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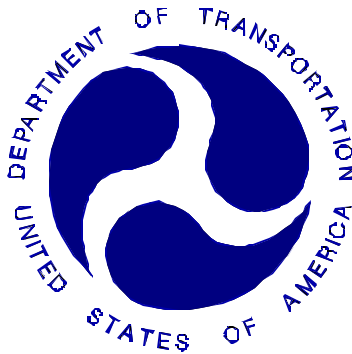
**NEW CAR ASSESSMENT PROGRAM (NCAP)
FRONTAL BARRIER IMPACT TEST**

NISSAN MOTOR CO. LTD.
2002 NISSAN FRONTIER KING CAB
PICKUP

NHTSA NUMBER: M25201

VERIDIAN TEST NUMBER: 8642-NCAP-11

VERIDIAN ENGINEERING
TRANSPORTATION SCIENCES CENTER
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May 3, 2002

FINAL REPORT

PREPARED FOR:

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16. Abstract A frontal load cell barrier test of a 2002 Nissan Frontier King Cab Pickup was performed at Veridian Engineering crash test facility in Buffalo, New York, on May 3. 2002. The impact velocity was 56.17 kph and the temperature at the barrier face was 21°C. The maximum post-test vehicle crush was 463 mm. The test vehicle was equipped with 3-point restraint systems with shoulder belt pretensioners and force limiters, knee bolsters, adjustable head restraints, and airbags at both the driver and right outboard passenger seating positions. With respect to FMVSS 208 "Occupant Crash Protection - Injury Criteria" both the driver and passenger appeared to comply with head, chest, and femur requirements.					
ATD Position	HIC	Clip (g's)	Chest Disp (mm)	Left Femur (N)	Right Femur (N)
Driver (150)	591.8	45.5	37.7	321.1	3034.4
Passenger (245)	501.4	41.8	29.3	1781.2	2182.4
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SECTION 1

PURPOSE AND SUMMARY OF TEST

1.1 PURPOSE

This 56.17 kph frontal barrier impact test is part of the Vehicle Barrier Impact Testing Program sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract No. DTNH22-01-D-32005. The purpose of this test was to obtain vehicle crashworthiness and occupant restraint system performance data for an impact speed in excess of the current 48.3 kph requirements.

The 56.17 kph frontal barrier impact test was conducted in accordance with the Office of Crashworthiness Standards Laboratory Indicant Test procedure.

1.2 TEST PROCEDURE

This 56.3-km/h frontal barrier impact test was conducted in accordance with the Office of Crashworthiness Standards (OCS) New Car Assessment Program (NCAP) Laboratory Indicant Test Procedure, dated December 1999. Data was obtained indicant of FMVSS 208, "Occupant Crash Protection"; FMVSS 212, "Windshield Retention"; FMVSS 219, "Windshield Zone Intrusion (Partial)"; and FMVSS 301 "Fuel System Integrity" performance. Procedures for receiving, inspection testing and reporting of test results are described in the test procedures and are not repeated in this report.

One real-time camera and 16 high-speed cameras were used to document the frontal barrier impact event. Camera locations and other pertinent camera information can be found in this report.

Two Part 572E, 50th percentile male anthropomorphic test devices (ATDs), were placed in the driver and right-front passenger seating positions according to dummy placement instructions specified in the Laboratory Indicant Test Procedure.

Both ATDs were fully instrumented with nine accelerometer array head, chest and pelvis triaxial accelerometers, chest displacement potentiometers, upper neck transducers, right/left femur load cells, left and right knee sliders, and lower leg instrumentation. The driver (position 1) ATD (Serial No. 150) and the right-front passenger (position 2) ATD (Serial No.245) were used in one test (M20302) previous to this test where they did not exceed FMVSS 208 head, chest or femur injury criteria. Certification details, along with instrumentation calibration data, are found in Appendix C.

The vehicle, occupant, camera and measurement data are presented in Section 2. Appendix A contains the still photograph prints. The 197 channels of data were recorded on an on-board data acquisition system. Appendix B contains the vehicle, load cell barrier and dummy response data traces. Appendix C contains the dummy calibration data and Appendix D contains the transducer calibration dates.

1.3 SUMMARY OF FRONTAL BARRIER IMPACT TEST

A load cell barrier consisting of 36 load cells was impacted by a 2002 Nissan Frontier King Cab Pickup at a velocity of 56.17 kph. The test was performed at Veridian Engineering on May 3, 2002. Pre- and post-test photographs of the vehicle and dummies can be found in Appendix A.

The occupant data is summarized below.

	HIC	Clip (g)	Chest Disp. (mm)	Left Femur (N)	Right Femur (N)	Belt Spool (mm)	Belt Stretch (mm/50 mm)
Driver ATD	591.8	45.5	37.7	321.1	3034.4	*	*
Passenger ATD	501.4	41.8	29.3	1781.2	2182.4	*	*

* Not Used

There was 100 percent windshield retention and no intrusion into the protected zone of the windshield during the event. There was no Stoddard solvent leakage after the event or during any phase of the static rollover.

The maximum vehicle static crush was 463 mm and both the driver and passenger side doors remained closed and latched during the impact event and were operable without the use of tools after the impact.

The driver's visible contact points were as follows: The face to the center of the airbag, the back of the head to the left of the center of the headrest, the chest to the airbag and the left and right knees to the knee bolster. The passenger's visible contact points were as follows: The face, top and the back of the head to the center of the airbag, the chest to the airbag and the left and right knees to the knee bolster.

The 2002 Nissan Frontier King Cab Pickup did not exceed the requirements of FMVSS 208, FMVSS 212, FMVSS 219, and FMVSS 301. Data pertaining to these standards are presented in the data sheets.

SECTION 2

GENERAL TEST AND VEHICLE PARAMETER DATA

DATA SHEET NO. 1 CRASH TEST SUMMARY

Vehicle NHTSA No.:	<u>M25201</u>	Test Mode:	<u>56.3 kph Frontal Barrier</u>
Test Date:	<u>May 3, 2002</u>	Time:	<u>11:45</u> Temperature: <u>21</u> °C
Vehicle Make/Model/Body Style:	<u>2002 Nissan Frontier King Cab Pickup</u>		
Vehicle Test Weight:	<u>1745.5</u>	kg	
Vehicle/Barrier Impact Angle:	<u>0</u>	°	
Impact Velocity:	<u>56.17</u>	kph	
Maximum Static Crush:	<u>463</u>	mm	
Vehicle Rebound:	<u>507</u>	mm	
<u>DUMMIES:</u>	<u>DRIVER</u>	<u>PASSENGER</u>	
Type:	<u>572E</u>	<u>572E</u>	
Restraint System:	<u>3-Point safety belt with shoulder pretensioner and force limiter, airbag, knee bolster and adjustable head restraint</u>	<u>3-Point safety belt with shoulder pretensioner and force limiter, airbag, knee bolster and adjustable head restraint</u>	
Number of Data Channels:	<u>197</u>		
Number of Cameras:	<u>1</u>	Real Time	
	<u>16</u>	High Speed	
<u>DOOR OPENING DATA:</u>	<u>Closed, latched and operable without tools</u> - Left Front		
	<u>Closed, latched and operable without tools</u> - Right Front		
Front Seat(s) Data:	<u>DRIVER</u>	<u>PASSENGER</u>	
Seat Track Failure: (mm of shift)	<u>0</u>	<u>0</u>	
Seat Back Failure:	<u>None</u>	<u>None</u>	
<u>VISIBLE DUMMY CONTACT POINTS:</u>	<u>DRIVER</u>	<u>PASSENGER</u>	
Head:	<u>The face to the center of the airbag; The back of the head to the left of the center of the headrest.</u>	<u>The face, top and the back of the head to the center of the airbag.</u>	
Abdomen:	<u>None</u>	<u>None</u>	
Chest:	<u>Airbag</u>	<u>Airbag</u>	
Knees:	<u>Knee Bolster</u>	<u>Knee Bolster</u>	

DATA SHEET NO. 2 GENERAL TEST AND VEHICLE PARAMETER DATA

TEST VEHICLE INFORMATION:

Year/Make/Model/Body Style: 2002 Nissan Frontier King Cab Pickup

NHTSA No. : M25201 ; VIN: 1N6DD26S62C359023 ; Color: Silver

Engine Data: 4 cylinders; - CID; 2.4 Liters; - cc

Placement: X Longitudinal or In-Line; - Transverse or Lateral

Transmission Data: 5 speeds; X Manual; - Automatic; X Overdrive

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

Safety Belt Features - Driver X Pretensioner (Shoulder); X Load Limiter; X Adj. Anchorage

Safety Belt Features - Passenger X Pretensioner (Shoulder); X Load Limiter; X Adj. Anchorage

Major Options: X A/C; X Pwr.Strg.; X Pwr. Brakes

- Pwr. Windows; - Pwr. Door Locks; - Tilt Wheel

Date Received: 4-16-02 ; Odometer Reading 48 km

Selling Dealer: Nissan Motor Company, Ltd.

& Address: 03/02

DATA FROM TIRE VEHICLE'S CERTIFICATION LABEL:

Vehicle Manufactured by: Nissan Motor Co. Ltd.

Date of Manufacture 03/02

GVWR: 2132 kg; GAWR: 1082 kg FRONT; 1202 kg REAR

DATA FROM TIRE PLACARD:

Tire Pressure with Maximum Capacity Vehicle Load: 300 kpa FRONT

300 kpa REAR

Recommended Tire Size: P225/70R15

* Recommended Cold Tire Pressure: 207 kpa FRONT; 207 kpa REAR

Size of Tires on Test Vehicle: P225/70R15 ; Manufacturer: General

Vehicle Capacity Data:

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

Number of Occupants: 2 Front; 2 Rear; 4 Total

Vehicle Capacity Weight (VCW) = 667.5 kg

No. of Occupants x 68.04 kg = 272.16 kg

Rated Cargo/Luggage Weight (RCLW) = 395.34 kg (136.1 kg maximum)

*Tire pressure used for test

DATA SHEET NO. 2 GENERAL TEST AND VEHICLE PARAMETER DATA (cont.)

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

Right Front =	<u>427.5</u>	kg	Right Rear =	<u>317.0</u>	kg
Left Front =	<u>400.0</u>	kg	Left Rear =	<u>320.0</u>	kg
TOTAL FRONT =	<u>827.5</u>	kg	TOTAL REAR =	<u>637.0</u>	kg
TOTAL DELIVERED WEIGHT =	<u>1464.5</u>	kg			
% of Total Front of Vehicle Weight =	<u>56.5%</u>		% of Total Rear Weight =	<u>43.5%</u>	%

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:

Total Delivered Weight (UDW) =	<u>1464.5</u>	kg
Rated Cargo/Luggage Weight (RCLW) =	<u>136.1</u>	kg (136.1 kg maximum)
Weight of 2 p.572 Dummies @ 76 each =	<u>152</u>	kg
TARGET TEST WEIGHT =	<u>1752.6</u>	kg

WEIGHT OF TEST VEHICLE WITH TWO DUMMIES AND 129.0 KG OF CARGO WEIGHT:

Right Front =	<u>490.5</u>	kg	Right Rear =	<u>399.0</u>	kg
Left Front =	<u>457.5</u>	kg	Left Rear =	<u>398.5</u>	kg
TOTAL FRONT =	<u>948.0</u>	kg	TOTAL REAR =	<u>797.5</u>	kg
TOTAL TEST WEIGHT =	<u>1745.5</u>	kg			
% of Total Front Weight =	<u>54.3%</u>	%	% of Total Rear Weight =	<u>45.7%</u>	%
Weight of Ballast Secured in Vehicle Trunk Area =	<u>0</u>	kg			
Vehicle Components Removed for Weight Reduction:	<u>Tailgate, spare tire, jack</u>				

VEHICLE ATTITUDE (all dimension in millimeters):

AS DELIVERED:	RF	<u>796</u>	LF	<u>792</u>	RR	<u>801</u>	LR	<u>797</u>
FULLY LOADED:	RF	<u>774</u>	LF	<u>770</u>	RR	<u>752</u>	LR	<u>750</u>
AS TESTED:	RF	<u>774</u>	LF	<u>774</u>	RR	<u>768</u>	LR	<u>770</u>
Vehicle's Wheel Base:	<u>2950</u> mm							
Location of Vehicle's C.G.:	<u>1348</u> mm rearward of front wheel center.							

FUEL SYSTEM DATA:

Fuel System Capacity From Owner's Manual =	<u>59.8</u>	liters
Usable Capacity Figure Furnished by COTR =	<u>59.8</u>	liters
Test Volume Range (92 to 94% of Usable Capacity) =	<u>55.02</u>	to <u>56.21</u> liters
ACTUAL TEST VOLUME=	<u>55.26</u>	liters (with entire fuel system filled)
Test Fluid Type:	<u>Stoddard Solution</u>	Spec. Grav. = <u>0.764</u>
Kinematic Viscosity =	<u>0.96</u>	centistokes; Color = <u>Orange</u>
Type of Fuel Pump: Electric-	<u>X</u>	Mechanical- <u>-</u>
Does Electric Pump operate with ignition switch "ON" & engine "OFF"	Yes- <u>X</u>	No- <u>-</u>
<u>Details of Fuel System: The tank is located to the right of center ahead of the rear axle; The fuel lines are located along the right frame rail; The filler neck is located on the right side of the vehicle ahead of the rear axle.</u>		

DATA SHEET NO. 3 POST IMPACT DATA

TYPE OF TEST:

Type of Test: Frontal Barrier Impact Angle: 0°
Test Date: May 3, 2002 Time: 11:45 Temperature: 21 °C
Vehicle NHTSA No.: M25201
Required Impact Velocity Range: 55.5 to 57.1 kph

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

Trap No. 1 = 56.17 kph; Trap No. 2 = 56.17 kph
Distance from vehicle to barrier: (1) entering trap = 813 mm
(2) exiting trap = 305 mm

VEHICLE STATIC CRUSH: (mm) (For frontal and rear impacts only.)

Vehicle Length:

Pre-Test	Left = <u>5081</u> ; C/L = <u>5145</u> ; Right = <u>5081</u>
Post-Test	Left = <u>4644</u> ; C/L = <u>4664</u> ; Right = <u>4623</u>
Crush	Left = <u>437</u> ; C/L = <u>481</u> ; Right = <u>458</u>
AVERAGE	= <u>458.67</u> mm

VEHICLE REBOUND: (From rigid barrier only.)

Distance from front of test vehicle to impact point:

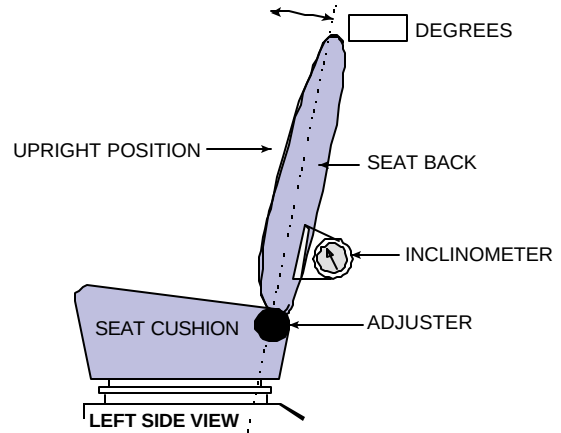
	Left = <u>520</u> ; C/L = <u>486</u> ; Right = <u>515</u>
AVERAGE	= <u>507</u> mm

DATA SHEET NO. 4 TEST VEHICLE INFORMATION

VEHICLE IDENTIFICATION:

Model Year : 2002 Vehicle Model: Nissan Frontier King Cab Body Style : Pickup

1. 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 ASSEMBLY

Seat back angle for driver's seat: 14

Measurement instructions: Recline seat to the 7th rearward notch from full upright position (0).

Seat back angle for passenger's seat: 14

Measurement instructions: Same as the driver's seat

2. Seat Fore and Aft Positioning

Positioning of the driver's seat: Adjust seat to mid-track position (detent 6 from full forward detent 0)

Positioning of the passenger's seat: Adjust seat to mid-track position (detent 9 from full forward detent 0)

3. Fuel Tank Capacity Data

3.1 A. "Usable Capacity" of the standard equipment fuel tank is 59.8 liters

B. "Usable Capacity" of the optional equipment fuel tank is - liters

C. "Usable Capacity" of the vehicle(s) used for certification testing to requirements of FMVSS 301 = 59.8 liters

3.2 Amount of Stoddard solvent added to vehicle(s) used for certification test(s) = 56.8 liters

3.3 Is vehicle equipped with electric fuel pump? Yes- X ; No- -

If YES, explain the vehicle operating conditions under which the fuel pump will pump fuel.

For 5 seconds after the ignition is turned on, while the engine is running, and for 1.5 seconds after the engine is switched off.

DATA SHEET NO. 4 TEST VEHICLE INFORMATION (cont.)

4. STEERING COLUMN ADJUSTMENTS:

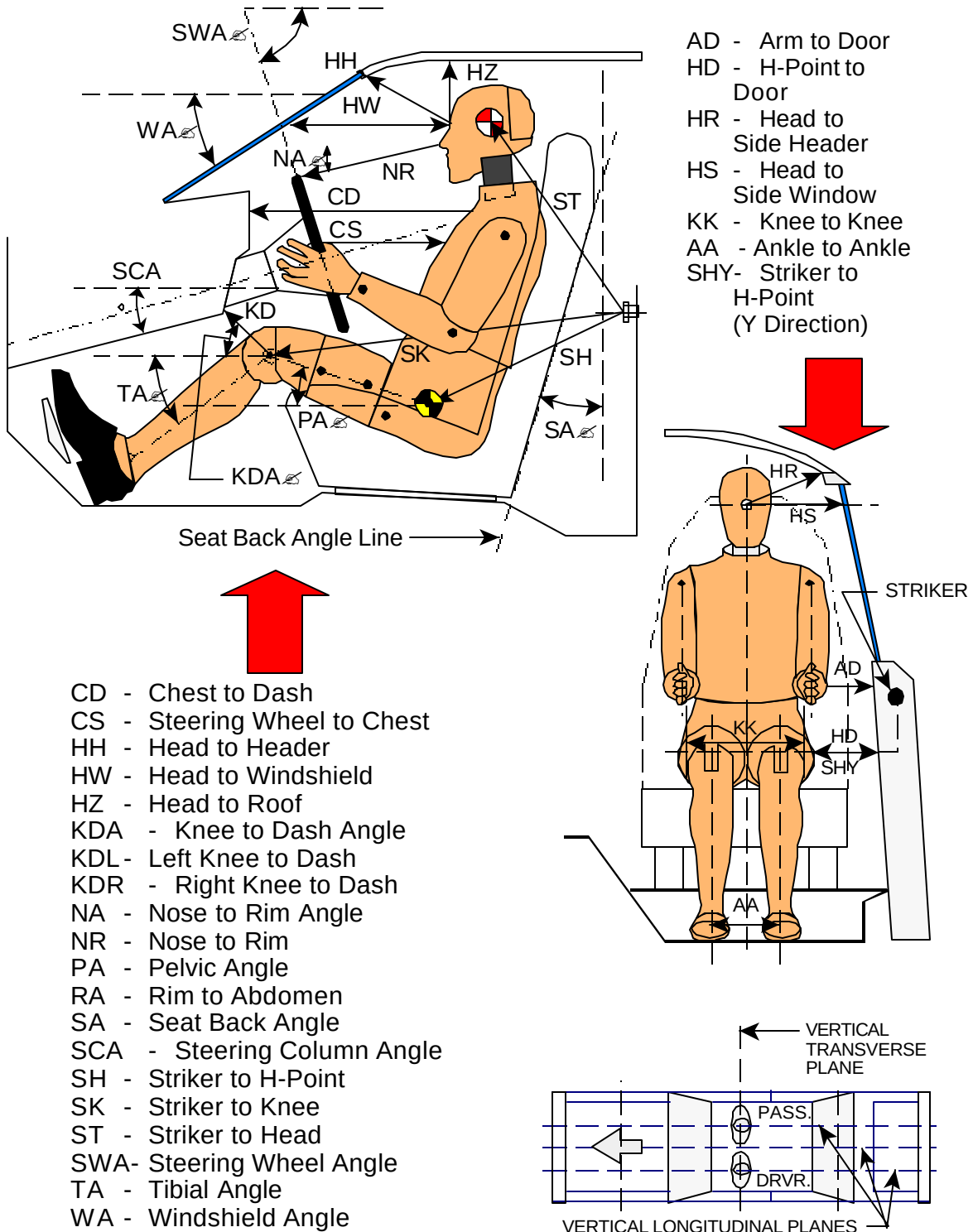
Steering wheel and column adjustments are made so that the steering wheel hub is at the geometric center of the locus it describes when it is moved through its full range of driving positions. If the tested vehicle has any of these adjustments, does your company use any specific procedures to determine the geometric center.

Operational Instructions: Not adjustable

5. SEAT BELT UPPER ANCHORAGE

Nominal design riding position: Upper-most position

DATA SHEET NO. 5 FRONT SEAT DUMMY POSITIONING MEASUREMENTS IN VEHICLE
DUMMY MEASUREMENT FOR FRONT SEAT PASSENGERS



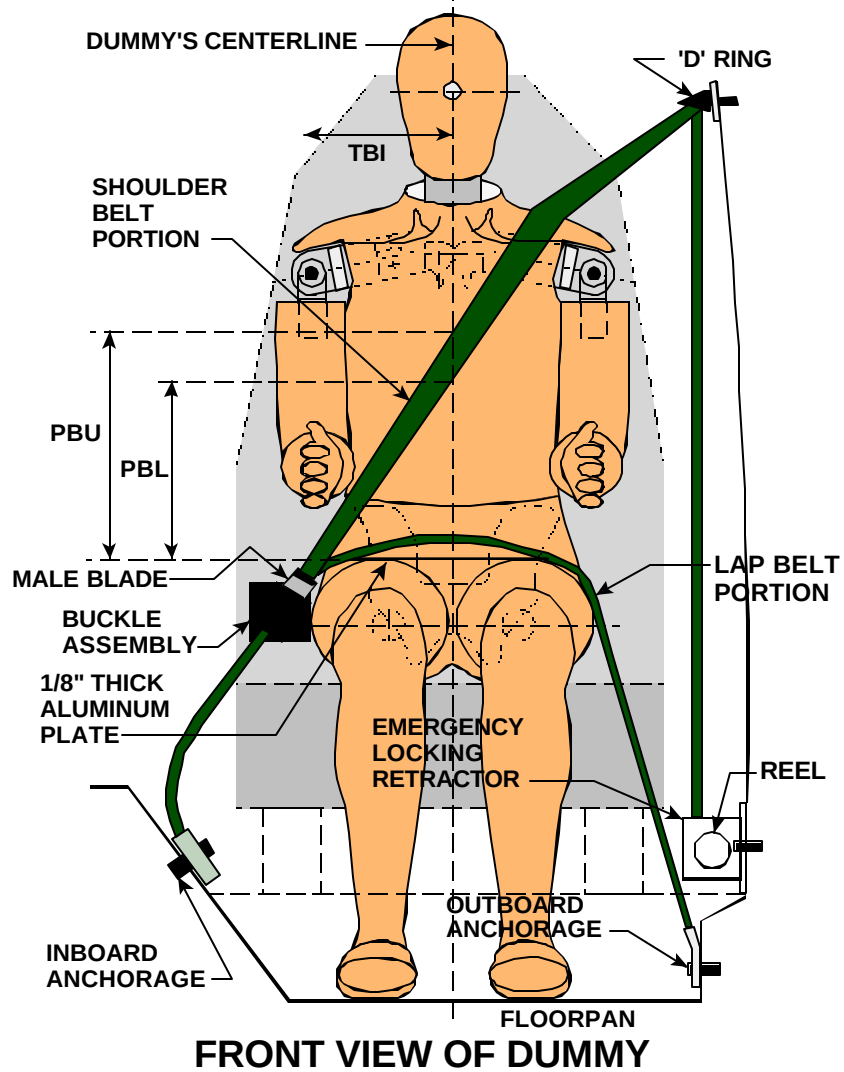
DATA SHEET NO. 5 FRONT SEAT DUMMY POSITIONING MEASUREMENTS IN VEHICLE (cont.)

	DRIVER (Serial #150)			PASS. (Serial #245)		
WA ⁰	36.0 deg.			N/A		
SWA ⁰	56.0 deg.			N/A		
SCA ⁰	24.0 deg.			N/A		
SA ⁰	14.6 deg.			14.5 deg.		
HZ	188			189		
HH	470			432		
HW	637			619		
HR	220			225		
NR	438	Angle	15 deg.	N/A		
CD	628			552		
CS	305			N/A		
RA	217			N/A		
KDL	218	Angle (KDA)	27 deg.	187		
KDR	207			170	Angle (KDA)	27 deg.
PA ⁰	23.6 deg.			23.8 deg.		
TA ⁰	40.0 deg.			41.2 deg.		
KK	280			275		
AA	240			275		
ST	590	Angle	9 deg.	585	Angle	12 deg.
SK	630	Angle	90 deg.	655	Angle	84 deg.
SH	275	Angle	116 deg.	295	Angle	107 deg.
SHY	195			180		
HS	304			337		
HD	147			130		
AD	85			86		

Dimensions in millimeters

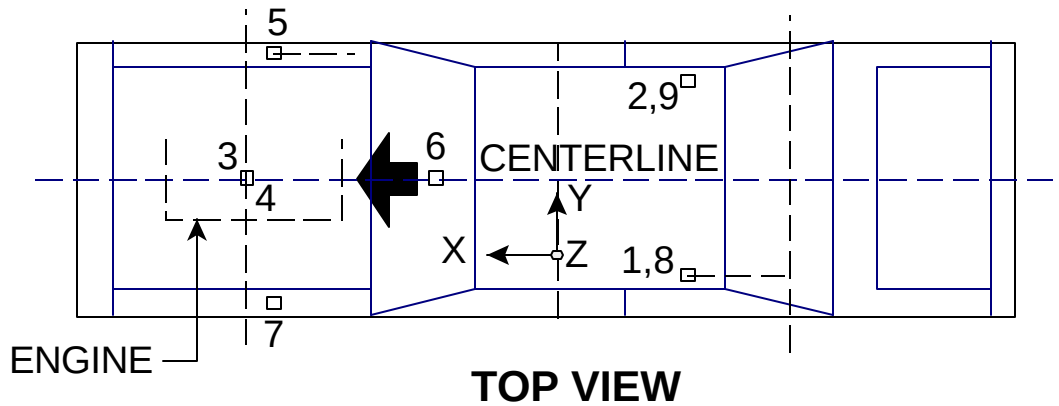
DATA SHEET NO. 6 SEAT BELT POSITIONING DATA

SEAT BELT POSITIONING DATA

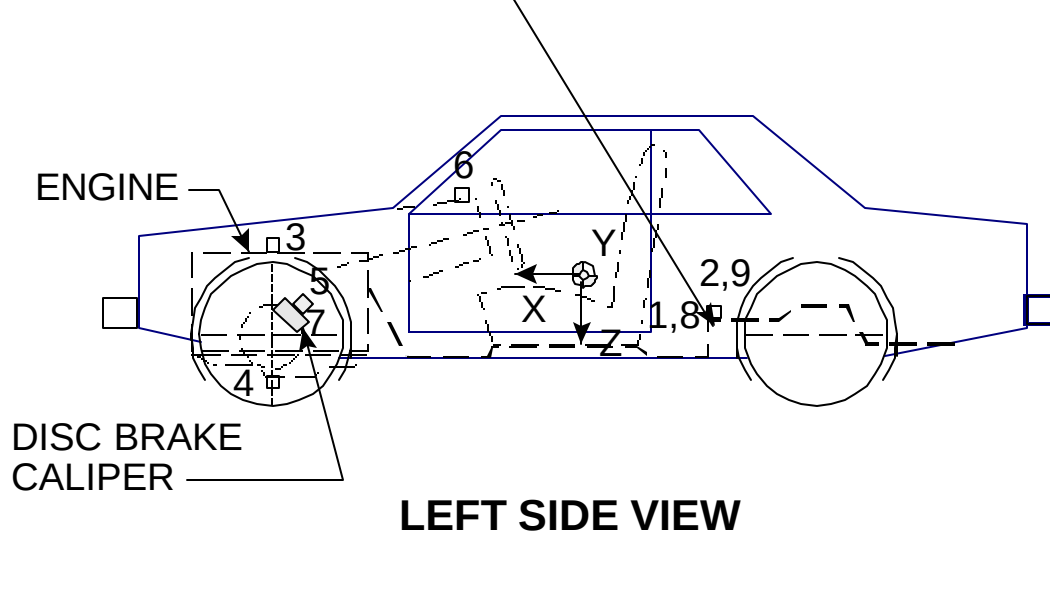


	DRIVER DUMMY (mm)	PASSENGER DUMMY (mm)
PBU -- Top surface of alum. plate to upper edge	345	335
PBL-- Top surface of alum. plate to belt lower edge	270	250
LAP BELT TENSION	10 N	10 N
SHOULDER BELT TENSION	Retractor	Retractor

VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY



REAR SEAT CUSHION
ASSY. FRONT ATTACHMENT
BRACKET SUPPORT



Note: Vehicle accelerometer location and data summary shown in DATA SHEET NO. 7

DATA SHEET NO. 7 VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY (cont.)

LOCATION		PRE-TEST LENGTH (mm)		
		X	Y	Z
1	Left Rear Seat Cross Member X	2740	-543	-441
2	Right Rear Seat Cross Member X	2739	549	-441
3	Top of Engine Block	4477	-129	-845
6	Instrument Panel	3463	-11	-945
7	Disc Brake Caliper @Left Side	4158	-736	-410
8	Left Rear Seat Cross Member Z	2740	-543	-441
9	Right Rear Seat Cross Member Z	2739	549	-441

LOCATION NUMBER	DESCRIPTION	MAXIMUM VALUE (g's)			
		Pos.	msec.	Neg.	msec.
1	Left Rear Seat Cross Member X	2.2	114.7	-43.7	14.6
2	Right Rear Seat Cross Member X	2.7	166.8	-42.1	15.2
3	Top of Engine Block	39.5	45.6	-167.7	35.6
6	Instrument Panel	*	*	*	*
7	Disc Brake Caliper @Left Side	13.1	56.1	-111.2	26.6
8	Left Rear Seat Cross Member Z	**	**	**	**
9	Right Rear Seat Cross Member Z	32.7	31.2	-22.8	49.0

*Not Accurate – Wire cut at 53 ms.

**Not Accurate – Wire cut at 74 ms.

DATA SHEET NO. 8 DUMMY INJURY CRITERIA VALUES

Vehicle Year/Make/Model/Body Style: 2002 Nissan Frontier King Cab Pickup

NHTSA Test No.: M25201 Test Date: May 3, 2002

		MAXIMUM VALUE							
		Driver				Passenger			
DESCRIPTION	Unit	Pos	msec	Neg	msec	Pos	msec	Neg	msec
Head 9 Array X Arm Y	g	9.7	78.3	-6.2	62.8	5.4	235.5	-17.7	64.8
Head 9 Array X Arm Z	g	34.1	80.2	-7.5	128.9	55.0	69.1	-3.0	124.9
Head 9 Array Y Arm X	g	7.5	205.1	-54.4	79.1	8.9	225.9	-35.6	64.6
Head 9 Array Y Arm Z	g	41.1	74.2	-3.9	130.1	48.3	64.7	-1.8	19.2
Head 9 Array Z Arm X	g	14.8	198.9	-56.9	77.5	18.0	218.9	-42.7	76.0
Head 9 Array Z Arm Y	g	12.0	91.5	-6.8	73.4	19.3	55.6	-29.0	51.5
Head X	g	8.2	205.2	-56.1	79.7	9.6	218.5	-32.7	77.9
Head Y	g	7.0	76.2	-5.7	25.3	8.4	57.7	-19.5	71.5
Head Z	g	33.1	74.8	-3.1	129.9	49.7	69.1	-1.5	19.1
Head Resultant	g	65.1	79.7	0.0	-49.1	59.4	69.1	0.0	-45.3
Redundant Head X	g	8.7	205.7	-55.2	79.2	9.8	218.3	-30.3	78.4
Redundant Head Y	g	6.6	76.9	-5.8	25.3	9.1	57.7	-16.7	73.5
Redundant Head Z	g	33.1	74.4	-3.2	130.5	50.8	68.6	-1.5	19.0
Redundant Head Resultant	g	64.3	79.2	0.0	-48.8	58.7	69.9	0.0	-43.1
Upper Neck Fx	N	114.6	210.9	-582.0	109.2	457.6	60.0	-881.4	119.5
Upper Neck Fy	N	140.3	122.2	-95.6	57.6	158.0	63.8	-239.9	135.7
Upper Neck Fz	N	1965.0	73.9	-296.7	262.5	802.9	42.1	-968.0	56.5
Upper Neck F Resultant	N	2001.0	73.9	2.2	-48.3	1051.4	56.5	0.9	-43.2
Upper Neck Mx	N-m	11.6	58.1	-20.4	75.0	34.0	72.6	-24.3	128.3
Upper Neck My	N-m	39.0	123.7	-23.8	52.8	49.7	125.2	-12.1	200.1
Upper Neck Mz	N-m	7.2	85.5	-8.4	112.5	10.7	82.5	-1.7	156.1
Upper Neck M Resultant	N-m	40.3	123.8	0.1	-50.0	54.5	126.3	0.0	-38.8
Chest X	g	2.5	127.3	-45.2	73.8	2.8	261.7	-43.4	65.7
Chest Y	g	8.5	74.4	-6.6	36.1	4.6	33.3	-9.1	82.0
Chest Z	g	9.4	44.0	-5.9	100.5	13.1	71.1	-11.1	106.8
Chest Resultant	g	46.6	73.9	0.0	-50.0	43.6	65.7	0.0	-49.8

DATA SHEET NO. 8 DUMMY INJURY CRITERIA VALUES (cont.)

Vehicle Year/Make/Model/Body Style: 2002 Nissan Frontier King Cab Pickup

NHTSA Test No.: M25201 Test Date: May 3, 2002

		MAXIMUM VALUE							
		Driver				Passenger			
DESCRIPTION	Unit	Pos	msec	Neg	msec	Pos	msec	Neg	msec
Redundant Chest X	g	2.5	127.3	-45.3	73.9	2.3	266.4	-45.2	65.7
Redundant Chest Y	g	8.5	74.7	-6.8	36.0	4.5	34.1	-9.5	81.7
Redundant Chest Z	g	9.1	41.0	-7.2	101.4	12.9	71.0	-11.2	107.0
Redundant Chest Resultant	g	46.6	73.9	0.1	-50.0	45.4	65.7	0.0	-48.5
Chest Displacement	mm	0.1	15.9	-37.7	82.9	0.0	18.2	-29.3	51.9
Pelvic X	g	6.6	134.0	-57.5	50.0	9.0	110.9	-64.0	53.5
Pelvic Y	g	11.6	78.3	-11.0	50.2	6.6	53.5	-5.5	87.9
Pelvic Z	g	3.4	261.0	-22.8	70.0	3.3	218.3	-26.0	67.9
Pelvic Resultant	g	61.4	50.0	0.1	-37.4	65.9	53.5	0.0	-49.6
Left Femur	N	1287.0	61.1	-321.1	126.8	1511.0	40.2	-1781.2	54.0
Right Femur	N	1871.4	43.1	-3034.4	50.0	1220.6	40.6	-2182.4	51.3
Left Upper Tibia Mx	N-m	15.5	135.5	-50.9	40.0	5.3	184.4	-37.3	74.1
Left Upper Tibia My	N-m	30.3	124.6	-112.0	40.8	21.8	54.9	-114.8	40.1
Left Lower Tibia Fz	N	119.4	204.8	-2479.6	34.8	90.3	27.5	-1994.4	43.0
Left Lower Tibia Mx	N-m	87.9	47.9	-32.8	33.5	22.6	76.5	-7.7	43.0
Left Lower Tibia My	N-m	24.9	128.1	-52.8	40.2	28.6	56.2	-87.0	39.4
Right Upper Tibia Mx	N-m	65.2	46.3	-21.8	48.7	36.8	48.9	-19.8	73.5
Right Upper Tibia My	N-m	24.5	130.5	-132.3	50.0	123.2	50.8	-104.3	37.6
Right Lower Tibia Fz	N	399.2	35.7	-4142.7	49.9	64.2	192.8	-2393.3	33.7
Right Lower Tibia Mx	N-m	32.8	45.7	-118.2	49.2	21.0	38.2	-45.3	74.5
Right Lower Tibia My	N-m	58.9	55.5	-55.8	45.5	43.0	51.1	-39.2	38.1
Left Foot Aft Ax	g	13.9	122.8	-100.0	37.1	32.3	58.6	-104.7	42.8
Left Foot Aft Az	g	4.0	200.0	-61.7	38.0	21.5	61.7	-52.9	48.3
Left Foot Fore Az	g	*	*	*	*	51.2	32.4	-140.6	46.3
Right Foot Aft Ax	g	27.6	54.4	-148.9	48.1	10.0	100.0	-82.1	34.6
Right Foot Aft Az	g	35.9	47.5	-122.3	48.0	2.8	226.7	-51.0	36.6
Right Foot Fore Az	g	145.6	47.6	-191.2	48.1	35.9	30.7	-72.6	37.3

* Data is questionable

DATA SHEET NO. 8 DUMMY INJURY CRITERIA VALUES (cont.)

Vehicle Year/Make/Model/Body Style: 2002 Nissan Frontier King Cab Pickup

NHTSA Test No.: M25201 Test Date: May 3, 2002

HEAD INJURY CRITERIA (HIC)				
	HIC**	t ₁ (msec)	t ₂ (msec)	Average Acceleration t ₁ to t ₂
Position #1 - Driver	591.8	57.5	93.2	48.7
Position #2 - Passenger	501.4	61.5	97.5	45.5

** 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 #1 - Driver	45.5	72.8	75.8	452.4
Position #2 - Passenger	41.8	64.4	67.4	385.0

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

DATA SHEET NO. 8 DUMMY INJURY CRITERIA VALUES (cont.)
REDUNDANT DATA

Vehicle Year/Make/Model/Body Style: 2002 Nissan Frontier King Cab Pickup
 NHTSA Test No.: M25201 Test Date: May 3, 2002

HEAD INJURY CRITERIA (HIC) REDUNDANT				
	HIC**	t ₁ (msec)	t ₂ (msec)	Average Acceleration t ₁ to t ₂
Position #1 - Driver	565.7	57.5	92.9	48.0
Position #2 - Passenger	473.6	61.7	97.7	44.4

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

CLIP SUMMARY* REDUNDANT				
	CLIP (g's)	t ₁ (msec)	t ₂ (msec)	CSI
Position #1 - Driver	45.5	72.8	75.8	456.9
Position #2 - Passenger	42.7	64.1	67.1	394.2

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

DATA SHEET NO. 9 SEAT BELT PERFORMANCE ASSESSMENT TEST DATA

BELT LENGTH DATA:

Belt length from trim panel exit
to bolt hole anchor point for
continuous webbing systems.

Driver

Passenger

2010

2040

Shoulder belt length as measured
on Part 572 Dummy.

870

880

Lap belt length as measured
on Part 572 Dummy.

890

910

Dimensions in millimeters

DATA SHEET NO.10 SUMMARY OF FMVSS 212 DATA

FMVSS NO. 212 - "WINDSHIELD MOUNTING" DATA

DETAILS OF WINDSHIELD MOUNTING SUCH AS RETENTION METHOD, TRIM TYPE, ETC.:

Windshield is bonded in place and covered with a 20 mm molding.

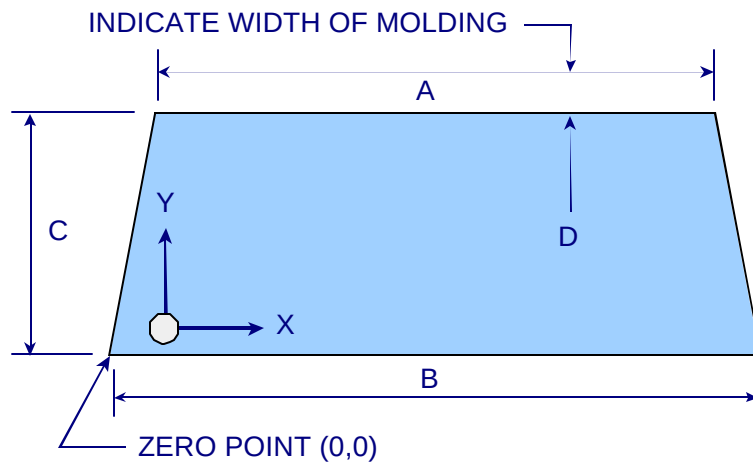
FMVSS 212 REQUIREMENTS:

The Post-Test periphery retention amount must be at least 75% of the Pre-Test periphery measurement for vehicles NOT equipped with automatic restraints, and 50% for each side of the windshield for vehicles equipped with automatic restraint systems for front occupants,

FMVSS 212 TEST DATA

	WINDSHIELD PERIPHERY		% OF RETENTION
	PRE-TEST (mm)	POST-TEST (mm)	
RIGHT SIDE	2000	2000	100.0%
LEFT SIDE	2000	2000	100.0%
TOTAL	4000	4000	100.0%

AREA OF RETENTION FAILURE: None



DIMENSIONS (mm)	
A	1220
B	1480
C	650
D	20

FRONT VIEW OF WINDSHIELD

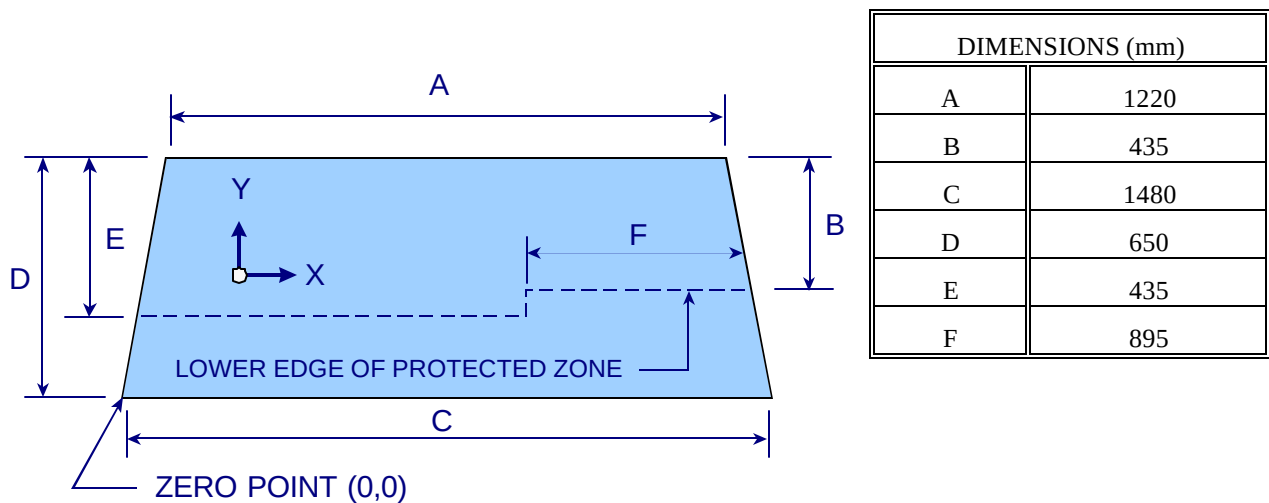
FAILURE DETAILS: None

DATA SHEET NO. 11 FMVSS NO. 219 (PARTIAL) - "WINDSHIELD ZONE INTRUSION" DATA

PROTECTED ZONE LOWER EDGE REQUIREMENT:

The lower edge of the protected zone is determined by placing a 165 mm diameter rigid sphere weighing 6.8 kg in a position such that it simultaneously contacts the inner surface of the windshield and the top surface of the instrument panel including padding. The locus of points is drawn on the inner surface of the windshield contacted by the sphere across the width of the instrument panel. From the outermost contactable points extend the locus line horizontally to the edges of the windshield, then draw a line on the inner surface of the windshield below and 13 mm distant from the locus line. The LOWER EDGE OF THE PROTECTED ZONE is the longitudinal projection of this line onto the outer surface of the windshield.

FMVSS 219 TEST DATA:



FRONT VIEW OF WINDSHIELD

DETAILS OF WINDSHIELD GLASS PENETRATION GREATER THAN 6 mm: None

(Show location of penetration on the above sketch)

COORDINATES		
	X	Y
1.	-	-
2.	-	-
3.	-	-
4.	-	-

DATA SHEET NO. 12 FMVSS NO. 301-75 "FUEL SYSTEM INTEGRITY" POST IMPACT TEST DATA

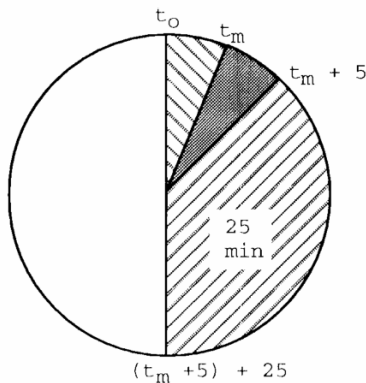
NHTSA TEST No.: M25201 TEST DATE: May 3, 2002
VEHICLE MAKE/MODEL: 2002 Nissan Frontier King Cab Pickup

The test vehicle was filled from 92% to 94% of the manufacture's "usable" capacity. The electric fuel pump was operating if it will operate without engine operation. Two Part 572 anthropomorphic test devices were located at each of the front designated seating positions.

=====

TEST VEHICLE IMPACT TYPE: X Frontal (56 kph)
- Oblique (48 kph) with _____ deg. barrier face first
 contacting _____
- (driver/passenger) side
- Rear Moving Barrier (48 kph)
- Lateral Moving Barrier (32 kph)

FUEL SPILLAGE MEASUREMENT:



1. From impact until vehicle motion ceases
2. For 5 minute period after vehicle motion ceases
3. For next 25 minutes

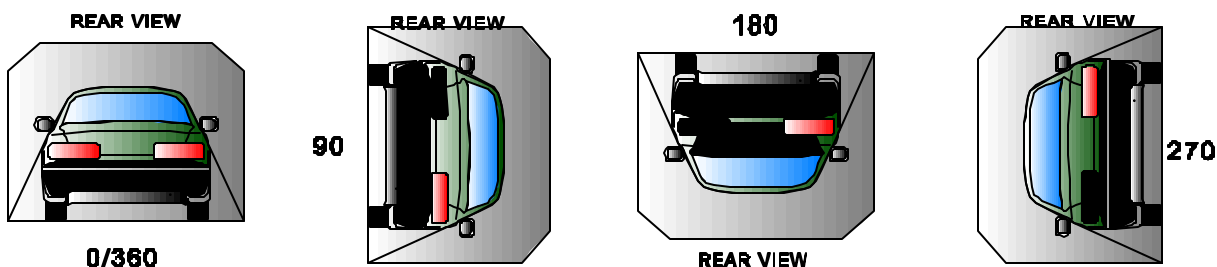
ACTUAL	MAX ALLOWED
0	28 g
0	141 g
0	28 g/min.

SOLVENT SPILLAGE DETAILS: None

DATA SHEET NO. 13 - ROLLOVER DATA

Vehicle: 2002 Nissan Frontier King Cab Pickup

NHTSA No.: M25201



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	
0° - 90°	1	minutes	17	seconds	5	minutes	6	minutes	17	seconds	7	minutes
90° - 180°	1	minutes	03	seconds	5	minutes	6	minutes	3	seconds	7	minutes
180°-270°	1	minutes	01	seconds	5	minutes	6	minutes	1	seconds	7	minutes
270°-360°	1	minutes	11	seconds	5	minutes	6	minutes	11	seconds	7	minutes

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

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

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

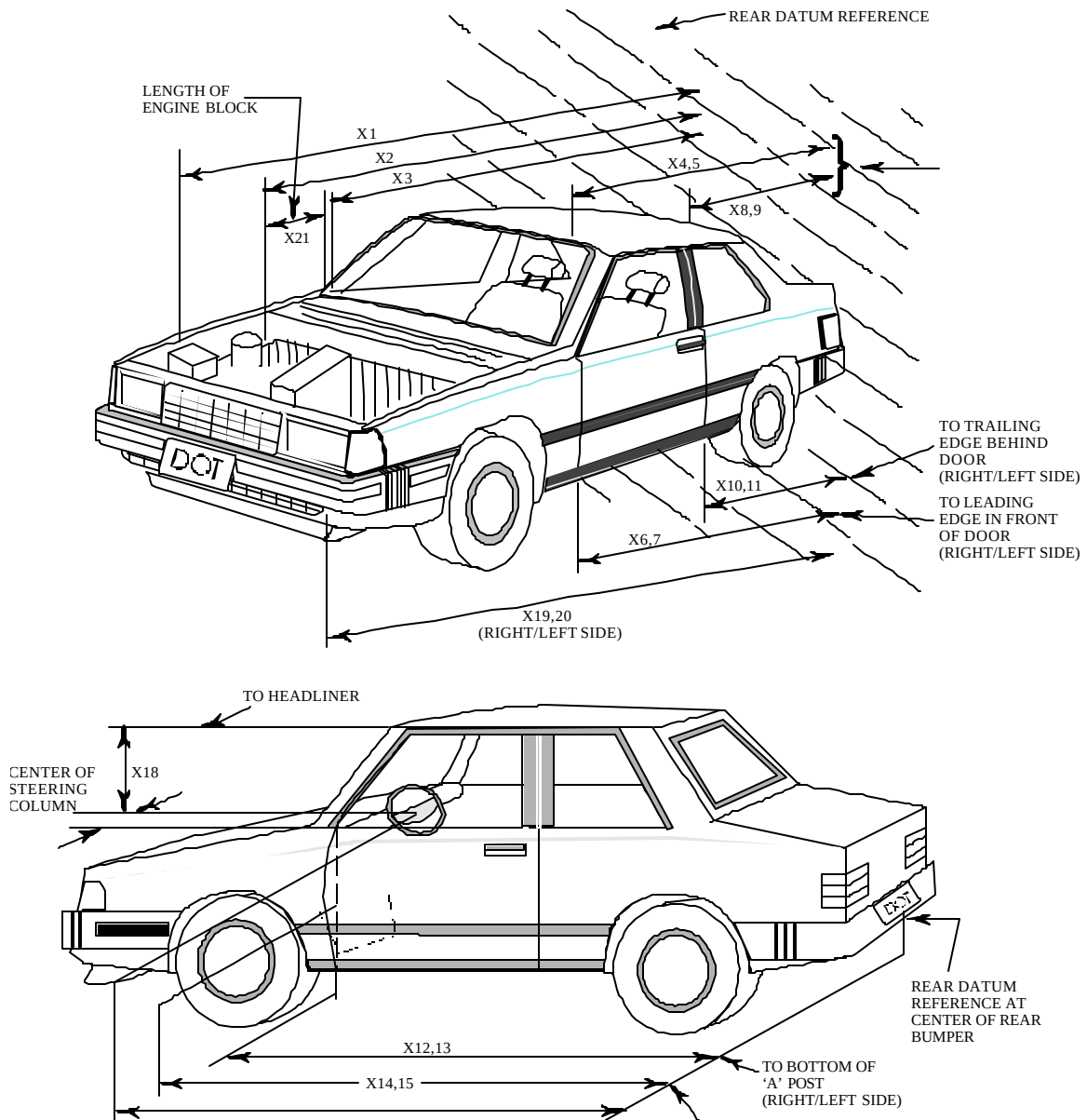
Rollover Stage	First 5 minutes from onset of rotation (g)	6th min. (g)	7th min. (g)	8th min. (if required) (g)
0° - 90°	0	0	0	N/A
90° - 180°	0	0	0	N/A
180°-270°	0	0	0	N/A
270°-360°	0	0	0	N/A

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

IV. SOLVENT SPILLAGE LOCATION(S):

Rollover Stage	Spillage Location
0° - 90°	None
90° - 180°	None
180°-270°	None
270°-360°	None

DATA SHEET NO. 14 TEST VEHICLE MEASUREMENTS

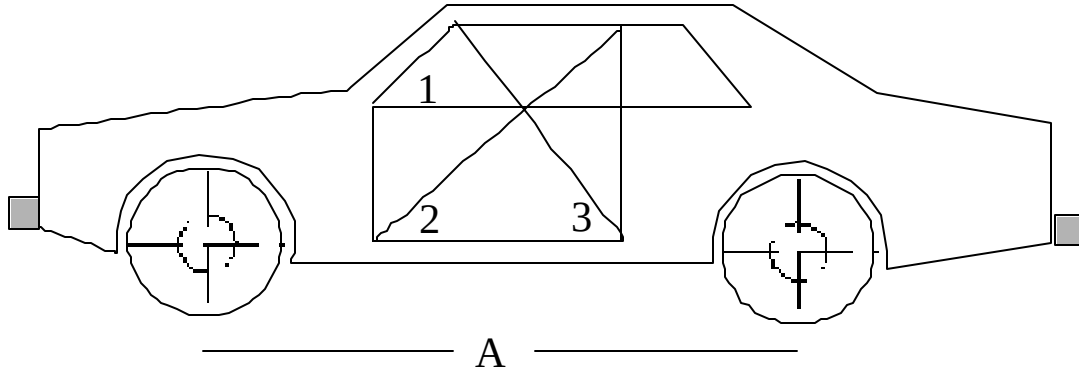


DATA SHEET NO.14 VEHICLE MEASUREMENTS (cont.)

No.		Pre-Test	Post-Test	Difference
X1	Total Length of Vehicle at Centerline	5145	4664	481
X2	Rear Surface of Vehicle to Front of Engine	4509	4393	116
X3	Rear Surface of Vehicle to Firewall	4019	4001	18
X4	Rear Surface of Vehicle to Upper Leading Edge of Right Door	3776	3752	24
X5	Rear Surface of Vehicle to Upper Leading Edge of Left Door	3766	3759	7
X6	Rear Surface of Vehicle to Lower Leading Edge of Right Door	3703	3700	3
X7	Rear Surface of Vehicle to Lower Leading Edge of Left Door	3710	3734	-24
X8	Rear Surface of Vehicle to Upper Trailing Edge of Right Door	2615	2606	9
X9	Rear Surface of Vehicle to Upper Trailing Edge of Left Door	2621	2616	5
X10	Rear Surface of Vehicle to Lower Trailing Edge of Right Door	2615	2621	-6
X11	Rear Surface of Vehicle to Lower Trailing Edge of Left Door	2617	2626	-9
X12	Rear Surface of Vehicle to Bottom of "A" Post of Right Side	3760	3747	13
X13	Rear Surface of Vehicle to Bottom of "A" Post of Left Side	3769	3762	7
X14	Rear Surface of Vehicle to Firewall, Right Side	4001	3983	18
X15	Rear Surface of Vehicle to Firewall, Left Side	4005	3991	14
X16	Rear Surface of Vehicle to Steering Column	3245	3240	5
X17	Center of Steering Column to "A" Post	283	246	37
X18	Center of Steering Column to Headliner	434	432	2
X19	Rear Surface of Vehicle to Right Side of Front Bumper	5081	4623	458
X20	Rear Surface of Vehicle to Left Side of Front Bumper	5081	4644	437
X21	Length of Engine Block	470	470	0
RD	Rear Surface of Vehicle to Right Side of Dash Panel	3497	3478	19
CD	Rear Surface of Vehicle to Center of Dash Panel	3436	3428	8
LD	Rear Surface of Vehicle to Left Side of Dash Panel	3500	3479	21

All Dimensions in mm

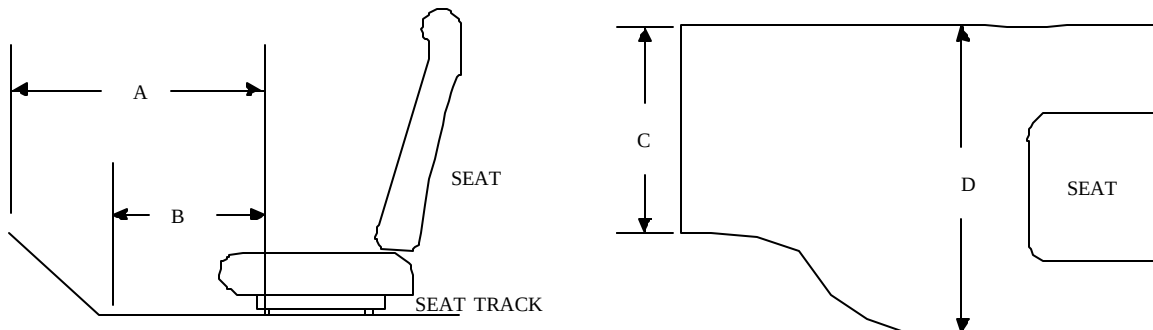
DATA SHEET NO.14 VEHICLE MEASUREMENTS (cont.)
 VEHICLE INTRUSION MEASUREMENTS
 DOOR OPENING WIDTH



UNITS (mm)	LEFT			RIGHT		
MEASUREMENT	1	2	3	1	2	3
BEFORE TEST	1086	1494	1130	1085	1496	1124
AFTER TEST	1072	1490	1132	1066	1489	1133
DIFFERENCE	14	4	-2	19	7	-9

UNITS (mm)	A = WHEELBASE LEFT	A = WHEELBASE RIGHT
BEFORE TEST	2950	2950
AFTER TEST	2861	2881
DIFFERENCE	89	69

DATA SHEET NO.14 VEHICLE MEASUREMENTS (cont.)
 VEHICLE INTRUSION MEASUREMENTS
 STATIC FOOTWELL DEFORMATION



DRIVER

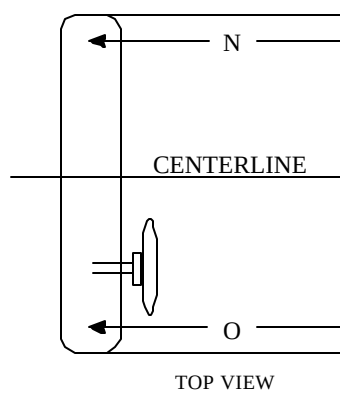
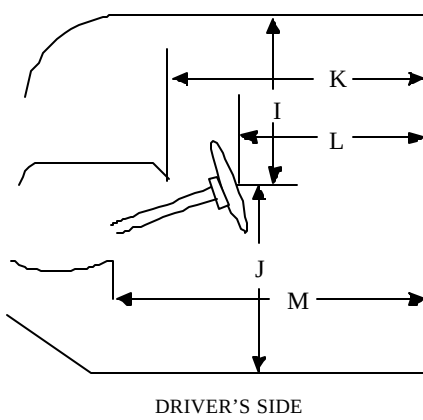
Measurement	Pre-Test	Post-Test	Difference
A	792	747	45
B	585	633	-48
C	400	417	-17
D	429	432	-3

PASSENGER

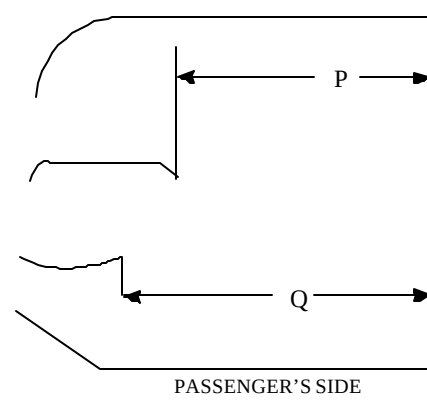
Measurement	Pre-Test	Post-Test	Difference
A	730	708	22
B	610	603	7
C	400	389	11
D	403	404	-1

Units = mm

DATA SHEET NO.14 VEHICLE MEASUREMENTS (cont.)
 VEHICLE INTRUSION MEASUREMENTS
 STATIC PASSENGER COMPARTMENT INTRUSION



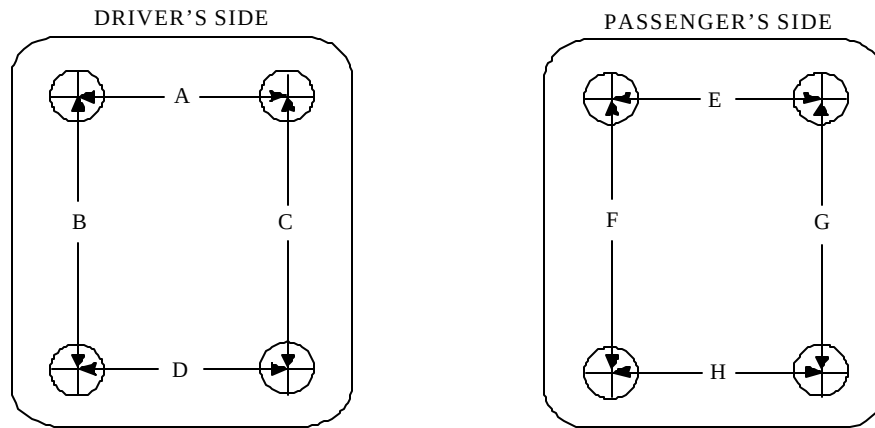
MEASUREMENTS
FROM C-PILLAR
BELT ANCHORAGE



Measurement	Pre-Test	Post-Test	Difference
I	434	432	2
J	614	638	-24
K	892	889	3
L	590	582	8
M	845	867	-22
N	855	837	18
O	845	821	24
P = K (PASS.)	893	881	12
Q = M (PASS.)	881	868	13

Units = mm

DATA SHEET NO.14 VEHICLE MEASUREMENTS (cont.)
FLOORBOARD DEFORMATION

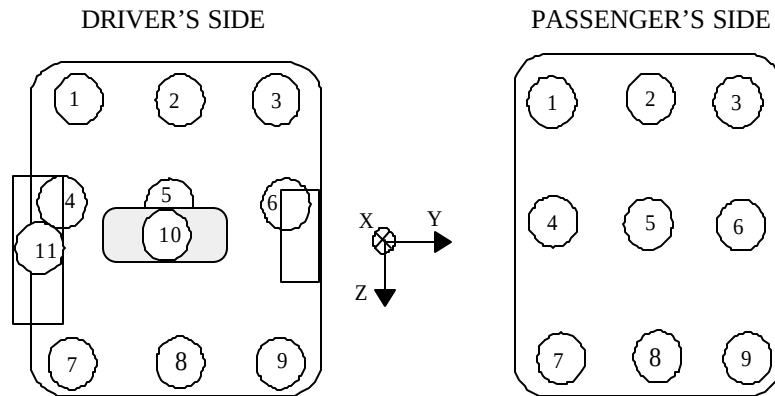


TOP VIEW THROUGH FLOOR PAN

Measurement	Pre-Test	Post-Test	Difference
A	400	417	-17
B	489	503	-14
C	505	488	17
D	429	432	-3
E	400	389	11
F	396	398	-2
G	342	338	4
H	403	404	-1

Units = mm

DATA SHEET NO.14 VEHICLE MEASUREMENTS (cont.)
TOE-PAN INTRUSION



Driver Side Toe-pan Measurements

Toe-pan Location	X Deformation (mm)			Z Deformation (mm)		
	Pre-Test	Post-Test	Difference	Pre-Test	Post-Test	Difference
1	3965	3958	7	-701	-808	107
2	4003	3956	47	-671	-762	91
3	3982	3850	132	-671	-798	127
4	3886	3860	26	-585	-671	86
5	3918	3884	34	-540	-623	83
6	3879	3849	30	-556	-624	68
7	3810	3821	-11	-448	-525	77
8	3797	3841	-44	-440	-506	66
9	3767	3772	-5	-471	-532	61
10	3782	3782	0	-633	-698	65
11	3823	3823	0	-616	-684	68

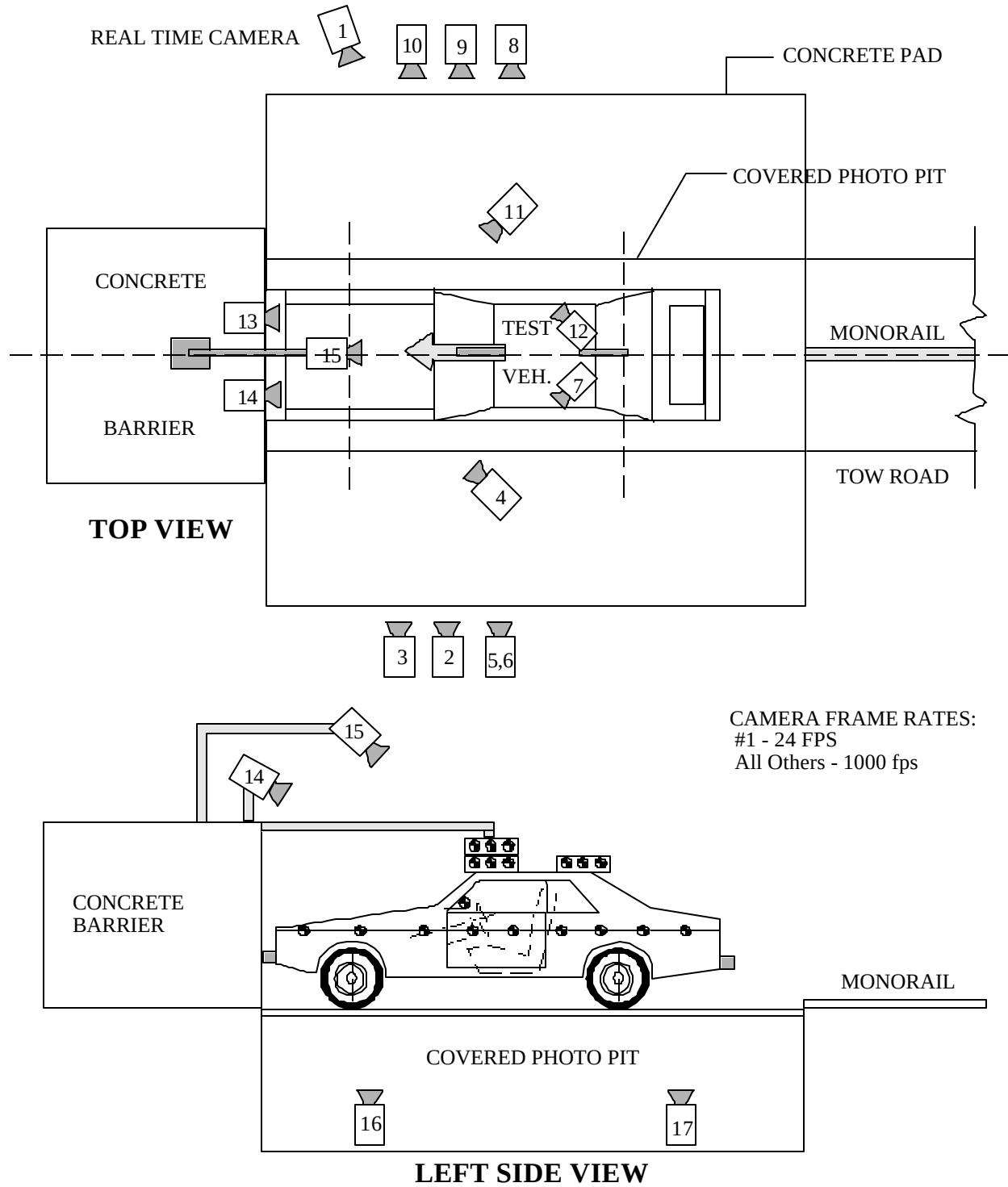
Passenger Side Toe-pan Measurements

Toe-pan Location	X Deformation (mm)			Z Deformation (mm)		
	Pre-Test	Post-Test	Difference	Pre-Test	Post-Test	Difference
1	3925	3865	60	-628	-661	33
2	3935	3905	30	-619	-642	23
3	3872	3860	12	-641	-660	19
4	3879	3836	43	-546	-583	37
5	3877	3858	19	-546	-572	26
6	3822	3815	7	-579	-591	12
7	3811	3783	28	-465	-486	21
8	3815	3800	15	-467	-481	14
9	3769	3762	7	-490	-503	13

Reference: SAE: X = Rear Bumper (Positive: forward); Z = Ground (Positive: down)

DATA SHEET NO.15 HIGH-SPEED CAMERA LOCATIONS

NOTE: Camera information shown in DATA SHEET NO. 15.



DATA SHEET NO.15 HIGH-SPEED CAMERA LOCATIONS (cont.)

NHTSA Test No.: M25201 Vehicle: 2002 Nissan Frontier King Cab Pickup

CAMERA NO.	VIEW	CAMERA POSITIONS (mm)*			ANGLE (deg)**	FILM PLANE TO HEAD TARGET	LENS (mm)	SPEED (fps)
		X	Y	Z				
1	Real-Time Camera	-	-	-	-	-	-	24
2	Overall Left Side	7056	1642	1070	-2	6641	12.5	1010
3	Left Side View	8178	804	1190	-5	7763	25	890
4	Driver and Interior View	7175	2613	1995	-12	-	25	1000
5	Steering Column (Bottom)	7620	1510	1170	-4	7205	25	1010
6	Steering Column (Top)	7620	1510	1770	-8	7205	25	1015
7	Left Belt	-	-	-	-	-	13	-
8	Overall Right Side	7295	2164	1138	-3	7578	12.5	1005
9	Right Side View	8173	1352	1150	-2	8456	25	1000
10	Right Passenger View	7939	2583	1431	-5	8222	35	1000
11	Passenger and Interior View	7525	2713	1982	-9	-	25	980
12	Right Belt	-	-	-	-	-	13	-
13	Passenger Front View	620	-92	1987	-34	-	13	1005
14	Driver Front View	620	-92	1987	-34	-	13	1015
15	Windshield View	0	-530	3374	-54	-	13	1000
16	Pit View of Engine	0	615	-3048	90	-	13	960
17	Pit View of Fuel Tank	0	2878	-3048	90	-	13	1000

*X = film plane to monorail centerline ** = referenced to horizontal plane

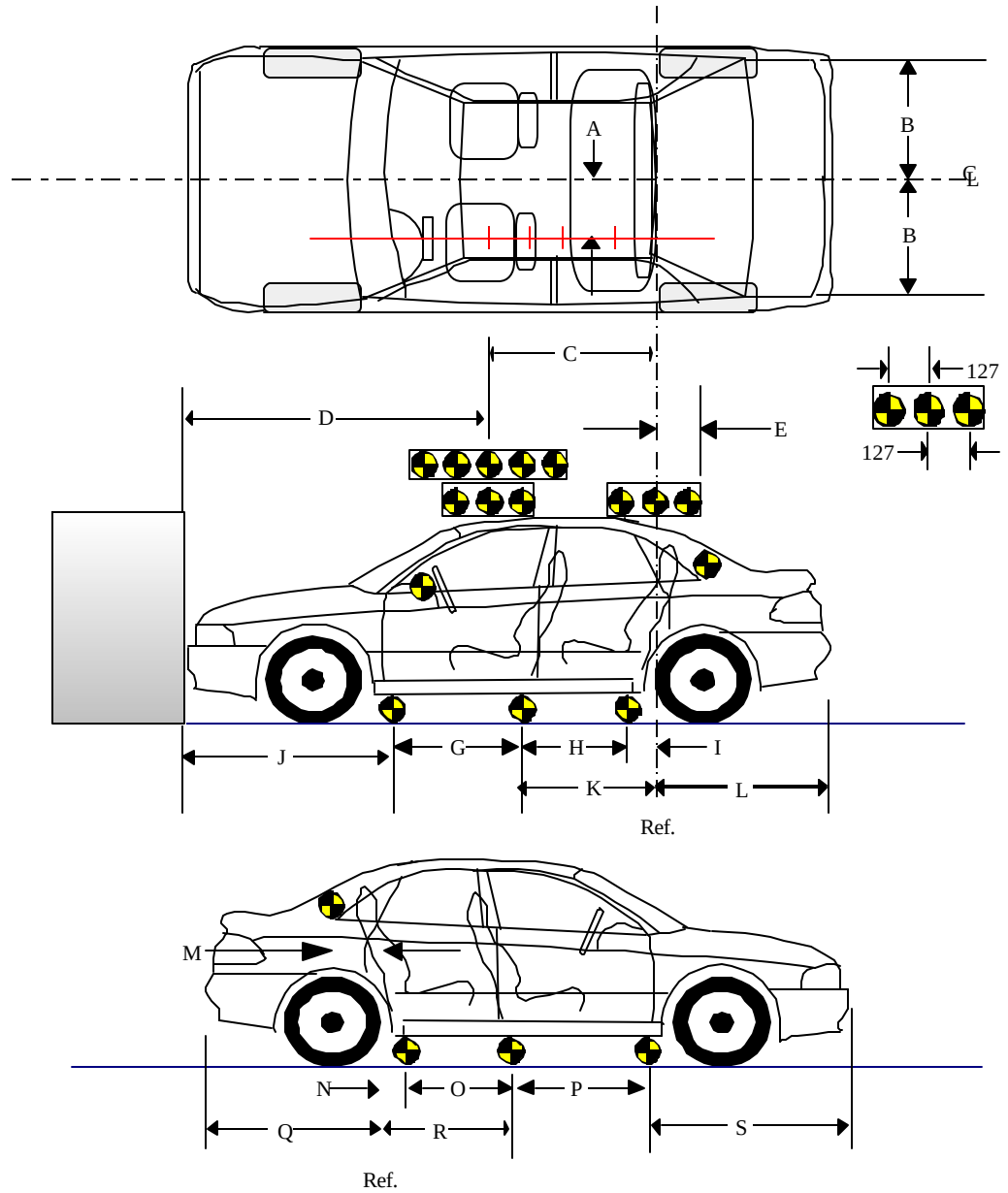
Y = film plane to impact location N.T. indicates No Timing

Z = film plane to ground

DATA SHEET NO. 16 VEHICLE REFERENCE PHOTO TARGET LOCATIONS

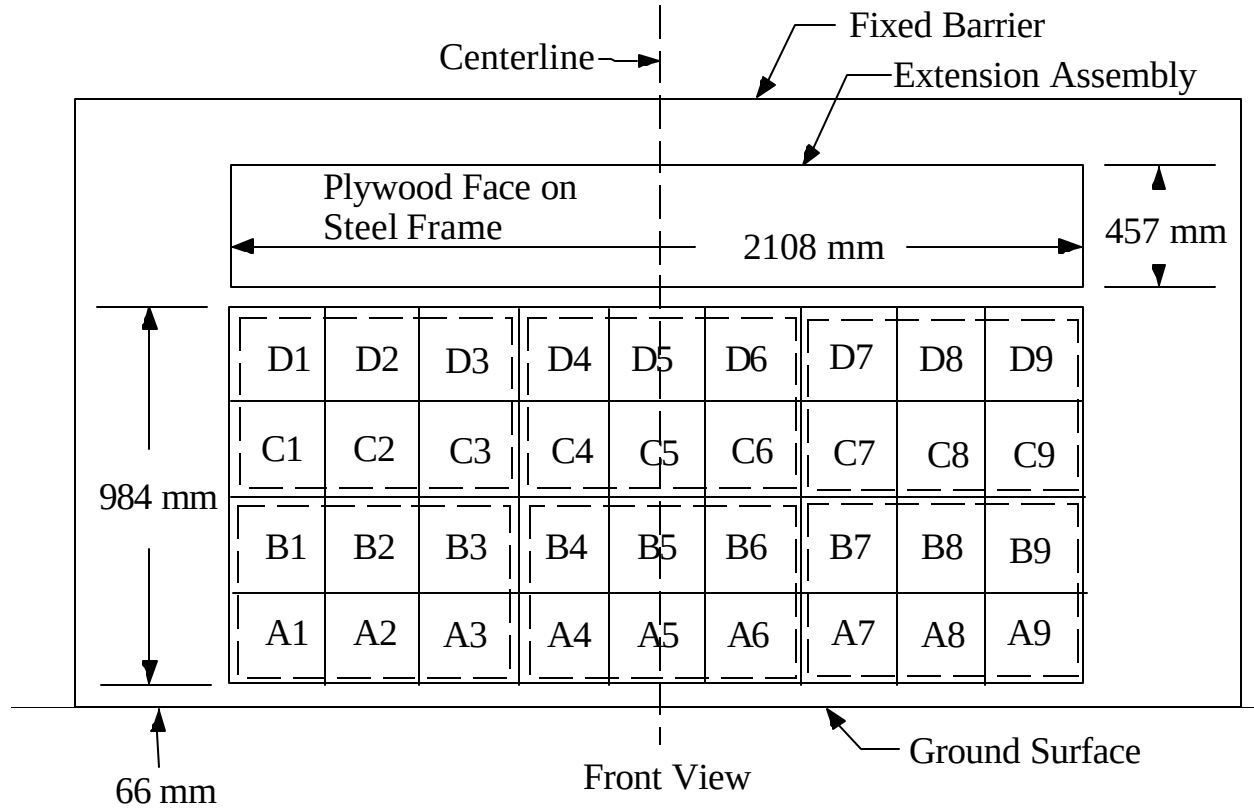
(Dimensions in millimeters)

A	359
B	698
C	1225
D	1903
E	720
F	1440
G	871
H	890
I	249
J	1487
K	1139
L	1646
M	722
N	251
O	874
P	878
Q	1638
R	1125
S	1502



DATA SHEET NO. 17 LOAD CELL LOCATIONS ON FIXED BARRIER

36 Load Cells
 4 Rows
 9 Columns
 6 Groupings (6 cells/group)



6 GROUPS OF 6 LOAD CELLS EACH

Group 4 C1 thru D3	Group 5 C4 thru D6	Group 6 C7 thru D9
Group 1 A1 thru B3	Group 2 A4 thru B6	Group 3 A7 thru B9

The following data is presented in Appendix B:

- (1) Data from 36 individual load cells
- (2) Total or Sum of 36 individual load cells
- (3) Data from 6 Groupings shown above (6 cells/group)

DATA SHEET NO. 18 POST TEST AIR BAG DATA

NHTSA No.: M25201; Test Date: May 3. 2002; Technician: Patrick MacDiarmid

Vehicle Model Year/Make/Model: 2002 Nissan Frontier King Cab Pickup

A. No. of vent holes: 2 -Driver 2 -Passenger

B. Size of vent holes: (mm²) 314 -Driver 962 -Passenger

C. Total vent area: (mm²) 628 -Driver 1924 -Passenger

D. Deflated air bag length and width dimensions or, if round, diameter. (mm)

Driver: 570 -Height; 510 -Width; 310 -Depth

Passenger: 680 -Height; 650 -Width; 770 -Depth

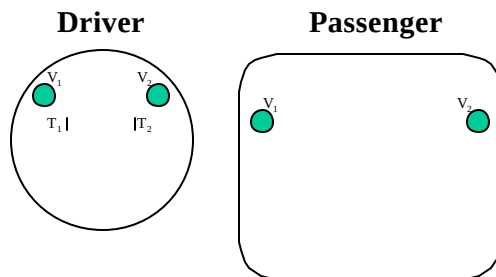
E. Is the air bag tethered?

Driver: X -Yes; - -No; If yes, record length of tether- 250

Passenger: - -Yes; X -No; If yes, record length of tether- -

Sketch the air bag showing the location of the vent holes, how the bag is tethered, and where the bag is tethered. Also describe how the tethers are attached to the bag and the steering wheel.

(Note: Not to scale; V_n = Vent hole_n, T_n = Tether_n).



F. Record part numbers and manufacturer name of the air bag and gas generator.

Driver: Air bag: P-43

Generator: AM824023090324 NCGN351QAXX

Passenger: Air bag: DE8C: 311/312PK266 R8 LT:12225 02/20/02 CC: K61244K01

ACT: K63187L01 PT LT: R61037H01

Generator: AP821023051558

DATA SHEET NO. 19 ACCIDENT INVESTIGATION DIVISION DATA

FOR 56.3 KPH FRONTAL BARRIER IMPACT

Vehicle Make/Model/Body Style: Nissan Frontier King Cab Pickup

NHTSA Test No.: M25201 VIN: 1N6DD26S62C359023

Model Year: 2002 Build Date: 03/02 Test Date: May 3, 2002

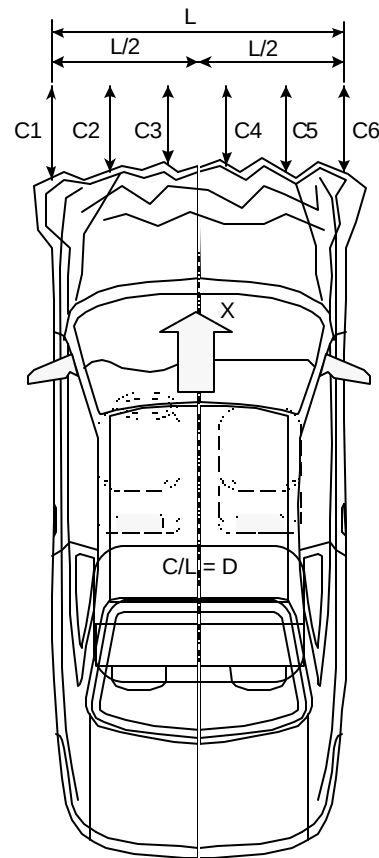
Vehicle Size Category: Standard Pickup Test Weight: 1745.5 kg

Vehicle Wheelbase: 2950 mm; Front Overhang: 895 mm; Overall Width: 1808 mm

Collision Deformation Classification (CDC) Code: 12FDEW3

Crush Depth Dimensions

	PRE (mm)	POST (mm)	DIFF (mm)
C1 =	4979	4644	335
C2 =	5093	4645	448
C3 =	5140	4652	488
C4 =	5140	4662	478
C5 =	5088	4629	459
C6 =	4965	4631	334



Midpoint of Damage: D = Vehicle Centerline (Longitudinal)

Length of Damaged Region:

L1=	<u>1514</u>	mm
L2=	<u>757.0</u>	mm
L5=	<u>302.8</u>	mm

APPENDIX A
PHOTOGRAPHS

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Figure A-1 LOAD CELL LOCATIONS



Figure A-2 PRE-TEST FRONT VIEW



Figure A-3 POST-TEST FRONT VIEW



Figure A-4 PRE-TEST LEFT SIDE VIEW



Figure A-5 POST-TEST LEFT SIDE VIEW



Figure A-6 PRE-TEST RIGHT SIDE VIEW



Figure A-7 POST-TEST RIGHT SIDE VIEW



Figure A-8 PRE-TEST RIGHT FRONT THREE-QUARTER VIEW



Figure A-9 POST-TEST RIGHT FRONT THREE-QUARTER VIEW



Figure A-10 PRE-TEST LEFT REAR THREE-QUARTER VIEW



Figure A-11 POST-TEST LEFT REAR THREE-QUARTER VIEW



Figure A-12 PRE-TEST WINDSHIELD VIEW



Figure A-13 POST-TEST WINDSHIELD VIEW

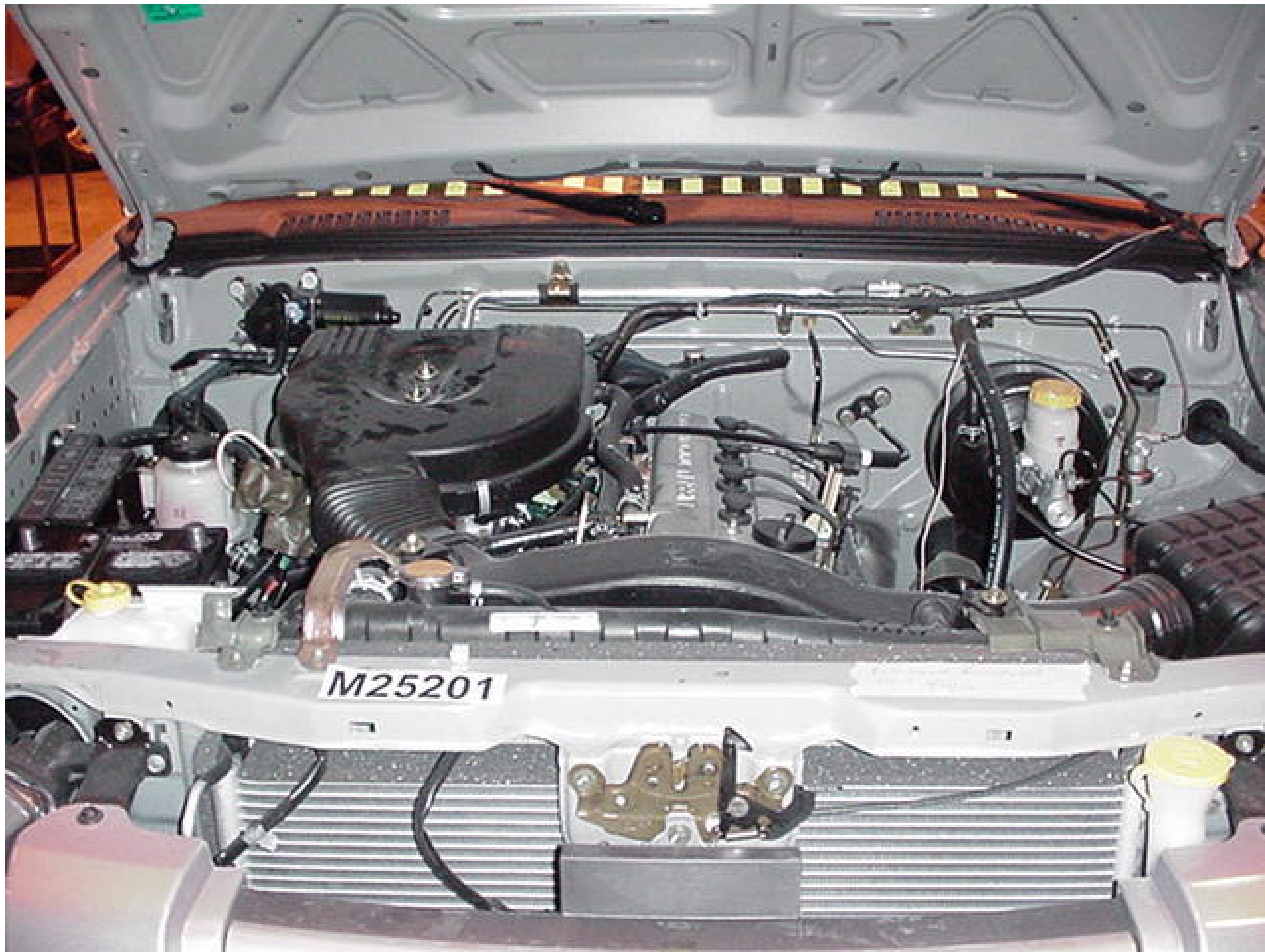


Figure A-14 PRE-TEST ENGINE COMPARTMENT VIEW

M25201



Figure A-15 FUEL CAP VIEW

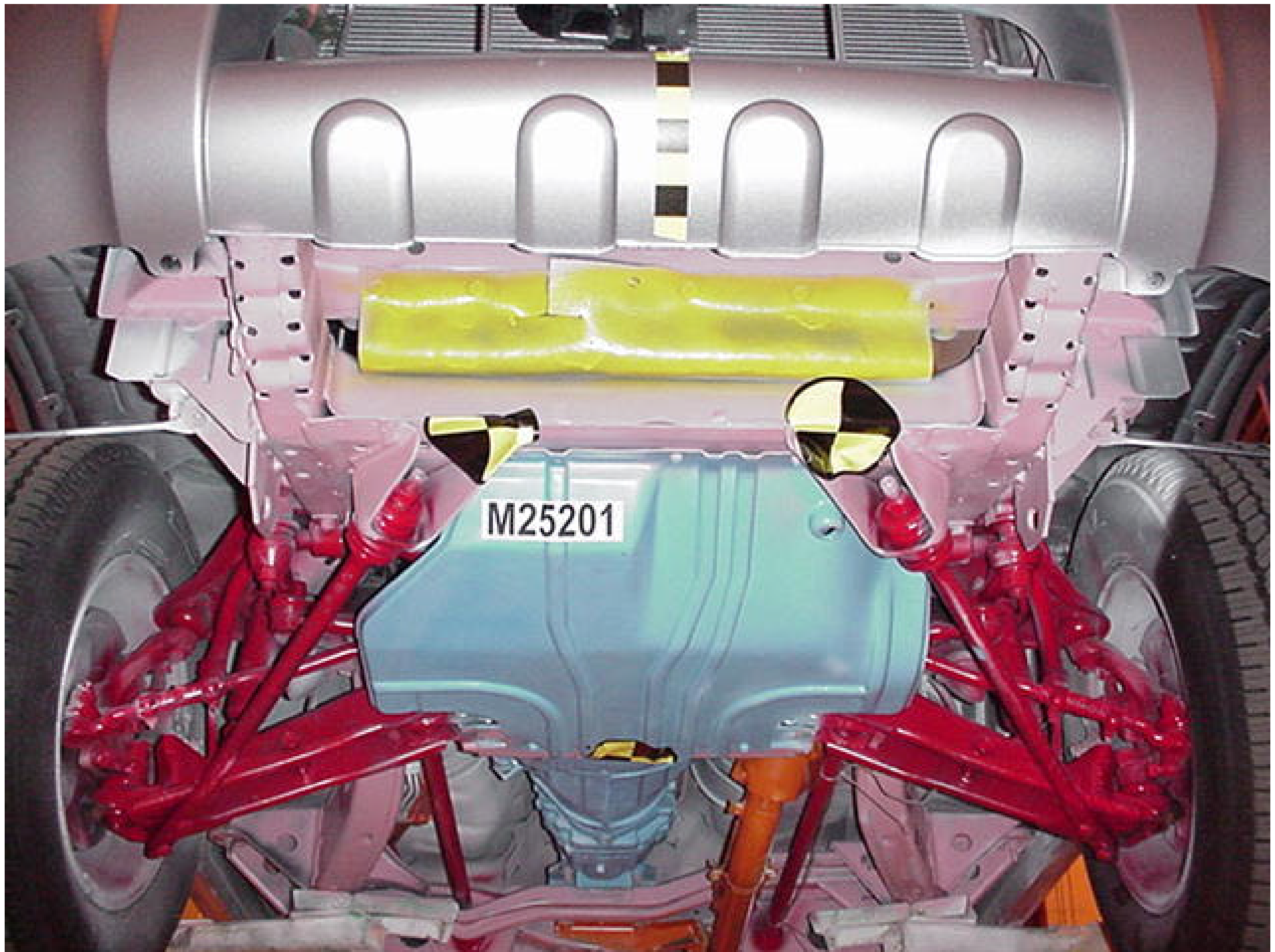


Figure A-16 PRE-TEST FRONT UNDERBODY VIEW

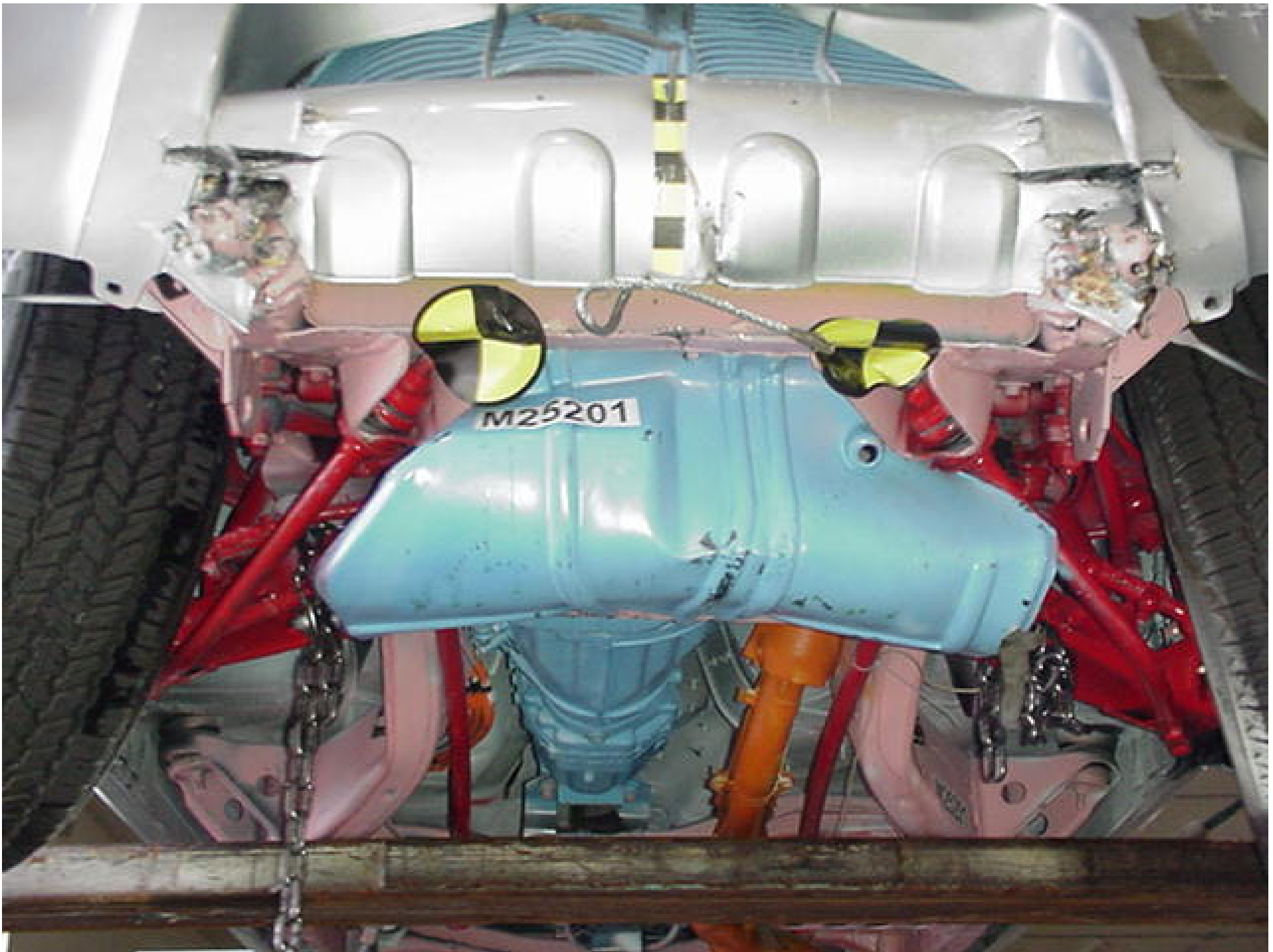


Figure A-17 POST-TEST FRONT UNDERBODY VIEW

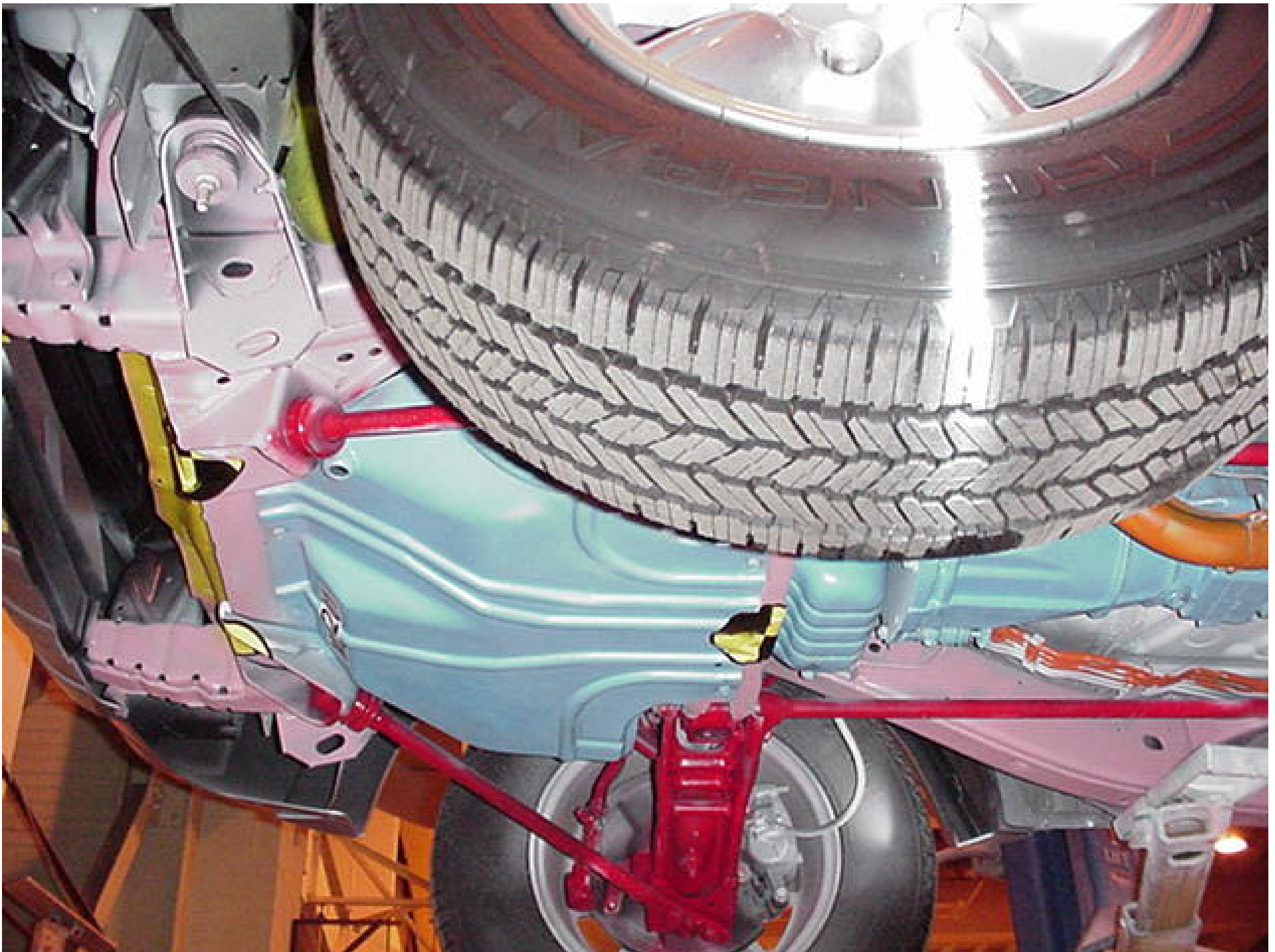


Figure A-18 PRE-TEST FRONT SIDE UNDERBODY VIEW



Figure A-19 POST-TEST FRONT SIDE UNDERBODY VIEW

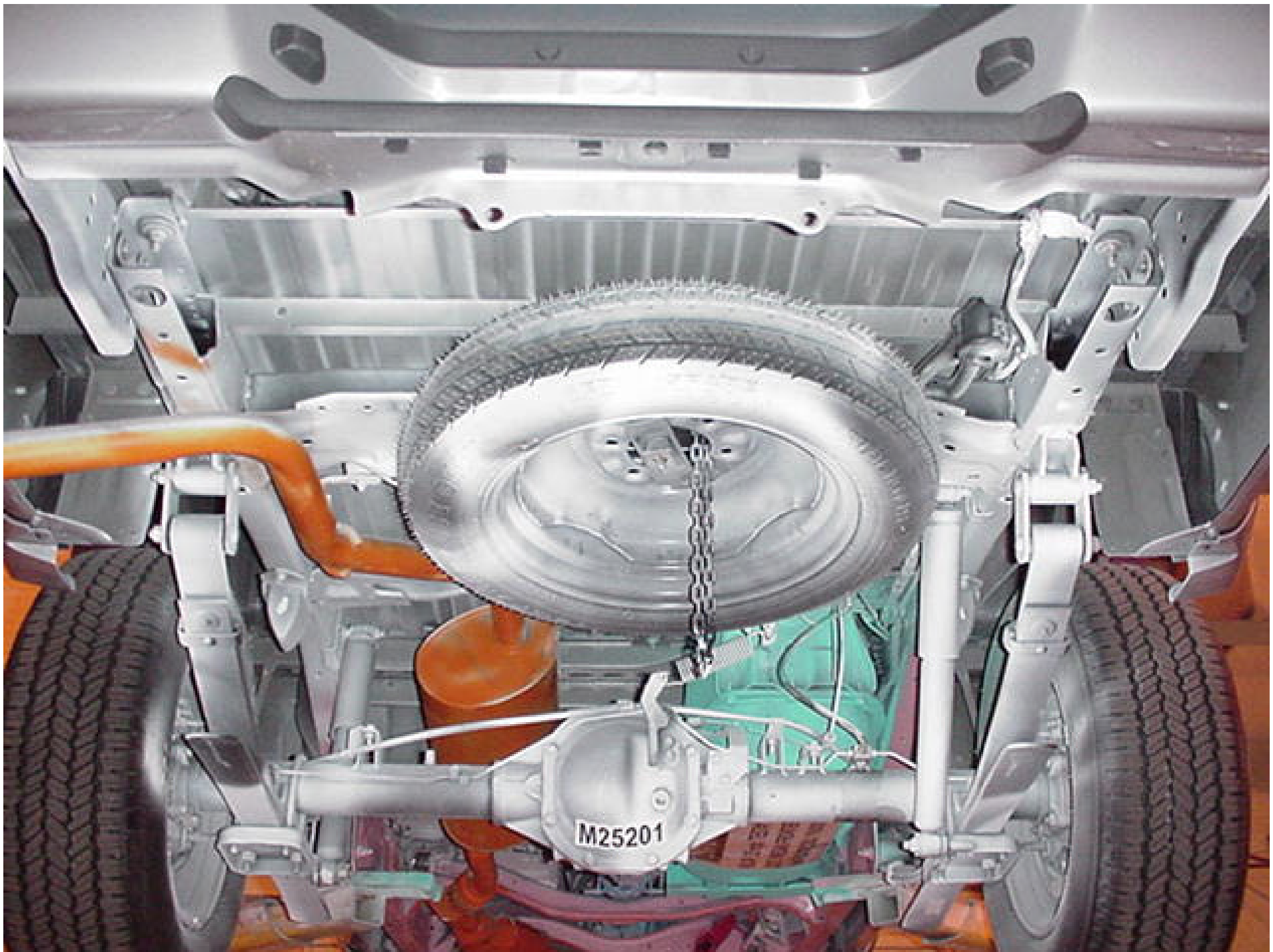


Figure A-20 PRE-TEST REAR UNDERBODY VIEW

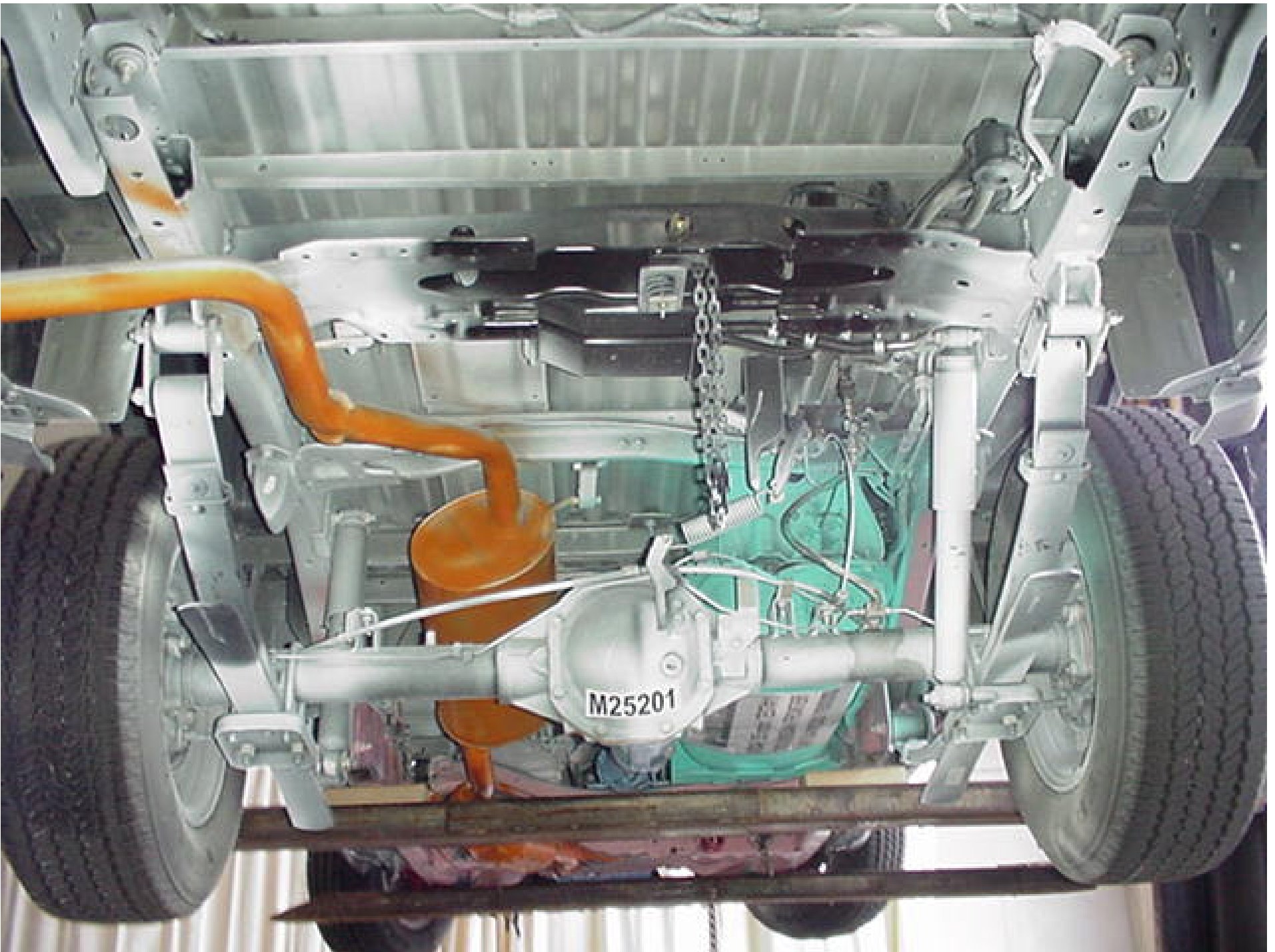


Figure A-21 POST-TEST REAR UNDERBODY VIEW



Figure A-22 PRE-TEST DRIVER POSITION VIEW



Figure A-23 POST-TEST DRIVER POSITION VIEW



Figure A-24 PRE-TEST PASSENGER POSITION VIEW



Figure A-25 POST-TEST PASSENGER POSITION VIEW



Figure A-26 PRE-TEST DRIVER AND INTERIOR VIEW



Figure A-27 POST-TEST DRIVER AND INTERIOR VIEW



Figure A-28 PRE-TEST PASSENGER AND INTERIOR VIEW



Figure A-29 POST-TEST PASSENGER AND INTERIOR VIEW



Figure A-30 PRE-TEST DRIVER HEAD LOCATION



Figure A-31 POST-TEST DRIVER HEAD LOCATION



Figure A-32 PRE-TEST PASSENGER HEAD LOCATION



Figure A-33 POST-TEST PASSENGER HEAD LOCATION



Figure A-34 PRE-TEST DRIVER FLOOR PAN VIEW



Figure A-35 POST-TEST DRIVER FLOOR PAN VIEW

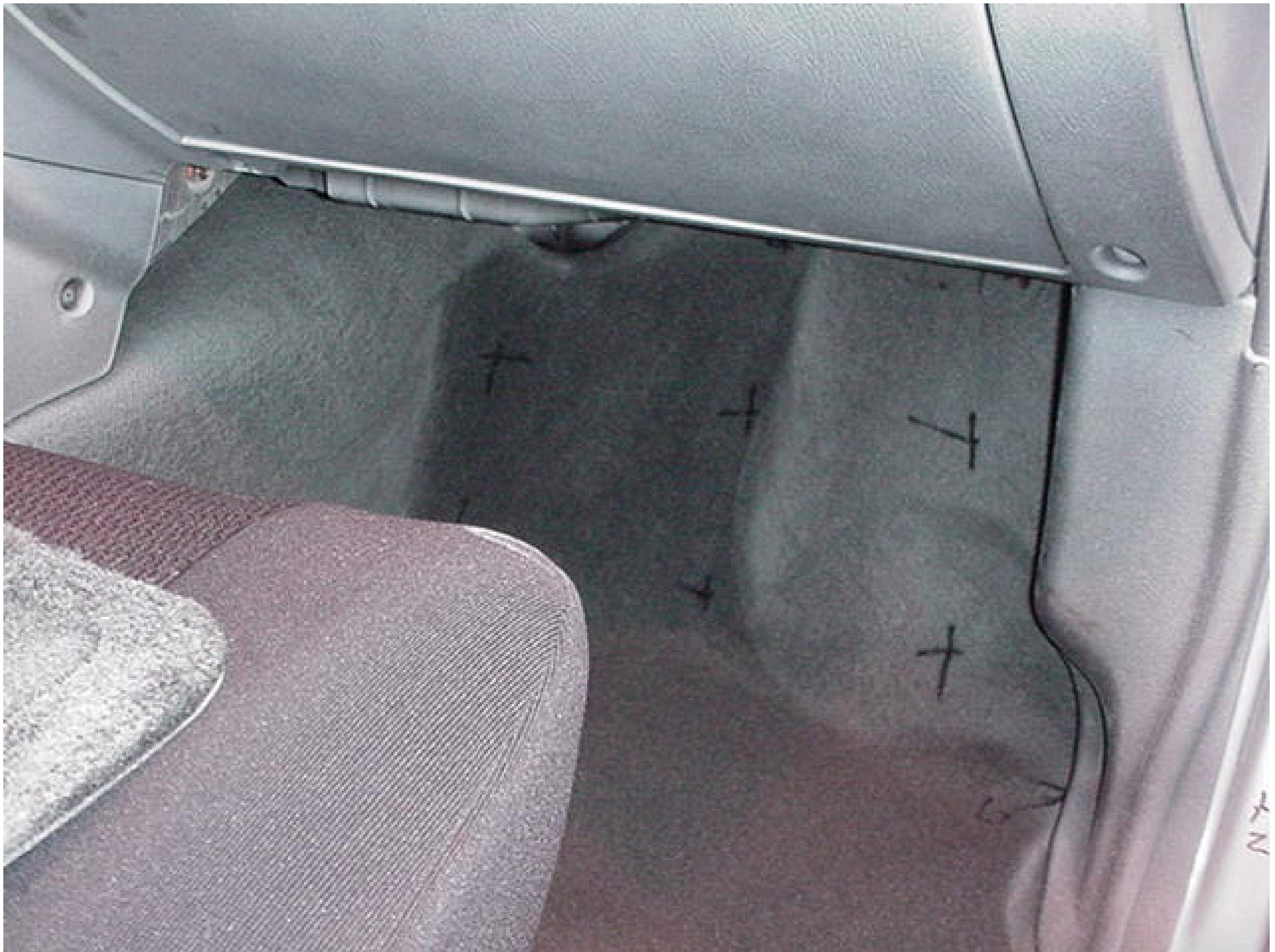


Figure A-36 PRE-TEST PASSENGER FLOOR PAN VIEW



Figure A-37 POST-TEST PASSENGER FLOOR PAN VIEW



Figure A-38 ROLLOVER VIEW



Figure A-39 IMPACT VIEW

MFD BY NISSAN MOTOR CO. LTD

DATE	03/02
GVWR	4700 LB
GAWR FR	2385 LB
WITH P225/70R15	TIRES
15X7.0	RIMS AT 30 PSI
COLD SINGLE	
GAWR RR	2650 LB
WITH P225/70R15	TIRES
15X7.0	RIMS AT 30 PSI
COLD SINGLE	

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.

1N6DD26S62C359023

TRUCK	136	8
MODEL:	BB6LEF-EUN	02000
COLOR	TRIM	TRANS
KUB	K	F55M71C
FILE	ENGINE	
CR39	KA24	2389CC

Figure A-40 VEHICLE PLACARD

APPENDIX B

DUMMY, VEHICLE AND LOAD CELL BARRIER RESPONSE DATA

**Hybrid III Dummy Sign Conventions
Load Cells and Special Transducers**

Transducer	SAE Sign Convention (positive unless noted)
Upper Neck Load Cell	Fx Head rearward Fy Head left Fz Neck in tension Mx Left ear to left shoulder My Chin to chest (flexion) Mz Chin to left shoulder (look left)
Chest Displacement Potentiometer	Compression is negative
Pelvic Load Cell (Lower Lumbar)	Fx Chest rearward Fy Chest left Fz Spine in tension
Femur Load Cell	Compression is negative
Upper Tibia Load Cell (right and left leg)	Mx Support tibia at ends, load left side center My Support tibia at ends, load front (shin) center
Lower Tibia Load Cell (right and left leg)	Fz Tibia in tension Mx Support tibia at ends, load left side center My Support tibia at ends, load front (shin) center

DATA CHANNEL FILTER CLASS SUMMARY

NHTSA TEST NO.

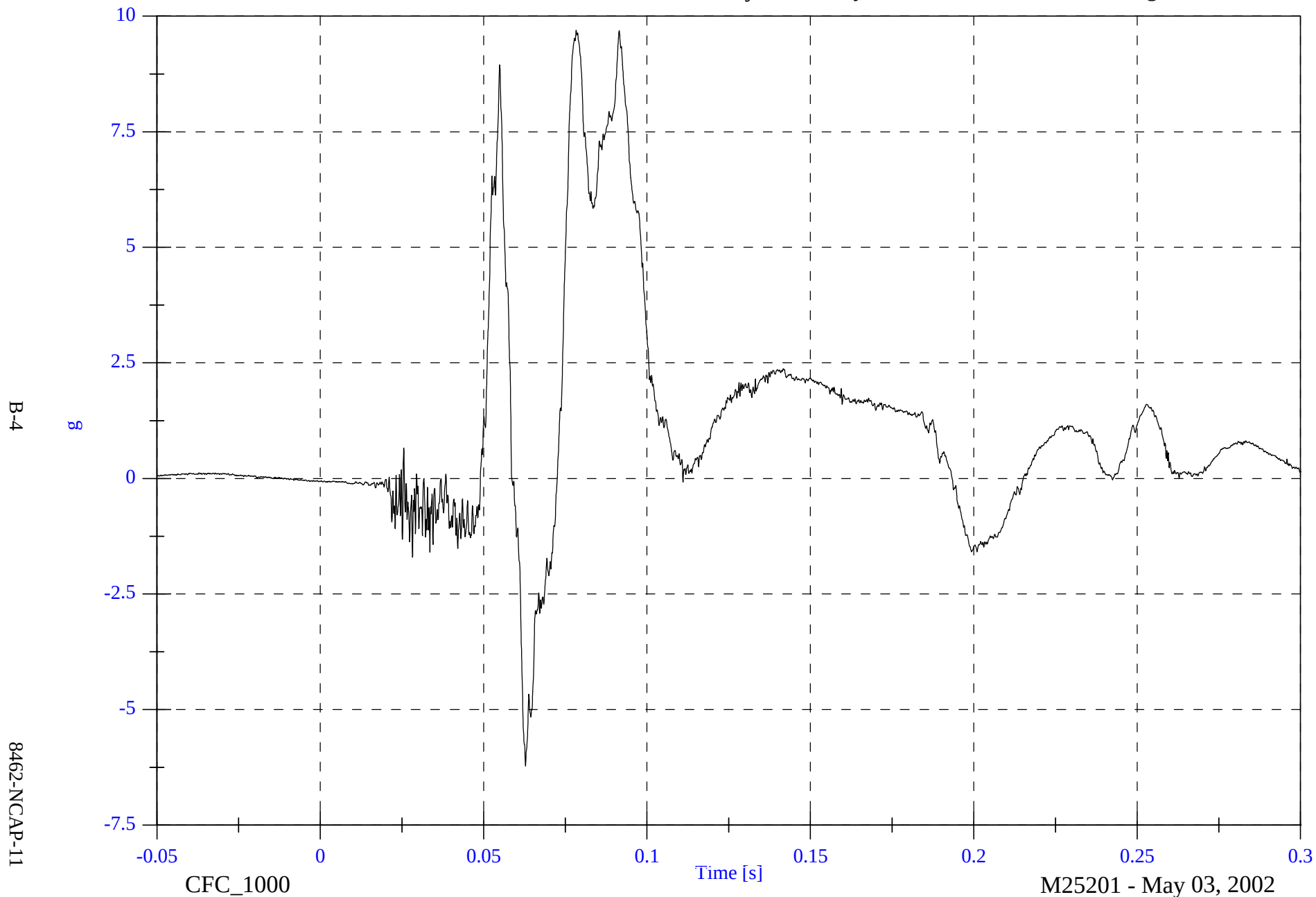
DATA TYPE	SAE FILTER CLASS (Hz)
Dummy Head Accelerations	1000
Dummy Chest Accelerations	180
Dummy Chest Displacements	60
Dummy Femur Forces	600
Dummy Belt Loads	60
Dummy Belt Displacements	180
Dummy Neck Forces	1000
Dummy Neck Moments	600
Vehicle Accelerations	60
Vehicle Velocity Integrations	180
Vehicle Displacement Integrations	180
Load Cell Barrier Forces	60

2002 NCAP Test 11 - 2002 Nissan Frontier

P1 Head 9 Array X Arm Ay

Max: 9.7 [g] at 0.078 [s]

Min: -6.2 [g] at 0.063 [s]



2002 NCAP Test 11 - 2002 Nissan Frontier

P1 Head 9 Array X Arm Az

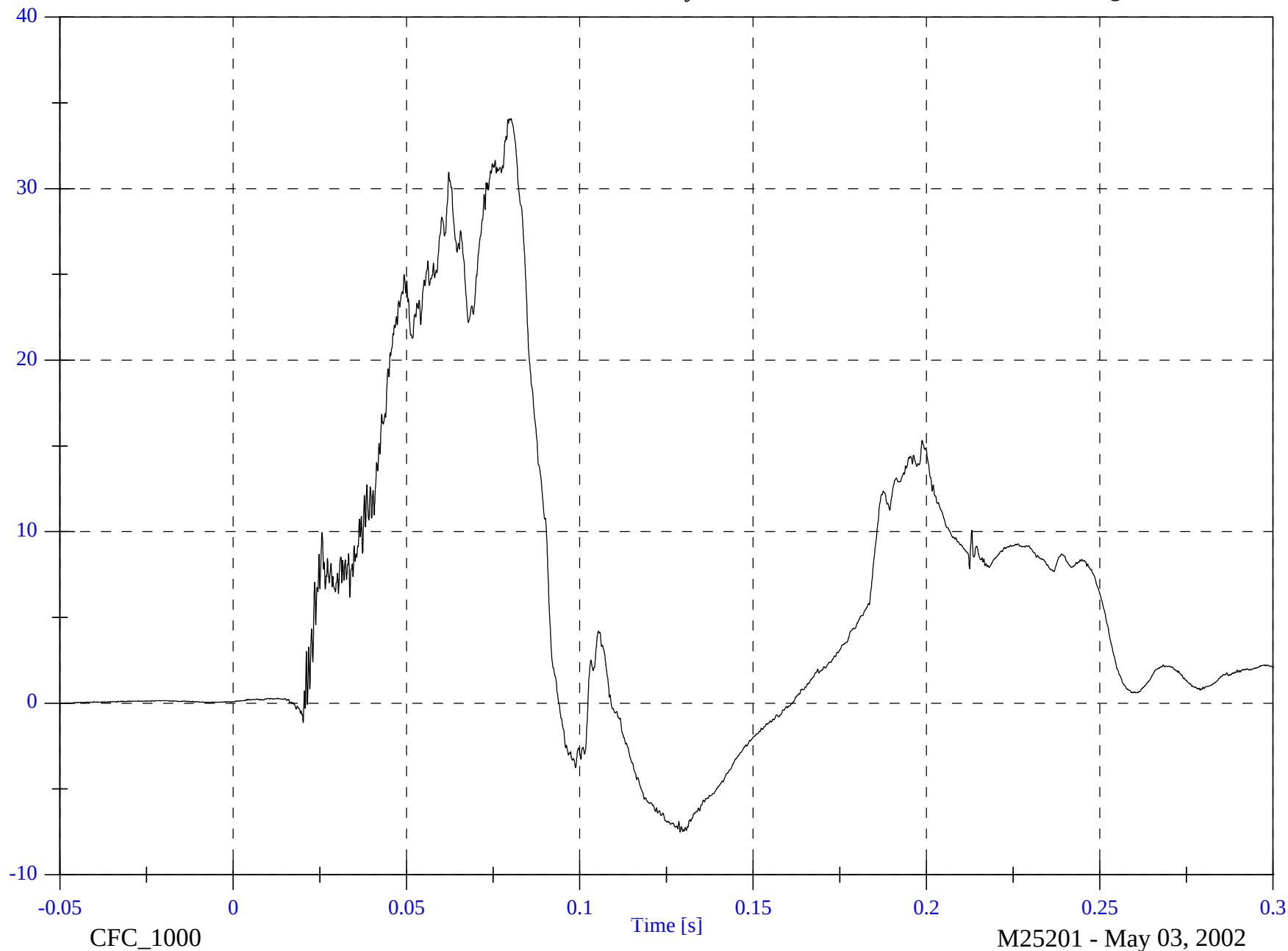
Max: 34.1 [g] at 0.080 [s]

Min: -7.5 [g] at 0.129 [s]

B-5

g

8462-NCAP-11

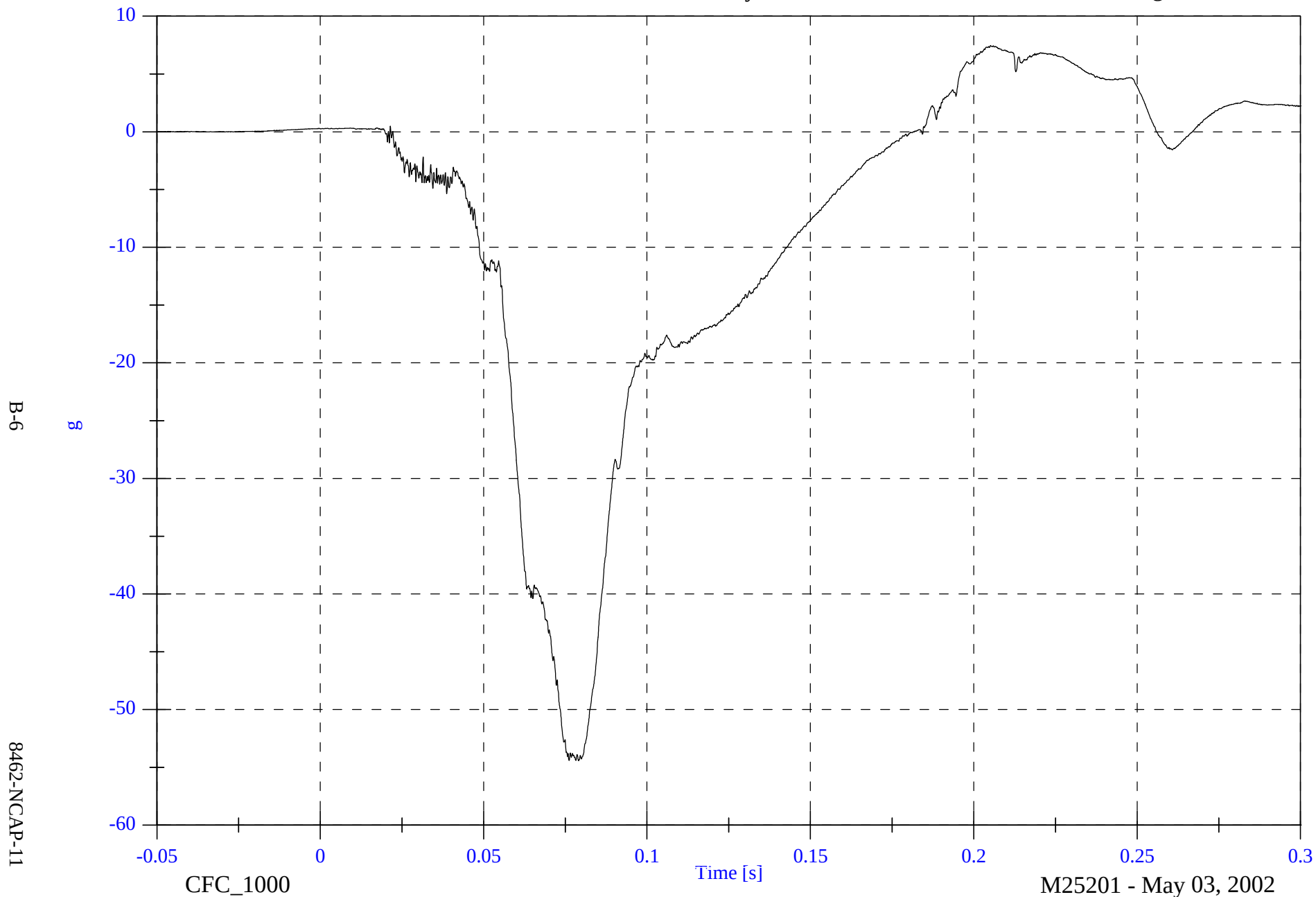


2002 NCAP Test 11 - 2002 Nissan Frontier

P1 Head 9 Array Y Arm Ax

Max: 7.5 [g] at 0.205 [s]

Min: -54.4 [g] at 0.079 [s]



2002 NCAP Test 11 - 2002 Nissan Frontier

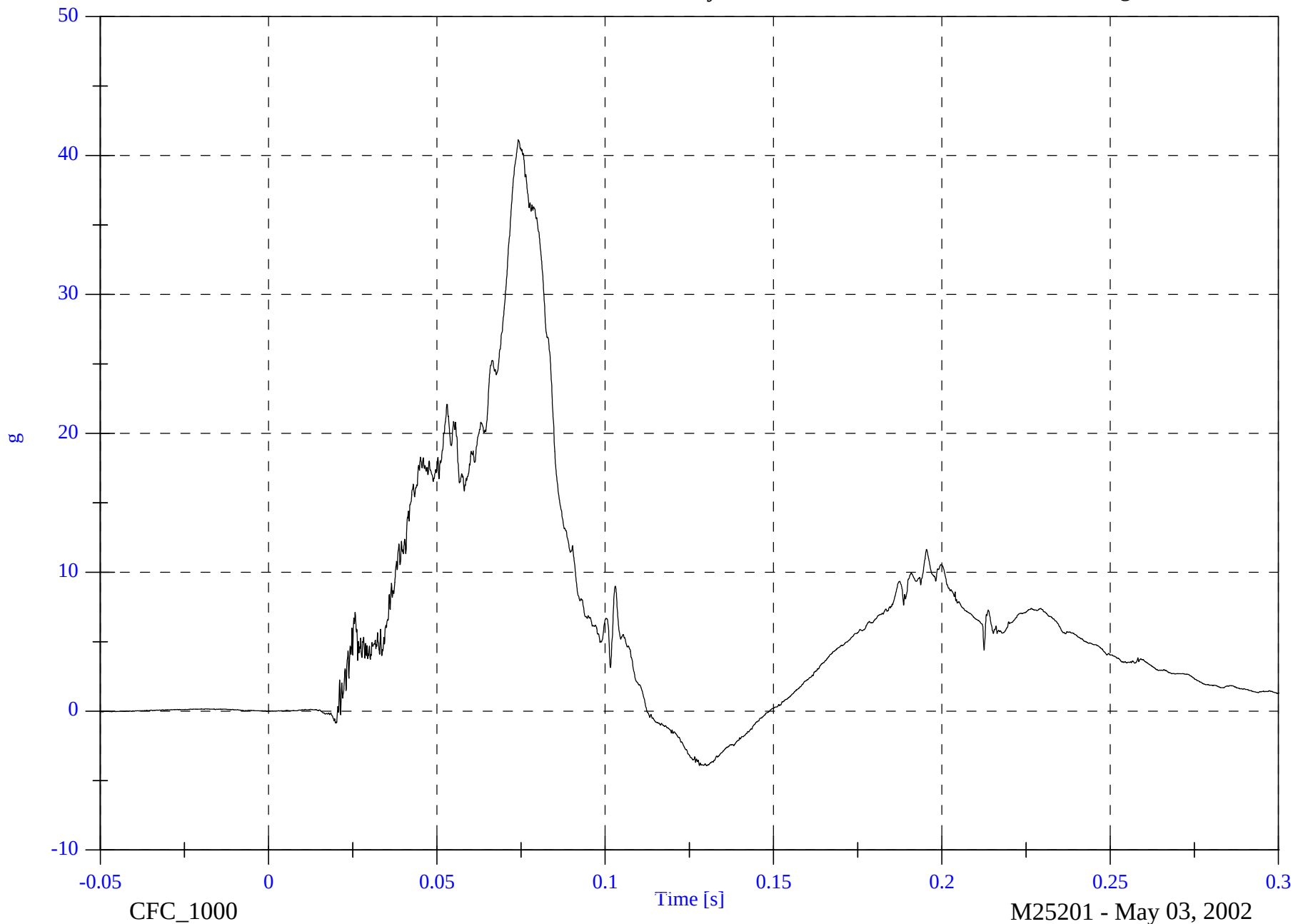
P1 Head 9 Array Y Arm Az

Max: 41.1 [g] at 0.074 [s]

Min: -3.9 [g] at 0.130 [s]

B-7

8462-NCAP-11

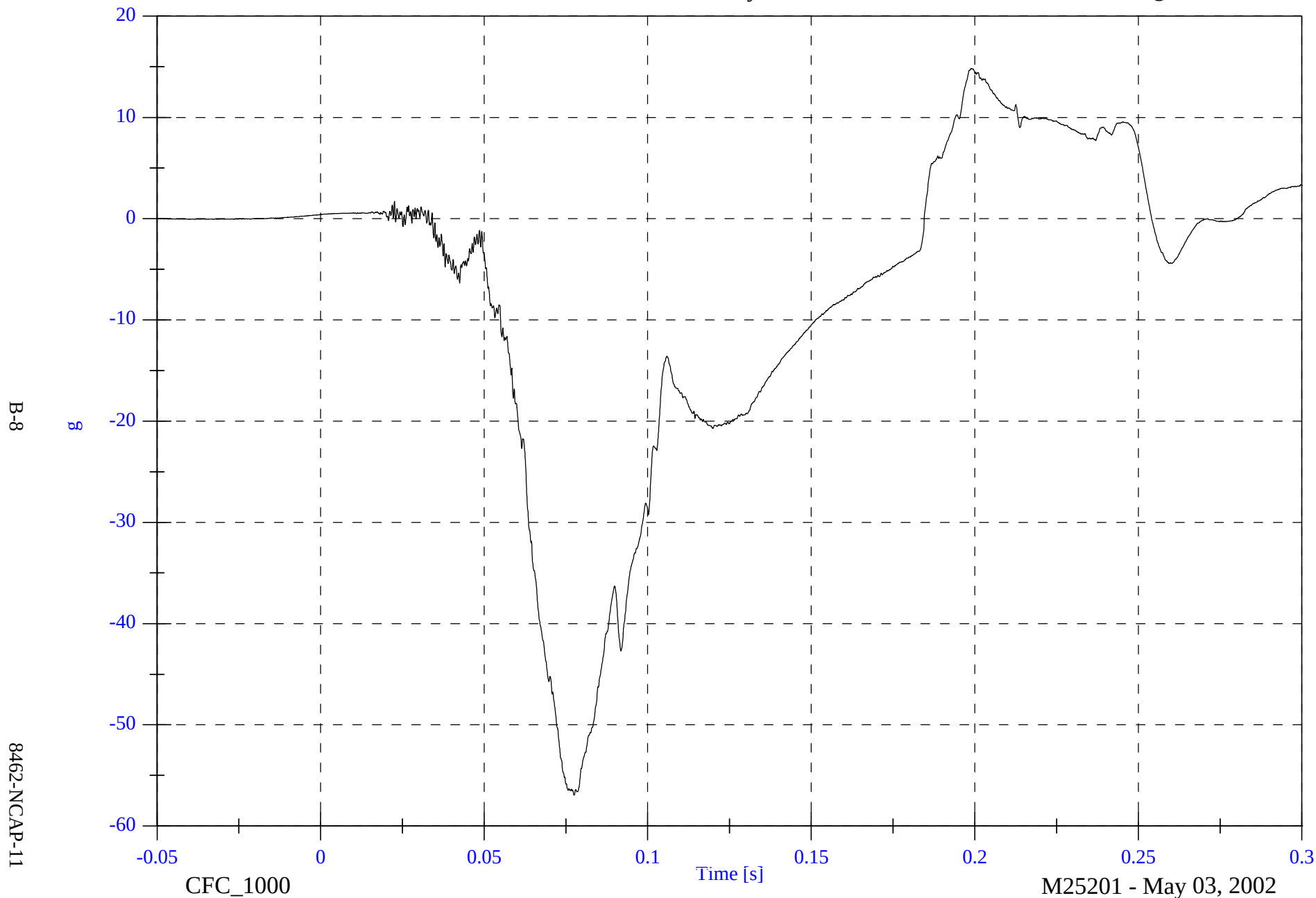


2002 NCAP Test 11 - 2002 Nissan Frontier

P1 Head 9 Array Z Arm Ax

Max: 14.8 [g] at 0.199 [s]

Min: -56.9 [g] at 0.078 [s]

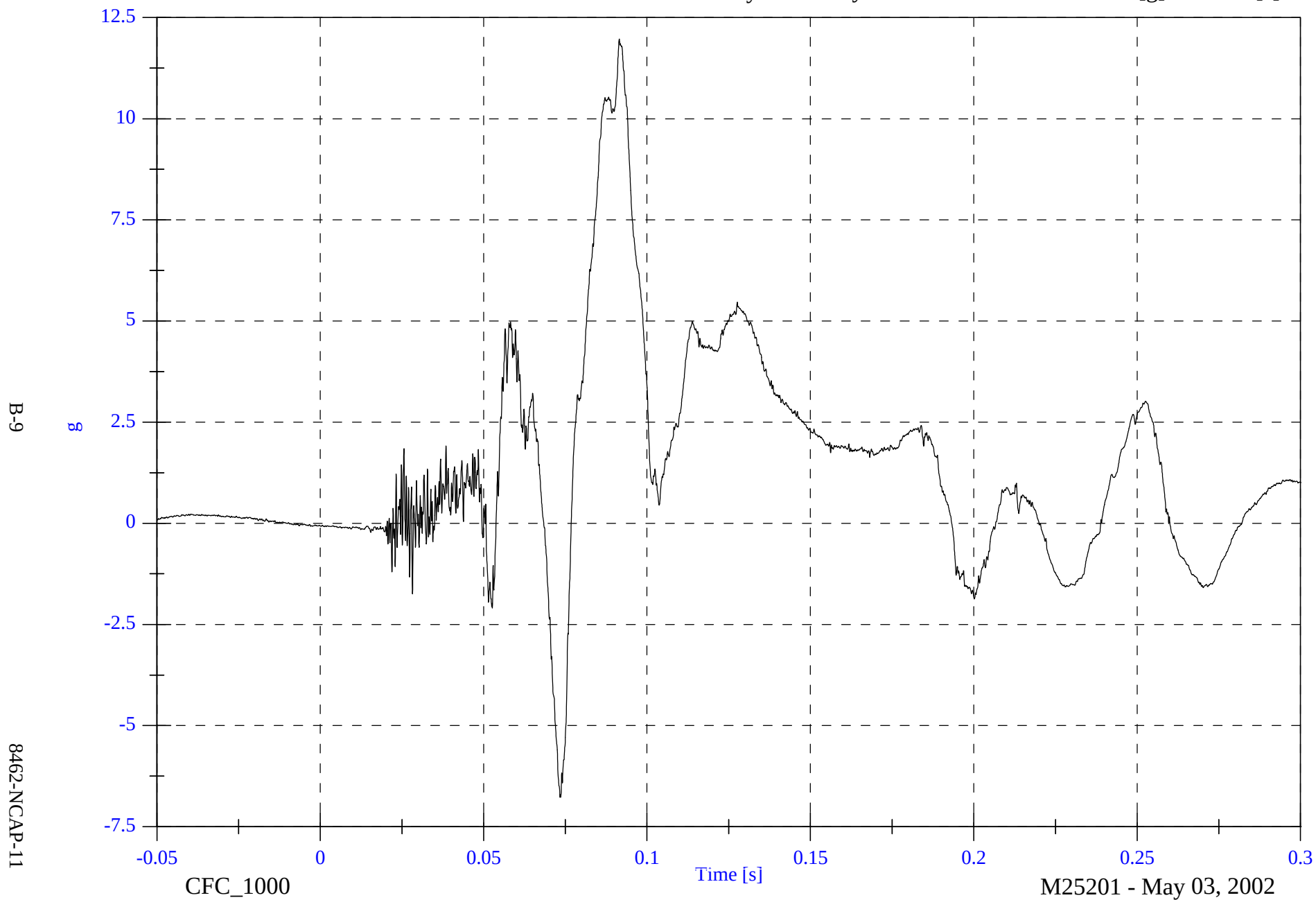


2002 NCAP Test 11 - 2002 Nissan Frontier

P1 Head 9 Array Z Arm Ay

Max: 12.0 [g] at 0.092 [s]

Min: -6.8 [g] at 0.073 [s]

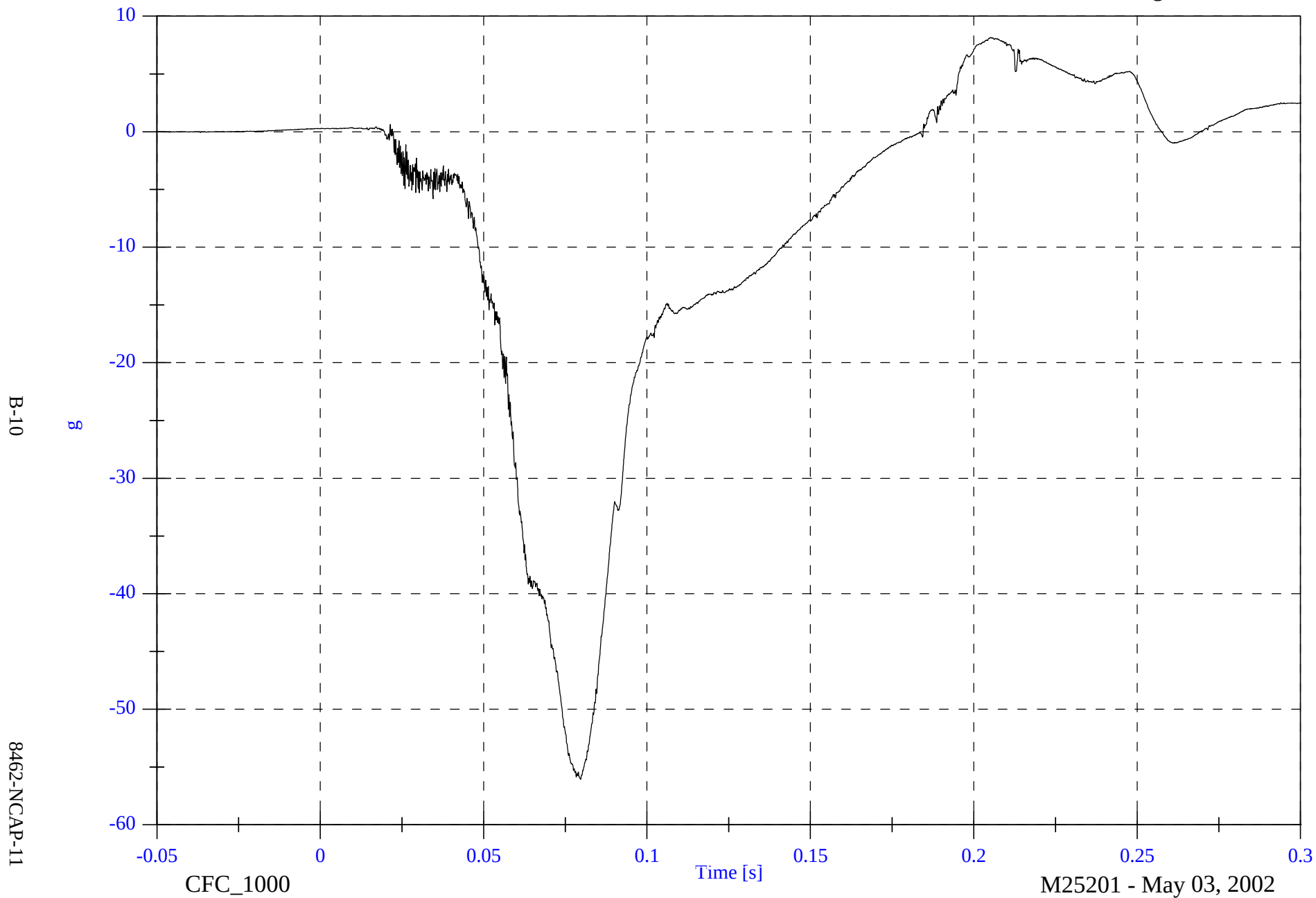


2002 NCAP Test 11 - 2002 Nissan Frontier

P1 Head CG x

Max: 8.2 [g] at 0.205 [s]

Min: -56.1 [g] at 0.080 [s]

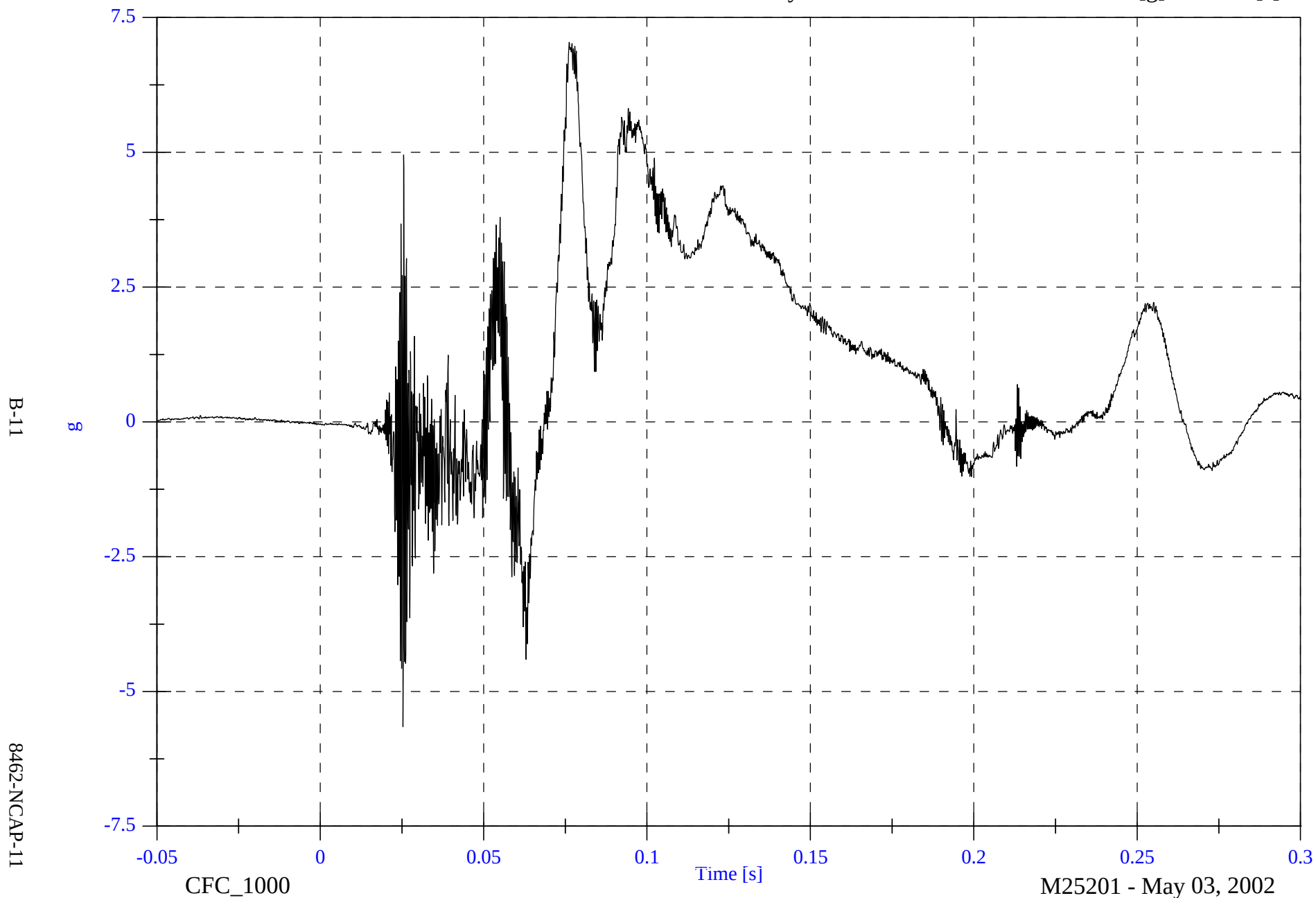


2002 NCAP Test 11 - 2002 Nissan Frontier

Max: 7.0 [g] at 0.076 [s]

Min: -5.7 [g] at 0.025 [s]

P1 Head CG y



2002 NCAP Test 11 - 2002 Nissan Frontier

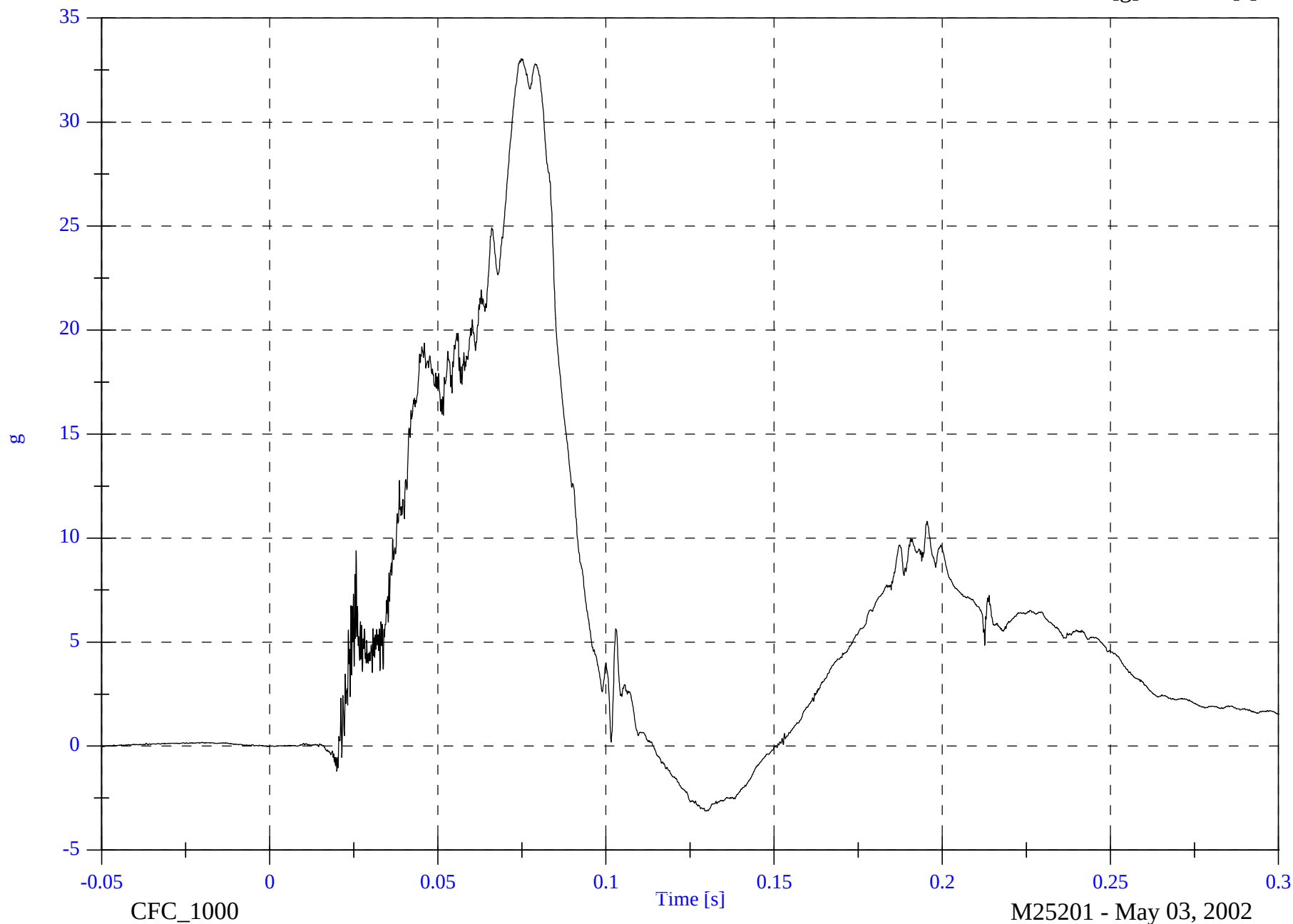
P1 Head CG z

Max: 33.1 [g] at 0.075 [s]

Min: -3.1 [g] at 0.130 [s]

