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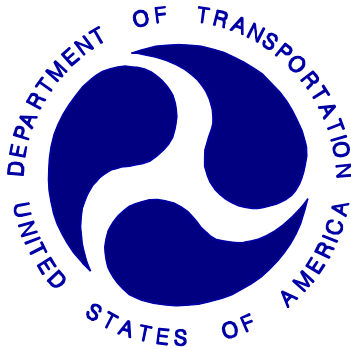
**NEW CAR ASSESSMENT PROGRAM (NCAP)
FRONTAL BARRIER IMPACT TEST**

**NISSAN MOTOR CO.
2001 NISSAN FRONTIER
4-DOOR PICKUP**

NHTSA NUMBER: M15201

VERIDIAN TEST NUMBER: 8602-23

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



March 13, 2001

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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15. <i>Supplementary Notes</i>					
16. <i>Abstract</i> A frontal load cell barrier test of a 2001 Nissan Frontier 4-Door Pickup was performed at Veridian Engineering crash test facility in Buffalo, New York, on March 13, 2001. The impact velocity was 55.16 kph and the temperature at the barrier face was 21EC. The maximum post-test vehicle crush was 588 mm. The test vehicle was equipped with 3-point restraint systems with torso belt pretensioners, 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)	560.0	56.6	37.6	887.1	1619.7
Passenger (245)	355.8	41.9	23.6	1018.1	770.3
17. <i>Key Words</i> 56 kph Frontal Barrier Impact test New Car Assessment Program (NCAP)			18. <i>Distribution Statement</i> <u>Copies of this report are available from:</u> NHTSA Technical Reference Division National Highway Traffic Safety Admin. 400 Seventh St., SW, Room 5108 Washington, DC 20590		
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SECTION 1

PURPOSE AND SUMMARY OF TEST M15201

PURPOSE

This 55.16 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. DTNH22-96-D-02010. 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 55.16 kph frontal barrier impact test was conducted in accordance with the Office of Crashworthiness Standards Laboratory Indicant Test procedure.

SUMMARY

A load cell barrier consisting of 36 load cells was impacted by a 2001 Nissan Frontier 4-Door Pickup at a velocity of 55.16 kph. The test was performed at Veridian Engineering on March 13, 2001. Pre- and post-test photographs of the vehicle and dummies can be found in Appendix A.

The frontal barrier impact event was documented by 1 real-time camera and 16 high-speed cameras. 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 head, chest, and pelvis triaxial accelerometers, chest displacement potentiometers, upper neck transducers, right/left knee shear displacement transducers, right/left femur load cells, and lower leg instrumentation. Seat belt load cells were also on the driver's and passenger's lap and shoulder belts to measure dummy torso and pelvic section loading. The driver (position 1) ATD (Serial No. 150) and the right-front passenger (position 2) ATD (Serial No. 245) were used in one test (M10114) previous to this test where they did not exceed FMVSS 208 head, chest and femur injury criteria. Certification details, along with instrumentation calibration data, are found in Appendix C.

The 135 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.

The driver's HIC was 560.0. The maximum chest deceleration over 3 milliseconds was 56.6 g's and maximum chest deflection was 37.6 mm. Compressive femur loads were 887.1 Newtons on the left and 1619.7 Newtons on the right.

The right front passenger's HIC was 355.8. Maximum chest deceleration over 3 milliseconds was 41.9 g's and maximum chest deflection was 23.6 mm. Compressive femur loads were 1018.1 Newtons on the left and 770.3 Newtons on the right.

DATA SHEET NO. 2 GENERAL TEST AND VEHICLE PARAMETER DATA

TEST VEHICLE INFORMATION :

Year/Make/Model/Body Style : 2001 Nissan Frontier 4-Door Pickup
NHTSA No. : M15201 ; VIN: 1N6ED27T61C360358 ; Color : Tan
Engine Data: 6 cylinders; - CID; 3.3 Liters; - cc
Placement : X Longitudinal or In-Line; - Transverse or Lateral
Transmission Data : 4 speeds; - Manual; X Automatic; X Overdrive
Final Drive : X Rear Wheel Drive; - 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
Date Received : 3/2/2001 ; Odometer Reading 203 km
Selling Dealer : Signature Nissan, Inc.
& Address: 254 Fluvanna Avenue Jamestown, NY 14701

DATA FROM TIRE VEHICLE'S CERTIFICATION LABEL:

Vehicle Manufactured by : Nissan Motor Co.
Date of Manufacture 12/00
GVWR : 2268 kg; GAWR: 1243 kg FRONT; 1293 kg REAR

DATA FROM TIRE PLACARD:

Tire Pressure with Maximum Capacity Vehicle Load : 300 kpa FRONT
300 kpa REAR
Recommended Tire Size : P255/65R16
* Recommended Cold Tire Pressure : 300 kpa FRONT; 300 kpa REAR
Size of Tires on Test Vehicle: P255/65R16 ; Manufacturer: General
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) = 499.5 kg
No. of Occupants x 68 kg = 340.2 kg
Rated Cargo/Luggage Weight (RCLW) = 159.3 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>505.0</u>	kg	Right Rear	=	<u>392.0</u>	kg
Left Front	=	<u>468.5</u>	kg	Left Rear	=	<u>403.0</u>	kg
TOTAL FRONT	=	<u>973.5</u>	kg	TOTAL REAR	=	<u>795.0</u>	kg
TOTAL DELIVERED WEIGHT	=	<u>1768.5</u>	kg				
% of Total Front of Vehicle Weight	=	<u>55.0</u>	%	% of Total Rear Weight	=	<u>45.0</u>	%

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT :

Total Delivered Weight (UDW)	=	<u>1768.5</u>	kg				
Rated Cargo/Luggage Weight (RCLW)	=	<u>136.1</u>	kg	(136.1 kg maximum)			
Weight of 2 p.572 Dummies @ 76 each	=	<u>152.0</u>	kg				
TARGET TEST WEIGHT	=	<u>2056.6</u>	kg				

WEIGHT OF TEST VEHICLE WITH TWO DUMMIES AND 131 KG OF CARGO WEIGHT:

Right Front	=	<u>536.0</u>	kg	Right Rear	=	<u>491.0</u>	kg
Left Front	=	<u>514.0</u>	kg	Left Rear	=	<u>510.0</u>	kg
TOTAL FRONT	=	<u>1050.0</u>	kg	TOTAL REAR	=	<u>1001.0</u>	kg
TOTAL TEST WEIGHT	=	<u>2051.0</u>	kg				
% of Total Front Weight	=	<u>51.2</u>	%	% of Total Rear Weight	=	<u>48.8</u>	%
Weight of Ballast Secured in Vehicle Trunk Area	=	<u>21</u>	kg				
Vehicle Components Removed for Weight Reduction:		<u>None</u>					

VEHICLE ATTITUDE (all dimension in millimeters):

AS DELIVERED :	RF	<u>877</u>	LF	<u>871</u>	RR	<u>871</u>	LR	<u>872</u>
FULLY LOADED :	RF	<u>868</u>	LF	<u>863</u>	RR	<u>828</u>	LR	<u>832</u>
AS TESTED :	RF	<u>869</u>	LF	<u>864</u>	RR	<u>832</u>	LR	<u>832</u>
Vehicle's Wheel Base :		<u>2950</u>	mm					
Location of Vehicle's C.G. :		<u>1440</u>	mm rearward of front wheel center.					

FUEL SYSTEM DATA :

Fuel System Capacity From Owner's Manual	=	<u>73.4</u>	liters				
Usable Capacity Figure Furnished by COTR	=	<u>73.4</u>	liters				
Test Volume Range (92 to 94% of Usable Capacity)	=	<u>67.5</u>	to	<u>69.0</u>	liters		
ACTUAL TEST VOLUME	=	<u>68.1</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	<u>Filler - Right side ahead of rear axle; Tank - Right side ahead of rear axle;</u>						
	<u>Lines - Inside left frame rail.</u>						

DATA SHEET NO. 3 POST IMPACT DATA

TYPE OF TEST:

Type of Test : Frontal Barrier Impact Angle : 0°
Test Date : March 13, 2001 Time: 11:00 Temperature: 2 °C
Vehicle NHTSA No. : M15201
Required Impact Velocity Range : 55.5 to 57.1 kph

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

Trap No. 1 = 55.16 kph; Trap No. 2 = 56.16 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 = 5010 ; C/L = 5050 ; Right = 5014
Post-Test Left = 4545 ; C/L = 4515 ; Right = 4516
Crush Left = 465 ; C/L = 535 ; Right = 498
AVERAGE = 499 mm

VEHICLE REBOUND: (From rigid barrier only.)

Distance from front of test vehicle to impact point :

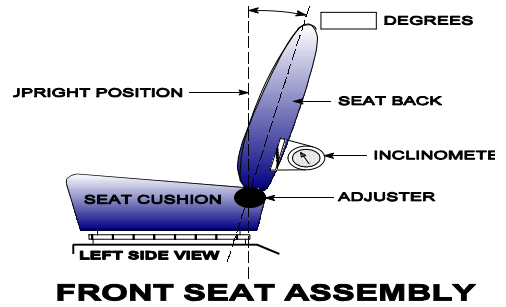
Left = 328 ; C/L = 341 ; Right = 334
AVERAGE = 334 mm

DATA SHEET NO. 4 TEST VEHICLE INFORMATION

VEHICLE IDENTIFICATION:

Model Year : 2001 Vehicle Model: Nissan Frontier Body Style : 4-Door Pickup

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



Seat back angle for driver's seat: 25E

Measurement instructions: Recline seat back 7 notches from full up position.

Seat back angle for passenger's seat: 25E

Measurement instructions: Same as the driver's seat.

2. Seat Fore and Aft Positioning

Positioning of the driver's seat: There are 20 total detents. The seat was placed in one detent rearward of true center. (0 - 19, detent 10)

Positioning of the passenger's seat: There are 13 total detents. The seat was placed in mid position. (0 - 12, detent 6)

3. Fuel Tank Capacity Data

3.1 A. "Usable Capacity" of the standard equipment fuel tank is 73.4 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 = 73.4 liters

3.2 Amount of Stoddard solvent added to vehicle(s) used for certification test(s) = 68.1 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 will pump fuel for 5 seconds after the ignition is turned ON, while the engine is running, and for 1.5 seconds after the engine stops running.

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

4. STEERING COLUMN ADJUSTMENTS :

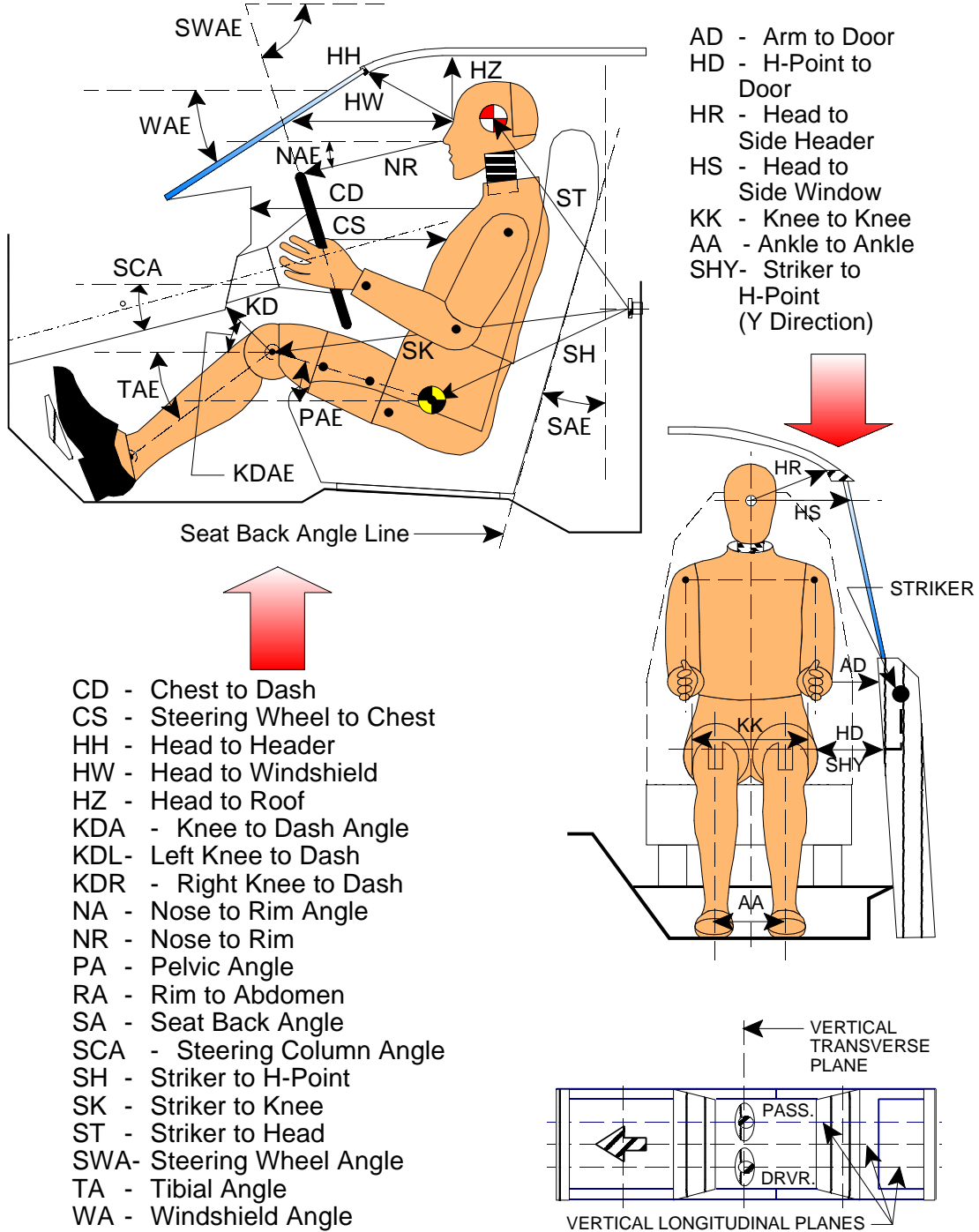
Steering wheel and column adjustments are made so that the steering wheel hub is at the geometric center of the locus it describes when it is moved through its full range of driving positions. If the tested vehicle has any of these adjustments, does your company use any specific procedures to determine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

Operational Instructions: The steering column was placed in mid-adjustment position.

5. SEAT BELT UPPER ANCHORAGE

Nominal design riding position: Uppermost

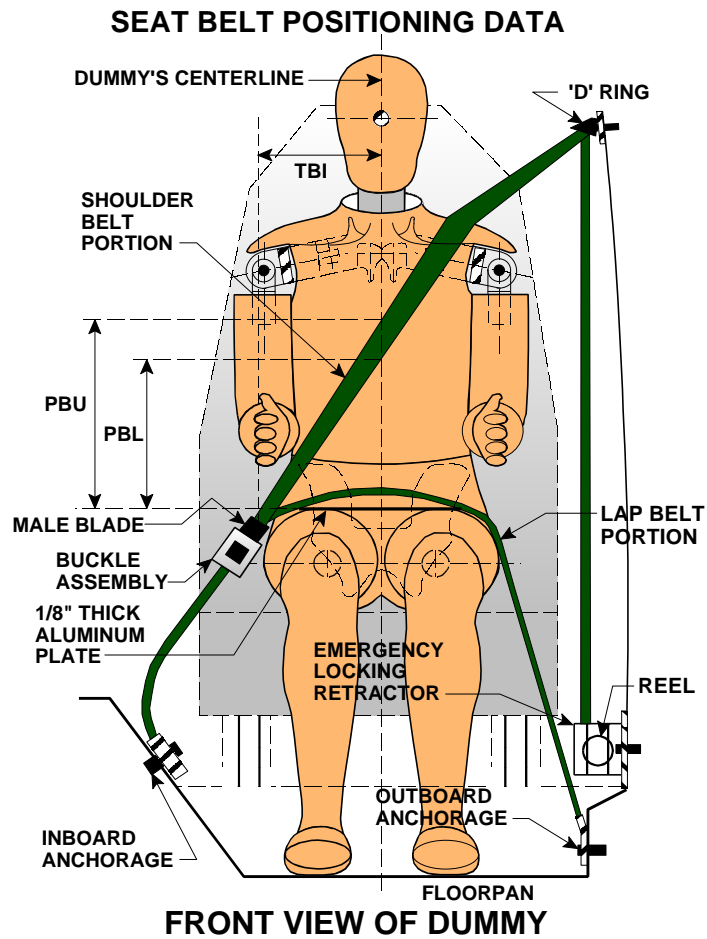
DUMMY MEASUREMENT FOR FRONT SEAT PASSENGERS



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

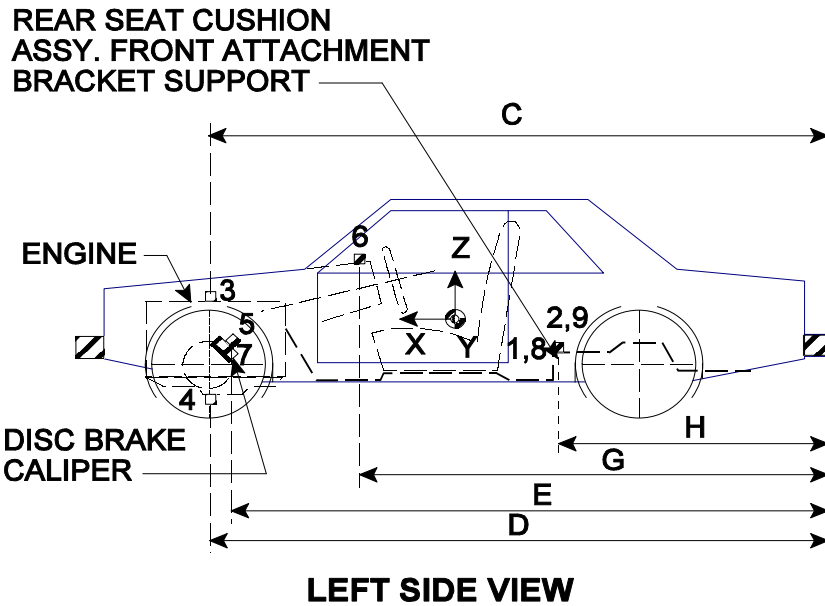
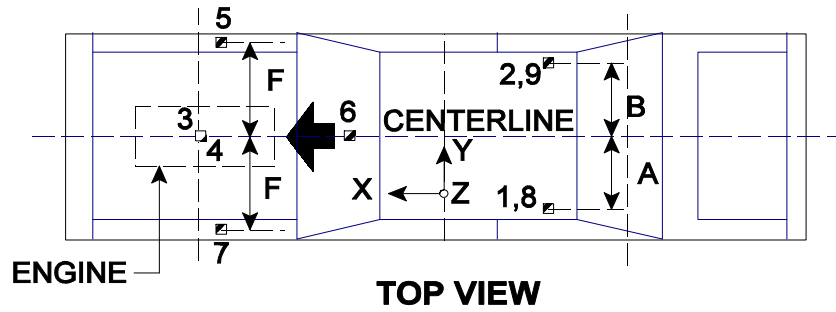
	DRIVER (Serial #150)			PASS. (Serial # 245)		
WA ^o	35 deg.			N/A		
SWA ^o	65 deg.			N/A		
SCA ^o	25 deg.			N/A		
SA ^o	25 deg.			25 deg.		
HZ	199			201		
HH	447			397		
HW	642			600		
HR	250			232		
NR	415	Angle	13 deg.	N/A		
CD	572			493		
CS	302			N/A		
RA	208			N/A		
KDL	228	Angle (KDA)	29 deg.	174		
KDR	223			192	Angle (KDA)	14 deg.
PA ^o	21.2 deg.			22.4 deg.		
TA ^o	32.0 deg.			41.5 deg.		
KK	278			236		
AA	216			205		
ST	576	Angle	13 deg.	561	Angle	20 deg.
SK	655	Angle	99 deg.	686	Angle	92 deg.
SH	270	Angle	125 deg.	309	Angle	113 deg.
SHY	200			190		
HS	314			303		
HD	132			125		
AD	88			88		

Dimensions in millimeters



	DRIVER DUMMY (mm)	PASSENGER DUMMY (mm)
PBU -- Top surface of alum. plate to upper edge	330	320
PBL-- Top surface of alum. plate to belt lower edge	245	230
<u>LAP BELT TENSION</u>	10 N	10 N
<u>SHOULDER BELT TENSION</u>	Retractor	Retractor

VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY



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

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

DIMENSION	PRE-TEST LENGTH (mm)
A Left Rear Seat Crossmember Y	-556
B Right Rear Seat Crossmember Y	554
C Top of Engine X	4210
D Bottom of Engine X	3882
E Disc Brake Calipers X	4039
F Disc Brake Calipers Y	785
G Instrument Panel X	3350
H Rear Seat Crossmembers X	2144

LOCATION NUMBER	DESCRIPTION	MAXIMUM VALUE (g's)			
		Pos.	msec.	Neg.	msec.
1	Rear Seat X-Member @ Left Side	2.2	127.9	-45.3	54.5
2	Rear Seat X-Member @ Right Side	2.6	153.7	-40.6	53.2
3	Top of Engine Block	17.5	55.2	-115.4	35.7
4	Bottom of Engine*	13.1	25.9	-69.2	33.2
5	Disc Brake Caliper @ Right Side	13.9	35.9	-71.3	47.3
6	Instrument Panel	82.3	66.8	-106.9	47.3
7	Disc Brake Caliper @Left Side	18.5	70.4	-48.0	7.0
8	Rear Seat X-Member @ Left-Redundant	2.4	128.1	-44.3	54.5
9	Rear Seat X-Member @ Right-Redundant	2.4	129.6	-41.2	53.7

* Data is clipped

DATA SHEET NO. 8 DUMMY INJURY CRITERIA VALUES

Vehicle Year/Make/Model/Body Style: 2001 Nissan Frontier 4-Door Pickup

NHTSA Test No.: M15201 Test Date: March 13, 2001

		MAXIMUM VALUE							
		Driver				Passenger			
DESCRIPTION	Unit	Pos	msec	Neg	msec	Pos	msec	Neg	msec
Head X	g	23.3	191.8	-60.9	79.3	10.6	240.9	-43.8	81.2
Head Y	g	5.5	150.5	-6.1	75.7	5.2	47.9	-9.6	56.8
Head Z	g	28.0	64.9	-4.1	150.0	28.7	64.0	-4.3	20.5
Head Resultant	g	63.7	78.4	0.1	-49.9	48.9	81.2	0.1	-47.9
Redundant Head X	g	24.1	191.8	-61.4	79.3	10.7	240.9	-43.3	81.4
Redundant Head Y	g	5.6	150.7	-6.4	75.7	4.9	47.9	-8.8	57.0
Redundant Head Z	g	27.8	70.1	-3.9	149.9	28.9	64.1	-4.6	20.5
Redundant Head Resultant	g	64.2	78.4	0.1	-49.0	48.9	81.5	0.1	-46.4
Upper Neck Fx	N	466.0	70.3	-584.4	136.5	398.2	65.3	-606.7	128.9
Upper Neck Fy	N	212.6	151.8	-181.7	77.5	88.5	243.9	-235.8	51.8
Upper Neck Fz	N	1600.5	72.2	-362.7	229.1	1370.0	39.5	-230.9	289.0
Upper Neck F Resultant	N	1661.3	72.1	5.1	-47.5	1398.7	39.5	3.6	-47.5
Upper Neck Mx	N-m	14.0	141.5	-22.4	90.3	16.7	52.2	-15.7	78.5
Upper Neck My	N-m	40.9	148.7	-36.7	232.6	39.1	64.9	-29.2	282.5
Upper Neck Mz	N-m	10.0	113.4	-7.1	80.0	17.6	86.6	-6.5	141.3
Upper Neck M Resultant	N-m	42.5	148.7	0.1	-40.1	40.0	64.0	0.2	-45.4
Chest X	g	5.4	151.8	-59.4	71.7	3.1	173.2	-42.6	72.4
Chest Y	g	5.4	72.8	-6.0	49.5	4.0	32.9	-9.0	69.9
Chest Z	g	12.4	50.7	-8.8	95.9	15.0	42.1	-10.4	111.4
Chest Resultant	g	59.8	71.7	0.1	-50.0	43.2	72.3	0.1	-50.0
Redundant Chest X	g	5.5	151.7	-59.8	71.7	3.2	178.2	-43.3	72.4
Redundant Chest Y	g	5.4	72.8	-6.2	49.4	4.0	33.0	-10.3	69.9
Redundant Chest Z	g	12.3	50.7	-8.9	95.9	15.2	42.1	-10.6	124.6
Redundant Chest Resultant	g	60.2	71.7	0.1	-50.0	44.0	72.3	0.1	-47.7
Chest Displacement	mm	0.1	11.7	-37.6	80.5	0.0	19.3	-23.6	68.4

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

Vehicle Year/Make/Model/Body Style: 2001 Nissan Frontier 4-Door Pickup

NHTSA Test No.: M15201 Test Date: March 13, 2001

		MAXIMUM VALUE							
		Driver				Passenger			
DESCRIPTION	Unit	Pos	msec	Neg	msec	Pos	msec	Neg	msec
Pelvic X	g	8.5	120.7	-53.0	53.9	8.2	128.7	-48.5	58.6
Pelvic Y	g	13.0	55.2	-6.0	37.9	8.0	42.3	-8.8	84.0
Pelvic Z	g	4.2	49.4	-19.3	78.5	3.9	36.1	-22.2	75.4
Pelvic Resultant	g	55.7	65.3	0.1	-49.2	49.8	58.6	0.1	-47.7
Left Femur	N	946.2	49.0	-887.1	53.5	420.9	32.6	-1018.1	84.8
Right Femur	N	1395.1	40.7	-1619.7	48.0	1184.7	46.7	-770.3	90.6
Left Knee Dx	mm	0.6	23.3	-2.0	6.2	1.1	5.7	0.0	24.5
Right Knee Dx	mm	0.5	13.9	0.0	8.6	14.3	6.1	-0.9	4.7
Left Upper Tibia Mx	N-m	54.7	33.0	-34.2	58.7	26.8	39.2	-59.2	62.9
Left Upper Tibia My	N-m	28.8	88.8	-74.9	33.9	206.0	60.3	-134.7	42.4
Left Lower Tibia Fz	N	167.7	146.6	-1881.5	33.4	289.4	291.1	-4293.5	45.4
Left Lower Tibia Mx	N-m	86.9	46.0	-27.3	29.9	58.1	70.4	-45.5	49.7
Left Lower Tibia My	N-m	17.5	119.4	-29.7	59.4	73.3	53.4	-26.4	38.2
Right Upper Tibia Mx	N-m	84.5	47.3	-82.8	50.9	22.5	34.4	-18.7	88.2
Right Upper Tibia My	N-m	42.8	142.8	-194.1	48.5	33.7	138.5	-74.5	34.1
Right Lower Tibia Fz	N	289.7	38.1	-6587.2	48.9	129.2	175.0	-1567.6	32.8
Right Lower Tibia Mx	N-m	43.0	44.8	-175.7	48.0	11.9	32.5	-42.8	51.8
Right Lower Tibia My	N-m	126.3	57.5	-66.5	44.5	35.3	94.8	-23.2	34.7
Left Foot Aft Ax	g	12.2	146.6	-48.0	32.0	67.6	52.5	-85.1	39.2
Left Foot Aft Az	g	6.5	156.9	-49.4	56.8	28.0	66.6	-94.9	44.4
Left Foot Fore Az	g	27.0	156.8	-69.1	44.5	98.5	63.9	-149.6	43.8
Right Foot Aft Ax	g	42.9	55.9	-148.4	44.7	15.5	61.9	-56.7	30.9
Right Foot Aft Az	g	71.3	47.5	-149.1	45.7	6.0	77.5	-37.1	57.4
Right Foot Fore Az	g	424.7	47.6	-327.0	42.0	25.1	60.1	-65.3	62.7
Lap Belt Load	N	8646.7	62.3	-2.9	143.2	8780.3	63.1	-21.4	140.5
Torso Belt	N	6725.8	76.2	-28.4	13.5	4594.9	41.0	-115.6	280.2

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

Vehicle Year/Make/Model/Body Style: 2001 Nissan Frontier 4-Door Pickup

NHTSA Test No.: M15201 Test Date: March 13, 2001

HEAD INJURY CRITERIA (HIC)				
	HIC**	t ₁ (msec)	t ₂ (msec)	Average Acceleration t ₁ to t ₂
Position #1 - Driver	560.0	58.9	91.1	49.7g
Position #2 - Passenger	355.8	58.9	94.9	39.6g

** 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	56.6	69.8	72.8	518.9
Position #2 - Passenger	41.9	70.9	73.9	380.5

* 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: 2001 Nissan Frontier 4-Door Pickup
 NHTSA Test No.: M15201 Test Date: March 13, 2001

HEAD INJURY CRITERIA (HIC) REDUNDANT				
	HIC**	t ₁ (msec)	t ₂ (msec)	Average Acceleration t ₁ to t ₂
Position #1 - Driver	566.1	59.0	91.1	49.9 g
Position #2 - Passenger	353.3	58.9	94.8	39.5 g

** 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	56.9	69.8	72.8	525.4
Position #2 - Passenger	42.7	71.1	74.1	393.3

* 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:

	<u>Driver</u>	<u>Passenger</u>
Belt length from trim panel exit to bolt hole anchor point for continuous webbing systems.	2310	2405
Shoulder belt length as measured on Part 572 Dummy.	855	895
Lap belt length as measured on Part 572 Dummy.	865	920

SHOULDER BELT SPOOL-OFF DATA:

As determined by film analysis.	102	178
As determined mechanically.	*	*
As determined electronically.	*	*

BELT STRETCH DATA:

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

_____ Dimensions in millimeters

* Vehicle was equipped with torso belt pretensioners. As a result, seat spool out potentiometers and belt stretch transducers were not used.

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 22 mm molding.

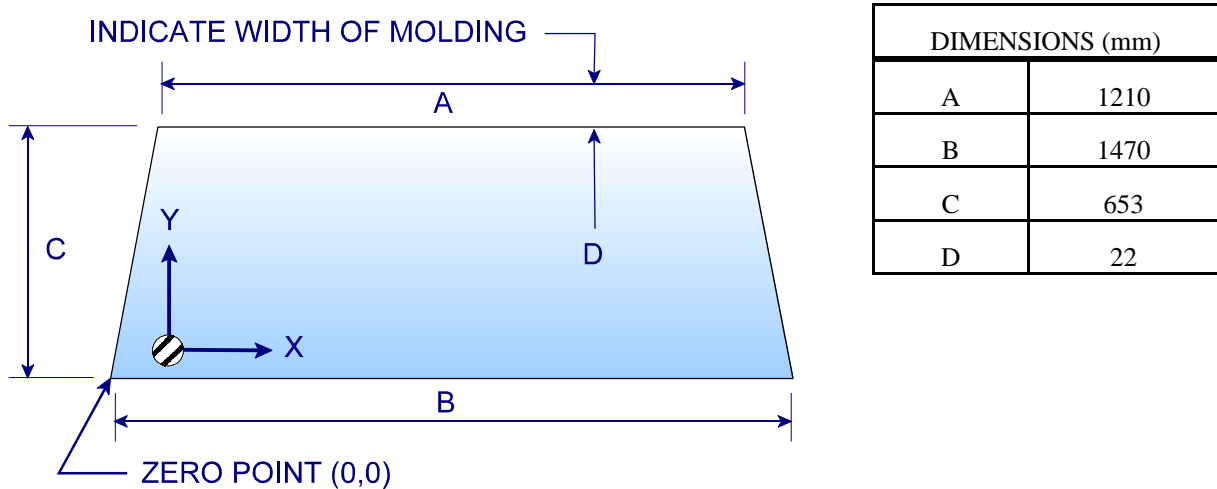
FMVSS 212 REQUIREMENTS:

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	1993	1993	100
LEFT SIDE	1993	1993	100
TOTAL	3986	3986	100

AREA OF RETENTION FAILURE: None



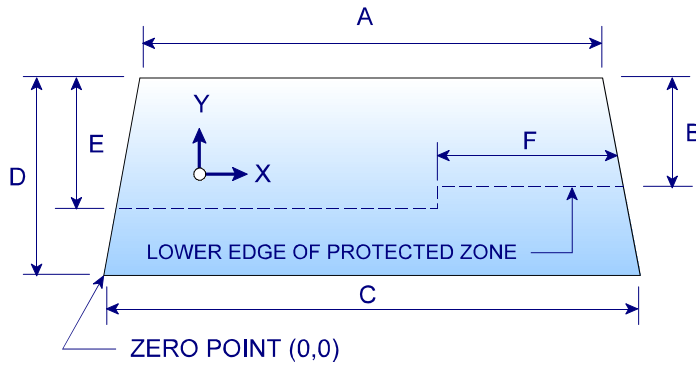
FRONT VIEW OF WINDSHIELD

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:

DIMENSIONS (mm)	
A	1210
B	370
C	1470
D	653
E	410
F	900

FRONT VIEW OF WINDSHIELD

DETAILS OF WINDSHIELD GLASS PENETRATION GREATER THAN 6 mm: None

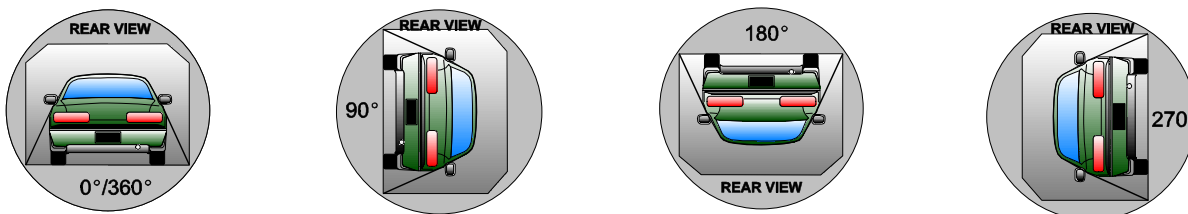
(Show location of penetration on the above sketch)

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

DATA SHEET 13 ROLLOVER DATA

Vehicle: 2001 Nissan Frontier

NHTSA No.: M15201



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD :

Rollover Stage	Rotation Time (spec. 1 -3 min)				FMVSS 301 Hold Time		Total Time				Next Whole Minute Interval	
	1	minutes	15	seconds	5	minutes	6	minutes	15	seconds	7	minutes
0E - 90E	1	minutes	05	seconds	5	minutes	6	minutes	5	seconds	7	minutes
90E - 180E	1	minutes	02	seconds	5	minutes	6	minutes	2	seconds	7	minutes
180E - 270E	1	minutes	09	seconds	5	minutes	6	minutes	9	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:

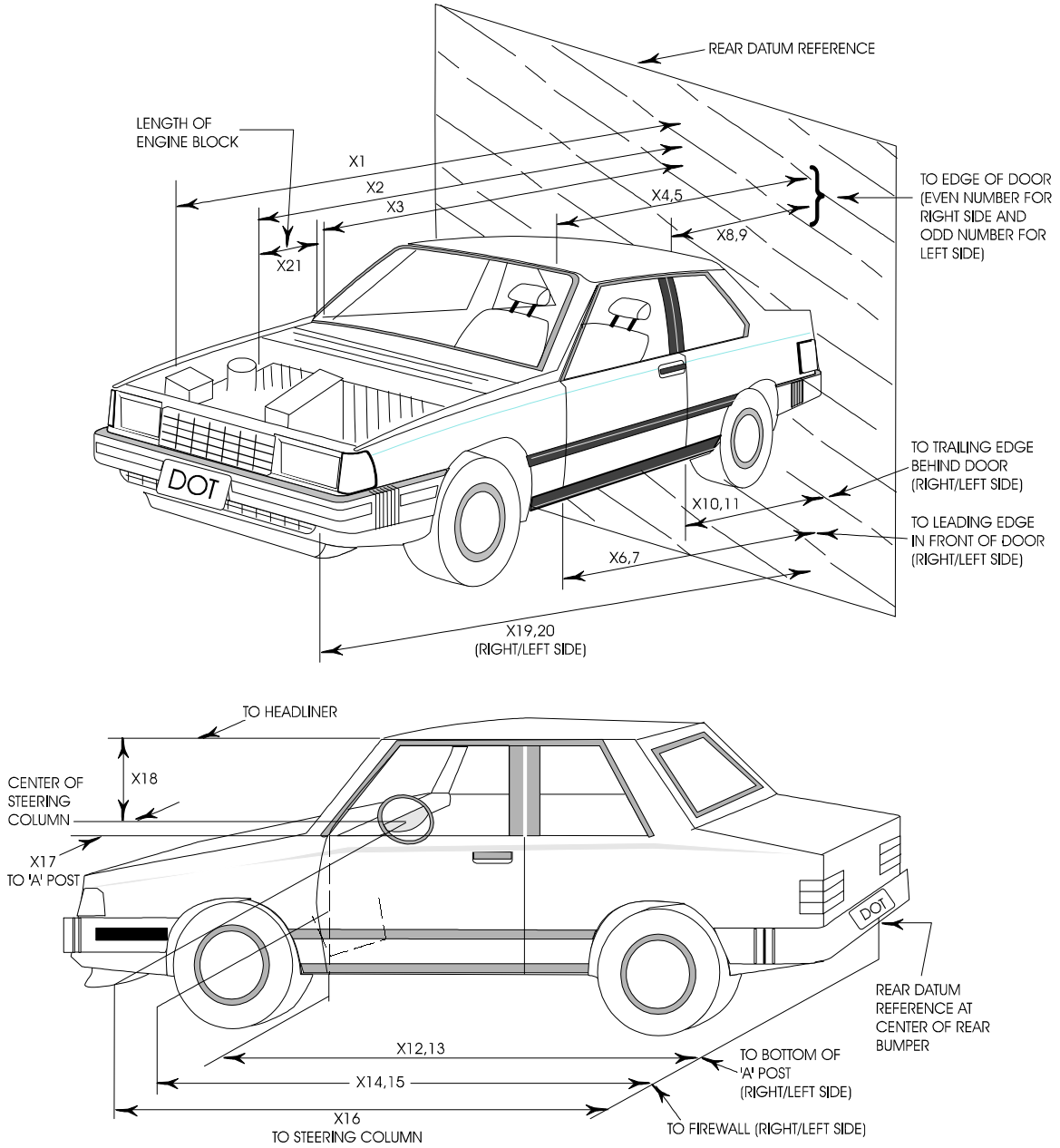
Rollover Stage	First 5 minutes from onset of rotation (g)	6th min. (g)	7th min. (g)	8th min. (if required) (g)
0E - 90E	0	0	0	-
90E - 180E	0	0	0	-
180E - 270E	0	0	0	-
270E - 360E	0	0	0	-

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

IV. SOLVENT SPILLAGE LOCATION(S):

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

DATA SHEET NO. 14 TEST VEHICLE MEASUREMENTS

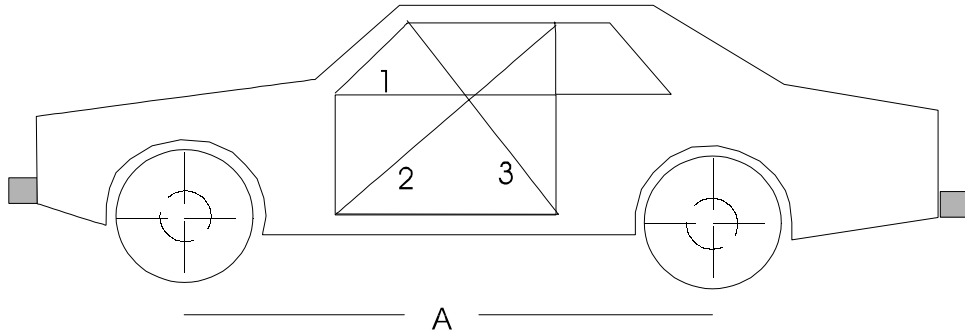


DATA SHEET NO.14 VEHICLE MEASUREMENTS (cont.)

No.		Pre-Test	Post-Test	Difference
X1	Total Length of Vehicle at Centerline	5050	4515	535
X2	Rear Surface of Vehicle to Front of Engine	4232	4007	225
X3	Rear Surface of Vehicle to Firewall	3903	3754	149
X4	Rear Surface of Vehicle to Upper Leading Edge of Right Door	3645	3647	-2
X5	Rear Surface of Vehicle to Upper Leading Edge of Left Door	3644	3630	14
X6	Rear Surface of Vehicle to Lower Leading Edge of Right Door	3607	3600	7
X7	Rear Surface of Vehicle to Lower Leading Edge of Left Door	3606	3576	30
X8	Rear Surface of Vehicle to Upper Trailing Edge of Right Door	2517	2520	-3
X9	Rear Surface of Vehicle to Upper Trailing Edge of Left Door	2515	2496	19
X10	Rear Surface of Vehicle to Lower Trailing Edge of Right Door	2510	2518	-8
X11	Rear Surface of Vehicle to Lower Trailing Edge of Left Door	2513	2483	30
X12	Rear Surface of Vehicle to Bottom of "A" Post of Right Side	3706	3711	-5
X13	Rear Surface of Vehicle to Bottom of "A" Post of Left Side	3734	3670	64
X14	Rear Surface of Vehicle to Firewall, Right Side	3900	3831	69
X15	Rear Surface of Vehicle to Firewall, Left Side	3889	3803	86
X16	Rear Surface of Vehicle to Steering Column	3141	3059	82
X17	Center of Steering Column to "A" Post	308	280	28
X18	Center of Steering Column to Headliner	422	380	42
X19	Rear Surface of Vehicle to Right Side of Front Bumper	4972	4449	523
X20	Rear Surface of Vehicle to Left Side of Front Bumper	4960	4456	504
X21	Length of Engine Block	223	223	0
RD	Rear Surface of Vehicle to Right Side of Dash Panel	3364	3368	-4
CD	Rear Surface of Vehicle to Center of Dash Panel	3416	3311	105
LD	Rear Surface of Vehicle to Left Side of Dash Panel	3366	3305	61

All Dimensions in mm

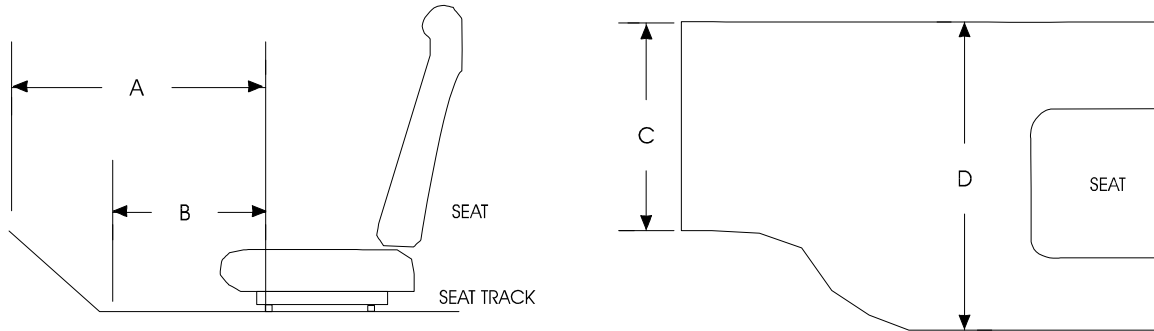
DATA SHEET NO.14 VEHICLE MEASUREMENTS (cont.)
 VEHICLE INTRUSION MEASUREMENTS
 DOOR OPENING WIDTH



UNITS (mm)	LEFT			RIGHT		
MEASUREMENT	1	2	3	1	2	3
BEFORE TEST	1081	1441	1111	1084	1451	1111
AFTER TEST	1056	1440	1141	1065	1447	1125
DIFFERENCE	25	1	-30	19	4	-14

UNITS (mm)	A = WHEELBASE LEFT	A = WHEELBASE RIGHT
BEFORE TEST	2950	2950
AFTER TEST	2892	2929
DIFFERENCE	58	21

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



DRIVER

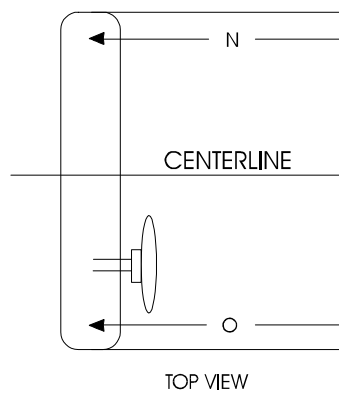
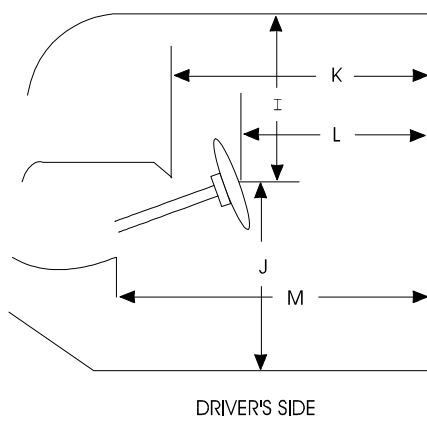
Measurement	Pre-Test	Post-Test	Difference
A	760	629	131
B	616	581	35
C	485	407	78
D	437	445	-8

PASSENGER

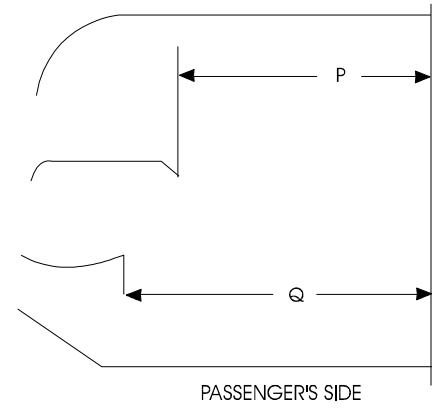
Measurement	Pre-Test	Post-Test	Difference
A	742	683	59
B	604	573	31
C	391	346	45
D	392	403	-11

Units = mm

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



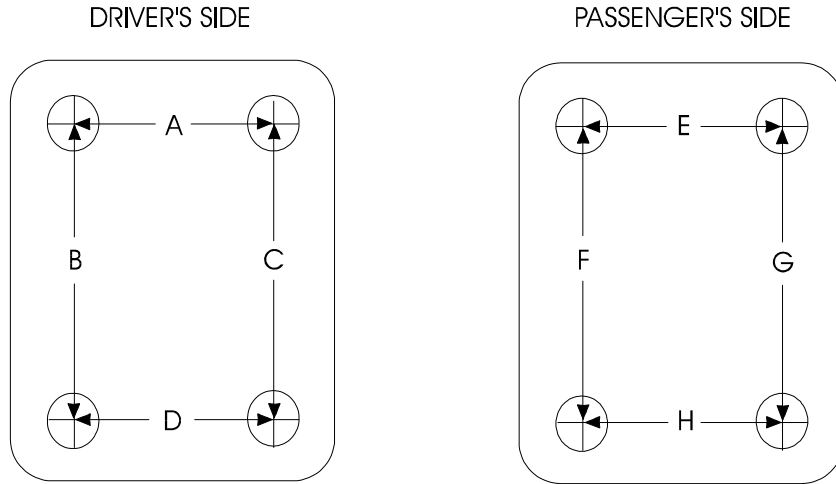
MEASUREMENTS
FROM C-PILLAR
BELT ANCHORAGE



Measurement	Pre-Test	Post-Test	Difference
I	422	380	42
J	609	775	-166
K	1633	1587	46
L	1378	1296	82
M	1591	1519	72
N	1600	1596	4
O	1603	1541	62
P = K (PASS.)	1649	1618	31
Q = M (PASS.)	1683	1626	57

Units = mm

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

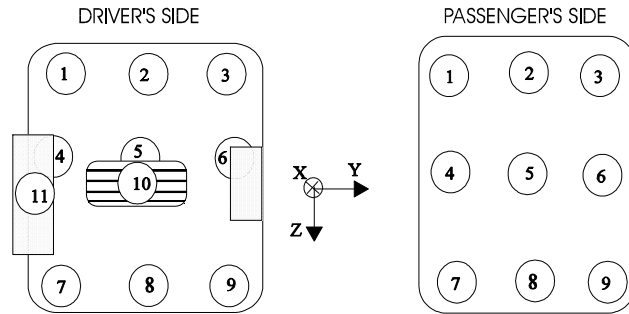


TOP VIEW THROUGH FLOOR PAN

Measurement	Pre-Test	Post-Test	Difference
A	100	93	7
B	446	440	6
C	460	460	0
D	97	97	0
E	112	111	1
F	522	520	2
G	520	520	0
H	90	89	1

Units = mm

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



Driver Side Toe-pan Measurements

Toe-pan Location	X Deformation (mm)			Z Deformation (mm)		
	Pre-Test	Post-Test	Difference	Pre-Test	Post-Test	Difference
1	3808	3732	76	-737	-750	-13
2	3862	3711	151	-685	-747	-62
3	3777	3647	130	-680	-716	-36
4	3757	3701	56	-678	-692	-14
5	3792	3684	108	-622	-666	-44
6	3769	3658	111	-619	-665	-46
7	3706	3659	47	-561	-573	-12
8	3718	3664	54	-554	-572	-18
9	3695	3629	66	-567	-613	-46
10	3657	3570	87	-737	-750	-13
11	3709	3657	52	-727	-725	2

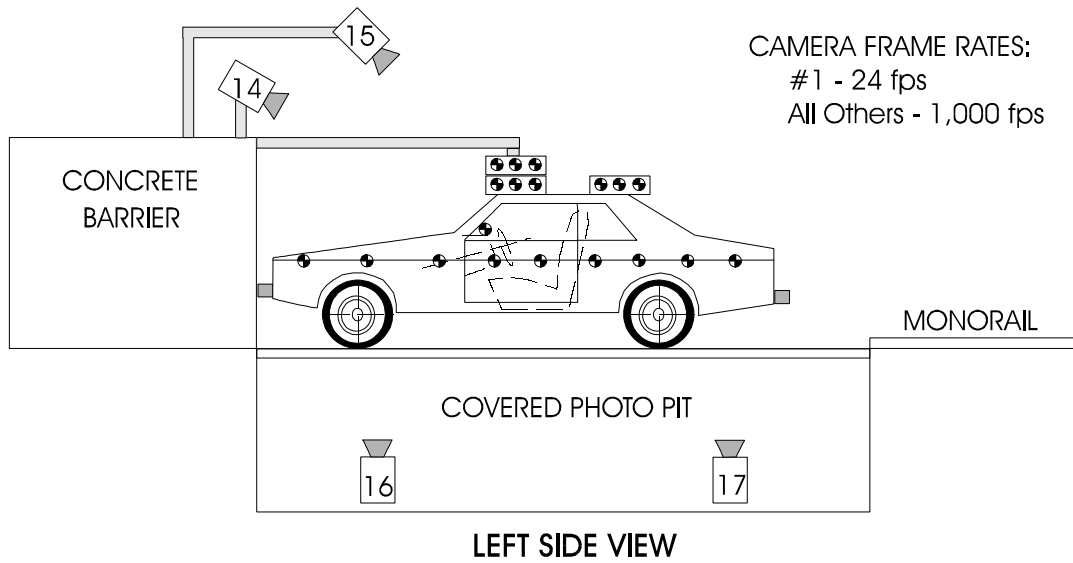
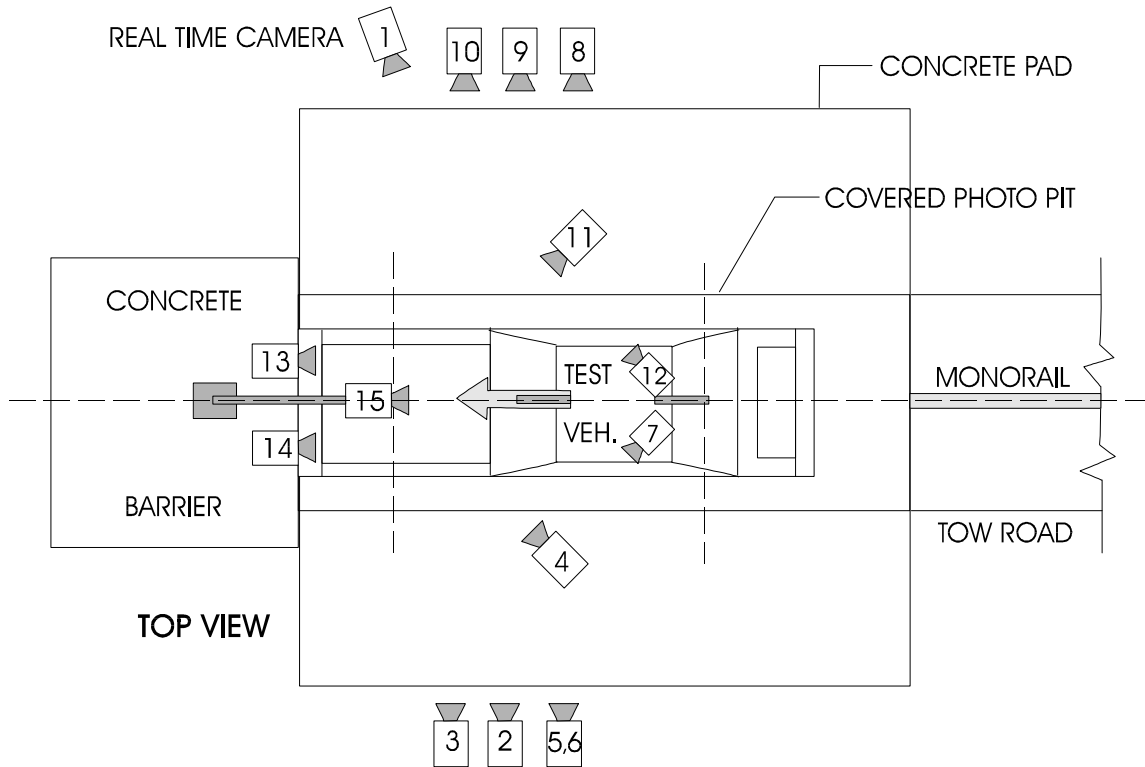
Passenger Side Toe-pan Measurements

Toe-pan Location	X Deformation (mm)			Z Deformation (mm)		
	Pre-Test	Post-Test	Difference	Pre-Test	Post-Test	Difference
1	3842	3722	120	-690	-784	-94
2	3848	3792	56	-713	-792	-79
3	3779	3717	62	-740	-780	-40
4	3767	3663	104	-625	-732	-107
5	3774	3745	29	-632	-686	-54
6	3729	3698	31	-677	-699	-22
7	3707	3651	56	-563	-636	-73
8	3710	3682	28	-553	-602	-49
9	3674	3659	15	-583	-604	-21

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

DATA SHEET NO.15 HIGH-SPEED CAMERA LOCATIONS

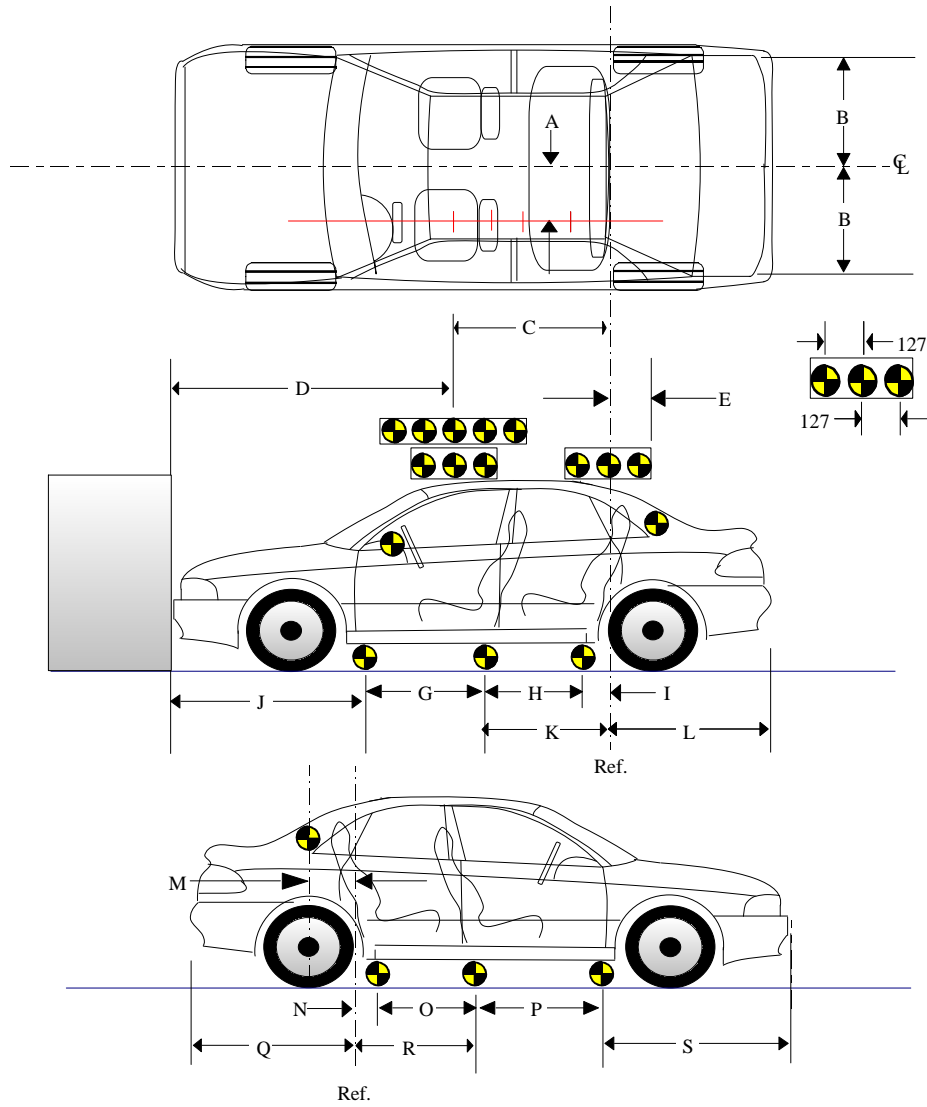
NOTE: Camera information shown in DATA SHEET NO. 15.



DATA SHEET NO. 16 VEHICLE REFERENCE PHOTO TARGET LOCATIONS

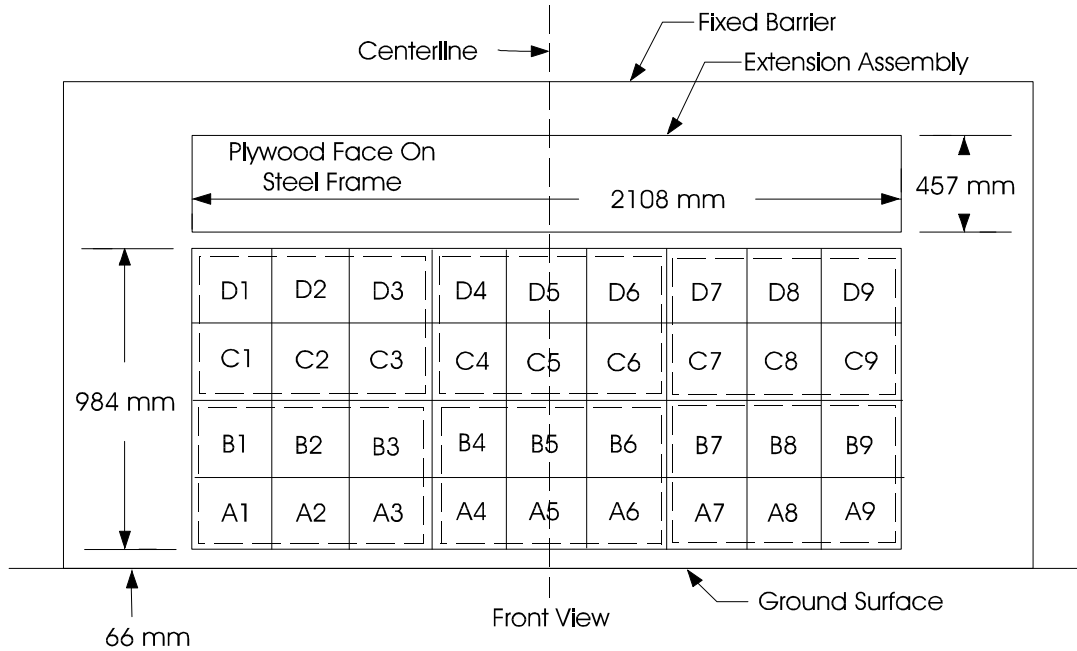
(Dimensions in millimeters)

A	328
B	711
C	1209
D	2256
E	-155
F	1803
G	986
H	992
I	140
J	1347
K	1132
L	1563
M	-160
N	179
O	984
P	983
Q	1532
R	1163
S	1350



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. 19 ACCIDENT INVESTIGATION DIVISION DATA

FOR 56.3 KPH FRONTAL BARRIER IMPACT

Vehicle Make/Model/Body Style: Nissan Frontier 4-Door Pickup

NHTSA Test No.: M15201 VIN: 1N6ED27T61C360358

Model Year: 2001 Build Date: 12/00 Test Date: March 13, 2001

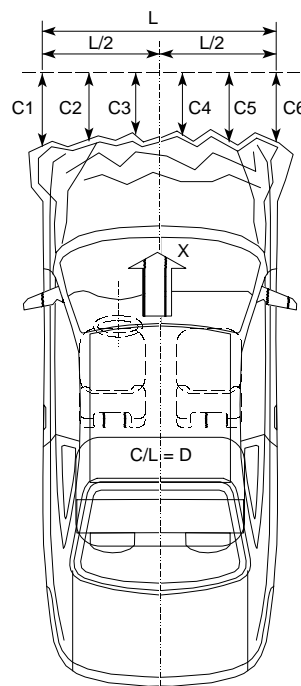
Vehicle Size Category: Standard Pickup Test Weight: 2051.0 kg

Vehicle Wheelbase: 2950 mm; Front Overhang: 890 mm; Overall Width: 1808 mm

Collision Deformation Classification (CDC) Code: 12FDEW3

Crush Depth Dimensions:

	PRE	POST	DIFF	
C1 =	4842	4540	302	mm
C2 =	4962	4440	522	mm
C3 =	5019	4434	585	mm
C4 =	5021	4433	588	mm
C5 =	4980	4435	545	mm
C6 =	4870	4569	301	mm



Midpoint of Damage: D = Vehicle Centerline (Longitudinal)

Length of Damaged Region: L1= 1523 mm
 L2= 762 mm
 L5= 305 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

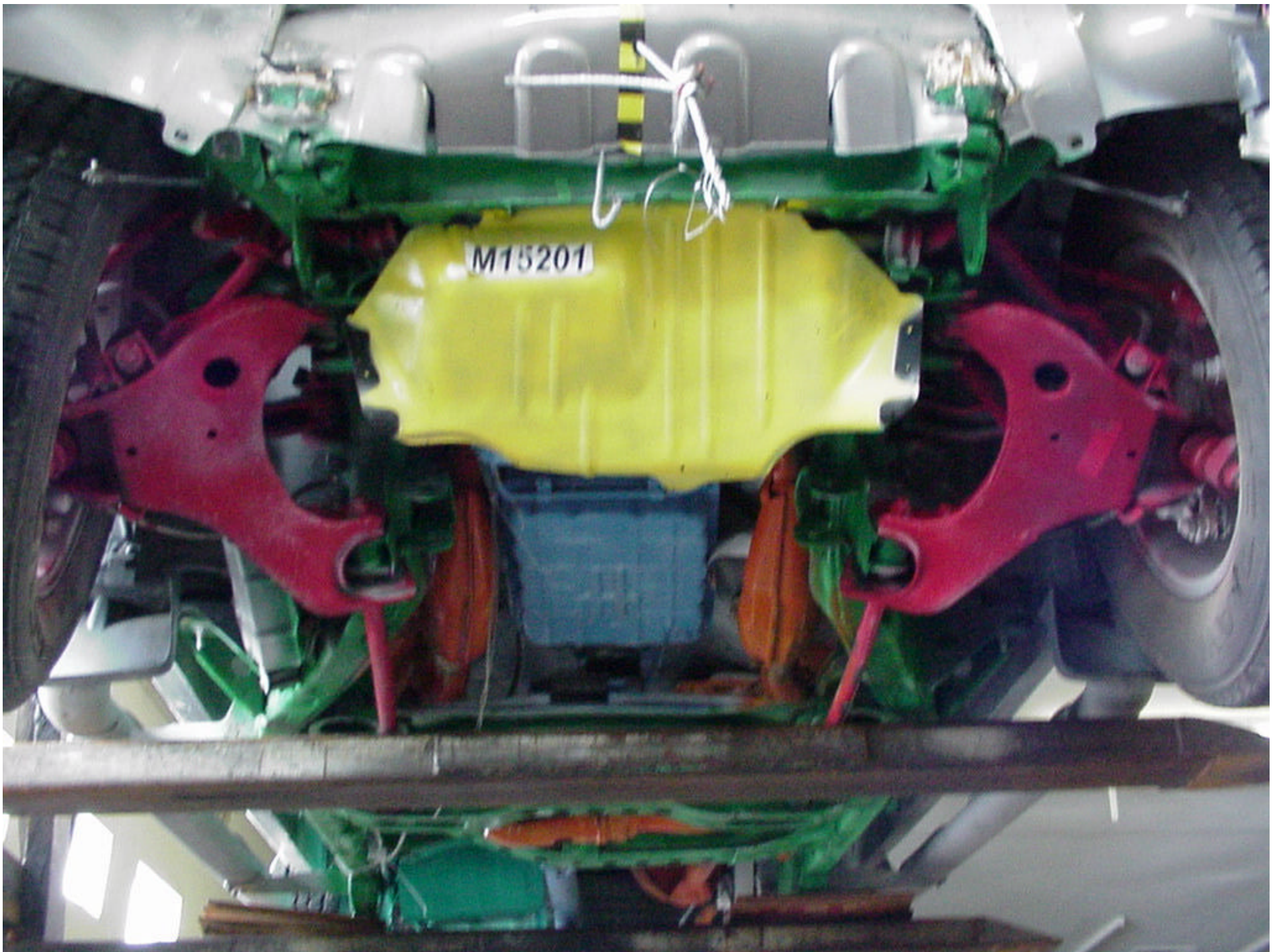


Figure A-17 POST-TEST FRONT UNDERBODY VIEW



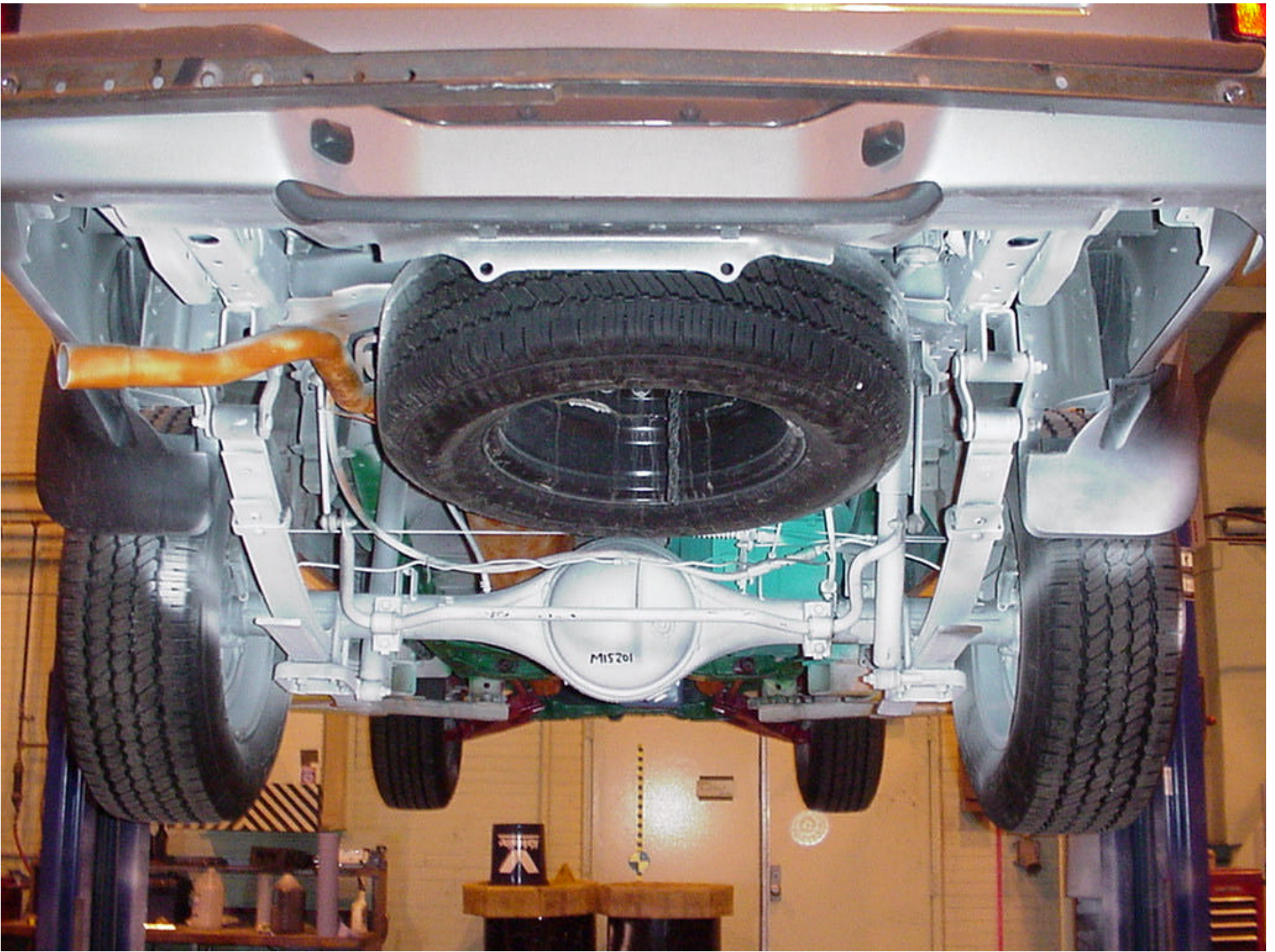
A-20

8602-23

Figure A-18 PRE-TEST FRONT SIDE UNDERBODY VIEW



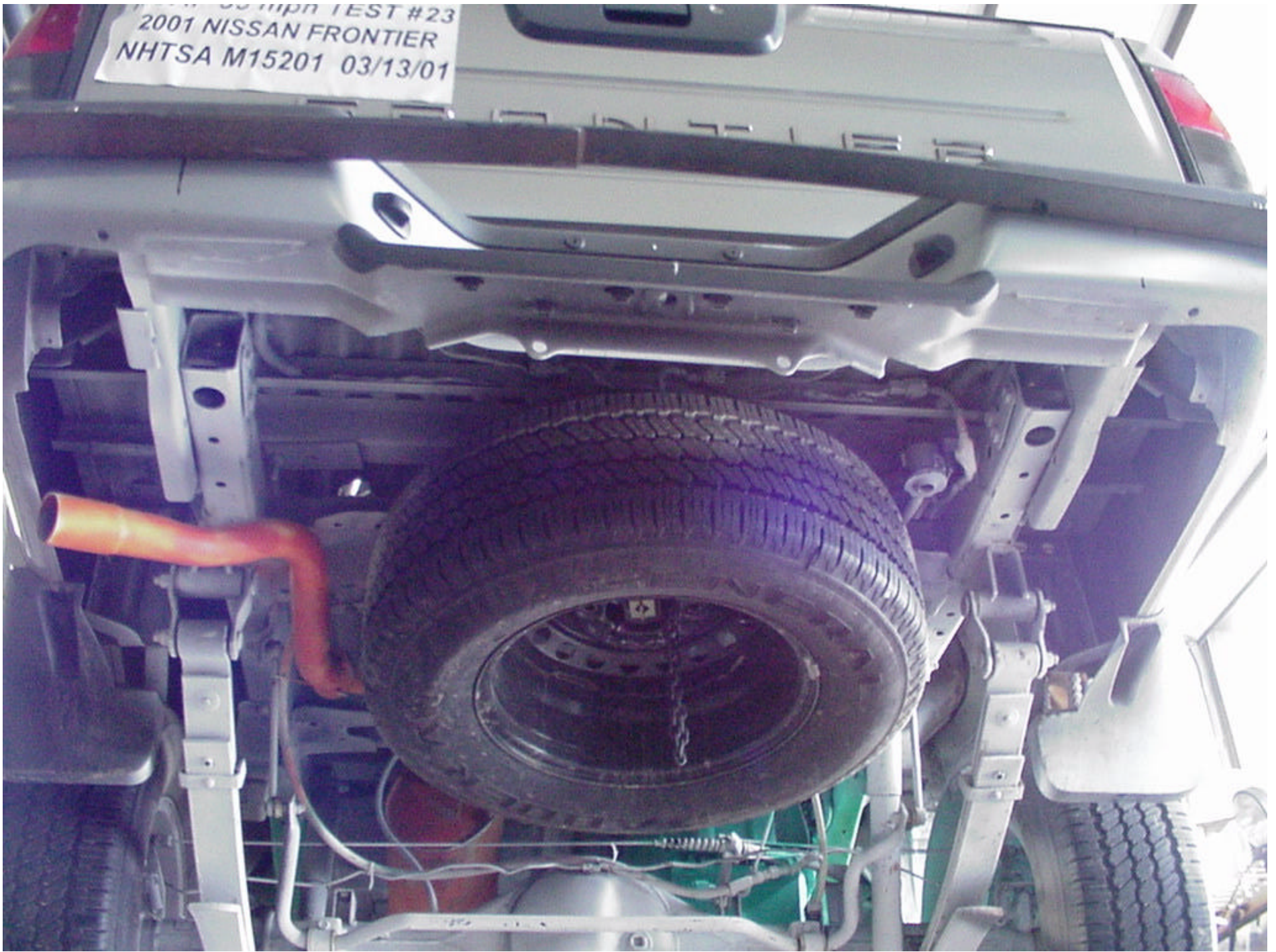
Figure A-19 POST-TEST FRONT SIDE UNDERBODY VIEW



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8602-23

Figure A-20 PRE-TEST REAR UNDERBODY VIEW



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8602-23

Figure A-21 POST-TEST REAR UNDERBODY VIEW



Figure A-22 PRE-TEST DRIVER POSITION VIEW



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8602-23

Figure A-23 POST-TEST DRIVER POSITION VIEW



A-26

8602-23

Figure A-24 PRE-TEST PASSENGER POSITION VIEW



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8602-23

Figure A-25 POST-TEST PASSENGER POSITION VIEW



Figure A-26 PRE-TEST DRIVER AND INTERIOR VIEW



Figure A-27 POST-TEST DRIVER AND INTERIOR VIEW



Figure A-28 PRE-TEST PASSENGER AND INTERIOR VIEW



Figure A-29 POST-TEST PASSENGER AND INTERIOR VIEW



Figure A-30 PRE-TEST DRIVER HEAD LOCATION



Figure A-31 POST-TEST DRIVER HEAD LOCATION



Figure A-32 PRE-TEST PASSENGER HEAD LOCATION



Figure A-33 POST-TEST PASSENGER HEAD LOCATION



Figure A-34 PRE-TEST DRIVER FLOOR PAN VIEW



Figure A-35 POST-TEST DRIVER FLOOR PAN VIEW



Figure A-36 PRE-TEST PASSENGER FLOOR PAN VIEW



Figure A-37 POST-TEST PASSENGER FLOOR PAN VIEW



Figure A-38 ROLLOVER VIEW



Figure A-39 IMPACT VIEW

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. M15201

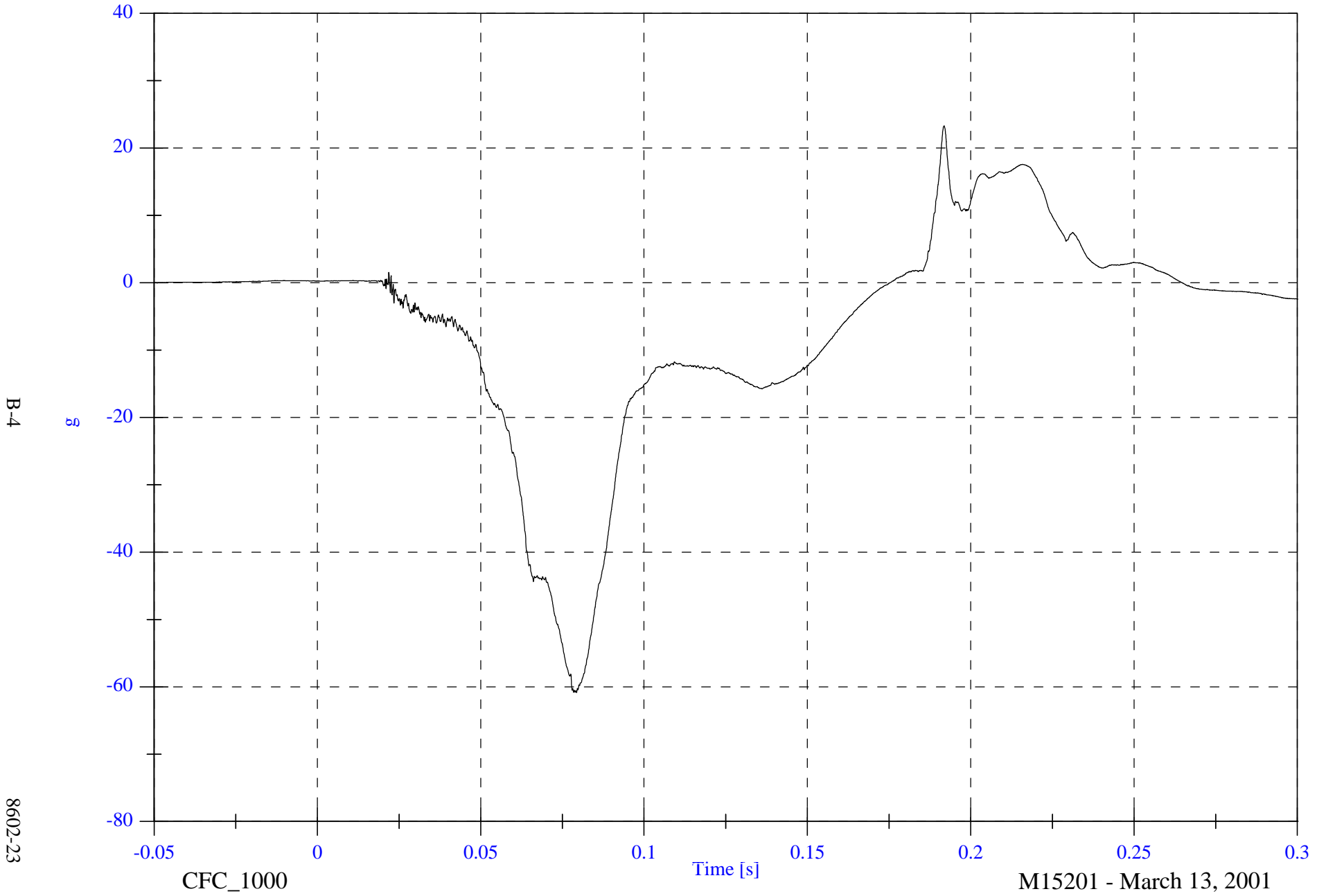
DATA TYPE	SAE FILTER CLASS (Hz)
Dummy Head Accelerations	1000
Dummy Chest Accelerations	180
Dummy Chest Displacements	60
Dummy Femur Forces	600
Dummy Belt Loads	60
Dummy Belt Displacements	180
Dummy Neck Forces	1000
Dummy Neck Moments	600
Vehicle Accelerations	60
Vehicle Velocity Integrations	180
Vehicle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

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 23.3 [g] at 0.192 [s]

Min: -60.9 [g] at 0.079 [s]

P1 Head x



B-4

8602-23

CFC_1000

Time [s]

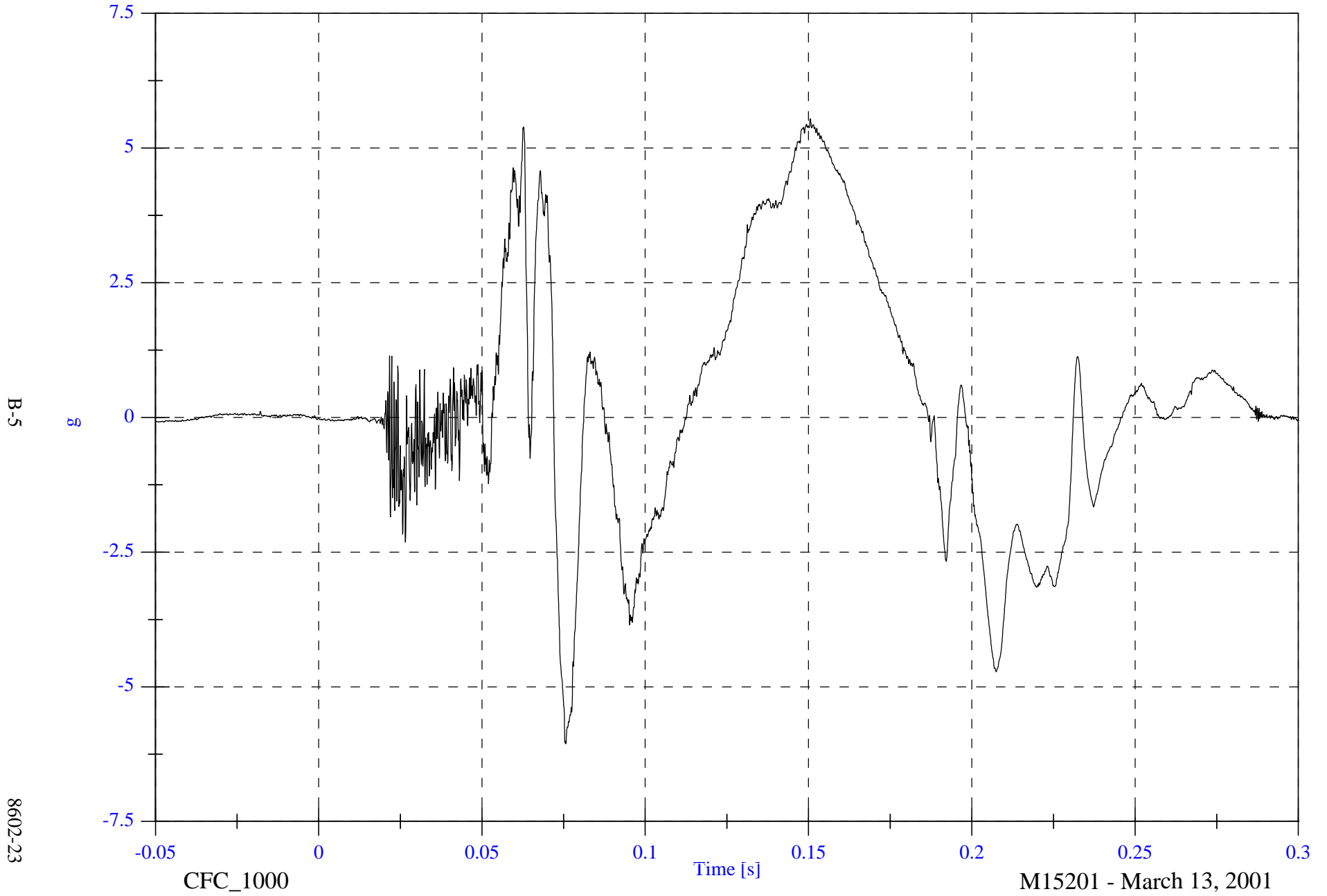
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 5.5 [g] at 0.151 [s]

Min: -6.1 [g] at 0.076 [s]

P1 Head y



B-5

8602-23

CFC_1000

Time [s]

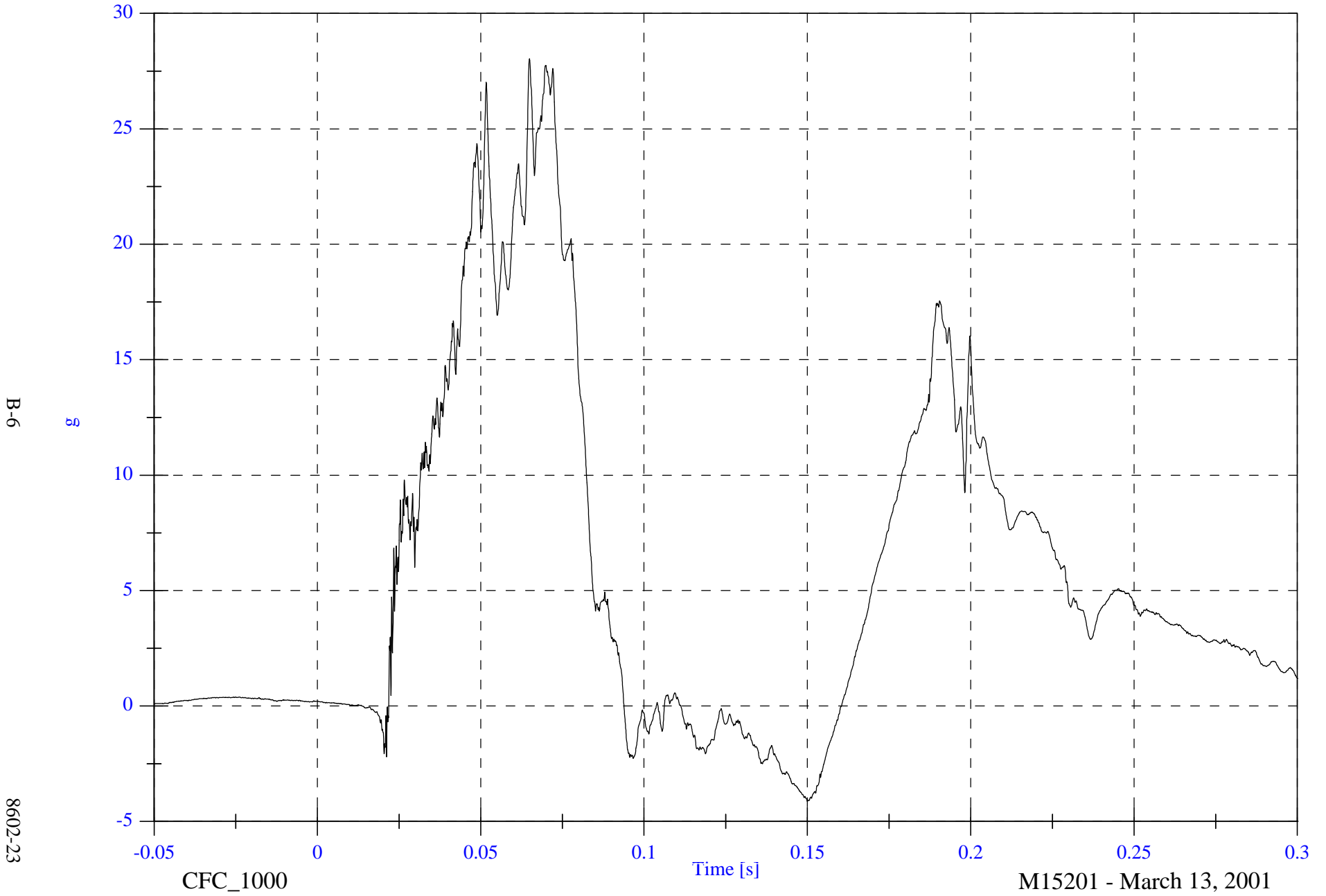
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 28.0 [g] at 0.065 [s]

Min: -4.1 [g] at 0.150 [s]

P1 Head z



B-6

g

8602-23

CFC_1000

Time [s]

M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

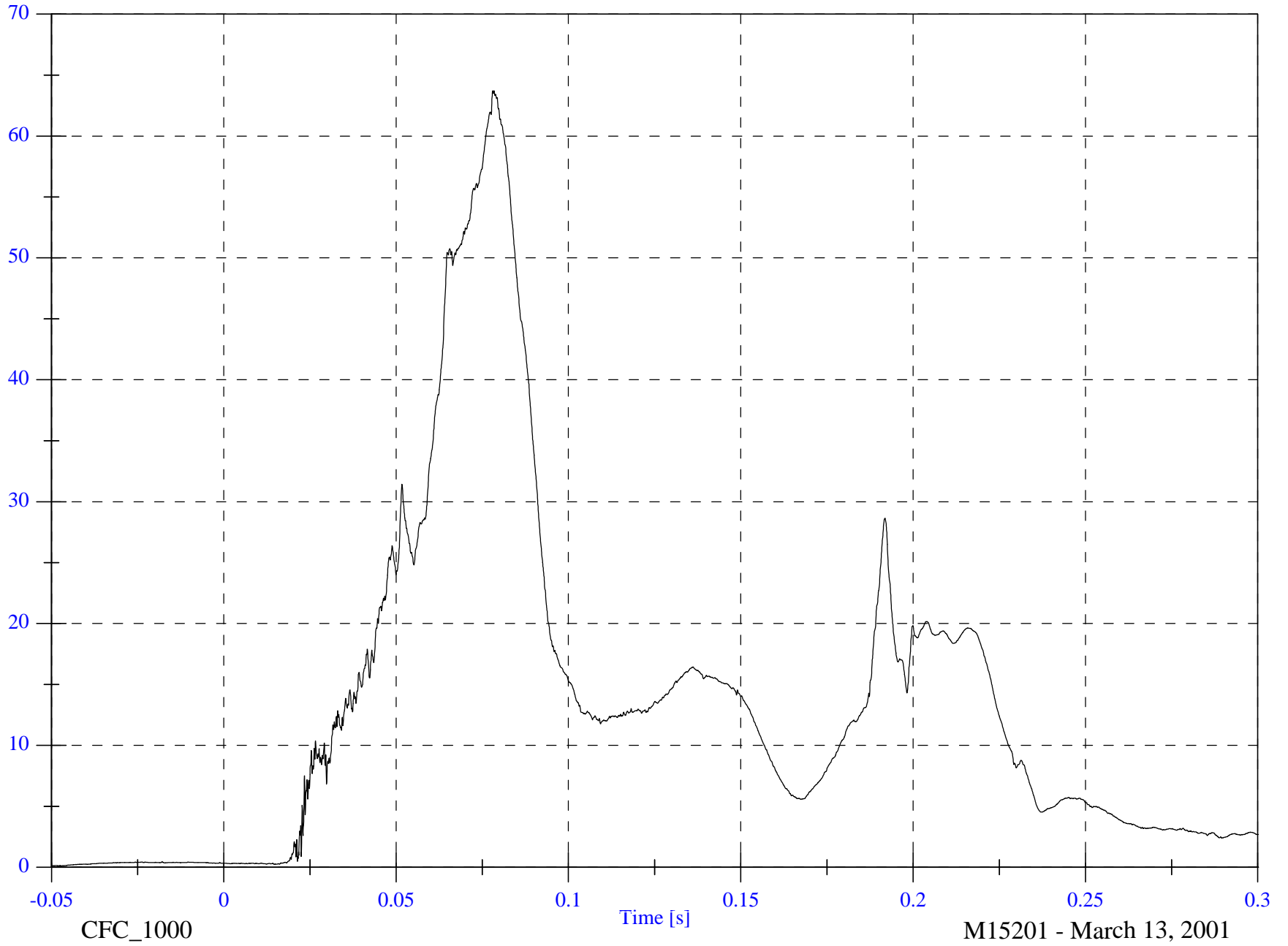
Max: 63.7 [g] at 0.078 [s]

P1 Head Resultant

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

B-7

g



8602-23

CFC_1000

Time [s]

M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 24.1 [g] at 0.192 [s]

P1 Head Red x

Min: -61.4 [g] at 0.079 [s]



B-8

8602-23

CFC_1000

Time [s]

