

REPORT NUMBER: CAL-02-10

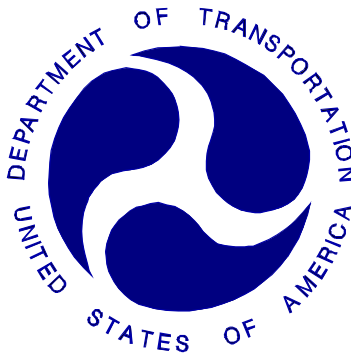
**NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
FRONTAL BARRIER 40% OFFSET IMPACT TEST**

NISSAN MOTOR CO., LTD.
2000 NISSAN ALTIMA
4-DOOR SEDAN

NHTSA NUMBER: RY5216

VERIDIAN TEST NUMBER: 8413-66

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



November 08, 2001

FINAL REPORT

PREPARED FOR:

U.S. DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration
Research and Development
Crashworthiness Research Division
Mail Code: NRD-11
400 Seventh Street, SW, Room No. 6226
Washington, DC 20590

This publication is distributed by the U. S. Department of Transportation, National Highway Traffic Safety Administration, in the interest of information exchange. The opinions, findings and conclusions expressed in this publication are those of the author(s) and not necessarily those of the Department of Transportation or the National Highway Traffic Safety Administration. The United States Government assumes no liability for its contents or use thereof. If trade or manufacturers' names or products are mentioned, it is only because they are considered essential to the object of the publication and should not be construed as an endorsement. The United States Government does not endorse products or manufacturers.

Prepared by:

Lawrence Q. Valvo, Project Engineer

Approved by:

David J. Travale, Program Manager
Transportation Science Center

Approval Date:

FINAL REPORT ACCEPTANCE BY OCS:

Contracting Officer's Technical Representative (COTR),
NHTSA, Office of Crashworthiness Standards

Date of Report Acceptance

Project Engineer
NHTSA, Research and Development

Date of Report Acceptance

TECHNICAL REPORT STANDARD TITLE PAGE

1. Report No. CAL-02-10		2. Government Accession No.		3. Recipient's Catalog No.																			
4. Title and Subtitle Final Report of Frontal Barrier 40% Offset Testing of a 2000 Nissan Altima 4-Door Sedan NHTSA No. RY5216				5. Report Date November 08, 2001																			
				6. Performing Organization Code CAL																			
7. Author(s) David J. Travale, Program Manager Lawrence Q. Valvo, Project Engineer				8. Performing Organization Report No. 8413-66																			
9. Performing Organization Name and Address Veridian Engineering 4455 Genesee Street Buffalo, New York 14225				10. Work Unit No.																			
				11. Contract or Grant No. DTNH22-01-D-32005																			
12. Sponsoring Agency Name and Address U.S. DEPARTMENT OF TRANSPORTATION National Highway Traffic Safety Administration Research and Development Crashworthiness Research Division Mail Code: NRD-11 400 Seventh Street, SW, Room No. 6226 Washington, DC 20590				13. Type of Report and Period Covered Final Report November 2001																			
				14. Sponsoring Agency Code NRD-11																			
15. Supplementary Notes																							
16. Abstract This test is to evaluate the use of the Denton (VRTC) instrumented lower legs in the frontal 40% offset deformable barrier tests. A frontal 40% offset barrier impact test of a 2000 Nissan Altima 4-Door Sedan was performed at Veridian Engineering crash test facility in Buffalo, New York, on November 08, 2001. The impact velocity was 59.87 kph and the temperature at the barrier face was 21.1°C. The maximum post-test vehicle crush was 570 mm. The test vehicle was equipped with 3-point pretensioning restraint systems, knee bolsters, and airbags at both the driver and right outboard passenger seating positions. With respect to FMVSS 208 "Occupant Crash Protection - Injury Criteria" the passenger appeared to comply with head, chest, and femur requirements. The driver appeared to comply with the chest displacement and femur requirements. The data for the driver head and chest acceleration were questionable and the HIC and Clip values could not be calculated with confidence. <table border="1"> <thead> <tr> <th>ATD Position</th> <th>HIC</th> <th>Clip (g's)</th> <th>Chest Disp (mm)</th> <th>Left Femur (N)</th> <th>Right Femur (N)</th> </tr> </thead> <tbody> <tr> <td>Driver (416)</td> <td>†</td> <td>†</td> <td>23.4</td> <td>3804.4</td> <td>2535.3</td> </tr> <tr> <td>Passenger (421)</td> <td>734.9</td> <td>33.4</td> <td>18.1</td> <td>2962.7</td> <td>608.0</td> </tr> </tbody> </table>						ATD Position	HIC	Clip (g's)	Chest Disp (mm)	Left Femur (N)	Right Femur (N)	Driver (416)	†	†	23.4	3804.4	2535.3	Passenger (421)	734.9	33.4	18.1	2962.7	608.0
ATD Position	HIC	Clip (g's)	Chest Disp (mm)	Left Femur (N)	Right Femur (N)																		
Driver (416)	†	†	23.4	3804.4	2535.3																		
Passenger (421)	734.9	33.4	18.1	2962.7	608.0																		
17. Key Words Frontal 40% Offset Barrier Impact test Thor-FLx/HIIIR				18. Distribution Statement Copies of this report are available from: NHTSA Technical Reference Division National Highway Traffic Safety Admin. 400 Seventh St., SW, Room 5108 Washington, DC 20590																			
19. Security Classif. (of this report) UNCLASSIFIED		20. Security Classif. (of this page) UNCLASSIFIED		21. No. of Pages 360																			
22. Price																							

Form DOT F1700.7 (8-69)

† Data is questionable, injury value could not be calculated with confidence.

TABLE OF CONTENTS

<u>Section</u>		<u>Page No.</u>
1	PURPOSE AND SUMMARY OF TEST	1-1
2	OCCUPANT AND VEHICLE INFORMATION	2-1
<u>Data Sheet</u>	<u>Description</u>	
1.	CRASH TEST SUMMARY	2-1
2.	GENERAL TEST AND VEHICLE PARAMETER DATA	2-2
3.	POST IMPACT DATA	2-4
4.	TEST VEHICLE INFORMATION	2-5
5.	DUMMY POSITIONING IN VEHICLE	2-7
6.	SEAT BELT POSITIONING DATA	2-9
7.	VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY	2-10
8.	DUMMY INJURY CRITERIA VALUES	2-12
9.	SEAT BELT PERFORMANCE DATA	2-18
10.	SUMMARY OF FMVSS 212 DATA	2-19
11.	WINDSHIELD ZONE INTRUSION FMVSS 219 DATA	2-20
12.	FMVSS 301 FUEL SYSTEM INTEGRITY DATA	2-21
13.	FMVSS 310 ROLLOVER DATA	2-22
14.	TEST VEHICLE MEASUREMENTS	2-23
15.	HIGH SPEED CAMERA LOCATIONS	2-30
16.	VEHICLE REFERENCE PHOTO TARGET LOCATIONS	2-31
17.	LOAD CELL LOCATIONS RELATIVE TO FIXED BARRIER AND DEFORMABLE BARRIER FACE	2-33
18.	POST TEST AIR BAG DATA	2-34
19.	ACCIDENT INVESTIGATION DIVISION DATA	2-35
20.	OFFSET BARRIER AND VEHICLE ORIENTATION	2-36
21.	OFFSET BARRIER DEFORMATION	2-37
APPENDIX A	PHOTOGRAPHS	A-1
APPENDIX B	VEHICLE, LOAD CELL BARRIER AND DUMMY RESPONSE DATA	B-1
APPENDIX C	PART 572 DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION TESTS	C-1
APPENDIX D	DUMMY, VEHICLE AND LABORATORY INSTRUMENT CALIBRATION	D-1

SECTION 1

PURPOSE AND SUMMARY OF TEST

PURPOSE

This 59.87 kph frontal 40% offset barrier impact test is part of the Test Procedure Development Program sponsored by the National Highway Traffic Safety Administration (NHTSA). The purpose of this test was to perform a comparative evaluation of the Thor-FLx 5th percentile adult female- Hybrid III retrofit (Thor-FLx/HIIIr) version lower legs, using the Denton (VRTC) instrumented lower legs, and obtain vehicle crashworthiness and occupant and restraint system performance data.

The frontal 40% offset barrier impact test was conducted in accordance with the Office of Crashworthiness Standards Laboratory Indicant Test procedure.

SUMMARY

A deformable honeycomb barrier mounted to a load cell barrier consisting of 30 load cells and a load cell plate above the barrier was impacted by a 2000 Nissan Altima 4-Door Sedan at 40% overlap at a velocity of 59.87 kph. The test was performed at Veridian Engineering on November 08, 2001. Pre- and post-test photographs of the vehicle and dummies can be found in Appendix A.

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

Two Part 572O, 5th percentile female 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 9 axis array head, head, chest, and pelvis triaxial accelerometers, chest displacement potentiometers, upper neck transducers, right/left femur load cells, knee sliders and Denton (VRTC) instrumented lower legs. The driver (position 1) ATD (Serial No. 416) and the right-front passenger (position 2) ATD (Serial No. 421) were calibrated previous to this test. Certification details, along with instrumentation calibration data, are found in Appendix C.

The 194 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 head and chest data were questionable, therefore the HIC and 3 millisecond chest deceleration (Clip) injury values could not be calculated with confidence. Compressive femur loads were 3804.4 Newtons on the left and 2535.3 Newtons on the right.

The right front passenger's HIC was 734.9. Maximum chest deceleration over 3 milliseconds was 33.4 g's and maximum chest deflection was 18.1 mm. Compressive femur loads were 2962.7 Newtons on the left and 608.0 Newtons on the right.

SECTION 2

GENERAL TEST AND VEHICLE PARAMETER DATA

DATA SHEET NO. 1 CRASH TEST SUMMARY

Vehicle NHTSA No.:	RY5216	Test Mode:	60 kph Offset Frontal Barrier
Test Date:	November 08, 2001	Time:	13:00
		Temperature:	21.1 °C
Vehicle Make/Model/Body Style:	2000 Nissan Altima 4-Door Sedan		
Vehicle Test Weight:	1516.0	kg	
Vehicle/Barrier Impact Angle:	0	°	
Impact Velocity:	59.87	kph	
Maximum Static Crush:	570	mm	
Actual Vehicle Offset:	40.5	%	
 <u>DUMMIES:</u>			
	<u>DRIVER</u>	<u>PASSENGER</u>	
Type:	5720	5720	
Restraint System:	Seatbelt with Pretensioner, Airbag, Knee Bolster	Seatbelt with Pretensioner, Airbag, Knee Bolster	
Lower Leg:	VRTC/Denton	VRTC/Denton	
Number of Data Channels:	194		
Number of Cameras:	1	Real Time	
	16	High Speed	
 <u>DOOR OPENING DATA:</u>			
	Closed / Inoperable	- Left Front	
	Closed / Operable	- Right Front	
 Front Seat(s) Data:			
	<u>DRIVER</u>	<u>PASSENGER</u>	
Seat Track Failure:(mm of shift)	0	0	
Seat Back Failure:	None	None	
 <u>VISIBLE DUMMY CONTACT POINTS:</u>			
	<u>DRIVER</u>	<u>PASSENGER</u>	
Head:	Face and chin to upper center of airbag; Back of head to outboard half of head restraint	Face to left half of airbag	
Abdomen:	Abdomen to lower steering wheel rim	None	
Chest:	Airbag	Airbag	
Knees:	Knee bolster	Left knee to left quarter of glove compartment door; Right knee to right third of glove compartment door	

DATA SHEET NO. 2 GENERAL TEST AND VEHICLE PARAMETER DATA

TEST VEHICLE INFORMATION:

Year/Make/Model/Body Style: 2000 Nissan Altima 4-Door Sedan

NHTSA No. : RY5216 ; VIN: 1N4DL01D2YC195464 ; Color: White

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

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

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

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

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

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

Date Received: 6/15/2001 ; Odometer Reading 20585 km

Selling Dealer: -

& Address: -

DATA FROM TIRE VEHICLE'S CERTIFICATION LABEL:

Vehicle Manufactured by: Nissan Motor Co., Ltd.

Date of Manufacture 03/00

GVWR: 1810 kg; GAWR: 976 kg FRONT; 875 kg REAR

DATA FROM TIRE PLACARD:

Tire Pressure with Maximum Capacity Vehicle Load: 300 kpa FRONT

300 kpa REAR

Recommended Tire Size: 205/60R15

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

Size of Tires on Test Vehicle: 205/60R15 ; 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) = 390 kg

No. of Occupants x 68.04 kg = 340.2 kg

Rated Cargo/Luggage Weight (RCLW) = 49.8 kg

*Tire pressure used for test

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

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

Right Front =	<u>424.0</u>	kg	Right Rear =	<u>256.5</u>	kg
Left Front =	<u>428.0</u>	kg	Left Rear =	<u>260.5</u>	kg
TOTAL FRONT =	<u>852.0</u>	kg	TOTAL REAR =	<u>517.0</u>	kg
TOTAL DELIVERED WEIGHT =	<u>1369.0</u>	kg			
% of Total Front of Vehicle Weight =	<u>62.2%</u>		% of Total Rear Weight =	<u>37.8%</u>	%

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:

Total Delivered Weight (UDW) =	<u>1369</u>	kg
Rated Cargo/Luggage Weight (RCLW) =	<u>49.8</u>	kg
Weight of 2 p.572 Dummies @ 49 each =	<u>98</u>	kg
TARGET TEST WEIGHT =	<u>1516.8</u>	kg

WEIGHT OF TEST VEHICLE WITH TWO DUMMIES AND 49 KG OF CARGO WEIGHT:

Right Front =	<u>436.0</u>	kg	Right Rear =	<u>314.5</u>	kg
Left Front =	<u>436.5</u>	kg	Left Rear =	<u>329.0</u>	kg
TOTAL FRONT =	<u>872.5</u>	kg	TOTAL REAR =	<u>643.5</u>	kg
TOTAL TEST WEIGHT =	<u>1516.0</u>	kg			
% of Total Front Weight =	<u>57.6%</u>	%	% of Total Rear Weight =	<u>42.4%</u>	%
Weight of Ballast Secured in Vehicle Trunk Area =	<u>0</u>	kg			
Vehicle Components Removed for Weight Reduction: and side mirrors.			Rear compartment and trunk trim, wheel covers,		

VEHICLE ATTITUDE (all dimension in millimeters):

AS DELIVERED:	RF	<u>669</u>	LF	<u>670</u>	RR	<u>685</u>	LR	<u>678</u>
FULLY LOADED:	RF	<u>655</u>	LF	<u>656</u>	RR	<u>660</u>	LR	<u>655</u>
AS TESTED:	RF	<u>676</u>	LF	<u>677</u>	RR	<u>660</u>	LR	<u>655</u>
Vehicle's Wheel Base:		<u>2619</u>	mm					
Location of Vehicle's C.G.:		<u>1112</u>	mm rearward of front wheel center.					

FUEL SYSTEM DATA:

Fuel System Capacity From Owner's Manual =	<u>59.8</u>	liters
Usable Capacity Figure Furnished by COTR =	<u>59.8</u>	liters
Test Volume Range (92 to 94% of Usable Capacity) =	<u>55.02</u>	to <u>56.21</u> liters
ACTUAL TEST VOLUME=	<u>55.0</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: Tank – centered ahead of the rear axle; Lines – inside the left body stiffener; Filler – left side of vehicle behind the rear axle		

DATA SHEET NO. 3 POST IMPACT DATA

TYPE OF TEST:

Type of Test: Offset Frontal Barrier Impact Angle: 0°
Test Date: November 08, 2001 Time: 13:00 Temperature: 21.1 °C
Vehicle NHTSA No.: RY5216
Required Impact Velocity Range: 59.8 to 60.8 kph

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

Trap No. 1 = 59.87 kph; Trap No. 2 = 59.87 kph
Distance from vehicle to barrier: (1) entering trap = 813 mm
(2) exiting trap = 305 mm

VEHICLE STATIC CRUSH: (mm)

Vehicle Length:

Pre-Test	Left = <u>4623</u>	; C/L = <u>4710</u>	; Right = <u>4620</u>
Post-Test	Left = <u>4063</u>	; C/L = <u>4277</u>	; Right = <u>4573</u>
Crush	Left = <u>560</u>	; C/L = <u>433</u>	; Right = <u>47</u>
AVERAGE	= <u>347</u>	mm	

VEHICLE OFFSET DATA: (mm)

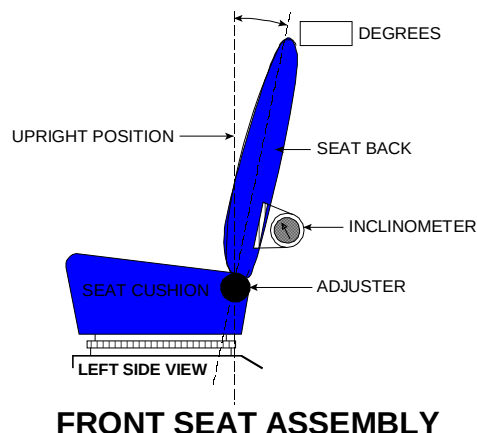
Vehicle Width	= <u>1750</u>	mm
Desired Vehicle Offset	= <u>700</u>	mm
Actual Vehicle Offset	= <u>708</u>	mm (from film analysis)
Offset Difference	= <u>-8</u>	mm
Actual Percent Offset	= <u>40.5</u>	%

DATA SHEET NO. 4 TEST VEHICLE INFORMATION

VEHICLE IDENTIFICATION:

Model Year: 2000 Vehicle Model: Nissan Altima Body Style: 4-Door Sedan

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



Seat back angle for driver's seat: 14° (5° on headrest post)

Measurement instructions: Seat back positioned according to the Hybrid III 5th percentile female ATD

Laboratory Indicant Test Procedure.

Seat back angle for passenger's seat: 14° (5° on headrest post)

Measurement instructions: Seat back positioned according to the Hybrid III 5th percentile female ATD

Laboratory Indicant Test Procedure.

2. Seat Fore and Aft Positioning

Positioning of the driver's seat: 21 total detents. Seat was placed in the forward-most position.

Positioning of the passenger's seat: 21 total detents. Seat was placed in the forward-most position.

3. Fuel Tank Capacity Data

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

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

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

3.2 Amount of Stoddard solvent added to vehicle(s) used for certification test(s) = 55.02 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.

Pump operates for 5 seconds after the ignition is switched on, continuously 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:

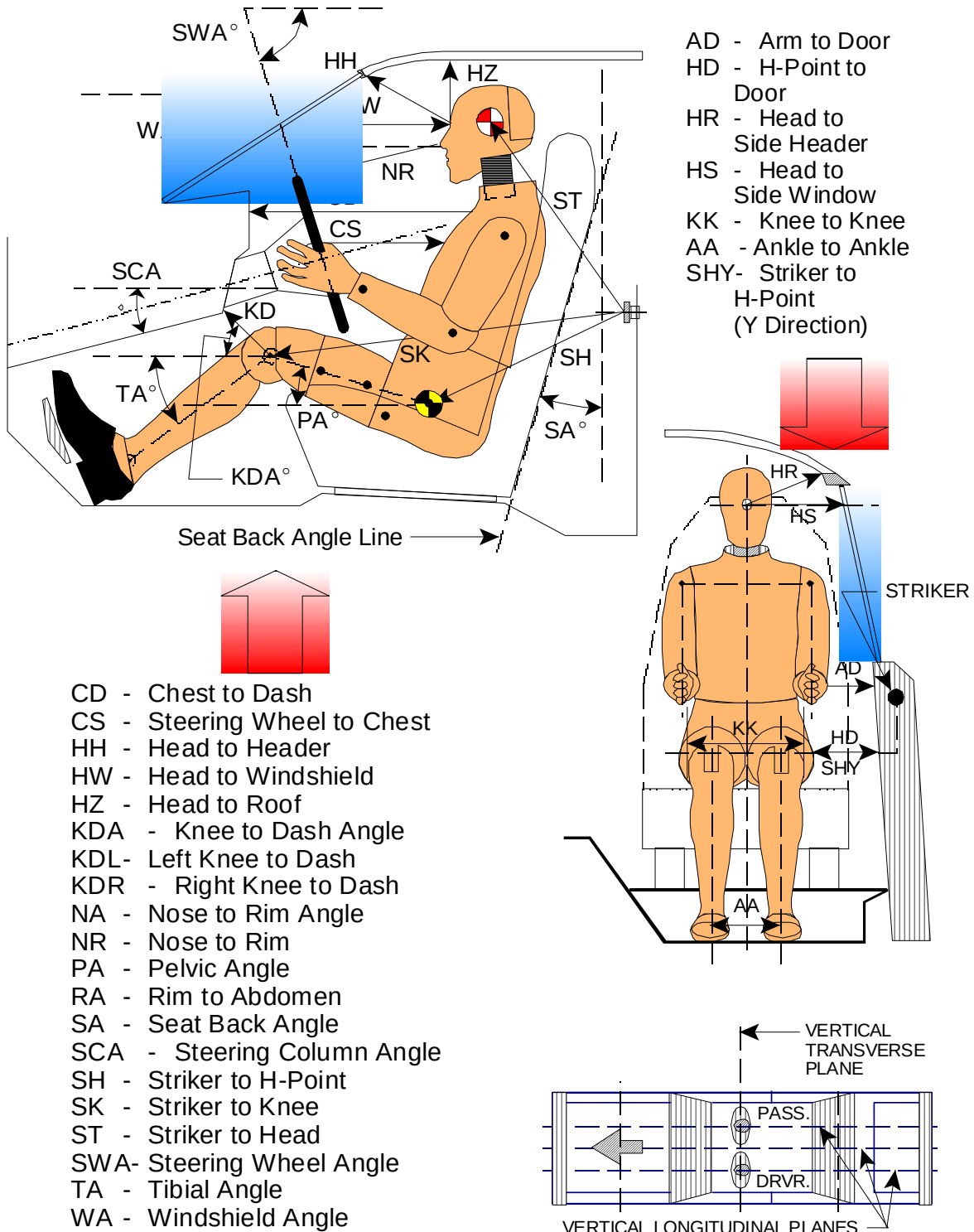
Steering wheel and column adjustments are made so that the steering wheel hub is at the geometric center of the locus it describes when it is moved through its full range of driving positions. If the tested vehicle has any of these adjustments, does your company use any specific procedures to determine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

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

5. SEAT BELT UPPER ANCHORAGE

Nominal design riding position: 4 total detents. The driver and passenger anchorages were placed in the
lowest position.

DUMMY MEASUREMENT FOR FRONT SEAT PASSENGERS

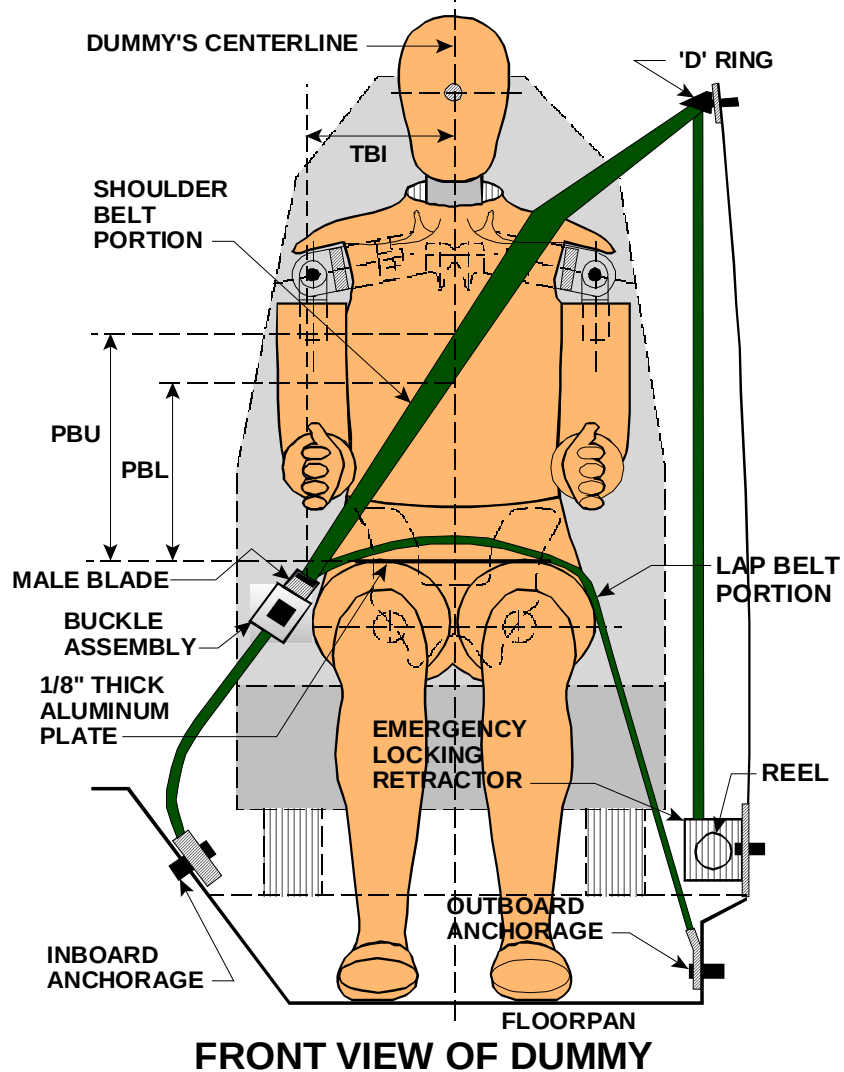


DATA SHEET NO. 5 FRONT SEAT DUMMY POSITIONING MEASUREMENTS IN VEHICLE (cont.)

	DRIVER (Serial #416)			PASS. (Serial #421)		
WA ⁰	28.7 deg.			N/A		
SWA ⁰	67 deg.			N/A		
SCA ⁰	23 deg.			N/A		
SA ⁰	14 deg. (5 deg. at headrest post)			14 deg. (5 deg. at headrest post)		
HZ	192			192		
HH	257			259		
HW	545			536		
HR	249			259		
NR	270	Angle	6 deg.	N/A		
CD	420			428		
CS	210			N/A		
RA	90			N/A		
KDL	116	Angle (KDA)	43 deg.	108		
KDR	108			107	Angle (KDA)	42 deg.
PA ⁰	29.0 deg.			28.5 deg.		
TA ⁰	47.2 deg.			48.2 deg.		
KK	290			165		
AA	362			170		
ST	456	Angle	25 deg.	458	Angle	25 deg.
SK	665	Angle	95 deg.	679	Angle	94 deg.
SH	364	Angle	108 deg.	368	Angle	108 deg.
SHY	280			281		
HS	383			386		
HD	228			217		
AD	165			165		

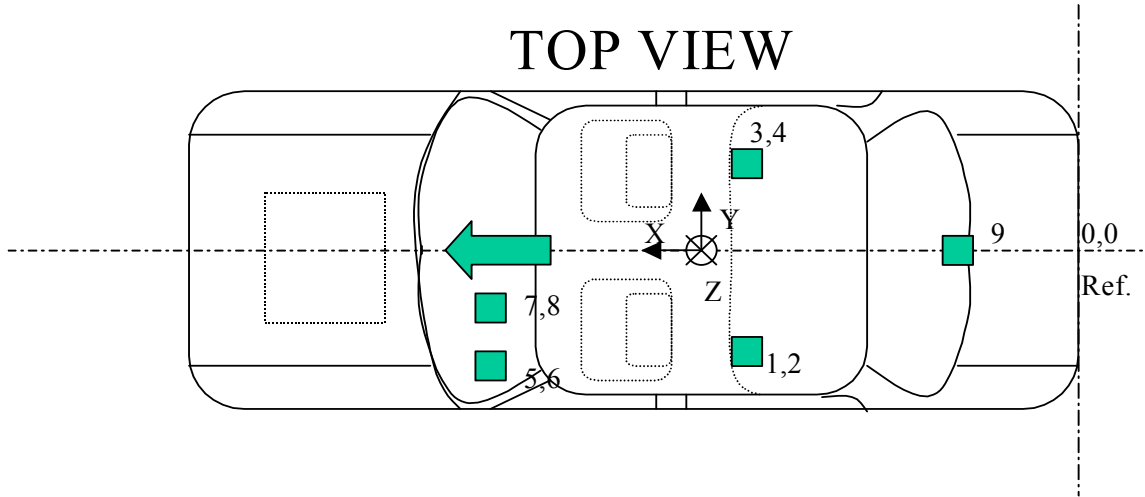
Dimensions in millimeters

SEAT BELT POSITIONING DATA



	DRIVER DUMMY (mm)	PASSENGER DUMMY (mm)
PBU -- Top surface of alum. plate to upper edge	298	278
PBL-- Top surface of alum. plate to belt lower edge	220	198
<u>LAP BELT TENSION</u>	10 N	10 N
<u>SHOULDER BELT TENSION</u>	Retractor	Retractor

DATA SHEET NO. 7 VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY



Accelerometer	X-Direction (mm)	Y-Direction (mm)	Z-Direction (mm)
Left Rear Seat Crossmember	1963	-677	-309
Right Rear Seat Crossmember	1952	692	-328
Driver Left Side Toepan	3376	-445	-303
Driver Right Side Toepan	3373	-245	-299
Trunk	1296	253	-490

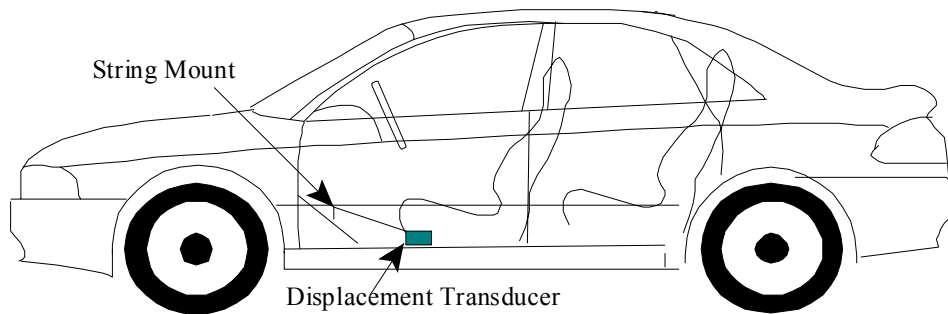
X-Direction is referenced from vehicle rear bumper (positive forward)

Y-Direction is referenced from vehicle centerline (positive to right)

Z-Direction is referenced from ground plane (positive down)

LOCATION NUMBER	DESCRIPTION	MAXIMUM VALUE (g's)			
		Pos.	msec.	Neg.	msec.
1	Rear Seat X-Member @ Left Side X	2.4	183.4	-31.6	82.4
2	Rear Seat X-Member @ Left Side Y	12.6	81.8	-3.4	116.3
3	Rear Seat X-Member @ Right Side X	8.1	41.5	-25.9	86.2
4	Rear Seat X-Member @ Right Side Y	13.8	77.9	-6.3	120.0
5	Driver Toe Pan @ Left Side X	2.5	145.5	-50.4	74.1
6	Driver Toe Pan @ Left Side Z	18.2	56.4	-36.2	67.5
7	Driver Toe Pan @ Right Side X	5.1	145.4	-67.8	69.7
8	Driver Toe Pan @ Right Side Z	20.8	88.0	-38.9	76.3
9	Trunk Z	5.1	124.1	-11.2	88.0

SIDE VIEW



Driver Toe Pan Displacement

P1 Toe Pan Spoolout**	X-Direction (mm)	Y-Direction (mm)	Z-Direction (mm)	Vertical Angle* (Deg)
Pre-Test	681	131	-16	1.4
Post-Test	482	182	-71	8.4

** Measurements taken from string pot mounting base.

*Referenced from horizontal (0 degrees)

SENSOR NAME	MAXIMUM VALUE (mm)			
	Pos.	msec.	Neg.	msec.
P1 Toe Pan Movement	0.0	-64.2	-199.8	119.7

DATA SHEET NO. 8 DUMMY INJURY CRITERIA VALUES

Vehicle Year/Make/Model/Body Style: 2000 Nissan Altima 4-Door Sedan

NHTSA Test No.: RY5216 Test Date: November 08, 2001

		MAXIMUM VALUE							
		Driver				Passenger			
DESCRIPTION	Unit	Pos	msec	Neg	msec	Pos	msec	Neg	msec
Head 9 Array X Arm Y	g	17.0	199.5	-17.6	141.8	16.1	84.8	-12.5	88.1
Head 9 Array X Arm Z	g	48.5	111.5	-24.5	95.1	61.1	93.9	-13.9	83.0
Head 9 Array Y Arm X	g	17.8	140.9	-91.5	92.3	7.3	85.5	-52.9	82.1
Head 9 Array Y Arm Z	g	29.7	111.0	-20.4	109.3	52.1	105.9	-15.9	85.5
Head 9 Array Z Arm X	g	50.5	140.0	-125.2	93.8	43.5	89.6	-83.2	82.1
Head 9 Array Z Arm Y	g	21.4	199.1	-12.4	106.0	57.4	84.9	-36.8	92.2
Head X	g	28.3	140.6	-99.6	92.6	7.2	89.8	-50.9	118.4
Head Y	g	13.7	199.5	-7.2	129.2	14.5	85.1	-13.5	92.4
Head Z	g	59.1†	150.0	-24.3†	375.1	56.0	102.3	-5.7	82.4
Head Resultant	g	102.8†	92.6	-	-	61.4	112.1	-	-
Redundant Head X	g	42.9†	138.9	-74.8†	92.5	9.0	89.8	-50.0	118.4
Redundant Head Y	g	14.0	199.5	-7.0	85.1	15.2	85.1	-12.4	92.4
Redundant Head Z	g	61.6†	126.9	-2.5†	464.2	57.6	102.3	-6.0	82.4
Redundant Head Resultant	g	75.5†	92.5	-	-	61.3	112.1	-	-
Upper Neck Fx	N	88.3	137.5	-1947.1	111.3	92.3	347.0	-1030.8	118.1
Upper Neck Fy	N	219.0	201.2	-196.5	135.7	275.9	103.3	-54.2	235.0
Upper Neck Fz	N	3720.1	97.7	-129.6	200.5	618.9	77.1	-2003.1	114.3
Upper Neck F Resultant	N	3900.4	97.7	-	-	2234.3	114.9	-	-
Upper Neck Mx	N-m	11.8	198.0	-11.7	91.6	12.7	161.4	-31.8	106.0
Upper Neck My	N-m	5.9	324.8	-114.3	111.5	13.6	99.1	-22.9	87.9
Upper Neck Mz	N-m	18.5	197.1	-11.3	133.2	10.4	110.6	-1.5	239.4
Upper Neck M Resultant	N-m	114.4	111.5	-	-	36.5	116.4	-	-
Chest X	g	144.9†	202.9	-23.5†	129.9	1.4	263.5	-32.6	102.0
Chest Y	g	72.1†	192.6	-1.9†	448.5	9.6	97.4	-2.1	156.3
Chest Z	g	51.8†	123.9	-36.4†	36.5	12.9	82.4	-8.2	134.3
Chest Resultant	g	158.3†	202.7	-	-	34.1	101.8	-	-

