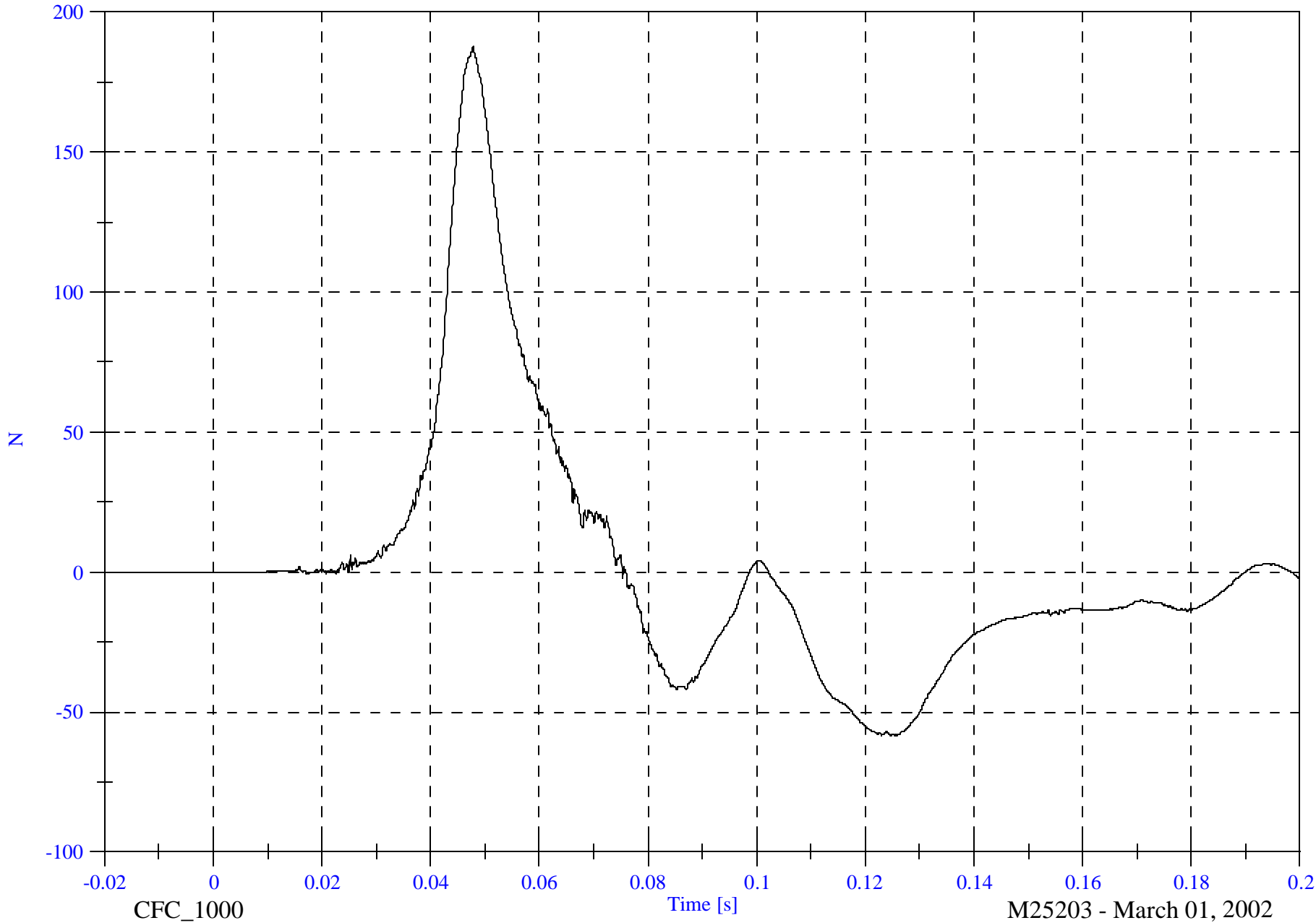
P3 Lumbar Fy

Max: 187.6 [N] at 0.048 [s]

Min: -58.3 [N] at 0.123 [s]

4-30

8652-SNCAP-04



SNCAP #4 - 2002 Nissan Sentra

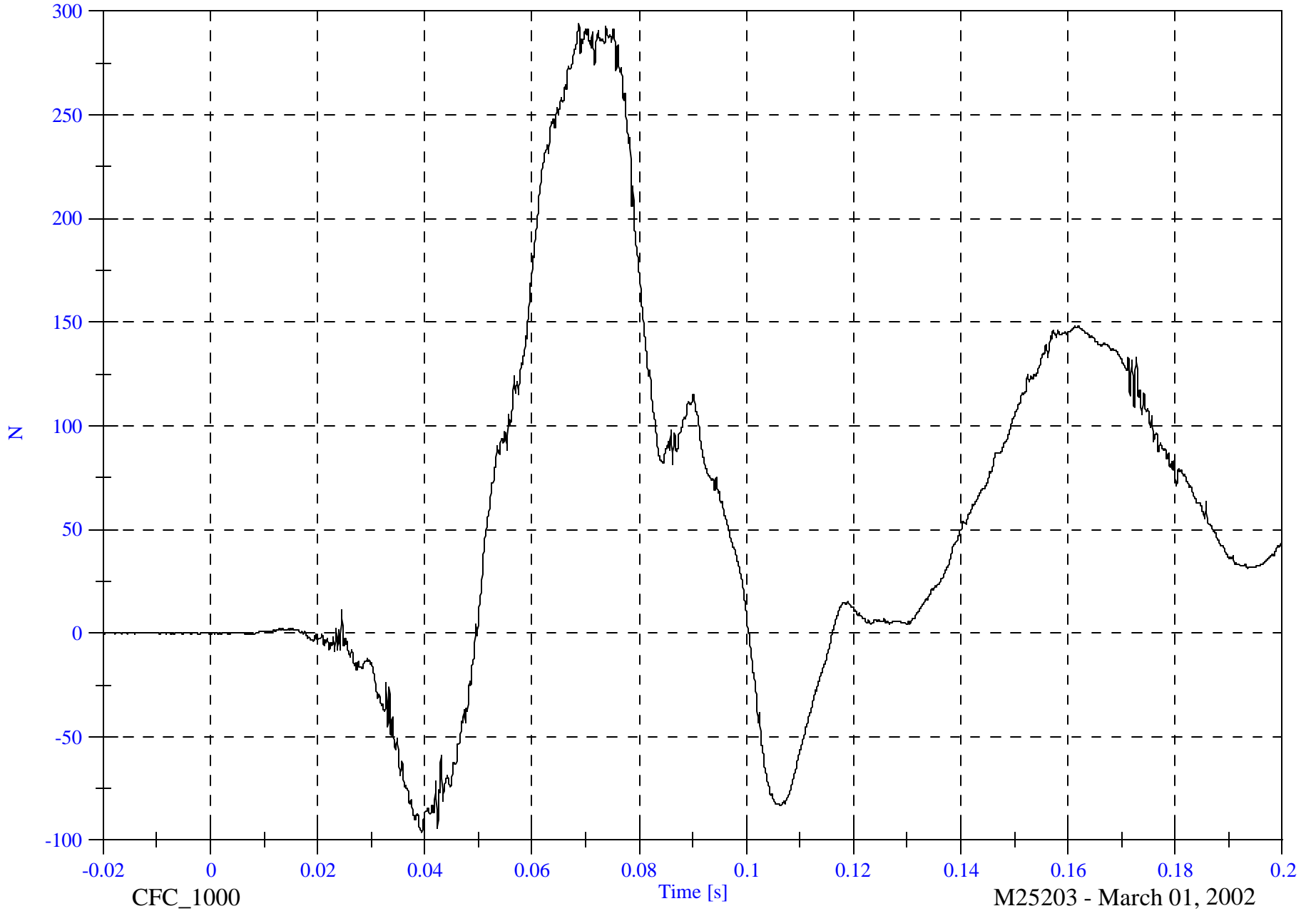
Max: 294.0 [N] at 0.069 [s]

P3 Lumbar Fz

Min: -96.6 [N] at 0.039 [s]

4-31

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CFC_1000

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

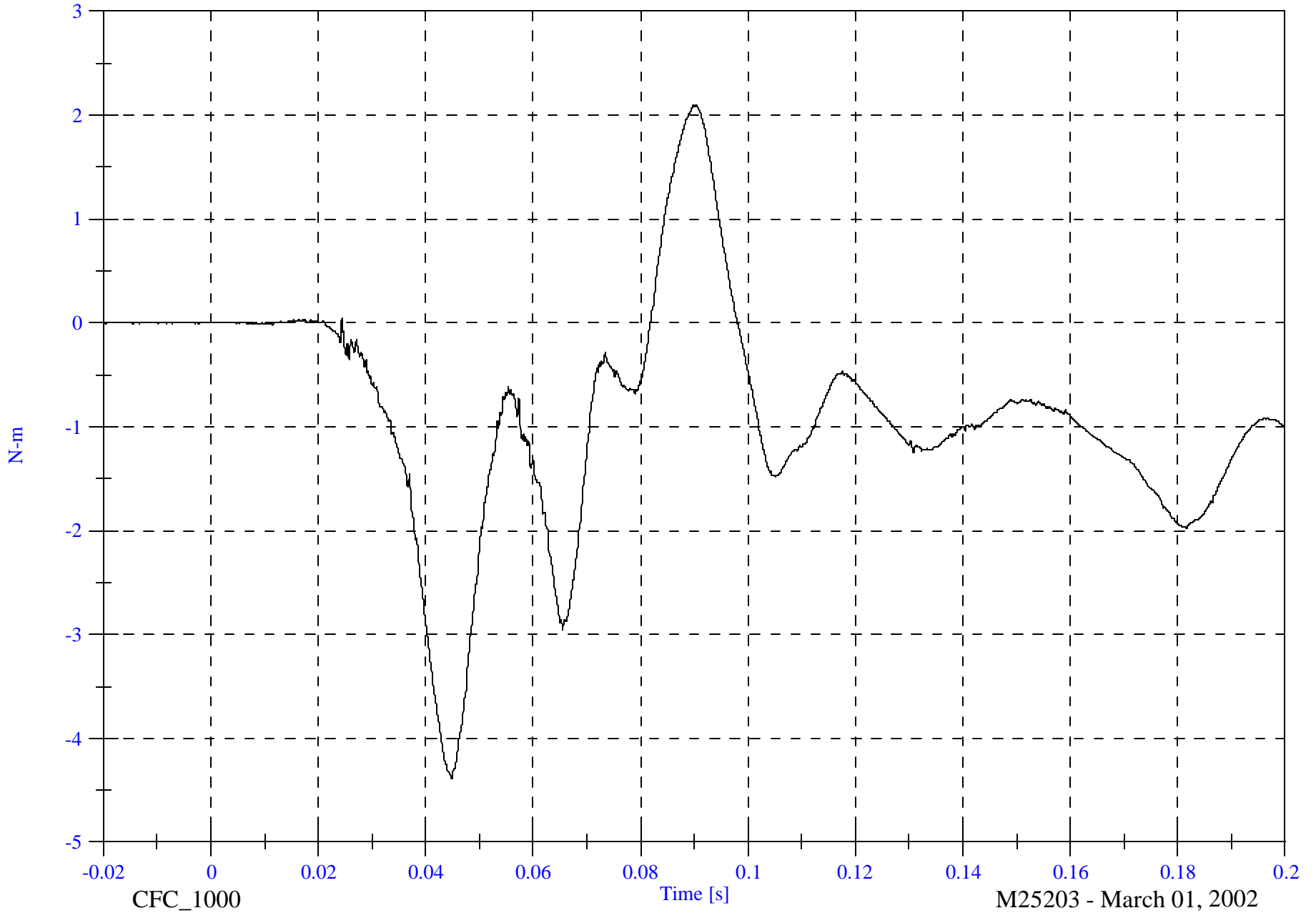
P3 Lumbar Mx

Max: 2.1 [N-m] at 0.090 [s]

Min: -4.4 [N-m] at 0.045 [s]

4-32

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CFC_1000

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

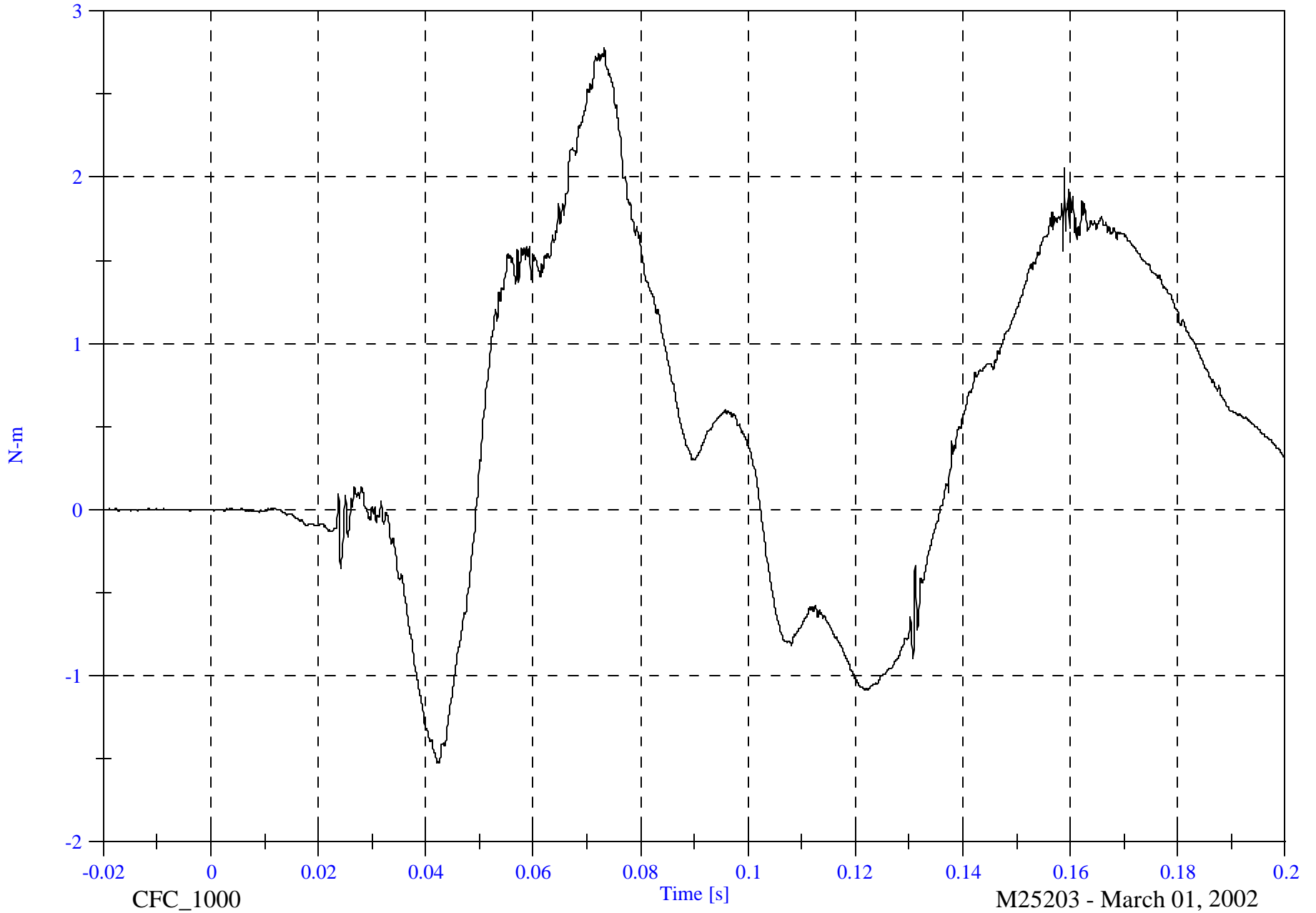
P3 Lumbar My

Max: 2.8 [N-m] at 0.073 [s]

Min: -1.5 [N-m] at 0.042 [s]

4-33

8652-SNCAP-04



SNCAP #4 - 2002 Nissan Sentra

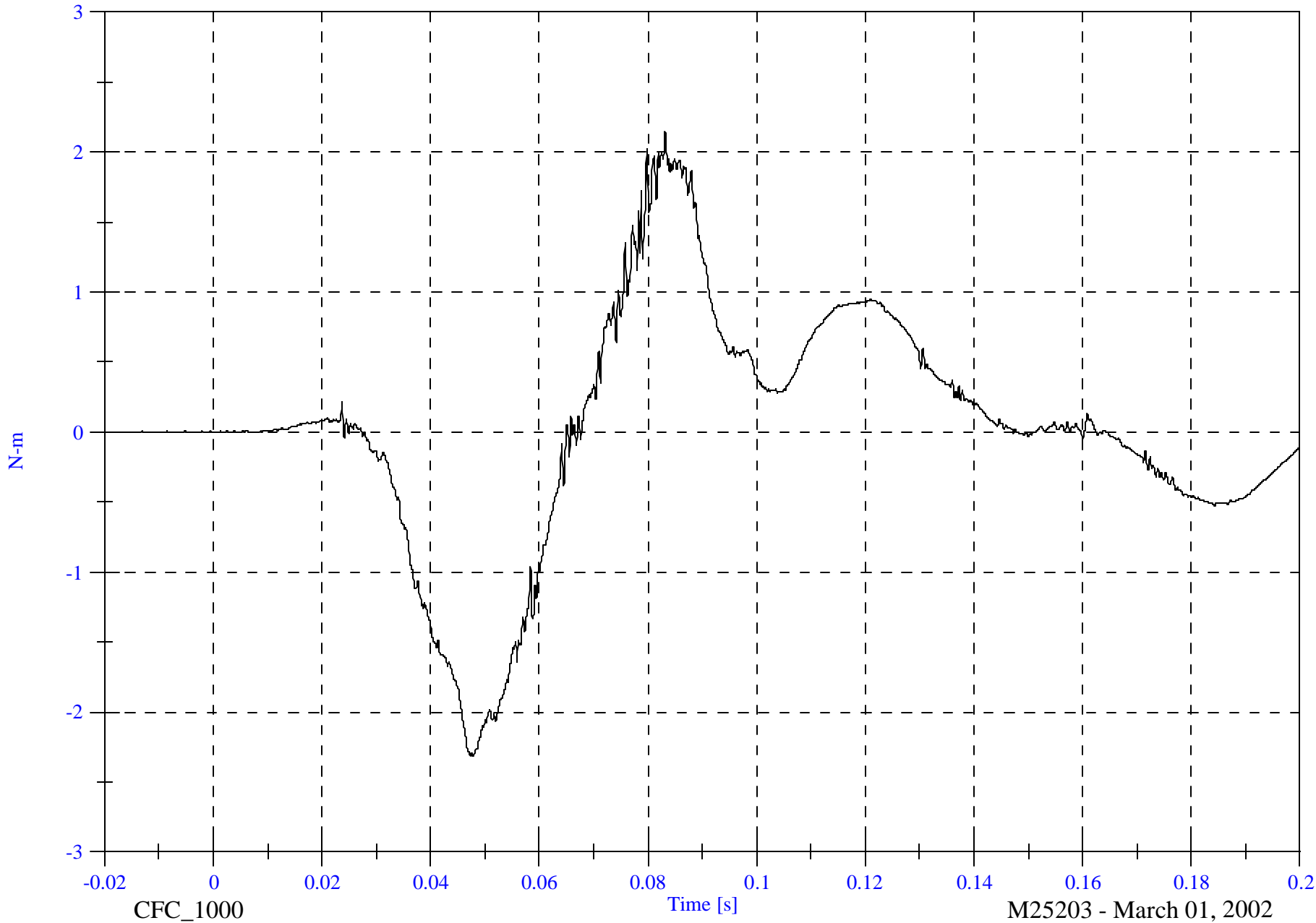
P3 Lumbar Mz

Max: 2.1 [N-m] at 0.083 [s]

Min: -2.3 [N-m] at 0.048 [s]

4-34

8652-SNCAP-04



CFC_1000

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SNCAP #4 - 2002 Nissan Sentra

Max: 11.5 [g] at 0.103 [s]

Min: -16.0 [g] at 0.043 [s]

P3 Pelvic x

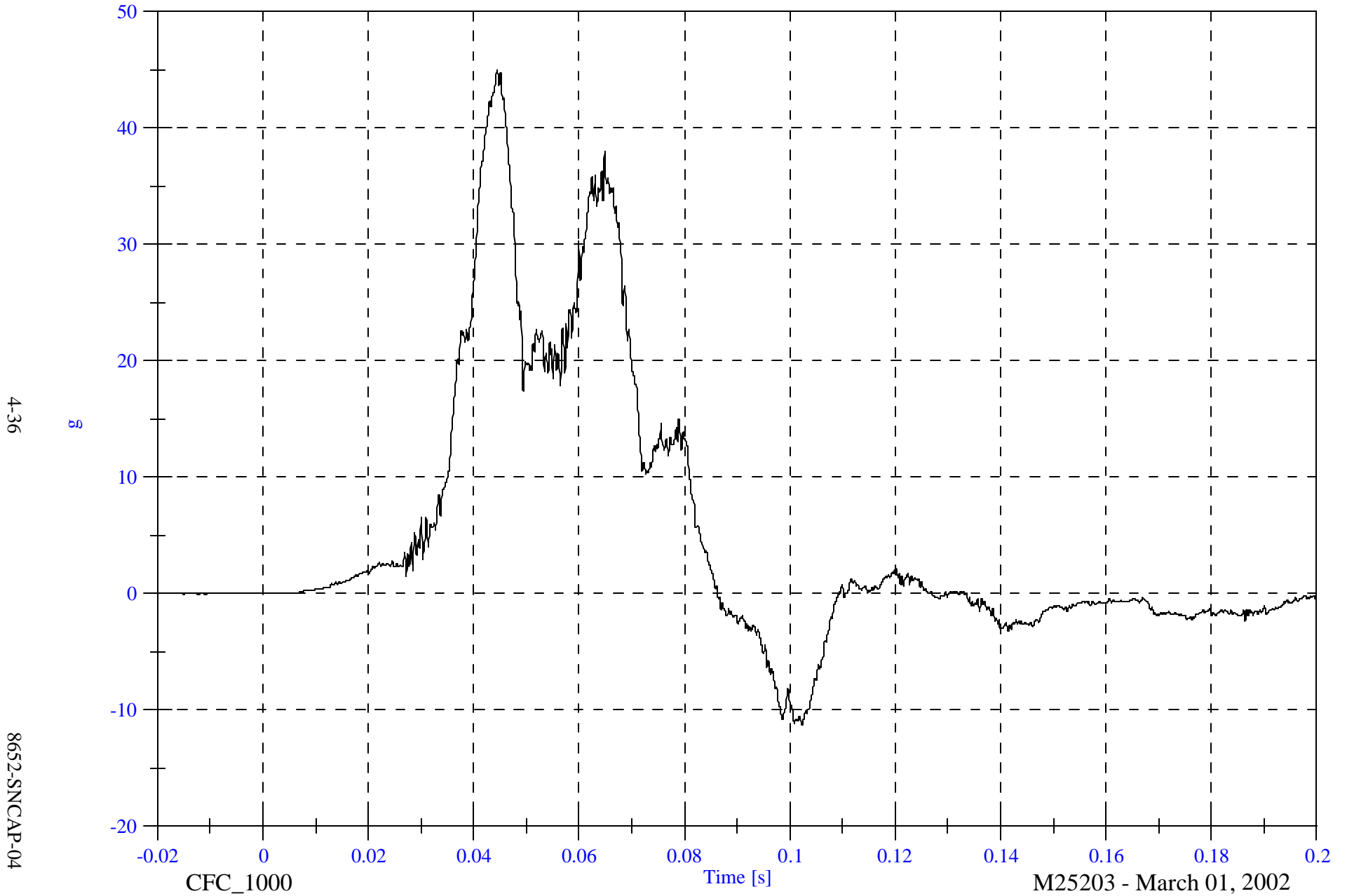


SNCAP #4 - 2002 Nissan Sentra

Max: 44.9 [g] at 0.044 [s]

Min: -11.3 [g] at 0.102 [s]

P3 Pelvic y

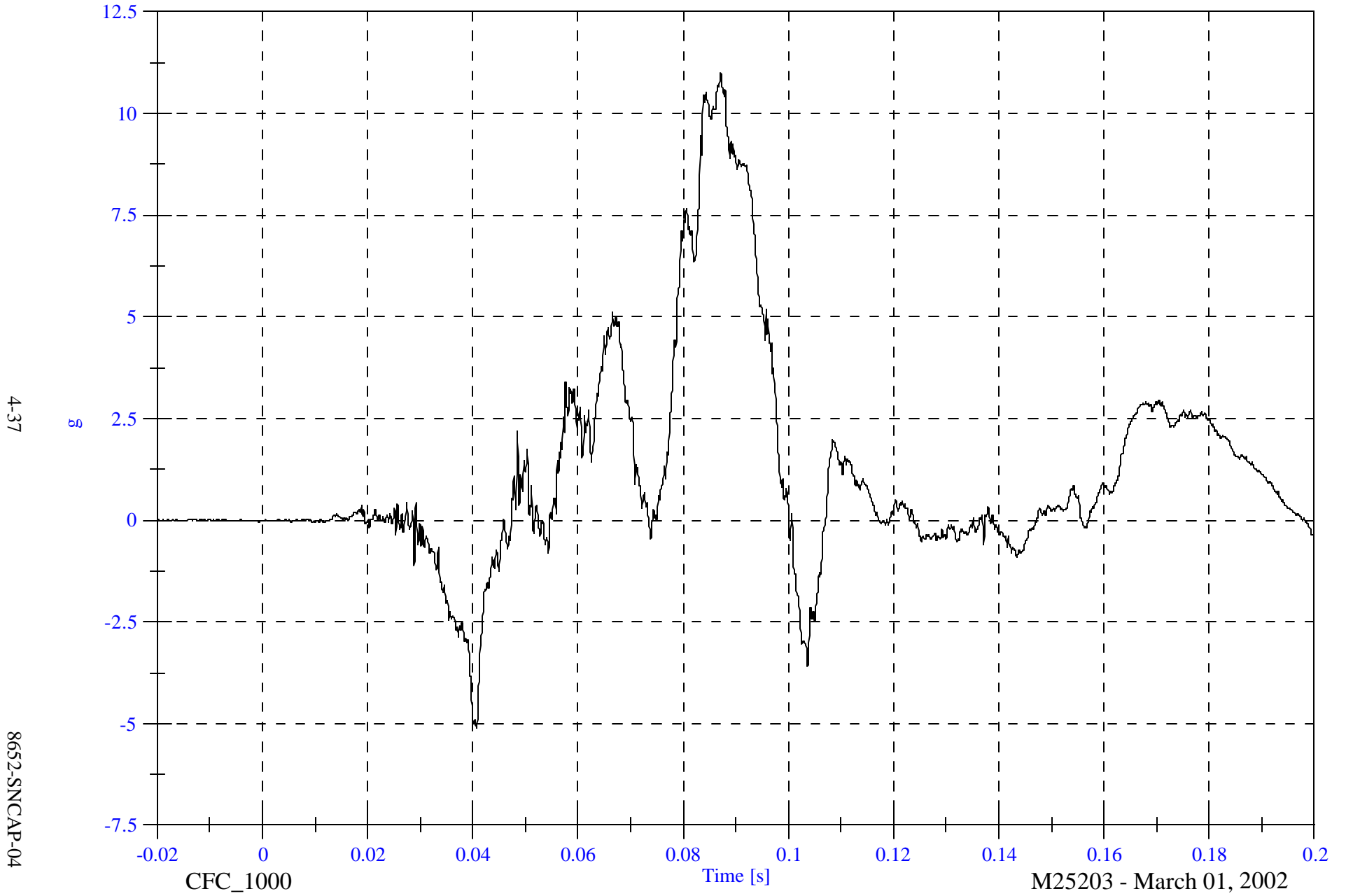


SNCAP #4 - 2002 Nissan Sentra

Max: 11.0 [g] at 0.087 [s]

Min: -5.1 [g] at 0.041 [s]

P3 Pelvic z



4-37

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CFC_1000

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

P3 Pelvic Resultant

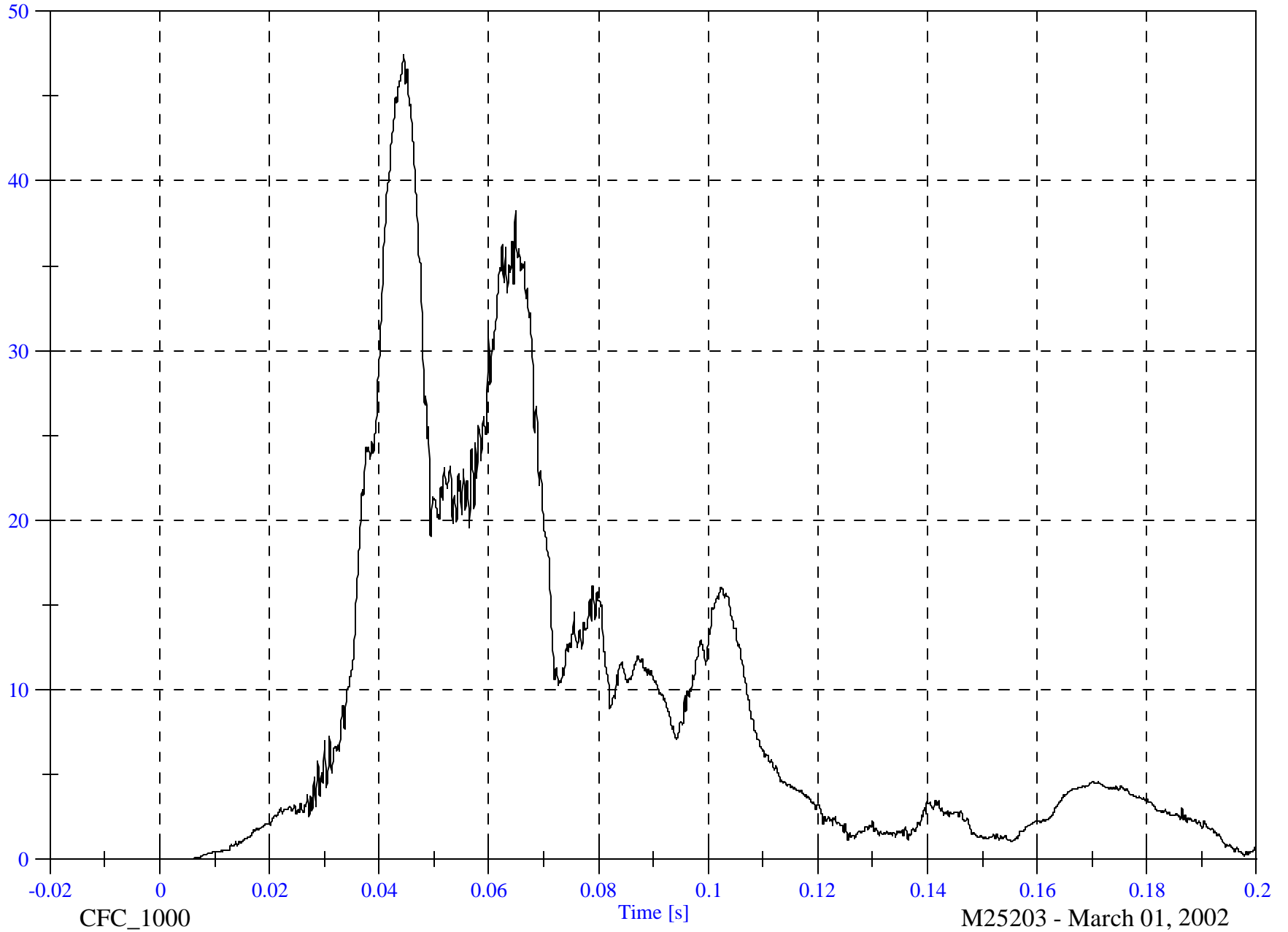
Max: 47.4 [g] at 0.045 [s]

