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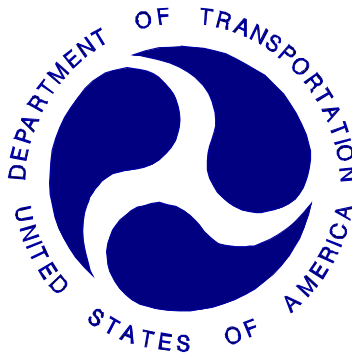
**NEW CAR ASSESSMENT PROGRAM (NCAP)
FRONTAL BARRIER IMPACT TEST**

NISSAN MOTOR COMPANY, LTD.
2002 NISSAN ALTIMA
4-DOOR SEDAN

NHTSA NUMBER: M25200

VERIDIAN TEST NUMBER: 8642-NCAP-06

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



April 10, 2002

FINAL REPORT

PREPARED FOR:

U. S. DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration
Safety Performance Standards
Office of Crashworthiness Standards
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16. Abstract A frontal load cell barrier test of a 2002 Nissan Altima 4-Door Sedan was performed at Veridian Engineering crash test facility in Buffalo, New York, on April 10, 2002. The impact velocity was 56.33 kph and the temperature at the barrier face was 21.1°C. The maximum post-test vehicle crush was 531 mm. The test vehicle was equipped with pretensioning/load limiting 3-point restraint systems, knee bolsters, 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)	497.5	44.7	37.2	244.8	1162.7
Passenger (245)	518.0	44.7	35.6	1203.8	620.3
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SECTION 1

PURPOSE AND SUMMARY OF TEST

1.1 PURPOSE

This 56.33 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 56.33 kph frontal barrier impact test was conducted in accordance with the Office of Crashworthiness Standards Laboratory Indicant Test procedure.

1.2 TEST PROCEDURE

This 56.33-kph 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 calibrated previous to this test. 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 170 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 Altima 4-Door Sedan at a velocity of 56.33 kph. The test was performed at Veridian Engineering on April 10, 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	497.5	44.7	37.2	244.8	1162.7	*	*
Passenger ATD	518.0	44.7	35.6	1203.8	620.3	*	*

*Instrumentation not used in test.

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 531 mm and both the driver and passenger side doors remained closed during the impact event and were operable after the impact.

The driver's visible contact points were as follows: Face to center of airbag, back of head to center of head restraint, chest to airbag, right knee to knee bolster. The passenger's visible contact points were as follows: Face to center of airbag, back of head to center of head restraint, chest to airbag, left and right knees to glove compartment door.

The 2002 Nissan Altima 4-Door Sedan 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.:	M25200	Test Mode:	56.3 kph Frontal Barrier
Test Date:	April 10, 2002	Time:	14:08
		Temperature:	21.1 °C
Vehicle Make/Model/Body Style:	2002 Nissan Altima 4-Door Sedan		
Vehicle Test Weight:	1609.0	kg	
Vehicle/Barrier Impact Angle:	0	°	
Impact Velocity:	56.33	kph	
Maximum Static Crush:	531	mm	
Vehicle Rebound:	1061	mm	
<u>DUMMIES:</u>		<u>DRIVER</u>	<u>PASSENGER</u>
Type:		572E	572E
Restraint System:		Seatbelt (pretensioning/load limiting), Airbag, Knee Bolster	Seatbelt (pretensioning/load limiting), Airbag, Knee Bolster
Number of Data Channels:	170		
Number of Cameras:	1	Real Time	
	16	High Speed	
<u>DOOR OPENING DATA:</u>	Door remained closed and latched; Door opened without tools - Left Front		
	Door remained closed and latched; Door opened without tools - Right Front		
Front Seat(s) Data:		<u>DRIVER</u>	<u>PASSENGER</u>
Seat Track Failure: (mm of shift)		0	0
Seat Back Failure:		Seat back did not break or fail, Seat back deformed 40 mm forward as measured at the top of the seat back	Seat back did not break or fail, Seat back deformed 140 mm forward as measured at the top of the seat back
<u>VISIBLE DUMMY CONTACT POINTS:</u>		<u>DRIVER</u>	<u>PASSENGER</u>
Head:		Face to center of airbag; Back of head to center of head restraint	Face to center of airbag; Back of head to center of head restraint
Abdomen:		None	None
Chest:		Chest to airbag	Chest to airbag
Knees:		Right knee to right knee bolster	Left knee to left quarter of glove compartment door; Right knee to right third of glove compartment door

DATA SHEET NO. 2 GENERAL TEST AND VEHICLE PARAMETER DATA

TEST VEHICLE INFORMATION:

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

NHTSA No. : M25200 ; VIN: 1N4AL11D32C145995 ; Color: Silver

Engine Data: 4 cylinders; - CID; 2.5 Liters; - cc

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

Transmission Data: 4 speeds; - Manual; X Automatic; - Overdrive

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

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

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

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

Date Received: 2/27/02 ; Odometer Reading 90 km

Selling Dealer: Ricart Nissan, Inc.

& Address: 4255 S Hamilton Rd., Columbus OH, 43227

DATA FROM TIRE VEHICLE'S CERTIFICATION LABEL:

Vehicle Manufactured by: Nissan Motor Company, Ltd.

Date of Manufacture 10/01

GVWR: 1906 kg; GAWR: 1020 kg FRONT; 893 kg REAR

DATA FROM TIRE PLACARD:

Tire Pressure with Maximum Capacity Vehicle Load: 241 kpa FRONT

241 kpa REAR

Recommended Tire Size: P205/65R16

* Recommended Cold Tire Pressure: 200 kpa FRONT; 200 kpa REAR

Size of Tires on Test Vehicle: P205/65R16 ; Manufacturer: Continental

Vehicle Capacity Data:

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

Number of Occupants: 2 Front; 3 Rear; 5 Total

Vehicle Capacity Weight (VCW) = 390 kg

No. of Occupants x 68.04 kg = 340.2 kg

Rated Cargo/Luggage Weight (RCLW) = 49.8 kg

*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>439.5</u>	kg	Right Rear	=	<u>262.5</u>	kg
Left Front	=	<u>424.0</u>	kg	Left Rear	=	<u>288.0</u>	kg
TOTAL FRONT	=	<u>863.5</u>	kg	TOTAL REAR	=	<u>550.5</u>	kg
TOTAL DELIVERED WEIGHT	=	<u>1414.0</u>	kg				
% of Total Front of Vehicle Weight	=	<u>61.1%</u>		% of Total Rear Weight	=	<u>38.9%</u>	%

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:

Total Delivered Weight (UDW)	=	<u>1414.0</u>	kg
Rated Cargo/Luggage Weight (RCLW)	=	<u>49.8</u>	kg
Weight of 2 p.572 Dummies @ 76 each	=	<u>152</u>	kg
TARGET TEST WEIGHT	=	<u>1615.8</u>	kg

WEIGHT OF TEST VEHICLE WITH TWO DUMMIES AND 43.0 KG OF CARGO WEIGHT:

Right Front	=	<u>461.5</u>	kg	Right Rear	=	<u>327.0</u>	kg
Left Front	=	<u>469.5</u>	kg	Left Rear	=	<u>351.0</u>	kg
TOTAL FRONT	=	<u>931.0</u>	kg	TOTAL REAR	=	<u>678.0</u>	kg
TOTAL TEST WEIGHT	=	<u>1609.0</u>	kg				
% of Total Front Weight	=	<u>57.9%</u>	%	% of Total Rear Weight	=	<u>42.1%</u>	%
Weight of Ballast Secured in Vehicle Trunk Area	=	<u>0</u>	kg				
Vehicle Components Removed for Weight Reduction:				<u>tail lights, trunk lid, floor mats, muffler, stoddard</u>			

VEHICLE ATTITUDE (all dimension in millimeters):

AS DELIVERED:	RF	<u>736</u>	LF	<u>730</u>	RR	<u>707</u>	LR	<u>702</u>
FULLY LOADED:	RF	<u>722</u>	LF	<u>716</u>	RR	<u>685</u>	LR	<u>679</u>
AS TESTED:	RF	<u>726</u>	LF	<u>718</u>	RR	<u>685</u>	LR	<u>679</u>
Vehicle's Wheel Base:		<u>2805</u>	mm					
Location of Vehicle's C.G.:		<u>1182</u>	mm rearward of front wheel center.					

FUEL SYSTEM DATA:

Fuel System Capacity From Owner's Manual	=	<u>75.7</u>	liters
Usable Capacity Figure Furnished by COTR	=	<u>75.0</u>	liters
Test Volume Range (92 to 94% of Usable Capacity)	=	<u>69</u>	to <u>70.5</u> liters
ACTUAL TEST VOLUME	=	<u>32.2</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>
Details of Fuel System: The fuel tank is located ahead of the rear axle; The fuel lines are routed along the underbody inboard of the left frame rail; The fuel filler is located on the left rear quarter panel rear of the right rear wheel.			

† Vehicle contained a CRS in the rear seat. Stoddard volume was approved by COTR to achieve target test weight.

DATA SHEET NO. 3 POST IMPACT DATA

TYPE OF TEST:

Type of Test: Frontal Barrier Impact Angle: 0°
Test Date: April 10, 2002 Time: 14:08 Temperature: 21.1 °C
Vehicle NHTSA No.: M25200
Required Impact Velocity Range: 55.5 to 57.1 kph

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

Trap No. 1 = 56.33 kph; Trap No. 2 = 56.33 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>4809</u> ; C/L = <u>4864</u> ; Right = <u>4811</u>
Post-Test	Left = <u>4312</u> ; C/L = <u>4333</u> ; Right = <u>4338</u>
Crush	Left = <u>497</u> ; C/L = <u>531</u> ; Right = <u>473</u>
AVERAGE	= <u>500</u> mm

VEHICLE REBOUND: (From rigid barrier only.)

Distance from front of test vehicle to impact point:

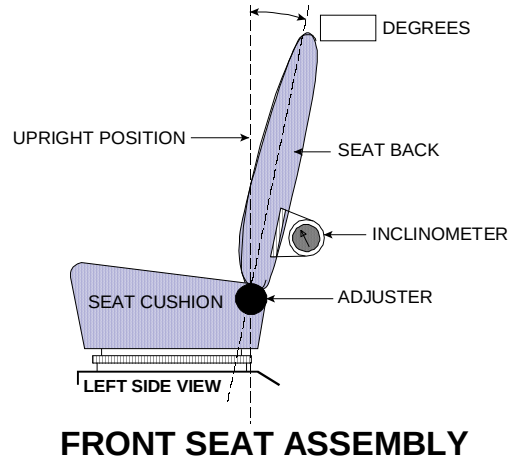
	Left = <u>984</u> ; C/L = <u>1031</u> ; Right = <u>1167</u>
AVERAGE	= <u>1061</u> mm

DATA SHEET NO. 4 TEST VEHICLE INFORMATION

VEHICLE IDENTIFICATION:

Model Year : 2002 Vehicle Model: Nissan Altima Body Style : 4-Door Sedan

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.



Seat back angle for driver's seat: 21 degrees

Measurement instructions: With the seatback full upright position defined as detent "0," recline the seat rearward to the 5th notch. The should be 10.5 degrees back from vertical in this position.

Seat back angle for passenger's seat: 21 degrees

Measurement instructions: With the seatback full upright position defined as detent "0," recline the seat rearward to the 5th notch. The should be 10.5 degrees back from vertical in this position.

2. Seat Fore and Aft Positioning

Positioning of the driver's seat: The driver seat was power adjustable. The seat was placed in the full down and the middle of its fore/aft travel (117mm from full forward, where the seat travel was 234mm).

Positioning of the passenger's seat: With the forward most position defined as detent "0," the seat was placed in detent 10. A total of 21 positions were possible.

3. Fuel Tank Capacity Data

3.1 A. "Usable Capacity" of the standard equipment fuel tank is 75.7 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 = 75 liters

3.2 Amount of Stoddard solvent added to vehicle(s) used for certification test(s) = 32.2 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.

The fuel pump operates for 5 seconds after the ignition is switched "ON", operates continuously while the engine is running, and operates for 1.5 seconds after the engine stops running.

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

4. STEERING COLUMN ADJUSTMENTS:

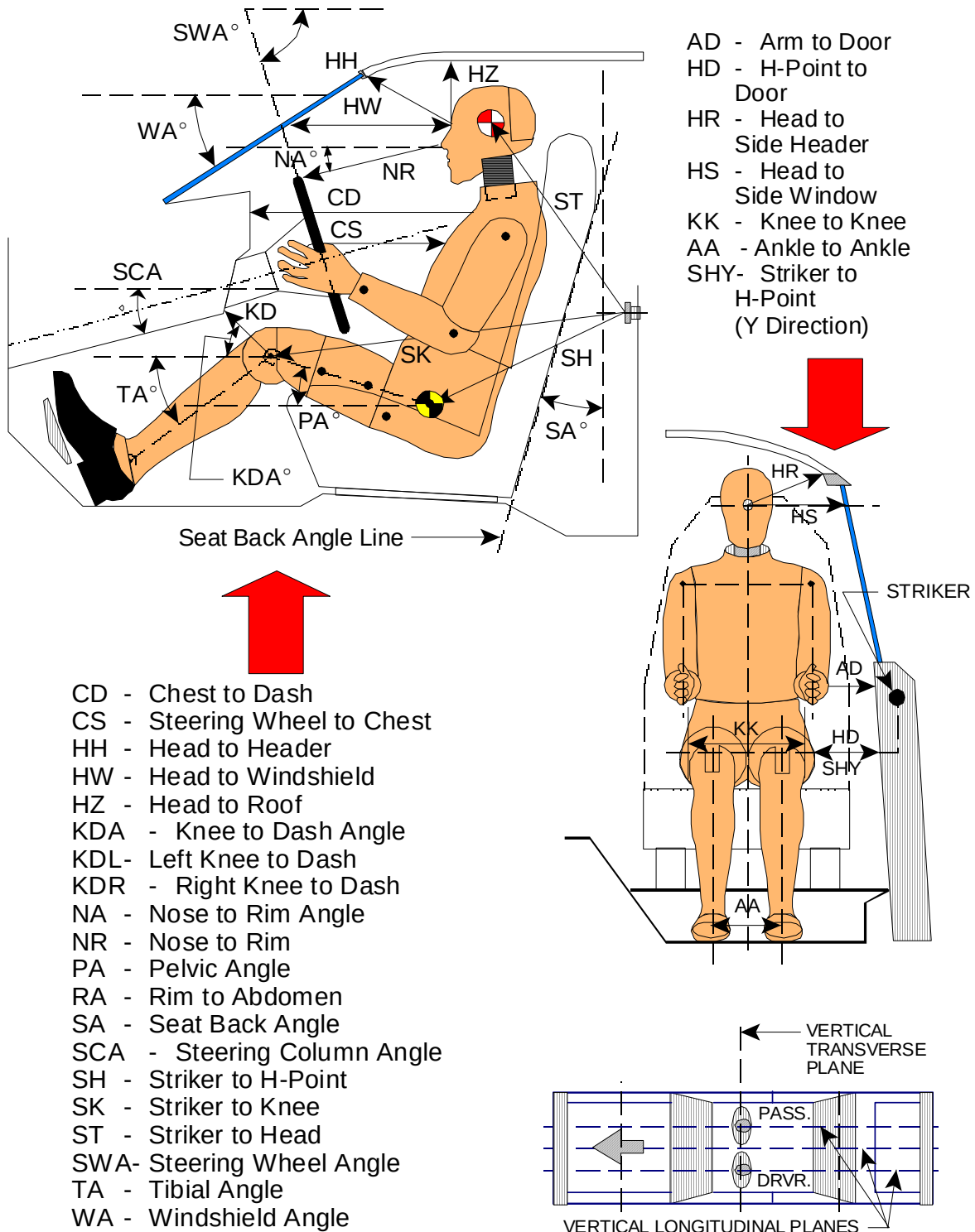
Steering wheel and column adjustments are made so that the steering wheel hub is at the geometric center of the locus it describes when it is moved through its full range of driving positions. If the tested vehicle has any of these adjustments, does your company use any specific procedures to determine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

Operational Instructions: Where the full up position is detent "0," the steering column was placed in
the 3rd notch (column angle of 25.5 degrees). The telescopic column was then positioned at the middle of its
telescopic range.

5. SEAT BELT UPPER ANCHORAGE

Nominal design riding position: The adjustable anchorage was positioned in its top most position.

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



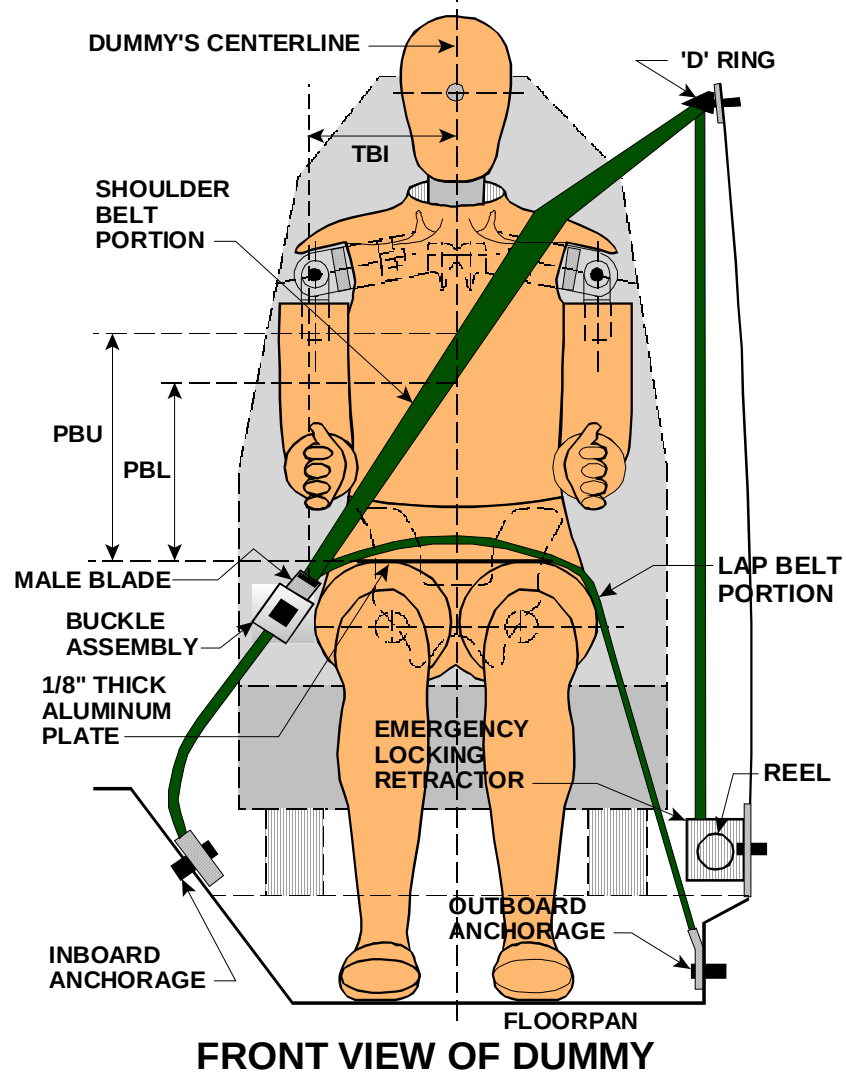
DATA SHEET NO. 5 FRONT SEAT DUMMY POSITIONING MEASUREMENTS IN VEHICLE (cont.)

	DRIVER (Serial #150)			PASS. (Serial #245)		
WA ⁰	26 deg.			N/A		
SWA ⁰	64.5 deg.			N/A		
SCA ⁰	25.5 deg.			N/A		
SA ⁰	21 deg.			21 deg.		
HZ	161			158		
HH	328			328		
HW	635			645		
HR	220			220		
NR	399	Angle	9 deg.	N/A		
CD	554			577		
CS	280			N/A		
RA	167			N/A		
KDL	190	Angle (KDA)	29 deg.	168		
KDR	158			202	Angle (KDA)	27 deg.
PA ⁰	23.8 deg.			23.5 deg.		
TA ⁰	39 deg.			35 deg.		
KK	340			310		
AA	361			263		
ST	520	Angle	8 deg.	537	Angle	9 deg.
SK	605	Angle	94 deg.	605	Angle	93 deg.
SH	260	Angle	122 deg.	253	Angle	120 deg.
SHY	245			236		
HS	320			322		
HD	149			143		
AD	105			110		

Dimensions in millimeters

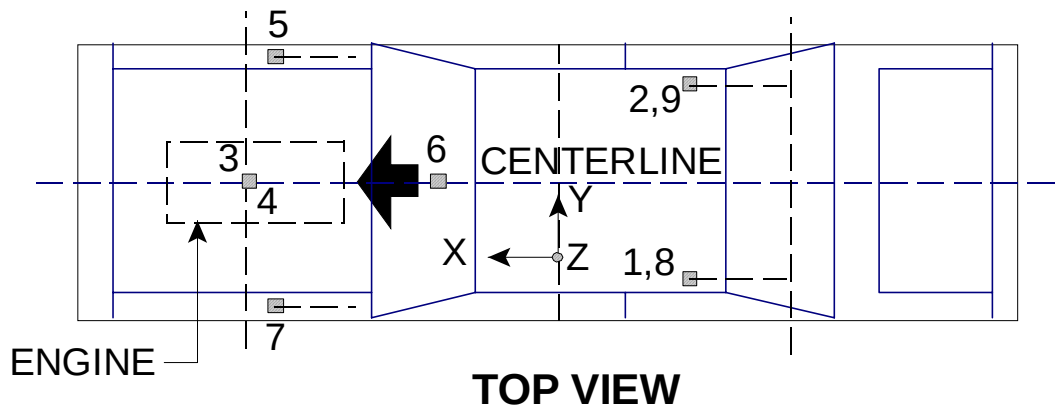
DATA SHEET NO. 6 SEAT BELT POSITIONING DATA

SEAT BELT POSITIONING DATA

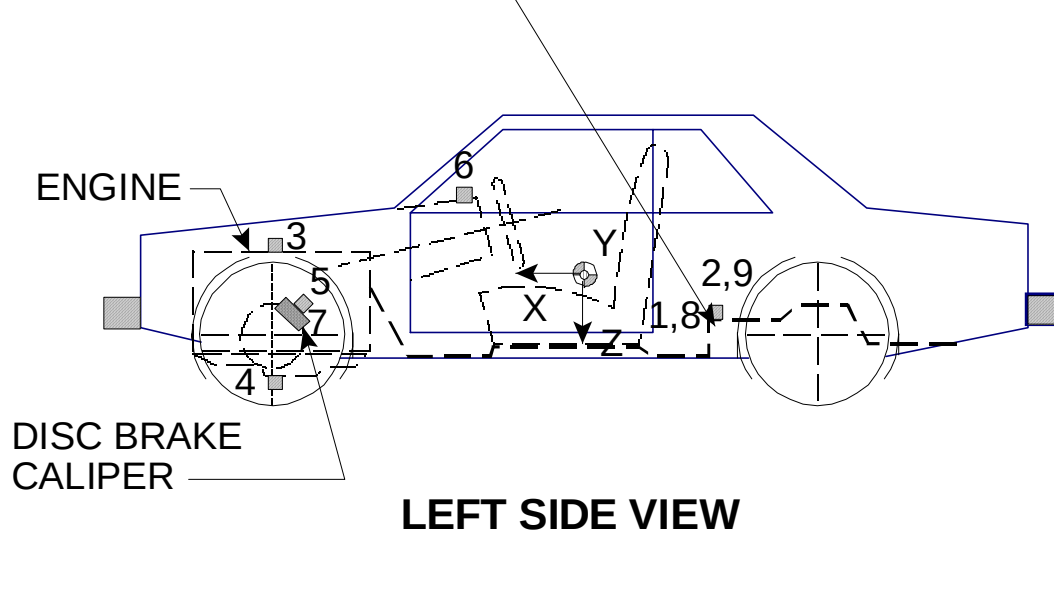


	DRIVER DUMMY (mm)	PASSENGER DUMMY (mm)
PBU -- Top surface of alum. plate to upper edge	342	345
PBL-- Top surface of alum. plate to belt lower edge	262	265
LAP BELT TENSION	10 N	10 N
SHOULDER BELT TENSION	Retractor	Retractor

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	1912	-623	-348
2	Right Rear Seat Cross Member X	1897	612	-347
3	Top of Engine Block	4183	-76	-676
4	Bottom of Engine	4145	228	-140
5	Disc Brake Caliper @ Right Side	-	-	-
6	Instrument Panel	3386	867	-336
7	Disc Brake Caliper @Left Side	-	-	-
8	Left Rear Seat Cross Member Z	1912	-623	-348
9	Right Rear Seat Cross Member Z	1897	612	-347

LOCATION NUMBER	DESCRIPTION	MAXIMUM VALUE (g's)			
		Pos.	msec.	Neg.	msec.
1	Left Rear Seat Cross Member X	1.9	128.9	-35.0	71.9
2	Right Rear Seat Cross Member X	2.0	128.9	-34.5	69.4
3	Top of Engine Block	48.8	46.1	-120.0	35.0
4	Bottom of Engine	24.5	45.3	-124.4	31.3
5	Disc Brake Caliper @ Right Side	-	-	-	-
6	Instrument Panel	15.8	67.4	-64.2	47.3
7	Disc Brake Caliper @Left Side	-	-	-	-
8	Left Rear Seat Cross Member Z	6.2	72.5	-7.3	41.9
9	Right Rear Seat Cross Member Z	2.8	89.2	-9.1	26.1

DATA SHEET NO. 8 DUMMY INJURY CRITERIA VALUES

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

NHTSA Test No.: M25200 Test Date: April 10, 2002

		MAXIMUM VALUE							
		Driver				Passenger			
DESCRIPTION	Unit	Pos	msec	Neg	msec	Pos	msec	Neg	msec
Head 9 Array X Arm Y	g	3.9	103.6	-16.6	69.5	24.4	62.6	-8.3	70.5
Head 9 Array X Arm Z	g	20.8	95.5	-6.5	126.2	24.8	50.7	-8.8	64.6
Head 9 Array Y Arm X	g	12.5	249.3	-59.2	69.2	6.2	224.4	-61.5	73.3
Head 9 Array Y Arm Z	g	19.4	67.3	-2.2	126.7	21.3	69.1	-4.9	126.2
Head 9 Array Z Arm X	g	18.4	249.1	-65.5	72.9	8.8	218.4	-77.4	73.6
Head 9 Array Z Arm Y	g	2.6	126.9	-16.6	66.4	17.8	64.3	-5.7	69.2
Head X	g	12.9	252.0	-55.4	78.6	6.1	220.9	-56.0	73.5
Head Y	g	3.1	22.6	-13.7	69.4	12.5	76.5	-2.6	50.0
Head Z	g	17.8	69.4	-1.4	130.0	19.6	86.1	-3.9	127.5
Head Resultant	g	59.2	69.2	-	-	57.5	73.5	-	-
Redundant Head X	g	13.0	250.9	-55.4	68.8	6.2	220.8	-55.5	75.0
Redundant Head Y	g	3.5	22.6	-14.3	69.4	11.9	77.3	-2.8	70.4
Redundant Head Z	g	17.7	69.8	-1.6	129.9	19.3	86.1	-4.0	126.2
Redundant Head Resultant	g	59.2	69.2	-	-	57.1	75.0	-	-
Upper Neck Fx	N	114.5	68.7	-350.2	97.8	277.3	77.2	-369.0	64.7
Upper Neck Fy	N	226.1	79.2	-95.4	66.6	82.6	97.9	-102.9	174.4
Upper Neck Fz	N	974.9	73.0	-77.9	130.9	1227.2	64.9	-209.4	126.1
Upper Neck F Resultant	N	978.1	73.0	-	-	1281.0	64.8	-	-
Upper Neck Mx	N-m	18.8	69.4	-6.3	101.7	7.3	117.0	-12.9	78.9
Upper Neck My	N-m	28.3	67.8	-12.9	97.1	27.1	132.6	-27.8	91.9
Upper Neck Mz	N-m	21.1	89.4	-7.9	141.3	7.3	137.9	-13.3	79.8
Upper Neck M Resultant	N-m	35.4	68.9	-	-	30.7	90.4	-	-
Chest X	g	3.5	205.5	-45.0	69.5	5.4	125.0	-45.4	84.0
Chest Y	g	3.9	99.3	-3.4	36.3	2.8	31.2	-5.9	87.9
Chest Z	g	7.4	24.0	-10.5	63.5	6.6	24.2	-5.2	72.9
Chest Resultant	g	45.4	69.5	-	-	45.5	84.0	-	-

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

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

NHTSA Test No.: M25200 Test Date: April 10, 2002

		MAXIMUM VALUE							
		Driver				Passenger			
DESCRIPTION	Unit	Pos	msec	Neg	msec	Pos	msec	Neg	msec
Redundant Chest X	g	3.5	205.4	-44.8	69.6	5.5	125.1	-45.0	83.6
Redundant Chest Y	g	4.0	99.0	-3.5	35.1	2.9	31.3	-6.1	88.4
Redundant Chest Z	g	7.2	24.0	-10.8	63.6	6.5	24.2	-5.6	73.1
Redundant Chest Resultant	g	45.3	69.6	-	-	45.2	83.7	-	-
Chest Displacement	mm	0.1	7.2	-37.2	69.9	0.0	16.9	-35.6	91.3
Pelvic X	g	4.6	167.7	-41.3	66.4	4.2	132.2	-40.5	61.9
Pelvic Y	g	7.7	67.7	-7.1	21.7	6.8	46.7	-7.8	82.1
Pelvic Z	g	2.9	180.9	-34.4	74.3	2.8	119.5	-28.1	78.1
Pelvic Resultant	g	51.9	66.5	-	-	44.8	61.9	-	-
Left Femur	N	1412.2	62.0	-244.8	176.4	674.1	36.7	-1203.8	61.9
Right Femur	N	1126.5	56.0	-1162.7	69.0	1305.7	56.4	-620.3	39.5
Left Knee Slider Dx	mm	0.1	114.9	-0.1	207.7	0.6	51.8	-5.5	64.3
Right Knee Slider Dx	mm	0.4	101.8	-0.2	208.7	0.4	59.0	0.0	39.6
Left Upper Tibia Mx	N-m	50.1	67.1	-13.1	42.1	7.3	44.1	-26.2	71.7
Left Upper Tibia My	N-m	20.2	137.6	-69.6	64.9	48.6	67.3	-109.7	48.4
Left Lower Tibia Fz	N	126.4	132.2	-1738.7	38.6	220.2	166.7	-3661.7	48.3
Left Lower Tibia Mx	N-m	59.7	67.7	-9.1	40.0	8.7	76.0	-38.9	50.7
Left Lower Tibia My	N-m	29.3	44.7	-24.6	27.1	55.0	66.9	-14.6	36.8
Right Upper Tibia Mx	N-m	13.5	63.9	-19.6	52.3	7.7	189.4	-32.9	94.5
Right Upper Tibia My	N-m	14.5	135.8	-108.1	51.8	29.1	132.0	-77.7	55.9
Right Lower Tibia Fz	N	115.0	140.3	-3094.5	48.9	108.3	161.5	-2530.9	40.0
Right Lower Tibia Mx	N-m	27.3	65.4	-21.8	51.1	1.3	33.4	-12.5	71.0
Right Lower Tibia My	N-m	248.5	70.7	-29.3	51.5	35.2	38.7	-41.1	53.4
Left Foot Aft Ax	g	16.3	39.3	-50.1	26.8	9.7	98.3	-75.5	49.2
Left Foot Aft Az	g	4.7	172.1	-44.7	37.3	6.6	66.0	-53.2	47.0
Left Foot Fore Az	g	57.0	31.9	-144.2	25.0	53.0	66.0	-82.9	37.2
Right Foot Aft Ax	g	27.2	55.7	-52.1	33.6	7.4	96.0	-49.5	51.9
Right Foot Aft Az	g	12.0	60.0	-98.7	48.6	3.7	22.3	-48.1	37.8
Right Foot Fore Az	g	91.2	36.5	-170.1	31.9	12.3	21.9	-48.4	30.3
Lap Belt Load	N	-	-	-	-	-	-	-	-
Torso Belt	N	-	-	-	-	-	-	-	-

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

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

NHTSA Test No.: M25200 Test Date: April 10, 2002

HEAD INJURY CRITERIA (HIC)				
	HIC**	t ₁ (msec)	t ₂ (msec)	Average Acceleration t ₁ to t ₂
Position #1 - Driver	497.5	58.8	93.4	46.0
Position #2 - Passenger	518.0	61.2	93.3	48.2

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

CLIP SUMMARY*				
	CLIP (g's)	t ₁ (msec)	t ₂ (msec)	CSI
Position #1 - Driver	44.7	67.6	70.6	411.3
Position #2 - Passenger	44.7	82.3	85.3	366.0

* 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 Altima 4-Door Sedan

NHTSA Test No.: M25200 Test Date: April 10, 2002

HEAD INJURY CRITERIA (HIC) REDUNDANT				
	HIC**	t ₁ (msec)	t ₂ (msec)	Average Acceleration t ₁ to t ₂
Position #1 - Driver	497.9	59.2	93.7	46.1
Position #2 - Passenger	497.6	61.9	93.4	47.7

** 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	44.7	67.6	70.6	413.4
Position #2 - Passenger	44.9	80.9	84.7	362.8

* 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

1931

1930

Shoulder belt length as measured
on Part 572 Dummy.

886

882

Lap belt length as measured
on Part 572 Dummy.

875

878

SHOULDER BELT SPOOL-OFF DATA:

As determined by film analysis.

-

-

As determined mechanically.

-

-

As determined electronically.

*

*

BELT STRETCH DATA:

Measured electronically between shoulder
belt load cell and the "D" ring.

* mm/m

* mm/m

Measured mechanically.

14 mm/m

14 mm/m

Dimensions in millimeters

*Instrumentation not used in test.

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 10 mm molding.

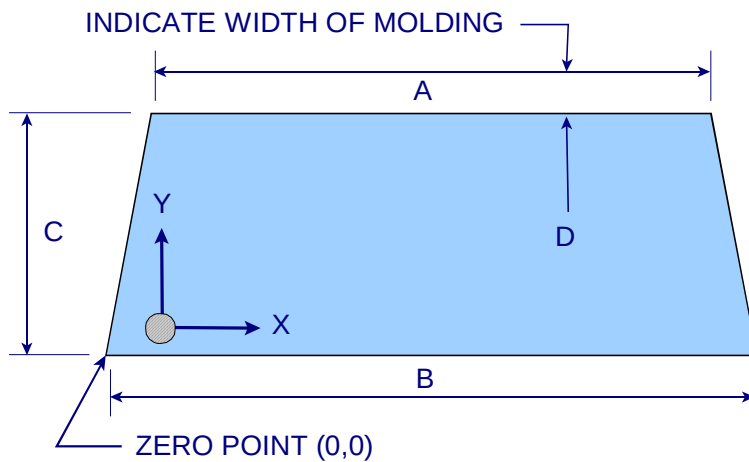
FMVSS 212 REQUIREMENTS:

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	2177.5	2177.5	100.0%
LEFT SIDE	2177.5	2177.5	100.0%
TOTAL	4355	4355	100.0%

AREA OF RETENTION FAILURE:



DIMENSIONS (mm)	
A	1175
B	1530
C	825
D	10

FRONT VIEW OF WINDSHIELD

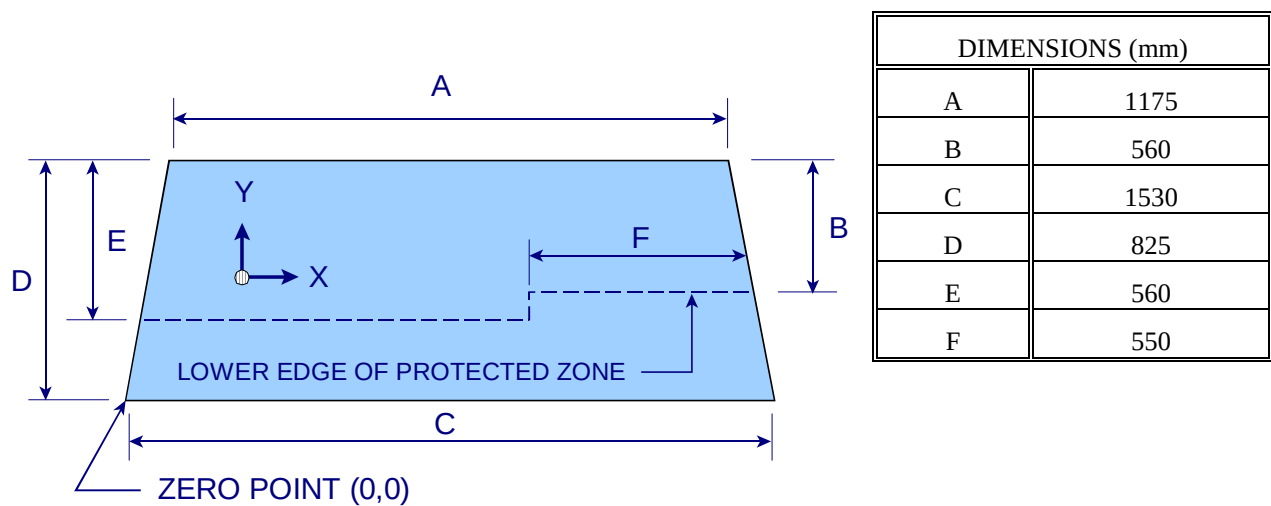
FAILURE DETAILS: None

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

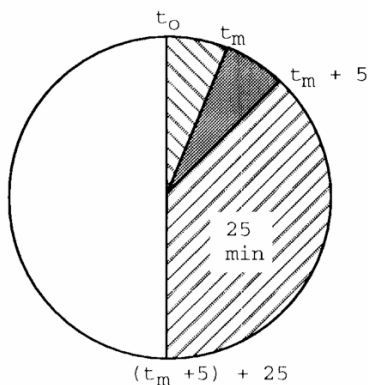
NHTSA TEST No.: M25200 TEST DATE: April 10, 2002
VEHICLE MAKE/MODEL: 2002 Nissan Altima 4-Door Sedan

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

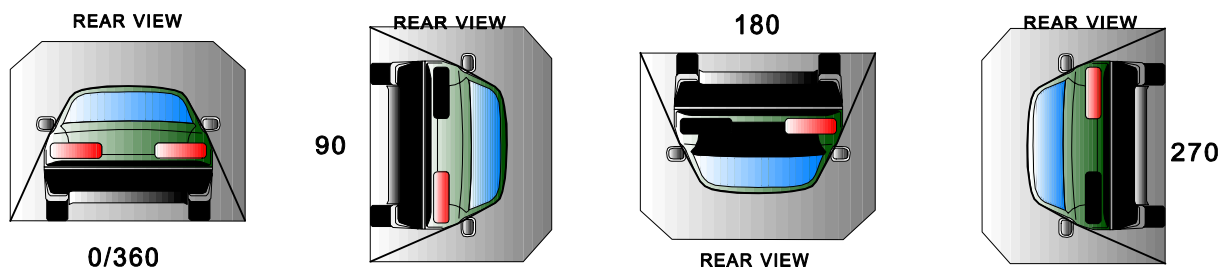
ACTUAL	MAX ALLOWED
0	28 g
0	141 g
0	28 g/min.

SOLVENT SPILLAGE DETAILS: None

DATA SHEET NO. 13 - ROLLOVER DATA

Vehicle: 2002 Nissan Altima 4-Door Sedan

NHTSA No.: M25200



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	15	seconds	5	minutes	6	minutes	15	seconds	7	minutes
90° - 180°	1	minutes	5	seconds	5	minutes	6	minutes	5	seconds	7	minutes
180°-270°	1	minutes	9	seconds	5	minutes	6	minutes	9	seconds	7	minutes
270°-360°	1	minutes	7	seconds	5	minutes	6	minutes	7	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:

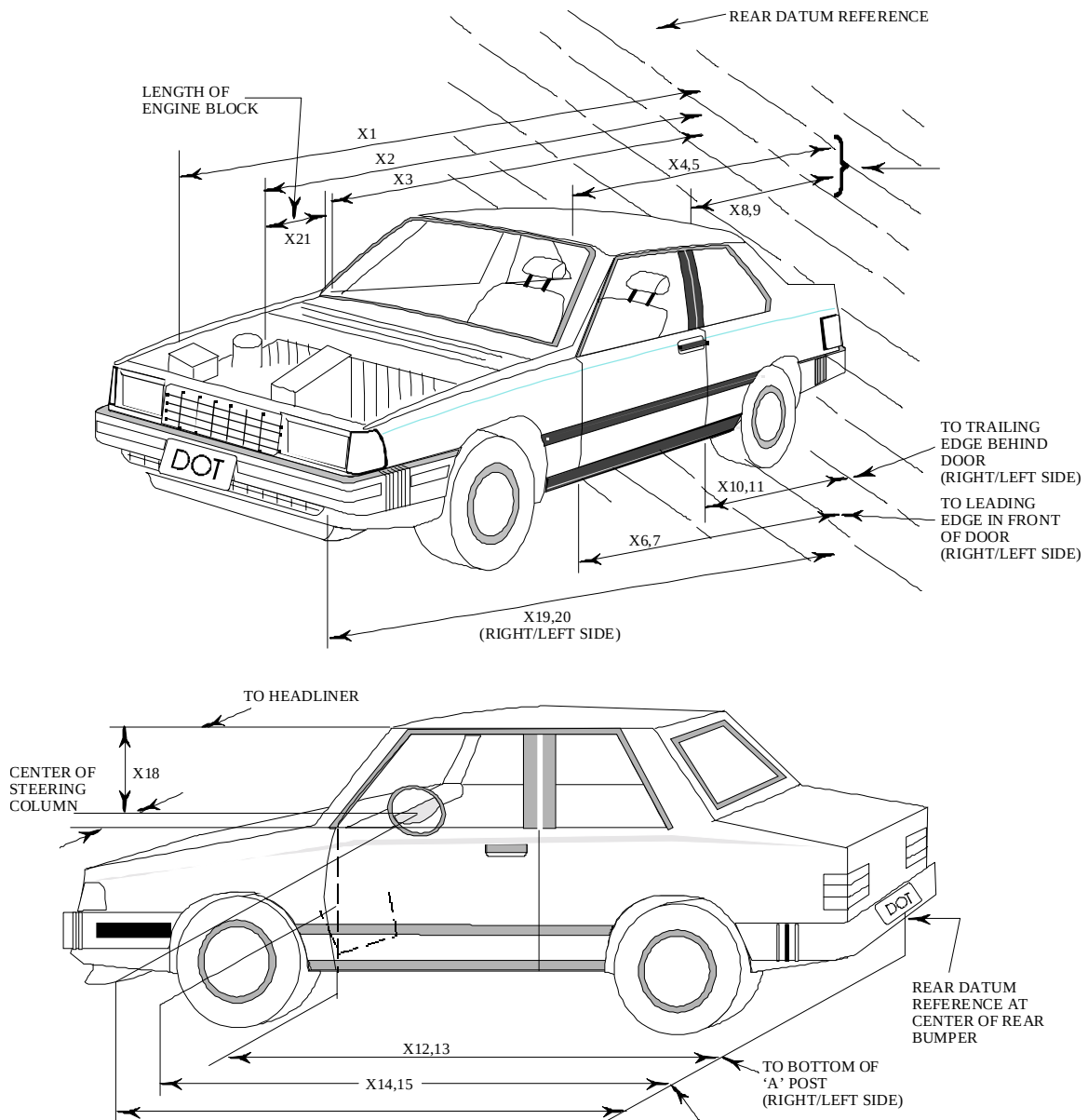
Rollover Stage	First 5 minutes from onset of rotation (g)	6th min. (g)	7th min. (g)	8th min. (if required) (g)
0° - 90°	0	0	0	-
90° - 180°	0	0	0	-
180°-270°	0	0	0	-
270°-360°	0	0	0	-

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

IV. SOLVENT SPILLAGE LOCATION(S):

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

DATA SHEET NO. 14 TEST VEHICLE MEASUREMENTS

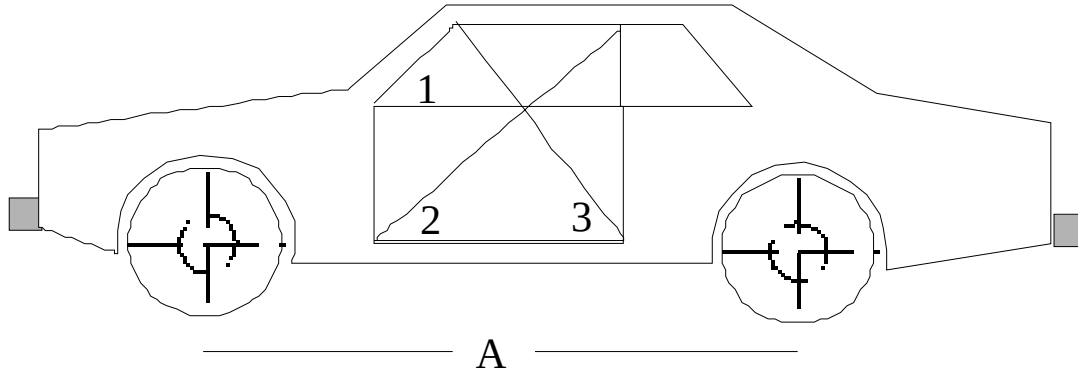


DATA SHEET NO.14 VEHICLE MEASUREMENTS (cont.)

No.		Pre-Test	Post-Test	Difference
X1	Total Length of Vehicle at Centerline	4864	4333	531
X2	Rear Surface of Vehicle to Front of Engine	4349	4106	243
X3	Rear Surface of Vehicle to Firewall	3727	3659	68
X4	Rear Surface of Vehicle to Upper Leading Edge of Right Door	3379	3381	-2
X5	Rear Surface of Vehicle to Upper Leading Edge of Left Door	3382	3381	1
X6	Rear Surface of Vehicle to Lower Leading Edge of Right Door	3386	3384	2
X7	Rear Surface of Vehicle to Lower Leading Edge of Left Door	3383	3384	-1
X8	Rear Surface of Vehicle to Upper Trailing Edge of Right Door	2255	2254	1
X9	Rear Surface of Vehicle to Upper Trailing Edge of Left Door	2253	2250	3
X10	Rear Surface of Vehicle to Lower Trailing Edge of Right Door	2274	2264	10
X11	Rear Surface of Vehicle to Lower Trailing Edge of Left Door	2269	2267	2
X12	Rear Surface of Vehicle to Bottom of "A" Post of Right Side	3400	3414	-14
X13	Rear Surface of Vehicle to Bottom of "A" Post of Left Side	3407	3409	-2
X14	Rear Surface of Vehicle to Firewall, Right Side	3727	3657	70
X15	Rear Surface of Vehicle to Firewall, Left Side	3766	3692	74
X16	Rear Surface of Vehicle to Steering Column	2871	2886	-15
X17	Center of Steering Column to "A" Post	275	265	10
X18	Center of Steering Column to Headliner	412	428	-16
X19	Rear Surface of Vehicle to Right Side of Front Bumper	4811	4338	473
X20	Rear Surface of Vehicle to Left Side of Front Bumper	4809	4312	497
X21	Length of Engine Block	483	414	69
RD	Rear Surface of Vehicle to Right Side of Dash Panel	3160	3147	13
CD	Rear Surface of Vehicle to Center of Dash Panel	3159	3116	43
LD	Rear Surface of Vehicle to Left Side of Dash Panel	3159	3154	5

All Dimensions in mm

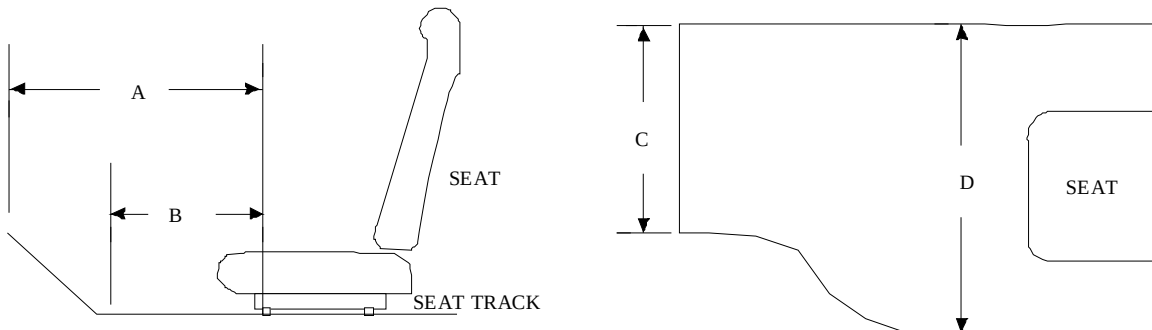
DATA SHEET NO.14 VEHICLE MEASUREMENTS (cont.)
 VEHICLE INTRUSION MEASUREMENTS
 DOOR OPENING WIDTH



UNITS (mm)	LEFT			RIGHT		
MEASUREMENT	1	2	3	1	2	3
BEFORE TEST	1052	1493	964	1025	1497	978
AFTER TEST	1049	1492	981	1050	1501	981
DIFFERENCE	3	1	-17	-25	-4	-3

UNITS (mm)	A = WHEELBASE LEFT	A = WHEELBASE RIGHT
BEFORE TEST	2806	2804
AFTER TEST	2700	2752
DIFFERENCE	106	52

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



DRIVER

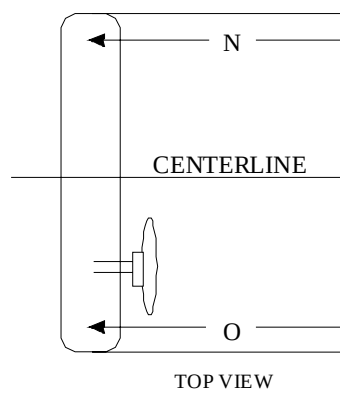
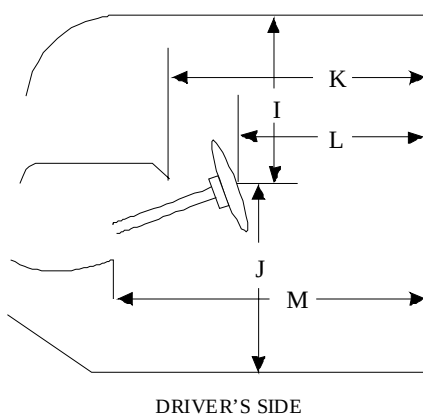
Measurement	Pre-Test	Post-Test	Difference
A	786	667	119
B	556	513	43
C	275	313	-38
D	453	452	1

PASSENGER

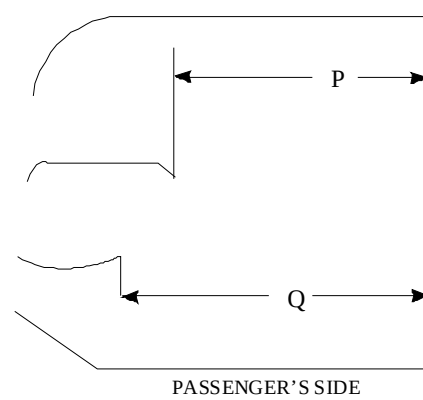
Measurement	Pre-Test	Post-Test	Difference
A	754	650	104
B	536	522	14
C	469	463	6
D	444	450	-6

Units = mm

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



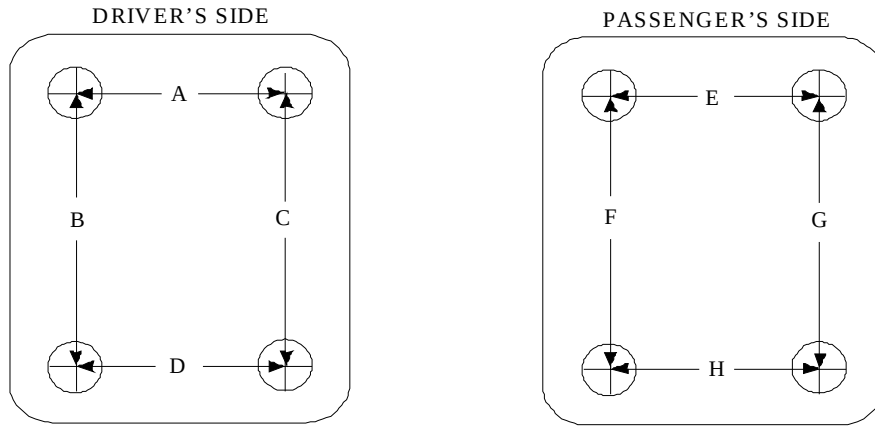
MEASUREMENTS
FROM C-PILLAR
BELT ANCHORAGE



Measurement	Pre-Test	Post-Test	Difference
I	412	428	-16
J	656	645	11
K	2103	2078	25
L	1854	1868	-14
M	2148	2141	7
N	2142	2130	12
O	2142	2136	6
P = K (PASS.)	2175	2162	13
Q = M (PASS.)	2164	2123	41

Units = mm

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

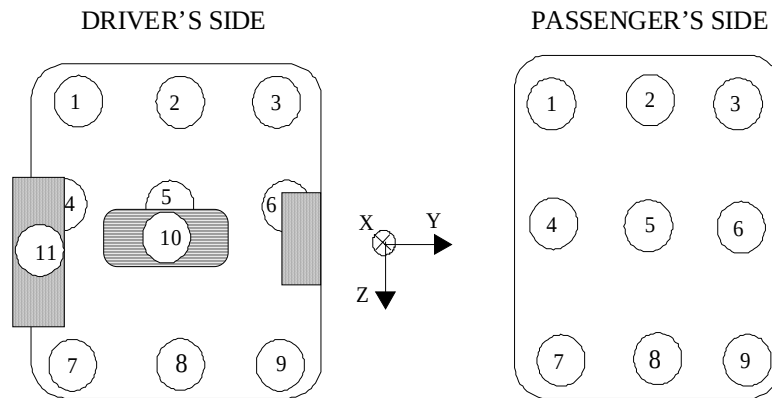


TOP VIEW THROUGH FLOOR PAN

Measurement	Pre-Test	Post-Test	Difference
A	275	313	-38
B	473	514	-41
C	562	474	88
D	453	452	1
E	469	463	6
F	519	514	5
G	521	496	25
H	444	450	-6

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	3578	3478	100	-473	-527	54
2	3617	3503	114	-455	-511	56
3	3609	3481	128	-451	-483	32
4	3513	3459	54	-339	-381	42
5	3515	3422	93	-327	-373	46
6	3508	3414	94	-342	-370	28
7	3378	3369	9	-252	-252	0
8	3388	3349	39	-249	-262	13
9	3382	3355	27	-257	-234	-23
10	3391	3322	69	-422	-438	16
11	3454	3415	39	-390	-408	18

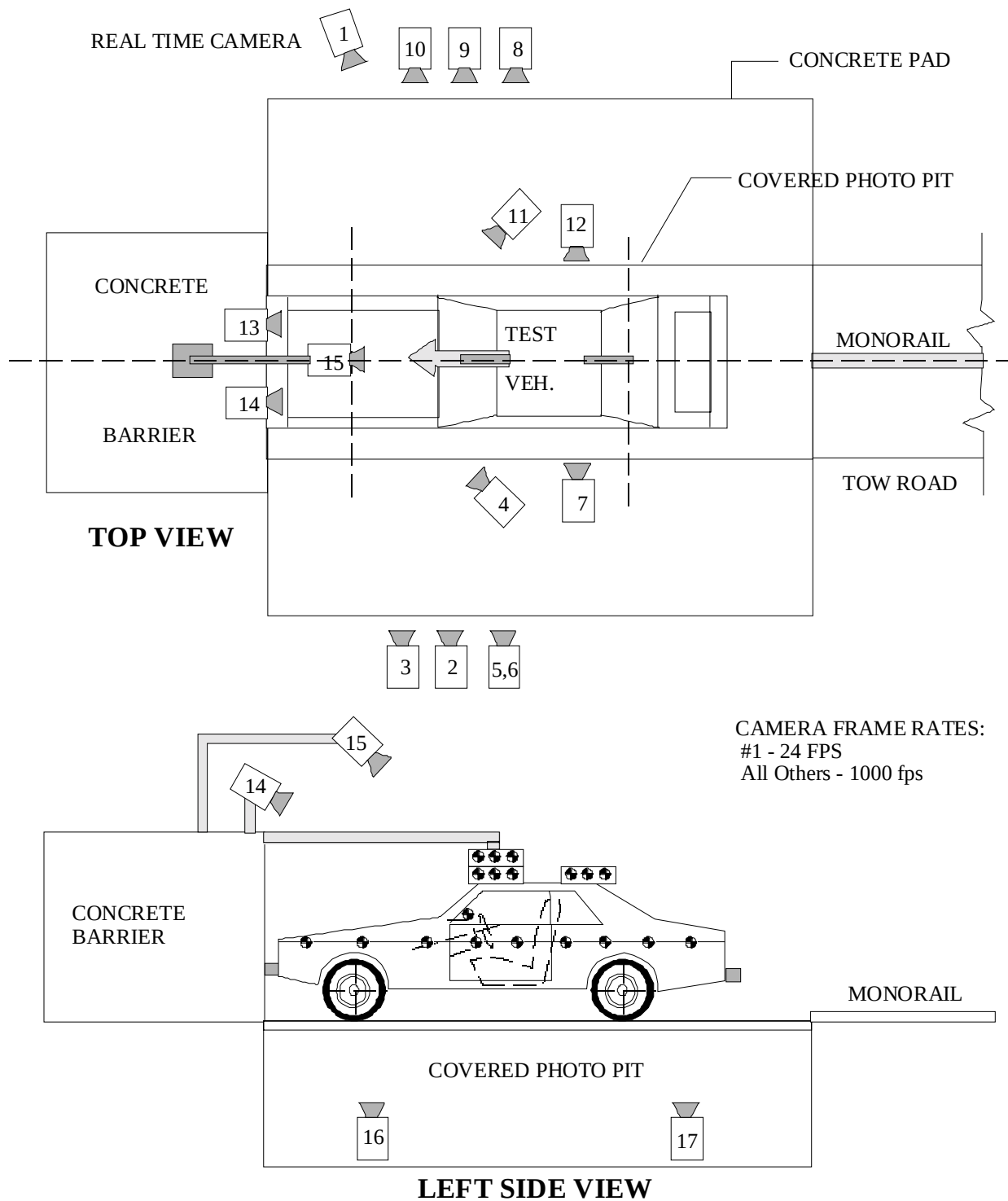
Passenger Side Toe-pan Measurements

Toe-pan Location	X Deformation (mm)			Z Deformation (mm)		
	Pre-Test	Post-Test	Difference	Pre-Test	Post-Test	Difference
1	3596	3502	94	-441	-450	9
2	3586	3480	106	-450	-473	23
3	3560	3464	96	-485	-503	18
4	3492	3442	50	-329	-332	3
5	3494	3444	50	-334	-351	17
6	3509	3479	30	-346	-355	9
7	3347	3341	6	-252	-230	-22
8	3367	3353	14	-248	-243	-5
9	3362	3370	-8	-253	-251	-2

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.: M25200 Vehicle: 2002 Nissan Altima 4-Door Sedan

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	1711	6946	1060	-2.5	1342	12.5	1020
3	Left Side View	944	8385	1084	-2.5	575	25	1020
4	Driver and Interior View	2667	7728	1995	-9.5	-	35	N.T.
5	Steering Column (Bottom)	1987	7798	1170	-3.0	1618	25	1015
6	Steering Column (Top)	1987	7798	1806	-9.0	1618	25	1005
7	Left Side P3 CRS View	-	-	-	-20.0	-	8	1020
8	Overall Right Side	1957	7050	1076	-5.5	2253	12.5	1010
9	Right Side View	1265	8753	1112	-3.0	1561	25	965
10	Right Passenger View	1804	8350	1283	-2.5	2100	35	1020
11	Passenger and Interior View	2705	7860	1958	-6.5	-	35	965
12	Right Side P3 CRS View	4492	2428	2193	-23.0	-	13	1010
13	Passenger Front View	620	-92	1987	-36.0	-	13	1005
14	Driver Front View	620	-92	1987	-38.0	-	13	1005
15	Windshield View	0	-530	3374	-50.0	-	13	1000
16	Pit View of Engine	0	960	-3048	90.0	-	13	1050
17	Pit View of Fuel Tank	0	2860	-3048	90.0	-	13	1005

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

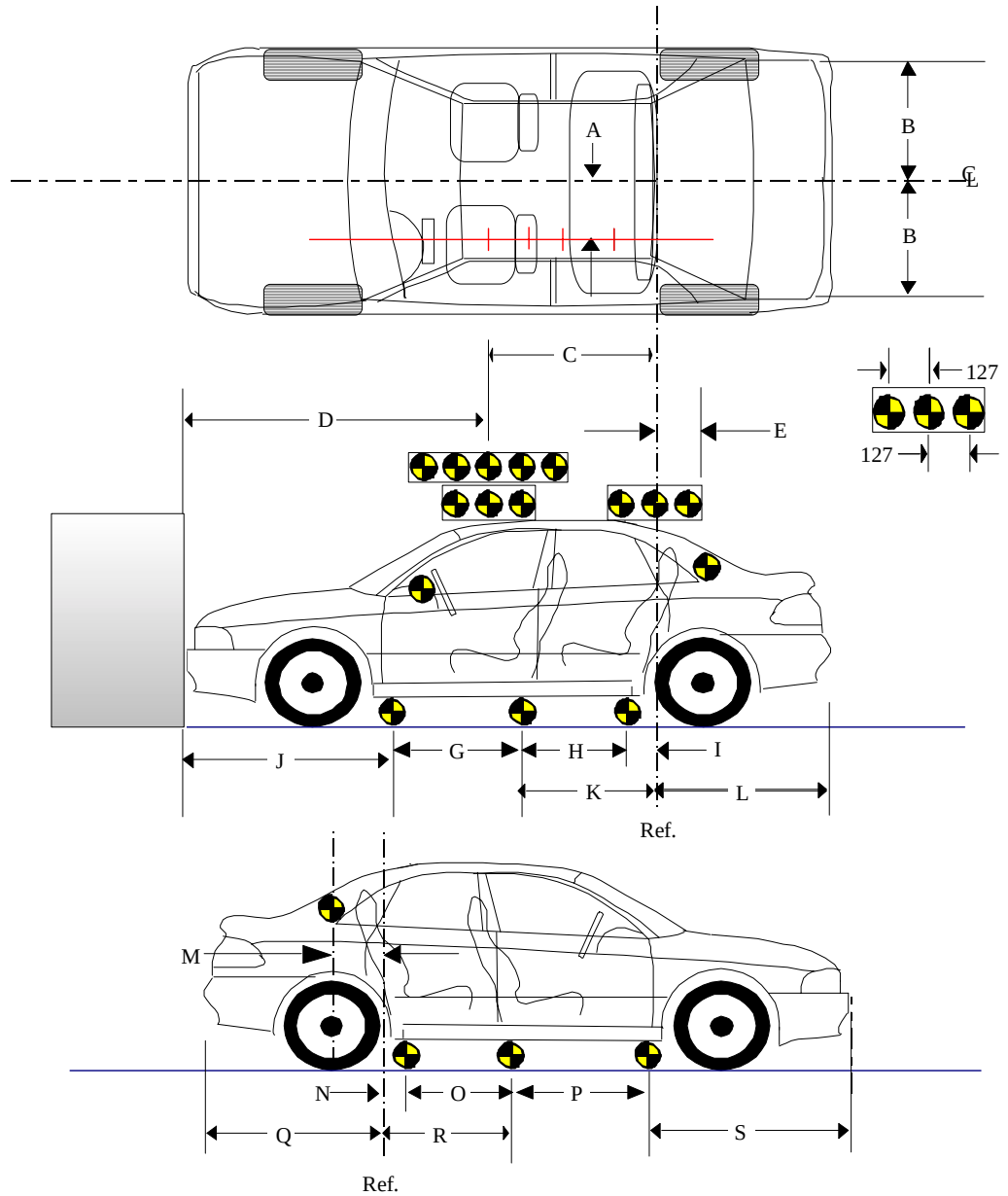
Y = film plane to impact location N.T. indicates No Timing

Z = film plane to ground

DATA SHEET NO. 16 VEHICLE REFERENCE PHOTO TARGET LOCATIONS

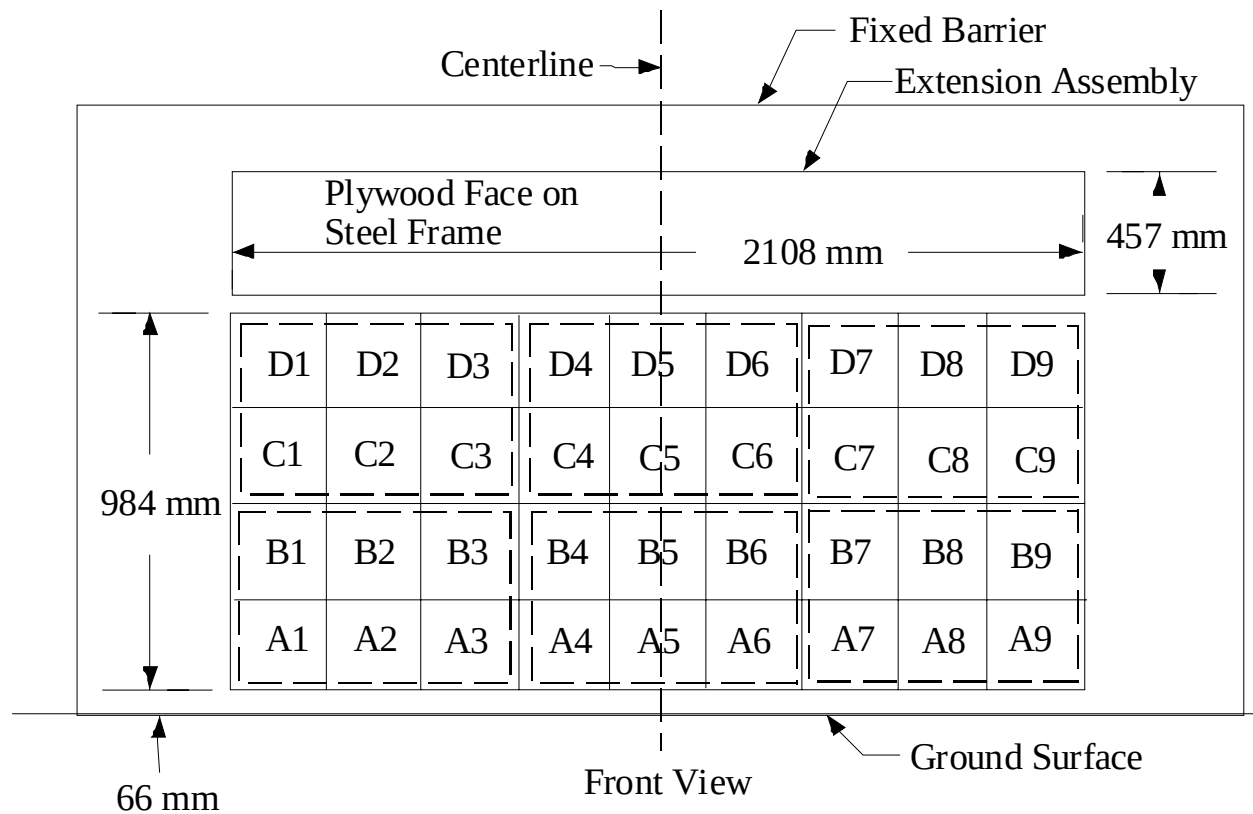
(Dimensions in millimeters)

A	372
B	665
C	1221
D	2252
E	375
F	1670
G	944
H	943
I	119
J	1424
K	1062
L	1434
M	373
N	122
O	943
P	941
Q	1437
R	1065
S	1421



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.: M25200; Test Date: April 10, 2002; Technician: Lawrence Q. Valvo

Vehicle Model Year/Make/Model: 2002 Nissan Altima 4-Door Sedan

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

B. Size of vent holes: (mm²) 1964 -Driver 804 -Passenger

C. Total vent area: (mm²) 3928 -Driver 1608 -Passenger

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

Driver: 650 -Height; 650 -Width; 310 -Depth

Passenger: 522 -Height; 380 -Width; 560 -Depth

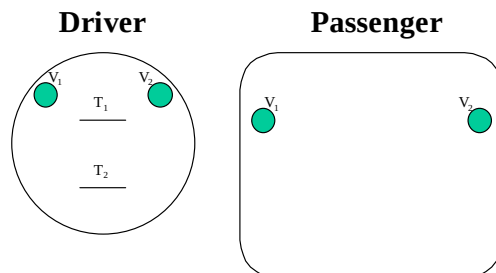
E. Is the air bag tethered?

Driver: X -Yes; - -No; If yes, record length of tether- 320

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: Nissan TK 9857 08J000; 0007894; 17 10 01

Generator: NGT MXK 3D CUD

Passenger: Air bag: CMX NISSAN TK; P6000375-00BB07; NLEM9NSPAFL

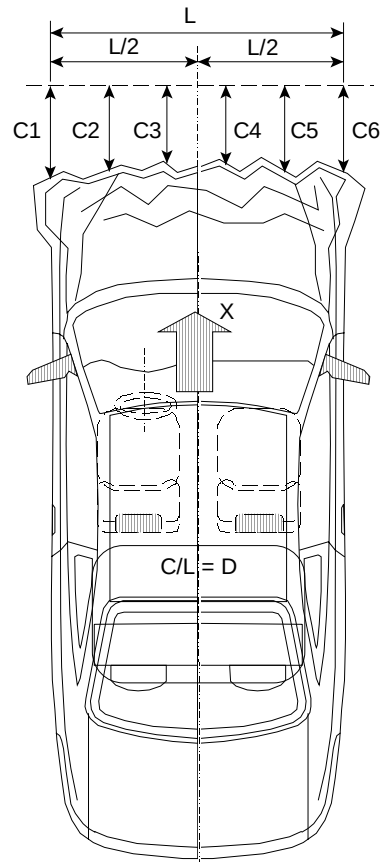
Generator: NP8J001X170749

DATA SHEET NO. 19 ACCIDENT INVESTIGATION DIVISION DATA
FOR FRONTAL BARRIER IMPACT

Vehicle Make/Model/Body Style: Nissan Altima 4-Door Sedan
 NHTSA Test No.: M25200 VIN: 1N4AL11D32C145995
 Model Year: 2002 Build Date: 10/01 Test Date: April 10, 2002
 Vehicle Size Category: Midsize Test Weight: 1609.0 kg
 Vehicle Wheelbase: 2805 mm; Front Overhang: 958 mm; Overall Width: 1788 mm
 Collision Deformation Classification (CDC) Code: 12FDEW3

Crush Depth Dimensions

	PRE (mm)	POST (mm)	DIFF (mm)
C1 =	4691	4354	337
C2 =	4817	4314	503
C3 =	4856	4331	525
C4 =	4863	4343	520
C5 =	4825	4346	479
C6 =	4720	4358	362



Midpoint of Damage: D = Vehicle Centerline (Longitudinal)

Length of Damaged Region: L1= 1455 mm
 L2= 727.5 mm
 L5= 291 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



Figure A-15: FUEL CAP VIEW



Figure A-16: PRE-TEST FRONT UNDERBODY VIEW



Figure A-17: POST-TEST FRONT UNDERBODY VIEW

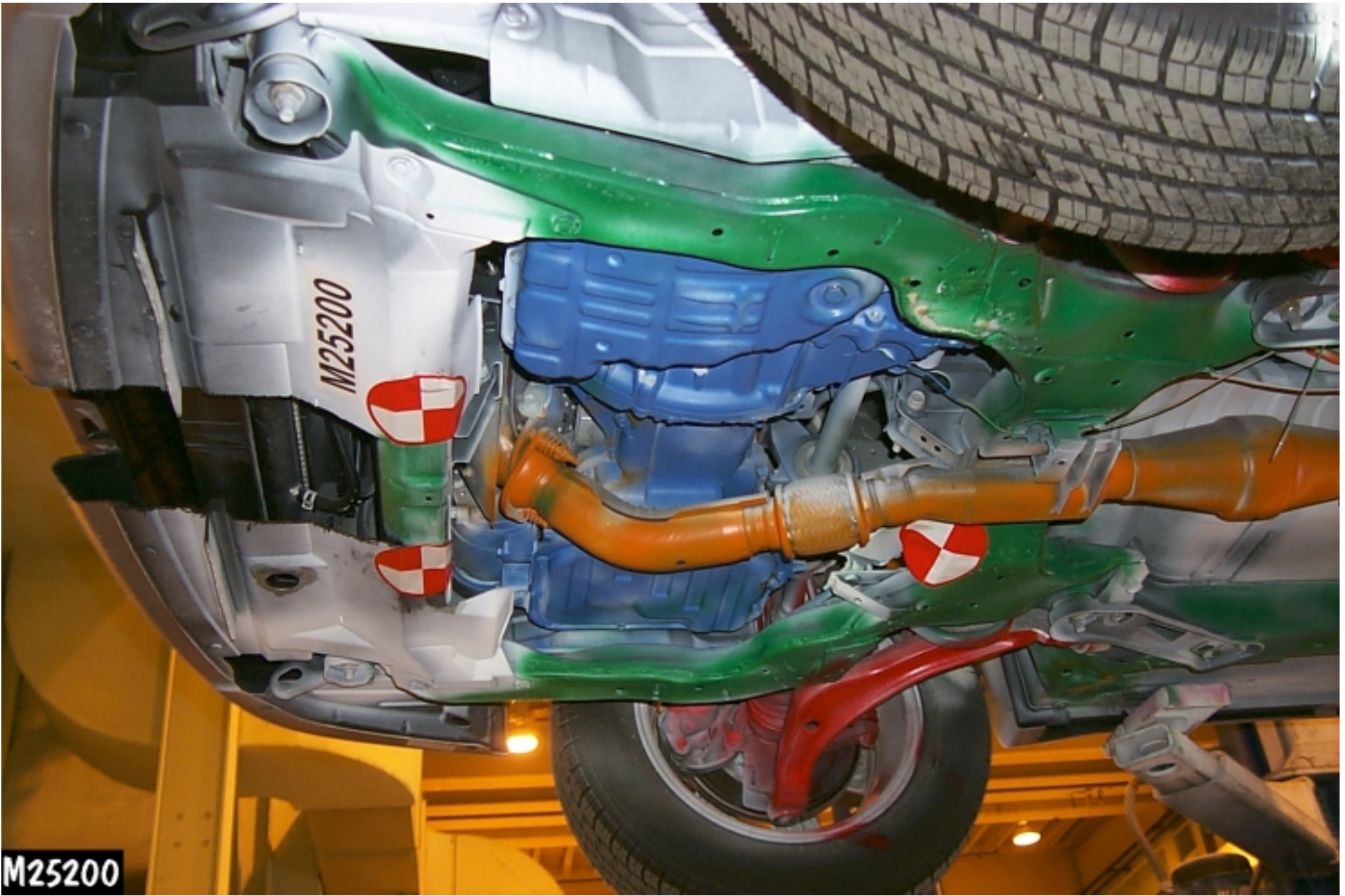


Figure A-18: PRE-TEST FRONT SIDE UNDERBODY VIEW



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

M25200



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

Photograph Not Available

Figure A-37: POST-TEST PASSENGER FLOOR PAN VIEW



Figure A-38: ROLLOVER VIEW



Figure A-39: IMPACT VIEW

MANUFACTURED BY NISSAN MOTOR CO., LTD.

DATE 10/01 GVWR 4202 LB
GAWR FR. 2249 LB GAWR RR. 1969 LB

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

VIN: 1N4AL11D32C145995 PASSENGER CAR
COLOR TRIM TRANS AXLE ENGINE
KY1 G RE4F04B FT40 QR25 2488CC
086 02000

MODEL: BDBALBA-EUA



1N4AL11D32C145995

M25200

Figure A-40: CERTIFICATION PLACARD

VEHICLE CAPACITY WEIGHT	860 lbs	SEATING CAPACITY	FRONT AVANT 2	TOTAL TOTAL	SPARE TIRE ROUE DE SECOURS	psi (kPa)
POIDS UTILE DU VEHICULE	390 kg	NOMBRE DE PLACES	REAR ARRIERE 3	5	T135/90D16	60 (420)
RECOMMENDED COLD TIRE INFLATION PRESSURE PRESSION DE GONFLAGE RECOMMANDEE DES PNEUS FROIDS.					DO NOT USE IN EXCESS OF 50 MPH. 80 km/h SEE OWNER'S MANUAL FOR ADDITIONAL INFORMATION. UTILISATION A UNE VITESSE MAX 50 MPH. 80 km/h POUR LES DETAILS SE REFERER AU MANUEL DU CONDUCTEUR.	
TIRE SIZE DIMENSIONS	FRONT psi AVANT (kPa)		REAR psi ARRIERE (kPa)			
P205/65R16 94T	29 (200)		29 (200)			

3Z001

3Z001

M25200

Figure A-41: TIRE 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. M25200

DATA TYPE	SAE FILTER CLASS (Hz)
Dummy Head Accelerations	1000
Dummy Chest Accelerations	180
Dummy Chest Displacements	600
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

NCAP Test #6 - 2002 Nissan Altima

P1 Head 9 Array X Arm Ay

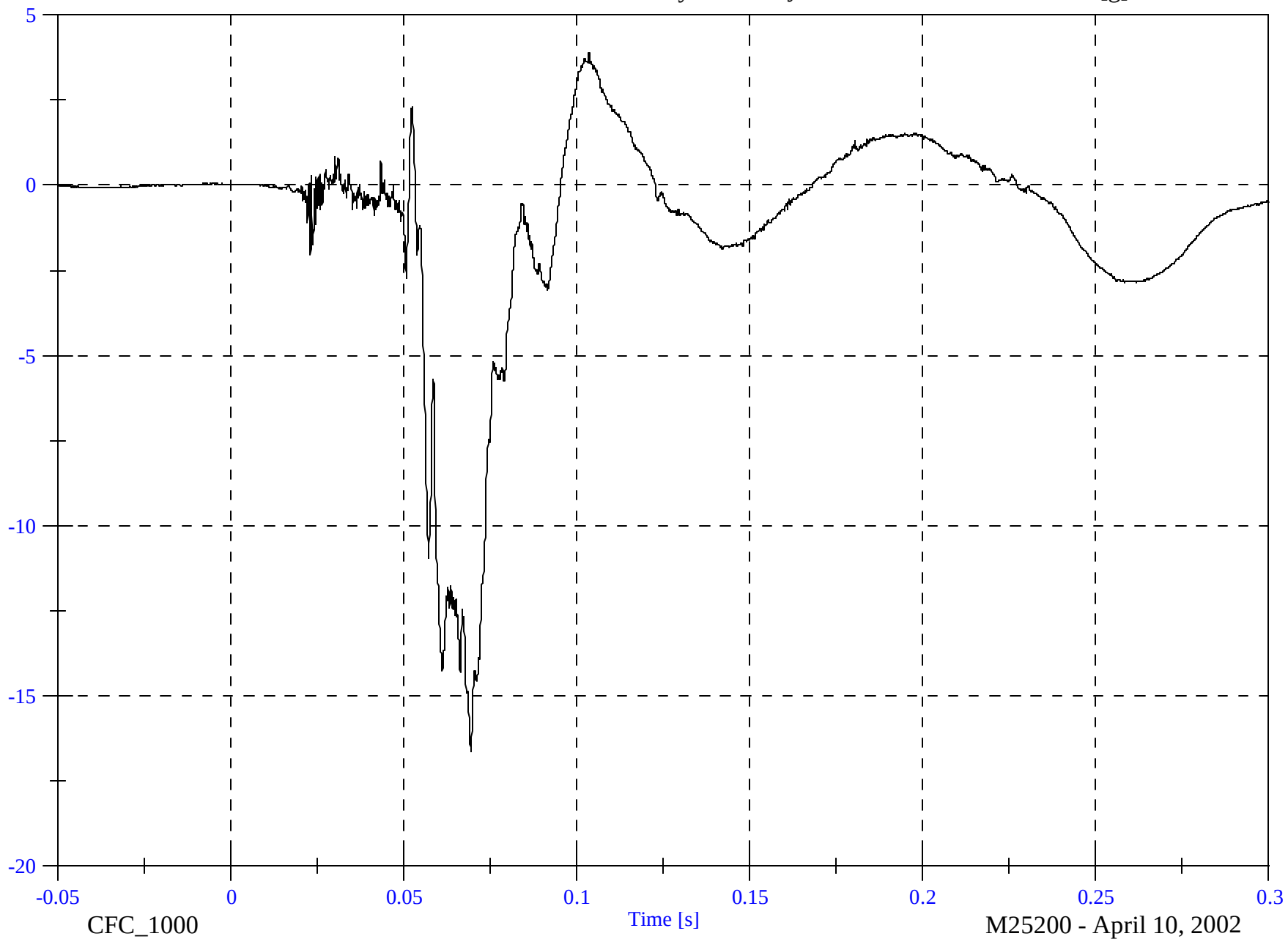
Max: 3.9 [g] at 0.104 [s]

Min: -16.6 [g] at 0.069 [s]

B-4

g

8642-NCAP-06

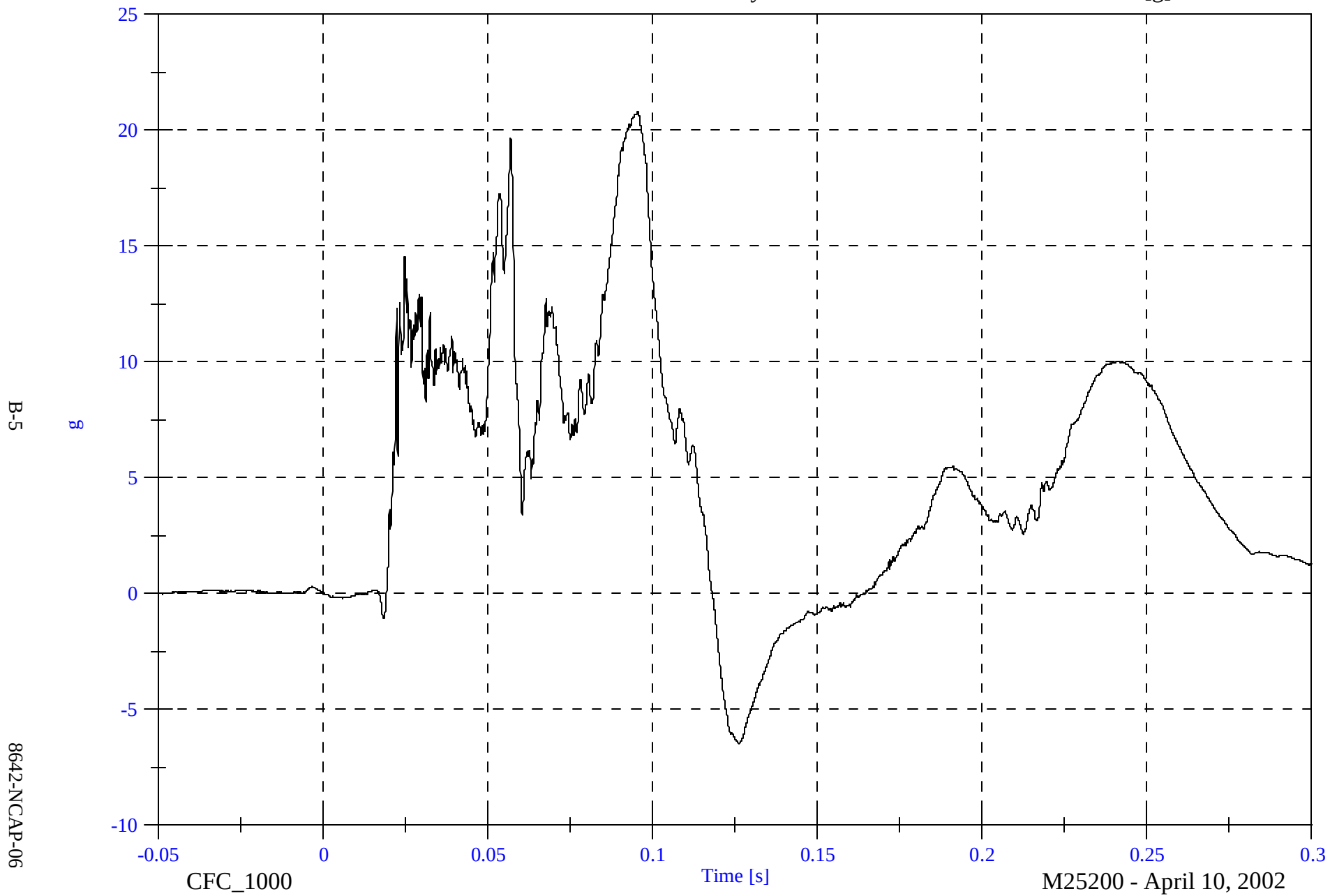


NCAP Test #6 - 2002 Nissan Altima

P1 Head 9 Array X Arm Az

Max: 20.8 [g] at 0.095 [s]

Min: -6.5 [g] at 0.126 [s]



NCAP Test #6 - 2002 Nissan Altima

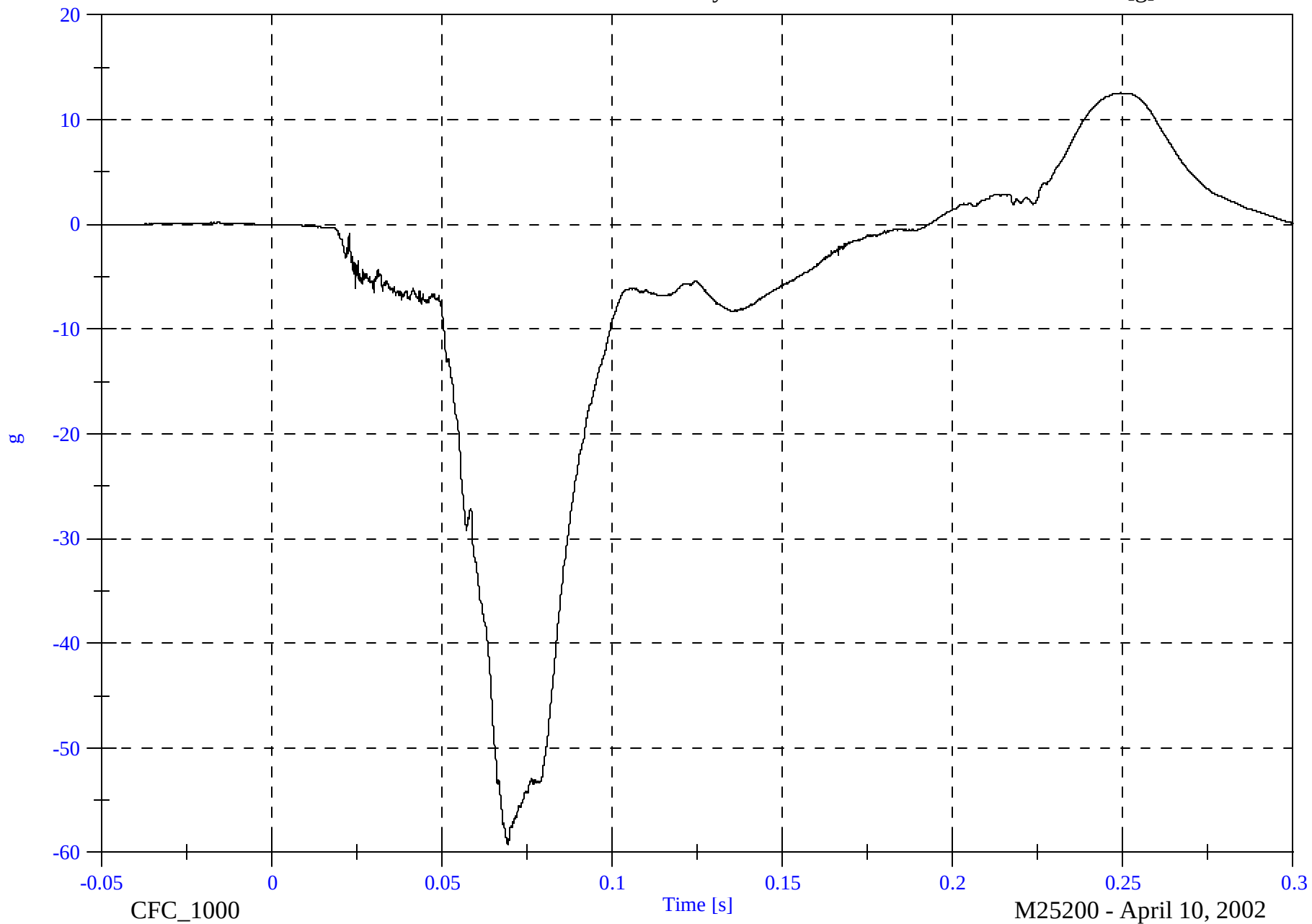
P1 Head 9 Array Y Arm Ax

Max: 12.5 [g] at 0.249 [s]

Min: -59.2 [g] at 0.069 [s]

B-6

8642-NCAP-06

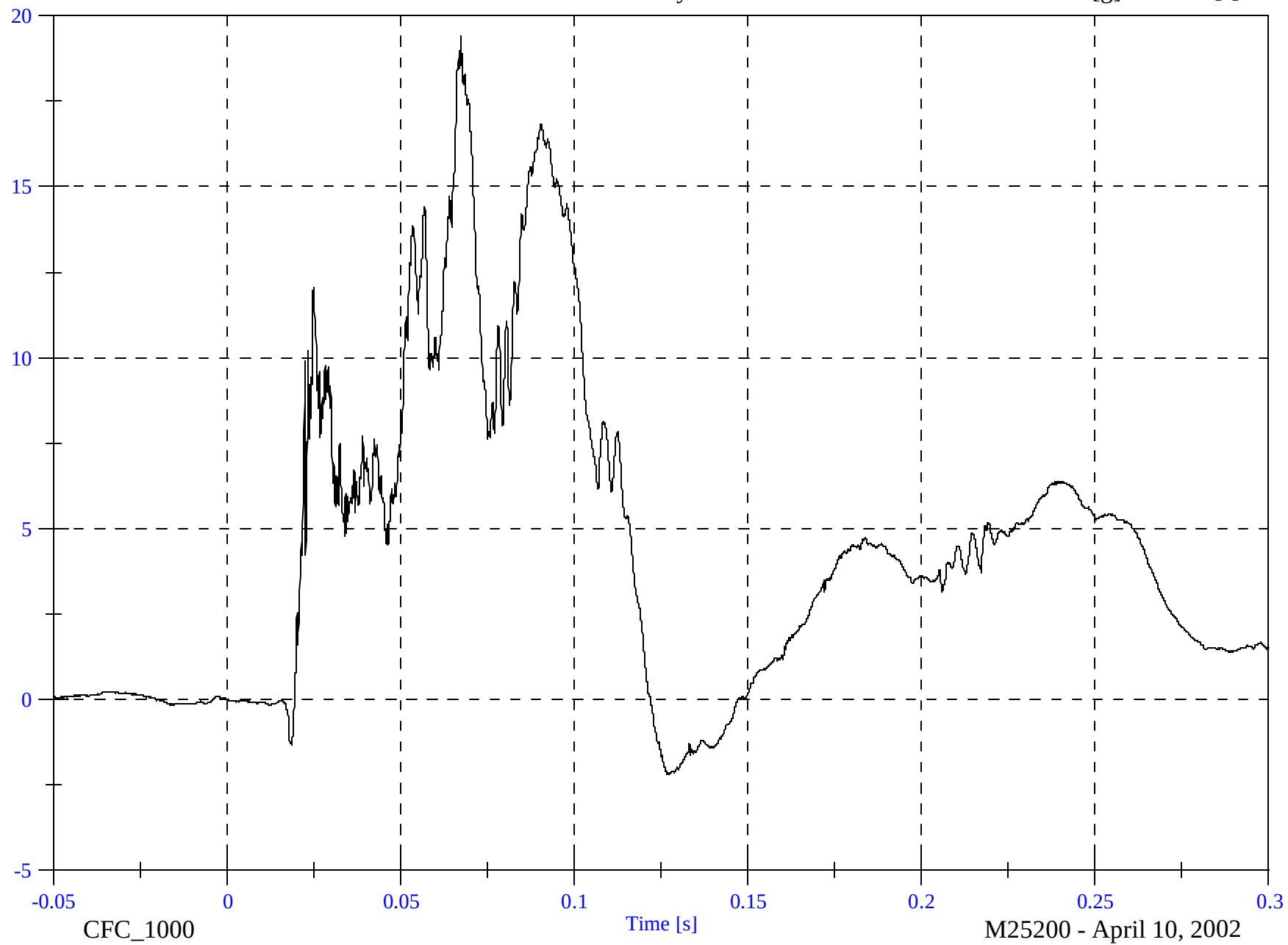


NCAP Test #6 - 2002 Nissan Altima

Max: 19.4 [g] at 0.067 [s]

P1 Head 9 Array Y Arm Az

Min: -2.2 [g] at 0.127 [s]



B-7

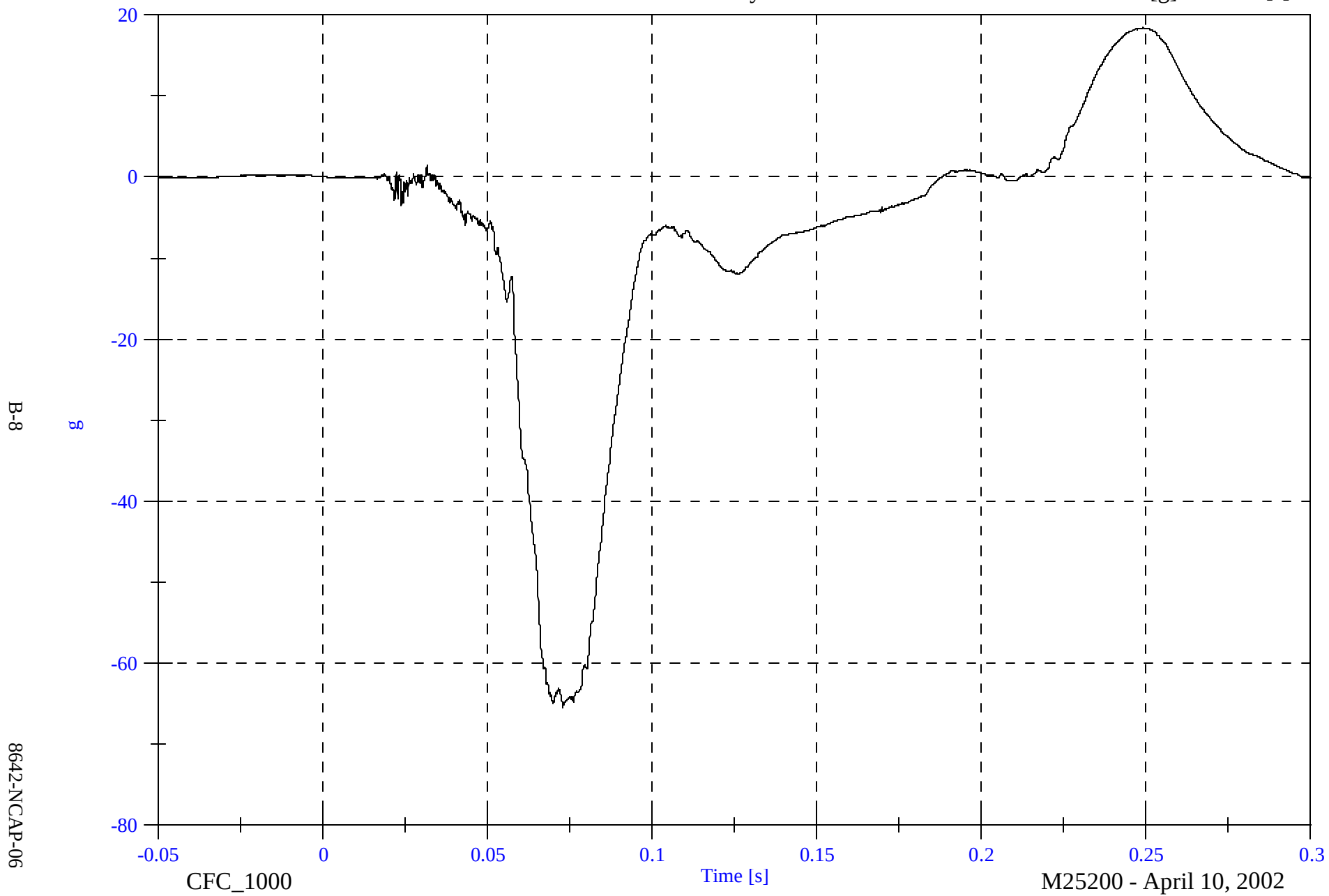
8642-NCAP-06

NCAP Test #6 - 2002 Nissan Altima

P1 Head 9 Array Z Arm Ax

Max: 18.4 [g] at 0.249 [s]

Min: -65.5 [g] at 0.073 [s]

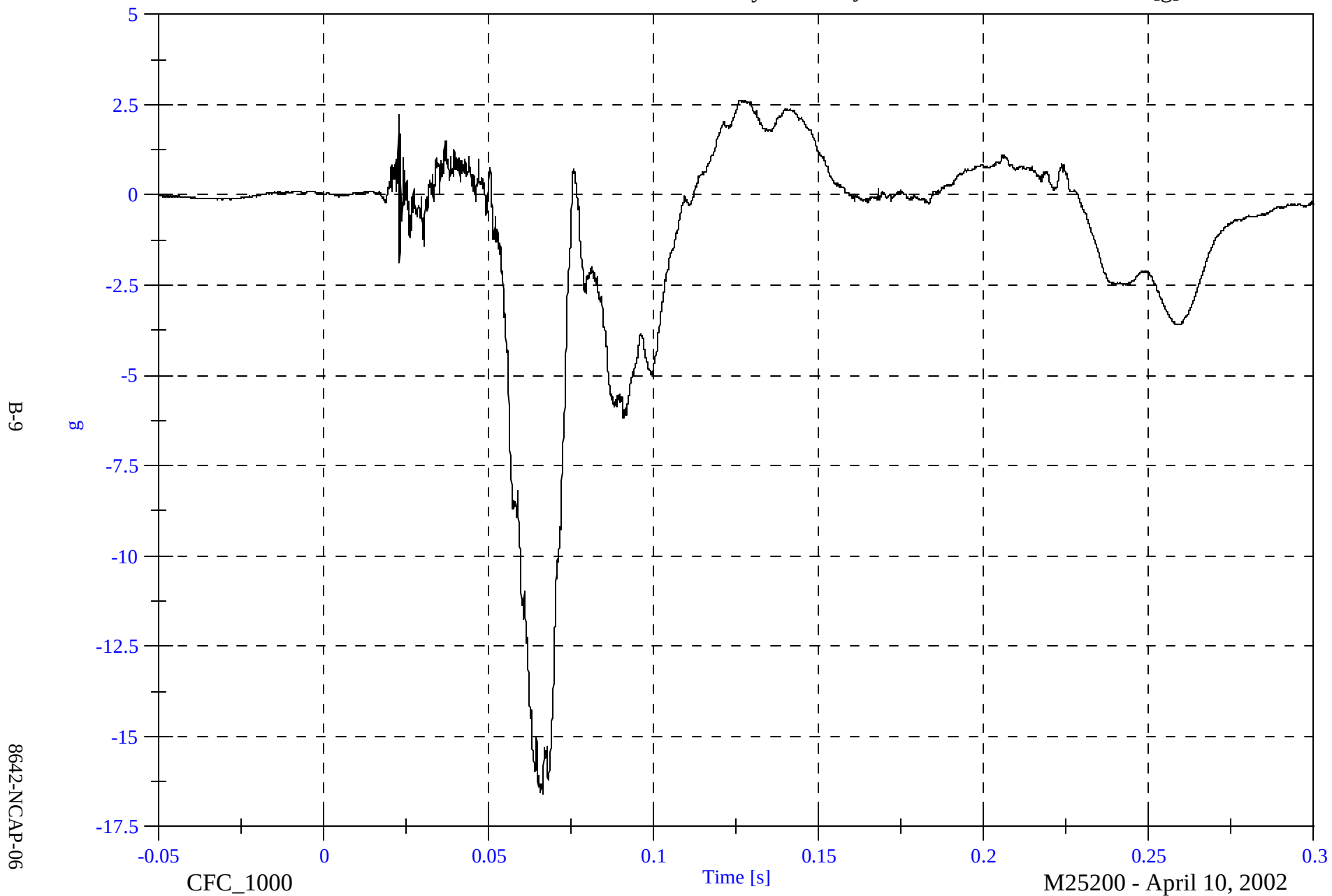


NCAP Test #6 - 2002 Nissan Altima

P1 Head 9 Array Z Arm Ay

Max: 2.6 [g] at 0.127 [s]

Min: -16.6 [g] at 0.066 [s]



NCAP Test #6 - 2002 Nissan Altima

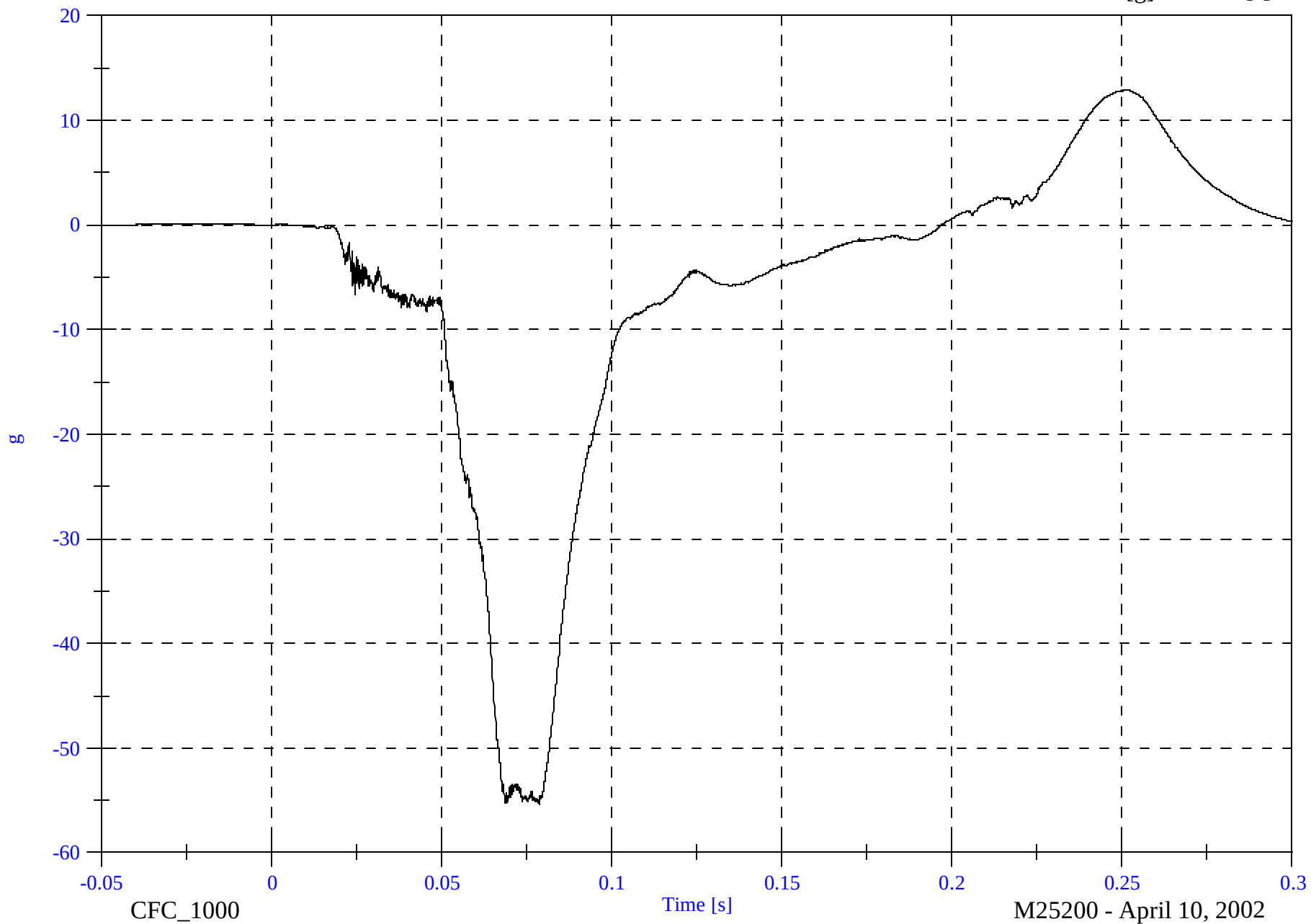
P1 Head CG x

Max: 12.9 [g] at 0.252 [s]

Min: -55.4 [g] at 0.079 [s]

B-10

8642-NCAP-06

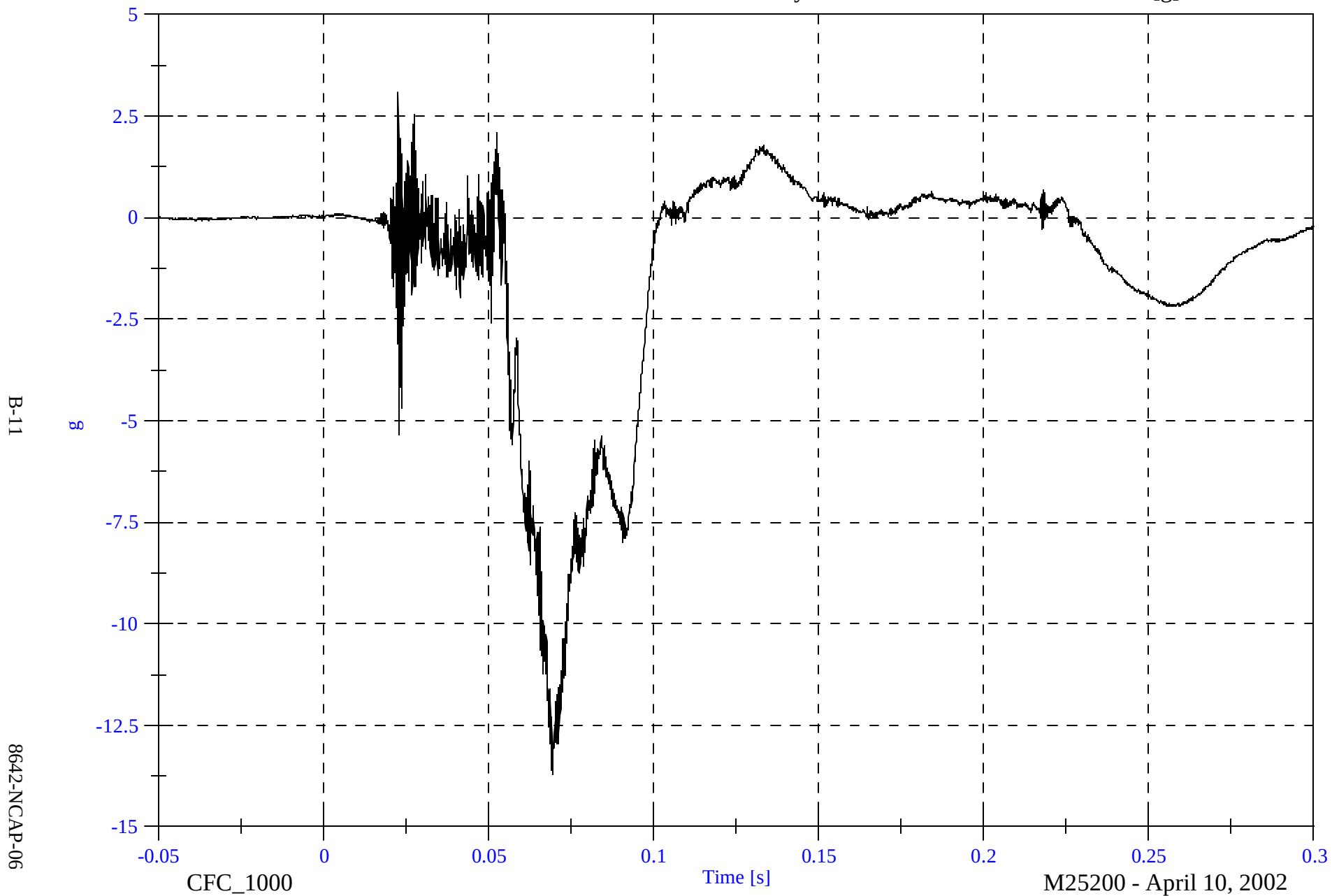


NCAP Test #6 - 2002 Nissan Altima

Max: 3.1 [g] at 0.023 [s]

Min: -13.7 [g] at 0.069 [s]

P1 Head CG y

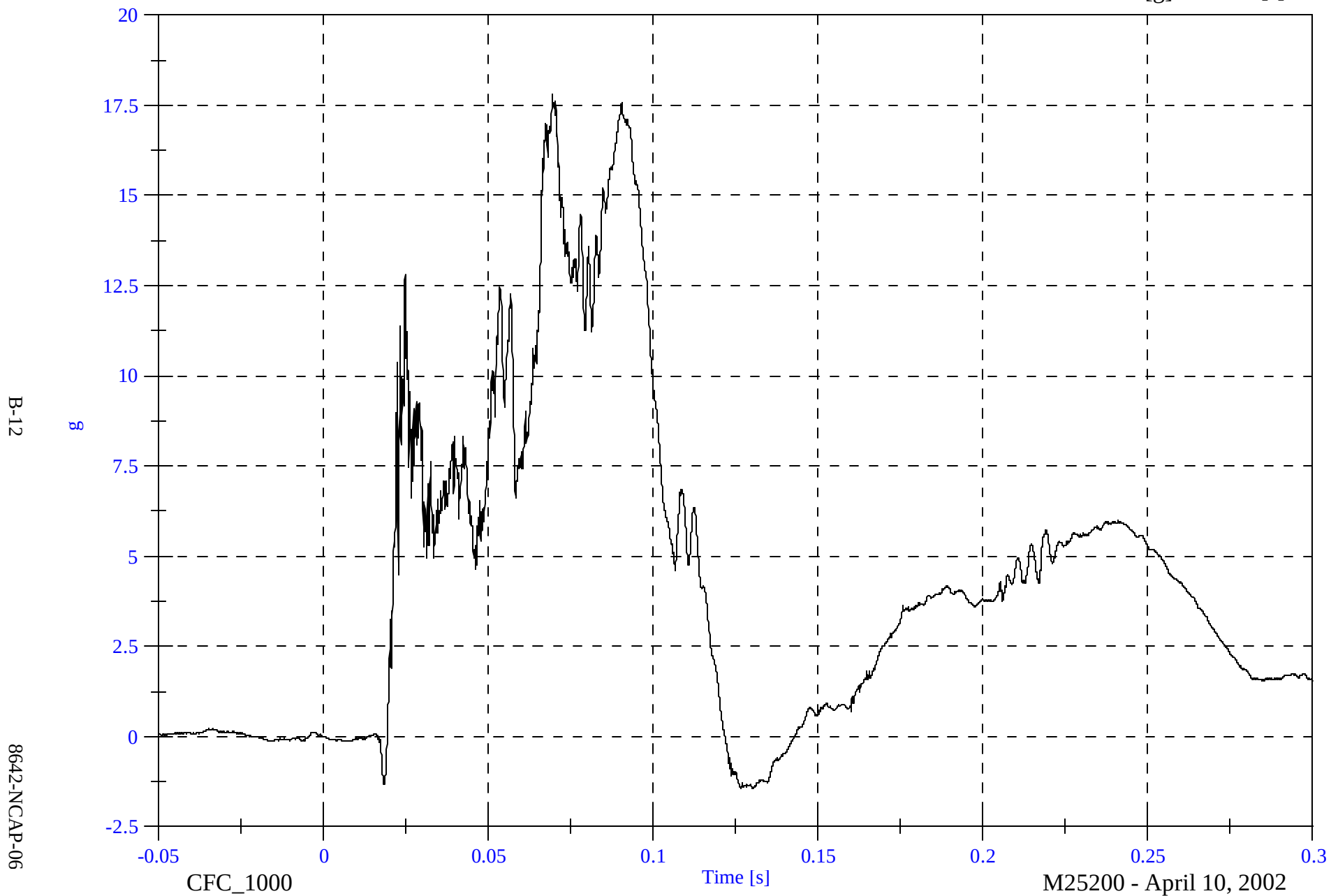


NCAP Test #6 - 2002 Nissan Altima

Max: 17.8 [g] at 0.069 [s]

Min: -1.4 [g] at 0.130 [s]

P1 Head CG z



NCAP Test #6 - 2002 Nissan Altima

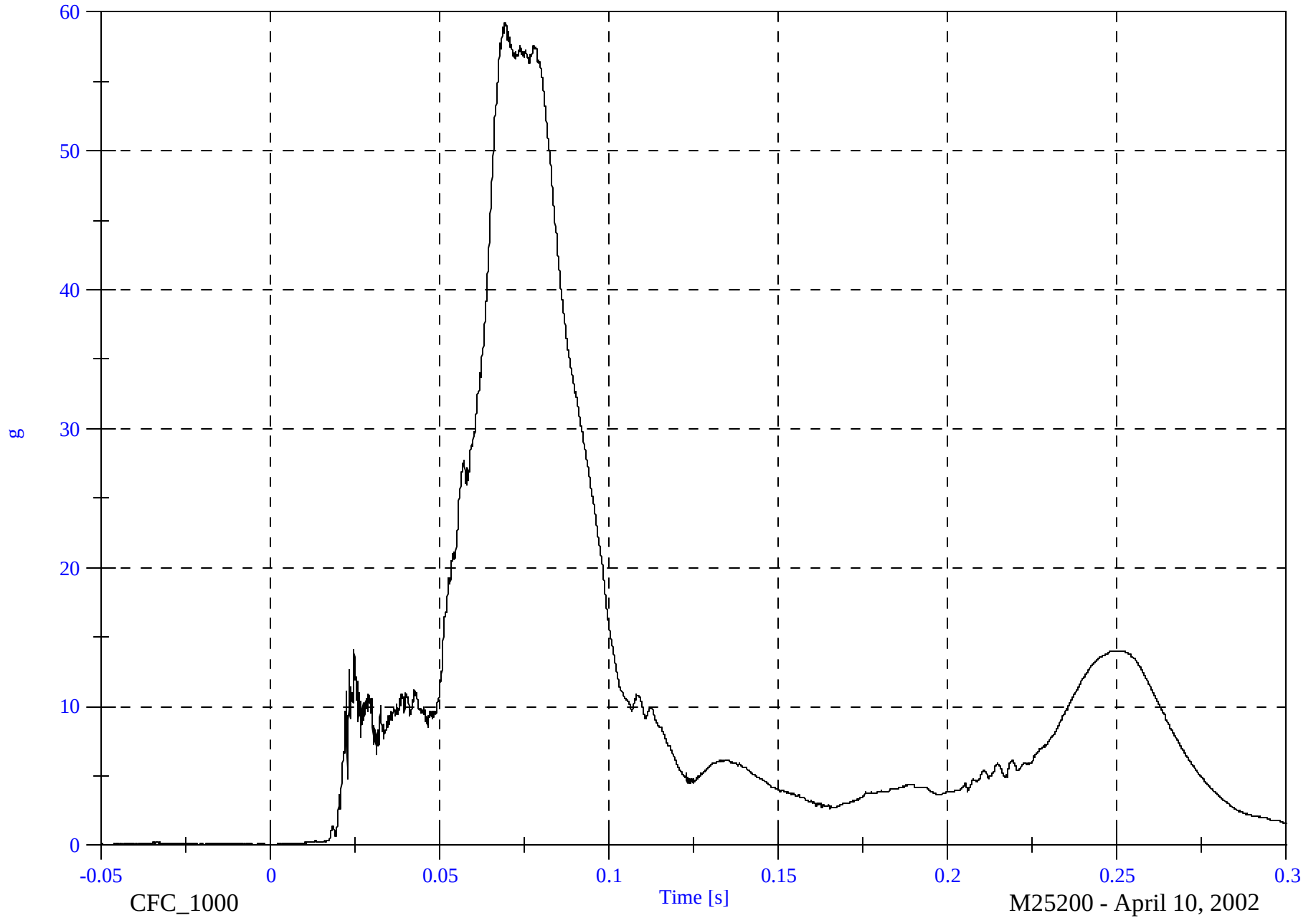
Max: 59.2 [g] at 0.069 [s]

Min: 0.0 [g] at 0.000 [s]

P1 Head CG Resultant

B-13

8642-NCAP-06



NCAP Test #6 - 2002 Nissan Altima

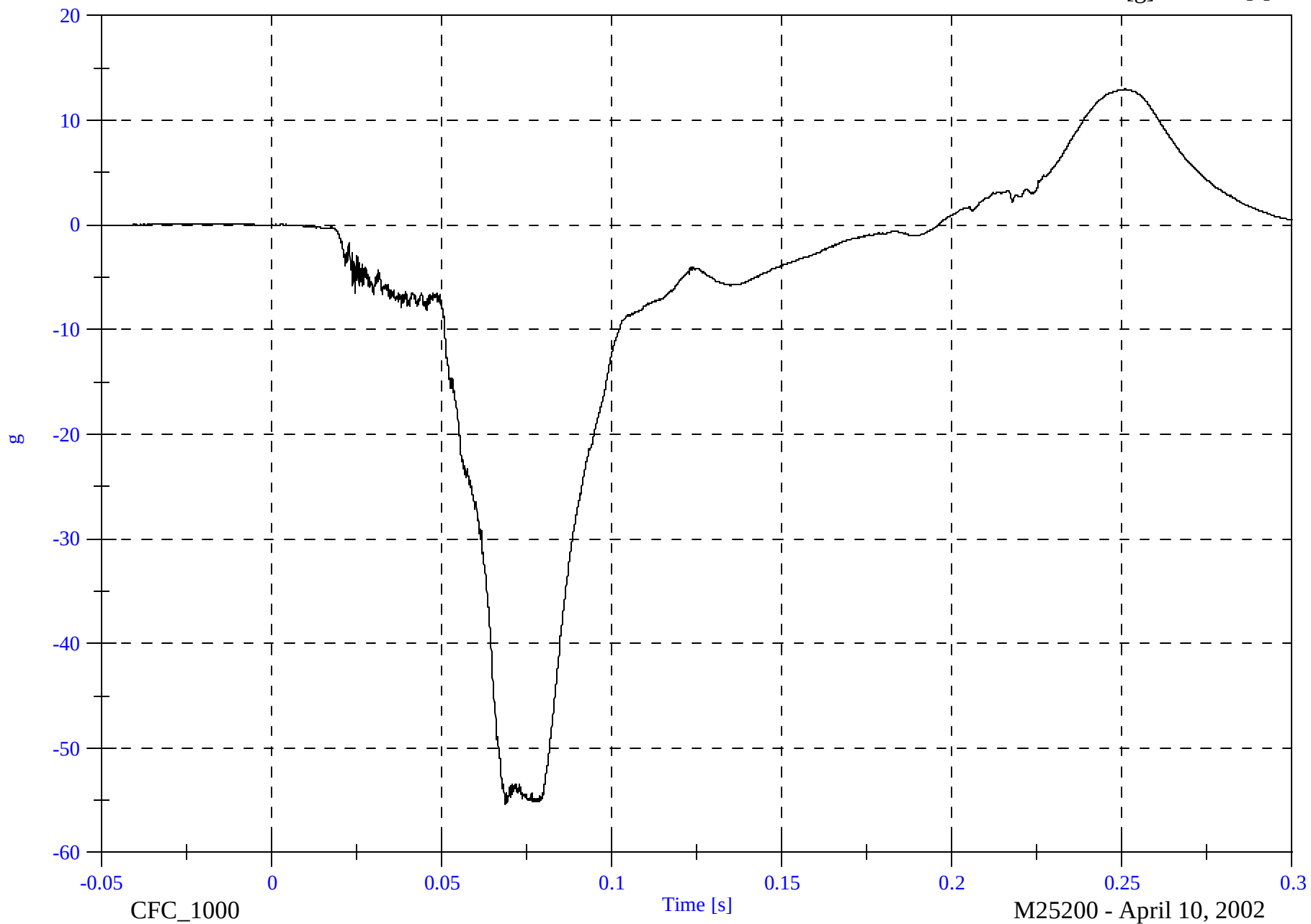
P1 Head CG Red x

Max: 13.0 [g] at 0.251 [s]

Min: -55.4 [g] at 0.069 [s]

B-14

8642-NCAP-06

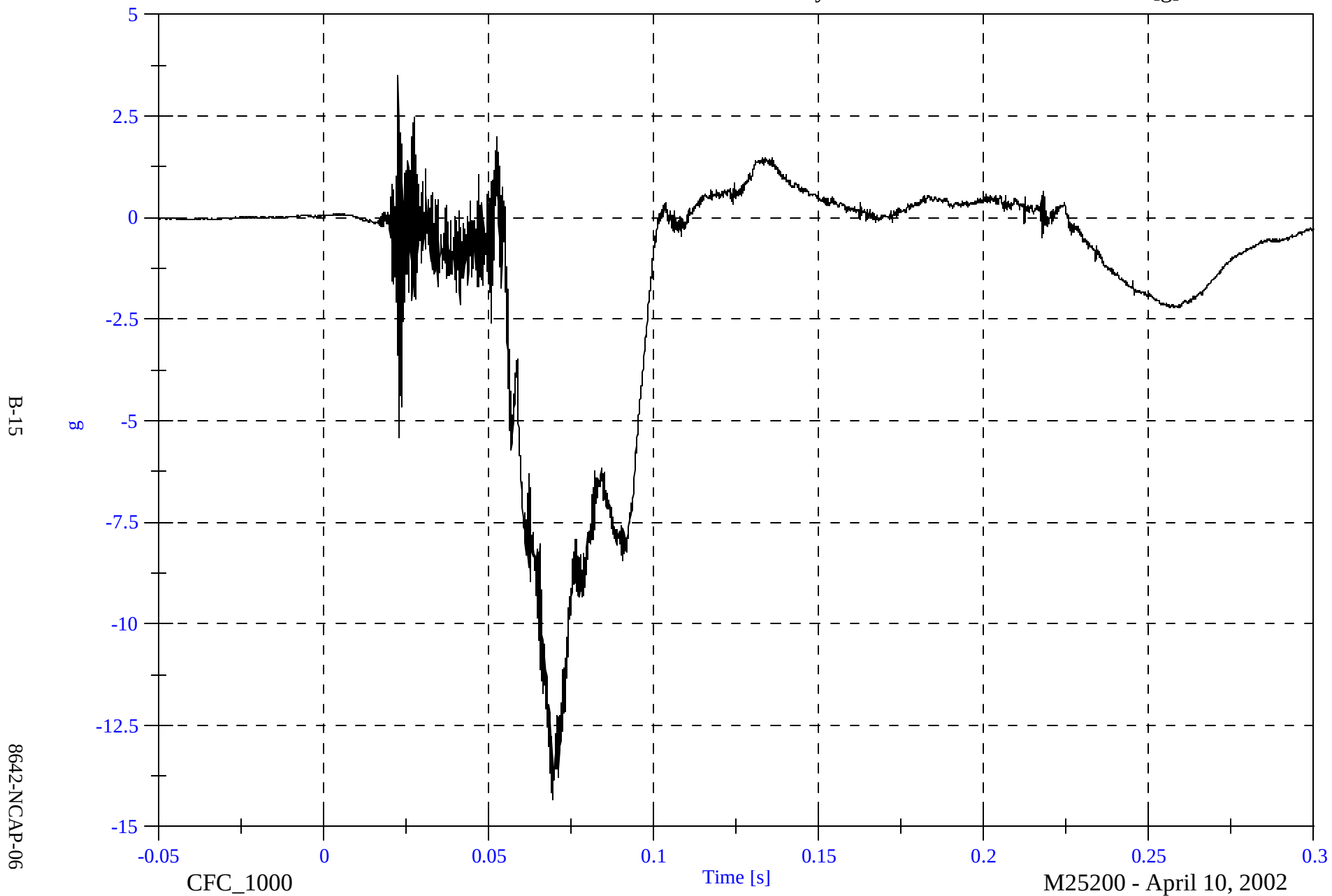


NCAP Test #6 - 2002 Nissan Altima

Max: 3.5 [g] at 0.023 [s]