B-12

8462-NCAP-11



2002 NCAP Test 11 - 2002 Nissan Frontier

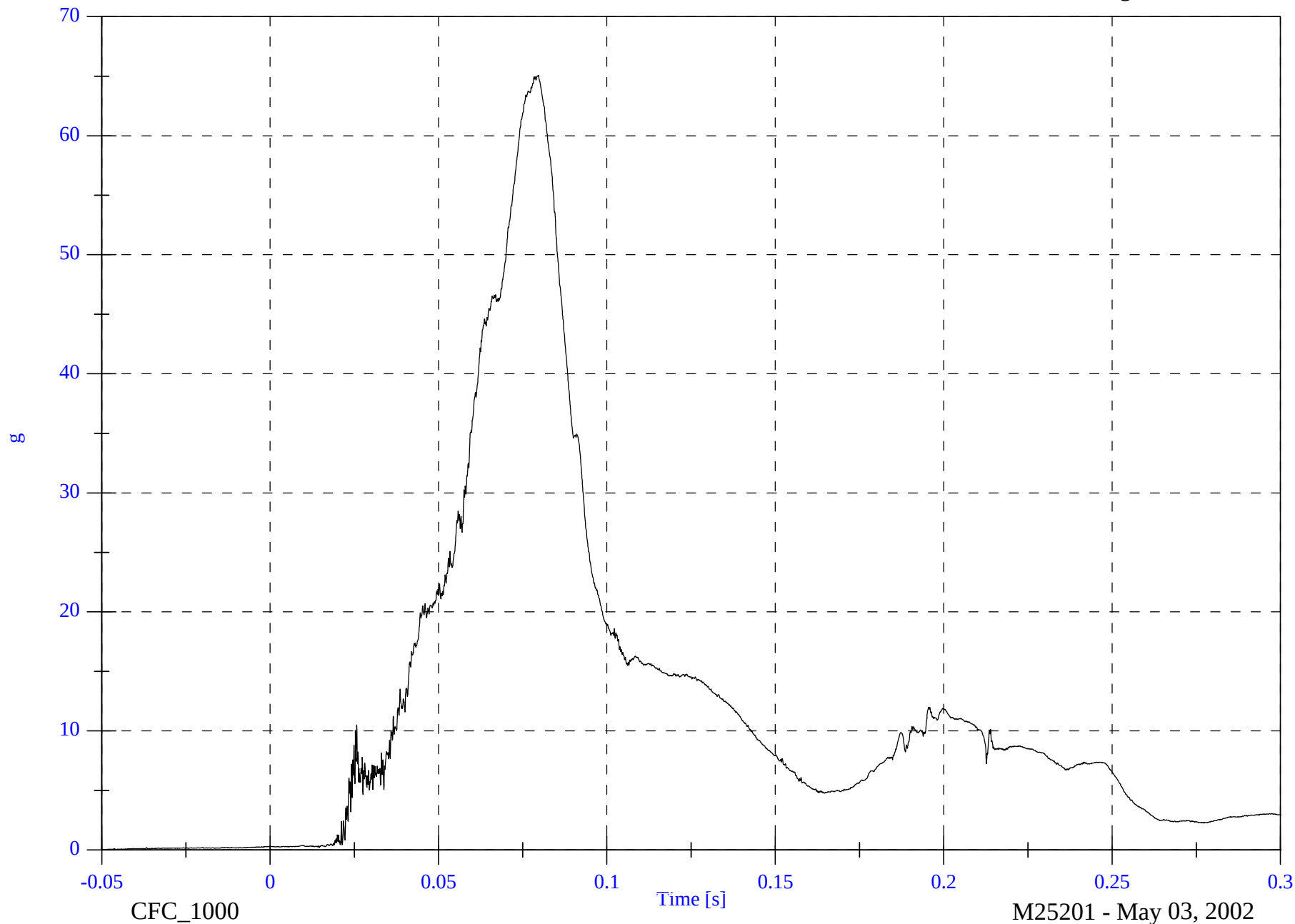
P1 Head CG Resultant

Max: 65.1 [g] at 0.080 [s]

Min: 0.0 [g] at -0.049 [s]

B-13

8462-NCAP-11

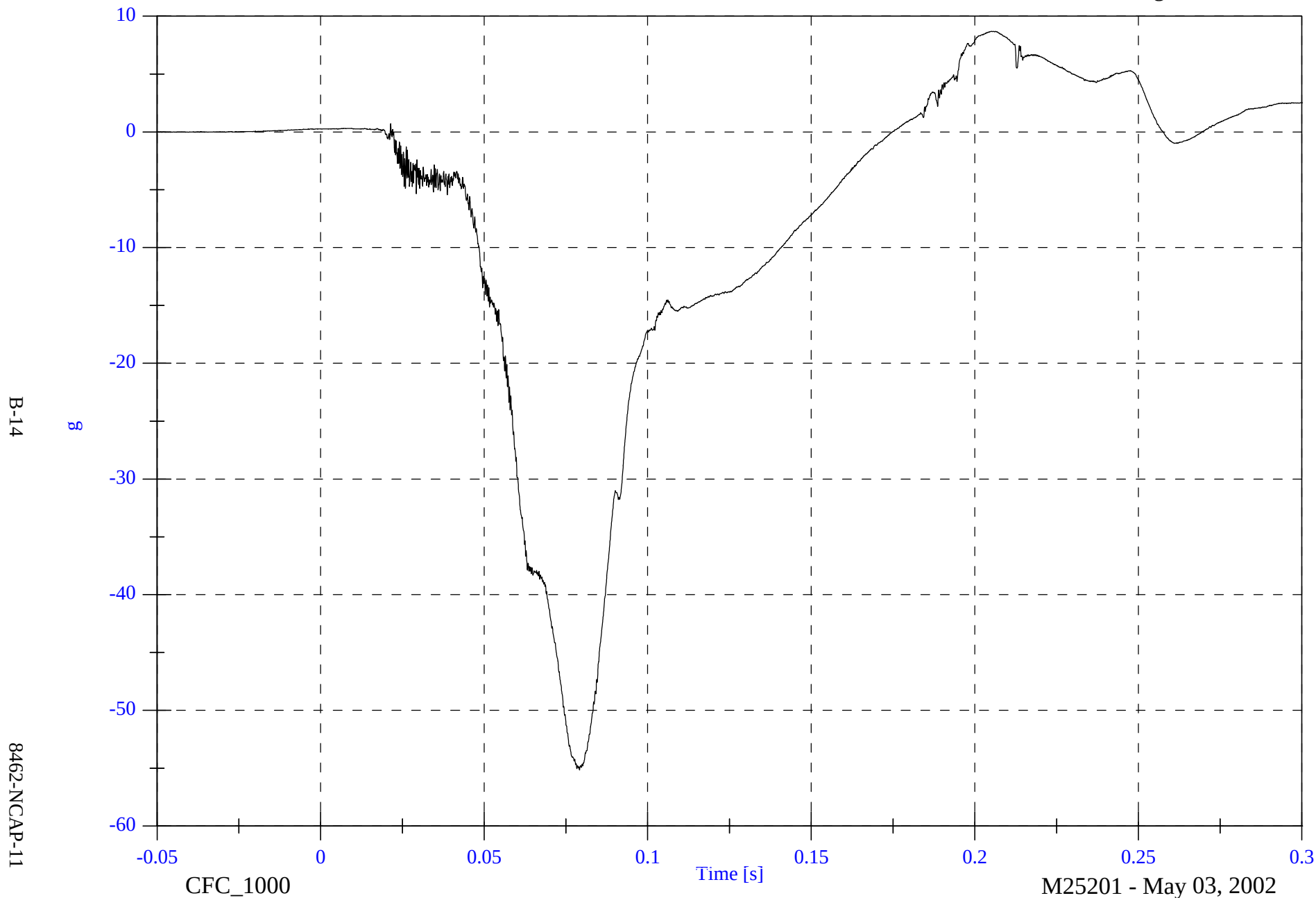


2002 NCAP Test 11 - 2002 Nissan Frontier

P1 Head CG Red x

Max: 8.7 [g] at 0.206 [s]

Min: -55.2 [g] at 0.079 [s]



2002 NCAP Test 11 - 2002 Nissan Frontier

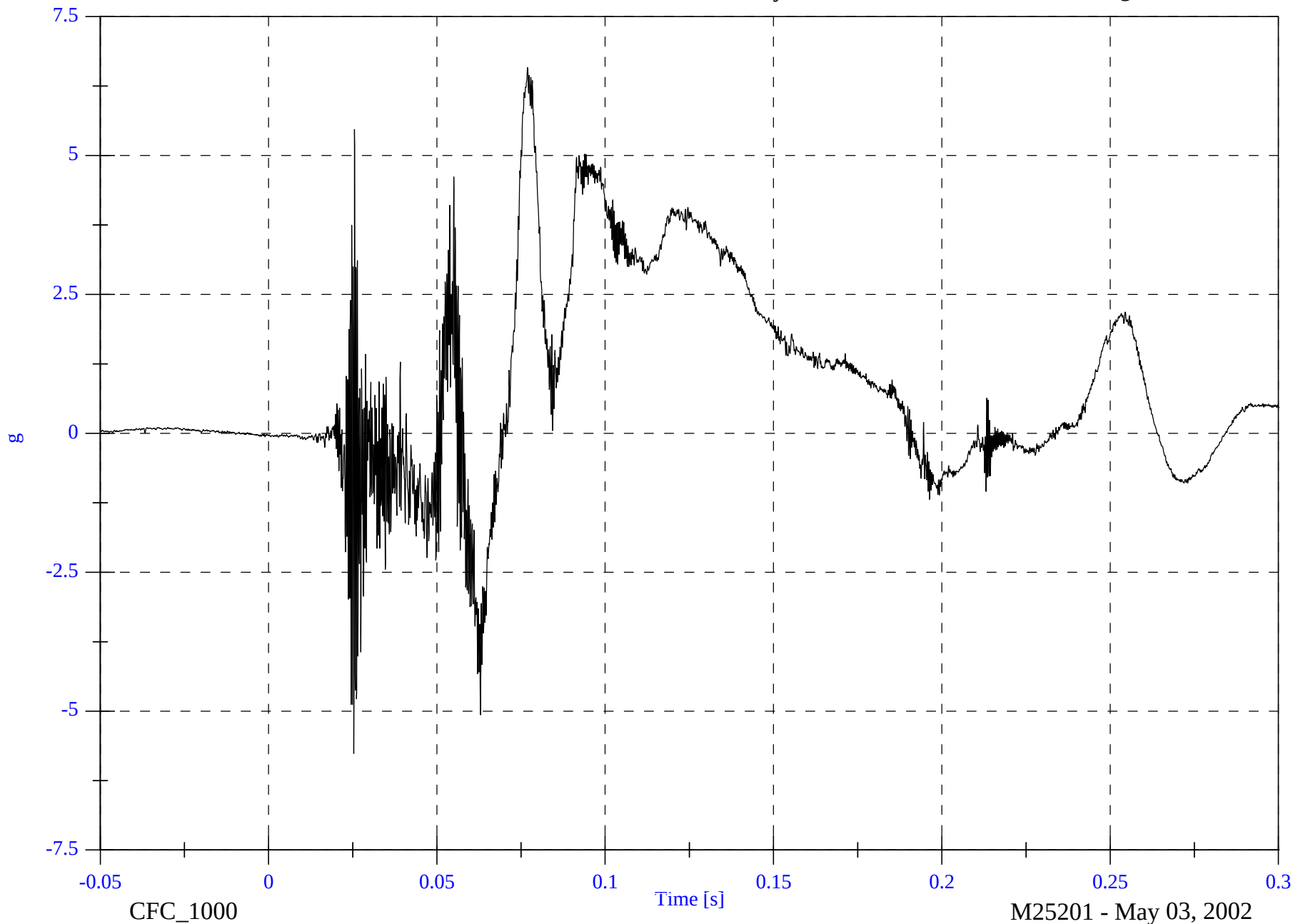
P1 Head CG Red y

Max: 6.6 [g] at 0.077 [s]

Min: -5.8 [g] at 0.025 [s]

B-15

8462-NCAP-11



2002 NCAP Test 11 - 2002 Nissan Frontier

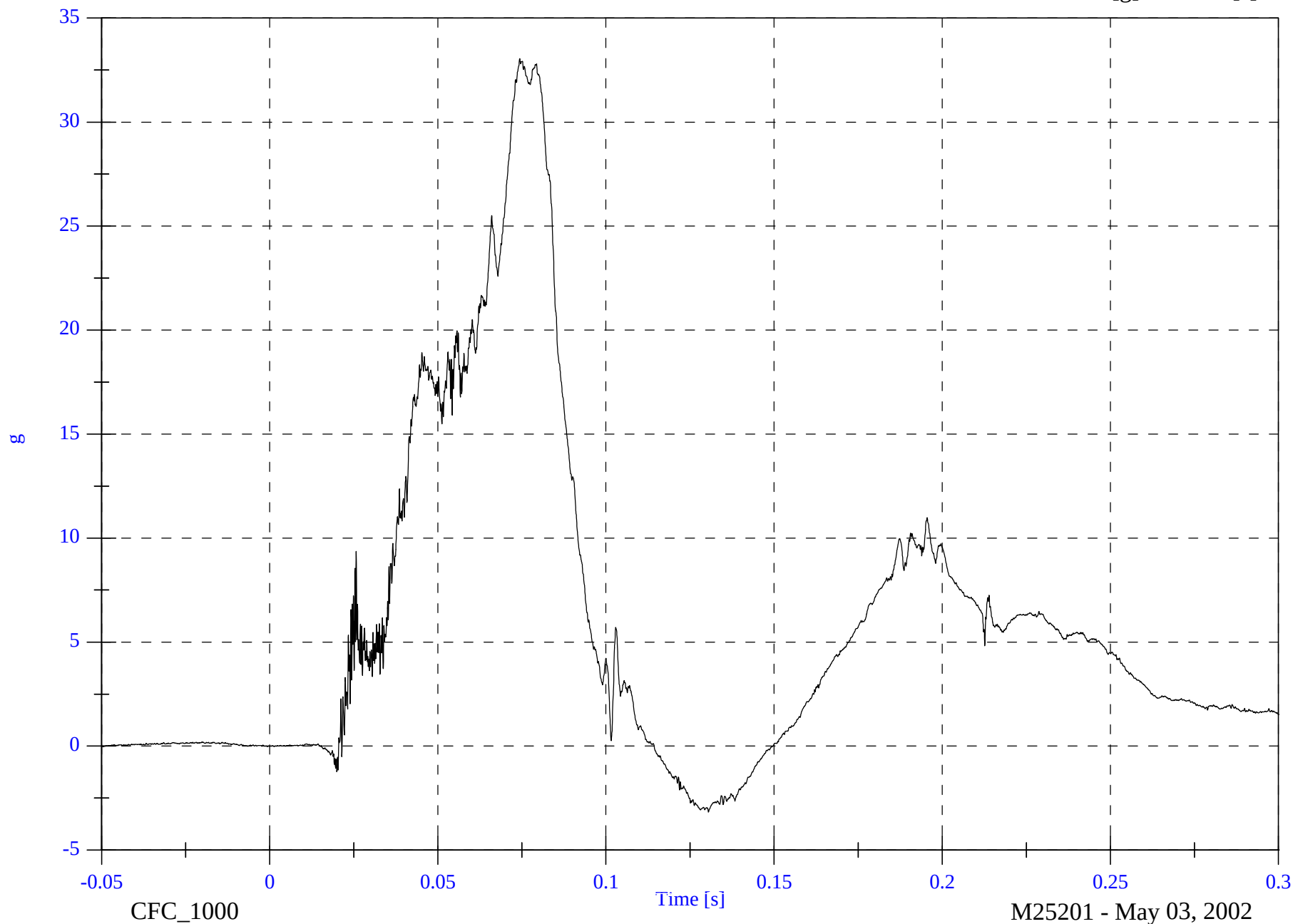
P1 Head CG Red z

Max: 33.1 [g] at 0.074 [s]

Min: -3.2 [g] at 0.130 [s]

B-16

8462-NCAP-11



2002 NCAP Test 11 - 2002 Nissan Frontier

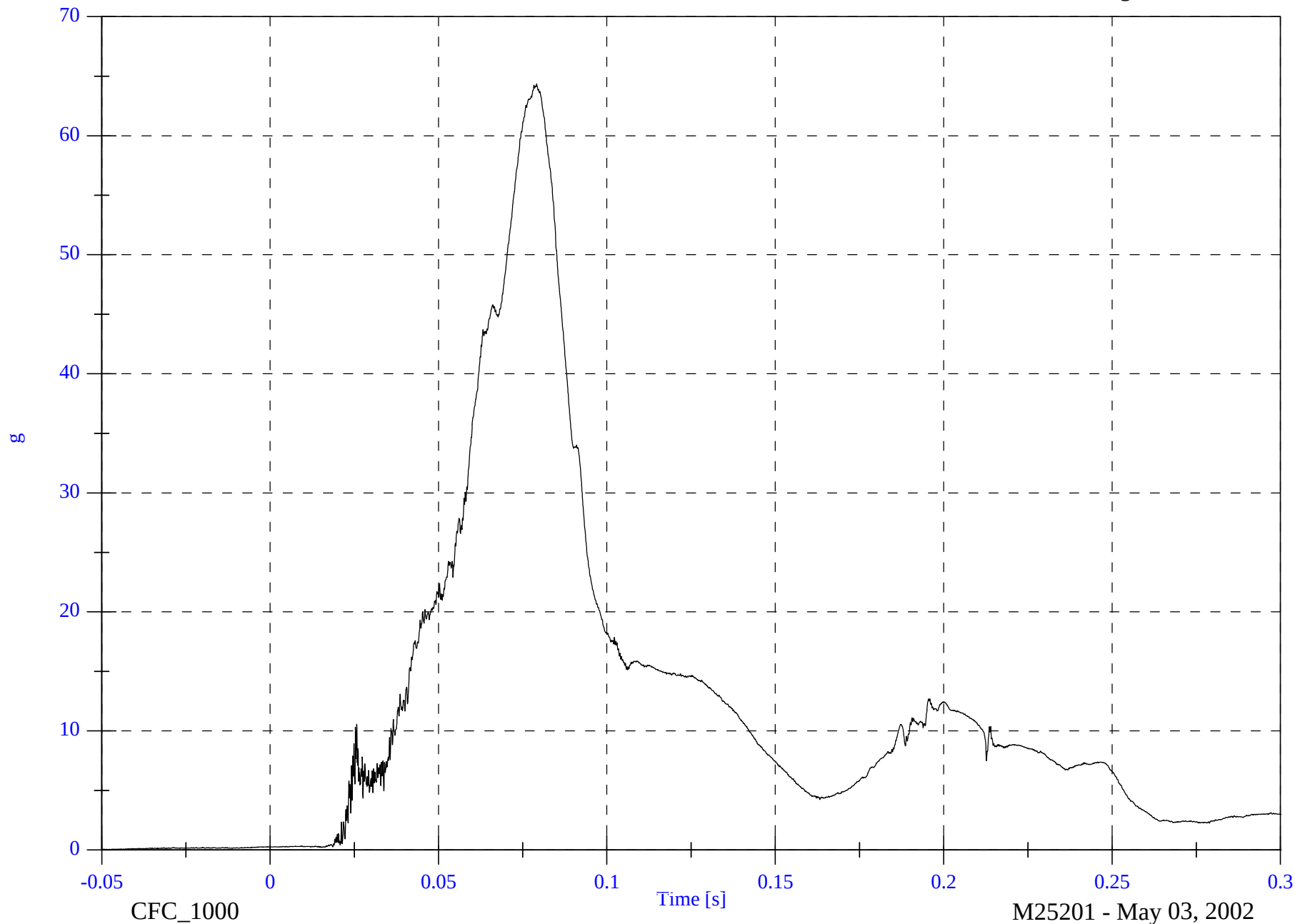
P1 Head CG Red Resultant

Max: 64.3 [g] at 0.079 [s]

Min: 0.0 [g] at -0.049 [s]

B-17

8462-NCAP-11

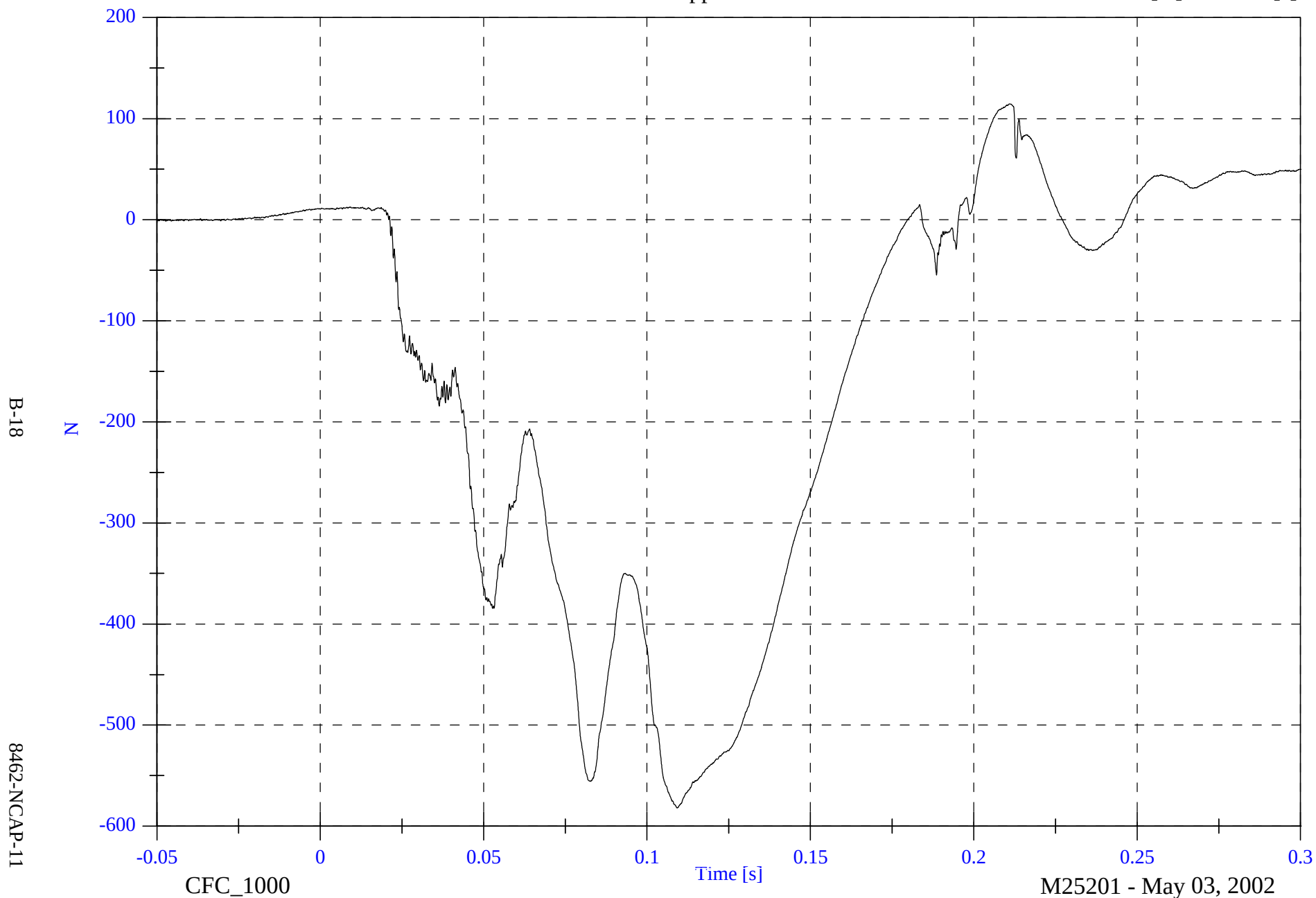


2002 NCAP Test 11 - 2002 Nissan Frontier

P1 Upper Neck Fx

Max: 114.6 [N] at 0.211 [s]

Min: -582.0 [N] at 0.109 [s]

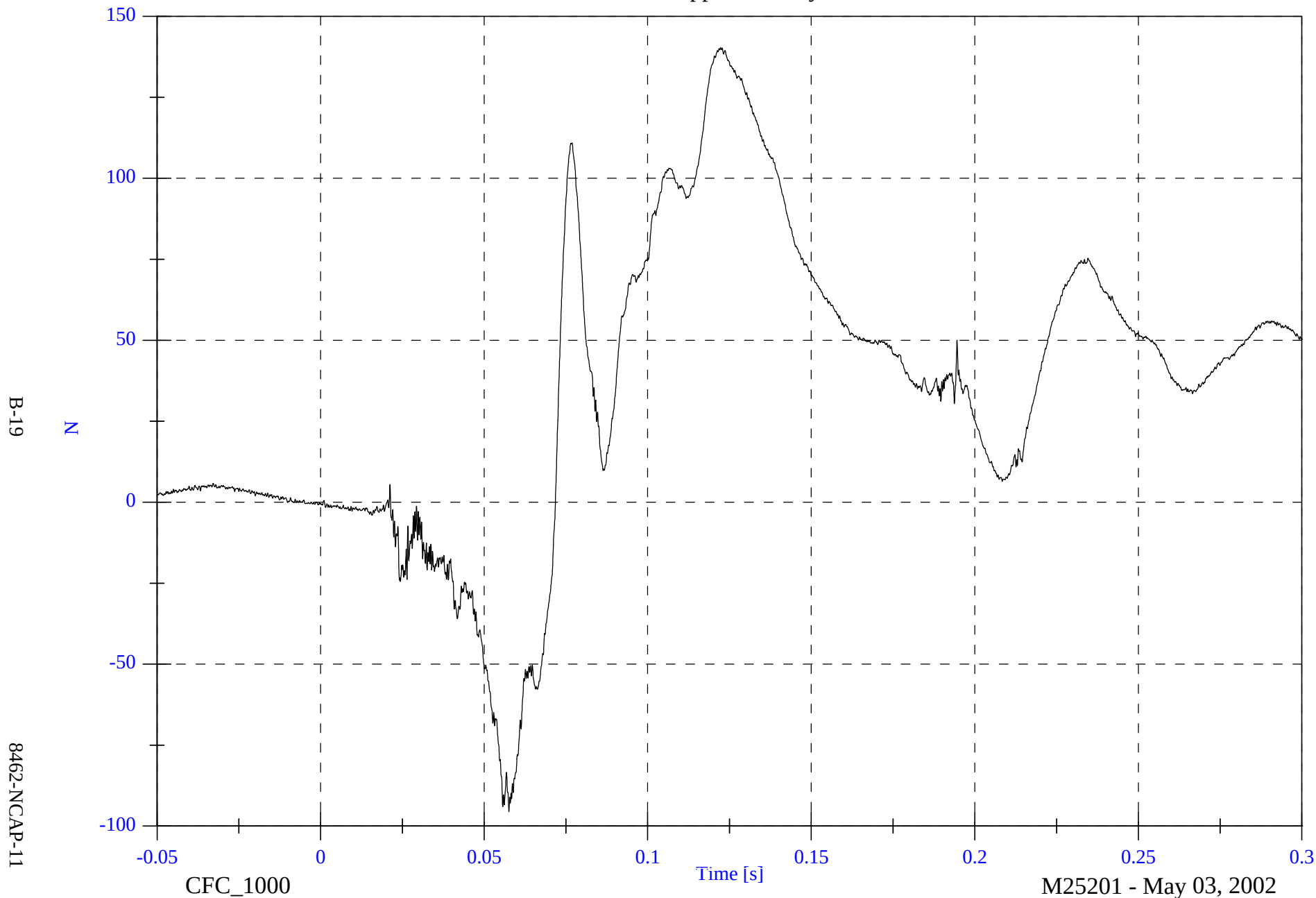


2002 NCAP Test 11 - 2002 Nissan Frontier

Max: 140.3 [N] at 0.122 [s]

Min: -95.6 [N] at 0.058 [s]

P1 Upper Neck Fy

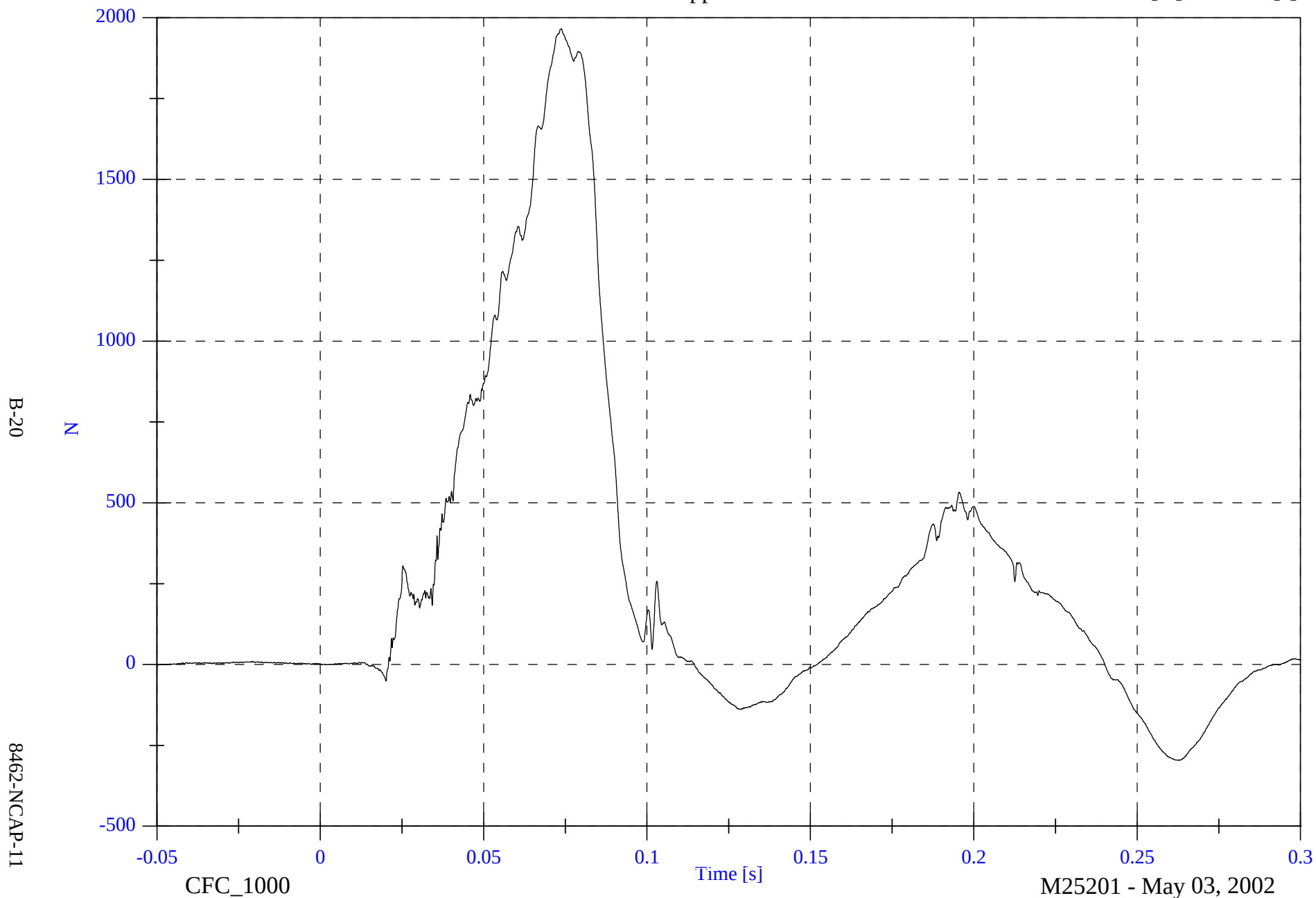


2002 NCAP Test 11 - 2002 Nissan Frontier

P1 Upper Neck Fz

Max: 1965.0 [N] at 0.074 [s]

Min: -296.7 [N] at 0.262 [s]



2002 NCAP Test 11 - 2002 Nissan Frontier

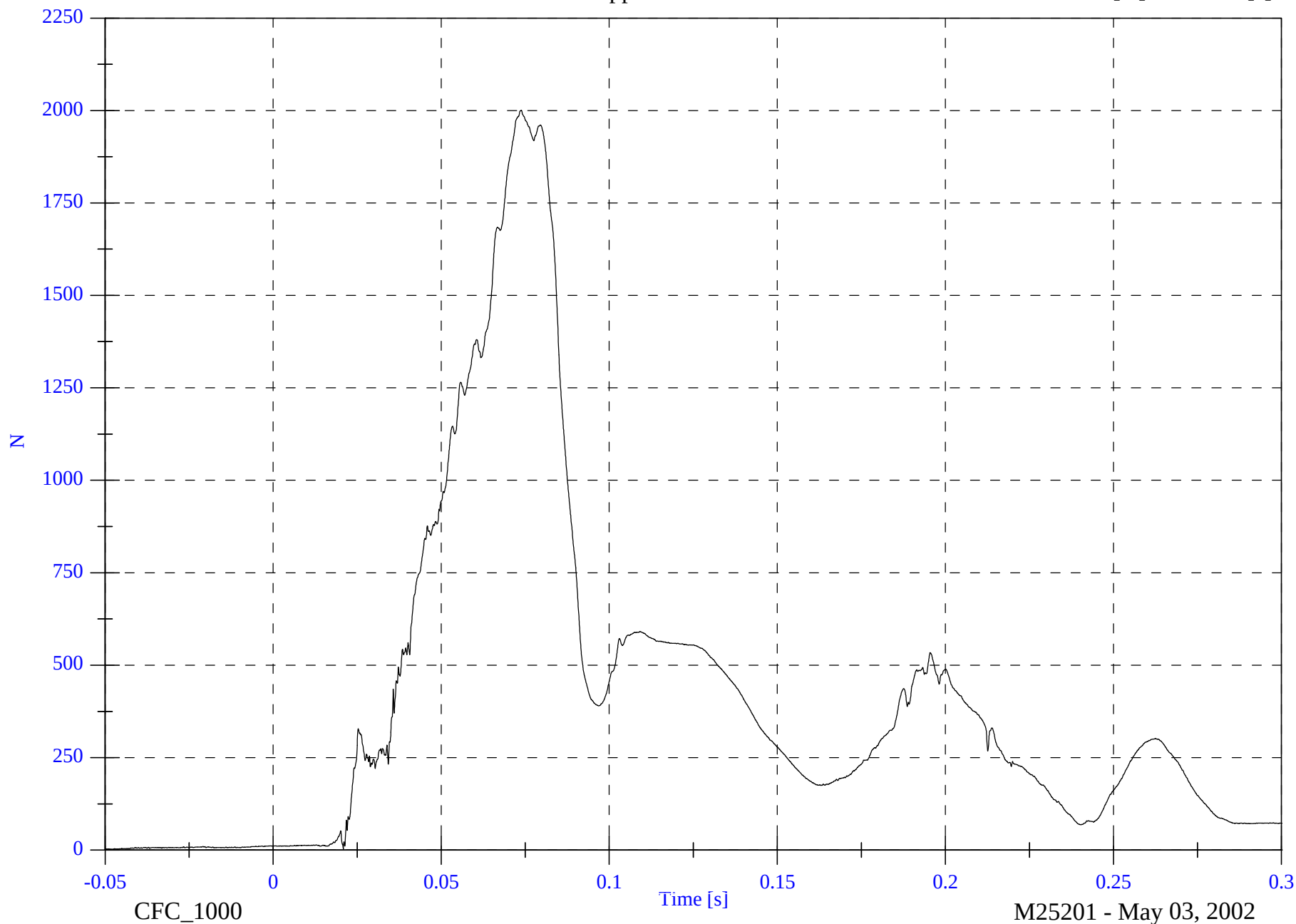
P1 Upper Neck F Resultant

Max: 2001.0 [N] at 0.074 [s]

Min: 2.2 [N] at -0.048 [s]

B-21

8462-NCAP-11

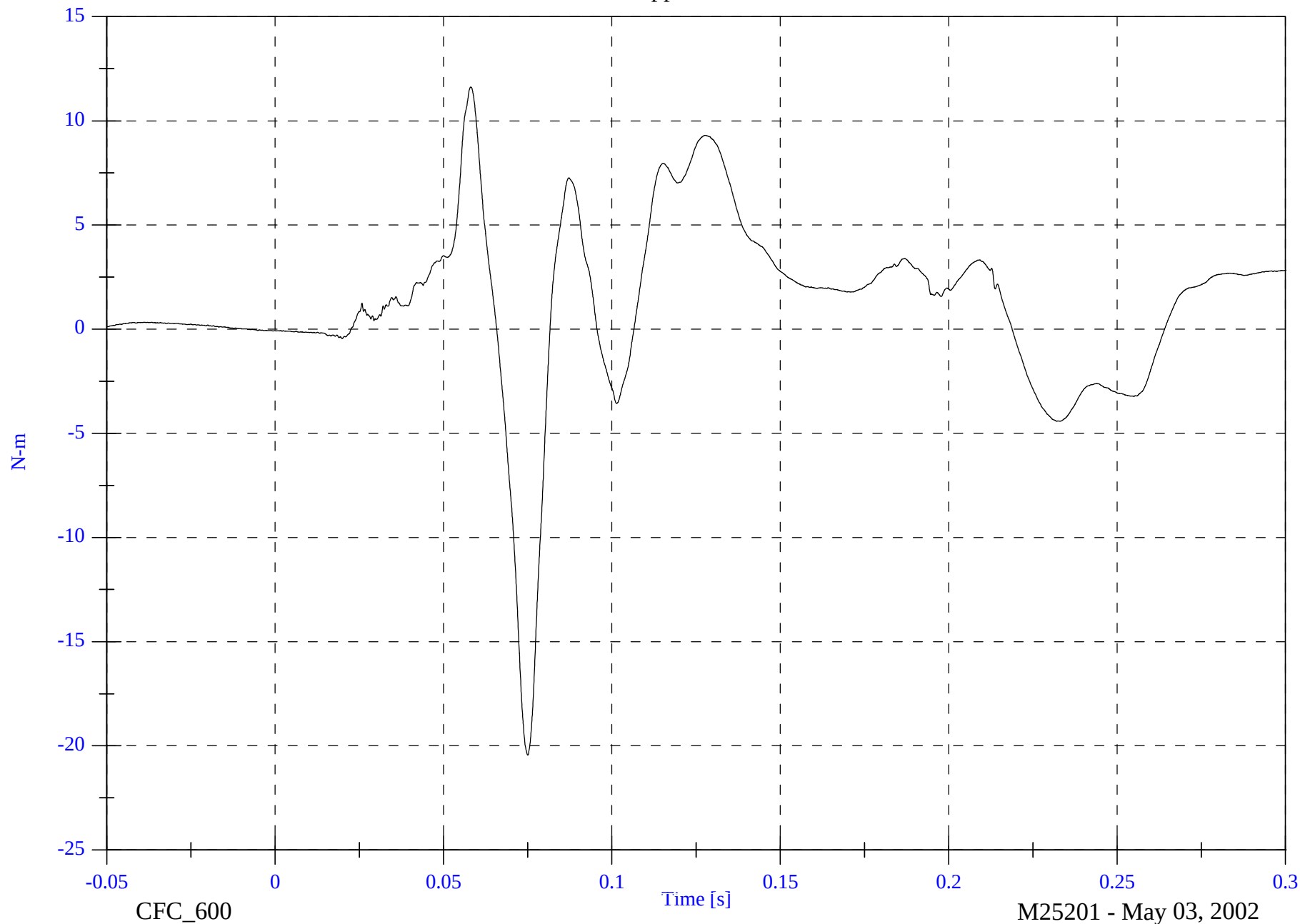


2002 NCAP Test 11 - 2002 Nissan Frontier

P1 Upper Neck Mx

Max: 11.6 [N-m] at 0.058 [s]

Min: -20.4 [N-m] at 0.075 [s]



B-22

8462-NCAP-11

CFC_600

M25201 - May 03, 2002

2002 NCAP Test 11 - 2002 Nissan Frontier

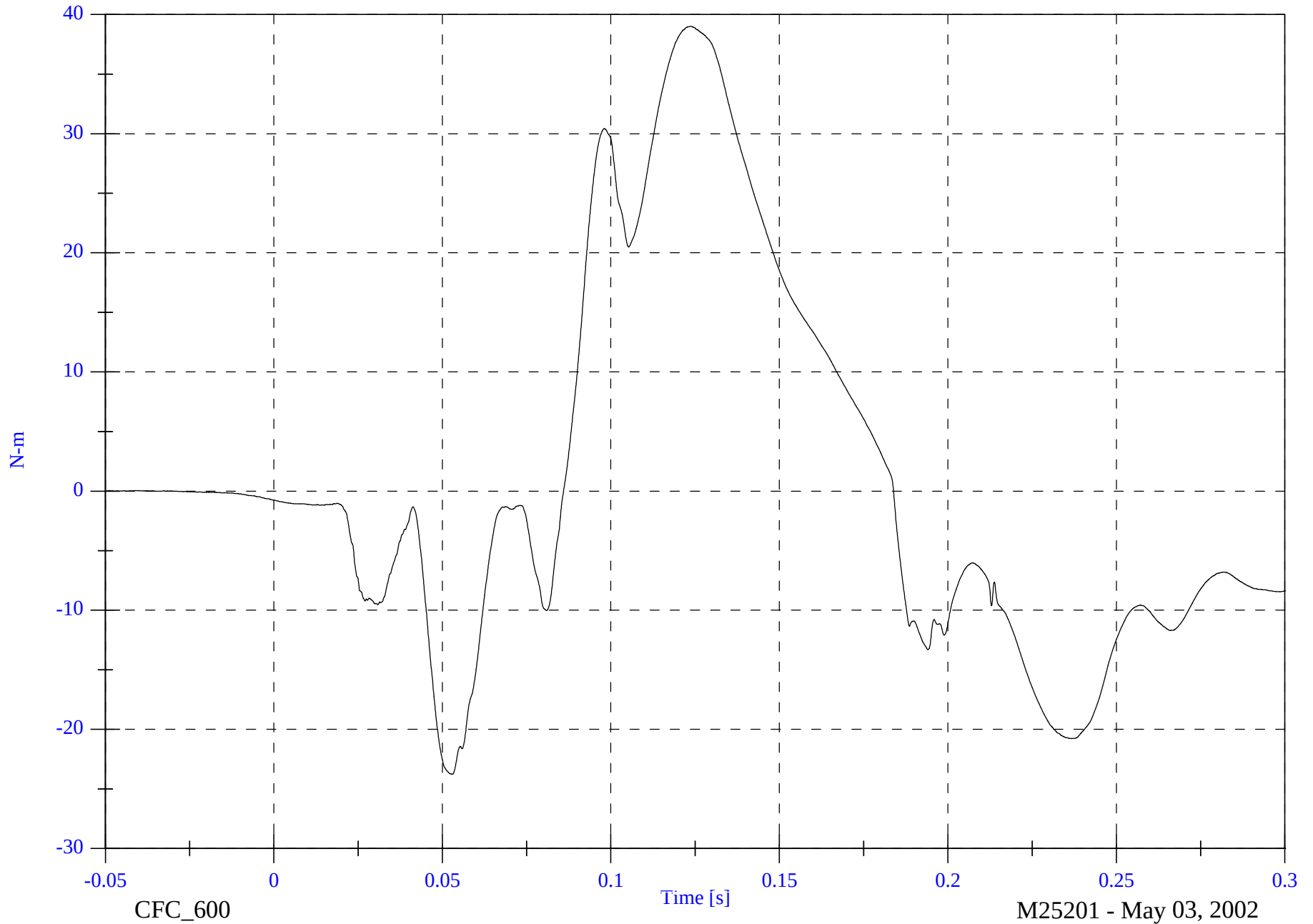
Max: 39.0 [N-m] at 0.124 [s]

Min: -23.8 [N-m] at 0.053 [s]

P1 Upper Neck My

B-23

8462-NCAP-11

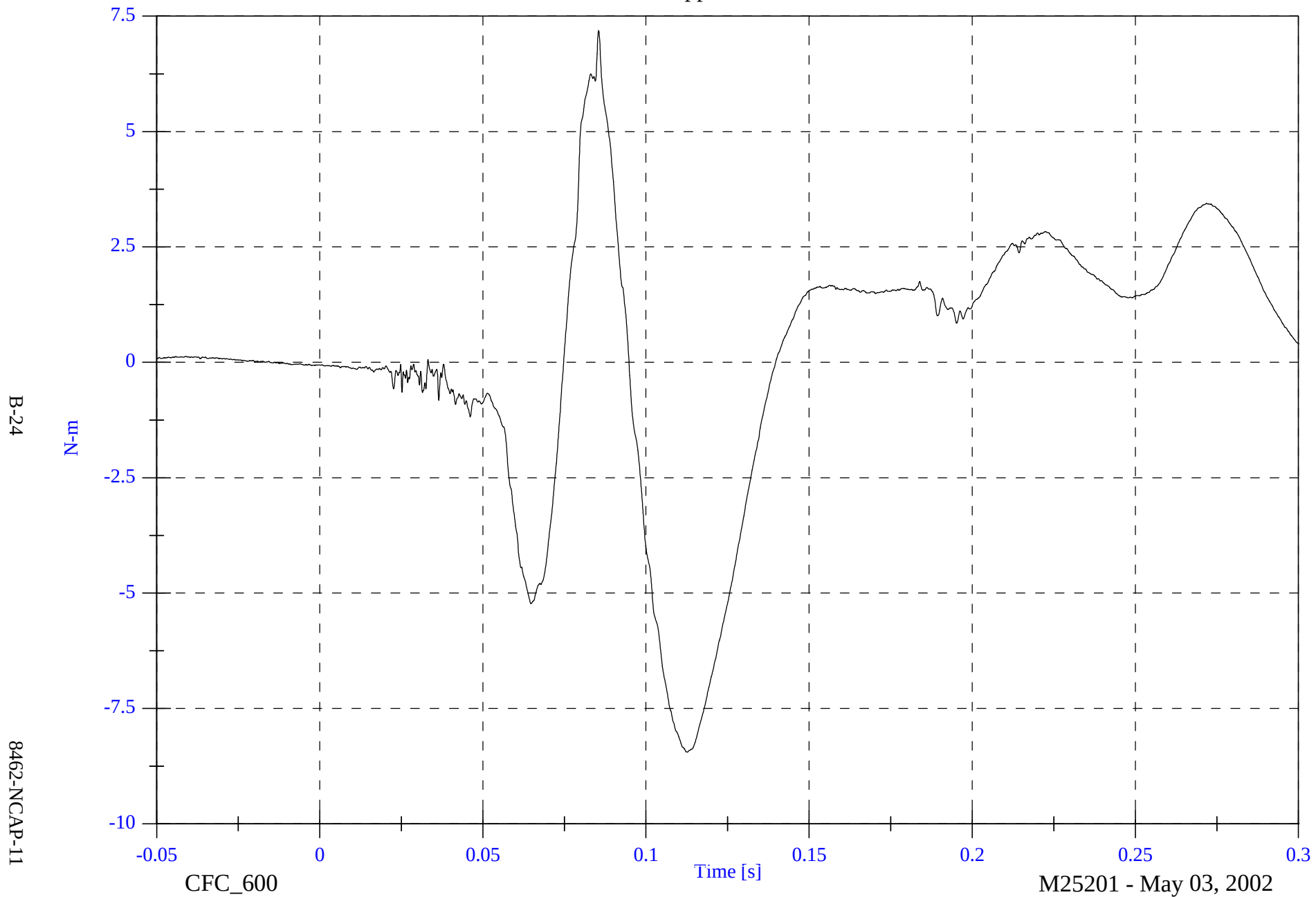


2002 NCAP Test 11 - 2002 Nissan Frontier

Max: 7.2 [N-m] at 0.085 [s]

Min: -8.4 [N-m] at 0.112 [s]

P1 Upper Neck Mz

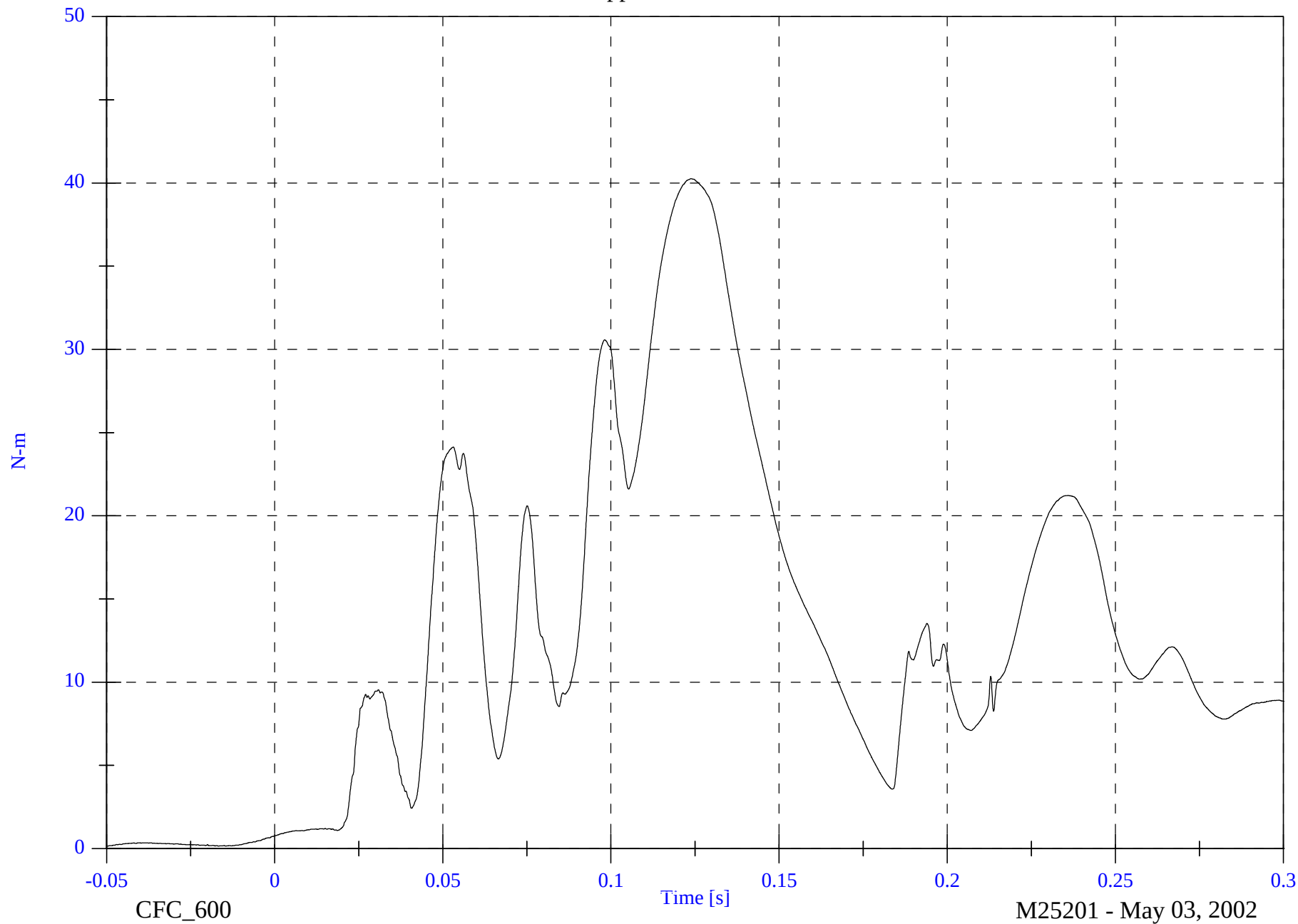


2002 NCAP Test 11 - 2002 Nissan Frontier

P1 Upper Neck M Resultant

Max: 40.3 [N-m] at 0.124 [s]

Min: 0.1 [N-m] at -0.050 [s]



B-25

8462-NCAP-11

2002 NCAP Test 11 - 2002 Nissan Frontier

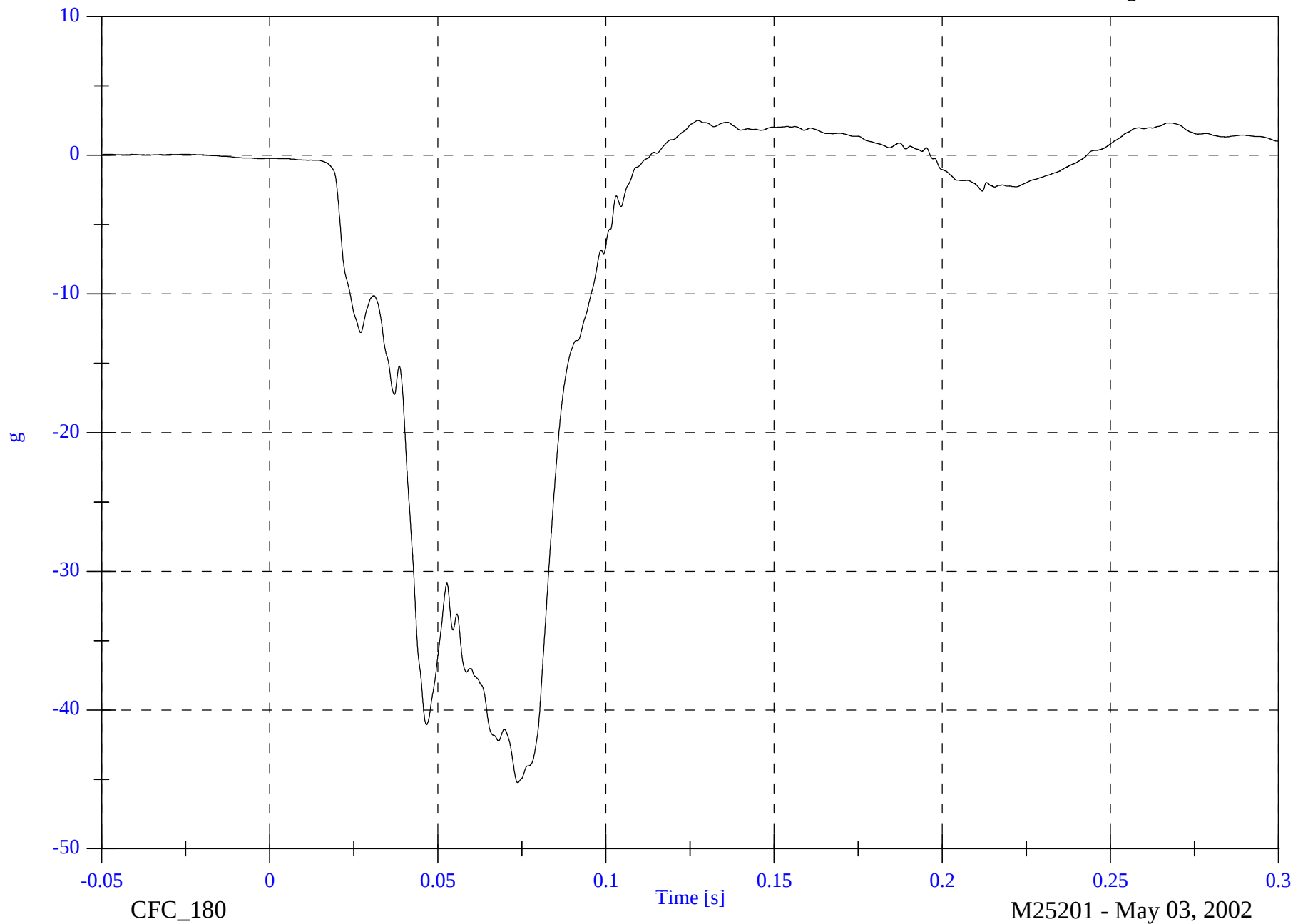
P1 Chest x

Max: 2.5 [g] at 0.127 [s]

Min: -45.2 [g] at 0.074 [s]

B-26

8462-NCAP-11



2002 NCAP Test 11 - 2002 Nissan Frontier

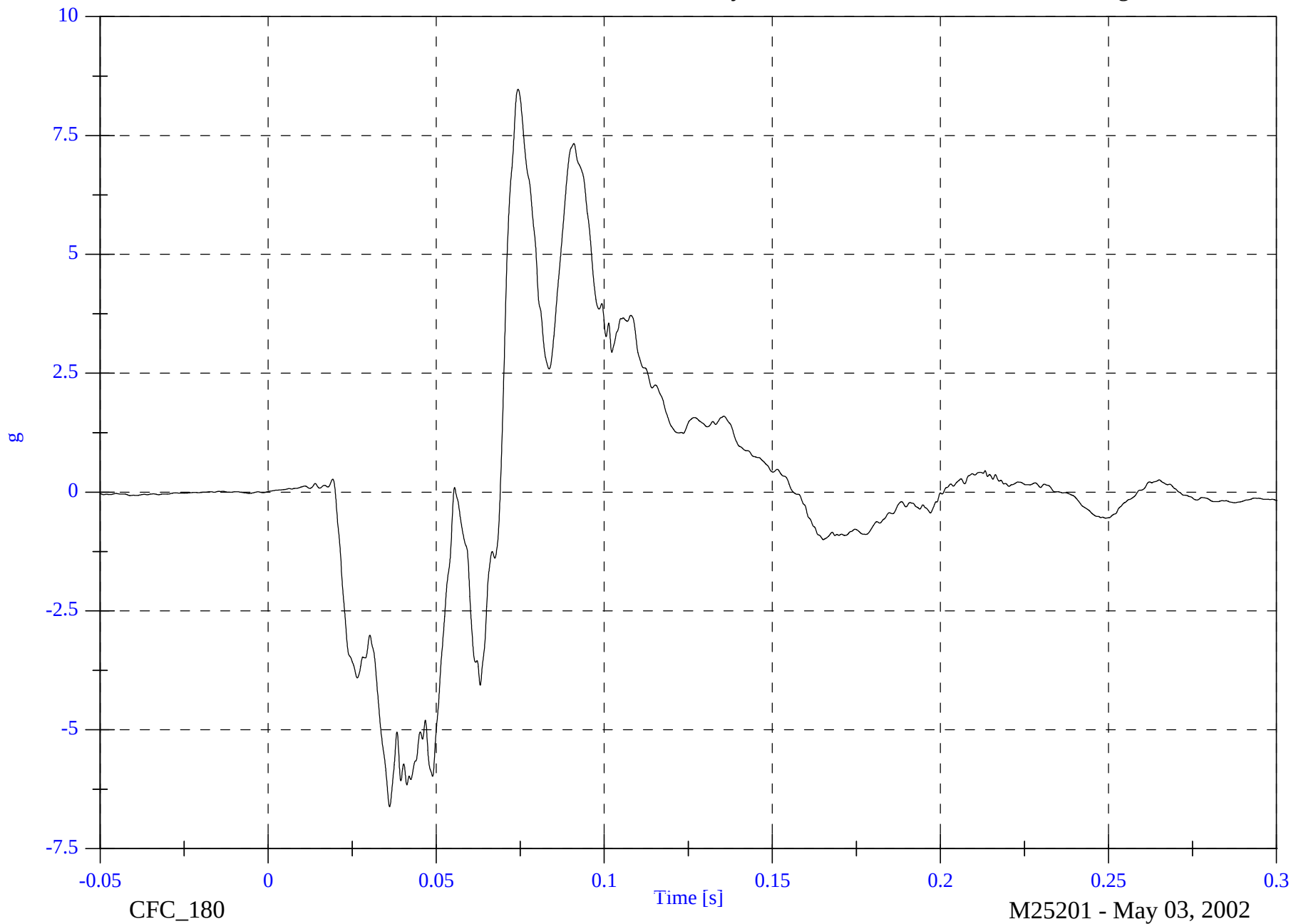
P1 Chest y

Max: 8.5 [g] at 0.074 [s]

Min: -6.6 [g] at 0.036 [s]

B-27

8462-NCAP-11

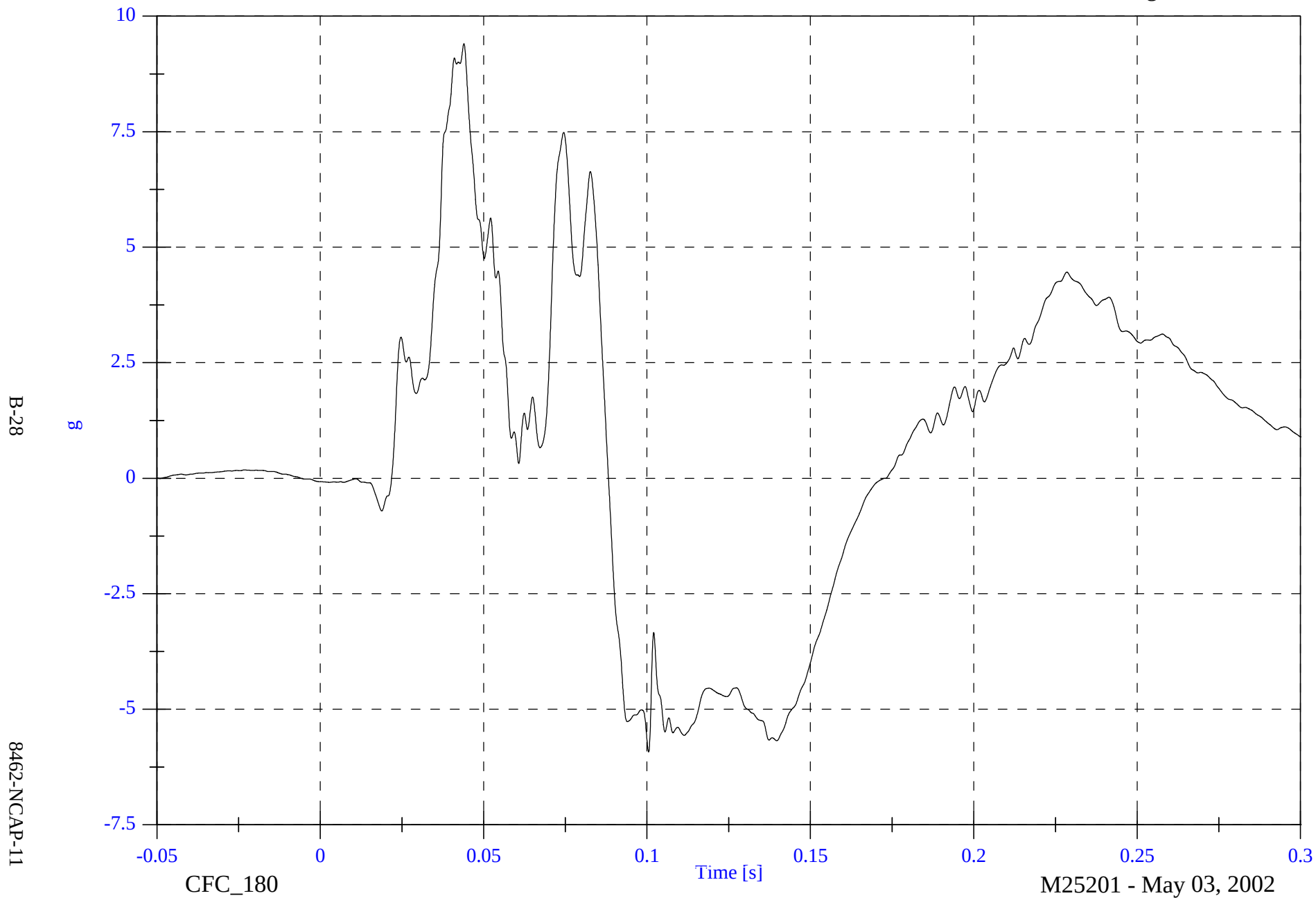


2002 NCAP Test 11 - 2002 Nissan Frontier

Max: 9.4 [g] at 0.044 [s]

Min: -5.9 [g] at 0.101 [s]

P1 Chest z



2002 NCAP Test 11 - 2002 Nissan Frontier

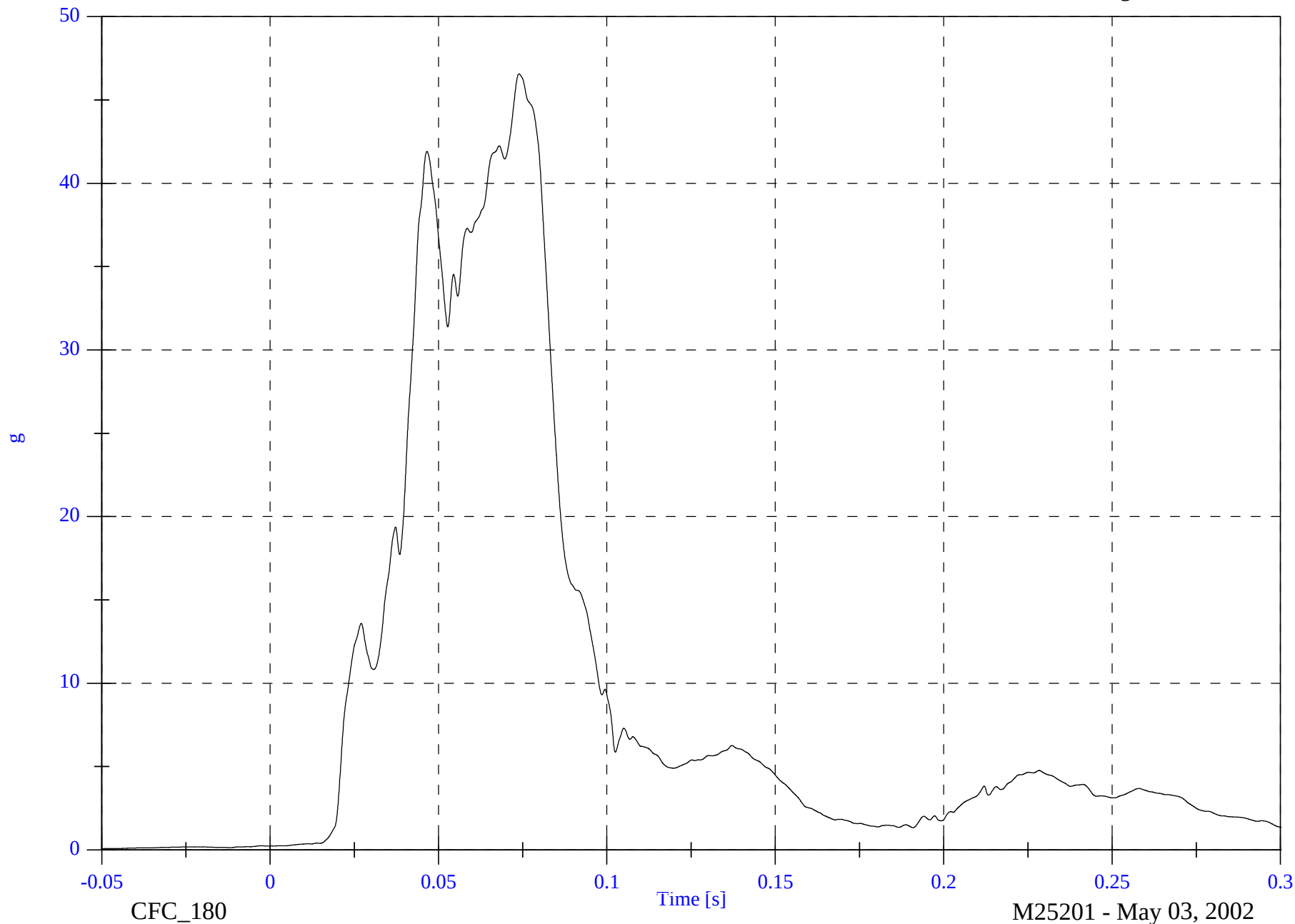
P1 Chest Resultant

Max: 46.6 [g] at 0.074 [s]

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

B-29

8462-NCAP-11

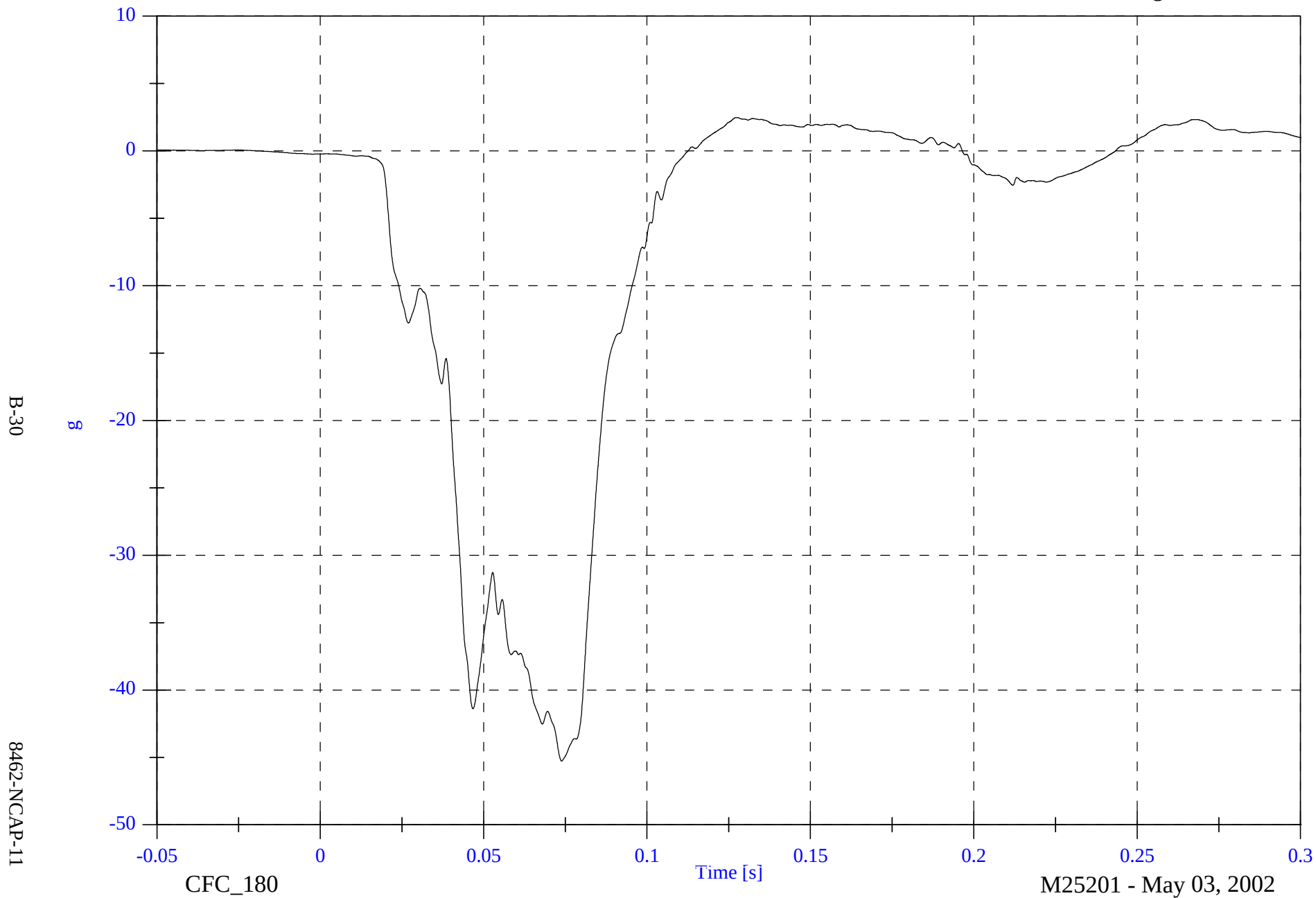


2002 NCAP Test 11 - 2002 Nissan Frontier

P1 Chest Red x

Max: 2.5 [g] at 0.127 [s]

Min: -45.3 [g] at 0.074 [s]

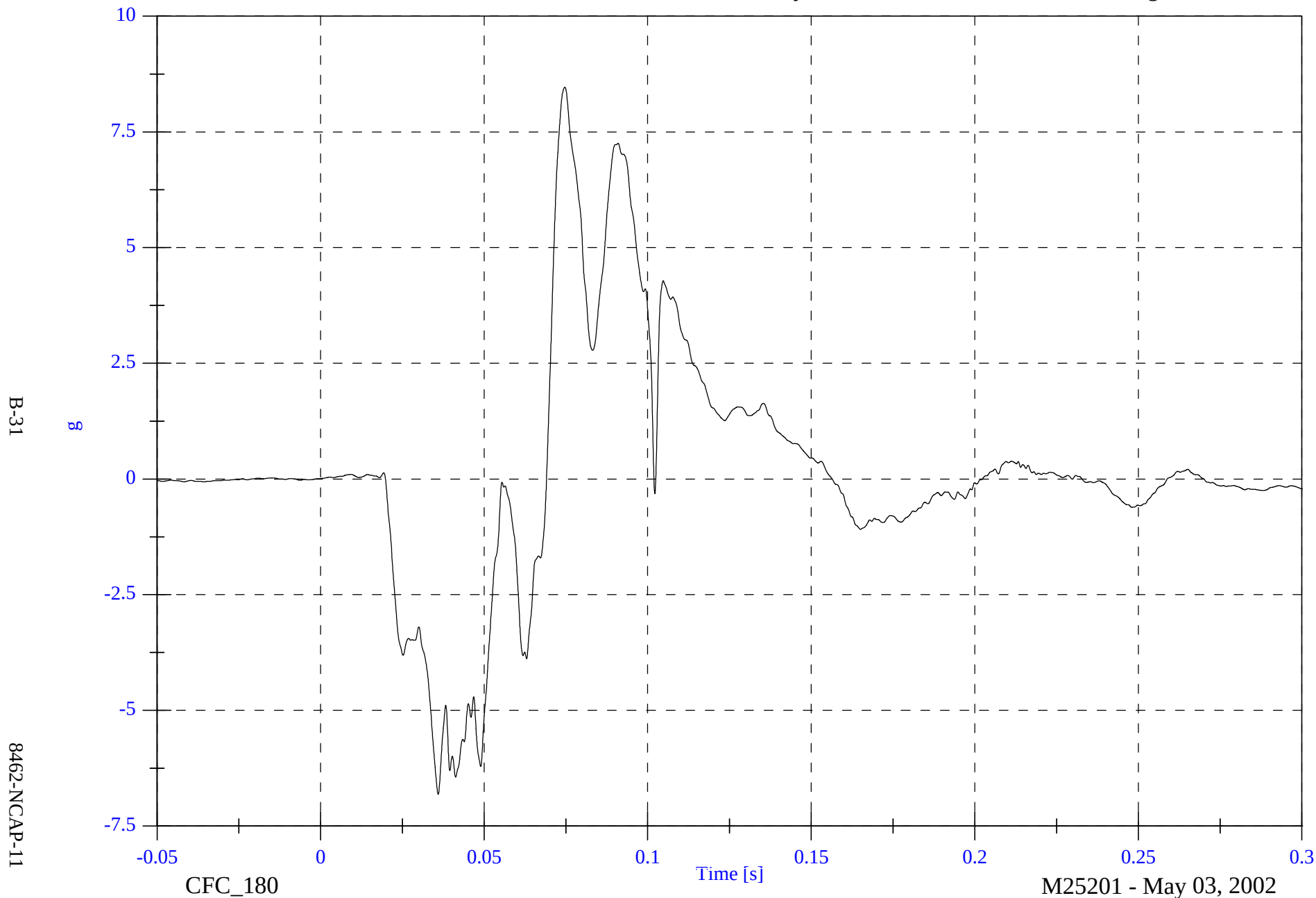


2002 NCAP Test 11 - 2002 Nissan Frontier

P1 Chest Red y

Max: 8.5 [g] at 0.075 [s]

Min: -6.8 [g] at 0.036 [s]

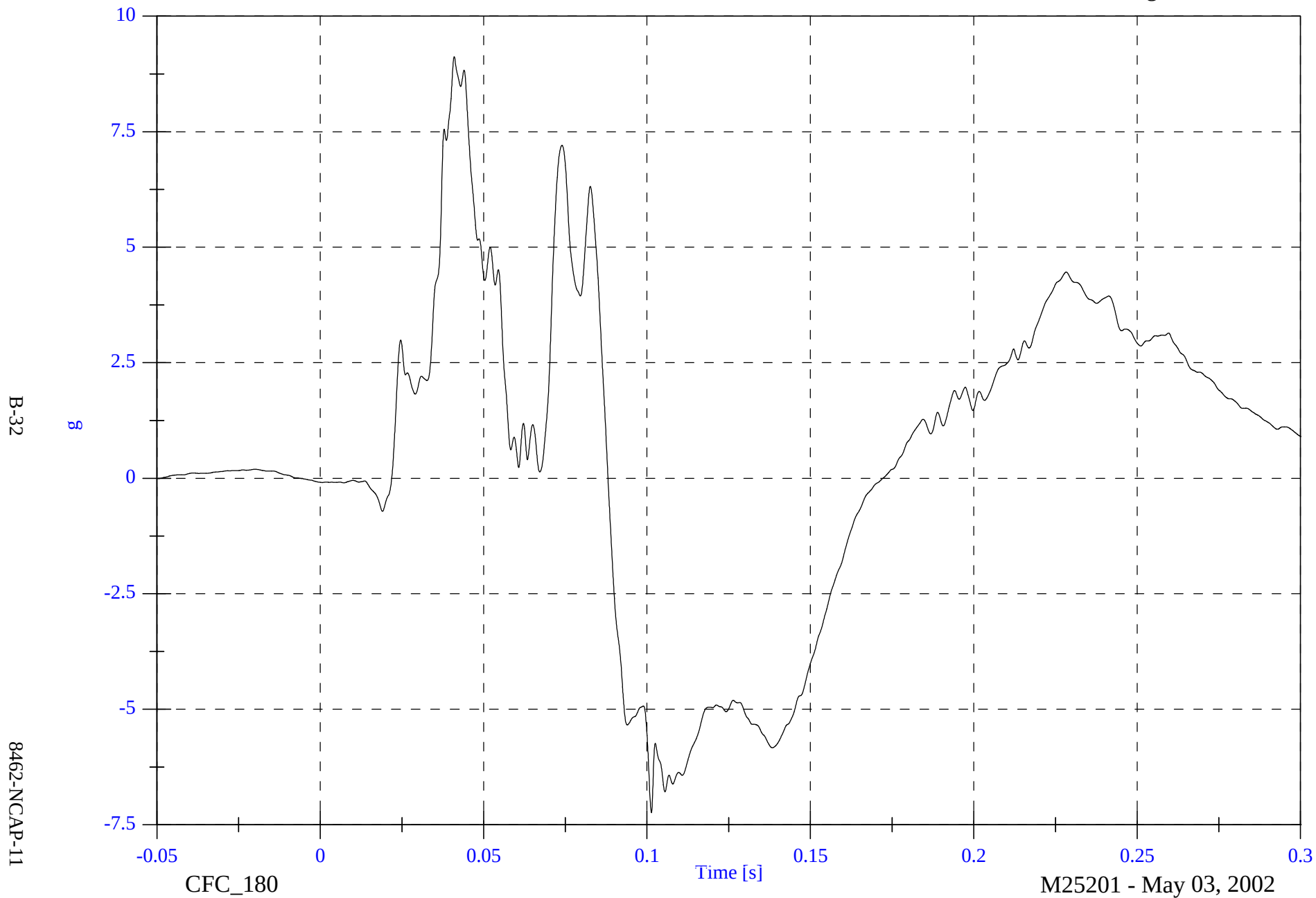


2002 NCAP Test 11 - 2002 Nissan Frontier

P1 Chest Red z

Max: 9.1 [g] at 0.041 [s]

Min: -7.2 [g] at 0.101 [s]



2002 NCAP Test 11 - 2002 Nissan Frontier

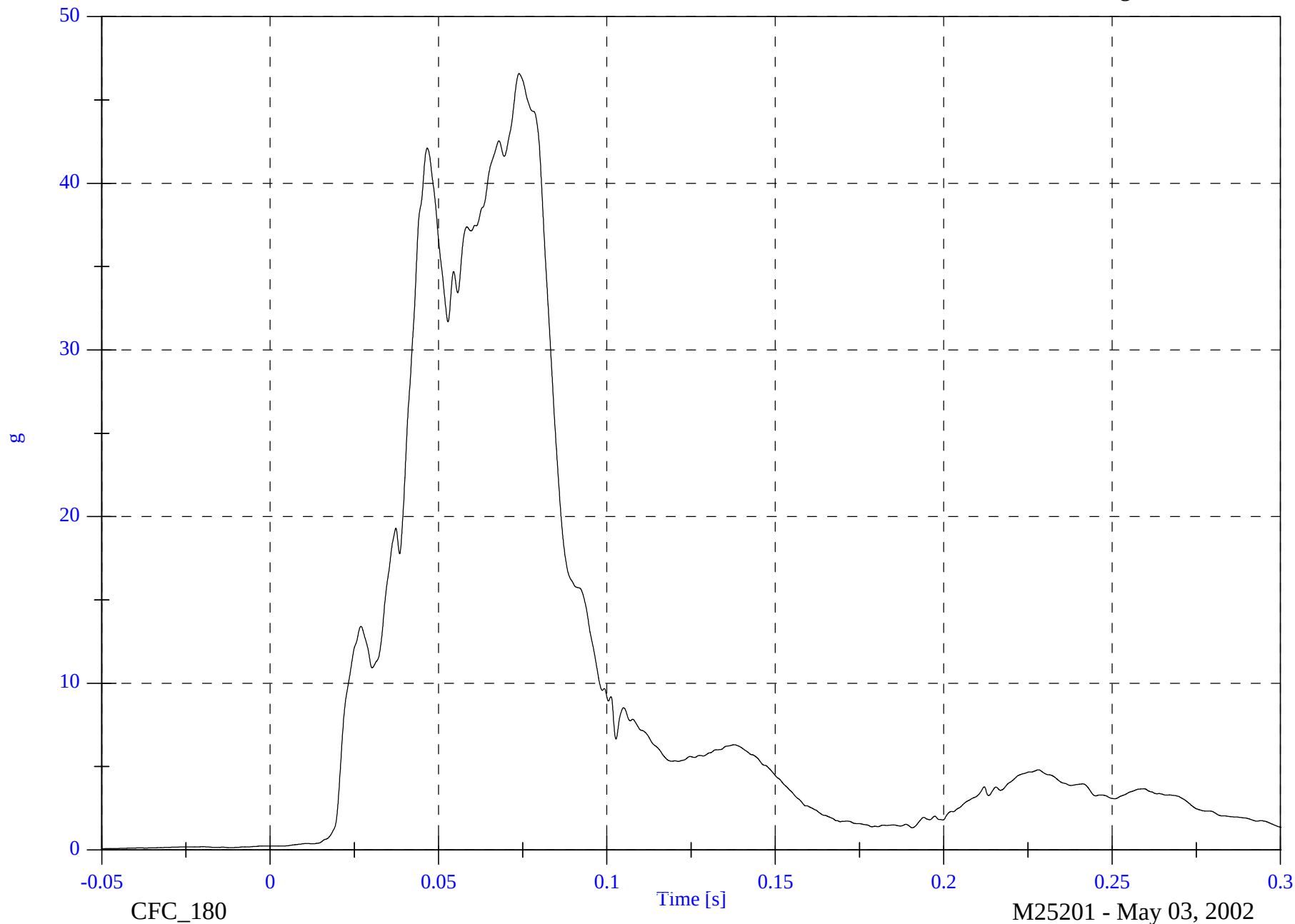
P1 Chest Red Resultant

Max: 46.6 [g] at 0.074 [s]

Min: 0.1 [g] at -0.050 [s]

B-33

8462-NCAP-11



2002 NCAP Test 11 - 2002 Nissan Frontier

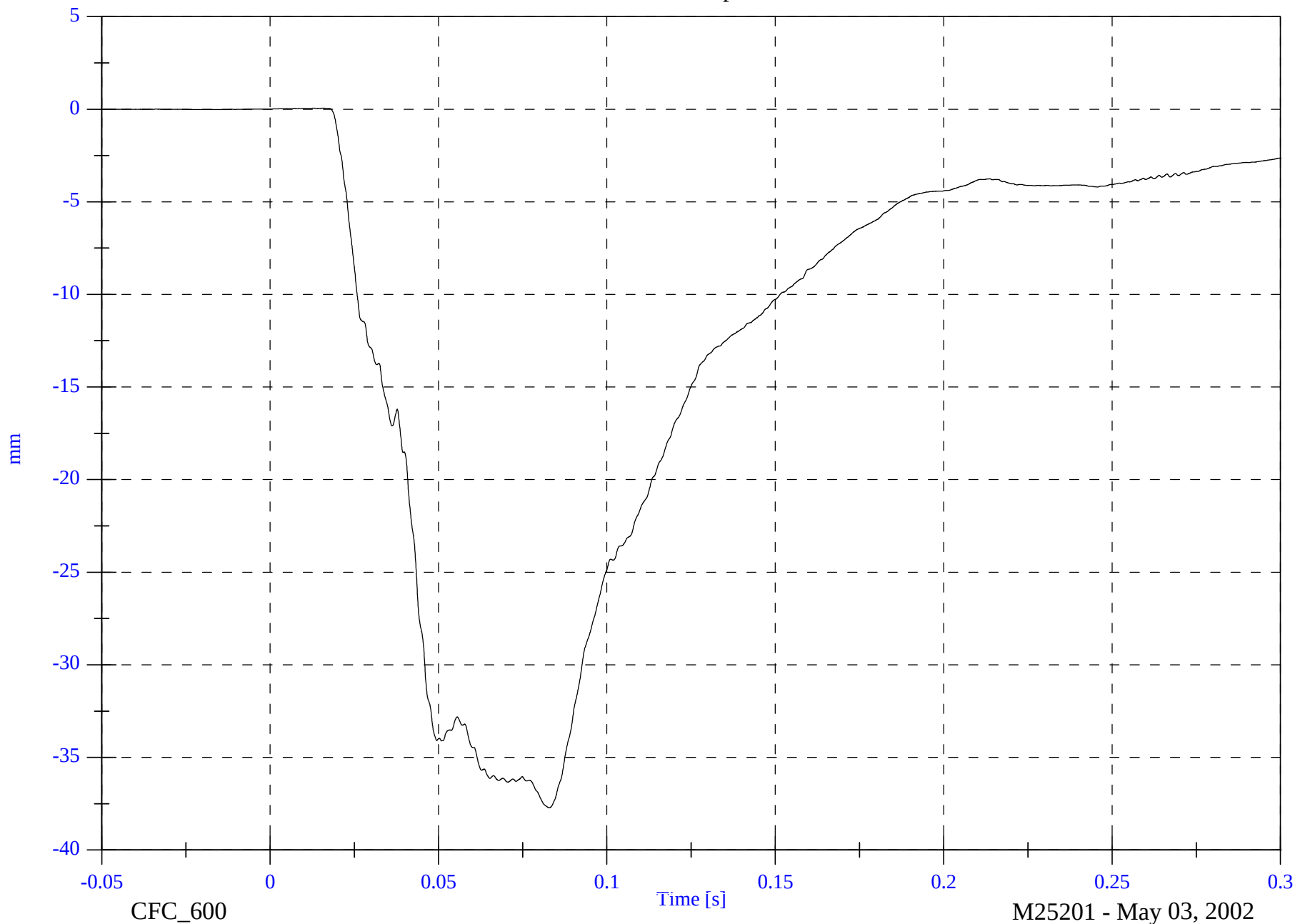
P1 Chest Compression

Max: 0.1 [mm] at 0.016 [s]

Min: -37.7 [mm] at 0.083 [s]

B-34

8462-NCAP-11

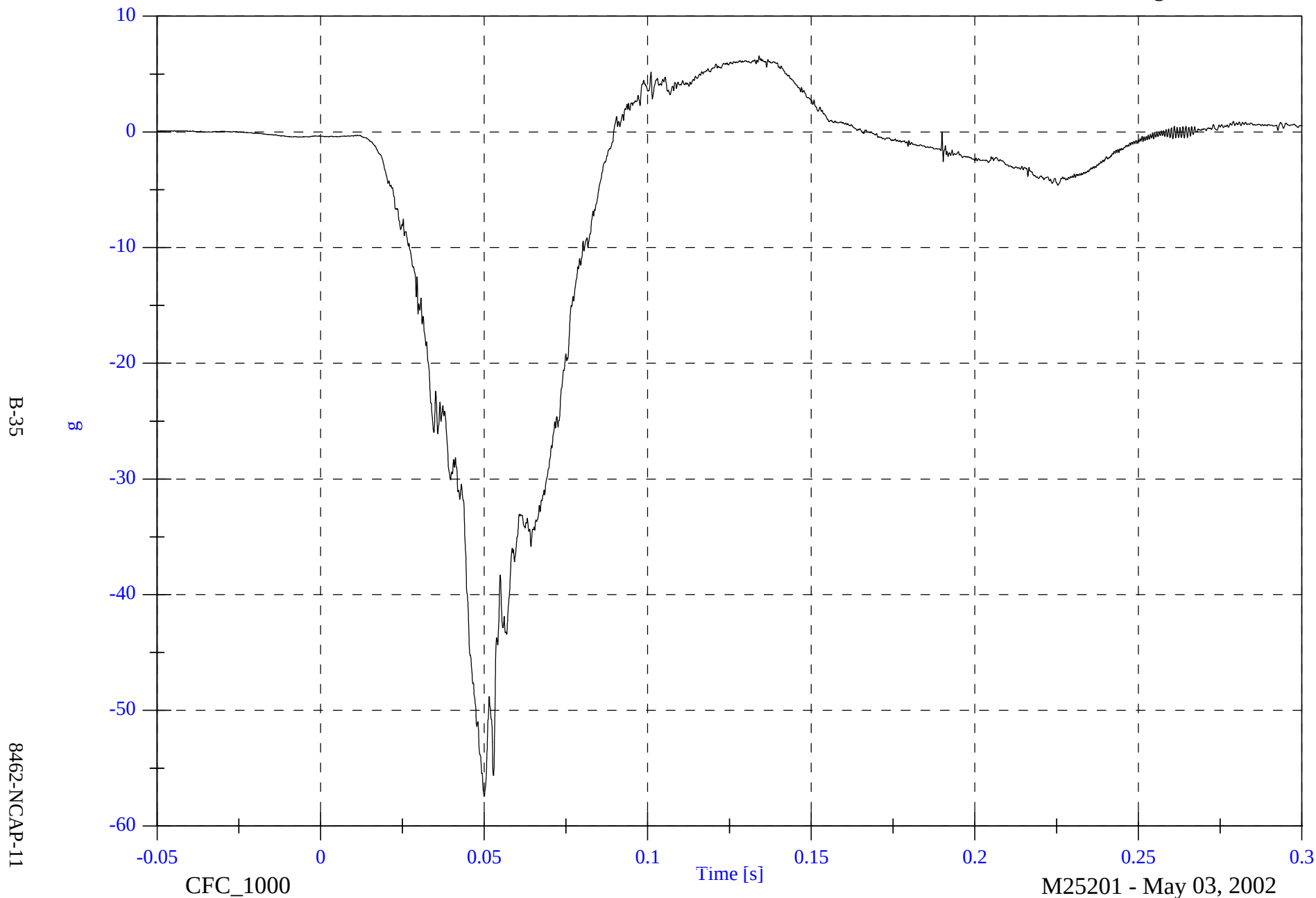


2002 NCAP Test 11 - 2002 Nissan Frontier

Max: 6.6 [g] at 0.134 [s]

Min: -57.5 [g] at 0.050 [s]

P1 Pelvic x



2002 NCAP Test 11 - 2002 Nissan Frontier

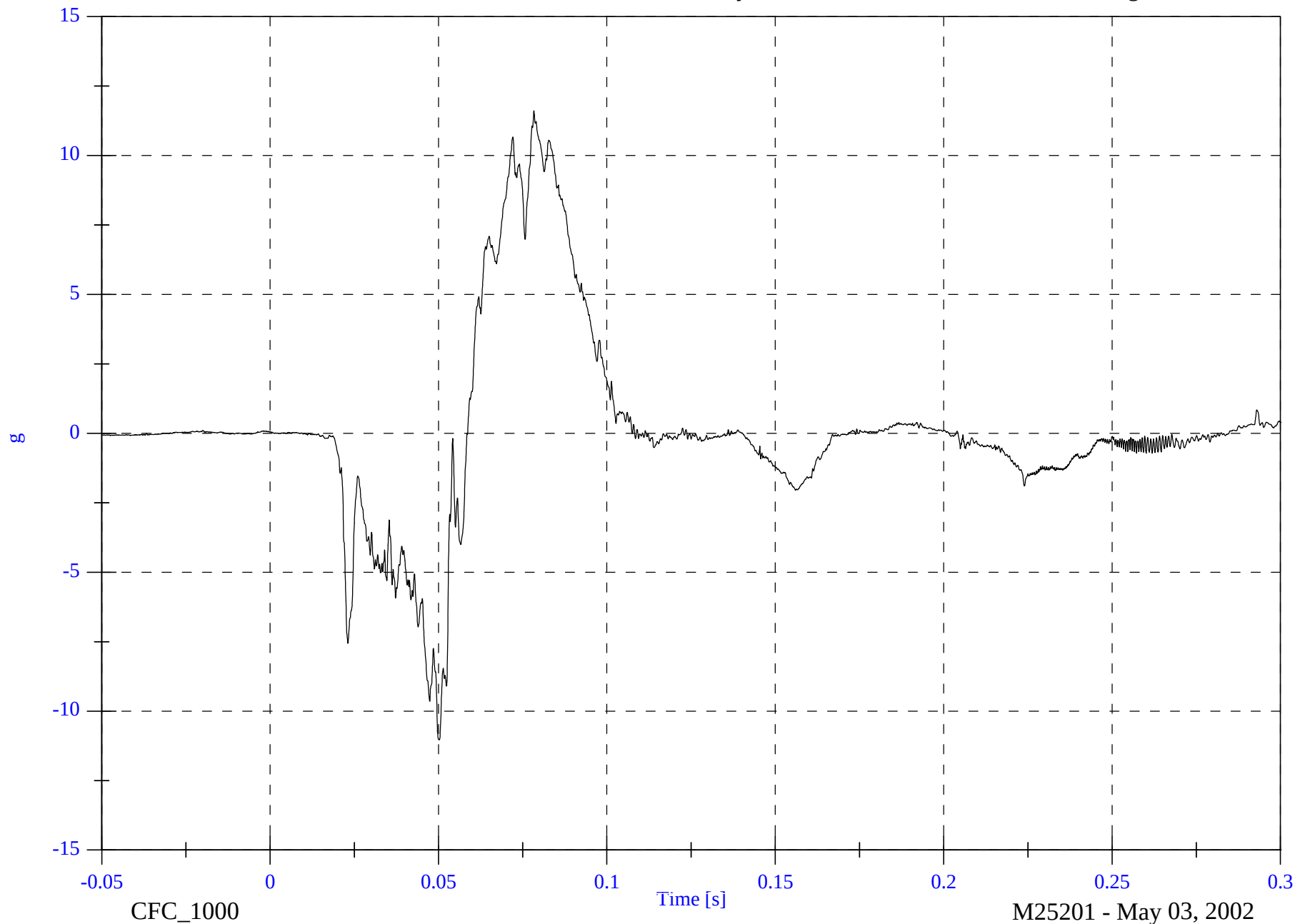
P1 Pelvic y

Max: 11.6 [g] at 0.078 [s]

Min: -11.0 [g] at 0.050 [s]

B-36

8462-NCAP-11

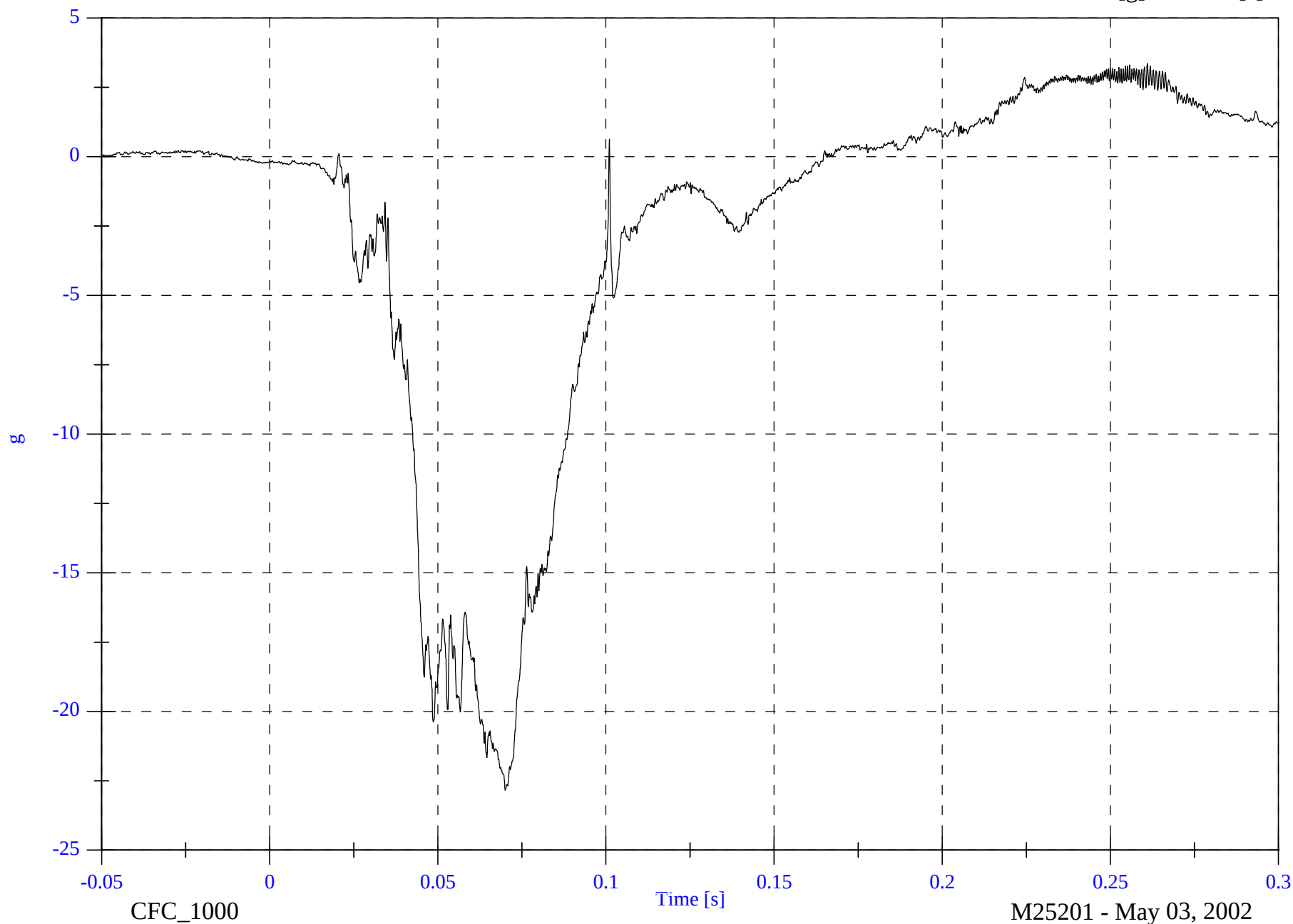


2002 NCAP Test 11 - 2002 Nissan Frontier

Max: 3.4 [g] at 0.261 [s]

Min: -22.8 [g] at 0.070 [s]

P1 Pelvic z



B-37

8462-NCAP-11

2002 NCAP Test 11 - 2002 Nissan Frontier

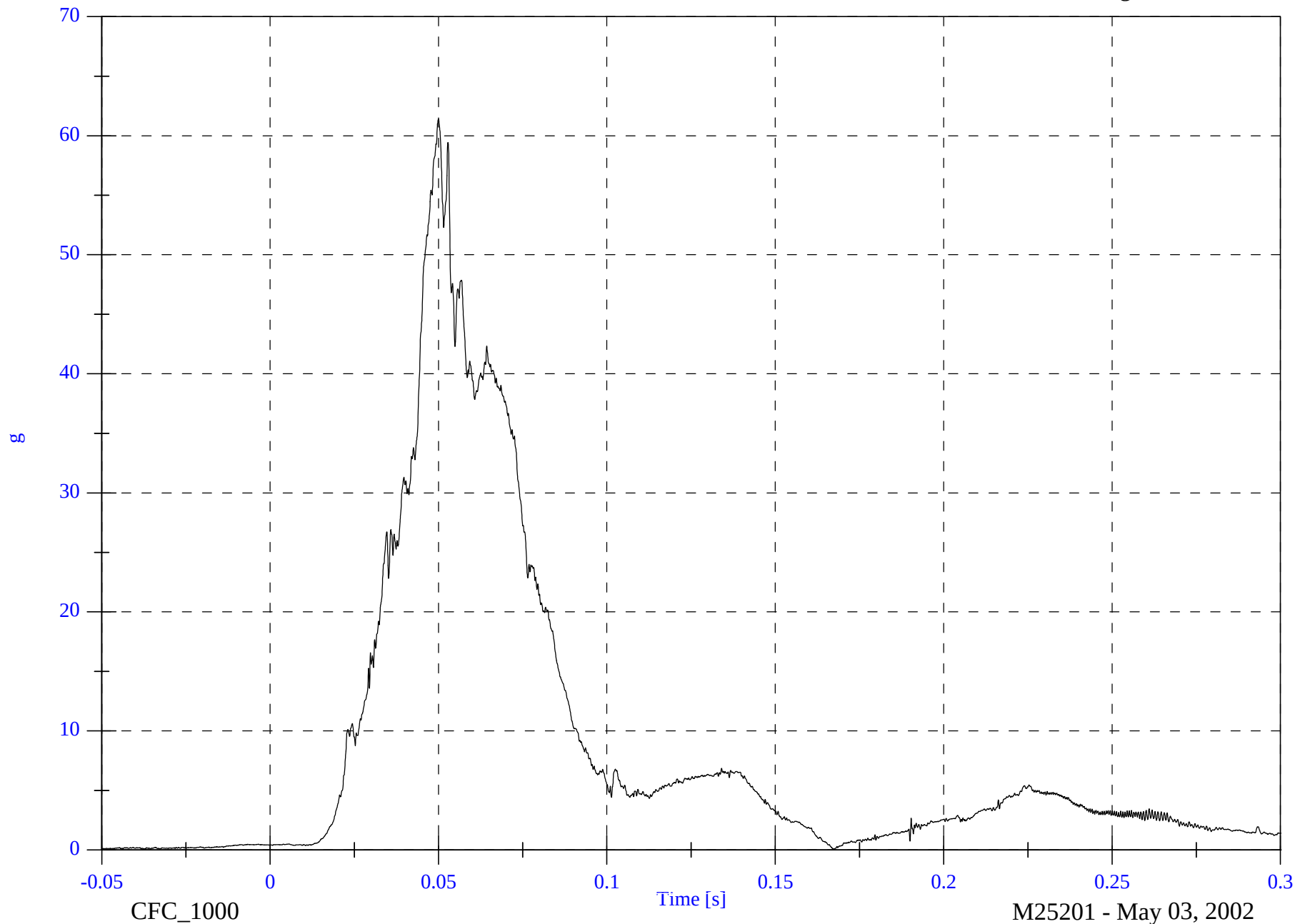
P1 Pelvic Resultant

Max: 61.4 [g] at 0.050 [s]

Min: 0.1 [g] at -0.037 [s]

B-38

8462-NCAP-11



2002 NCAP Test 11 - 2002 Nissan Frontier

Max: 1287.0 [N] at 0.061 [s]

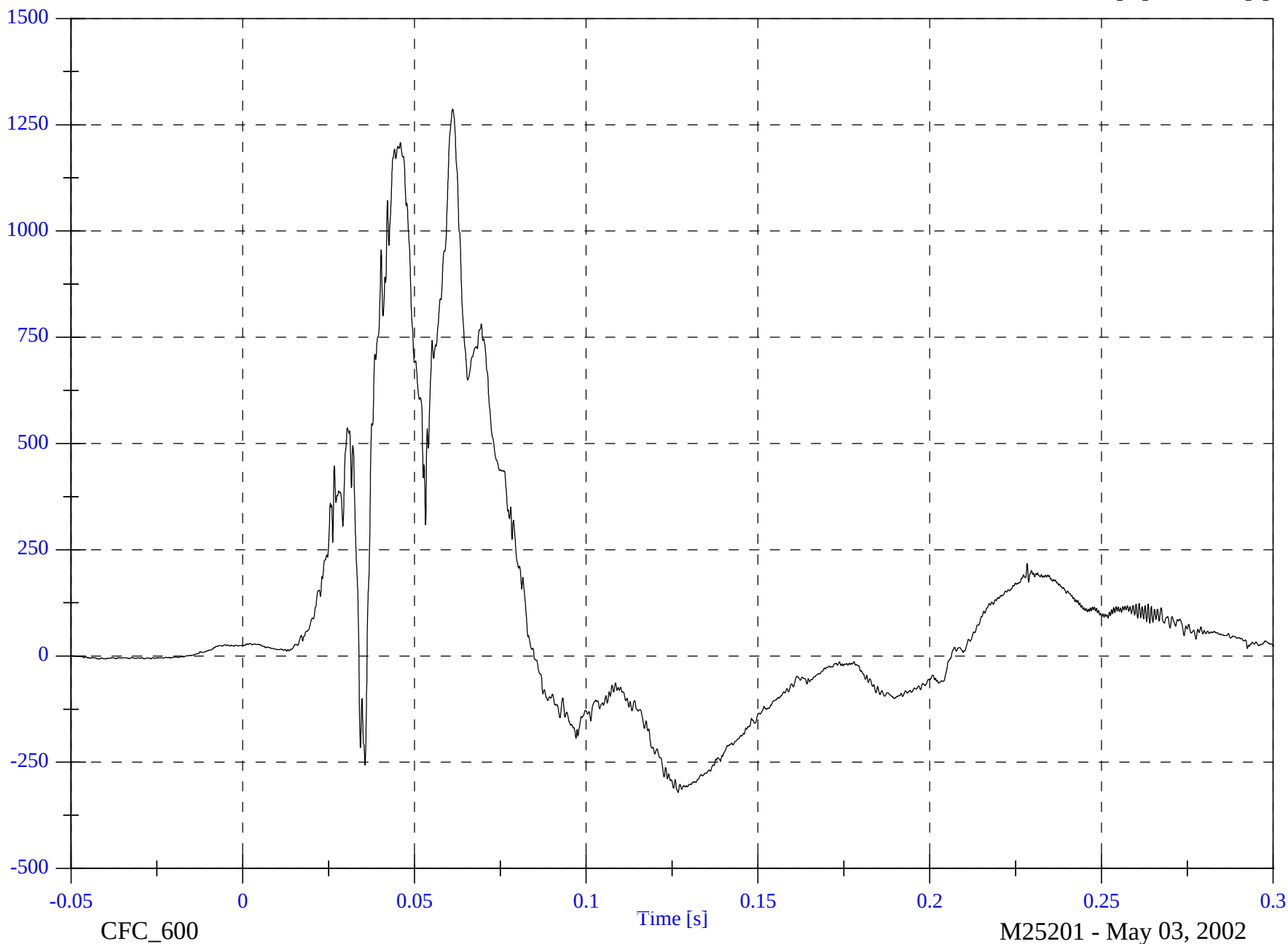
Min: -321.1 [N] at 0.127 [s]

P1 Left Femur

B-39

N

8462-NCAP-11

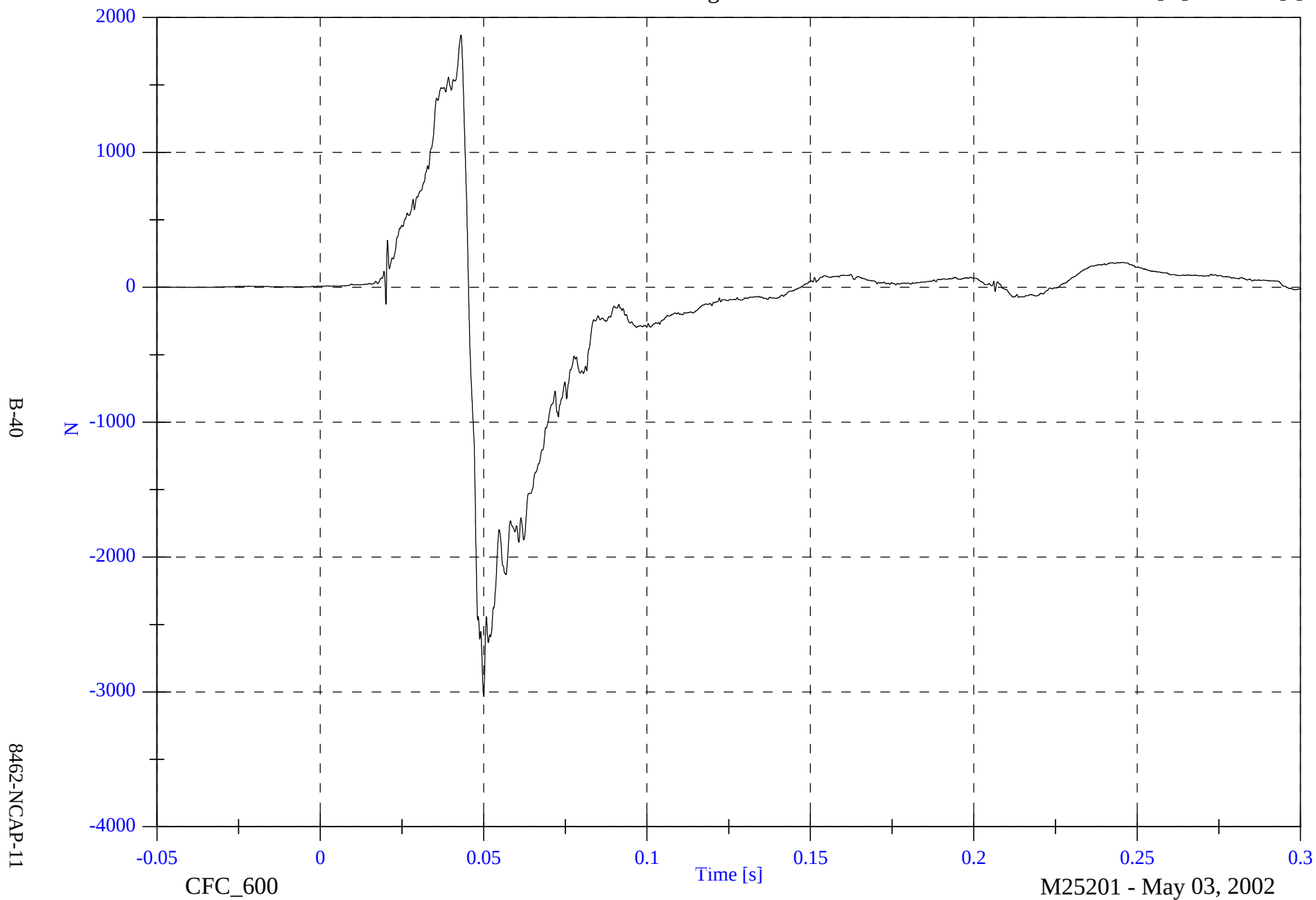


2002 NCAP Test 11 - 2002 Nissan Frontier

P1 Right Femur

Max: 1871.4 [N] at 0.043 [s]

Min: -3034.4 [N] at 0.050 [s]

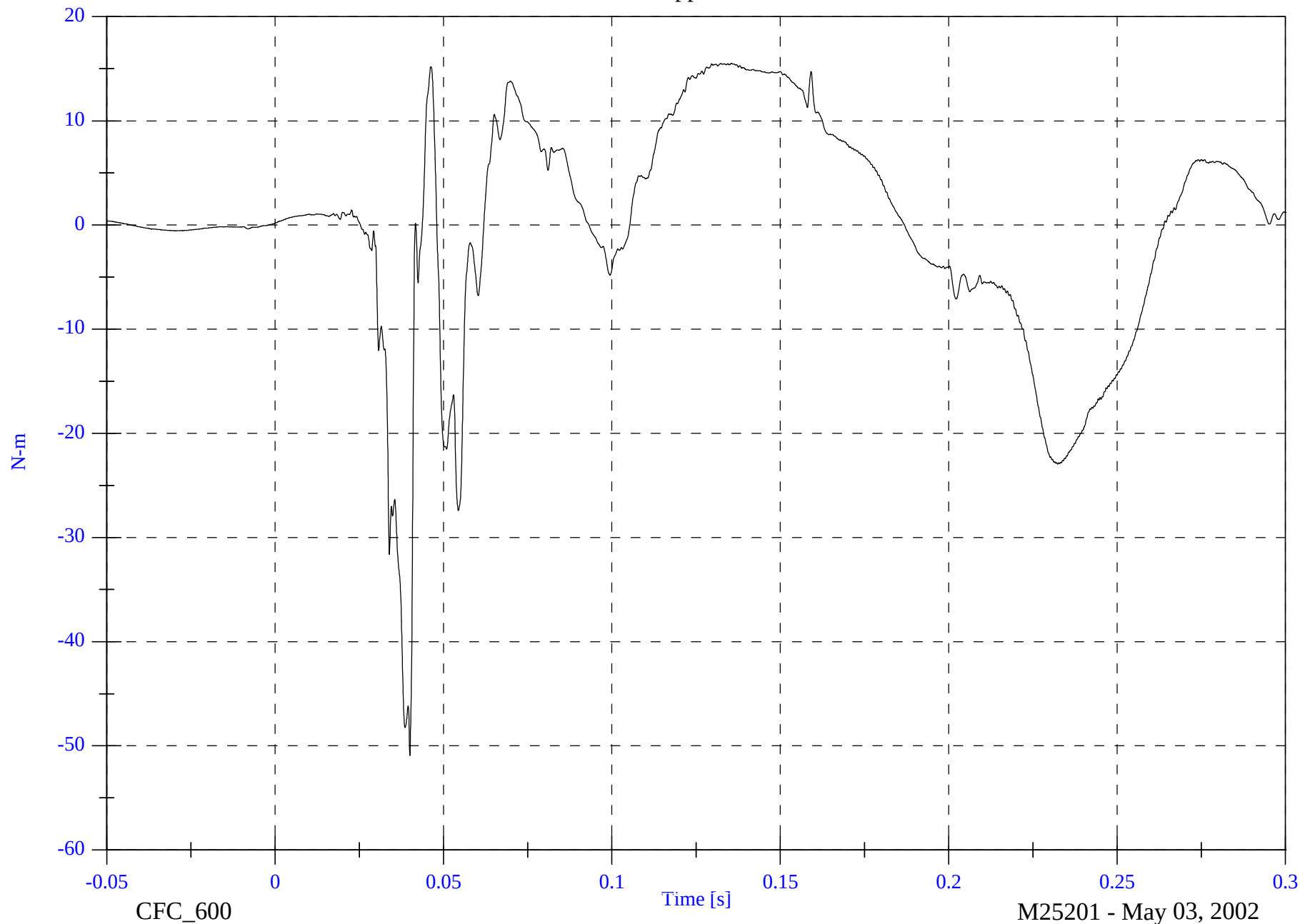


2002 NCAP Test 11 - 2002 Nissan Frontier

P1 Left Upper Tibia Mx

Max: 15.5 [N-m] at 0.136 [s]

Min: -50.9 [N-m] at 0.040 [s]



B-41

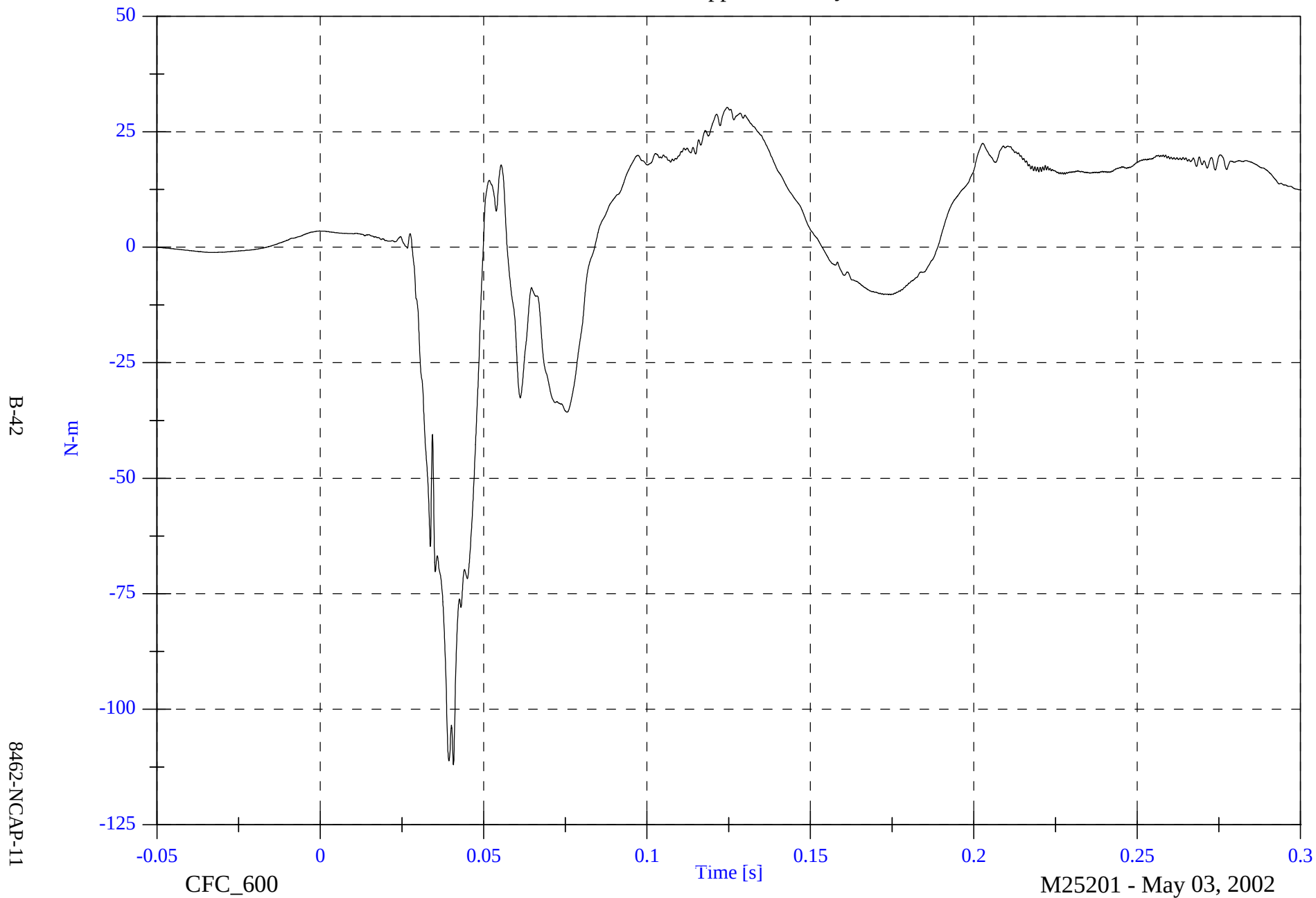
8462-NCAP-11

2002 NCAP Test 11 - 2002 Nissan Frontier

P1 Left Upper Tibia My

Max: 30.3 [N-m] at 0.125 [s]

Min: -112.0 [N-m] at 0.041 [s]

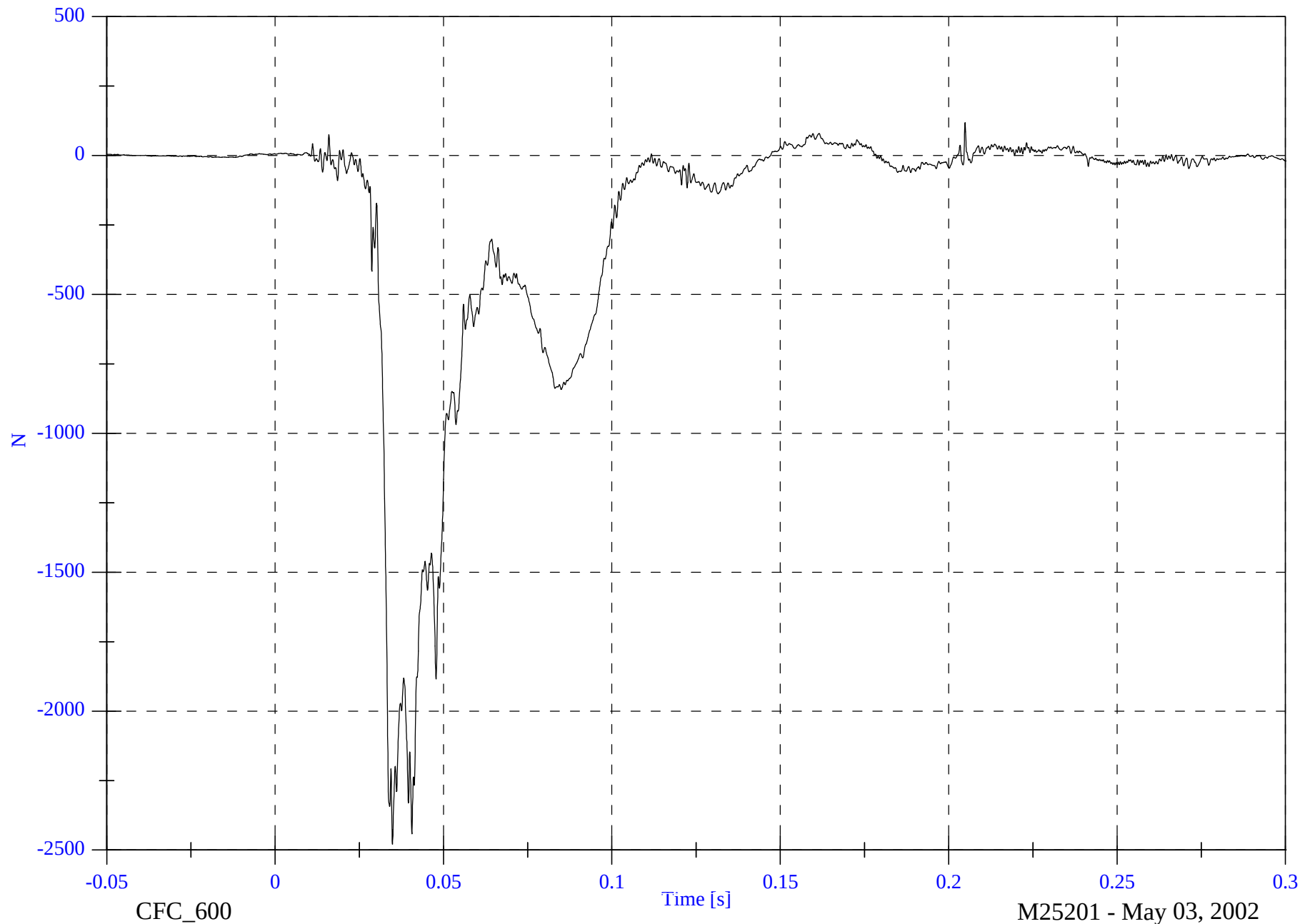


2002 NCAP Test 11 - 2002 Nissan Frontier

Max: 119.4 [N] at 0.205 [s]

P1 Left Lower Tibia Fz

Min: -2479.6 [N] at 0.035 [s]



B-43

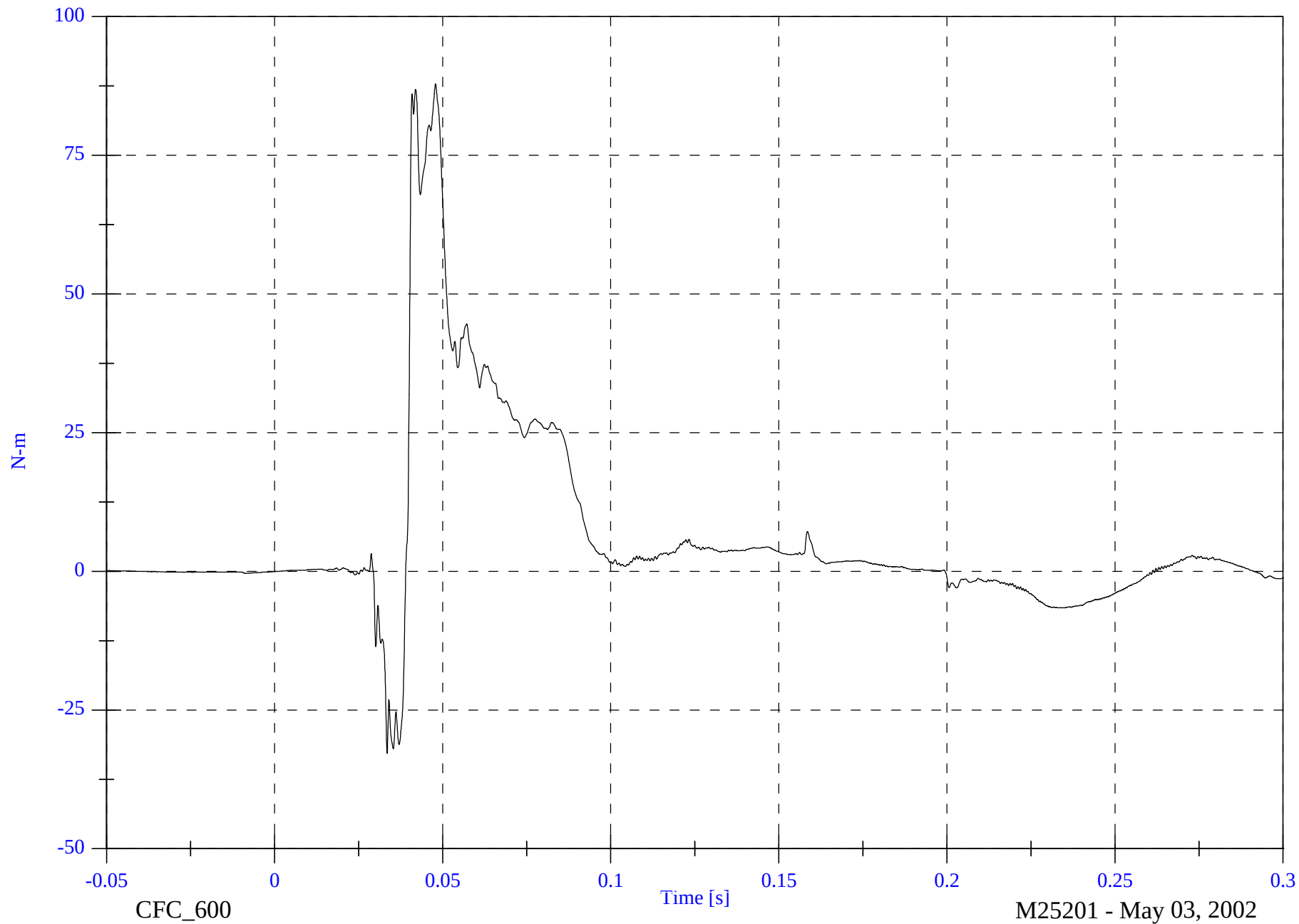
8462-NCAP-11

2002 NCAP Test 11 - 2002 Nissan Frontier

Max: 87.9 [N-m] at 0.048 [s]

P1 Left Lower Tibia Mx

Min: -32.8 [N-m] at 0.033 [s]



B-44

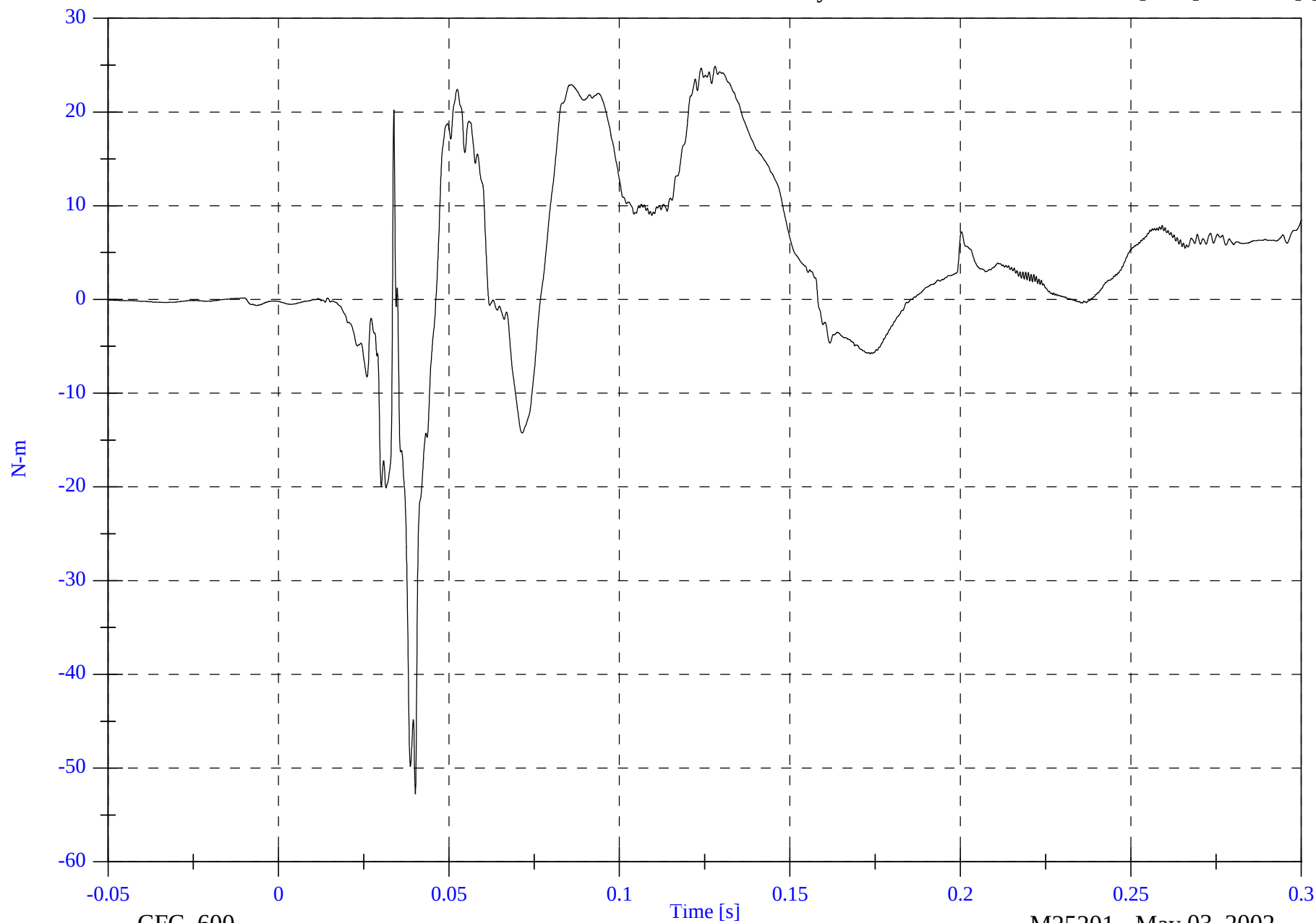
8462-NCAP-11

2002 NCAP Test 11 - 2002 Nissan Frontier

Max: 24.9 [N-m] at 0.128 [s]

Min: -52.8 [N-m] at 0.040 [s]

P1 Left Lower Tibia My



B-45

8462-NCAP-11

CFC_600

M25201 - May 03, 2002

2002 NCAP Test 11 - 2002 Nissan Frontier

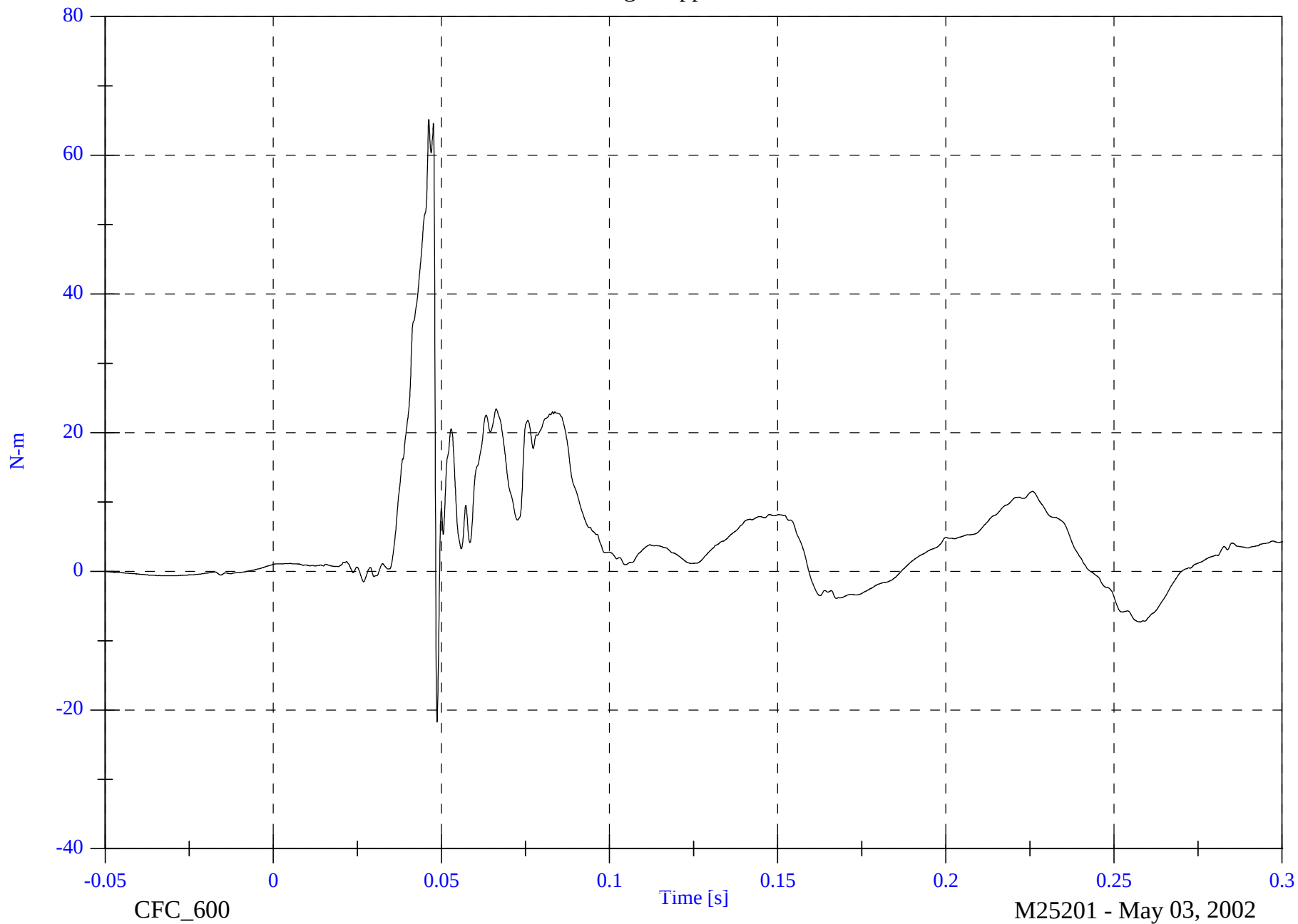
P1 Right Upper Tibia Mx

Max: 65.2 [N-m] at 0.046 [s]

Min: -21.8 [N-m] at 0.049 [s]

B-46

8462-NCAP-11

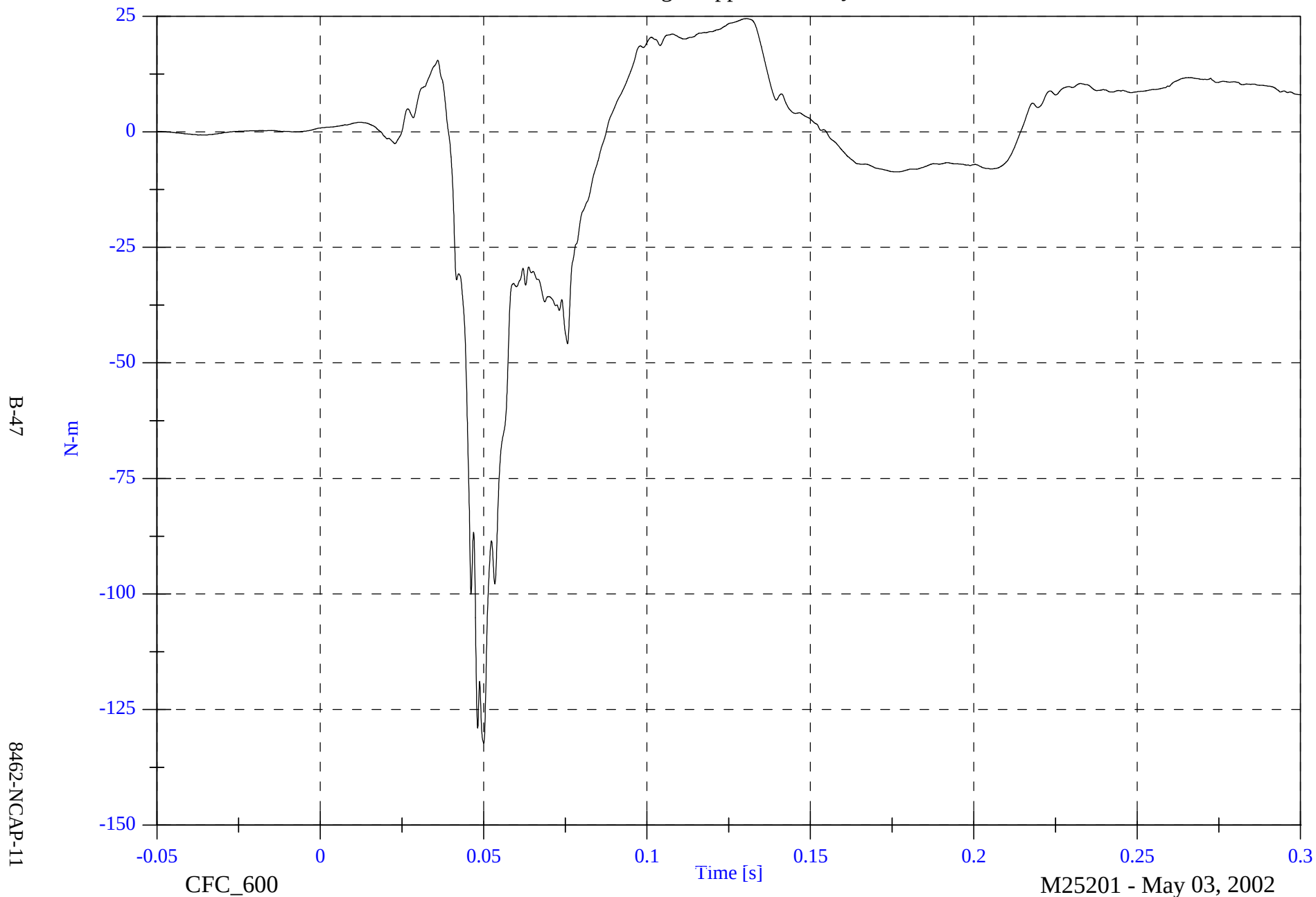


2002 NCAP Test 11 - 2002 Nissan Frontier

P1 Right Upper Tibia My

Max: 24.5 [N-m] at 0.130 [s]

Min: -132.3 [N-m] at 0.050 [s]

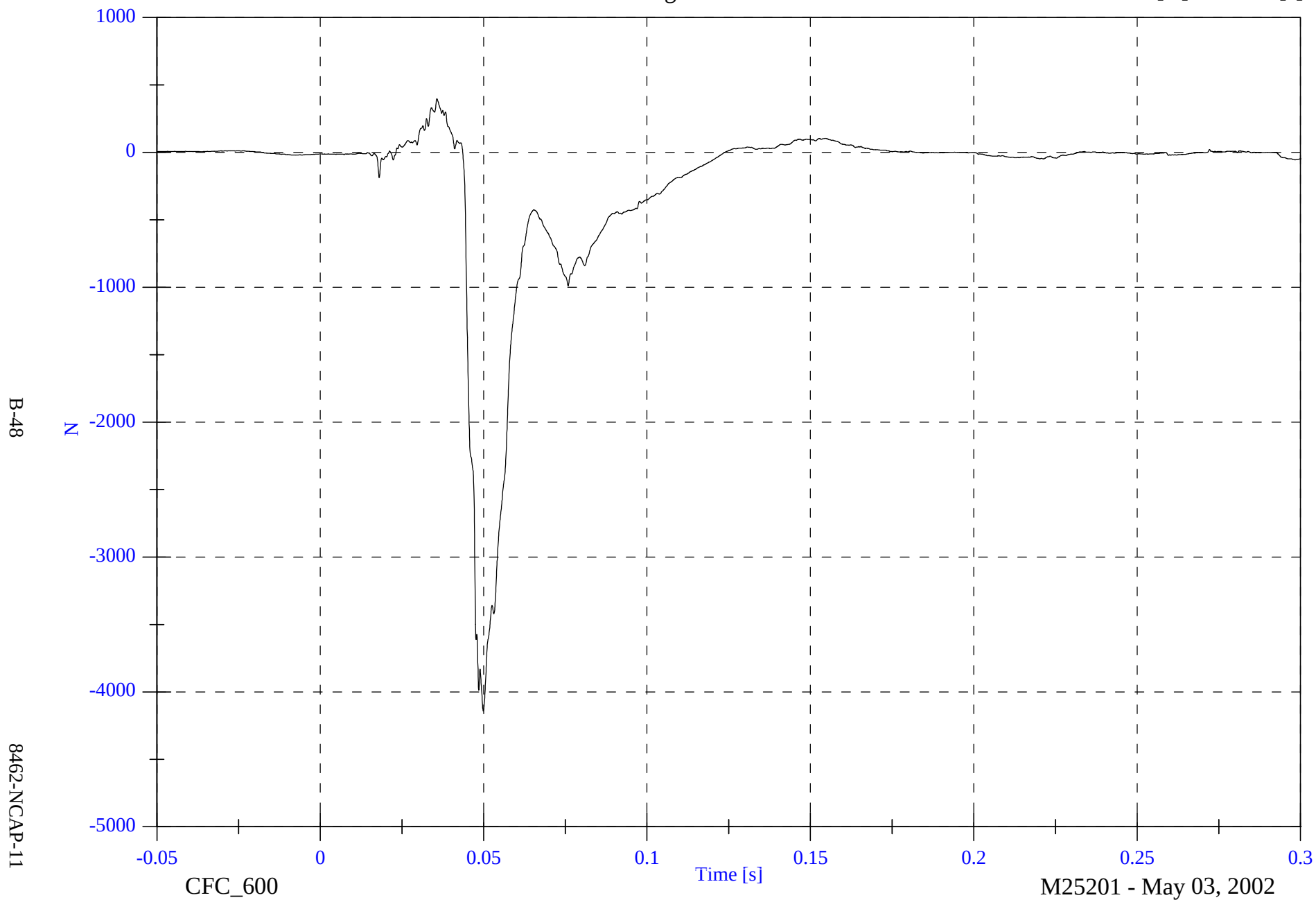


2002 NCAP Test 11 - 2002 Nissan Frontier

Max: 399.2 [N] at 0.036 [s]

Min: -4142.7 [N] at 0.050 [s]

P1 Right Lower Tibia Fz

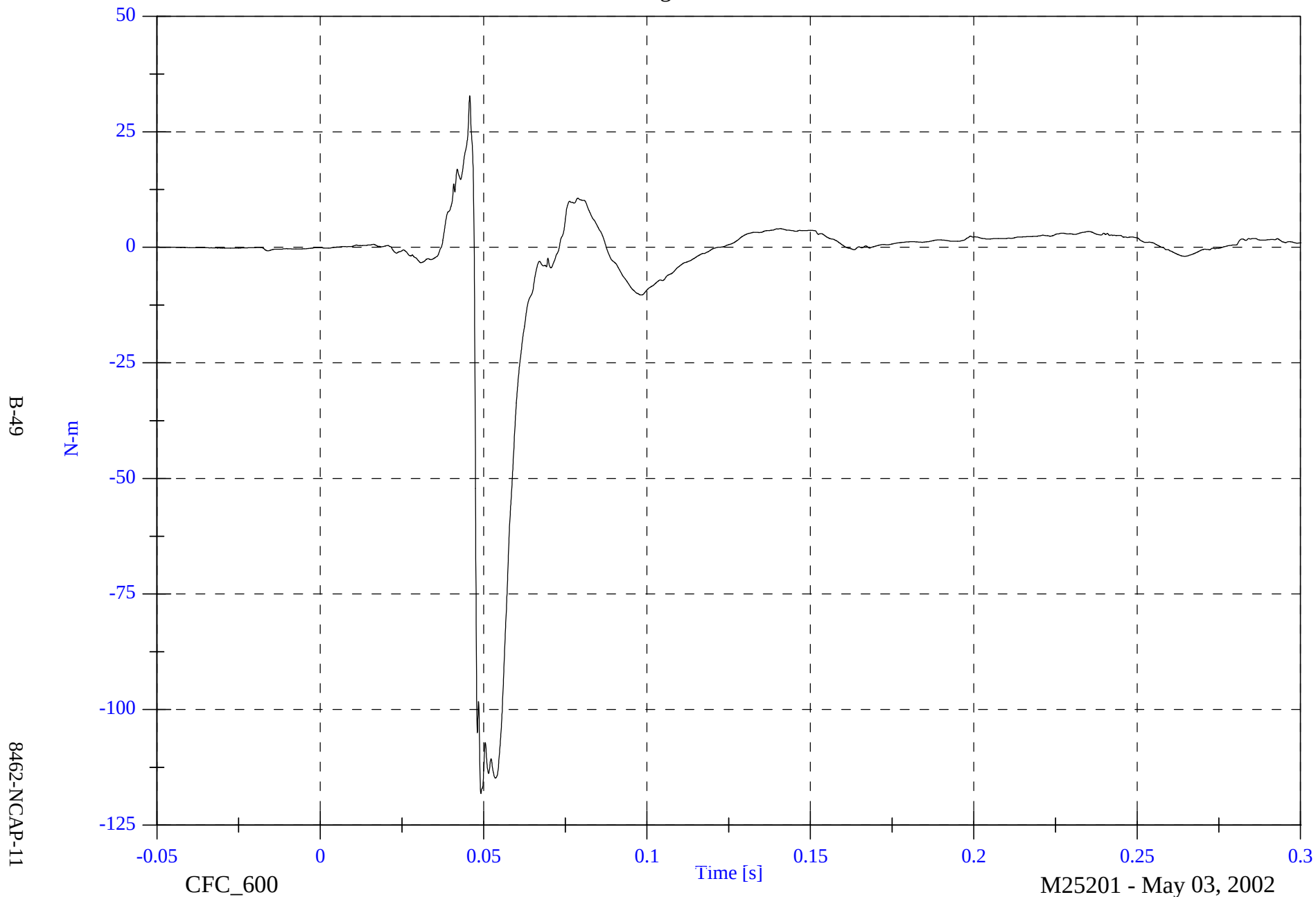


2002 NCAP Test 11 - 2002 Nissan Frontier

P1 Right Lower Tibia Mx

Max: 32.8 [N-m] at 0.046 [s]

Min: -118.2 [N-m] at 0.049 [s]

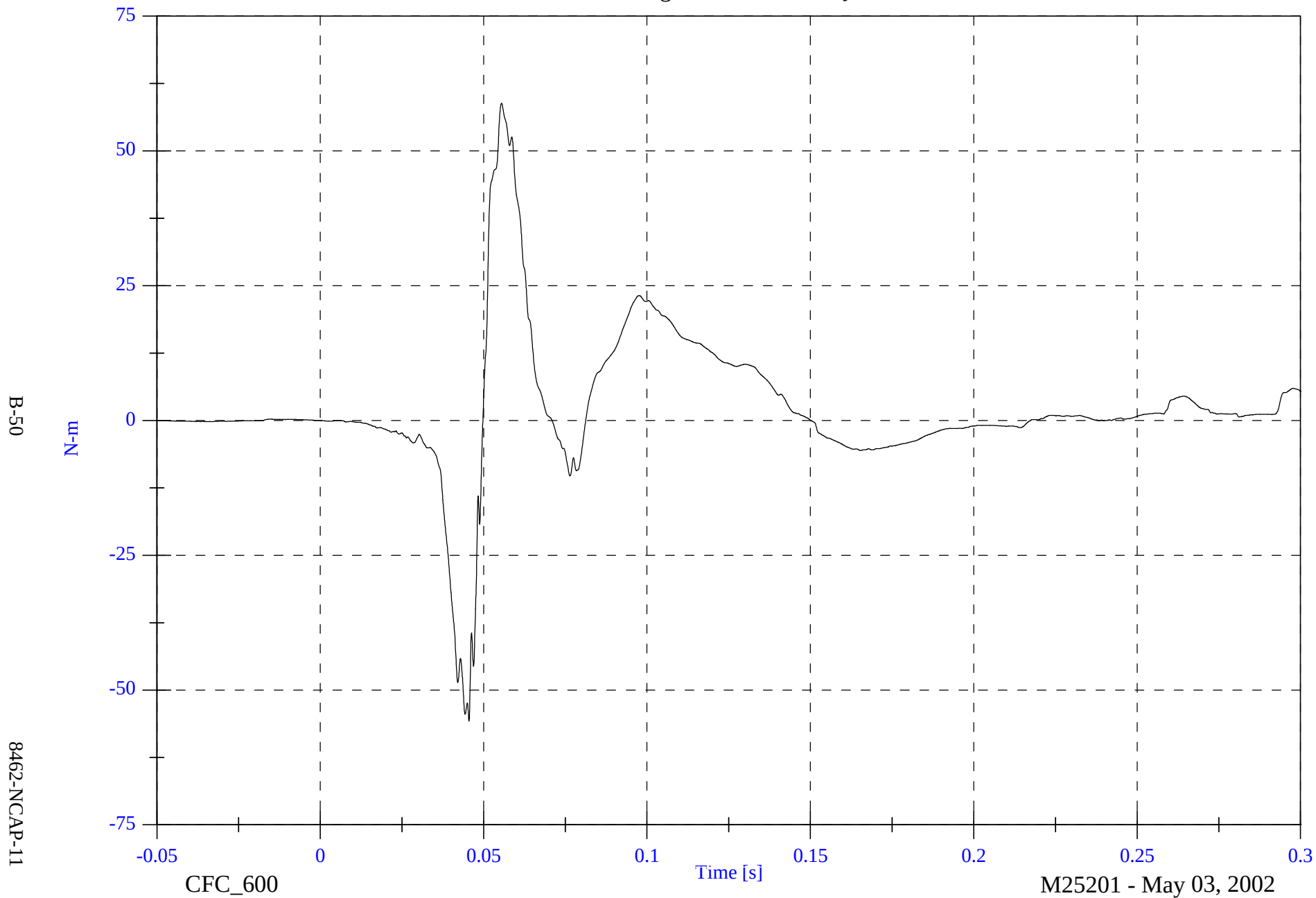


2002 NCAP Test 11 - 2002 Nissan Frontier

Max: 58.9 [N-m] at 0.055 [s]