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

4-38

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g



CFC_1000

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

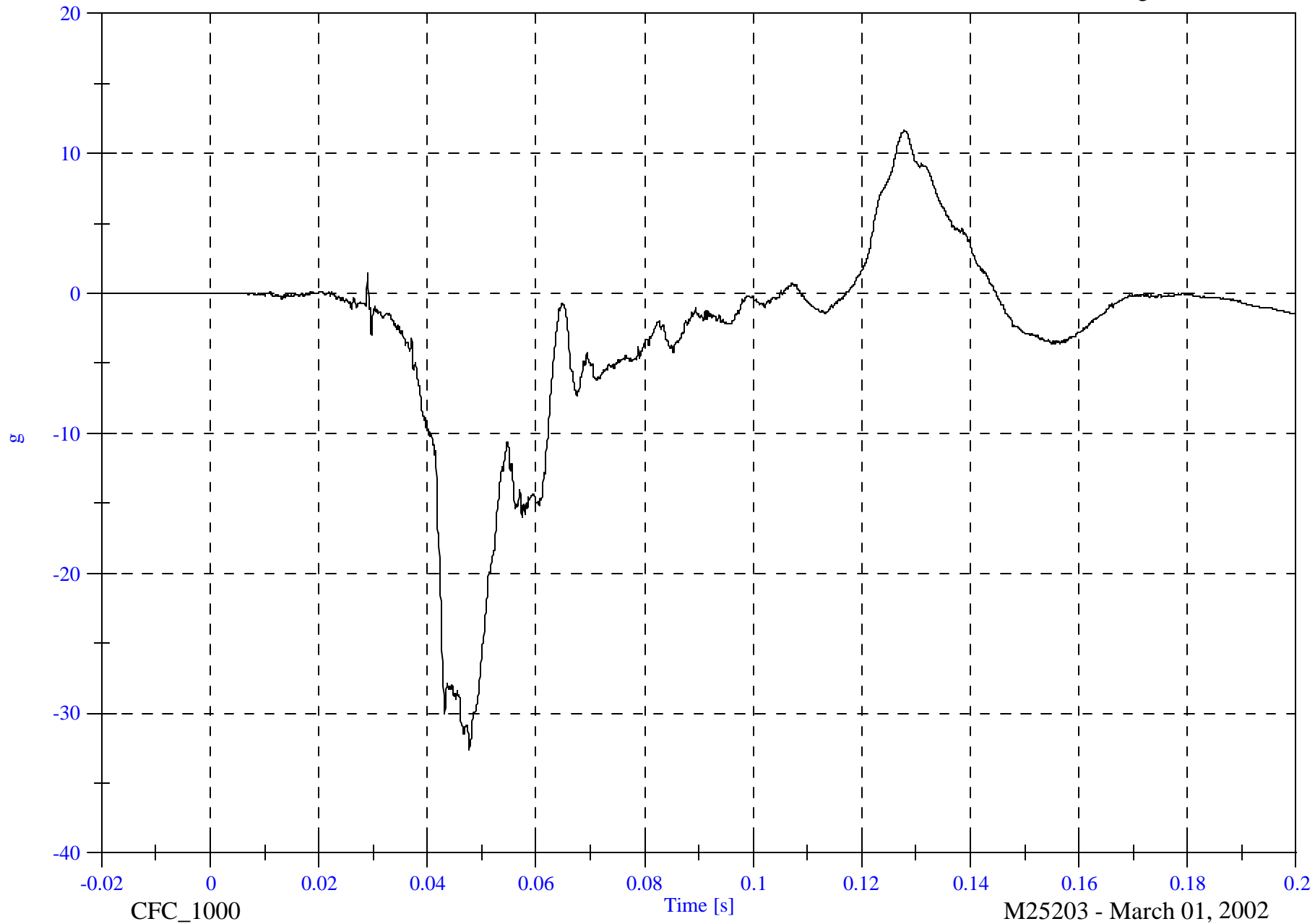
P4 Head x

Max: 11.6 [g] at 0.128 [s]

Min: -32.6 [g] at 0.048 [s]

4-39

8652-SNCAP-04



CFC_1000

Time [s]

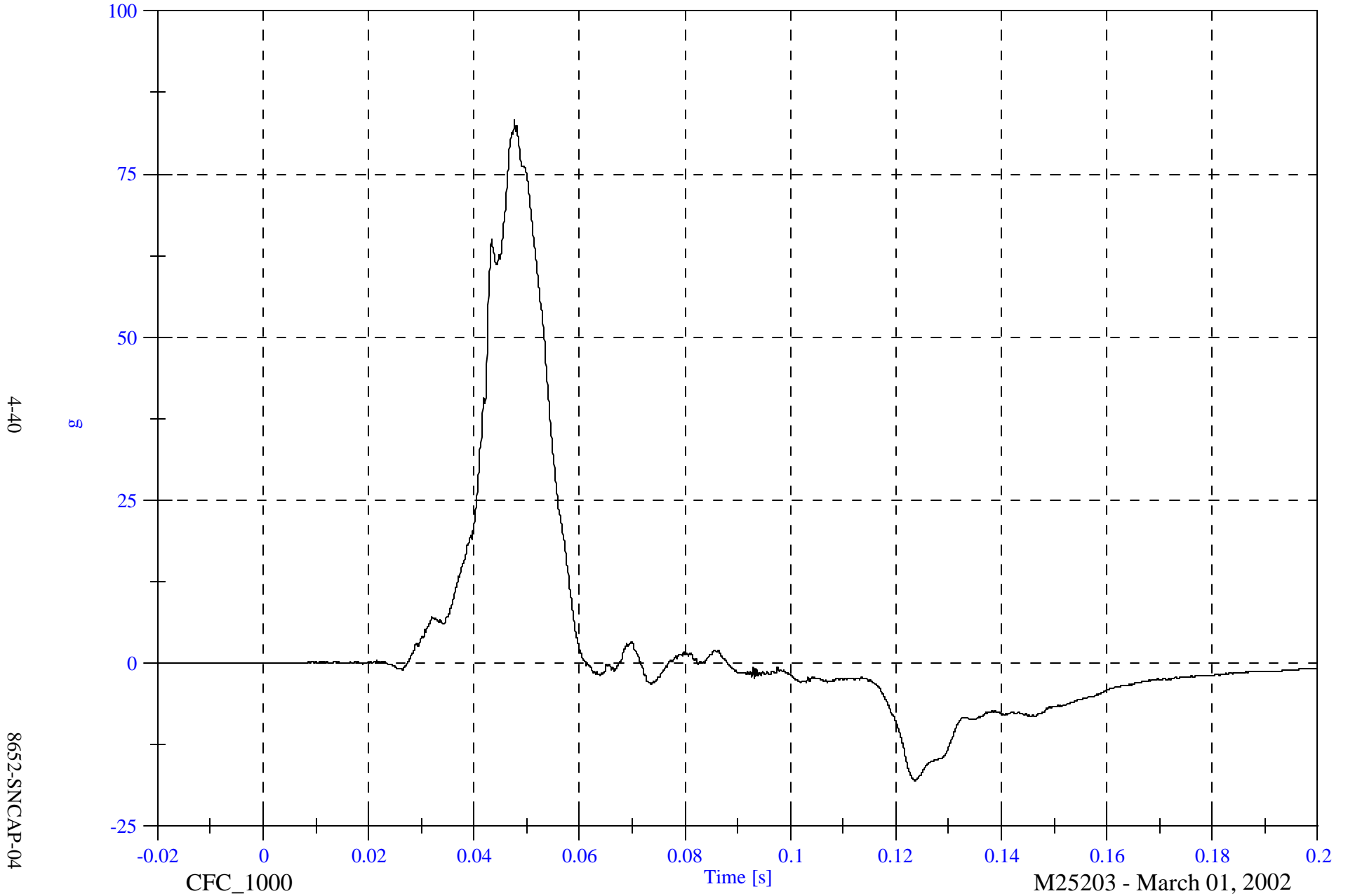
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P4 Head y

Max: 83.4 [g] at 0.048 [s]

Min: -18.0 [g] at 0.124 [s]



SNCAP #4 - 2002 Nissan Sentra

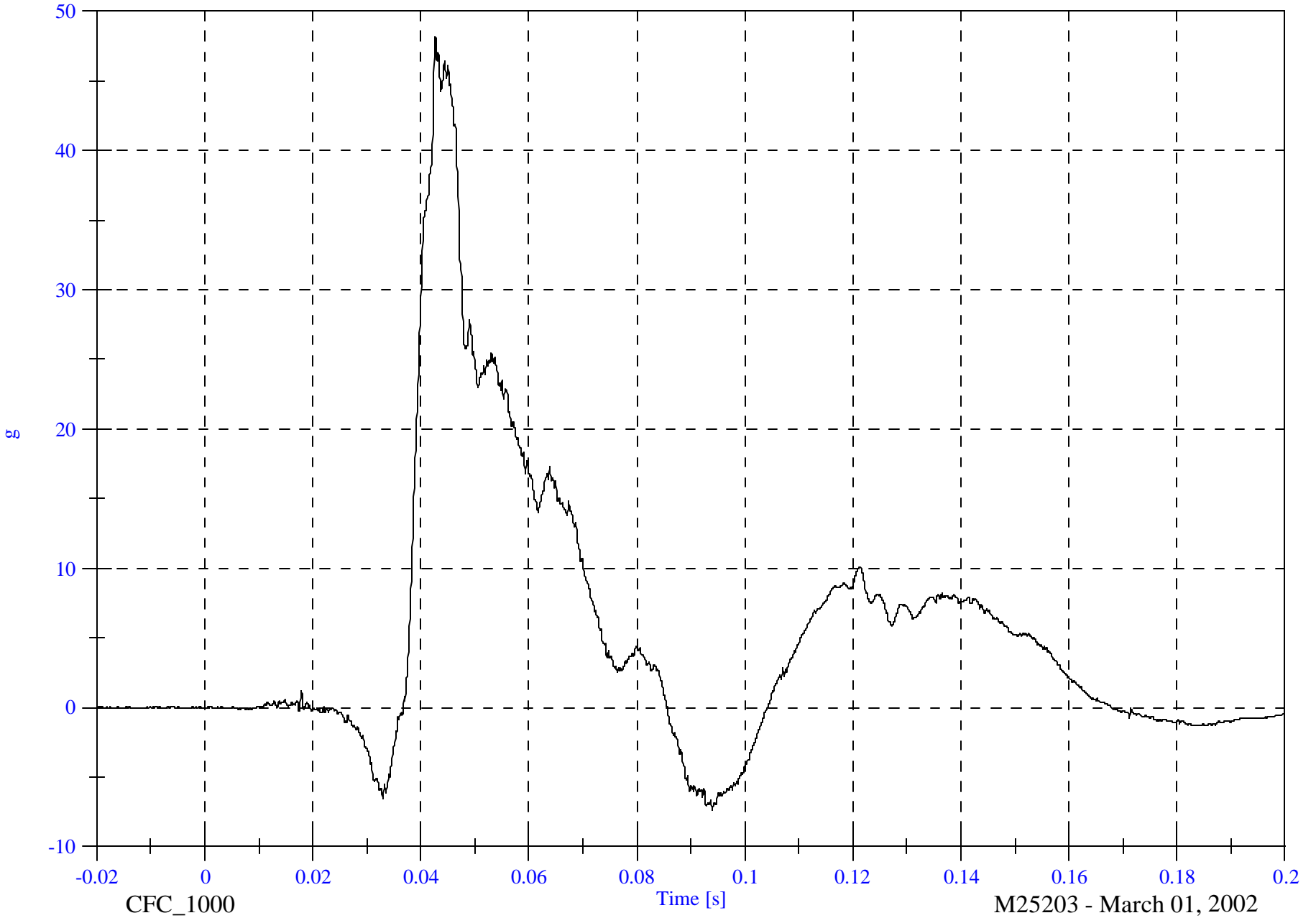
P4 Head z

Max: 48.2 [g] at 0.043 [s]

Min: -7.4 [g] at 0.094 [s]

4-41

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CFC_1000

Time [s]

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SNCAP #4 - 2002 Nissan Sentra

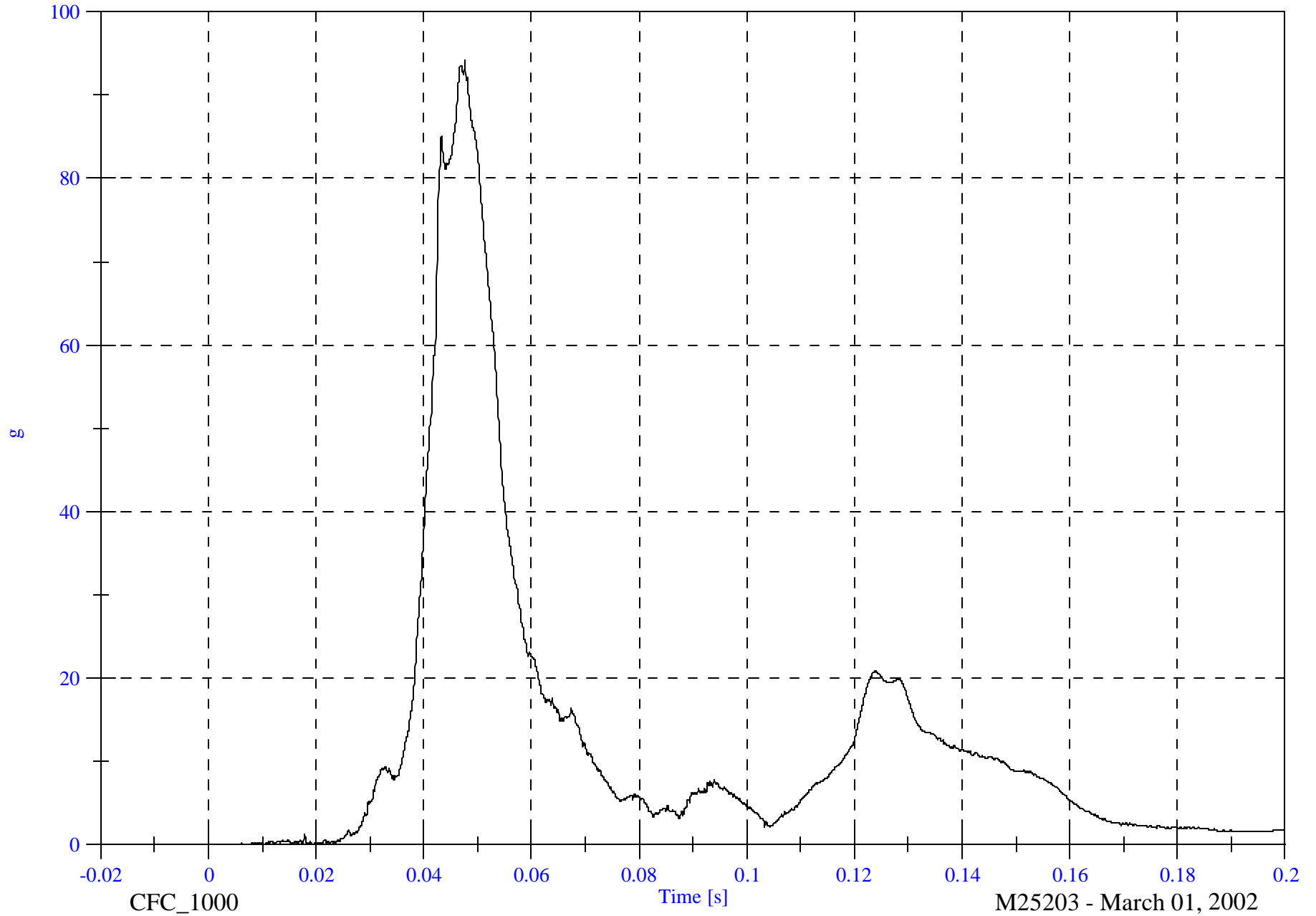
P4 Head Resultant

Max: 94.1 [g] at 0.048 [s]

Min: 0.0 [g] at -0.007 [s]

4-42

8652-SNCAP-04



SNCAP #4 - 2002 Nissan Sentra

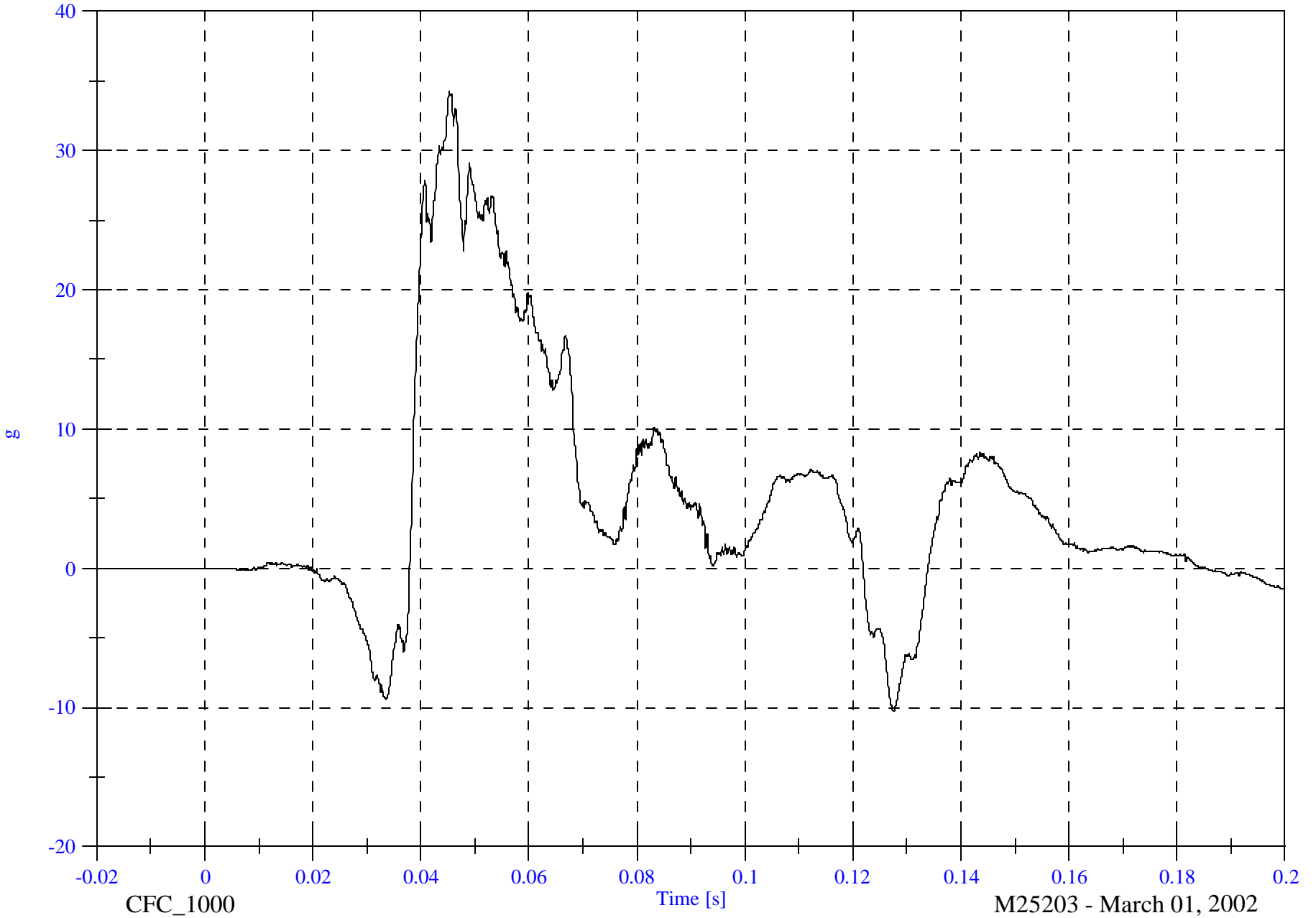
P4 Head Red z

Max: 34.2 [g] at 0.045 [s]

Min: -10.3 [g] at 0.128 [s]

4-43

8652-SNCAP-04

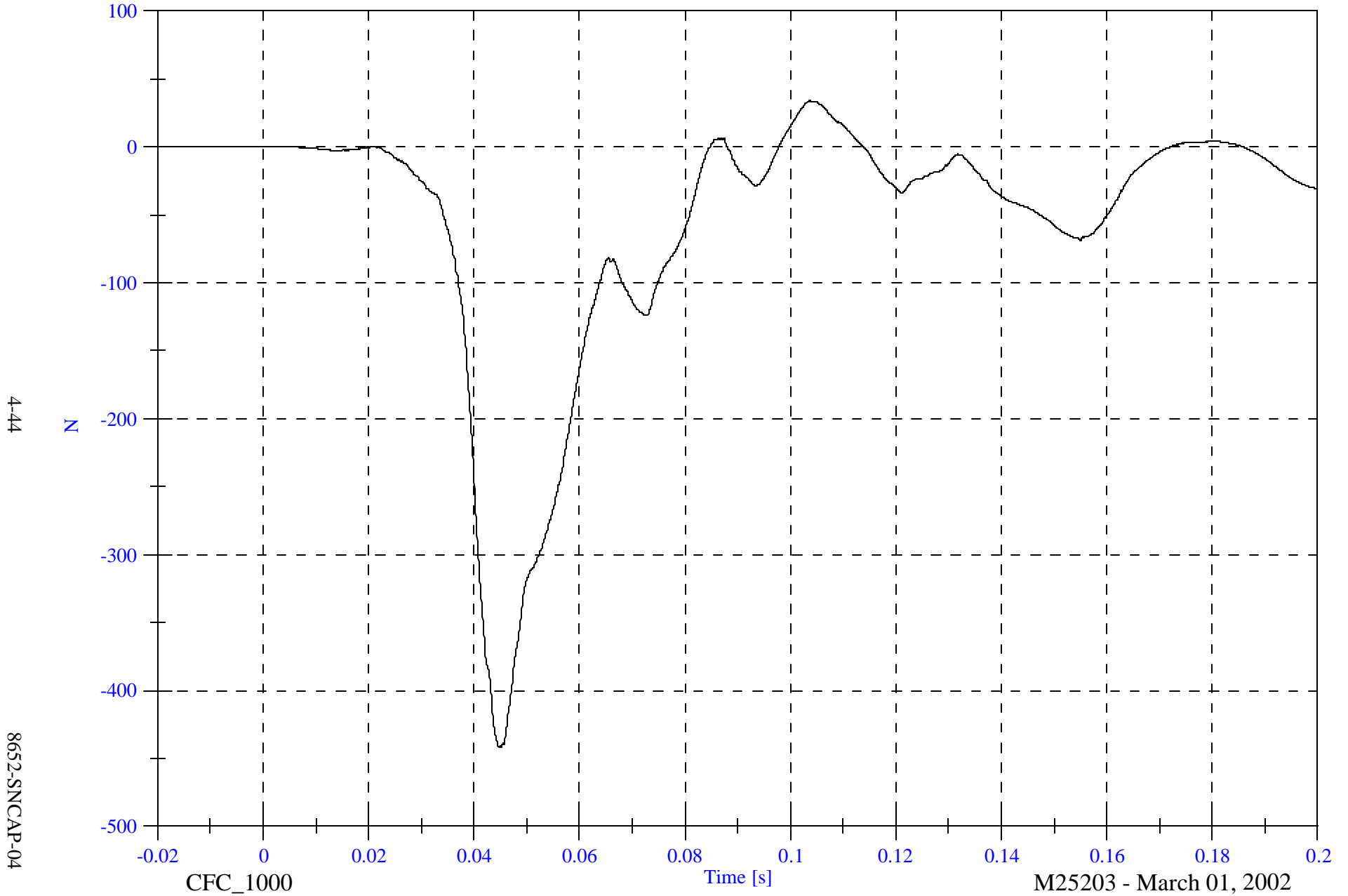


SNCAP #4 - 2002 Nissan Sentra

P4 Upper Neck Fx

Max: 34.0 [N] at 0.104 [s]

Min: -441.9 [N] at 0.045 [s]



4-44

N

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CFC_1000

Time [s]

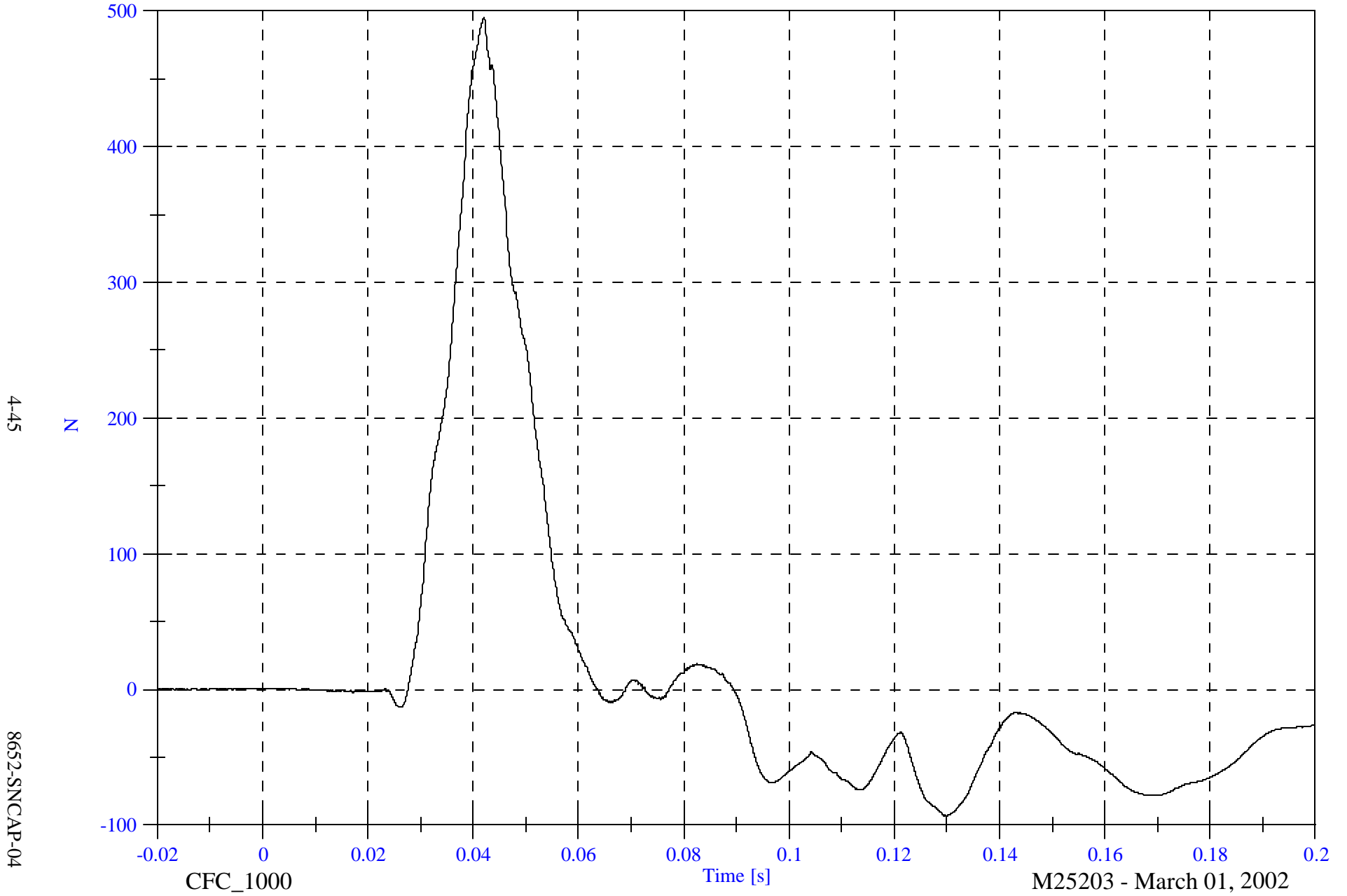
M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

P4 Upper Neck Fy

Max: 494.8 [N] at 0.042 [s]

Min: -93.1 [N] at 0.130 [s]



4-45

N

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CFC_1000

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

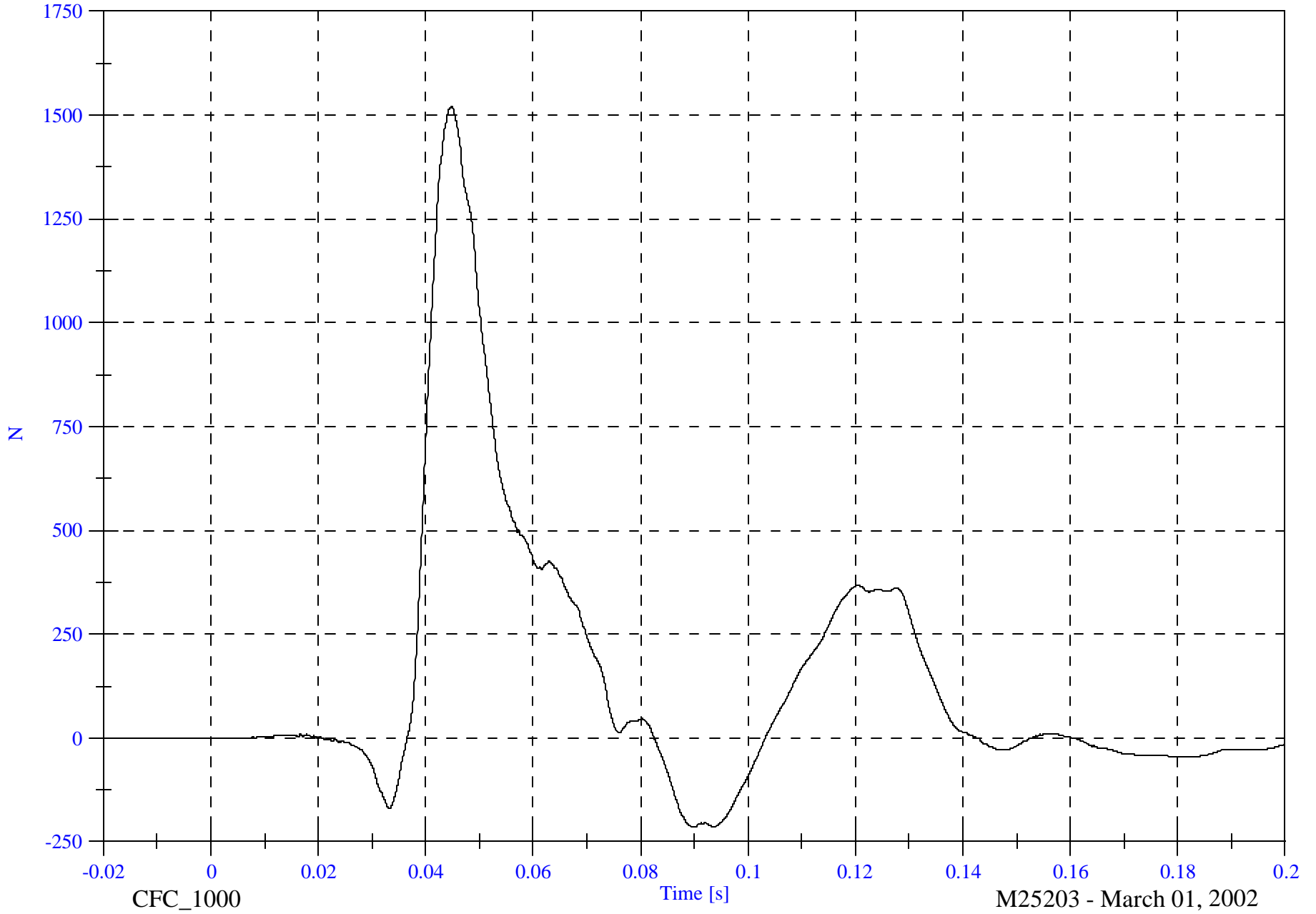
P4 Upper Neck Fz

Max: 1519.9 [N] at 0.045 [s]

Min: -214.7 [N] at 0.090 [s]