Min: -14.3 [g] at 0.069 [s]

P1 Head CG Red y



NCAP Test #6 - 2002 Nissan Altima

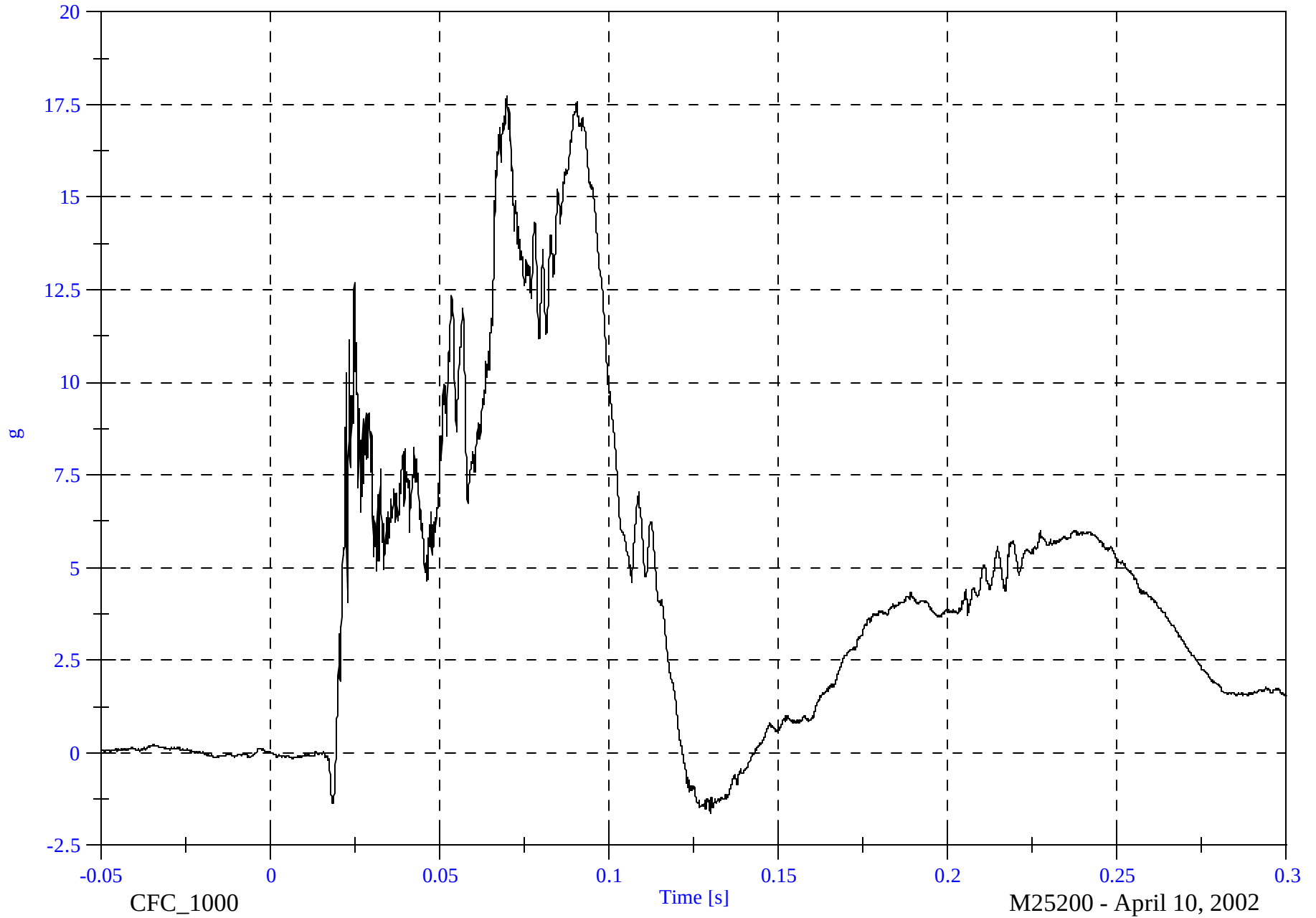
P1 Head CG Red z

Max: 17.7 [g] at 0.070 [s]

Min: -1.6 [g] at 0.130 [s]

B-16

8642-NCAP-06

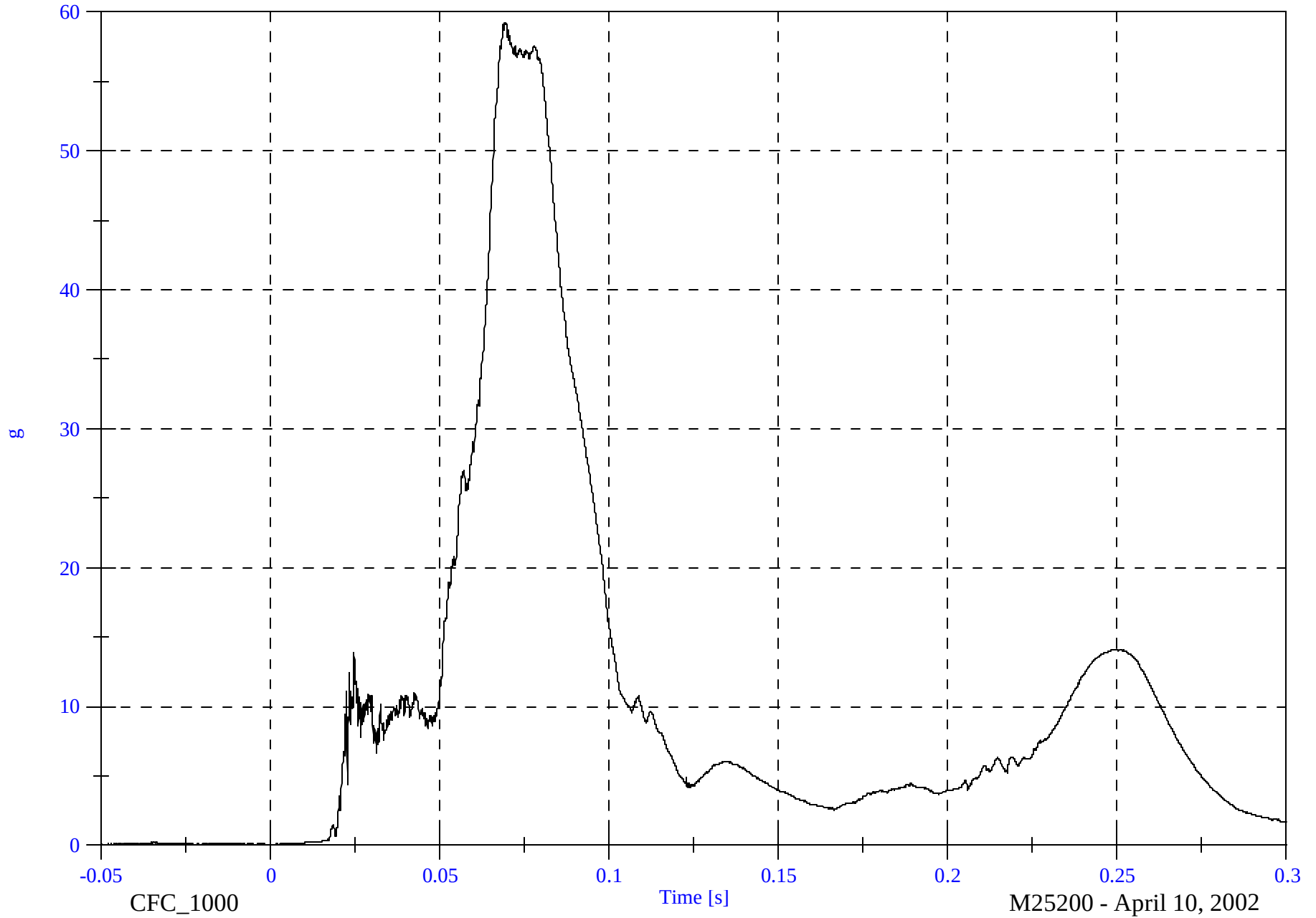


NCAP Test #6 - 2002 Nissan Altima

Max: 59.2 [g] at 0.069 [s]

Min: 0.0 [g] at 0.000 [s]

P1 Head CG Red Resultant



B-17

8642-NCAP-06

CFC_1000

Time [s]

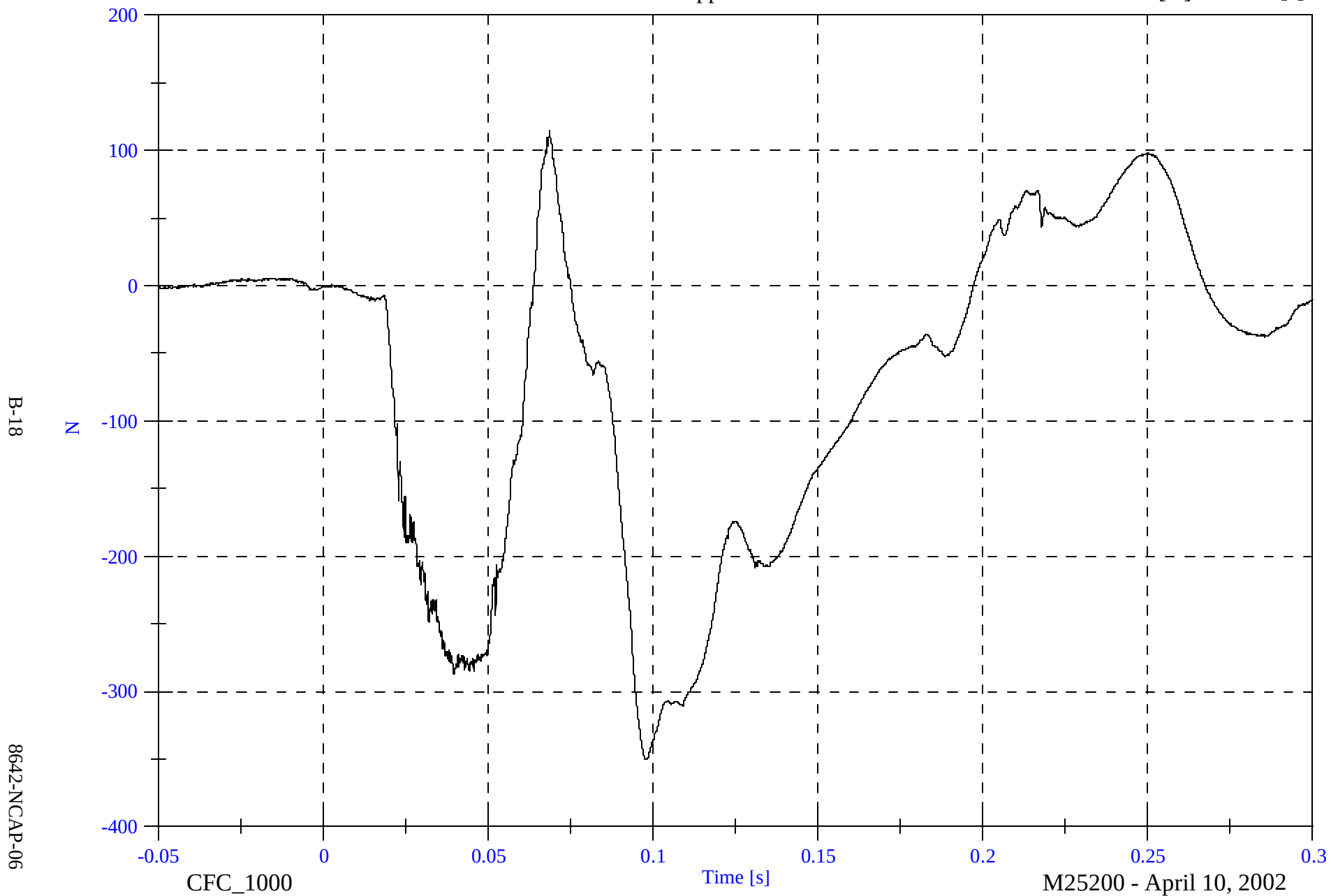
M25200 - April 10, 2002

NCAP Test #6 - 2002 Nissan Altima

P1 Upper Neck Fx

Max: 114.5 [N] at 0.069 [s]

Min: -350.2 [N] at 0.098 [s]

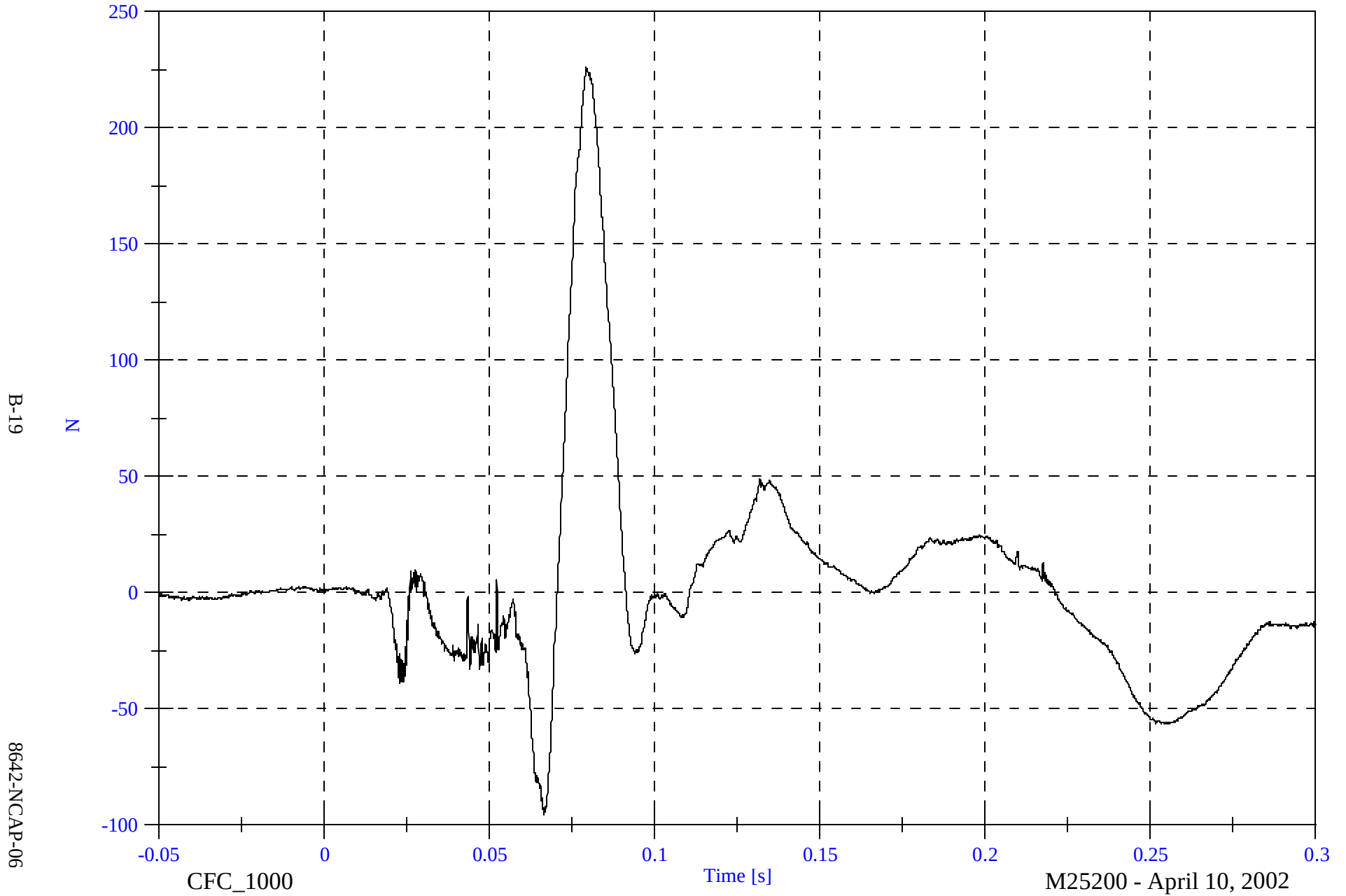


NCAP Test #6 - 2002 Nissan Altima

Max: 226.1 [N] at 0.079 [s]

Min: -95.4 [N] at 0.067 [s]

P1 Upper Neck Fy

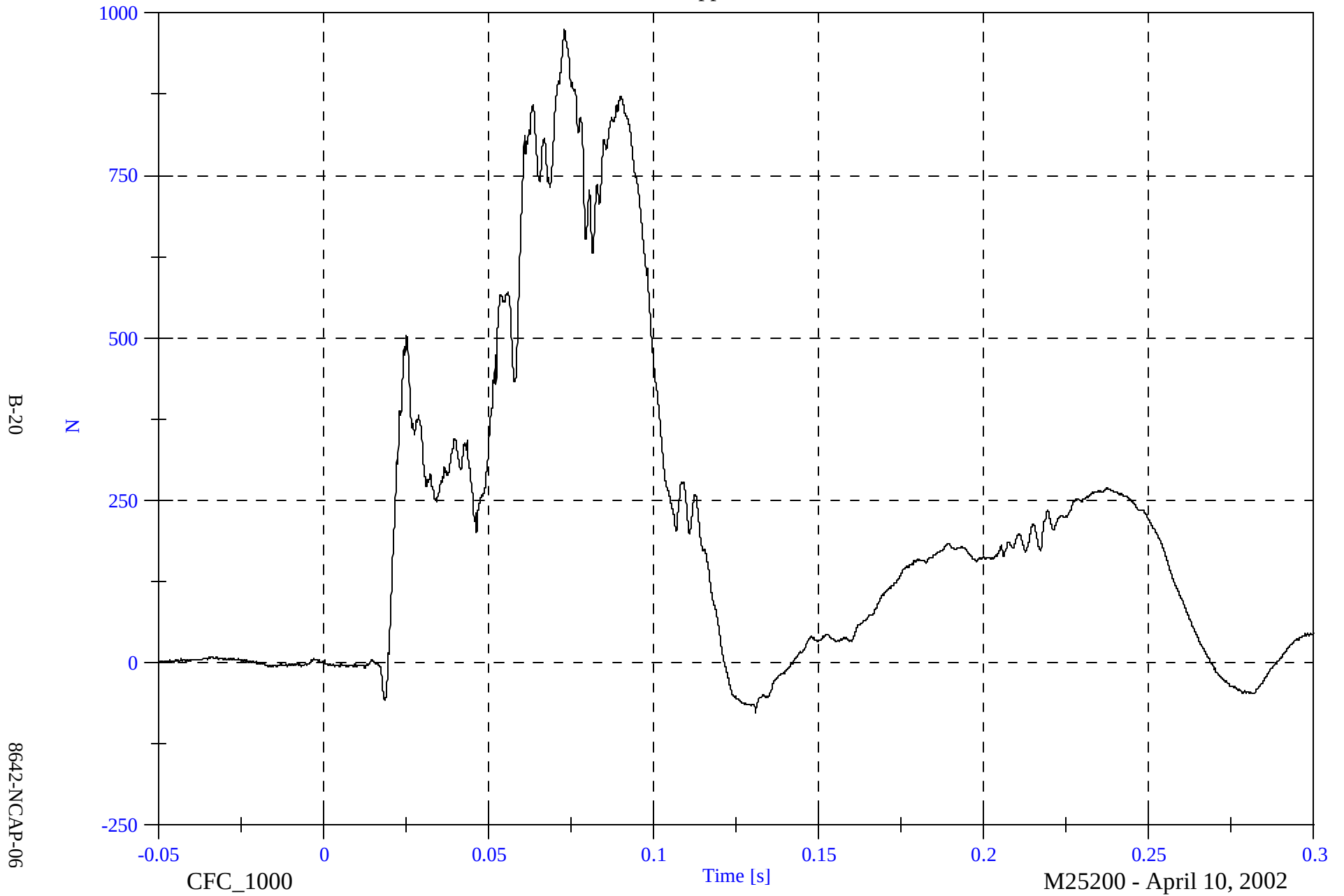


NCAP Test #6 - 2002 Nissan Altima

Max: 974.9 [N] at 0.073 [s]

Min: -77.9 [N] at 0.131 [s]

P1 Upper Neck Fz

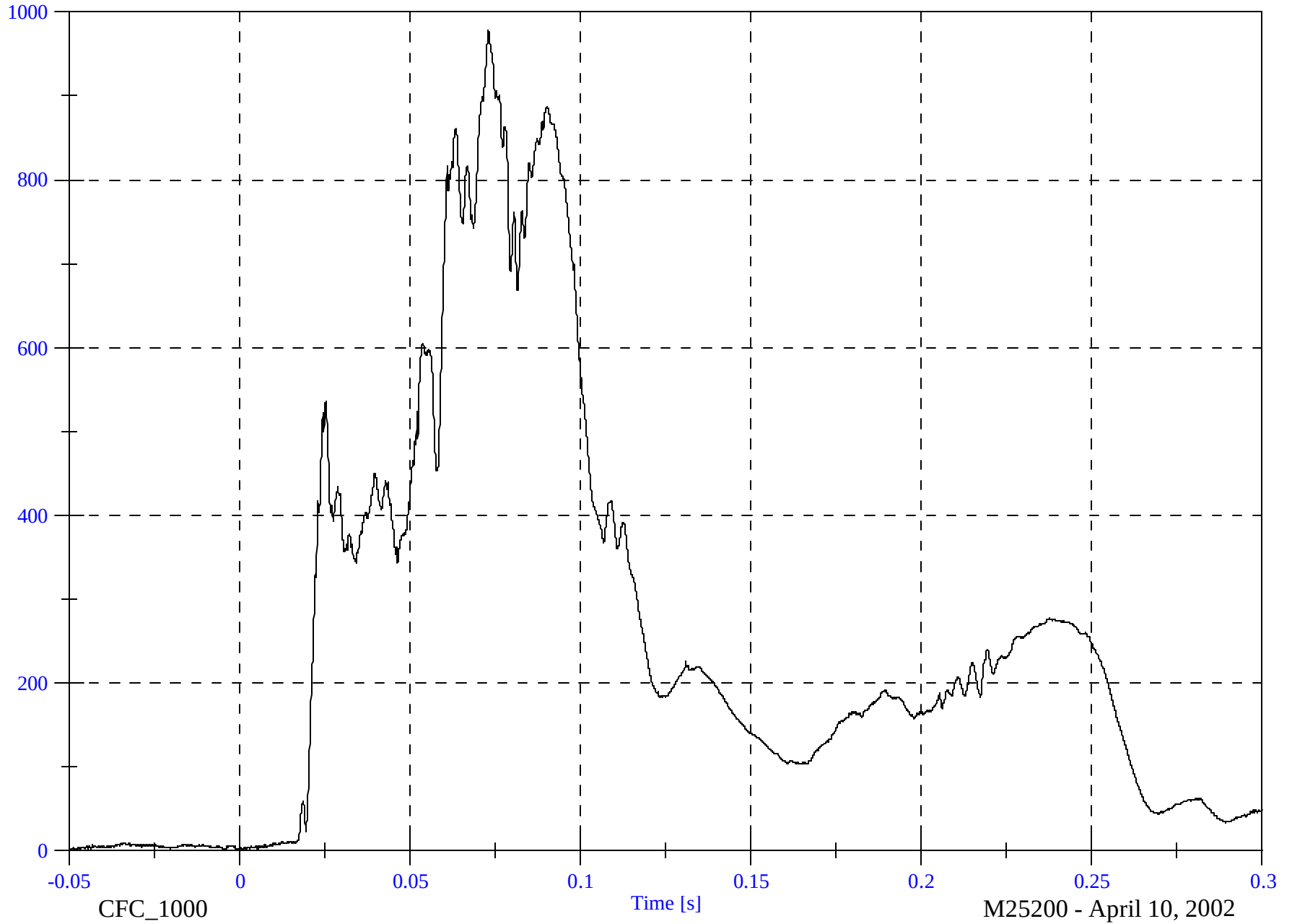


NCAP Test #6 - 2002 Nissan Altima

P1 Upper Neck F Resultant

Max: 978.1 [N] at 0.073 [s]

Min: 1.2 [N] at -0.050 [s]



B-21

8642-NCAP-06

NCAP Test #6 - 2002 Nissan Altima

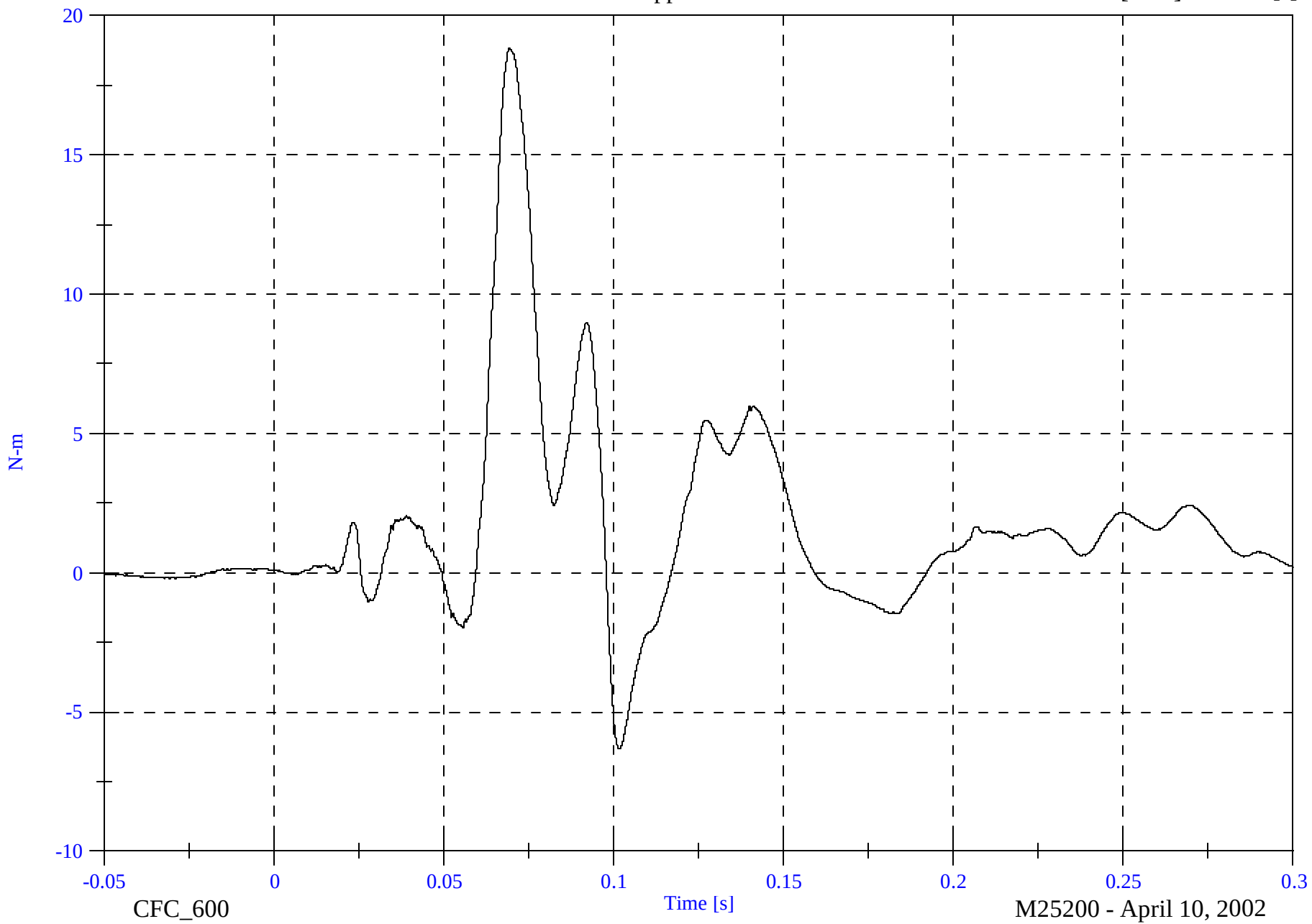
Max: 18.8 [N-m] at 0.069 [s]

P1 Upper Neck Mx

Min: -6.3 [N-m] at 0.102 [s]

B-22

8642-NCAP-06



NCAP Test #6 - 2002 Nissan Altima

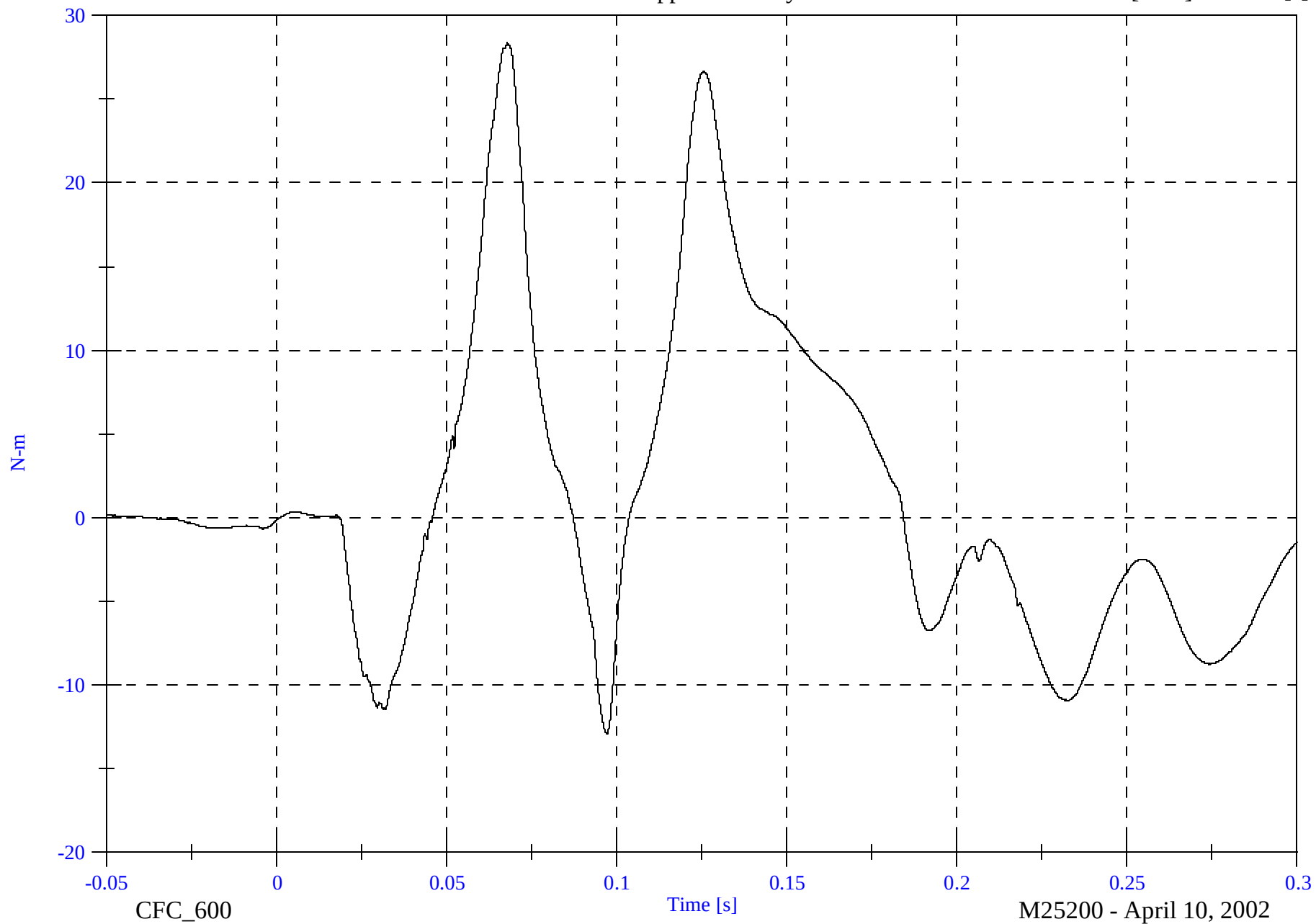
Max: 28.3 [N-m] at 0.068 [s]

Min: -12.9 [N-m] at 0.097 [s]

P1 Upper Neck My

B-23

8642-NCAP-06

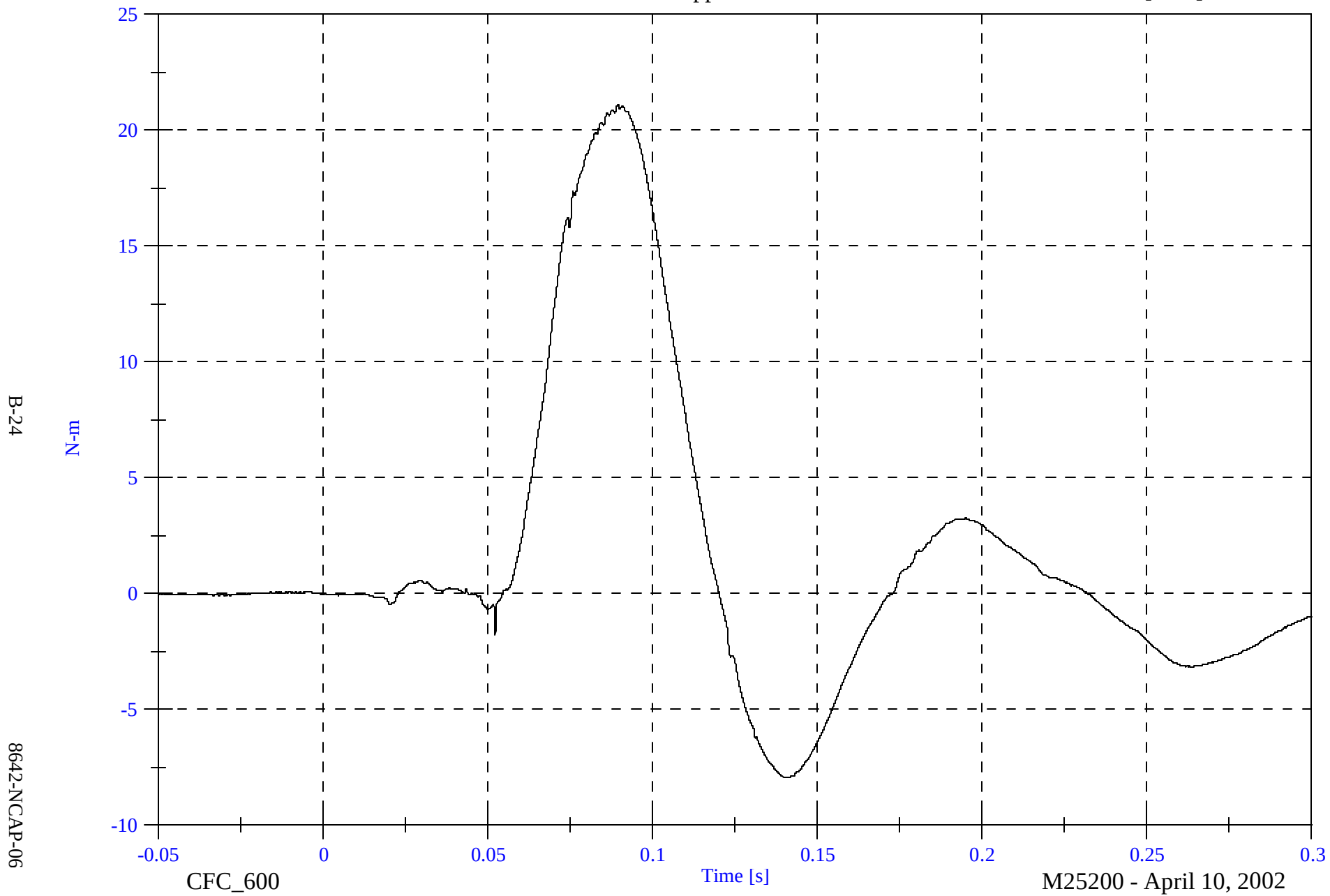


NCAP Test #6 - 2002 Nissan Altima

Max: 21.1 [N-m] at 0.089 [s]

Min: -7.9 [N-m] at 0.141 [s]

P1 Upper Neck Mz



NCAP Test #6 - 2002 Nissan Altima

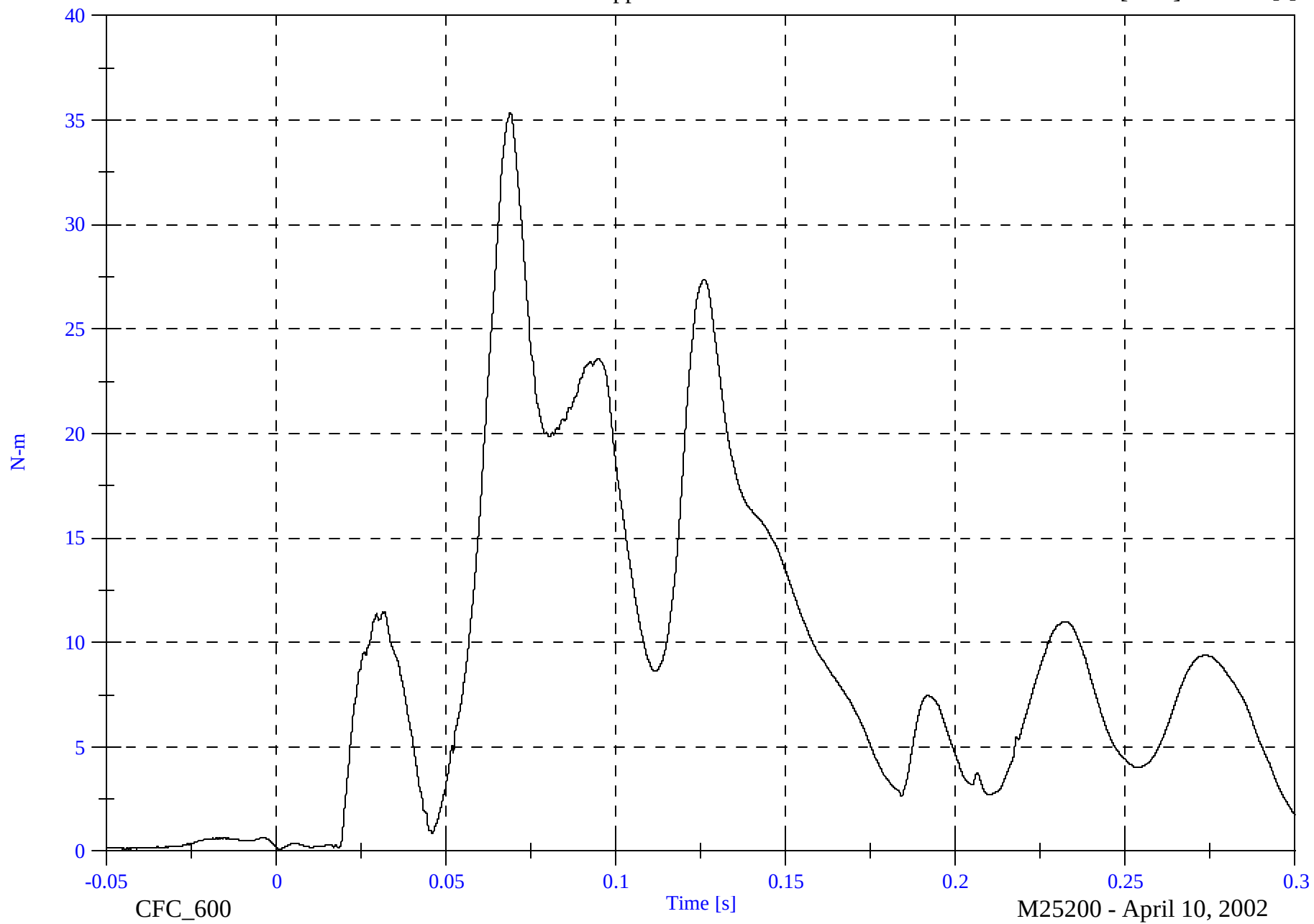
P1 Upper Neck M Resultant

Max: 35.4 [N-m] at 0.069 [s]

Min: 0.1 [N-m] at 0.001 [s]

B-25

8642-NCAP-06

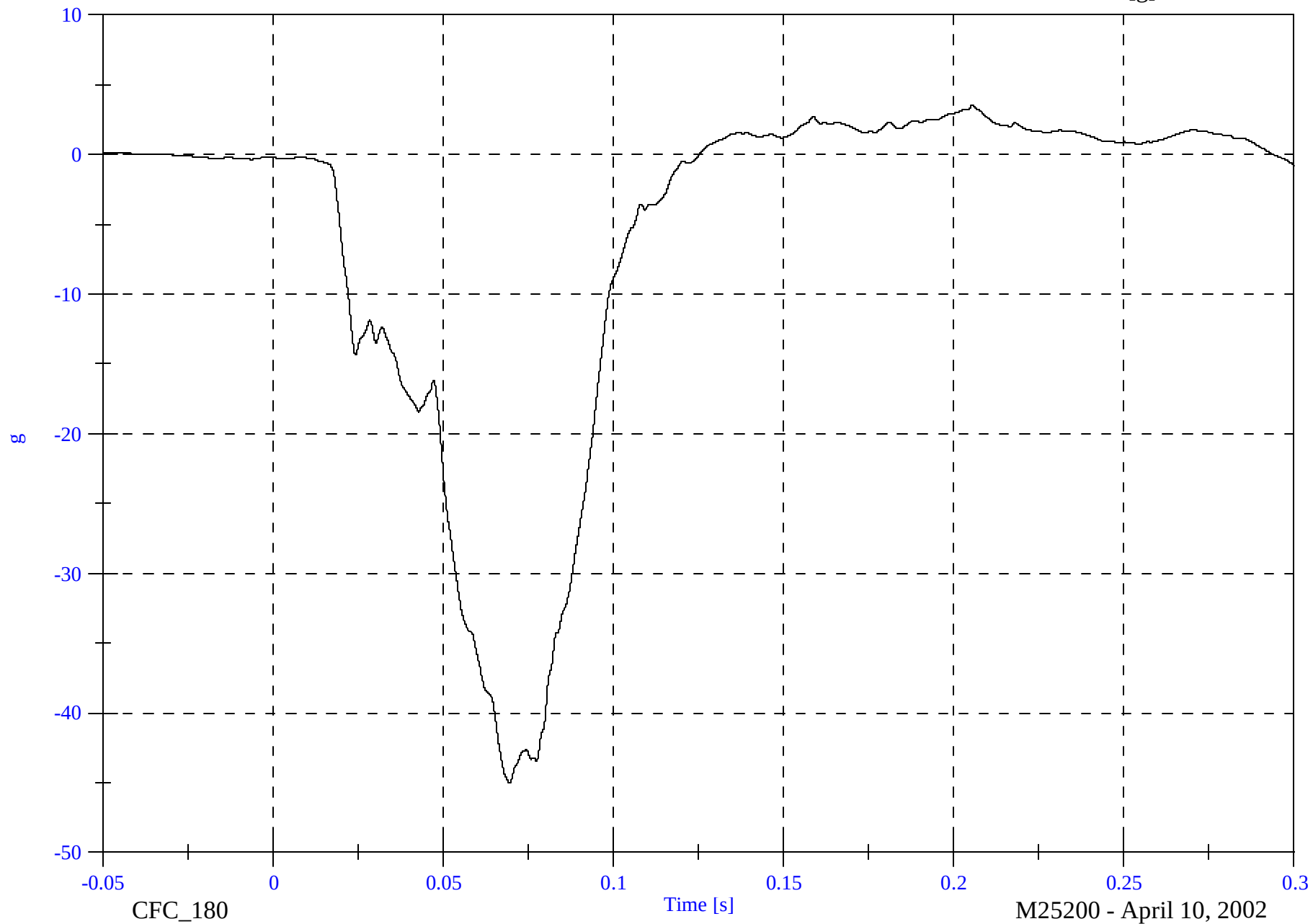


NCAP Test #6 - 2002 Nissan Altima

Max: 3.5 [g] at 0.205 [s]

Min: -45.0 [g] at 0.069 [s]

P1 Chest x



B-26

8642-NCAP-06

CFC_180

Time [s]

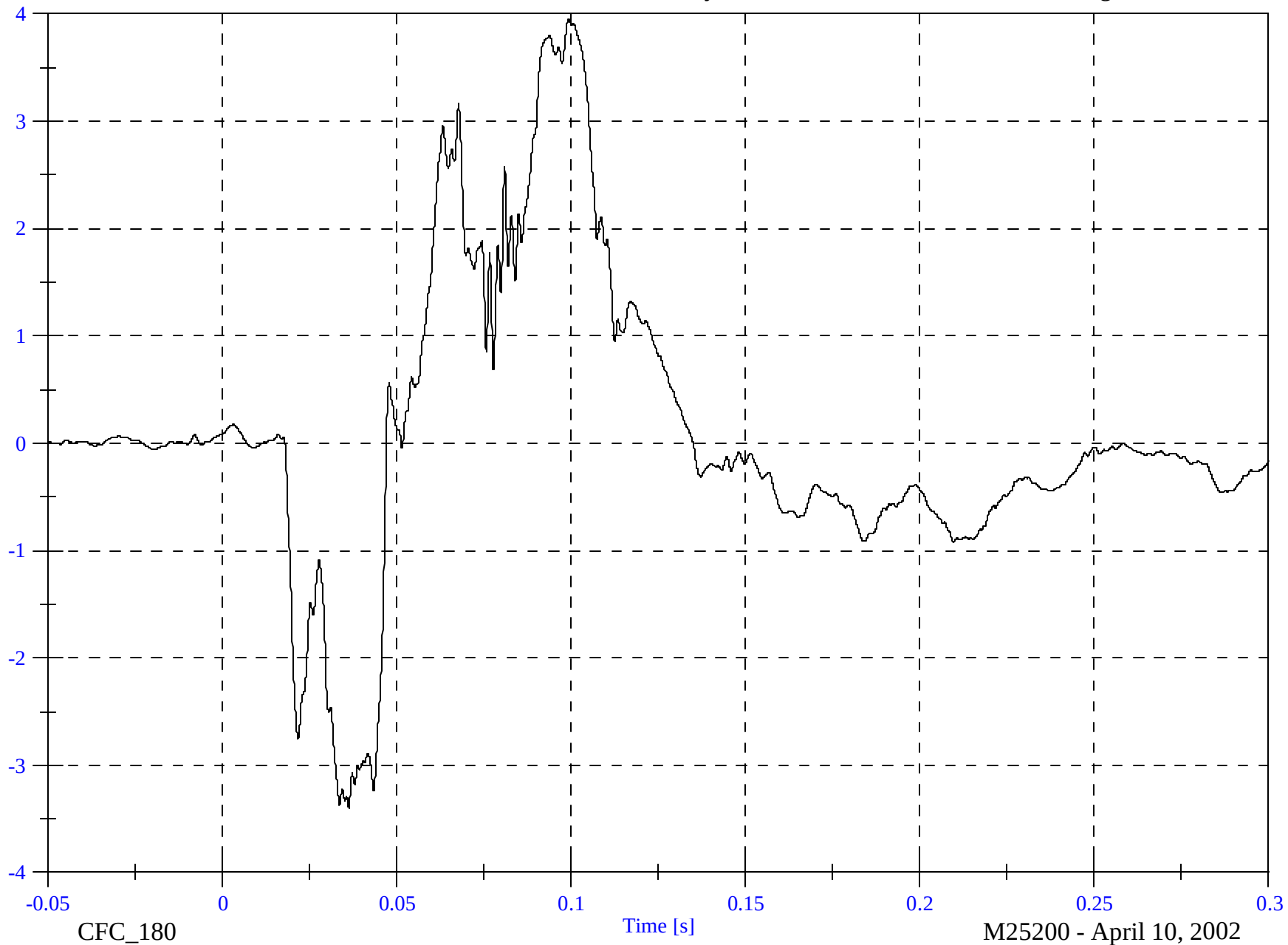
M25200 - April 10, 2002

NCAP Test #6 - 2002 Nissan Altima

Max: 3.9 [g] at 0.099 [s]

Min: -3.4 [g] at 0.036 [s]

P1 Chest y



B-27

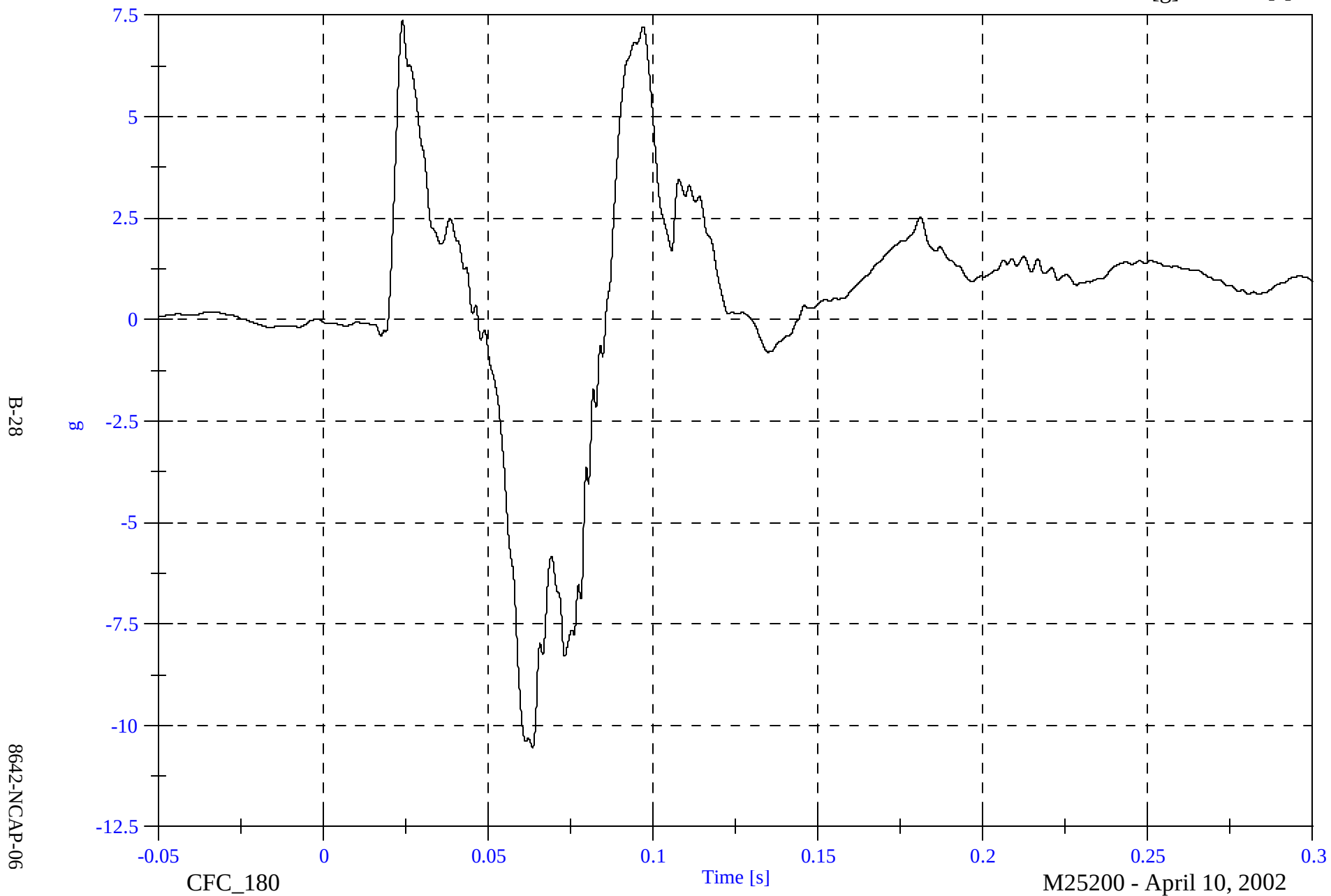
8642-NCAP-06

NCAP Test #6 - 2002 Nissan Altima

Max: 7.4 [g] at 0.024 [s]

Min: -10.5 [g] at 0.063 [s]

P1 Chest z

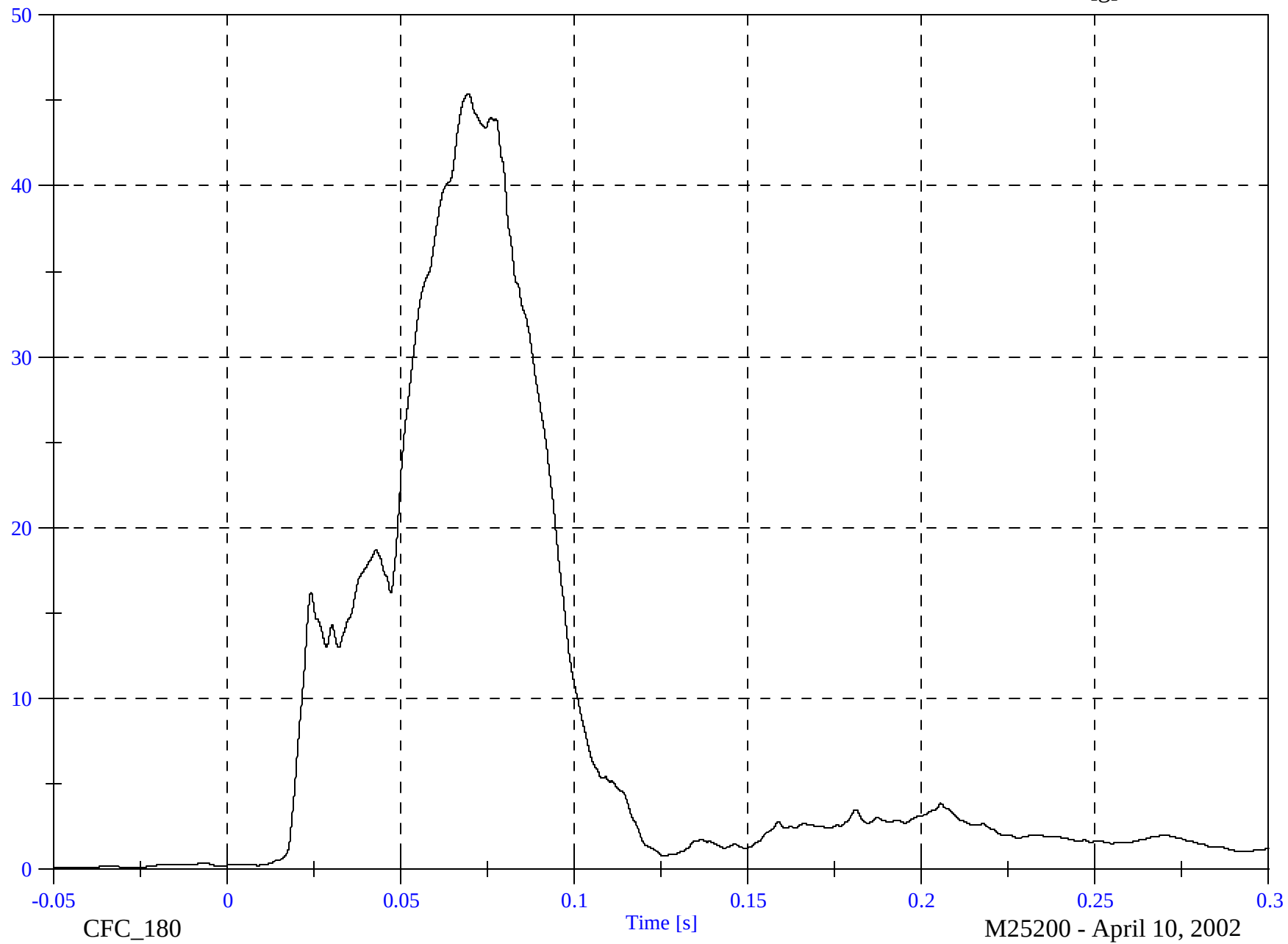


NCAP Test #6 - 2002 Nissan Altima

P1 Chest Resultant

Max: 45.4 [g] at 0.070 [s]

Min: 0.1 [g] at -0.025 [s]



B-29

8642-NCAP-06

CFC_180

Time [s]

M25200 - April 10, 2002

NCAP Test #6 - 2002 Nissan Altima

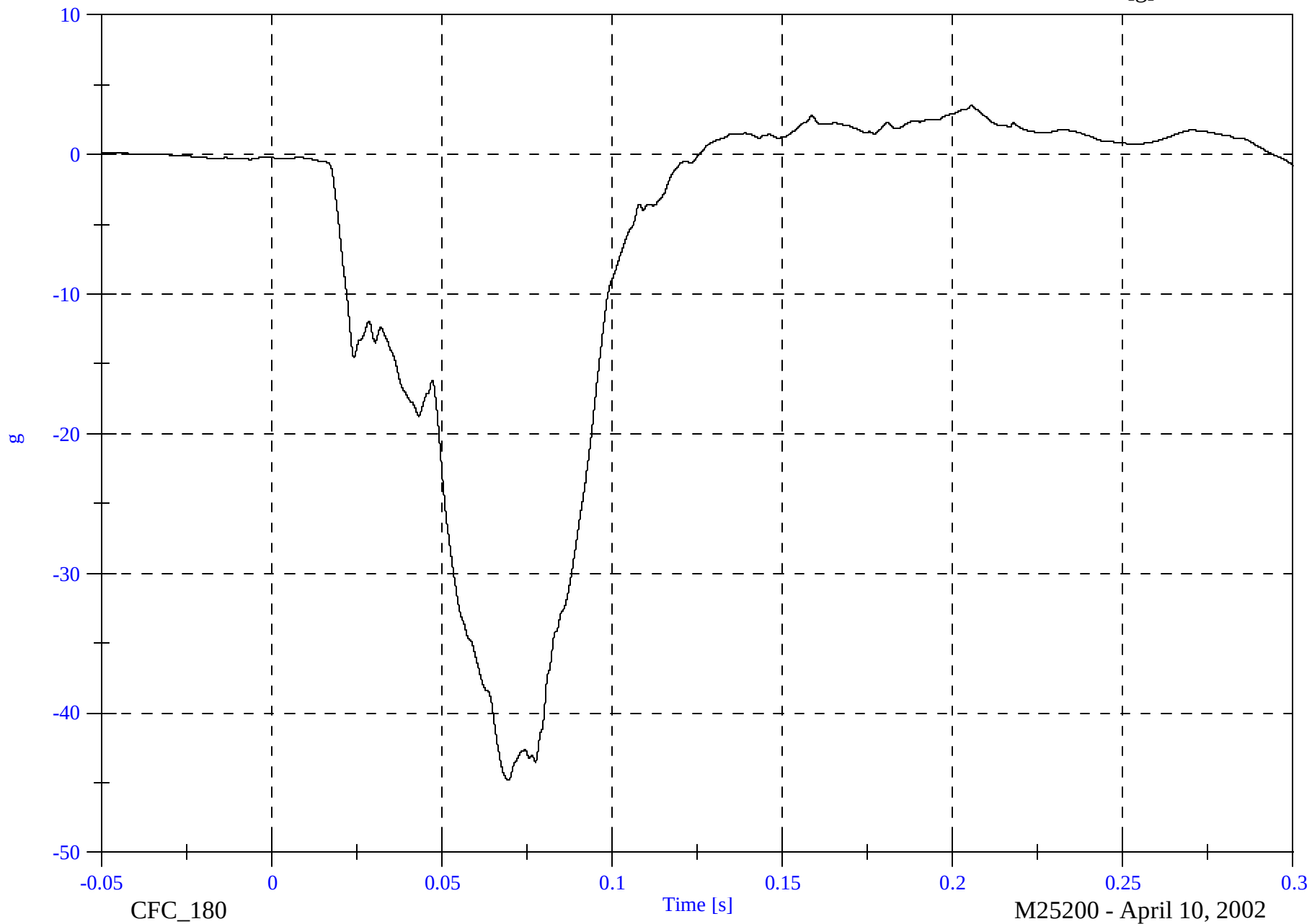
P1 Chest Red x

Max: 3.5 [g] at 0.205 [s]

Min: -44.8 [g] at 0.070 [s]

B-30

8642-NCAP-06



NCAP Test #6 - 2002 Nissan Altima

Max: 4.0 [g] at 0.099 [s]

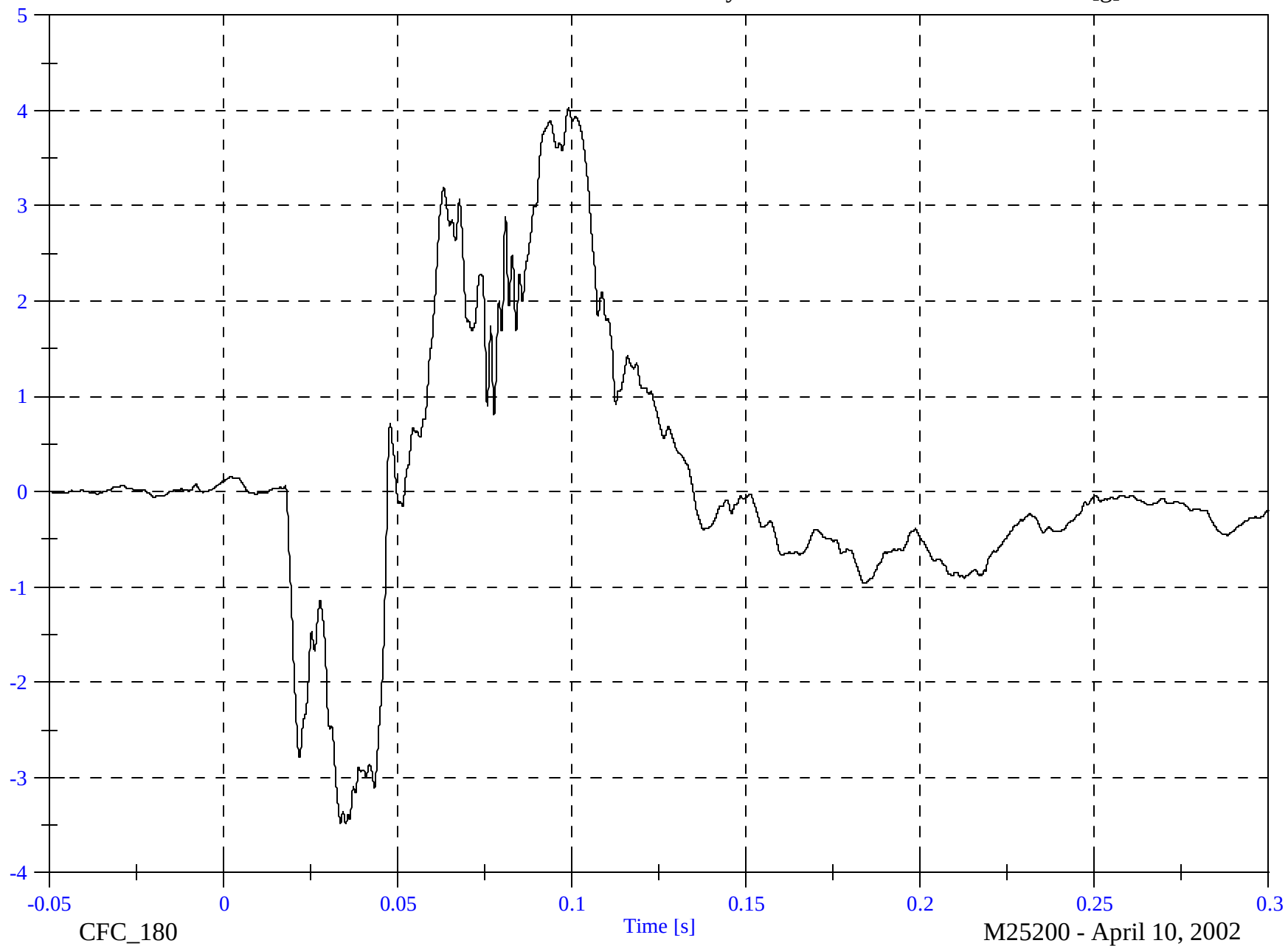
Min: -3.5 [g] at 0.035 [s]

P1 Chest Red y

B-31

g

8642-NCAP-06

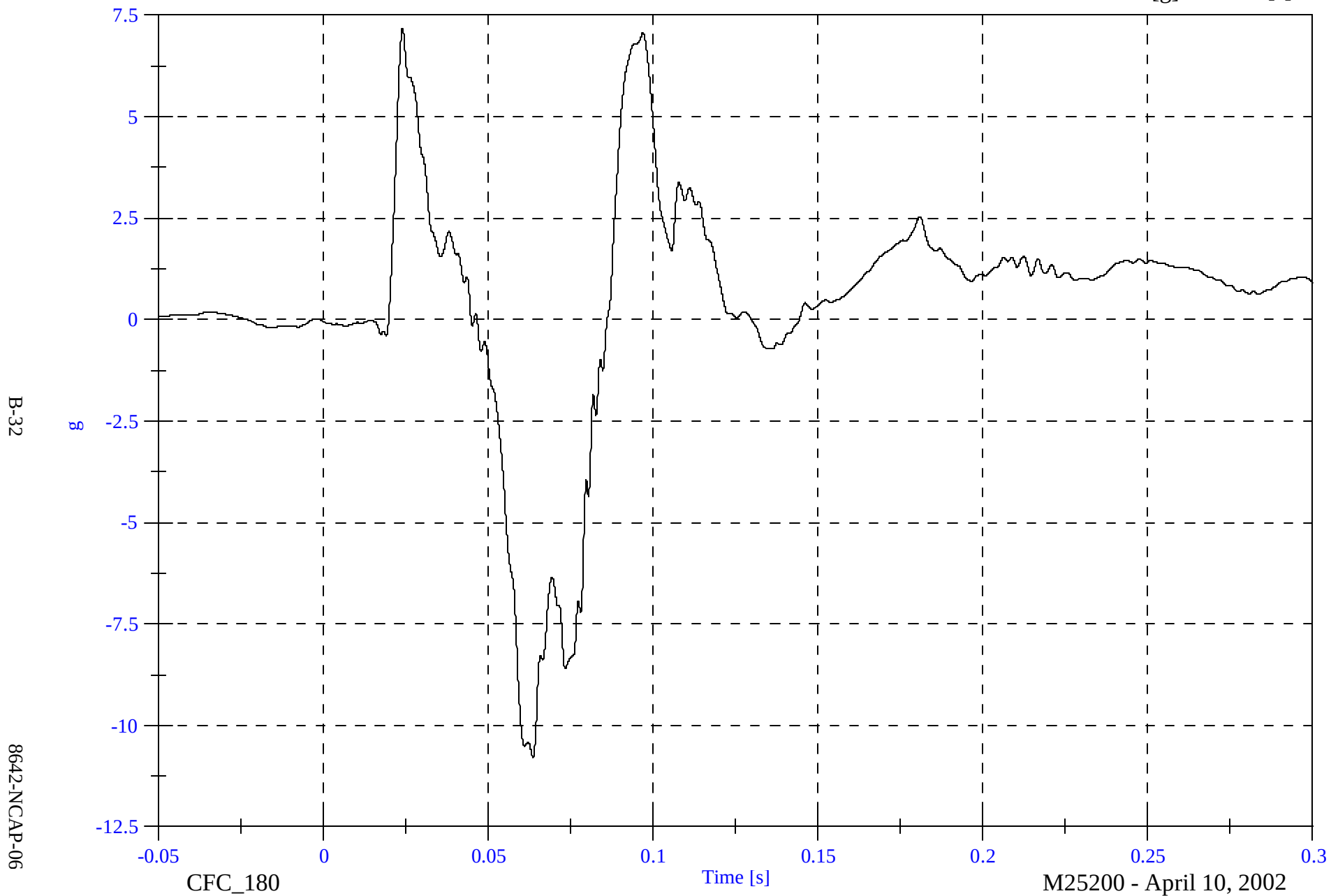


NCAP Test #6 - 2002 Nissan Altima

Max: 7.2 [g] at 0.024 [s]

Min: -10.8 [g] at 0.064 [s]

P1 Chest Red z

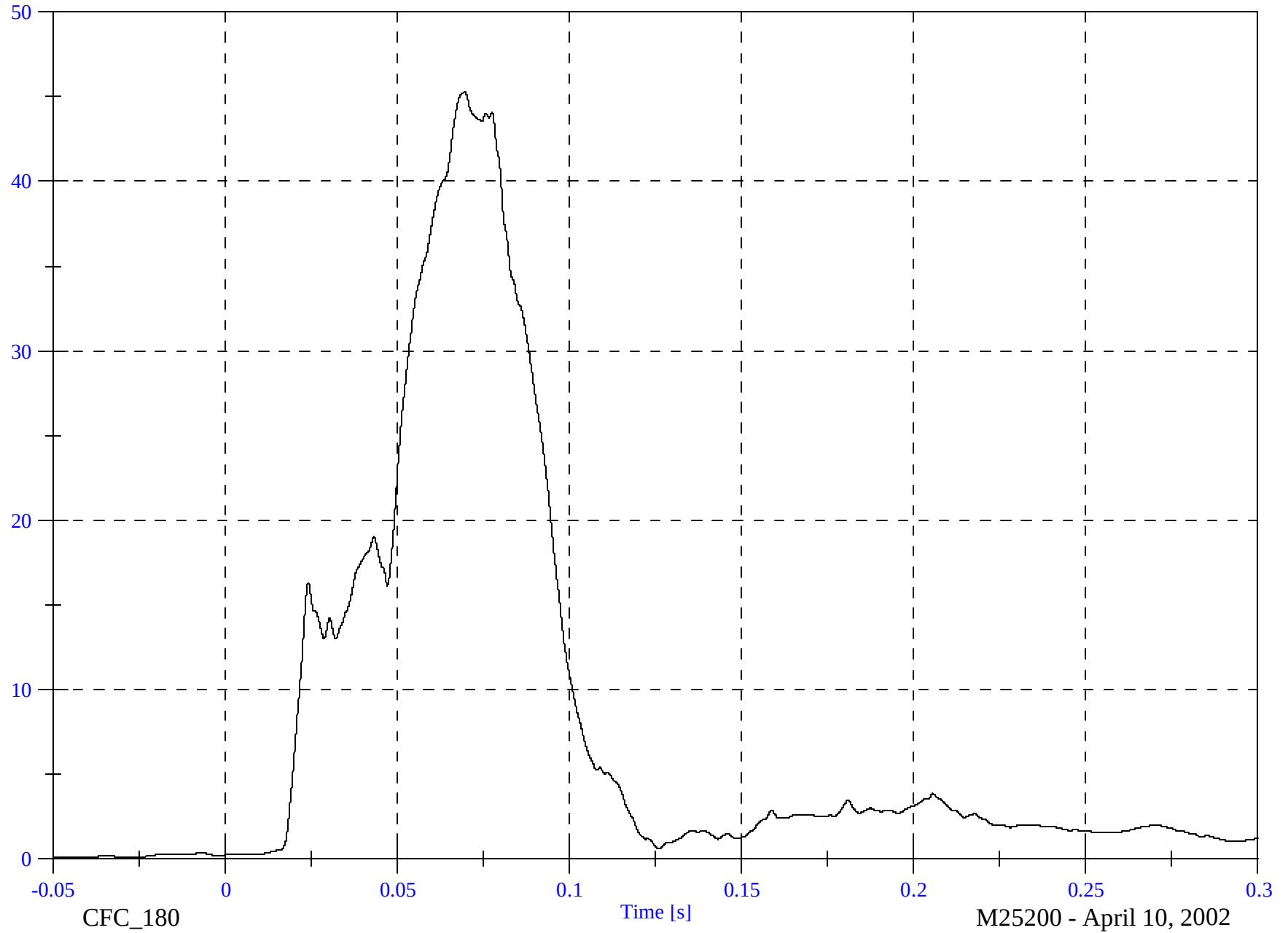


NCAP Test #6 - 2002 Nissan Altima

P1 Chest Red Resultant

Max: 45.3 [g] at 0.070 [s]

Min: 0.1 [g] at -0.025 [s]



B-33

8642-NCAP-06

CFC_180

Time [s]

M25200 - April 10, 2002

NCAP Test #6 - 2002 Nissan Altima

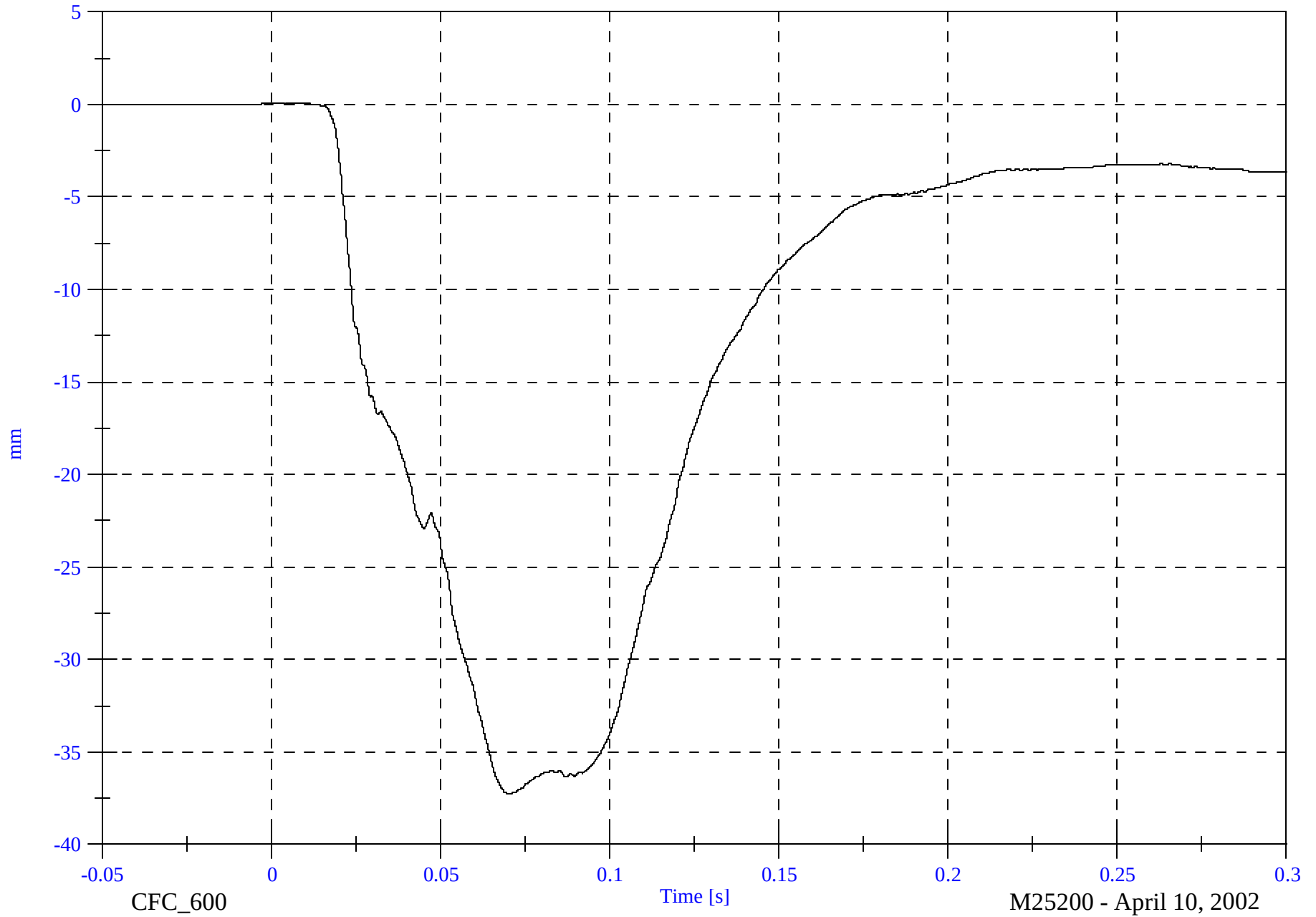
P1 Chest Compression

Max: 0.1 [mm] at 0.007 [s]

Min: -37.2 [mm] at 0.070 [s]

B-34

8642-NCAP-06

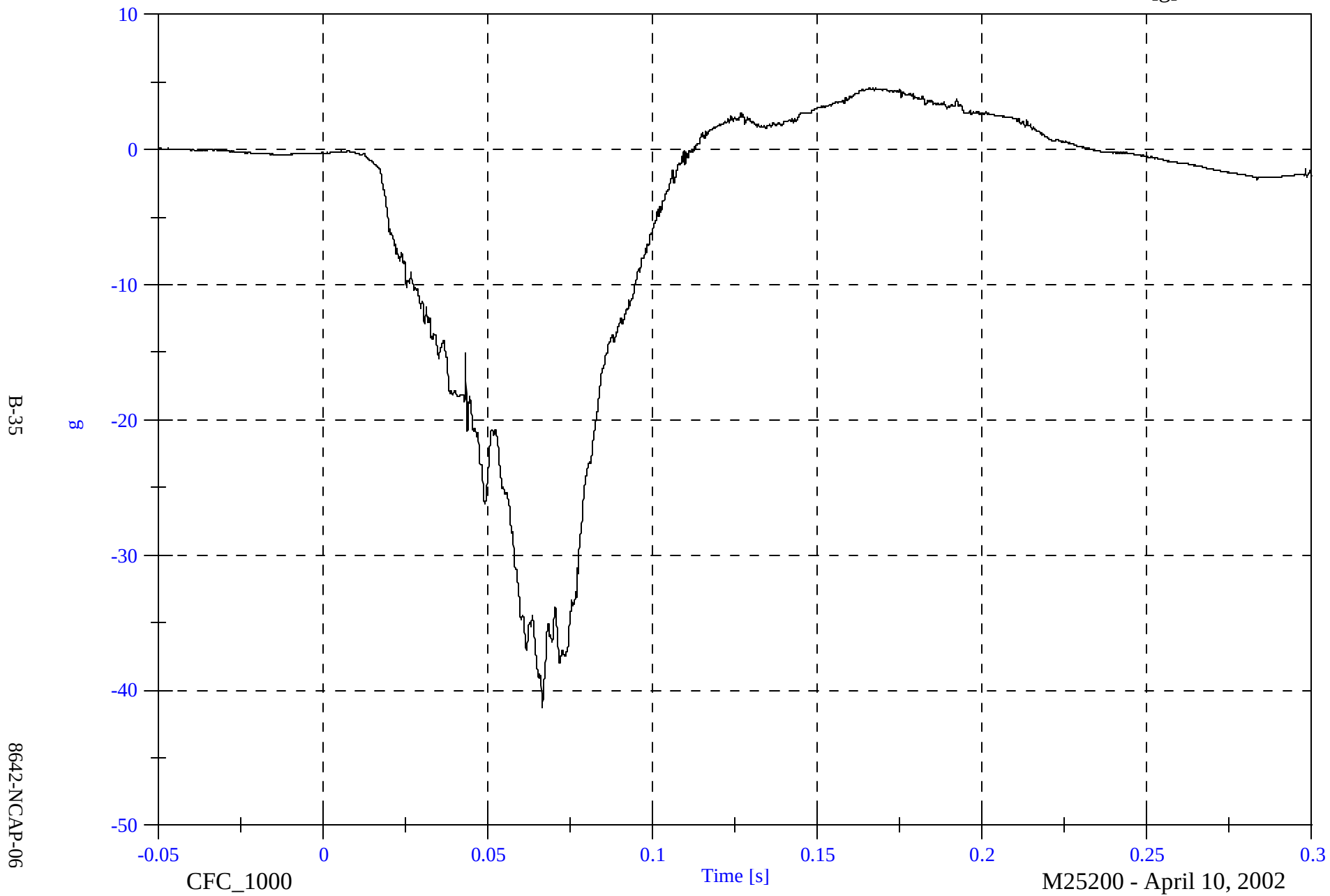


NCAP Test #6 - 2002 Nissan Altima

Max: 4.6 [g] at 0.168 [s]

Min: -41.3 [g] at 0.066 [s]

P1 Pelvic x

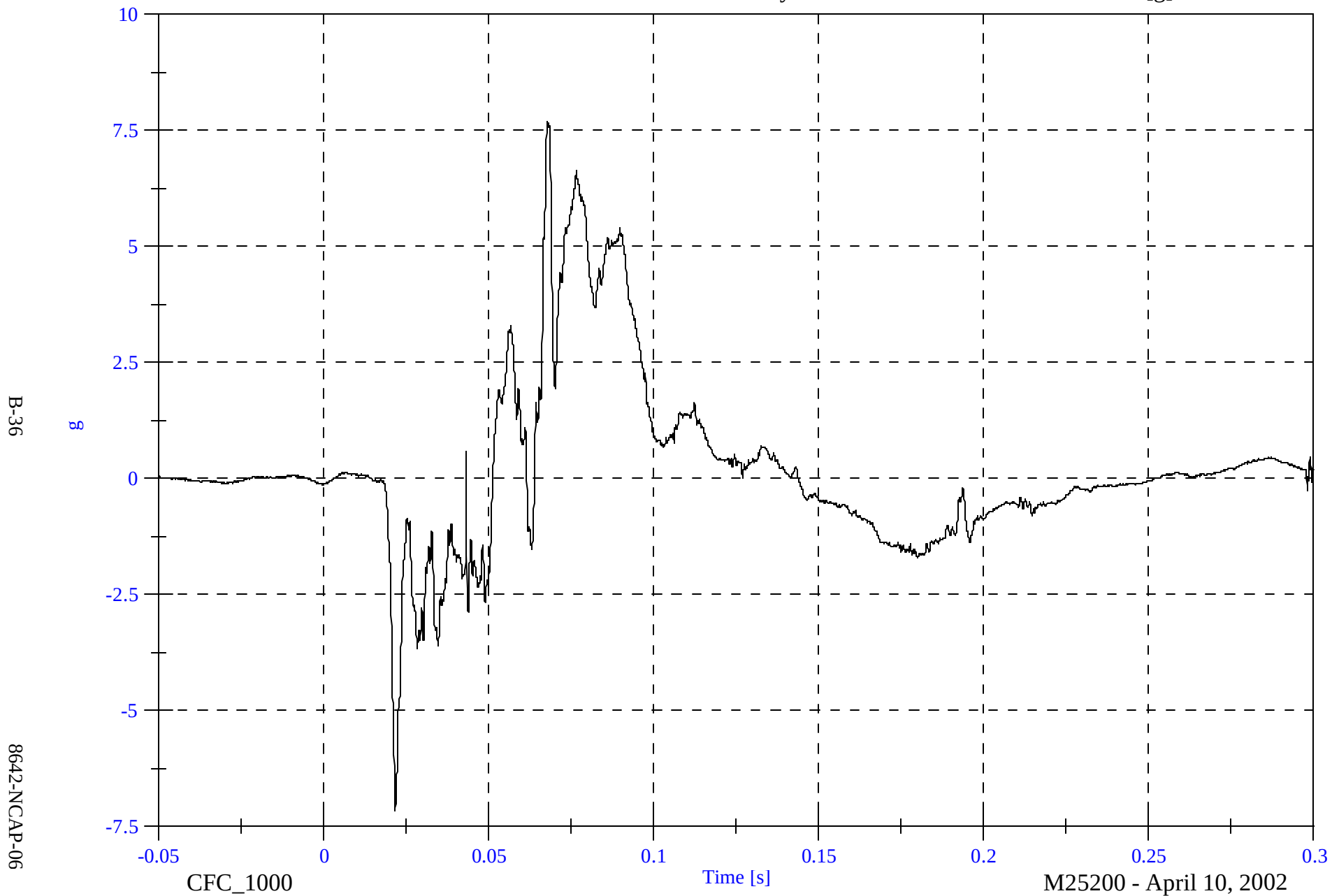


NCAP Test #6 - 2002 Nissan Altima

Max: 7.7 [g] at 0.068 [s]

Min: -7.1 [g] at 0.022 [s]

P1 Pelvic y

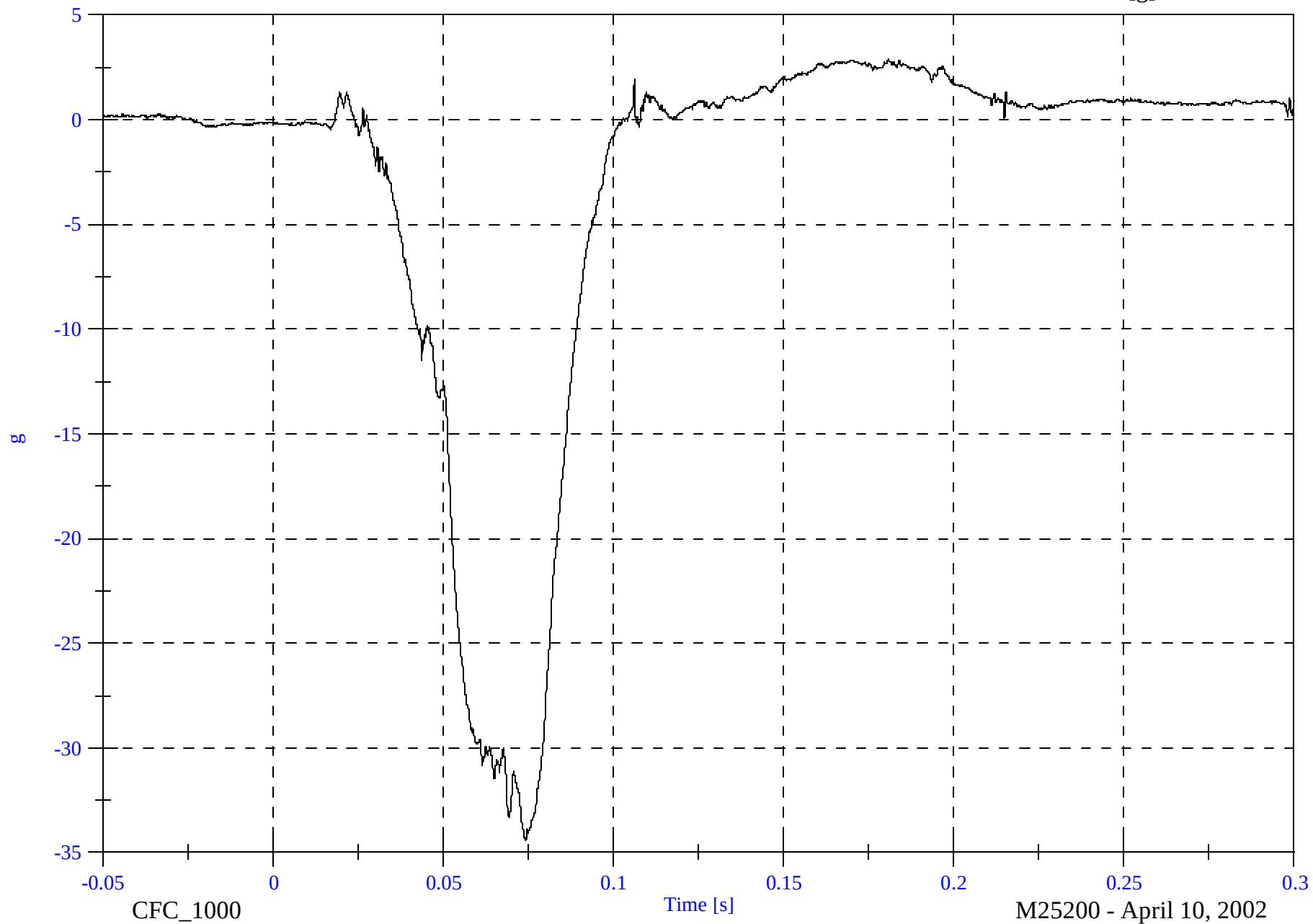


NCAP Test #6 - 2002 Nissan Altima

Max: 2.9 [g] at 0.181 [s]

Min: -34.4 [g] at 0.074 [s]

P1 Pelvic z



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8642-NCAP-06

CFC_1000

Time [s]

M25200 - April 10, 2002

NCAP Test #6 - 2002 Nissan Altima

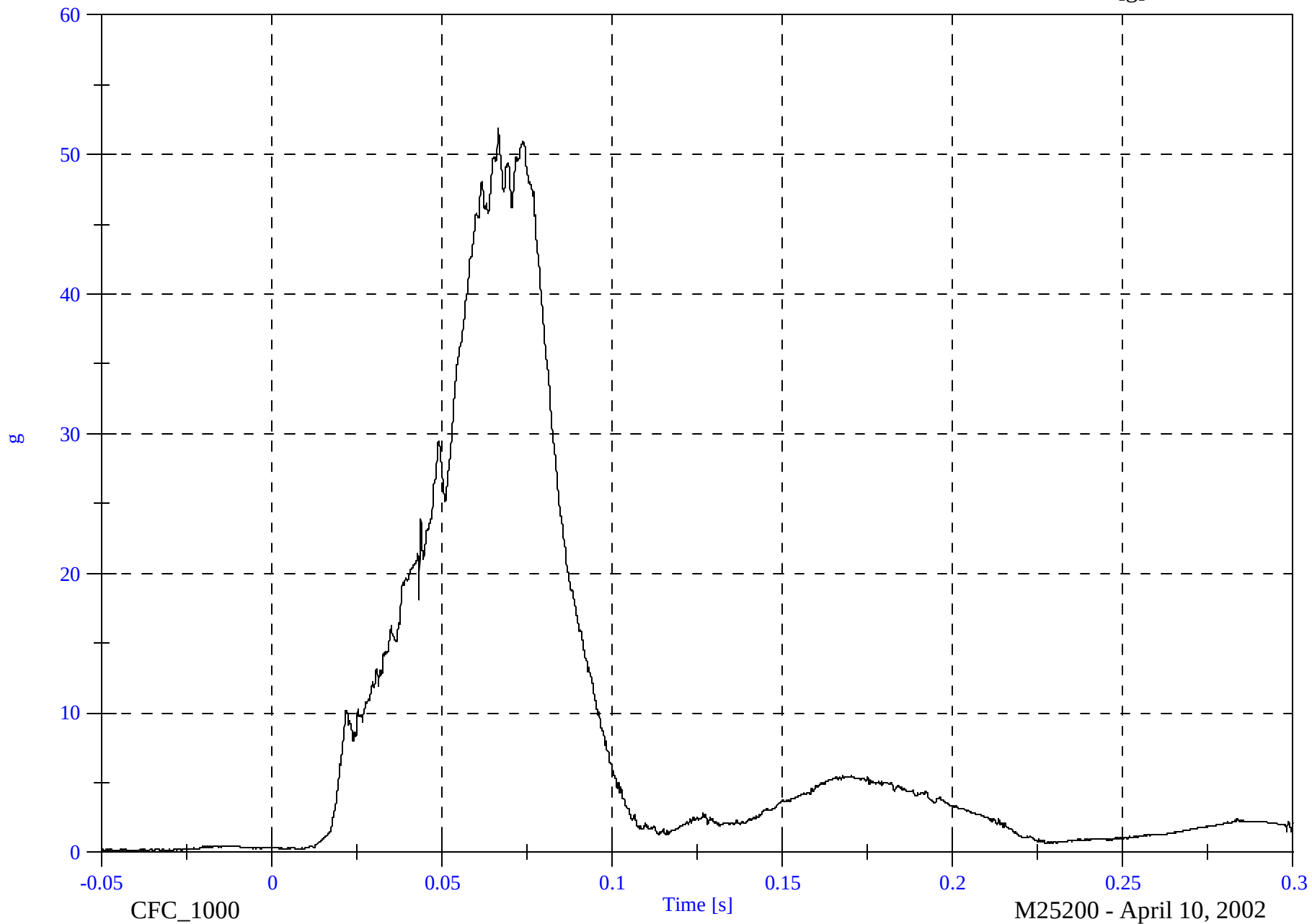
P1 Pelvic Resultant

Max: 51.9 [g] at 0.067 [s]

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

B-38

8642-NCAP-06



CFC_1000

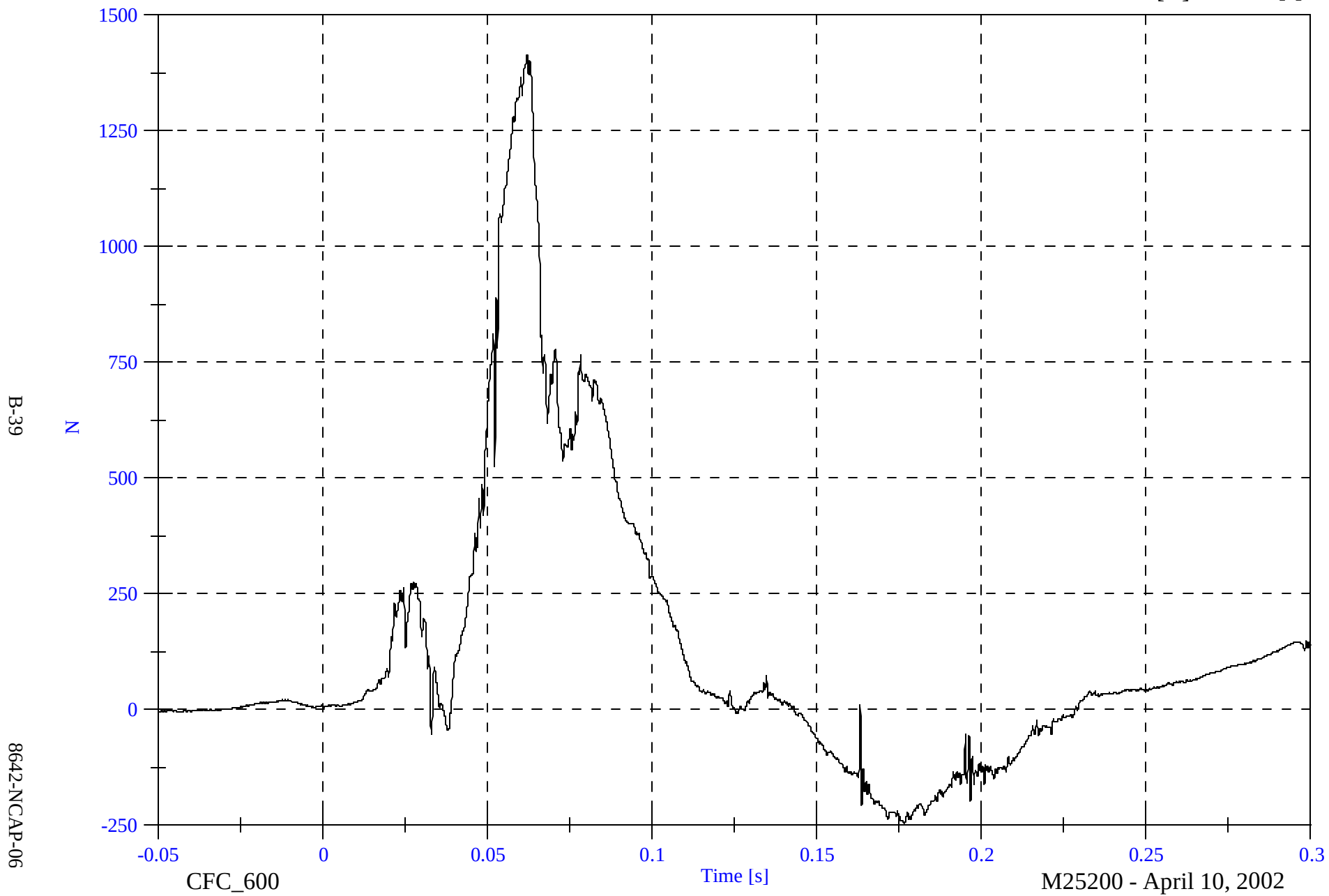
M25200 - April 10, 2002

NCAP Test #6 - 2002 Nissan Altima

P1 Left Femur

Max: 1412.2 [N] at 0.062 [s]

Min: -244.8 [N] at 0.176 [s]

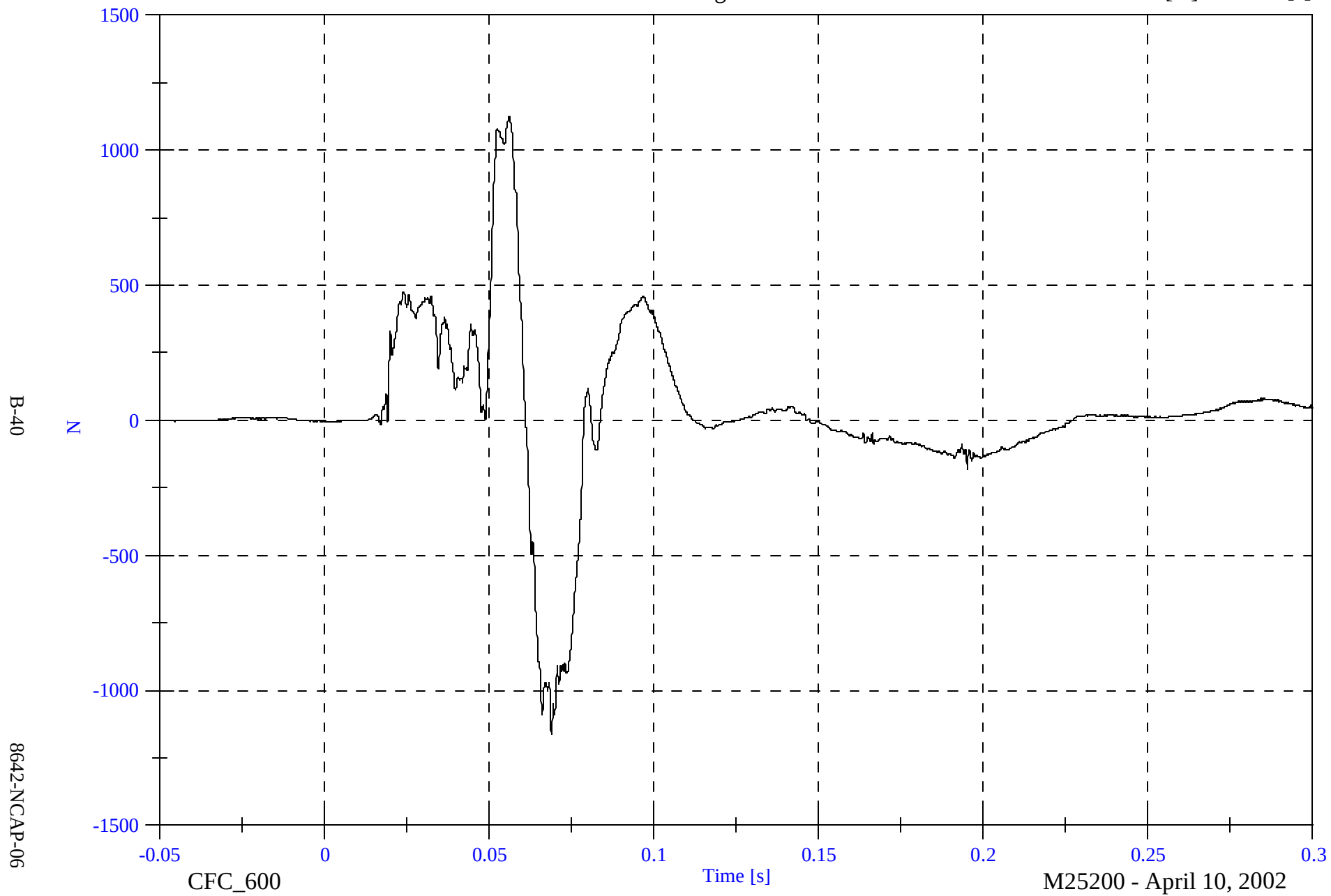


NCAP Test #6 - 2002 Nissan Altima

P1 Right Femur

Max: 1126.5 [N] at 0.056 [s]

Min: -1162.7 [N] at 0.069 [s]

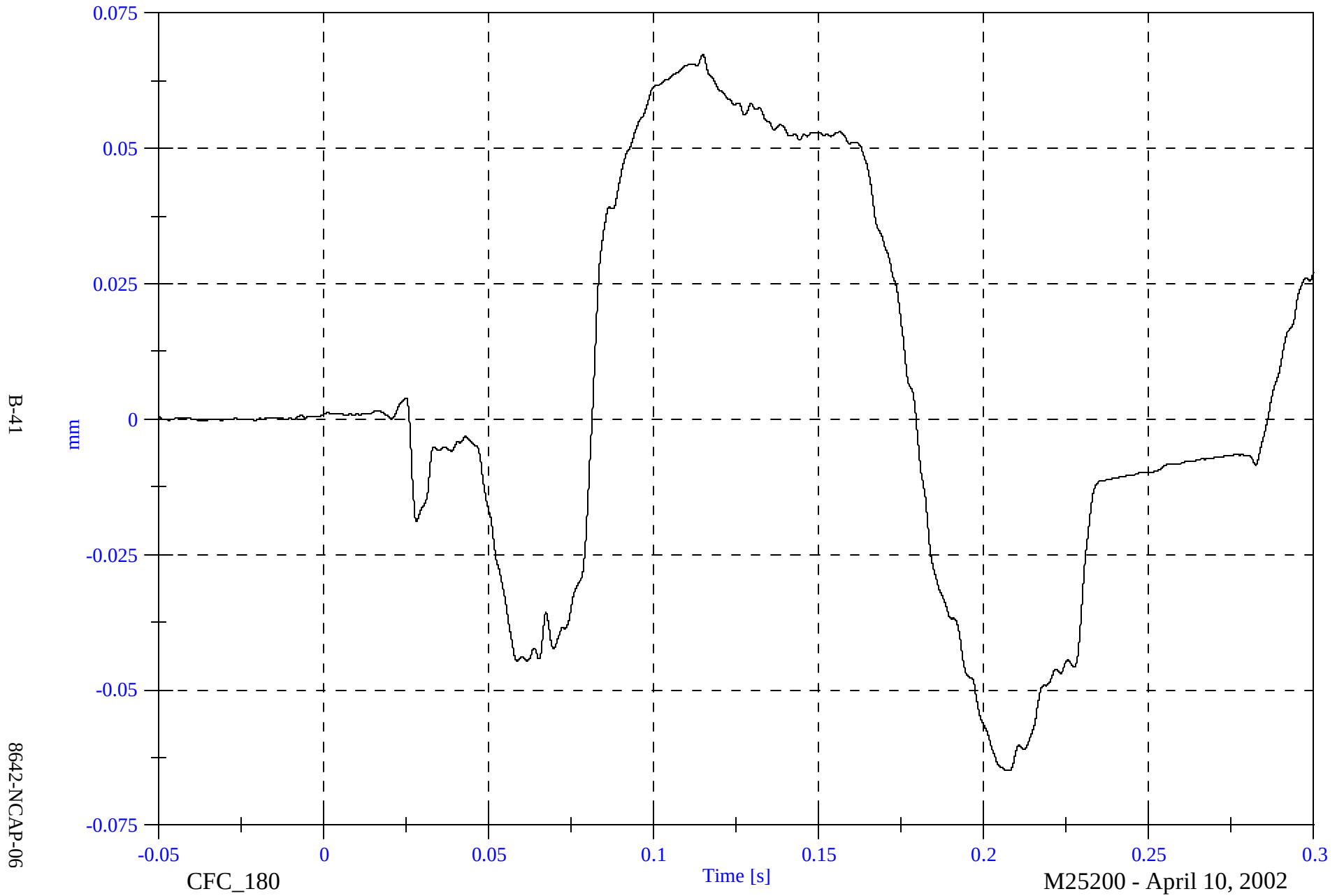


NCAP Test #6 - 2002 Nissan Altima

P1 Left Knee Shear

Max: 0.1 [mm] at 0.115 [s]

Min: -0.1 [mm] at 0.208 [s]



NCAP Test #6 - 2002 Nissan Altima

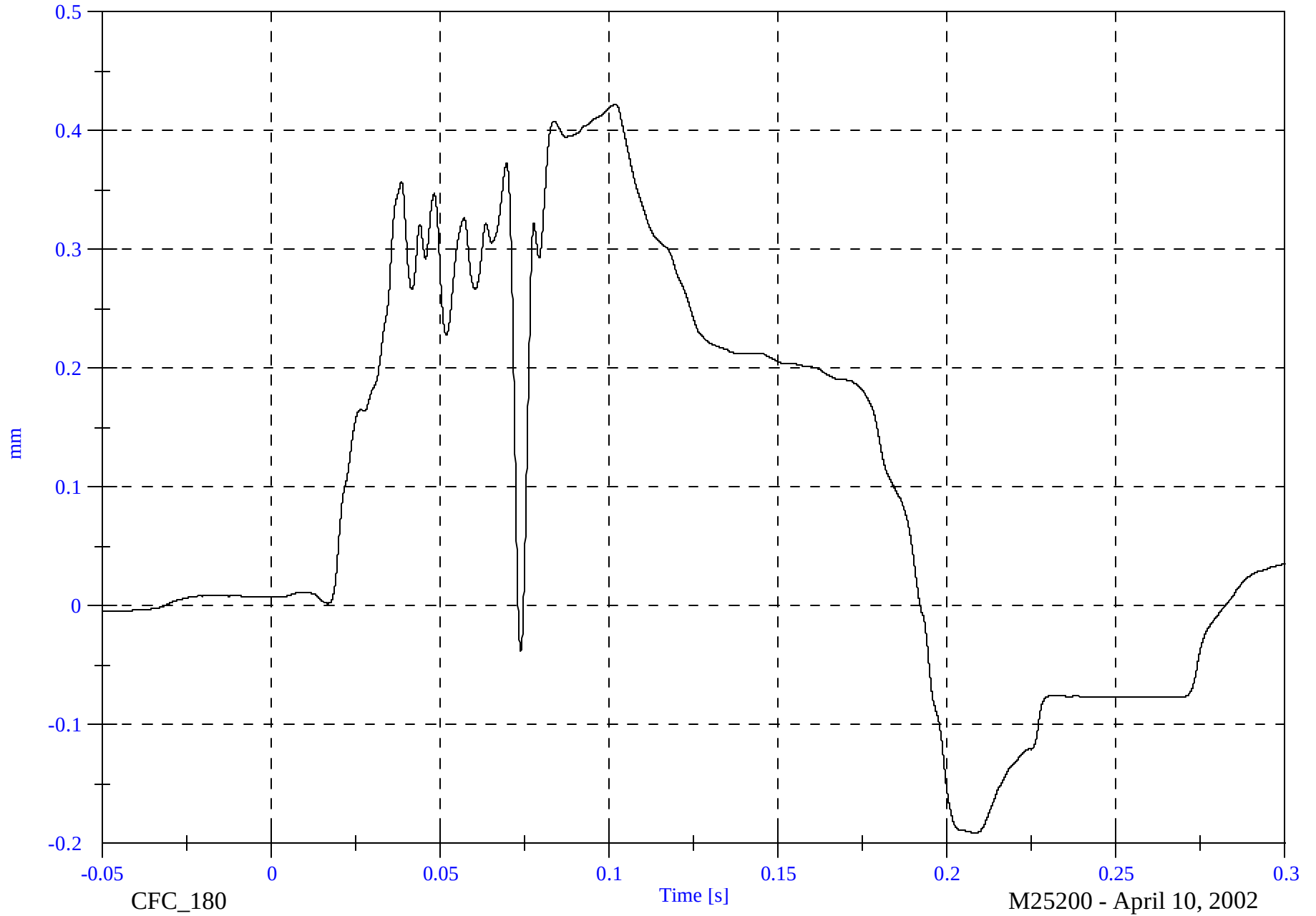
P1 Right Knee Shear

Max: 0.4 [mm] at 0.102 [s]

Min: -0.2 [mm] at 0.209 [s]

B-42

8642-NCAP-06

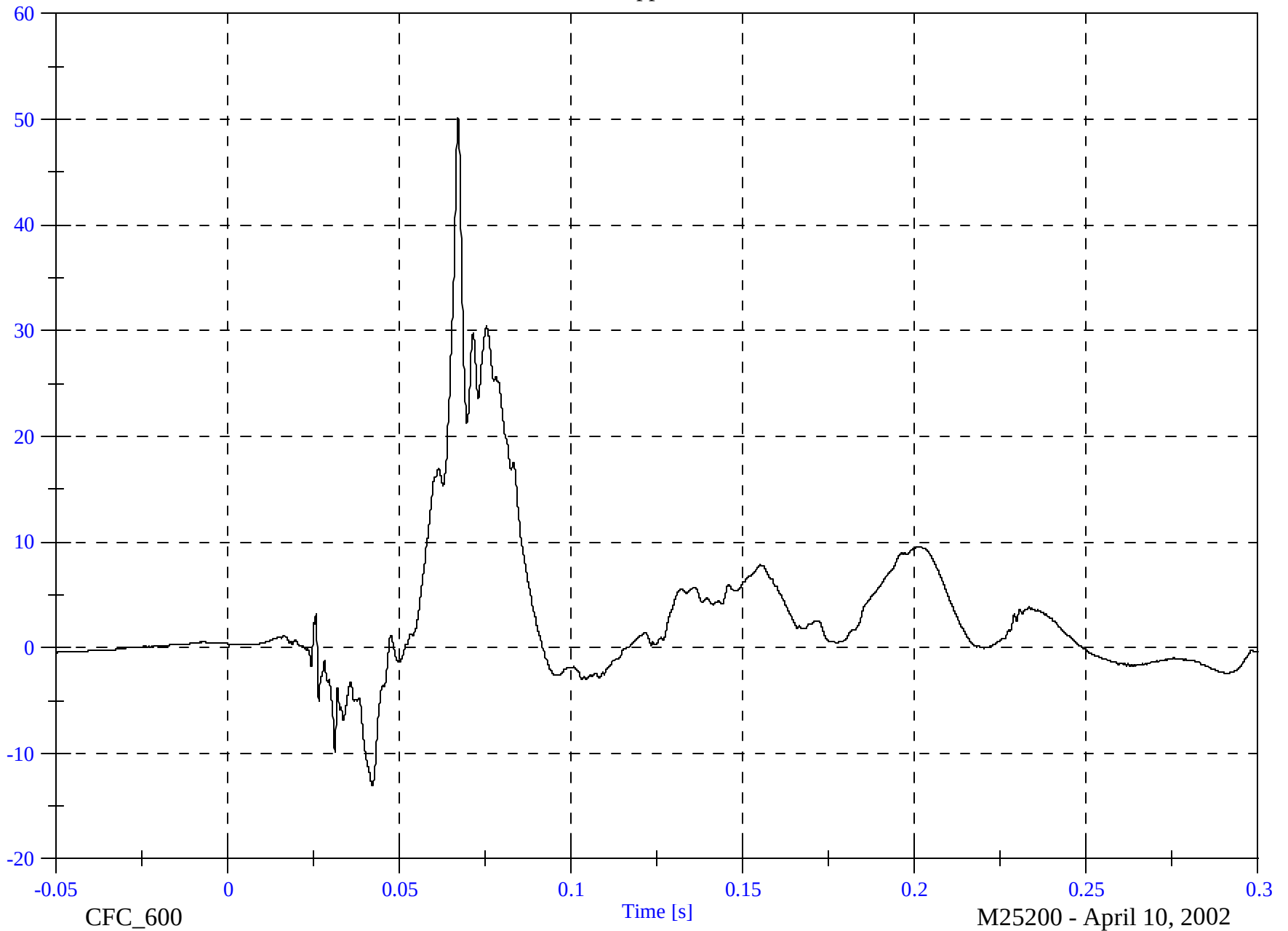


NCAP Test #6 - 2002 Nissan Altima

P1 Left Upper Tibia Mx

Max: 50.1 [N-m] at 0.067 [s]

Min: -13.1 [N-m] at 0.042 [s]



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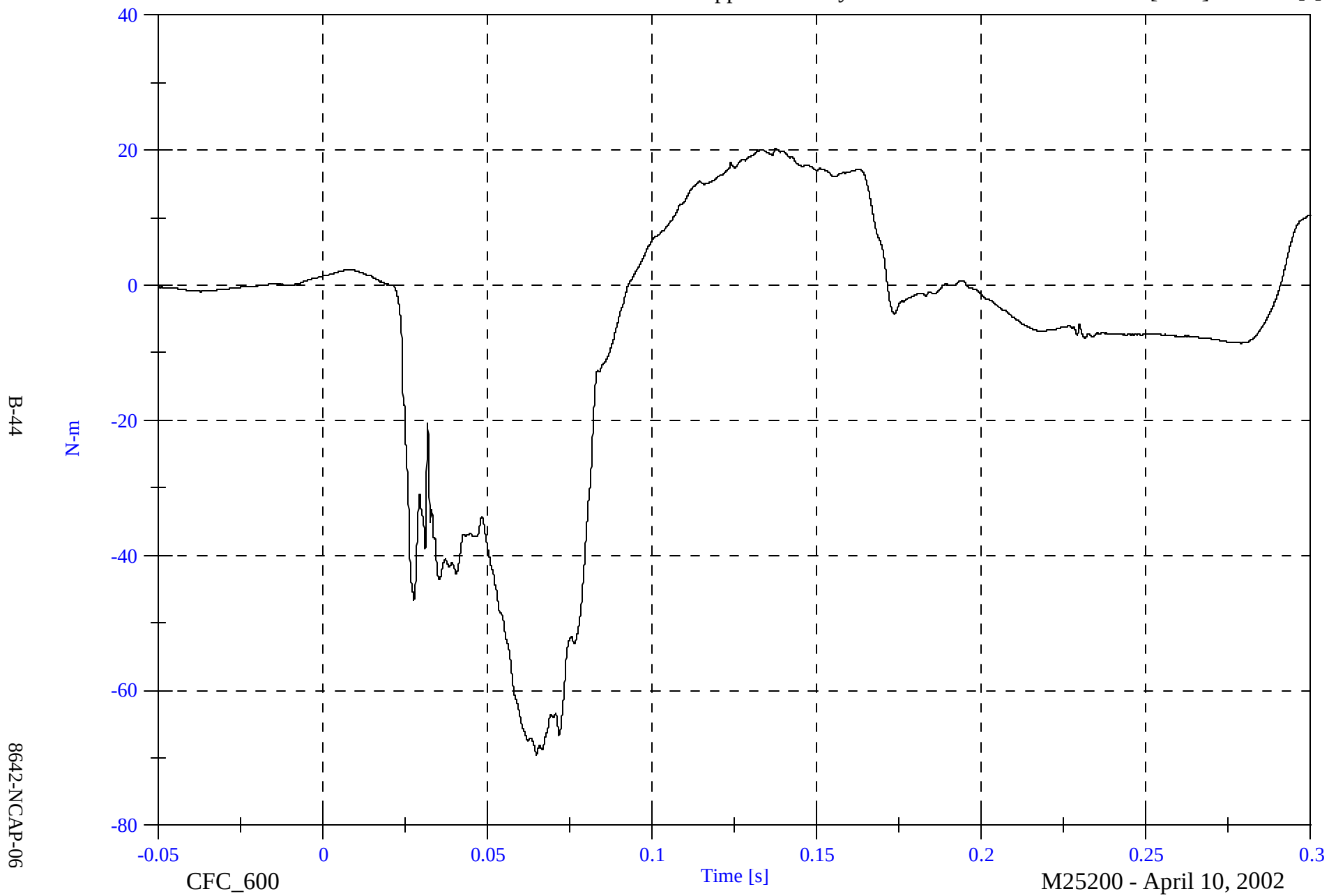
8642-NCAP-06

NCAP Test #6 - 2002 Nissan Altima

Max: 20.2 [N-m] at 0.138 [s]

Min: -69.6 [N-m] at 0.065 [s]

P1 Left Upper Tibia My

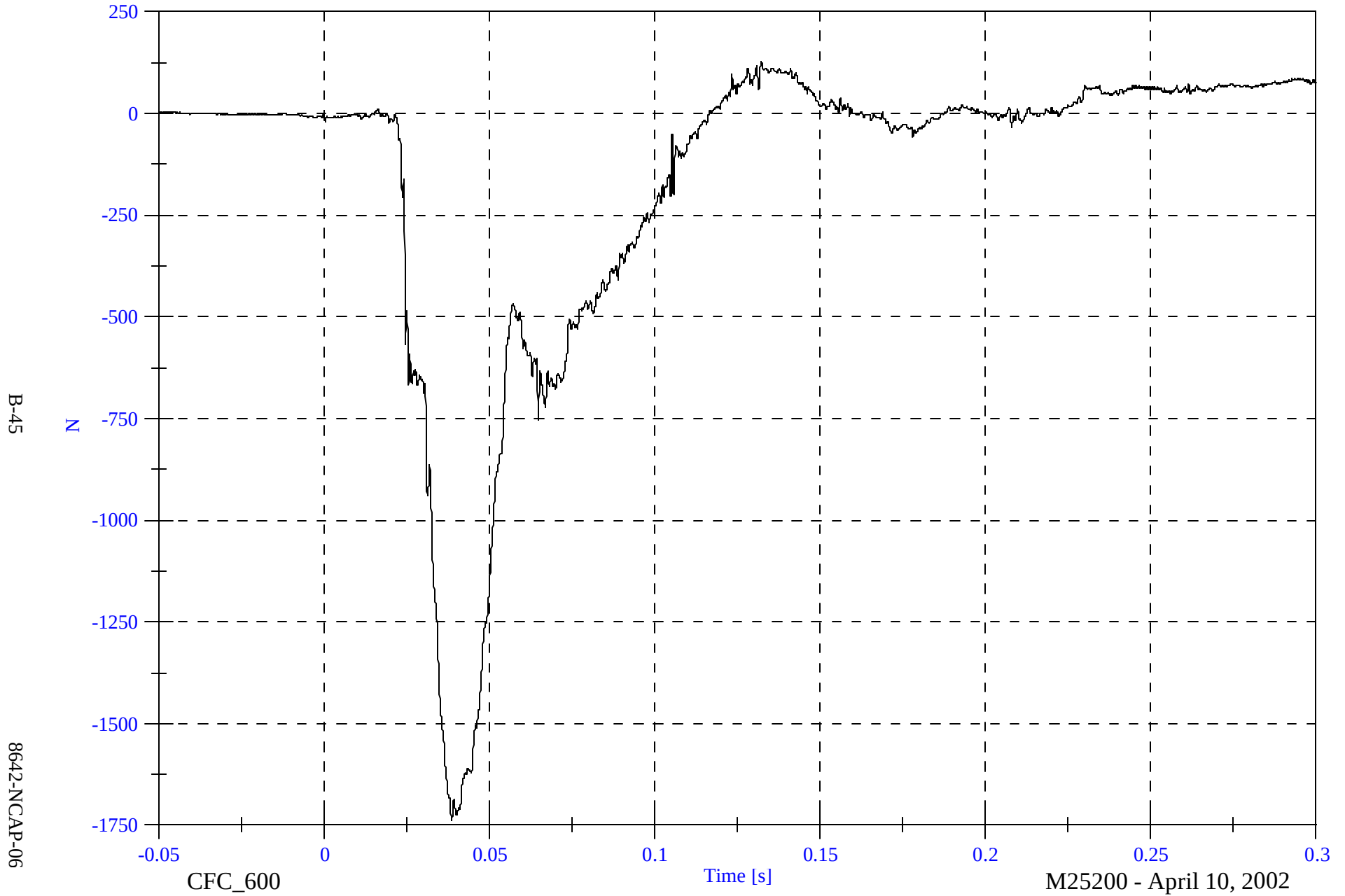


NCAP Test #6 - 2002 Nissan Altima

P1 Left Lower Tibia Fz

Max: 126.4 [N] at 0.132 [s]

Min: -1738.7 [N] at 0.039 [s]

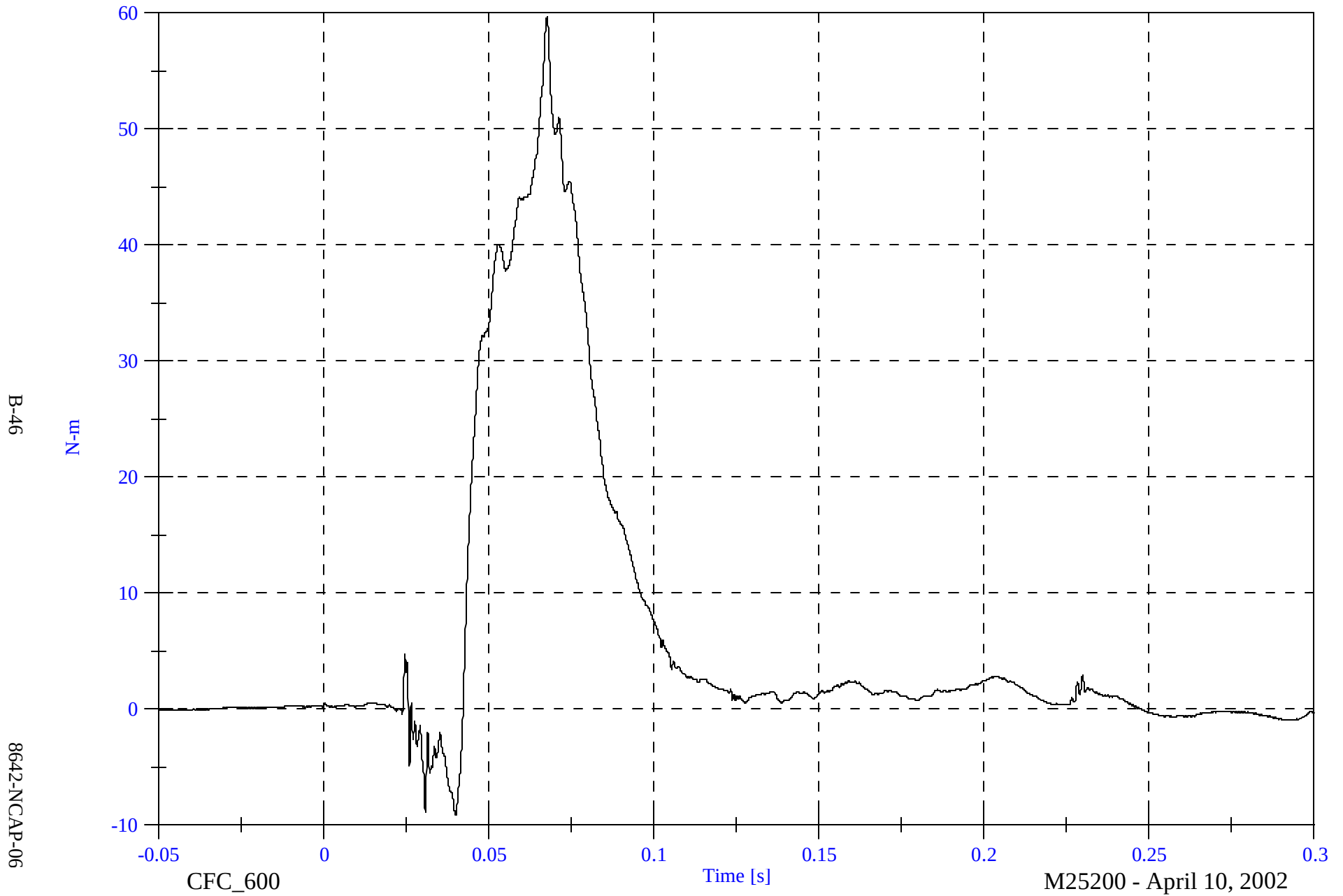


NCAP Test #6 - 2002 Nissan Altima

Max: 59.7 [N-m] at 0.068 [s]