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

Vehicle Year/Make/Model/Body Style: 2000 Nissan Altima 4-Door Sedan

NHTSA Test No.: RY5216 Test Date: November 08, 2001

		MAXIMUM VALUE							
		Driver				Passenger			
DESCRIPTION	Unit	Pos	msec	Neg	msec	Pos	msec	Neg	msec
Redundant Chest X	g	42.1†	208.0	-35.9†	139.9	1.5	263.5	-32.4	102.0
Redundant Chest Y	g	51.6†	215.4	-30.3†	145.9	9.7	97.4	-2.1	156.5
Redundant Chest Z	g	124.0†	202.6	-31.6†	37.8	13.2	85.8	-8.0	139.3
Redundant Chest Resultant	g	132.6†	203.2	-	-	34.1	101.7	-	-
Chest Displacement	mm	0.1	24.3	-23.4	90.3	0.0	33.7	-18.1	100.0
Pelvic X	g	14.1†	159.2	-24.1†	71.0	3.3	143.8	-31.7	71.9
Pelvic Y	g	62.6†	201.4	-0.9†	41.4	11.2	87.9	-6.8	136.4
Pelvic Z	g	14.5†	210.9	-25.2†	202.5	2.0	302.6	-13.6	102.9
Pelvic Resultant	g	68.1†	202.4	-	-	33.6	72.0	-	-
Left Femur Fx	N	355.2	114.3	-172.1	70.0	167.9	101.7	-149.8	144.7
Left Femur Fy	N	239.8	114.1	-189.8	94.4	460.1	108.8	-22.4	330.4
Left Femur Fz	N	235.8	55.5	-3804.4	108.2	47.3	19.0	-2962.7	91.3
Left Femur Force Resultant	N	3819.6	108.2	-	-	2969.7	91.3	-	-
Left Femur Mx	N-m	31.0	131.9	-52.4	99.0	26.1	110.8	-21.3	65.5
Left Femur My	N-m	89.7	117.3	-16.6	64.1	62.6	97.8	-4.3	62.3
Left Femur Mz	N-m	43.4	75.3	-11.8	389.1	19.7	80.4	-35.3	145.4
Left Femur Moment Res.	N-m	94.3	117.4	-	-	65.5	97.7	-	-
Right Femur Fx	N	682.7	90.7	-135.3	67.3	80.8	55.1	-164.6	144.1
Right Femur Fy	N	514.6	116.7	-25.3	55.8	143.1	72.9	-73.7	205.2
Right Femur Fz	N	776.7	145.0	-2535.3	86.5	302.8	64.6	-608.0	74.6
Right Femur Force Resultant	N	2611.6	86.8	-	-	633.8	74.6	-	-
Right Femur Mx	N-m	25.3	88.0	-46.7	75.9	21.9	119.5	-41.5	72.7
Right Femur My	N-m	46.6	119.1	-65.6	80.6	19.6	94.7	-16.6	158.0
Right Femur Mz	N-m	23.5	123.5	-32.0	78.6	28.6	90.7	-27.1	145.4
Right Femur Moment Res.	N-m	79.2	80.7	-	-	42.6	73.6	-	-

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

Vehicle Year/Make/Model/Body Style: 2000 Nissan Altima 4-Door Sedan

NHTSA Test No.: RY5216 Test Date: November 08, 2001

		MAXIMUM VALUE							
		Driver				Passenger			
DESCRIPTION	Unit	Pos	msec	Neg	msec	Pos	msec	Neg	msec
Left Knee Shear Dx	mm	0.9	76.3	-1.3	119.7	0.6	89.4	0.0	-73.2
Right Knee Shear Dx	mm	0.7	79.5	-2.3	86.8	0.9	94.8	-0.2	108.9
Left Upper Tibia Fx	N	129.7	55.6	-489.2	113.4	93.2	126.1	-154.5	90.8
Left Upper Tibia Fz	N	128.8	169.2	-1611.3	91.7	149.5	126.5	-1054.2	86.1
Left Upper Tibia Mx	N-m	33.8	73.4	-28.7	97.7	8.6	230.6	-26.7	145.9
Left Upper Tibia My	N-m	27.0	120.0	-55.2	64.0	13.3	140.7	-49.8	85.9
Left Lower Tibia Fx	N	56.3	186.2	-876.4	96.2	49.7	140.7	-508.7	85.6
Left Lower Tibia Fz	N	167.8	175.3	-1705.8	90.5	116.3	128.3	-1330.2	85.9
Left Lower Tibia Mx	N-m	11.4	71.6	-58.2	82.3	3.5	129.3	-39.8	83.4
Left Lower Tibia My	N-m	94.1	113.7	-21.5	71.7	9.5	90.8	-21.5	73.9
Right Upper Tibia Fx	N	151.5	208.1	-1349.1	88.5	131.9	81.6	-229.2	105.5
Right Upper Tibia Fz	N	170.2	211.3	-3554.2	78.3	58.8	188.3	-441.5	74.7
Right Upper Tibia Mx	N-m	25.5	85.2	-45.1	74.3	14.2	102.2	-15.7	144.5
Right Upper Tibia My	N-m	7.4	85.3	-55.4	74.8	8.3	145.6	-41.8	74.7
Right Lower Tibia Fx	N	11.6	183.6	-1395.9	88.8	31.1	216.4	-282.1	74.6
Right Lower Tibia Fz	N	209.5	195.6	-3958.0	88.5	31.2	198.3	-463.2	74.7
Right Lower Tibia Mx	N-m	67.8	84.5	-18.0	72.6	6.9	146.3	-14.7	97.8
Right Lower Tibia My	N-m	224.6	88.3	-15.0	58.0	3.1	145.5	-17.5	81.3

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

Vehicle Year/Make/Model/Body Style: 2000 Nissan Altima 4-Door Sedan

NHTSA Test No.: RY5216 Test Date: November 08, 2001

		MAXIMUM VALUE							
		Driver				Passenger			
DESCRIPTION	Unit	Pos	msec	Neg	msec	Pos	msec	Neg	msec
Left Ankle Ax	g	35.4†	116.9	-35.0†	54.7	23.8	172.1	-43.4	78.7
Left Ankle Az	g	33.6†	272.0	-34.3†	75.3	88.1	156.5	-10.8	50.9
Left Toe Az	g	83.2†	134.4	-62.9†	56.6	107.7	179.0	-6.7	499.9
Right Ankle Ax	g	43.4†	86.2	-36.6†	71.9	45.5	112.8	-9.3	322.0
Right Ankle Az	g	43.0†	181.6	-75.2†	76.2	41.6	186.2	-31.8	92.1
Right Toe Az	g	24.1†	178.8	-431.9†	66.3	18.0	55.6	-18.3	80.2
Lap Belt Force	N	1115.0	68.3	-13.8	476.3	2368.5	75.8	-12.0	462.2

† Data is questionable

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

Vehicle Year/Make/Model/Body Style: 2000 Nissan Altima 4-Door Sedan

NHTSA Test No.: RY5216 Test Date: November 08, 2001

	HEAD INJURY CRITERIA (HIC)			
	HIC**	t ₁ (msec)	t ₂ (msec)	Average Acceleration t ₁ to t ₂
Position #1 - Driver	†	-	-	-
Position #2 - Passenger	734.9	93.0	128.9	53.0

** 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	†	-	-	-
Position #2 - Passenger	33.4	100.9	103.9	253.3

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

† Data is questionable, injury value could not be calculated with confidence.

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

Vehicle Year/Make/Model/Body Style: 2000 Nissan Altima 4-Door Sedan

NHTSA Test No.: RY5216 Test Date: November 08, 2001

HEAD INJURY CRITERIA (HIC) REDUNDANT				
	HIC**	t ₁ (msec)	t ₂ (msec)	Average Acceleration t ₁ to t ₂
Position #1 - Driver	†	-	-	-
Position #2 - Passenger	737.2	93.0	128.9	53.0

** 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	†	-	-	-
Position #2 - Passenger	33.4	100.8	103.8	253.1

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

† Data is questionable, injury value could not be calculated with confidence.

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.	<u>1914</u>	<u>1920</u>
Shoulder belt length as measured on Part 572 Dummy.	<u>914</u>	<u>920</u>
Lap belt length as measured on Part 572 Dummy.	<u>870</u>	<u>870</u>

SHOULDER BELT SPOOL-OFF DATA:

As determined by film analysis.	<u>†</u>	<u>†</u>
As determined mechanically.	<u>33 mm</u>	<u>33 mm</u>
As determined electronically.	<u>†</u>	<u>†</u>

BELT STRETCH DATA:

Measured electronically between shoulder belt load cell and the "D" ring.	<u>†</u>	<u>†</u>
Measured mechanically.	<u>0 mm/50mm</u>	<u>0 mm/50mm</u>

Dimensions in millimeters

† This vehicle was equipped with pretensioning seatbelts, measurement device was deleted.

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.:

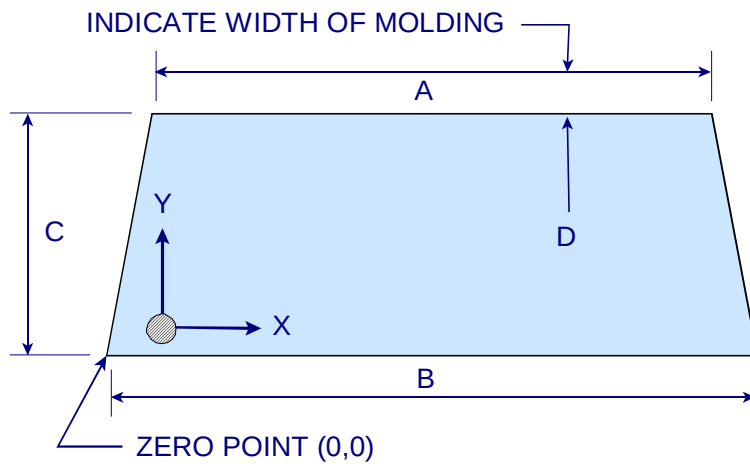
Windshield is bonded in place and covered with a 19 mm molding.

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			
	PRE-TEST (mm)	POST-TEST (mm)	% OF RETENTION
RIGHT SIDE	2101	2101	100.0%
LEFT SIDE	2101	2101	100.0%
TOTAL	4202	4202	100.0%

AREA OF RETENTION FAILURE:



DIMENSIONS (mm)	
A	1142
B	1470
C	795
D	19

FRONT VIEW OF WINDSHIELD

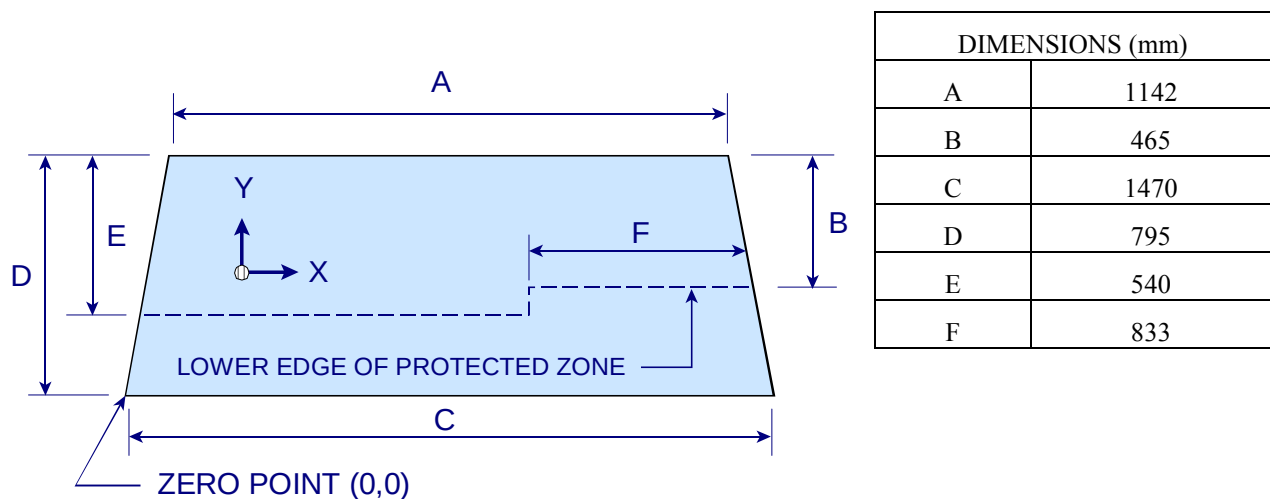
FAILURE DETAILS: None

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

PROTECTED ZONE LOWER EDGE REQUIREMENT:

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

FMVSS 219 TEST DATA:



FRONT VIEW OF WINDSHIELD

DETAILS OF WINDSHIELD GLASS PENETRATION GREATER THAN 6 mm: None

(Show location of penetration on the above sketch)

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

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

NHTSA TEST No.: RY5216 TEST DATE: November 08, 2001

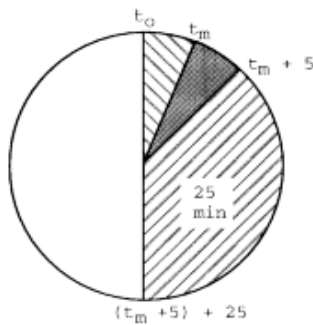
VEHICLE MAKE/MODEL: 2000 Nissan Altima 4-Door Sedan

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

=====

TEST VEHICLE IMPACT TYPE:	
X	Offset Frontal (60 kph)
	Oblique (48 kph) with _____ deg. barrier face first contacting _____
-	(driver/passenger) side
-	Rear Moving Barrier (48 kph)
-	Lateral Moving Barrier (32 kph)

FUEL SPILLAGE MEASUREMENT:



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

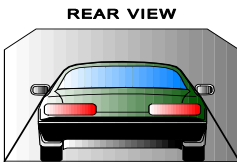
ACTUAL	MAX ALLOWED
0	28 g
0	141 g
0	28 g/min.

SOLVENT SPILLAGE DETAILS: None

DATA SHEET NO. 13 - ROLLOVER DATA

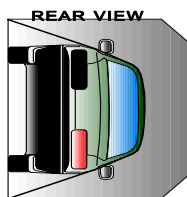
Vehicle: 2000 Nissan Altima 4-Door Sedan

NHTSA No.: RY5216

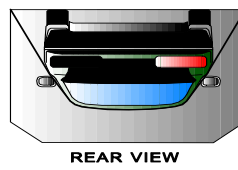


0/360

90

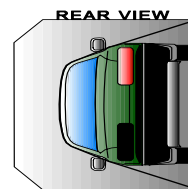


180



REAR VIEW

270



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Stage	Rotation Time (spec. 1 -3 min)				FMVSS 301 Hold Time		Total Time				Next Whole Minute Interval	
0° - 90°	1	minutes	5	seconds	5	minutes	6	minutes	5	seconds	7	minutes
90° - 180°	1	minutes	4	seconds	5	minutes	6	minutes	4	seconds	7	minutes
180°-270°	1	minutes	11	seconds	5	minutes	6	minutes	11	seconds	7	minutes
270°-360°	1	minutes	8	seconds	5	minutes	6	minutes	8	seconds	7	minutes

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

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

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

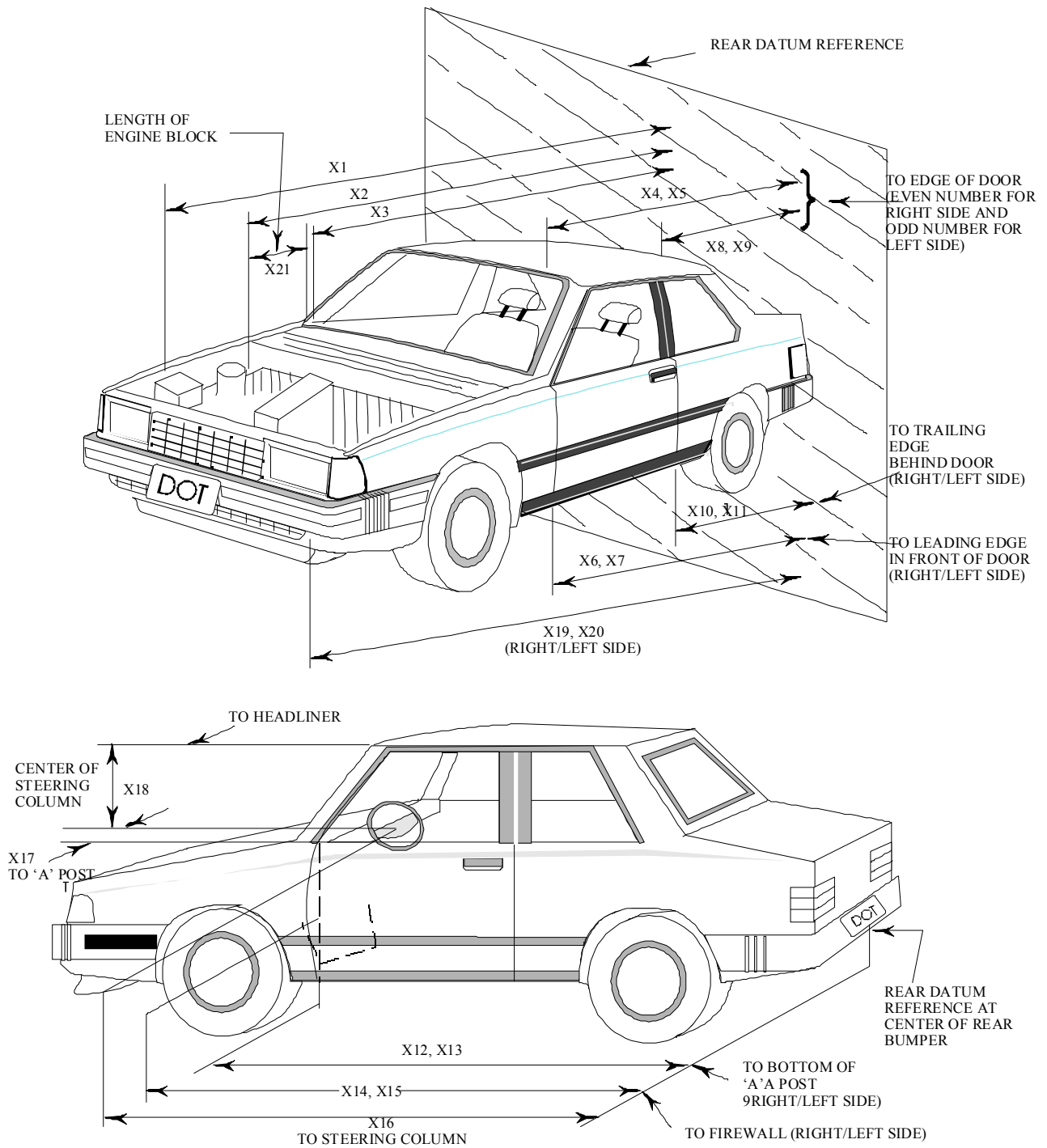
Rollover Stage	First 5 minutes from onset of rotation (g)	6th min. (g)	7th min. (g)	8th min. (if required) (g)
0° - 90°	0	0	0	N/A
90° - 180°	0	0	0	N/A
180°-270°	0	0	0	N/A
270°-360°	0	0	0	N/A

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

IV. SOLVENT SPILLAGE LOCATION(S):

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

DATA SHEET NO. 14 TEST VEHICLE MEASUREMENTS



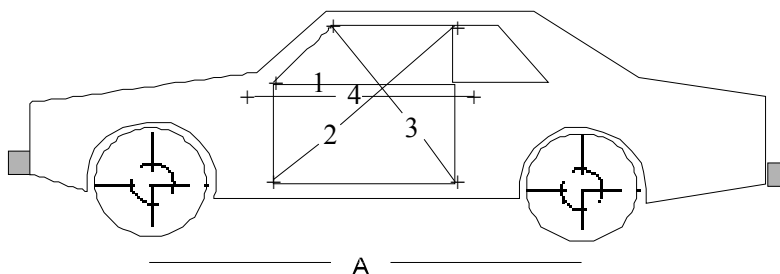
DATA SHEET NO.14 VEHICLE MEASUREMENTS (cont.)

No.		Pre-Test	Post-Test	Difference
X1	Total Length of Vehicle at Centerline	4710	4277	433
X2	Rear Surface of Vehicle to Front of Engine	4187	4027	160
X3	Rear Surface of Vehicle to Firewall	3544	3459	85
X4	Rear Surface of Vehicle to Upper Leading Edge of Right Door	3207	3209	-2
X5	Rear Surface of Vehicle to Upper Leading Edge of Left Door	3206	3154	52
X6	Rear Surface of Vehicle to Lower Leading Edge of Right Door	3201	3202	-1
X7	Rear Surface of Vehicle to Lower Leading Edge of Left Door	3204	3138	66
X8	Rear Surface of Vehicle to Upper Trailing Edge of Right Door	2156	2163	-7
X9	Rear Surface of Vehicle to Upper Trailing Edge of Left Door	2160	2134	26
X10	Rear Surface of Vehicle to Lower Trailing Edge of Right Door	2153	2156	-3
X11	Rear Surface of Vehicle to Lower Trailing Edge of Left Door	2151	2122	29
X12	Rear Surface of Vehicle to Bottom of "A" Post of Right Side	3341	3354	-13
X13	Rear Surface of Vehicle to Bottom of "A" Post of Left Side	3348	3199	149
X14	Rear Surface of Vehicle to Firewall, Right Side	3501	3492	9
X15	Rear Surface of Vehicle to Firewall, Left Side	3483	3332	151
X16	Rear Surface of Vehicle to Steering Column	2766	2717	49
X17	Center of Steering Column to "A" Post	287	309	-22
X18	Center of Steering Column to Headliner	427	440	-13
X19	Rear Surface of Vehicle to Right Side of Front Bumper	4620	4573	47
X20	Rear Surface of Vehicle to Left Side of Front Bumper	4623	4063	560
X21	Length of Engine Block	522	495	27
RD	Rear Surface of Vehicle to Right Side of Dash Panel	2955	2954	1
CD	Rear Surface of Vehicle to Center of Dash Panel	3002	2951	51
LD	Rear Surface of Vehicle to Left Side of Dash Panel	2954	2847	107

All Dimensions in mm

All measurements taken forward from a lateral plane located at the rearmost point of the vehicle.

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

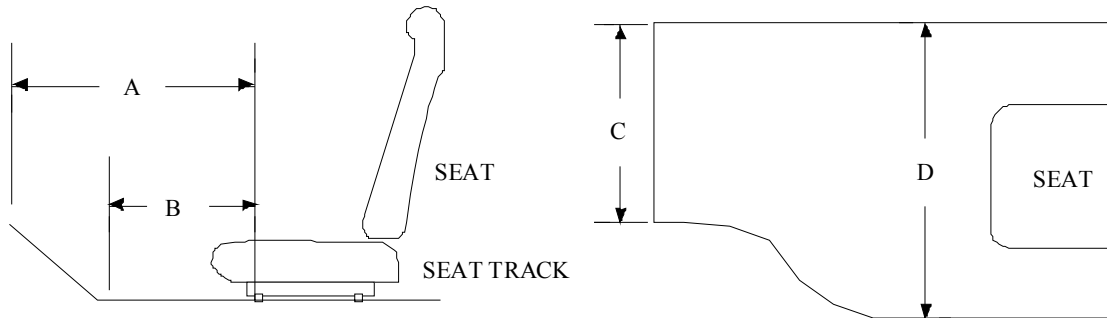


UNITS (mm)	LEFT				RIGHT		
MEASUREMENT	1	2	3	4*	1	2	3
BEFORE TEST	985	1453	947	997	988	1451	949
AFTER TEST	890	1400	1037	915	992	1450	946
DIFFERENCE	95	53	-90	82	-4	1	3

* Insurance Institute for Highway Safety (IIHS) measurement for driver's side only

UNITS (mm)	A = WHEELBASE LEFT	A = WHEELBASE RIGHT
BEFORE TEST	2618	2620
AFTER TEST	2323	2702
DIFFERENCE	295	-82

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



DRIVER

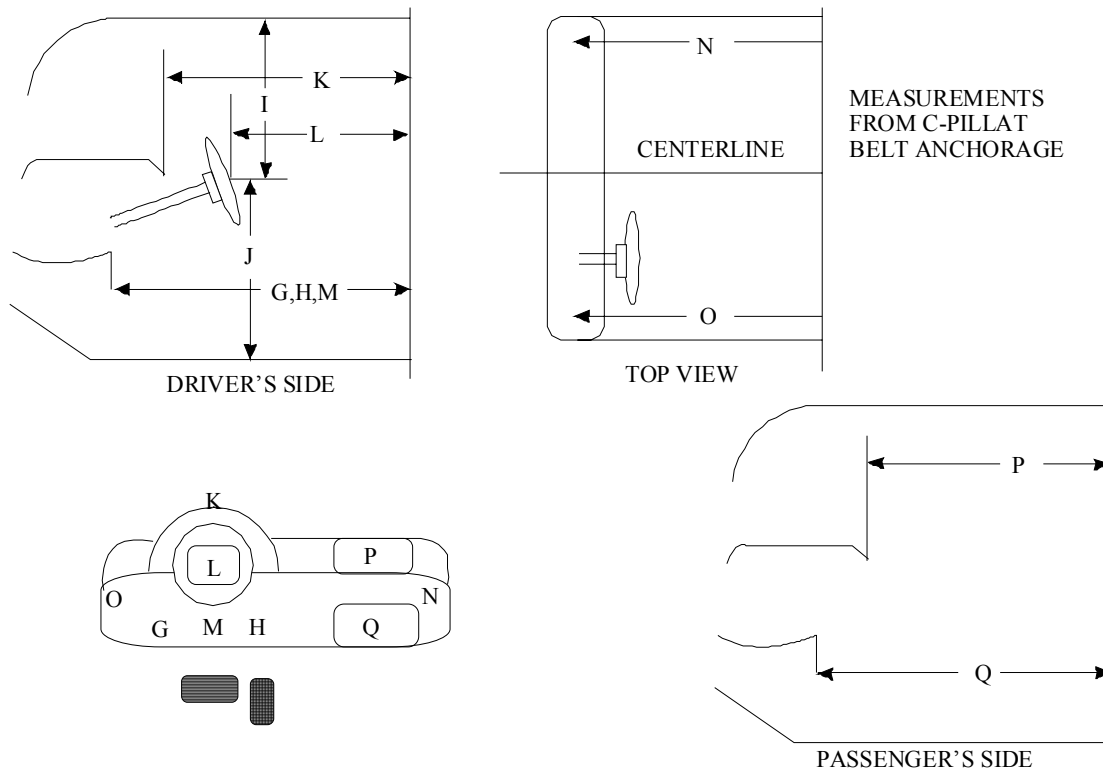
Measurement	Pre-Test	Post-Test	Difference
A	751	505	246
B	565	406	159
C	431	450	-19
D	440	489	-49

PASSENGER

Measurement	Pre-Test	Post-Test	Difference
A	739	704	35
B	500	501	-1
C	458	446	12
D	485	472	13

Units = mm

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

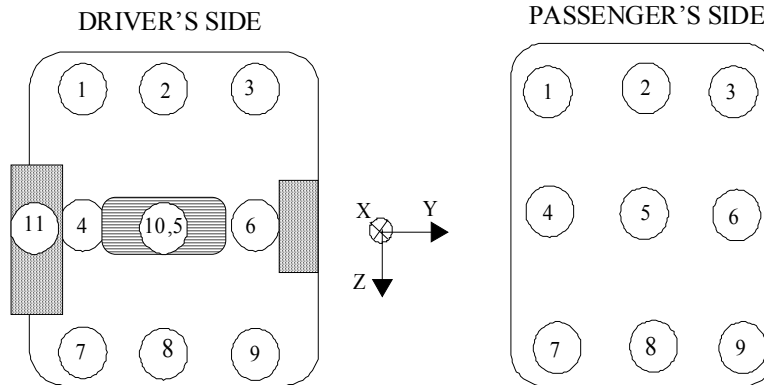


Measurement	Pre-Test	Post-Test	Difference
G*	1871	1779	92
H*	1865	1781	84
I	427	440	-13
J	618	680	-62
K	1833	1755	78
L	1641	1592	49
M	1846	1760	86
N	1830	1843	-13
O	1830	1722	108
P = K (PASS.)	1903	1899	4
Q = M (PASS.)	1933	1928	5

* IIHS measurement locations; 15 cm left and right of steering wheel center 45 cm from floor.

Units = mm

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



Driver Side Toe-pan Measurements

Toe-pan Location	X Deformation (mm)			Y Deformation (mm)			Z Deformation (mm)		
	Pre	Post	Δ	Pre	Post	Δ	Pre	Post	Δ
1	3449	3176	273	-474	-436	-38	-466	-508	42
2	3445	3186	259	-322	-310	-12	-443	-488	45
3	3456	3239	217	-174	-169	-5	-433	-467	34
4*	3381	3171	210	-469	-437	-32	-319	-354	35
5* ^A	3382	3141	241	-329	-306	-23	-317	-357	40
6*	3374	3194	180	-173	-150	-23	-319	-363	44
7	3266	3115	151	-467	-453	-14	-233	-228	-5
8	3260	3087	173	-321	-302	-19	-228	-214	-14
9	3252	3137	115	-165	-123	-42	-241	-206	-35
10	3257	3045	212	-322	-320	-2	-413	-479	66
11*	3332	3178	154	-571	-556	-15	-368	-378	10

Passenger Side Toe-pan Measurements

Toe-pan Location	X Deformation (mm)			Y Deformation (mm)			Z Deformation (mm)		
	Pre	Post	Δ	Pre	Post	Δ	Pre	Post	Δ
1	3445	3365	80	237	231	6	-396	-412	16
2	3436	3403	33	390	382	8	-396	-387	-9
3	3380	3381	-1	515	526	-11	-415	-414	-1
4	3336	3284	52	243	259	-16	-298	-302	4
5	3334	3326	8	401	396	5	-297	-281	-16
6	3346	3351	-5	537	547	-10	-298	-277	-21
7	3194	3198	-4	248	258	-10	-200	-195	-5
8	3197	3200	-3	404	415	-11	-207	-176	-31
9	3203	3207	-4	548	560	-12	-207	-186	-21

Reference: (SAE) X = Rear Bumper (pos: forward); Y = Vehicle Centerline (pos: right); Z = Ground (pos: down)

* IIHS measurement locations

*^A IIHS measurement located directly behind 10 (brake pedal center) on the vehicle floorpan in same vertical plane.

DATA SHEET NO.14 VEHICLE MEASUREMENTS (cont.)
INSURANCE INSTITUTE MEASUREMENT LOCATION AND FLOOR PAN DEFORMATION DATA

IIHS Measurement Location Data

Meas. Loc*	X Measurement (mm)			Y Measurement (mm)			Z Measurement (mm)		
	Pre	Post	Δ	Pre	Post	Δ	Pre	Post	Δ
1	2766	2717	49	-362	-333	-29	-845	-883	38
2	2996	2904	92	-495	-483	-12	-681	-680	-1
3	2990	2906	84	-202	-187	-15	-693	-696	3
4	3257	3045	212	-322	-320	-2	-413	-479	66
5	3381	3171	210	-469	-437	-32	-319	-354	35
6	3382	3141	241	-329	-306	-23	-317	-357	40
7	3374	3194	180	-173	-150	-23	-319	-363	44
8	3332	3178	154	-571	-556	-15	-368	-378	10
17	3177	3083	94	-743	-750	7	-902	-888	-14
18	2180	2168	12	-763	-765	2	-888	-872	-16

Floor Pan Deformation Measurement Data

Meas. Loc**	X Measurement (mm)			Y Measurement (mm)			Z Measurement (mm)		
	Pre	Post	Δ	Pre	Post	Δ	Pre	Post	Δ
1	3157	3110	47	-480	-493	13	-197	-148	-49
2	3154	3082	72	-330	-328	-2	-202	-125	-77
3	3157	3104	53	-179	-186	7	-189	-169	-20
4	3008	2976	32	-469	-493	24	-195	-117	-78
5	3000	2964	36	-324	-346	22	-199	-136	-63
6	3012	2947	65	-178	-153	-25	-228	-273	45
7	2853	2828	25	-462	-475	13	-199	-144	-55
8	2853	2838	15	-313	-338	25	-202	-174	-28
9	2864	2821	43	-171	-176	5	-232	-241	9

Reference: (SAE) X = Rear Bumper (pos: forward); Y = Vehicle Centerline (pos: right); Z = Ground (pos: down)

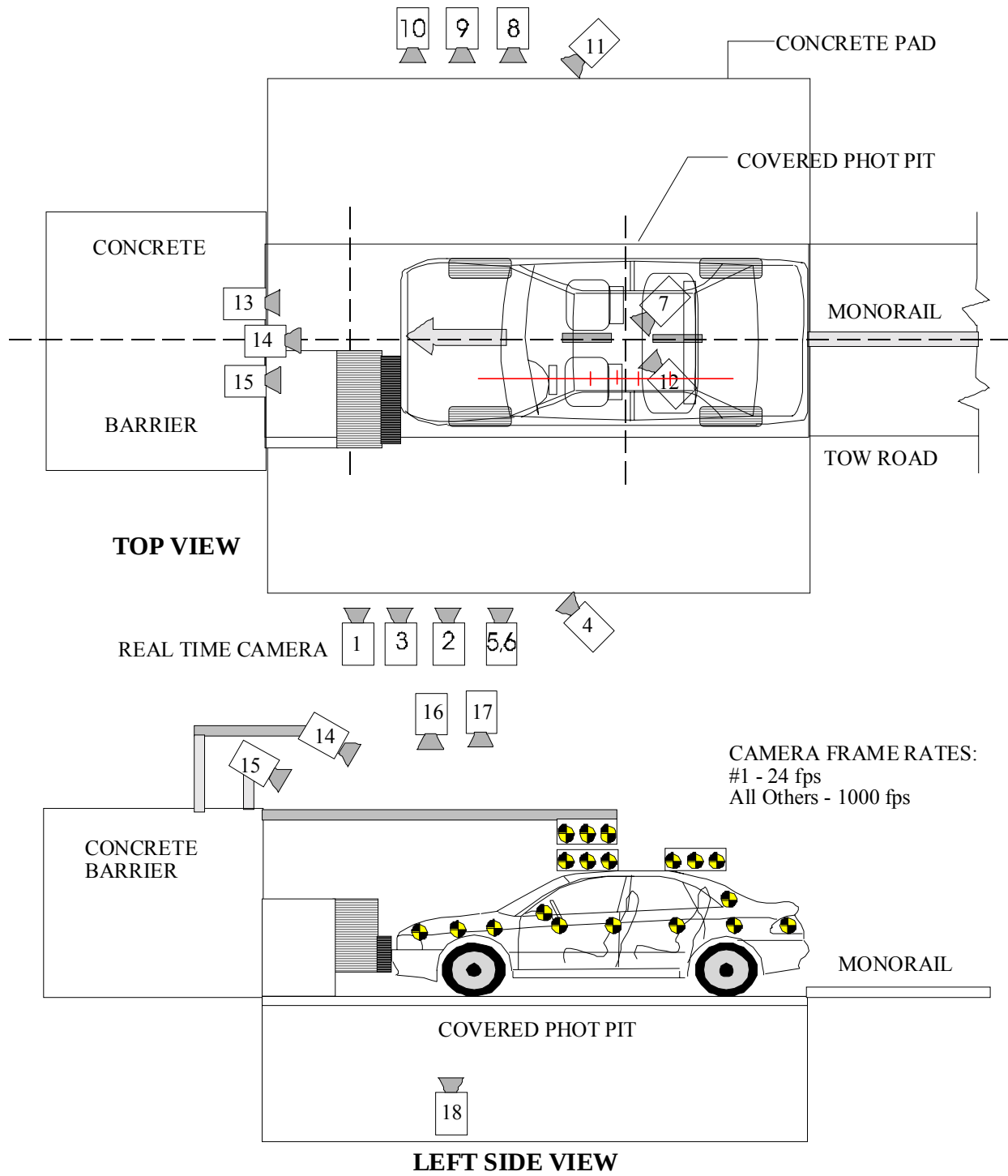
Measurement Location Descriptions*

1. Steering Column - Geometric center of the steering wheel on airbag door.
2. Lower Instrument Panel Left - Taken 45 cm above floorpan and 15 cm to the left of the steering wheel center.
3. Lower Instrument Panel Right - Taken 45 cm above floorpan and 15 cm to the right of the steering wheel center.
4. Brake Pedal - Geometric center of the brake pedal.
5. Toepan Left - Taken 15 cm to the left of the brake pedal center on the same vertical plane on the vehicle toepan.
6. Toepan Center - Taken directly behind the brake pedal center on the same vertical plane on the vehicle toepan.
7. Toepan Right - Taken 15 cm to the right of the brake pedal center on the same vertical plane on the vehicle toepan.
8. Left Footrest - Taken 25 cm to the left of the brake pedal center on the same vertical plane on the vehicle toepan.
17. A-pillar - Taken on the vehicle exterior at the same vertical coordinate as the base on the left front window.
18. B-pillar - Taken on the vehicle exterior at the same vertical coordinate as the lower A-pillar mark.