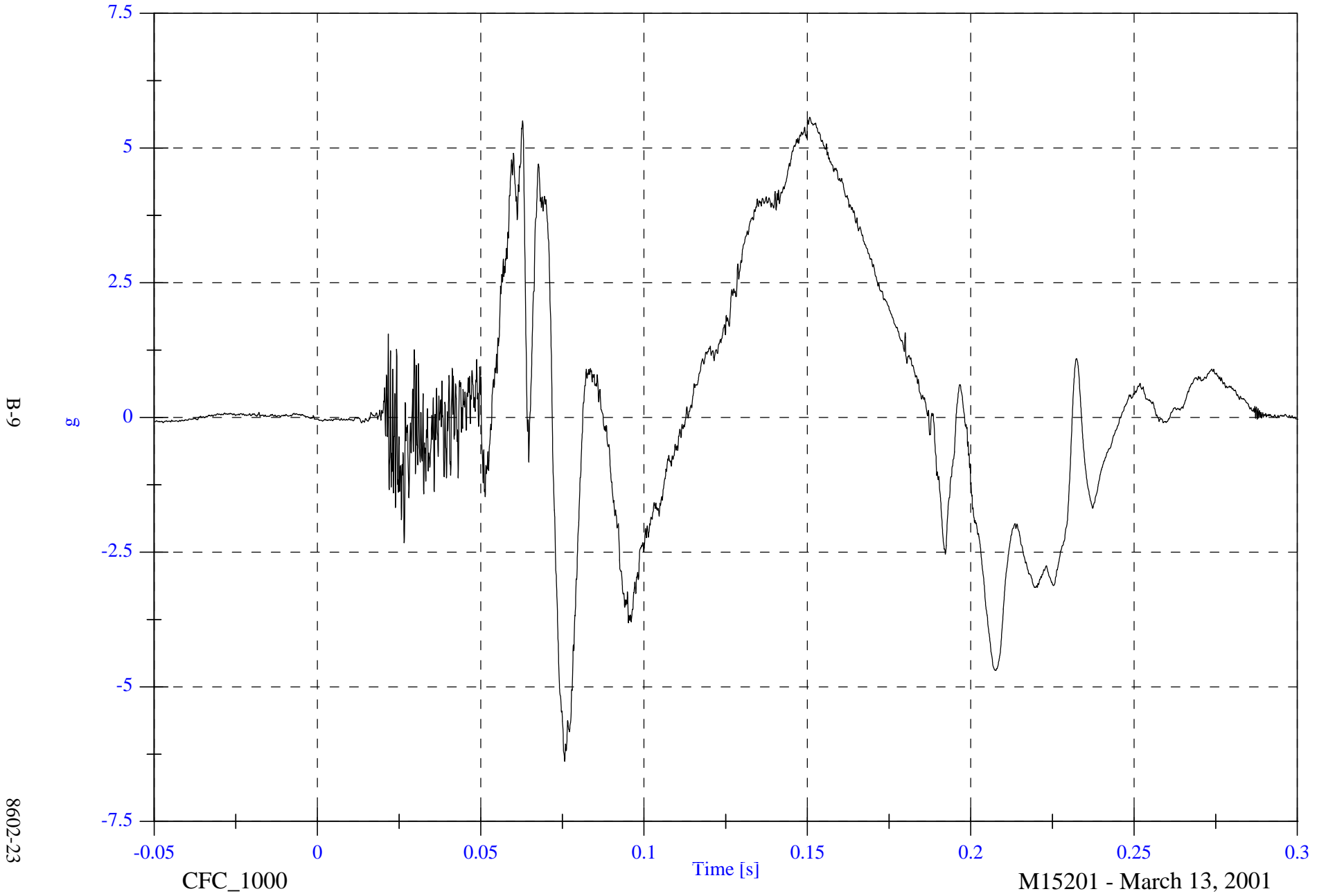
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 5.6 [g] at 0.151 [s]

Min: -6.4 [g] at 0.076 [s]

P1 Head Red y

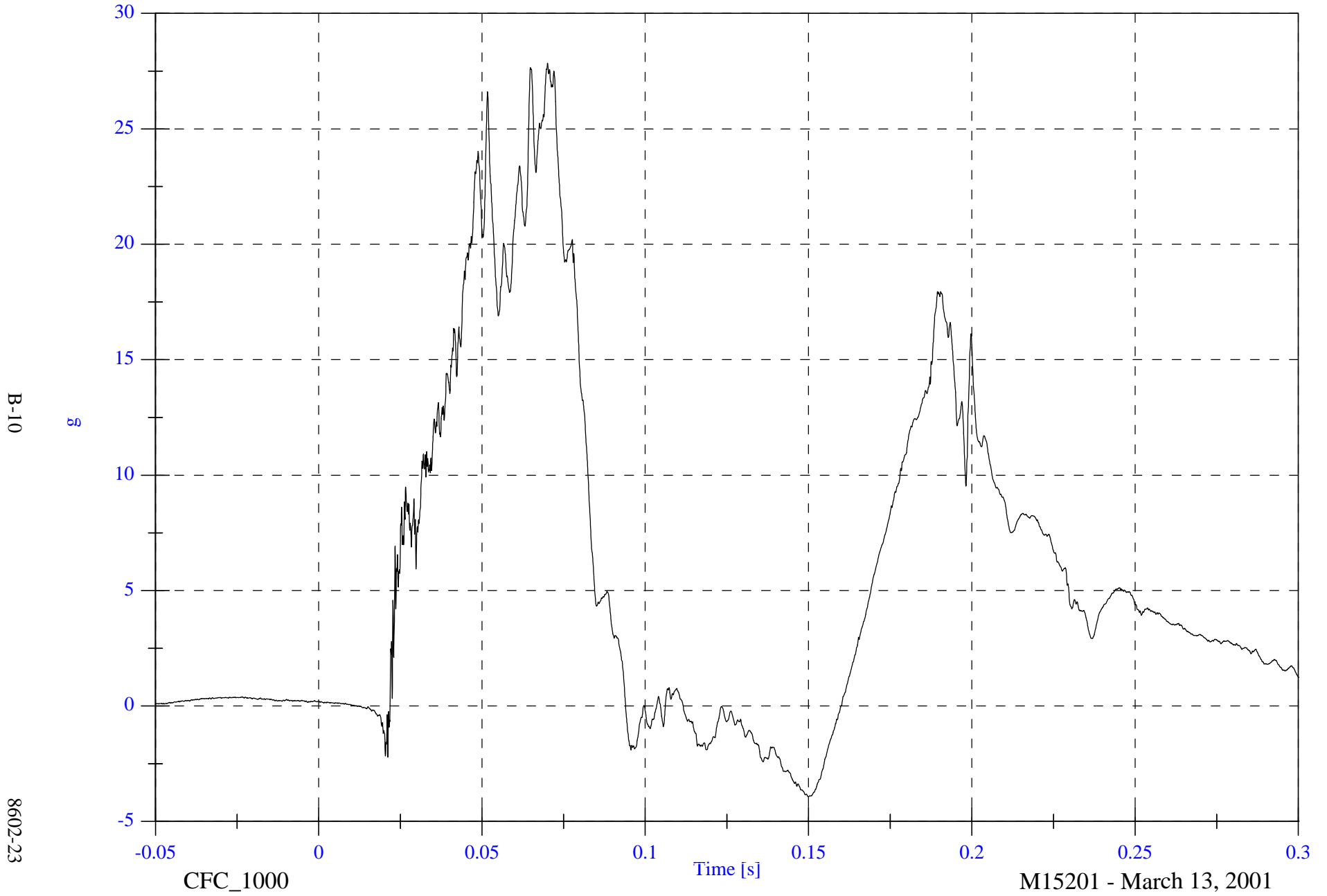


NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 27.8 [g] at 0.070 [s]

P1 Head Red z

Min: -3.9 [g] at 0.150 [s]



B-10

8602-23

CFC_1000

M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

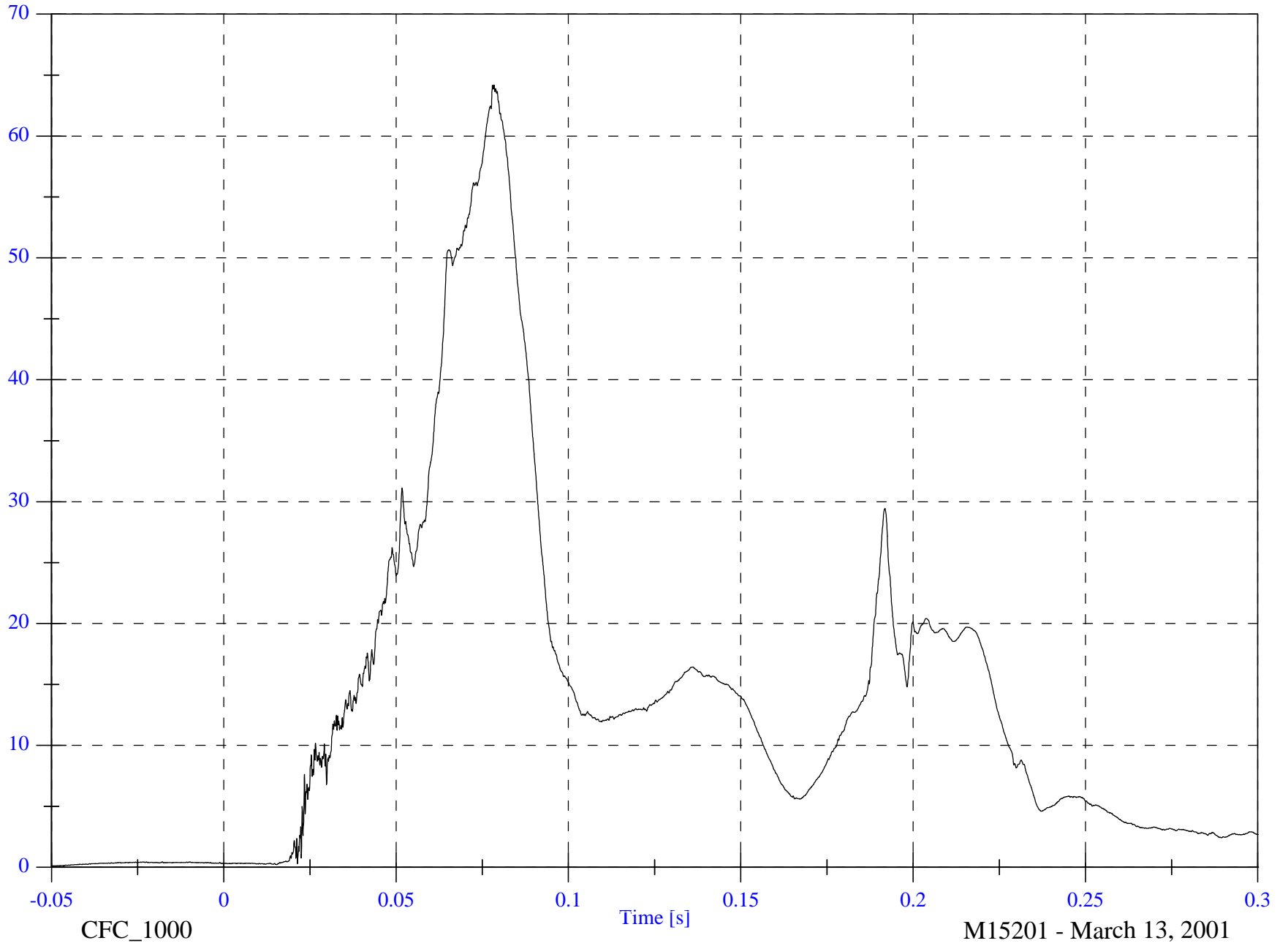
Max: 64.2 [g] at 0.078 [s]

P1 Head Red Resultant

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

B-11

g



8602-23

CFC_1000

Time [s]

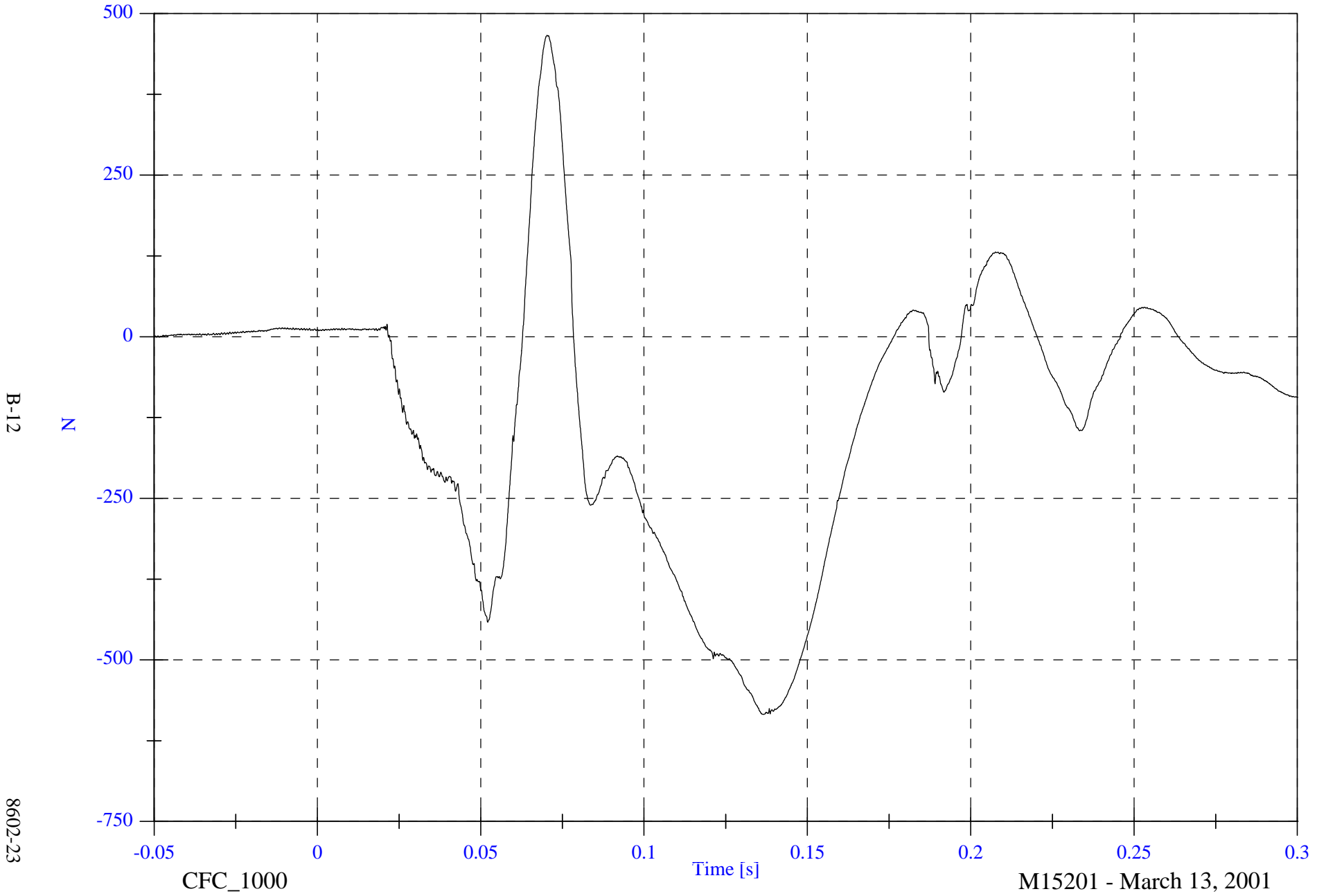
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 466.0 [N] at 0.070 [s]

P1 Upper Neck Fx

Min: -584.4 [N] at 0.136 [s]

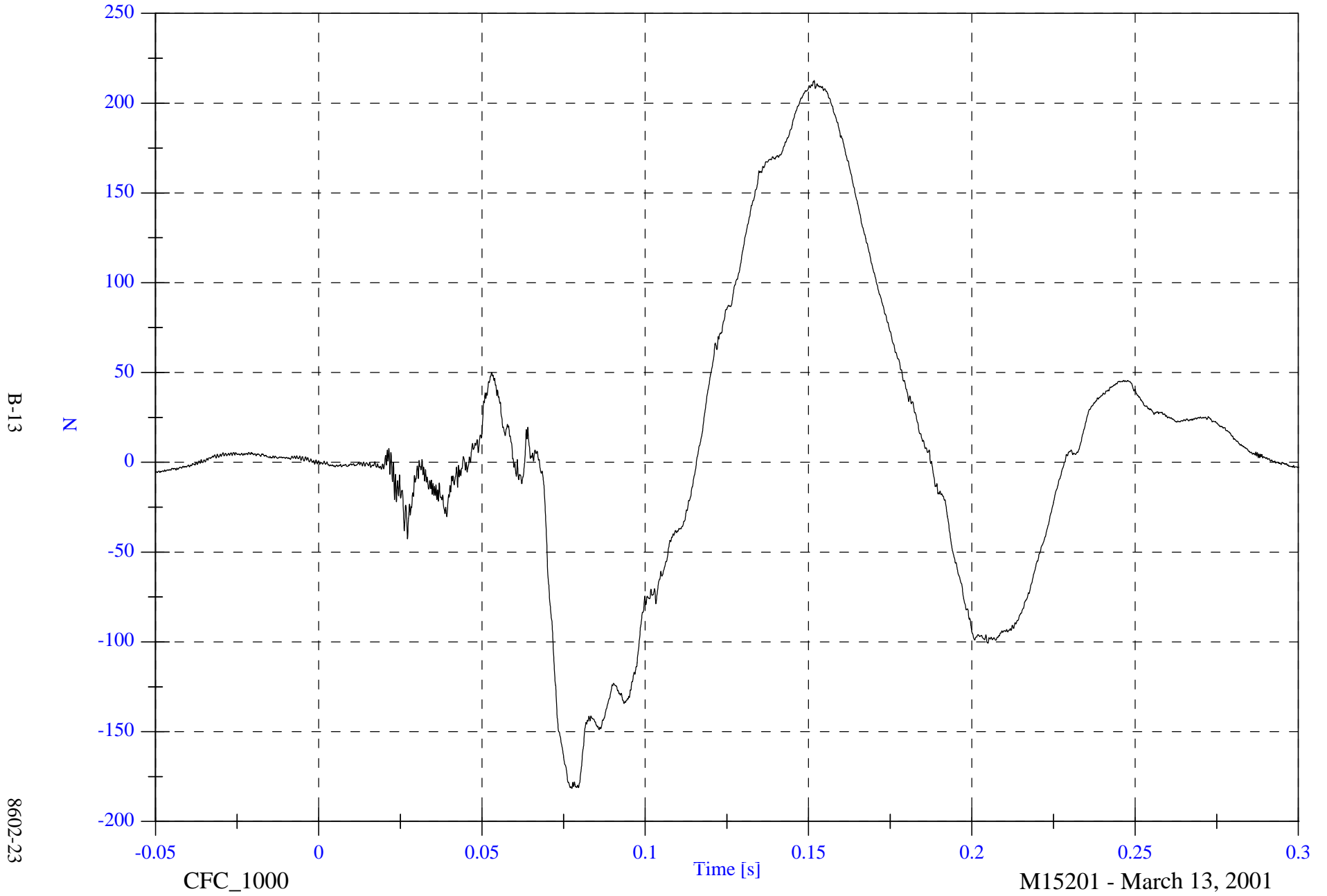


NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 212.6 [N] at 0.152 [s]

P1 Upper Neck Fy

Min: -181.7 [N] at 0.078 [s]



B-13

8602-23

CFC_1000

Time [s]

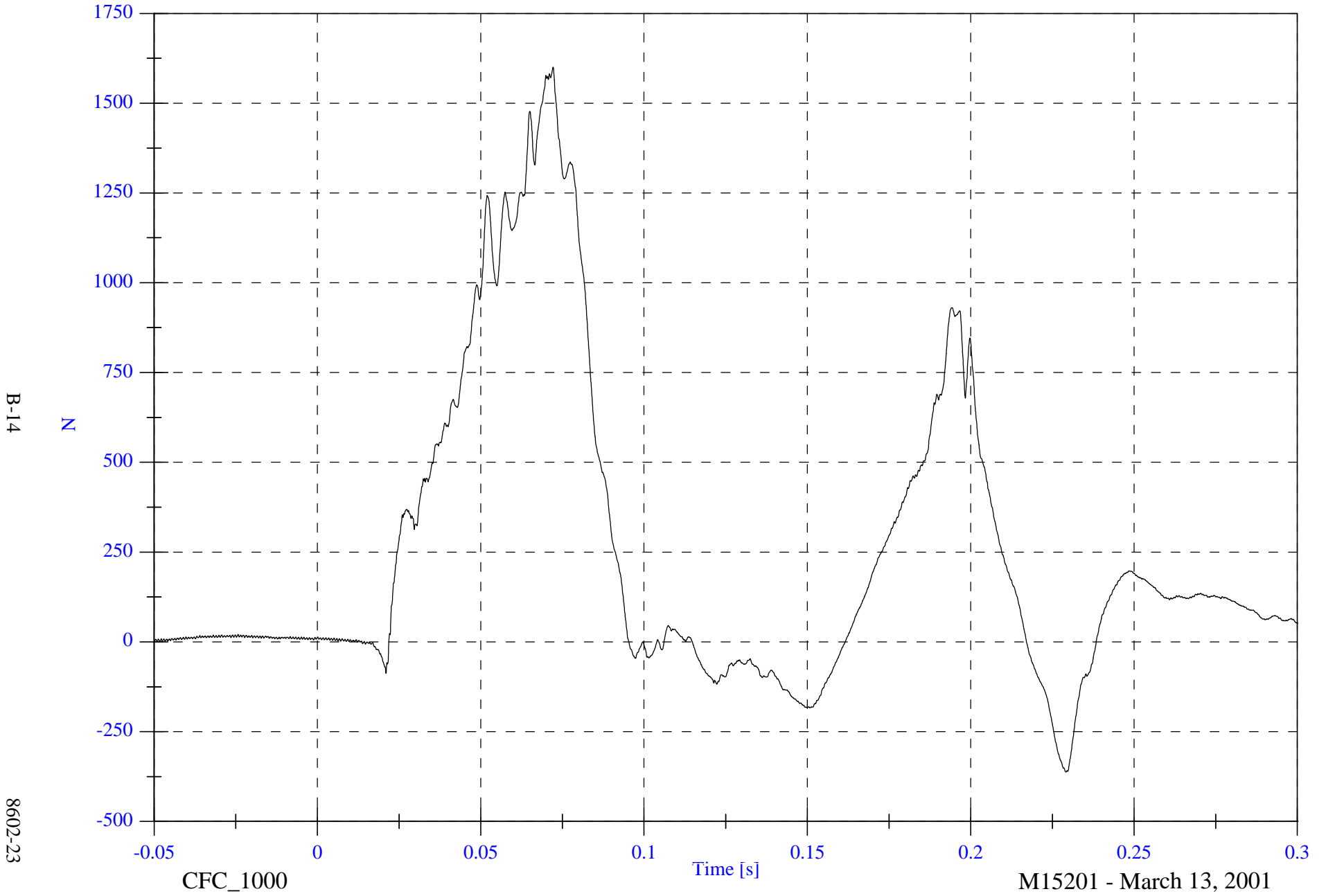
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 1600.5 [N] at 0.072 [s]

P1 Upper Neck Fz

Min: -362.7 [N] at 0.229 [s]



B-14

8602-23

CFC_1000

Time [s]

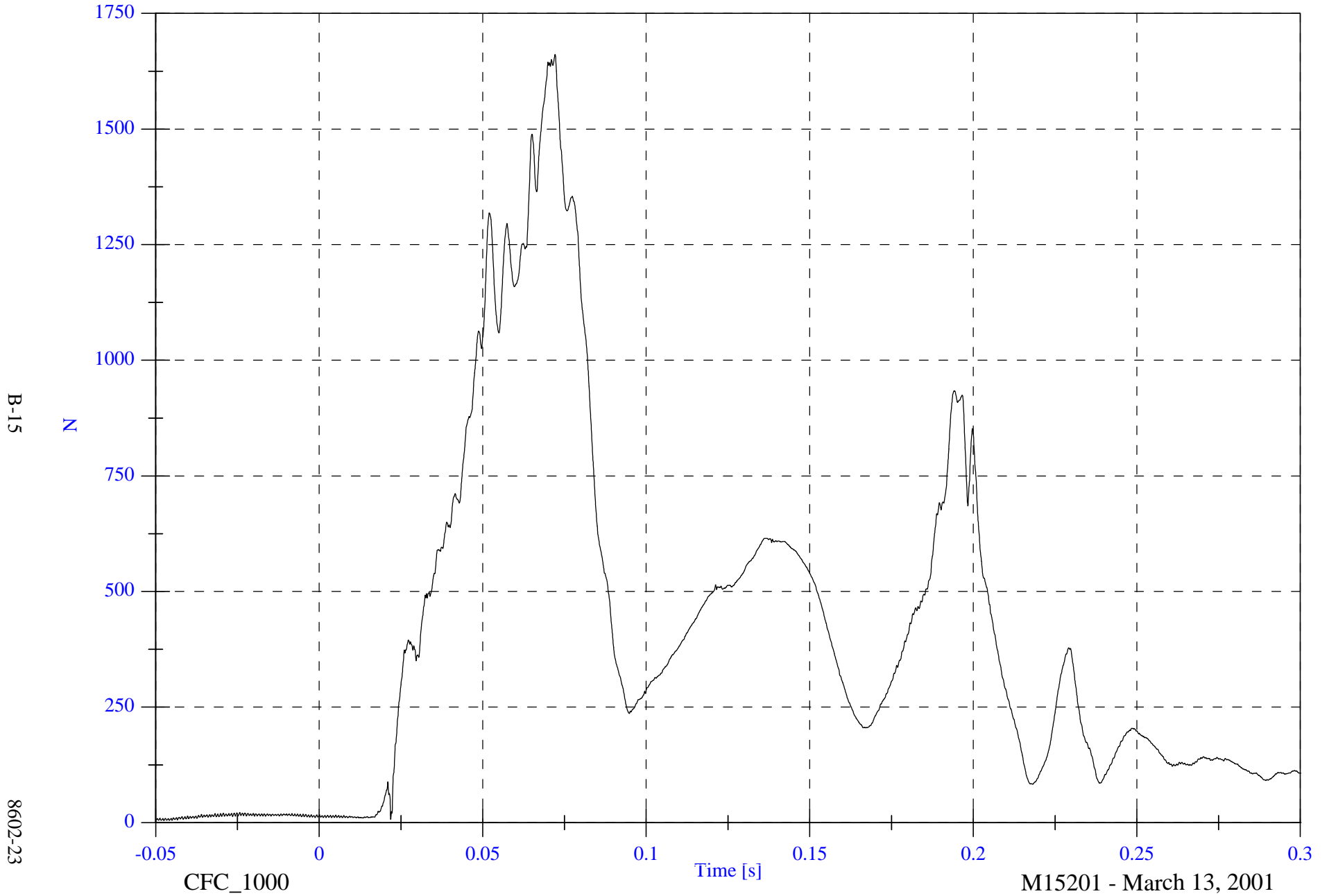
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 1661.3 [N] at 0.072 [s]

P1 Upper Neck F Resultant

Min: 5.1 [N] at -0.048 [s]



B-15

8602-23

CFC_1000

Time [s]

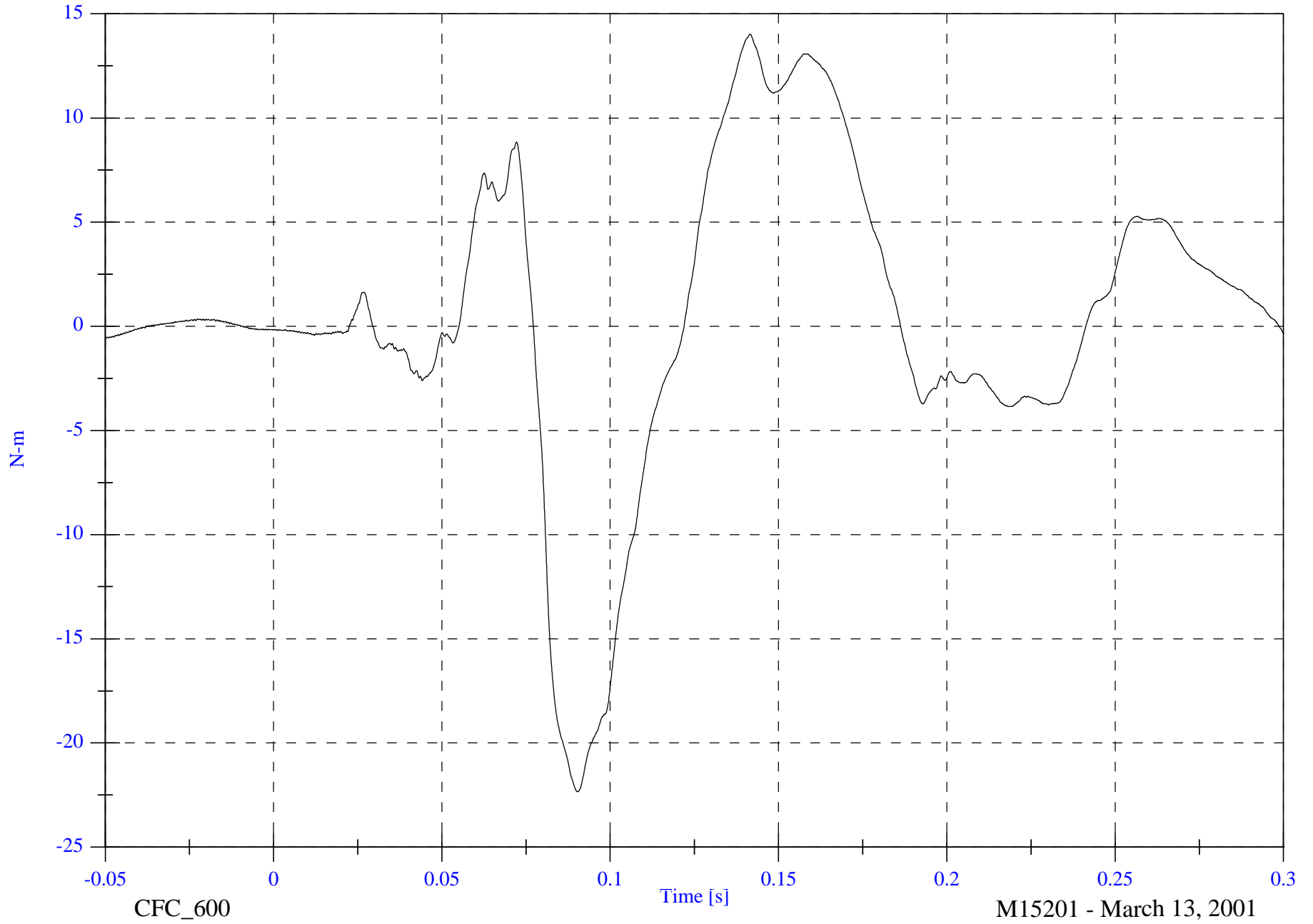
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 14.0 [N-m] at 0.141 [s]

P1 Upper Neck Mx

Min: -22.4 [N-m] at 0.090 [s]



B-16

8602-23

CFC_600

Time [s]

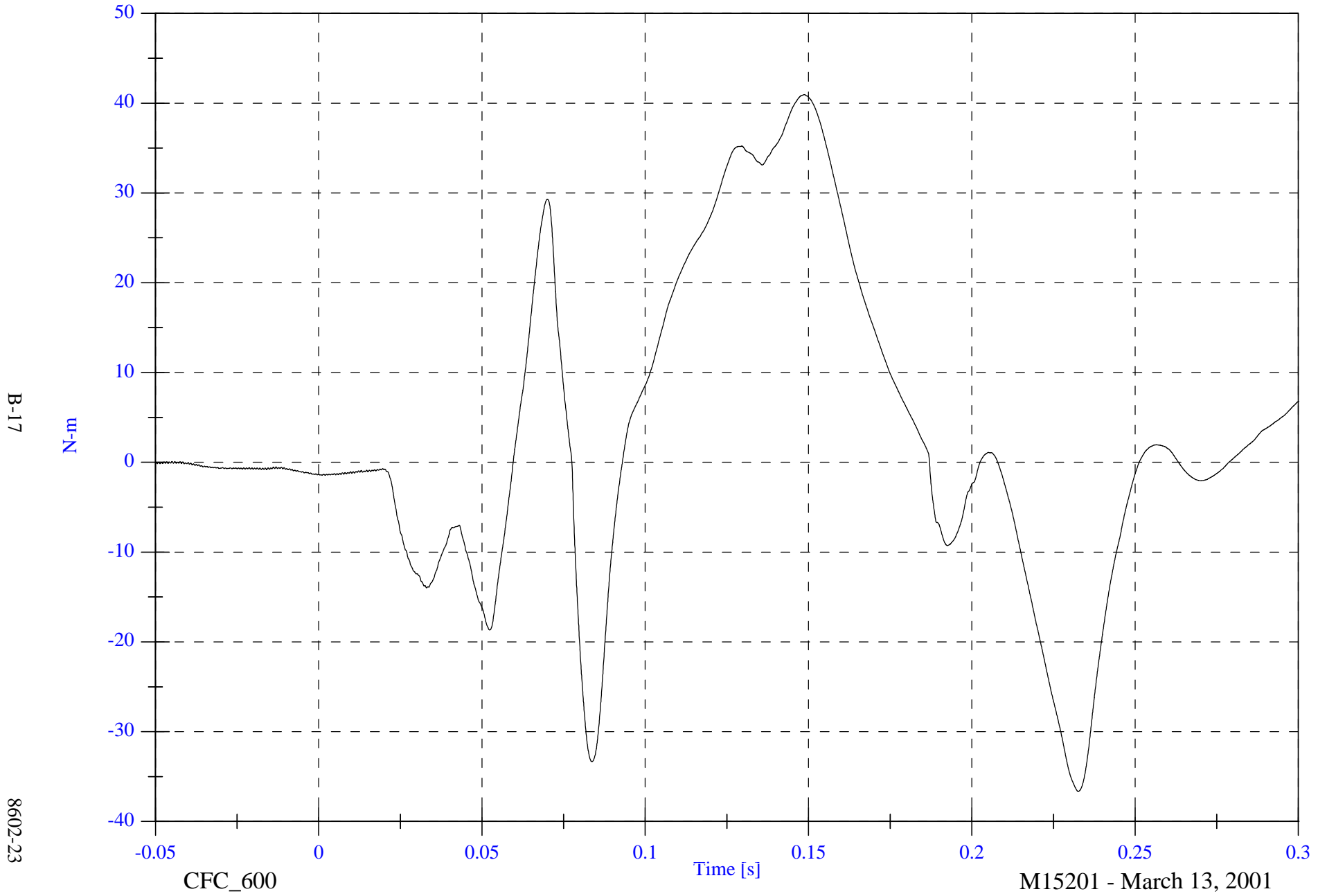
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 40.9 [N-m] at 0.149 [s]

Min: -36.7 [N-m] at 0.233 [s]

P1 Upper Neck My



B-17

8602-23

CFC_600

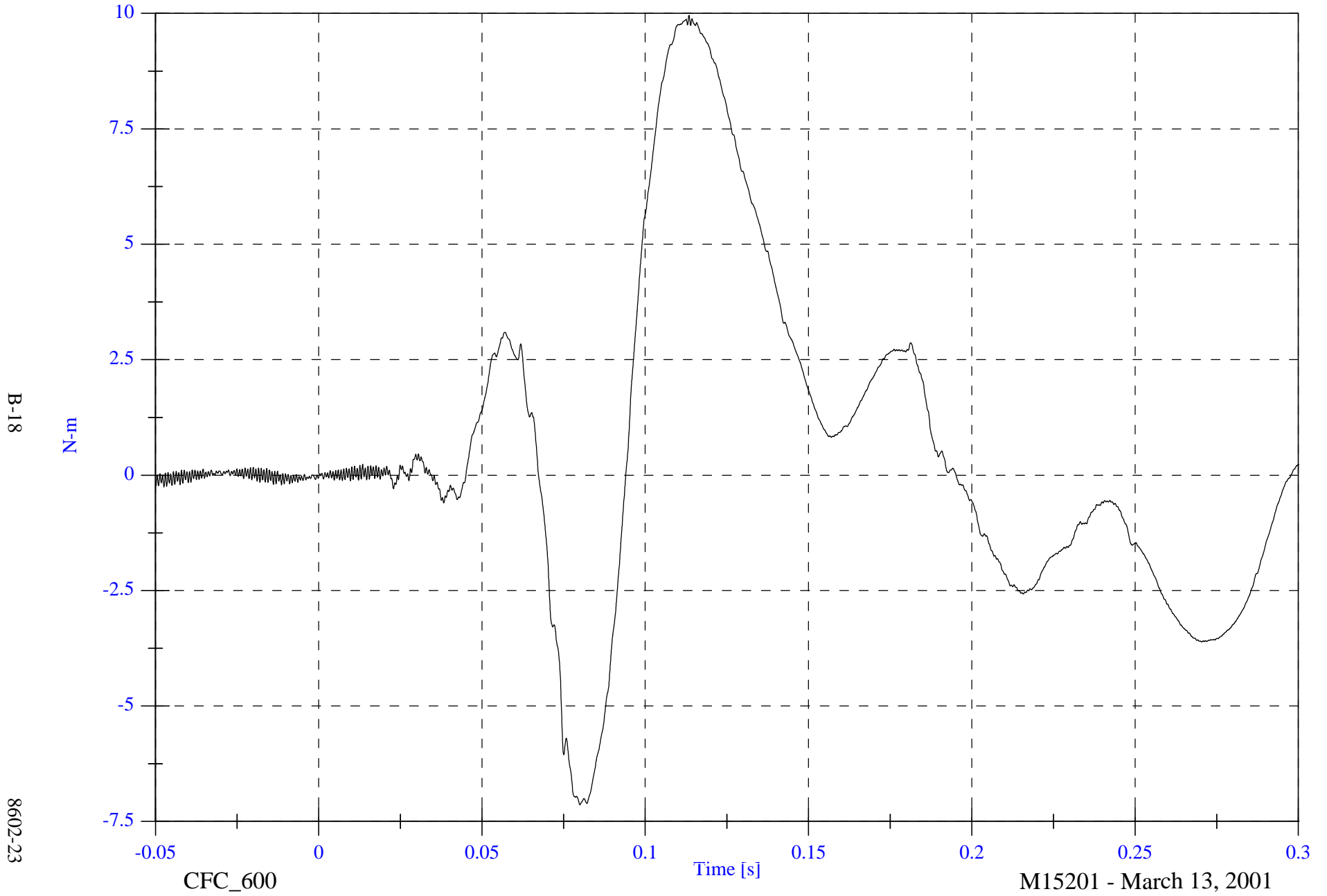
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 10.0 [N-m] at 0.113 [s]

Min: -7.1 [N-m] at 0.080 [s]

P1 Upper Neck Mz



B-18

8602-23

CFC_600

M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

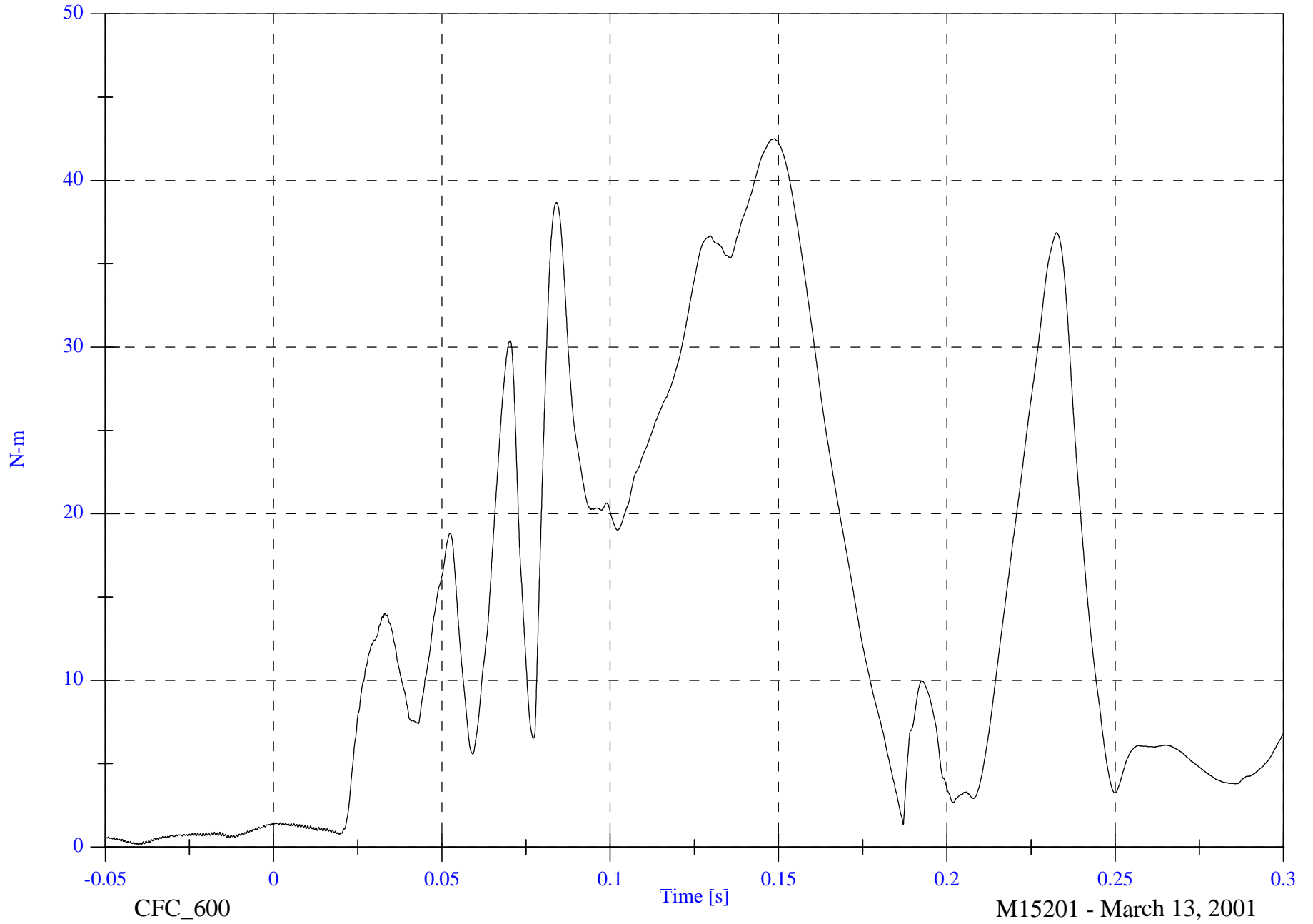
P1 Upper Neck M Resultant

Max: 42.5 [N-m] at 0.149 [s]

Min: 0.1 [N-m] at -0.040 [s]

B-19

8602-23

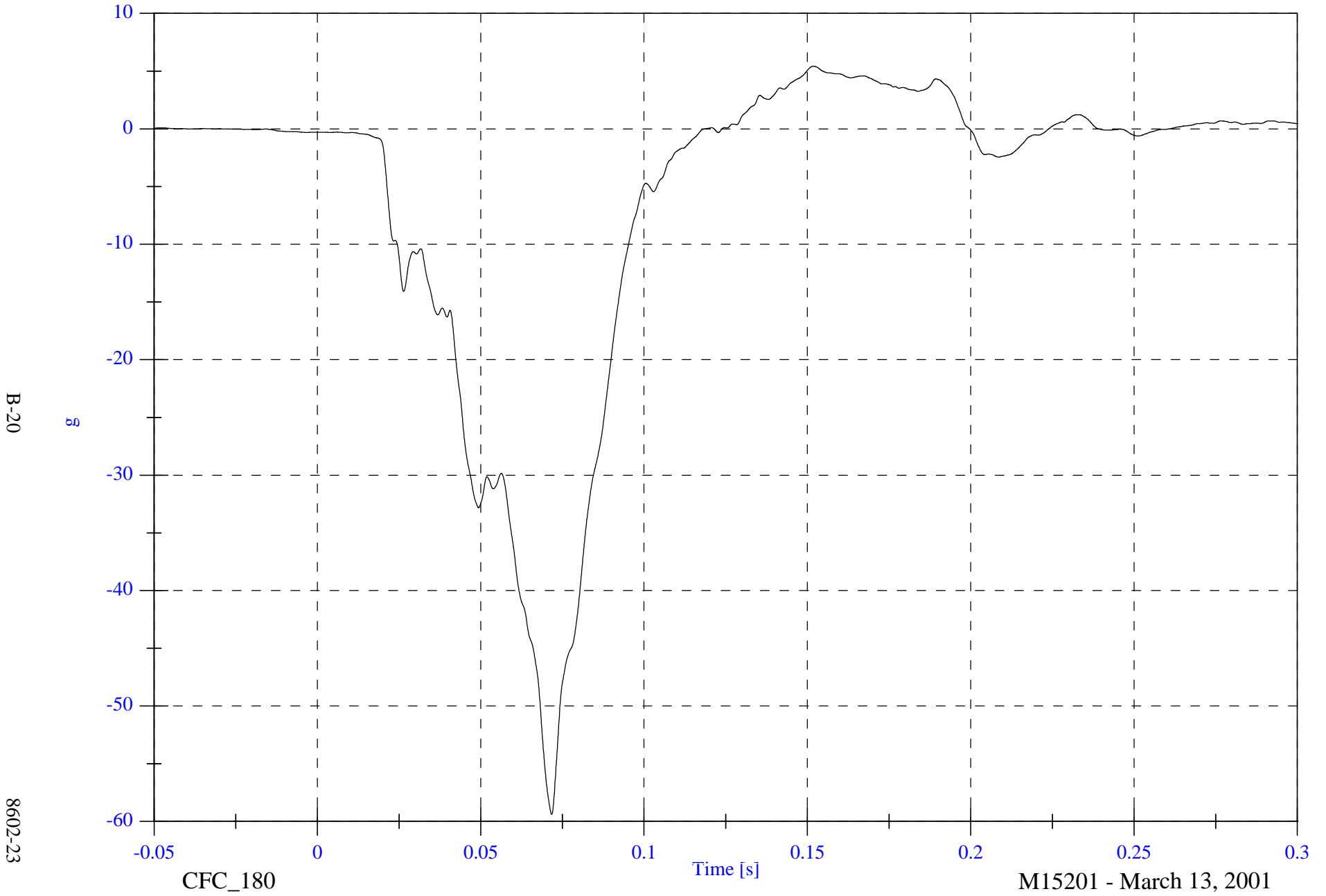


NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 5.4 [g] at 0.152 [s]

Min: -59.4 [g] at 0.072 [s]

P1 Chest x

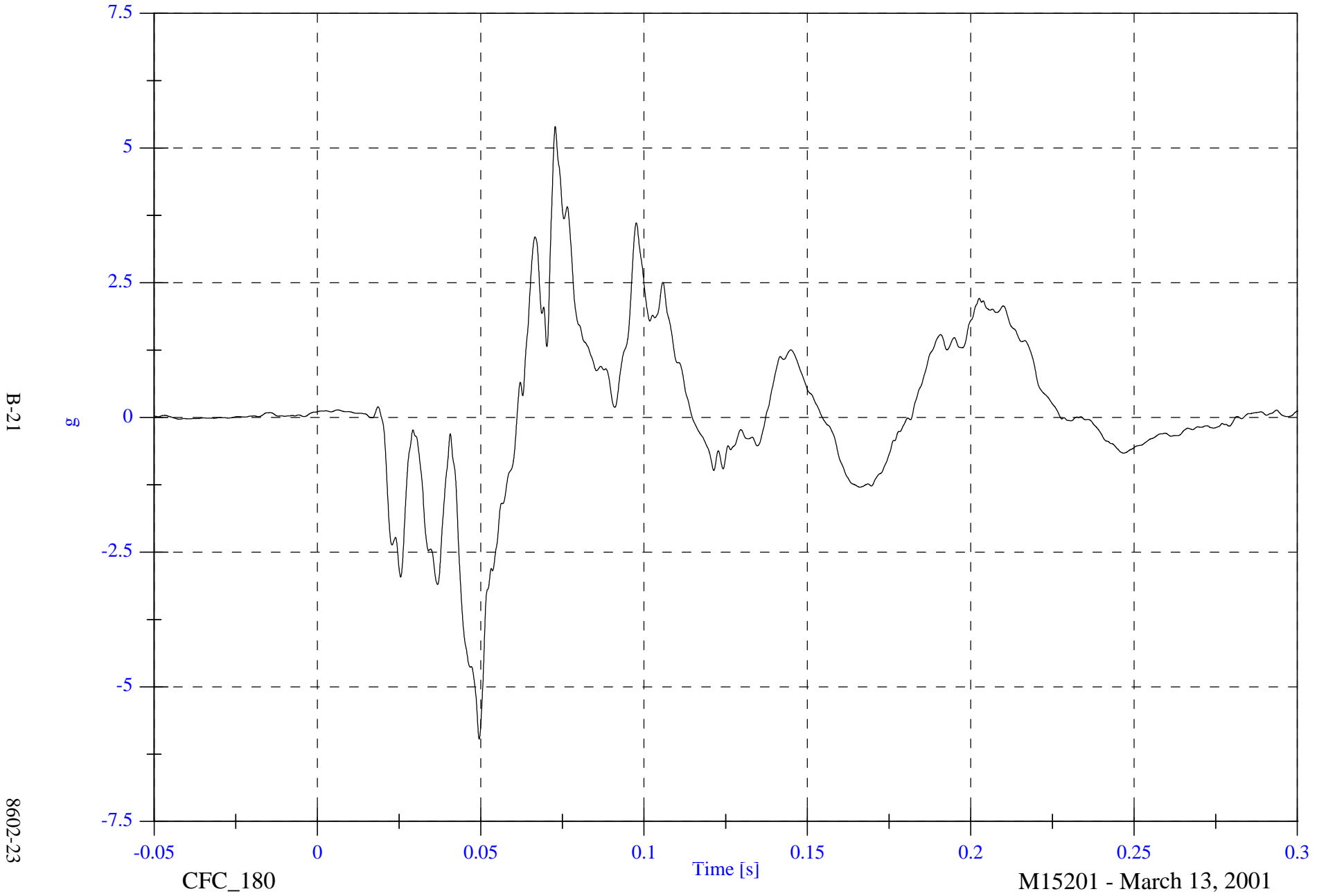


NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 5.4 [g] at 0.073 [s]

Min: -6.0 [g] at 0.050 [s]

P1 Chest y



NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 12.4 [g] at 0.051 [s]

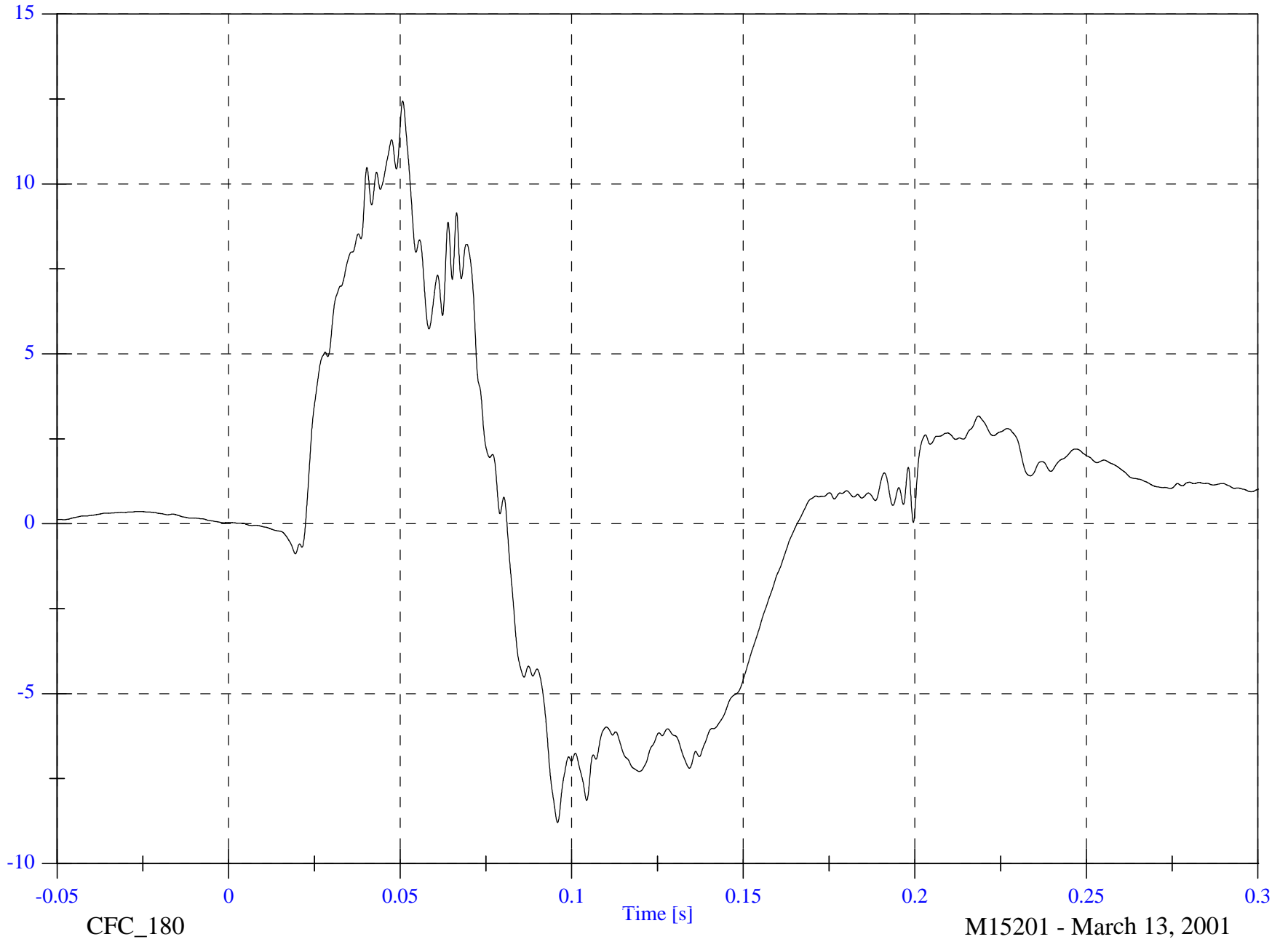
P1 Chest z

Min: -8.8 [g] at 0.096 [s]

B-22

g

8602-23



NCAP 2001 Test #23 - 2001 Nissan Frontier

P1 Chest Resultant

Max: 59.8 [g] at 0.072 [s]

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

B-23

8602-23

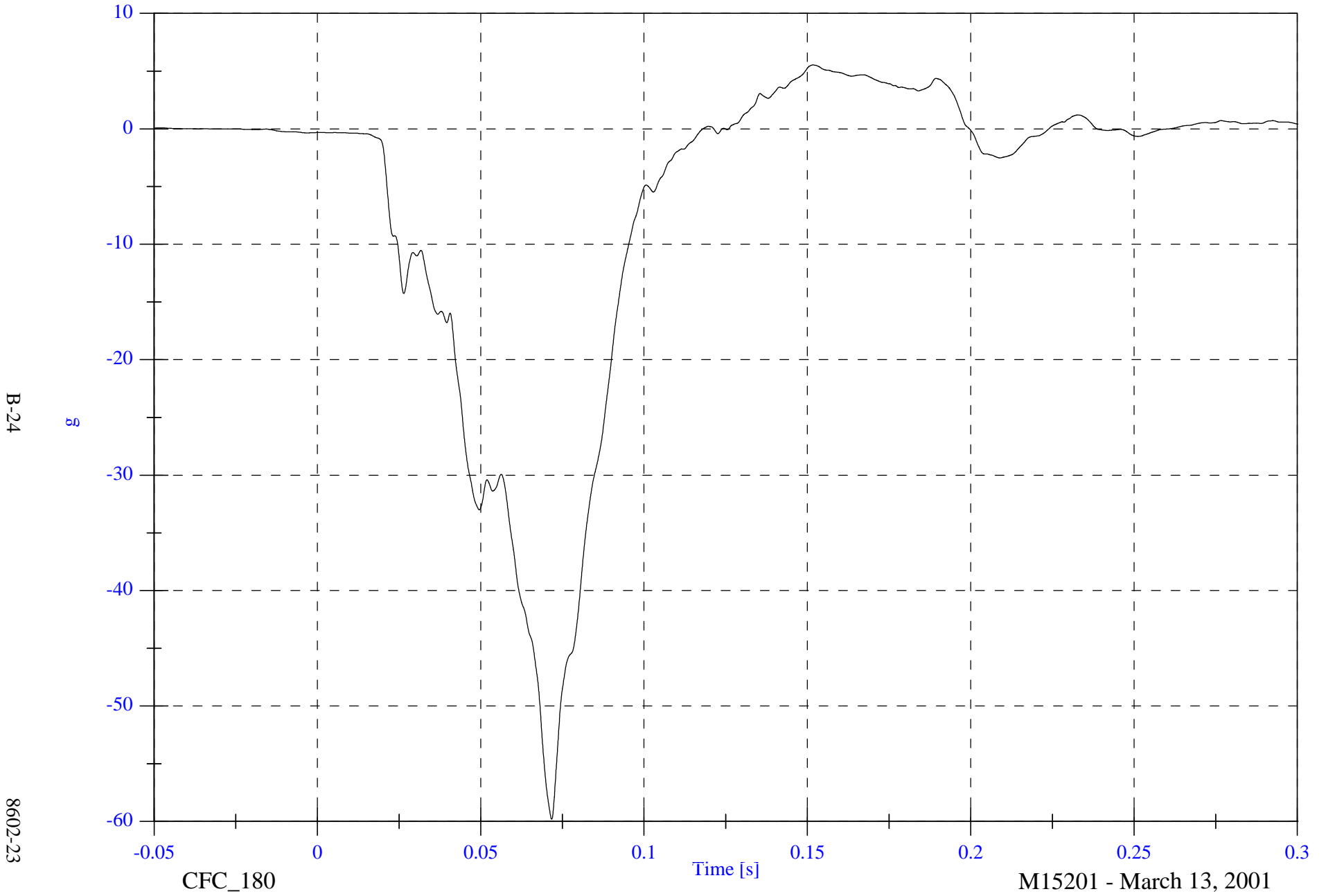


NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 5.5 [g] at 0.152 [s]

Min: -59.8 [g] at 0.072 [s]

P1 Chest Red x



B-24

8602-23

CFC_180

Time [s]

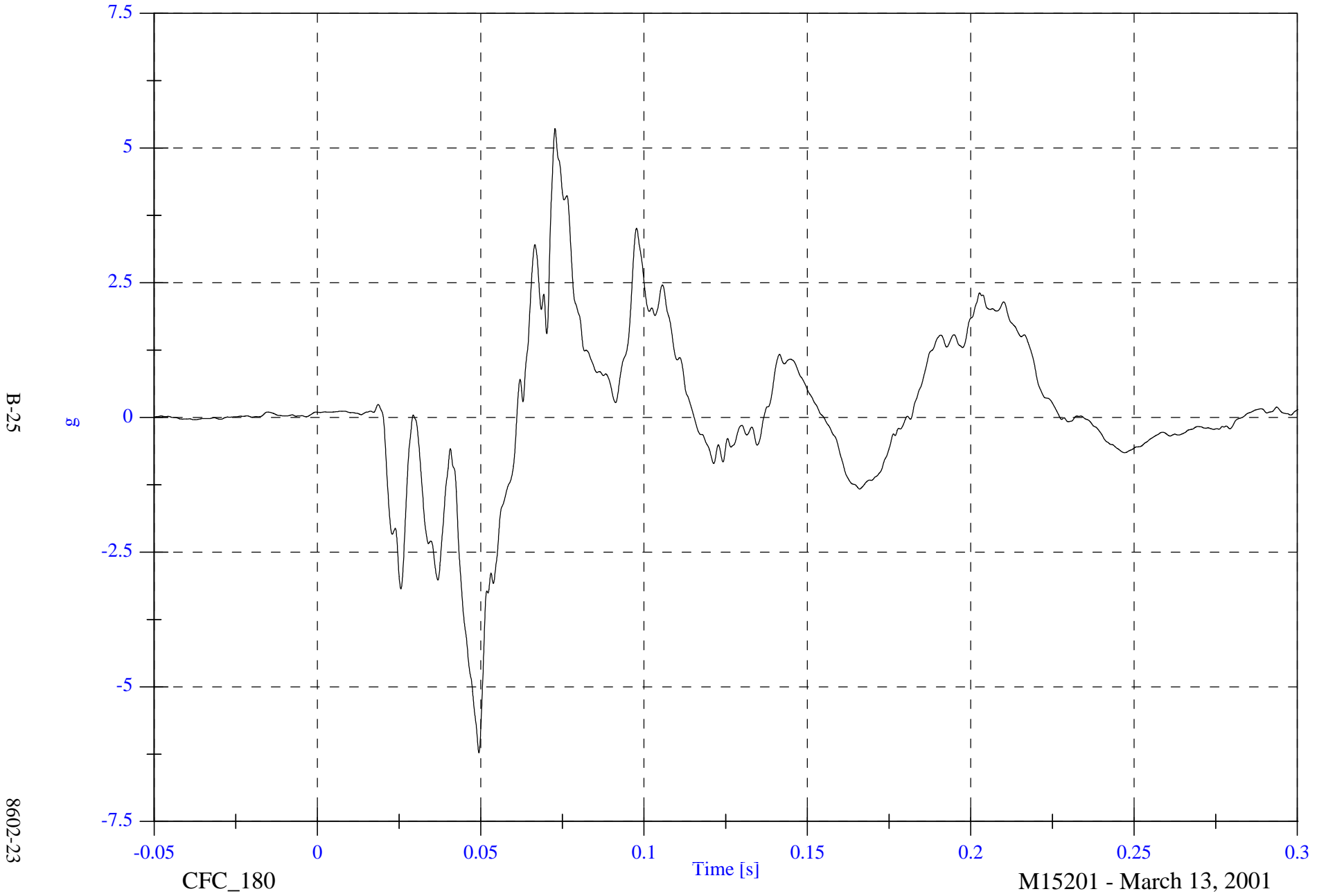
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 5.4 [g] at 0.073 [s]

Min: -6.2 [g] at 0.049 [s]

P1 Chest Red y



NCAP 2001 Test #23 - 2001 Nissan Frontier

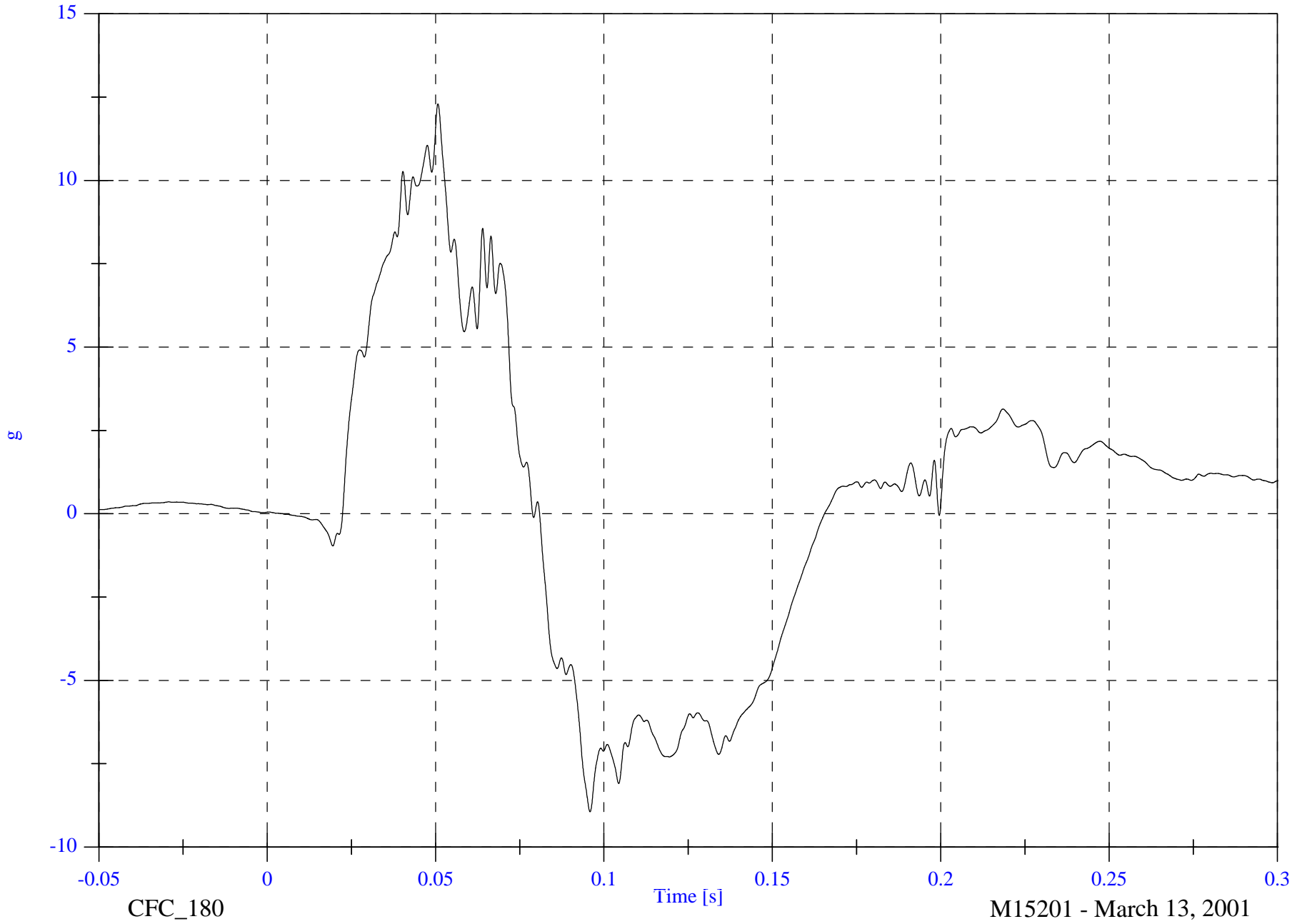
Max: 12.3 [g] at 0.051 [s]

Min: -8.9 [g] at 0.096 [s]

P1 Chest Red z

B-26

8602-23



CFC_180

M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 60.2 [g] at 0.072 [s]

P1 Chest Red Resultant

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



B-27

8602-23

CFC_180

Time [s]

M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

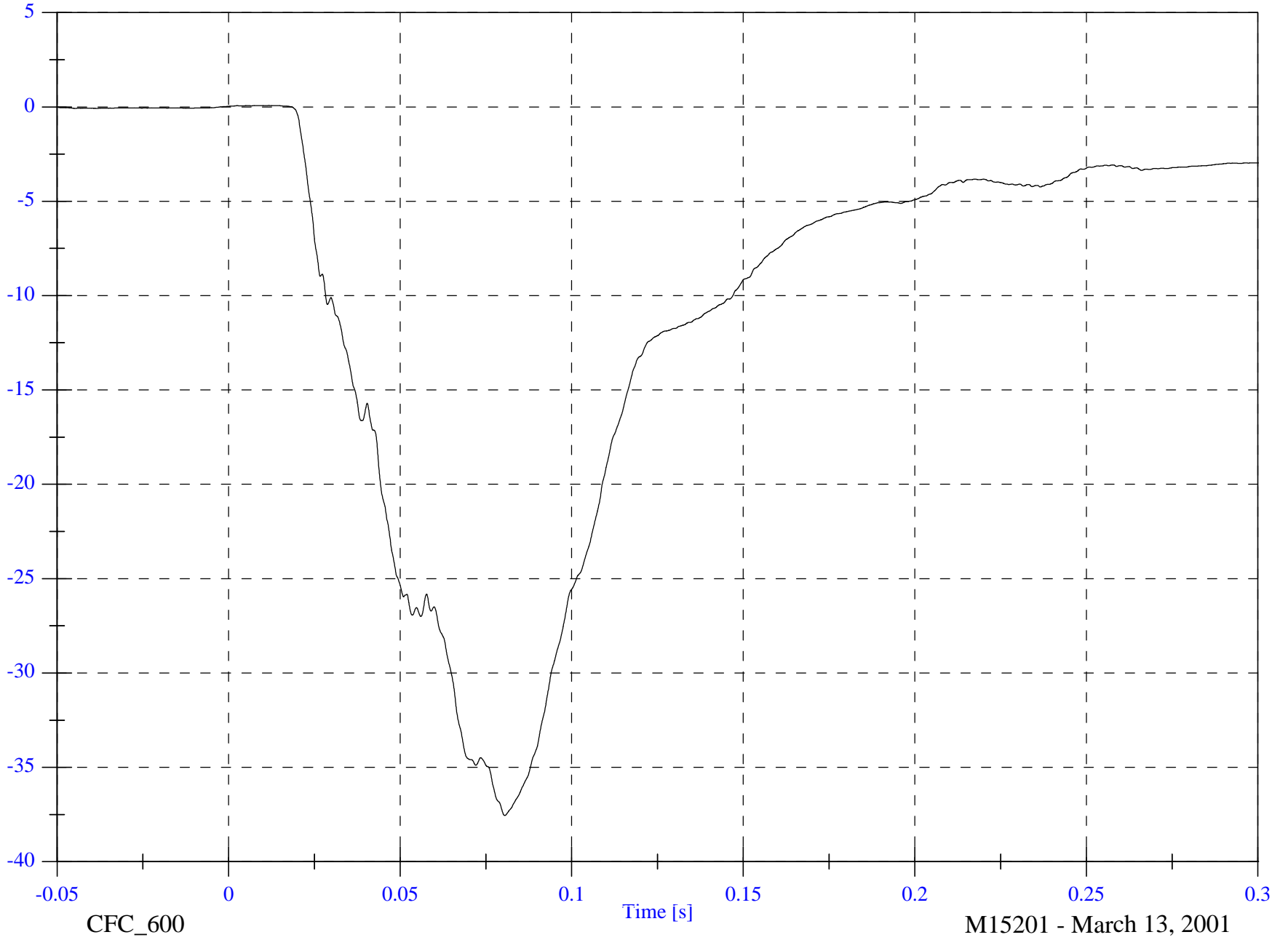
P1 Chest Compression

Max: 0.1 [mm] at 0.012 [s]

Min: -37.6 [mm] at 0.080 [s]

B-28

mm



8602-23

CFC_600

Time [s]

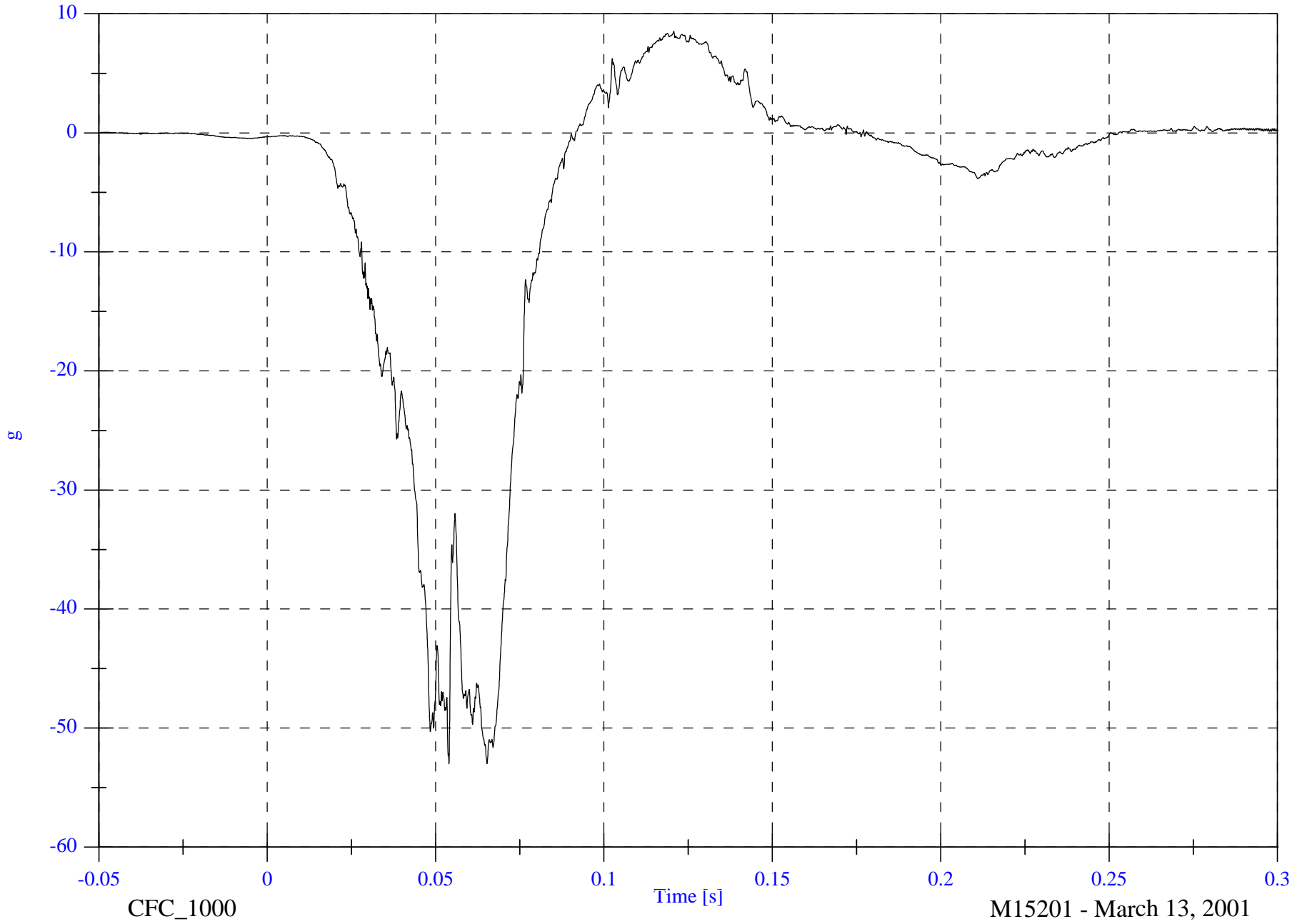
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 8.5 [g] at 0.121 [s]

Min: -53.0 [g] at 0.054 [s]

P1 Pelvic x



B-29

8602-23

CFC_1000

Time [s]

M15201 - March 13, 2001

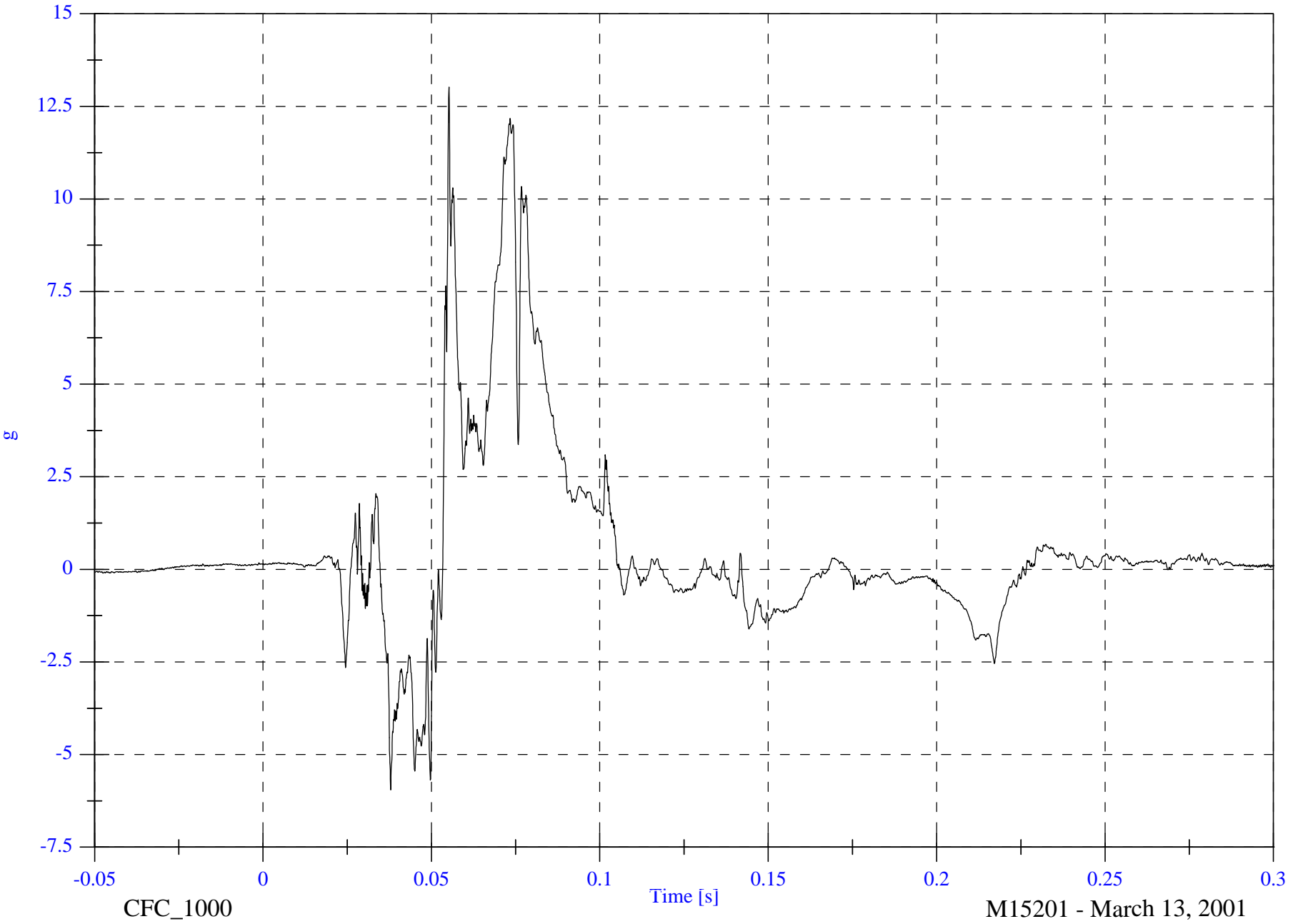
NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 13.0 [g] at 0.055 [s]

P1 Pelvic y

Min: -6.0 [g] at 0.038 [s]

B-30



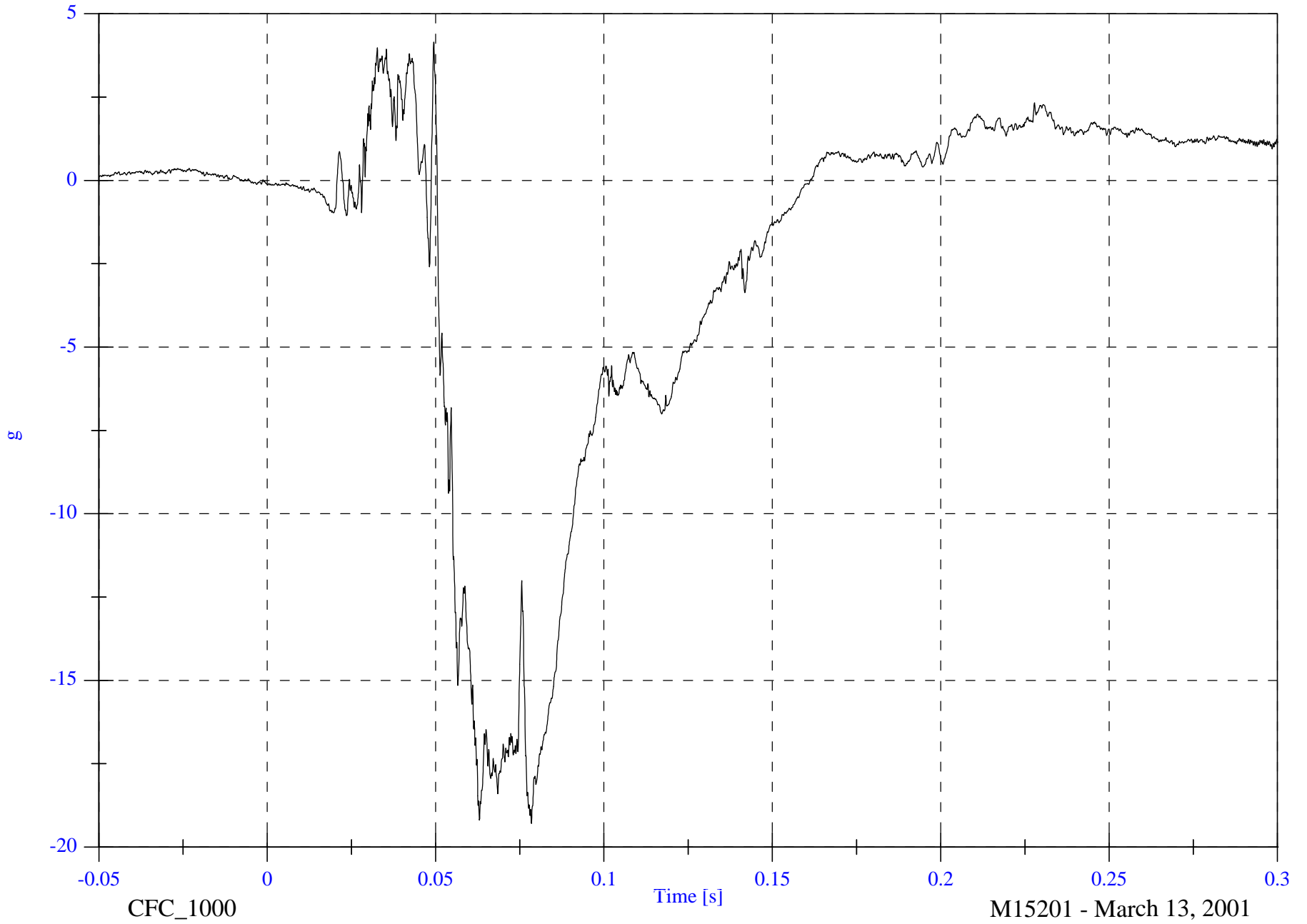
8602-23

M15201 - March 13, 2001

P1 Pelvic z

B-31

8602-23



CFC_1000

Time [s]

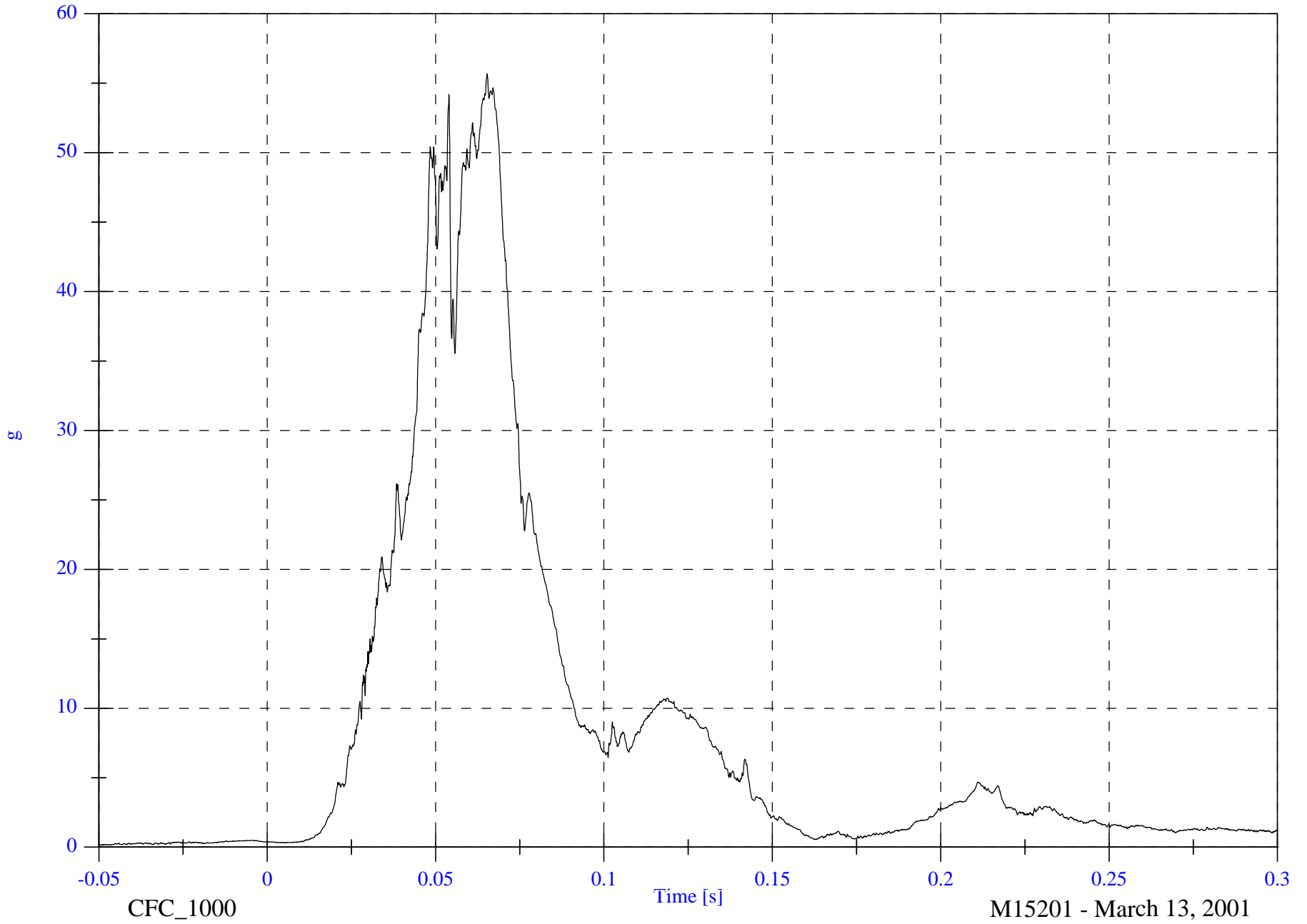
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

P1 Pelvic Resultant

Max: 55.7 [g] at 0.065 [s]

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



B-32

8602-23

CFC_1000

Time [s]

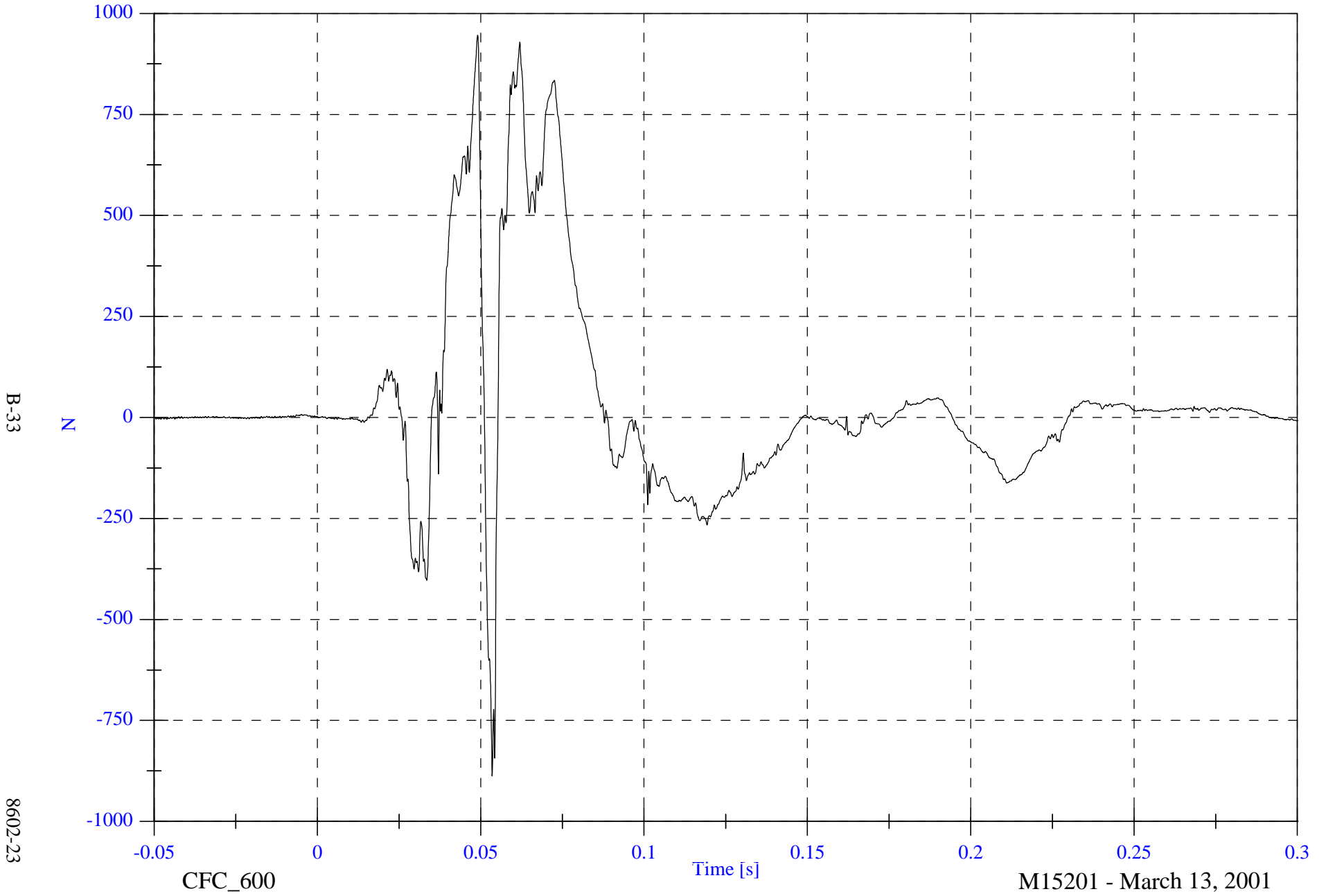
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 946.2 [N] at 0.049 [s]

P1 Left Femur

Min: -887.1 [N] at 0.054 [s]



B-33

8602-23

CFC_600

Time [s]

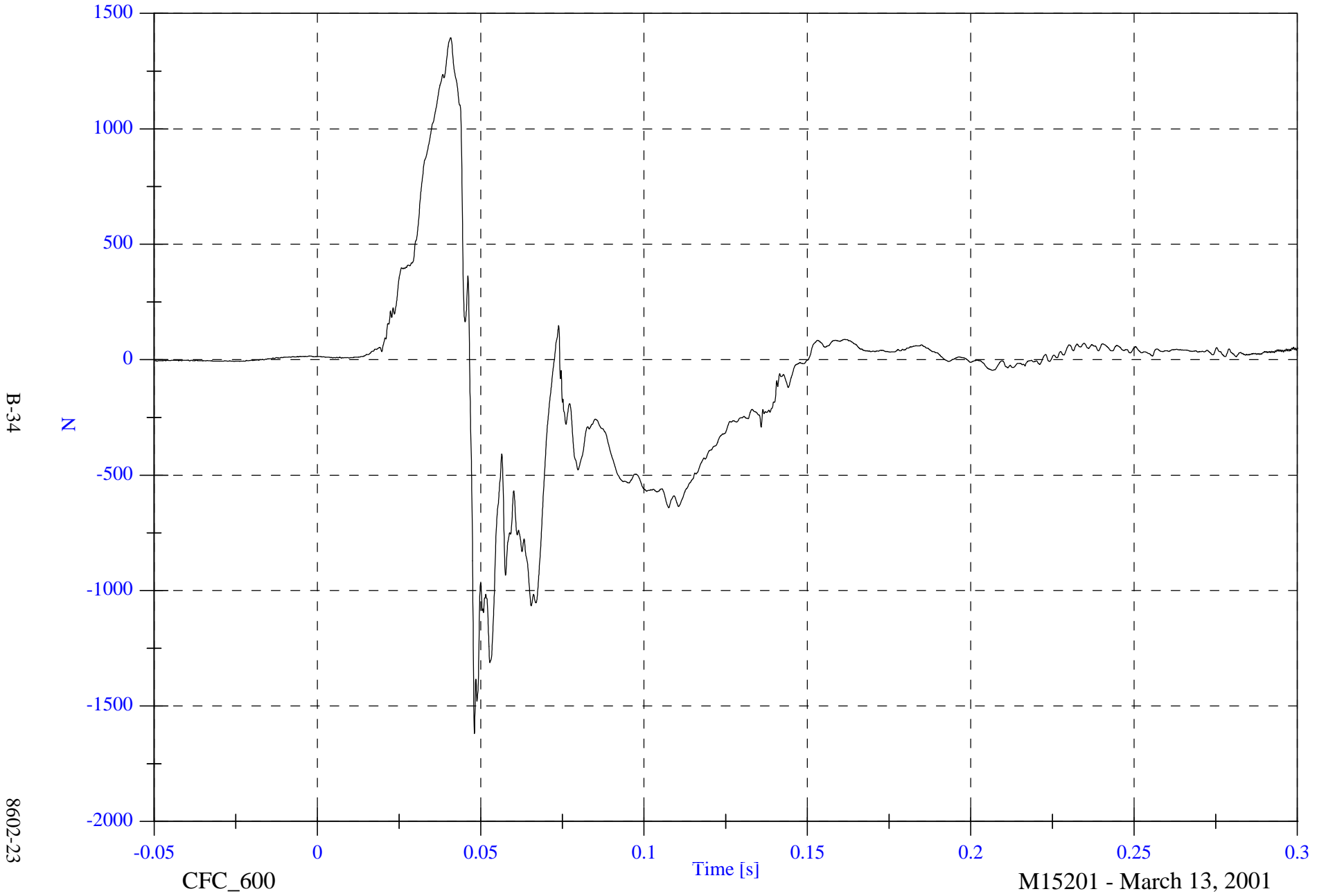
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

P1 Right Femur

Max: 1395.1 [N] at 0.041 [s]

Min: -1619.7 [N] at 0.048 [s]