Min: -9.1 [N-m] at 0.040 [s]

P1 Left Lower Tibia Mx

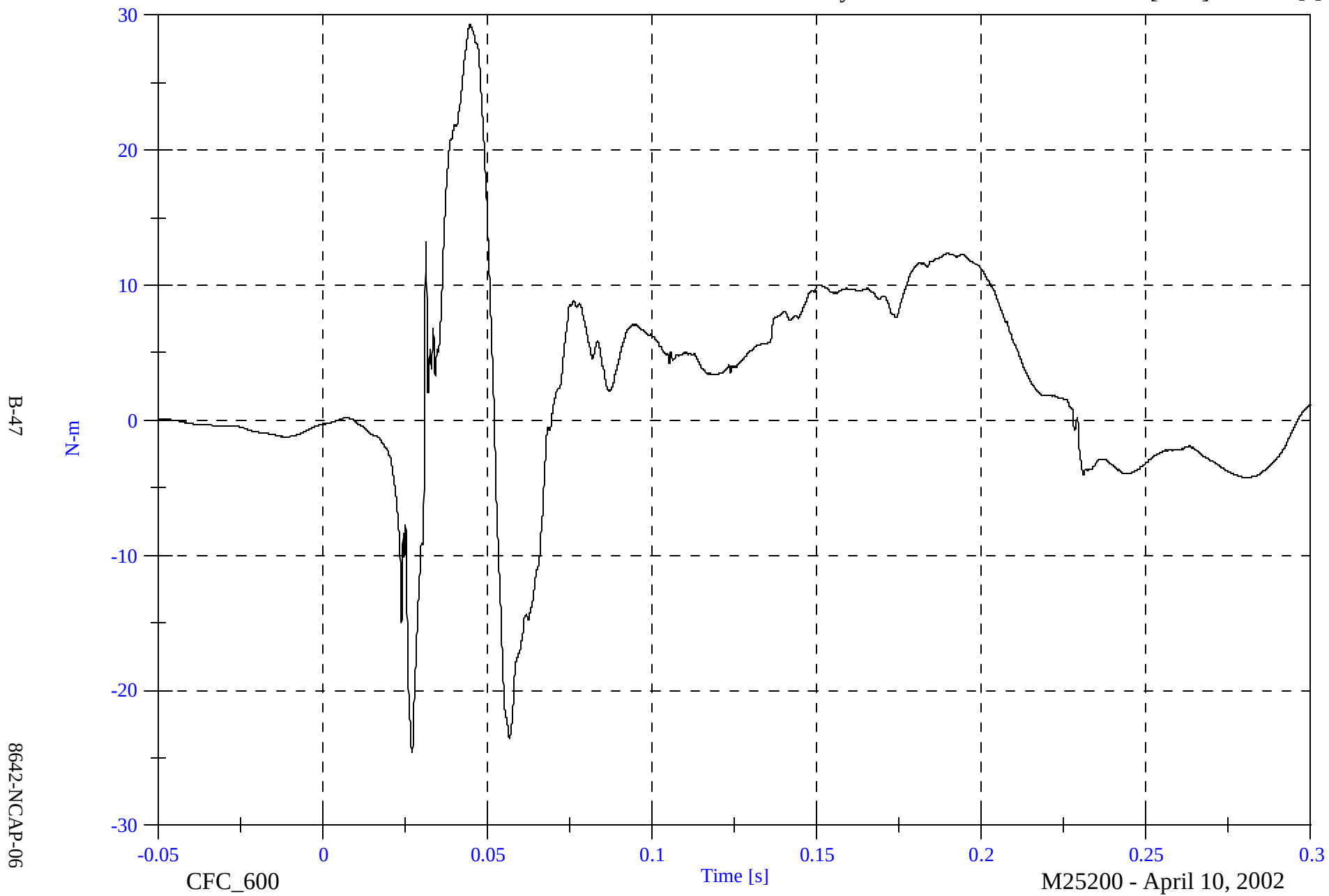


NCAP Test #6 - 2002 Nissan Altima

Max: 29.3 [N-m] at 0.045 [s]

Min: -24.6 [N-m] at 0.027 [s]

P1 Left Lower Tibia My

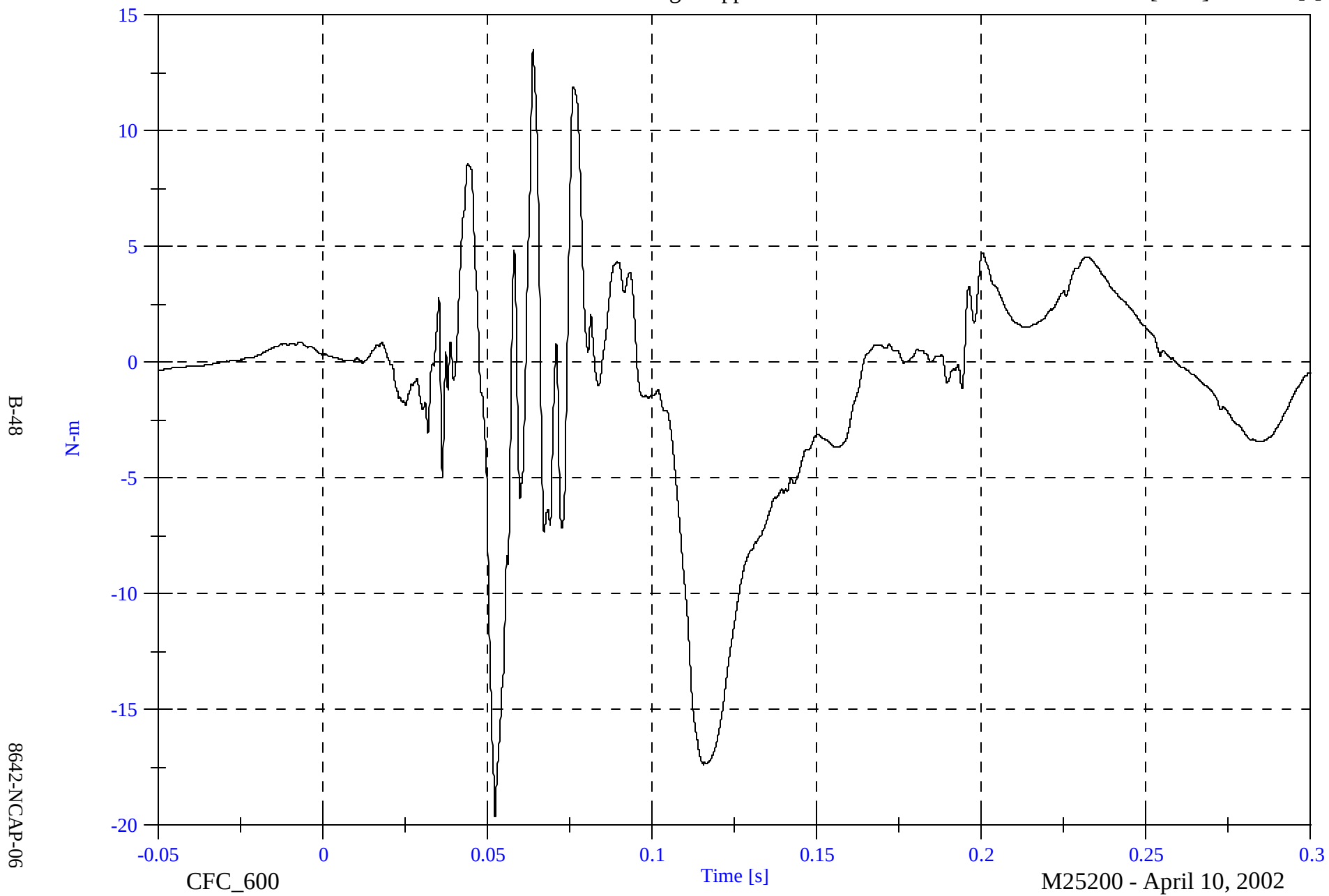


NCAP Test #6 - 2002 Nissan Altima

Max: 13.5 [N-m] at 0.064 [s]

Min: -19.6 [N-m] at 0.052 [s]

P1 Right Upper Tibia Mx



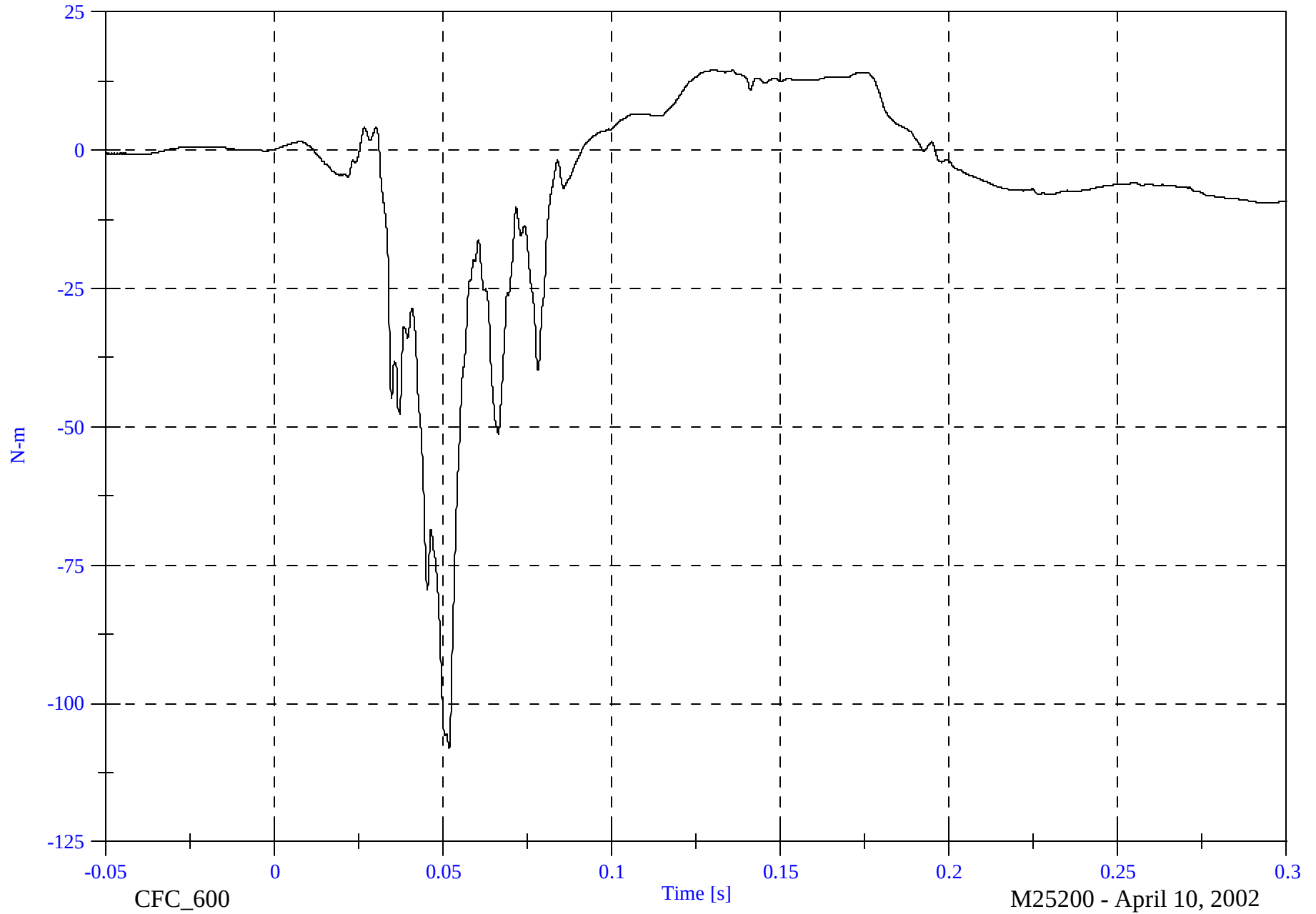
NCAP Test #6 - 2002 Nissan Altima

P1 Right Upper Tibia My

Max: 14.5 [N-m] at 0.136 [s]
Min: -108.1 [N-m] at 0.052 [s]

B-49

8642-NCAP-06

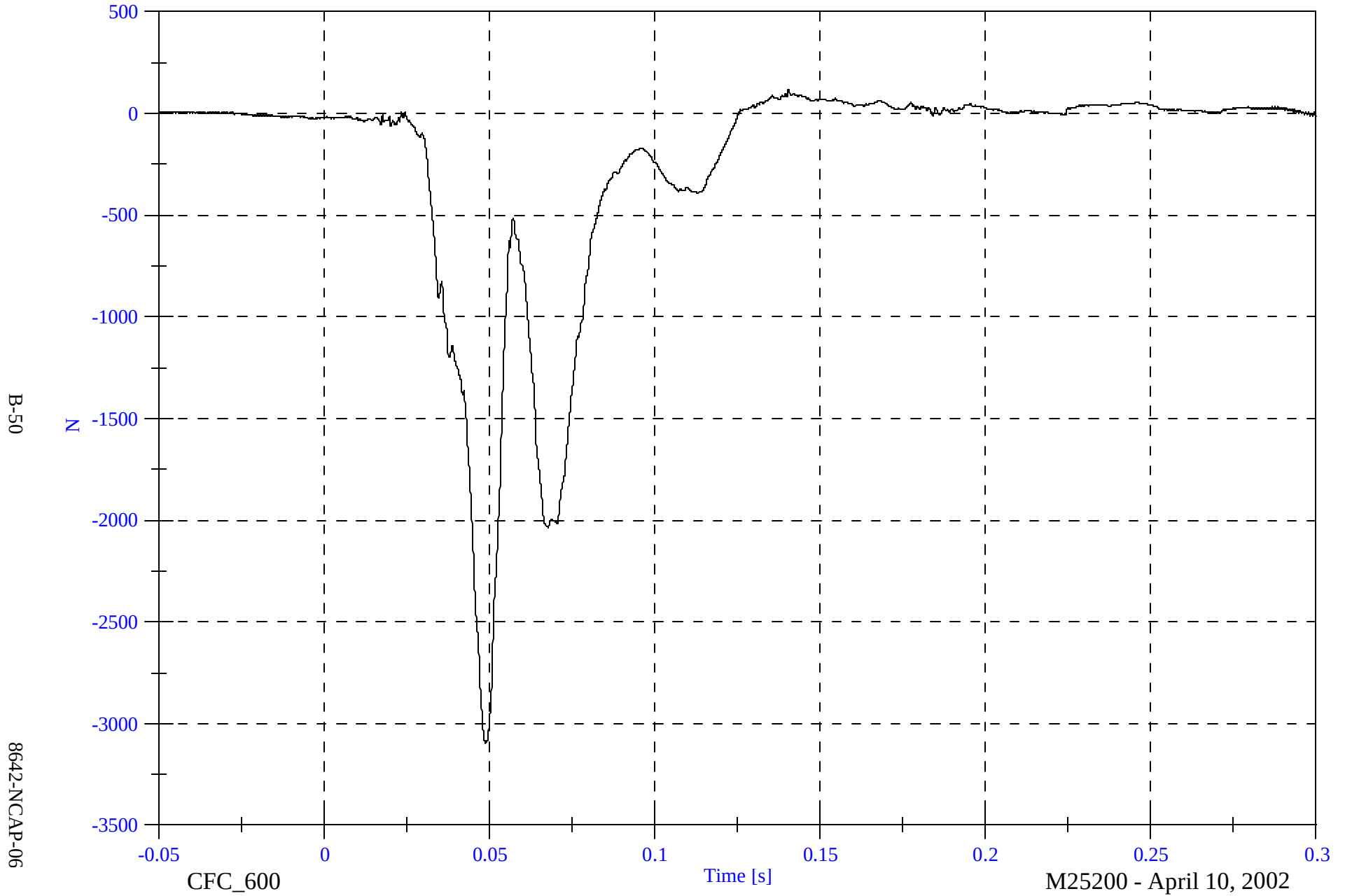


NCAP Test #6 - 2002 Nissan Altima

P1 Right Lower Tibia Fz

Max: 115.0 [N] at 0.140 [s]

Min: -3094.5 [N] at 0.049 [s]



NCAP Test #6 - 2002 Nissan Altima

Max: 27.3 [N-m] at 0.065 [s]

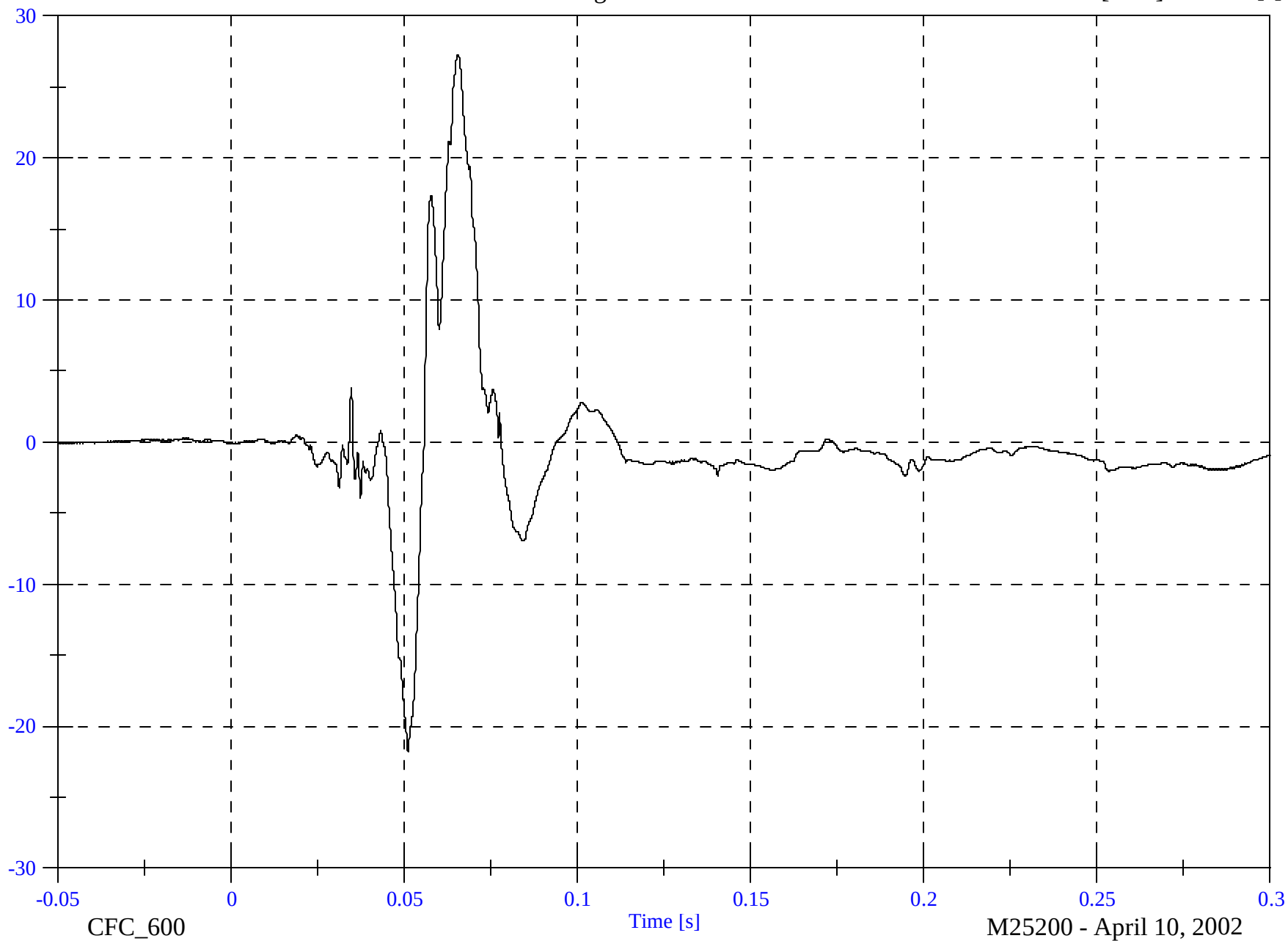
P1 Right Lower Tibia Mx

Min: -21.8 [N-m] at 0.051 [s]

B-51

N-m

8642-NCAP-06

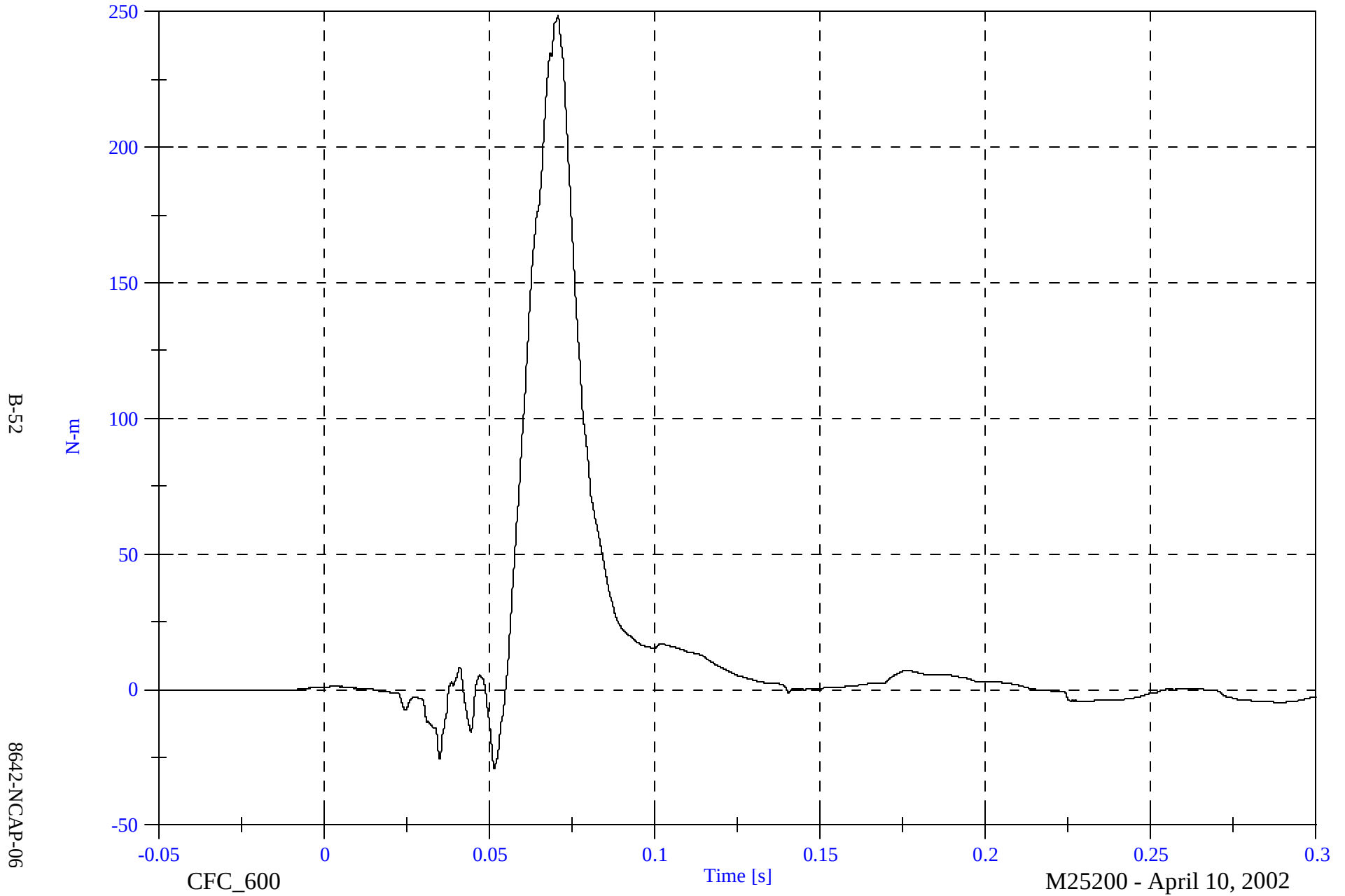


NCAP Test #6 - 2002 Nissan Altima

Max: 248.5 [N-m] at 0.071 [s]

Min: -29.3 [N-m] at 0.052 [s]

P1 Right Lower Tibia My



NCAP Test #6 - 2002 Nissan Altima

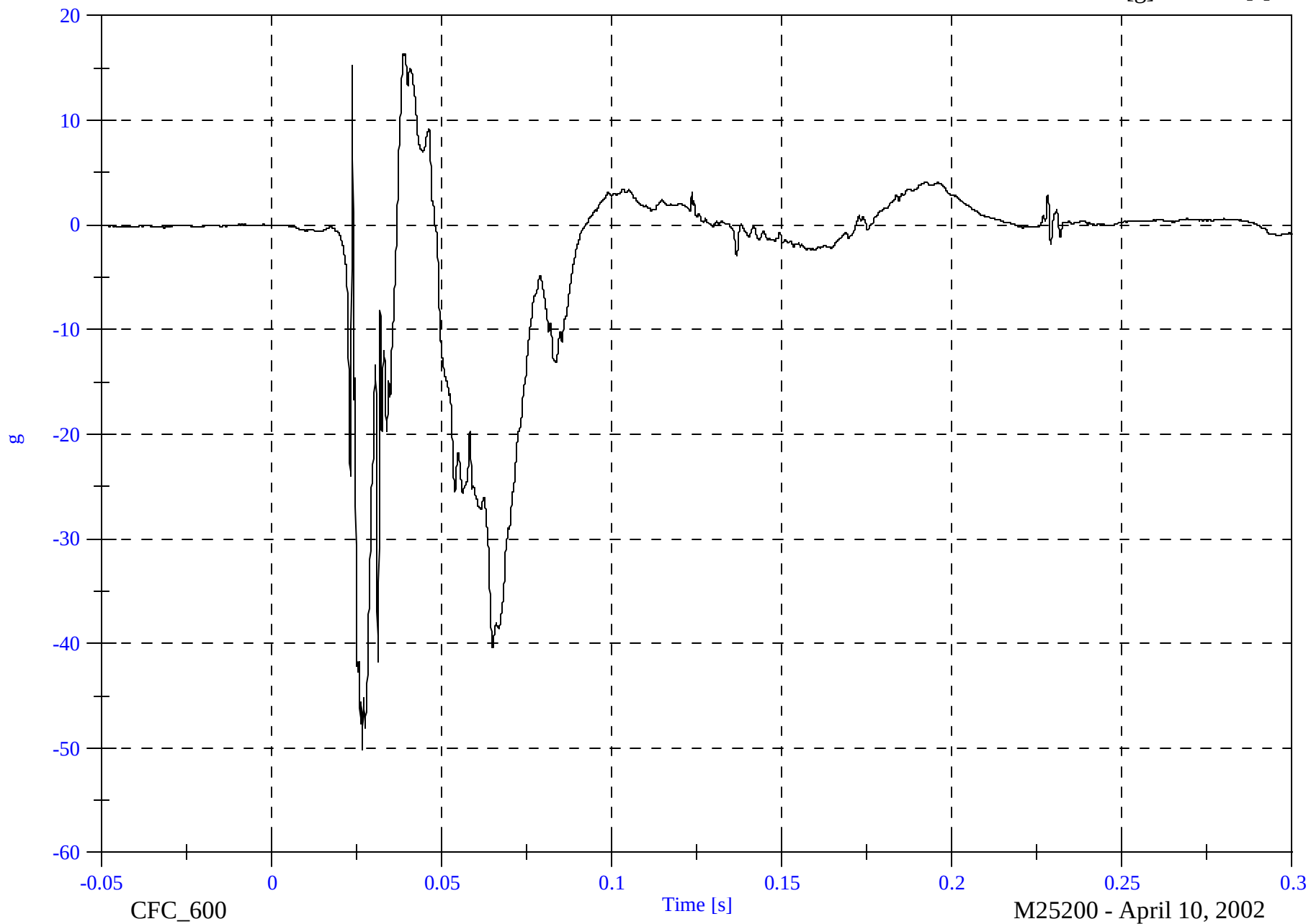
Max: 16.3 [g] at 0.039 [s]

Min: -50.1 [g] at 0.027 [s]

P1 Left Foot Aft x

B-53

8642-NCAP-06

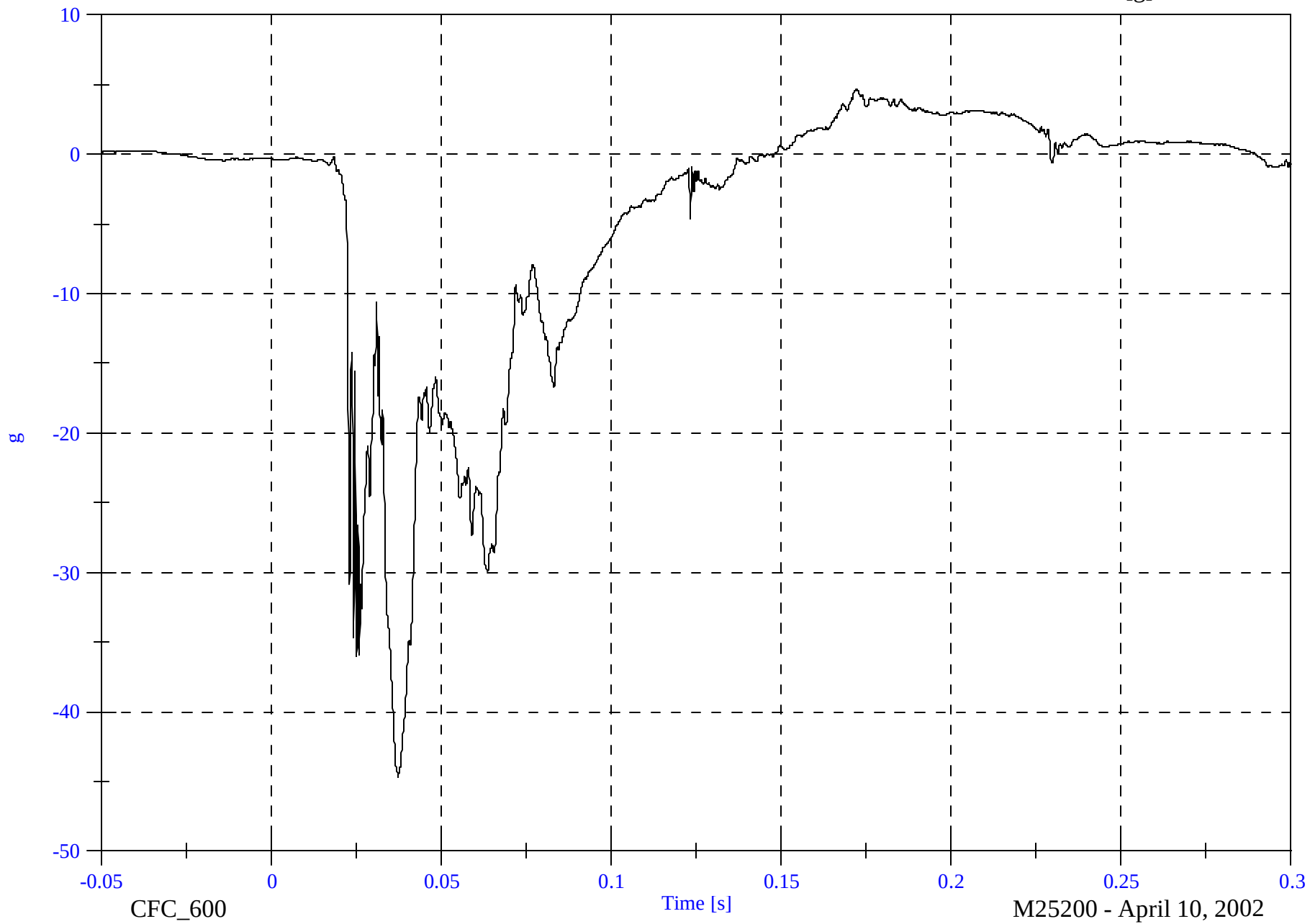


NCAP Test #6 - 2002 Nissan Altima

P1 Left Foot Aft z

Max: 4.7 [g] at 0.172 [s]

Min: -44.7 [g] at 0.037 [s]



B-54

8642-NCAP-06

CFC_600

Time [s]

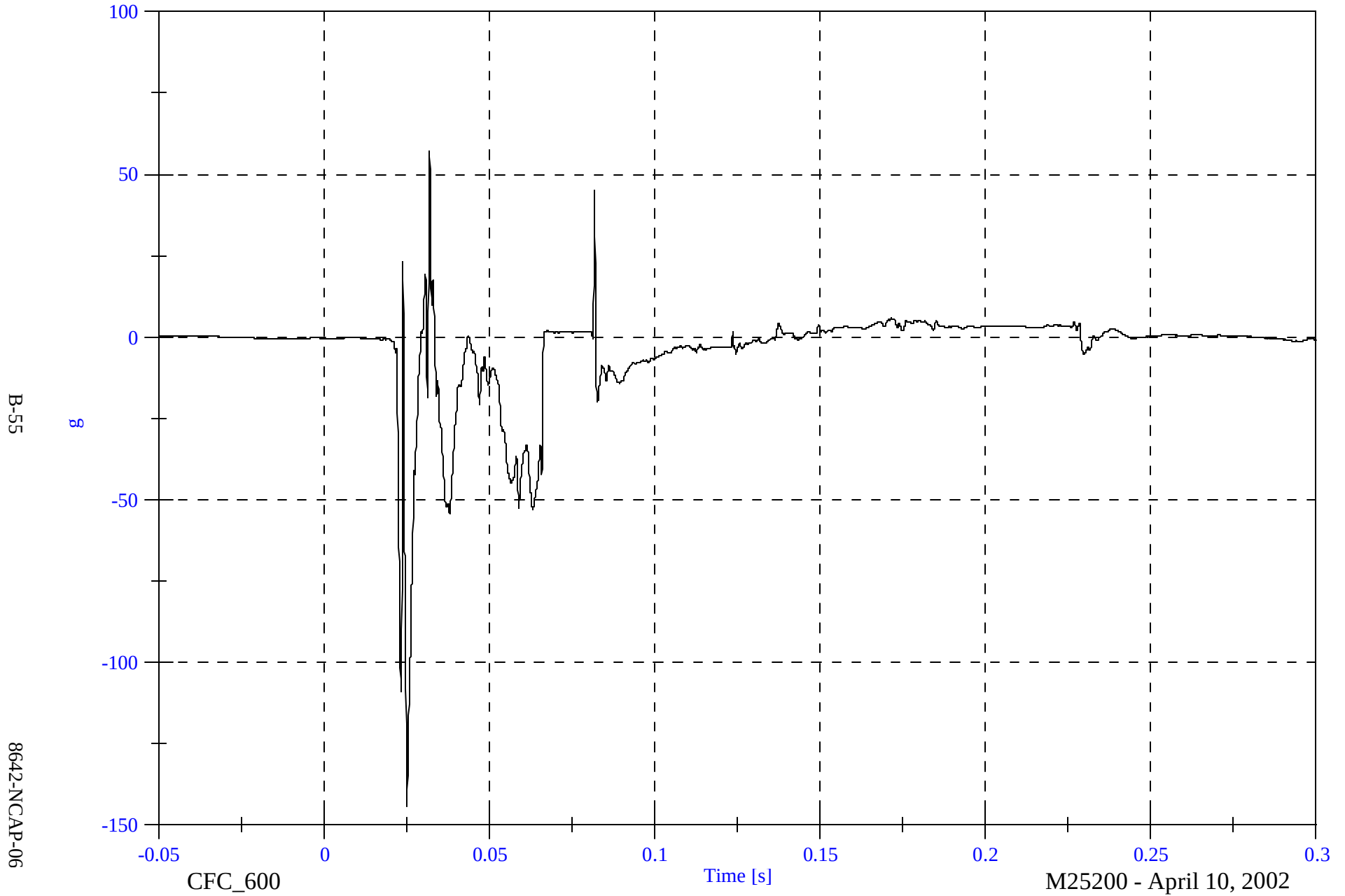
M25200 - April 10, 2002

NCAP Test #6 - 2002 Nissan Altima

Max: 57.0 [g] at 0.032 [s]

Min: -144.2 [g] at 0.025 [s]

P1 Left Foot Fore z

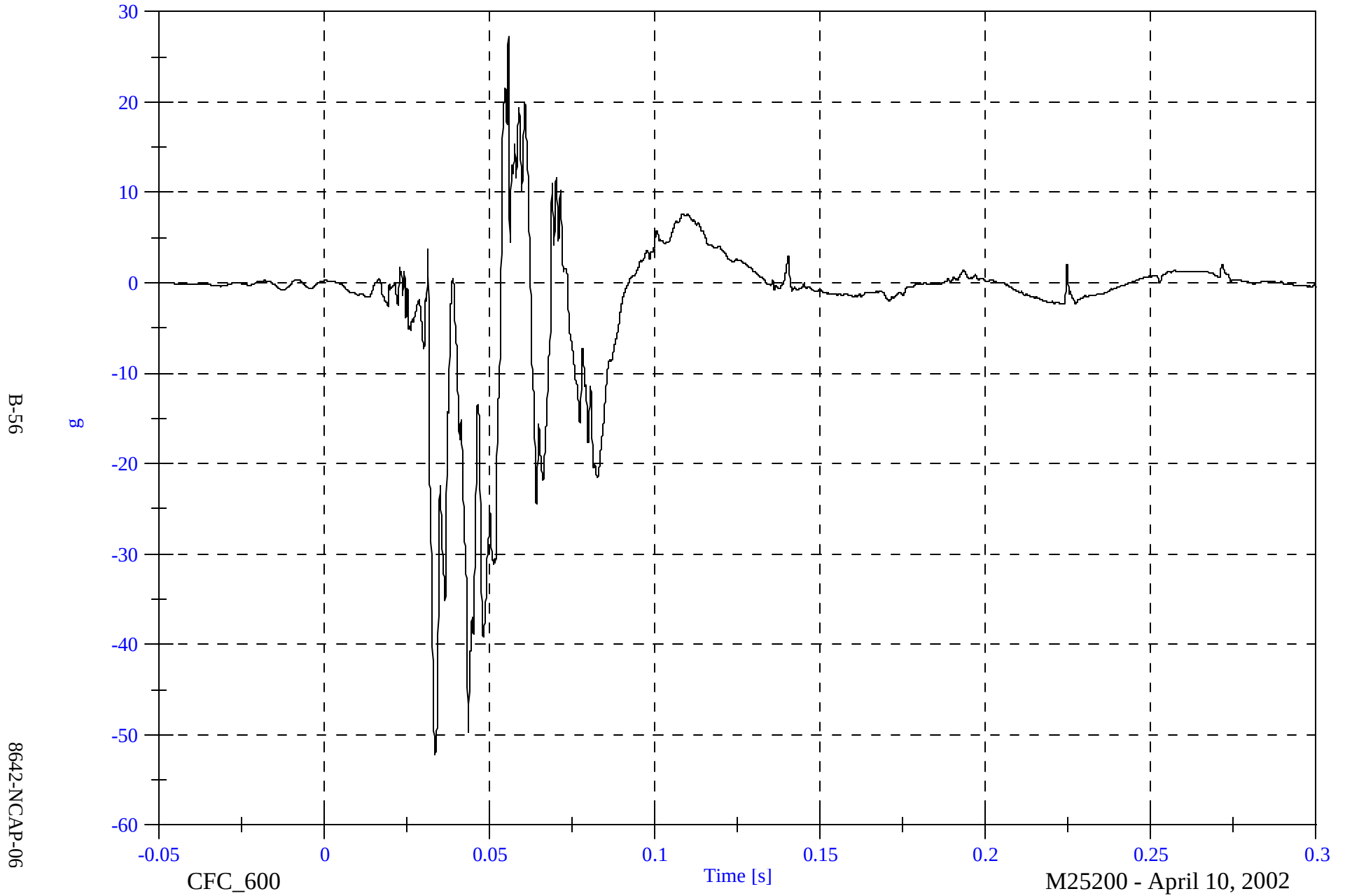


NCAP Test #6 - 2002 Nissan Altima

Max: 27.2 [g] at 0.056 [s]

Min: -52.1 [g] at 0.034 [s]

P1 Right Foot Aft x

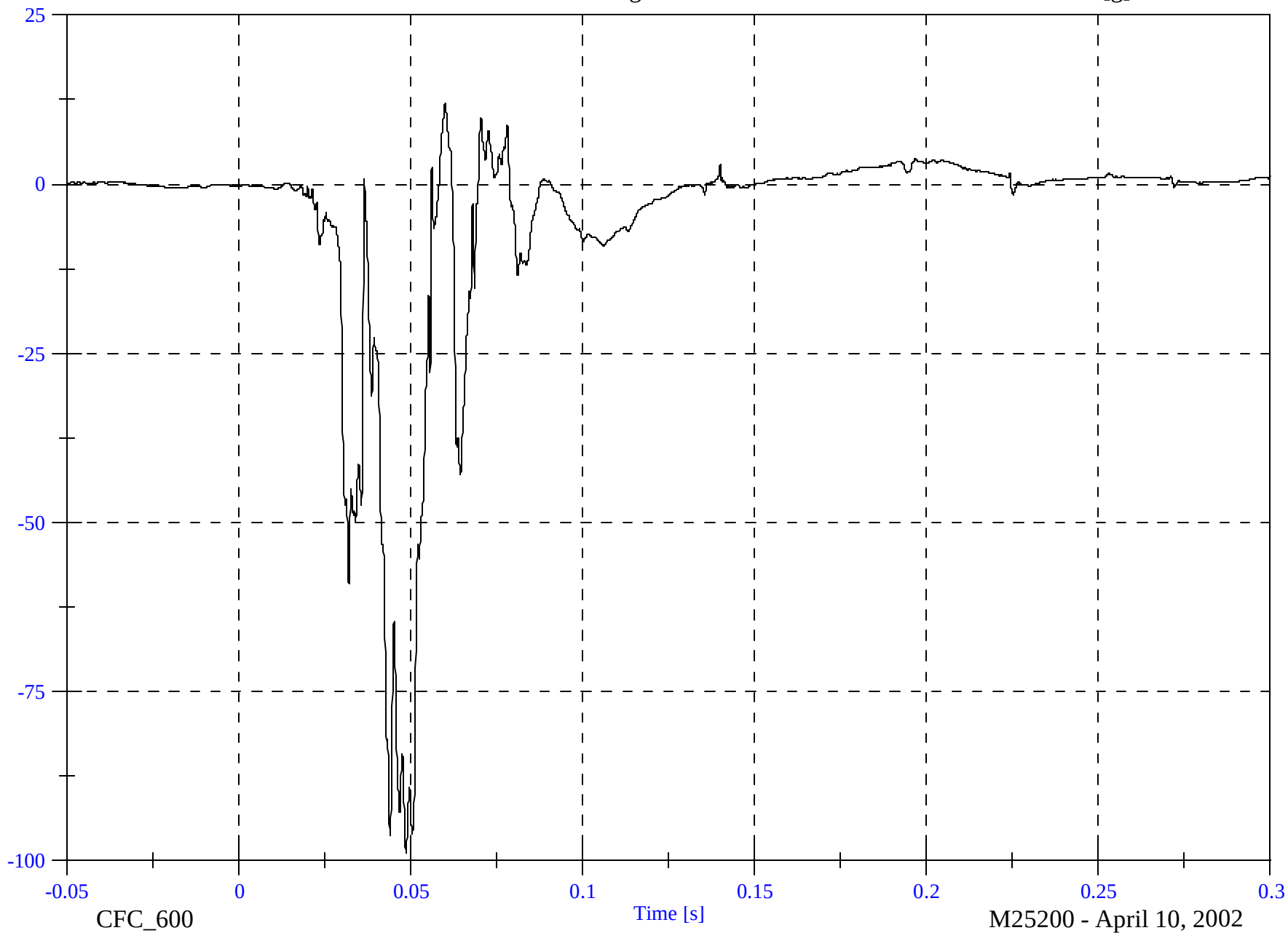


NCAP Test #6 - 2002 Nissan Altima

Max: 12.0 [g] at 0.060 [s]

Min: -98.7 [g] at 0.049 [s]

P1 Right Foot Aft z



B-57

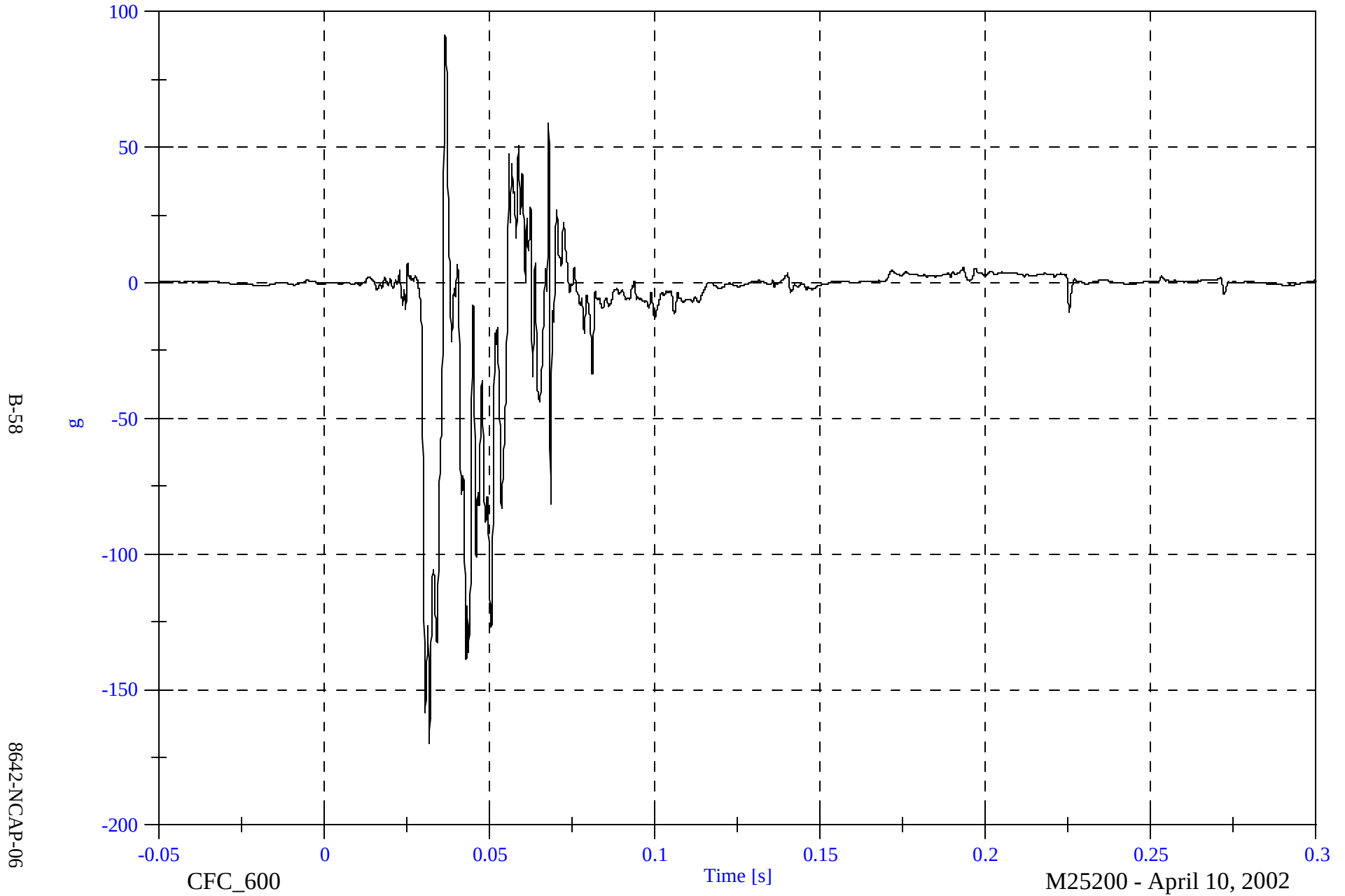
8642-NCAP-06

NCAP Test #6 - 2002 Nissan Altima

Max: 91.2 [g] at 0.037 [s]

Min: -170.1 [g] at 0.032 [s]

P1 Right Foot Fore z



NCAP Test #6 - 2002 Nissan Altima

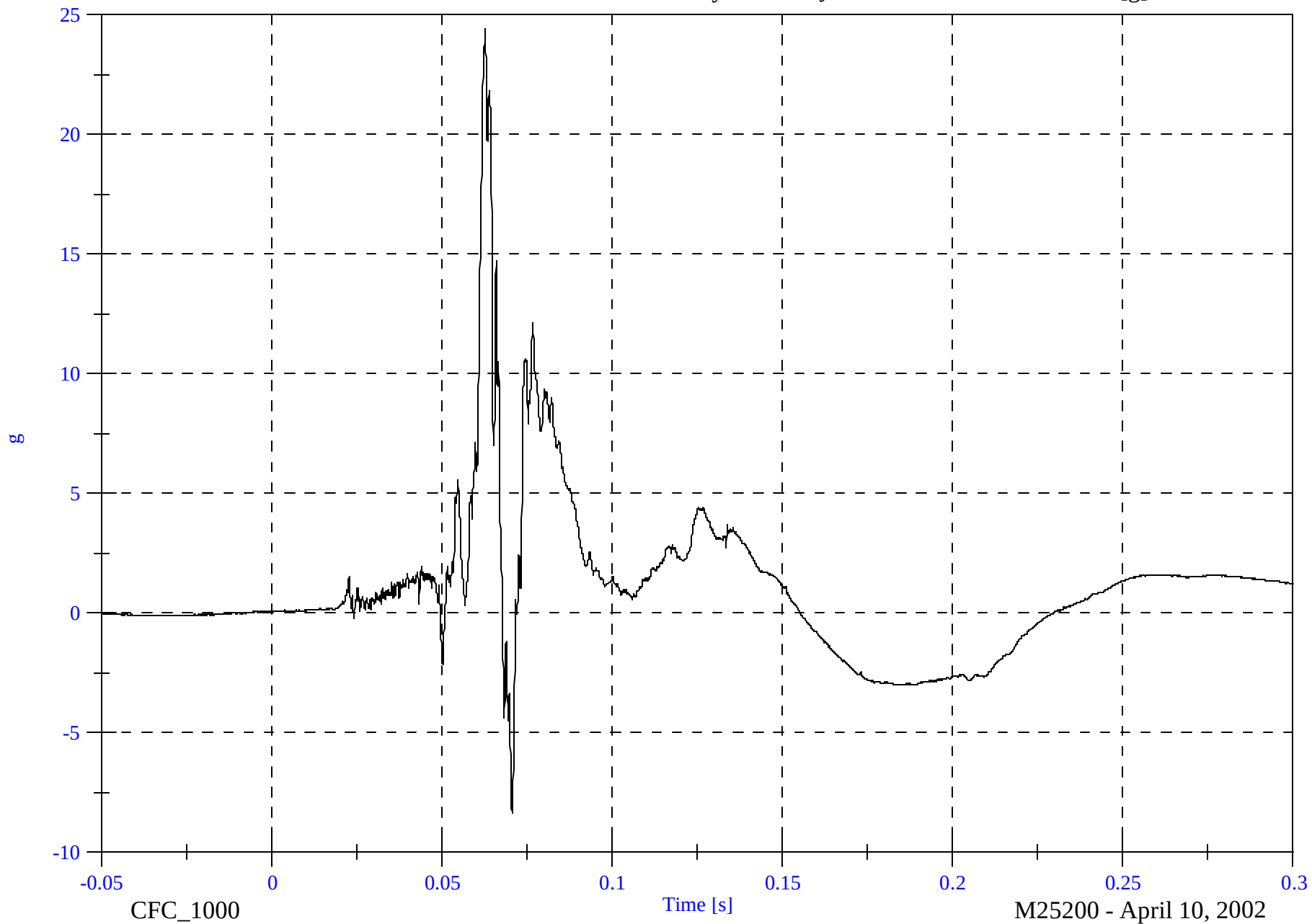
P2 Head 9 Array X Arm Ay

Max: 24.4 [g] at 0.063 [s]

Min: -8.3 [g] at 0.071 [s]

B-59

8642-NCAP-06

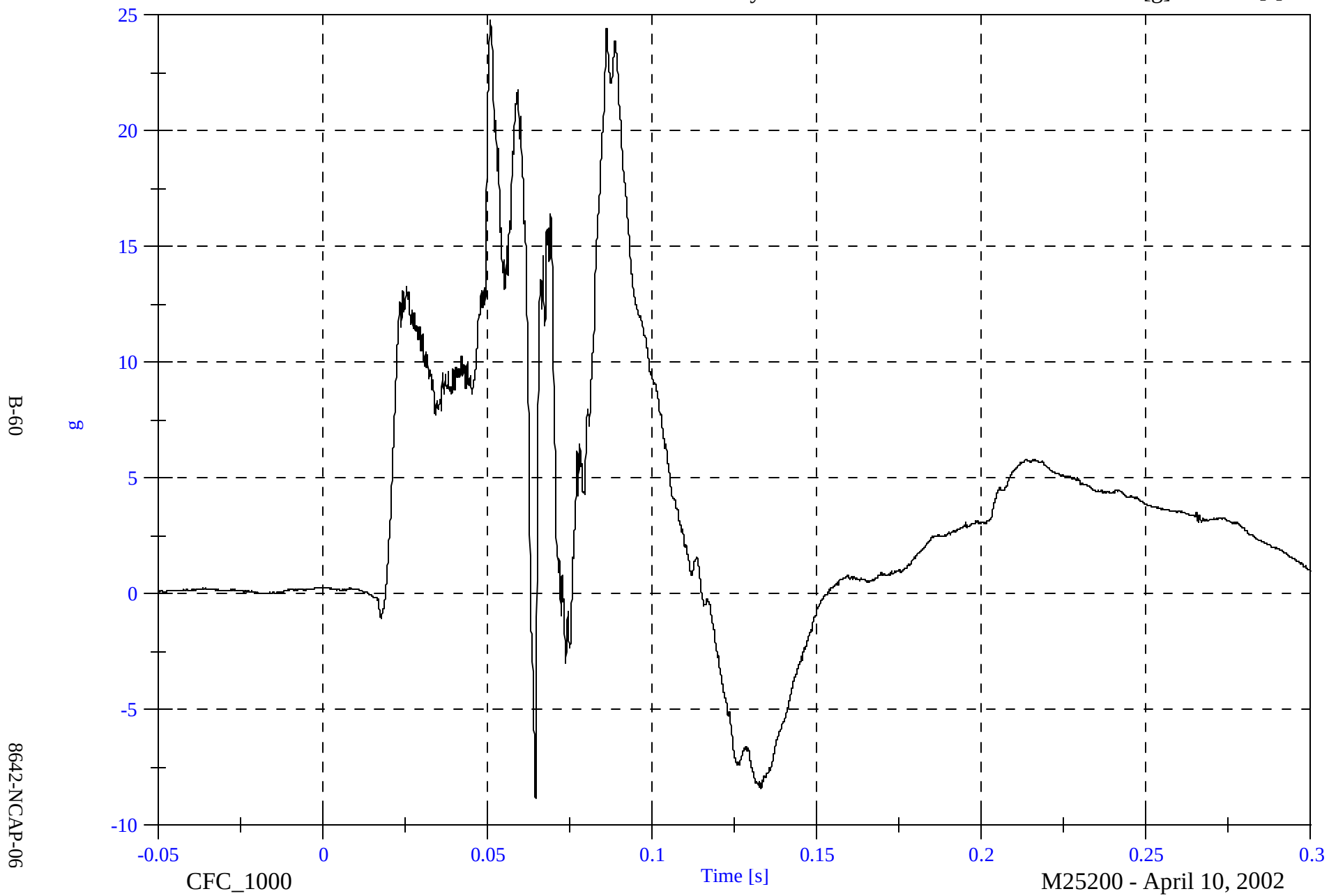


NCAP Test #6 - 2002 Nissan Altima

P2 Head 9 Array X Arm Az

Max: 24.8 [g] at 0.051 [s]

Min: -8.8 [g] at 0.065 [s]



NCAP Test #6 - 2002 Nissan Altima

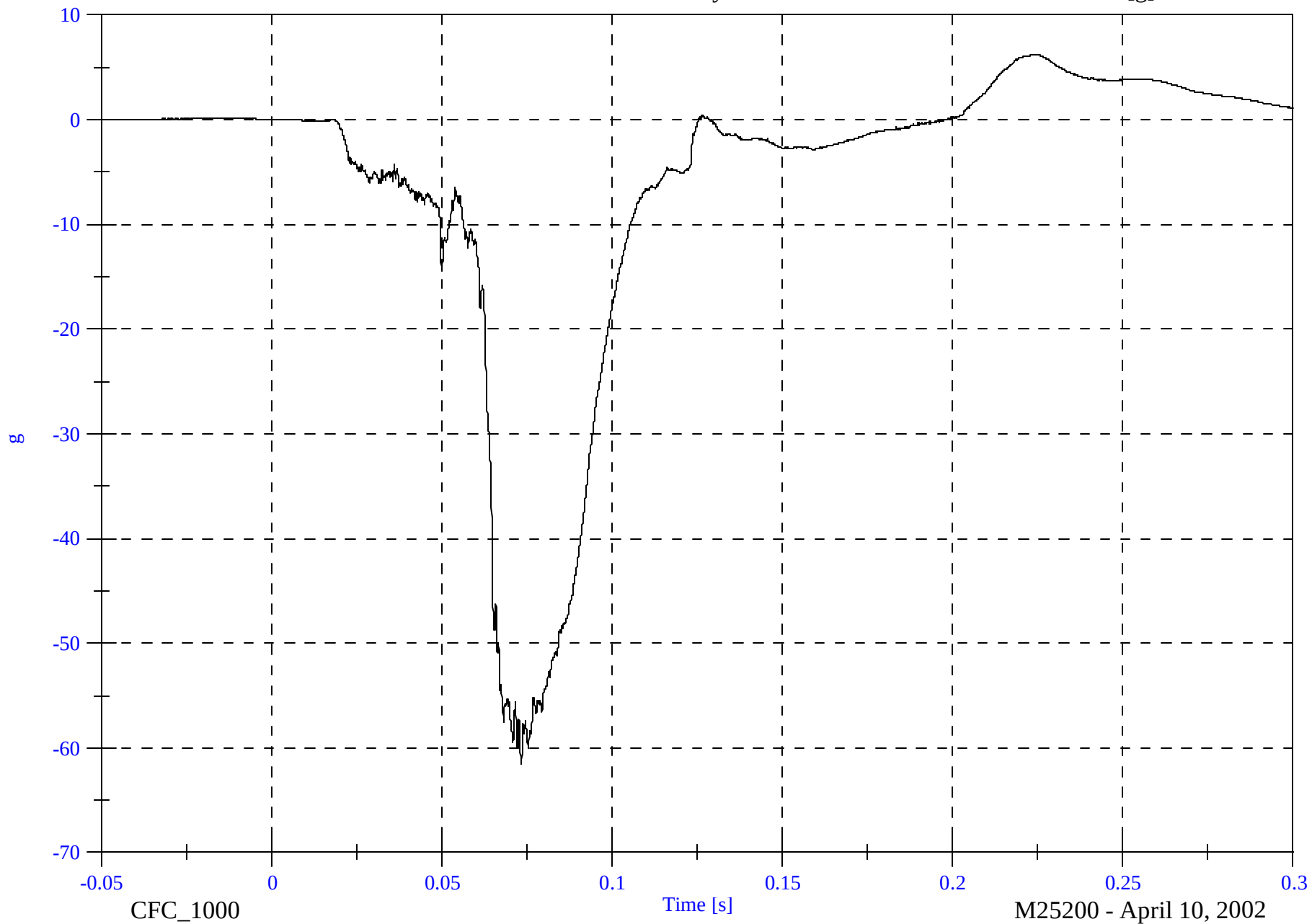
P2 Head 9 Array Y Arm Ax

Max: 6.2 [g] at 0.224 [s]

Min: -61.5 [g] at 0.073 [s]

B-61

8642-NCAP-06



NCAP Test #6 - 2002 Nissan Altima

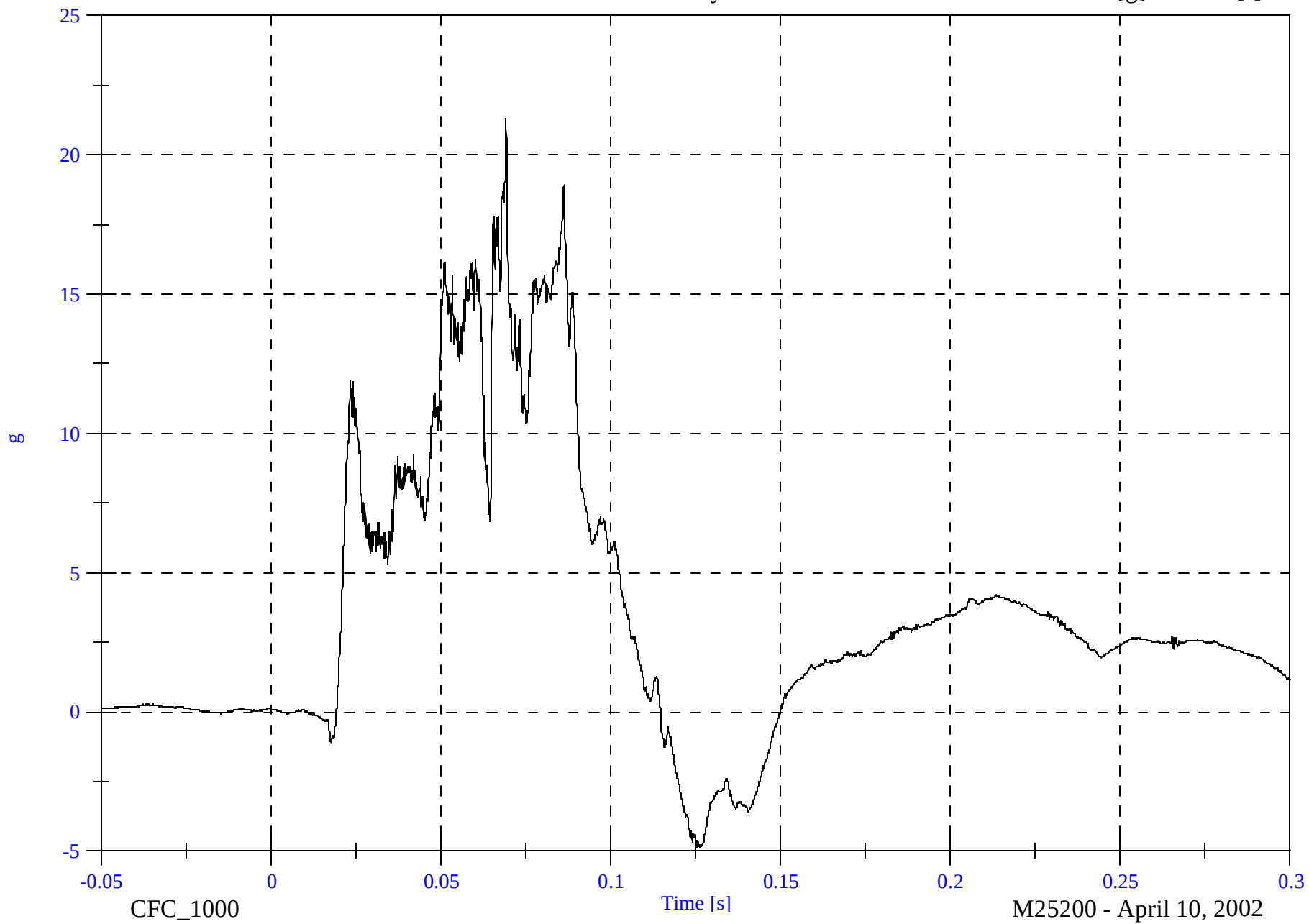
P2 Head 9 Array Y Arm Az

Max: 21.3 [g] at 0.069 [s]

Min: -4.9 [g] at 0.126 [s]

B-62

8642-NCAP-06

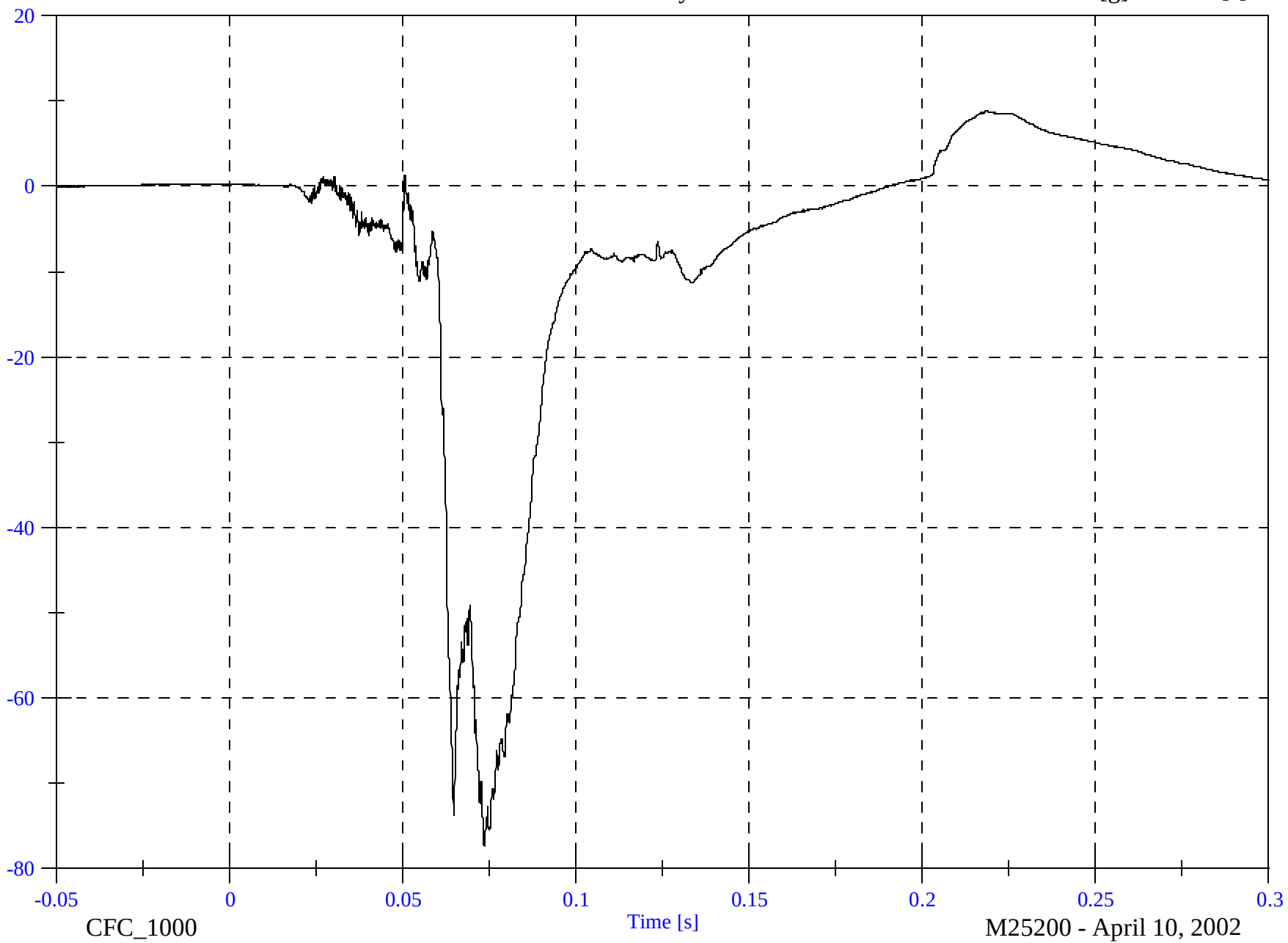


NCAP Test #6 - 2002 Nissan Altima

P2 Head 9 Array Z Arm Ax

Max: 8.8 [g] at 0.218 [s]

Min: -77.4 [g] at 0.074 [s]



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CFC_1000

Time [s]

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NCAP Test #6 - 2002 Nissan Altima

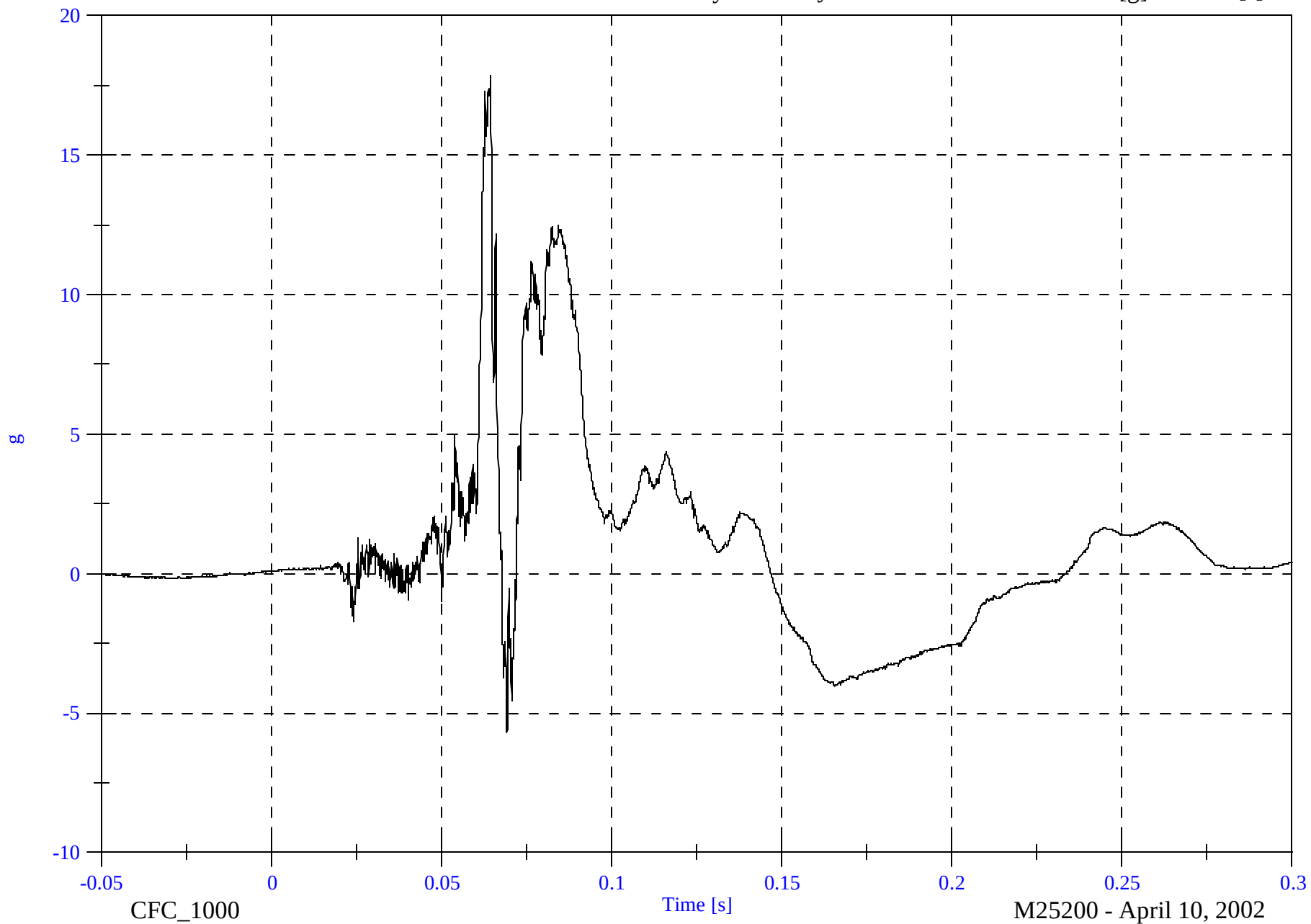
P2 Head 9 Array Z Arm Ay

Max: 17.8 [g] at 0.064 [s]

Min: -5.7 [g] at 0.069 [s]

B-64

8642-NCAP-06



NCAP Test #6 - 2002 Nissan Altima

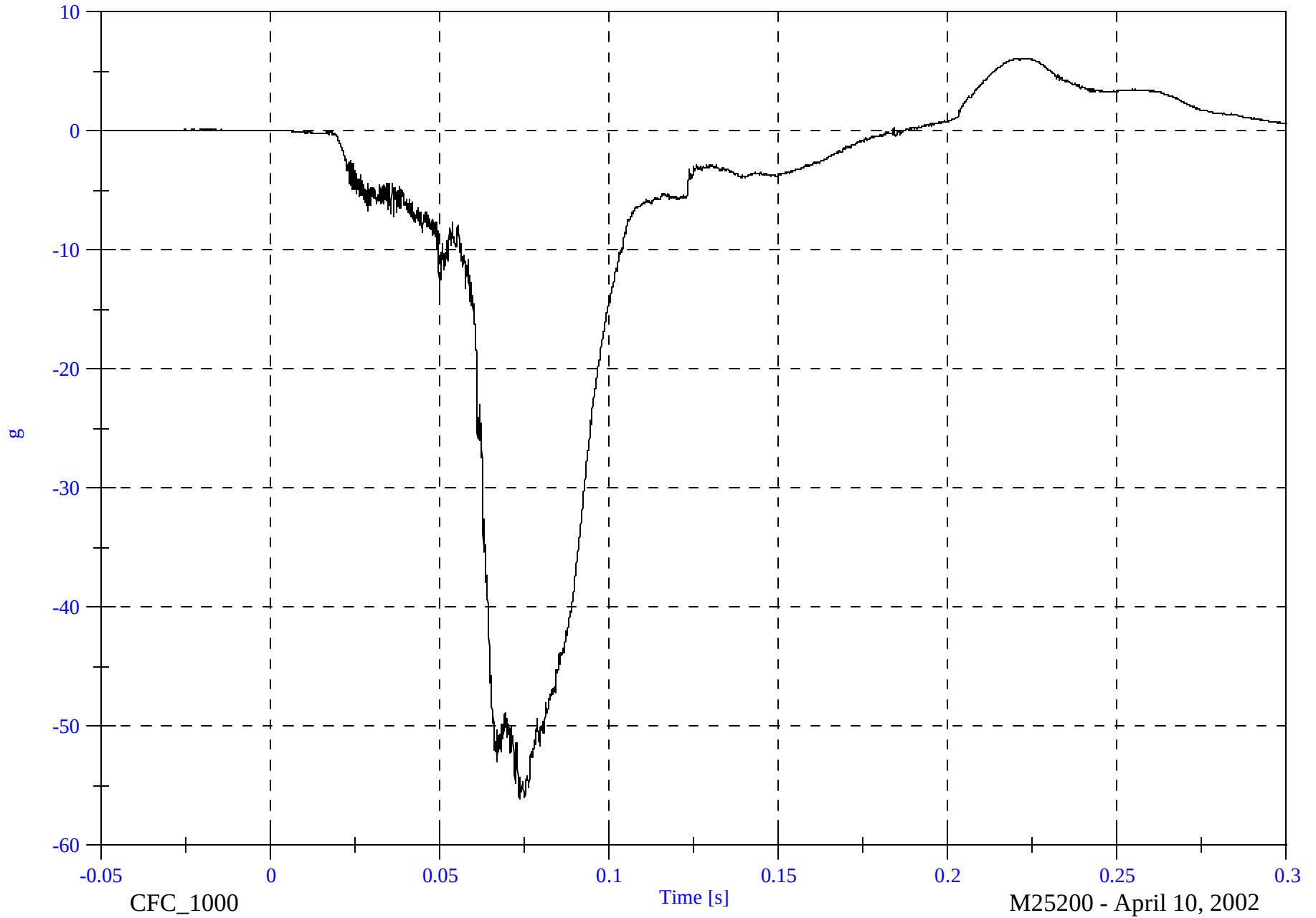
P2 Head CG x

Max: 6.1 [g] at 0.221 [s]

Min: -56.0 [g] at 0.073 [s]

B-65

8642-NCAP-06



NCAP Test #6 - 2002 Nissan Altima

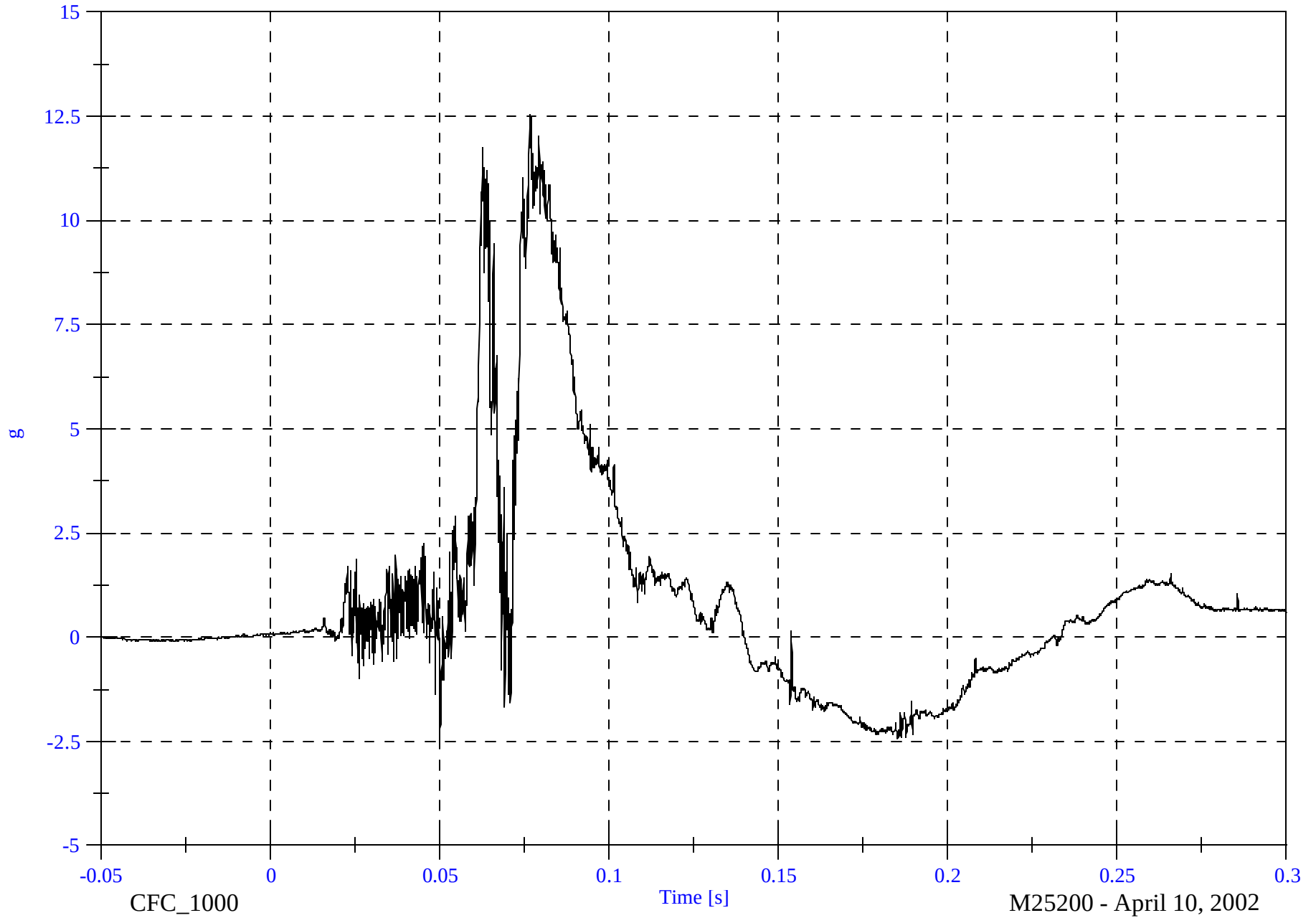
Max: 12.5 [g] at 0.077 [s]

Min: -2.6 [g] at 0.050 [s]

P2 Head CG y

B-66

8642-NCAP-06

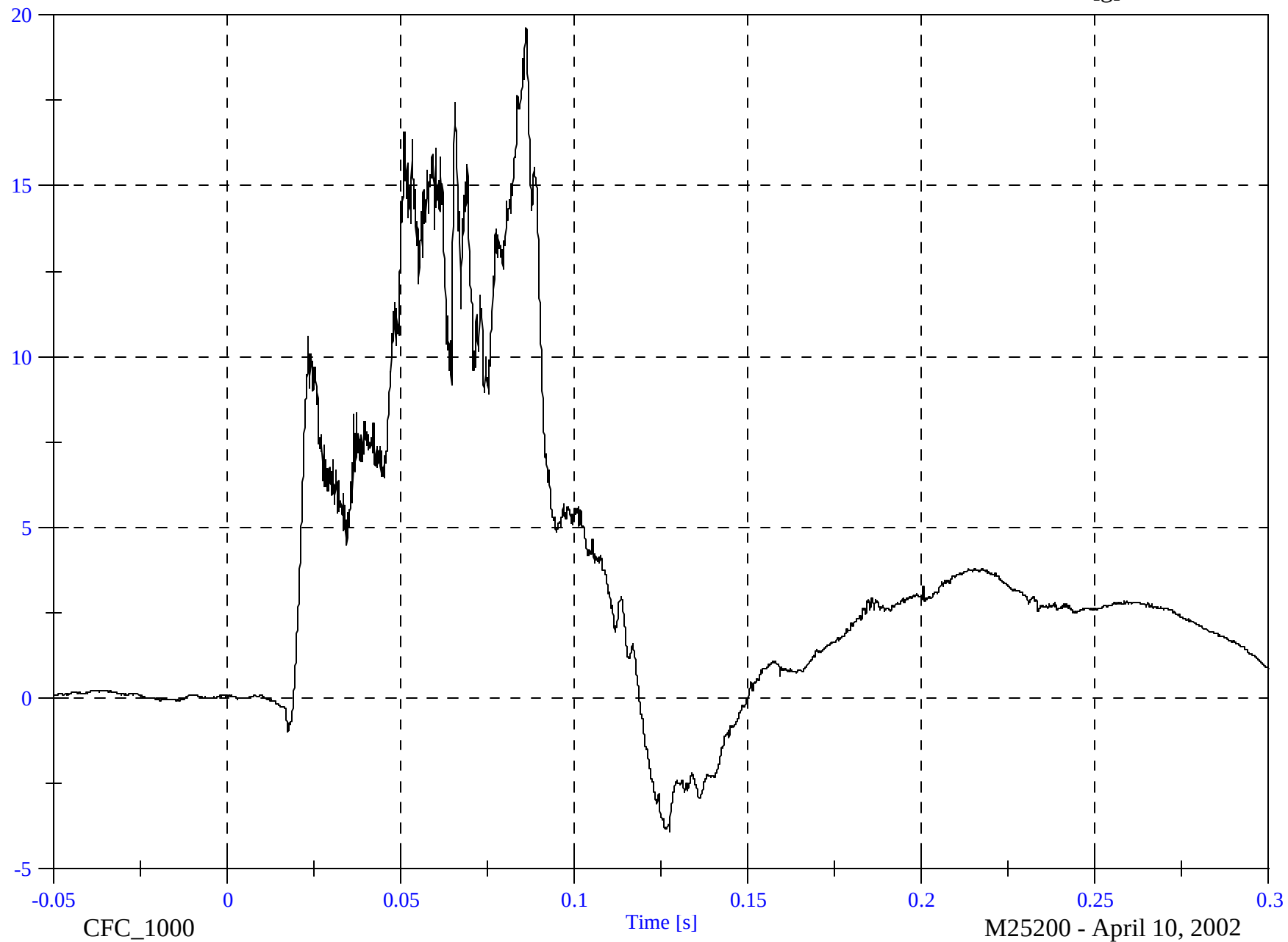


NCAP Test #6 - 2002 Nissan Altima

Max: 19.6 [g] at 0.086 [s]

Min: -3.9 [g] at 0.128 [s]

P2 Head CG z



B-67

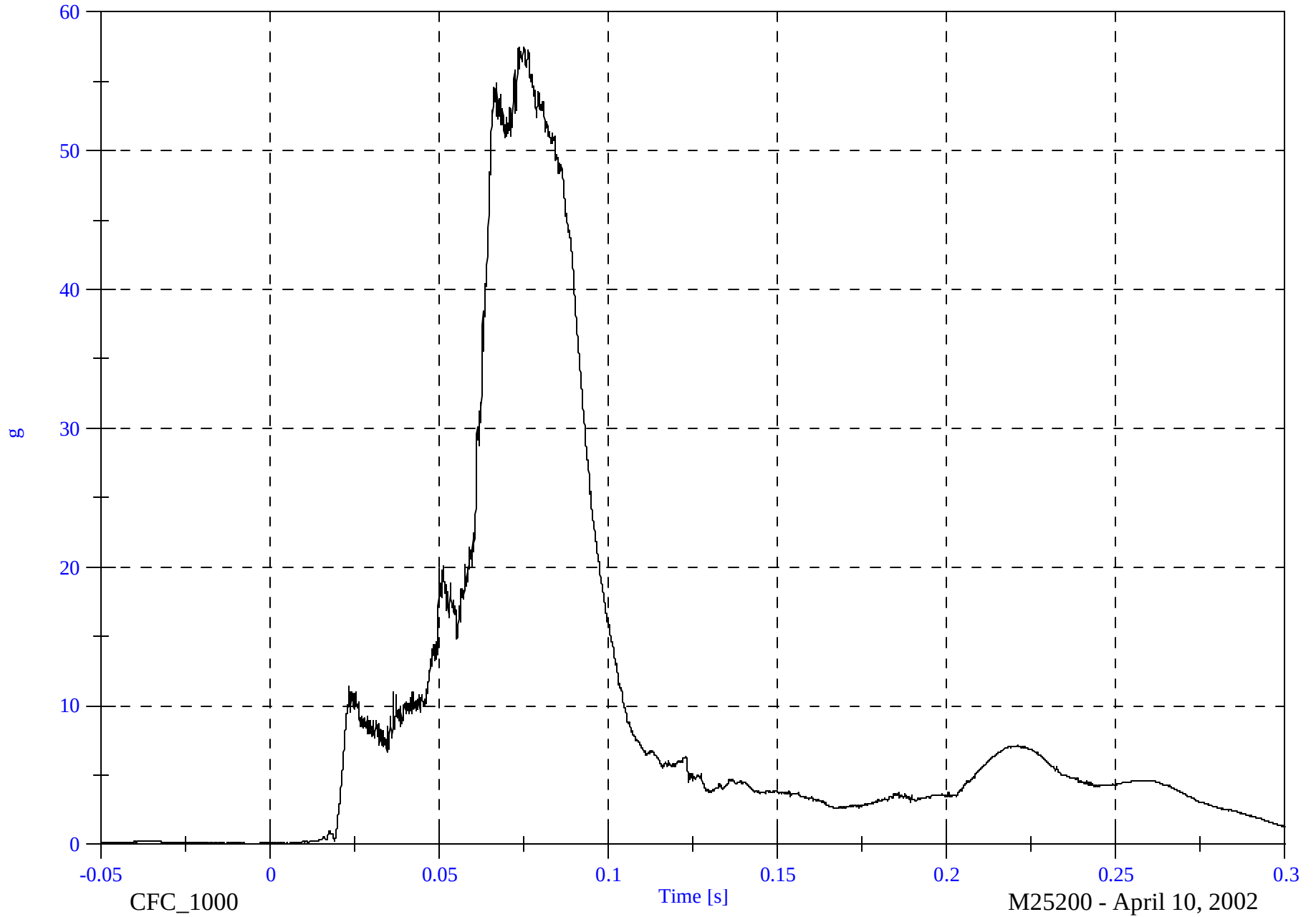
8642-NCAP-06

NCAP Test #6 - 2002 Nissan Altima

P2 Head CG Resultant

Max: 57.5 [g] at 0.073 [s]

Min: 0.0 [g] at -0.005 [s]



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CFC_1000

Time [s]

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NCAP Test #6 - 2002 Nissan Altima

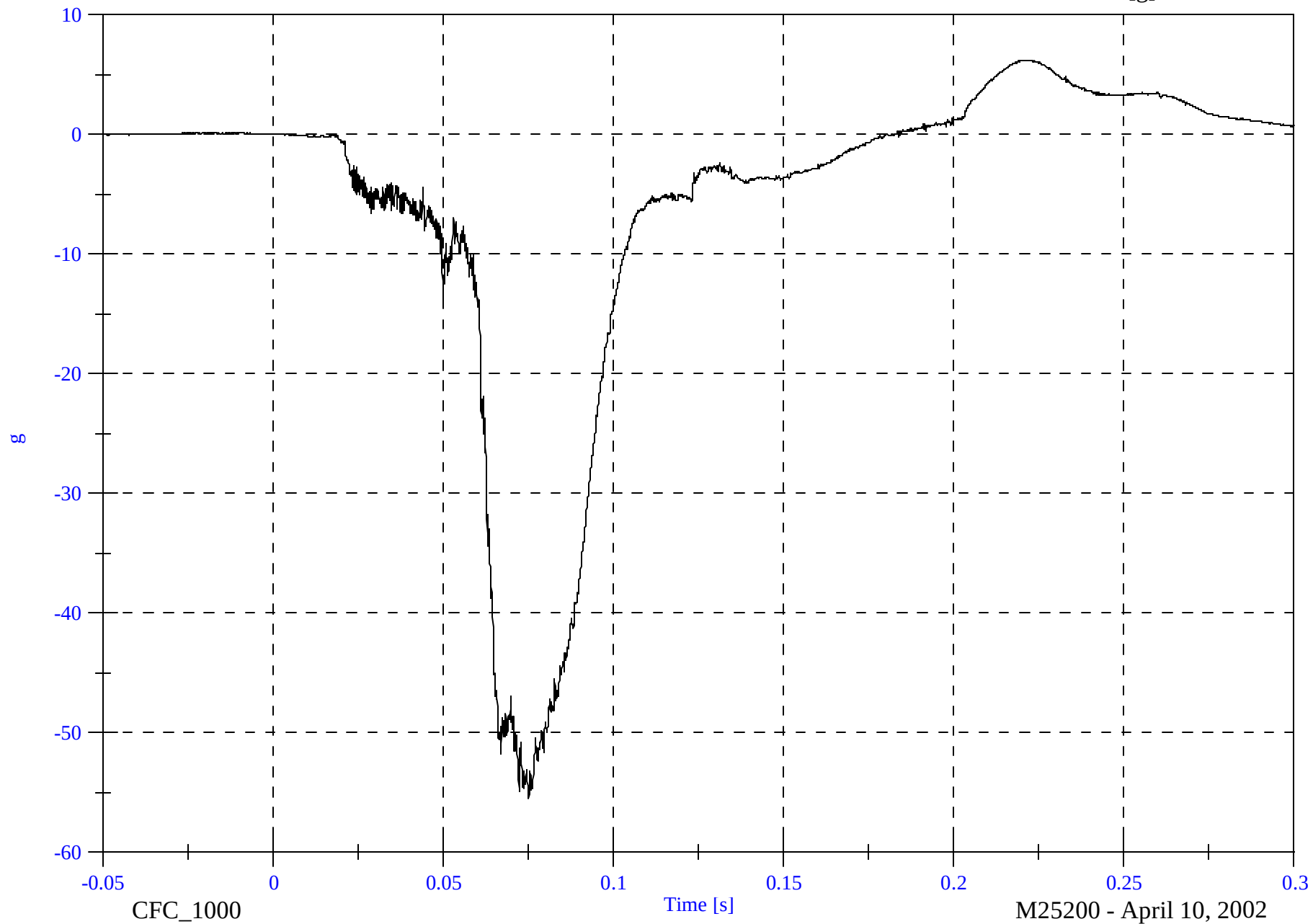
P2 Head CG Red x

Max: 6.2 [g] at 0.221 [s]

Min: -55.5 [g] at 0.075 [s]

B-69

8642-NCAP-06

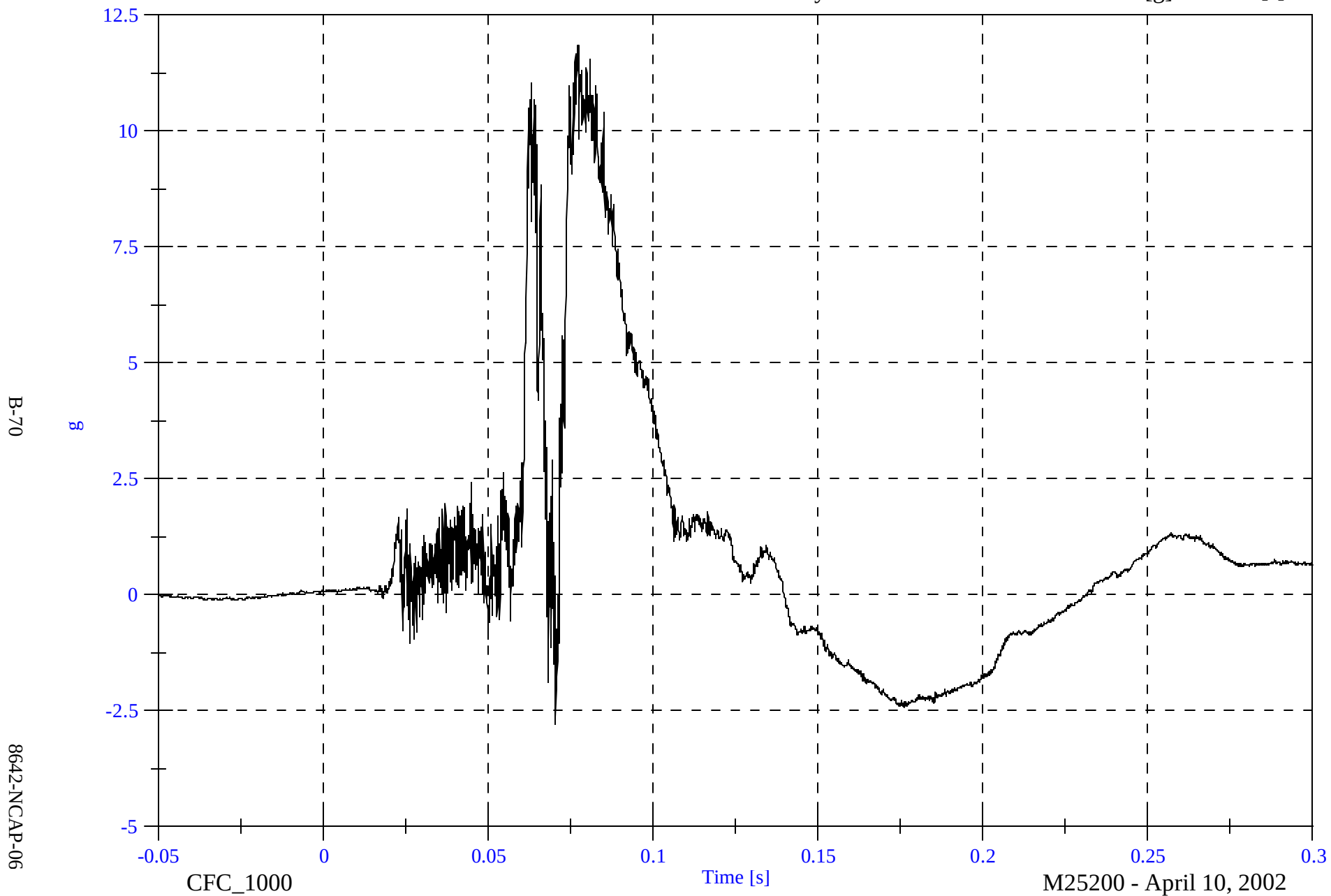


NCAP Test #6 - 2002 Nissan Altima

Max: 11.9 [g] at 0.077 [s]

Min: -2.8 [g] at 0.070 [s]

P2 Head CG Red y

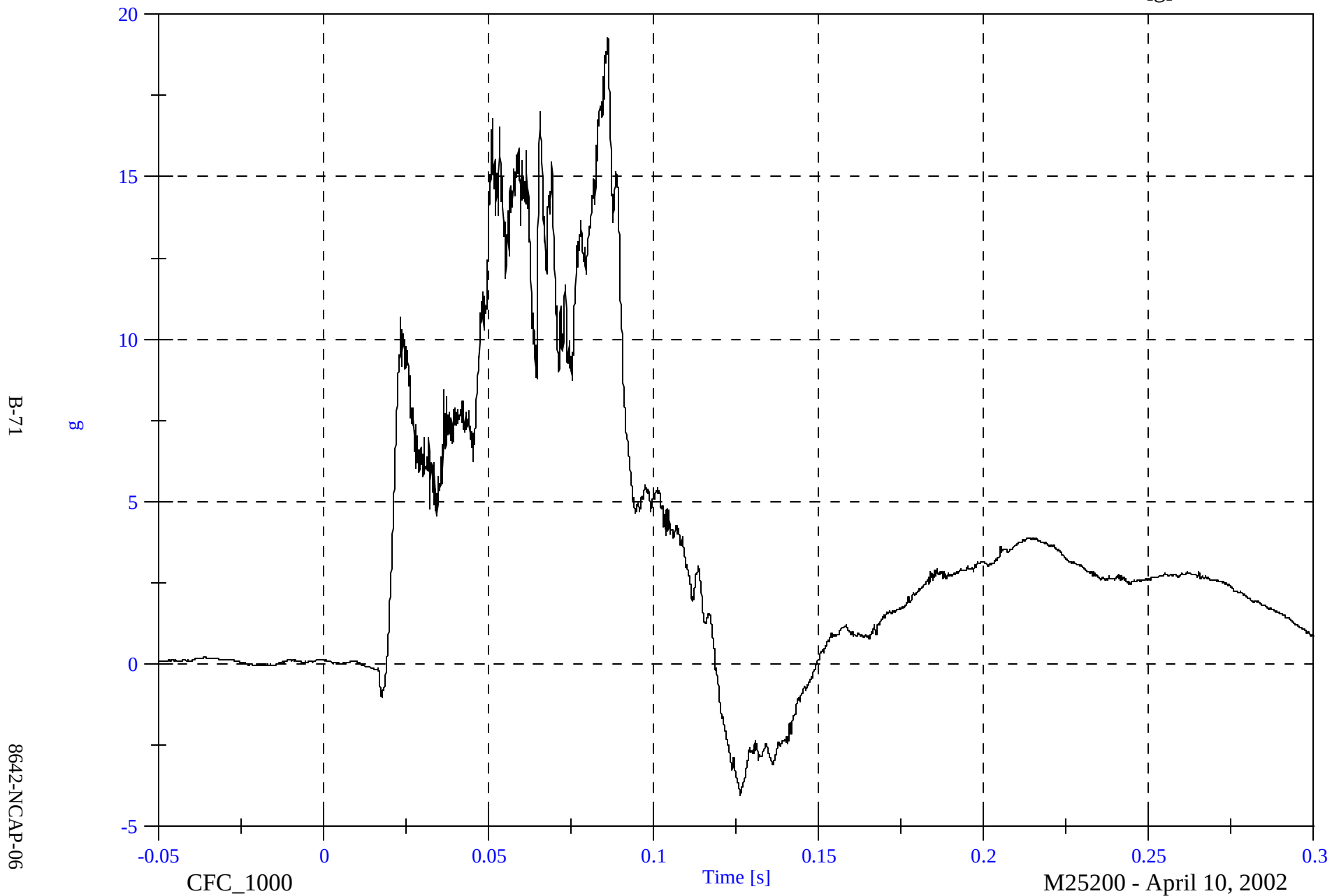


NCAP Test #6 - 2002 Nissan Altima

Max: 19.3 [g] at 0.086 [s]

Min: -4.0 [g] at 0.126 [s]

P2 Head CG Red z

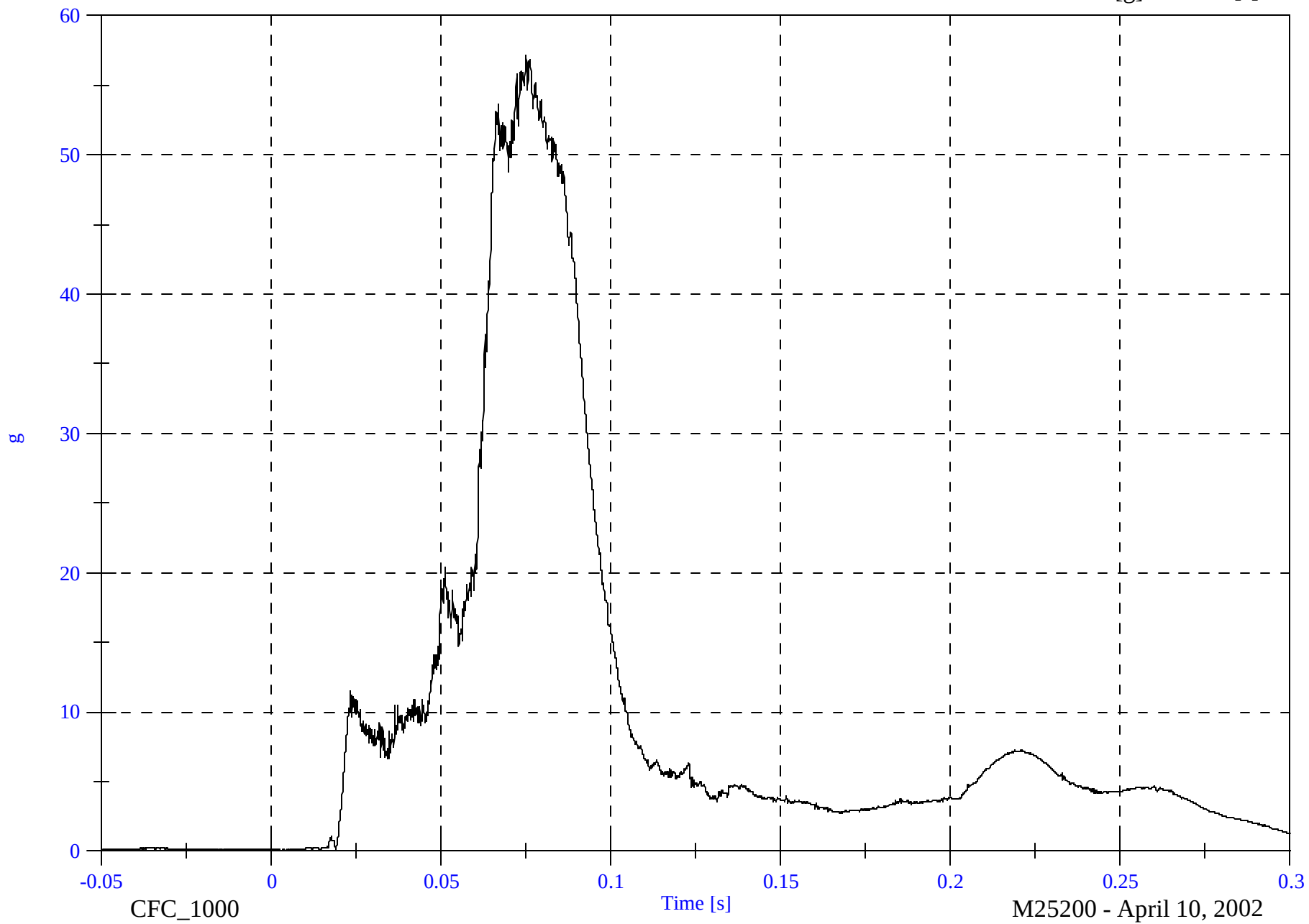


NCAP Test #6 - 2002 Nissan Altima

P2 Head CG Red Resultant

Max: 57.1 [g] at 0.075 [s]

Min: 0.1 [g] at 0.005 [s]



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8642-NCAP-06

CFC_1000

Time [s]

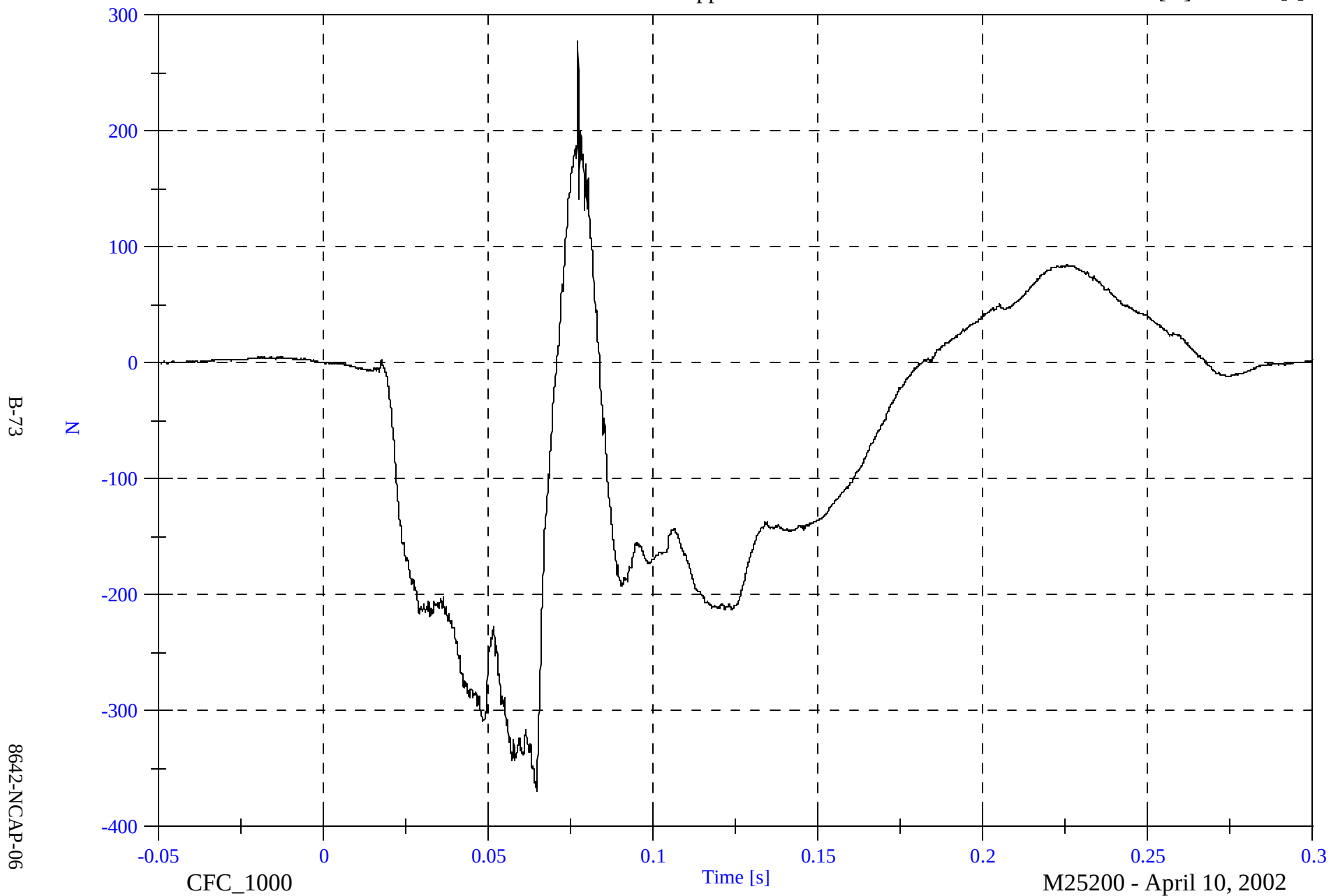
M25200 - April 10, 2002

NCAP Test #6 - 2002 Nissan Altima

Max: 277.3 [N] at 0.077 [s]

Min: -369.0 [N] at 0.065 [s]

P2 Upper Neck Fx

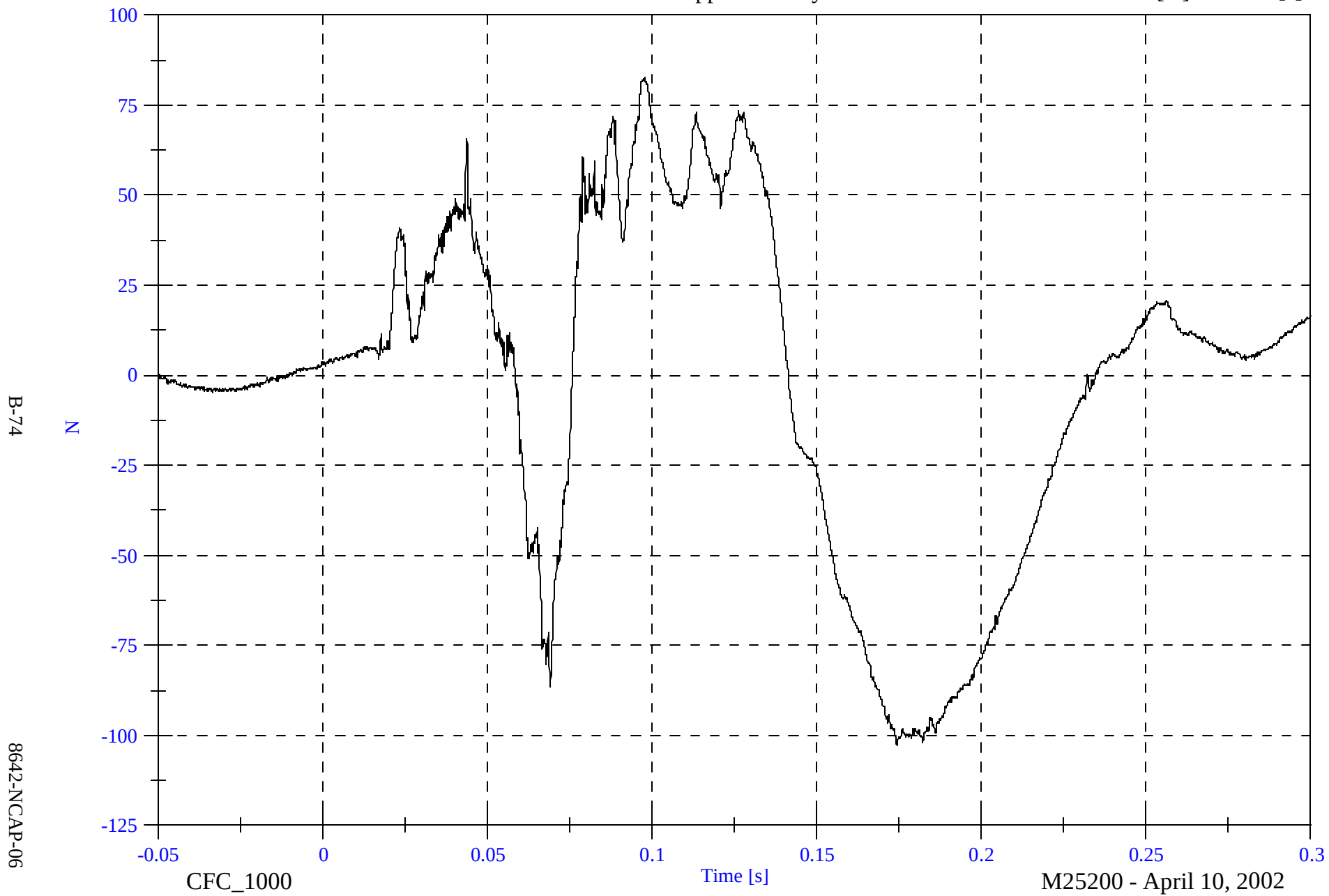


NCAP Test #6 - 2002 Nissan Altima

Max: 82.6 [N] at 0.098 [s]

Min: -102.9 [N] at 0.174 [s]

P2 Upper Neck Fy

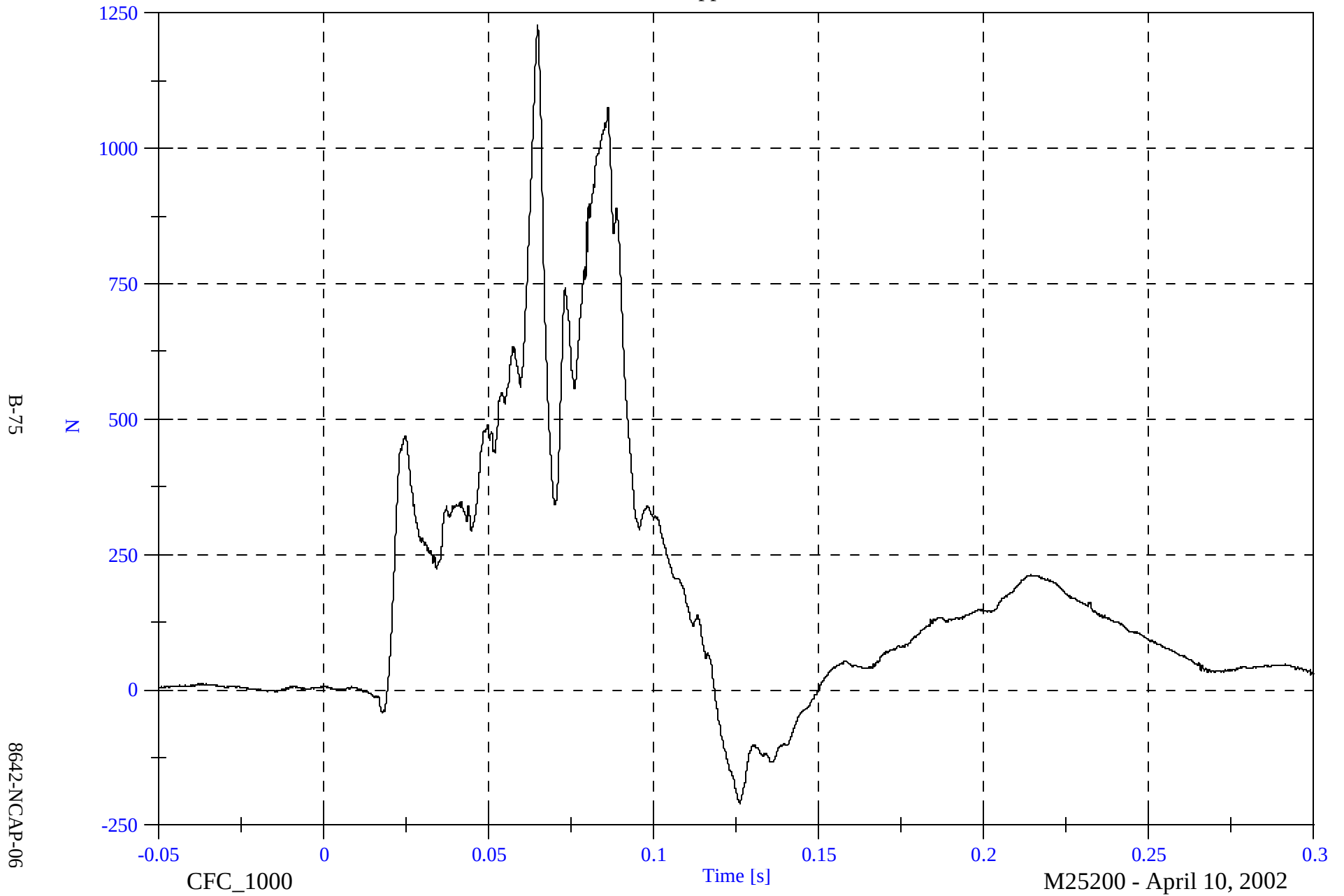


NCAP Test #6 - 2002 Nissan Altima

Max: 1227.2 [N] at 0.065 [s]

Min: -209.4 [N] at 0.126 [s]

P2 Upper Neck Fz



NCAP Test #6 - 2002 Nissan Altima

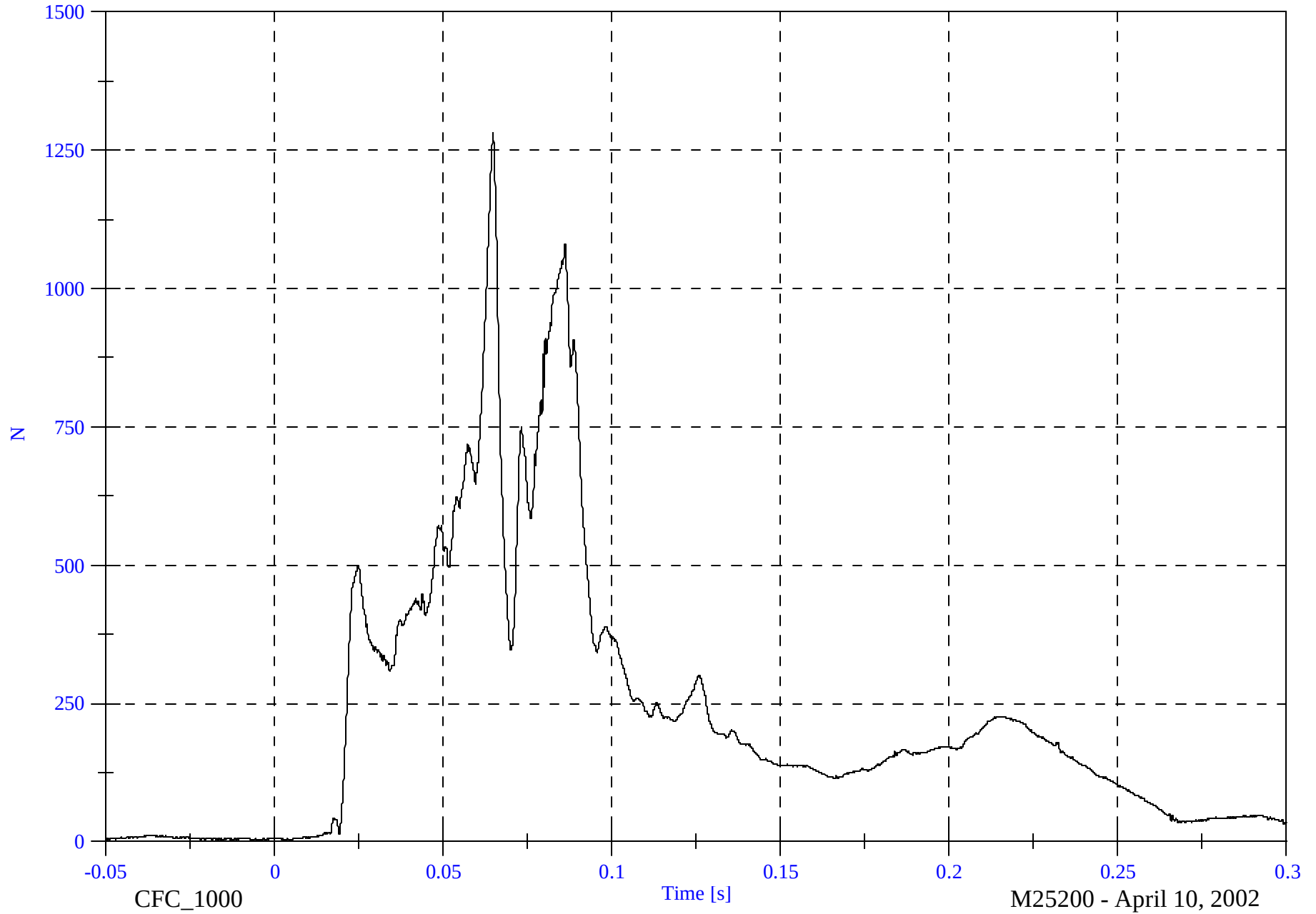
P2 Upper Neck F Resultant

Max: 1281.0 [N] at 0.065 [s]

Min: 3.2 [N] at -0.005 [s]