** There is an equal spaced 3 x 3 floor pan matrix. Position 1 if floor pan left side forwardmost position; Position 9 is located on the right side rearmost position of the 3 x 3 grid.

DATA SHEET NO.15 HIGH-SPEED CAMERA LOCATIONS

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



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

NHTSA Test No.: RY5216 Vehicle: 2000 Nissan Altima 4-Door Sedan

CAMERA NO.	VIEW	CAMERA POSITIONS (mm)*			ANGLE (deg)**	FILM PLANE TO HEAD TARGET	LENS (mm)	SPEED (fps)
		X	Y	Z				
1	Real-Time Camera	-	-	-	-	-	-	24
2	Overall Left Side	7280	1390	1068	-5	6903	12.5	1010
3	Left Side View	8954	785	1090	-5	8577	25	1000
4	Driver and Interior View	9159	2378	1987	-10	-	25	1005
5	Steering Column (Bottom)	9359	1724	1177	-5	8982	25	1010
6	Steering Column (Top)	9359	1724	1777	-9	8982	25	1010
7	Interior Driver View	-	-	-	-	-	-	-
8	Overall Right Side View	6919	1270	1135	-3	7199	13	1005
9	Right Side View	9394	578	1116	-3	9674	25	1060
10	Right Passenger View	8534	1474	1427	-4	8814	35	1005
11	Passenger and Interior View	7958	2352	1970	-8	-	35	1010
12	Interior Passenger View	-	-	-	-	-	-	-
13	Passenger Front View	-520	-2150	1987	-27	-	13	1010
14	Windshield View	0	-2050	3048	-43	-	13	1010
15	Driver Front View	-530	-2050	3488	-38	-	25	1005
16	Overhead Close-Up View	0	323	4880	-90	-	25	845
17	Overhead Overall View	0	156	4880	-90	-	12.5	1010
18	Pit View of Engine	0	1325	-3048	90	-	13	1010

*X = film plane to monorail centerline

Y = film plane to impact location

Z = film plane to ground

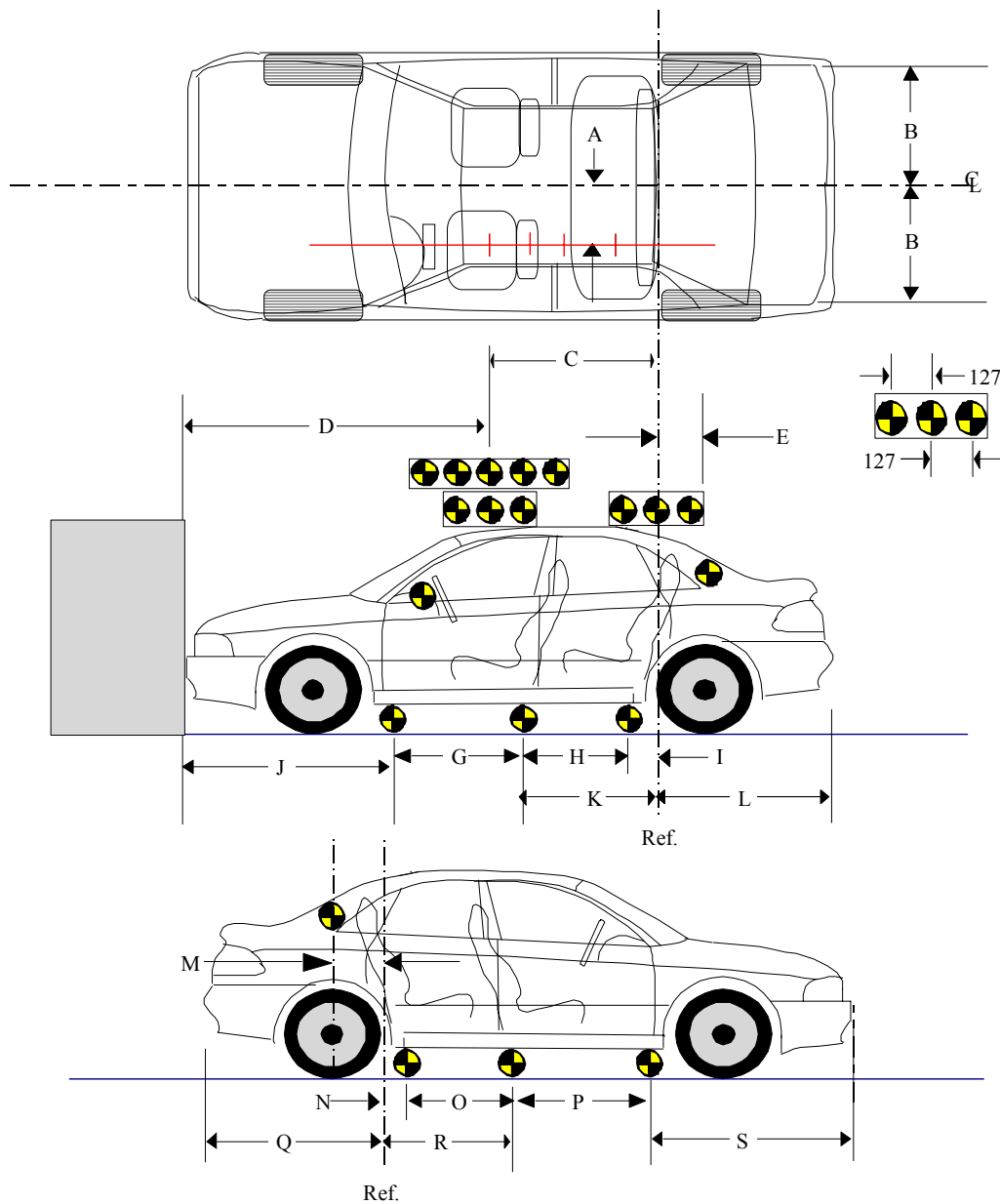
** = referenced to horizontal plane

N.T. indicates No Timing

DATA SHEET NO. 16 VEHICLE REFERENCE PHOTO TARGET LOCATIONS

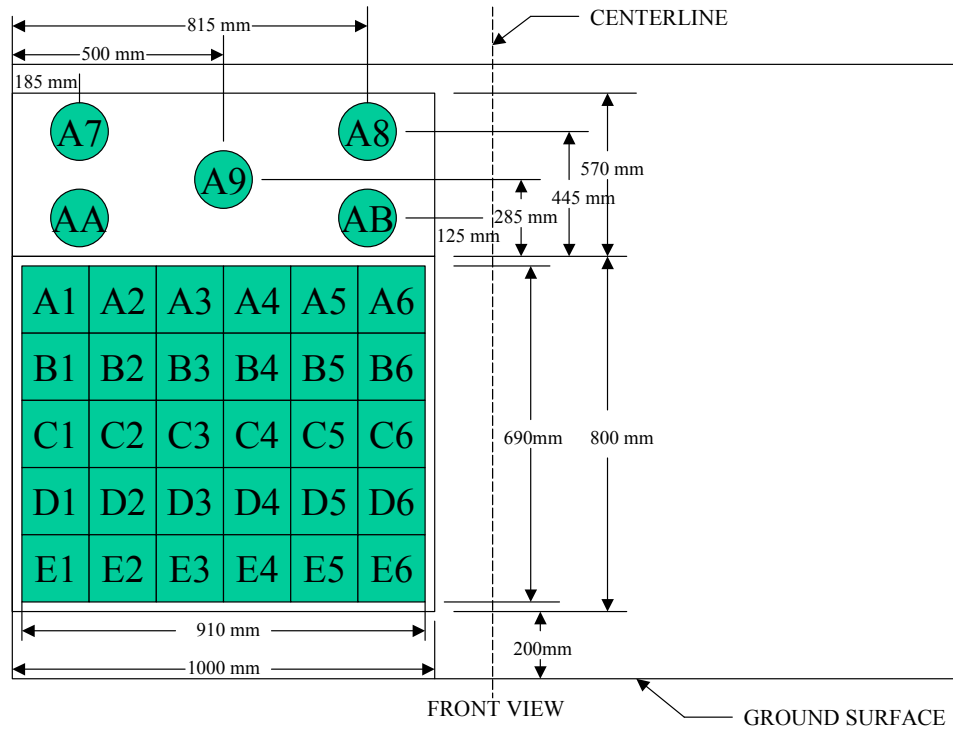
(Dimensions in millimeters)

A	356
B	657
C	1223
D	2040
E	321
F	1480
G	900
H	885
I	86
J	1406
K	971
L	1434
M	323
N	84
O	901
P	885
Q	1518
R	901
S	1379



DATA SHEET NO. 17 LOAD CELL LOCATIONS RELATIVE TO FIXED BARRIER AND
DEFORMABLE BARRIER FACE

35 Load Cells



Load cell width	146 mm
Load cell height	133 mm
Vertical gap between load cells	6 mm
Horizontal gap between load cells	6 mm
Vertical filler block width	55 mm

The following data is presented in Appendix B:

- (1)X Direction Data from load cells A1 through A6
- (2)X and Y Direction Data from load cells B1 through E6

DATA SHEET NO. 18 POST TEST AIR BAG DATA

NHTSA No.: RY5216; Test Date: November 08, 2001; Technician: Lawrence Q. Valvo

Vehicle Model Year/Make/Model: 2000 Nissan Altima 4-Door Sedan

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

B. Size of vent holes: (mm²) 491 -Driver 491 -Passenger

C. Total vent area: (mm²) 982 -Driver 982 -Passenger

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

Driver: 480 -Height; 600 -Width; 310 -Depth

Passenger: 750 -Height; 700 -Width; 625 -Depth

E. Is the air bag tethered?

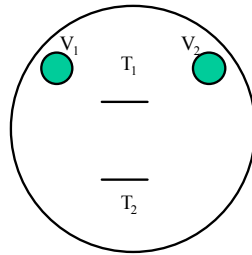
Driver: X -Yes; - -No; If yes, record length of tether- 200

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

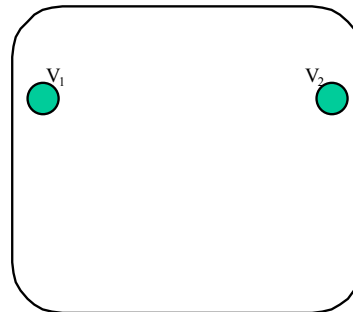
Sketch the air bag showing the location of the vent holes, how the bag is tethered, and where the bag is tethered. Also describe how the tethers are attached to the bag and the steering wheel.

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

Driver



Passenger



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

Driver: Air bag: ZQ98570-89912-C1 0004758 110200

Generator: G12 KM9E0003072159

Passenger: Air bag: NP800003020360

Generator: P5204970-00A TXM000550200

DATA SHEET NO. 19 ACCIDENT INVESTIGATION DIVISION DATA

FOR 56.3 KPH OFFSET FRONTAL BARRIER IMPACT

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

NHTSA Test No.: RY5216 VIN: 1N4DL01D2YC195464

Model Year: 2000 Build Date: 03/00 Test Date: November 08, 2001

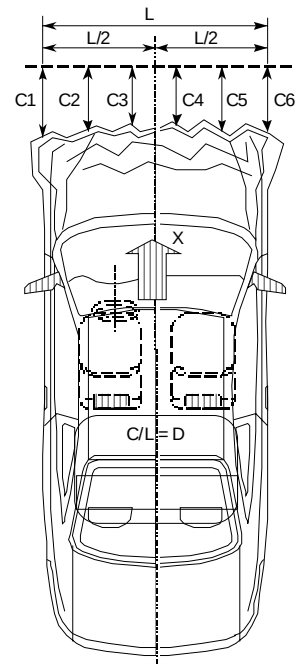
Vehicle Size Category: Compact Test Weight: 1516.0 kg

Vehicle Wheelbase: 2619 mm; Front Overhang: 973 mm; Overall Width: 1750 mm

Collision Deformation Classification (CDC) Code: 12FDEW3

Crush Depth Dimensions

	PRE	POST	DIFF	
C1 =	4507	3947	560	mm
C2 =	4643	4073	570	mm
C3 =	4701	4156	545	mm
C4 =	4697	4370	327	mm
C5 =	4645	4534	111	mm
C6 =	4508	4640	-132	mm



Midpoint of Damage: D = Vehicle Centerline (Longitudinal)

Length of Damaged Region:

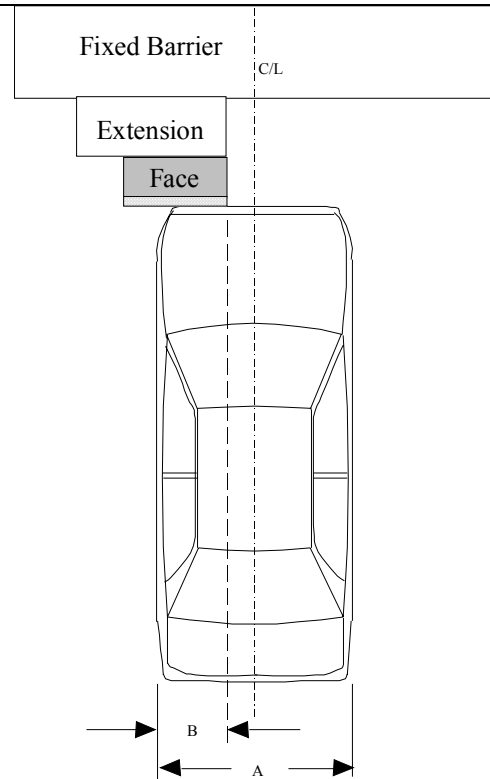
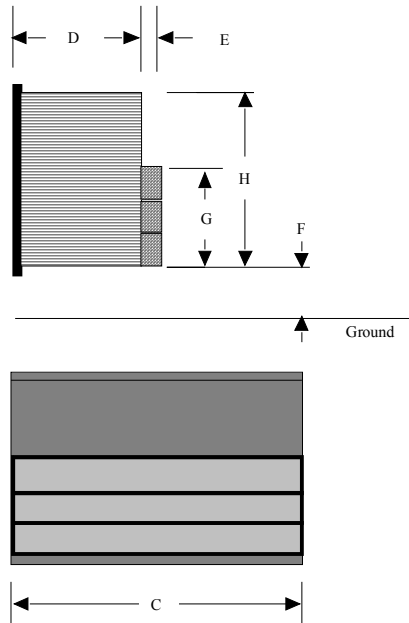
L1=	<u>1468</u>	mm
L2=	<u>734</u>	mm
L5=	<u>293.6</u>	mm

DATA SHEET NO. 20 OFFSET BARRIER AND VEHICLE ORIENTATION

NHTSA Test No.: RY5216

Vehicle: 2000 Nissan Altima 4-Door Sedan

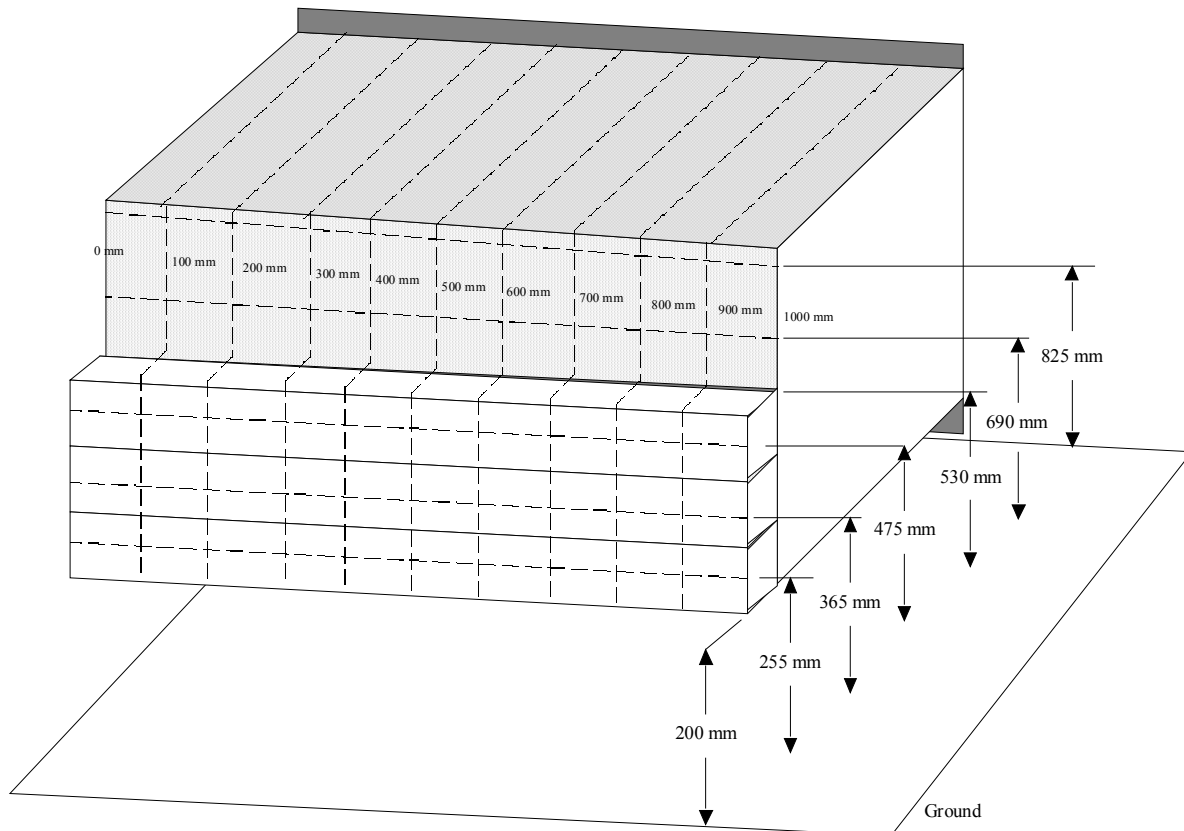
Barrier Manufacturer and Serial Number:



A	Total Vehicle Width	1750	mm
B	40% Overlap Distance	700.0	mm
C	Deformable Face Width	1000	mm
D	Single Stage Honeycomb Depth	450	mm
E	Bumper Element Depth	90	mm
F	Lower Edge Height From Ground	200	mm
G*	Bumper Element Height	330	mm
H	Deformable Barrier Honeycomb Height	650	mm

* The bumper element consists of three 110 mm height blocks of 1.723 MPa honeycomb

Offset Barrier Measurement Locations



DATA SHEET NO. 21 OFFSET BARRIER DEFORMATION (continued)

EXTERIOR STATIC CRUSH FOR BARRIER FACE
(Grid as looking at barrier from front)

Vehicle: _ 2000 Nissan Altima 4-Door Sedan

NHTSA No. RY5216

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

LEVEL	HEIGHT AT CL (mm)*		DISTANCE RIGHT OF CENTER (mm)					0	DISTANCE LEFT OF CENTER (mm)				
			500	400	300	200	100		100	200	300	400	500
LEVEL 6 TOP STACK	825	PRE	546	546	546	546	546	546	546	546	546	546	546
		POST	507	540	561	588	656	716	750	796	829	859	904
		CRUSH	-39	-6	15	42	110	170	204	250	283	313	358
LEVEL 5 MID STACK	687	PRE	546	546	546	546	546	546	546	546	546	546	546
		POST	535	545	571	637	707	784	822	885	927	945	968
		CRUSH	-11	-1	25	91	161	238	276	339	381	399	422
LEVEL 4 TOP BUMPER	530	PRE	546	546	546	546	546	546	546	546	546	546	546
		POST	531	571	609	700	791	853	904	942	961	961	963
		CRUSH	-15	25	63	154	245	307	358	396	415	415	417
LEVEL 3 BUMPER TOP	475	PRE	456	456	456	456	456	456	456	456	456	456	456
		POST	422	499	572	648	719	778	867	925	943	937	970
		CRUSH	-34	43	116	192	263	322	411	469	487	481	514
LEVEL 2 BUMPER MID	365	PRE	456	456	456	456	456	456	456	456	456	456	456
		POST	407	480	561	621	689	754	820	862	885	901	947
		CRUSH	-49	24	105	165	233	298	364	406	429	445	491
LEVEL 1 BUMPER LOW	255	PRE	456	456	456	456	456	456	456	456	456	456	456
		POST	406	473	537	603	666	728	799	822	846	861	905
		CRUSH	-50	17	81	147	210	272	343	366	390	405	449

*Heights measured above ground level.

APPENDIX A
PHOTOGRAPHS

TABLE OF PHOTOGRAPHS

<u>Figure</u>	<u>Title</u>	<u>Page</u>
A-1	PRE-TEST FRONT VIEW	A-3
A-2	POST-TEST FRONT VIEW	A-4
A-3	PRE-TEST LEFT SIDE VIEW	A-5
A-4	POST-TEST LEFT SIDE VIEW	A-6
A-5	PRE-TEST RIGHT SIDE VIEW	A-7
A-6	POST-TEST RIGHT SIDE VIEW	A-8
A-7	PRE-TEST RIGHT FRONT THREE-QUARTER VIEW	A-9
A-8	POST-TEST RIGHT FRONT THREE-QUARTER VIEW	A-10
A-9	PRE-TEST LEFT REAR THREE-QUARTER VIEW	A-11
A-10	POST-TEST LEFT REAR THREE-QUARTER VIEW	A-12
A-11	PRE-TEST WINDSHIELD VIEW	A-13
A-12	POST-TEST WINDSHIELD VIEW	A-14
A-13	PRE-TEST ENGINE COMPARTMENT VIEW	A-15
A-14	FUEL CAP VIEW	A-16
A-15	PRE-TEST FRONT UNDERBODY VIEW	A-17
A-16	POST-TEST FRONT UNDERBODY VIEW	A-18
A-17	PRE-TEST FRONT SIDE UNDERBODY VIEW	A-19
A-18	POST-TEST FRONT SIDE UNDERBODY VIEW	A-20
A-19	PRE-TEST REAR UNDERBODY VIEW	A-21
A-20	POST-TEST REAR UNDERBODY VIEW	A-22
A-21	PRE-TEST DRIVER POSITION VIEW	A-23
A-22	POST-TEST DRIVER POSITION VIEW	A-24
A-23	PRE-TEST PASSENGER POSITION VIEW	A-25
A-24	POST-TEST PASSENGER POSITION VIEW	A-26
A-25	PRE-TEST DRIVER AND INTERIOR VIEW	A-27
A-26	POST-TEST DRIVER AND INTERIOR VIEW	A-28
A-27	PRE-TEST PASSENGER AND INTERIOR VIEW	A-29
A-28	POST-TEST PASSENGER AND INTERIOR VIEW	A-30
A-29	PRE-TEST DRIVER HEAD LOCATION	A-31
A-30	POST-TEST DRIVER HEAD LOCATION	A-32
A-31	PRE-TEST PASSENGER HEAD LOCATION	A-33
A-32	POST-TEST PASSENGER HEAD LOCATION	A-34
A-33	PRE-TEST DRIVER FLOOR PAN VIEW	A-35
A-34	POST-TEST DRIVER FLOOR PAN VIEW	A-36
A-35	PRE-TEST PASSENGER FLOOR PAN VIEW	A-37
A-36	POST-TEST PASSENGER FLOOR PAN VIEW	A-38
A-37	PRE-TEST BARRIER FRONT VIEW	A-39
A-38	POST-TEST BARRIER FRONT VIEW	A-40
A-39	PRE-TEST BARRIER LEFT SIDE VIEW	A-41
A-40	POST-TEST BARRIER LEFT SIDE VIEW	A-42
A-41	PRE-TEST BARRIER RIGHT SIDE VIEW	A-43
A-42	POST-TEST BARRIER RIGHT SIDE VIEW	A-44
A-43	PRE-TEST BARRIER TOP VIEW	A-45
A-44	POST-TEST BARRIER TOP VIEW	A-46
A-45	POST-TEST OVERHEAD VIEW	A-47
A-46	ROLLOVER VIEW	A-48
A-47	IMPACT VIEW	A-49