P1 Right Lower Tibia My

Min: -55.8 [N-m] at 0.046 [s]

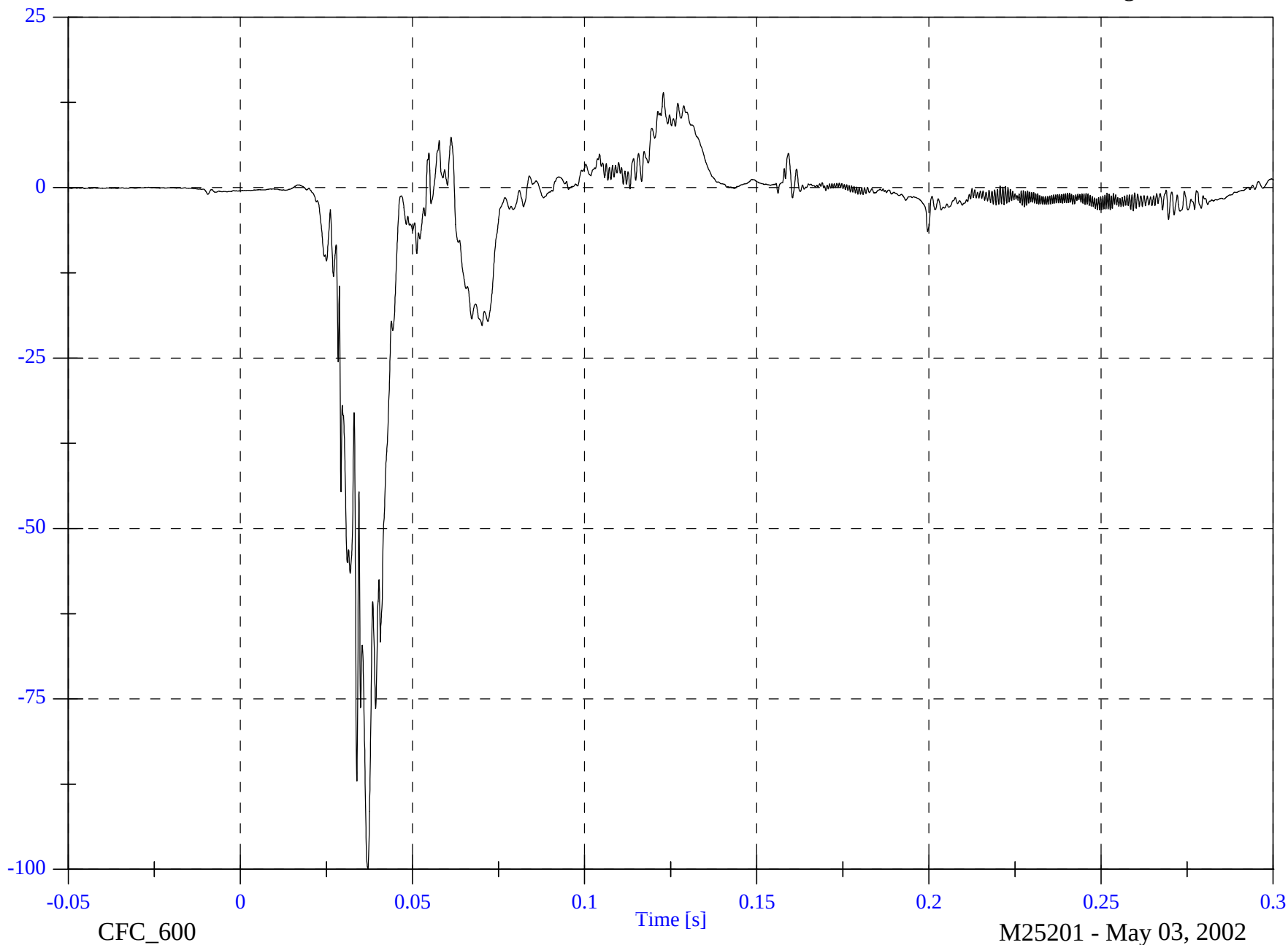


2002 NCAP Test 11 - 2002 Nissan Frontier

P1 Left Foot Aft x

Max: 13.9 [g] at 0.123 [s]

Min: -100.0 [g] at 0.037 [s]



B-51

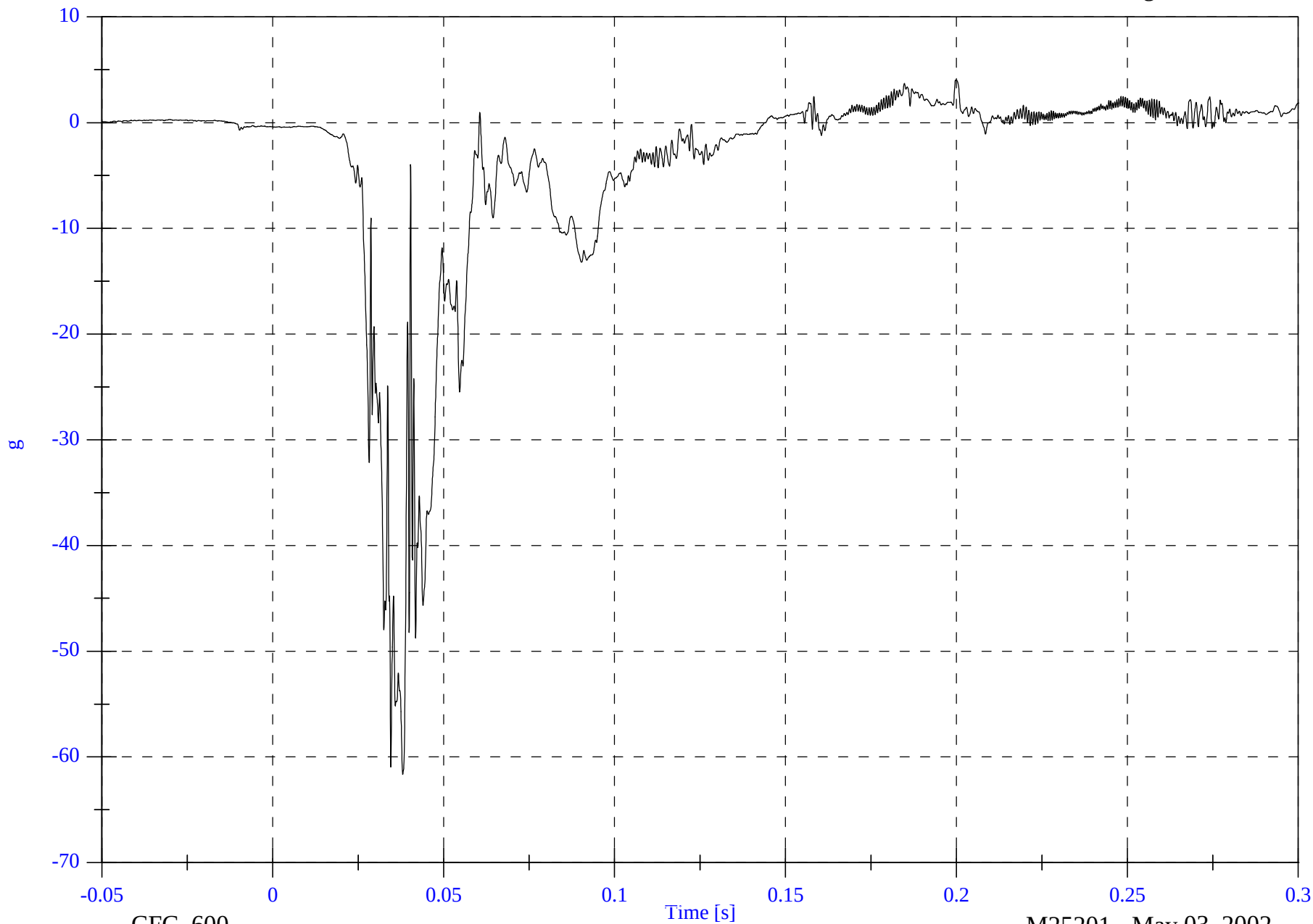
8462-NCAP-11

2002 NCAP Test 11 - 2002 Nissan Frontier

Max: 4.0 [g] at 0.200 [s]

Min: -61.7 [g] at 0.038 [s]

P1 Left Foot Aft z



B-52

8462-NCAP-11

CFC_600

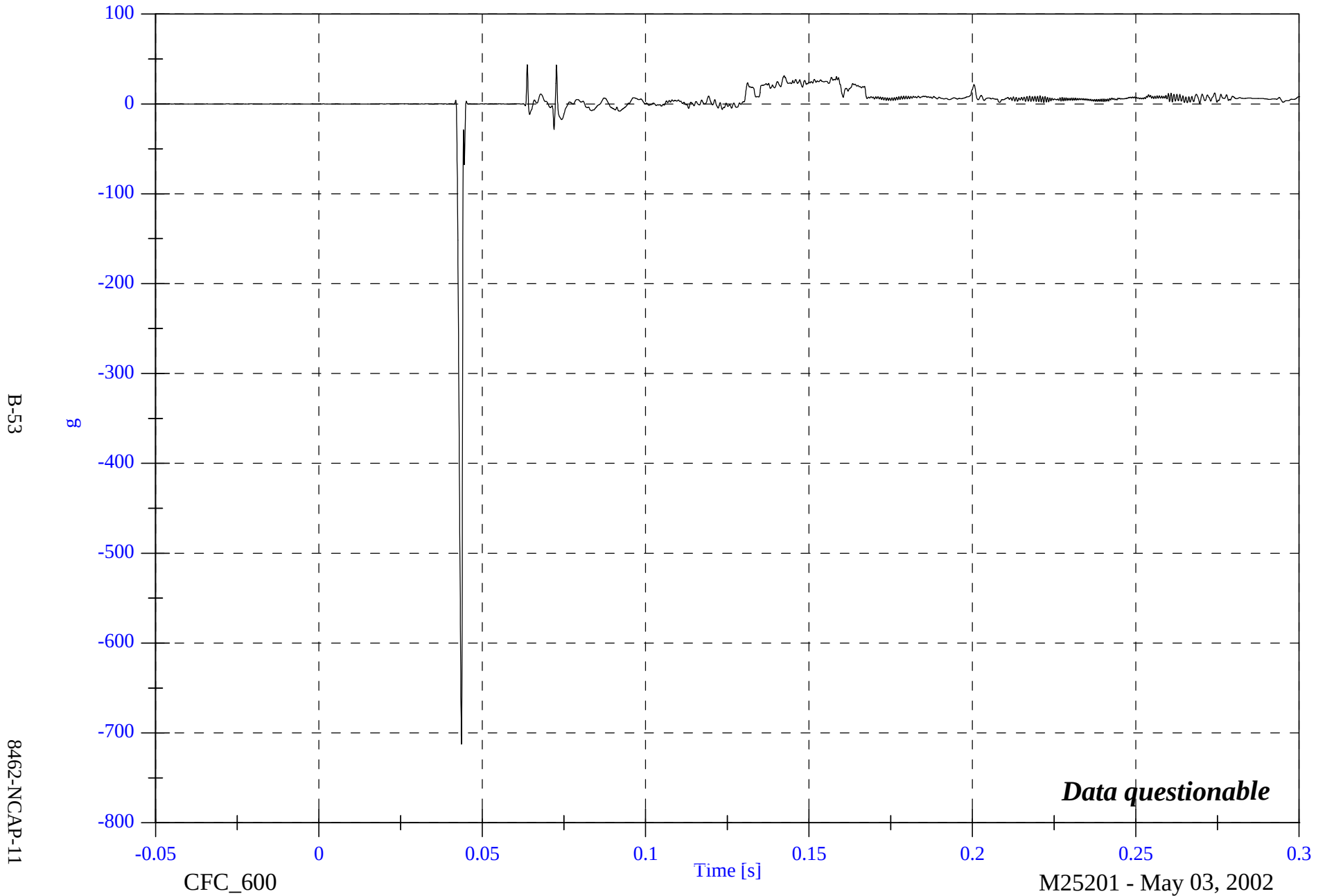
M25201 - May 03, 2002

2002 NCAP Test 11 - 2002 Nissan Frontier

Max: 43.7 [g] at 0.064 [s]

Min: -712.6 [g] at 0.044 [s]

P1 Left Foot Fore z

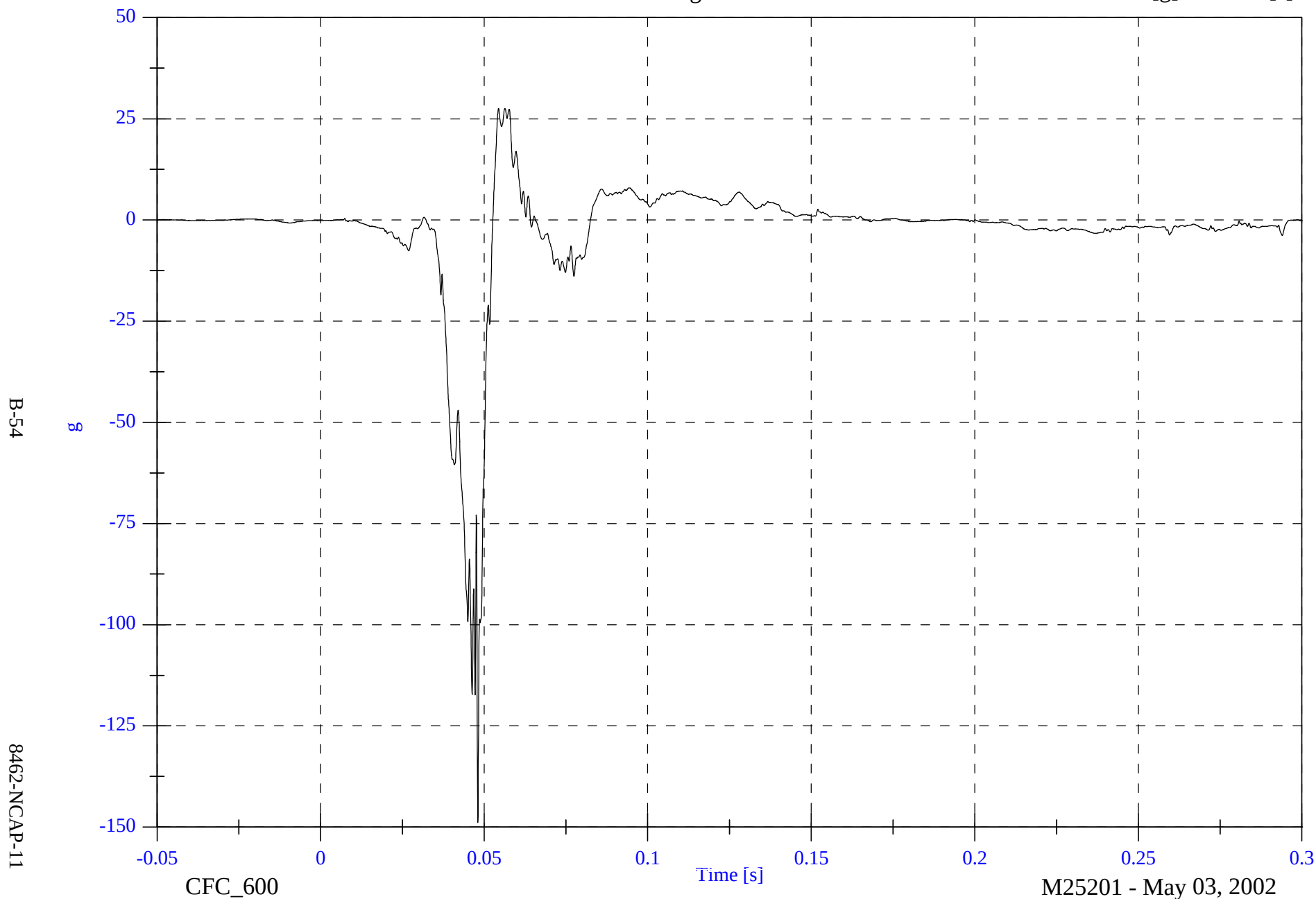


2002 NCAP Test 11 - 2002 Nissan Frontier

Max: 27.6 [g] at 0.054 [s]

Min: -148.9 [g] at 0.048 [s]

P1 Right Foot Aft x

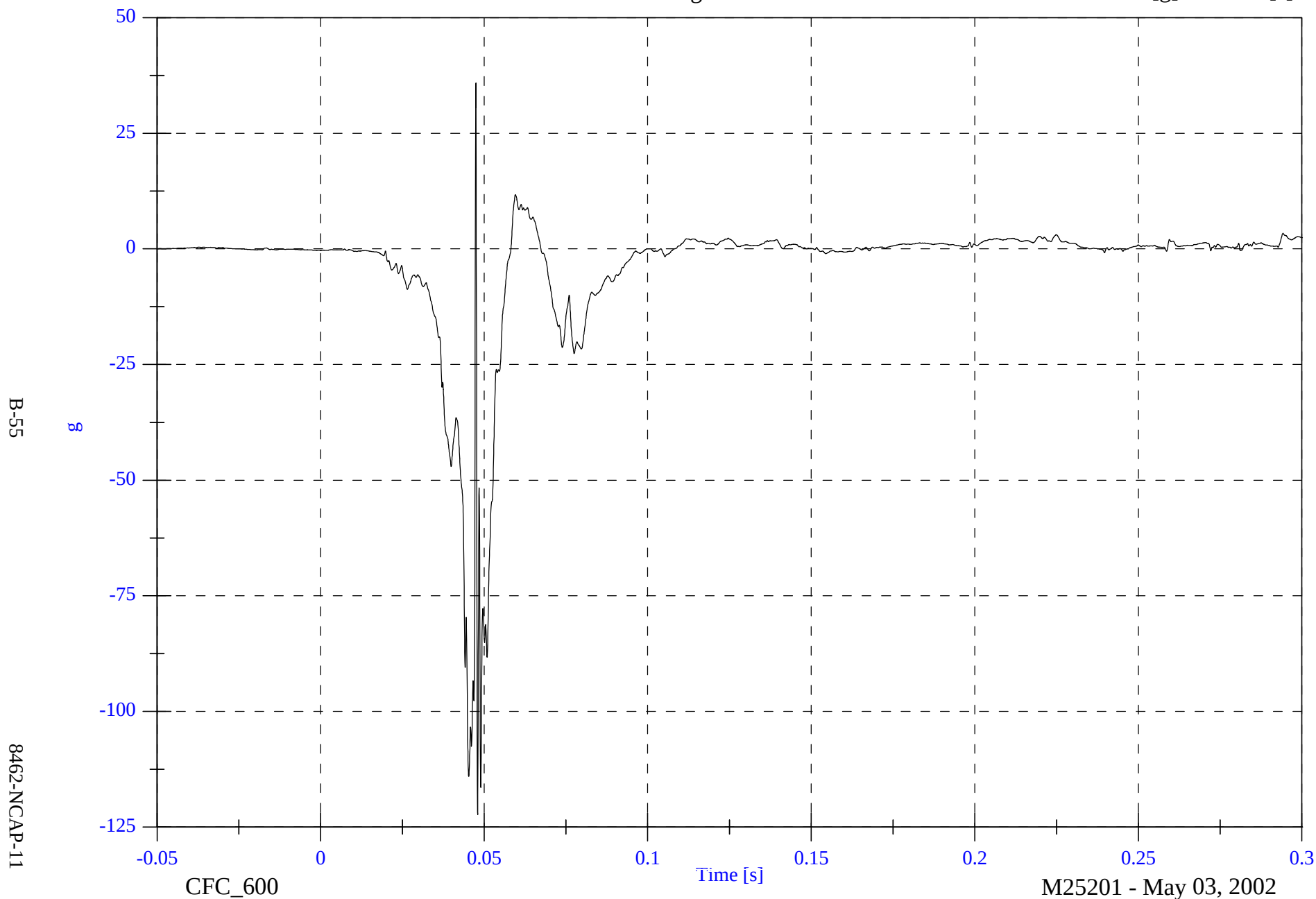


2002 NCAP Test 11 - 2002 Nissan Frontier

Max: 35.9 [g] at 0.047 [s]

Min: -122.3 [g] at 0.048 [s]

P1 Right Foot Aft z

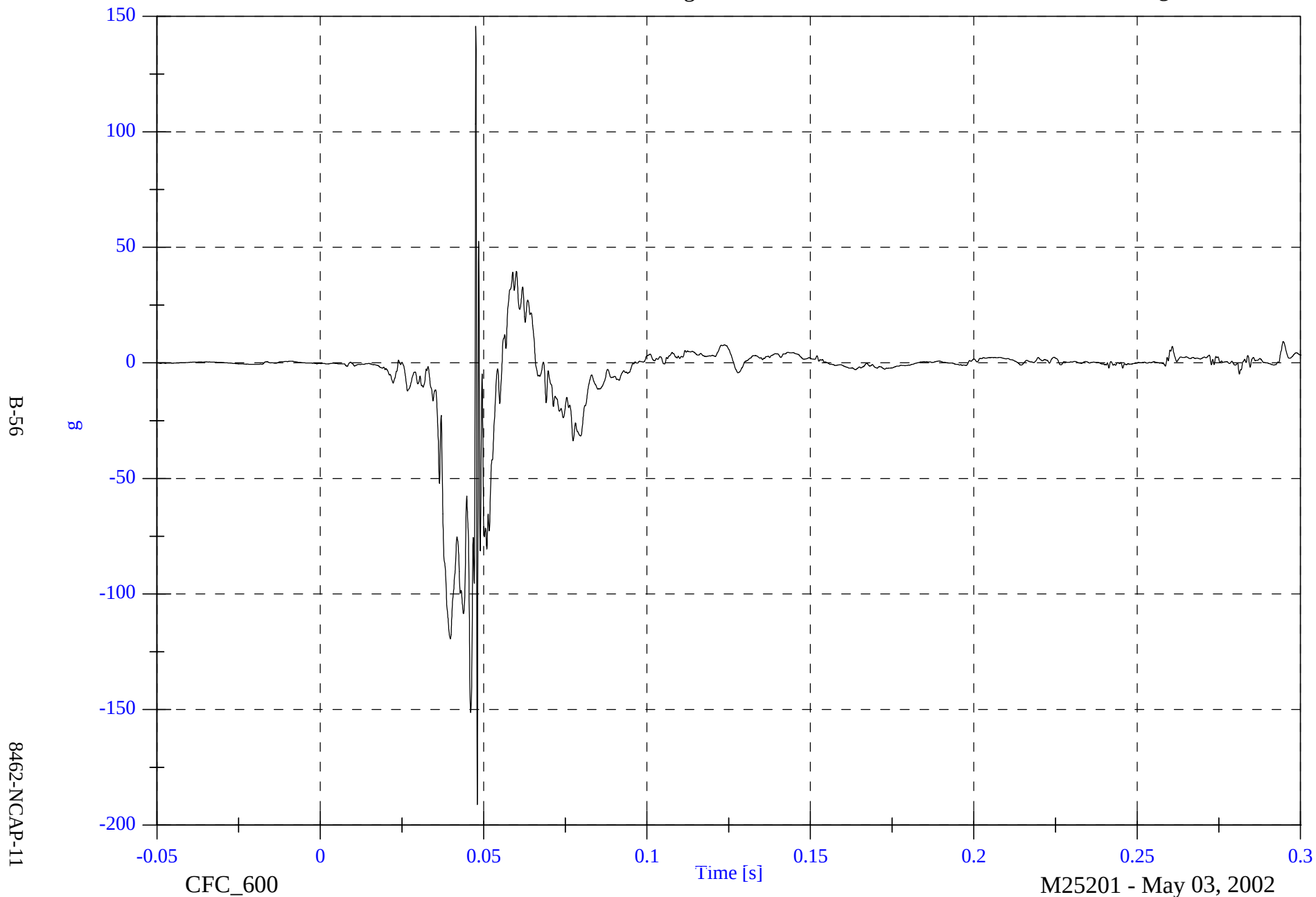


2002 NCAP Test 11 - 2002 Nissan Frontier

Max: 145.6 [g] at 0.048 [s]

Min: -191.2 [g] at 0.048 [s]

P1 Right Foot Fore z



2002 NCAP Test 11 - 2002 Nissan Frontier

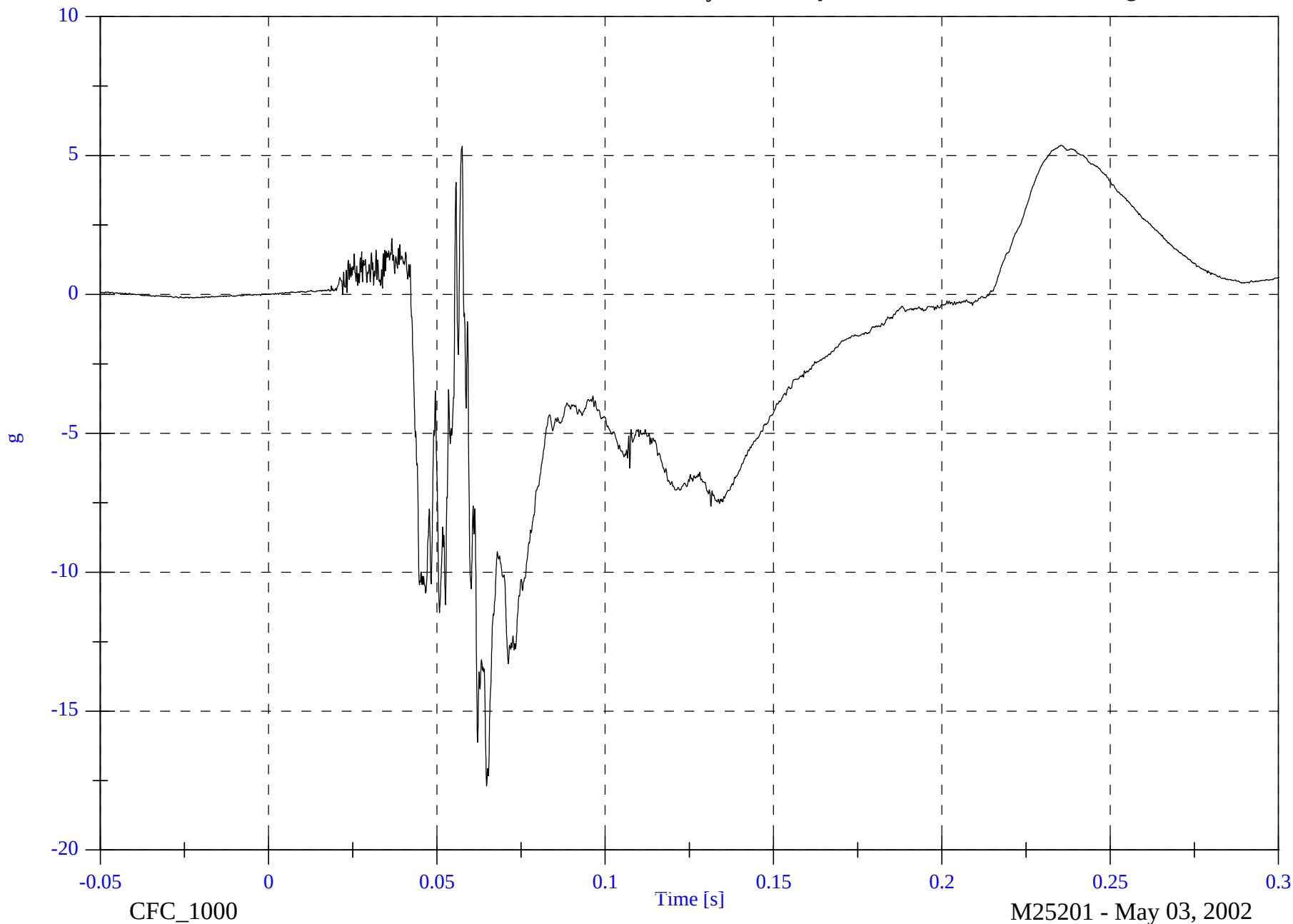
P2 Head 9 Array X Arm Ay

Max: 5.4 [g] at 0.236 [s]

Min: -17.7 [g] at 0.065 [s]

B-57

8462-NCAP-11



2002 NCAP Test 11 - 2002 Nissan Frontier

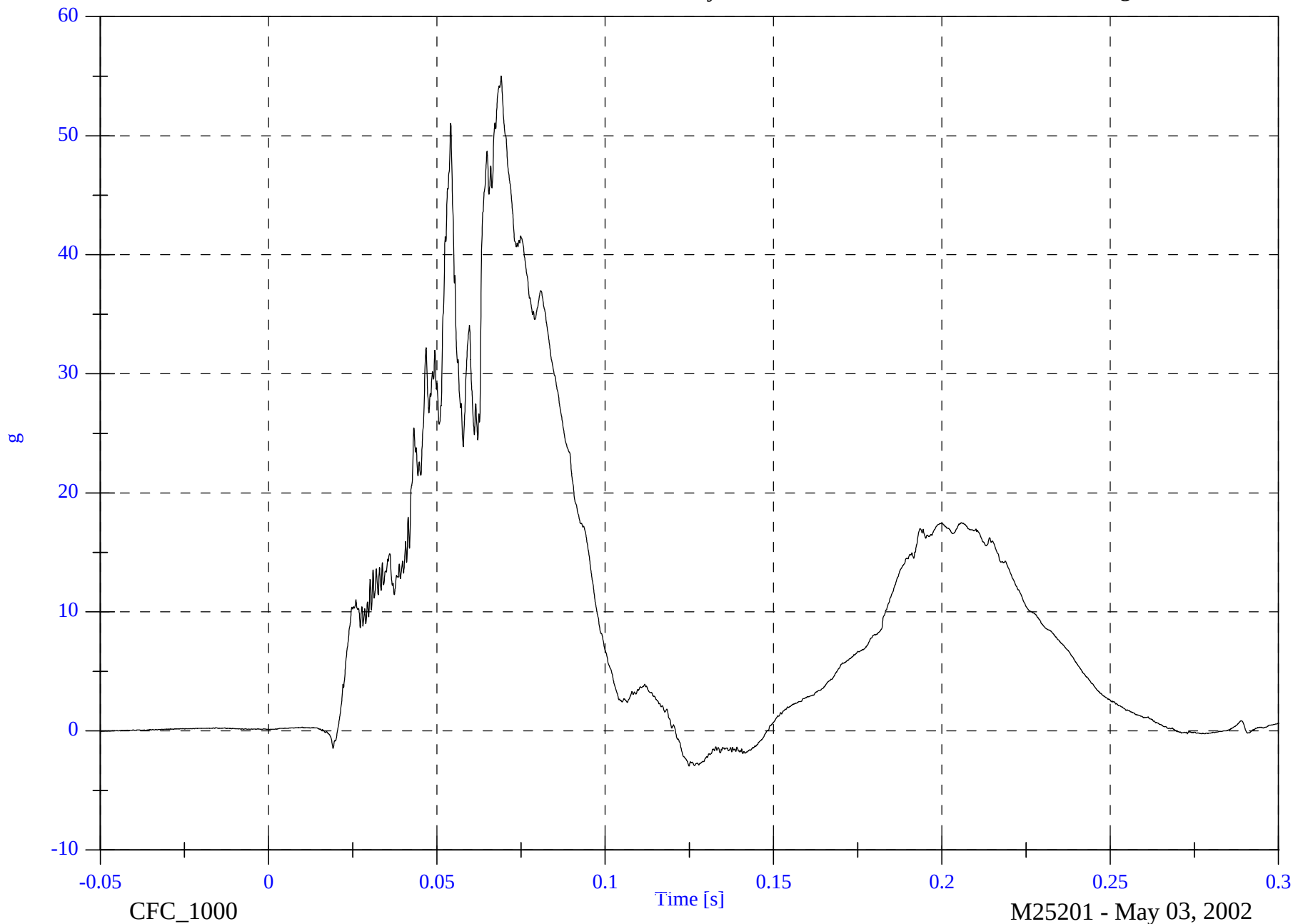
P2 Head 9 Array X Arm Az

Max: 55.0 [g] at 0.069 [s]

Min: -3.0 [g] at 0.125 [s]

B-58

8462-NCAP-11

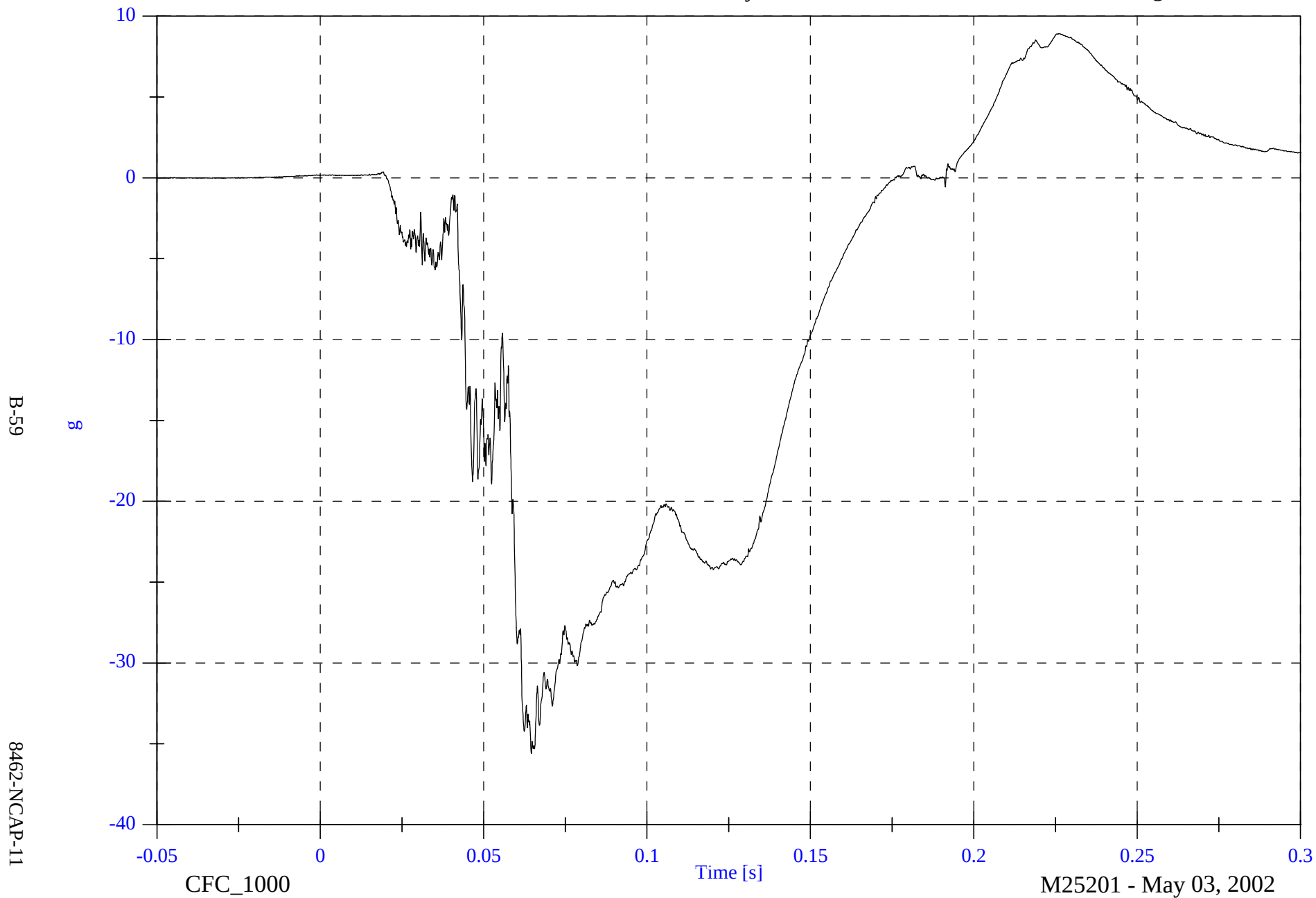


2002 NCAP Test 11 - 2002 Nissan Frontier

P2 Head 9 Array Y Arm Ax

Max: 8.9 [g] at 0.226 [s]

Min: -35.6 [g] at 0.065 [s]



2002 NCAP Test 11 - 2002 Nissan Frontier

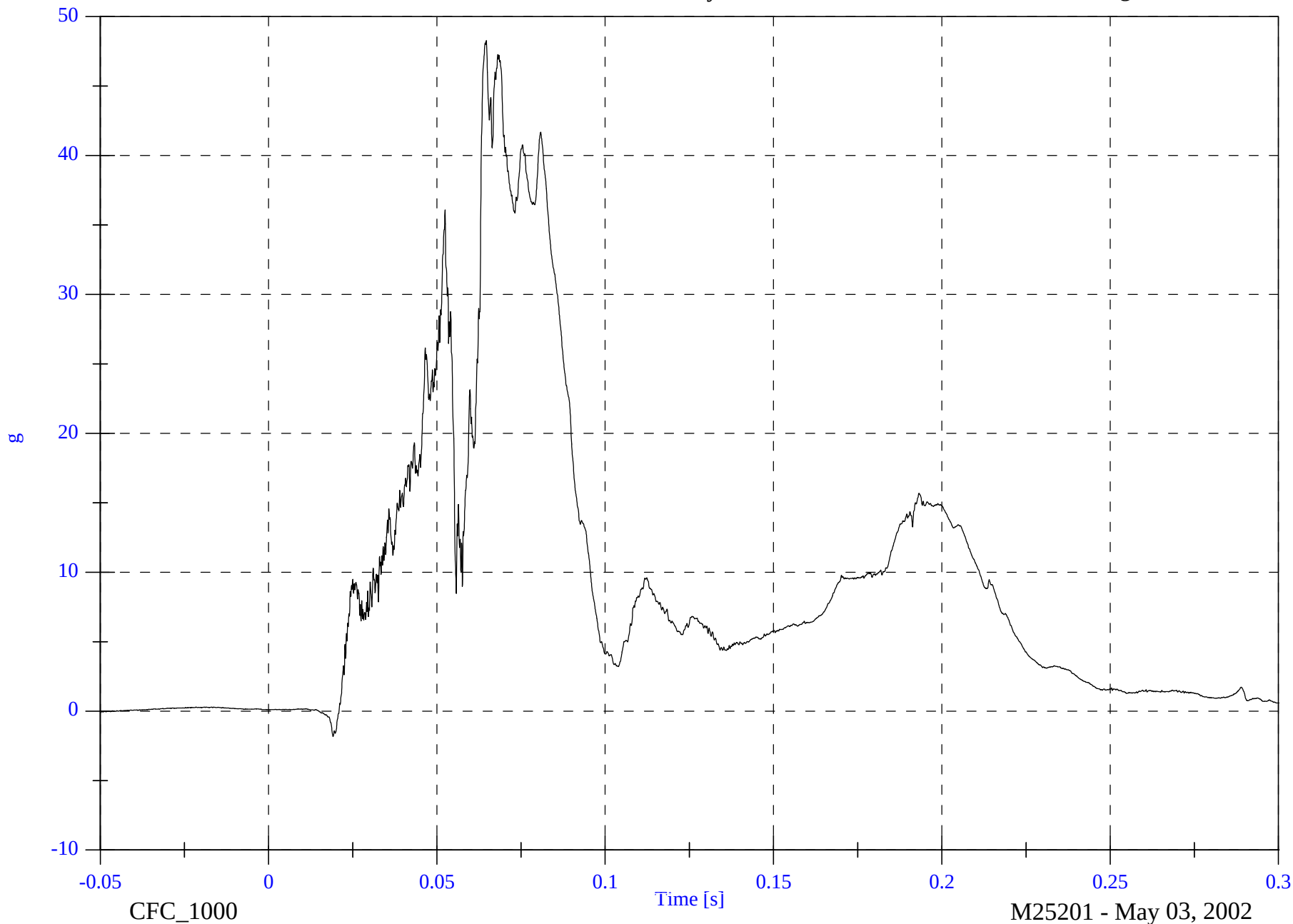
P2 Head 9 Array Y Arm Az

Max: 48.3 [g] at 0.065 [s]

Min: -1.8 [g] at 0.019 [s]

B-60

8462-NCAP-11



2002 NCAP Test 11 - 2002 Nissan Frontier

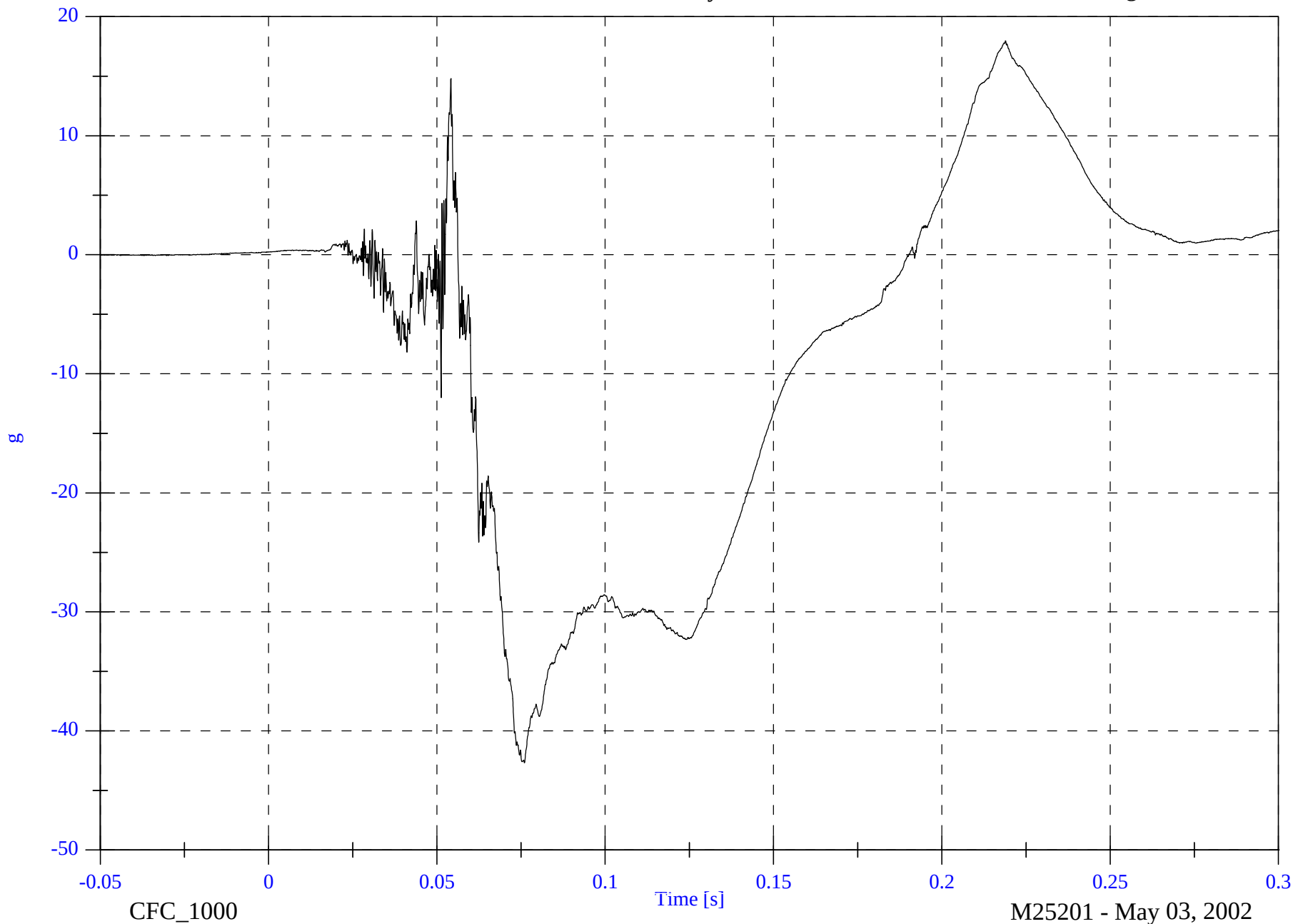
P2 Head 9 Array Z Arm Ax

Max: 18.0 [g] at 0.219 [s]

Min: -42.7 [g] at 0.076 [s]

B-61

8462-NCAP-11

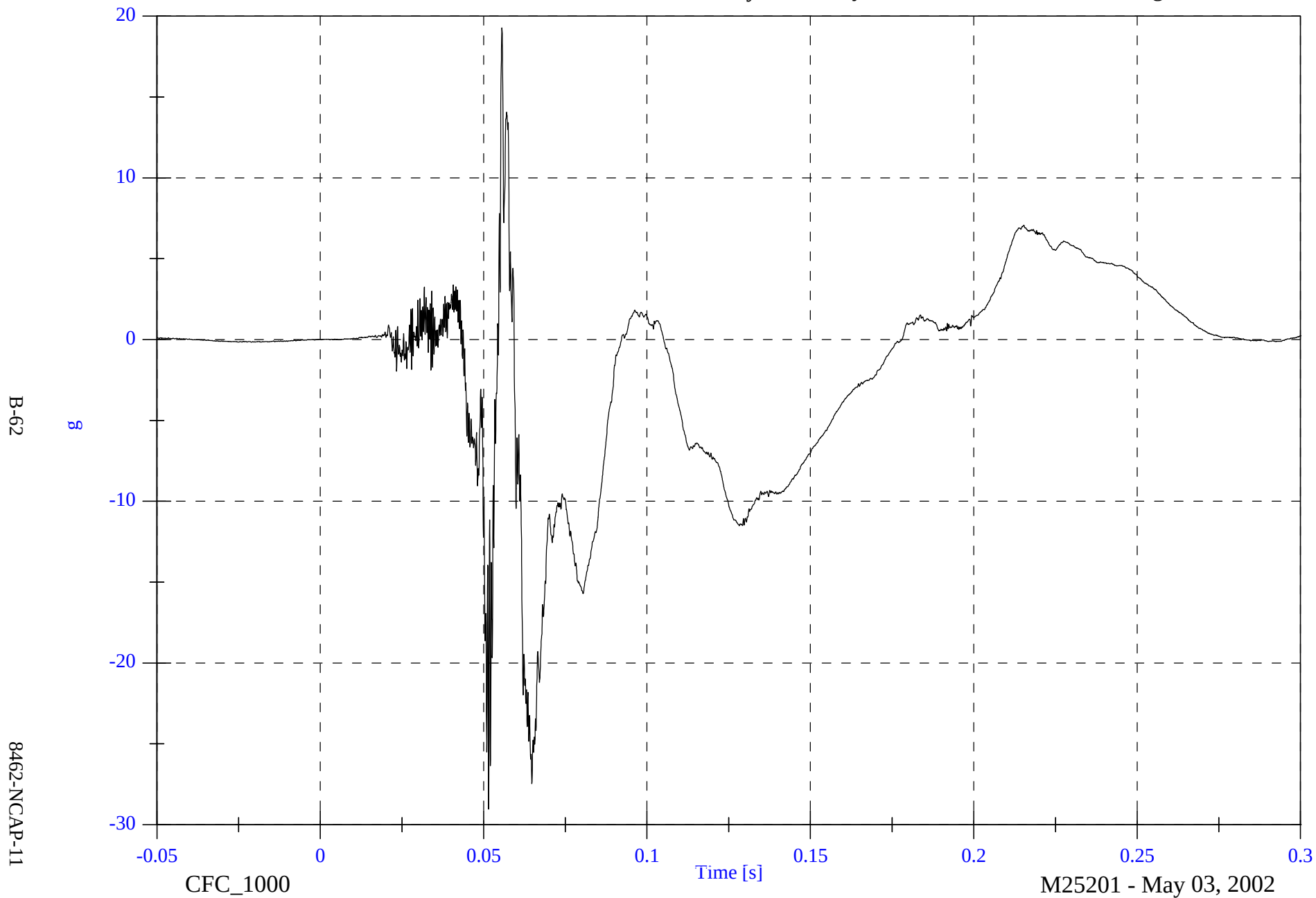


2002 NCAP Test 11 - 2002 Nissan Frontier

P2 Head 9 Array Z Arm Ay

Max: 19.3 [g] at 0.056 [s]

Min: -29.0 [g] at 0.052 [s]



2002 NCAP Test 11 - 2002 Nissan Frontier

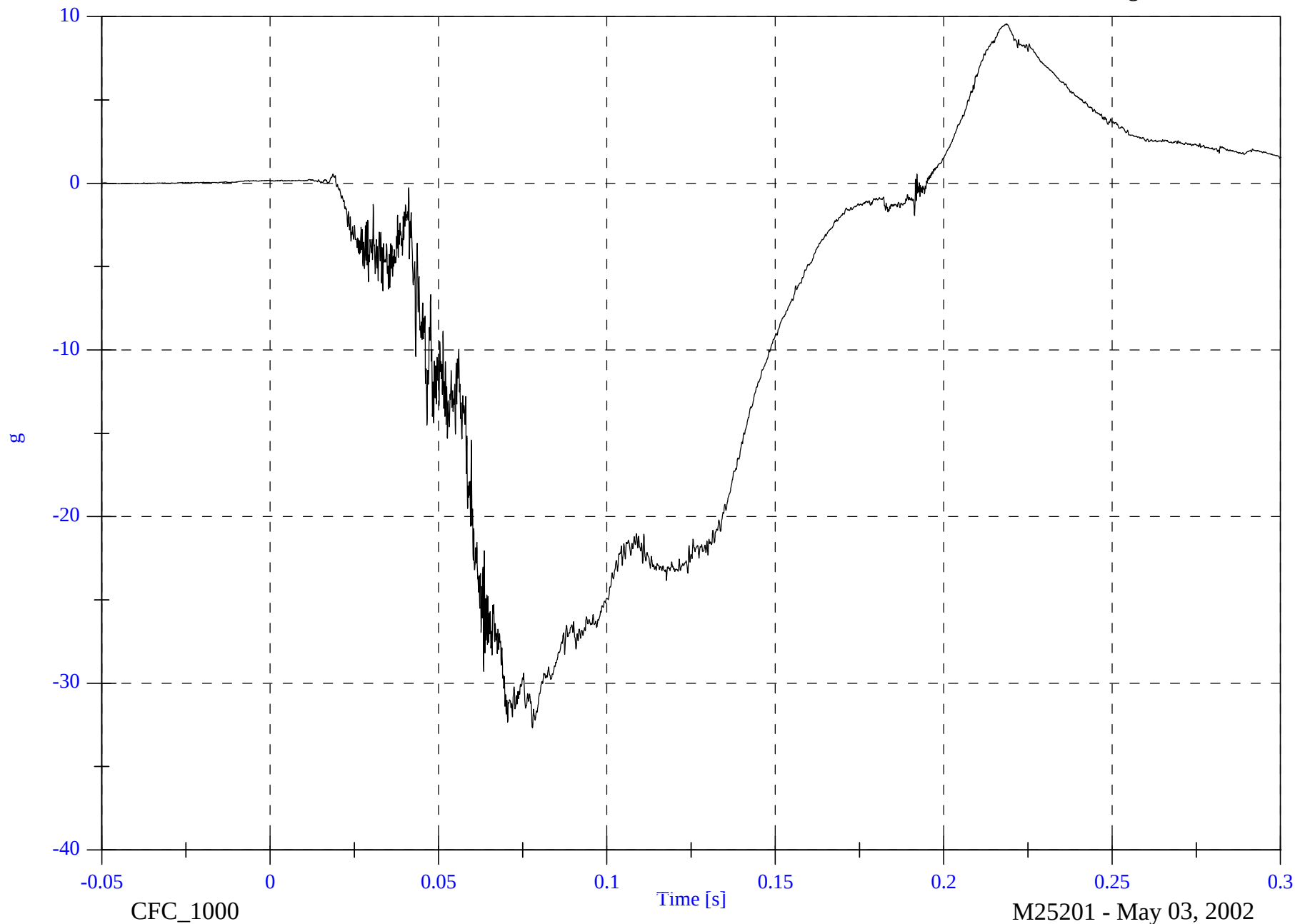
P2 Head CG x

Max: 9.6 [g] at 0.219 [s]

Min: -32.7 [g] at 0.078 [s]

B-63

8462-NCAP-11



2002 NCAP Test 11 - 2002 Nissan Frontier

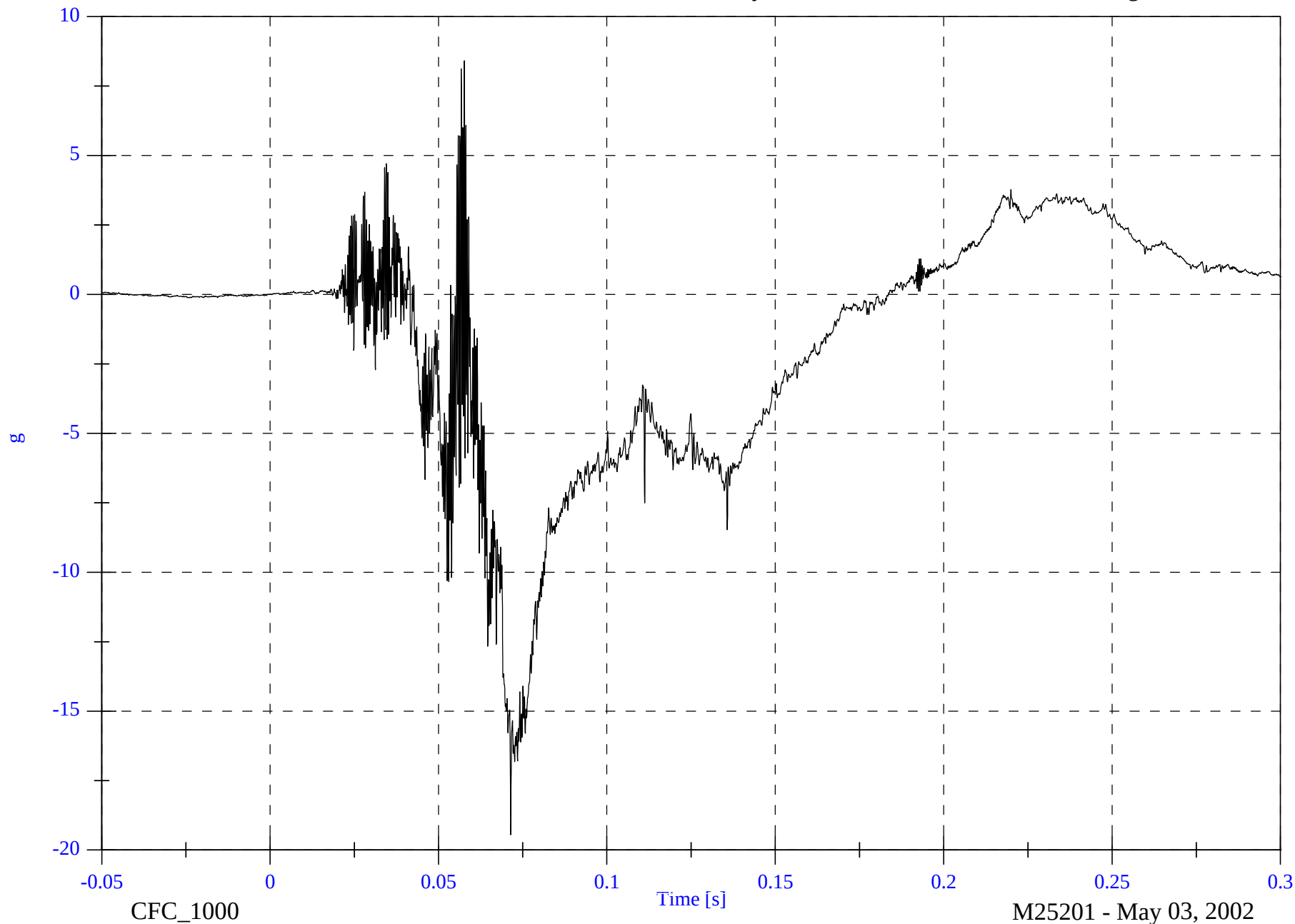
P2 Head CG y

Max: 8.4 [g] at 0.058 [s]

Min: -19.5 [g] at 0.071 [s]

B-64

8462-NCAP-11



2002 NCAP Test 11 - 2002 Nissan Frontier

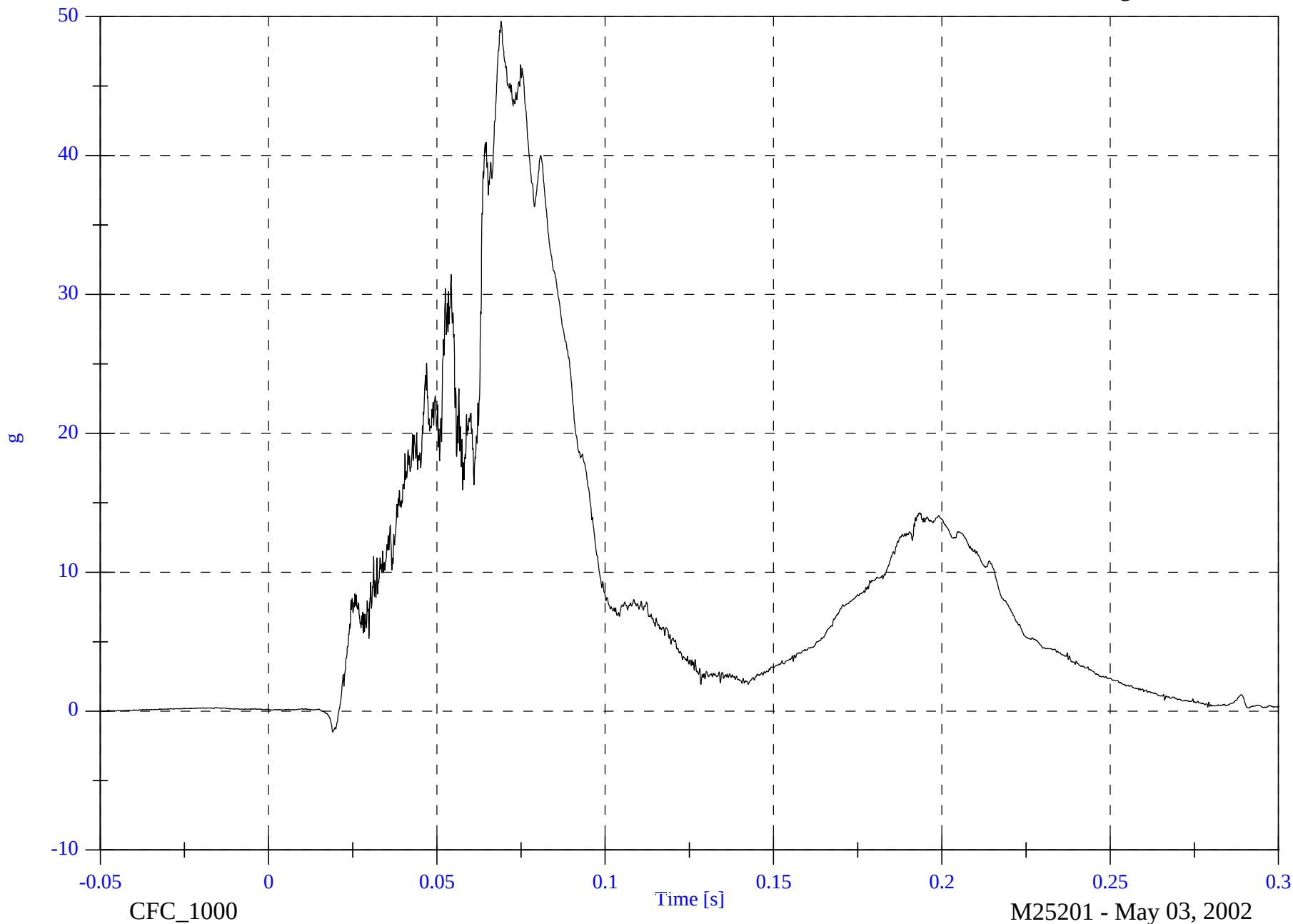
Max: 49.7 [g] at 0.069 [s]

Min: -1.5 [g] at 0.019 [s]

P2 Head CG z

B-65

8462-NCAP-11



2002 NCAP Test 11 - 2002 Nissan Frontier

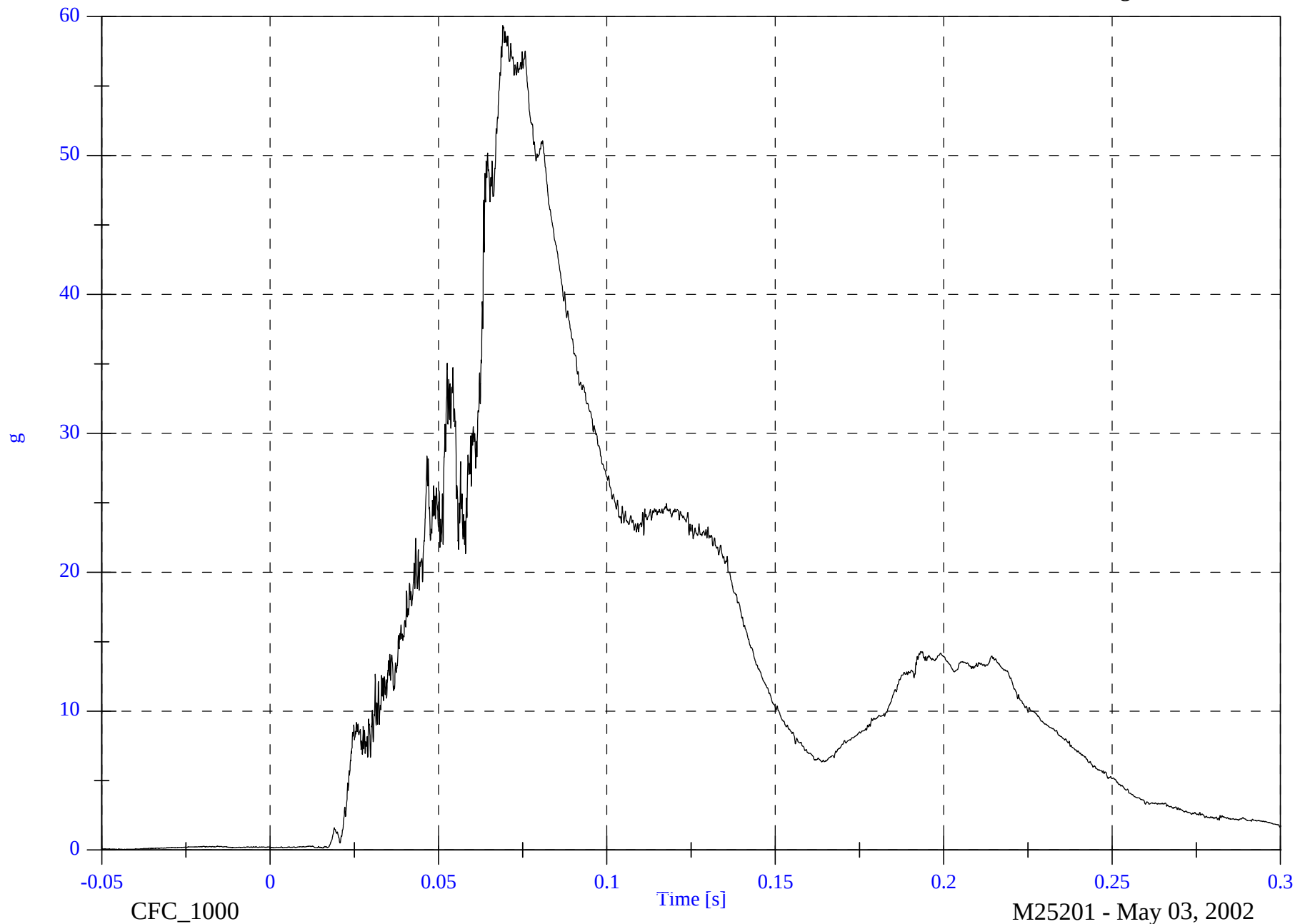
P2 Head CG Resultant

Max: 59.4 [g] at 0.069 [s]

Min: 0.0 [g] at -0.045 [s]

B-66

8462-NCAP-11

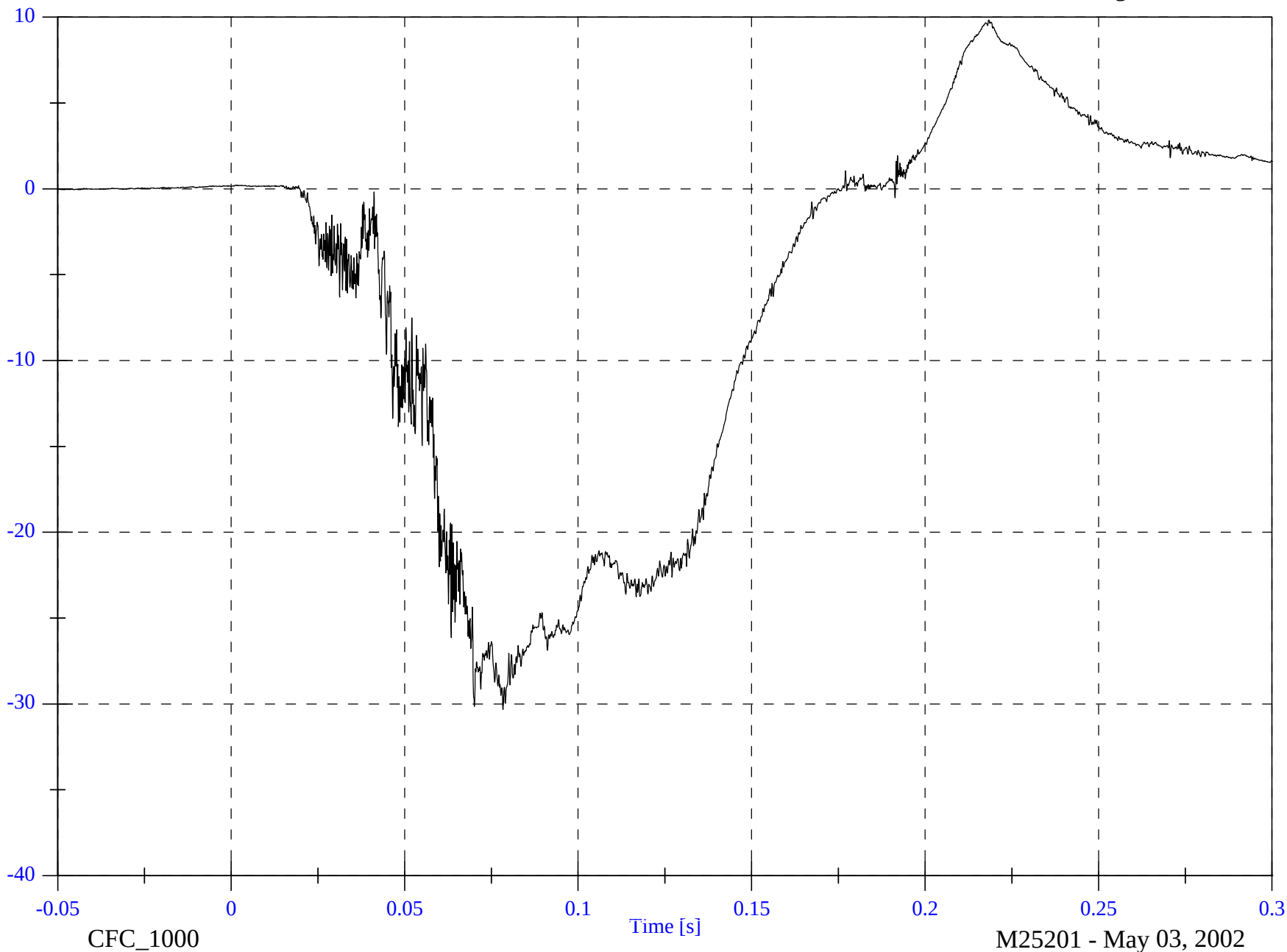


2002 NCAP Test 11 - 2002 Nissan Frontier

P2 Head CG Red x

Max: 9.8 [g] at 0.218 [s]

Min: -30.3 [g] at 0.078 [s]



B-67

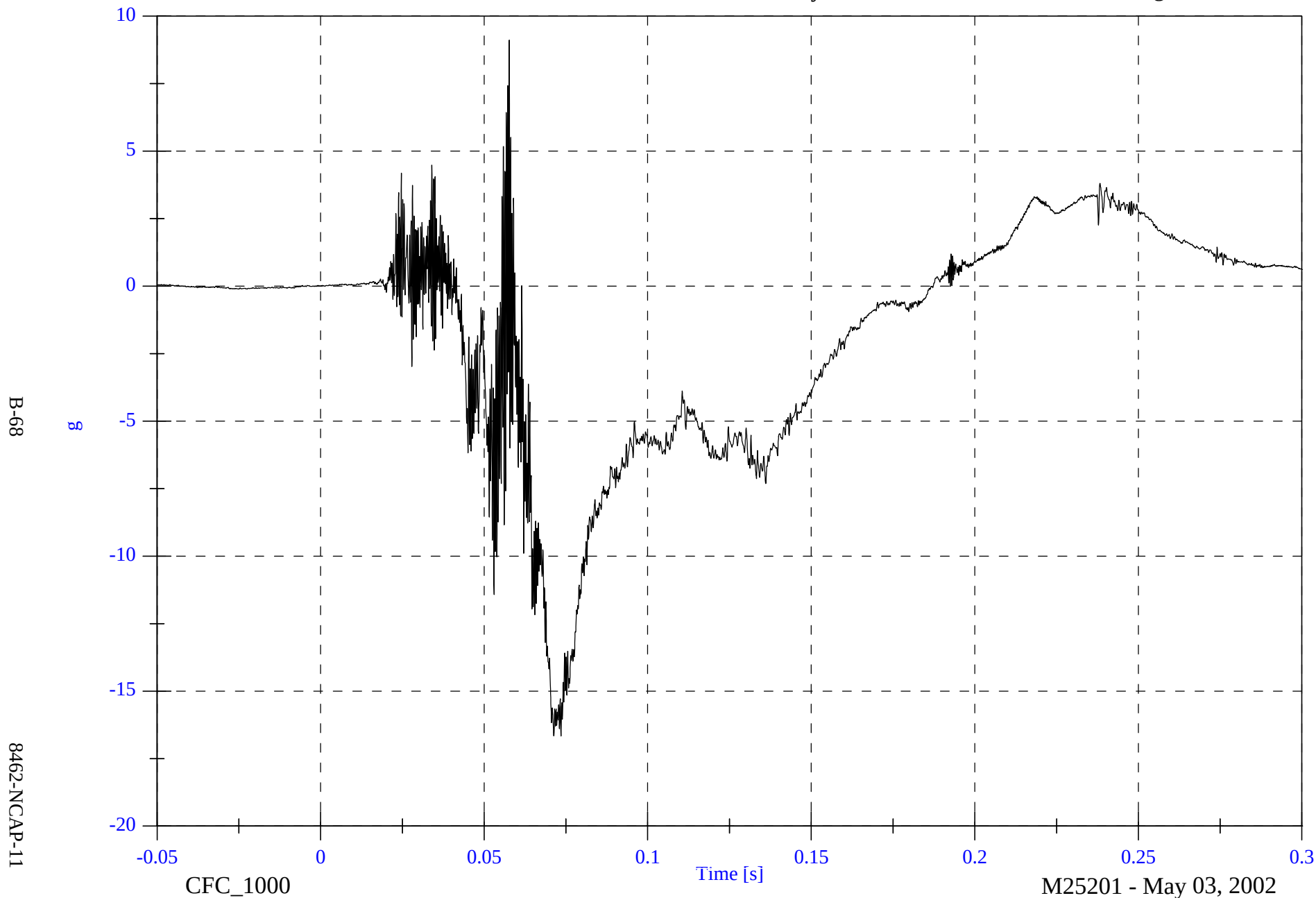
8462-NCAP-11

2002 NCAP Test 11 - 2002 Nissan Frontier

P2 Head CG Red y

Max: 9.1 [g] at 0.058 [s]

Min: -16.7 [g] at 0.073 [s]



2002 NCAP Test 11 - 2002 Nissan Frontier

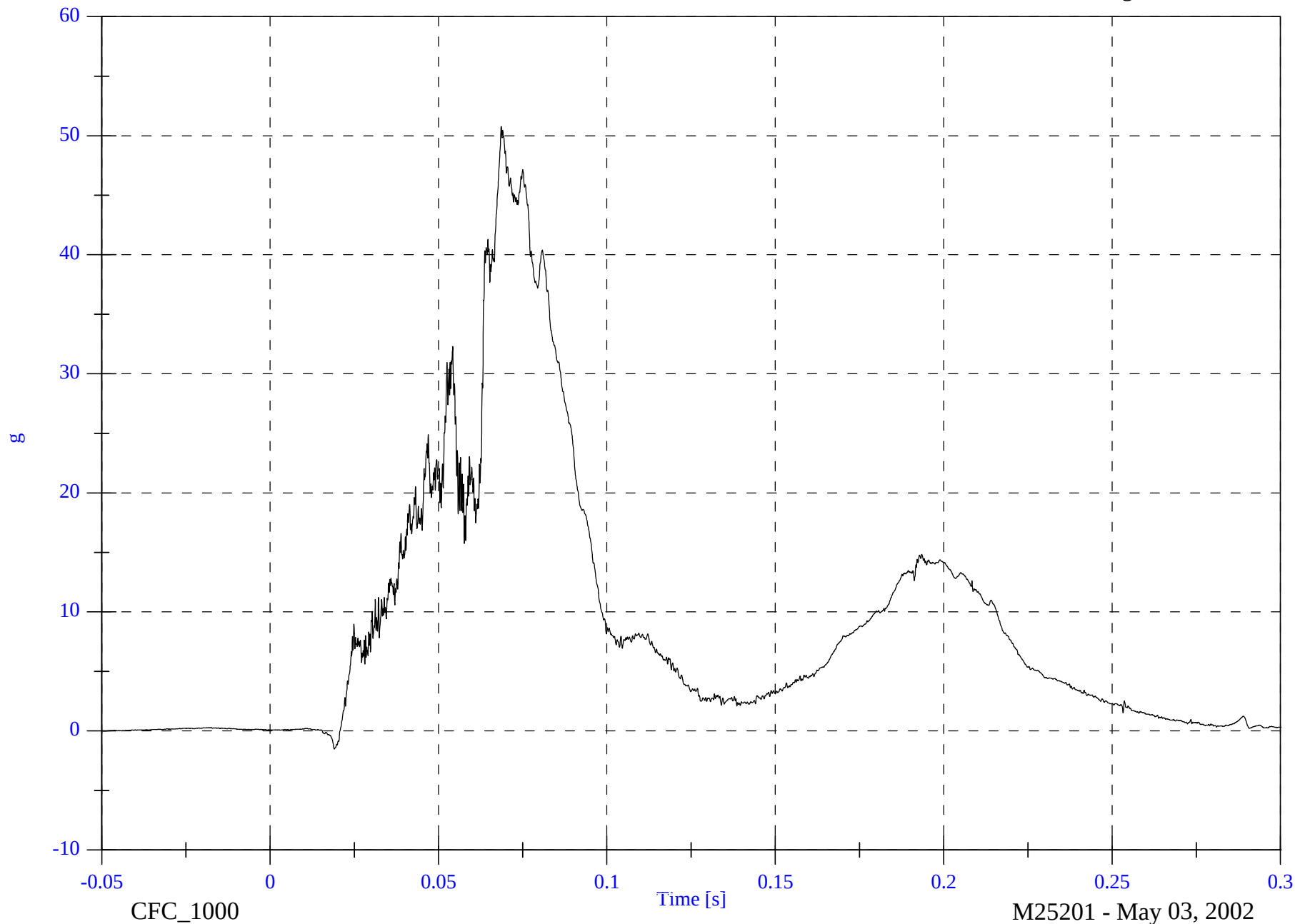
P2 Head CG Red z

Max: 50.8 [g] at 0.069 [s]

Min: -1.5 [g] at 0.019 [s]

B-69

8462-NCAP-11



2002 NCAP Test 11 - 2002 Nissan Frontier

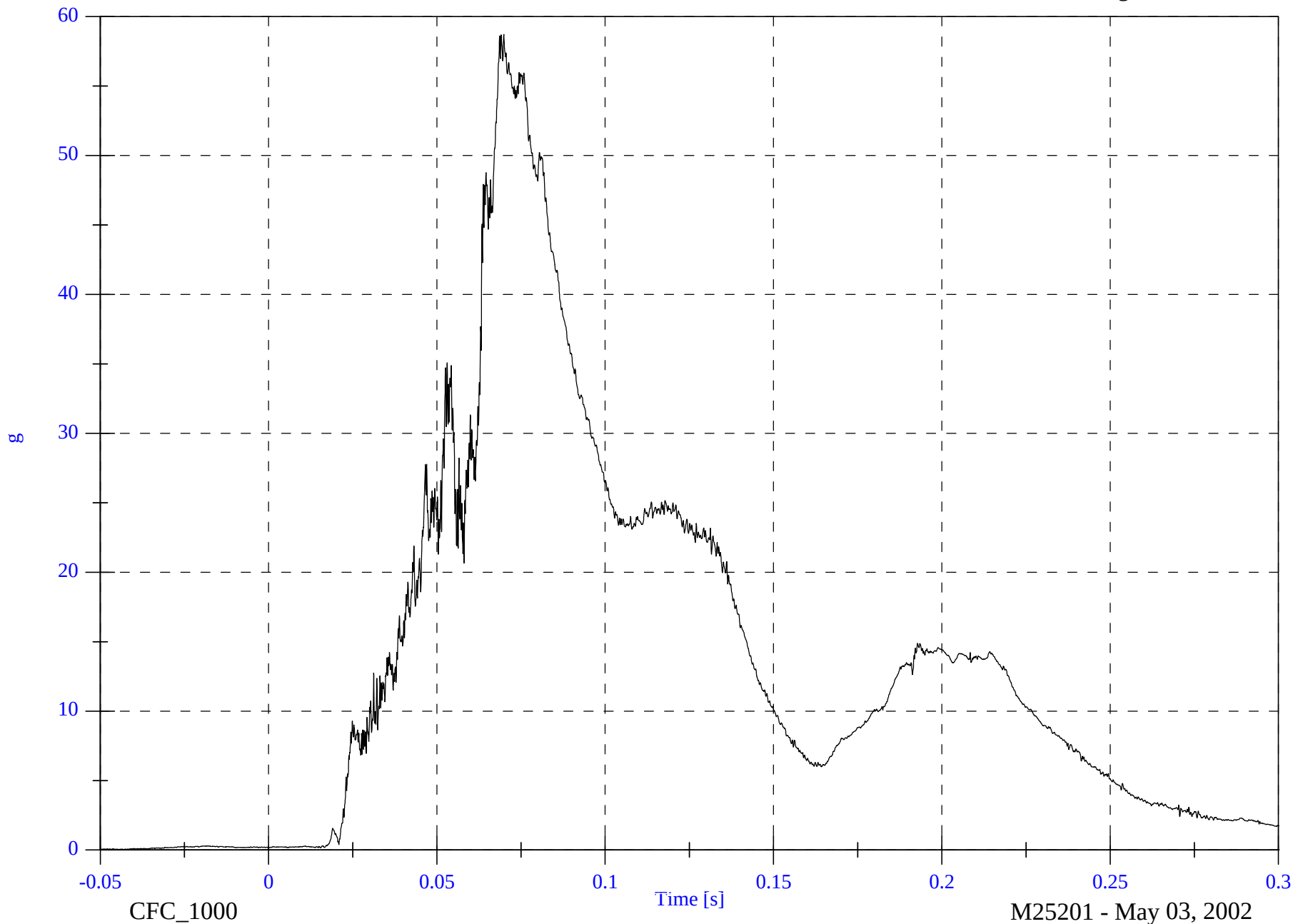
P2 Head CG Red Resultant

Max: 58.7 [g] at 0.070 [s]

Min: 0.0 [g] at -0.043 [s]

B-70

8462-NCAP-11

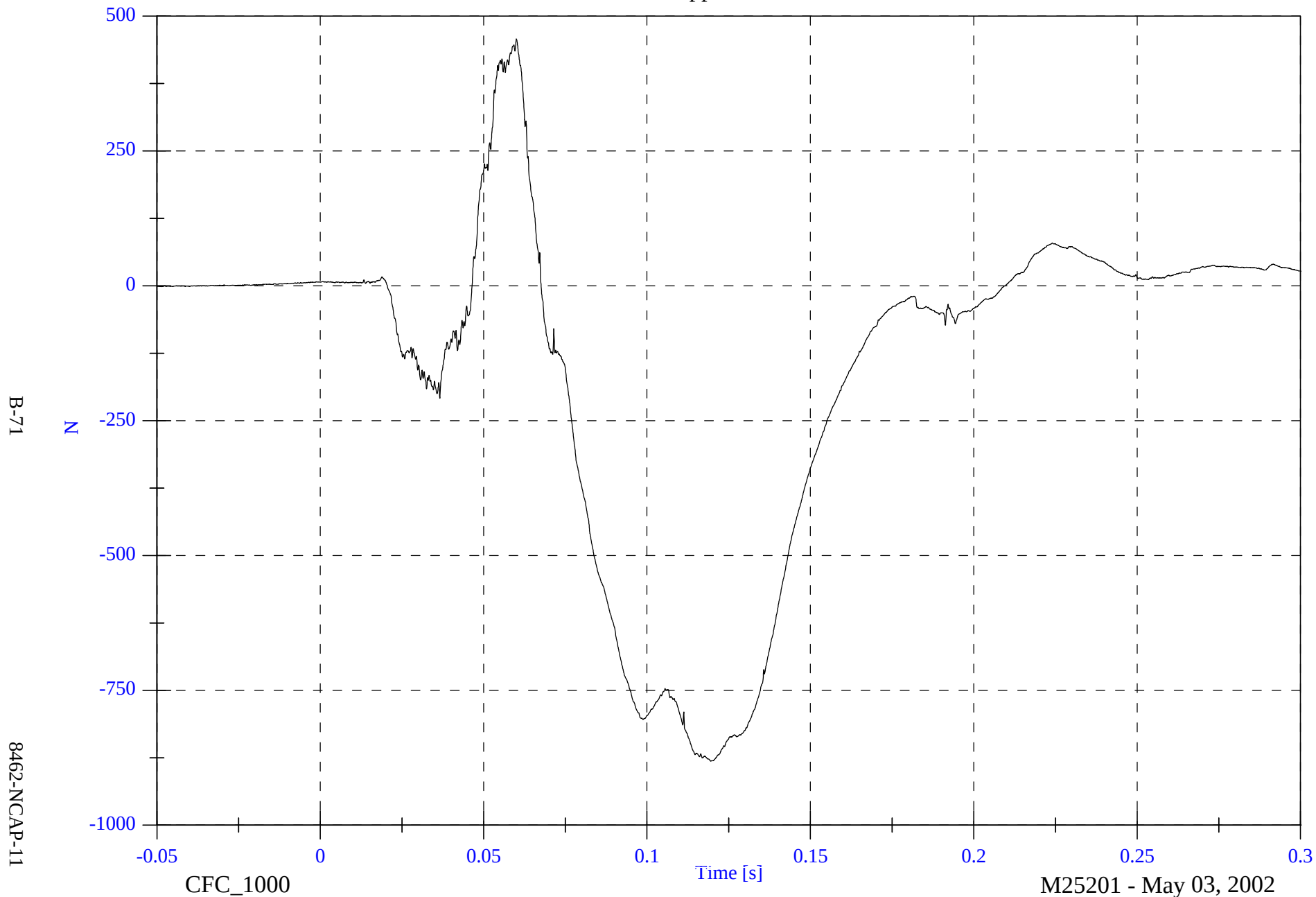


2002 NCAP Test 11 - 2002 Nissan Frontier

P2 Upper Neck Fx

Max: 457.6 [N] at 0.060 [s]

Min: -881.4 [N] at 0.120 [s]

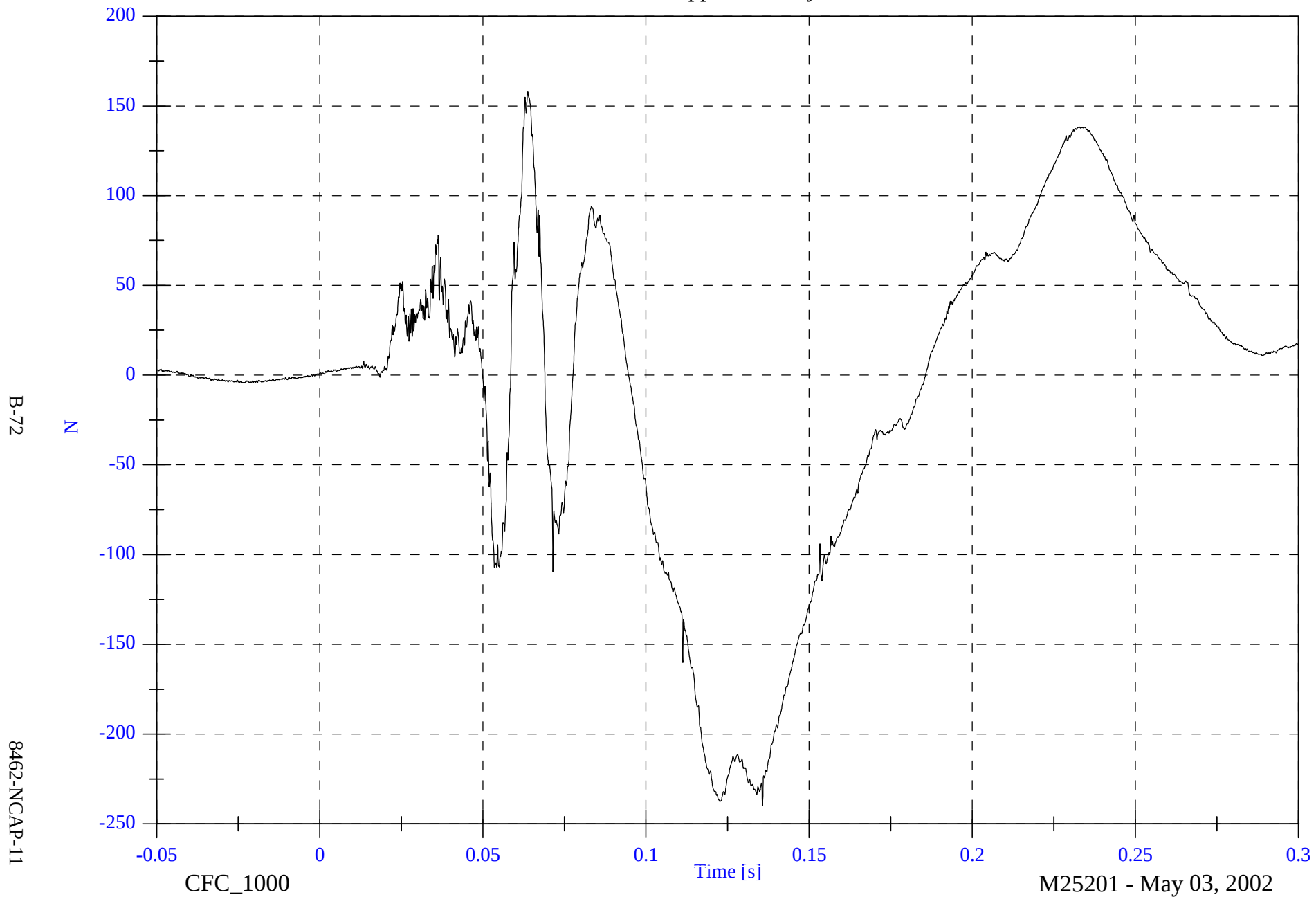


2002 NCAP Test 11 - 2002 Nissan Frontier

P2 Upper Neck Fy

Max: 158.0 [N] at 0.064 [s]

Min: -239.9 [N] at 0.136 [s]

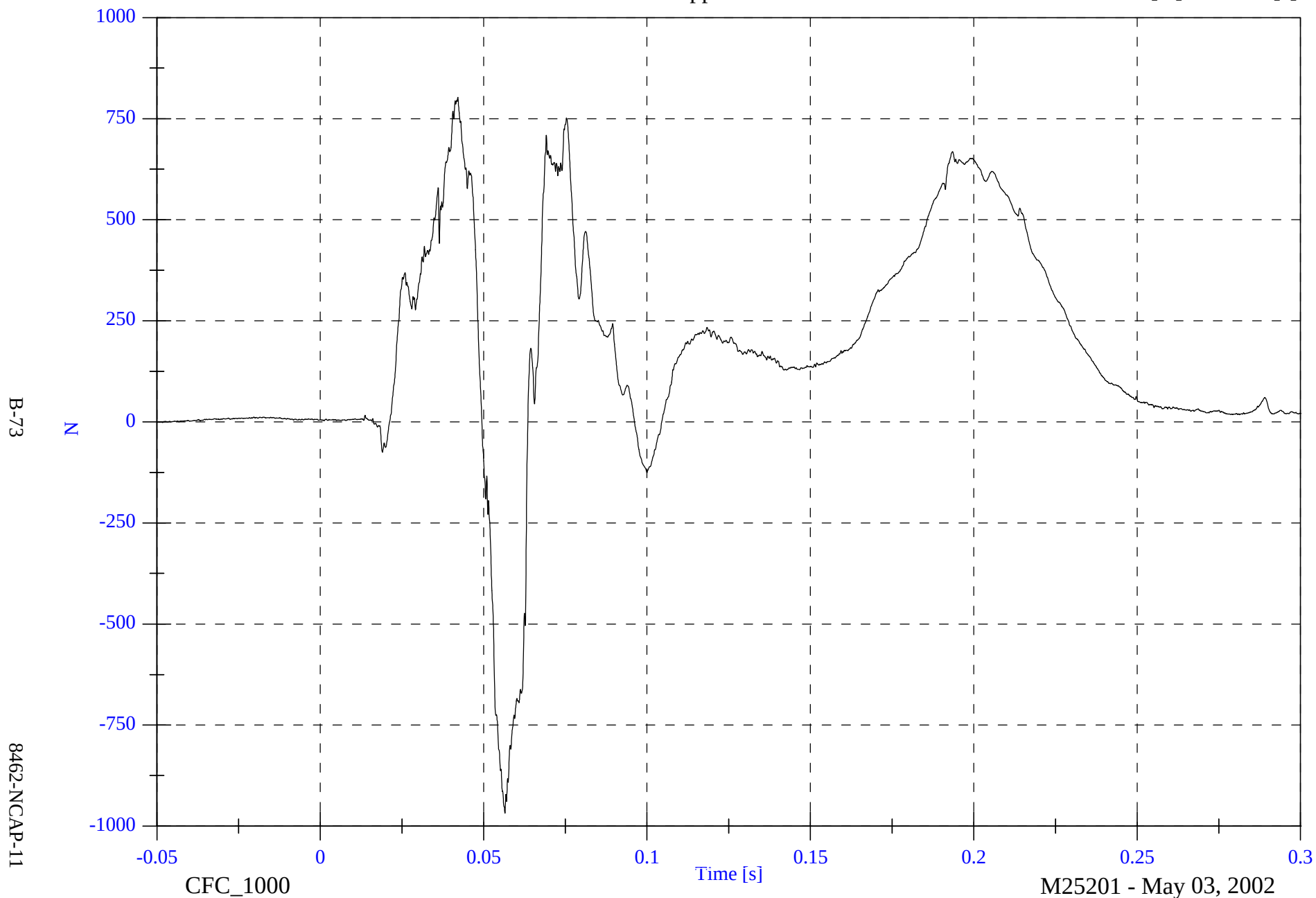


2002 NCAP Test 11 - 2002 Nissan Frontier

P2 Upper Neck Fz

Max: 802.9 [N] at 0.042 [s]

Min: -968.0 [N] at 0.057 [s]



2002 NCAP Test 11 - 2002 Nissan Frontier

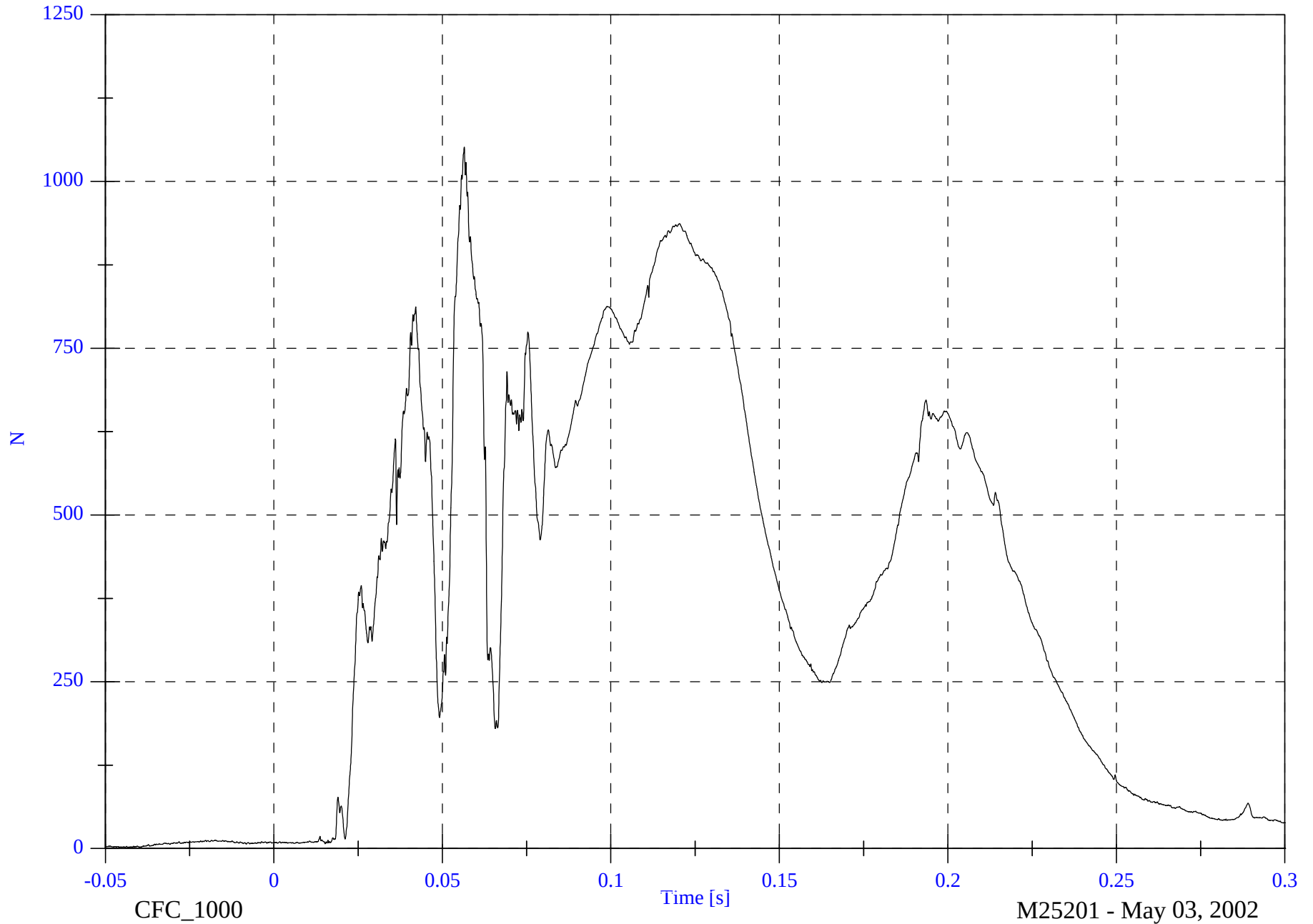
P2 Upper Neck F Resultant

Max: 1051.4 [N] at 0.057 [s]

Min: 0.9 [N] at -0.043 [s]

B-74

8462-NCAP-11



2002 NCAP Test 11 - 2002 Nissan Frontier

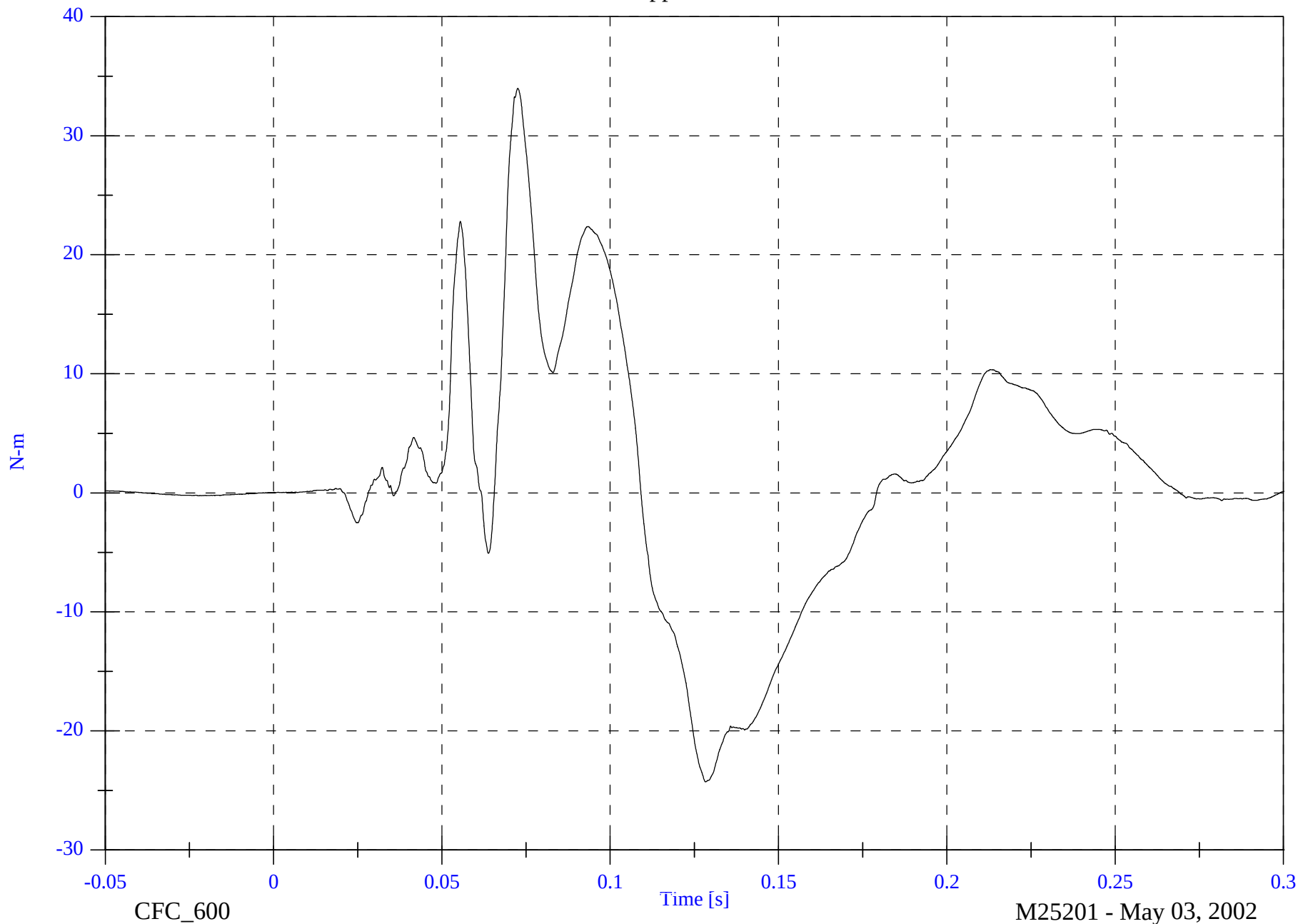
P2 Upper Neck Mx

Max: 34.0 [N-m] at 0.073 [s]

Min: -24.3 [N-m] at 0.128 [s]

B-75

8462-NCAP-11



2002 NCAP Test 11 - 2002 Nissan Frontier

Max: 49.7 [N-m] at 0.125 [s]

Min: -12.1 [N-m] at 0.200 [s]

P2 Upper Neck My

B-76

N-m

8462-NCAP-11



CFC_600

M25201 - May 03, 2002

2002 NCAP Test 11 - 2002 Nissan Frontier

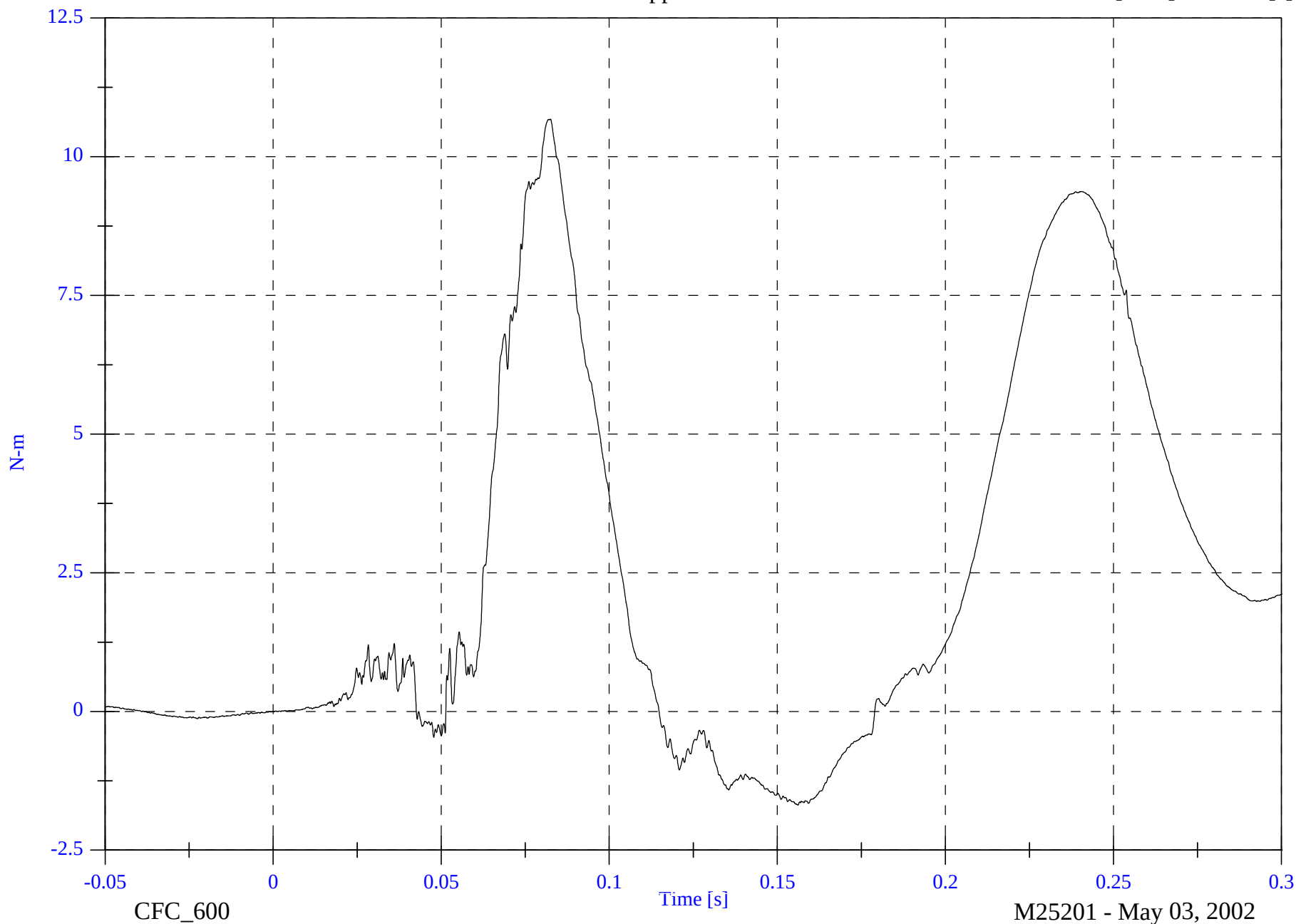
P2 Upper Neck Mz

Max: 10.7 [N-m] at 0.082 [s]

Min: -1.7 [N-m] at 0.156 [s]

B-77

8462-NCAP-11

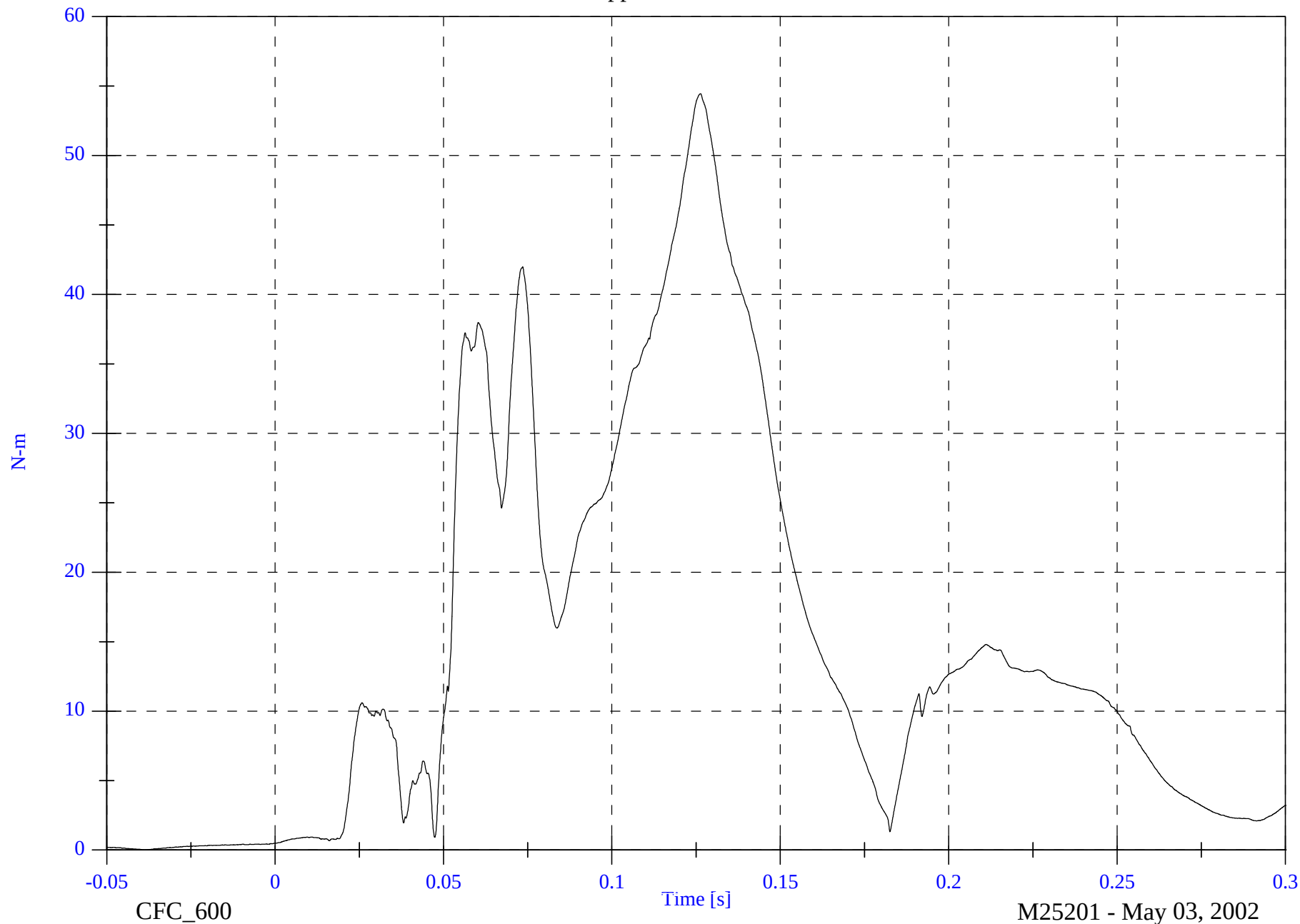


2002 NCAP Test 11 - 2002 Nissan Frontier

P2 Upper Neck M Resultant

Max: 54.5 [N-m] at 0.126 [s]

Min: 0.0 [N-m] at -0.039 [s]



B-78

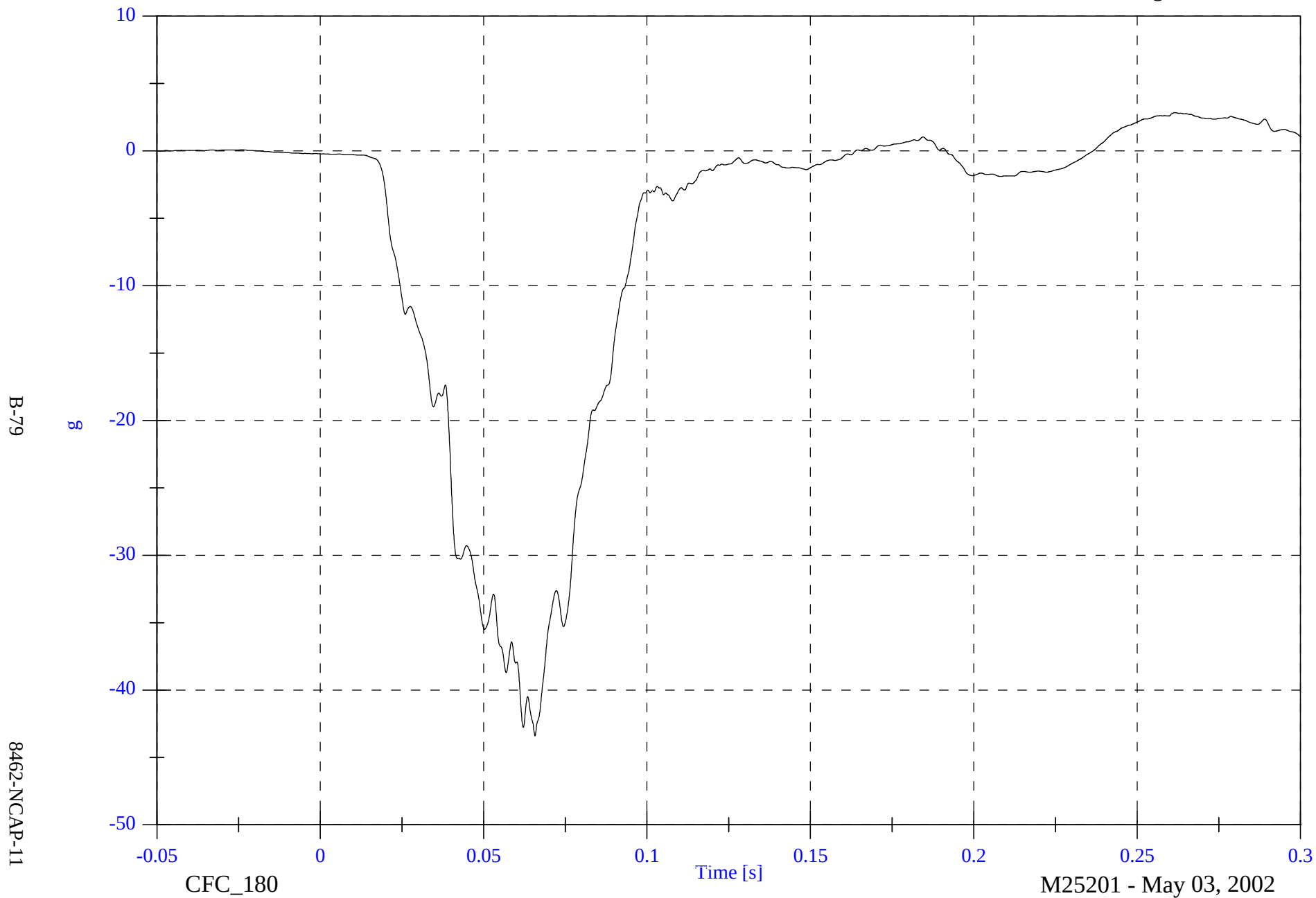
8462-NCAP-11

2002 NCAP Test 11 - 2002 Nissan Frontier

Max: 2.8 [g] at 0.262 [s]

Min: -43.4 [g] at 0.066 [s]

P2 Chest x

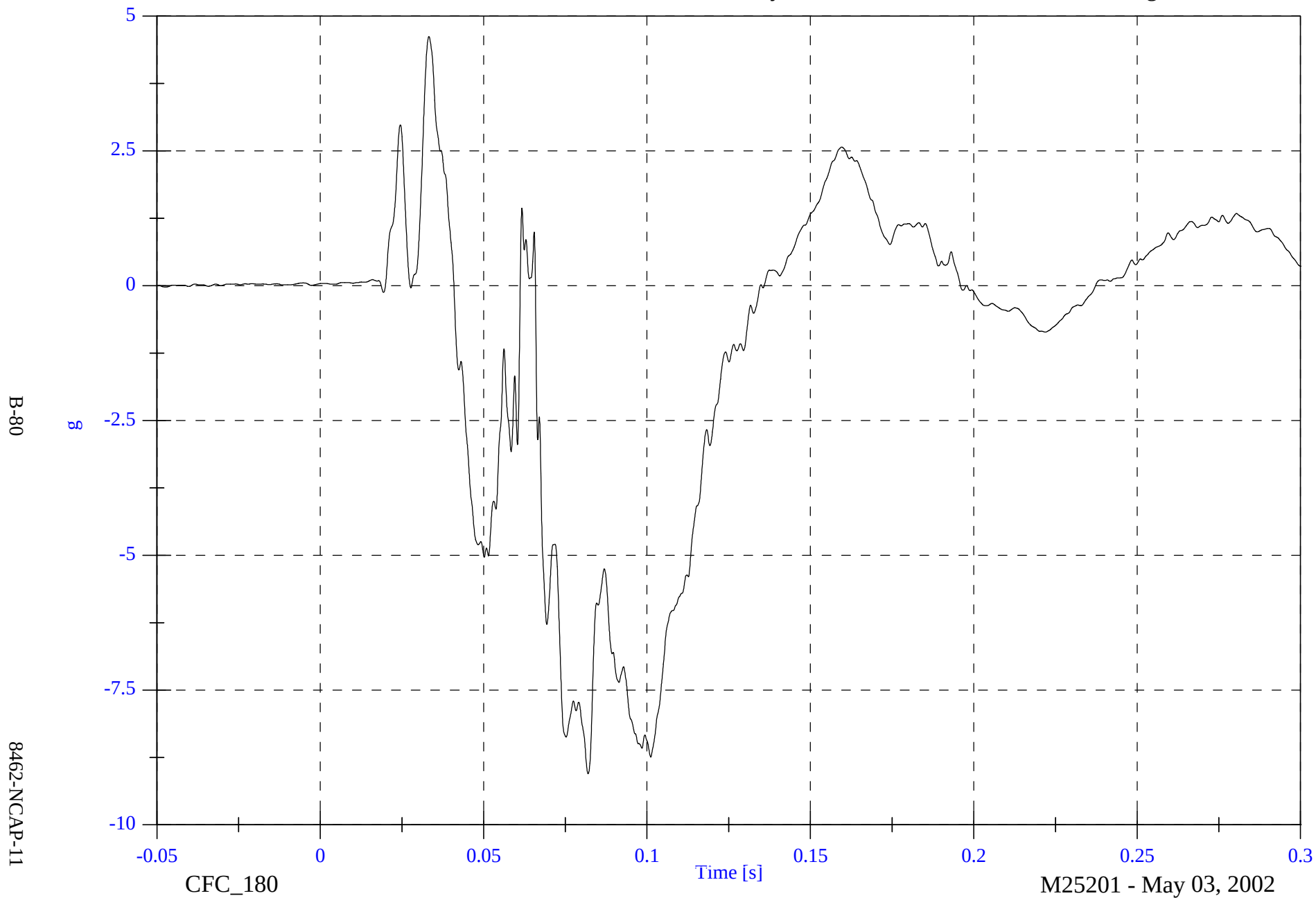


2002 NCAP Test 11 - 2002 Nissan Frontier

P2 Chest y

Max: 4.6 [g] at 0.033 [s]

Min: -9.1 [g] at 0.082 [s]



2002 NCAP Test 11 - 2002 Nissan Frontier

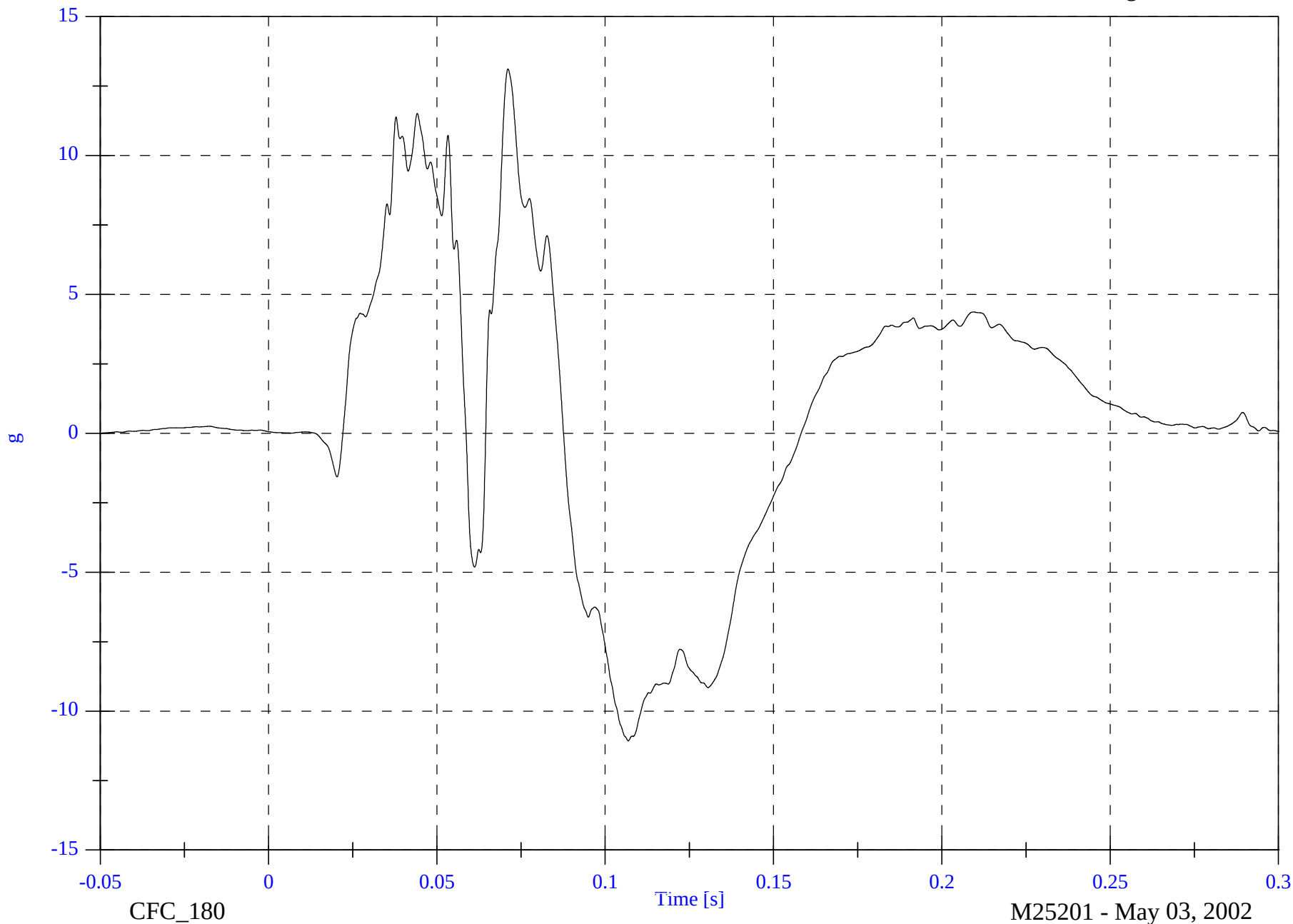
P2 Chest z

Max: 13.1 [g] at 0.071 [s]

Min: -11.1 [g] at 0.107 [s]

B-81

8462-NCAP-11



2002 NCAP Test 11 - 2002 Nissan Frontier

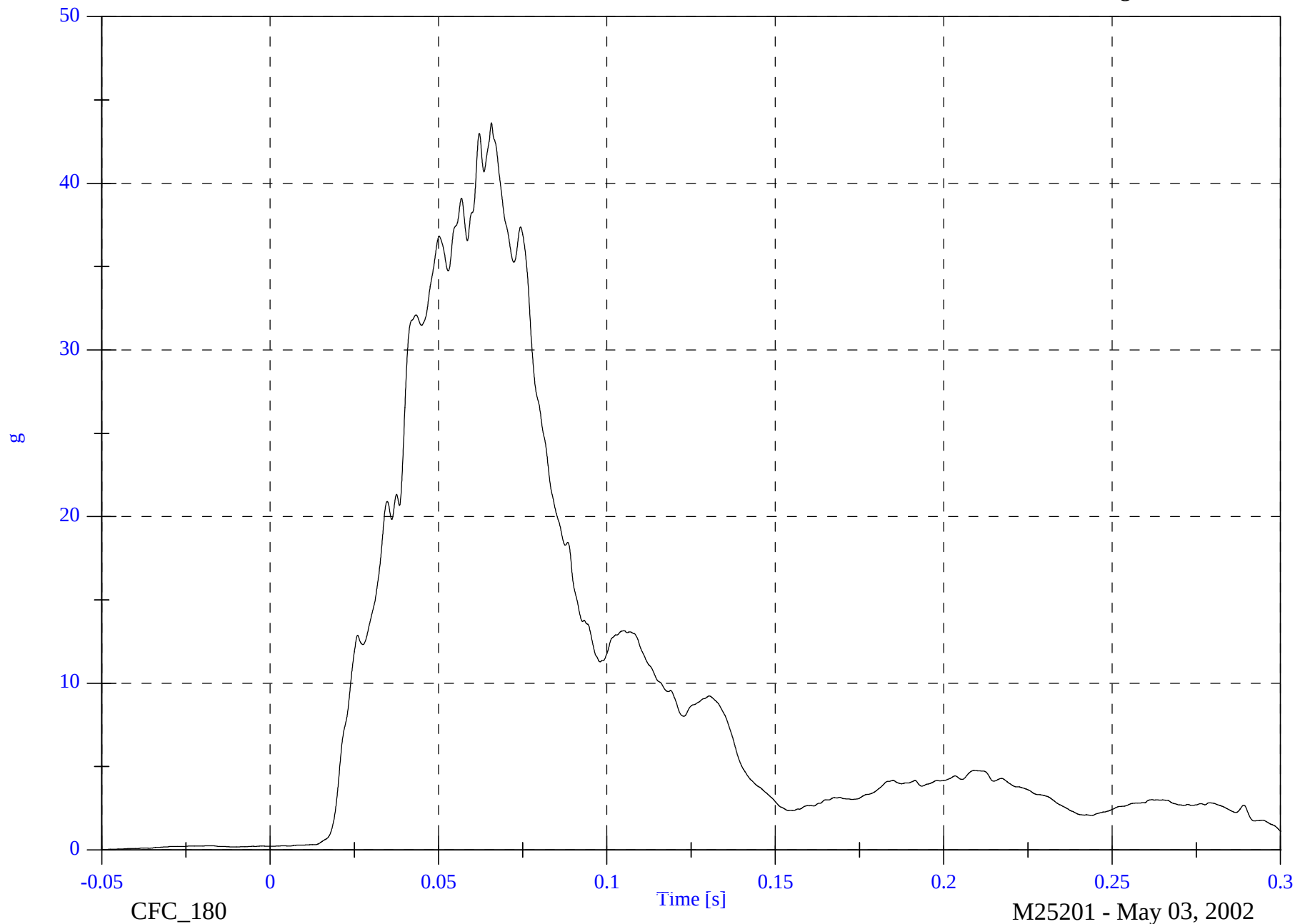
P2 Chest Resultant

Max: 43.6 [g] at 0.066 [s]

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

B-82

8462-NCAP-11



2002 NCAP Test 11 - 2002 Nissan Frontier

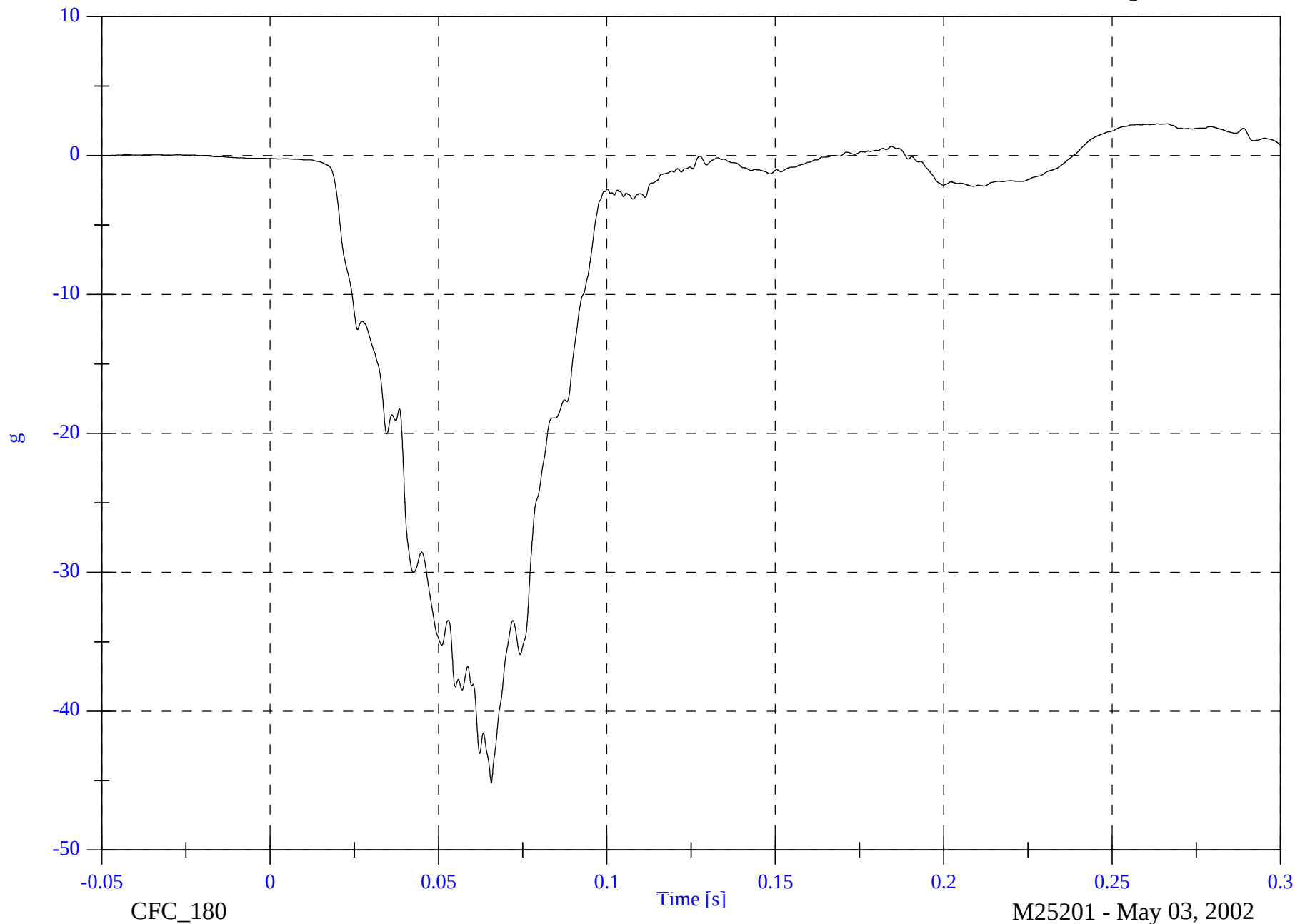
P2 Chest Red x

Max: 2.3 [g] at 0.266 [s]

Min: -45.2 [g] at 0.066 [s]

B-83

8462-NCAP-11

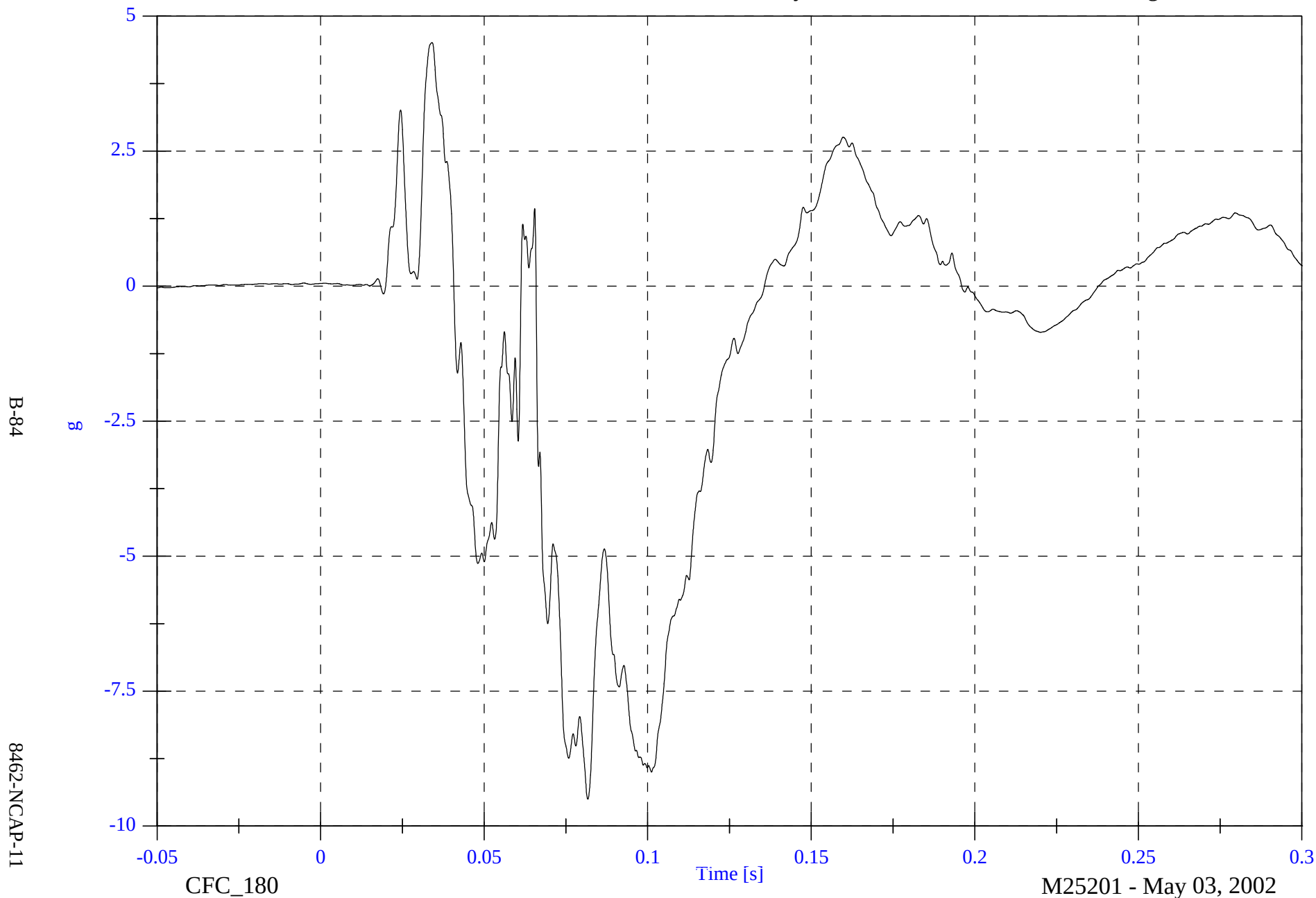


2002 NCAP Test 11 - 2002 Nissan Frontier

P2 Chest Red y

Max: 4.5 [g] at 0.034 [s]

Min: -9.5 [g] at 0.082 [s]

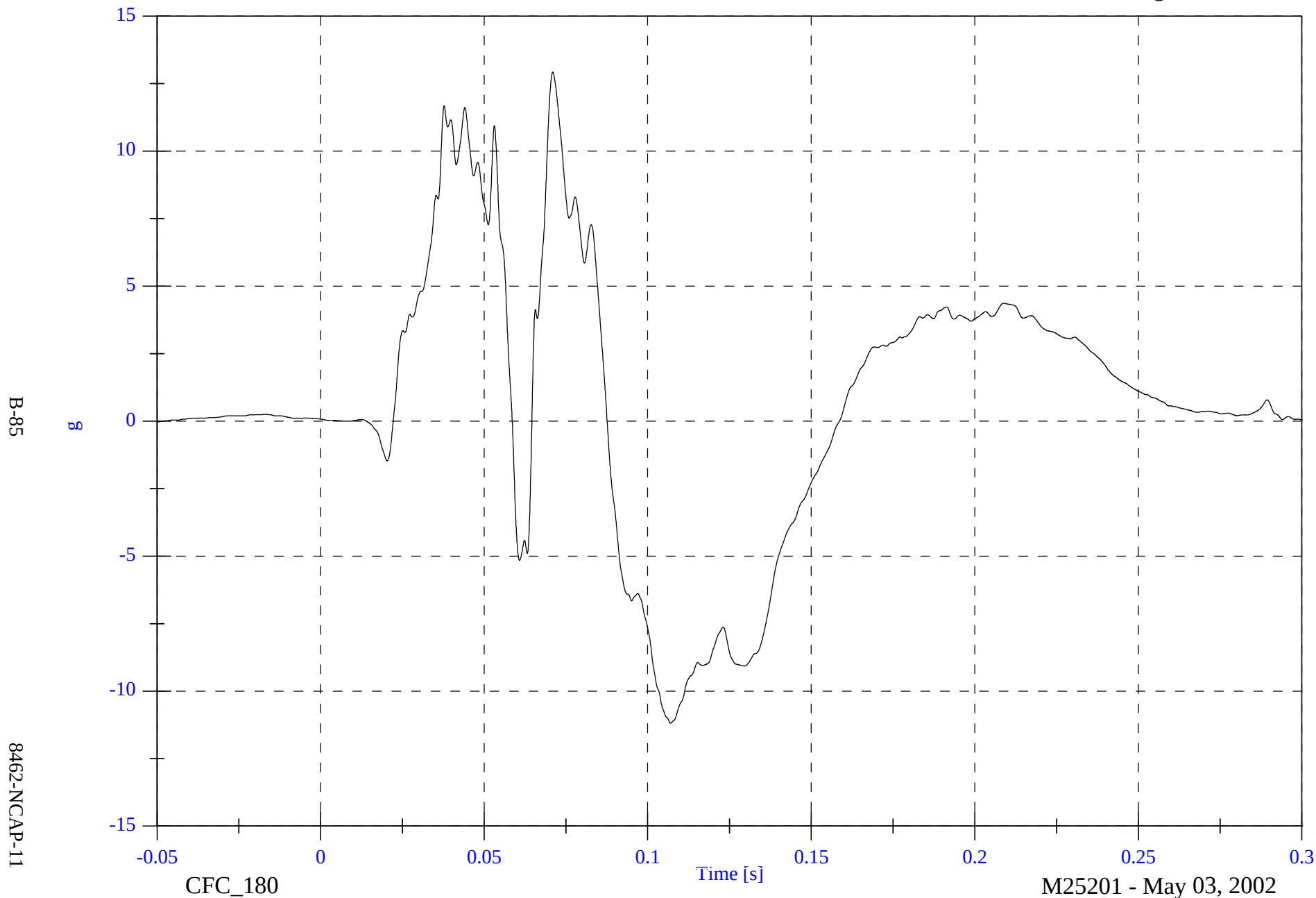


2002 NCAP Test 11 - 2002 Nissan Frontier

P2 Chest Red z

Max: 12.9 [g] at 0.071 [s]

Min: -11.2 [g] at 0.107 [s]



2002 NCAP Test 11 - 2002 Nissan Frontier

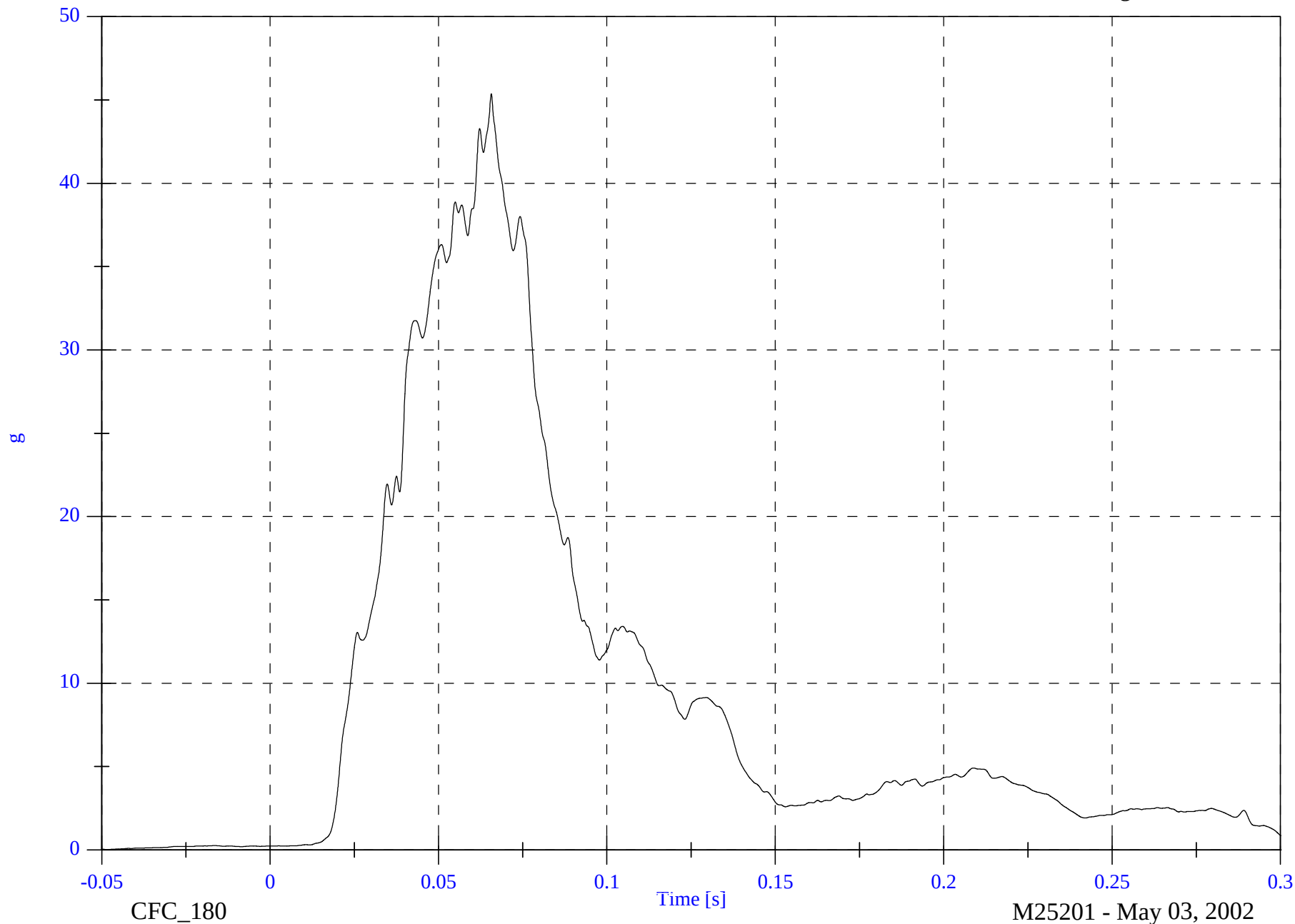
P2 Chest Red Resultant

Max: 45.4 [g] at 0.066 [s]

Min: 0.0 [g] at -0.048 [s]

B-86

8462-NCAP-11



2002 NCAP Test 11 - 2002 Nissan Frontier

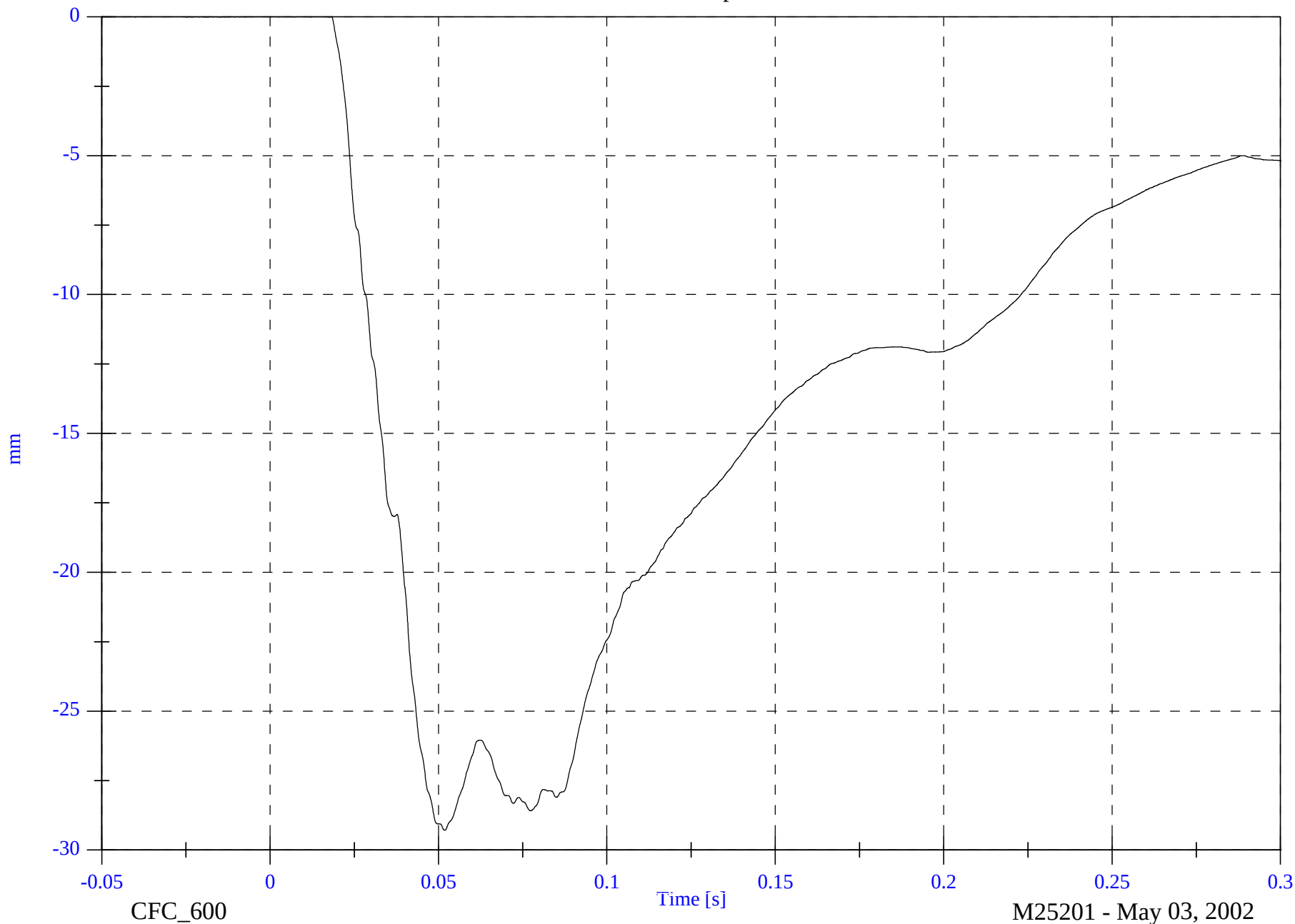
P2 Chest Compression

Max: 0.0 [mm] at 0.018 [s]

Min: -29.3 [mm] at 0.052 [s]

B-87

8462-NCAP-11

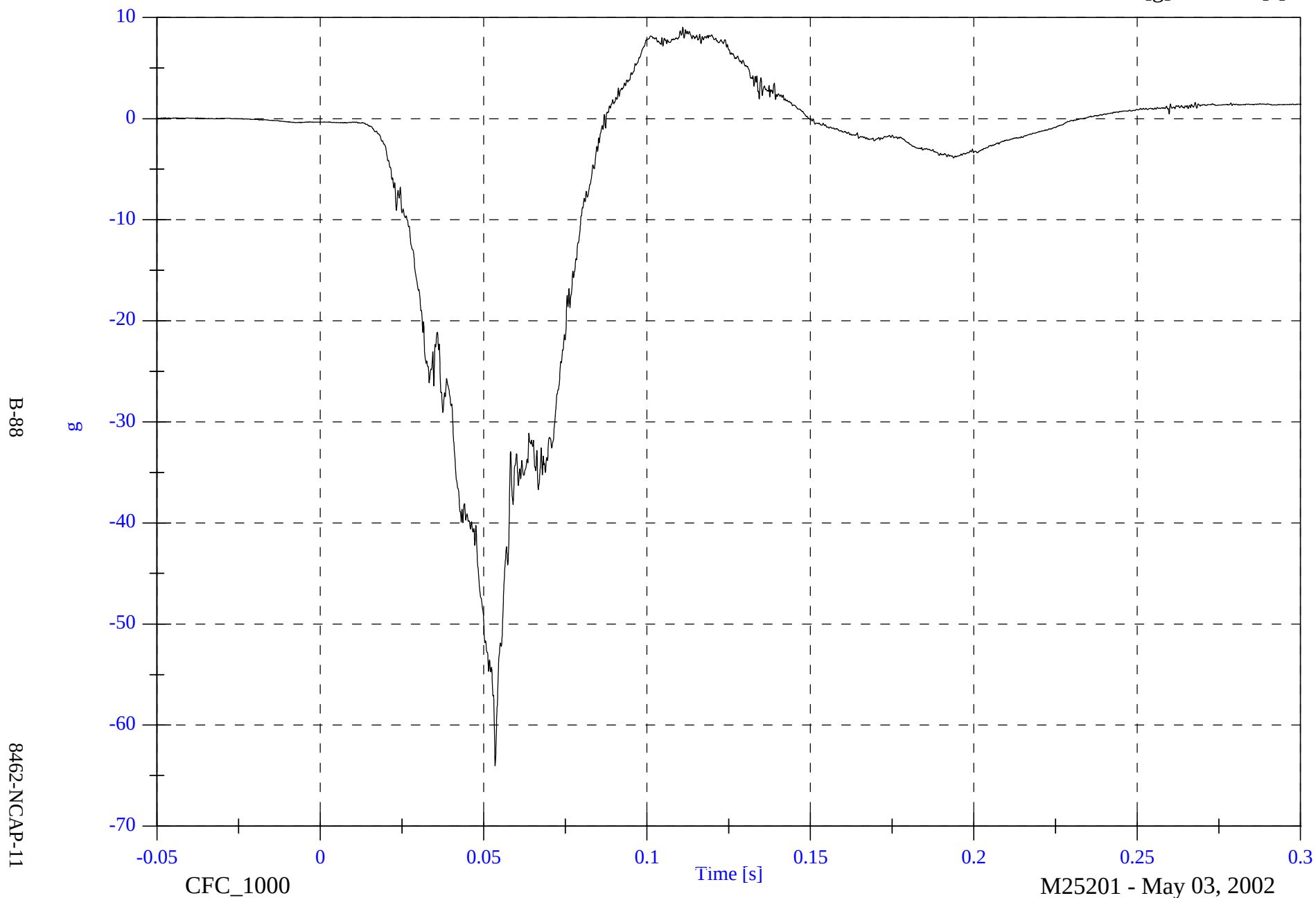


2002 NCAP Test 11 - 2002 Nissan Frontier

Max: 9.0 [g] at 0.111 [s]

Min: -64.0 [g] at 0.054 [s]

P2 Pelvic x

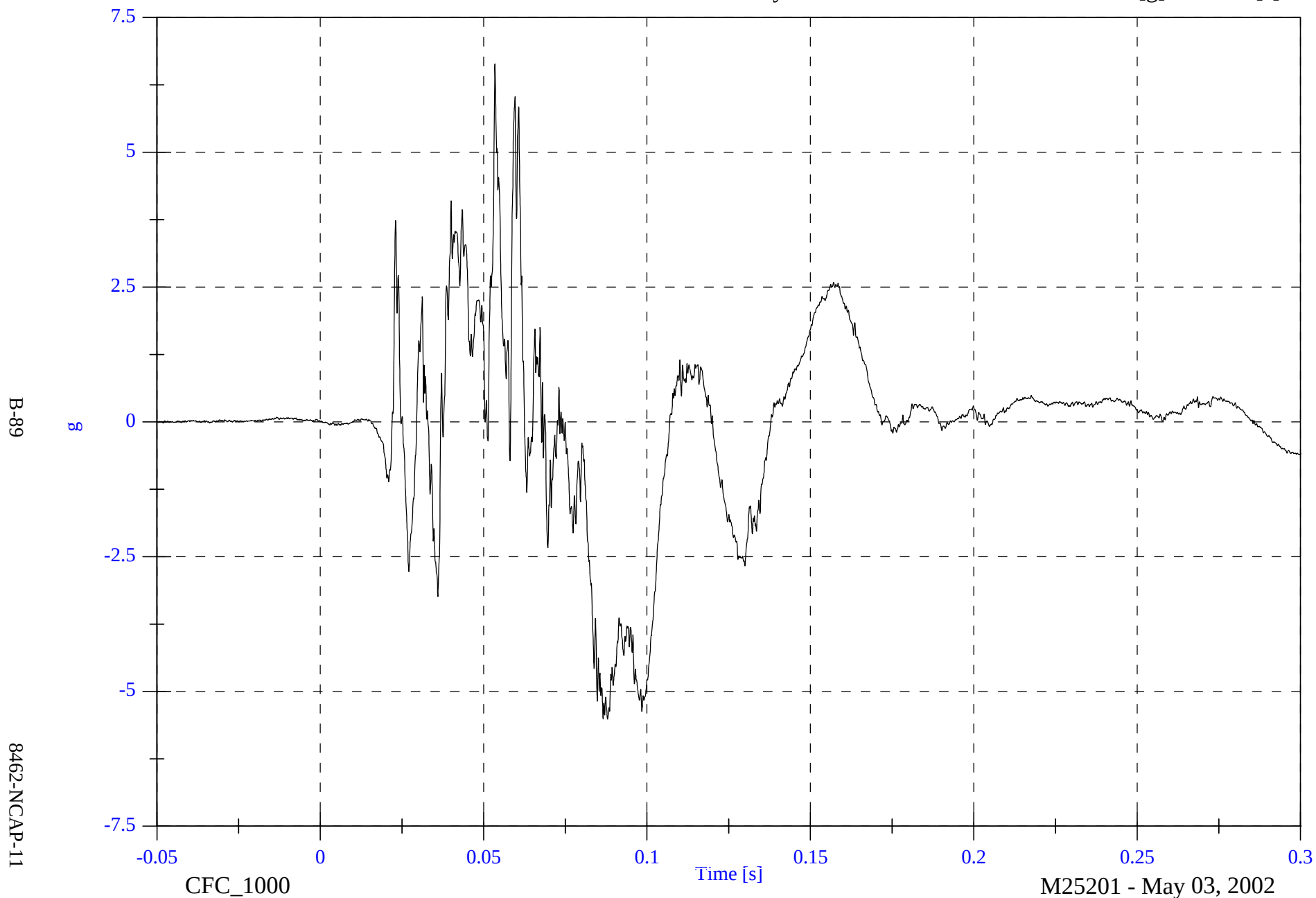


2002 NCAP Test 11 - 2002 Nissan Frontier

Max: 6.6 [g] at 0.053 [s]