B-34

8602-23

NCAP 2001 Test #23 - 2001 Nissan Frontier

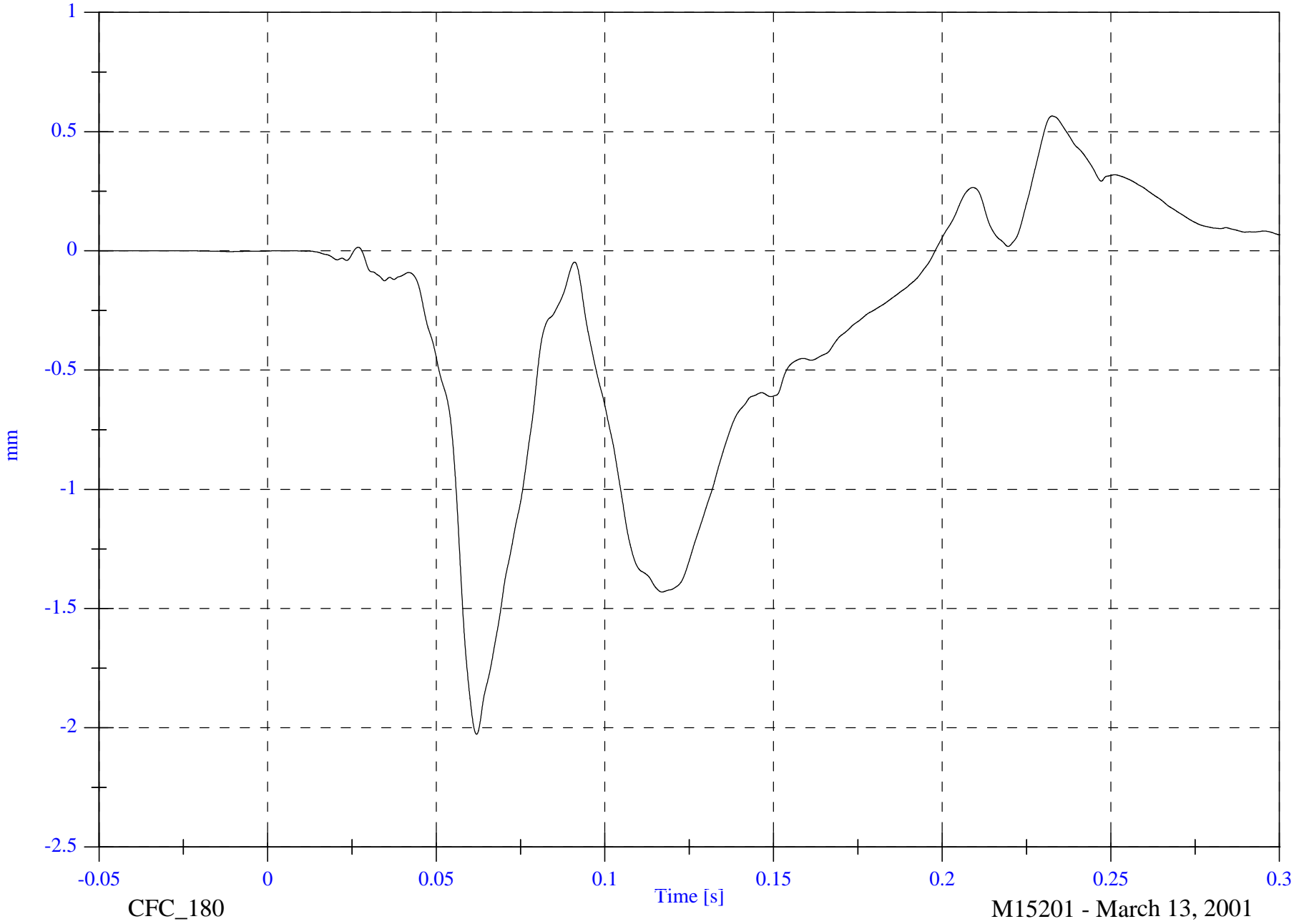
P1 Left Knee Shear

Max: 0.6 [mm] at 0.233 [s]

Min: -2.0 [mm] at 0.062 [s]

B-35

8602-23



CFC_180

Time [s]

M15201 - March 13, 2001

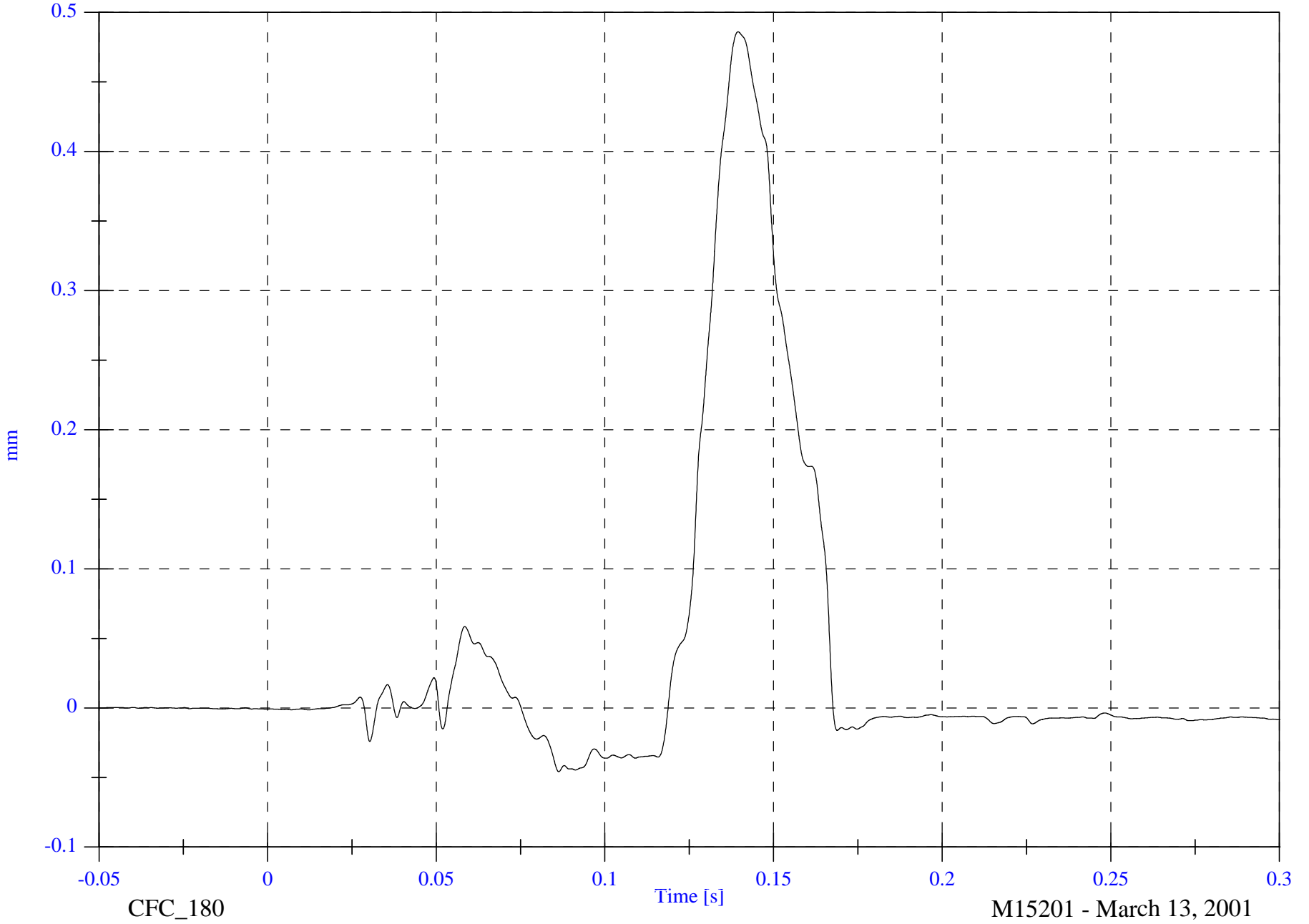
NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 0.5 [mm] at 0.139 [s]

P1 Right Knee Shear

Min: -0.0 [mm] at 0.086 [s]

B-36



8602-23

CFC_180

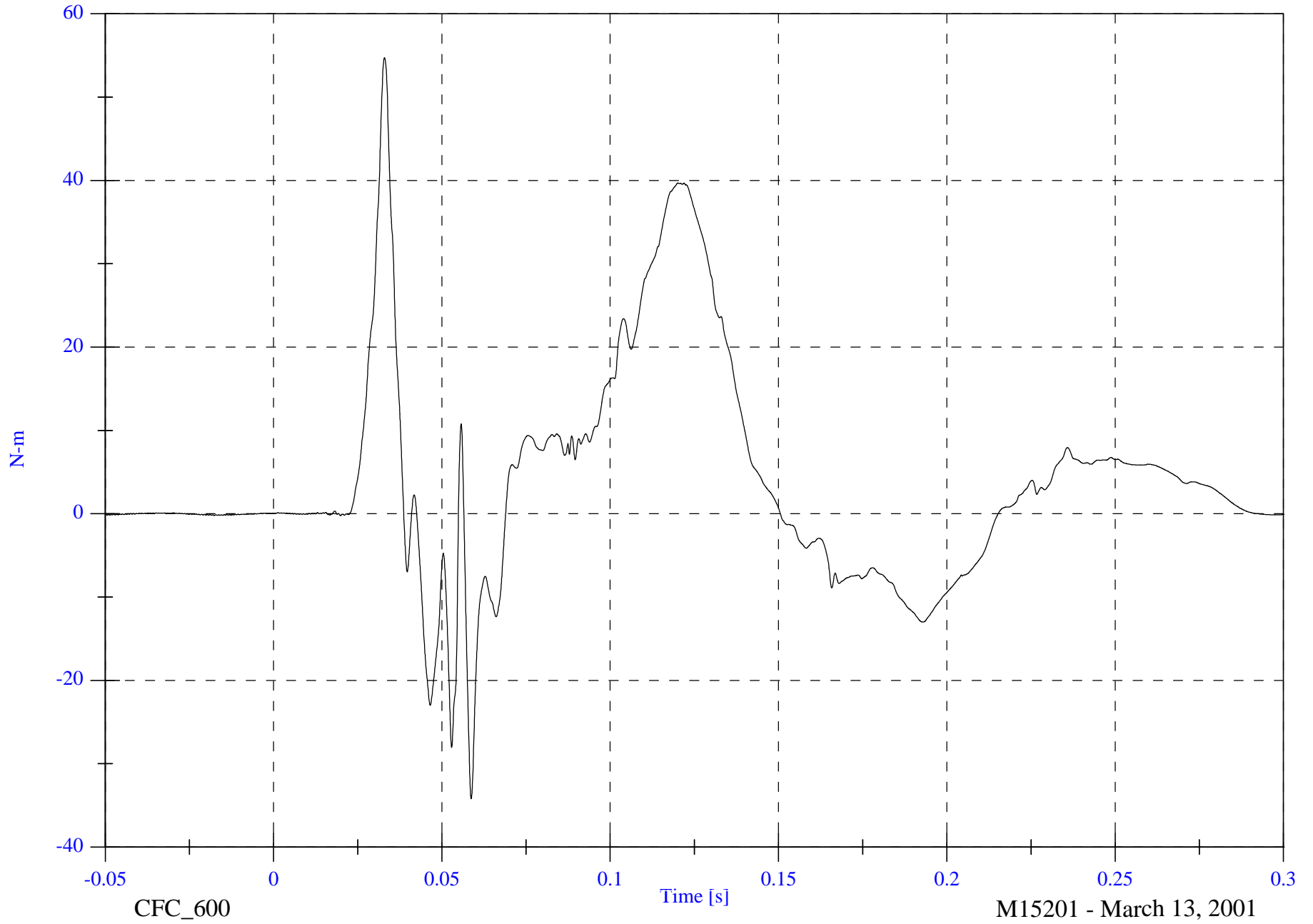
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 54.7 [N-m] at 0.033 [s]

P1 Left Upper Tibia Mx

Min: -34.2 [N-m] at 0.059 [s]



B-37

8602-23

CFC_600

Time [s]

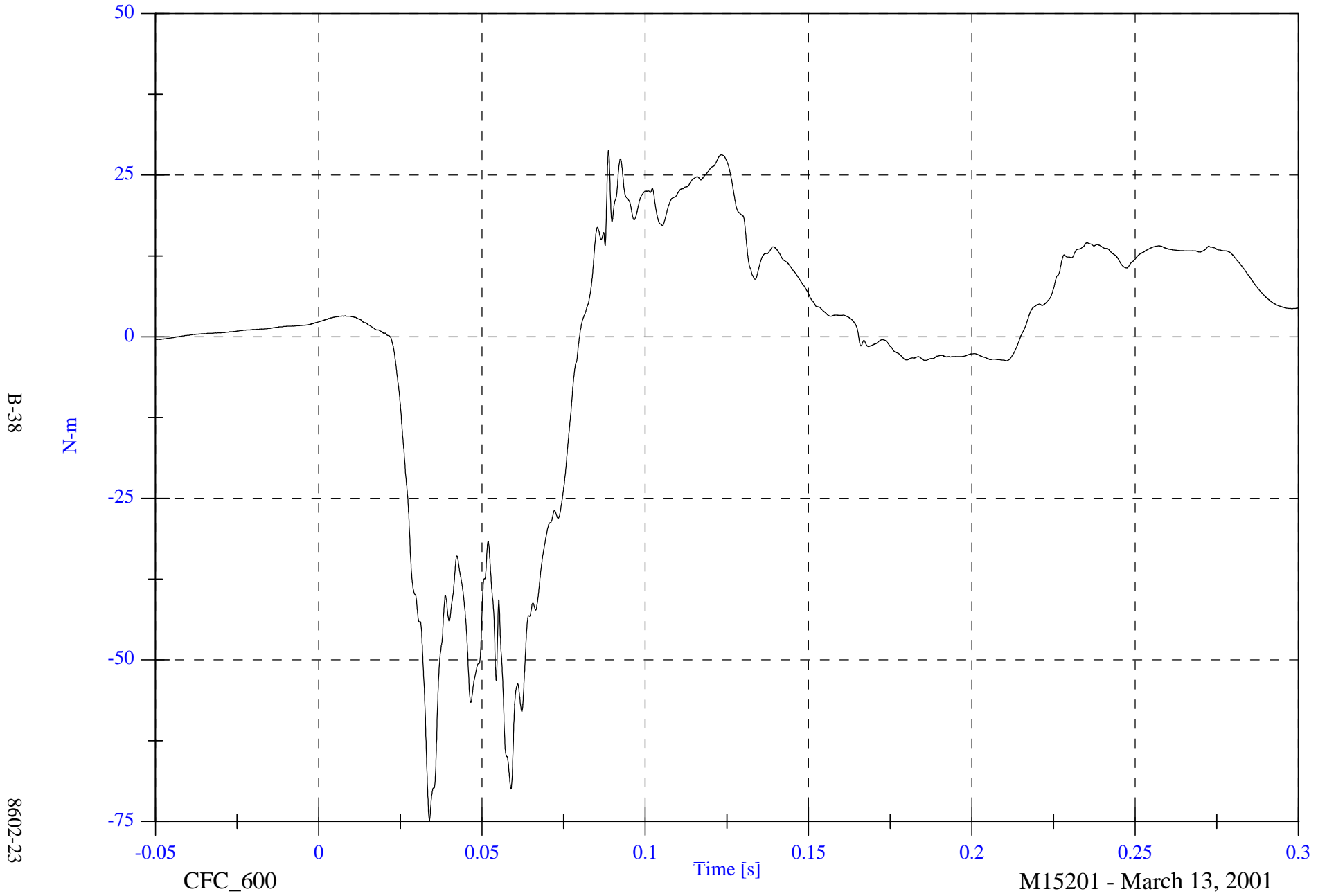
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 28.8 [N-m] at 0.089 [s]

P1 Left Upper Tibia My

Min: -74.9 [N-m] at 0.034 [s]



B-38

8602-23

CFC_600

Time [s]

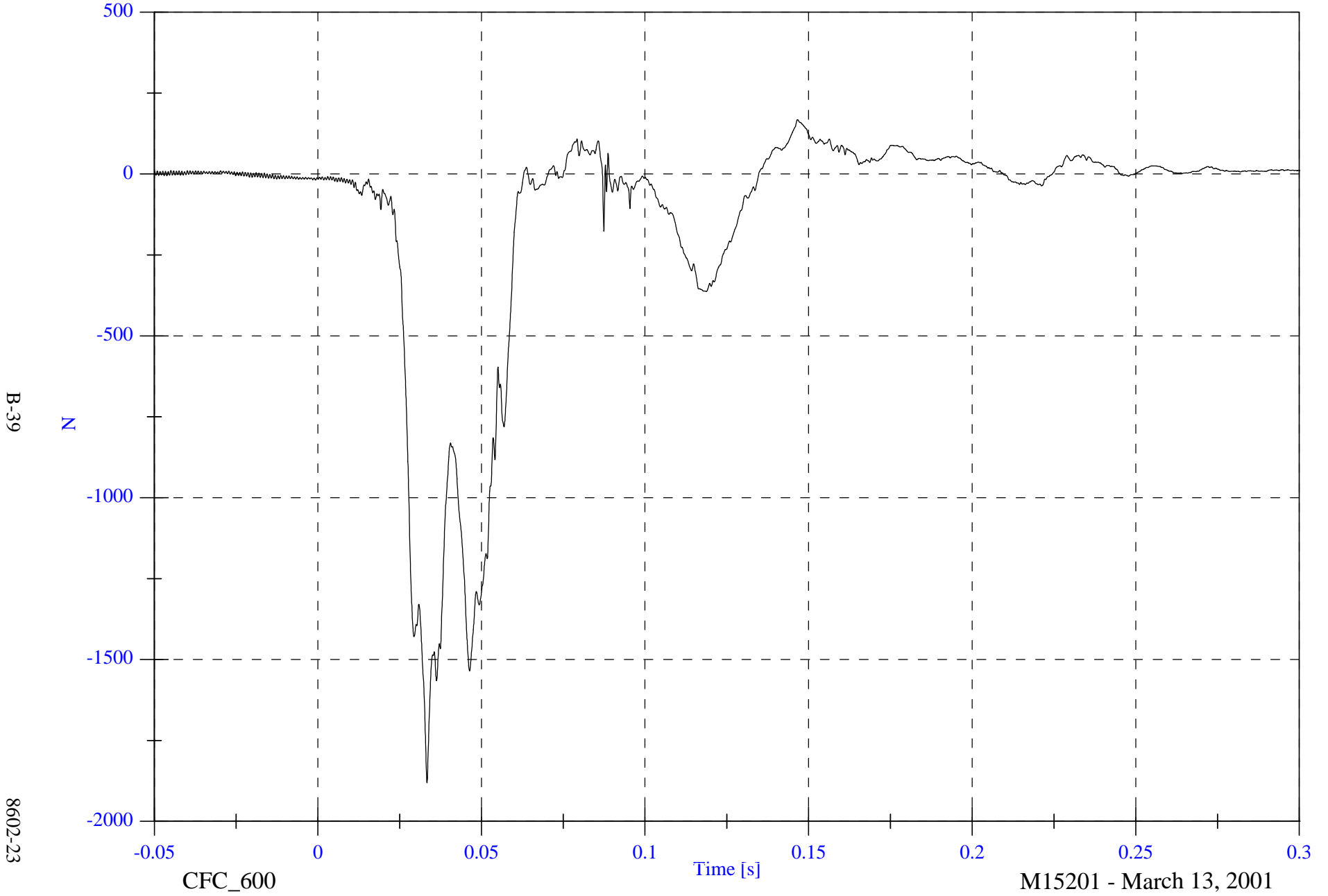
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 167.7 [N] at 0.147 [s]

P1 Left Lower Tibia Fz

Min: -1881.5 [N] at 0.033 [s]



B-39

8602-23

CFC_600

Time [s]

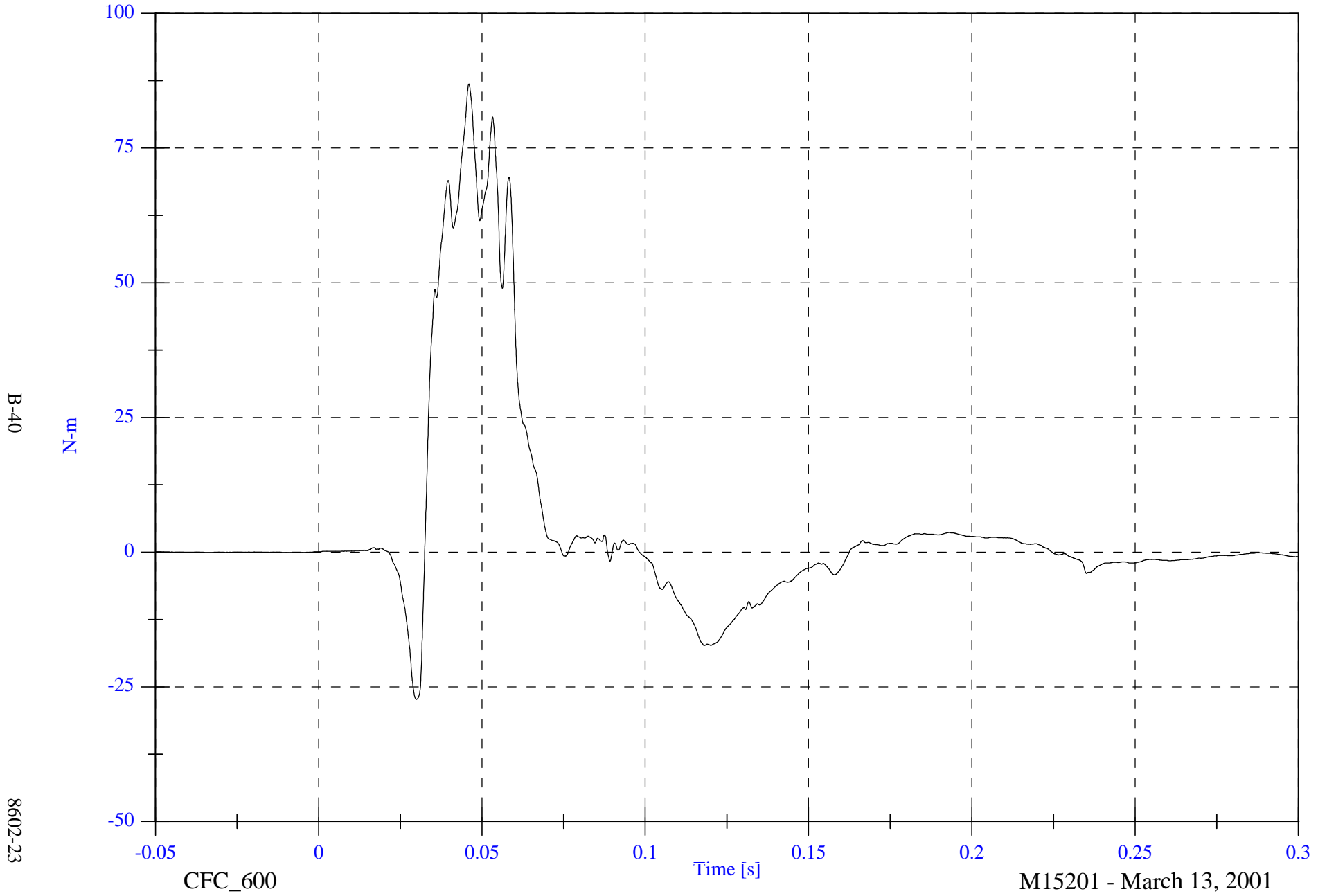
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 86.9 [N-m] at 0.046 [s]

P1 Left Lower Tibia Mx

Min: -27.3 [N-m] at 0.030 [s]



B-40

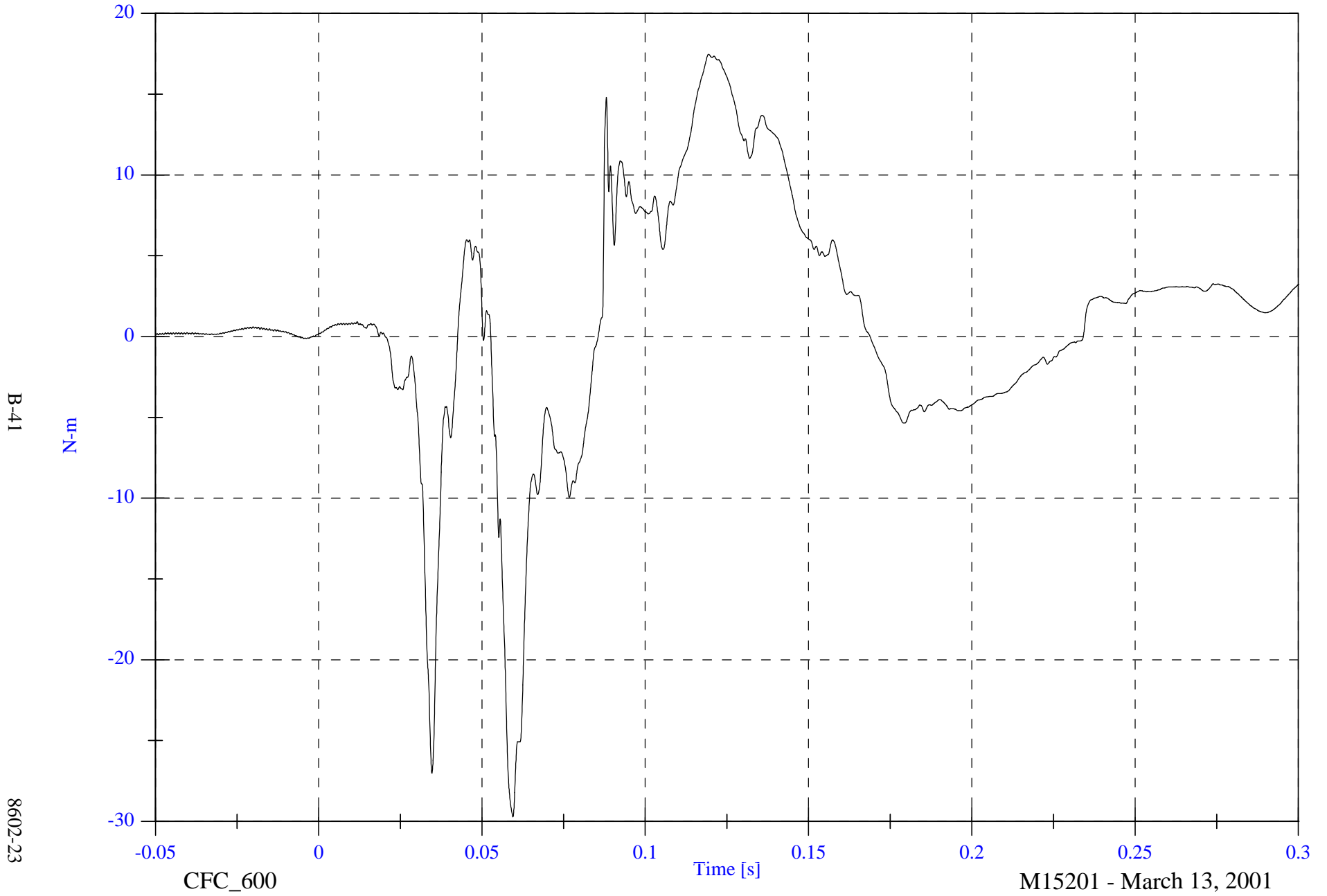
8602-23

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 17.5 [N-m] at 0.119 [s]

P1 Left Lower Tibia My

Min: -29.7 [N-m] at 0.059 [s]



B-41

8602-23

CFC_600

Time [s]

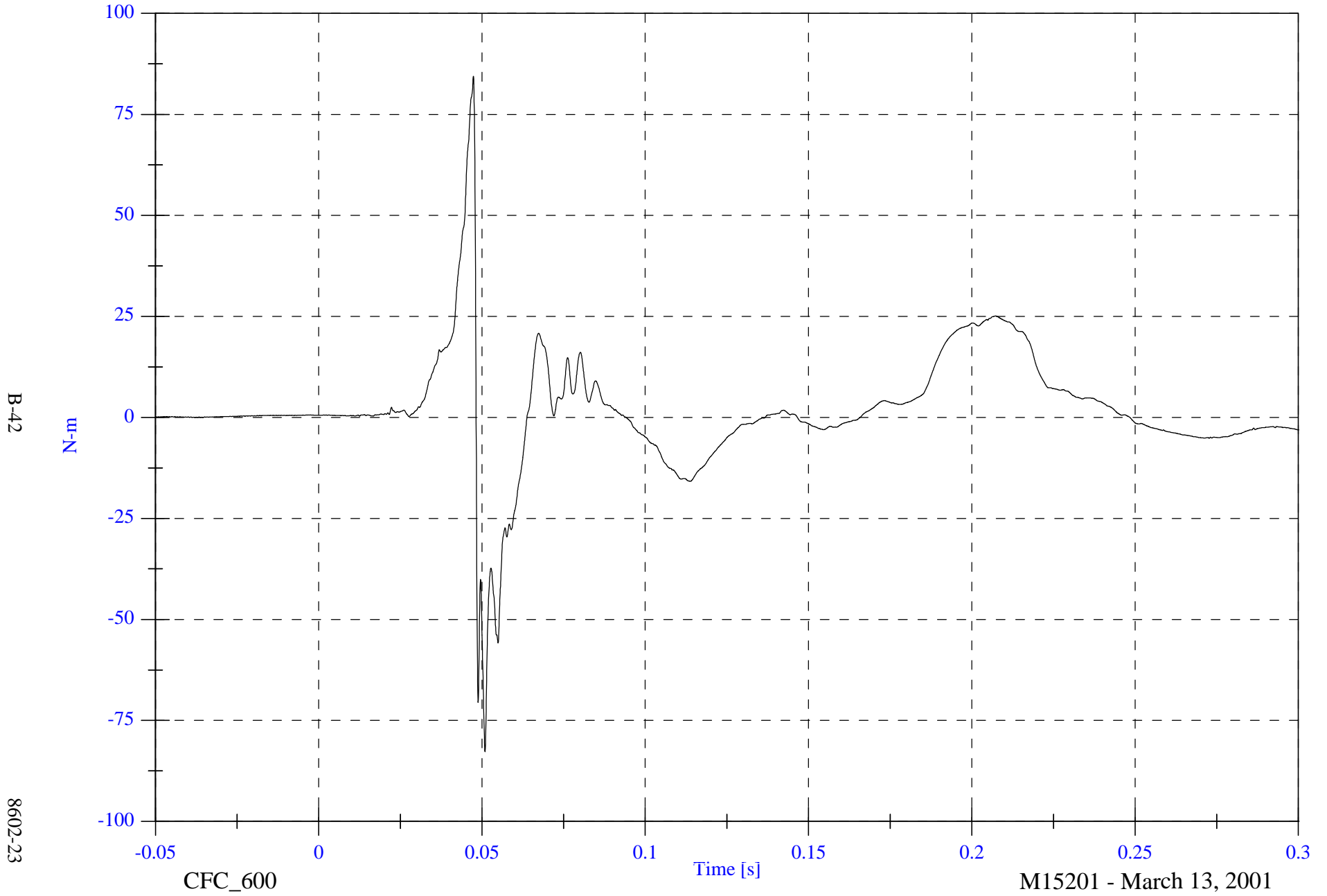
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 84.5 [N-m] at 0.047 [s]

P1 Right Upper Tibia Mx

Min: -82.8 [N-m] at 0.051 [s]



B-42

8602-23

CFC_600

Time [s]

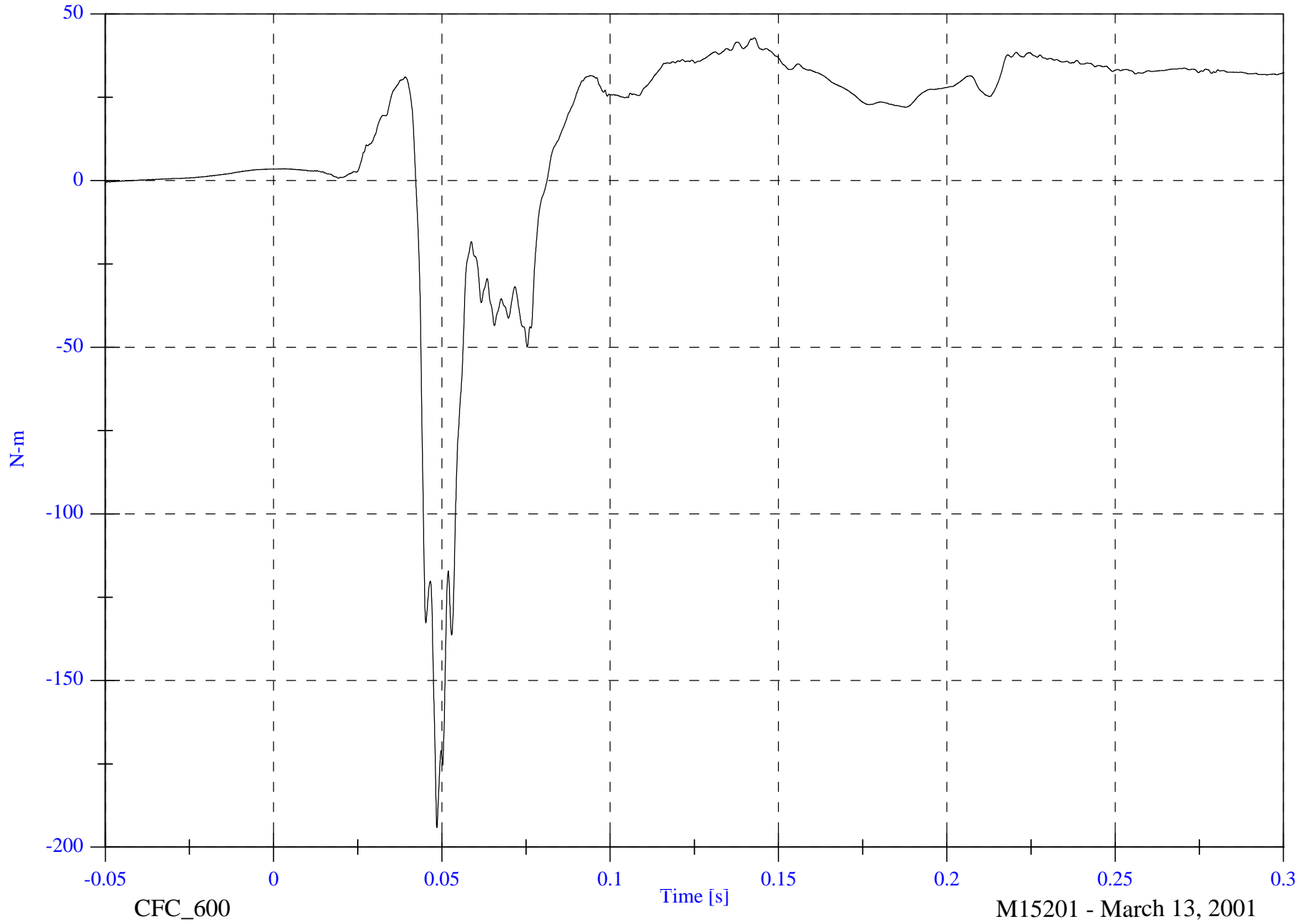
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 42.8 [N-m] at 0.143 [s]

P1 Right Upper Tibia My

Min: -194.1 [N-m] at 0.048 [s]



B-43

8602-23

CFC_600

Time [s]

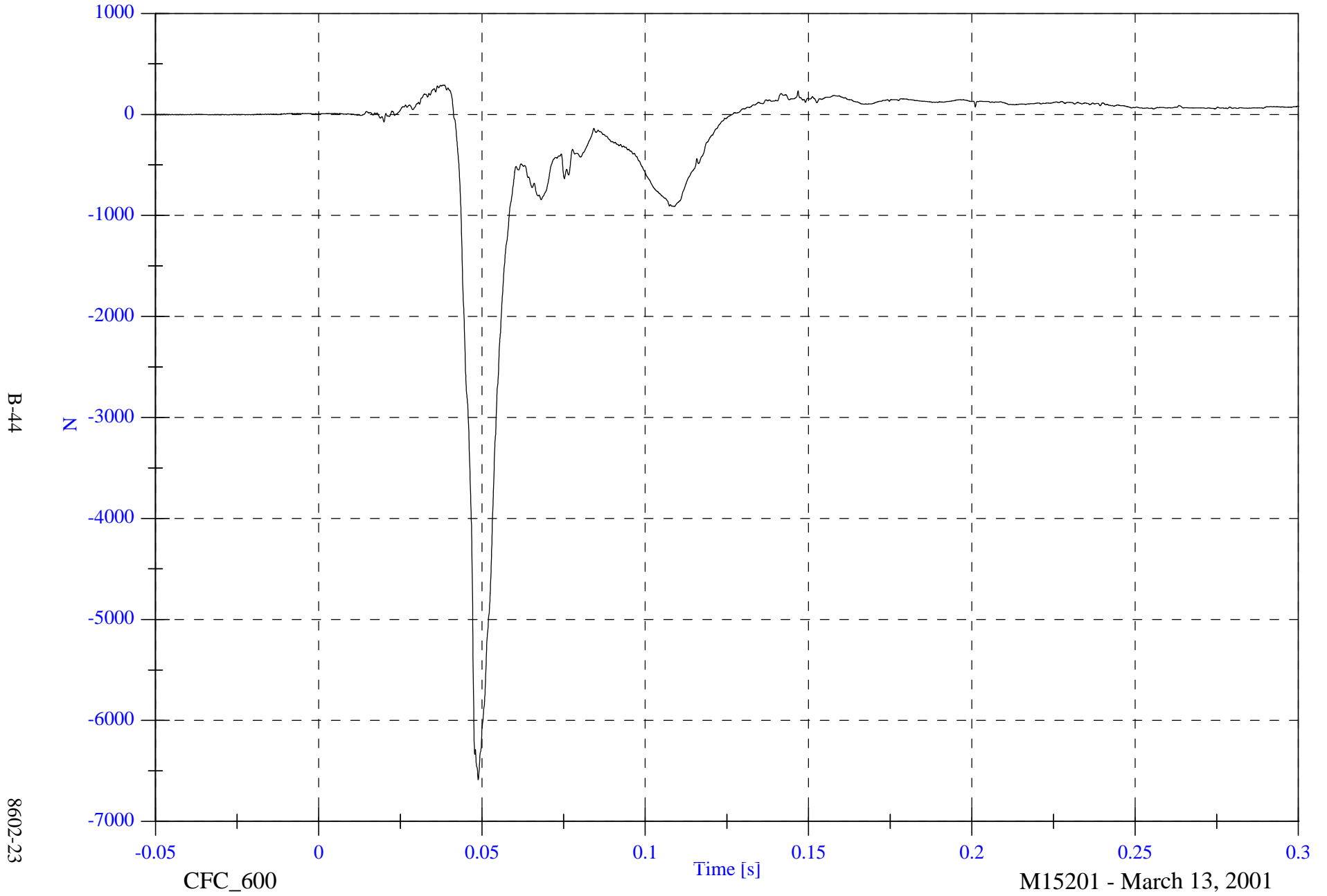
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 289.7 [N] at 0.038 [s]

P1 Right Lower Tibia Fz

Min: -6587.2 [N] at 0.049 [s]



B-44

8602-23

CFC_600

Time [s]

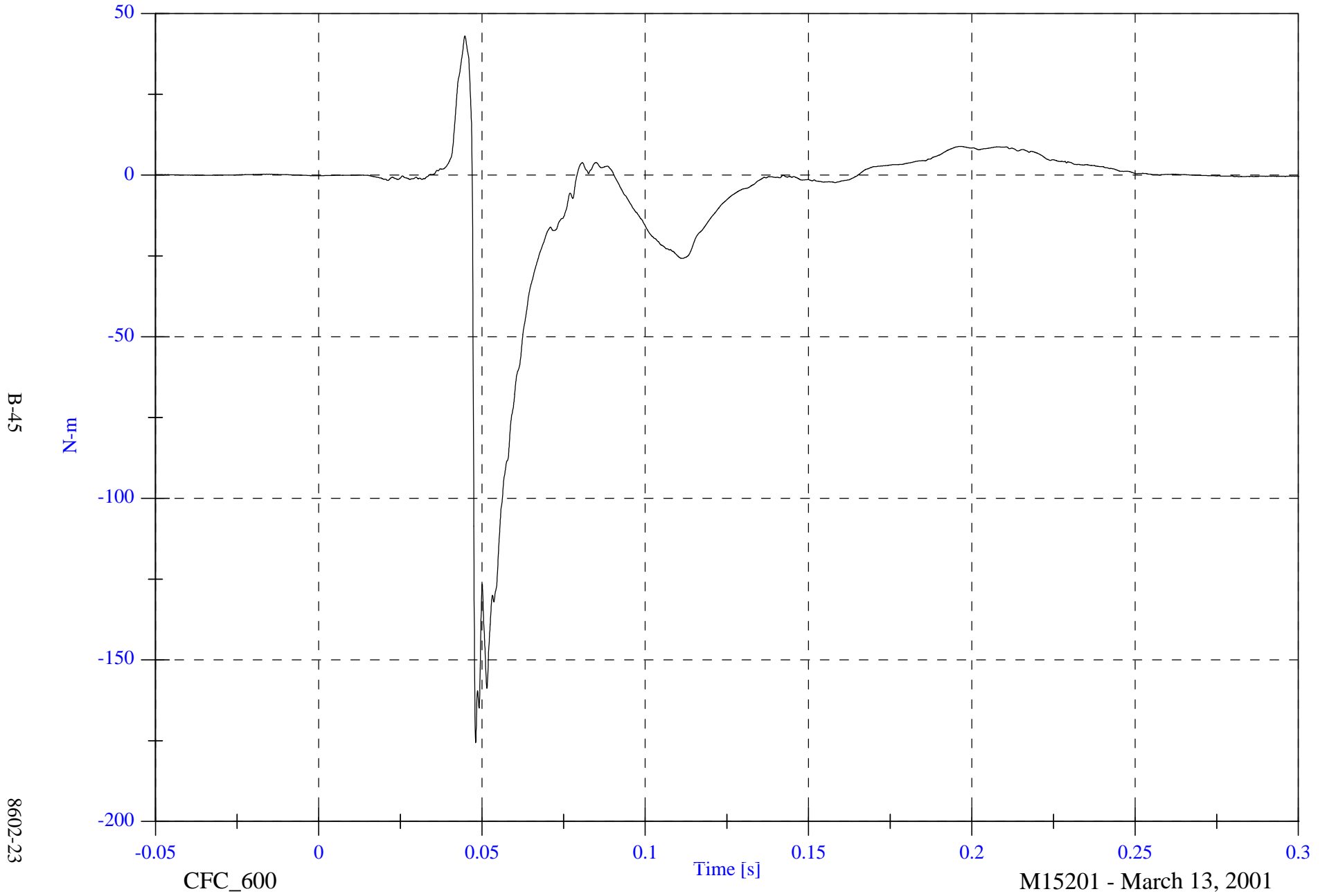
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 43.0 [N-m] at 0.045 [s]

P1 Right Lower Tibia Mx

Min: -175.7 [N-m] at 0.048 [s]



B-45

8602-23

CFC_600

Time [s]

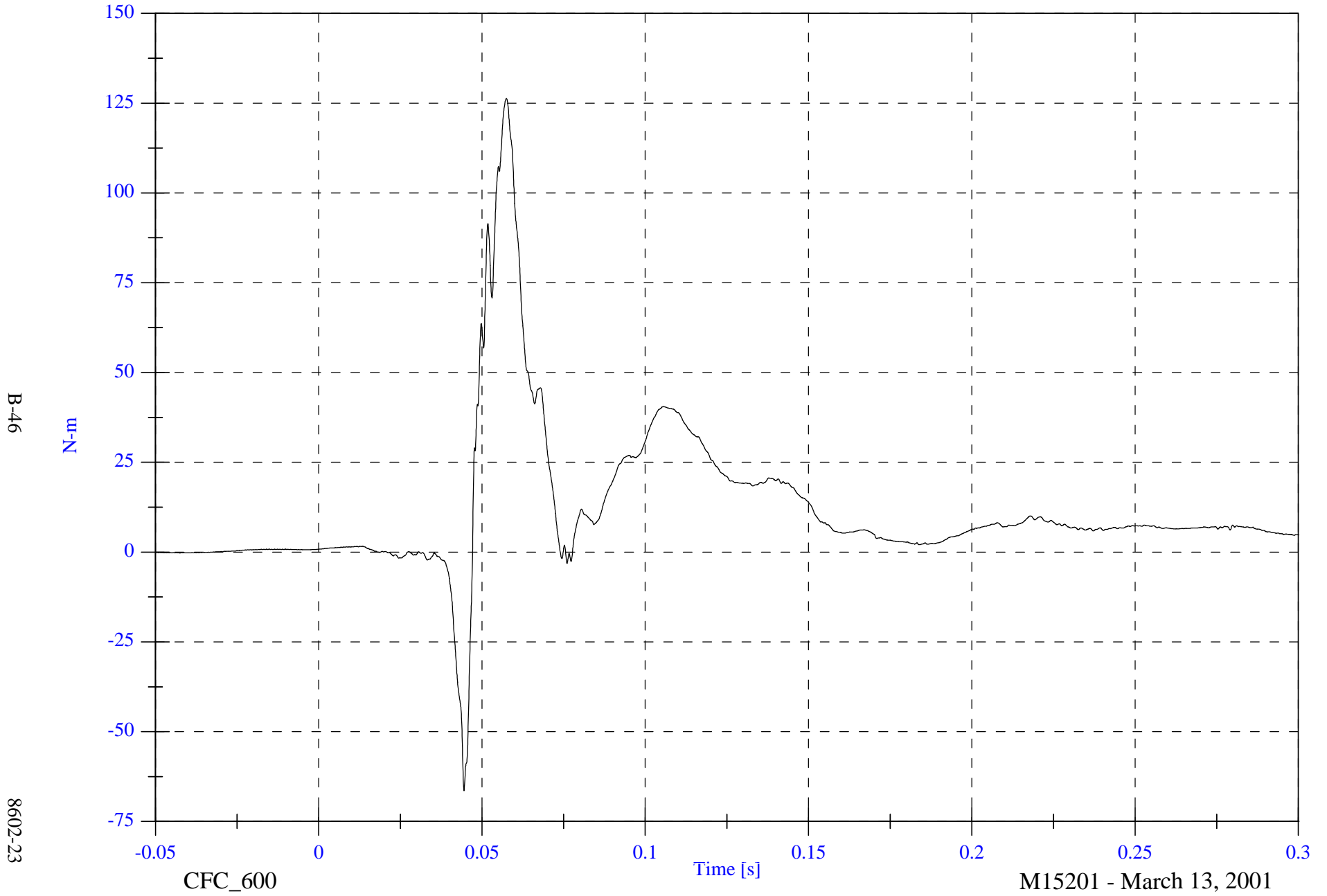
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 126.3 [N-m] at 0.057 [s]

P1 Right Lower Tibia My

Min: -66.5 [N-m] at 0.045 [s]



B-46

8602-23

CFC_600

Time [s]

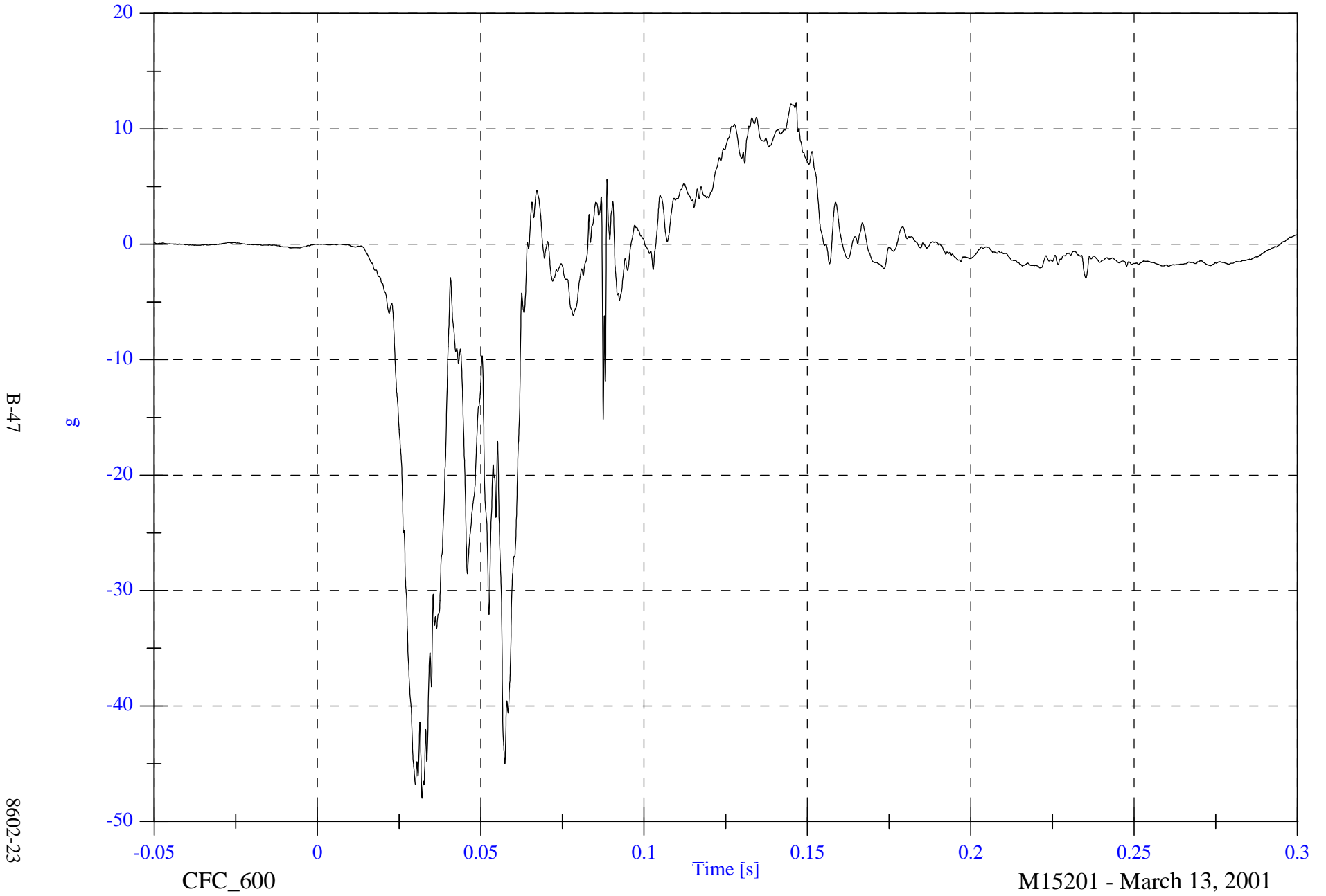
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 12.2 [g] at 0.147 [s]

Min: -48.0 [g] at 0.032 [s]

P1 Left Foot Aft x



B-47

8602-23

CFC_600

Time [s]

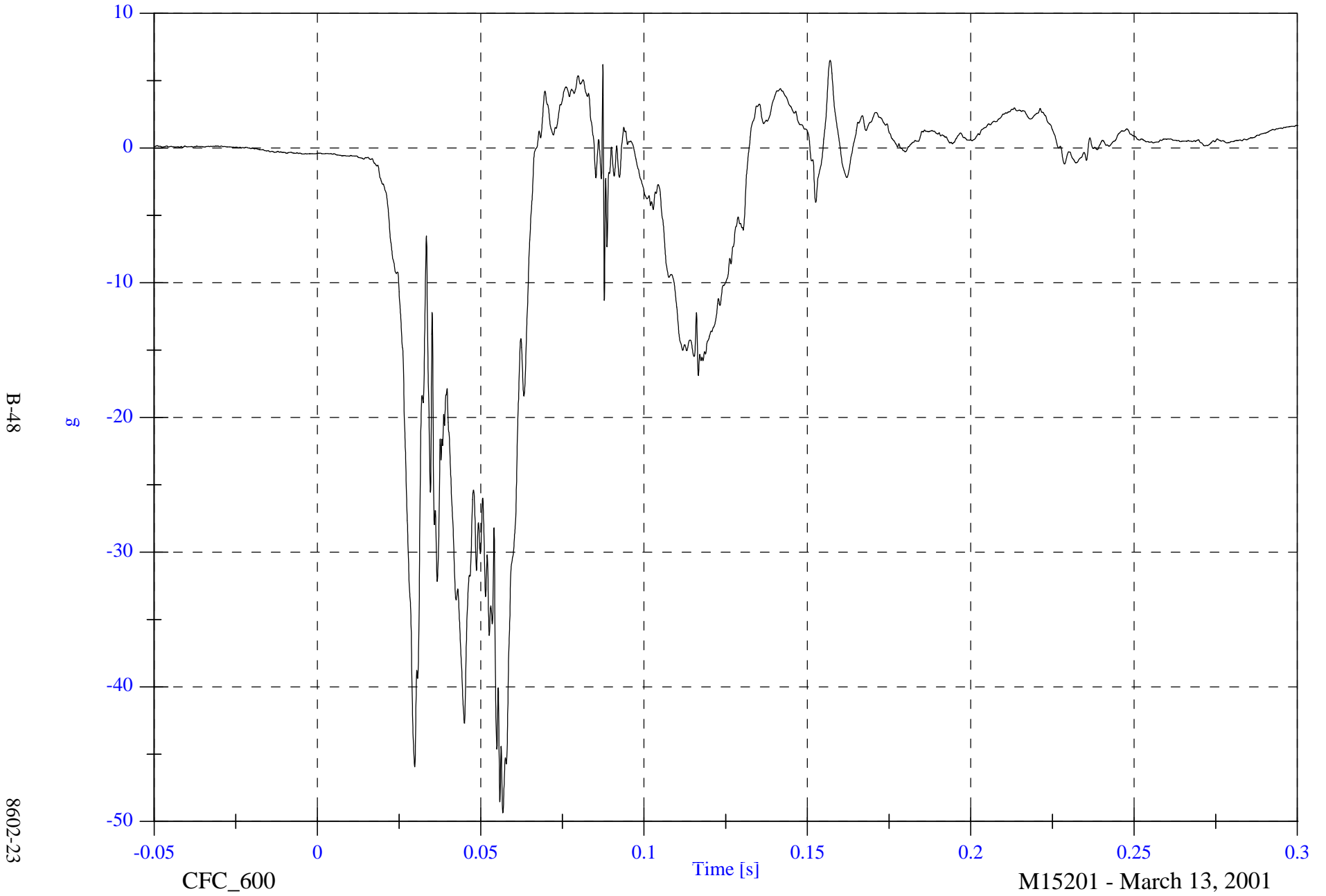
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 6.5 [g] at 0.157 [s]

P1 Left Foot Aft z

Min: -49.4 [g] at 0.057 [s]



B-48

8602-23

CFC_600

Time [s]

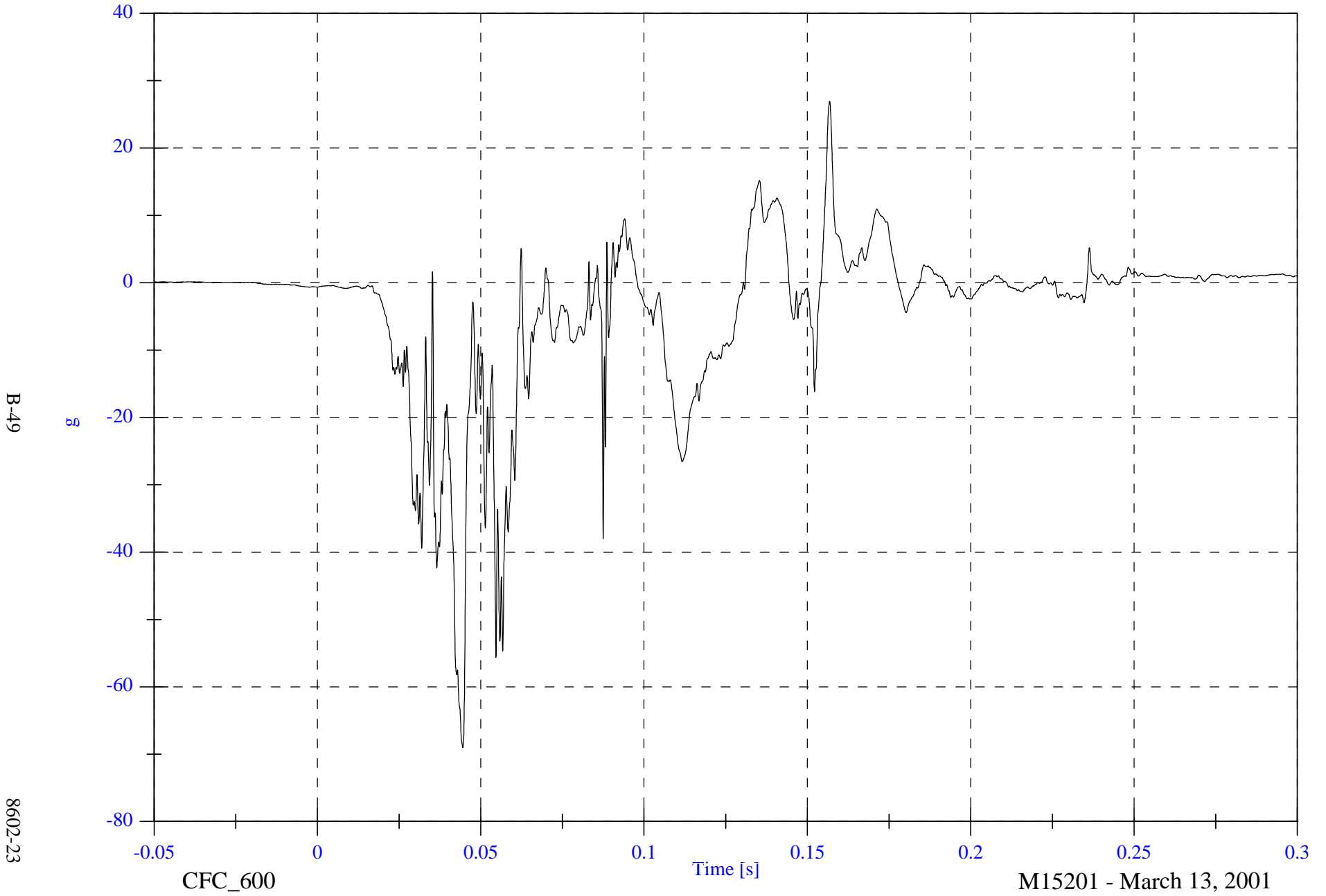
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 27.0 [g] at 0.157 [s]

P1 Left Foot Fore z

Min: -69.1 [g] at 0.045 [s]



B-49

8602-23

CFC_600

Time [s]

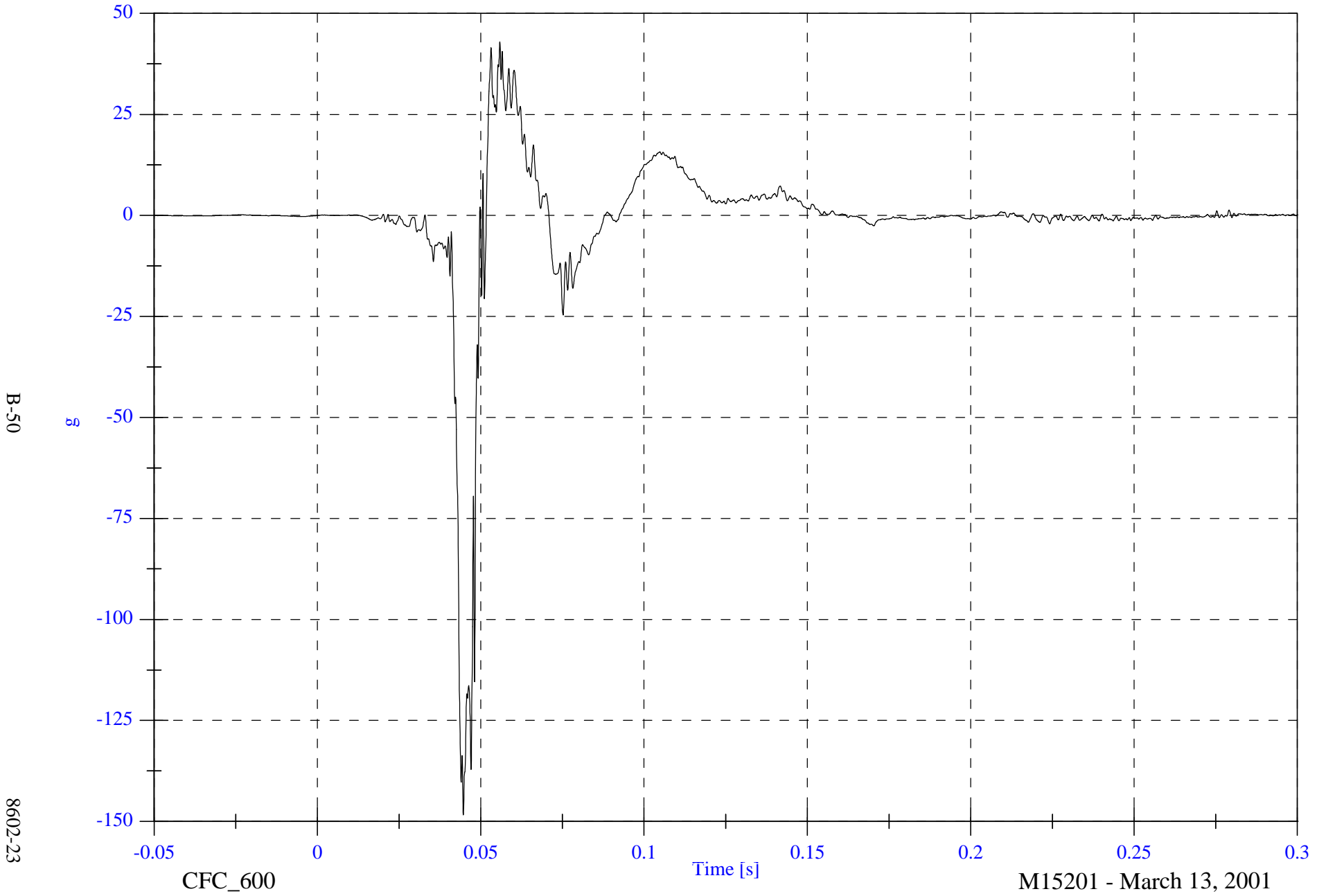
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 42.9 [g] at 0.056 [s]

Min: -148.4 [g] at 0.045 [s]

P1 Right Foot Aft x

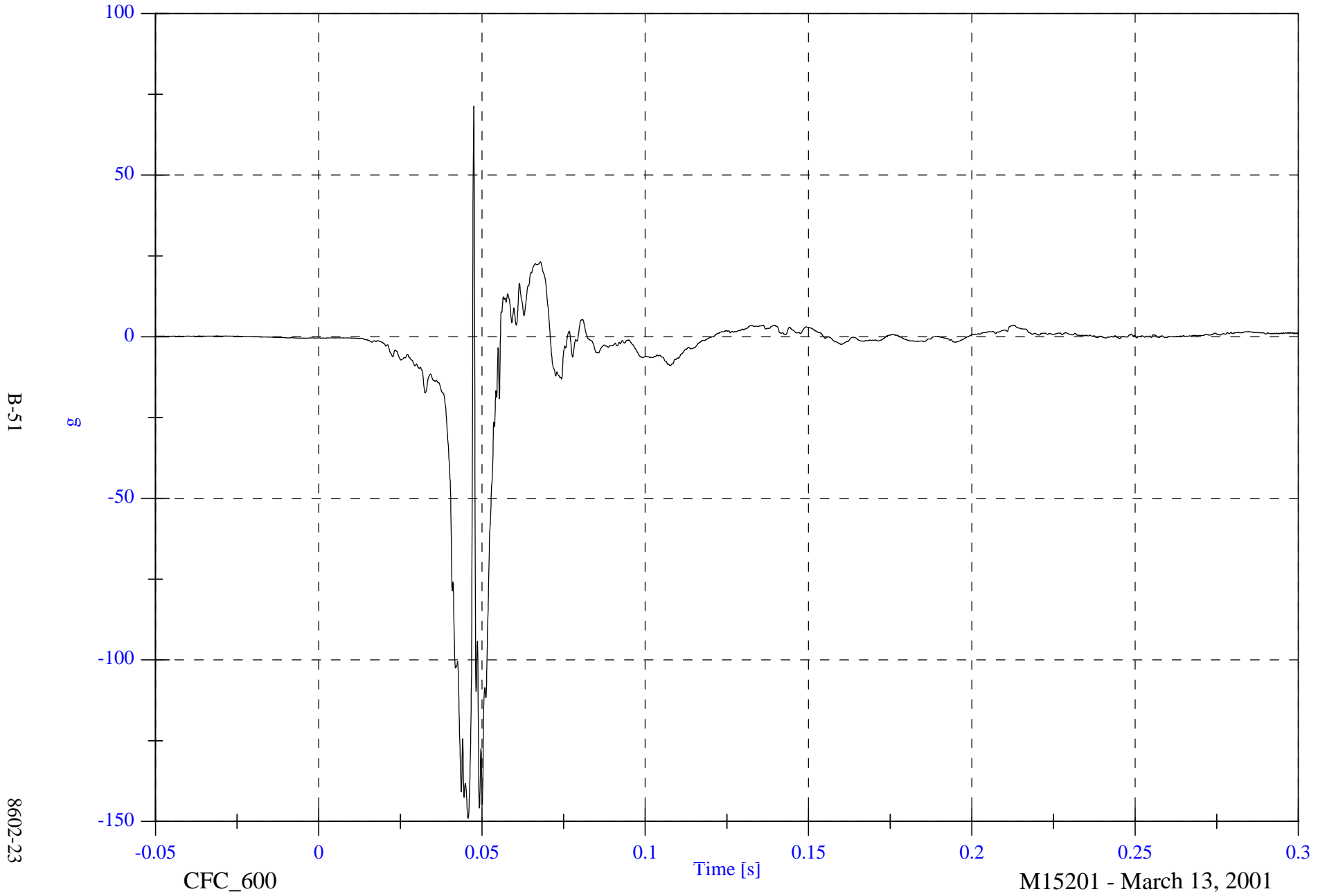


NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 71.3 [g] at 0.047 [s]

Min: -149.1 [g] at 0.046 [s]

P1 Right Foot Aft z

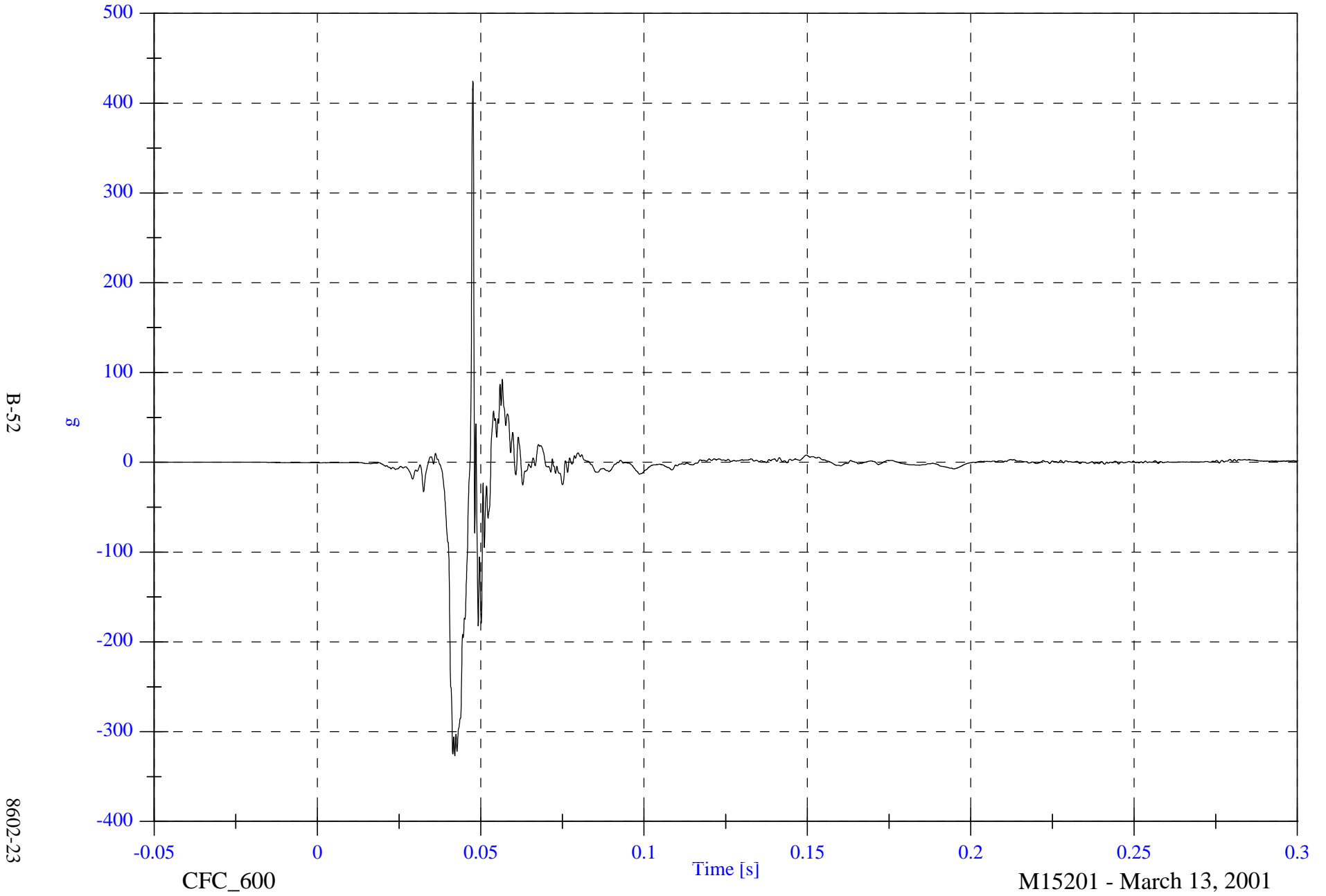


NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 424.7 [g] at 0.048 [s]

Min: -327.0 [g] at 0.042 [s]

P1 Right Foot Fore z



B-52

8602-23

CFC_600

Time [s]

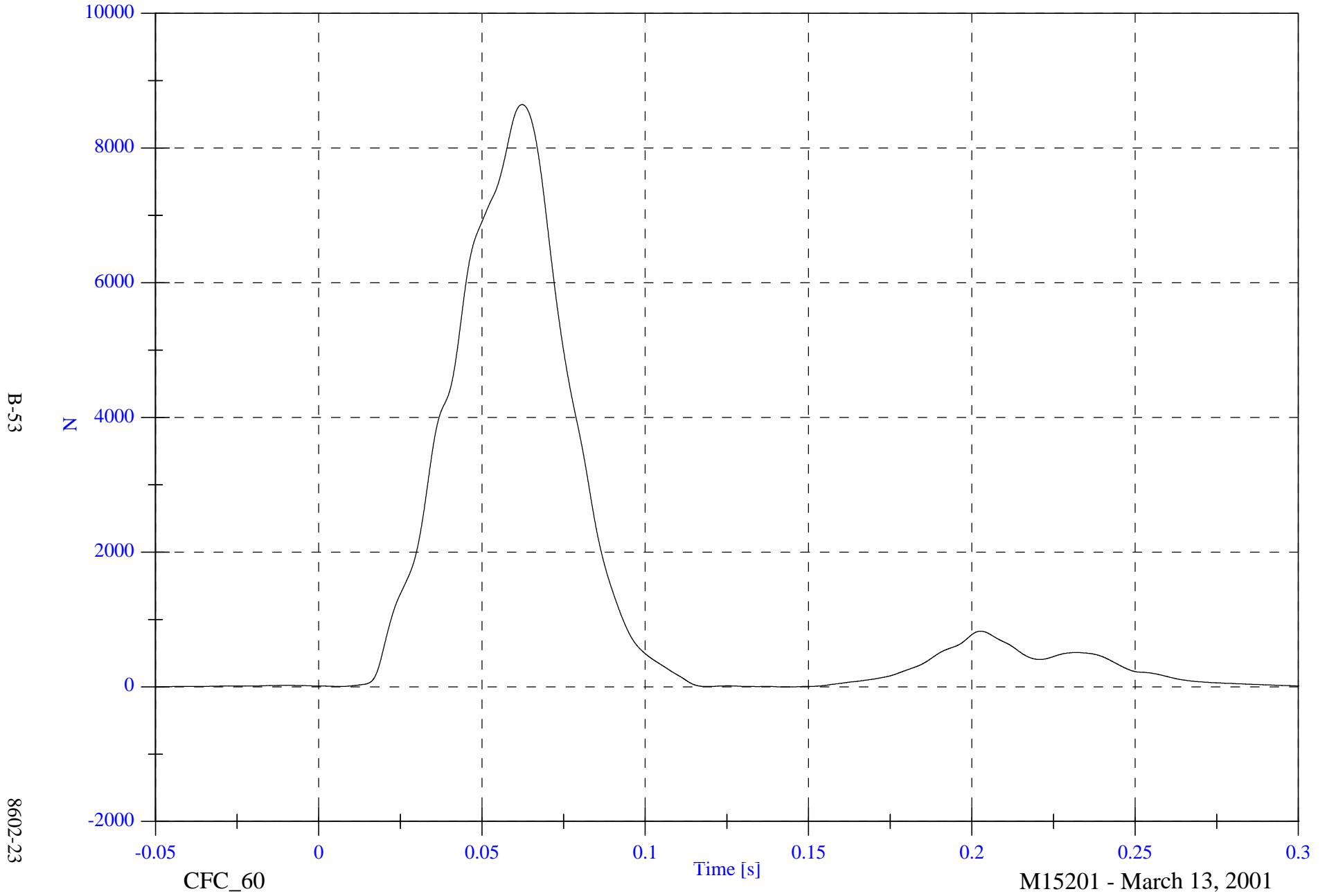
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 8646.7 [N] at 0.062 [s]

P1 Lap Belt Force

Min: -2.9 [N] at 0.143 [s]



B-53

8602-23

CFC_60

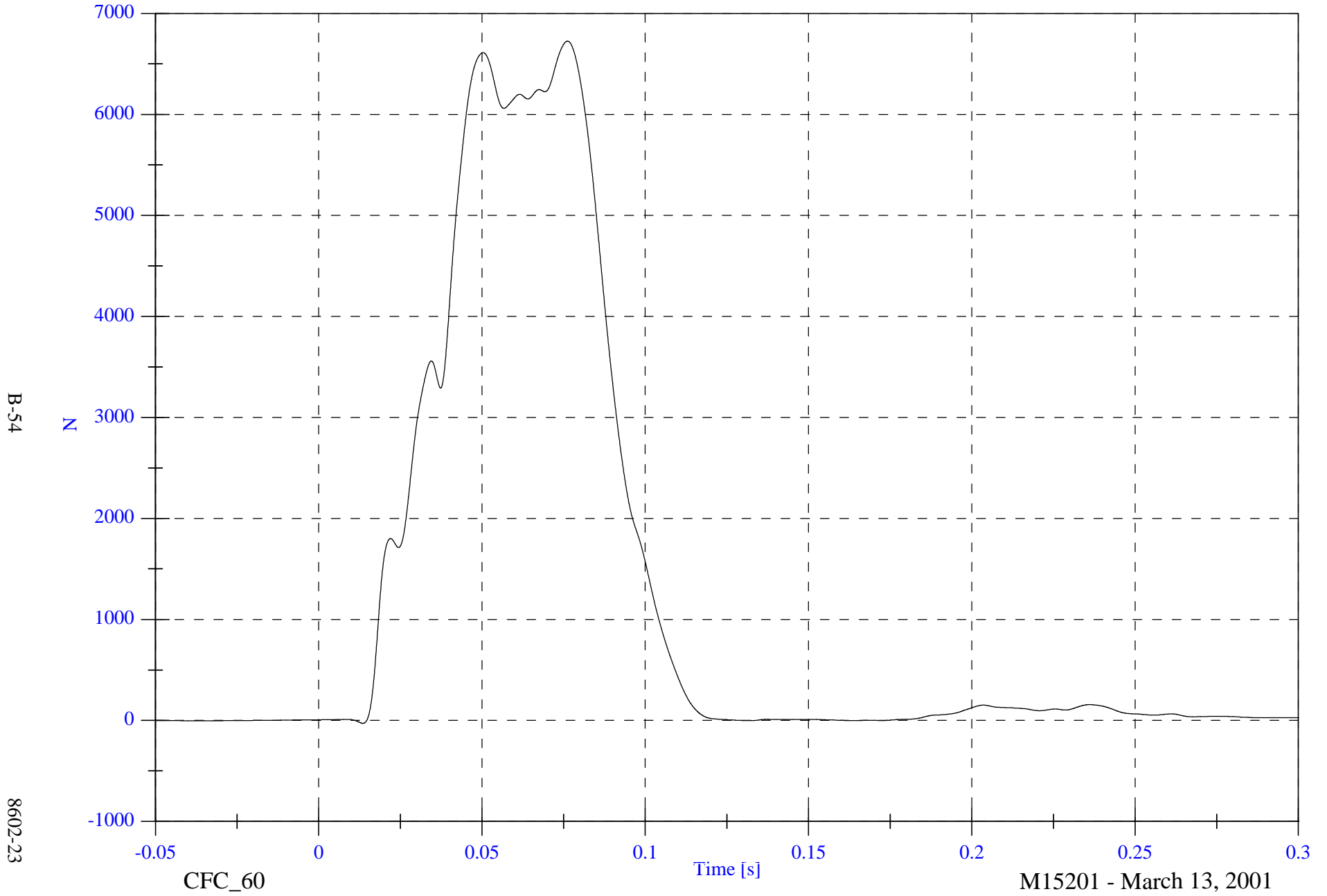
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 6725.8 [N] at 0.076 [s]

P1 Shoulder Belt Force

Min: -28.4 [N] at 0.014 [s]



B-54

8602-23

CFC_60

Time [s]

M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

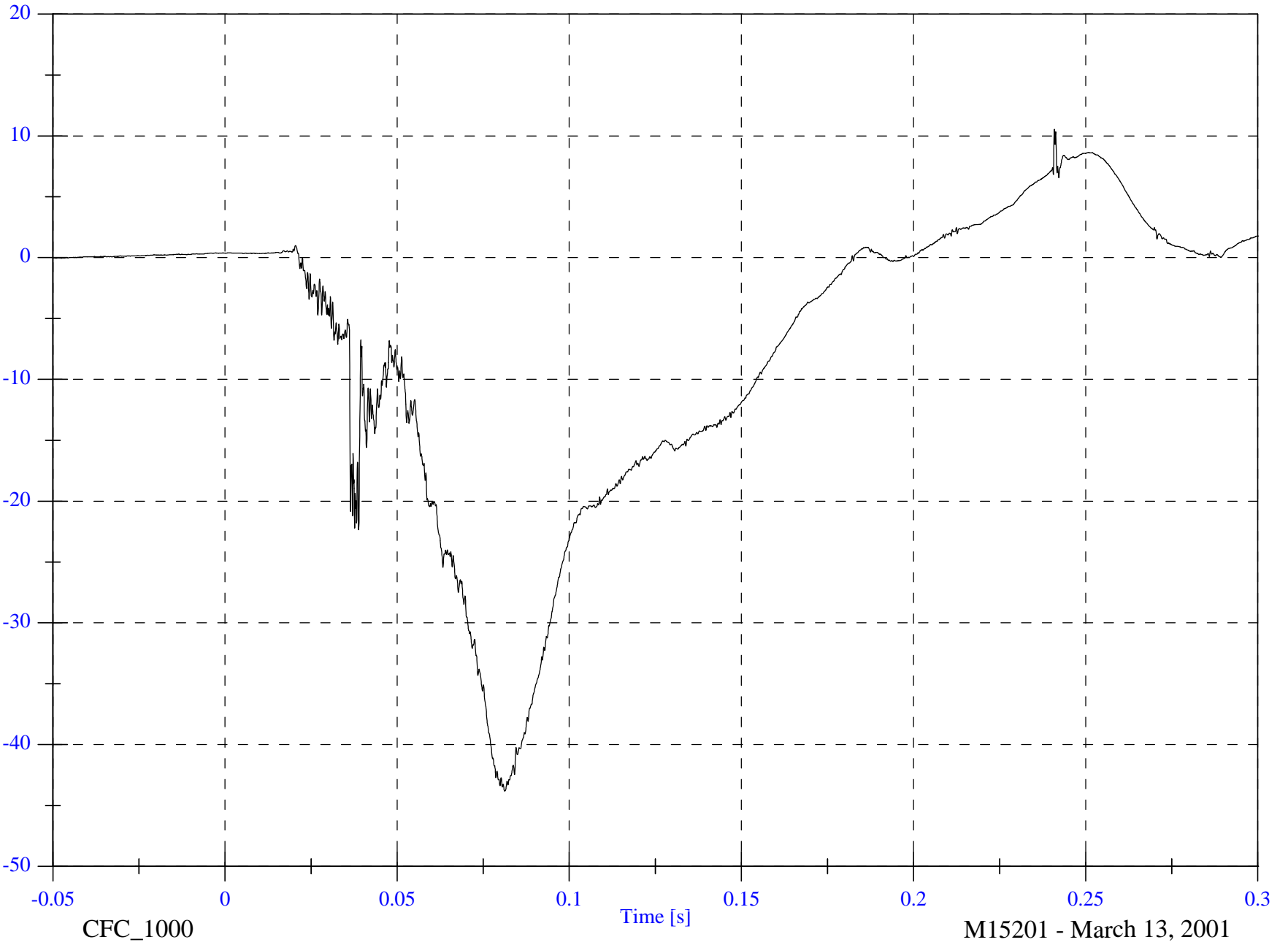
Max: 10.6 [g] at 0.241 [s]

P2 Head x

Min: -43.8 [g] at 0.081 [s]

B-55

g



8602-23

CFC_1000

Time [s]

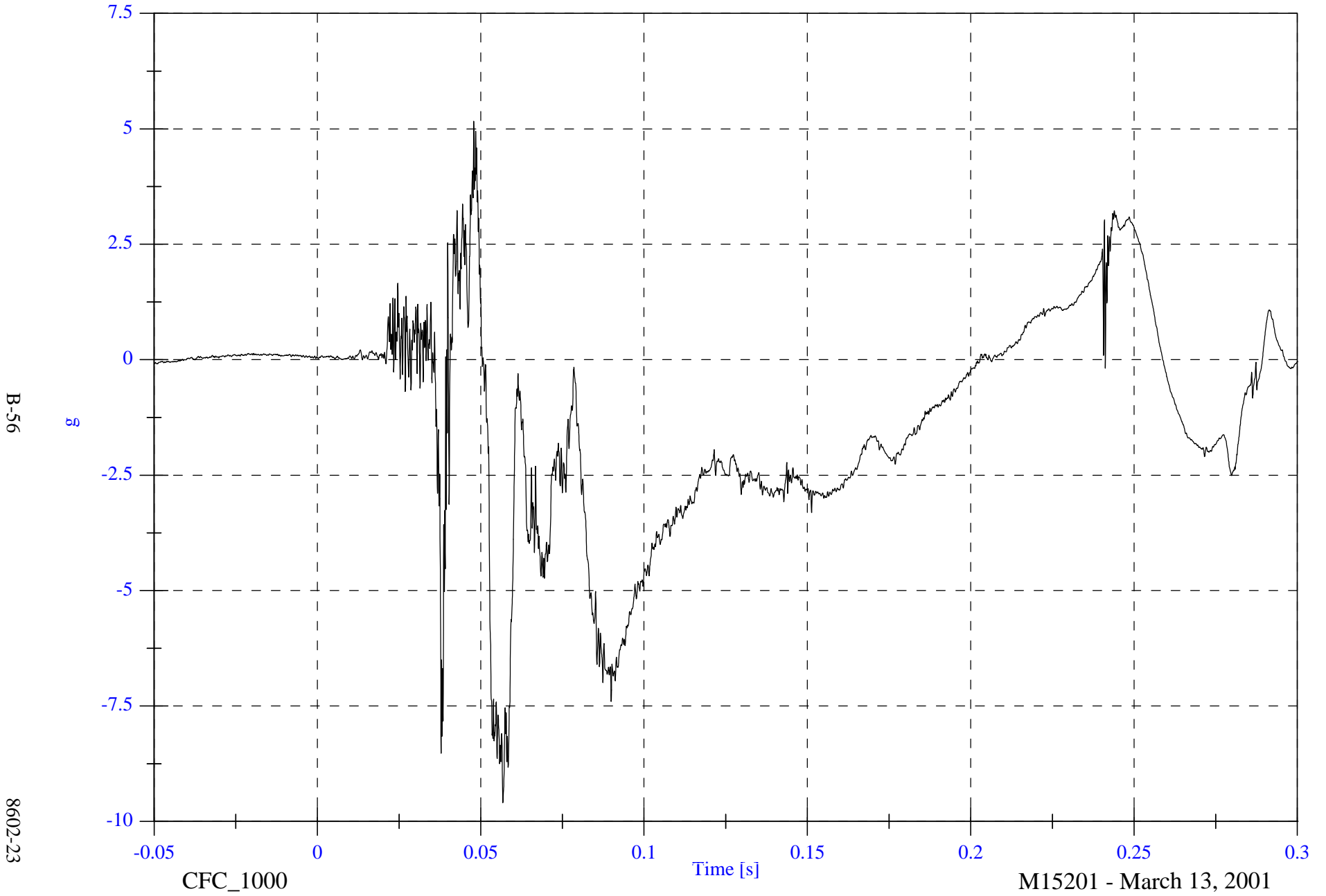
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 5.2 [g] at 0.048 [s]

Min: -9.6 [g] at 0.057 [s]

P2 Head y



B-56

g

8602-23

CFC_1000

Time [s]

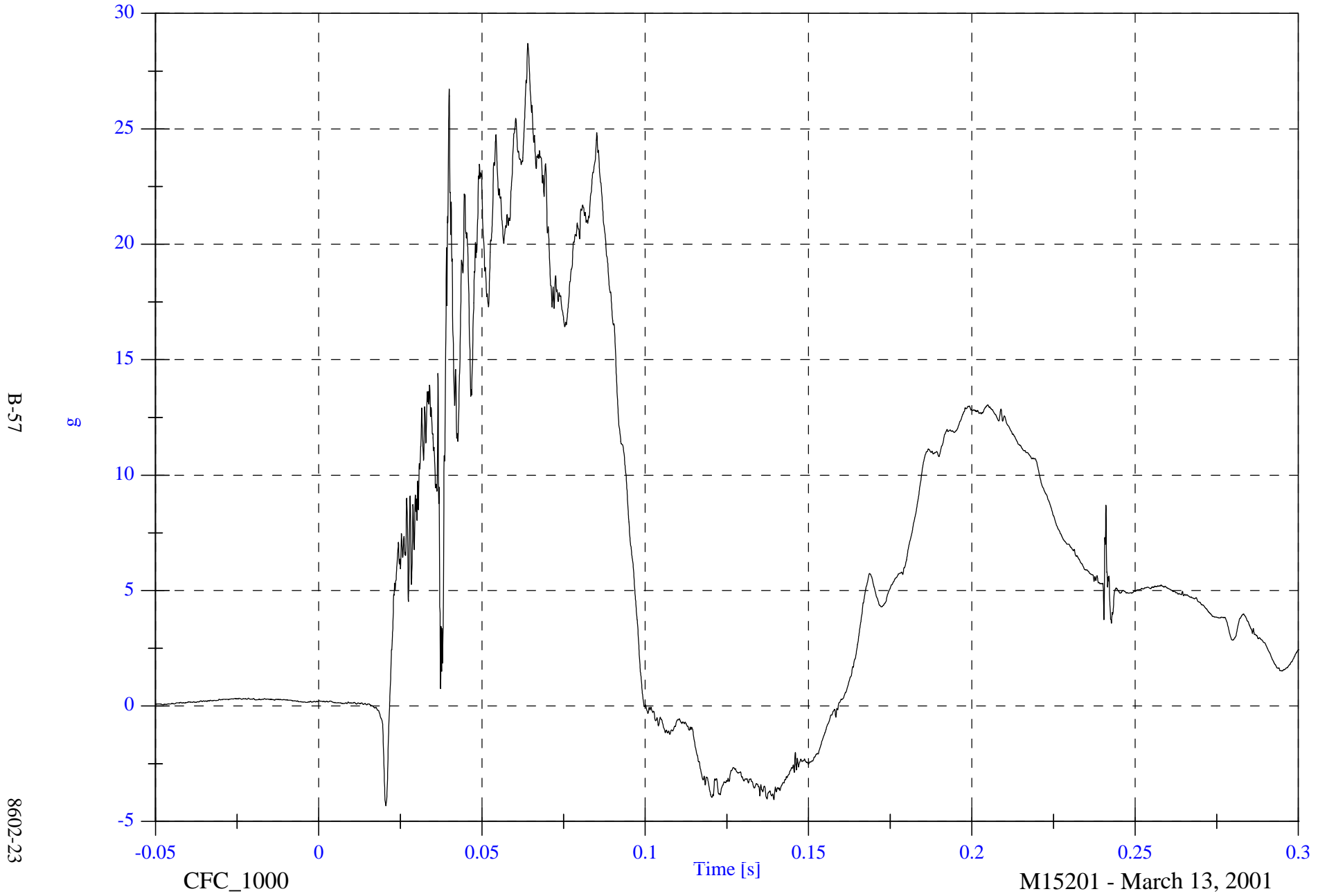
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 28.7 [g] at 0.064 [s]

P2 Head z

Min: -4.3 [g] at 0.021 [s]



B-57

g

8602-23

CFC_1000

Time [s]

M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

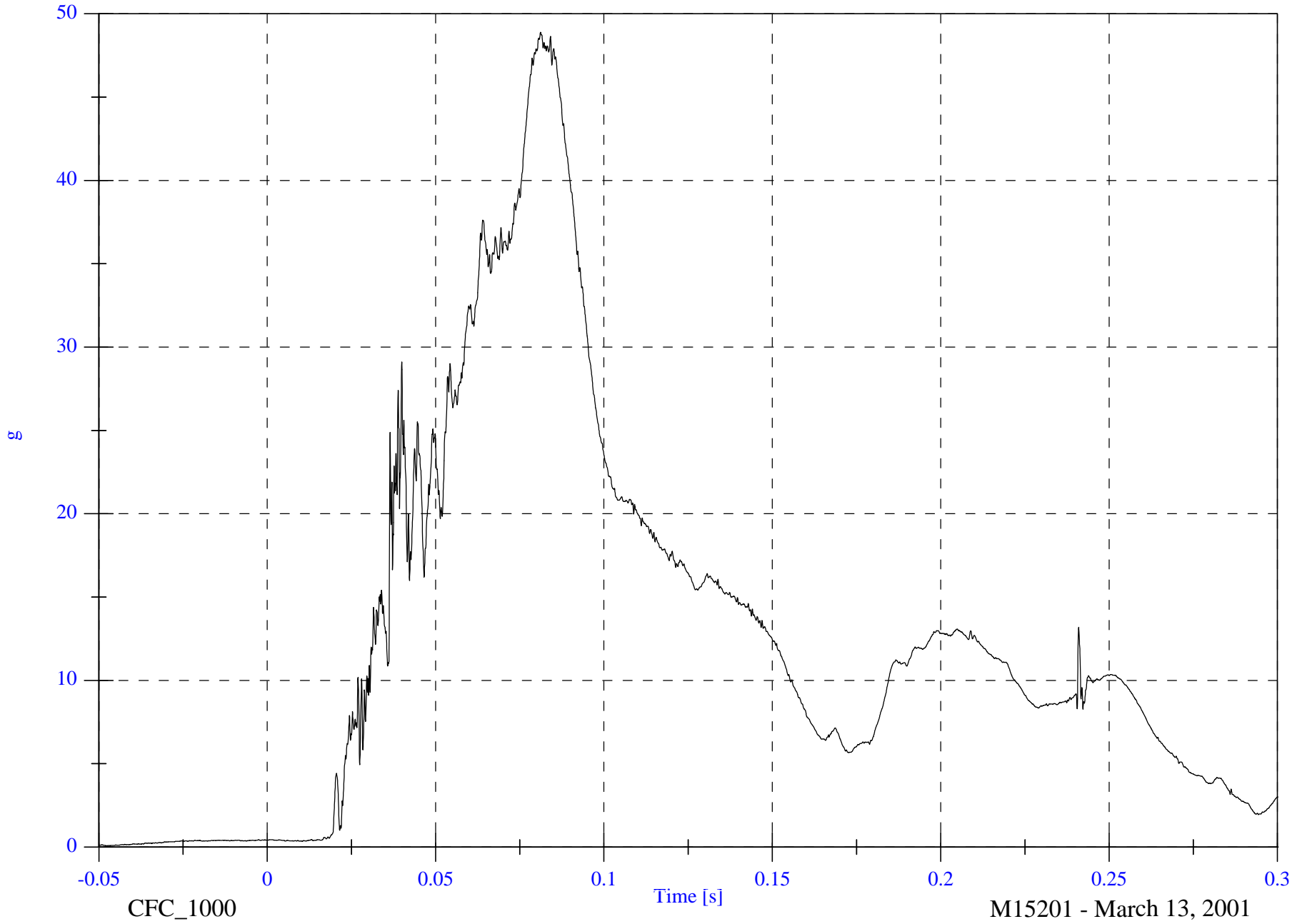
P2 Head Resultant

Max: 48.9 [g] at 0.081 [s]