4-46

8652-SNCAP-04



CFC_1000

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

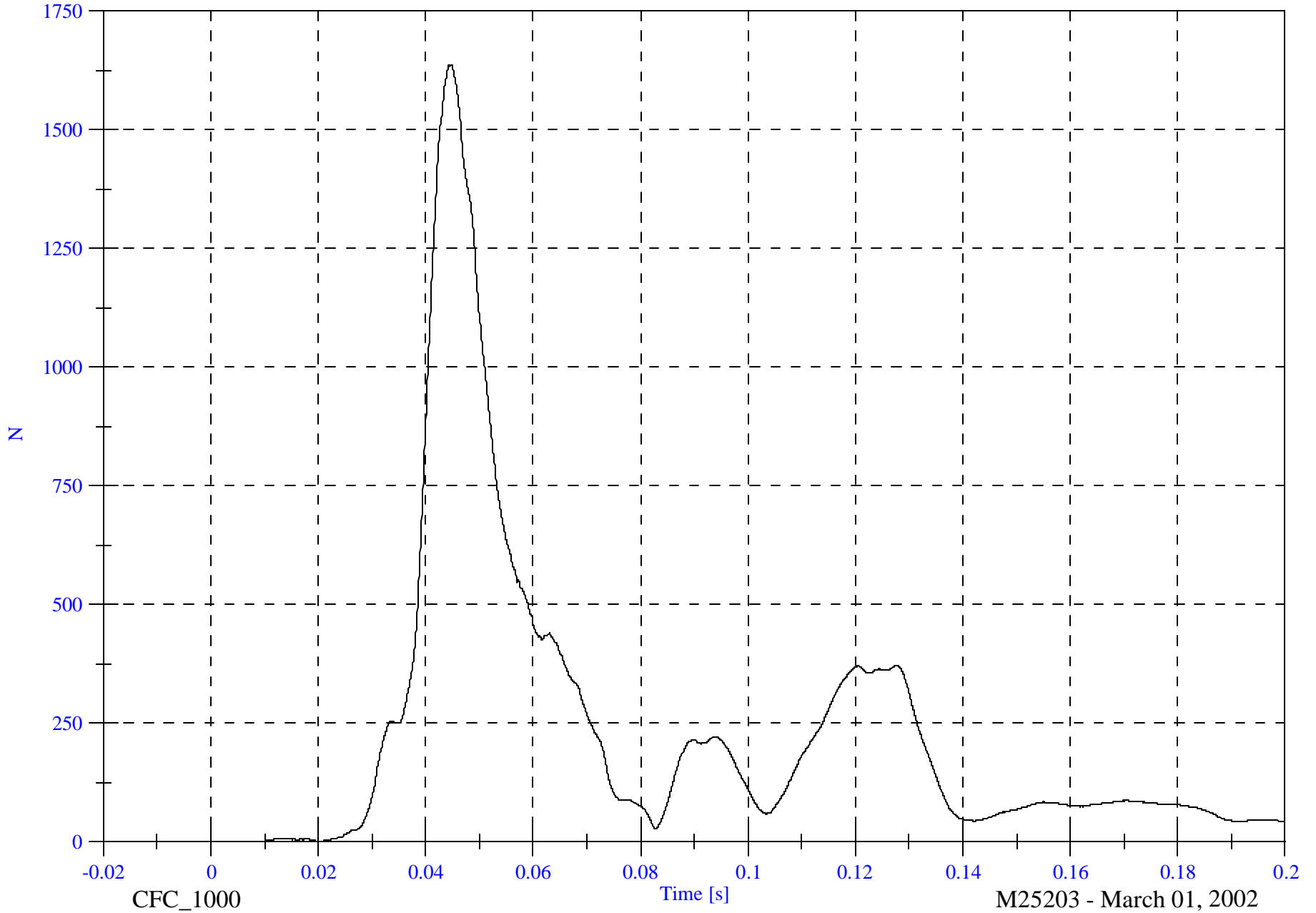
P4 Upper Neck F Resultant

Max: 1636.7 [N] at 0.045 [s]

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

4-47

8652-SNCAP-04



CFC_1000

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

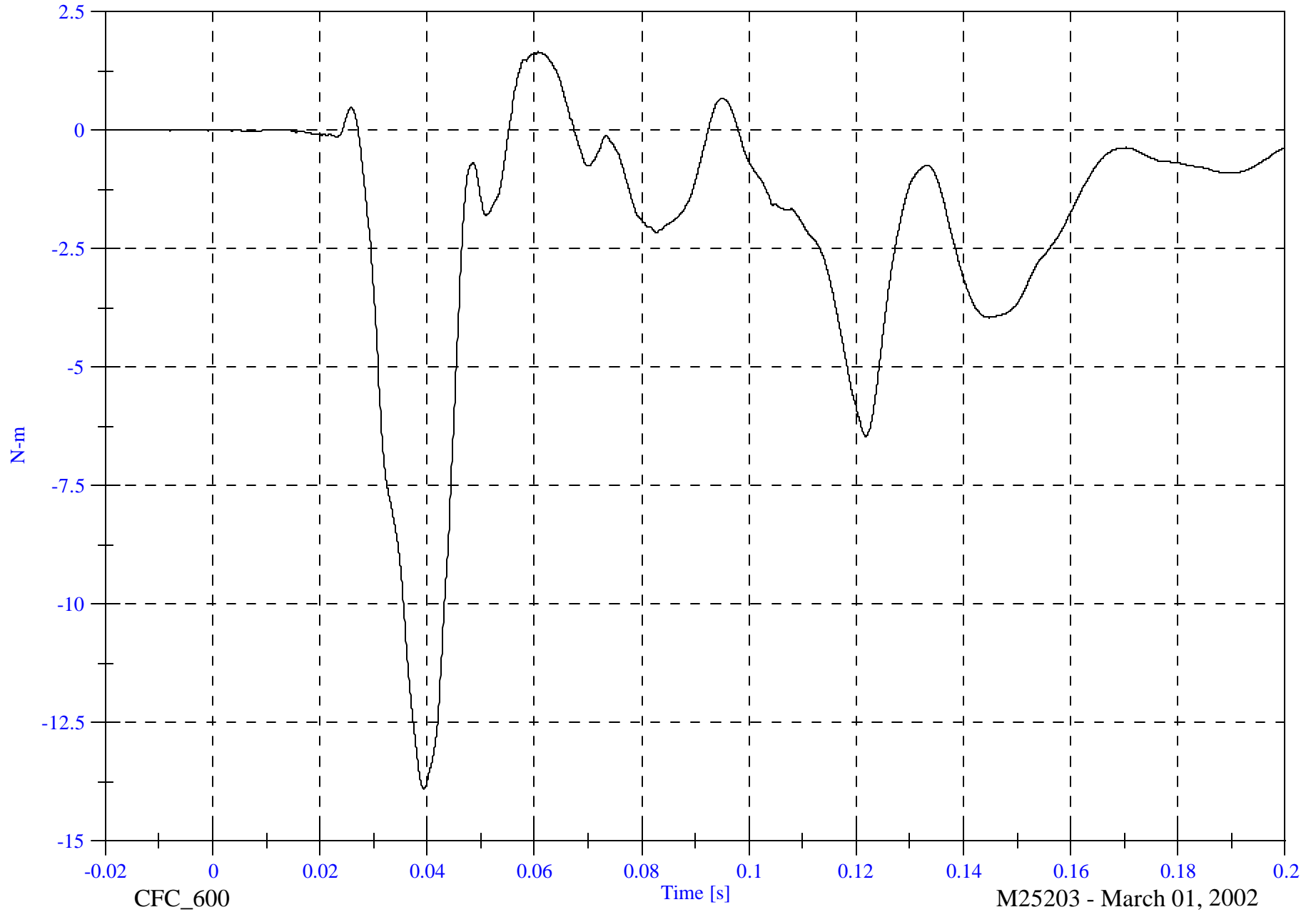
P4 Upper Neck Mx

Max: 1.7 [N-m] at 0.061 [s]

Min: -13.9 [N-m] at 0.039 [s]

4-48

8652-SNCAP-04



CFC_600

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

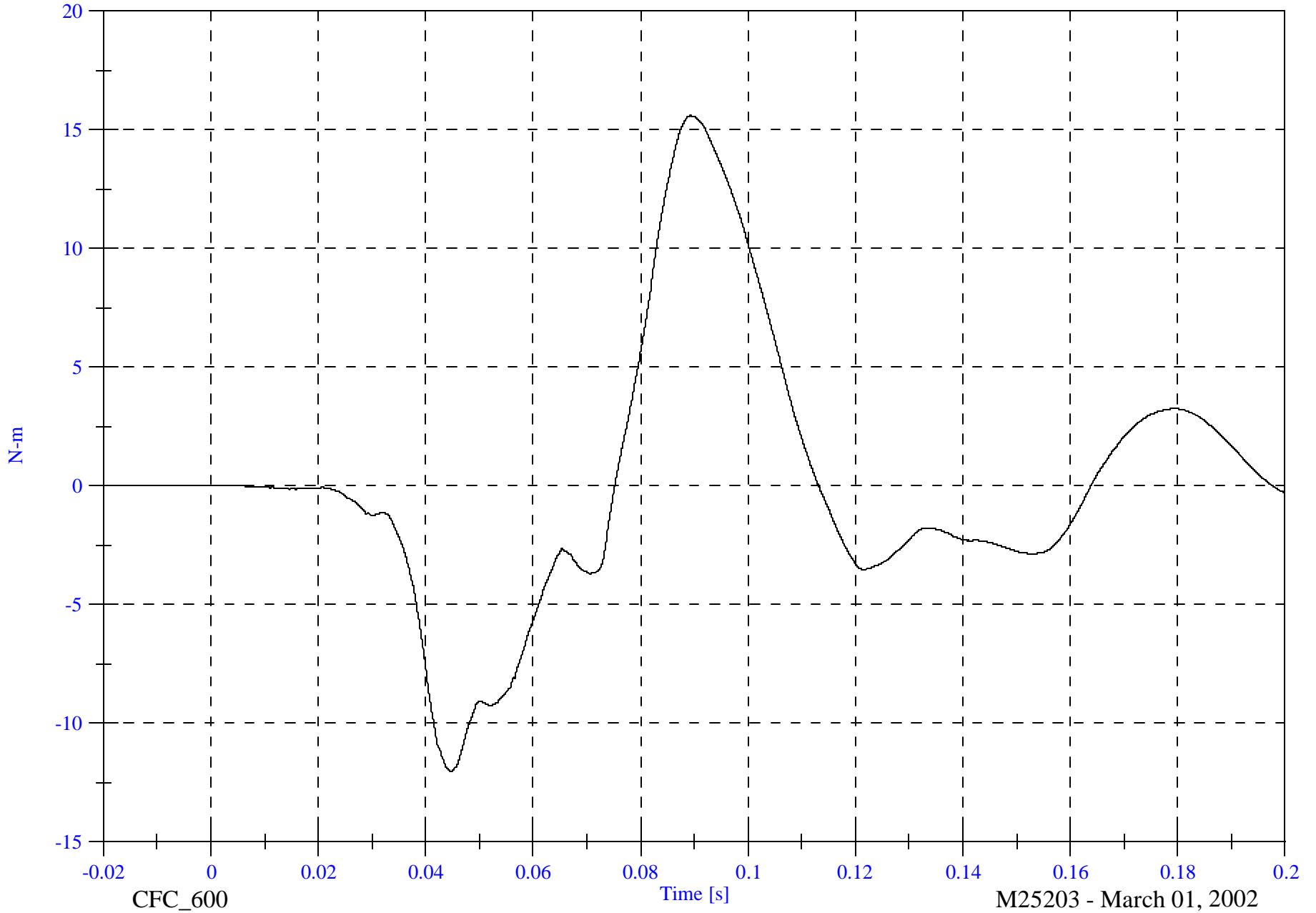
P4 Upper Neck My

Max: 15.6 [N-m] at 0.089 [s]

Min: -12.0 [N-m] at 0.045 [s]

4-49

8652-SNCAP-04



SNCAP #4 - 2002 Nissan Sentra

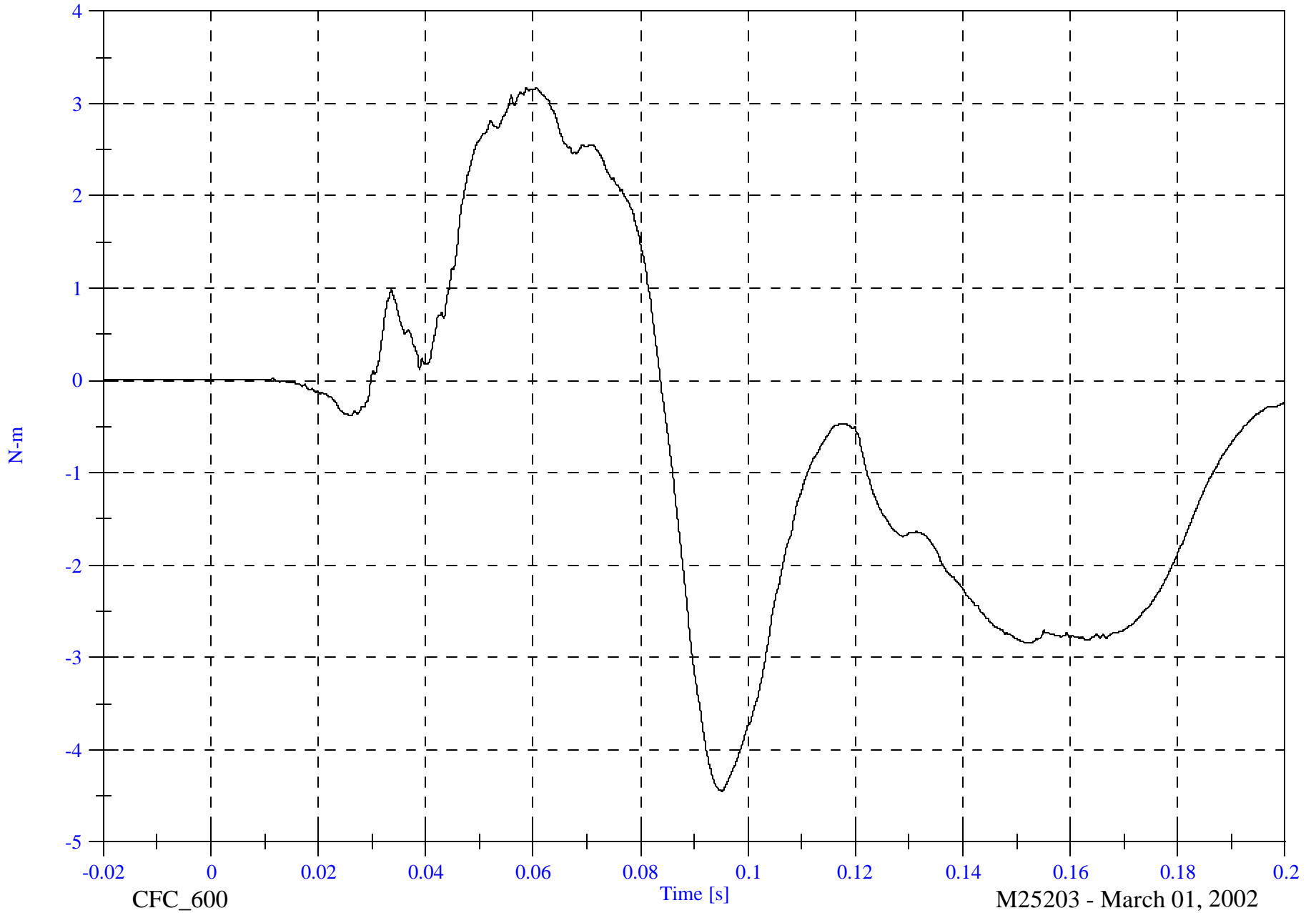
P4 Upper Neck Mz

Max: 3.2 [N-m] at 0.061 [s]

Min: -4.4 [N-m] at 0.095 [s]

4-50

8652-SNCAP-04



CFC_600

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

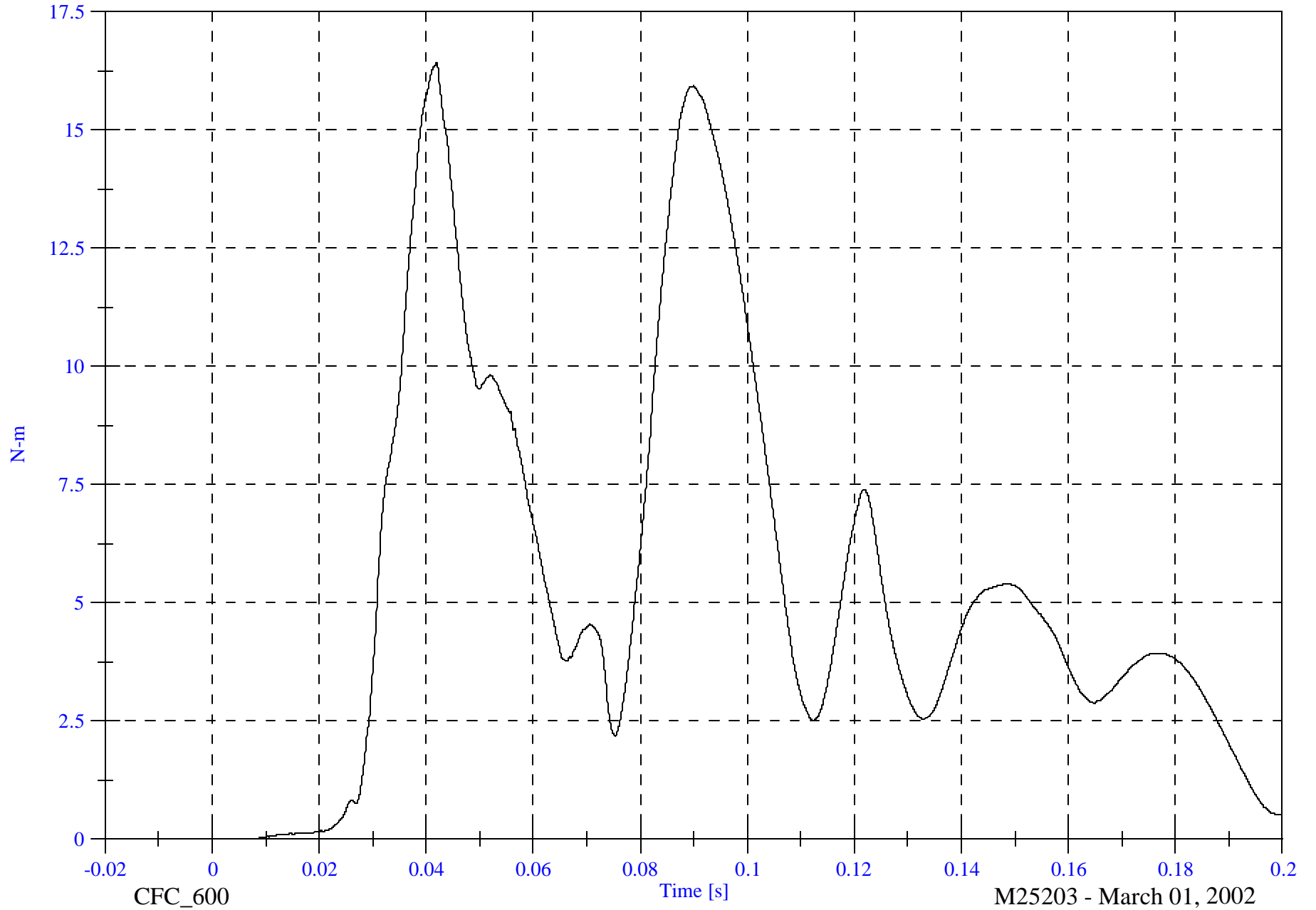
P4 Upper Neck M Resultant

Max: 16.4 [N-m] at 0.042 [s]

Min: 0.0 [N-m] at -0.017 [s]

4-51

8652-SNCAP-04



CFC_600

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

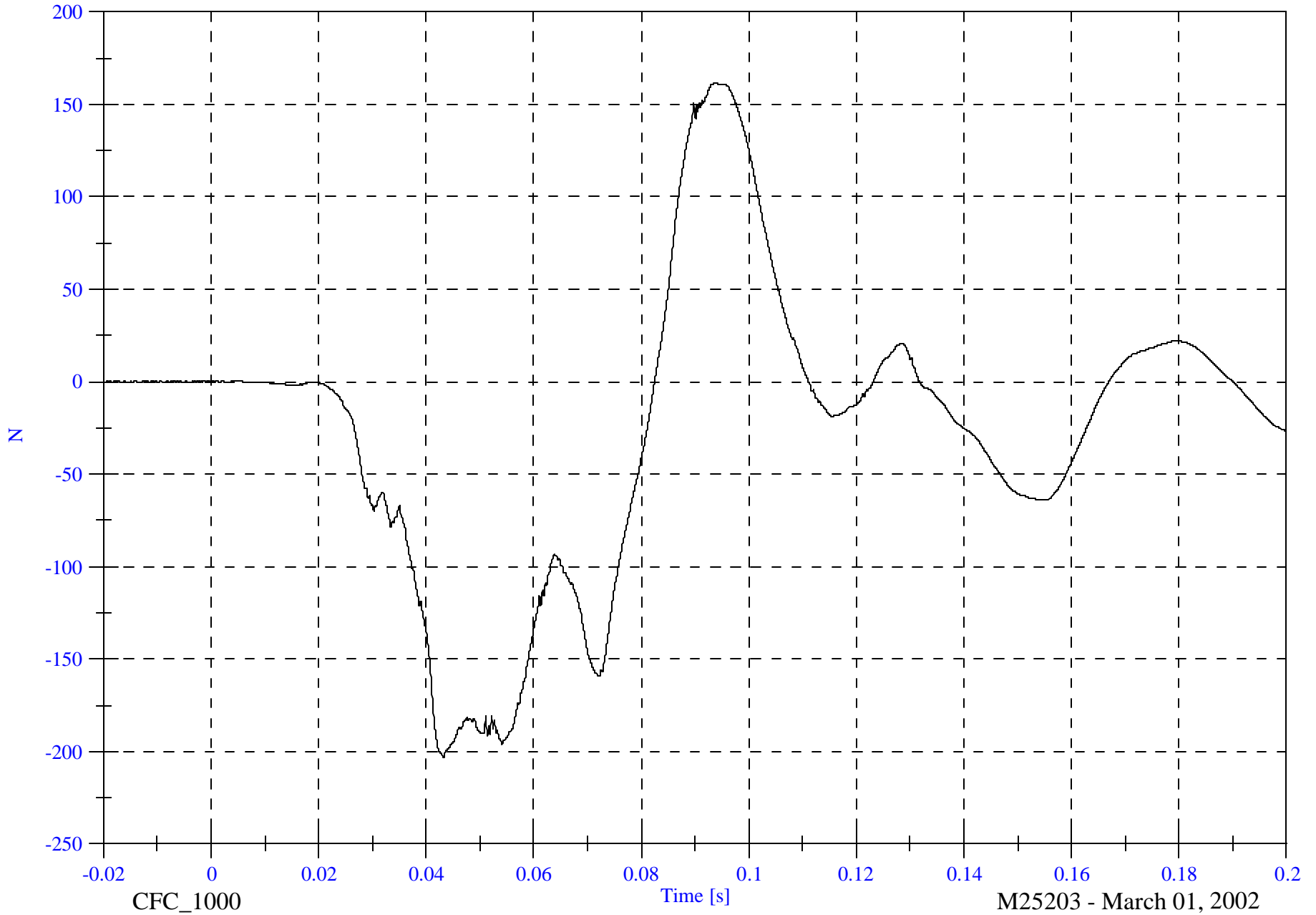
P4 Lower Neck Fx

Max: 161.5 [N] at 0.093 [s]

Min: -203.3 [N] at 0.043 [s]

4-52

8652-SNCAP-04



SNCAP #4 - 2002 Nissan Sentra

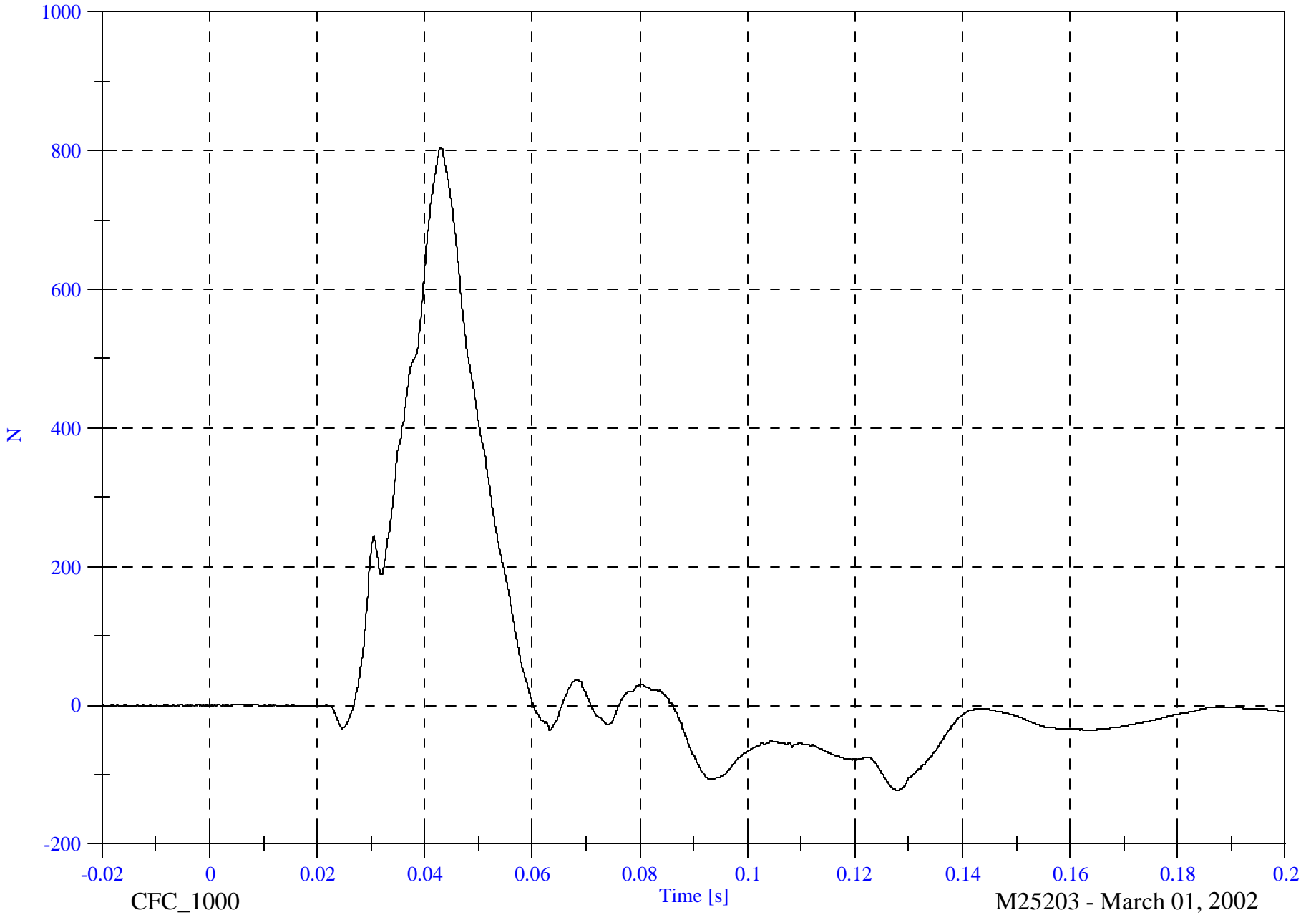
P4 Lower Neck Fy

Max: 804.3 [N] at 0.043 [s]

Min: -121.8 [N] at 0.128 [s]

4-53

8652-SNCAP-04



CFC_1000

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

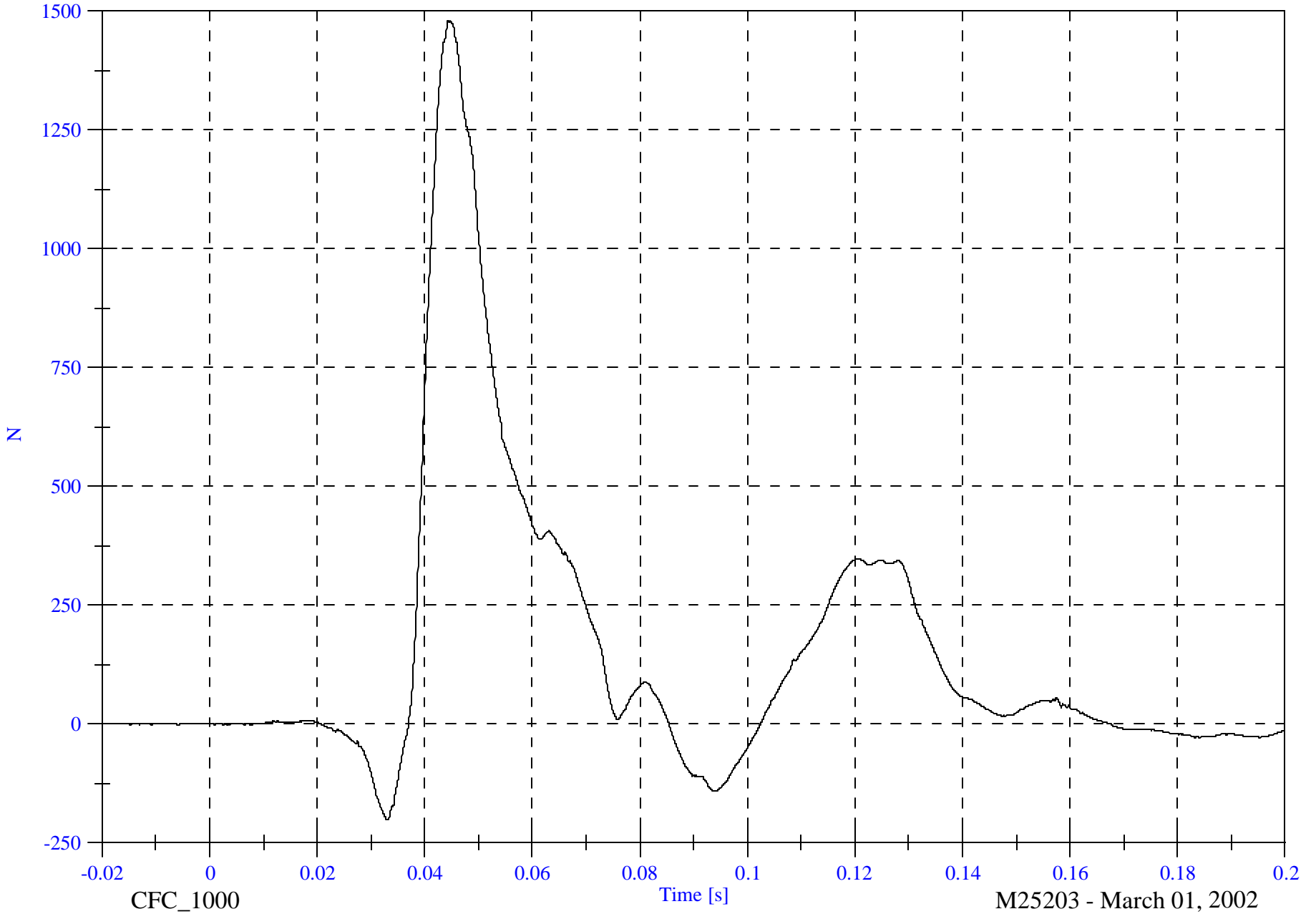
P4 Lower Neck Fz

Max: 1479.5 [N] at 0.044 [s]

Min: -201.7 [N] at 0.033 [s]

4-54

8652-SNCAP-04



CFC_1000

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

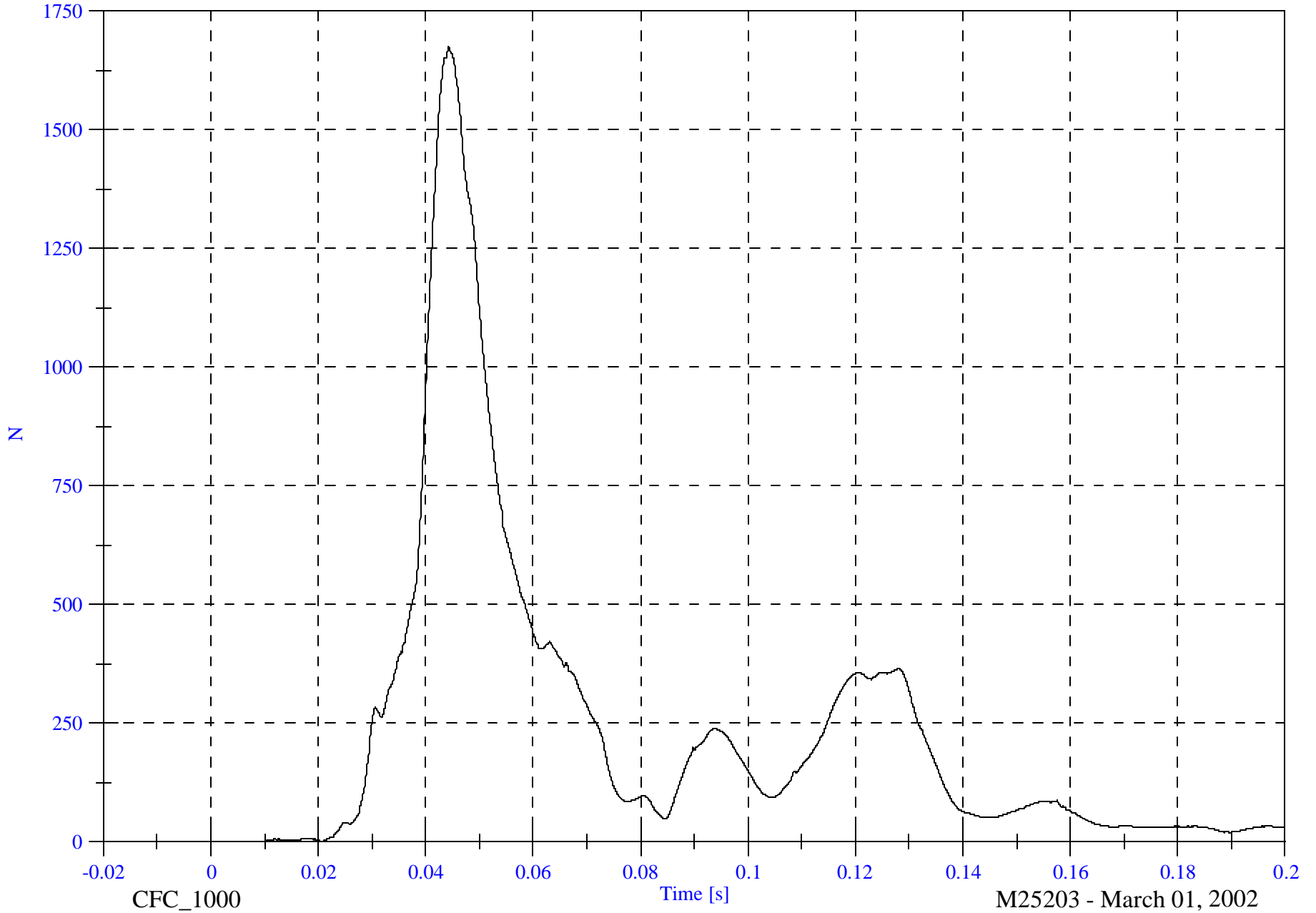
P4 Lower Neck F Resultant

Max: 1674.4 [N] at 0.044 [s]