Min: -5.5 [g] at 0.088 [s]

P2 Pelvic y

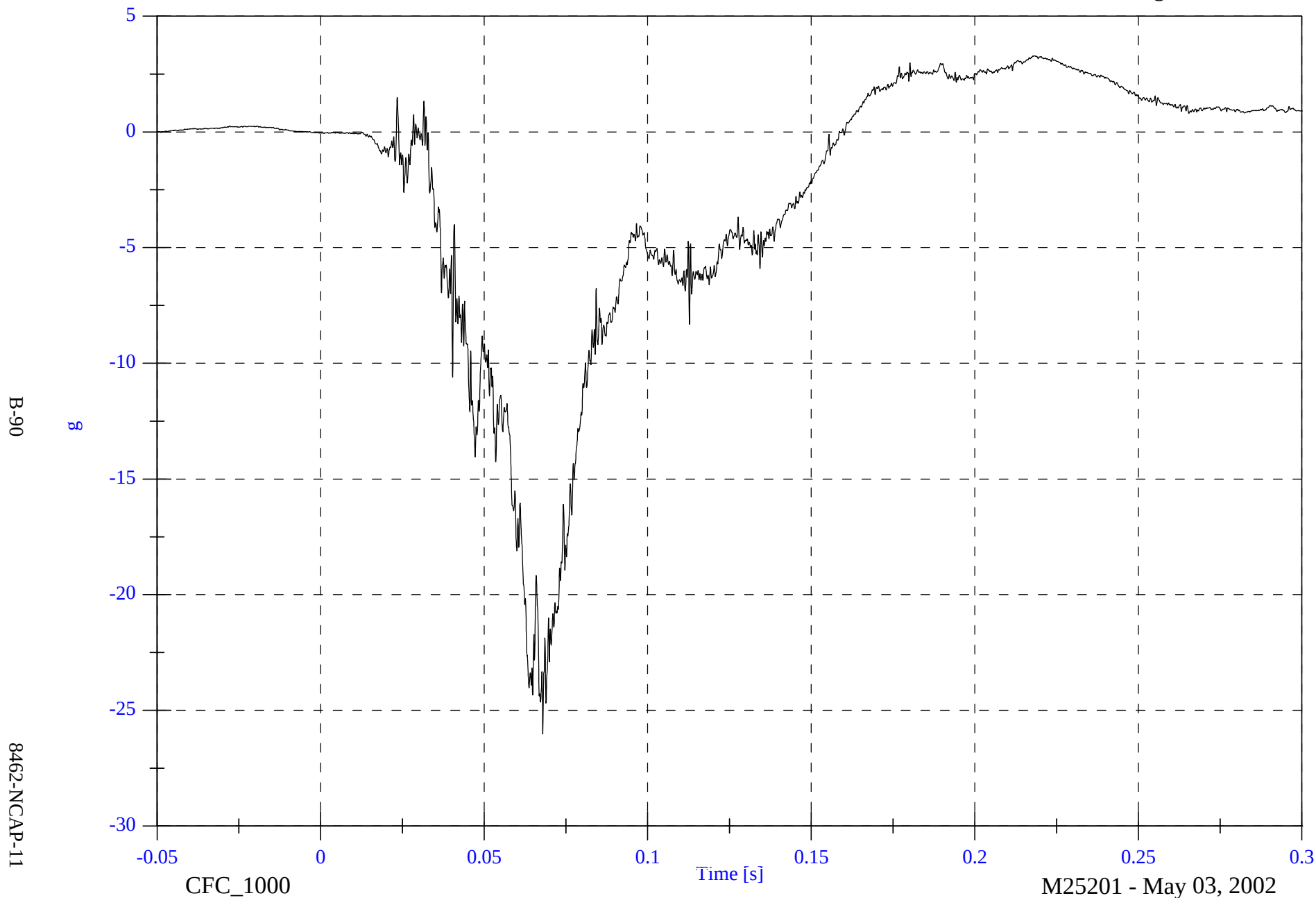


2002 NCAP Test 11 - 2002 Nissan Frontier

Max: 3.3 [g] at 0.218 [s]

Min: -26.0 [g] at 0.068 [s]

P2 Pelvic z



2002 NCAP Test 11 - 2002 Nissan Frontier

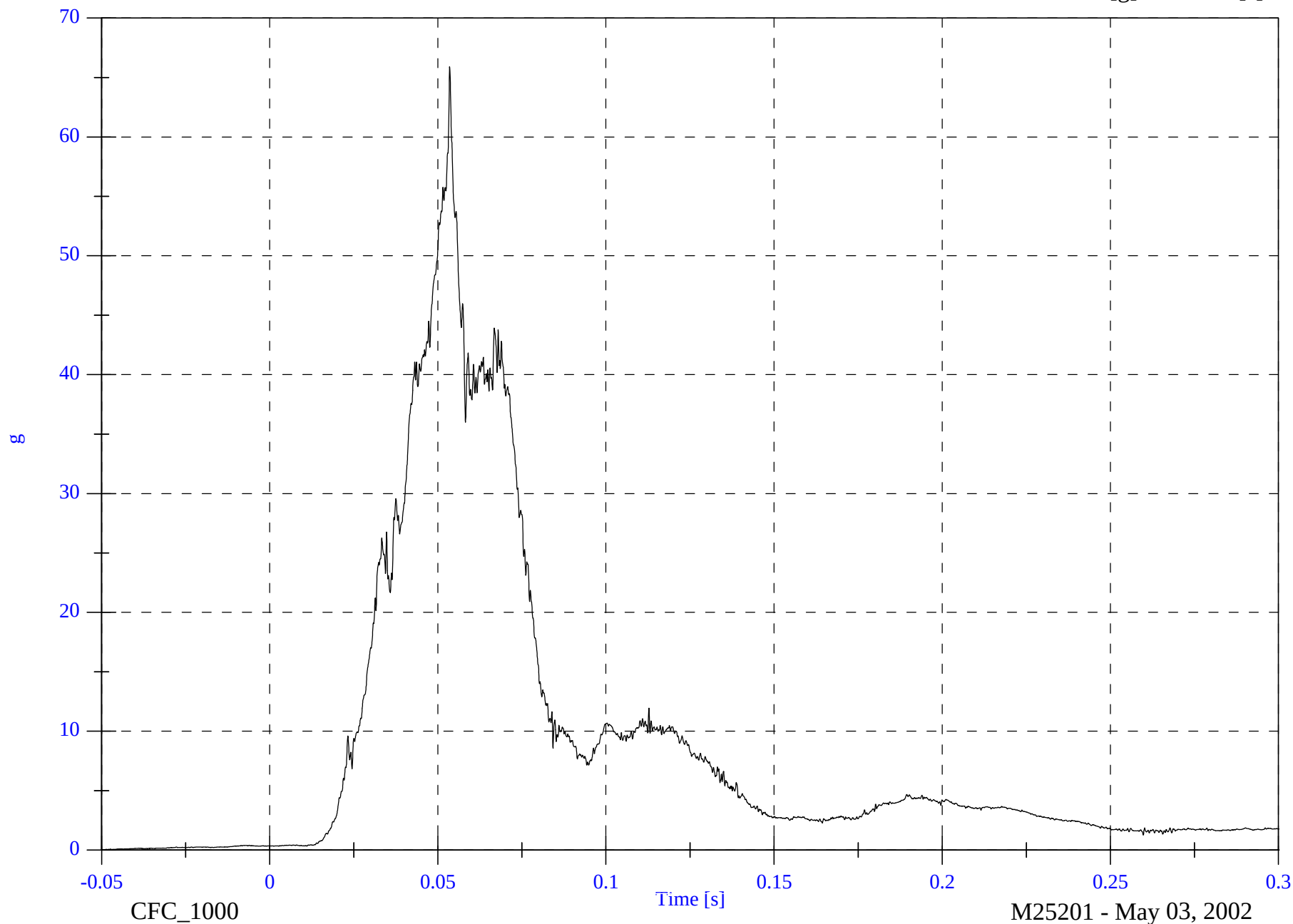
P2 Pelvic Resultant

Max: 65.9 [g] at 0.054 [s]

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

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8462-NCAP-11

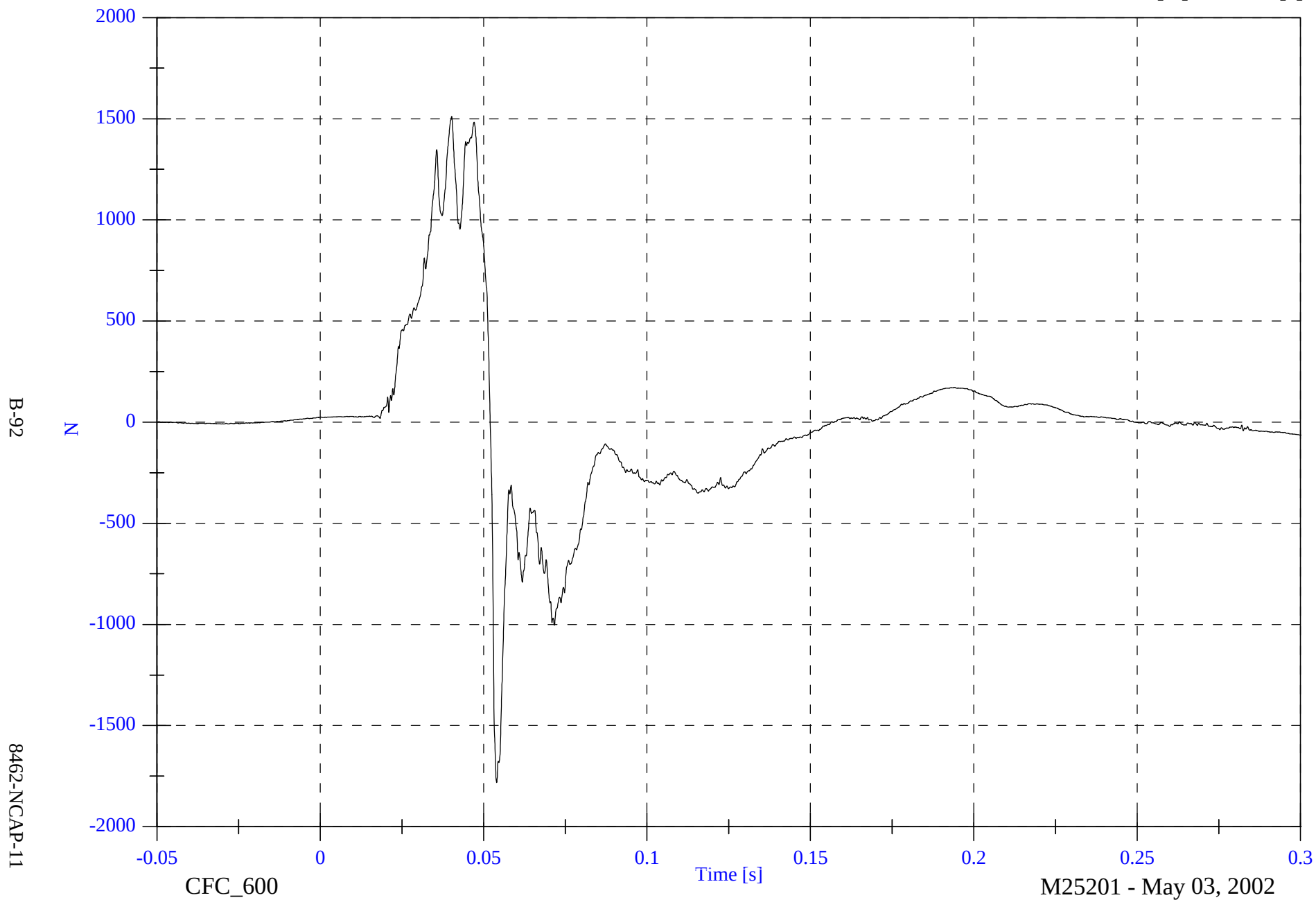


2002 NCAP Test 11 - 2002 Nissan Frontier

P2 Left Femur

Max: 1511.0 [N] at 0.040 [s]

Min: -1781.2 [N] at 0.054 [s]

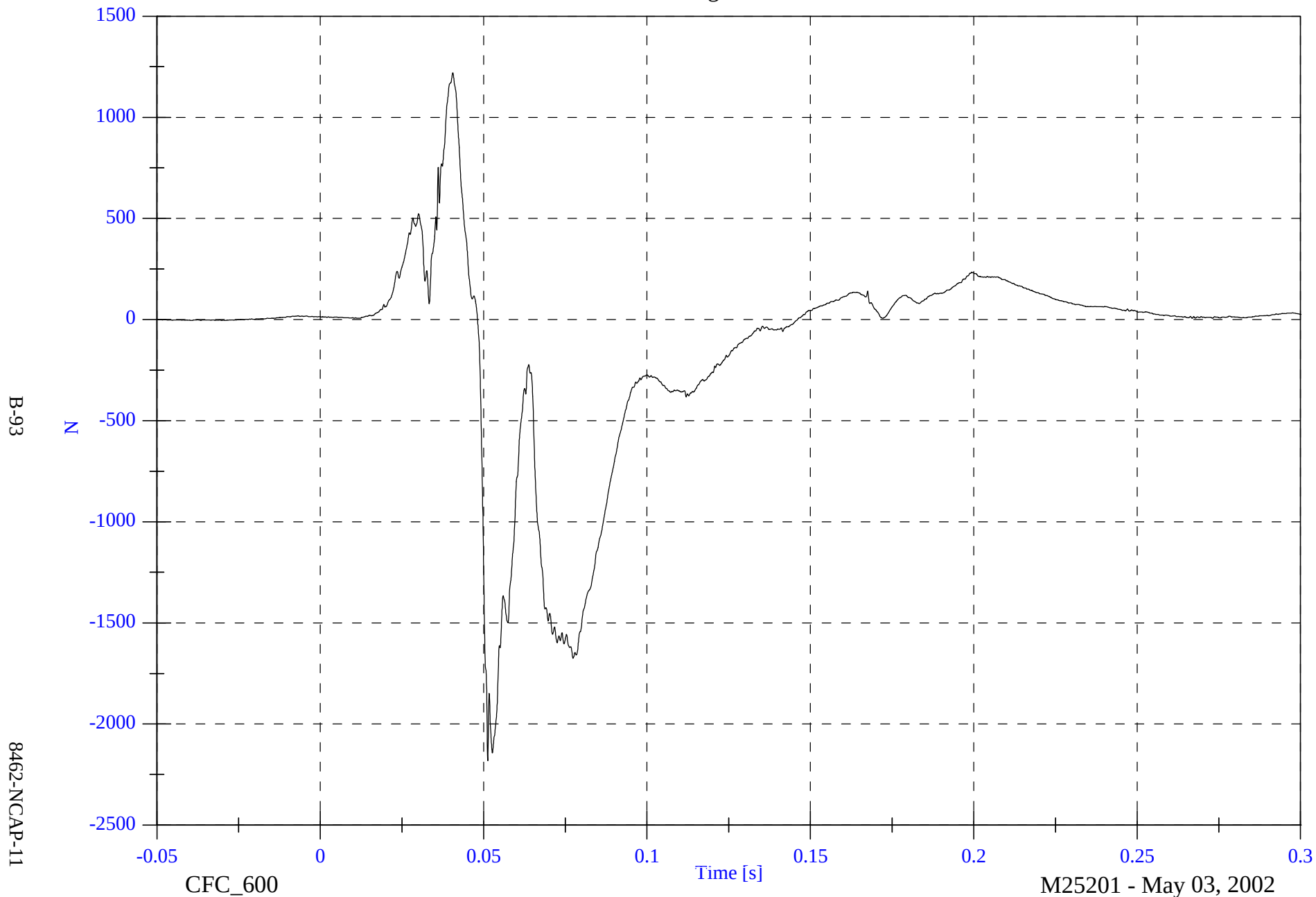


2002 NCAP Test 11 - 2002 Nissan Frontier

P2 Right Femur

Max: 1220.6 [N] at 0.041 [s]

Min: -2182.4 [N] at 0.051 [s]

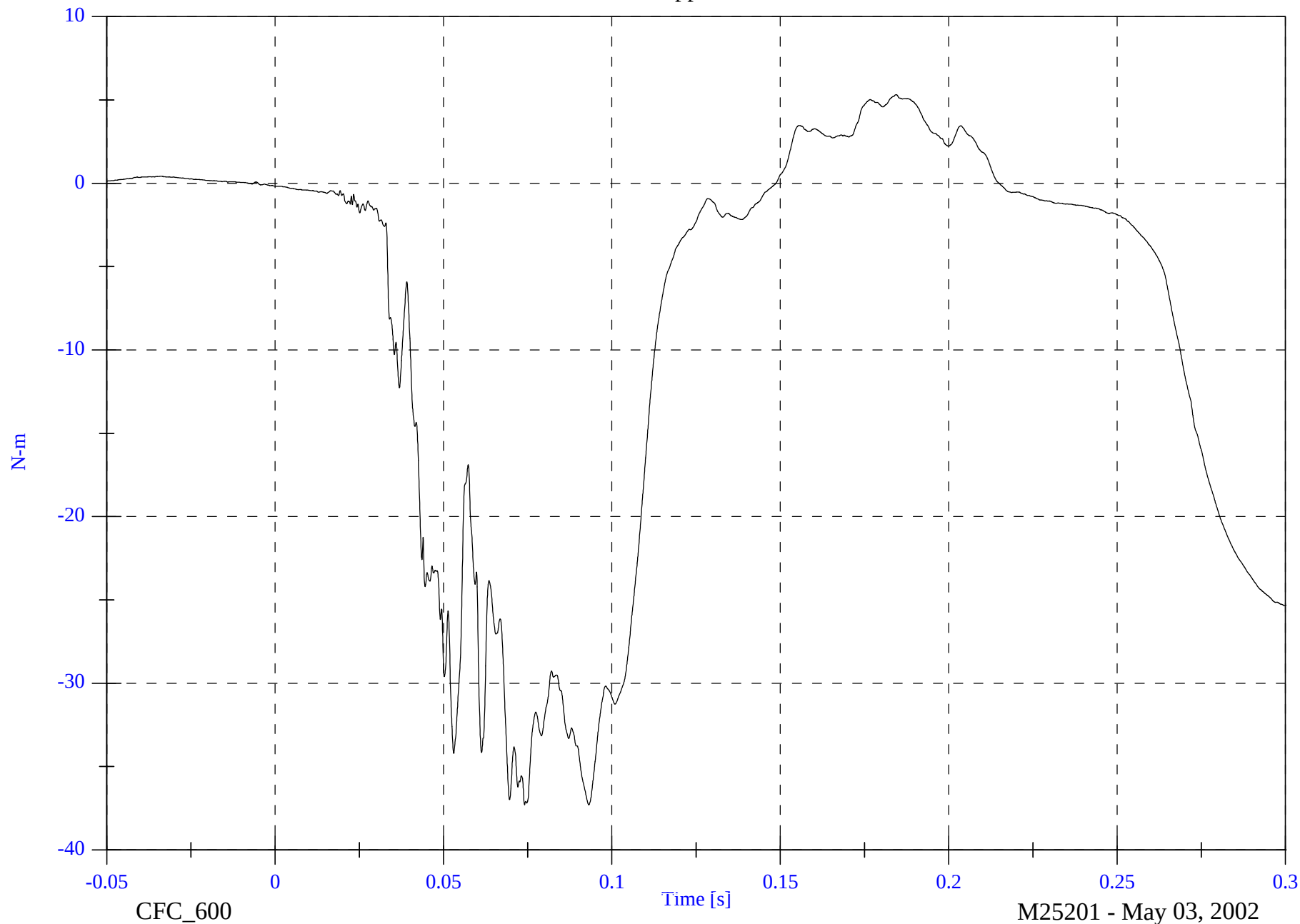


2002 NCAP Test 11 - 2002 Nissan Frontier

P2 Left Upper Tibia Mx

Max: 5.3 [N-m] at 0.184 [s]

Min: -37.3 [N-m] at 0.074 [s]

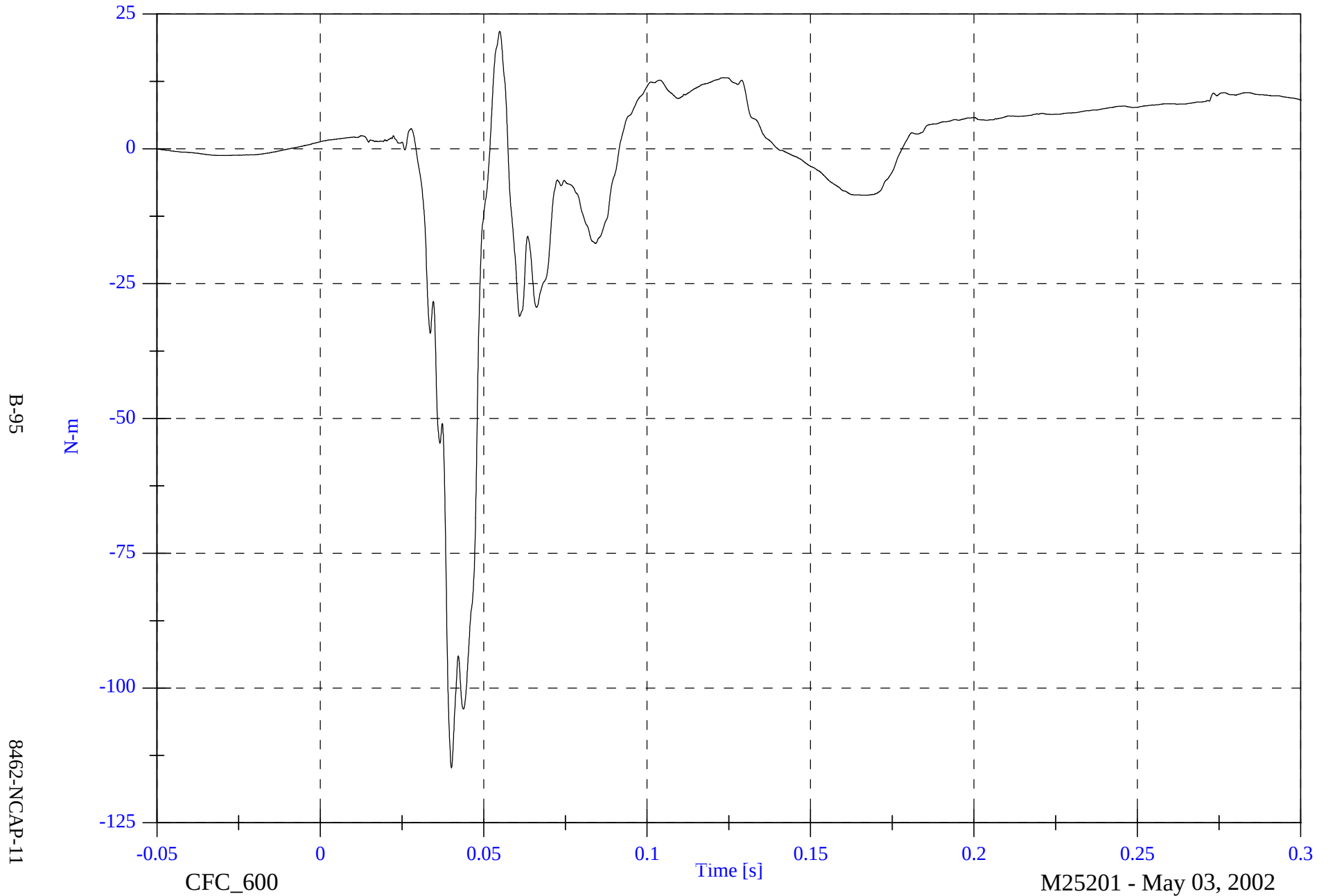


2002 NCAP Test 11 - 2002 Nissan Frontier

P2 Left Upper Tibia My

Max: 21.8 [N-m] at 0.055 [s]

Min: -114.8 [N-m] at 0.040 [s]

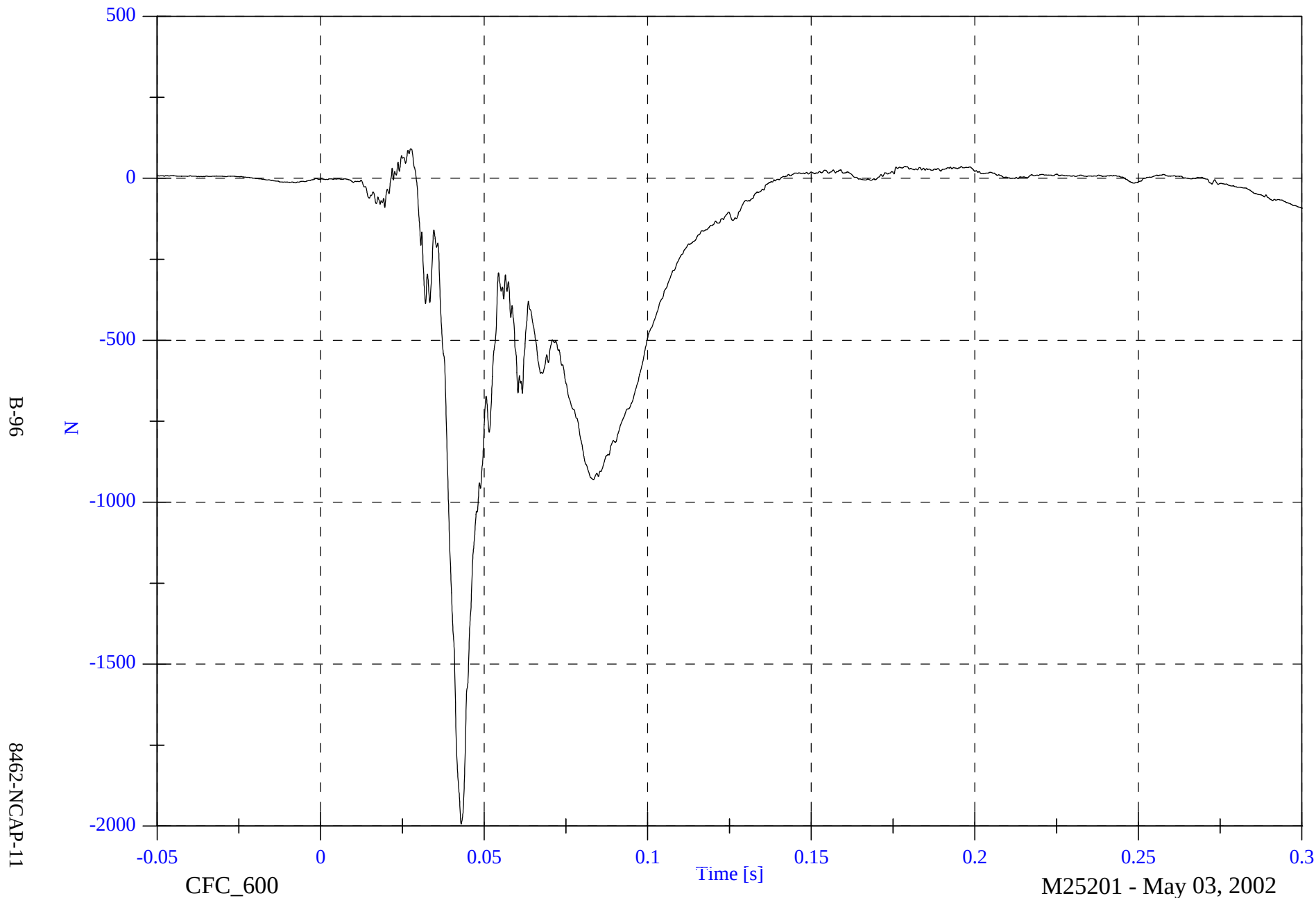


2002 NCAP Test 11 - 2002 Nissan Frontier

Max: 90.3 [N] at 0.028 [s]

Min: -1994.4 [N] at 0.043 [s]

P2 Left Lower Tibia Fz



2002 NCAP Test 11 - 2002 Nissan Frontier

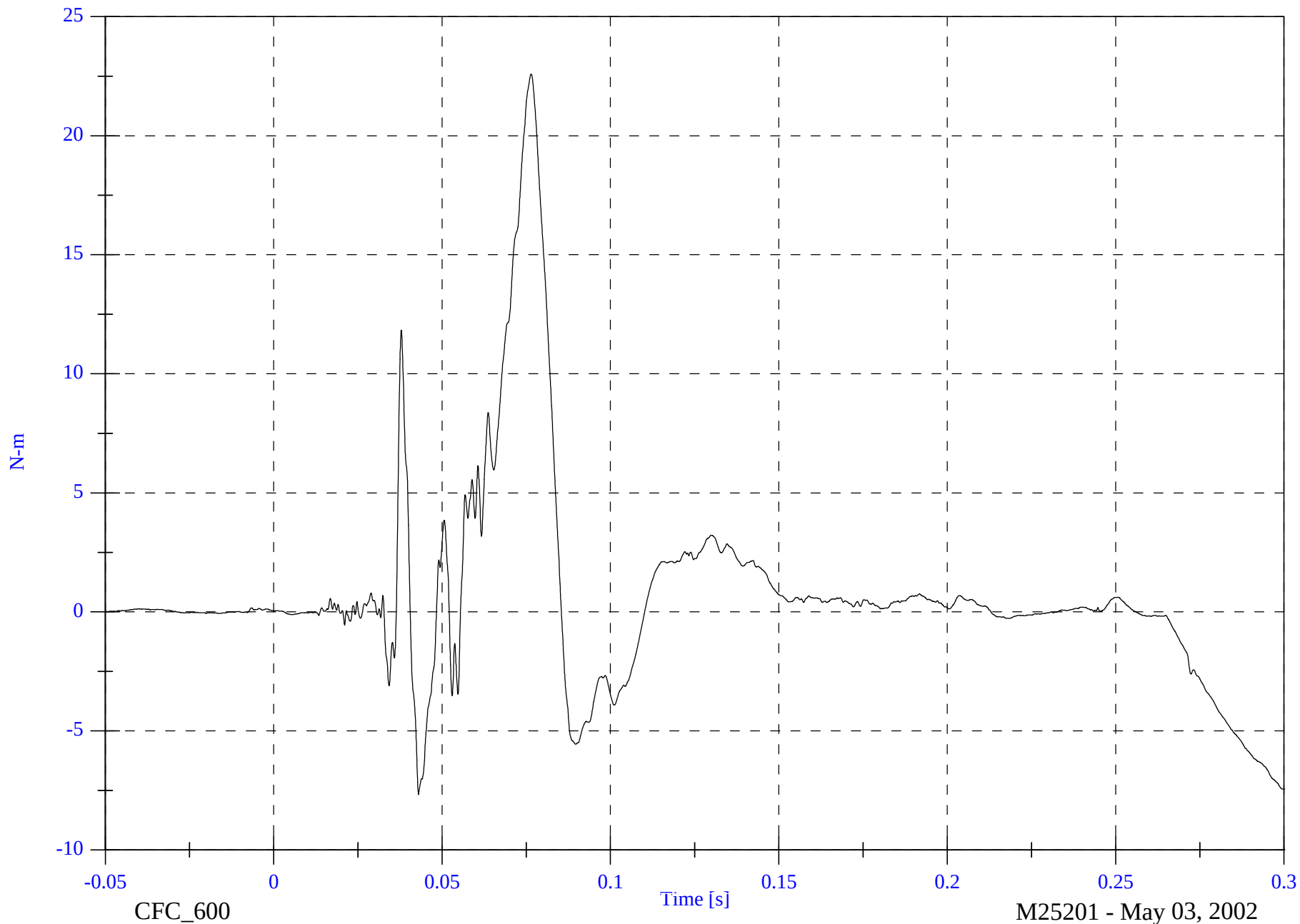
Max: 22.6 [N-m] at 0.076 [s]

P2 Left Lower Tibia Mx

Min: -7.7 [N-m] at 0.043 [s]

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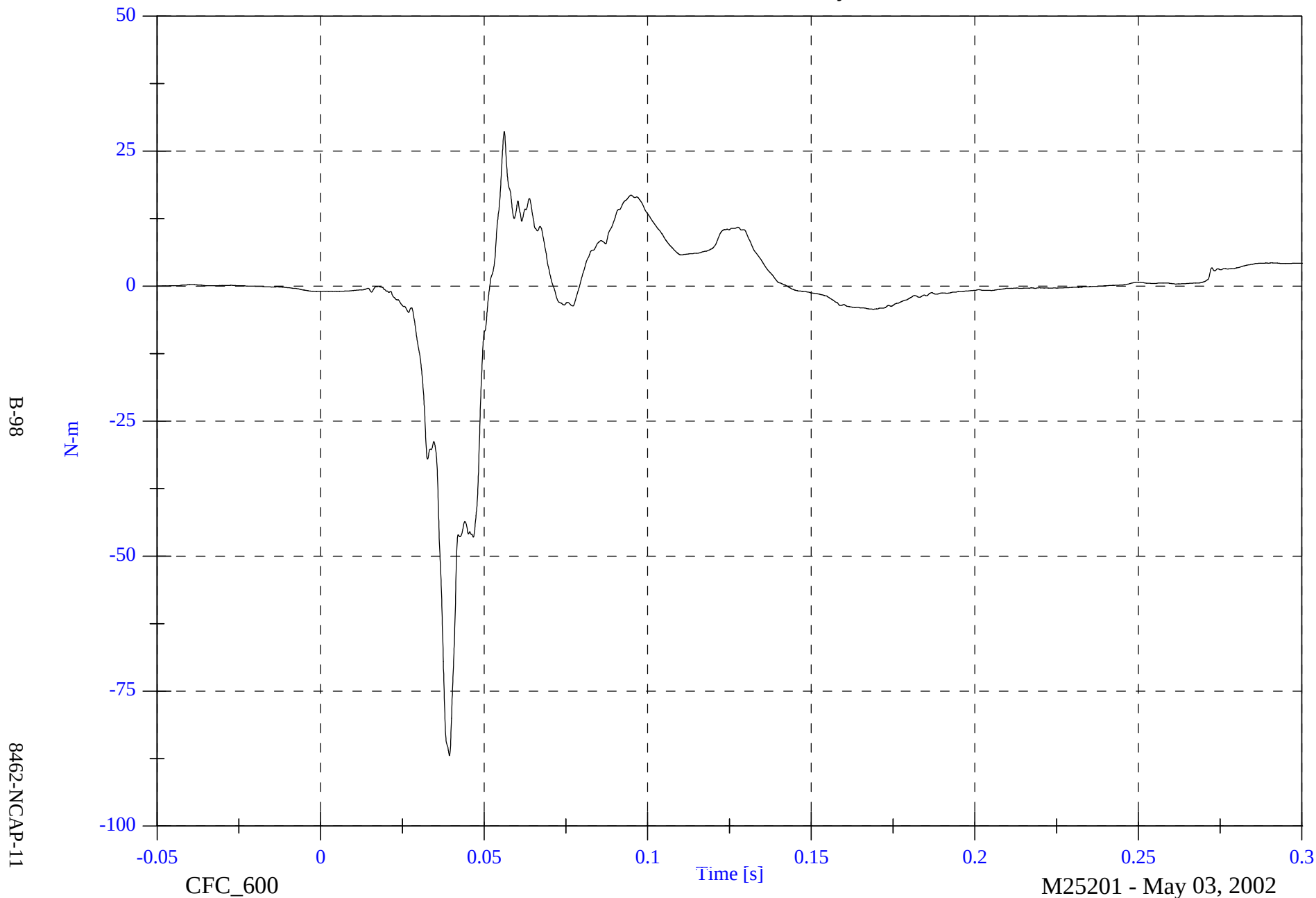


2002 NCAP Test 11 - 2002 Nissan Frontier

Max: 28.6 [N-m] at 0.056 [s]

Min: -87.0 [N-m] at 0.039 [s]

P2 Left Lower Tibia My

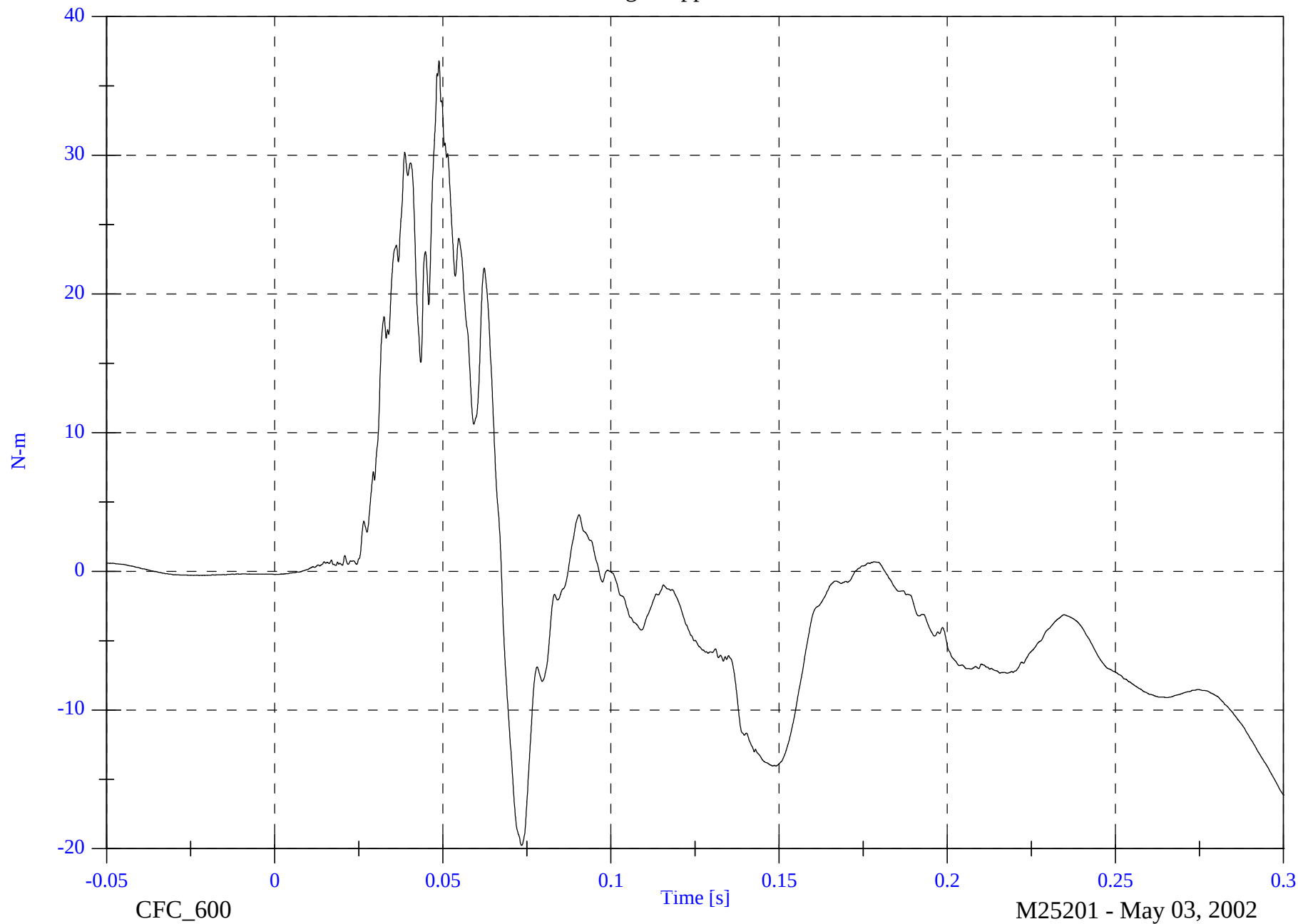


2002 NCAP Test 11 - 2002 Nissan Frontier

P2 Right Upper Tibia Mx

Max: 36.8 [N-m] at 0.049 [s]

Min: -19.8 [N-m] at 0.073 [s]



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8462-NCAP-11

CFC_600

Time [s]

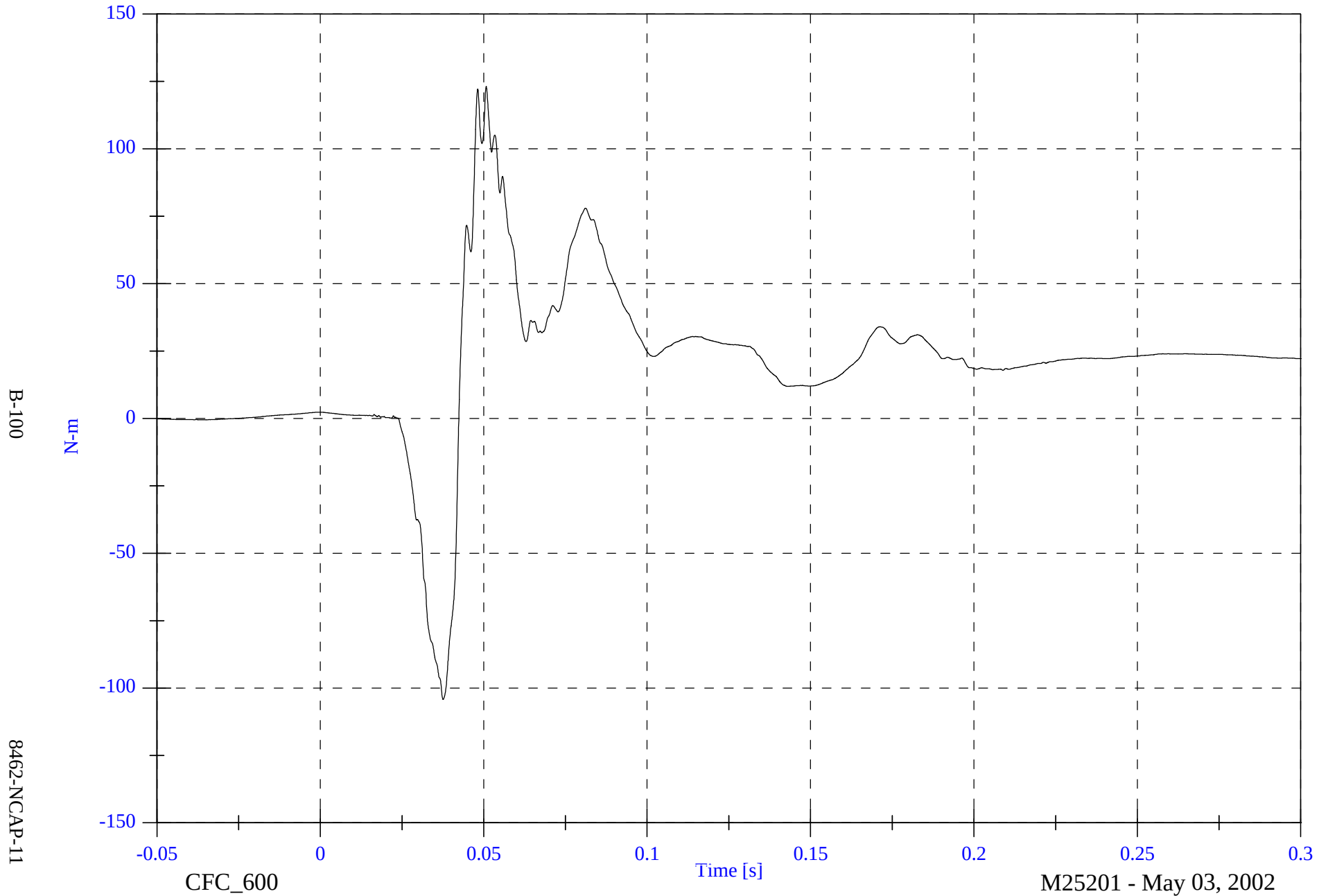
M25201 - May 03, 2002

2002 NCAP Test 11 - 2002 Nissan Frontier

P2 Right Upper Tibia My

Max: 123.2 [N-m] at 0.051 [s]

Min: -104.3 [N-m] at 0.038 [s]

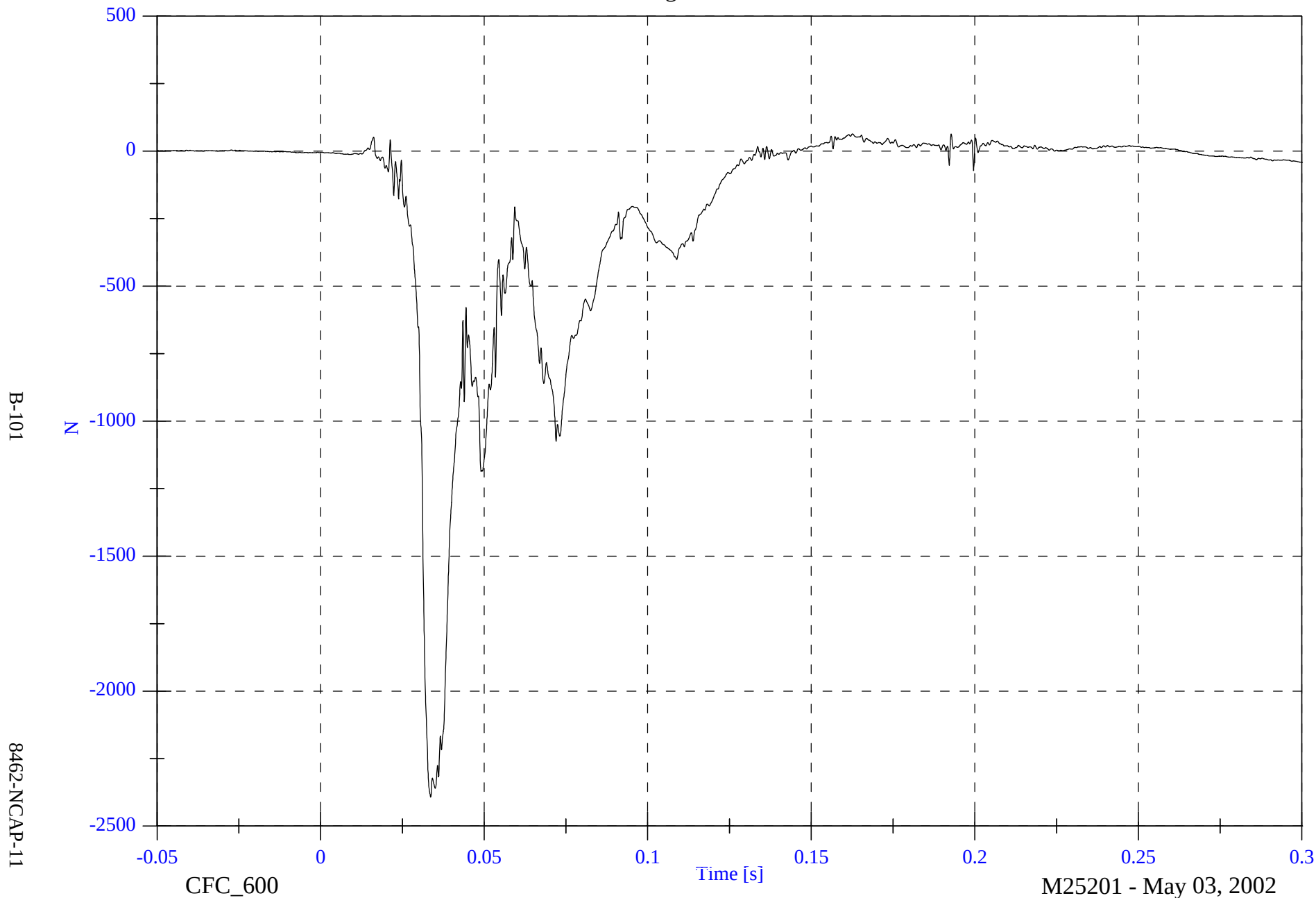


2002 NCAP Test 11 - 2002 Nissan Frontier

Max: 64.2 [N] at 0.193 [s]

Min: -2393.3 [N] at 0.034 [s]

P2 Right Lower Tibia Fz

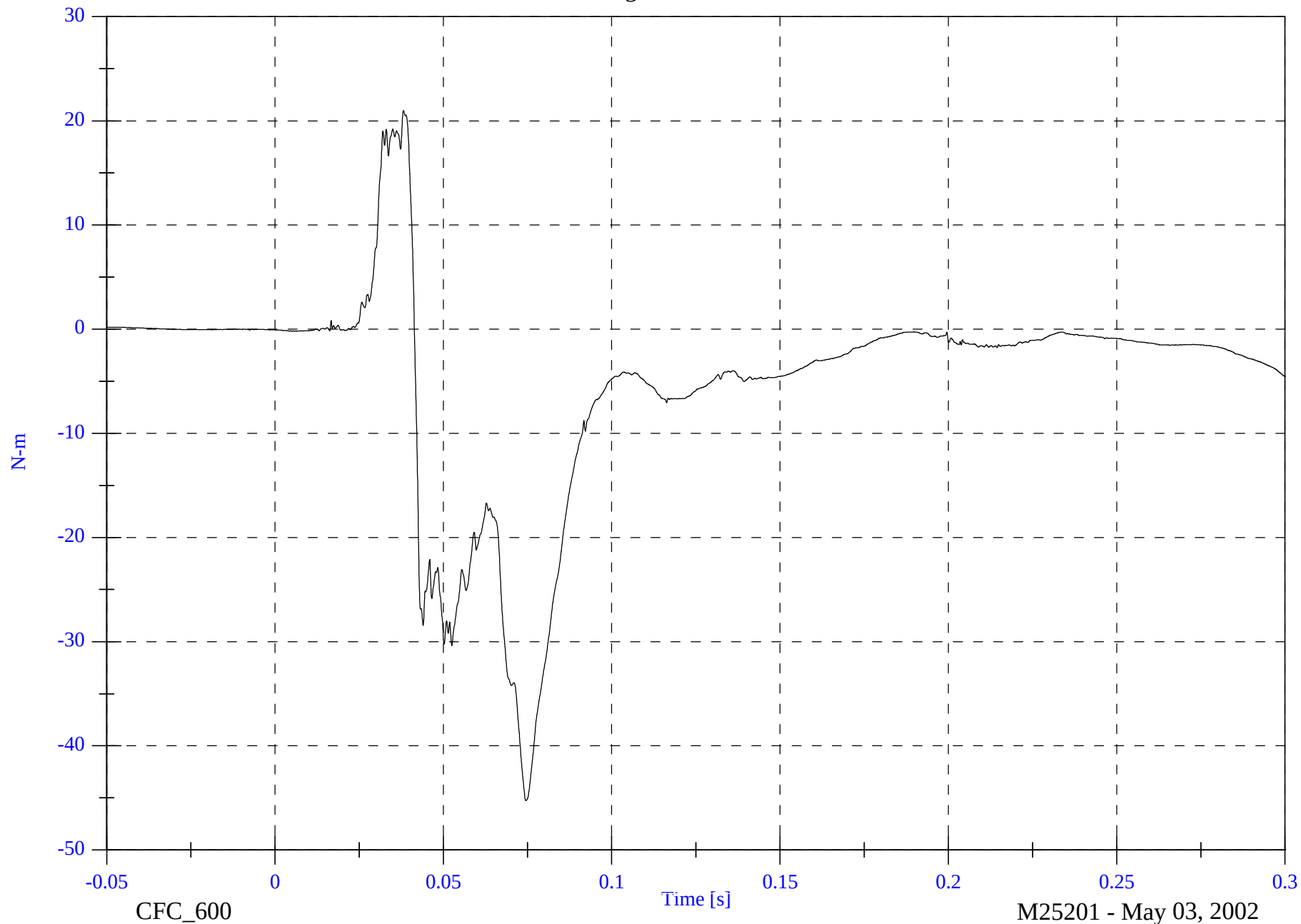


2002 NCAP Test 11 - 2002 Nissan Frontier

P2 Right Lower Tibia Mx

Max: 21.0 [N-m] at 0.038 [s]

Min: -45.3 [N-m] at 0.075 [s]

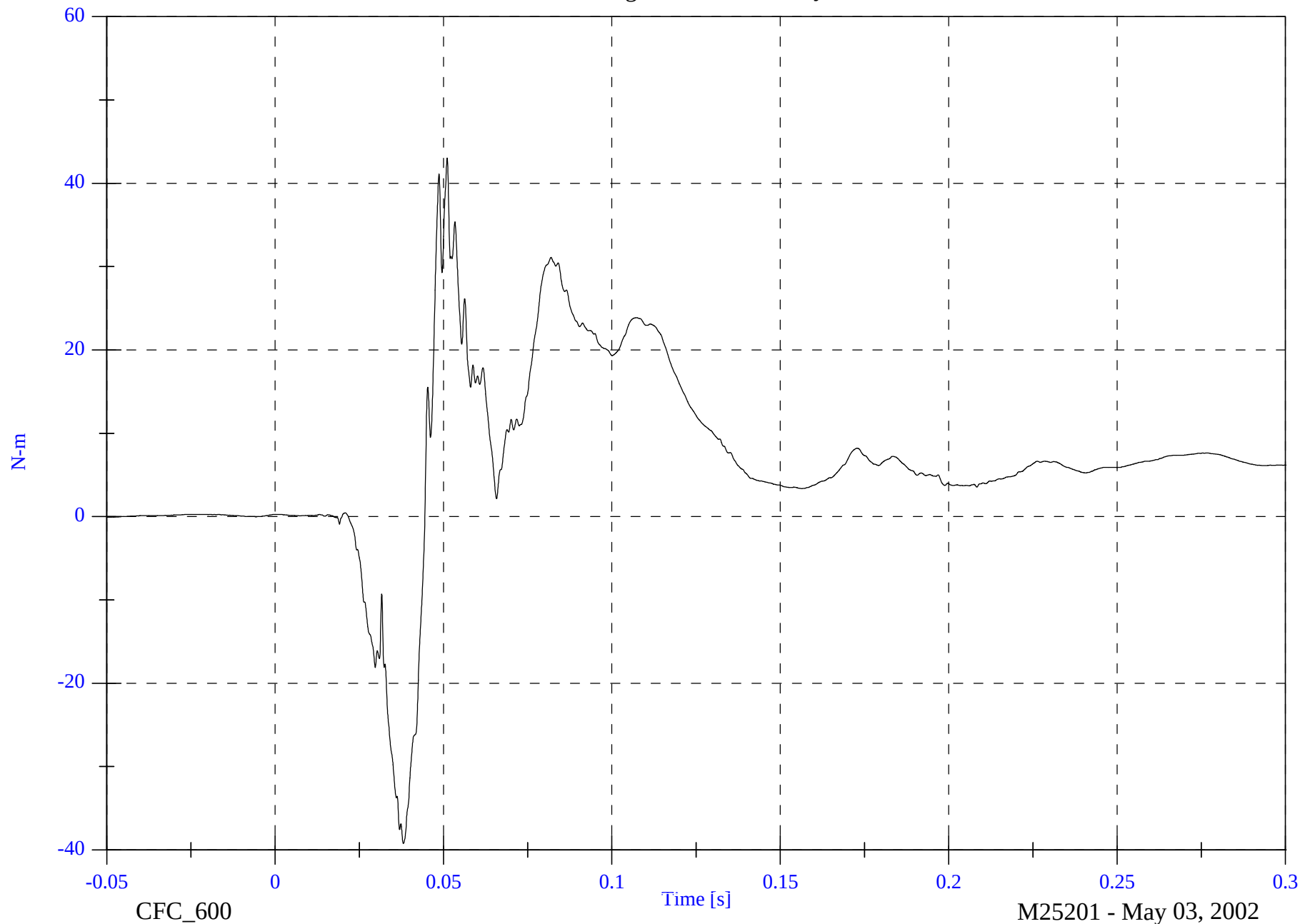


2002 NCAP Test 11 - 2002 Nissan Frontier

P2 Right Lower Tibia My

Max: 43.0 [N-m] at 0.051 [s]

Min: -39.2 [N-m] at 0.038 [s]



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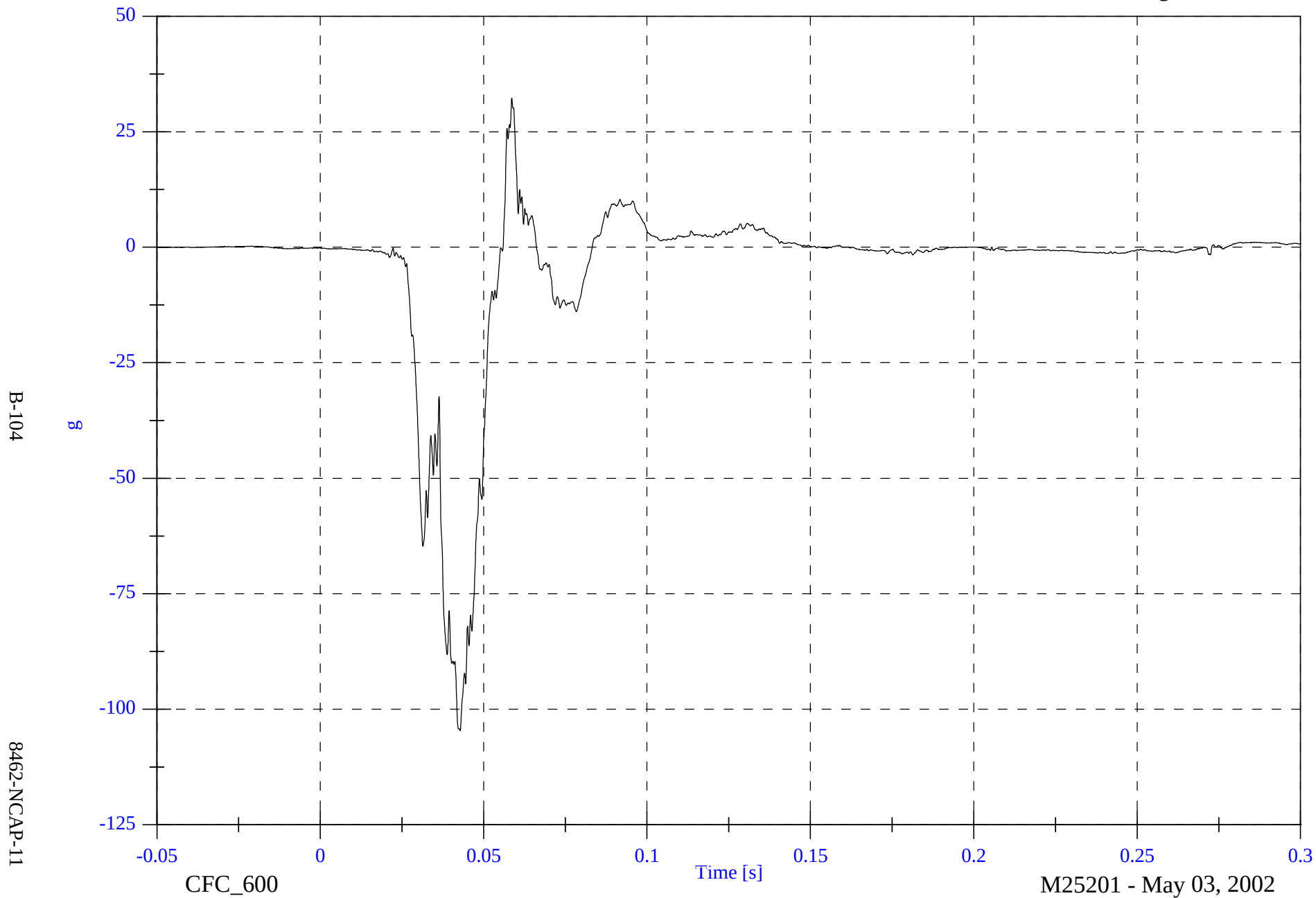
8462-NCAP-11

2002 NCAP Test 11 - 2002 Nissan Frontier

P2 Left Foot Aft x

Max: 32.3 [g] at 0.059 [s]

Min: -104.7 [g] at 0.043 [s]

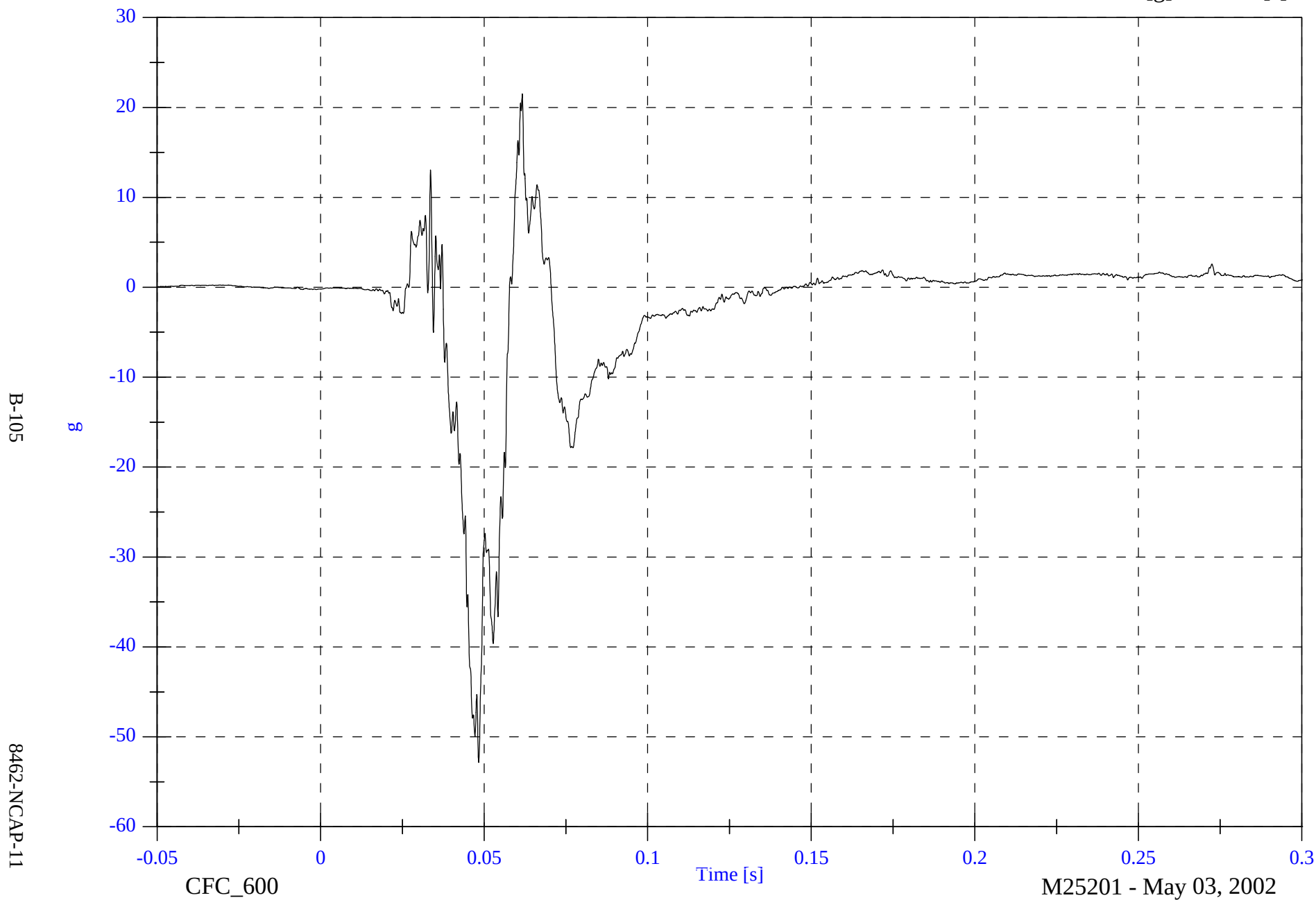


2002 NCAP Test 11 - 2002 Nissan Frontier

P2 Left Foot Aft z

Max: 21.5 [g] at 0.062 [s]

Min: -52.9 [g] at 0.048 [s]

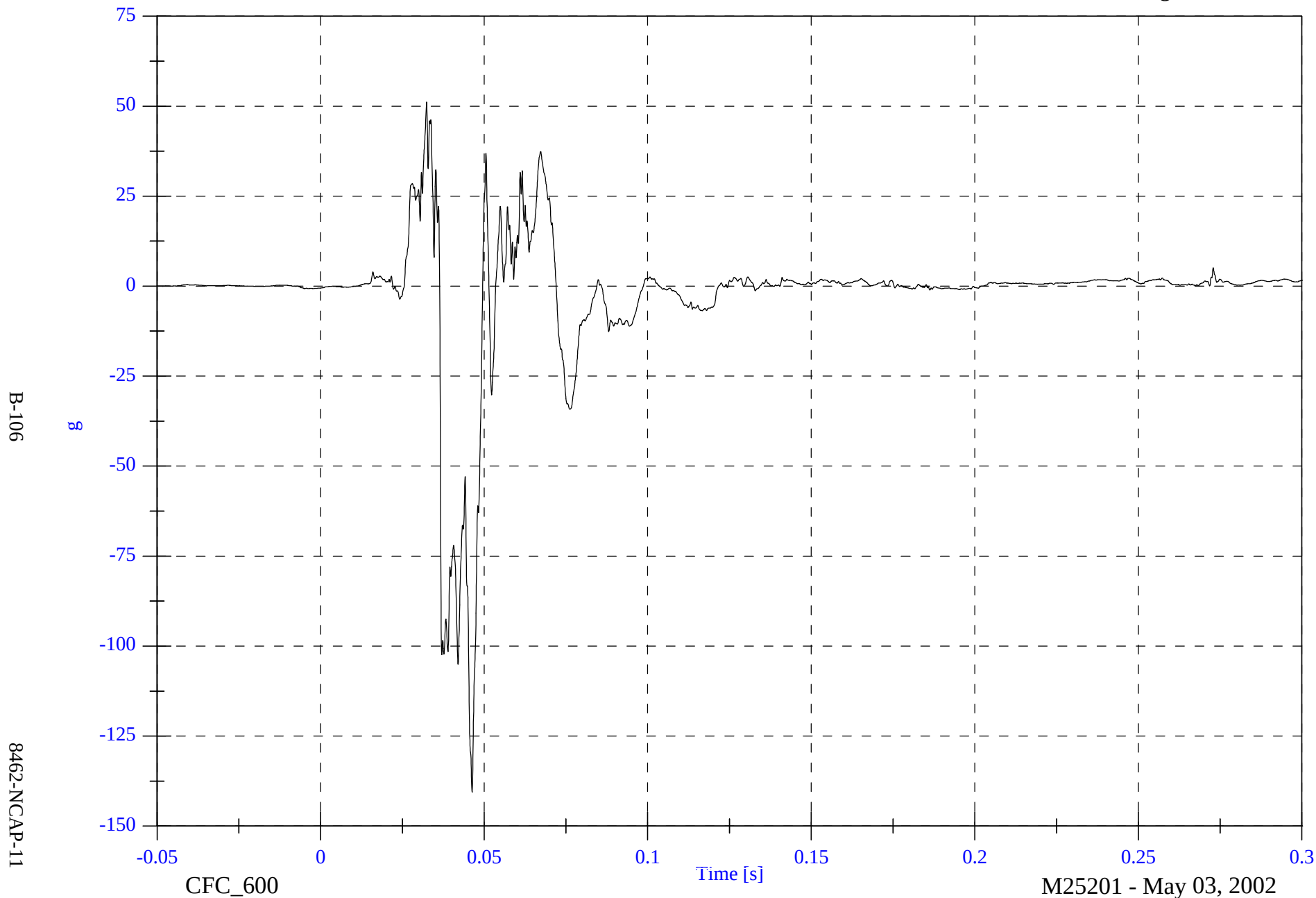


2002 NCAP Test 11 - 2002 Nissan Frontier

Max: 51.2 [g] at 0.032 [s]

Min: -140.6 [g] at 0.046 [s]

P2 Left Foot Fore z

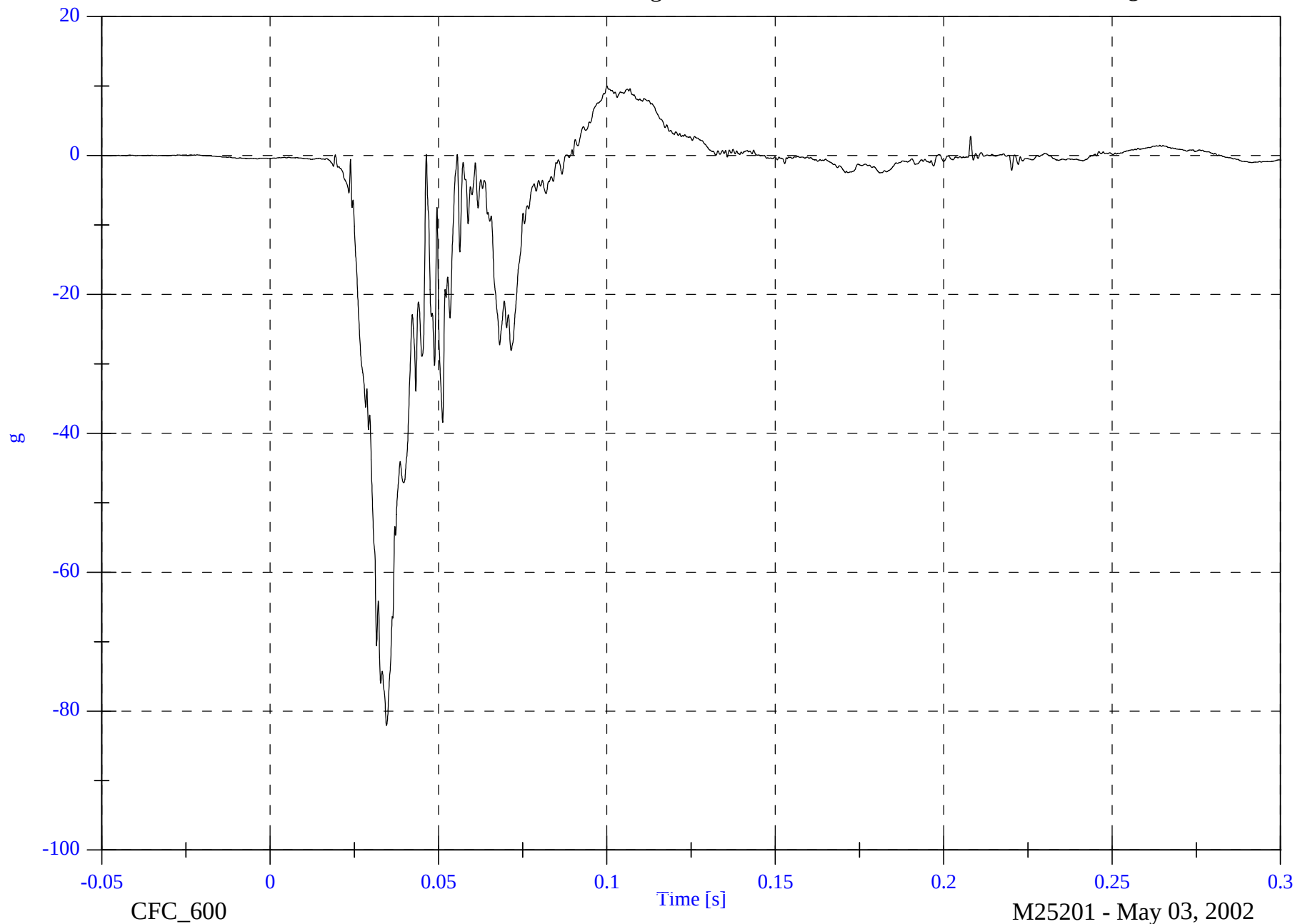


2002 NCAP Test 11 - 2002 Nissan Frontier

Max: 10.0 [g] at 0.100 [s]

Min: -82.1 [g] at 0.035 [s]

P2 Right Foot Aft x



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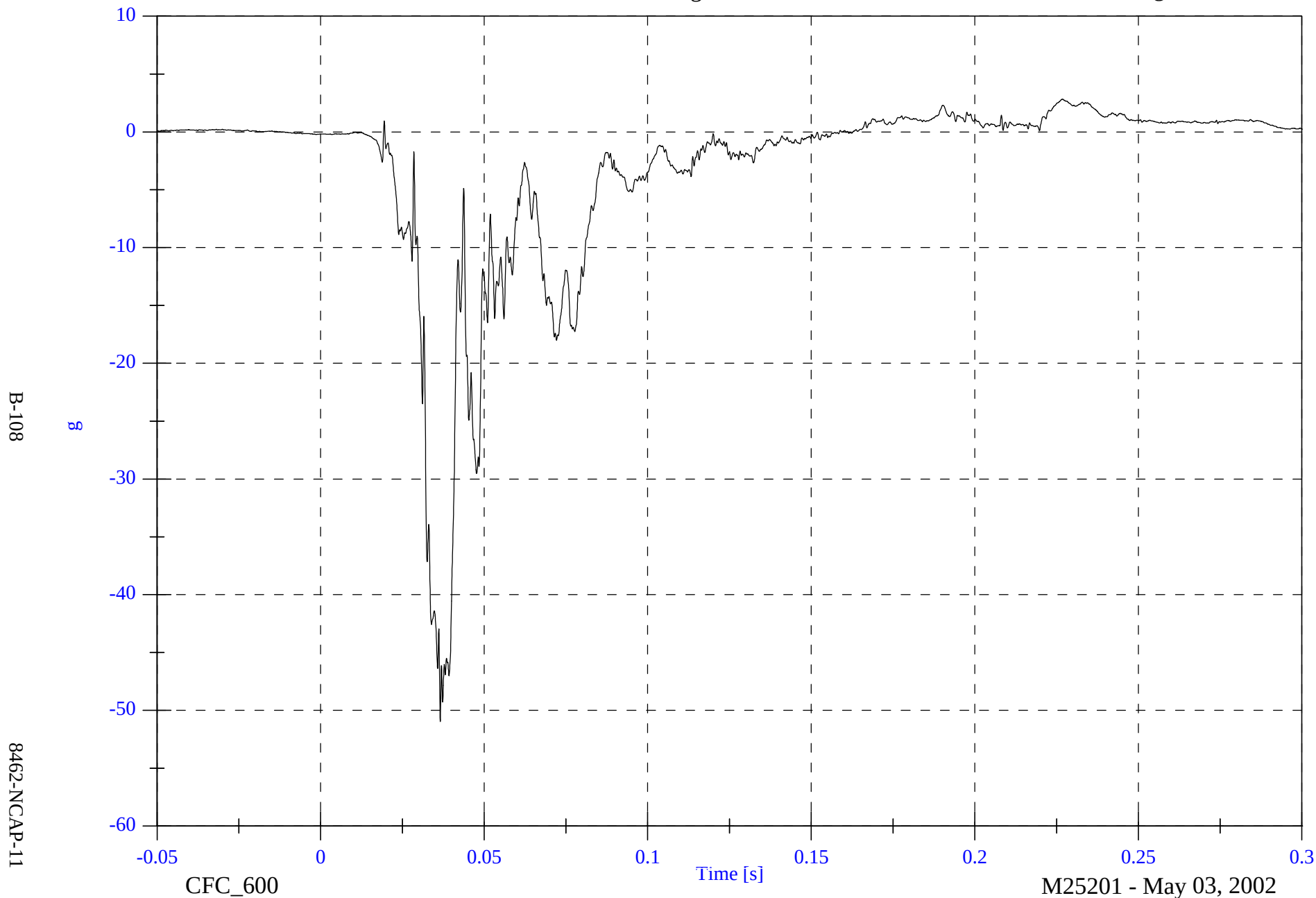
8462-NCAP-11

2002 NCAP Test 11 - 2002 Nissan Frontier

Max: 2.8 [g] at 0.227 [s]

Min: -51.0 [g] at 0.037 [s]

P2 Right Foot Aft z

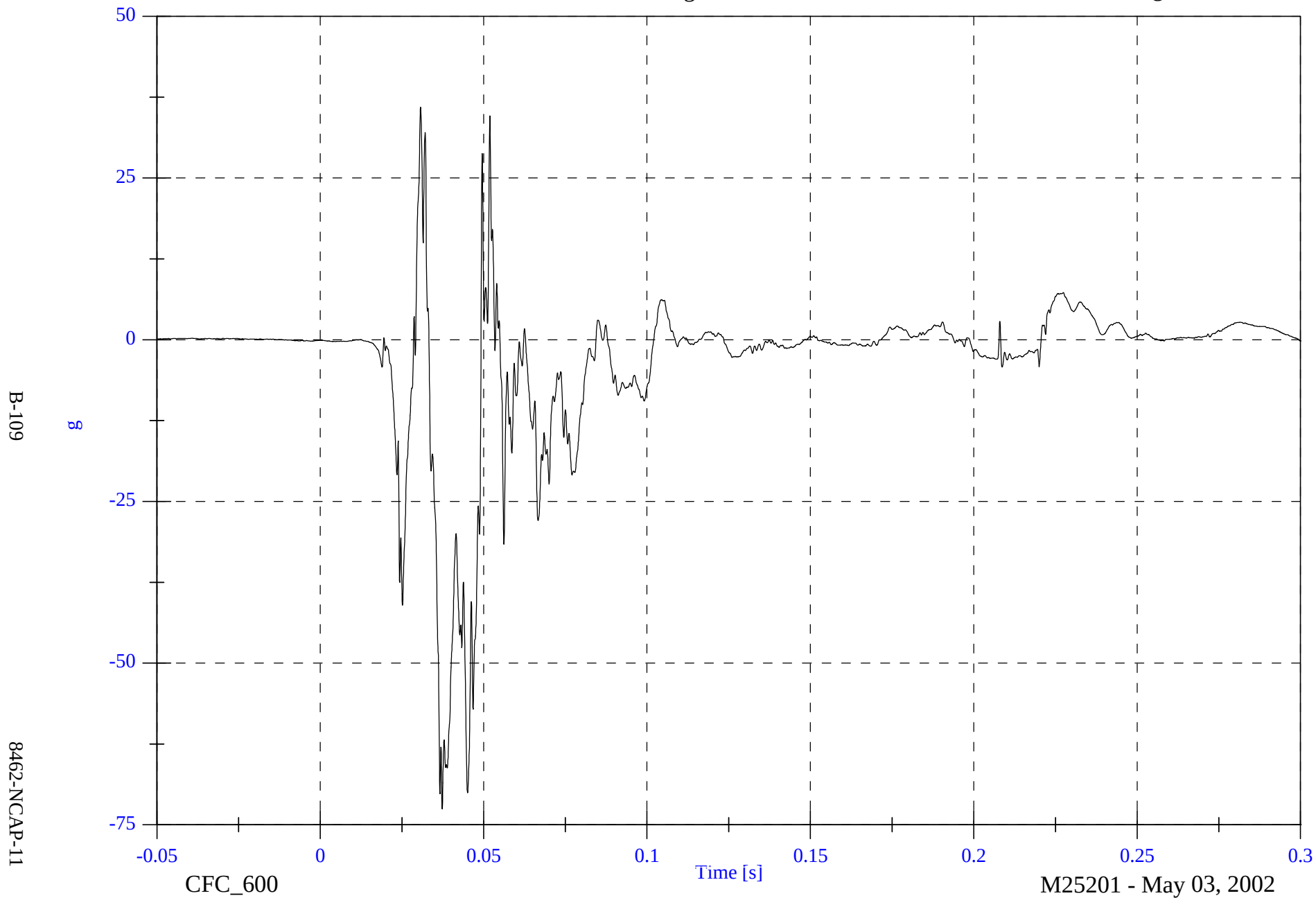


2002 NCAP Test 11 - 2002 Nissan Frontier

Max: 35.9 [g] at 0.031 [s]

Min: -72.6 [g] at 0.037 [s]

P2 Right Foot Fore z

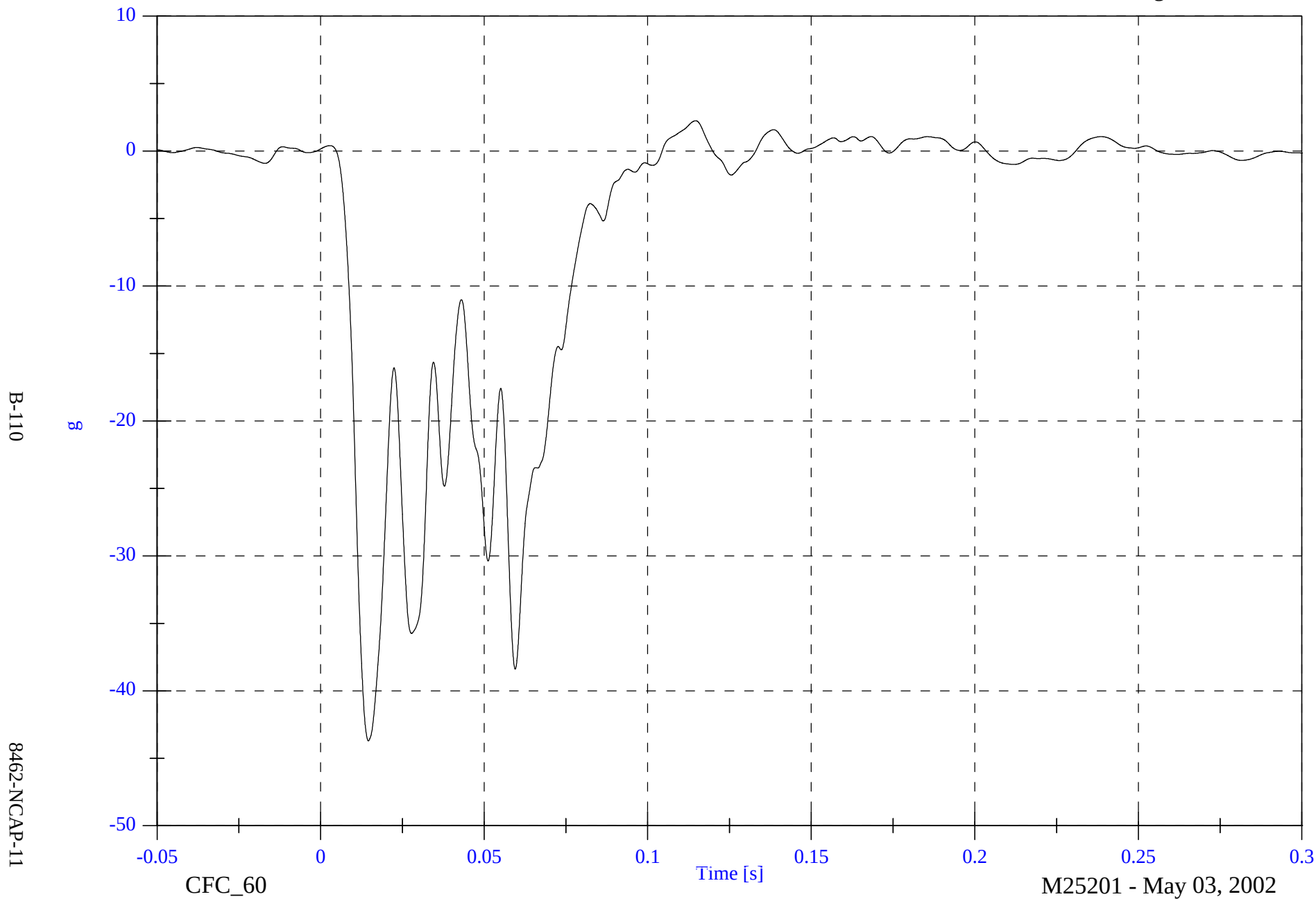


2002 NCAP Test 11 - 2002 Nissan Frontier

Left Rear #1x

Max: 2.2 [g] at 0.115 [s]

Min: -43.7 [g] at 0.015 [s]

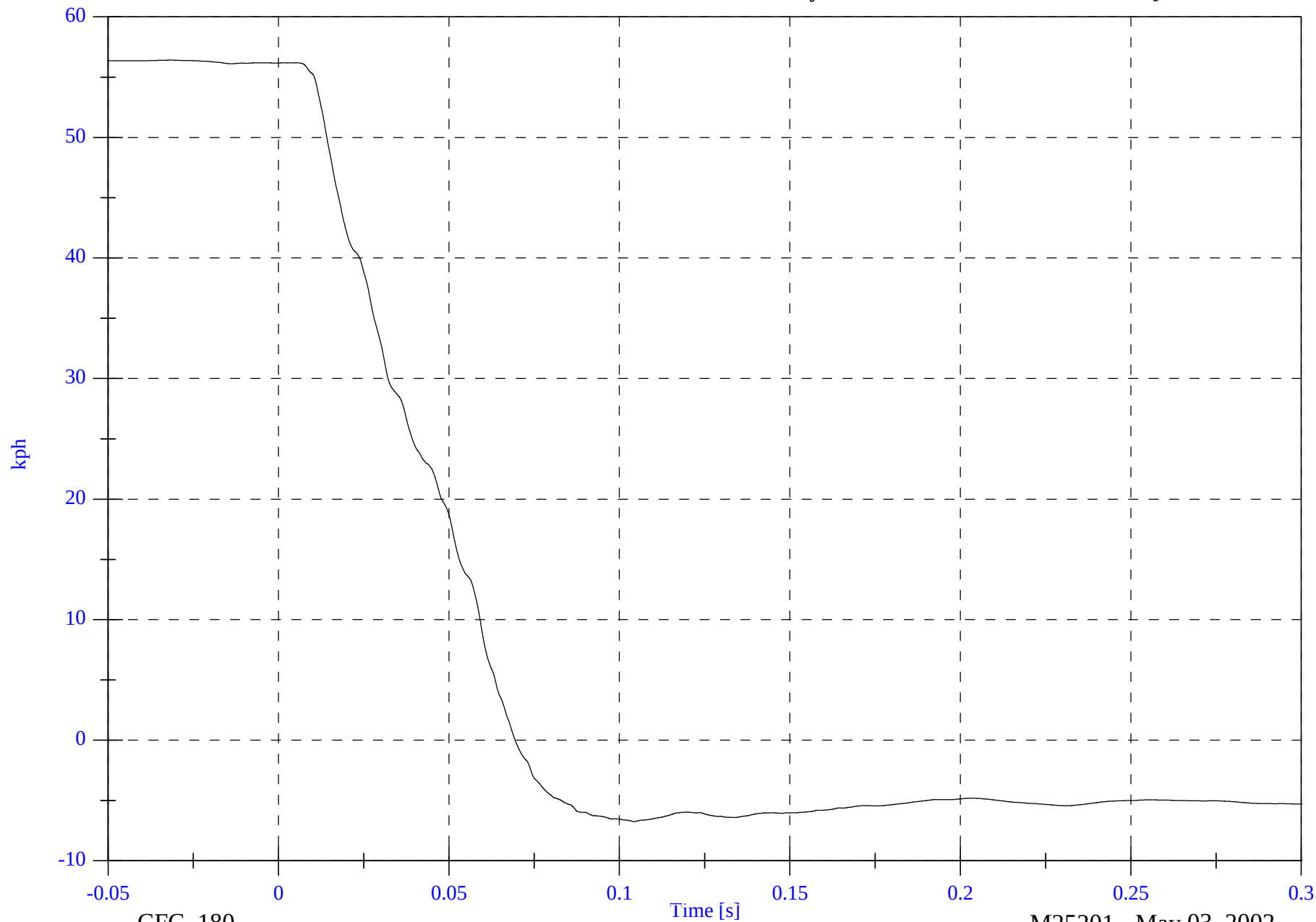


2002 NCAP Test 11 - 2002 Nissan Frontier

Max: 56.4 [kph] at -0.032 [s]

Left Rear #1x Velocity

Min: -6.7 [kph] at 0.104 [s]



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8462-NCAP-11

CFC_180

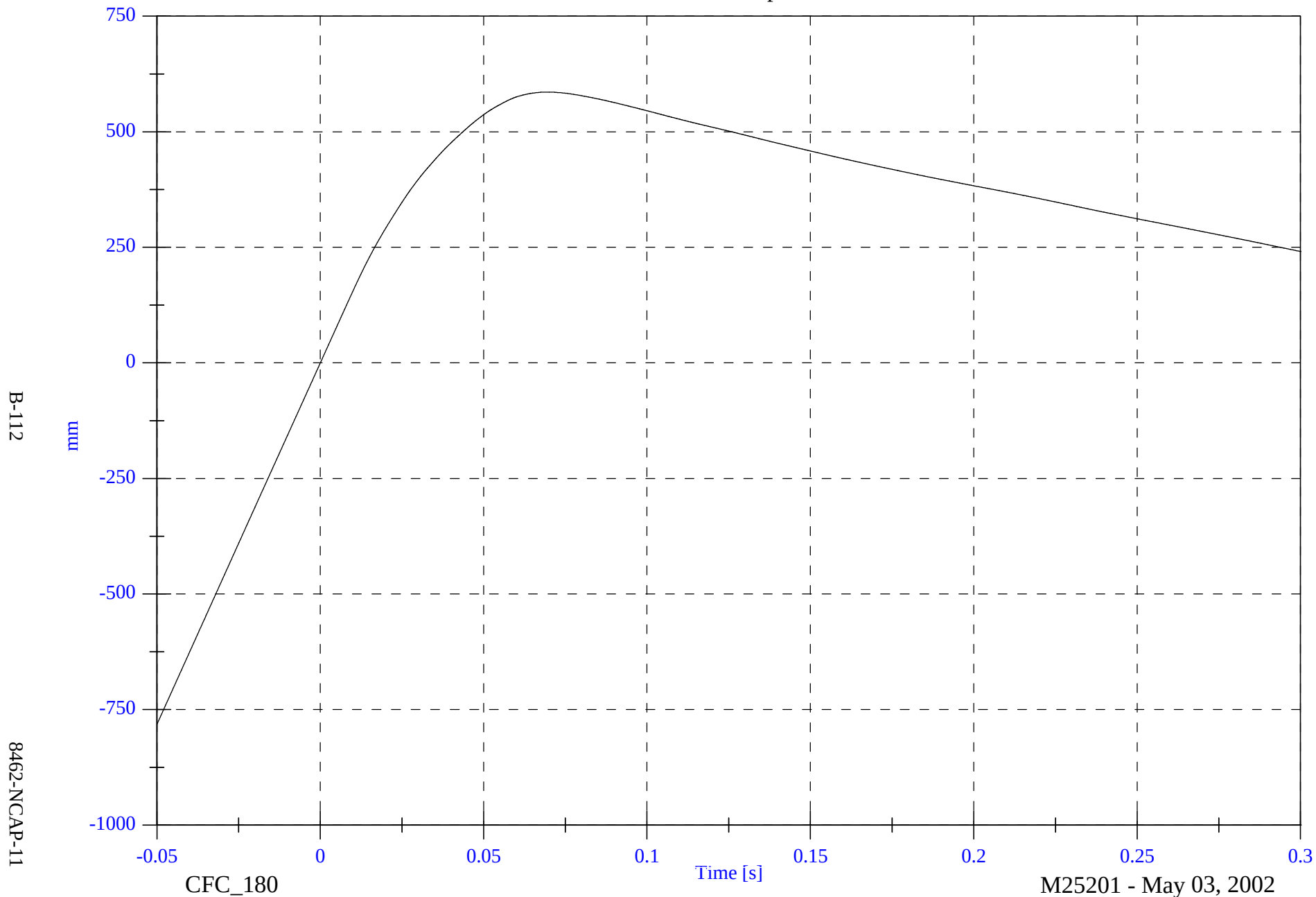
M25201 - May 03, 2002

2002 NCAP Test 11 - 2002 Nissan Frontier

Left Rear #1x Displacement

Max: 585.8 [mm] at 0.069 [s]

Min: -781.9 [mm] at -0.050 [s]



2002 NCAP Test 11 - 2002 Nissan Frontier

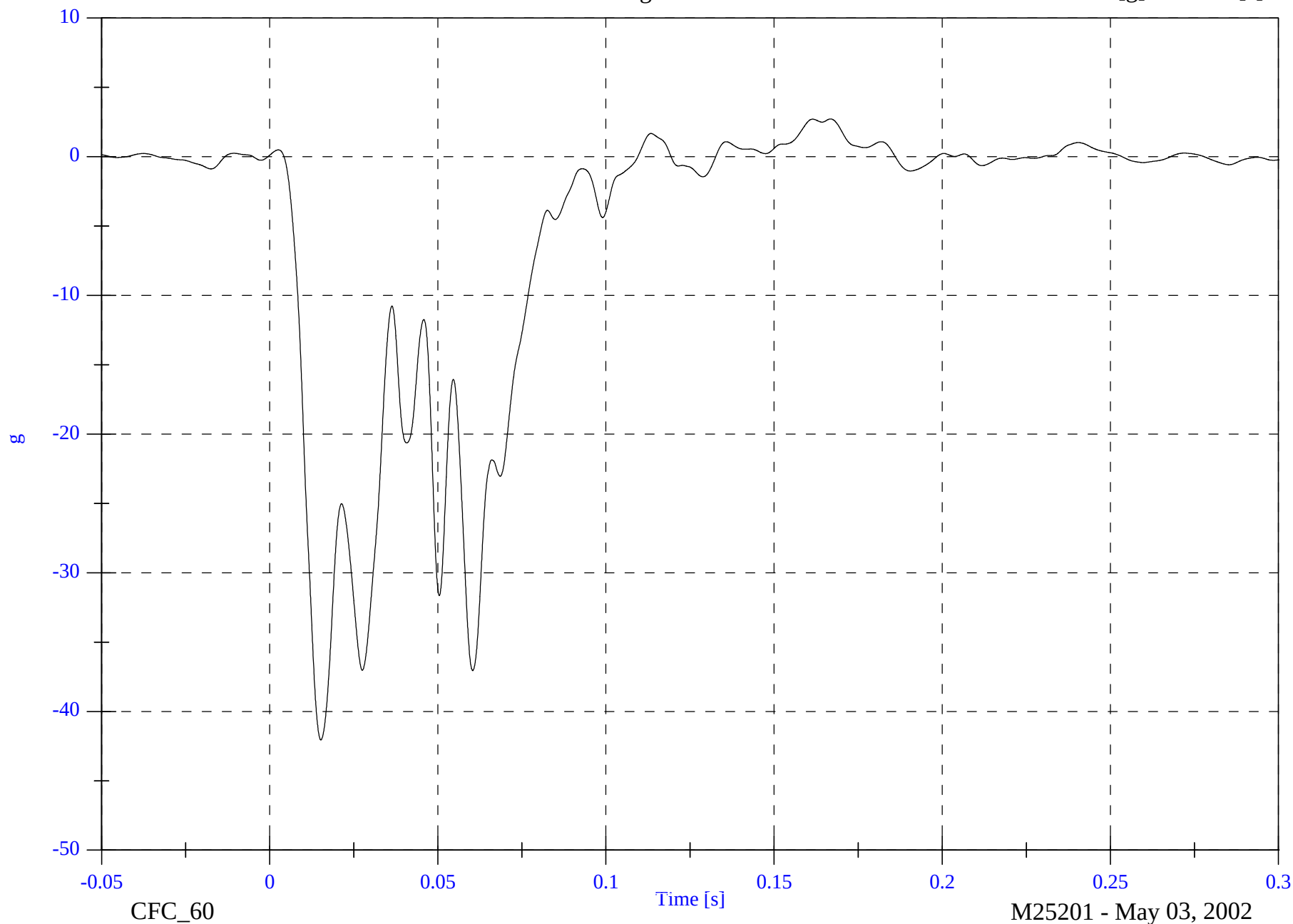
Right Rear #2x

Max: 2.7 [g] at 0.167 [s]

Min: -42.1 [g] at 0.015 [s]

B-113

8462-NCAP-11

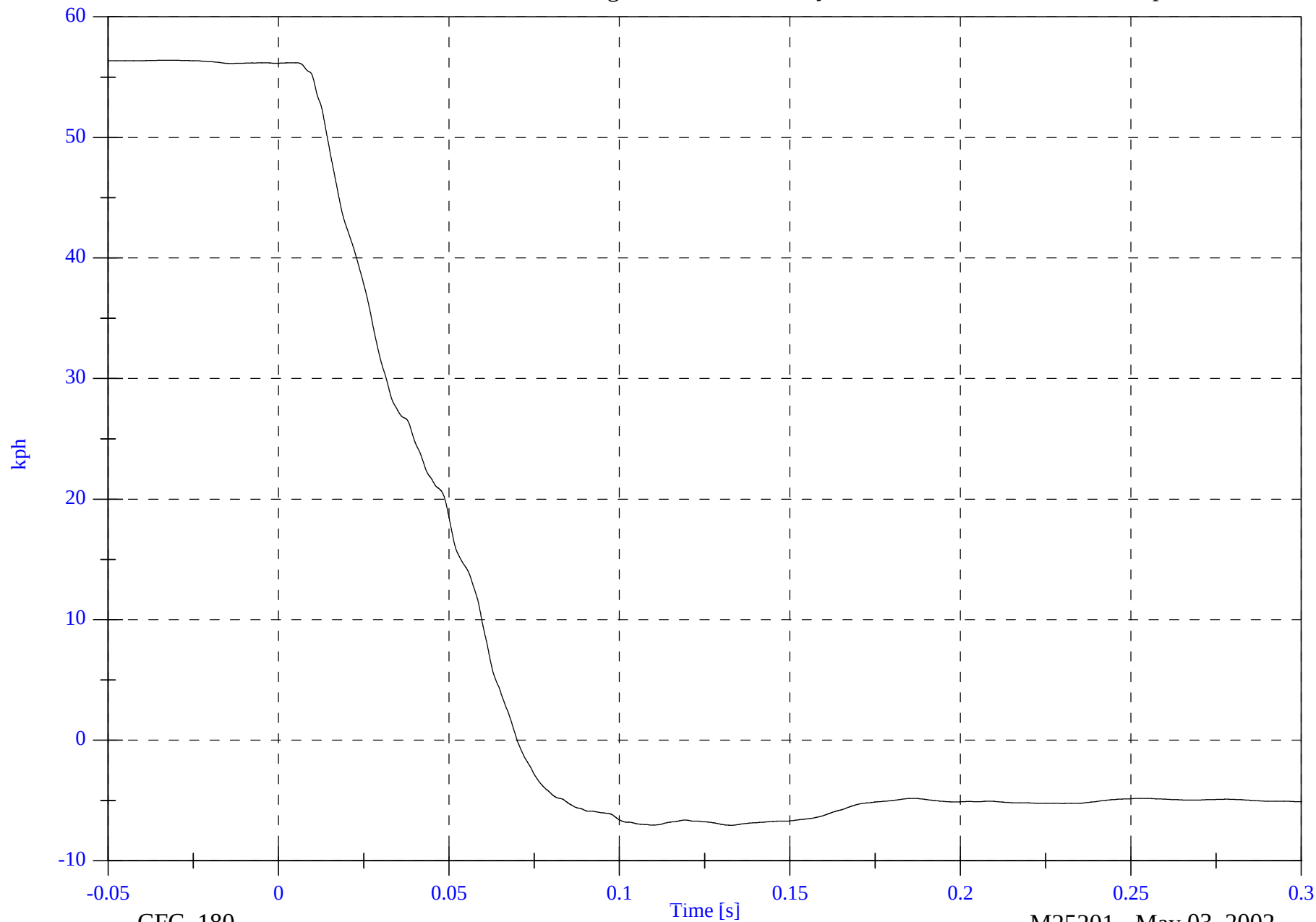


2002 NCAP Test 11 - 2002 Nissan Frontier

Max: 56.4 [kph] at -0.034 [s]

Right Rear #2x Velocity

Min: -7.1 [kph] at 0.133 [s]



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8462-NCAP-11

CFC_180

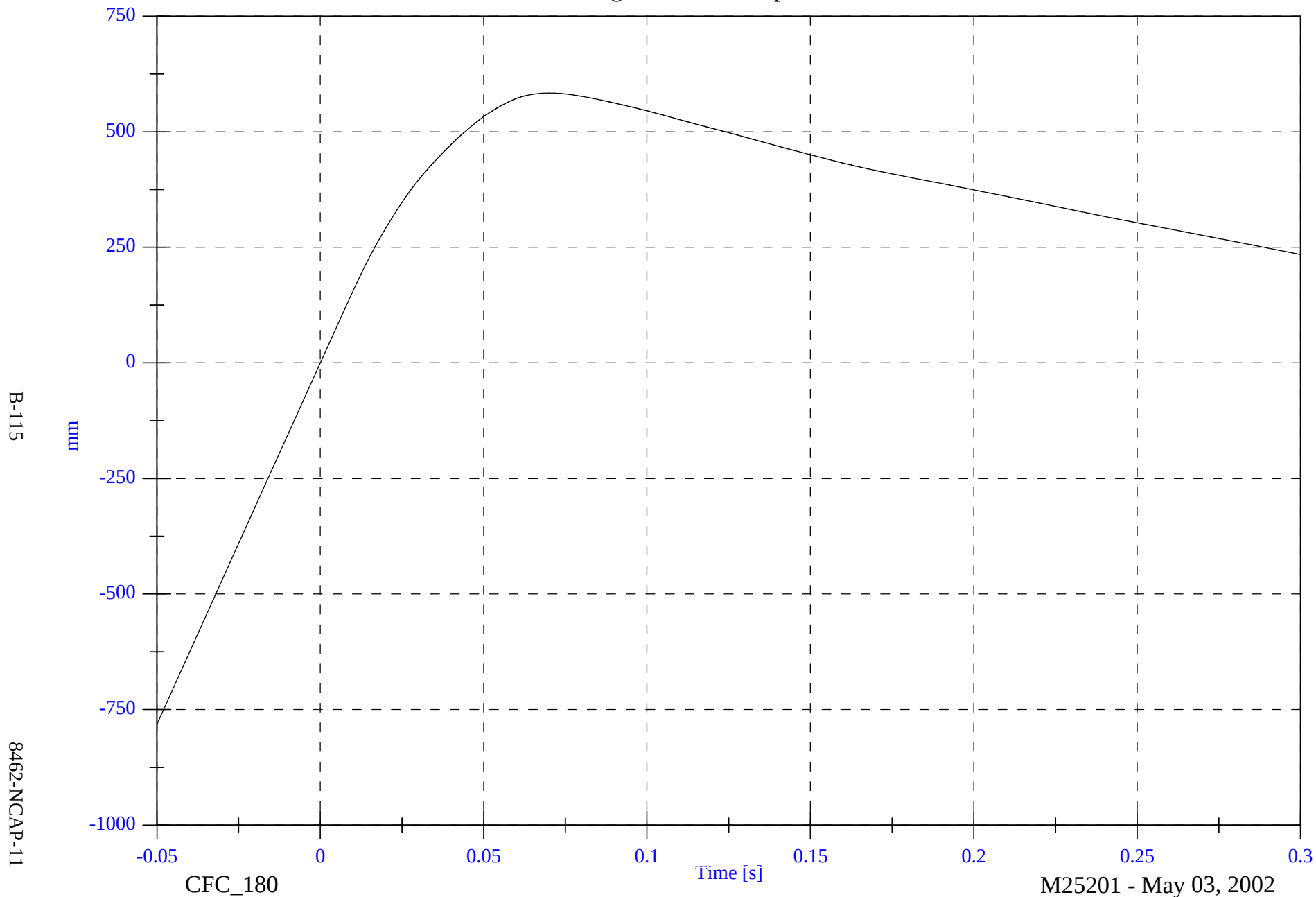
M25201 - May 03, 2002

2002 NCAP Test 11 - 2002 Nissan Frontier

Right Rear #2x Displacement

Max: 583.9 [mm] at 0.070 [s]

Min: -781.9 [mm] at -0.050 [s]

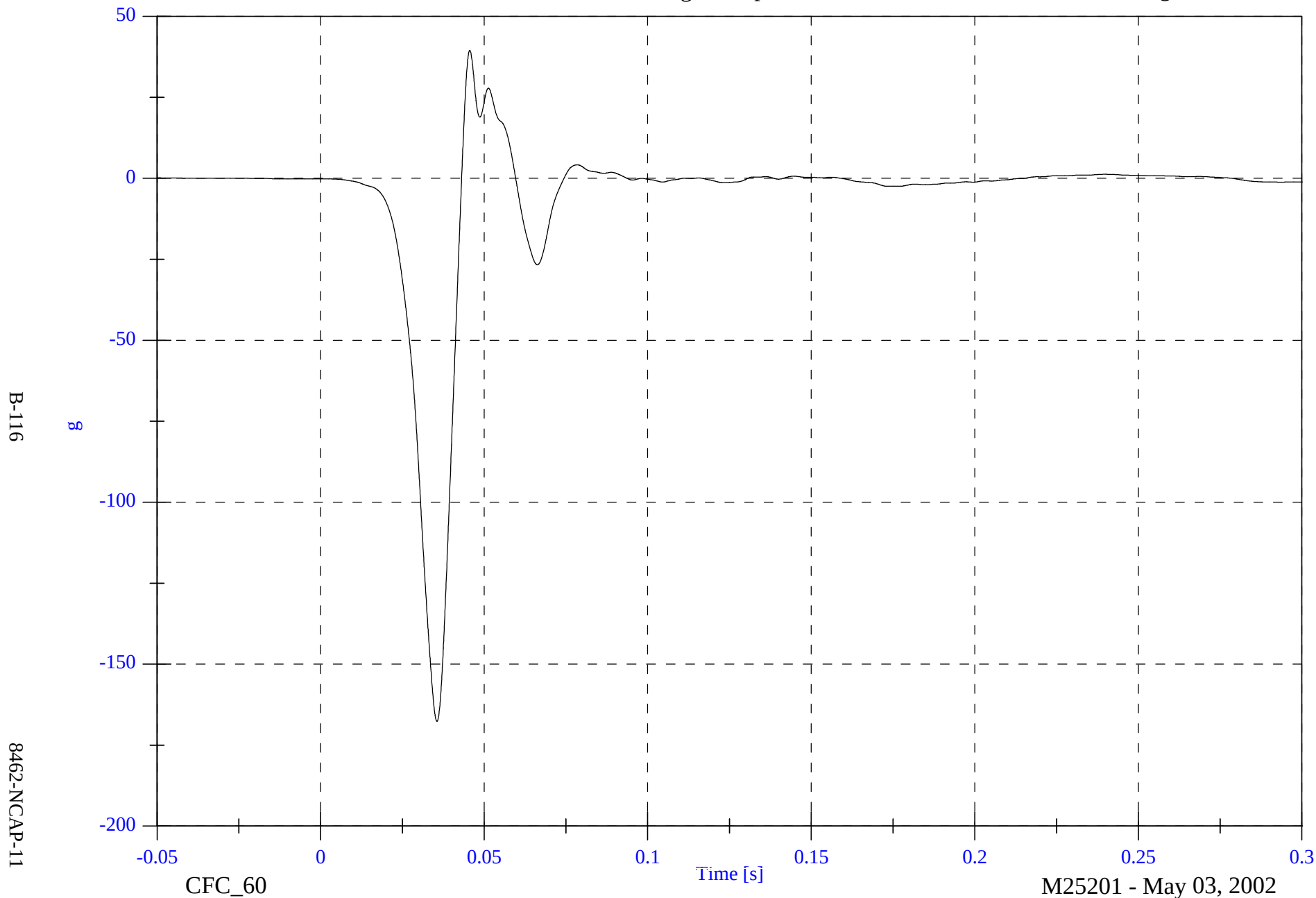


2002 NCAP Test 11 - 2002 Nissan Frontier

Engine Top #3x

Max: 39.5 [g] at 0.046 [s]

Min: -167.7 [g] at 0.036 [s]

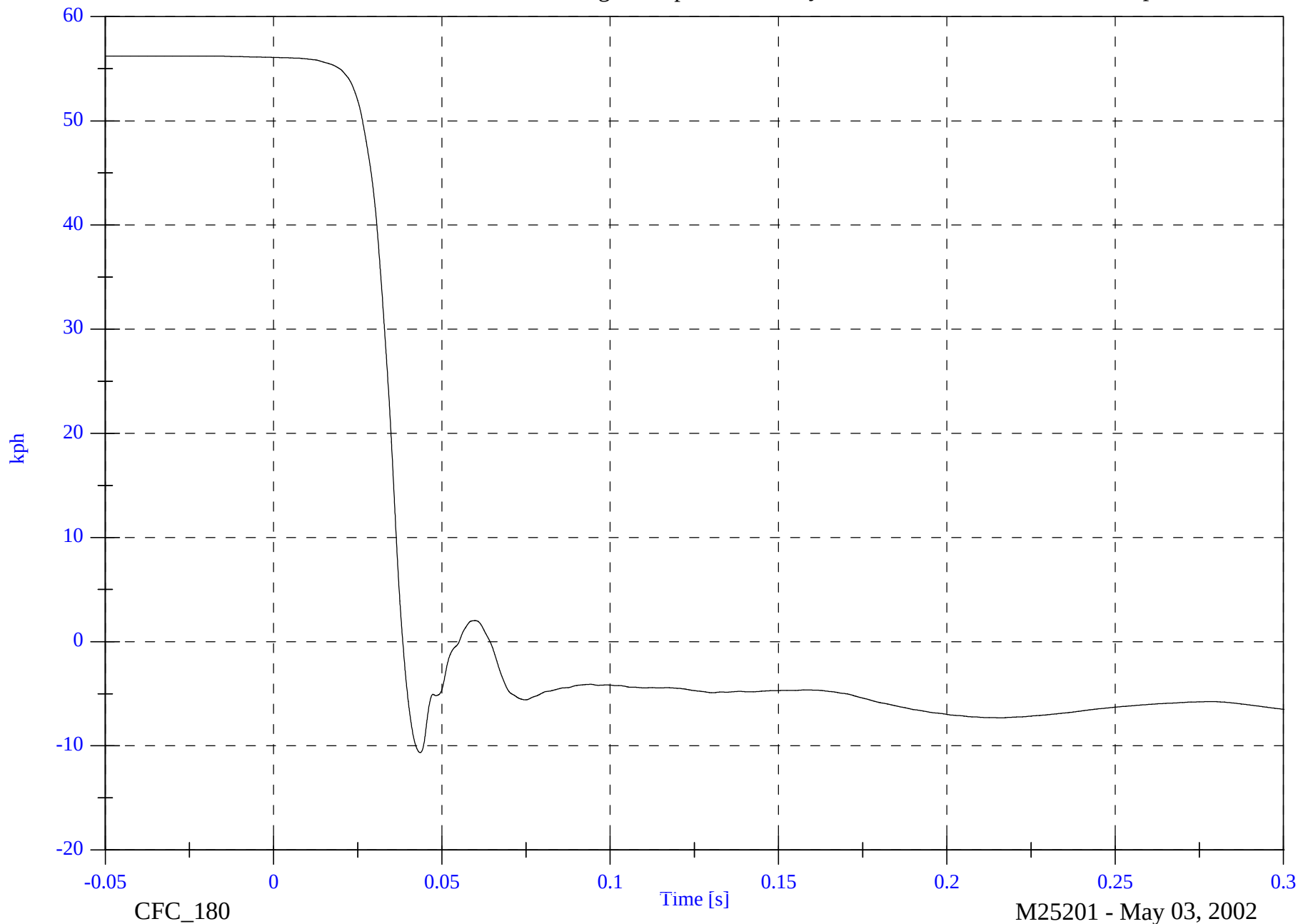


2002 NCAP Test 11 - 2002 Nissan Frontier

Engine Top #3x Velocity

Max: 56.2 [kph] at -0.031 [s]

Min: -10.6 [kph] at 0.044 [s]



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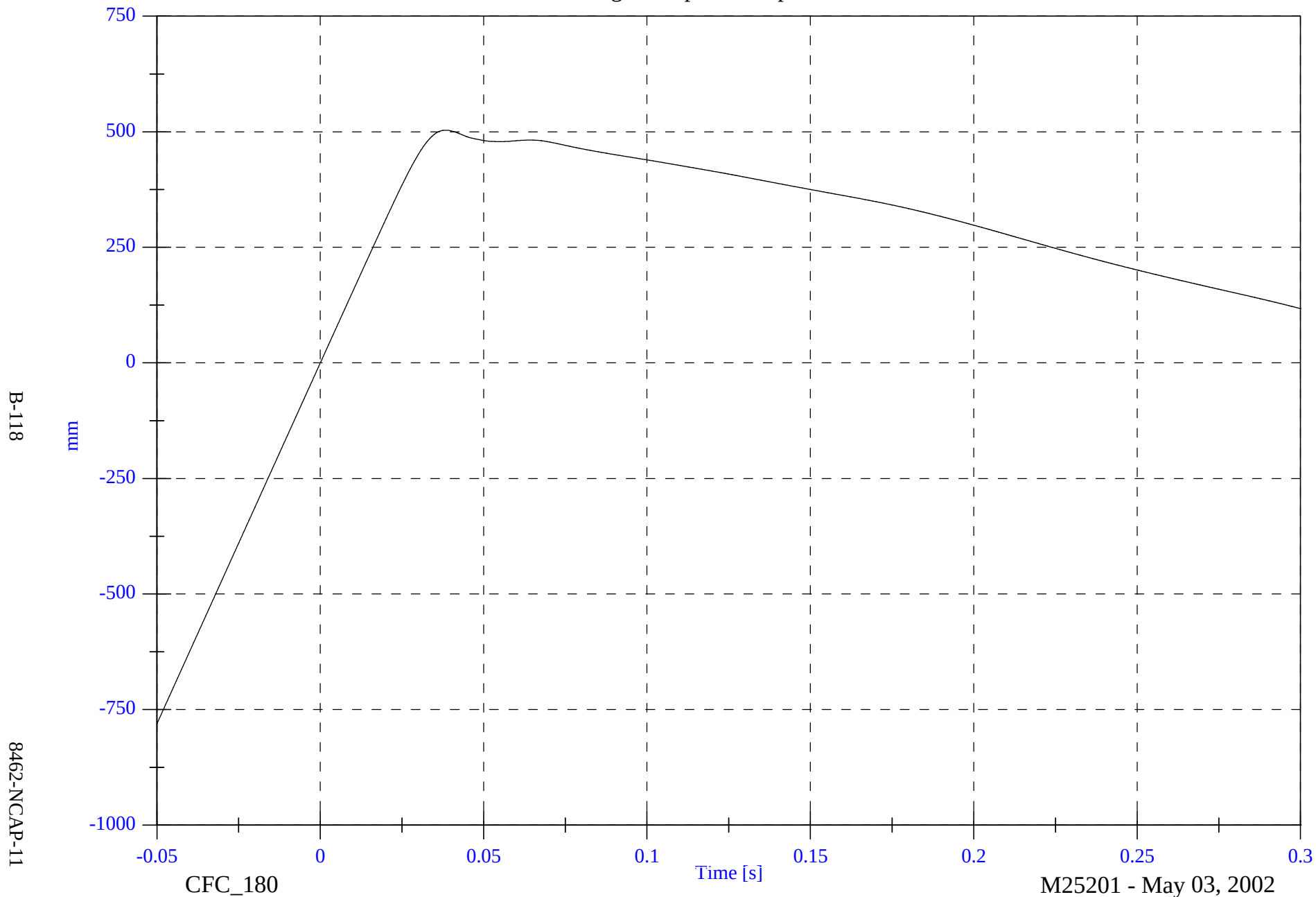
8462-NCAP-11

2002 NCAP Test 11 - 2002 Nissan Frontier

Engine Top #3x Displacement

Max: 503.4 [mm] at 0.038 [s]

Min: -780.5 [mm] at -0.050 [s]



2002 NCAP Test 11 - 2002 Nissan Frontier

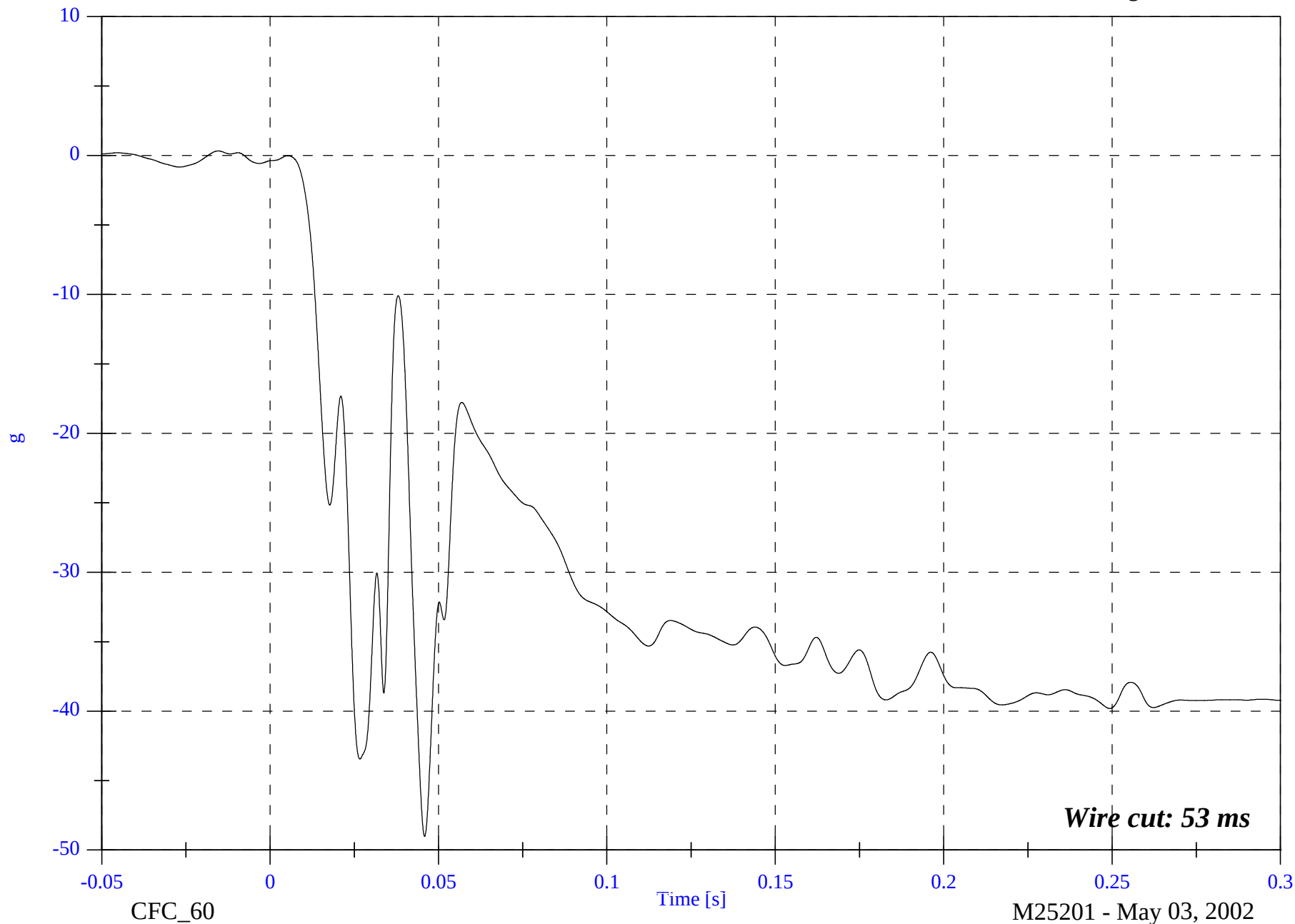
Instrument Panel #6x

Max: 0.3 [g] at -0.015 [s]

Min: -49.0 [g] at 0.046 [s]

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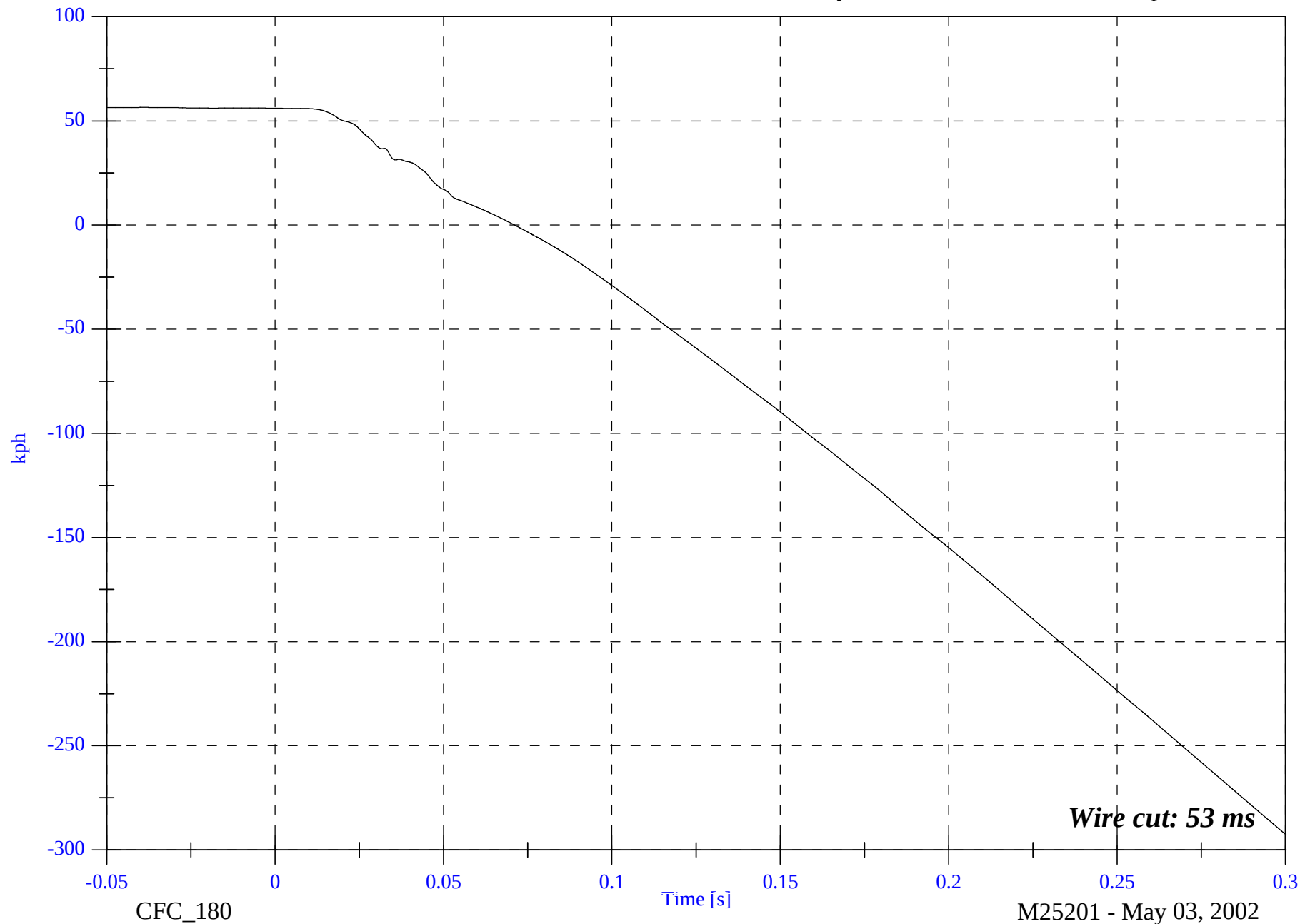


2002 NCAP Test 11 - 2002 Nissan Frontier

Instrument Panel #6x Velocity

Max: 56.5 [kph] at -0.039 [s]

Min: -292.5 [kph] at 0.300 [s]



Wire cut: 53 ms

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CFC_180

Time [s]

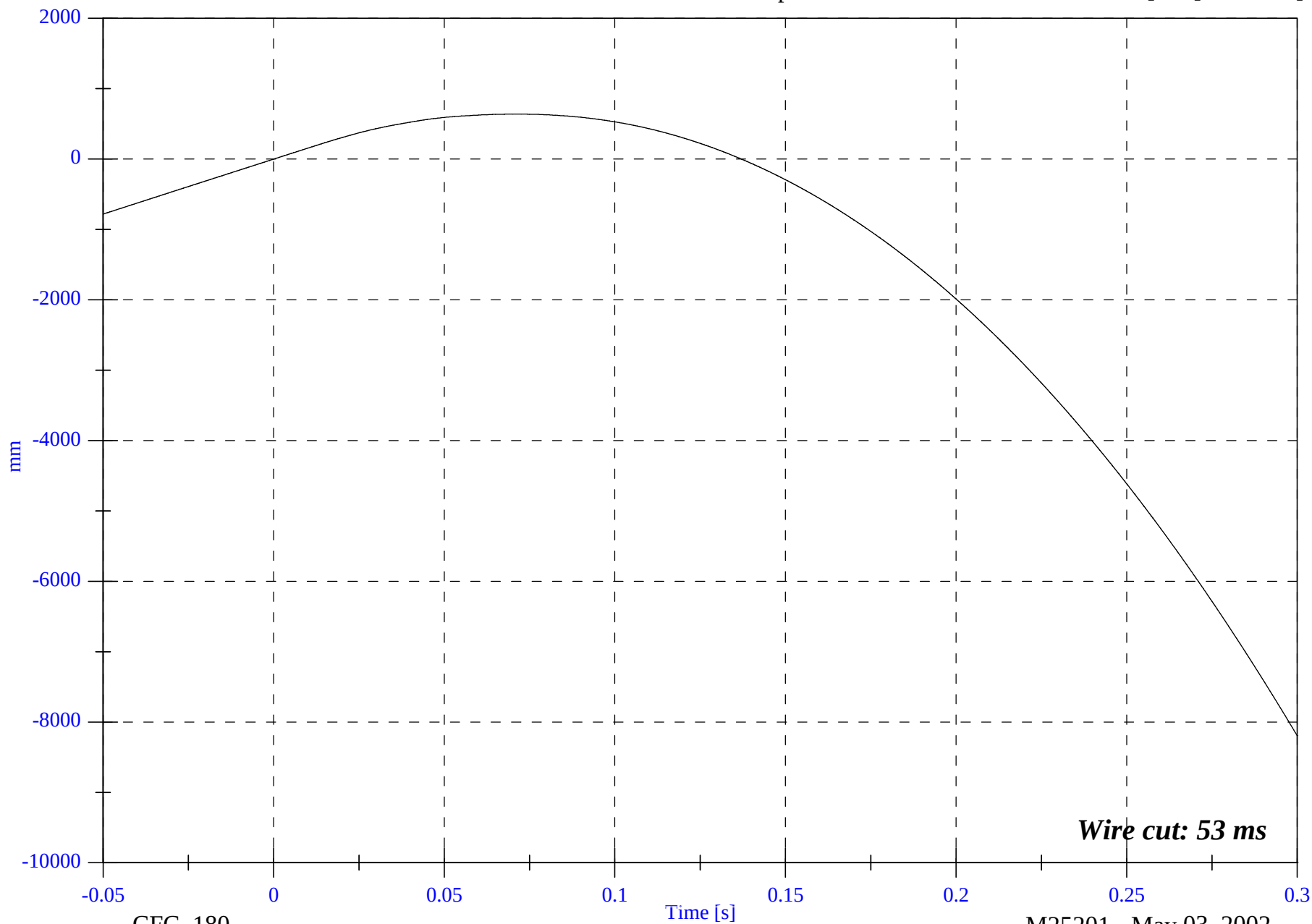
M25201 - May 03, 2002

2002 NCAP Test 11 - 2002 Nissan Frontier

Instrument Panel #6x Displacement

Max: 639.1 [mm] at 0.071 [s]

Min: -8193.6 [mm] at 0.300 [s]



Wire cut: 53 ms

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CFC_180

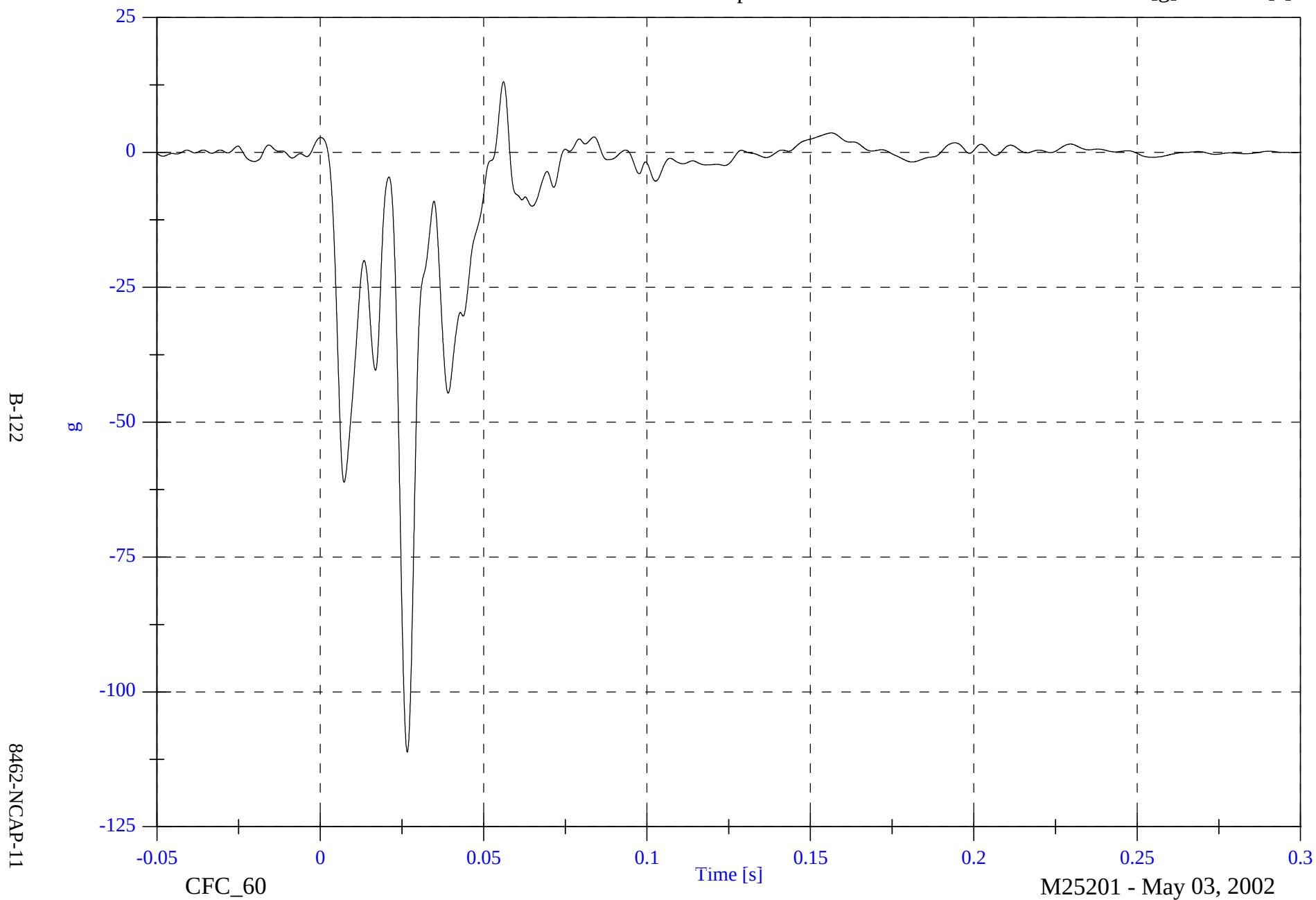
M25201 - May 03, 2002

2002 NCAP Test 11 - 2002 Nissan Frontier

Left Caliper #7x

Max: 13.1 [g] at 0.056 [s]

Min: -111.2 [g] at 0.027 [s]

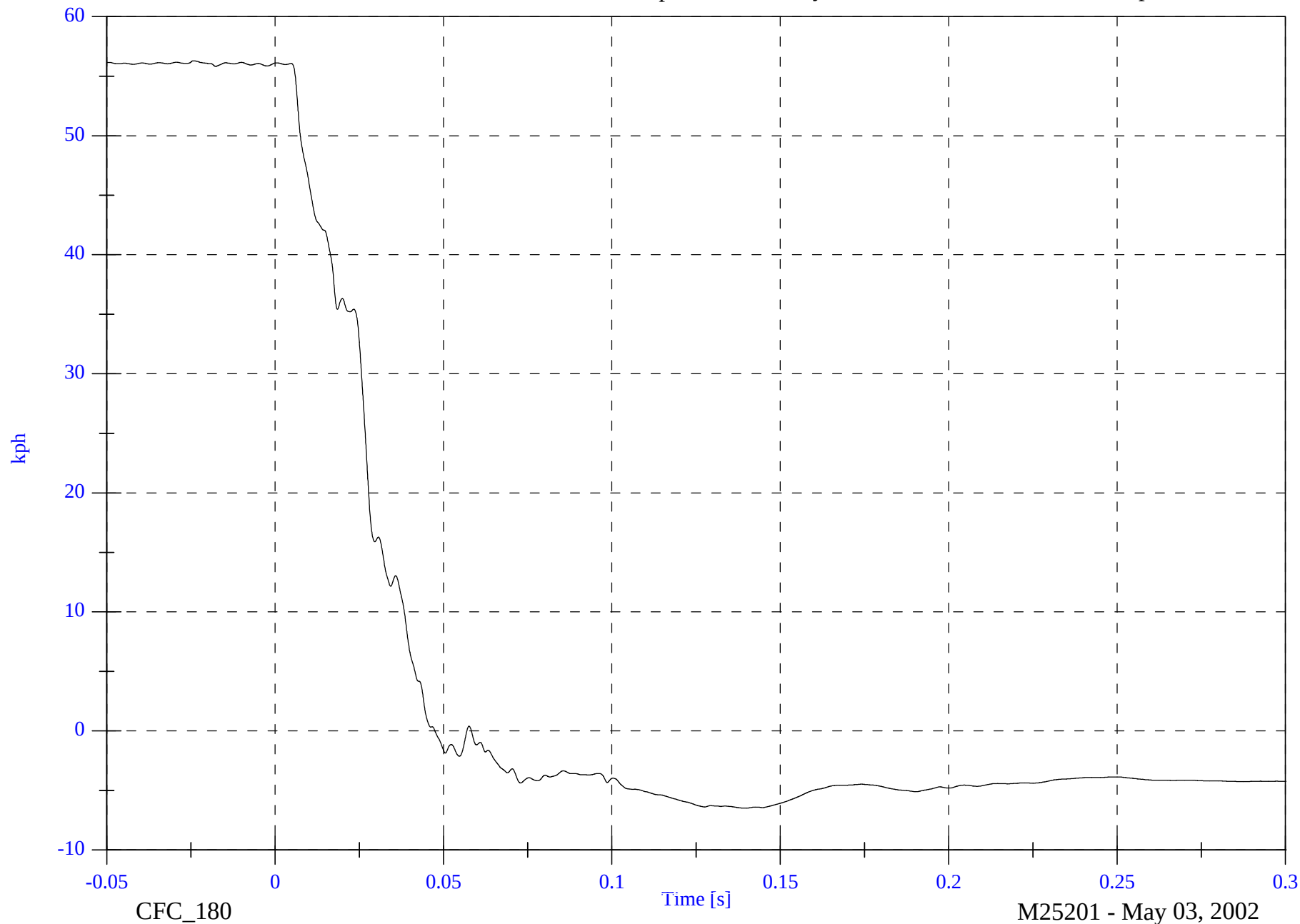


2002 NCAP Test 11 - 2002 Nissan Frontier

Max: 56.3 [kph] at -0.024 [s]

Left Caliper #7x Velocity

Min: -6.5 [kph] at 0.140 [s]



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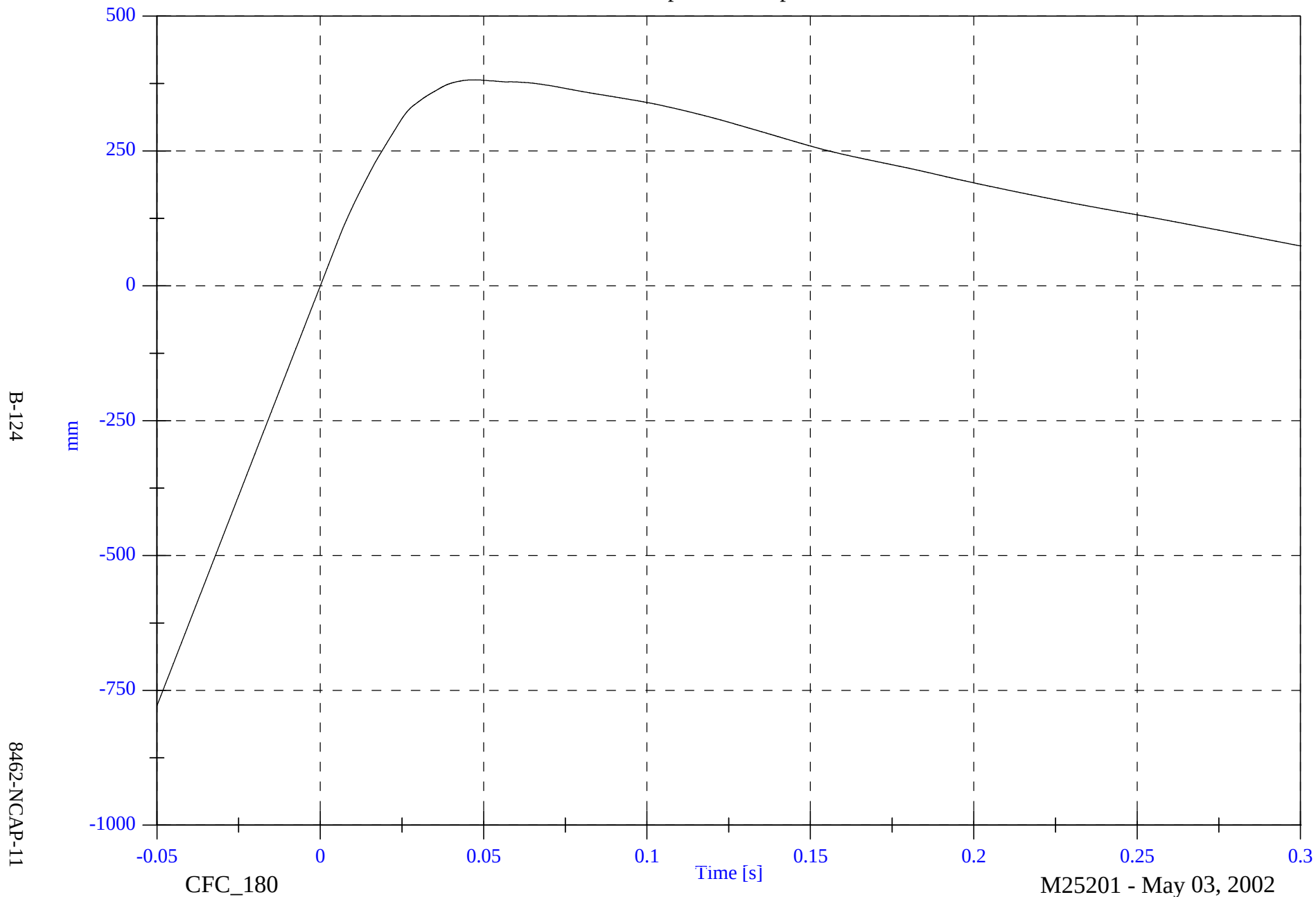
8462-NCAP-11

2002 NCAP Test 11 - 2002 Nissan Frontier

Left Caliper #7x Displacement

Max: 381.7 [mm] at 0.047 [s]

Min: -778.7 [mm] at -0.050 [s]

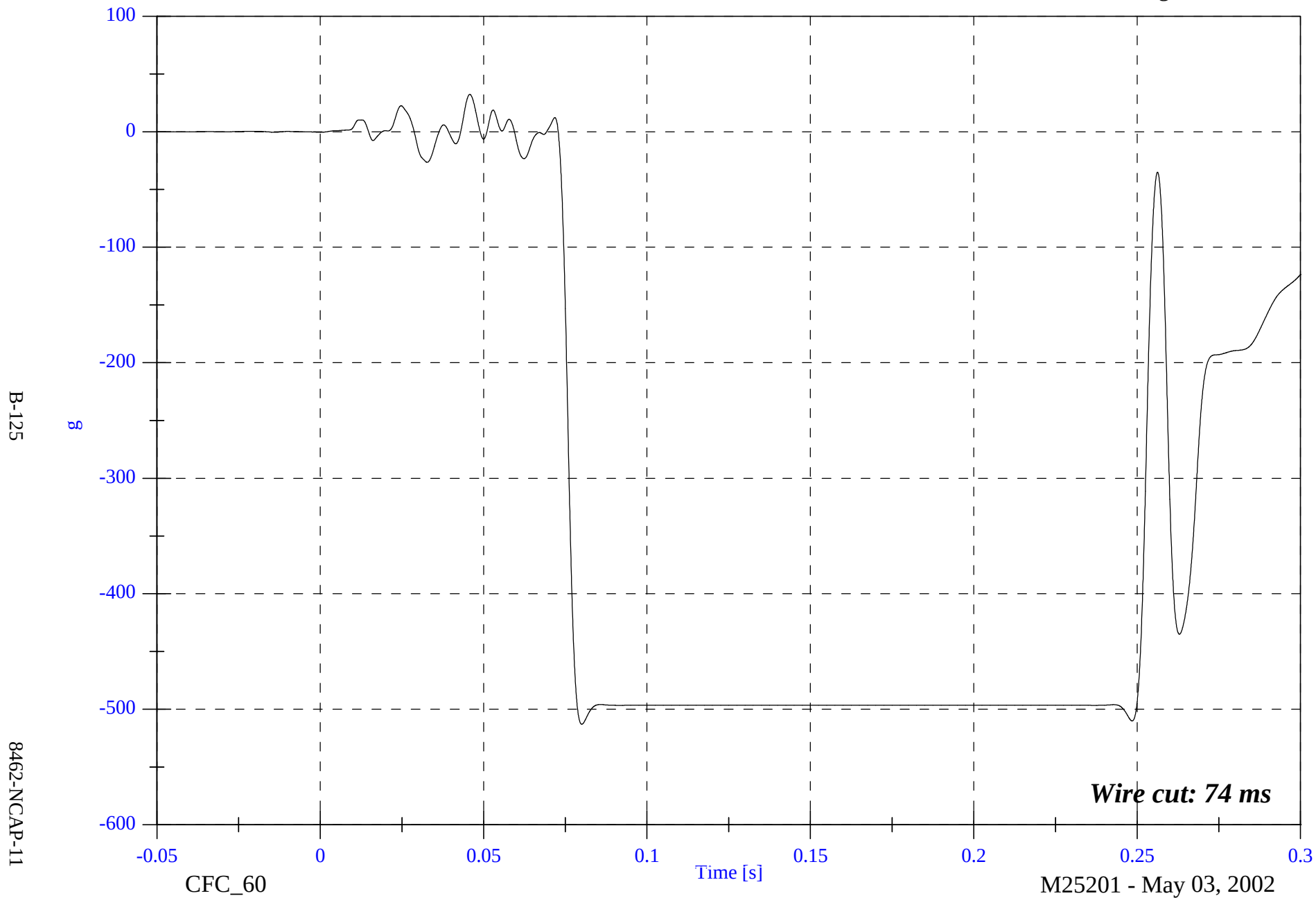


2002 NCAP Test 11 - 2002 Nissan Frontier

Left Rear #8z

Max: 32.3 [g] at 0.046 [s]

Min: -513.0 [g] at 0.080 [s]

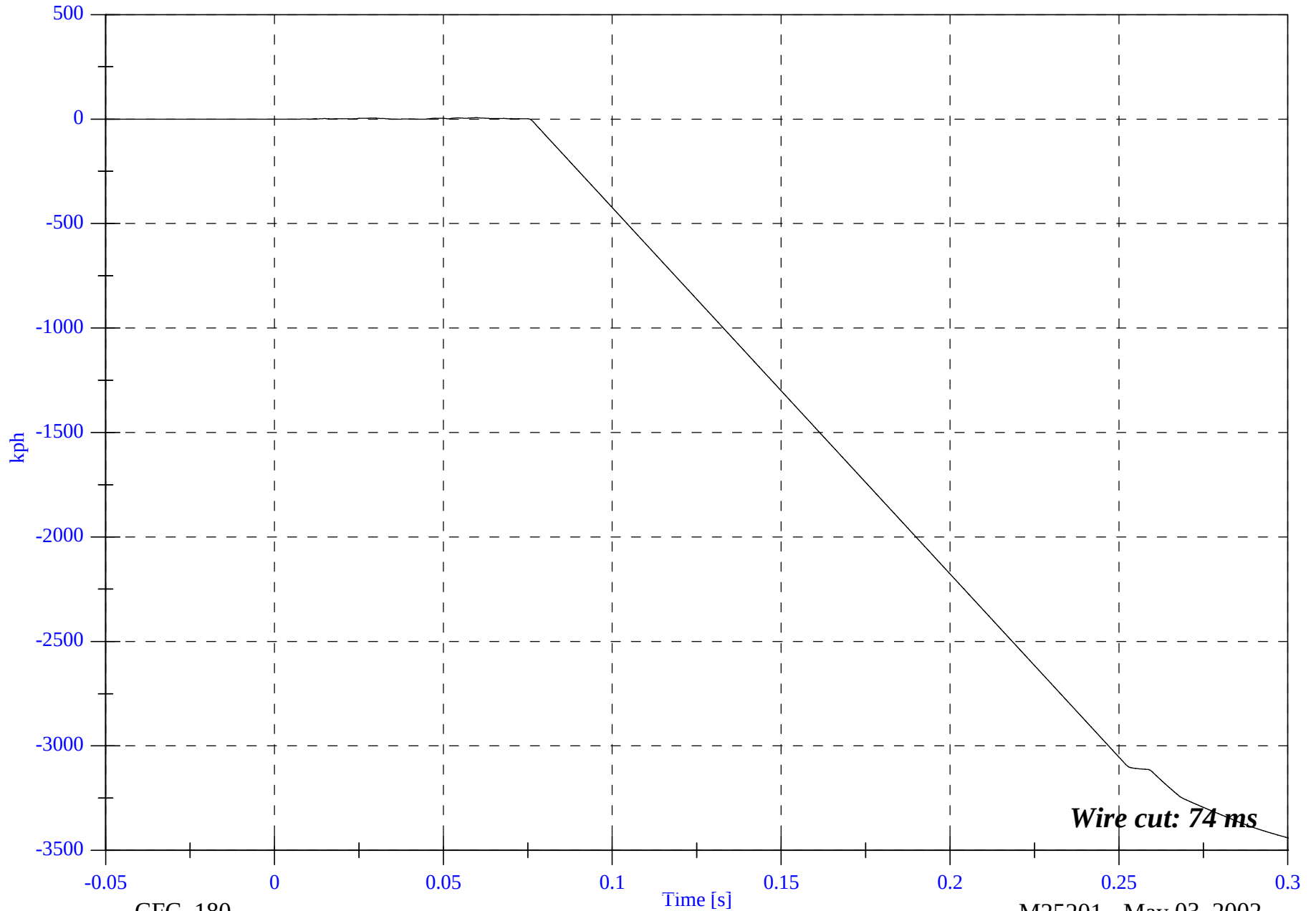


2002 NCAP Test 11 - 2002 Nissan Frontier

Left Rear #8z Velocity

Max: 6.5 [kph] at 0.060 [s]

Min: -3439.9 [kph] at 0.300 [s]