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8642-NCAP-06

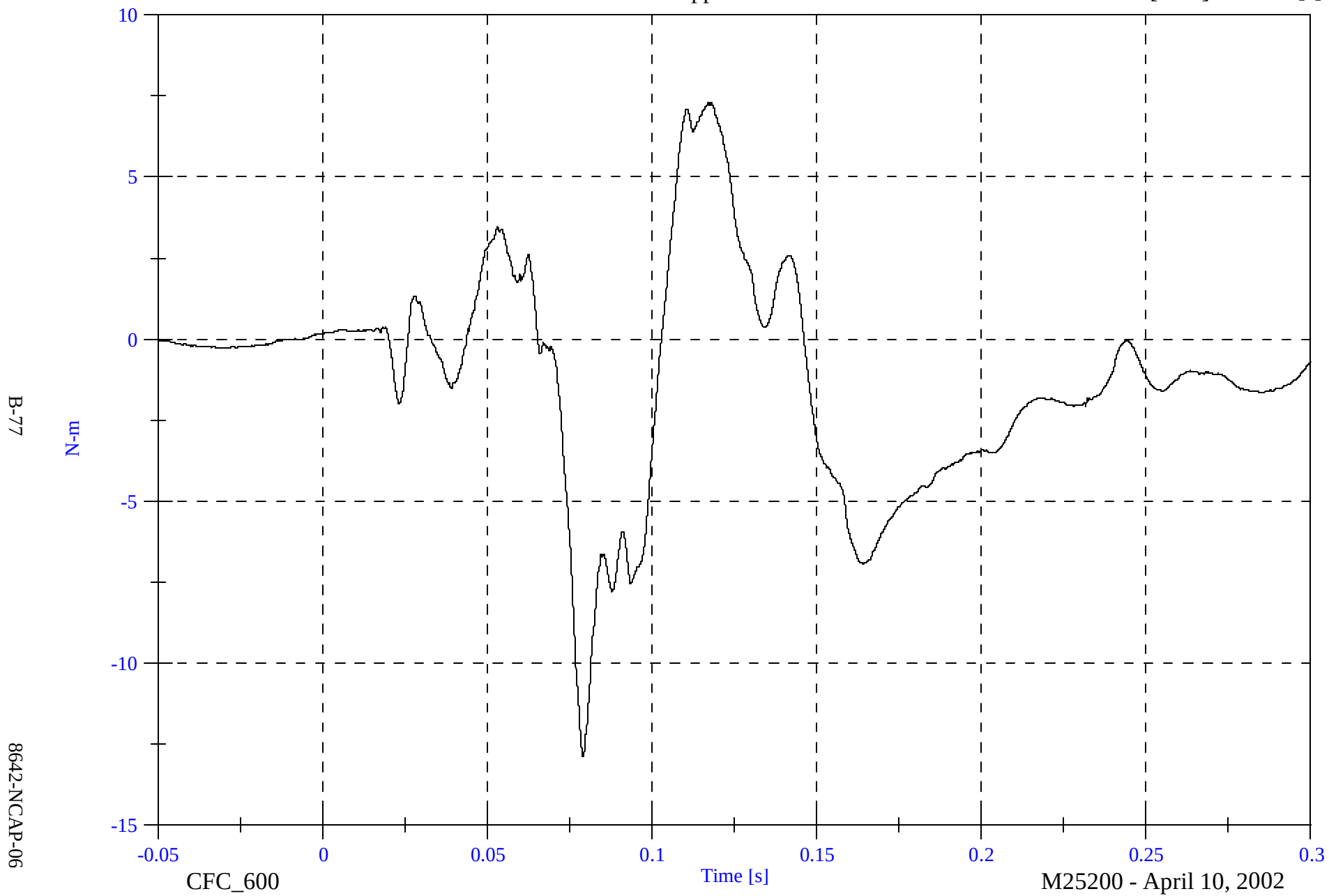


NCAP Test #6 - 2002 Nissan Altima

P2 Upper Neck Mx

Max: 7.3 [N-m] at 0.117 [s]

Min: -12.9 [N-m] at 0.079 [s]

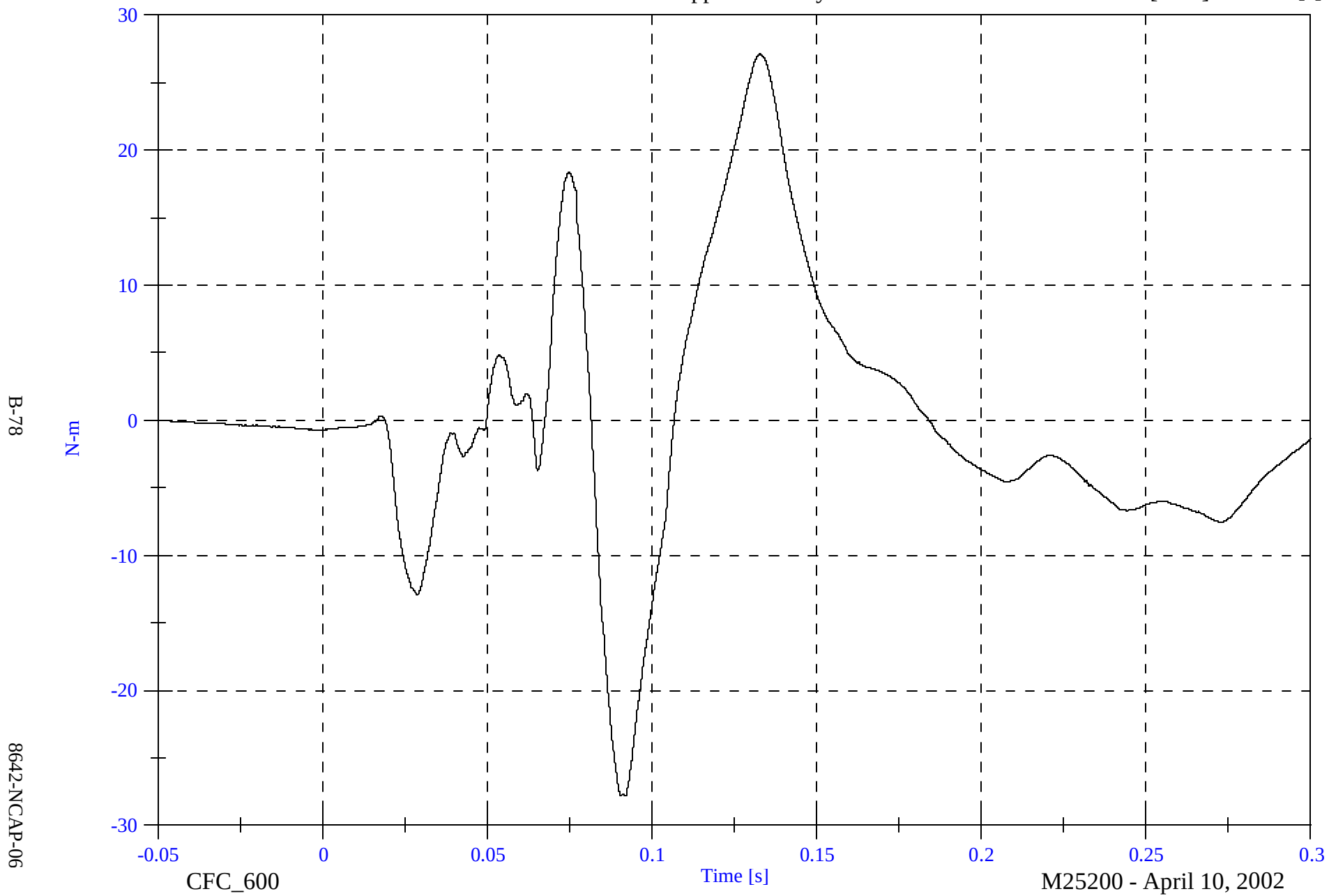


NCAP Test #6 - 2002 Nissan Altima

Max: 27.1 [N-m] at 0.133 [s]

Min: -27.8 [N-m] at 0.092 [s]

P2 Upper Neck My

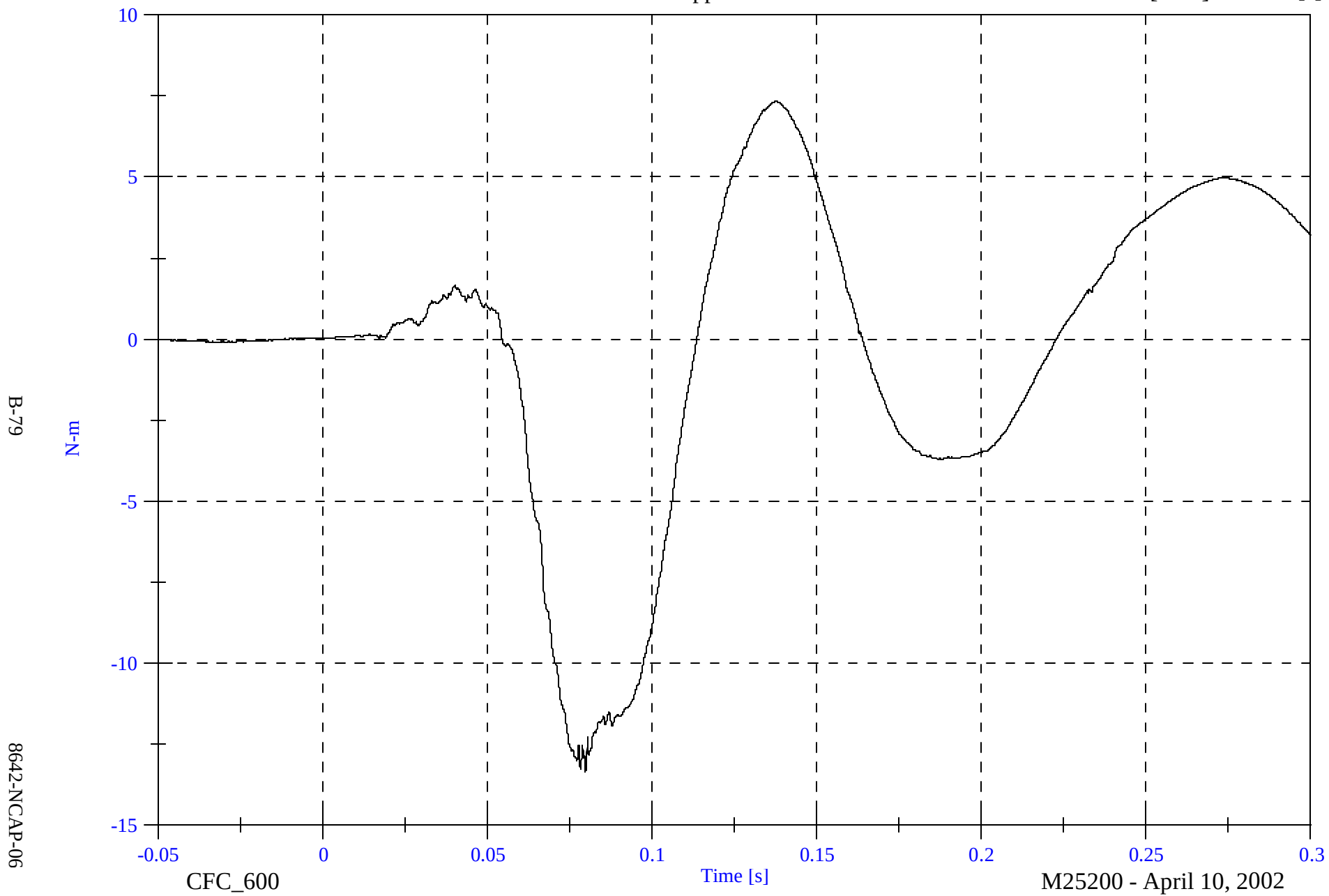


NCAP Test #6 - 2002 Nissan Altima

P2 Upper Neck Mz

Max: 7.3 [N-m] at 0.138 [s]

Min: -13.3 [N-m] at 0.080 [s]



NCAP Test #6 - 2002 Nissan Altima

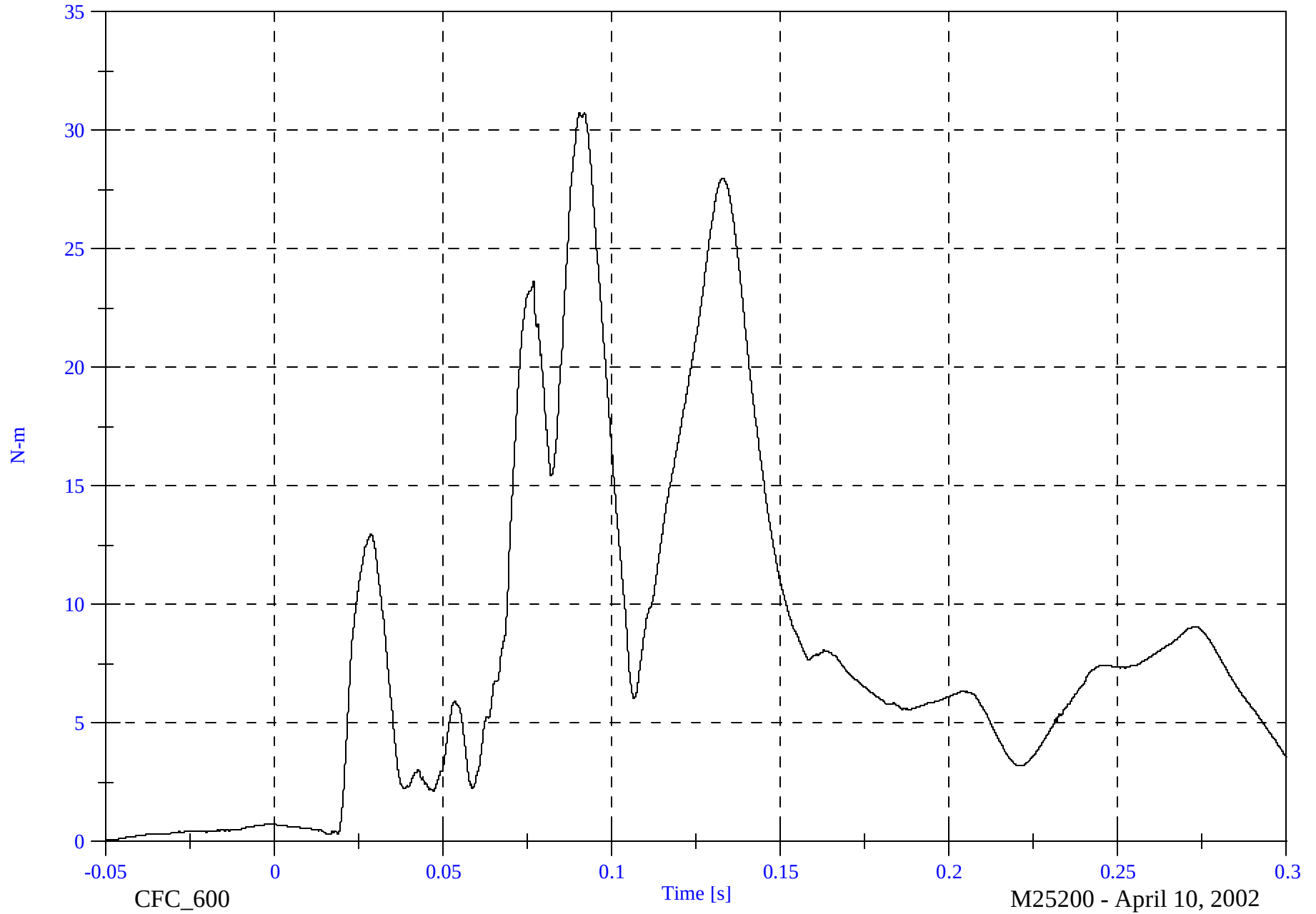
P2 Upper Neck M Resultant

Max: 30.7 [N-m] at 0.090 [s]

Min: 0.0 [N-m] at -0.050 [s]

B-80

8642-NCAP-06

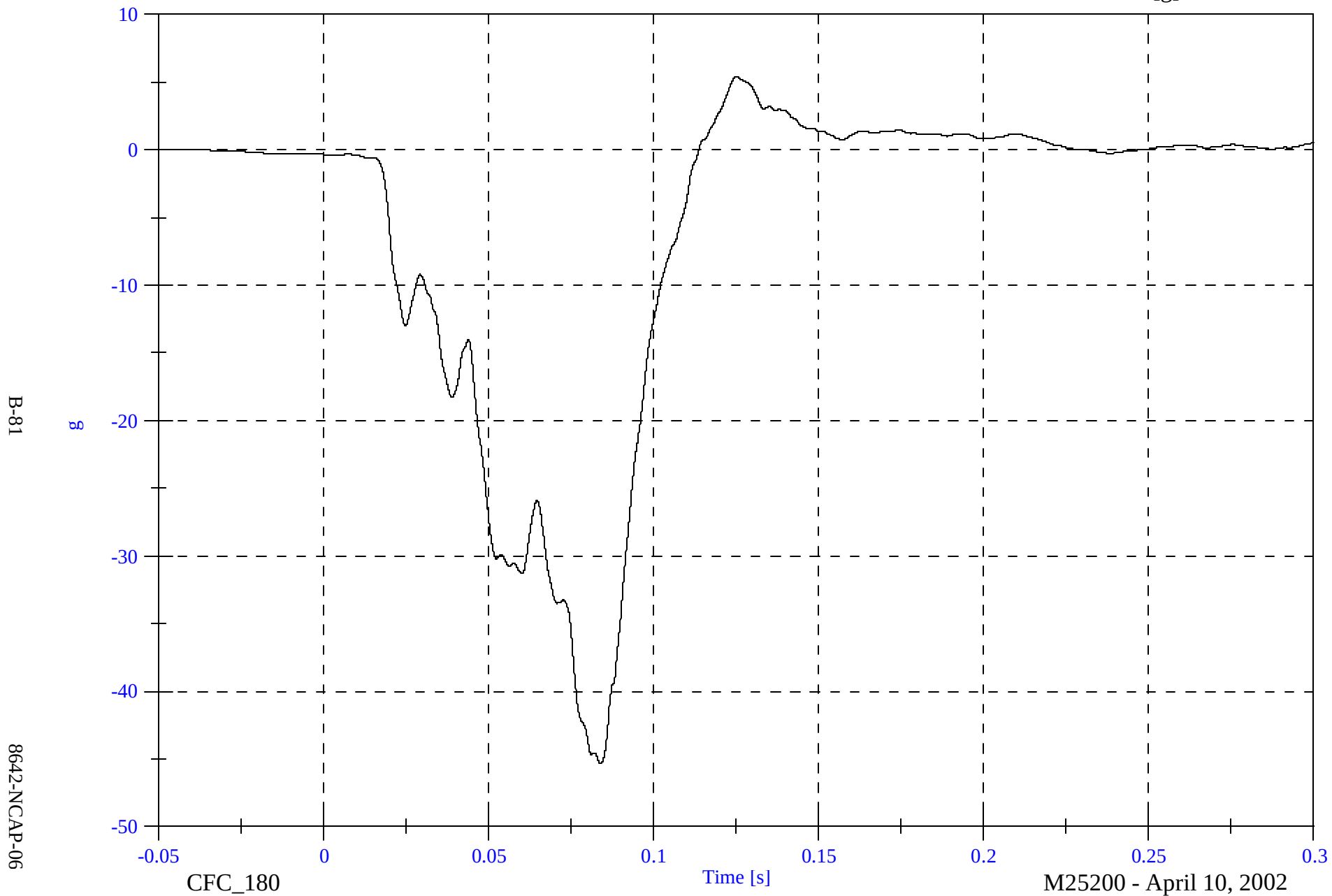


NCAP Test #6 - 2002 Nissan Altima

Max: 5.4 [g] at 0.125 [s]

Min: -45.4 [g] at 0.084 [s]

P2 Chest x

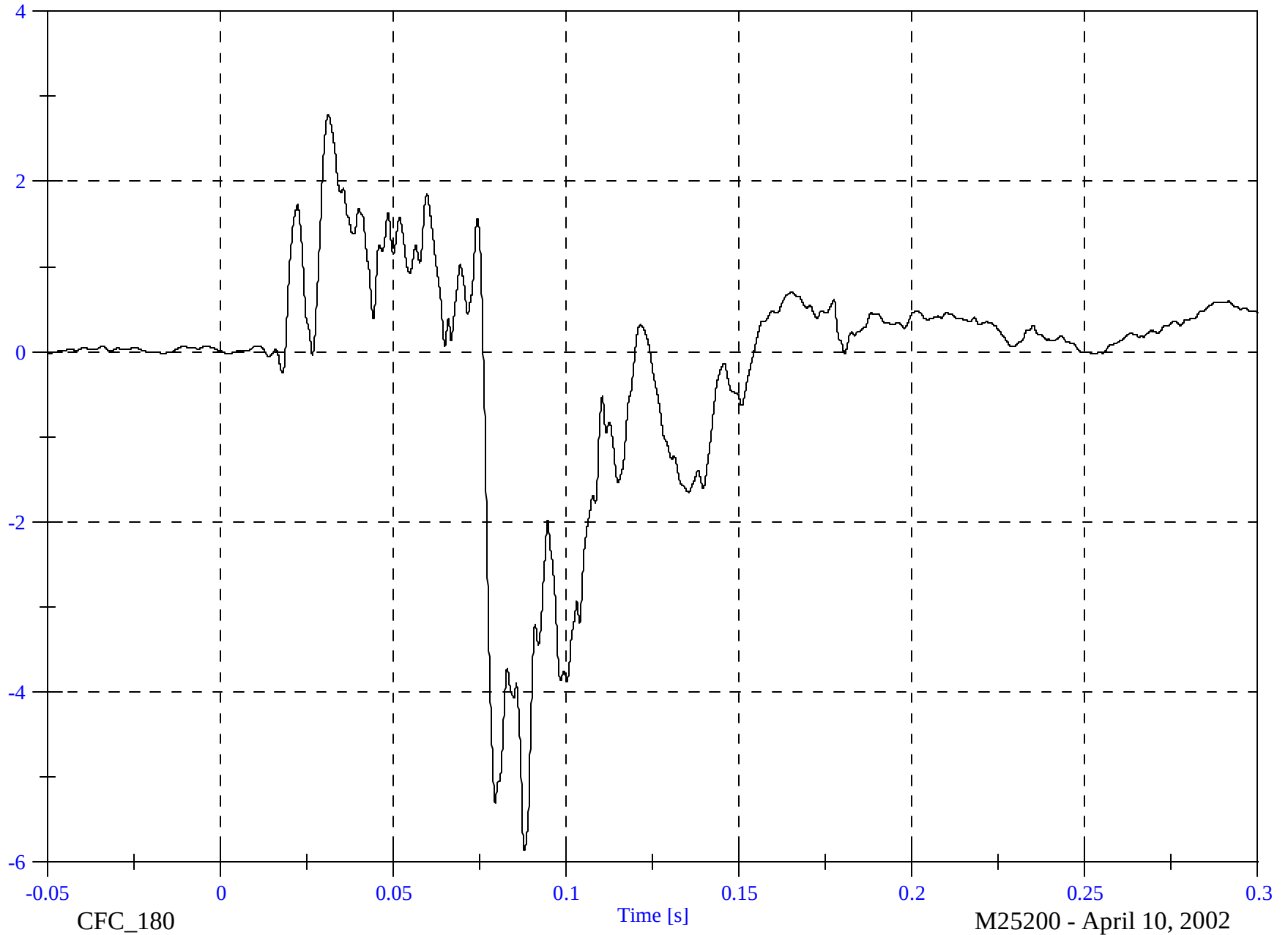


NCAP Test #6 - 2002 Nissan Altima

Max: 2.8 [g] at 0.031 [s]

Min: -5.9 [g] at 0.088 [s]

P2 Chest y



B-82

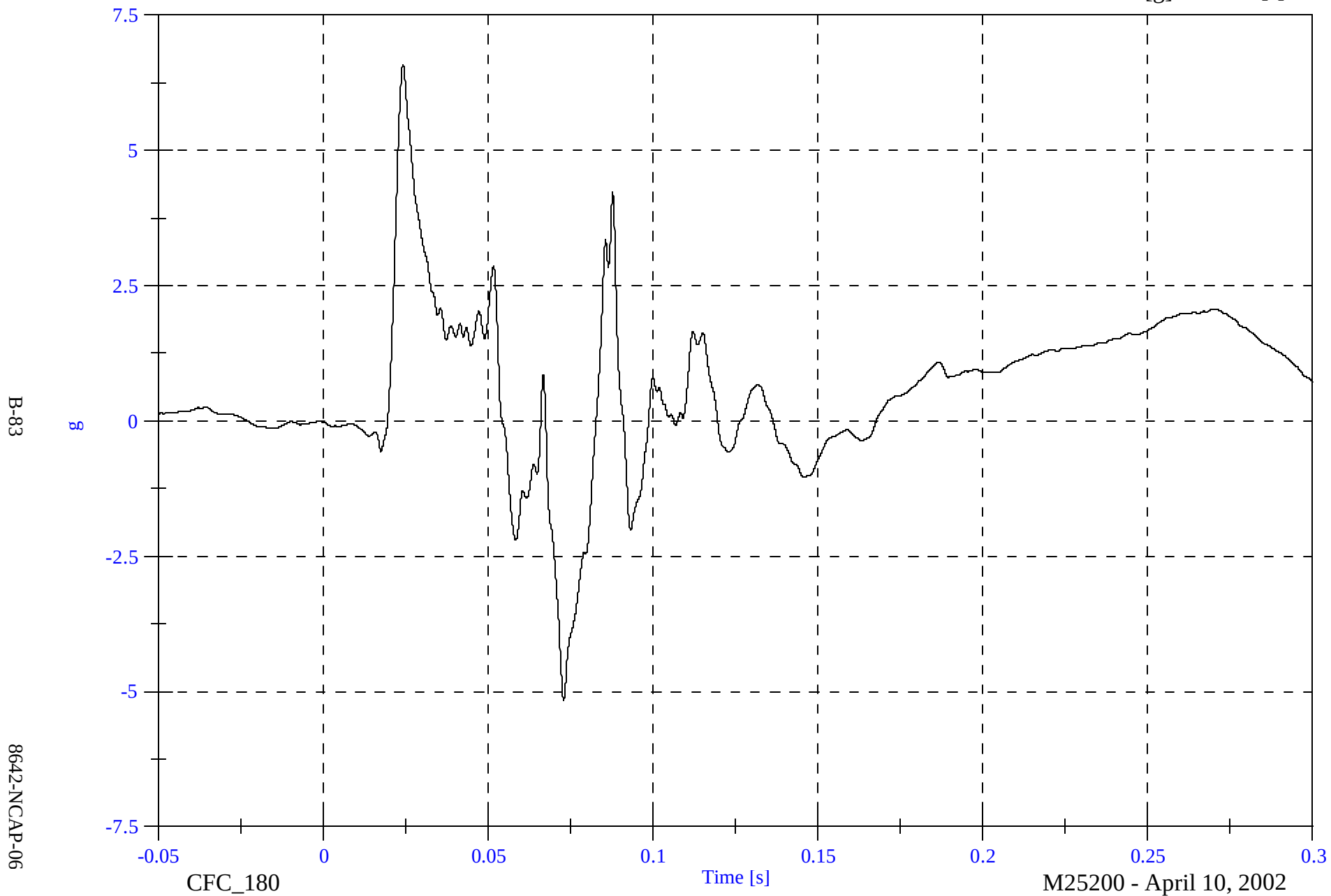
8642-NCAP-06

NCAP Test #6 - 2002 Nissan Altima

P2 Chest z

Max: 6.6 [g] at 0.024 [s]

Min: -5.2 [g] at 0.073 [s]



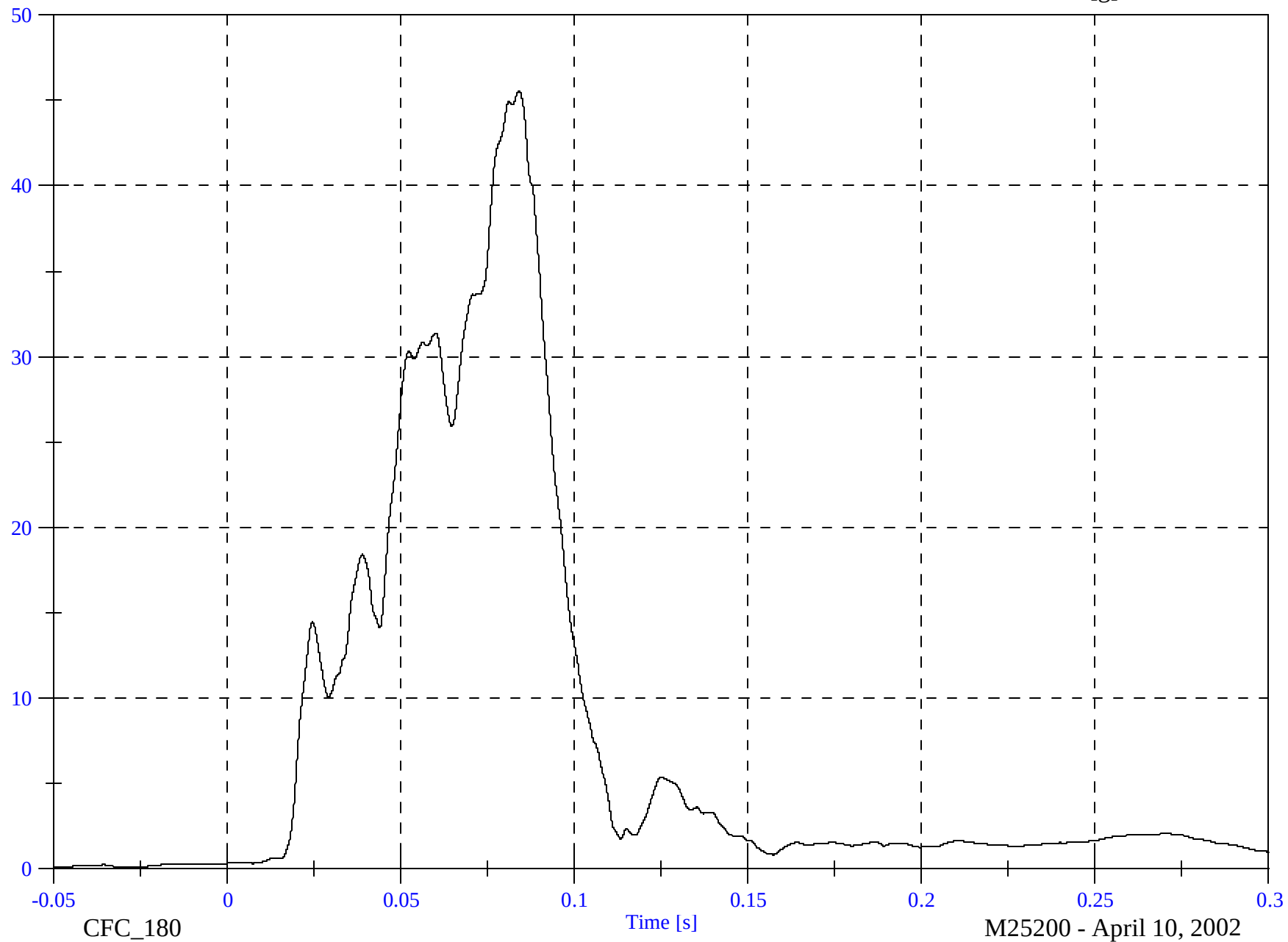
8642-NCAP-06

NCAP Test #6 - 2002 Nissan Altima

P2 Chest Resultant

Max: 45.5 [g] at 0.084 [s]

Min: 0.1 [g] at -0.031 [s]



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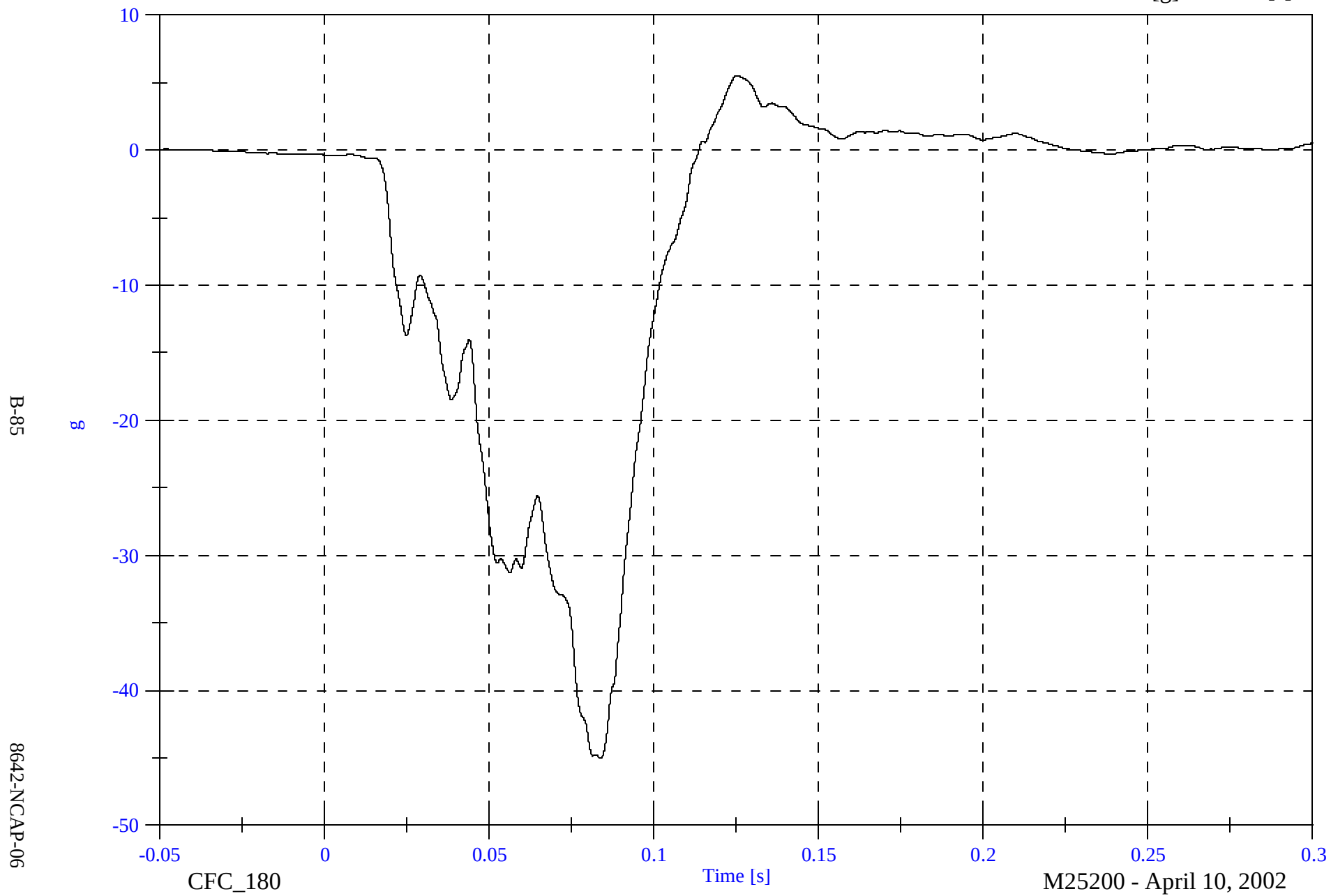
8642-NCAP-06

NCAP Test #6 - 2002 Nissan Altima

Max: 5.5 [g] at 0.125 [s]

Min: -45.0 [g] at 0.084 [s]

P2 Chest Red x

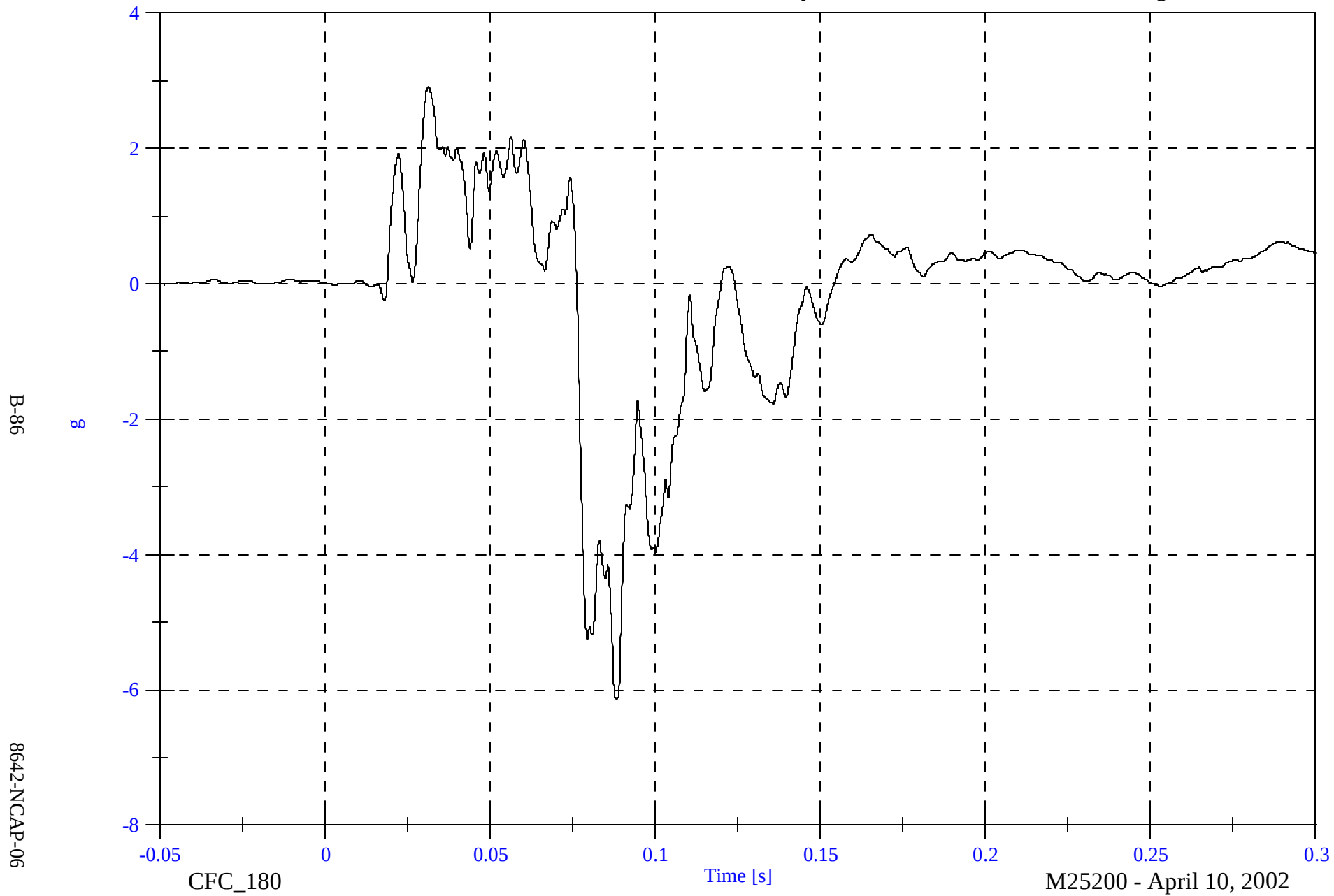


NCAP Test #6 - 2002 Nissan Altima

Max: 2.9 [g] at 0.031 [s]

Min: -6.1 [g] at 0.088 [s]

P2 Chest Red y



NCAP Test #6 - 2002 Nissan Altima

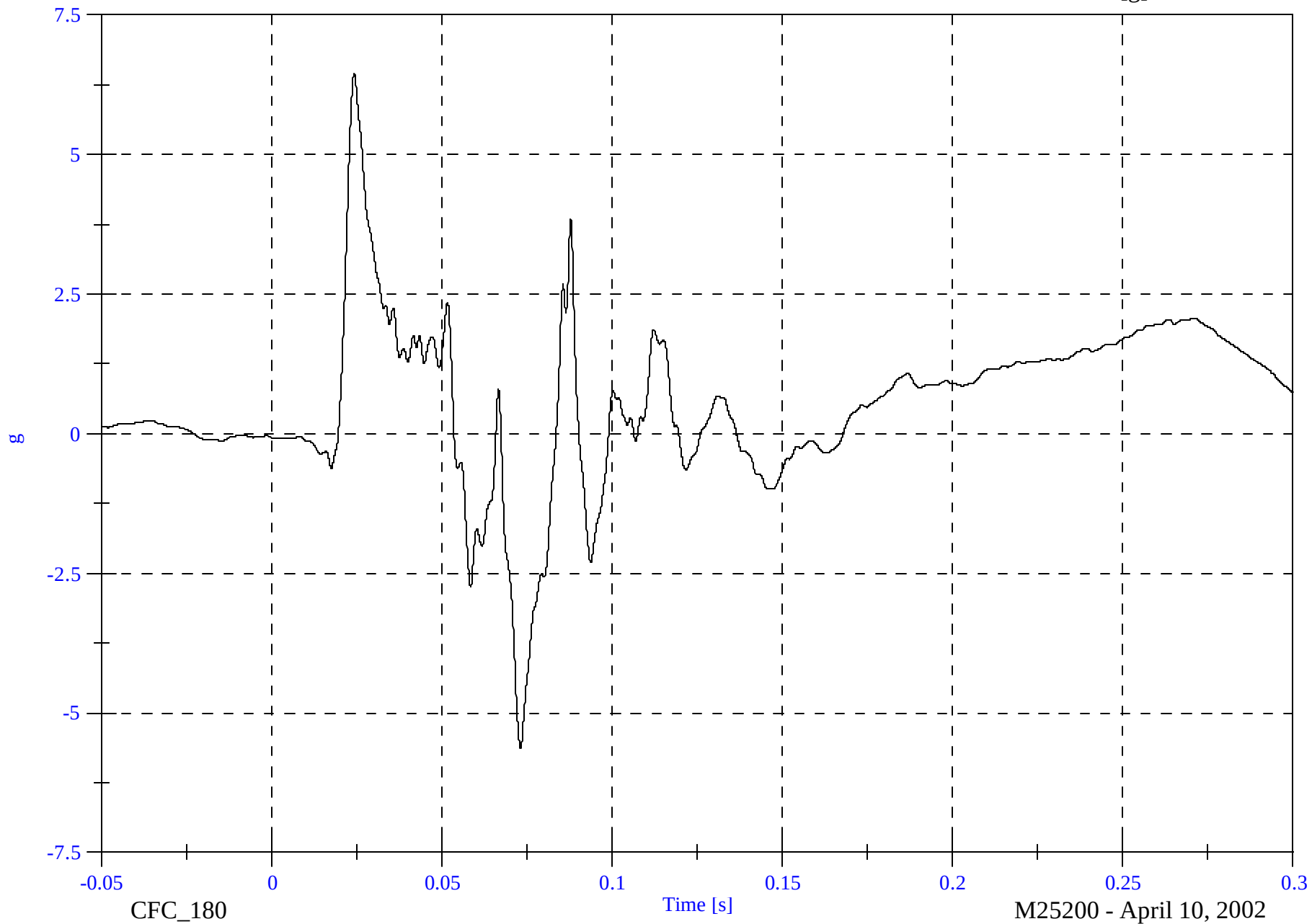
P2 Chest Red z

Max: 6.5 [g] at 0.024 [s]

Min: -5.6 [g] at 0.073 [s]

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8642-NCAP-06



NCAP Test #6 - 2002 Nissan Altima

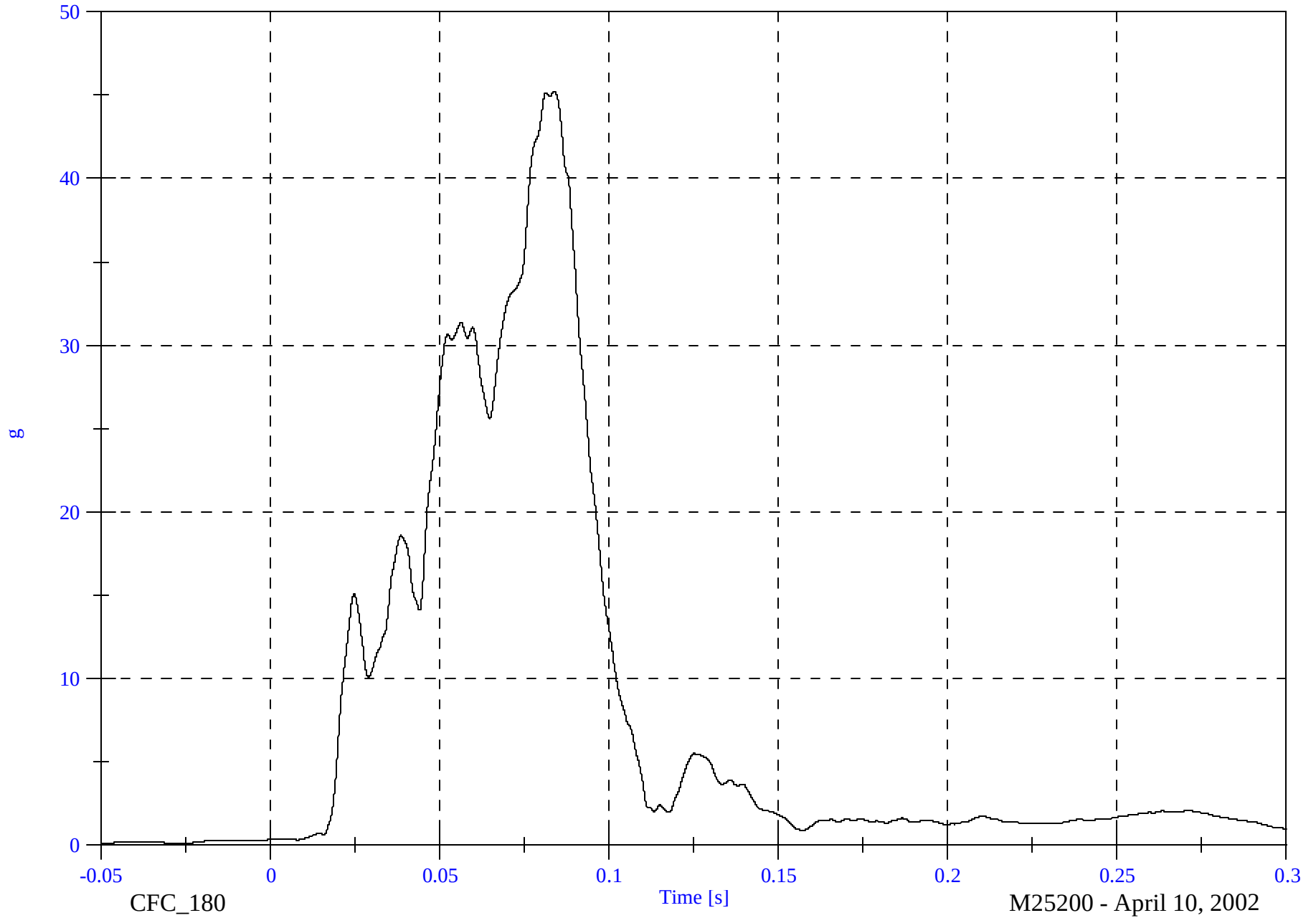
P2 Chest Red Resultant

Max: 45.2 [g] at 0.084 [s]

Min: 0.1 [g] at -0.048 [s]

B-88

8642-NCAP-06



NCAP Test #6 - 2002 Nissan Altima

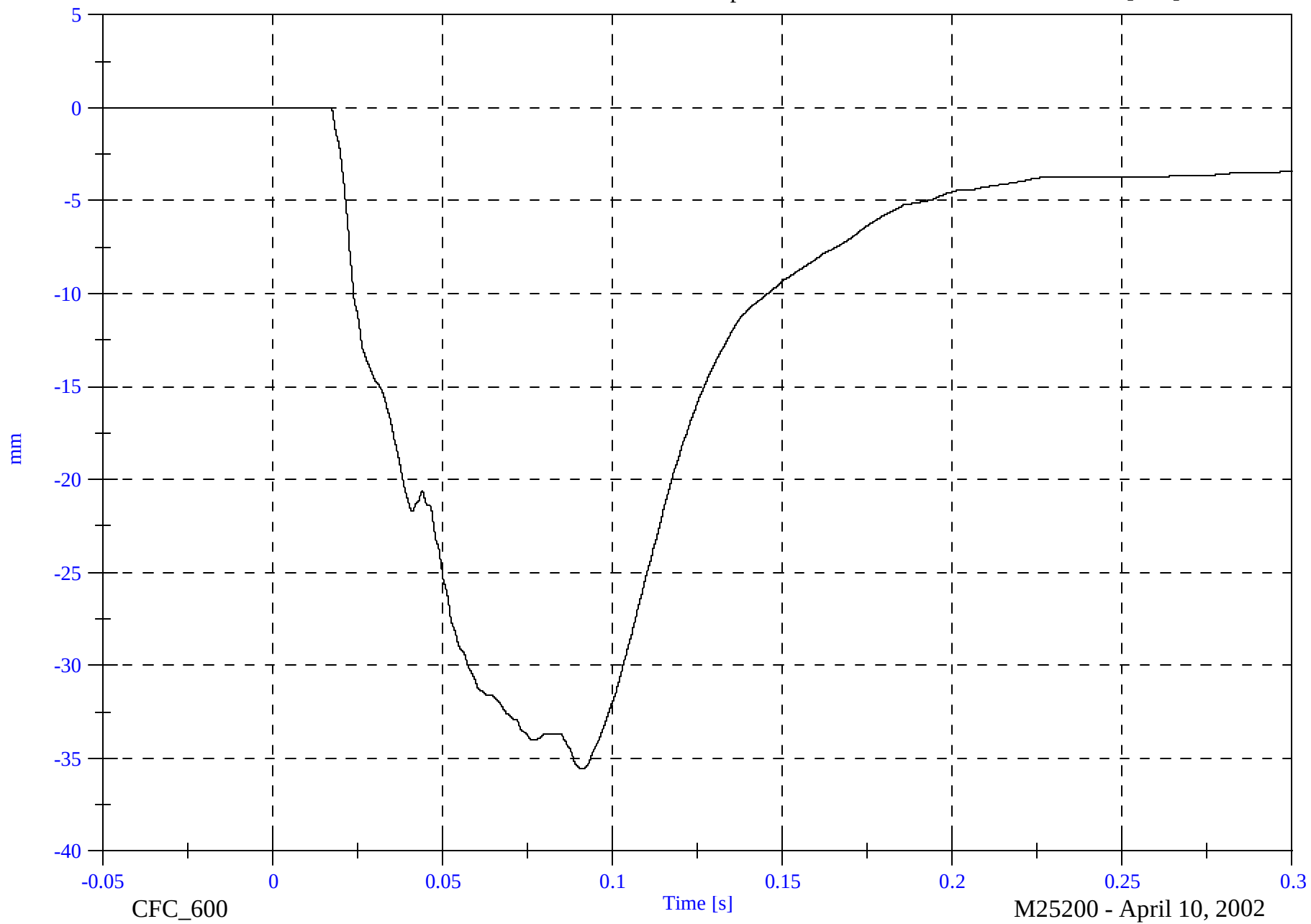
P2 Chest Compression

Max: 0.0 [mm] at 0.017 [s]

Min: -35.6 [mm] at 0.091 [s]

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8642-NCAP-06

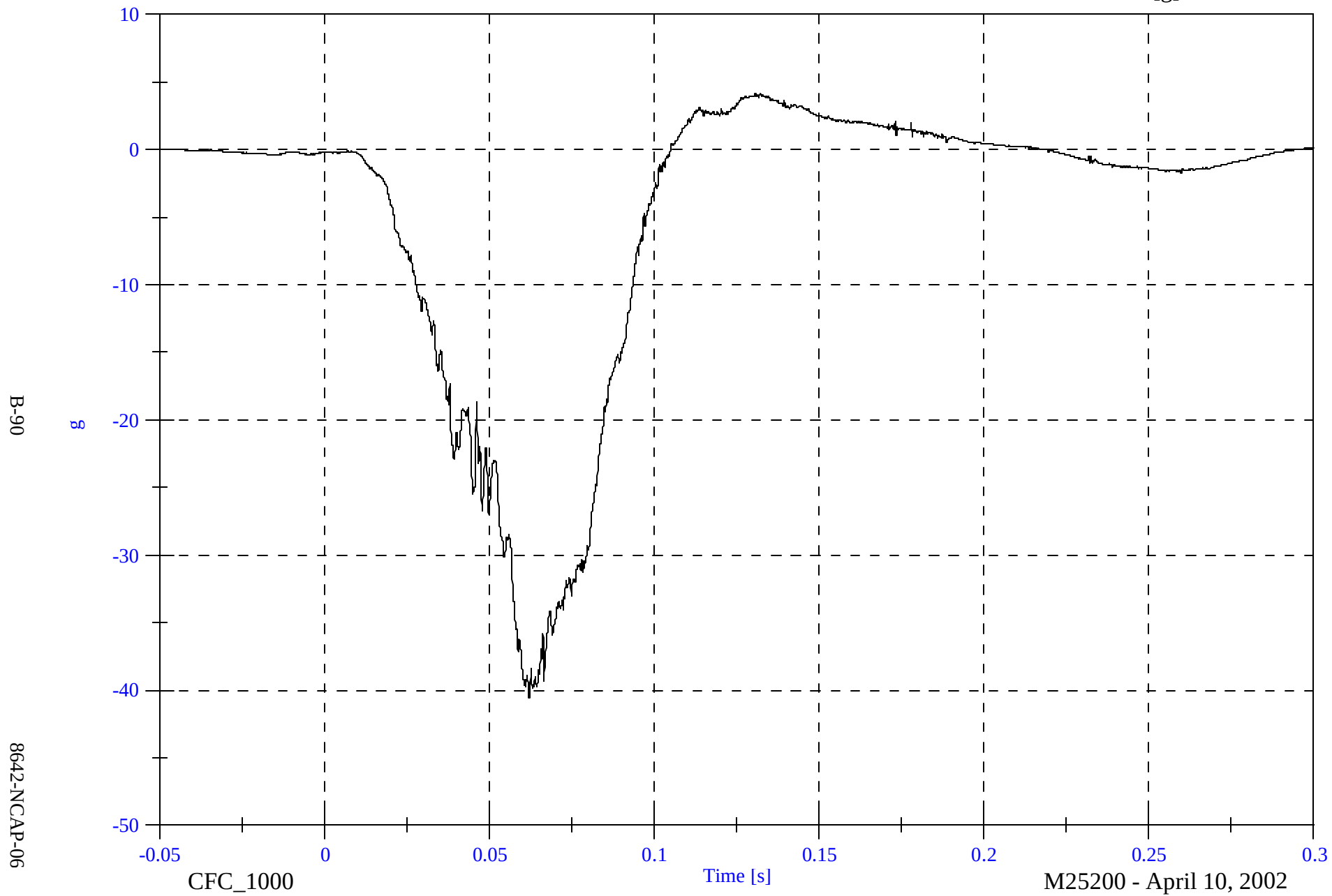


NCAP Test #6 - 2002 Nissan Altima

Max: 4.2 [g] at 0.132 [s]

Min: -40.5 [g] at 0.062 [s]

P2 Pelvic x

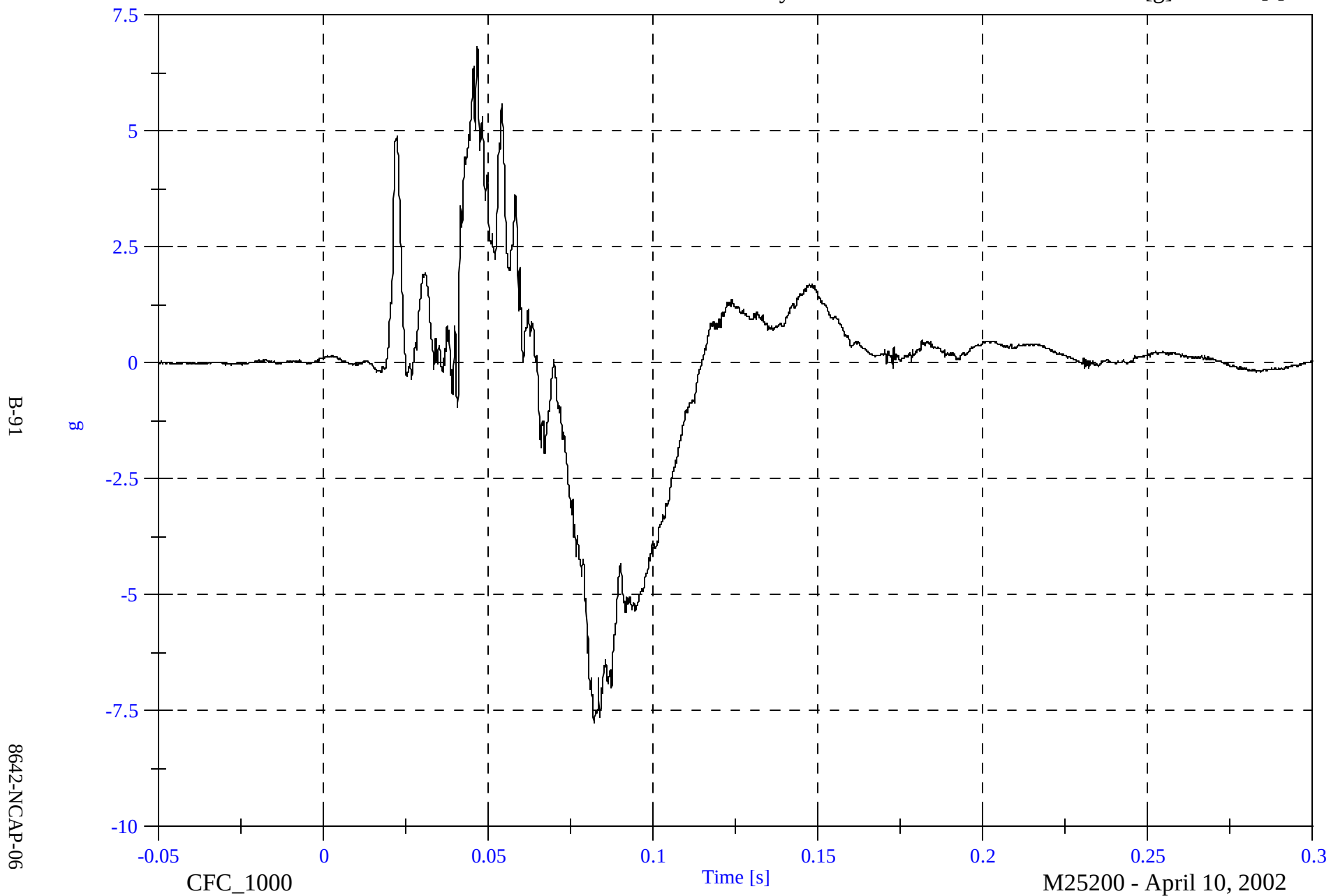


NCAP Test #6 - 2002 Nissan Altima

Max: 6.8 [g] at 0.047 [s]

Min: -7.8 [g] at 0.082 [s]

P2 Pelvic y

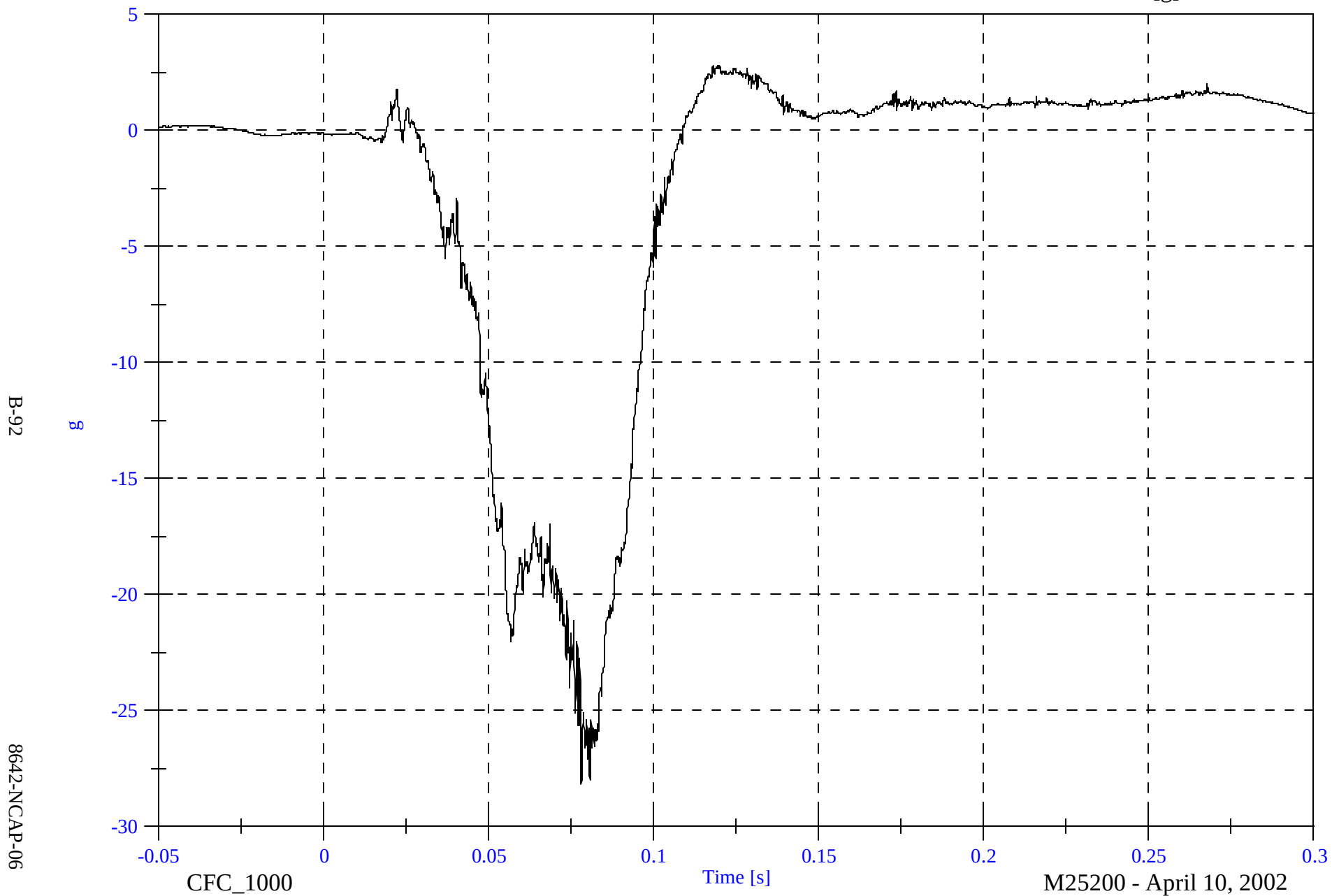


NCAP Test #6 - 2002 Nissan Altima

Max: 2.8 [g] at 0.119 [s]

Min: -28.1 [g] at 0.078 [s]

P2 Pelvic z

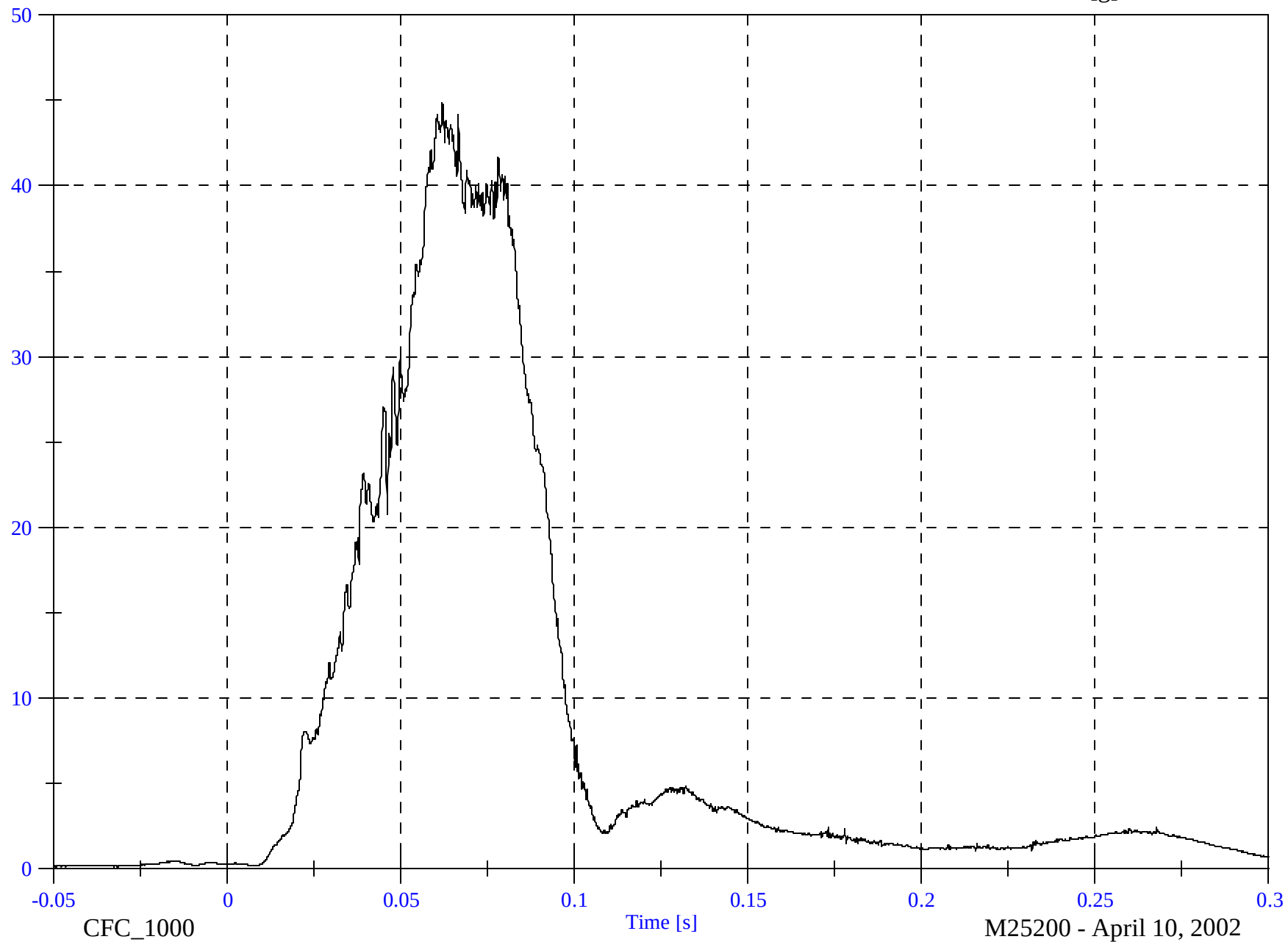


NCAP Test #6 - 2002 Nissan Altima

P2 Pelvic Resultant

Max: 44.8 [g] at 0.062 [s]

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



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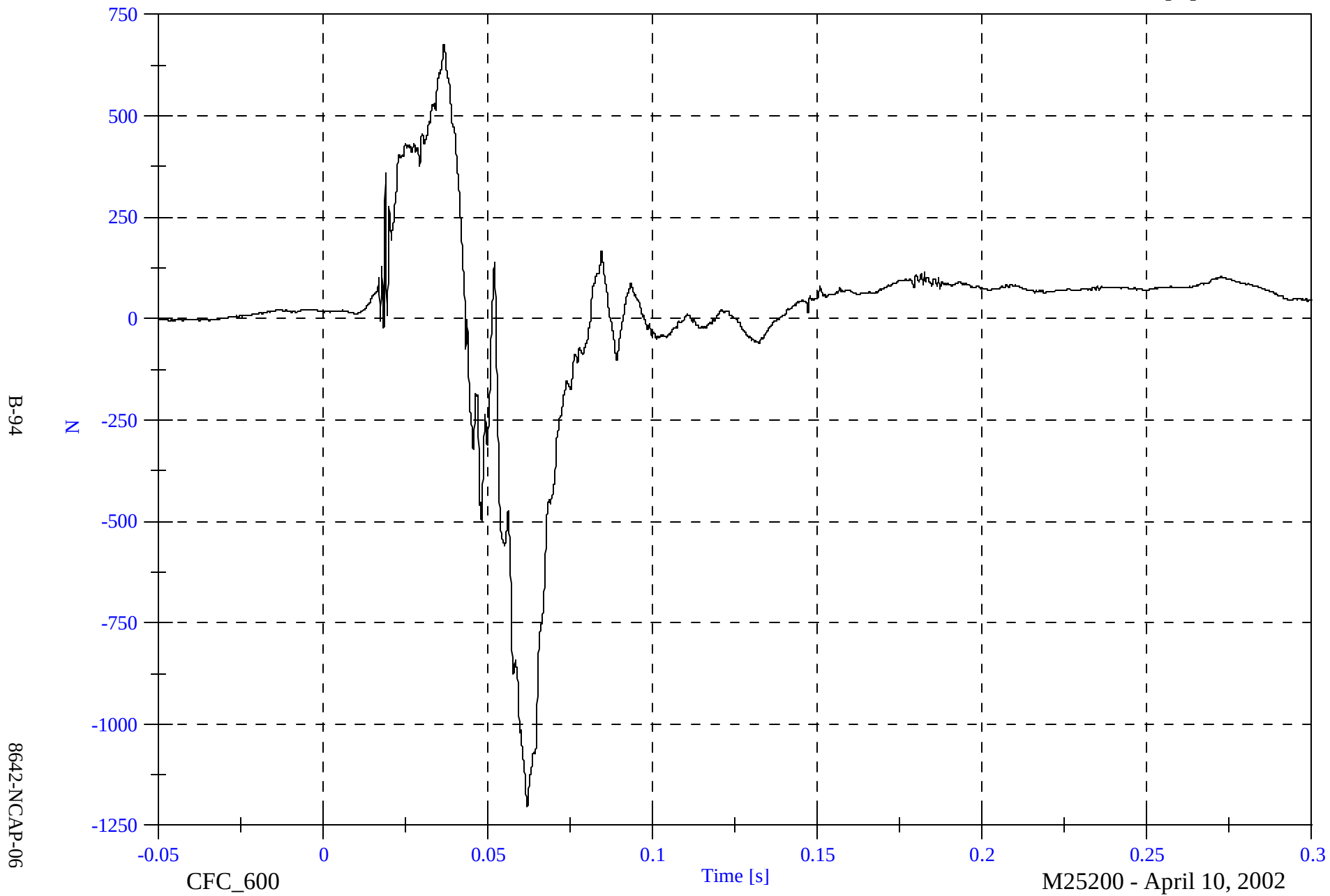
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NCAP Test #6 - 2002 Nissan Altima

P2 Left Femur

Max: 674.1 [N] at 0.037 [s]

Min: -1203.8 [N] at 0.062 [s]

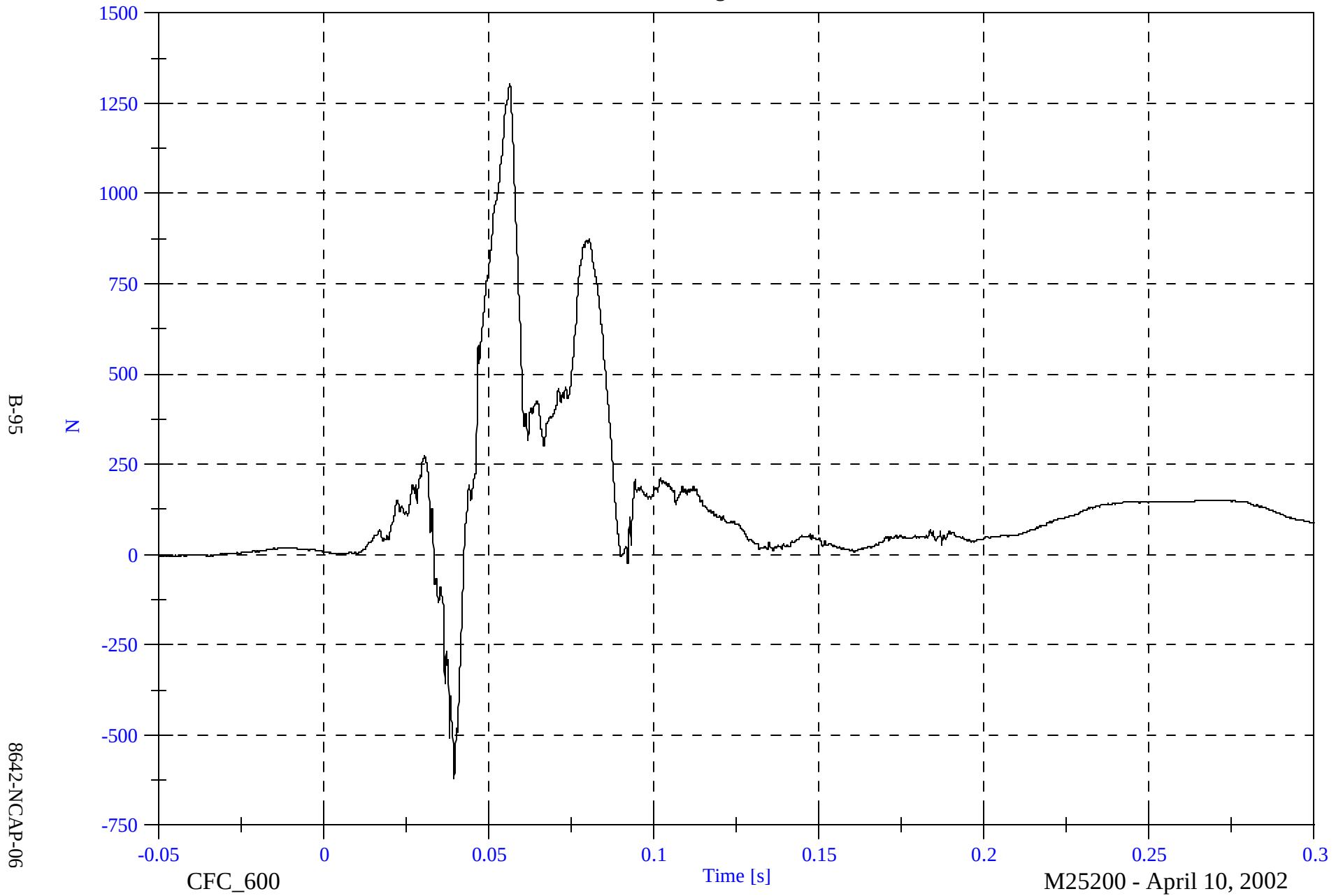


NCAP Test #6 - 2002 Nissan Altima

P2 Right Femur

Max: 1305.7 [N] at 0.056 [s]

Min: -620.3 [N] at 0.039 [s]

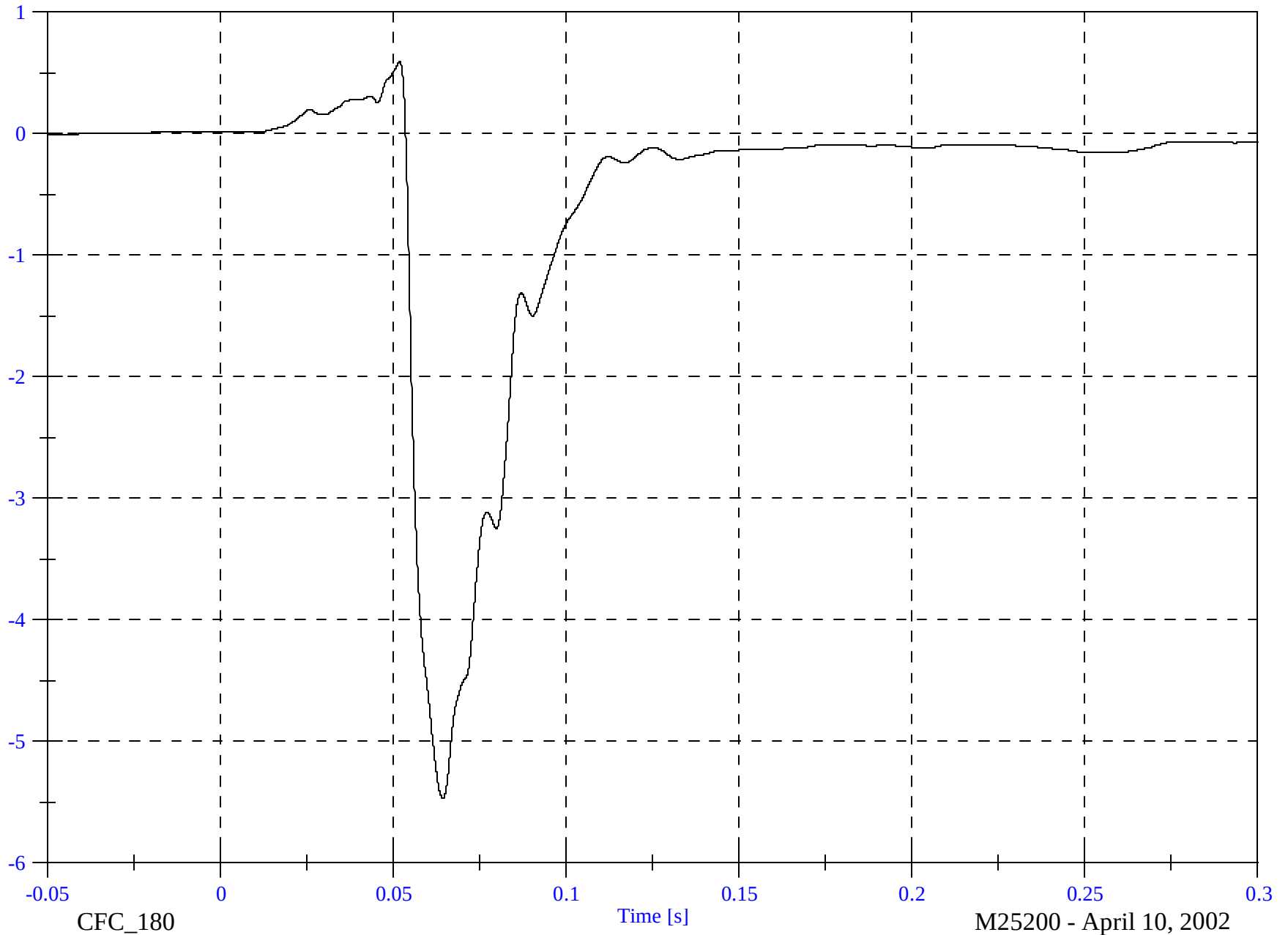


NCAP Test #6 - 2002 Nissan Altima

P2 Left Knee Shear

Max: 0.6 [mm] at 0.052 [s]

Min: -5.5 [mm] at 0.064 [s]



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CFC_180

Time [s]

M25200 - April 10, 2002

NCAP Test #6 - 2002 Nissan Altima

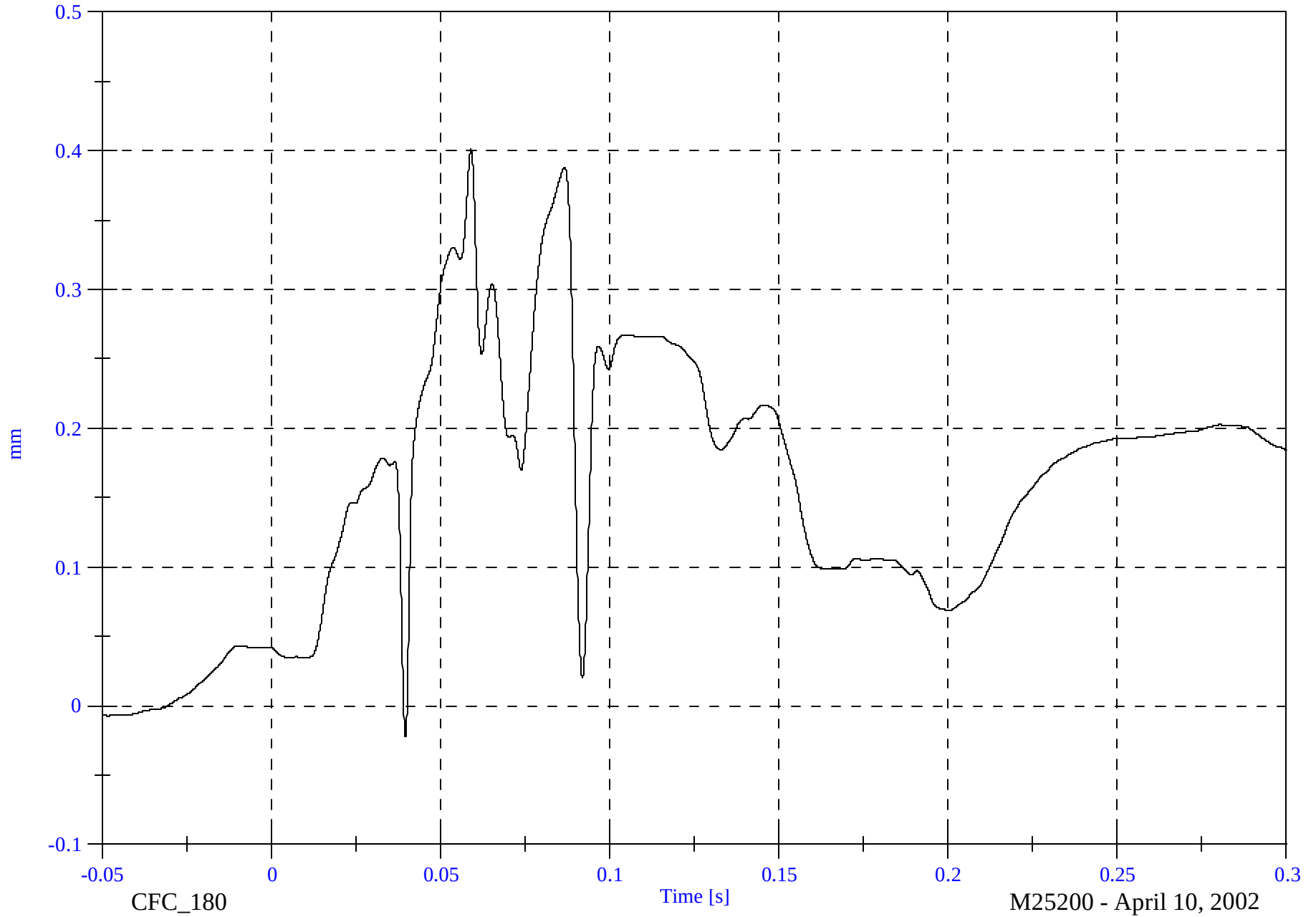
P2 Right Knee Shear

Max: 0.4 [mm] at 0.059 [s]

Min: -0.0 [mm] at 0.040 [s]

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8642-NCAP-06



NCAP Test #6 - 2002 Nissan Altima

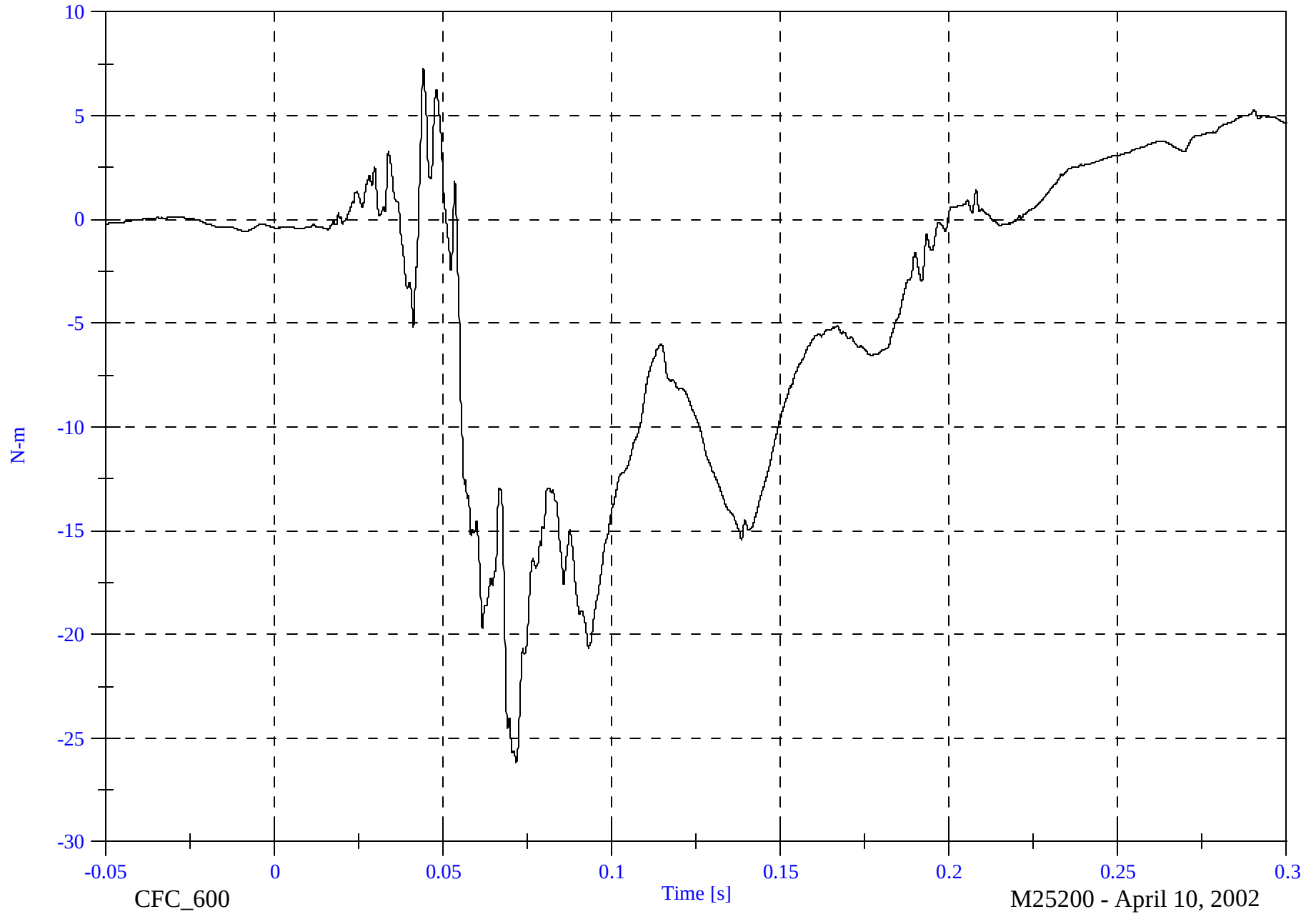
P2 Left Upper Tibia Mx

Max: 7.3 [N-m] at 0.044 [s]

Min: -26.2 [N-m] at 0.072 [s]

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8642-NCAP-06

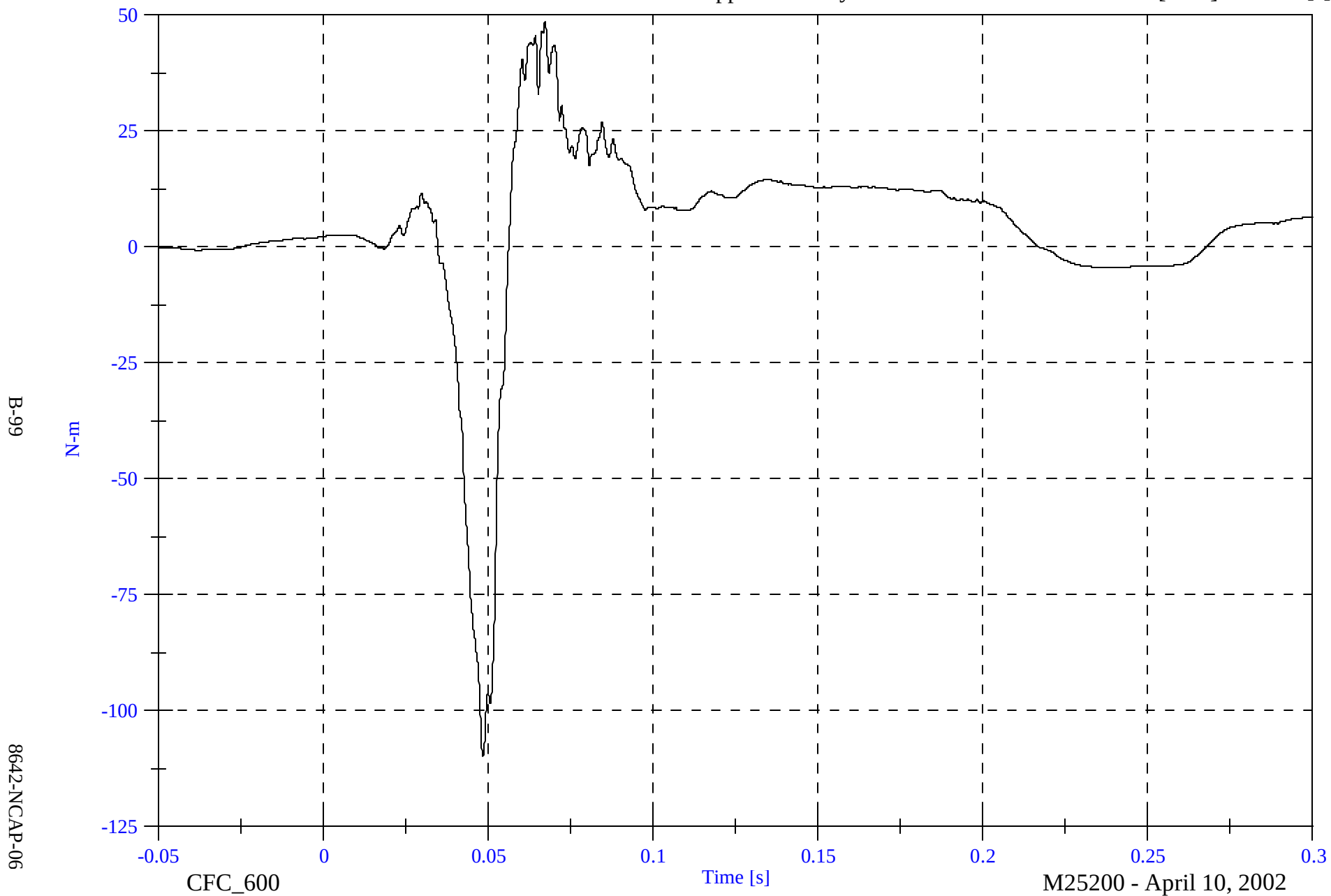


NCAP Test #6 - 2002 Nissan Altima

Max: 48.6 [N-m] at 0.067 [s]

Min: -109.7 [N-m] at 0.048 [s]

P2 Left Upper Tibia My

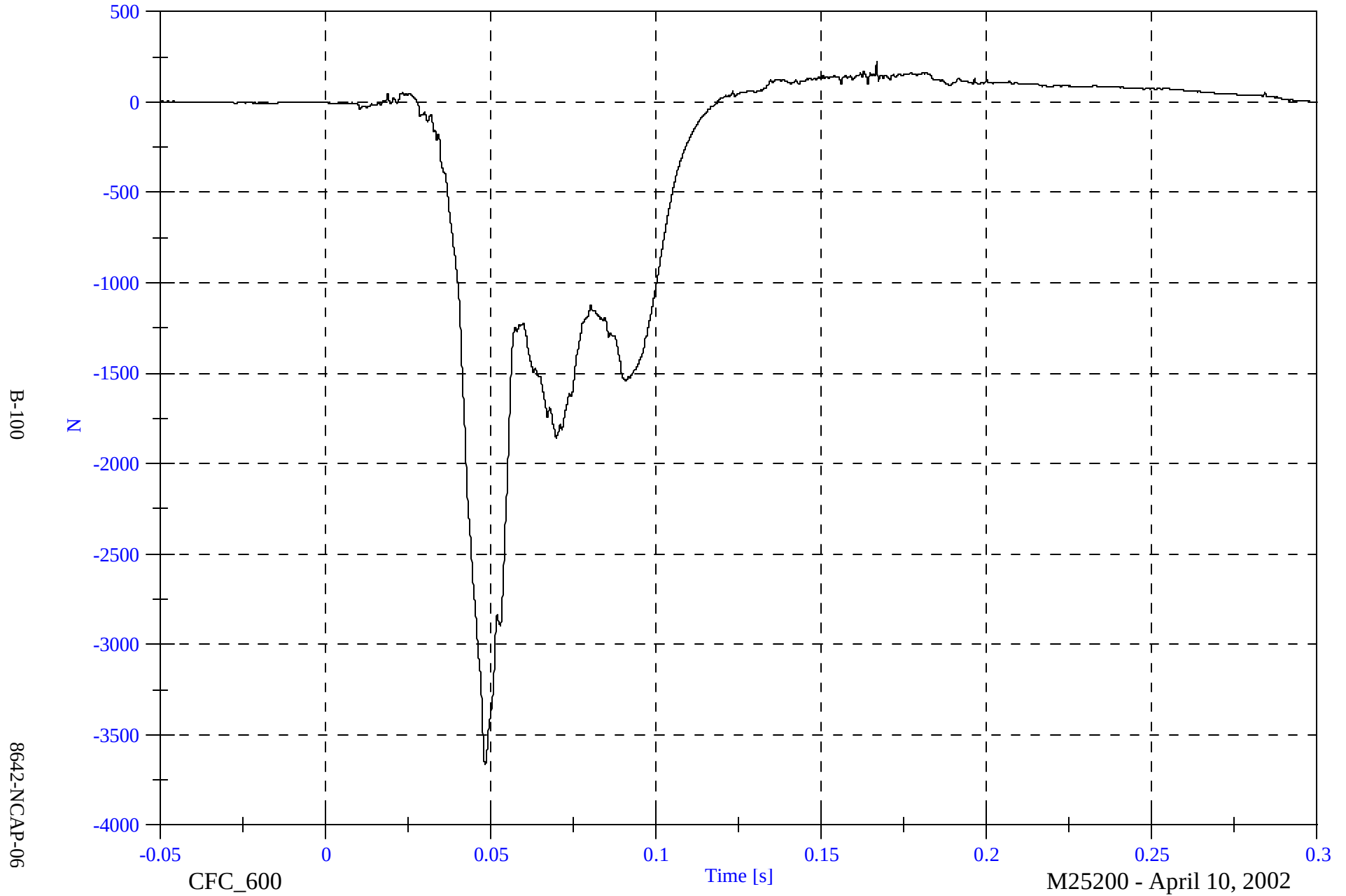


NCAP Test #6 - 2002 Nissan Altima

P2 Left Lower Tibia Fz

Max: 220.2 [N] at 0.167 [s]

Min: -3661.7 [N] at 0.048 [s]

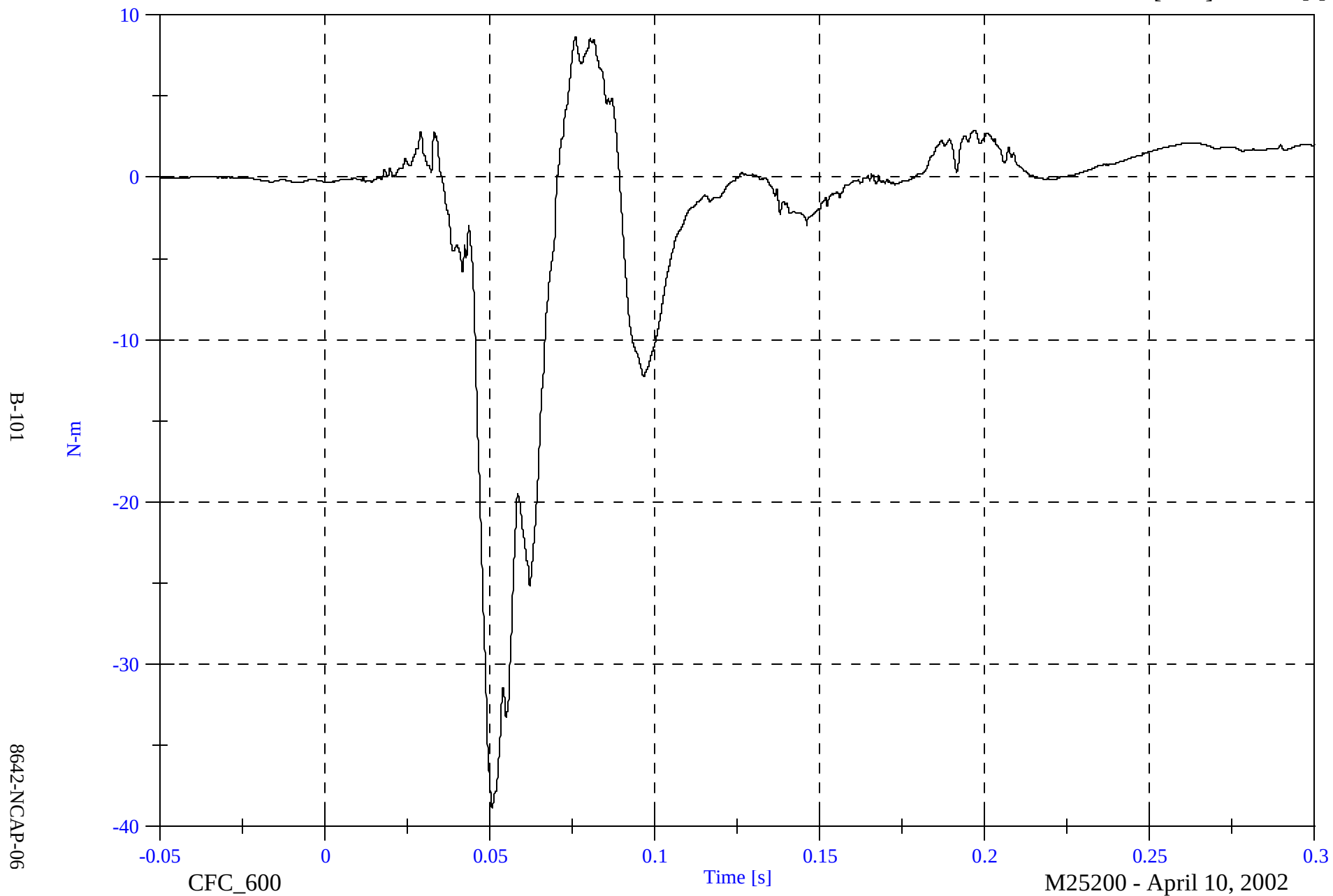


NCAP Test #6 - 2002 Nissan Altima

Max: 8.7 [N-m] at 0.076 [s]

Min: -38.9 [N-m] at 0.051 [s]

P2 Left Lower Tibia Mx

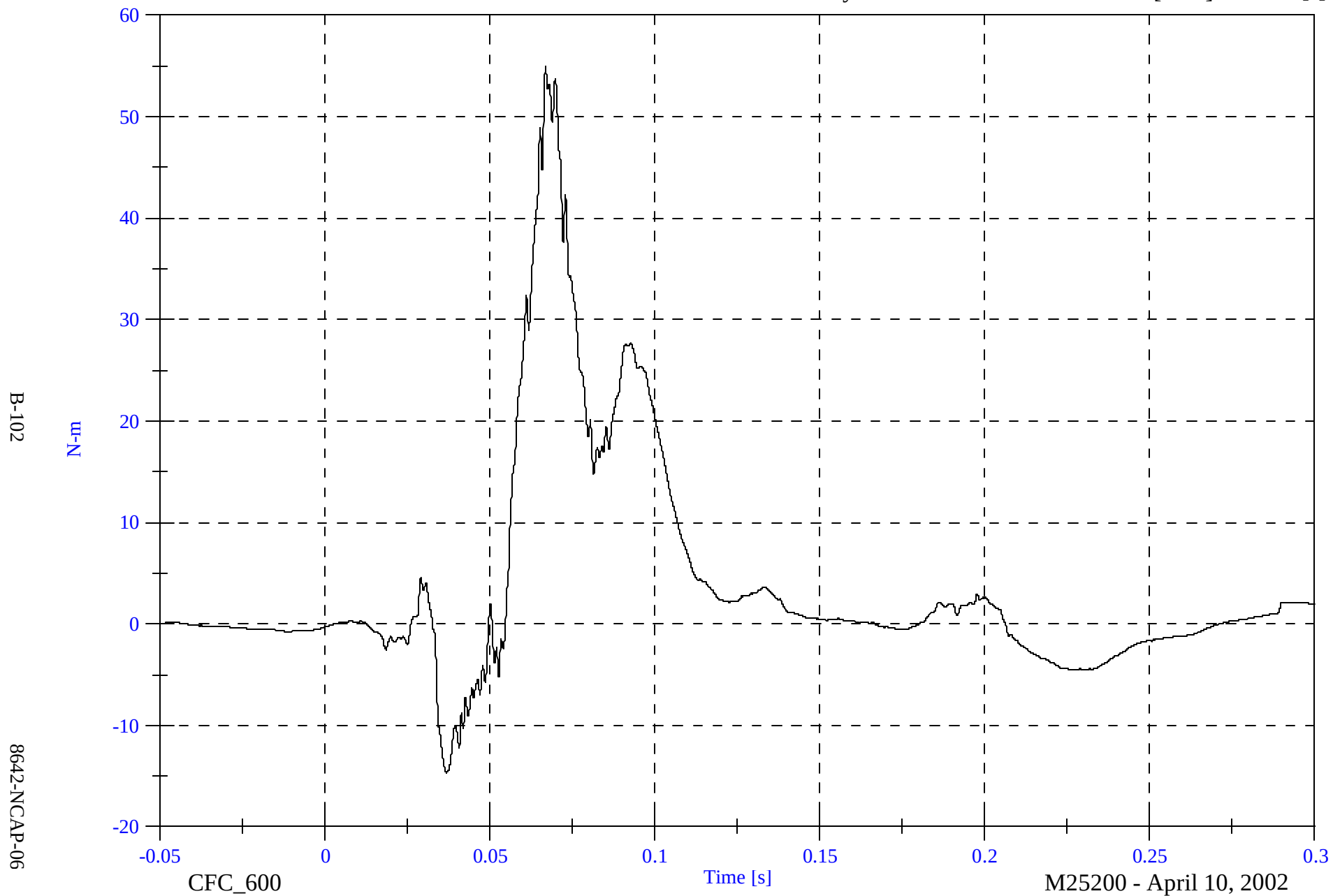


NCAP Test #6 - 2002 Nissan Altima

Max: 55.0 [N-m] at 0.067 [s]

Min: -14.6 [N-m] at 0.037 [s]

P2 Left Lower Tibia My

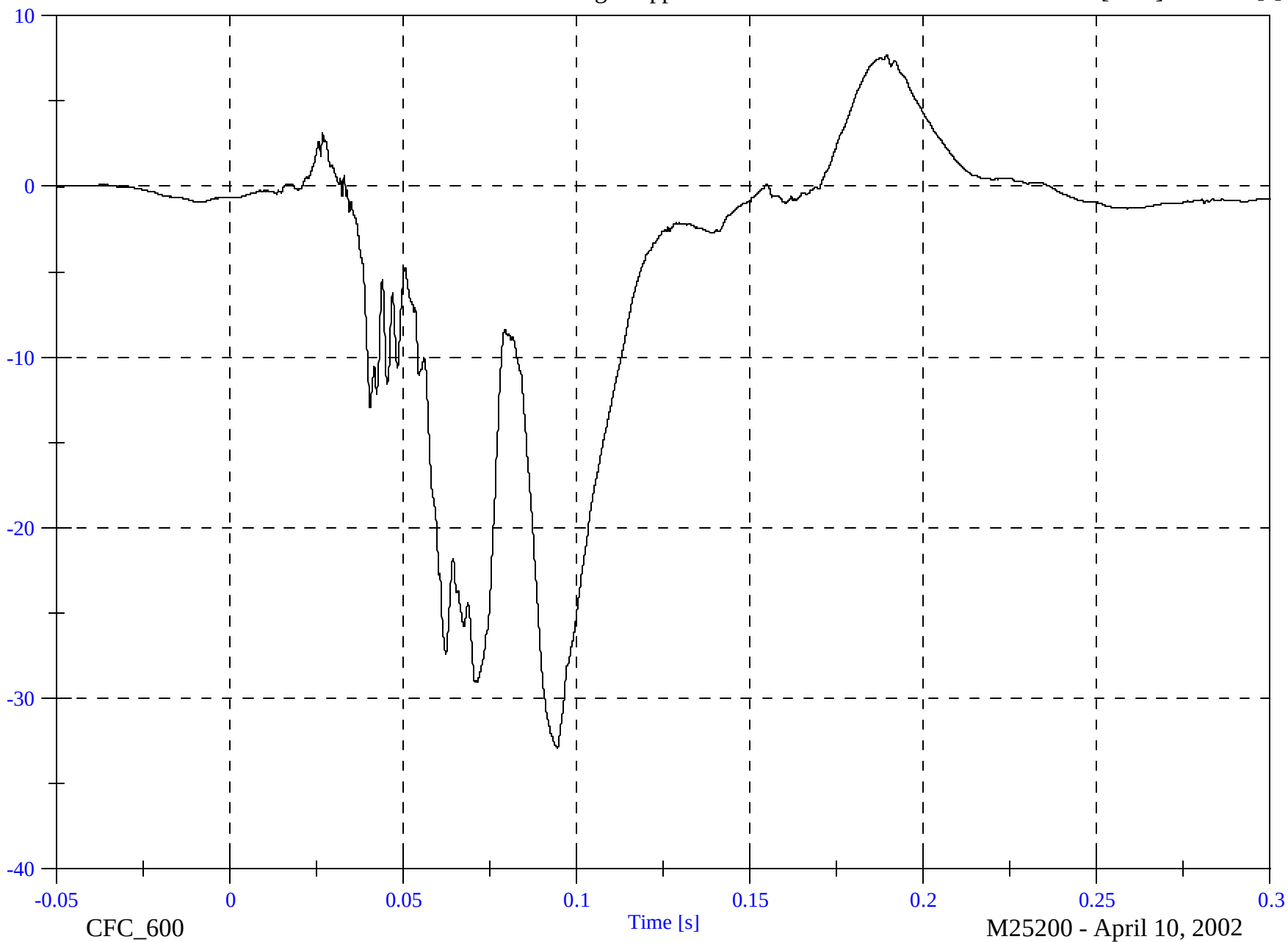


NCAP Test #6 - 2002 Nissan Altima

P2 Right Upper Tibia Mx

Max: 7.7 [N-m] at 0.189 [s]

Min: -32.9 [N-m] at 0.095 [s]



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8642-NCAP-06

CFC_600

Time [s]

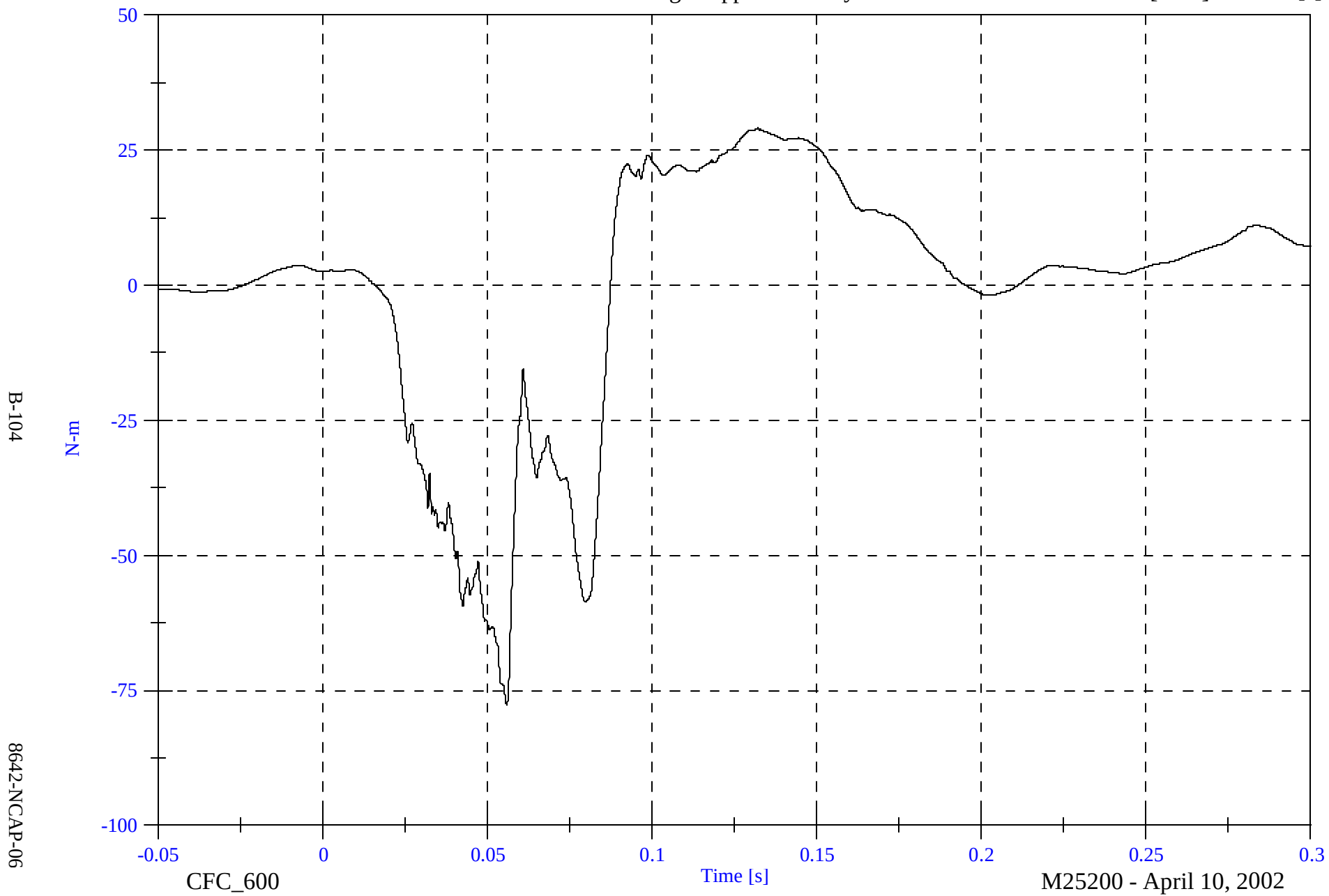
M25200 - April 10, 2002

NCAP Test #6 - 2002 Nissan Altima

Max: 29.1 [N-m] at 0.132 [s]

Min: -77.7 [N-m] at 0.056 [s]

P2 Right Upper Tibia My

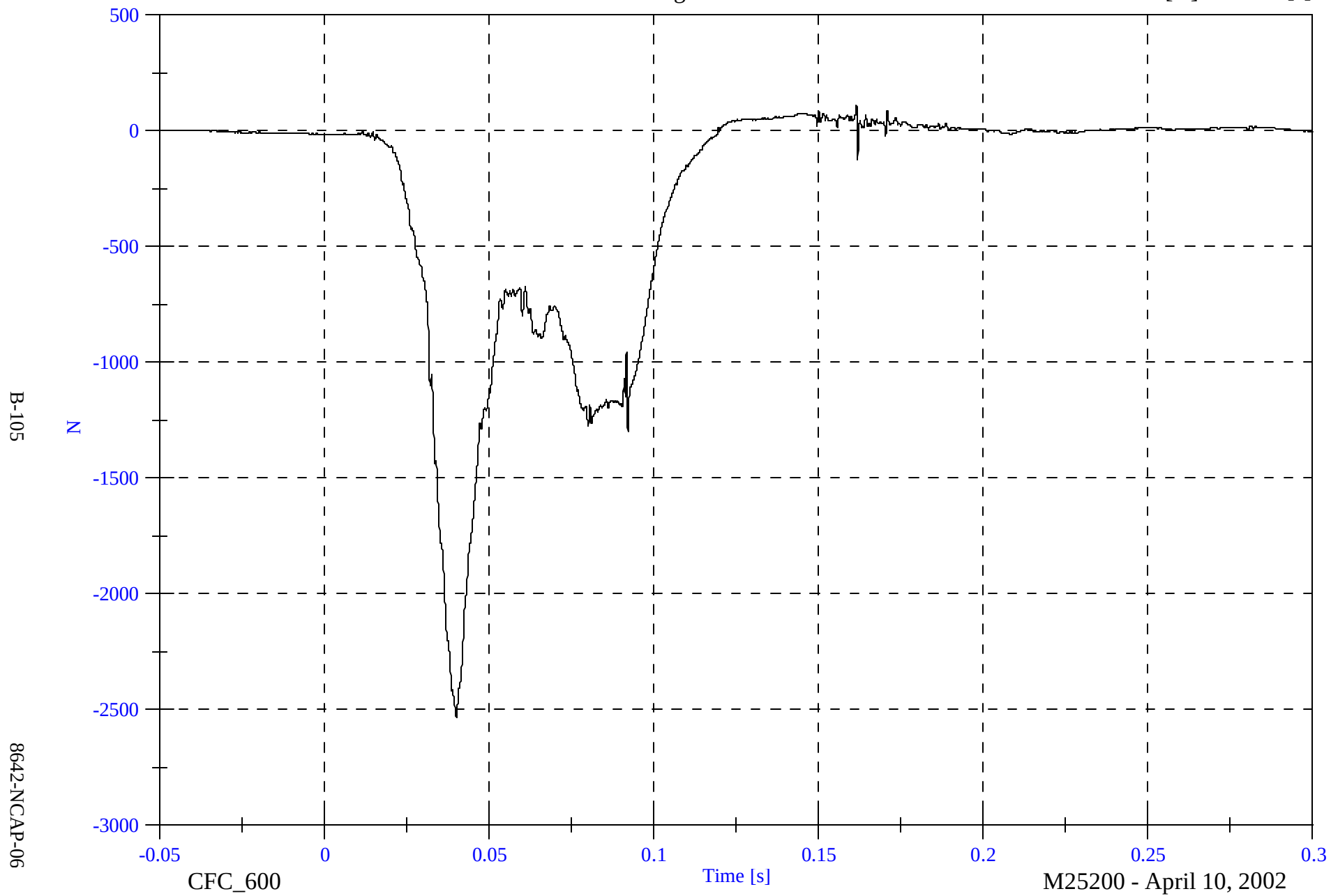


NCAP Test #6 - 2002 Nissan Altima

P2 Right Lower Tibia Fz

Max: 108.3 [N] at 0.161 [s]

Min: -2530.9 [N] at 0.040 [s]

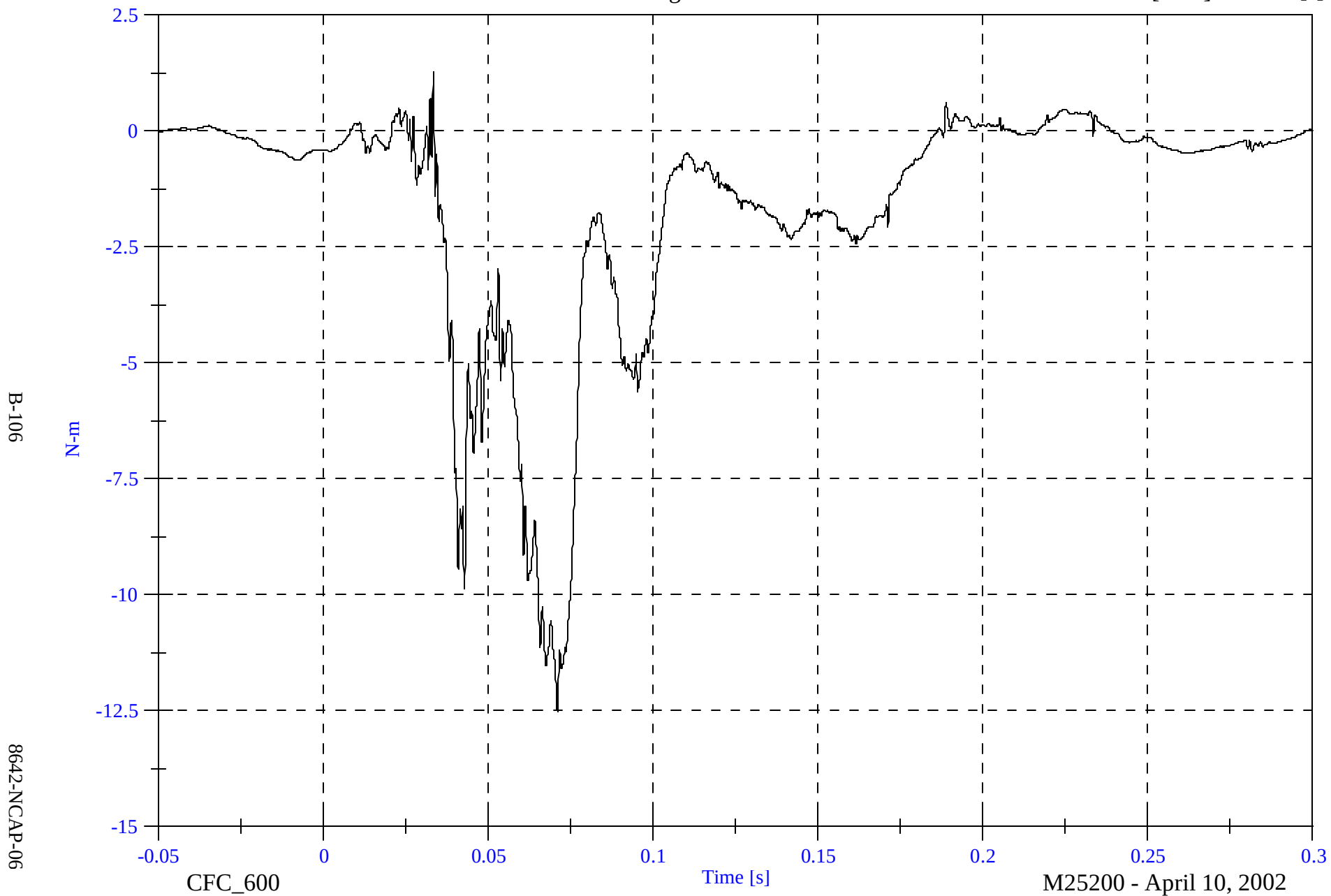


NCAP Test #6 - 2002 Nissan Altima

P2 Right Lower Tibia Mx

Max: 1.3 [N-m] at 0.033 [s]

Min: -12.5 [N-m] at 0.071 [s]

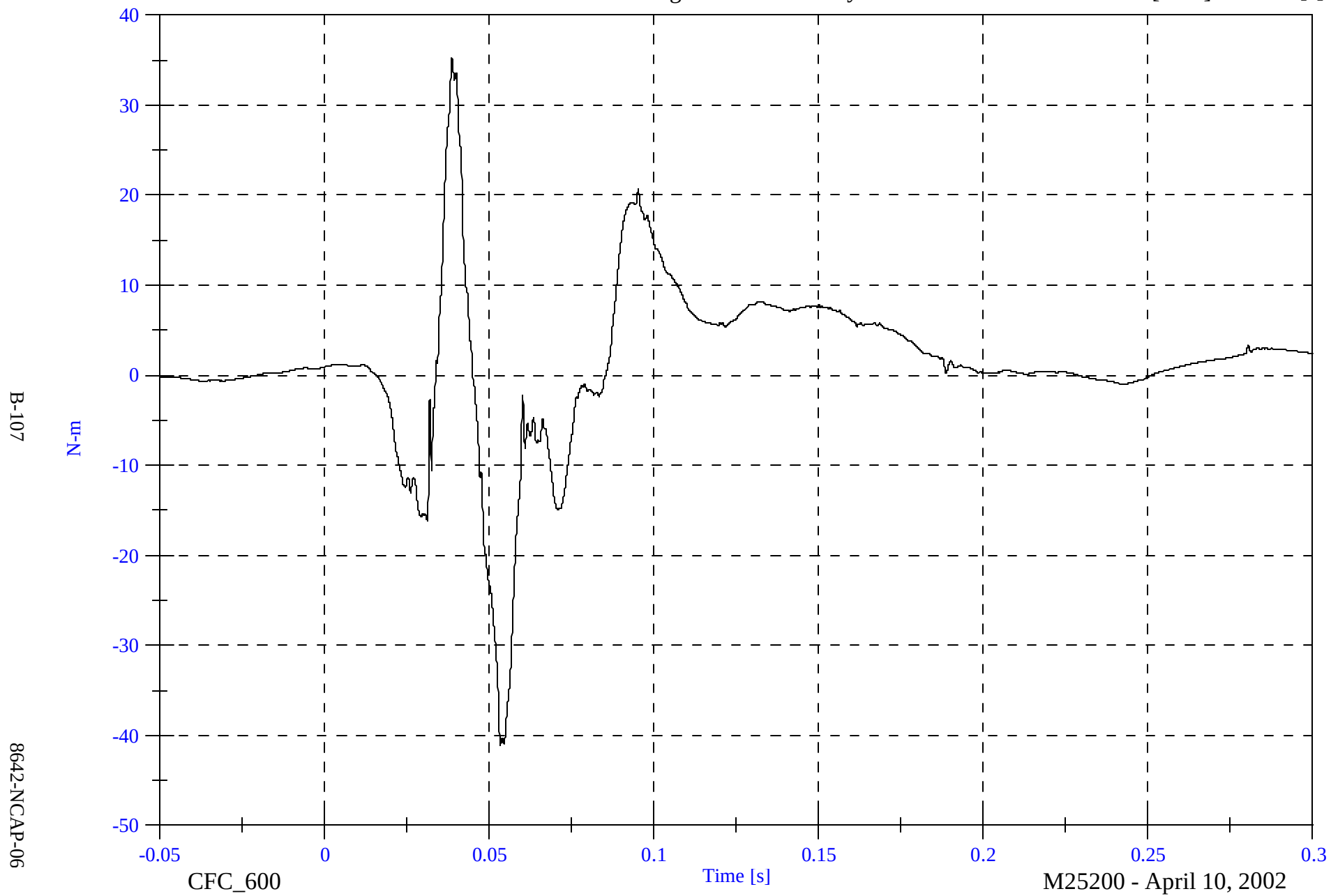


NCAP Test #6 - 2002 Nissan Altima

Max: 35.2 [N-m] at 0.039 [s]

P2 Right Lower Tibia My

Min: -41.1 [N-m] at 0.053 [s]

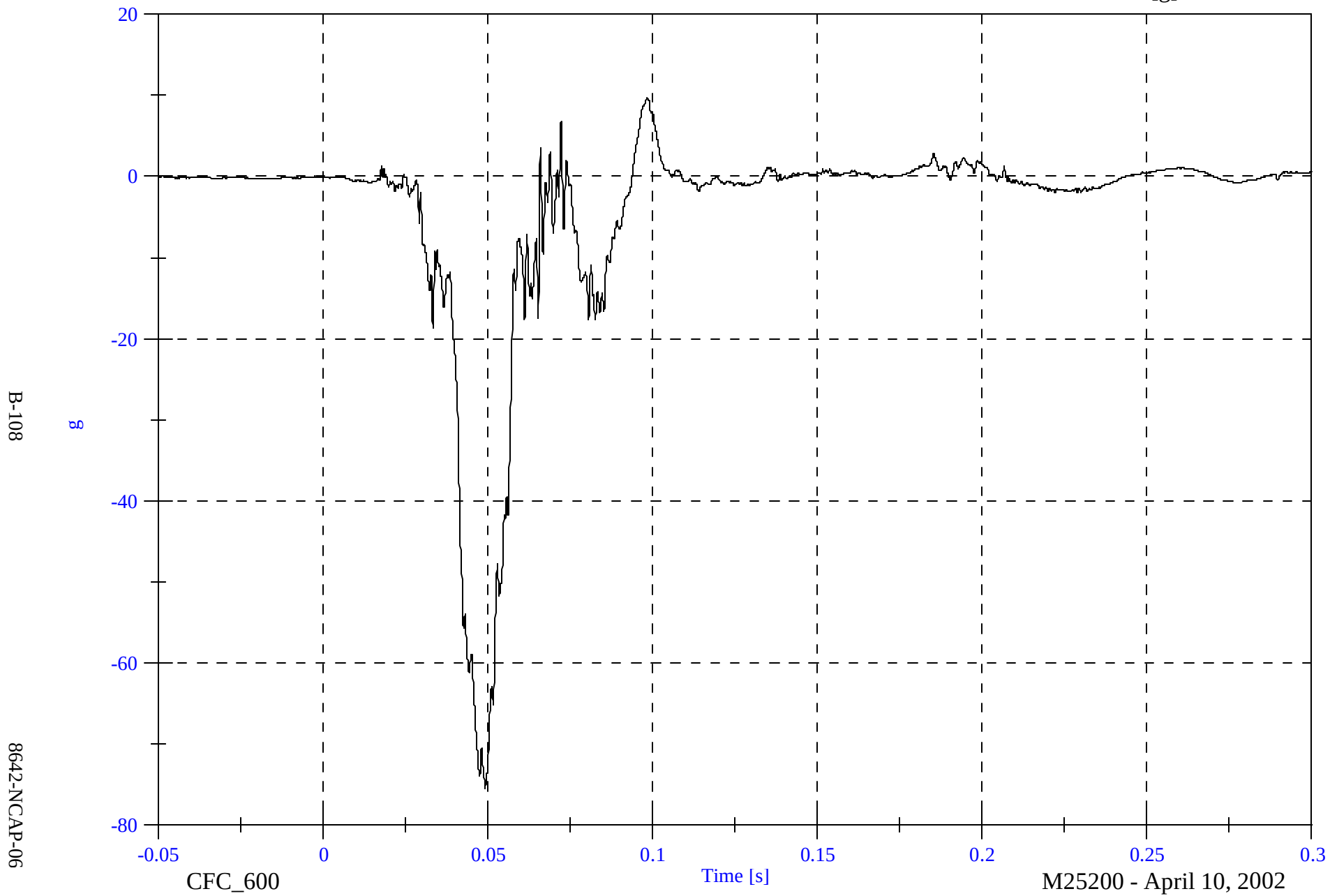


NCAP Test #6 - 2002 Nissan Altima

Max: 9.7 [g] at 0.098 [s]