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

B-58

8602-23



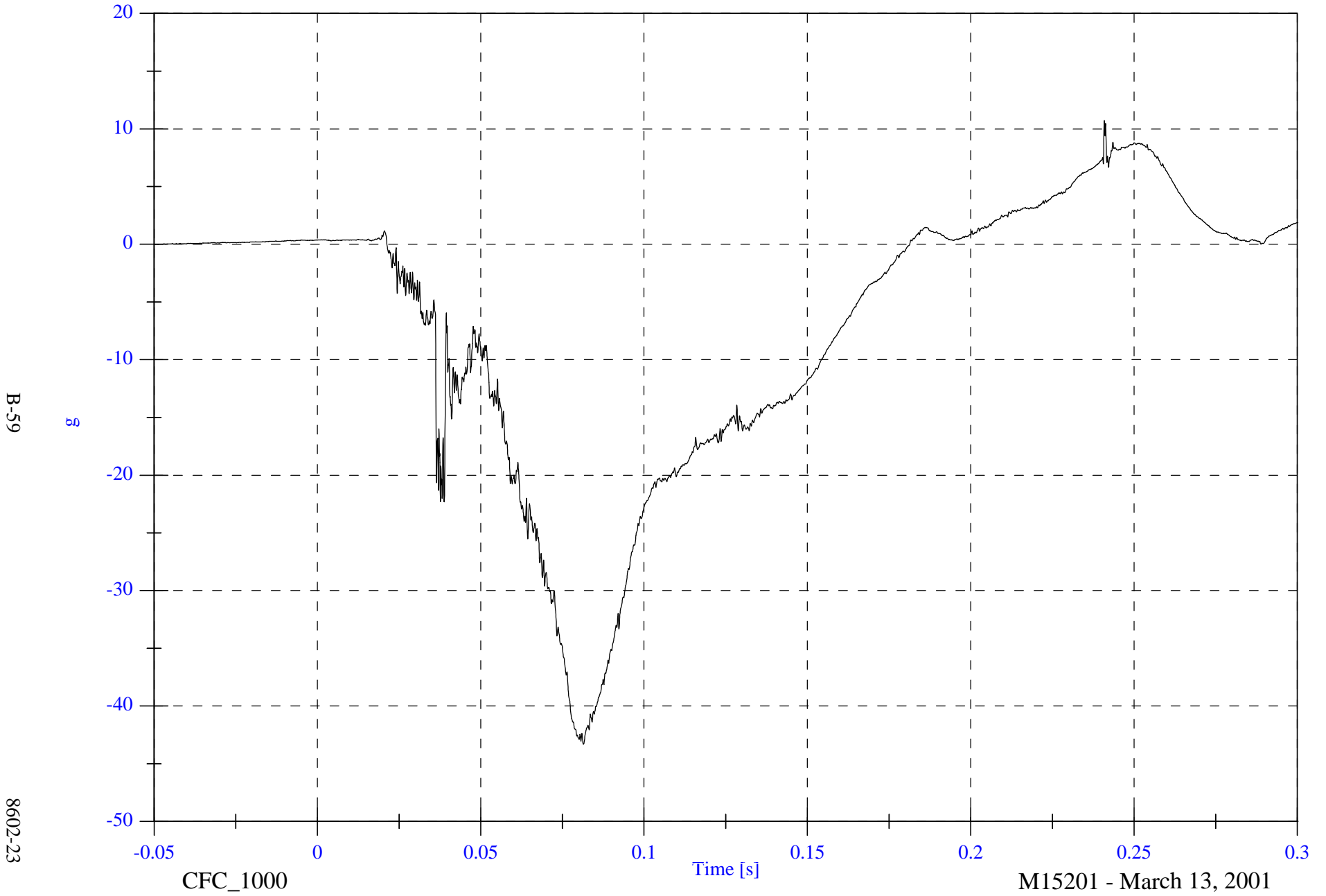
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 10.7 [g] at 0.241 [s]

P2 Head Red x

Min: -43.3 [g] at 0.081 [s]

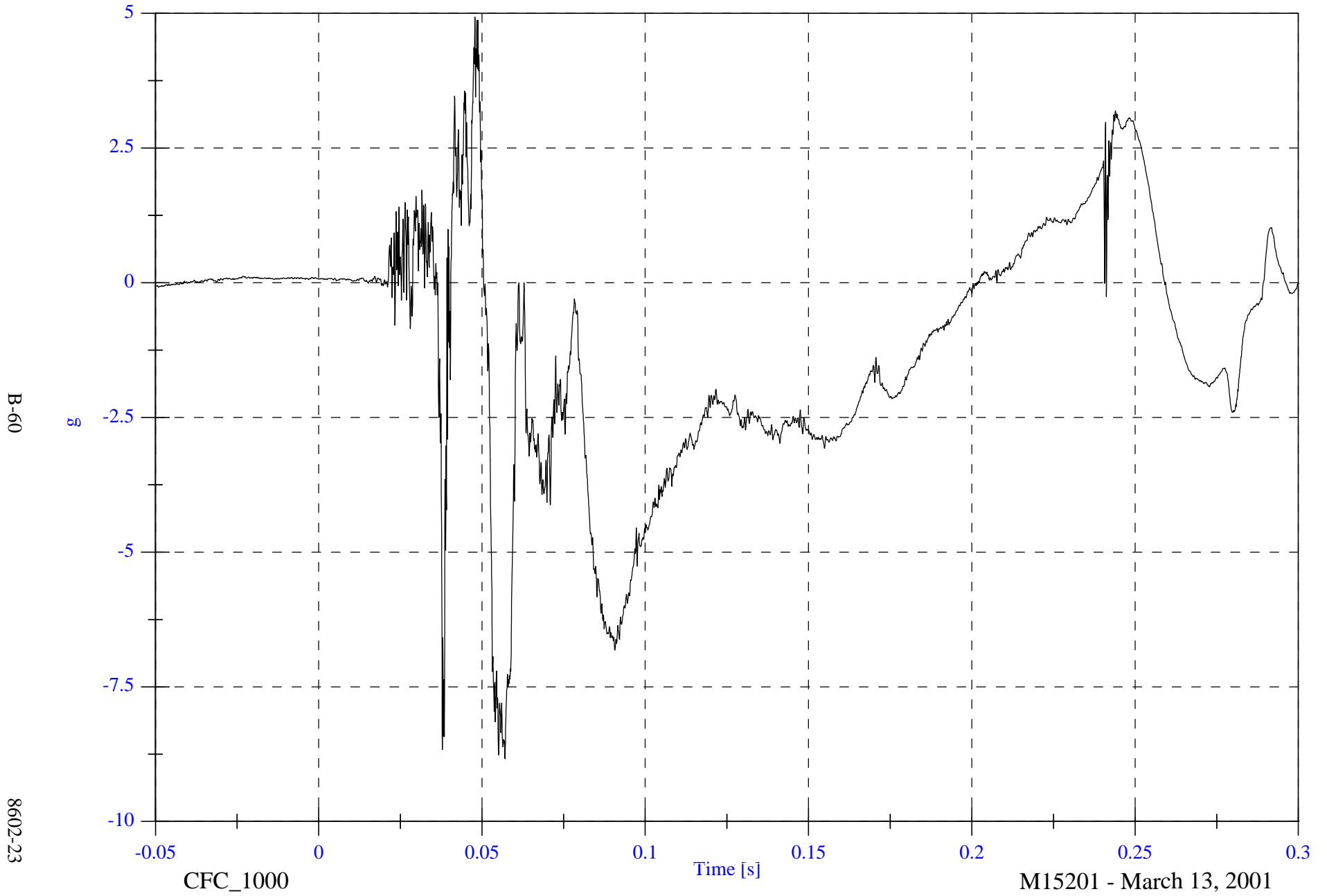


NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 4.9 [g] at 0.048 [s]

Min: -8.8 [g] at 0.057 [s]

P2 Head Red y



B-60

8602-23

CFC_1000

Time [s]

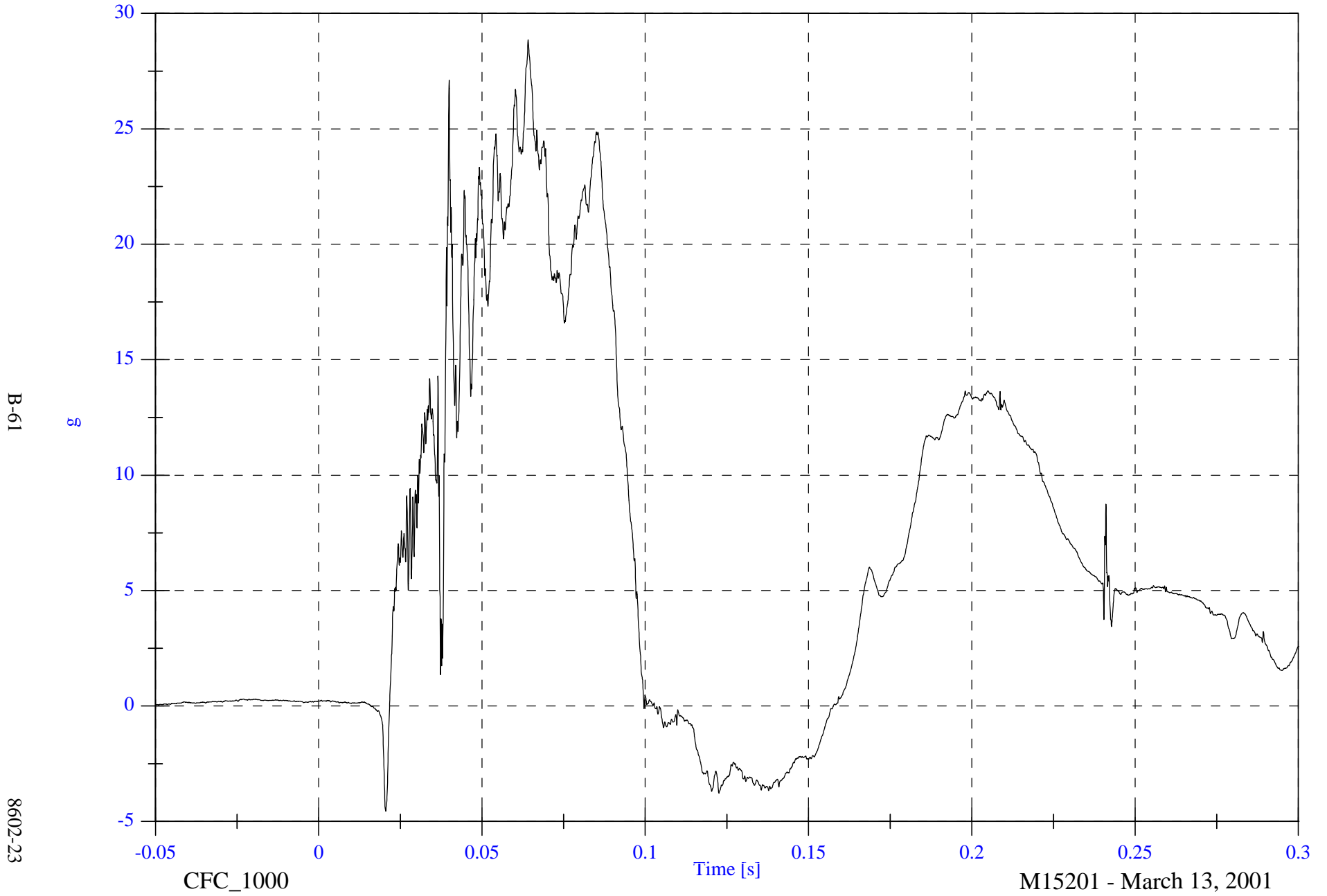
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 28.9 [g] at 0.064 [s]

P2 Head Red z

Min: -4.6 [g] at 0.021 [s]



B-61

g

8602-23

CFC_1000

Time [s]

M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 48.9 [g] at 0.081 [s]

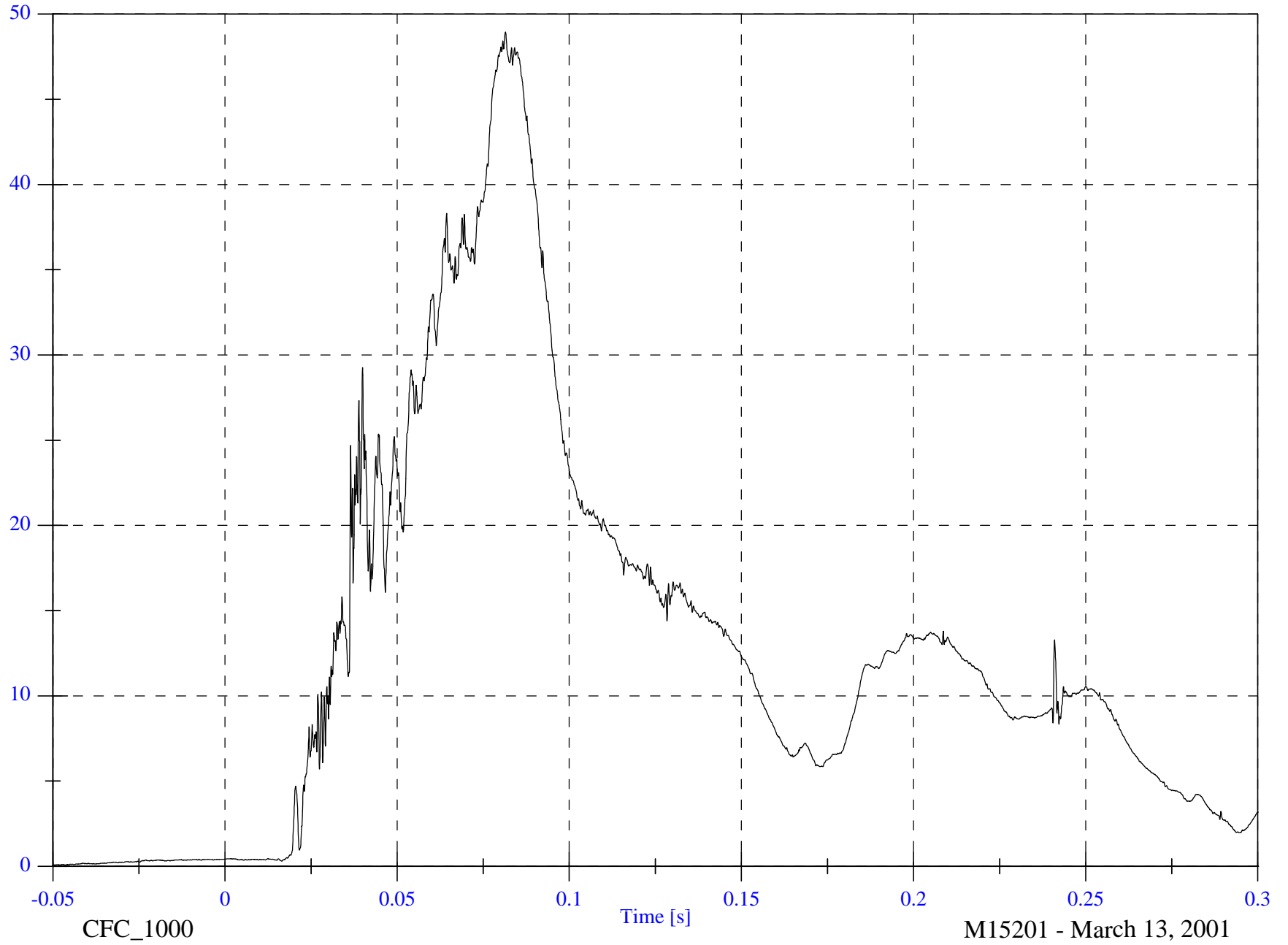
P2 Head Red Resultant

Min: 0.1 [g] at -0.046 [s]

B-62

g

8602-23

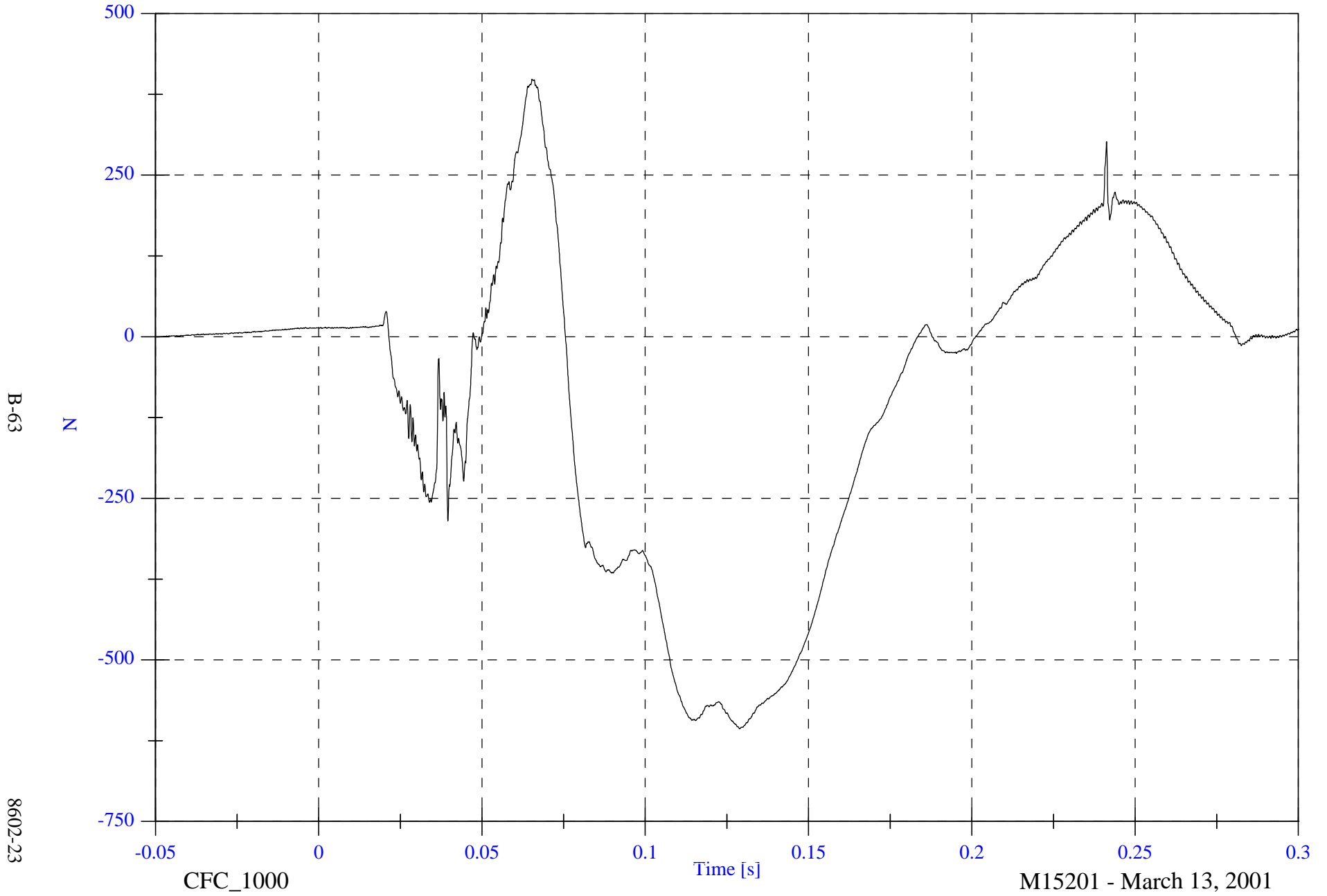


NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 398.2 [N] at 0.065 [s]

P2 Upper Neck Fx

Min: -606.7 [N] at 0.129 [s]

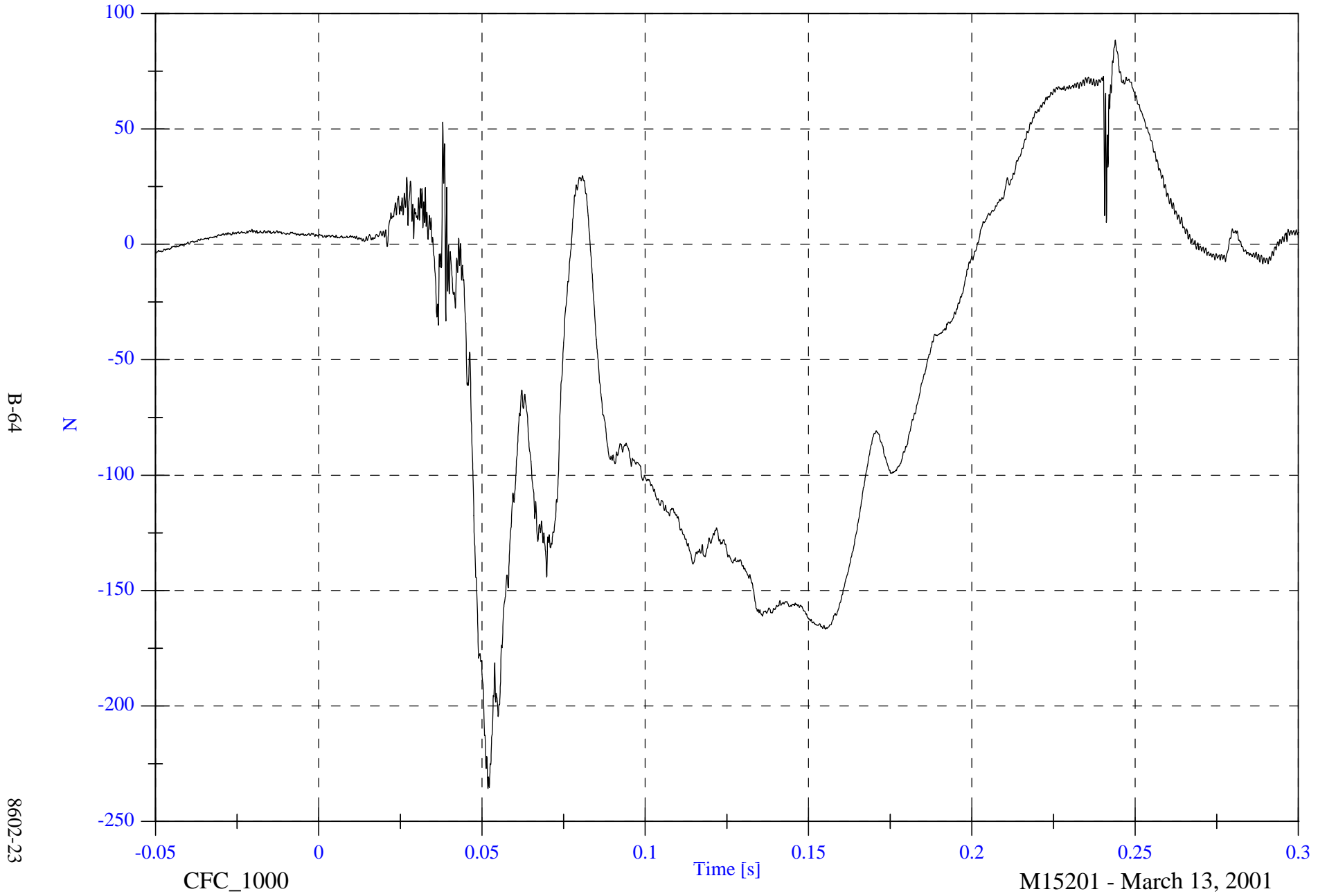


NCAP 2001 Test #23 - 2001 Nissan Frontier

P2 Upper Neck Fy

Max: 88.5 [N] at 0.244 [s]

Min: -235.8 [N] at 0.052 [s]



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8602-23

CFC_1000

Time [s]

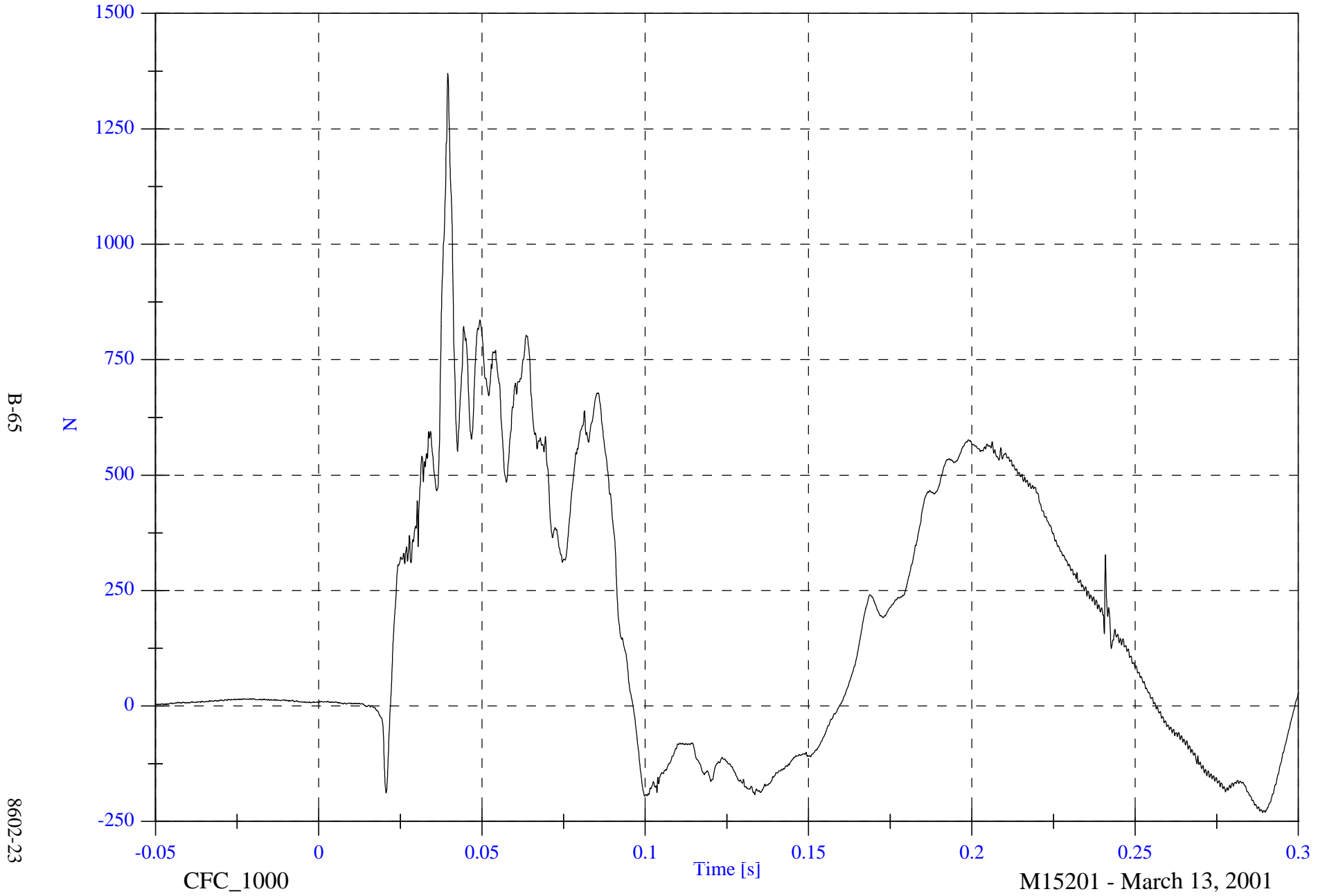
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 1370.0 [N] at 0.039 [s]

P2 Upper Neck Fz

Min: -230.9 [N] at 0.289 [s]



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8602-23

CFC_1000

Time [s]

M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

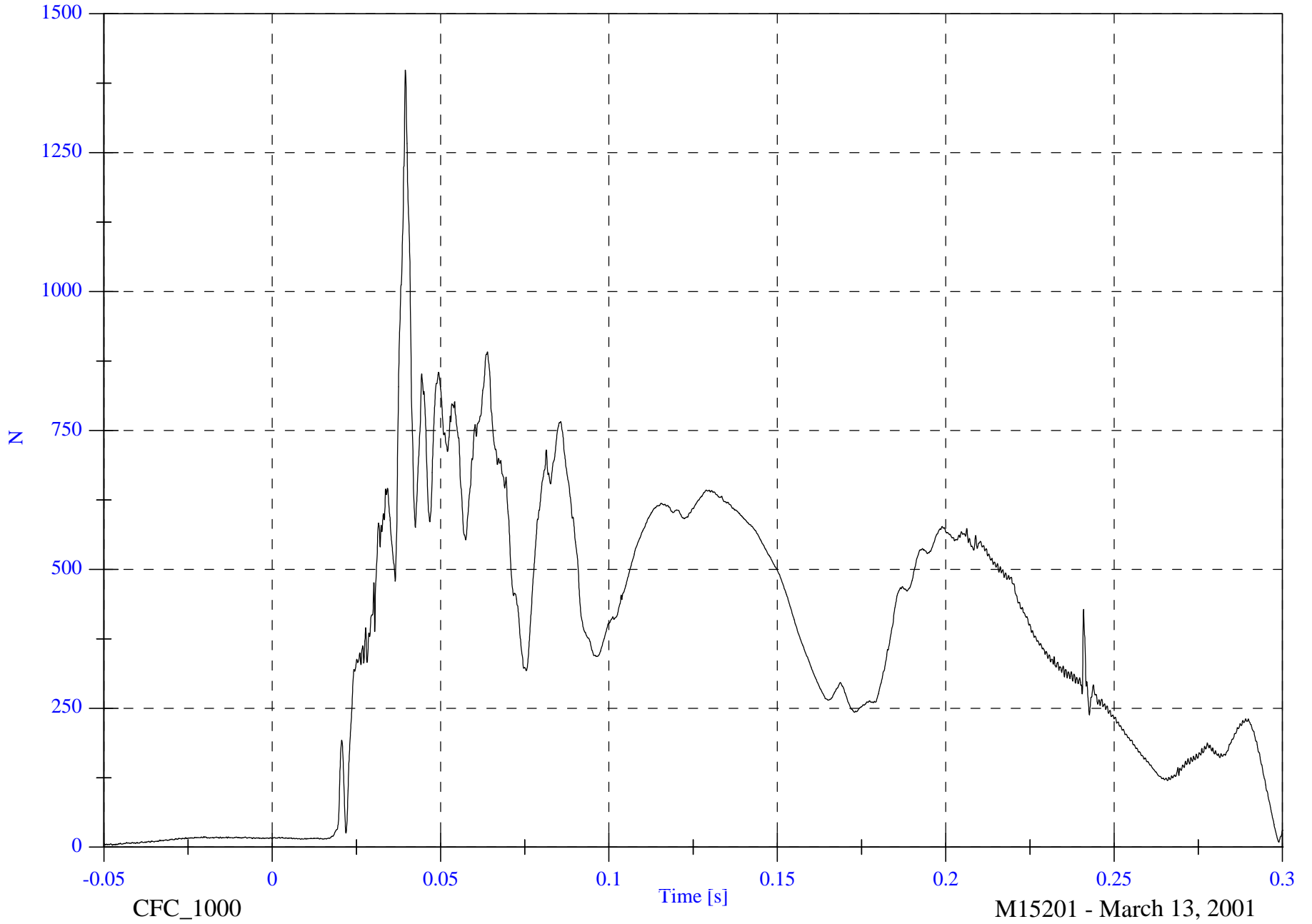
Max: 1398.7 [N] at 0.039 [s]

P2 Upper Neck F Resultant

Min: 3.6 [N] at -0.047 [s]

B-66

8602-23



CFC_1000

Time [s]

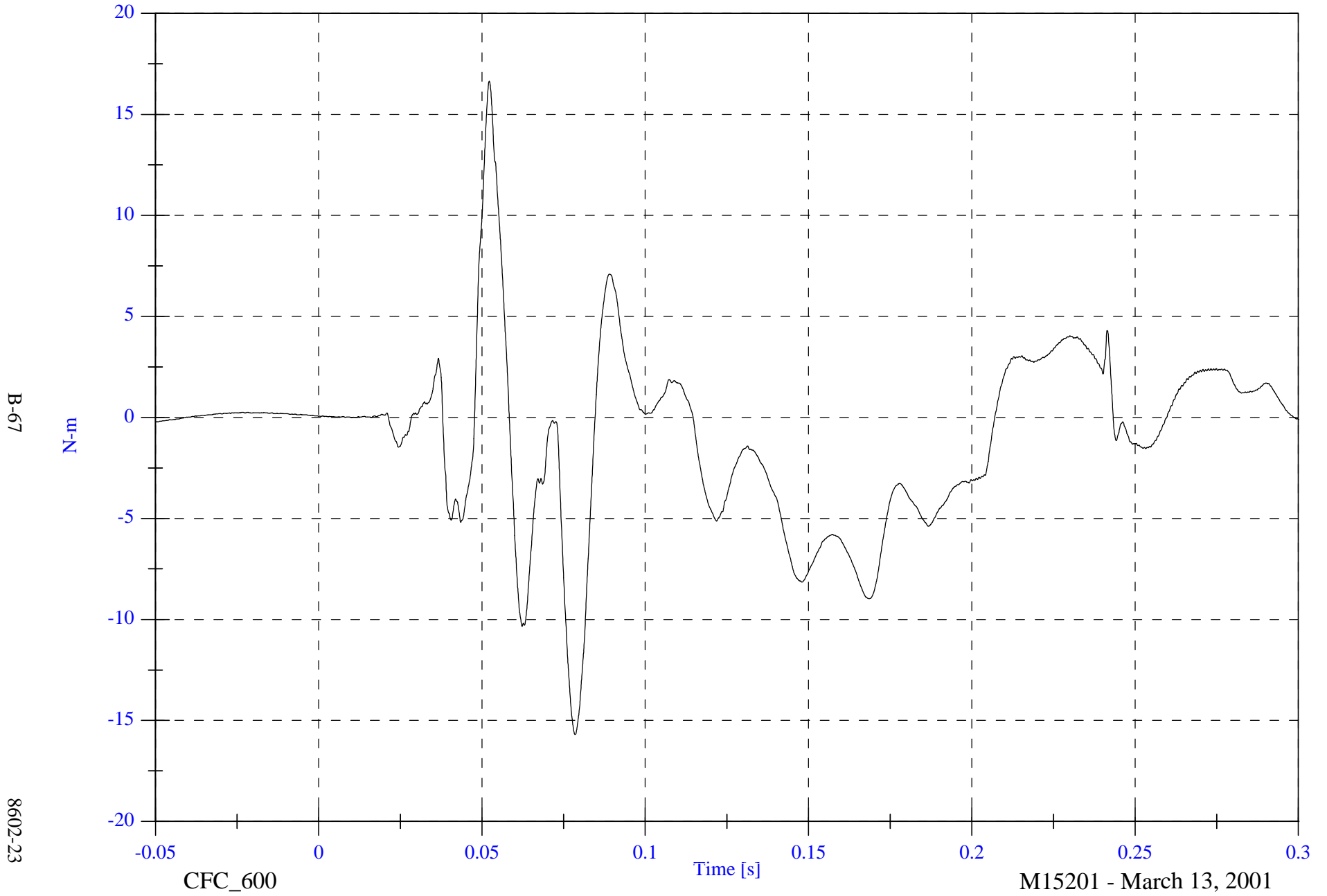
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 16.7 [N-m] at 0.052 [s]

P2 Upper Neck Mx

Min: -15.7 [N-m] at 0.078 [s]



B-67

8602-23

CFC_600

Time [s]

M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

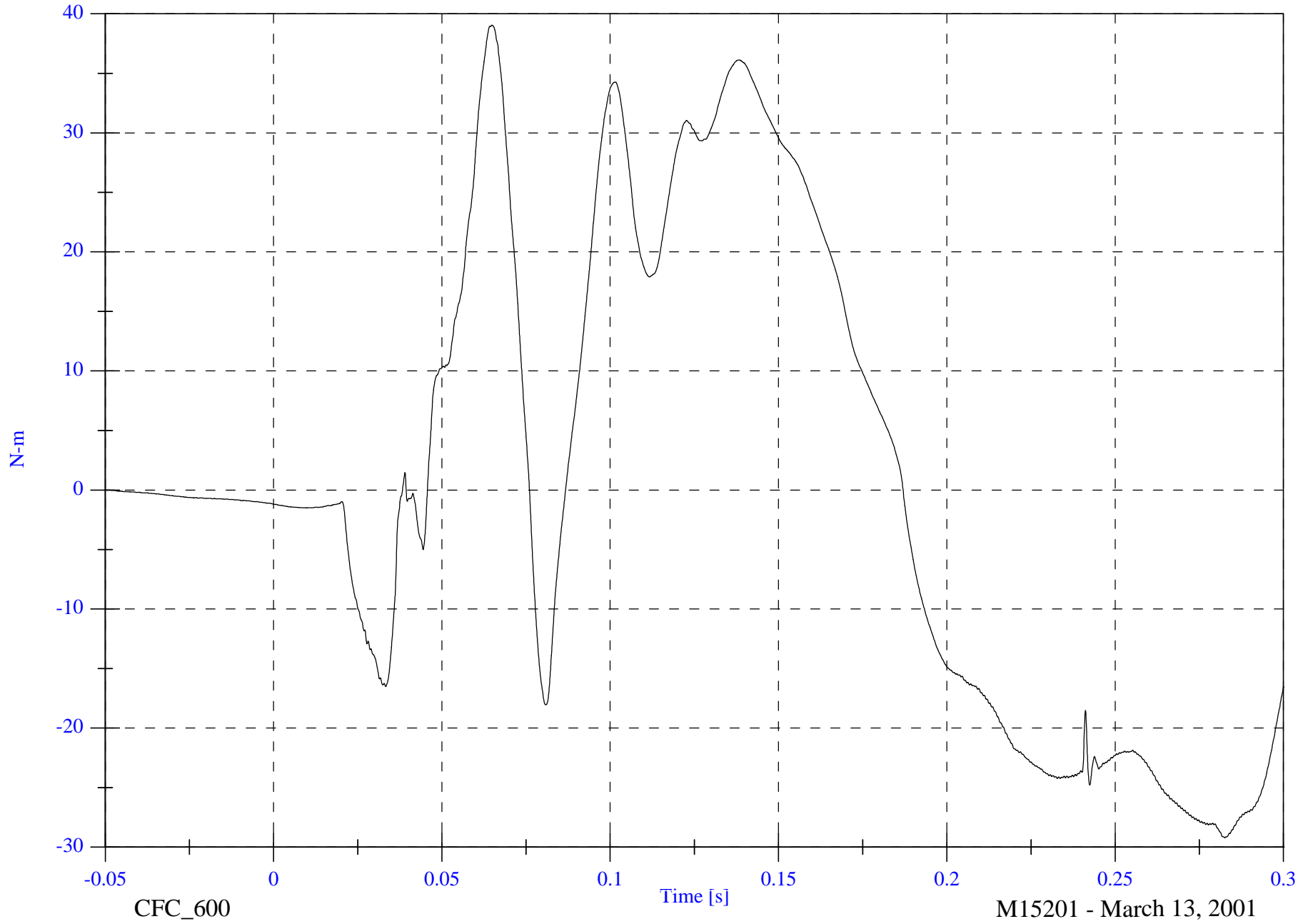
Max: 39.1 [N-m] at 0.065 [s]

Min: -29.2 [N-m] at 0.283 [s]

P2 Upper Neck My

B-68

8602-23



CFC_600

Time [s]

M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

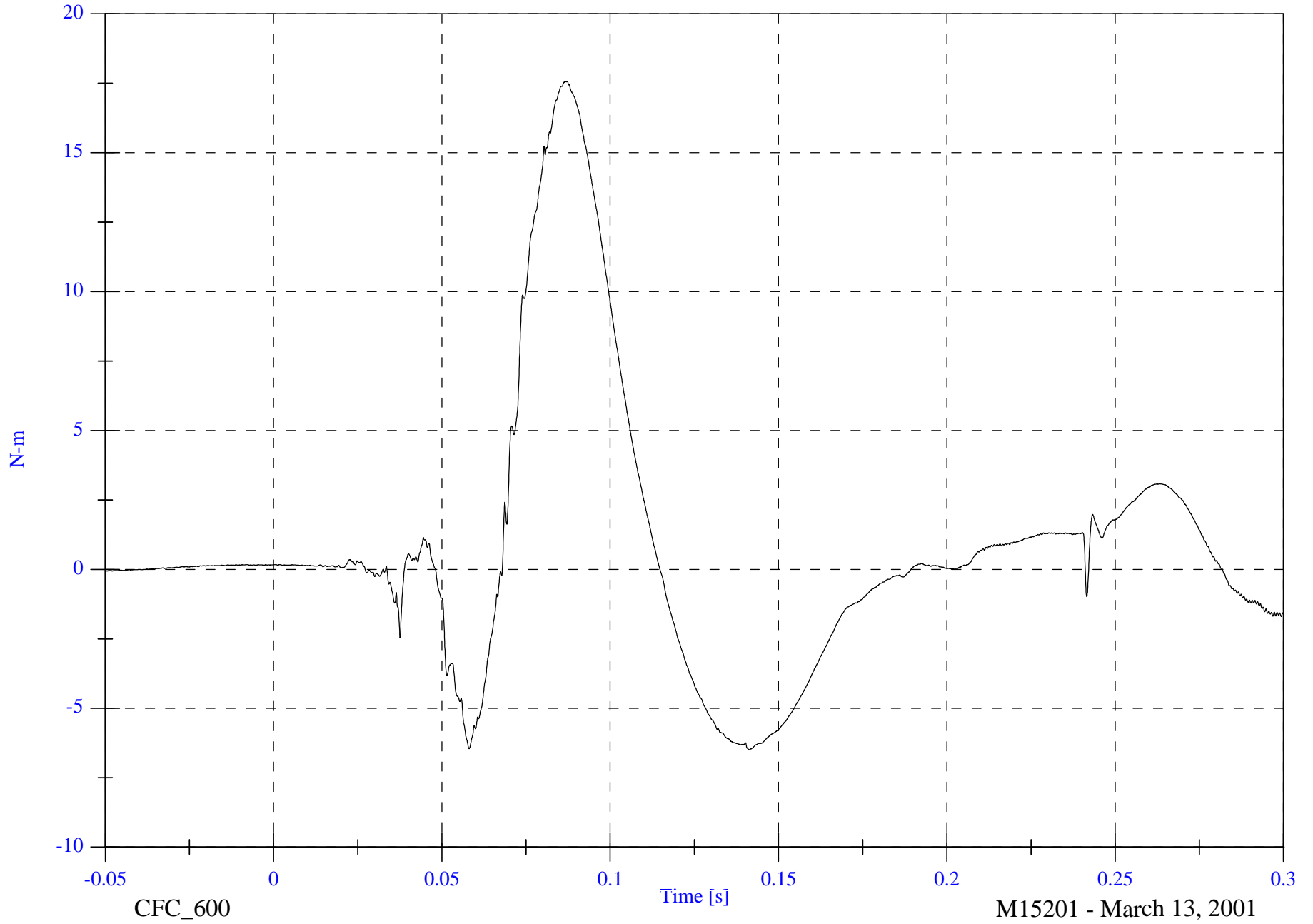
Max: 17.6 [N-m] at 0.087 [s]

P2 Upper Neck Mz

Min: -6.5 [N-m] at 0.141 [s]

B-69

8602-23



CFC_600

Time [s]

M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

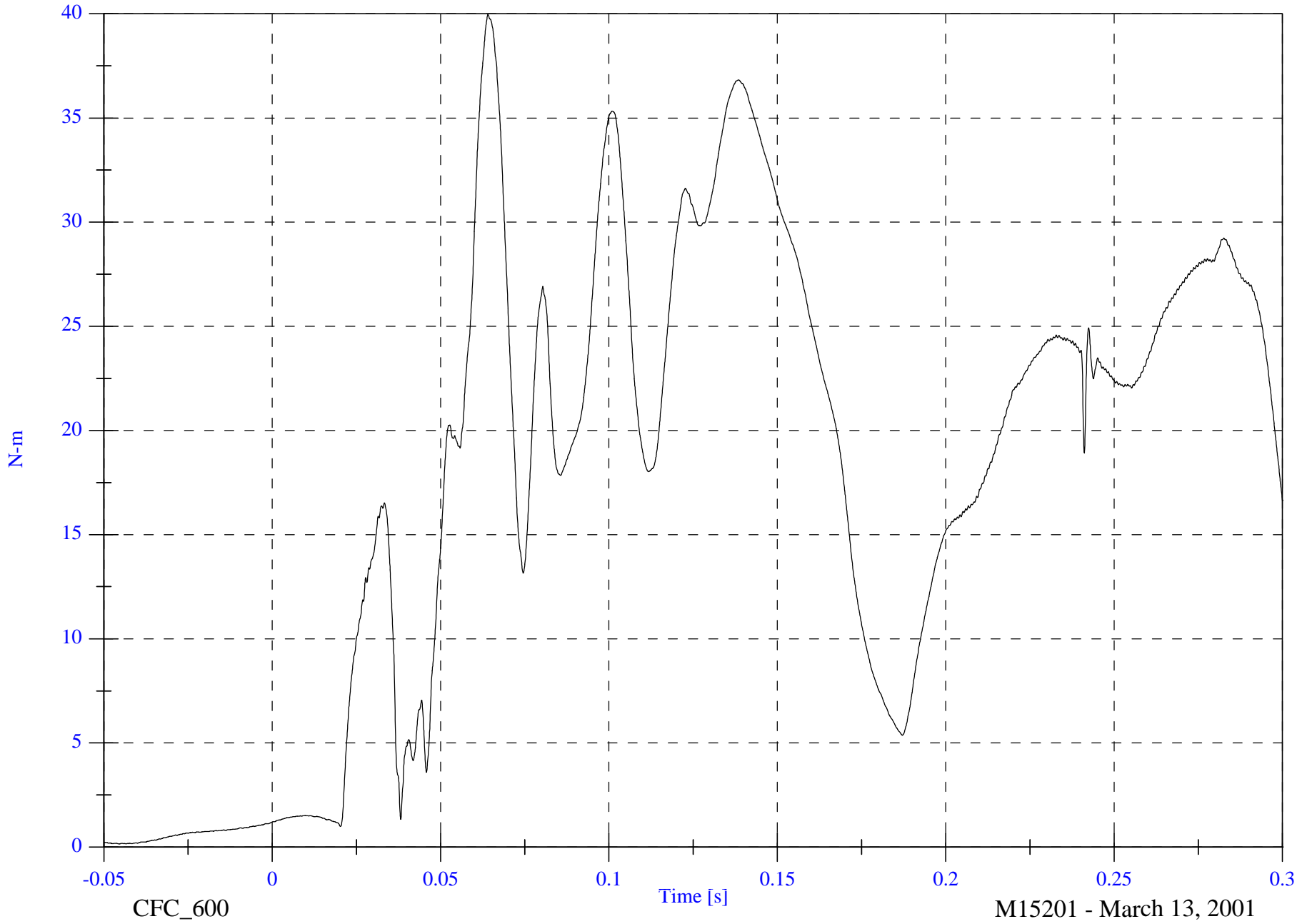
P2 Upper Neck M Resultant

Max: 40.0 [N-m] at 0.064 [s]

Min: 0.2 [N-m] at -0.045 [s]

B-70

8602-23



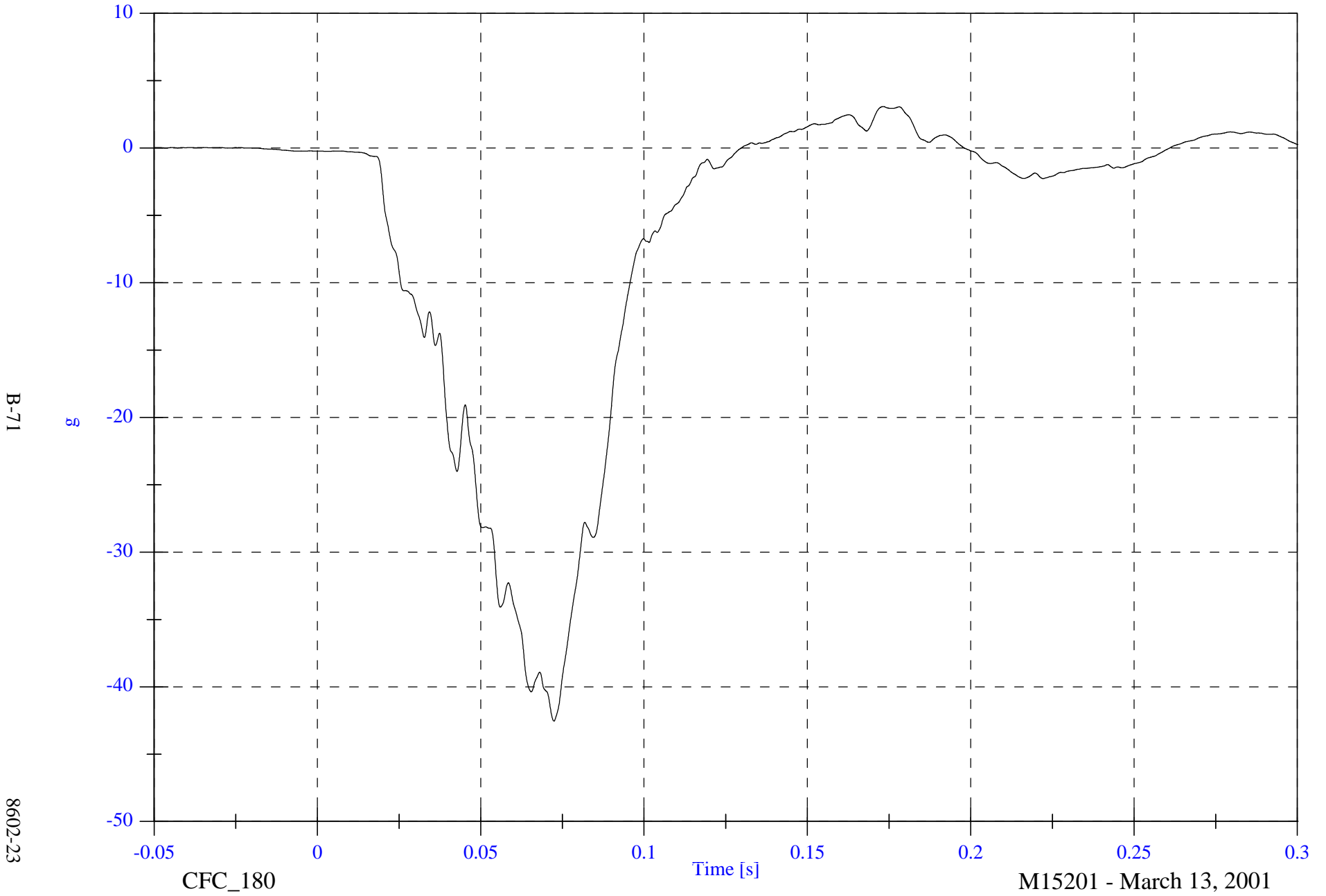
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 3.1 [g] at 0.173 [s]

Min: -42.6 [g] at 0.072 [s]

P2 Chest x



B-71

8602-23

CFC_180

Time [s]

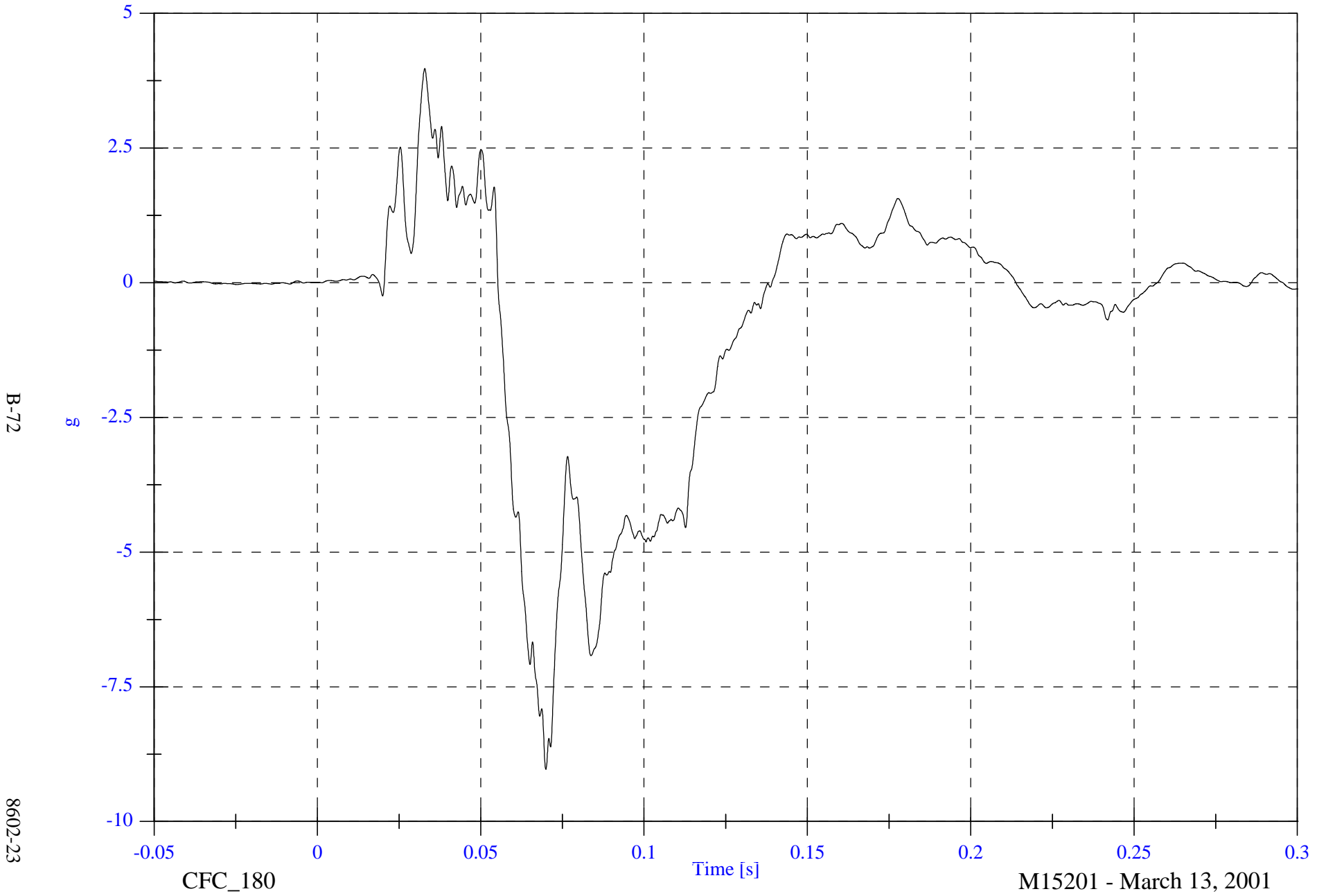
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 4.0 [g] at 0.033 [s]

Min: -9.0 [g] at 0.070 [s]

P2 Chest y



B-72

8602-23

CFC_180

Time [s]

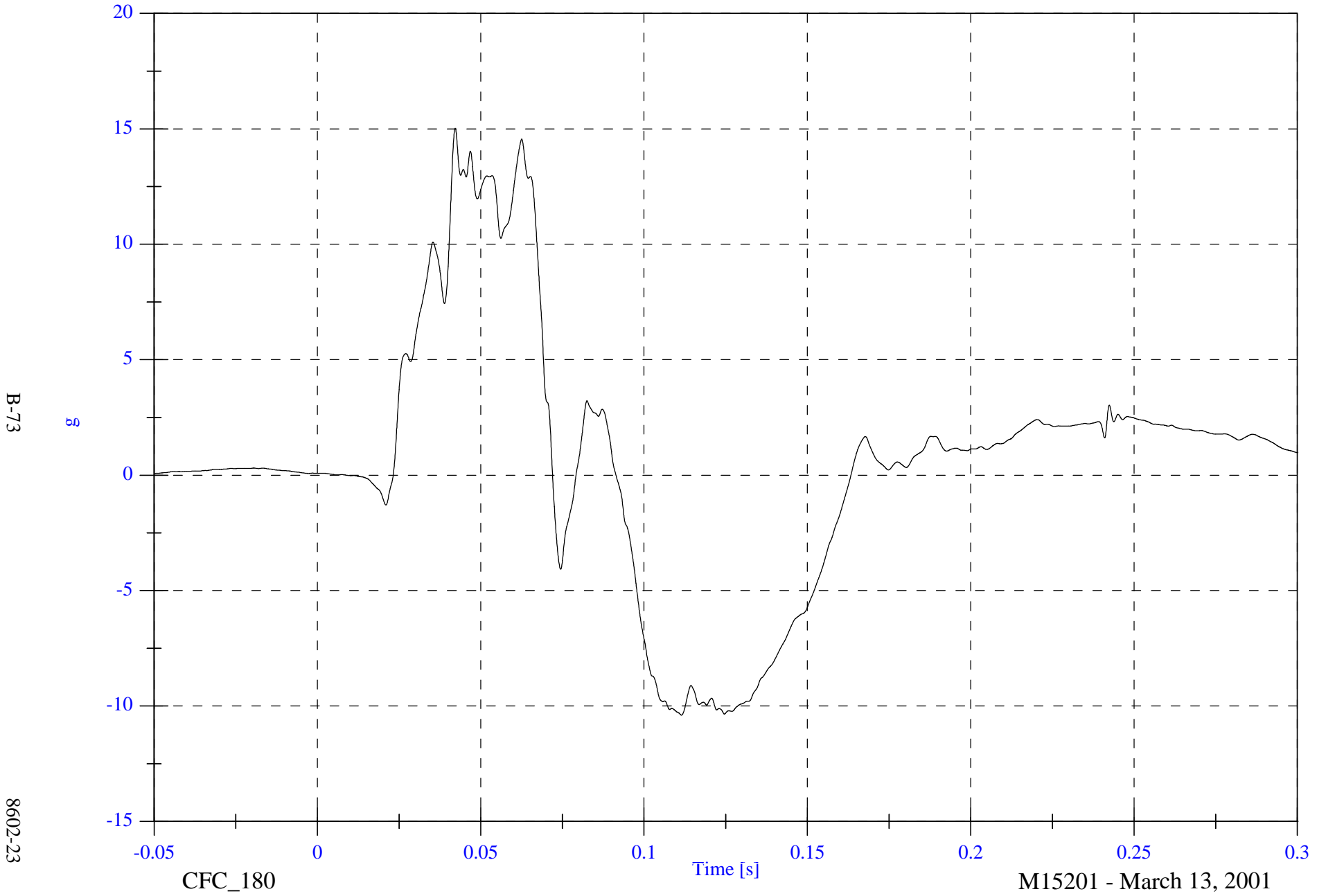
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 15.0 [g] at 0.042 [s]

P2 Chest z

Min: -10.4 [g] at 0.111 [s]



NCAP 2001 Test #23 - 2001 Nissan Frontier

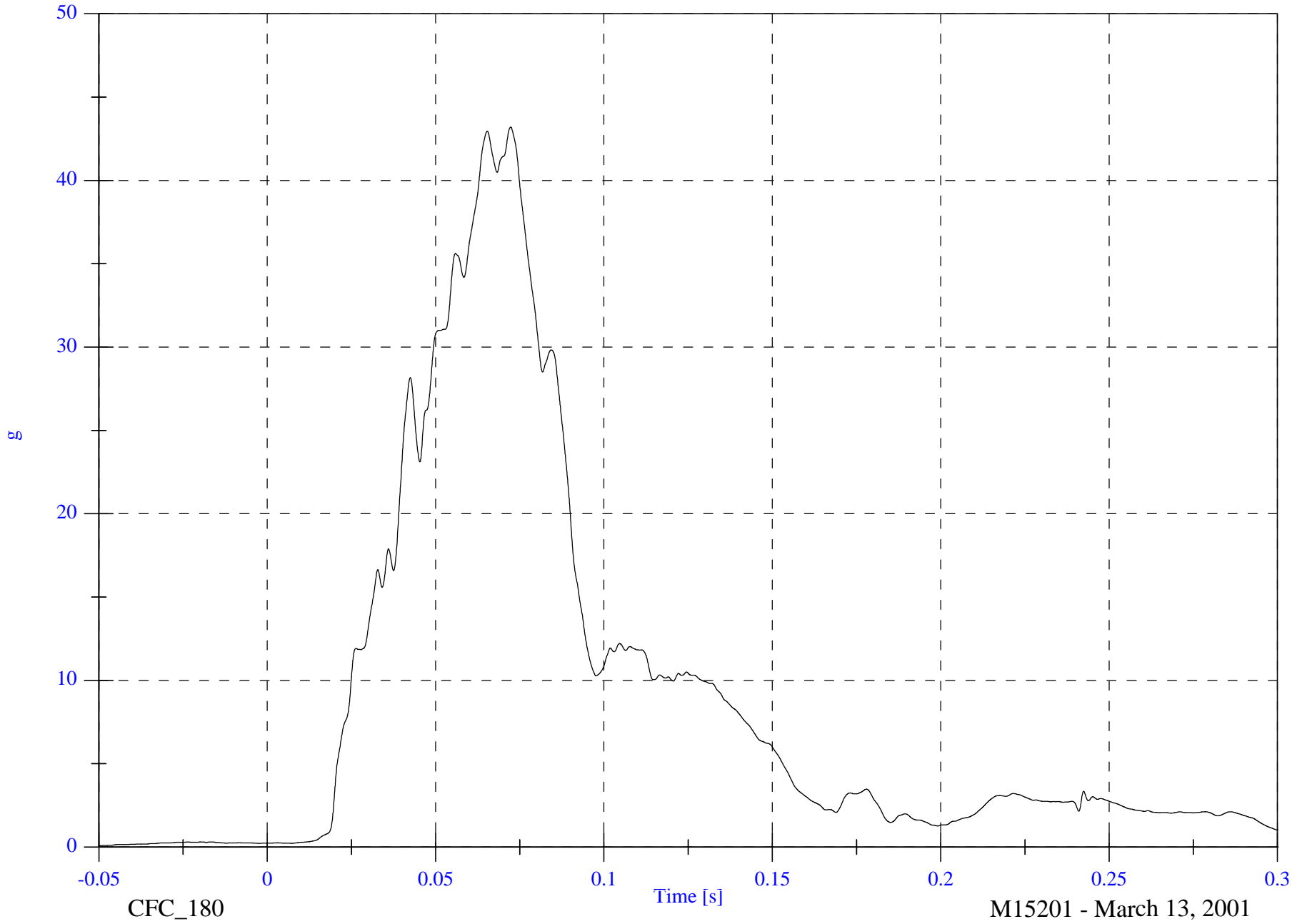
P2 Chest Resultant

Max: 43.2 [g] at 0.072 [s]

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

B-74

8602-23

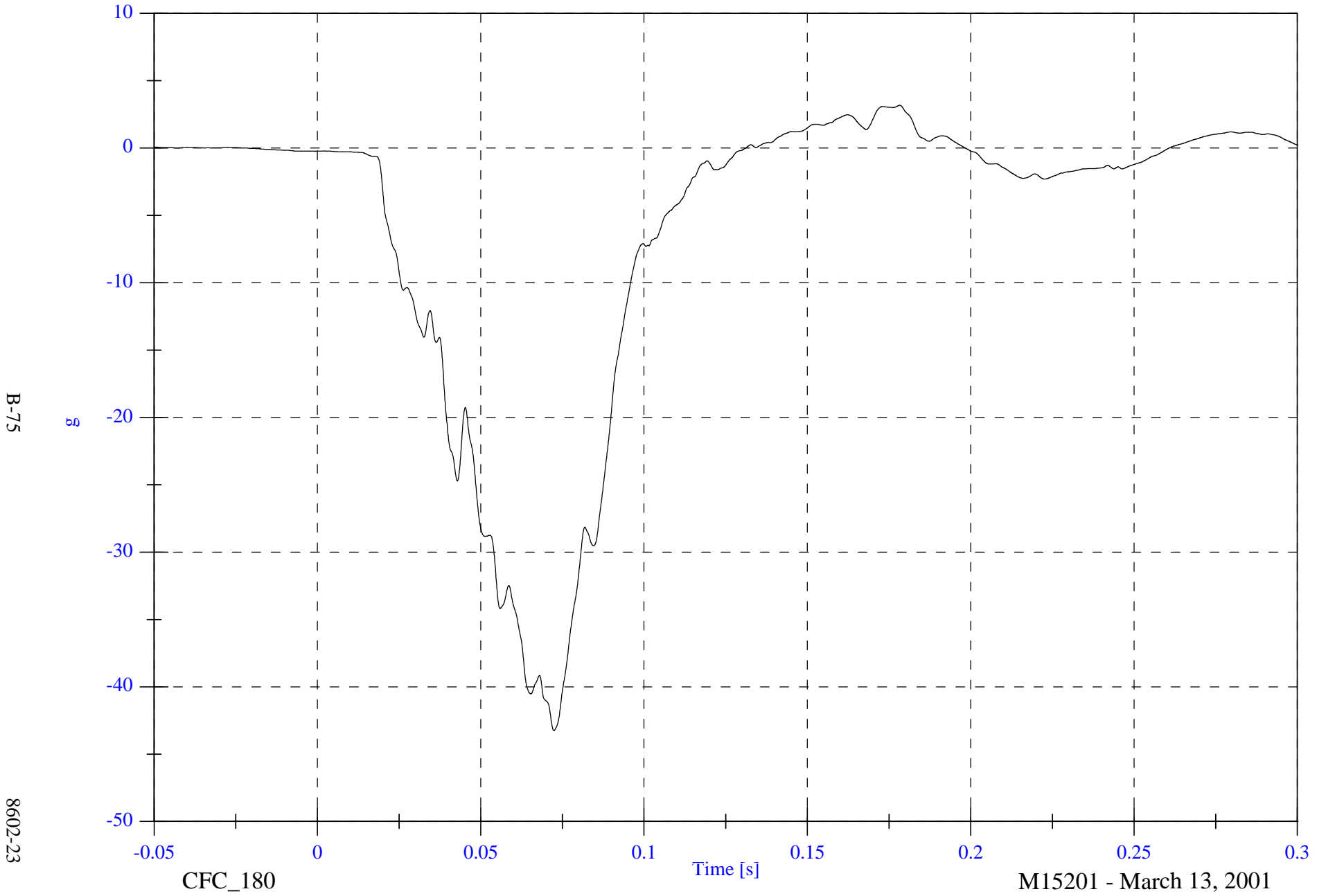


NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 3.2 [g] at 0.178 [s]

P2 Chest Red x

Min: -43.3 [g] at 0.072 [s]



B-75

8602-23

CFC_180

Time [s]

M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 4.0 [g] at 0.033 [s]

Min: -10.3 [g] at 0.070 [s]

P2 Chest Red y

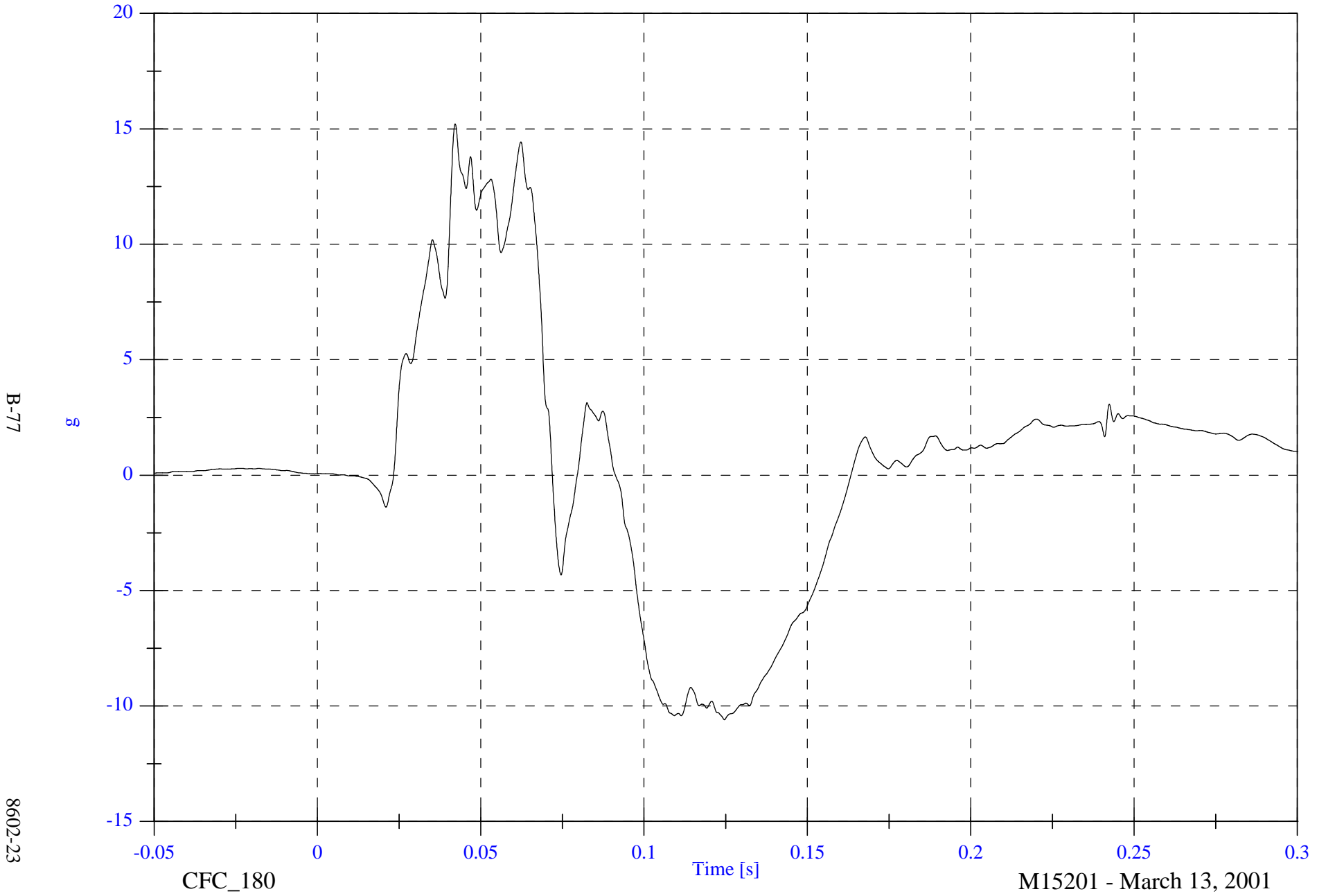


NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 15.2 [g] at 0.042 [s]

P2 Chest Red z

Min: -10.6 [g] at 0.125 [s]



NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 44.0 [g] at 0.072 [s]

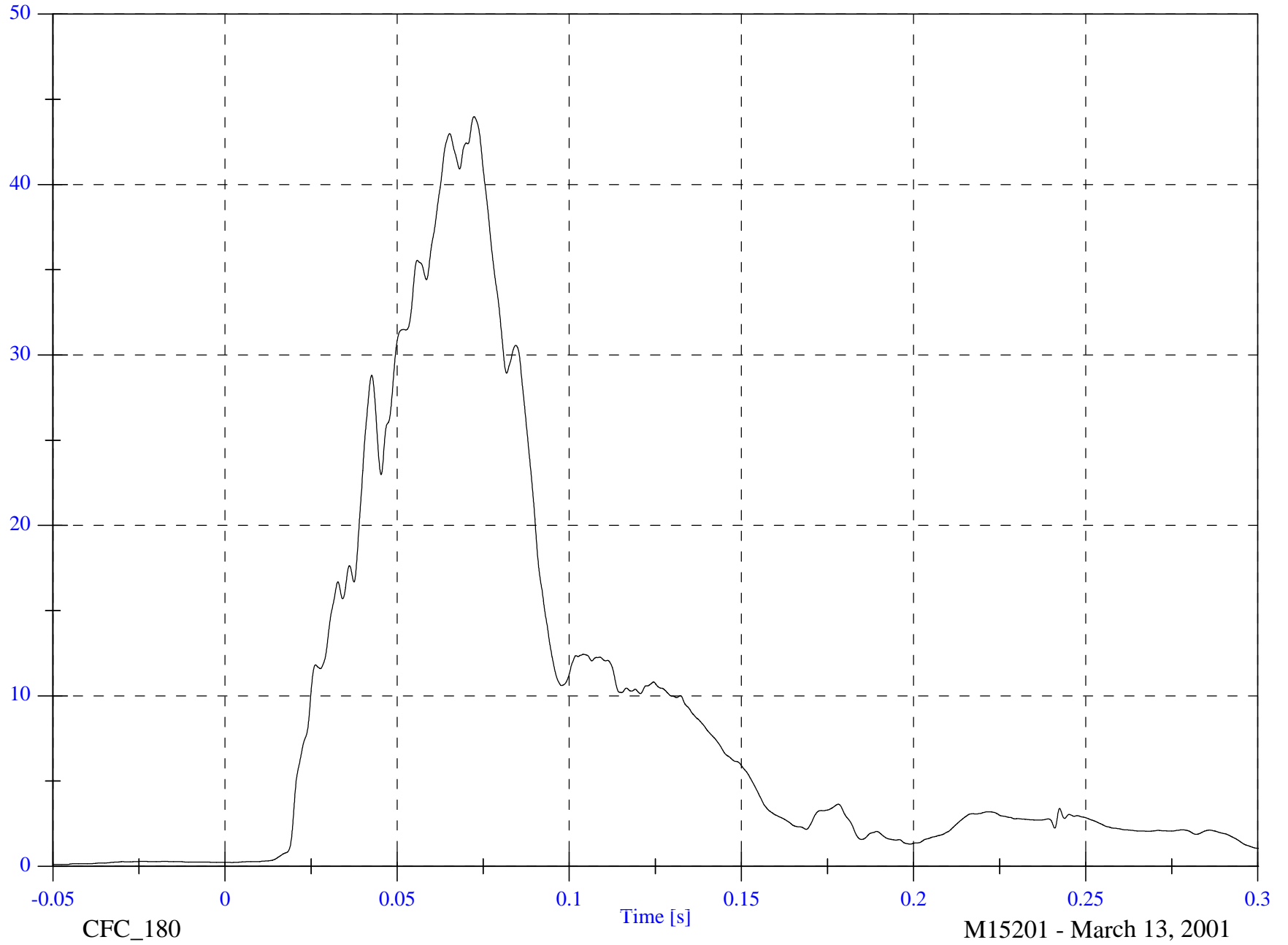
P2 Chest Red Resultant

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

B-78

g

8602-23



CFC_180

Time [s]

M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

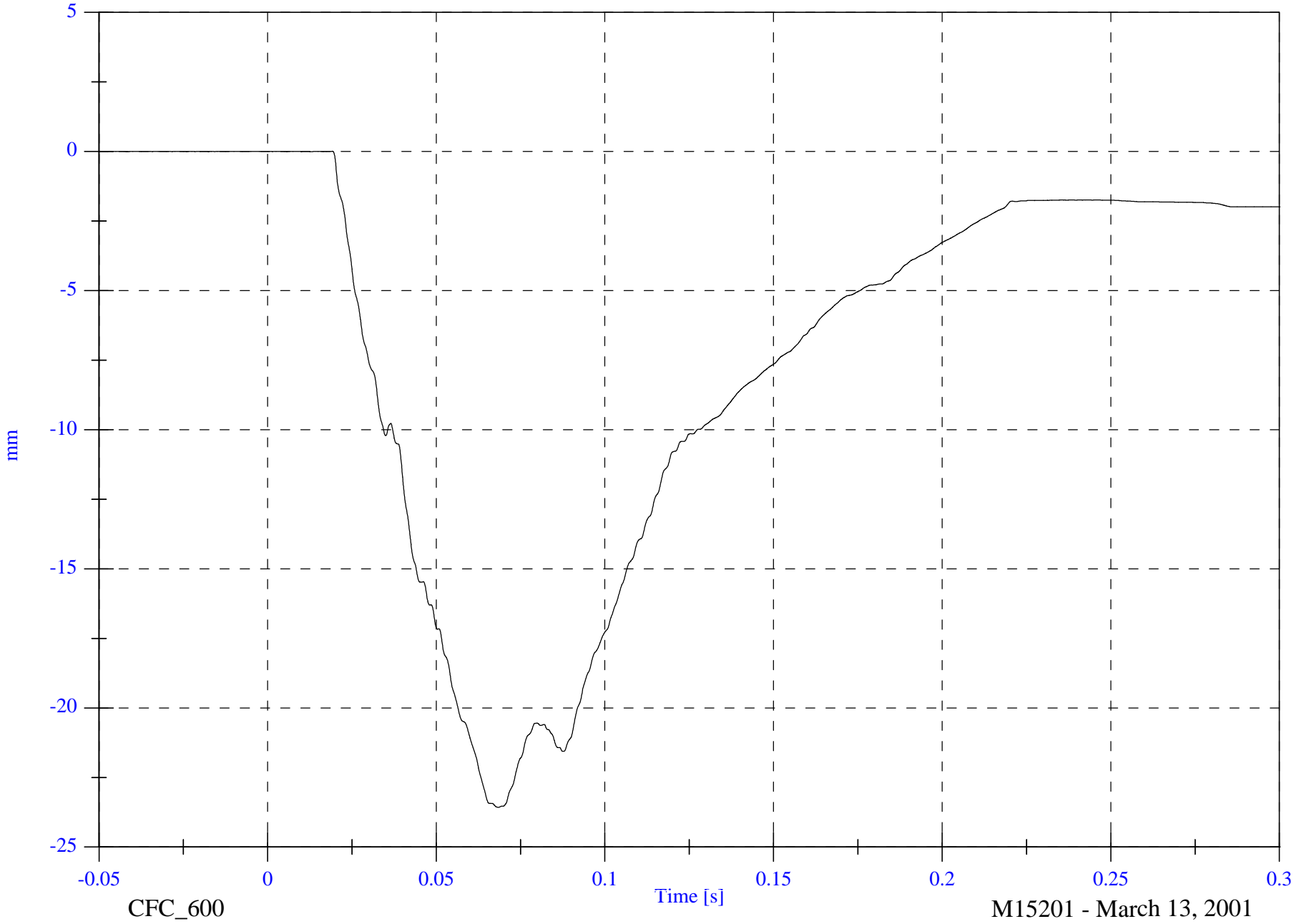
P2 Chest Compression

Max: 0.0 [mm] at 0.019 [s]

Min: -23.6 [mm] at 0.068 [s]

B-79

8602-23



CFC_600

Time [s]

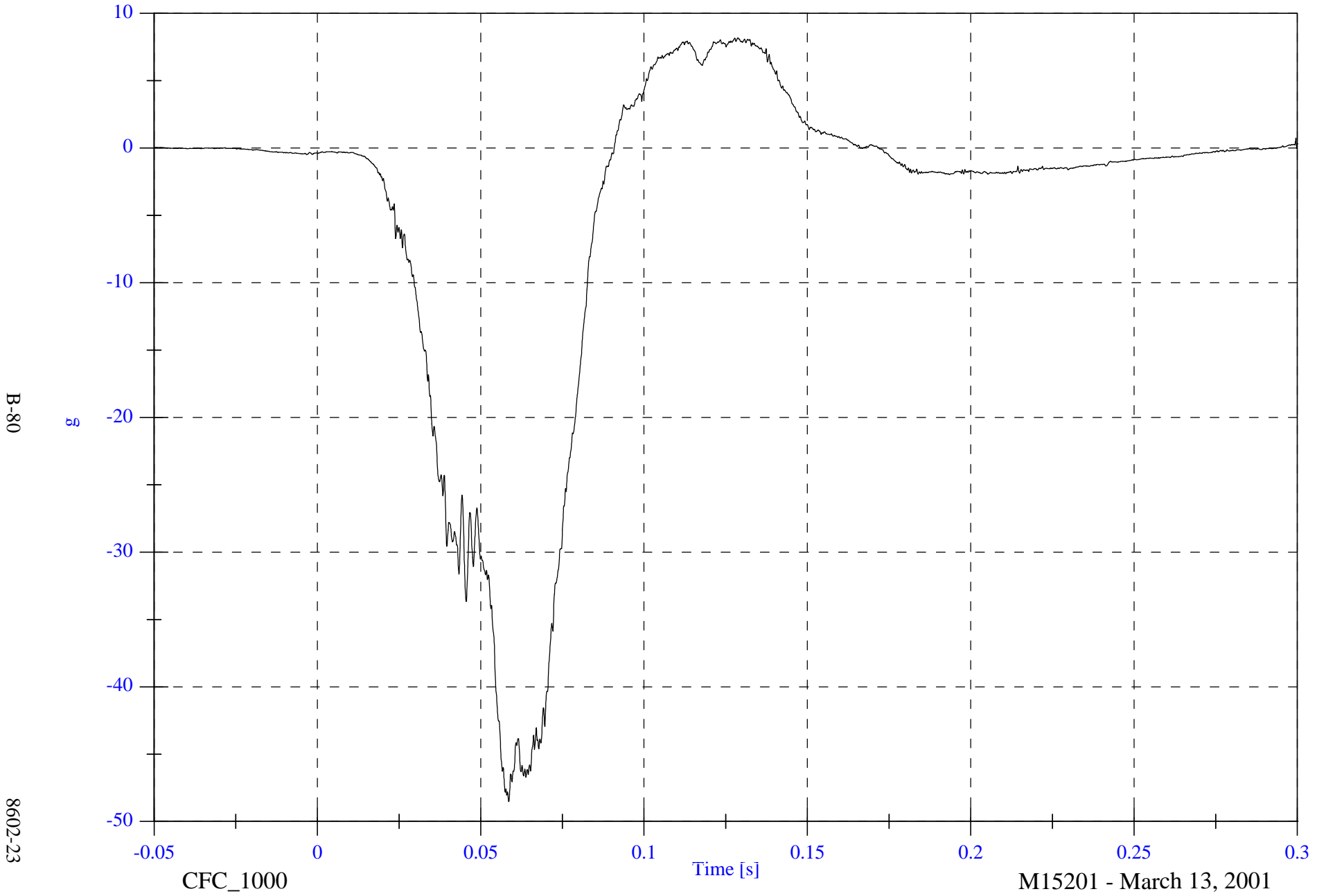
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 8.2 [g] at 0.129 [s]

Min: -48.5 [g] at 0.059 [s]

P2 Pelvic x

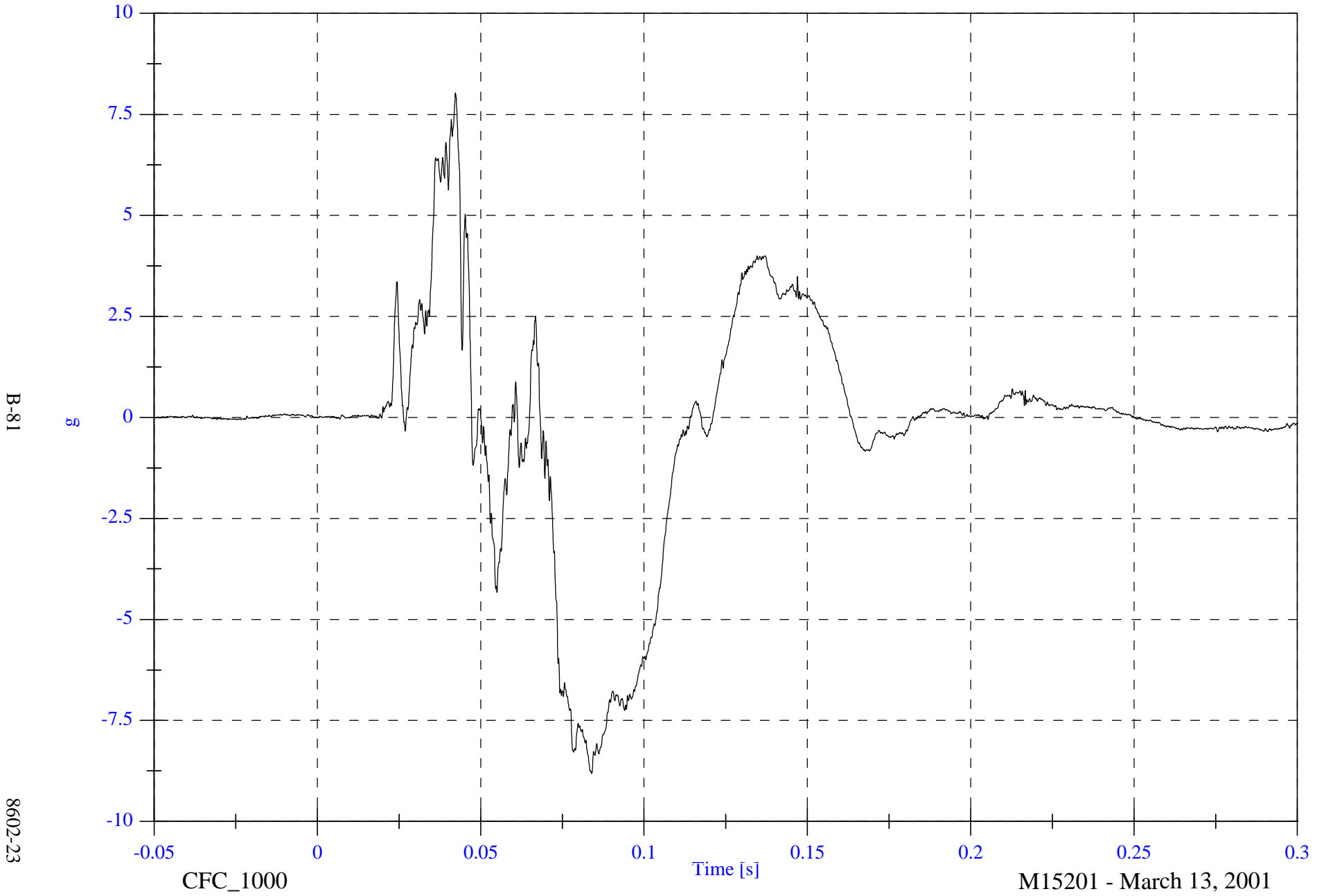


NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 8.0 [g] at 0.042 [s]

Min: -8.8 [g] at 0.084 [s]

P2 Pelvic y

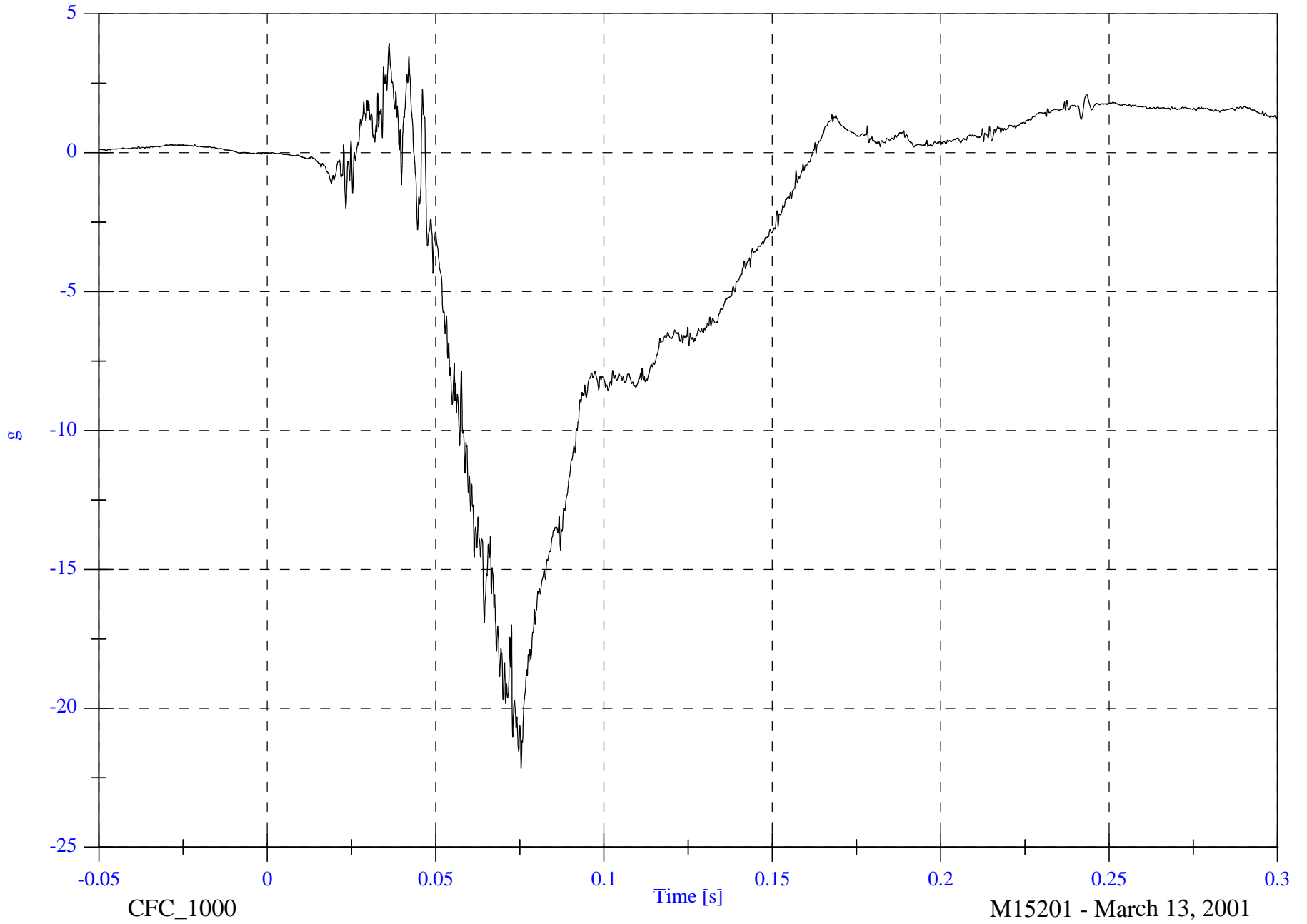


NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 3.9 [g] at 0.036 [s]

Min: -22.2 [g] at 0.075 [s]

P2 Pelvic z



B-82

8602-23

CFC_1000

Time [s]

M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 49.8 [g] at 0.059 [s]