Figure A-1: PRE-TEST FRONT VIEW



Figure A-2: POST-TEST FRONT VIEW



Figure A-3: PRE-TEST LEFT SIDE VIEW



Figure A-4: POST-TEST LEFT SIDE VIEW



Figure A-5: PRE-TEST RIGHT SIDE VIEW



Figure A-6: POST-TEST RIGHT SIDE VIEW



Figure A-7: PRE-TEST RIGHT FRONT THREE-QUARTER VIEW



Figure A-8: POST-TEST RIGHT FRONT THREE-QUARTER VIEW



Figure A-9: PRE-TEST LEFT REAR THREE-QUARTER VIEW

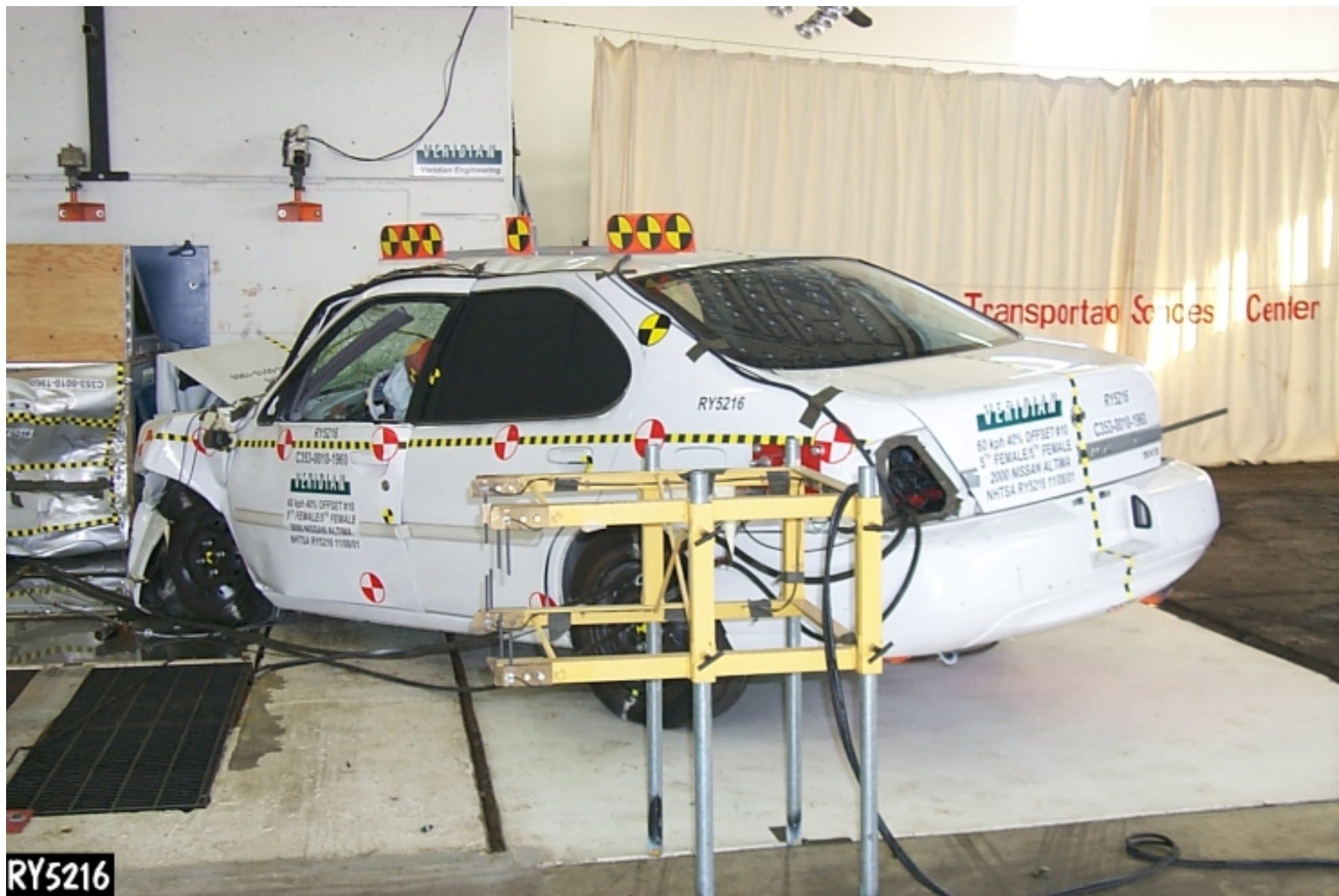


Figure A-10: POST-TEST LEFT REAR THREE-QUARTER VIEW



Figure A-11: PRE-TEST WINDSHIELD VIEW



Figure A-12: POST-TEST WINDSHIELD VIEW



Figure A-13: PRE-TEST ENGINE COMPARTMENT VIEW



Figure A-14: FUEL CAP VIEW



Figure A-15: PRE-TEST FRONT UNDERBODY VIEW

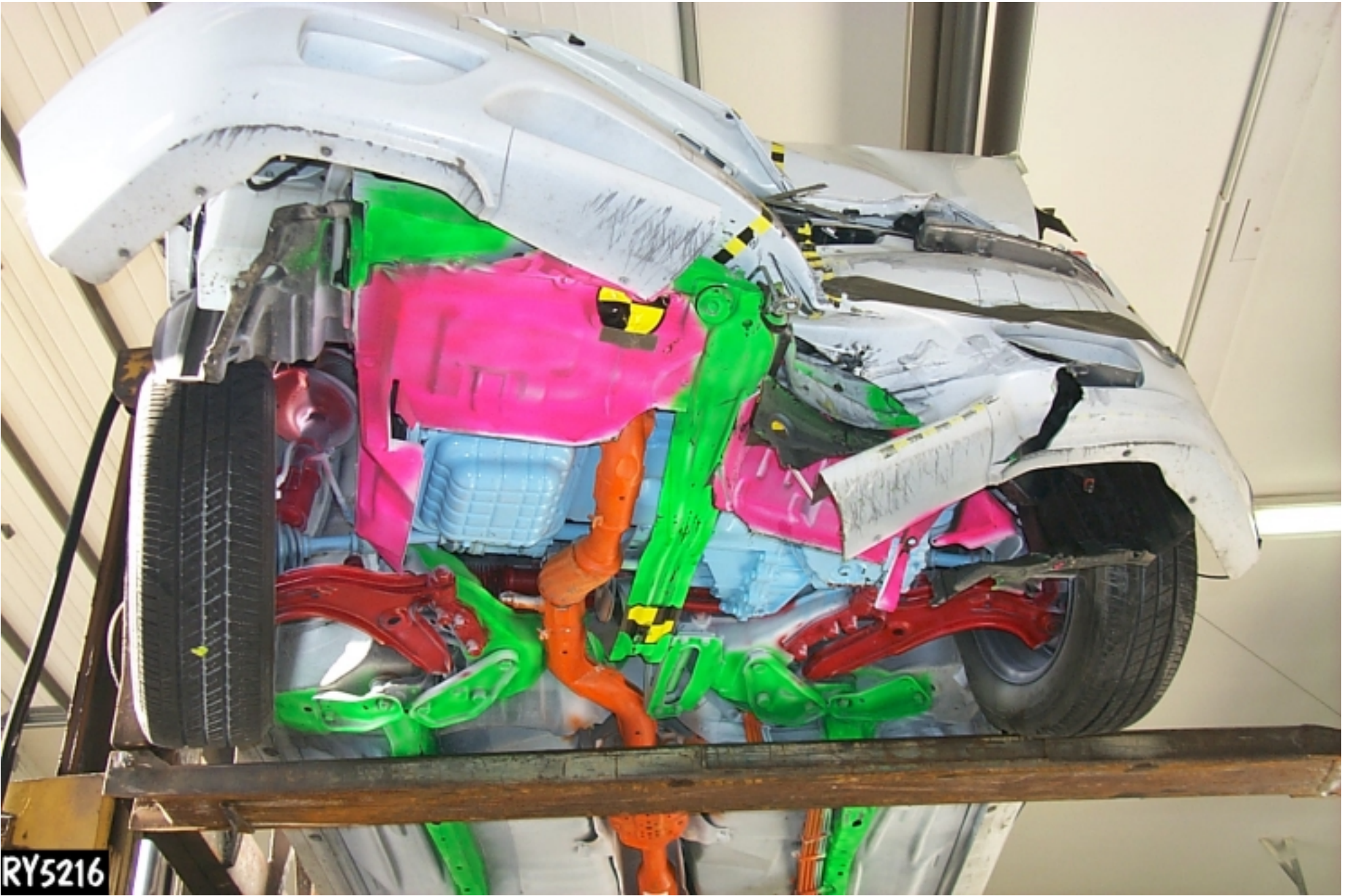


Figure A-16: POST-TEST FRONT UNDERBODY VIEW

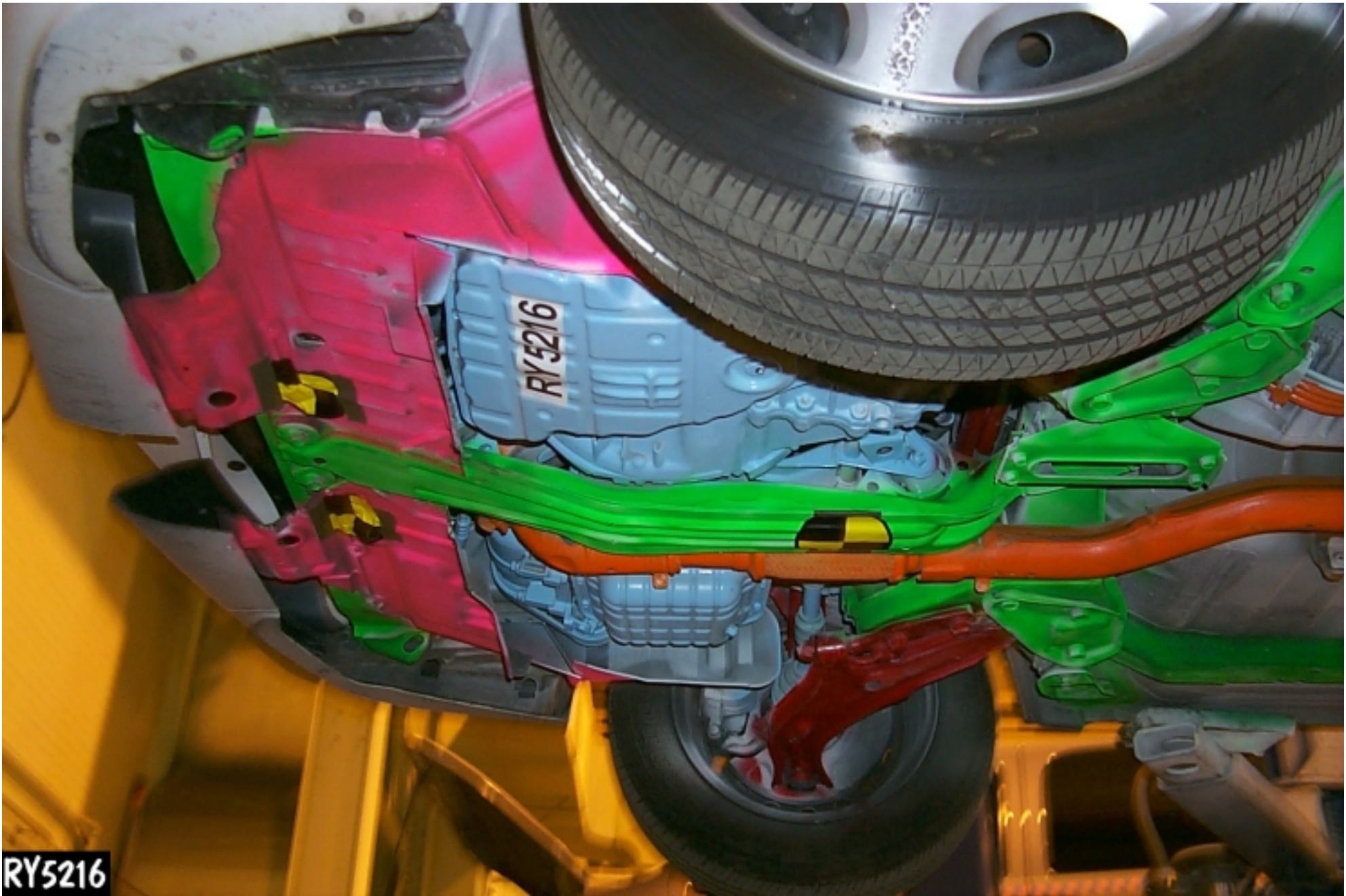


Figure A-17: PRE-TEST FRONT SIDE UNDERBODY VIEW



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

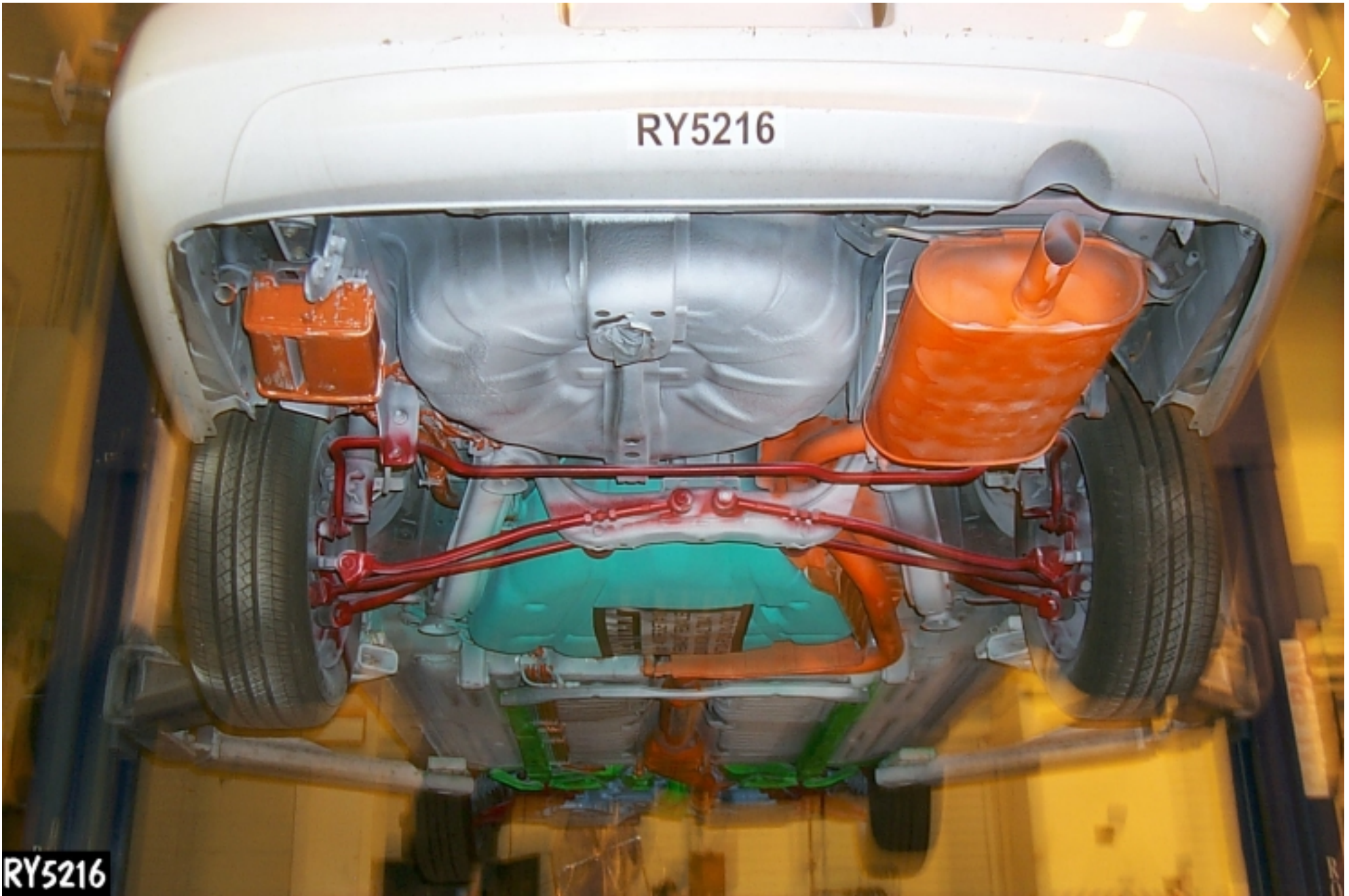


Figure A-19: PRE-TEST REAR UNDERBODY VIEW



Figure A-20: POST-TEST REAR UNDERBODY VIEW

RY5216



Figure A-21: PRE-TEST DRIVER POSITION VIEW



Figure A-22: POST-TEST DRIVER POSITION VIEW



Figure A-23: PRE-TEST PASSENGER POSITION VIEW



Figure A-24: POST-TEST PASSENGER POSITION VIEW



Figure A-25: PRE-TEST DRIVER AND INTERIOR VIEW



Figure A-26: POST-TEST DRIVER AND INTERIOR VIEW



Figure A-27: PRE-TEST PASSENGER AND INTERIOR VIEW



Figure A-28: POST-TEST PASSENGER AND INTERIOR VIEW



Figure A-29: PRE-TEST DRIVER HEAD LOCATION



Figure A-30: POST-TEST DRIVER HEAD LOCATION



Figure A-31: PRE-TEST PASSENGER HEAD LOCATION



Figure A-32: POST-TEST PASSENGER HEAD LOCATION



Figure A-33: PRE-TEST DRIVER FLOOR PAN VIEW

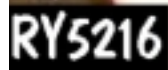


Figure A-34: POST-TEST DRIVER FLOOR PAN VIEW



Figure A-35: PRE-TEST PASSENGER FLOOR PAN VIEW



RY5216

Figure A-36: POST-TEST PASSENGER FLOOR PAN VIEW



Figure A-37: PRE-TEST BARRIER FRONT VIEW



Figure A-38: POST-TEST BARRIER FRONT VIEW



Figure A-39: PRE-TEST BARRIER LEFT SIDE VIEW



Figure A-40: POST-TEST BARRIER LEFT SIDE VIEW



Figure A-41: PRE-TEST BARRIER RIGHT SIDE VIEW



Figure A-42: POST-TEST BARRIER RIGHT SIDE VIEW



Figure A-43: PRE-TEST BARRIER TOP VIEW



Figure A-44: POST-TEST BARRIER TOP VIEW



Figure A-45: POST-TEST OVERHEAD VIEW



Figure A-46: ROLLOVER VIEW



Figure A-47: 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, Chest Froward Fy Head leftward, Chest rightward Fz Head Upward, Chest Downward Mx Left ear toward left shoulder My Chin toward sternum (flexion) Mz Chin toward 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 (right and left leg)	Fx Knee Upward, Upper Femur Downward Fy Knee Rightward, Upper Femur Leftward Fz Knee Forward, Pelvis Rearward Mx Knee Leftward, Hold Upper Femur in Place My Knee Upward, Hold Upper Femur in Place Mz Tibia Leftward, Hold Pelvis in Place
Upper Tibia Load Cell (right and left leg)	Fx Ankle Forward, Knee Rearward Fy Ankle Rightward, Knee Leftward Fz Tibia Downward, Femur Upward Mx Ankle Leftward, Hold Knee in Place My Ankle Forward, Bottom of Knee Clevis Rearward
Lower Tibia Load Cell (right and left leg)	Fx Ankle Forward, Knee Rearward Fy Ankle Rightward, Knee Leftward Fz Tibia Downward, Femur Upward Mx Ankle Leftward, Hold Knee in Place My Ankle Forward, Bottom of Knee Clevis Rearward
Knee Shear Displacement	X Hold Femur Move Tibia Forward
Tibia Mid-Shaft Accelerometer	X Forward Y To the Right
Foot Rotations (left foot)	X Eversion Y Dorsi Flexion Z Internal Rotation
Foot Rotations (right foot)	X Inversion Y Dorsi Flexion Z External Rotation
Foot Accelerometer (right and left foot)	X Forward Y To the Right Z Down

DATA CHANNEL FILTER CLASS SUMMARY

NHTSA TEST NO. RY5216

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

PLOT	PLOT NAME[UNITS, CHANNEL FILTER CLASS]	PAGE
1	P1 Head 9 Array X Arm Ay [g, CFC_1000]	B-9
2	P1 Head 9 Array X Arm Az [g, CFC_1000]	B-10
3	P1 Head 9 Array Y Arm Ax [g, CFC_1000]	B-11
4	P1 Head 9 Array Y Arm Az [g, CFC_1000]	B-12
5	P1 Head 9 Array Z Arm Ax [g, CFC_1000]	B-13
6	P1 Head 9 Array Z Arm Ay [g, CFC_1000]	B-14
7	P1 Head CG Ax [g, CFC_1000]	B-15
8	P1 Head CG Ay [g, CFC_1000]	B-16
9	P1 Head CG Az [g, CFC_1000]	B-17
10	P1 Head CG A Resultant [g, CFC_1000]	B-18
11	P1 Head CG Red Ax [g, CFC_1000]	B-19
12	P1 Head CG Red Ay [g, CFC_1000]	B-20
13	P1 Head CG Red Az [g, CFC_1000]	B-21
14	P1 Head CG Red A Resultant [g, CFC_1000]	B-22
15	P1 Upper Neck Fx [N, CFC_1000]	B-23
16	P1 Upper Neck Fy [N, CFC_1000]	B-24
17	P1 Upper Neck Fz [N, CFC_1000]	B-25
18	P1 Upper Neck F Resultant [N, CFC_1000]	B-26
19	P1 Upper Neck Mx [N-m, CFC_600]	B-27
20	P1 Upper Neck My [N-m, CFC_600]	B-28
21	P1 Upper Neck Mz [N-m, CFC_600]	B-29
22	P1 Upper Neck M Resultant [N-m, CFC_600]	B-30
23	P1 Chest Ax [g, CFC_180]	B-31
24	P1 Chest Ay [g, CFC_180]	B-32
25	P1 Chest Az [g, CFC_180]	B-33
26	P1 Chest A Resultant [g, CFC_180]	B-34
27	P1 Chest Red Ax [g, CFC_180]	B-35
28	P1 Chest Red Ay [g, CFC_180]	B-36
29	P1 Chest Red Az [g, CFC_180]	B-37
30	P1 Chest Red A Resultant [g, CFC_180]	B-38
31	P1 Chest Displacement [mm, CFC_600]	B-39
32	P1 Pelvic Ax [g, CFC_1000]	B-40
33	P1 Pelvic Ay [g, CFC_1000]	B-41
34	P1 Pelvic Az [g, CFC_1000]	B-42
35	P1 Pelvic A Resultant [g, CFC_1000]	B-43
36	P1 Left Femur Fx [N, CFC_600]	B-44
37	P1 Left Femur Fy [N, CFC_600]	B-45
38	P1 Left Femur Fz [N, CFC_600]	B-46
39	P1 Left Femur F Resultant [N, CFC_600]	B-47
40	P1 Left Femur Mx [N-m, CFC_600]	B-48
41	P1 Left Femur My [N-m, CFC_600]	B-49
42	P1 Left Femur Mz [N-m, CFC_600]	B-50
43	P1 Left Femur M Resultant [N-m, CFC_600]	B-51
44	P1 Right Femur Fx [N, CFC_600]	B-52
45	P1 Right Femur Fy [N, CFC_600]	B-53
46	P1 Right Femur Fz [N, CFC_600]	B-54
	B-4	8413-66

47	P1 Right Femur F Resultant [N, CFC_600]	B-55
48	P1 Right Femur Mx [N-m, CFC_600]	B-56
49	P1 Right Femur My [N-m, CFC_600]	B-57
50	P1 Right Femur Mz [N-m, CFC_600]	B-58
51	P1 Right Femur M Resultant [N-m, CFC_600]	B-59
52	P1 Left Knee Shear [mm, CFC_180]	B-60
53	P1 Right Knee Shear Dx [mm, CFC_180]	B-61
54	P1 Left Upper Tibia Fx [N, CFC_600]	B-62
55	P1 Left Upper Tibia Fz [N, CFC_600]	B-63
56	P1 Left Upper Tibia Mx [N-m, CFC_600]	B-64
57	P1 Left Upper Tibia My [N-m, CFC_600]	B-65
58	P1 Left Lower Tibia Fx [N, CFC_600]	B-66
59	P1 Left Lower Tibia Fz [N, CFC_600]	B-67
60	P1 Left Lower Tibia Mx [N-m, CFC_600]	B-68
61	P1 Left Lower Tibia My [N-m, CFC_600]	B-69
62	P1 Right Upper Tibia Fx [N, CFC_600]	B-70
63	P1 Right Upper Tibia Fz [N, CFC_600]	B-71
64	P1 Right Upper Tibia Mx [N-m, CFC_600]	B-72
65	P1 Right Upper Tibia My [N-m, CFC_600]	B-73
66	P1 Right Lower Tibia Fx [N, CFC_600]	B-74
67	P1 Right Lower Tibia Fz [N-m, CFC_600]	B-75
68	P1 Right Lower Tibia Mx [N-m, CFC_600]	B-76
69	P1 Right Lower Tibia My [N-m, CFC_600]	B-77
70	P1 Left Ankle Ax [g, CFC_600]	B-78
71	P1 Left Ankle Az [g, CFC_600]	B-79
72	P1 Left Toe Az [g, CFC_600]	B-80
73	P1 Right Ankle Ax [g, CFC_600]	B-81
74	P1 Right Ankle Az [g, CFC_600]	B-82
75	P1 Right Toe Az [g, CFC_600]	B-83
76	P1 Lap Belt Force [N, CFC_60]	B-84
77	P1 Toepan Left Displacement [mm, CFC_1000]	B-85
78	P2 Head 9 Array X Arm Ay [g, CFC_1000]	B-86
79	P2 Head 9 Array X Arm Az [g, CFC_1000]	B-87
80	P2 Head 9 Array Y Arm Ax [g, CFC_1000]	B-88
81	P2 Head 9 Array Y Arm Az [g, CFC_1000]	B-89
82	P2 Head 9 Array Z Arm Ax [g, CFC_1000]	B-90
83	P2 Head 9 Array Z Arm Ay [g, CFC_1000]	B-91
84	P2 Head CG Ax [g, CFC_1000]	B-92
85	P2 Head CG Ay [g, CFC_1000]	B-93
86	P2 Head CG Az [g, CFC_1000]	B-94
87	P2 Head CG A Resultant [g, CFC_1000]	B-95
88	P2 Head CG Red Ax [g, CFC_1000]	B-96
89	P2 Head CG Red Ay [g, CFC_1000]	B-97
90	P2 Head CG Red Az [g, CFC_1000]	B-98
91	P2 Head CG Red A Resultant [g, CFC_1000]	B-99
92	P2 Upper Neck Fx [N, CFC_1000]	B-100
93	P2 Upper Neck Fy [N, CFC_1000]	B-101

94	P2 Upper Neck Fz [N, CFC_1000]	B-102
95	P2 Upper Neck F Resultant [N, CFC_1000]	B-103
96	P2 Upper Neck Mx [N-m, CFC_600]	B-104
97	P2 Upper Neck My [N-m, CFC_600]	B-105
98	P2 Upper Neck Mz [N-m, CFC_600]	B-106
99	P2 Upper Neck M Resultant [N-m, CFC_600]	B-107
100	P2 Chest Ax [g, CFC_180]	B-108
101	P2 Chest Ay [g, CFC_180]	B-109
102	P2 Chest Az [g, CFC_180]	B-110
103	P2 Chest A Resultant [g, CFC_180]	B-111
104	P2 Chest Red Ax [g, CFC_180]	B-112
105	P2 Chest Red Ay [g, CFC_180]	B-113
106	P2 Chest Red Az [g, CFC_180]	B-114
107	P2 Chest Red A Resultant [g, CFC_180]	B-115
108	P2 Chest Displacement [mm, CFC_600]	B-116
109	P2 Pelvic Ax [g, CFC_1000]	B-117
110	P2 Pelvic Ay [g, CFC_1000]	B-118
111	P2 Pelvic Az [g, CFC_1000]	B-119
112	P2 Pelvic A Resultant [g, CFC_1000]	B-120
113	P2 Left Femur Fx [N, CFC_600]	B-121
114	P2 Left Femur Fy [N, CFC_600]	B-122
115	P2 Left Femur Fz [N, CFC_600]	B-123
116	P2 Left Femur F Resultant [N, CFC_600]	B-124
117	P2 Left Femur Mx [N-m, CFC_600]	B-125
118	P2 Left Femur My [N-m, CFC_600]	B-126
119	P2 Left Femur Mz [N-m, CFC_600]	B-127
120	P2 Left Femur M Resultant [N-m, CFC_600]	B-128
121	P2 Right Femur Fx [N, CFC_600]	B-129
122	P2 Right Femur Fy [N, CFC_600]	B-130
123	P2 Right Femur Fz [N, CFC_600]	B-131
124	P2 Right Femur F Resultant [N, CFC_600]	B-132
125	P2 Right Femur Mx [N-m, CFC_600]	B-133
126	P2 Right Femur My [N-m, CFC_600]	B-134
127	P2 Right Femur Mz [N-m, CFC_600]	B-135
128	P2 Right Femur M Resultant [N-m, CFC_600]	B-136
129	P2 Left Knee Shear Dx [mm, CFC_180]	B-137
130	P2 Right Knee Shear Dx [mm, CFC_180]	B-138
131	P2 Left Upper Tibia Fx [N, CFC_600]	B-139
132	P2 Left Upper Tibia Fz [N, CFC_600]	B-140
133	P2 Left Upper Tibia Mx [N-m, CFC_600]	B-141
134	P2 Left Upper Tibia My [N-m, CFC_600]	B-142
135	P2 Left Lower Tibia Fx [N, CFC_600]	B-143
136	P2 Left Lower Tibia Fz [N, CFC_600]	B-144
137	P2 Left Lower Tibia Mx [N-m, CFC_600]	B-145
138	P2 Left Lower Tibia My [N-m, CFC_600]	B-146
139	P2 Right Upper Tibia Fx [N, CFC_600]	B-147
140	P2 Right Upper Tibia Fz [N, CFC_600]	B-148

141	P2 Right Upper Tibia Mx [N-m, CFC_600]	B-149
142	P2 Right Upper Tibia My [N-m, CFC_600]	B-150
143	P2 Right Lower Tibia Fx [N, CFC_600]	B-151
144	P2 Right Lower Tibia Fz [N, CFC_600]	B-152
145	P2 Right Lower Tibia Mx [N-m, CFC_600]	B-153
146	P2 Right Lower Tibia My [N-m, CFC_600]	B-154
147	P2 Left Ankle Ax [g, CFC_600]	B-155
148	P2 Left Ankle Az [g, CFC_600]	B-156
149	P2 Left Toe Az [g, CFC_600]	B-157
150	P2 Right Ankle Ax [g, CFC_600]	B-158
151	P2 Right Ankle Az [g, CFC_600]	B-159
152	P2 Right Toe Az [g, CFC_600]	B-160
153	P2 Lap Belt Force [N, CFC_60]	B-161
154	Acc 1 Rear XMBR Left X [g, CFC_60]	B-162
155	Acc 1 Rear XMBR Left X Velocity [kph, CFC_180]	B-163
156	Acc 1 Rear XMBR Left X Displacement [mm, CFC_180]	B-164
157	Acc 2 Rear XMBR Left Y [g, CFC_60]	B-165
158	Acc 2 Rear XMBR Left Y Velocity [kph, CFC_180]	B-166
159	Acc 2 Rear XMBR Left Y Displacement [mm, CFC_180]	B-167
160	Acc 3 Rear XMBR Right X [g, CFC_60]	B-168
161	Acc 3 Rear XMBR Right X Velocity [kph, CFC_180]	B-169
162	Acc 3 Rear XMBR Right X Displacement [mm, CFC_180]	B-170
163	Acc 4 Rear XMBR Right Y [g, CFC_60]	B-171
164	Acc 4 Rear XMBR Right Y Velocity [kph, CFC_180]	B-172
165	Acc 4 Rear XMBR Right Y Displacement [mm, CFC_180]	B-173
166	Acc 5 P1 Toepan Left X [g, CFC_60]	B-174
167	Acc 5 P1 Toepan Left X Velocity [kph, CFC_180]	B-175
168	Acc 5 P1 Toepan Left X Displacement [mm, CFC_180]	B-176
169	Acc 6 P1 Toepan Left Z [g, CFC_60]	B-177
170	Acc 6 P1 Toepan Left Z Velocity [kph, CFC_180]	B-178
171	Acc 6 P1 Toepan Left Z Displacement [mm, CFC_180]	B-179
172	Acc 7 P1 Toepan Right X [g, CFC_60]	B-180
173	Acc 7 P1 Toepan Right X Velocity [kph, CFC_180]	B-181
174	Acc 7 P1 Toepan Right X Displacement [mm, CFC_180]	B-182
175	Acc 8 P1 Toepan Right Z [g, CFC_60]	B-183
176	Acc 8 P1 Toepan Right Z Velocity [kph, CFC_180]	B-184
177	Acc 8 P1 Toepan Right Z Displacement [mm, CFC_180]	B-185
178	Acc 9 Trunk Z [g, CFC_60]	B-186
179	Acc 9 Trunk Z Velocity [kph, CFC_180]	B-187
180	Acc 9 Trunk Z Displacement [mm, CFC_180]	B-188
181	Barrier Load Cell E2 FY [N, CFC_60]	B-189
182	Barrier Load Cell E3 FY [N, CFC_60]	B-190
183	Barrier Load Cell E4 FY [N, CFC_60]	B-191
184	Barrier Load Cell E5 FY [N, CFC_60]	B-192
185	Barrier Load Cell E6 FY [N, CFC_60]	B-193
186	Barrier Load Cell E1 FX [N, CFC_60]	B-194
187	Barrier Load Cell E2 FX [N, CFC_60]	B-195

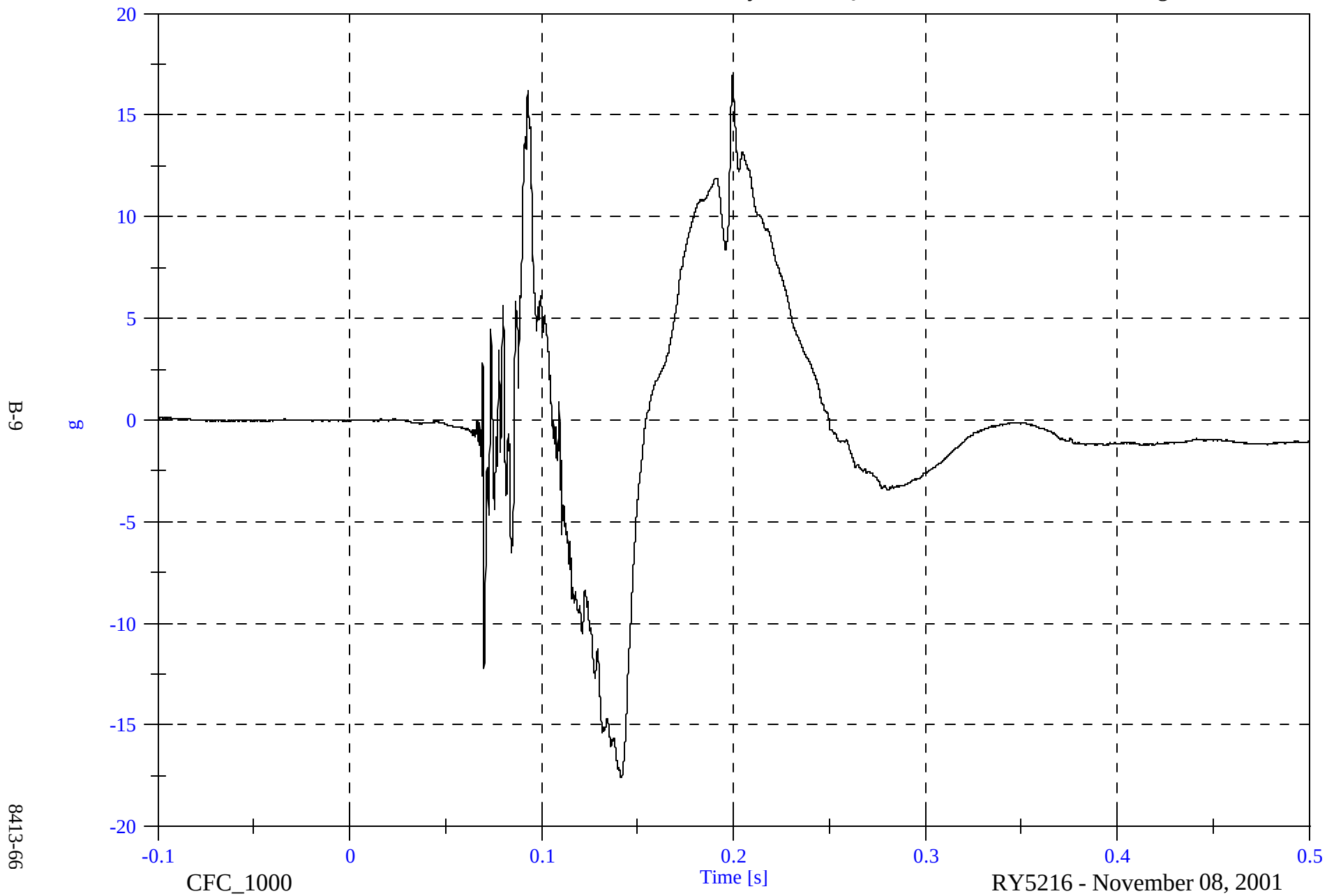
188	Barrier Load Cell E3 FX [N, CFC_60]	B-196
189	Barrier Load Cell E4 FX [N, CFC_60]	B-197
190	Barrier Load Cell E5 FX [N, CFC_60]	B-198
191	Barrier Load Cell E6 FX [N, CFC_60]	B-199
192	Barrier Load Cell D2 FY [N, CFC_60]	B-200
193	Barrier Load Cell D3 FY [N, CFC_60]	B-201
194	Barrier Load Cell D4 FY [N, CFC_60]	B-202
195	Barrier Load Cell D5 FY [N, CFC_60]	B-203
196	Barrier Load Cell D6 FY [N, CFC_60]	B-204
197	Barrier Load Cell D1 FX [N, CFC_60]	B-205
198	Barrier Load Cell D2 FX [N, CFC_60]	B-206
199	Barrier Load Cell D3 FX [N, CFC_60]	B-207
200	Barrier Load Cell D4 FX [N, CFC_60]	B-208
201	Barrier Load Cell D5 FX [N, CFC_60]	B-209
202	Barrier Load Cell D6 FX [N, CFC_60]	B-210
203	Barrier Load Cell C2 FY [N, CFC_60]	B-211
204	Barrier Load Cell C3 FY [N, CFC_60]	B-212
205	Barrier Load Cell C4 FY [N, CFC_60]	B-213
206	Barrier Load Cell C5 FY [N, CFC_60]	B-214
207	Barrier Load Cell C6 FY [N, CFC_60]	B-215
208	Barrier Load Cell C1 FX [N, CFC_60]	B-216
209	Barrier Load Cell C2 FX [N, CFC_60]	B-217
210	Barrier Load Cell C3 FX [N, CFC_60]	B-218
211	Barrier Load Cell C4 FX [N, CFC_60]	B-219
212	Barrier Load Cell C5 FX [N, CFC_60]	B-220
213	Barrier Load Cell C6 FX [N, CFC_60]	B-221
214	Barrier Load Cell B3 FY [N, CFC_60]	B-222
215	Barrier Load Cell B4 FY [N, CFC_60]	B-223
216	Barrier Load Cell B5 FY [N, CFC_60]	B-224
217	Barrier Load Cell B6 FY [N, CFC_60]	B-225
218	Barrier Load Cell B1 FX [N, CFC_60]	B-226
219	Barrier Load Cell B2 FX [N, CFC_60]	B-227
220	Barrier Load Cell B3 FX [N, CFC_60]	B-228
221	Barrier Load Cell B4 FX [N, CFC_60]	B-229
222	Barrier Load Cell B5 FX [N, CFC_60]	B-230
223	Barrier Load Cell B6 FX [N, CFC_60]	B-231
224	Barrier Load Cell A1 FX [N, CFC_60]	B-232
225	Barrier Load Cell A2 FX [N, CFC_60]	B-233
226	Barrier Load Cell A3 FX [N, CFC_60]	B-234
227	Barrier Load Cell A4 FX [N, CFC_60]	B-235
228	Barrier Load Cell A5 FX [N, CFC_60]	B-236
229	Barrier Load Cell A6 FX [N, CFC_60]	B-237
230	Barrier Load Cell UH1 TL FX [N, CFC_60]	B-238
231	Barrier Load Cell UH2 TR FX [N, CFC_60]	B-239
232	Barrier Load Cell UH3 CL FX [N, CFC_60]	B-240
233	Barrier Load Cell UH4 BL FX [N, CFC_60]	B-241
234	Barrier Load Cell UH5 BR FX [N, CFC_60]	B-242

40% Frontal Offset Test #10 - 2000 Nissan Altima

P1 Head 9 Array X Arm Ay

Max: 17.0 [g] at 0.200 [s]

Min: -17.6 [g] at 0.142 [s]

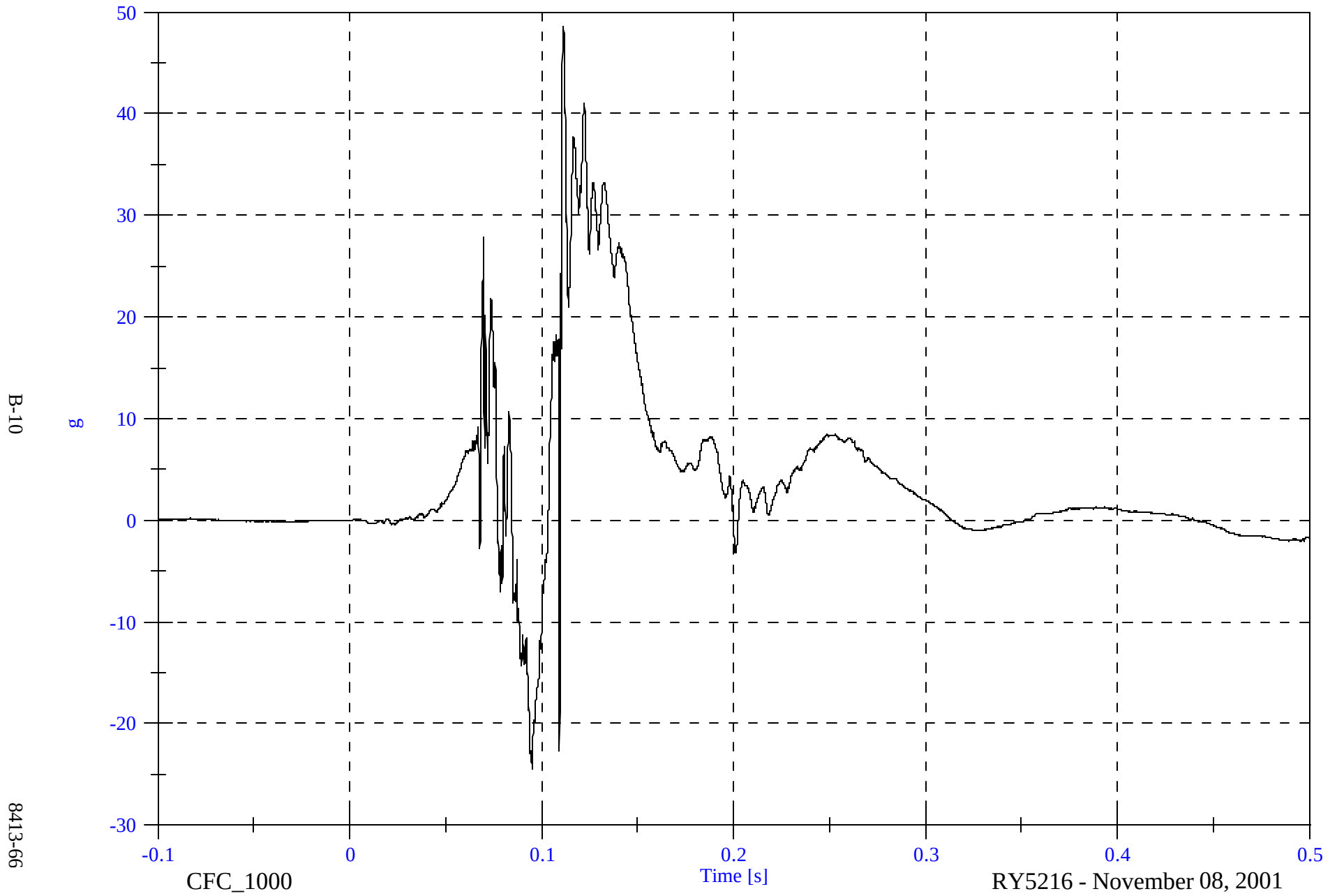


40% Frontal Offset Test #10 - 2000 Nissan Altima

P1 Head 9 Array X Arm Az

Max: 48.5 [g] at 0.111 [s]