Min: 0.0 [N] at -0.009 [s]

4-55

8652-SNCAP-04



SNCAP #4 - 2002 Nissan Sentra

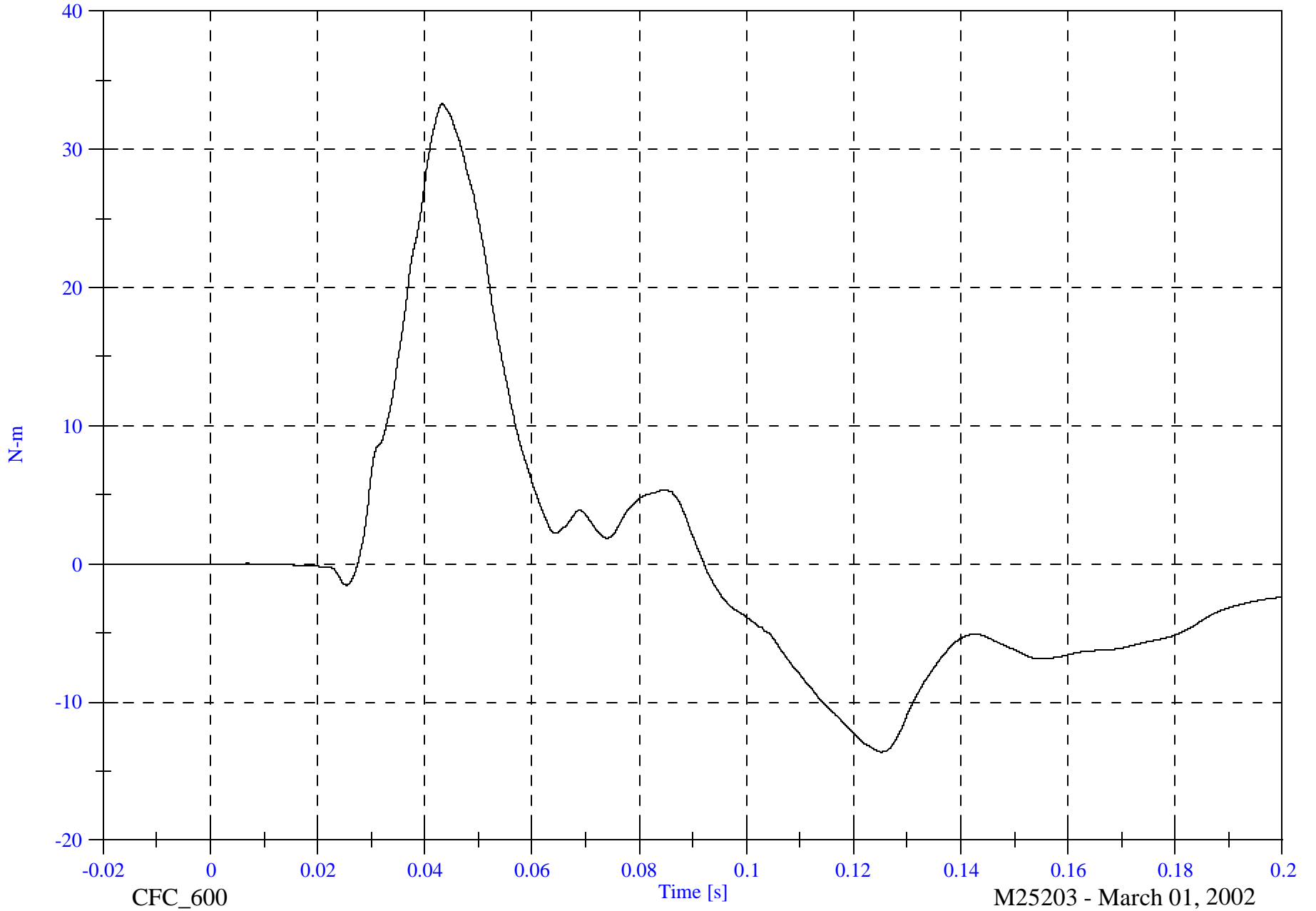
P4 Lower Neck Mx

Max: 33.3 [N-m] at 0.043 [s]

Min: -13.6 [N-m] at 0.125 [s]

4-56

8652-SNCAP-04



SNCAP #4 - 2002 Nissan Sentra

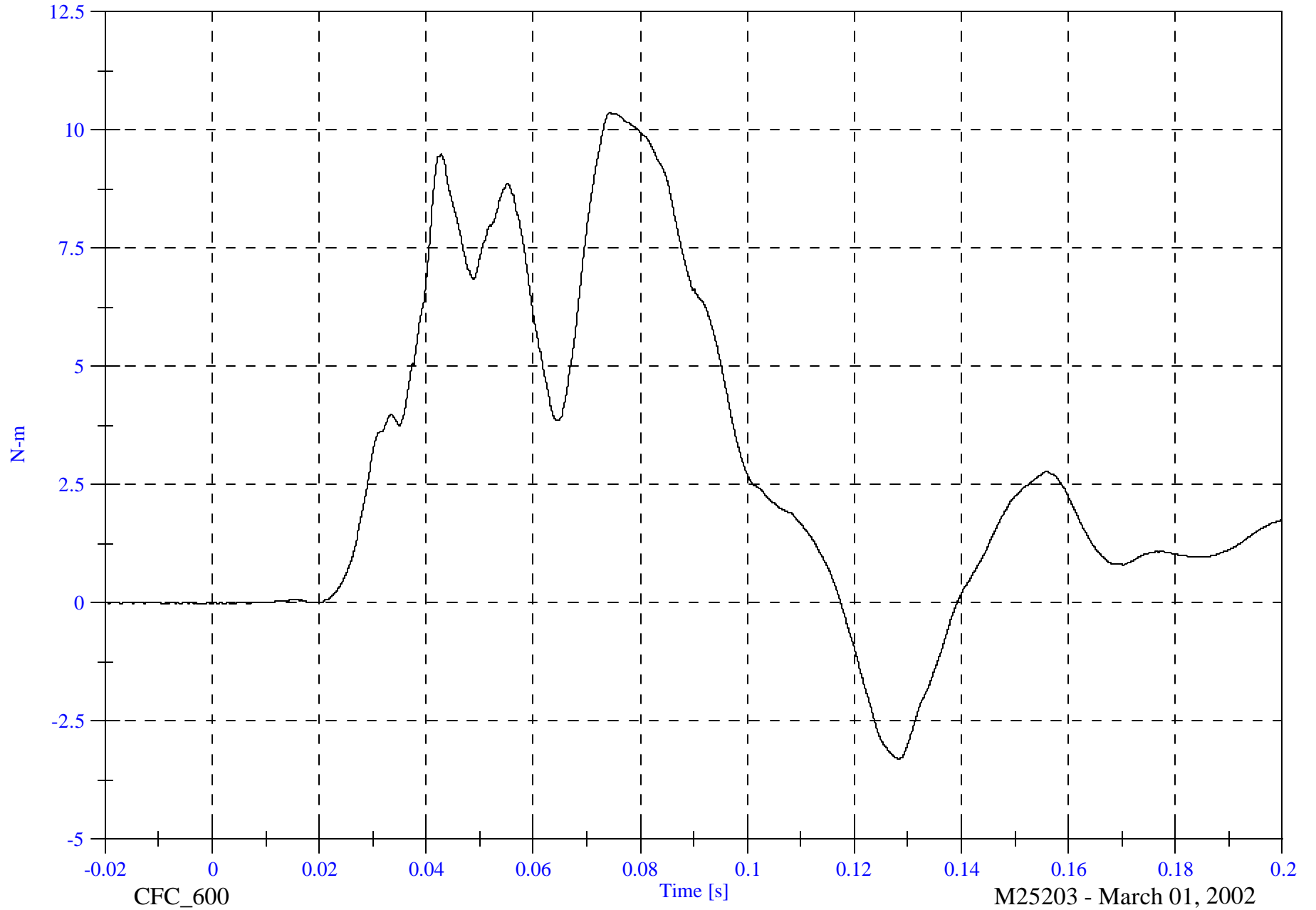
P4 Lower Neck My

Max: 10.4 [N-m] at 0.074 [s]

Min: -3.3 [N-m] at 0.128 [s]

4-57

8652-SNCAP-04



SNCAP #4 - 2002 Nissan Sentra

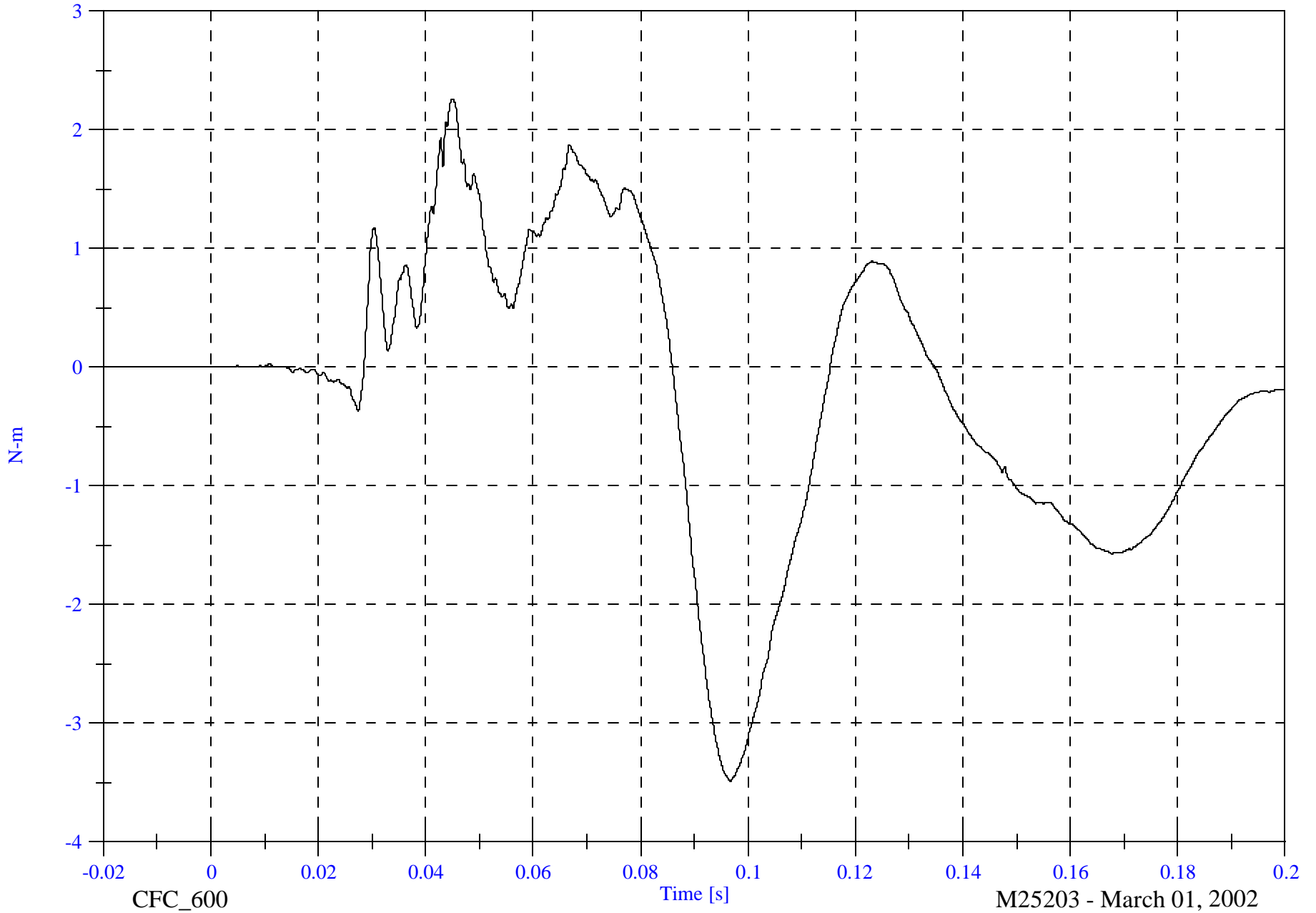
P4 Lower Neck Mz

Max: 2.3 [N-m] at 0.045 [s]

Min: -3.5 [N-m] at 0.097 [s]

4-58

8652-SNCAP-04



CFC_600

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

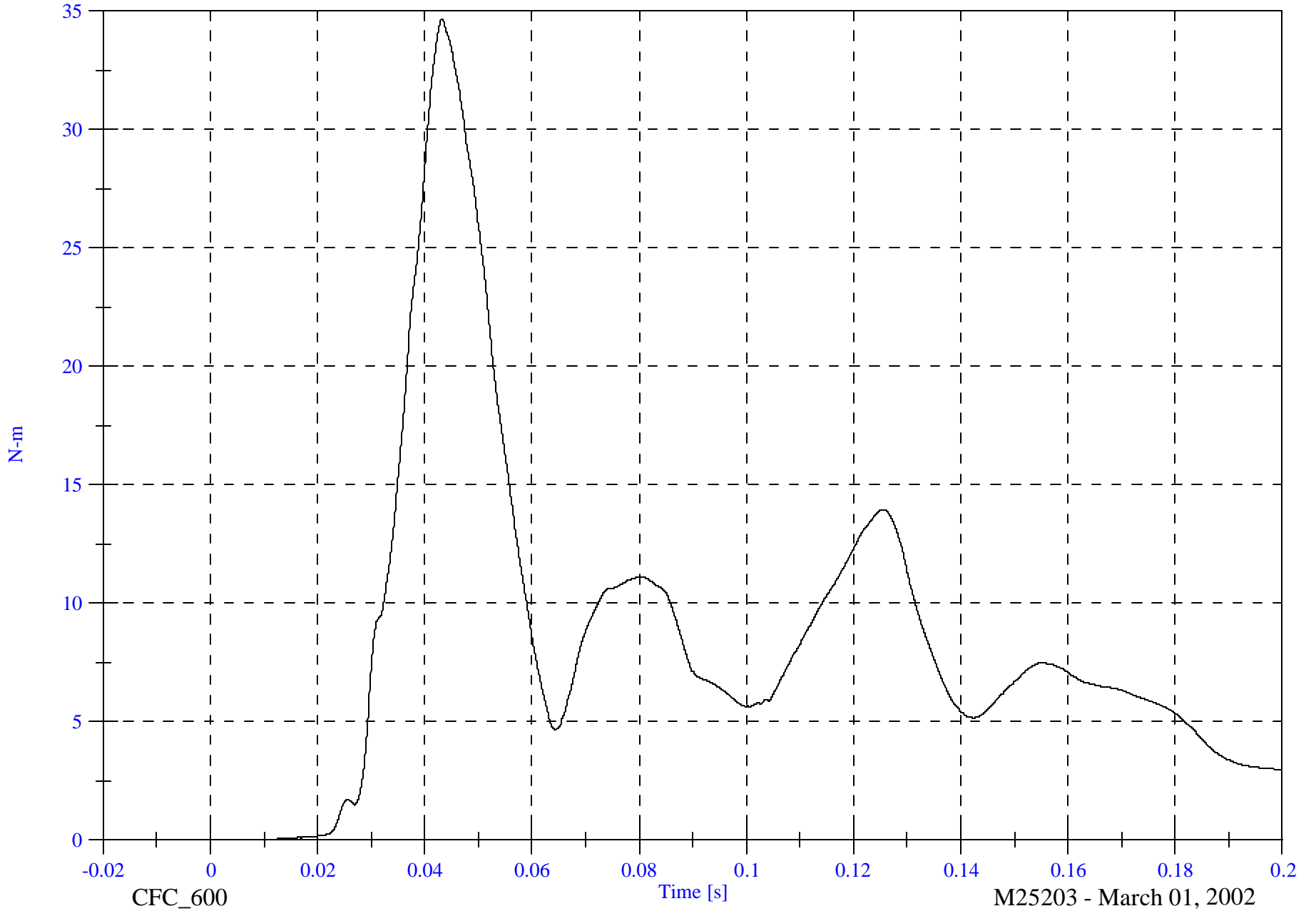
P4 Lower Neck M Resultant

Max: 34.7 [N-m] at 0.043 [s]

Min: 0.0 [N-m] at -0.020 [s]

4-59

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CFC_600

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

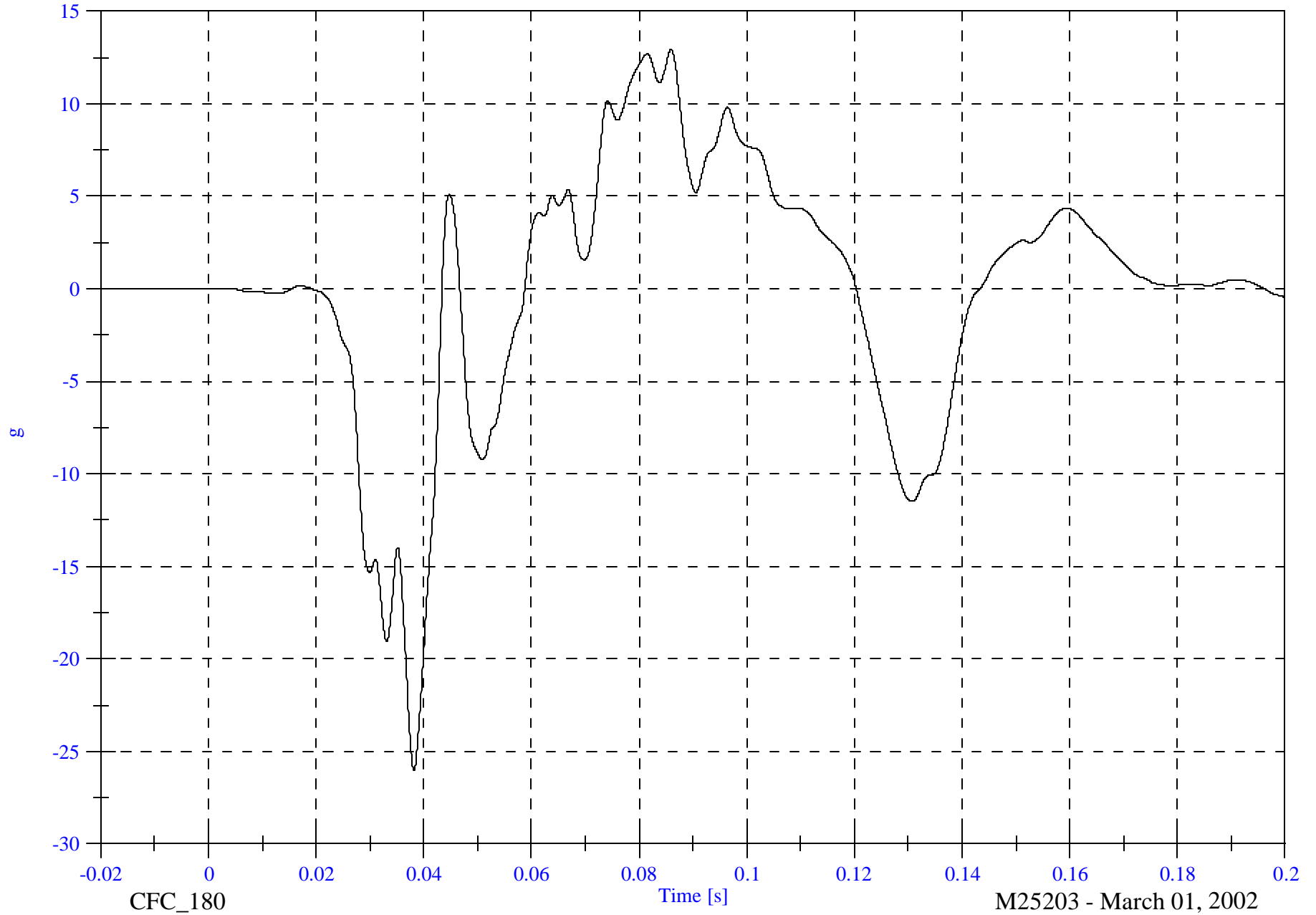
Max: 12.9 [g] at 0.086 [s]

Min: -26.0 [g] at 0.038 [s]

P4 Chest x

4-60

8652-SNCAP-04



CFC_180

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

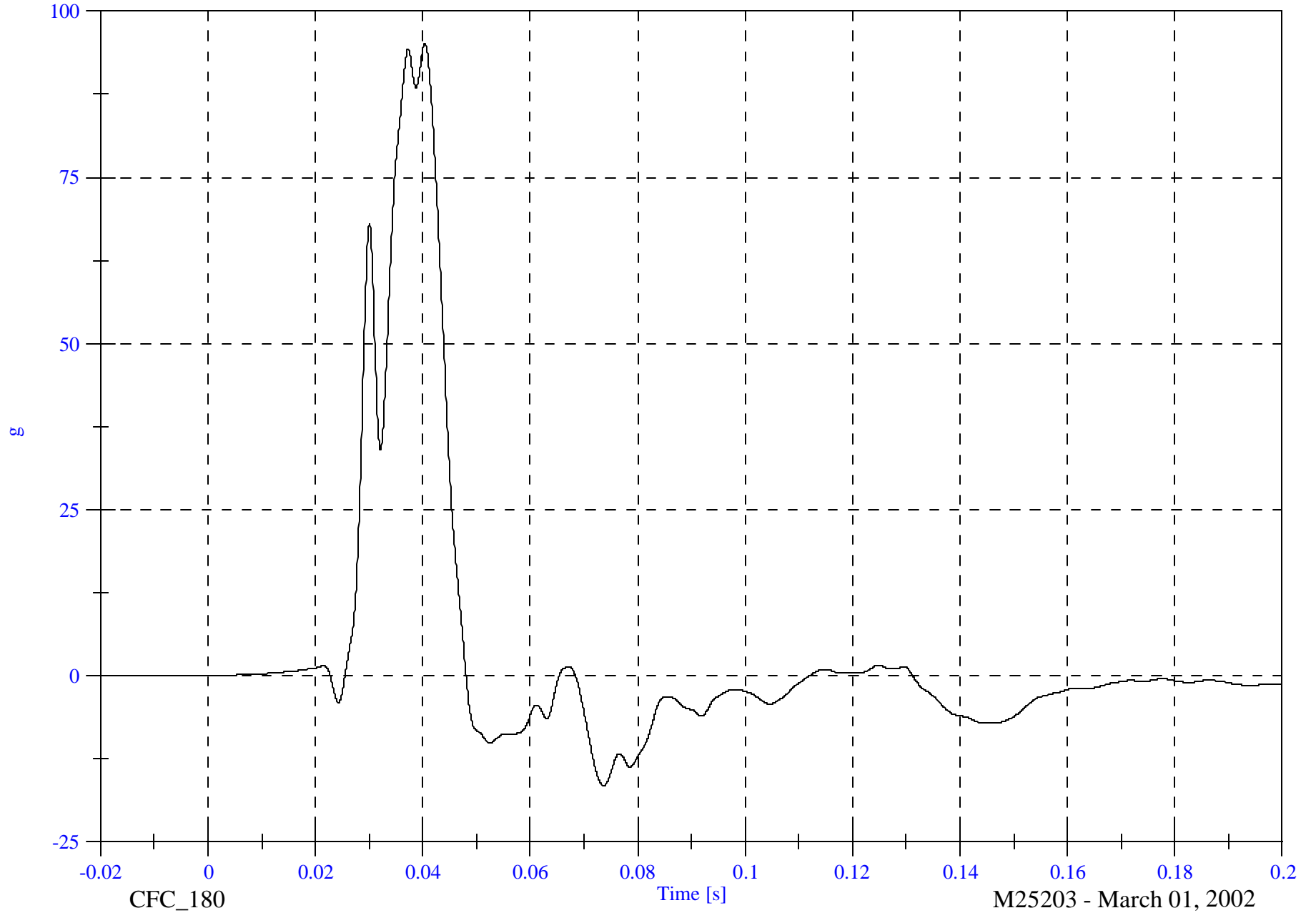
P4 Chest y

Max: 95.2 [g] at 0.040 [s]

Min: -16.5 [g] at 0.074 [s]

4-61

8652-SNCAP-04



SNCAP #4 - 2002 Nissan Sentra

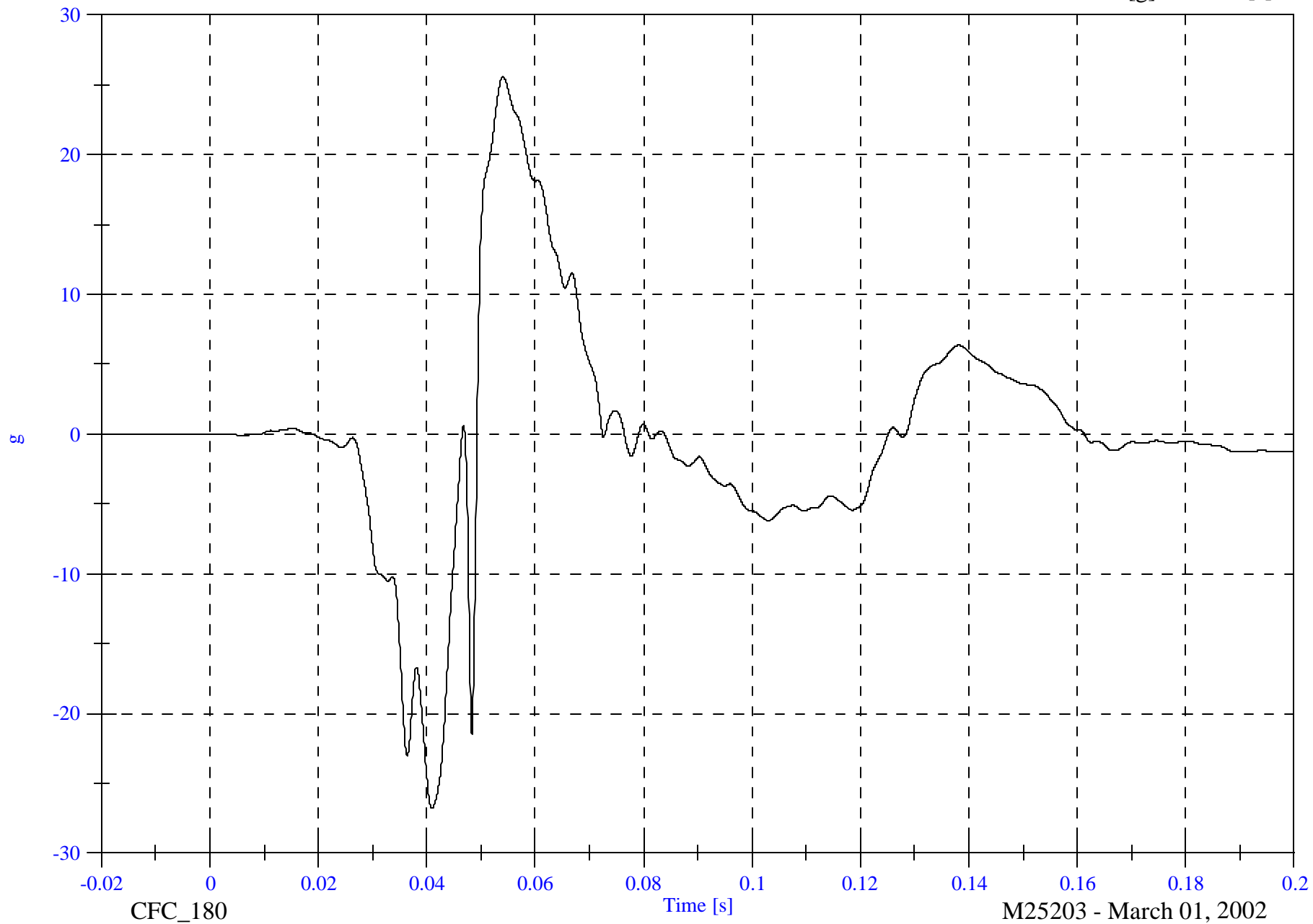
P4 Chest z

Max: 25.6 [g] at 0.054 [s]

Min: -26.8 [g] at 0.041 [s]

4-62

8652-SNCAP-04



CFC_180

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

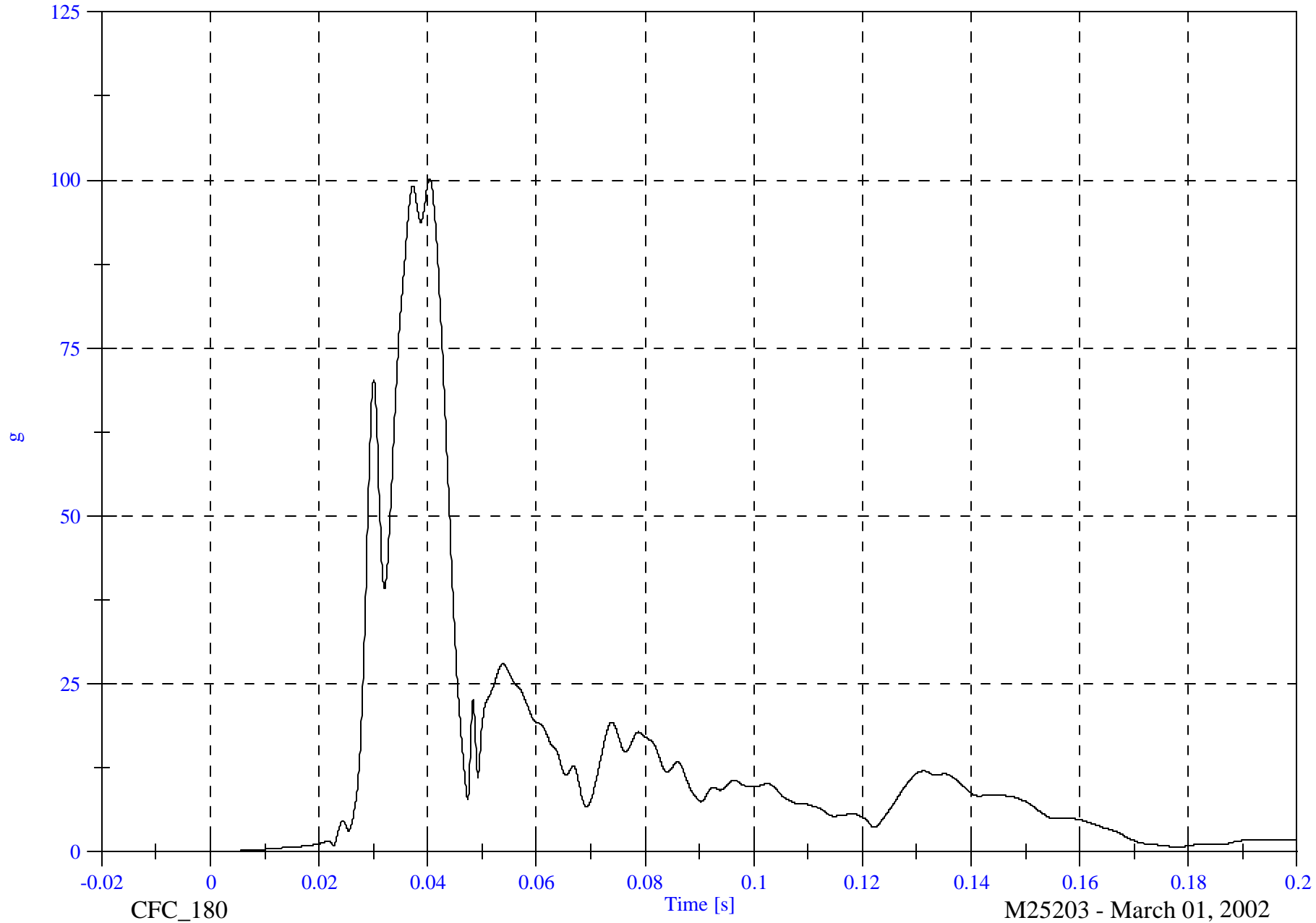
P4 Chest Resultant

Max: 100.2 [g] at 0.040 [s]