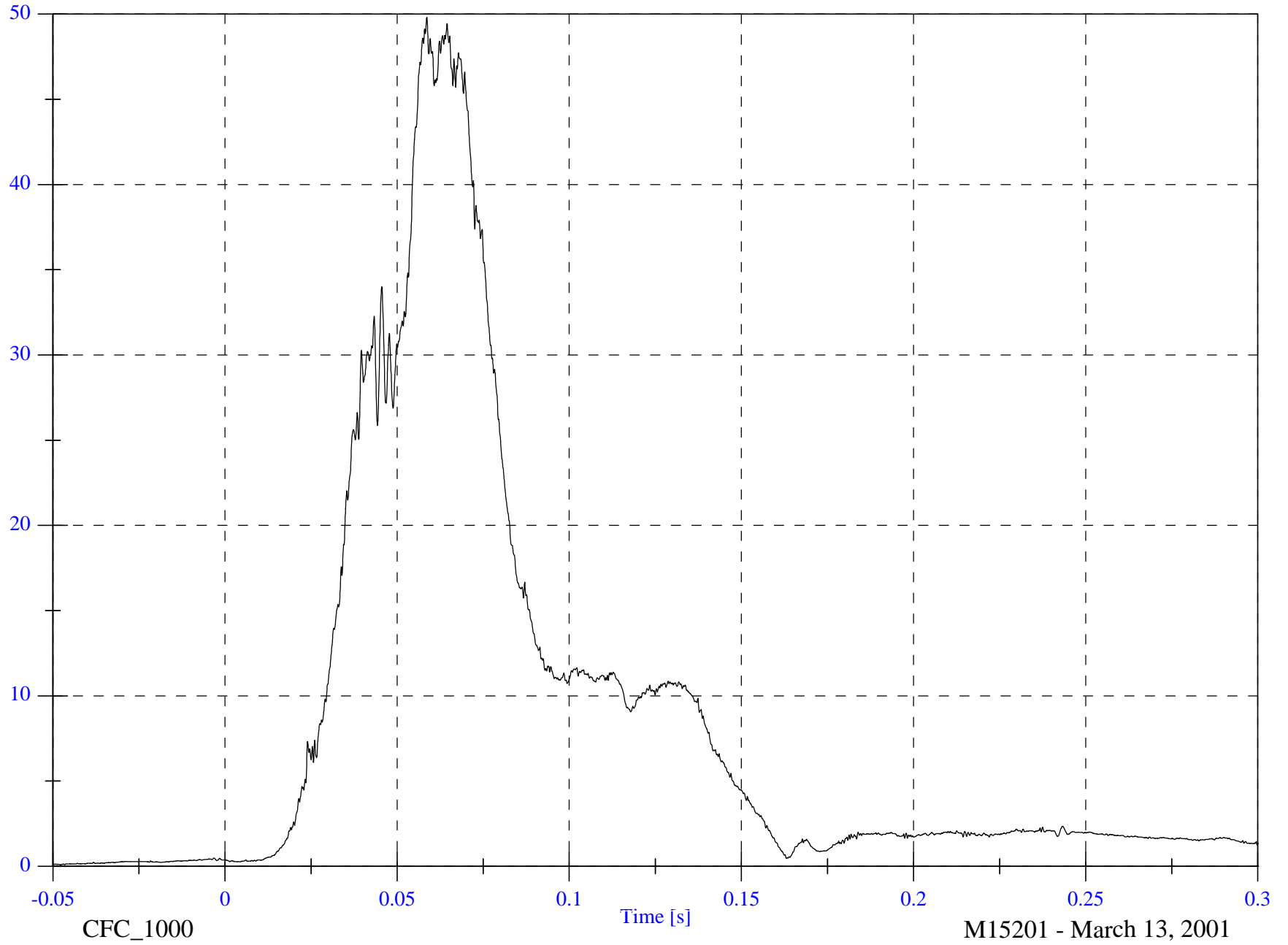
P2 Pelvic Resultant

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

B-83

g

8602-23



CFC_1000

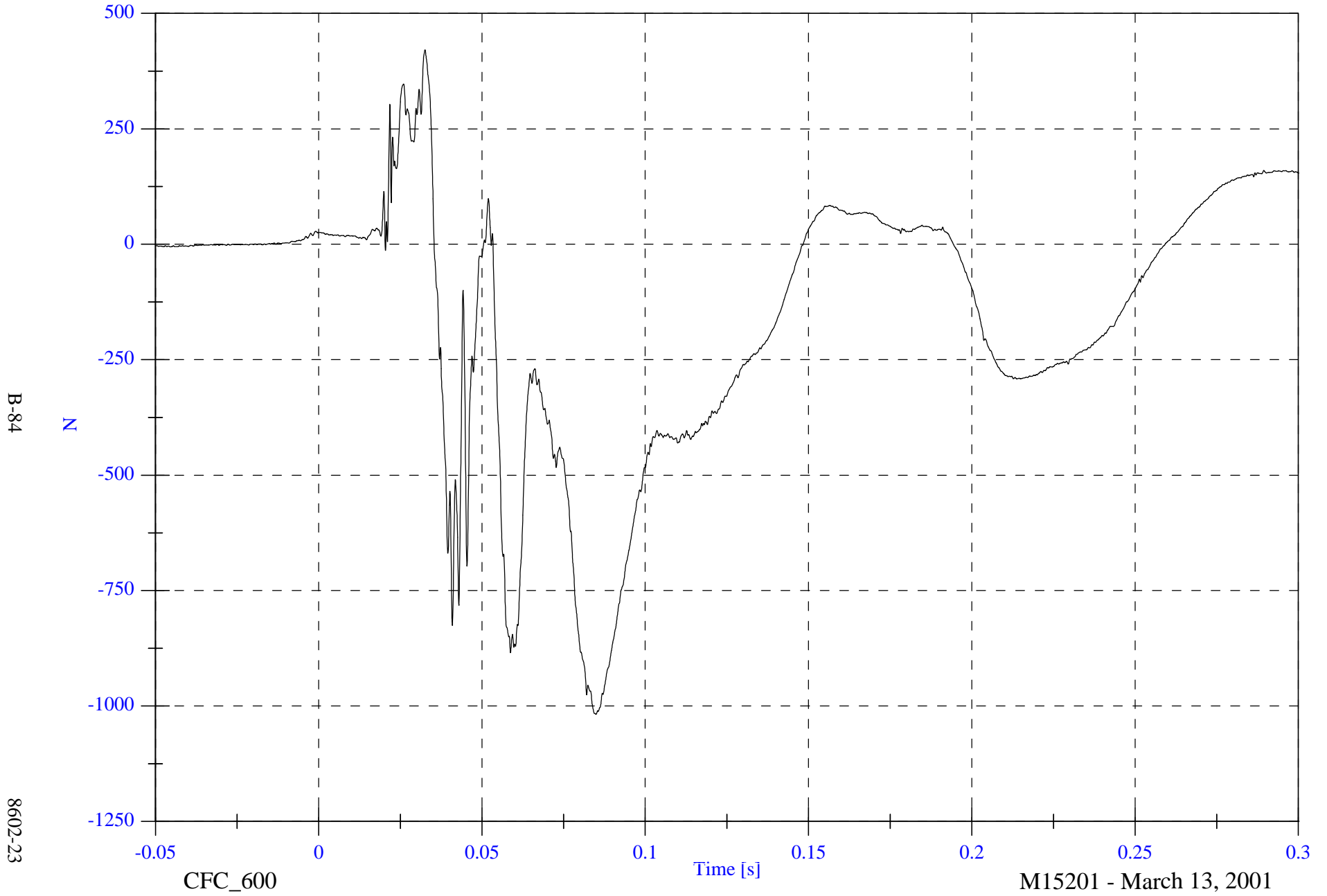
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

P2 Left Femur

Max: 420.9 [N] at 0.033 [s]

Min: -1018.1 [N] at 0.085 [s]



NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 1184.7 [N] at 0.047 [s]

P2 Right Femur

Min: -770.3 [N] at 0.091 [s]



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CFC_600

Time [s]

M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

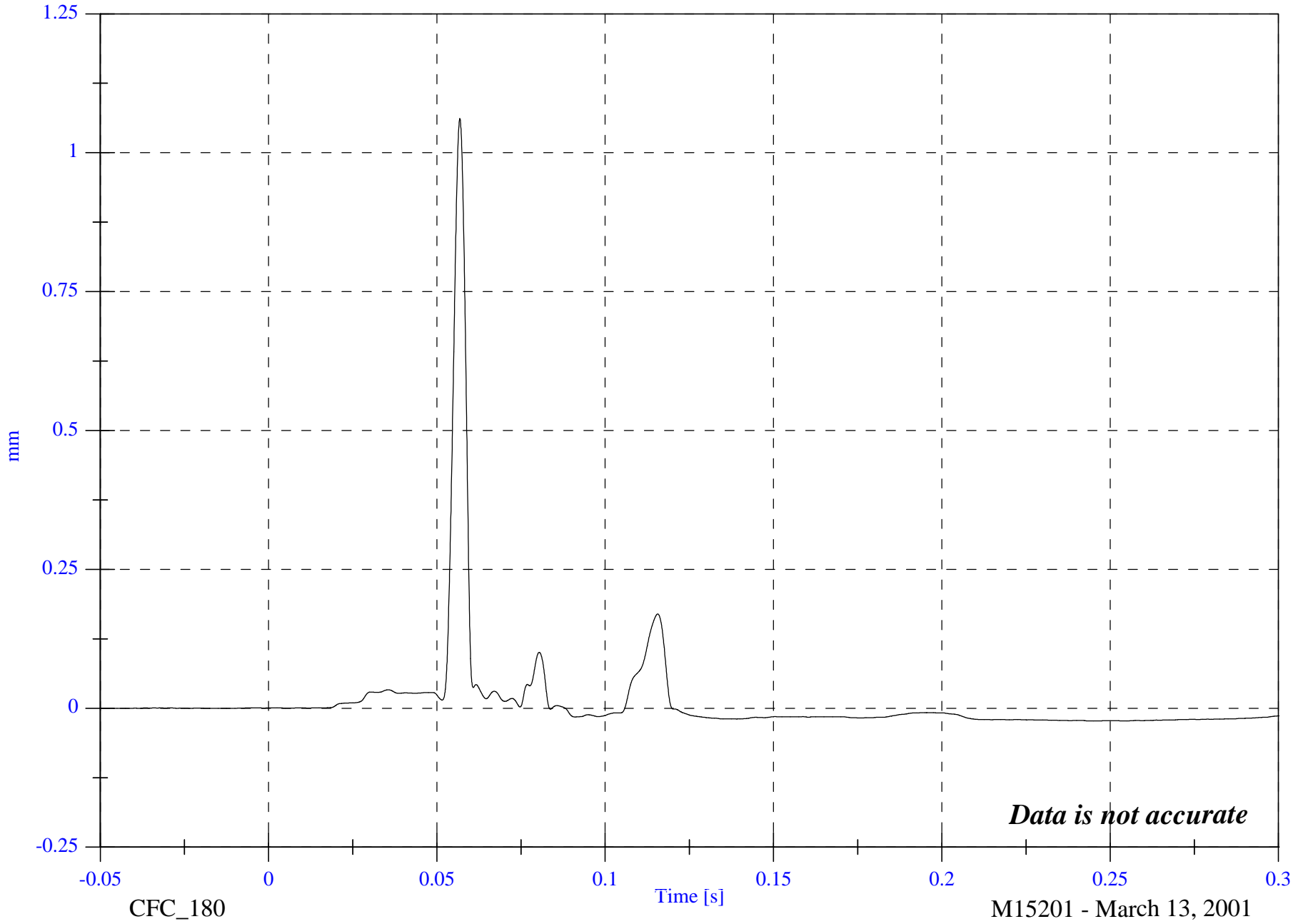
P2 Left Knee Shear

Max: 1.1 [mm] at 0.057 [s]

Min: -0.0 [mm] at 0.245 [s]

B-86

8602-23



Data is not accurate

CFC_180

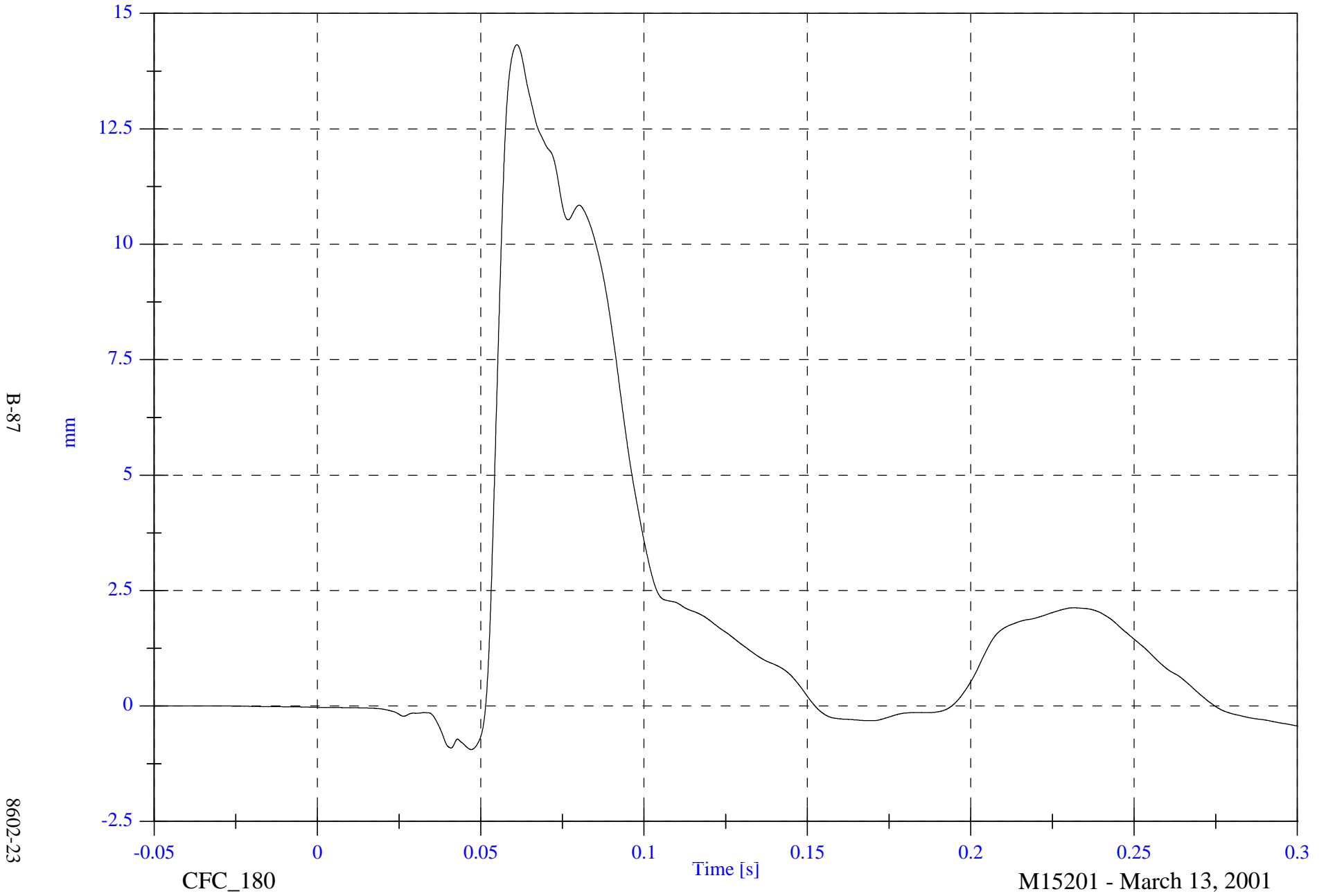
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 14.3 [mm] at 0.061 [s]

P2 Right Knee Shear

Min: -0.9 [mm] at 0.047 [s]



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8602-23

CFC_180

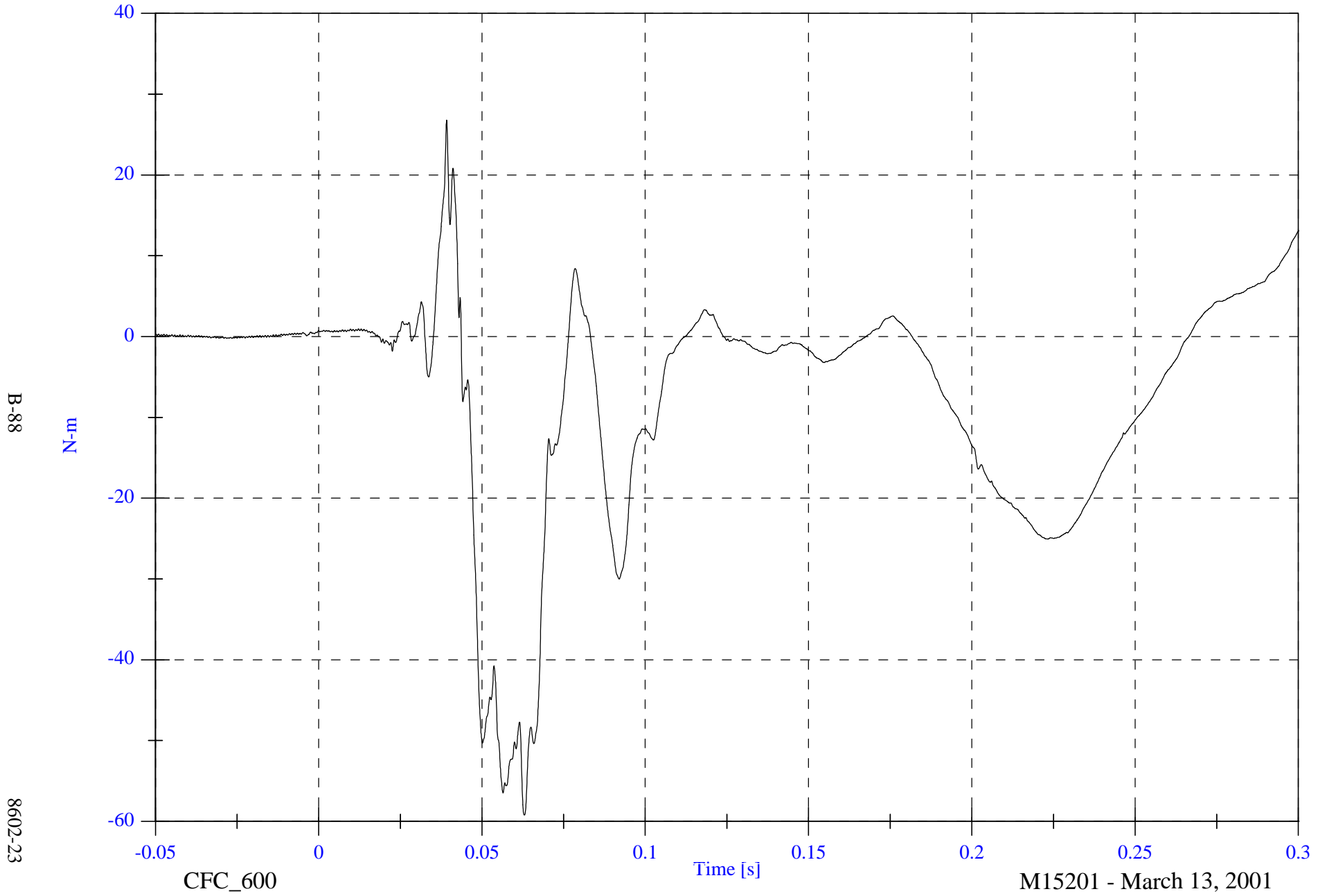
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 26.8 [N-m] at 0.039 [s]

P2 Left Upper Tibia Mx

Min: -59.2 [N-m] at 0.063 [s]



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8602-23

CFC_600

Time [s]

M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

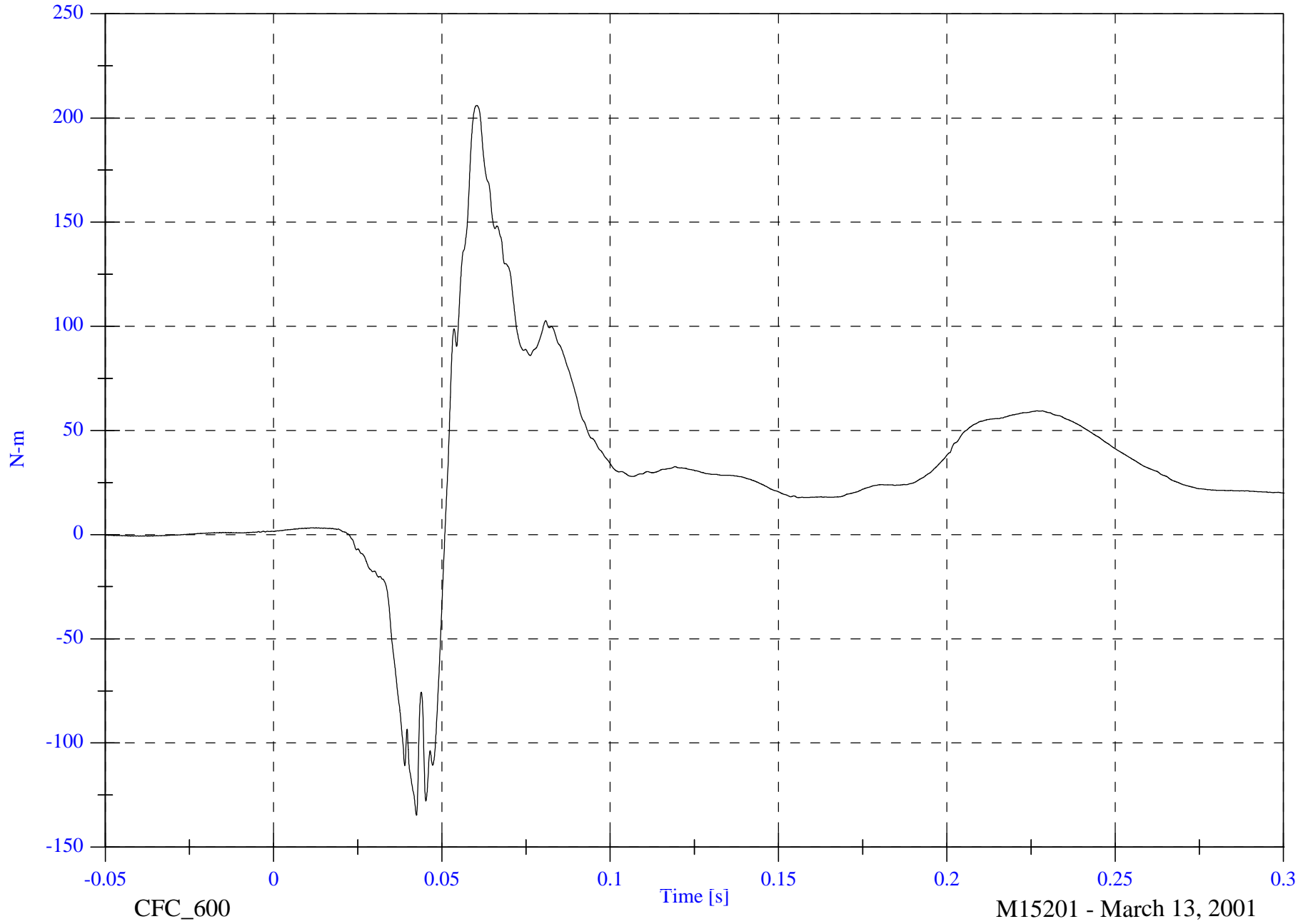
Max: 206.0 [N-m] at 0.060 [s]

P2 Left Upper Tibia My

Min: -134.7 [N-m] at 0.042 [s]

B-89

8602-23



CFC_600

Time [s]

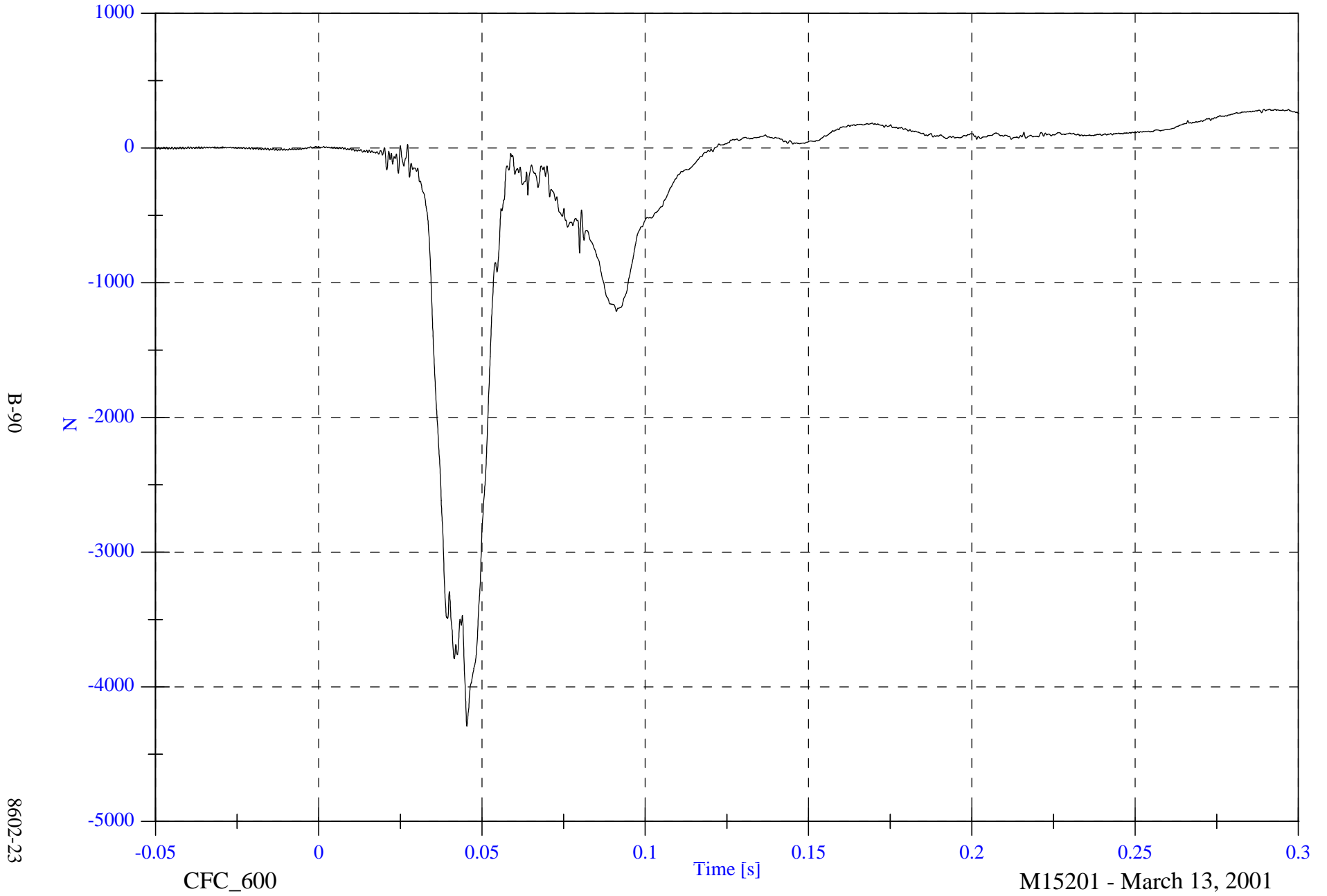
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 289.4 [N] at 0.291 [s]

P2 Left Lower Tibia Fz

Min: -4293.5 [N] at 0.045 [s]



B-90

8602-23

CFC_600

Time [s]

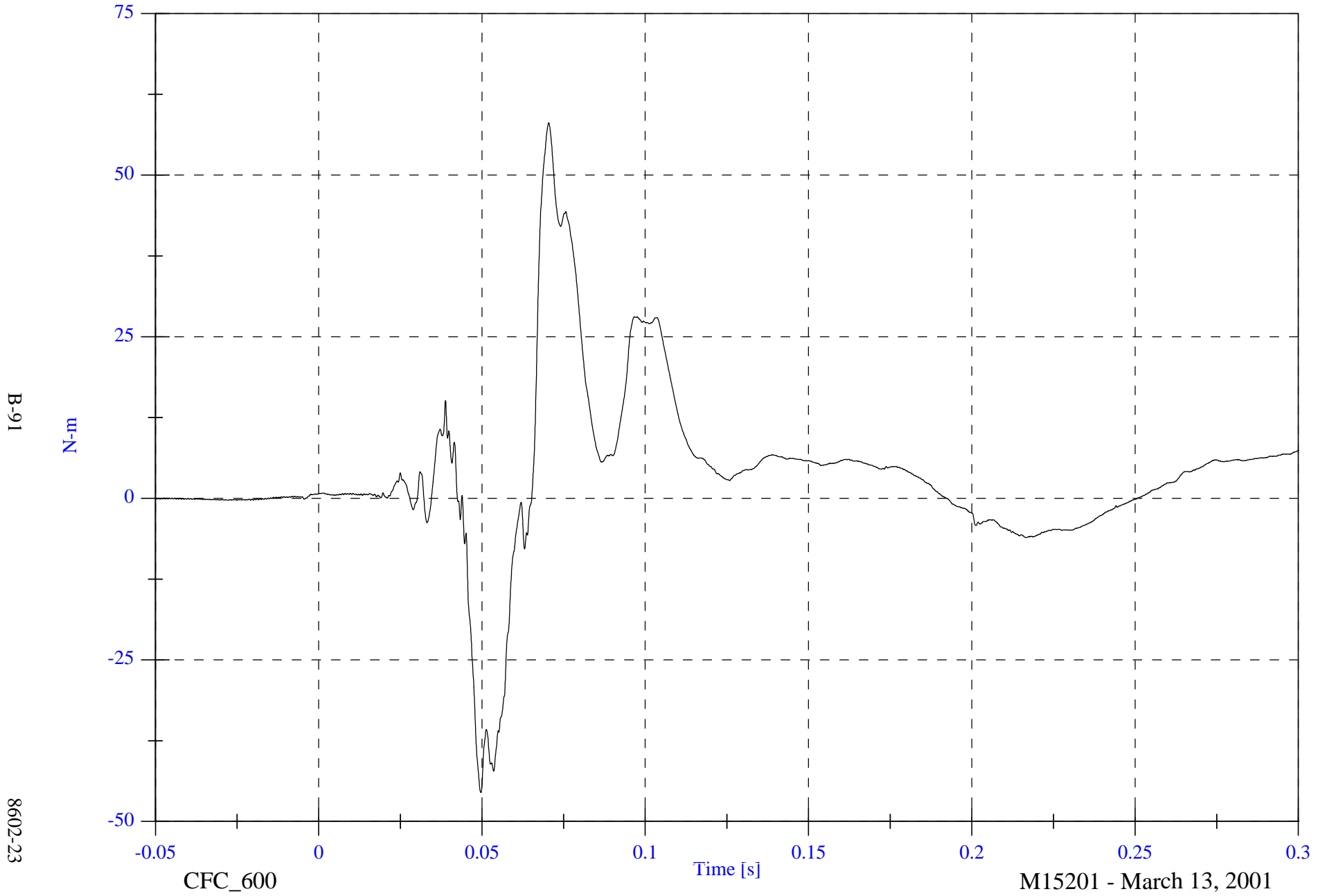
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 58.1 [N-m] at 0.070 [s]

P2 Left Lower Tibia Mx

Min: -45.5 [N-m] at 0.050 [s]



B-91

8602-23

CFC_600

Time [s]

M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

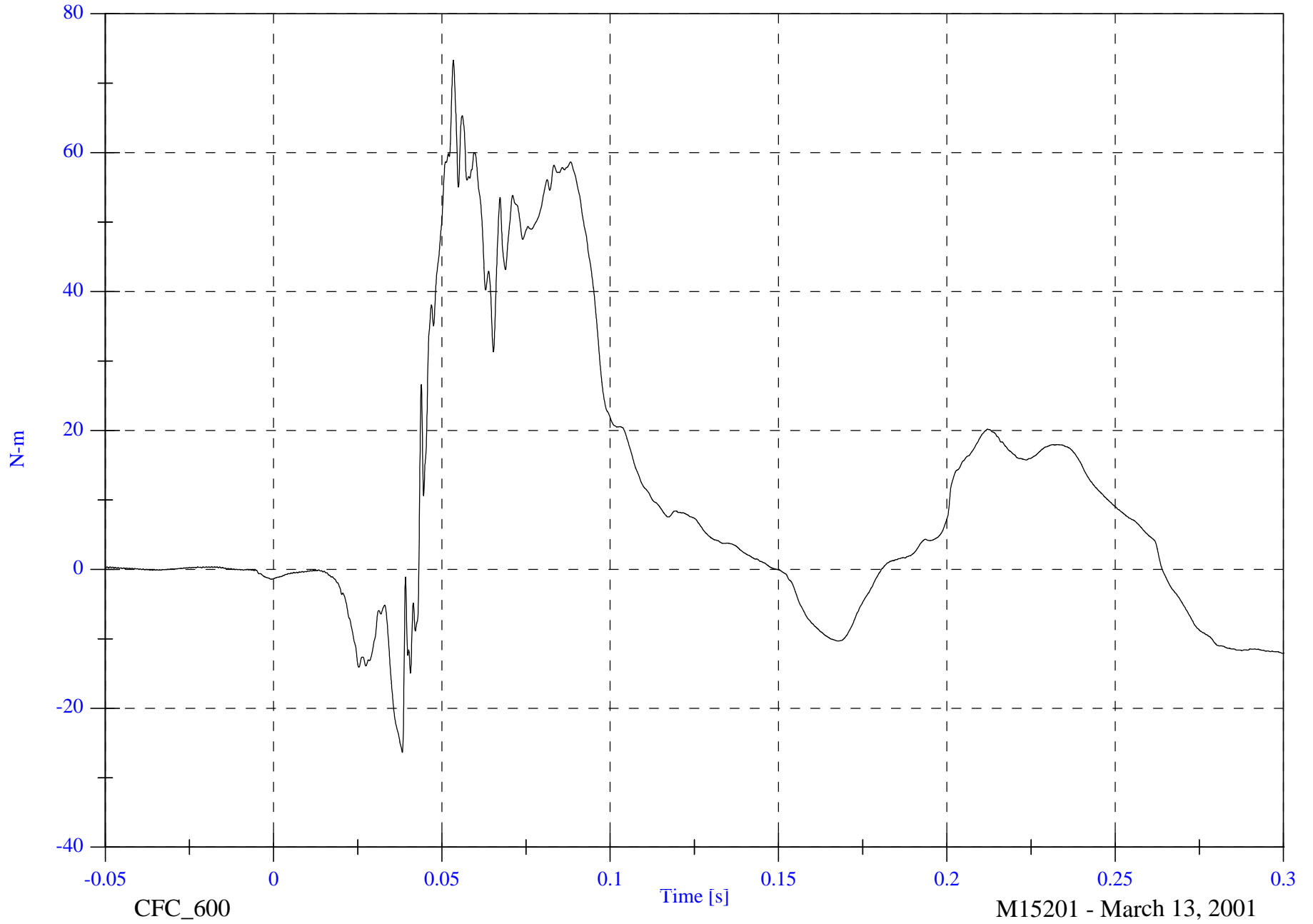
Max: 73.3 [N-m] at 0.053 [s]

P2 Left Lower Tibia My

Min: -26.4 [N-m] at 0.038 [s]

B-92

8602-23



CFC_600

Time [s]

M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

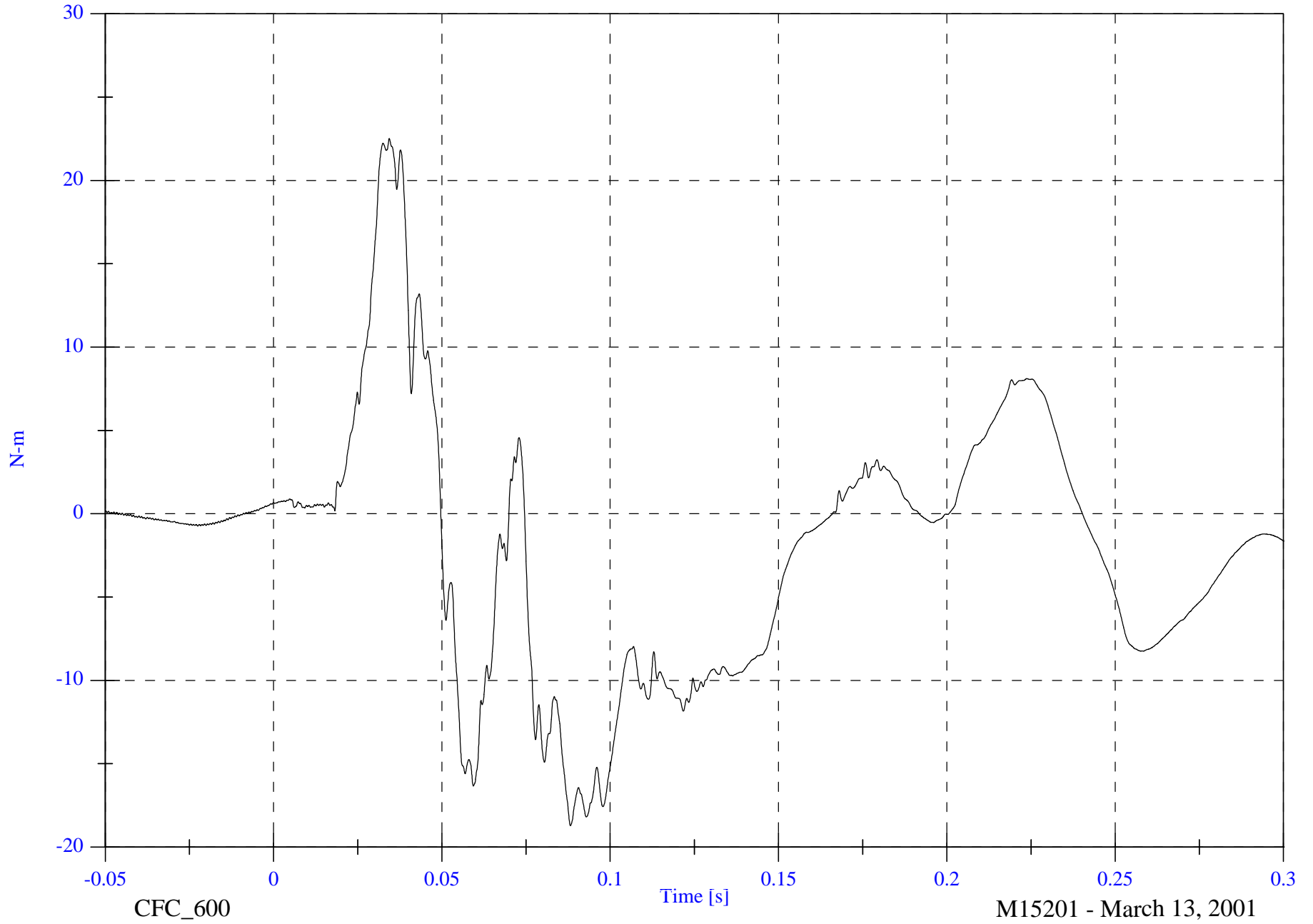
Max: 22.5 [N-m] at 0.034 [s]

P2 Right Upper Tibia Mx

Min: -18.7 [N-m] at 0.088 [s]

B-93

8602-23

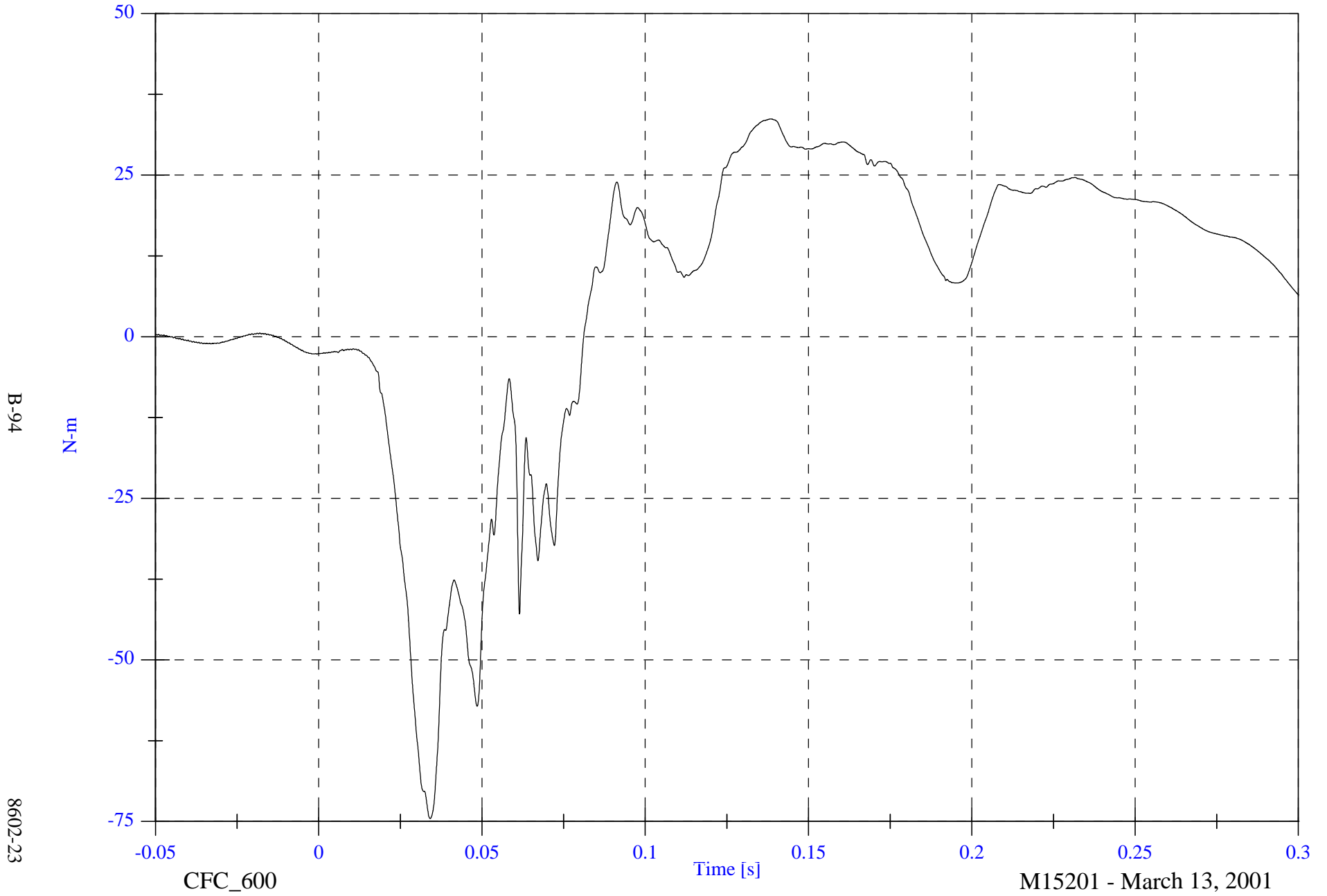


NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 33.7 [N-m] at 0.139 [s]

P2 Right Upper Tibia My

Min: -74.5 [N-m] at 0.034 [s]

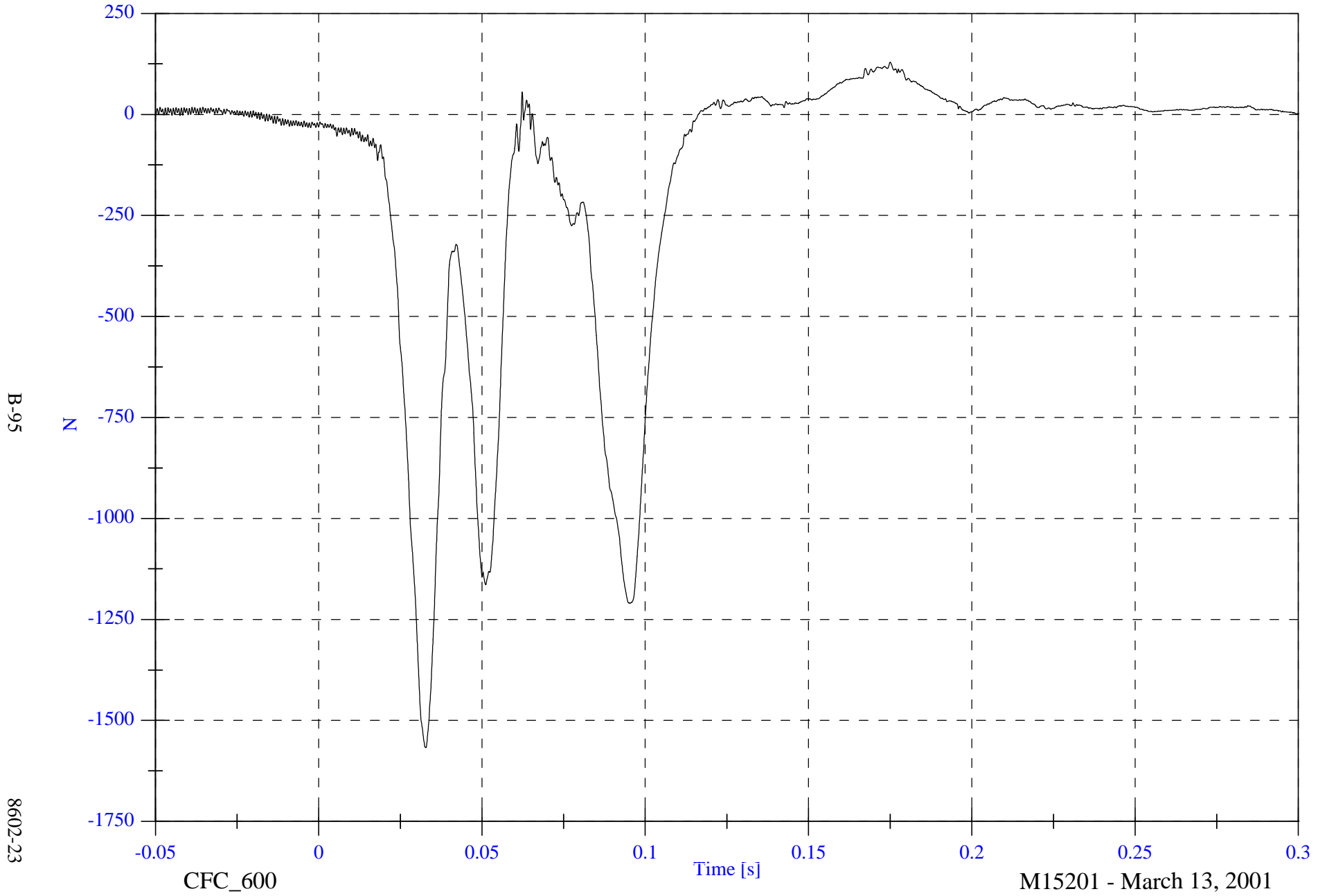


NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 129.2 [N] at 0.175 [s]

P2 Right Lower Tibia Fz

Min: -1567.6 [N] at 0.033 [s]



B-95

8602-23

CFC_600

Time [s]

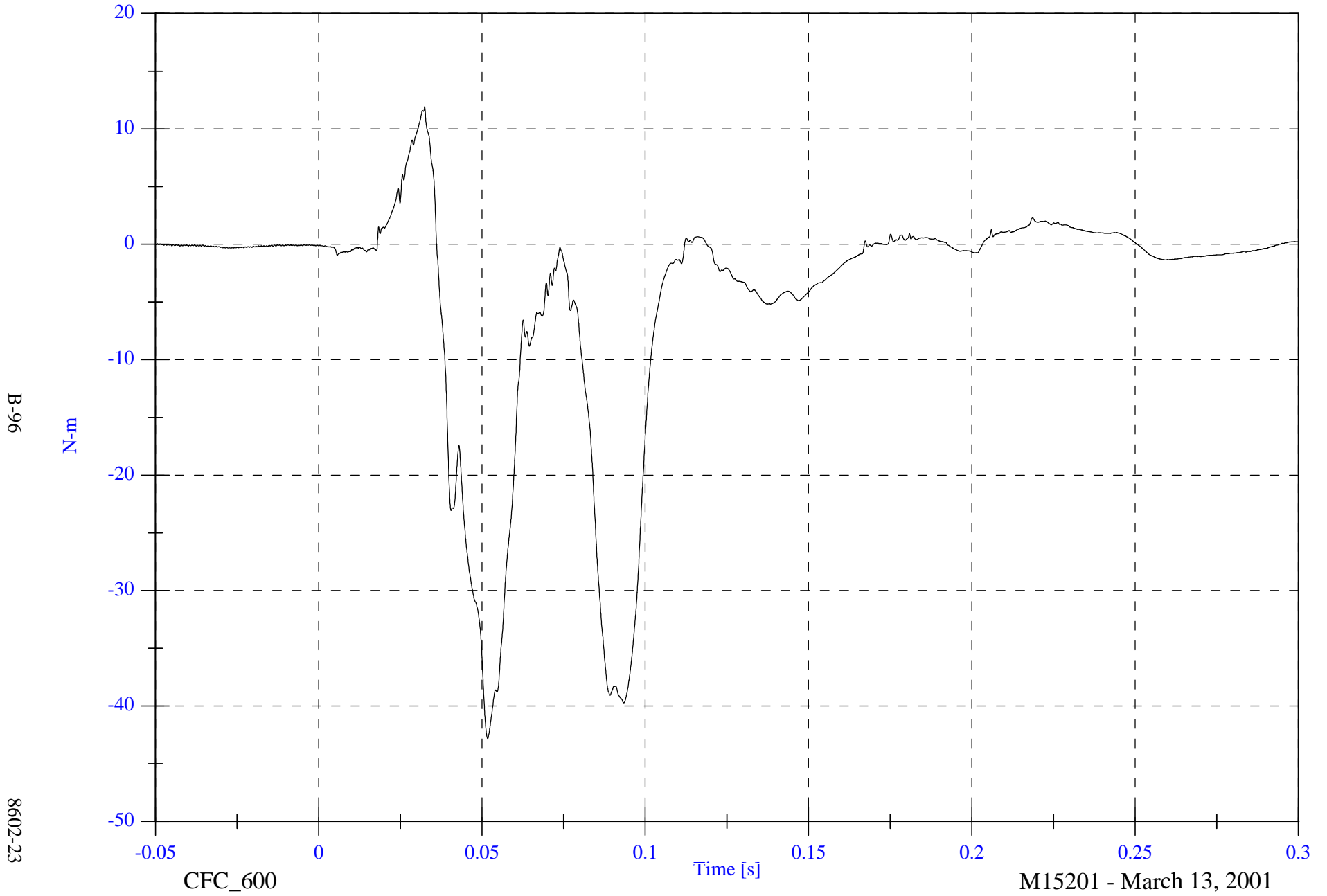
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 11.9 [N-m] at 0.032 [s]

P2 Right Lower Tibia Mx

Min: -42.8 [N-m] at 0.052 [s]



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8602-23

CFC_600

Time [s]

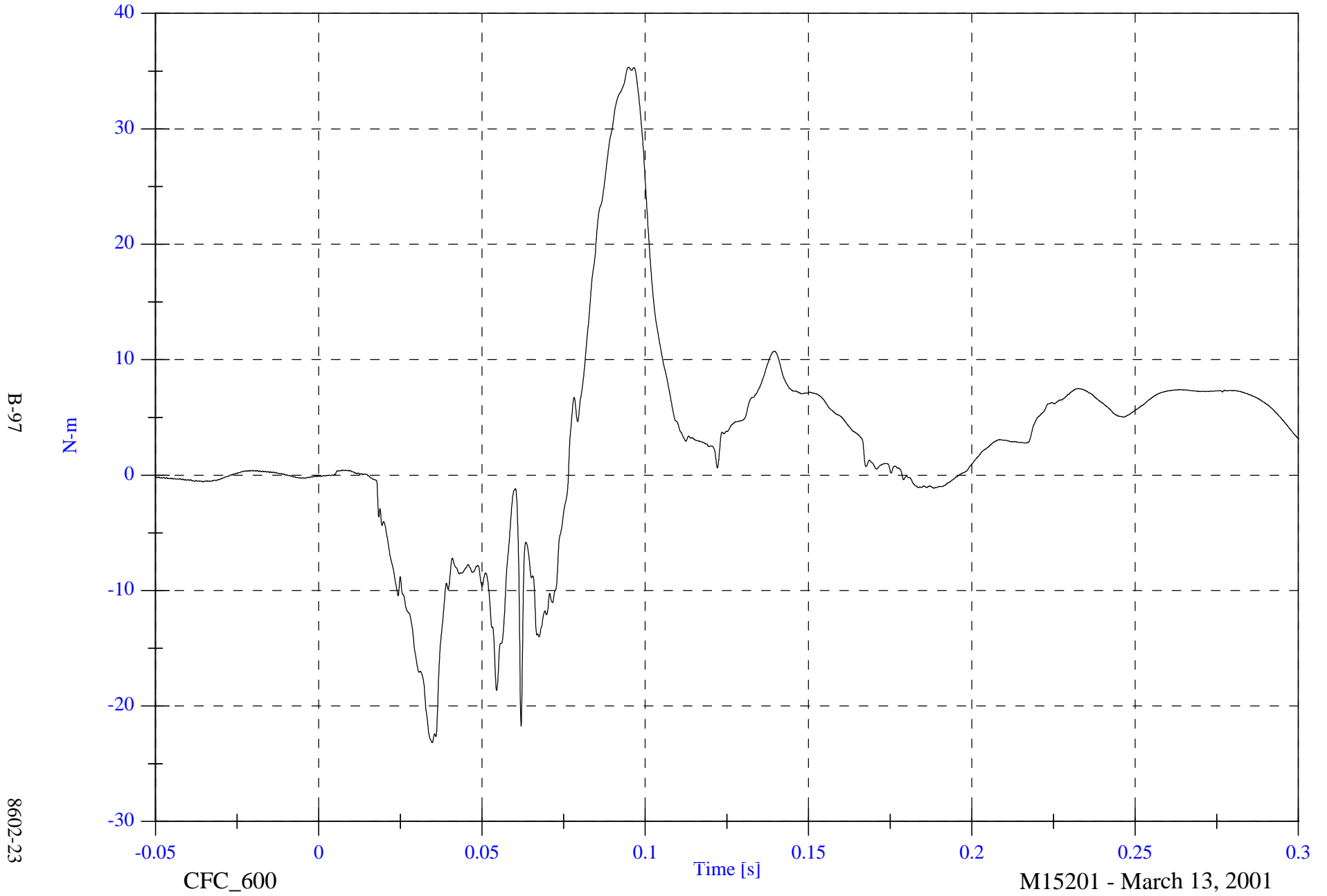
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 35.3 [N-m] at 0.095 [s]

P2 Right Lower Tibia My

Min: -23.2 [N-m] at 0.035 [s]

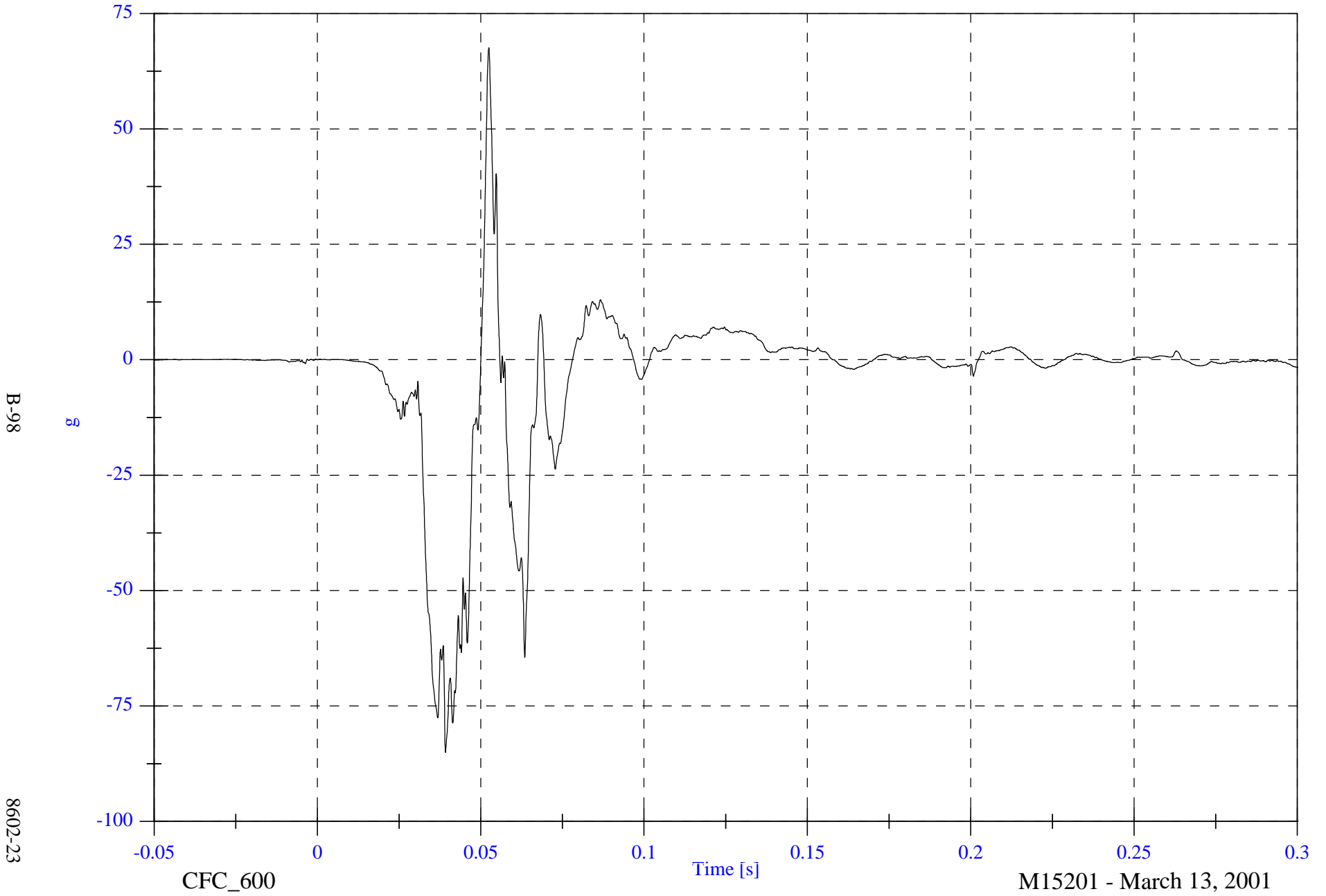


NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 67.6 [g] at 0.052 [s]

Min: -85.1 [g] at 0.039 [s]

P2 Left Foot Aft x

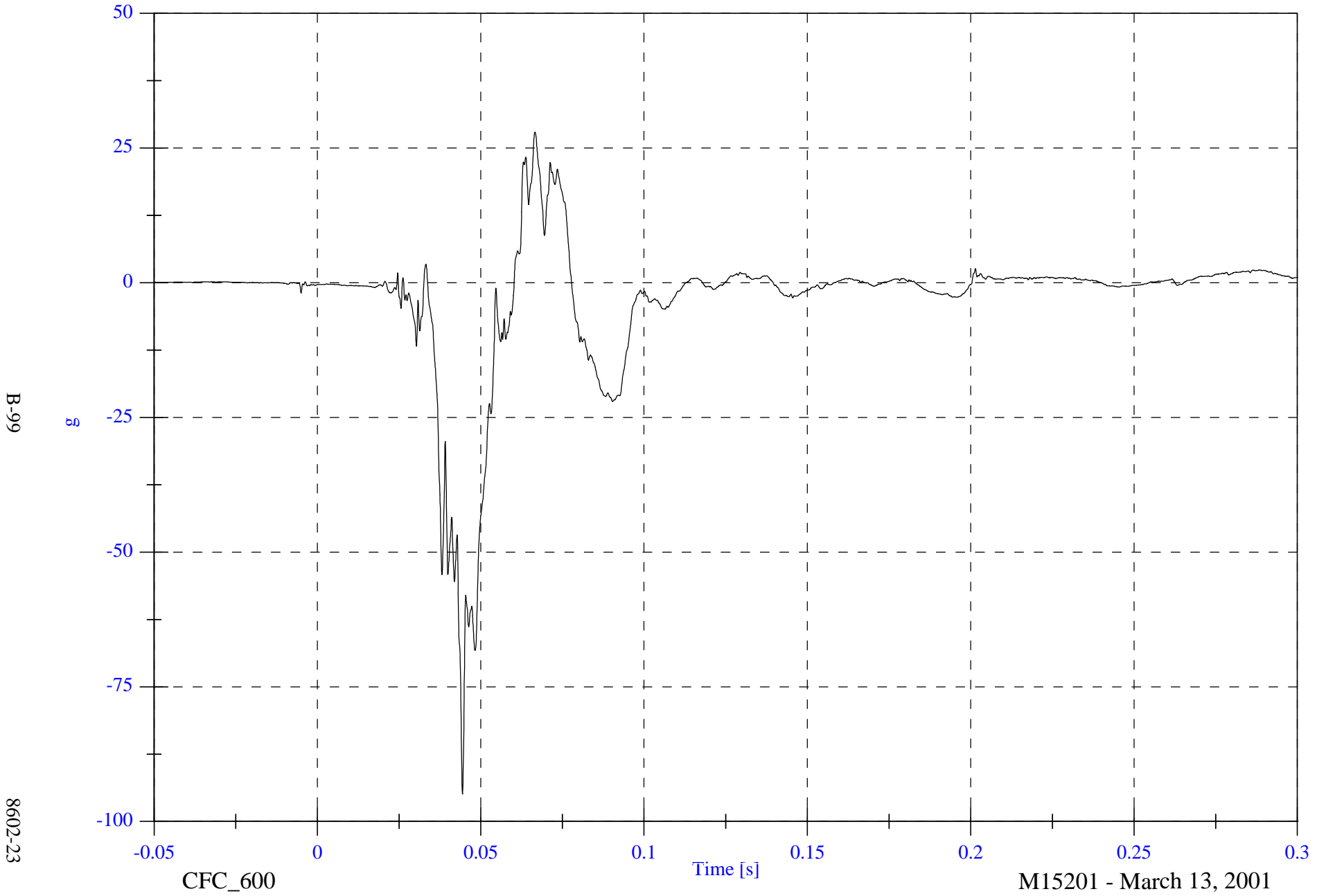


NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 28.0 [g] at 0.067 [s]

Min: -94.9 [g] at 0.044 [s]

P2 Left Foot Aft z



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8602-23

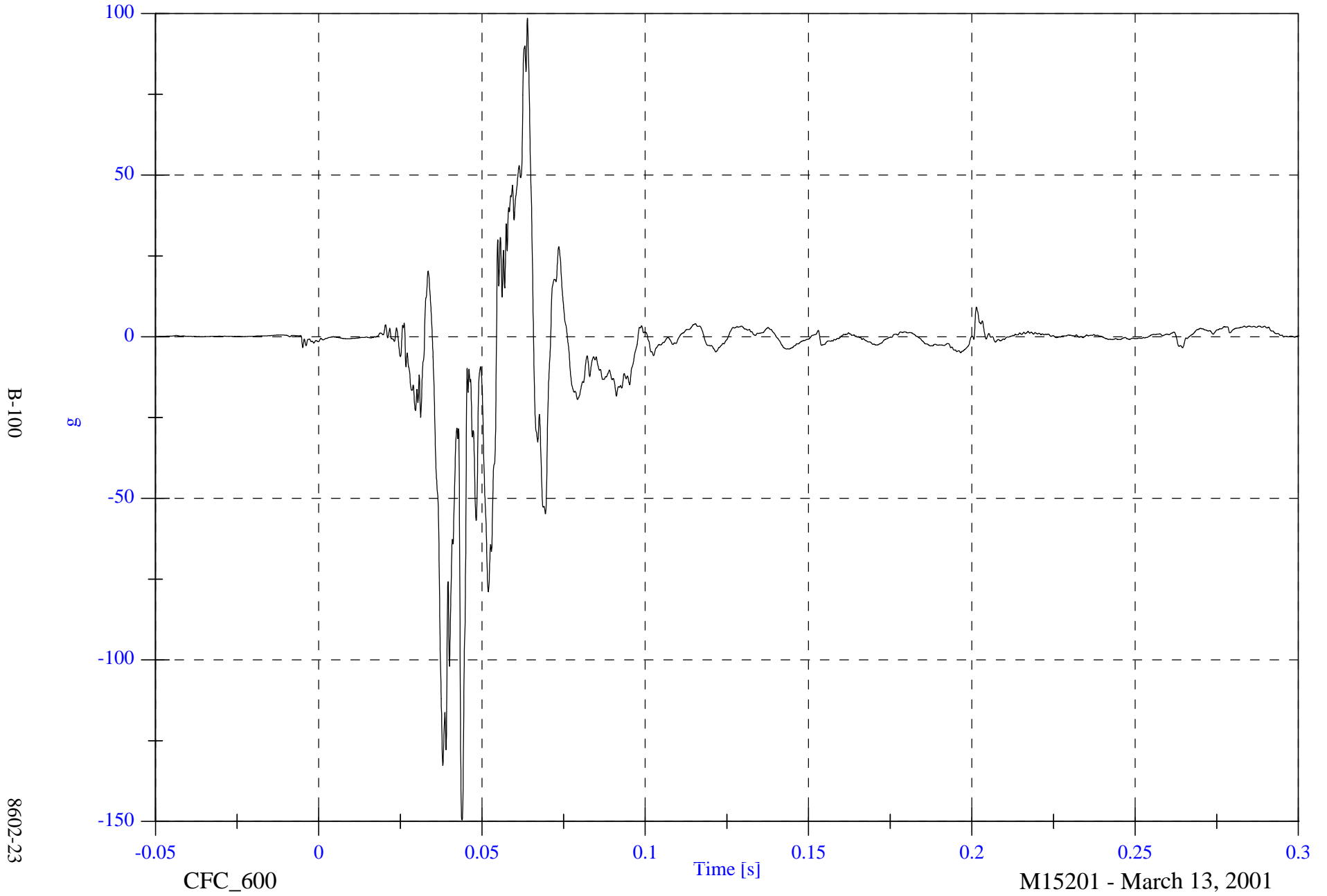
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 98.5 [g] at 0.064 [s]

P2 Left Foot Fore z

Min: -149.6 [g] at 0.044 [s]

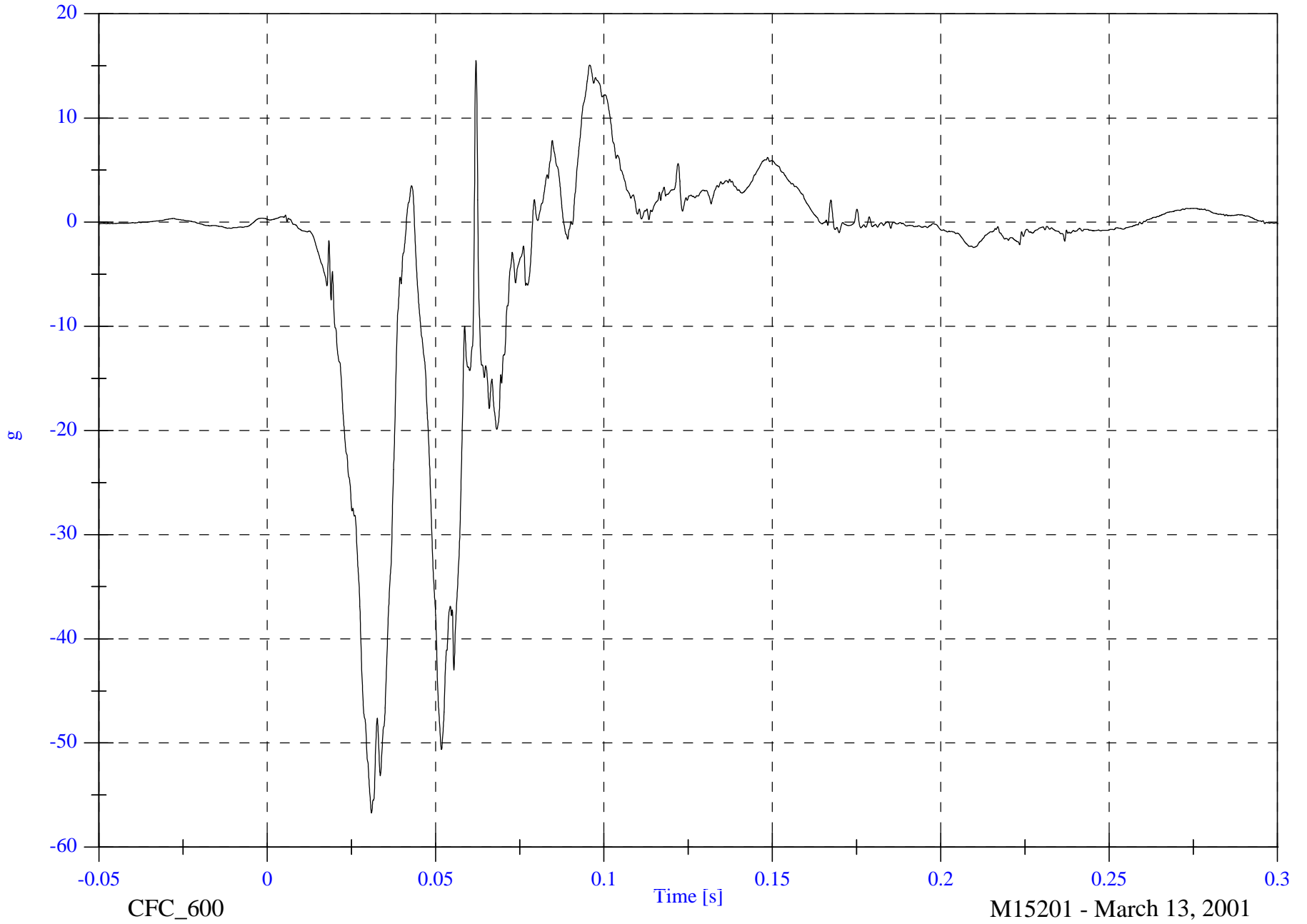


NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 15.5 [g] at 0.062 [s]

Min: -56.7 [g] at 0.031 [s]

P2 Right Foot Aft x



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CFC_600

Time [s]

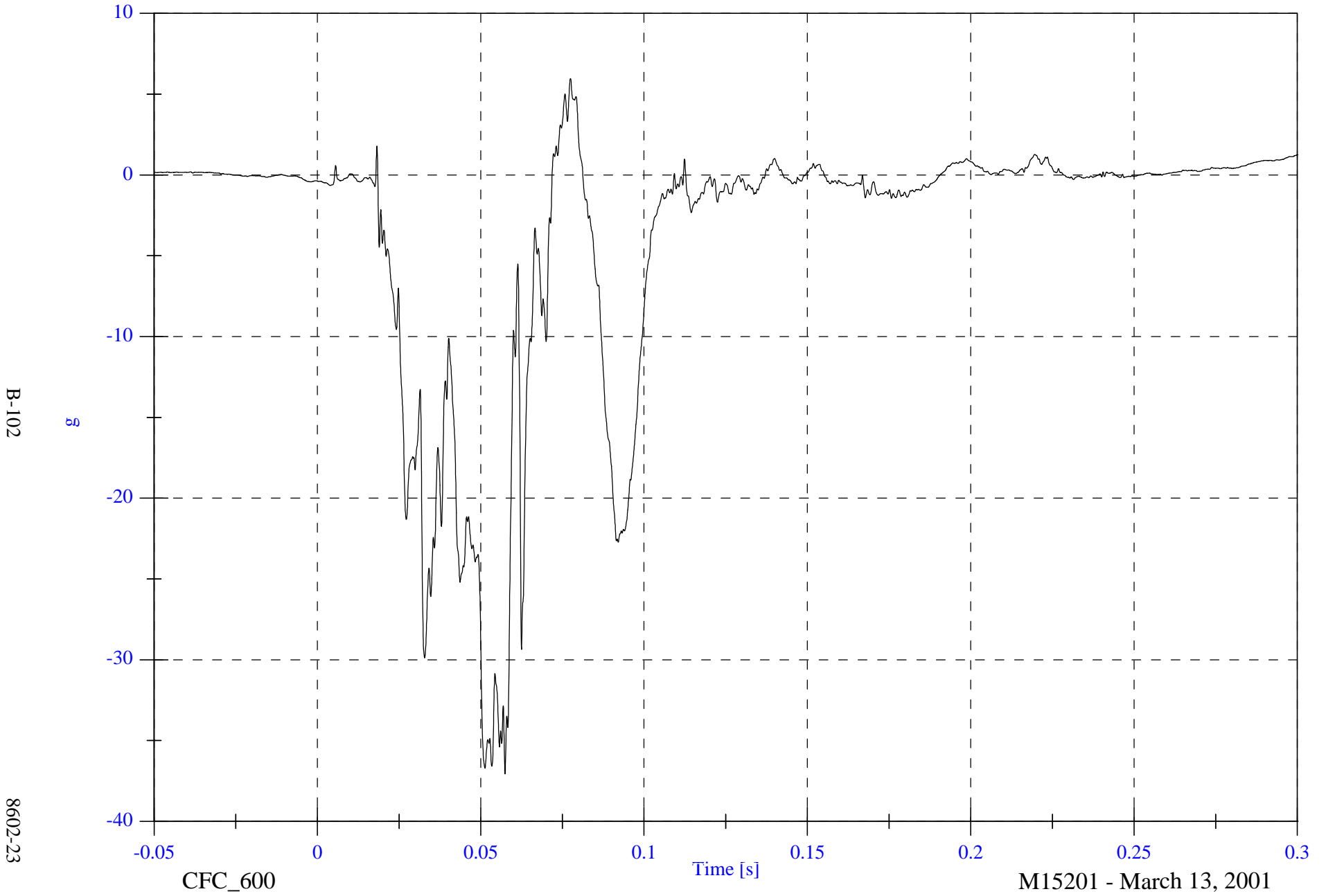
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 6.0 [g] at 0.077 [s]

Min: -37.1 [g] at 0.057 [s]

P2 Right Foot Aft z



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CFC_600

Time [s]

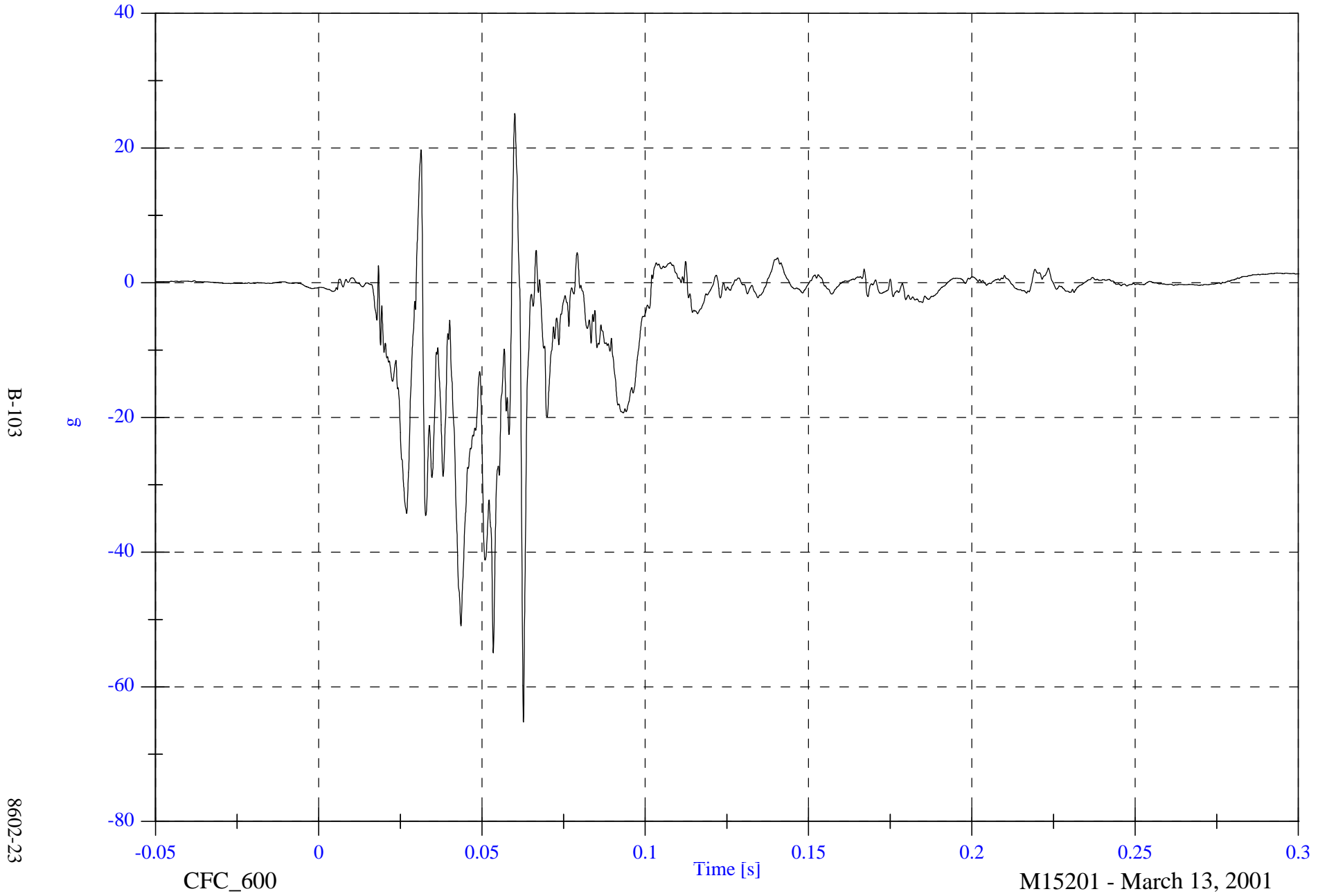
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 25.1 [g] at 0.060 [s]

Min: -65.3 [g] at 0.063 [s]

P2 Right Foot Fore z

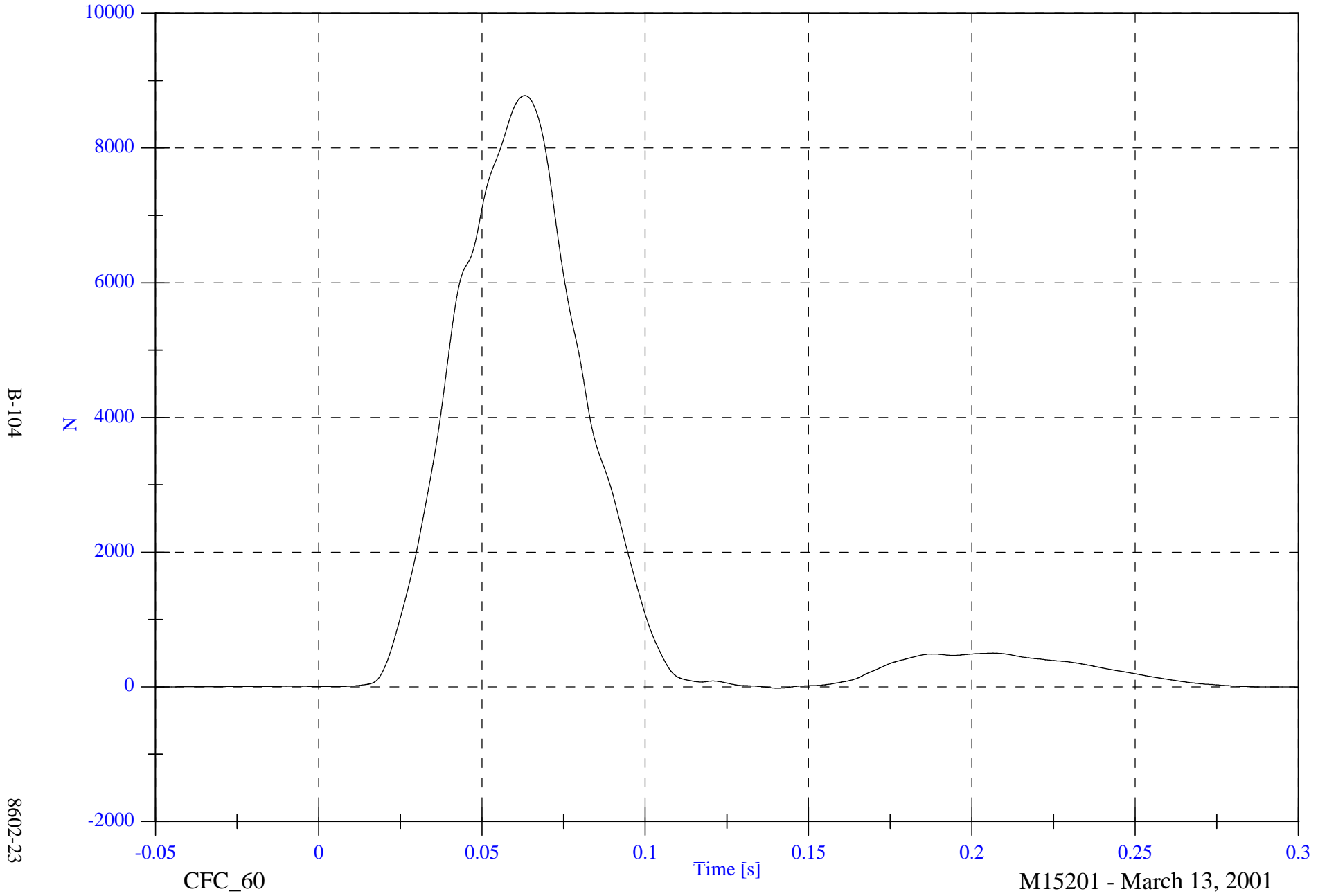


NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 8780.3 [N] at 0.063 [s]

P2 Lap Belt Force

Min: -21.4 [N] at 0.140 [s]



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CFC_60

Time [s]

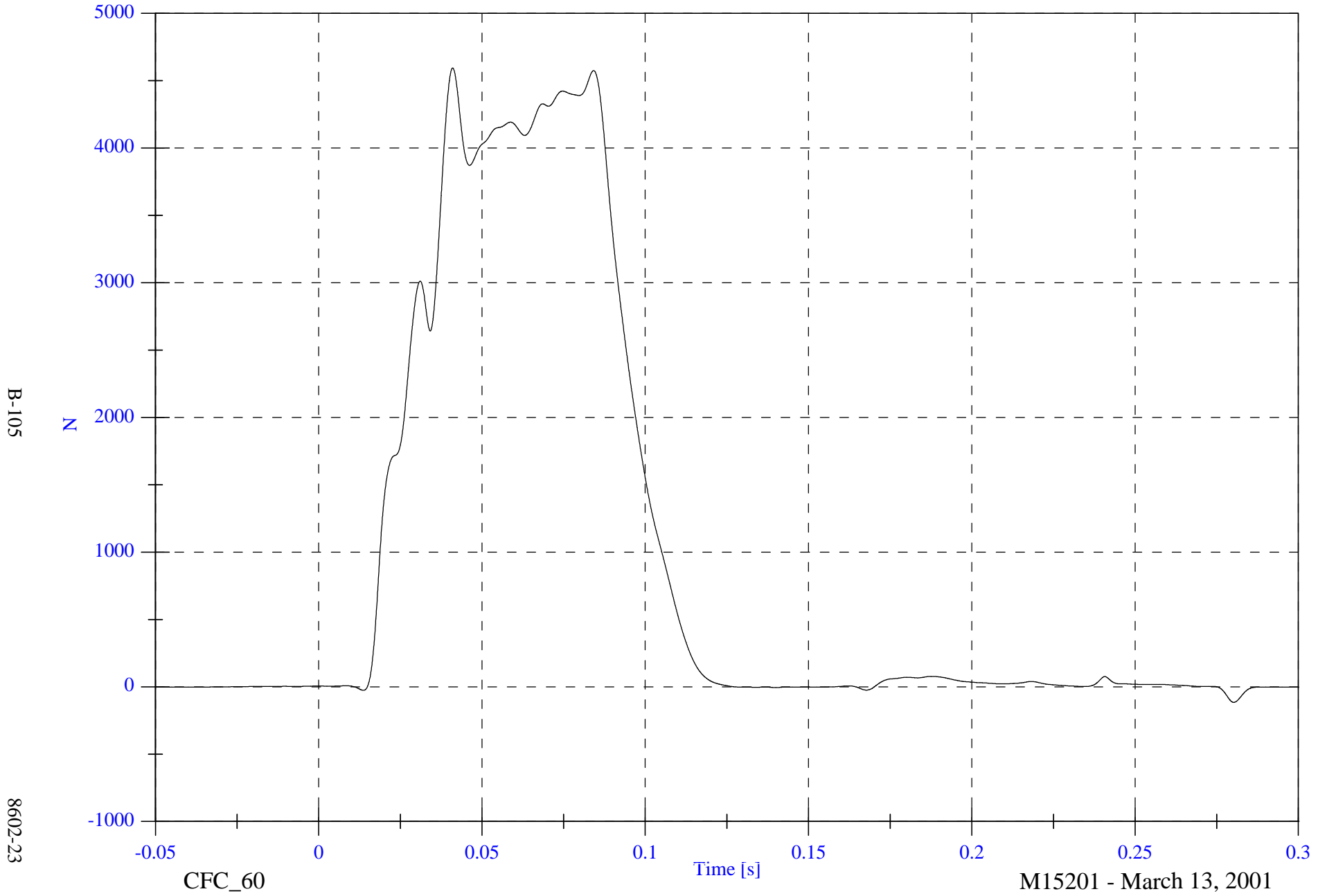
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 4594.9 [N] at 0.041 [s]

P2 Shoulder Belt Force

Min: -115.6 [N] at 0.280 [s]

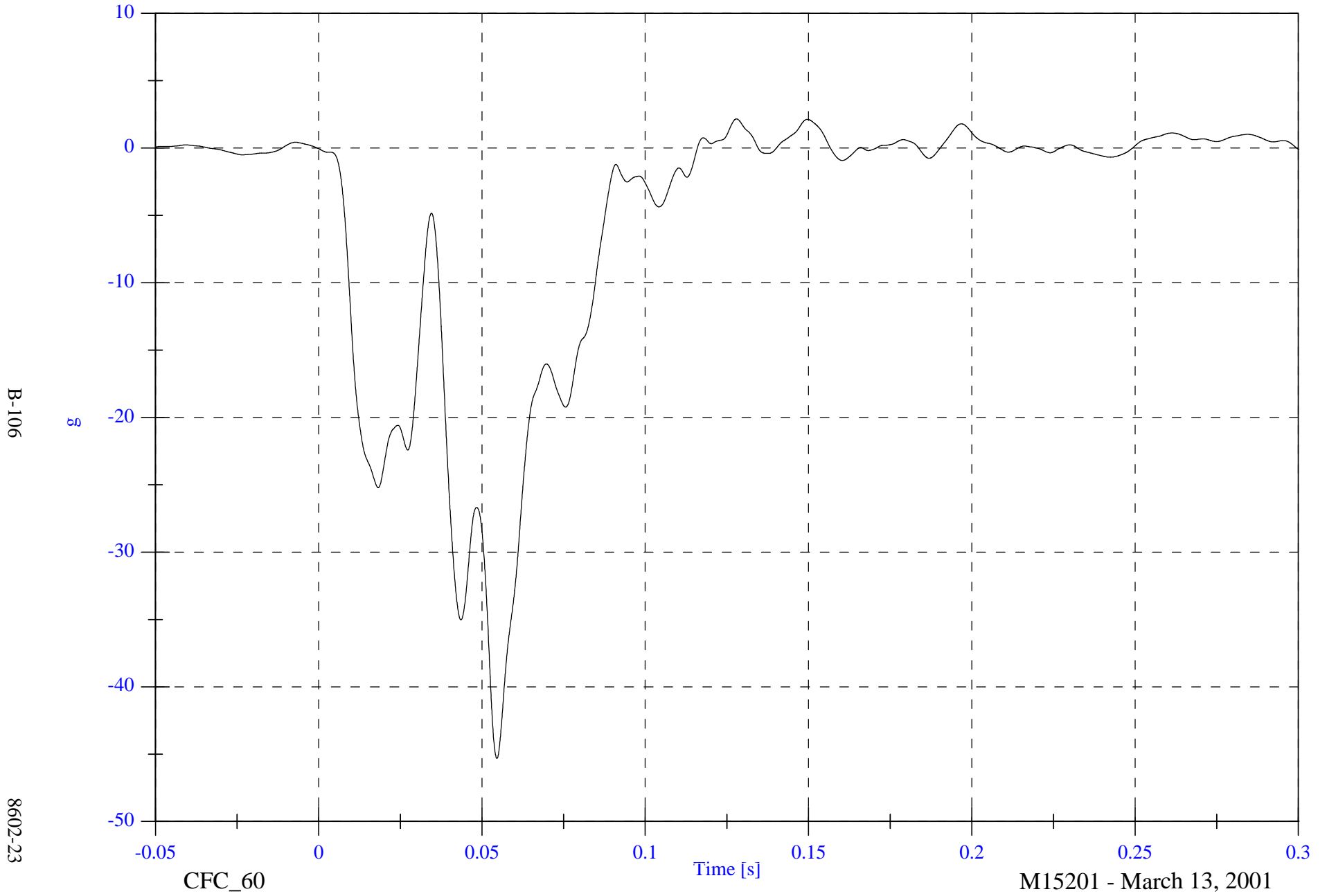


NCAP 2001 Test #23 - 2001 Nissan Frontier

Left Rear #1x

Max: 2.2 [g] at 0.128 [s]

Min: -45.3 [g] at 0.055 [s]



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CFC_60

Time [s]

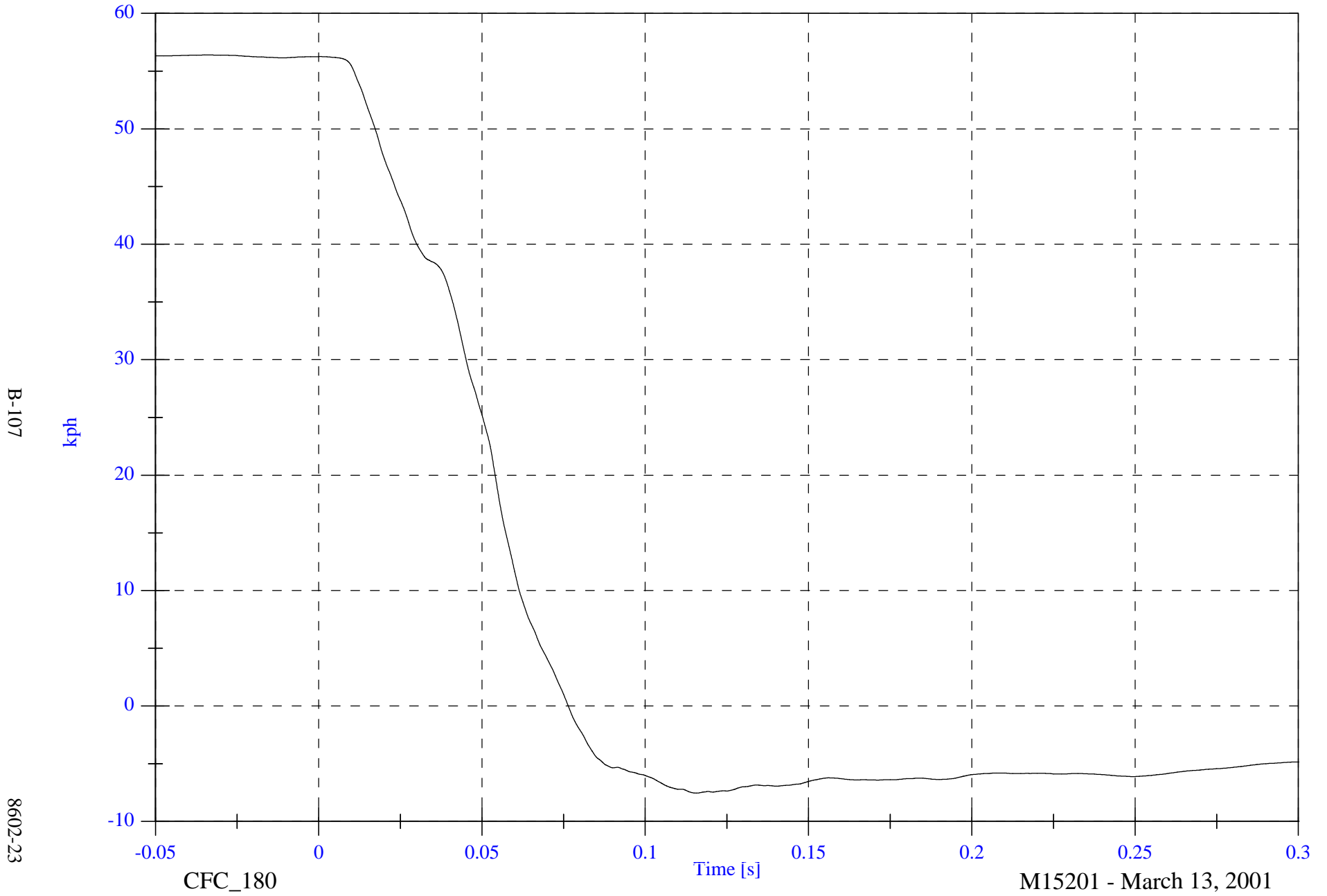
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 56.4 [kph] at -0.035 [s]

Left Rear #1x Velocity

Min: -7.5 [kph] at 0.116 [s]



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CFC_180

Time [s]

M15201 - March 13, 2001

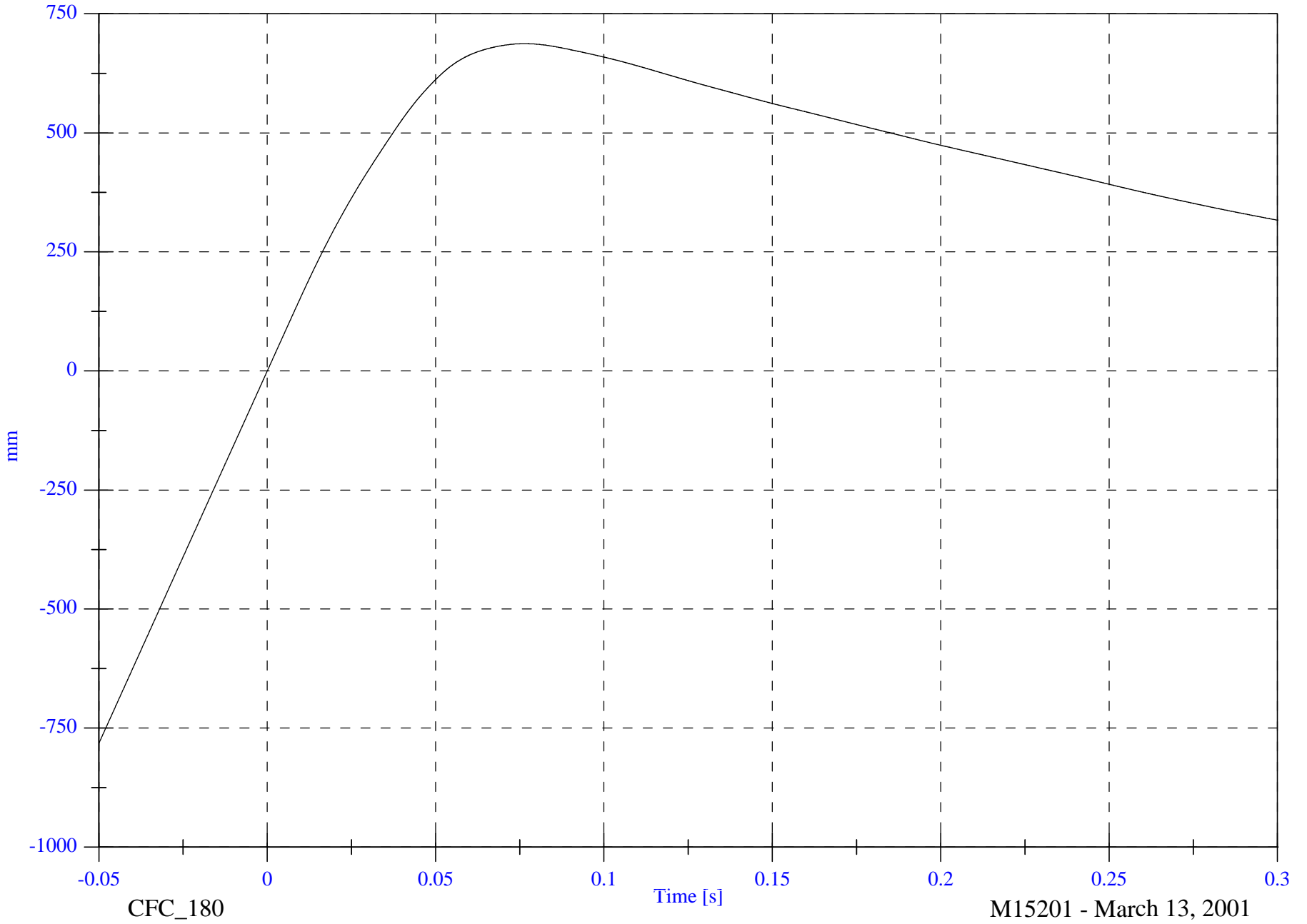
NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 687.4 [mm] at 0.076 [s]