Min: -75.5 [g] at 0.049 [s]

P2 Left Foot Aft x

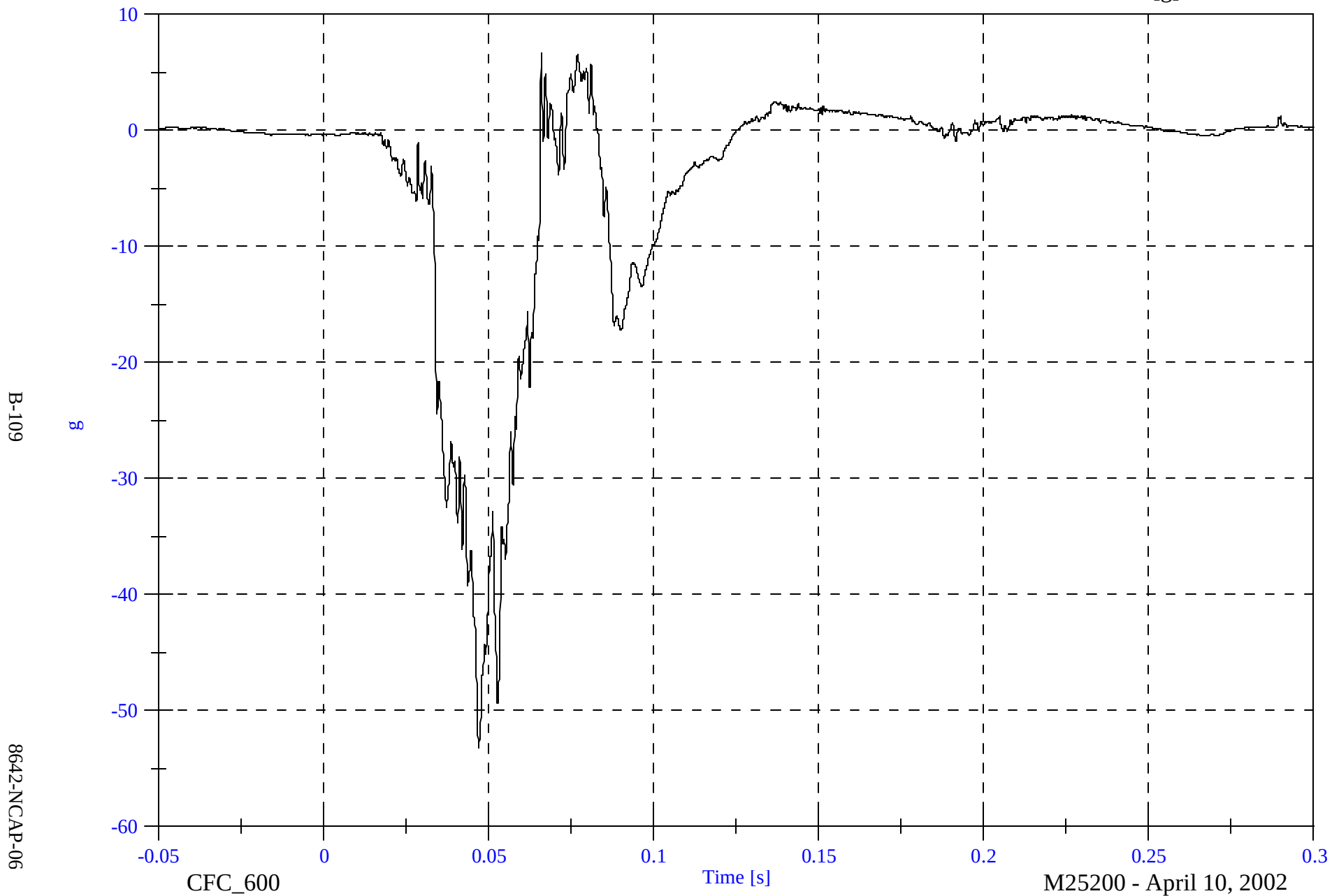


NCAP Test #6 - 2002 Nissan Altima

Max: 6.6 [g] at 0.066 [s]

Min: -53.2 [g] at 0.047 [s]

P2 Left Foot Aft z

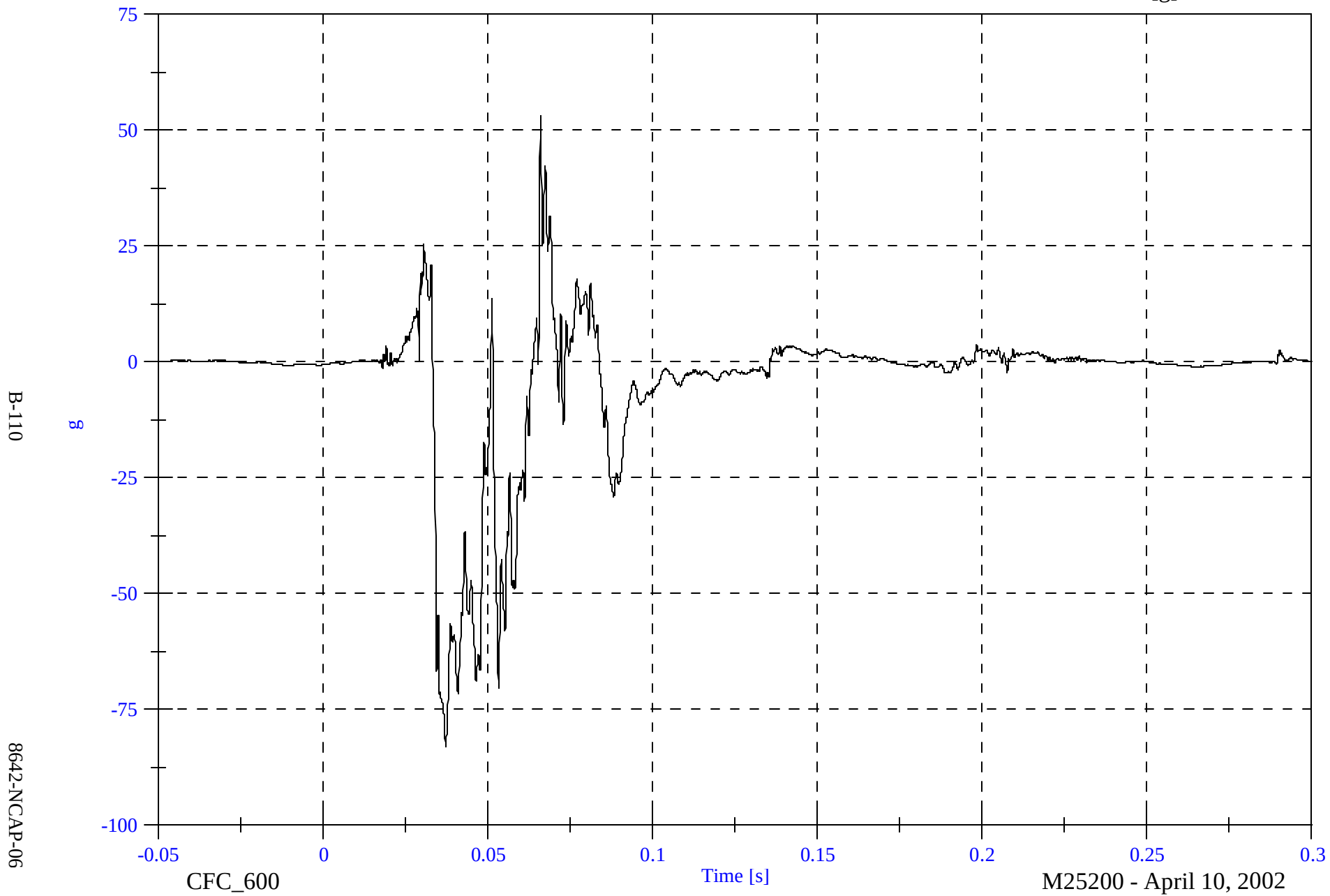


NCAP Test #6 - 2002 Nissan Altima

P2 Left Foot Fore z

Max: 53.0 [g] at 0.066 [s]

Min: -82.9 [g] at 0.037 [s]

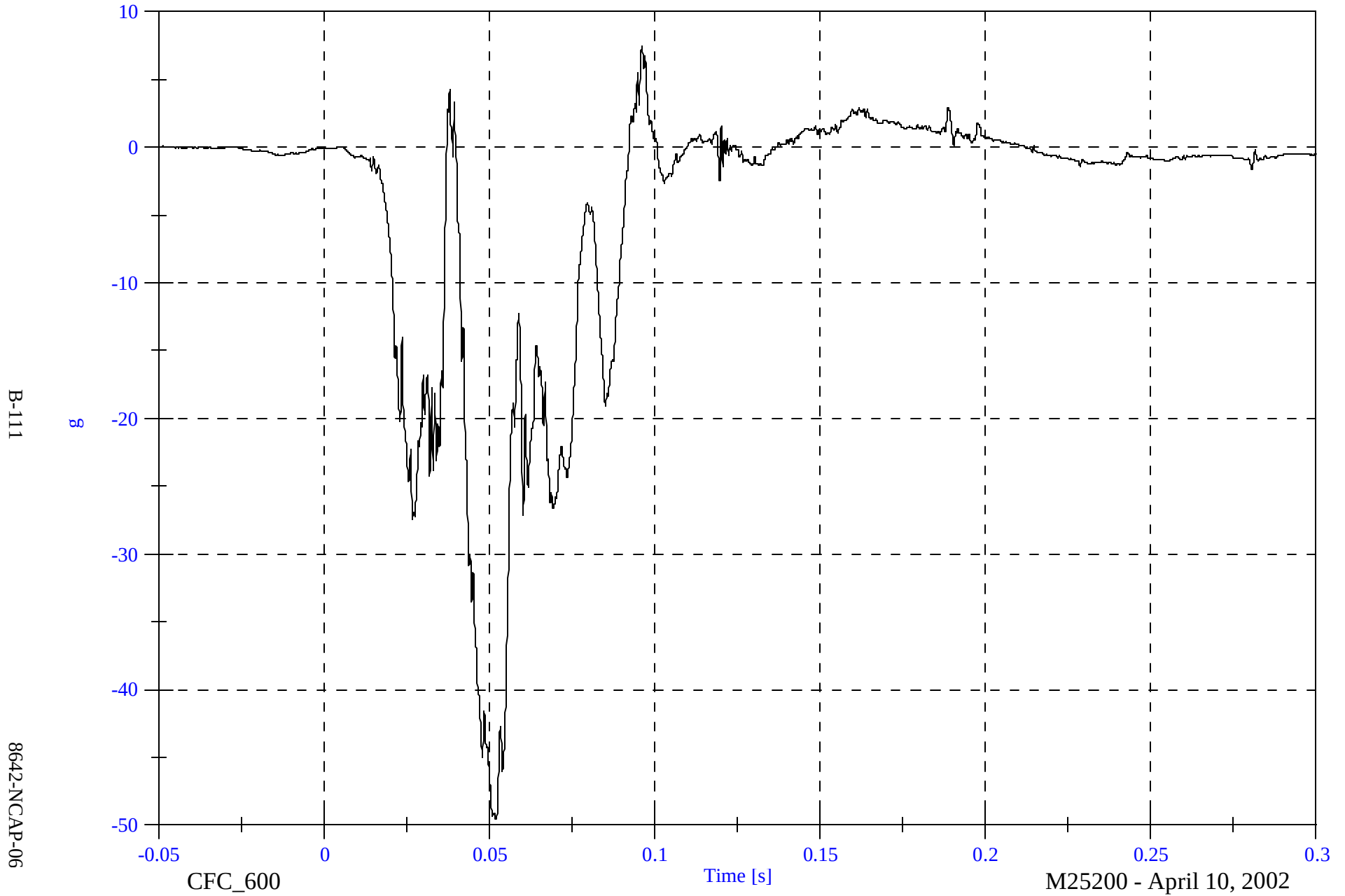


NCAP Test #6 - 2002 Nissan Altima

Max: 7.4 [g] at 0.096 [s]

Min: -49.5 [g] at 0.052 [s]

P2 Right Foot Aft x

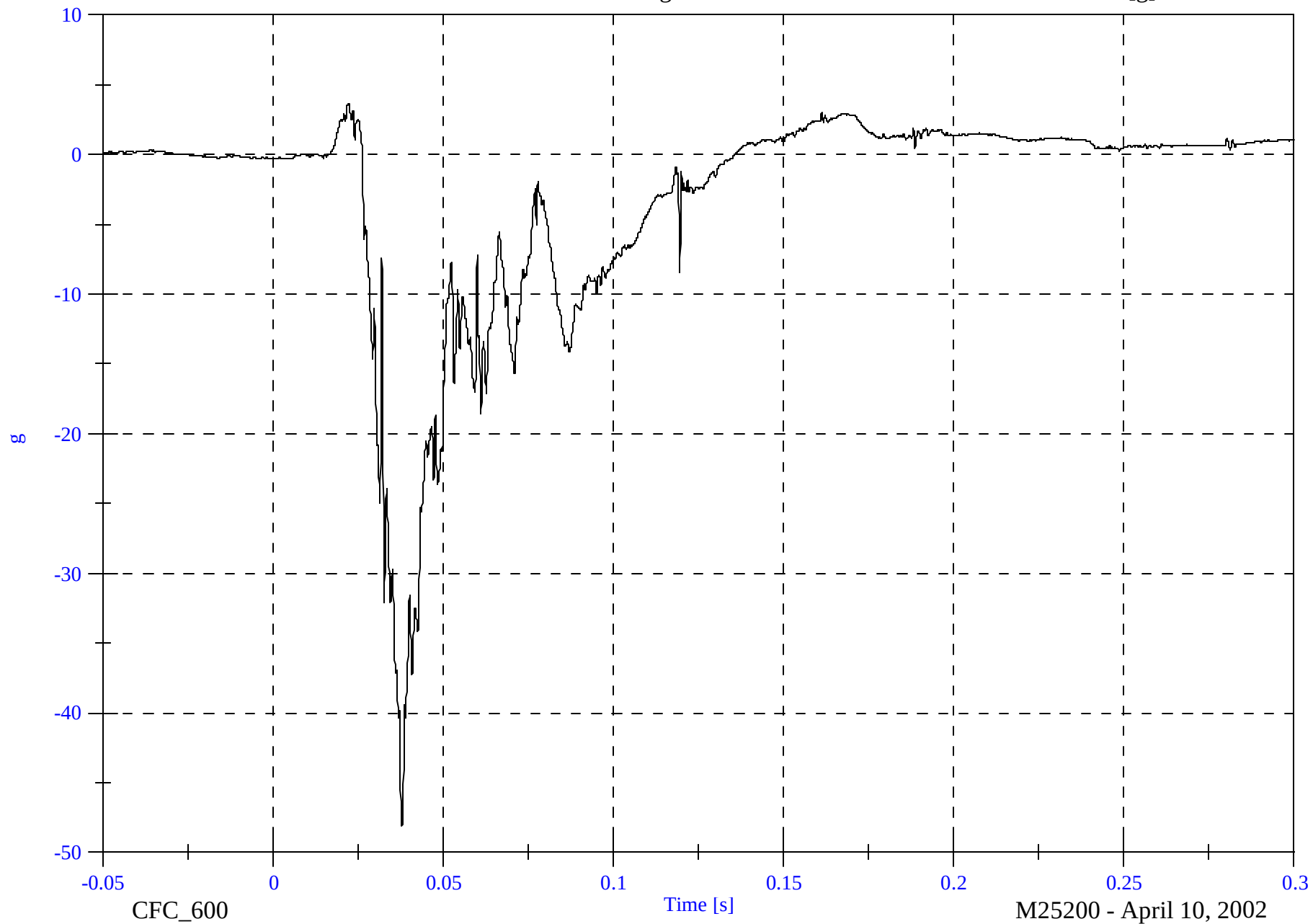


NCAP Test #6 - 2002 Nissan Altima

Max: 3.7 [g] at 0.022 [s]

Min: -48.1 [g] at 0.038 [s]

P2 Right Foot Aft z



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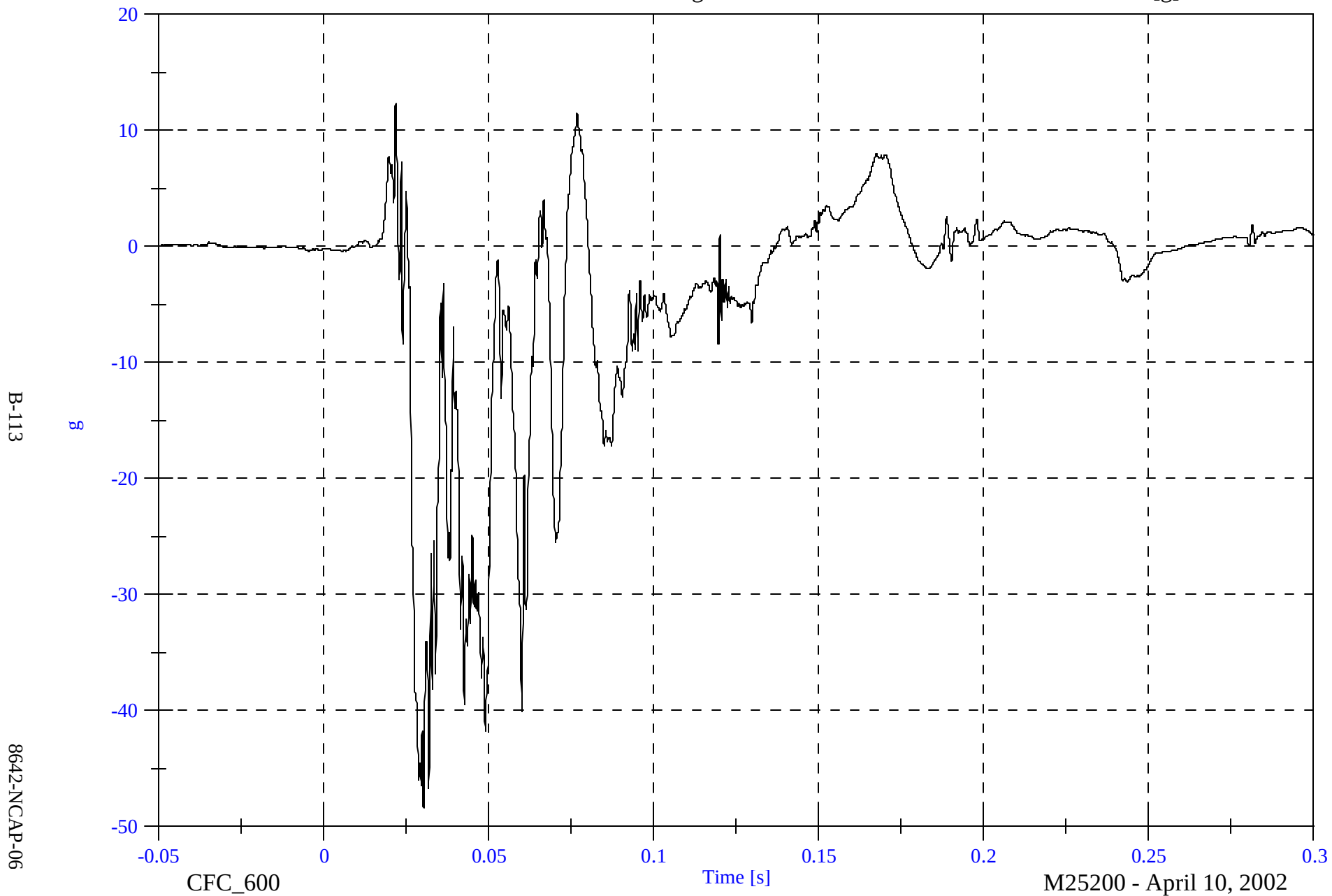
8642-NCAP-06

NCAP Test #6 - 2002 Nissan Altima

Max: 12.3 [g] at 0.022 [s]

Min: -48.4 [g] at 0.030 [s]

P2 Right Foot Fore z



NCAP Test #6 - 2002 Nissan Altima

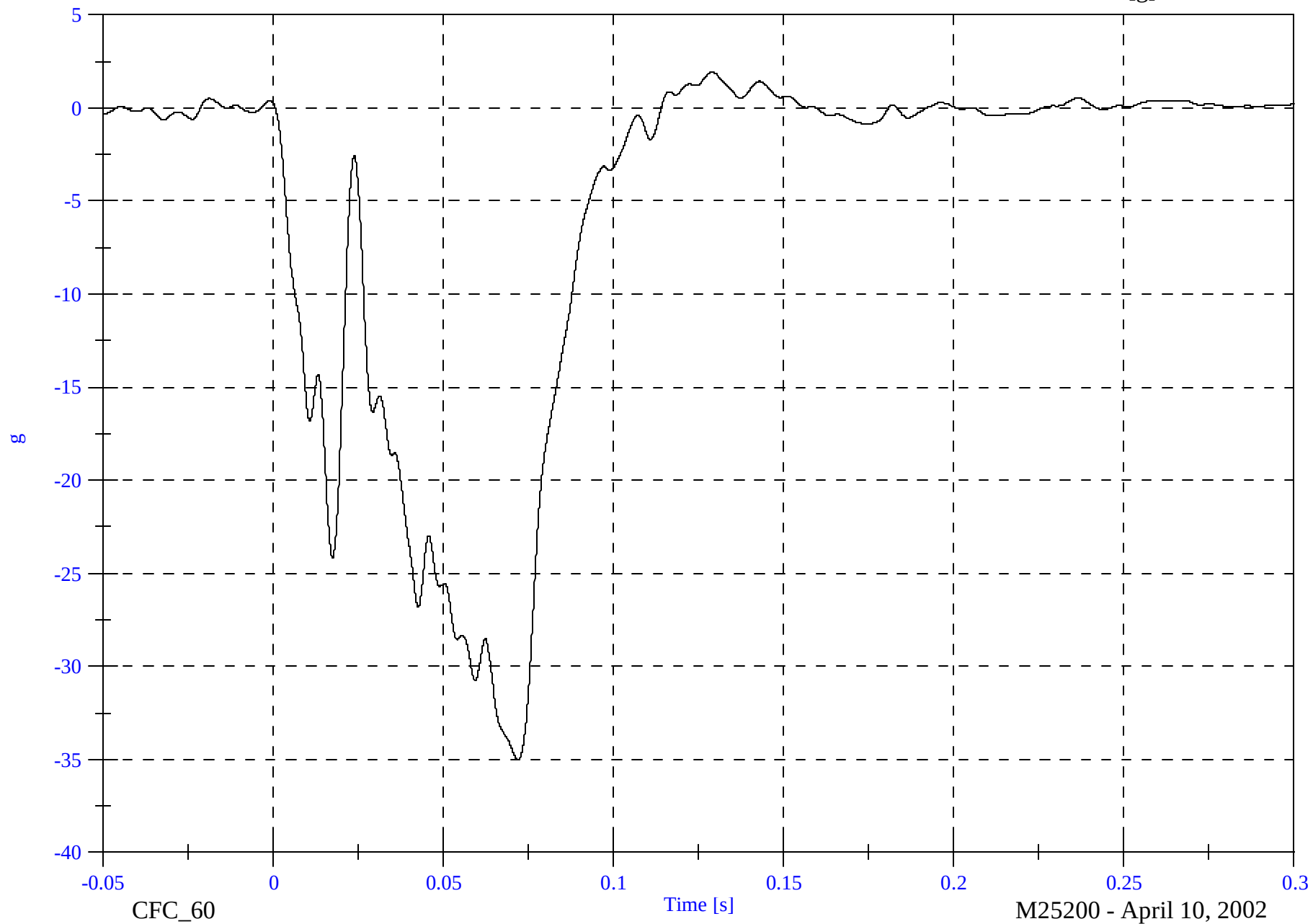
Left Rear #1x

Max: 1.9 [g] at 0.129 [s]

Min: -35.0 [g] at 0.072 [s]

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8642-NCAP-06

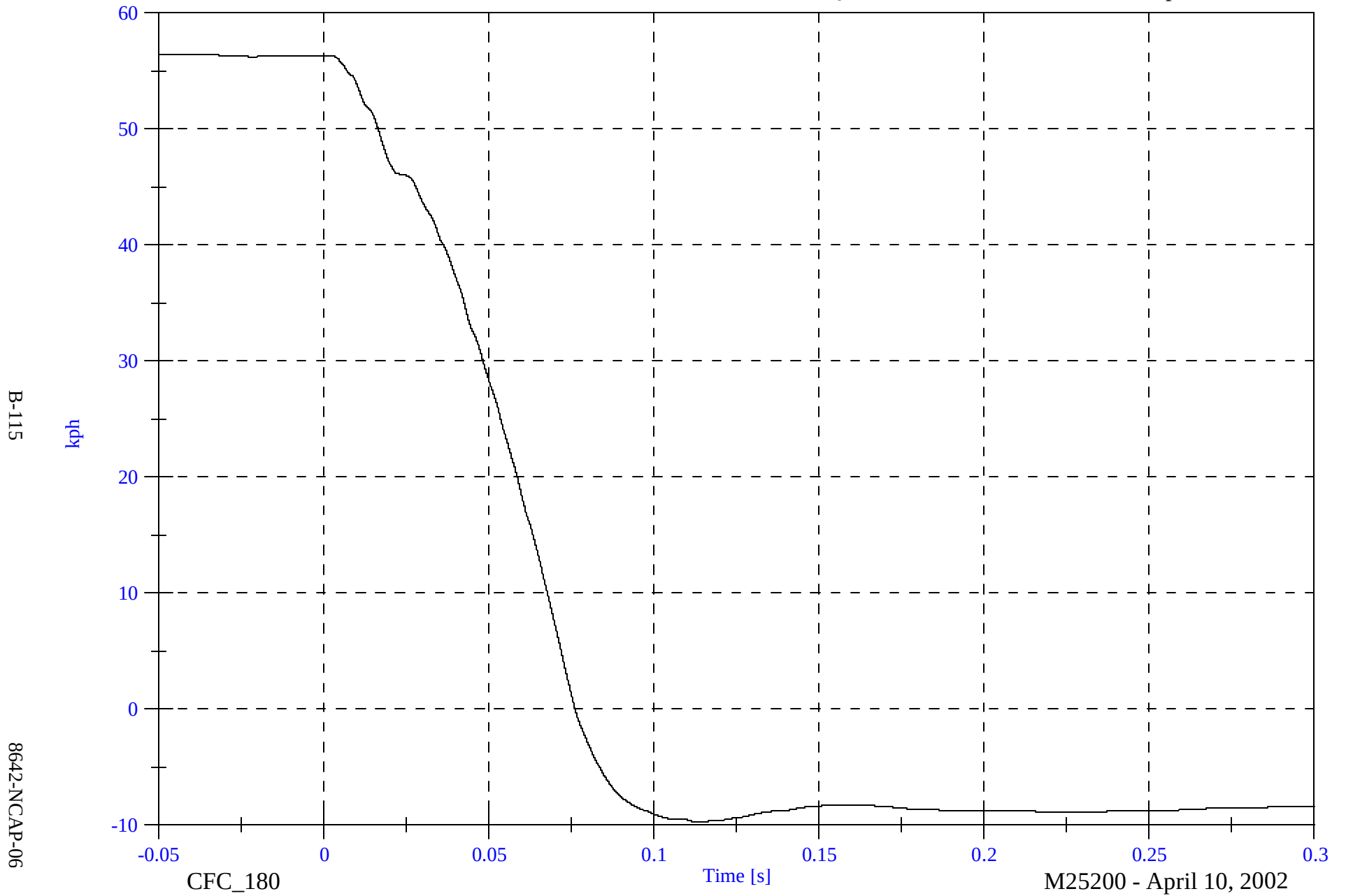


NCAP Test #6 - 2002 Nissan Altima

Max: 56.5 [kph] at -0.050 [s]

Min: -9.8 [kph] at 0.114 [s]

Left Rear #1x Velocity

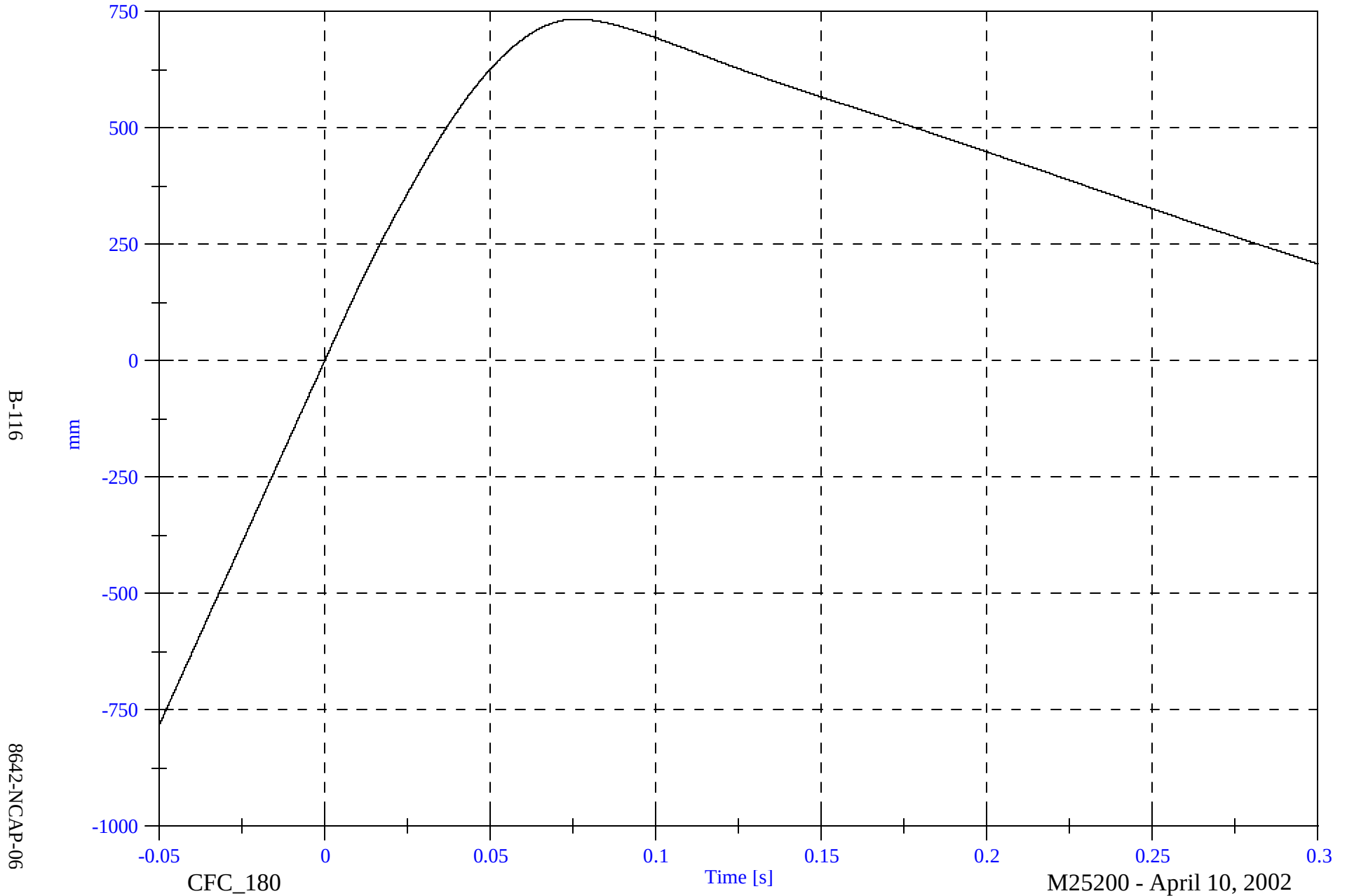


NCAP Test #6 - 2002 Nissan Altima

Max: 734.1 [mm] at 0.076 [s]

Min: -782.6 [mm] at -0.050 [s]

Left Rear #1x Displacement

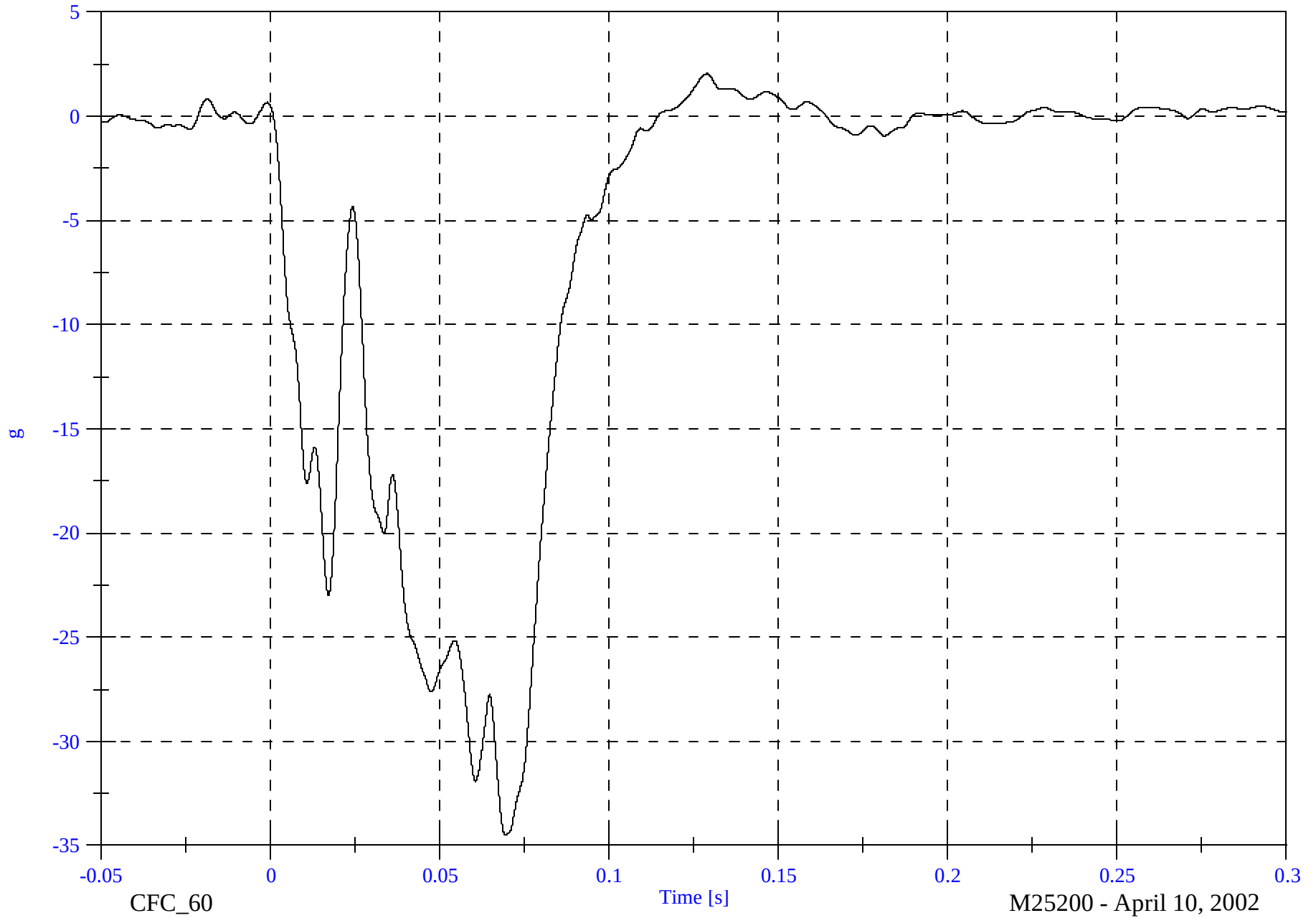


NCAP Test #6 - 2002 Nissan Altima

Right Rear #2x

Max: 2.0 [g] at 0.129 [s]

Min: -34.5 [g] at 0.069 [s]



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8642-NCAP-06

CFC_60

Time [s]

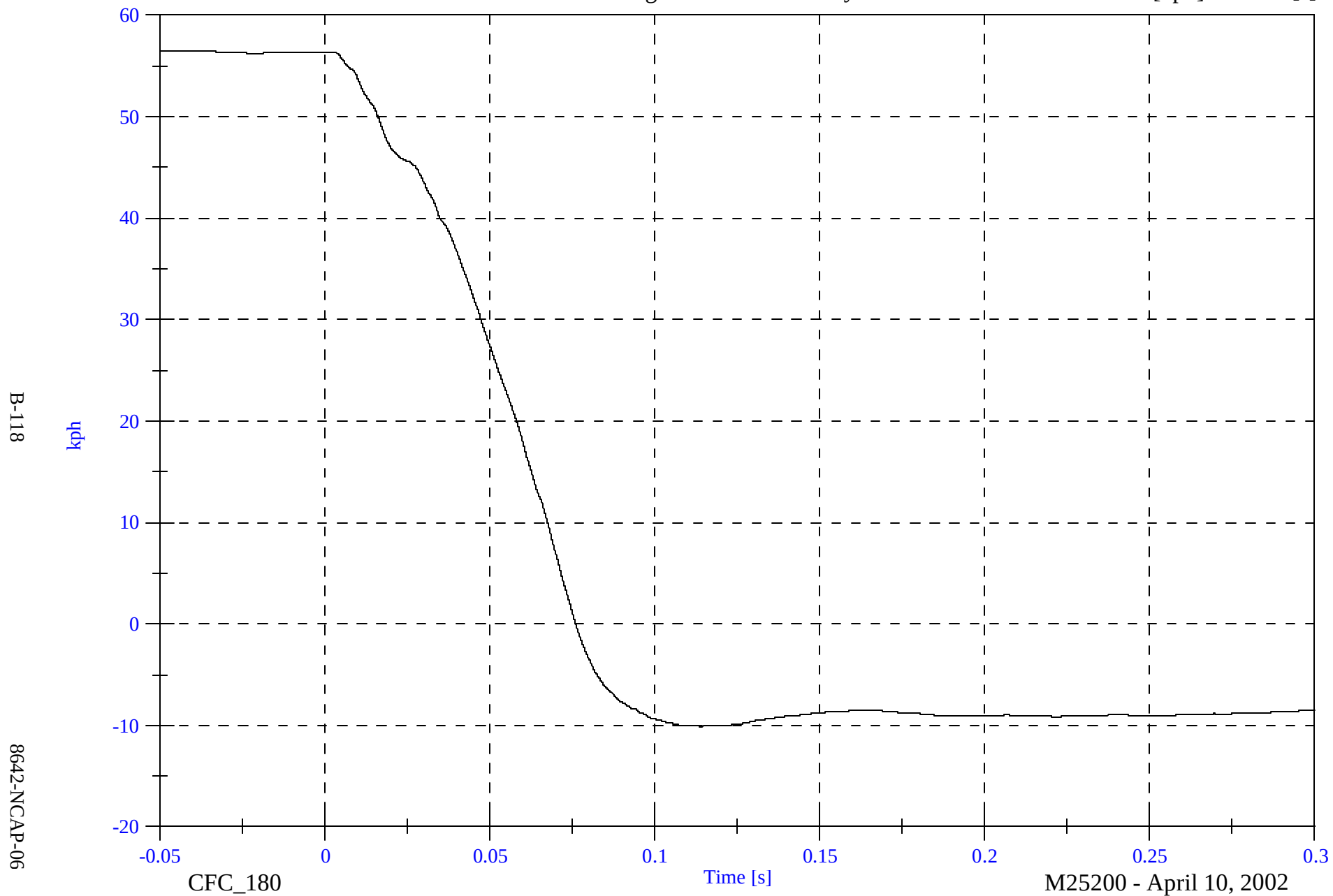
M25200 - April 10, 2002

NCAP Test #6 - 2002 Nissan Altima

Max: 56.5 [kph] at -0.050 [s]

Min: -10.1 [kph] at 0.114 [s]

Right Rear #2x Velocity



NCAP Test #6 - 2002 Nissan Altima

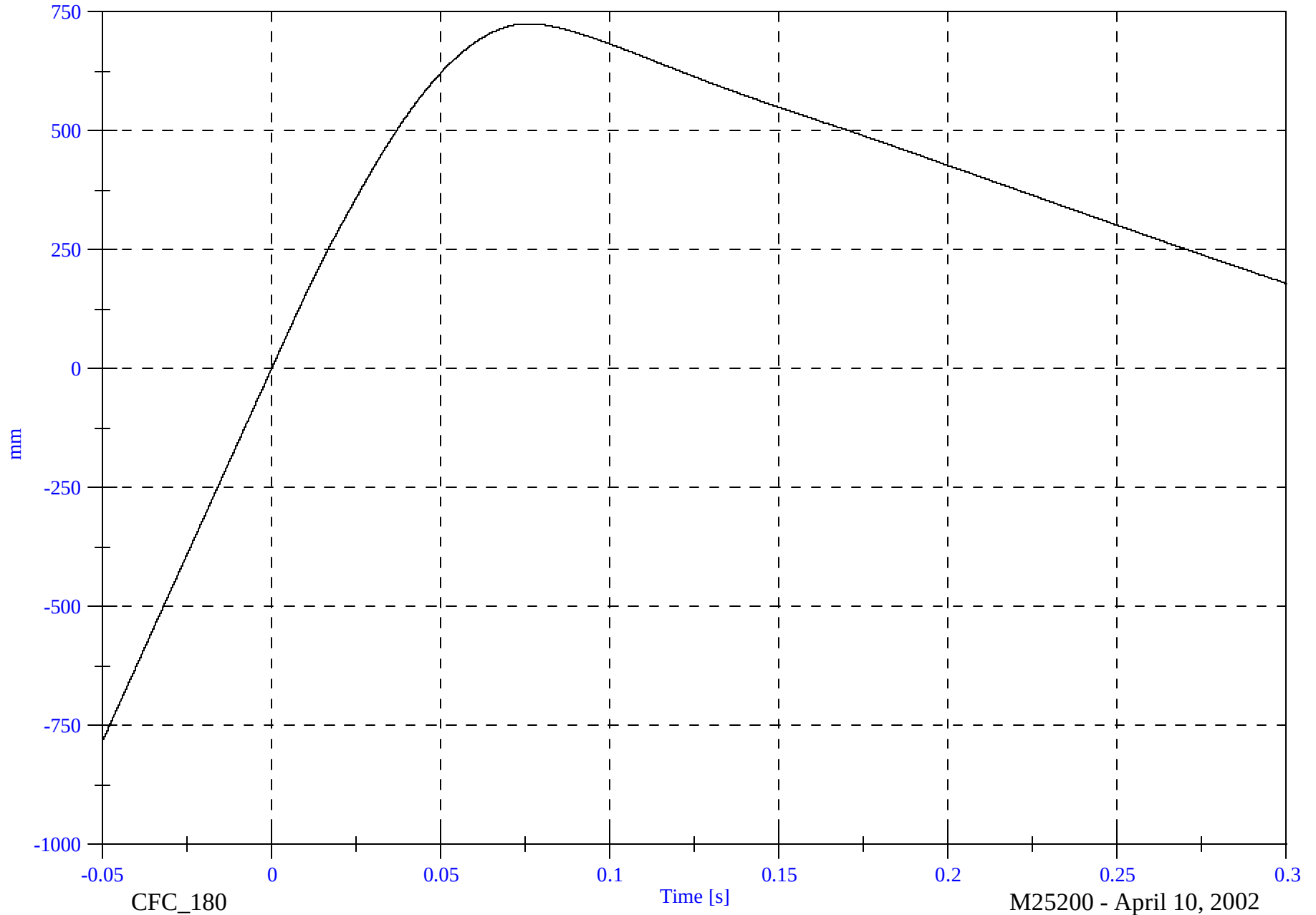
Right Rear #2x Displacement

Max: 725.3 [mm] at 0.076 [s]

Min: -782.7 [mm] at -0.050 [s]

B-119

8642-NCAP-06



CFC_180

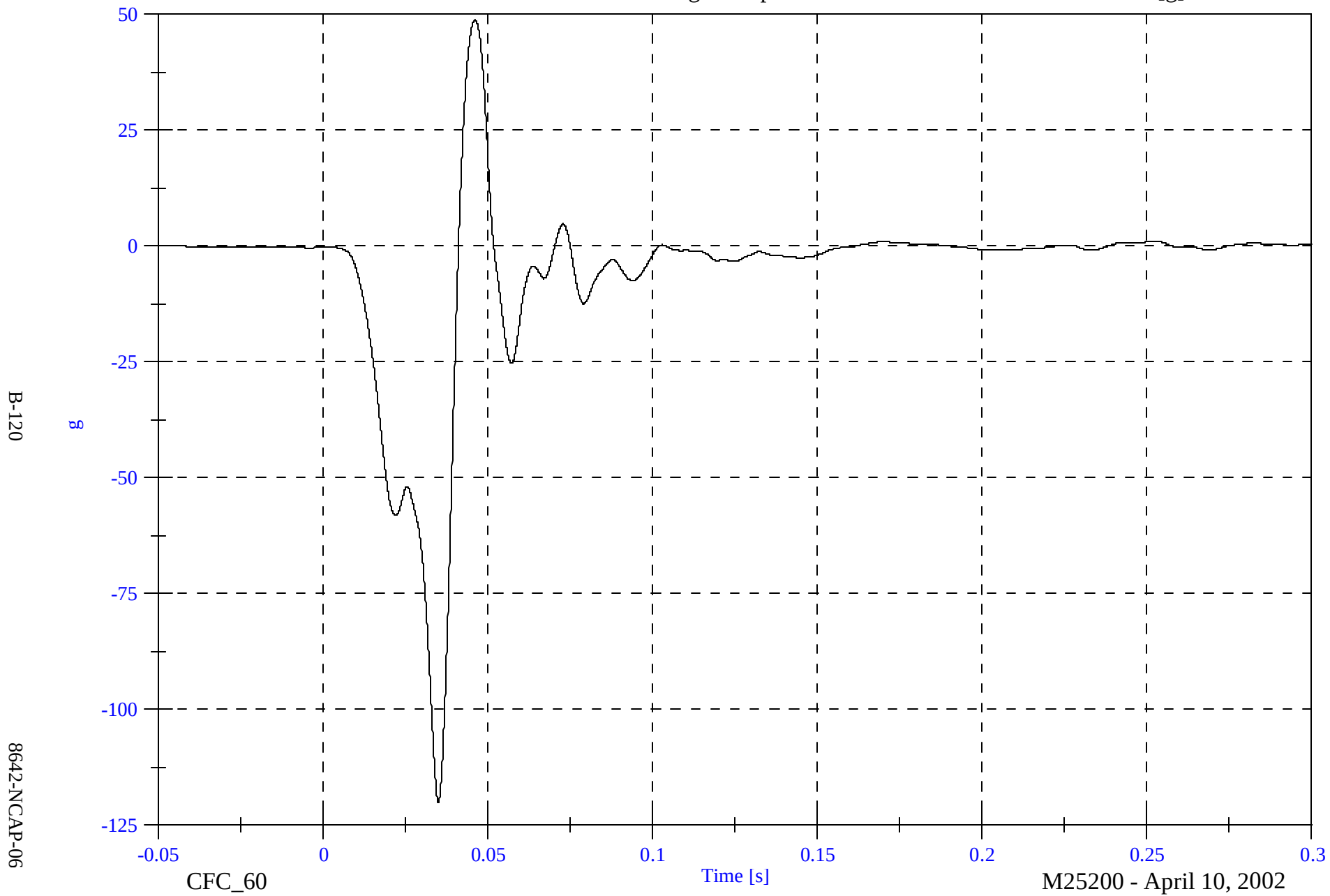
M25200 - April 10, 2002

NCAP Test #6 - 2002 Nissan Altima

Engine Top #3x

Max: 48.8 [g] at 0.046 [s]

Min: -120.0 [g] at 0.035 [s]

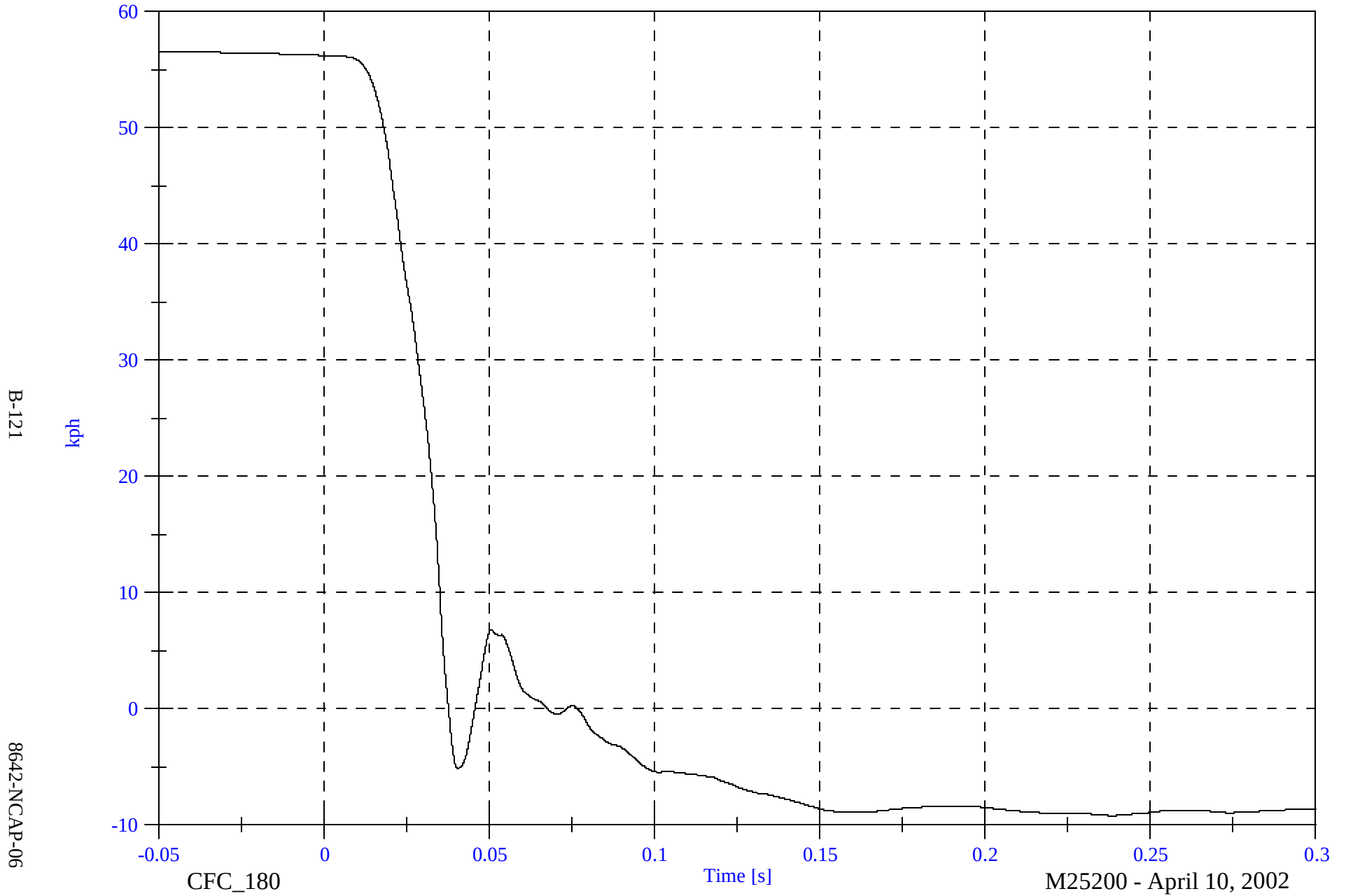


NCAP Test #6 - 2002 Nissan Altima

Max: 56.6 [kph] at -0.044 [s]

Min: -9.2 [kph] at 0.238 [s]

Engine Top #3x Velocity



NCAP Test #6 - 2002 Nissan Altima

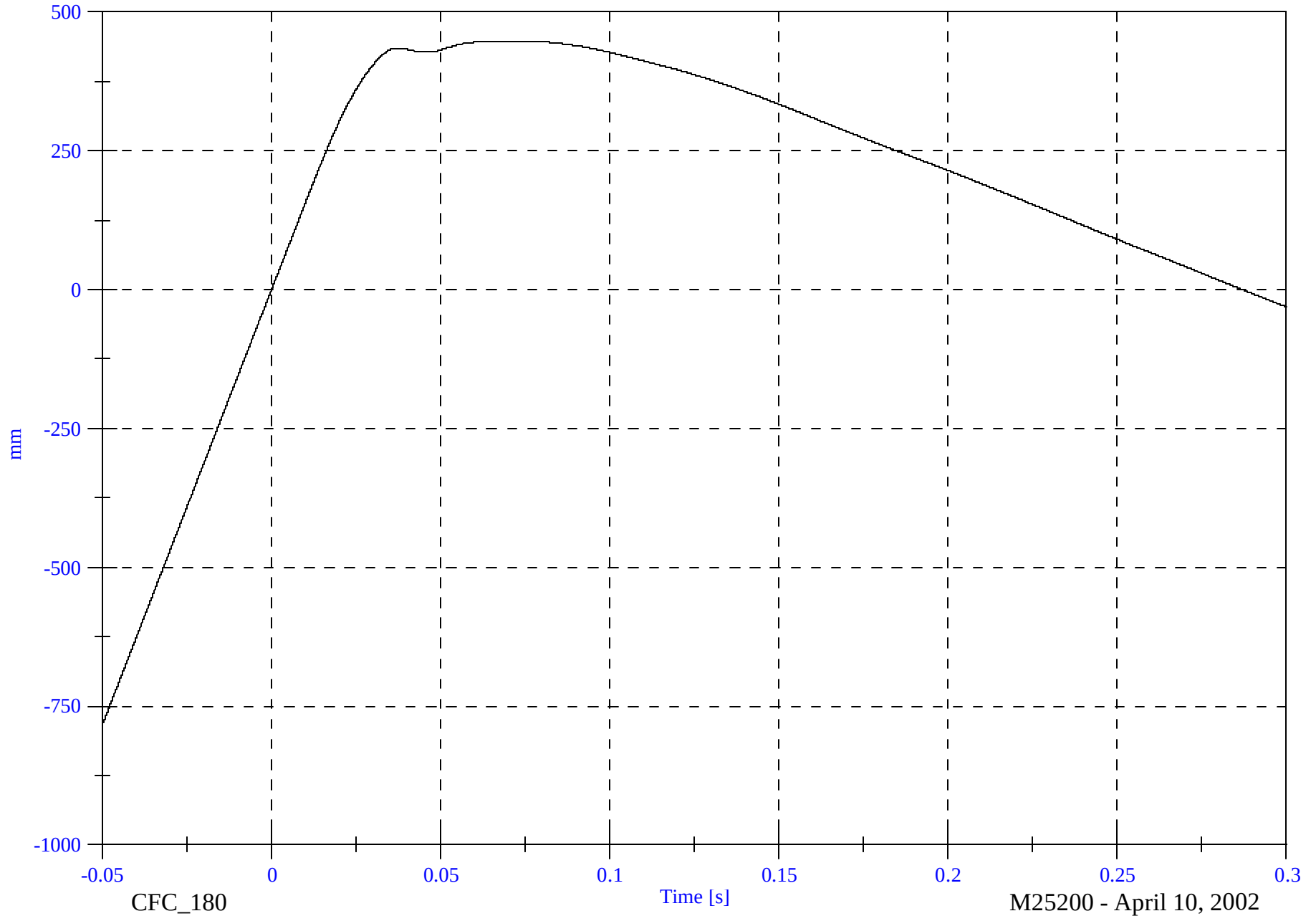
Engine Top #3x Displacement

Max: 447.4 [mm] at 0.068 [s]

Min: -783.8 [mm] at -0.050 [s]

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NCAP Test #6 - 2002 Nissan Altima

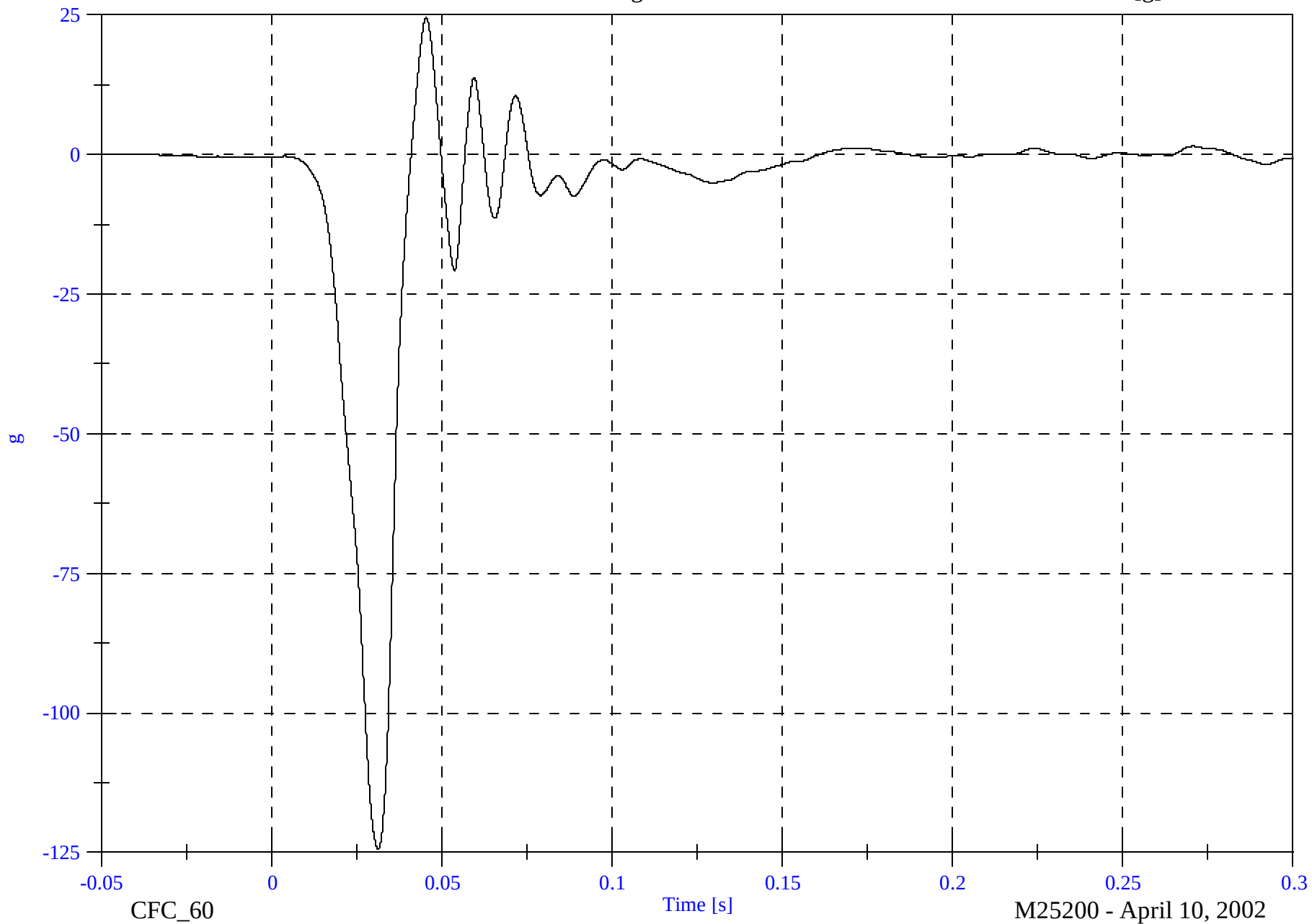
Engine Bottom #4x

Max: 24.5 [g] at 0.045 [s]

Min: -124.4 [g] at 0.031 [s]

B-123

8642-NCAP-06

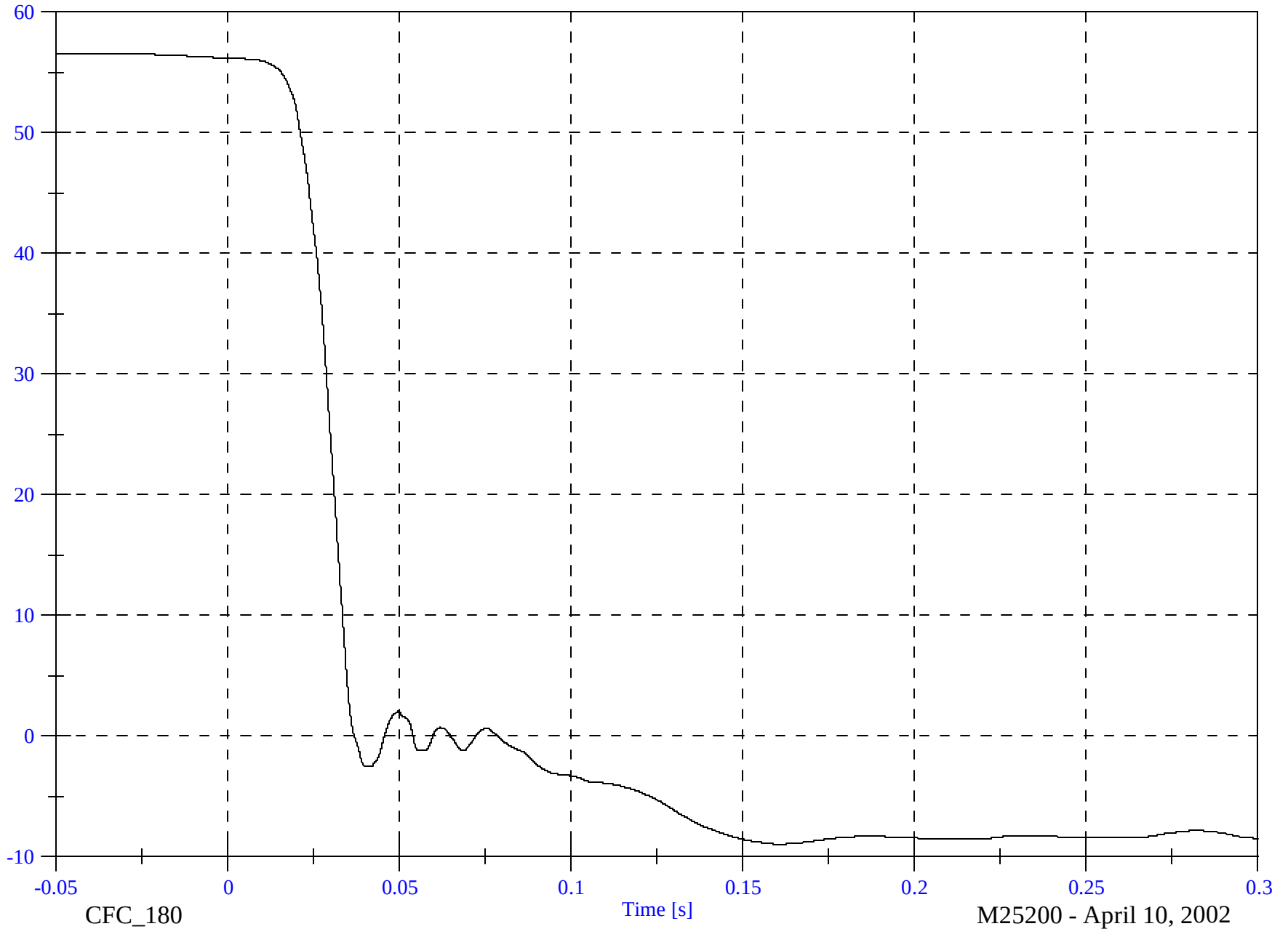


NCAP Test #6 - 2002 Nissan Altima

Engine Bottom #4x Velocity

Max: 56.6 [kph] at -0.033 [s]

Min: -8.9 [kph] at 0.160 [s]



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CFC_180

Time [s]

M25200 - April 10, 2002

NCAP Test #6 - 2002 Nissan Altima

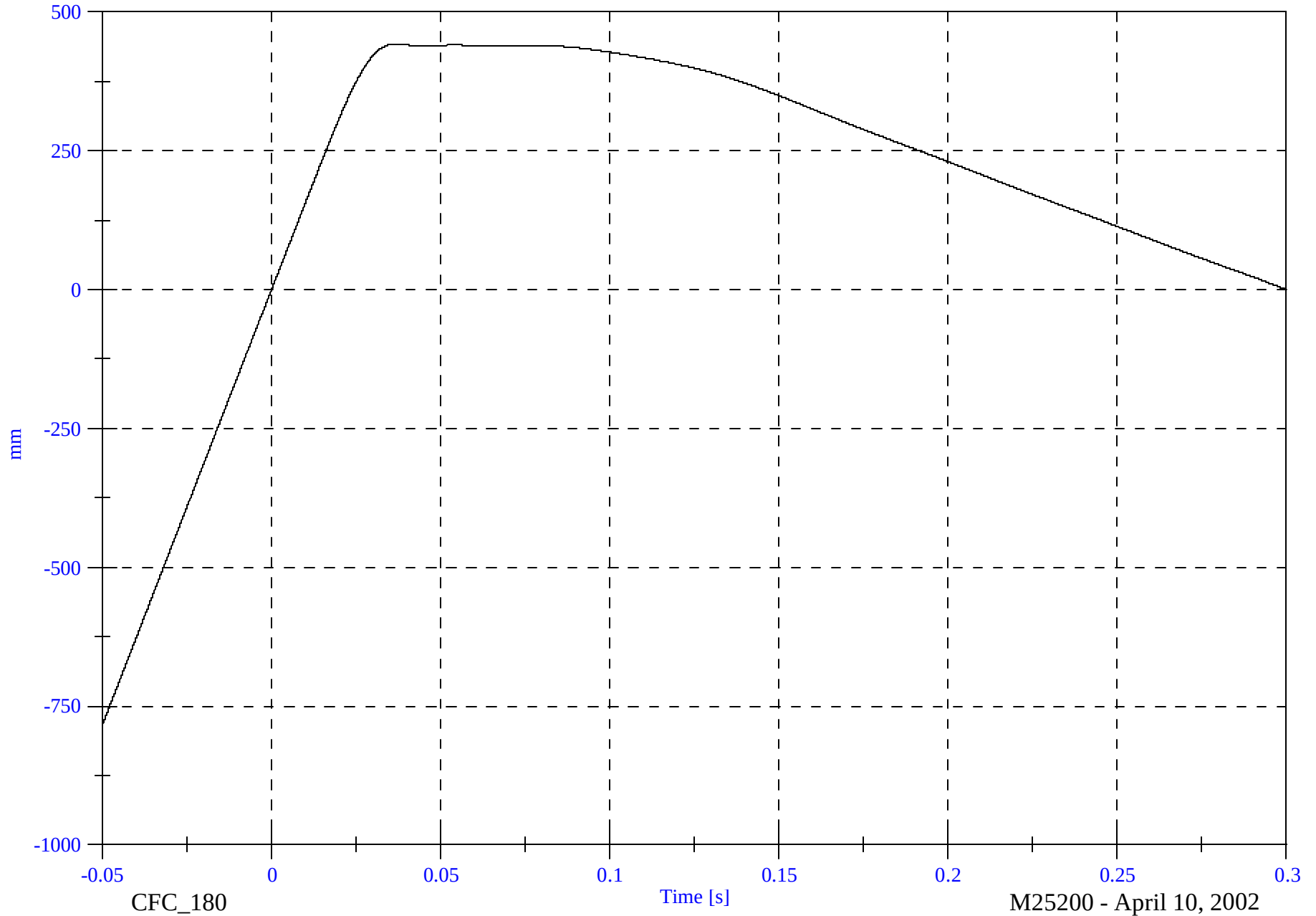
Engine Bottom #4x Displacement

Max: 441.8 [mm] at 0.037 [s]

Min: -784.0 [mm] at -0.050 [s]

B-125

8642-NCAP-06

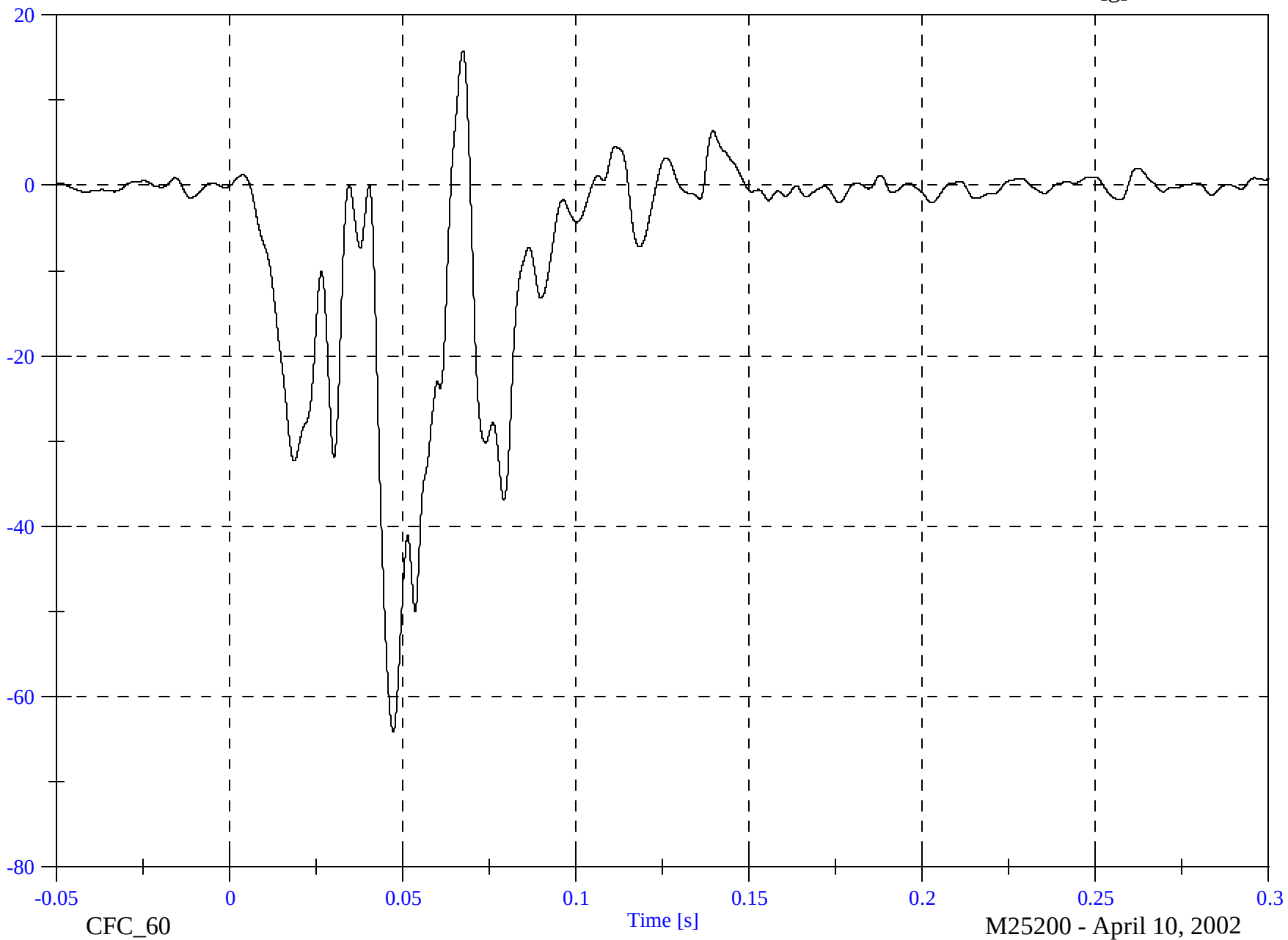


NCAP Test #6 - 2002 Nissan Altima

Instrument Panel #6x

Max: 15.8 [g] at 0.067 [s]

Min: -64.2 [g] at 0.047 [s]



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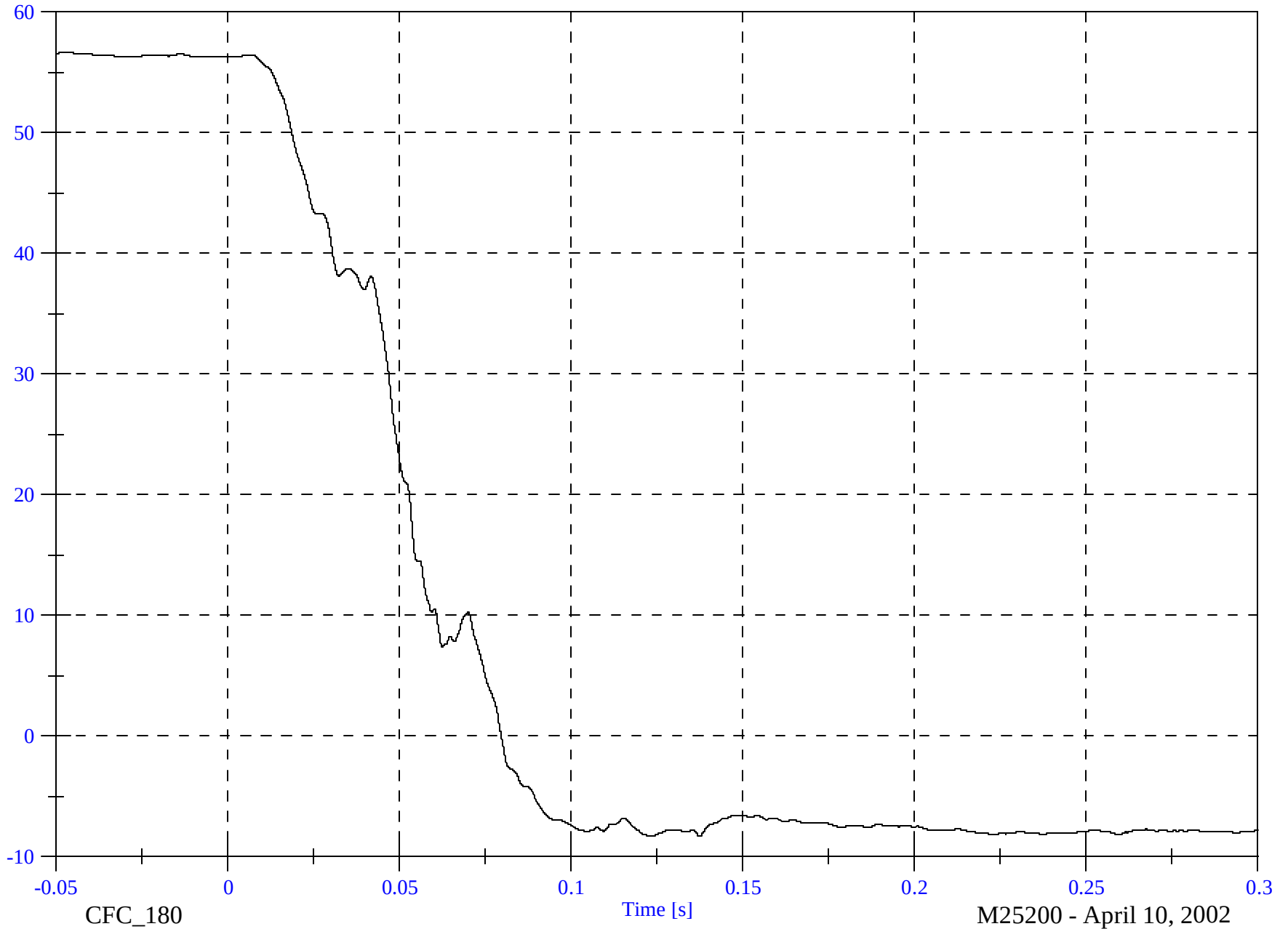
8642-NCAP-06

NCAP Test #6 - 2002 Nissan Altima

Max: 56.6 [kph] at -0.047 [s]

Instrument Panel #6x Velocity

Min: -8.3 [kph] at 0.137 [s]



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8642-NCAP-06

CFC_180

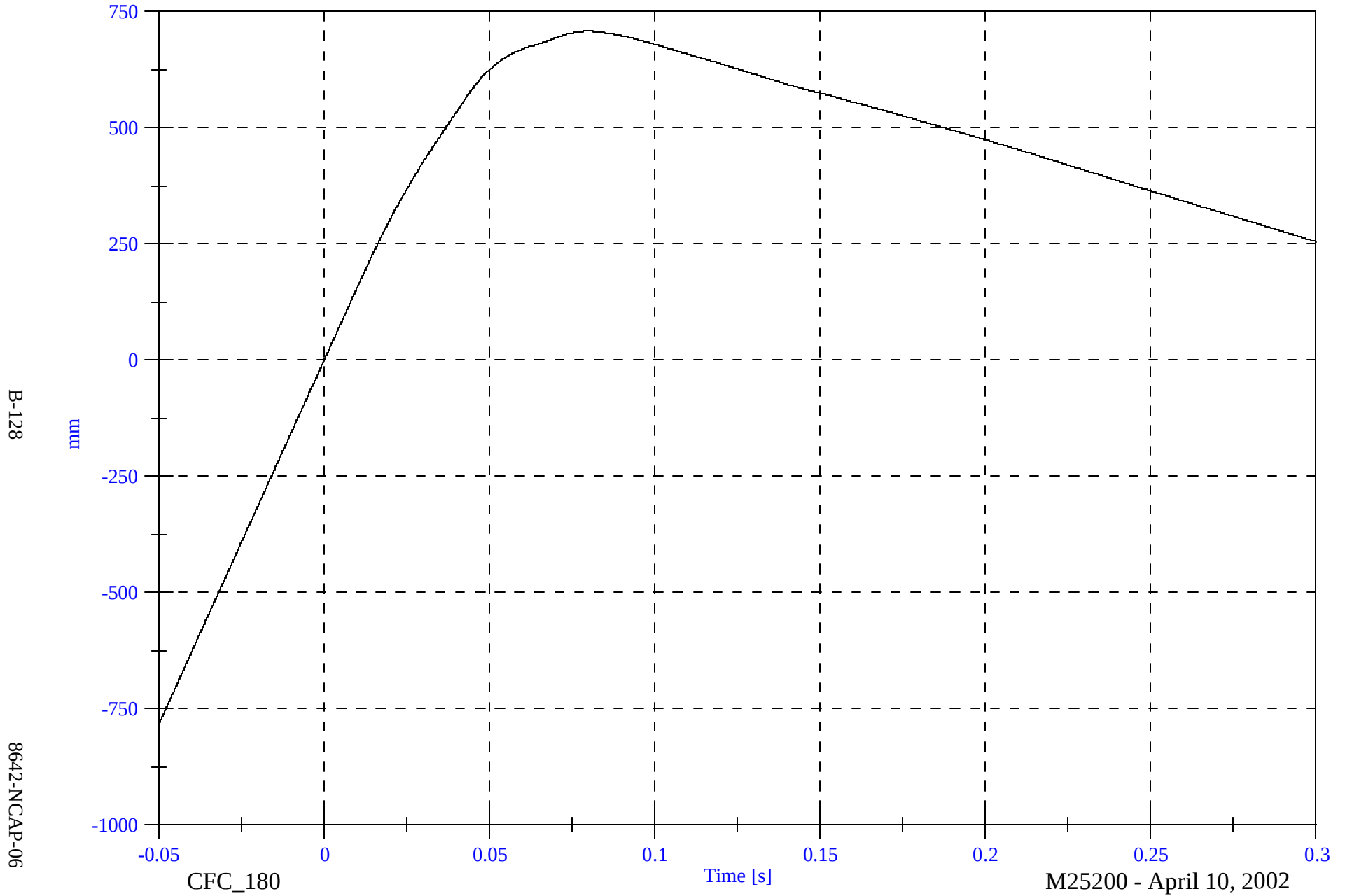
M25200 - April 10, 2002

NCAP Test #6 - 2002 Nissan Altima

Instrument Panel #6x Displacement

Max: 707.7 [mm] at 0.080 [s]

Min: -783.5 [mm] at -0.050 [s]



NCAP Test #6 - 2002 Nissan Altima

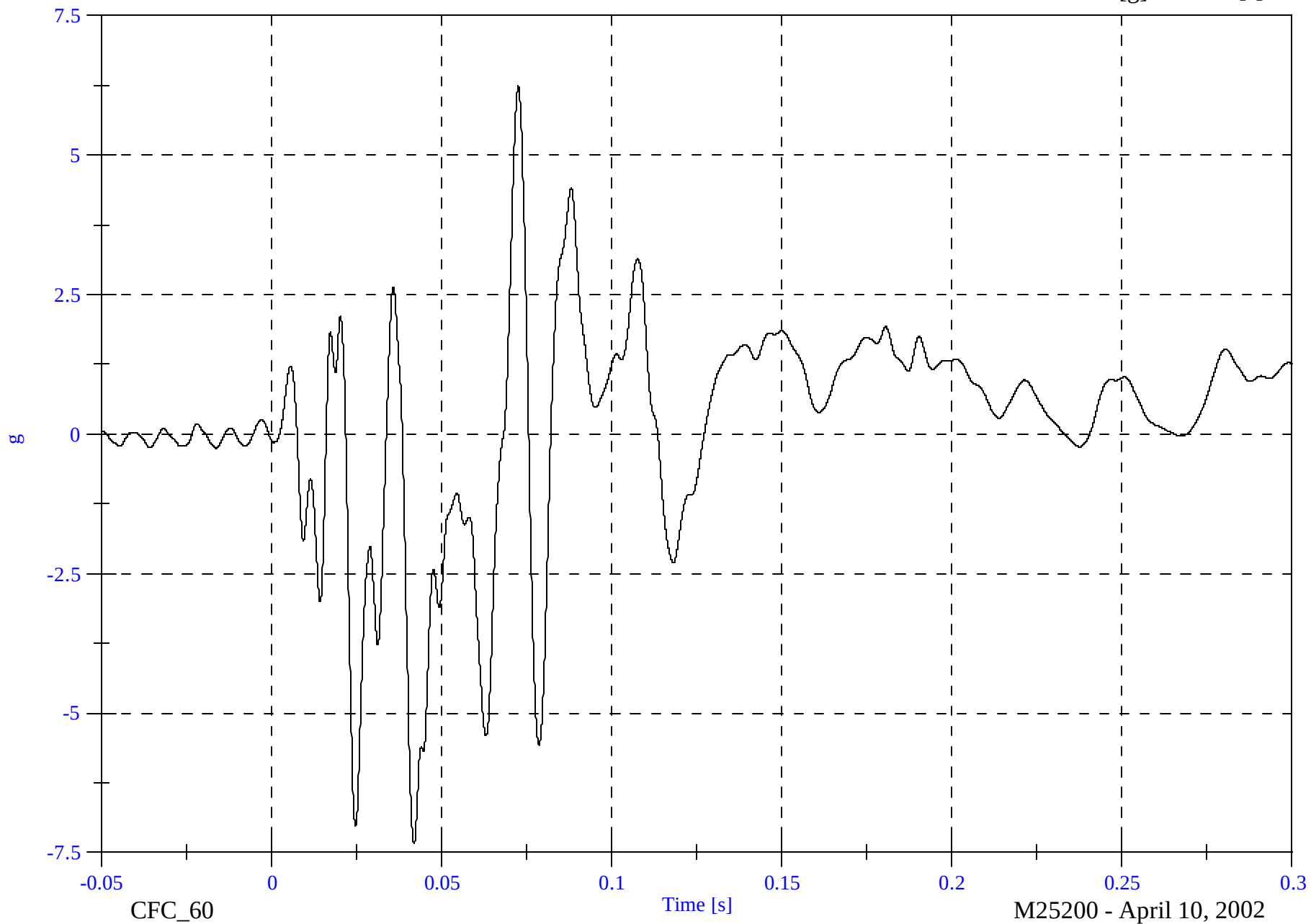
Left Rear #8z

Max: 6.2 [g] at 0.072 [s]

Min: -7.3 [g] at 0.042 [s]

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8642-NCAP-06



NCAP Test #6 - 2002 Nissan Altima

Left Rear #8z Velocity

Max: 2.7 [kph] at 0.300 [s]

Min: -4.6 [kph] at 0.070 [s]

B-130

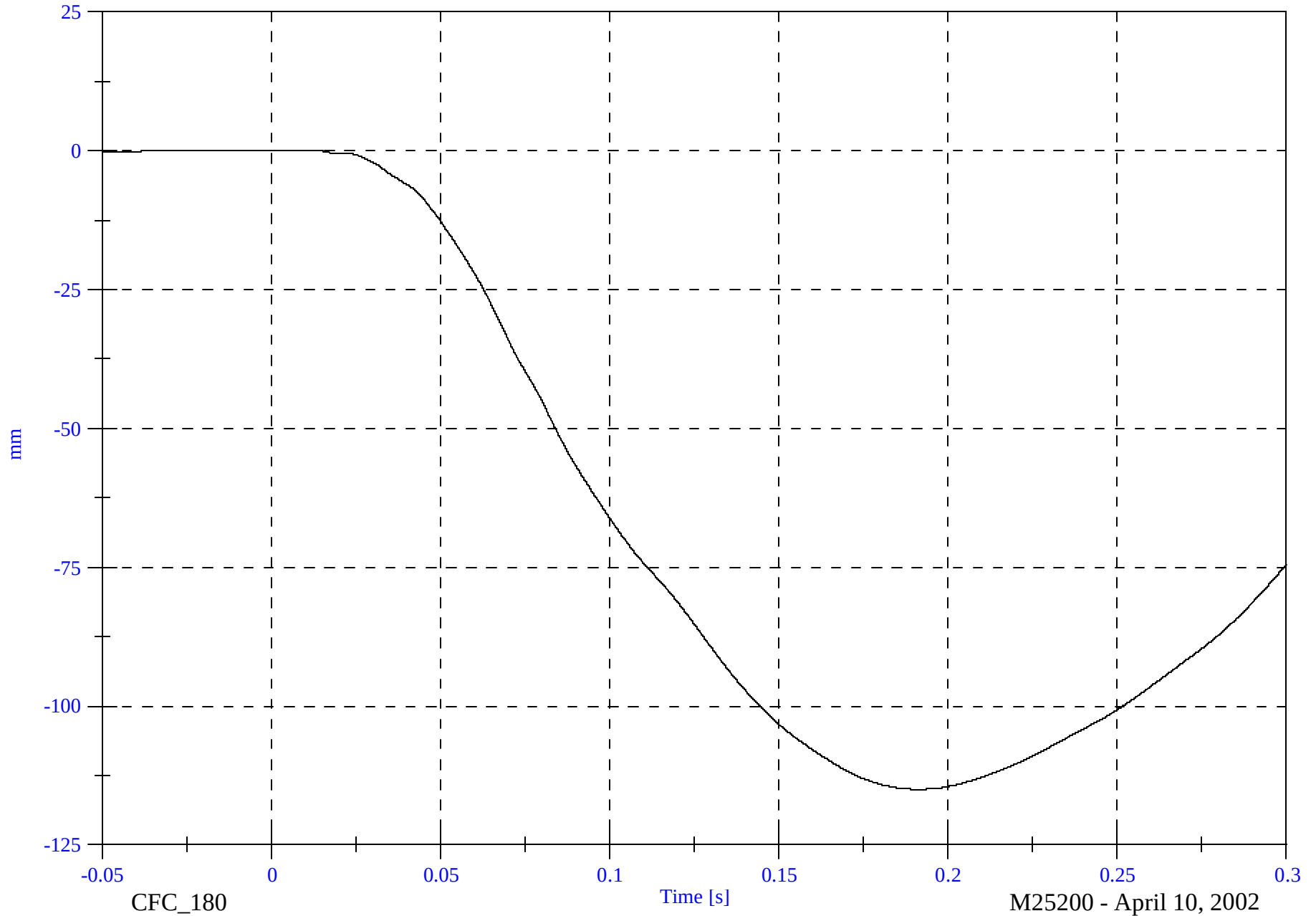
8642-NCAP-06



NCAP Test #6 - 2002 Nissan Altima

Left Rear #8z Displacement

Max: 0.1 [mm] at 0.009 [s]
Min: -115.0 [mm] at 0.191 [s]



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CFC_180

M25200 - April 10, 2002

NCAP Test #6 - 2002 Nissan Altima

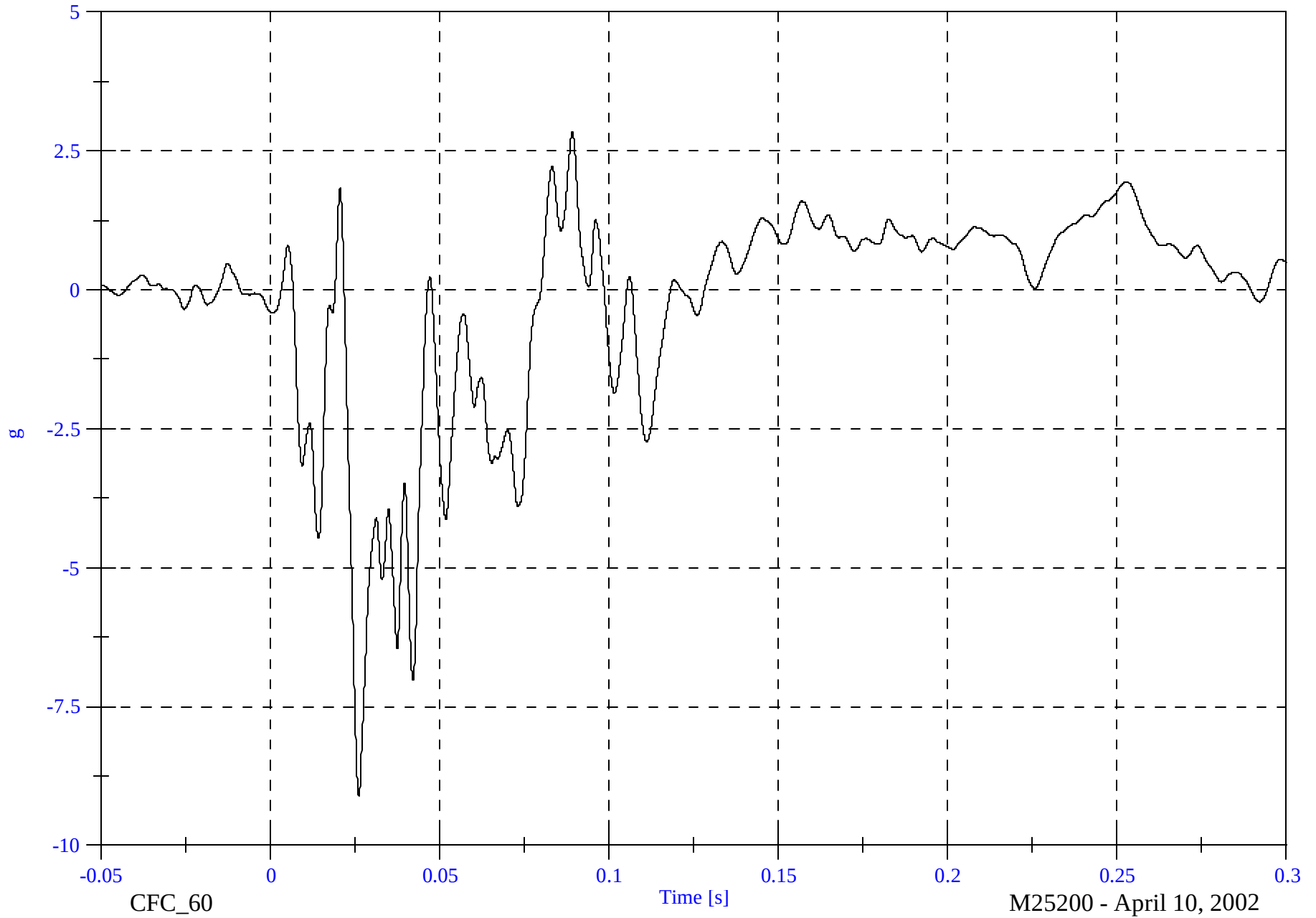
Right Rear #9z

Max: 2.8 [g] at 0.089 [s]

Min: -9.1 [g] at 0.026 [s]

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8642-NCAP-06



NCAP Test #6 - 2002 Nissan Altima

Right Rear #9z Velocity

Max: 0.1 [kph] at 0.007 [s]

Min: -7.8 [kph] at 0.128 [s]



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8642-NCAP-06

CFC_180

Time [s]

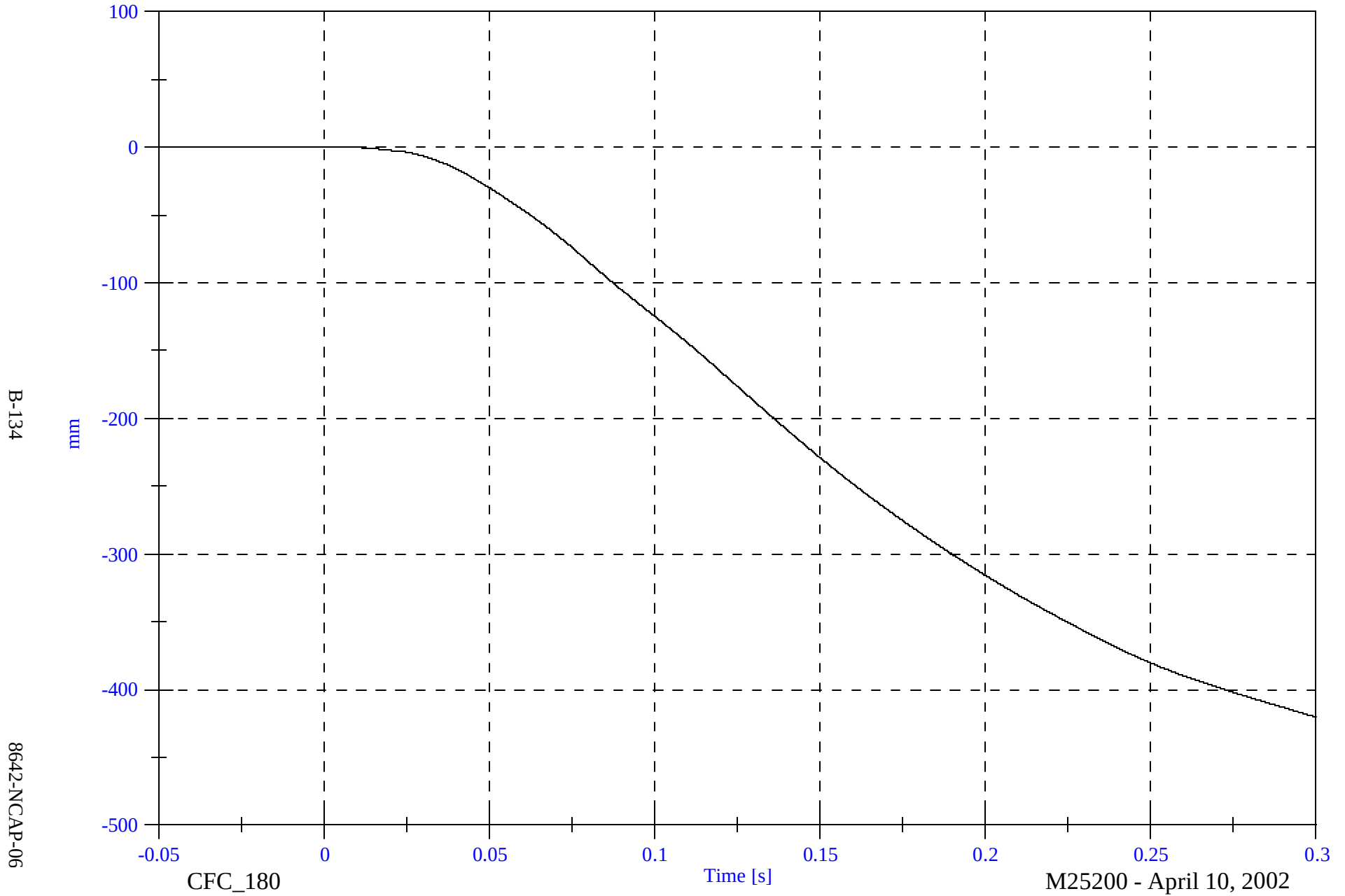
M25200 - April 10, 2002

NCAP Test #6 - 2002 Nissan Altima

Right Rear #9z Displacement

Max: 0.3 [mm] at -0.050 [s]

Min: -420.3 [mm] at 0.300 [s]

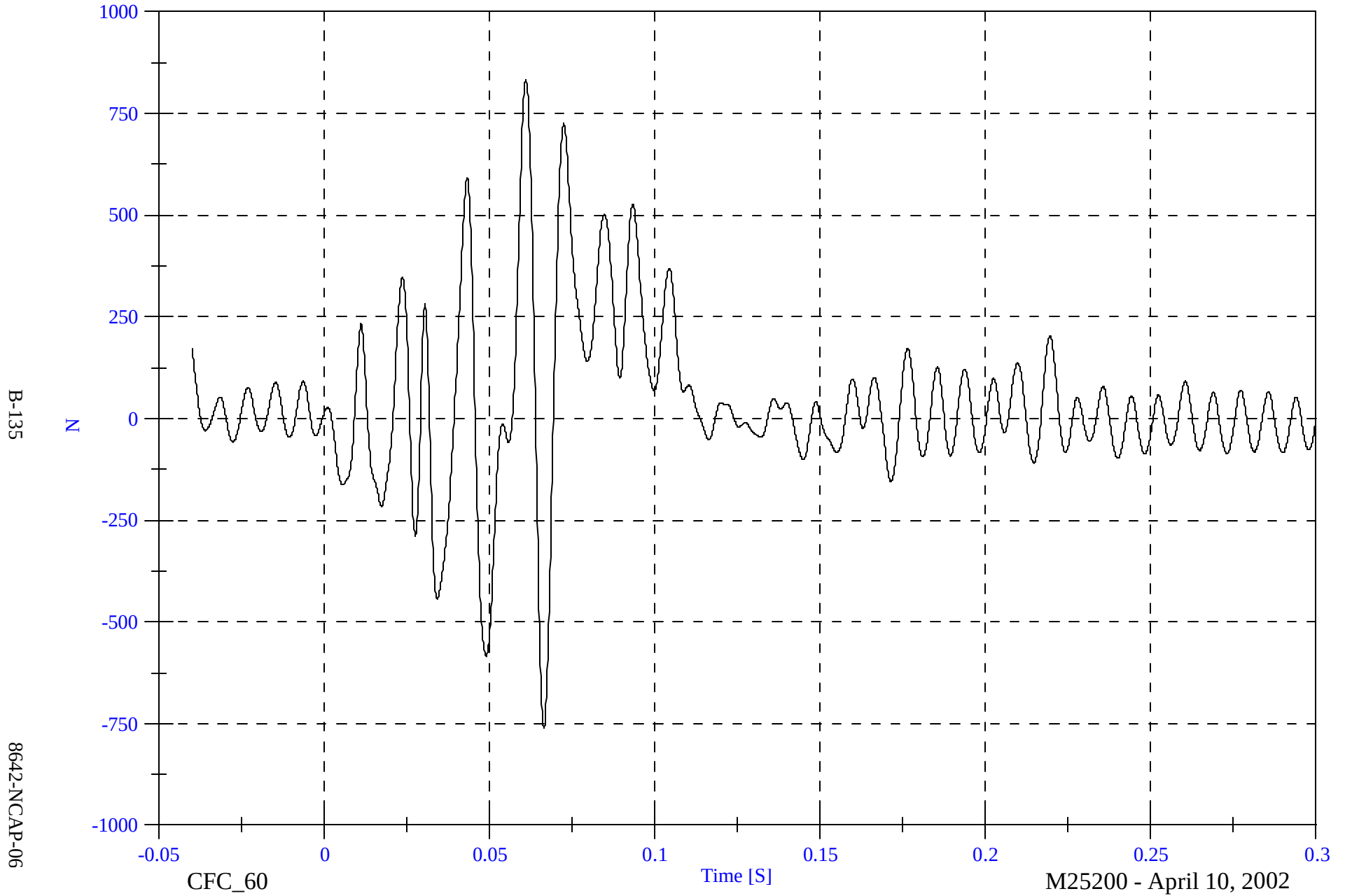


NCAP Test 6 - 2002 Nissan Altima

Barrier Load Cell A1 Fx

Max: 833.4 [N] at 0.061 [S]

Min: -761.8 [N] at 0.066 [S]

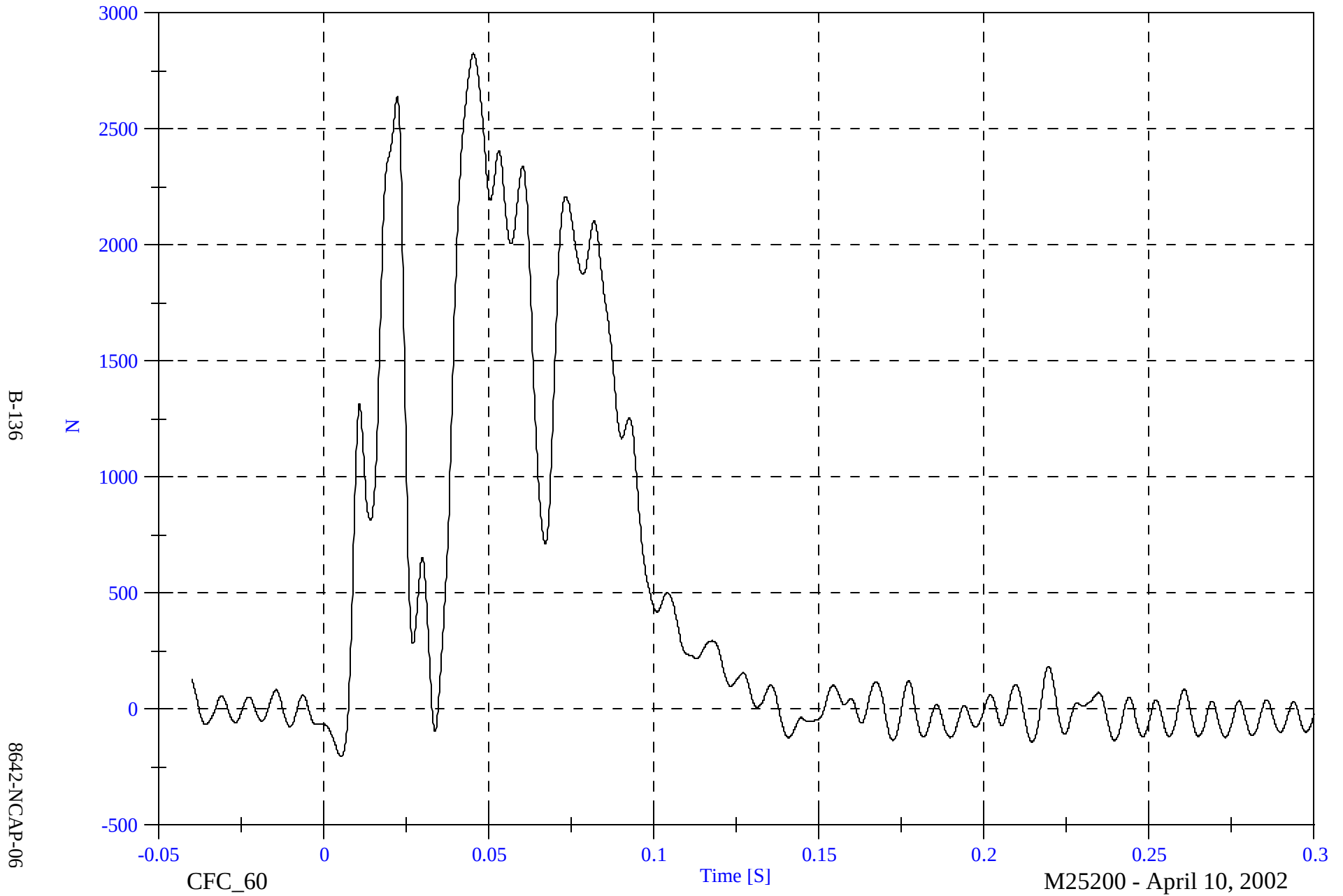


NCAP Test 6 - 2002 Nissan Altima

Max: 2824.7 [N] at 0.045 [S]

Min: -204.1 [N] at 0.005 [S]

Barrier Load Cell A2 Fx

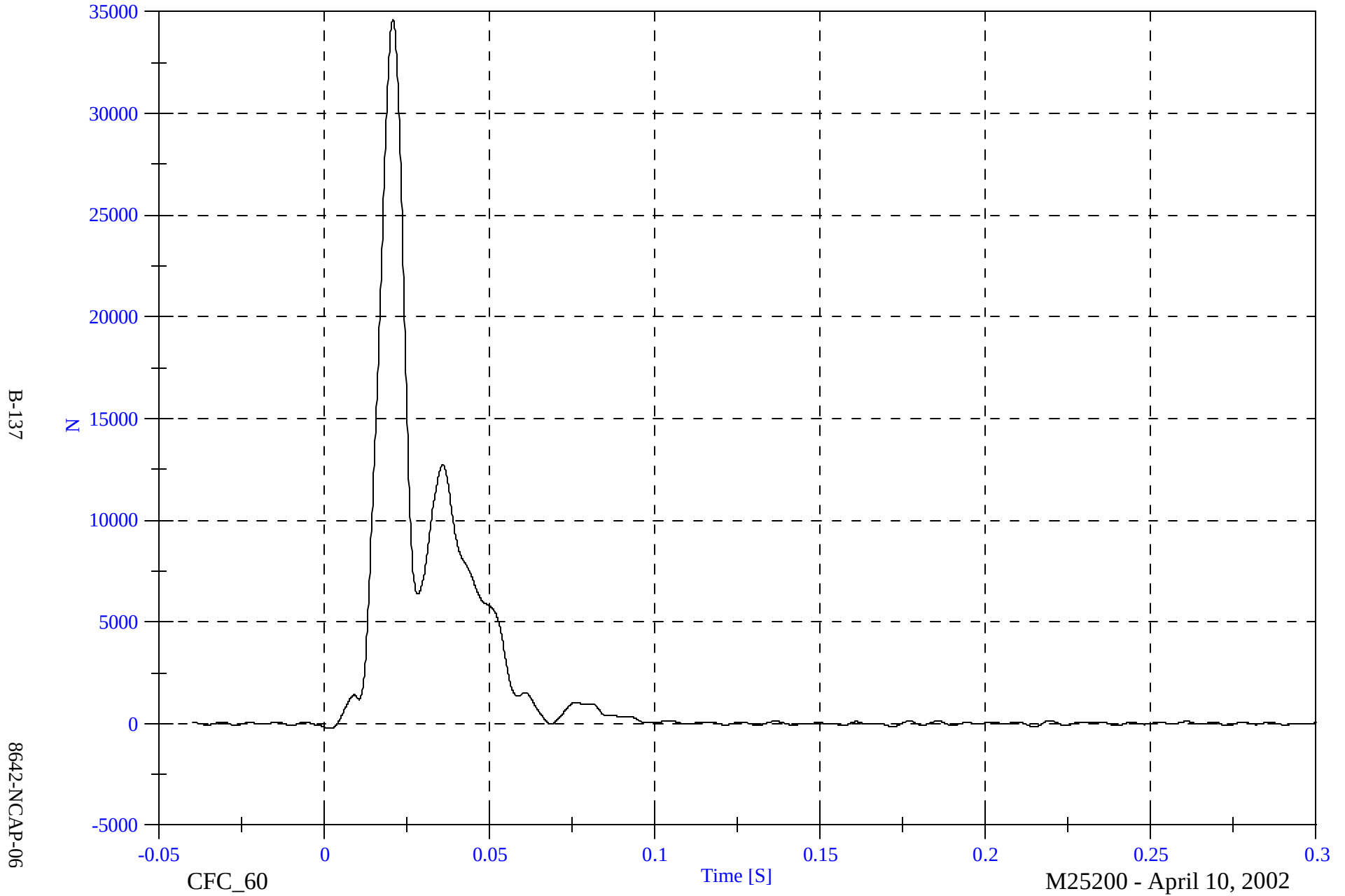


NCAP Test 6 - 2002 Nissan Altima

Barrier Load Cell A3 Fx

Max: 34607.7 [N] at 0.021 [S]

Min: -241.0 [N] at 0.002 [S]

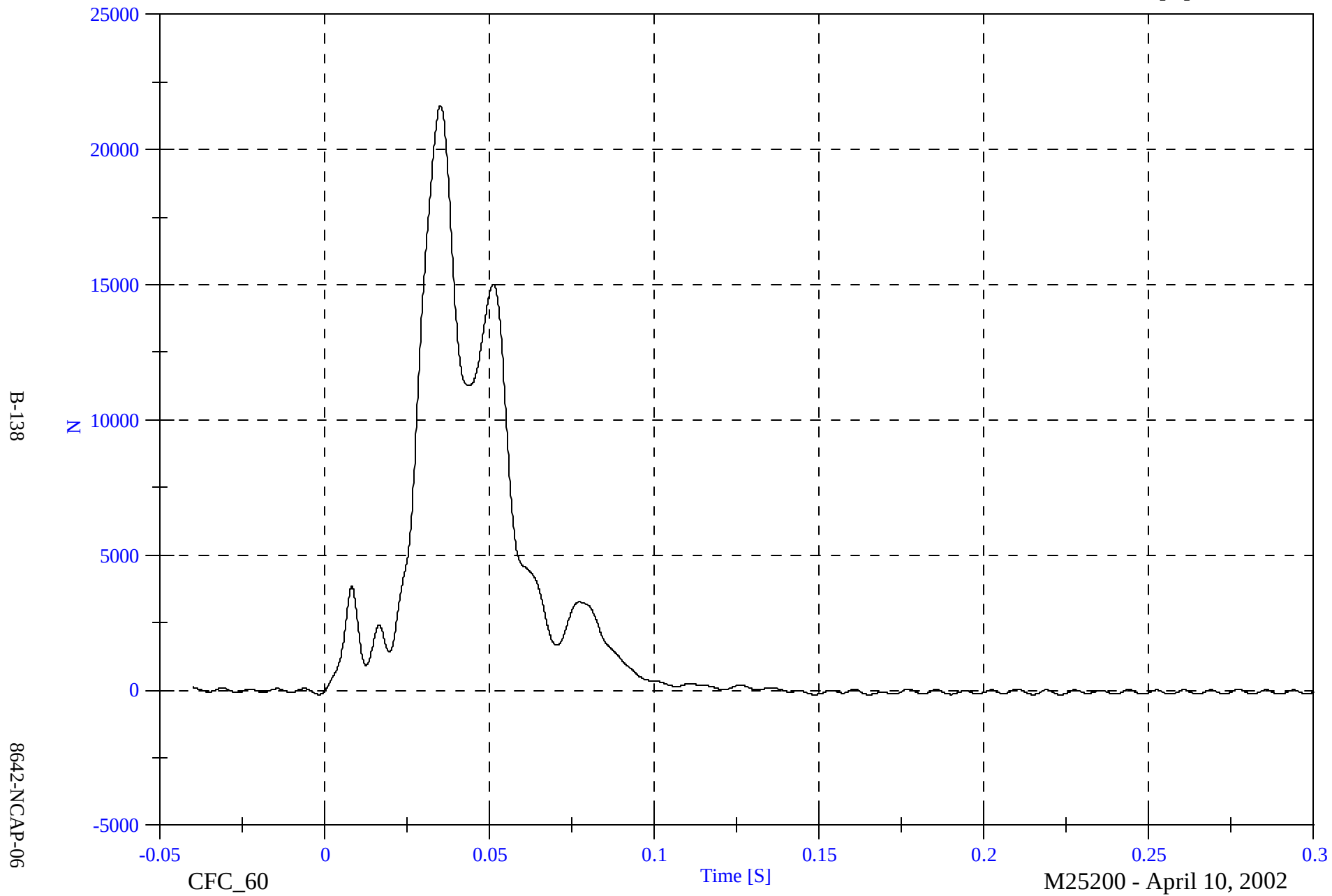


NCAP Test 6 - 2002 Nissan Altima

Barrier Load Cell A4 Fx

Max: 21616.5 [N] at 0.035 [S]

Min: -163.1 [N] at 0.165 [S]

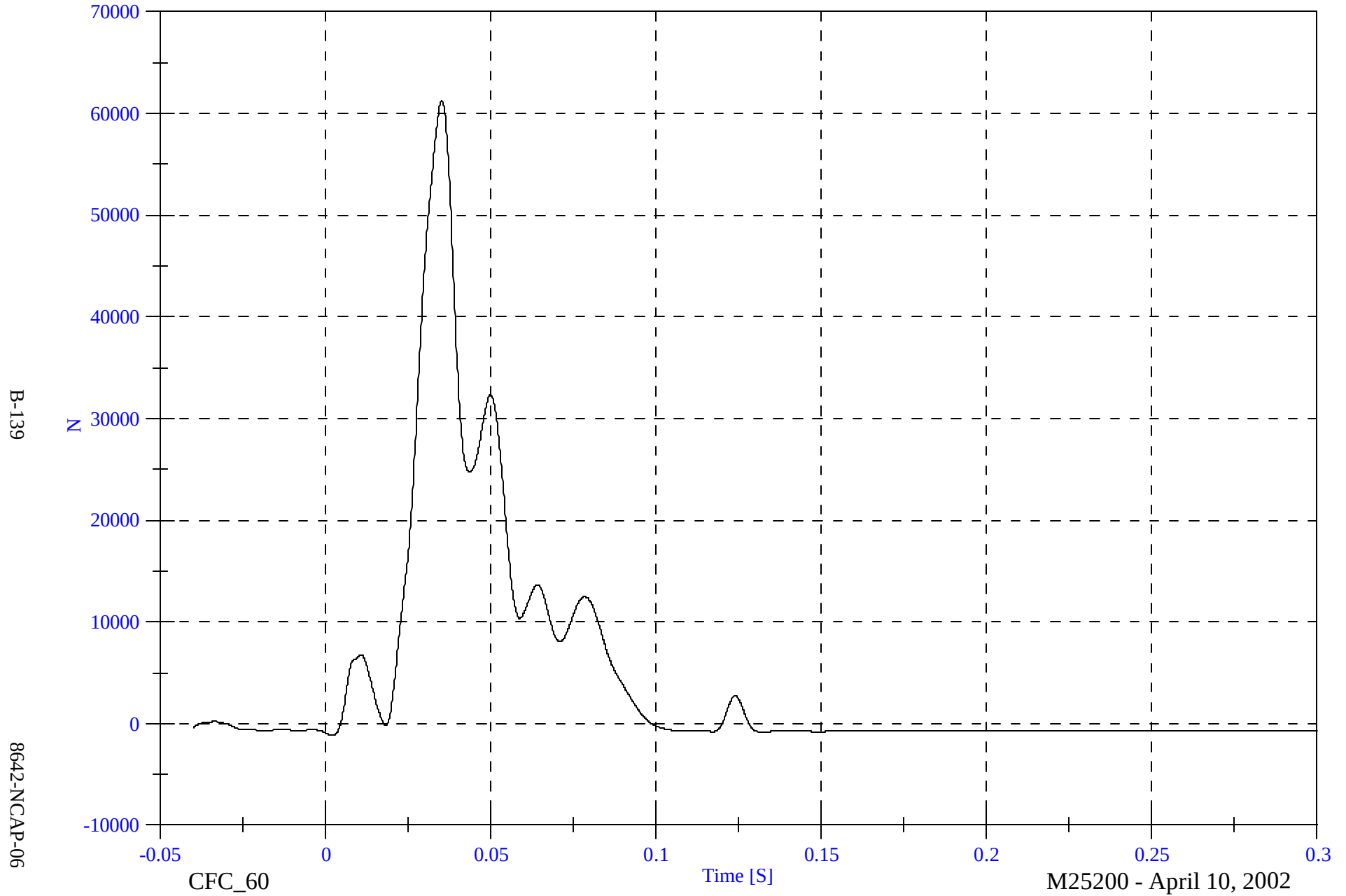


NCAP Test 6 - 2002 Nissan Altima

Barrier Load Cell A5 Fx

Max: 61222.7 [N] at 0.035 [S]

Min: -1162.9 [N] at 0.002 [S]

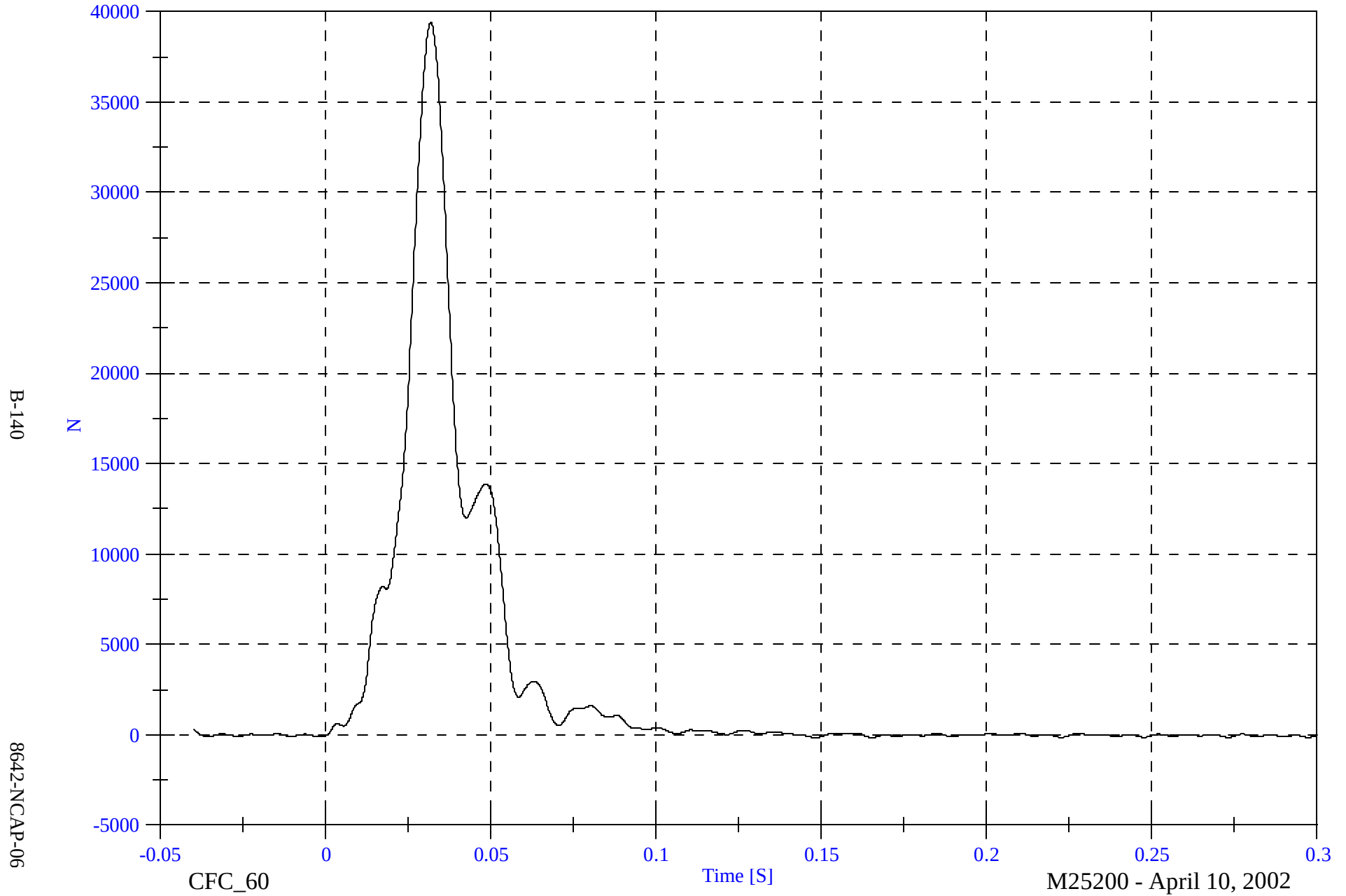


NCAP Test 6 - 2002 Nissan Altima

Barrier Load Cell A6 Fx

Max: 39390.0 [N] at 0.032 [S]

Min: -159.3 [N] at 0.165 [S]