Wire cut: 74 ms

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8462-NCAP-11

CFC_180

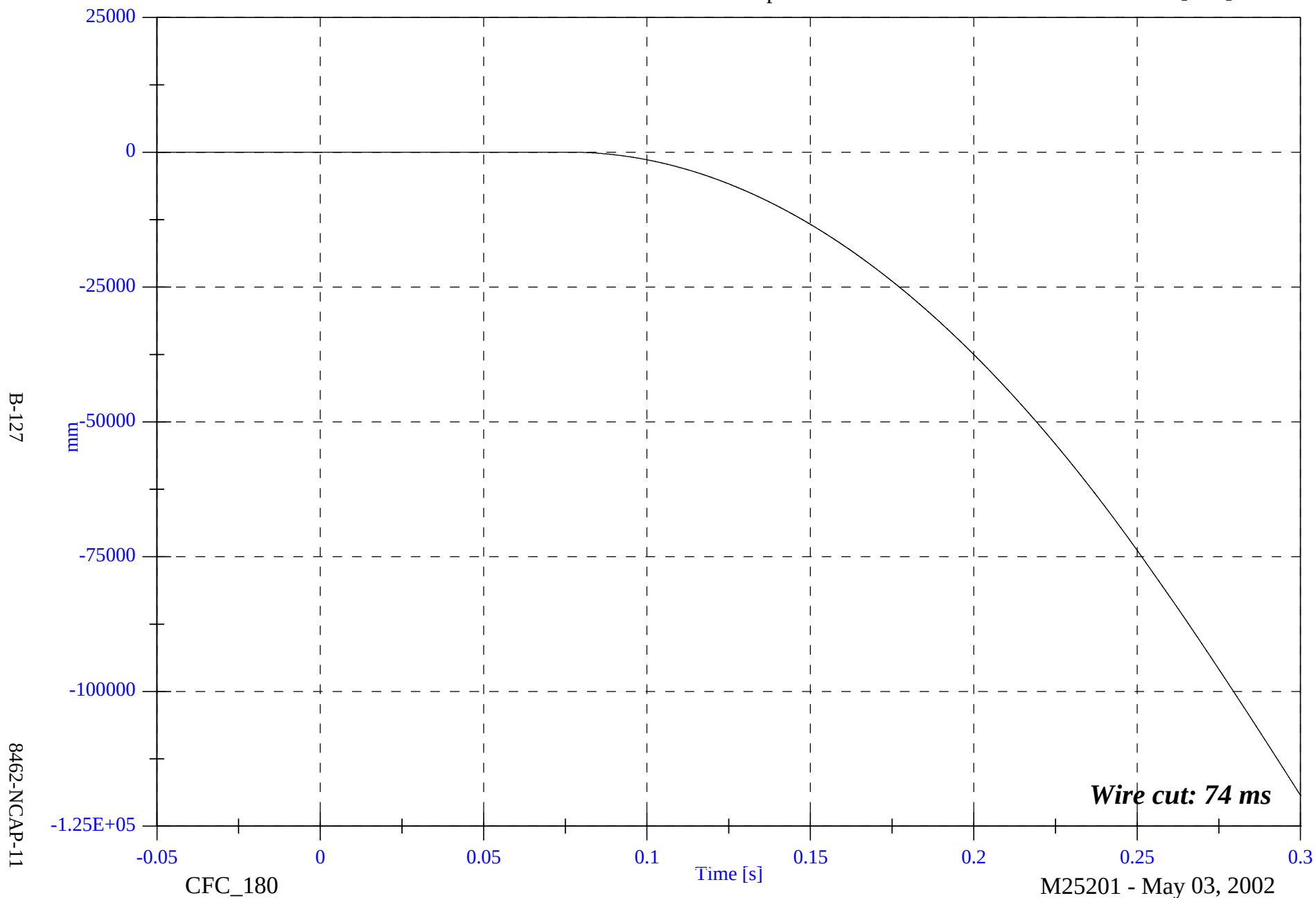
M25201 - May 03, 2002

2002 NCAP Test 11 - 2002 Nissan Frontier

Left Rear #8z Displacement

Max: 41.8 [mm] at 0.076 [s]

Min: -119268.3 [mm] at 0.300 [s]

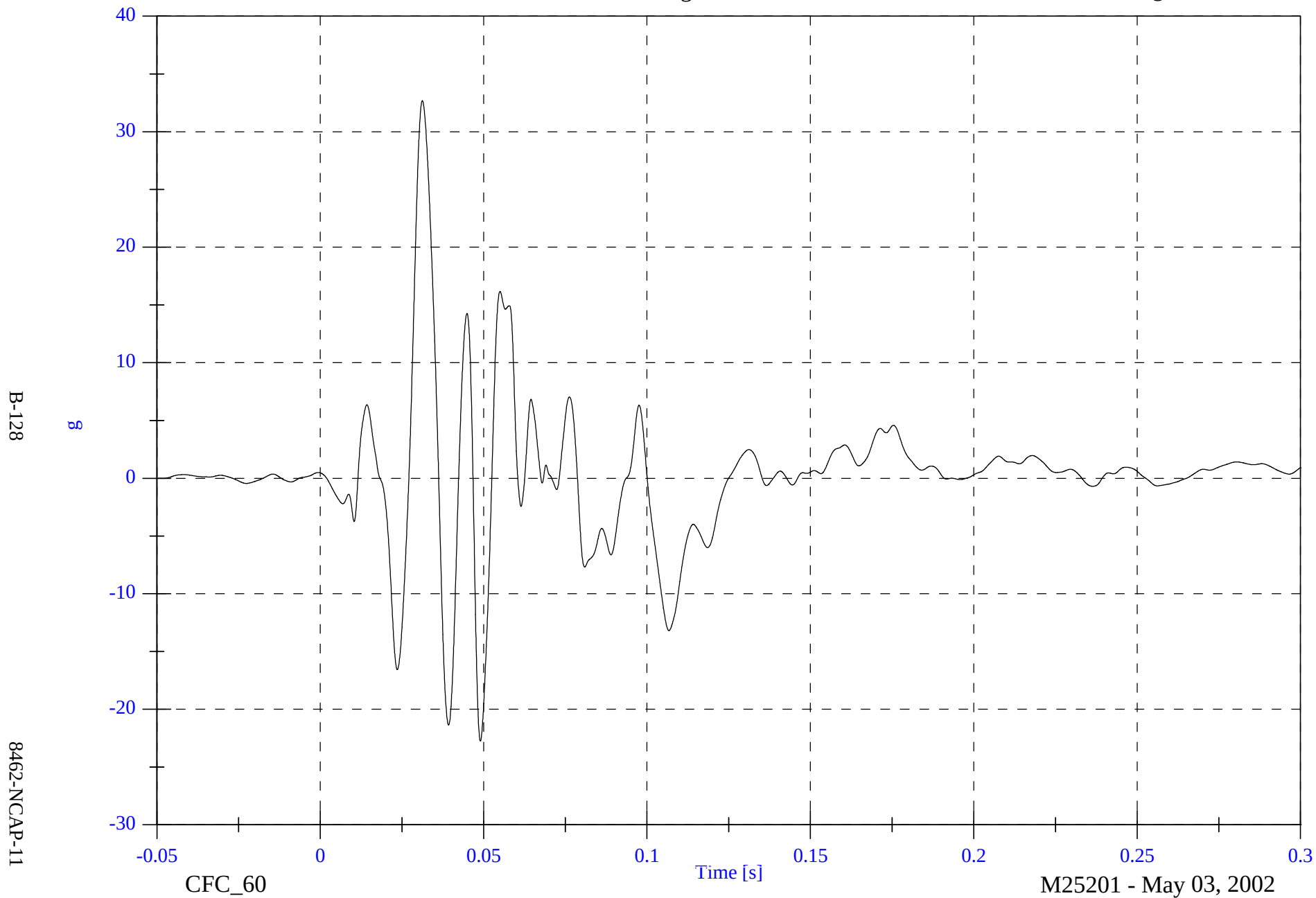


2002 NCAP Test 11 - 2002 Nissan Frontier

Right Rear #9z

Max: 32.7 [g] at 0.031 [s]

Min: -22.8 [g] at 0.049 [s]

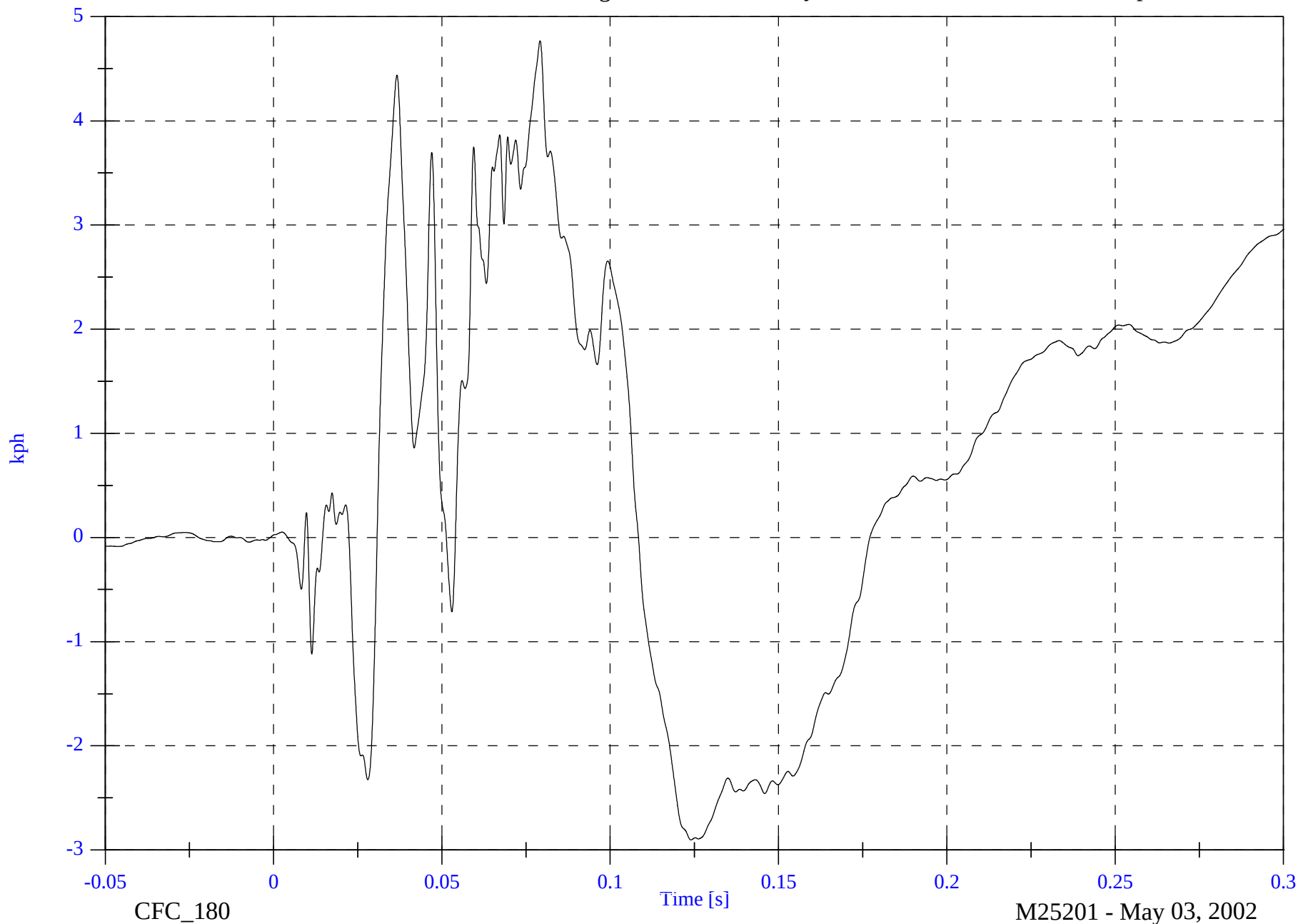


2002 NCAP Test 11 - 2002 Nissan Frontier

Right Rear #9z Velocity

Max: 4.8 [kph] at 0.079 [s]

Min: -2.9 [kph] at 0.124 [s]



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2002 NCAP Test 11 - 2002 Nissan Frontier

Right Rear #9z Displacement

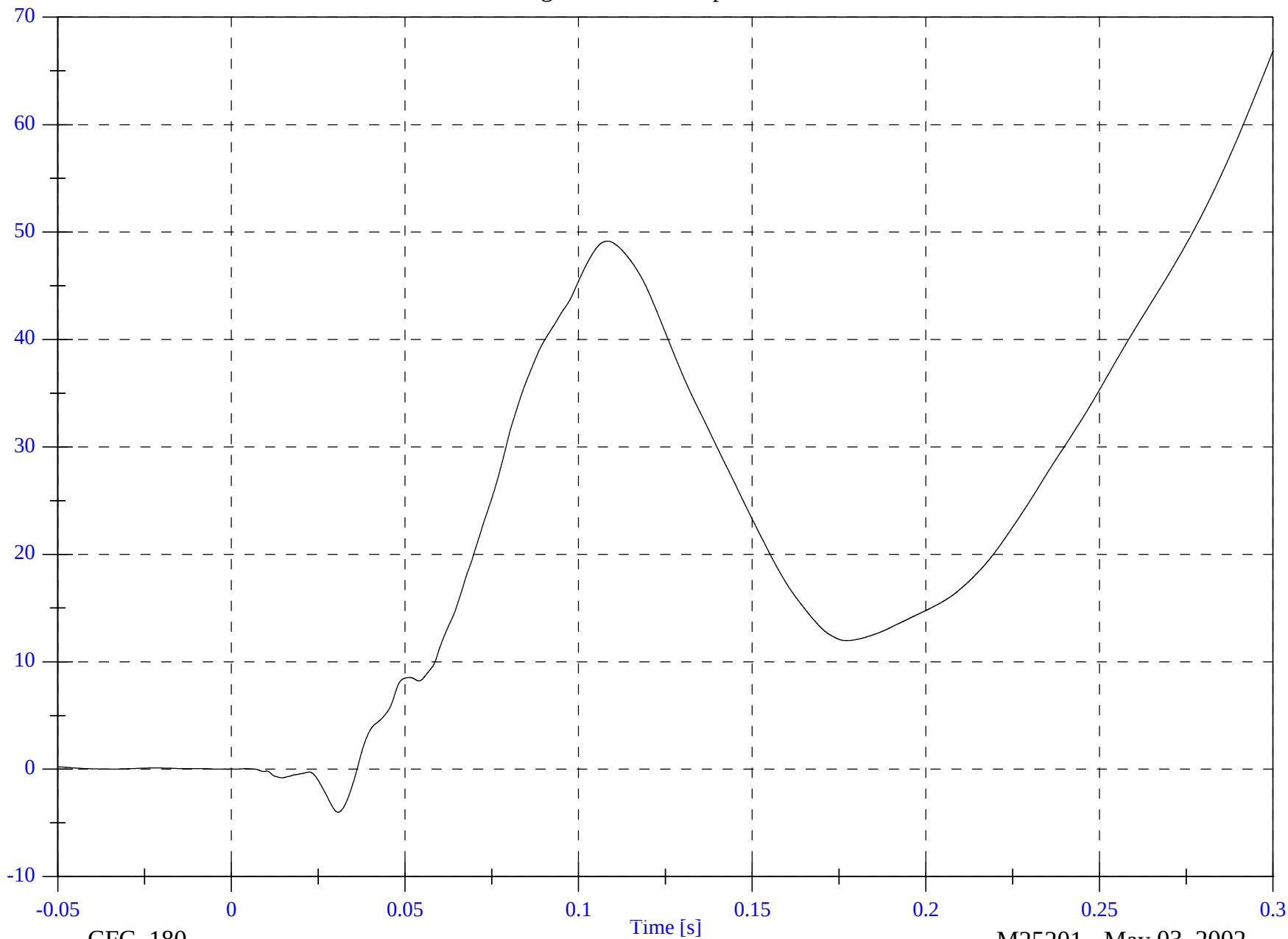
Max: 66.8 [mm] at 0.300 [s]

Min: -4.0 [mm] at 0.031 [s]

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mm



CFC_180

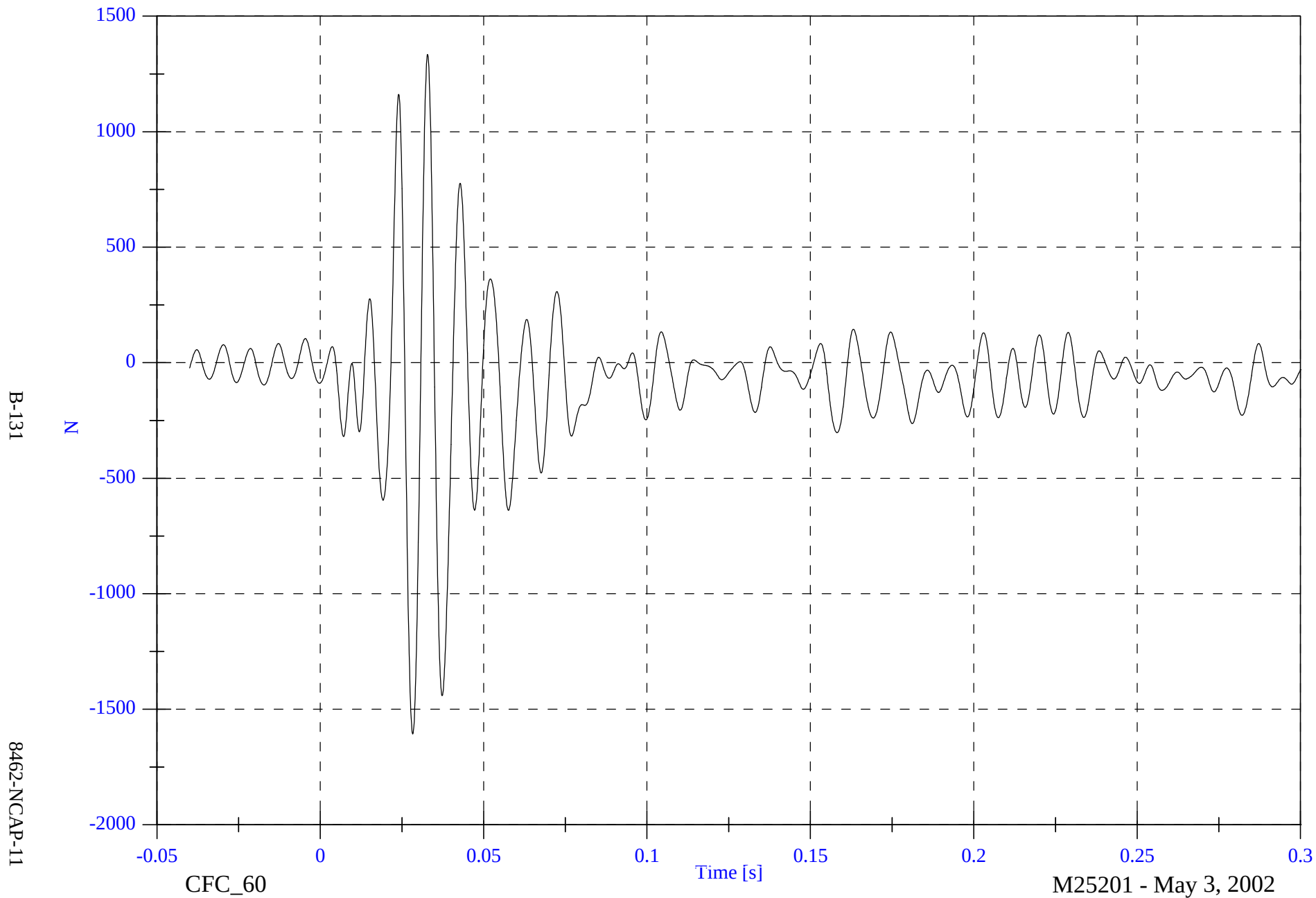
M25201 - May 03, 2002

NCAP Test #11 - 2002 Nissan Frontier

Max: 1334.1 [N] at 0.033 [s]

Barrier Load Cell A1 Fx

Min: -1607.3 [N] at 0.028 [s]

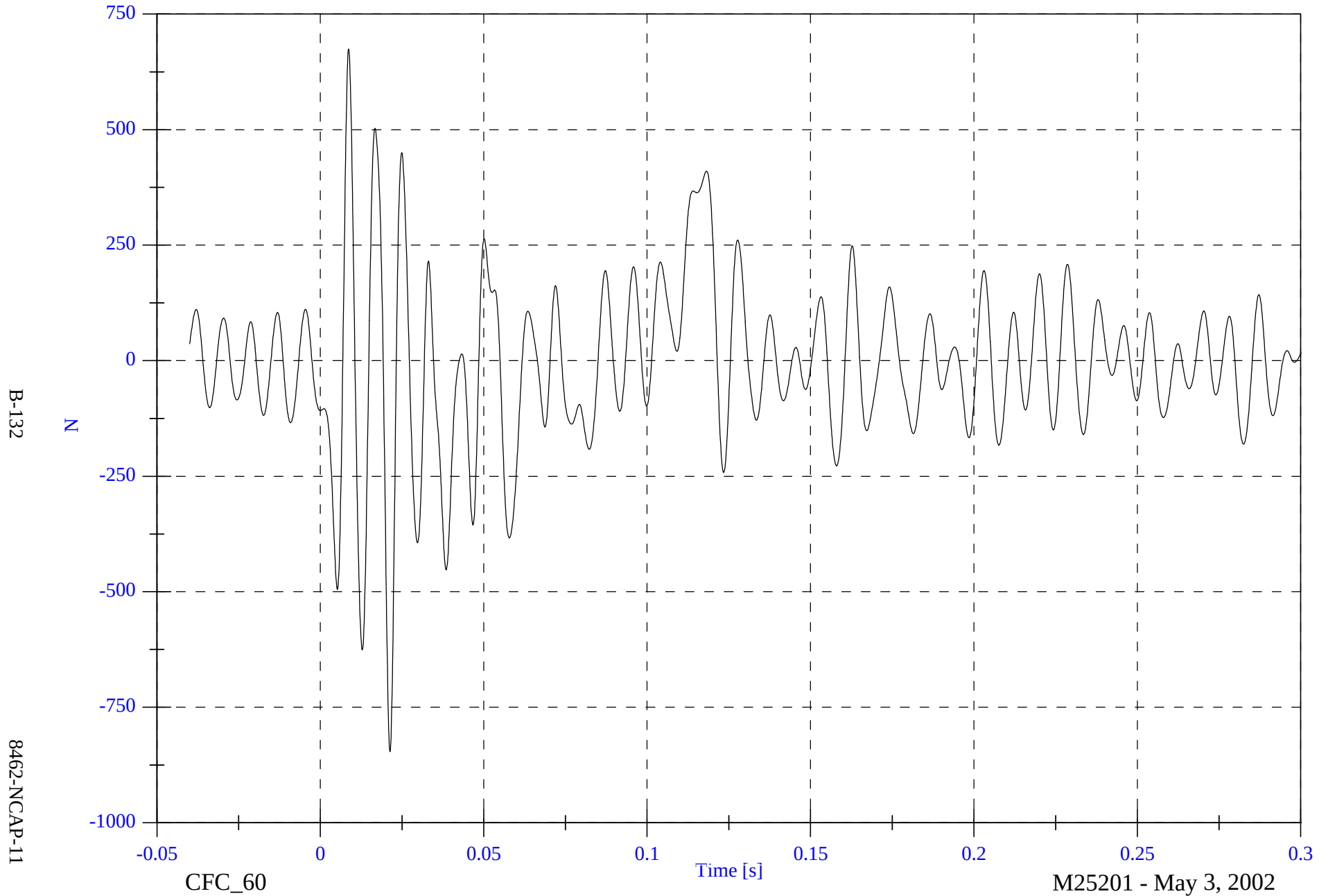


NCAP Test #11 - 2002 Nissan Frontier

Max: 674.8 [N] at 0.009 [s]

Barrier Load Cell A2 Fx

Min: -846.5 [N] at 0.021 [s]

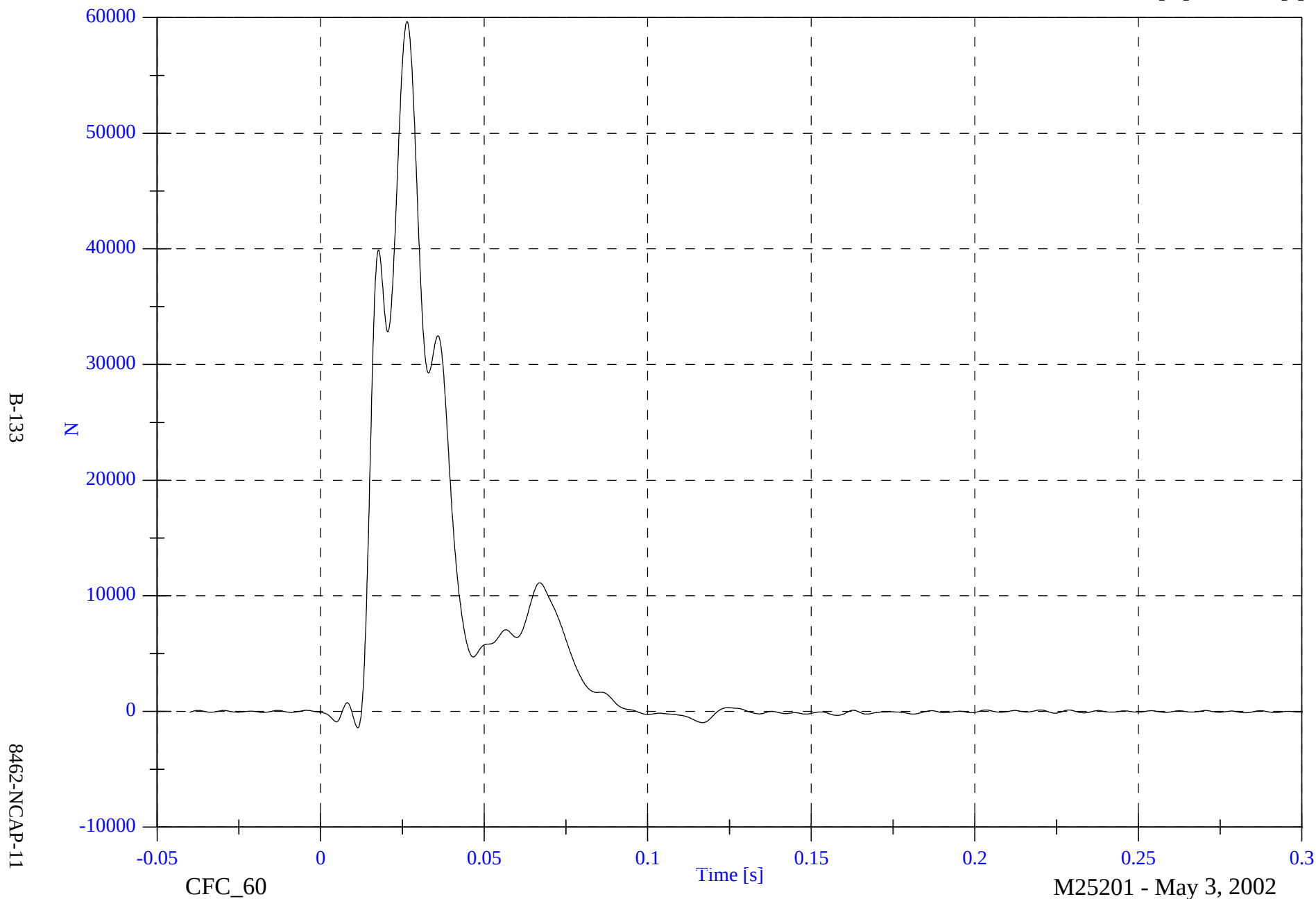


NCAP Test #11 - 2002 Nissan Frontier

Barrier Load Cell A3 Fx

Max: 59664.2 [N] at 0.026 [s]

Min: -1414.0 [N] at 0.011 [s]

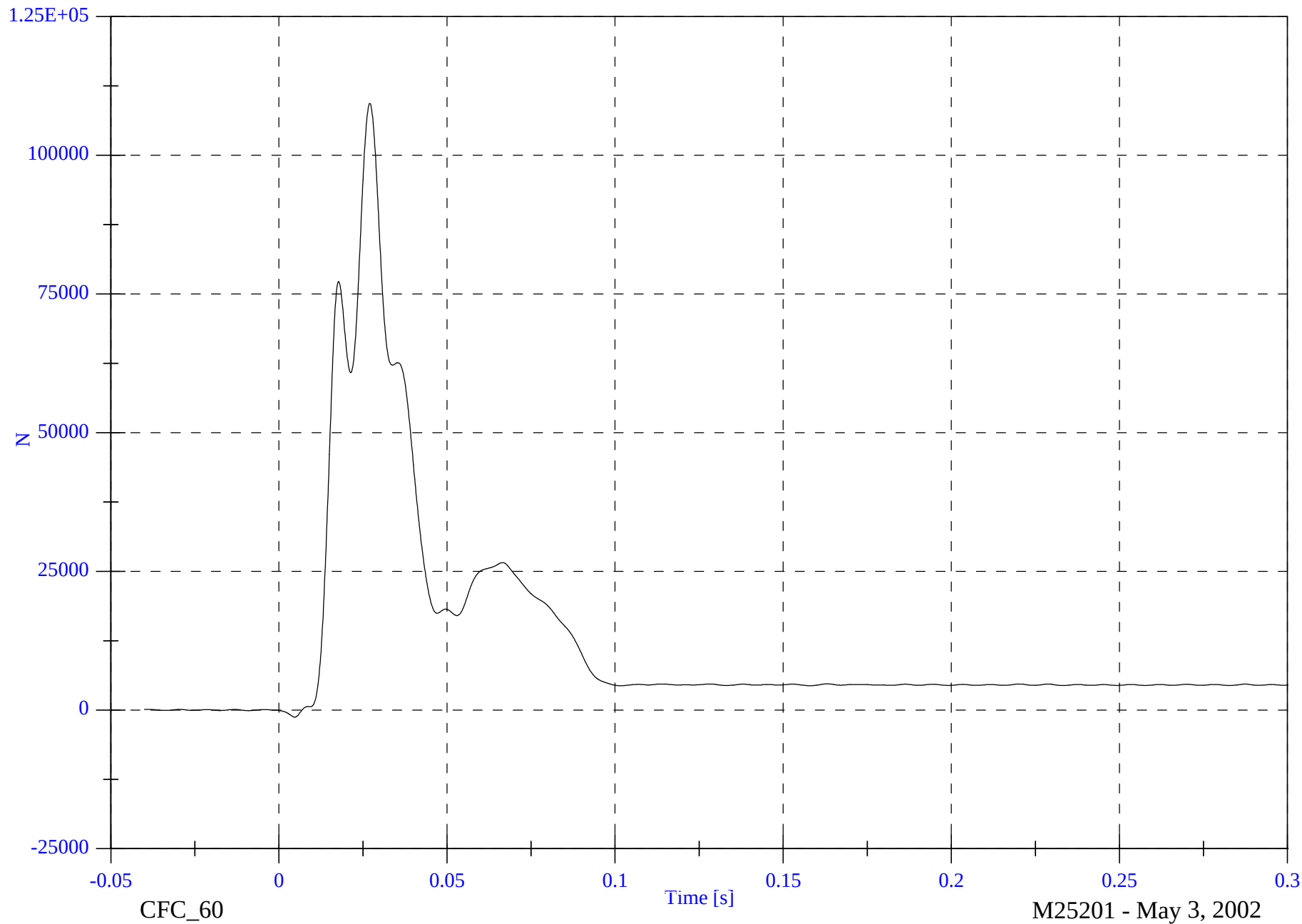


NCAP Test #11 - 2002 Nissan Frontier

Barrier Load Cell A4 Fx

Max: 109368.3 [N] at 0.027 [s]

Min: -1284.7 [N] at 0.005 [s]



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CFC_60

Time [s]

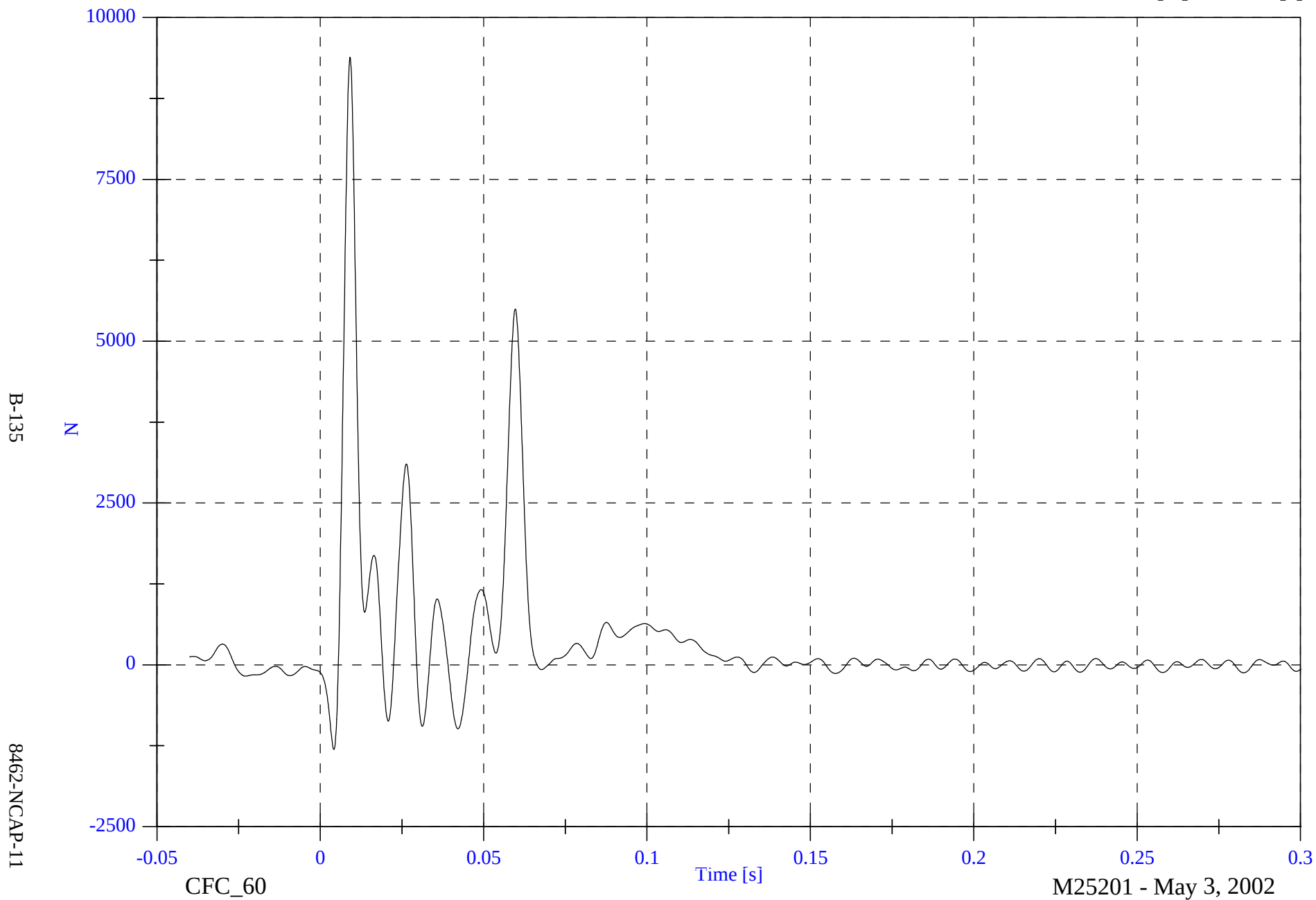
M25201 - May 3, 2002

NCAP Test #11 - 2002 Nissan Frontier

Barrier Load Cell A5 Fx

Max: 9387.8 [N] at 0.009 [s]

Min: -1306.9 [N] at 0.004 [s]

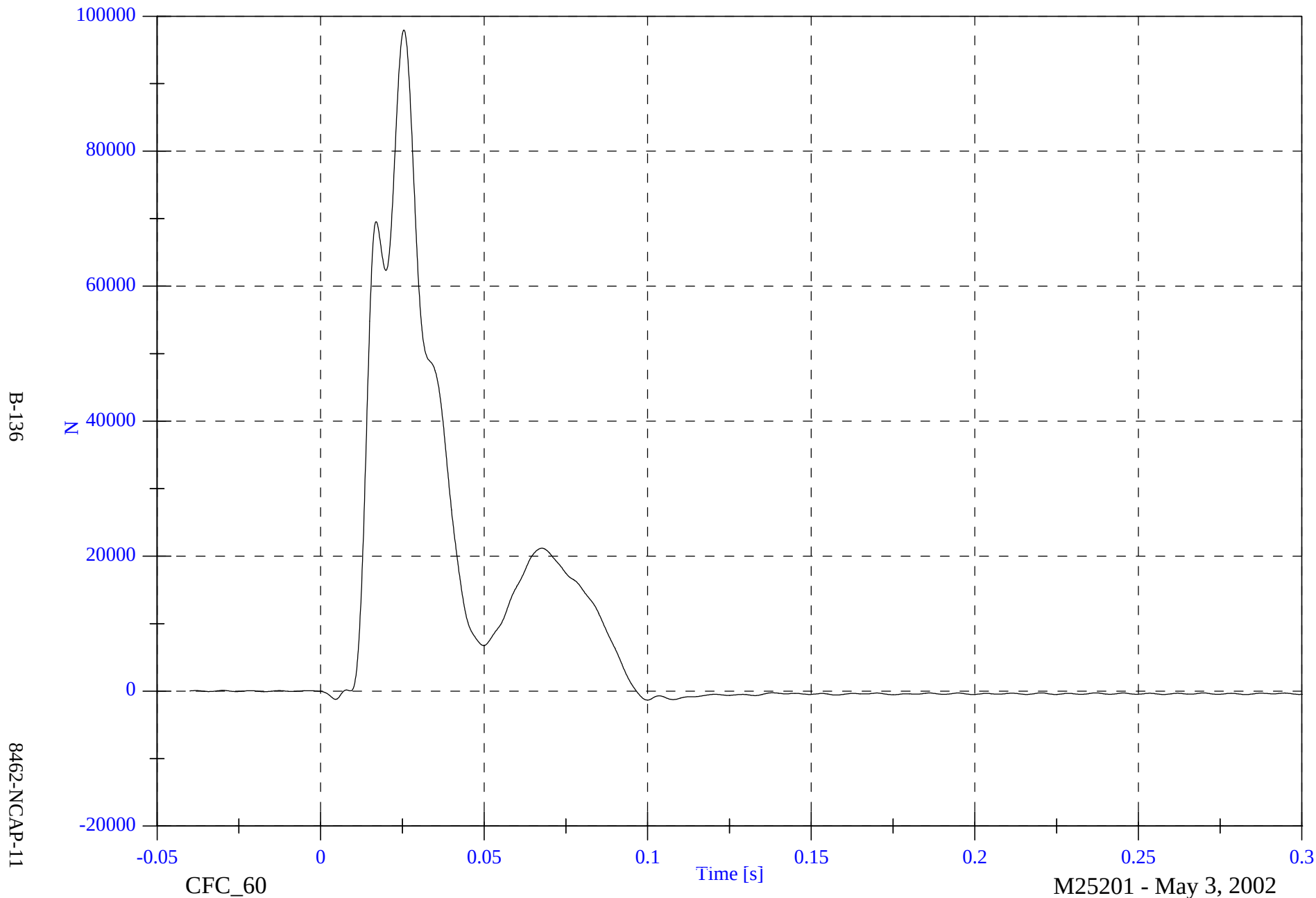


NCAP Test #11 - 2002 Nissan Frontier

Barrier Load Cell A6 Fx

Max: 97961.2 [N] at 0.025 [s]

Min: -1336.7 [N] at 0.100 [s]

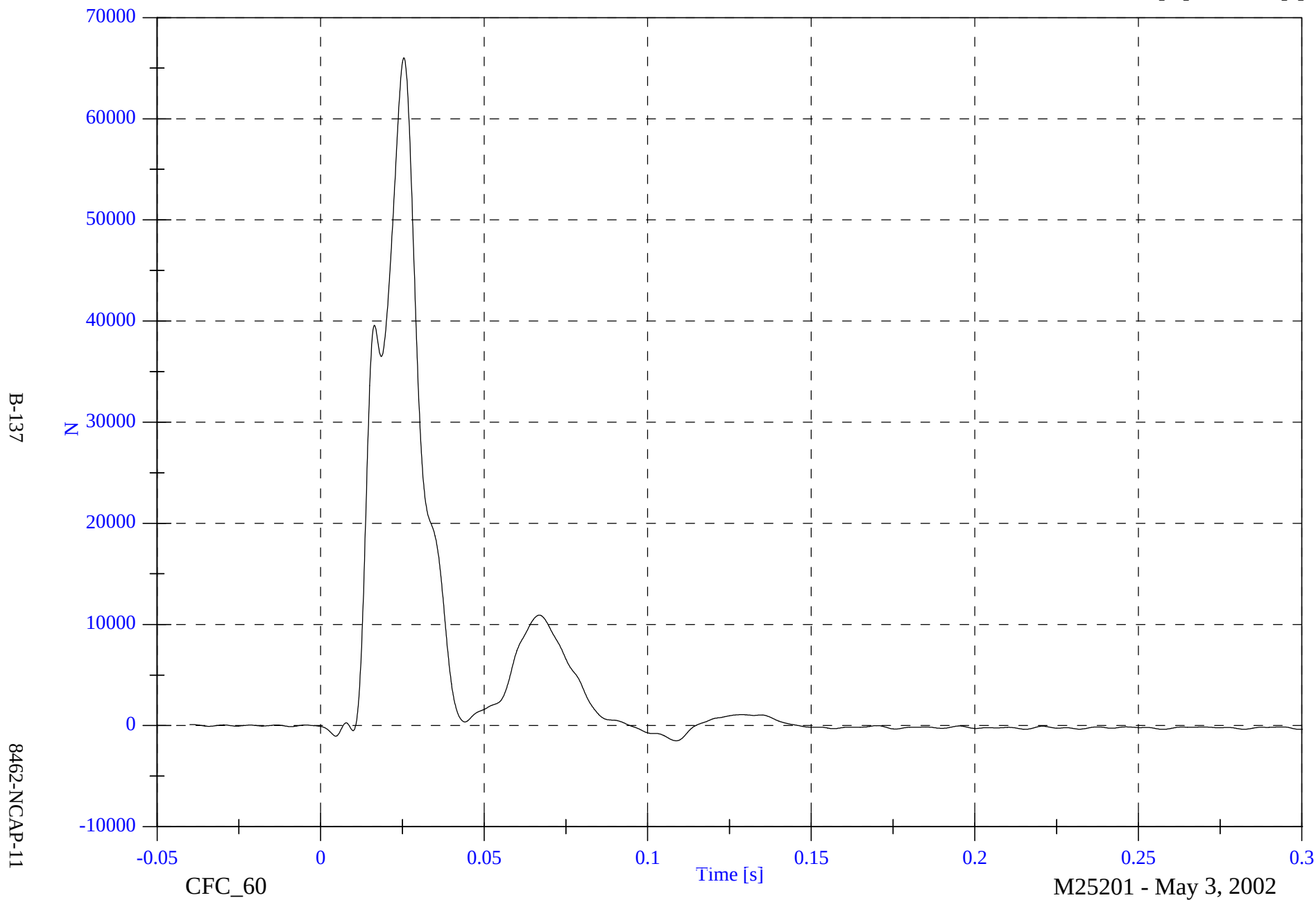


NCAP Test #11 - 2002 Nissan Frontier

Barrier Load Cell A7 Fx

Max: 66016.2 [N] at 0.025 [s]

Min: -1509.4 [N] at 0.109 [s]

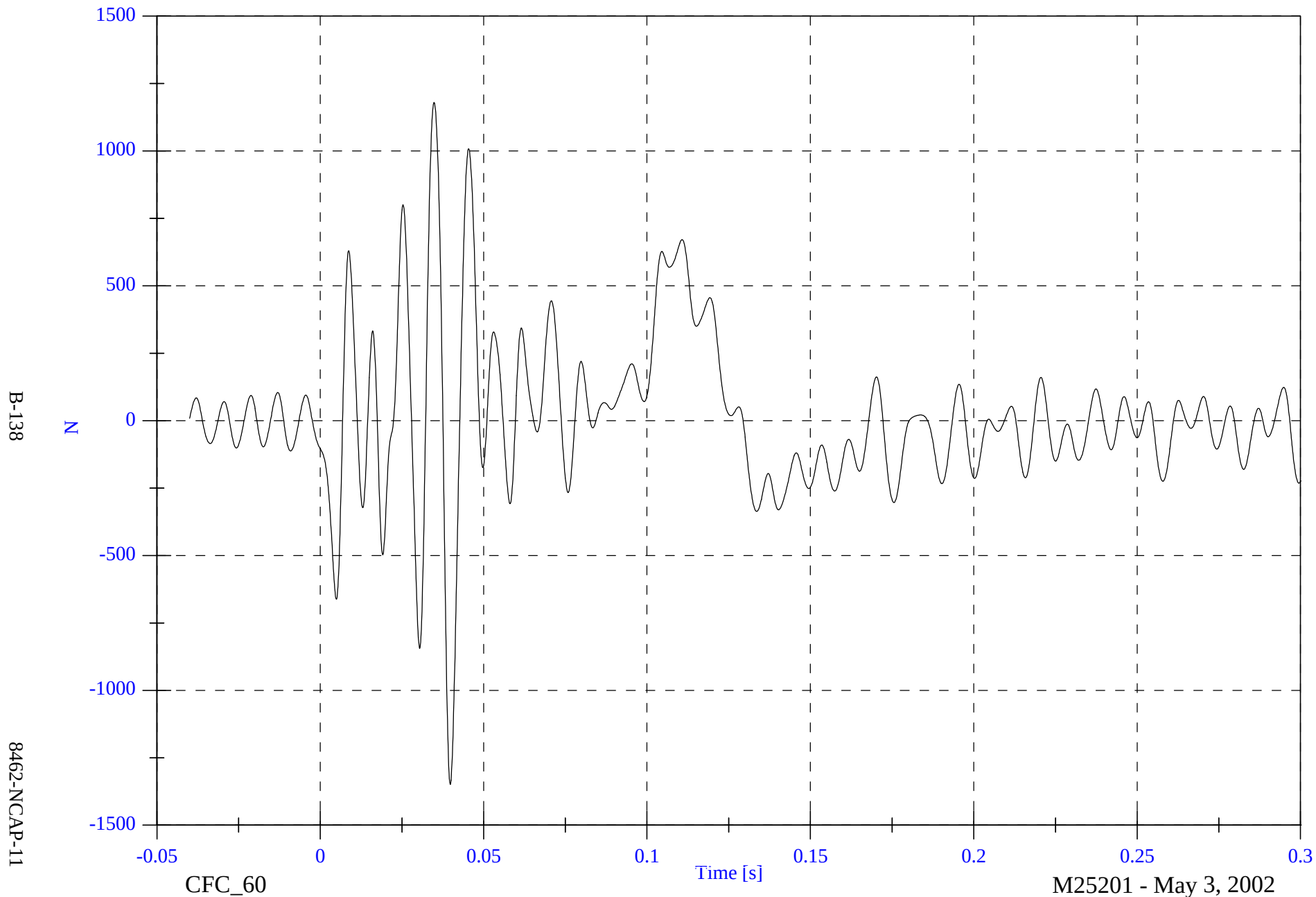


NCAP Test #11 - 2002 Nissan Frontier

Barrier Load Cell A8 Fx

Max: 1180.7 [N] at 0.035 [s]

Min: -1349.5 [N] at 0.040 [s]

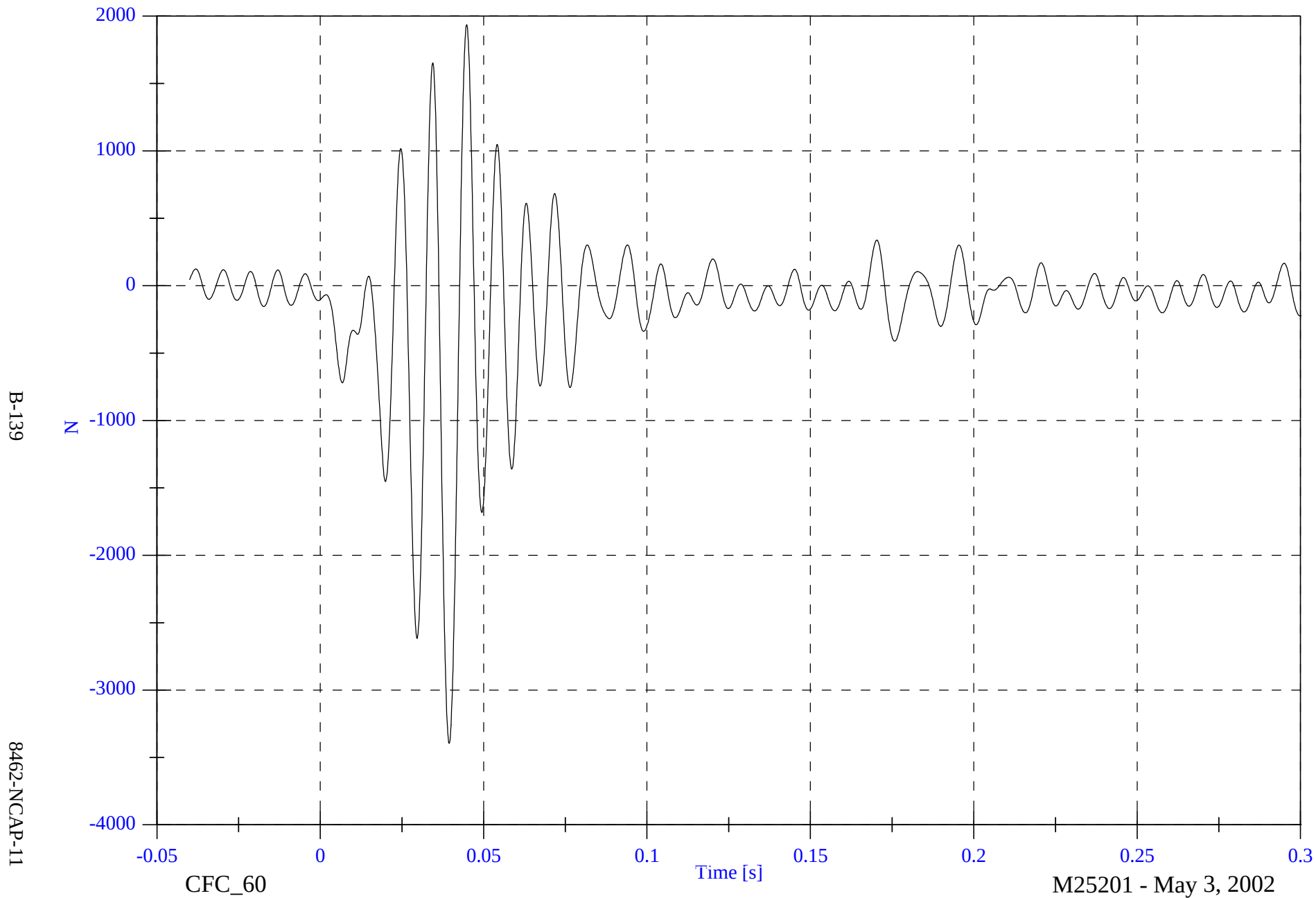


NCAP Test #11 - 2002 Nissan Frontier

Max: 1937.0 [N] at 0.045 [s]

Barrier Load Cell A9 Fx

Min: -3396.4 [N] at 0.039 [s]

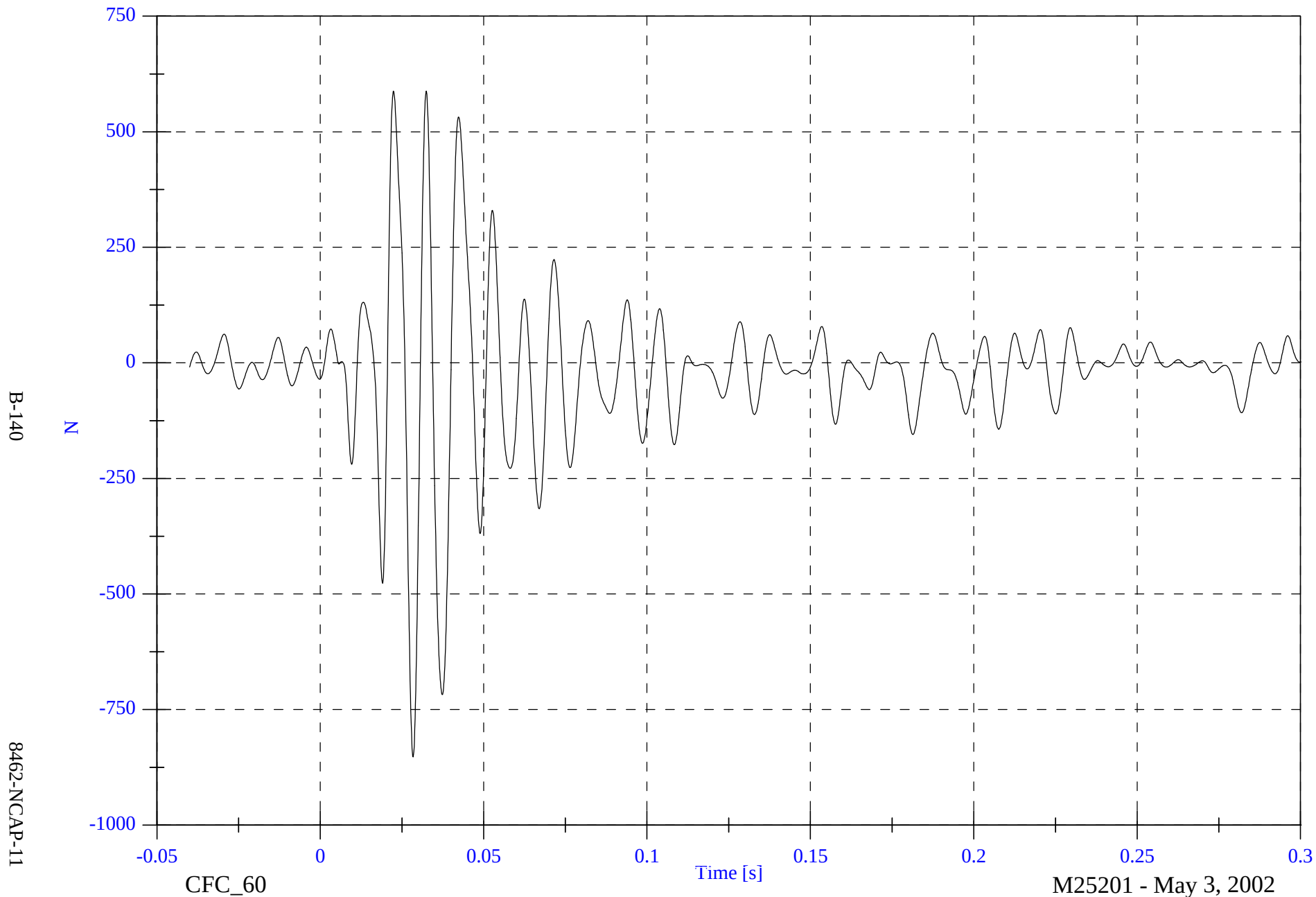


NCAP Test #11 - 2002 Nissan Frontier

Max: 588.3 [N] at 0.032 [s]

Barrier Load Cell B1 Fx

Min: -852.7 [N] at 0.028 [s]



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CFC_60

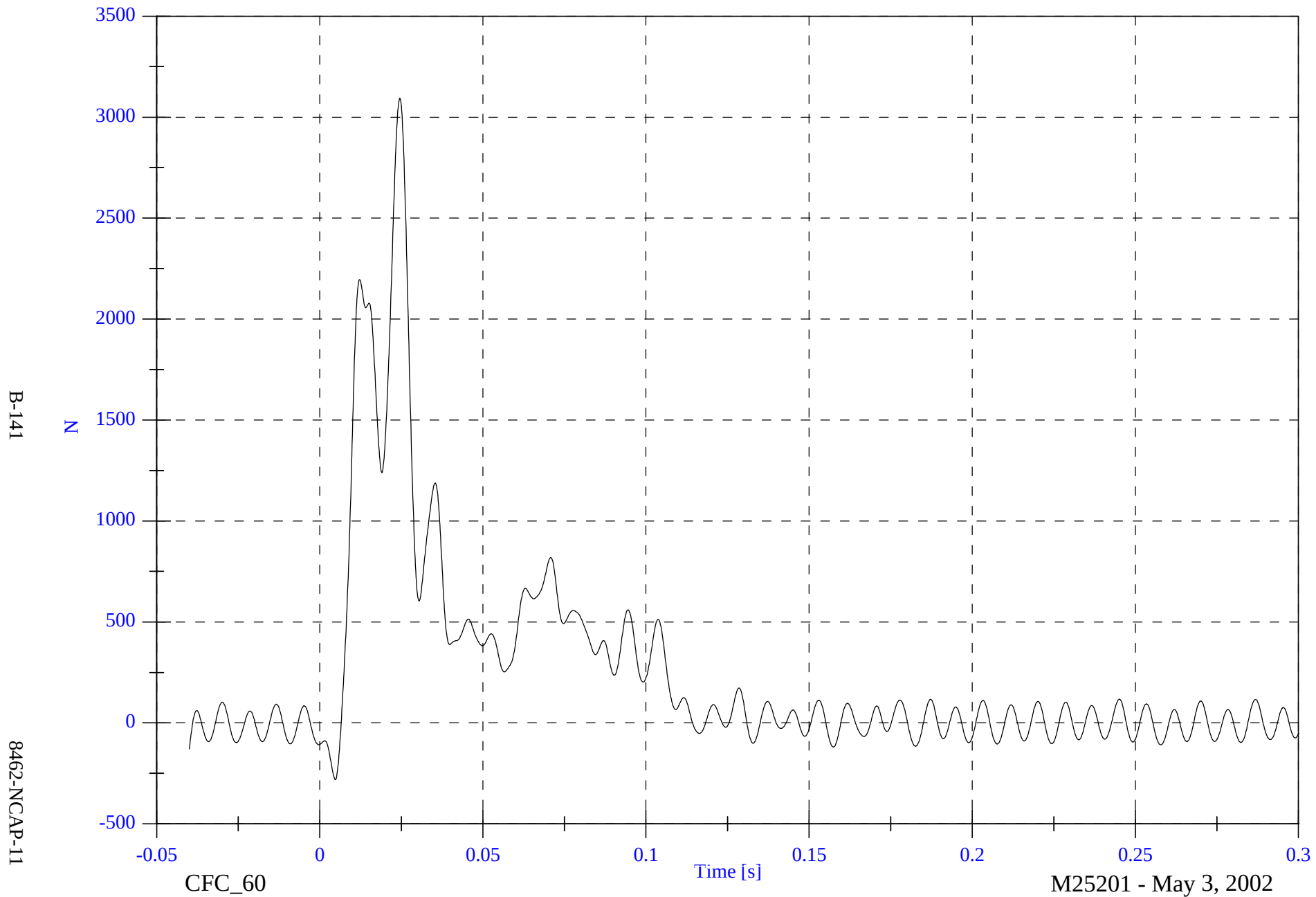
M25201 - May 3, 2002

NCAP Test #11 - 2002 Nissan Frontier

Max: 3093.4 [N] at 0.024 [s]

Barrier Load Cell B2 Fx

Min: -281.0 [N] at 0.005 [s]

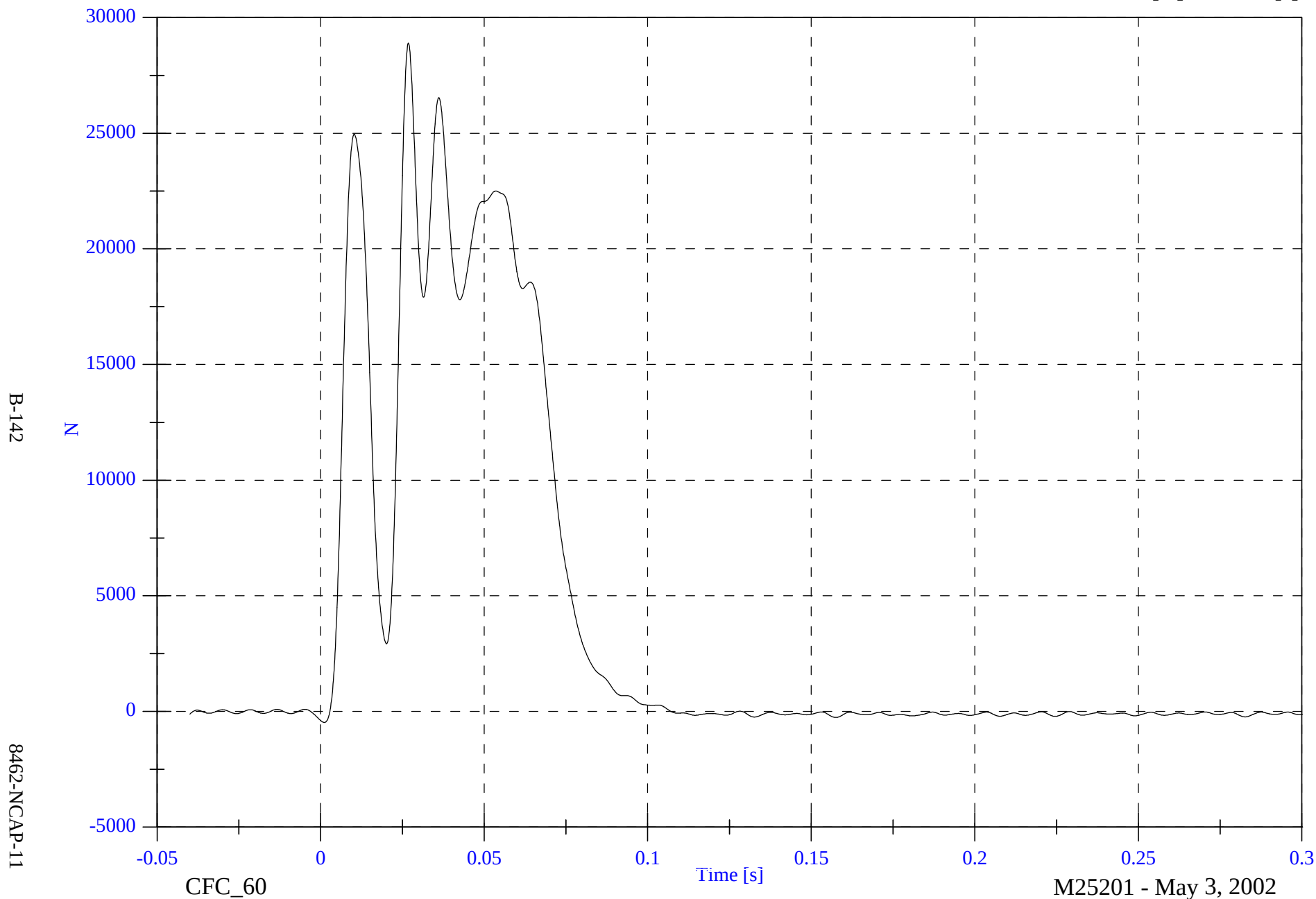


NCAP Test #11 - 2002 Nissan Frontier

Barrier Load Cell B3 Fx

Max: 28908.0 [N] at 0.027 [s]

Min: -477.9 [N] at 0.001 [s]

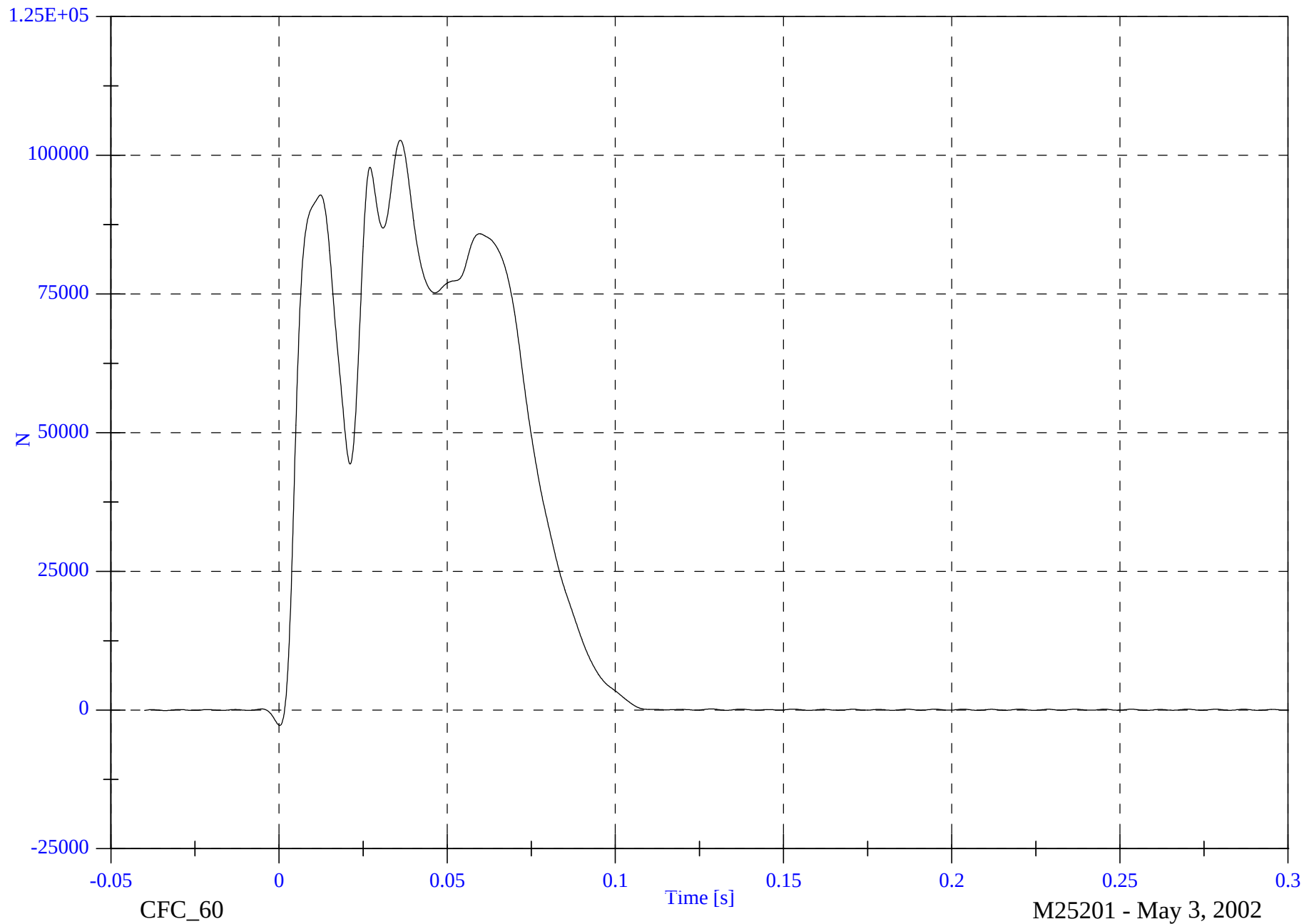


NCAP Test #11 - 2002 Nissan Frontier

Barrier Load Cell B4 Fx

Max: 102714.7 [N] at 0.036 [s]

Min: -2775.0 [N] at 0.000 [s]



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CFC_60

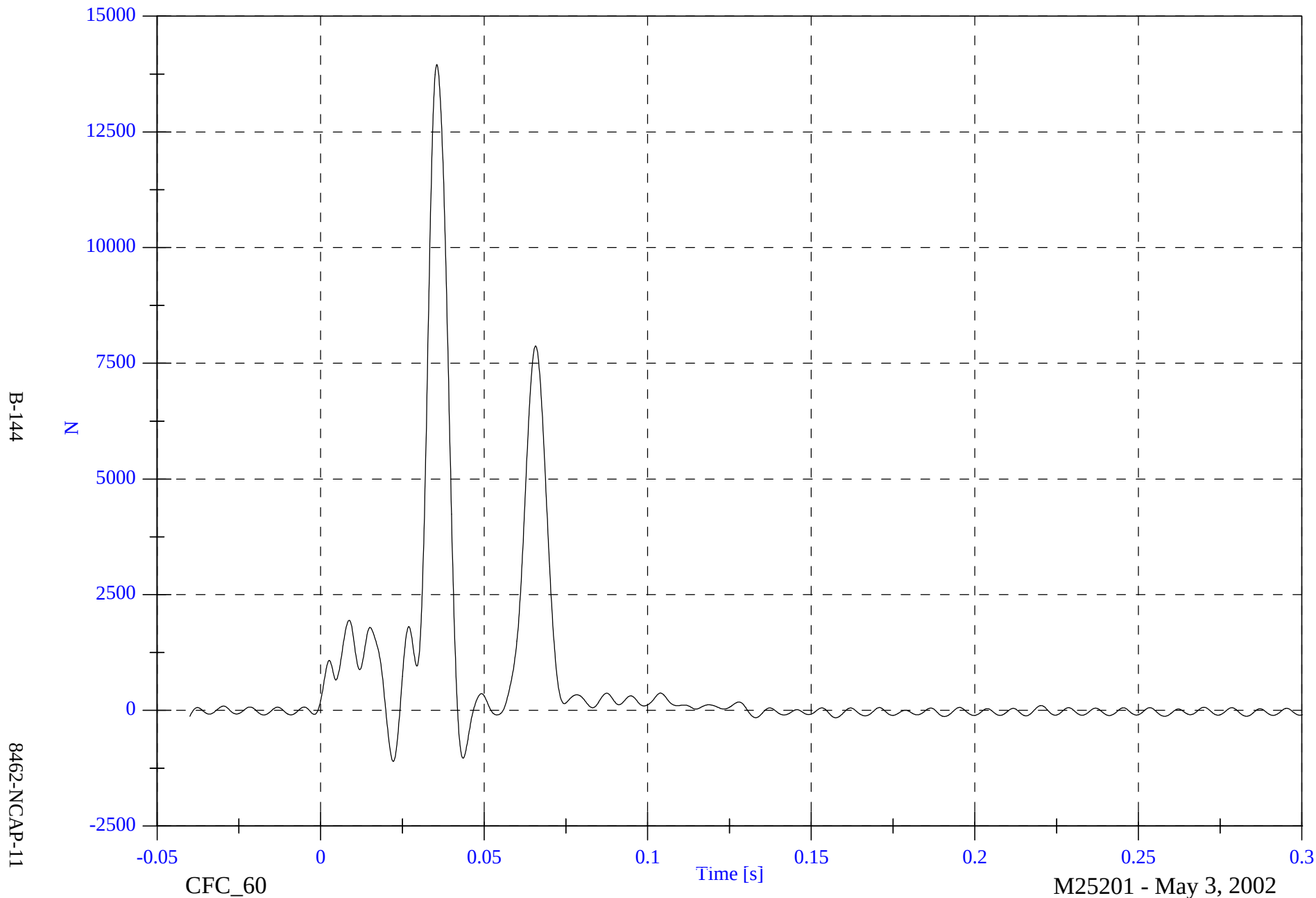
M25201 - May 3, 2002

NCAP Test #11 - 2002 Nissan Frontier

Barrier Load Cell B5 Fx

Max: 13956.3 [N] at 0.035 [s]

Min: -1104.8 [N] at 0.022 [s]

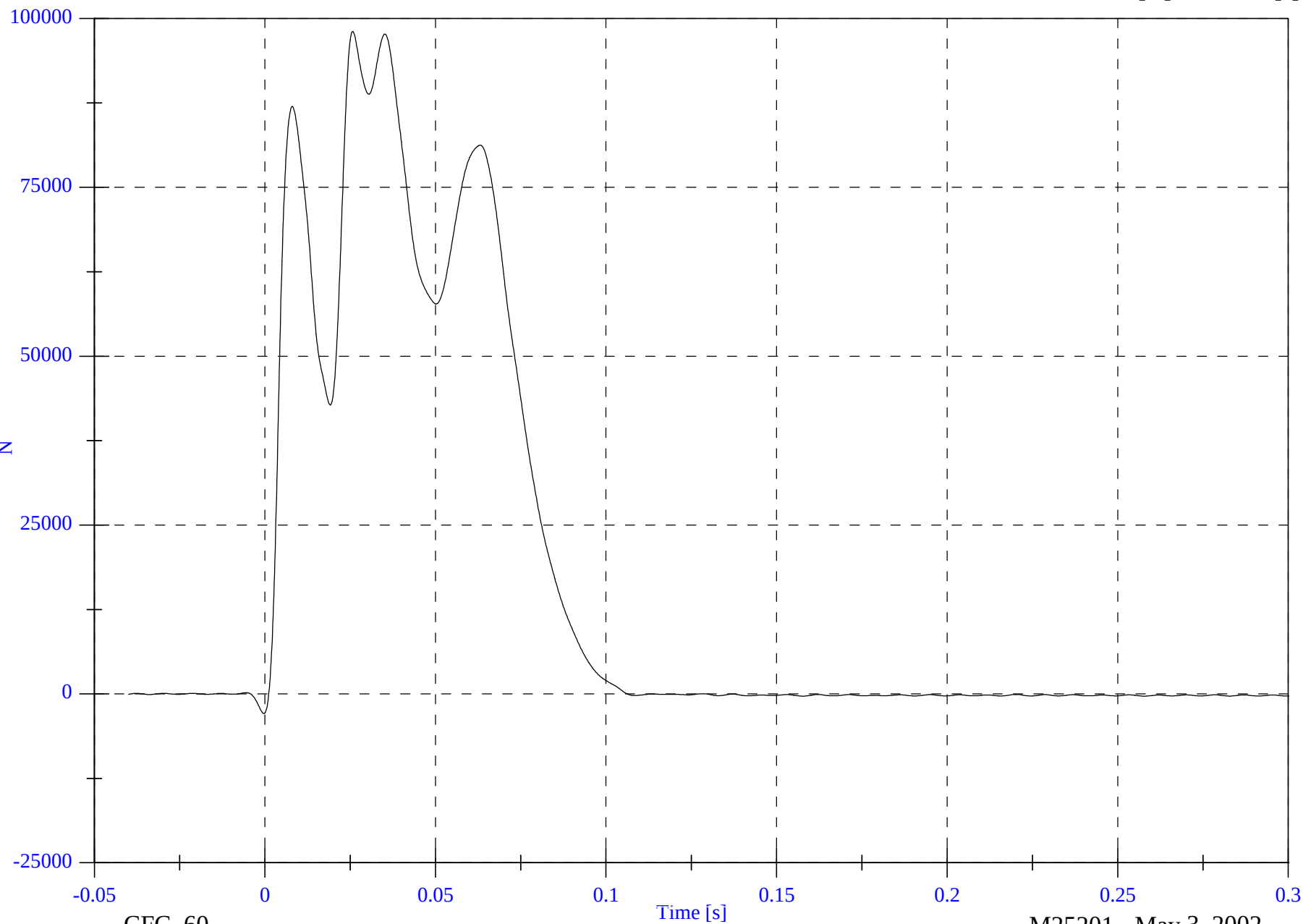


NCAP Test #11 - 2002 Nissan Frontier

Barrier Load Cell B6 Fx

Max: 98068.2 [N] at 0.026 [s]

Min: -2910.8 [N] at -0.000 [s]



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8462-NCAP-11

CFC_60

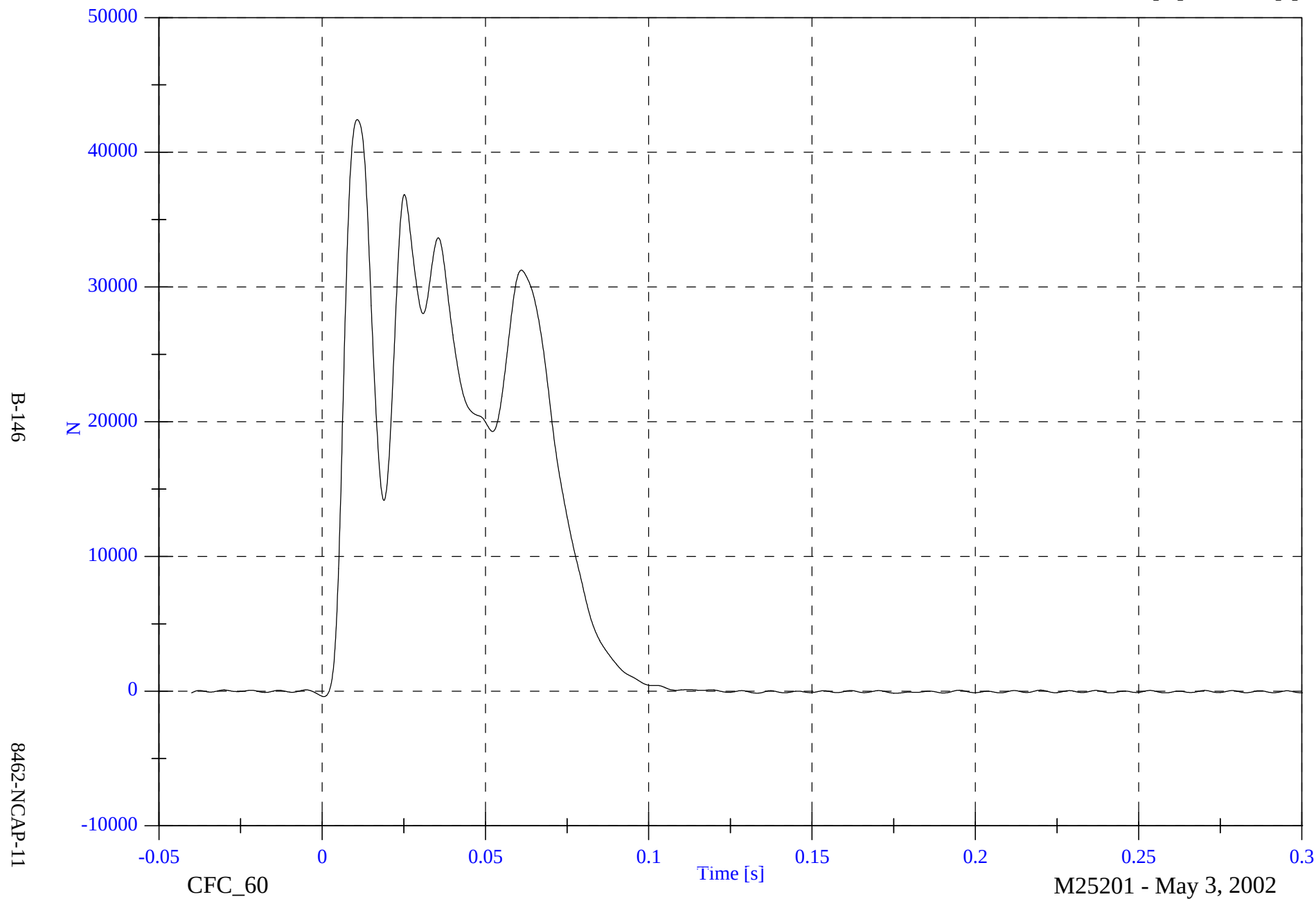
M25201 - May 3, 2002

NCAP Test #11 - 2002 Nissan Frontier

Barrier Load Cell B7 Fx

Max: 42425.5 [N] at 0.011 [s]

Min: -407.8 [N] at 0.000 [s]

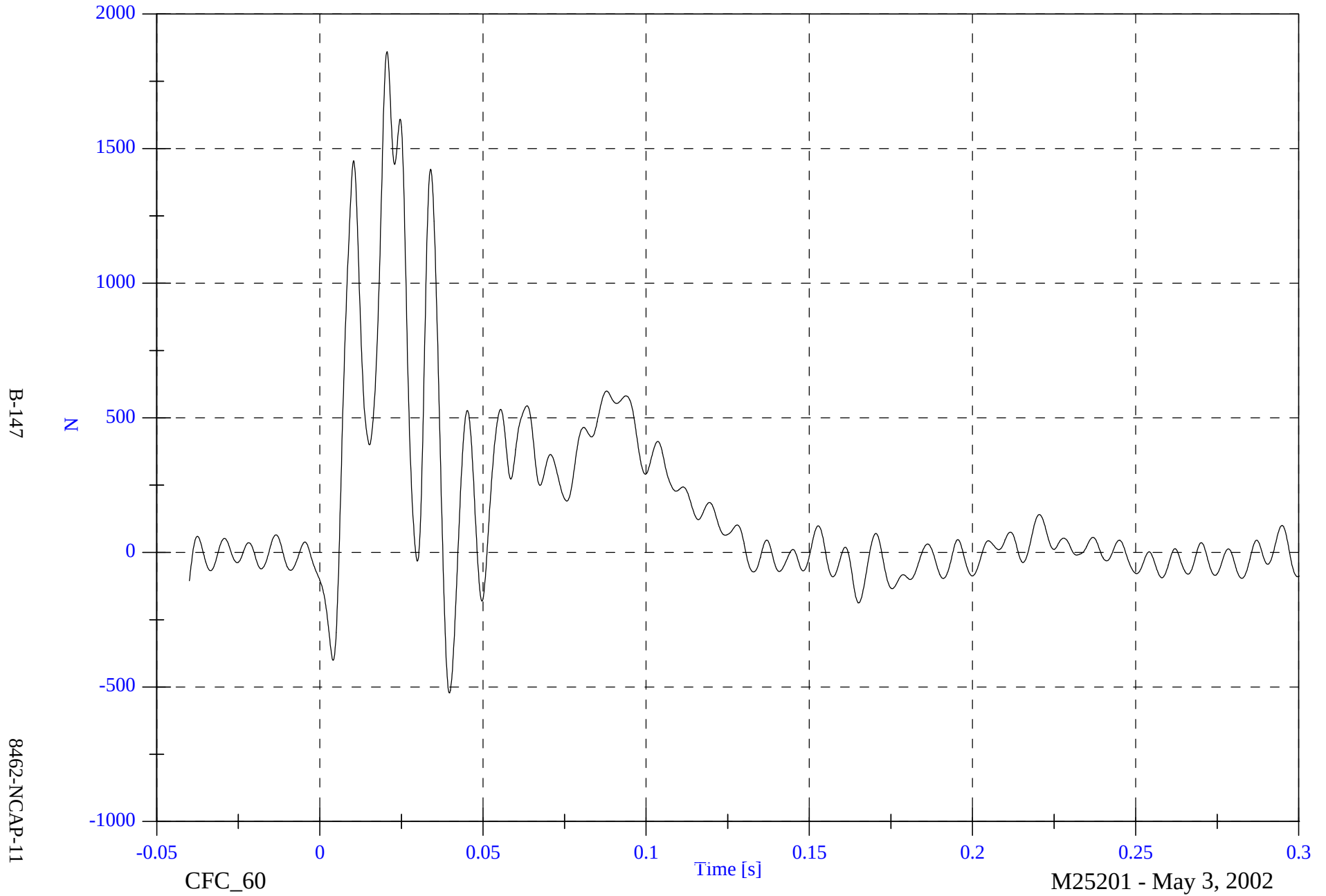


NCAP Test #11 - 2002 Nissan Frontier

Barrier Load Cell B8 Fx

Max: 1860.4 [N] at 0.021 [s]

Min: -523.0 [N] at 0.040 [s]

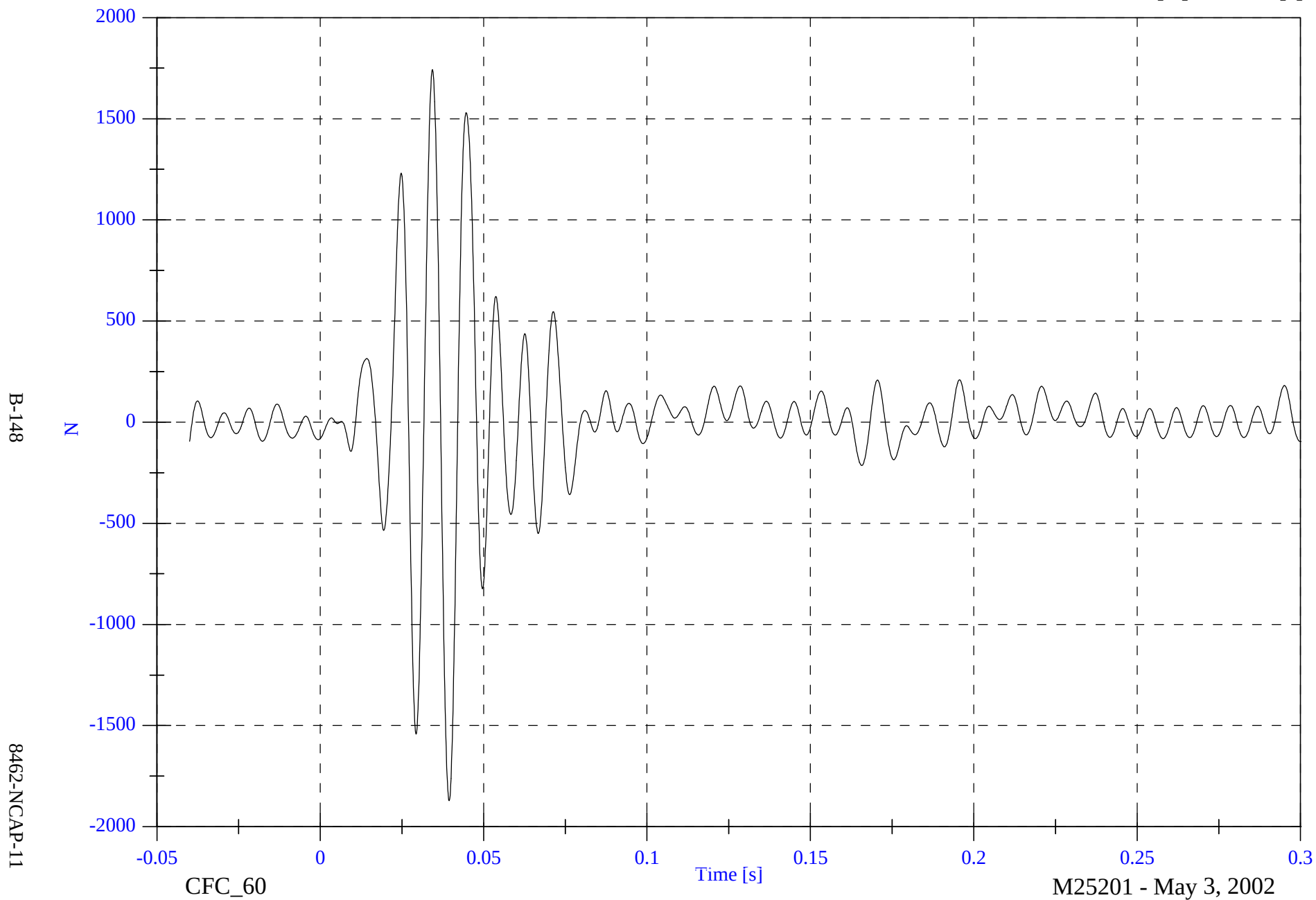


NCAP Test #11 - 2002 Nissan Frontier

Barrier Load Cell B9 Fx

Max: 1742.6 [N] at 0.034 [s]

Min: -1871.6 [N] at 0.039 [s]

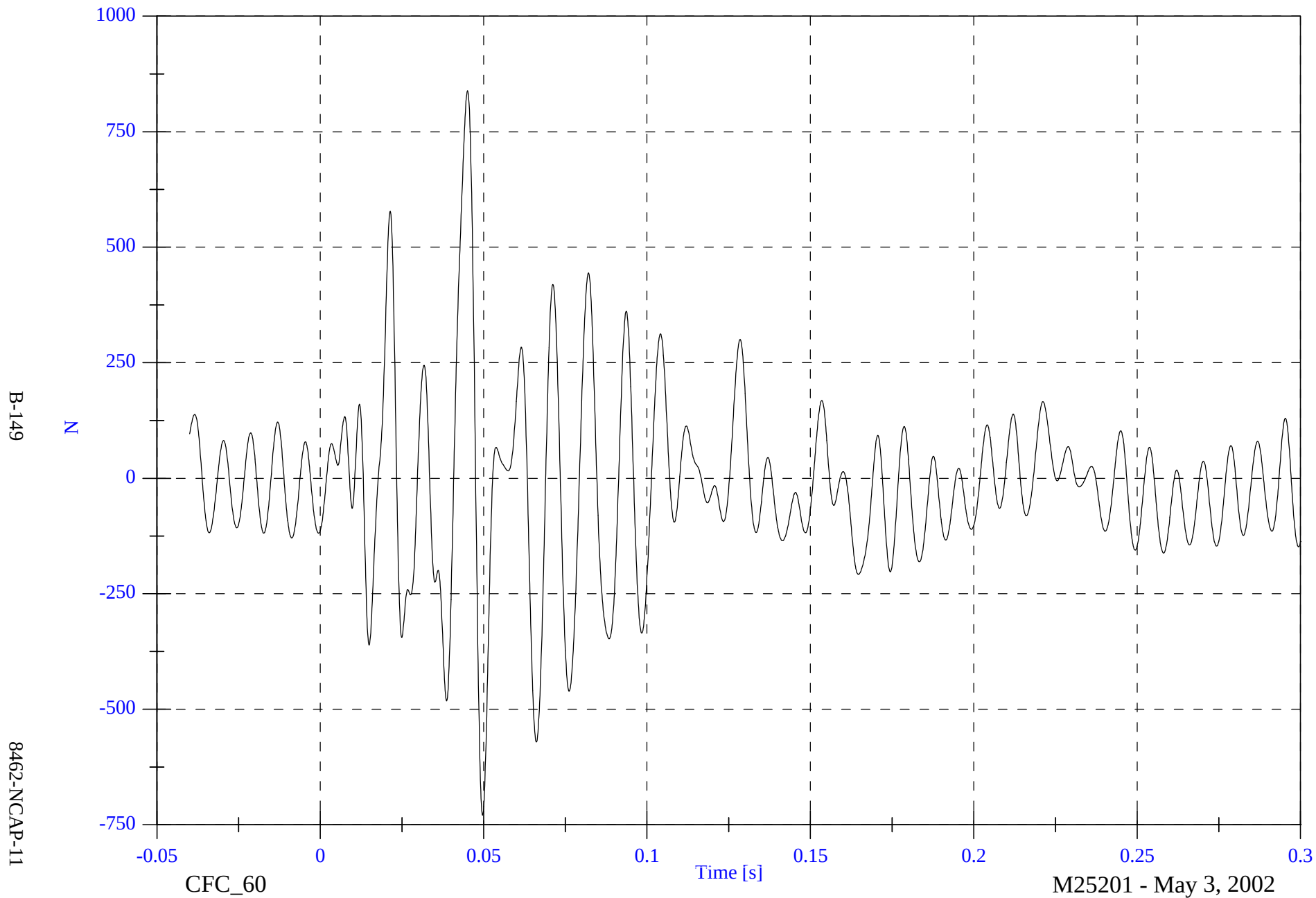


NCAP Test #11 - 2002 Nissan Frontier

Max: 838.4 [N] at 0.045 [s]

Barrier Load Cell C1 Fx

Min: -729.3 [N] at 0.050 [s]

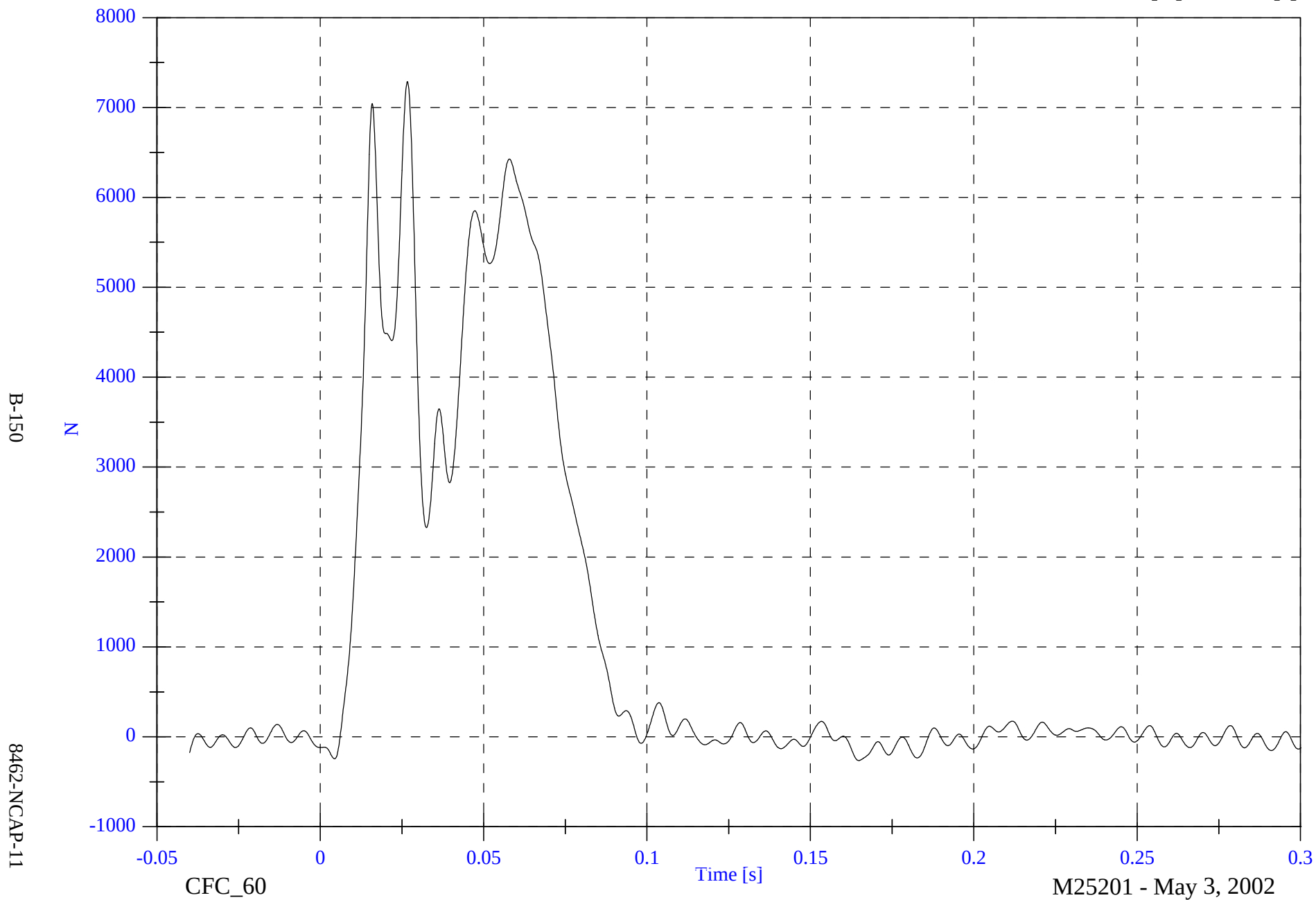


NCAP Test #11 - 2002 Nissan Frontier

Barrier Load Cell C2 Fx

Max: 7287.9 [N] at 0.027 [s]

Min: -263.8 [N] at 0.165 [s]

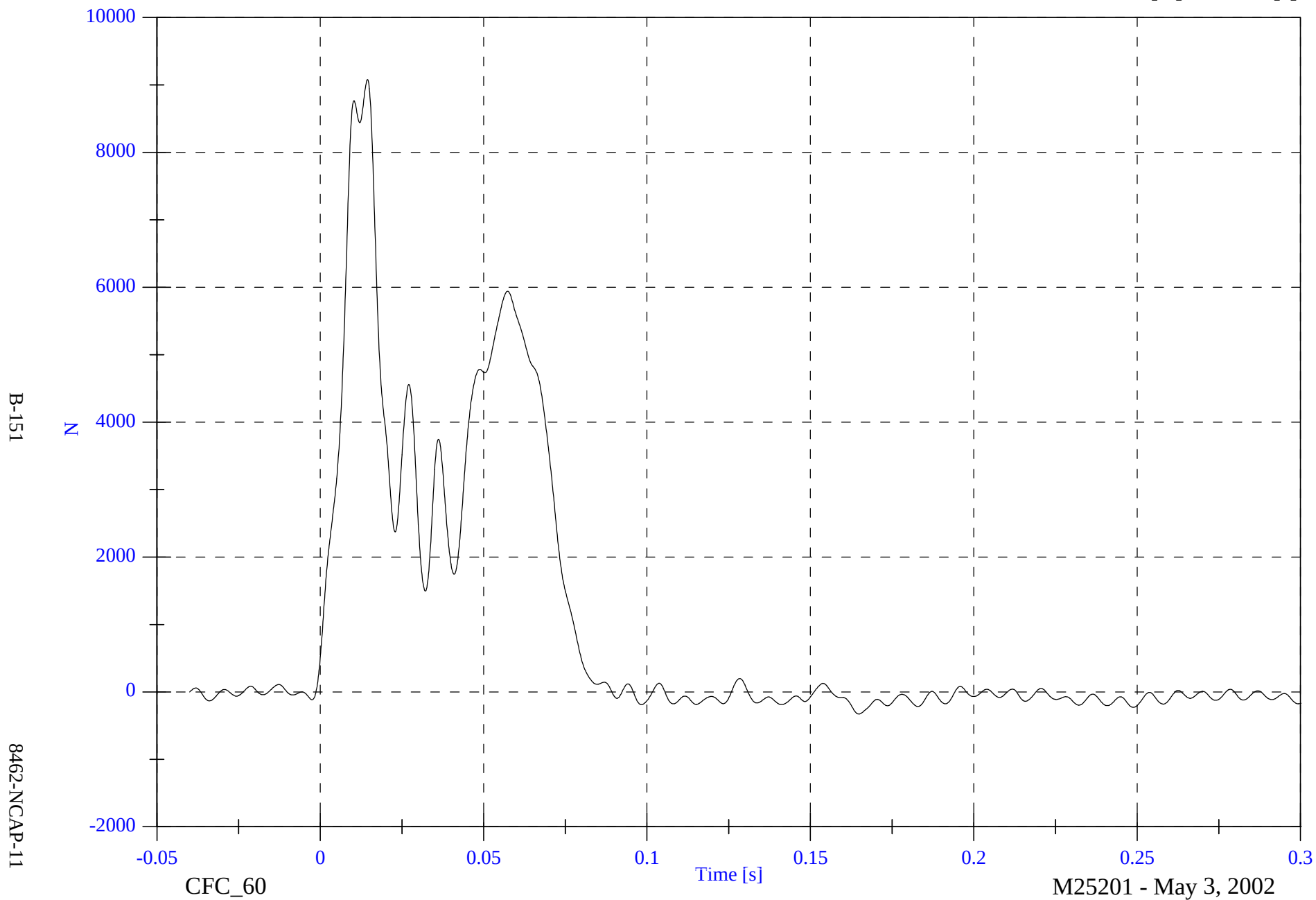


NCAP Test #11 - 2002 Nissan Frontier

Max: 9080.5 [N] at 0.014 [s]

Barrier Load Cell C3 Fx

Min: -329.0 [N] at 0.165 [s]

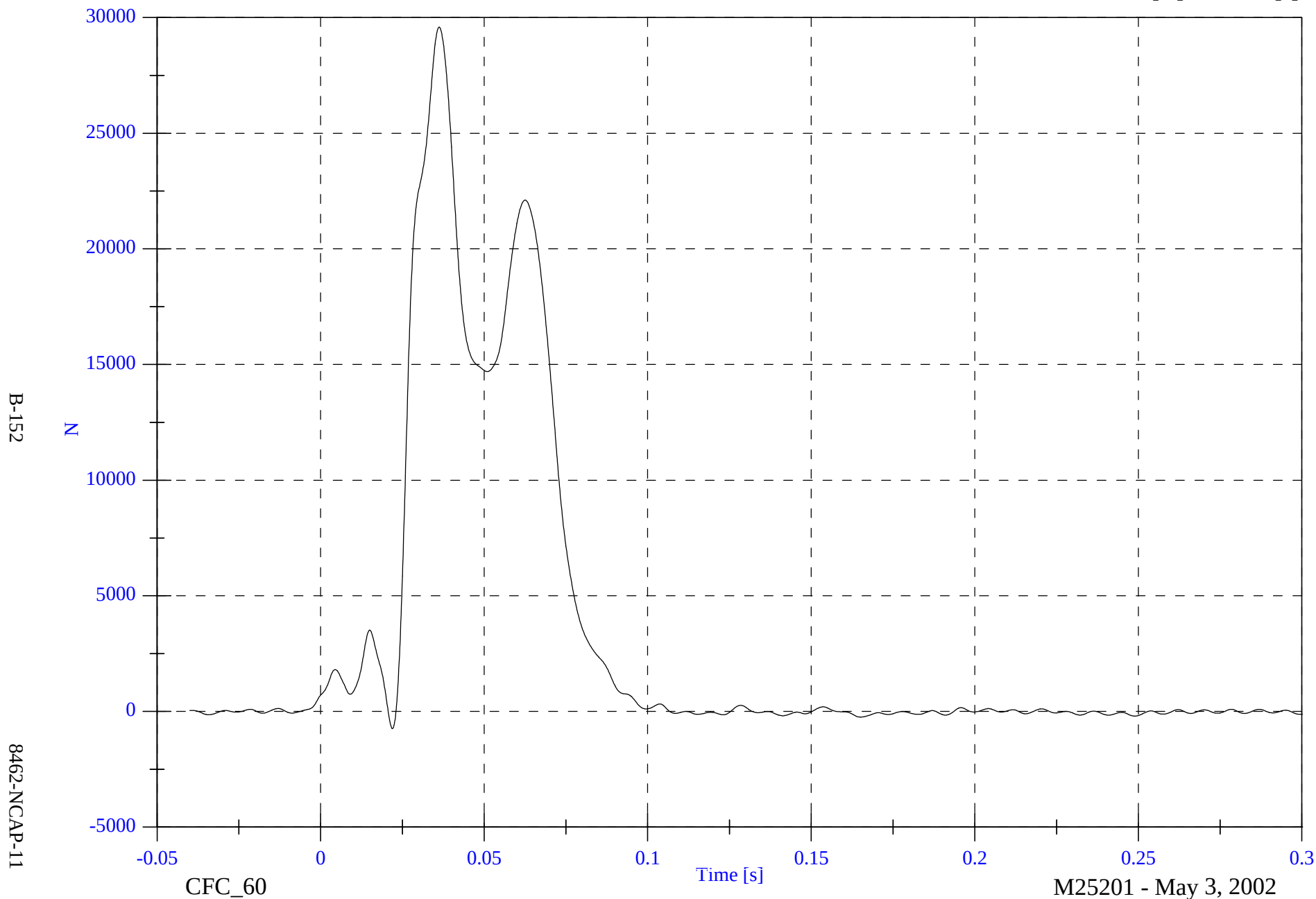


NCAP Test #11 - 2002 Nissan Frontier

Barrier Load Cell C4 Fx

Max: 29589.9 [N] at 0.036 [s]

Min: -741.9 [N] at 0.022 [s]

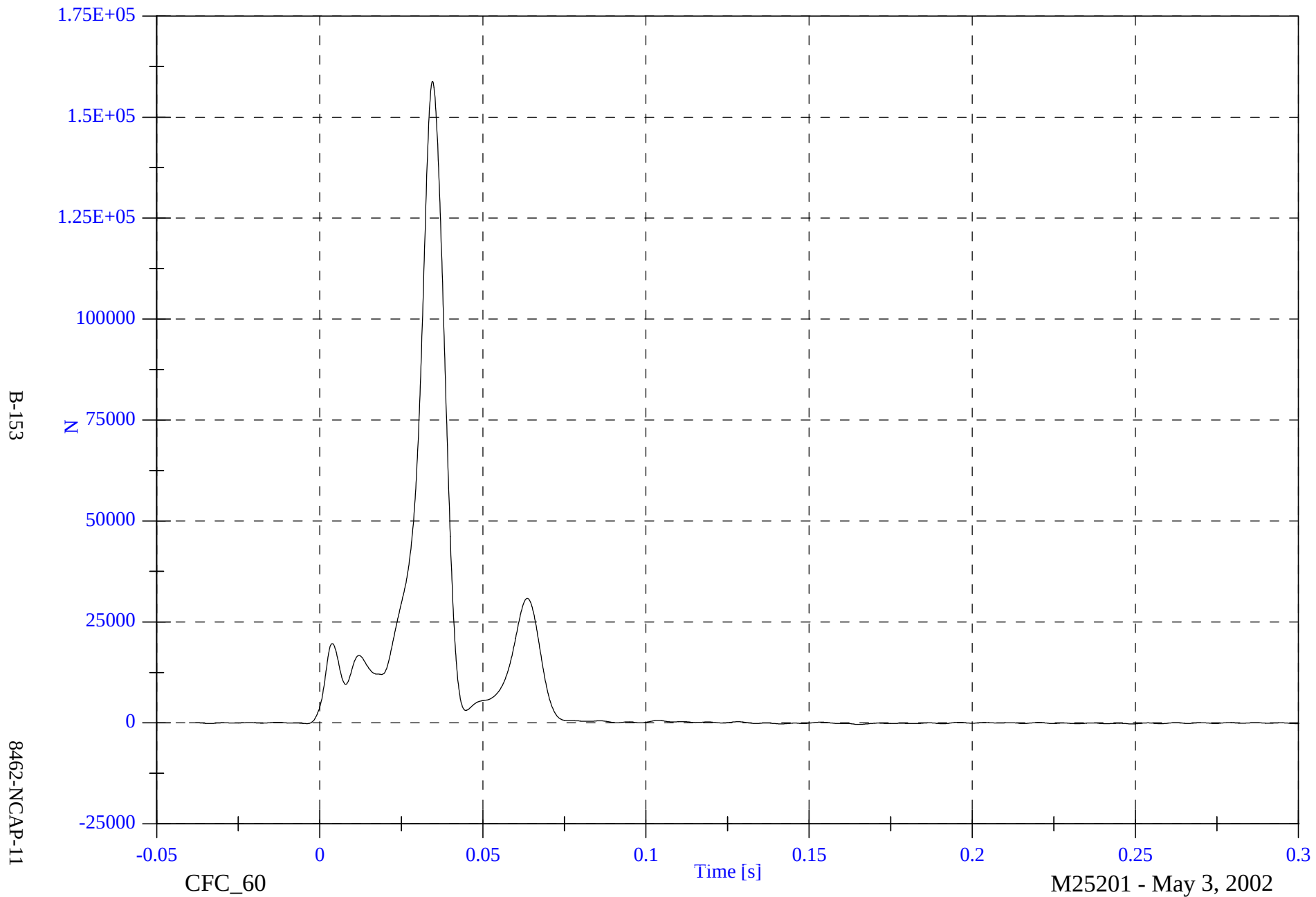


NCAP Test #11 - 2002 Nissan Frontier

Barrier Load Cell C5 Fx

Max: 158873.8 [N] at 0.034 [s]

Min: -364.5 [N] at 0.165 [s]

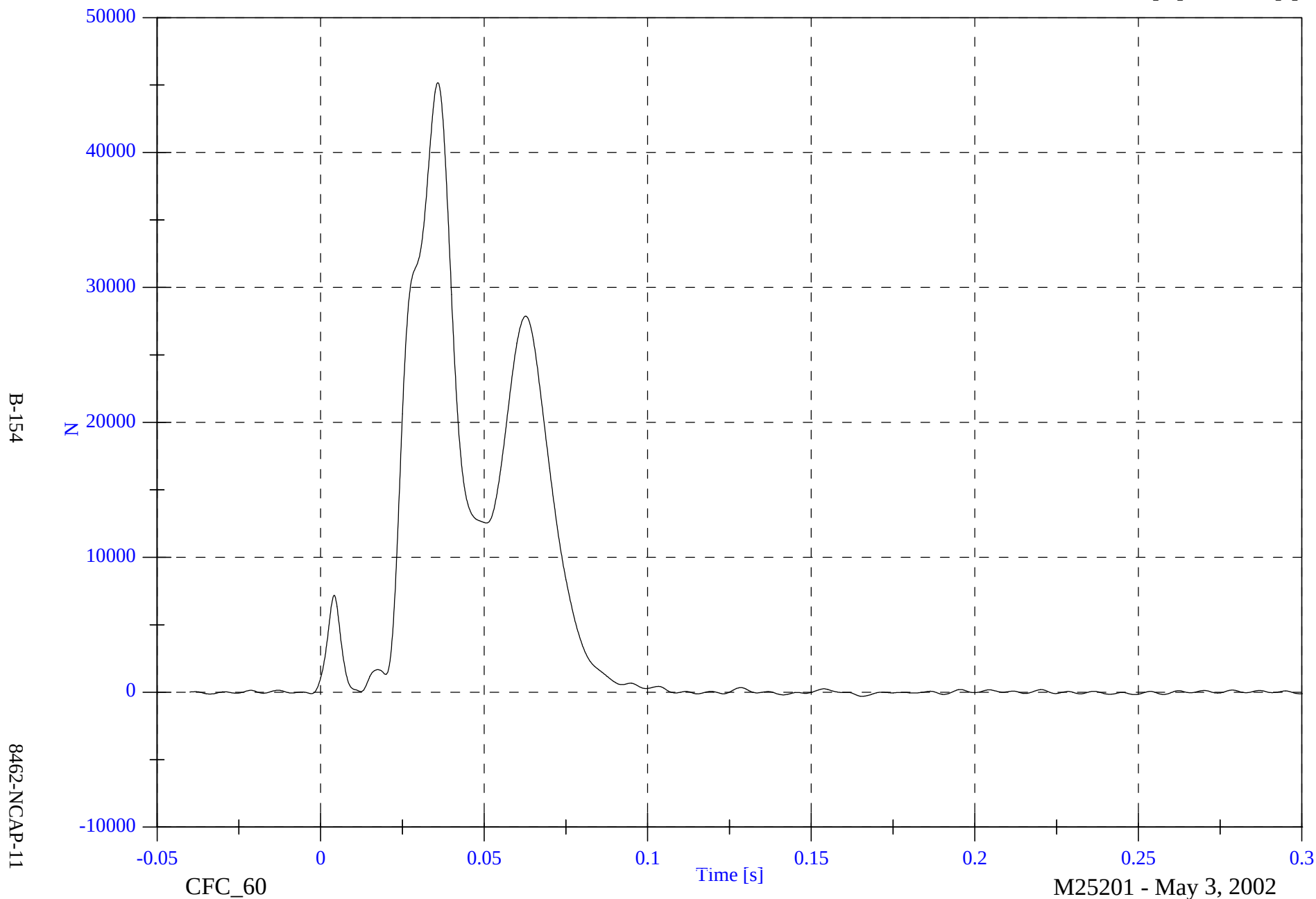


NCAP Test #11 - 2002 Nissan Frontier

Barrier Load Cell C6 Fx

Max: 45175.3 [N] at 0.036 [s]

Min: -307.6 [N] at 0.165 [s]

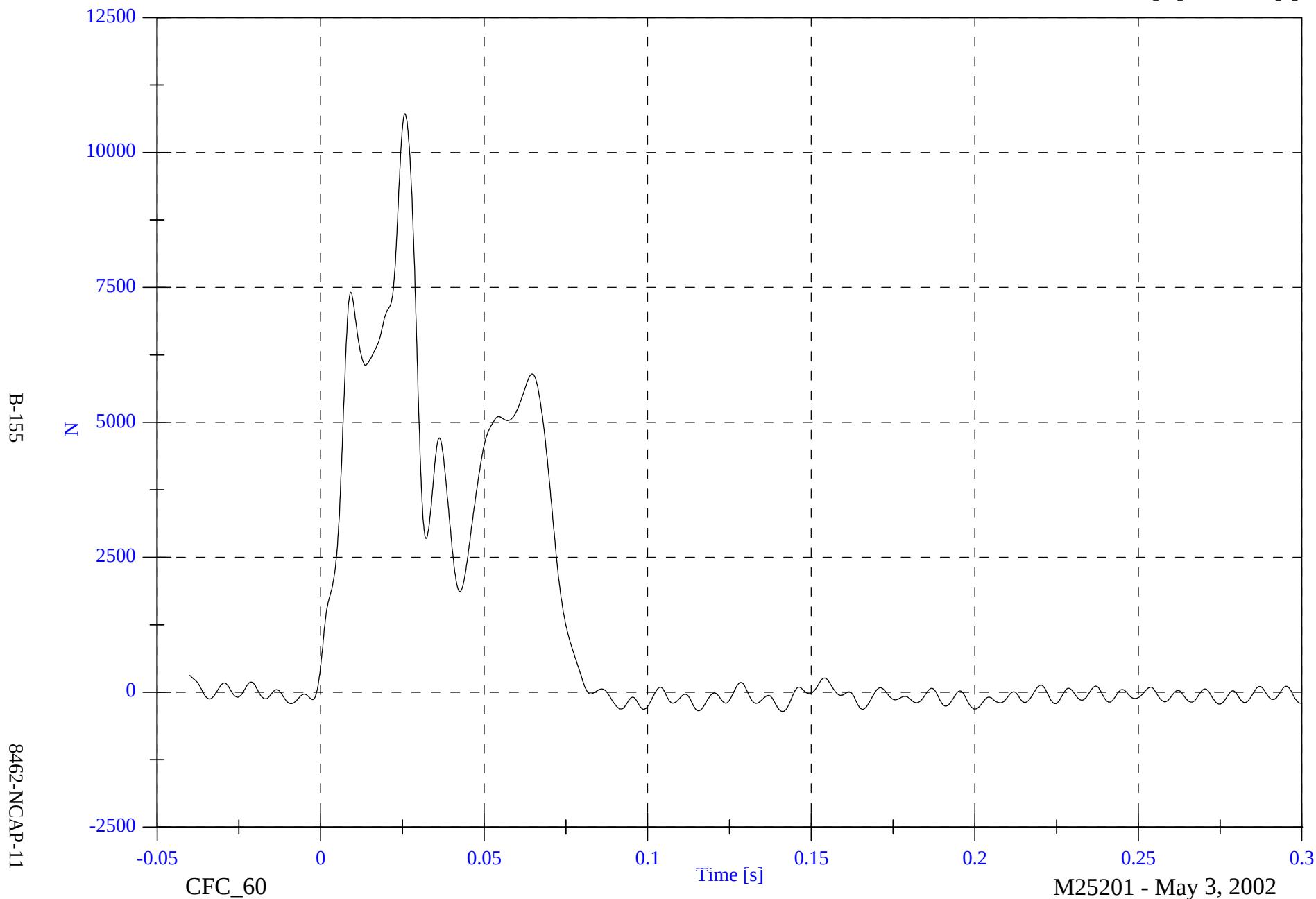


NCAP Test #11 - 2002 Nissan Frontier

Barrier Load Cell C7 Fx

Max: 10718.0 [N] at 0.026 [s]

Min: -357.8 [N] at 0.141 [s]

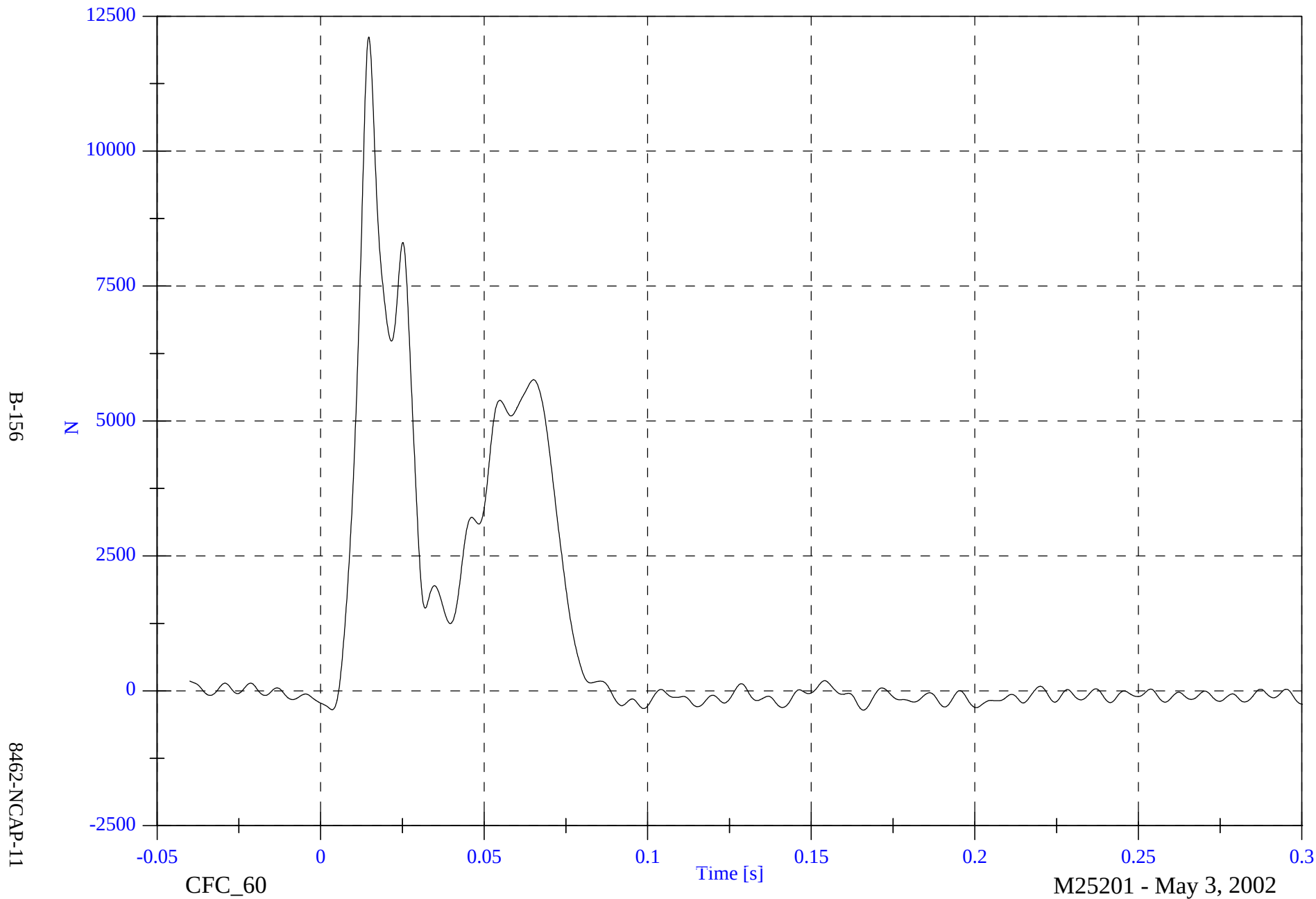


NCAP Test #11 - 2002 Nissan Frontier

Barrier Load Cell C8 Fx

Max: 12116.8 [N] at 0.015 [s]

Min: -358.0 [N] at 0.166 [s]

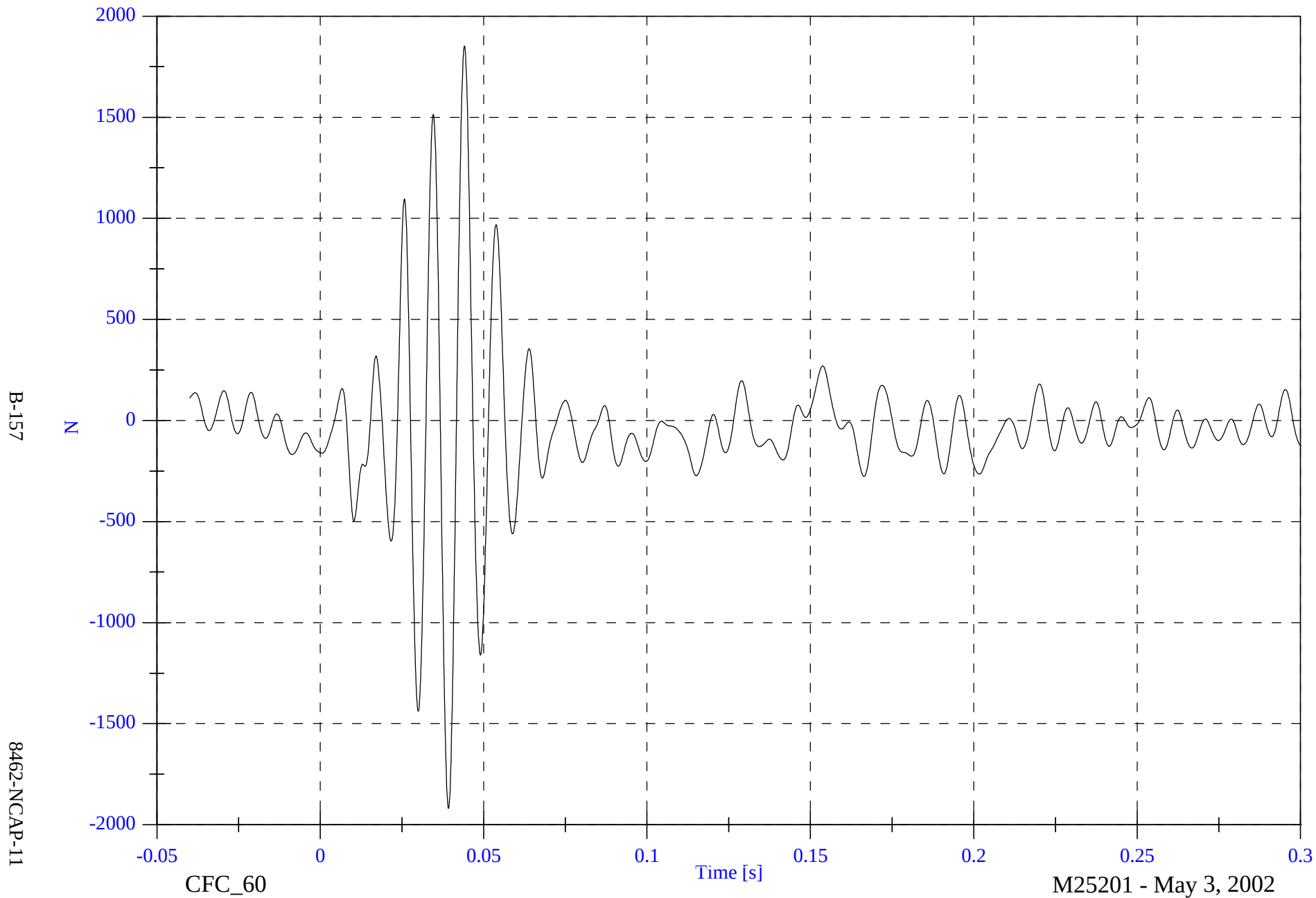


NCAP Test #11 - 2002 Nissan Frontier

Barrier Load Cell C9 Fx

Max: 1853.0 [N] at 0.044 [s]

Min: -1919.1 [N] at 0.039 [s]

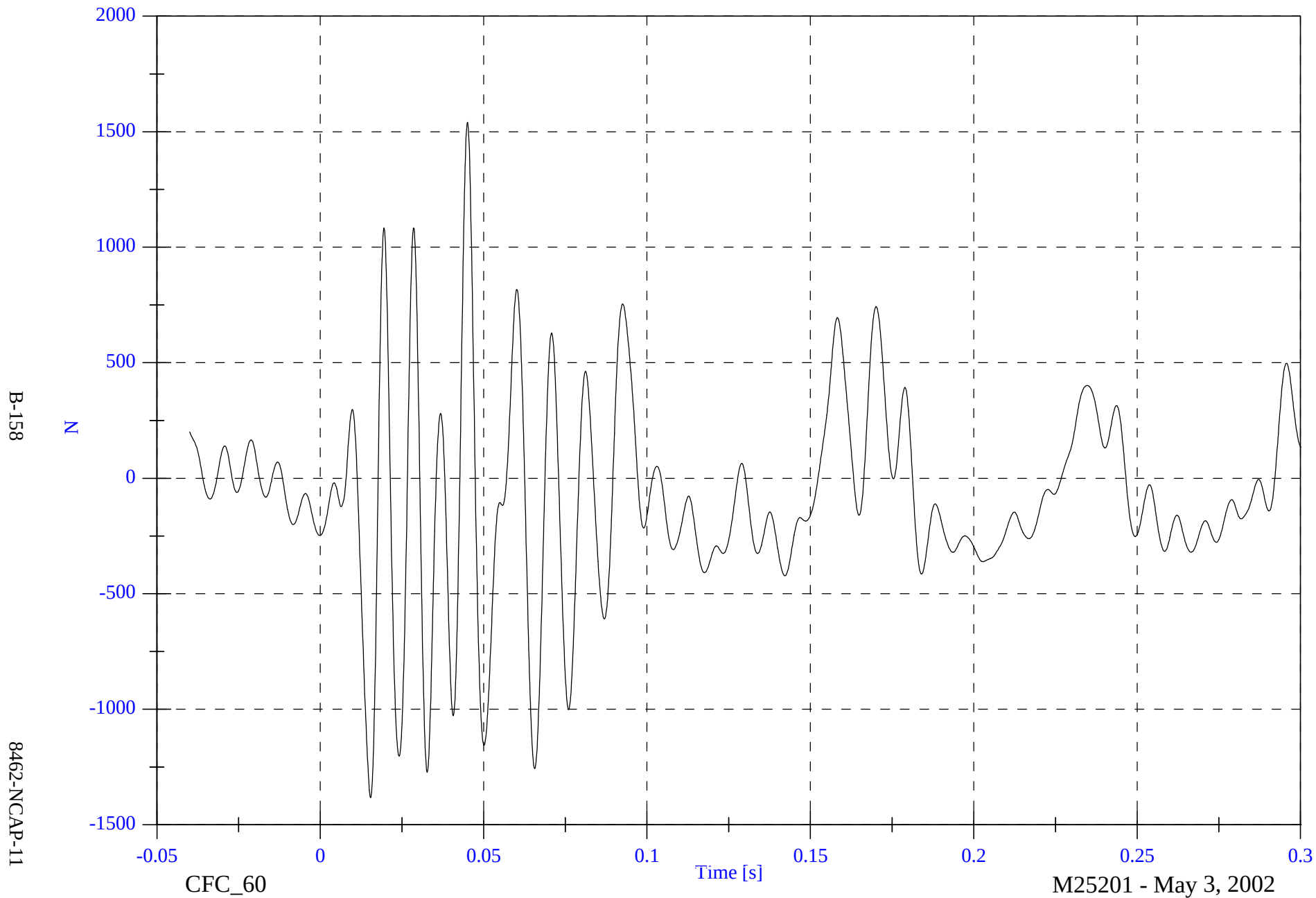


NCAP Test #11 - 2002 Nissan Frontier

Barrier Load Cell D1 Fx

Max: 1540.7 [N] at 0.045 [s]

Min: -1382.9 [N] at 0.015 [s]

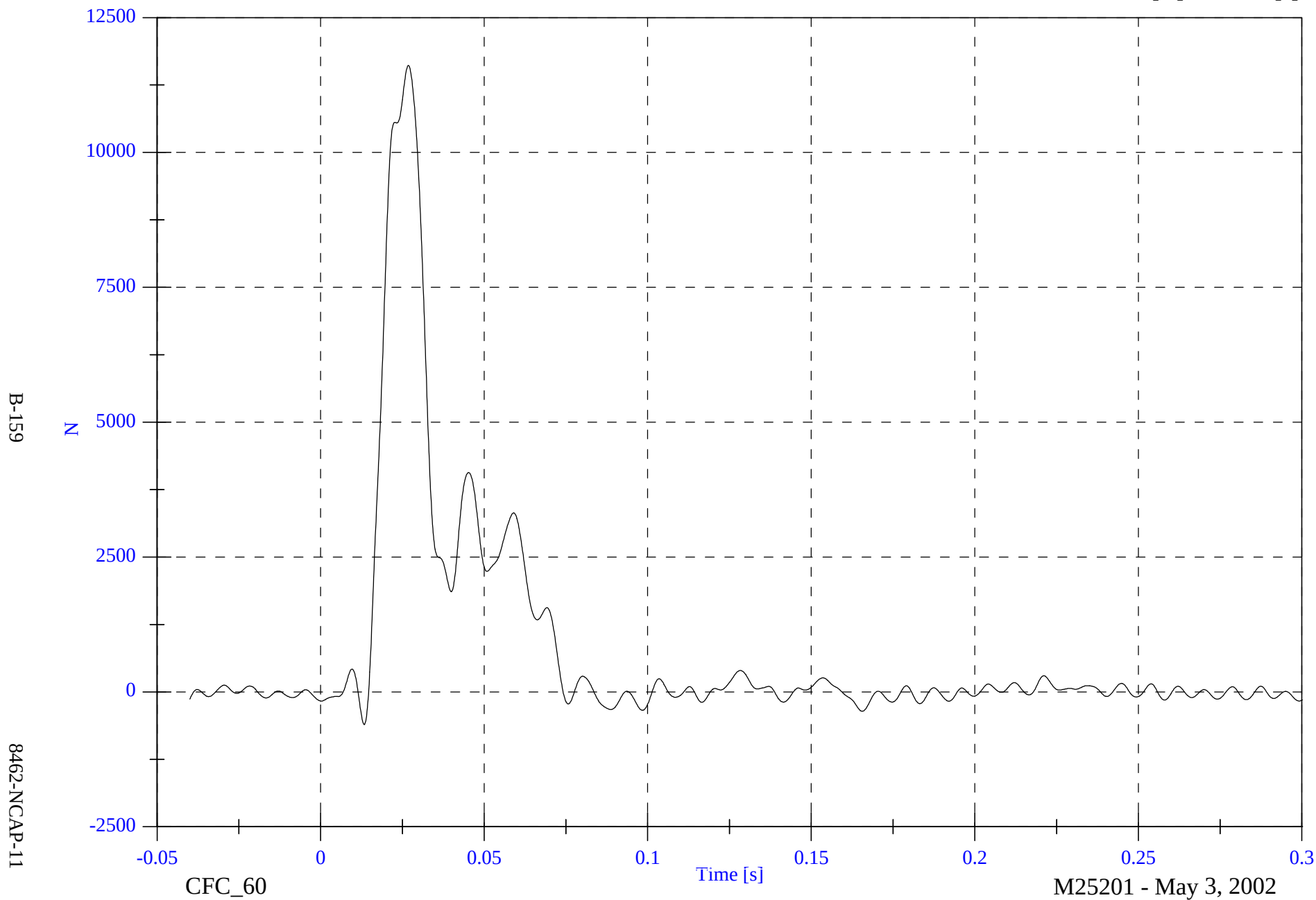


NCAP Test #11 - 2002 Nissan Frontier

Barrier Load Cell D2 Fx

Max: 11612.8 [N] at 0.027 [s]

Min: -607.7 [N] at 0.013 [s]

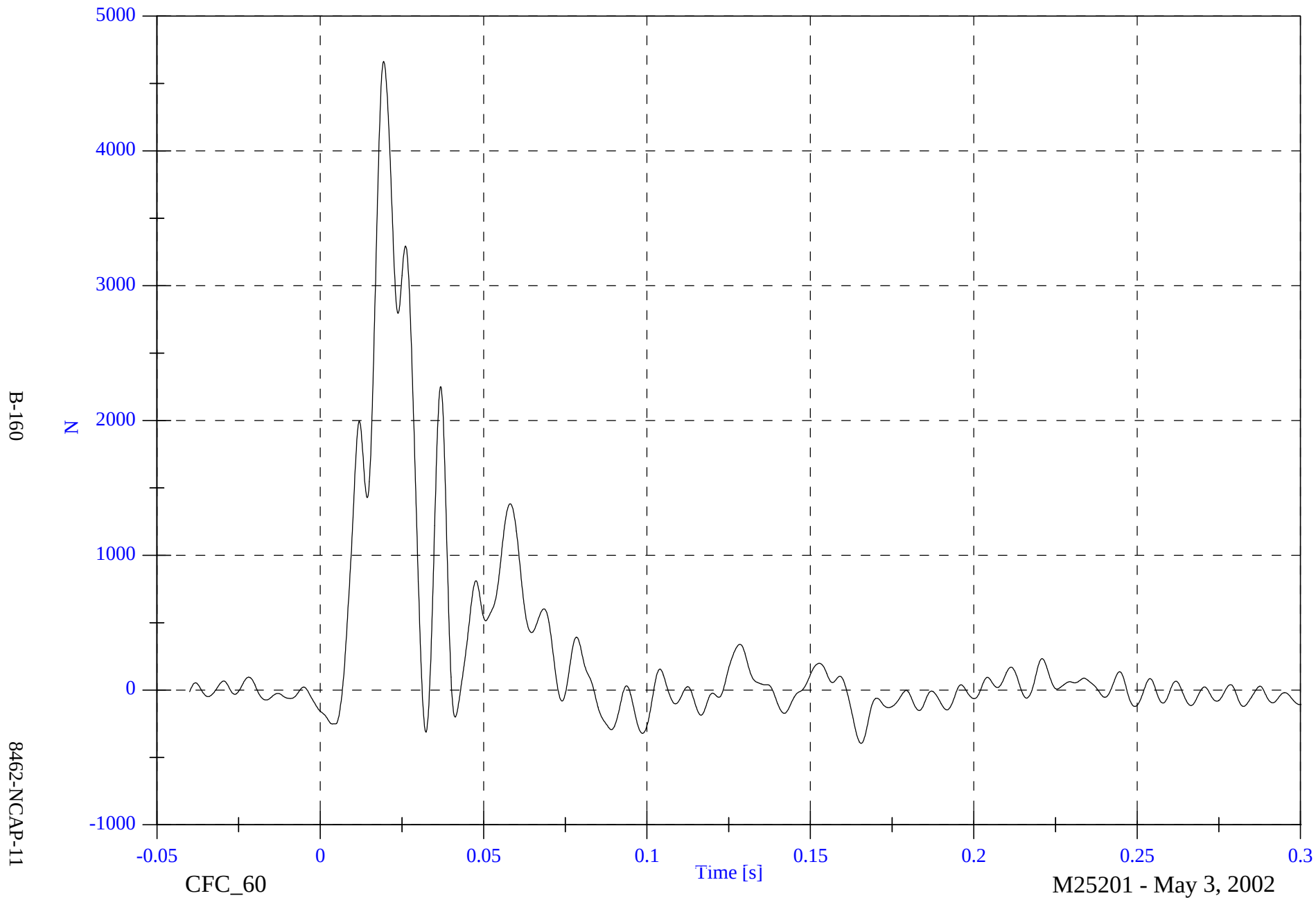


NCAP Test #11 - 2002 Nissan Frontier

Barrier Load Cell D3 Fx

Max: 4664.2 [N] at 0.019 [s]

Min: -395.8 [N] at 0.165 [s]

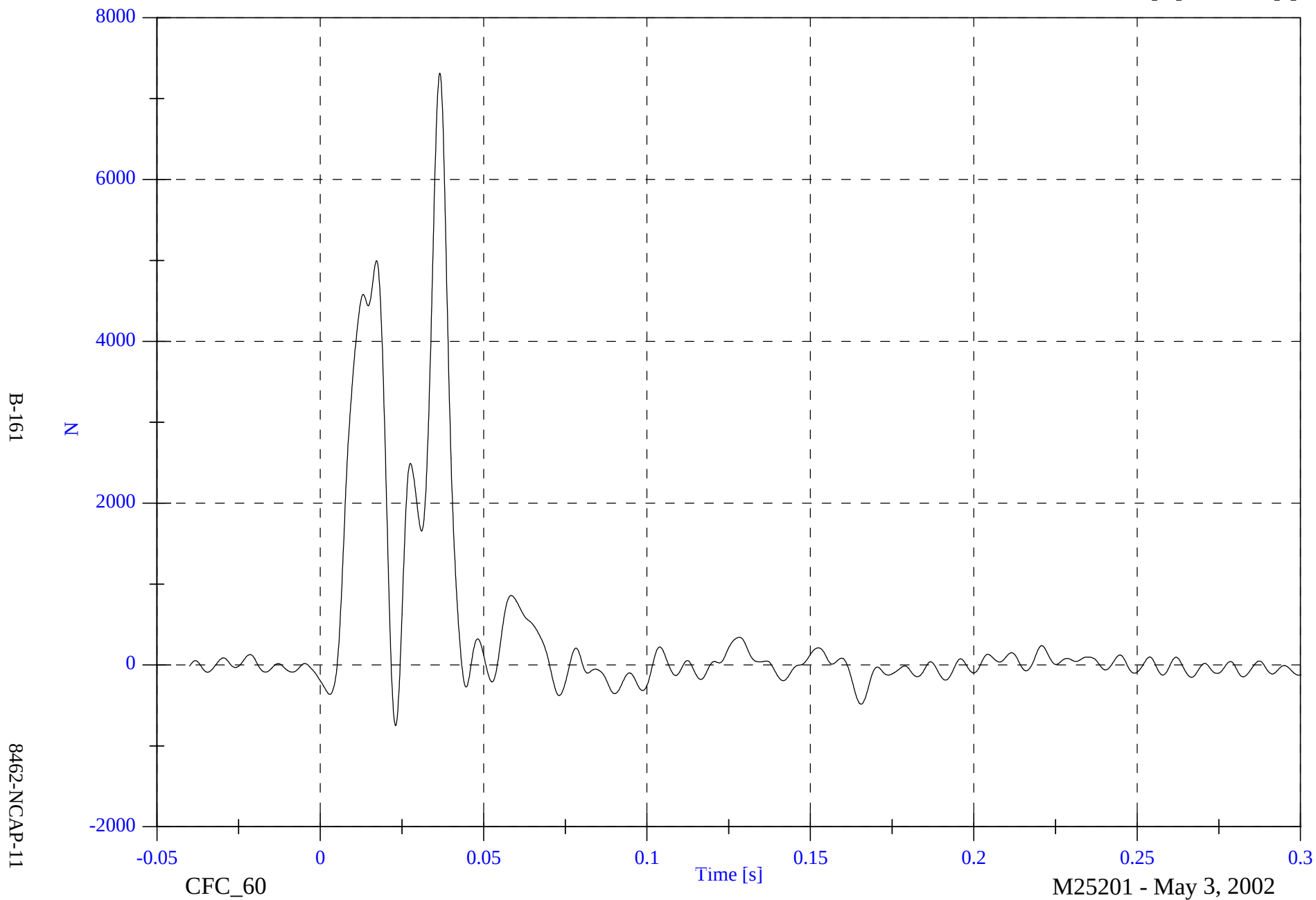


NCAP Test #11 - 2002 Nissan Frontier

Barrier Load Cell D4 Fx

Max: 7315.0 [N] at 0.037 [s]

Min: -751.9 [N] at 0.023 [s]

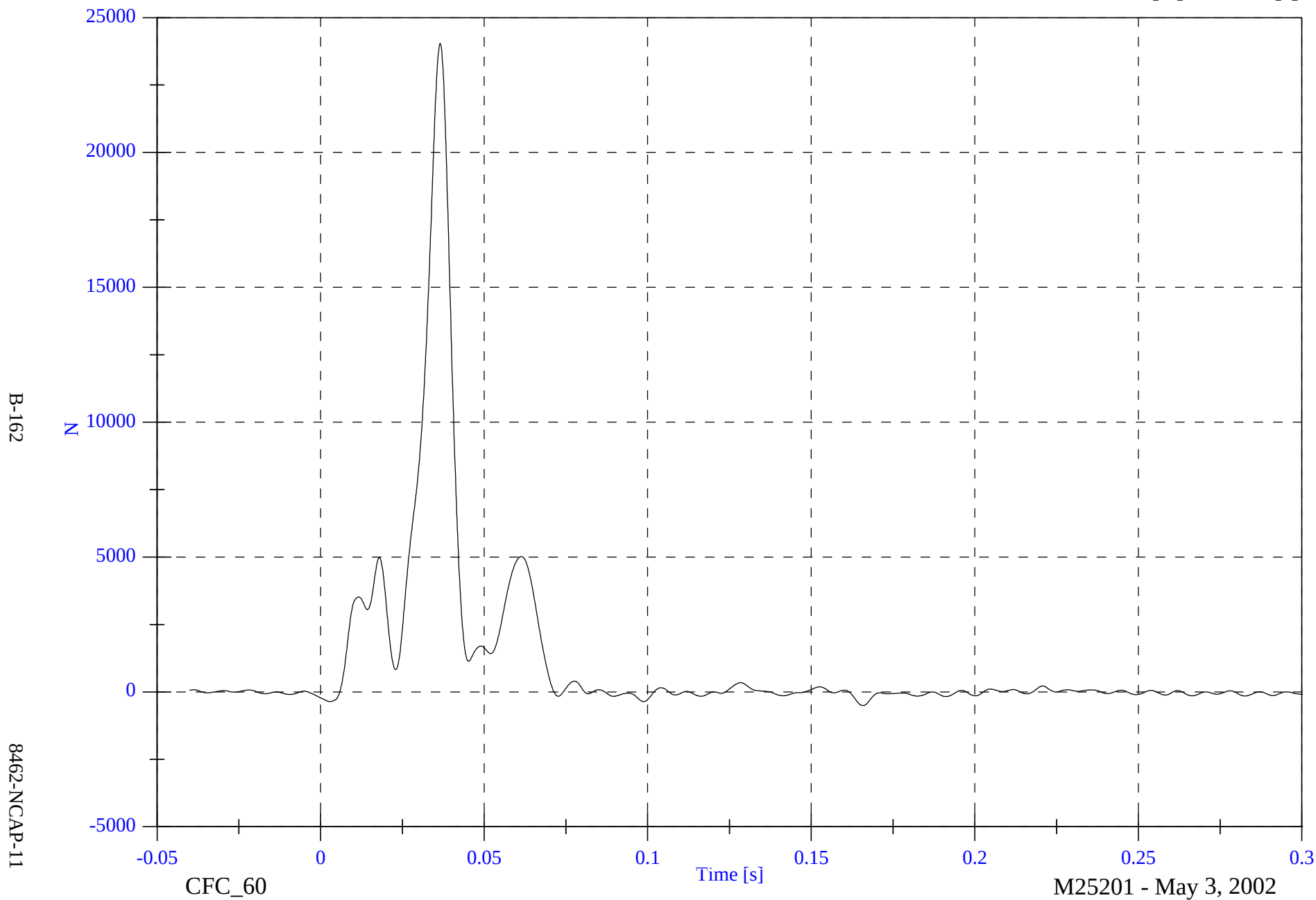


NCAP Test #11 - 2002 Nissan Frontier

Barrier Load Cell D5 Fx

Max: 24043.2 [N] at 0.036 [s]

Min: -509.1 [N] at 0.166 [s]

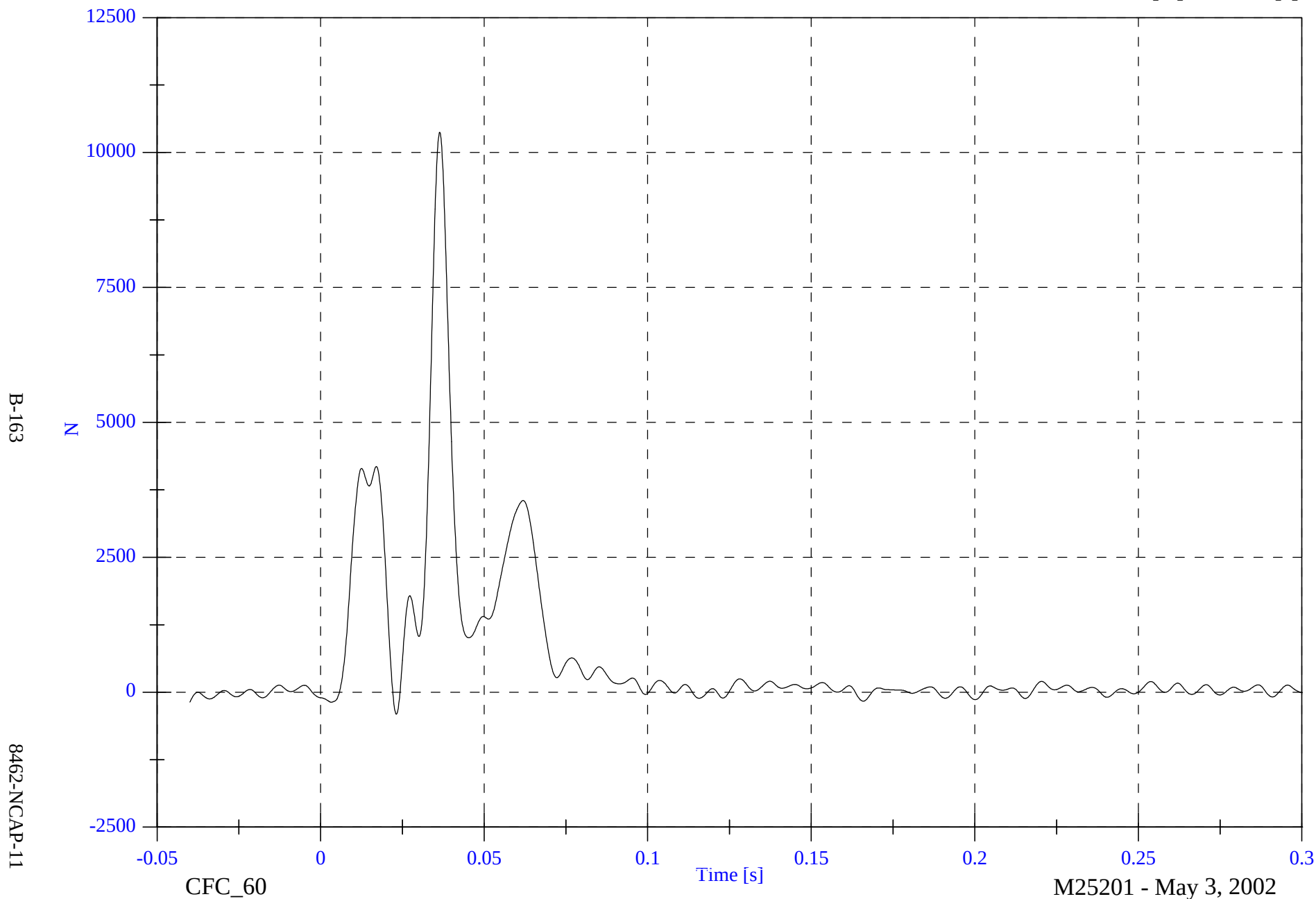


NCAP Test #11 - 2002 Nissan Frontier

Barrier Load Cell D6 Fx

Max: 10378.4 [N] at 0.036 [s]

Min: -407.6 [N] at 0.023 [s]

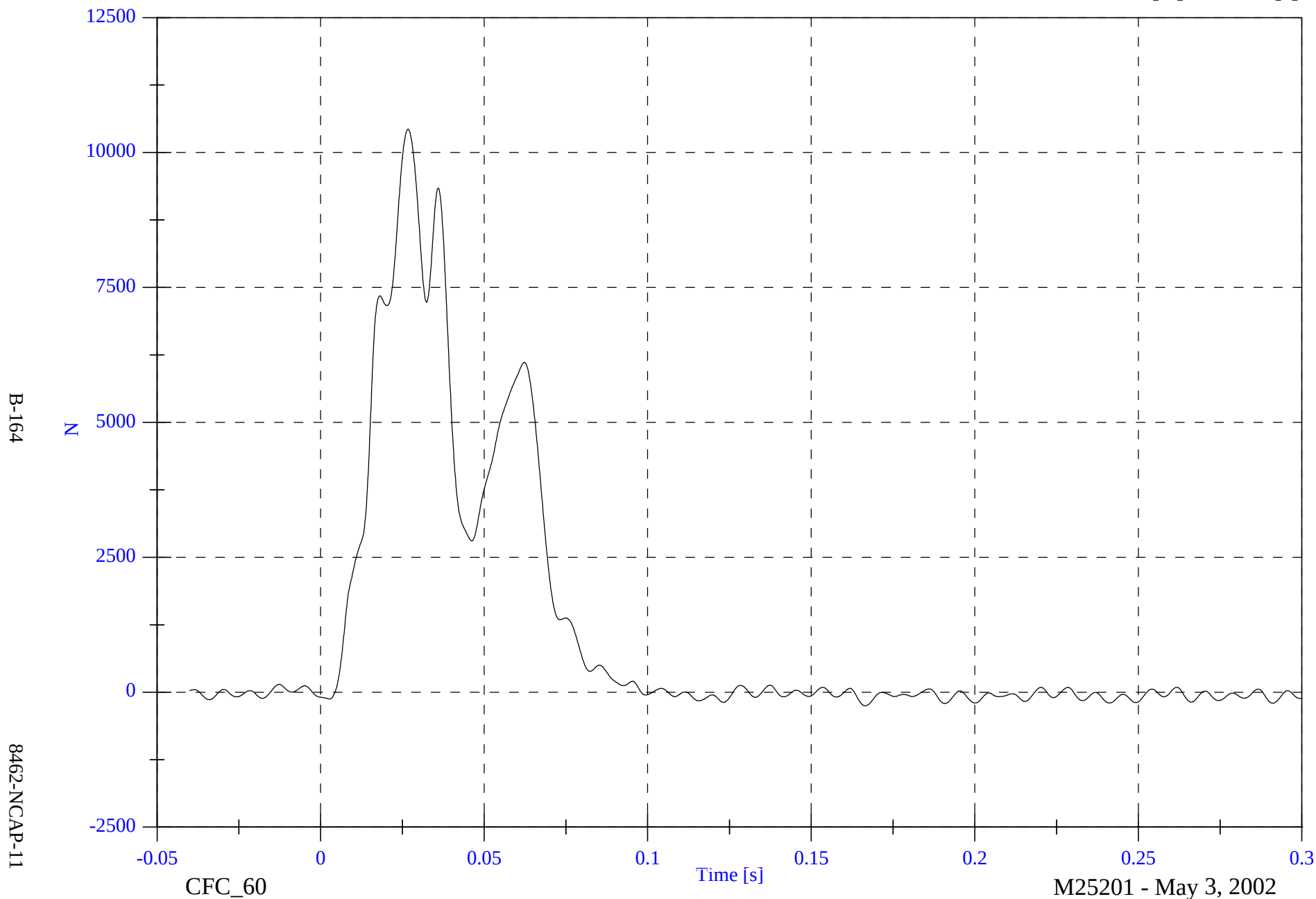


NCAP Test #11 - 2002 Nissan Frontier

Barrier Load Cell D7 Fx

Max: 10432.1 [N] at 0.027 [s]

Min: -252.4 [N] at 0.166 [s]