Left Rear #1x Displacement

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

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CFC_180

Time [s]

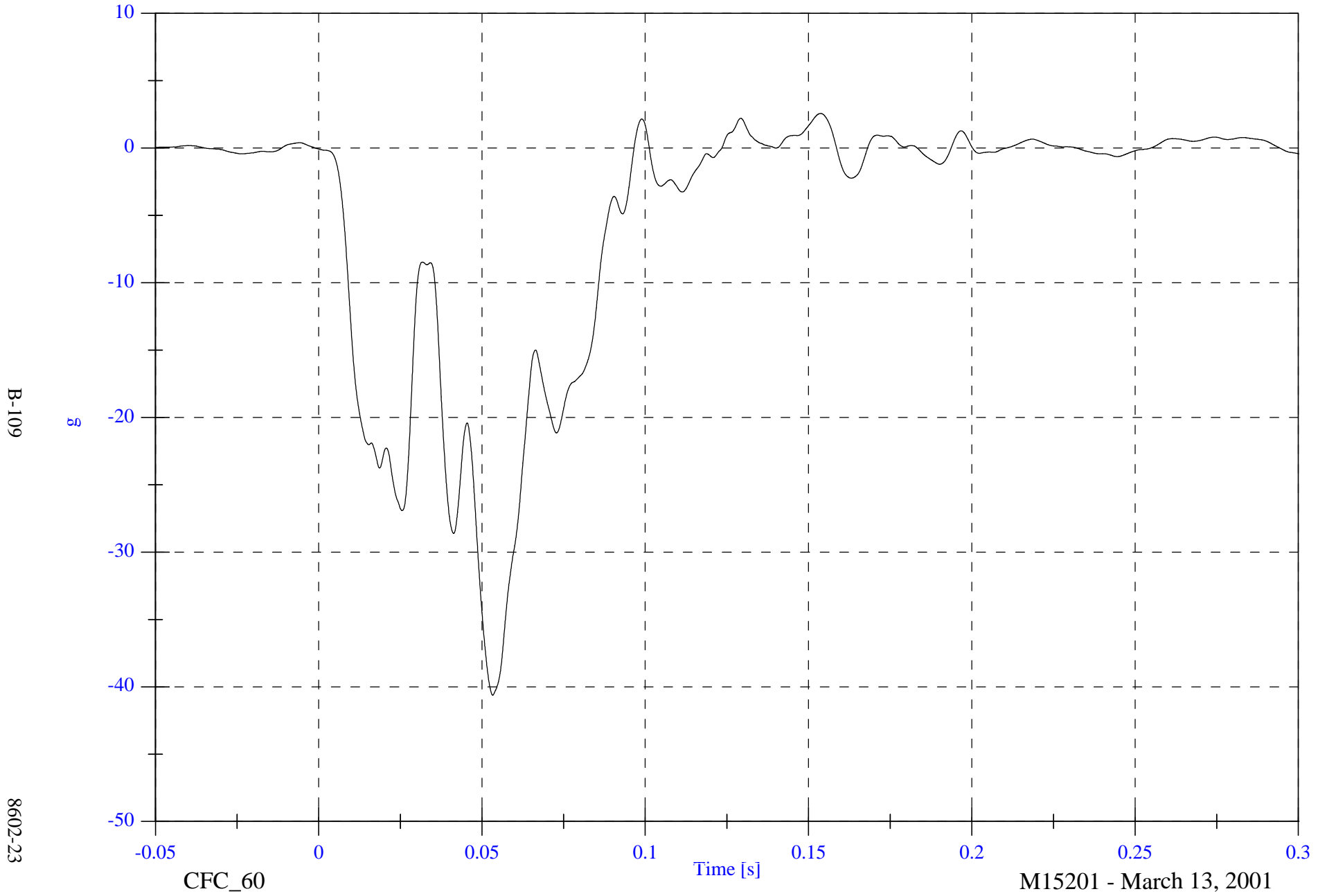
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 2.6 [g] at 0.154 [s]

Right Rear #2x

Min: -40.6 [g] at 0.053 [s]



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CFC_60

Time [s]

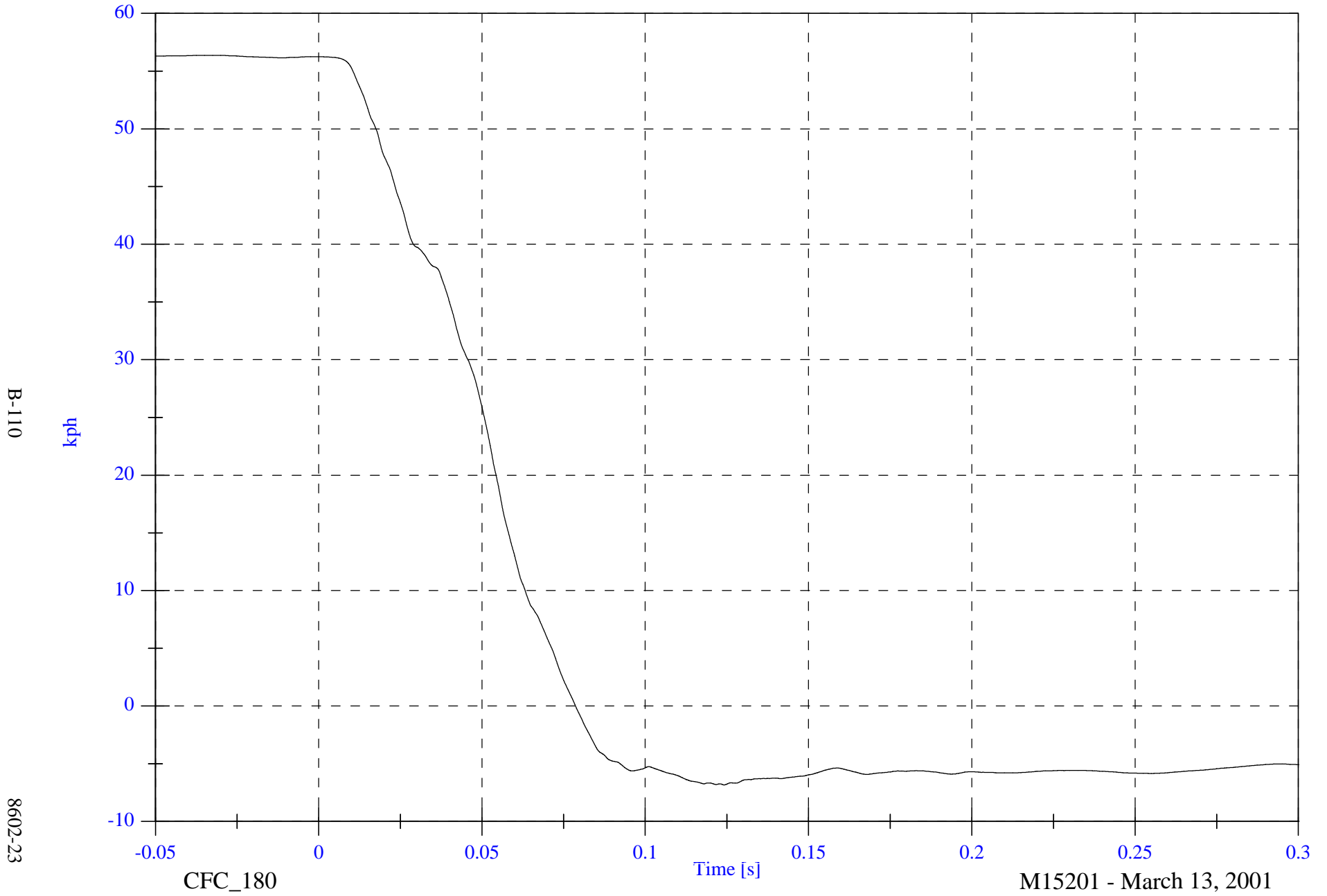
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 56.4 [kph] at -0.036 [s]

Right Rear #2x Velocity

Min: -6.8 [kph] at 0.124 [s]



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CFC_180

Time [s]

M15201 - March 13, 2001

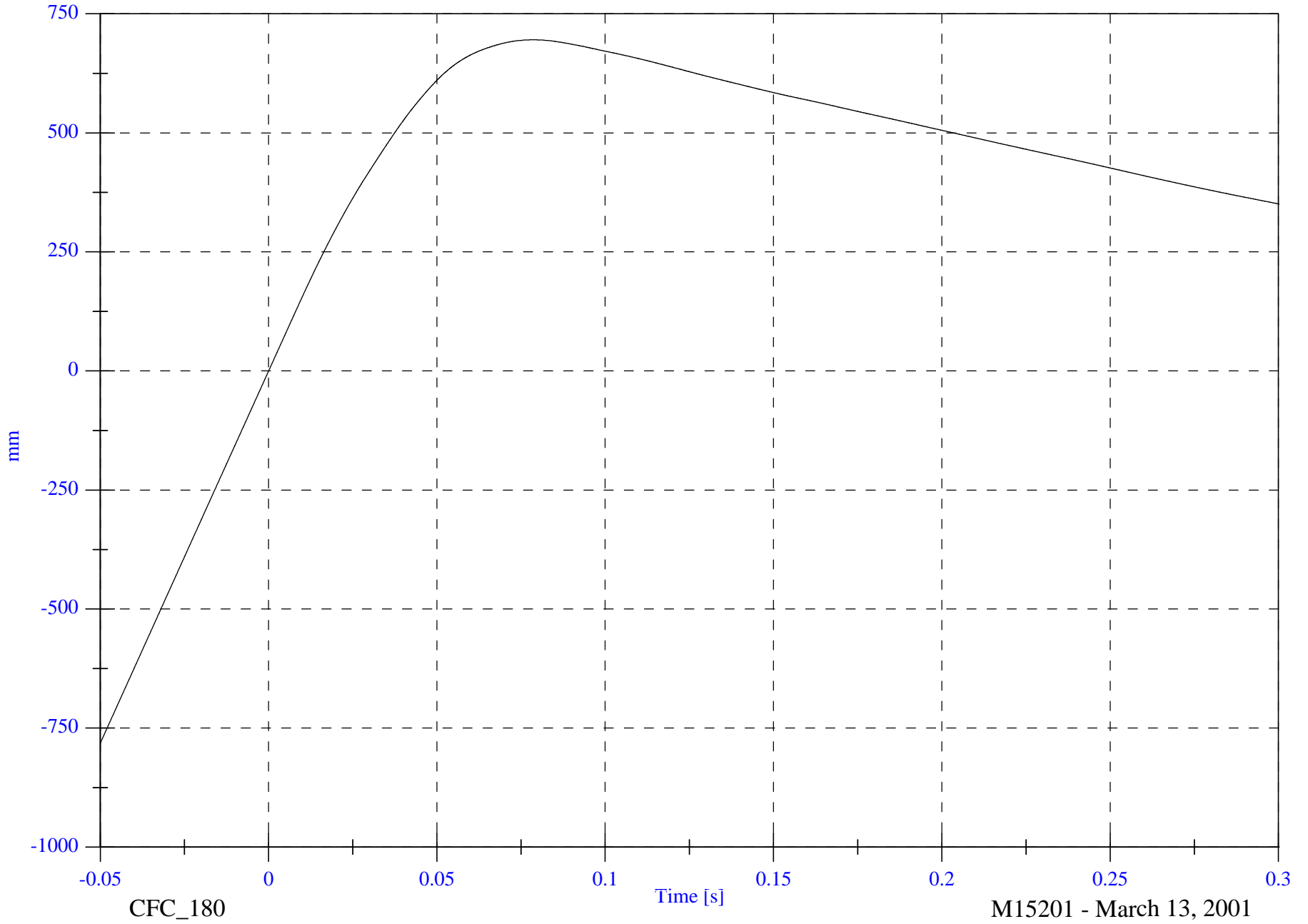
NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 695.5 [mm] at 0.079 [s]

Right Rear #2x Displacement

Min: -781.6 [mm] at -0.050 [s]

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CFC_180

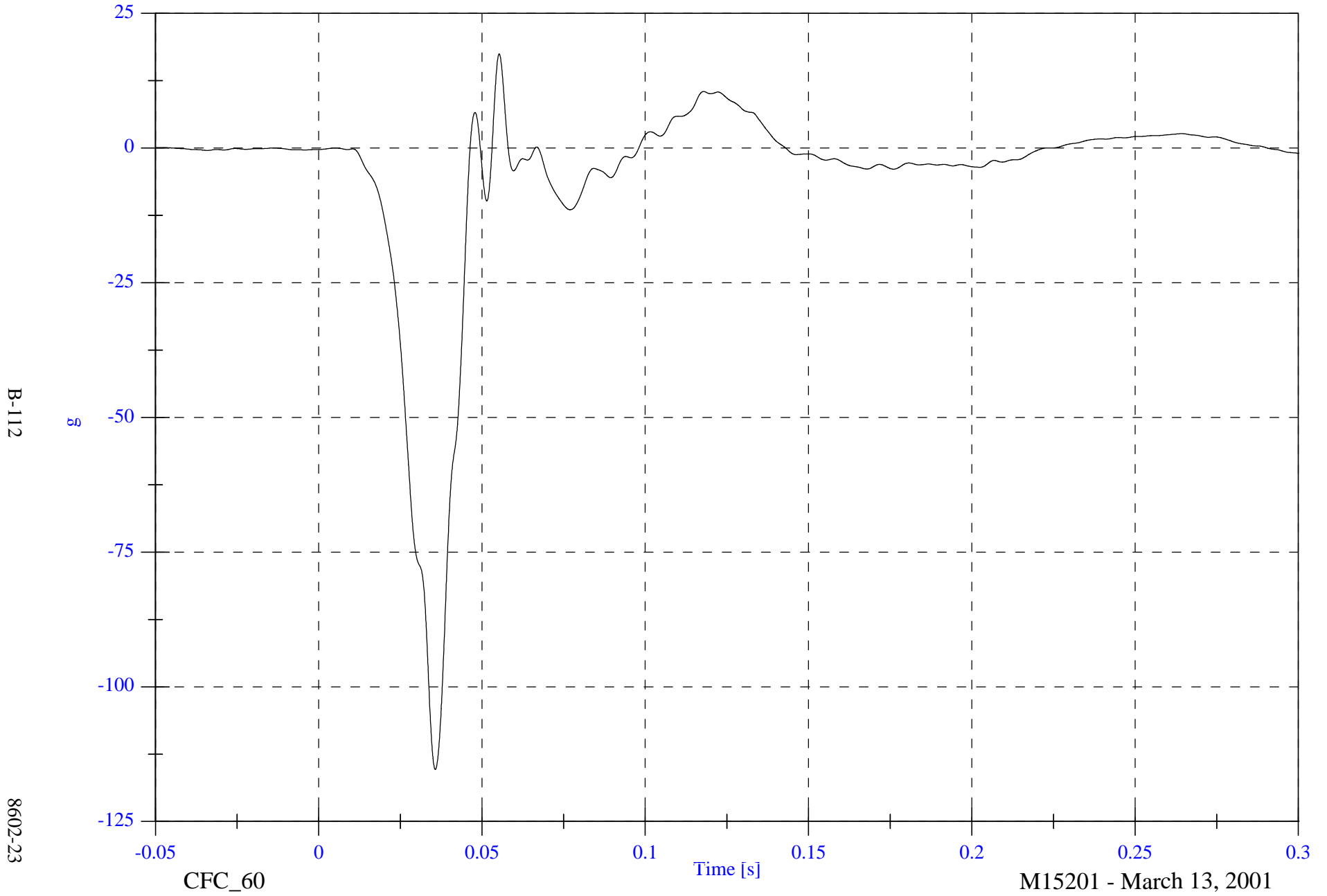
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Engine Top #3x

Max: 17.5 [g] at 0.055 [s]

Min: -115.4 [g] at 0.036 [s]



NCAP 2001 Test #23 - 2001 Nissan Frontier

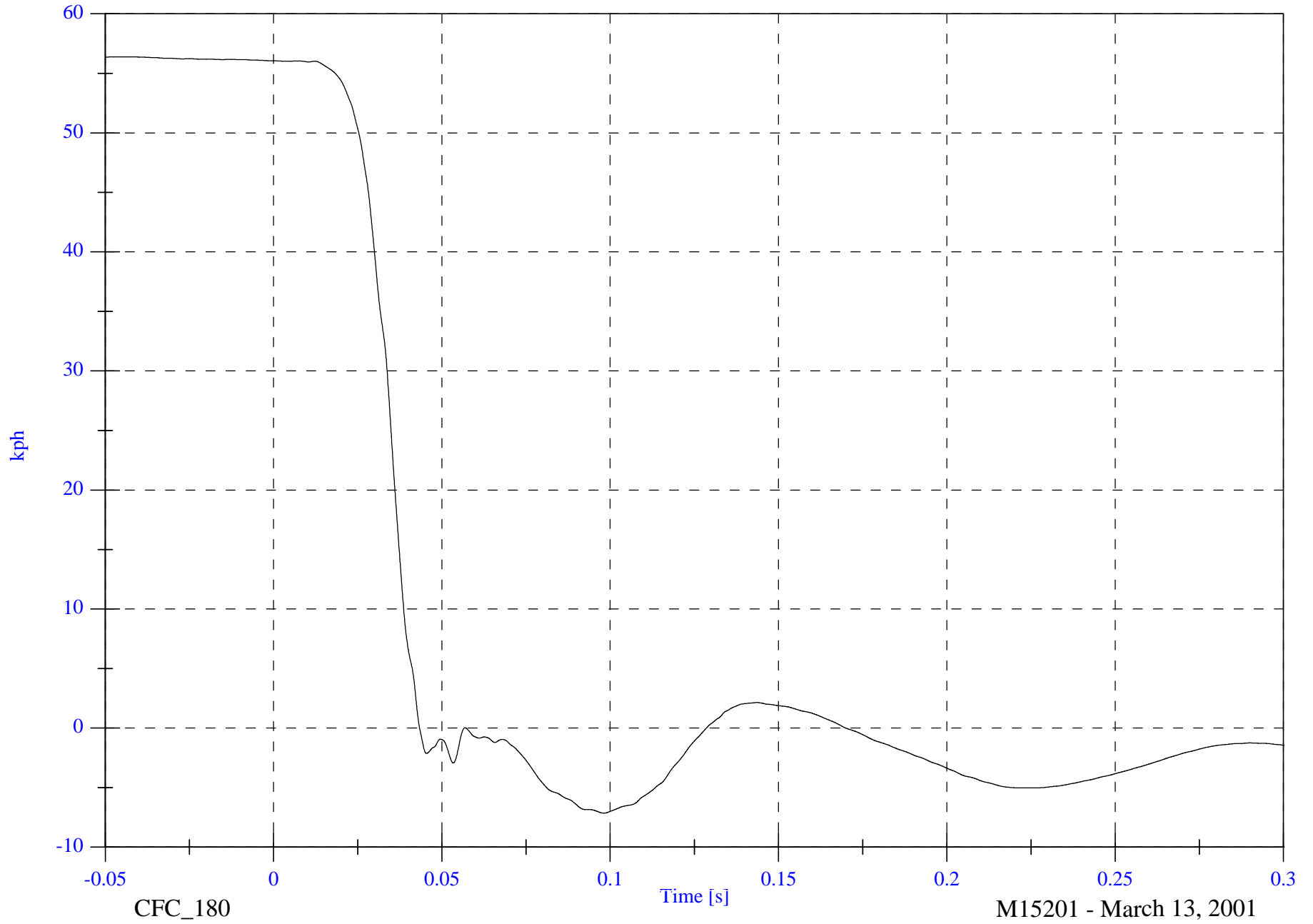
Max: 56.4 [kph] at -0.044 [s]

Engine Top #3x Velocity

Min: -7.1 [kph] at 0.098 [s]

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CFC_180

Time [s]

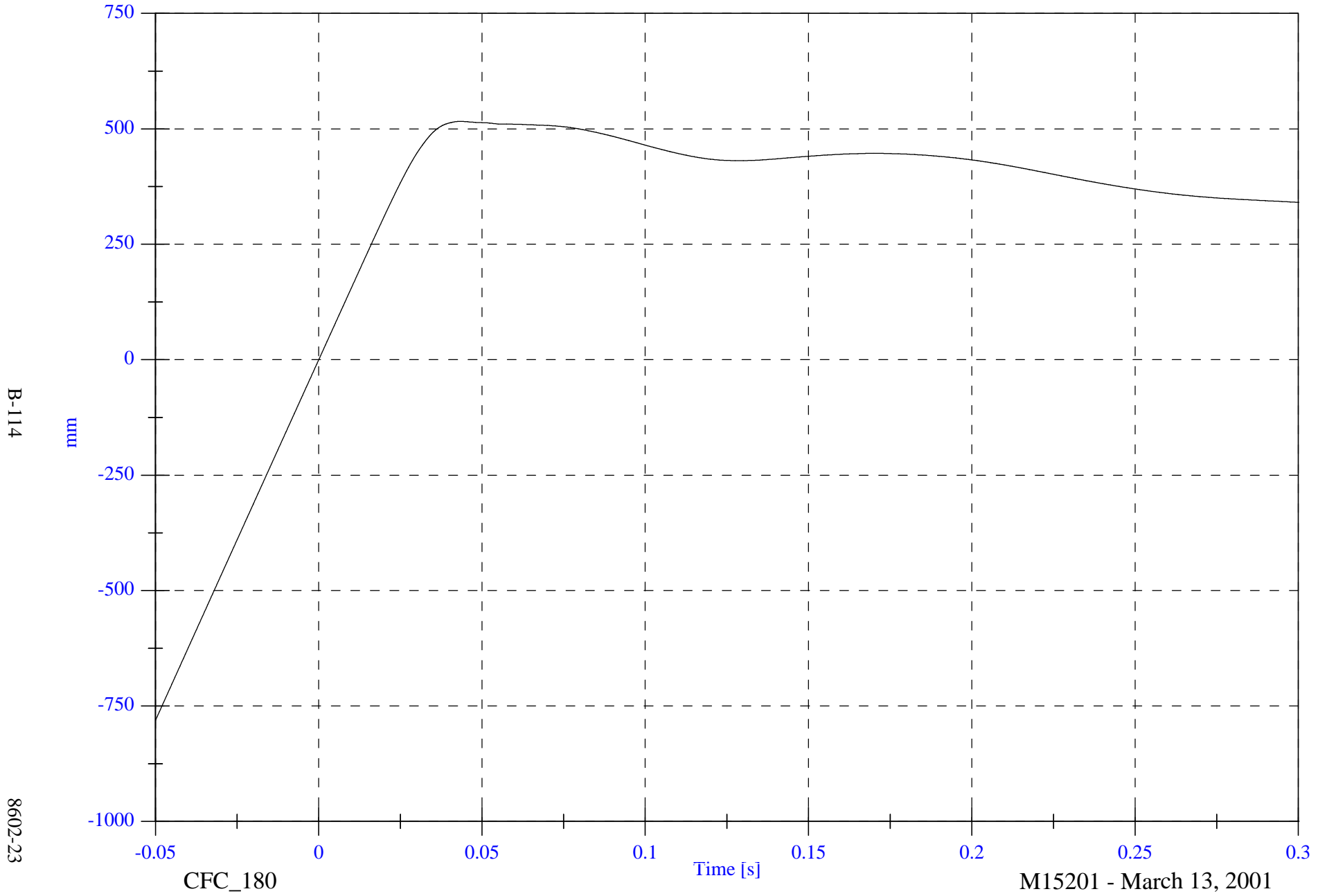
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 516.1 [mm] at 0.043 [s]

Engine Top #3x Displacement

Min: -781.1 [mm] at -0.050 [s]



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CFC_180

Time [s]

M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

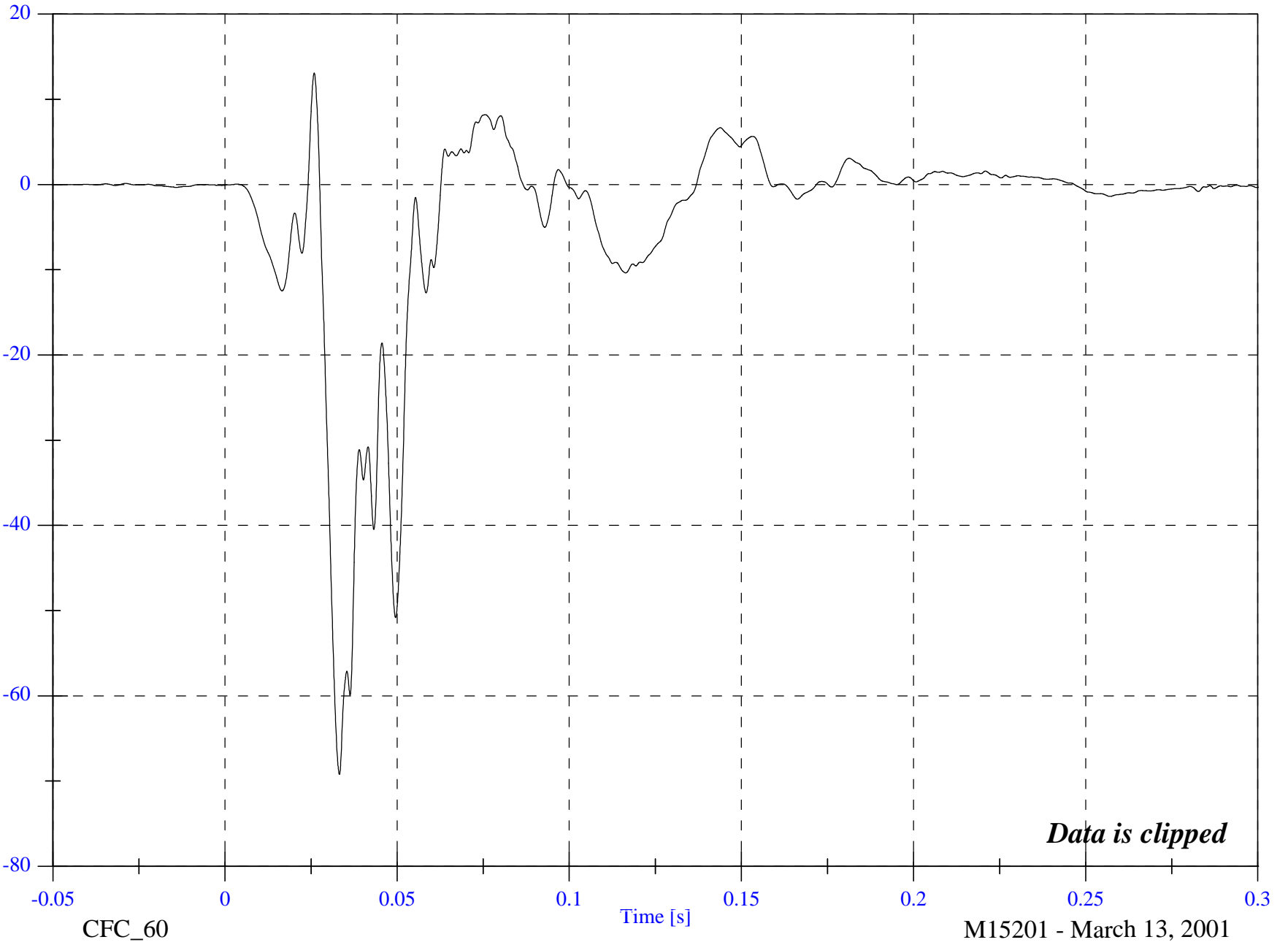
Engine Bottom #4x

Max: 13.1 [g] at 0.026 [s]

Min: -69.2 [g] at 0.033 [s]

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g



Data is clipped

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CFC_60

Time [s]

M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 56.3 [kph] at -0.021 [s]

Engine Bottom #4x Velocity

Min: 11.6 [kph] at 0.137 [s]



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CFC_180

Time [s]

M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

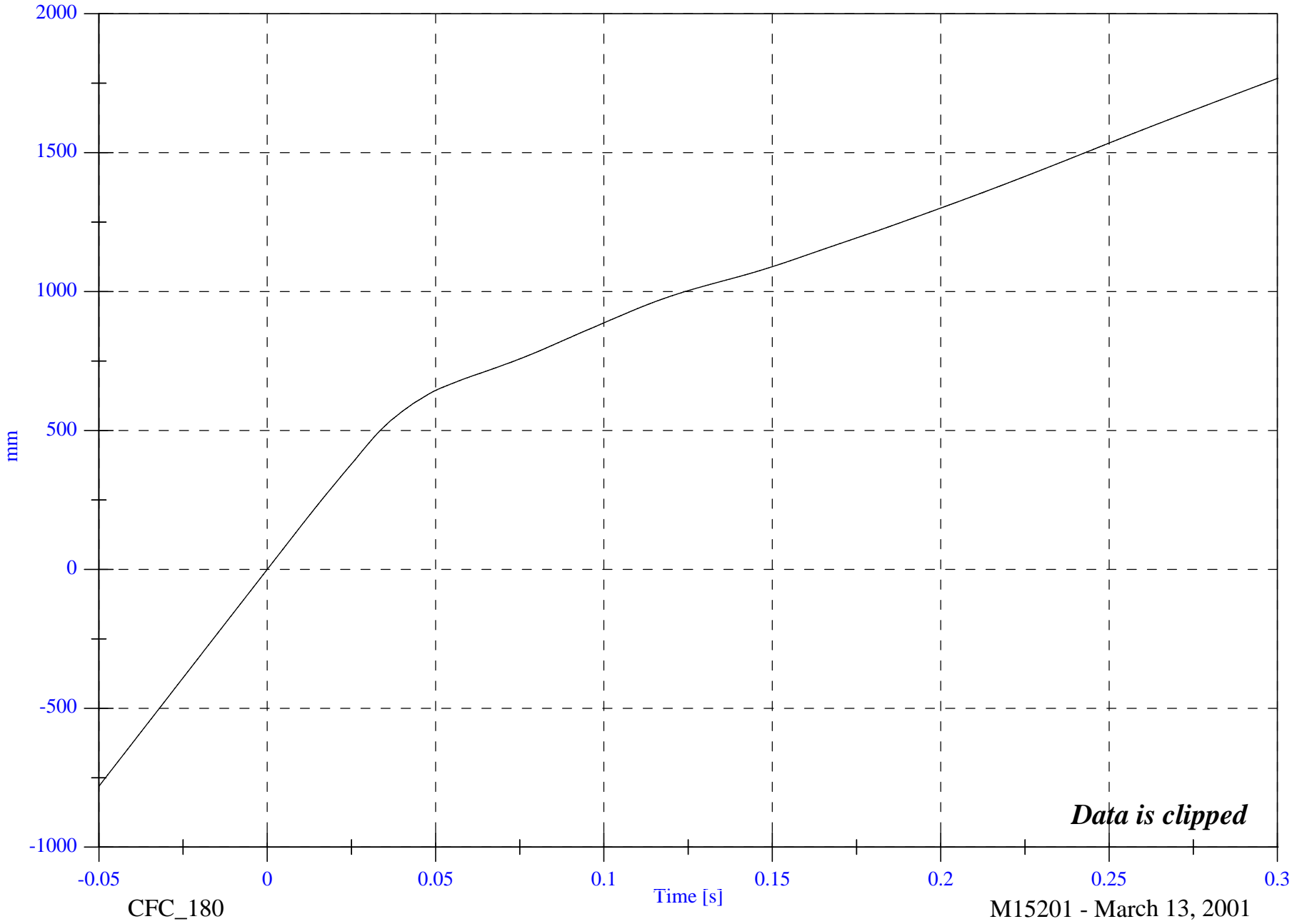
Engine Bottom #4x Displacement

Max: 1767.3 [mm] at 0.300 [s]

Min: -780.9 [mm] at -0.050 [s]

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Data is clipped

CFC_180

Time [s]

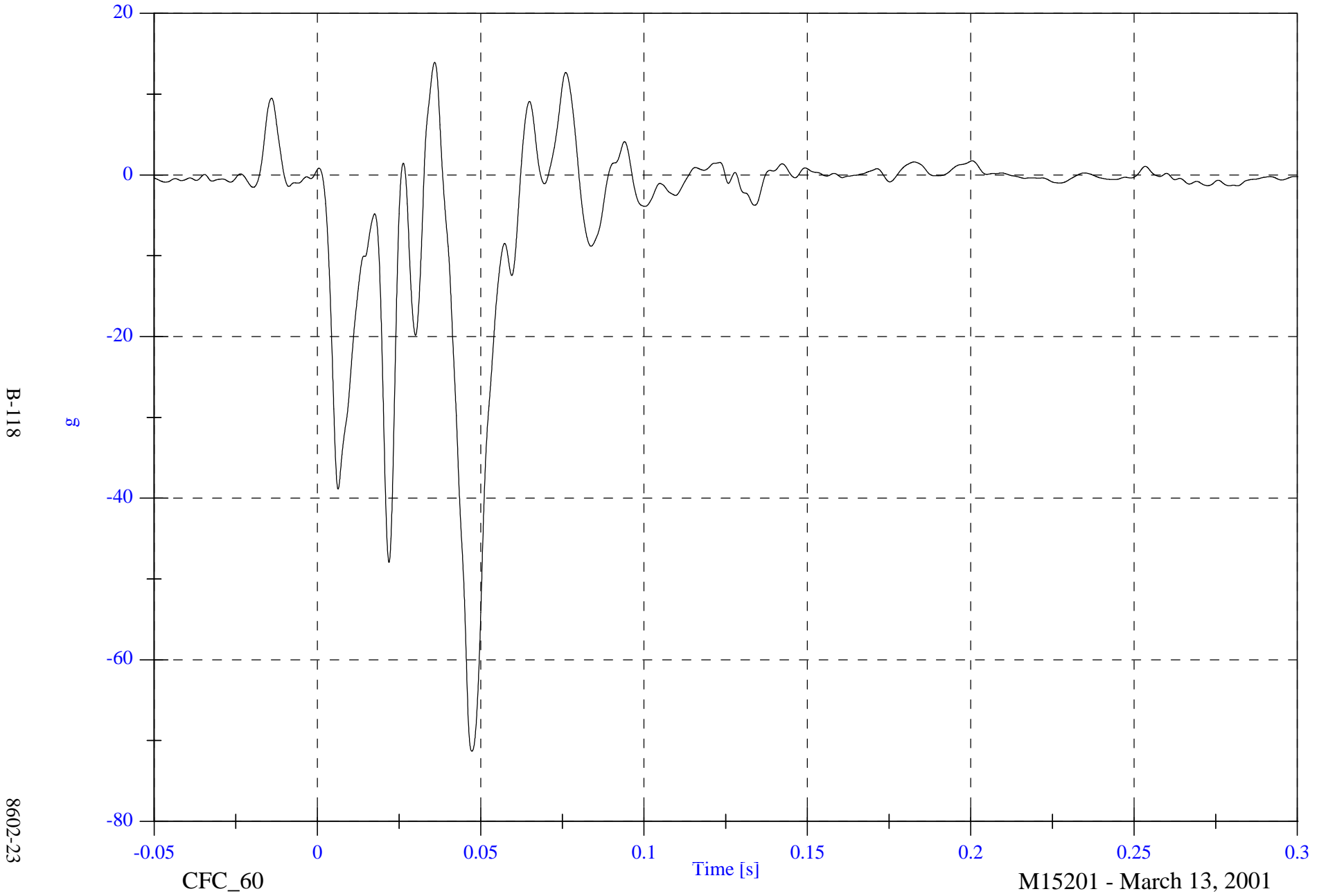
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Right Caliper #5x

Max: 13.9 [g] at 0.036 [s]

Min: -71.3 [g] at 0.047 [s]



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NCAP 2001 Test #23 - 2001 Nissan Frontier

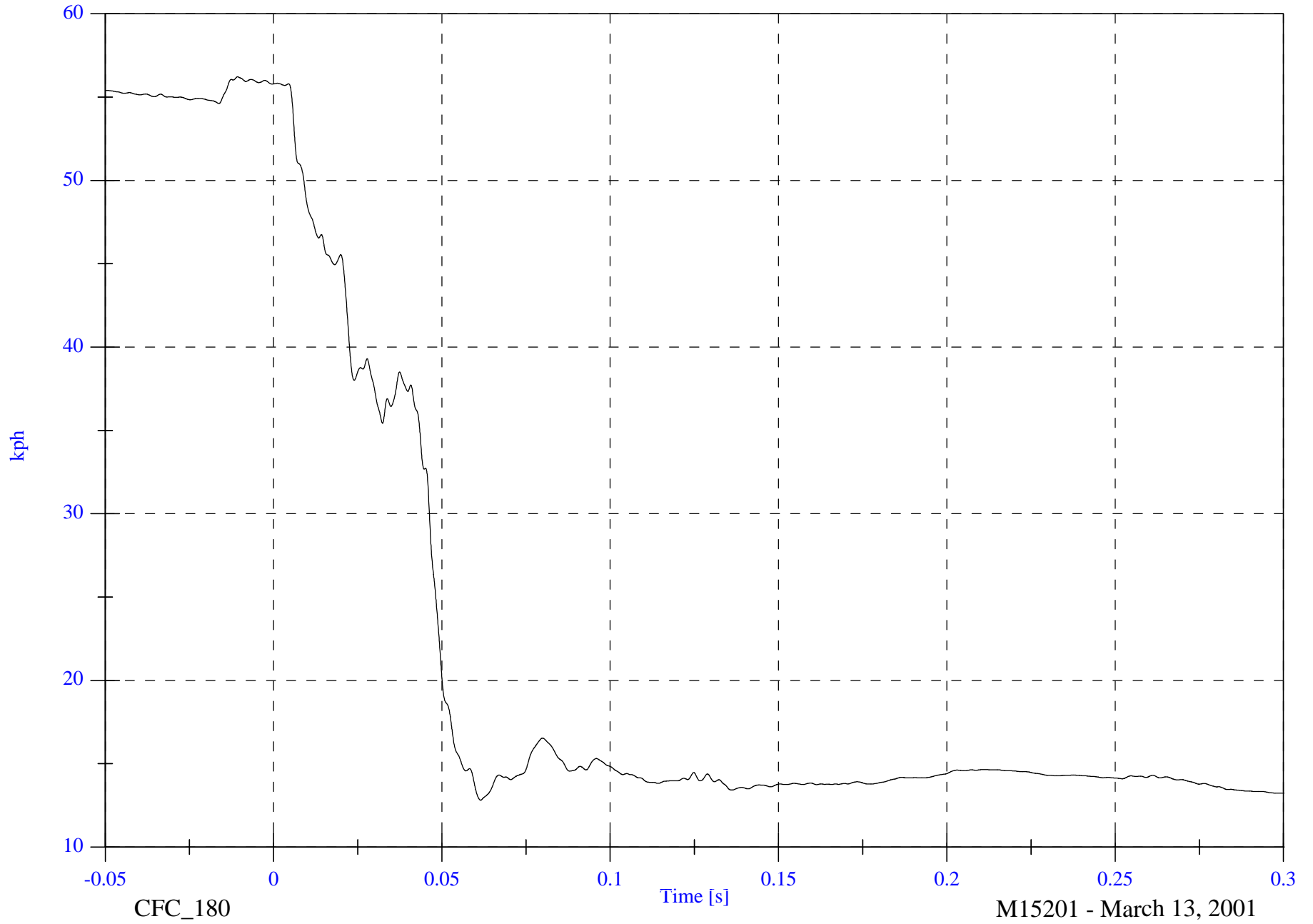
Max: 56.2 [kph] at -0.011 [s]

Right Caliper #5x Velocity

Min: 12.8 [kph] at 0.062 [s]

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CFC_180

Time [s]

M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

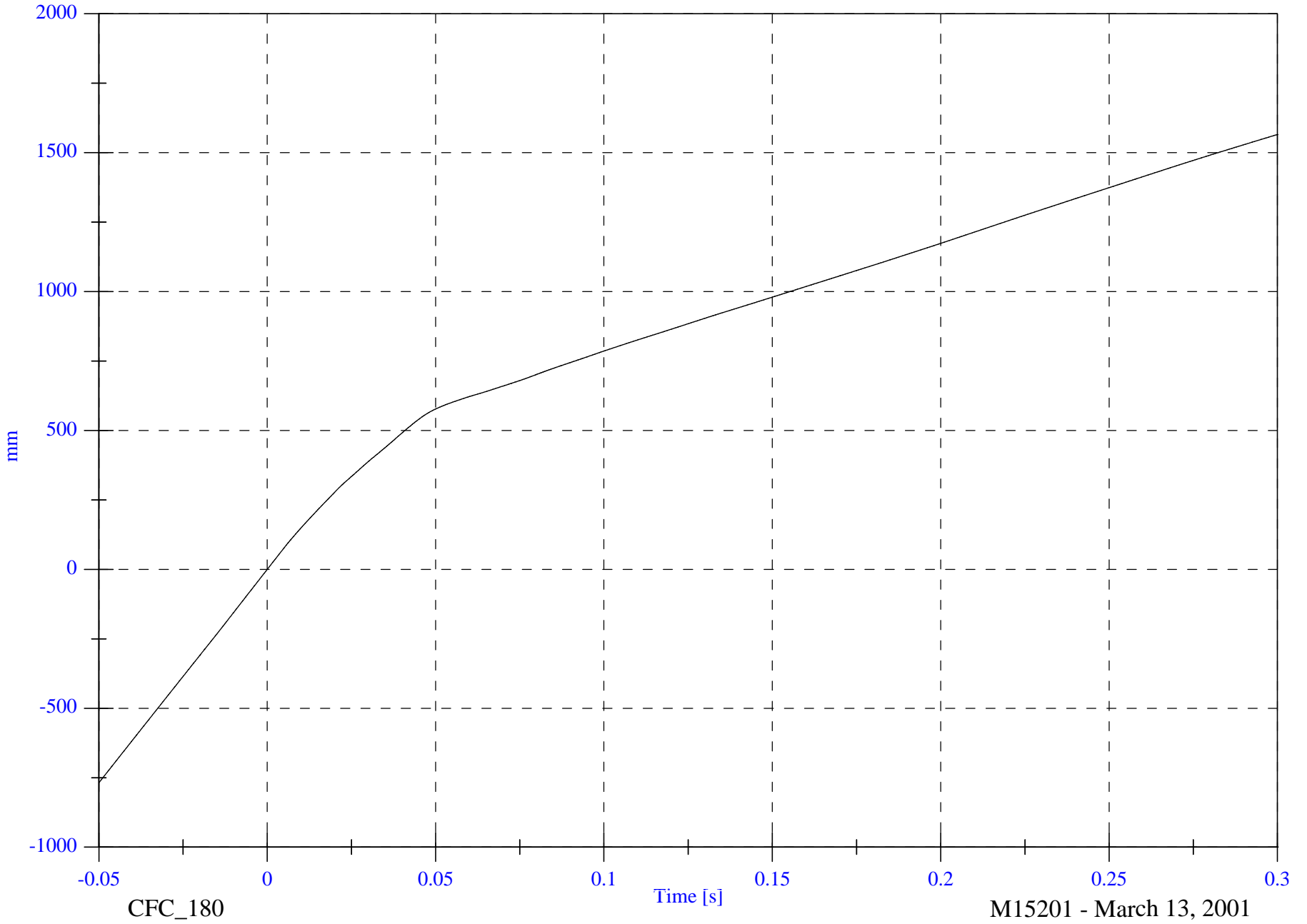
Right Caliper #5x Displacement

Max: 1565.5 [mm] at 0.300 [s]

Min: -768.3 [mm] at -0.050 [s]

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CFC_180

Time [s]

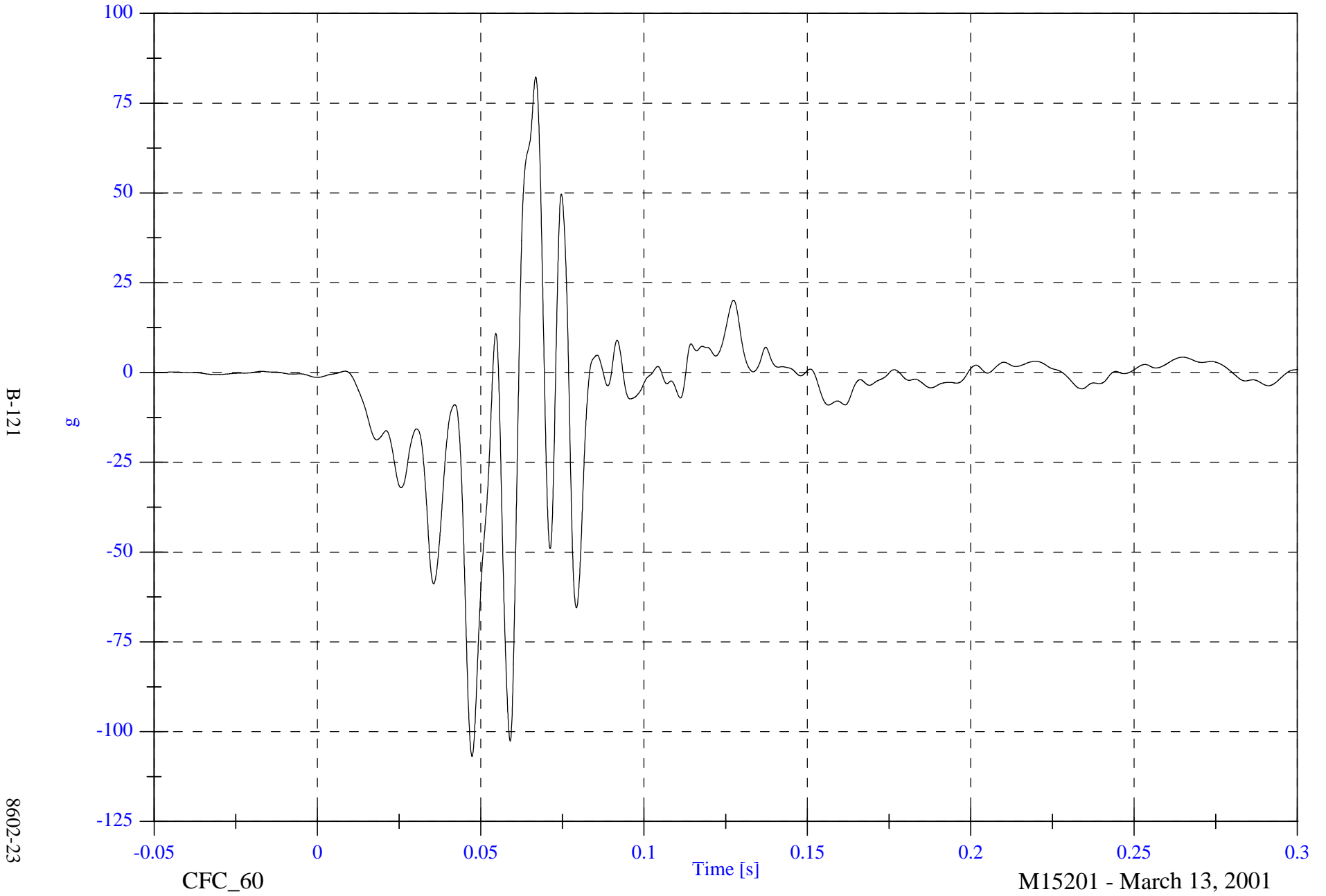
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 82.3 [g] at 0.067 [s]

Instrument Panel #6x

Min: -106.9 [g] at 0.047 [s]



NCAP 2001 Test #23 - 2001 Nissan Frontier

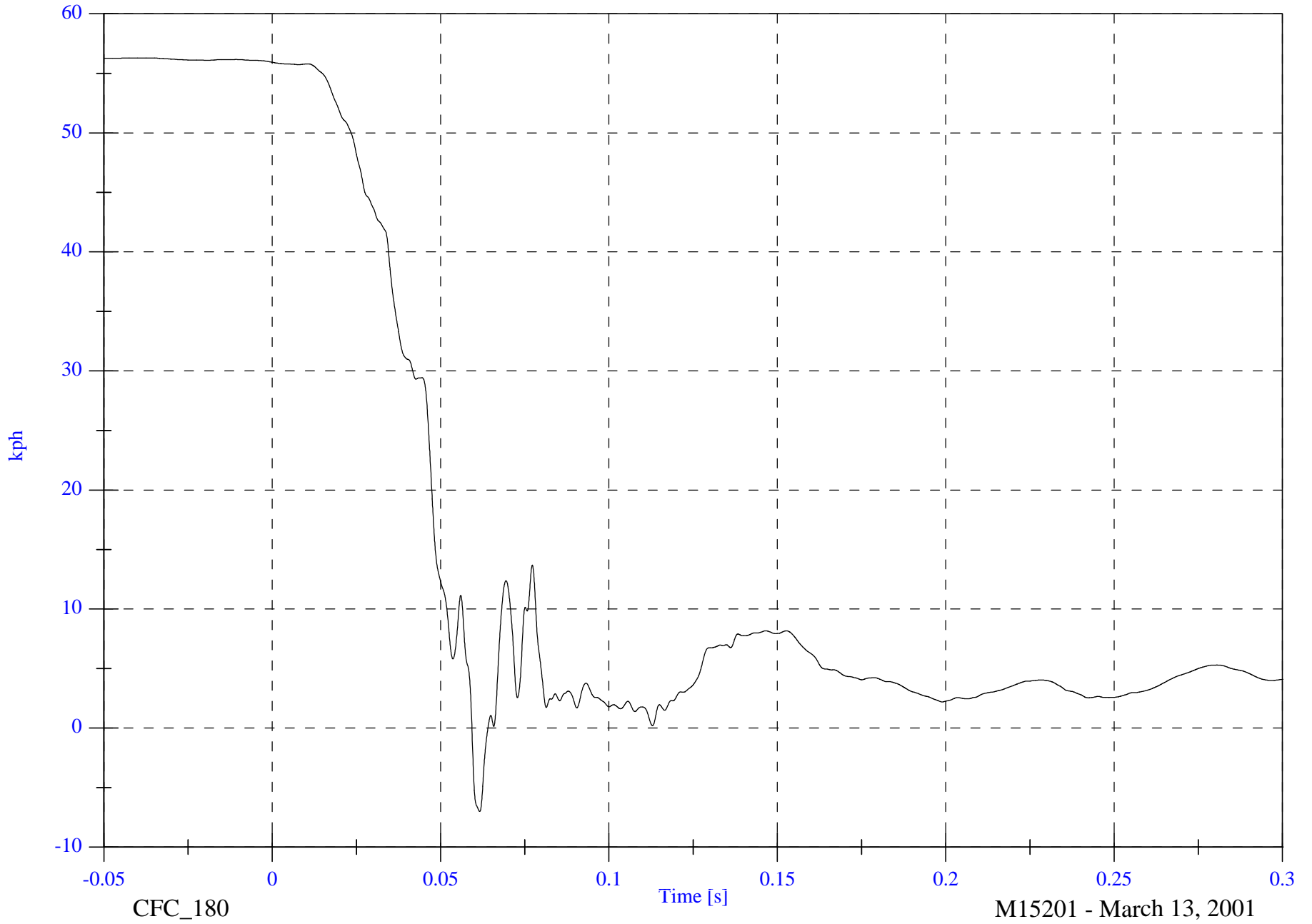
Max: 56.3 [kph] at -0.041 [s]

Instrument Panel #6x Velocity

Min: -7.0 [kph] at 0.062 [s]

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Time [s]

M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

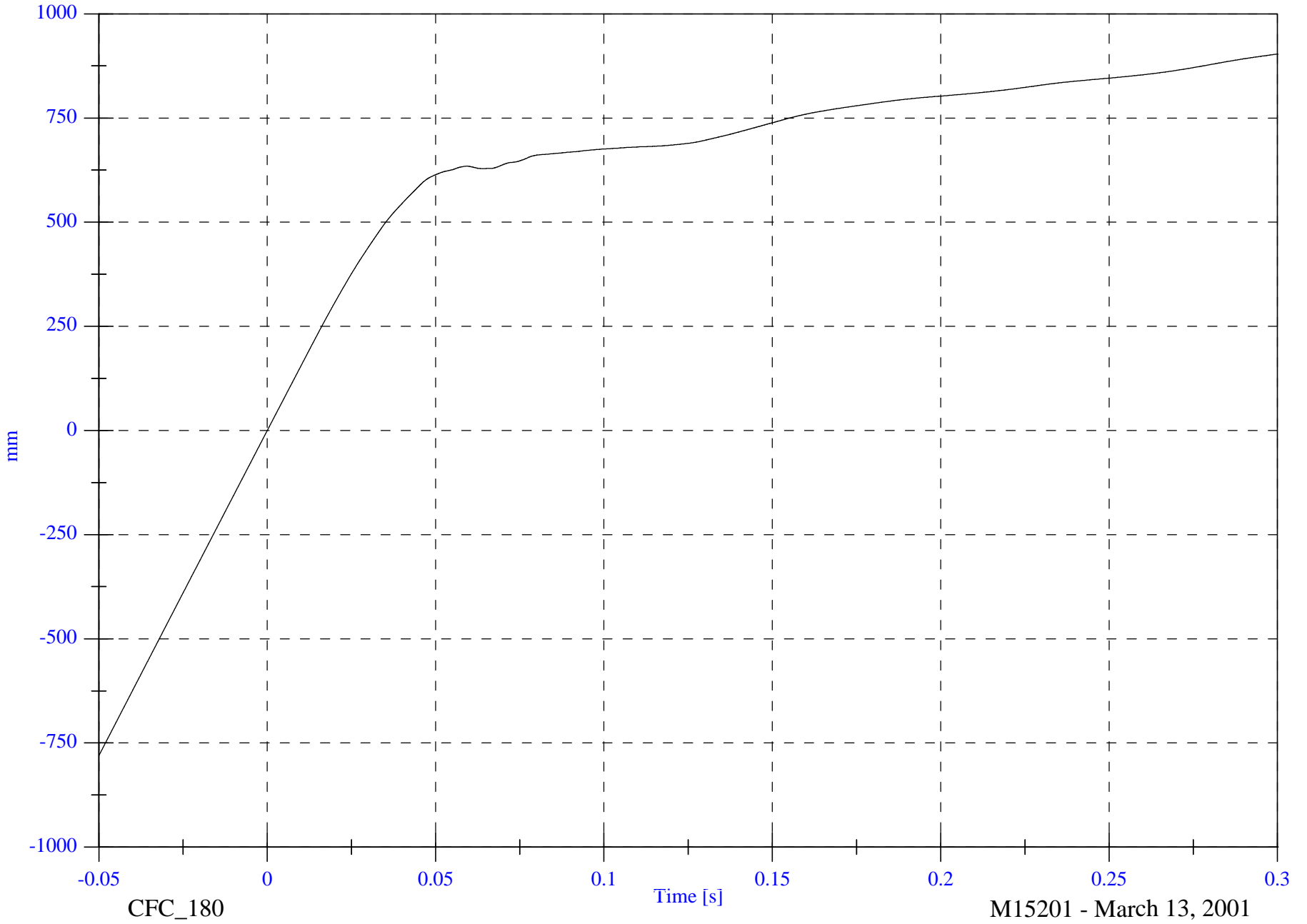
Instrument Panel #6x Displacement

Max: 903.5 [mm] at 0.300 [s]

Min: -780.3 [mm] at -0.050 [s]

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CFC_180

Time [s]

M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

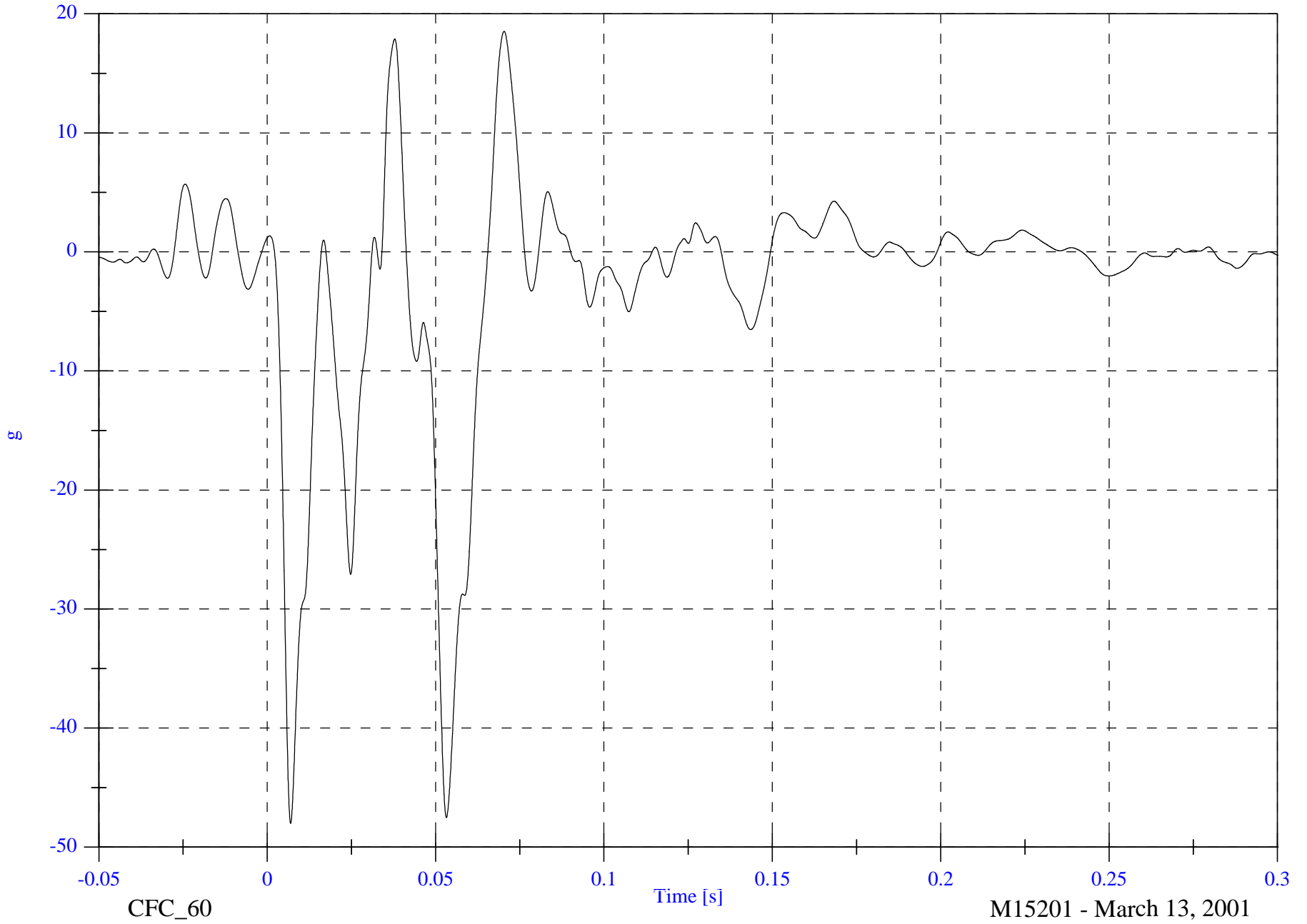
Left Caliper #7x

Max: 18.5 [g] at 0.070 [s]

Min: -48.0 [g] at 0.007 [s]

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CFC_60

Time [s]

M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 56.2 [kph] at -0.010 [s]

Left Caliper #7x Velocity

Min: 23.8 [kph] at 0.067 [s]



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CFC_180

Time [s]

M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

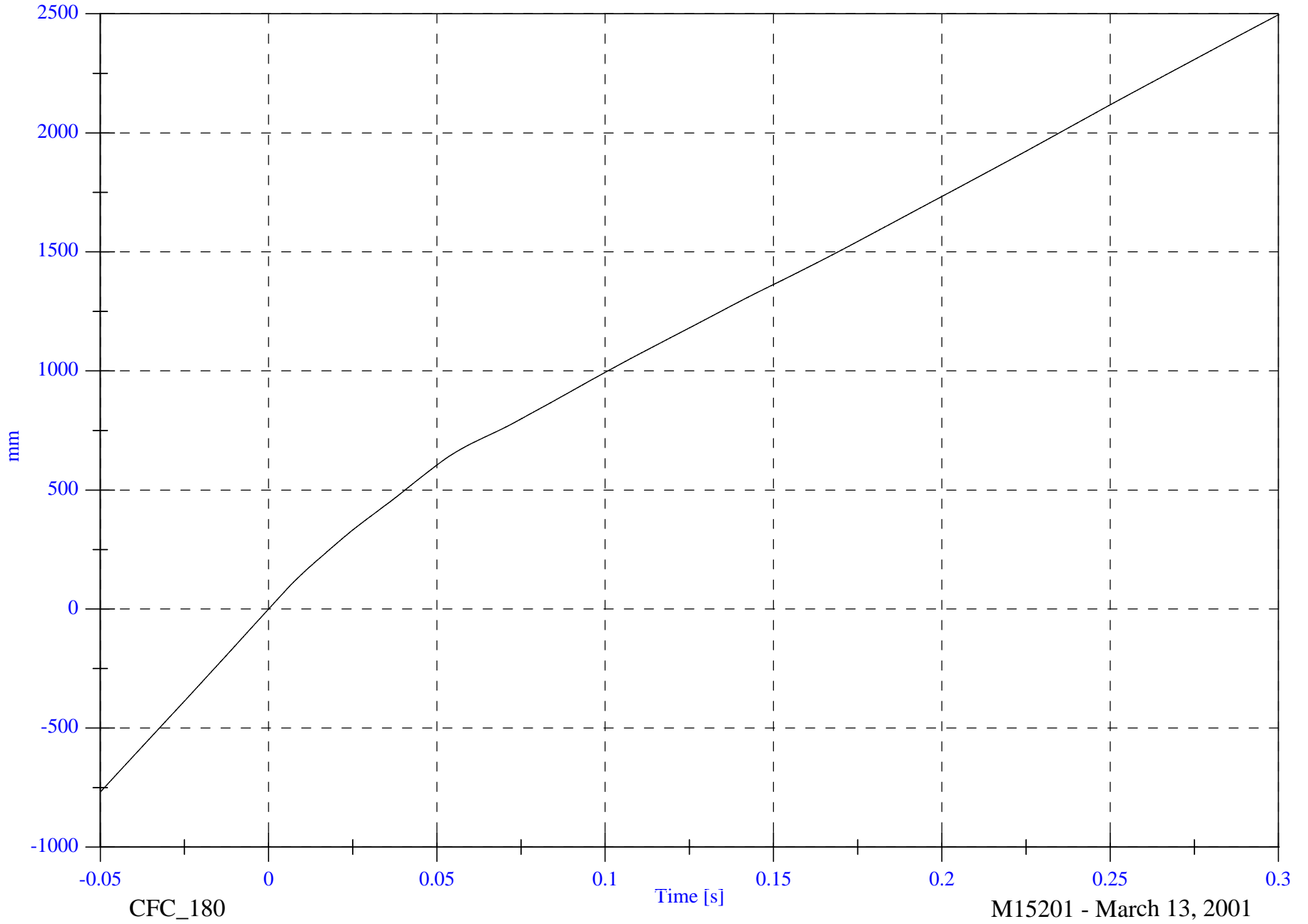
Left Caliper #7x Displacement

Max: 2496.0 [mm] at 0.300 [s]

Min: -768.7 [mm] at -0.050 [s]

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CFC_180

Time [s]

M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

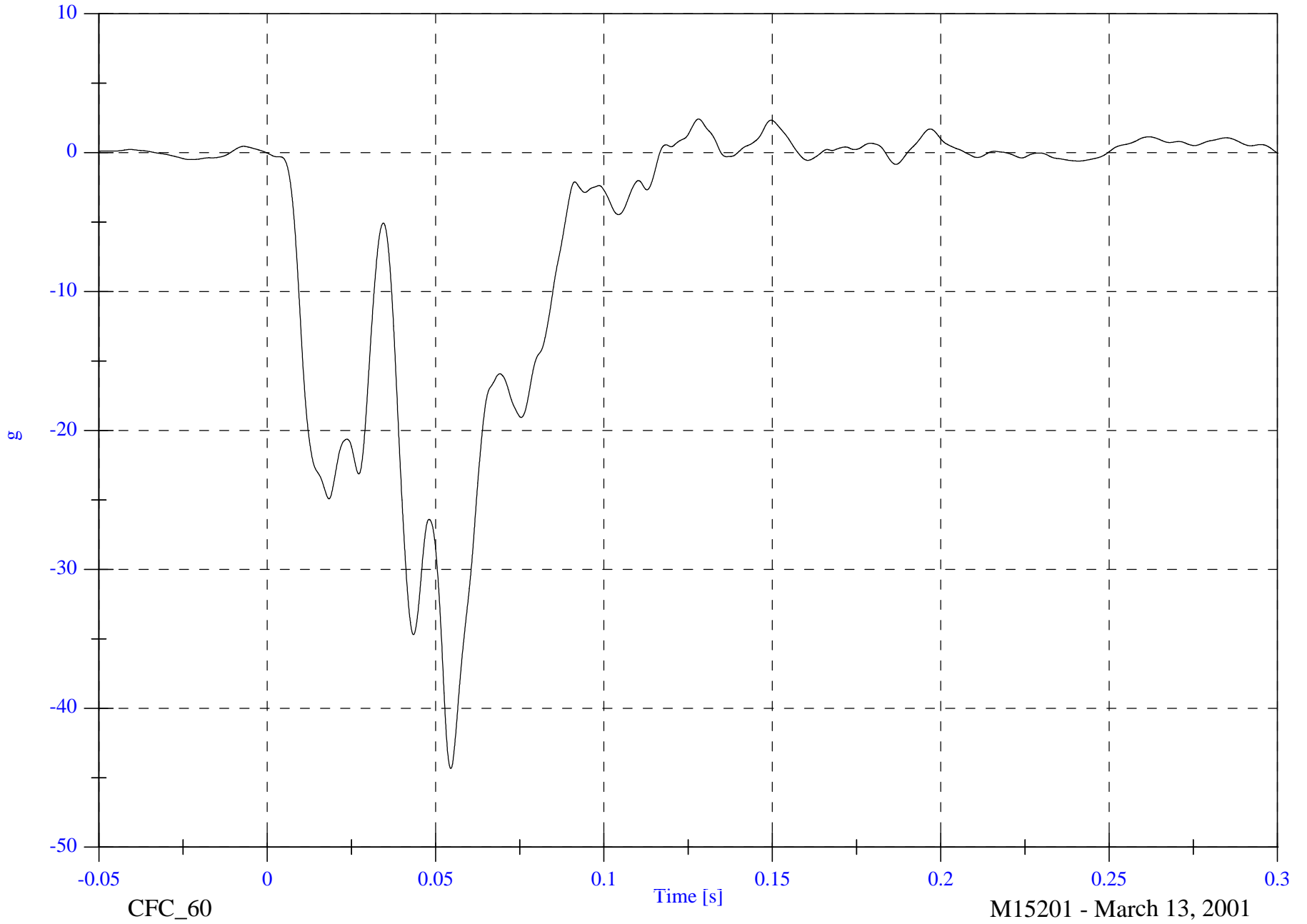
Left Rear Red #8x

Max: 2.4 [g] at 0.128 [s]

Min: -44.3 [g] at 0.055 [s]

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NCAP 2001 Test #23 - 2001 Nissan Frontier

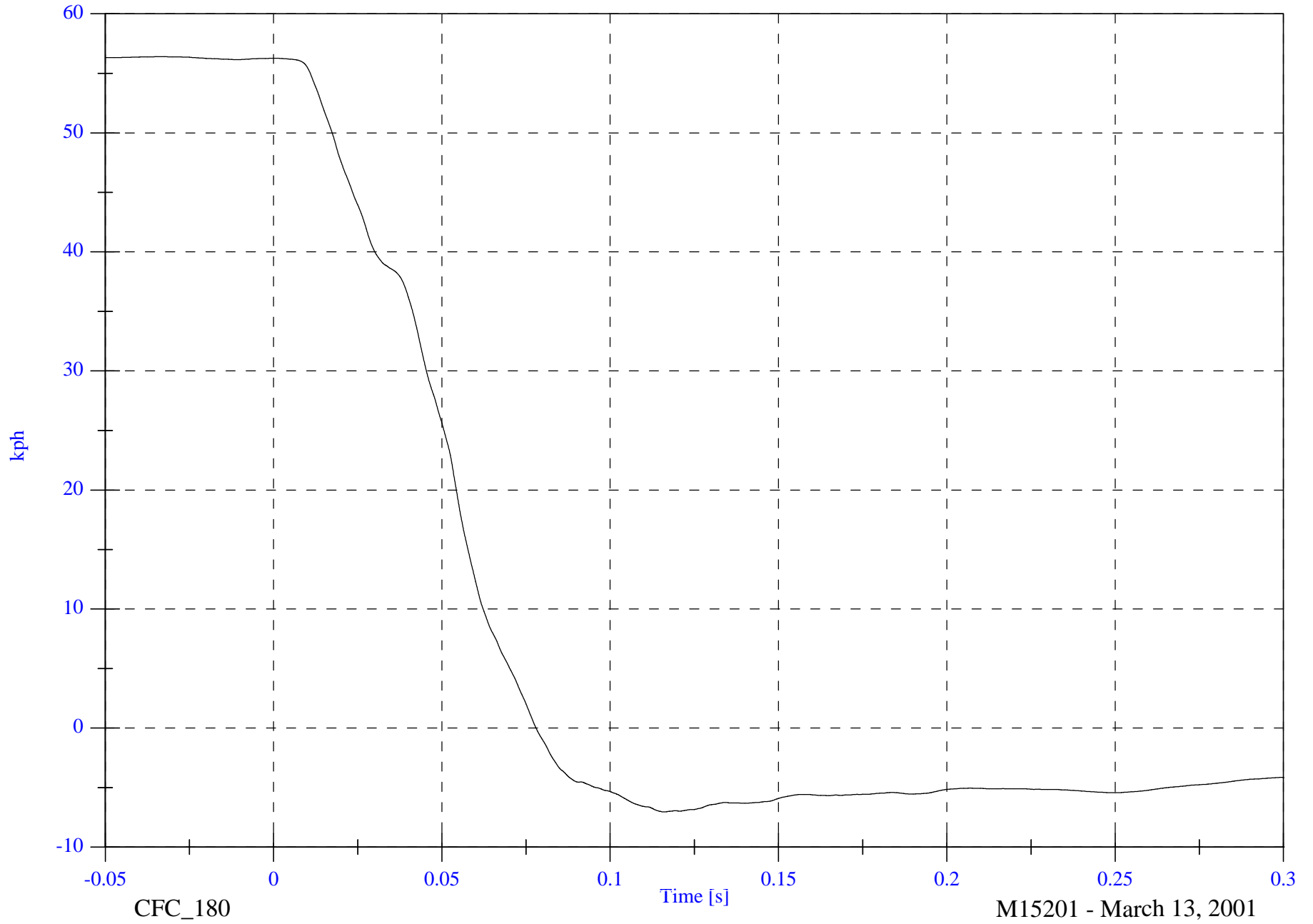
Max: 56.4 [kph] at -0.033 [s]

Left Rear Red #8x Velocity

Min: -7.0 [kph] at 0.116 [s]

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CFC_180

Time [s]

M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

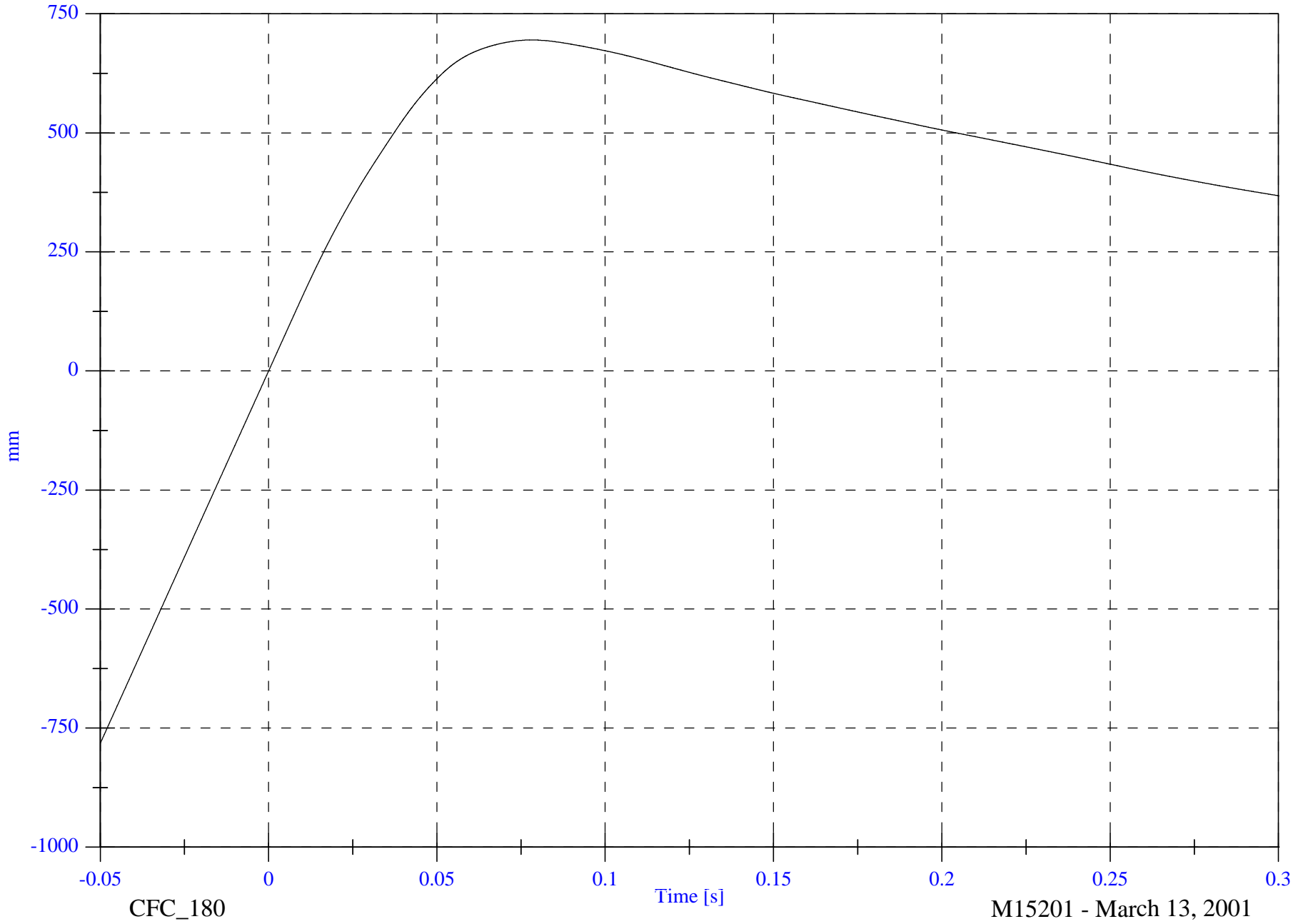
Max: 695.1 [mm] at 0.078 [s]

Left Rear Red #8x Displacement

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

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CFC_180

Time [s]

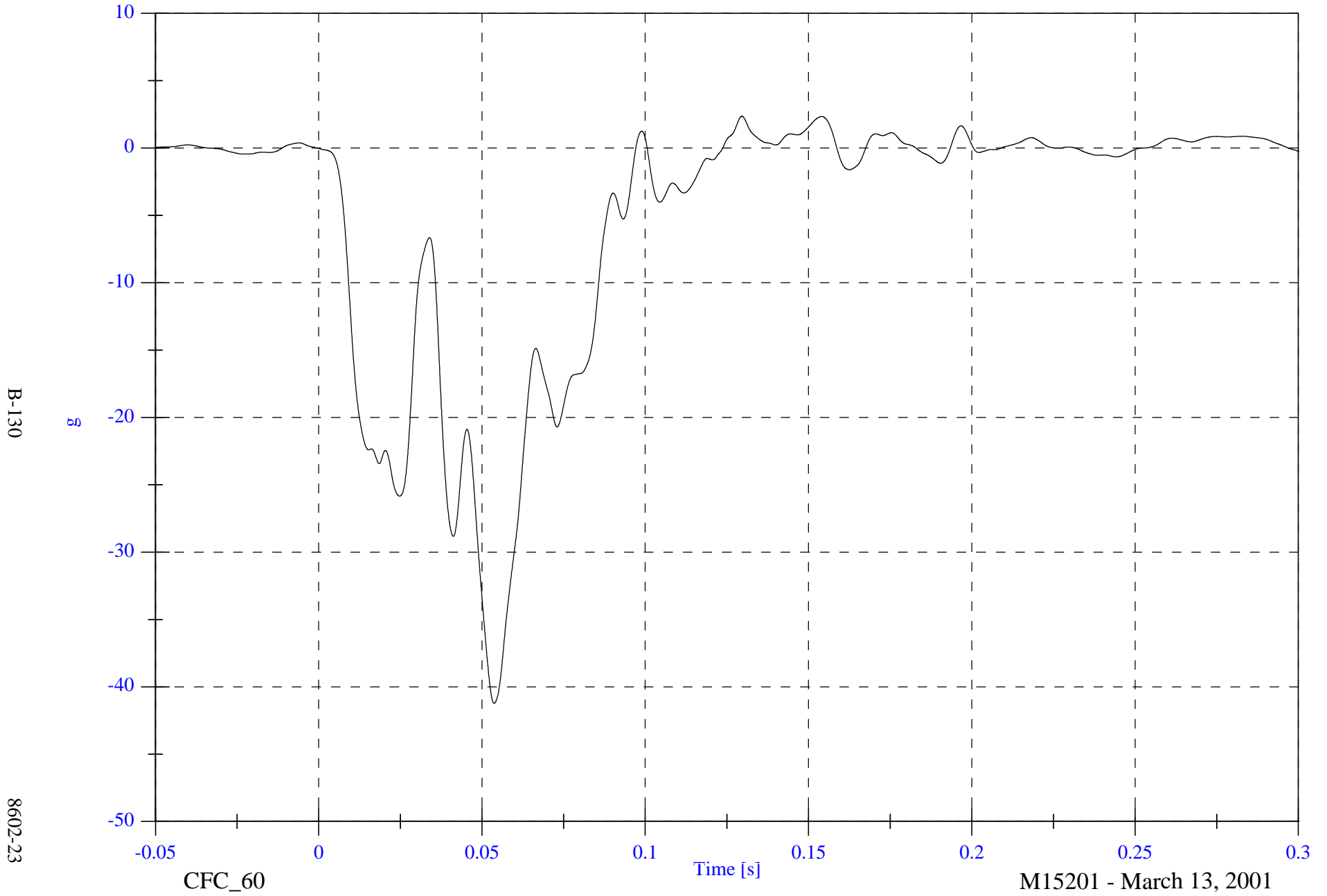
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 2.4 [g] at 0.130 [s]

Right Rear Red #9x

Min: -41.2 [g] at 0.054 [s]



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CFC_60

Time [s]

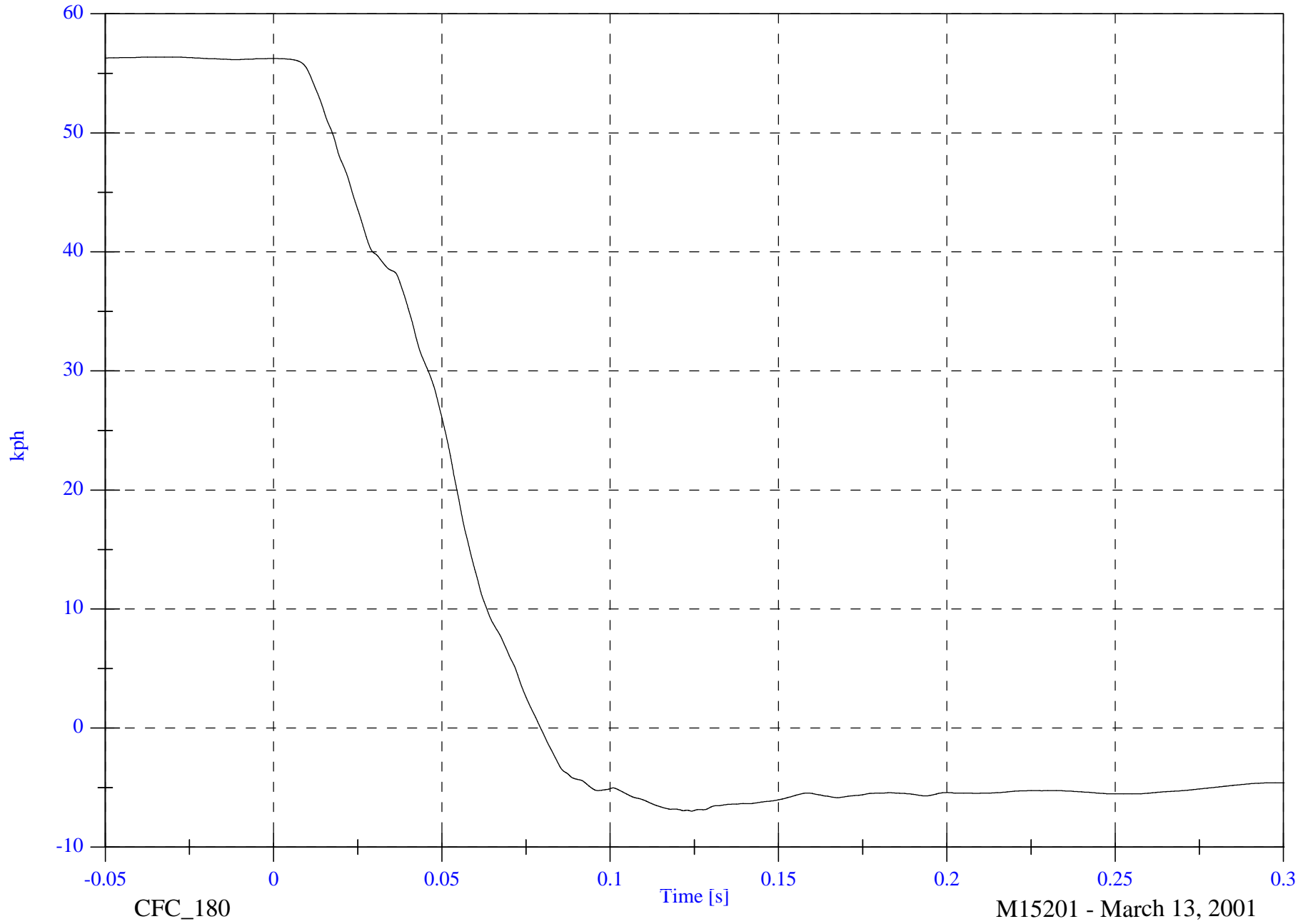
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

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

Right Rear Red #9x Velocity

Min: -7.0 [kph] at 0.124 [s]



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CFC_180

Time [s]

M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

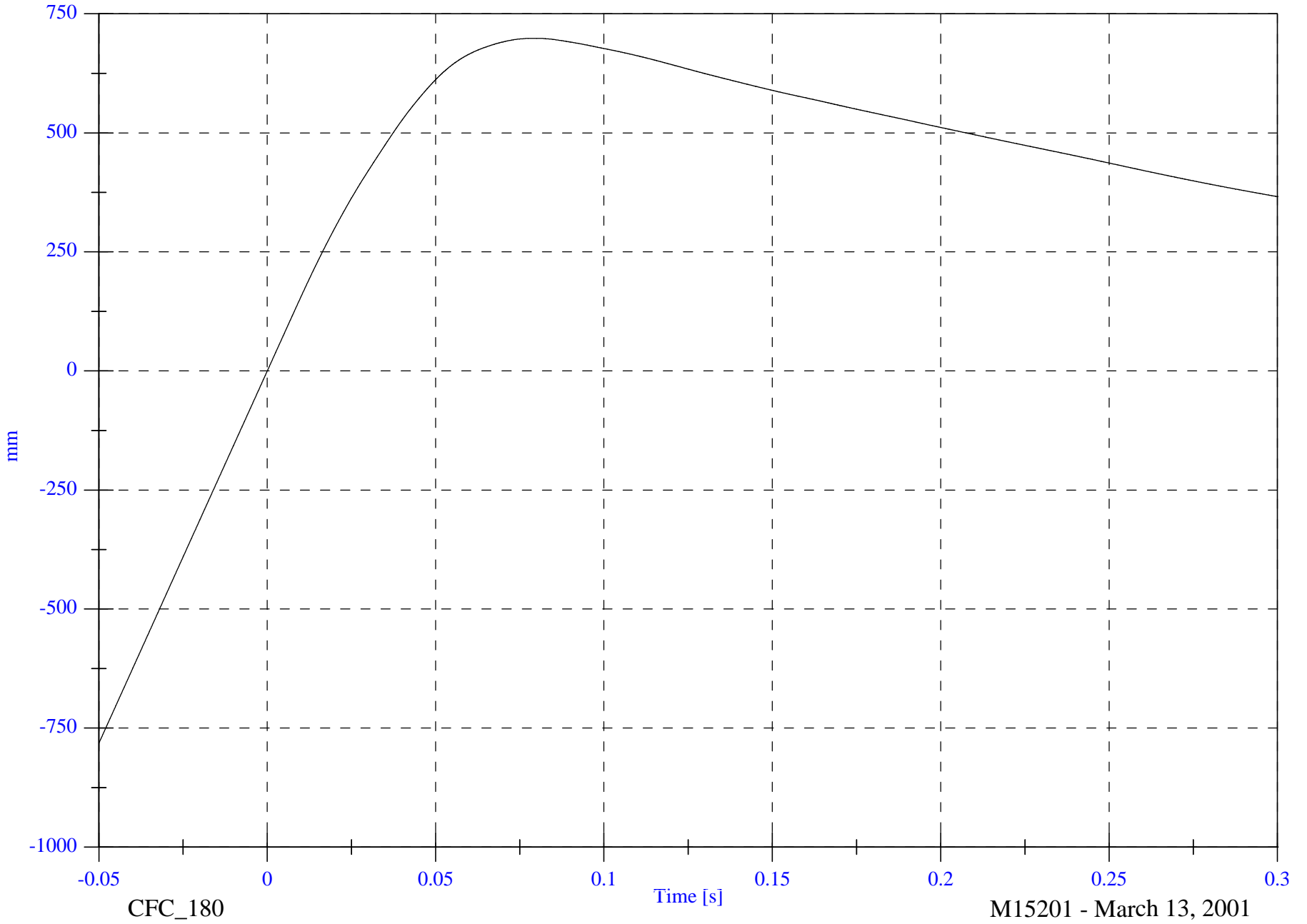
Max: 698.7 [mm] at 0.079 [s]

Right Rear Red #9x Displacement

Min: -781.7 [mm] at -0.050 [s]

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CFC_180

Time [s]

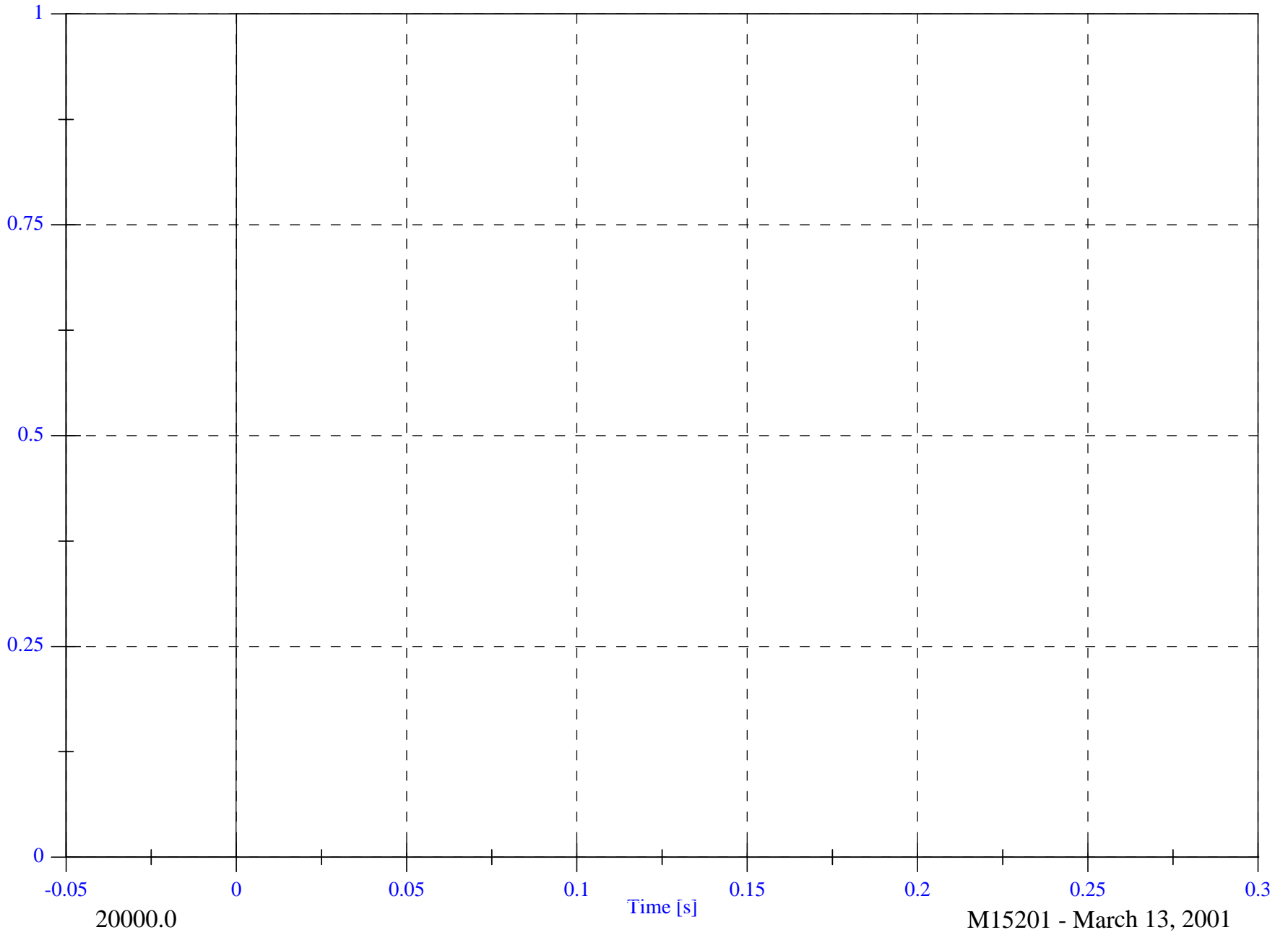
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 1.0 [] at 0.000 [s]

Min: 0.0 [] at -0.050 [s]