Min: -24.5 [g] at 0.095 [s]



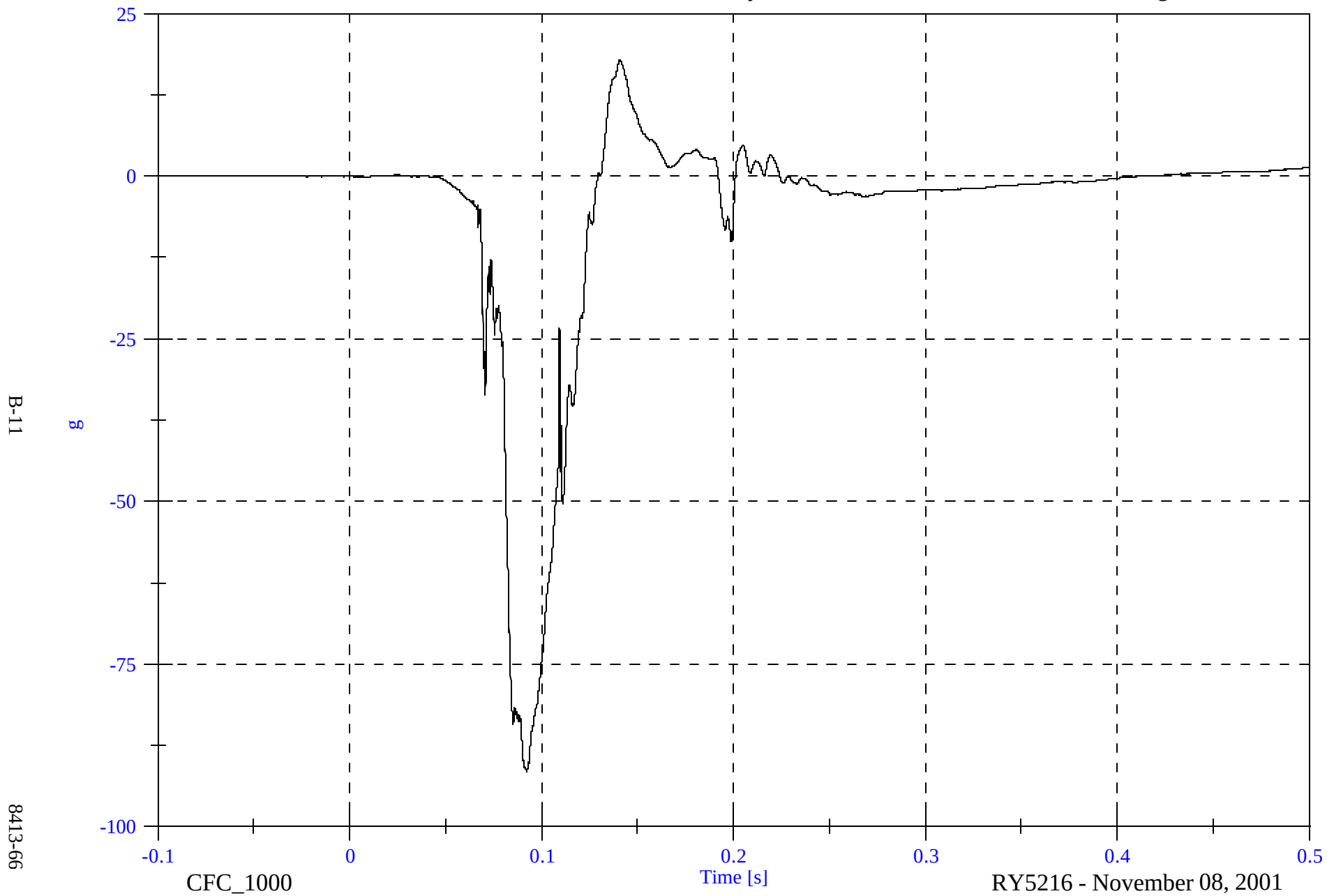
8413-66

40% Frontal Offset Test #10 - 2000 Nissan Altima

P1 Head 9 Array Y Arm Ax

Max: 17.8 [g] at 0.141 [s]

Min: -91.5 [g] at 0.092 [s]



40% Frontal Offset Test #10 - 2000 Nissan Altima

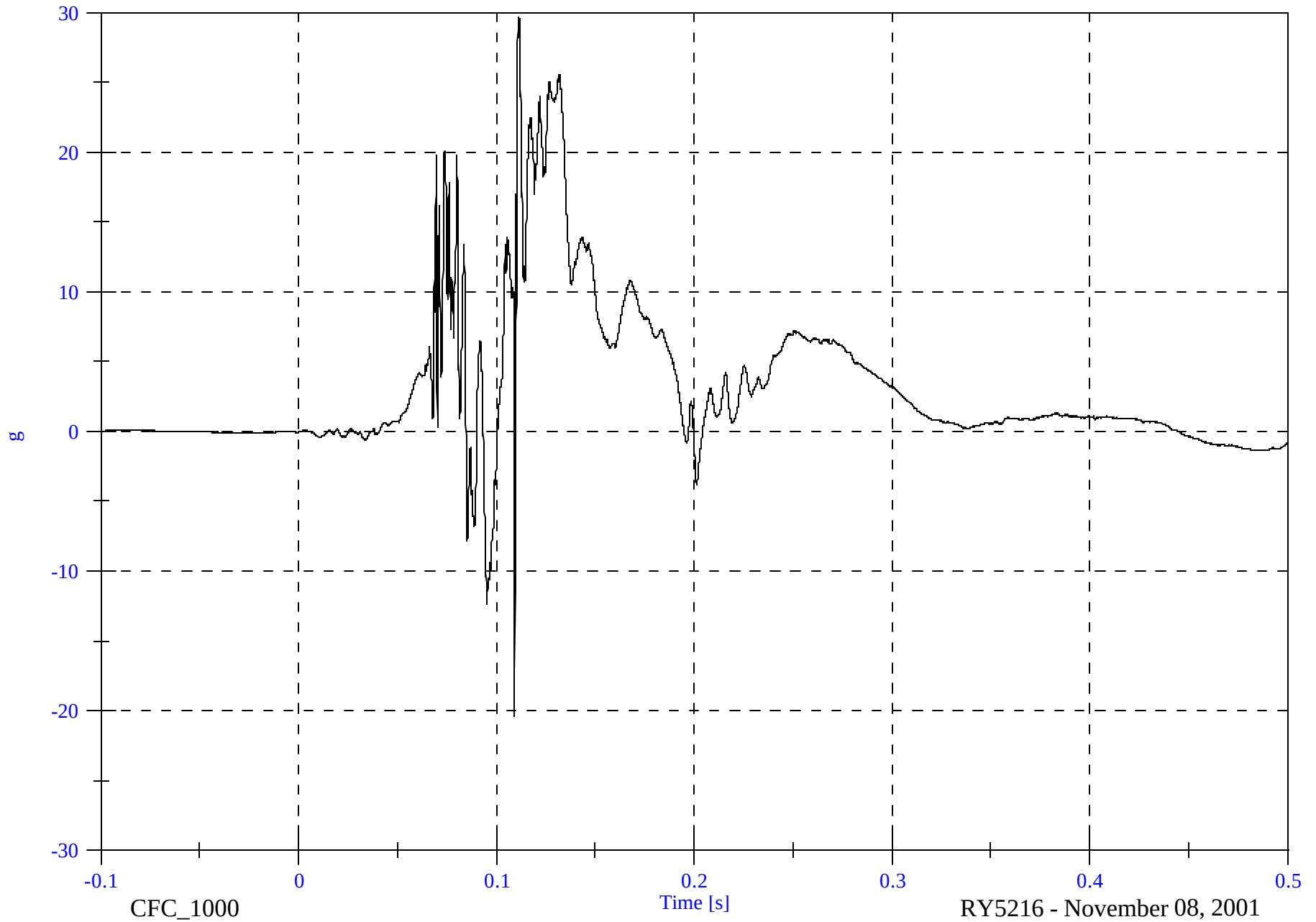
P1 Head 9 Array Y Arm Az

Max: 29.7 [g] at 0.111 [s]

Min: -20.4 [g] at 0.109 [s]

B-12

8413-66

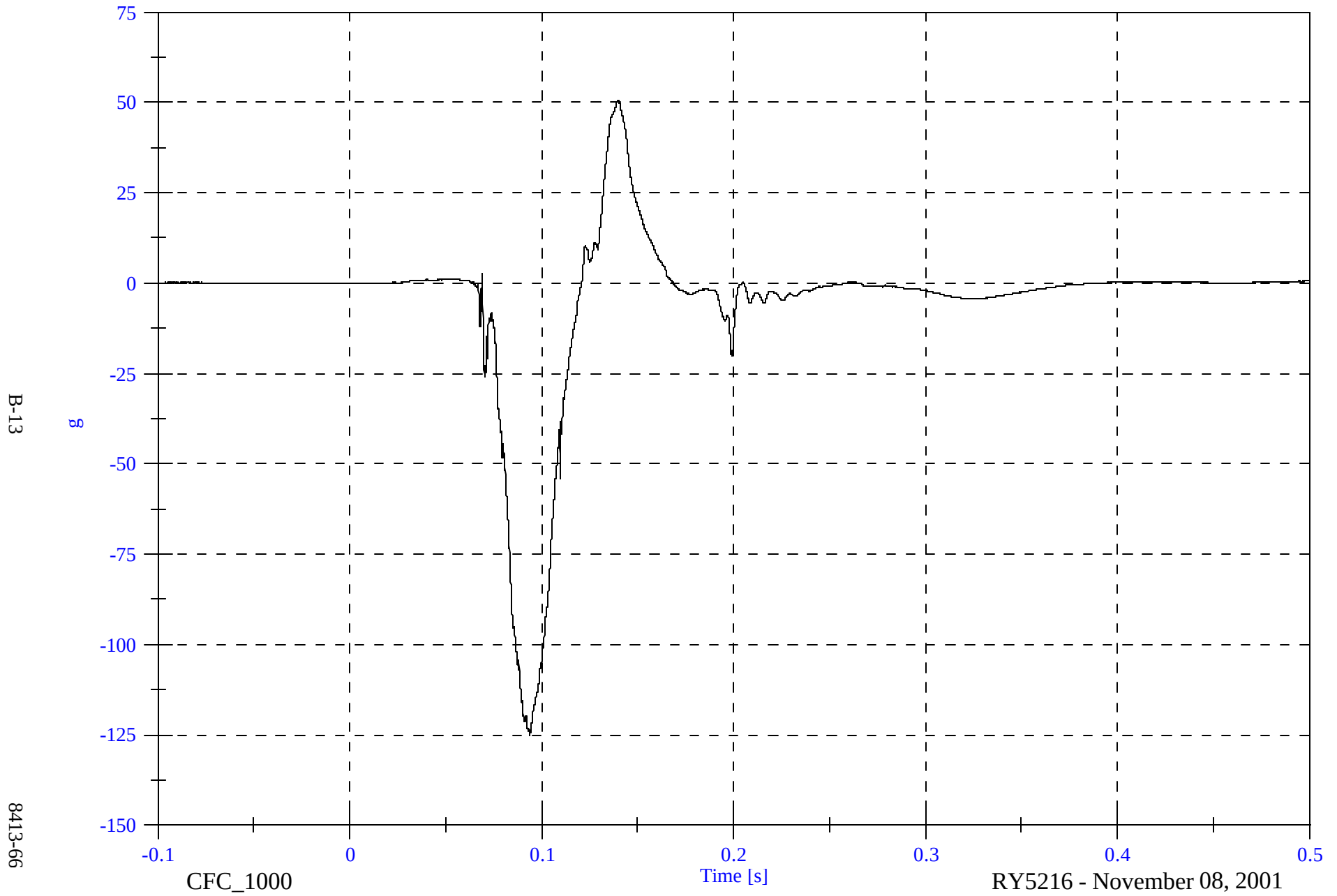


40% Frontal Offset Test #10 - 2000 Nissan Altima

P1 Head 9 Array Z Arm Ax

Max: 50.5 [g] at 0.140 [s]

Min: -125.2 [g] at 0.094 [s]



8413-66

40% Frontal Offset Test #10 - 2000 Nissan Altima

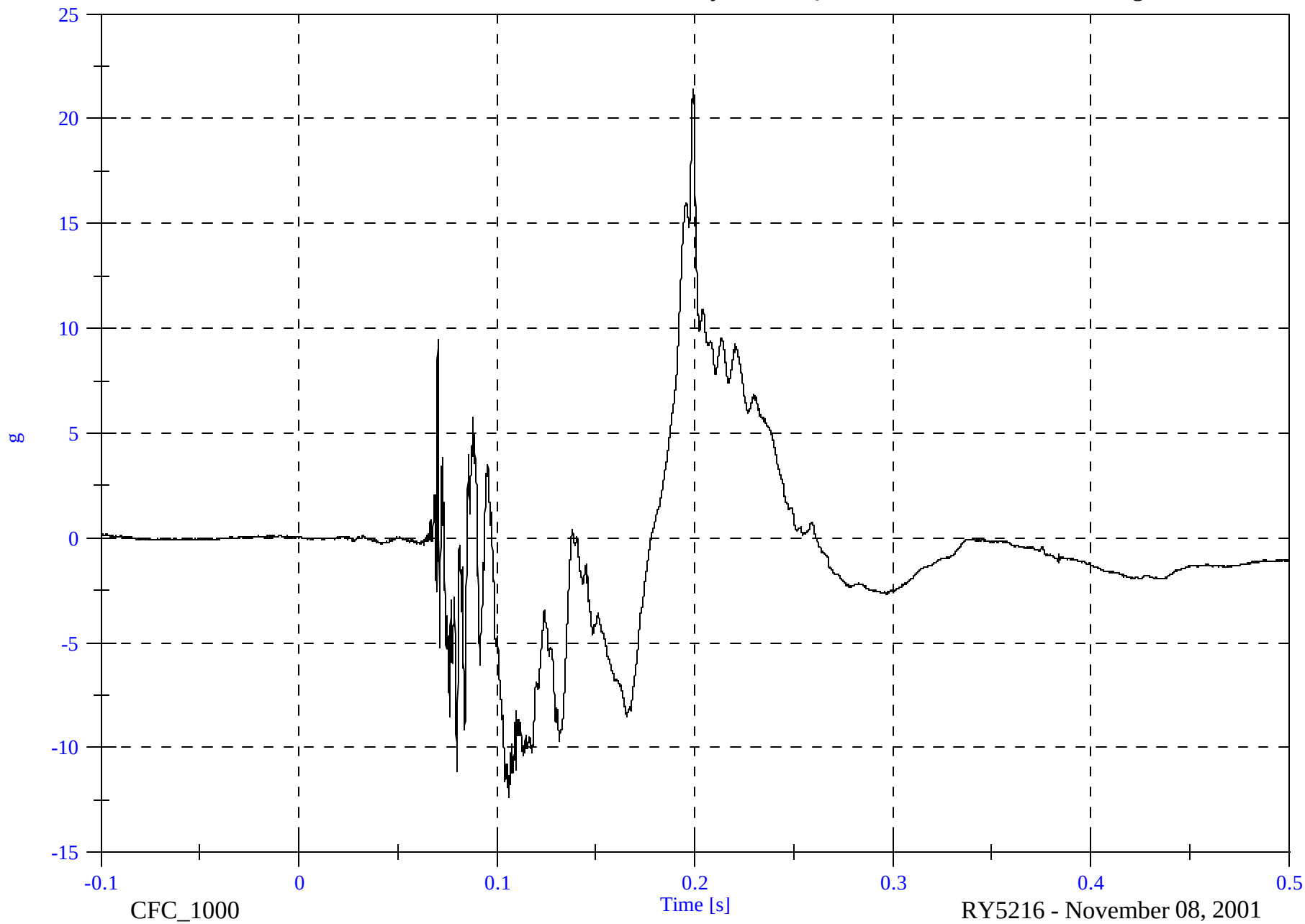
P1 Head 9 Array Z Arm Ay

Max: 21.4 [g] at 0.199 [s]

Min: -12.4 [g] at 0.106 [s]

B-14

8413-66

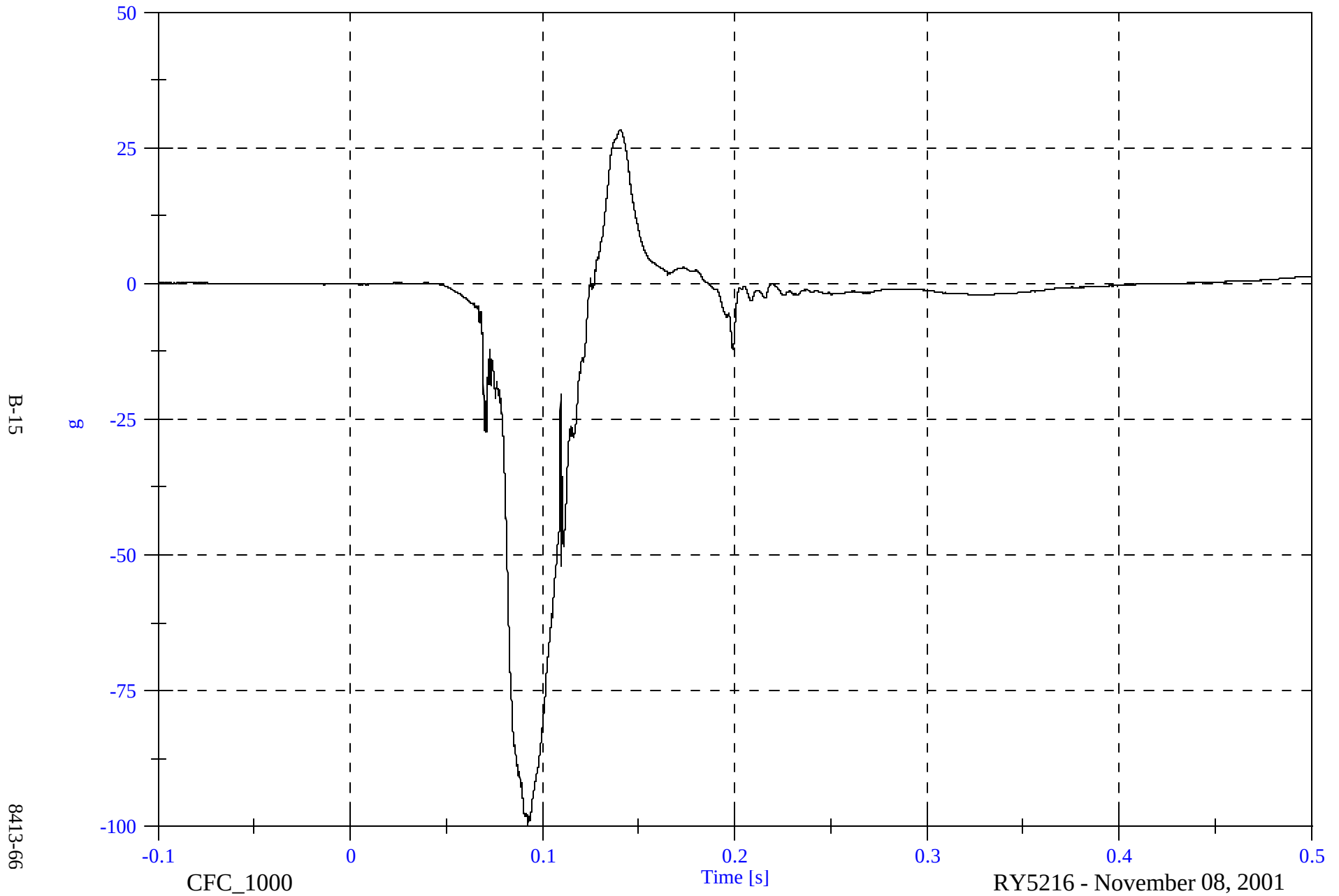


40% Frontal Offset Test #10 - 2000 Nissan Altima

Max: 28.3 [g] at 0.141 [s]

Min: -99.6 [g] at 0.093 [s]

P1 Head CG Ax



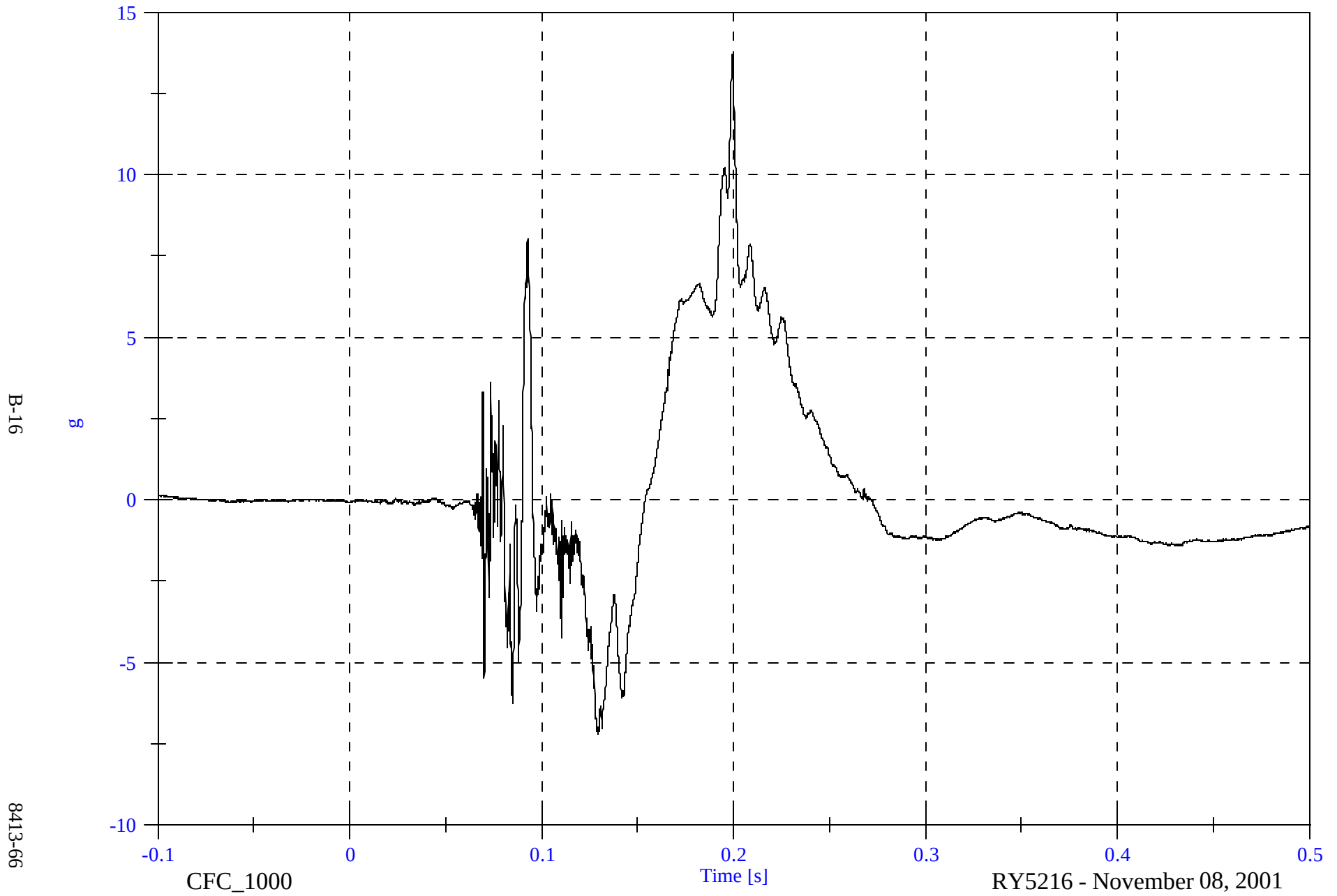
8413-66

40% Frontal Offset Test #10 - 2000 Nissan Altima

P1 Head CG Ay

Max: 13.7 [g] at 0.200 [s]

Min: -7.2 [g] at 0.129 [s]



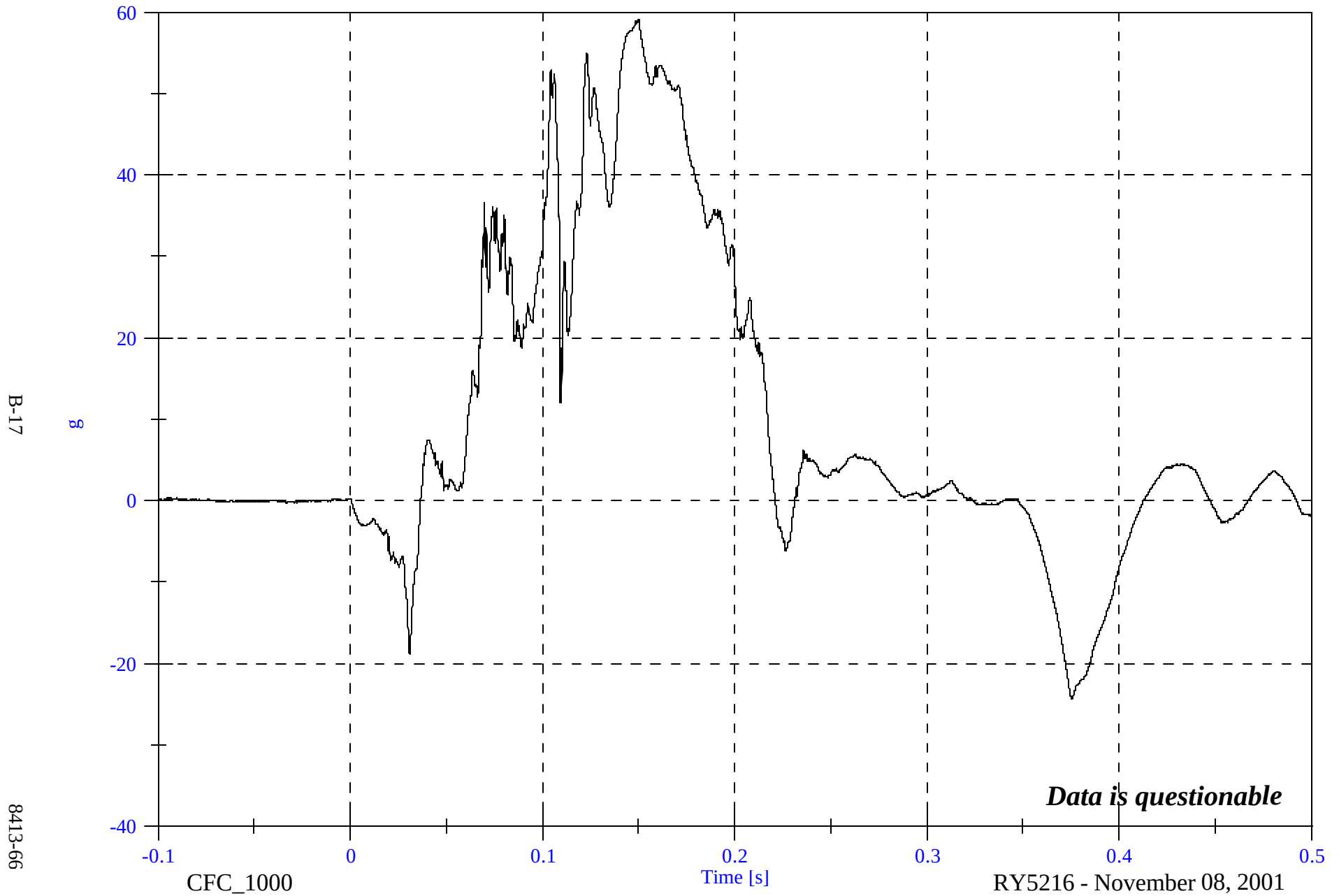
8413-66

40% Frontal Offset Test #10 - 2000 Nissan Altima

Max: 59.1 [g] at 0.150 [s]

Min: -24.3 [g] at 0.375 [s]

P1 Head CG Az



40% Frontal Offset Test #10 - 2000 Nissan Altima

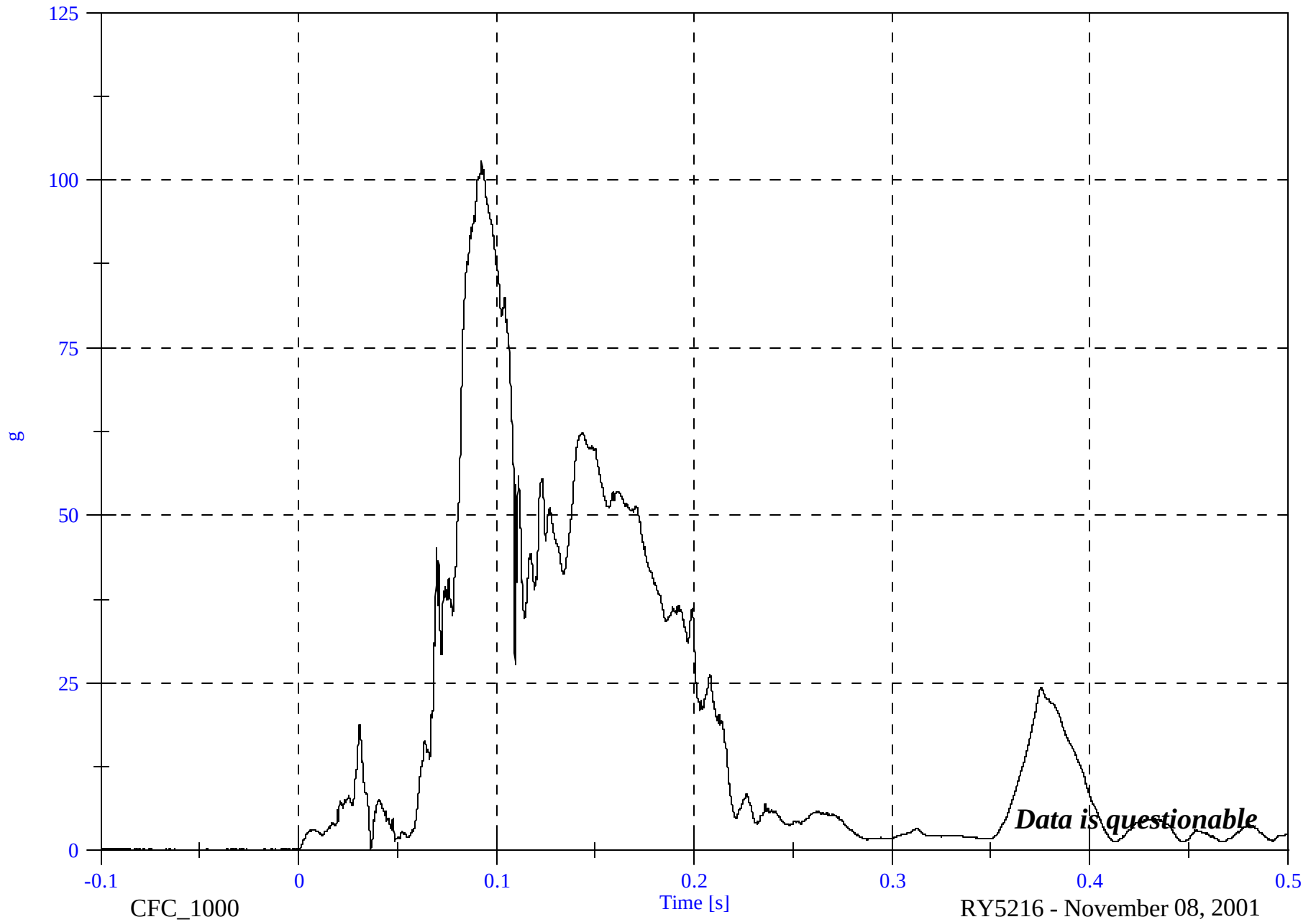
P1 Head CG A Resultant

Max: 102.8 [g] at 0.093 [s]

Min: 0.0 [g] at -0.021 [s]