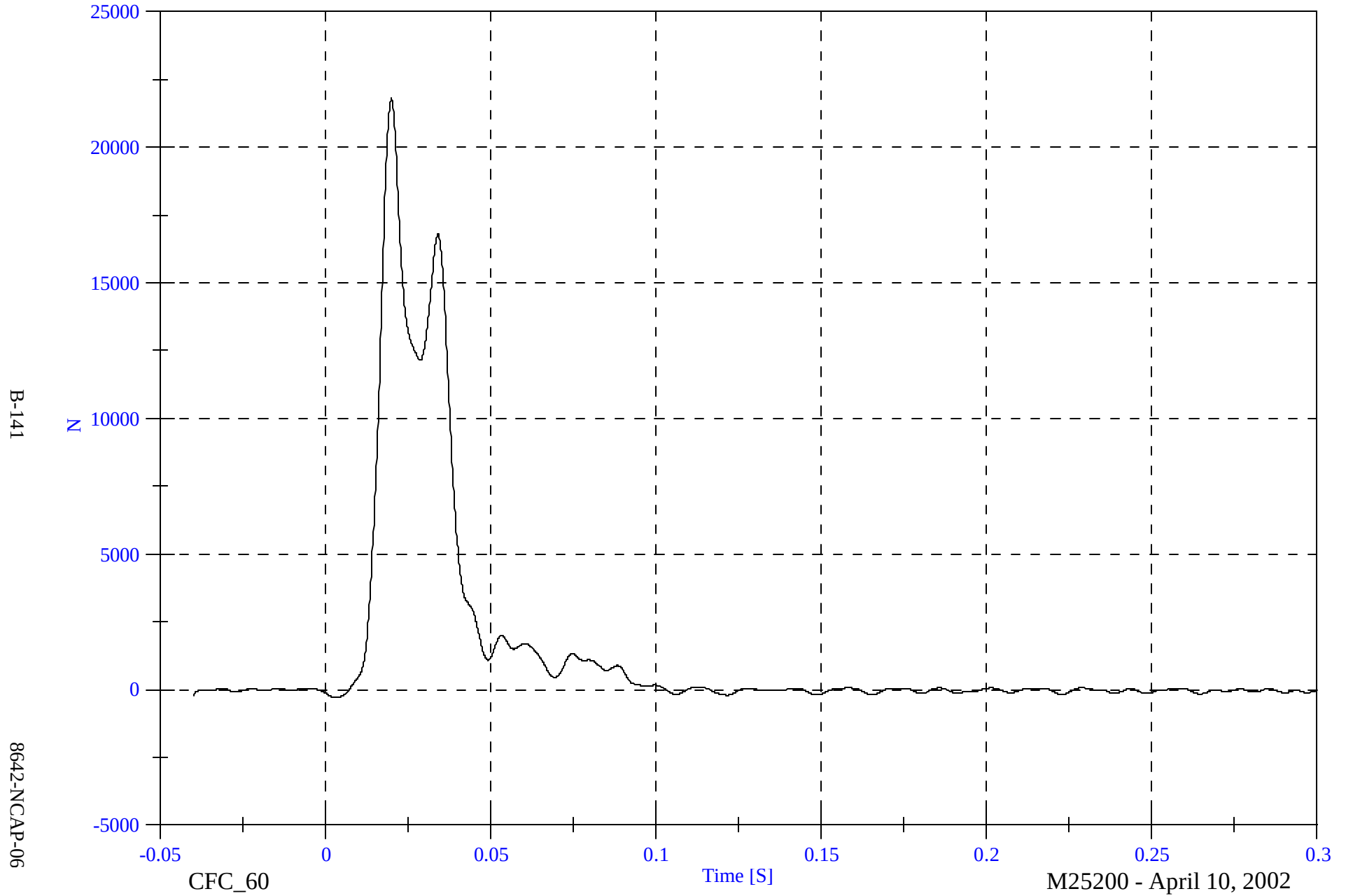


NCAP Test 6 - 2002 Nissan Altima

Barrier Load Cell A7 Fx

Max: 21792.4 [N] at 0.020 [S]

Min: -291.0 [N] at 0.003 [S]

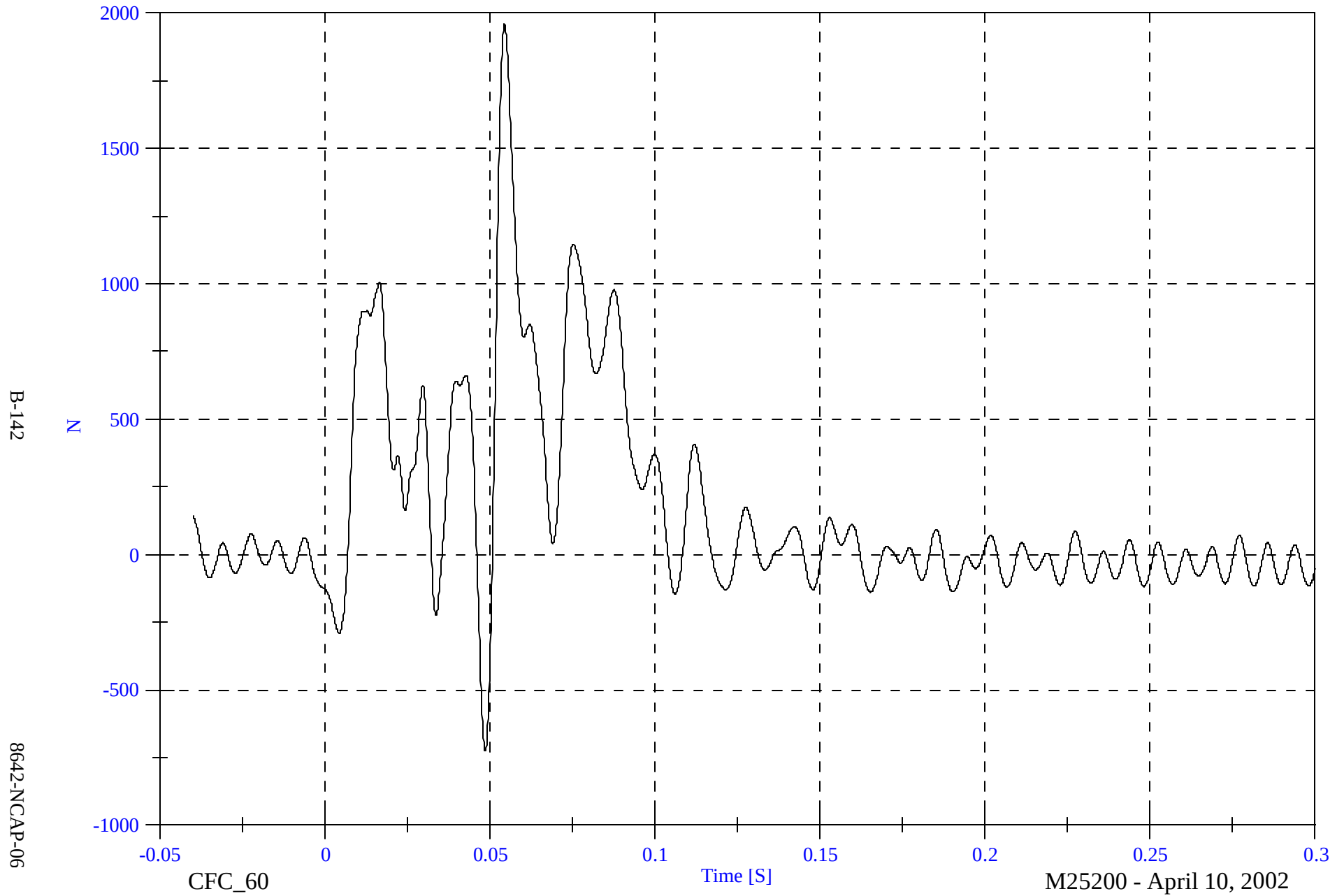


NCAP Test 6 - 2002 Nissan Altima

Max: 1959.1 [N] at 0.054 [S]

Min: -725.7 [N] at 0.049 [S]

Barrier Load Cell A8 Fx

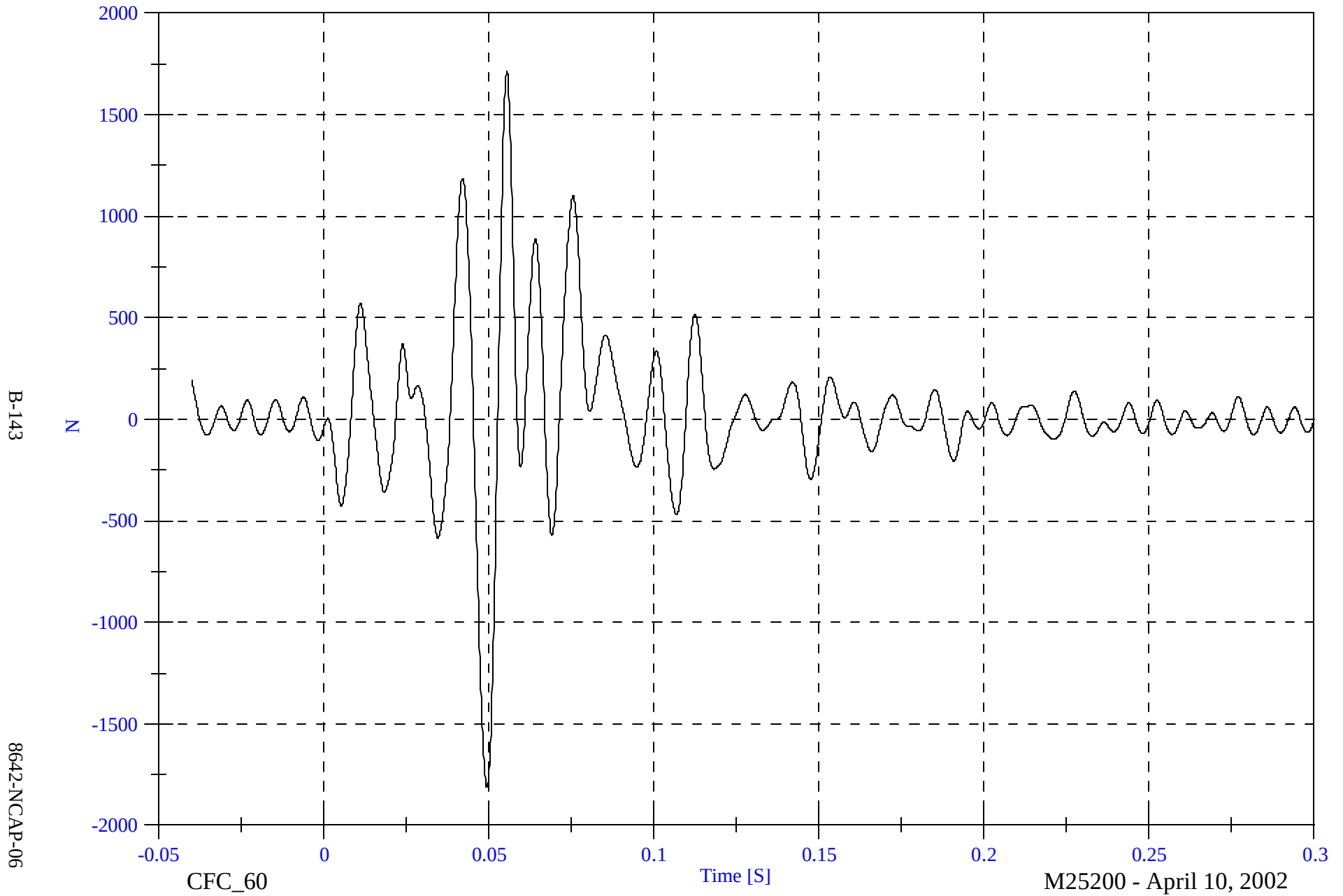


NCAP Test 6 - 2002 Nissan Altima

Barrier Load Cell A9 Fx

Max: 1712.3 [N] at 0.055 [S]

Min: -1811.2 [N] at 0.049 [S]

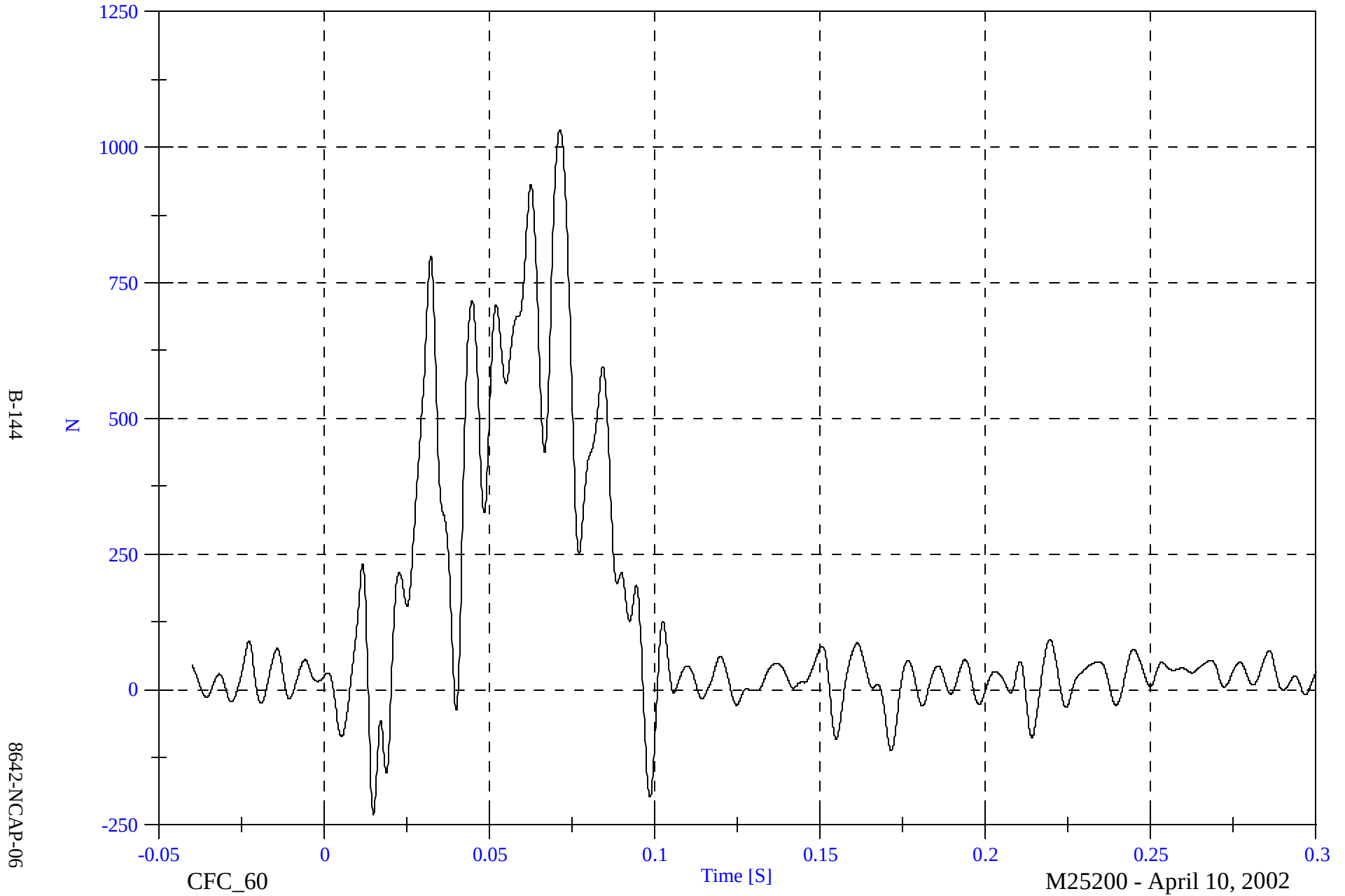


NCAP Test 6 - 2002 Nissan Altima

Max: 1032.4 [N] at 0.071 [S]

Min: -232.0 [N] at 0.015 [S]

Barrier Load Cell B1 Fx

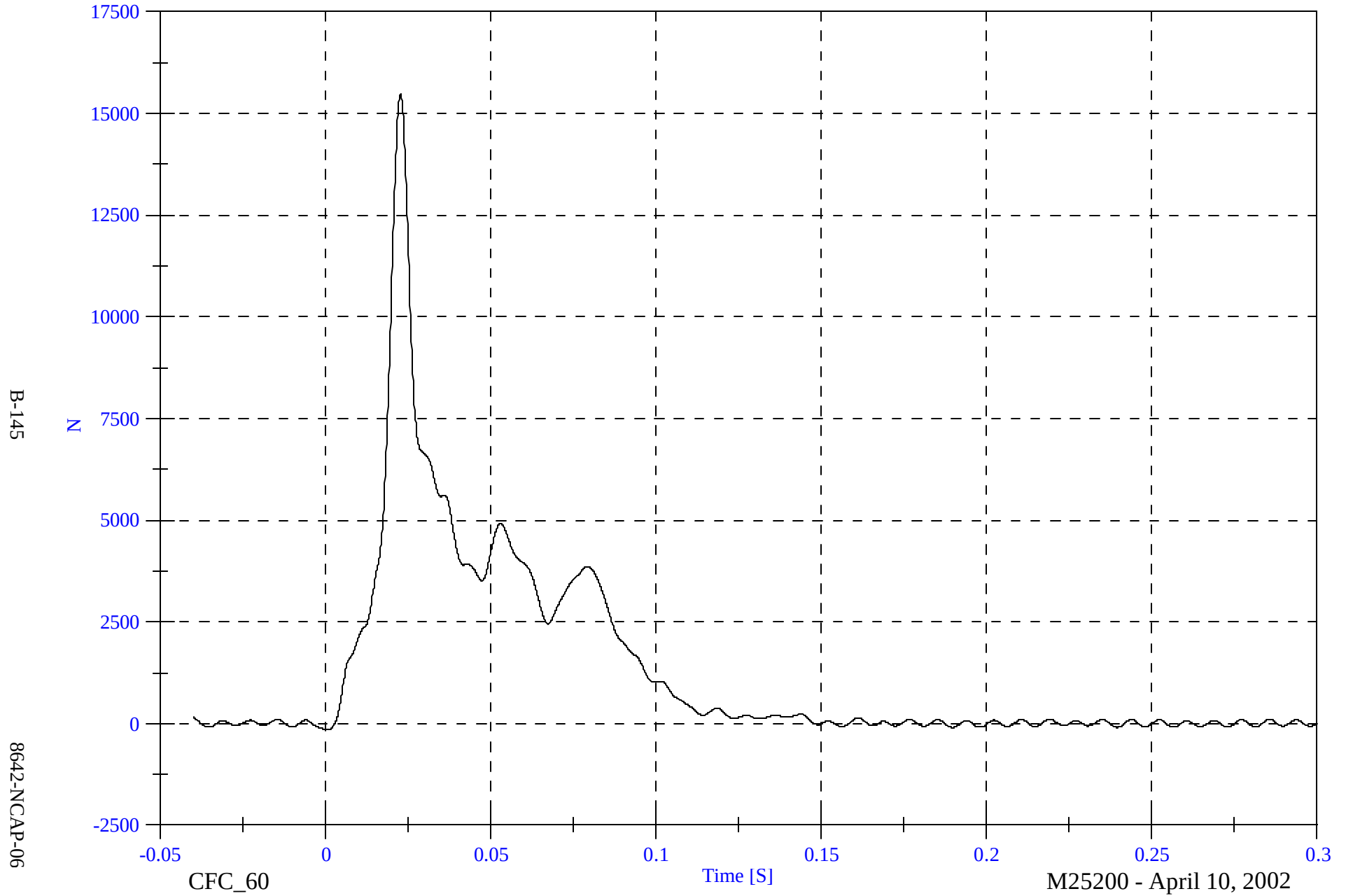


NCAP Test 6 - 2002 Nissan Altima

Barrier Load Cell B2 Fx

Max: 15468.2 [N] at 0.023 [S]

Min: -149.4 [N] at 0.000 [S]

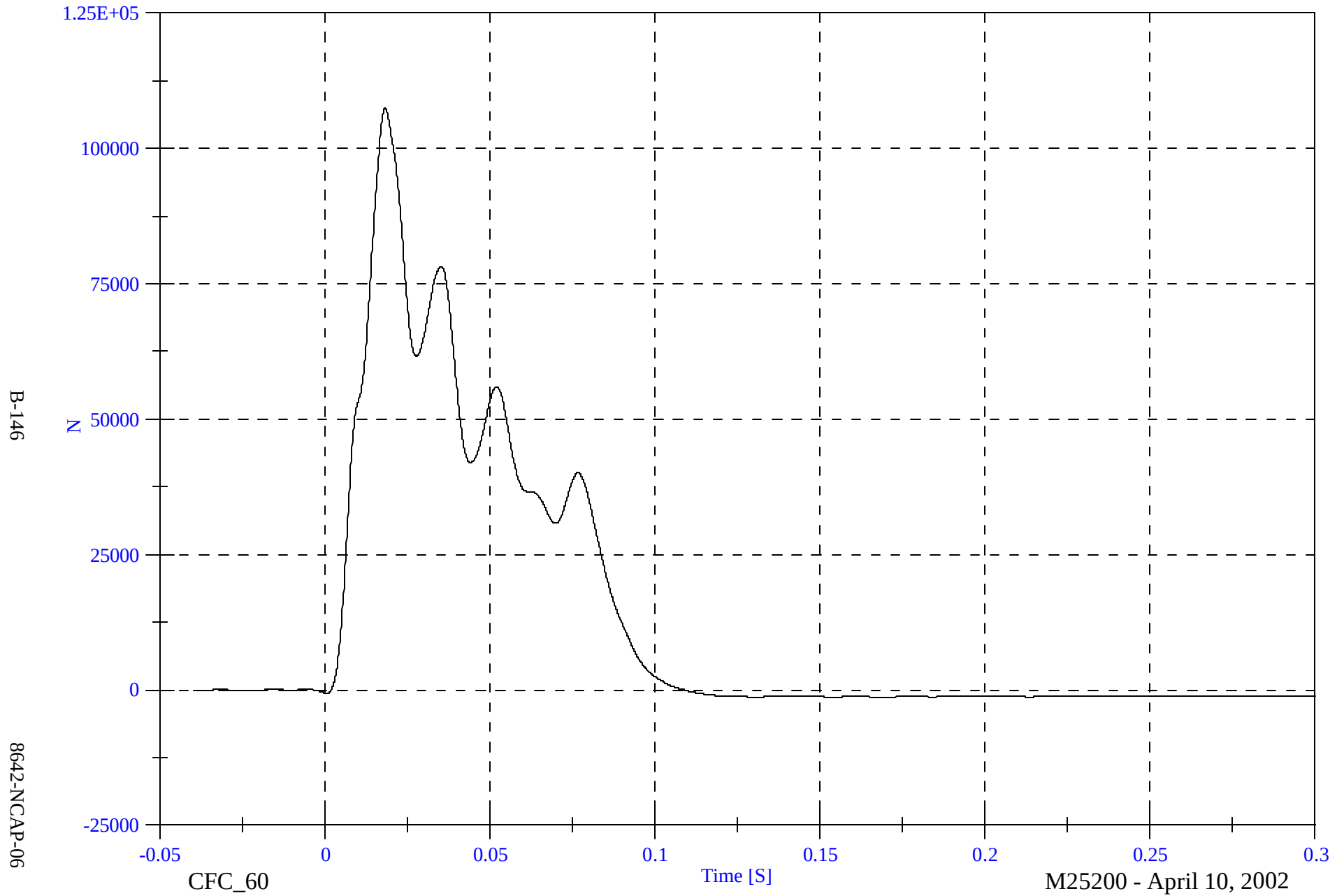


NCAP Test 6 - 2002 Nissan Altima

Max: 107477.9 [N] at 0.018 [S]

Min: -1286.6 [N] at 0.130 [S]

Barrier Load Cell B3 Fx

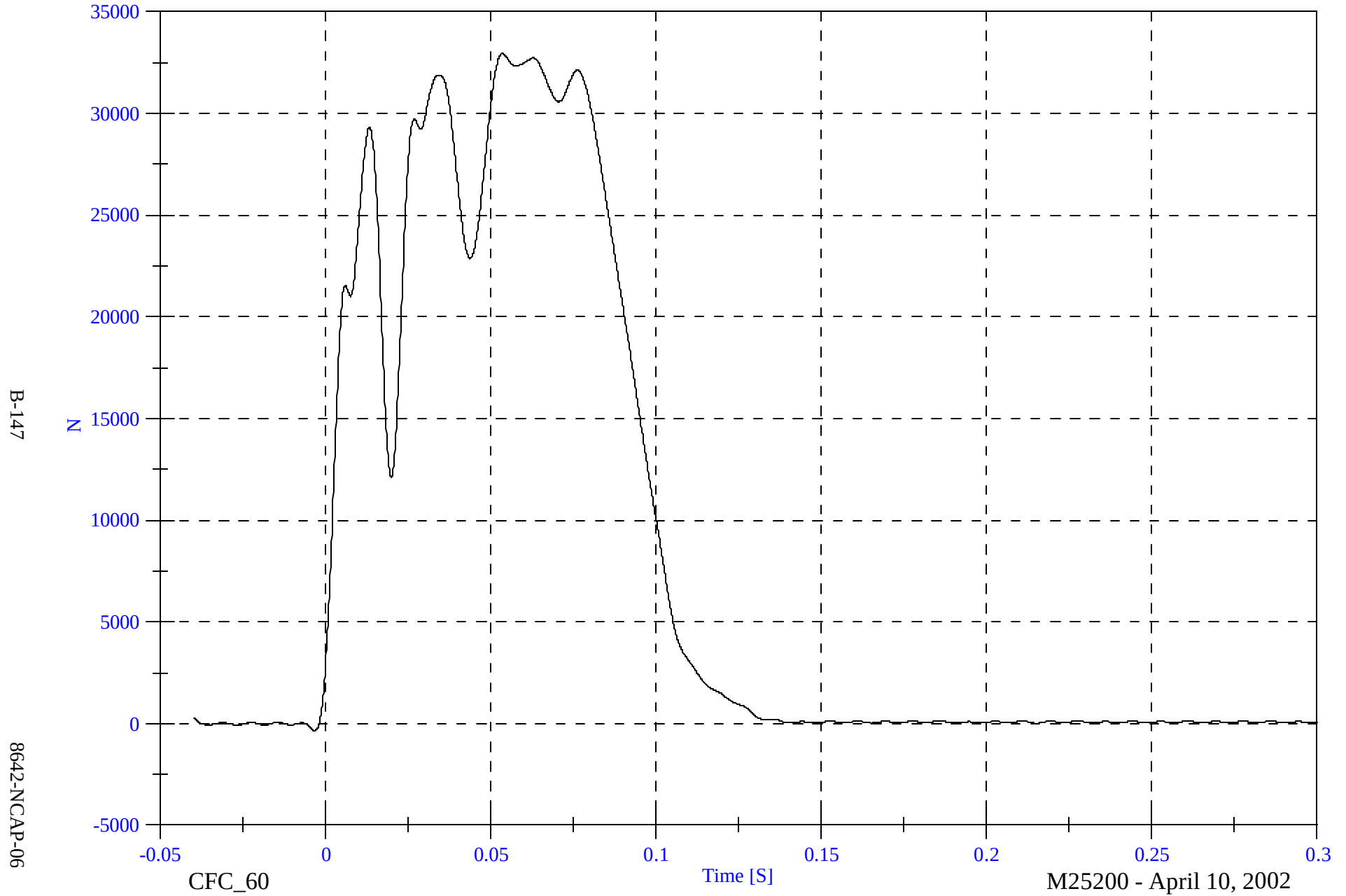


NCAP Test 6 - 2002 Nissan Altima

Barrier Load Cell B4 Fx

Max: 32940.4 [N] at 0.053 [S]

Min: -341.4 [N] at -0.003 [S]

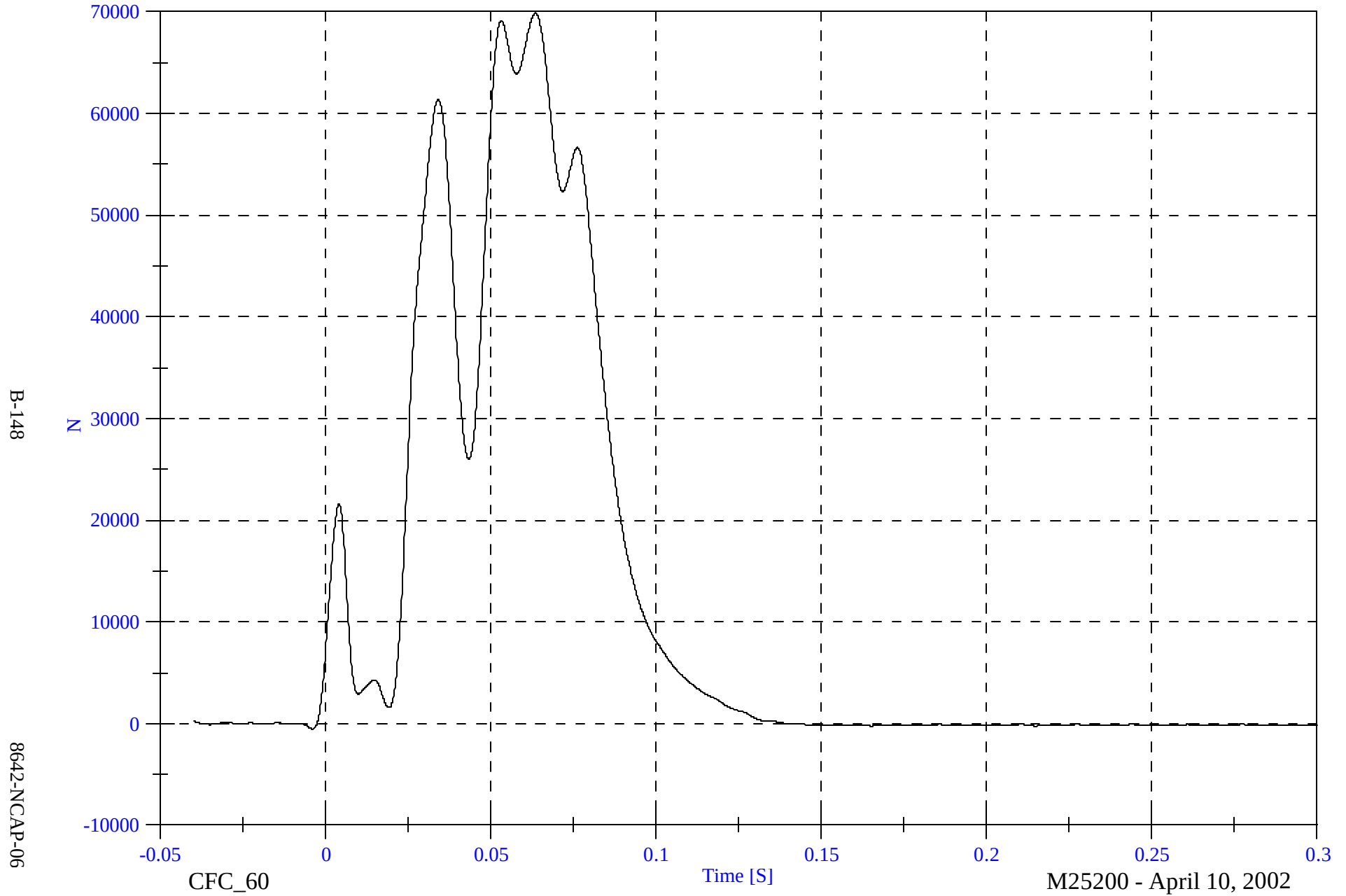


NCAP Test 6 - 2002 Nissan Altima

Barrier Load Cell B5 Fx

Max: 69848.4 [N] at 0.063 [S]

Min: -540.5 [N] at -0.004 [S]

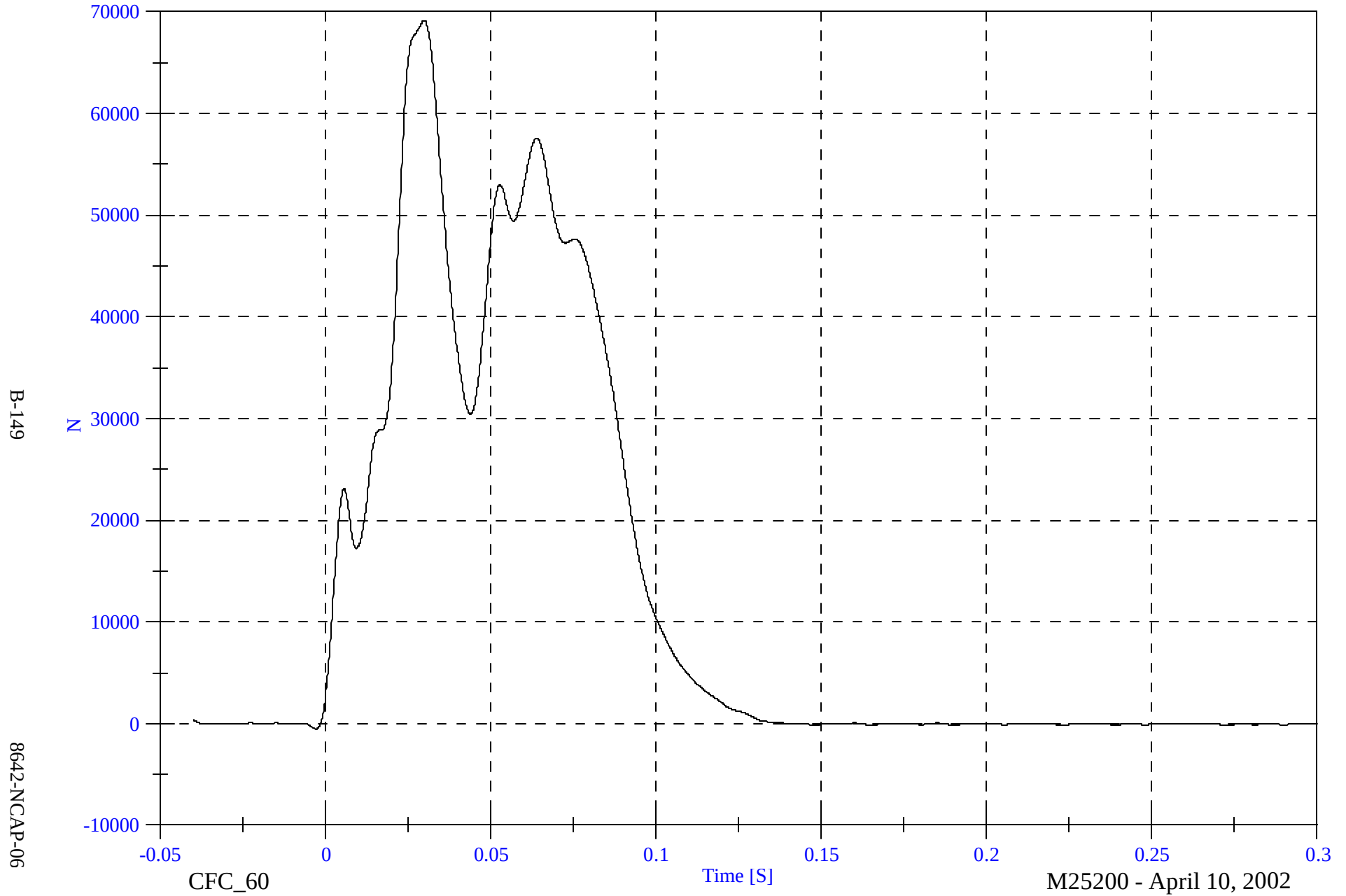


NCAP Test 6 - 2002 Nissan Altima

Barrier Load Cell B6 Fx

Max: 69122.4 [N] at 0.030 [S]

Min: -527.5 [N] at -0.003 [S]

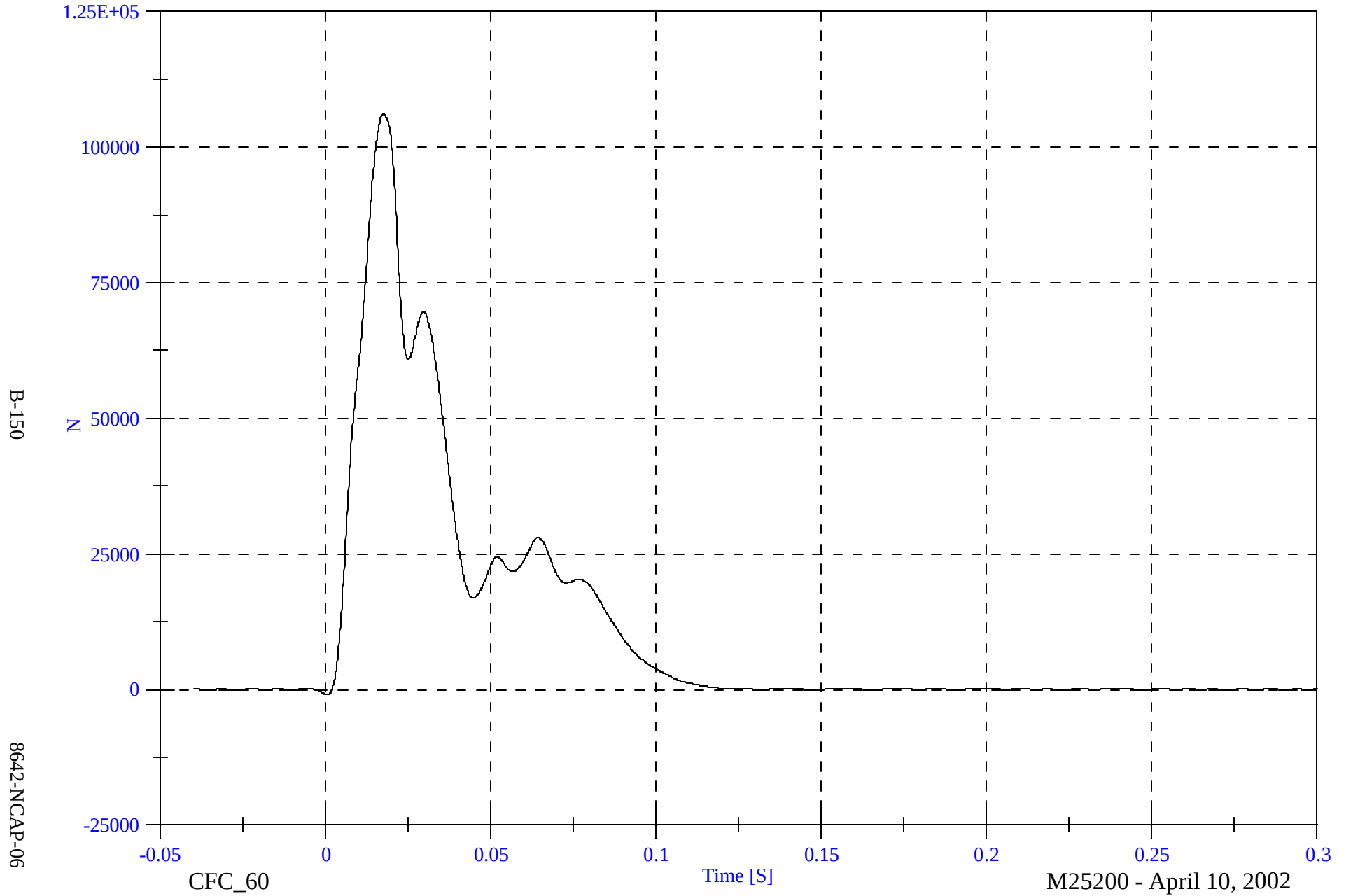


NCAP Test 6 - 2002 Nissan Altima

Barrier Load Cell B7 Fx

Max: 106133.8 [N] at 0.017 [S]

Min: -944.5 [N] at 0.000 [S]

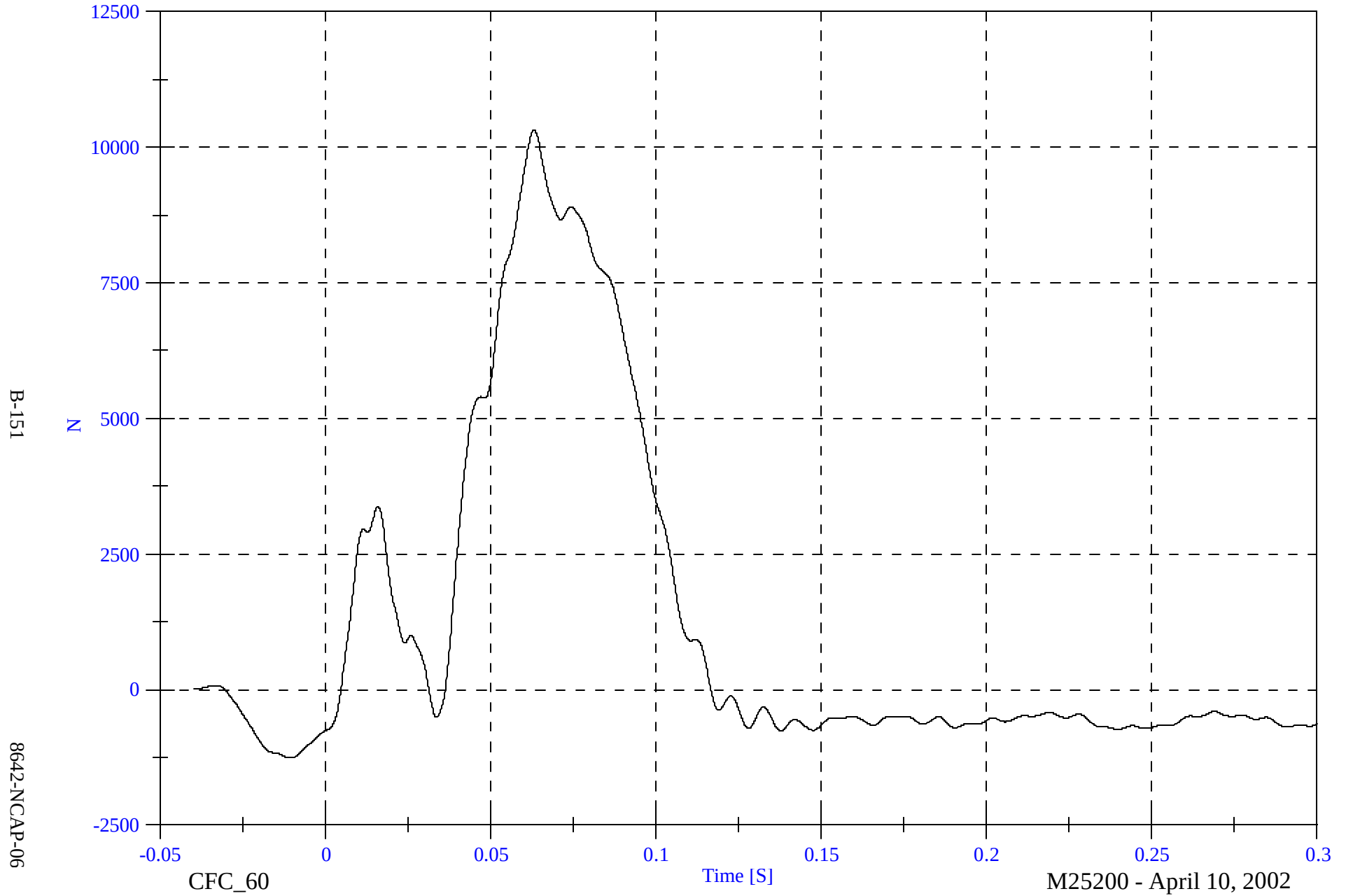


NCAP Test 6 - 2002 Nissan Altima

Barrier Load Cell B8 Fx

Max: 10321.7 [N] at 0.063 [S]

Min: -1260.2 [N] at -0.011 [S]

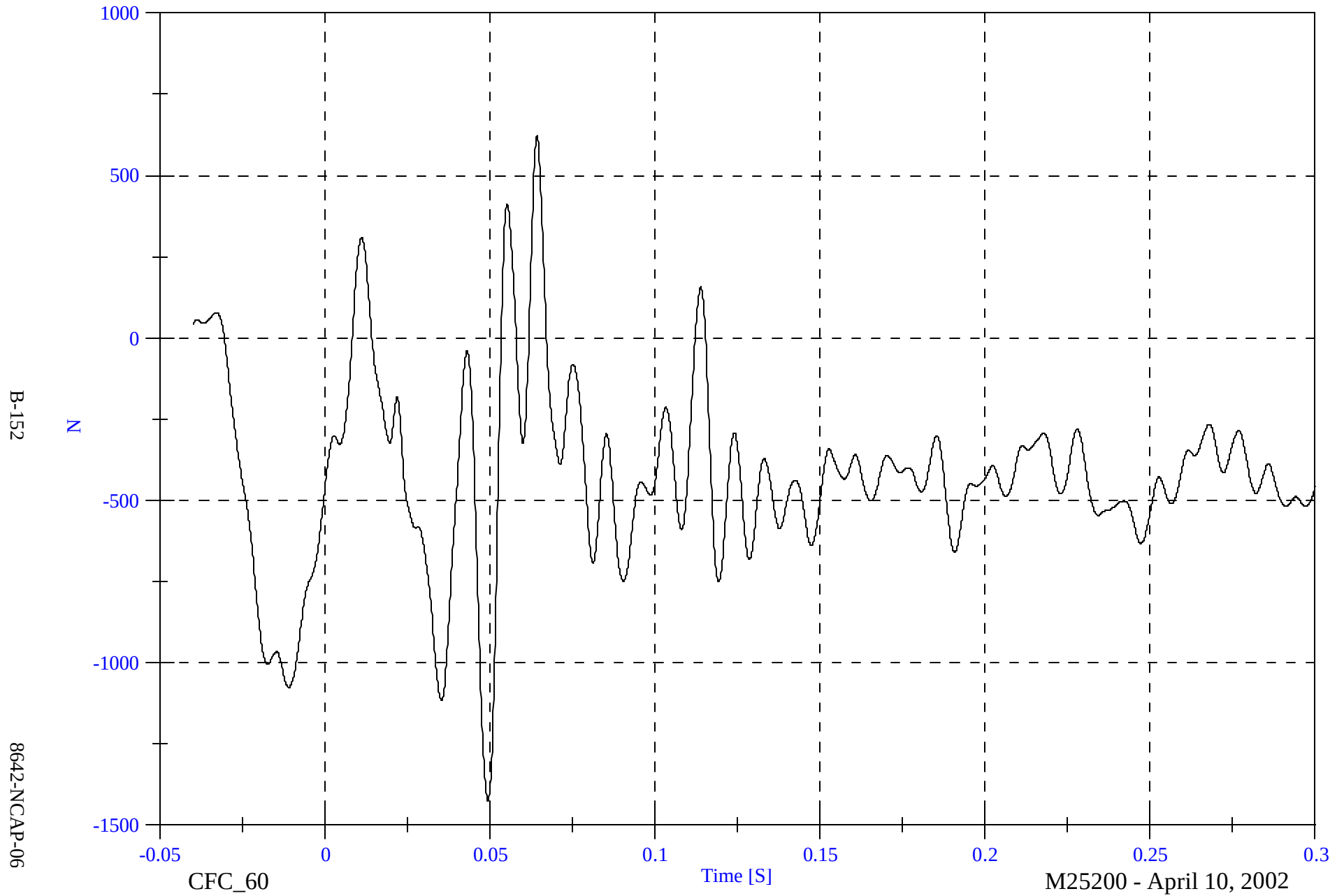


NCAP Test 6 - 2002 Nissan Altima

Barrier Load Cell B9 Fx

Max: 620.9 [N] at 0.064 [S]

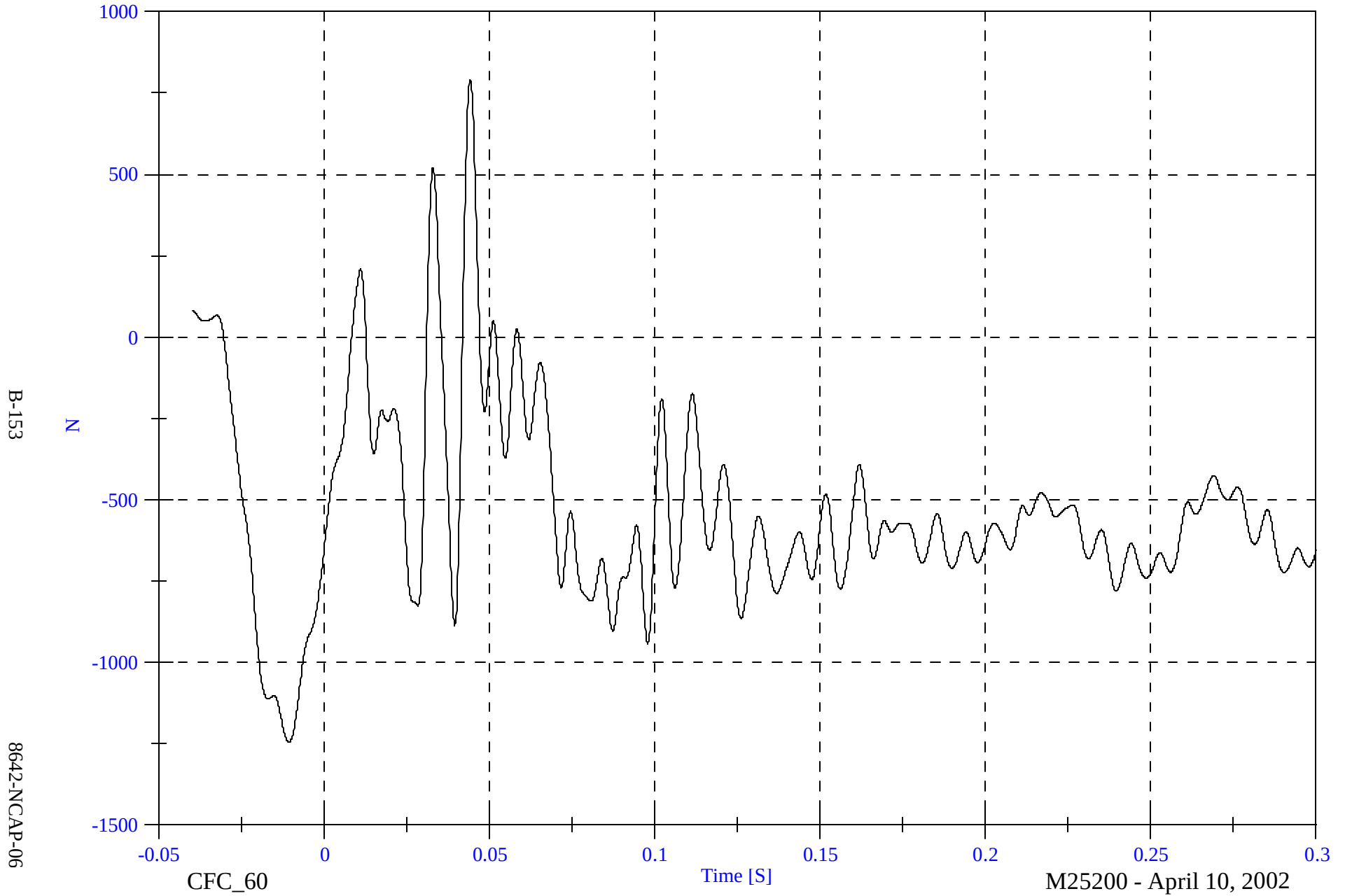
Min: -1423.0 [N] at 0.049 [S]



NCAP Test 6 - 2002 Nissan Altima

Barrier Load Cell C1 Fx

Max: 791.5 [N] at 0.044 [S]
Min: -1244.4 [N] at -0.011 [S]

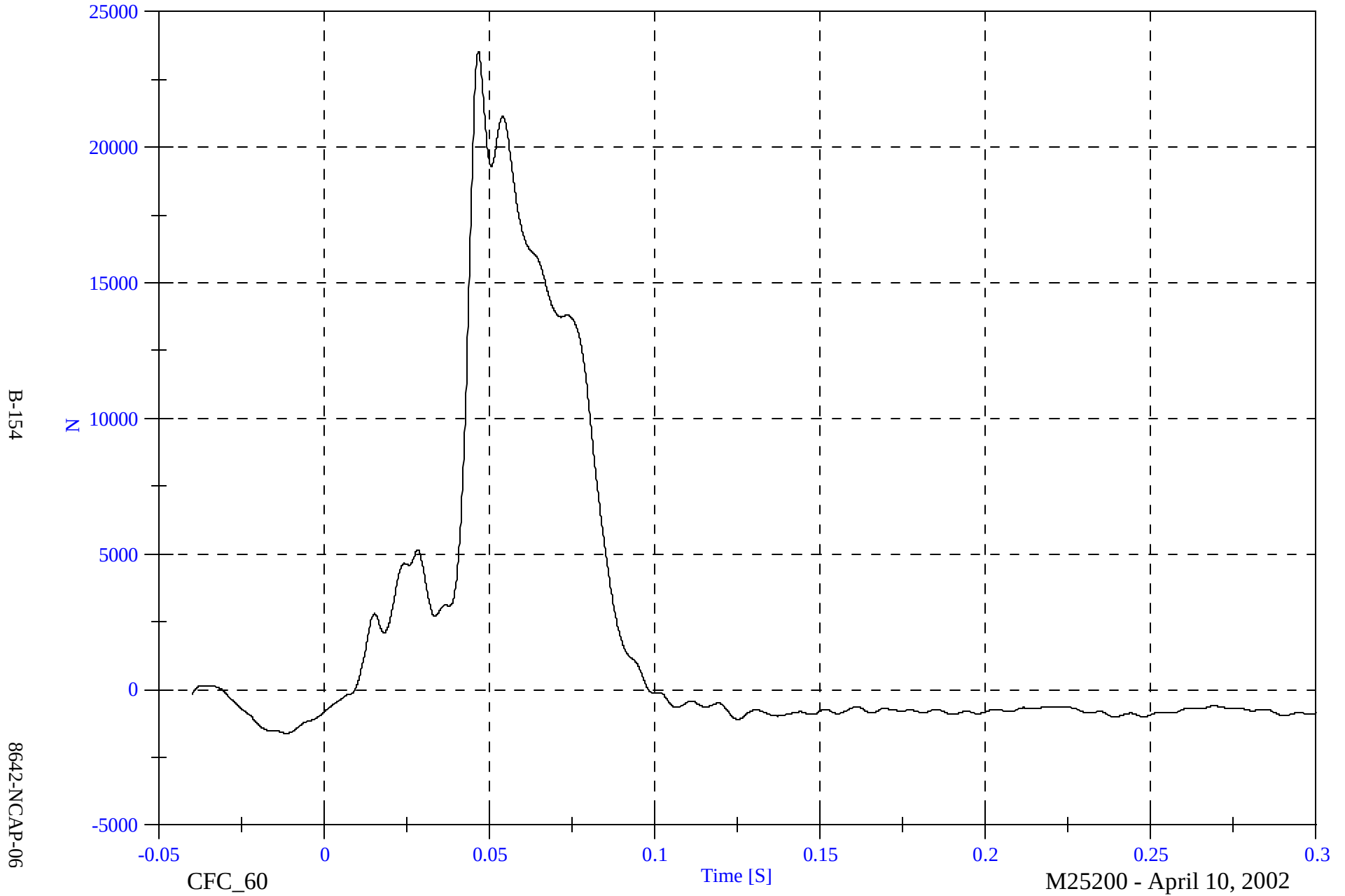


NCAP Test 6 - 2002 Nissan Altima

Barrier Load Cell C2 Fx

Max: 23543.2 [N] at 0.047 [S]

Min: -1604.0 [N] at -0.012 [S]

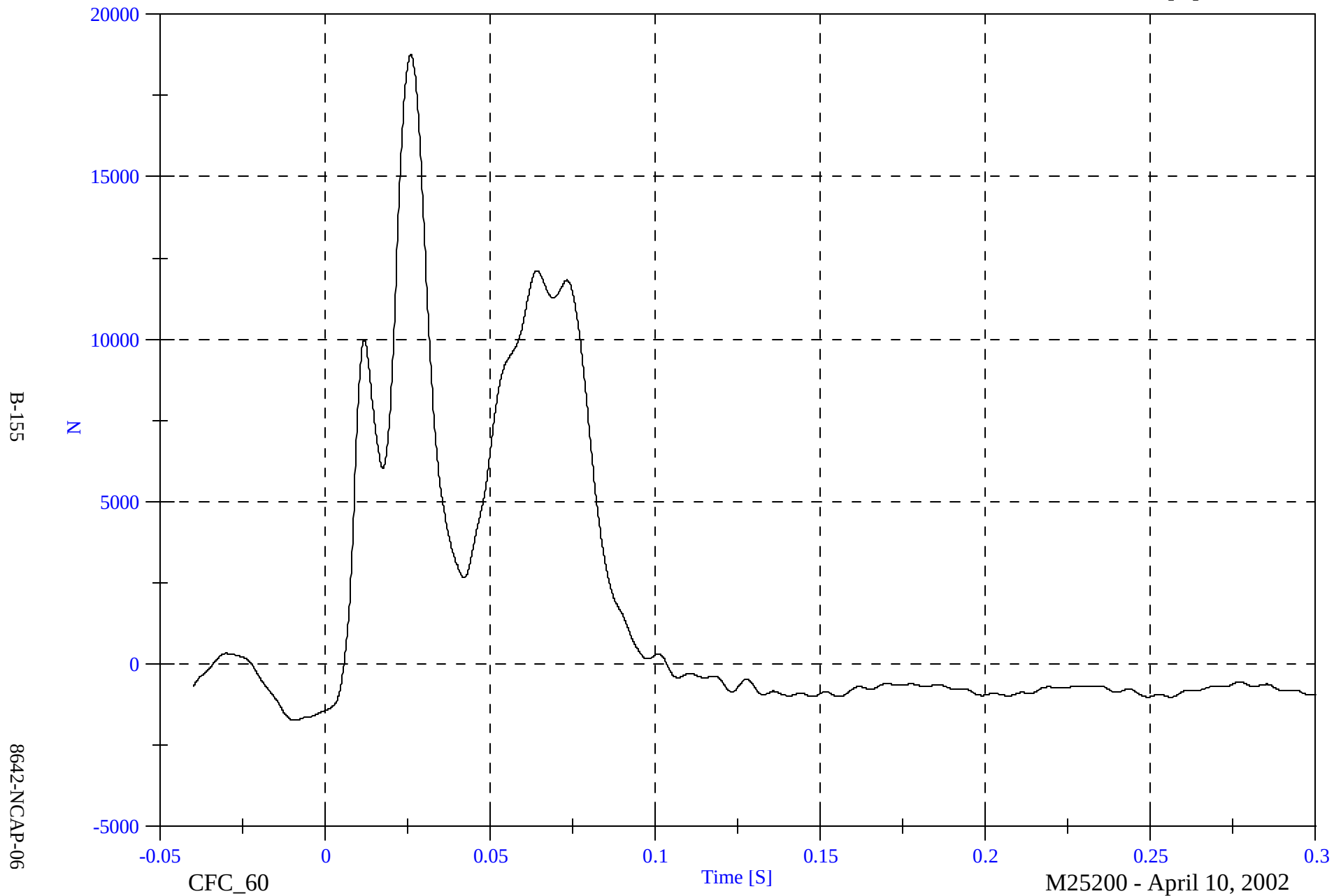


NCAP Test 6 - 2002 Nissan Altima

Barrier Load Cell C3 Fx

Max: 18763.4 [N] at 0.026 [S]

Min: -1723.4 [N] at -0.009 [S]

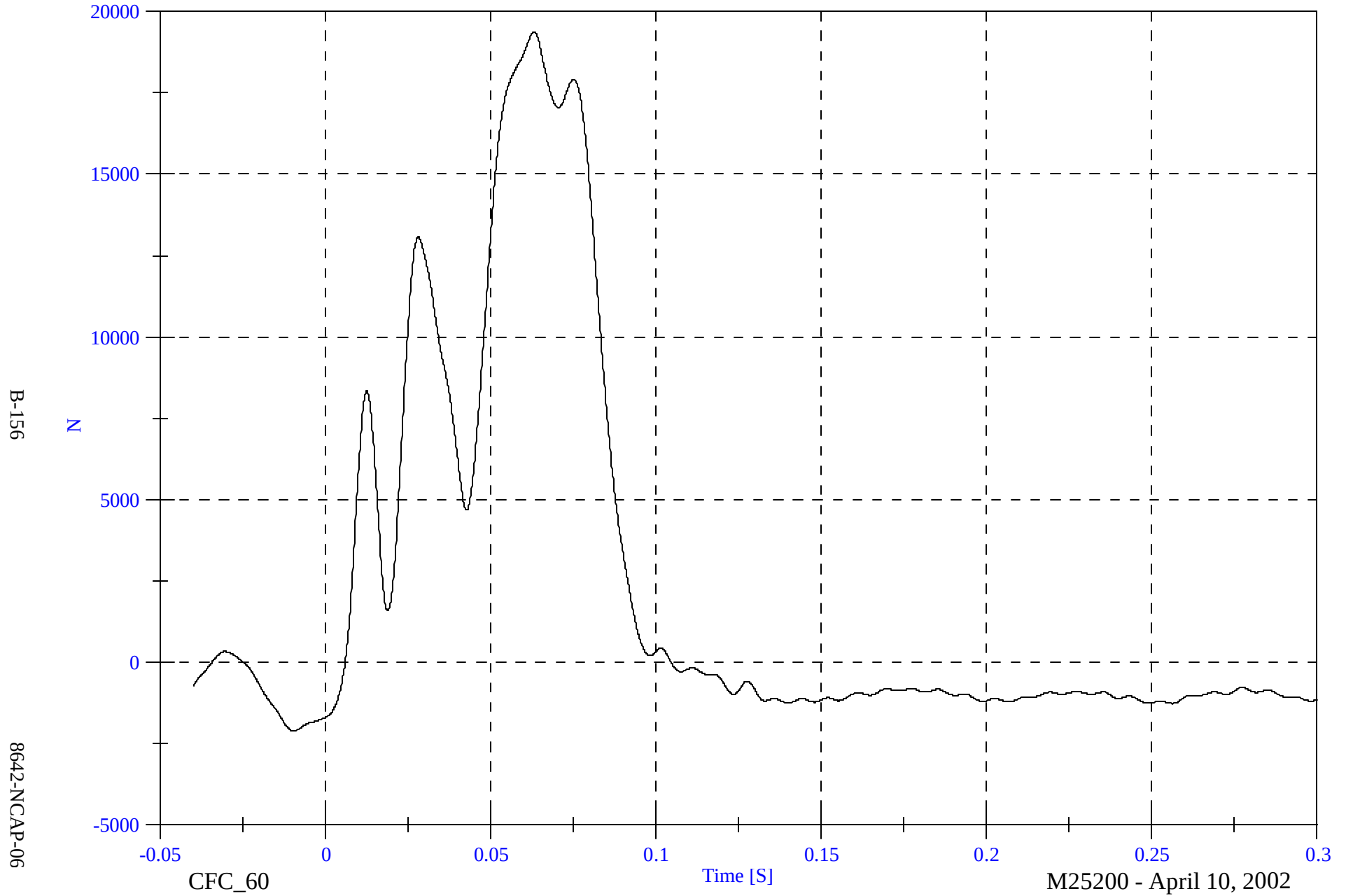


NCAP Test 6 - 2002 Nissan Altima

Barrier Load Cell C4 Fx

Max: 19384.7 [N] at 0.063 [S]

Min: -2094.3 [N] at -0.010 [S]

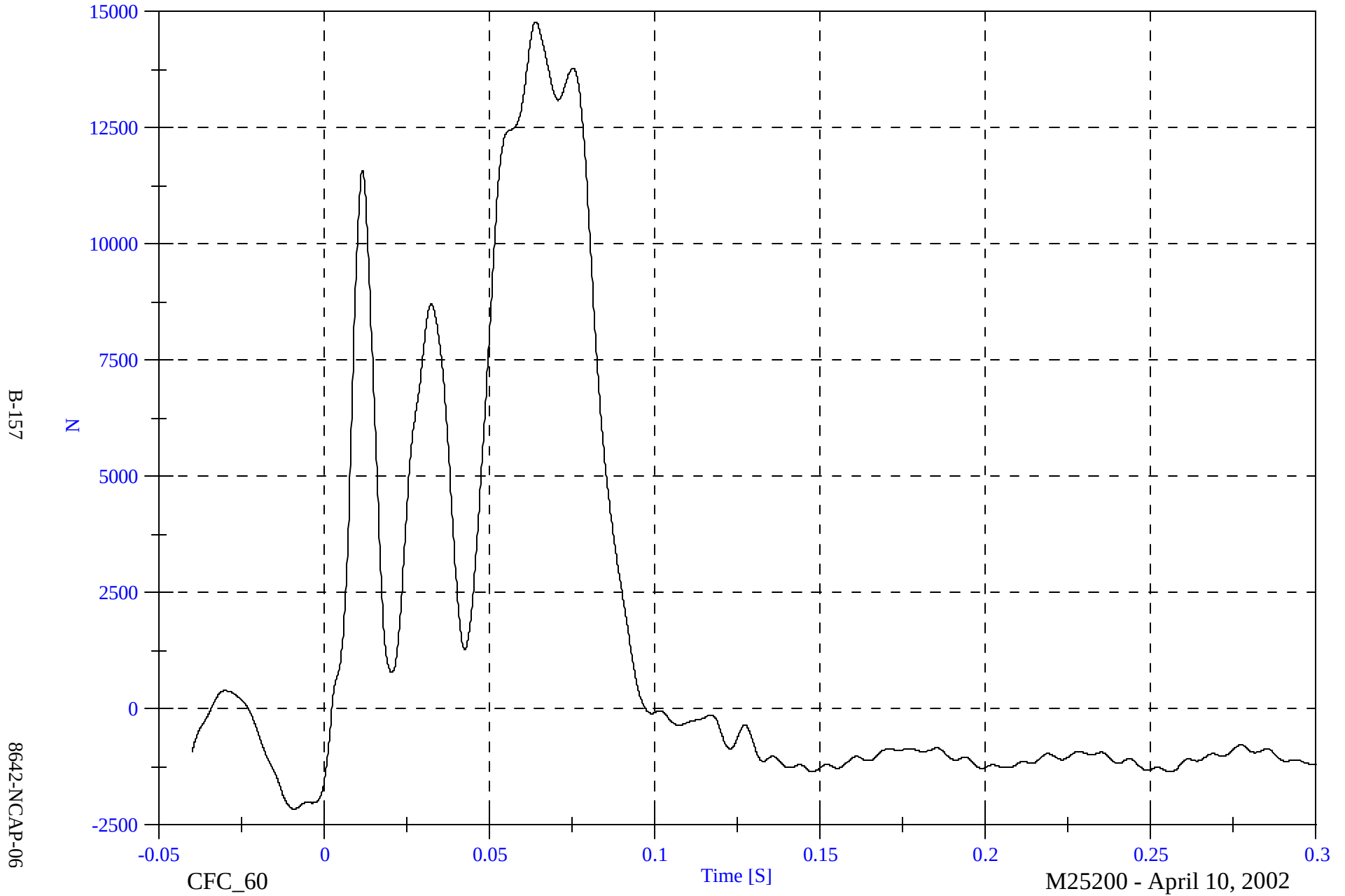


NCAP Test 6 - 2002 Nissan Altima

Barrier Load Cell C5 Fx

Max: 14783.9 [N] at 0.064 [S]

Min: -2149.8 [N] at -0.009 [S]

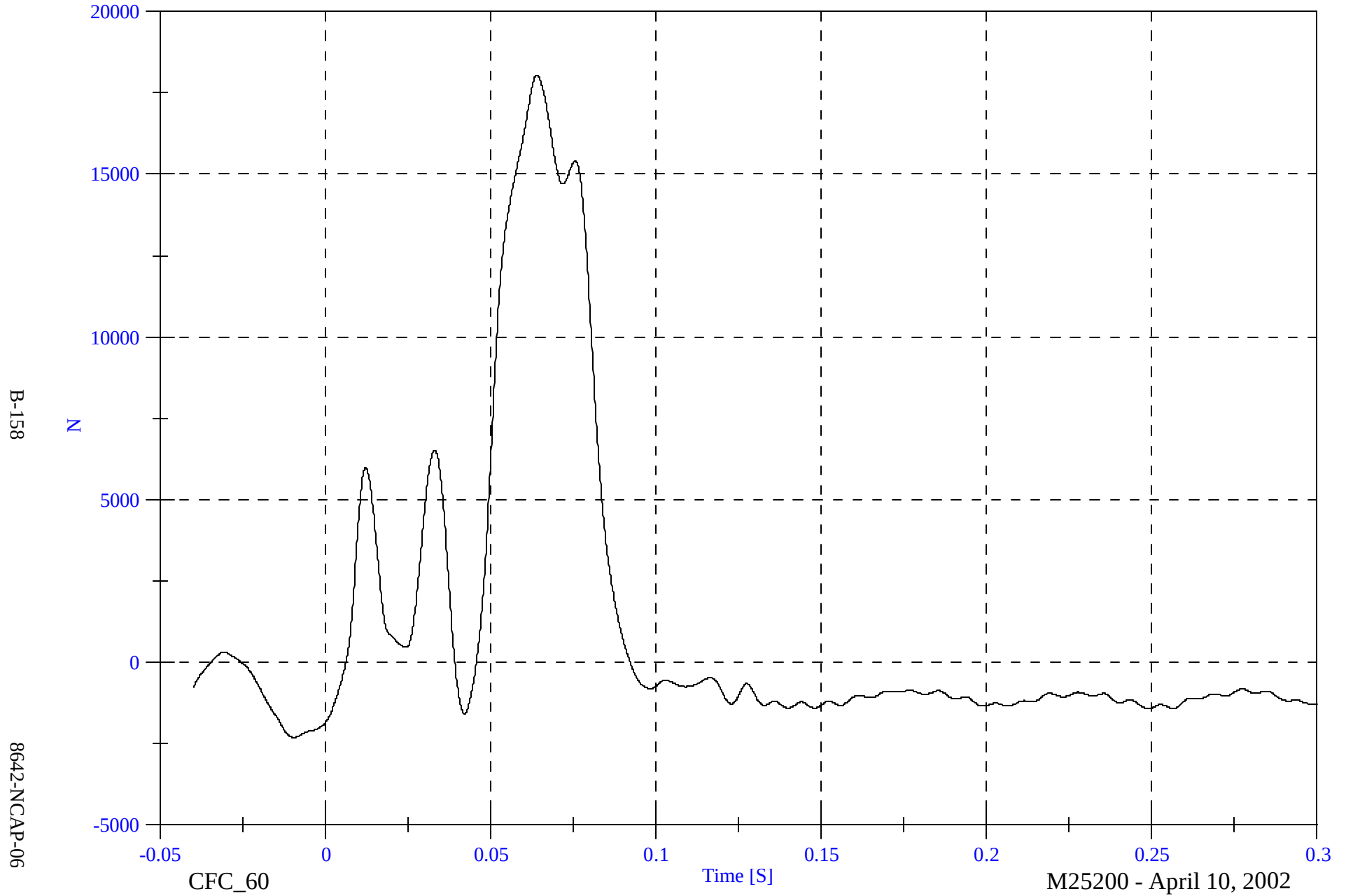


NCAP Test 6 - 2002 Nissan Altima

Barrier Load Cell C6 Fx

Max: 18049.5 [N] at 0.064 [S]

Min: -2300.0 [N] at -0.010 [S]

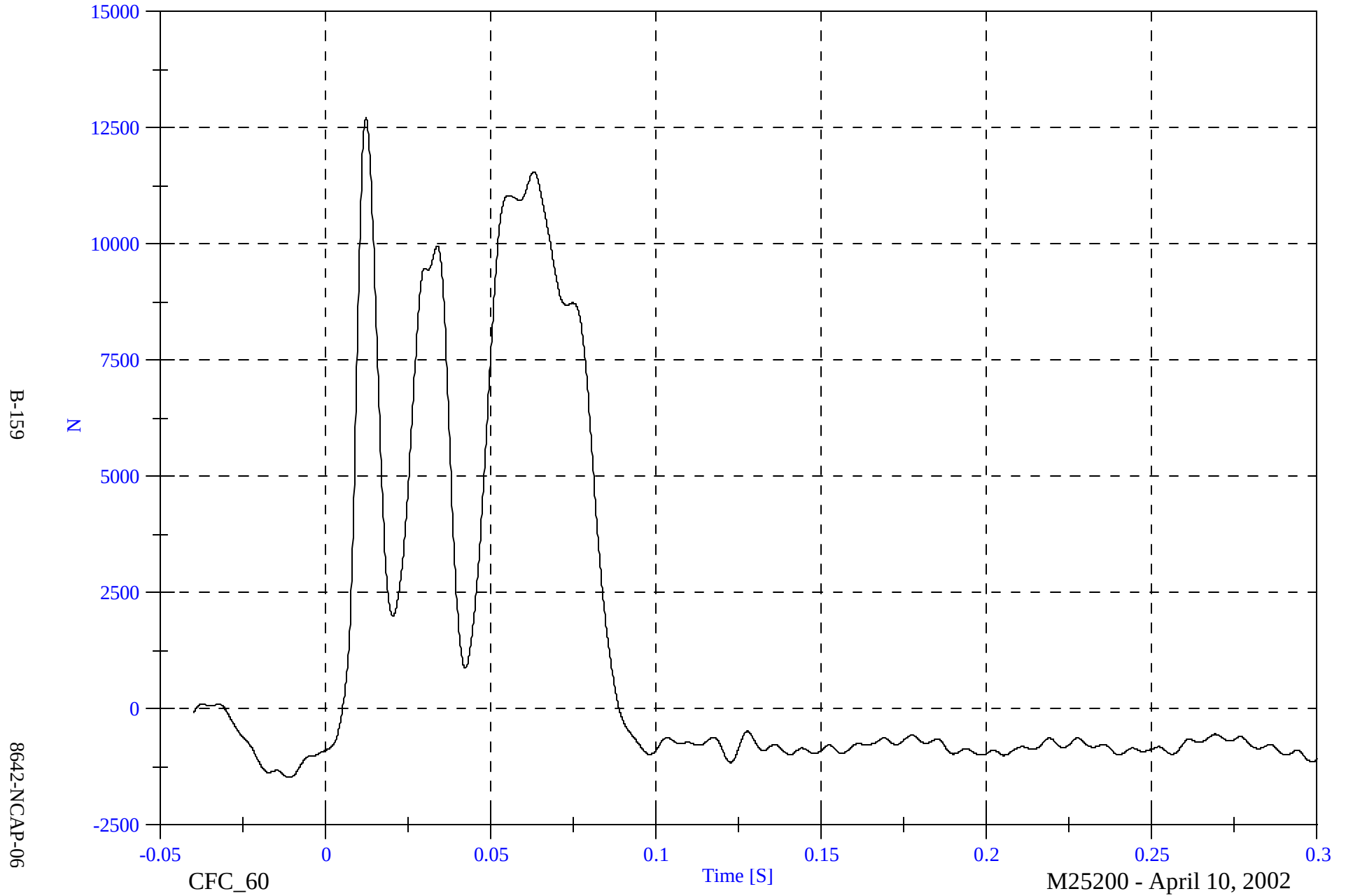


NCAP Test 6 - 2002 Nissan Altima

Barrier Load Cell C7 Fx

Max: 12708.7 [N] at 0.012 [S]

Min: -1472.5 [N] at -0.011 [S]

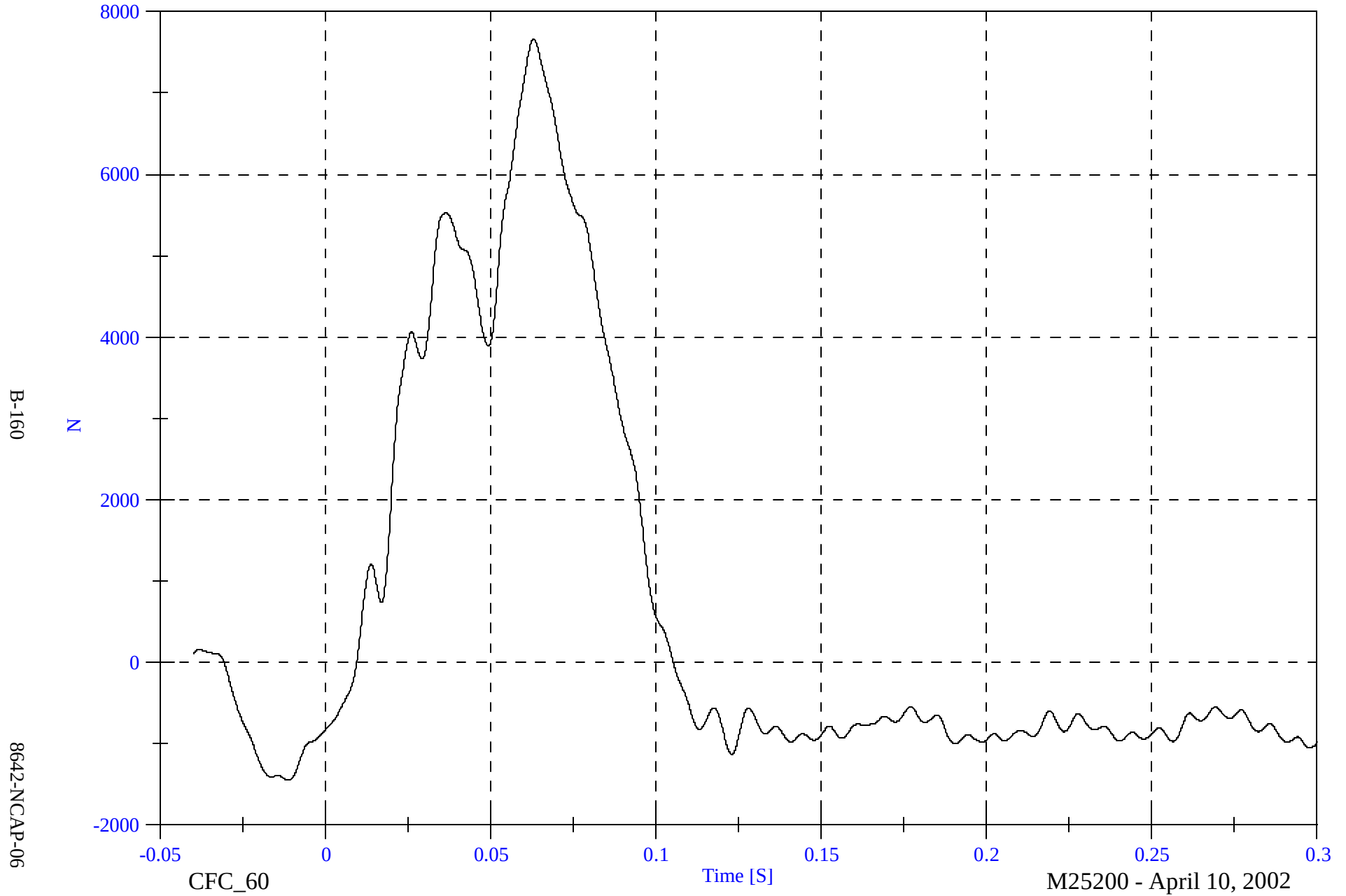


NCAP Test 6 - 2002 Nissan Altima

Barrier Load Cell C8 Fx

Max: 7666.6 [N] at 0.063 [S]

Min: -1446.0 [N] at -0.011 [S]



NCAP Test 6 - 2002 Nissan Altima

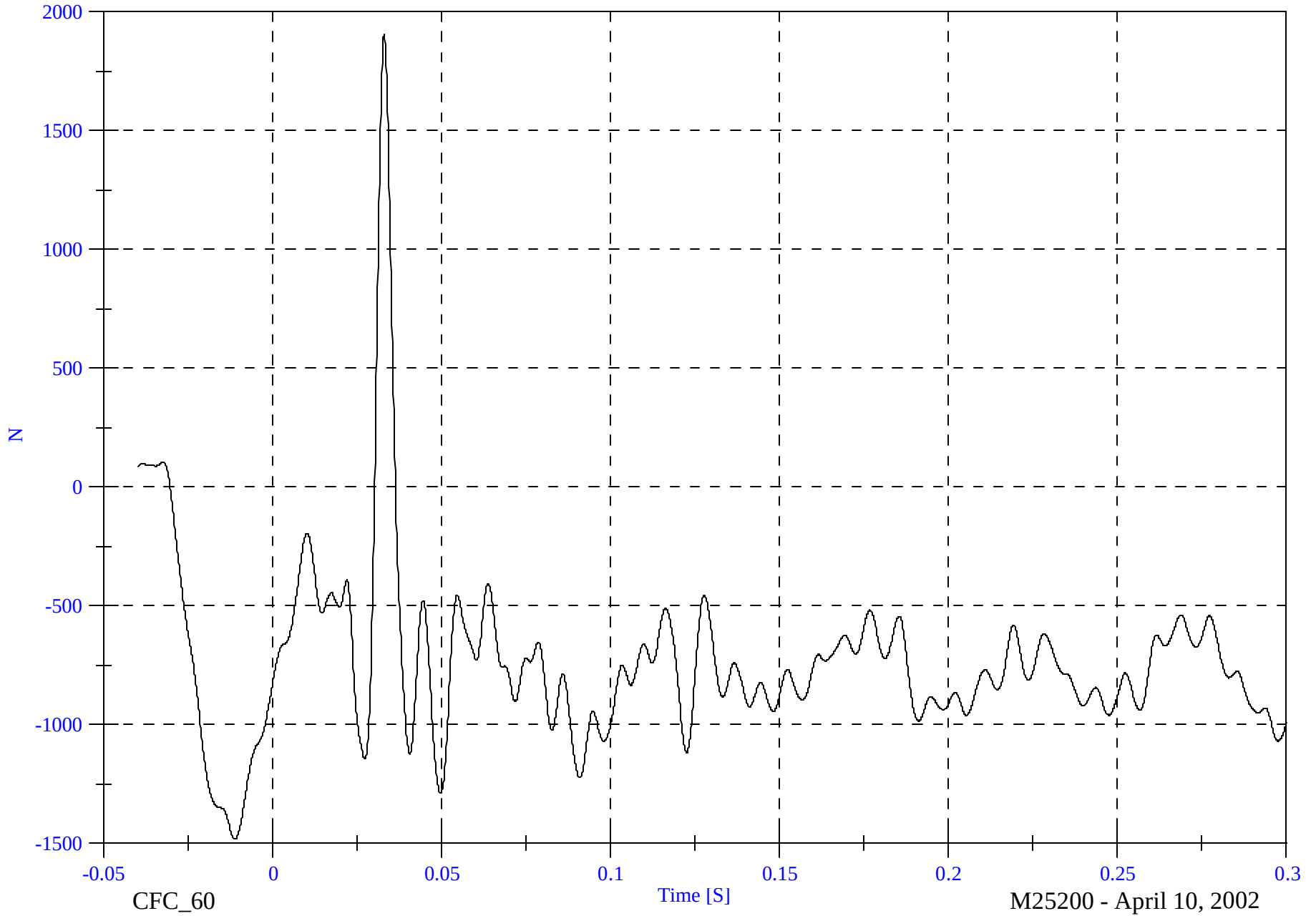
Barrier Load Cell C9 Fx

Max: 1903.1 [N] at 0.033 [S]

Min: -1480.4 [N] at -0.011 [S]

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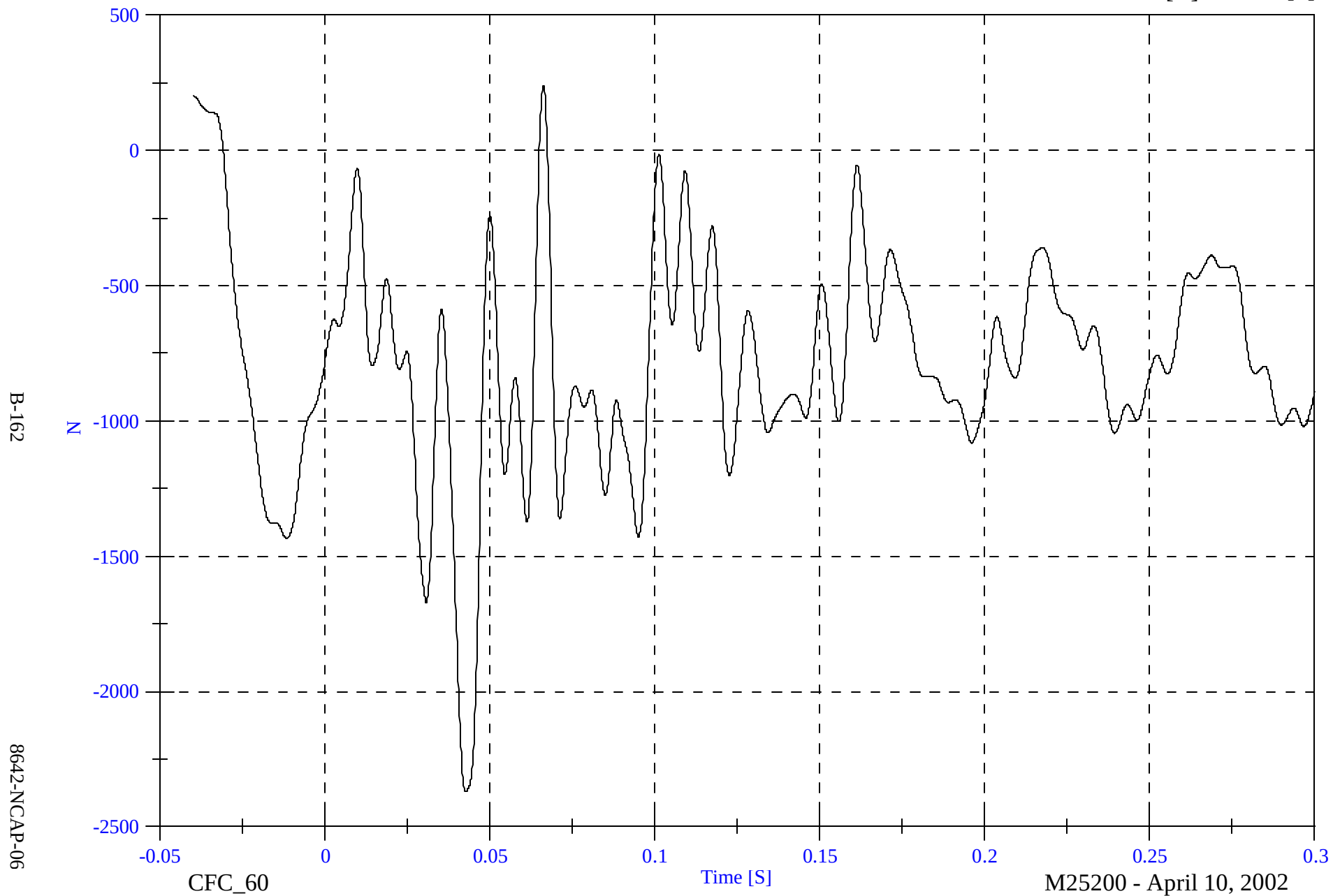


NCAP Test 6 - 2002 Nissan Altima

Max: 238.7 [N] at 0.066 [S]

Min: -2370.5 [N] at 0.043 [S]

Barrier Load Cell D1 Fx

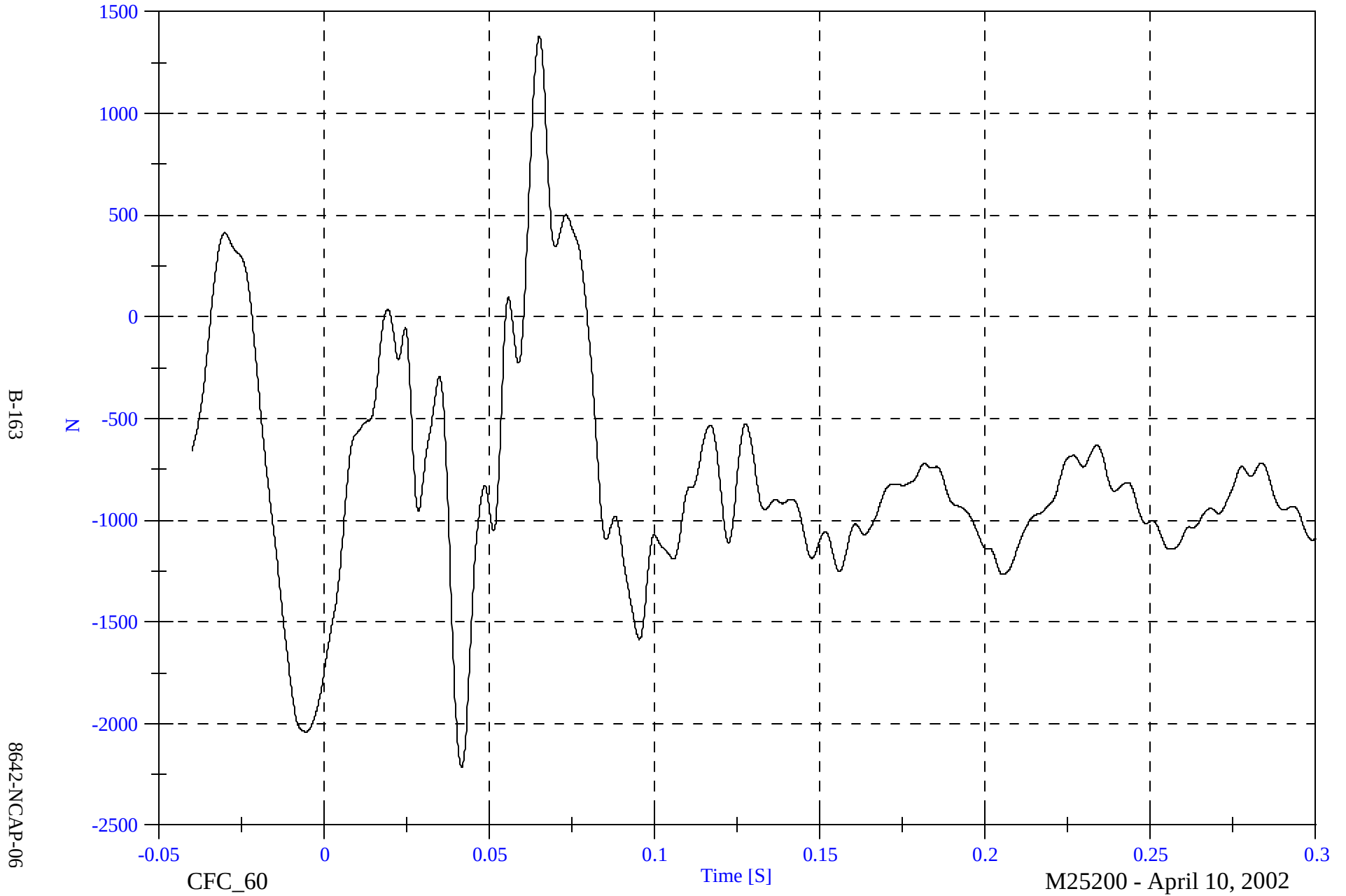


NCAP Test 6 - 2002 Nissan Altima

Barrier Load Cell D2 Fx

Max: 1380.0 [N] at 0.065 [S]

Min: -2216.3 [N] at 0.042 [S]

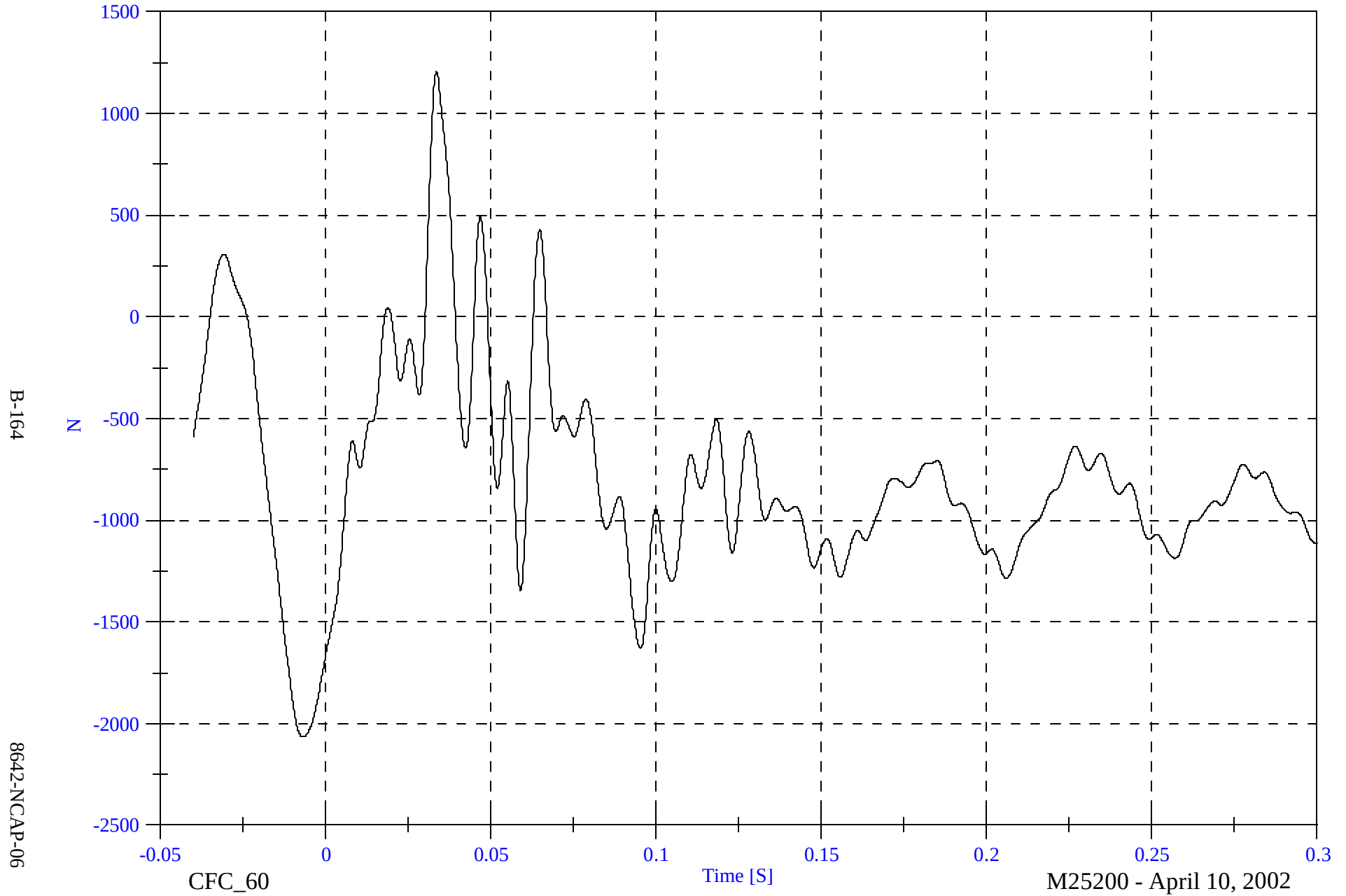


NCAP Test 6 - 2002 Nissan Altima

Barrier Load Cell D3 Fx

Max: 1203.9 [N] at 0.034 [S]

Min: -2065.4 [N] at -0.007 [S]

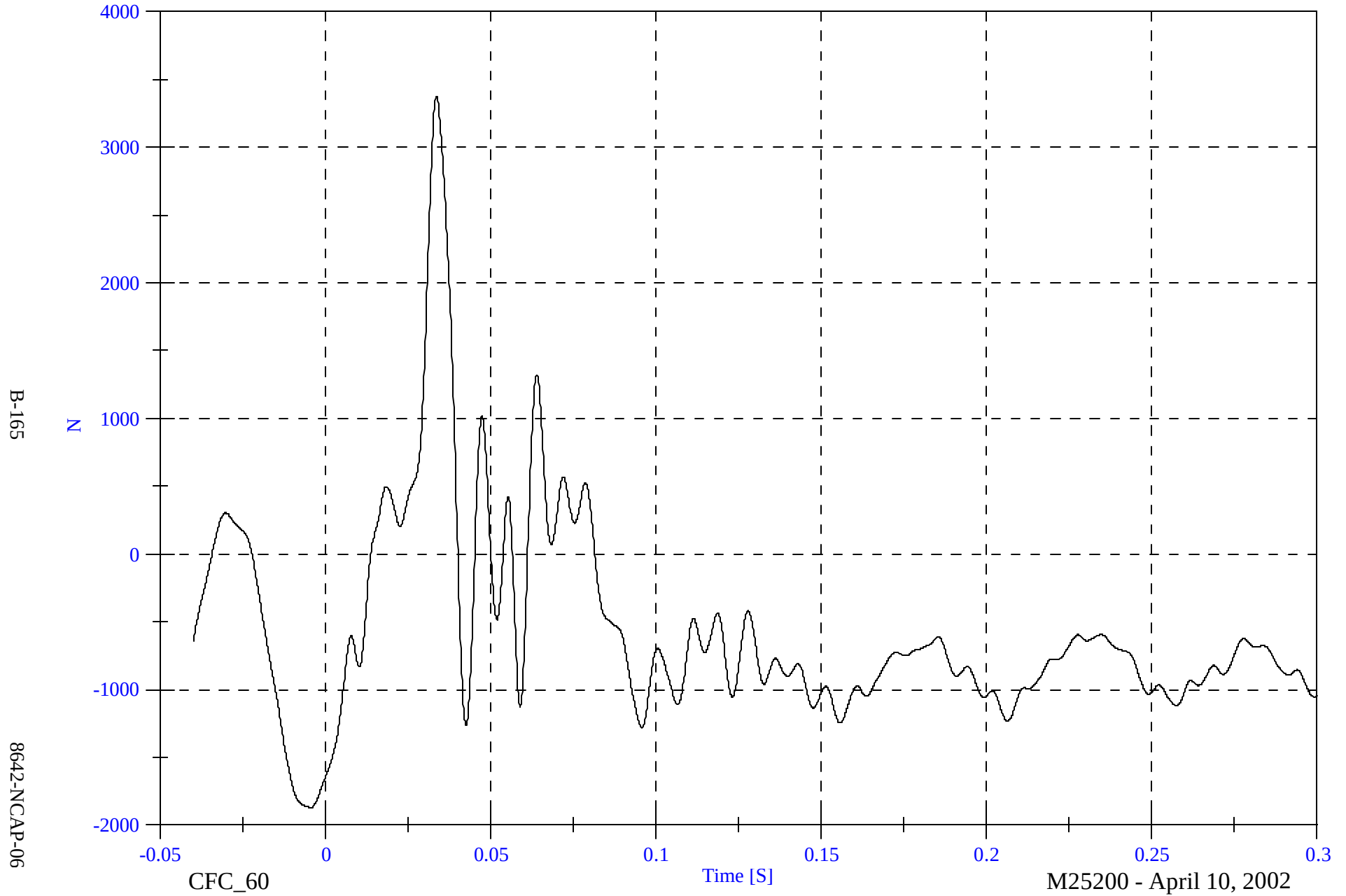


NCAP Test 6 - 2002 Nissan Altima

Barrier Load Cell D4 Fx

Max: 3374.9 [N] at 0.034 [S]

Min: -1871.2 [N] at -0.005 [S]

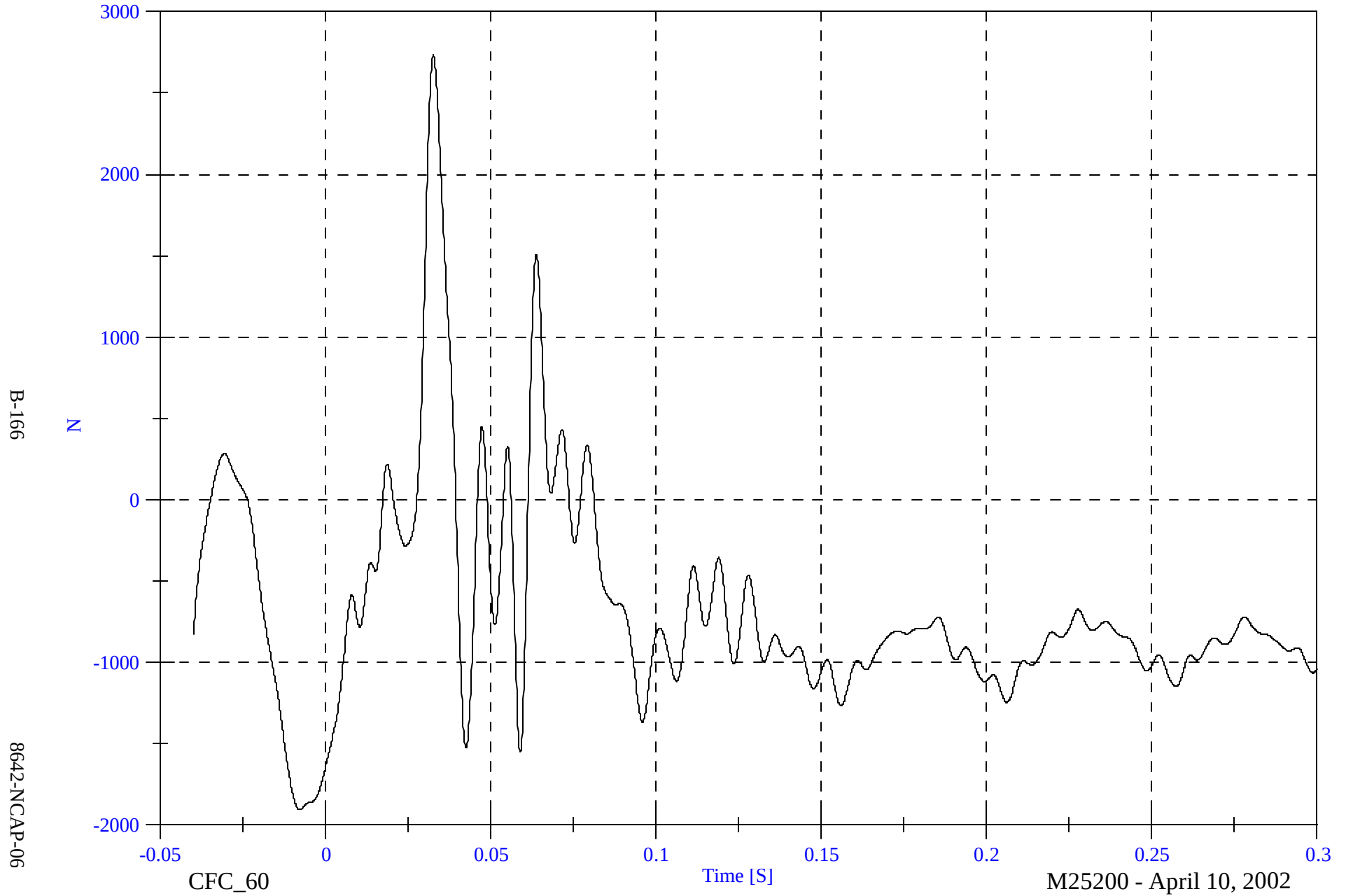


NCAP Test 6 - 2002 Nissan Altima

Barrier Load Cell D5 Fx

Max: 2734.8 [N] at 0.033 [S]

Min: -1905.2 [N] at -0.008 [S]

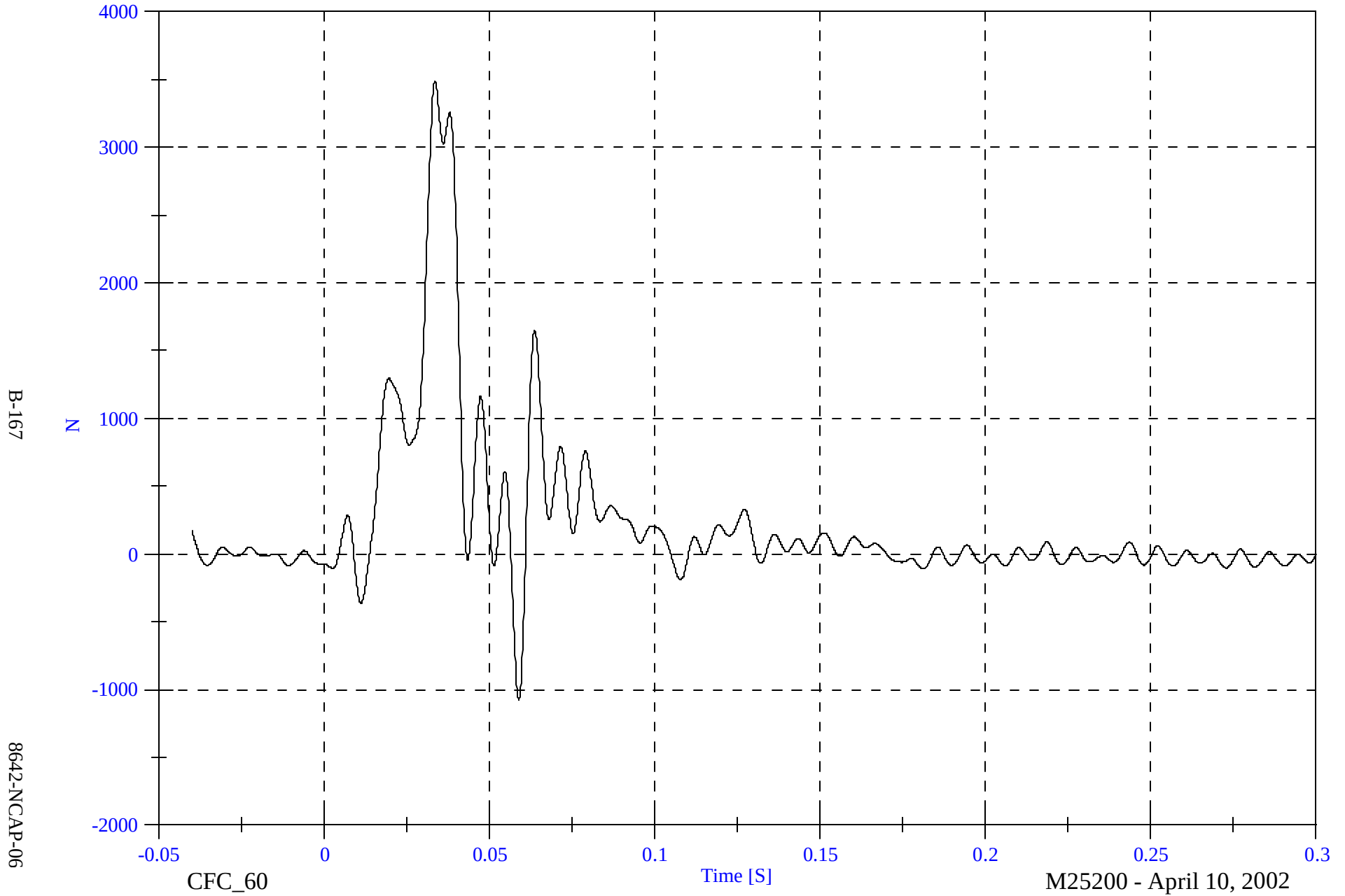


NCAP Test 6 - 2002 Nissan Altima

Barrier Load Cell D6 Fx

Max: 3486.5 [N] at 0.033 [S]

Min: -1074.1 [N] at 0.059 [S]

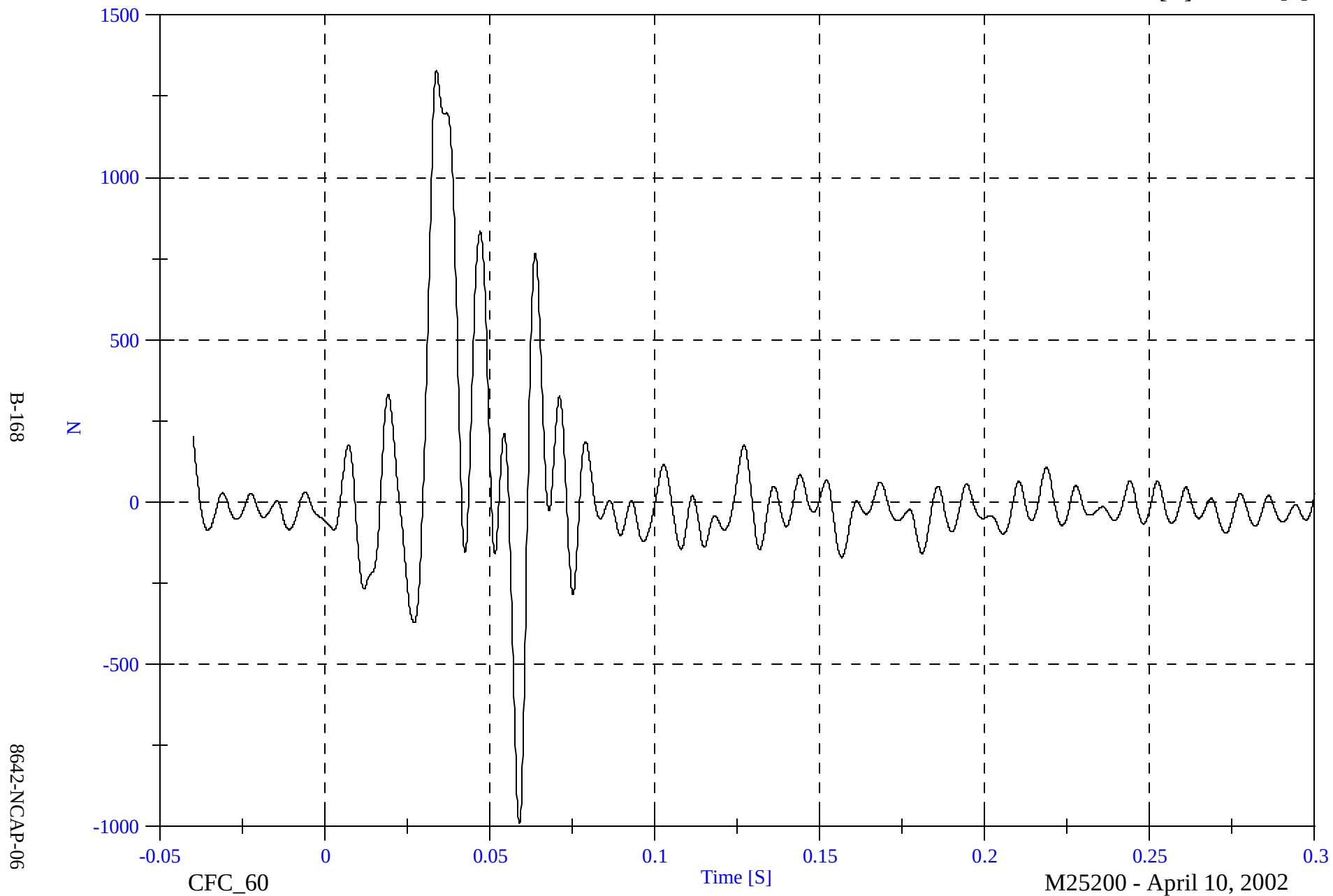


NCAP Test 6 - 2002 Nissan Altima

Barrier Load Cell D7 Fx

Max: 1329.6 [N] at 0.034 [S]

Min: -989.5 [N] at 0.059 [S]

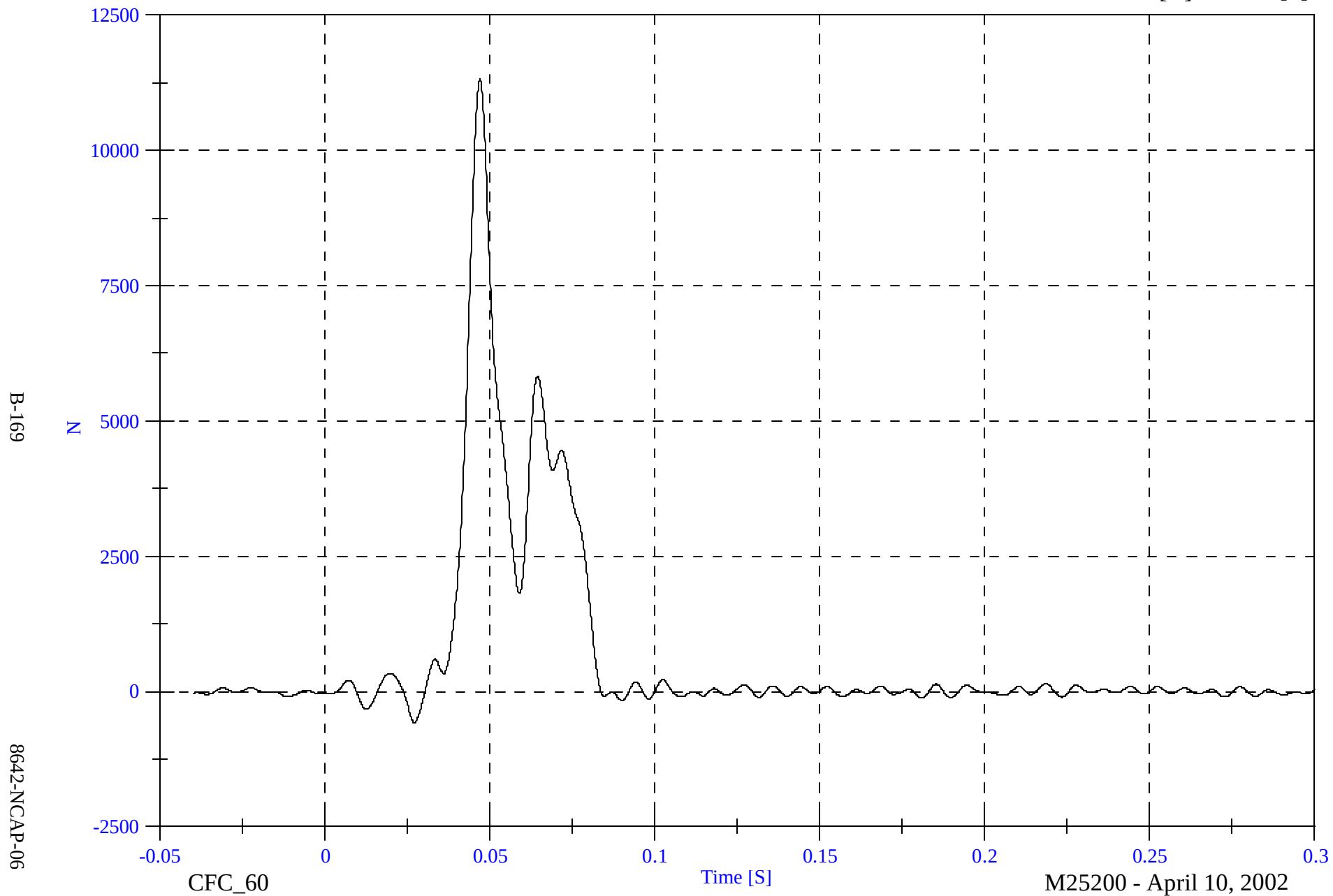


NCAP Test 6 - 2002 Nissan Altima

Barrier Load Cell D8 Fx

Max: 11320.6 [N] at 0.047 [S]

Min: -574.0 [N] at 0.027 [S]

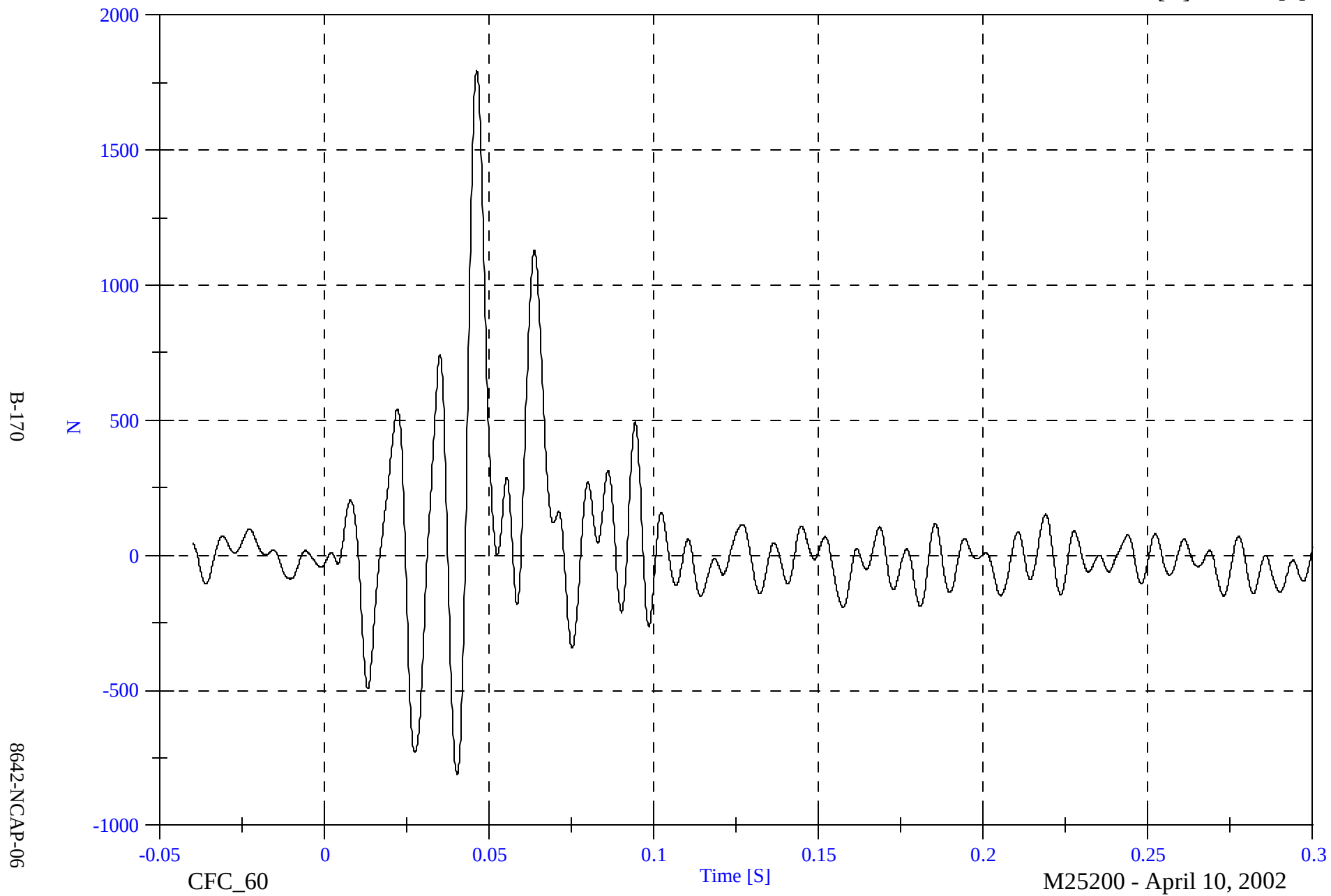


NCAP Test 6 - 2002 Nissan Altima

Barrier Load Cell D9 Fx

Max: 1792.9 [N] at 0.046 [S]

Min: -811.7 [N] at 0.040 [S]

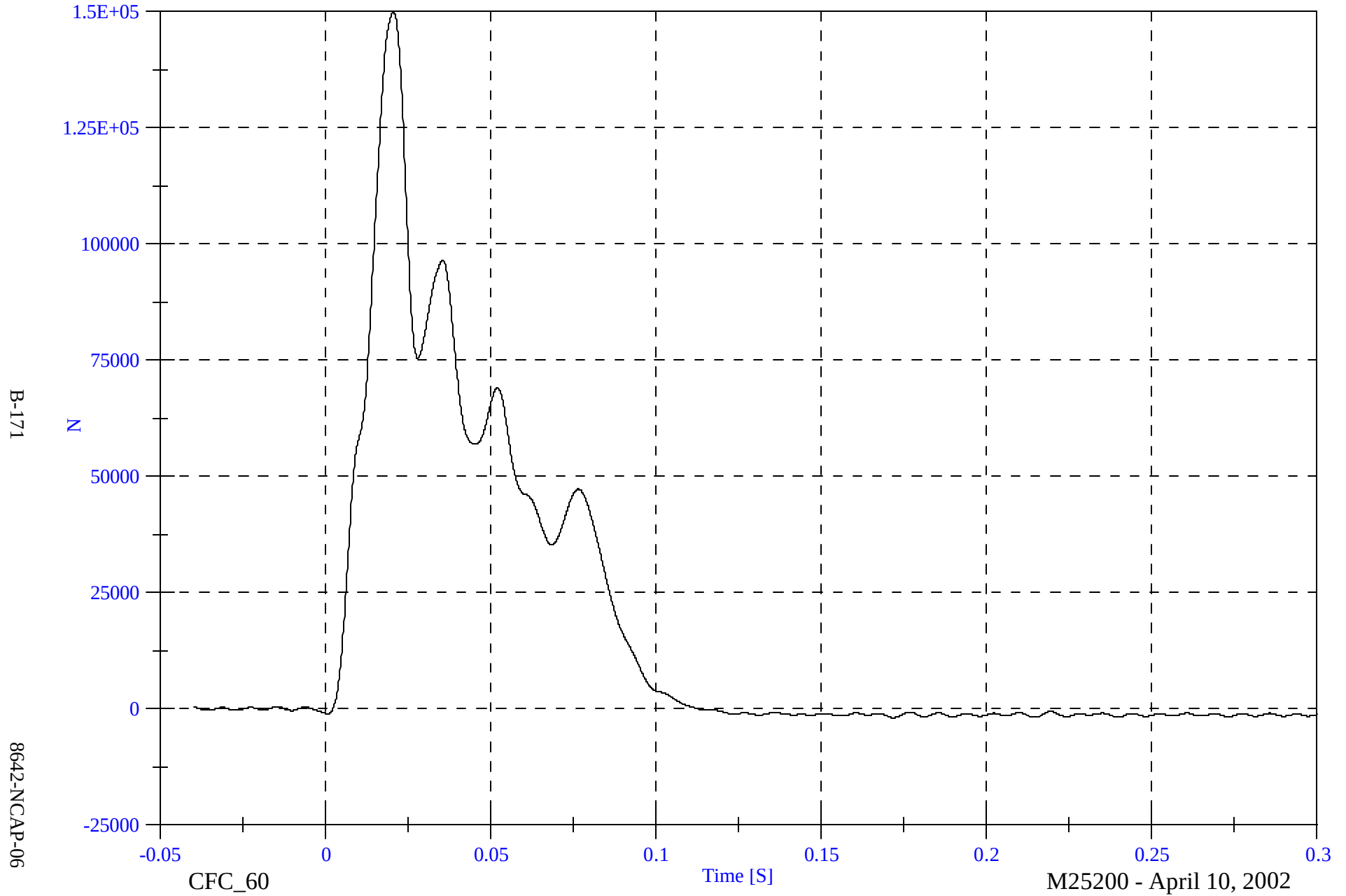


NCAP Test 6 - 2002 Nissan Altima

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

Max: 149869.5 [N] at 0.020 [S]

Min: -1868.9 [N] at 0.172 [S]