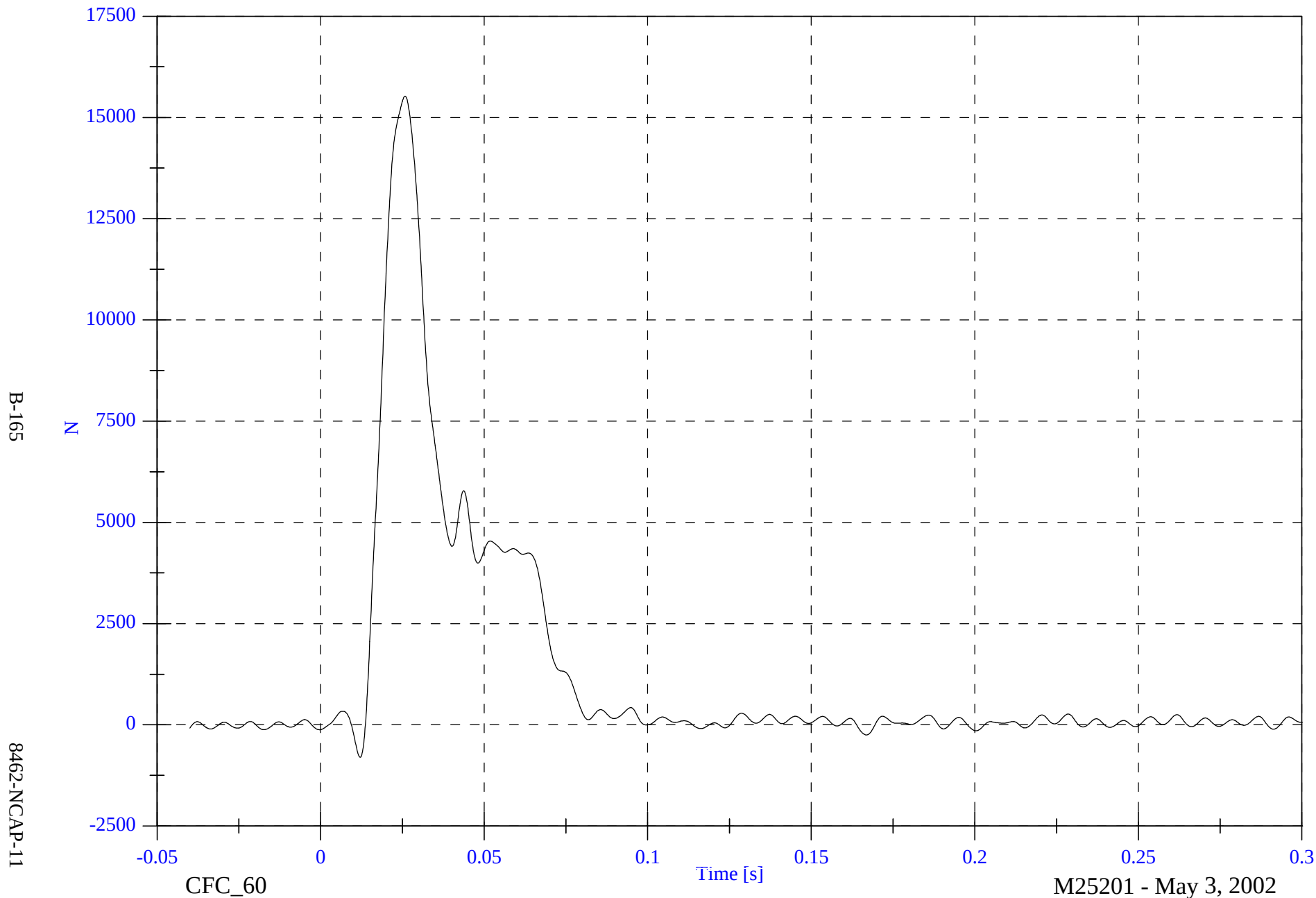


NCAP Test #11 - 2002 Nissan Frontier

Barrier Load Cell D8 Fx

Max: 15524.0 [N] at 0.026 [s]

Min: -802.0 [N] at 0.012 [s]

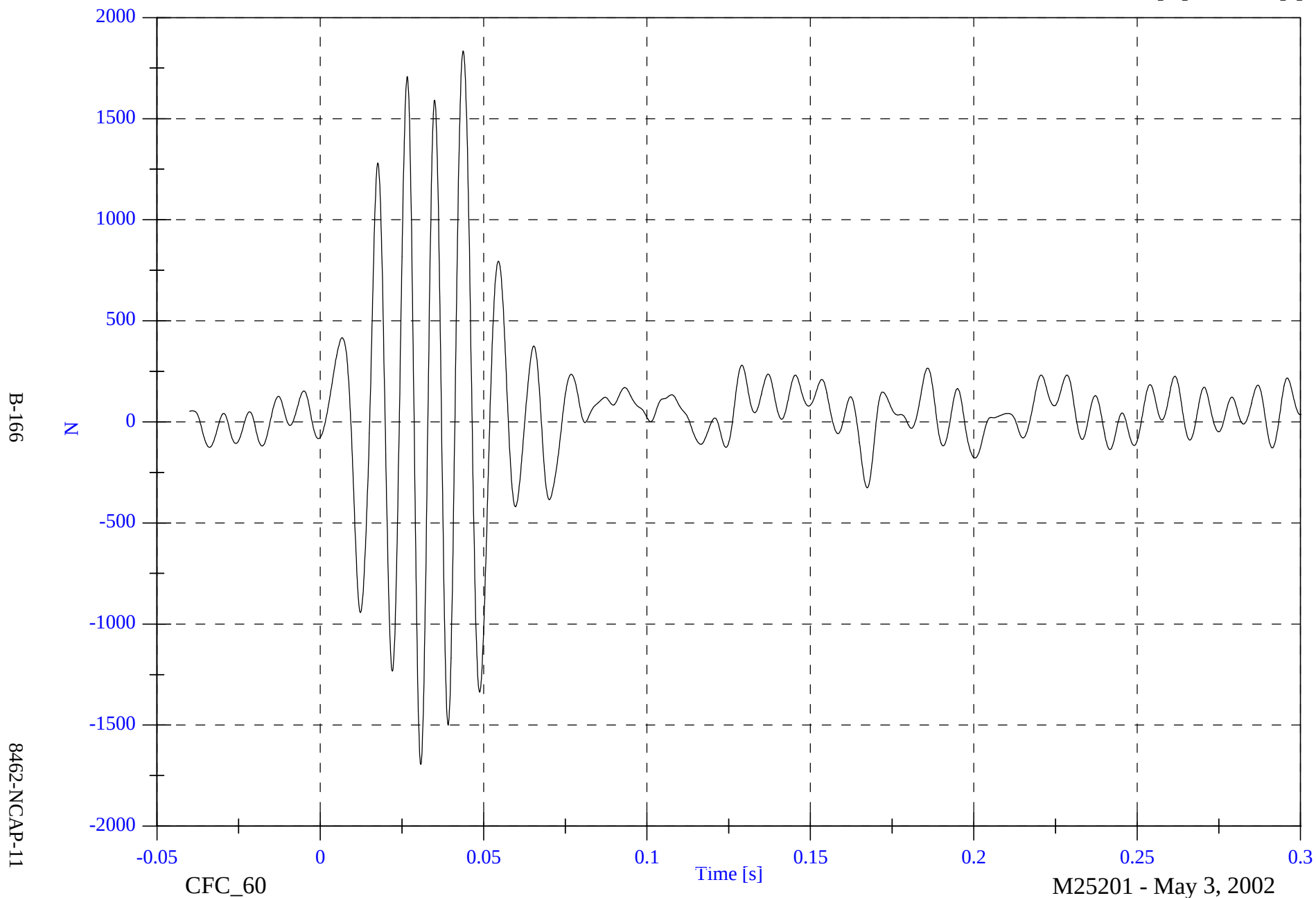


NCAP Test #11 - 2002 Nissan Frontier

Barrier Load Cell D9 Fx

Max: 1835.7 [N] at 0.044 [s]

Min: -1695.6 [N] at 0.031 [s]

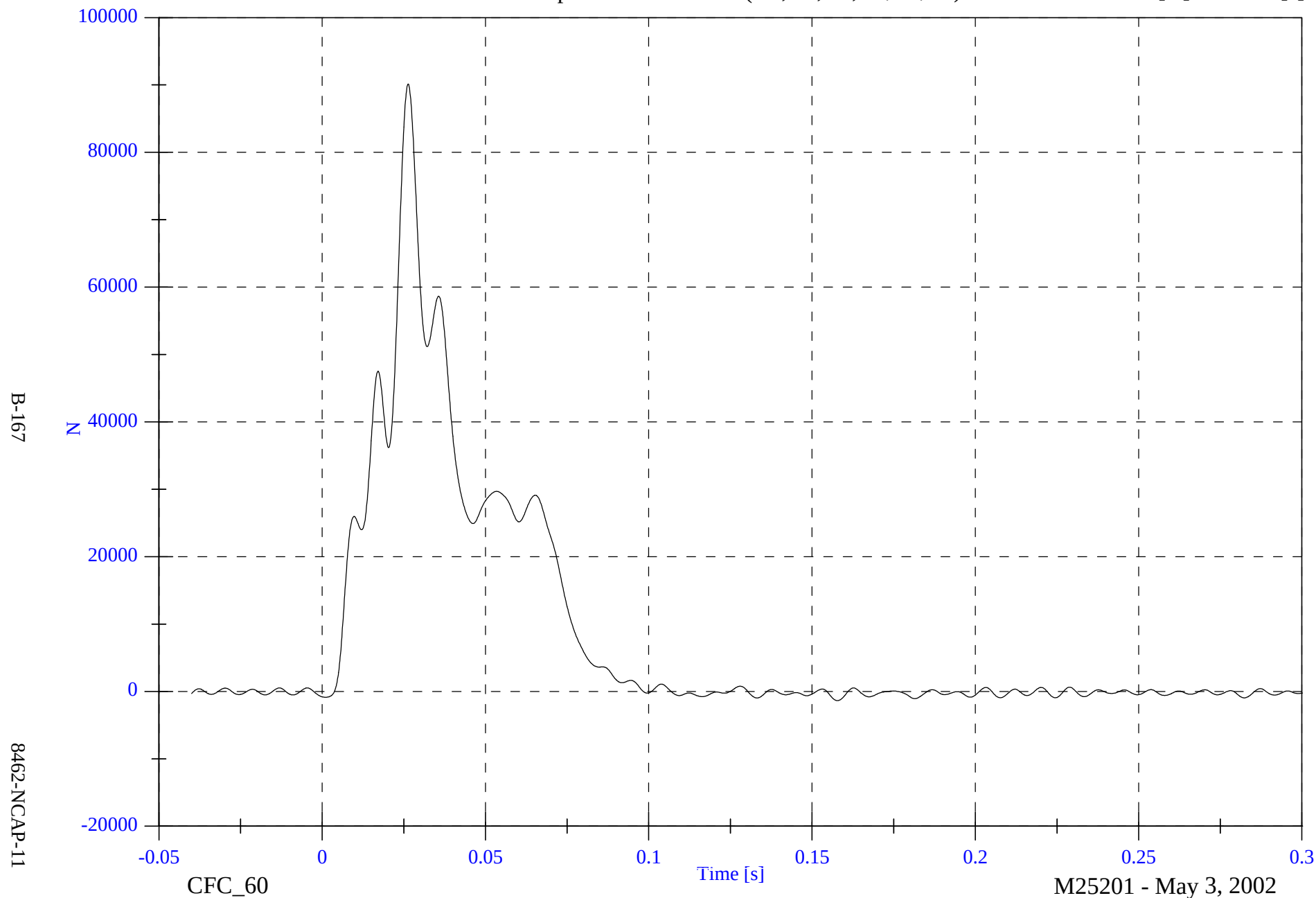


NCAP Test #11 - 2002 Nissan Frontier

Group 1 Load Cell Sum (A1,A2,A3,B1,B2,B3)

Max: 90138.3 [N] at 0.026 [s]

Min: -1372.3 [N] at 0.158 [s]

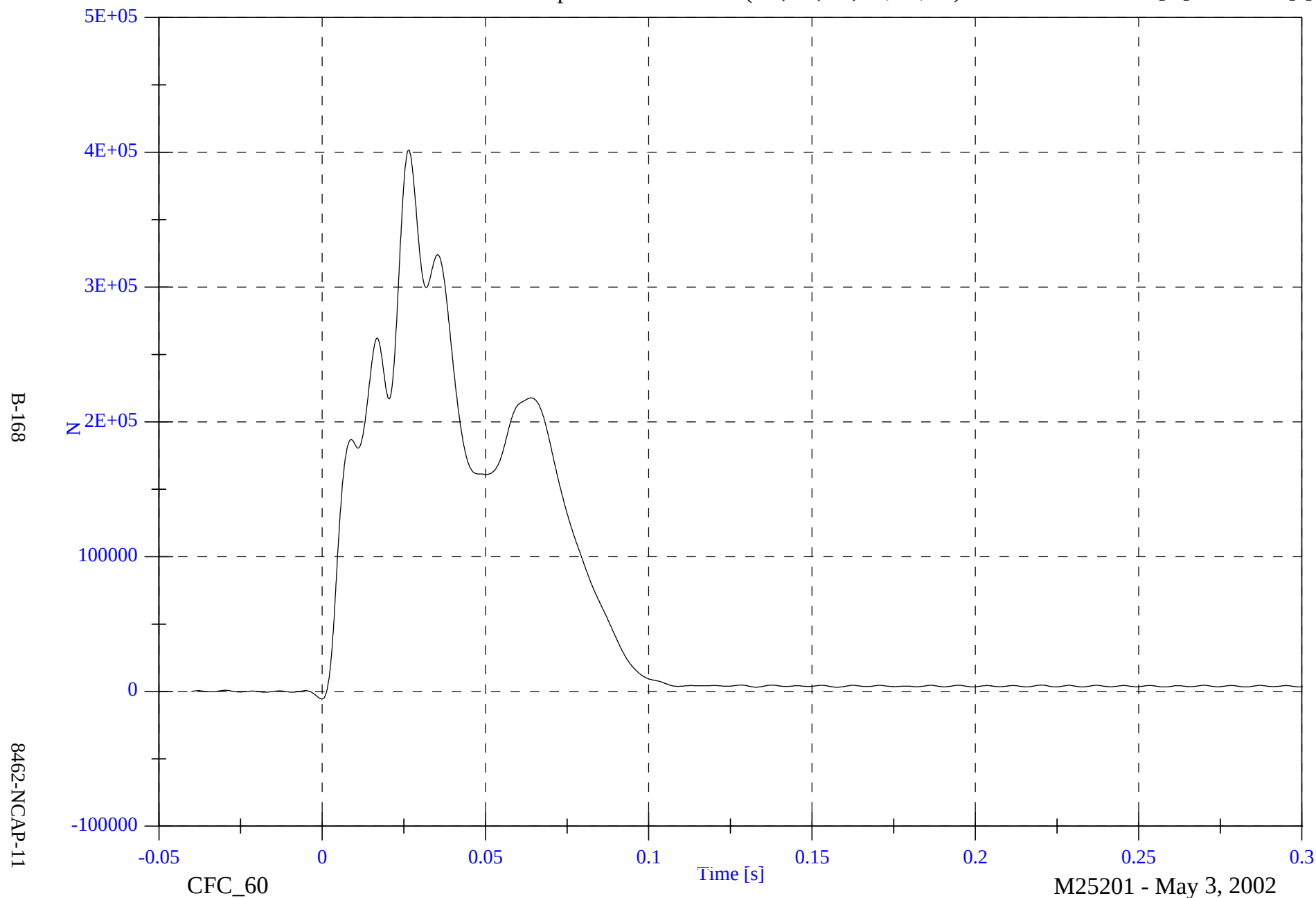


NCAP Test #11 - 2002 Nissan Frontier

Group 2 Load Cell Sum (A4,A5,A6,B4,B5,B6)

Max: 401836.1 [N] at 0.026 [s]

Min: -5642.8 [N] at -0.000 [s]

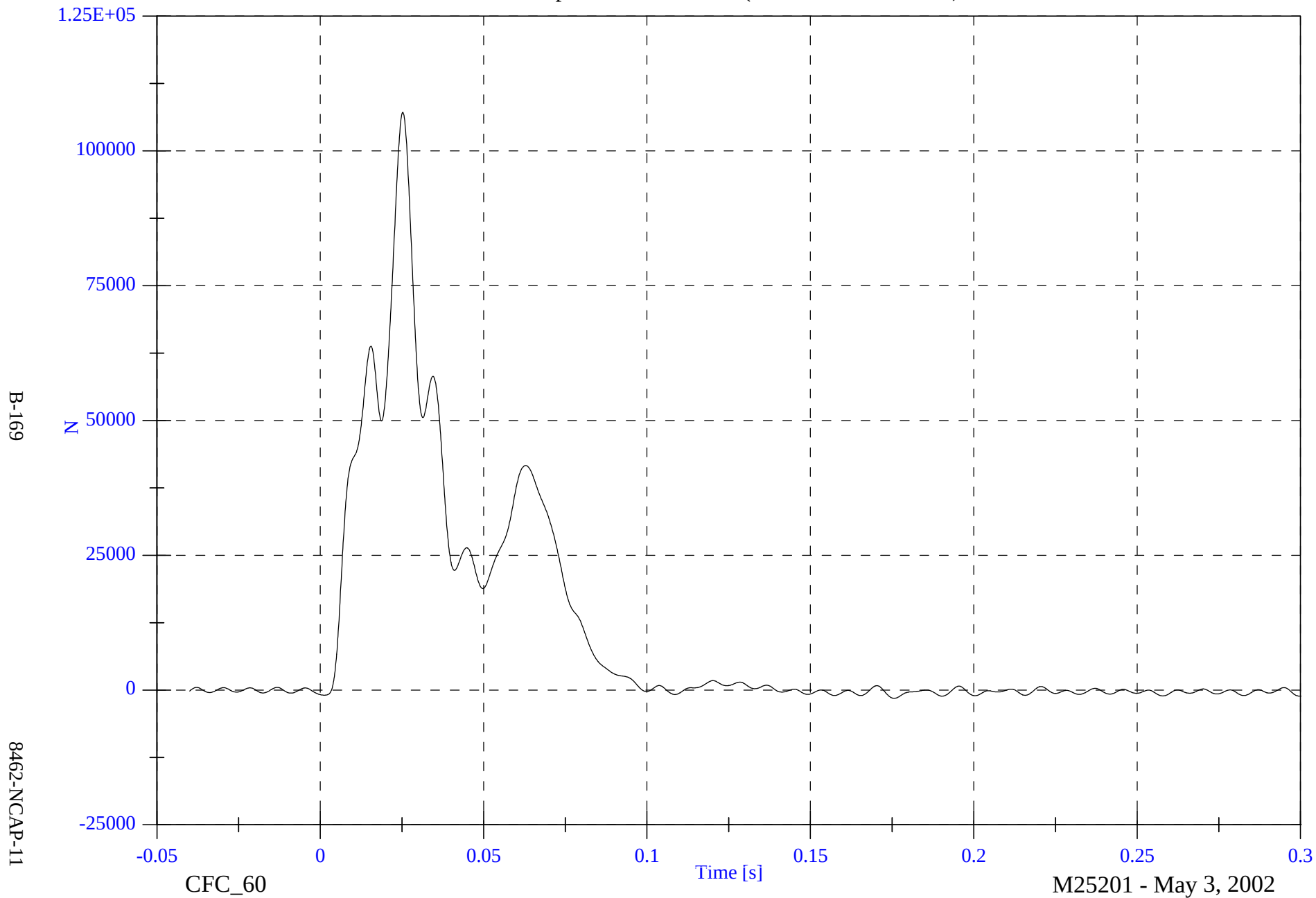


NCAP Test #11 - 2002 Nissan Frontier

Group 3 Load Cell Sum (A7,A8,A9,B7,B8,B9)

Max: 107181.2 [N] at 0.025 [s]

Min: -1542.6 [N] at 0.176 [s]

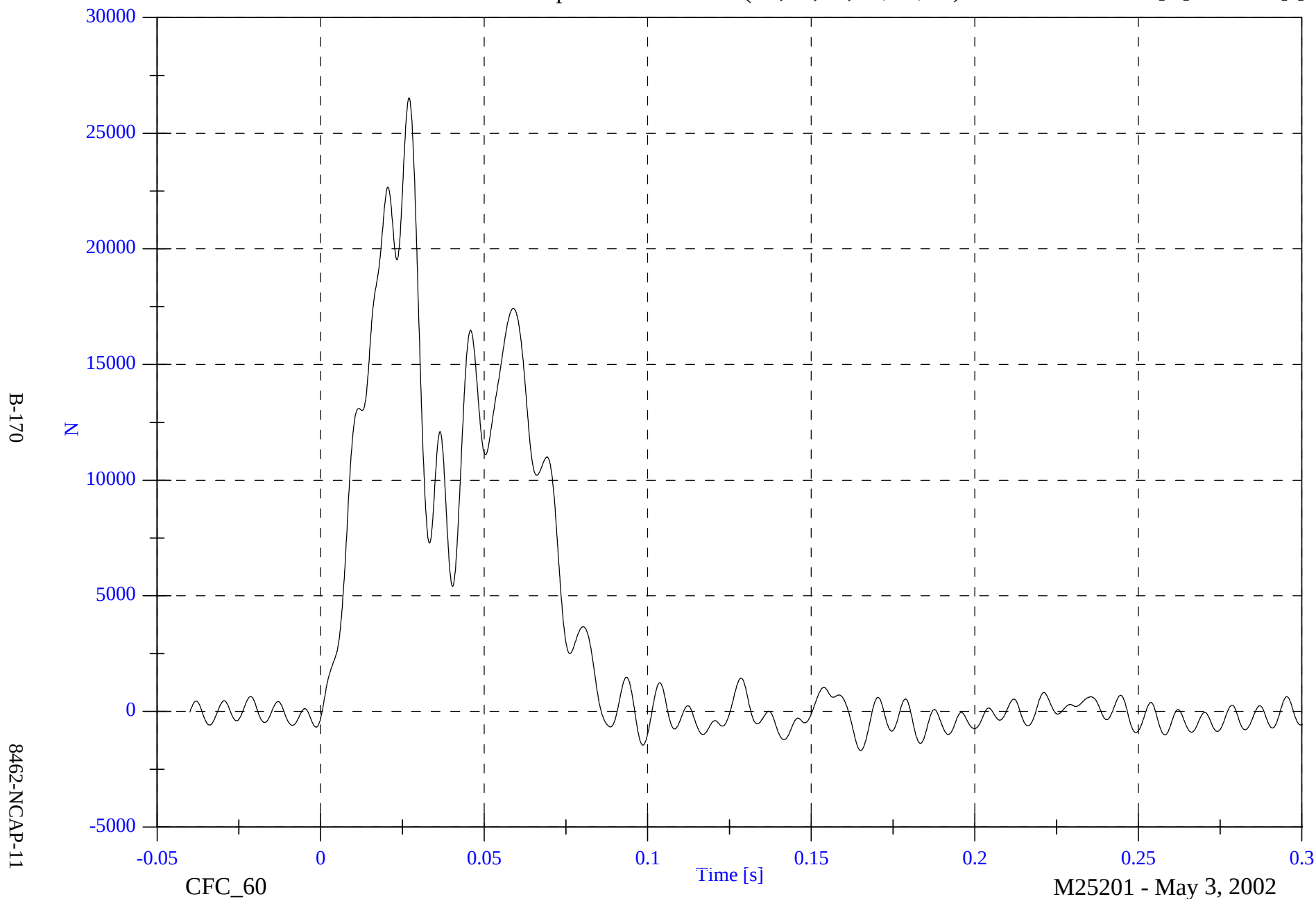


NCAP Test #11 - 2002 Nissan Frontier

Group 4 Load Cell Sum (C1,C2,C3,D1,D2,D3)

Max: 26529.0 [N] at 0.027 [s]

Min: -1690.4 [N] at 0.165 [s]

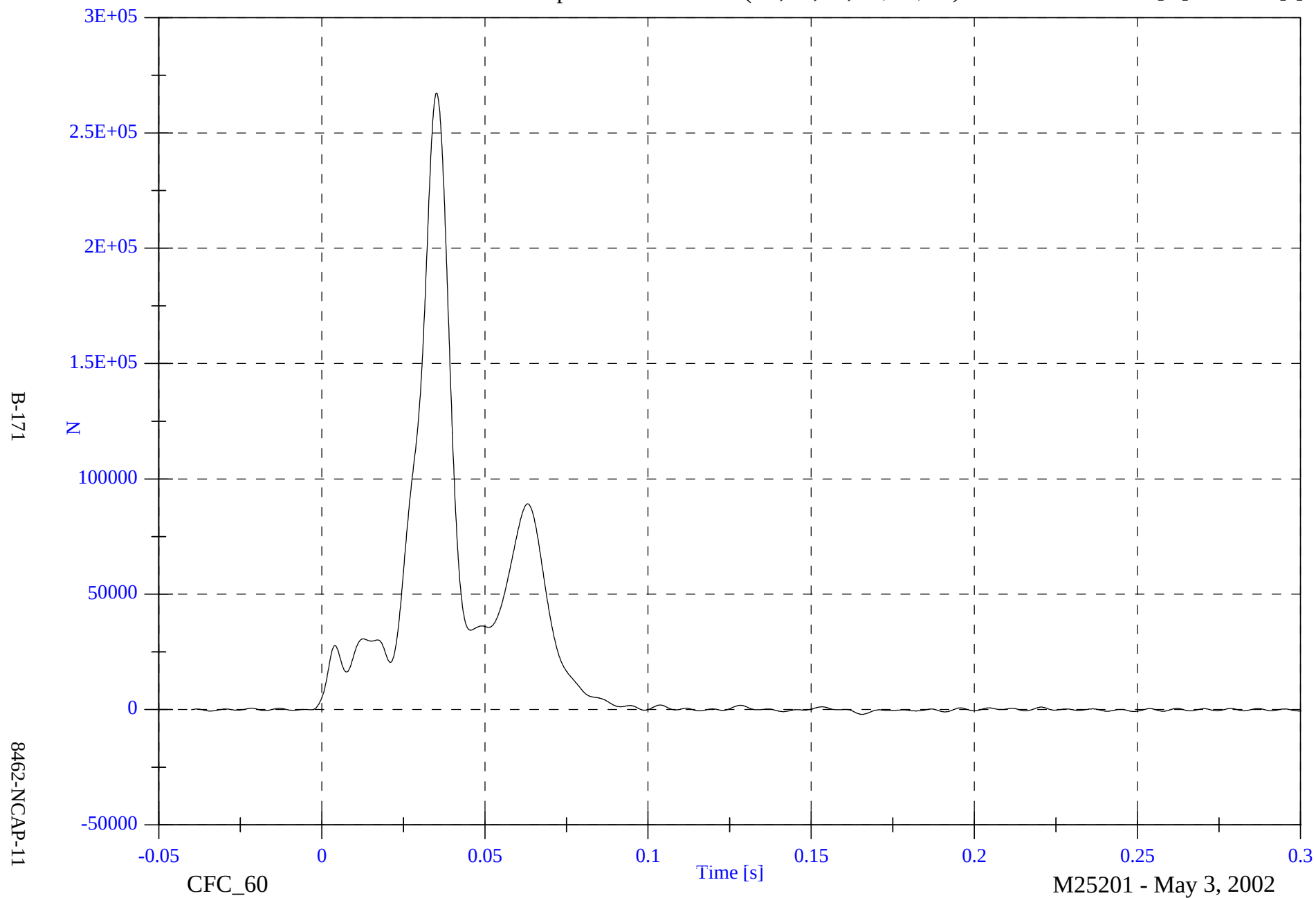


NCAP Test #11 - 2002 Nissan Frontier

Group 5 Load Cell Sum (C4,C5,C6,D4,D5,D6)

Max: 267282.9 [N] at 0.035 [s]

Min: -2065.5 [N] at 0.166 [s]

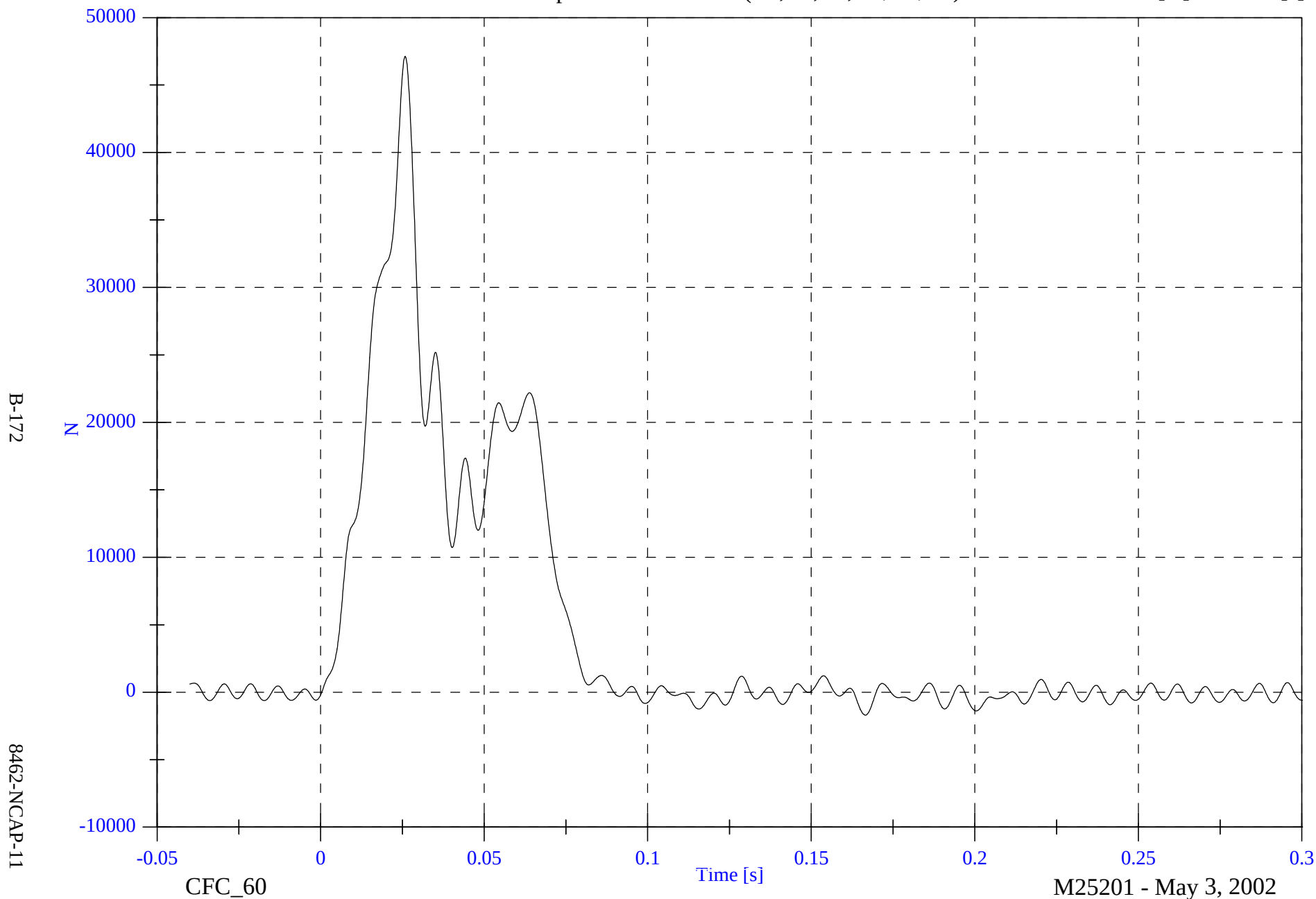


NCAP Test #11 - 2002 Nissan Frontier

Group 6 Load Cell Sum (C7,C8,C9,D7,D8,D9)

Max: 47130.8 [N] at 0.026 [s]

Min: -1699.9 [N] at 0.166 [s]

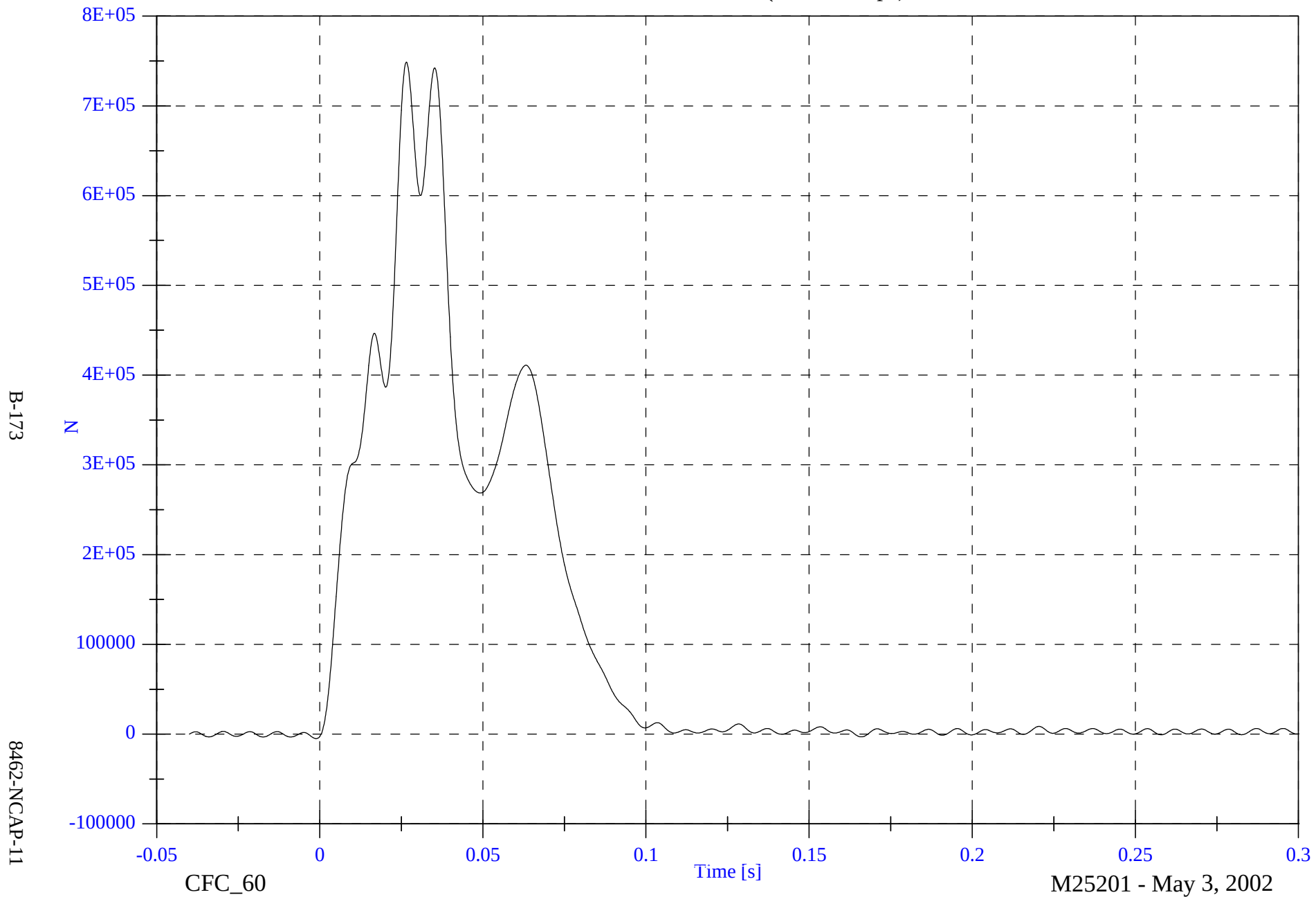


NCAP Test #11 - 2002 Nissan Frontier

Total Load Cell Sum (All 6 Groups)

Max: 748786.8 [N] at 0.026 [s]

Min: -5015.7 [N] at -0.001 [s]



APPENDIX C

PART 572B/E DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA SHEETS

Appendix C contains the results from certification tests performed on the 50th percentile male anthropomorphic test devices utilized for this crash test. The results indicate that the dummies meet all of the performance requirements of the six standard tests as specified in 49 CFR Part 572, Federal Register, Volume 42, No. 25, dated February 7, 1977.

The tests were conducted at the Dummy Certification Test Facility of Veridian Engineering. A summary of the test results, and Part 572 specifications are included in this Appendix.

Dummy serial numbers and certification dates are:

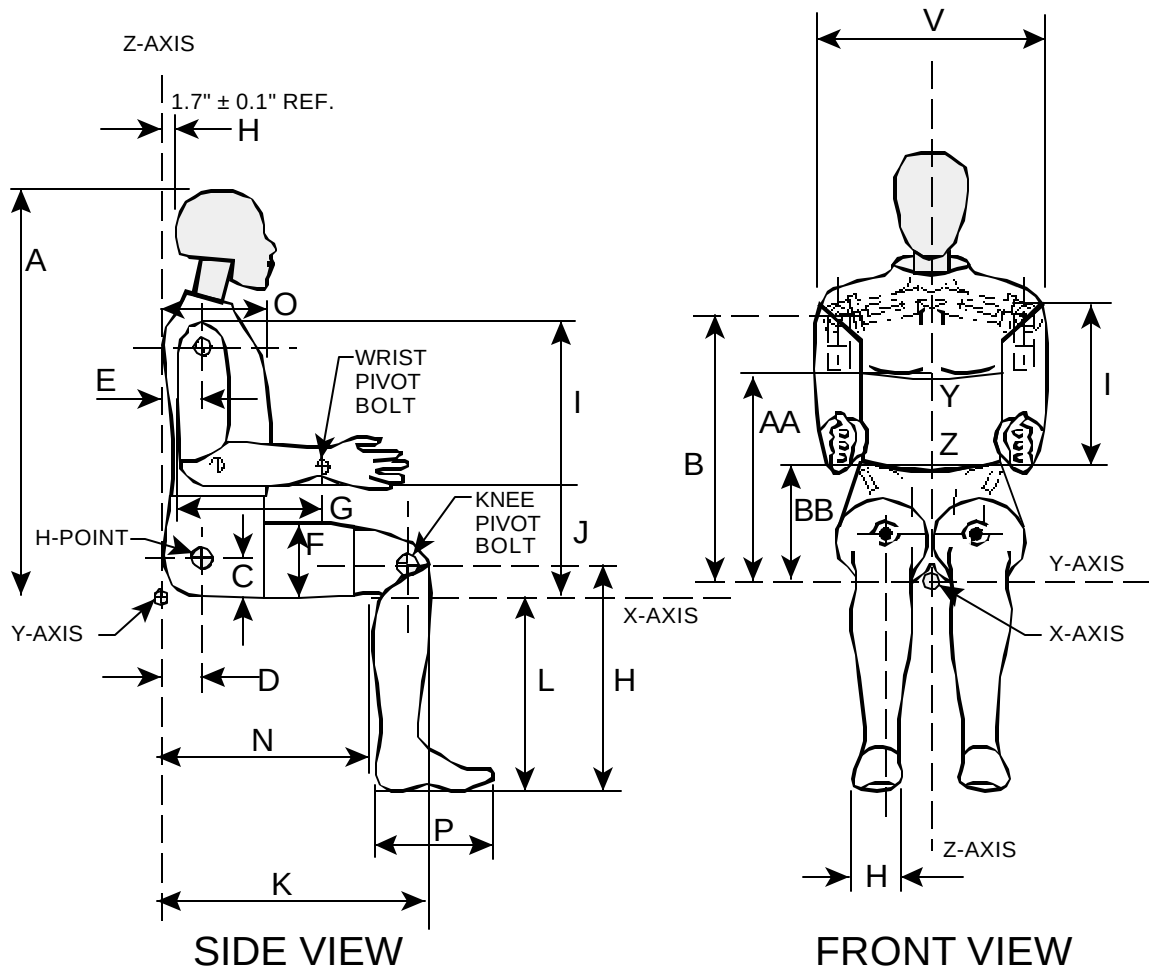
<u>Position No./Location</u>	<u>Serial No.</u>	<u>Completion Date</u>
#1/Driver	150	April 24, 2002
#2/Right Front Passenger	245	April 24, 2002

Electronic Test Equipment

The complement of signal conditioning, recording and display equipment, in conjunction with dummy certification testing, can be found in New Car Assessment and Standards Inducant Testing Final Report No. 6525-V-1.

DUMMY CONFIGURATION DIMENSIONS

EXTERNAL DIMENSIONS SPECIFICATIONS



NOTE: Figure is referenced to the erect seated position. The curved lumbar does not allow the Hybrid III to be positioned in a perfect erect attitude.
(REF: S572.31(A)(6))

PART 572E
HEAD DROP TEST

Dummy Serial Number 150
Sequential Test Number 1
Date April 22, 2002
Workfile 150H2

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	66-78 Deg F	71.0
Relative Humidity	10% - 70%	45.0
Peak Resultant Acceleration	225-275 G's	252.70
Peak Lateral Acceleration	15 G's Max	1.19
Is Acceleration Curve Unimodal?	YES	YES

Remarks:

Laboratory Technician:

B. Swiecicki

PART 572E
NECK FLEXION TEST

Dummy Serial Number	150	
Sequential Test Number	1	
Date	April 23, 2002	6 Axis Neck Transducer
Workfile	150Flx	

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature		69-72 Deg F	72.0
Relative Humidity		10% - 70%	45.0
Impact Velocity		22.60 - 23.40 Ft/s	23.12
Pendulum Deceleration	10 ms	22.50 - 27.50 G's	22.70
	20 ms	17.60 - 22.60 G's	21.64
	30 ms	12.50 - 18.50 G's	14.22
Max Pendulum G's Above 30 ms		29 G's Max	14.22
Deceleration - Time Curve Decay Time to 5 G's		34 - 42 ms	41.90
D Plane Rotation	Max	64 - 78 Deg	66.63
	Time	57 - 64 ms	58.80
Moment About Occipital Condyle	Max	65 - 80 Ft-Lbs	77.55
	Time	47 - 58 ms	53.00
Rotation Angle - Time Curve Decay Time to Zero		113 - 128 ms	113.90
Positive Moment - Time Curve Decay Time to Zero		97 - 107 ms	97.90

Remarks:

Laboratory Technician: B. Swiecicki

PART 572E
NECK EXTENSION TEST

Dummy Serial Number	150	
Sequential Test Number	1	
Date	April 23, 2002	6 Axis Neck Transducer
Workfile	150Ext	

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature		69-72 Deg F	72.0
Relative Humidity		10% - 70%	45.0
Impact Velocity		19.50 - 20.30 Ft/s	19.80
Pendulum Deceleration	10 ms	17.20 - 21.20 G's	20.47
	20 ms	14.00 - 19.00 G's	17.31
	30 ms	11.00 - 16.00 G's	14.12
Max Pendulum G's Above 30 ms		22 G's Max	14.90
Deceleration - Time Curve Decay Time to 5 G's		38 - 46 ms	39.70
D Plane Rotation	Max	81 - 106 Deg	88.69
	Time	72 - 82 ms	74.20
Moment About Occipital Condyle	Max	-59.0 - -39.0 Ft-Lbs	-40.32
	Time	65 - 79 ms	69.70
Rotation Angle - Time Curve Decay Time to Zero		147 - 174 ms	153.30
Positive Moment - Time Curve Decay Time to Zero		120 - 148 ms	148.00

Remarks:

Laboratory Technician: B. Swiecicki

PART 572E
THORAX IMPACT TEST

Dummy Serial Number 150
Sequential Test Number 1
Date April 24, 2002
Workfile 150T

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	69-72 Deg F	70.0
Relative Humidity	10% - 70%	17.0
Pendulum Velocity	21.6 - 22.4 Ft/s	22.12
Maximum Deflection	2.50 - 2.86 in	2.51
Maximum Resistive Force	1160 - 1325 Lbs	1320.51
Internal Hysteresis	69 - 85 %	70.15

Remarks:

Laboratory Technician:

B. Swiecicki

PART 572E
KNEE IMPACT TEST

Dummy Serial Number 150
Sequential Test Number 1
Date April 29, 2002
Workfile 150LF/150RF

TEST PARAMETER	SPECIFICATION	TEST RESULTS
LEFT KNEE		
Temperature	66 - 78 Deg F	74.0
Relative Humidity	10% - 70%	35.0
Probe Velocity	6.8 - 7.0 Ft/s	6.90
Peak Knee Impact Force	1060 - 1300 Lbs	1158.79
RIGHT KNEE		
Temperature	66 - 78 Deg F	74.0
Relative Humidity	10% - 70%	35.0
Probe Velocity	6.8 - 7.0 Ft/s	6.90
Peak Knee Impact Force	1060 - 1300 Lbs	1245.87

Remarks:

Laboratory Technician:

B. Swiecicki

PART 572E
EXTERNAL DIMENSIONS

Dummy Serial Number 150
Sequential Test Number 1
Date April 24, 2002

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature			70
Relative Humidity			20
Location for Chest Circumference	AA	16.9 - 17.1 in	17.0
Location for Waist Circumference	BB	8.9 - 9.1 in	9.0
Chest Circumference (With Jacket)	Y	38.2 - 39.4 in	39.2
Waist Circumference	Z	32.9 - 34.1 in	34.0
Chest Depth	O	8.4 - 9.0 in	8.4
H-Point Height	C	3.3 - 3.5 in	3.4
H-Point from Backline	D	5.3 - 5.5 in	5.4
Skull Cap to Backline	H	1.6 - 1.8 in	1.7
Total Sitting Height	A	34.6 - 35.0 in	34.7
Thigh Clearance	F	5.5 - 6.1 in	5.8
Buttock Knee Length	K	22.8 - 23.8 in	23.4
Buttock Popliteal Length	N	17.8 - 18.8 in	18.5
Popliteal Height	L	16.9 - 17.9 in	17.8
Knee Pivot Height	M	19.1 - 19.7 in	19.6
Foot Length	P	9.9 - 10.5 in	10.1
Foot Breadth	W	3.6 - 4.2 in	3.8
Shoulder Pivot from Backline	E	3.3 - 3.7 in	3.7
Shoulder Breadth	V	16.6 - 17.2 in	16.8
Shoulder Pivot Height	B	19.9 - 20.5 in	20.2
Elbow Rest Height	J	7.5 - 8.3 in	8.1
Shoulder - Elbow Length	I	13.0 - 13.6 in	13.2
Back of Elbow to Wrist Pivot	G	11.4 - 12.0 in	11.5

Remarks:

Laboratory Technician:

B. Swiecicki

PART 572E
HEAD DROP TEST

Dummy Serial Number 245
Sequential Test Number 1
Date April 22, 2002
Workfile 245H

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	66-78 Deg F	71.0
Relative Humidity	10% - 70%	45.0
Peak Resultant Acceleration	225-275 G's	259.15
Peak Lateral Acceleration	15 G's Max	13.53
Is Acceleration Curve Unimodal?	YES	YES

Remarks:

Laboratory Technician:

B. Swiecicki

PART 572E
NECK FLEXION TEST

Dummy Serial Number	245	
Sequential Test Number	1	
Date	April 24, 2002	6 Axis Neck Transducer
Workfile	245Flx	

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature		69-72 Deg F	72.0
Relative Humidity		10% - 70%	40.0
Impact Velocity		22.60 - 23.40 Ft/s	23.06
Pendulum Deceleration	10 ms	22.50 - 27.50 G's	23.68
	20 ms	17.60 - 22.60 G's	22.22
	30 ms	12.50 - 18.50 G's	15.77
Max Pendulum G's Above 30 ms		29 G's Max	15.77
Deceleration - Time Curve Decay Time to 5 G's		34 - 42 ms	36.80
D Plane Rotation	Max	64 - 78 Deg	72.62
	Time	57 - 64 ms	63.60
Moment About Occipital Condyle	Max	65 - 80 Ft-Lbs	78.80
	Time	47 - 58 ms	51.30
Rotation Angle - Time Curve Decay Time to Zero		113 - 128 ms	124.10
Positive Moment - Time Curve Decay Time to Zero		97 - 107 ms	101.70

Remarks:

Laboratory Technician:

B. Swiecicki

PART 572E
NECK EXTENSION TEST

Dummy Serial Number	245	
Sequential Test Number	1	
Date	April 24, 2002	6 Axis Neck Transducer
Workfile	245Ext	

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature		69-72 Deg F	72.0
Relative Humidity		10% - 70%	40.0
Impact Velocity		19.50 - 20.30 Ft/s	19.90
Pendulum Deceleration	10 ms	17.20 - 21.20 G's	18.66
	20 ms	14.00 - 19.00 G's	16.96
	30 ms	11.00 - 16.00 G's	13.41
Max Pendulum G's Above 30 ms		22 G's Max	13.41
Deceleration - Time Curve Decay Time to 5 G's		38 - 46 ms	44.20
D Plane Rotation	Max	81 - 106 Deg	100.59
	Time	72 - 82 ms	80.30
Moment About Occipital Condyle	Max	-59.0 - -39.0 Ft-Lbs	-39.30
	Time	65 - 79 ms	76.40
Rotation Angle - Time Curve Decay Time to Zero		147 - 174 ms	167.40
Positive Moment - Time Curve Decay Time to Zero		120 - 148 ms	126.90

Remarks:

Laboratory Technician: B. Swiecicki

PART 572E
THORAX IMPACT TEST

Dummy Serial Number 245
Sequential Test Number 1
Date April 24, 2002
Workfile 245T

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	69-72 Deg F	70.0
Relative Humidity	10% - 70%	17.0
Pendulum Velocity	21.6 - 22.4 Ft/s	22.01
Maximum Deflection	2.50 - 2.86 in	2.51
Maximum Resistive Force	1160 - 1325 Lbs	1303.81
Internal Hysteresis	69 - 85 %	71.74

Remarks:

Laboratory Technician:

B. Swiecicki

PART 572E
KNEE IMPACT TEST

Dummy Serial Number 245
Sequential Test Number 1
Date April 29, 2002
Workfile 245LF/245RF

TEST PARAMETER	SPECIFICATION	TEST RESULTS
LEFT KNEE		
Temperature	66 - 78 Deg F	74.0
Relative Humidity	10% - 70%	35.0
Probe Velocity	6.8 - 7.0 Ft/s	7.00
Peak Knee Impact Force	1060 - 1300 Lbs	1184.93
RIGHT KNEE		
Temperature	66 - 78 Deg F	74.0
Relative Humidity	10% - 70%	35.0
Probe Velocity	6.8 - 7.0 Ft/s	7.00
Peak Knee Impact Force	1060 - 1300 Lbs	1150.56

Remarks:

Laboratory Technician:

B. Swiecicki

PART 572E
EXTERNAL DIMENSIONS

Dummy Serial Number 245
Sequential Test Number 1
Date April 24, 2002

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature			70
Relative Humidity			20
Location for Chest Circumference	AA	16.9 - 17.1 in	17.0
Location for Waist Circumference	BB	8.9 - 9.1 in	9.0
Chest Circumference (With Jacket)	Y	38.2 - 39.4 in	39.2
Waist Circumference	Z	32.9 - 34.1 in	33.8
Chest Depth	O	8.4 - 9.0 in	8.4
H-Point Height	C	3.3 - 3.5 in	3.4
H-Point from Backline	D	5.3 - 5.5 in	5.4
Skull Cap to Backline	H	1.6 - 1.8 in	1.7
Total Sitting Height	A	34.6 - 35.0 in	34.7
Thigh Clearance	F	5.5 - 6.1 in	6.0
Buttock Knee Length	K	22.8 - 23.8 in	23.4
Buttock Popliteal Length	N	17.8 - 18.8 in	18.5
Popliteal Height	L	16.9 - 17.9 in	17.5
Knee Pivot Height	M	19.1 - 19.7 in	19.6
Foot Length	P	9.9 - 10.5 in	10.2
Foot Breadth	W	3.6 - 4.2 in	3.8
Shoulder Pivot from Backline	E	3.3 - 3.7 in	3.6
Shoulder Breadth	V	16.6 - 17.2 in	16.8
Shoulder Pivot Height	B	19.9 - 20.5 in	20.2
Elbow Rest Height	J	7.5 - 8.3 in	8.1
Shoulder - Elbow Length	I	13.0 - 13.6 in	13.2
Back of Elbow to Wrist Pivot	G	11.4 - 12.0 in	11.6

Remarks:

Laboratory Technician:

B. Swiecicki

APPENDIX D

DUMMY, VEHICLE AND LABORATORY INSTRUMENT CALIBRATION

INSTRUMENT CALIBRATION FOR DRIVER DUMMY
(Six Month Calibration Minimum)

DRIVER DUMMY (S/N 150)		Manufacturer	Serial #	Calibration	
				Last	Next
Head 9 Array	X Arm Y	ENDEVCO	AC-P17531	25-Mar-02	25-Sep-02
	X Arm Z	ENDEVCO	AC-P14965	25-Mar-02	25-Sep-02
	Y Arm X	ENDEVCO	AC-P17563	25-Mar-02	25-Sep-02
	Y Arm Z	ENDEVCO	AC-P18551	25-Mar-02	25-Sep-02
	Z Arm X	ENDEVCO	AC-P17539	25-Mar-02	25-Sep-02
	Z Arm Y	ENDEVCO	AC-P18718	25-Mar-02	25-Sep-02
Head	X	ENDEVCO	AC-P16832	26-Mar-02	26-Sep-02
	Y	ENDEVCO	AC-P16591	26-Mar-02	26-Sep-02
	Z	ENDEVCO	AC-P16286	26-Mar-02	26-Sep-02
Head	X (R)	ENDEVCO	AC-P17141	26-Mar-02	26-Sep-02
	Y (R)	ENDEVCO	AC-P17242	26-Mar-02	26-Sep-02
	Z (R)	ENDEVCO	AC-P17152	26-Mar-02	26-Sep-02
Neck Load Cell	X	DENTON	LC-269Fx	17-Jan-02	17-Jul-02
	Y	DENTON	LC-269Fy	17-Jan-02	17-Jul-02
	Z	DENTON	LC-269Fz	17-Jan-02	17-Jul-02
Neck Moment	X	DENTON	LC-269Mx	17-Jan-02	17-Jul-02
	Y	DENTON	LC-269My	17-Jan-02	17-Jul-02
	Z	DENTON	LC-269Mz	17-Jan-02	17-Jul-02
Chest	X	ENDEVCO	AC-P17235	04-Apr-02	04-Oct-02
	Y	ENDEVCO	AC-P14393	04-Apr-02	04-Oct-02
	Z	ENDEVCO	AC-P17285	04-Apr-02	04-Oct-02
Chest	X (R)	ENDEVCO	AC-P16863	04-Apr-02	04-Oct-02
	Y (R)	ENDEVCO	AC-P17248	04-Apr-02	04-Oct-02
	Z (R)	ENDEVCO	AC-P17283	04-Apr-02	04-Oct-02
Chest Deflection	X	SERVO	DS-150	22-Mar-02	22-Sep-02
Pelvic	X	ENDEVCO	AC-J30041	25-Mar-02	25-Sep-02
	Y	ENDEVCO	AC-P13355	25-Mar-02	25-Sep-02
	Z	ENDEVCO	AC-P13329	25-Mar-02	25-Sep-02

INSTRUMENT CALIBRATION FOR DRIVER DUMMY
(Six Month Calibration Minimum)

DRIVER DUMMY (S/N 150)		Manufacturer	Serial #	Calibration	
				Last	Next
Left Femur Load Cell	Fz	GSE	LC-418	24-Jan-02	24-Jul-02
Right Femur Load Cell	Fz	GSE	LC-419	24-Jan-02	24-Jul-02
Left Upper Tibia	Mx	DENTON	LC-016Mx	08-Apr-02	08-Oct-02
	My	DENTON	LC-016My	08-Apr-02	08-Oct-02
Left Lower Tibia	Fz	DENTON	LC-123Fz	08-Apr-02	08-Oct-02
	Mx	DENTON	LC-123Mx	08-Apr-02	08-Oct-02
	My	DENTON	LC-123My	08-Apr-02	08-Oct-02
Right Upper Tibia	Mx	DENTON	LC-023Mx	08-Apr-02	08-Oct-02
	My	DENTON	LC-023My	08-Apr-02	08-Oct-02
Right Lower Tibia	Fz	DENTON	LC-111Fz	08-Apr-02	08-Oct-02
	Mx	DENTON	LC-111Mx	08-Apr-02	08-Oct-02
	My	DENTON	LC-111My	08-Apr-02	08-Oct-02
Left Foot Rear	X	ENDEVCO	AC-P19343	04-Apr-02	04-Oct-02
	Z	ENDEVCO	AC-P16583	04-Apr-02	04-Oct-02
Left Foot Front	Z	ENDEVCO	AC-P18728	04-Apr-02	04-Oct-02
Right Foot Rear	X	ENDEVCO	AC-P18628	04-Apr-02	04-Oct-02
	Z	ENDEVCO	AC-P18741	04-Apr-02	04-Oct-02
Right Foot Front	Z	ENDEVCO	AC-P16587	04-Apr-02	04-Oct-02

INSTRUMENT CALIBRATION FOR PASSENGER DUMMY
(Six Month Calibration Minimum)

PASSENGER DUMMY (S/N 245)		Manufacturer	Serial #	Calibration	
				Last	Next
Head 9 Array	X Arm Y	ENDEVCO	AC-P18558	21-Mar-02	21-Sep-02
	X Arm Z	ENDEVCO	AC-P19212	21-Mar-02	21-Sep-02
	Y Arm X	ENDEVCO	AC-P19197	21-Mar-02	21-Sep-02
	Y Arm Z	ENDEVCO	AC-P18738	21-Mar-02	21-Sep-02
	Z Arm X	ENDEVCO	AC-P19217	21-Mar-02	21-Sep-02
	Z Arm Y	ENDEVCO	AC-P18739	21-Mar-02	21-Sep-02
	Head	X	ENDEVCO	AC-J32184	22-Mar-02
Y		ENDEVCO	AC-J32185	22-Mar-02	22-Sep-02
Z		ENDEVCO	AC-J31011	22-Mar-02	22-Sep-02
Head	X (R)	ENDEVCO	AC-J31020	24-Mar-02	24-Sep-02
	Y (R)	ENDEVCO	AC-J31101	22-Mar-02	22-Sep-02
	Z (R)	ENDEVCO	AC-J31059	22-Mar-02	22-Sep-02
Neck Load Cell	X	DENTON	LC-076Fx	17-Jan-02	17-Jul-02
	Y	DENTON	LC-076Fy	17-Jan-02	17-Jul-02
	Z	DENTON	LC-076Fz	17-Jan-02	17-Jul-02
Neck Moment	X	DENTON	LC-076Mx	17-Jan-02	17-Jul-02
	Y	DENTON	LC-076My	17-Jan-02	17-Jul-02
	Z	DENTON	LC-076Mz	17-Jan-02	17-Jul-02
Chest	X	ENDEVCO	AC-J34019	21-Mar-02	21-Sep-02
	Y	ENDEVCO	AC-J33018	21-Mar-02	21-Sep-02
	Z	ENDEVCO	AC-J32783	21-Mar-02	21-Sep-02
Chest	X (R)	ENDEVCO	AC-J31066	21-Mar-02	21-Sep-02
	Y (R)	ENDEVCO	AC-P16979	21-Mar-02	21-Sep-02
	Z (R)	ENDEVCO	AC-J31022	21-Mar-02	21-Sep-02
Chest Deflection	X	SERVO	DS-245	22-Mar-02	22-Sep-02
Pelvic	X	ENDEVCO	AC-J31034	21-Mar-02	21-Sep-02
	Y	ENDEVCO	AC-P17258	21-Mar-02	21-Sep-02
	Z	ENDEVCO	AC-J31010	21-Mar-02	21-Sep-02

INSTRUMENT CALIBRATION FOR PASSENGER DUMMY
(Six Month Calibration Minimum)

PASSENGER DUMMY (S/N 245)		Manufacturer	Serial #	Calibration	
				Last	Next
Left Femur Load Cell	Fz	GSE	LC-551	24-Jan-02	24-Jul-02
Right Femur Load Cell	Fz	GSE	LC-951	24-Jan-02	24-Jul-02
Left Upper Tibia	Mx	DENTON	LC-045Mx	08-Apr-02	08-Oct-02
	My	DENTON	LC-045My	08-Apr-02	08-Oct-02
Left Lower Tibia	Fz	DENTON	LC-125Fz	08-Apr-02	08-Oct-02
	Mx	DENTON	LC-125Mx	08-Apr-02	08-Oct-02
	My	DENTON	LC-125My	08-Apr-02	08-Oct-02
Right Upper Tibia	Mx	DENTON	LC-038Mx	08-Apr-02	08-Oct-02
	My	DENTON	LC-038My	08-Apr-02	08-Oct-02
Right Lower Tibia	Fz	DENTON	LC-124Fz	08-Apr-02	08-Oct-02
	Mx	DENTON	LC-124Mx	08-Apr-02	08-Oct-02
	My	DENTON	LC-124My	08-Apr-02	08-Oct-02
Left Foot Rear	X	ENDEVCO	AC-J30491	21-Mar-02	21-Sep-02
	Z	ENDEVCO	AC-J31026	21-Mar-02	21-Sep-02
Left Foot Front	Z	ENDEVCO	AC-J32831	21-Mar-02	21-Sep-02
Right Foot Rear	X	ENDEVCO	AC-J33376	21-Mar-02	21-Sep-02
	Z	ENDEVCO	AC-J32832	21-Mar-02	21-Sep-02
Right Foot Front	Z	ENDEVCO	AC-J31095	21-Mar-02	21-Sep-02

INSTRUMENT CALIBRATION FOR VEHICLE ACCELEROMETERS
(Six Month Calibration Minimum)

	Manufacturer	Serial #	Calibration	
			Last	Next
Left Seat Rear Crossmember X	ICS	AC-X83	15-Jan-02	15-Jul-02
Right Rear Seat Crossmember X	ICS	AC-X86	25-Apr-02	25-Oct-02
Top of Engine	ENDEVCO	AC-J32383	14-Feb-02	14-Aug-02
Instrument Panel	ENDEVCO	AC-J32098	14-Feb-02	14-Aug-02
Left Disc Brake Caliper	ENDEVCO	AC-J31050	14-Feb-02	14-Aug-02
Left Seat Rear Crossmember Z	ICS	AC-D61	04-Apr-02	04-Oct-02
Right Seat Rear Crossmember Z	ICS	AC-D82	04-Apr-02	04-Oct-02

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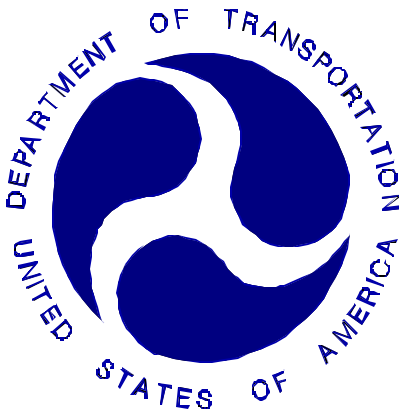
NEW CAR ASSESSMENT PROGRAM (NCAP)
FRONTAL BARRIER IMPACT TEST

CHILD AND JUMP SEAT

NHTSA NUMBER: M25201

VERIDIAN ENGINEERING TEST NUMBER: 8642-NCAP-11

VERIDIAN ENGINEERING
TRANSPORTATION SCIENCES CENTER
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May 3, 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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16. Abstract A frontal load cell barrier test was conducted in accordance with the specifications of the Office of Crashworthiness Standards Test Procedure. This test was conducted at the Veridian Engineering Crash Test Facility in Buffalo, New York, on May 3, 2002.					
17. Key Words New Car Assessment Program (NCAP)				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 M25201

The purpose of this test was to obtain data in a frontal impact NCAP condition.

The 56.17 kph NCAP frontal impact test was conducted in accordance with the Office of Crashworthiness Standards (OCS) NCAP Laboratory Test Procedure.

SUMMARY

Both child dummies were instrumented with head, chest, and pelvic triaxial accelerometers. In addition, chest displacement and upper and lower six axial neck force and moment load cell sensors were utilized. Position 3 was equipped with lower spine force and moment load cells as well as left and right upper and lower ASIS load cell sensors. Position 4 was also equipped with a head redundant z accelerometer.

The right rear (Position 3) child dummy (serial no. 144) and left rear (Position 4) child dummy (serial no. 042) were calibrated previous to this test. Child dummy certification information is found in section 5.

The right rear child dummy's HIC was 987.6, maximum chest deceleration over 3 ms was 47.6 g's. The left rear child dummy's HIC was 489.7, maximum chest deceleration over 3 ms was 64.6 g's.

SECTION 2
DATA SHEET NO. 1
CRASH TEST SUMMARY

TEST DUMMY INFORMATION:

DESCRIPTION	Position #3	Position #4
ATD Type/Serial No.	Hybrid III 6C/144	Hybrid III 3C/042
Restraint System:	Lap Belt	Lap Belt

Number of Data Channels 61
Number of Cameras: 1 Real Time
2 High Speed

POST TEST DOOR OPENING

DESCRIPTION	FRONT	REAR
Left Side Doors	Closed, latched and operable without tools	Closed, latched and operable without tools
Right Side Doors	N/A	N/A
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	Position #4
Head Contact:	Right side of the head P2 seatback; The back of the head to the P2 seat belt.	The left side of the head to the P1 seat back; The right side of the face to the P1 seat back.
Upper Torso Contact:	P2 seat back	P1 seat back
Lower Torso Contact:	None	None
Left Knee Contact:	Right Knee	None
Right Knee Contact:	P2 seat back	None

DATA SHEET NO. 2

PARAMETER DATA

NHTSA No. M25201

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:

Delivered Weight of Vehicle with Maximum Fluids = 1464.5 kg (A)

AS TESTED WEIGHT OF VEHICLE (2 ATDs + 1 P572I +1 P572C + CARGO + EQUIPMENT & INSTRUMENTATION):

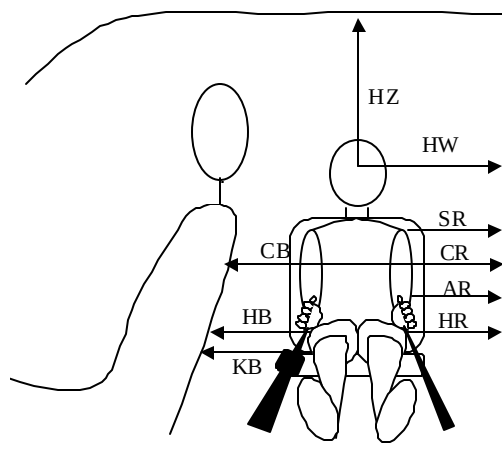
Left Front	=	<u>457.5</u>	kg	Left Rear	=	<u>398.5</u>	kg
Right Front	=	<u>490.5</u>	kg	Right Rear	=	<u>399.0</u>	kg
TOTAL FRONT	=	<u>948.0</u>	kg	TOTAL REAR	=	<u>797.5</u>	kg
TOTAL TEST WEIGHT =		<u>1745.5</u>	kg				

DATA SHEET NO. 3

CHILD DUMMY POSITIONING IN VEHICLE

NHTSA No. M25201

Measurements for Jump Seat Passengers



X-Z View

HZ = Head to Roof
 HW = Head to Rear Window
 SR = Shoulder to Rear
 CR = Chest to Rear
 CB = Chest to Seatback
 AR = Arm to Rear
 HR = Hip to Rear
 HB = Hip to Seatback
 KB = Knee to Seatback
 SA = Front Seatback Angle

Measurement	Pre-Test (mm)		Post Test (mm)	
	P3 (144)	P4 (042)	P3 (144)	P4 (042)
SA	14.6°	14.5°	8.2 L/9.6 R°	14.4 L/20.1 R°
HZ	390	480	NA	NA
HW	240	190	NA	NA
SR	90	60	NA	NA
CR	190	190	NA	NA
CB	240	200	NA	NA
AR	30	40	NA	NA
HR	50	111	NA	NA
HB	130	193	NA	NA
KB	90	103	NA	NA

All dimensions in mm (unless noted)

P3 – Right Rear Passenger

P4 – Left Rear Passenger

DATA SHEET 4

CHILD DUMMY INJURY CRITERIA VALUES

NHTSA No. M25201

DESCRIPTION	Unit	MAXIMUM VALUE							
		Position #3				Position #4			
		Pos	msec	Neg	msec	Pos	msec	Neg	msec
Head X	g	49.6	99.8	-33.7	54.7	12.7	117.7	-34.3	50.7
Head Y	g	2.7	40.0	-117.5	93.5	132.6	50.1	-3.9	42.0
Head Z	g	55.0	93.2	-3.1	57.9	15.8	47.1	-25.7	67.8
Head Resultant	g	129.6	93.2	0.0	-41.4	134.4	50.1	0.1	-12.4
Head RZ	g	-	-	-	-	23.9	51.2	-44.9	69.2
Upper Neck Fx	N	378.1	101.4	-347.9	80.9	38.4	272.5	-277.4	54.4
Upper Neck Fy	N	265.3	64.0	-594.0	96.8	305.5	104.8	-571.1	50.3
Upper Neck Fz	N	821.0	93.1	-52.0	131.7	980.5	52.0	-126.7	127.9
Upper Neck F Resultant	N	946.1	93.9	0.1	-43.1	1107.0	52.1	2.2	-12.3
Upper Neck Mx	N-m	28.5	74.2	-20.5	113.5	30.8	70.3	-10.1	103.7
Upper Neck My	N-m	21.1	100.7	-37.0	80.8	8.1	53.7	-11.3	67.8
Upper Neck Mz	N-m	12.5	76.6	-4.0	166.6	16.8	57.3	-3.7	145.6
Upper Neck M Resultant	N-m	44.0	80.4	0.0	-40.0	34.2	68.8	0.1	-46.7
Lower Neck Fx	N	151.4	49.7	-428.5	93.6	172.8	65.8	-152.8	100.7
Lower Neck Fy	N	1051.8	69.1	-360.2	45.9	341.6	44.8	-300.4	62.4
Lower Neck Fz	N	1870.5	93.5	-197.9	129.8	1014.1	51.8	-229.4	127.8
Lower Neck F Resultant	N	1986.9	93.6	0.2	-39.9	1031.4	51.8	1.4	-12.8
Lower Neck Mx	N-m	67.7	68.9	-40.7	98.6	63.4	63.6	-33.9	104.5
Lower Neck My	N-m	4.5	248.8	-88.9	93.6	29.3	68.1	-16.8	100.6
Lower Neck Mz	N-m	43.1	102.7	-10.9	45.9	29.9	66.7	-9.2	110.3
Lower Neck M Resultant	N-m	109.1	68.4	0.2	-8.3	74.0	64.3	0.2	-49.1
Chest X	g	5.2	92.0	-23.5	49.5	20.9	69.5	-6.6	41.2
Chest Y	g	1.3	209.4	-50.0	45.9	61.9	69.5	-5.3	131.1
Chest Z	g	22.3	77.9	-11.6	93.4	16.3	71.2	-10.6	95.0
Chest Resultant	g	52.0	45.9	0.2	-40.0	67.0	69.6	0.2	-50.0
Chest Displacement	g	32.7	53.2	-14.5	126.3	1.7	55.7	-4.0	72.2

DATA SHEET 4

CHILD DUMMY INJURY CRITERIA VALUES (CONTINUED)

NHTSA No. M25201

DESCRIPTION	Unit	MAXIMUM VALUE							
		Position #3				Position #4			
		Pos	msec	Neg	msec	Pos	msec	Neg	msec
Pelvic X	g	225.4	107.6	-1165.0	69.2	30.3	42.7	-20.3	51.8
Pelvic Y	g	23.8	123.0	-1842.7	76.1	71.2	46.5	-11.6	119.8
Pelvic Z	g	3800.8	69.5	-305.1	129.9	30.4	76.3	-10.5	95.5
Pelvic Resultant	g	4308.7	69.6	3.2	-41.4	73.1	46.8	0.3	-49.8
Lower Spine Fx	N	15.5	289.8	-97.5	76.7	-	-	-	-
Lower Spine Fy	N	45.6	68.8	-42.4	105.8	-	-	-	-
Lower Spine Fz	N	5.3	153.5	-14.9	80.0	-	-	-	-
Lower Spine F Resultant	N	99.9	76.7	0.1	19.5	-	-	-	-
Lower Spine Mx	N-m	17.8	83.0	-26.9	43.0	-	-	-	-
Lower Spine My	N-m	8.0	94.5	-56.8	47.2	-	-	-	-
Lower Spine Mz	N-m	18.5	71.7	-16.9	89.6	-	-	-	-
Lower Spine M Resultant	N-m	60.4	47.1	0.1	-37.3	-	-	-	-
Left Upper ASIS Fz	N	55.4	101.5	-701.8	68.8	-	-	-	-
Left Lower ASIS Fz	N	3.4	-50.0	-2024.3	66.9	-	-	-	-
Right Upper ASIS Fz	N	2.3	9.3	-1011.5	71.4	-	-	-	-
Right Lower ASIS Fz	N	13.7	20.2	-1762.5	70.1	-	-	-	-

DATA SHEET 4

CHILD DUMMY INJURY CRITERIA VALUES (CONTINUED)

NHTSA No. M25201

	HEAD INJURY CRITERIA (HIC)			
	HIC**	t ₁ (msec)	t ₂ (msec)	Average Acceleration (g's) t ₁ to t ₂
Position #3 - Right	987.6	91.4	106.4	84.6
Position #4 - Left	489.7	49.4	64.4	63.9

** HIC is as defined in FMVSS 208. The maximum time interval from t₁ to t₂ is 15 milliseconds.

	CLIP SUMMARY*			
	CLIP (g's)	t ₁ (msec)	t ₂ (msec)	CSI
Position #3 - Right	47.6	68.1	71.1	463.5
Position #4 - Left	64.6	68.2	71.2	689.5

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

Position 3 Neck Injury Summary (HIII 6 year old – In Position)

Nij V10	Nij	Time (ms)	Z Force (N)	X Force (N)	Y Moment (N-m)
Ntf	0.29	97.4	582.4	314.6	9.3
Nte	0.88	80.7	441.9	-347.7	-30.8
Ncf	0.04	29.1	-25	29.2	2.5
Nce	0.16	121.9	-11.5	89.3	-6.7

Peak Tension (CFC1000) 821 N

Peak Compression (CFC1000) 51.98 N

Critical Values

Nij Intercepts				Peak Limits	
Tension (CVt)	3096 N	Extension (mCVe)	42 N-m	Tension	1890 N
Compression (CVc)	2800 N	Flexion (mCVf)	93 N-m	Compression	-1820 N

Condyle Offset -0.01778

Position 4 Neck Injury Summary (HIII 3 year old – In Position)

Nij V10	Nij	Time (ms)	Z Force (N)	X Force (N)	Y Moment (N-m)
Ntf	0.53	54.4	958.1	-276.6	8.1
Nte	0.62	66.6	598.7	-72.3	-10.9
Ncf	0.08	279.1	-18.7	33.5	4.6
Nce	0.02	32.5	-22.7	12	-0.4

Peak Tension (CFC1000) 980.49 N

Peak Compression (CFC1000) 126.7 N

Critical Values

Nij Intercepts				Peak Limits	
Tension (CVt)	2340 N	Extension (mCVe)	30 N-m	Tension	1430 N
Compression (CVc)	2120 N	Flexion (mCVf)	68 N-m	Compression	-1380 N

Condyle Offset 0

DATA SHEET NO. 5

PERFORMANCE DATA

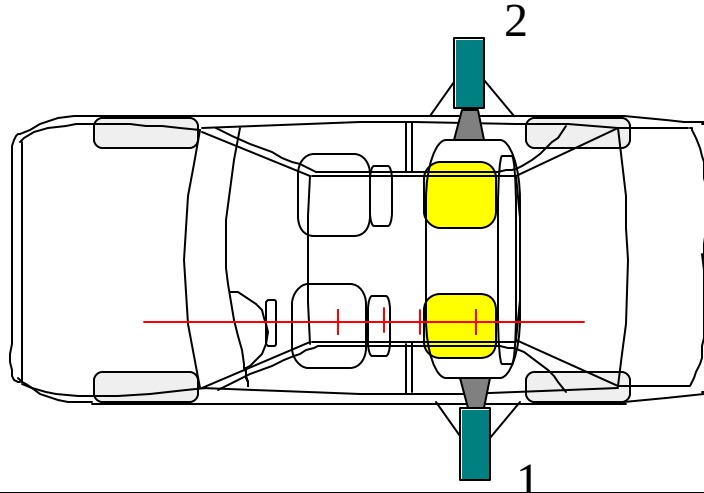
NHTSA No. M25201

		MAXIMUM VALUE			
DESCRIPTION	Unit	Positive	Time (ms)	Negative	Time (ms)
P3 Seat X	g	17.1	46.9	-53.4	24.6
P3 Seat Y	g	25.8	155.6	-20.3	26.2
P3 Seat Z	g	43.9	44.6	-34.0	61.7
P3 Seat Resultant	g	59.0	24.4	0.1	-5.8
P4 Seat X	g	11.6	107.3	-53.9	32.7
P4 Seat Y	g	15.6	54.7	-19.9	62.7
P4 Seat Z	g	38.9	34.3	-22.4	83.6
P4 Seat Resultant	g	66.6	34.0	0.1	-43.6

DATA SHEET NO. 6

CAMERA DATA

NHTSA No. M25201



Camera No.	View	Coordinates (millimeters)			Angle (deg.)	Lens (mm)	Film Speed (fps)
		X*	Y*	Z*			
1	Left side view	3705	5273	2295	-12	25	500
2	Right side view	4877	0	1994	-10	25	500

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

X = + Forward

Y = + To Right

Z = + Down

DATA SHEET NO. 7

ADDITIONAL MEASUREMENTS

NHTSA No. M25201

Location	Position # 3			Position #4		
	X	Y	Z	X	Y	Z
Top Striker Bolt	2642.3	749.96	-805.8	2645	-750.1	-805.9
Buckle Stalk Anchor	2561.7	617.64	-505.2	2572.6	-611.3	-503.1
Buckle Stalk Top	2528.3	531.85	-720	2550.9	-517.3	-715.4
Buckle Center	2504.4	506.84	-746.8	2526.1	-495.7	-738.5
Seat Belt Anchor	2191.6	615.68	-499.4	2191	-612.9	-491.1
Top Center of Seat Back	2365.1	626.77	-1029	2362.7	-627.7	-1027
Seat Bight Pivot	2460.7	595.43	-695.9	2468.5	-593.4	-697.5
Front Center of Seat Cushion	2363.1	226.07	-656.2	2365.1	-236.5	-654.6

Measurements performed with ATD centered in seat and buckled.

All Dimensions are in mm.

Reference:

? X from Rear Centerline of Vehicle – Positive Forward

? Y from Center of Vehicle – Positive Right

? Z from ground - Positive Down

SECTION 3

PHOTOGRAPHS

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Figure 3-1 PRE-TEST POSITION 3 LEFT SIDE VIEW



Figure 3-2 POST-TEST POSITION 3 LEFT SIDE VIEW



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



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



Figure 3-5 PRE-TEST POSITION 3 RIGHT SIDE VIEW



Figure 3-6 POST-TEST POSITION 3 RIGHT SIDE VIEW



Figure 3-7 PRE-TEST POSITION 4 RIGHT SIDE VIEW

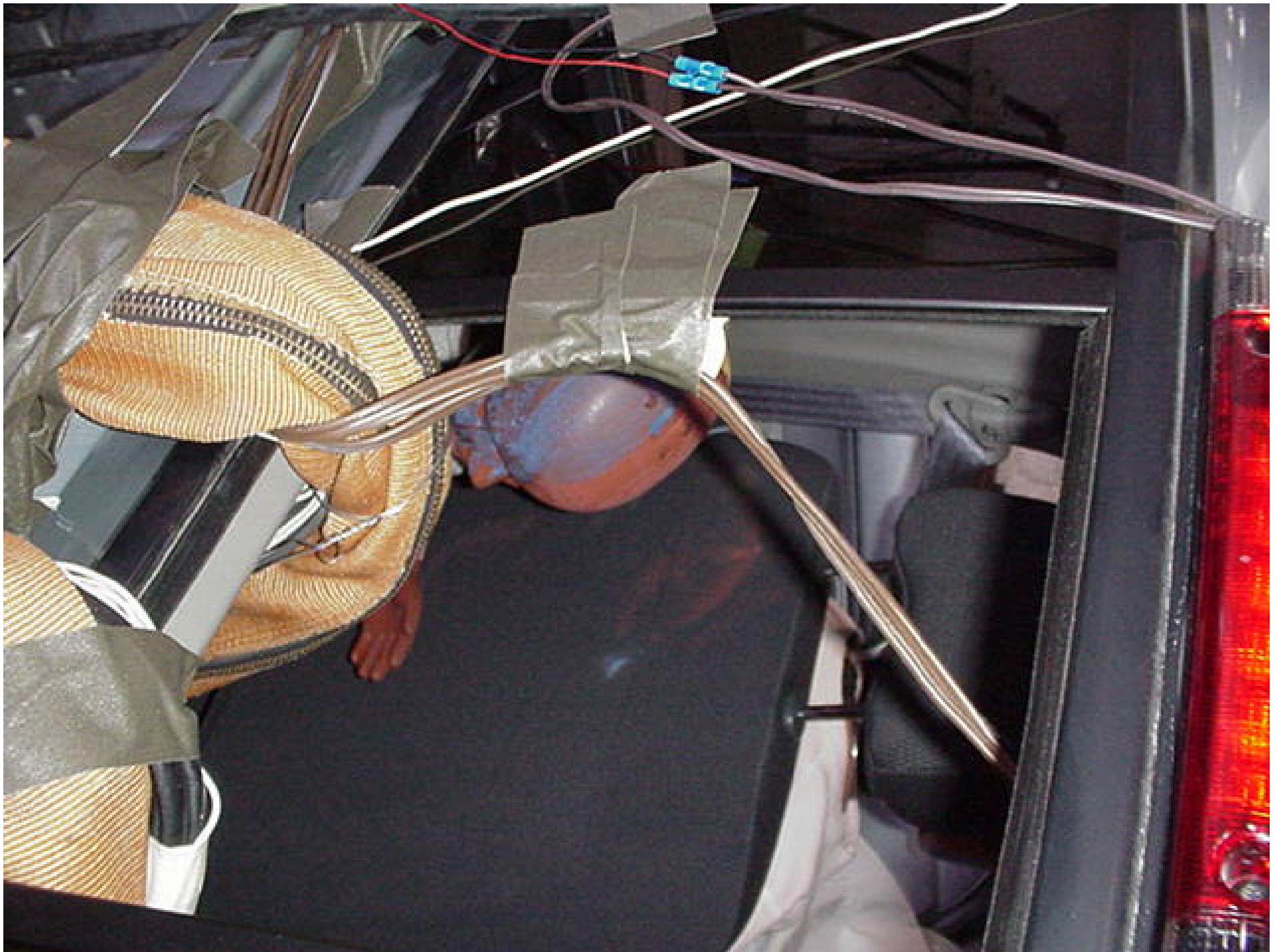


Figure 3-8 POST-TEST POSITION 4 RIGHT SIDE VIEW



Figure 3-9 PRE-TEST POSITION 3 FRONT VIEW



Figure 3-10 POST-TEST POSITION 3 FRONT VIEW



Figure 3-11 PRE-TEST POSITION 4 FRONT VIEW



Figure 3-12 POST-TEST POSITION 4 FRONT VIEW

SECTION 4

CHILD DUMMY RESPONSE AND JUMP SEAT DATA TRACES

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19	P3 Lower Neck Mz [N-m, CFC_600]	4-22
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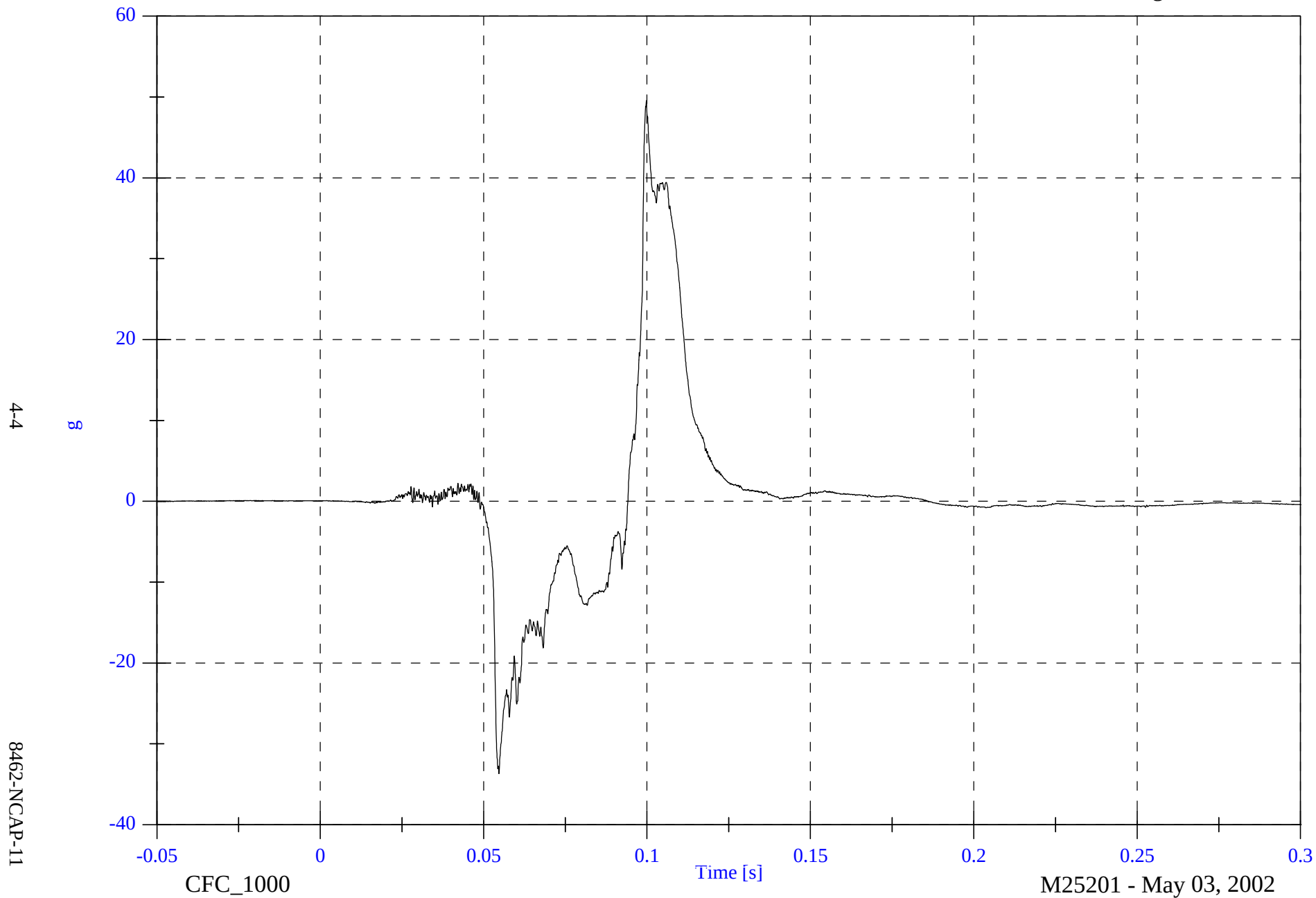
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Max: 49.6 [g] at 0.100 [s]

Min: -33.7 [g] at 0.055 [s]

P3 Head x



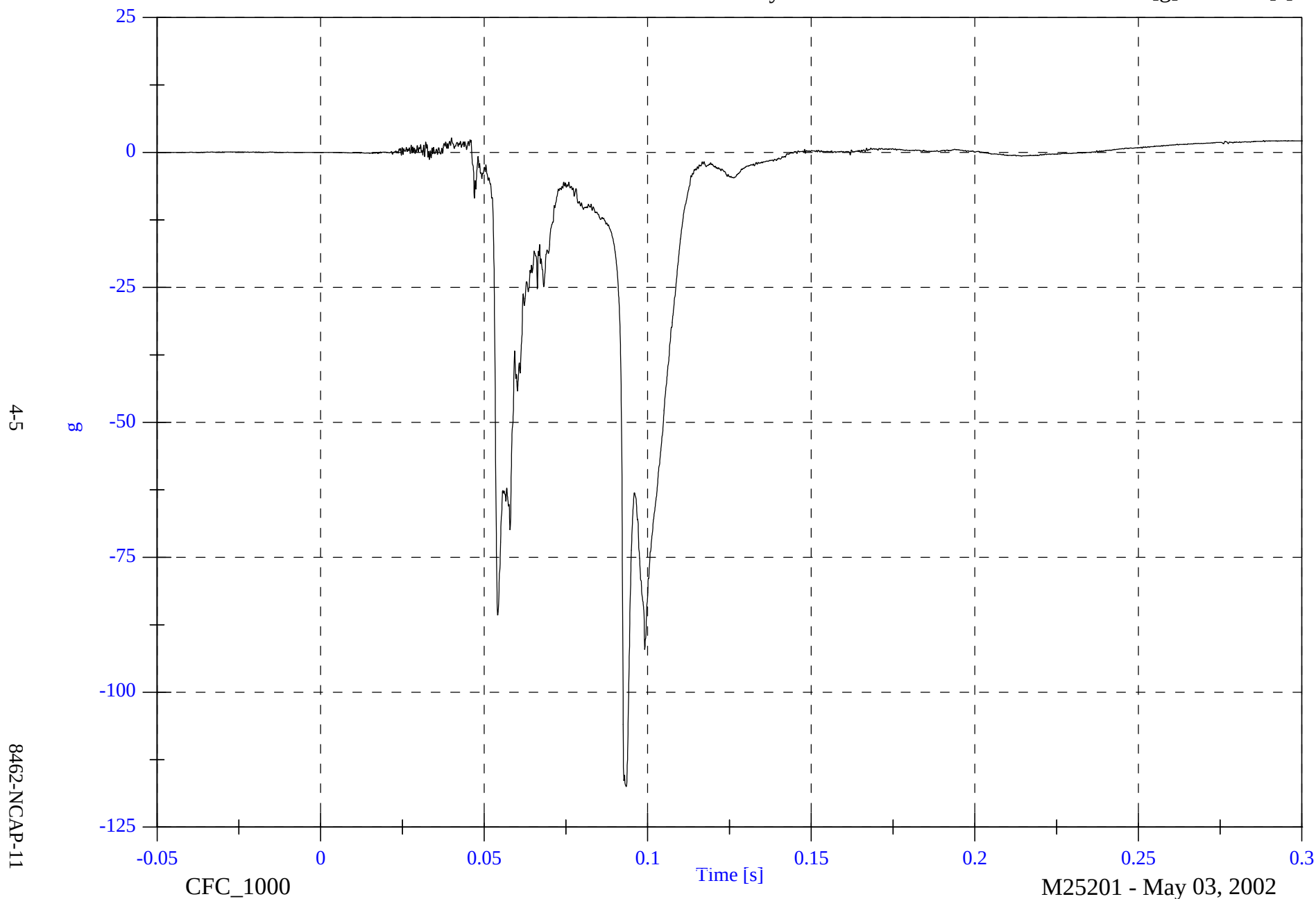
8462-NCAP-11

2002 NCAP Test 11 - 2002 Nissan Frontier

P3 Head y

Max: 2.7 [g] at 0.040 [s]

Min: -117.5 [g] at 0.093 [s]

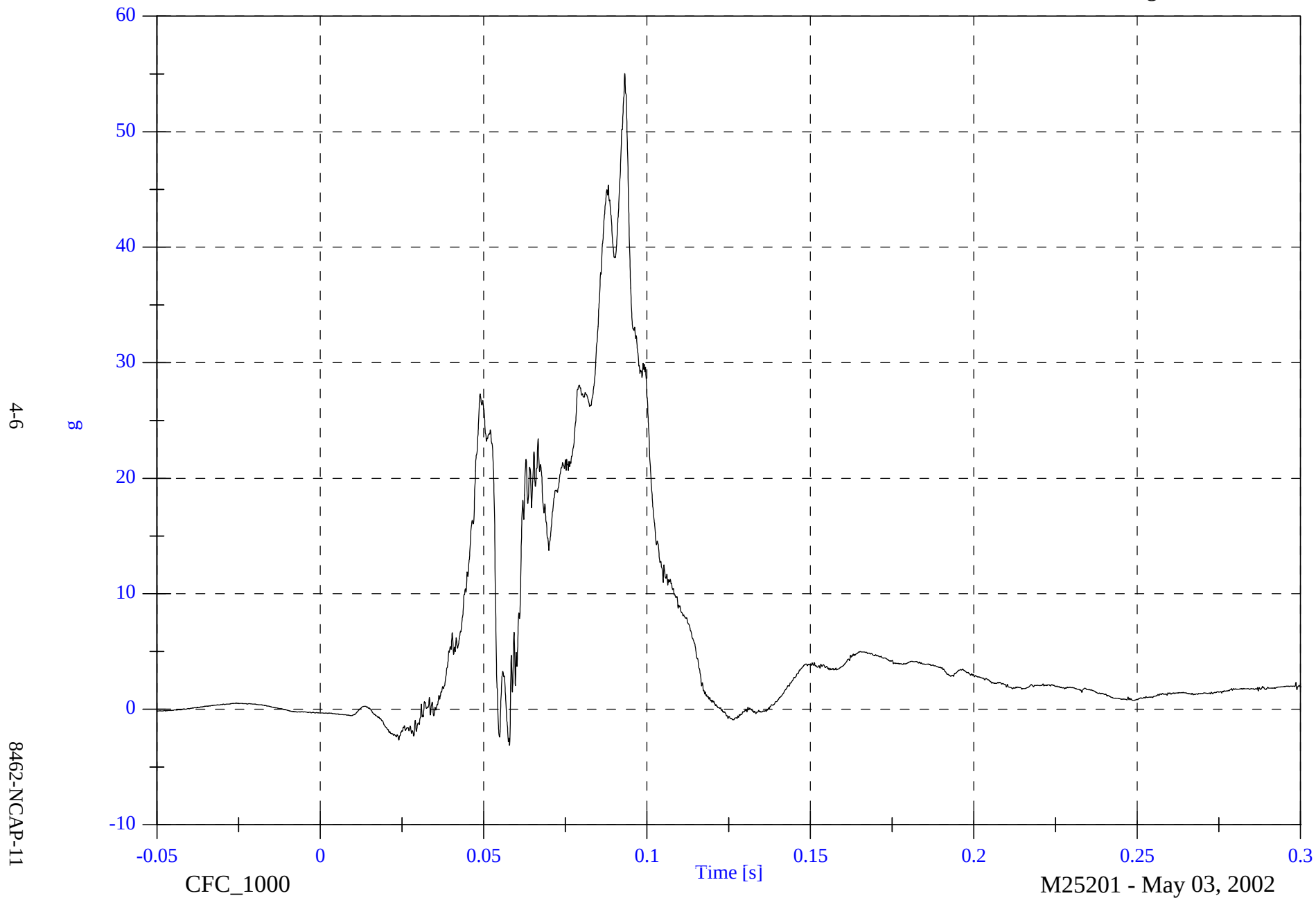


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P3 Head z

Max: 55.0 [g] at 0.093 [s]

Min: -3.1 [g] at 0.058 [s]



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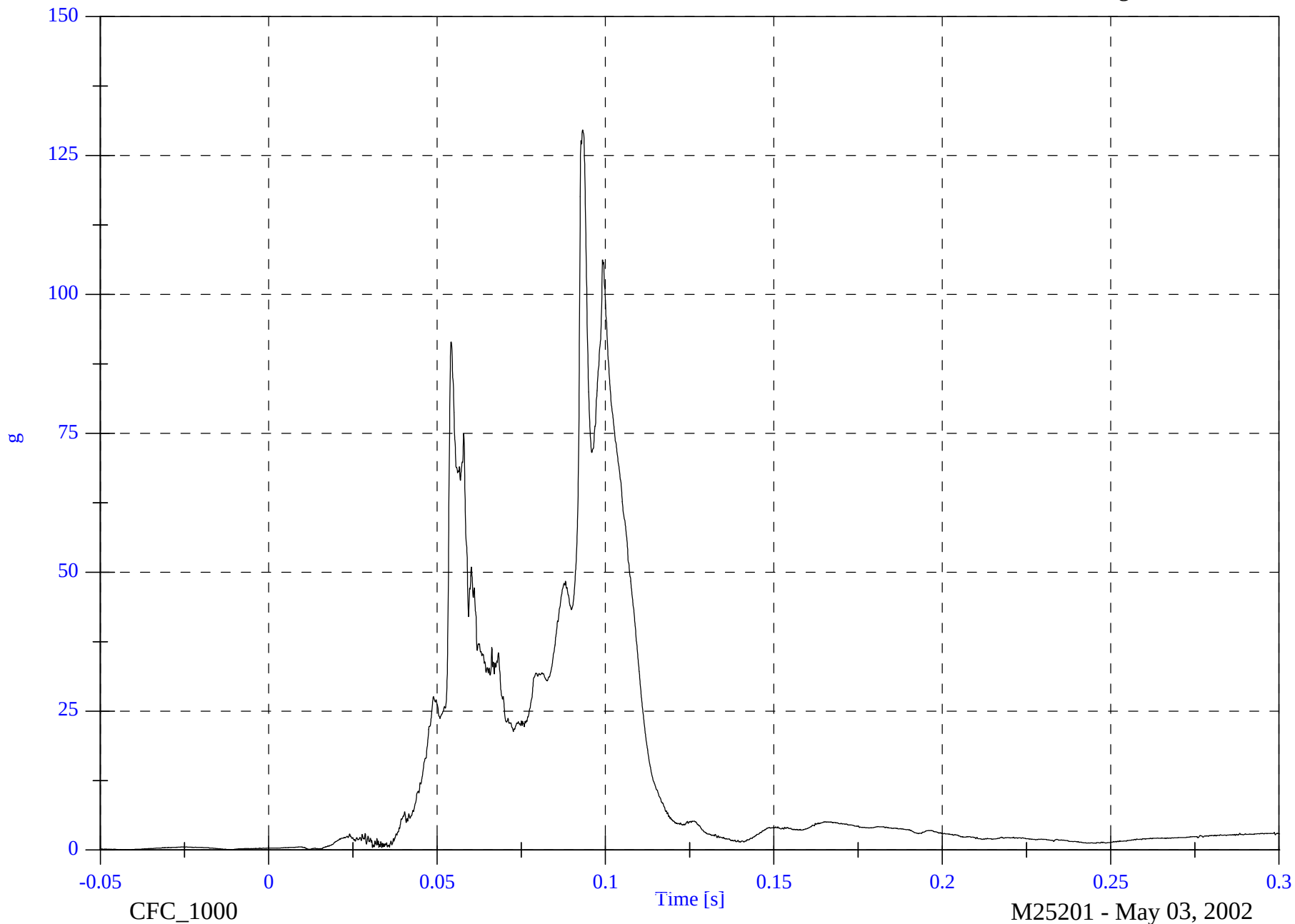
P3 Head Resultant

Max: 129.6 [g] at 0.093 [s]

Min: 0.0 [g] at -0.041 [s]

4-7

8462-NCAP-11

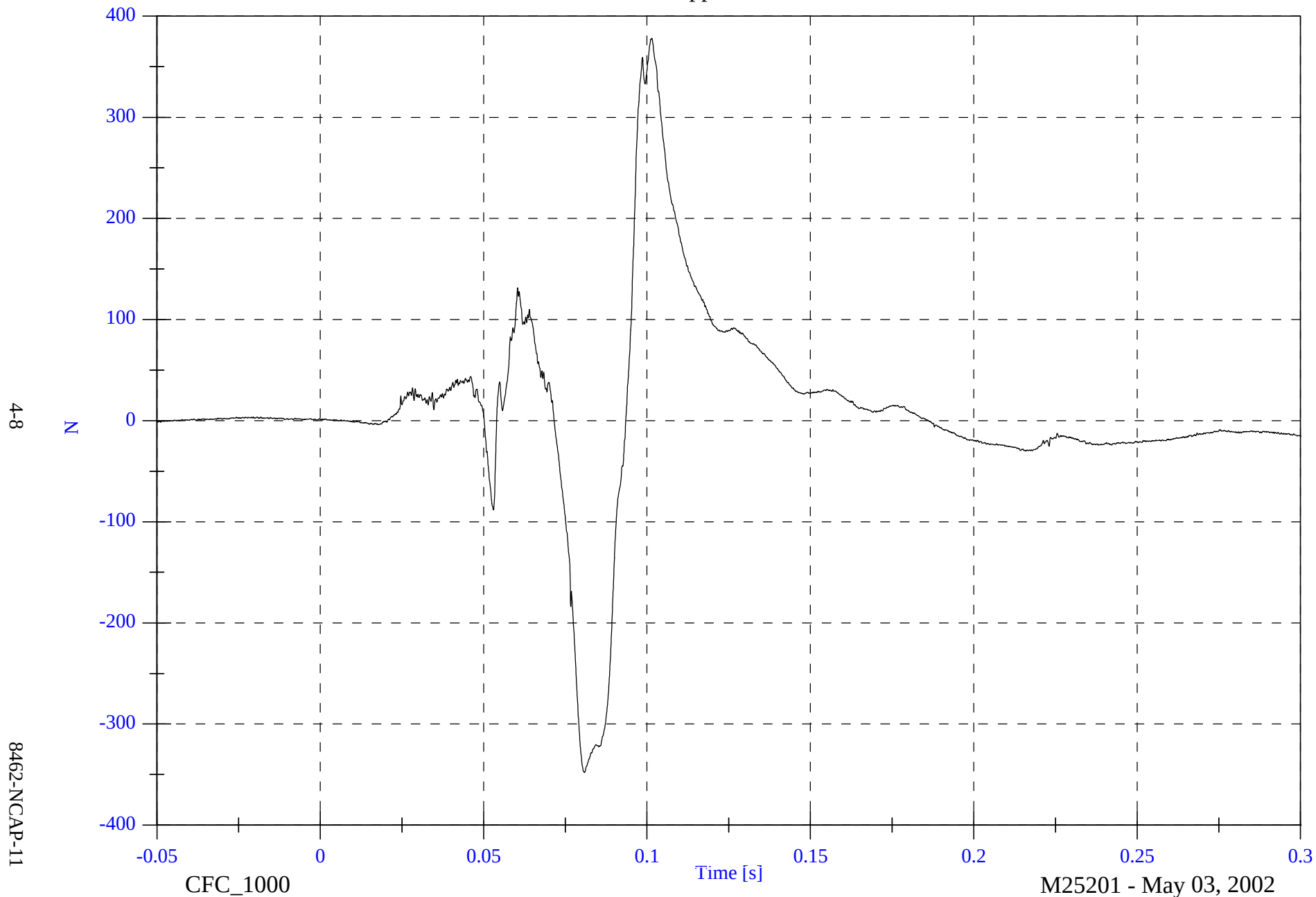


2002 NCAP Test 11 - 2002 Nissan Frontier

P3 Upper Neck Fx

Max: 378.1 [N] at 0.101 [s]

Min: -347.9 [N] at 0.081 [s]

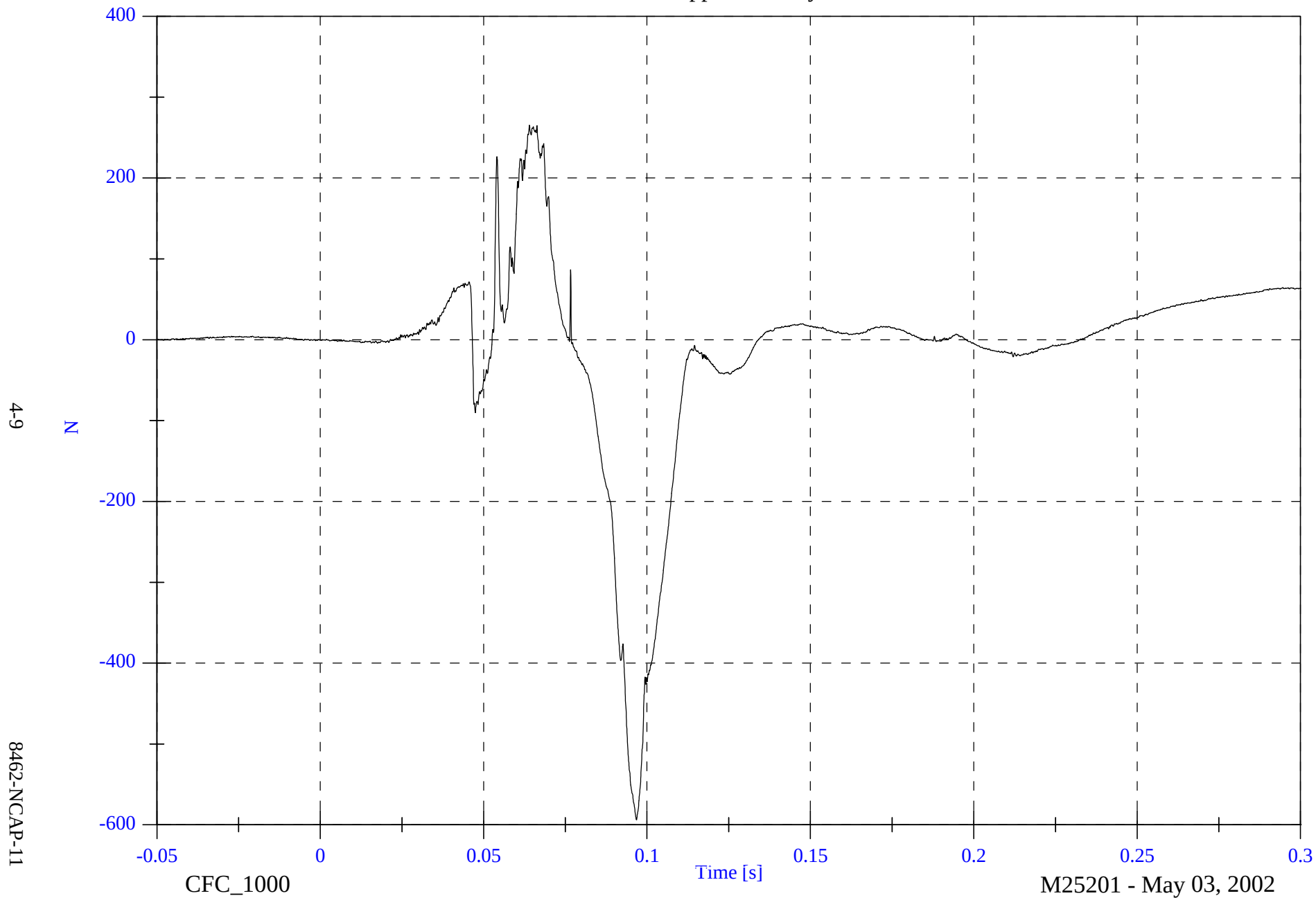


2002 NCAP Test 11 - 2002 Nissan Frontier

P3 Upper Neck Fy

Max: 265.3 [N] at 0.064 [s]

Min: -594.0 [N] at 0.097 [s]

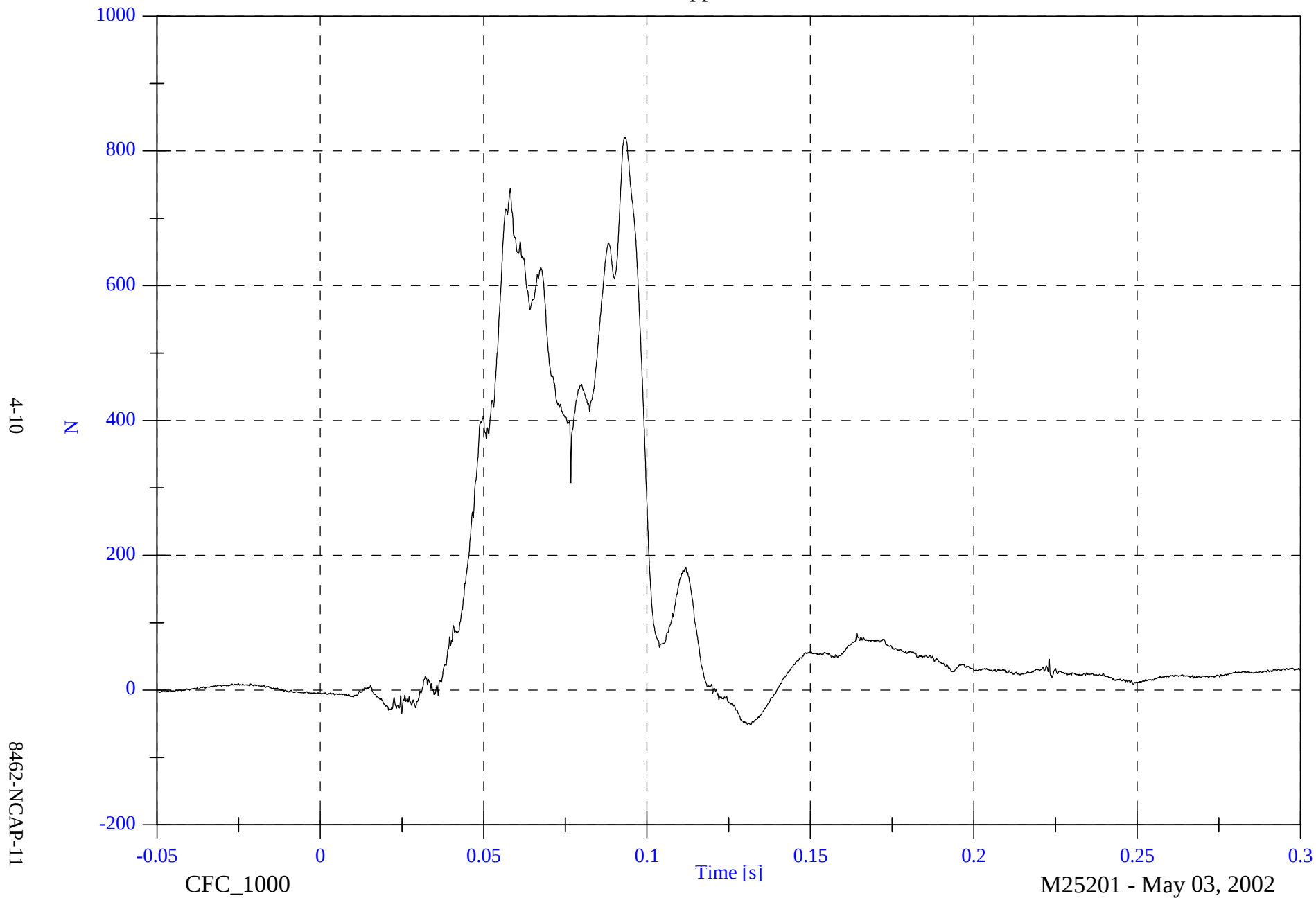


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P3 Upper Neck Fz

Max: 821.0 [N] at 0.093 [s]

Min: -52.0 [N] at 0.132 [s]



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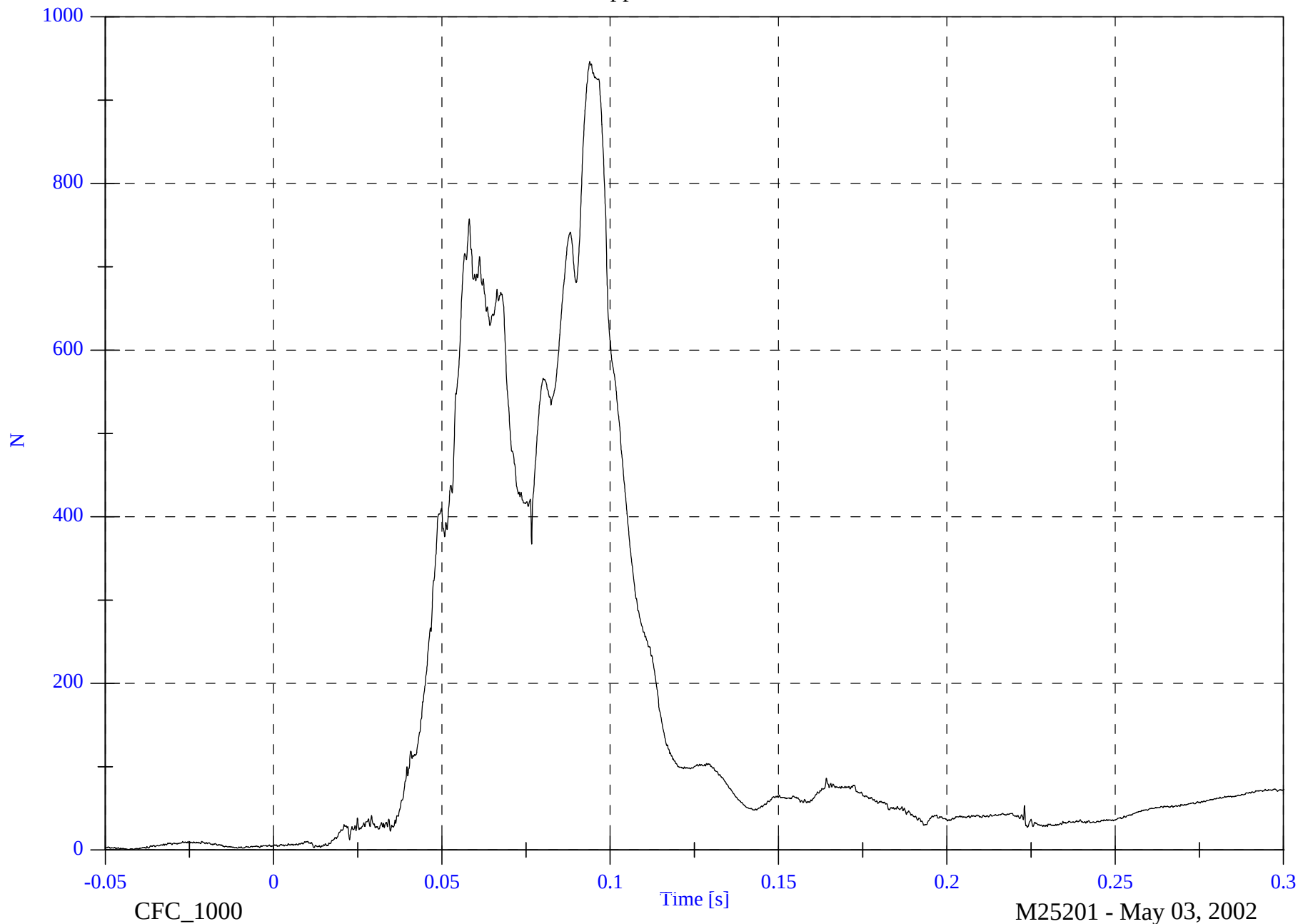
P3 Upper Neck F Resultant

Max: 946.1 [N] at 0.094 [s]

Min: 0.1 [N] at -0.043 [s]

4-11

8462-NCAP-11



2002 NCAP Test 11 - 2002 Nissan Frontier

P3 Upper Neck Mx

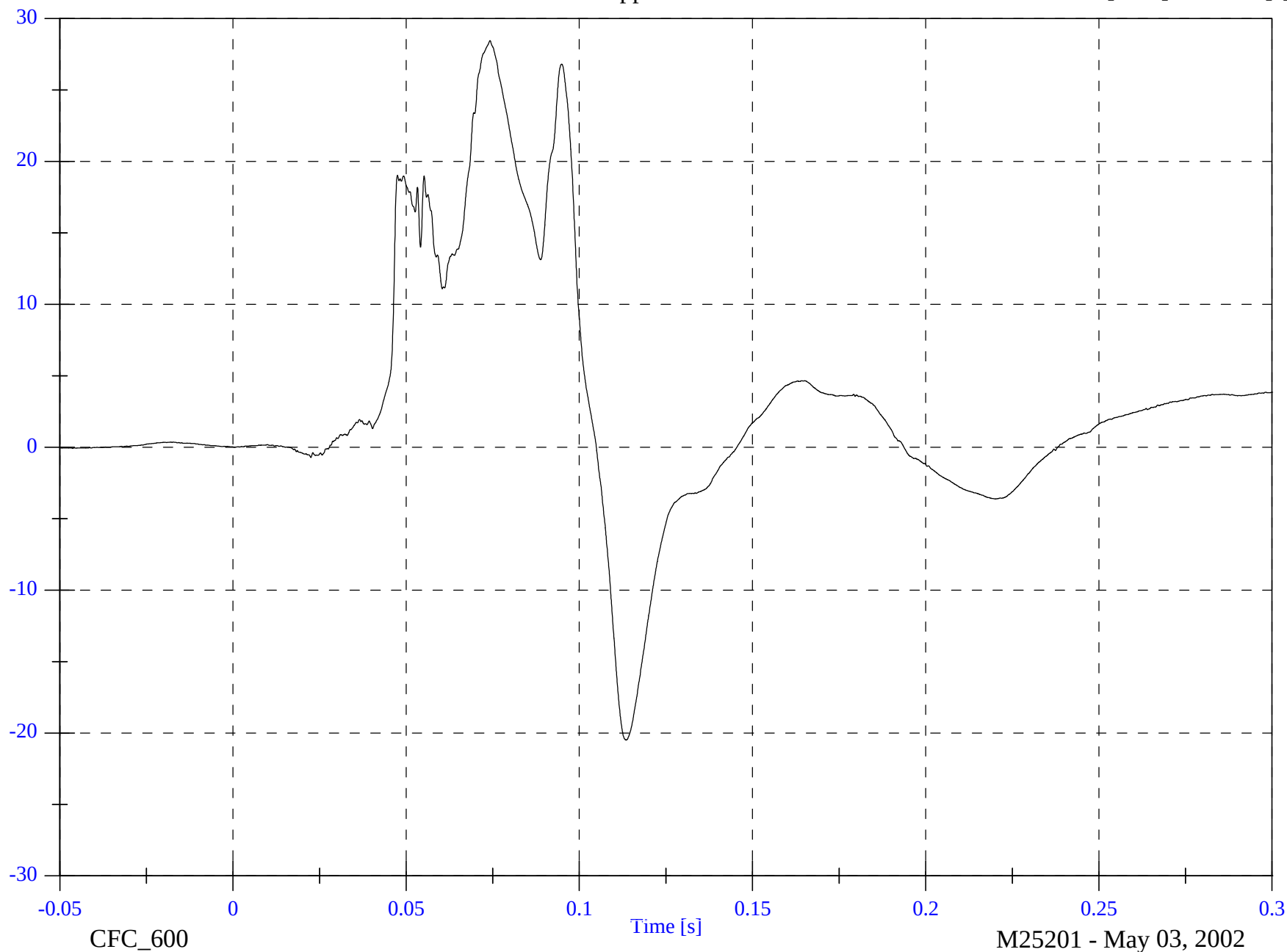
Max: 28.5 [N-m] at 0.074 [s]

Min: -20.5 [N-m] at 0.114 [s]

4-12

N-m

8462-NCAP-11



2002 NCAP Test 11 - 2002 Nissan Frontier

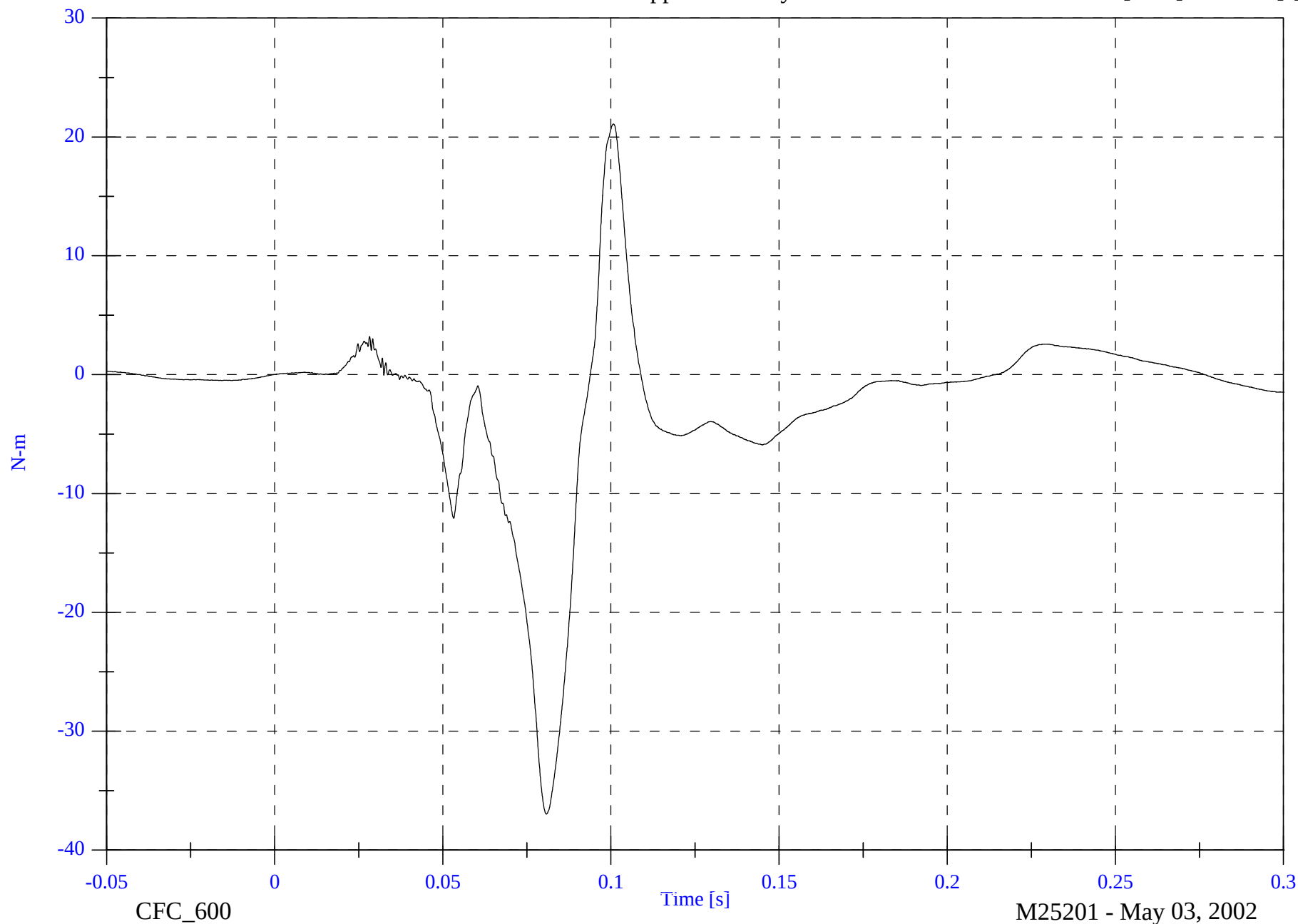
P3 Upper Neck My

Max: 21.1 [N-m] at 0.101 [s]

Min: -37.0 [N-m] at 0.081 [s]

4-13

8462-NCAP-11



2002 NCAP Test 11 - 2002 Nissan Frontier

P3 Upper Neck Mz

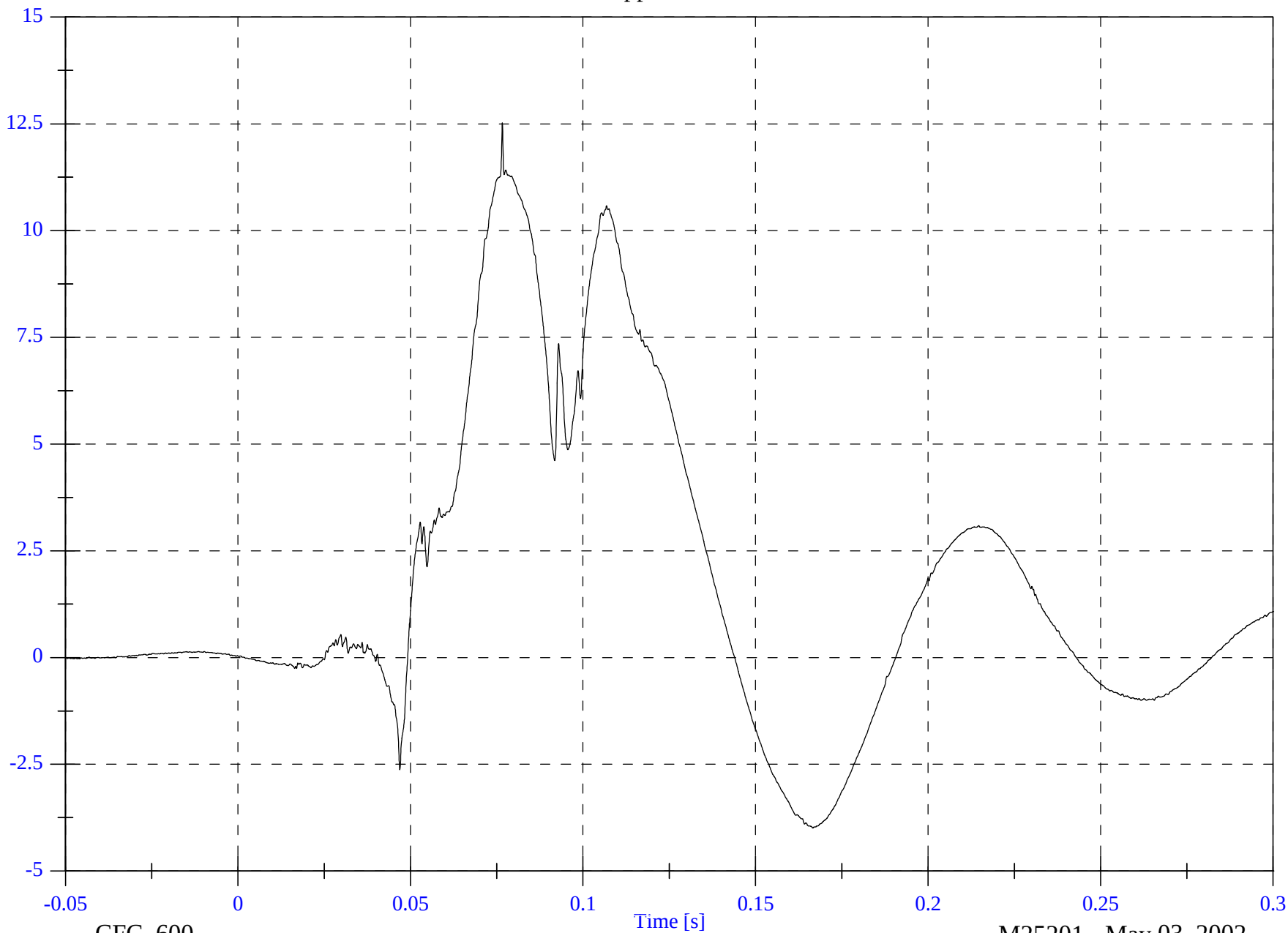
Max: 12.5 [N-m] at 0.077 [s]

Min: -4.0 [N-m] at 0.167 [s]

4-14

N-m

8462-NCAP-11



CFC_600

M25201 - May 03, 2002

2002 NCAP Test 11 - 2002 Nissan Frontier

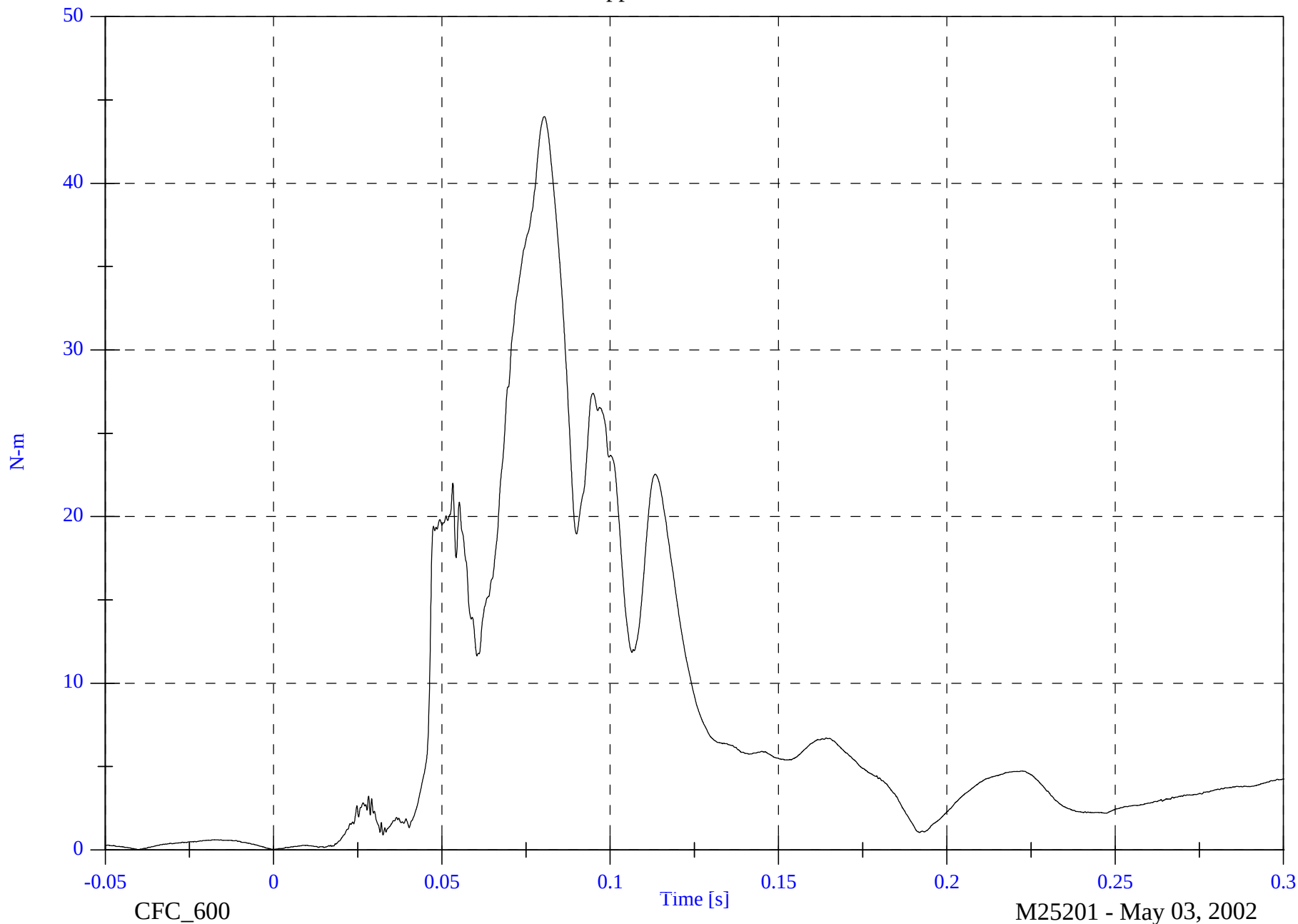
P3 Upper Neck M Resultant

Max: 44.0 [N-m] at 0.080 [s]

Min: 0.0 [N-m] at -0.040 [s]

4-15

8462-NCAP-11

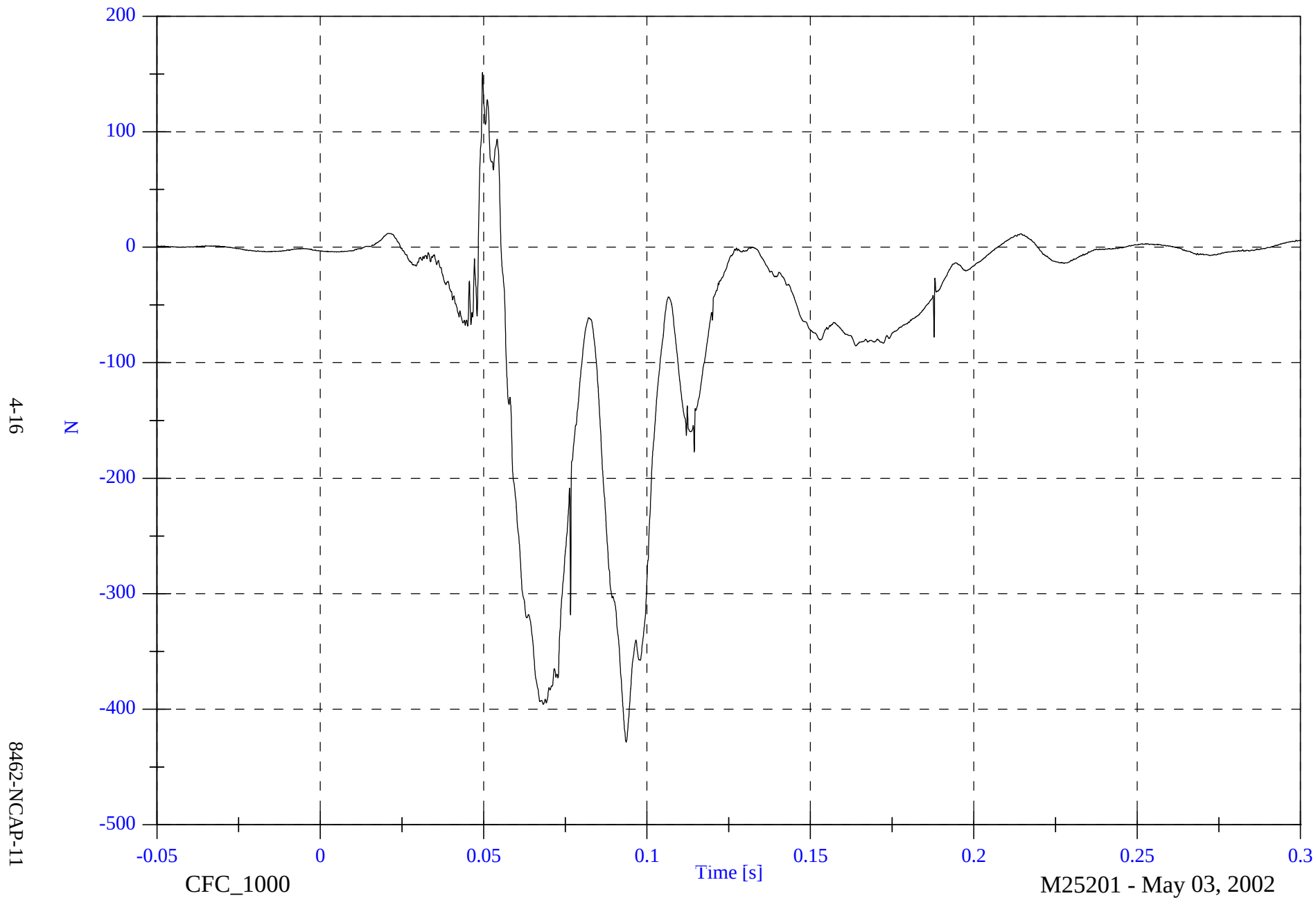


2002 NCAP Test 11 - 2002 Nissan Frontier

P3 Lower Neck Fx

Max: 151.4 [N] at 0.050 [s]

Min: -428.5 [N] at 0.094 [s]

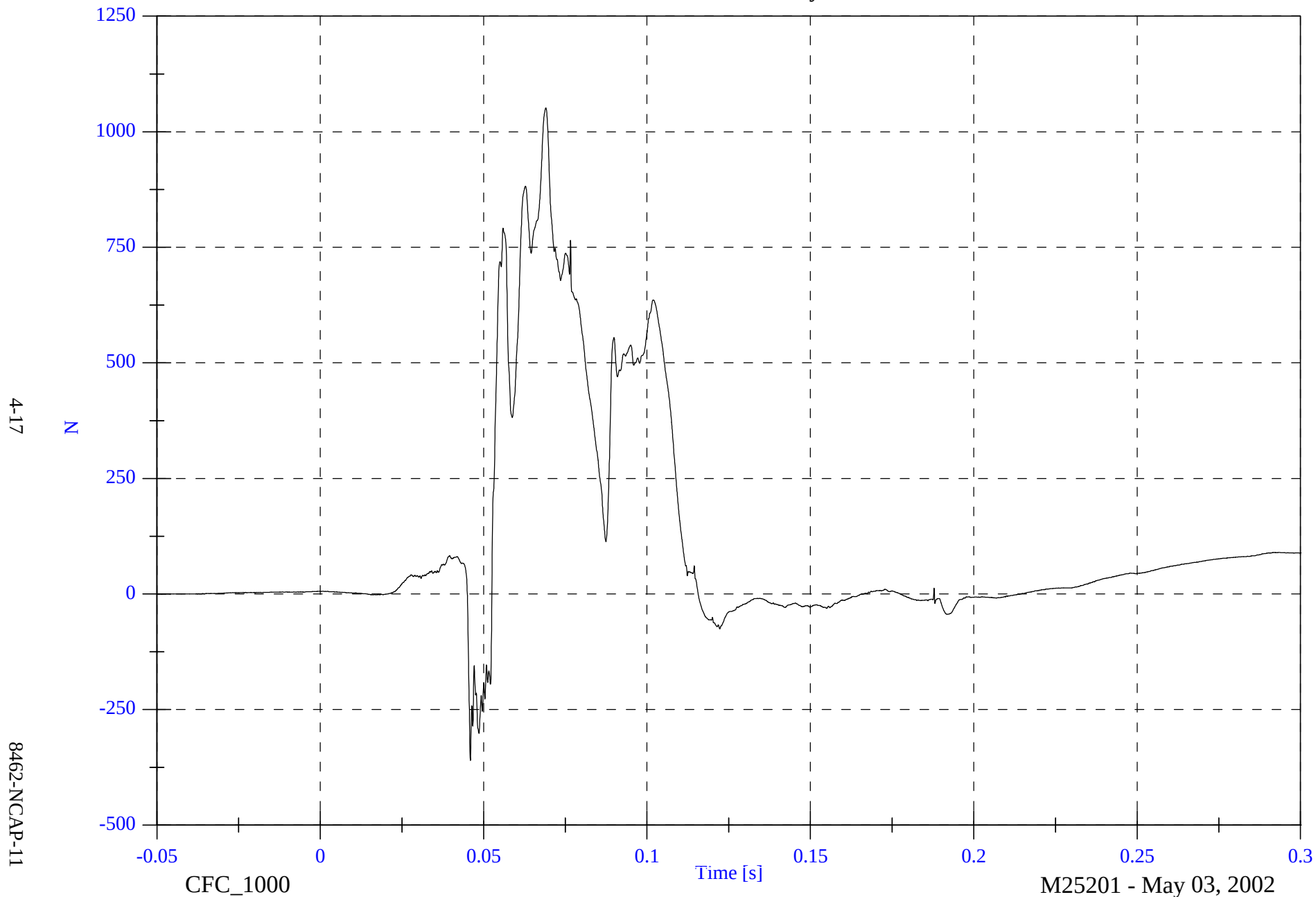


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P3 Lower Neck Fy

Max: 1051.8 [N] at 0.069 [s]

Min: -360.2 [N] at 0.046 [s]



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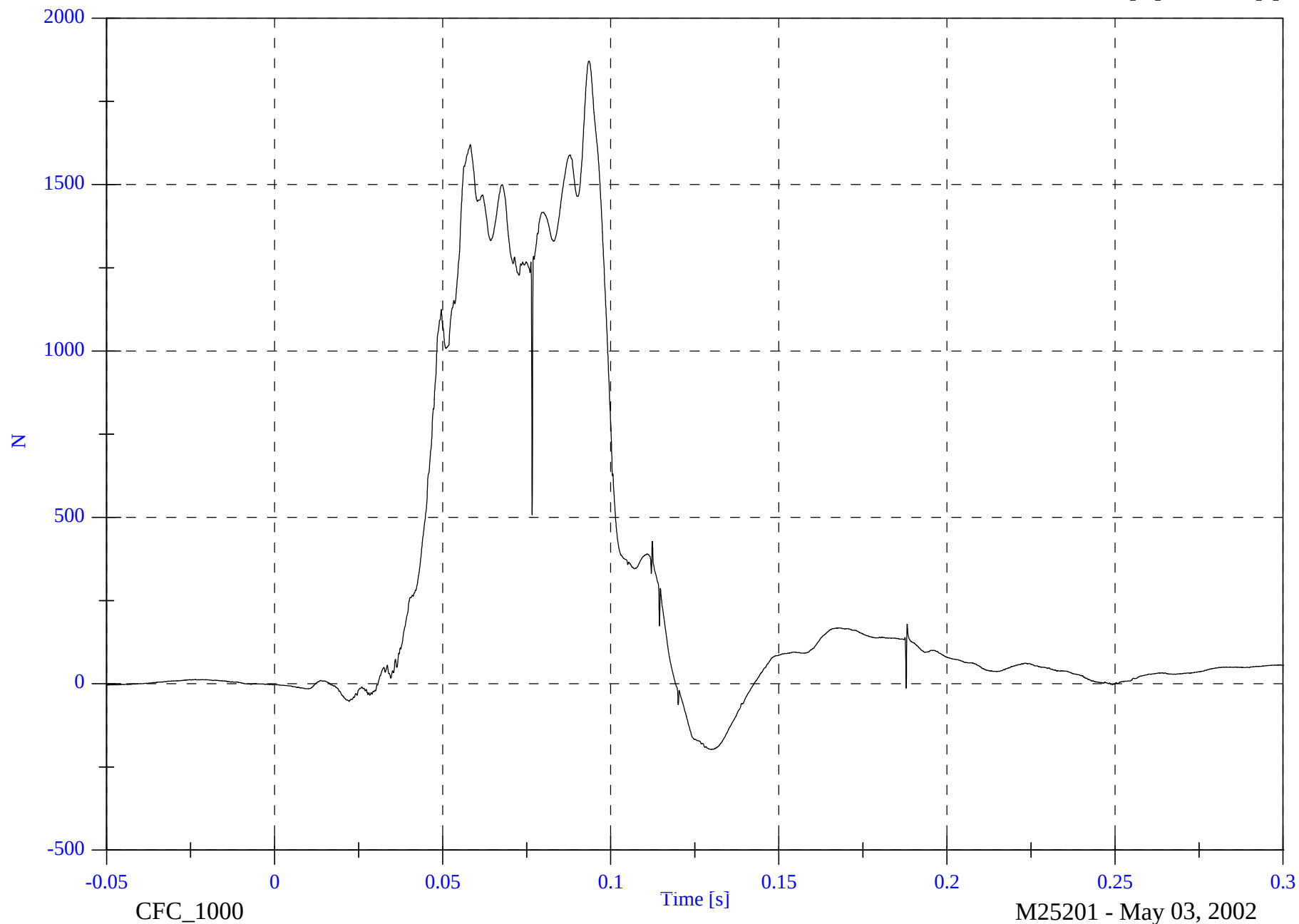
P3 Lower Neck Fz

Max: 1870.5 [N] at 0.094 [s]

Min: -197.9 [N] at 0.130 [s]

4-18

8462-NCAP-11



2002 NCAP Test 11 - 2002 Nissan Frontier

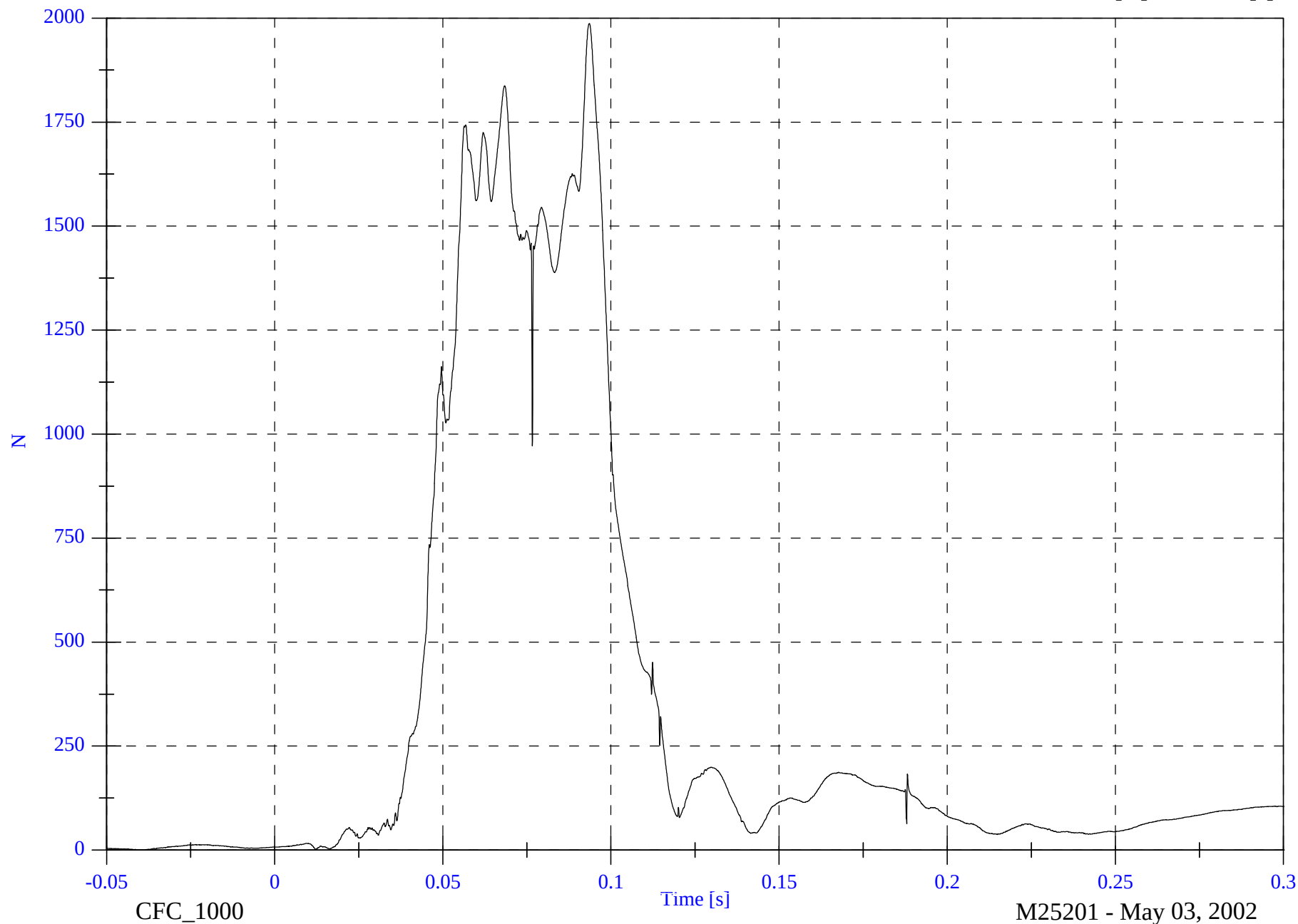
P3 Lower Neck F Resultant

Max: 1986.9 [N] at 0.094 [s]

Min: 0.2 [N] at -0.040 [s]

4-19

8462-NCAP-11



2002 NCAP Test 11 - 2002 Nissan Frontier

P3 Lower Neck Mx

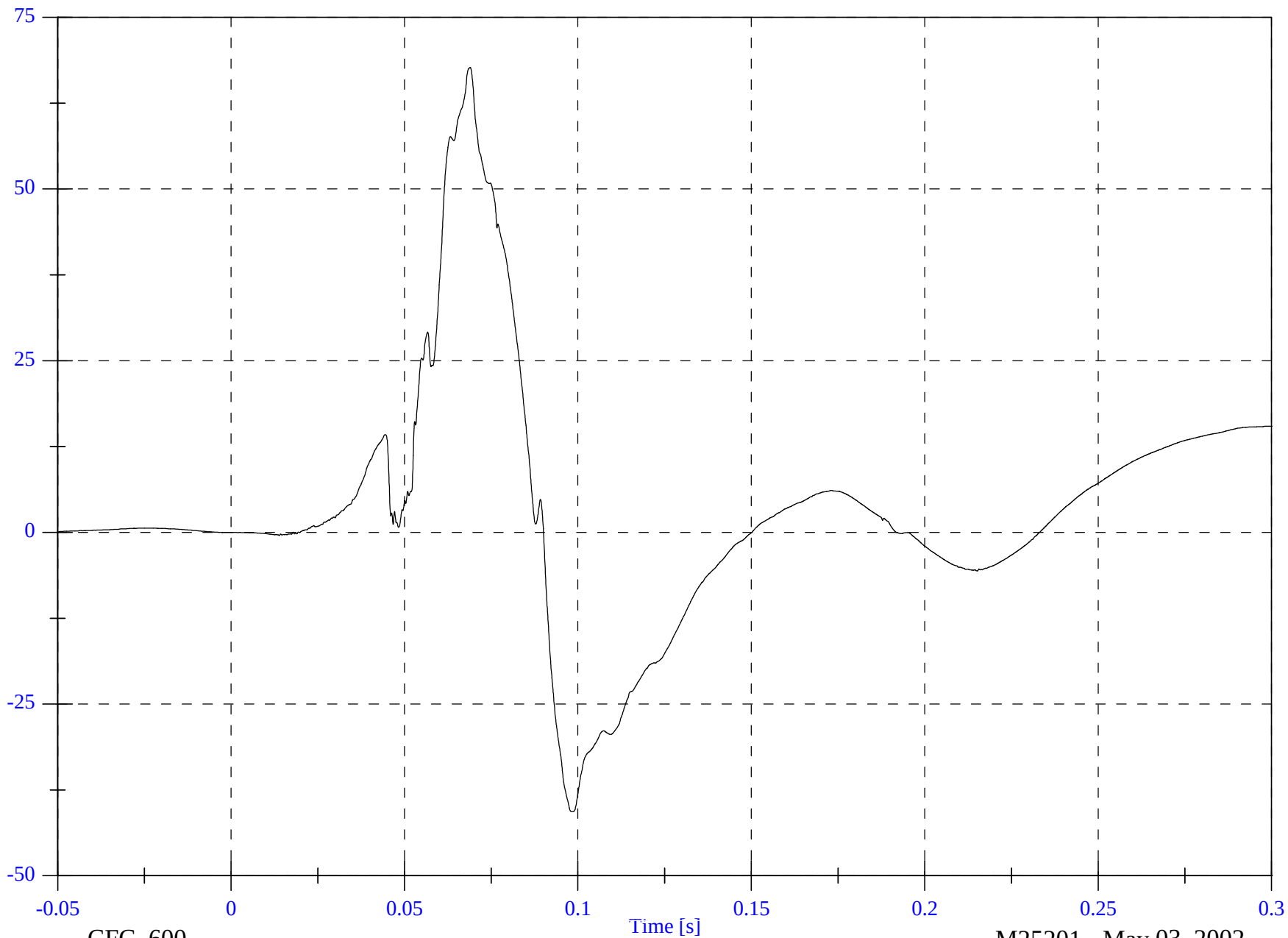
Max: 67.7 [N-m] at 0.069 [s]