B-18

8413-66

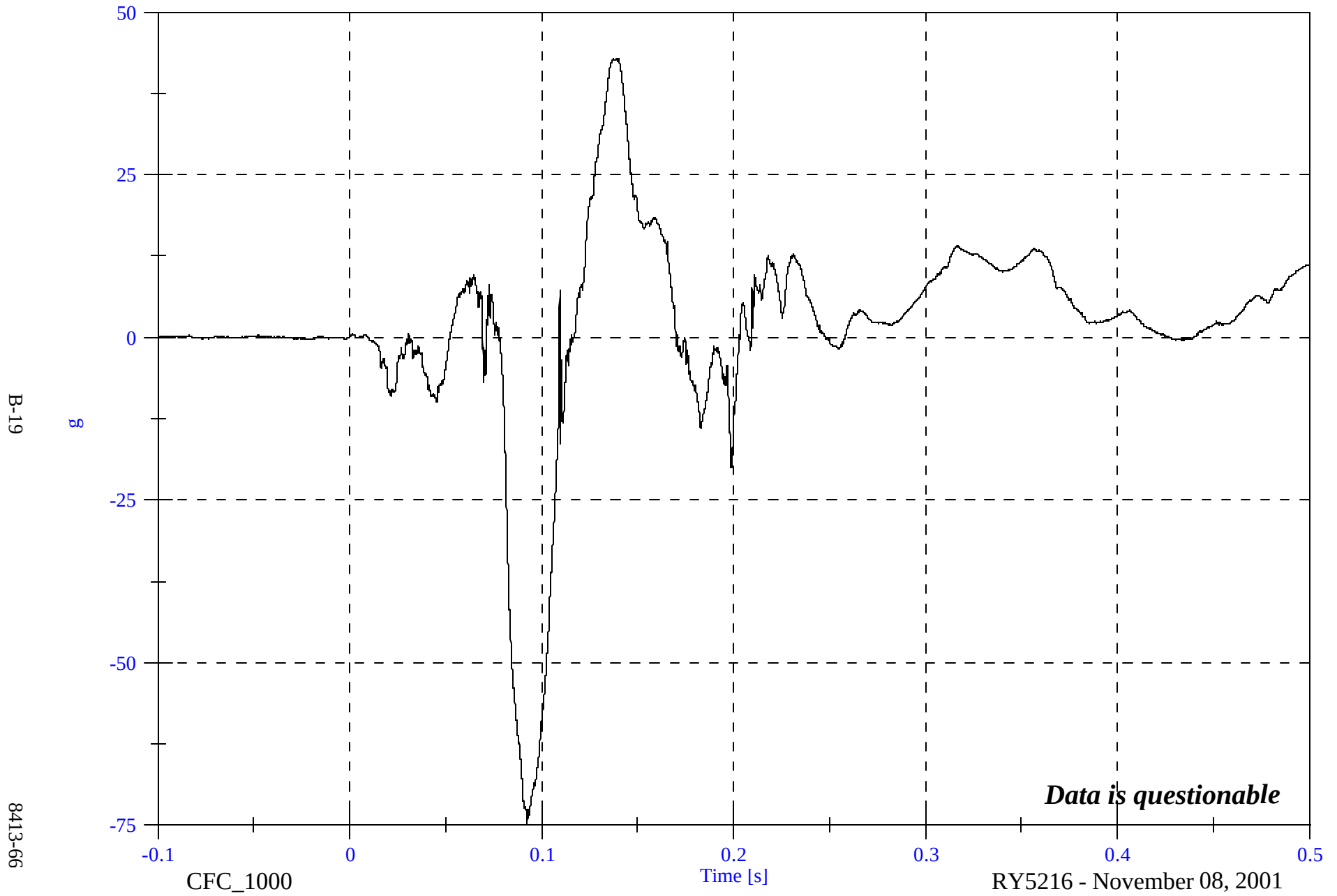


40% Frontal Offset Test #10 - 2000 Nissan Altima

P1 Head CG Red Ax

Max: 42.9 [g] at 0.139 [s]

Min: -74.8 [g] at 0.093 [s]



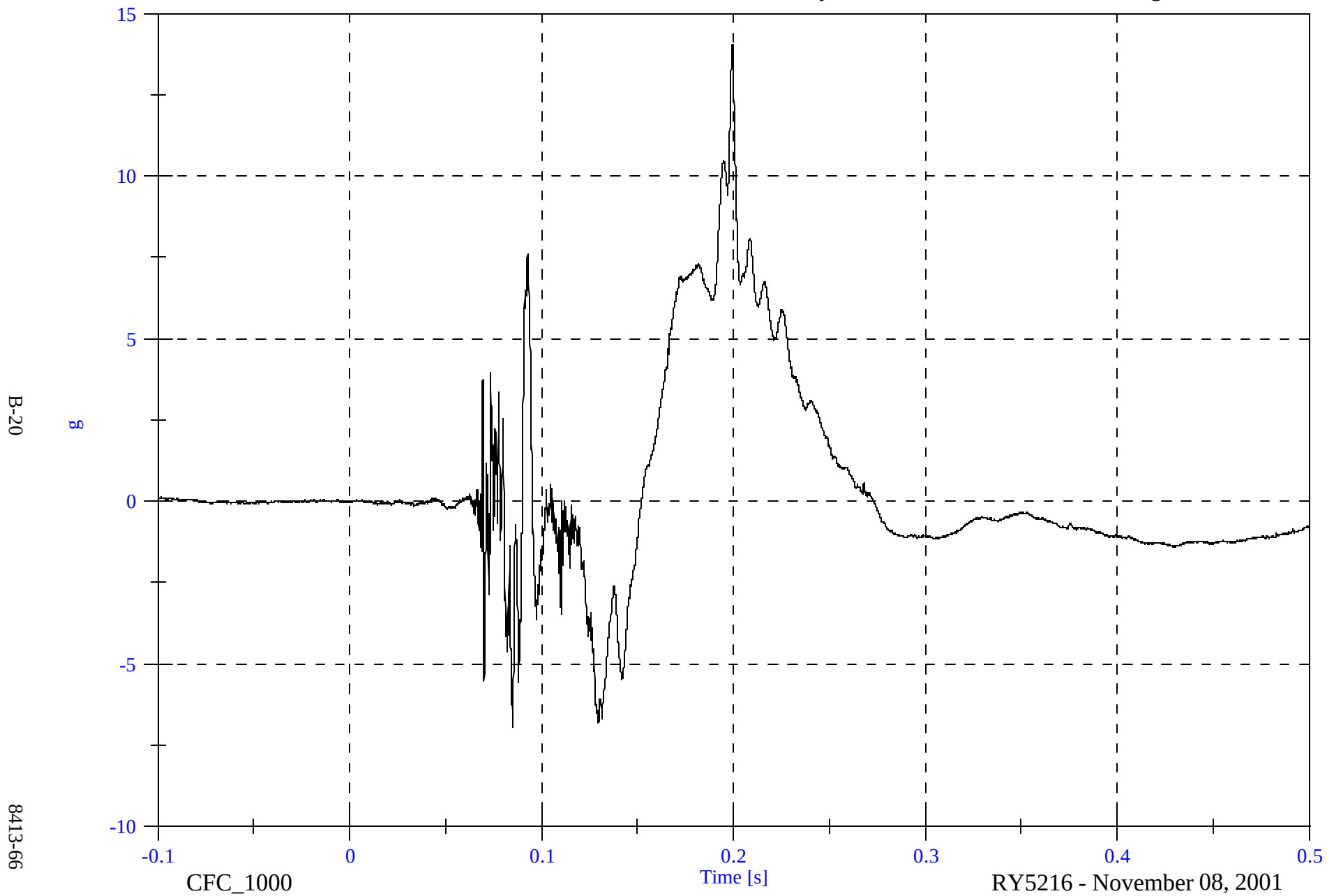
8413-66

40% Frontal Offset Test #10 - 2000 Nissan Altima

P1 Head CG Red Ay

Max: 14.0 [g] at 0.200 [s]

Min: -7.0 [g] at 0.085 [s]



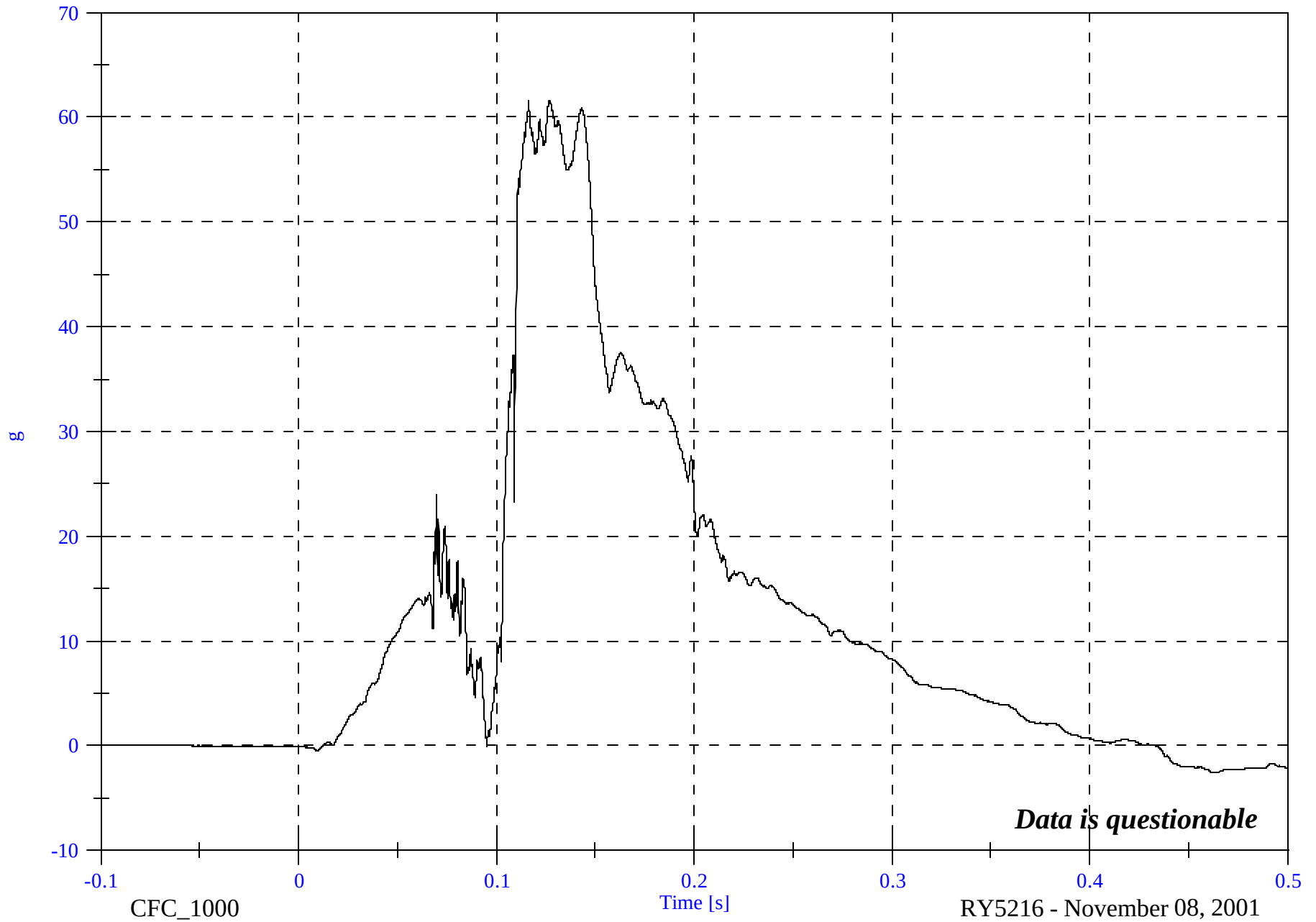
8413-66

40% Frontal Offset Test #10 - 2000 Nissan Altima

P1 Head CG Red Az

Max: 61.6 [g] at 0.127 [s]

Min: -2.5 [g] at 0.464 [s]



B-21

8413-66

CFC_1000

RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

P1 Head CG Red A Resultant

Max: 75.5 [g] at 0.093 [s]

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



B-22

8413-66

CFC_1000

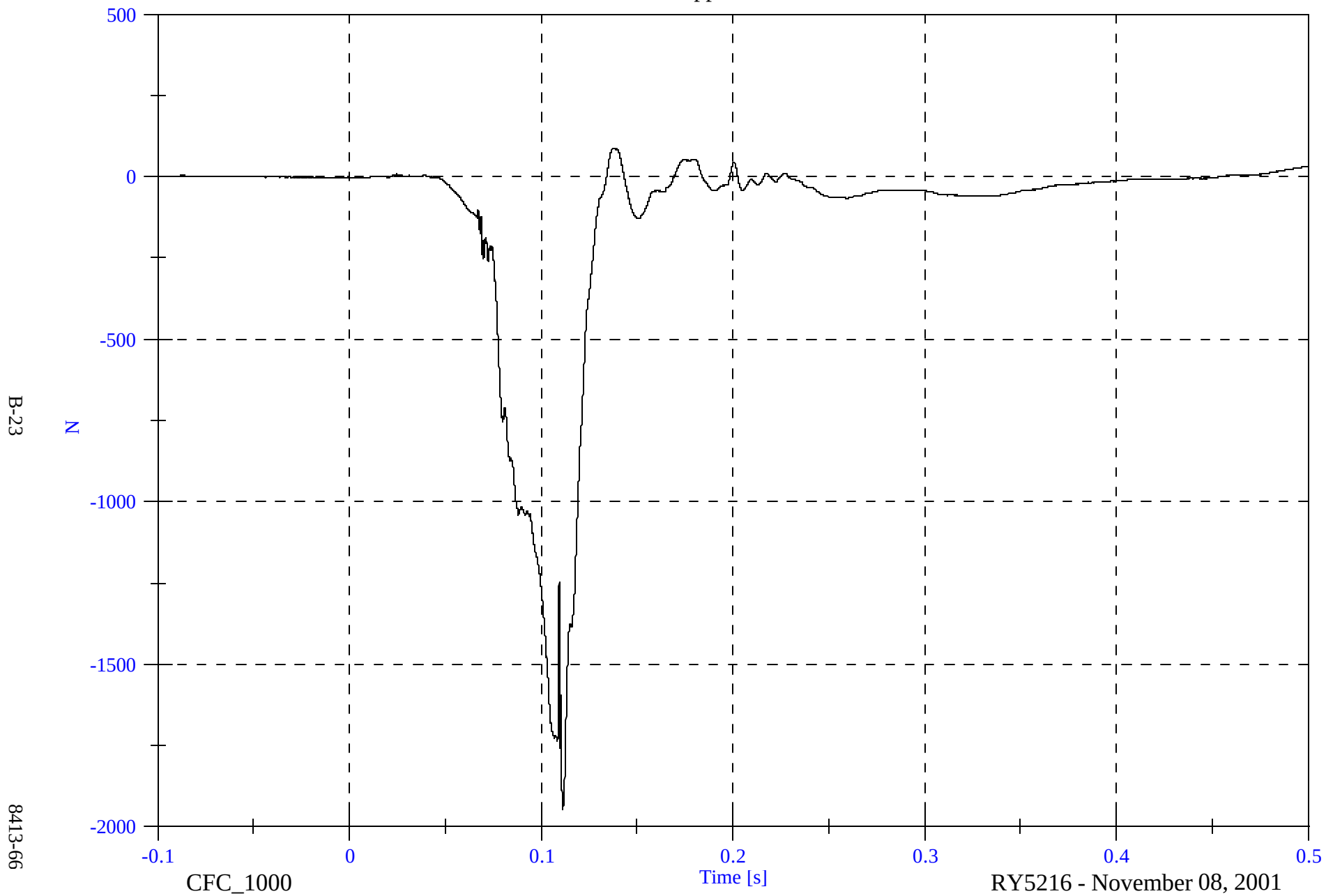
RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

P1 Upper Neck Fx

Max: 88.3 [N] at 0.138 [s]

Min: -1947.1 [N] at 0.111 [s]

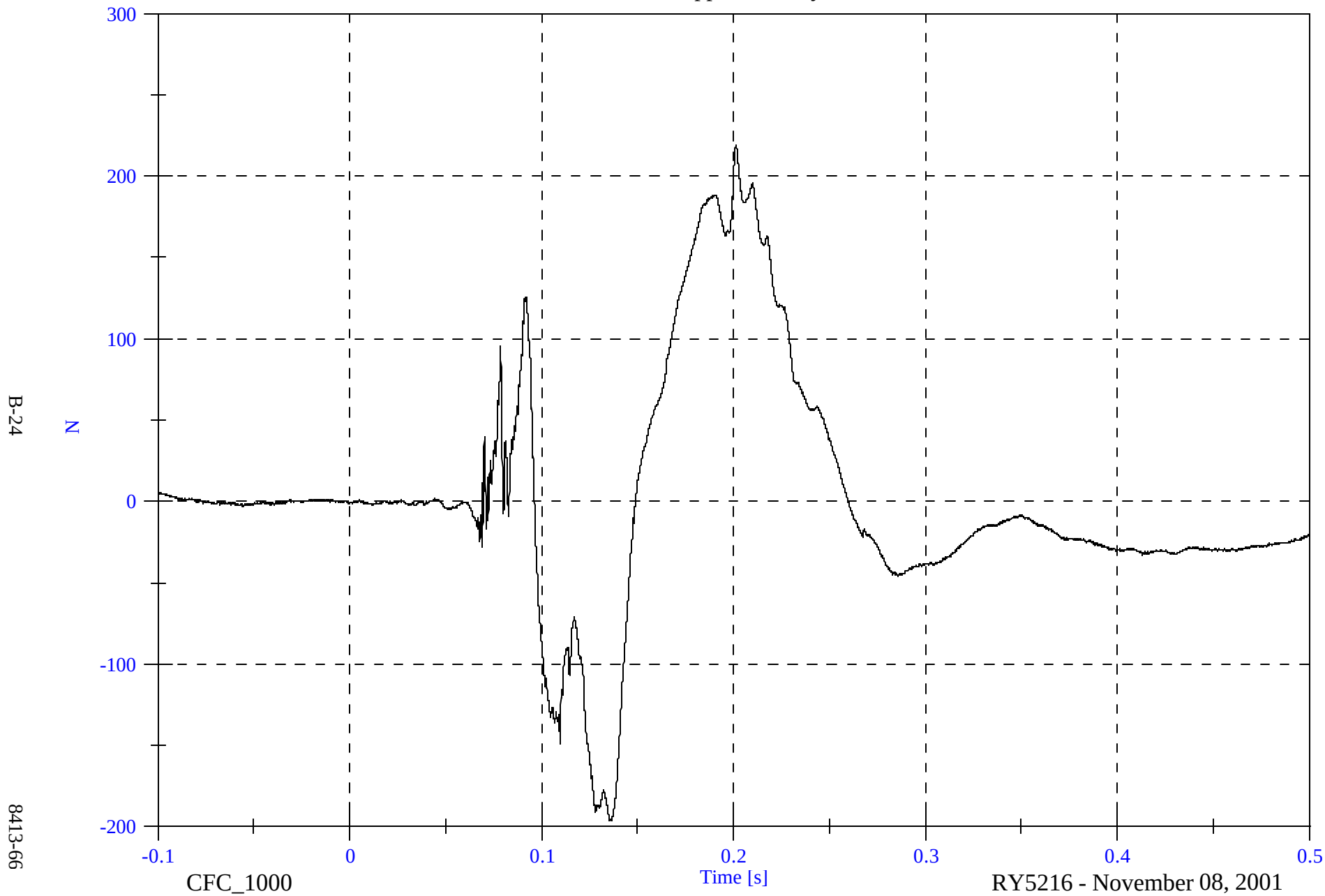


40% Frontal Offset Test #10 - 2000 Nissan Altima

P1 Upper Neck Fy

Max: 219.0 [N] at 0.201 [s]

Min: -196.5 [N] at 0.136 [s]

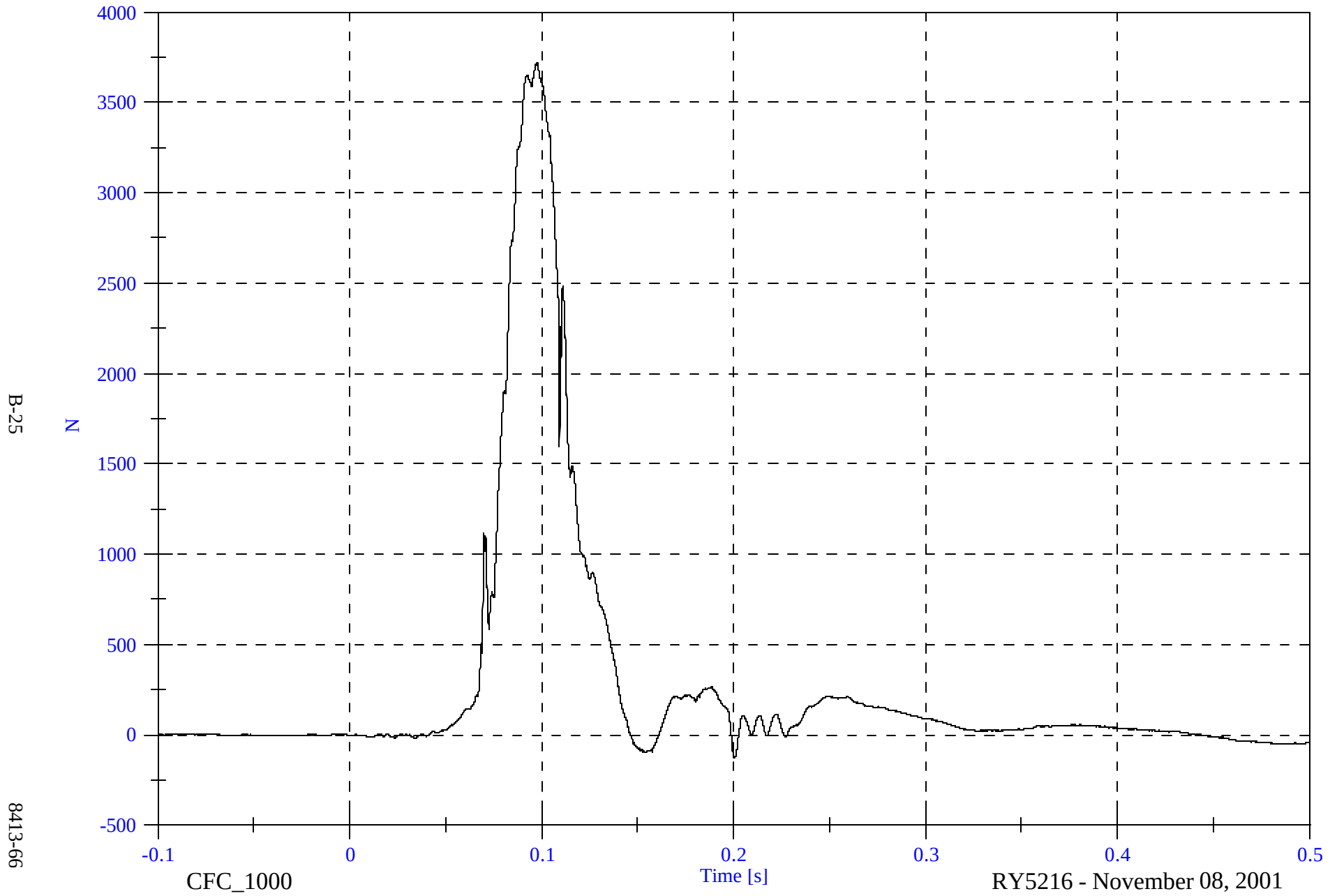


40% Frontal Offset Test #10 - 2000 Nissan Altima

Max: 3720.1 [N] at 0.098 [s]

P1 Upper Neck Fz

Min: -129.6 [N] at 0.201 [s]

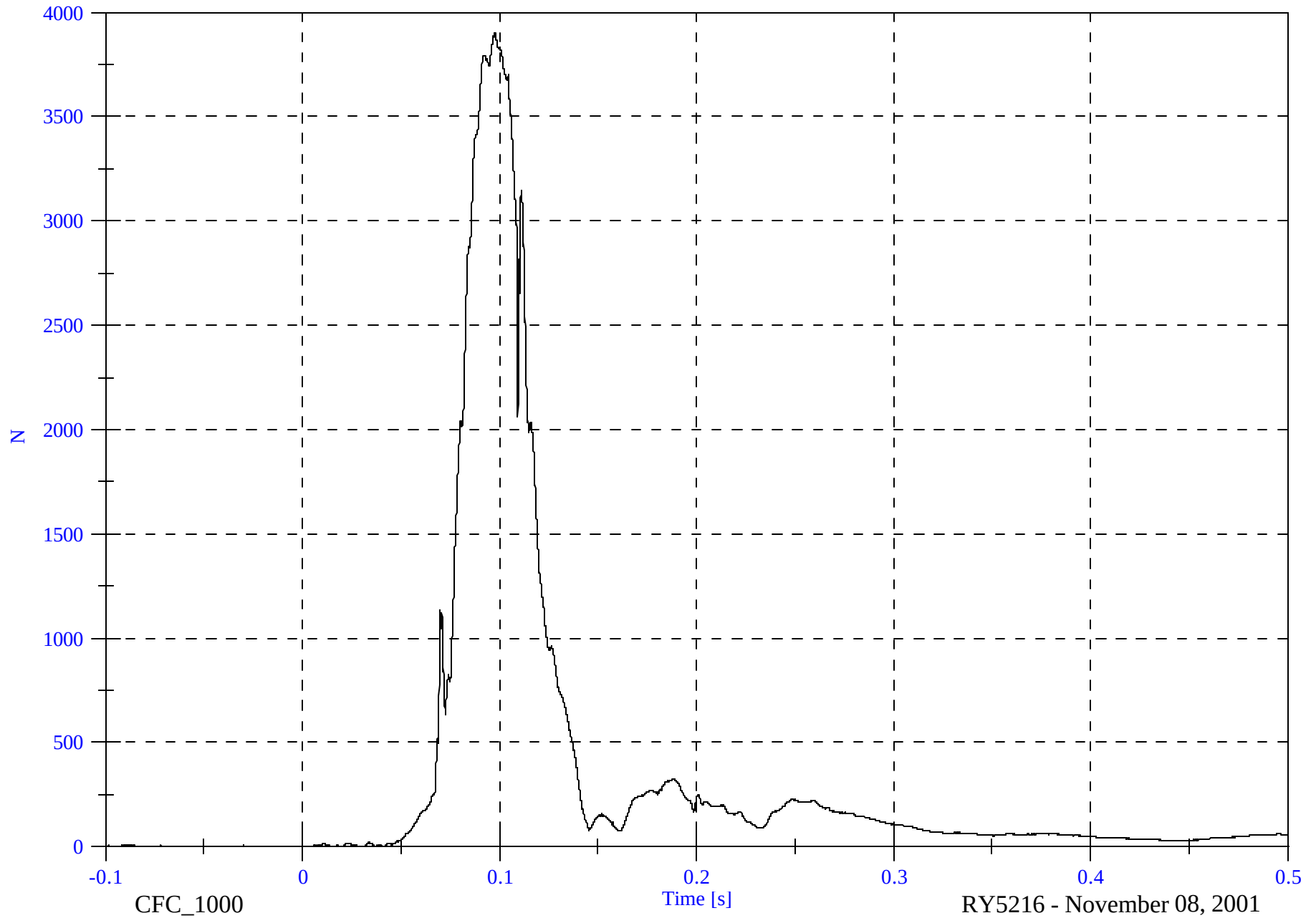


40% Frontal Offset Test #10 - 2000 Nissan Altima

P1 Upper Neck F Resultant

Max: 3900.4 [N] at 0.098 [s]

Min: 0.4 [N] at 0.037 [s]



B-26

8413-66

CFC_1000

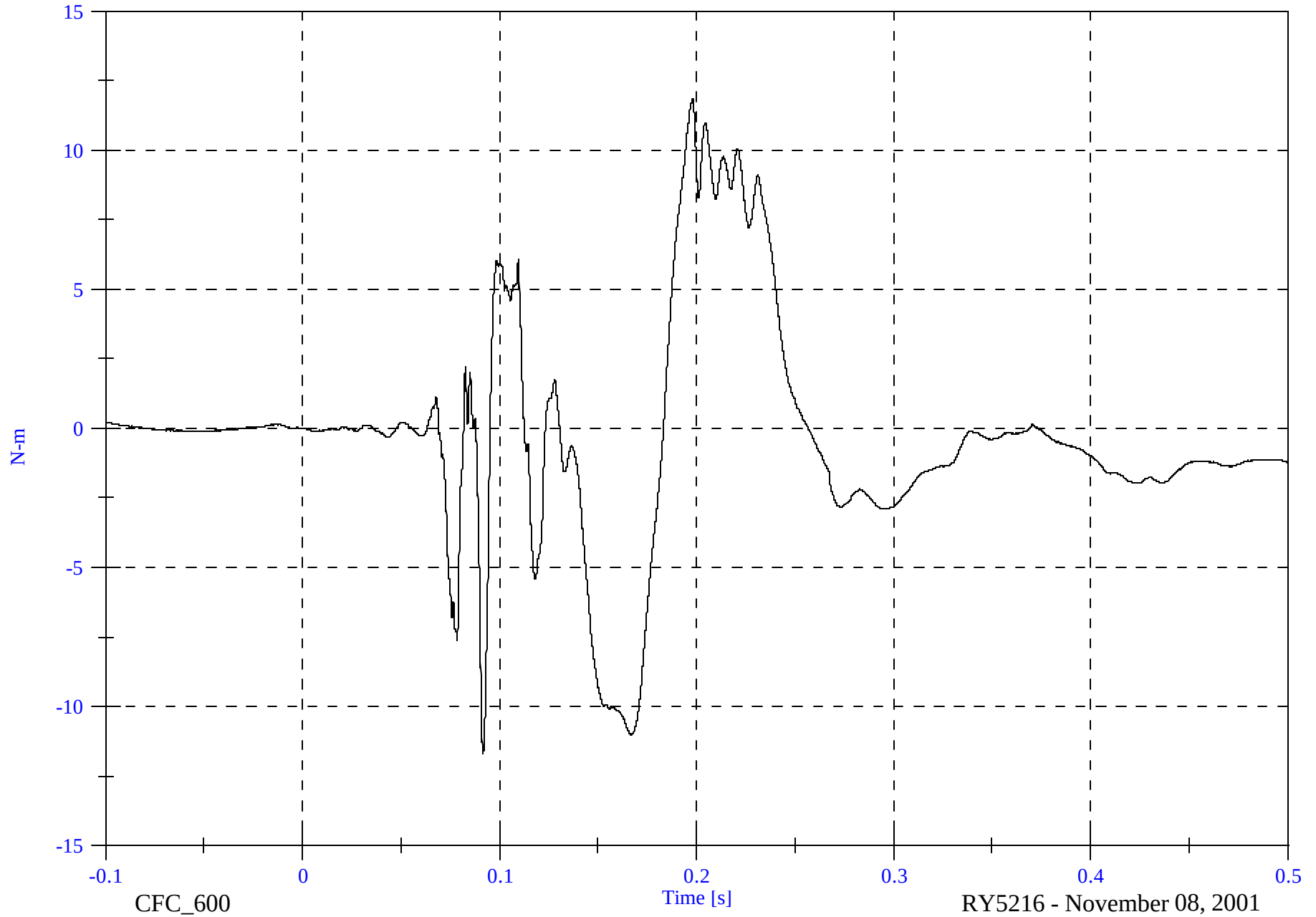
RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

P1 Upper Neck Mx

Max: 11.8 [N-m] at 0.198 [s]

Min: -11.7 [N-m] at 0.092 [s]



B-27

8413-66

CFC_600

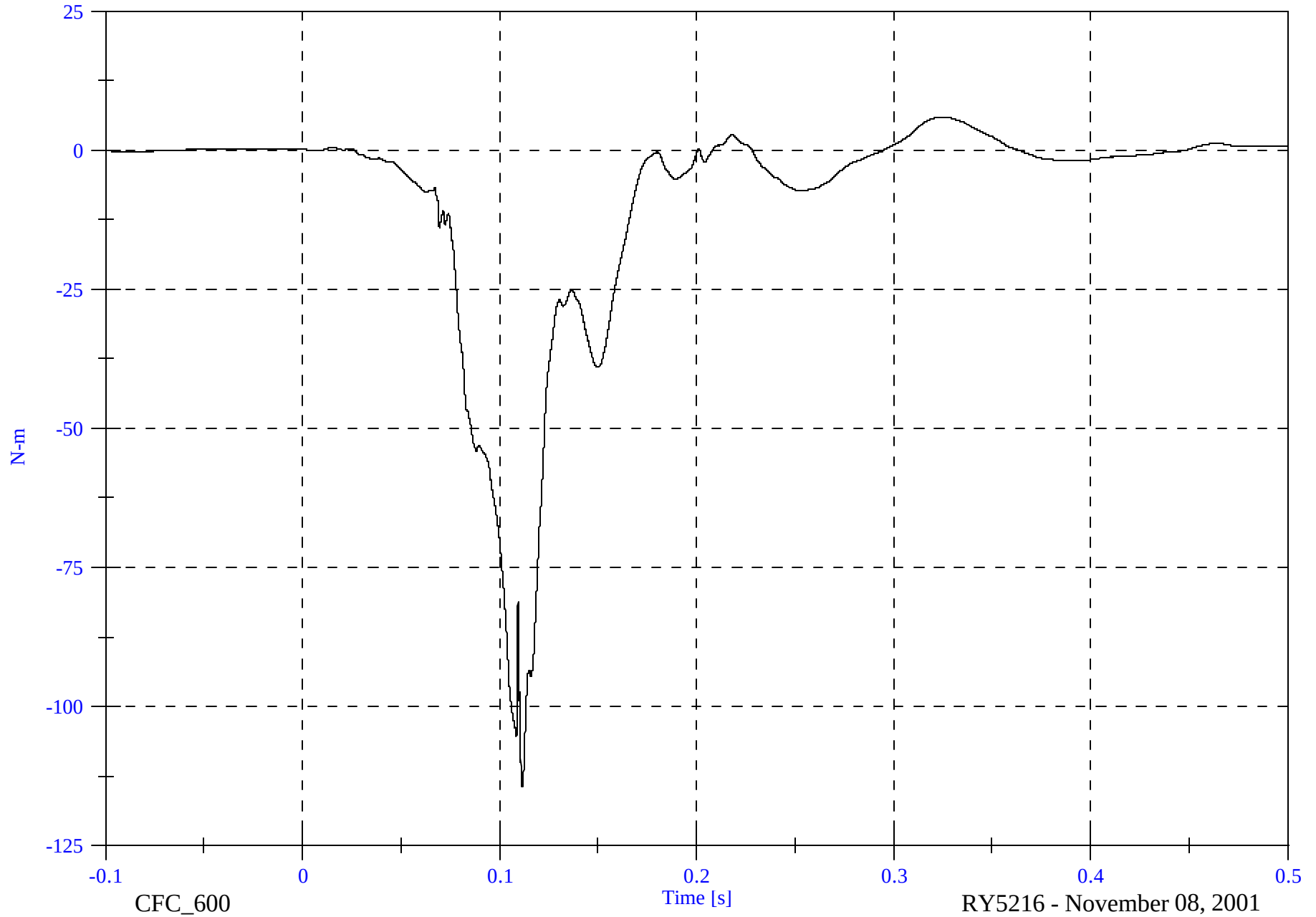
RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

P1 Upper Neck My

Max: 5.9 [N-m] at 0.325 [s]

Min: -114.3 [N-m] at 0.112 [s]