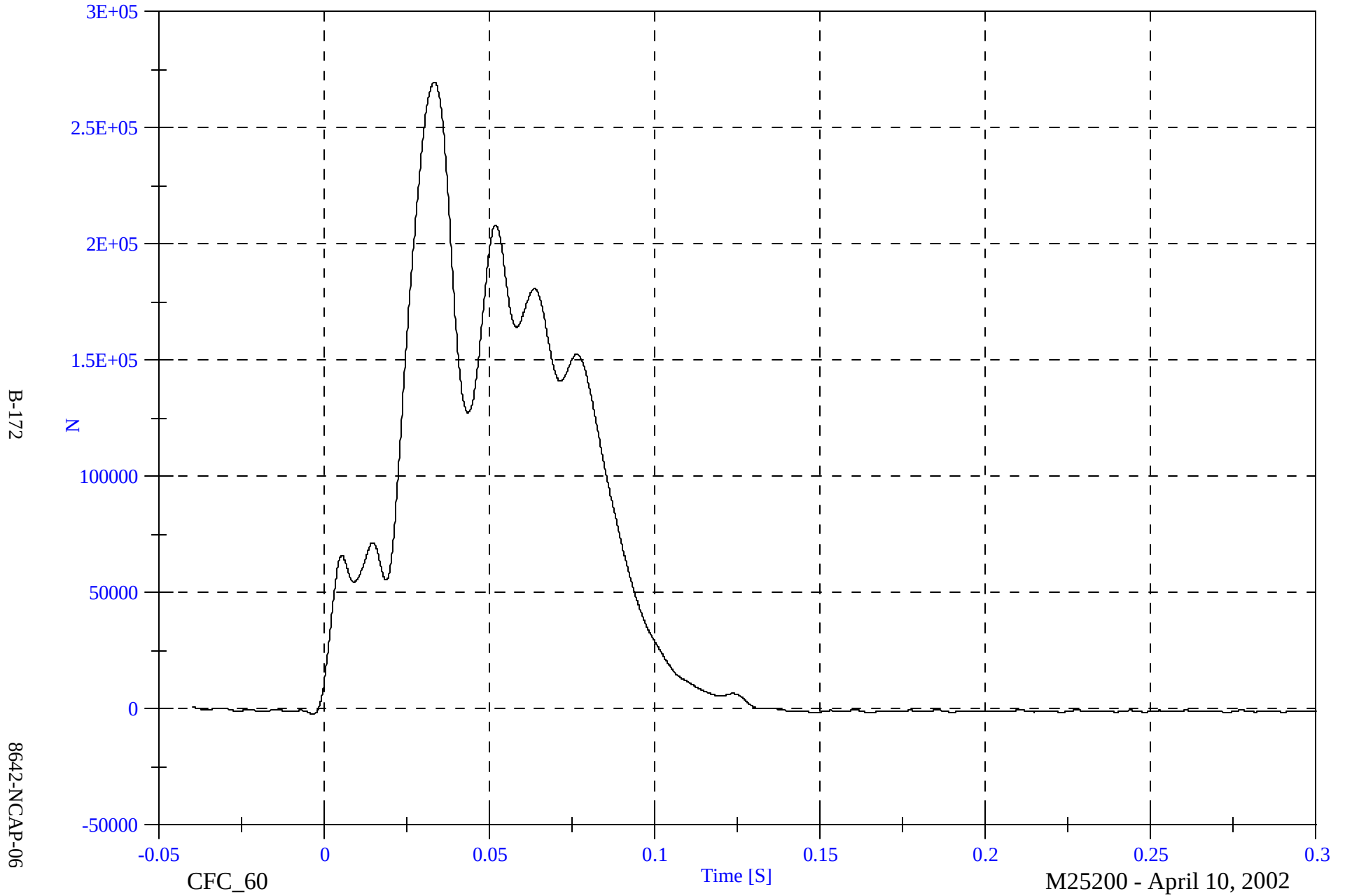


NCAP Test 6 - 2002 Nissan Altima

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

Max: 269603.4 [N] at 0.033 [S]

Min: -2076.9 [N] at -0.003 [S]

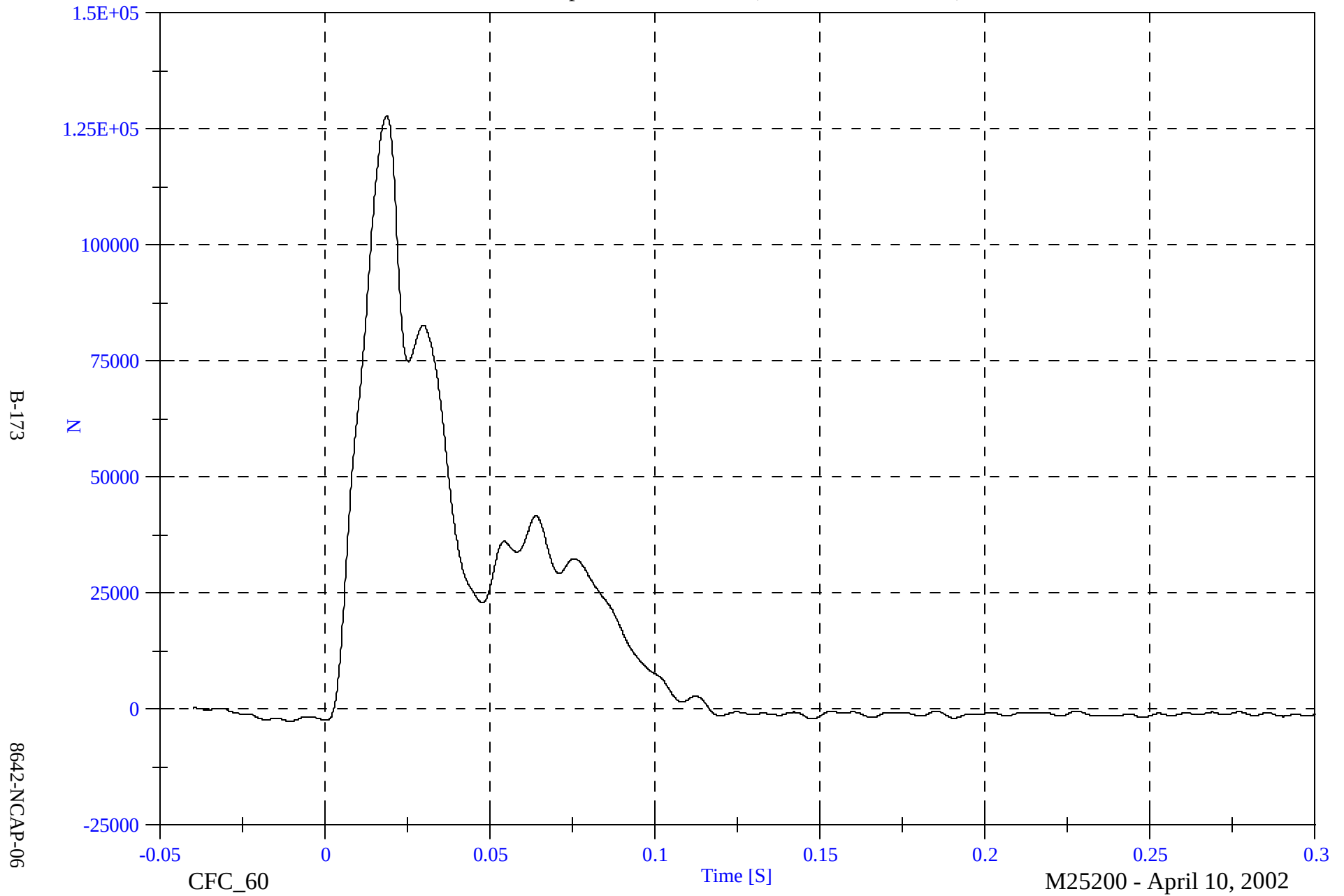


NCAP Test 6 - 2002 Nissan Altima

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

Max: 127733.7 [N] at 0.019 [S]

Min: -2545.9 [N] at -0.011 [S]

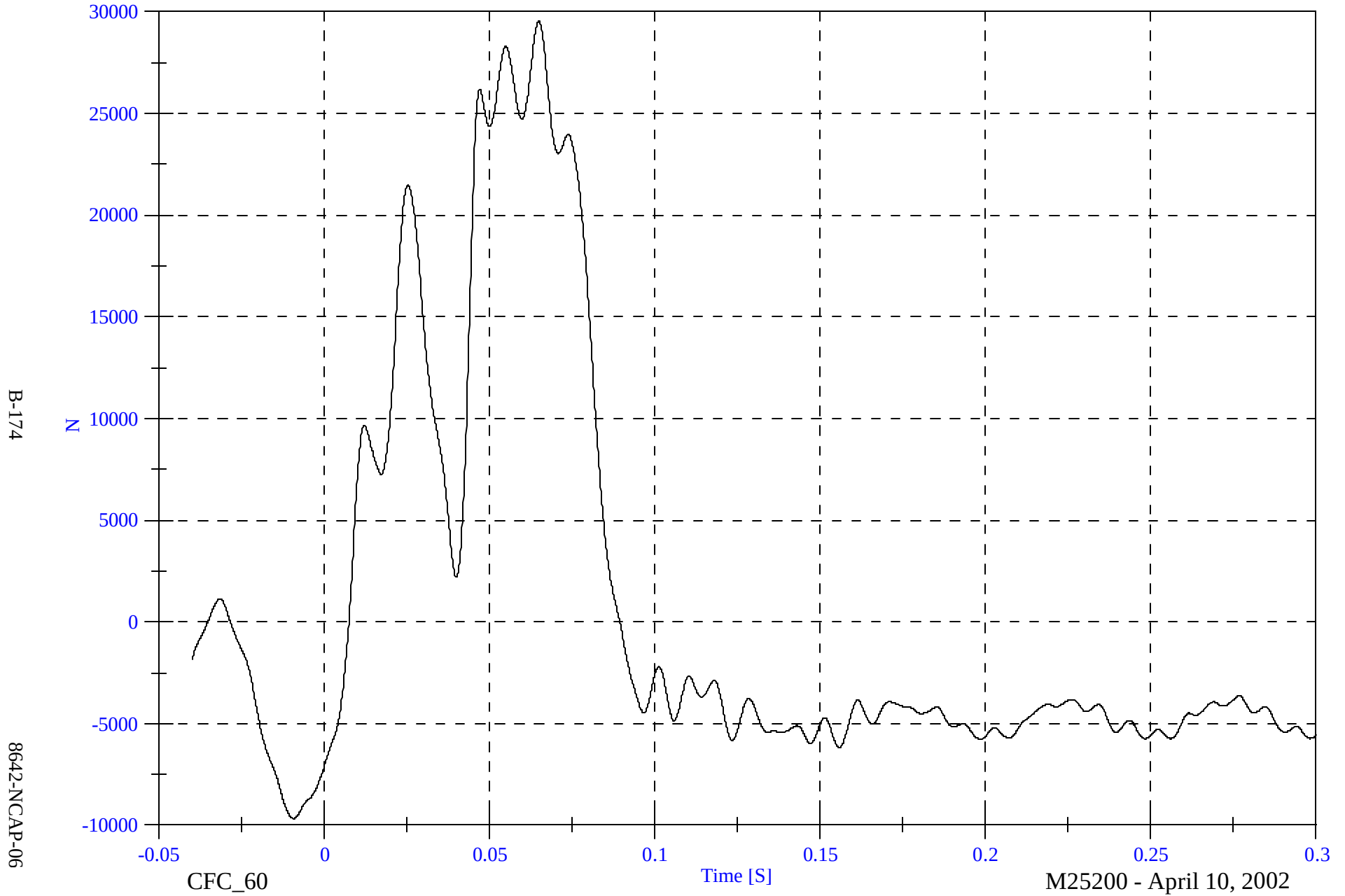


NCAP Test 6 - 2002 Nissan Altima

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

Max: 29552.3 [N] at 0.065 [S]

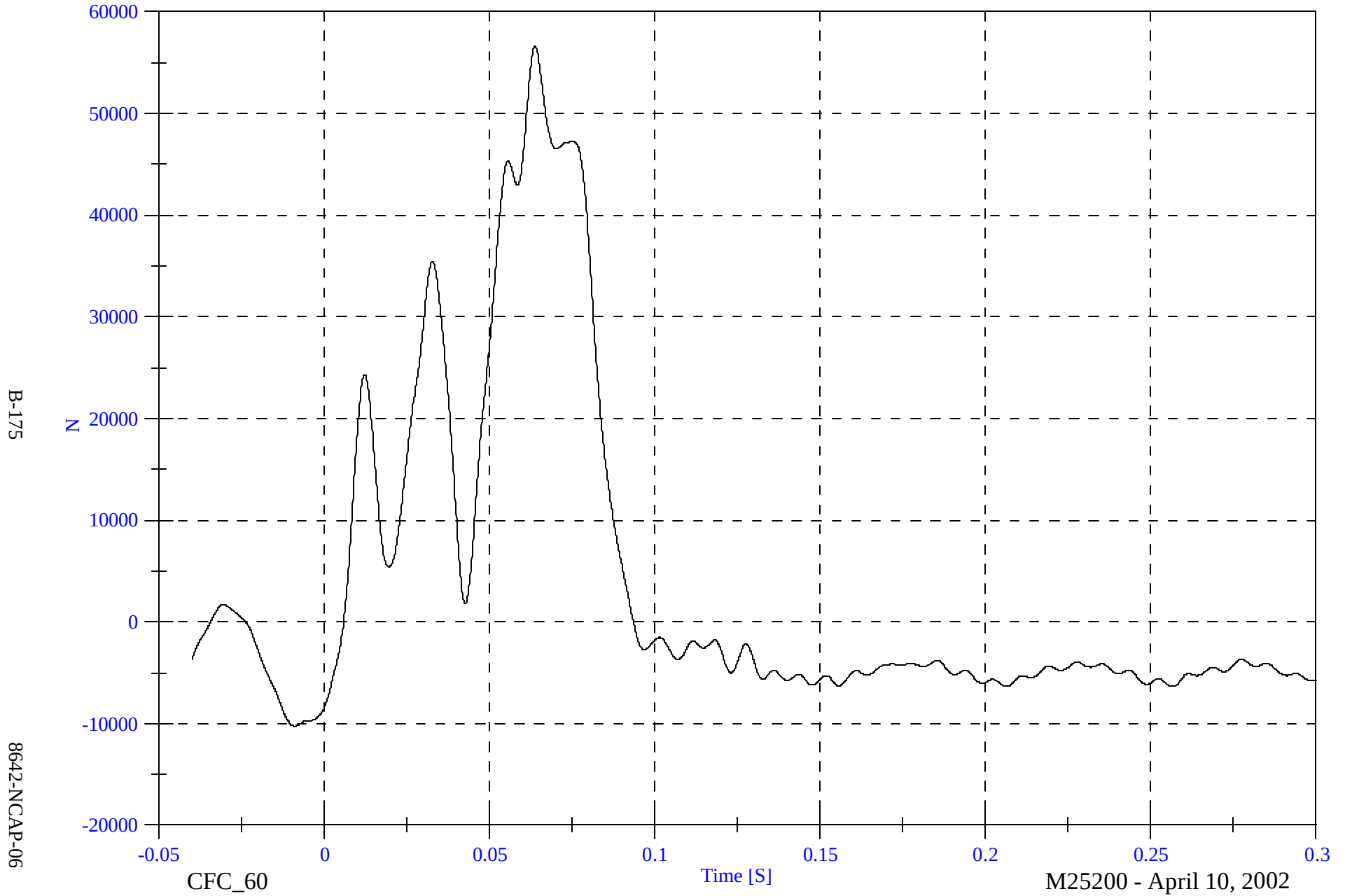
Min: -9673.1 [N] at -0.009 [S]



NCAP Test 6 - 2002 Nissan Altima

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

Max: 56599.3 [N] at 0.064 [S]
Min: -10253.2 [N] at -0.009 [S]

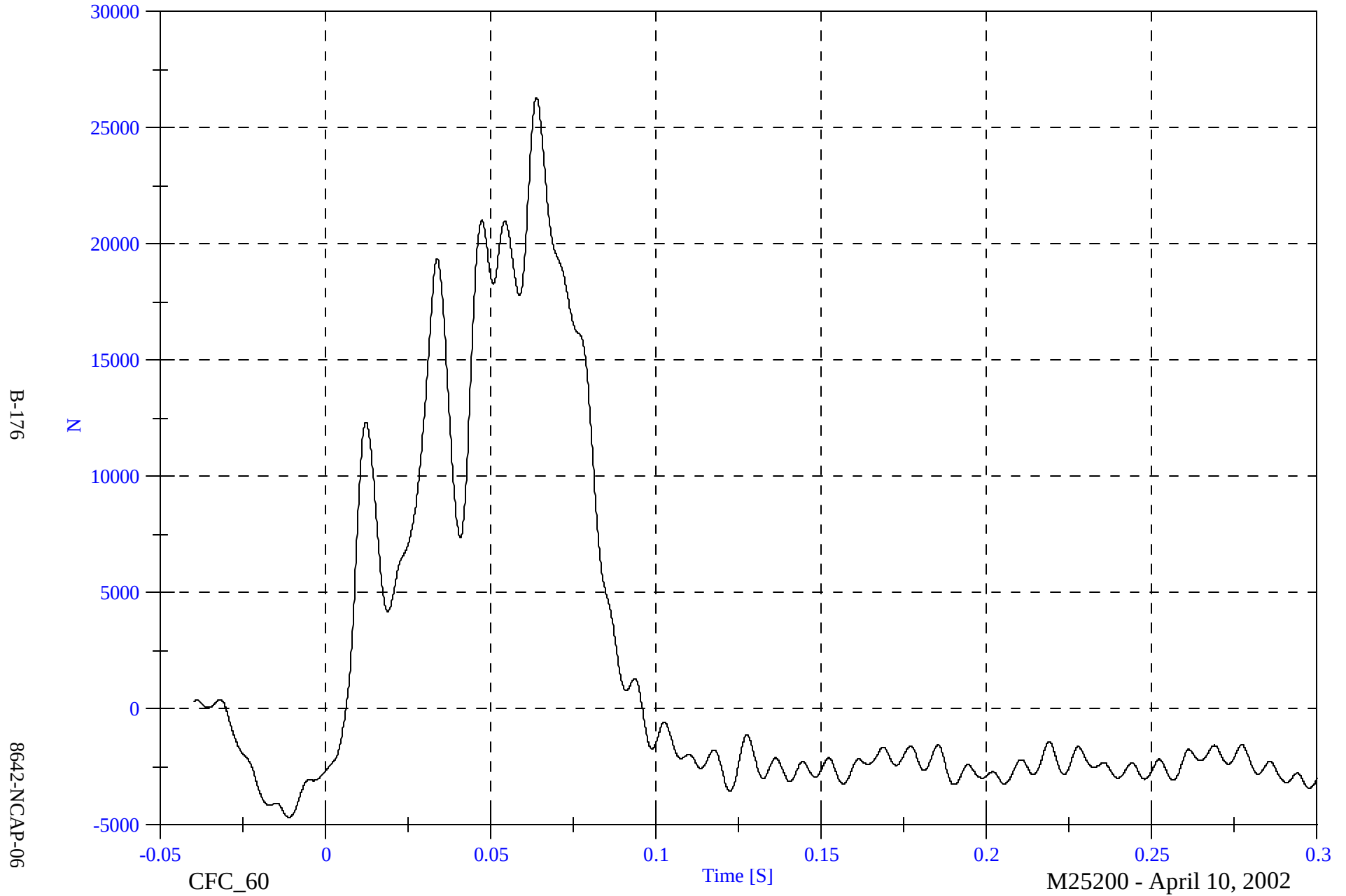


NCAP Test 6 - 2002 Nissan Altima

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

Max: 26294.2 [N] at 0.064 [S]

Min: -4653.3 [N] at -0.011 [S]

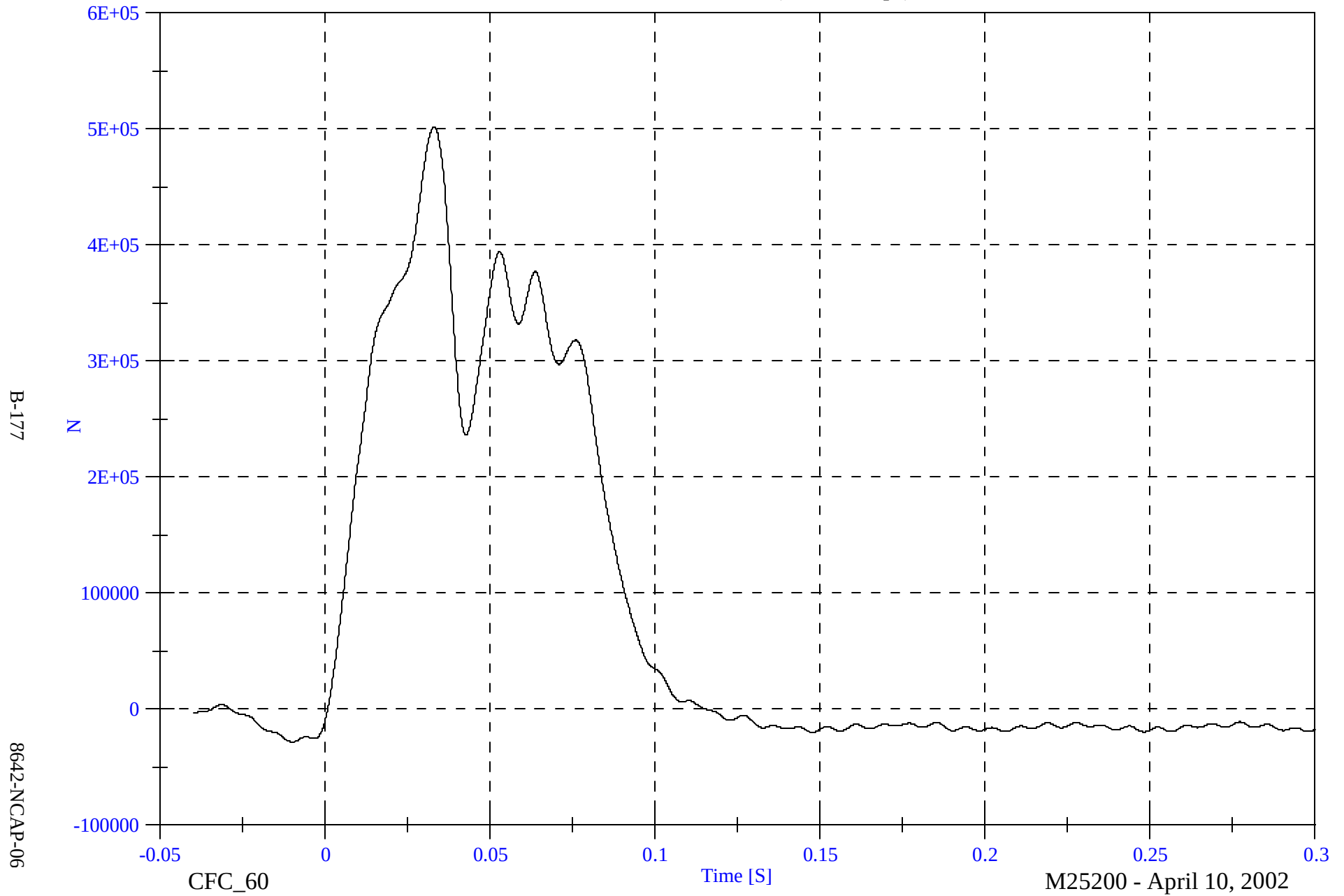


NCAP Test 6 - 2002 Nissan Altima

Max: 502001.3 [N] at 0.033 [S]

Min: -28126.3 [N] at -0.010 [S]

Total Load Cell Sum (All 6 Groups)



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:

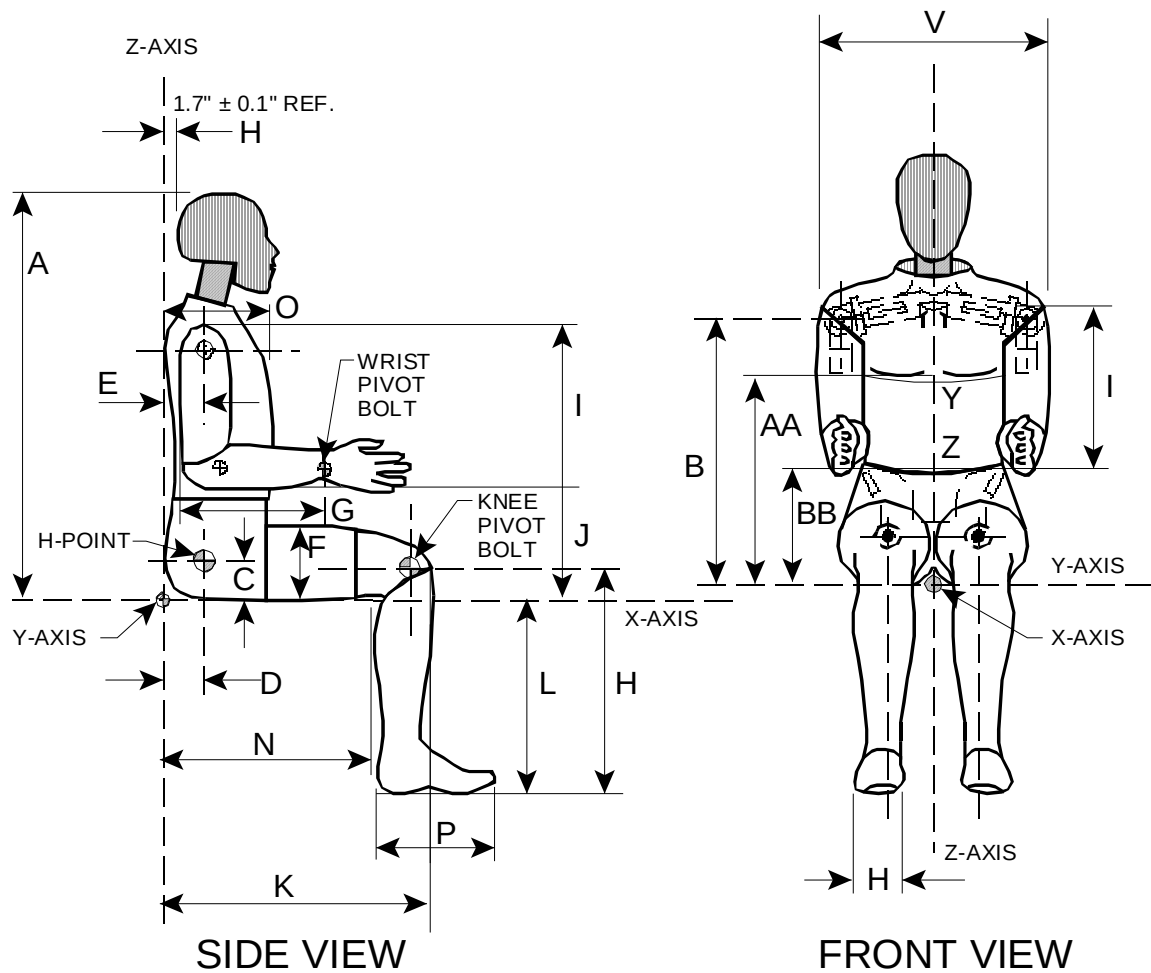
<u>Position No./Location</u>	<u>Serial No.</u>	<u>Completion Date</u>
#1/Driver	150	1/23/02
#2/Right Front Passenger	245	1/23/02

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 1/18/02
Workfile 150H 1-18-02

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	66-78 Deg F	70
Relative Humidity	10% - 70%	30
Peak Resultant Acceleration	225-275 G's	235.4
Peak Lateral Acceleration	15 G's Max	7.0
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	1/22/02	6 Axis Neck Transducer
Workfile	150102.nfl	

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature		69-72 Deg F	70
Relative Humidity		10% - 70%	30
Impact Velocity		22.60 - 23.40 Ft/s	23.0
Pendulum Deceleration	10 ms	22.50 - 27.50 G's	24.91
	20 ms	17.60 - 22.60 G's	22.09
	30 ms	12.50 - 18.50 G's	15.91
Max Pendulum G's Above 30 ms		29 G's Max	15.91
Deceleration - Time Curve Decay Time to 5 G's		34 - 42 ms	39.38
D Plane Rotation	Max	64 - 78 Deg	74.48
	Time	57 - 64 ms	58.62
Moment About Occipital Condyle	Max	65 - 80 Ft-Lbs	79.37
	Time	47 - 58 ms	50.88
Rotation Angle - Time Curve Decay Time to Zero		113 - 128 ms	113.25
Positive Moment - Time Curve Decay Time to Zero		97 - 107 ms	97.25

Remarks:

Laboratory Technician:

B. Swiecicki

PART 572E
NECK EXTENSION TEST

Dummy Serial Number	150	
Sequential Test Number	1	
Date	1/21/02	6 Axis Neck Transducer
Workfile	150102.nex	

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature		69-72 Deg F	71
Relative Humidity		10% - 70%	29
Impact Velocity		19.50 - 20.30 Ft/s	19.70
Pendulum Deceleration	10 ms	17.20 - 21.20 G's	18.93
	20 ms	14.00 - 19.00 G's	16.42
	30 ms	11.00 - 16.00 G's	13.40
Max Pendulum G's Above 30 ms		22 G's Max	13.64
Deceleration - Time Curve Decay Time to 5 G's		38 - 46 ms	43.38
D Plane Rotation	Max	81 - 106 Deg	96.59
	Time	72 - 82 ms	78.62
Moment About Occipital Condyle	Max	-59.0 - -39.0 Ft-Lbs	-45.37
	Time	65 - 79 ms	73.88
Rotation Angle - Time Curve Decay Time to Zero		147 - 174 ms	160.88
Positive Moment - Time Curve Decay Time to Zero		120 - 148 ms	135.75

Remarks:

Laboratory Technician:

B. Swiecicki

PART 572E
THORAX IMPACT TEST

Dummy Serial Number 150
Sequential Test Number 1
Date 1/23/02
Workfile 150102.th3

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	69-72 Deg F	70
Relative Humidity	10% - 70%	30
Pendulum Velocity	21.6 - 22.4 Ft/s	22.1
Maximum Deflection	2.50 - 2.86 in	2.52
Maximum Resistive Force	1160 - 1325 Lbs	1318.42
Internal Hysteresis	69 - 85 %	73.3

Remarks:

Laboratory Technician:

B. Swiecicki

PART 572E
KNEE IMPACT TEST

Dummy Serial Number 150
Sequential Test Number 1
Date 1/23/02
Workfile 150102.lf / 150102.rf

TEST PARAMETER	SPECIFICATION	TEST RESULTS
LEFT KNEE		
Temperature	66 - 78 Deg F	70
Relative Humidity	10% - 70%	30
Probe Velocity	6.8 - 7.0 Ft/s	7.0
Peak Knee Impact Force	1060 - 1300 Lbs	1214.61
RIGHT KNEE		
Temperature	66 - 78 Deg F	70
Relative Humidity	10% - 70%	30
Probe Velocity	6.8 - 7.0 Ft/s	7.0
Peak Knee Impact Force	1060 - 1300 Lbs	1202.13

Remarks:

Laboratory Technician:

B. Swiecicki

PART 572E
EXTERNAL DIMENSIONS

Dummy Serial Number 150
Sequential Test Number 1
Date 1/22/02

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature			70
Relative Humidity			31
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	39.1
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	34.8
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	18.4
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 1/18/02
Workfile 245H 1-18-02

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	66-78 Deg F	70
Relative Humidity	10% - 70%	30
Peak Resultant Acceleration	225-275 G's	235.4
Peak Lateral Acceleration	15 G's Max	3.0
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	1/21/02	6 Axis Neck Transducer
Workfile	245102.nfl	

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature		69-72 Deg F	71
Relative Humidity		10% - 70%	29
Impact Velocity		22.60 - 23.40 Ft/s	23.06
Pendulum Deceleration	10 ms	22.50 - 27.50 G's	25.45
	20 ms	17.60 - 22.60 G's	22.41
	30 ms	12.50 - 18.50 G's	17.28
Max Pendulum G's Above 30 ms		29 G's Max	17.28
Deceleration - Time Curve Decay Time to 5 G's		34 - 42 ms	37.62
D Plane Rotation	Max	64 - 78 Deg	76.86
	Time	57 - 64 ms	60.38
Moment About Occipital Condyle	Max	65 - 80 Ft-Lbs	77.26
	Time	47 - 58 ms	50.88
Rotation Angle - Time Curve Decay Time to Zero		113 - 128 ms	117.38
Positive Moment - Time Curve Decay Time to Zero		97 - 107 ms	97.88

Remarks:

Laboratory Technician:

B. Swiecicki

PART 572E
NECK EXTENSION TEST

Dummy Serial Number	245	
Sequential Test Number	1	
Date	1/21/02	6 Axis Neck Transducer
Workfile	245102.nex	

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature		69-72 Deg F	71
Relative Humidity		10% - 70%	29
Impact Velocity		19.50 - 20.30 Ft/s	19.62
Pendulum Deceleration	10 ms	17.20 - 21.20 G's	18.46
	20 ms	14.00 - 19.00 G's	16.87
	30 ms	11.00 - 16.00 G's	13.19
Max Pendulum G's Above 30 ms		22 G's Max	13.19
Deceleration - Time Curve Decay Time to 5 G's		38 - 46 ms	44.38
D Plane Rotation	Max	81 - 106 Deg	98.46
	Time	72 - 82 ms	77.75
Moment About Occipital Condyle	Max	-59.0 - -39.0 Ft-Lbs	-49.96
	Time	65 - 79 ms	72.62
Rotation Angle - Time Curve Decay Time to Zero		147 - 174 ms	156.0
Positive Moment - Time Curve Decay Time to Zero		120 - 148 ms	141.5

Remarks:

Laboratory Technician:

B. Swiecicki

PART 572E
THORAX IMPACT TEST

Dummy Serial Number 245
Sequential Test Number 1
Date 1/22/02
Workfile 245102.th3

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	69-72 Deg F	70
Relative Humidity	10% - 70%	29
Pendulum Velocity	21.6 - 22.4 Ft/s	21.96
Maximum Deflection	2.50 - 2.86 in	2.52
Maximum Resistive Force	1160 - 1325 Lbs	1320.0
Internal Hysteresis	69 - 85 %	72.6

Remarks:

Laboratory Technician:

B. Swiecicki

PART 572E
KNEE IMPACT TEST

Dummy Serial Number 245
Sequential Test Number 1
Date 1/23/02
Workfile 245102.lf

TEST PARAMETER	SPECIFICATION	TEST RESULTS
LEFT KNEE		
Temperature	66 - 78 Deg F	70
Relative Humidity	10% - 70%	30
Probe Velocity	6.8 - 7.0 Ft/s	7.0
Peak Knee Impact Force	1060 - 1300 Lbs	1199.2
RIGHT KNEE		
Temperature	66 - 78 Deg F	70
Relative Humidity	10% - 70%	30
Probe Velocity	6.8 - 7.0 Ft/s	7.0
Peak Knee Impact Force	1060 - 1300 Lbs	1198.7

Remarks:

Laboratory Technician:

B. Swiecicki

PART 572E
EXTERNAL DIMENSIONS

Dummy Serial Number 245
Sequential Test Number 1
Date 1/22/02

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature			70
Relative Humidity			31
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	18.4
Popliteal Height	L	16.9 - 17.9 in	17.5
Knee Pivot Height	M	19.1 - 19.7 in	19.2
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	8.0
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	3/25/2002	9/24/2002
	X Arm Z	ENDEVCO	AC-P14965	3/25/2002	9/24/2002
	Y Arm X	ENDEVCO	AC-P17563	3/25/2002	9/24/2002
	Y Arm Z	ENDEVCO	AC-P18551	3/25/2002	9/24/2002
	Z Arm X	ENDEVCO	AC-P17539	3/25/2002	9/24/2002
	Z Arm Y	ENDEVCO	AC-P18718	3/25/2002	9/24/2002
Head	X	ENDEVCO	AC-P16832	3/26/2002	9/25/2002
	Y	ENDEVCO	AC-P16591	3/26/2002	9/25/2002
	Z	ENDEVCO	AC-P16286	3/26/2002	9/25/2002
Head	X (R)	ENDEVCO	AC-P17141	3/26/2002	9/25/2002
	Y (R)	ENDEVCO	AC-P17242	3/26/2002	9/25/2002
	Z (R)	ENDEVCO	AC-P17152	3/26/2002	9/25/2002
Neck Load Cell	X	DENTON	LC-269FX	1/17/2002	7/19/2002
	Y	DENTON	LC-269FY	1/17/2002	7/19/2002
	Z	DENTON	LC-269FZ	1/17/2002	7/19/2002
Neck Moment	X	DENTON	LC-269MX	1/17/2002	7/19/2002
	Y	DENTON	LC-269MY	1/17/2002	7/19/2002
	Z	DENTON	LC-269MZ	1/17/2002	7/19/2002
Chest	X	ENDEVCO	AC-P17235	4/4/2002	10/4/2002
	Y	ENDEVCO	AC-P14393	4/4/2002	10/4/2002
	Z	ENDEVCO	AC-P17285	4/4/2002	10/4/2002
Chest	X (R)	ENDEVCO	AC-P16863	4/4/2002	10/4/2002
	Y (R)	ENDEVCO	AC-P17248	4/4/2002	10/4/2002
	Z (R)	ENDEVCO	AC-P17283	4/4/2002	10/4/2002
Chest Deflection	X	SERVO	DS-150	3/22/2002	9/21/2002
Pelvic	X	ENDEVCO	AC-J30041	3/25/2002	9/24/2002
	Y	ENDEVCO	AC-P13355	3/25/2002	9/24/2002
	Z	ENDEVCO	AC-P13329	3/25/2002	9/24/2002

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	1/24/2002	7/26/2002
Right Femur Load Cell	Fz	GSE	LC-419	1/24/2002	7/26/2002
Left Knee Shear	Dx	SPACEAGE CONTROL	DS-821	12/7/2001	6/8/2002
Right Knee Shear	Dx	SPACEAGE CONTROL	DS-817	12/7/2001	6/8/2002
Left Upper Tibia	Mx	DENTON	LC-016MX	4/8/2002	10/8/2002
	My	DENTON	LC-016MY	4/8/2002	10/8/2002
Left Lower Tibia	Fz	DENTON	LC-123FZ	4/8/2002	10/8/2002
	Mx	DENTON	LC-123MX	4/8/2002	10/8/2002
	My	DENTON	LC-123MY	4/8/2002	10/8/2002
Right Upper Tibia	Mx	DENTON	LC-023MX	4/8/2002	10/8/2002
	My	DENTON	LC-023MY	4/8/2002	10/8/2002
Right Lower Tibia	Fz	DENTON	LC-111FZ	4/8/2002	10/8/2002
	Mx	DENTON	LC-111MX	4/8/2002	10/8/2002
	My	DENTON	LC-111MY	4/8/2002	10/8/2002
Left Foot Rear	X	ENDEVCO	AC-P19343	4/4/2002	10/4/2002
	Z	ENDEVCO	AC-P16583	4/4/2002	10/4/2002
Left Foot Front	Z	ENDEVCO	AC-P18728	4/4/2002	10/4/2002
Right Foot Rear	X	ENDEVCO	AC-P18628	4/4/2002	10/4/2002
	Z	ENDEVCO	AC-P18741	4/4/2002	10/4/2002
Right Foot Front	Z	ENDEVCO	AC-P16587	4/4/2002	10/4/2002
Lap Belt Load Cell		-	-	-	-
Shoulder Belt Load Cell		-	-	-	-
Belt Stretch Transducer		-	-	-	-

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	3/21/2002	9/20/2002
	X Arm Z	ENDEVCO	AC-P19212	3/21/2002	9/20/2002
	Y Arm X	ENDEVCO	AC-P19197	3/21/2002	9/20/2002
	Y Arm Z	ENDEVCO	AC-P18738	3/21/2002	9/20/2002
	Z Arm X	ENDEVCO	AC-P19217	3/21/2002	9/20/2002
	Z Arm Y	ENDEVCO	AC-P18739	3/21/2002	9/20/2002
Head	X	ENDEVCO	AC-J32184	3/22/2002	9/21/2002
	Y	ENDEVCO	AC-J32185	3/22/2002	9/21/2002
	Z	ENDEVCO	AC-J31011	3/22/2002	9/21/2002
Head	X (R)	ENDEVCO	AC-J31020	3/24/2002	9/23/2002
	Y (R)	ENDEVCO	AC-J31101	3/22/2002	9/21/2002
	Z (R)	ENDEVCO	AC-J31059	3/22/2002	9/21/2002
Neck Load Cell	X	DENTON	LC-076FX	1/17/2002	7/19/2002
	Y	DENTON	LC-076FY	1/17/2002	7/19/2002
	Z	DENTON	LC-076FZ	1/17/2002	7/19/2002
Neck Moment	X	DENTON	LC-076MX	1/17/2002	7/19/2002
	Y	DENTON	LC-076MY	1/17/2002	7/19/2002
	Z	DENTON	LC-076MZ	1/17/2002	7/19/2002
Chest	X	ENDEVCO	AC-J34019	3/21/2002	9/20/2002
	Y	ENDEVCO	AC-J33018	3/21/2002	9/20/2002
	Z	ENDEVCO	AC-J32783	3/21/2002	9/20/2002
Chest	X (R)	ENDEVCO	AC-J31066	3/21/2002	9/20/2002
	Y (R)	ENDEVCO	AC-P16979	3/21/2002	9/20/2002
	Z (R)	ENDEVCO	AC-J31022	3/21/2002	9/20/2002
Chest Deflection	X	SERVO	DS-245	3/22/2002	9/21/2002
Pelvic	X	ENDEVCO	AC-J31034	3/21/2002	9/20/2002
	Y	ENDEVCO	AC-P17258	3/21/2002	9/20/2002
	Z	ENDEVCO	AC-J31010	3/21/2002	9/20/2002

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	1/24/2002	7/26/2002
Right Femur Load Cell	Fz	GSE	LC-951	1/24/2002	7/26/2002
Left Knee Shear	Dx	SPACEAGE CONTROL	DS-819	12/7/2001	6/8/2002
Right Knee Shear	Dx	SPACEAGE CONTROL	DS-815	12/7/2001	6/8/2002
Left Upper Tibia	Mx	DENTON	LC-045MX	4/8/2002	10/8/2002
	My	DENTON	LC-045MY	4/8/2002	10/8/2002
Left Lower Tibia	Fz	DENTON	LC-125FZ	4/8/2002	10/8/2002
	Mx	DENTON	LC-125MX	4/8/2002	10/8/2002
	My	DENTON	LC-125MY	4/8/2002	10/8/2002
Right Upper Tibia	Mx	DENTON	LC-038MX	4/8/2002	10/8/2002
	My	DENTON	LC-038MY	4/8/2002	10/8/2002
Right Lower Tibia	Fz	DENTON	LC-124FZ	4/8/2002	10/8/2002
	Mx	DENTON	LC-124MX	4/8/2002	10/8/2002
	My	DENTON	LC-124MY	4/8/2002	10/8/2002
Left Foot Rear	X	ENDEVCO	AC-J30491	3/21/2002	9/20/2002
	Z	ENDEVCO	AC-J31026	3/21/2002	9/20/2002
Left Foot Front	Z	ENDEVCO	AC-J32831	3/21/2002	9/20/2002
Right Foot Rear	X	ENDEVCO	AC-J33376	3/21/2002	9/20/2002
	Z	ENDEVCO	AC-J32832	3/21/2002	9/20/2002
Right Foot Front	Z	ENDEVCO	AC-J31095	3/21/2002	9/20/2002
Lap Belt Load Cell		-	-	-	-
Shoulder Belt Load Cell		-	-	-	-
Belt Stretch Transducer		-	-	-	-

INSTRUMENT CALIBRATION FOR VEHICLE ACCELEROMETERS
(Six Month Calibration Minimum)

	Manufacturer	Serial #	Calibration	
			Last	Next
Left Seat Rear Crossmember X	ICS	AC-Y13	2/11/2002	8/13/2002
Right Rear Seat Crossmember X	ICS	AC-X86	10/30/2001	5/1/2002
Top of Engine	ENDEVCO	AC-J32176	3/7/2002	9/6/2002
Bottom of Engine	ENDEVCO	AC-J33032	2/11/2002	8/13/2002
Right Disc Brake Caliper	-	-	-	-
Instrument Panel	ENDEVCO	AC-J32186	2/11/2002	8/13/2002
Left Disc Brake Caliper	-	-	-	-
Left Seat Rear Crossmember Z	ICS	AC-D82	4/4/2002	10/4/2002
Right Seat Rear Crossmember Z	ICS	AC-D61	4/4/2002	10/4/2002

REPORT NUMBER: CAL-02-06

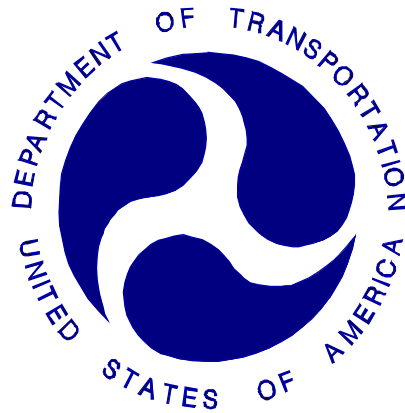
NEW CAR ASSESSMENT PROGRAM (NCAP)
FRONTAL BARRIER IMPACT TEST

EVENFLO COZY CARRY 5
SECURED WITH VEHICLE ALR 3-POINT BELT

NHTSA NUMBER: M25200

VERIDIAN ENGINEERING TEST NUMBER: 8642-NCAP-06

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



April 10, 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 on the subject CRS Evenflo Cozy Carry 5 with vehicle ALR in accordance with the specifications of the Office of Crashworthiness Standards Test Procedure for the determination of CRS crashworthiness. This test was conducted at the Veridian Engineering Crash Test Facility in Buffalo, New York, on April 10, 2002.					
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SECTION 1

PURPOSE AND SUMMARY OF TEST M25200

The purpose of this test was to obtain CRS performance data in a frontal impact NCAP condition. The 56.33 kph NCAP frontal impact test was conducted in accordance with the Office of Crashworthiness Standards (OCS) NCAP Laboratory Test Procedure.

SUMMARY

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

The CRS and child dummy (serial no. 017) was installed in the right rear occupant position (P3). The child dummy was certified previous to this test and is documented in section 5.

The CRS became unrestrained during the event and loaded into the P2 seatback. Plastic tabs on the CRS base at the top left and right of vehicle belt path were sheared off during the event. The P3 vehicle seat belt also became unlatched during the event.

The child dummy's HIC was 287.9, maximum chest deceleration over 3 ms was 43.4 g's.

SECTION 2
DATA SHEET NO. 1
CRASH TEST SUMMARY

TEST DUMMY INFORMATION:

DESCRIPTION	Position #3 CRS
ATD Type/Serial No.	CRABI 12 Month Old (P572 R) / 017
Restraint System:	Evenflo Cozy Carry 5 secured with vehicle ALR 3-point belt

Number of Data Channels 31

Number of Cameras: 1 Real Time

2 High Speed

POST TEST DOOR OPENING

DESCRIPTION	FRONT	REAR
Left Side Doors	Door remained closed and latched; Door opened without tools	Door remained closed and latched; Door opened without tools
Right Side Doors	Door remained closed and latched; Door opened without tools	Door remained closed and latched; Door opened without tools
Hatch/Other Door	-	-

POST TEST SEAT DATA

LOCATION	SEAT MOVEMENT (mm)	SEAT BACK FAILURE
P1 (Left Front)	0	Seat back did not break or fail, Seat back deformed 40 mm forward as measured at the top of the seat back
P2 (Right Front)	0	The P3 CRS became unrestrained and loaded against the P2 seat back. The P2 seat back did not break or fail, Seat back deformed 140 mm forward as measured at the top of the seat back.
P3 (Right Rear)	0	None
P4 (Left Rear)	0	None

VISIBLE DUMMY CONTACT POINTS

	Position #3 CRS
Head Contact:	Back of head to top of CRS seat back. Top of head to CRS carry handle.
Upper Torso Contact:	None
Lower Torso Contact:	None
Left Knee Contact:	None
Right Knee Contact:	None

DATA SHEET NO. 2

CRS PARAMETER DATA

CRS: _Evenflo Cozy Carry 5 secured with vehicle ALR 3-point belt

NHTSA No. M25200

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:

Delivered Weight of Vehicle with Maximum Fluids = 1414.0 kg (A)

AS TESTED WEIGHT OF VEHICLE (2 ATDs + 2 P572 R w/ CRS +CARGO + EQUIPMENT & INSTRUMENTATION):

Left Front	=	<u>469.5</u>	kg	Left Rear	=	<u>351.0</u>	kg
Right Front	=	<u>461.5</u>	kg	Right Rear	=	<u>327.0</u>	kg
TOTAL FRONT	=	<u>931.0</u>	kg	TOTAL REAR	=	<u>678.0</u>	kg
TOTAL TEST WEIGHT =		<u>1609.0</u>	kg				

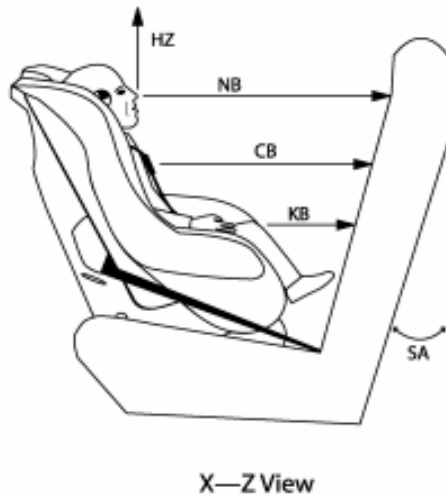
DATA SHEET NO. 3

CHILD DUMMY POSITIONING IN VEHICLE

CRS: Evenflo Cozy Carry 5 secured with vehicle ALR 3-point belt

NHTSA No. M25200

Dummy Measurements for Rear-facing CRS Passengers



HZ	-	Head to Roof
NB	-	Nose to Front of Back Seat
CB	-	Chest to Front of Back Seat
KB	-	Knee to Front of Back Seat
SA	-	Seat Back Angle

Measurement	Pre-Test (mm)	Post Test (mm)
	P3 CRS (017)	P3 CRS (017)
SA	26.5°	27.0°
HZ	444	430
NB	549	583
CB	408	460
KB – LEFT	168	255
KB – RIGHT	175	270

All dimensions in mm (unless noted)

P3 – Right Rear Passenger (CRS #1)

DATA SHEET 4

CHILD DUMMY INJURY CRITERIA VALUES

CRS: Evenflo Cozy Carry 5 secured with vehicle ALR 3-point belt

NHTSA No. M25200

		MAXIMUM VALUE			
		Position #3			
DESCRIPTION	Unit	Pos	msec	Neg	msec
Head X	g	61.1	58.8	-2.0	157.3
Head Y	g	3.0	59.5	-24.0	94.5
Head Z	g	45.7	58.2	-7.0	115.5
Head Resultant	g	74.8	58.4	-	-
Redundant Head Z	g	34.5	76.2	-15.0	93.4
Upper Neck Fx	N	33.4	208.1	-462.5	83.8
Upper Neck Fy	N	5.9	277.4	-199.8	97.1
Upper Neck Fz	N	541.6	53.3	-726.6	96.0
Upper Neck F Resultant	N	836.5	96.0	-	-
Upper Neck Mx	N-m	13.6	97.1	-2.3	187.0
Upper Neck My	N-m	3.1	71.9	-10.4	58.6
Upper Neck Mz	N-m	0.5	295.2	-10.7	99.8
Upper Neck M Resultant	N-m	17.3	97.3	-	-
Lower Neck Fx	N	308.5	95.7	-139.1	60.0
Lower Neck Fy	N	27.4	44.1	-131.6	94.4
Lower Neck Fz	N	599.0	54.1	-583.1	92.4
Lower Neck F Resultant	N	670.5	95.5	-	-
Lower Neck Mx	N-m	0.4	290.0	-11.8	98.7
Lower Neck My	N-m	20.5	81.7	-1.6	211.0
Lower Neck Mz	N-m	0.4	290.4	-7.9	99.0
Lower Neck M Resultant	N-m	21.8	81.7	-	-
Chest X	g	38.4	88.1	-2.6	209.6
Chest Y	g	5.0	109.7	-12.6	84.9
Chest Z	g	34.6	78.3	-2.5	200.1
Chest Resultant	g	46.2	77.9	-	-
Lumbar Fx	N	16.8	165.3	-185.3	98.4
Lumbar Fy	N	20.5	91.4	-49.5	140.3
Lumbar Fz	N	188.4	97.6	-126.3	79.7
Lumbar F Resultant	N	263.7	97.7	-	-
Lumbar Mx	N-m	0.4	214.7	-3.0	78.9
Lumbar My	N-m	7.4	99.4	-1.3	204.5
Lumbar Mz	N-m	0.8	120.6	-1.7	79.6
Lumbar M Resultant	N-m	7.4	99.4	-	-
Pelvic X	g	25.5	53.9	-6.7	108.0
Pelvic Y	g	5.3	63.2	-12.5	101.0
Pelvic Z	g	40.9	78.5	-2.9	201.6
Pelvic Resultant	g	42.4	59.3	-	-

DATA SHEET 4

CHILD DUMMY INJURY CRITERIA VALUES (CONTINUED)

CRS: Evenflo Cozy Carry 5 secured with vehicle ALR 3-point belt

NHTSA No. M25200

	HEAD INJURY CRITERIA (HIC15)			
	HIC**	t ₁ (msec)	t ₂ (msec)	Average Acceleration (g's) t ₁ to t ₂
Position #3 - Right	287.9	54.7	69.6	51.7

** 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	43.4	76.4	79.4	343.3

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

Position 3 Neck Injury Summary (CRABI 12 month old – In Position)

Nij V10	Nij	Time (ms)	Z Force (N)	X Force (N)	Y Moment (N-m)
Ntf	0.07	209.4	44.0	32.1	1.6
Nte	0.72	55.9	458.0	-237.2	-6.9
Ncf	0.61	96.1	-722.4	-366.3	4.9
Nce	0.54	64.2	-363.8	-171.0	-4.9

Peak Tension (CFC1000) 542.26 N

Peak Compression (CFC1000) 731.04 N

Critical Values

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

Condyle Offset -0.0058

DATA SHEET NO. 5

CRS PERFORMANCE DATA

CRS: Evenflo Cozy Carry 5 secured with vehicle ALR 3-point belt

NHTSA No. M25200

		MAXIMUM VALUE			
DESCRIPTION	Unit	Positive	Time (ms)	Negative	Time (ms)
P3 Tether Load	N	-	-	-	-
P3 CRS X	g	13.7	124.6	-49.6	66.8
P3 CRS Y	g	25.9	94.1	-16.9	62.7
P3 CRS Z	g	27.1	90.0	-24.1	96.3
P3 CRS Resultant	g	52.0	67.3	-	-

DATA SHEET NO. 5

CRS PERFORMANCE DATA (CONTINUED)

CRS: Evenflo Cozy Carry 5 secured with vehicle ALR 3-point belt

NHTSA No. M25200

POSITION #3 CRS POST-TEST INSPECTION (Model No. 2731124 P1)

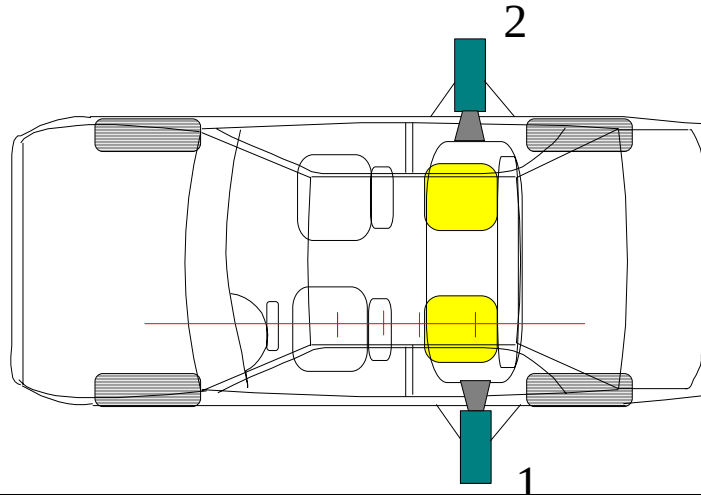
LOCATION	DAMAGE	REMARKS
Upper Tether Strap	N/A	-
Upper Tether Buckle	N/A	-
Upper Tether Hook	N/A	-
Vehicle Upper Tether Anchor	N/A	-
Lower Anchor Strap	N/A	-
Lower Anchor Buckle	N/A	-
Lower Anchor Hooks	N/A	-
Vehicle Lower CRS Anchors	N/A	-
Five Point Harness Connections	N/A	-
Cracks on CRS	YES	Left and right plastic tabs on the CRS base located along the top of the vehicle belt path sheared off during the event. The CRS base angle adjustment knob sheared off during the event. Cracks were visible on the CRS base above the outboard latching mechanism. Stress marks were visible on the CRS base above the inboard latching mechanism.
Fabric Tears on CRS	NO	-
Vehicle Seat Structure	NO	-
Vehicle Seat Fabric Tears	NO	-
Vehicle Seat Belt	NO	Buckle unlatched during the event.
Child Dummy	NO	-

DATA SHEET NO. 6

CRS CAMERA DATA

CRS: Evenflo Cozy Carry 5 secured with vehicle ALR 3-point belt

NHTSA No. M25200



Camera No.	View	Coordinates (millimeters)			Angle (deg.)	Lens (mm)	Film Speed (fps)
		X*	Y*	Z*			
1	Left side CRS lateral view (onboard)	-	-	-	-20.0	8	1020
2	Right side CRS lateral view (off-board)	4492	2428	2193	-23.0	13	1010

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

X = + Forward

Y = + To Right

Z = + Down

SECTION 3

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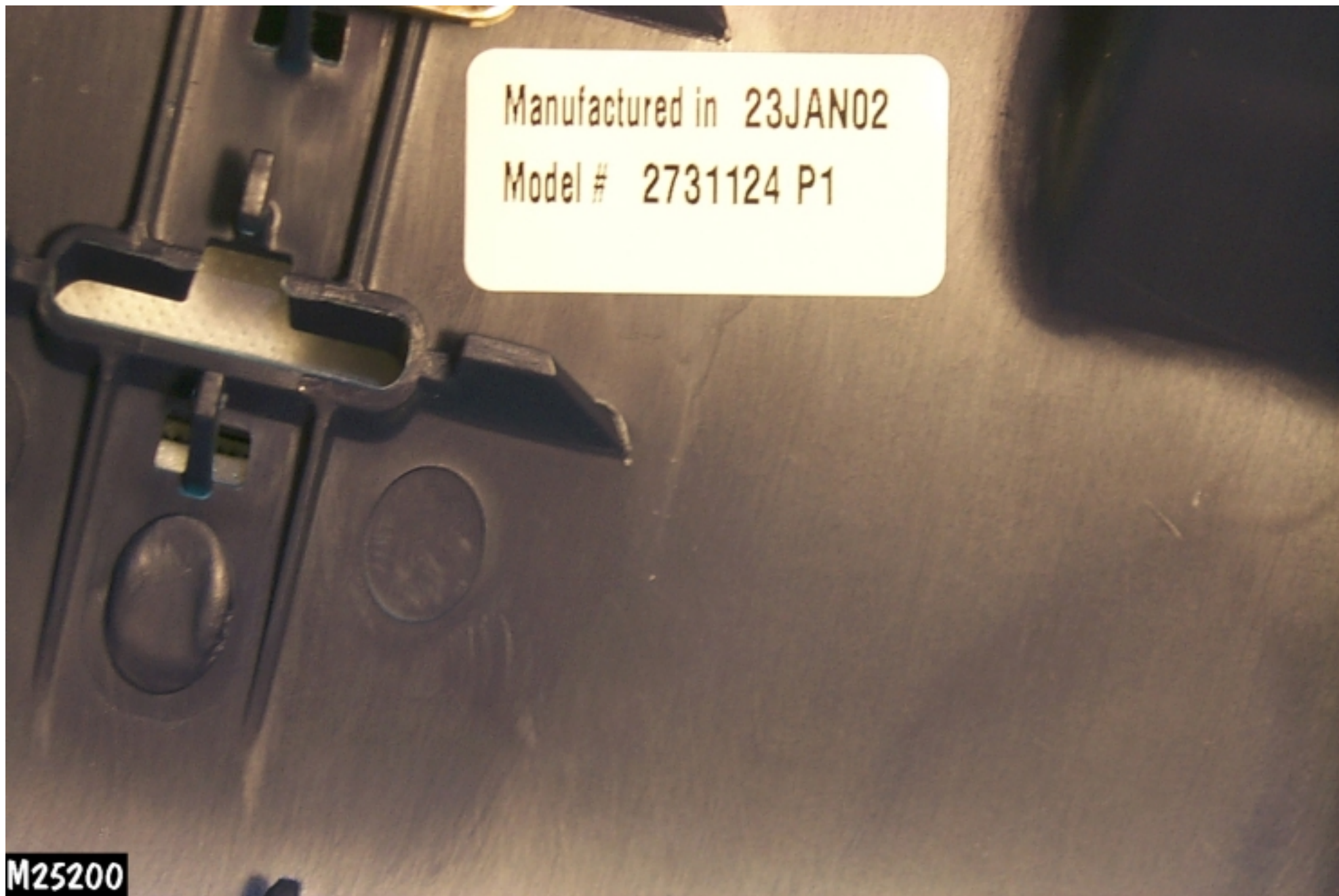


Figure 3-1: CLOSE-UP VIEW OF POSITION 3 CRS LABEL



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



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



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



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



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



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



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



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



Figure 3-10: PRE-TEST POSITION 3 LEFT SIDE VIEW



Figure 3-11: POST-TEST POSITION 3 LEFT SIDE VIEW



Figure 3-12: PRE-TEST POSITION 3 RIGHT SIDE VIEW



Figure 3-13: POST-TEST POSITION 3 RIGHT SIDE VIEW

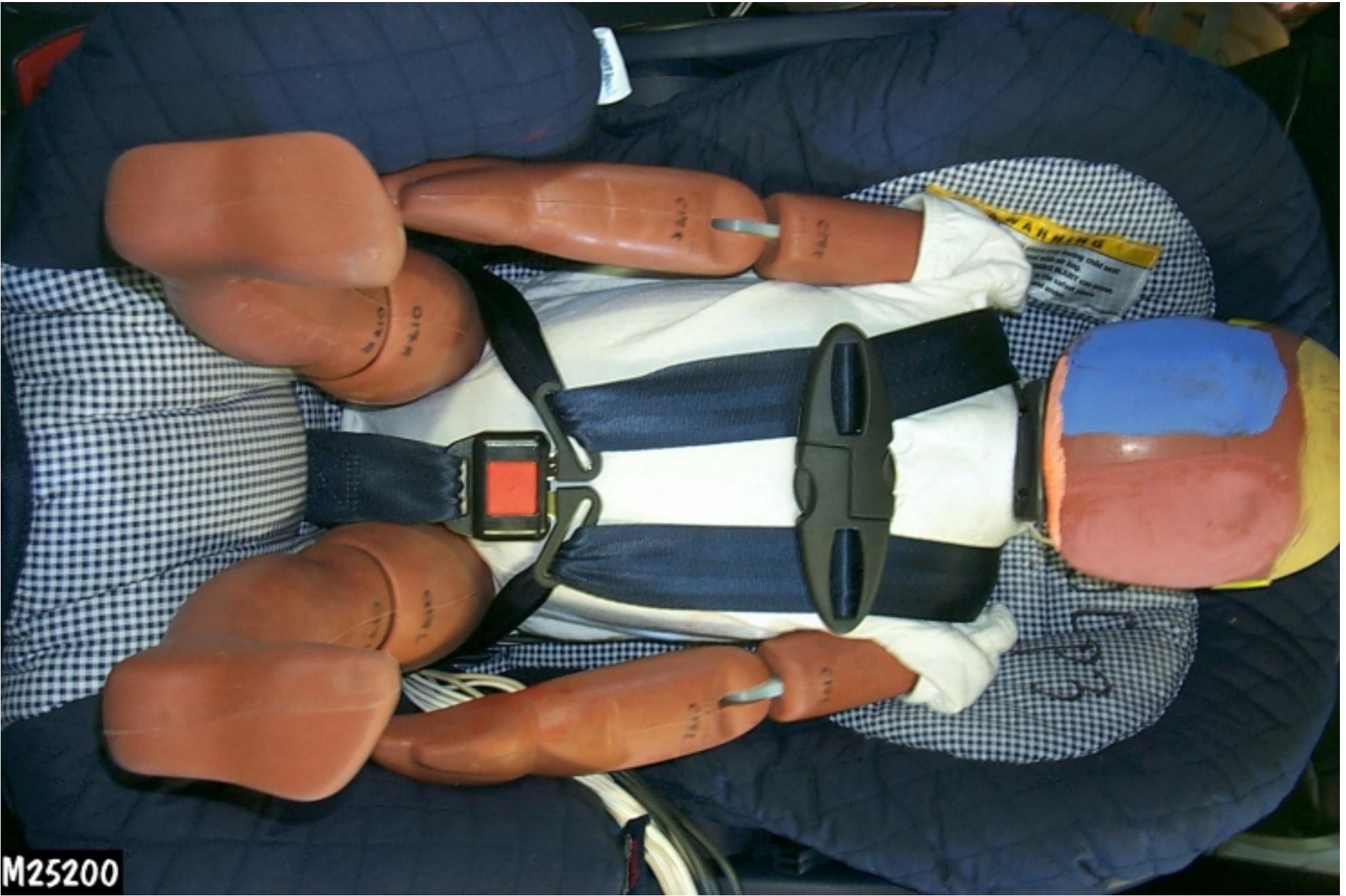


Figure 3-14: PRE-TEST POSITION 3 REAR VIEW



Figure 3-15: POST-TEST POSITION 3 REAR VIEW

SECTION 4

CHILD DUMMY RESPONSE AND CRS DATA TRACES

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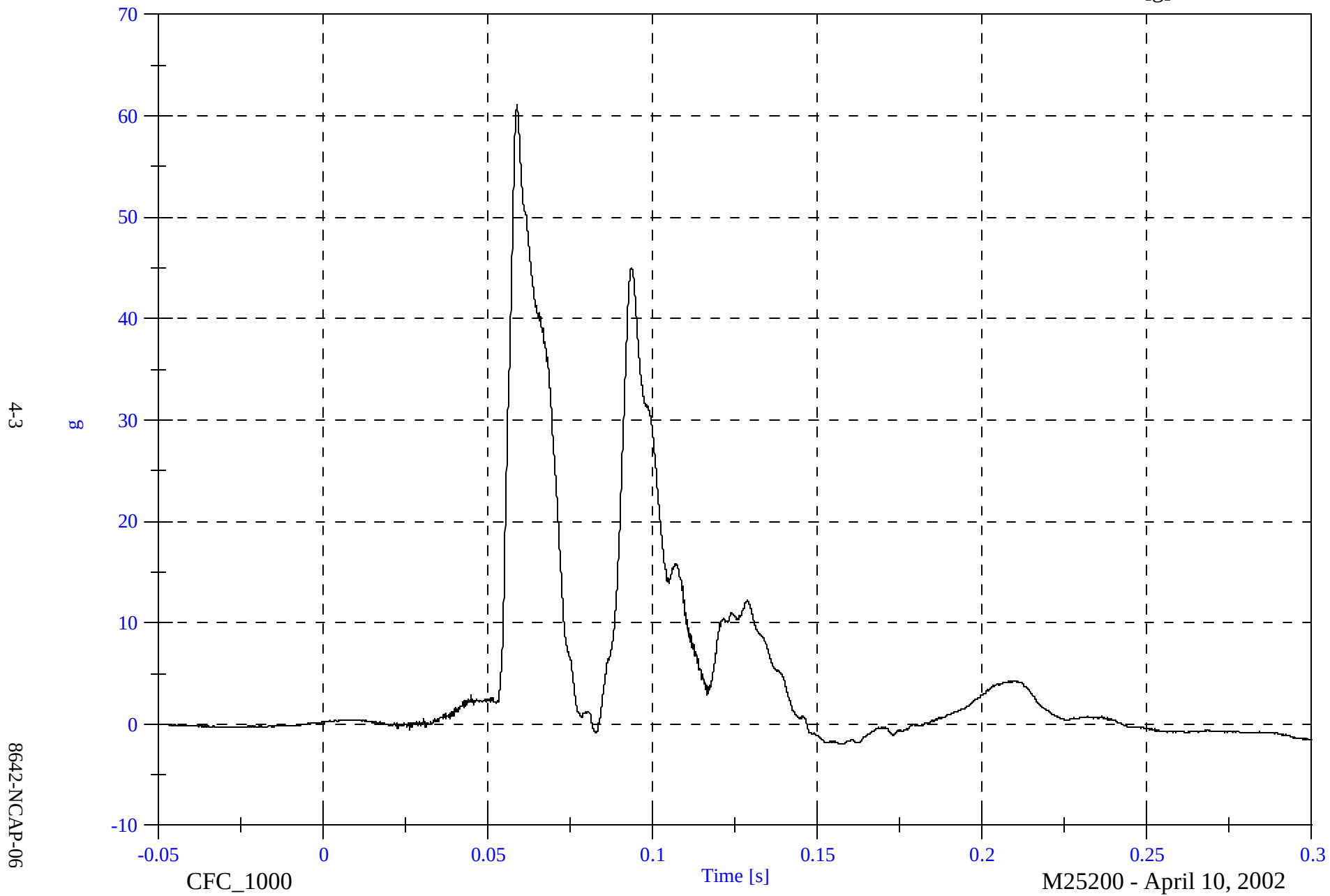
PLOT	PLOT NAME [UNITS, FILTER CLASS]	PAGE
1	P3 Head x [g, CFC_1000]	4-3
2	P3 Head y [g, CFC_1000]	4-4
3	P3 Head z [g, CFC_1000]	4-5
4	P3 Head Resultant [g, CFC_1000]	4-6
5	P3 Head Red z [g, CFC_1000]	4-7
6	P3 Upper Neck Fx [N, CFC_1000]	4-8
7	P3 Upper Neck Fy [N, CFC_1000]	4-9
8	P3 Upper Neck Fz [N, CFC_1000]	4-10
9	P3 Upper Neck F Resultant [N, CFC_1000]	4-11
10	P3 Upper Neck Mx [N-m, CFC_600]	4-12
11	P3 Upper Neck My [N-m, CFC_600]	4-13
12	P3 Upper Neck Mz [N-m, CFC_600]	4-14
13	P3 Upper Neck M Resultant [N-m, CFC_600]	4-15
14	P3 Lower Neck Fx [N, CFC_1000]	4-16
15	P3 Lower Neck Fy [N, CFC_1000]	4-17
16	P3 Lower Neck Fz [N, CFC_1000]	4-18
17	P3 Lower Neck F Resultant [N, CFC_1000]	4-19
18	P3 Lower Neck Mx [N-m, CFC_600]	4-20
19	P3 Lower Neck My [N-m, CFC_600]	4-21
20	P3 Lower Neck Mz [N-m, CFC_600]	4-22
21	P3 Lower Neck M Resultant [N-m, CFC_600]	4-23
22	P3 Chest x [g, CFC_180]	4-24
23	P3 Chest y [g, CFC_180]	4-25
24	P3 Chest z [g, CFC_180]	4-26
25	P3 Chest Resultant [g, CFC_180]	4-27
26	P3 Lumbar Fx [N, CFC_1000]	4-28
27	P3 Lumbar Fy [N, CFC_1000]	4-29
28	P3 Lumbar Fz [N, CFC_1000]	4-30
29	P3 Lumbar F Resultant [N, CFC_1000]	4-31
30	P3 Lumbar Mx [N-m, CFC_1000]	4-32
31	P3 Lumbar My [N-m, CFC_1000]	4-33
32	P3 Lumbar Mz [N-m, CFC_1000]	4-34
33	P3 Lumbar M Resultant [N-m, CFC_1000]	4-35
34	P3 Pelvic x [g, CFC_1000]	4-36
35	P3 Pelvic y [g, CFC_1000]	4-37
36	P3 Pelvic z [g, CFC_1000]	4-38
37	P3 Pelvic Resultant [g, CFC_1000]	4-39
38	Child Seat x [g, CFC_60]	4-40
39	Child Seat x Velocity [kph, CFC_180]	4-41
40	Child Seat x Displacement [mm, CFC_180]	4-42
41	Child Seat y [g, CFC_60]	4-43
42	Child Seat y Velocity [kph, CFC_180]	4-44
43	Child Seat y Displacement [mm, CFC_180]	4-45
44	Child Seat z [g, CFC_60]	4-46
45	Child Seat z Velocity [kph, CFC_180]	4-47
46	Child Seat z Displacement [mm, CFC_180]	4-48
47	Child Seat Resultant [g, CFC_60]	4-49

NCAP Test #6 - 2002 Nissan Altima

Max: 61.1 [g] at 0.059 [s]

Min: -2.0 [g] at 0.157 [s]

P3 Head x

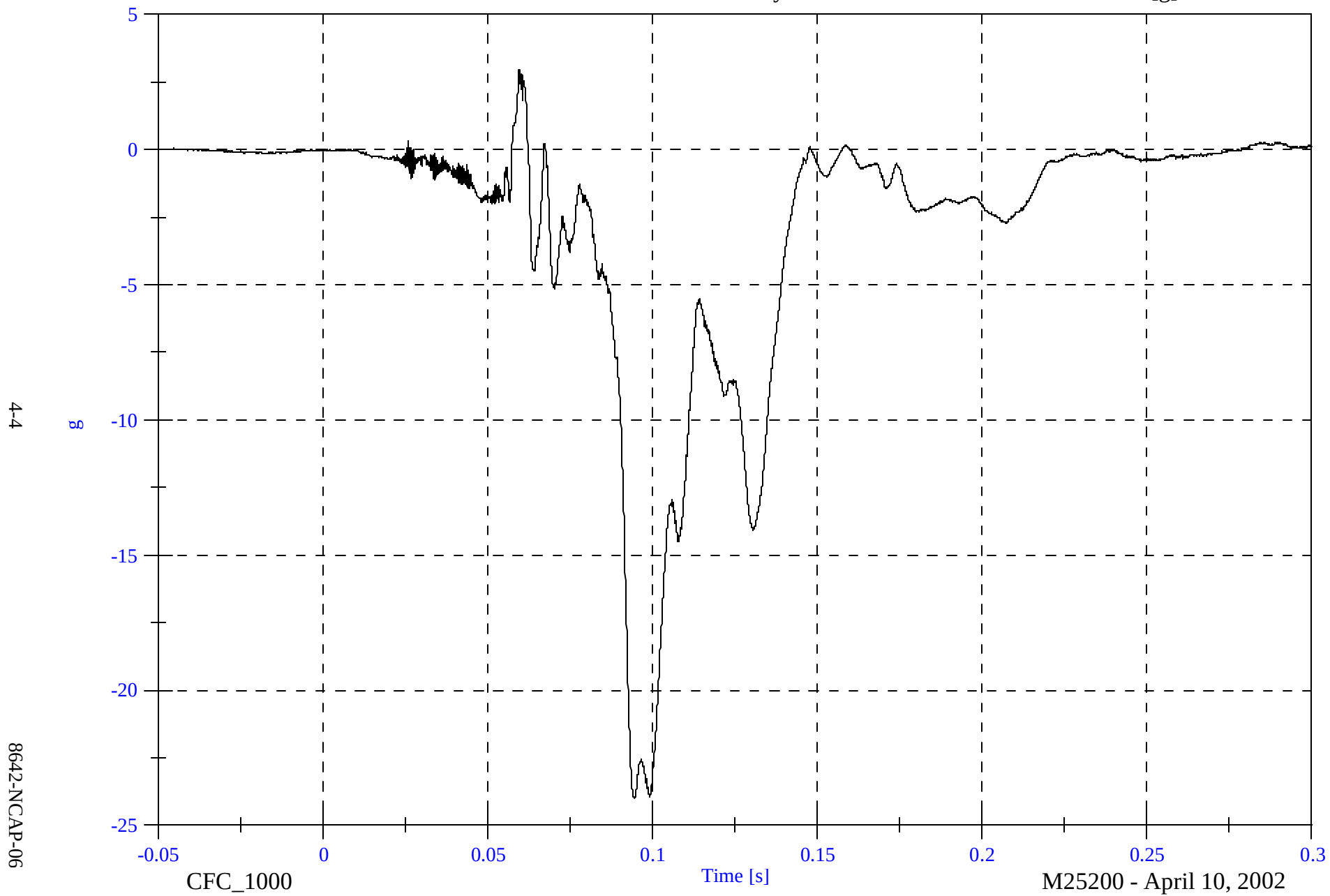


NCAP Test #6 - 2002 Nissan Altima

P3 Head y

Max: 3.0 [g] at 0.060 [s]

Min: -24.0 [g] at 0.095 [s]



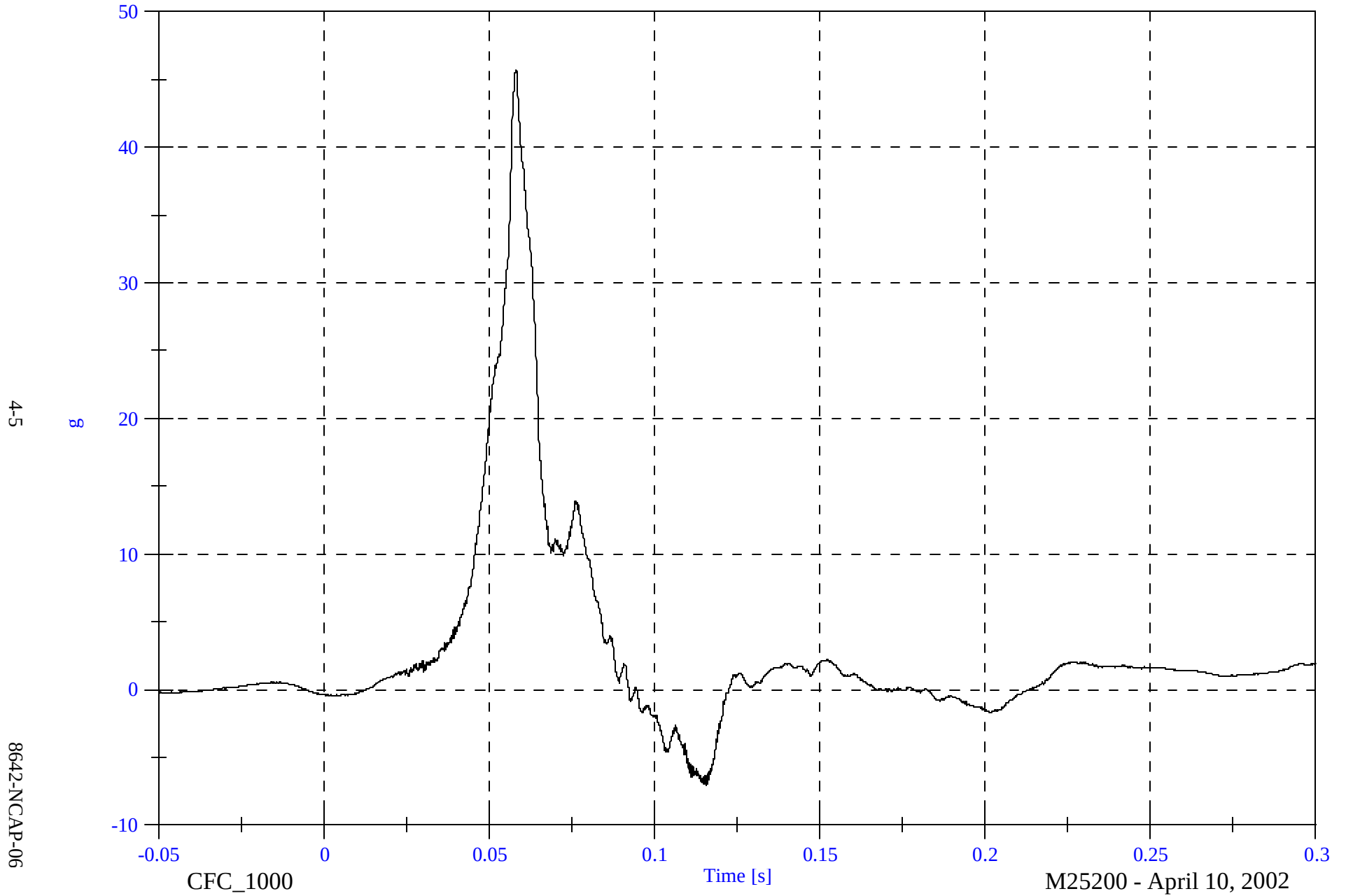
8642-NCAP-06

NCAP Test #6 - 2002 Nissan Altima

Max: 45.7 [g] at 0.058 [s]

Min: -7.0 [g] at 0.115 [s]

P3 Head z



NCAP Test #6 - 2002 Nissan Altima

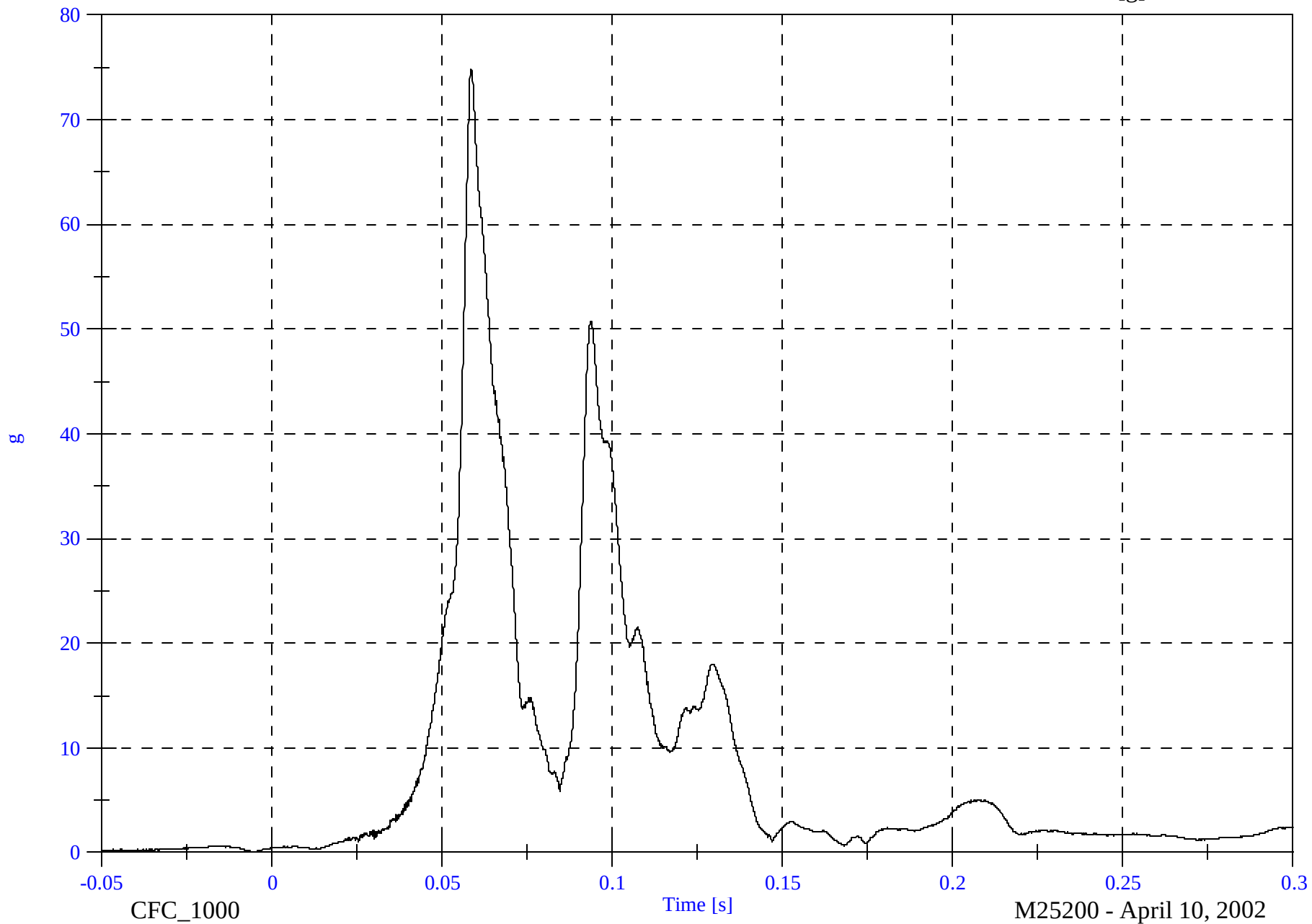
P3 Head Resultant

Max: 74.8 [g] at 0.058 [s]

Min: 0.1 [g] at -0.005 [s]

4-6

8642-NCAP-06

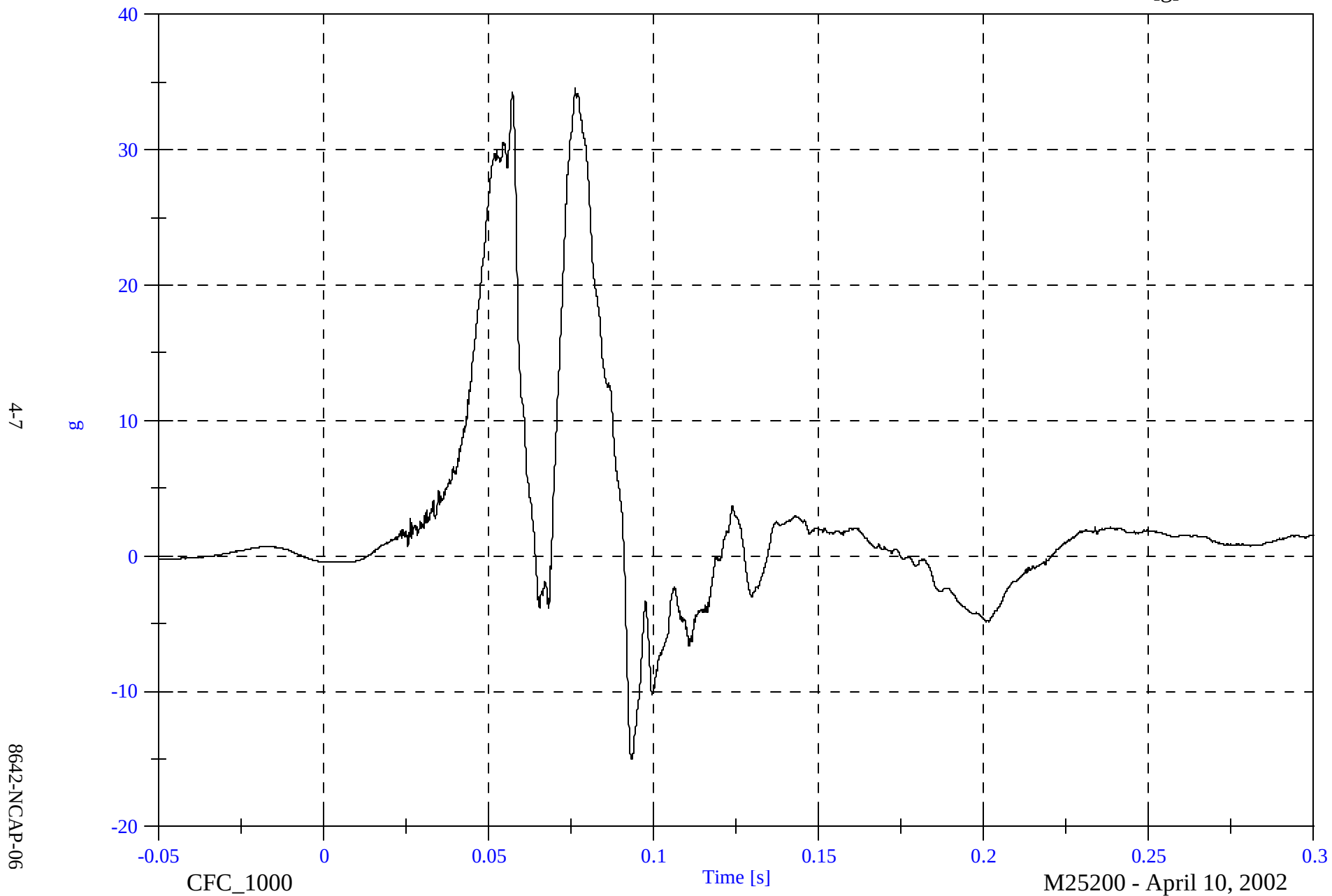


NCAP Test #6 - 2002 Nissan Altima

Max: 34.5 [g] at 0.076 [s]

Min: -15.0 [g] at 0.093 [s]

P3 Head Red z

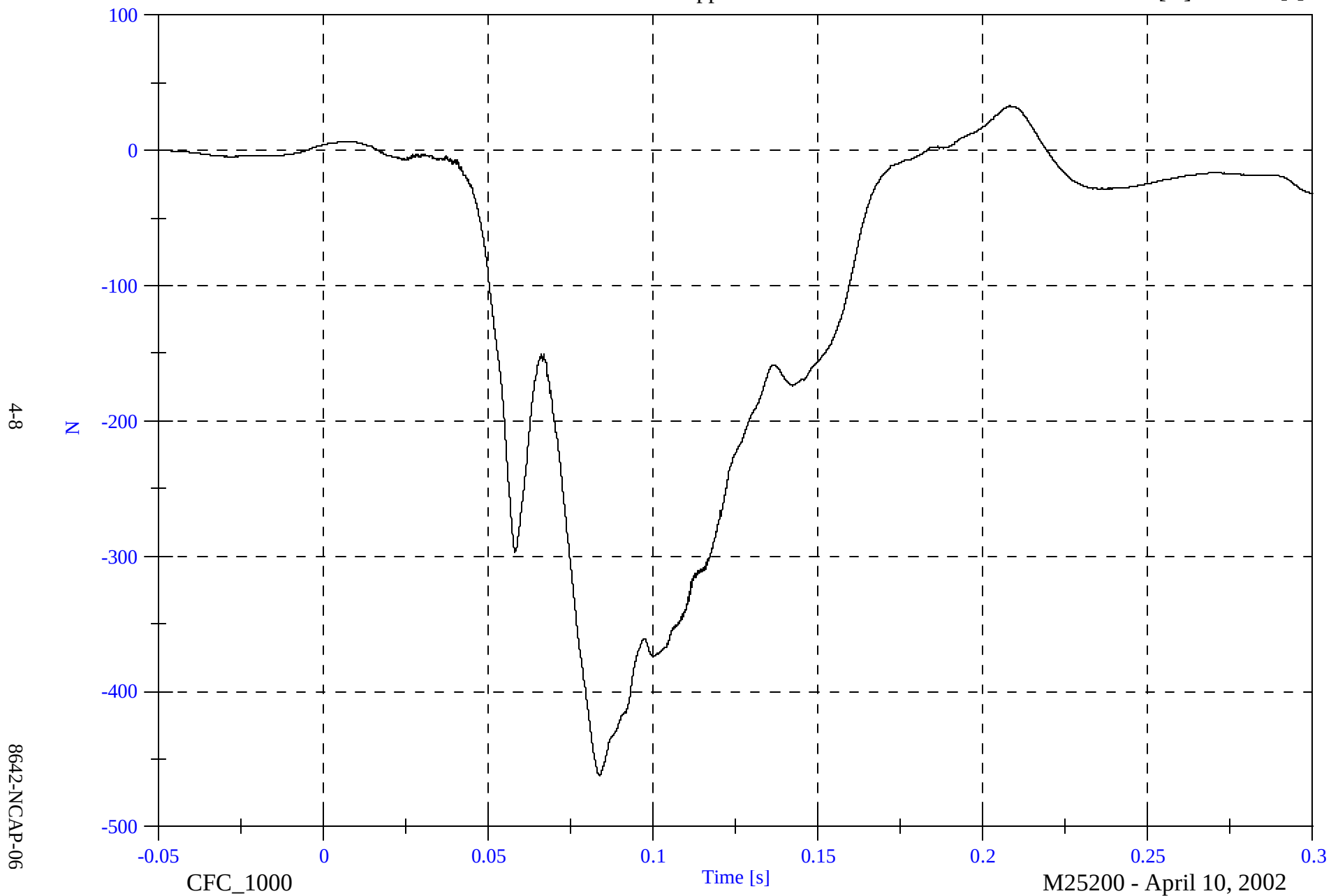


NCAP Test #6 - 2002 Nissan Altima

P3 Upper Neck Fx

Max: 33.4 [N] at 0.208 [s]

Min: -462.5 [N] at 0.084 [s]

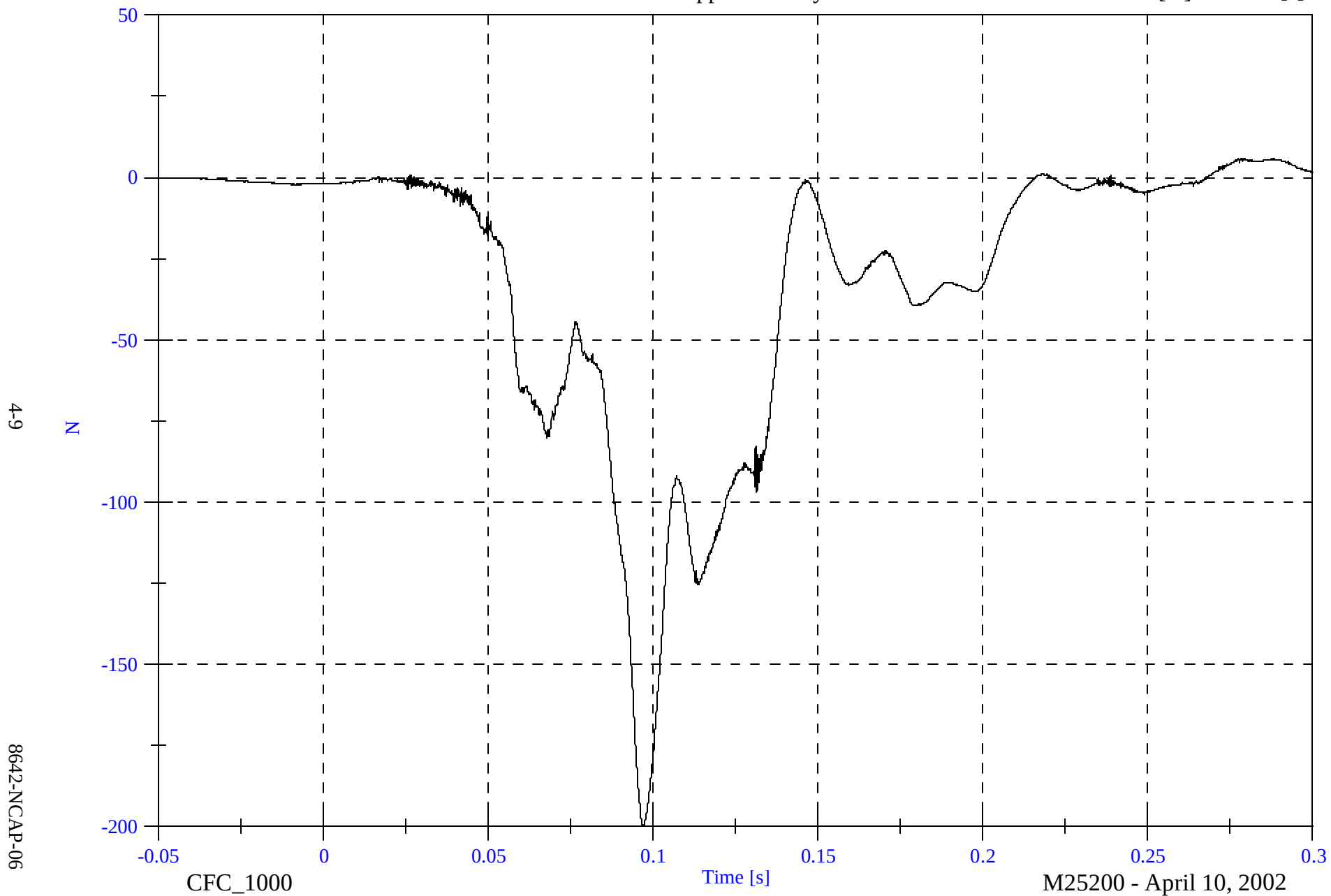


NCAP Test #6 - 2002 Nissan Altima

P3 Upper Neck Fy

Max: 5.9 [N] at 0.277 [s]

Min: -199.8 [N] at 0.097 [s]

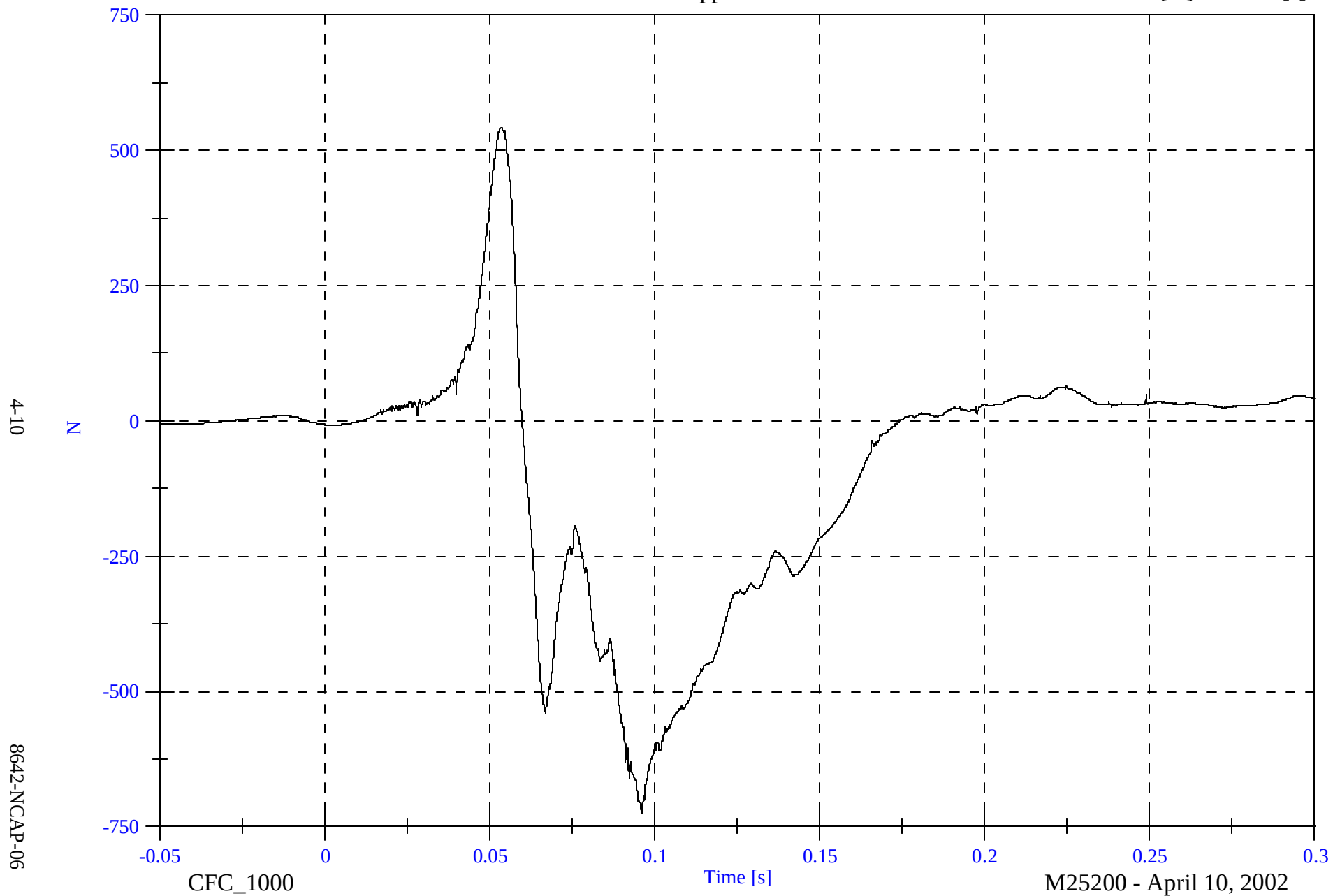


NCAP Test #6 - 2002 Nissan Altima

P3 Upper Neck Fz

Max: 541.6 [N] at 0.053 [s]

Min: -726.6 [N] at 0.096 [s]

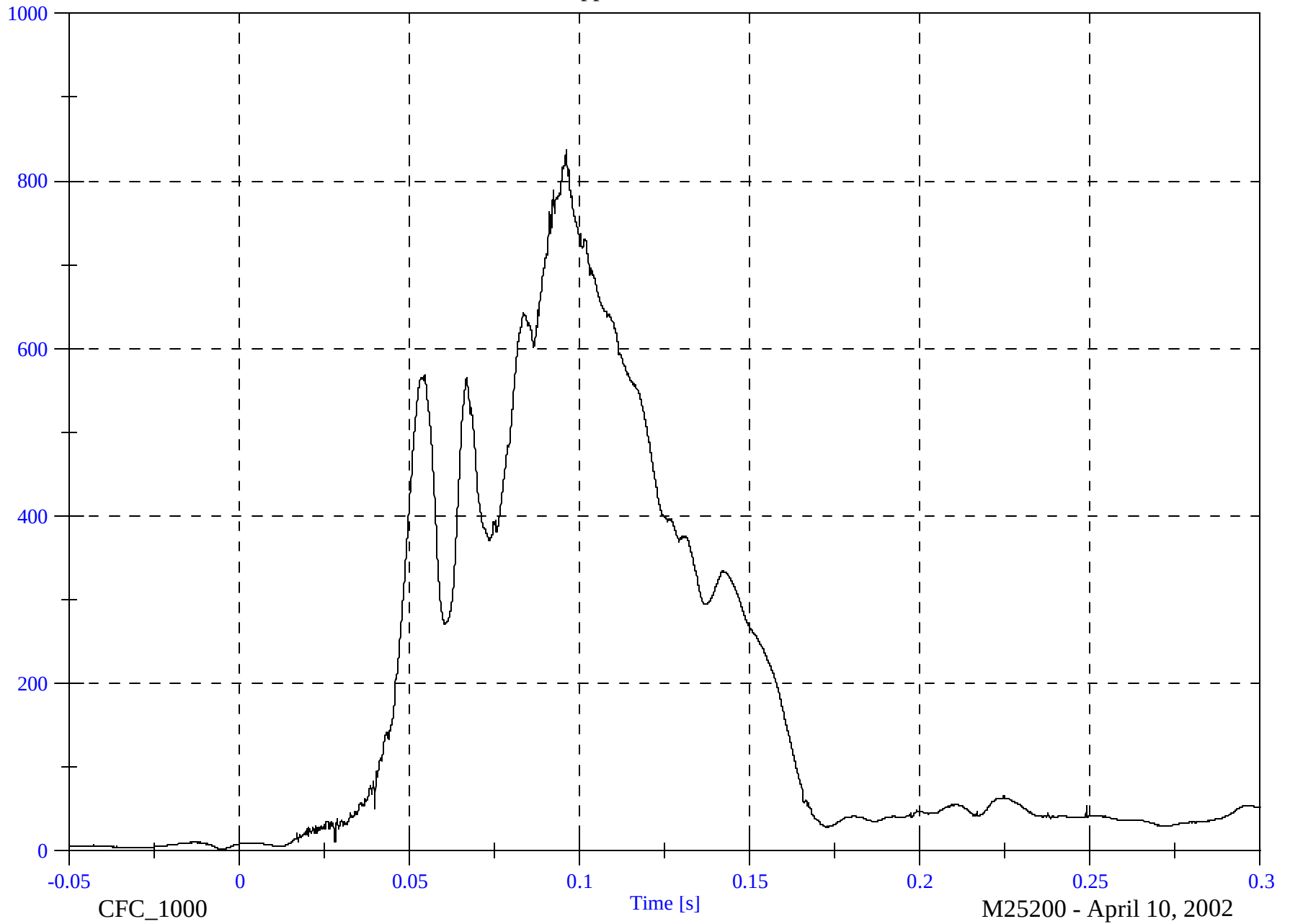


NCAP Test #6 - 2002 Nissan Altima

P3 Upper Neck F Resultant

Max: 836.5 [N] at 0.096 [s]

Min: 2.0 [N] at -0.005 [s]



4-11

8642-NCAP-06

CFC_1000

Time [s]

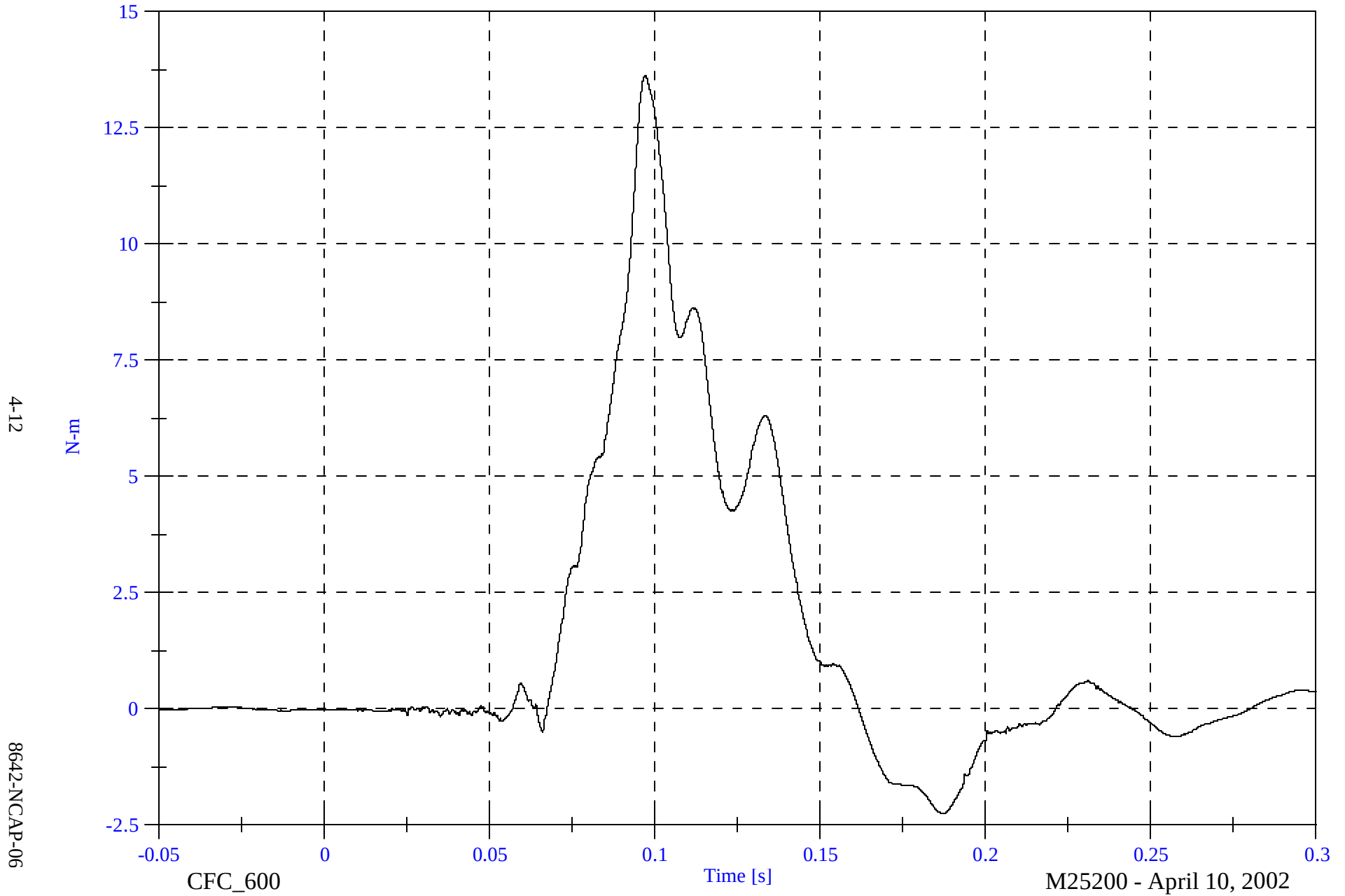
M25200 - April 10, 2002

NCAP Test #6 - 2002 Nissan Altima

P3 Upper Neck Mx

Max: 13.6 [N-m] at 0.097 [s]

Min: -2.3 [N-m] at 0.187 [s]



NCAP Test #6 - 2002 Nissan Altima

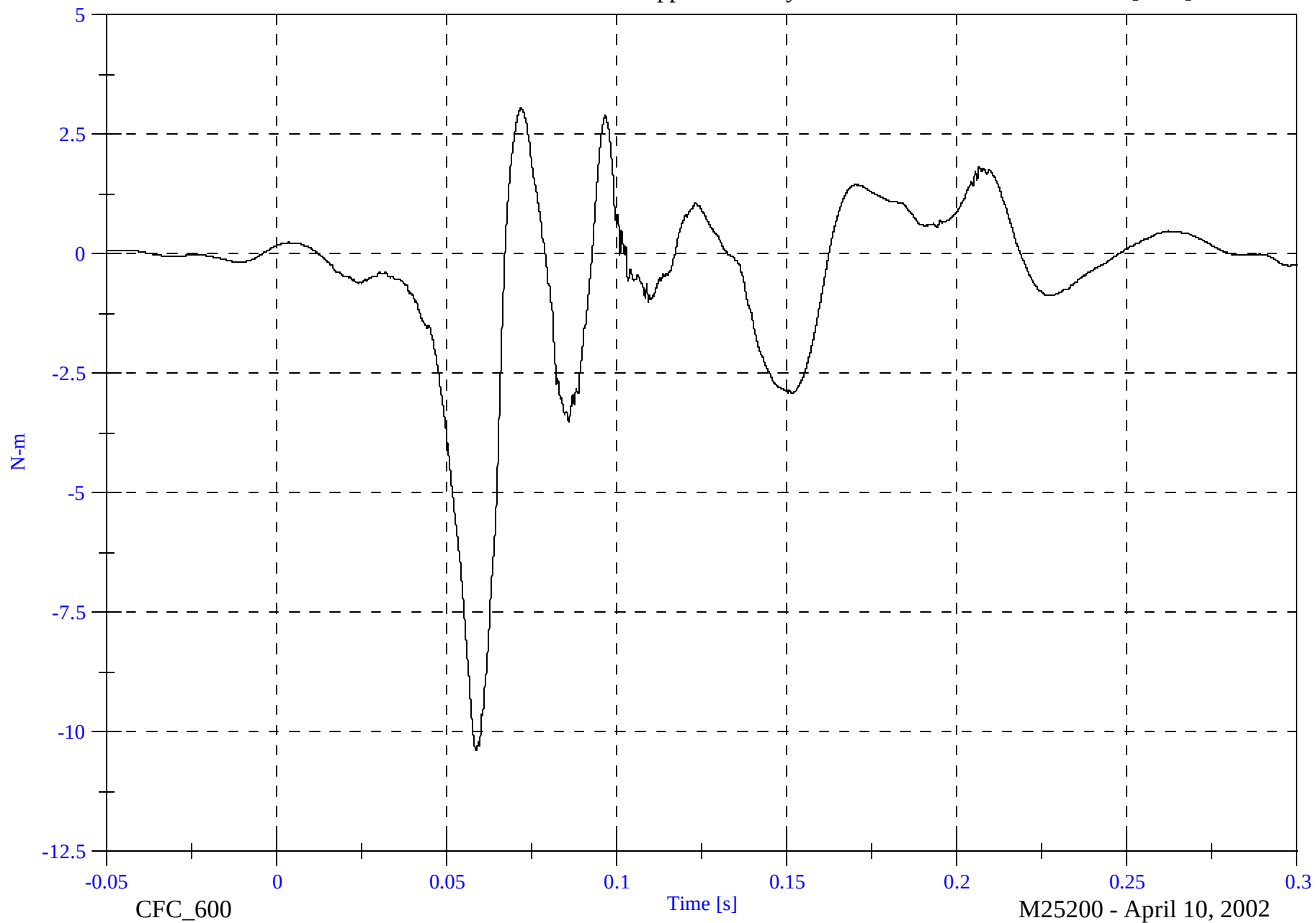
P3 Upper Neck My

Max: 3.1 [N-m] at 0.072 [s]

Min: -10.4 [N-m] at 0.059 [s]

4-13

8642-NCAP-06



NCAP Test #6 - 2002 Nissan Altima

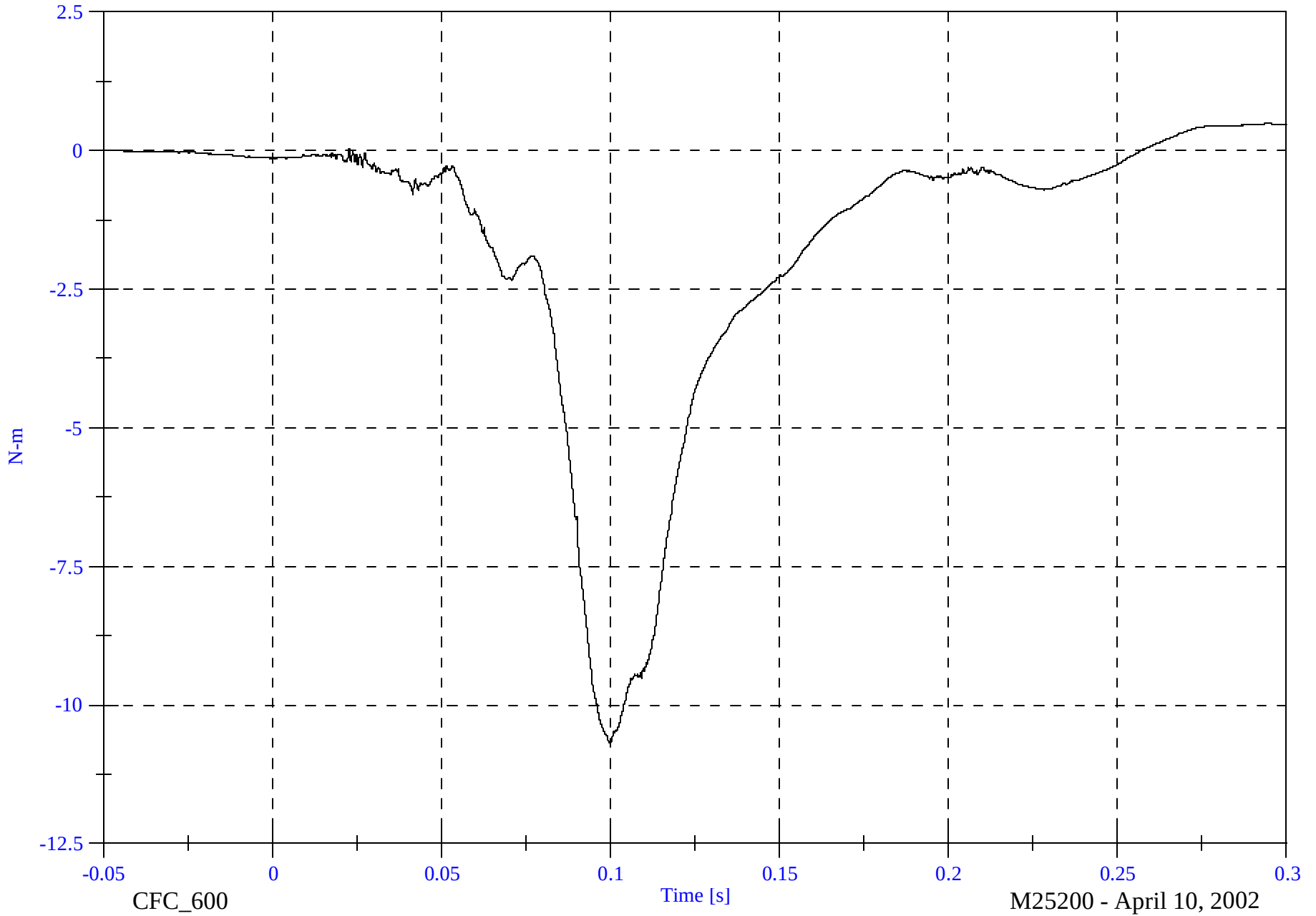
P3 Upper Neck Mz

Max: 0.5 [N-m] at 0.295 [s]

Min: -10.7 [N-m] at 0.100 [s]

4-14

8642-NCAP-06



NCAP Test #6 - 2002 Nissan Altima

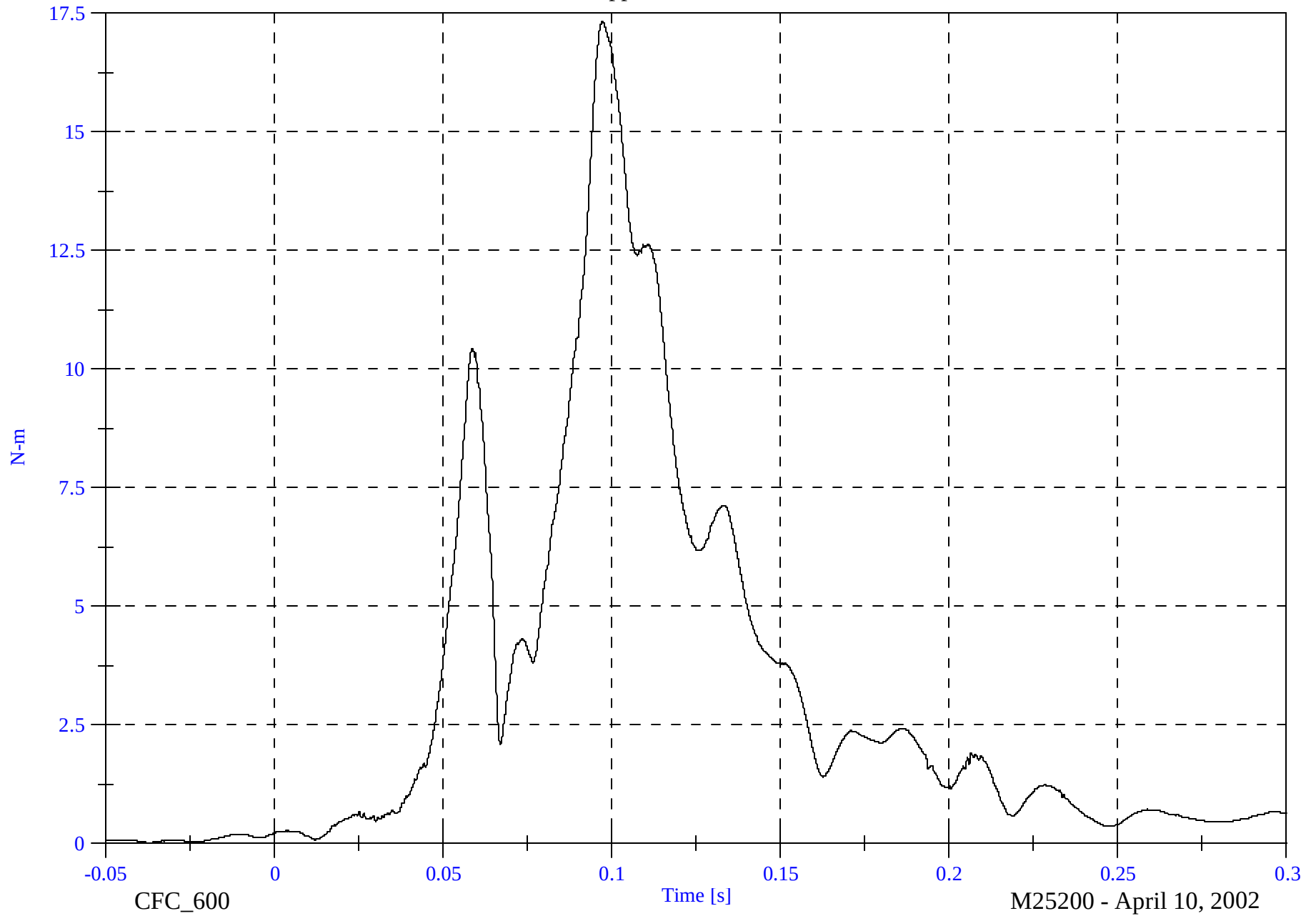
P3 Upper Neck M Resultant

Max: 17.3 [N-m] at 0.097 [s]

Min: 0.0 [N-m] at -0.037 [s]

4-15

8642-NCAP-06

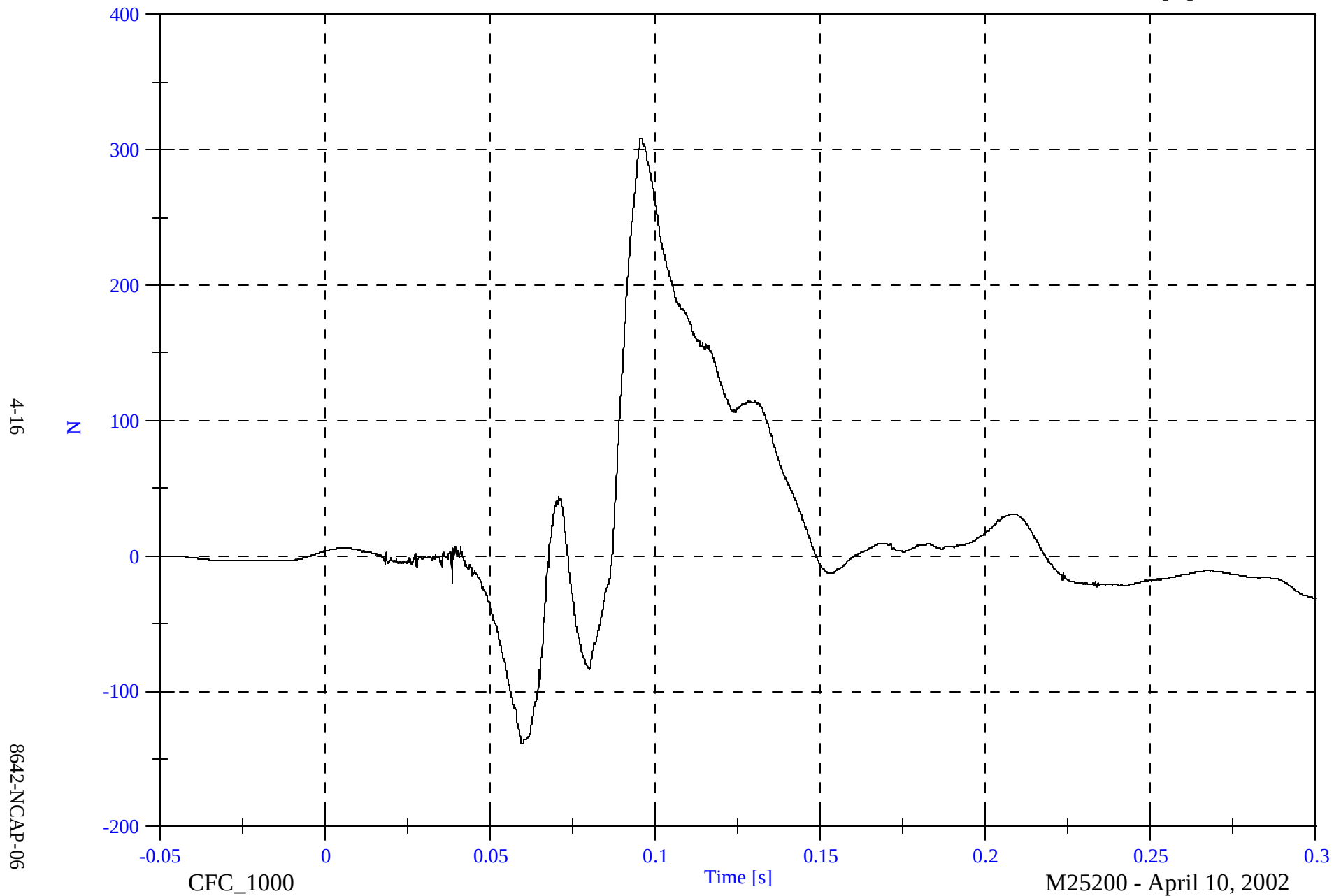


NCAP Test #6 - 2002 Nissan Altima

Max: 308.5 [N] at 0.096 [s]