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

4-63

8652-SNCAP-04

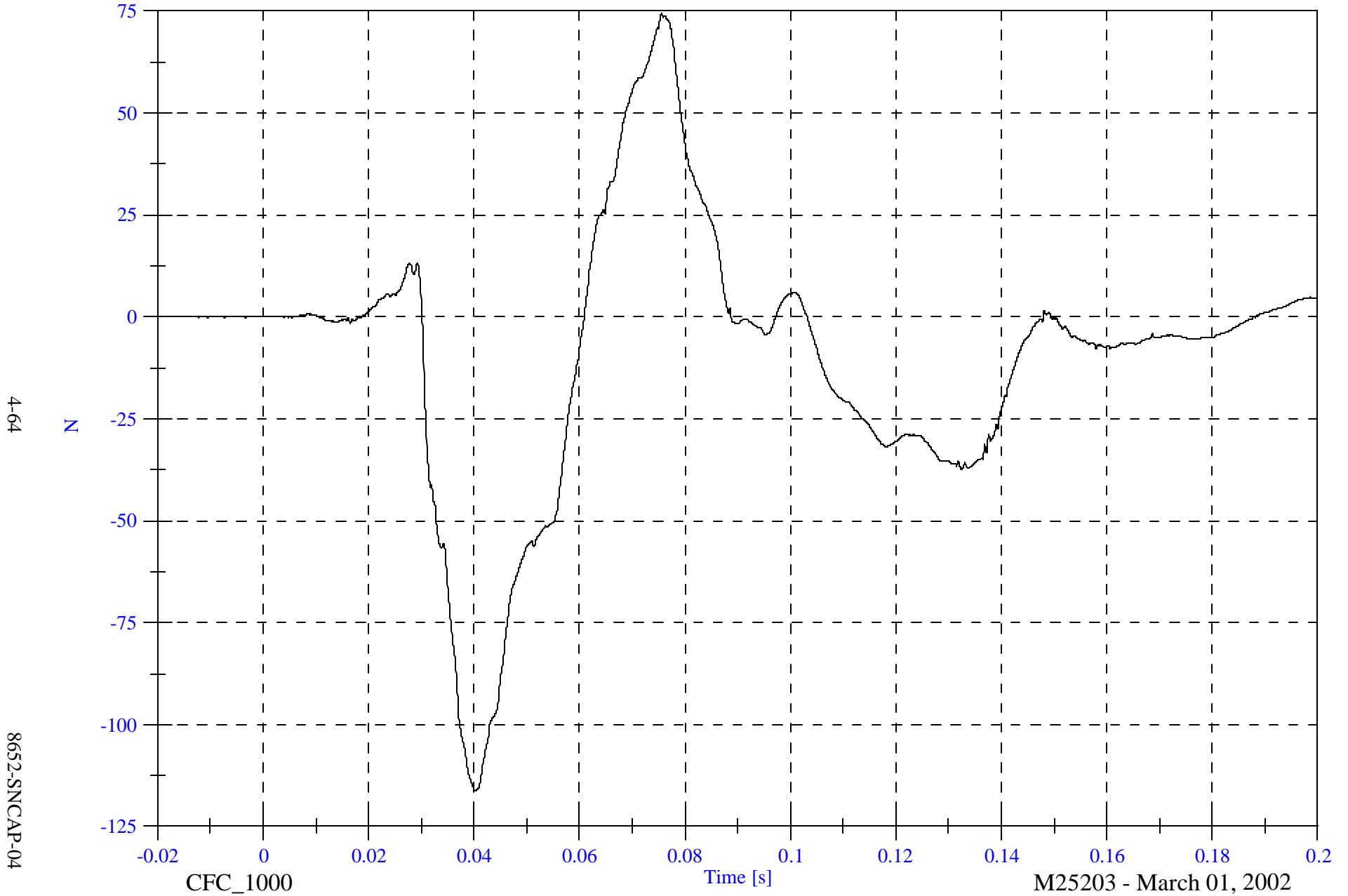


SNCAP #4 - 2002 Nissan Sentra

Max: 74.3 [N] at 0.076 [s]

Min: -116.2 [N] at 0.040 [s]

P4 Lumbar Fx



4-64

N

8652-SNCAP-04

CFC_1000

Time [s]

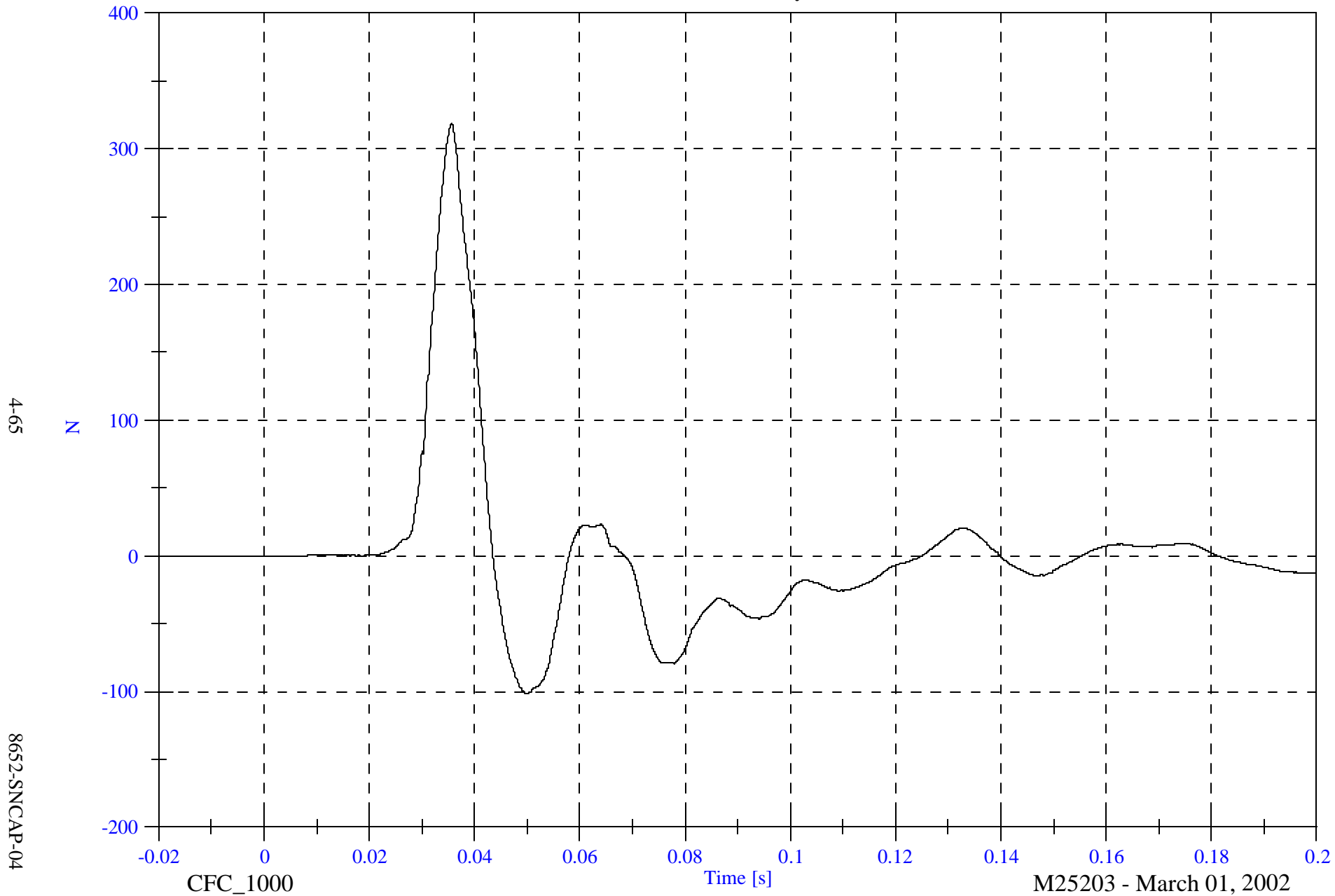
M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

P4 Lumbar Fy

Max: 318.4 [N] at 0.036 [s]

Min: -101.7 [N] at 0.050 [s]



4-65

8652-SNCAP-04

CFC_1000

Time [s]

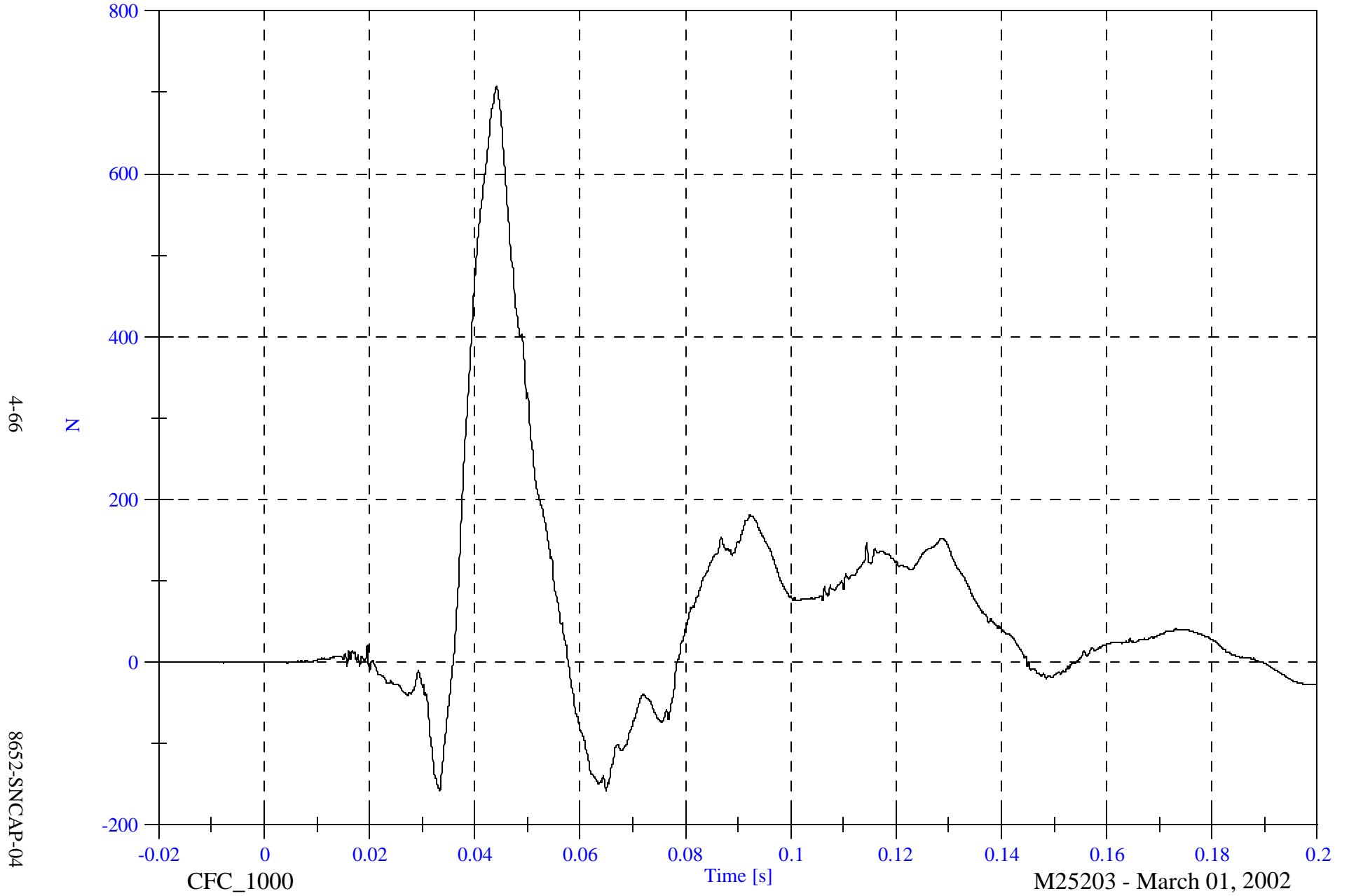
M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

P4 Lumbar Fz

Max: 708.1 [N] at 0.044 [s]

Min: -158.2 [N] at 0.065 [s]



4-66

8652-SNCAP-04

CFC_1000

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

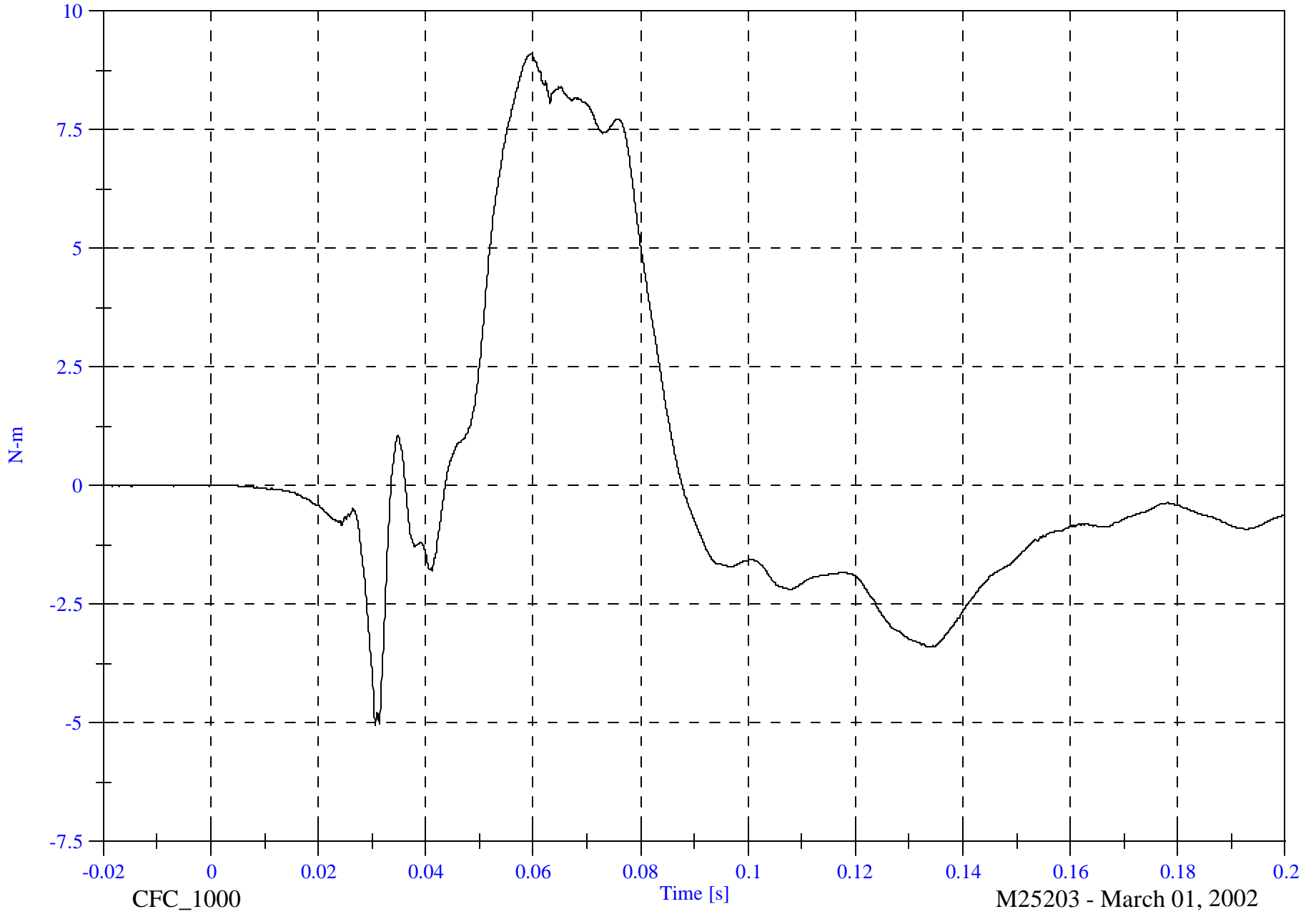
P4 Lumbar Mx

Max: 9.1 [N-m] at 0.060 [s]

Min: -5.1 [N-m] at 0.031 [s]

4-67

8652-SNCAP-04



CFC_1000

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

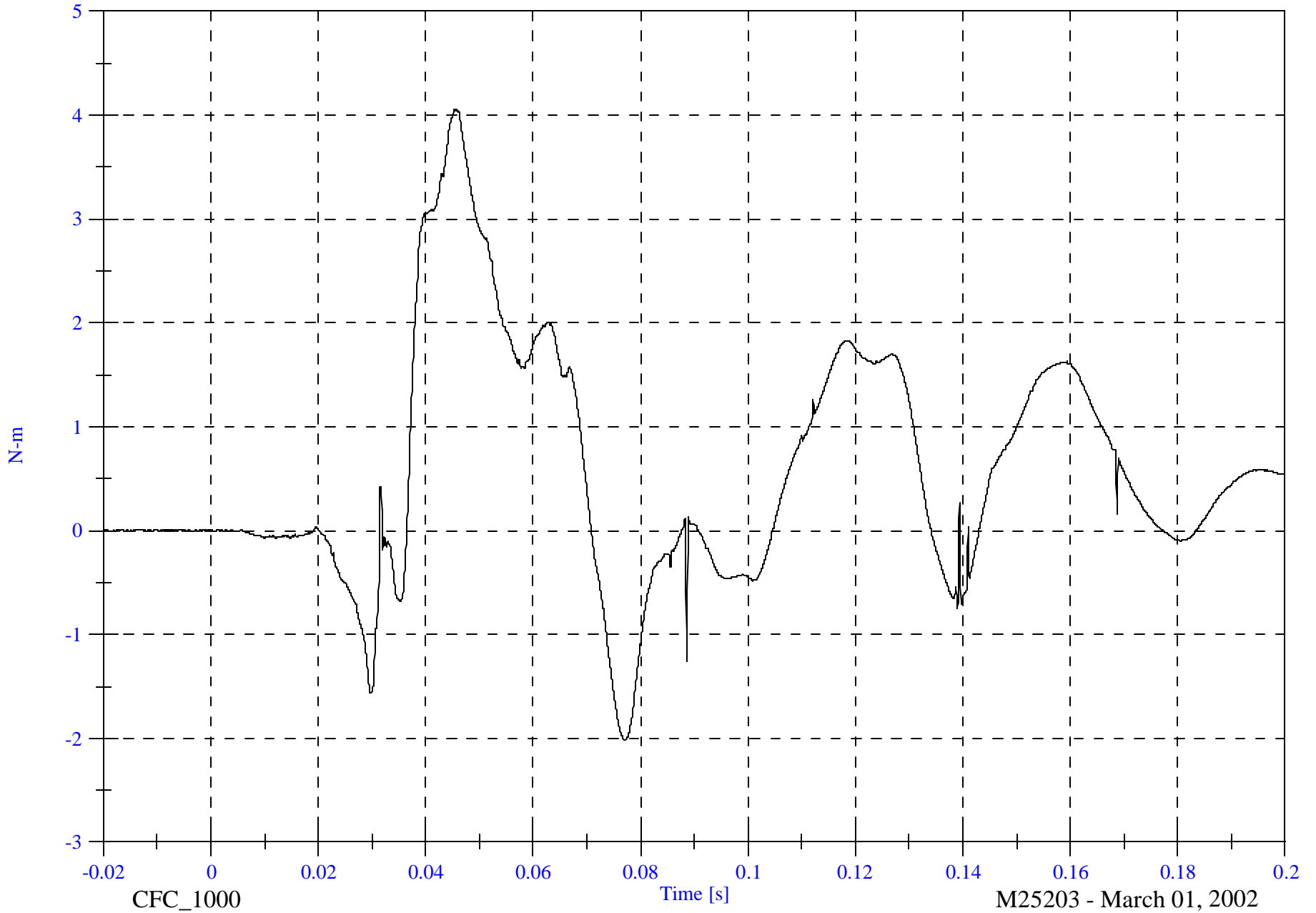
P4 Lumbar My

Max: 4.1 [N-m] at 0.046 [s]

Min: -2.0 [N-m] at 0.077 [s]

4-68

8652-SNCAP-04



CFC_1000

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

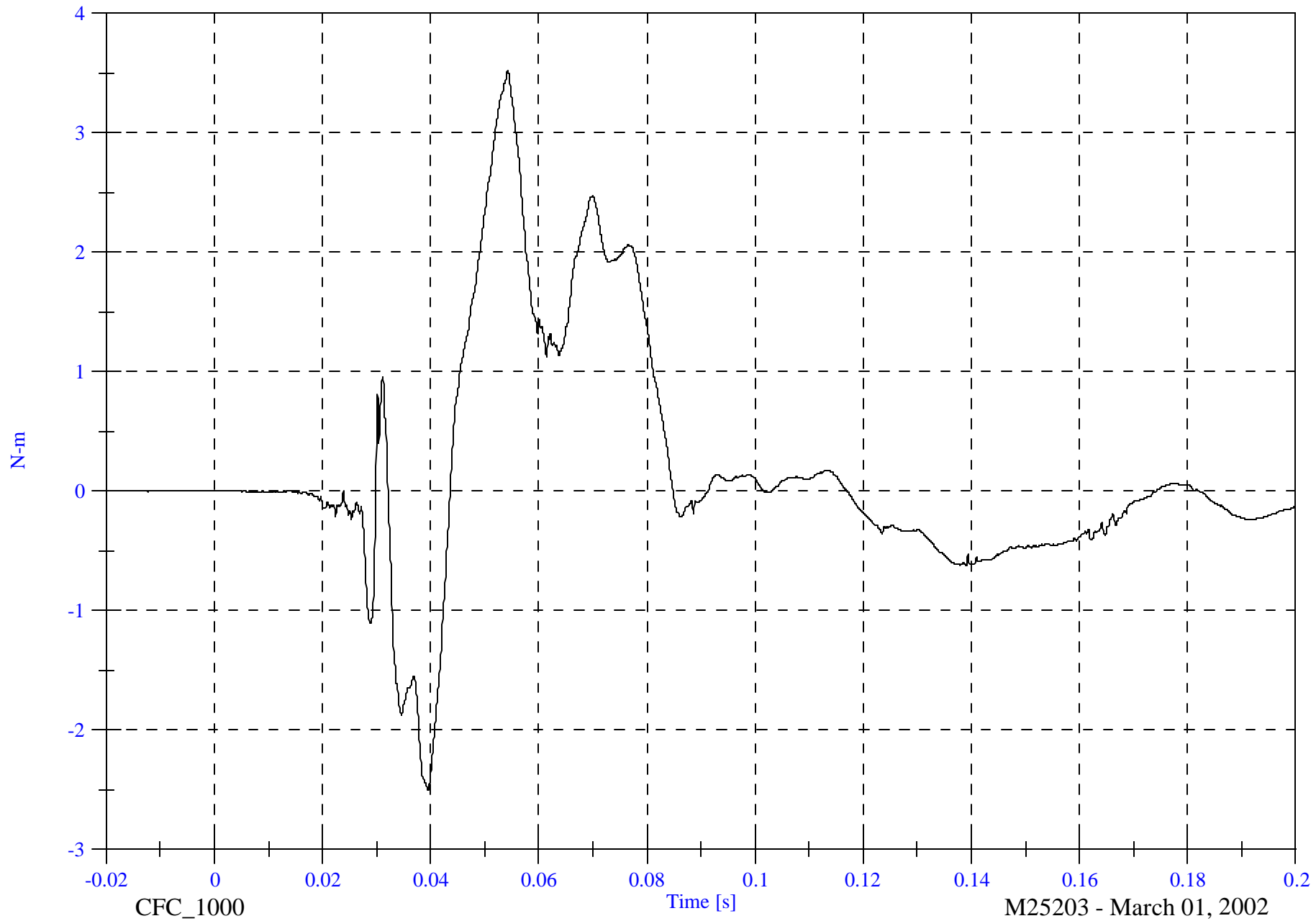
P4 Lumbar Mz

Max: 3.5 [N-m] at 0.054 [s]

Min: -2.5 [N-m] at 0.039 [s]

4-69

8652-SNCAP-04

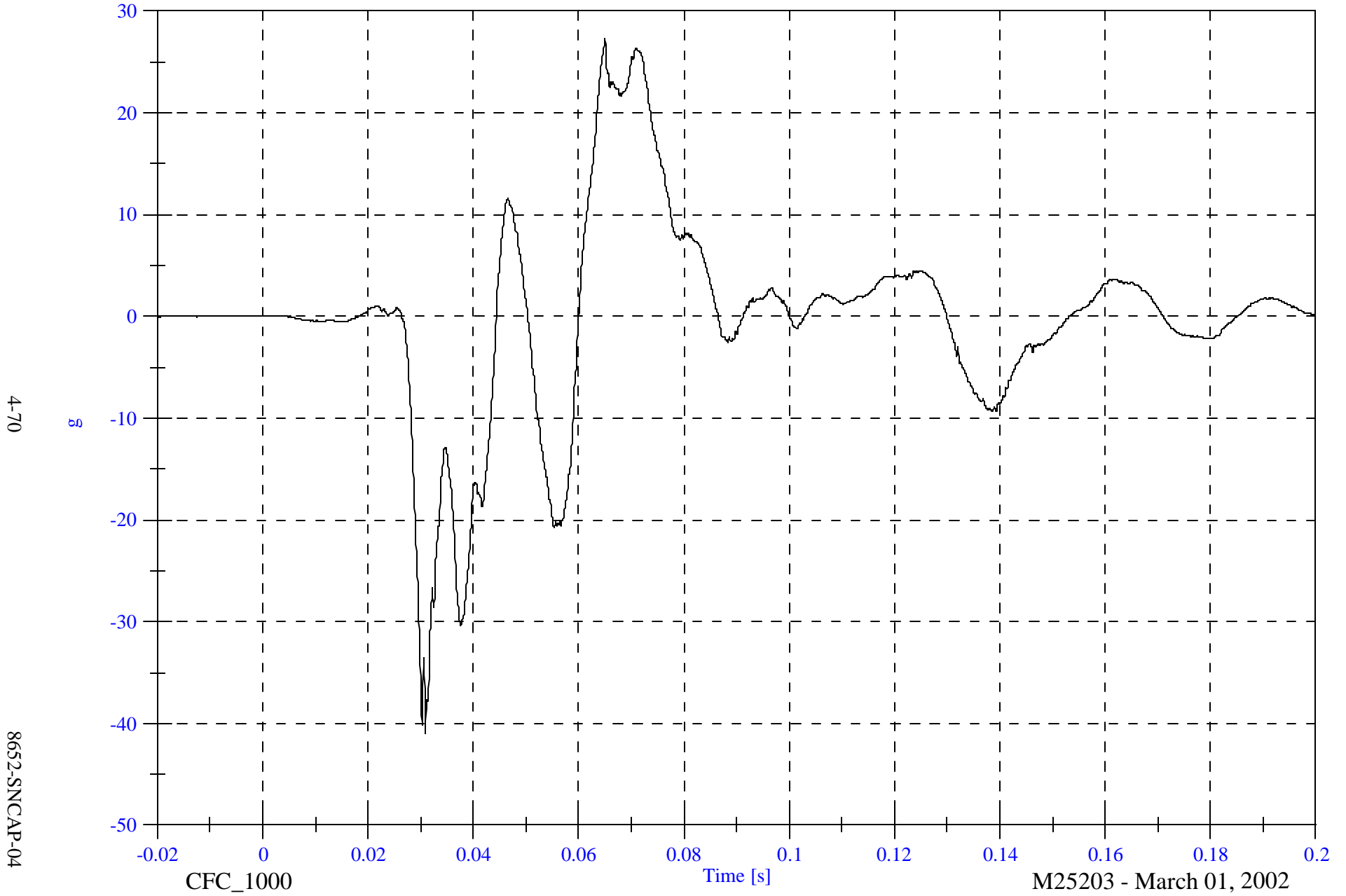


SNCAP #4 - 2002 Nissan Sentra

Max: 27.3 [g] at 0.065 [s]

Min: -41.0 [g] at 0.031 [s]

P4 Pelvic x



SNCAP #4 - 2002 Nissan Sentra

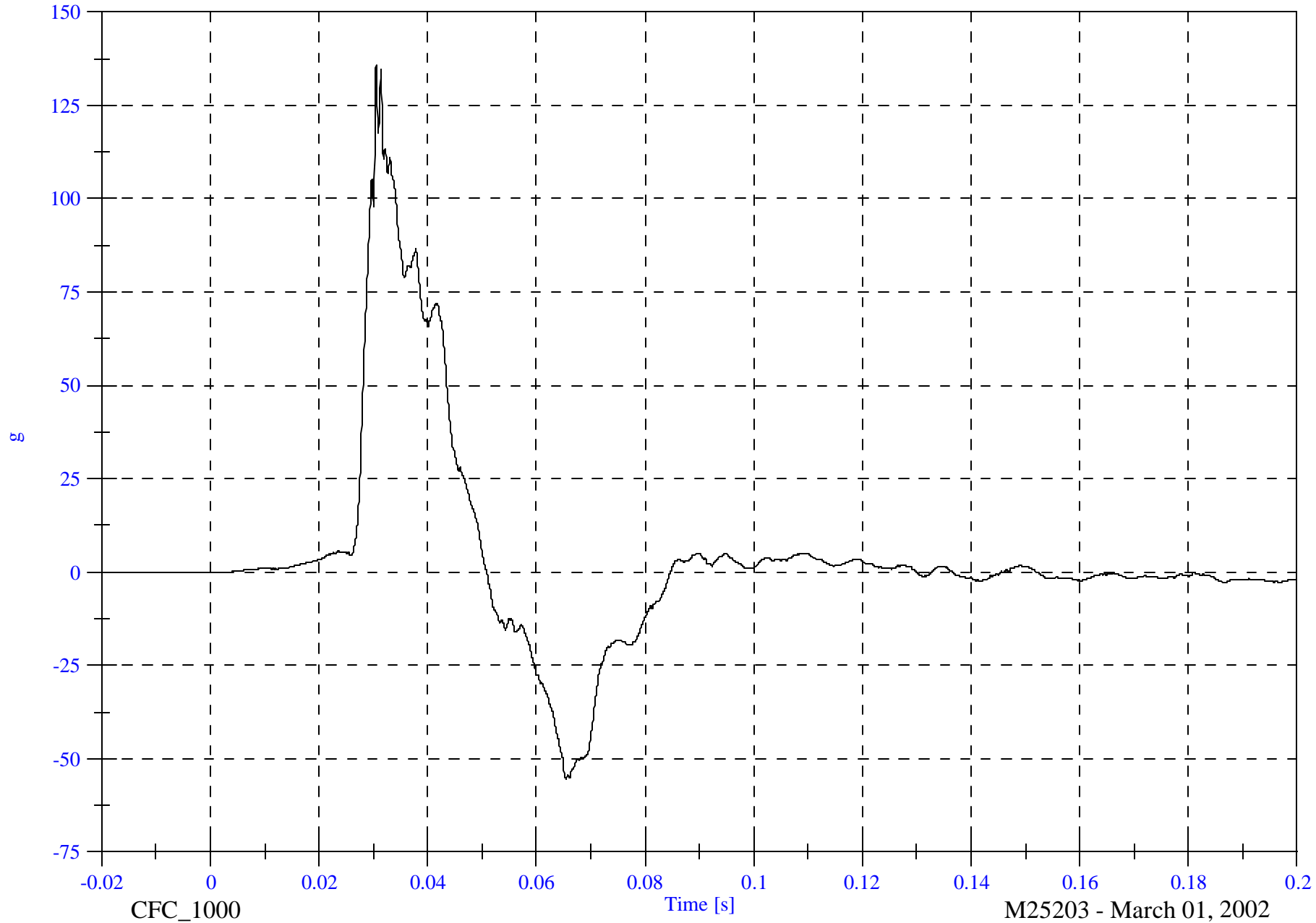
P4 Pelvic y

Max: 135.7 [g] at 0.031 [s]