B-28

8413-66

CFC_600

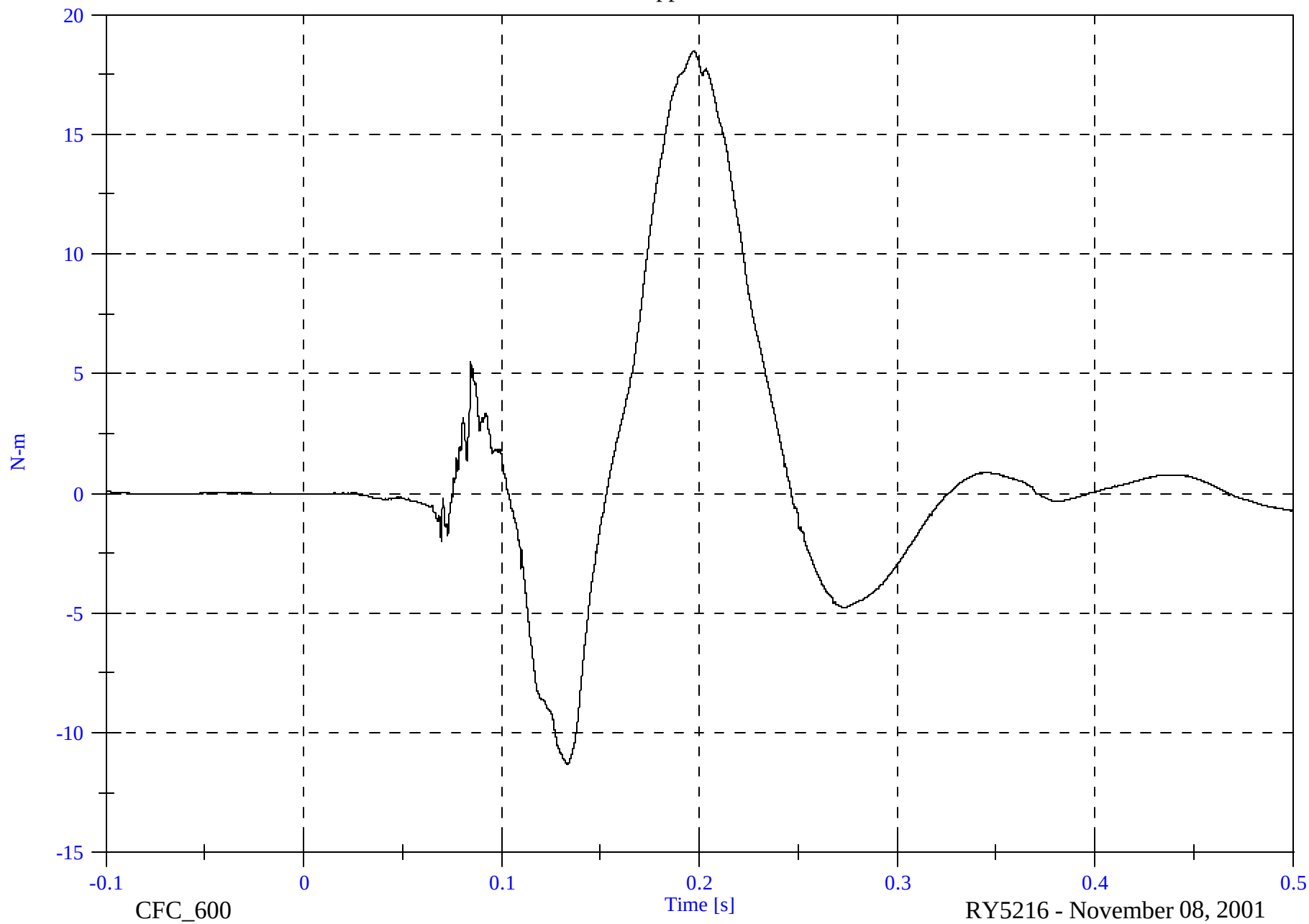
RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

Max: 18.5 [N-m] at 0.197 [s]

P1 Upper Neck Mz

Min: -11.3 [N-m] at 0.133 [s]



B-29

8413-66

CFC_600

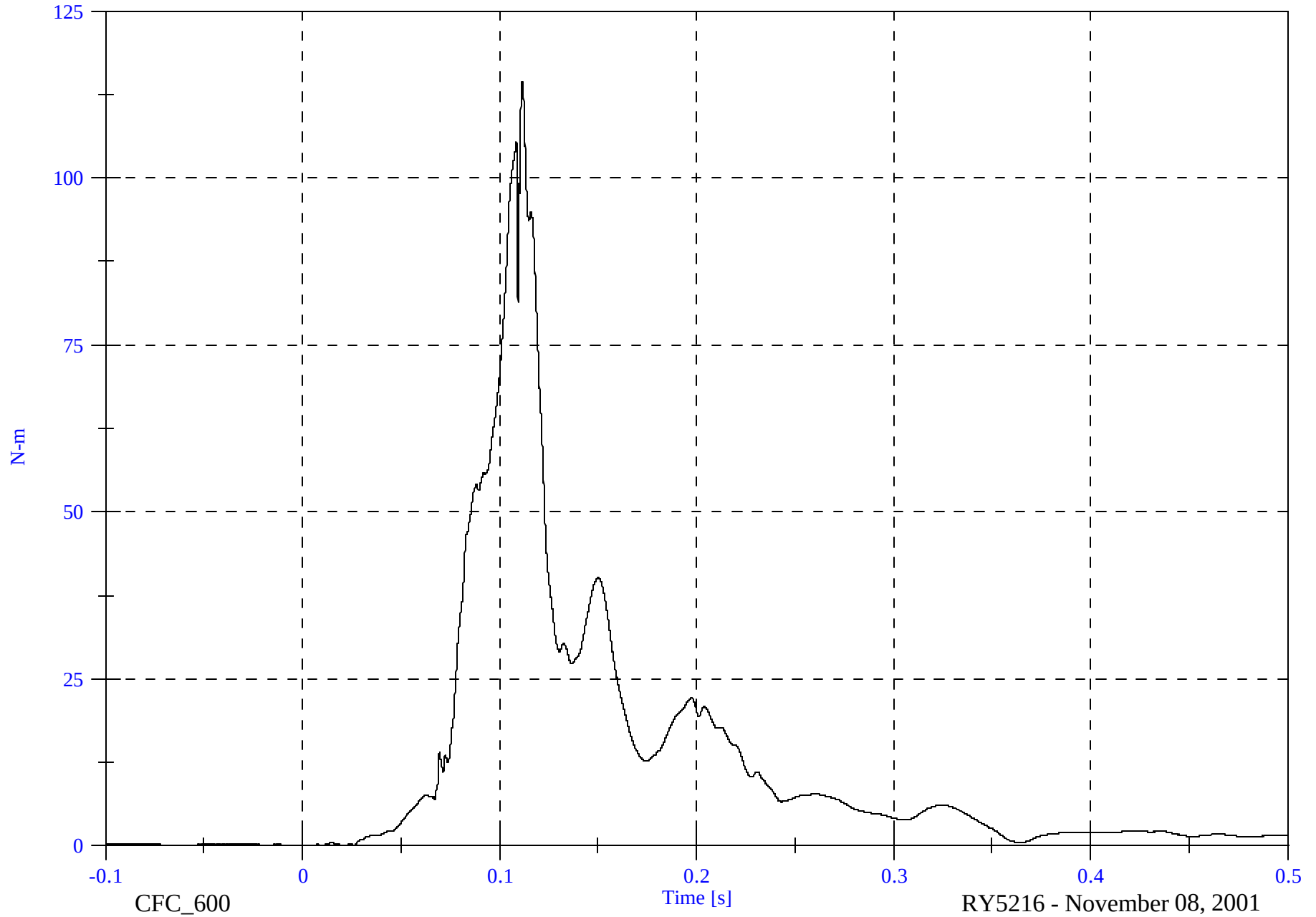
RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

P1 Upper Neck M Resultant

Max: 114.4 [N-m] at 0.112 [s]

Min: 0.0 [N-m] at 0.021 [s]



B-30

8413-66

CFC_600

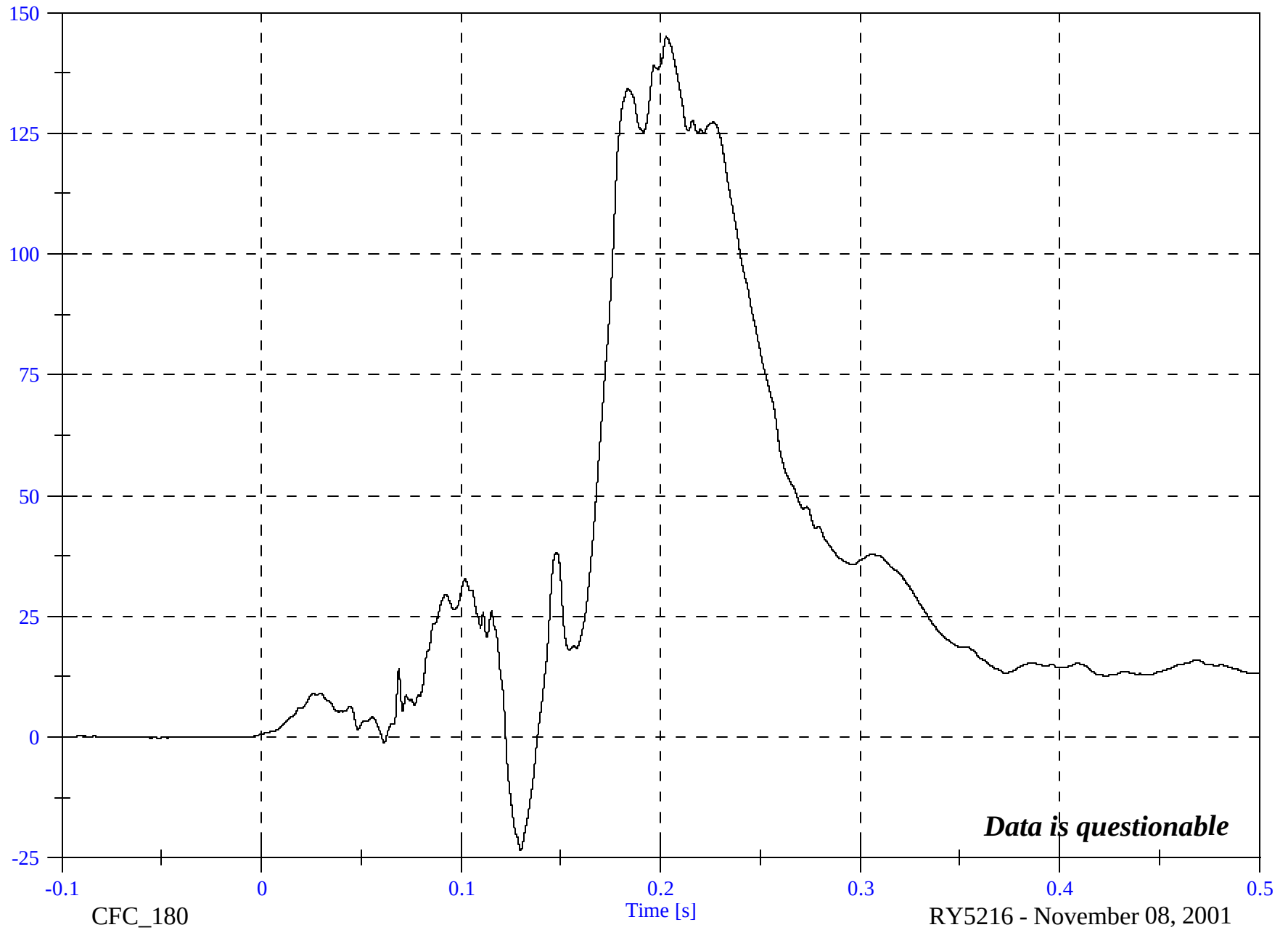
RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

Max: 144.9 [g] at 0.203 [s]

Min: -23.5 [g] at 0.130 [s]

P1 Chest Ax



B-31

8413-66

CFC_180

RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

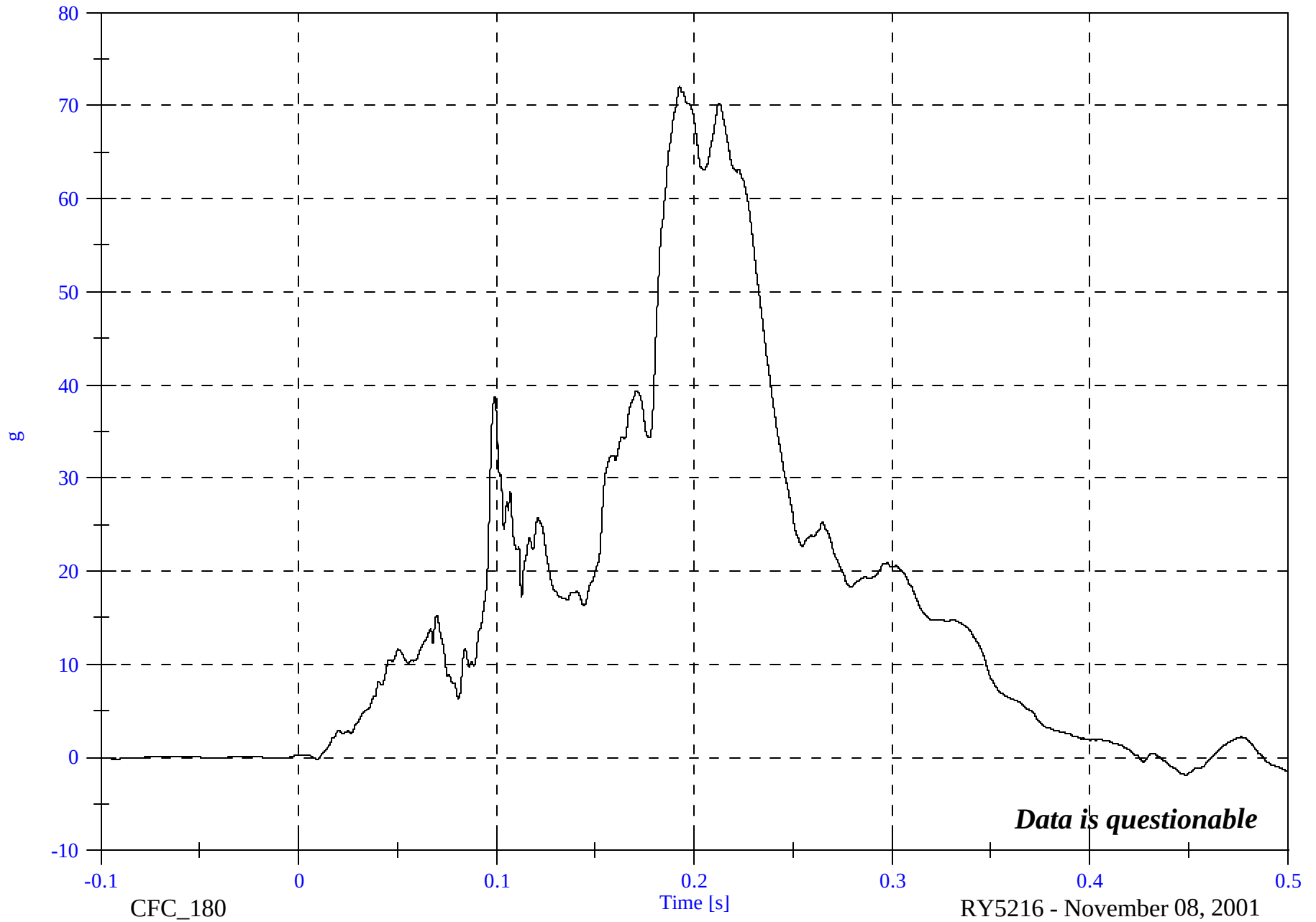
Max: 72.1 [g] at 0.193 [s]

Min: -1.9 [g] at 0.448 [s]

P1 Chest Ay

B-32

8413-66



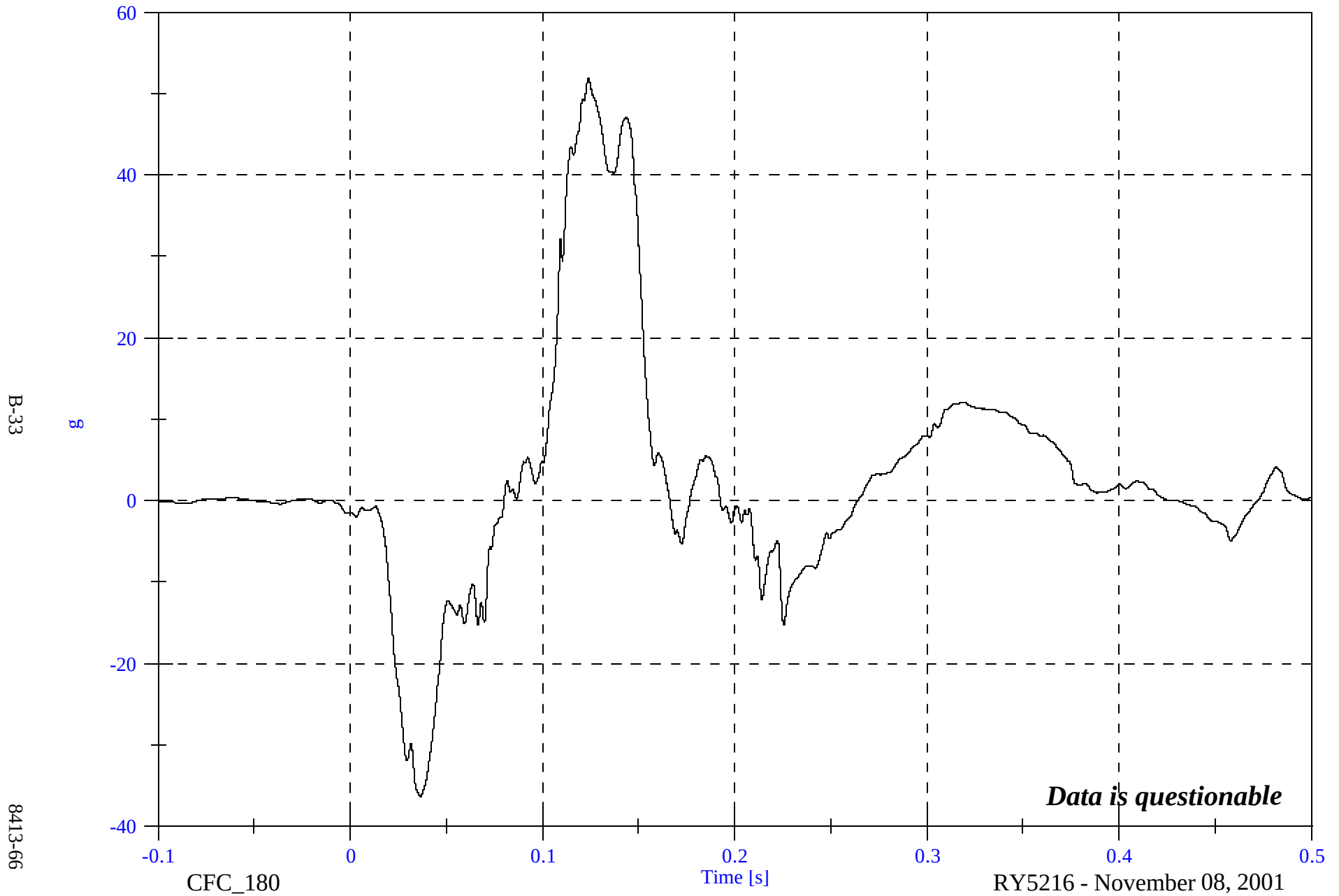
RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

Max: 51.8 [g] at 0.124 [s]

Min: -36.4 [g] at 0.036 [s]

P1 Chest Az

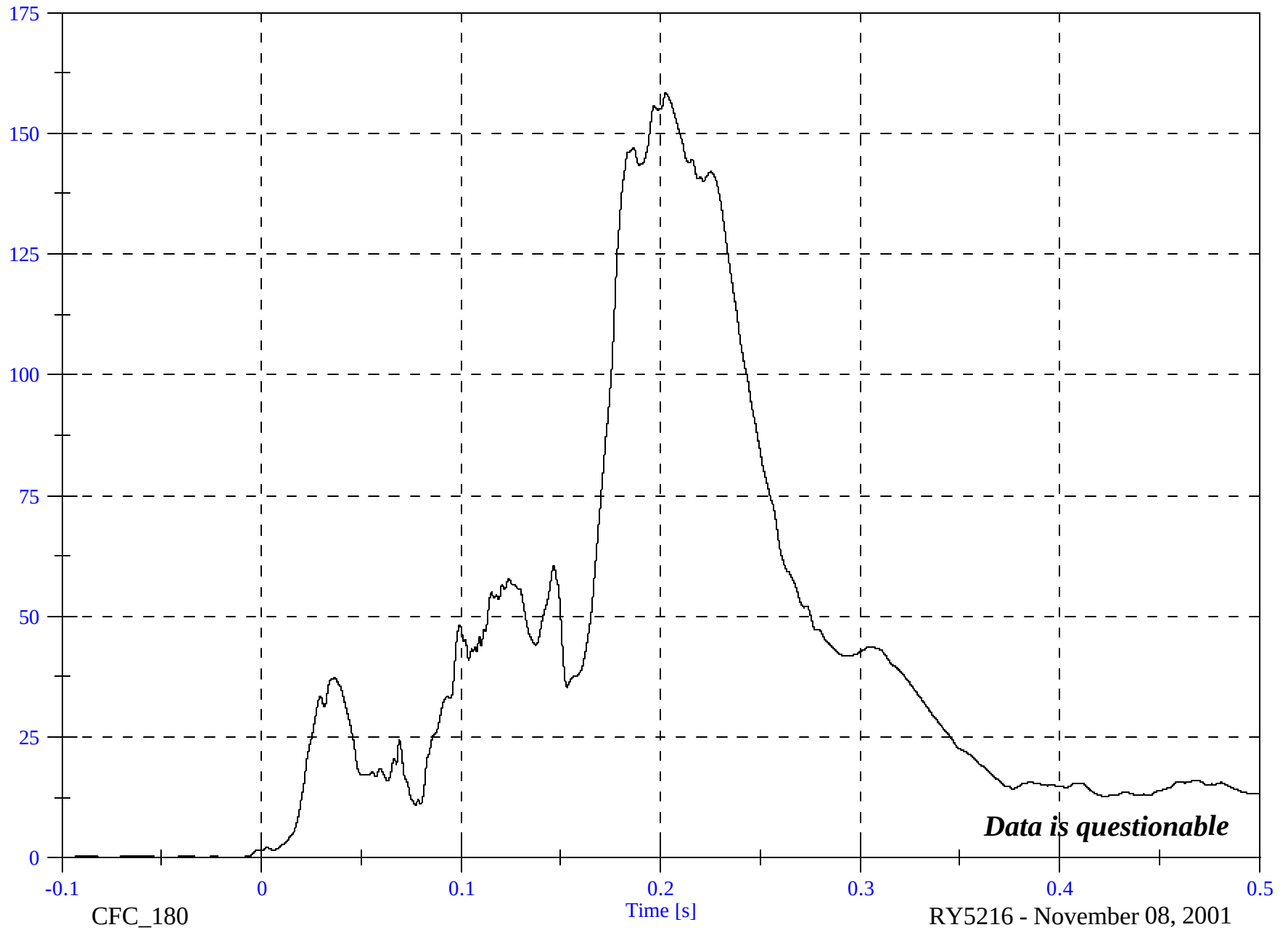


40% Frontal Offset Test #10 - 2000 Nissan Altima

P1 Chest A Resultant

Max: 158.3 [g] at 0.203 [s]

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



B-34

8413-66

CFC_180

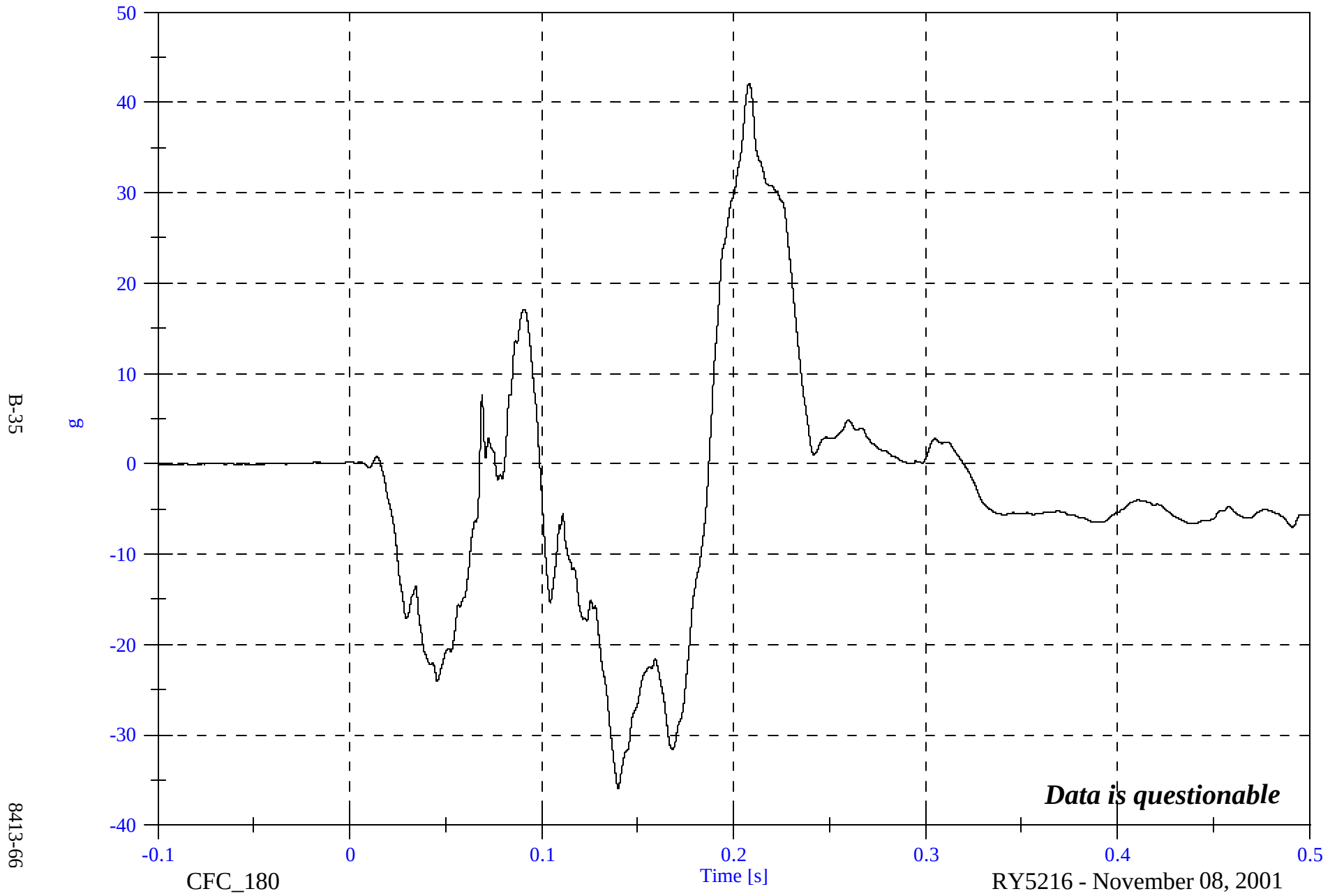
RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

P1 Chest Red Ax

Max: 42.1 [g] at 0.208 [s]

Min: -35.9 [g] at 0.140 [s]



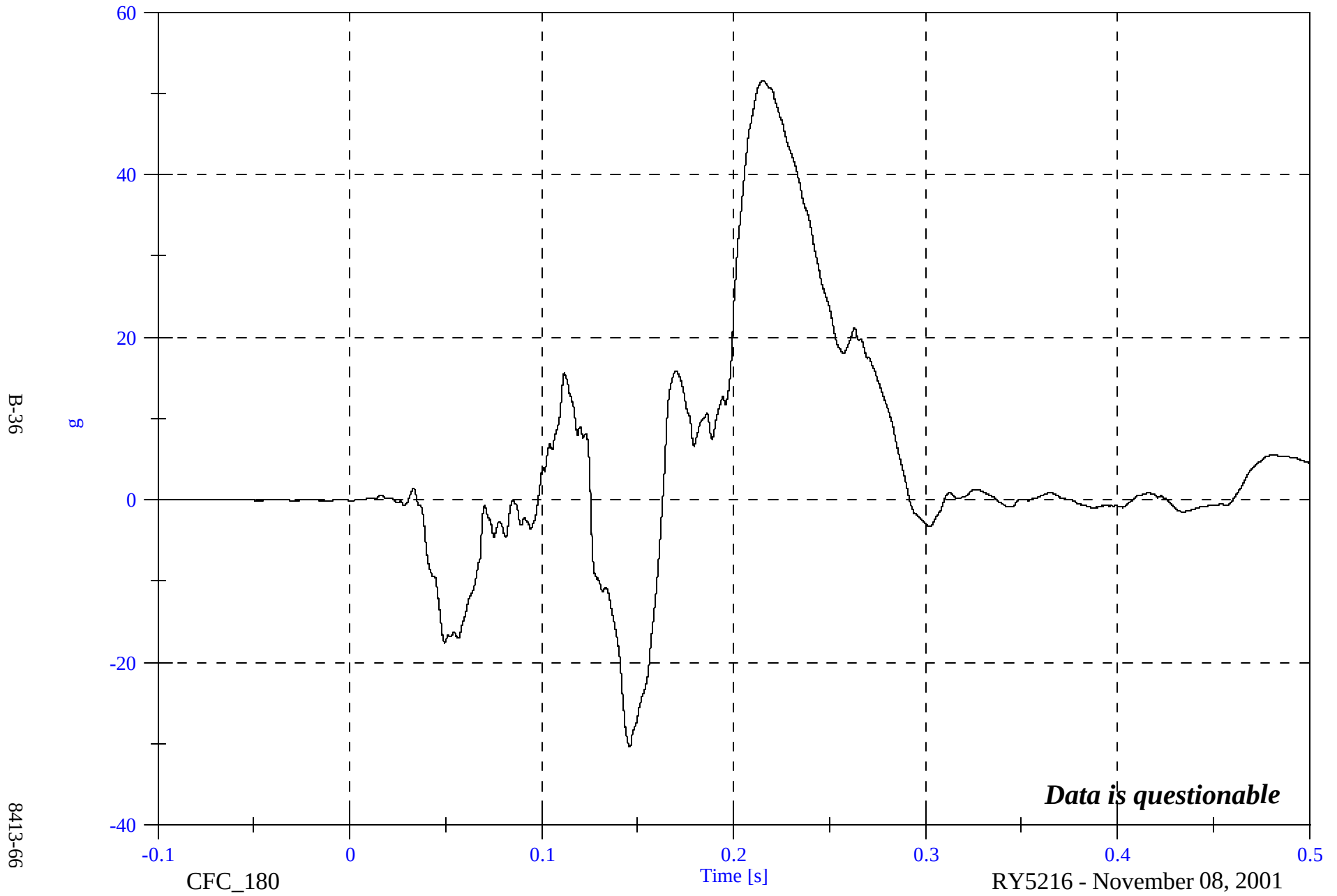
8413-66

40% Frontal Offset Test #10 - 2000 Nissan Altima

P1 Chest Red Ay

Max: 51.6 [g] at 0.215 [s]

Min: -30.3 [g] at 0.146 [s]



8413-66

40% Frontal Offset Test #10 - 2000 Nissan Altima

Max: 124.0 [g] at 0.203 [s]

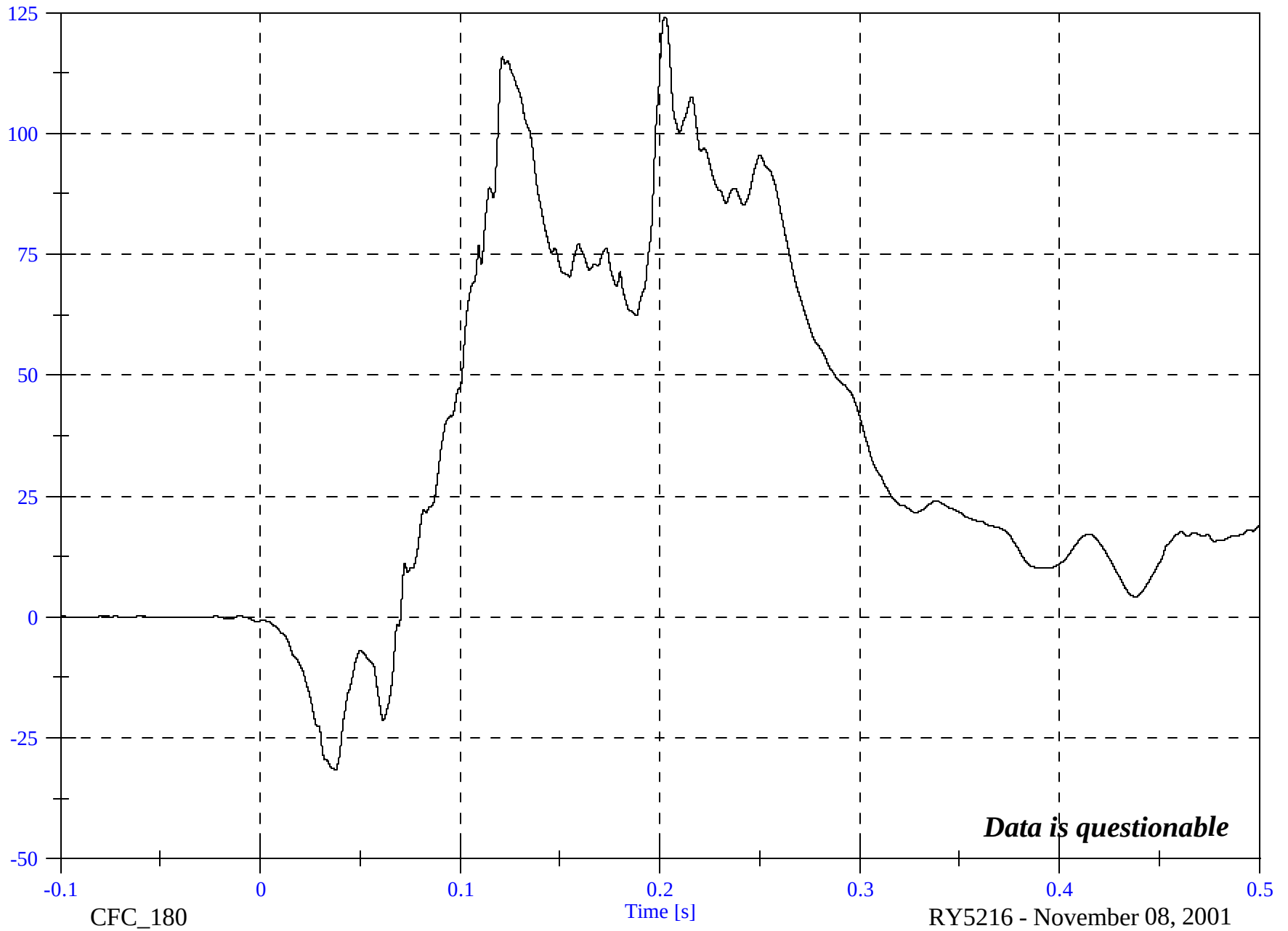
P1 Chest Red Az

Min: -31.6 [g] at 0.038 [s]