Contact Time



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20000.0

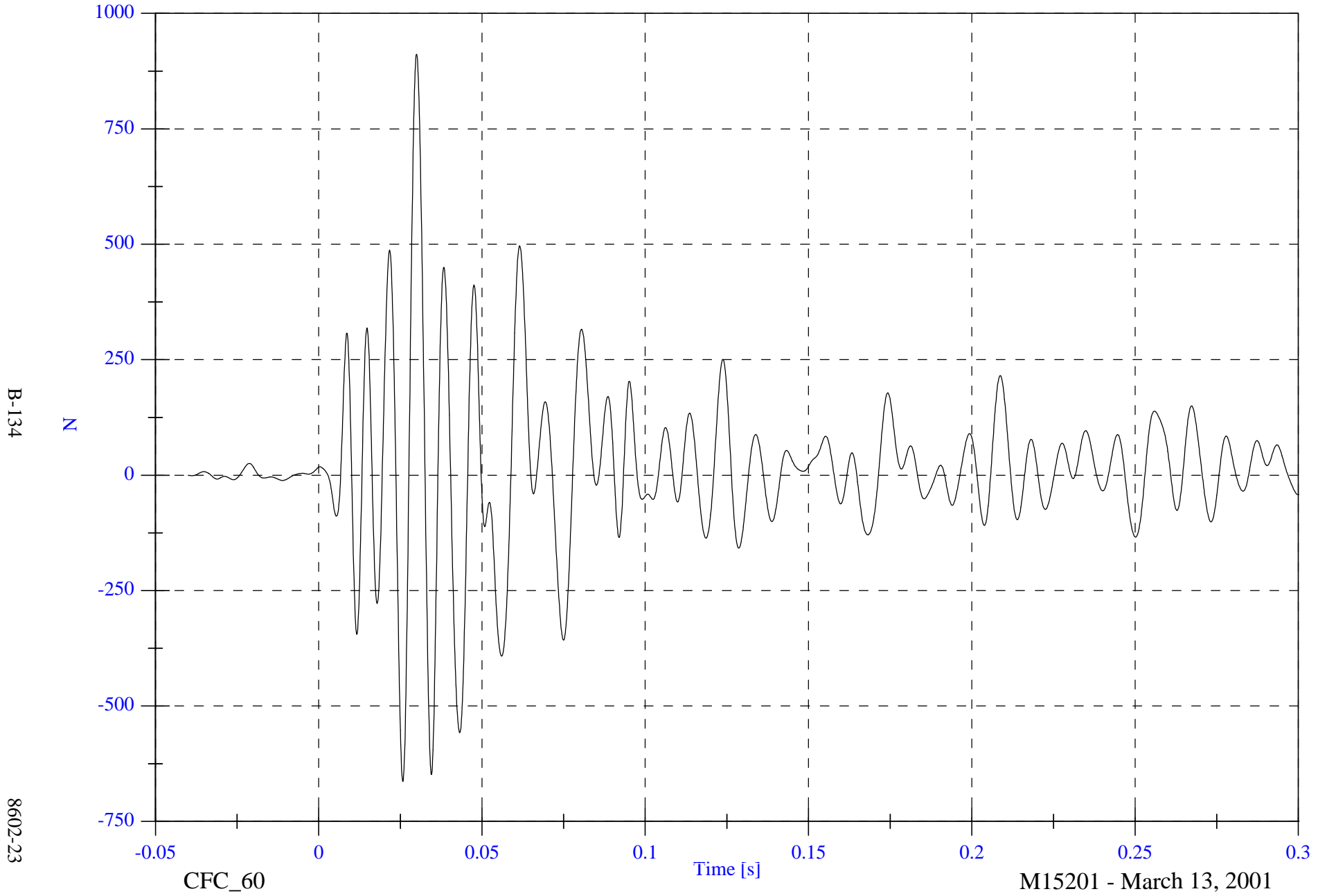
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 911.6 [N] at 0.030 [s]

Barrier Load Cell A1 Fx

Min: -663.3 [N] at 0.026 [s]

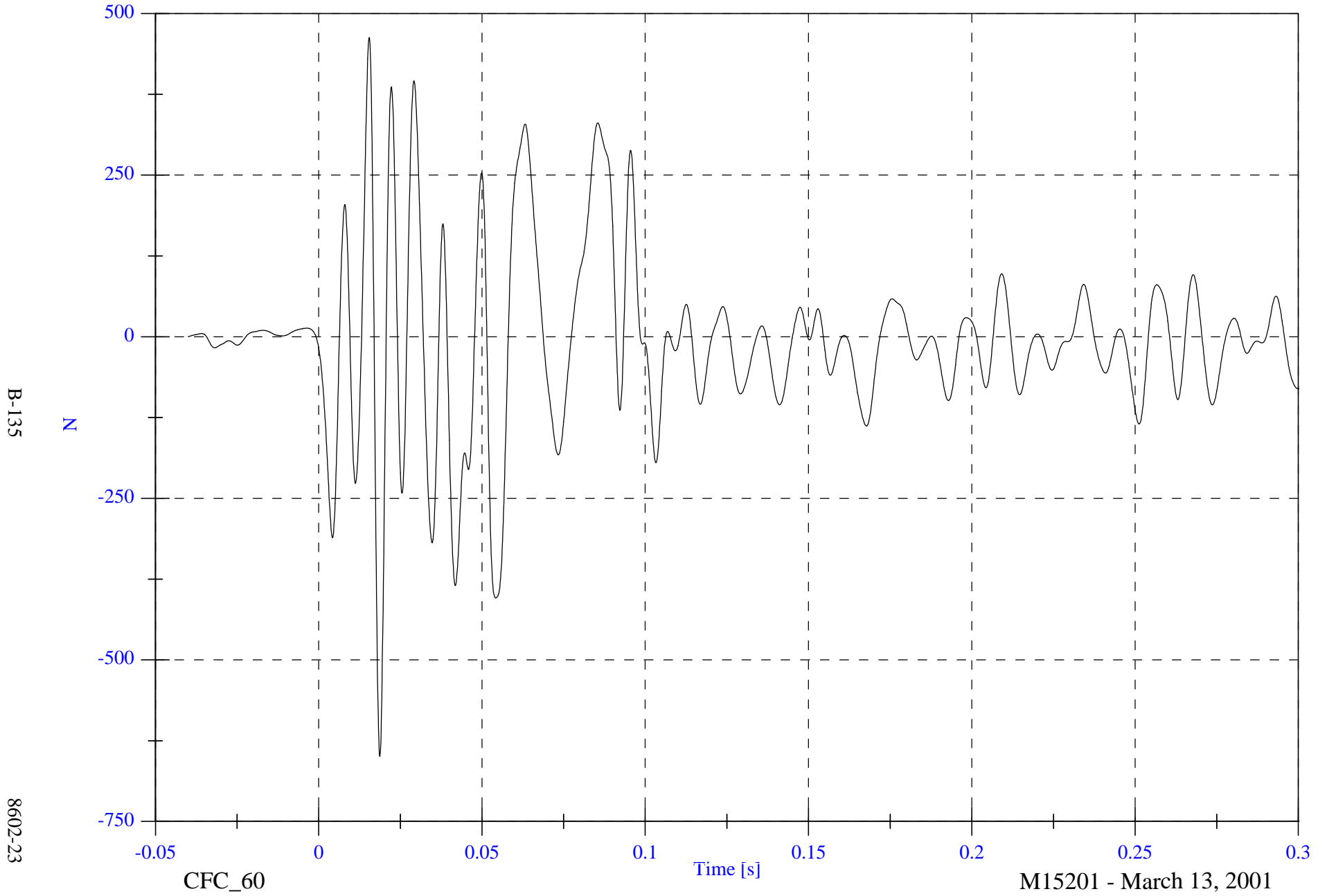


NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 462.8 [N] at 0.015 [s]

Barrier Load Cell A2 Fx

Min: -649.7 [N] at 0.019 [s]



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Time [s]

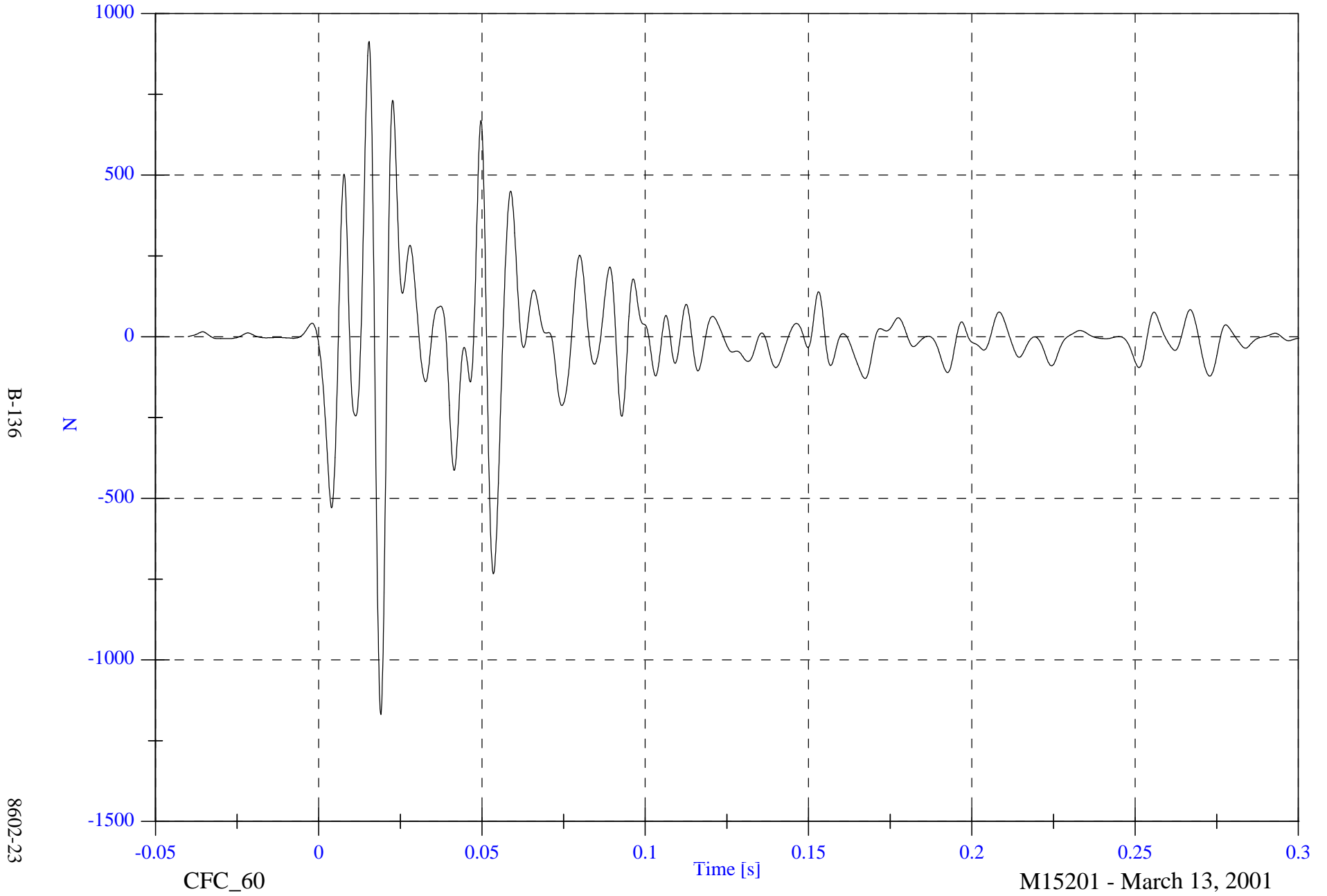
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Barrier Load Cell A3 Fx

Max: 913.1 [N] at 0.015 [s]

Min: -1169.0 [N] at 0.019 [s]

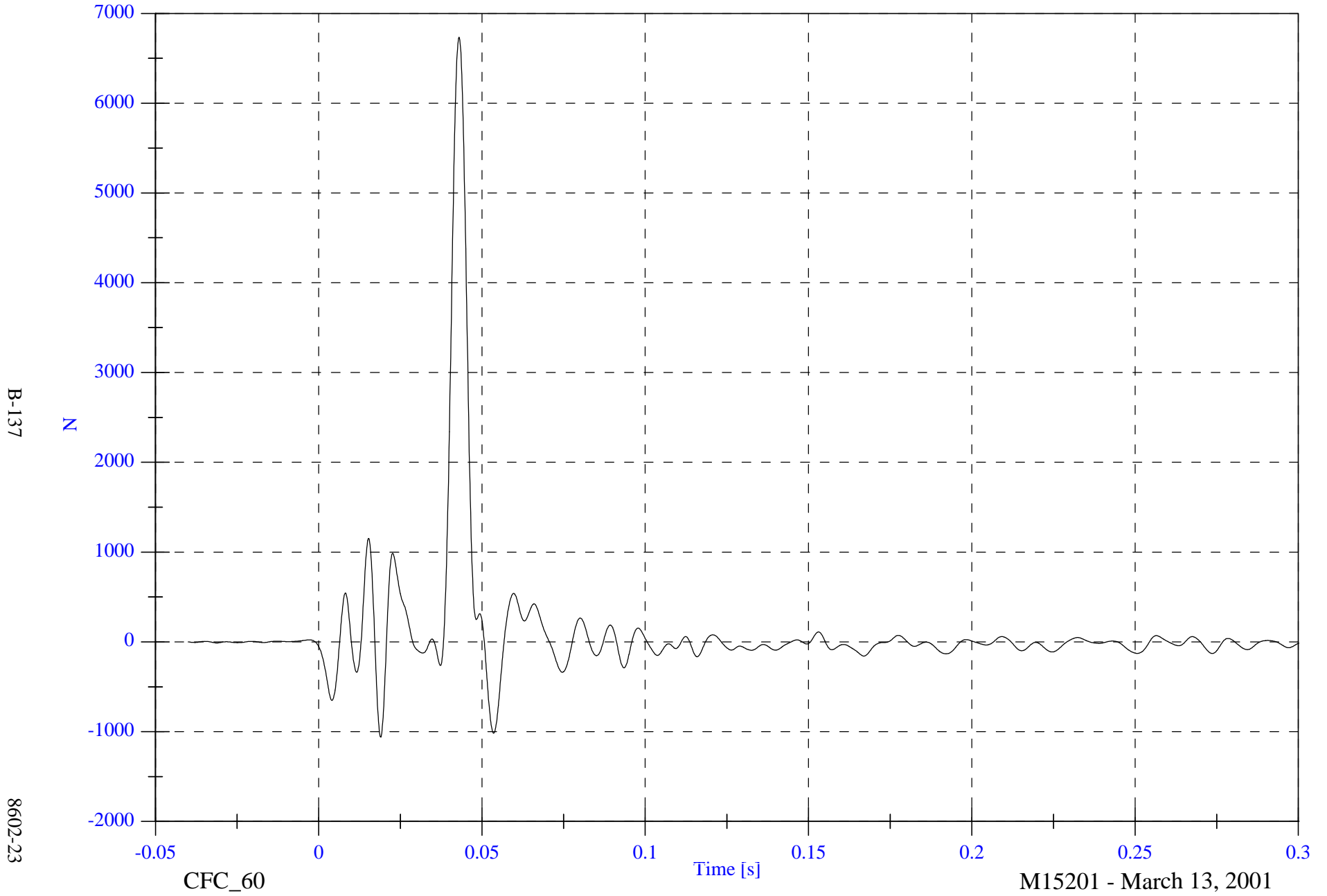


NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 6734.8 [N] at 0.043 [s]

Barrier Load Cell A4 Fx

Min: -1061.7 [N] at 0.019 [s]



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CFC_60

Time [s]

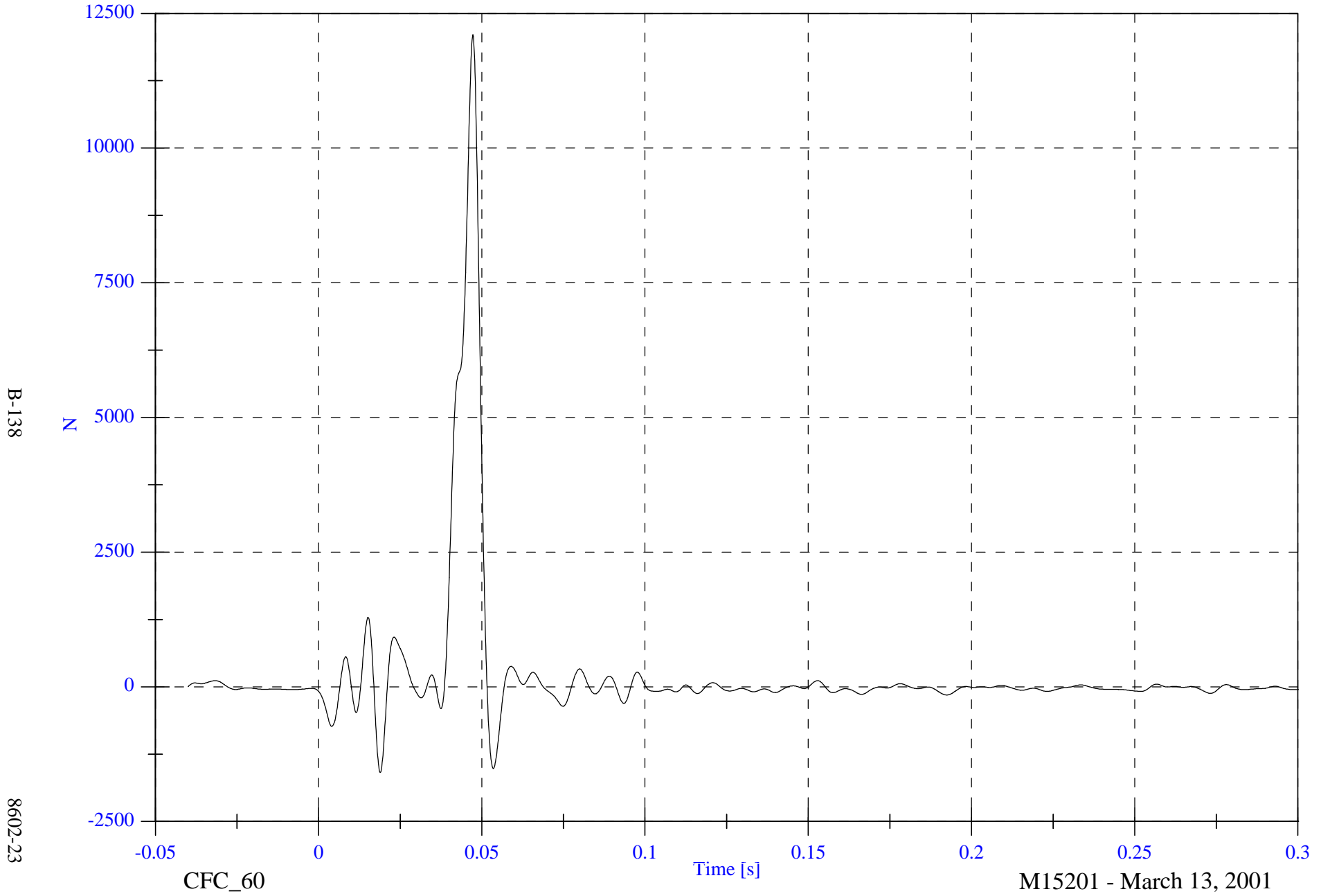
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 12105.0 [N] at 0.047 [s]

Barrier Load Cell A5 Fx

Min: -1592.2 [N] at 0.019 [s]

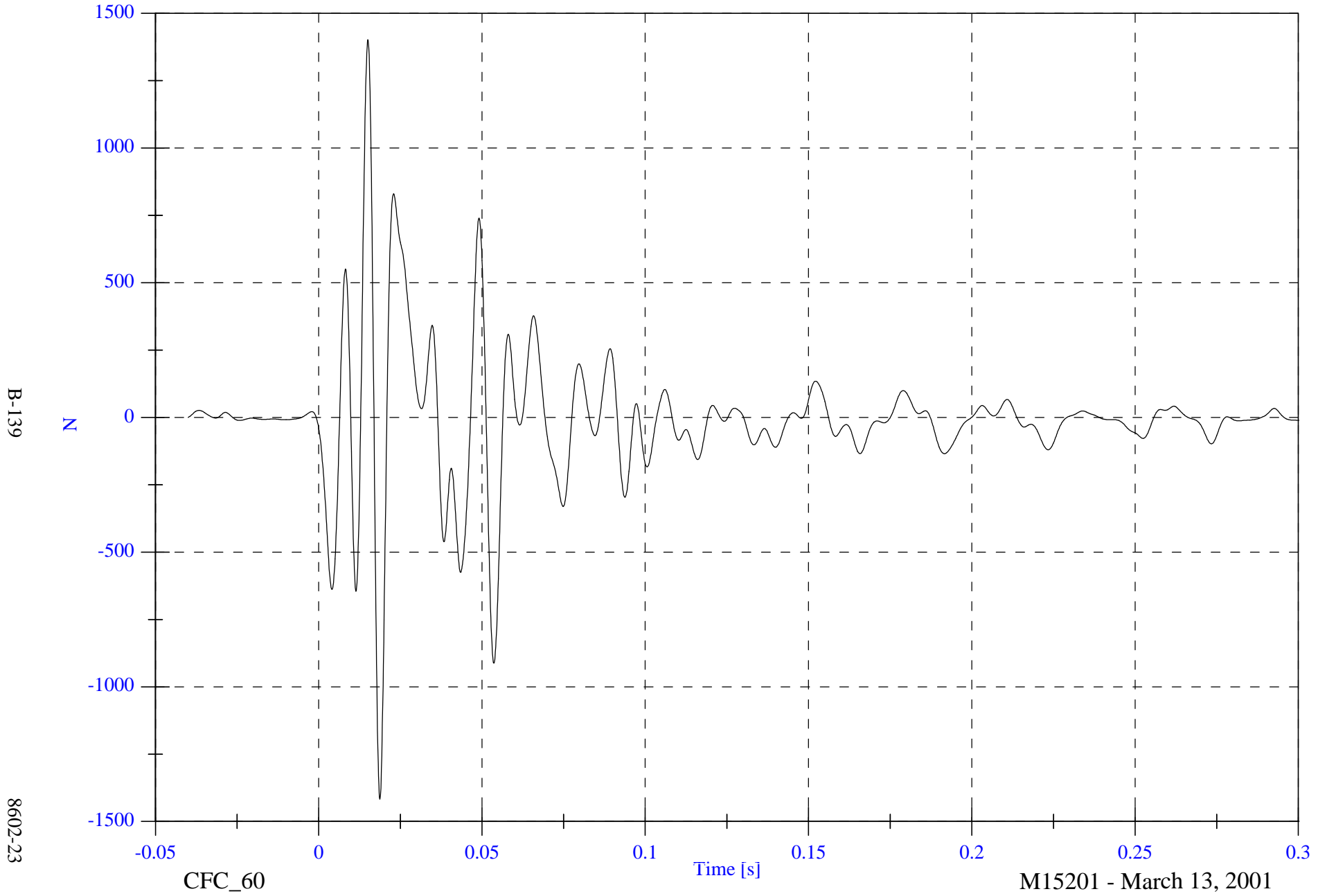


NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 1401.9 [N] at 0.015 [s]

Barrier Load Cell A6 Fx

Min: -1417.4 [N] at 0.019 [s]

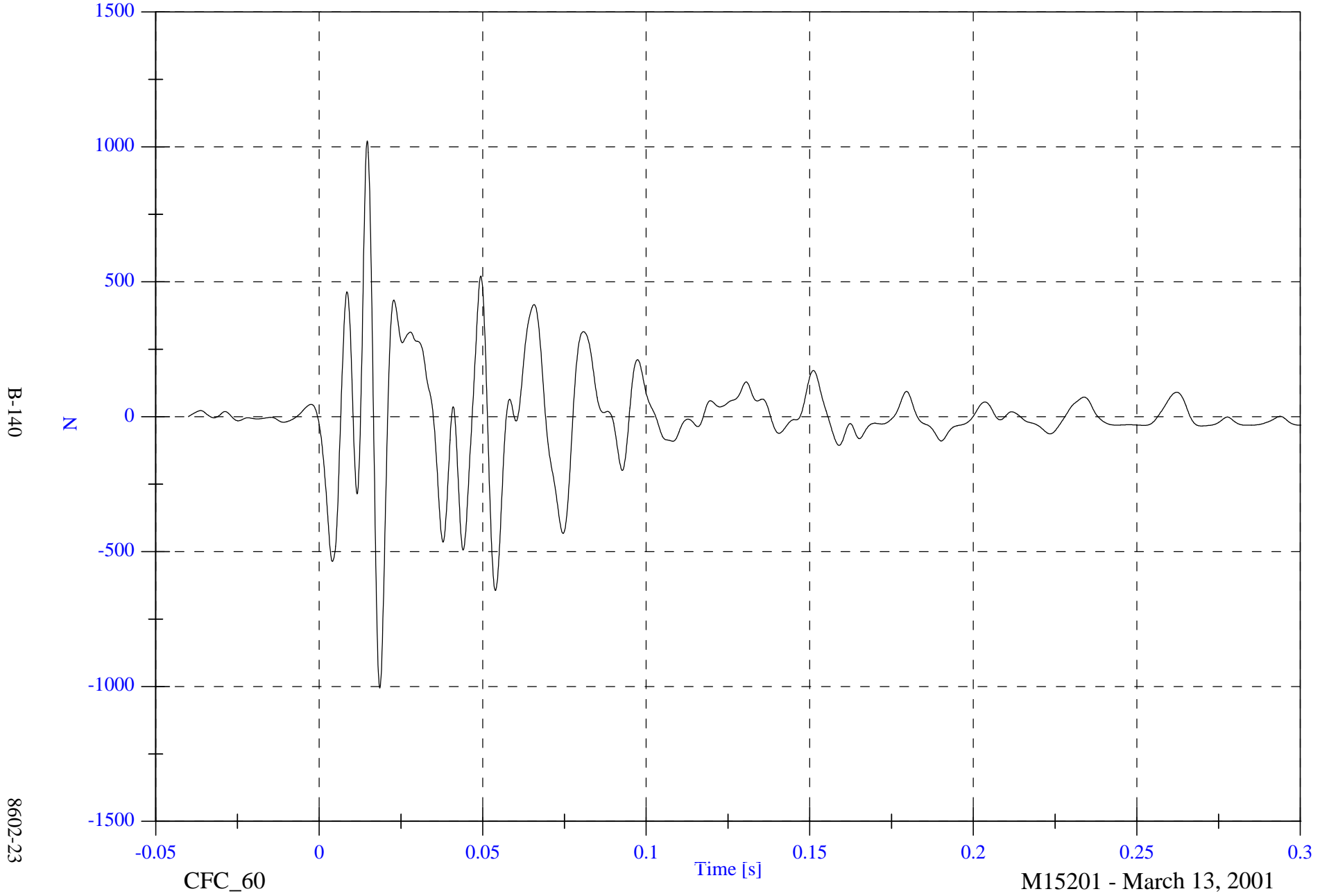


NCAP 2001 Test #23 - 2001 Nissan Frontier

Barrier Load Cell A7 Fx

Max: 1022.6 [N] at 0.015 [s]

Min: -1006.2 [N] at 0.018 [s]



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CFC_60

Time [s]

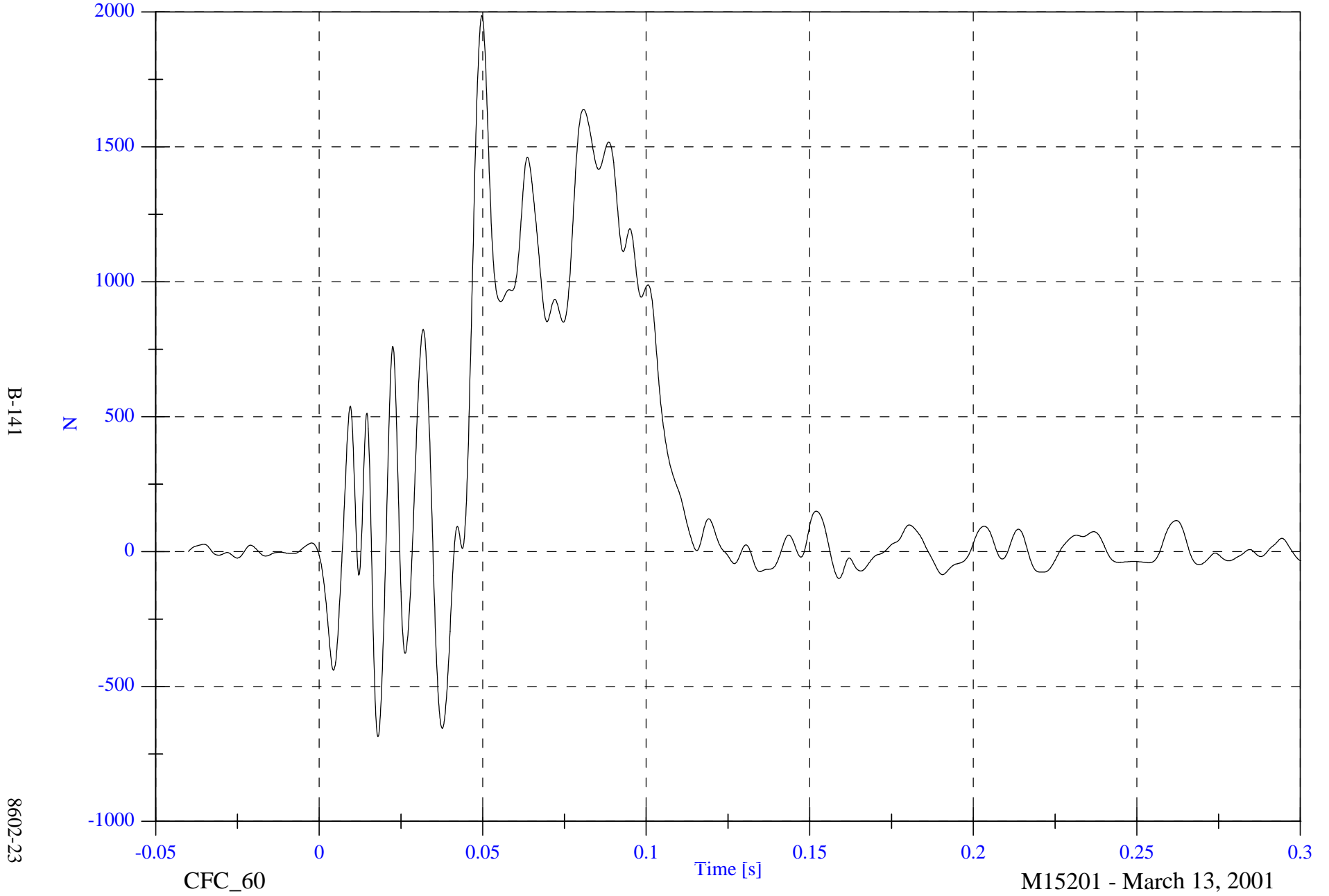
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 1987.4 [N] at 0.050 [s]

Barrier Load Cell A8 Fx

Min: -686.6 [N] at 0.018 [s]



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CFC_60

Time [s]

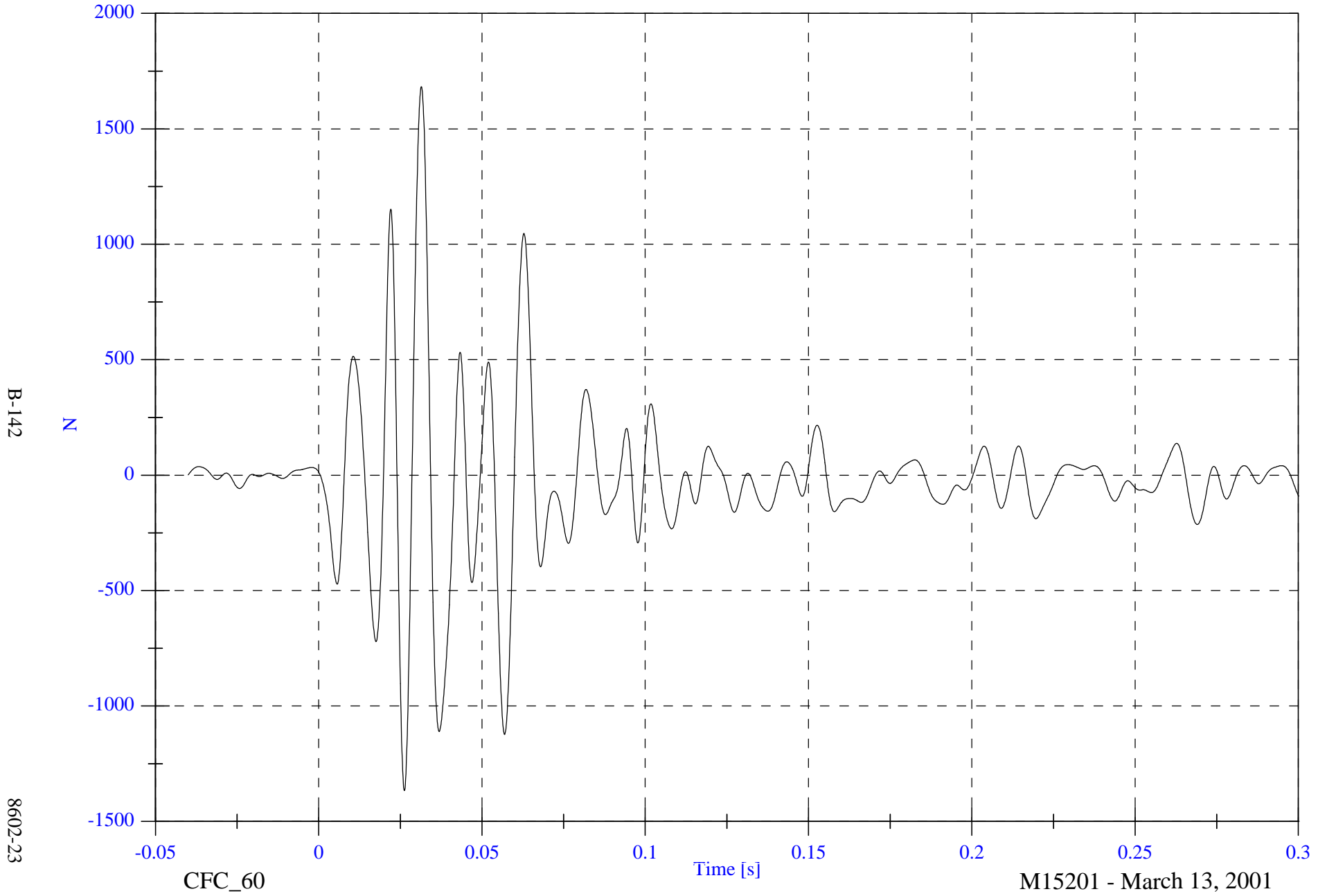
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 1682.2 [N] at 0.031 [s]

Barrier Load Cell A9 Fx

Min: -1366.8 [N] at 0.026 [s]

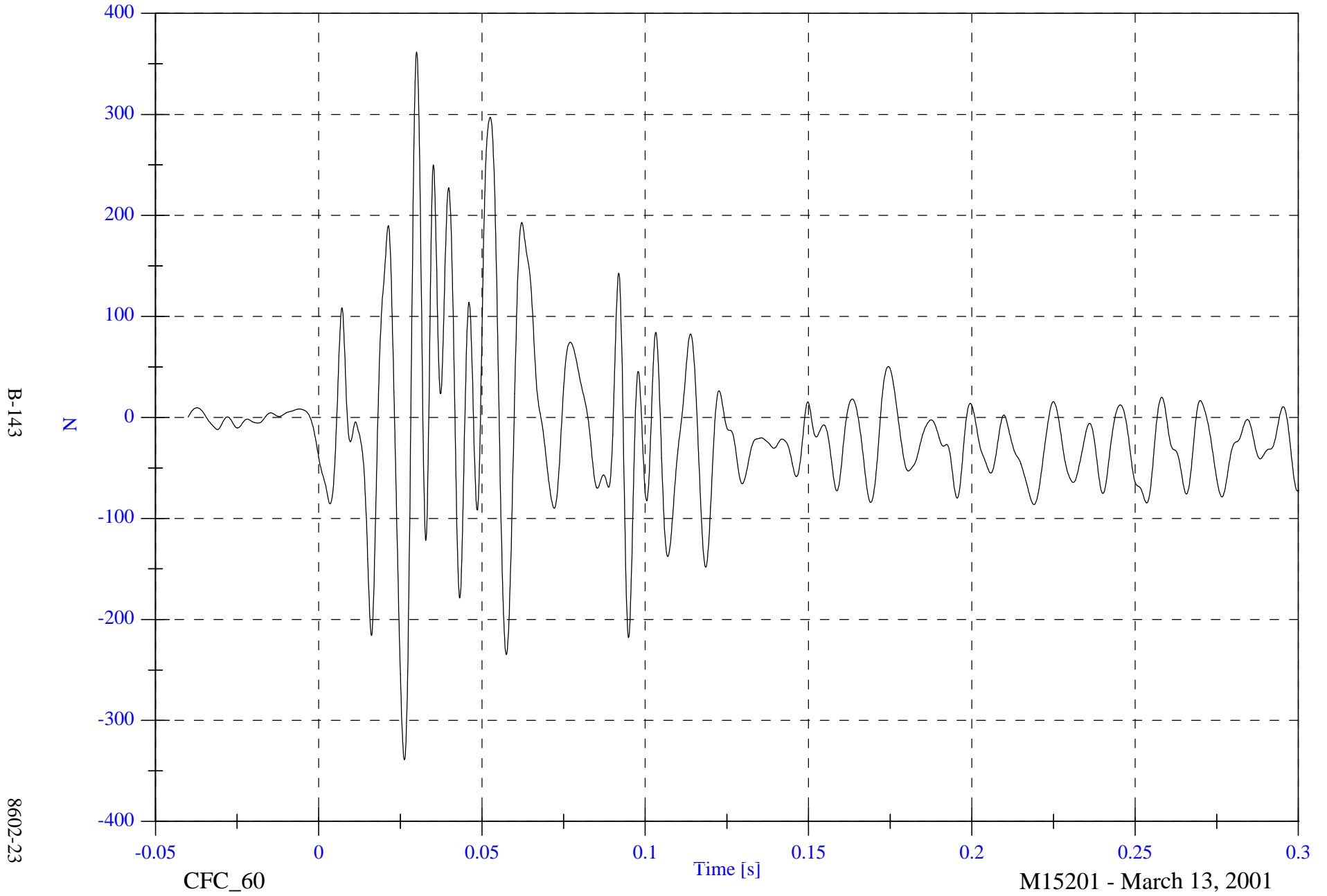


NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 361.6 [N] at 0.030 [s]

Barrier Load Cell B1 Fx

Min: -339.1 [N] at 0.026 [s]

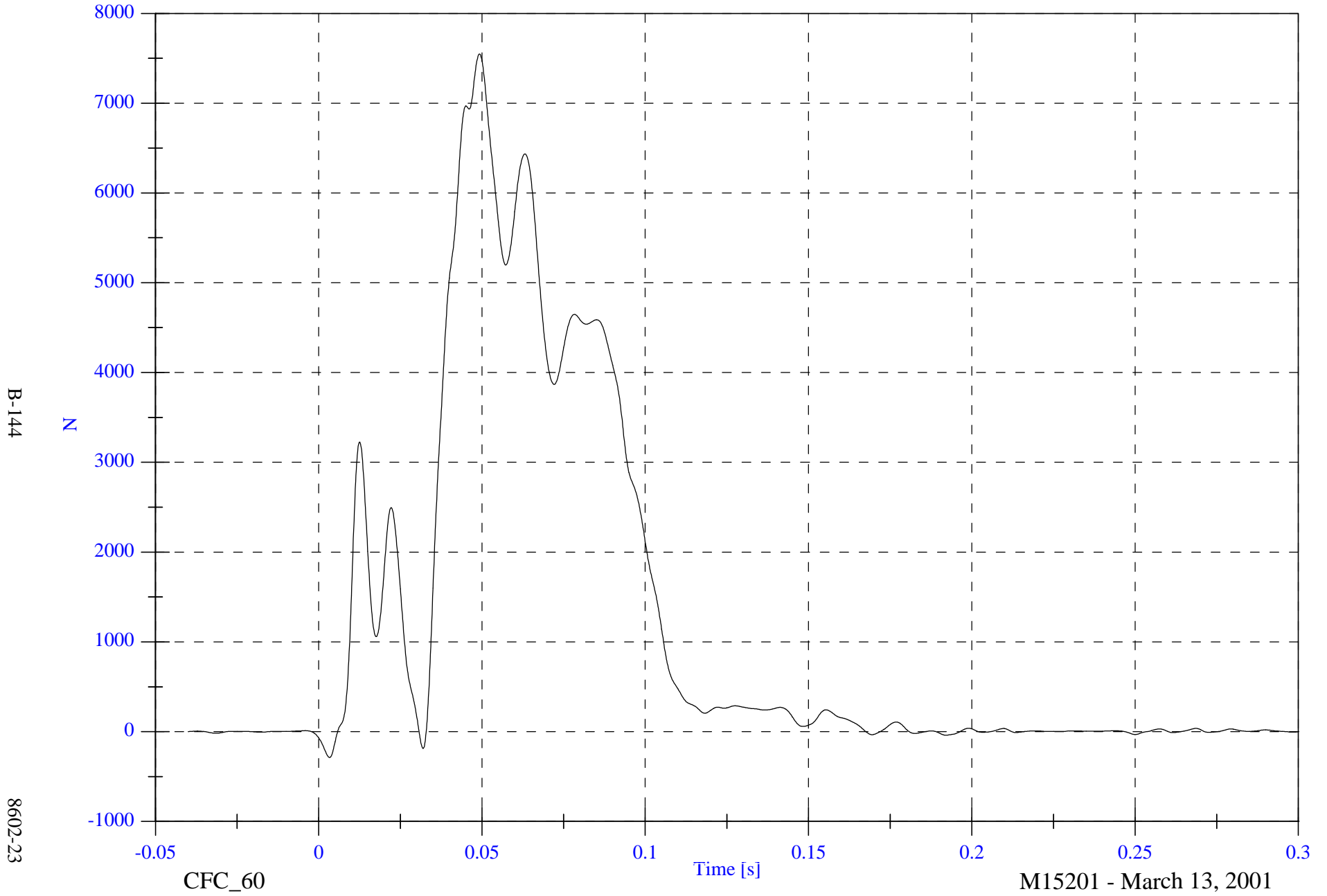


NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 7548.8 [N] at 0.049 [s]

Barrier Load Cell B2 Fx

Min: -287.6 [N] at 0.003 [s]



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CFC_60

Time [s]

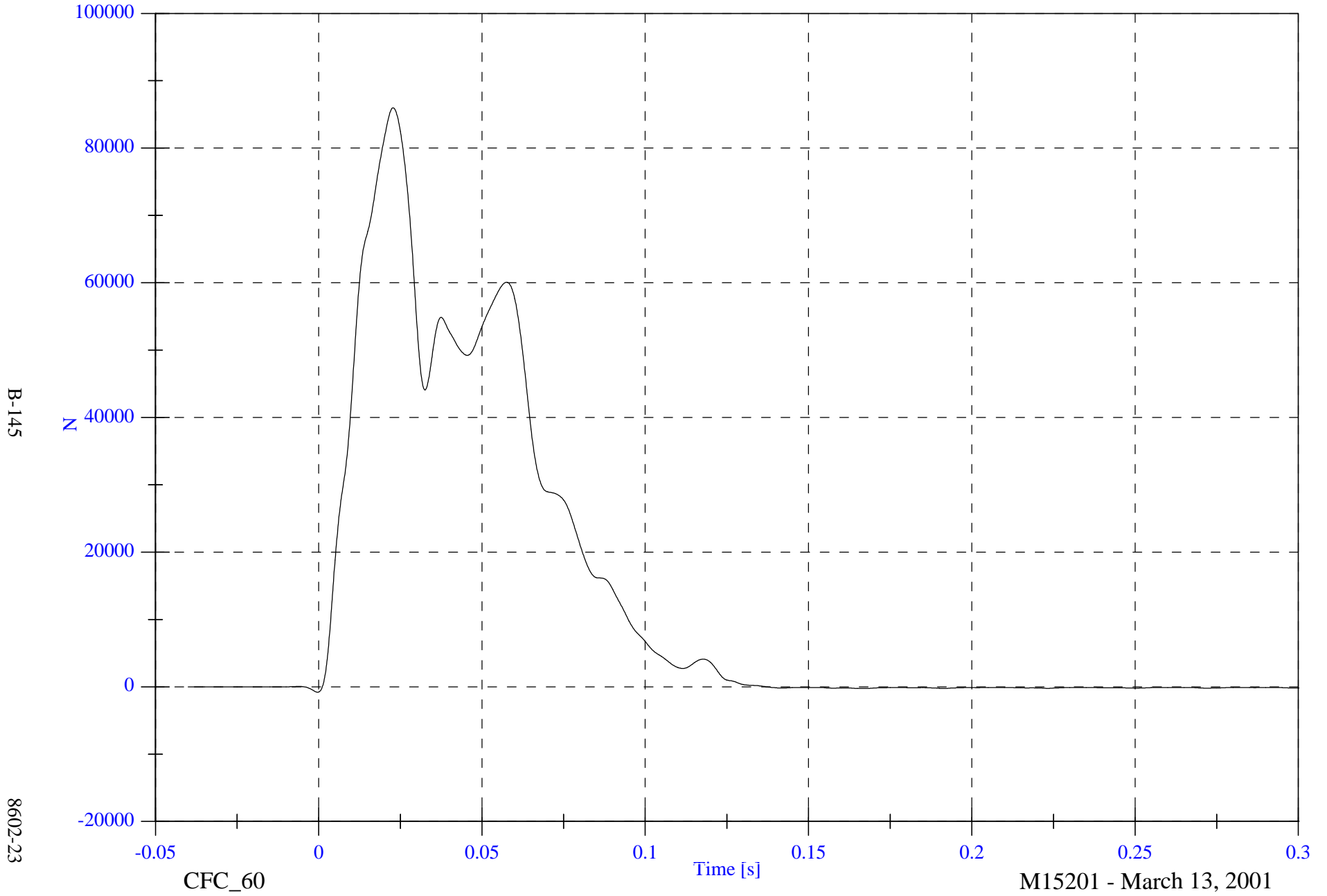
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Barrier Load Cell B3 Fx

Max: 85982.5 [N] at 0.023 [s]

Min: -812.6 [N] at -0.000 [s]



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CFC_60

Time [s]

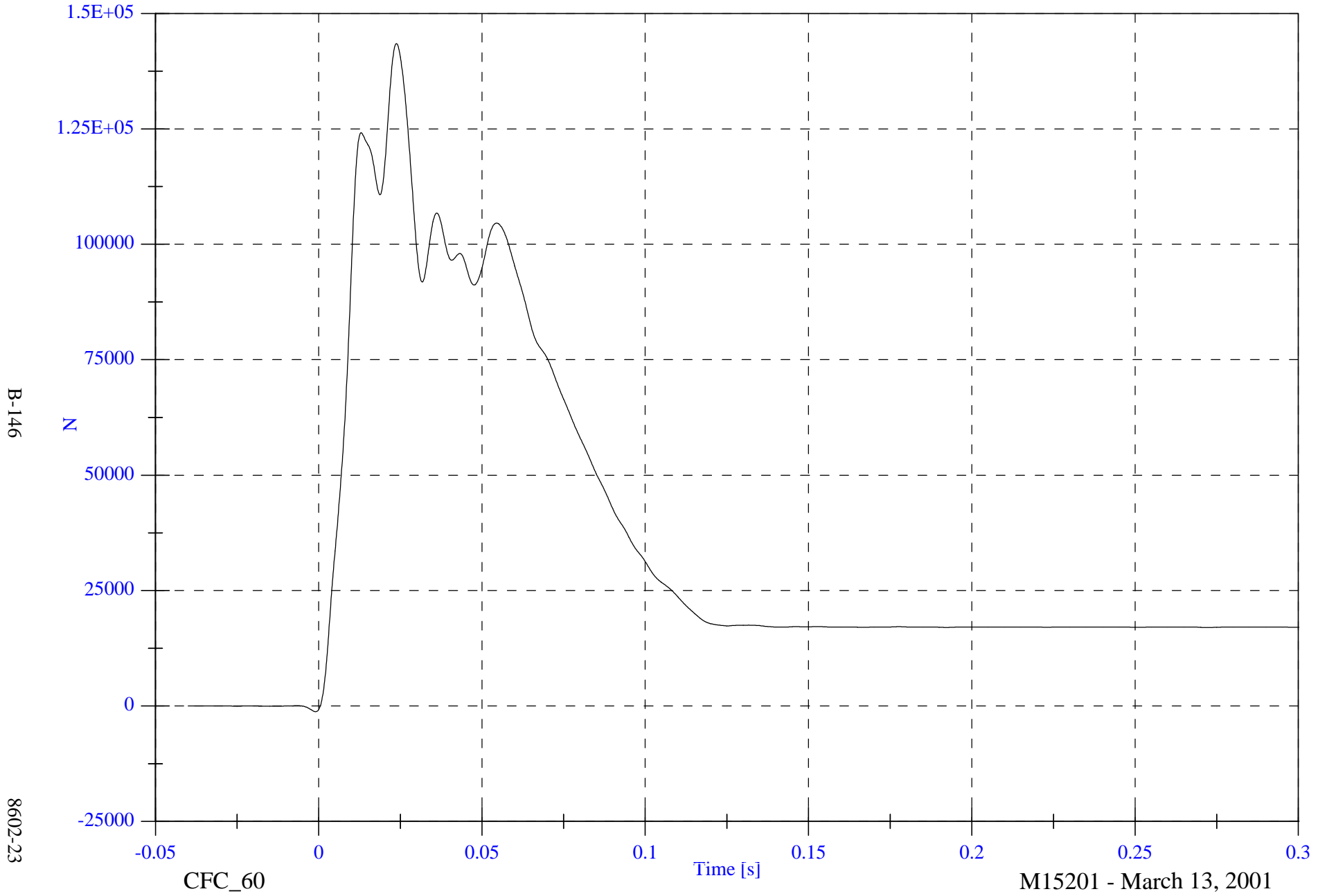
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 143478.3 [N] at 0.024 [s]

Barrier Load Cell B4 Fx

Min: -1230.5 [N] at -0.001 [s]



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CFC_60

Time [s]

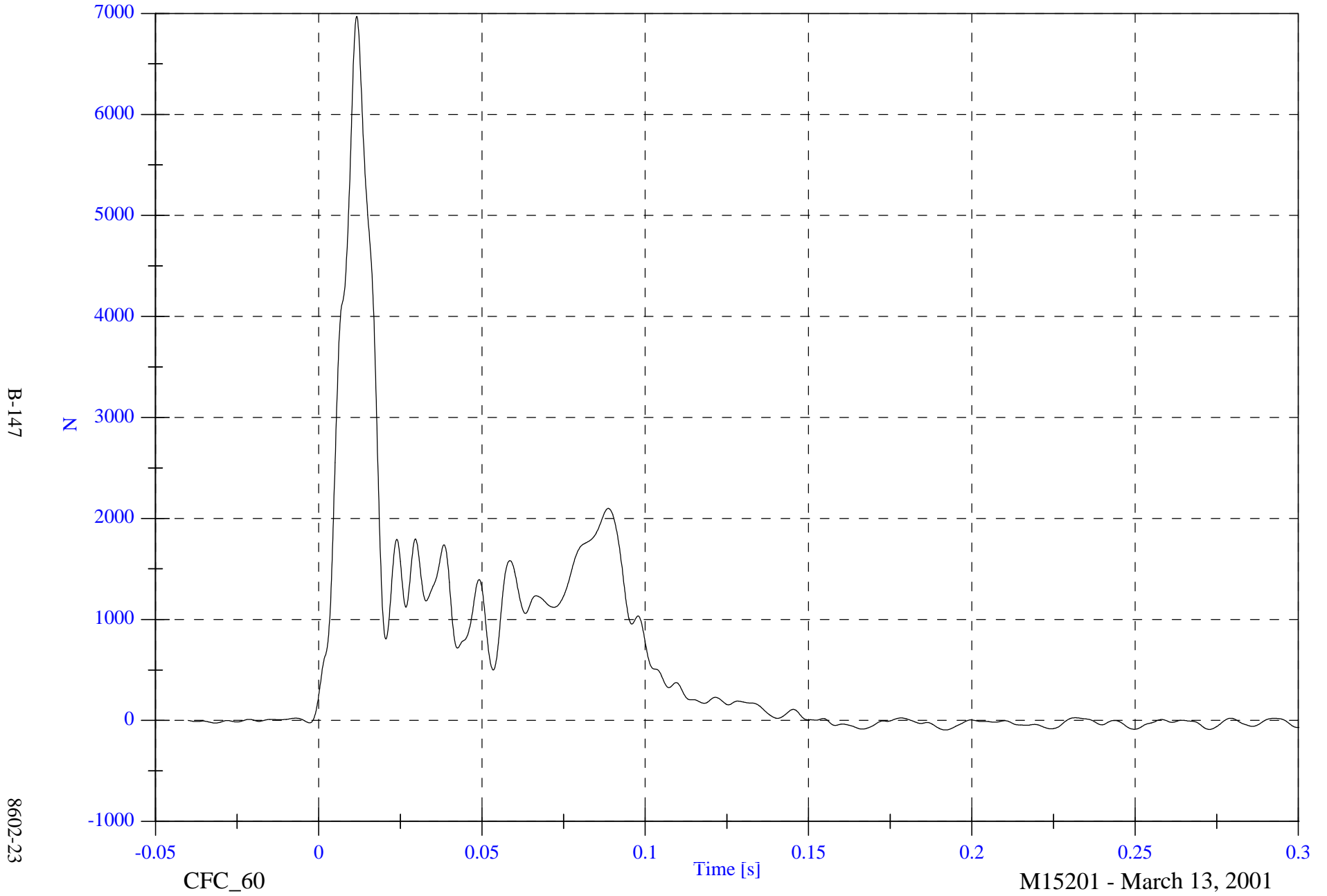
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 6970.9 [N] at 0.012 [s]

Barrier Load Cell B5 Fx

Min: -94.5 [N] at 0.192 [s]



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CFC_60

Time [s]

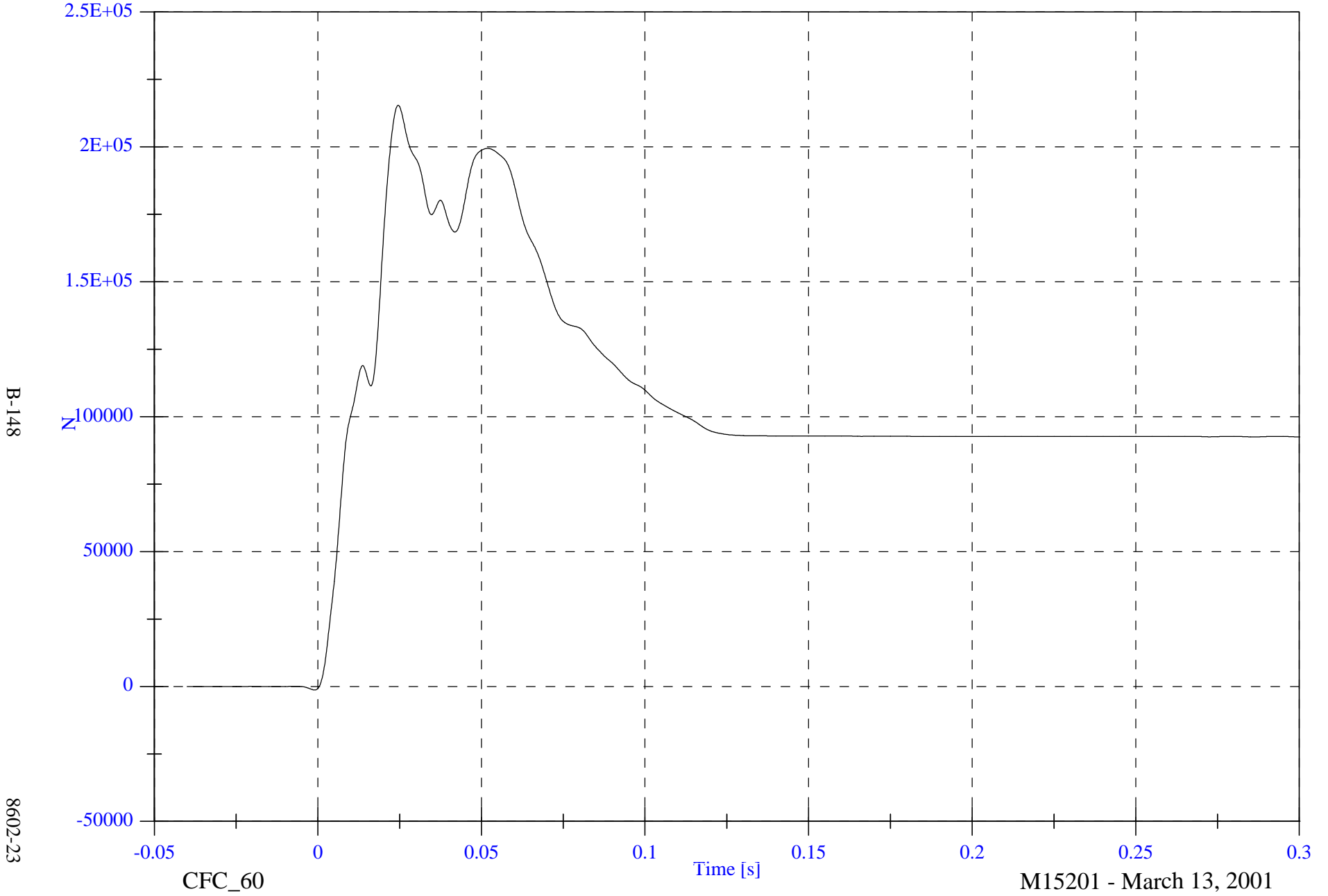
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 215448.4 [N] at 0.024 [s]

Barrier Load Cell B6 Fx

Min: -1323.7 [N] at -0.001 [s]



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CFC_60

Time [s]

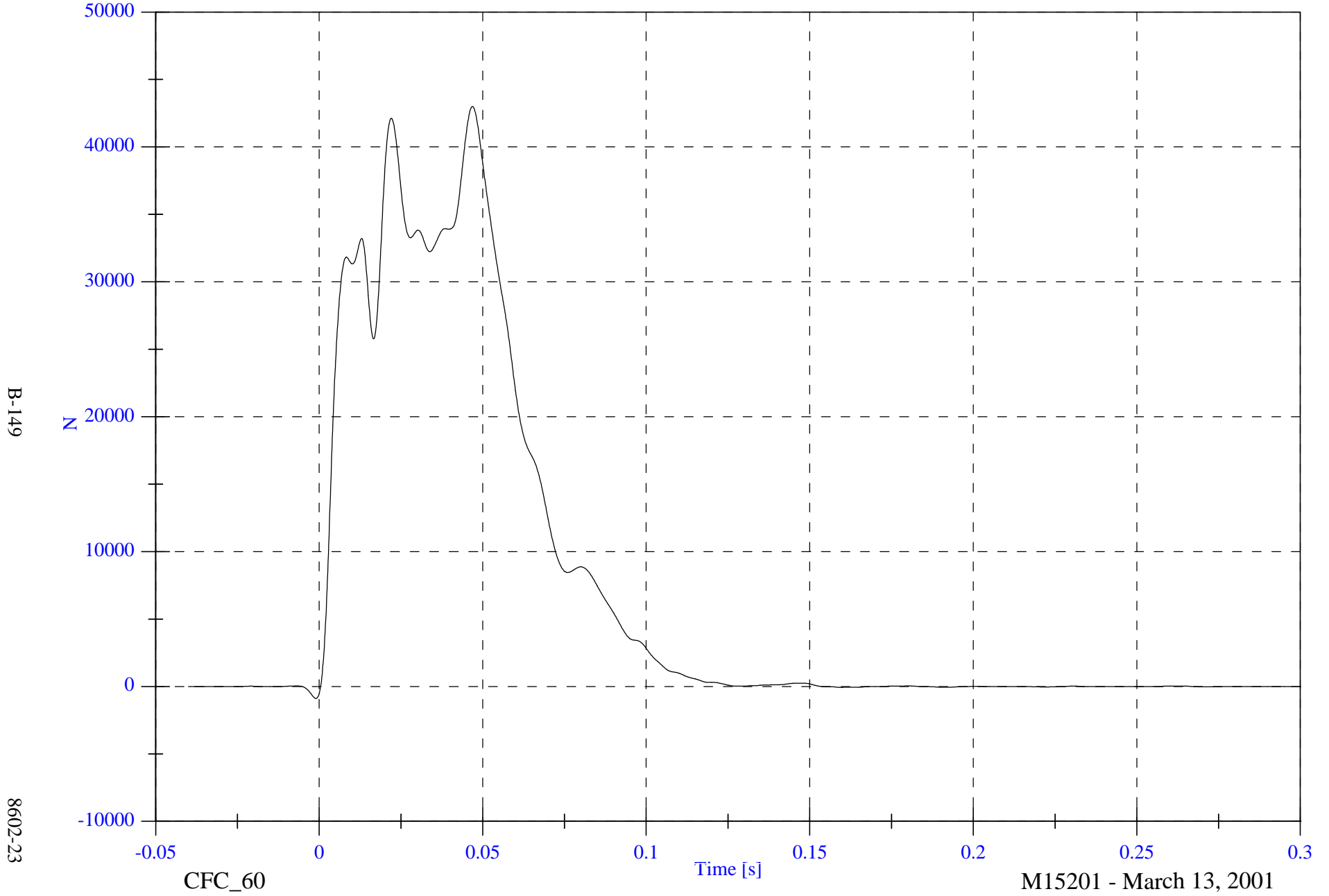
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Barrier Load Cell B7 Fx

Max: 42999.2 [N] at 0.047 [s]

Min: -894.9 [N] at -0.001 [s]



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CFC_60

Time [s]

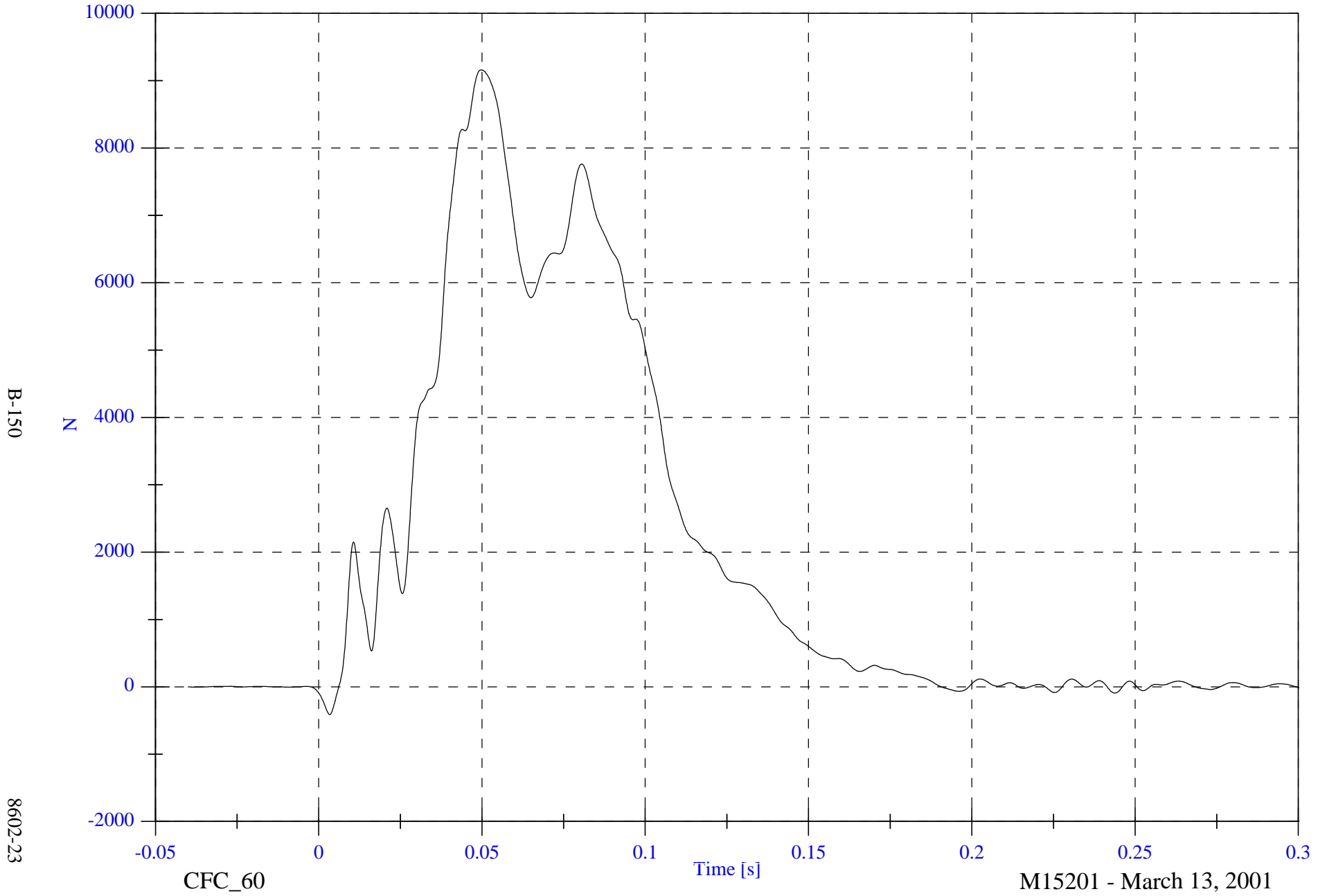
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 9159.6 [N] at 0.050 [s]

Barrier Load Cell B8 Fx

Min: -413.2 [N] at 0.003 [s]



B-150

8602-23

CFC_60

Time [s]

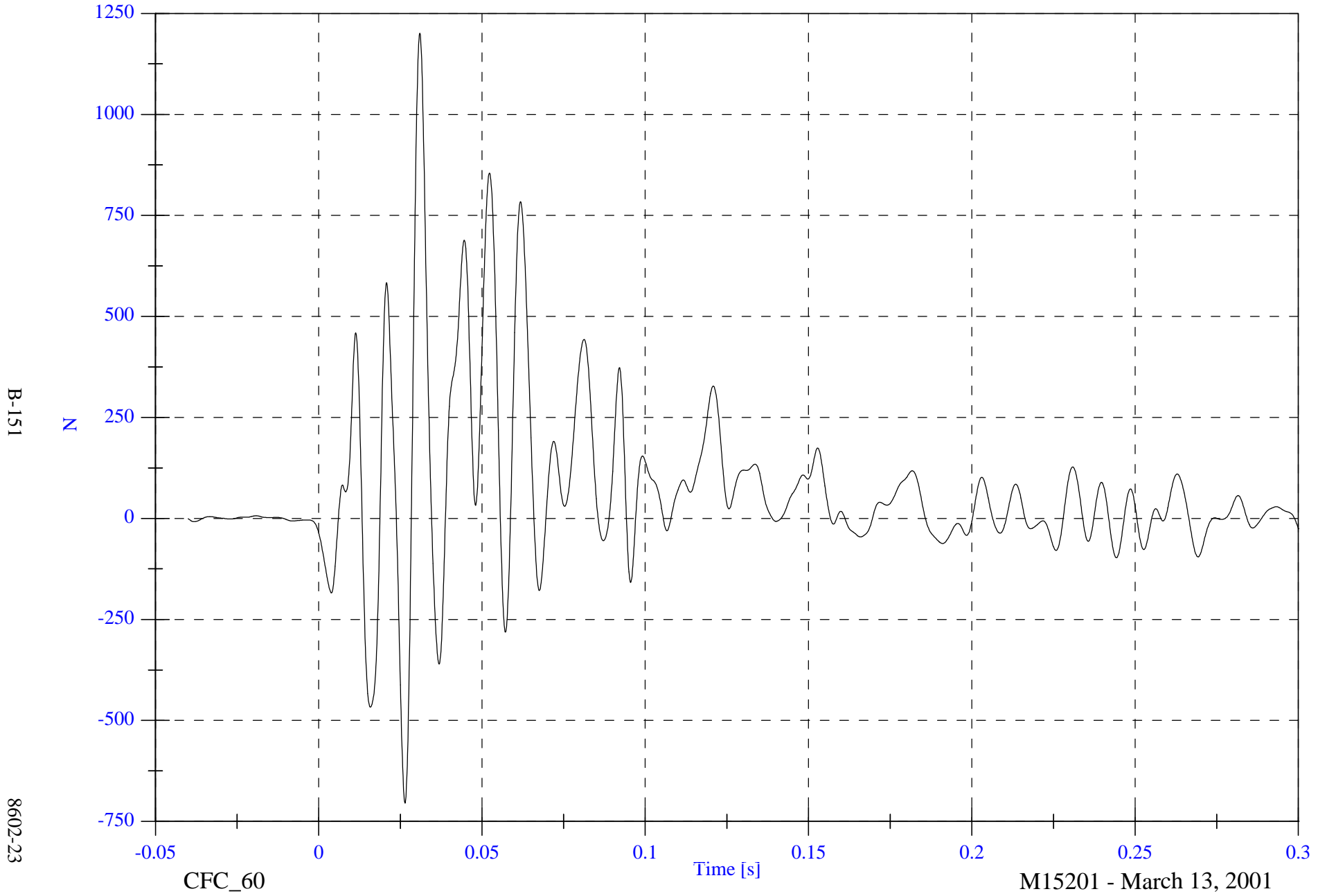
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 1200.9 [N] at 0.031 [s]

Barrier Load Cell B9 Fx

Min: -704.7 [N] at 0.026 [s]



B-151

8602-23

CFC_60

Time [s]

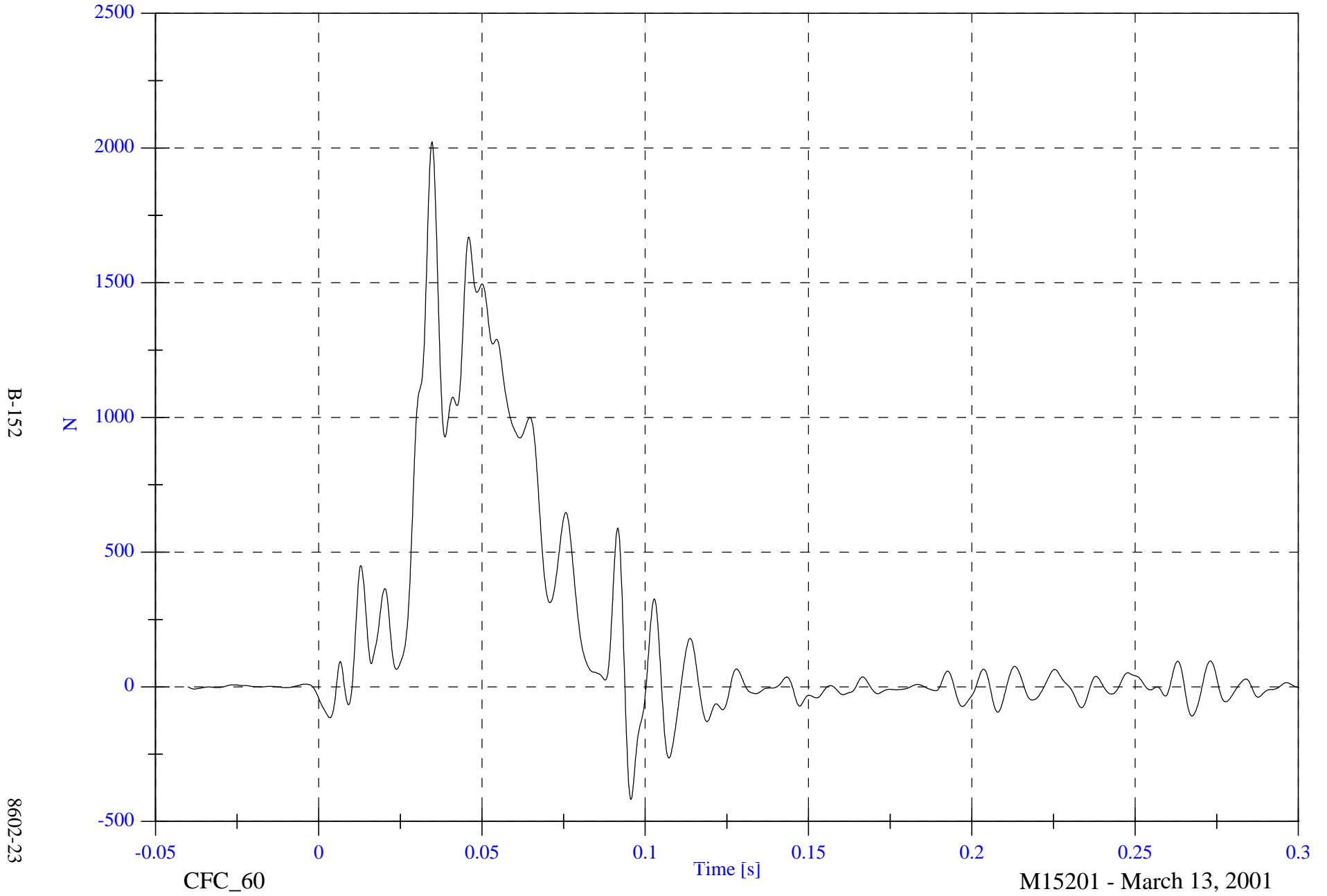
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 2022.9 [N] at 0.035 [s]

Barrier Load Cell C1 Fx

Min: -418.4 [N] at 0.096 [s]

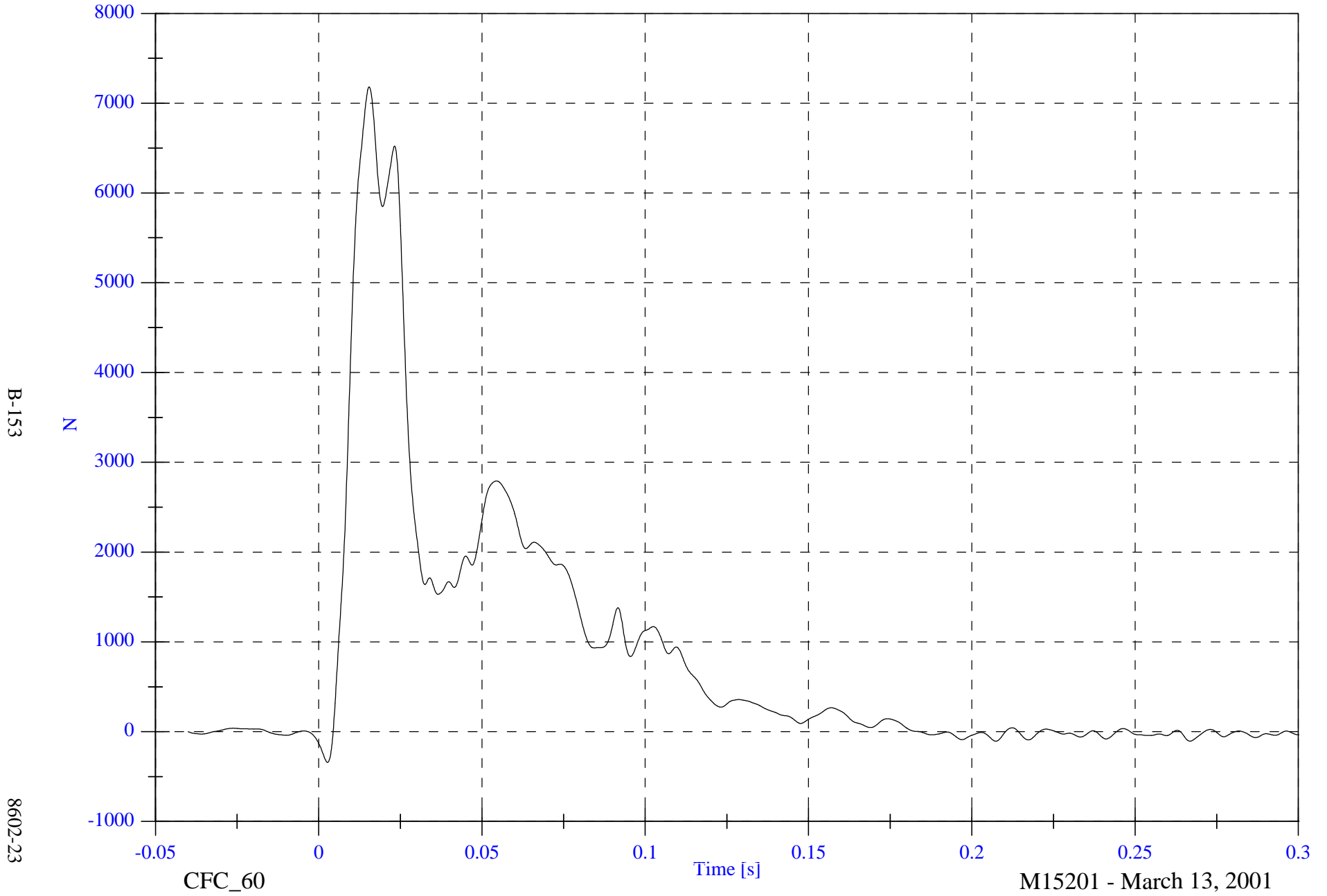


NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 7181.3 [N] at 0.015 [s]

Barrier Load Cell C2 Fx

Min: -342.8 [N] at 0.003 [s]



B-153

8602-23

CFC_60

Time [s]

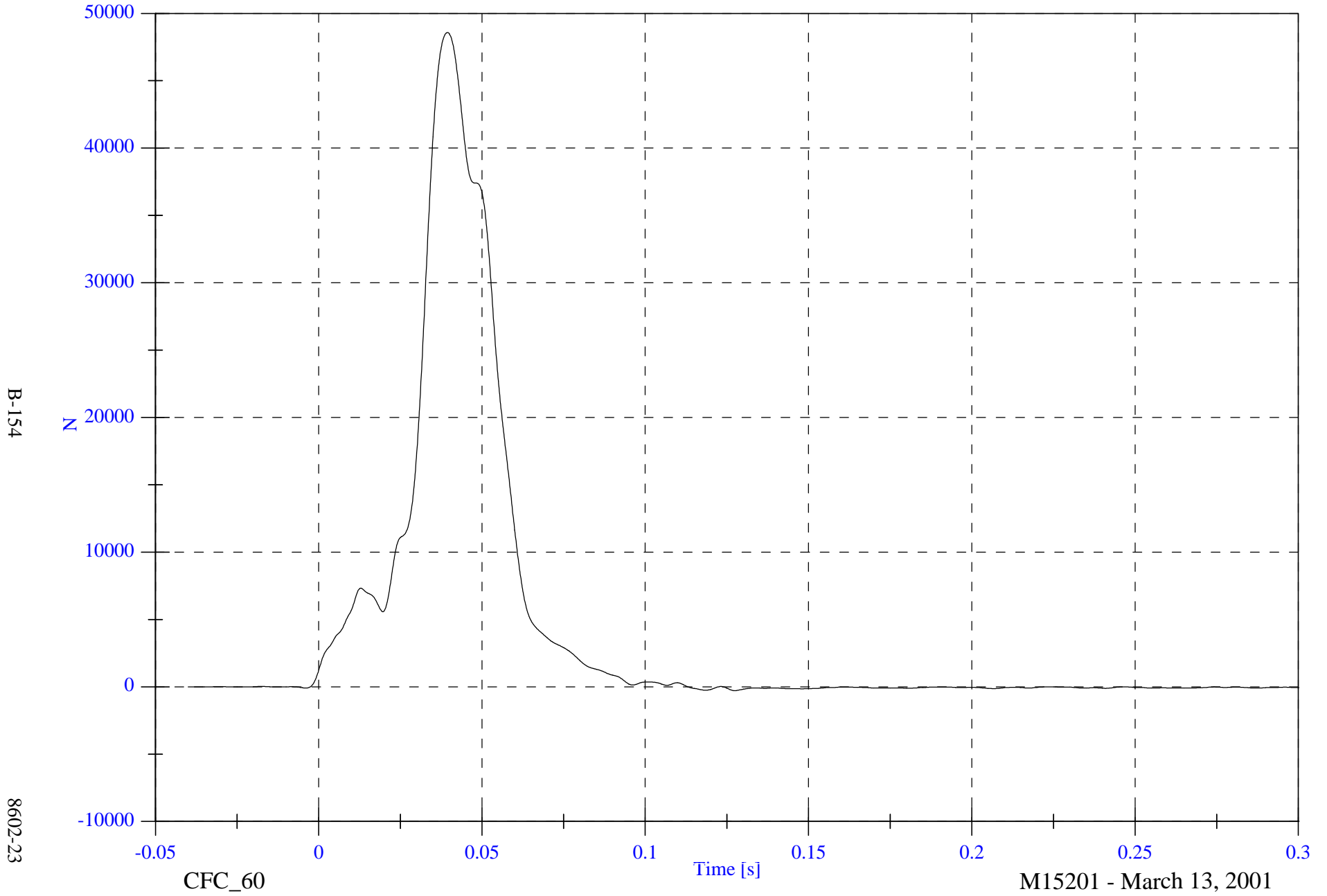
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 48579.4 [N] at 0.039 [s]

Barrier Load Cell C3 Fx

Min: -289.0 [N] at 0.127 [s]



B-154

8602-23

CFC_60

Time [s]

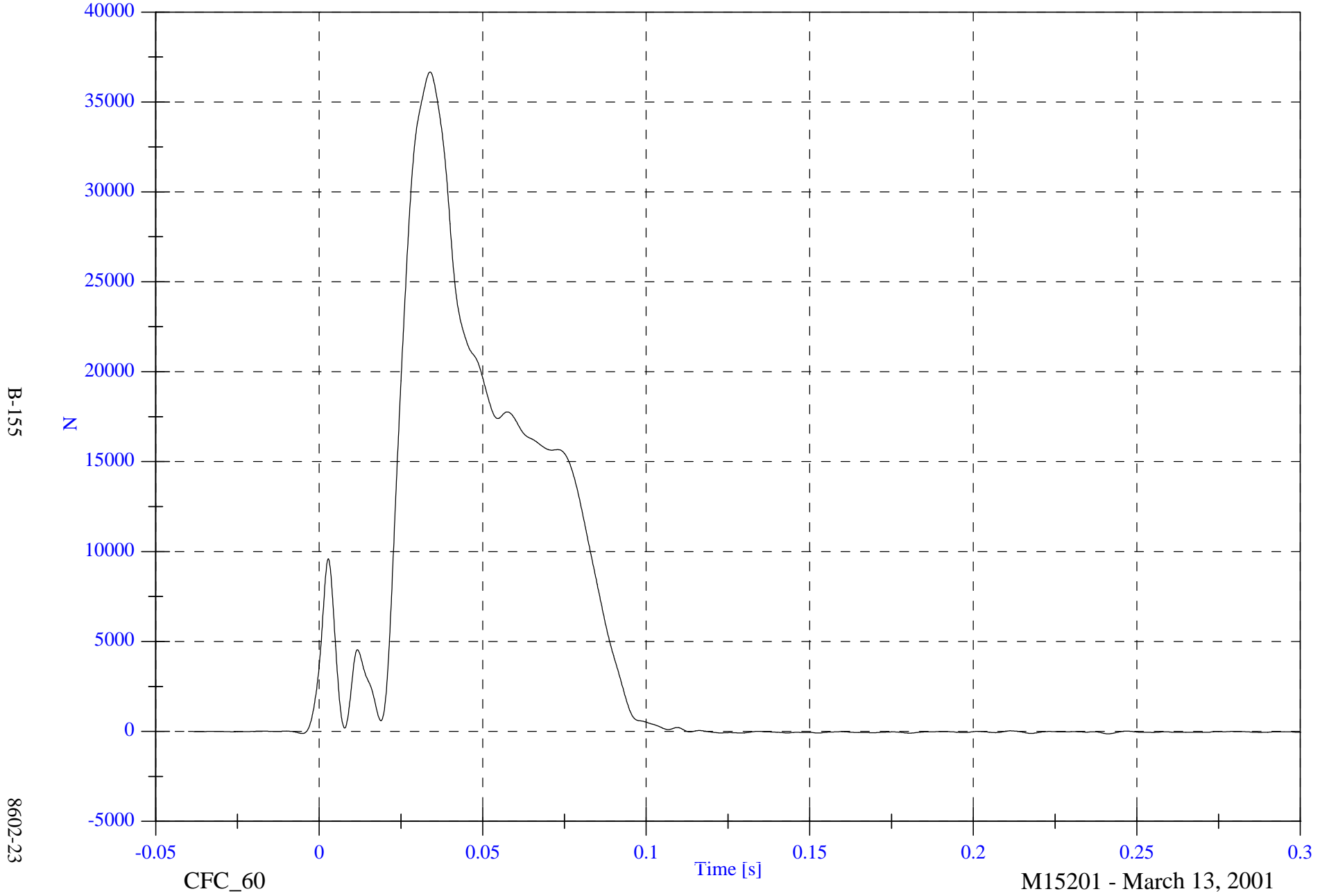
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Barrier Load Cell C4 Fx

Max: 36668.1 [N] at 0.034 [s]

Min: -132.6 [N] at 0.241 [s]



B-155

8602-23

CFC_60

Time [s]

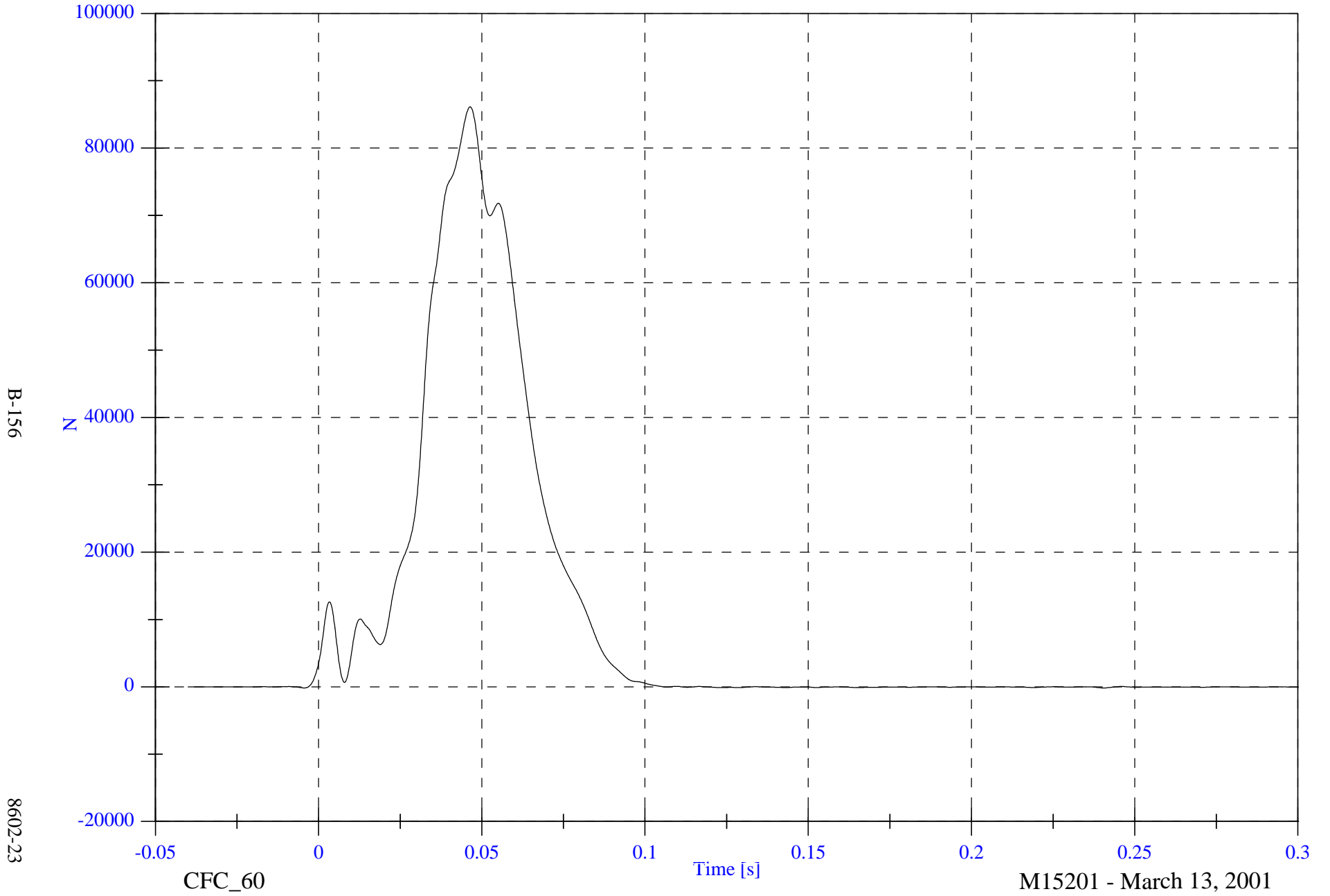
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Barrier Load Cell C5 Fx

Max: 86117.5 [N] at 0.046 [s]

Min: -170.0 [N] at -0.004 [s]



B-156

8602-23

CFC_60

Time [s]

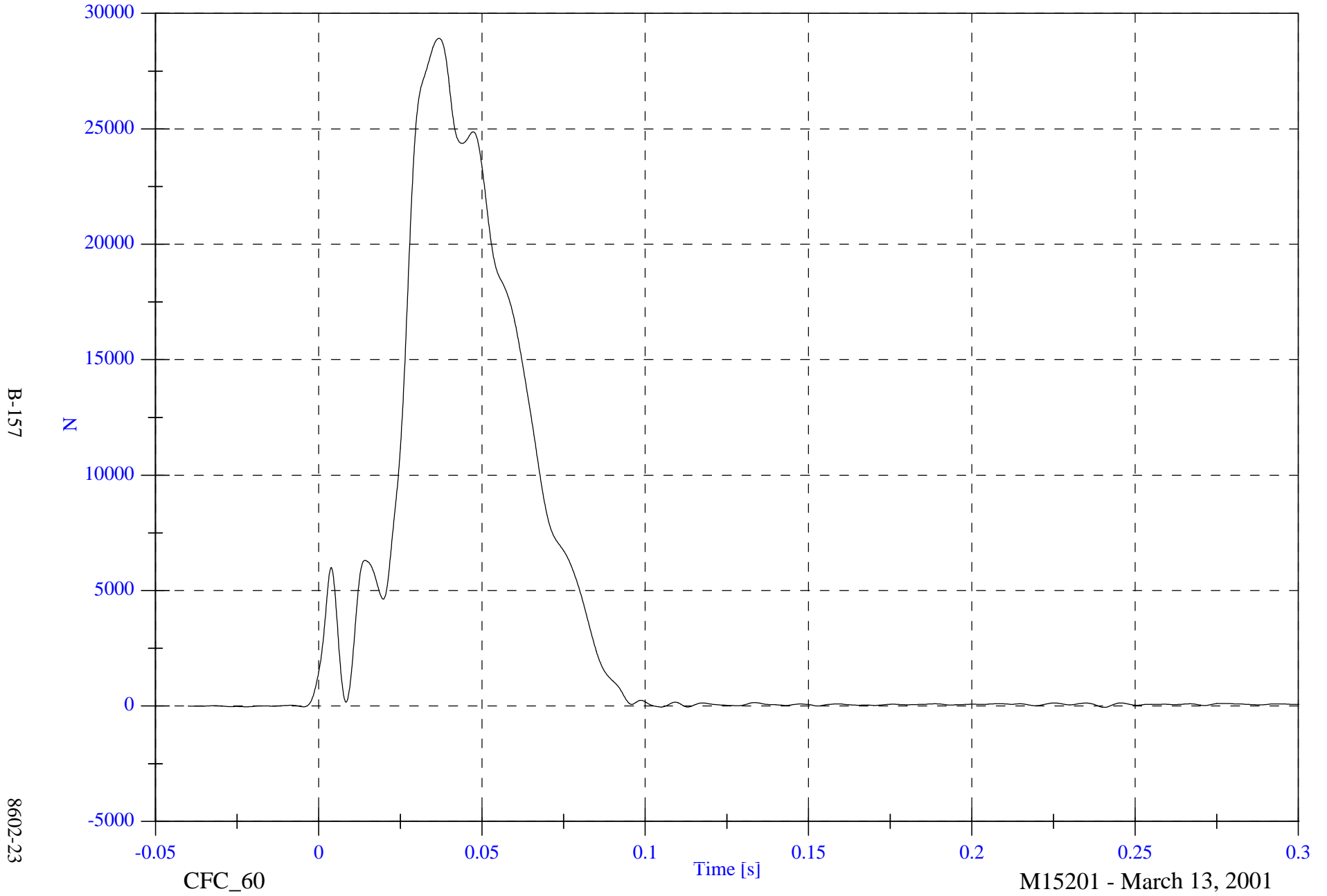
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Barrier Load Cell C6 Fx

Max: 28919.4 [N] at 0.037 [s]

Min: -60.7 [N] at 0.240 [s]



B-157

8602-23

CFC_60

Time [s]