Min: -55.3 [g] at 0.065 [s]

4-71

8652-SNCAP-04



CFC_1000

Time [s]

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SNCAP #4 - 2002 Nissan Sentra

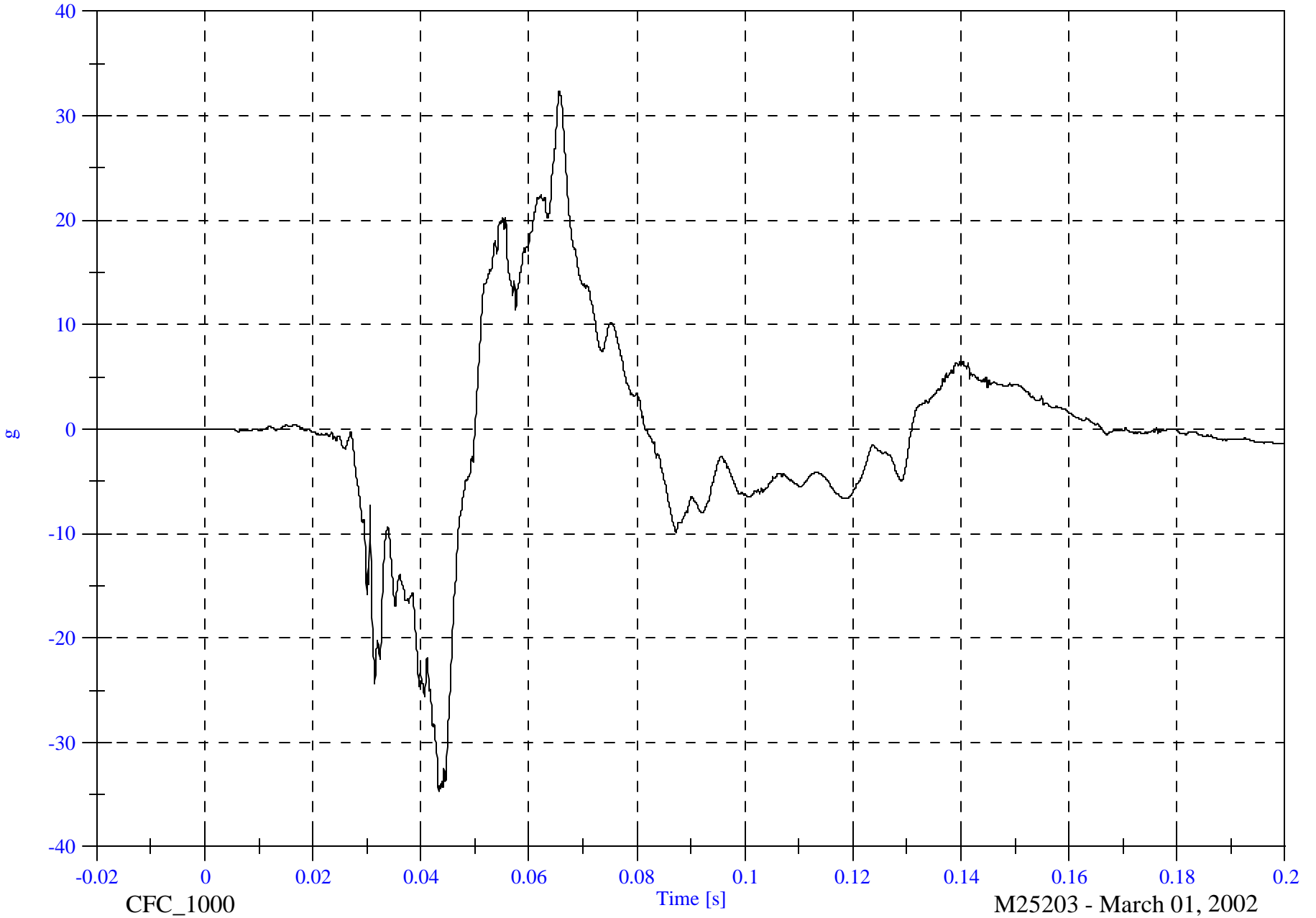
Max: 32.4 [g] at 0.066 [s]

P4 Pelvic z

Min: -34.6 [g] at 0.043 [s]

4-72

8652-SNCAP-04



CFC_1000

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

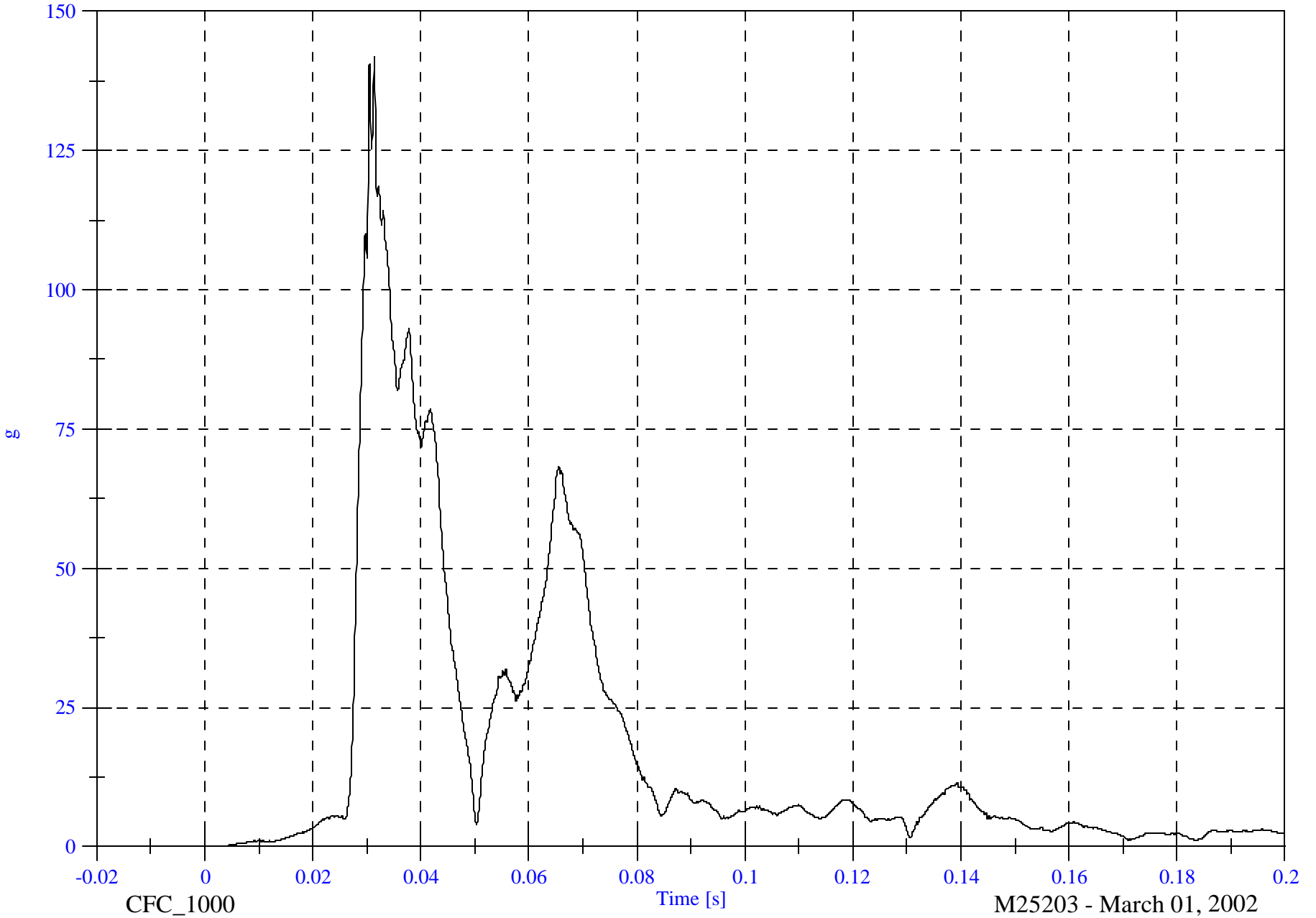
P4 Pelvic Resultant

Max: 141.8 [g] at 0.031 [s]

Min: 0.0 [g] at -0.010 [s]

4-73

8652-SNCAP-04



CFC_1000

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

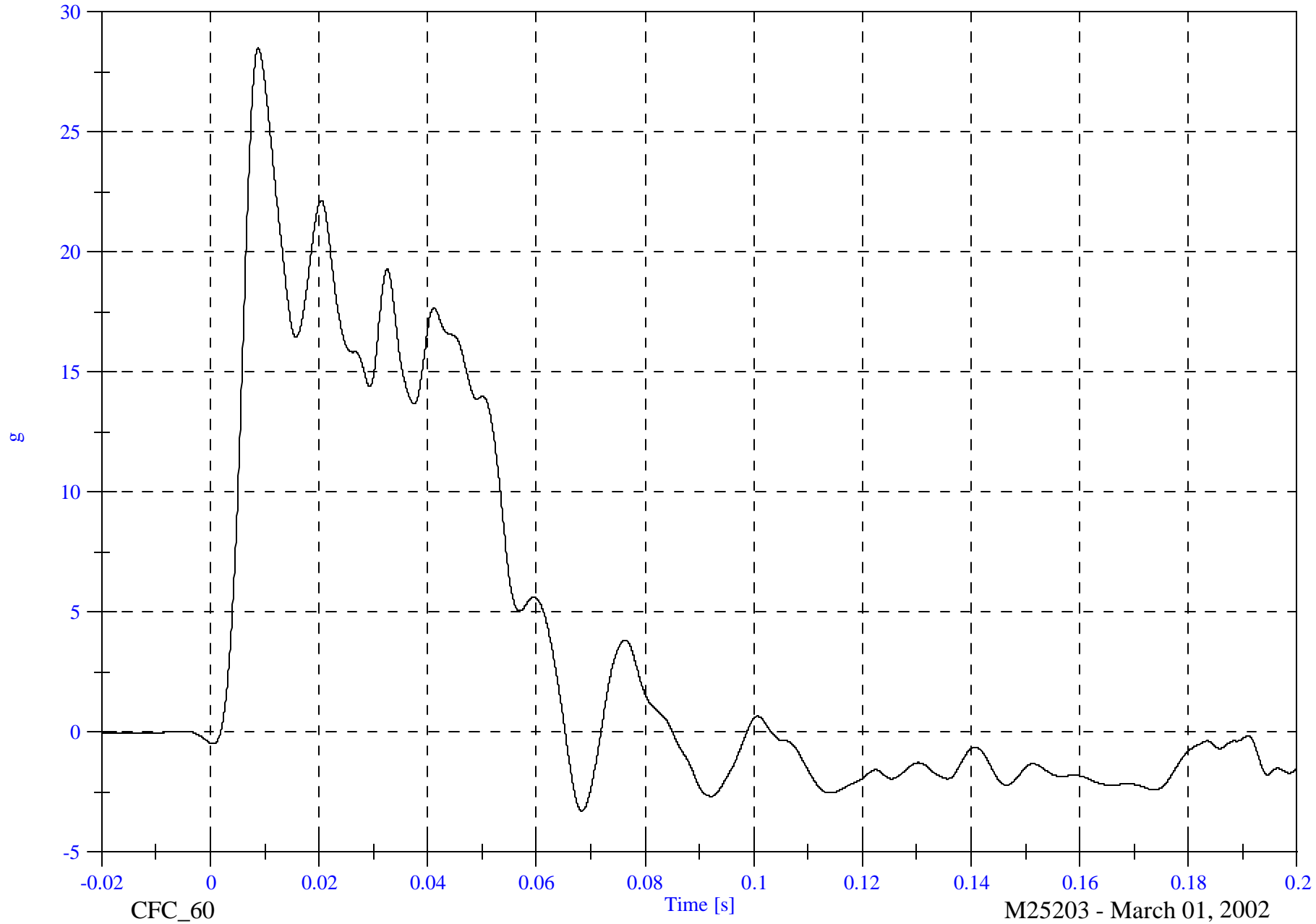
A19 Right Rear Compartment Red y

Max: 28.5 [g] at 0.009 [s]

Min: -3.3 [g] at 0.068 [s]

4-74

8652-SNCAP-04



SNCAP #4 - 2002 Nissan Sentra

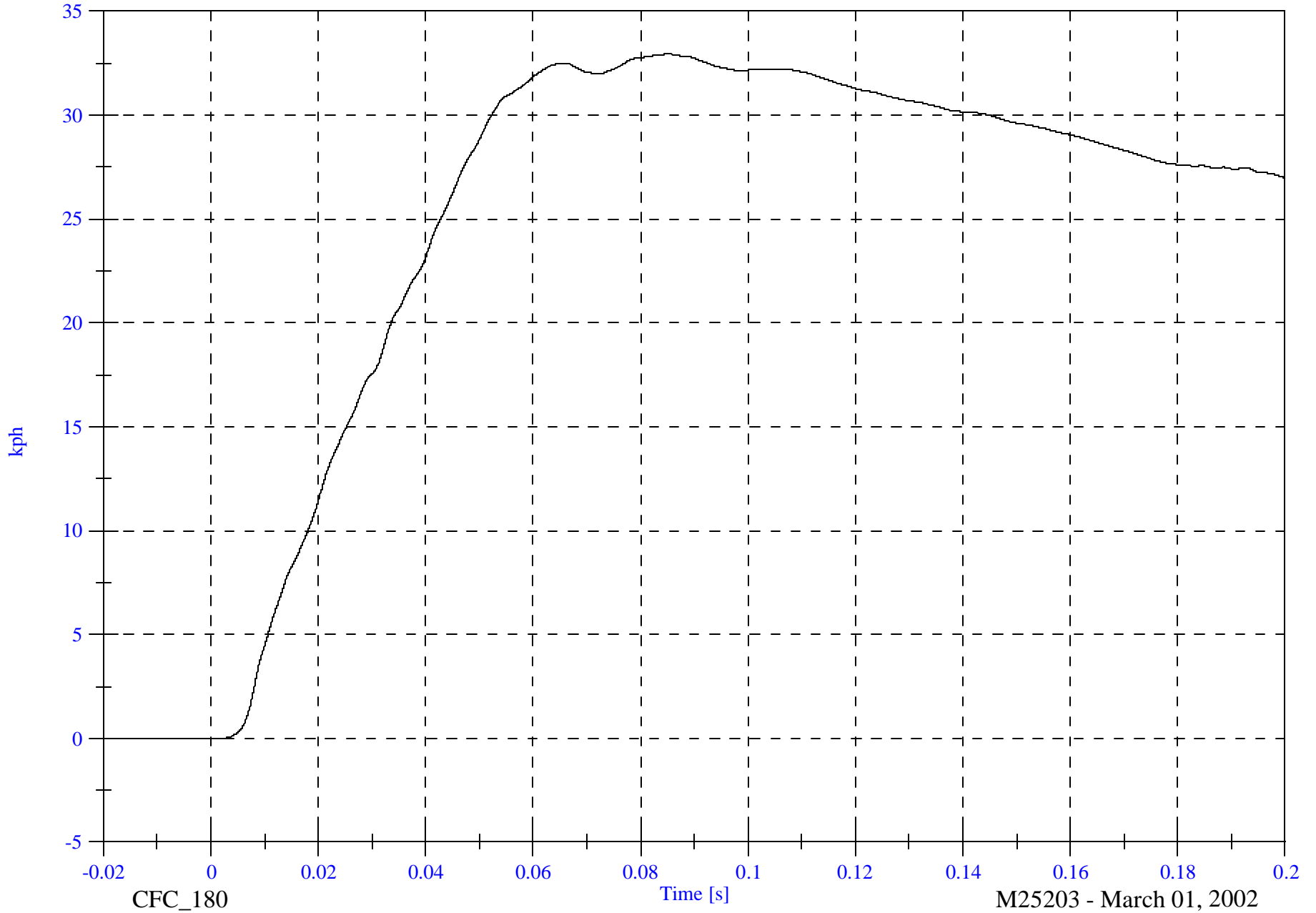
A19 Right Rear Compartment Red y Velocity

Max: 32.9 [kph] at 0.085 [s]

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

4-75

8652-SNCAP-04



CFC_180

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

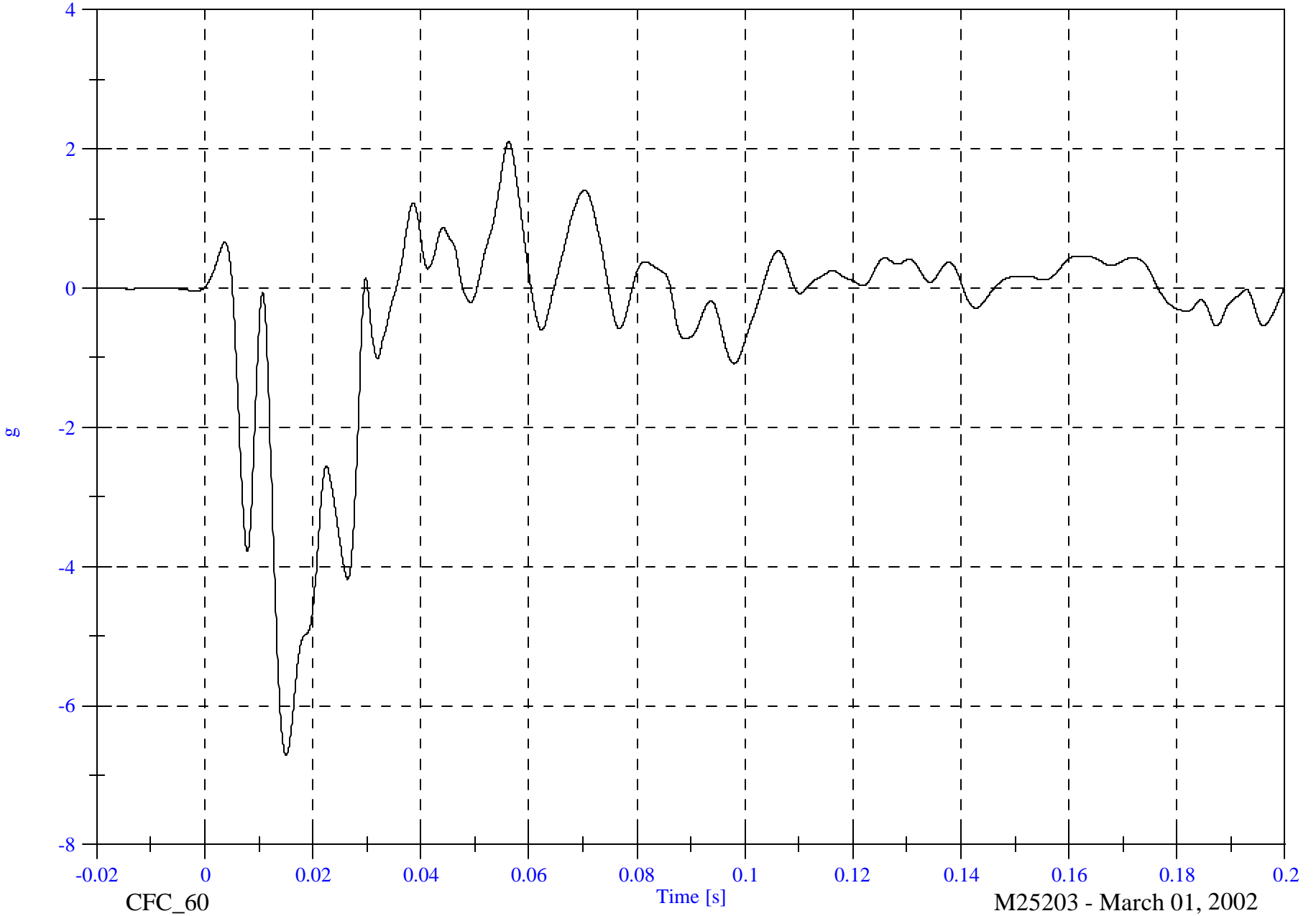
A20 Right Rear Compartment x

Max: 2.1 [g] at 0.056 [s]

Min: -6.7 [g] at 0.015 [s]

4-76

8652-SNCAP-04



CFC_60

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

A20 Right Rear Compartment x Velocity

Max: 0.2 [kph] at 0.006 [s]

Min: -3.1 [kph] at 0.029 [s]

4-77

8652-SNCAP-04



CFC_180

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

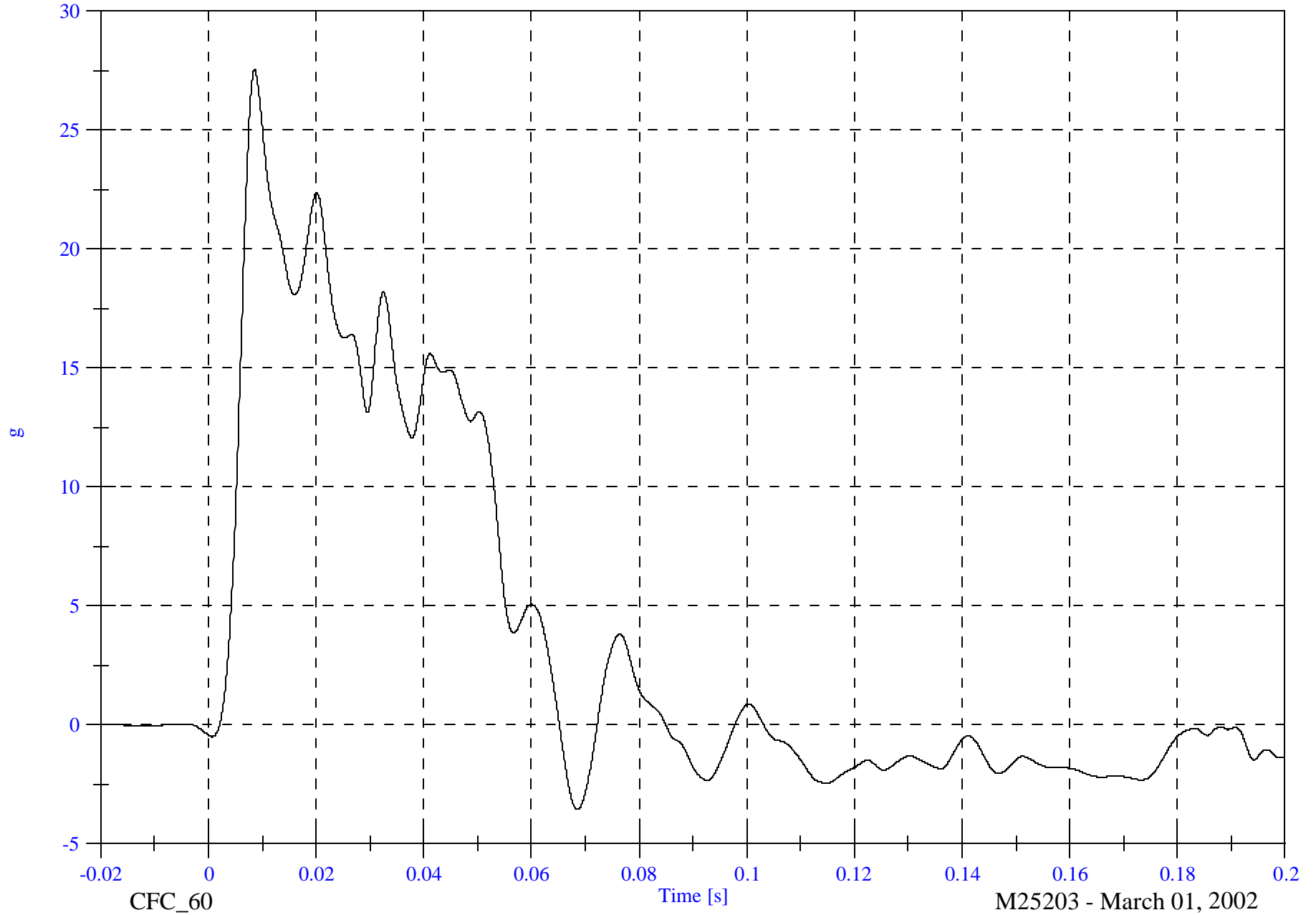
Max: 27.6 [g] at 0.009 [s]

A21 Right Rear Compartment 63 deg y

Min: -3.5 [g] at 0.069 [s]

4-78

8652-SNCAP-04



CFC_60

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

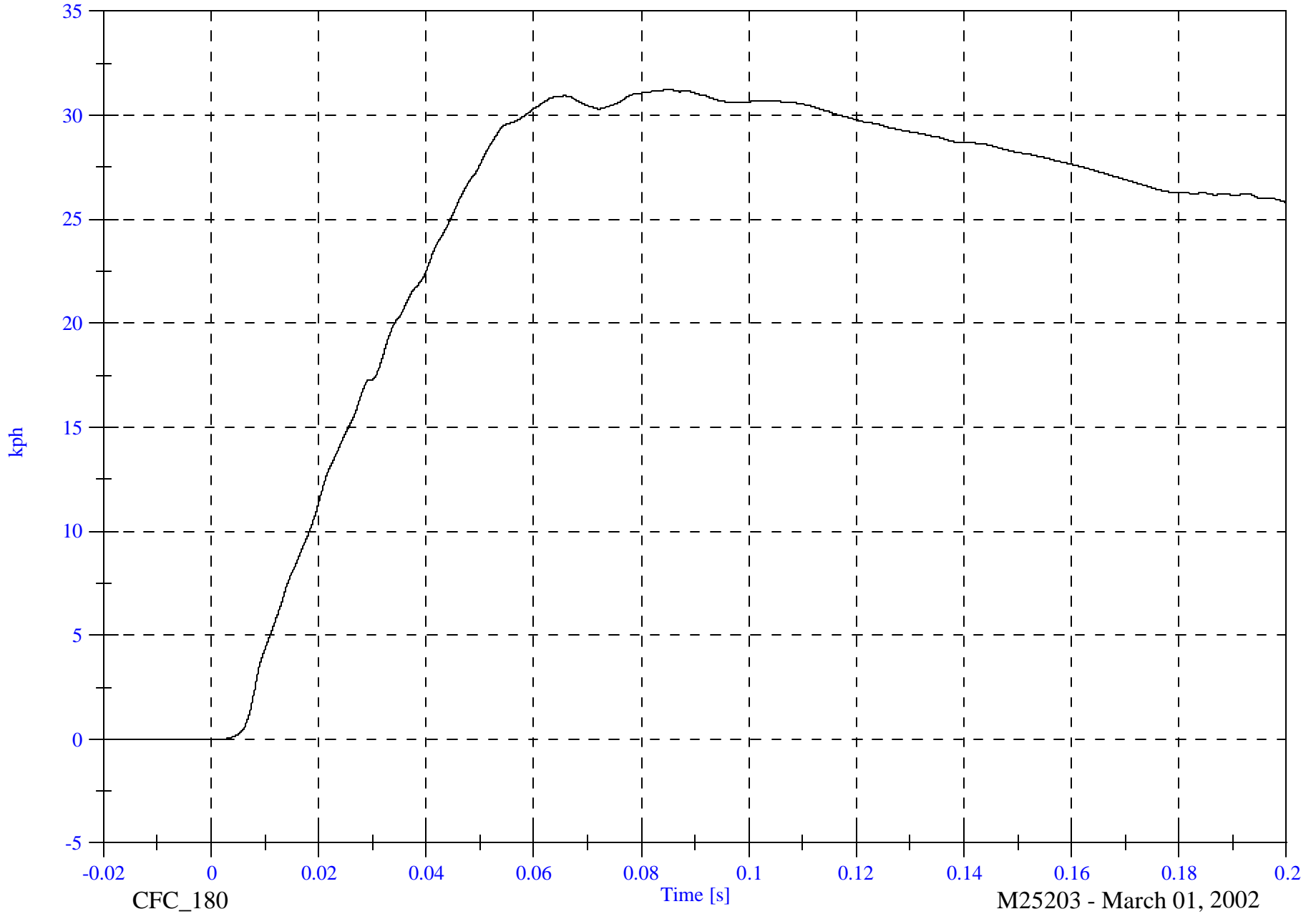
A21 Right Rear Compartment 63 deg y Velocity

Max: 31.2 [kph] at 0.085 [s]

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

4-79

8652-SNCAP-04



CFC_180

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

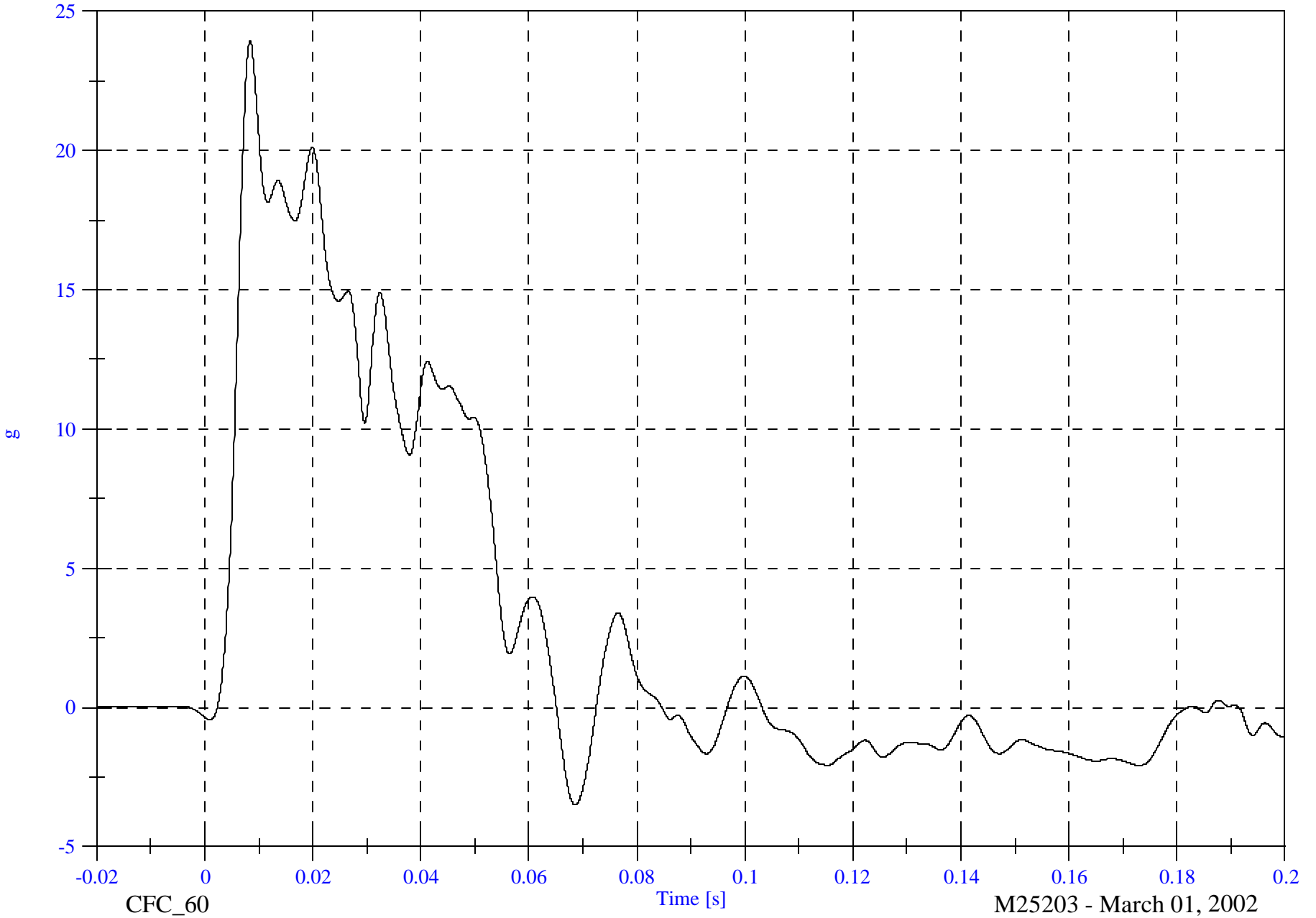
Max: 24.0 [g] at 0.008 [s]

A24 Right Rear Compartment 45 deg y

Min: -3.5 [g] at 0.069 [s]