Min: -139.1 [N] at 0.060 [s]

P3 Lower Neck Fx



NCAP Test #6 - 2002 Nissan Altima

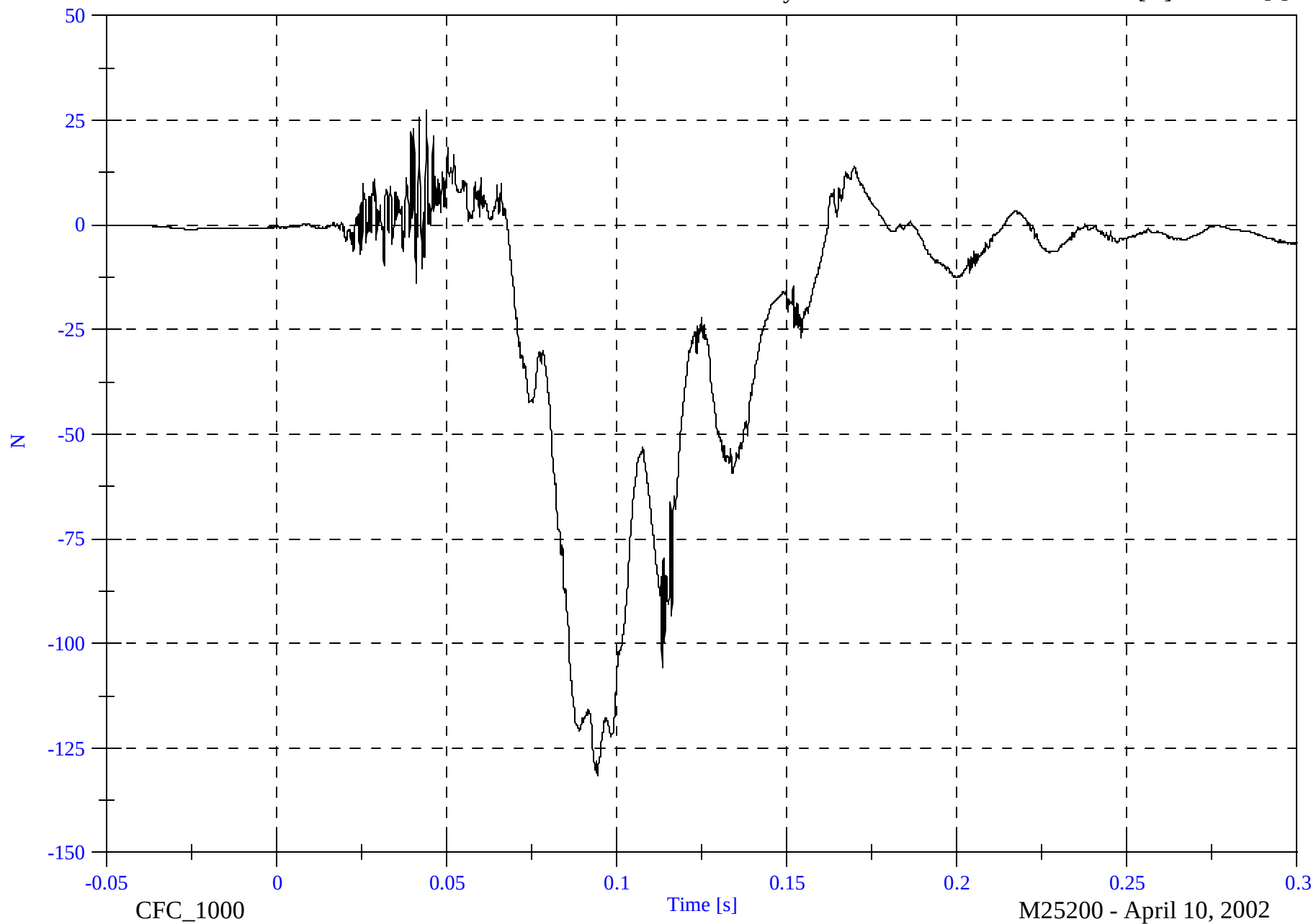
P3 Lower Neck Fy

Max: 27.4 [N] at 0.044 [s]

Min: -131.6 [N] at 0.094 [s]

4-17

8642-NCAP-06

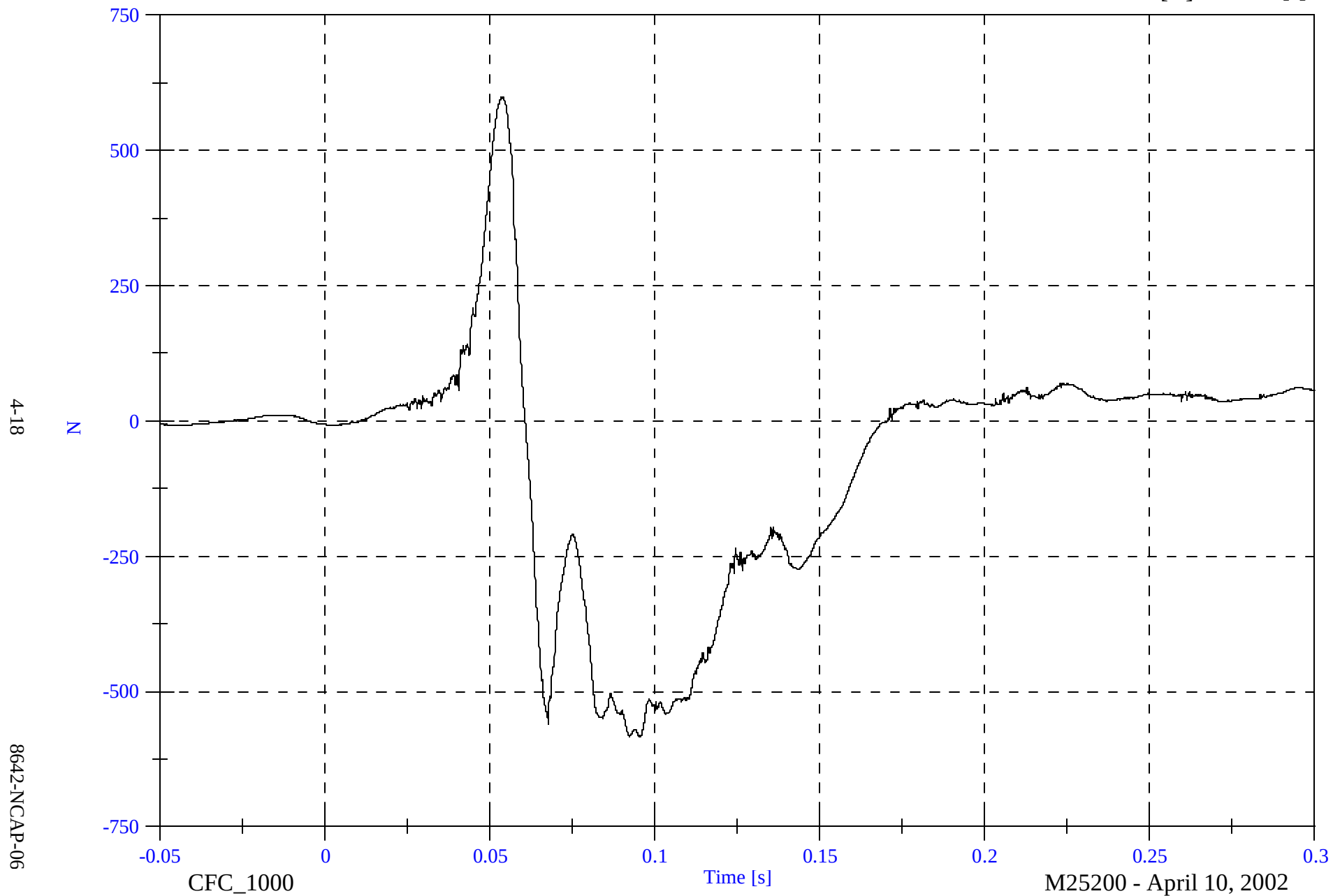


NCAP Test #6 - 2002 Nissan Altima

Max: 599.0 [N] at 0.054 [s]

Min: -583.1 [N] at 0.092 [s]

P3 Lower Neck Fz

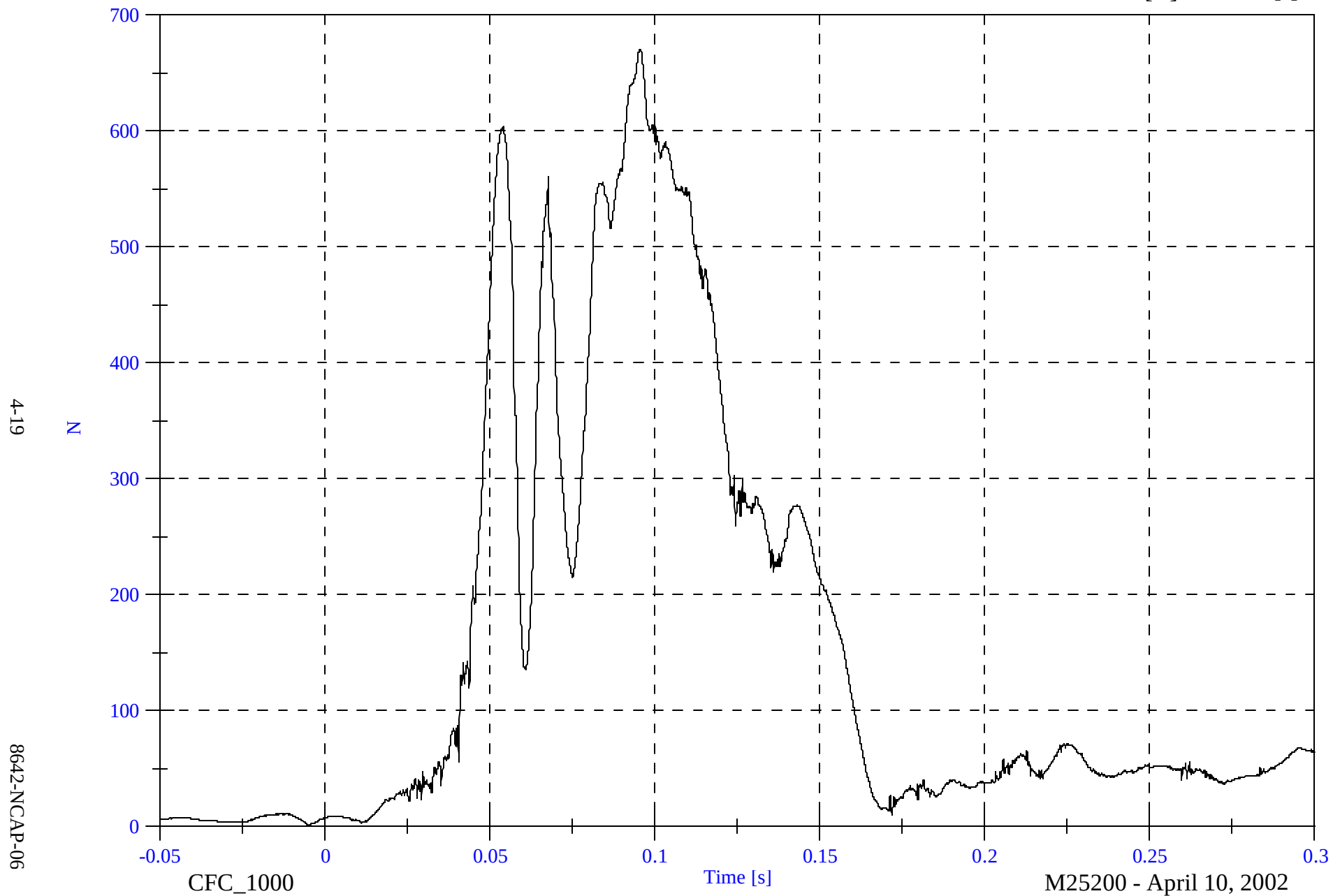


NCAP Test #6 - 2002 Nissan Altima

P3 Lower Neck F Resultant

Max: 670.5 [N] at 0.095 [s]

Min: 0.8 [N] at -0.005 [s]

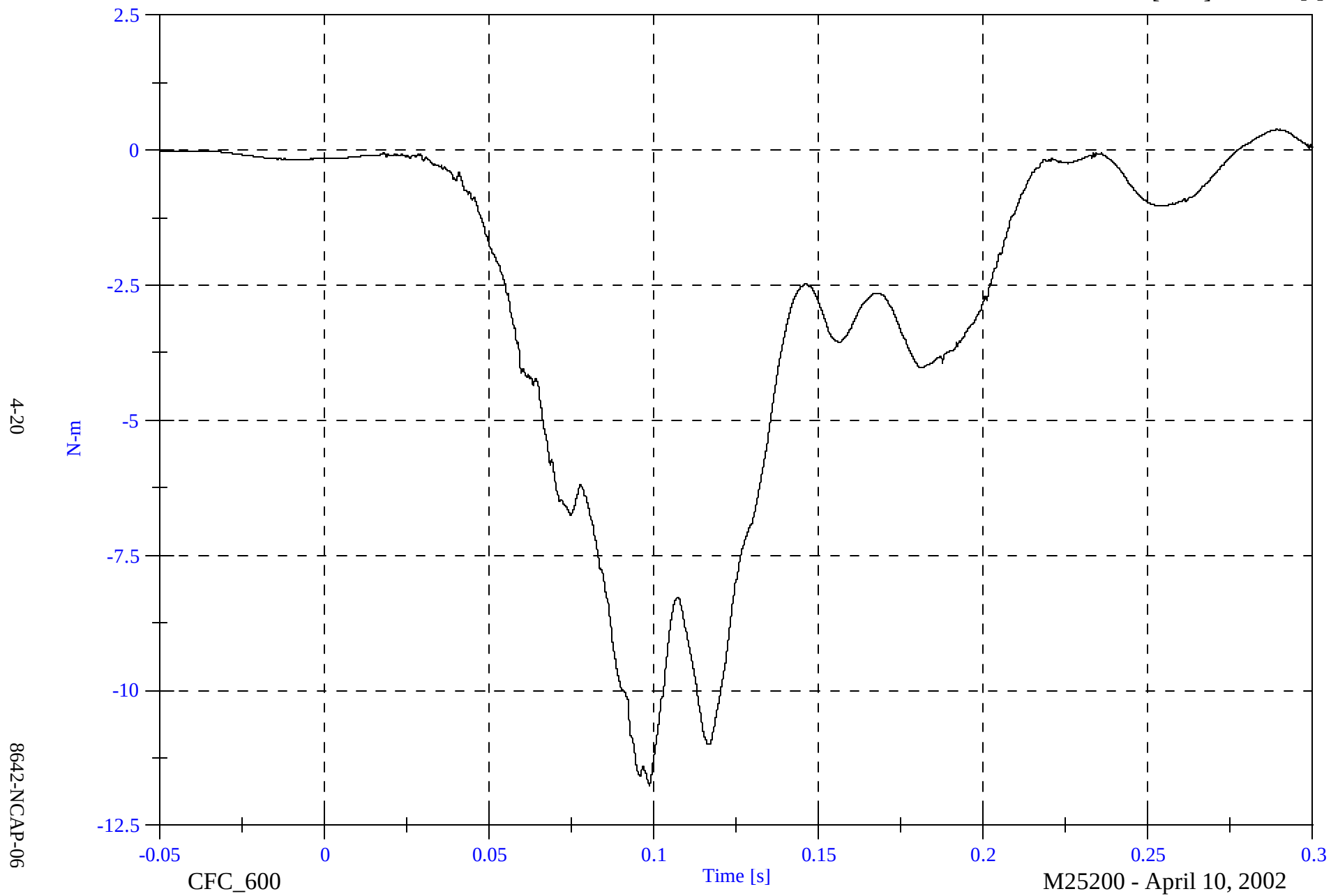


NCAP Test #6 - 2002 Nissan Altima

P3 Lower Neck Mx

Max: 0.4 [N-m] at 0.290 [s]

Min: -11.8 [N-m] at 0.099 [s]



NCAP Test #6 - 2002 Nissan Altima

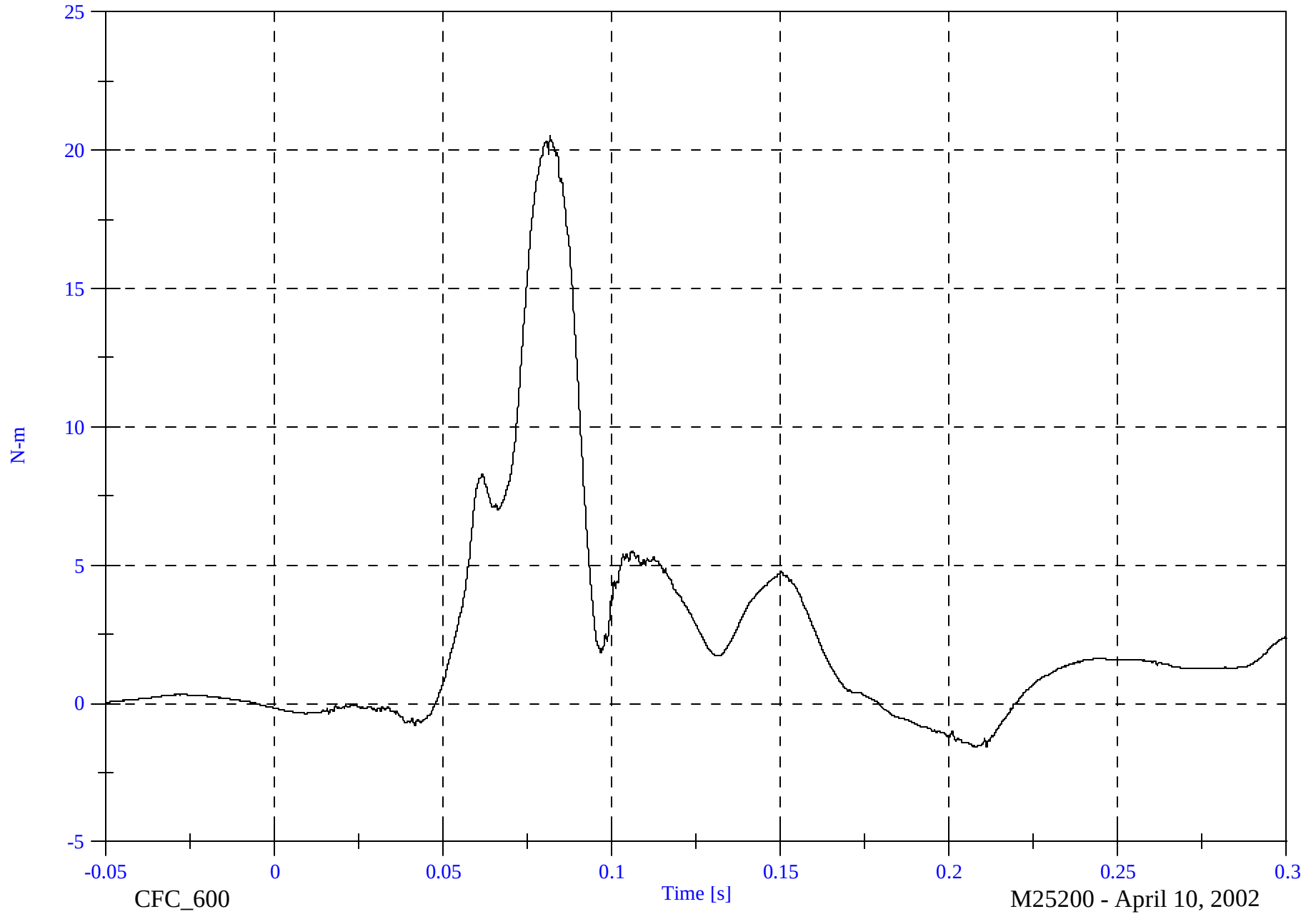
Max: 20.5 [N-m] at 0.082 [s]

Min: -1.6 [N-m] at 0.211 [s]

P3 Lower Neck My

4-21

8642-NCAP-06

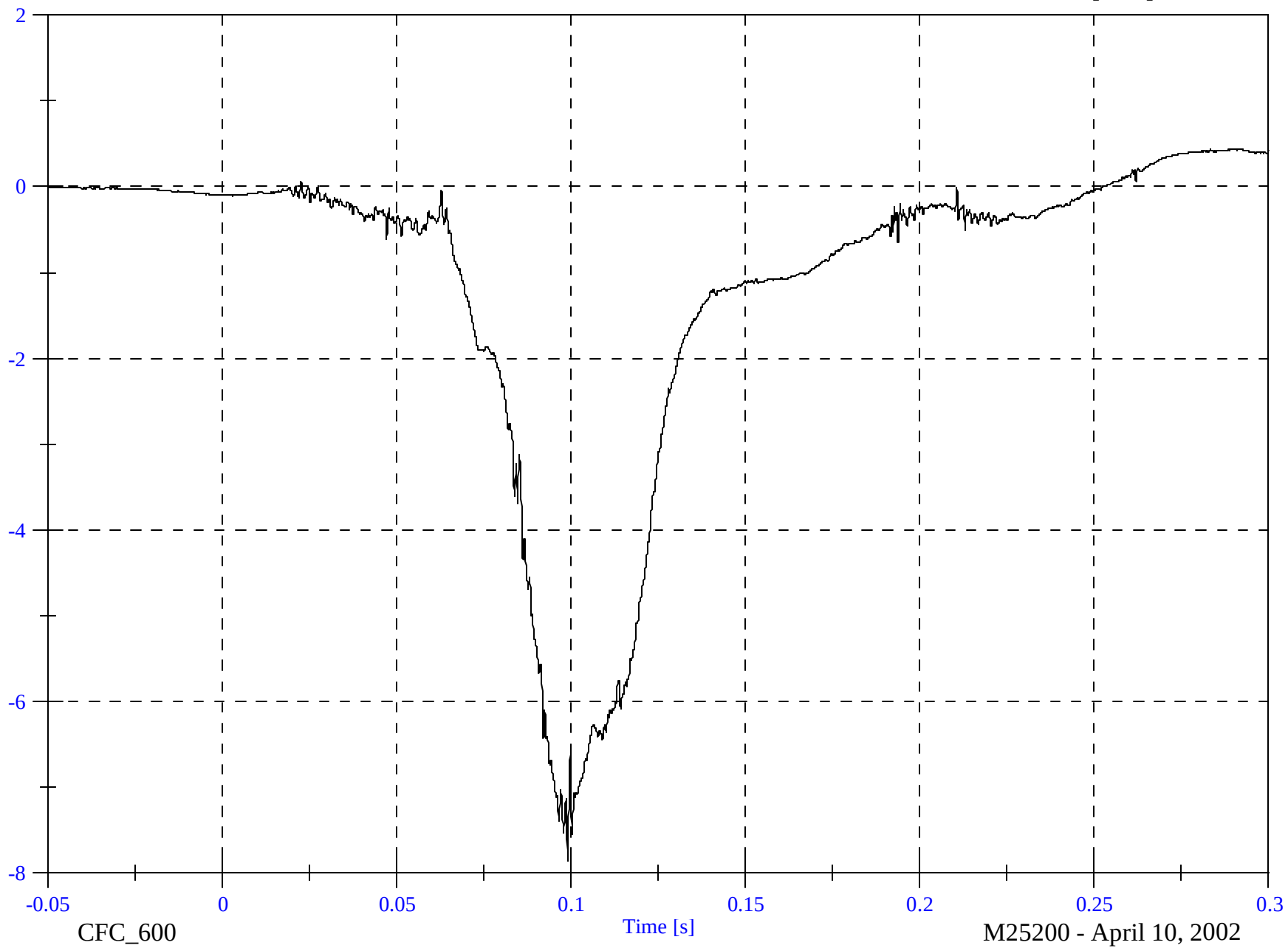


NCAP Test #6 - 2002 Nissan Altima

P3 Lower Neck Mz

Max: 0.4 [N-m] at 0.290 [s]

Min: -7.9 [N-m] at 0.099 [s]



4-22

8642-NCAP-06

M25200 - April 10, 2002

NCAP Test #6 - 2002 Nissan Altima

P3 Lower Neck M Resultant

Max: 21.8 [N-m] at 0.082 [s]

Min: 0.0 [N-m] at -0.050 [s]



4-23

8642-NCAP-06

CFC_600

Time [s]

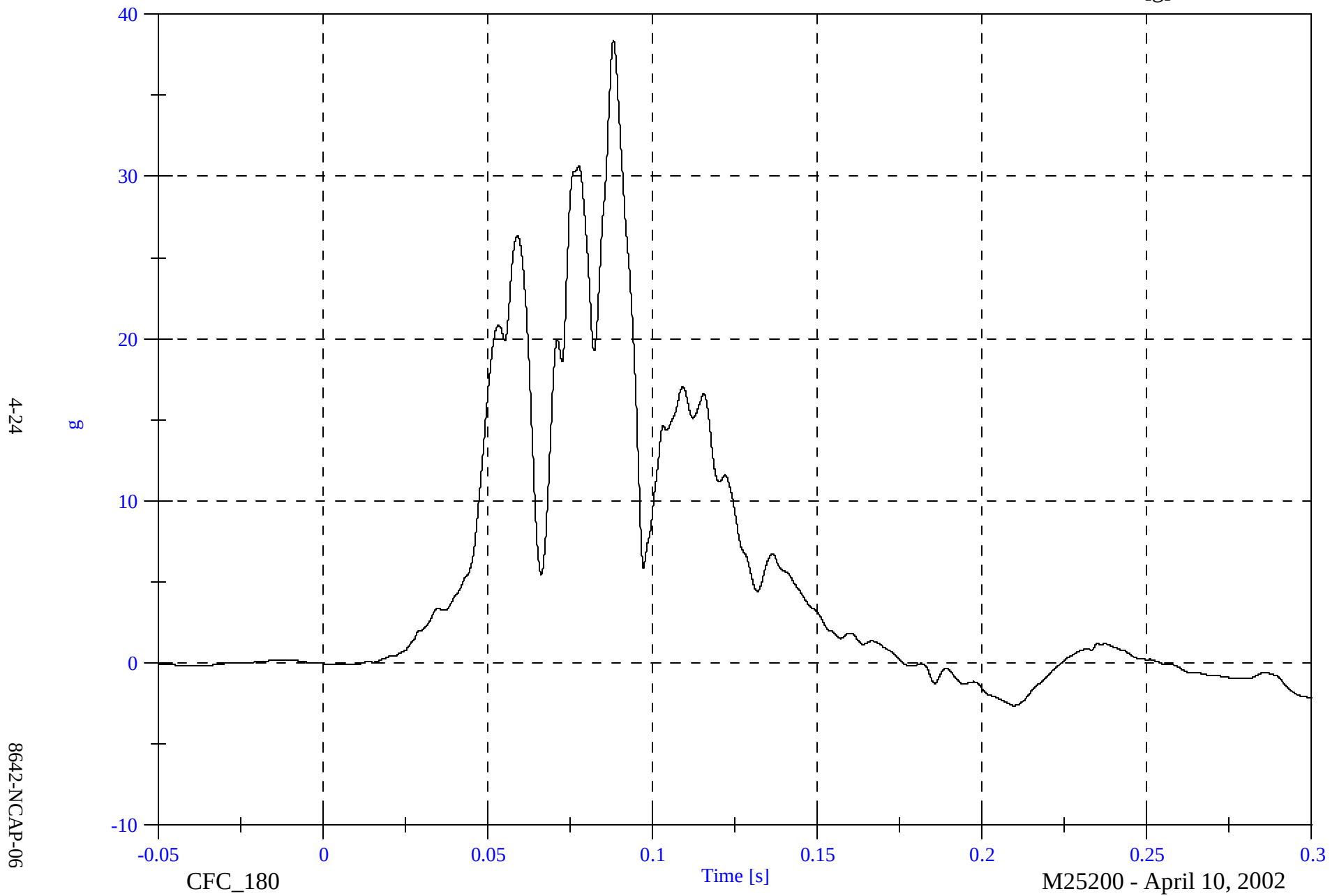
M25200 - April 10, 2002

NCAP Test #6 - 2002 Nissan Altima

Max: 38.4 [g] at 0.088 [s]

Min: -2.6 [g] at 0.210 [s]

P3 Chest x

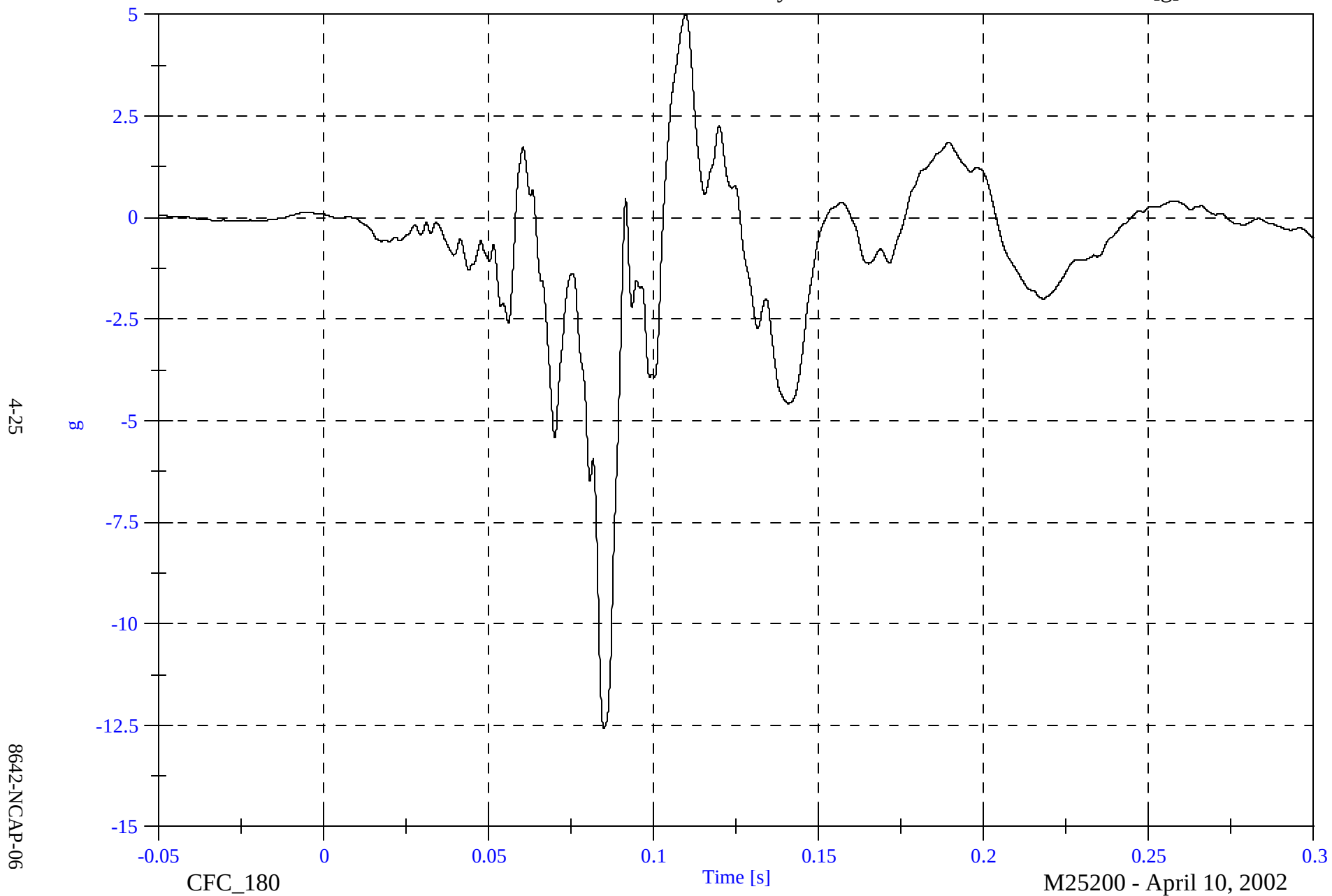


NCAP Test #6 - 2002 Nissan Altima

Max: 5.0 [g] at 0.110 [s]

Min: -12.6 [g] at 0.085 [s]

P3 Chest y



NCAP Test #6 - 2002 Nissan Altima

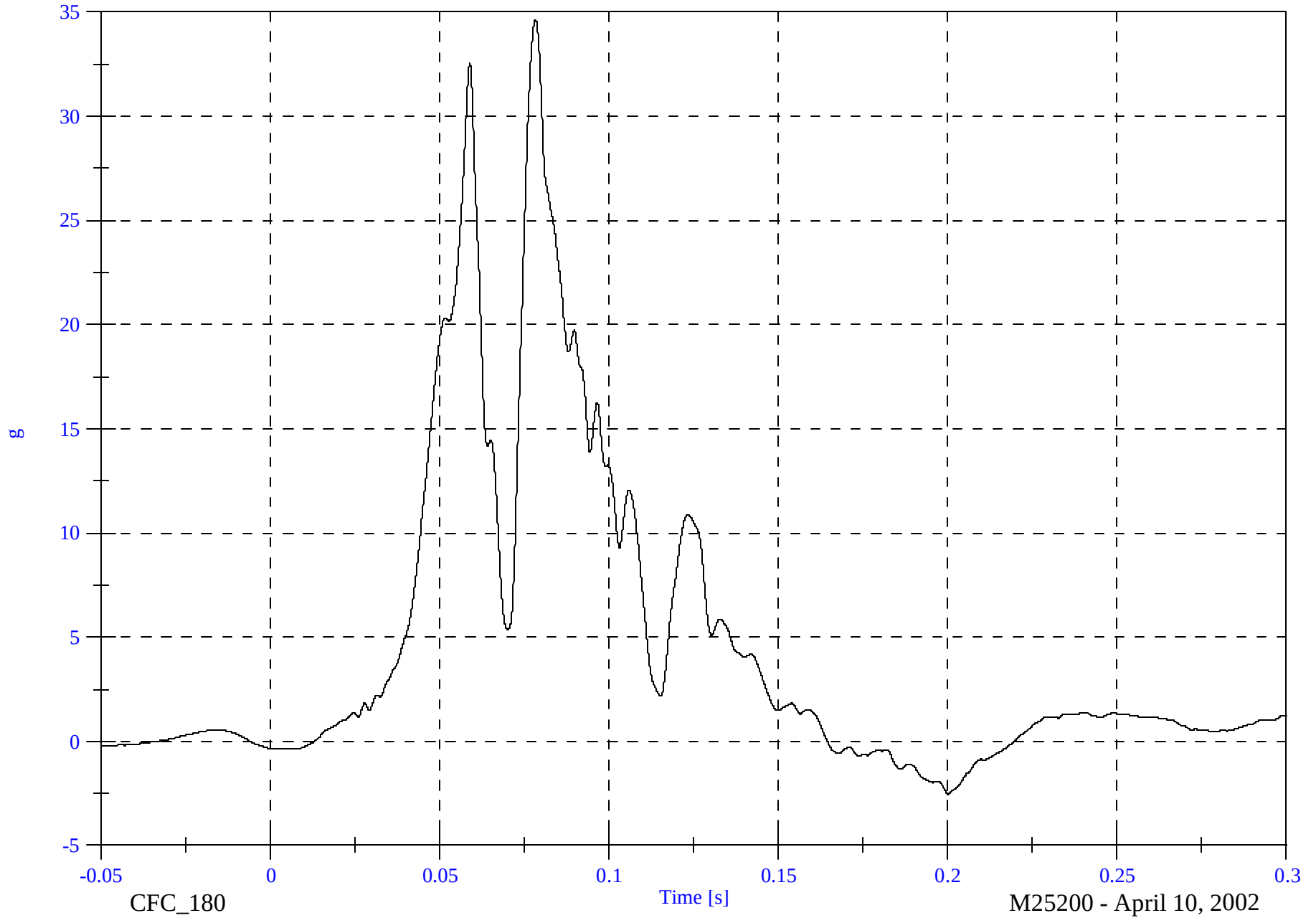
Max: 34.6 [g] at 0.078 [s]

Min: -2.5 [g] at 0.200 [s]

P3 Chest z

4-26

8642-NCAP-06

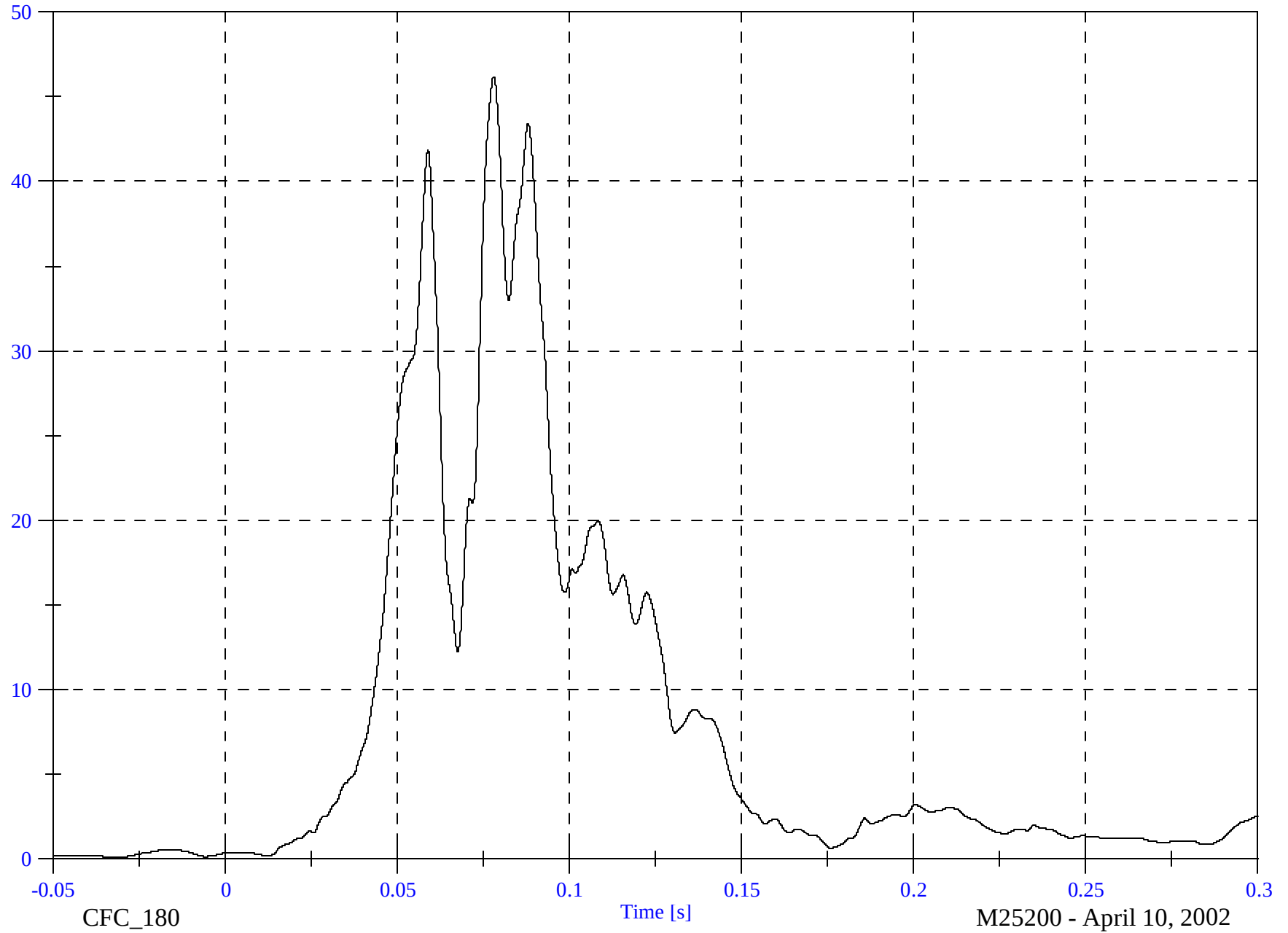


NCAP Test #6 - 2002 Nissan Altima

P3 Chest Resultant

Max: 46.2 [g] at 0.078 [s]

Min: 0.1 [g] at -0.031 [s]



4-27

8642-NCAP-06

CFC_180

Time [s]

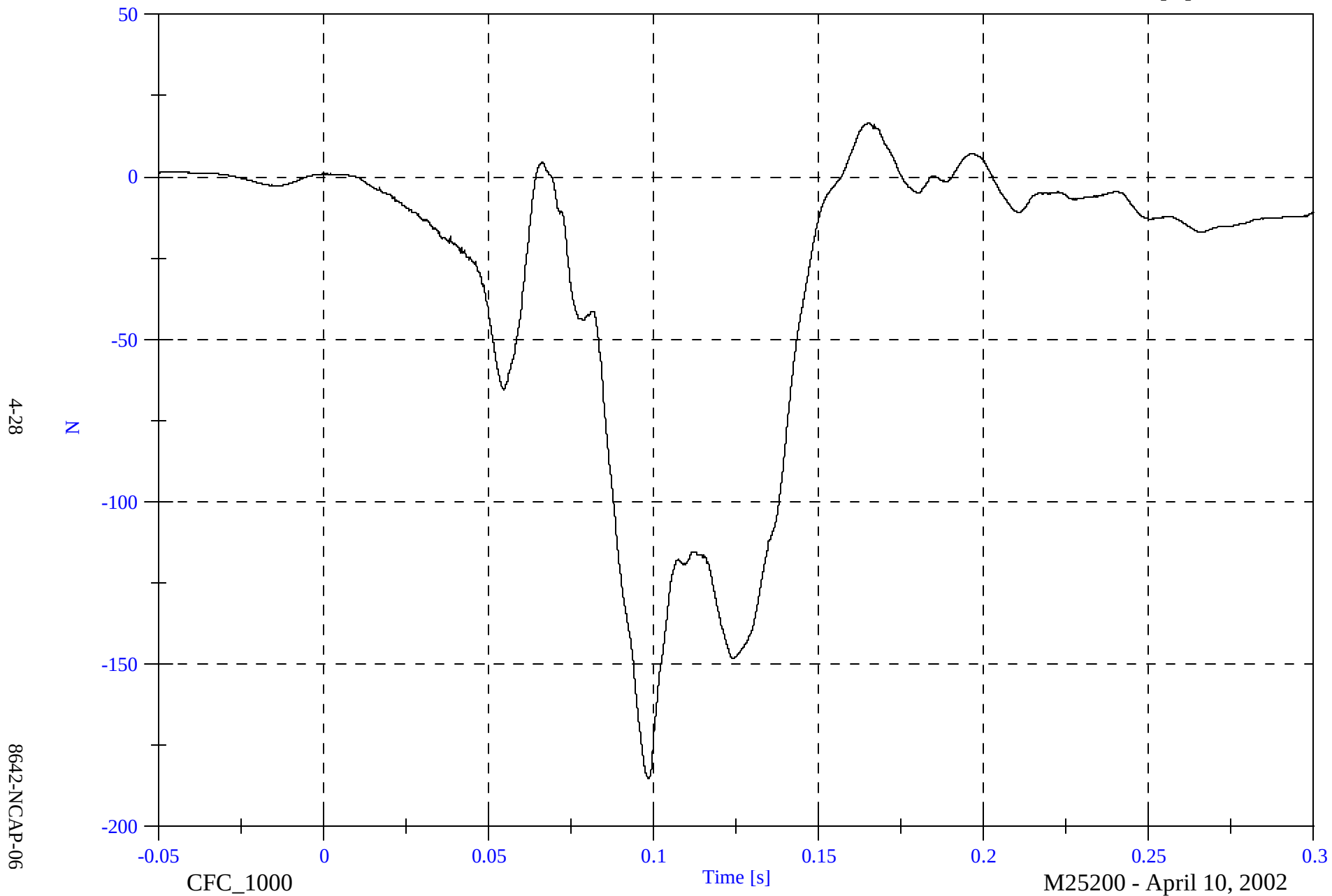
M25200 - April 10, 2002

NCAP Test #6 - 2002 Nissan Altima

P3 Lumbar Fx

Max: 16.8 [N] at 0.165 [s]

Min: -185.3 [N] at 0.098 [s]

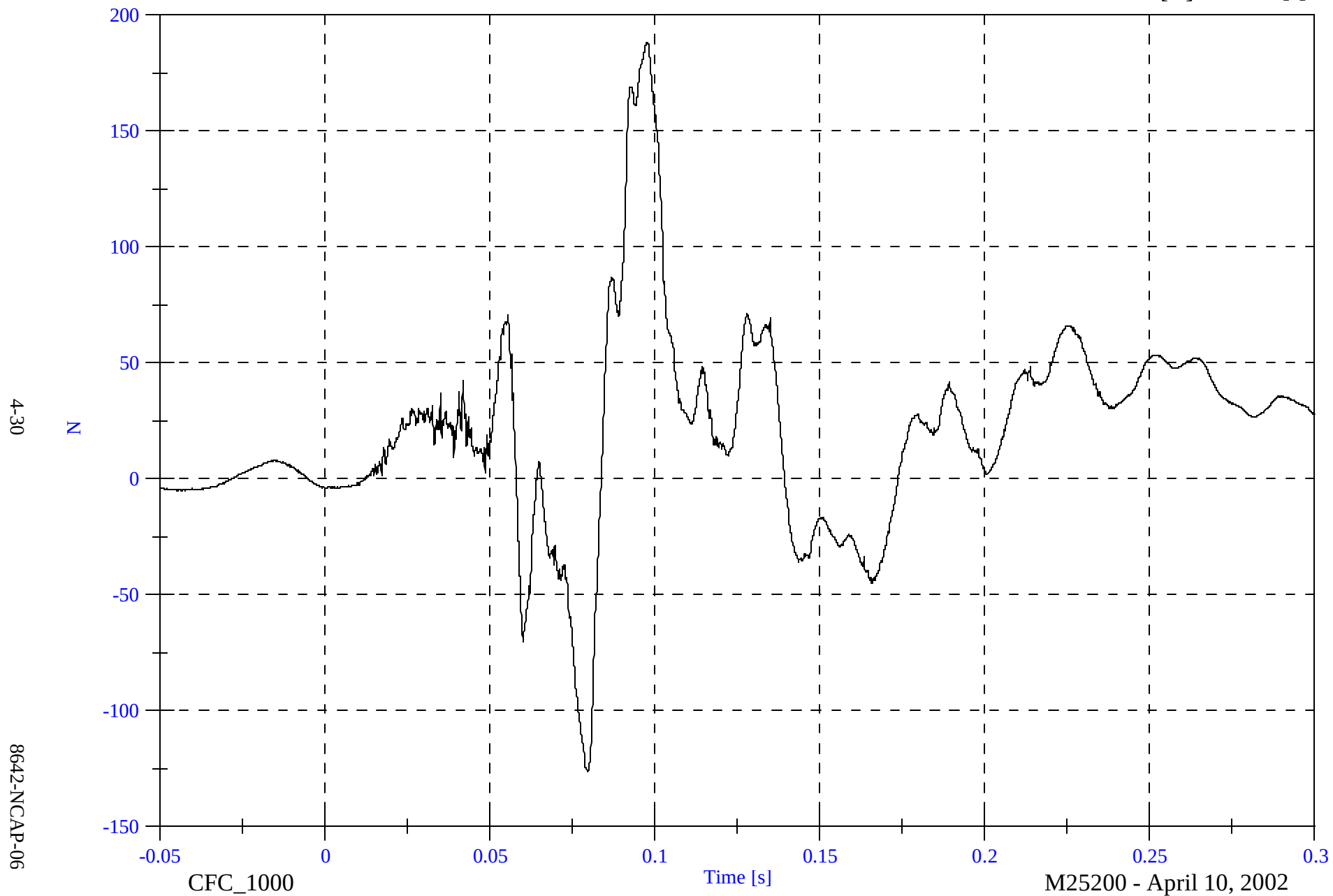


NCAP Test #6 - 2002 Nissan Altima

Max: 188.4 [N] at 0.098 [s]

Min: -126.3 [N] at 0.080 [s]

P3 Lumbar Fz



NCAP Test #6 - 2002 Nissan Altima

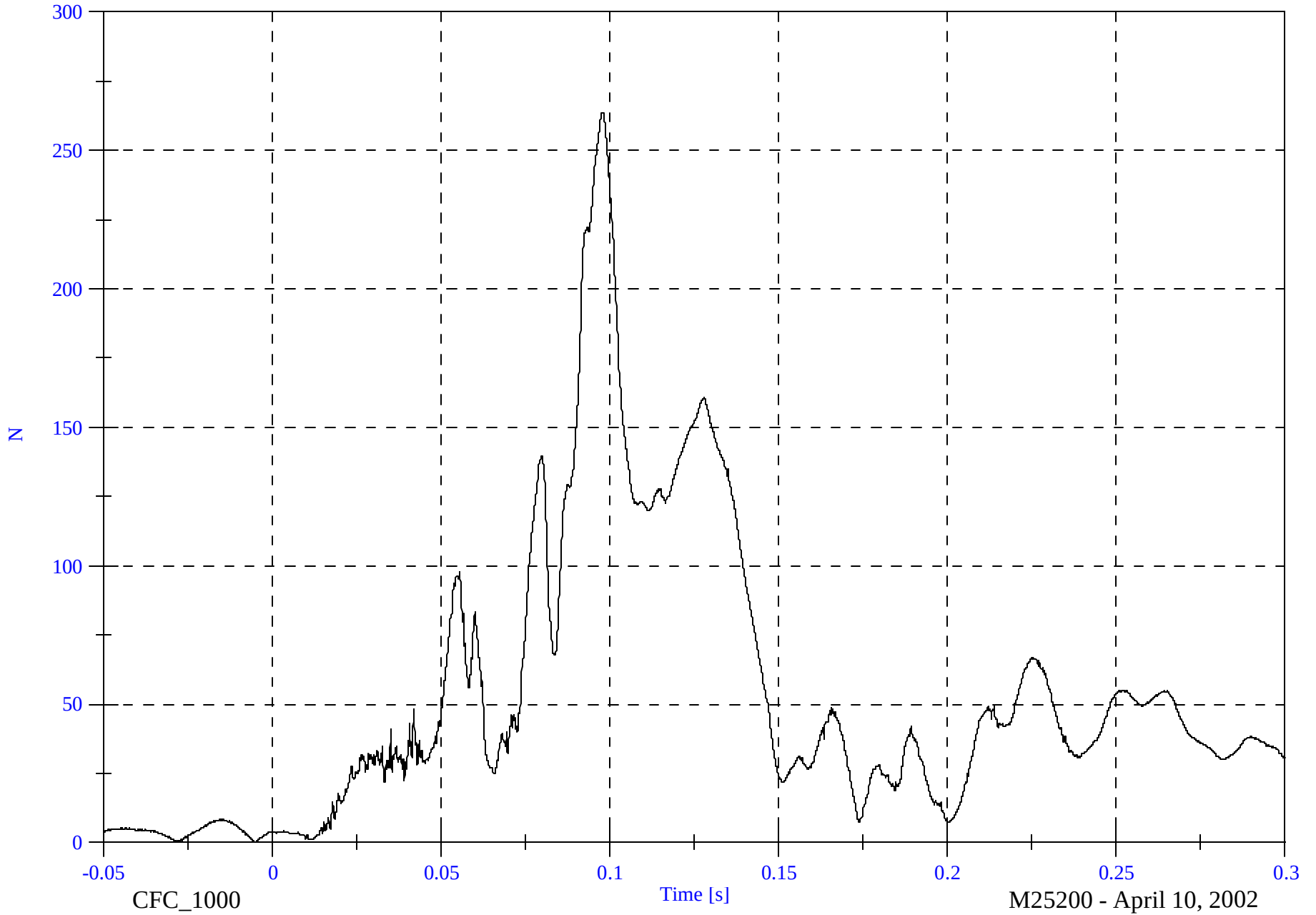
Max: 263.7 [N] at 0.098 [s]

Min: 0.1 [N] at -0.005 [s]

P3 Lumbar F Resultant

4-31

8642-NCAP-06



NCAP Test #6 - 2002 Nissan Altima

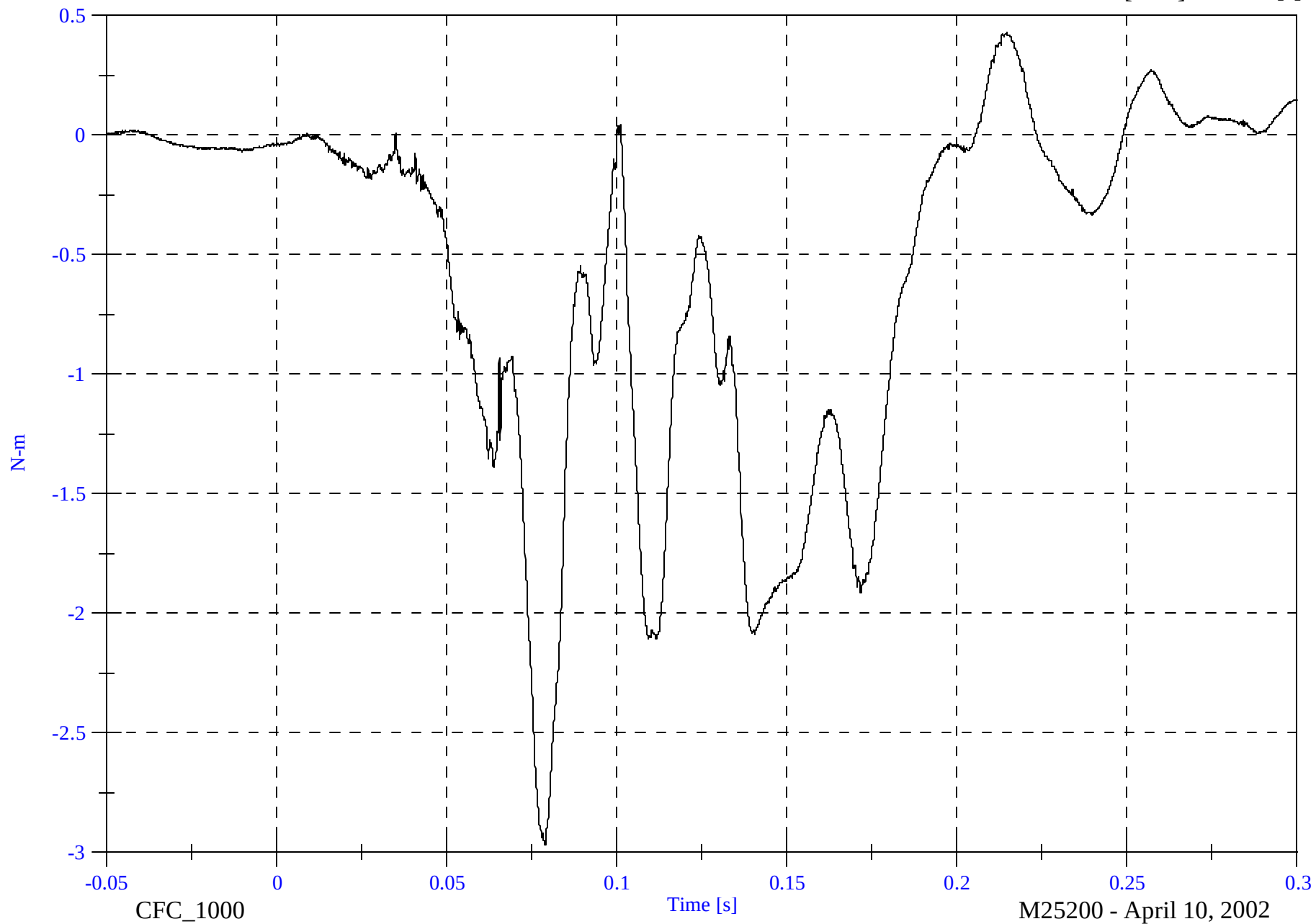
P3 Lumbar Mx

Max: 0.4 [N-m] at 0.215 [s]

Min: -3.0 [N-m] at 0.079 [s]

4-32

8642-NCAP-06



NCAP Test #6 - 2002 Nissan Altima

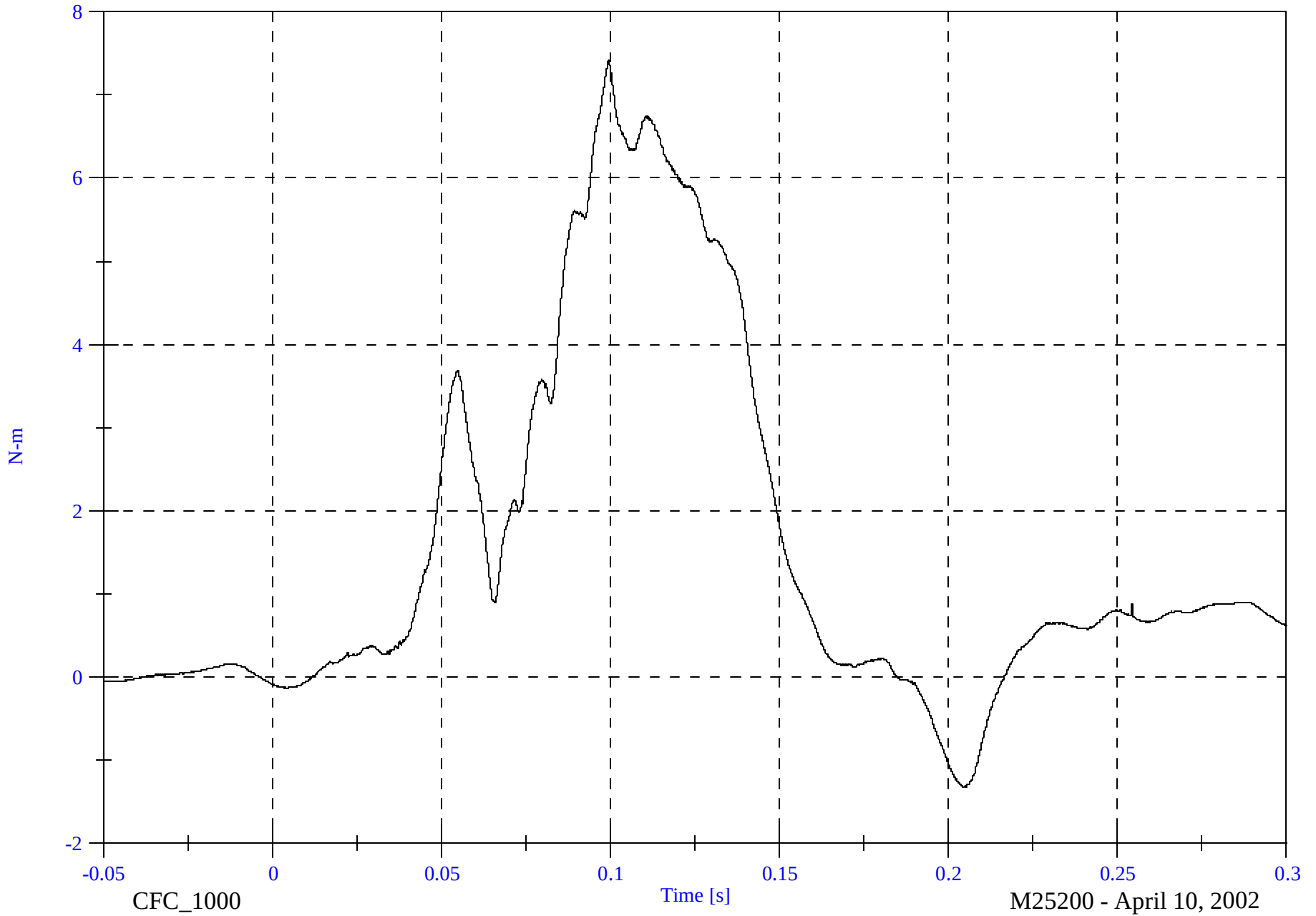
Max: 7.4 [N-m] at 0.099 [s]

Min: -1.3 [N-m] at 0.204 [s]

P3 Lumbar My

4-33

8642-NCAP-06

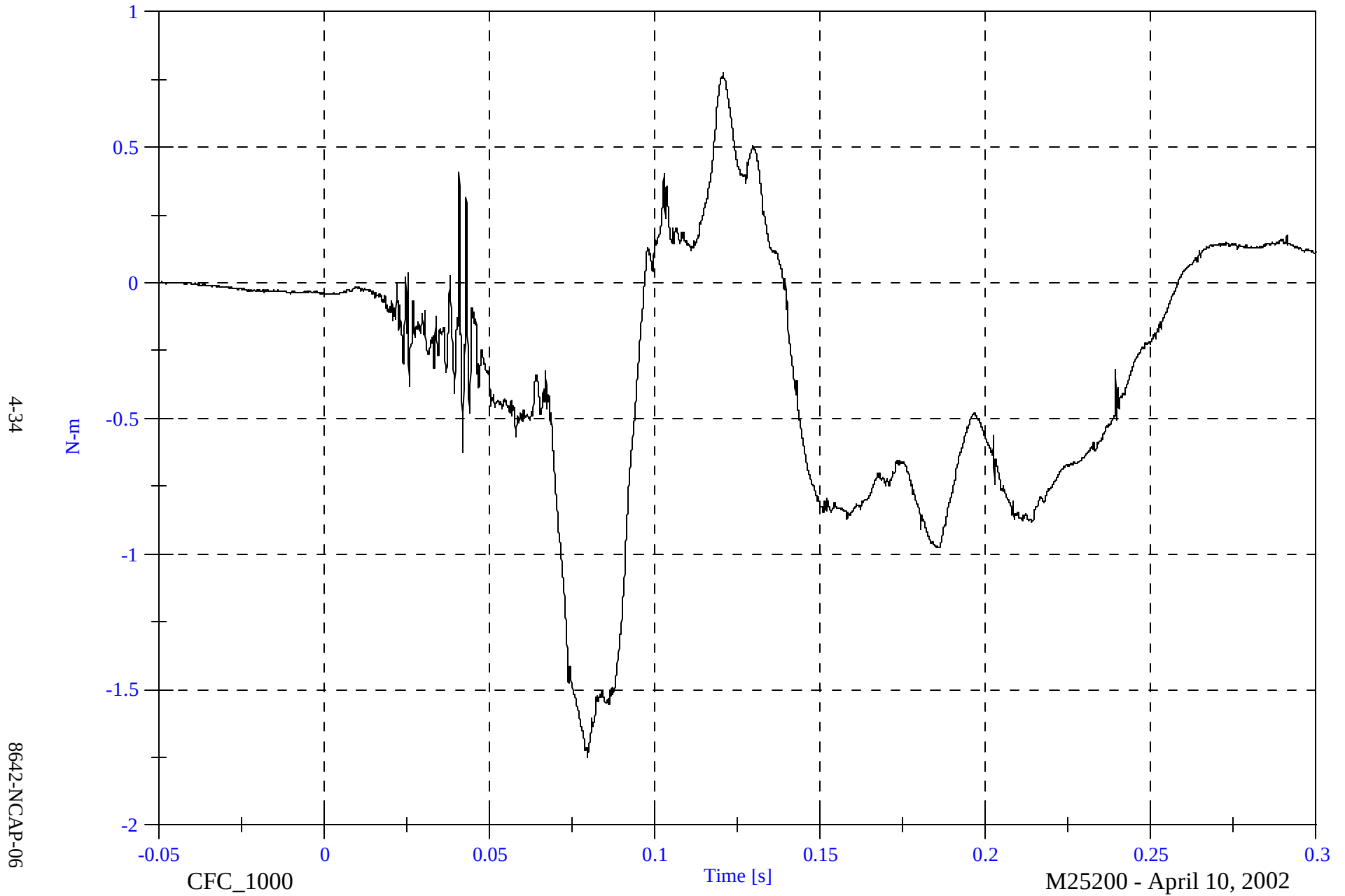


NCAP Test #6 - 2002 Nissan Altima

Max: 0.8 [N-m] at 0.121 [s]

Min: -1.7 [N-m] at 0.080 [s]

P3 Lumbar Mz

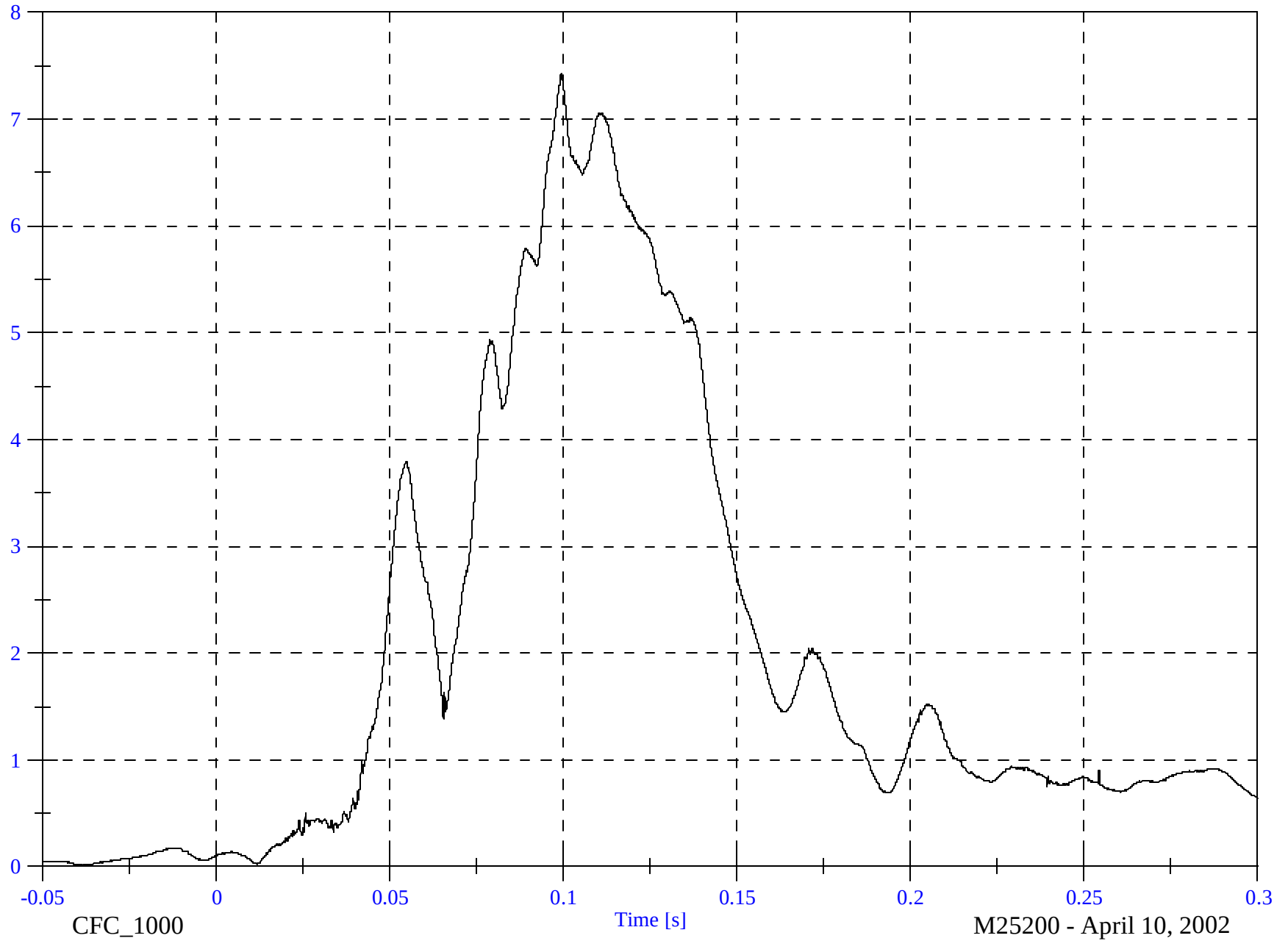


NCAP Test #6 - 2002 Nissan Altima

P3 Lumbar M Resultant

Max: 7.4 [N-m] at 0.099 [s]

Min: 0.0 [N-m] at -0.038 [s]



4-35

8642-NCAP-06

CFC_1000

Time [s]

M25200 - April 10, 2002

NCAP Test #6 - 2002 Nissan Altima

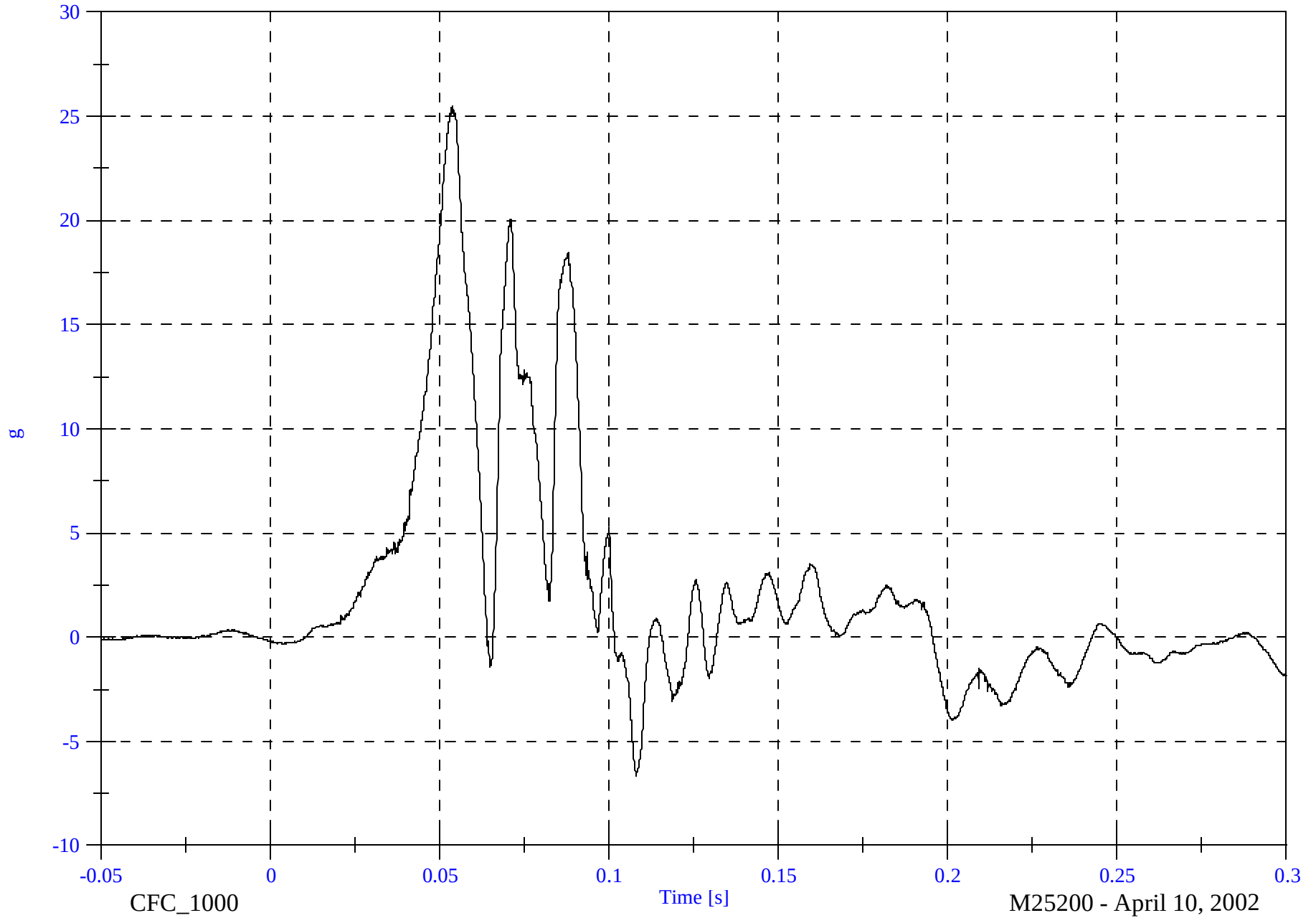
Max: 25.5 [g] at 0.054 [s]

Min: -6.7 [g] at 0.108 [s]

P3 Pelvic x

4-36

8642-NCAP-06

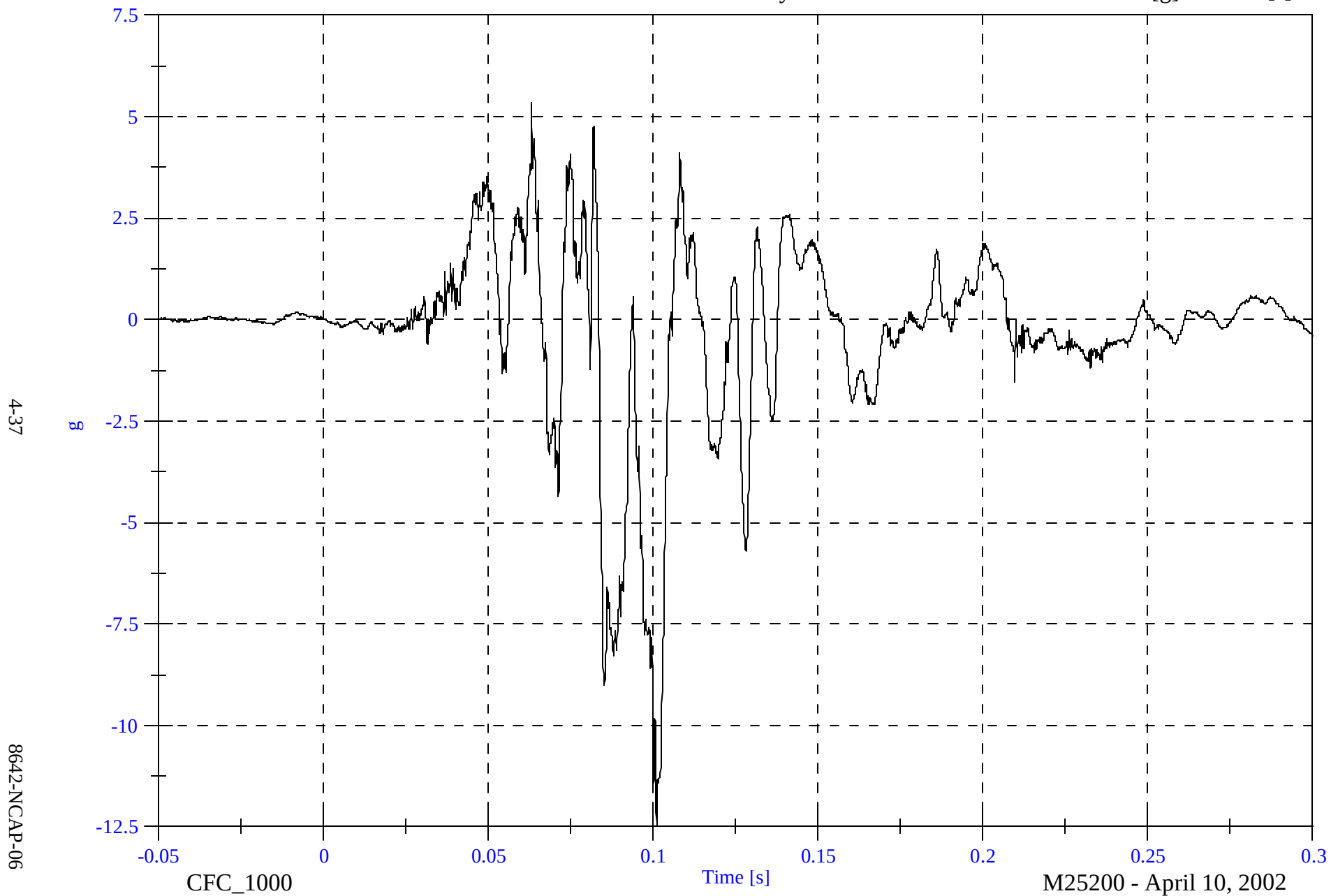


NCAP Test #6 - 2002 Nissan Altima

Max: 5.3 [g] at 0.063 [s]

Min: -12.5 [g] at 0.101 [s]

P3 Pelvic y

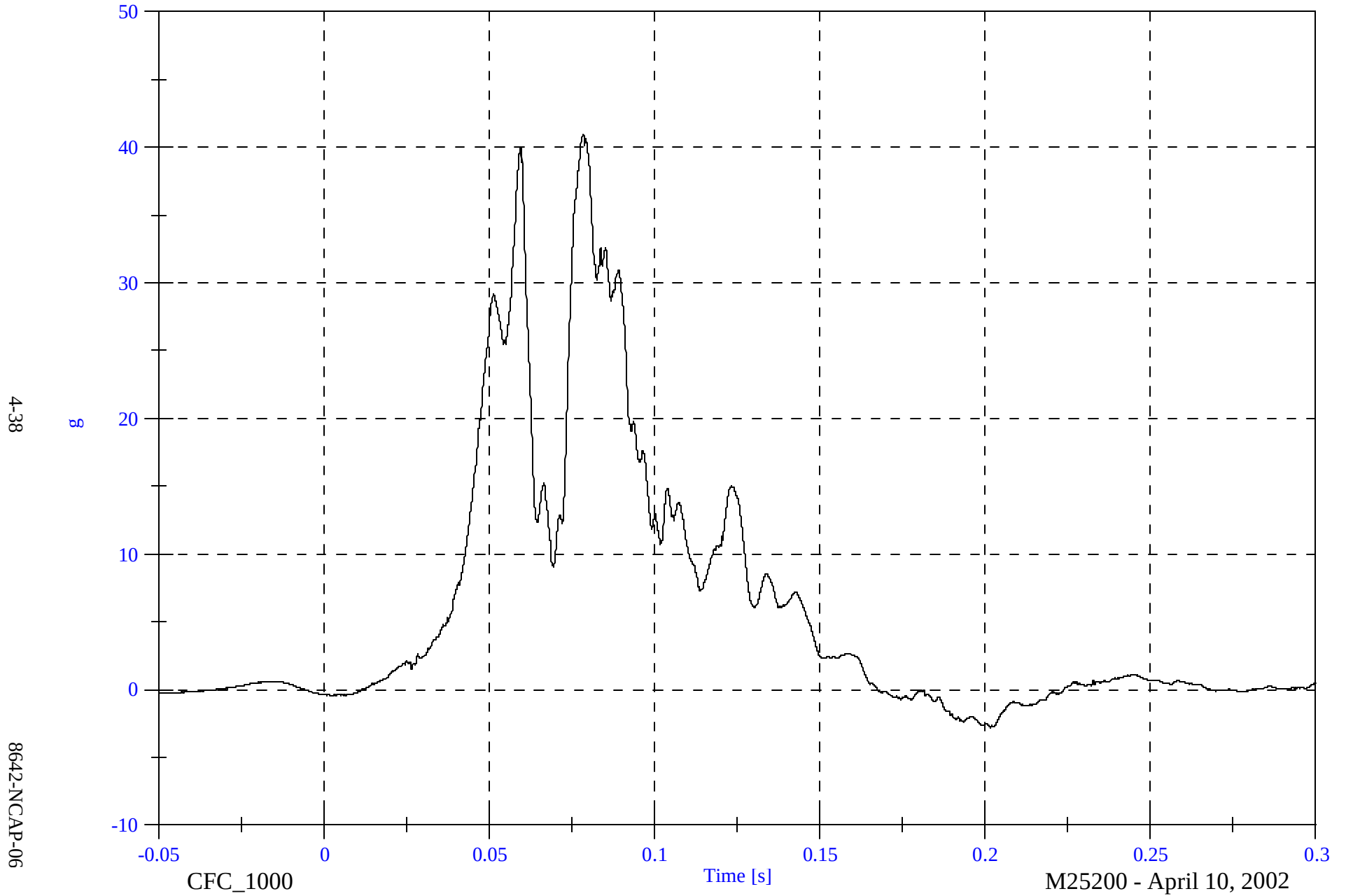


NCAP Test #6 - 2002 Nissan Altima

Max: 40.9 [g] at 0.079 [s]

Min: -2.9 [g] at 0.202 [s]

P3 Pelvic z



NCAP Test #6 - 2002 Nissan Altima

P3 Pelvic Resultant

Max: 42.4 [g] at 0.059 [s]

Min: 0.0 [g] at -0.033 [s]



4-39

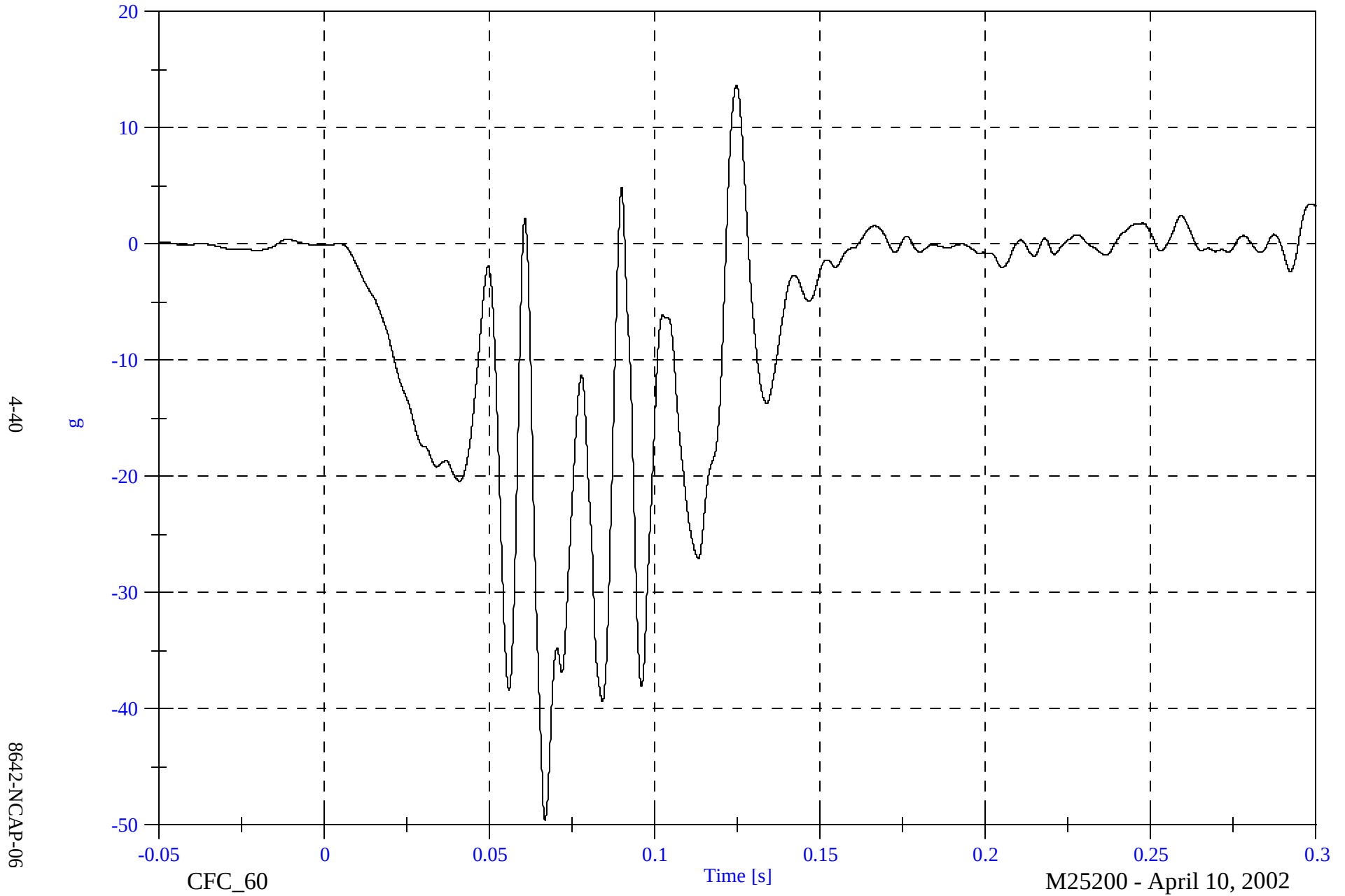
8642-NCAP-06

NCAP Test #6 - 2002 Nissan Altima

Child Seat x

Max: 13.7 [g] at 0.125 [s]

Min: -49.6 [g] at 0.067 [s]

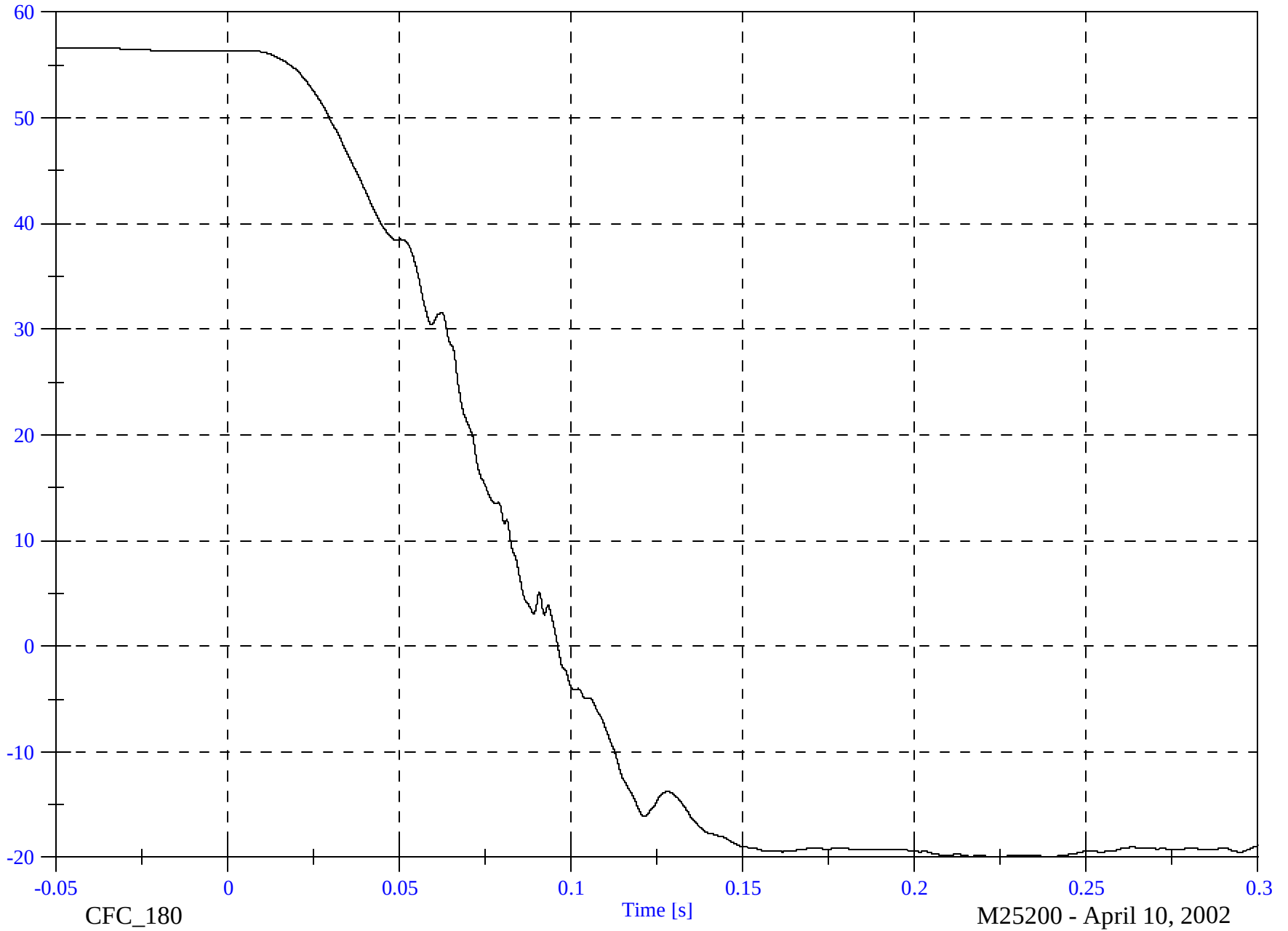


NCAP Test #6 - 2002 Nissan Altima

Max: 56.6 [kph] at -0.045 [s]

Min: -20.0 [kph] at 0.238 [s]

Child Seat x Velocity



4-41

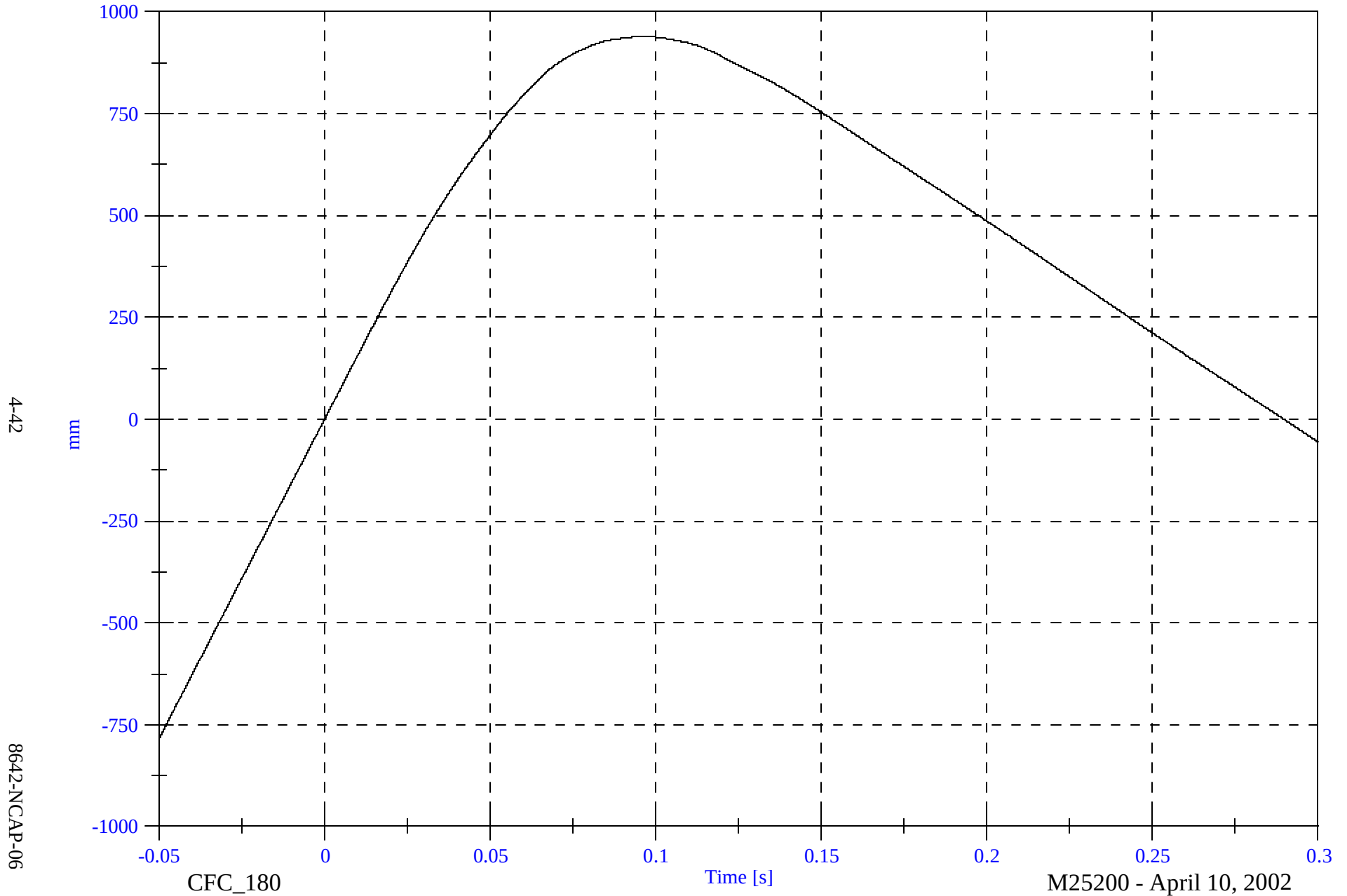
8642-NCAP-06

NCAP Test #6 - 2002 Nissan Altima

Max: 939.7 [mm] at 0.096 [s]

Min: -783.9 [mm] at -0.050 [s]

Child Seat x Displacement

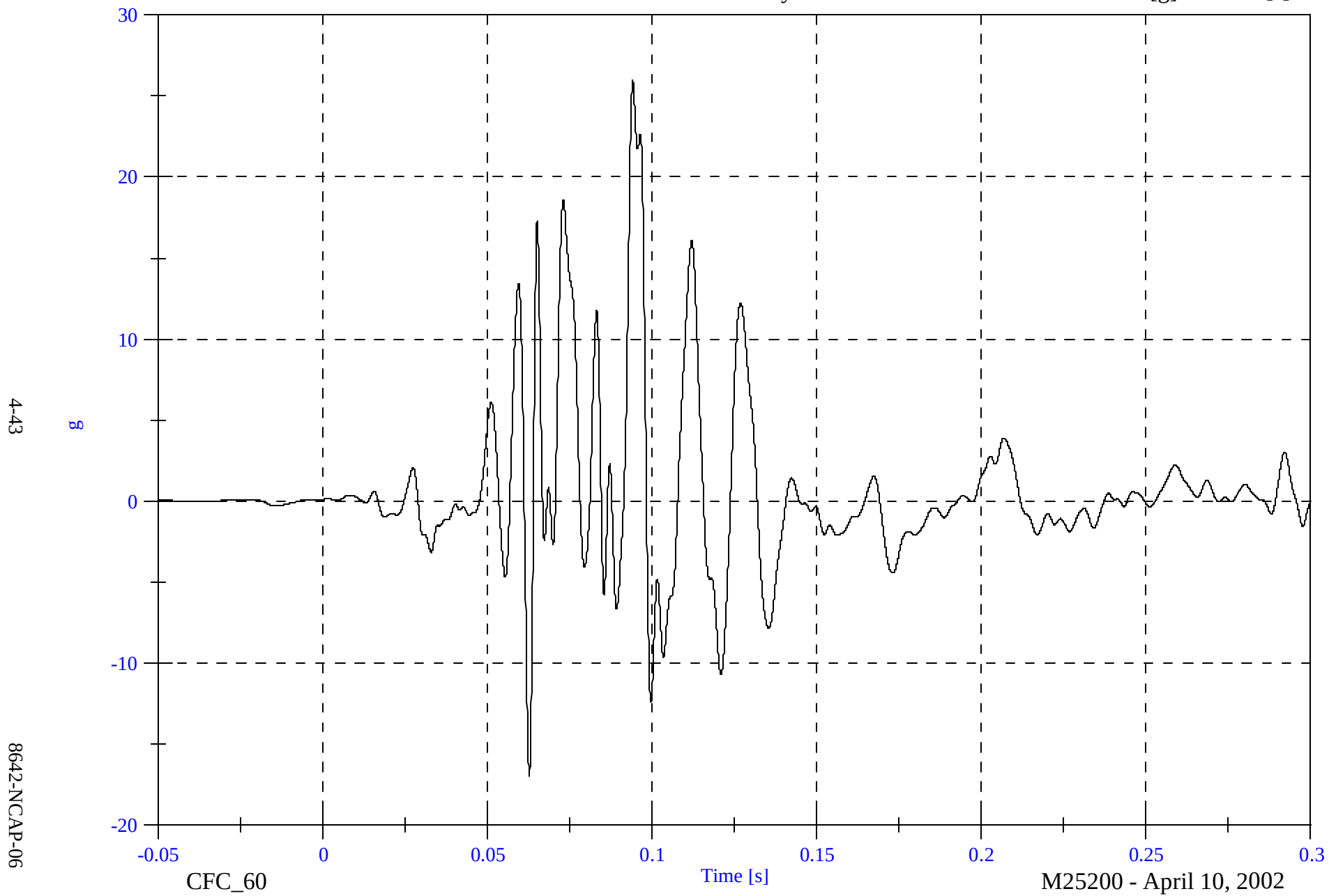


NCAP Test #6 - 2002 Nissan Altima

Max: 25.9 [g] at 0.094 [s]

Min: -16.9 [g] at 0.063 [s]

Child Seat y

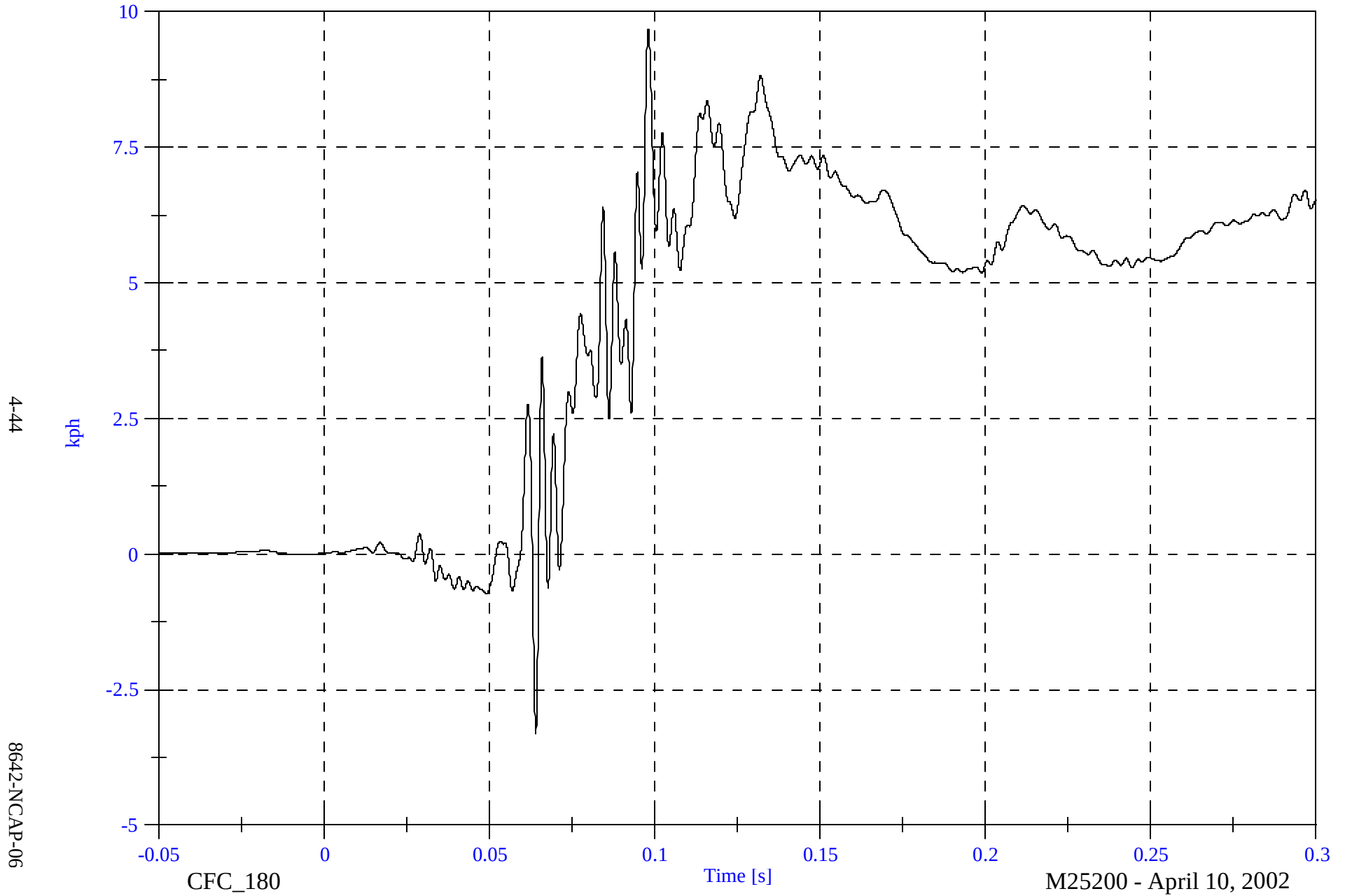


NCAP Test #6 - 2002 Nissan Altima

Max: 9.7 [kph] at 0.098 [s]

Min: -3.3 [kph] at 0.064 [s]

Child Seat y Velocity

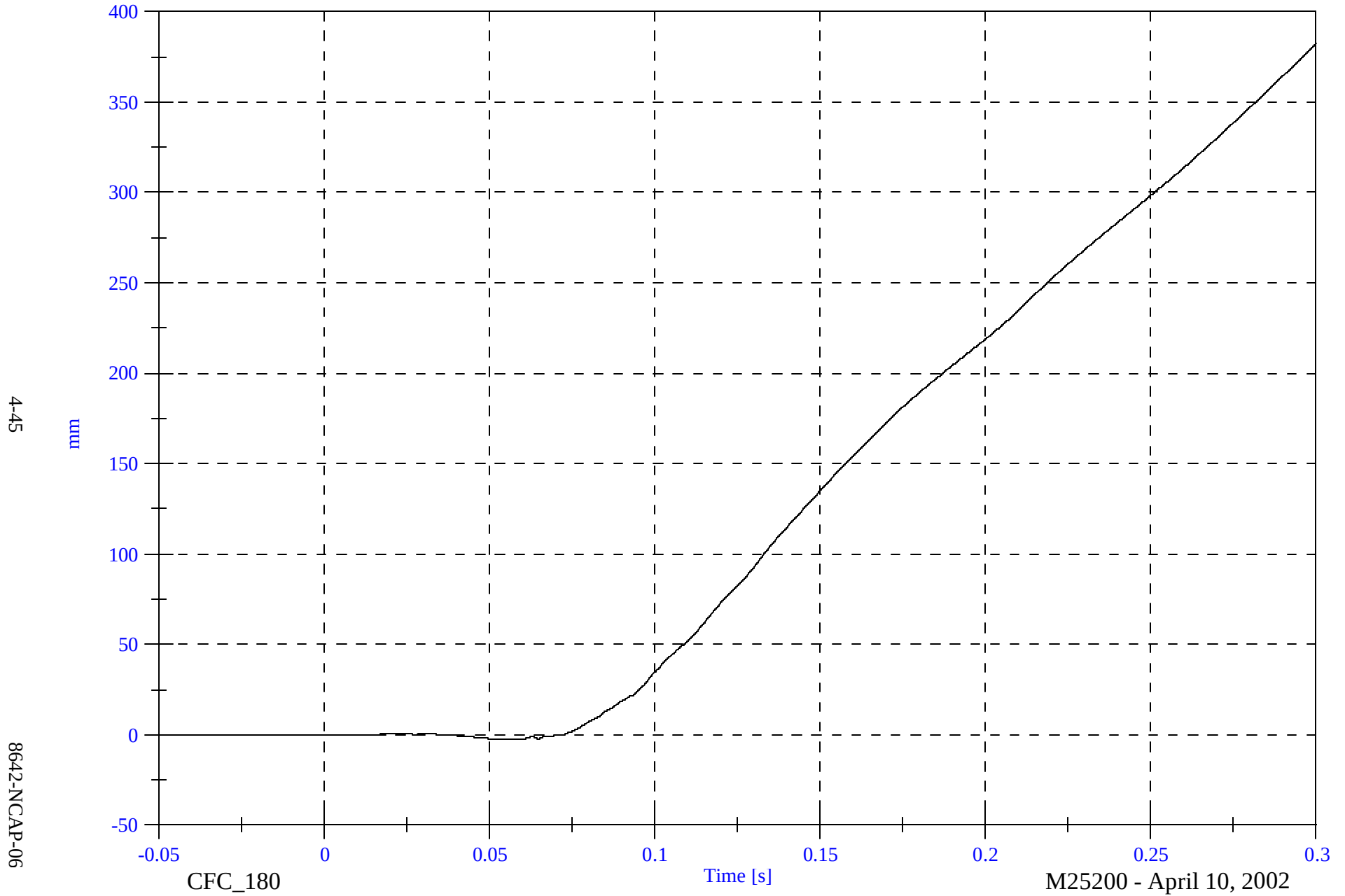


NCAP Test #6 - 2002 Nissan Altima

Child Seat y Displacement

Max: 382.4 [mm] at 0.300 [s]

Min: -2.6 [mm] at 0.059 [s]

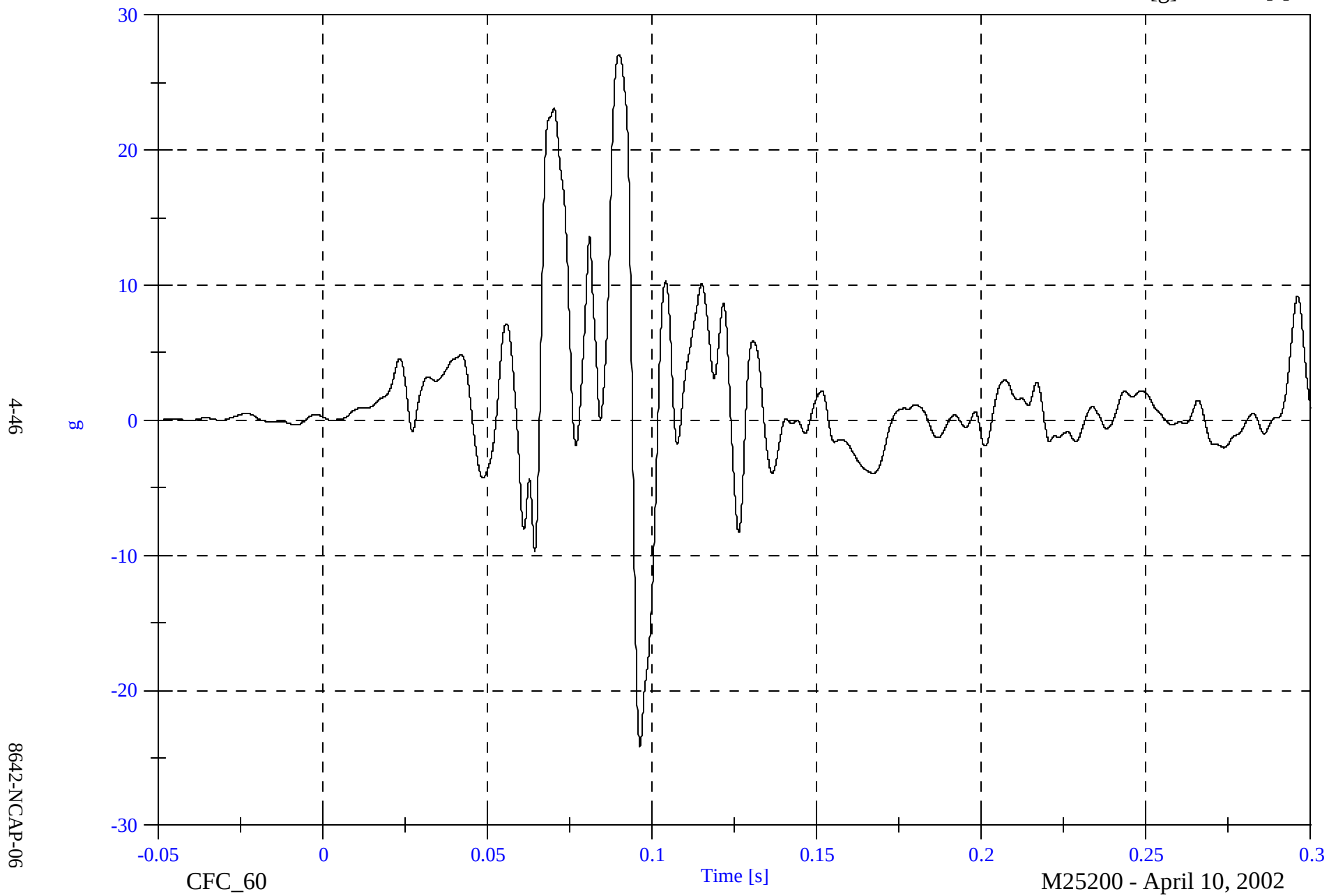


NCAP Test #6 - 2002 Nissan Altima

Max: 27.1 [g] at 0.090 [s]

Min: -24.1 [g] at 0.096 [s]

Child Seat z

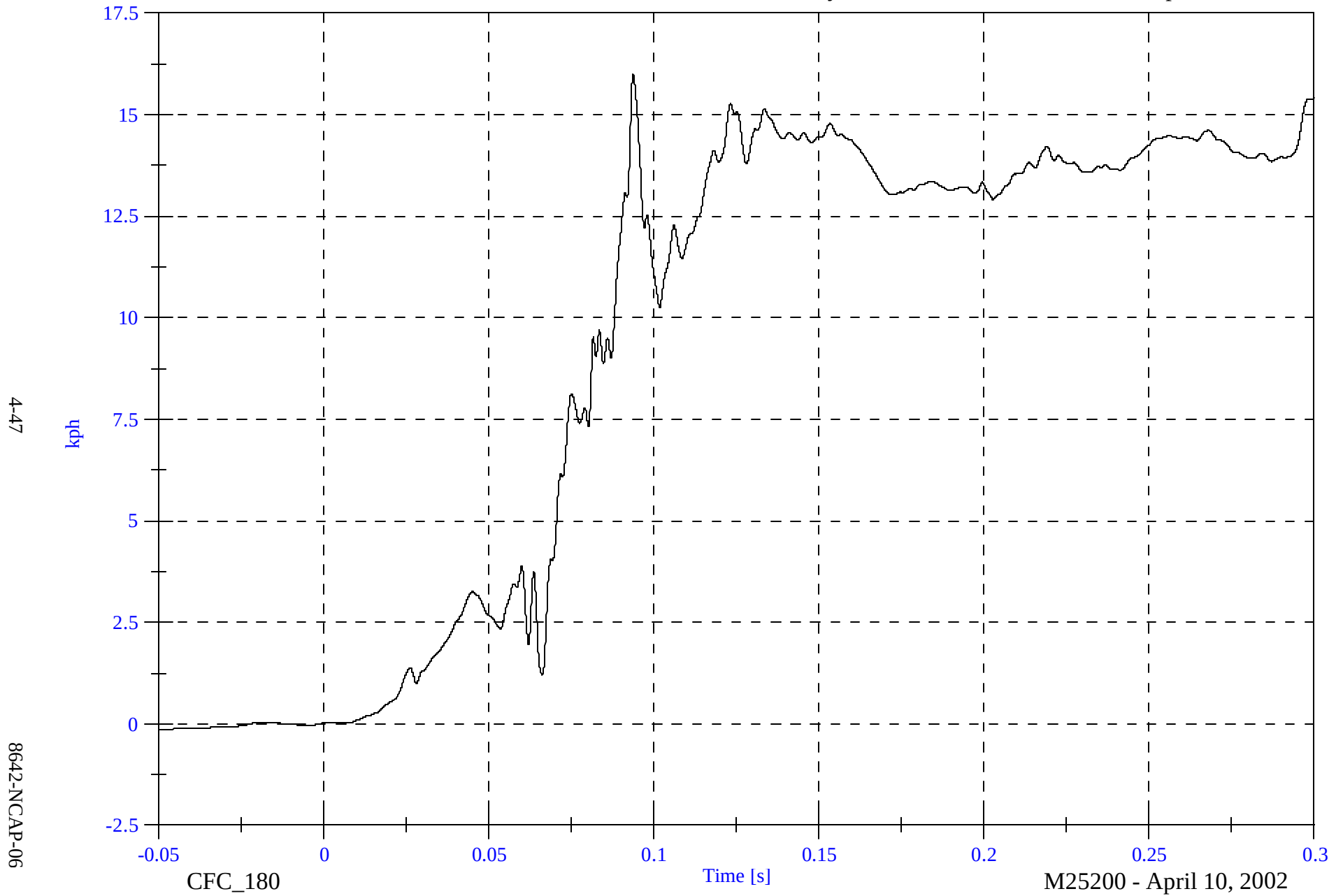


NCAP Test #6 - 2002 Nissan Altima

Max: 16.0 [kph] at 0.094 [s]

Min: -0.1 [kph] at -0.049 [s]

Child Seat z Velocity

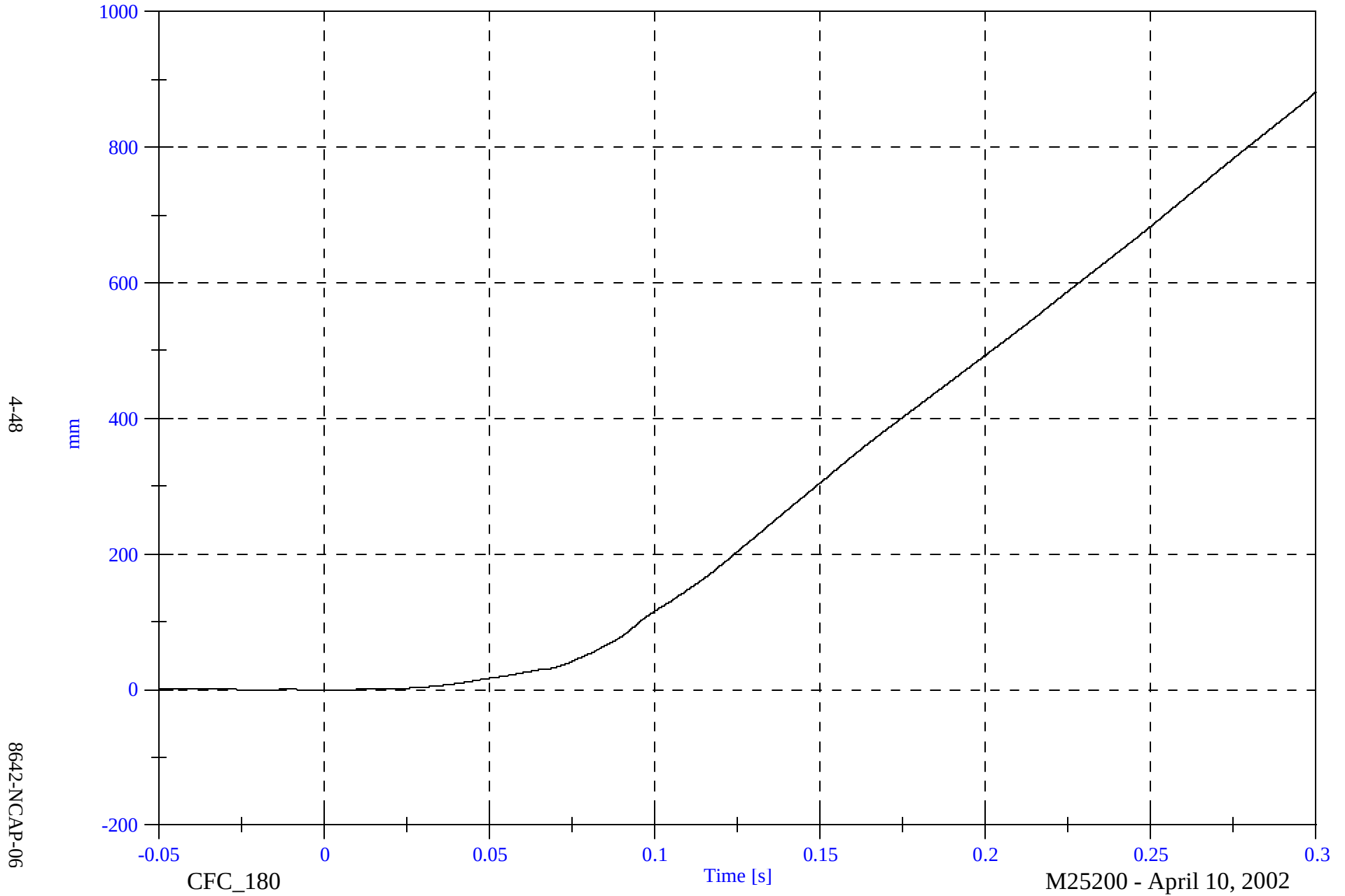


NCAP Test #6 - 2002 Nissan Altima

Max: 881.8 [mm] at 0.300 [s]

Child Seat z Displacement

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



NCAP Test #6 - 2002 Nissan Altima

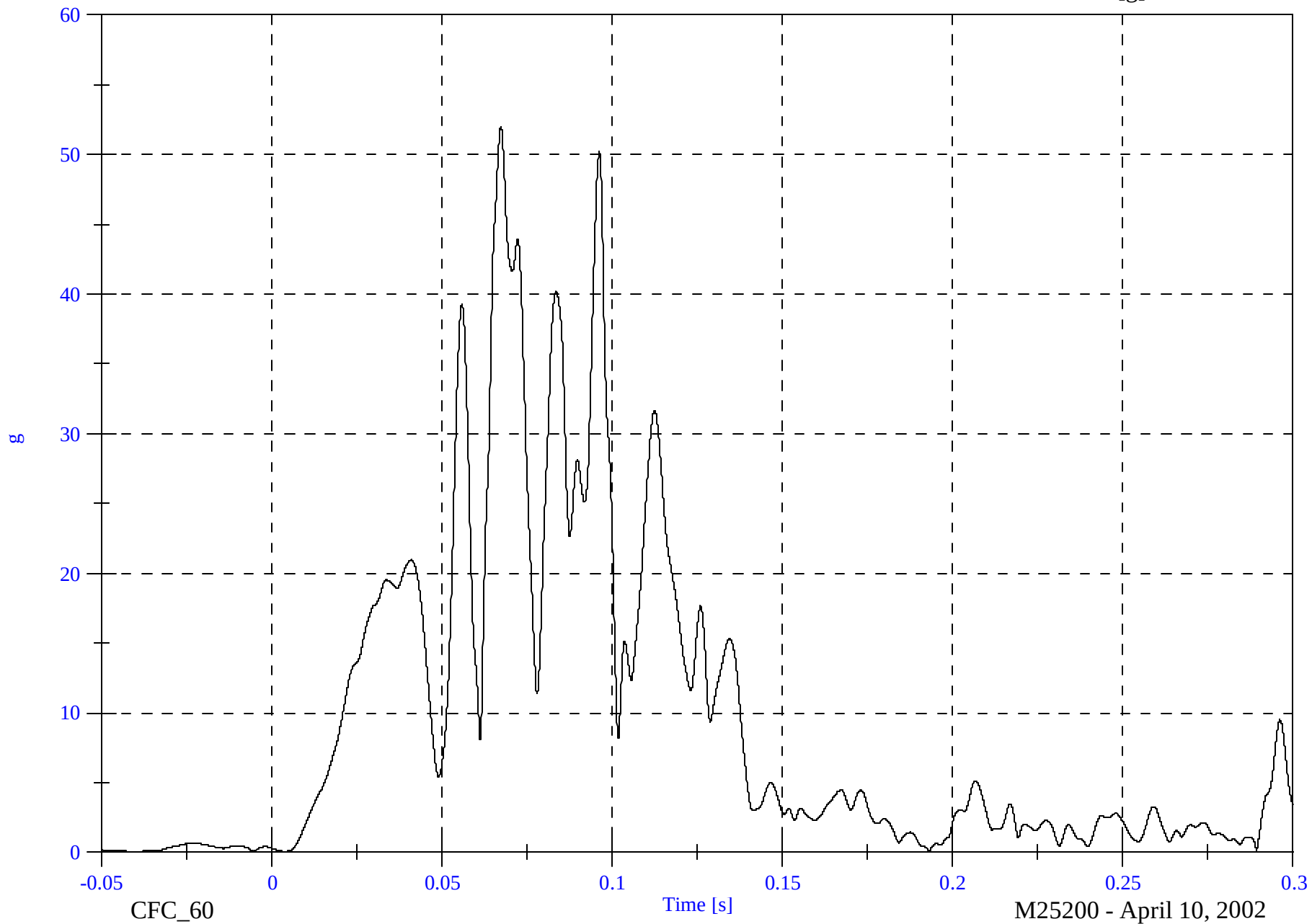
Child Seat Resultant

Max: 52.0 [g] at 0.067 [s]

Min: 0.0 [g] at -0.039 [s]

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8642-NCAP-06



SECTION 5

CHILD DUMMY CALIBRATION INFORMATION

ATD's certified by VRTC prior to test program, data is included in bound report.

SECTION 6

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

P572 R INSTRUMENTATION

	POSITION #3 (RIGHT) SERIAL NO.: 017		
	MANUFACTURER	SERIAL NUMBER	CALIBRATION DATE
HEAD AX	ENDEVCO	AC-P16194	1/14/2002
HEAD AY	ENDEVCO	AC-P16428	1/14/2002
HEAD AZ	ENDEVCO	AC-P16517	1/14/2002
HEAD RAZ	ENTRAN	AC-99H30-Z07	1/14/2002
UPPER NECK FX	DENTON	LC-277-FX	1/14/2002
UPPER NECK FY	DENTON	LC-277-FY	1/14/2002
UPPER NECK FZ	DENTON	LC-277-FZ	1/14/2002
UPPER NECK MX	DENTON	LC-277-MX	1/14/2002
UPPER NECK MY	DENTON	LC-277-MY	1/14/2002
UPPER NECK MZ	DENTON	LC-277-MZ	1/14/2002
LOWER NECK FX	DENTON	LC-280-FX	1/15/2002
LOWER NECK FY	DENTON	LC-280-FY	1/16/2002
LOWER NECK FZ	DENTON	LC-280-FZ	1/15/2002
LOWER NECK MX	DENTON	LC-280-MX	1/15/2002
LOWER NECK MY	DENTON	LC-280-MY	1/15/2002
LOWER NECK MZ	DENTON	LC-280-MZ	1/15/2002
CHEST AX	ENDEVCO	AC-J27467	1/14/2002
CHEST AY	ENDEVCO	AC-AJ4Y5	1/14/2002
CHEST AZ	ENDEVCO	AC-P17559	1/14/2002
LUMBAR FX	DENTON	LC-283-FX	1/16/2002
LUMBAR FY	DENTON	LC-283-FY	1/16/2002
LUMBAR FZ	DENTON	LC-283-FZ	1/16/2002
LUMBAR MX	DENTON	LC-283-MX	1/16/2002
LUMBAR MY	DENTON	LC-283-MY	1/16/2002
LUMBAR MZ	DENTON	LC-283-MZ	1/16/2002
PELVIS AX	ENDEVCO	AC-P15856	1/14/2002
PELVIS AY	ENDEVCO	AC-J27496	1/14/2002
PELVIS AZ	ENDEVCO	AC-P15638	1/14/2002
TETHER	-	-	-

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

VEHICLE AND MDB INSTRUMENTATION

	VEHICLE AND MDB INSTRUMENTS		
	MANUFACTURER	SERIAL NUMBER	CALIBRATION DATE
P3 CRS (X)	ENDEVCO	AC-P18948	2/26/2002
P3 CRS (Y)	ENDEVCO	AC-P22943	2/26/2002
P3 CRS (Z)	ENDEVCO	AC-P23471	2/26/2002

REMARKS: None