Min: -40.7 [N-m] at 0.099 [s]

4-20

N-m

8462-NCAP-11



CFC_600

M25201 - May 03, 2002

2002 NCAP Test 11 - 2002 Nissan Frontier

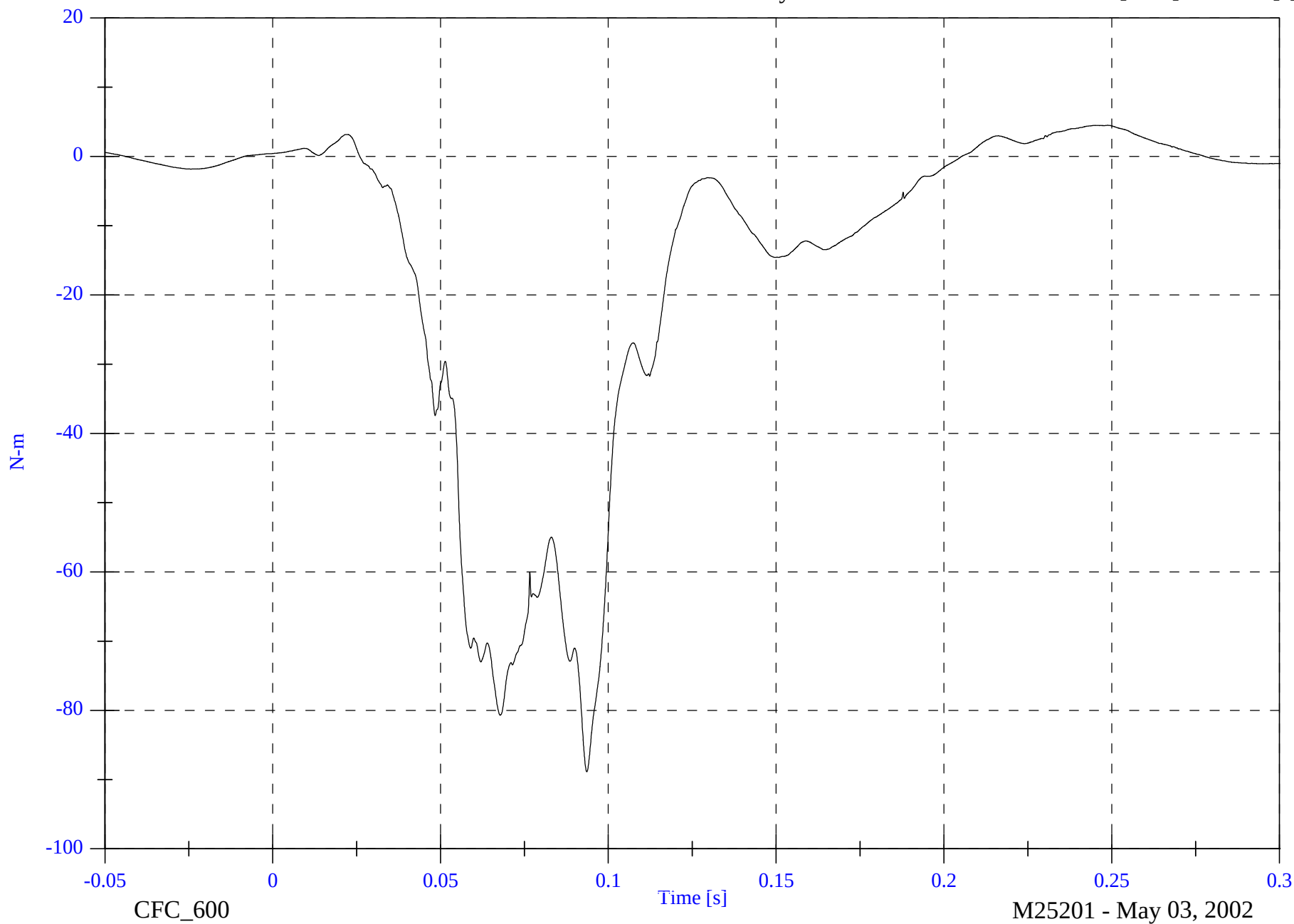
P3 Lower Neck My

Max: 4.5 [N-m] at 0.249 [s]

Min: -88.9 [N-m] at 0.094 [s]

4-21

8462-NCAP-11

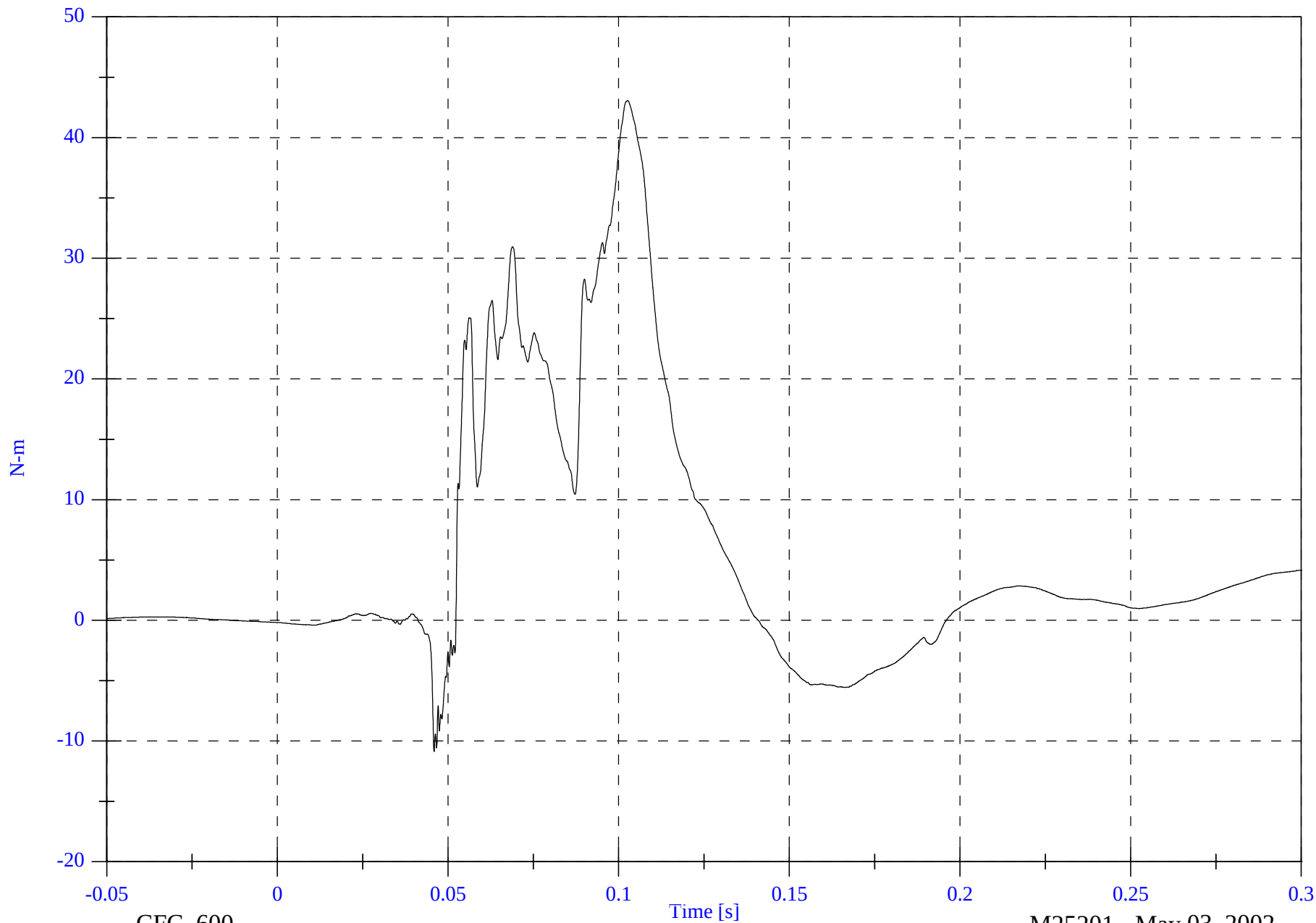


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P3 Lower Neck Mz

Max: 43.1 [N-m] at 0.103 [s]

Min: -10.9 [N-m] at 0.046 [s]



4-22

8462-NCAP-11

CFC_600

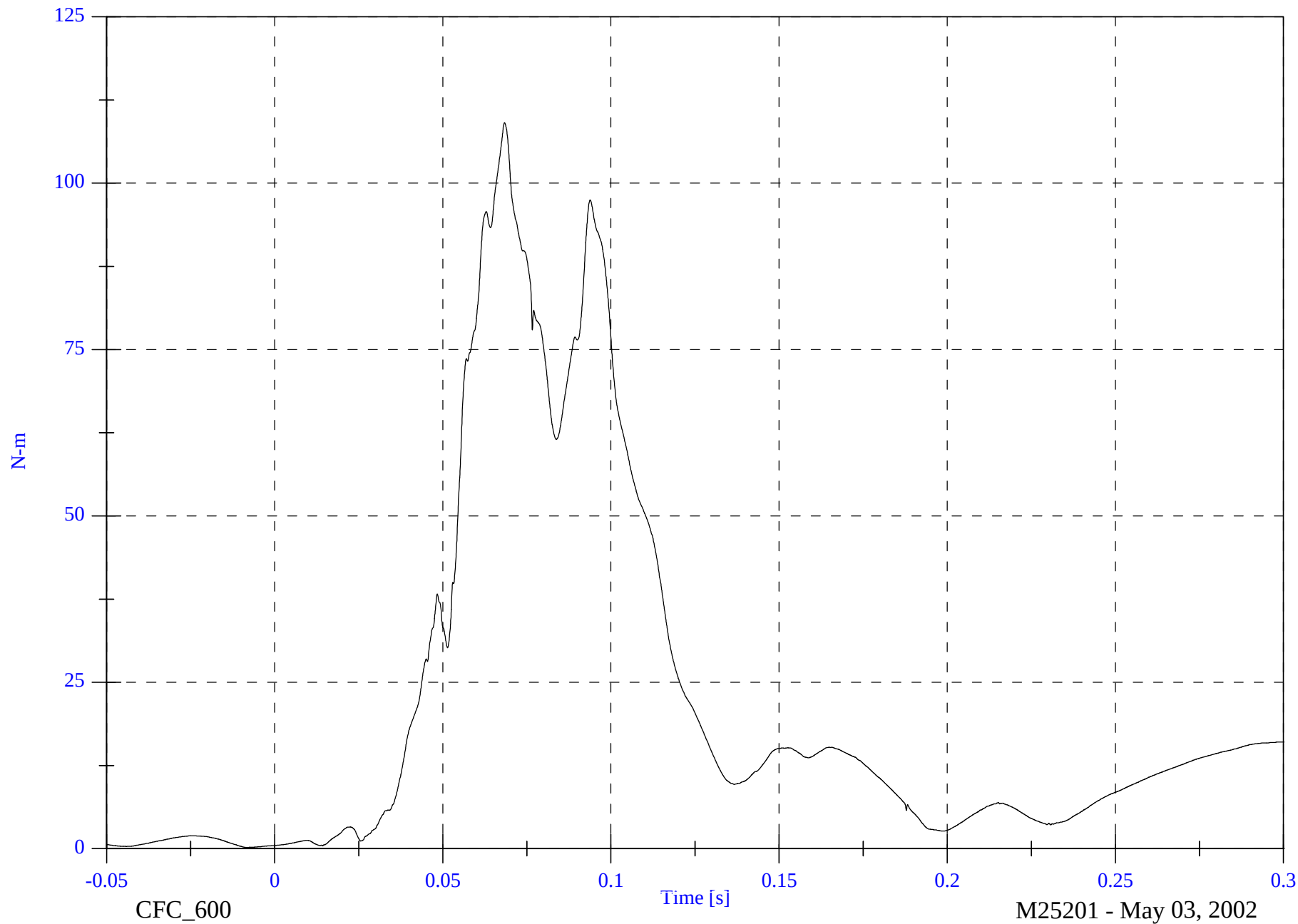
M25201 - May 03, 2002

2002 NCAP Test 11 - 2002 Nissan Frontier

P3 Lower Neck M Resultant

Max: 109.1 [N-m] at 0.068 [s]

Min: 0.2 [N-m] at -0.008 [s]



4-23

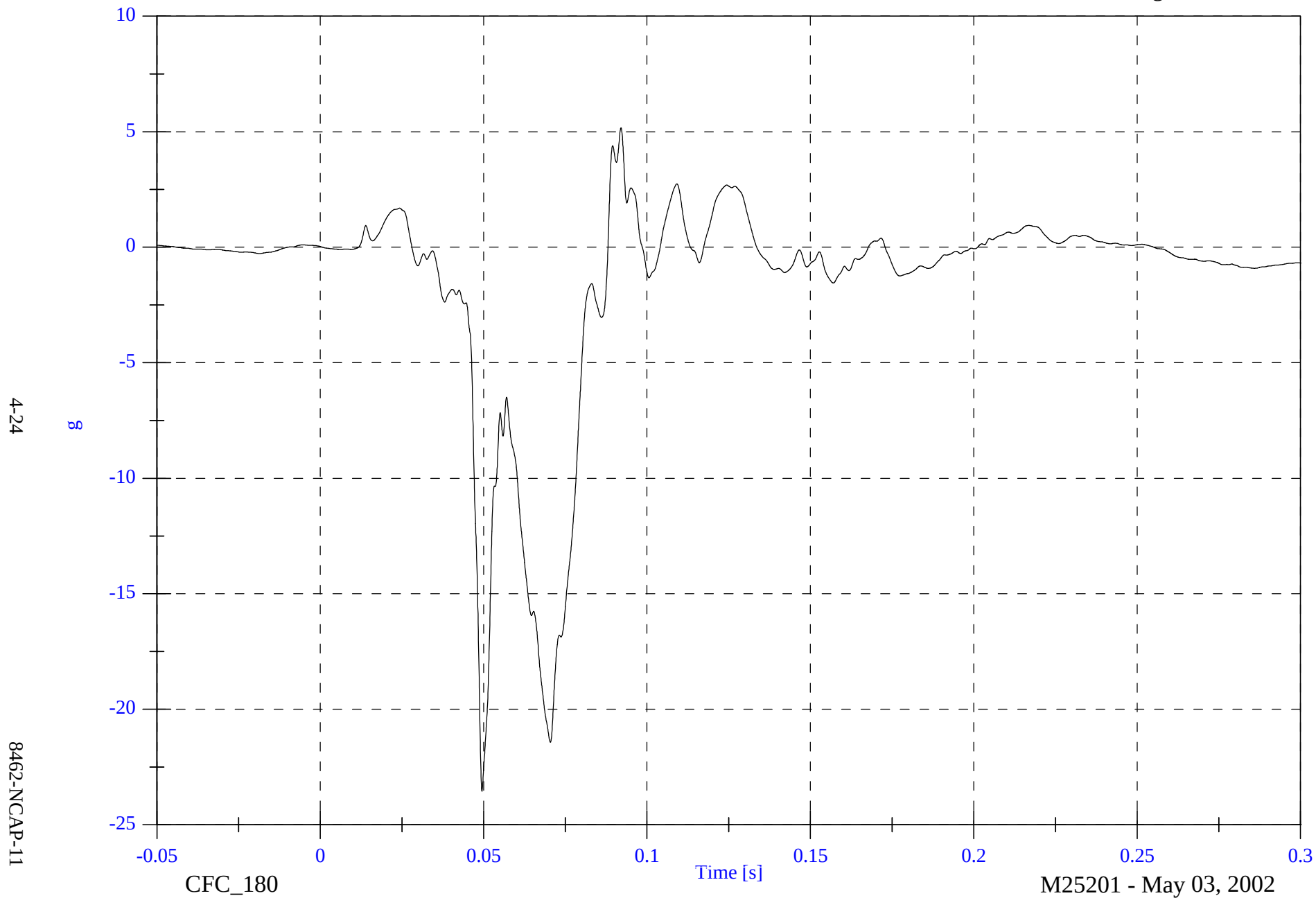
8462-NCAP-11

2002 NCAP Test 11 - 2002 Nissan Frontier

Max: 5.2 [g] at 0.092 [s]

Min: -23.5 [g] at 0.049 [s]

P3 Chest x

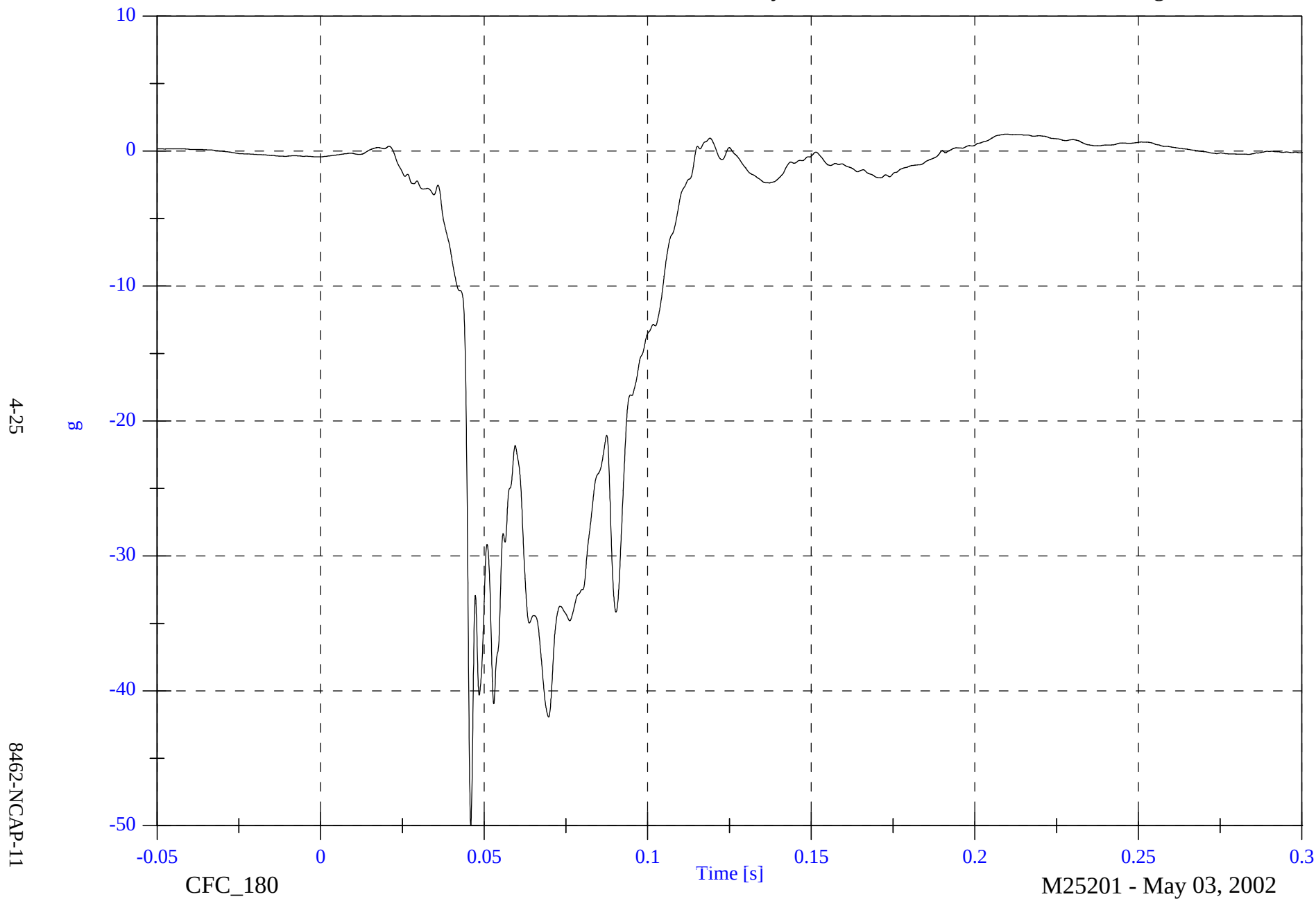


2002 NCAP Test 11 - 2002 Nissan Frontier

P3 Chest y

Max: 1.3 [g] at 0.209 [s]

Min: -50.0 [g] at 0.046 [s]

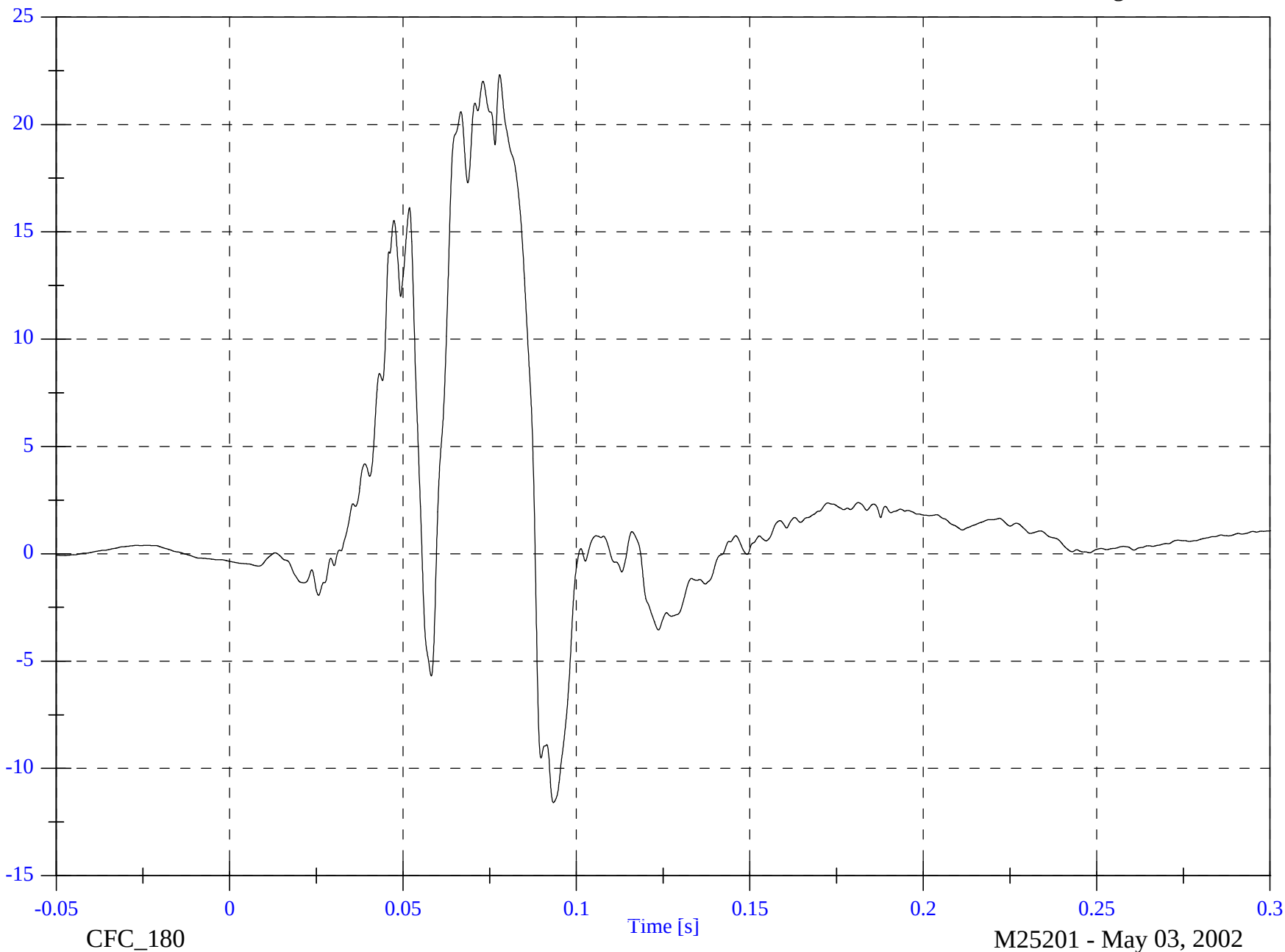


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P3 Chest z

Max: 22.3 [g] at 0.078 [s]

Min: -11.6 [g] at 0.093 [s]



4-26

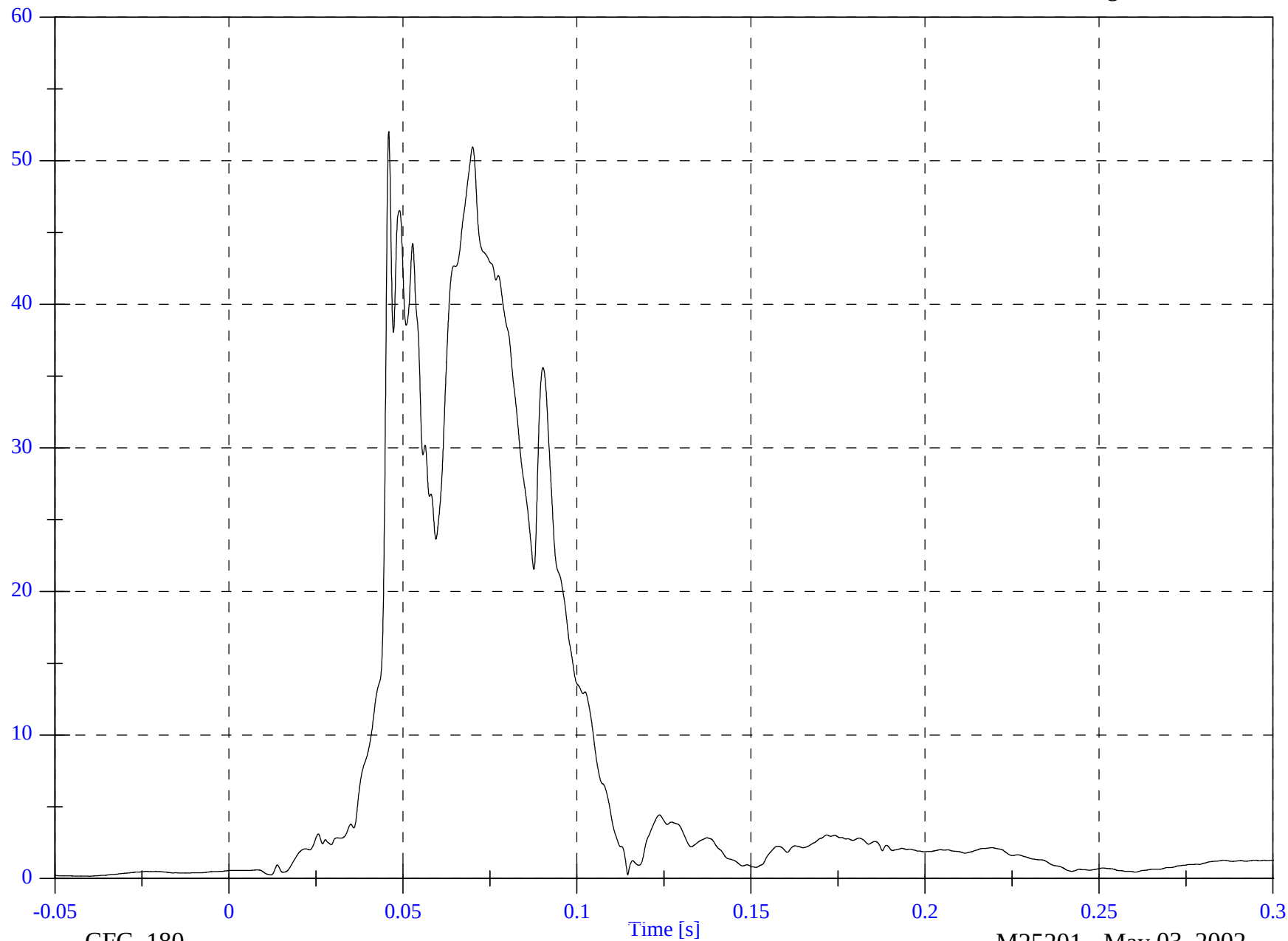
8462-NCAP-11

2002 NCAP Test 11 - 2002 Nissan Frontier

P3 Chest Resultant

Max: 52.0 [g] at 0.046 [s]

Min: 0.2 [g] at -0.040 [s]



4-27

8462-NCAP-11

CFC_180

M25201 - May 03, 2002

2002 NCAP Test 11 - 2002 Nissan Frontier

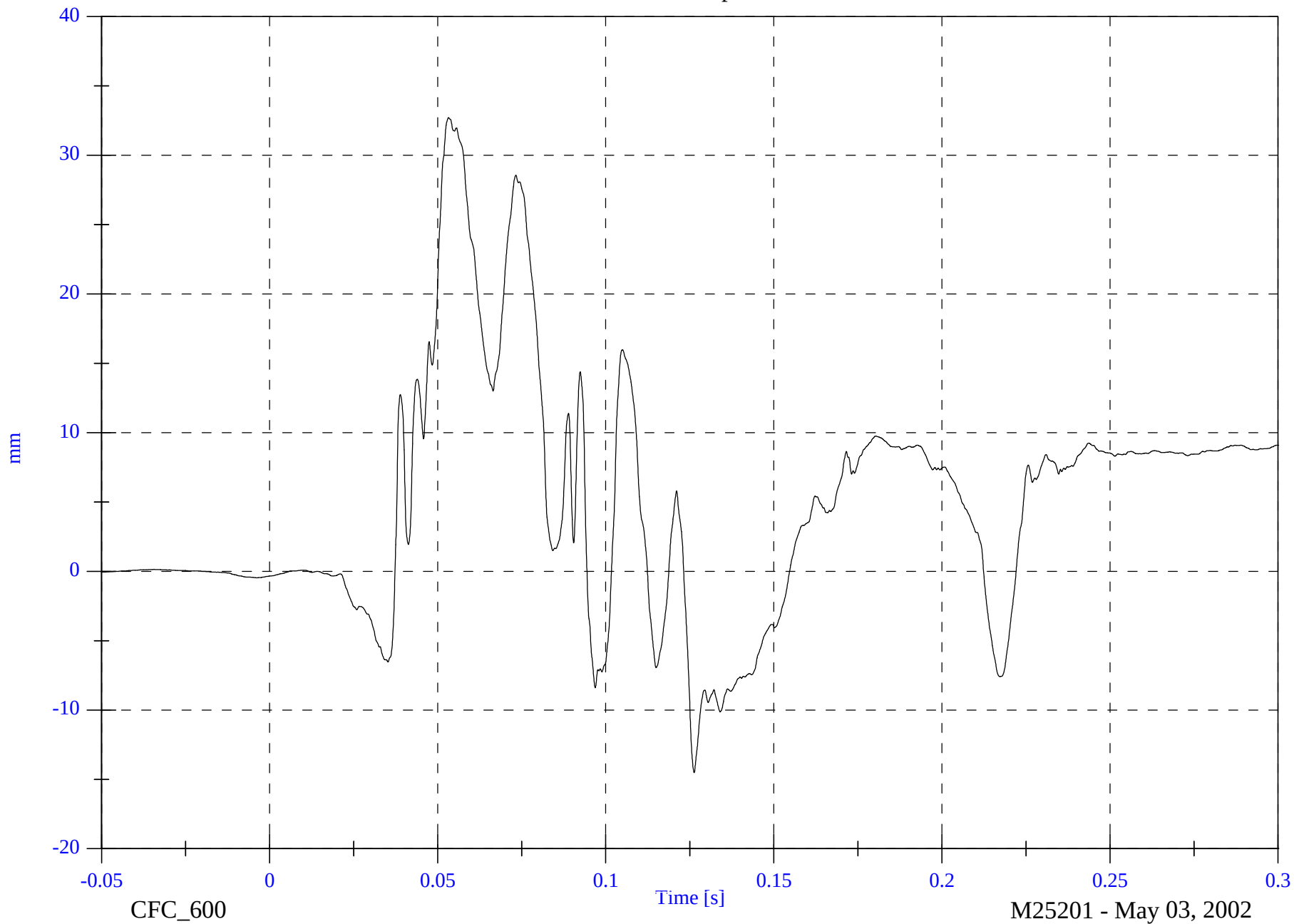
P3 Chest Compression

Max: 32.7 [mm] at 0.053 [s]

Min: -14.5 [mm] at 0.126 [s]

4-28

8462-NCAP-11

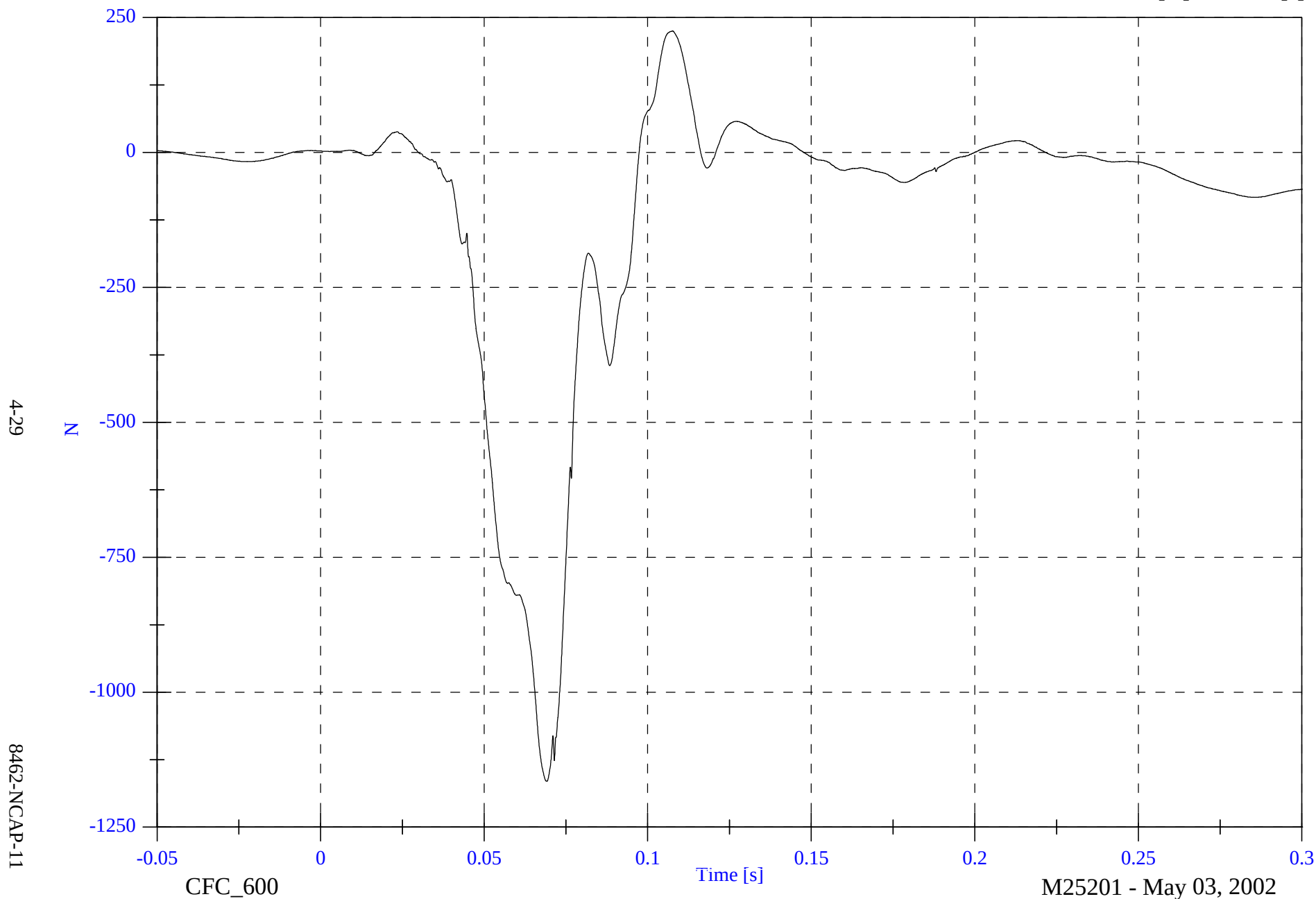


2002 NCAP Test 11 - 2002 Nissan Frontier

Max: 225.4 [N] at 0.108 [s]

Min: -1165.0 [N] at 0.069 [s]

P3 Lumbar Fx



4-29

8462-NCAP-11

CFC_600

Time [s]

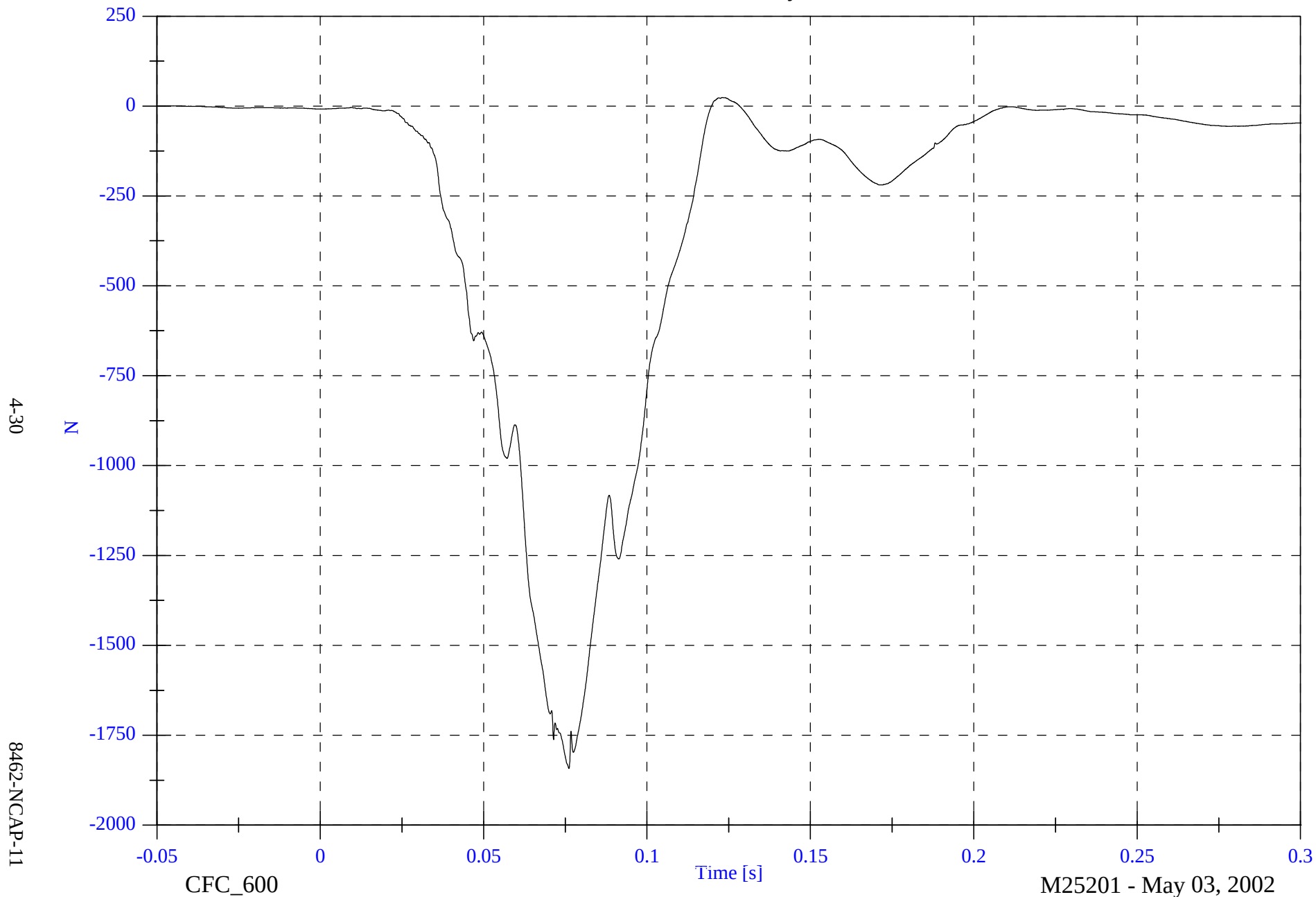
M25201 - May 03, 2002

2002 NCAP Test 11 - 2002 Nissan Frontier

P3 Lumbar Fy

Max: 23.8 [N] at 0.123 [s]

Min: -1842.7 [N] at 0.076 [s]

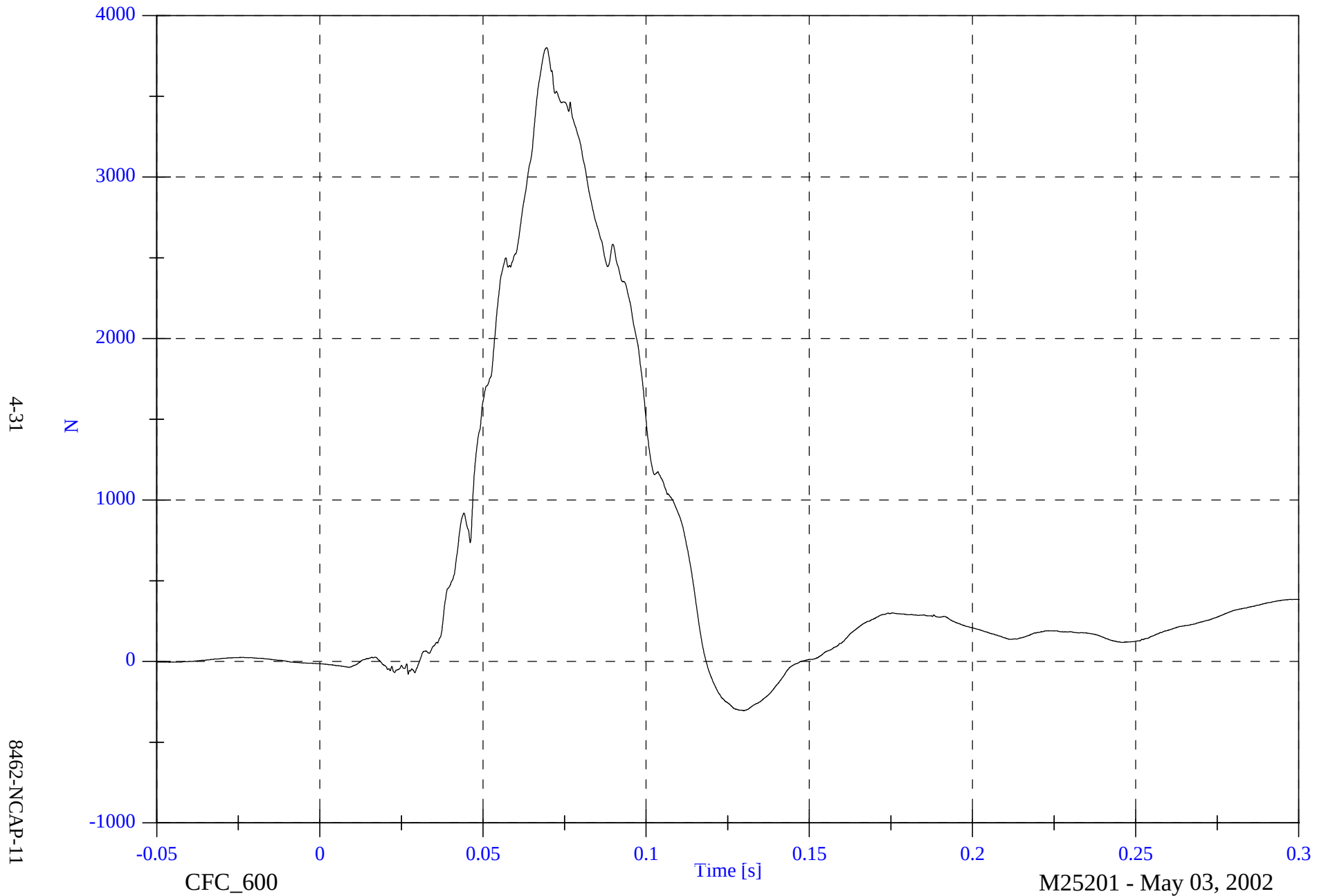


2002 NCAP Test 11 - 2002 Nissan Frontier

Max: 3800.8 [N] at 0.070 [s]

Min: -305.1 [N] at 0.130 [s]

P3 Lumbar Fz



2002 NCAP Test 11 - 2002 Nissan Frontier

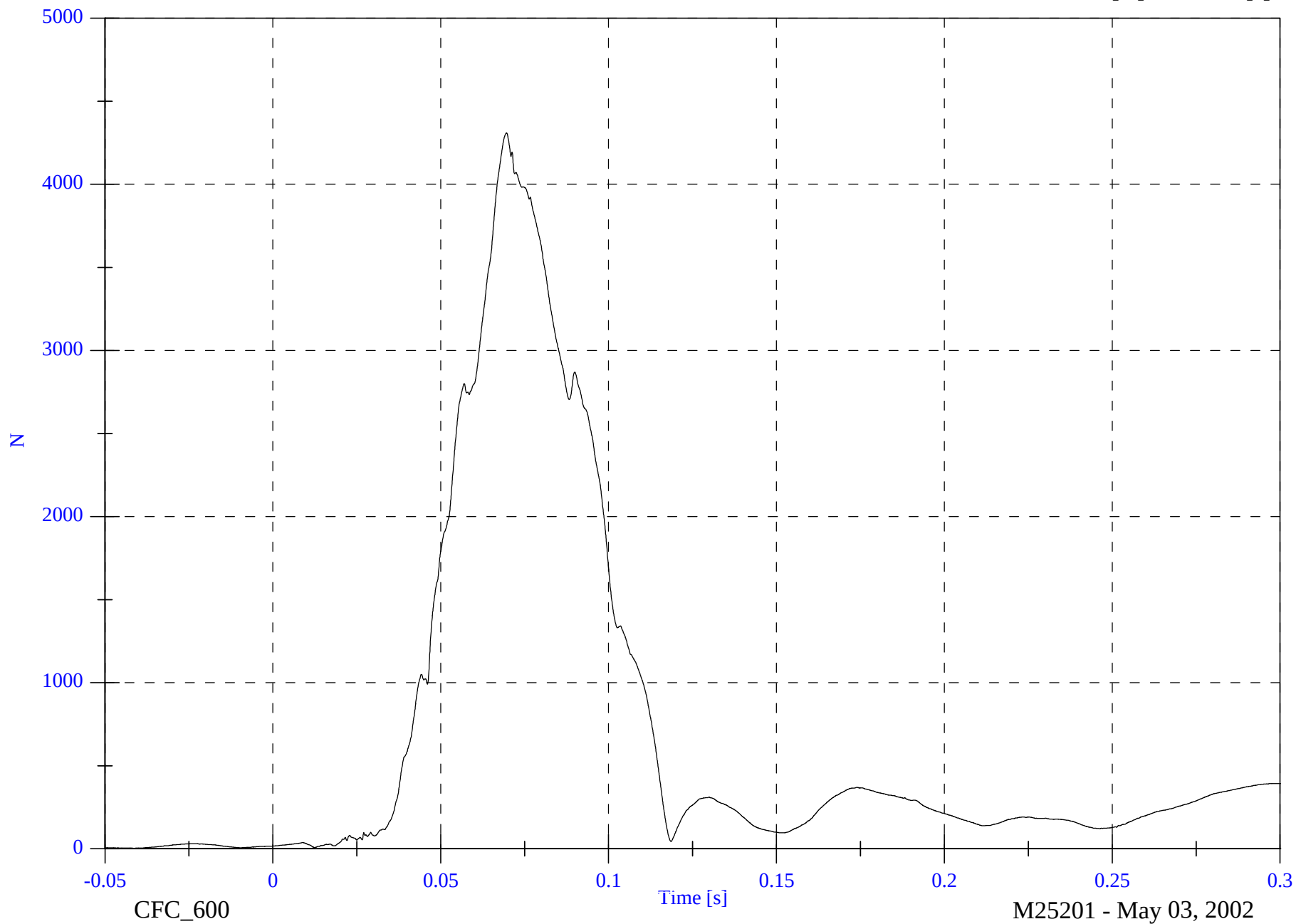
P3 Lumbar F Resultant

Max: 4308.7 [N] at 0.070 [s]

Min: 3.2 [N] at -0.041 [s]

4-32

8462-NCAP-11

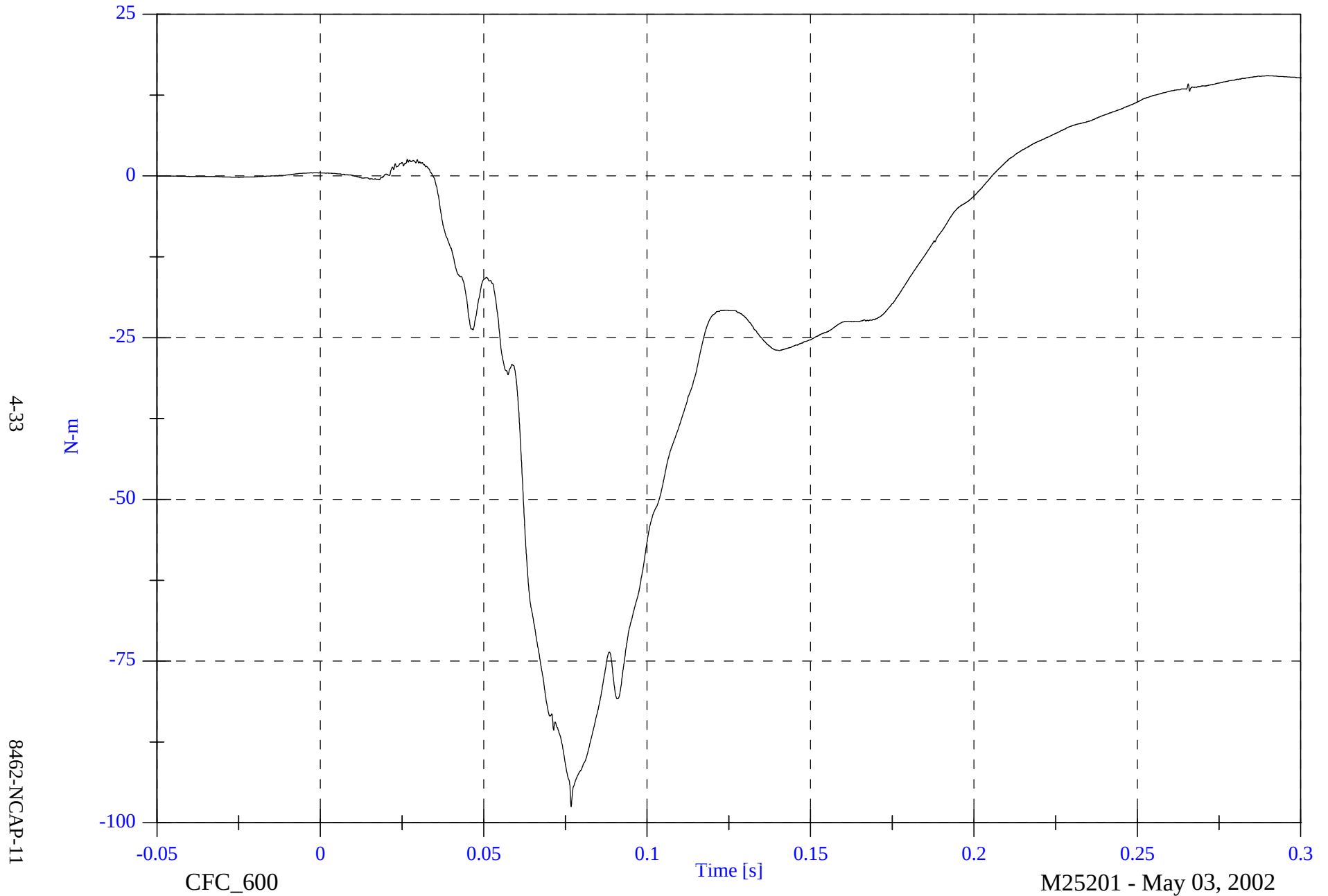


2002 NCAP Test 11 - 2002 Nissan Frontier

P3 Lumbar Mx

Max: 15.5 [N-m] at 0.290 [s]

Min: -97.5 [N-m] at 0.077 [s]



2002 NCAP Test 11 - 2002 Nissan Frontier

P3 Lumbar My

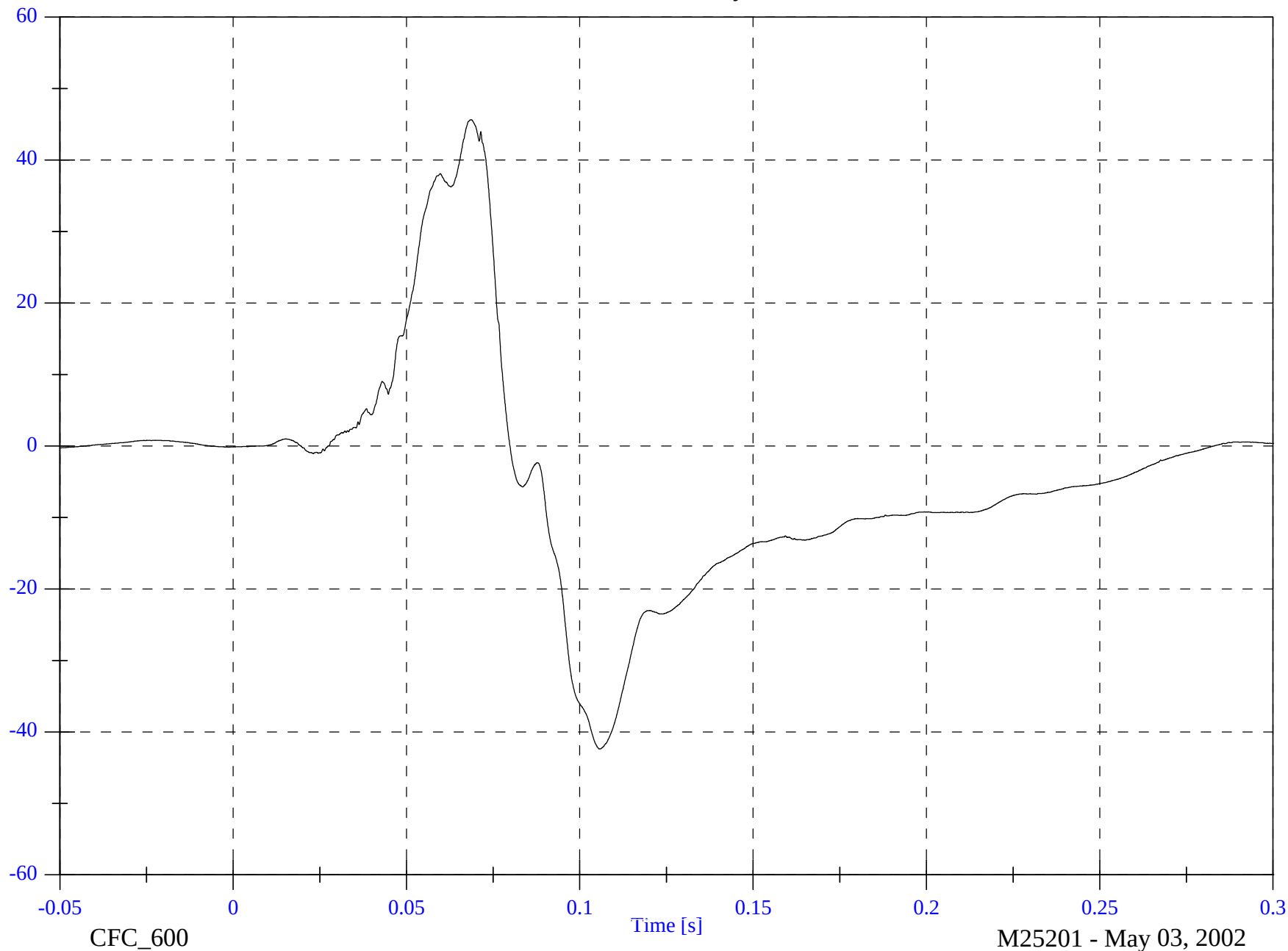
Max: 45.6 [N-m] at 0.069 [s]

Min: -42.4 [N-m] at 0.106 [s]

4-34

N-m

8462-NCAP-11

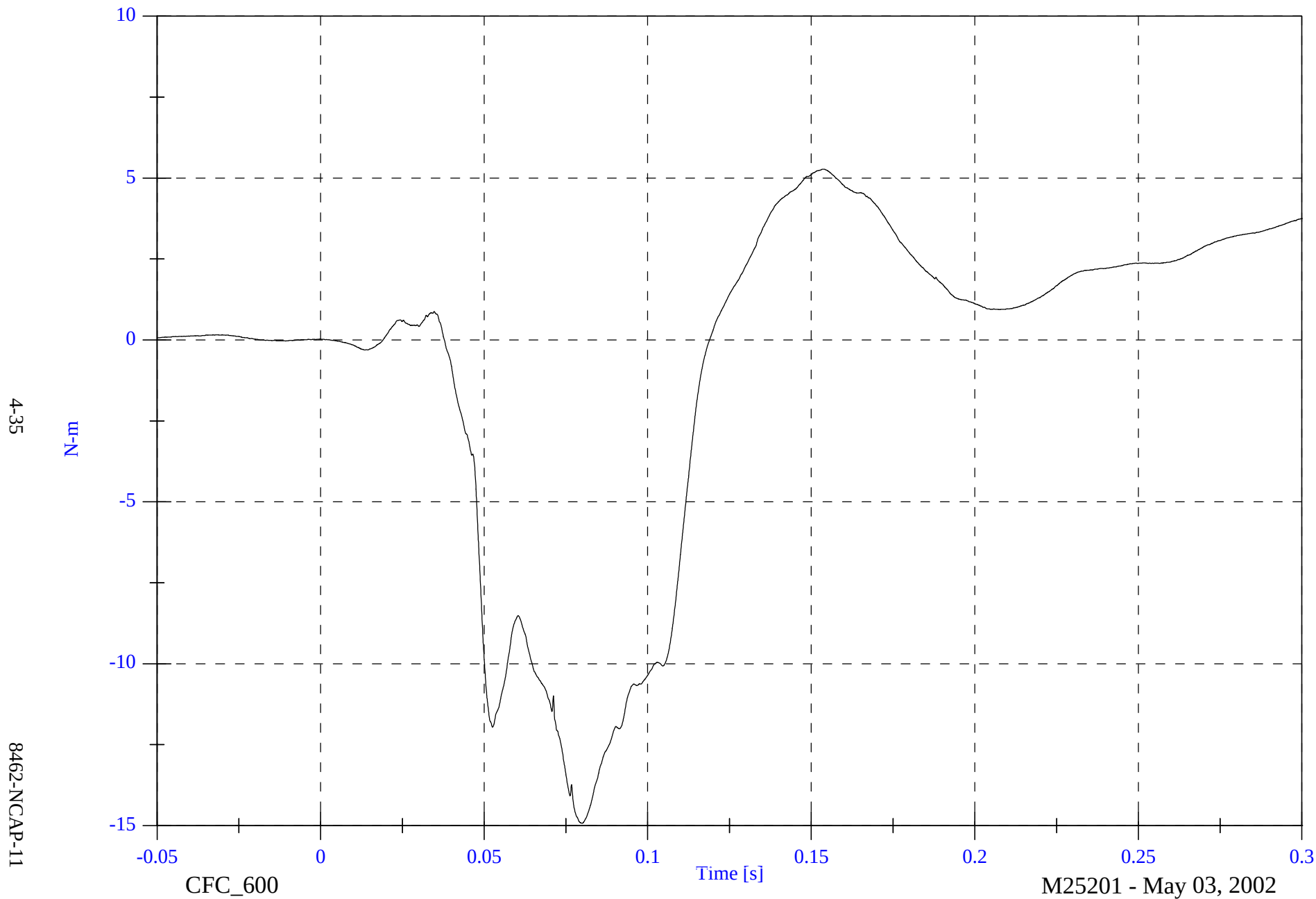


2002 NCAP Test 11 - 2002 Nissan Frontier

P3 Lumbar Mz

Max: 5.3 [N-m] at 0.154 [s]

Min: -14.9 [N-m] at 0.080 [s]

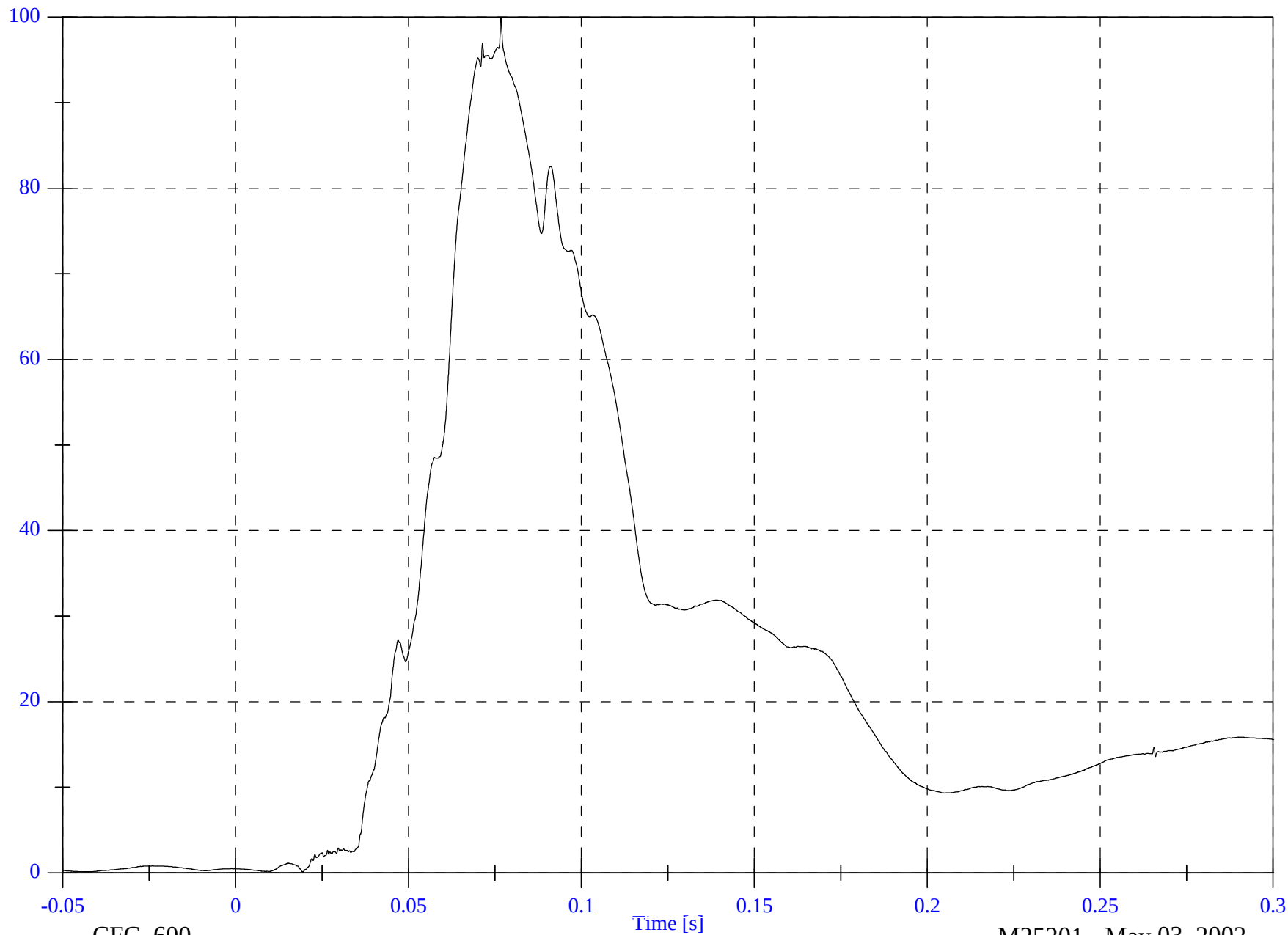


2002 NCAP Test 11 - 2002 Nissan Frontier

P3 Lumbar M Resultant

Max: 99.9 [N-m] at 0.077 [s]

Min: 0.1 [N-m] at 0.019 [s]



4-36

8462-NCAP-11

CFC_600

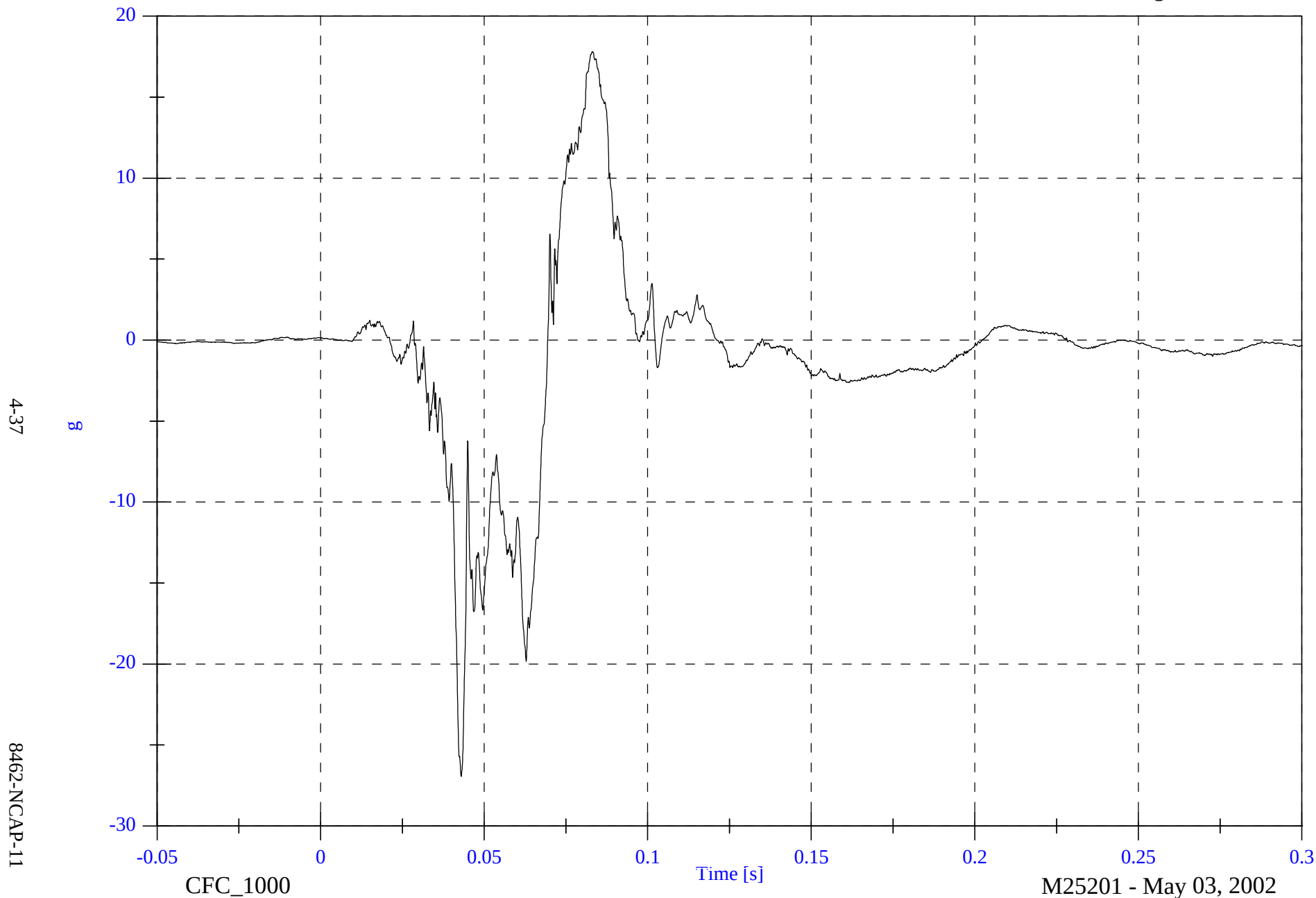
M25201 - May 03, 2002

2002 NCAP Test 11 - 2002 Nissan Frontier

Max: 17.8 [g] at 0.083 [s]

Min: -26.9 [g] at 0.043 [s]

P3 Pelvic x

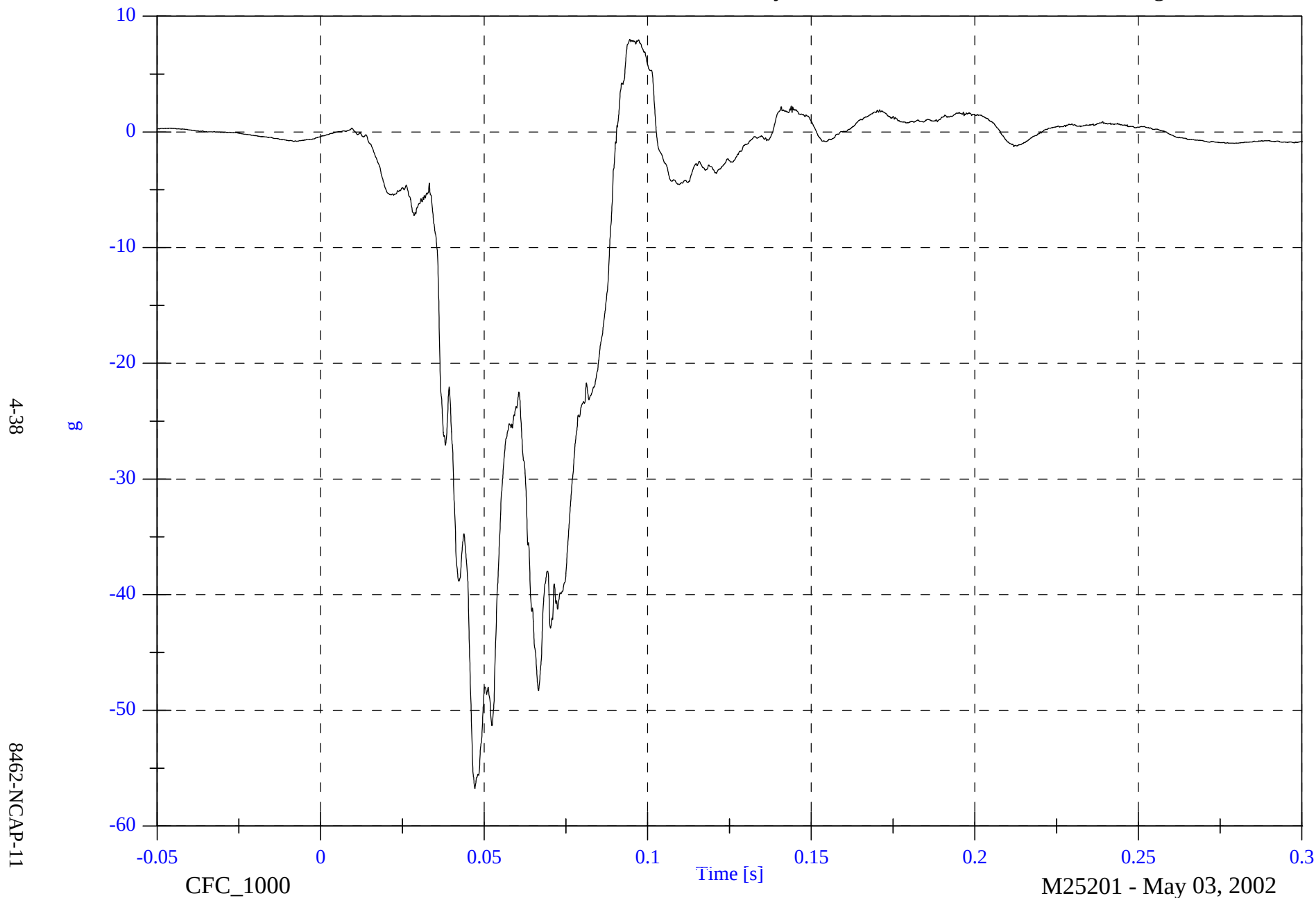


2002 NCAP Test 11 - 2002 Nissan Frontier

Max: 8.0 [g] at 0.095 [s]

Min: -56.8 [g] at 0.047 [s]

P3 Pelvic y



2002 NCAP Test 11 - 2002 Nissan Frontier

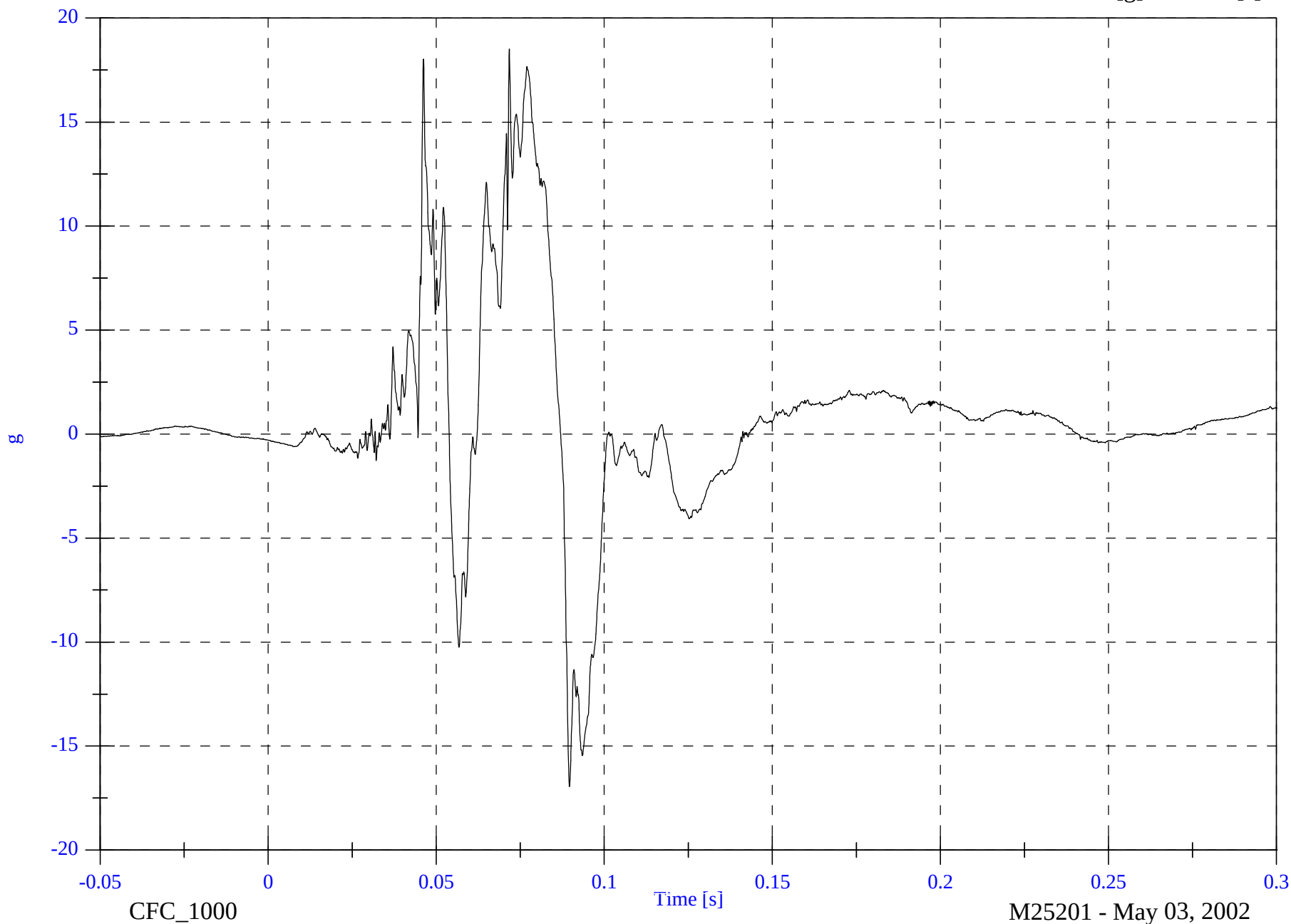
Max: 18.5 [g] at 0.072 [s]

Min: -16.9 [g] at 0.090 [s]

P3 Pelvic z

4-39

8462-NCAP-11

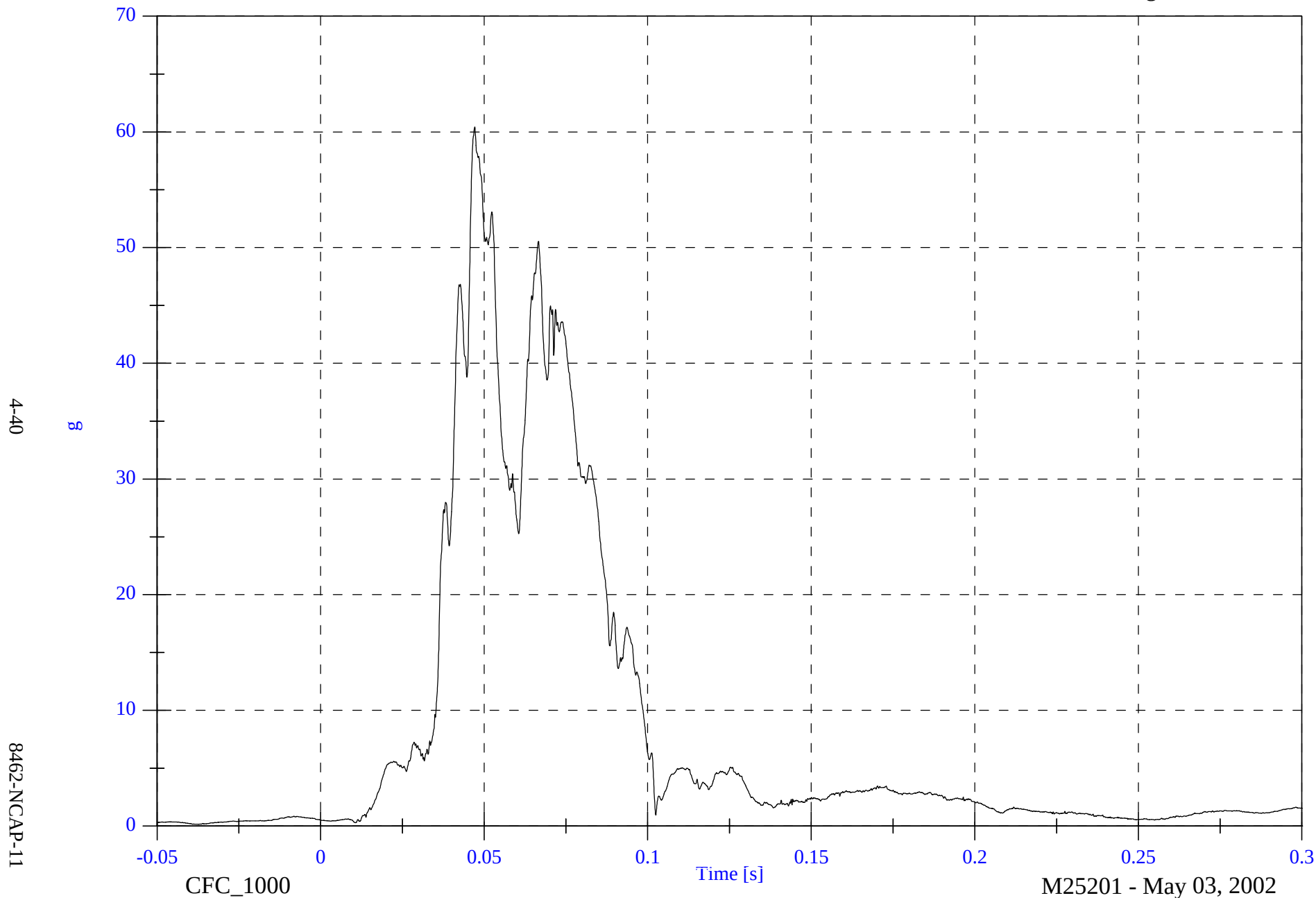


2002 NCAP Test 11 - 2002 Nissan Frontier

P3 Pelvic Resultant

Max: 60.4 [g] at 0.047 [s]

Min: 0.1 [g] at -0.037 [s]

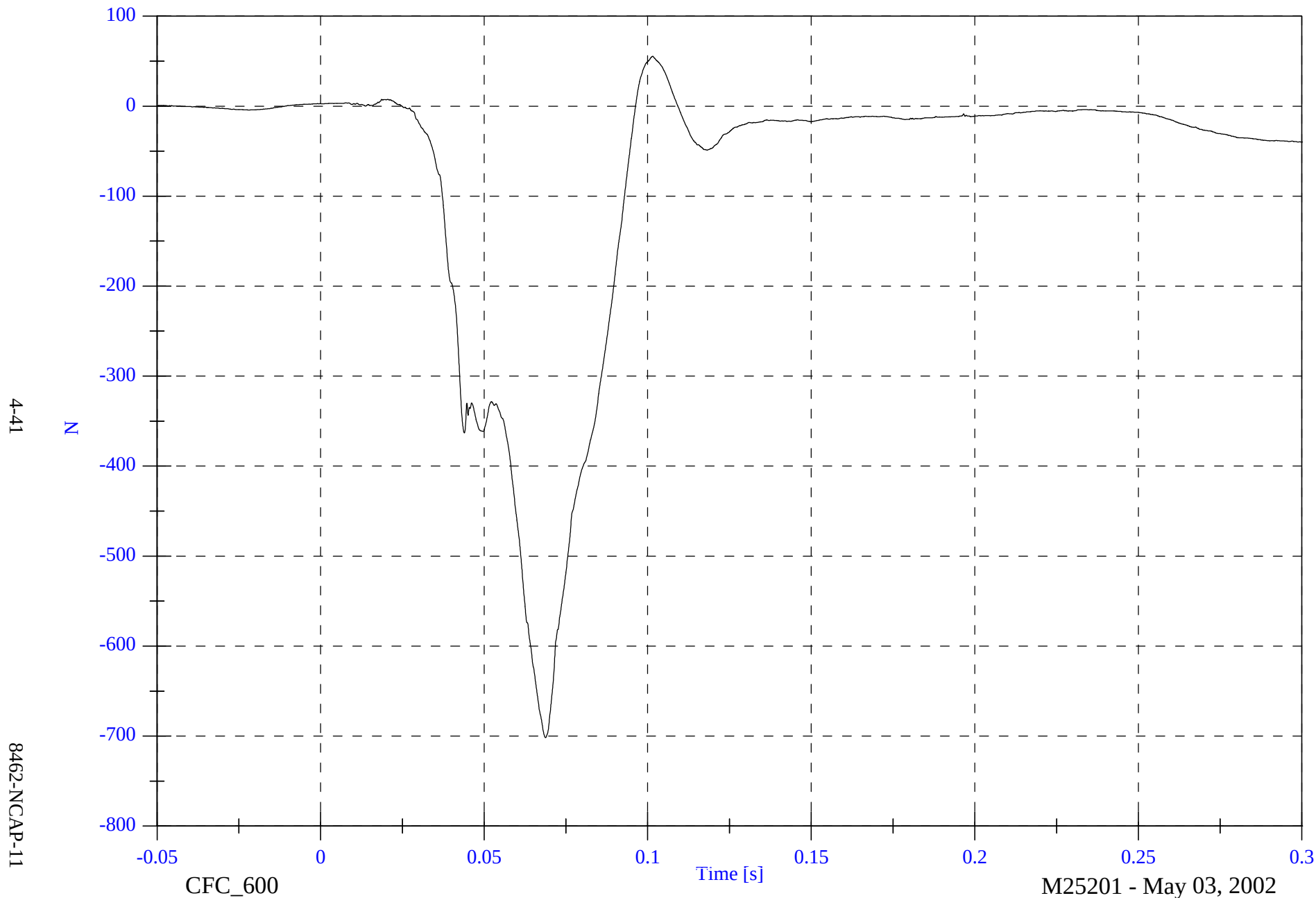


2002 NCAP Test 11 - 2002 Nissan Frontier

P3 LT.UP ASIS LOAD

Max: 55.4 [N] at 0.102 [s]

Min: -701.8 [N] at 0.069 [s]

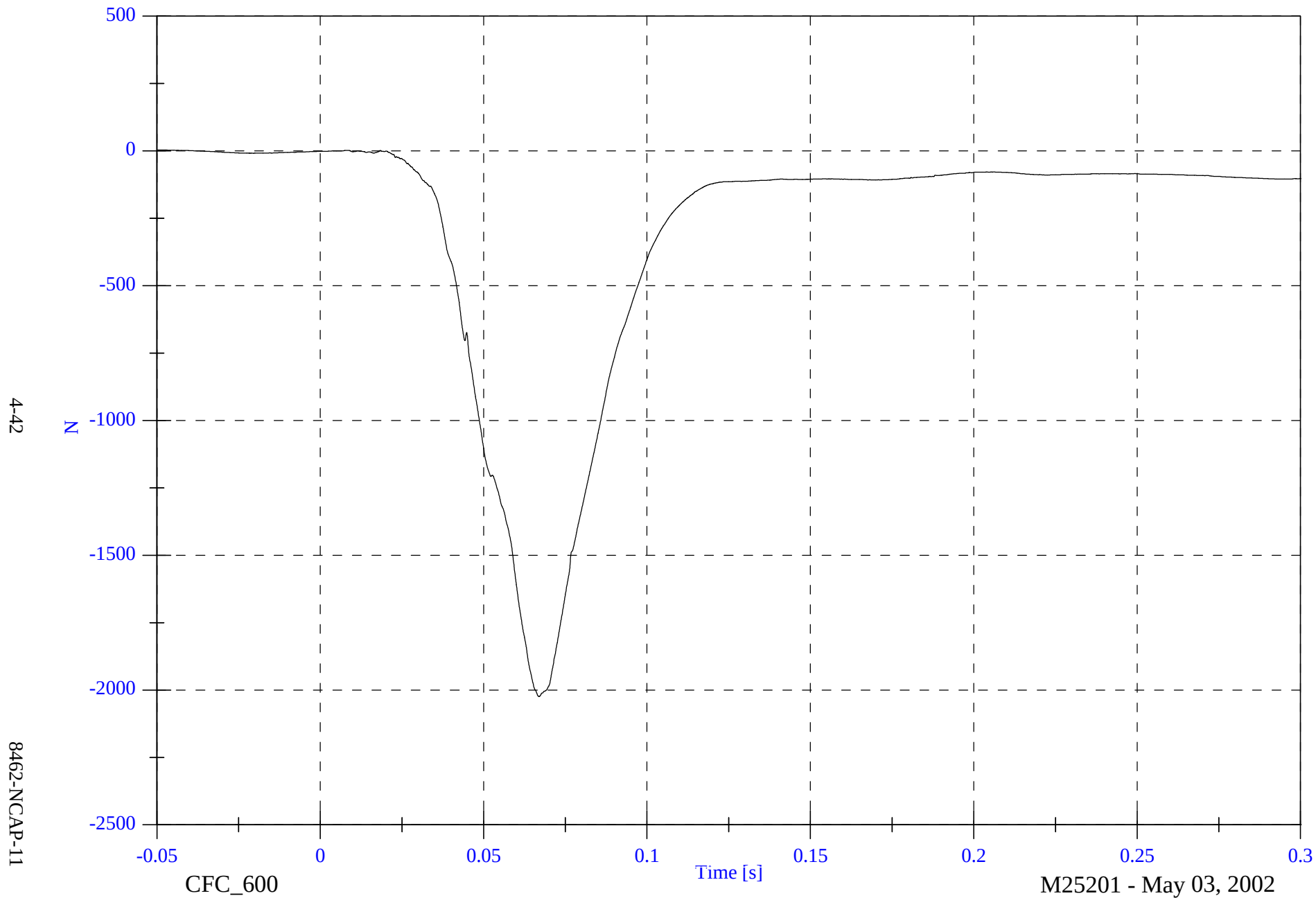


2002 NCAP Test 11 - 2002 Nissan Frontier

P3 LT.LO ASIS LOAD

Max: 3.4 [N] at -0.050 [s]

Min: -2024.3 [N] at 0.067 [s]

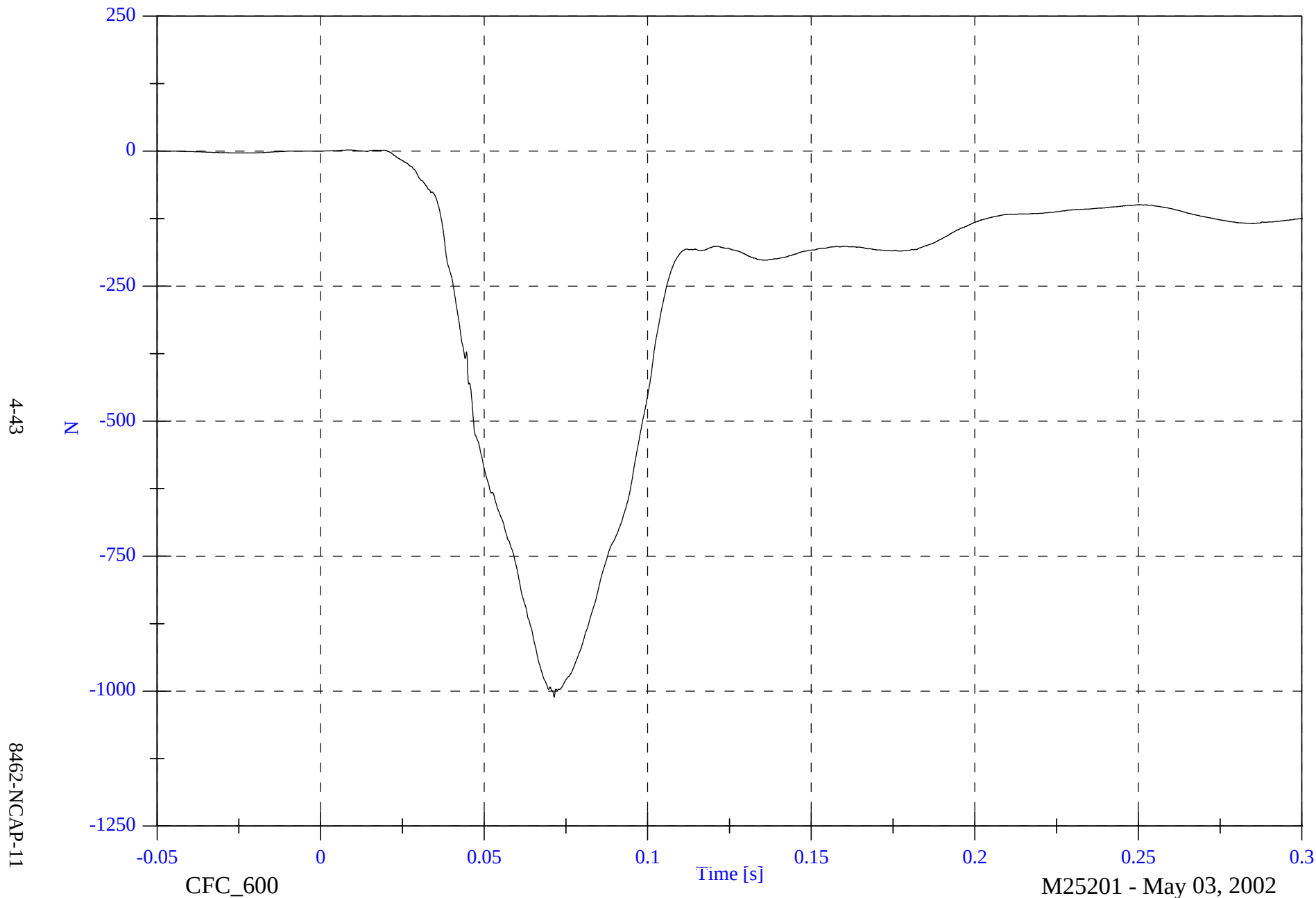


2002 NCAP Test 11 - 2002 Nissan Frontier

P3 RT.UP ASIS LOAD

Max: 2.3 [N] at 0.009 [s]

Min: -1011.5 [N] at 0.071 [s]

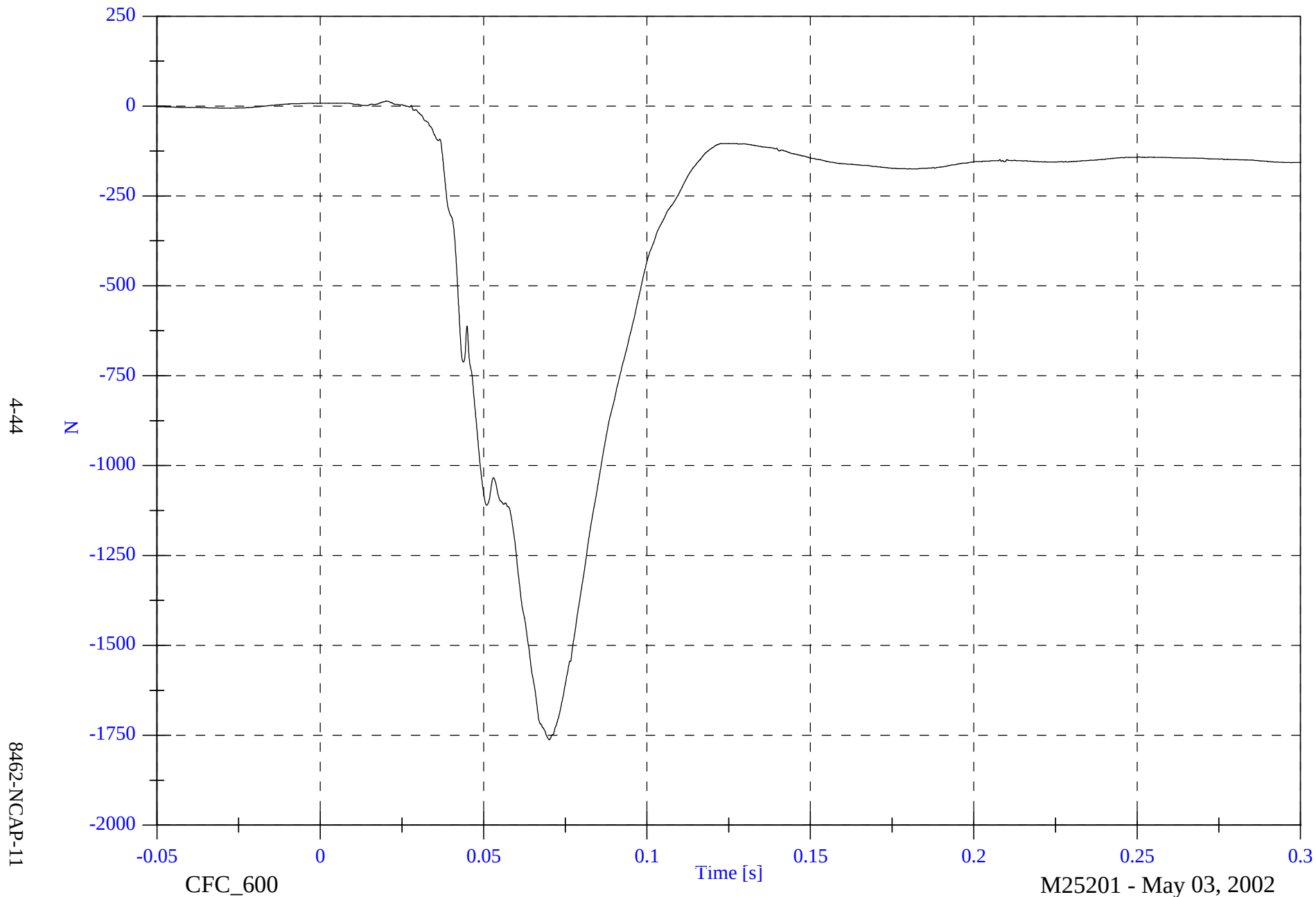


2002 NCAP Test 11 - 2002 Nissan Frontier

P3 RT.LO ASIS LOAD

Max: 13.7 [N] at 0.020 [s]

Min: -1762.5 [N] at 0.070 [s]

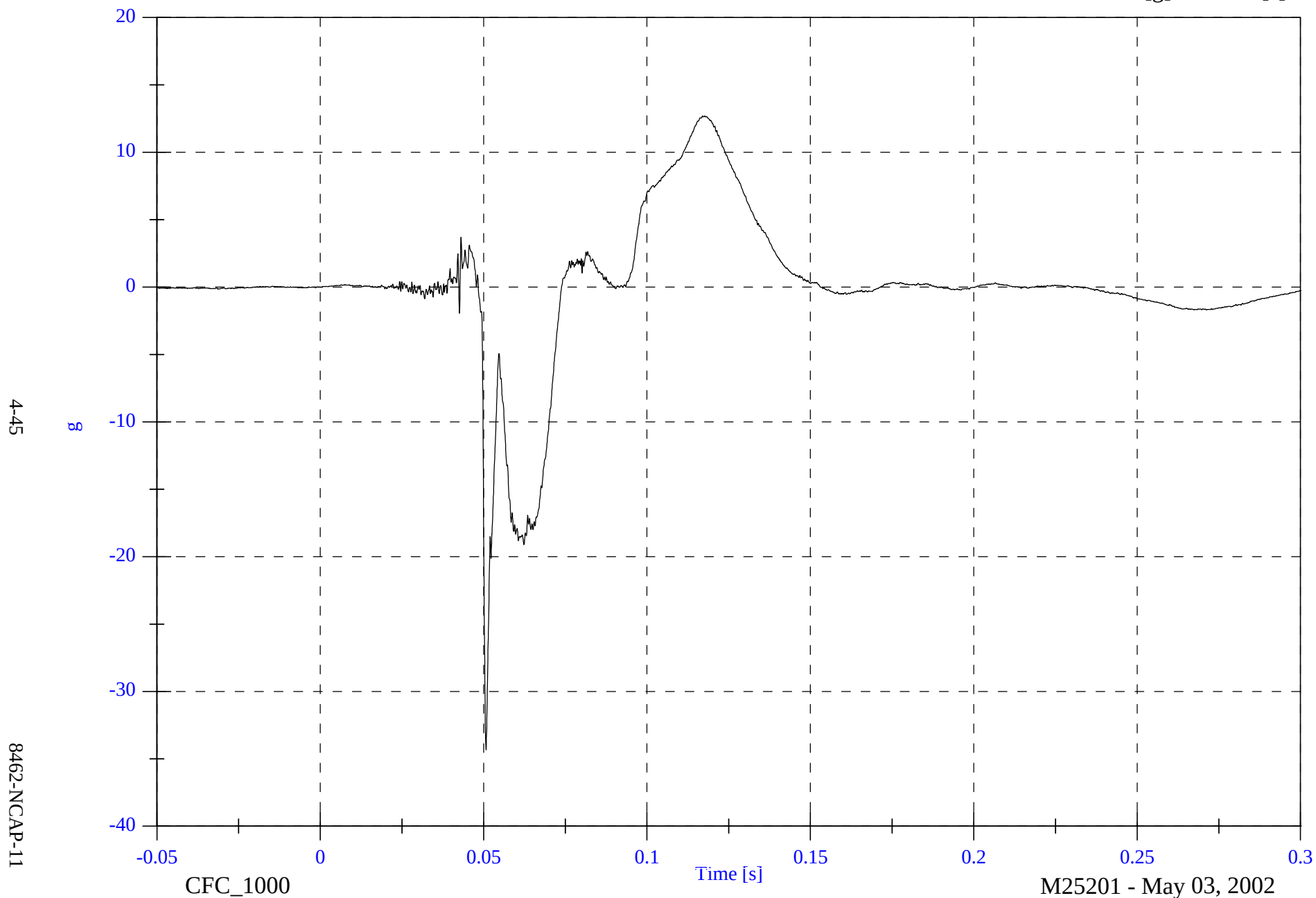


2002 NCAP Test 11 - 2002 Nissan Frontier

Max: 12.7 [g] at 0.118 [s]

Min: -34.3 [g] at 0.051 [s]

P4 Head x

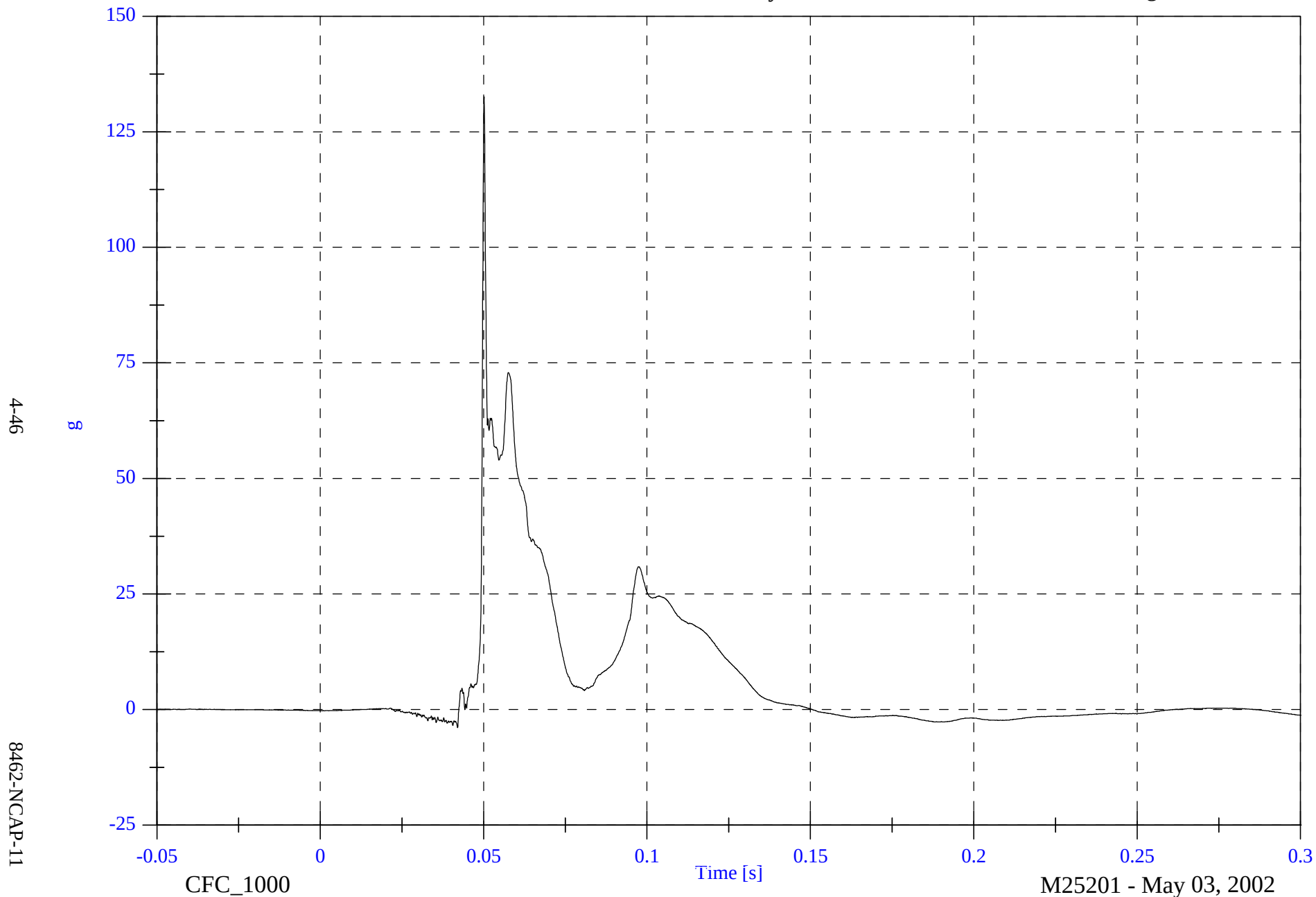


2002 NCAP Test 11 - 2002 Nissan Frontier

Max: 132.6 [g] at 0.050 [s]

Min: -3.9 [g] at 0.042 [s]

P4 Head y

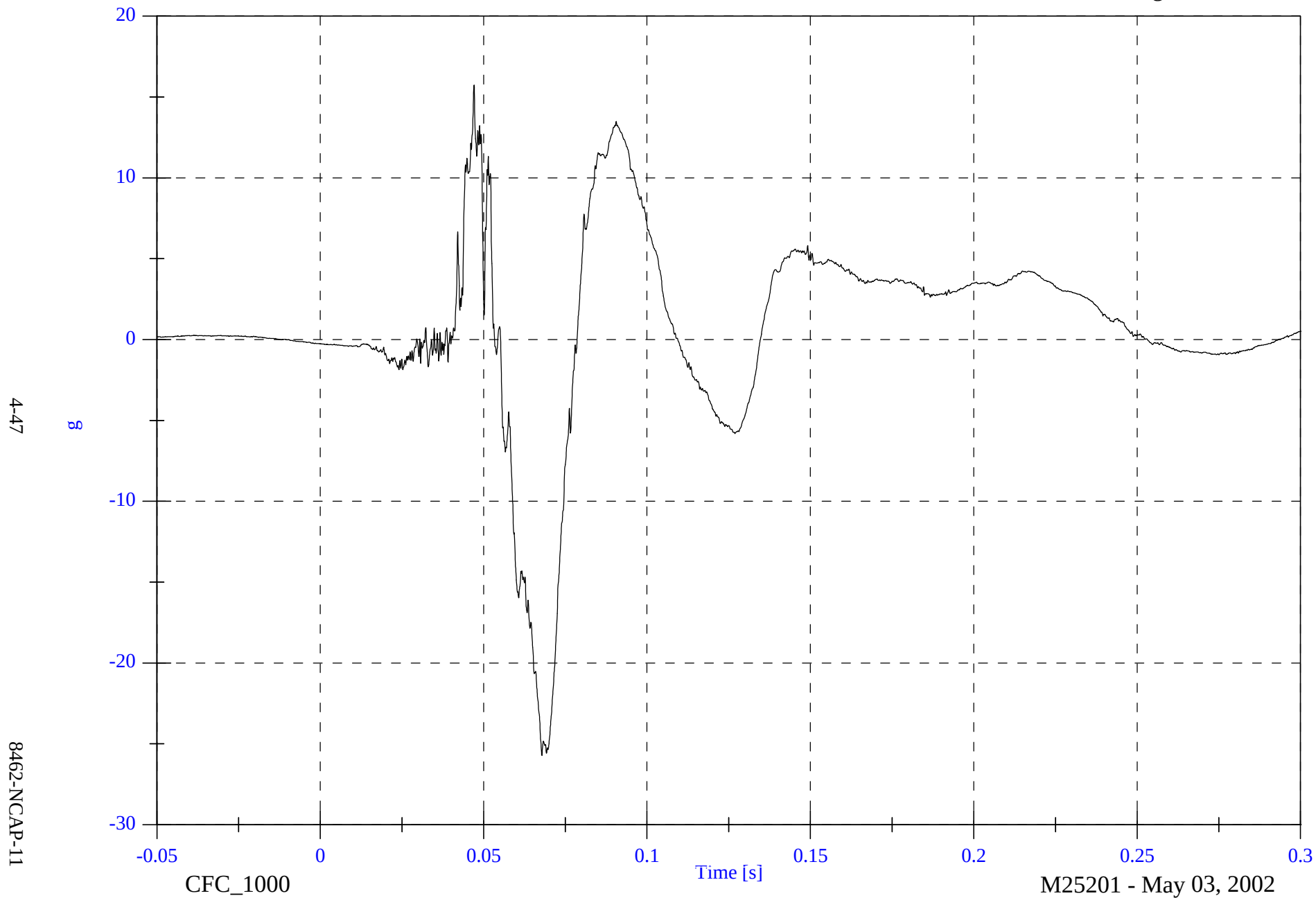


2002 NCAP Test 11 - 2002 Nissan Frontier

P4 Head z

Max: 15.8 [g] at 0.047 [s]

Min: -25.7 [g] at 0.068 [s]



2002 NCAP Test 11 - 2002 Nissan Frontier

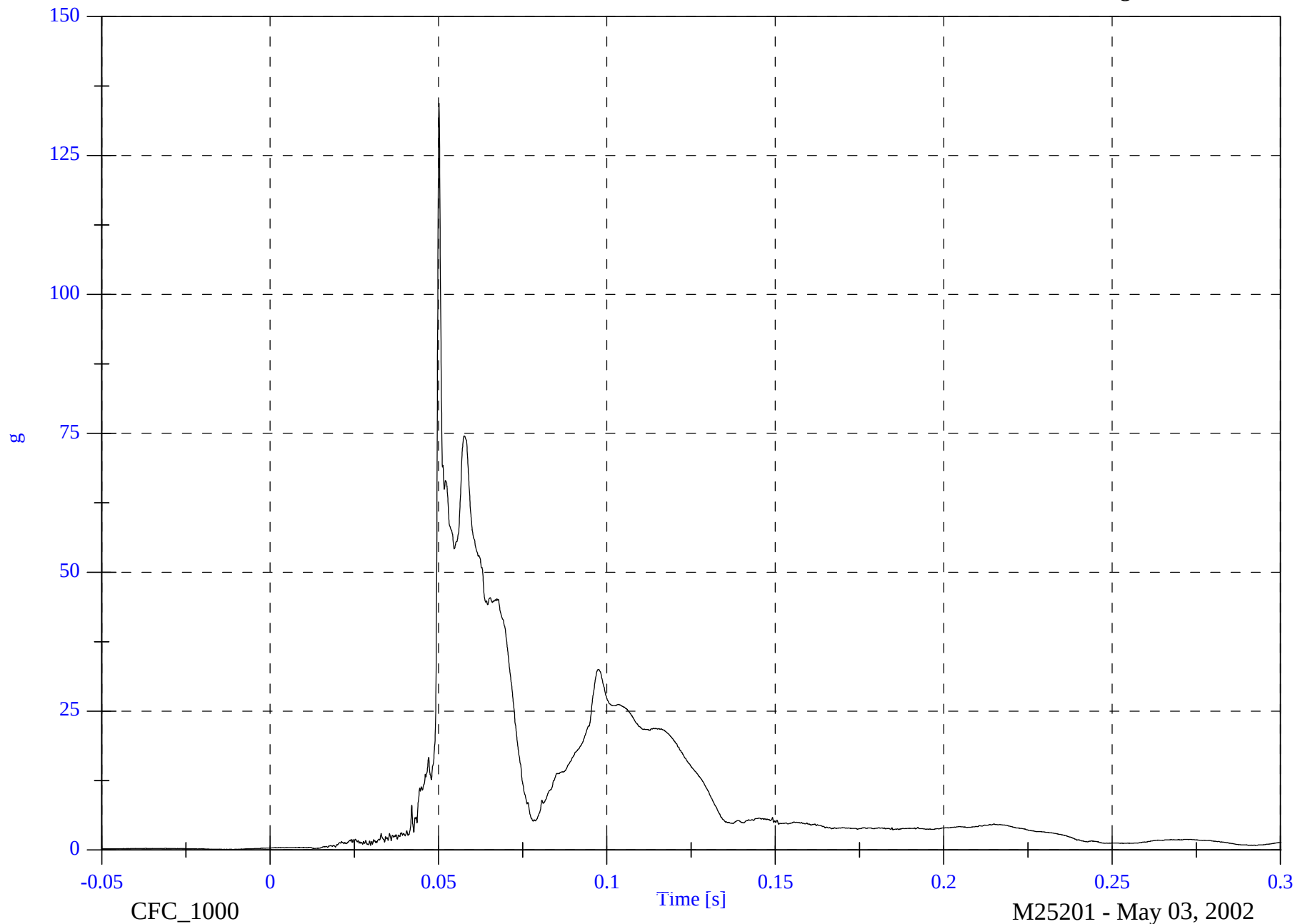
P4 Head Resultant

Max: 134.4 [g] at 0.050 [s]

Min: 0.1 [g] at -0.012 [s]

4-48

8462-NCAP-11

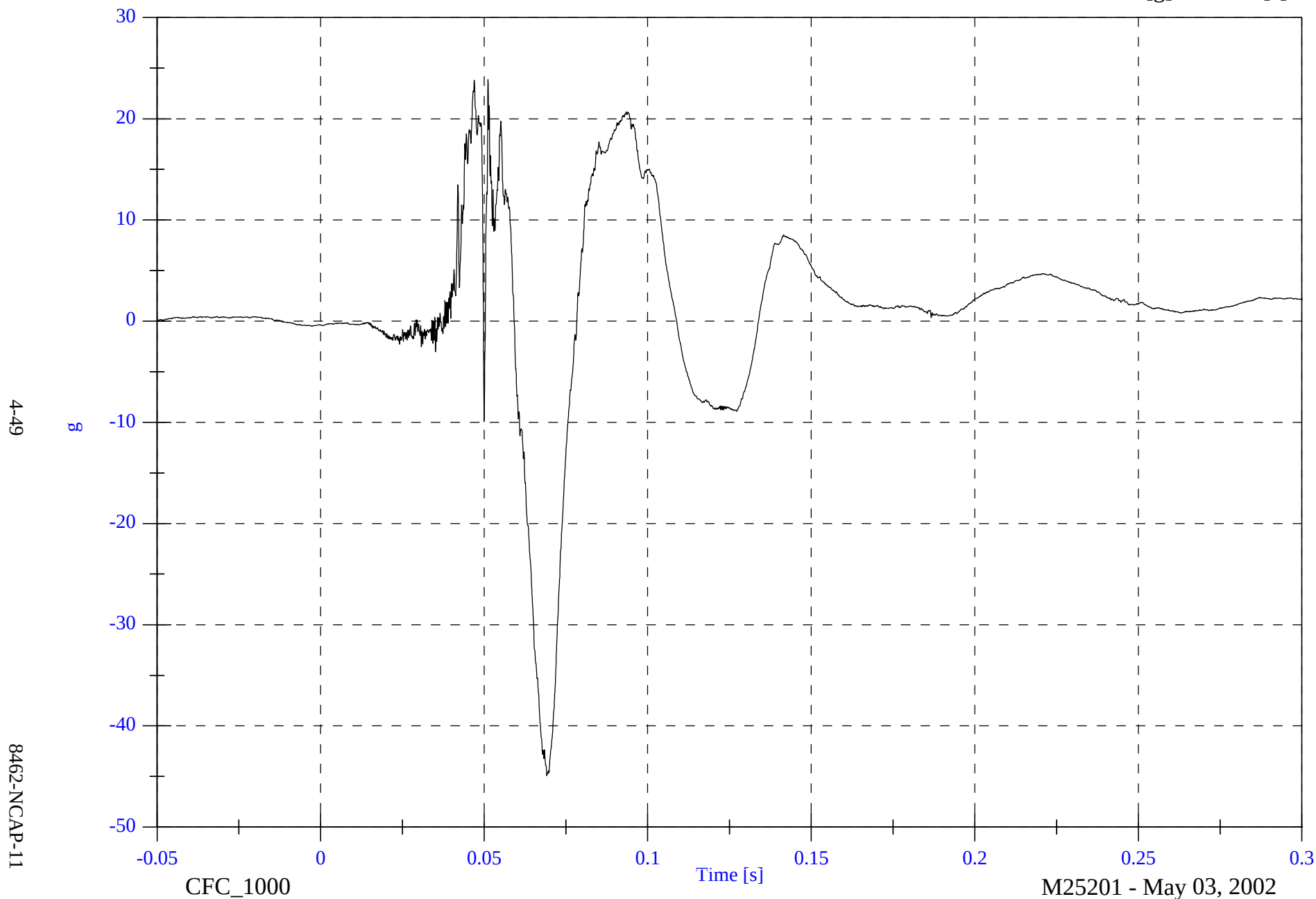


2002 NCAP Test 11 - 2002 Nissan Frontier

Max: 23.9 [g] at 0.051 [s]

Min: -44.9 [g] at 0.069 [s]

P4 Head Red z

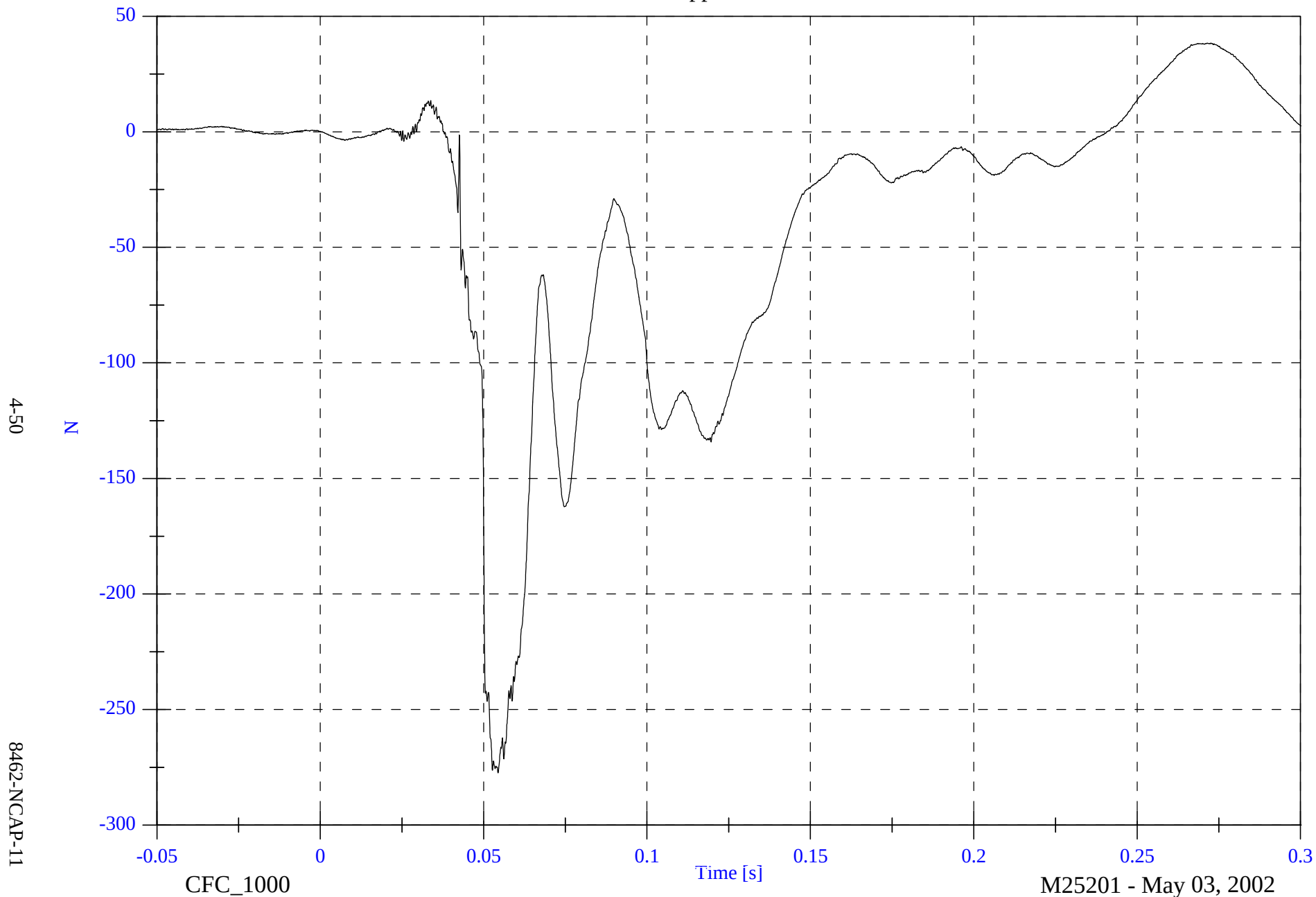


2002 NCAP Test 11 - 2002 Nissan Frontier

P4 Upper Neck Fx

Max: 38.4 [N] at 0.273 [s]

Min: -277.4 [N] at 0.054 [s]

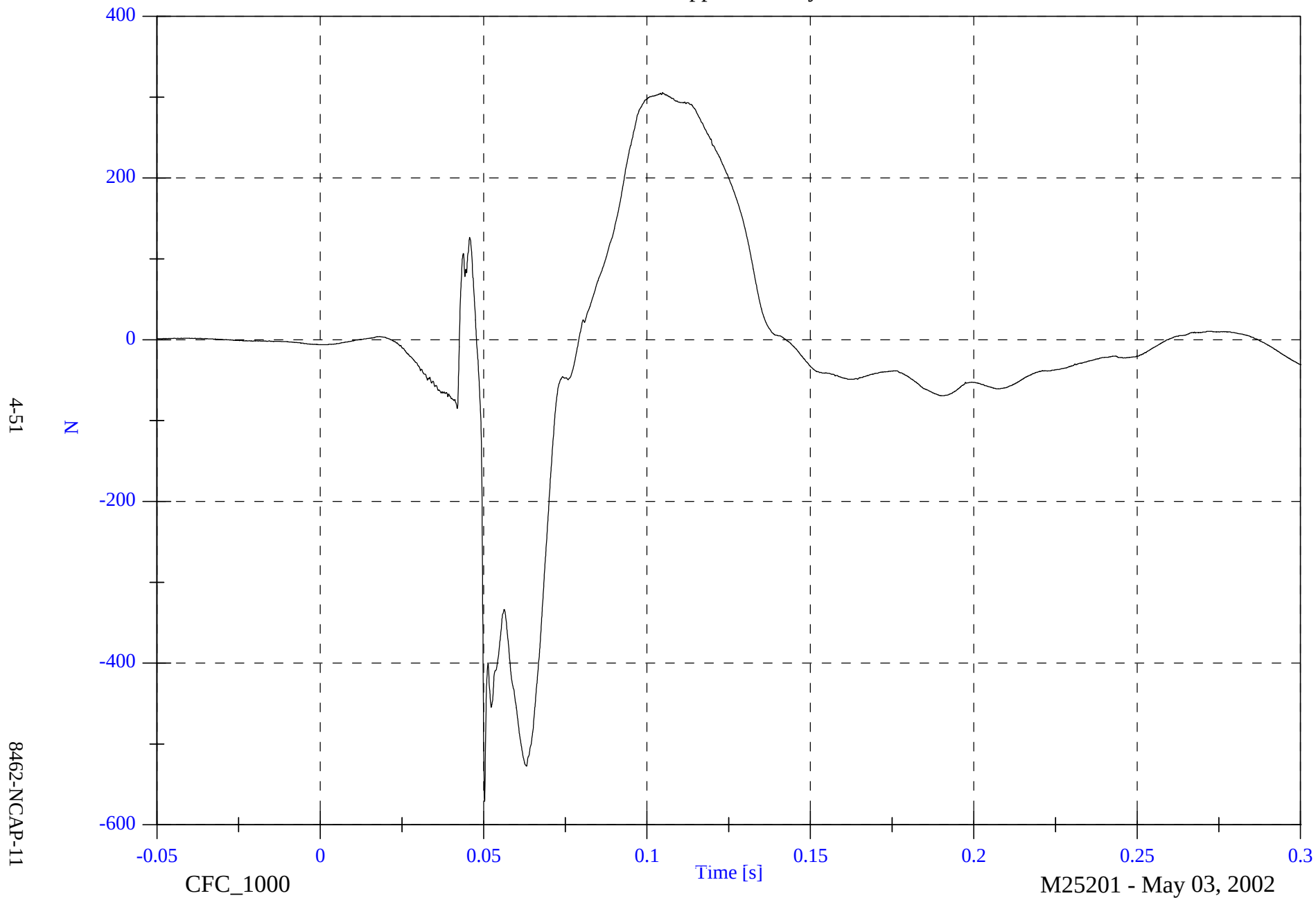


2002 NCAP Test 11 - 2002 Nissan Frontier

Max: 305.5 [N] at 0.105 [s]

Min: -571.1 [N] at 0.050 [s]

P4 Upper Neck Fy



2002 NCAP Test 11 - 2002 Nissan Frontier

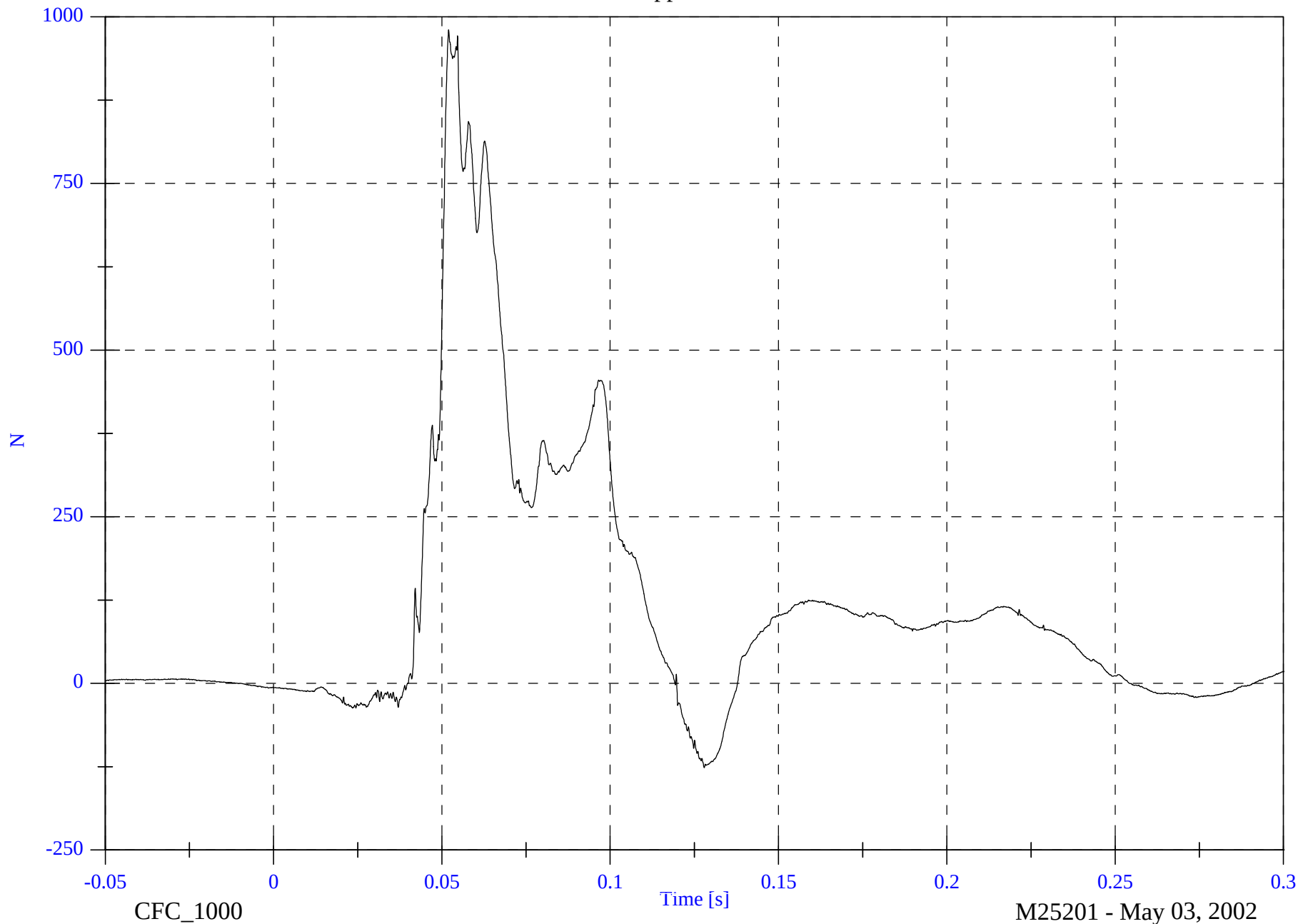
P4 Upper Neck Fz

Max: 980.5 [N] at 0.052 [s]

Min: -126.7 [N] at 0.128 [s]

4-52

8462-NCAP-11



2002 NCAP Test 11 - 2002 Nissan Frontier

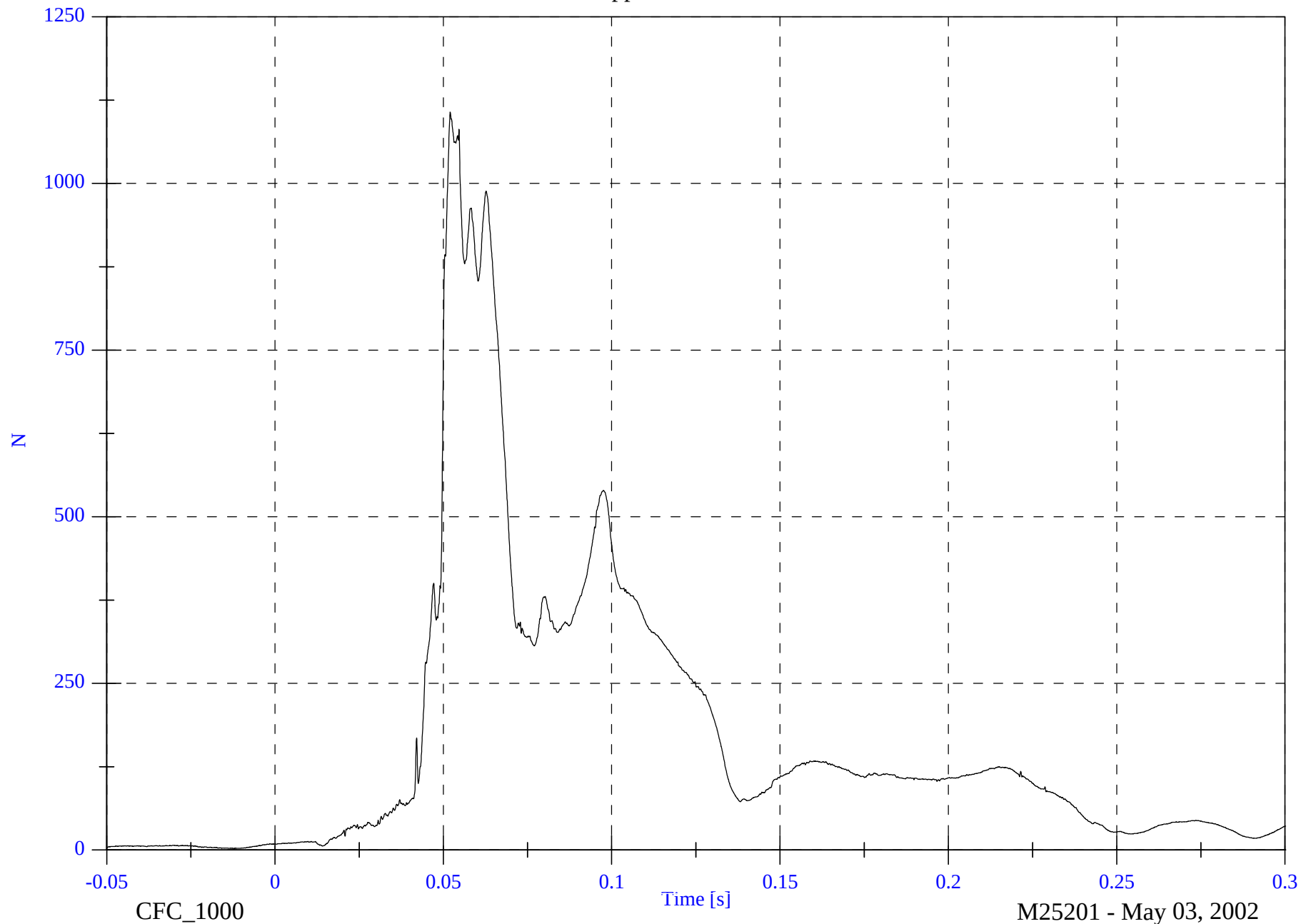
P4 Upper Neck F Resultant

Max: 1107.0 [N] at 0.052 [s]

Min: 2.2 [N] at -0.012 [s]

4-53

8462-NCAP-11



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P4 Upper Neck Mx

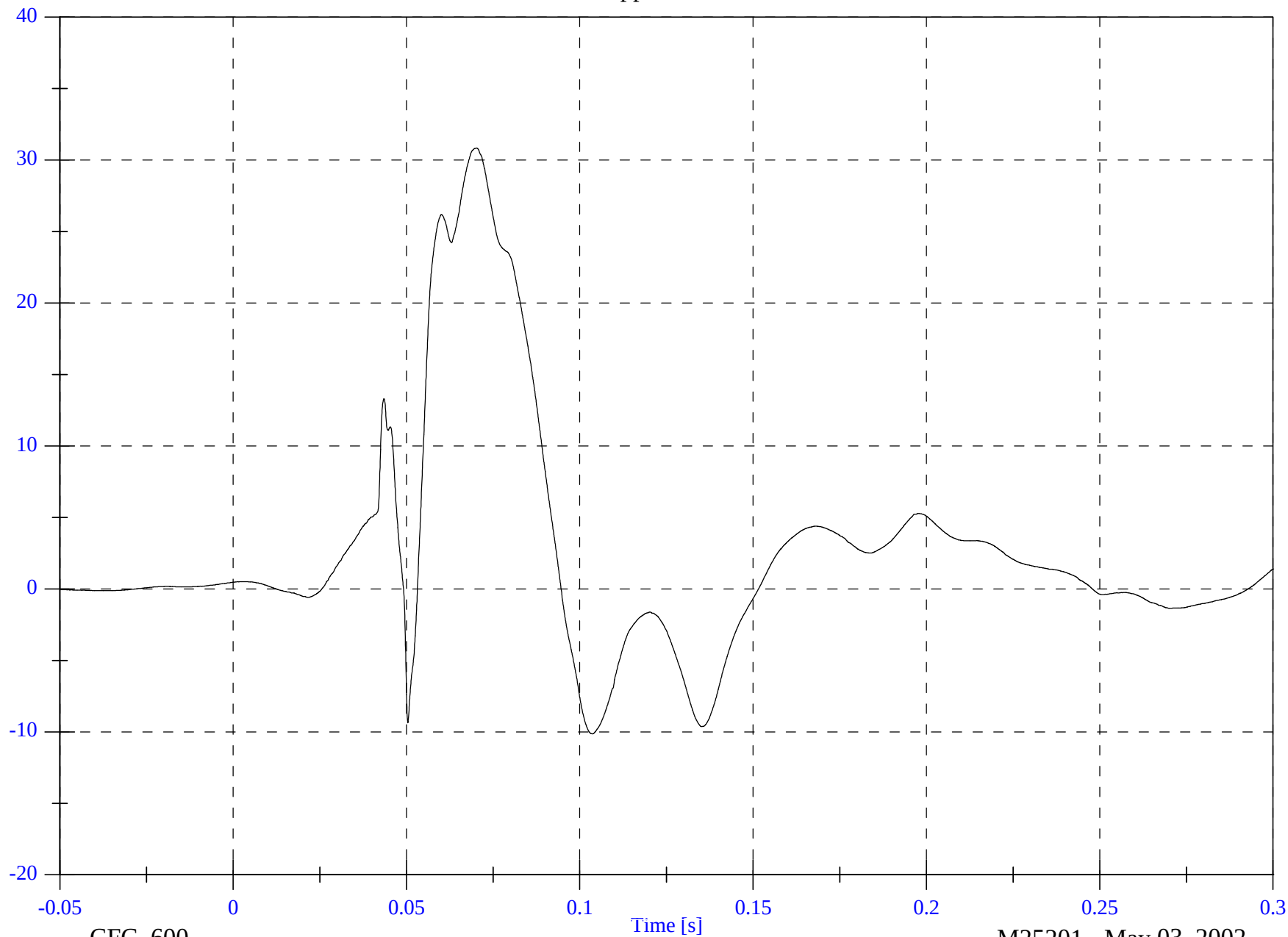
Max: 30.8 [N-m] at 0.070 [s]

Min: -10.1 [N-m] at 0.104 [s]

4-54

N-m

8462-NCAP-11



CFC_600

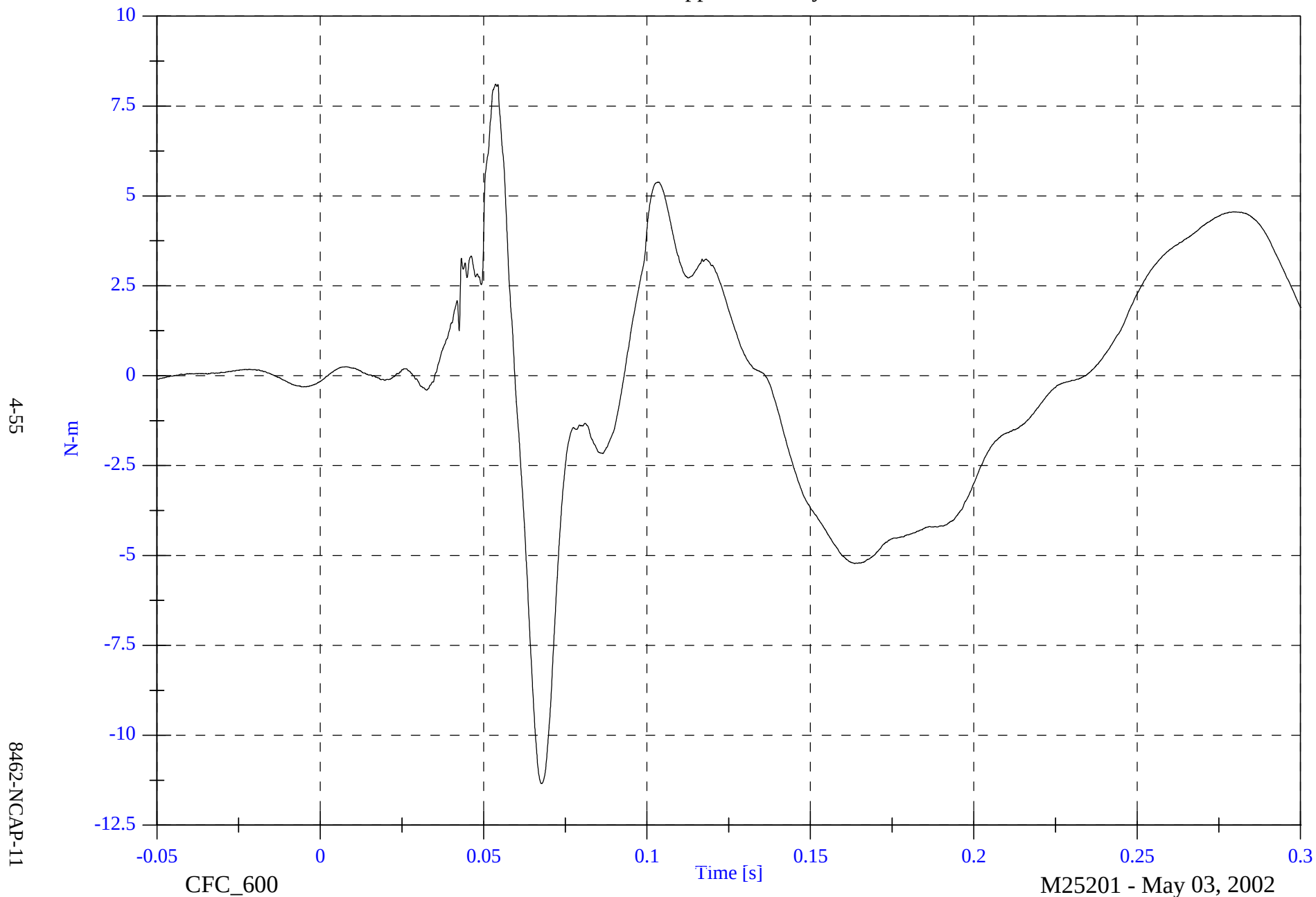
M25201 - May 03, 2002

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P4 Upper Neck My

Max: 8.1 [N-m] at 0.054 [s]

Min: -11.3 [N-m] at 0.068 [s]



2002 NCAP Test 11 - 2002 Nissan Frontier

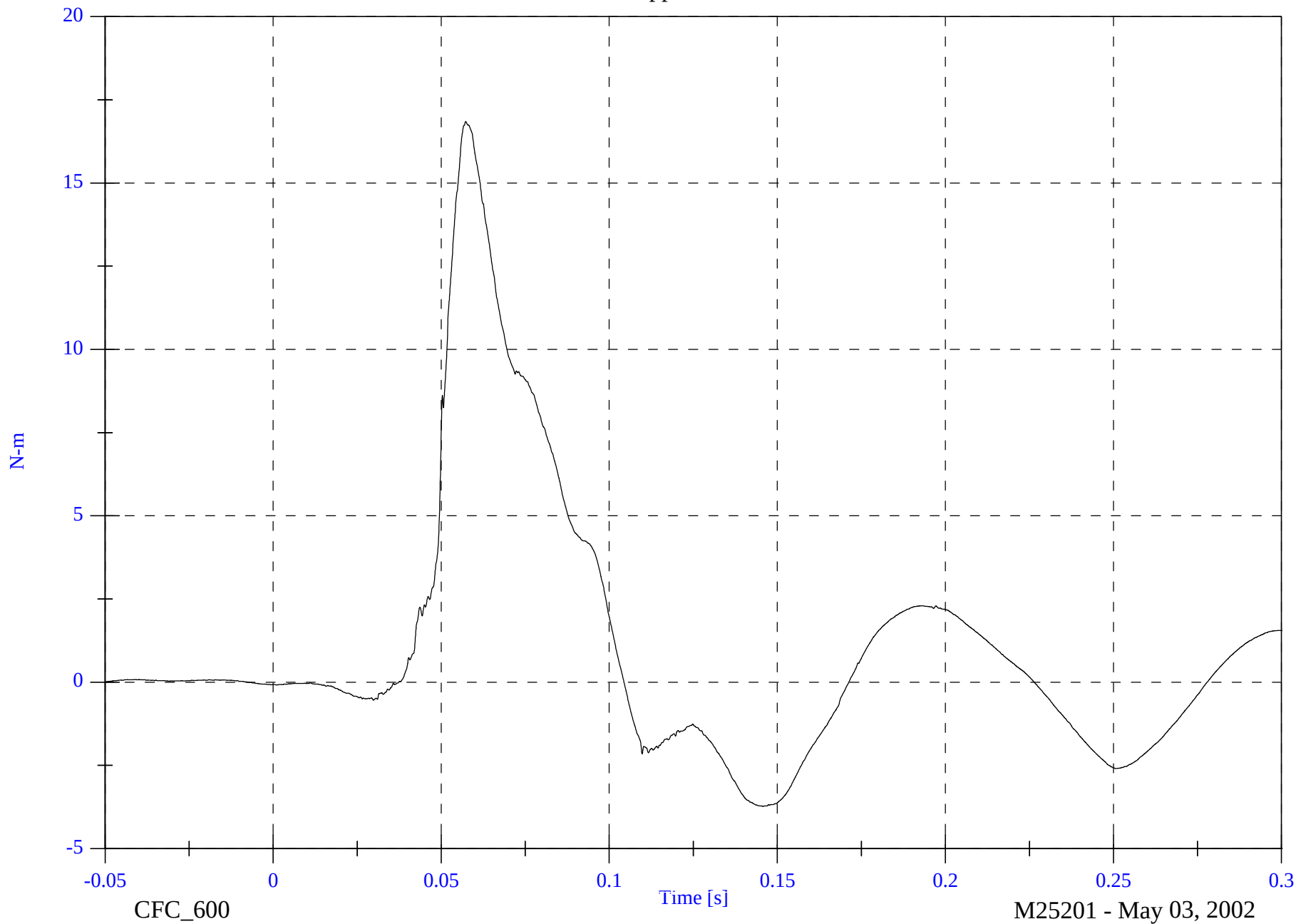
P4 Upper Neck Mz

Max: 16.8 [N-m] at 0.057 [s]

Min: -3.7 [N-m] at 0.146 [s]

4-56

8462-NCAP-11



2002 NCAP Test 11 - 2002 Nissan Frontier

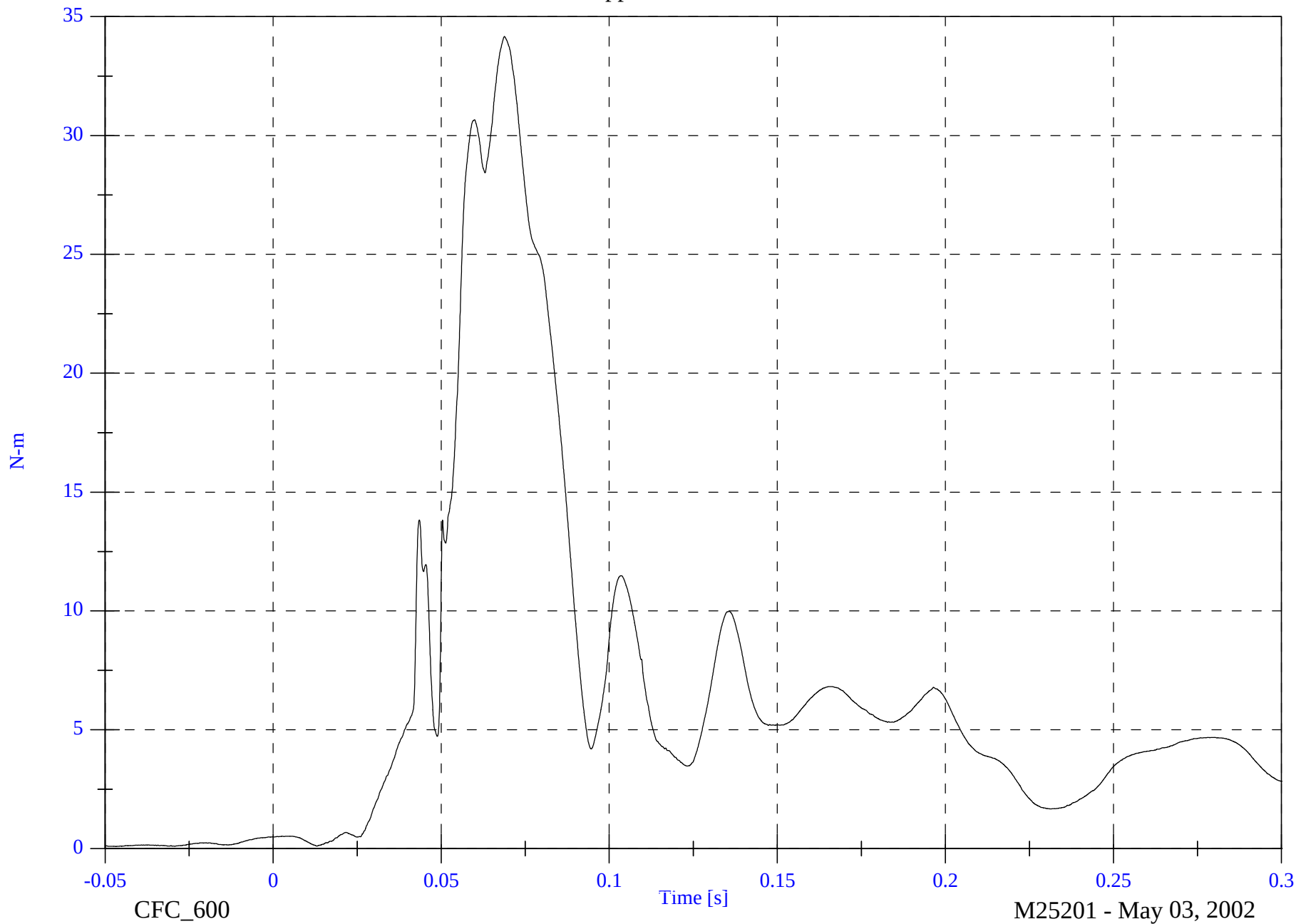
P4 Upper Neck M Resultant

Max: 34.2 [N-m] at 0.069 [s]

Min: 0.1 [N-m] at -0.047 [s]

4-57

8462-NCAP-11



2002 NCAP Test 11 - 2002 Nissan Frontier

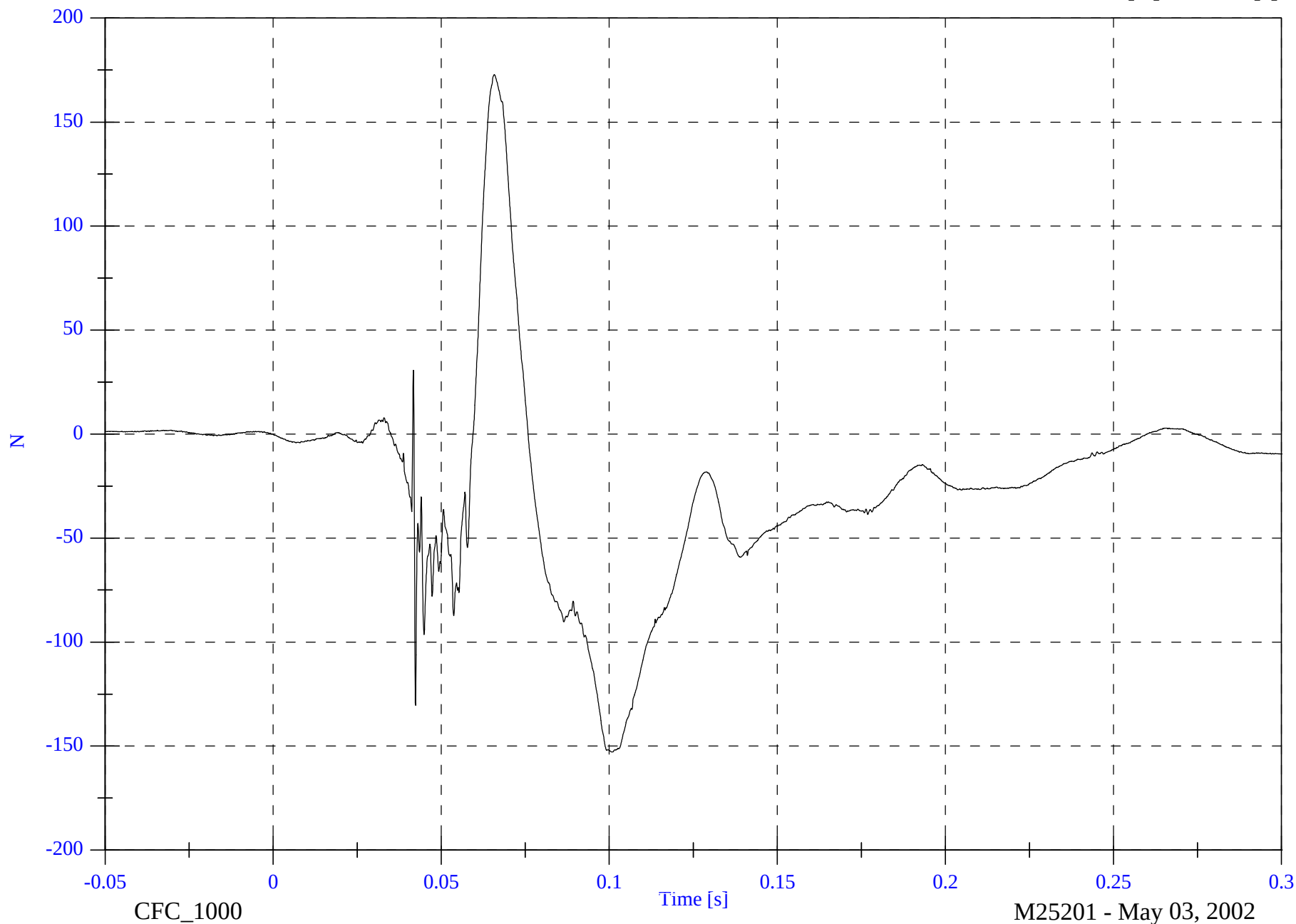
P4 Lower Neck Fx

Max: 172.8 [N] at 0.066 [s]