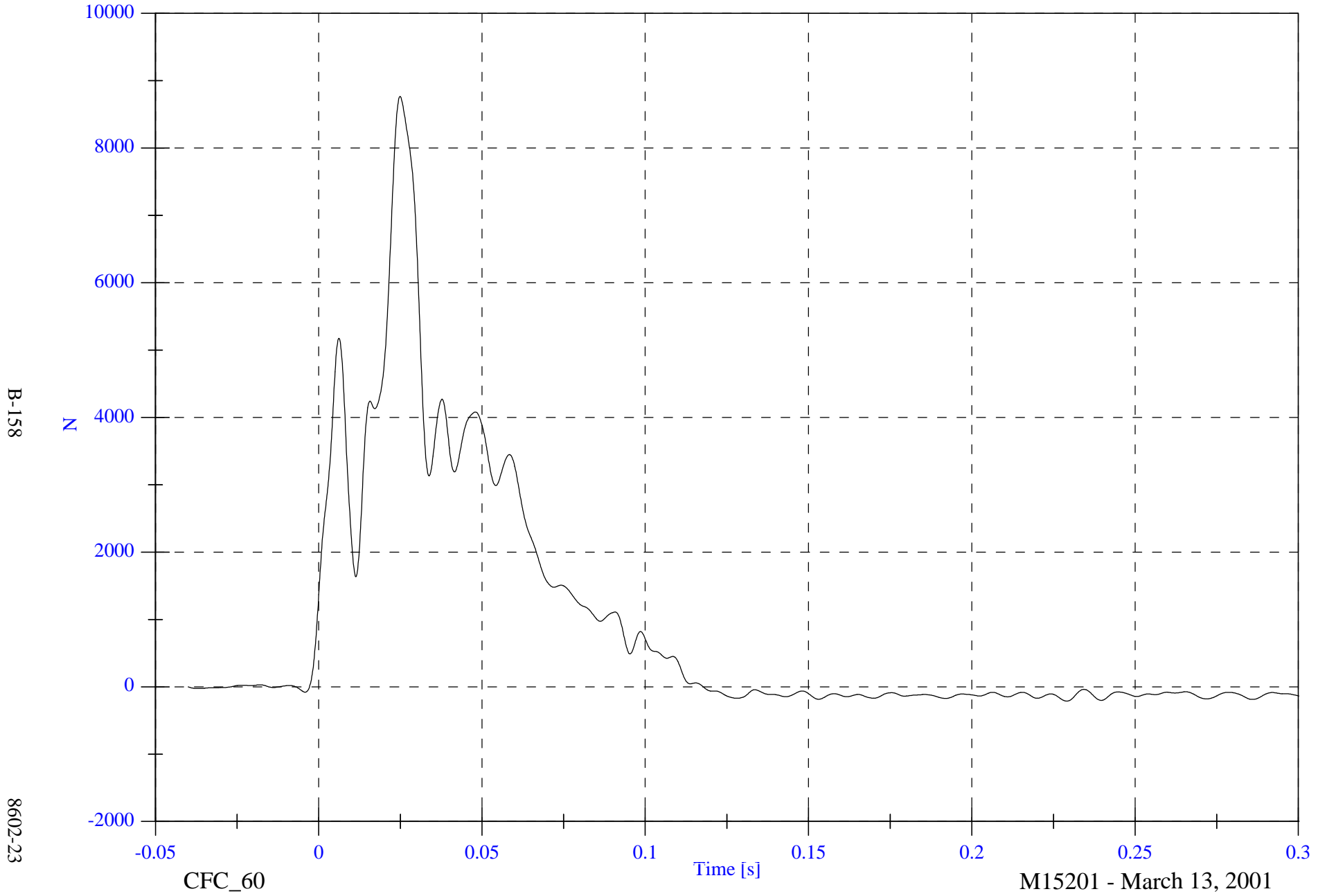
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 8768.2 [N] at 0.025 [s]

Barrier Load Cell C7 Fx

Min: -213.1 [N] at 0.229 [s]



B-158

8602-23

CFC_60

Time [s]

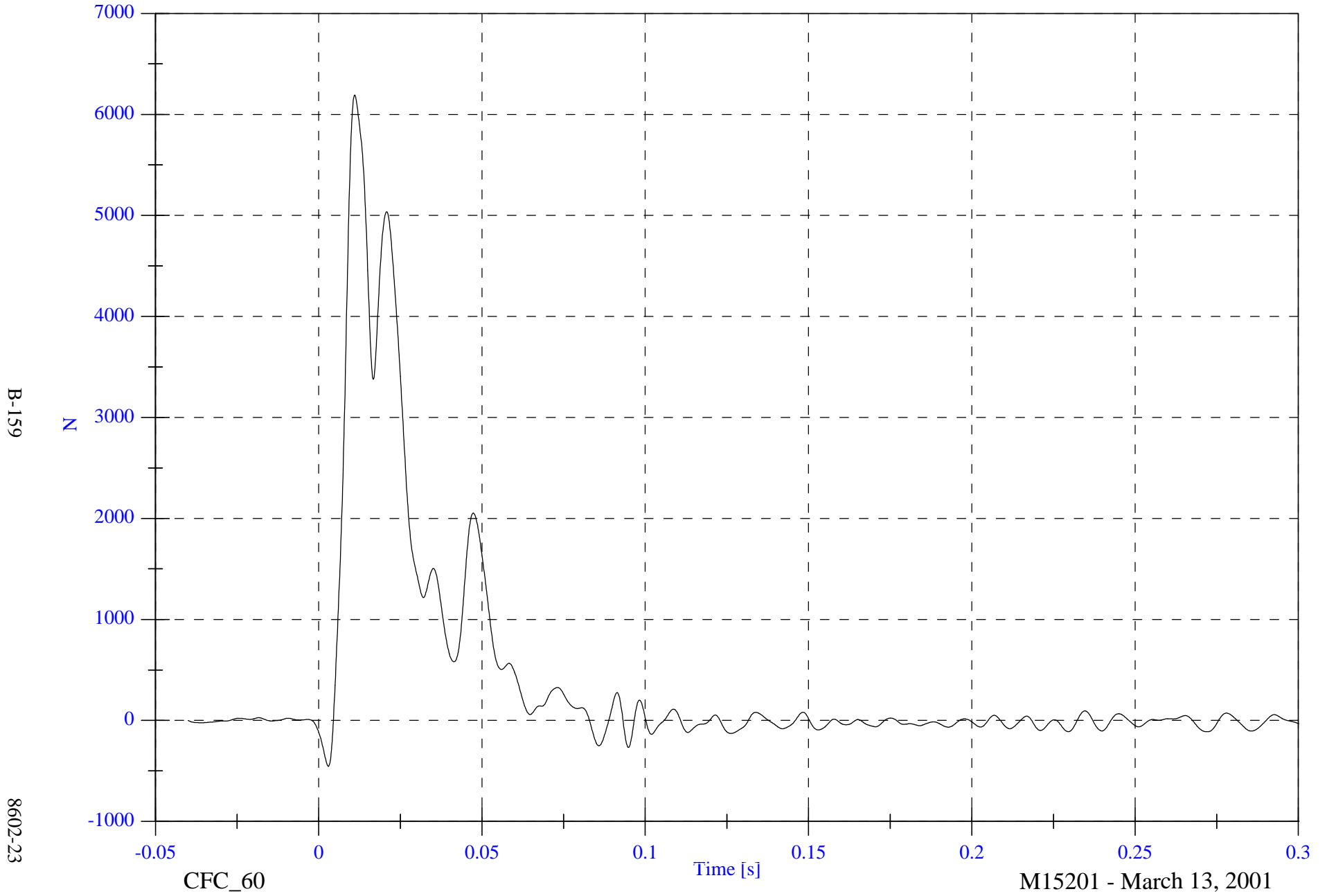
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 6192.8 [N] at 0.011 [s]

Barrier Load Cell C8 Fx

Min: -454.4 [N] at 0.003 [s]



B-159

8602-23

CFC_60

Time [s]

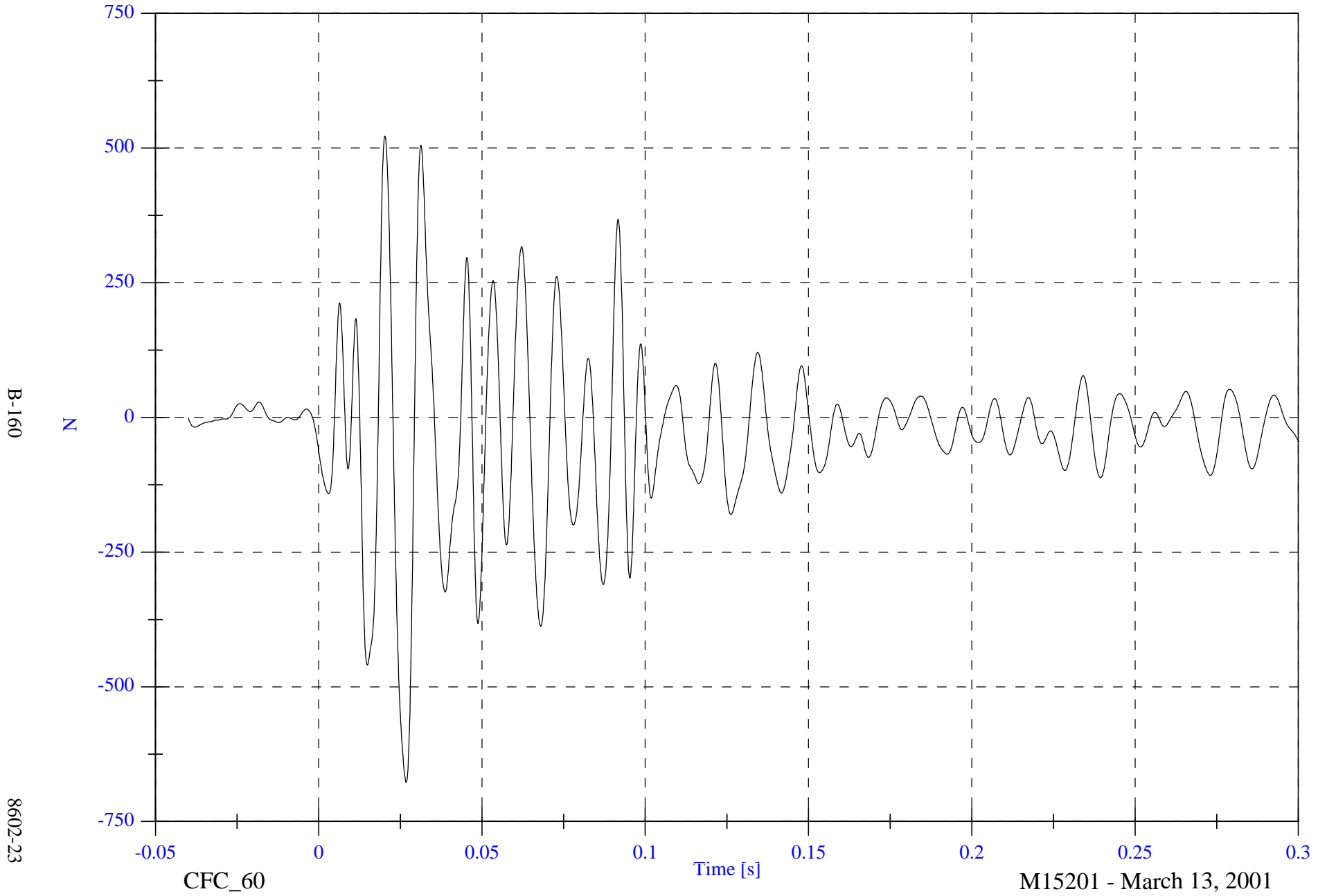
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 522.4 [N] at 0.020 [s]

Barrier Load Cell C9 Fx

Min: -678.0 [N] at 0.027 [s]



B-160

8602-23

CFC_60

Time [s]

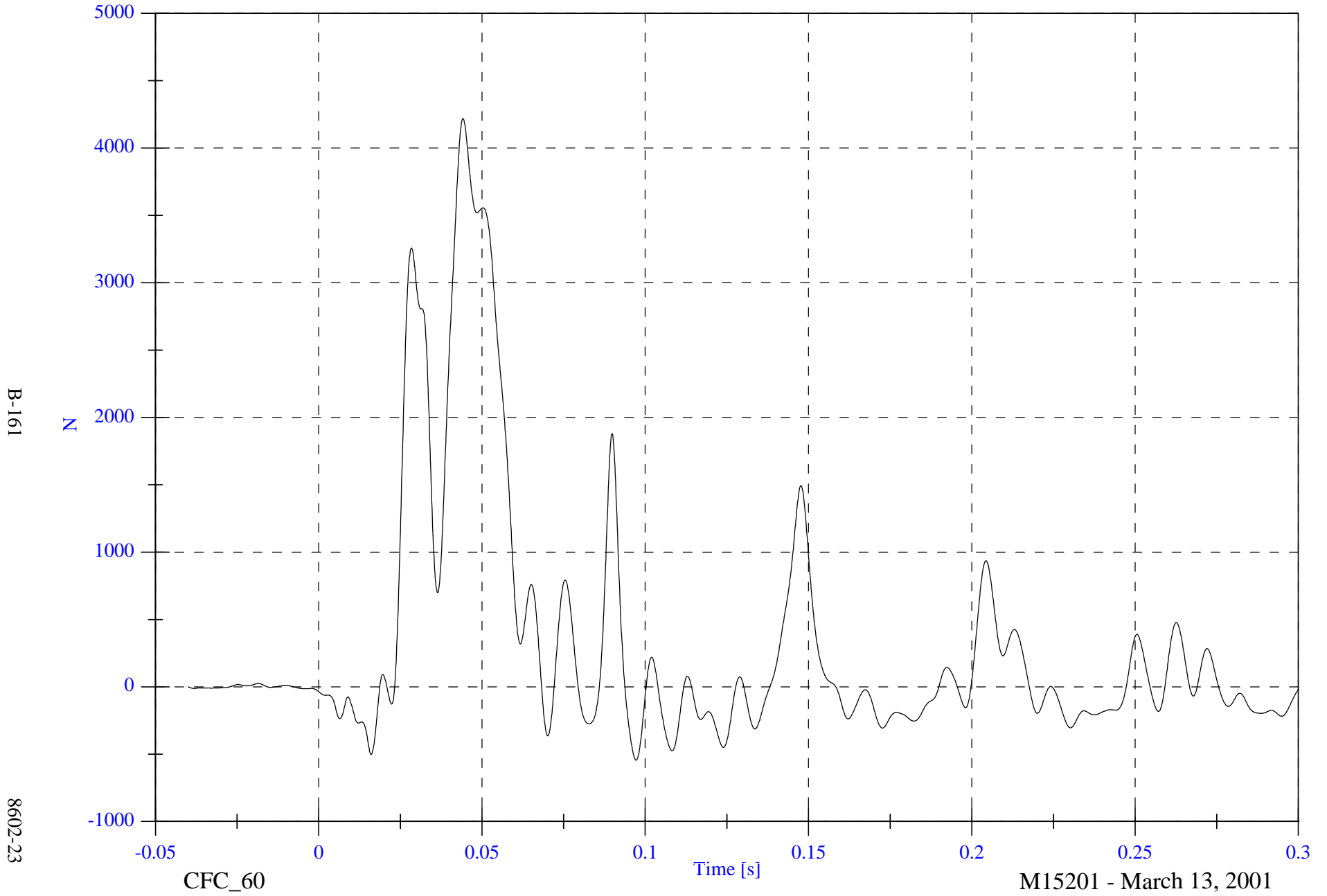
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 4219.7 [N] at 0.044 [s]

Barrier Load Cell D1 Fx

Min: -545.3 [N] at 0.097 [s]



B-161

8602-23

CFC_60

Time [s]

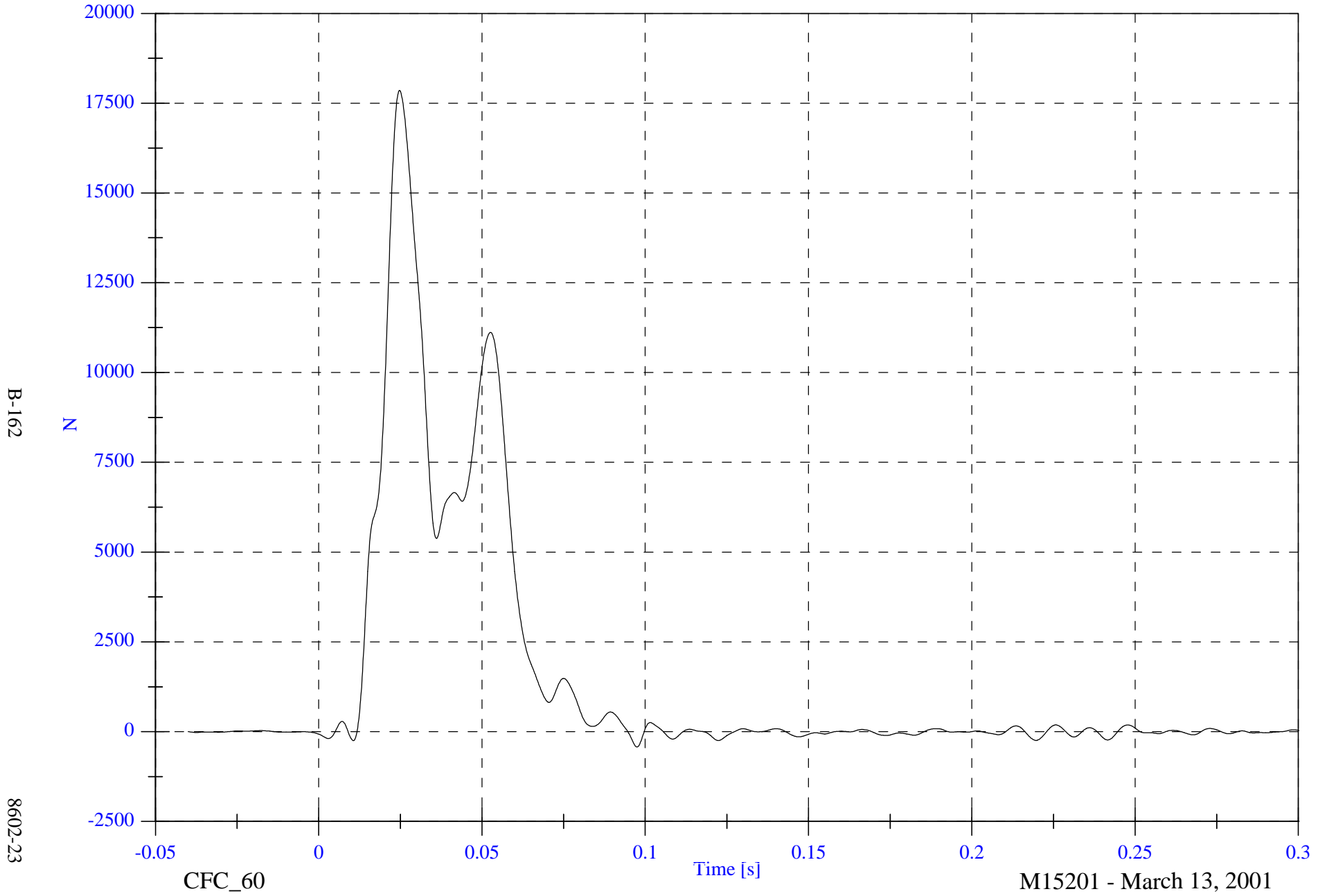
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 17855.4 [N] at 0.025 [s]

Barrier Load Cell D2 Fx

Min: -424.6 [N] at 0.097 [s]



B-162

8602-23

CFC_60

Time [s]

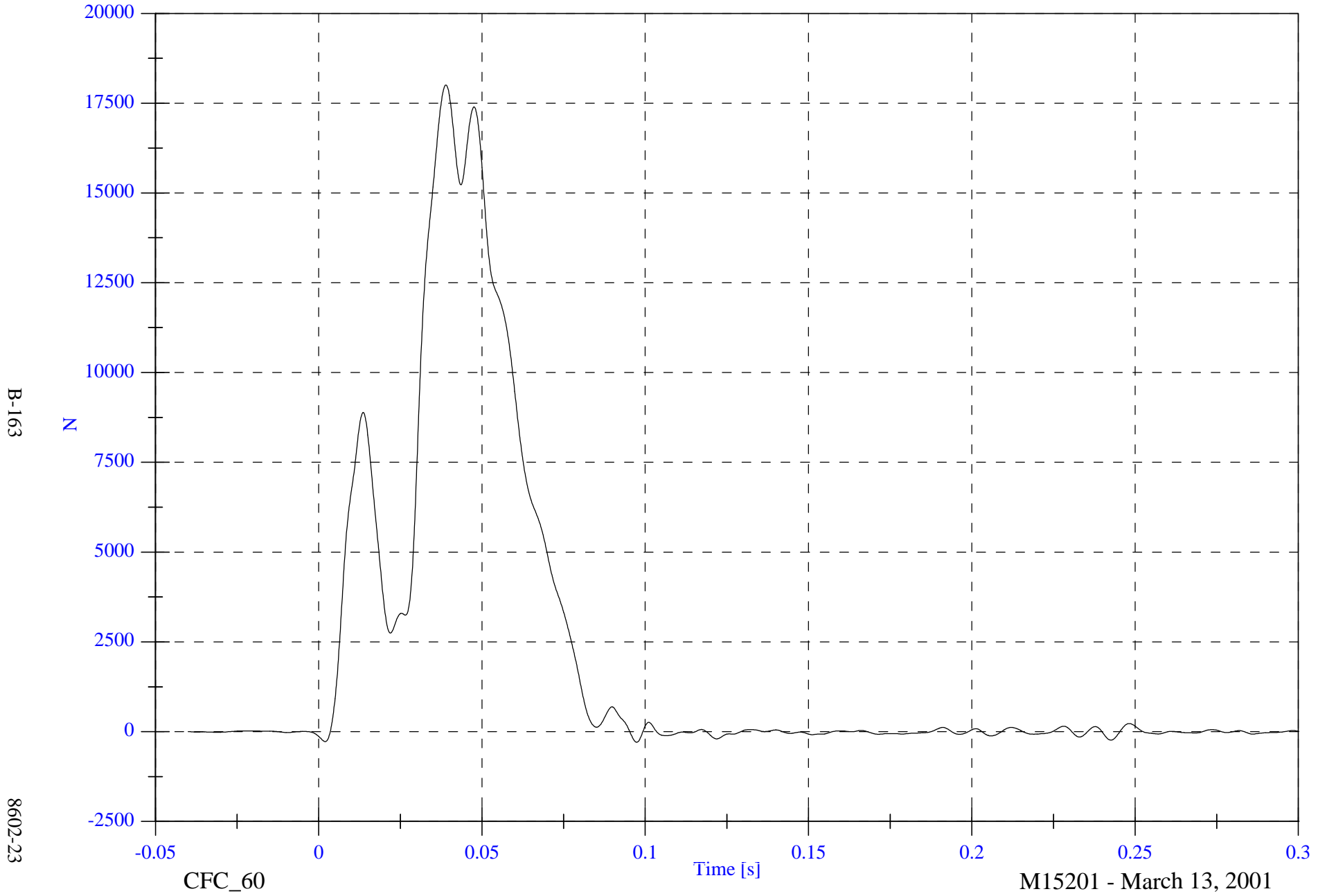
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 18004.3 [N] at 0.039 [s]

Barrier Load Cell D3 Fx

Min: -293.6 [N] at 0.097 [s]



B-163

8602-23

CFC_60

Time [s]

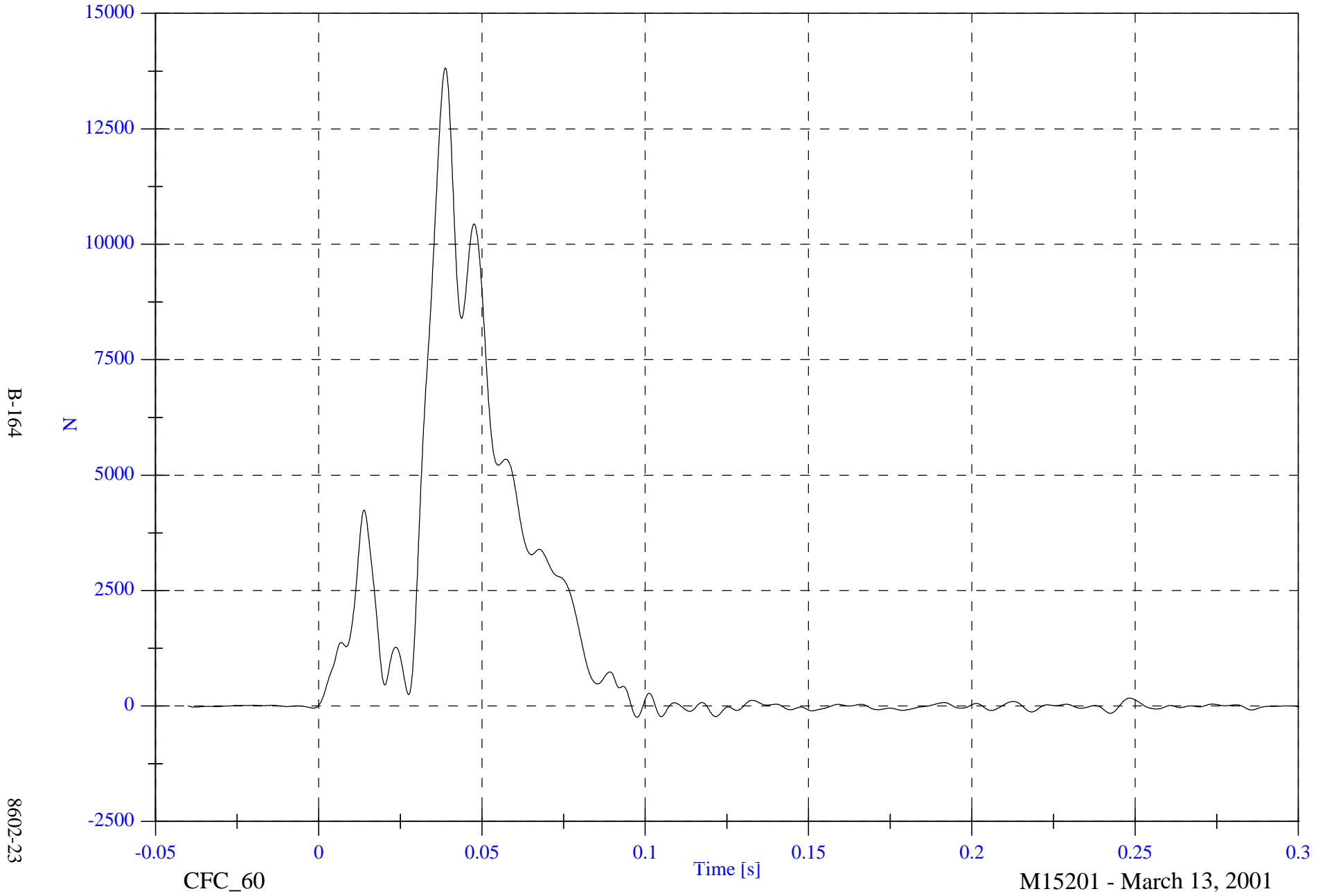
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 13819.6 [N] at 0.039 [s]

Barrier Load Cell D4 Fx

Min: -243.2 [N] at 0.097 [s]



B-164

8602-23

CFC_60

Time [s]

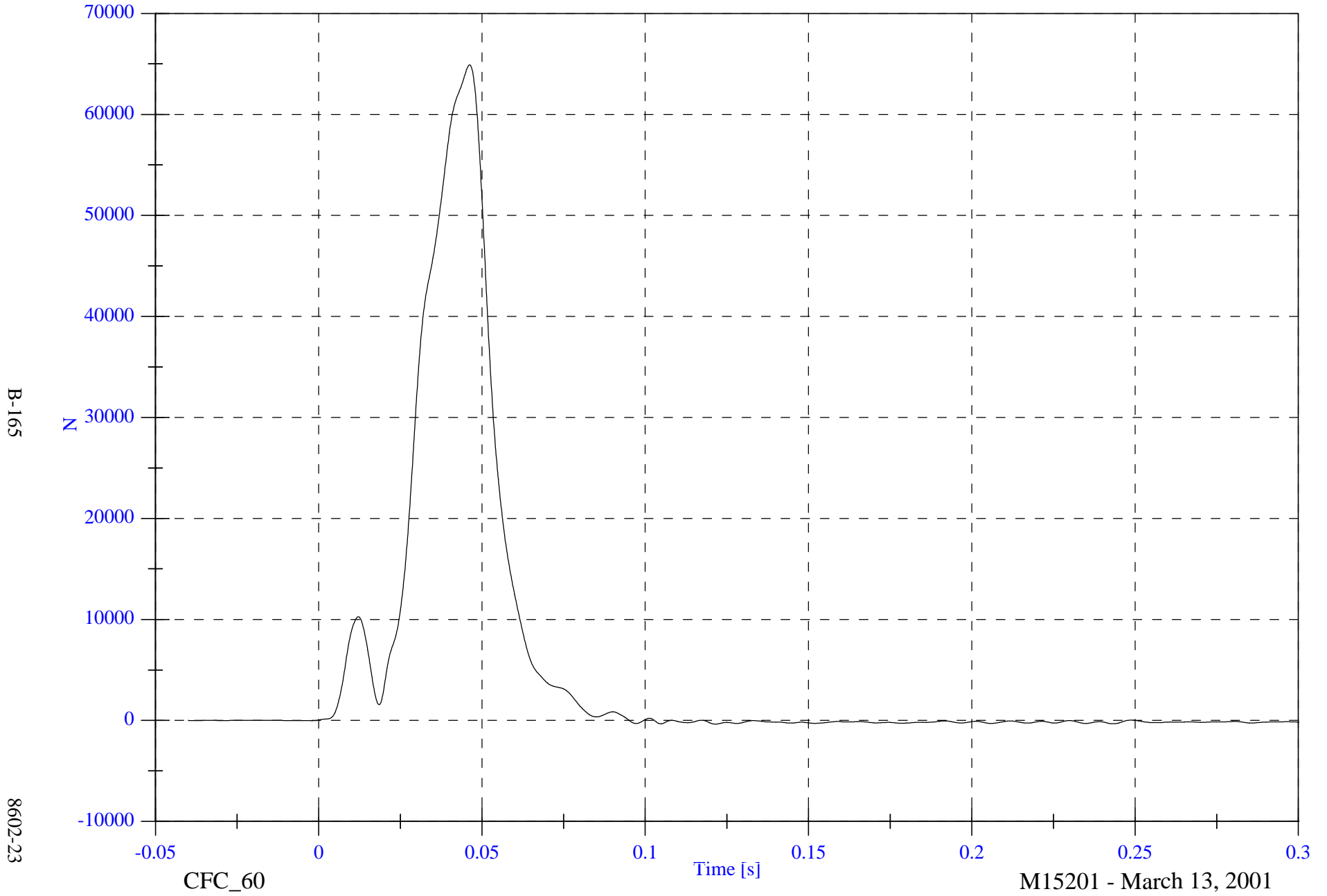
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 64903.8 [N] at 0.046 [s]

Barrier Load Cell D5 Fx

Min: -367.7 [N] at 0.121 [s]



B-165

8602-23

CFC_60

Time [s]

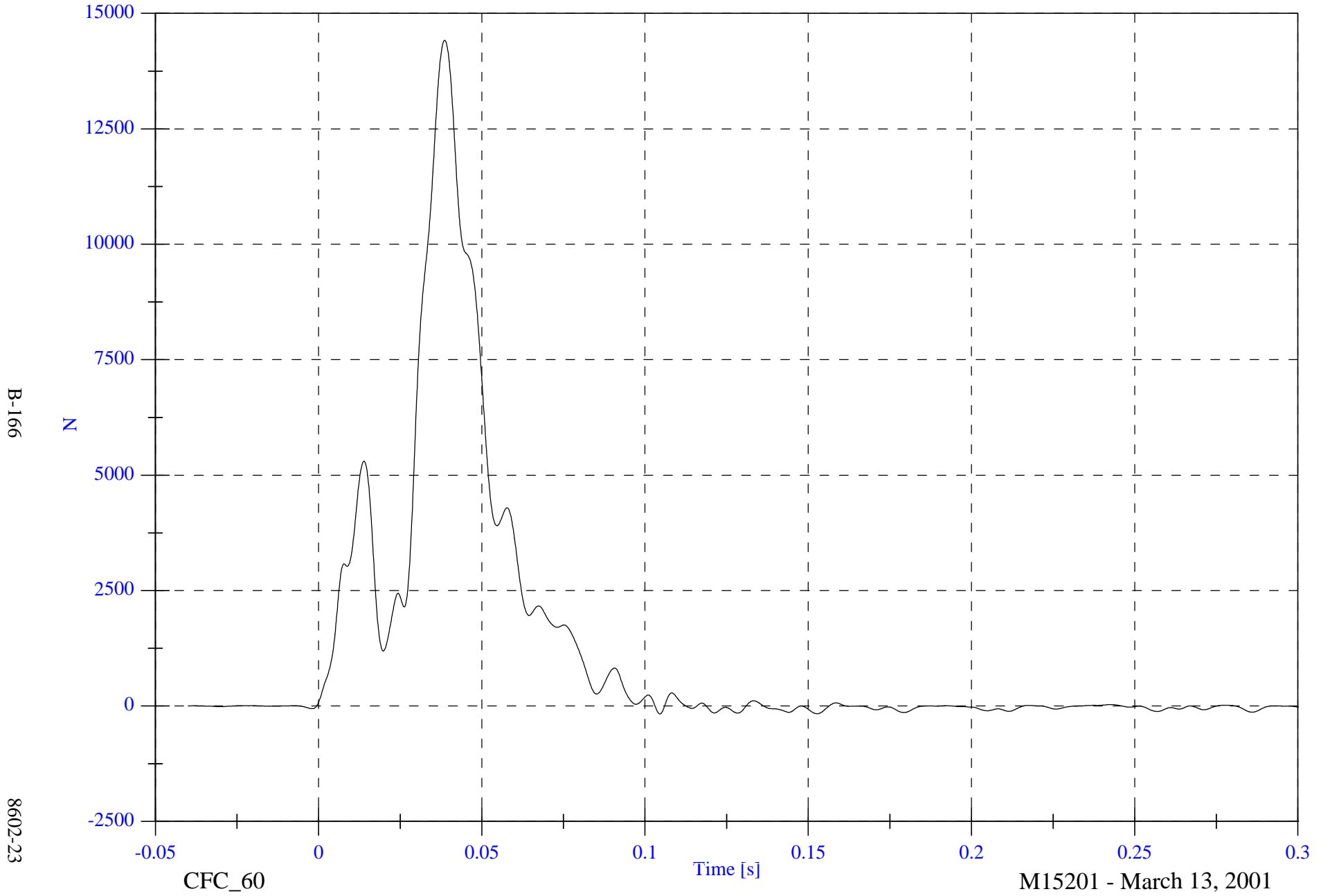
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 14419.0 [N] at 0.039 [s]

Barrier Load Cell D6 Fx

Min: -171.8 [N] at 0.104 [s]



B-166

8602-23

CFC_60

Time [s]

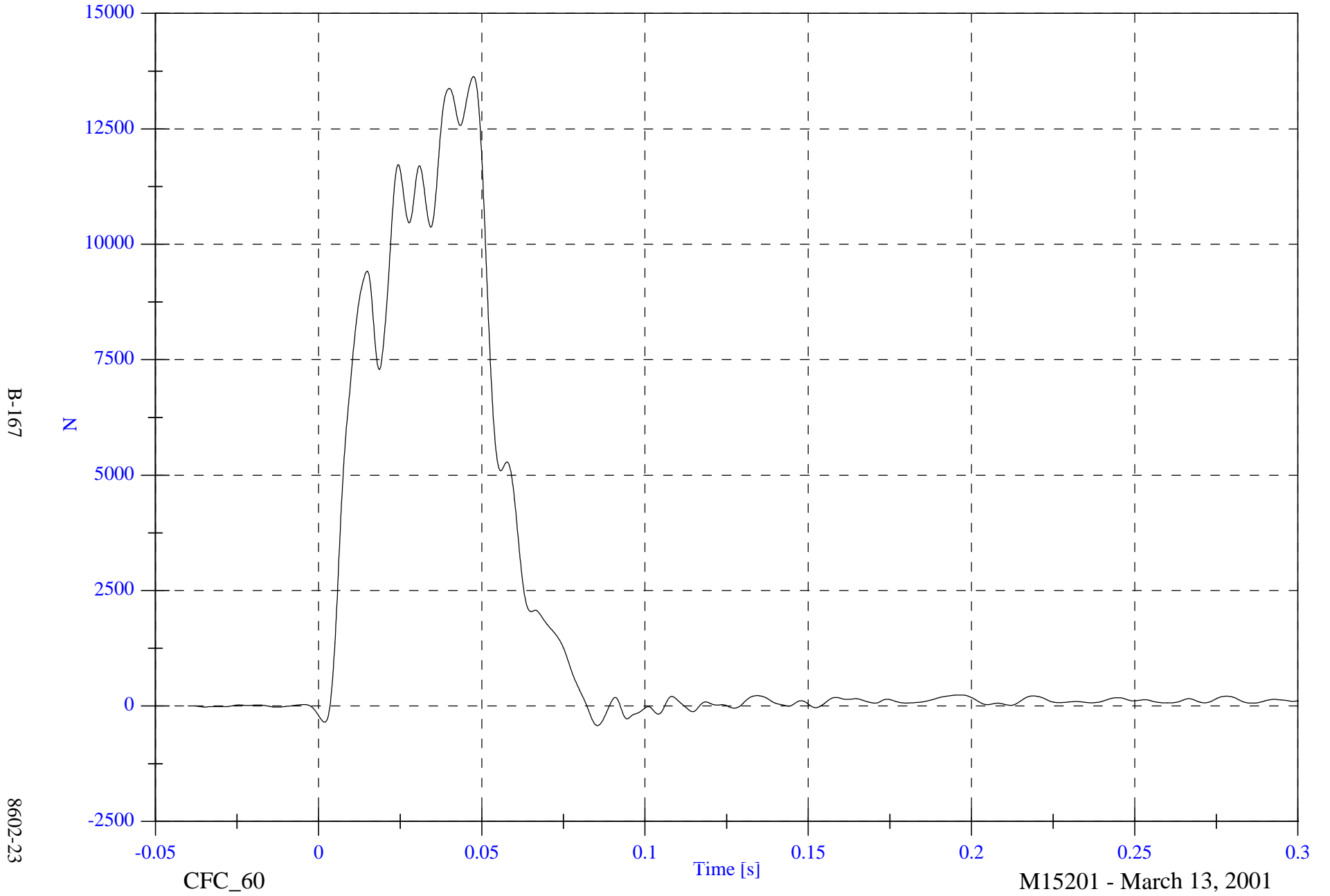
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 13632.9 [N] at 0.047 [s]

Barrier Load Cell D7 Fx

Min: -423.6 [N] at 0.085 [s]



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8602-23

CFC_60

Time [s]

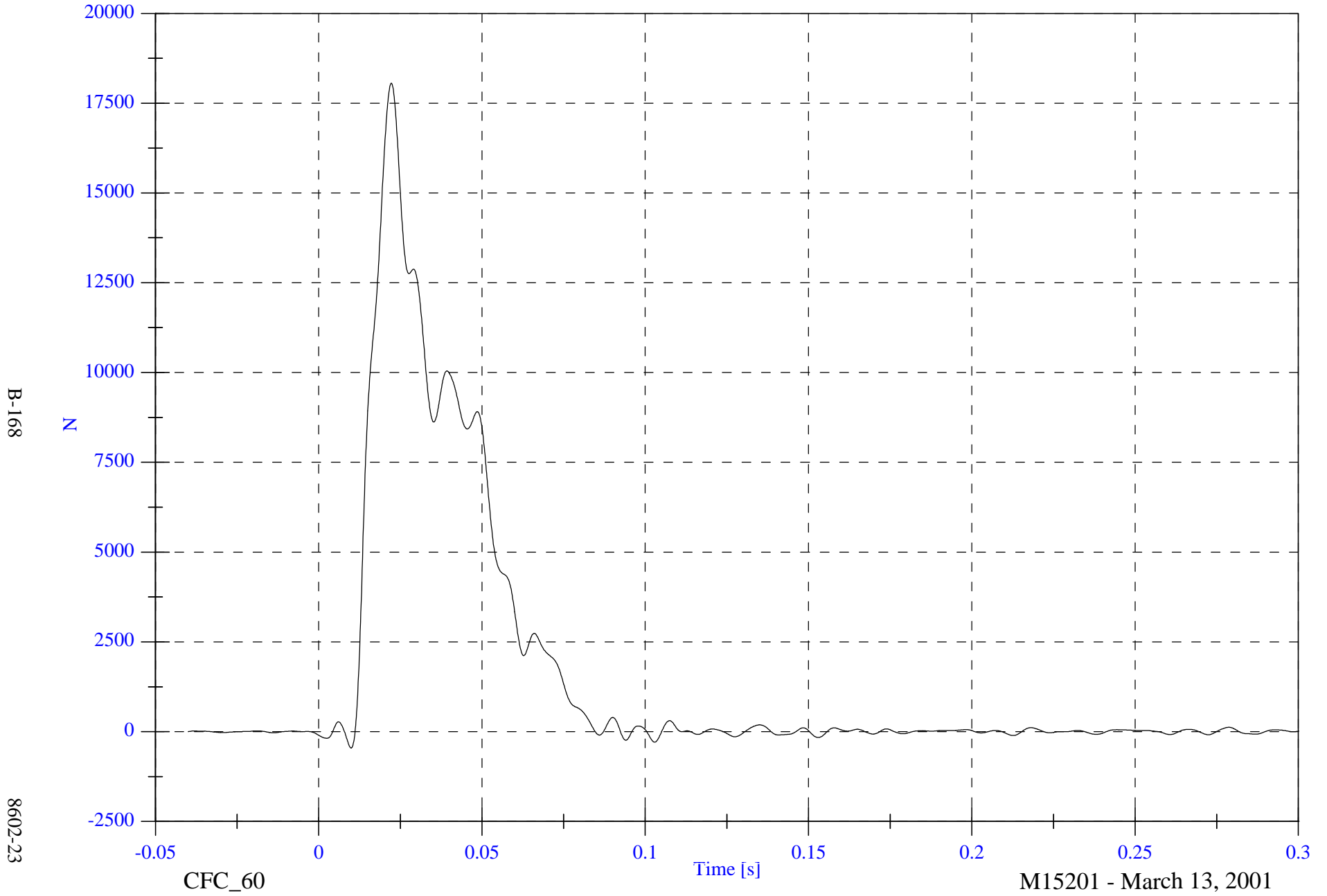
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 18058.1 [N] at 0.022 [s]

Barrier Load Cell D8 Fx

Min: -456.9 [N] at 0.010 [s]



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8602-23

CFC_60

Time [s]

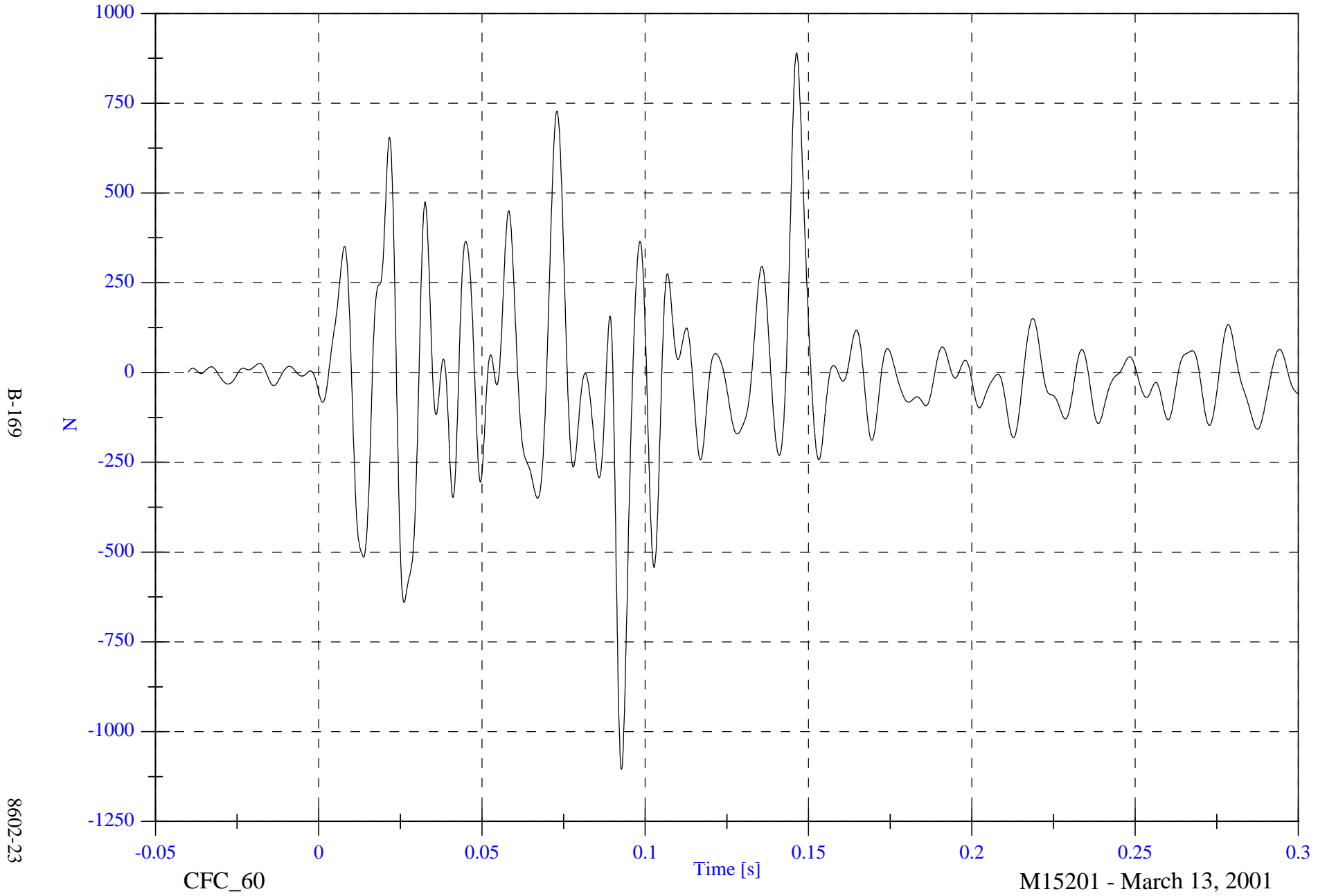
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Barrier Load Cell D9 Fx

Max: 890.7 [N] at 0.146 [s]

Min: -1104.8 [N] at 0.093 [s]



B-169

8602-23

CFC_60

Time [s]

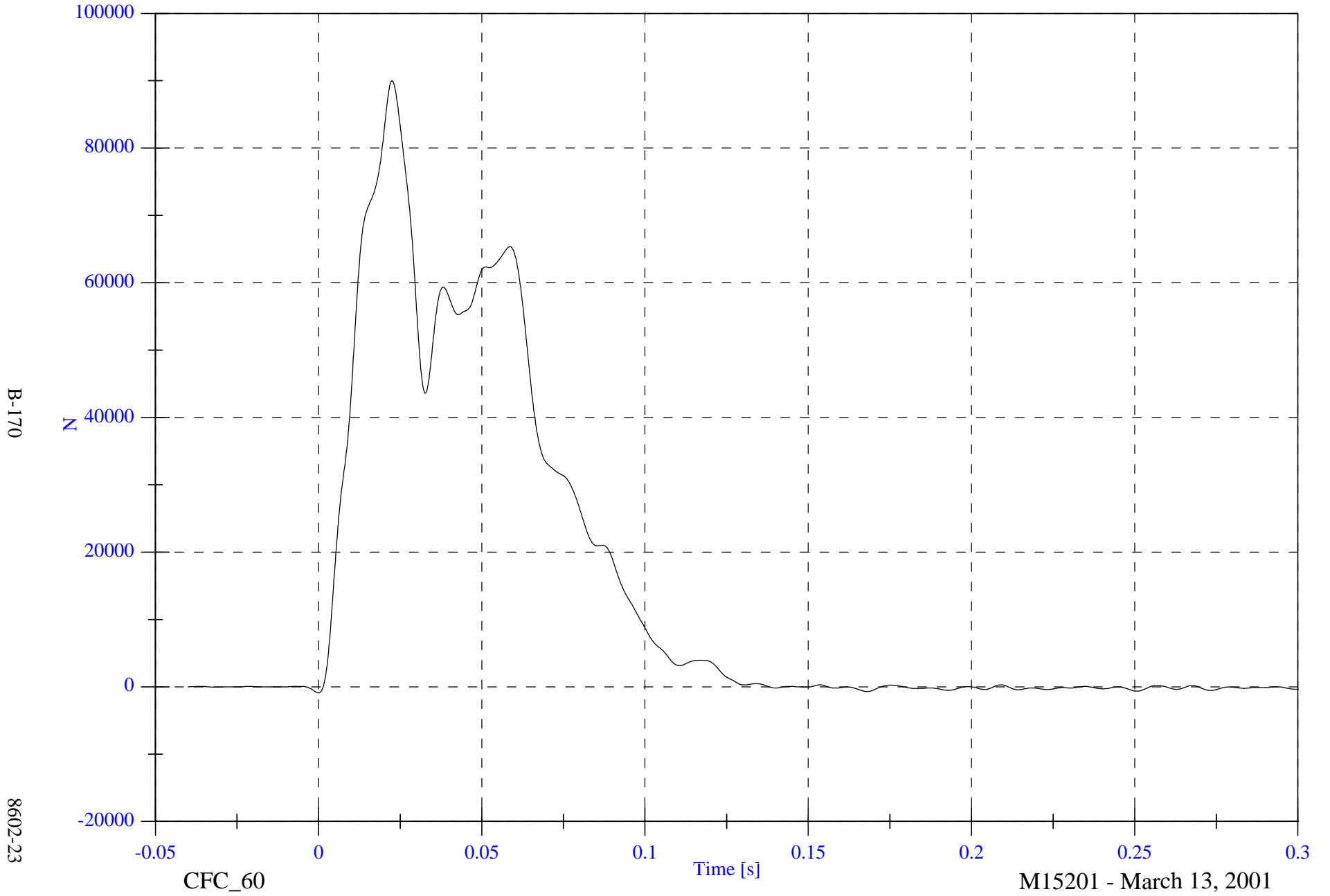
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

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

Max: 90001.3 [N] at 0.022 [s]

Min: -917.4 [N] at -0.000 [s]



B-170

8602-23

CFC_60

Time [s]

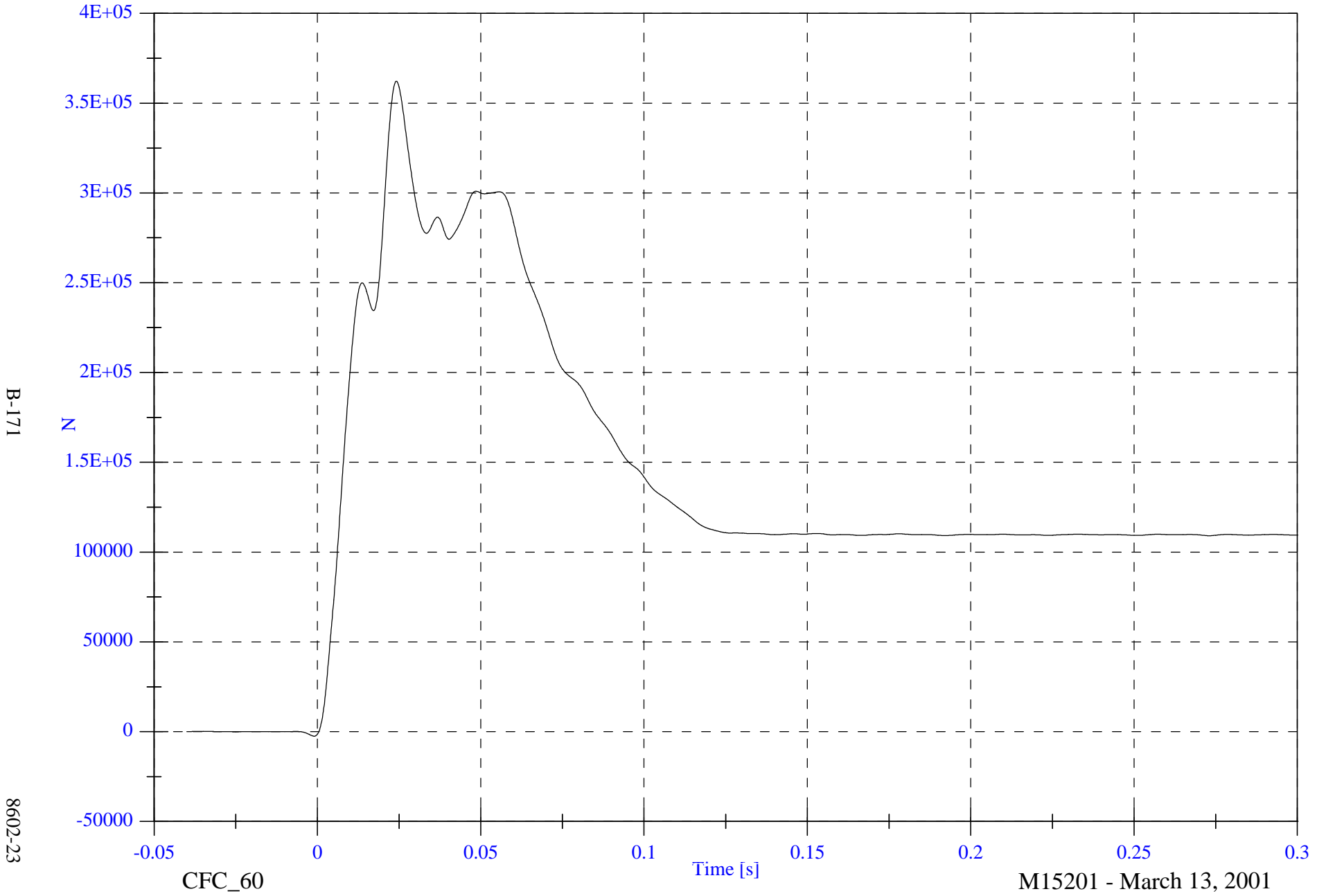
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

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

Max: 362221.1 [N] at 0.024 [s]

Min: -2518.8 [N] at -0.001 [s]



B-171

8602-23

CFC_60

Time [s]

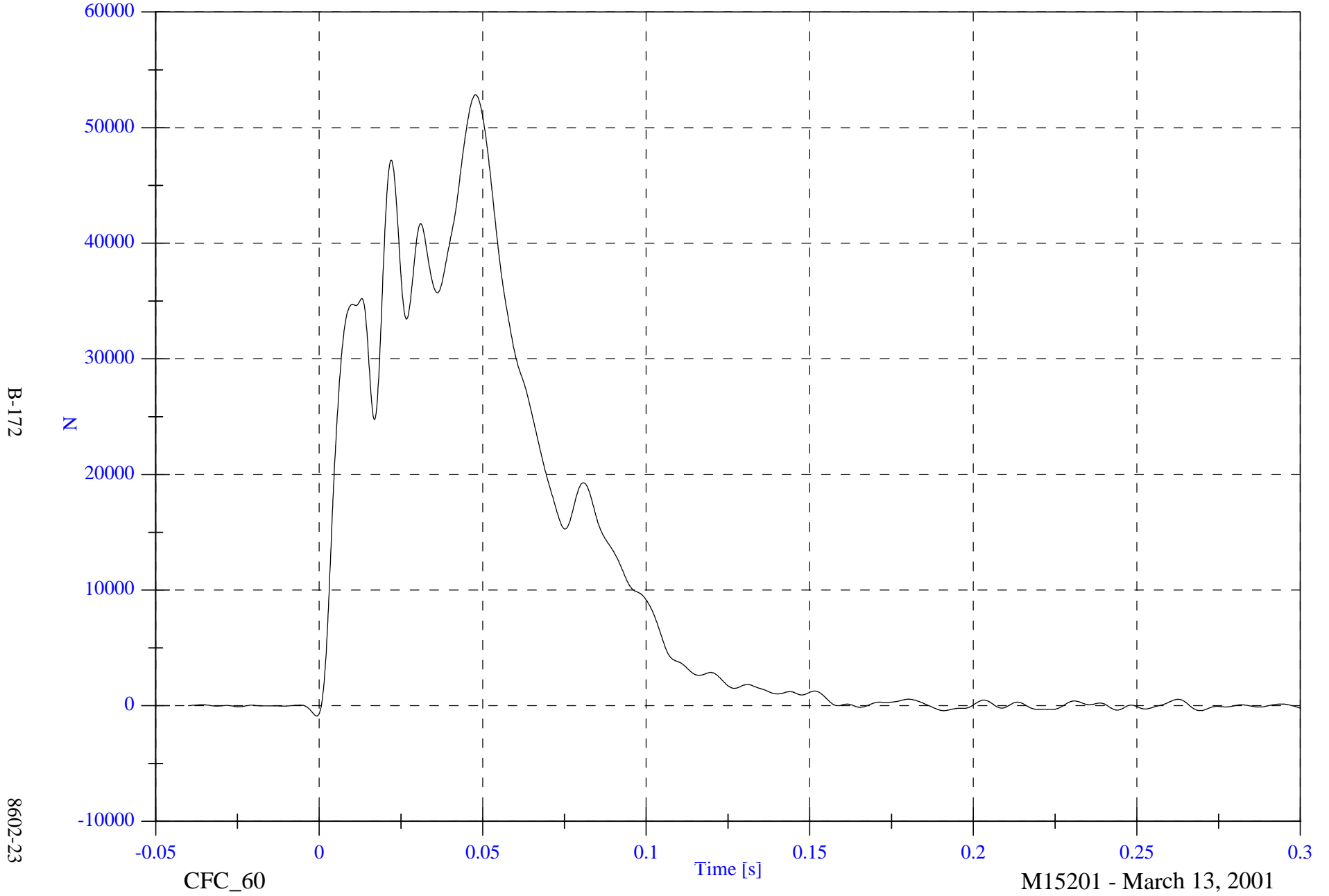
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

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

Max: 52839.3 [N] at 0.048 [s]

Min: -892.1 [N] at -0.001 [s]



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8602-23

CFC_60

Time [s]

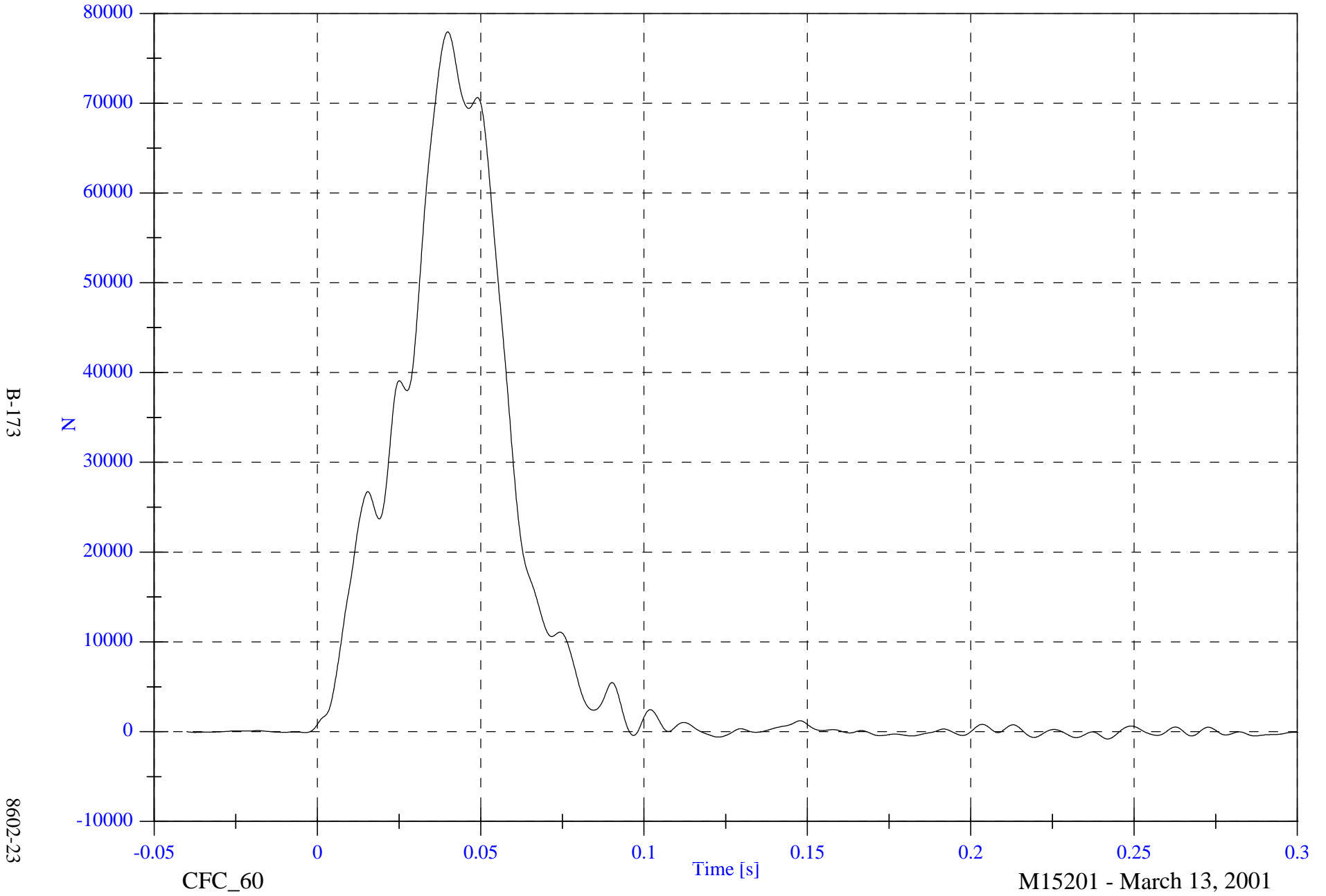
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

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

Max: 77940.6 [N] at 0.040 [s]

Min: -814.9 [N] at 0.242 [s]



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8602-23

CFC_60

Time [s]

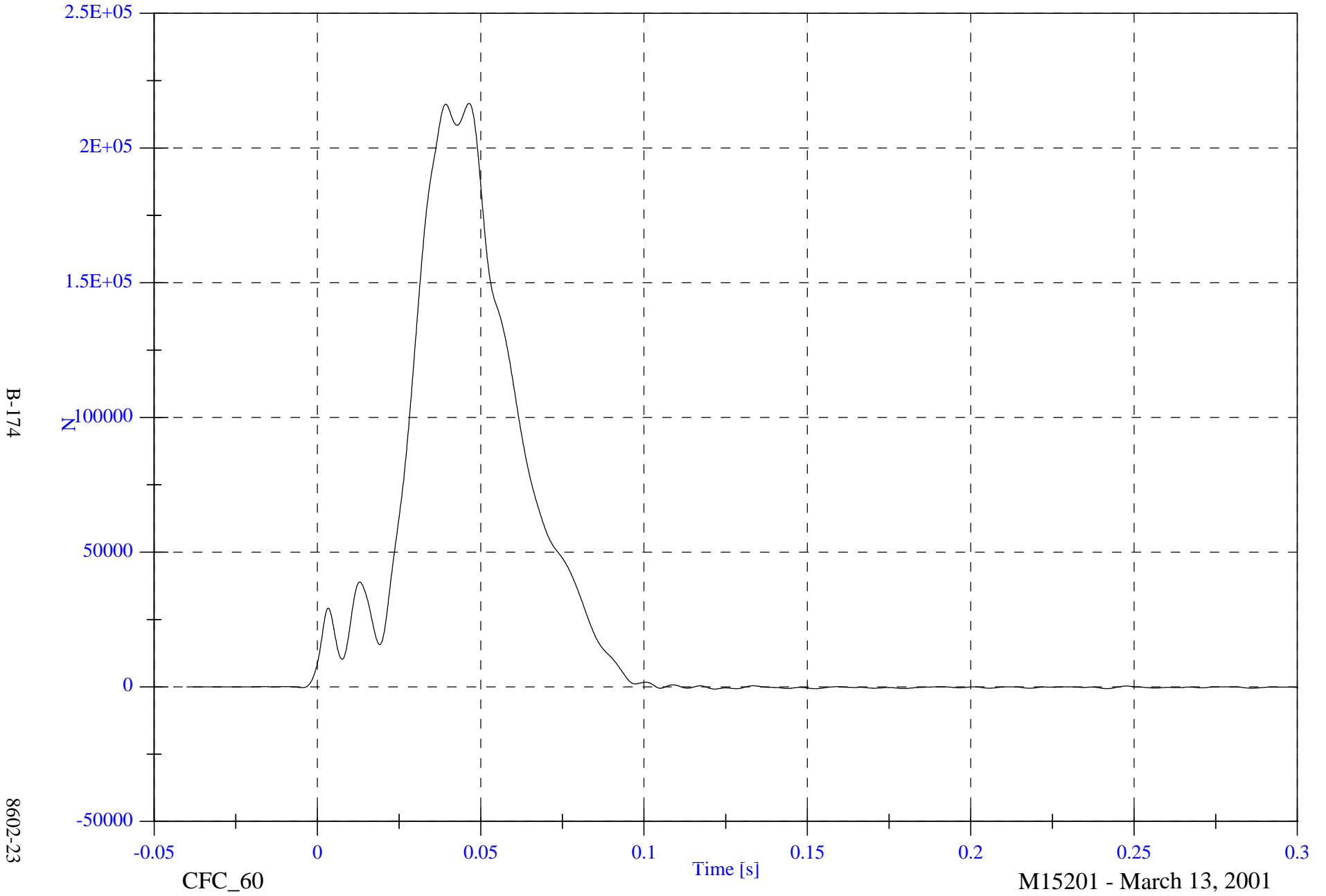
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

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

Max: 216583.9 [N] at 0.046 [s]

Min: -854.1 [N] at 0.122 [s]



B-174

8602-23

CFC_60

Time [s]

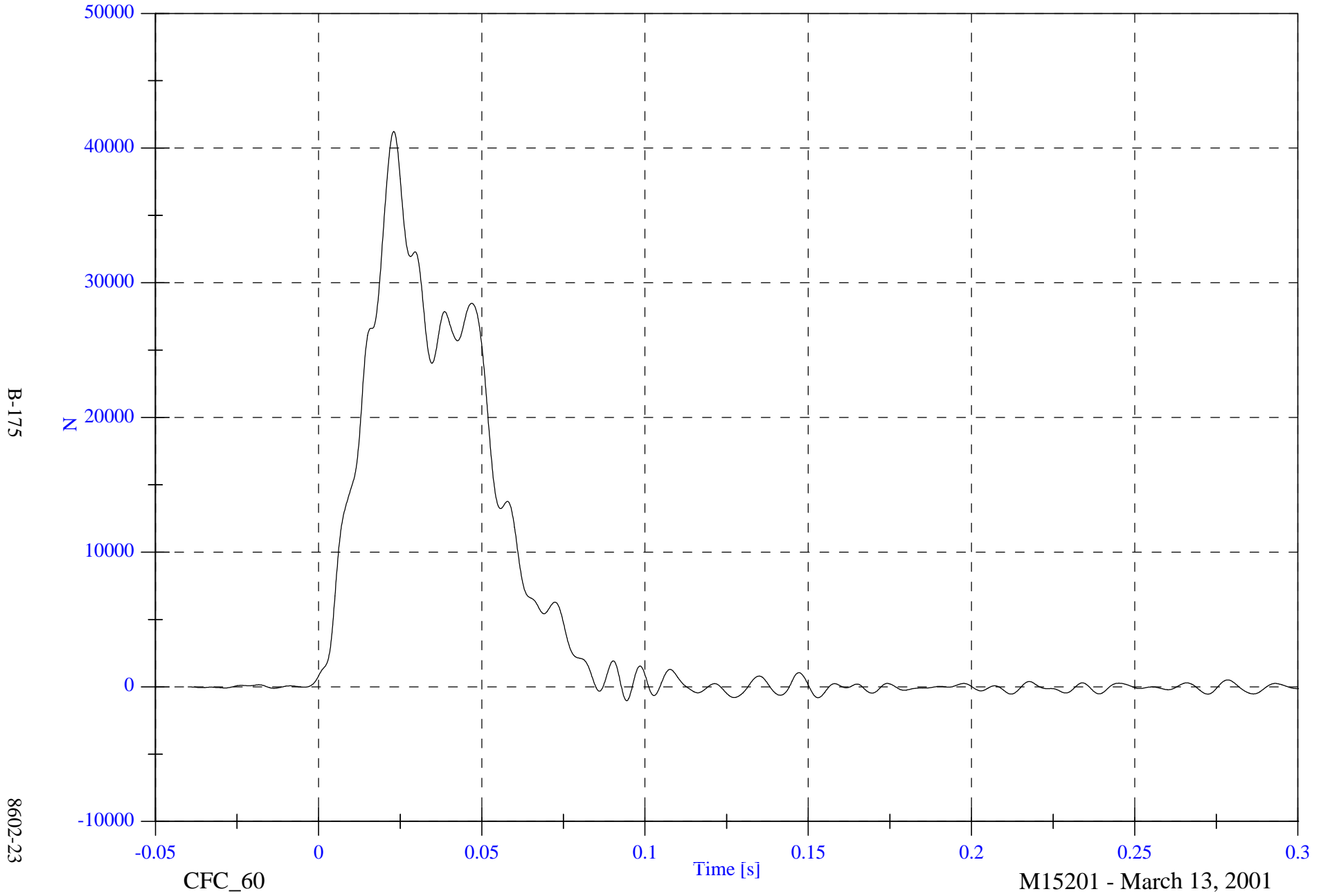
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

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

Max: 41239.0 [N] at 0.023 [s]

Min: -1037.1 [N] at 0.094 [s]



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8602-23

CFC_60

Time [s]

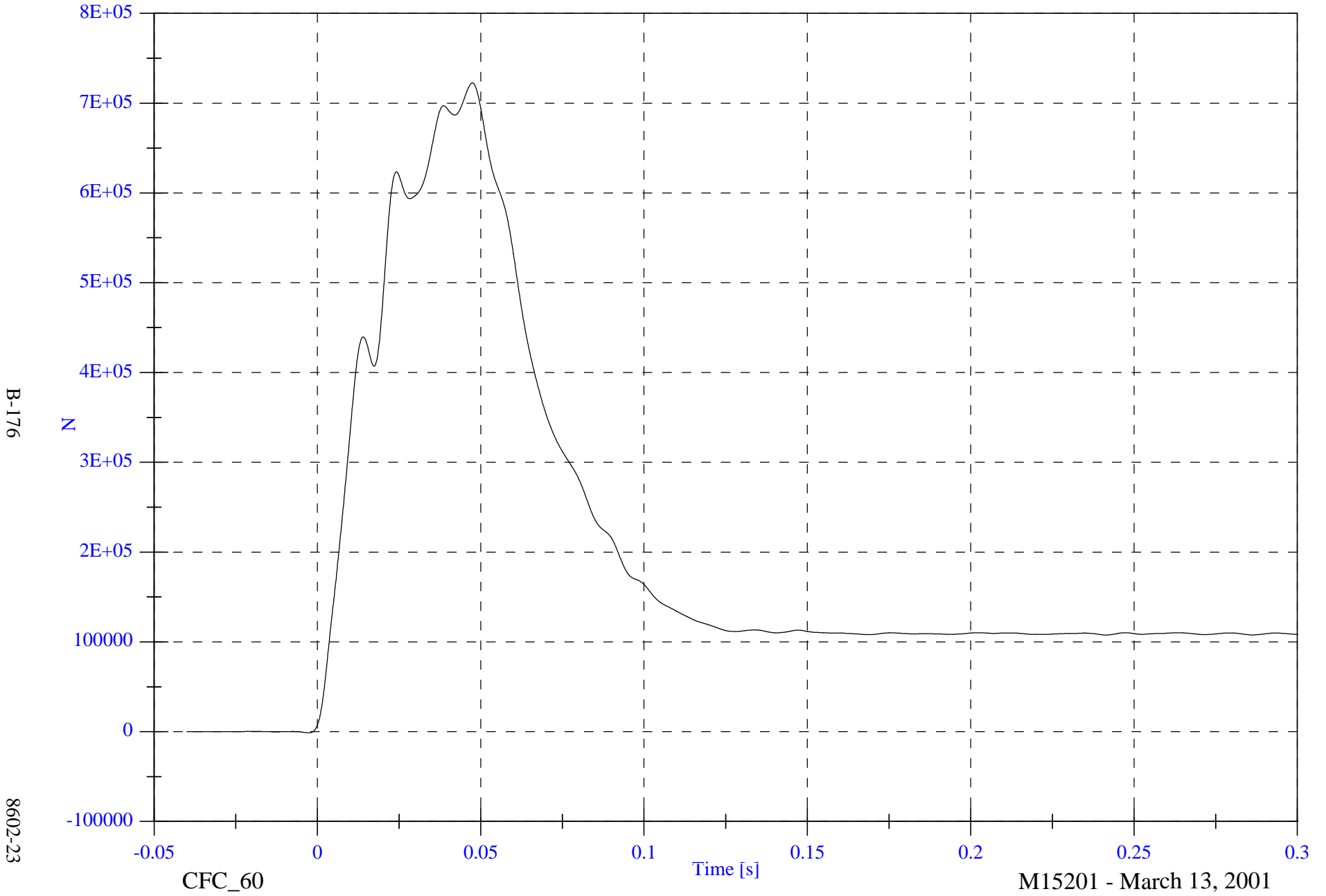
M15201 - March 13, 2001

NCAP 2001 Test #23 - 2001 Nissan Frontier

Max: 722633.8 [N] at 0.047 [s]

Total Load Cell Sum (All 6 Groups)

Min: -1350.4 [N] at -0.003 [s]



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8602-23

CFC_60

Time [s]

M15201 - March 13, 2001

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:

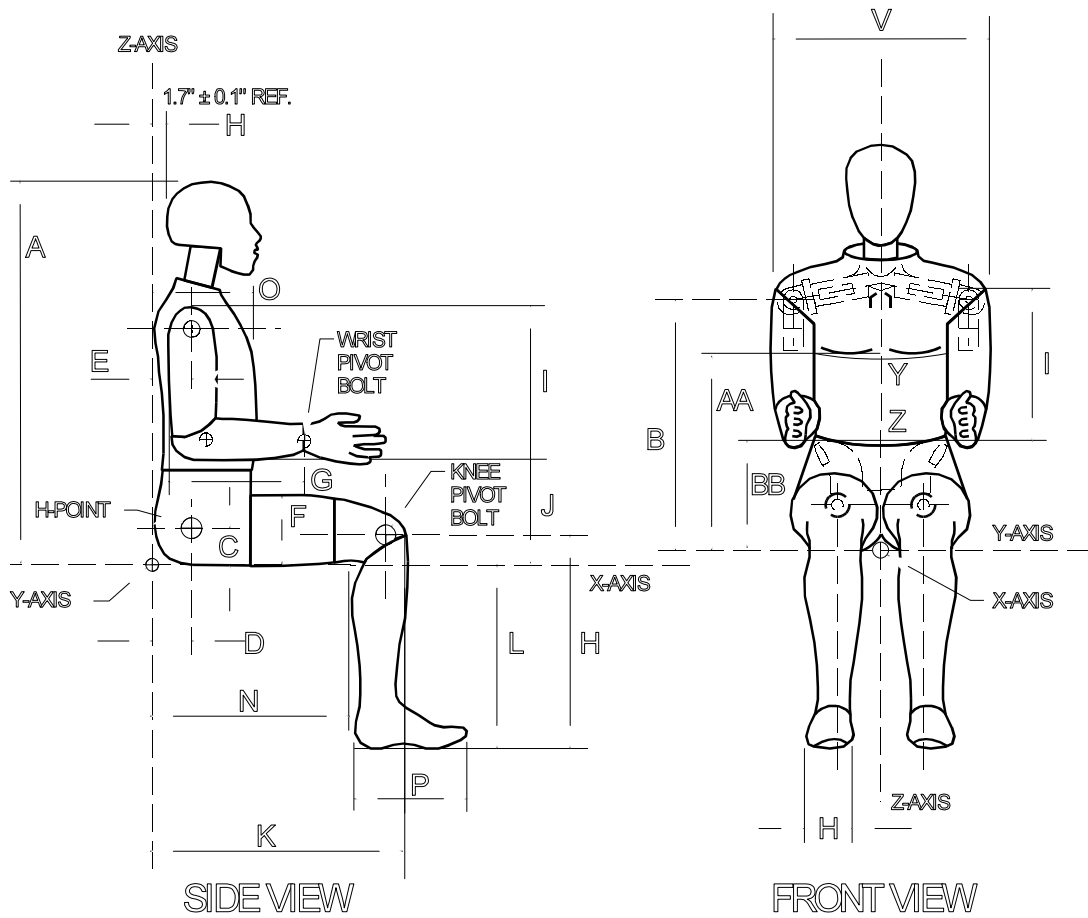
<u>Position No./Location</u>	<u>Serial No.</u>	<u>Completion Date</u>
#1/Driver	150	February 6, 2001
#2/Right Front Passenger	245	February 6, 2001

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 Indicant 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 2
Date February 2, 2001
Workfile 150201.hdp

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	66-78 Deg F	71.0
Relative Humidity	10% - 70%	31.0
Peak Resultant Acceleration	225-275 G's	250.33
Peak Lateral Acceleration	15 G's Max	14.21
Is Acceleration Curve Unimodal?	YES	YES

Remarks:

Laboratory Technician: B. Swiecicki

PART 572E
NECK EXTENSION TEST

Dummy Serial Number	150	
Sequential Test Number	2	
Date	February 5, 2001	6 Axis Neck Transducer
Workfile	150201.nex	

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature		69-72 Deg F	71.0
Relative Humidity		10% - 70%	31.0
Impact Velocity		19.50 - 20.30 Ft/s	19.67
Pendulum Deceleration	10 ms	17.20 - 21.20 G's	18.38
	20 ms	14.00 - 19.00 G's	15.43
	30 ms	11.00 - 16.00 G's	12.74
Max Pendulum G's Above 30 ms		22 G's Max	12.74
Deceleration - Time Curve Decay Time to 5 G's		38 - 46 ms	44.25
D Plane Rotation	Max	81 - 106 Deg	101.97
	Time	72 - 82 ms	78.00
Moment About Occipital Condyle	Max	-59.0 - -39.0 Ft-Lbs	-54.53
	Time	65 - 79 ms	72.12
Rotation Angle - Time Curve Decay Time to Zero		147 - 174 ms	157.88
Positive Moment - Time Curve Decay Time to Zero		120 - 148 ms	143.38

Remarks:

Laboratory Technician: B. Swiecicki

PART 572E
THORAX IMPACT TEST

Dummy Serial Number 150
Sequential Test Number 2
Date February 6, 2001
Workfile 150201.th3

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	69-72 Deg F	70.0
Relative Humidity	10% - 70%	32.0
Pendulum Velocity	21.6 - 22.4 Ft/s	21.9
Maximum Deflection	2.50 - 2.86 in	2.56
Maximum Resistive Force	1160 - 1325 Lbs	1211.57
Internal Hysteresis	69 - 85 %	71.64

Remarks:

Laboratory Technician: B. Swiecicki

PART 572E
KNEE IMPACT TEST

Dummy Serial Number 150
 Sequential Test Number 2
 Date February 6, 2001
 Workfile 150201.lf / 150201.rf

TEST PARAMETER	SPECIFICATION	TEST RESULTS
LEFT KNEE		
Temperature	66 - 78 Deg F	70.0
Relative Humidity	10% - 70%	32.0
Probe Velocity	6.8 - 7.0 Ft/s	7.0
Peak Knee Impact Force	1060 - 1300 Lbs	1192.47
RIGHT KNEE		
Temperature	66 - 78 Deg F	70.0
Relative Humidity	10% - 70%	32.0
Probe Velocity	6.8 - 7.0 Ft/s	7.0
Peak Knee Impact Force	1060 - 1300 Lbs	1162.92

Remarks:

Laboratory Technician: B. Swiecicki

PART 572E
EXTERNAL DIMENSIONS

Dummy Serial Number 150
 Sequential Test Number 2
 Date February 6, 2001

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	5.7
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	16.9
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 2
Date February 2, 2001
Workfile 245201.hdp

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	66-78 Deg F	71.0
Relative Humidity	10% - 70%	31.0
Peak Resultant Acceleration	225-275 G's	257.60
Peak Lateral Acceleration	15 G's Max	9.61
Is Acceleration Curve Unimodal?	YES	YES

Remarks:

Laboratory Technician: B. Swiecicki

PART 572E
NECK FLEXION TEST

Dummy Serial Number	245	
Sequential Test Number	2	
Date	February 5, 2001	6 Axis Neck Transducer
Workfile	245201.nfl	

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature		69-72 Deg F	71.0
Relative Humidity		10% - 70%	31.0
Impact Velocity		22.60 - 23.40 Ft/s	22.82
Pendulum Deceleration	10 ms	22.50 - 27.50 G's	22.51
	20 ms	17.60 - 22.60 G's	19.01
	30 ms	12.50 - 18.50 G's	14.71
Max Pendulum G's Above 30 ms		29 G's Max	14.71
Deceleration - Time Curve Decay Time to 5 G's		34 - 42 ms	42.00
D Plane Rotation	Max	64 - 78 Deg	75.85
	Time	57 - 64 ms	58.75
Moment About Occipital Condyle	Max	65 - 80 Ft-Lbs	72.16
	Time	47 - 58 ms	56.62
Rotation Angle - Time Curve Decay Time to Zero		113 - 128 ms	126.00
Positive Moment - Time Curve Decay Time to Zero		97 - 107 ms	102.50

Remarks:

Laboratory Technician: B. Swiecicki

PART 572E
NECK EXTENSION TEST

Dummy Serial Number	245	
Sequential Test Number	2	
Date	February 5, 2001	6 Axis Neck Transducer
Workfile	245201.nex	

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature		69-72 Deg F	71.0
Relative Humidity		10% - 70%	31.0
Impact Velocity		19.50 - 20.30 Ft/s	19.81
Pendulum Deceleration	10 ms	17.20 - 21.20 G's	18.09
	20 ms	14.00 - 19.00 G's	16.43
	30 ms	11.00 - 16.00 G's	13.23
Max Pendulum G's Above 30 ms		22 G's Max	13.23
Deceleration - Time Curve Decay Time to 5 G's		38 - 46 ms	42.50
D Plane Rotation	Max	81 - 106 Deg	96.78
	Time	72 - 82 ms	77.50
Moment About Occipital Condyle	Max	-59.0 - -39.0 Ft-Lbs	-53.26
	Time	65 - 79 ms	69.50
Rotation Angle - Time Curve Decay Time to Zero		147 - 174 ms	150.38
Positive Moment - Time Curve Decay Time to Zero		120 - 148 ms	144.50

Remarks:

Laboratory Technician: B. Swiecicki

PART 572E
THORAX IMPACT TEST

Dummy Serial Number 245
Sequential Test Number 2
Date February 6, 2001
Workfile 245201.th3

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	69-72 Deg F	70.0
Relative Humidity	10% - 70%	32.0
Pendulum Velocity	21.6 - 22.4 Ft/s	21.9
Maximum Deflection	2.50 - 2.86 in	2.52
Maximum Resistive Force	1160 - 1325 Lbs	1297.78
Internal Hysteresis	69 - 85 %	71.47

Remarks:

Laboratory Technician: B. Swiecicki

PART 572E
KNEE IMPACT TEST

Dummy Serial Number 245
 Sequential Test Number 2
 Date February 6, 2001
 Workfile 245201.lf / 245201.rf

TEST PARAMETER	SPECIFICATION	TEST RESULTS
LEFT KNEE		
Temperature	66 - 78 Deg F	70.0
Relative Humidity	10% - 70%	32.0
Probe Velocity	6.8 - 7.0 Ft/s	7.0
Peak Knee Impact Force	1060 - 1300 Lbs	1164.79
RIGHT KNEE		
Temperature	66 - 78 Deg F	70.0
Relative Humidity	10% - 70%	32.0
Probe Velocity	6.8 - 7.0 Ft/s	7.0
Peak Knee Impact Force	1060 - 1300 Lbs	1151.0

Remarks:

Laboratory Technician: B. Swiecicki

PART 572E
EXTERNAL DIMENSIONS

Dummy Serial Number 245
 Sequential Test Number 2
 Date February 6, 2001

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	33.7
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	6.0
Buttock Knee Length	K	22.8 - 23.8 in	23.4
Buttock Popliteal Length	N	17.8 - 18.8 in	18.3
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

(6 Month Calibration Minimum)

DRIVER DUMMY (S/N 150)	Manufacturer	Serial #	Calibration		
			Last	Next	
Head	X	ENDEVCO	AC-P16832	20-Sep-00	20-Mar-01
	Y	ENDEVCO	AC-P16591	20-Sep-00	20-Mar-01
	Z	ENDEVCO	AC-P17286	21-Nov-00	21-May-01
Head	X (R)	ENDEVCO	AC-P17141	20-Sep-00	20-Mar-01
	Y (R)	ENDEVCO	AC-P17242	20-Sep-00	20-Mar-01
	Z (R)	ENDEVCO	AC-P17265	20-Sep-00	20-Mar-01
Neck Load Cell	X	DENTON	LC-269Fx	16-Nov-00	16-May-01
	Y	DENTON	LC-269Fy	16-Nov-00	16-May-01
	Z	DENTON	LC-269Fz	16-Nov-00	16-May-01
Neck Moment	X	DENTON	LC-269Mx	16-Nov-00	16-May-01
	Y	DENTON	LC-269My	16-Nov-00	16-May-01
	Z	DENTON	LC-269Mz	16-Nov-00	16-May-01
Chest	X	ENDEVCO	AC-P17235	15-Sep-00	15-Mar-01
	Y	ENDEVCO	AC-P14393	20-Sep-00	20-Mar-01
	Z	ENDEVCO	AC-P17285	20-Sep-00	20-Mar-01
Chest	X (R)	ENDEVCO	AC-P16863	13-Sep-00	13-Mar-01
	Y (R)	ENDEVCO	AC-P17248	20-Sep-00	20-Mar-01
	Z (R)	ENDEVCO	AC-P17283	20-Sep-00	20-Mar-01
Chest Deflection Gauge	SERVO	DS-150	16-Nov-00	16-May-01	
Pelvic	X	ENDEVCO	AC-J30041	06-Mar-01	06-Sep-01
	Y	ENDEVCO	AC-P13355	16-Nov-00	06-Mar-01
	Z	ENDEVCO	AC-P13329	16-Nov-00	06-Mar-01

INSTRUMENT CALIBRATION FOR DRIVER DUMMY

(6 Month Calibration Minimum)

DRIVER DUMMY (S/N 150)	Manufacturer	Serial #	Calibration		
			Last	Next	
Left Femur Load Cell	GSE	LC-418	20-Nov-00	20-May-01	
Right Femur Load Cell	GSE	LC-420	20-Nov-00	20-May-01	
Left Knee Shear	SpaceAge Control	DS-821	02-Feb-01	02-Aug-01	
Left Upper Tibia	Mx	DENTON	LC-045Mx	04-Nov-00	04-May-01
	My	DENTON	LC-045My	04-Nov-00	04-May-01
Left Lower Tibia	Fz	DENTON	LC-125Fz	04-Nov-00	04-May-01
	Mx	DENTON	LC-125Mx	04-Nov-00	04-May-01
	My	DENTON	LC-125My	04-Nov-00	04-May-01
Right Upper Tibia	Mx	DENTON	LC-038Mx	09-Nov-00	09-May-01
	My	DENTON	LC-038My	09-Nov-00	09-May-01
Right Lower Tibia	Fz	DENTON	LC-124Fz	09-Nov-00	09-May-01
	Mx	DENTON	LC-124Mx	09-Nov-00	09-May-01
	My	DENTON	LC-124My	09-Nov-00	09-May-01
Left Foot Rear	X	ENDEVCO	AC-P16951	02-Oct-00	02-Apr-01
	Z	ENDEVCO	AC-P17152	02-Oct-00	02-Apr-01
Left Foot Front	Z	ENDEVCO	AC-P16975	02-Oct-00	02-Apr-01
Right Foot Rear	X	ENDEVCO	AC-J31042	07-Nov-00	07-May-01
	Z	ENDEVCO	AC-J32176	07-Nov-00	07-May-01
Right Foot Front	Z	ENDEVCO	AC-J31009	08-Nov-00	08-May-01
Lap Belt Load Cells	LEBOW	LC-706	01-Dec-00	01-Jun-01	
Shoulder Belt Load Cells	LEBOW	LC-707	01-Dec-00	01-Jun-01	

INSTRUMENT CALIBRATION FOR PASSENGER DUMMY

(6 Month Calibration Minimum)

PASSENGER DUMMY (S/N 245)	Manufacturer	Serial #	Calibration		
			Last	Next	
Head	X	ENDEVCO	AC-J32184	04-Dec-00	04-Jun-01
	Y	ENDEVCO	AC-J32185	04-Dec-00	04-Jun-01
	Z	ENDEVCO	AC-J31011	04-Dec-00	04-Jun-01
Head	X (R)	ENDEVCO	AC-J31020	04-Dec-00	04-Jun-01
	Y (R)	ENDEVCO	AC-J31101	04-Dec-00	04-Jun-01
	Z (R)	ENDEVCO	AC-J31059	04-Dec-00	04-Jun-01
Neck Load Cell	X	DENTON	LC-076Fx	28-Sep-00	28-Mar-01
	Y	DENTON	LC-076Fy	28-Aug-00	28-Sep-00
	Z	DENTON	LC-076Fz	28-Aug-00	28-Sep-00
Neck Moment	X	DENTON	LC-076Mx	28-Aug-00	28-Sep-00
	Y	DENTON	LC-076My	28-Aug-00	28-Sep-00
	Z	DENTON	LC-076Mz	28-Aug-00	28-Sep-00
Chest	X	ENDEVCO	AC-J34019	04-Dec-00	04-Jun-01
	Y	ENDEVCO	AC-J33018	04-Dec-00	04-Jun-01
	Z	ENDEVCO	AC-J32783	04-Dec-00	04-Jun-01
Chest	X (R)	ENDEVCO	AC-J31066	04-Dec-00	04-Jun-01
	Y (R)	ENDEVCO	AC-P16979	15-Sep-00	15-Mar-01
	Z (R)	ENDEVCO	AC-J31022	04-Dec-00	04-Jun-01
Chest Deflection Gauge	SERVO	DS-245	05-Dec-00	05-Jun-01	
Pelvic	X	ENDEVCO	AC-J31034	03-Dec-00	03-Jun-01
	Y	ENDEVCO	AC-P17258	15-Sep-00	15-Mar-01
	Z	ENDEVCO	AC-J31010	03-Dec-00	03-Jun-01

INSTRUMENT CALIBRATION FOR PASSENGER DUMMY

(6 Month Calibration Minimum)

PASSENGER DUMMY (S/N 245)	Manufacturer	Serial #	Calibration		
			Last	Next	
Left Femur Load Cell	GSE	LC-551	20-Nov-00	20-May-01	
Right Femur Load Cell	GSE	LC-951	20-Nov-00	20-May-01	
Left Knee Shear	SpaceAge Control	DS-819	02-Feb-01	02-Aug-01	
Right Knee Shear	SpaceAge Control	DS-815	02-Feb-01	02-Aug-01	
Left Upper Tibia	Mx	DENTON	LC-016Mx	09-Nov-00	09-May-01
	My	DENTON	LC-016My	09-Nov-00	09-May-01
Left Lower Tibia	Fz	DENTON	LC-123Fz	09-Nov-00	09-May-01
	Mx	DENTON	LC-123Mx	09-Nov-00	09-May-01
	My	DENTON	LC-123My	09-Nov-00	09-May-01
Right Upper Tibia	Mx	DENTON	LC-023Mx	09-Nov-00	09-May-01
	My	DENTON	LC-023My	09-Nov-00	09-May-01
Right Lower Tibia	Fz	DENTON	LC-111Fz	09-Nov-00	09-May-01
	Mx	DENTON	LC-111Mx	09-Nov-00	09-May-01
	My	DENTON	LC-111My	09-Nov-00	09-May-01
Left Foot Rear	X	ENDEVCO	AC-J30491	12-Jan-01	12-Jul-01
	Z	ENDEVCO	AC-J31026	22-Jan-01	22-Jul-01
Left Foot Front	Z	ENDEVCO	AC-J32831	22-Jan-01	22-Jul-01
Right Foot Rear	X	ENDEVCO	AC-J33376	22-Jan-01	22-Jul-01
	Z	ENDEVCO	AC-J32832	22-Jan-01	22-Jul-01
Right Foot Front	Z	ENDEVCO	AC-J31095	12-Jan-01	12-Jul-01
Lap Belt Load Cells	LEBOW	LC-711	01-Dec-00	01-Jun-01	
Shoulder Belt Load Cells	LEBOW	LC-712	01-Dec-00	01-Jun-01	

INSTRUMENT CALIBRATION FOR VEHICLE ACCELEROMETERS

(6 Month Calibration Minimum)

	Manufacturer	Serial #	Calibration	
			Last	Next
Left Seat Rear Crossmember	ICS	AC-D77	15-Feb-01	15-Aug-01
Right Rear Seat Crossmember	ICS	AC-D30	15-Feb-01	15-Aug-01
Top of Engine	ICS	AC-D84	15-Feb-01	15-Aug-01
Bottom of Engine	ENDEVCO	AC-A14433	15-Feb-01	15-Aug-01
Right Disc Brake Caliper	ENDEVCO	AC-A13513	12-Jan-01	12-Jul-01
Instrument Panel	ENDEVCO	AC-ACC06	23-Feb-01	23-Aug-01
Left Disc Brake Caliper	ENDEVCO	AC-B10481	23-Feb-01	23-Aug-01
Left Seat Rear Crossmember (R)	ICS	AC-D61	15-Feb-01	15-Aug-01
Right Seat Rear Crossmember (R)	ICS	AC-D80	15-Feb-01	15-Aug-01