4-80

8652-SNCAP-04



CFC_60

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

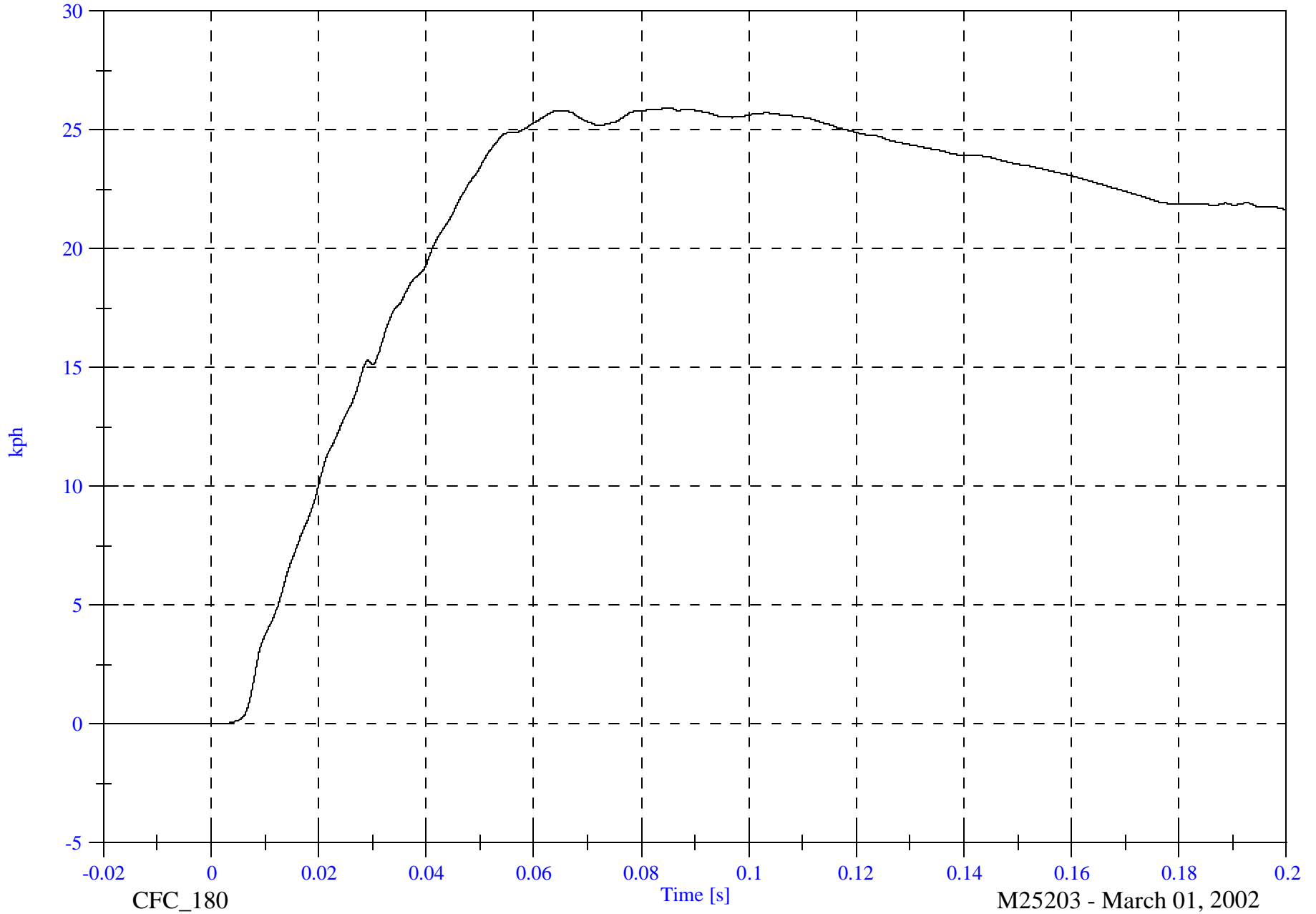
A24 Right Rear Compartment 45 deg y Velocity

Max: 25.9 [kph] at 0.085 [s]

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

4-81

8652-SNCAP-04



CFC_180

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

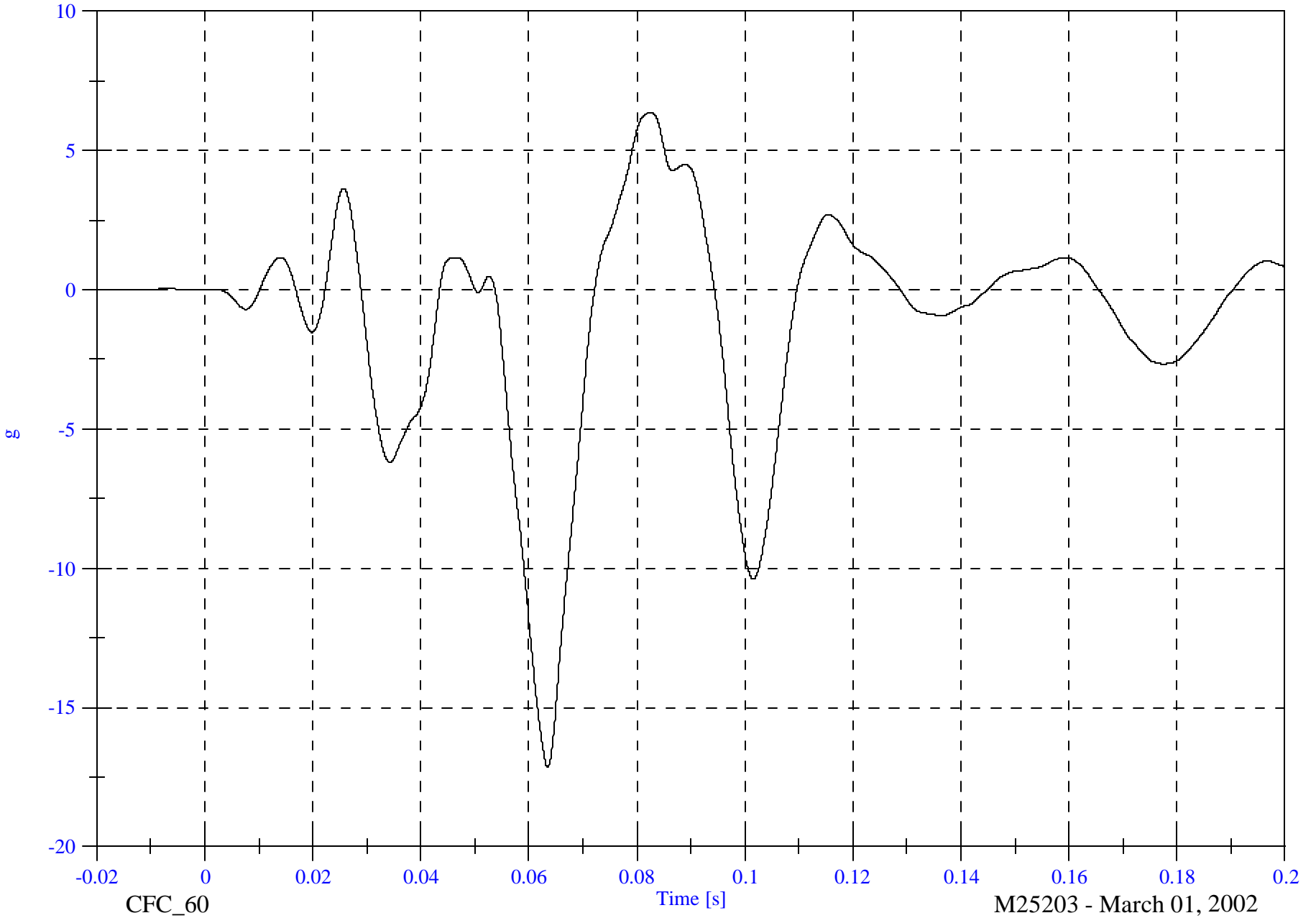
P3 Child Seat x

Max: 6.4 [g] at 0.082 [s]

Min: -17.1 [g] at 0.063 [s]

4-82

8652-SNCAP-04



SNCAP #4 - 2002 Nissan Sentra

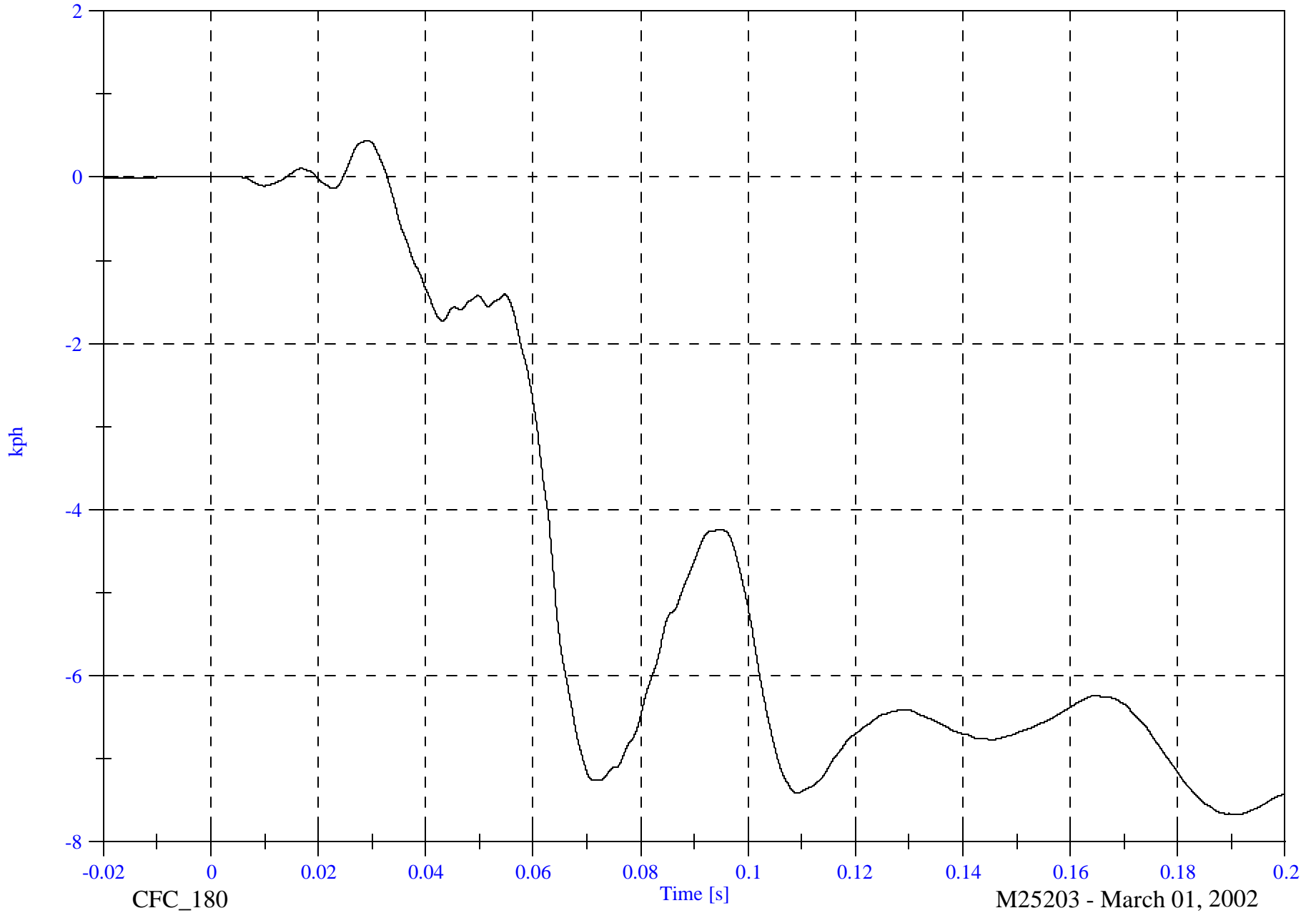
P3 Child Seat x Velocity

Max: 0.4 [kph] at 0.029 [s]

Min: -7.7 [kph] at 0.191 [s]

4-83

8652-SNCAP-04



CFC_180

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

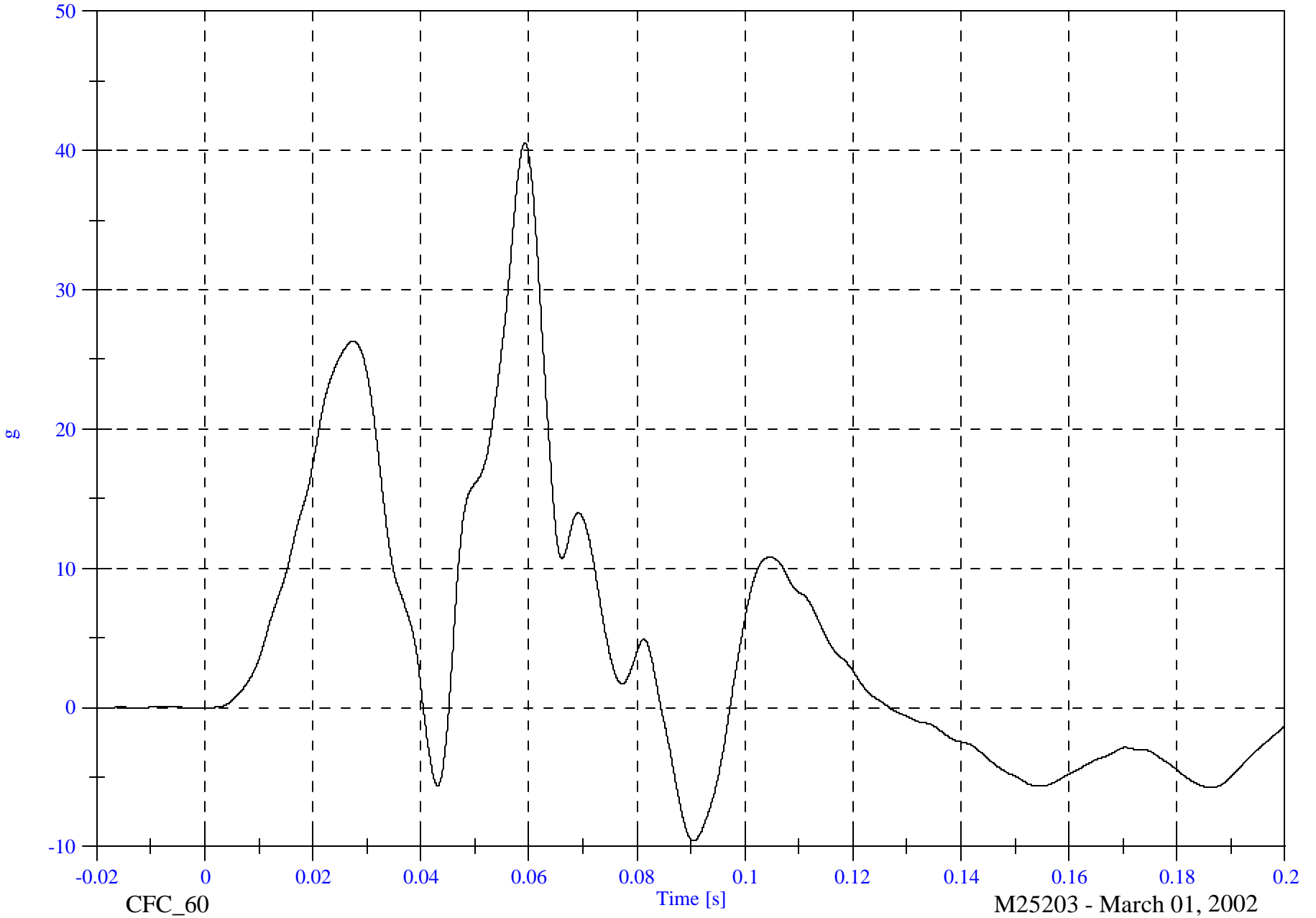
P3 Child Seat y

Max: 40.6 [g] at 0.059 [s]

Min: -9.6 [g] at 0.091 [s]

4-84

8652-SNCAP-04



SNCAP #4 - 2002 Nissan Sentra

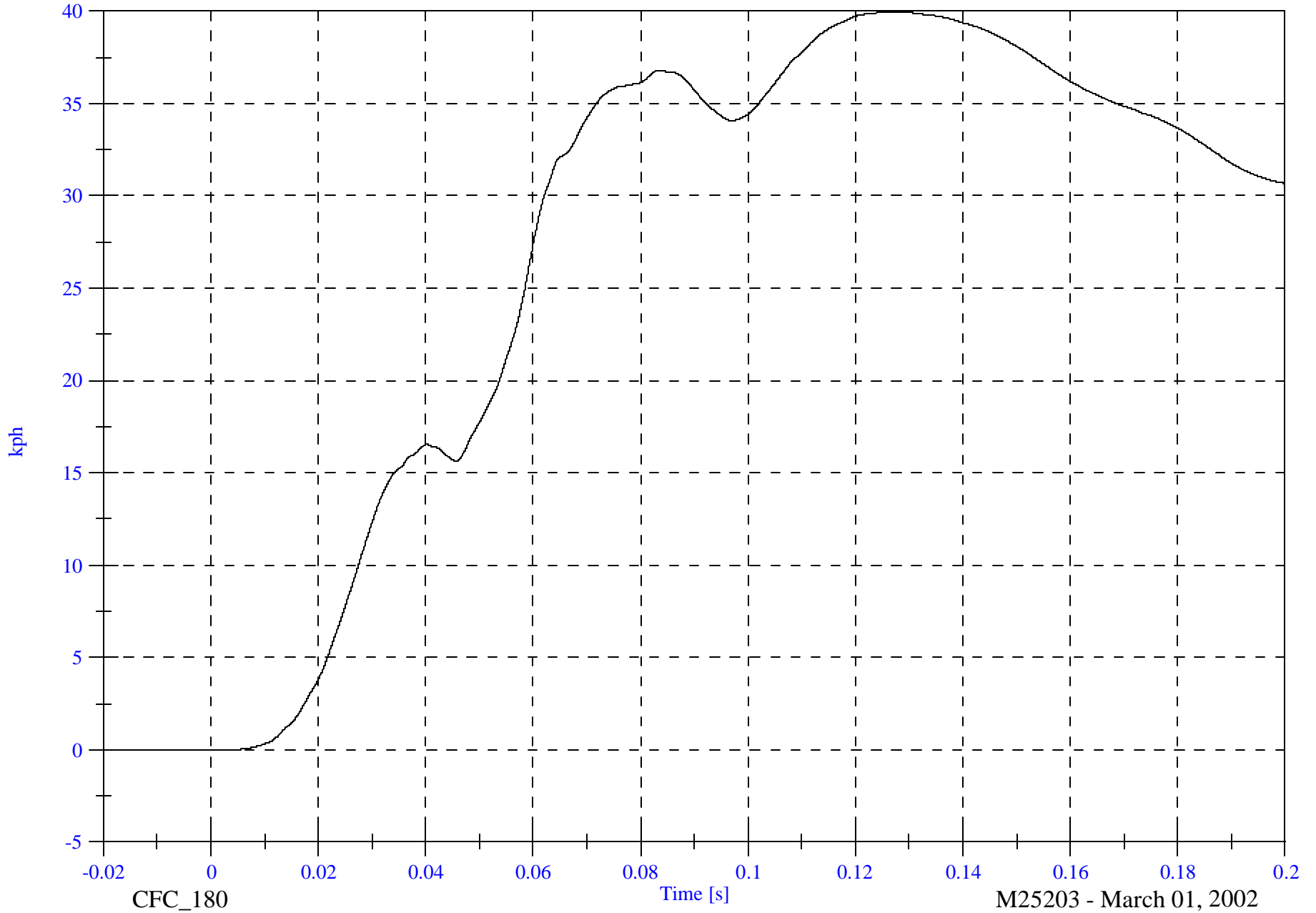
P3 Child Seat y Velocity

Max: 40.0 [kph] at 0.126 [s]

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

4-85

8652-SNCAP-04



CFC_180

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

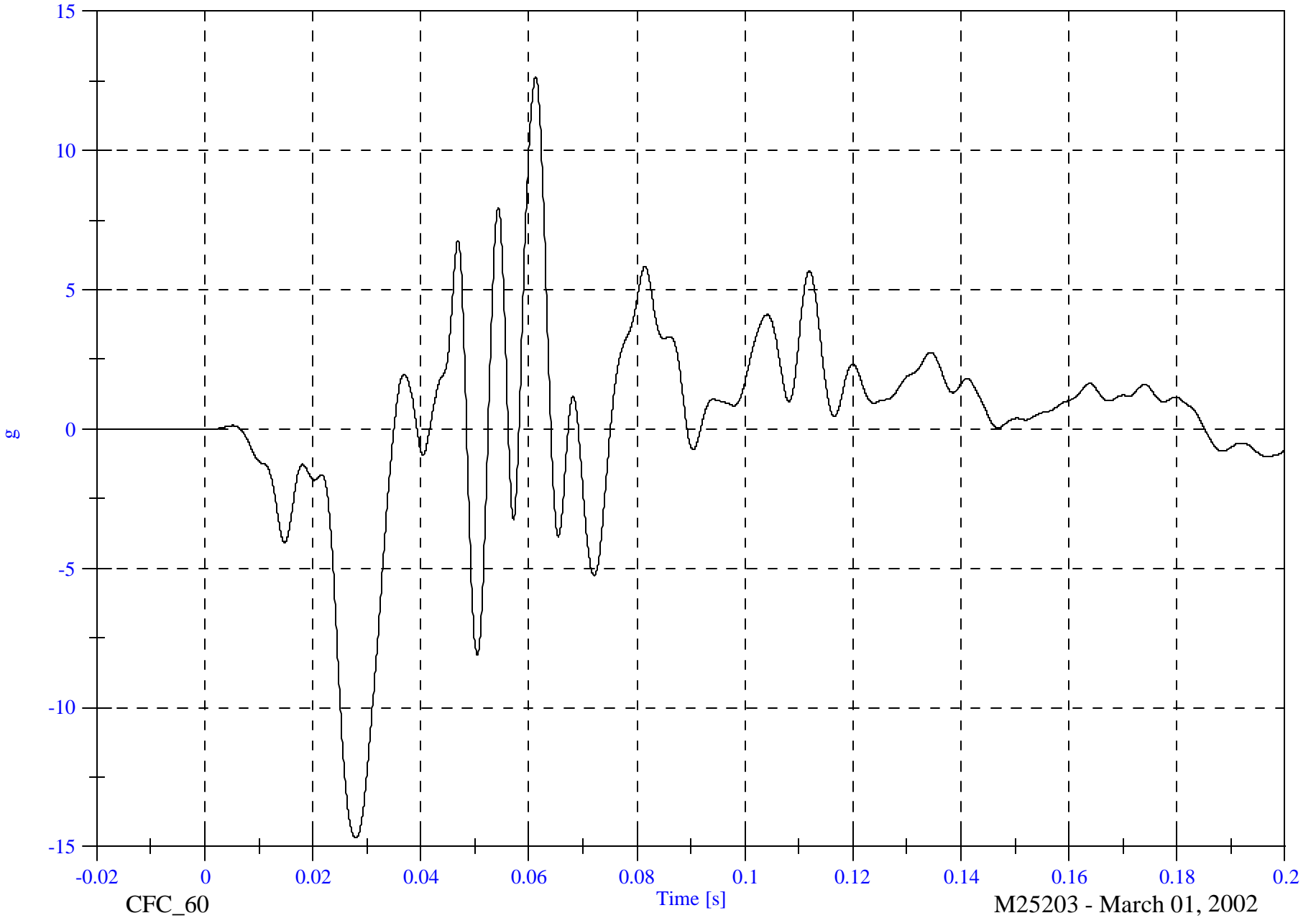
P3 Child Seat z

Max: 12.6 [g] at 0.061 [s]

Min: -14.7 [g] at 0.028 [s]

4-86

8652-SNCAP-04



CFC_60

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

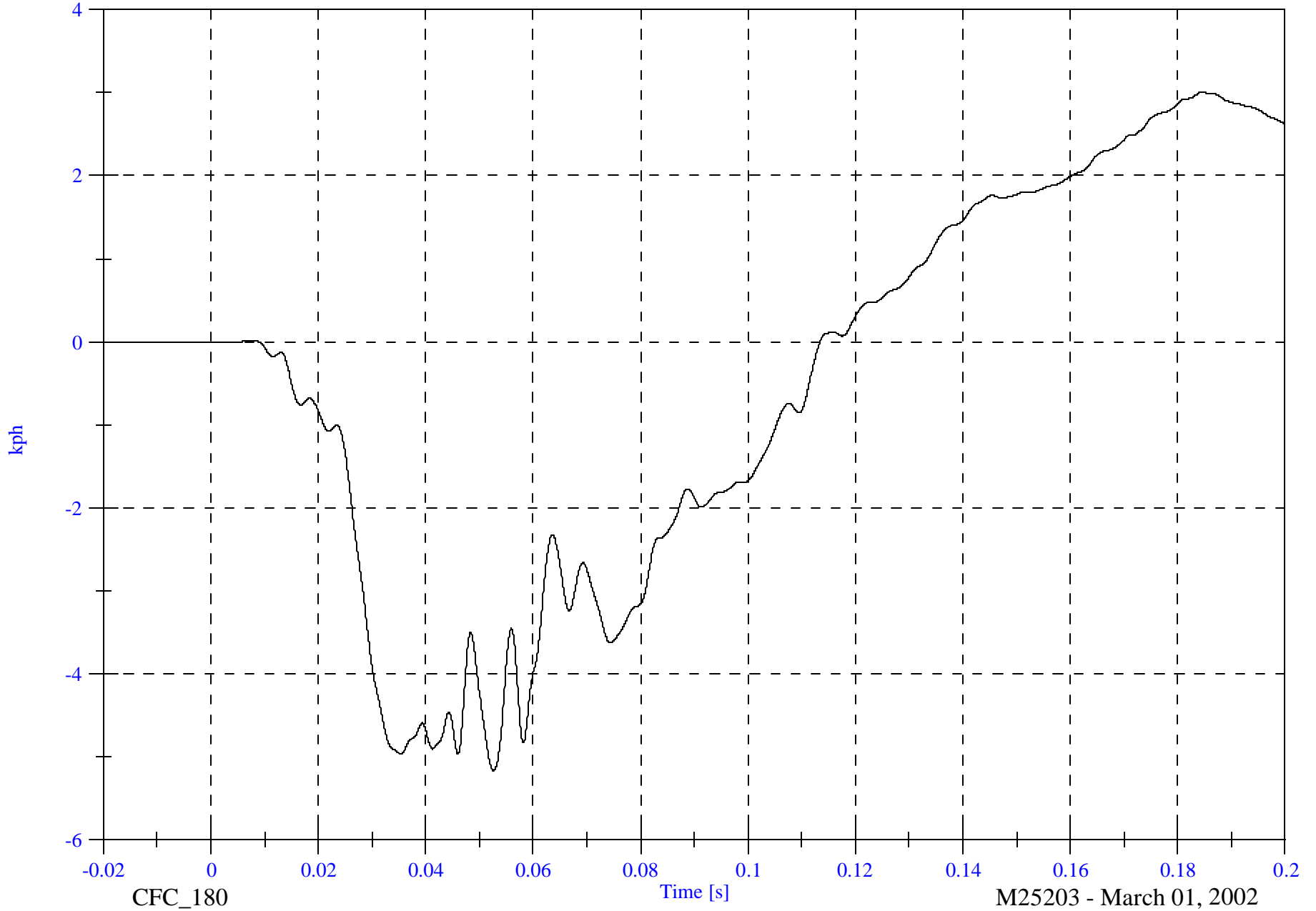
P3 Child Seat z Velocity

Max: 3.0 [kph] at 0.185 [s]

Min: -5.2 [kph] at 0.053 [s]

4-87

8652-SNCAP-04



CFC_180

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

P3 Child Seat Resultant

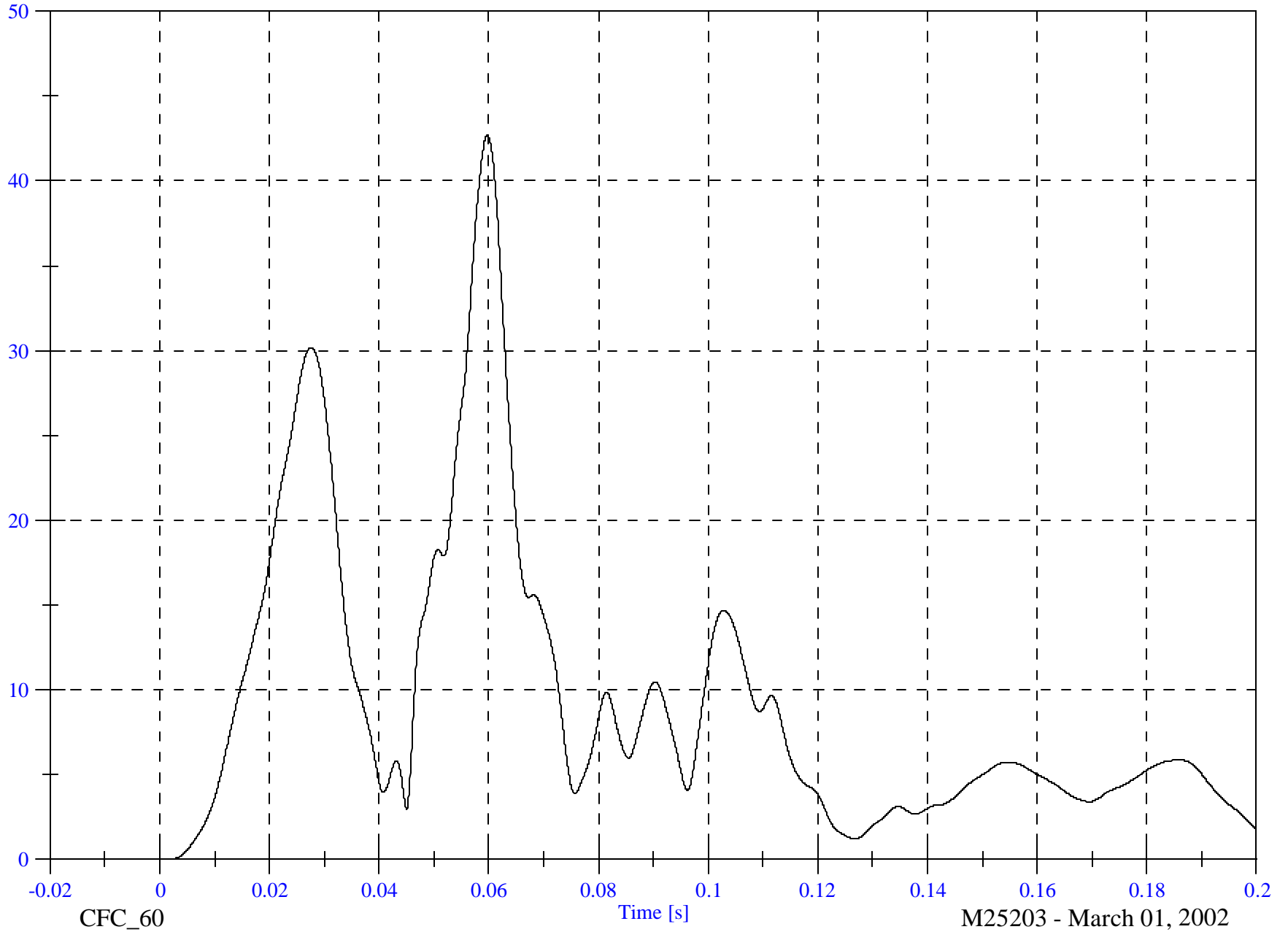
Max: 42.7 [g] at 0.060 [s]