Min: -152.8 [N] at 0.101 [s]

4-58

8462-NCAP-11

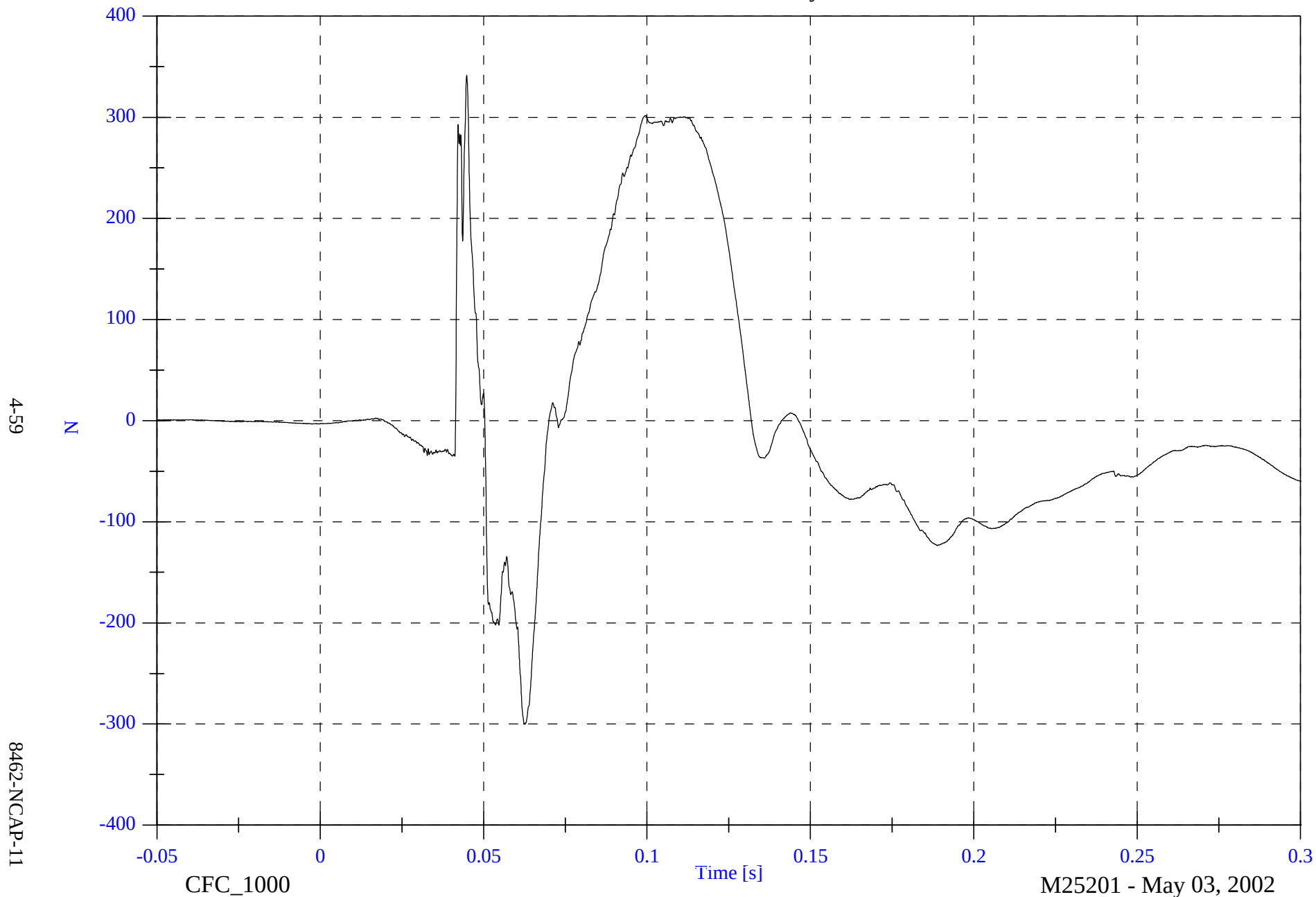


2002 NCAP Test 11 - 2002 Nissan Frontier

P4 Lower Neck Fy

Max: 341.6 [N] at 0.045 [s]

Min: -300.4 [N] at 0.062 [s]

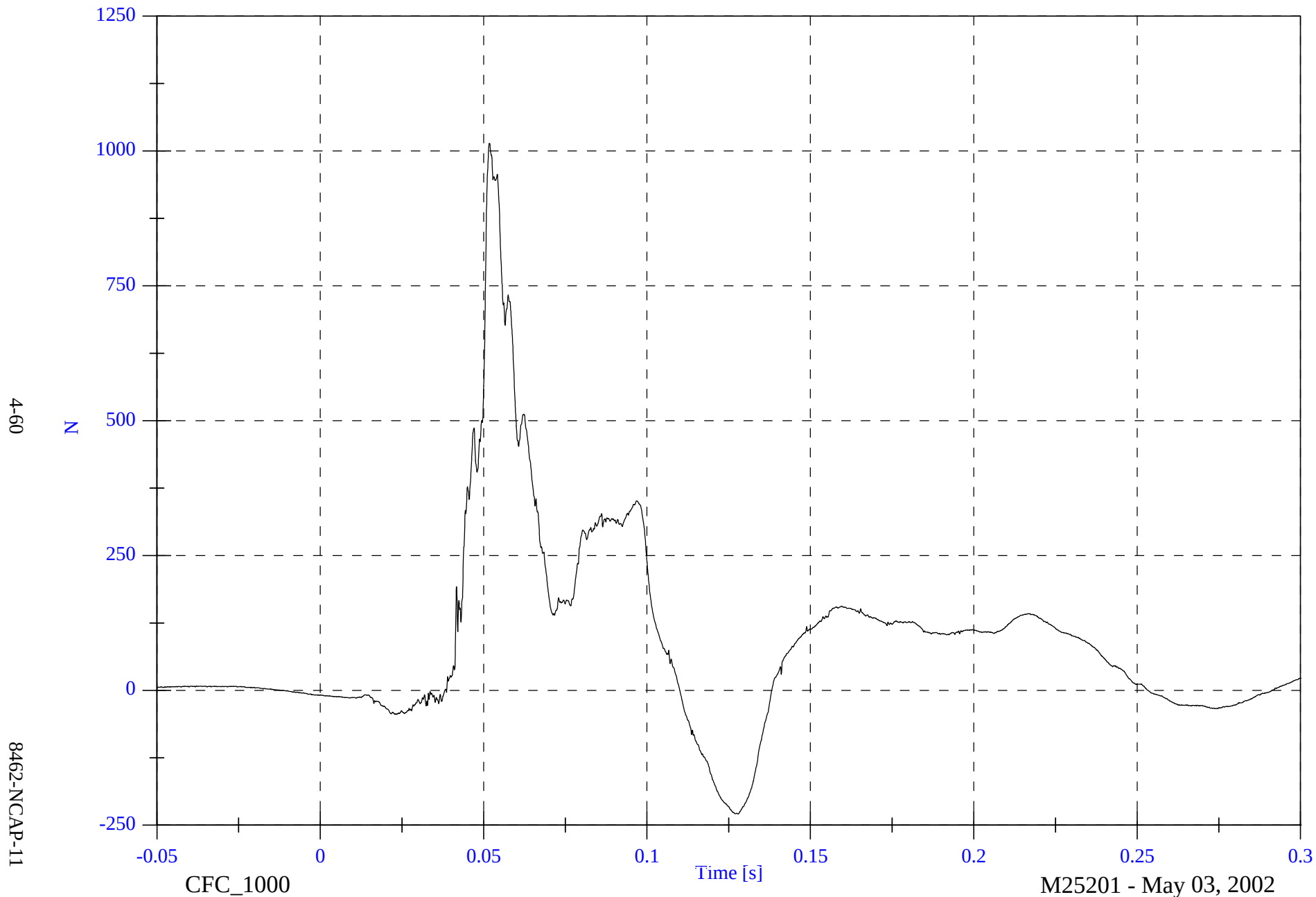


2002 NCAP Test 11 - 2002 Nissan Frontier

P4 Lower Neck Fz

Max: 1014.1 [N] at 0.052 [s]

Min: -229.4 [N] at 0.128 [s]



2002 NCAP Test 11 - 2002 Nissan Frontier

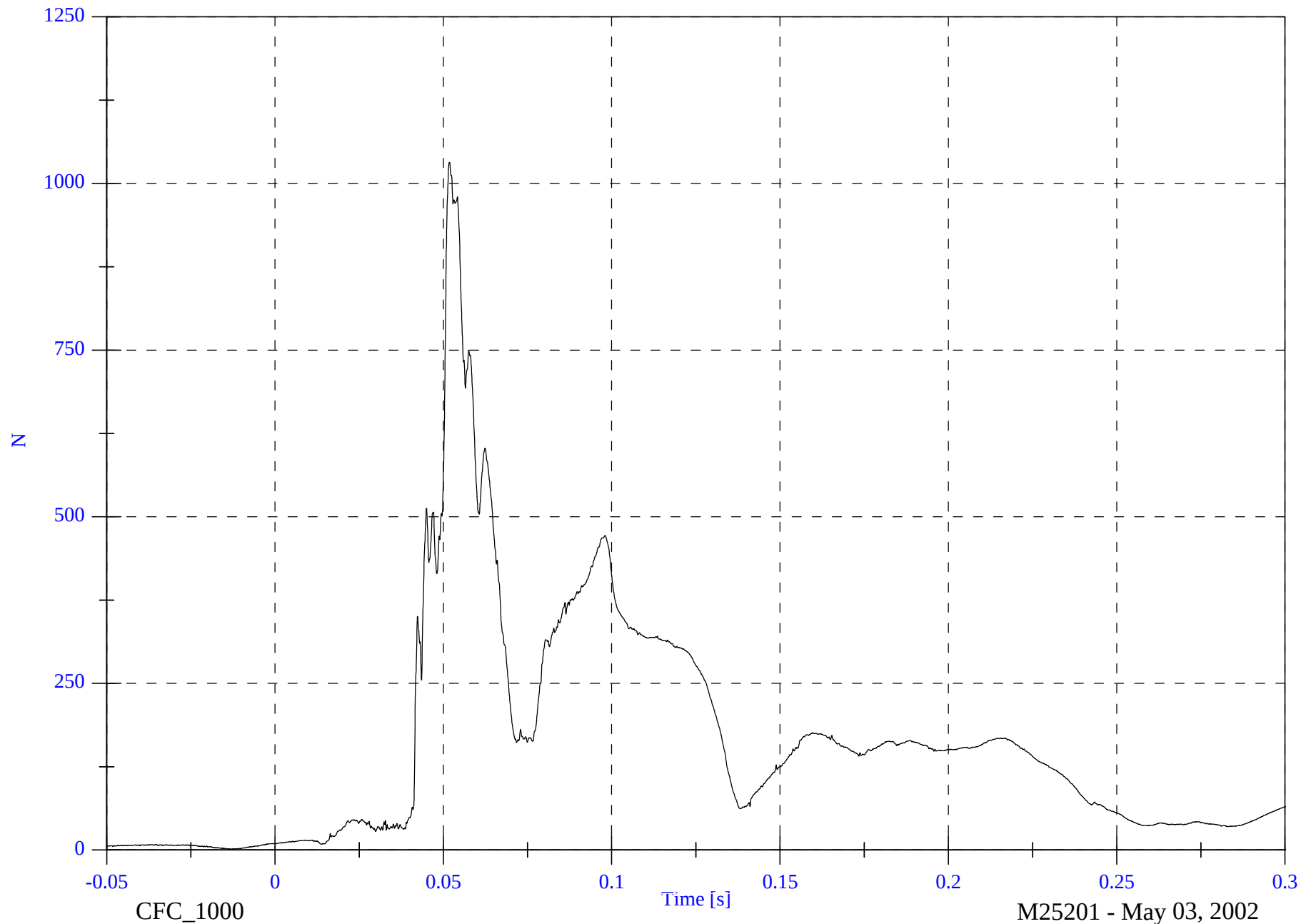
P4 Lower Neck F Resultant

Max: 1031.4 [N] at 0.052 [s]

Min: 1.4 [N] at -0.013 [s]

4-61

8462-NCAP-11



2002 NCAP Test 11 - 2002 Nissan Frontier

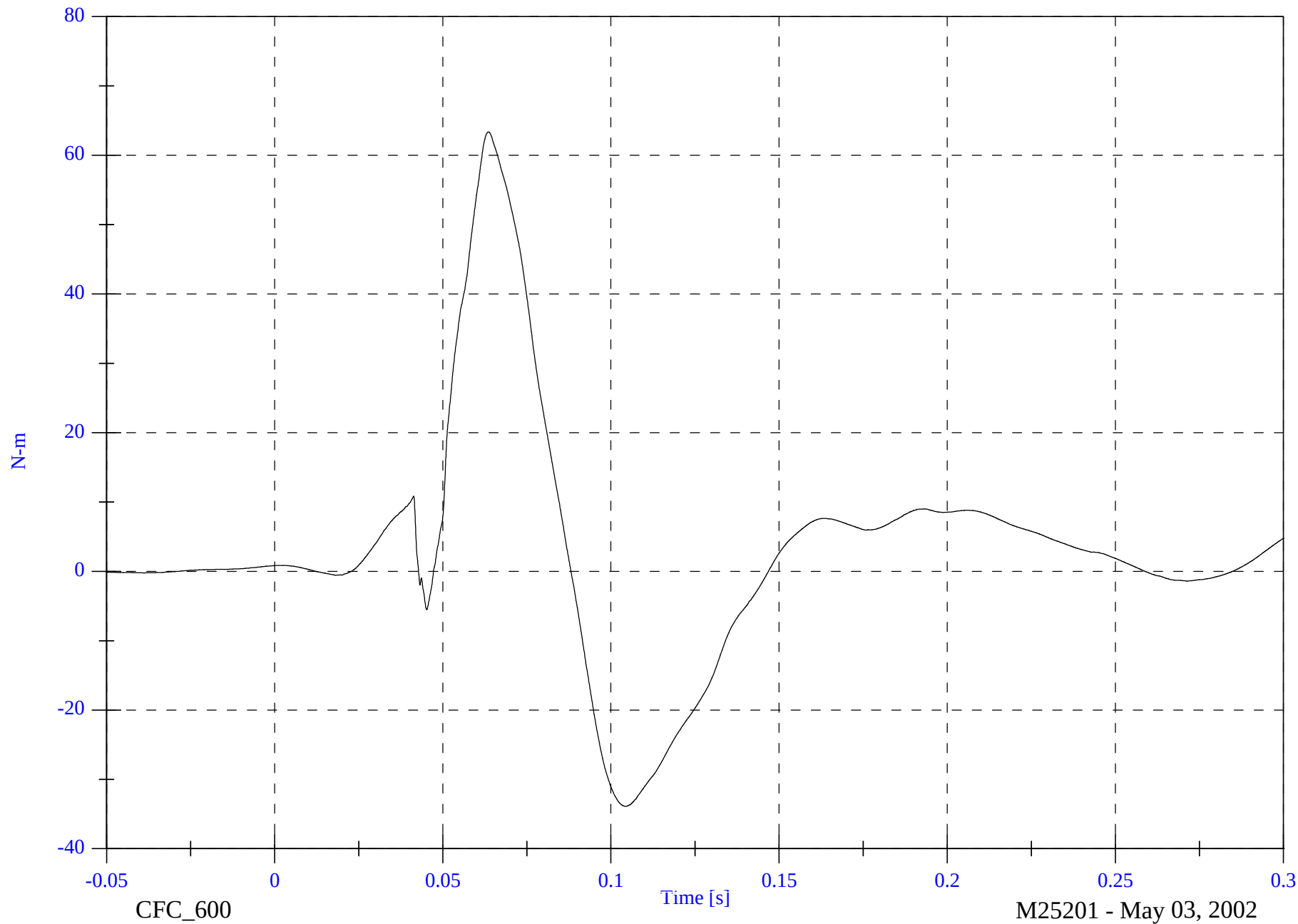
P4 Lower Neck Mx

Max: 63.4 [N-m] at 0.064 [s]

Min: -33.9 [N-m] at 0.104 [s]

4-62

8462-NCAP-11



2002 NCAP Test 11 - 2002 Nissan Frontier

P4 Lower Neck My

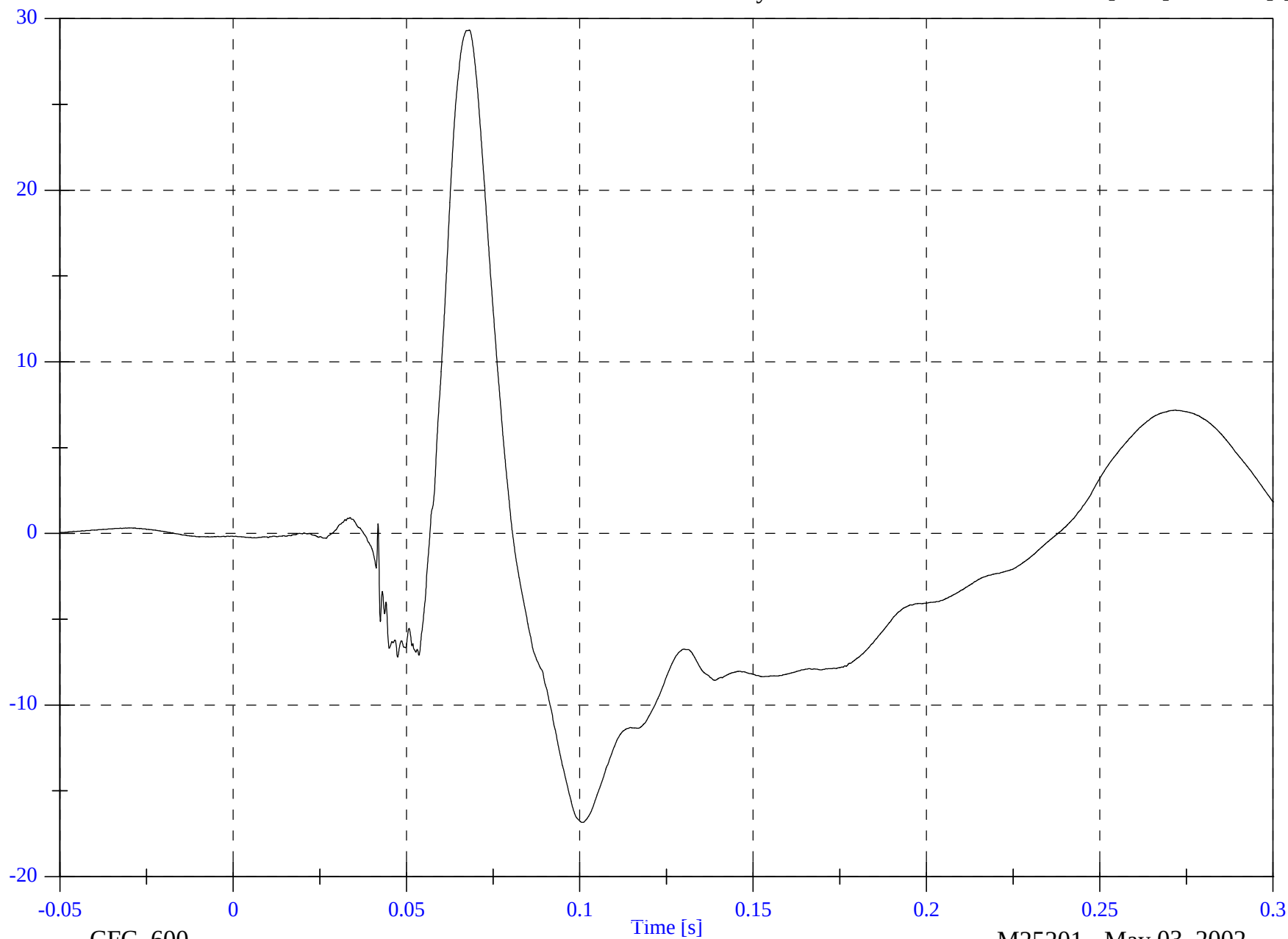
Max: 29.3 [N-m] at 0.068 [s]

Min: -16.8 [N-m] at 0.101 [s]

4-63

N-m

8462-NCAP-11



CFC_600

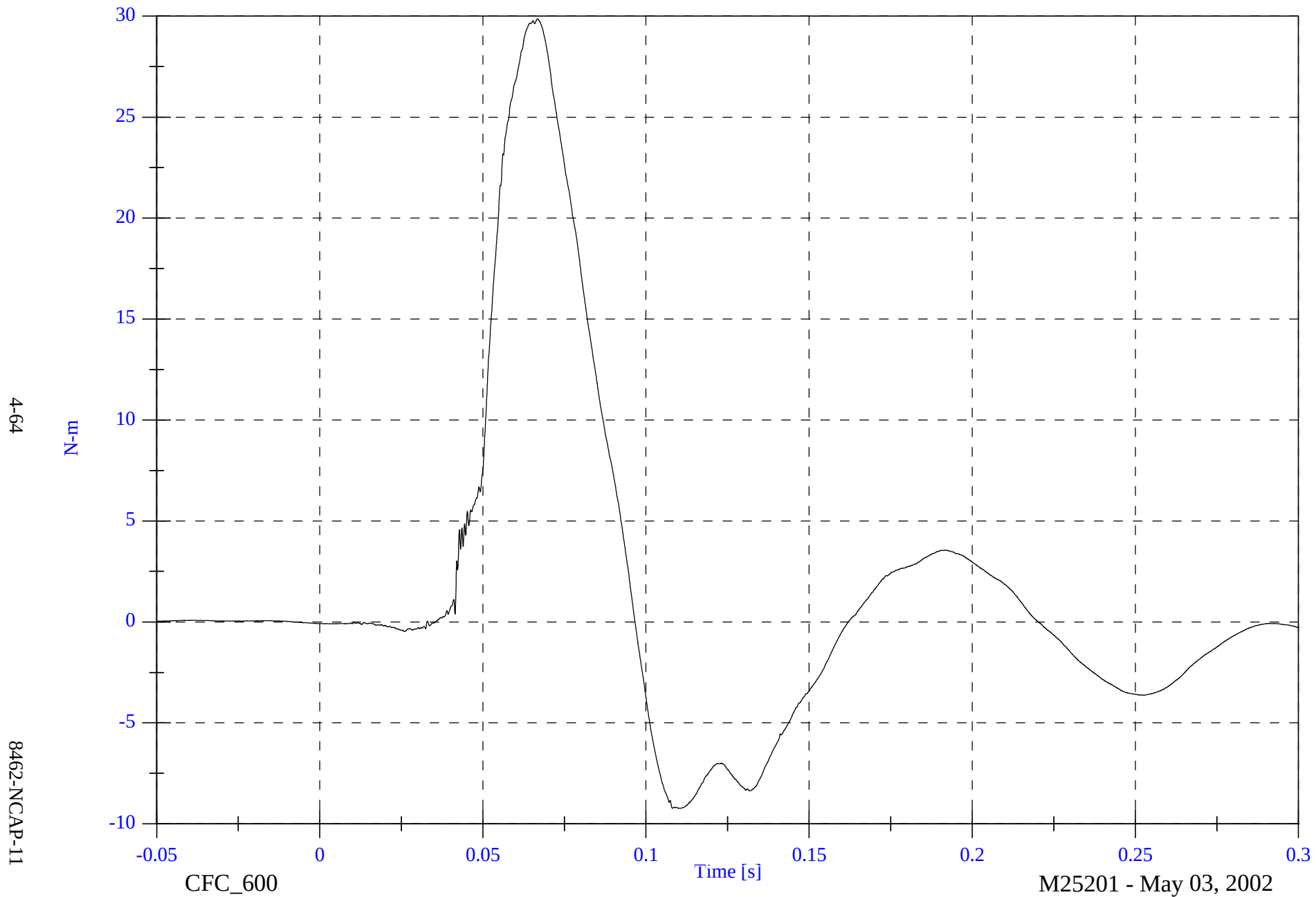
M25201 - May 03, 2002

2002 NCAP Test 11 - 2002 Nissan Frontier

Max: 29.9 [N-m] at 0.067 [s]

Min: -9.2 [N-m] at 0.110 [s]

P4 Lower Neck Mz



4-64

8462-NCAP-11

CFC_600

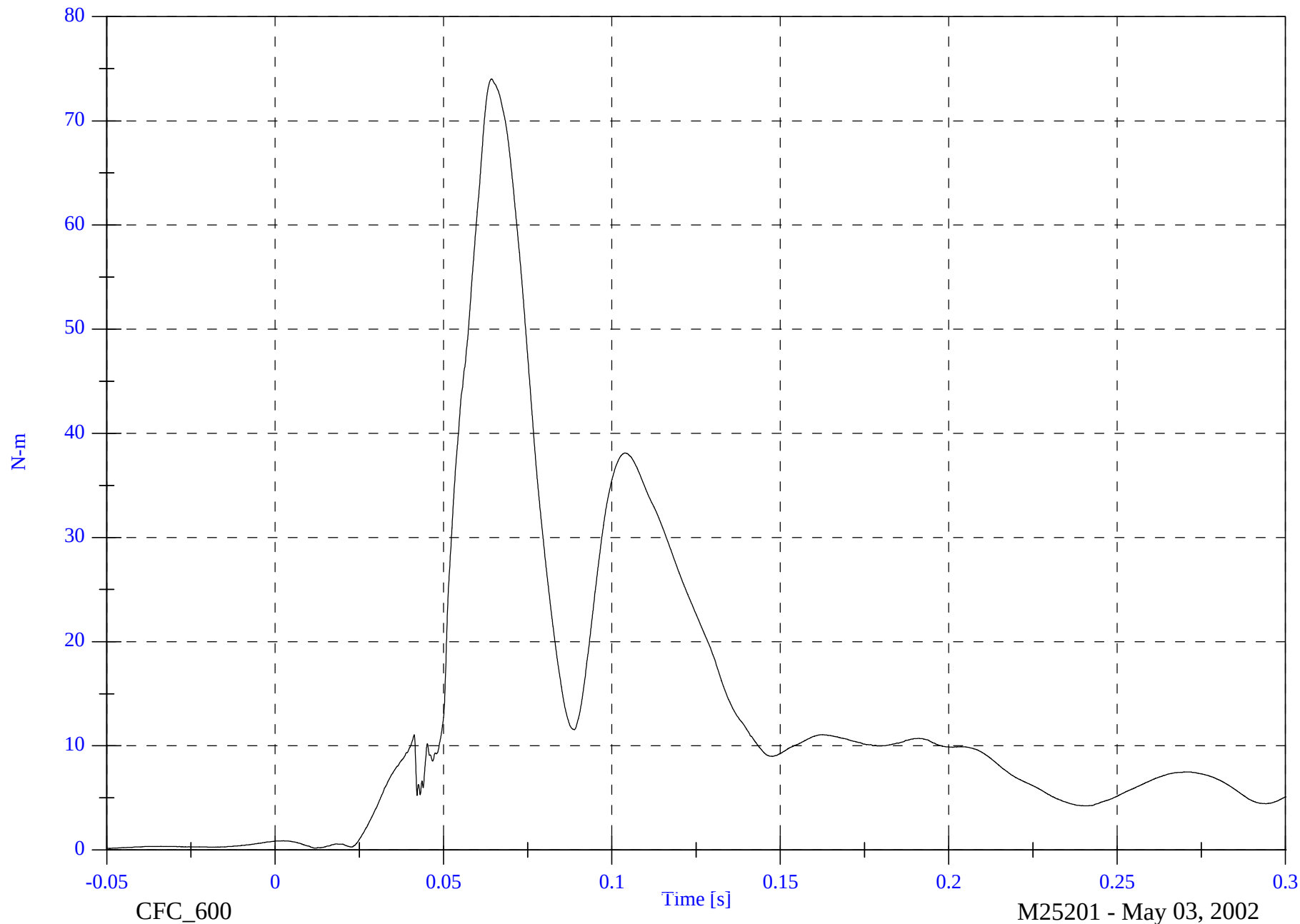
M25201 - May 03, 2002

2002 NCAP Test 11 - 2002 Nissan Frontier

P4 Lower Neck M Resultant

Max: 74.0 [N-m] at 0.064 [s]

Min: 0.2 [N-m] at -0.049 [s]

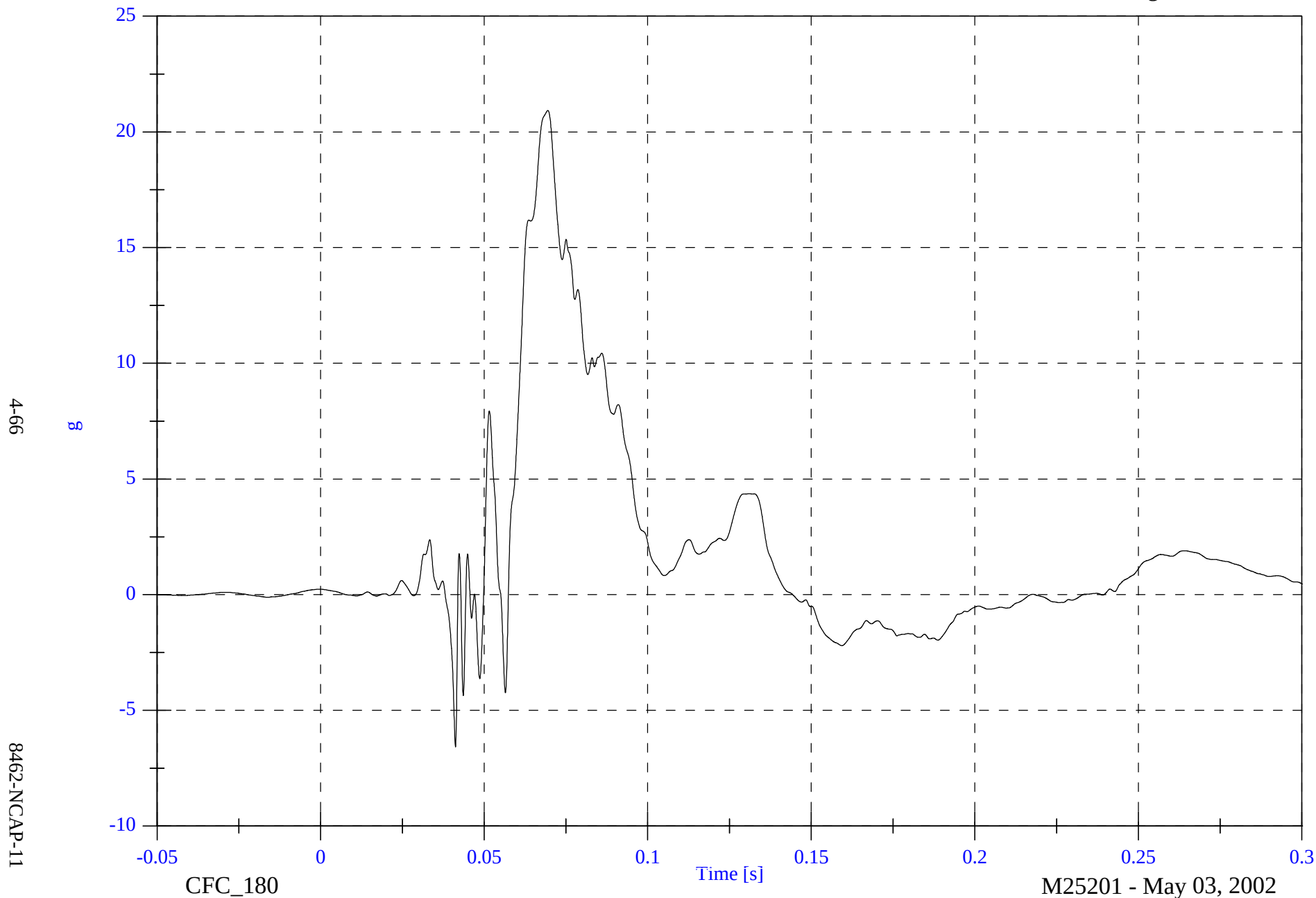


2002 NCAP Test 11 - 2002 Nissan Frontier

Max: 20.9 [g] at 0.069 [s]

Min: -6.6 [g] at 0.041 [s]

P4 Chest x



2002 NCAP Test 11 - 2002 Nissan Frontier

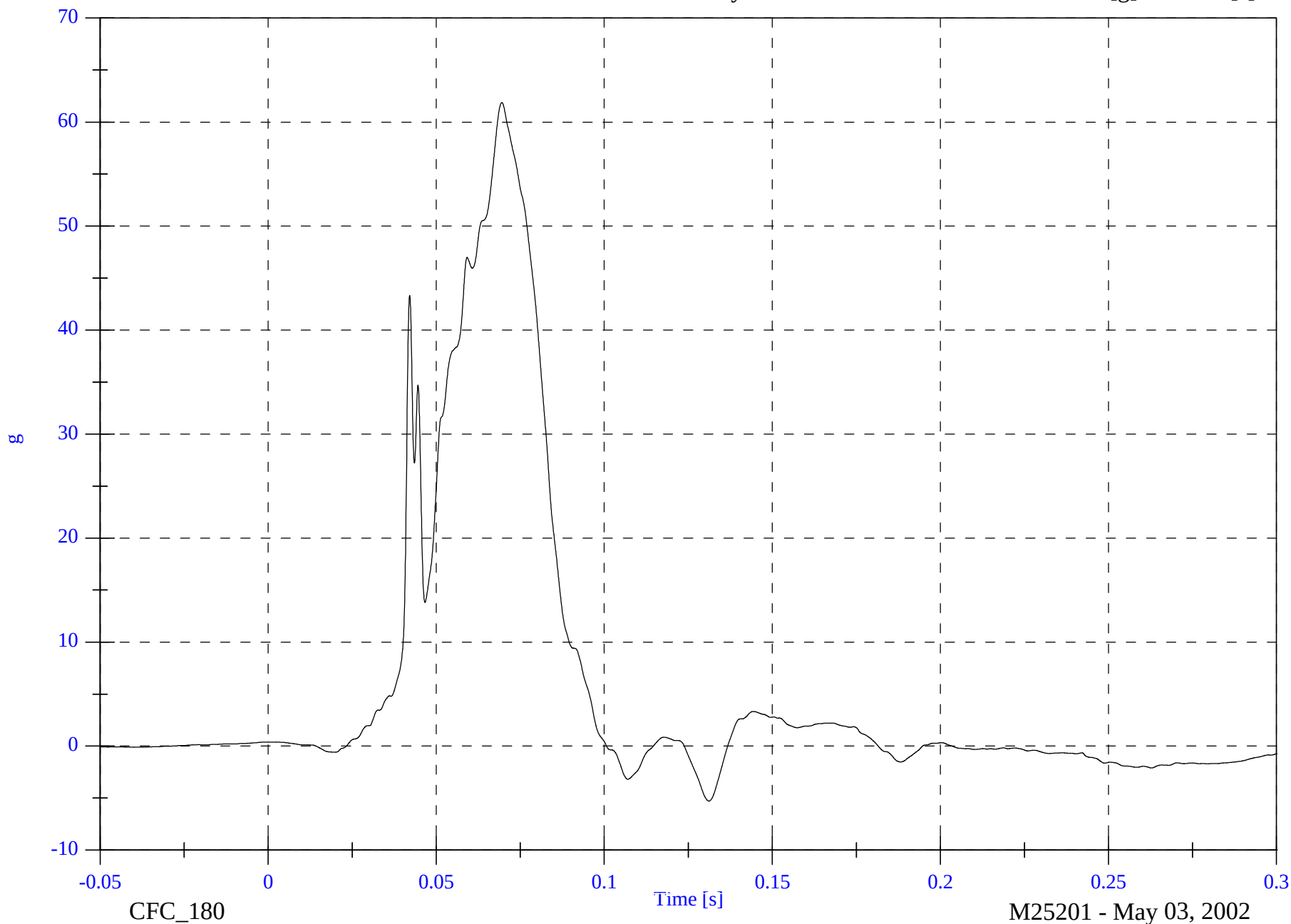
P4 Chest y

Max: 61.9 [g] at 0.070 [s]

Min: -5.3 [g] at 0.131 [s]

4-67

8462-NCAP-11

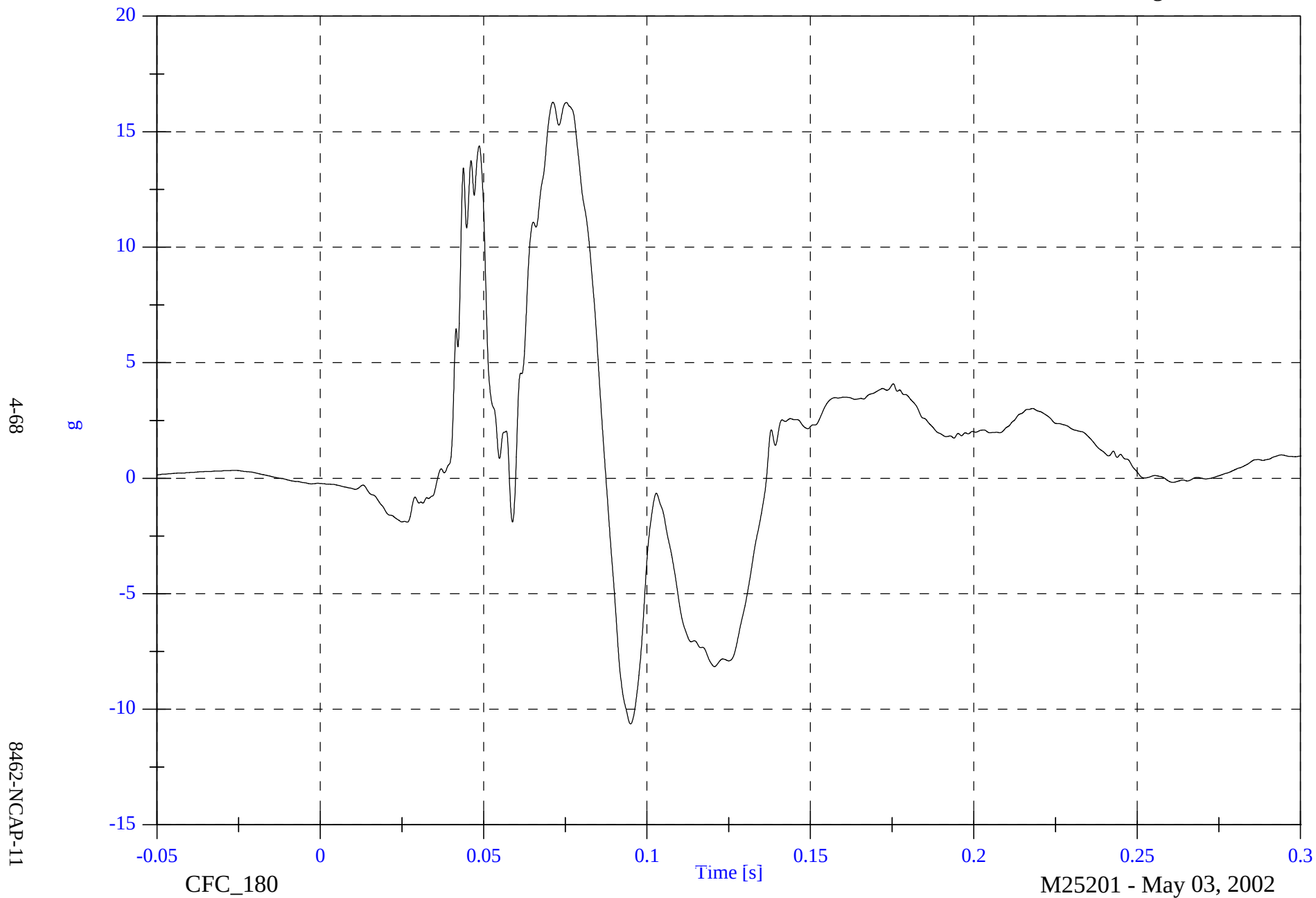


2002 NCAP Test 11 - 2002 Nissan Frontier

P4 Chest z

Max: 16.3 [g] at 0.071 [s]

Min: -10.6 [g] at 0.095 [s]



2002 NCAP Test 11 - 2002 Nissan Frontier

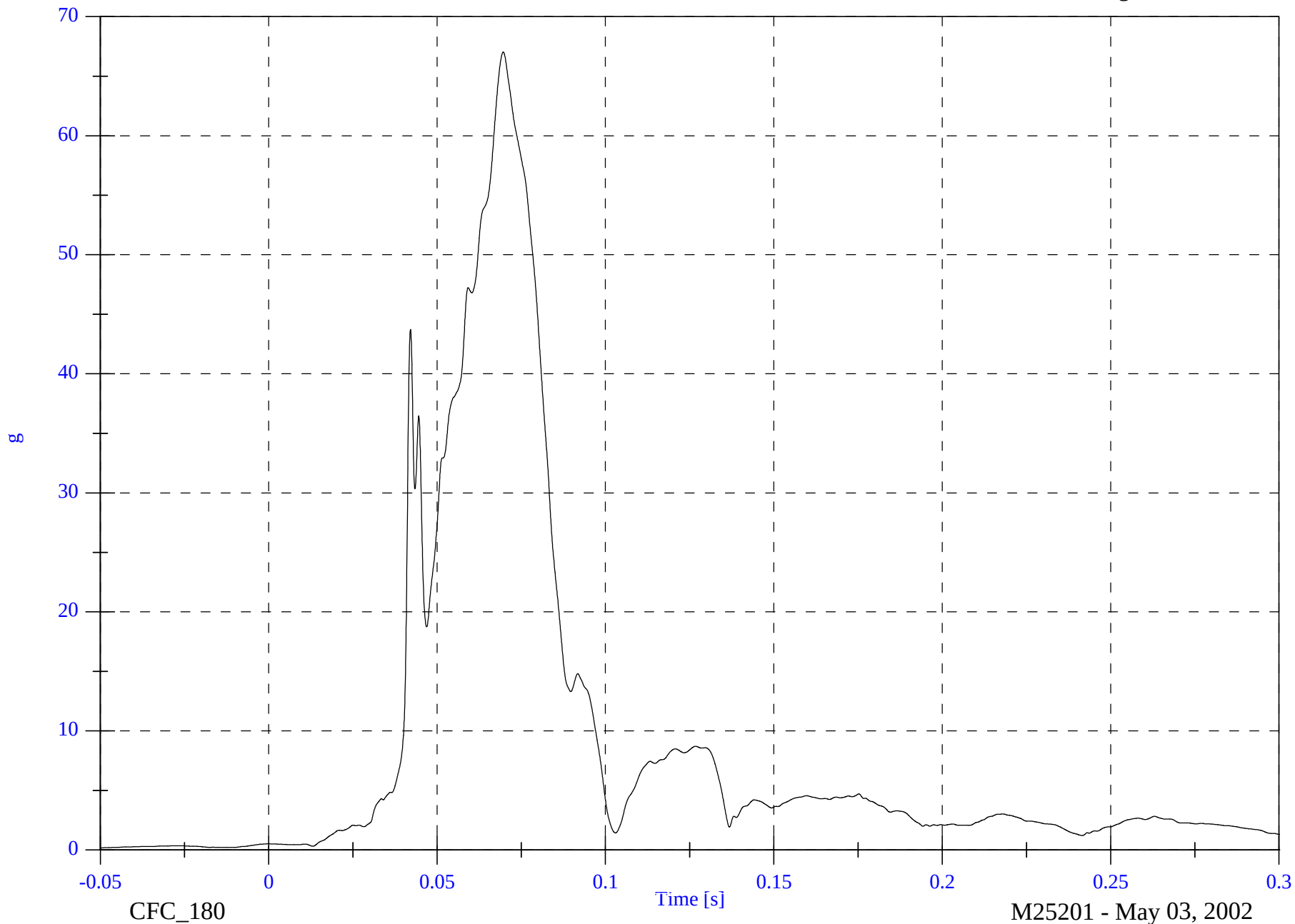
P4 Chest Resultant

Max: 67.0 [g] at 0.070 [s]

Min: 0.2 [g] at -0.050 [s]

4-69

8462-NCAP-11

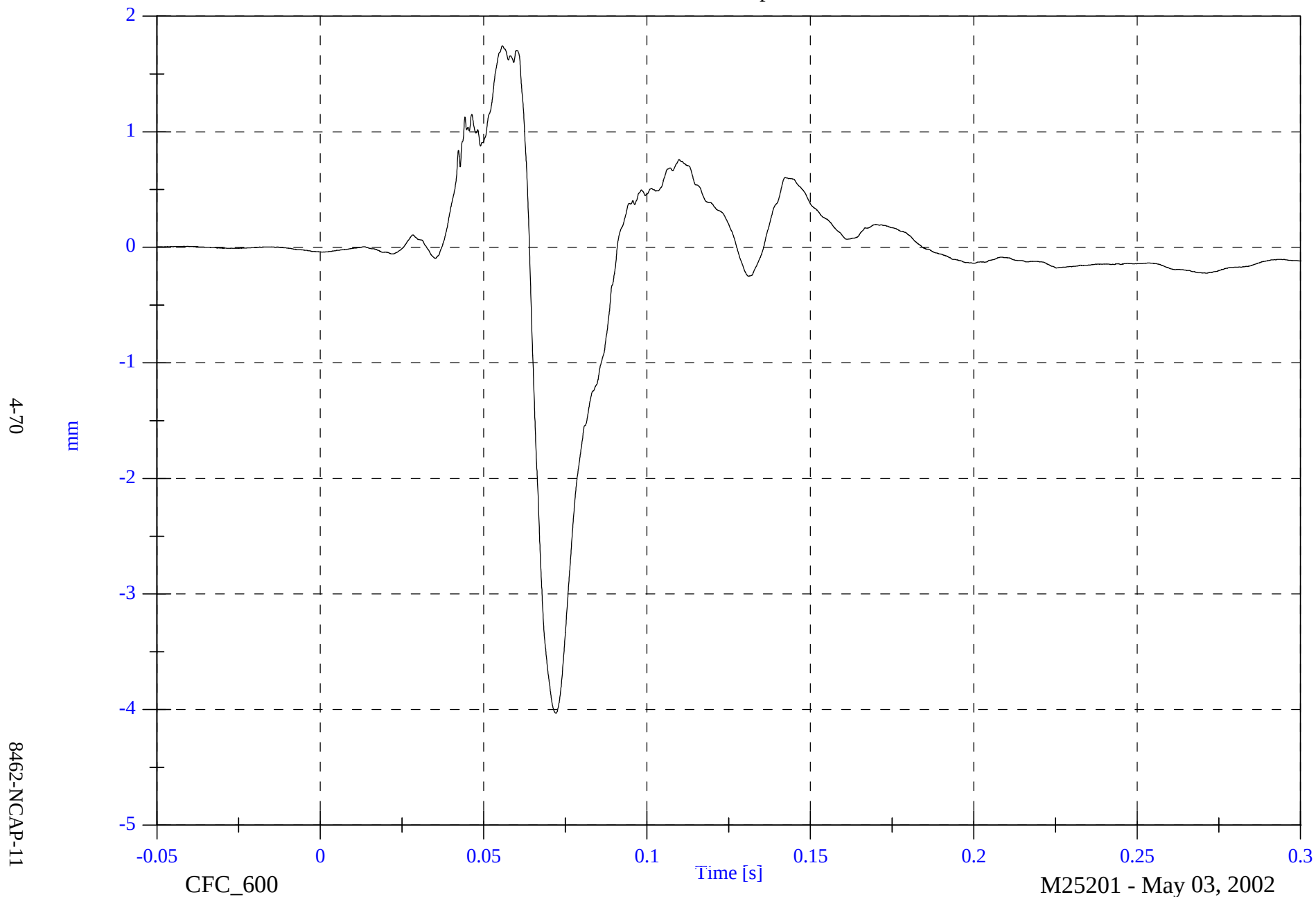


2002 NCAP Test 11 - 2002 Nissan Frontier

P4 Chest Compression

Max: 1.7 [mm] at 0.056 [s]

Min: -4.0 [mm] at 0.072 [s]

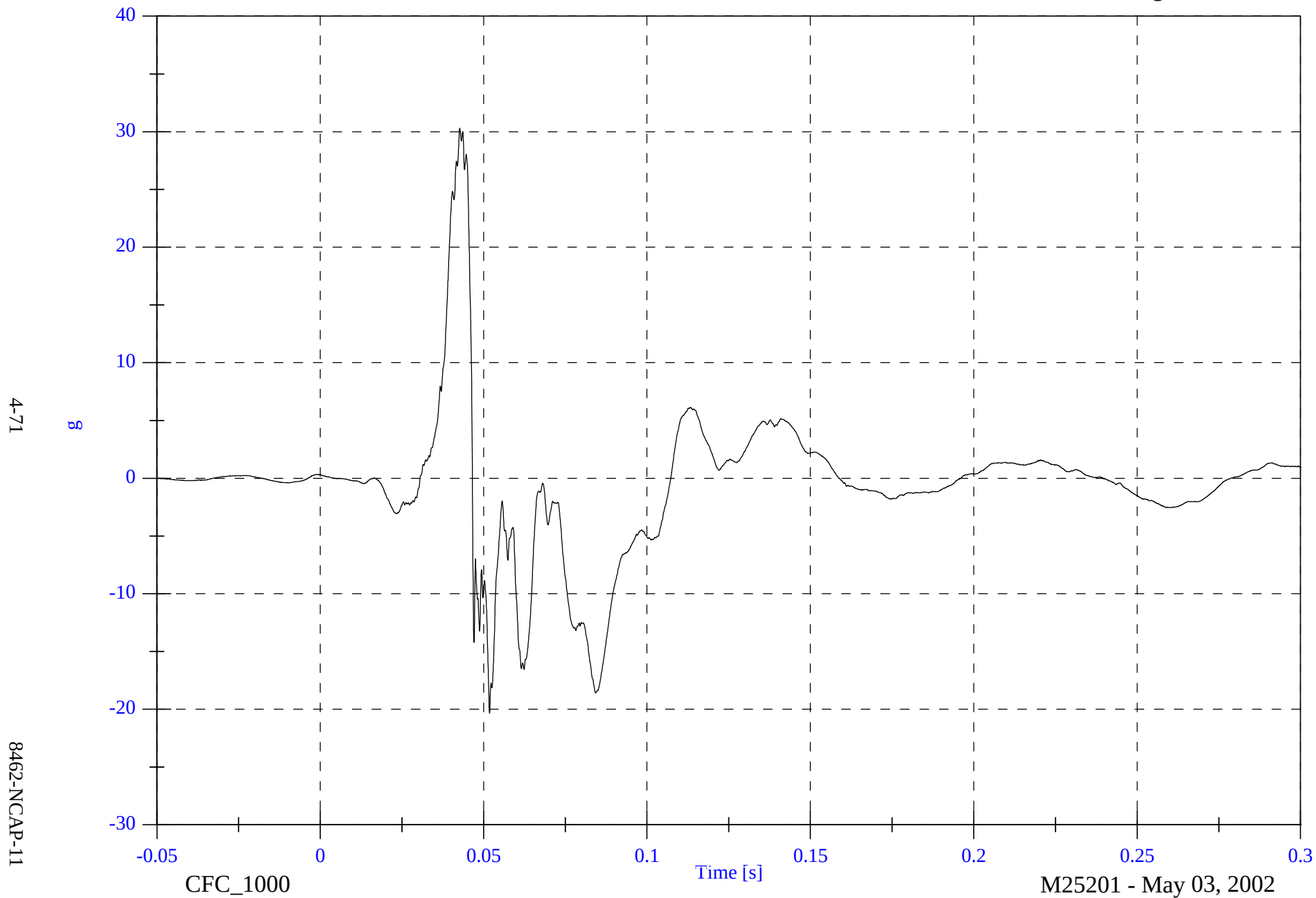


2002 NCAP Test 11 - 2002 Nissan Frontier

Max: 30.3 [g] at 0.043 [s]

Min: -20.3 [g] at 0.052 [s]

P4 Pelvic x

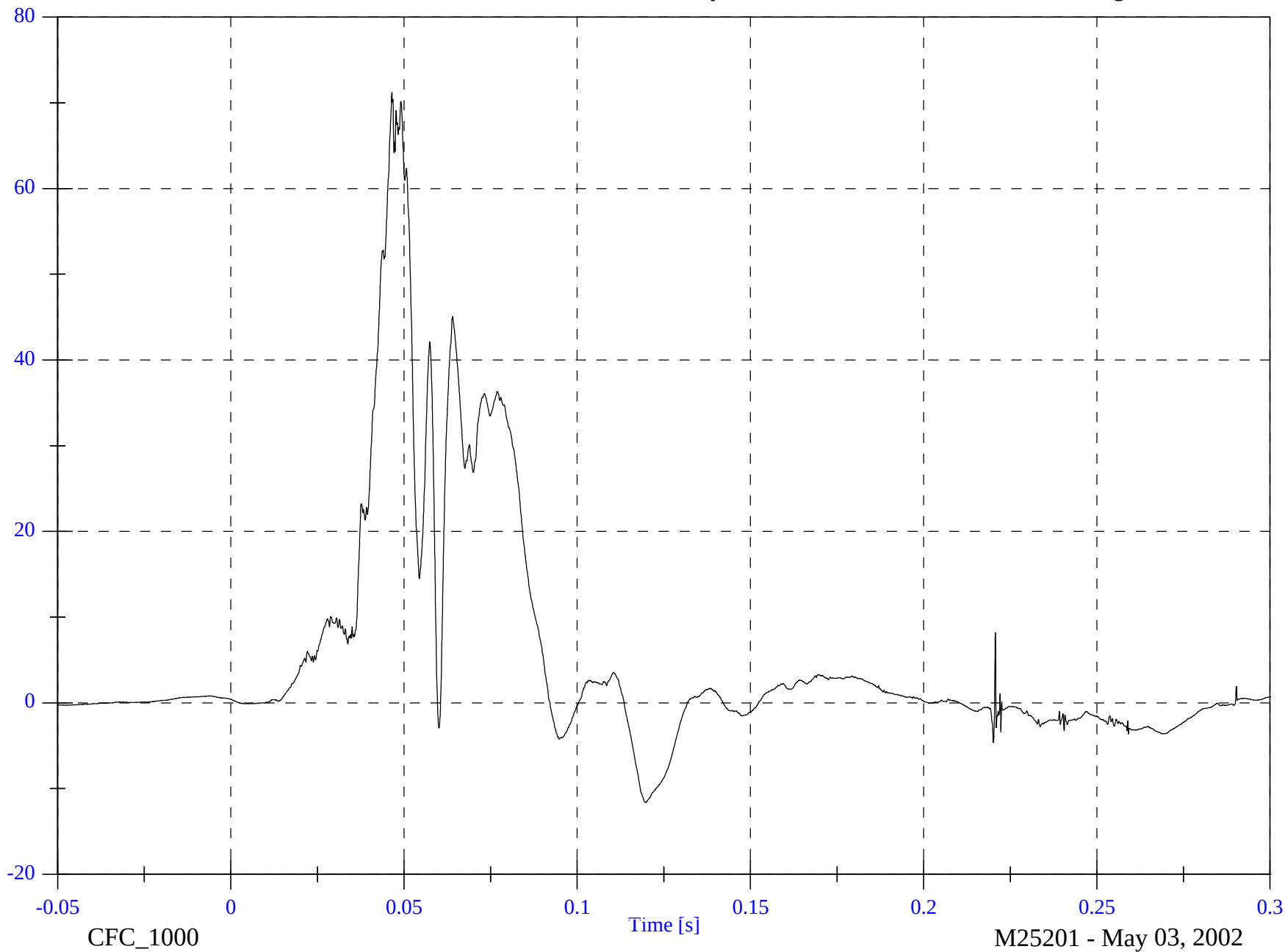


2002 NCAP Test 11 - 2002 Nissan Frontier

P4 Pelvic y

Max: 71.2 [g] at 0.046 [s]

Min: -11.6 [g] at 0.120 [s]



4-72

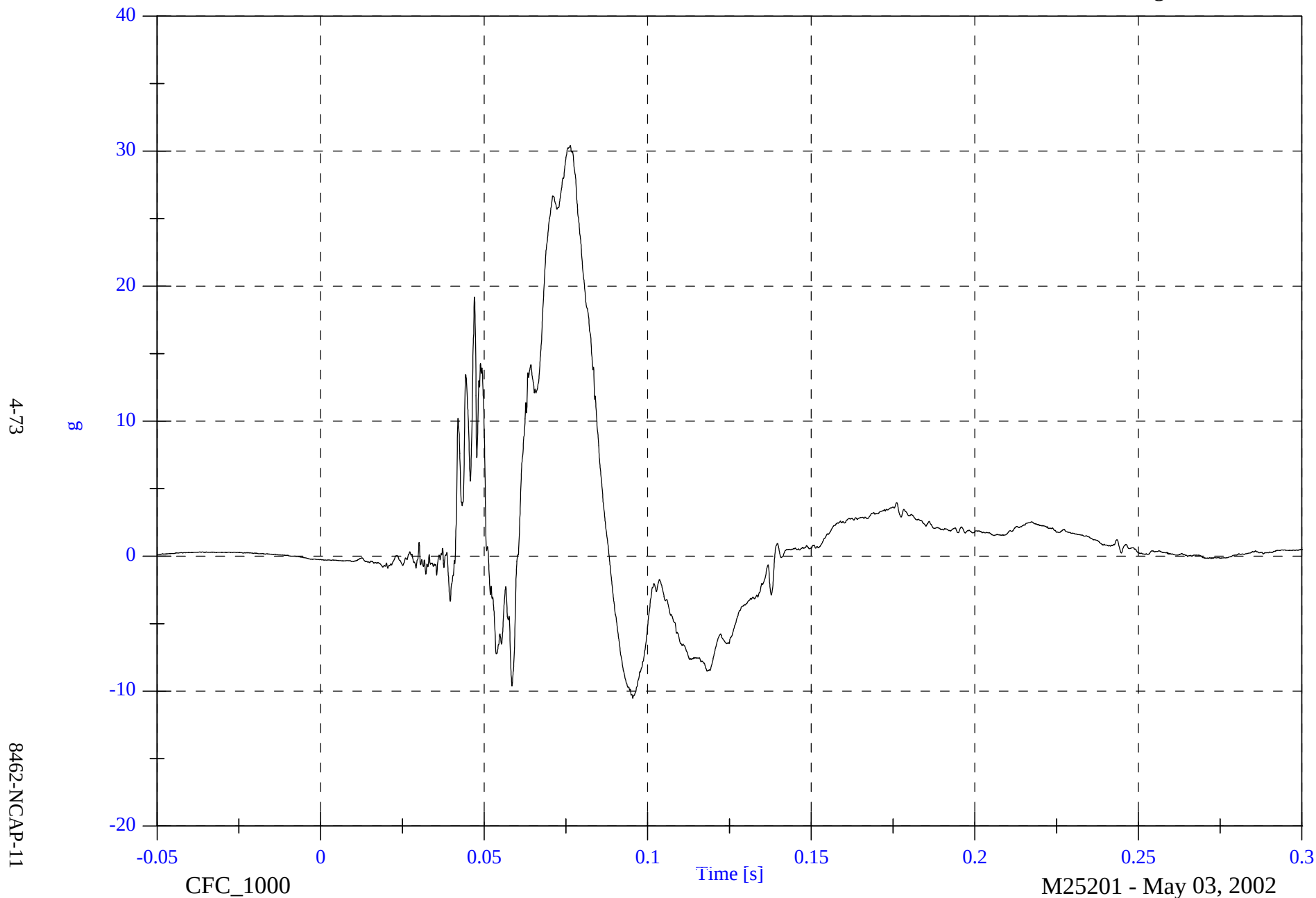
8462-NCAP-11

2002 NCAP Test 11 - 2002 Nissan Frontier

Max: 30.4 [g] at 0.076 [s]

Min: -10.5 [g] at 0.095 [s]

P4 Pelvic z



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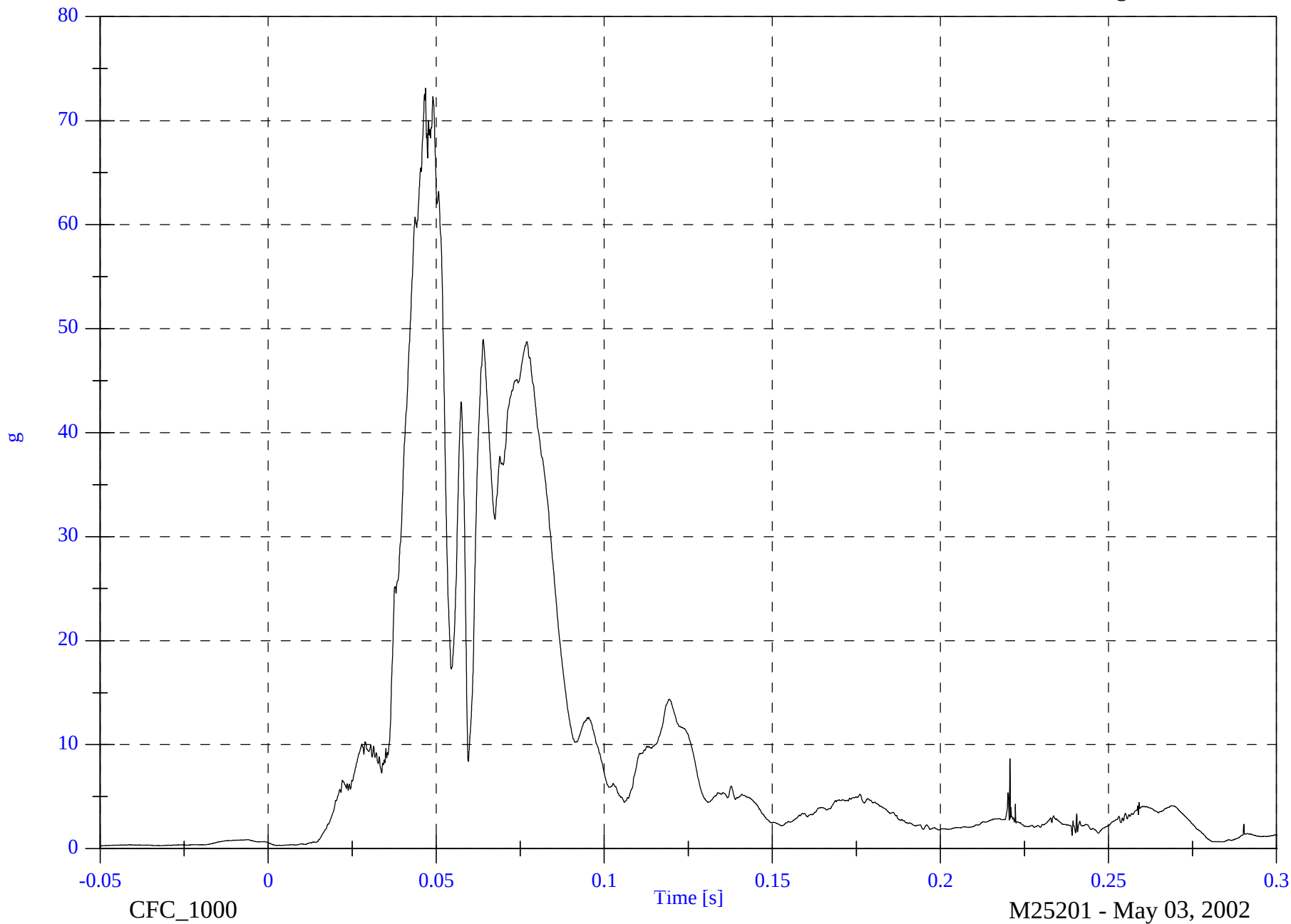
P4 Pelvic Resultant

Max: 73.1 [g] at 0.047 [s]

Min: 0.3 [g] at -0.050 [s]

4-74

8462-NCAP-11

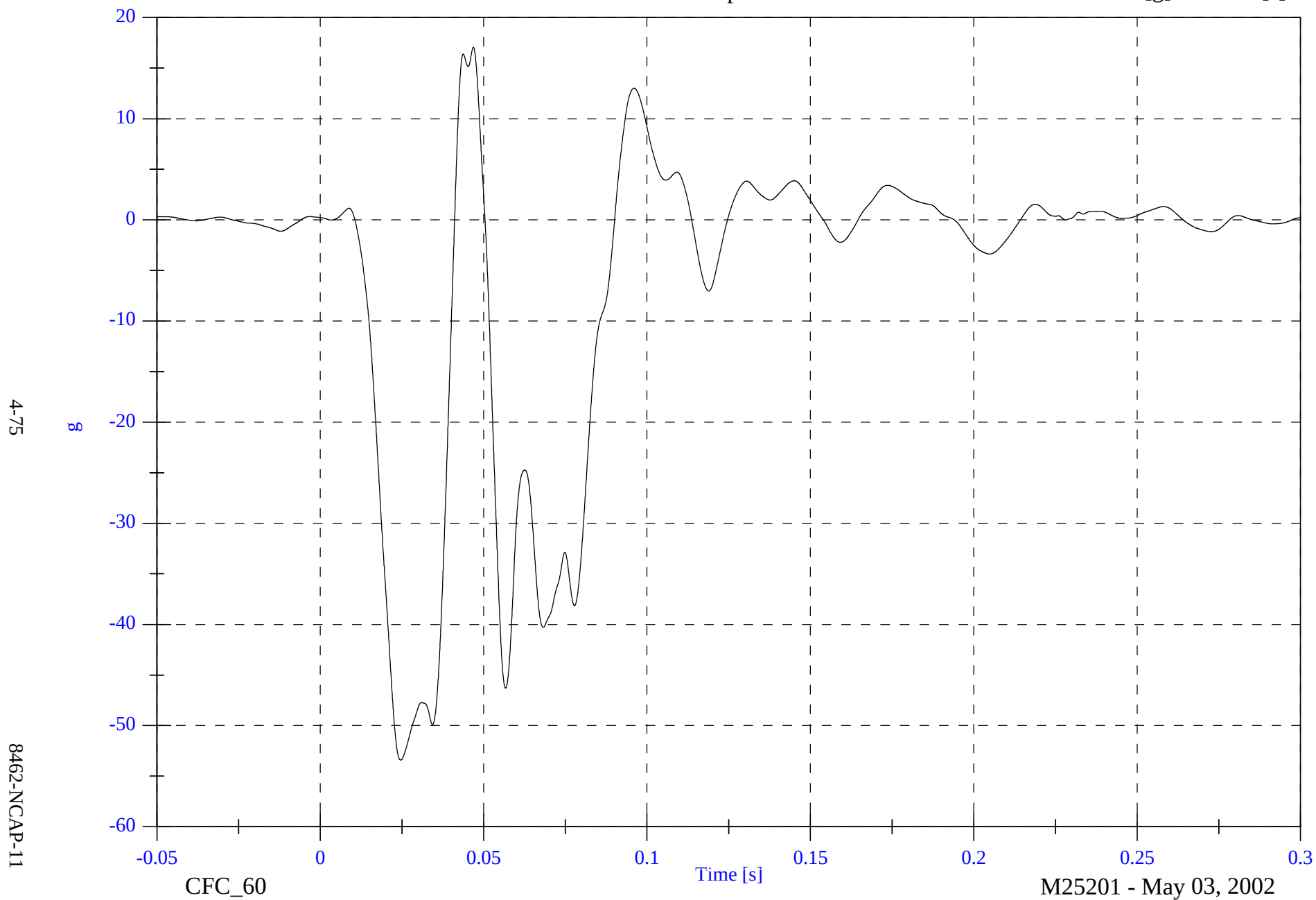


2002 NCAP Test 11 - 2002 Nissan Frontier

P3 Jump Seat x

Max: 17.1 [g] at 0.047 [s]

Min: -53.4 [g] at 0.025 [s]

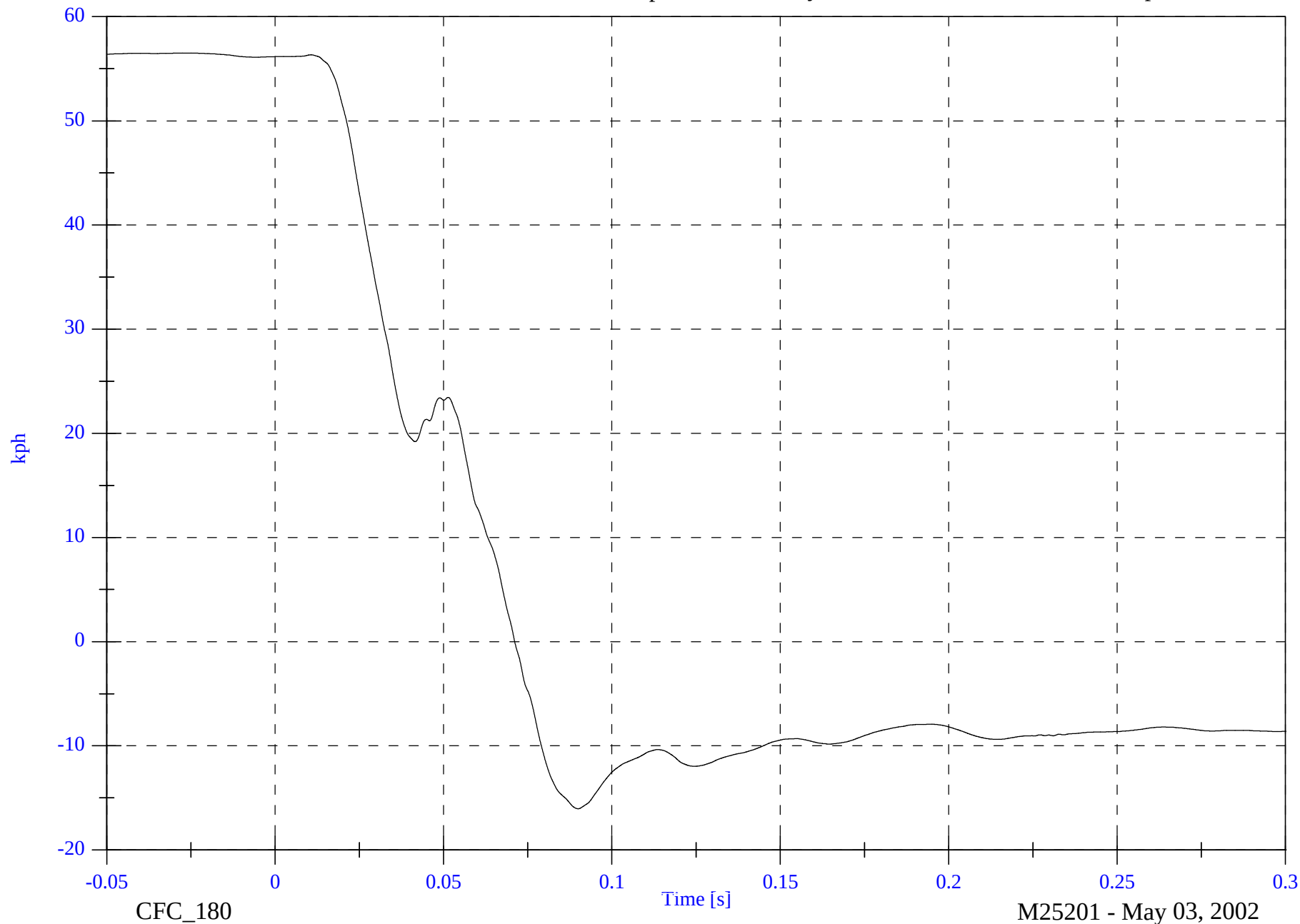


2002 NCAP Test 11 - 2002 Nissan Frontier

P3 Jump Seat x Velocity

Max: 56.5 [kph] at -0.028 [s]

Min: -16.0 [kph] at 0.090 [s]



4-76

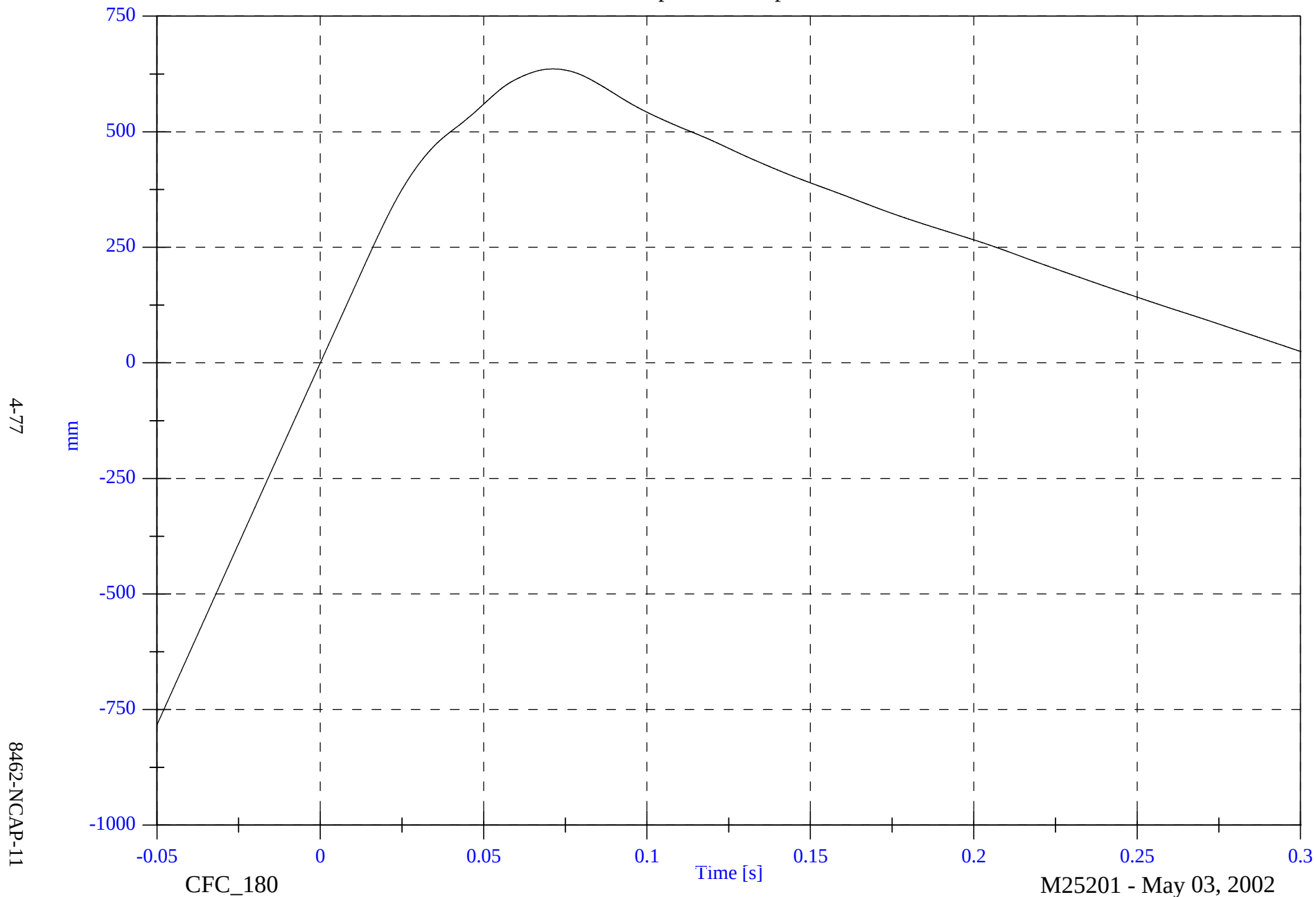
8462-NCAP-11

2002 NCAP Test 11 - 2002 Nissan Frontier

P3 Jump Seat x Displacement

Max: 636.0 [mm] at 0.071 [s]

Min: -783.0 [mm] at -0.050 [s]

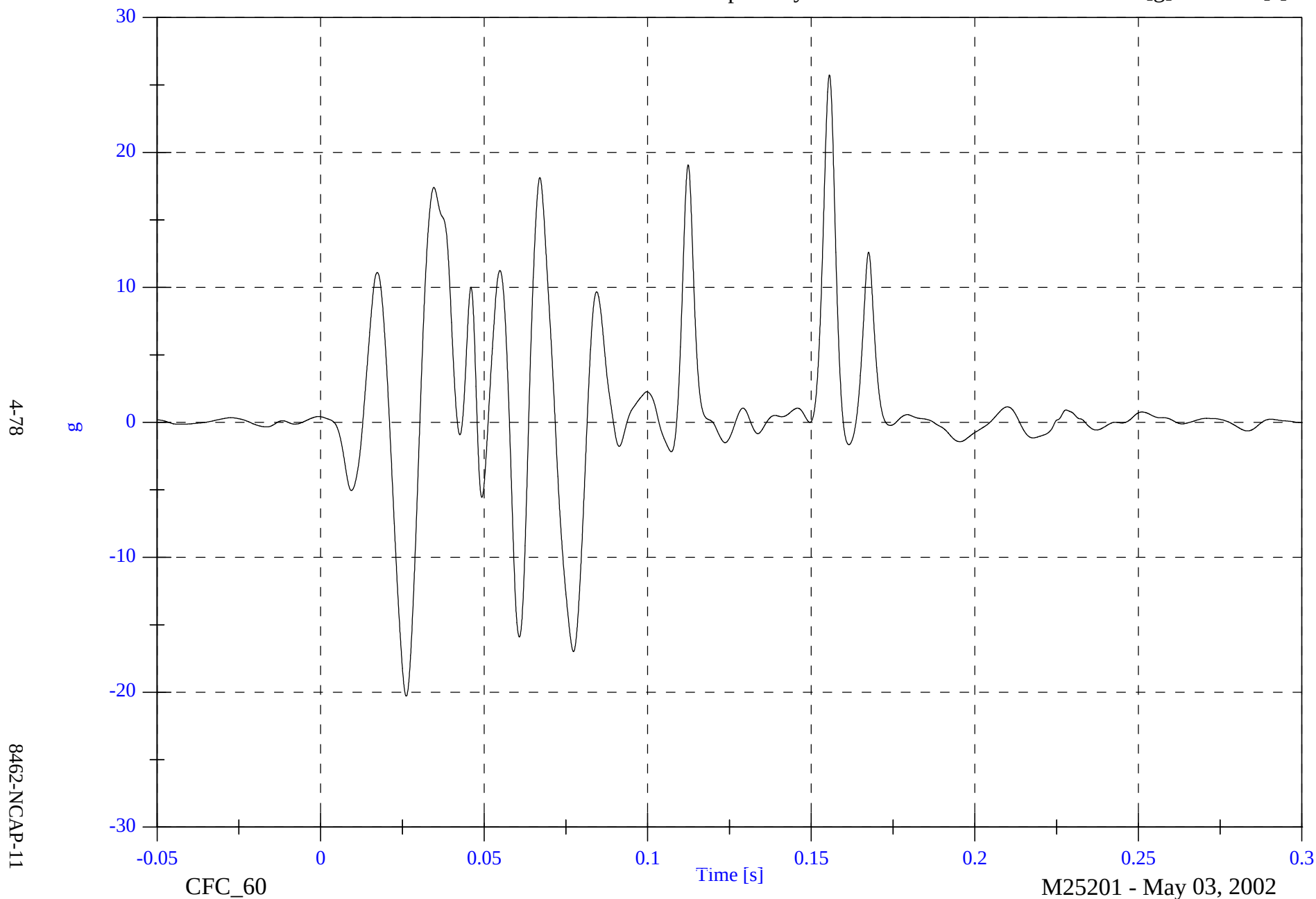


2002 NCAP Test 11 - 2002 Nissan Frontier

P3 Jump Seat y

Max: 25.8 [g] at 0.156 [s]

Min: -20.3 [g] at 0.026 [s]



2002 NCAP Test 11 - 2002 Nissan Frontier

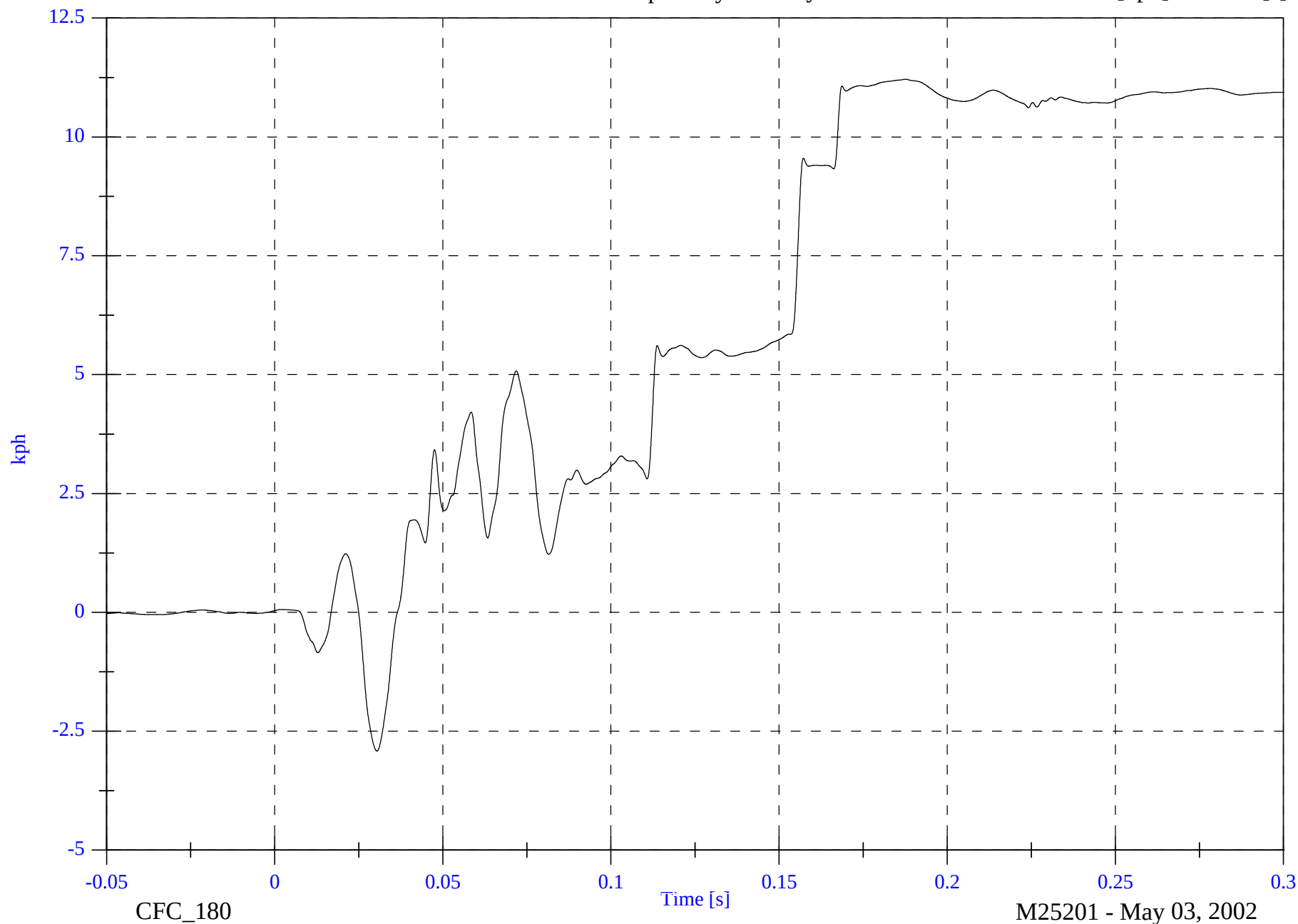
P3 Jump Seat y Velocity

Max: 11.2 [kph] at 0.188 [s]

Min: -2.9 [kph] at 0.030 [s]

4-79

8462-NCAP-11

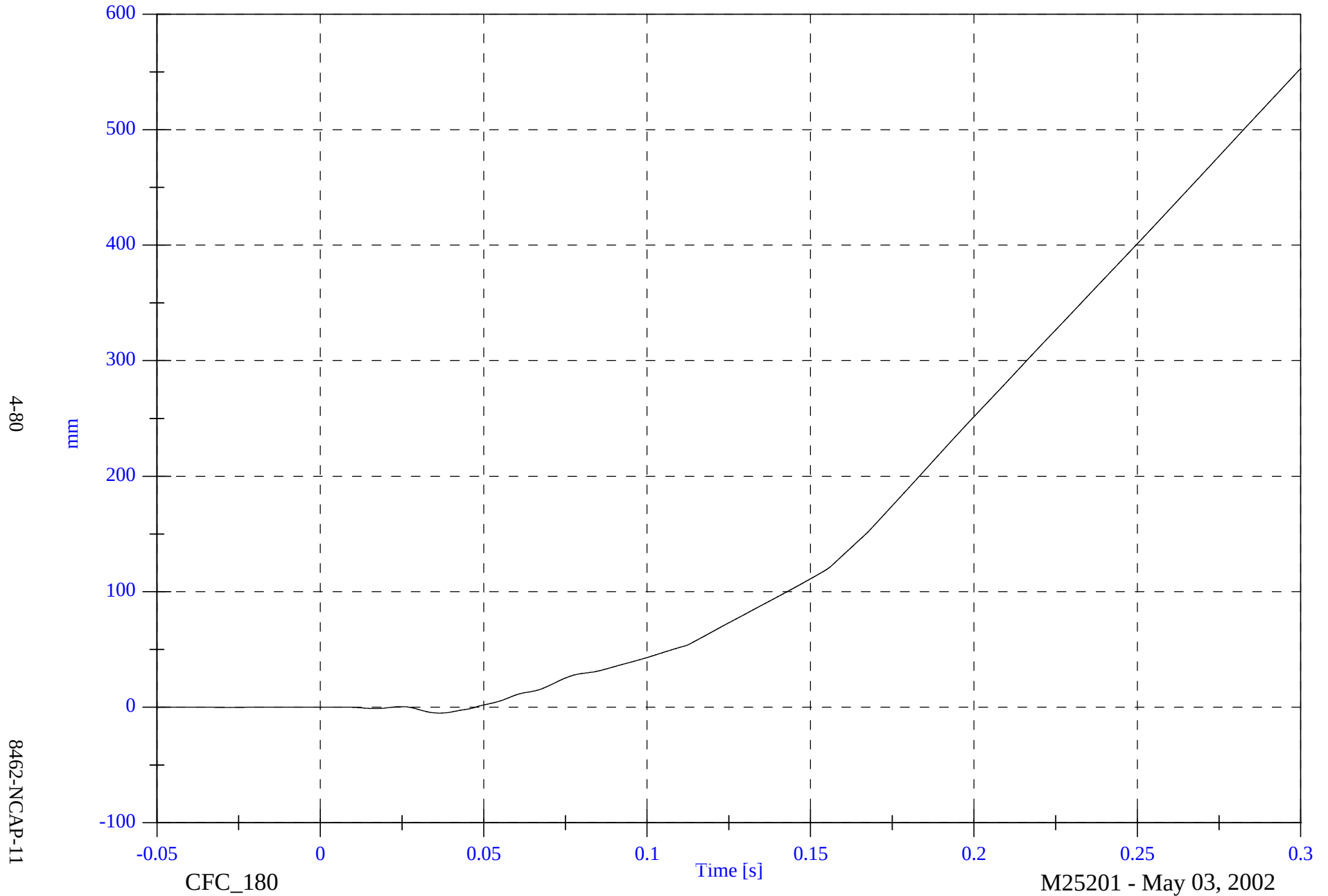


2002 NCAP Test 11 - 2002 Nissan Frontier

P3 Jump Seat y Displacement

Max: 552.9 [mm] at 0.300 [s]

Min: -5.0 [mm] at 0.036 [s]

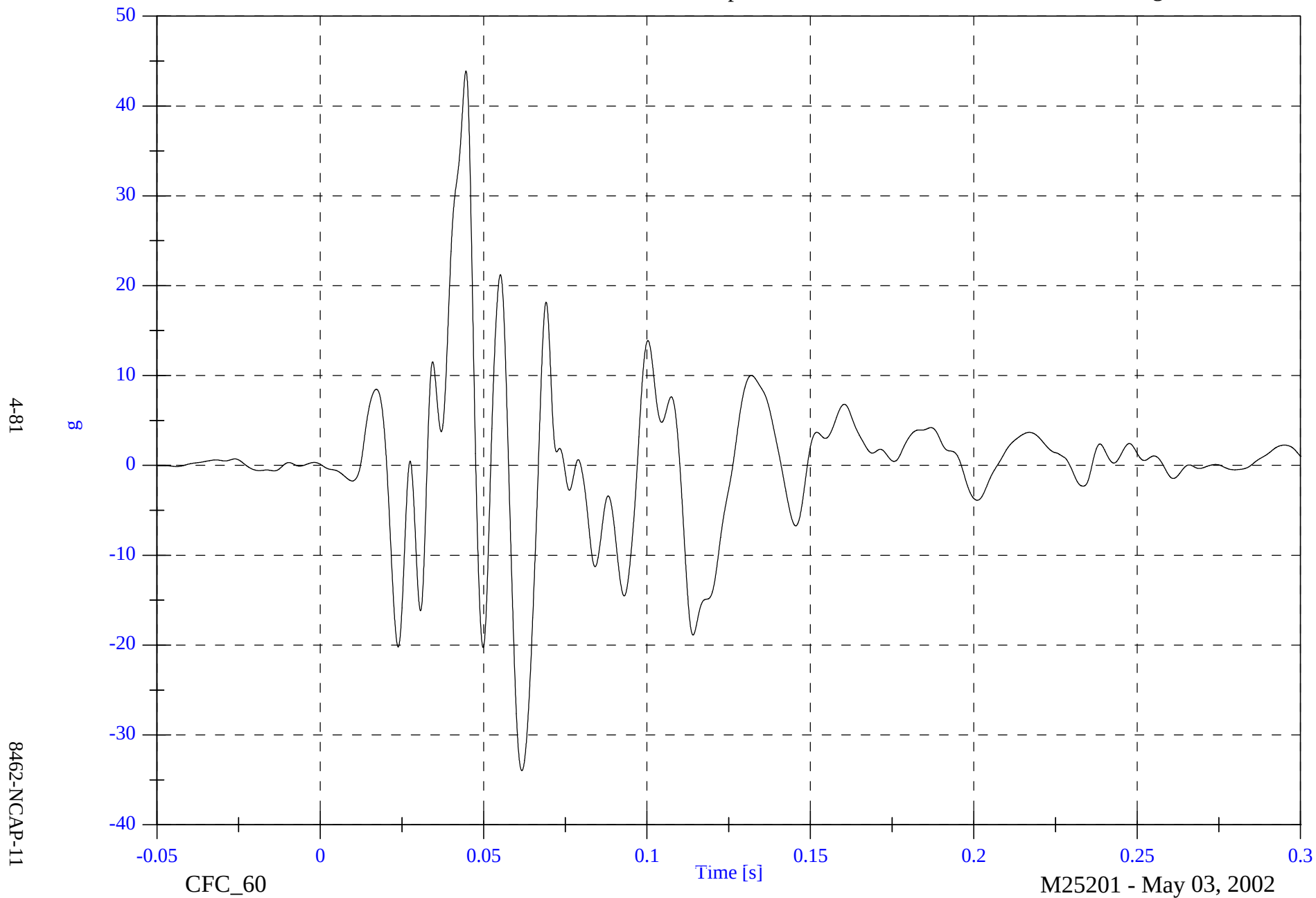


2002 NCAP Test 11 - 2002 Nissan Frontier

P3 Jump Seat z

Max: 43.9 [g] at 0.045 [s]

Min: -34.0 [g] at 0.062 [s]



2002 NCAP Test 11 - 2002 Nissan Frontier

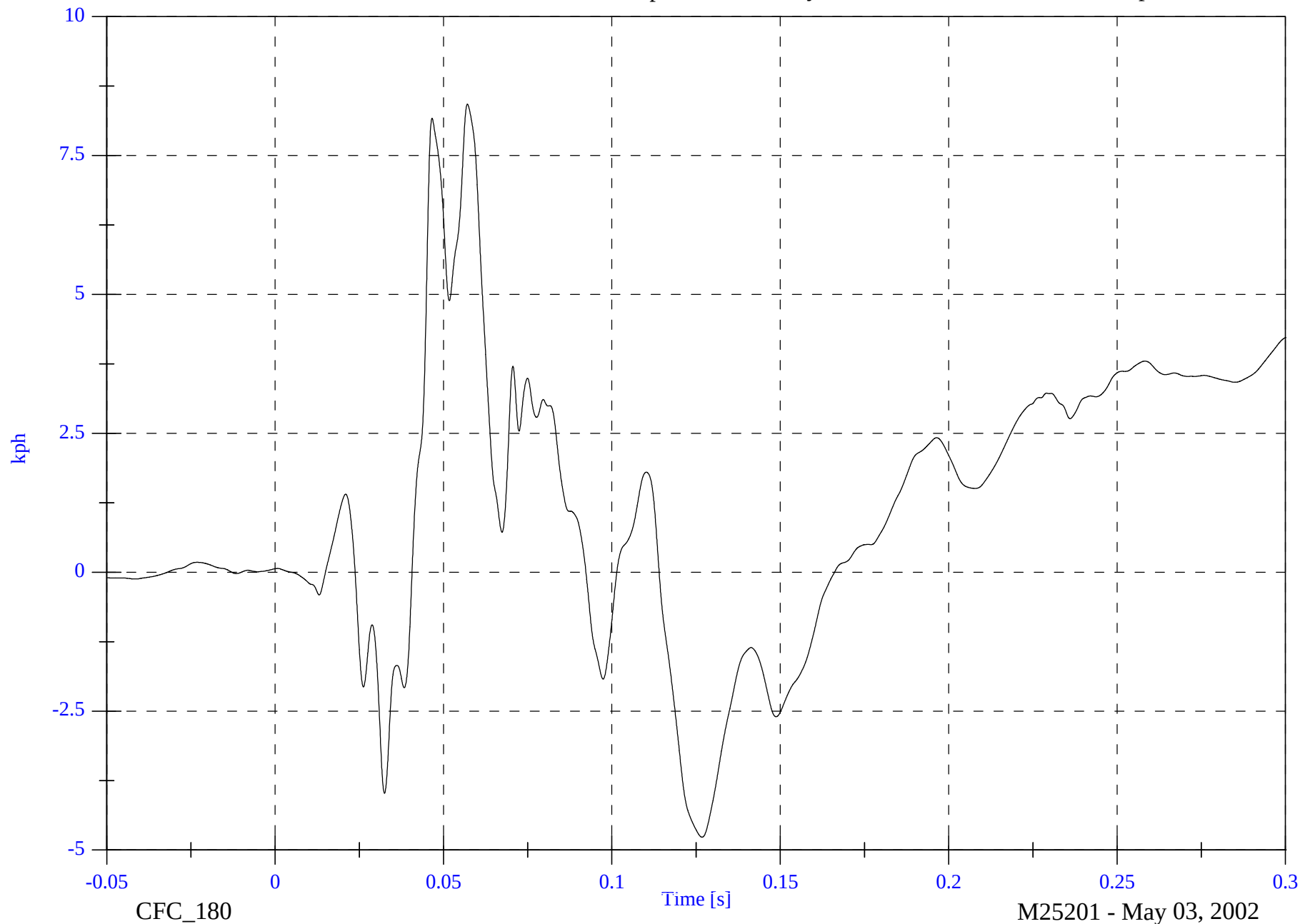
P3 Jump Seat z Velocity

Max: 8.4 [kph] at 0.057 [s]

Min: -4.8 [kph] at 0.127 [s]

4-82

8462-NCAP-11



2002 NCAP Test 11 - 2002 Nissan Frontier

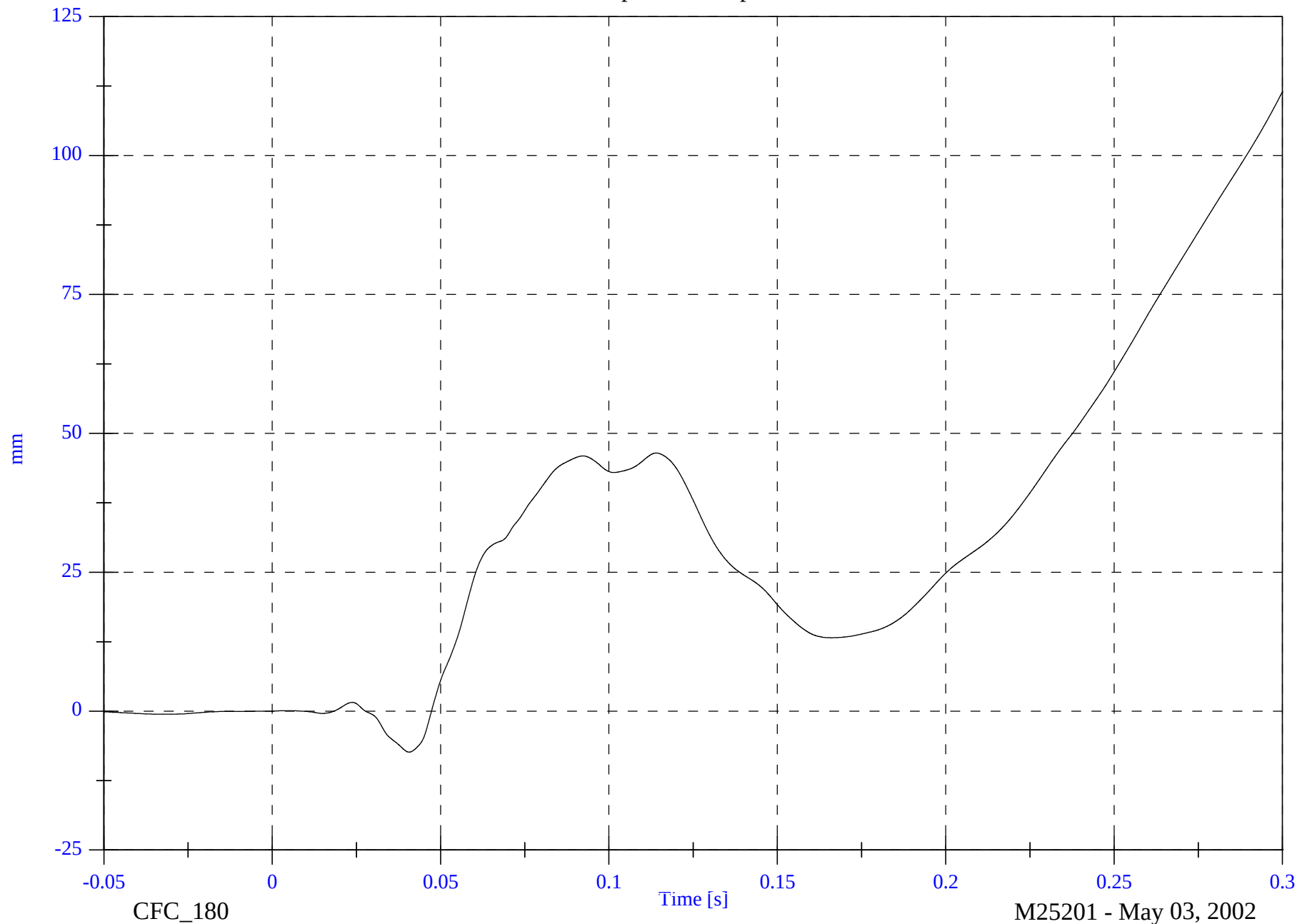
P3 Jump Seat z Displacement

Max: 111.5 [mm] at 0.300 [s]

Min: -7.4 [mm] at 0.041 [s]

4-83

8462-NCAP-11



2002 NCAP Test 11 - 2002 Nissan Frontier

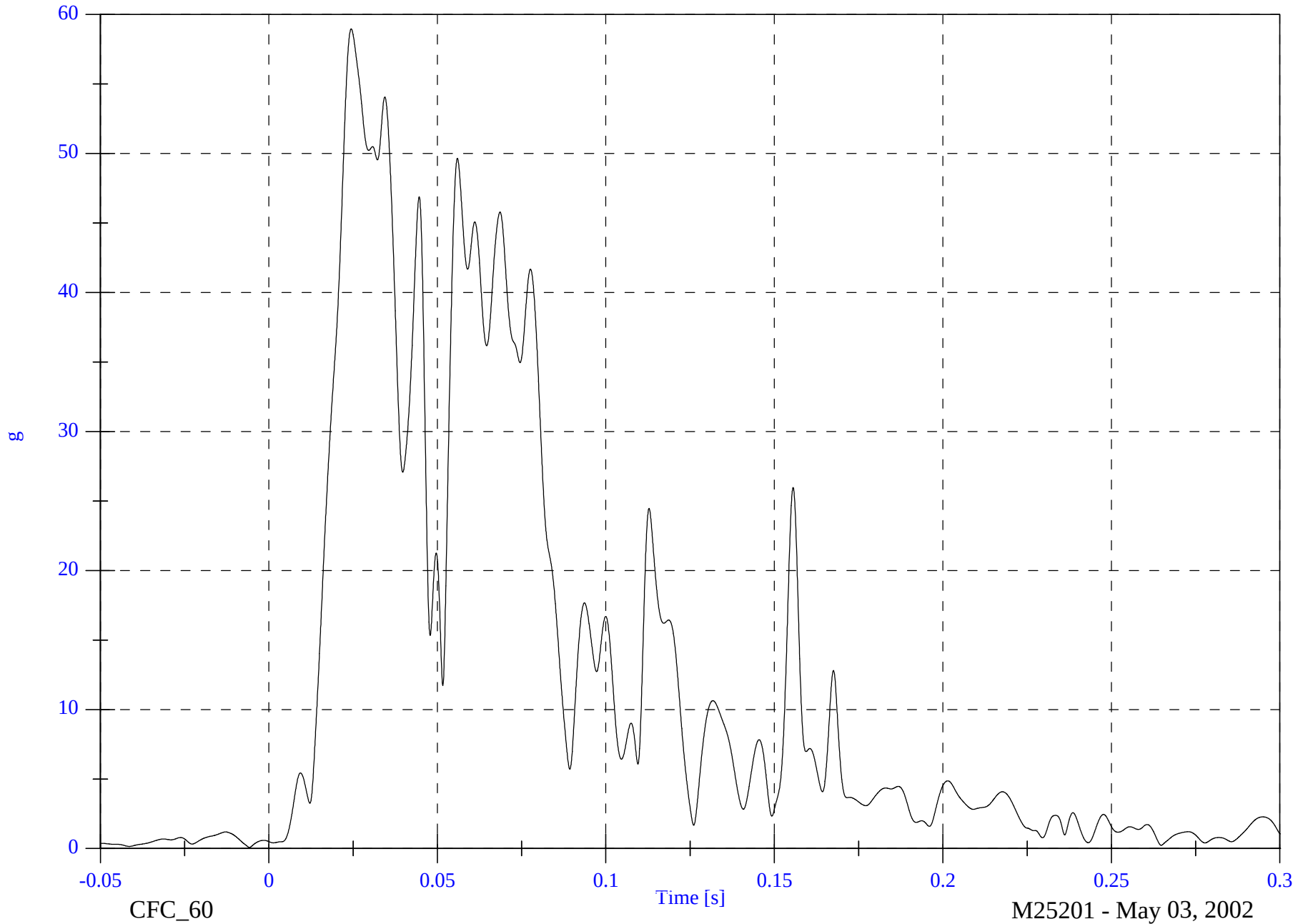
P3 Jump Seat Resultant

Max: 59.0 [g] at 0.024 [s]

Min: 0.1 [g] at -0.006 [s]

4-84

8462-NCAP-11

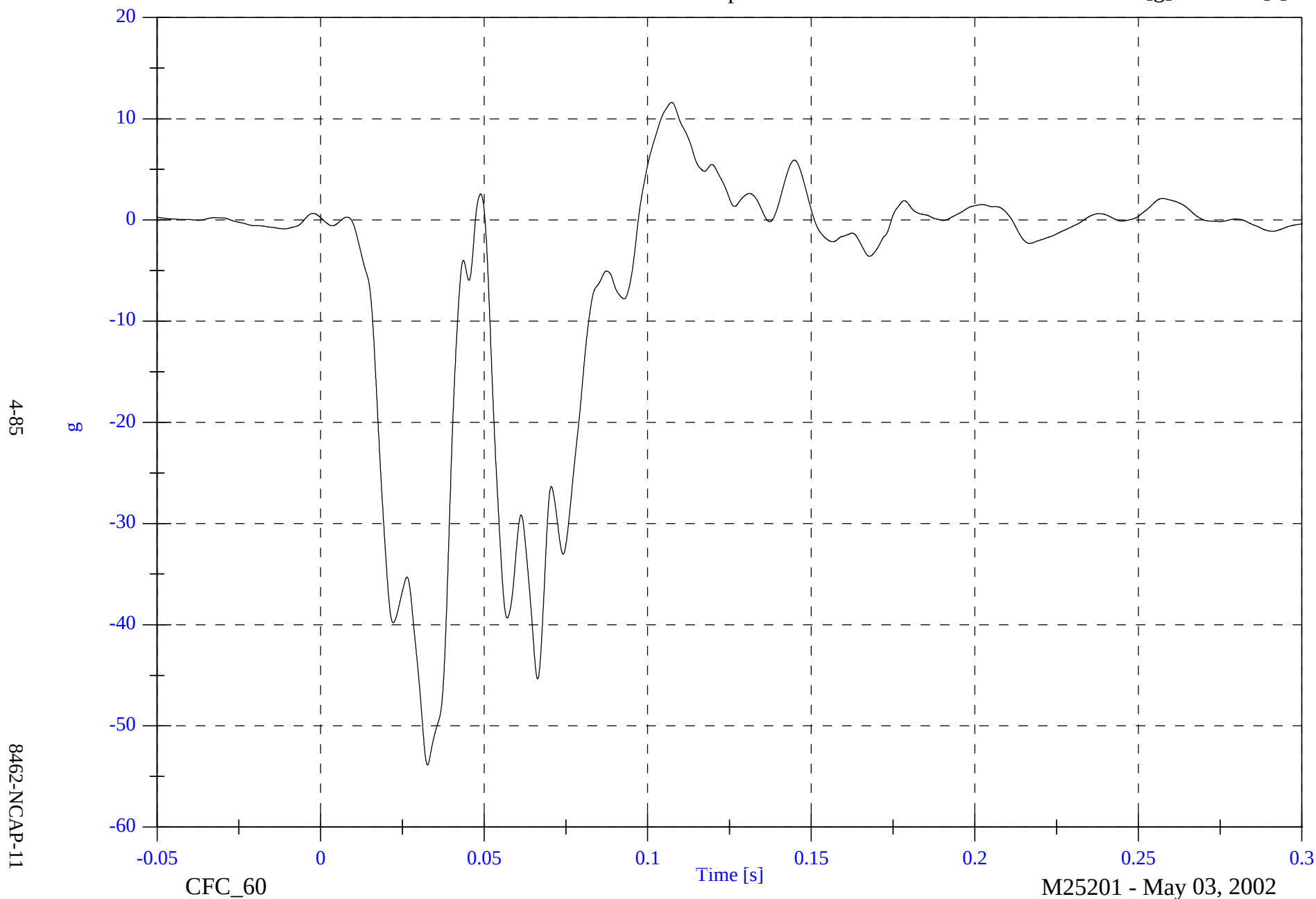


2002 NCAP Test 11 - 2002 Nissan Frontier

P4 Jump Seat x

Max: 11.6 [g] at 0.107 [s]

Min: -53.9 [g] at 0.033 [s]

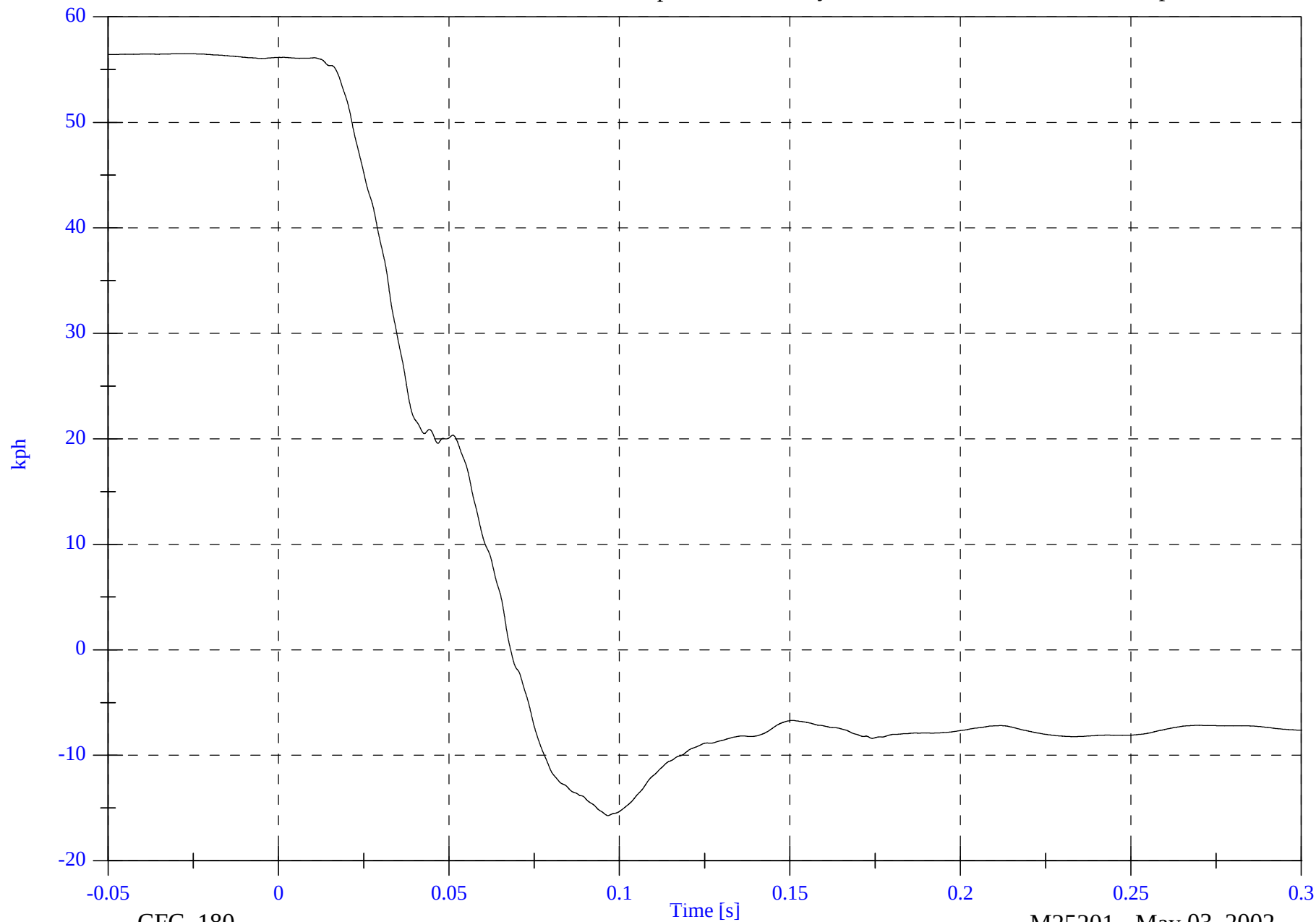


2002 NCAP Test 11 - 2002 Nissan Frontier

P4 Jump Seat x Velocity

Max: 56.5 [kph] at -0.028 [s]

Min: -15.7 [kph] at 0.097 [s]



4-86

8462-NCAP-11

CFC_180

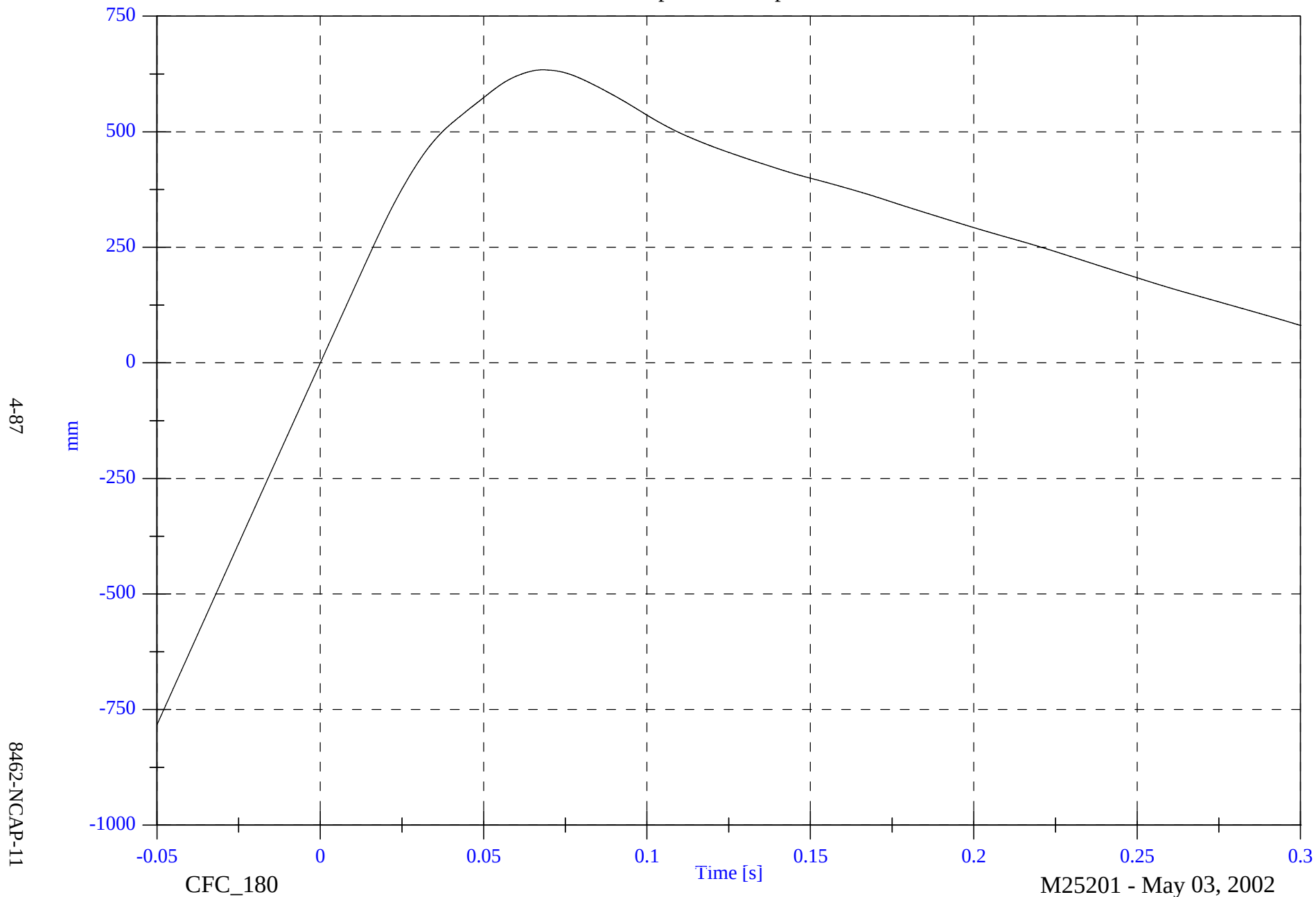
M25201 - May 03, 2002

2002 NCAP Test 11 - 2002 Nissan Frontier

P4 Jump Seat x Displacement

Max: 634.0 [mm] at 0.068 [s]

Min: -782.9 [mm] at -0.050 [s]



2002 NCAP Test 11 - 2002 Nissan Frontier

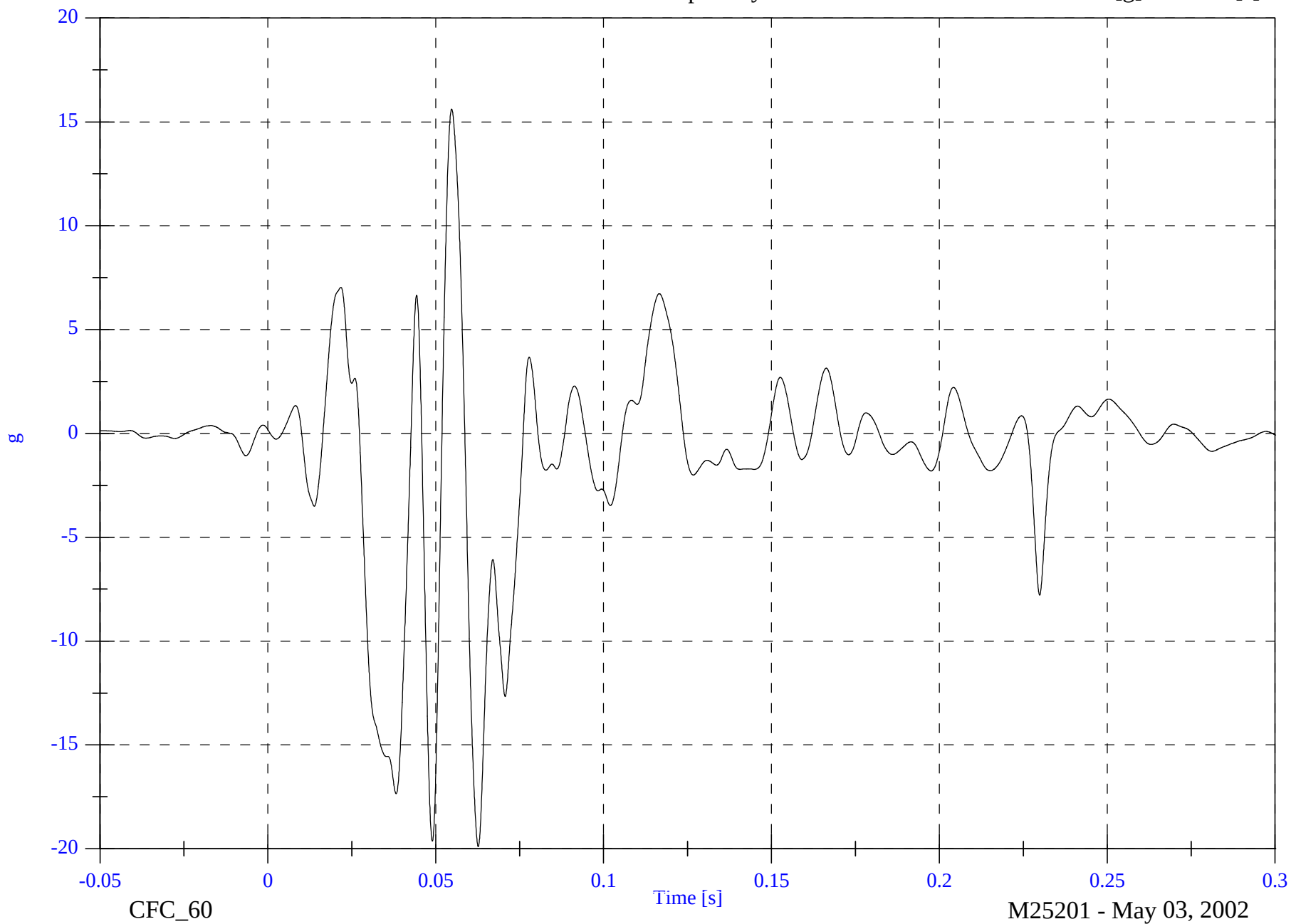
P4 Jump seat y

Max: 15.6 [g] at 0.055 [s]

Min: -19.9 [g] at 0.063 [s]

4-88

8462-NCAP-11

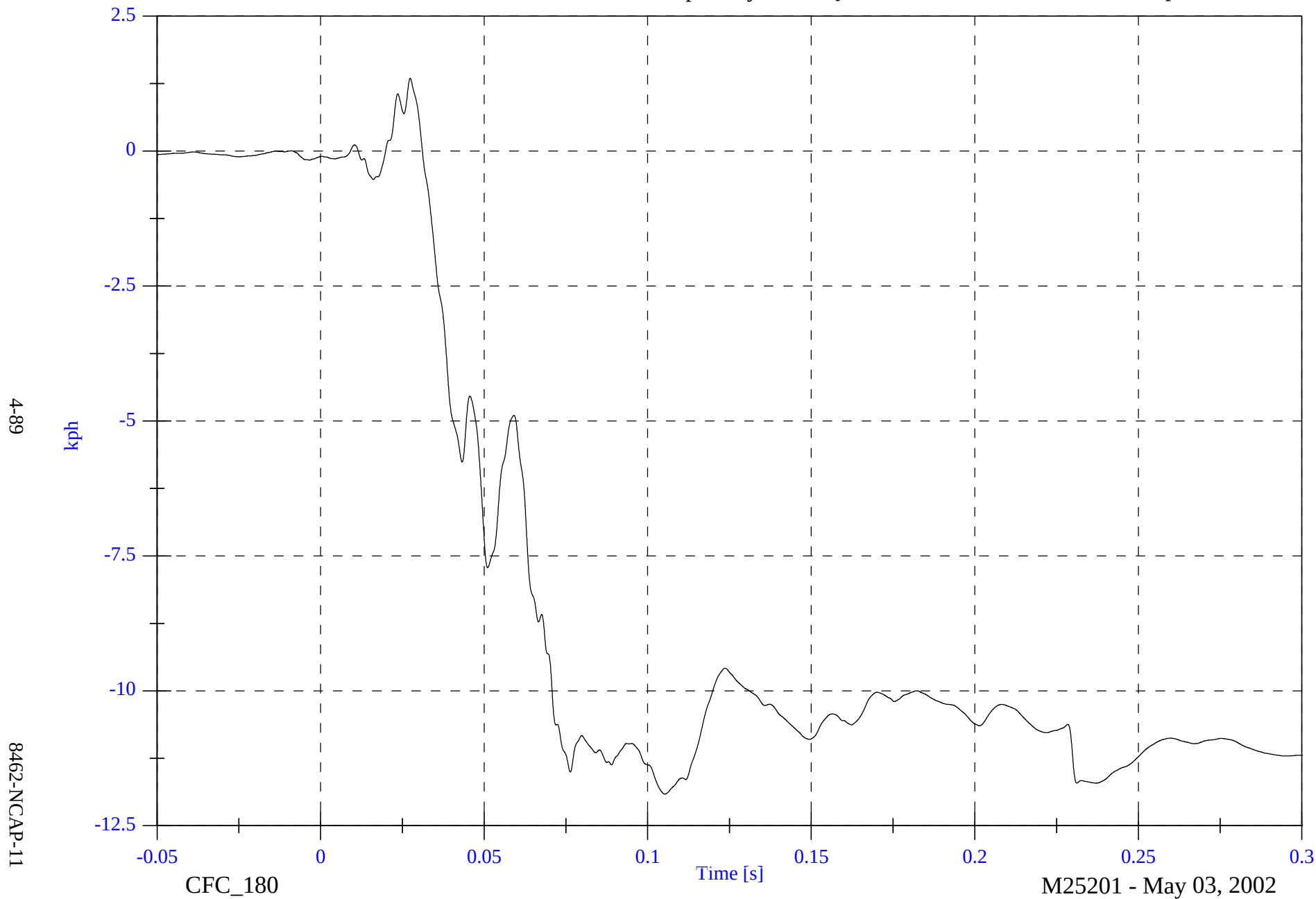


2002 NCAP Test 11 - 2002 Nissan Frontier

P4 Jump seat y Velocity

Max: 1.3 [kph] at 0.027 [s]

Min: -11.9 [kph] at 0.105 [s]

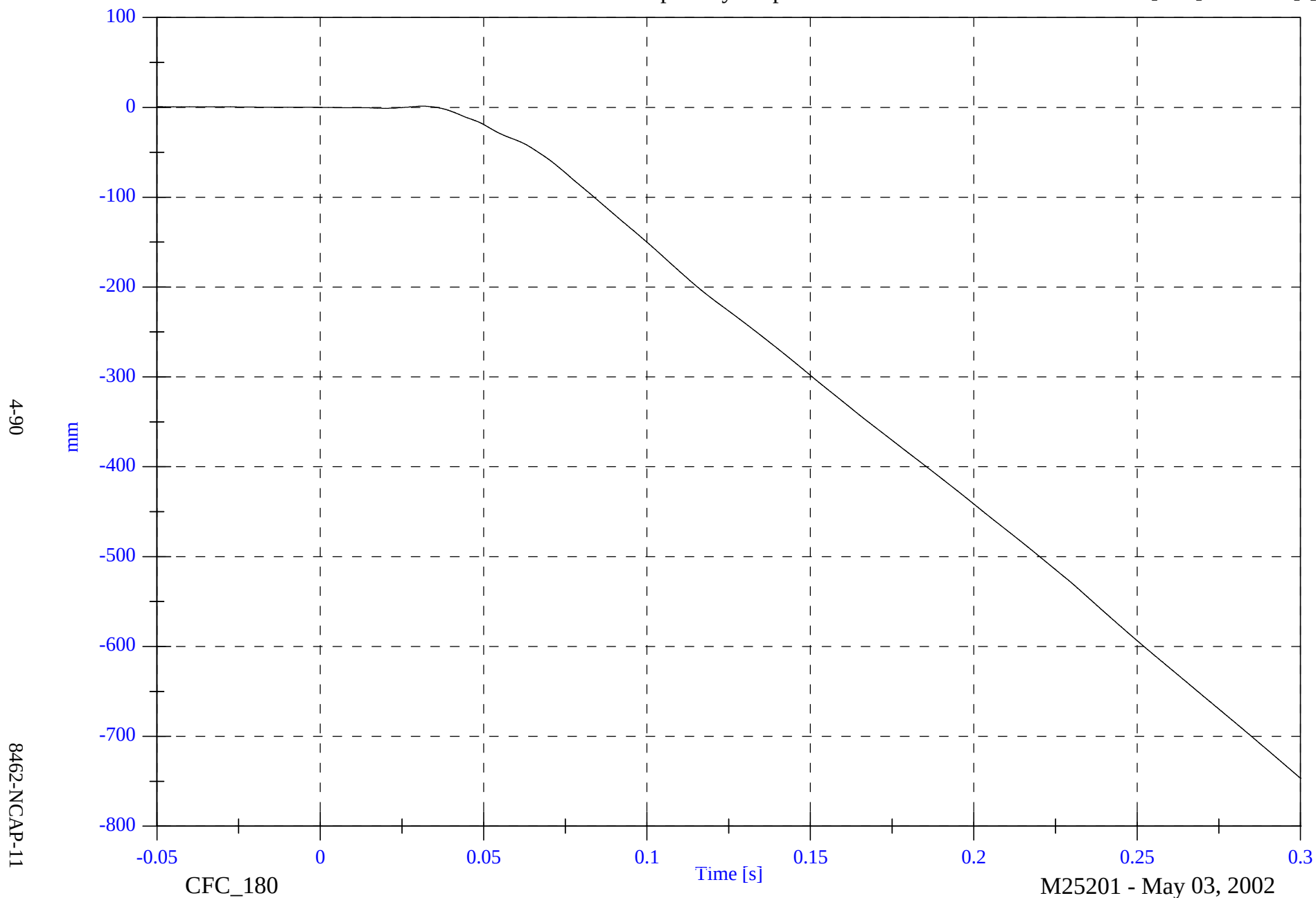


2002 NCAP Test 11 - 2002 Nissan Frontier

P4 Jump seat y Displacement

Max: 1.4 [mm] at 0.031 [s]

Min: -746.5 [mm] at 0.300 [s]

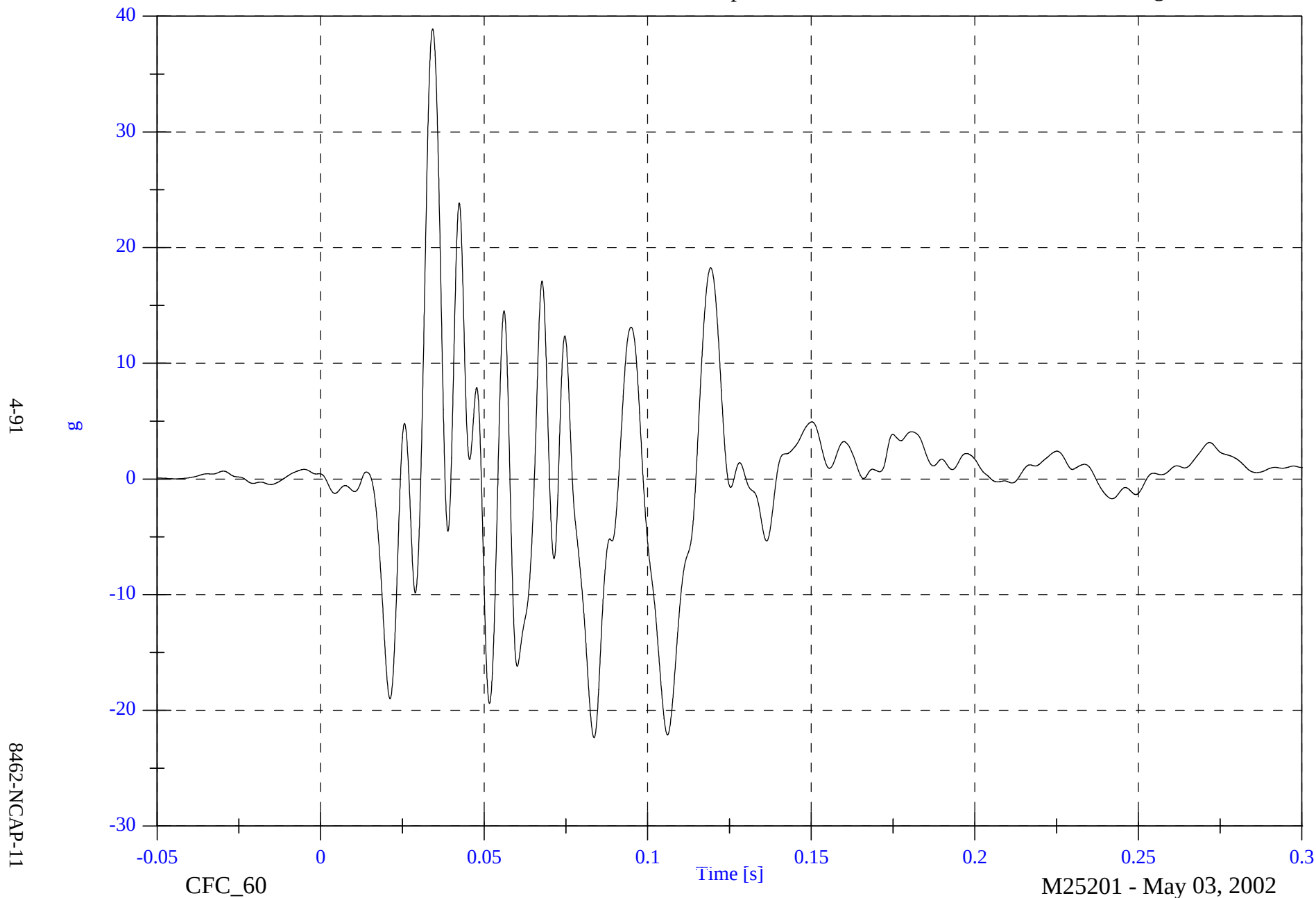


2002 NCAP Test 11 - 2002 Nissan Frontier

P4 Jump seat z

Max: 38.9 [g] at 0.034 [s]

Min: -22.4 [g] at 0.084 [s]

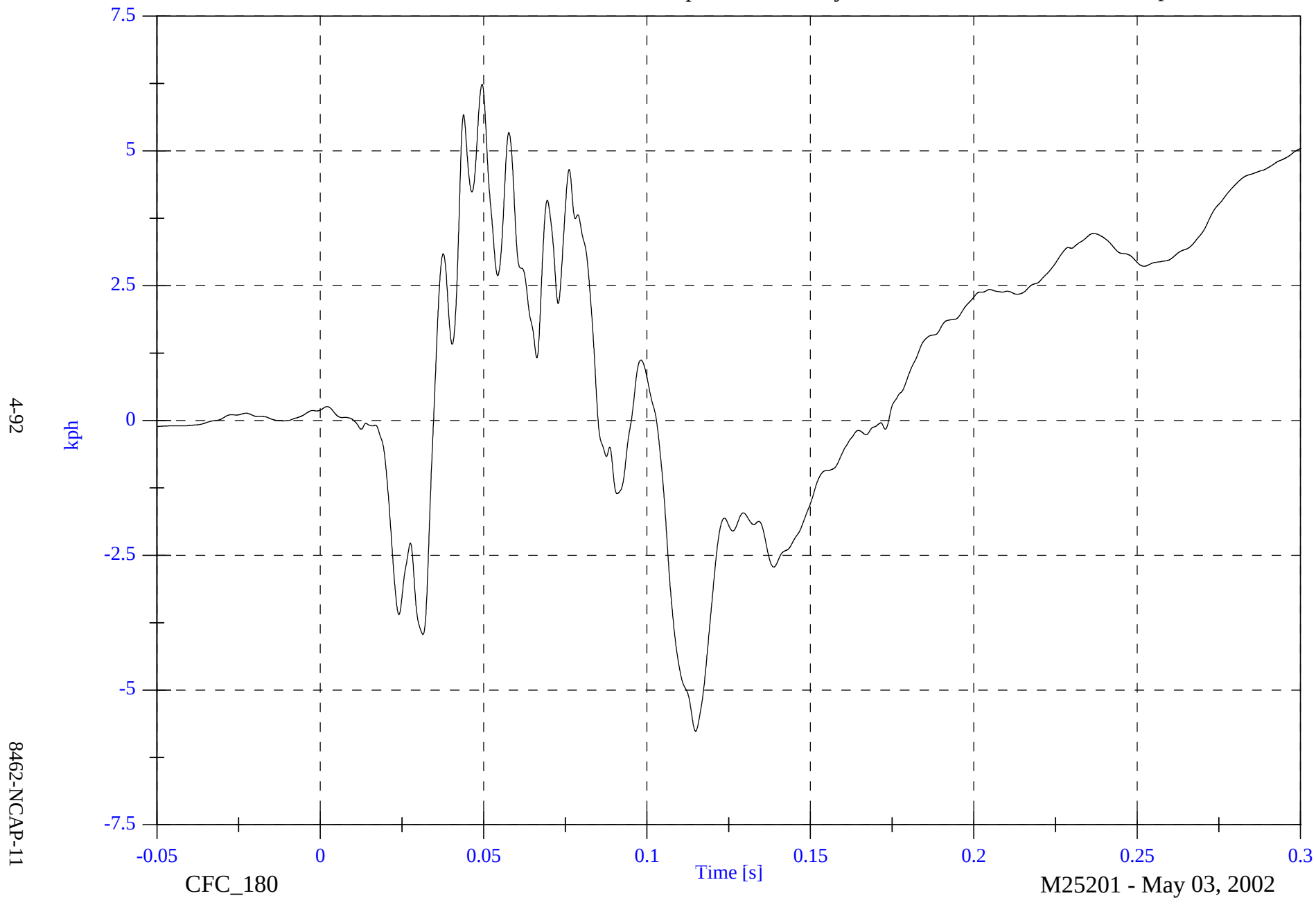


2002 NCAP Test 11 - 2002 Nissan Frontier

Max: 6.2 [kph] at 0.050 [s]

P4 Jump seat z Velocity

Min: -5.8 [kph] at 0.115 [s]

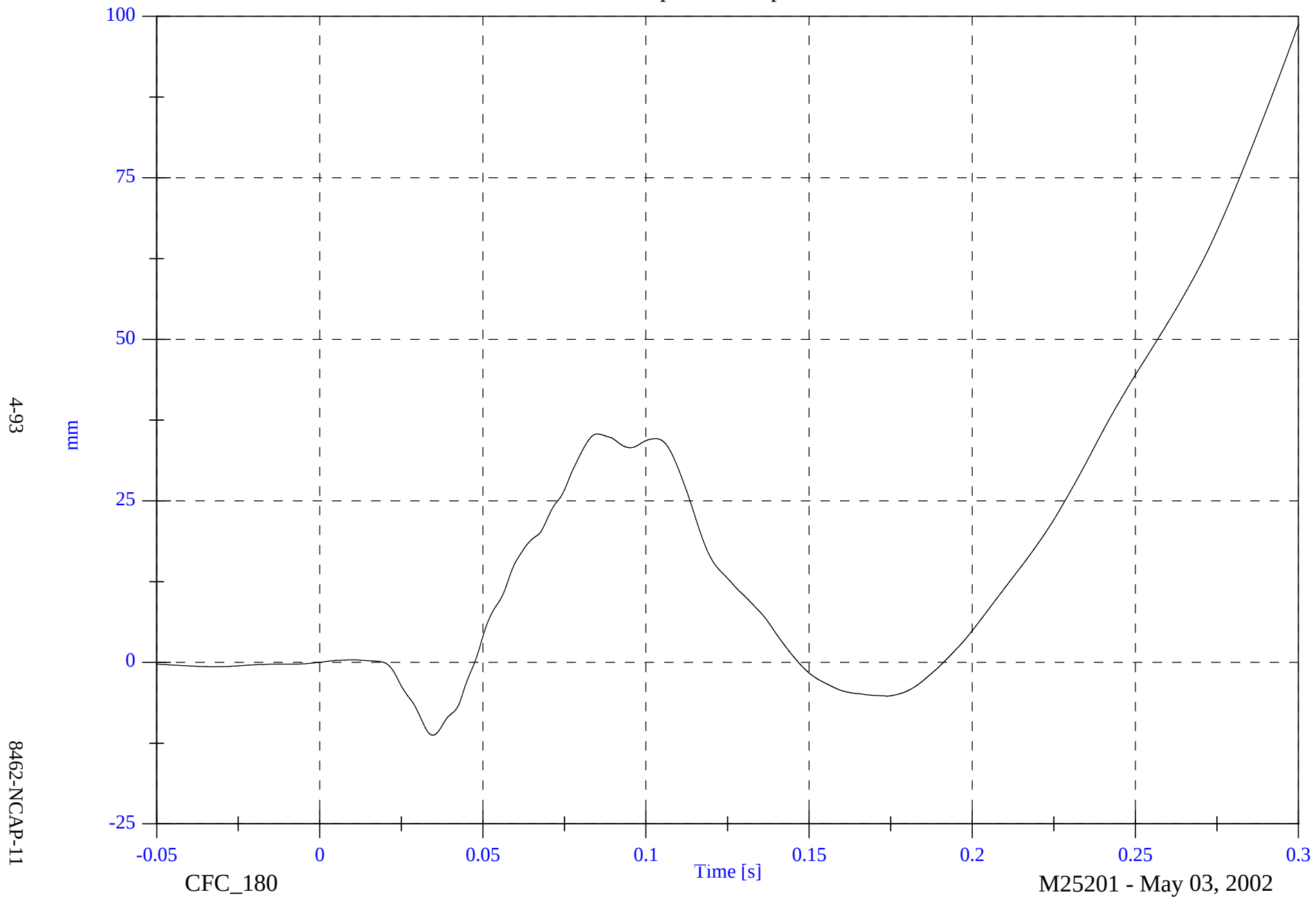


2002 NCAP Test 11 - 2002 Nissan Frontier

P4 Jump seat z Displacement

Max: 98.7 [mm] at 0.300 [s]

Min: -11.3 [mm] at 0.035 [s]



2002 NCAP Test 11 - 2002 Nissan Frontier

P4 Jump Seat Resultant

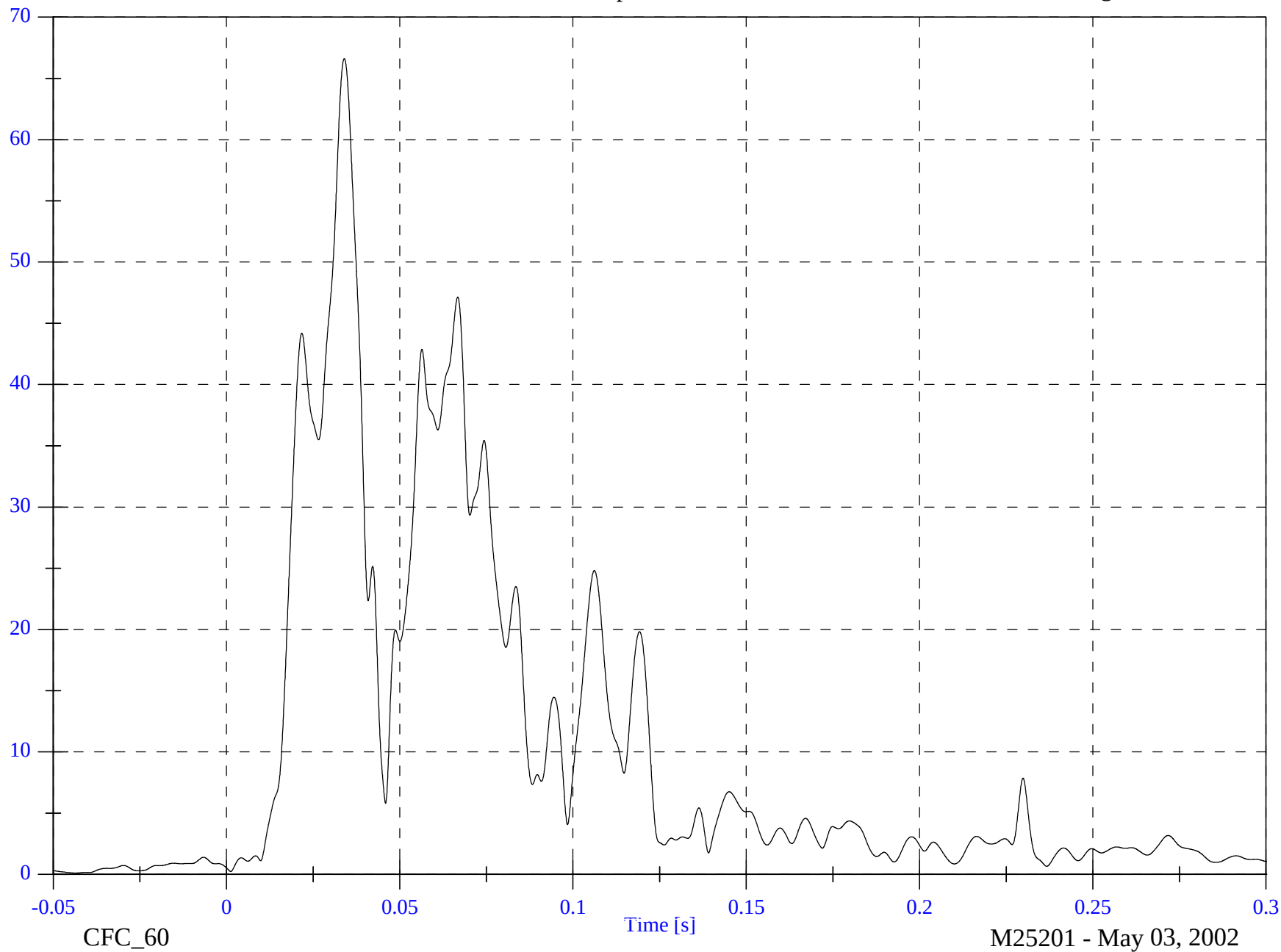
Max: 66.6 [g] at 0.034 [s]

Min: 0.1 [g] at -0.044 [s]

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SECTION 5

CHILD DUMMY CALIBRATION INFORMATION

ATDs Certified by VRTC prior to test program
Certification data is found in the bound report

SECTION 6

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

P572I INSTRUMENTATION

	POSITION #3 (RIGHT) SERIAL NO.: 144		
	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
HEAD AX	ENTRAN	AC-99H12-F18	03-Apr-02
HEAD AY	ENDEVCO	AC-J35770	03-Apr-02
HEAD AZ	ENDEVCO	AC-P18545	27-Feb-02
UPPER NECK FX	DENTON	LC-274Fx	06-Sep-01
UPPER NECK FY	DENTON	LC-274Fy	06-Sep-01
UPPER NECK FZ	DENTON	LC-274Fz	06-Sep-01
UPPER NECK MX	DENTON	LC-274Mx	06-Sep-01
UPPER NECK MY	DENTON	LC-274My	06-Sep-01
UPPER NECK MZ	DENTON	LC-274Mz	06-Sep-01
LOWER NECK FX	DENTON	LC-139Fx	05-Apr-02
LOWER NECK FY	DENTON	LC-139Fy	05-Apr-02
LOWER NECK FZ	GSE	LC-139Fz	05-Apr-02
LOWER NECK MX	DENTON	LC-139Mx	05-Apr-02
LOWER NECK MY	DENTON	LC-139My	05-Apr-02
LOWER NECK MZ	DENTON	LC-139Mz	05-Apr-02
CHEST AX	ENDEVCO	AC-J36744	03-Apr-02
CHEST AY	ENDEVCO	AC-J35847	03-Apr-02
CHEST AZ	ENDEVCO	AC-J35718	03-Apr-02
CHEST DISPLACEMENT X	SERVO	DS-144	10-Apr-02
LOWER SPINE FX	DENTON	LC-127Fx	04-Apr-02
LOWER SPINE FY	DENTON	LC-127Fy	04-Apr-02
LOWER SPINE FZ	DENTON	LC-127Fz	04-Apr-02
LOWER SPINE MX	DENTON	LC-127Mx	04-Apr-02
LOWER SPINE MY	DENTON	LC-127My	04-Apr-02
LOWER SPINE MZ	DENTON	LC-127Mz	04-Apr-02
PELVIS AX	ENDEVCO	AC-J36724	03-Apr-02
PELVIS AY	ENDEVCO	AC-J36719	03-Apr-02
PELVIS AZ	ENDEVCO	AC-J34363	03-Apr-02
LEFT UPPER ASIS FZ	DENTON	LC-3745-101U	04-Apr-02
LEFT LOWER ASIS FZ	DENTON	LC-3745-101L	04-Apr-02
RIGHT UPPER ASIS FZ	DENTON	LC-3746-101U	04-Apr-02
RIGHT LOWER ASIS FZ	DENTON	LC-3746-101L	04-Apr-02

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

P572C INSTRUMENTATION

	POSITION #4 (LEFT) SERIAL NO.: 042		
	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
HEAD AX	ENTRAN	AC-98H10-F10	27-Dec-01
HEAD AY	ENTRAN	AC-98H10-F12	26-Dec-01
HEAD AZ	ENDEVCO	AC-AJ4L1	27-Dec-01
HEAD RAZ	ENDEVCO	AC-ADAT0	27-Dec-01
UPPER NECK FX	DENTON	LC-213-Fx	07-Jan-02
UPPER NECK FY	DENTON	LC-213-Fy	07-Jan-02
UPPER NECK FZ	DENTON	LC-213-Fz	07-Jan-02
UPPER NECK MX	DENTON	LC-213-Mx	07-Jan-02
UPPER NECK MY	DENTON	LC-213-My	07-Jan-02
UPPER NECK MZ	DENTON	LC-213-Mz	07-Jan-02
LOWER NECK FX	DENTON	LC-215-Fx	05-Jan-02
LOWER NECK FY	DENTON	LC-215-Fy	05-Jan-02
LOWER NECK FZ	DENTON	LC-215-Fz	05-Jan-02
LOWER NECK MX	DENTON	LC-215-Mx	05-Jan-02
LOWER NECK MY	DENTON	LC-215-My	05-Jan-02
LOWER NECK MZ	DENTON	LC-215-Mz	05-Jan-02
CHEST AX	ENDEVCO	AC-P23138	24-Nov-01
CHEST AY	ENDEVCO	AC-P19253	24-Nov-01
CHEST AZ	ENDEVCO	AC-P21392	24-Nov-01
CHEST DISPLACEMENT X	SERVO	DS-042	04-Jan-02
PELVIS AX	ENDEVCO	AC-BE95J	27-Dec-01
PELVIS AY	ENDEVCO	AC-DE54J	27-Dec-01
PELVIS AZ	ENTRAN	AC-99H12-F30	27-Dec-01

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

VEHICLE AND MDB INSTRUMENTATION

	VEHICLE AND MDB INSTRUMENTS		
	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
P3 SEAT (X)	ENDEVCO	AC-P15747	27-Feb-02
P3 SEAT (Y)	ENDEVCO	AC-P17237	27-Feb-02
P3 SEAT (Z)	ENDEVCO	AC-P14438	27-Feb-02
P4 SEAT (X)	ENDEVCO	AC-P18948	26-Feb-02
P4 SEAT (Y)	ENDEVCO	AC-P23471	26-Feb-02
P4 SEAT (Z)	ENDEVCO	AC-P22943	26-Feb-02

REMARKS: None