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

4-88

8652-SNCAP-04

g



CFC_60

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

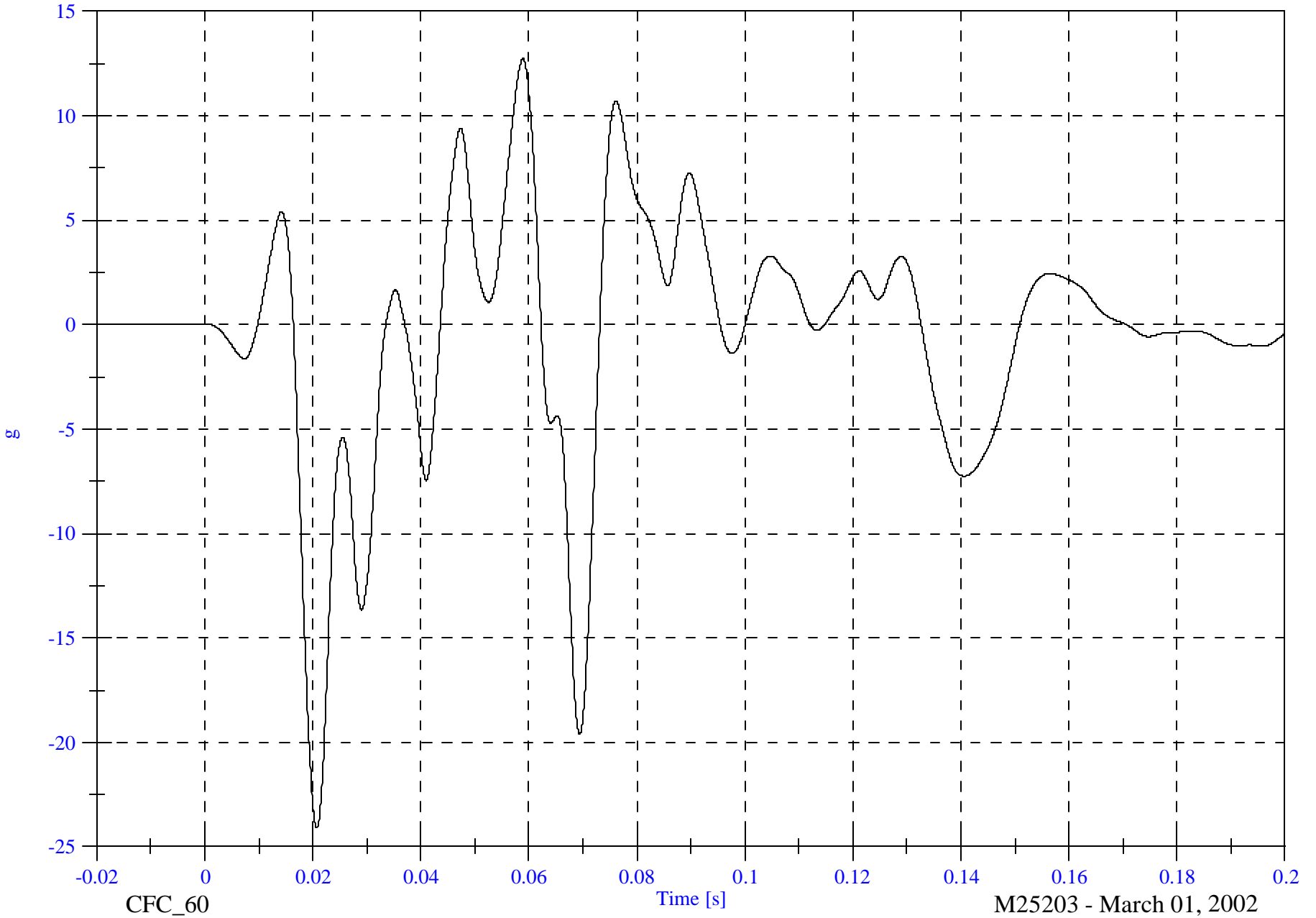
P4 Child Seat x

Max: 12.7 [g] at 0.059 [s]

Min: -24.1 [g] at 0.021 [s]

4-89

8652-SNCAP-04



CFC_60

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

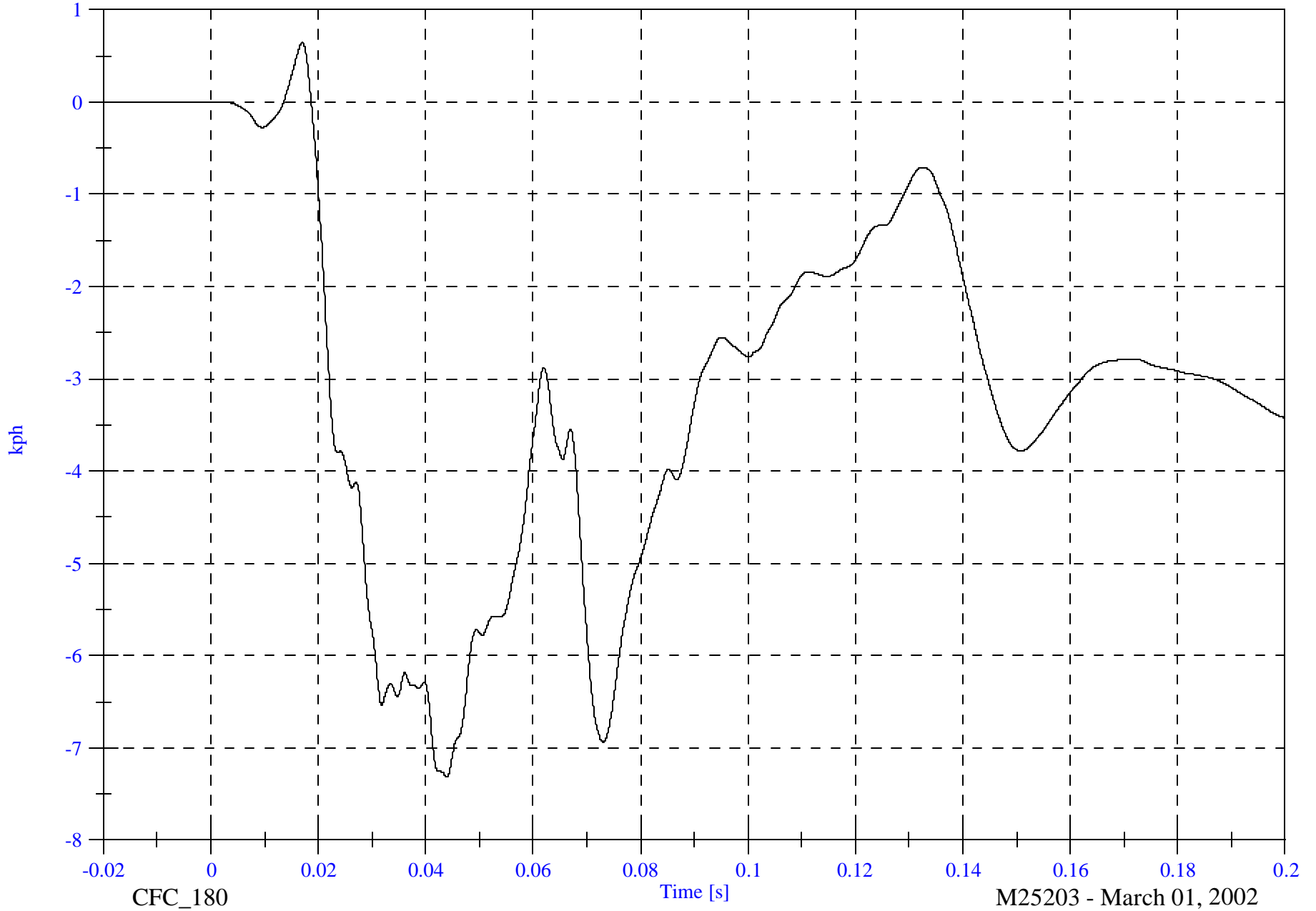
P4 Child Seat x Velocity

Max: 0.6 [kph] at 0.017 [s]

Min: -7.3 [kph] at 0.044 [s]

4-90

8652-SNCAP-04



SNCAP #4 - 2002 Nissan Sentra

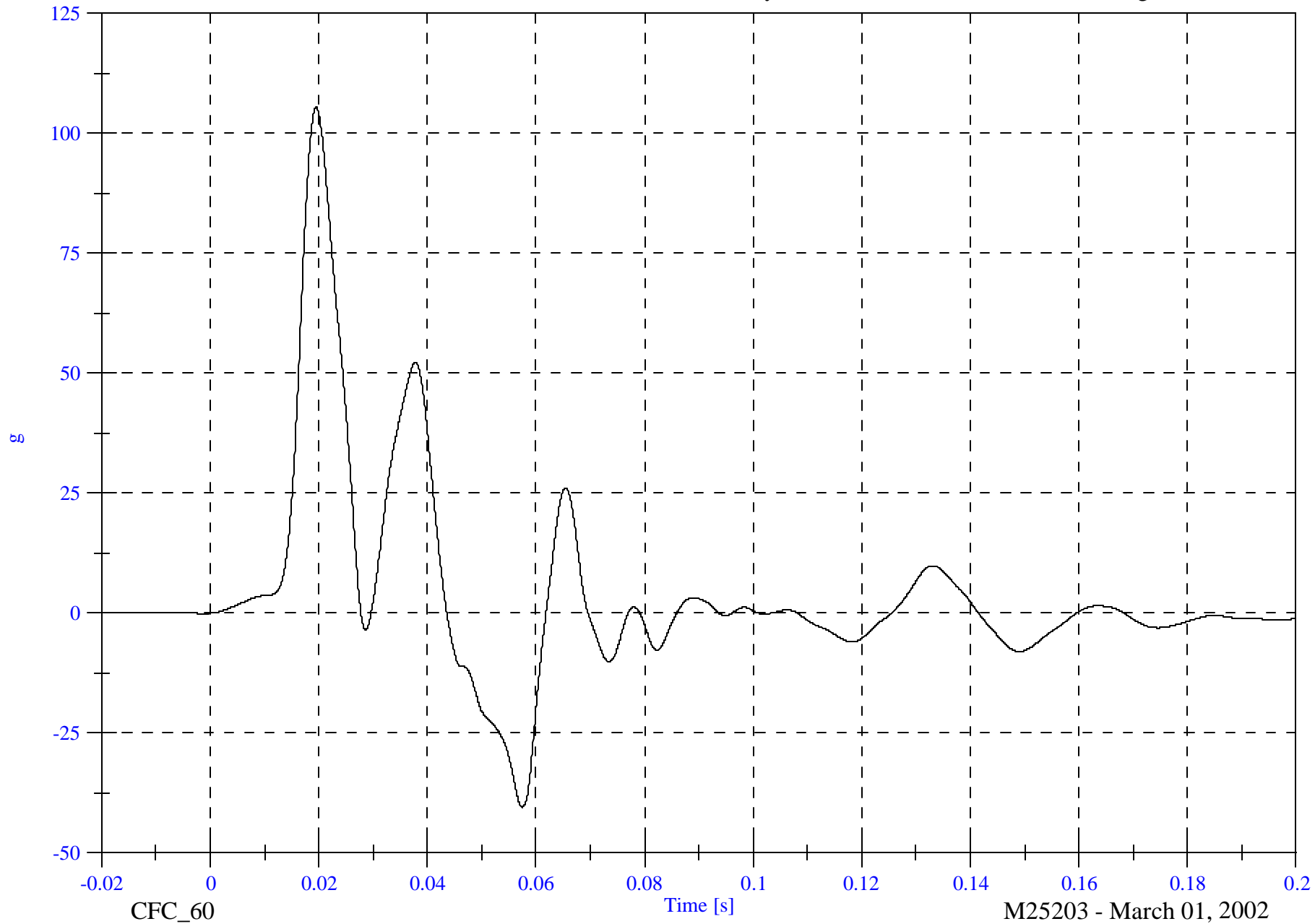
P4 Child Seat y

Max: 105.4 [g] at 0.019 [s]

Min: -40.4 [g] at 0.057 [s]

4-91

8652-SNCAP-04



CFC_60

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

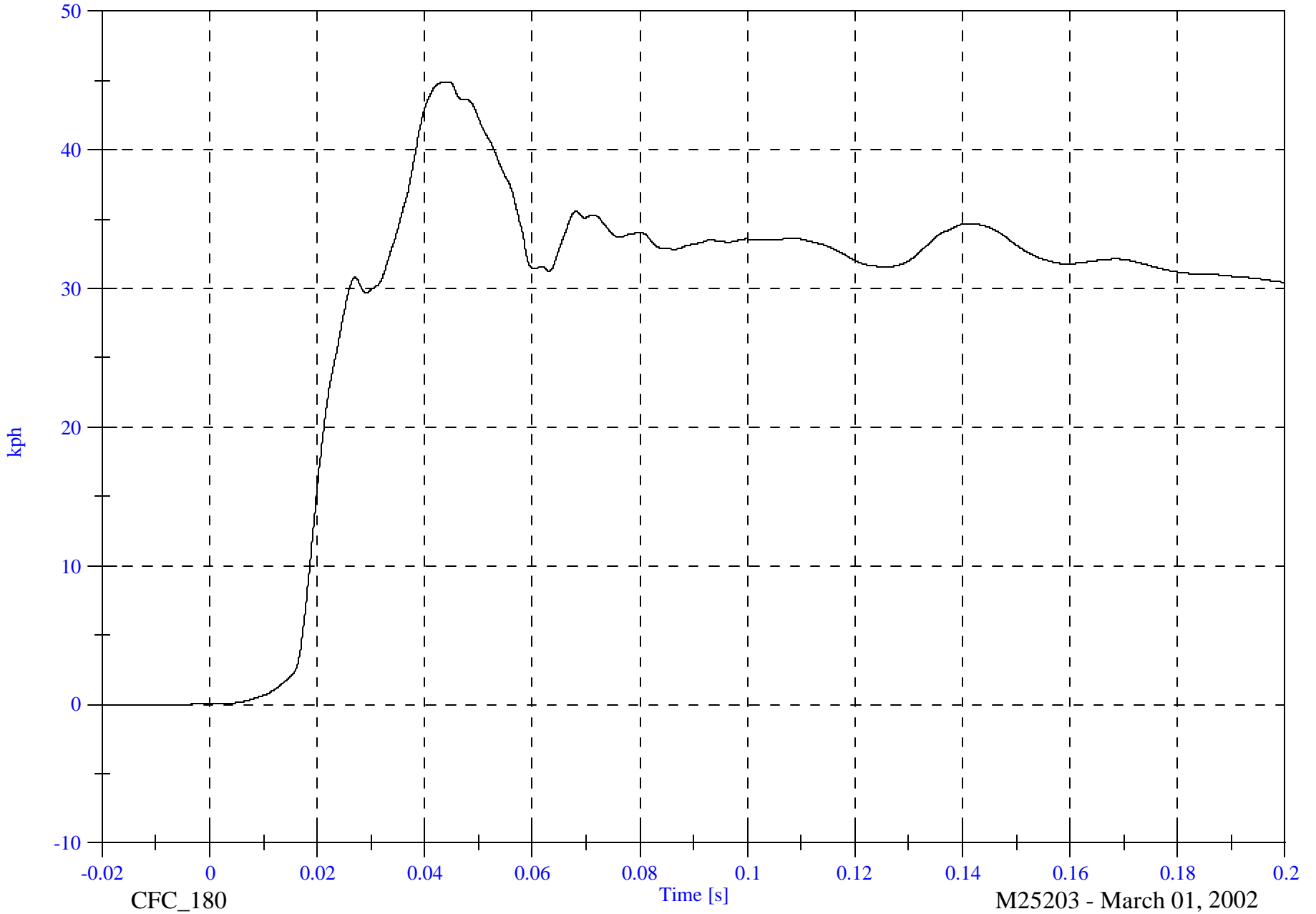
Max: 44.9 [kph] at 0.045 [s]

P4 Child Seat y Velocity

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

4-92

8652-SNCAP-04



CFC_180

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

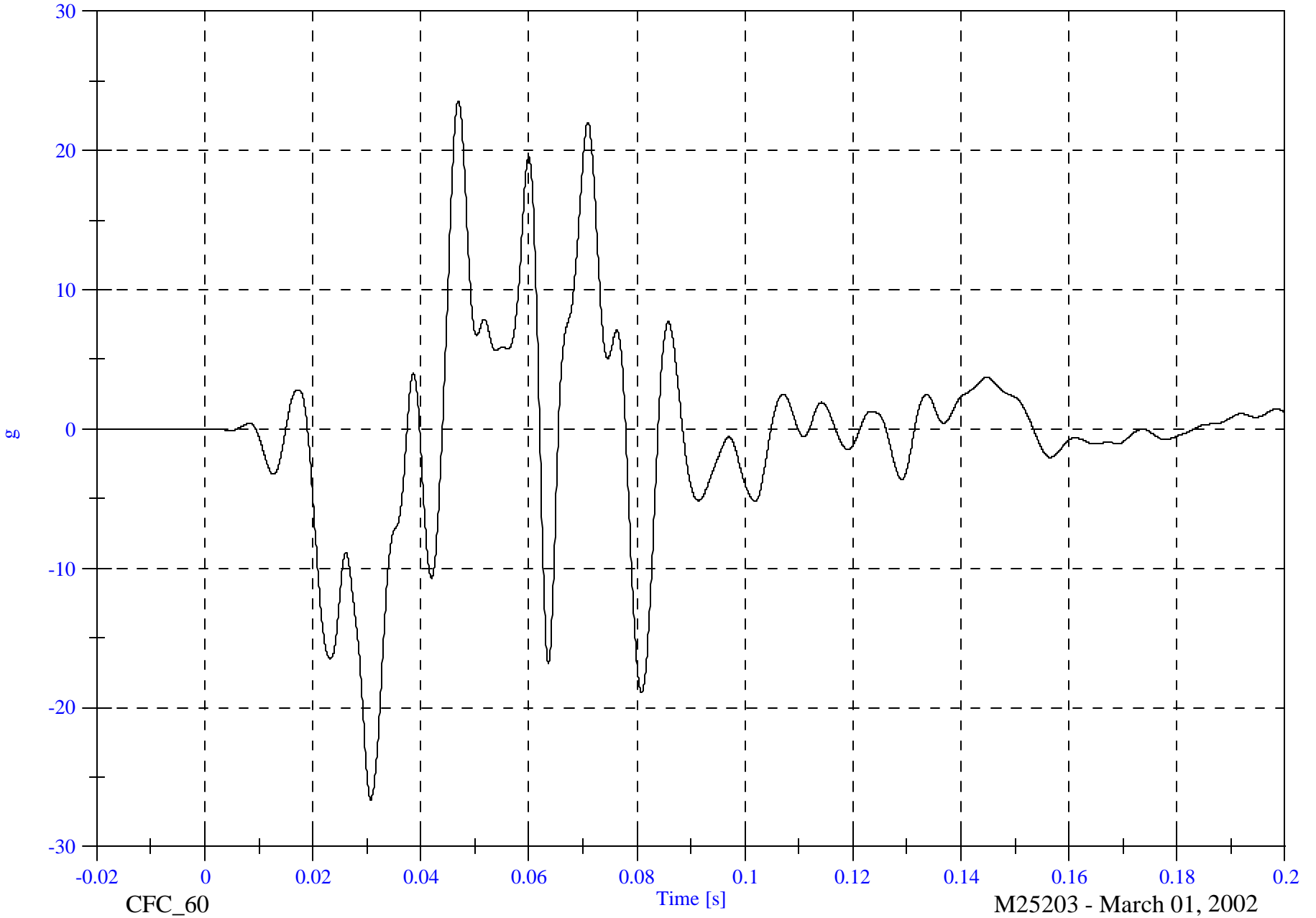
P4 Child Seat z

Max: 23.5 [g] at 0.047 [s]

Min: -26.6 [g] at 0.031 [s]

4-93

8652-SNCAP-04



M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

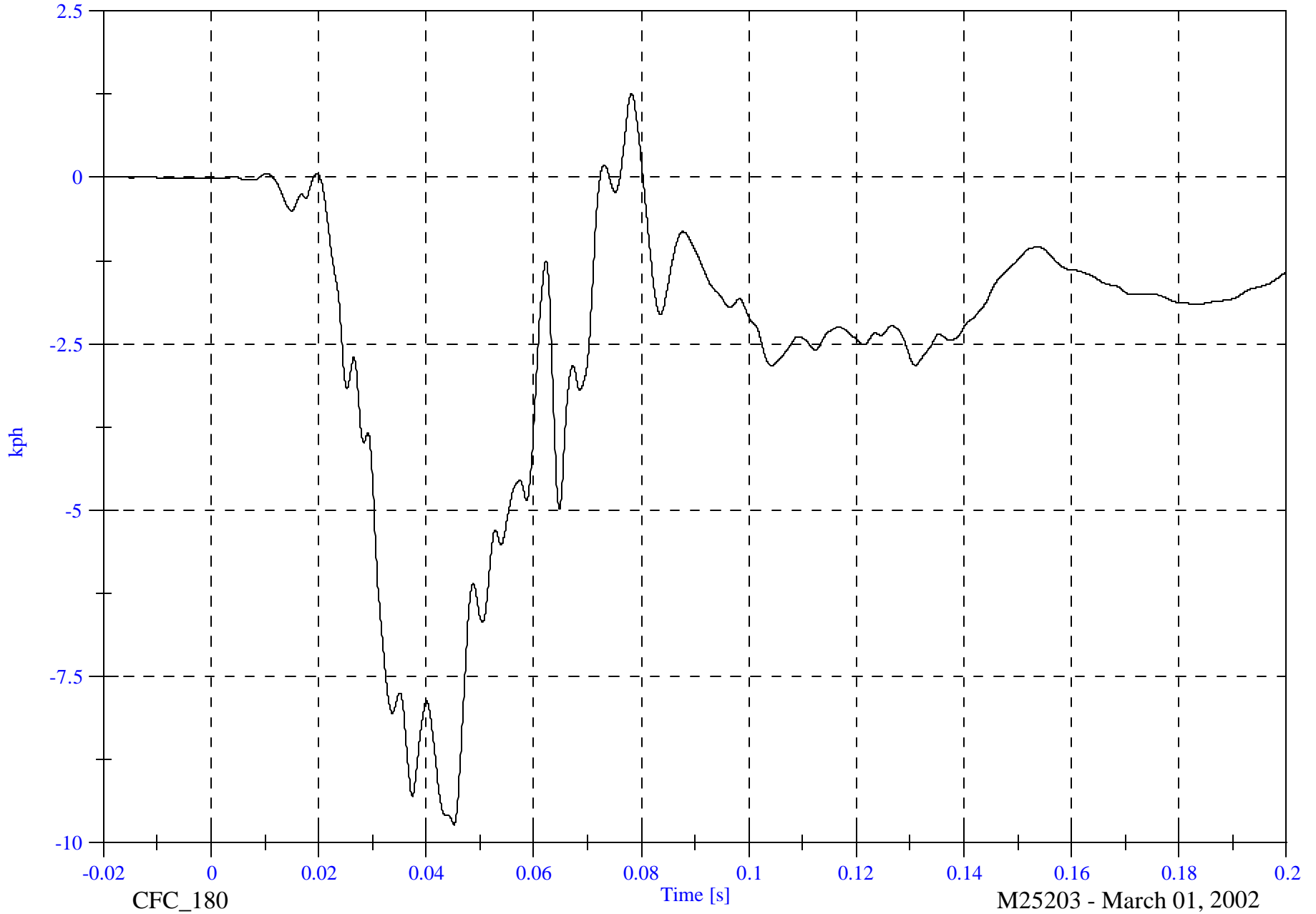
P4 Child Seat z Velocity

Max: 1.3 [kph] at 0.078 [s]

Min: -9.7 [kph] at 0.045 [s]

4-94

8652-SNCAP-04



CFC_180

Time [s]

M25203 - March 01, 2002

SNCAP #4 - 2002 Nissan Sentra

P4 Child Seat Resultant

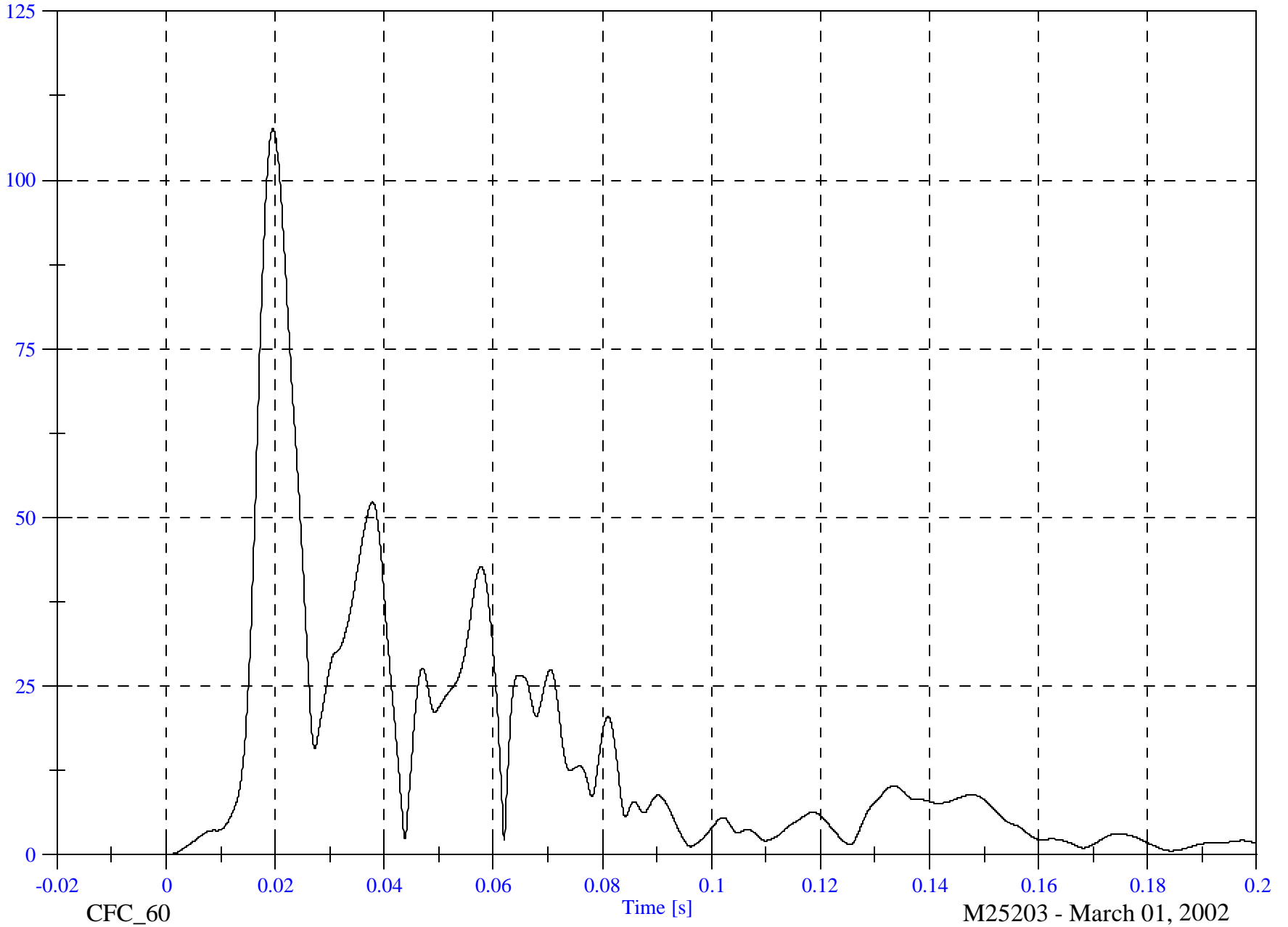
Max: 107.6 [g] at 0.020 [s]

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

4.95

g

8652-SNCAP-04



CFC_60

M25203 - March 01, 2002

SECTION 5

CHILD DUMMY CALIBRATION INFORMATION

ATD's Certified by VRTC Prior to Test Program
Data Included in Bound Report

SECTION 6

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

P572R INSTRUMENTATION

	POSITION #3 (RIGHT) SERIAL NO.: 017		
	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
HEAD AX	AC-P16194	ENDEVCO	01/14/02
HEAD AY	AC-P16428	ENDEVCO	01/14/02
HEAD AZ	AC-P16517	ENDEVCO	01/14/02
HEAD RAZ	AC-99H30-Z07	ENTRAN	01/14/02
UPPER NECK FX	LC-277-FX	DENTON	01/14/02
UPPER NECK FY	LC-277-FY	DENTON	01/14/02
UPPER NECK FZ	LC-277-FZ	DENTON	01/14/02
UPPER NECK MX	LC-277-MX	DENTON	01/14/02
UPPER NECK MY	LC-277-MY	DENTON	01/14/02
UPPER NECK MZ	LC-277-MZ	DENTON	01/14/02
LOWER NECK FX	LC-280-FX	DENTON	01/15/02
LOWER NECK FY	LC-280-FY	DENTON	01/16/02
LOWER NECK FZ	LC-280-FZ	DENTON	01/15/02
LOWER NECK MX	LC-280-MX	DENTON	01/15/02
LOWER NECK MY	LC-280-MY	DENTON	01/15/02
LOWER NECK MZ	LC-280-MZ	DENTON	01/15/02
CHEST AX	AC-J27467	ENDEVCO	01/14/02
CHEST AY	AC-AJ4Y5	ENDEVCO	01/14/02
CHEST AZ	AC-P17559	ENDEVCO	01/14/02
LUMBAR SPINE FX	LC-283-FX	DENTON	01/16/02
LUMBAR SPINE FY	LC-283-FY	DENTON	01/16/02
LUMBAR SPINE FZ	LC-283-FZ	DENTON	01/16/02
LUMBAR SPINE MX	LC-283-MX	DENTON	01/16/02
LUMBAR SPINE MY	LC-283-MY	DENTON	01/16/02
LUMBAR SPINE MZ	LC-283-MZ	DENTON	01/16/02
PELVIS AX	AC-P15856	ENDEVCO	01/14/02
PELVIS AY	AC-J27496	ENDEVCO	01/14/02
PELVIS AZ	AC-P15638	ENDEVCO	01/14/02
TETHER	LC-635	LEBOW	02/12/02

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

P572R INSTRUMENTATION

	POSITION #4 (LEFT) SERIAL NO.: 022		
	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
HEAD AX	AC-P16336	ENDEVCO	01/14/02
HEAD AY	AC-P14936	ENDEVCO	01/14/02
HEAD AZ	AC-P17837	ENDEVCO	01/14/02
HEAD RAZ	AC-P14914	ENDEVCO	01/14/02
UPPER NECK FX	LC-128-FX	DENTON	01/07/02
UPPER NECK FY	LC-128-FY	DENTON	01/07/02
UPPER NECK FZ	LC-128-FZ	DENTON	01/07/02
UPPER NECK MX	LC-128-MX	DENTON	01/07/02
UPPER NECK MY	LC-128-MY	DENTON	01/07/02
UPPER NECK MZ	LC-128-MZ	DENTON	01/07/02
LOWER NECK FX	LC-130-FX	DENTON	01/05/02
LOWER NECK FY	LC-130-FY	DENTON	01/05/02
LOWER NECK FZ	LC-130-FZ	DENTON	01/05/02
LOWER NECK MX	LC-130-MX	DENTON	01/05/02
LOWER NECK MY	LC-130-MY	DENTON	01/05/02
LOWER NECK MZ	LC-130-MZ	DENTON	01/05/02
CHEST AX	AC-99108-F26	ENTRAN	01/14/02
CHEST AY	AC-99102-F09	ENTRAN	01/09/02
CHEST AZ	AC-99H30-Z08	ENTRAN	01/09/02
LUMBAR SPINE FX	LC-140-FX	DENTON	01/05/02
LUMBAR SPINE FY	LC-140-FY	DENTON	01/05/02
LUMBAR SPINE FZ	LC-140-FZ	DENTON	01/05/02
LUMBAR SPINE MX	LC-140-MX	DENTON	01/05/02
LUMBAR SPINE MY	LC-140-MY	DENTON	01/05/02
LUMBAR SPINE MZ	LC-140-MZ	DENTON	01/05/02
PELVIS AX	AC-01G19-F01	ENTRAN	01/09/02
PELVIS AY	AC-99H30-Z05	ENTRAN	01/09/02
PELVIS AZ	AC-99H30-Z03	ENTRAN	01/09/02
TETHER	LC-707	LEBOW	02/12/02

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

VEHICLE AND MDB INSTRUMENTATION

	VEHICLE AND MDB INSTRUMENTS		
	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
RIGHT REAR COMPARTMENT (Y)	AC-J31050	ENDEVCO	02/14/02
RIGHT REAR COMPARTMENT (X)	AC-J32787	ENDEVCO	02/14/02
RIGHT REAR COMPARTMENT ANGLED 63 DEG.	AC-J32098	ENDEVCO	02/14/02
RIGHT REAR COMPARTMENT ANGLED 45 DEG.	AC-P17286	ENDEVCO	02/11/02
P3 CRS (X)	AC-J31009	ENDEVCO	02/18/02
P3 CRS (Y)	AC-J31042	ENDEVCO	02/18/02
P3 CRS (Z)	AC-J33030	ENDEVCO	02/18/02
P4 CRS (X)	AC-P18948	ENDEVCO	02/26/02
P4 CRS (Y)	AC-P23471	ENDEVCO	02/26/02
P4 CRS (Z)	AC-P22943	ENDEVCO	02/26/02

REMARKS: None