B-37

g

8413-66

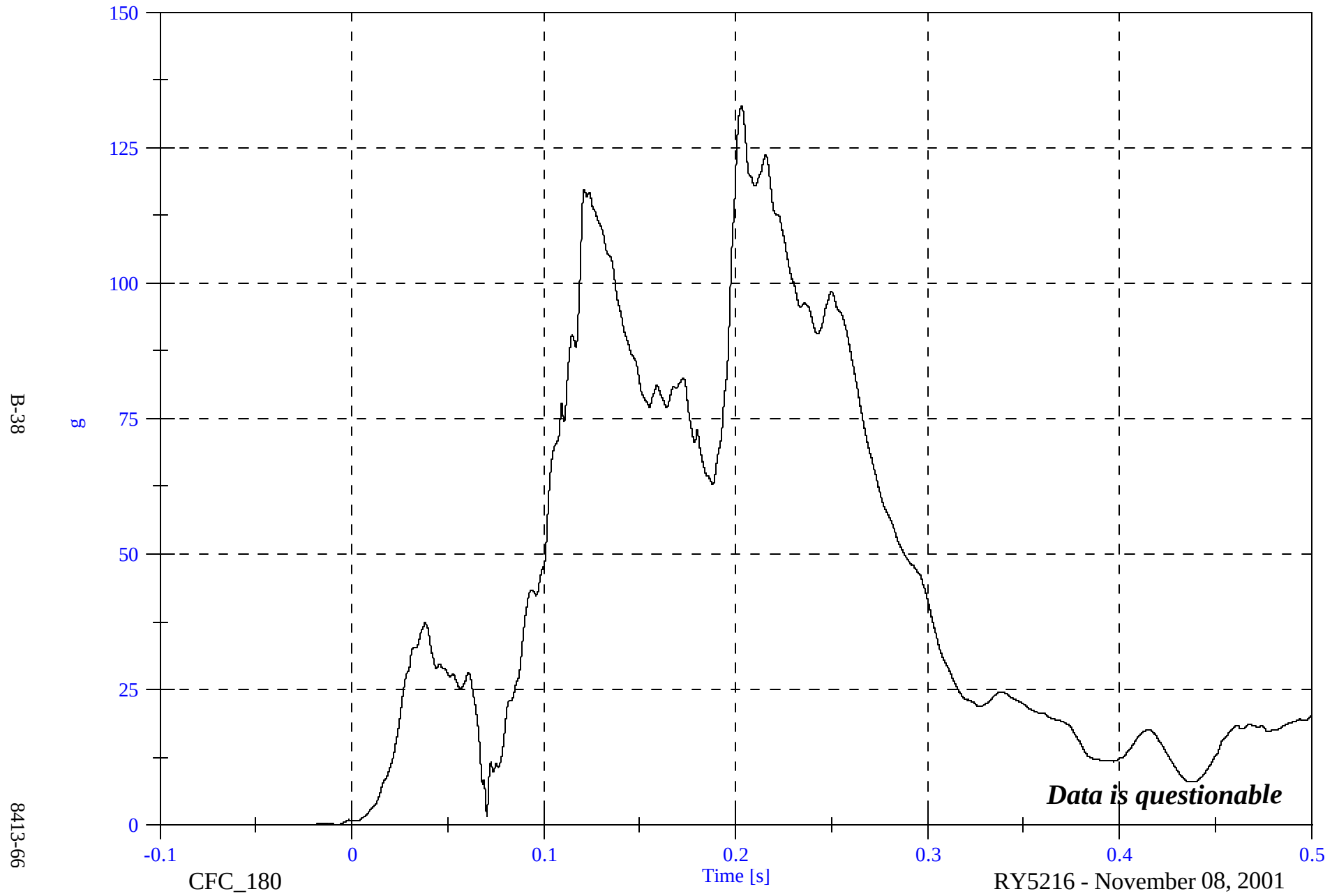


40% Frontal Offset Test #10 - 2000 Nissan Altima

P1 Chest Red A Resultant

Max: 132.6 [g] at 0.203 [s]

Min: 0.0 [g] at -0.053 [s]

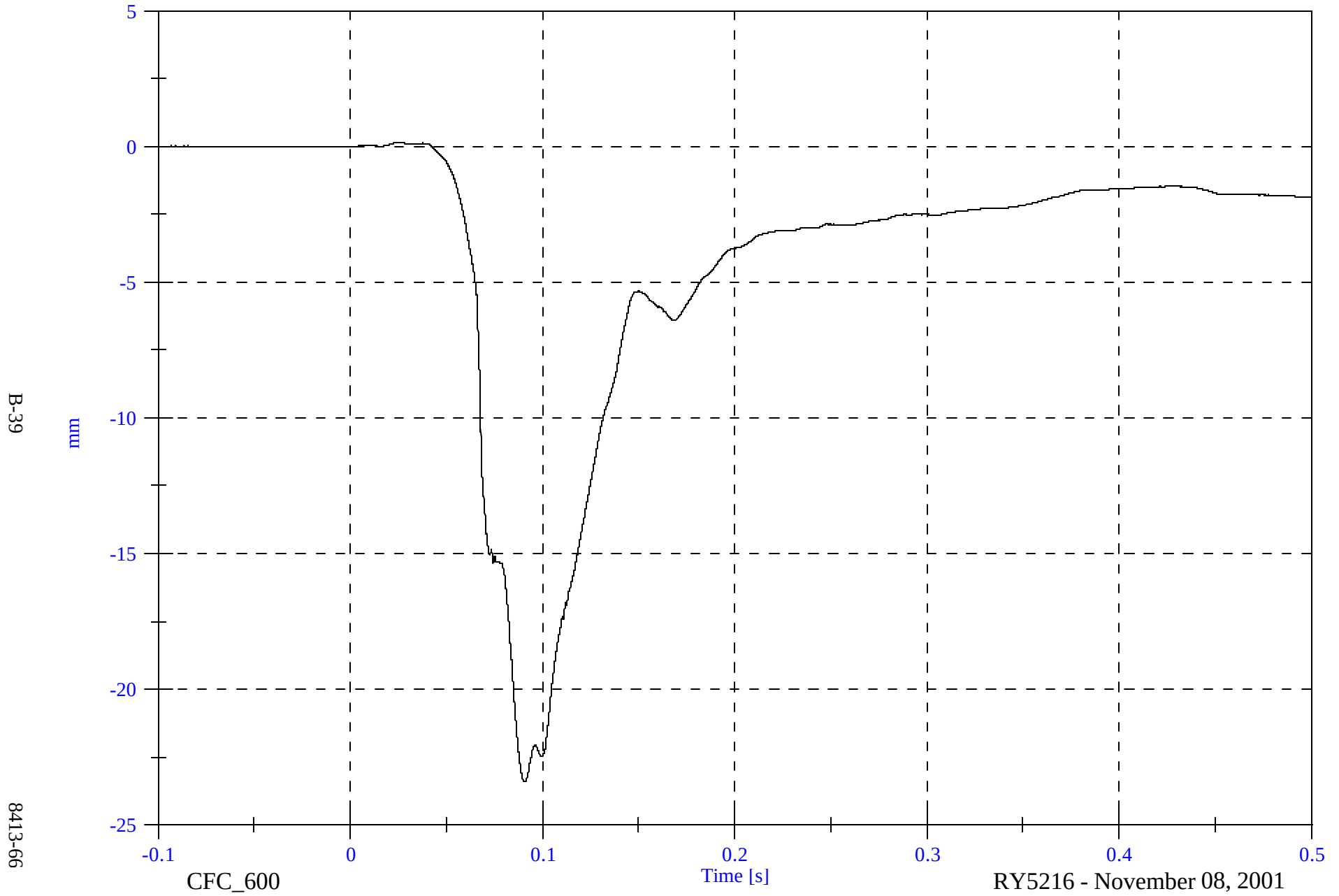


40% Frontal Offset Test #10 - 2000 Nissan Altima

P1 Chest Displacement

Max: 0.1 [mm] at 0.024 [s]

Min: -23.4 [mm] at 0.090 [s]

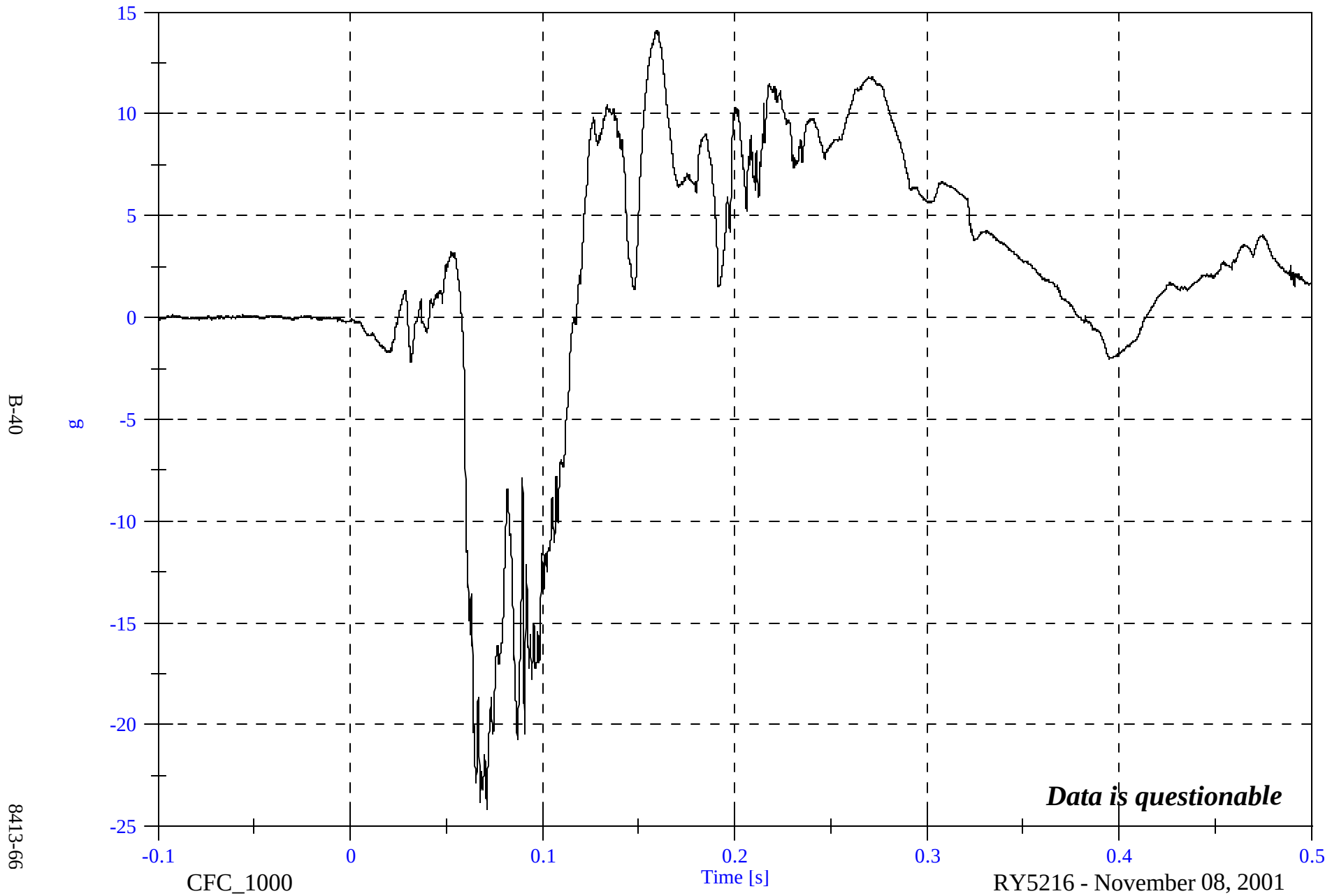


40% Frontal Offset Test #10 - 2000 Nissan Altima

Max: 14.1 [g] at 0.159 [s]

Min: -24.1 [g] at 0.071 [s]

P1 Pelvic Ax

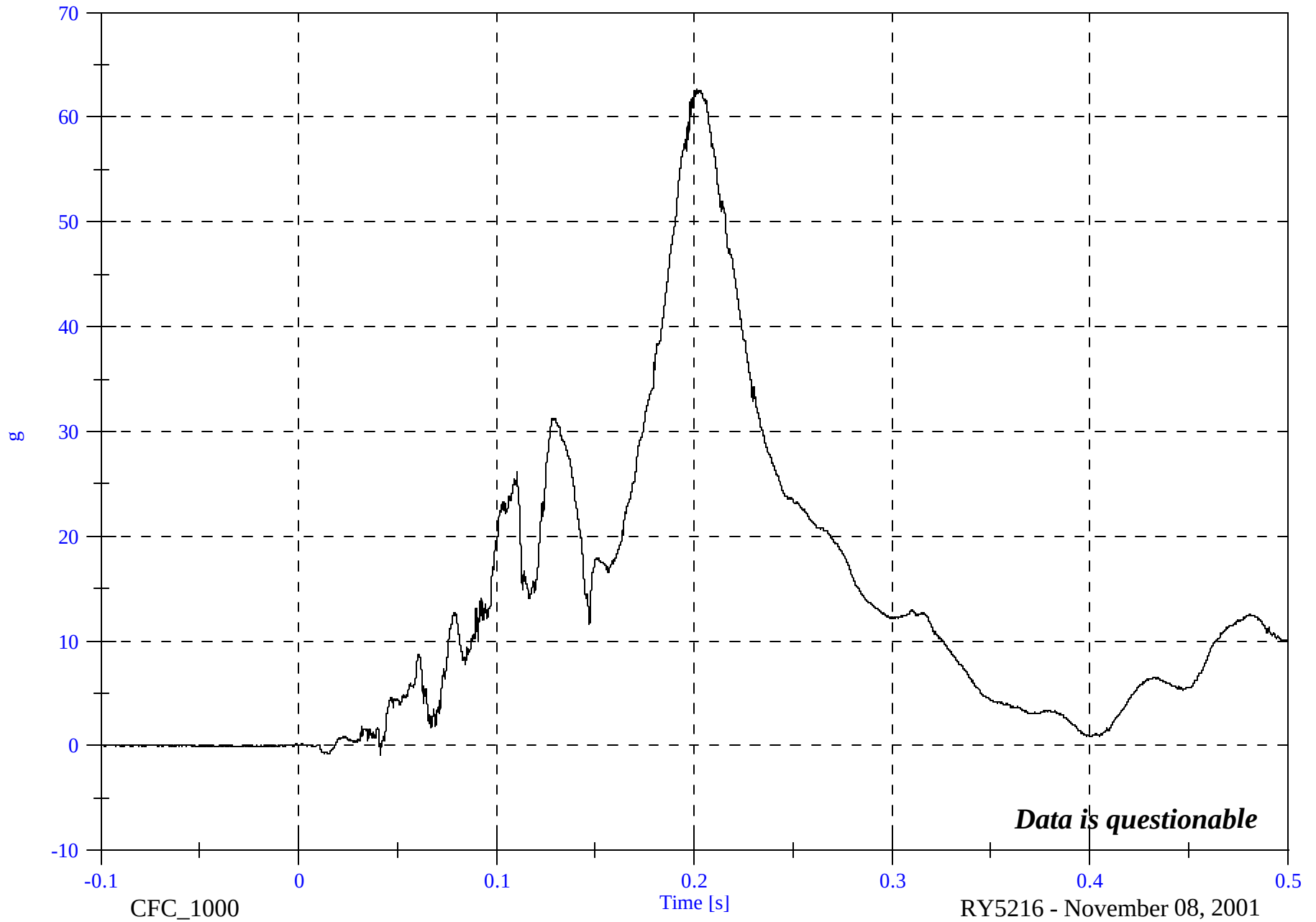


40% Frontal Offset Test #10 - 2000 Nissan Altima

Max: 62.6 [g] at 0.201 [s]

Min: -0.9 [g] at 0.041 [s]

P1 Pelvic Ay



B-41

8413-66

CFC_1000

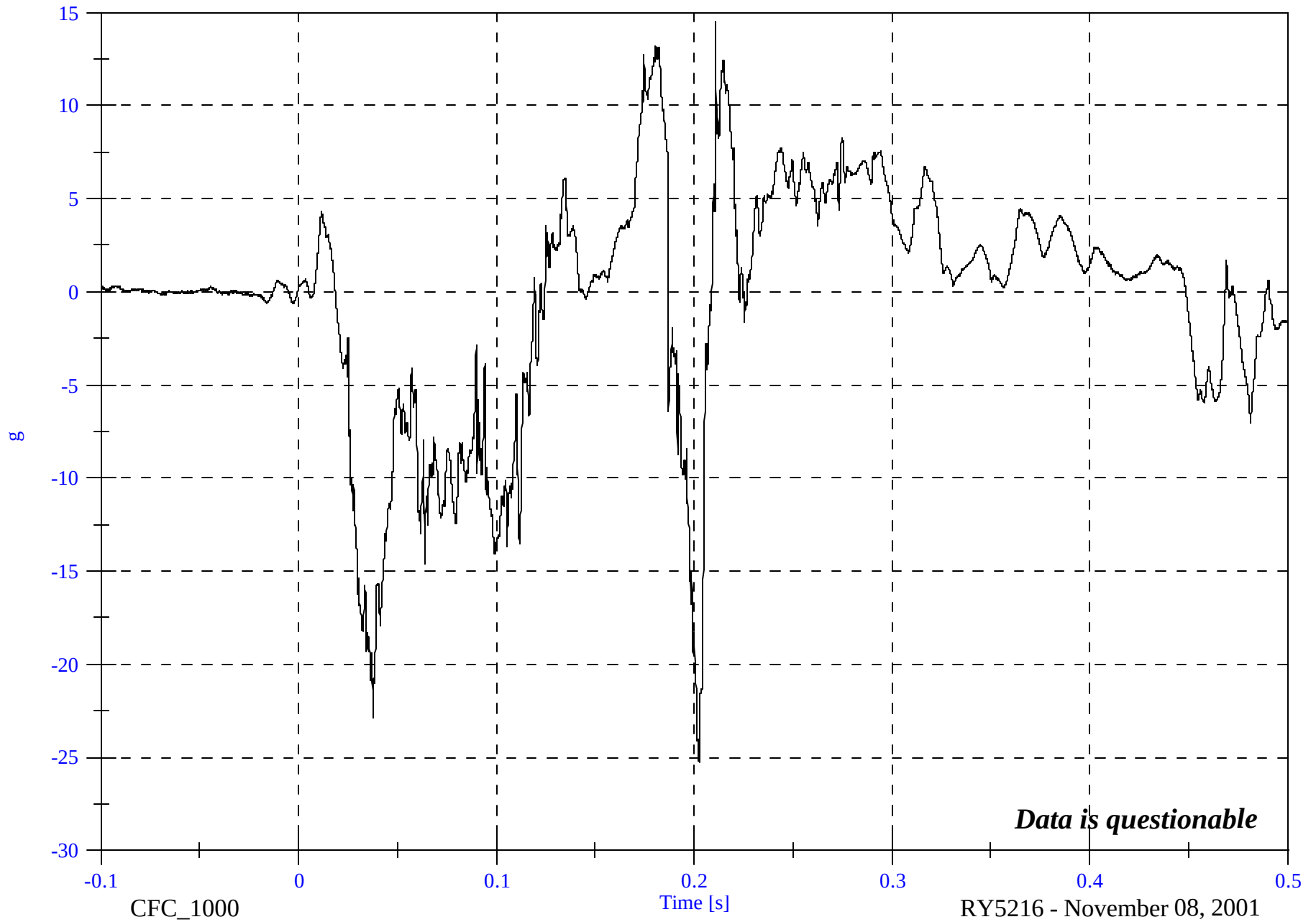
RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

Max: 14.5 [g] at 0.211 [s]

Min: -25.2 [g] at 0.202 [s]

P1 Pelvic Az



B-42

8413-66

CFC_1000

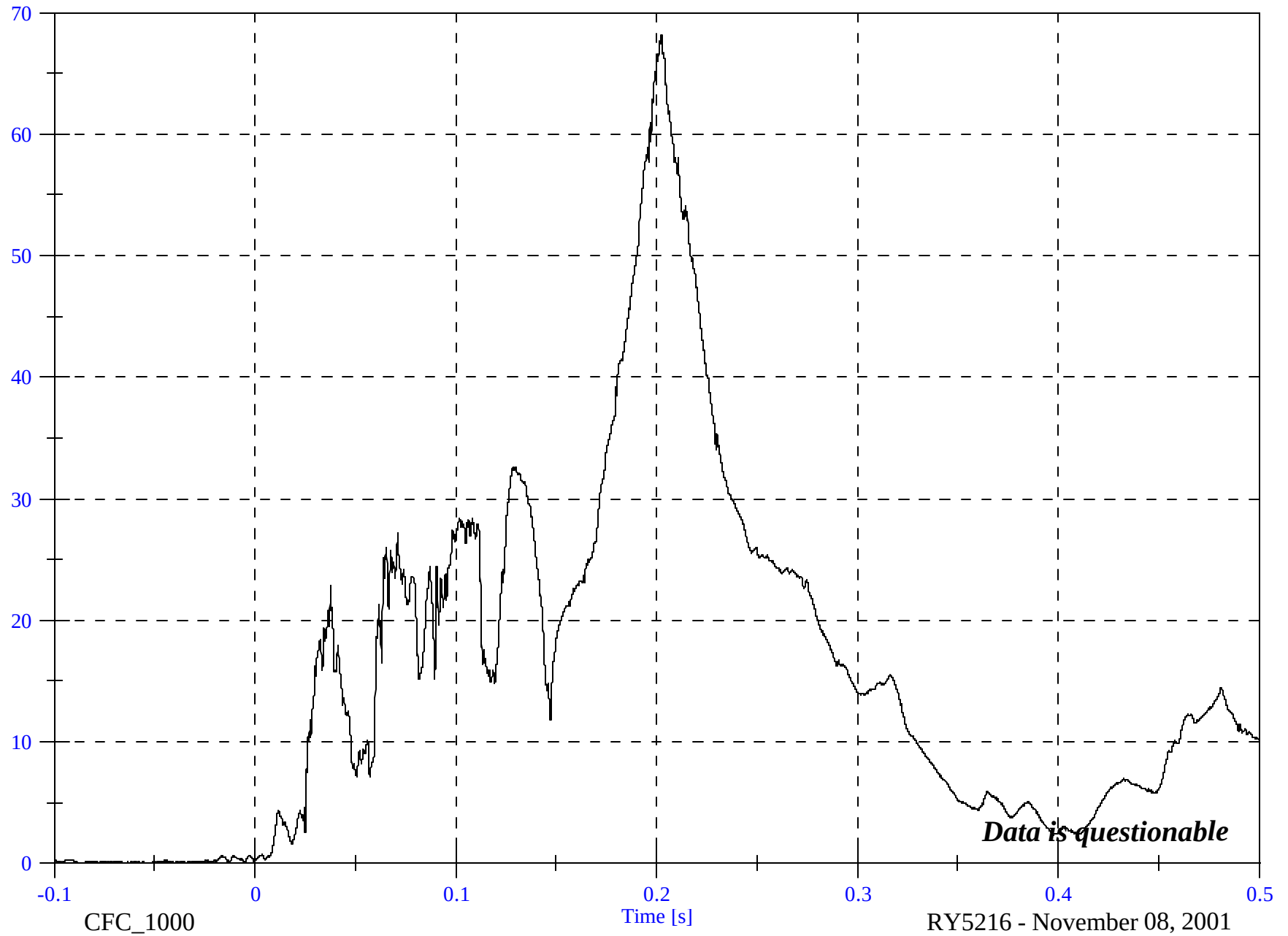
RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

P1 Pelvic A Resultant

Max: 68.1 [g] at 0.202 [s]

Min: 0.0 [g] at -0.065 [s]



B-43

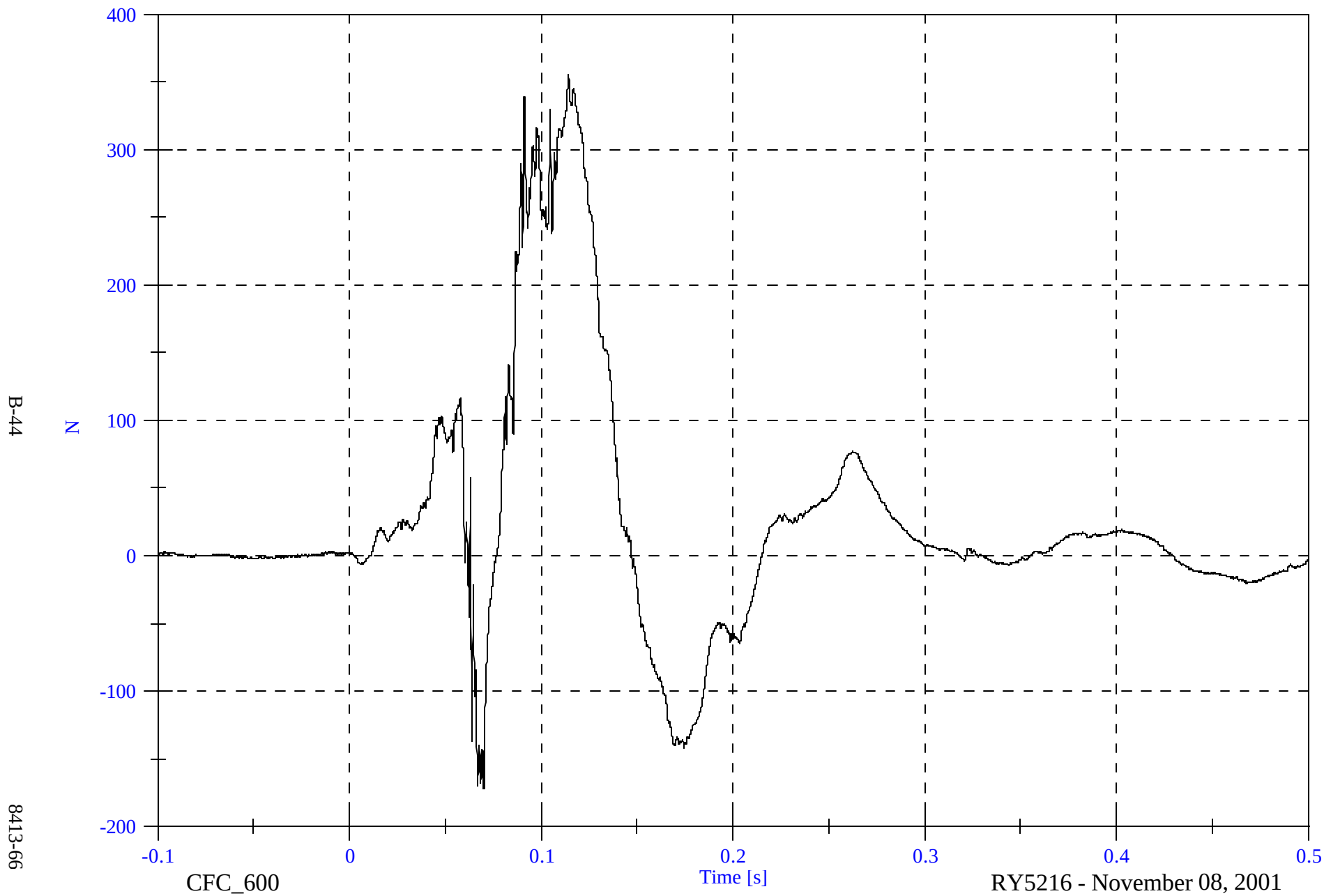
8413-66

40% Frontal Offset Test #10 - 2000 Nissan Altima

P1 Left Femur Fx

Max: 355.2 [N] at 0.114 [s]

Min: -172.1 [N] at 0.070 [s]

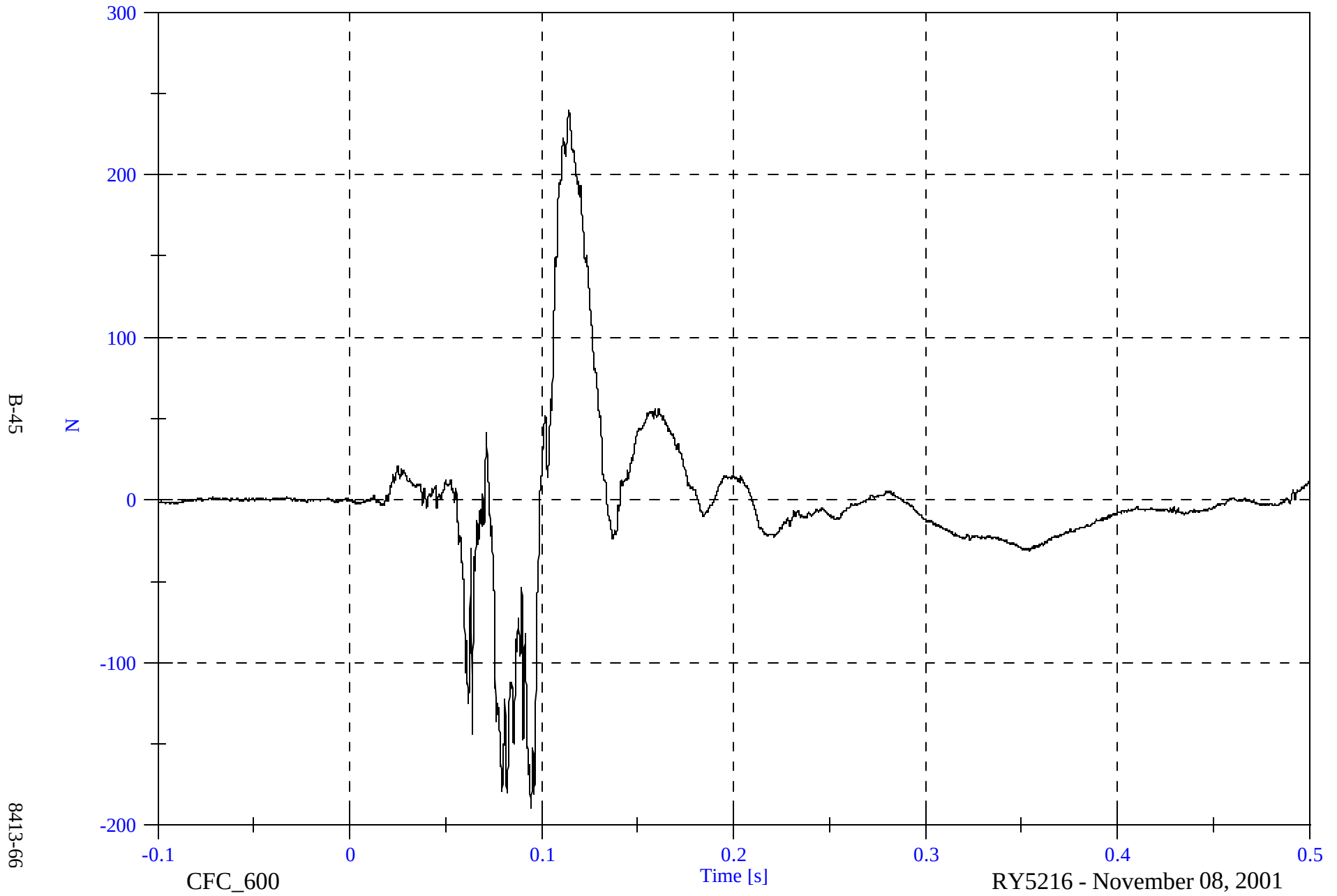


40% Frontal Offset Test #10 - 2000 Nissan Altima

Max: 239.8 [N] at 0.114 [s]

P1 Left Femur Fy

Min: -189.8 [N] at 0.094 [s]

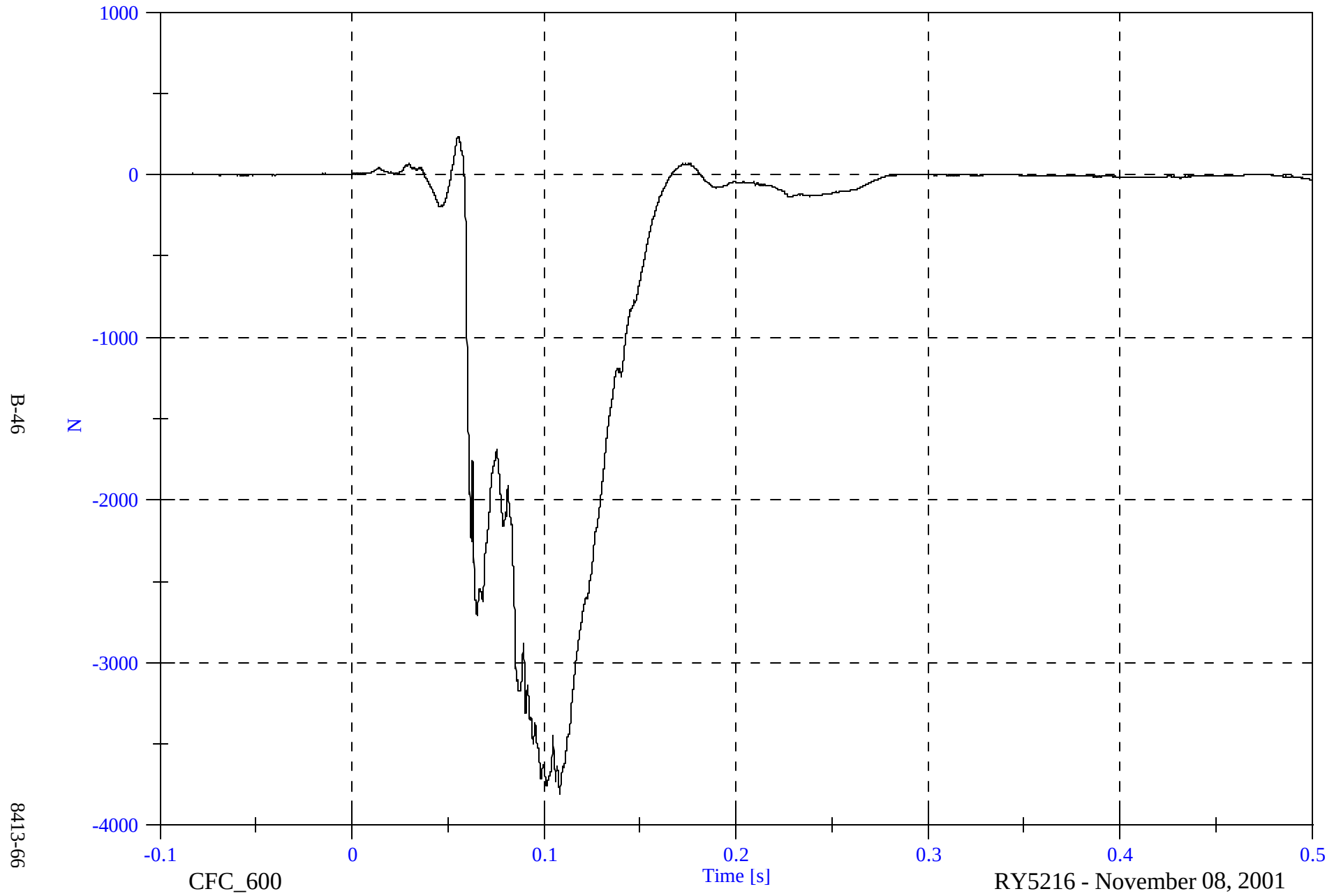


40% Frontal Offset Test #10 - 2000 Nissan Altima

Max: 235.8 [N] at 0.055 [s]

P1 Left Femur Fz

Min: -3804.4 [N] at 0.108 [s]

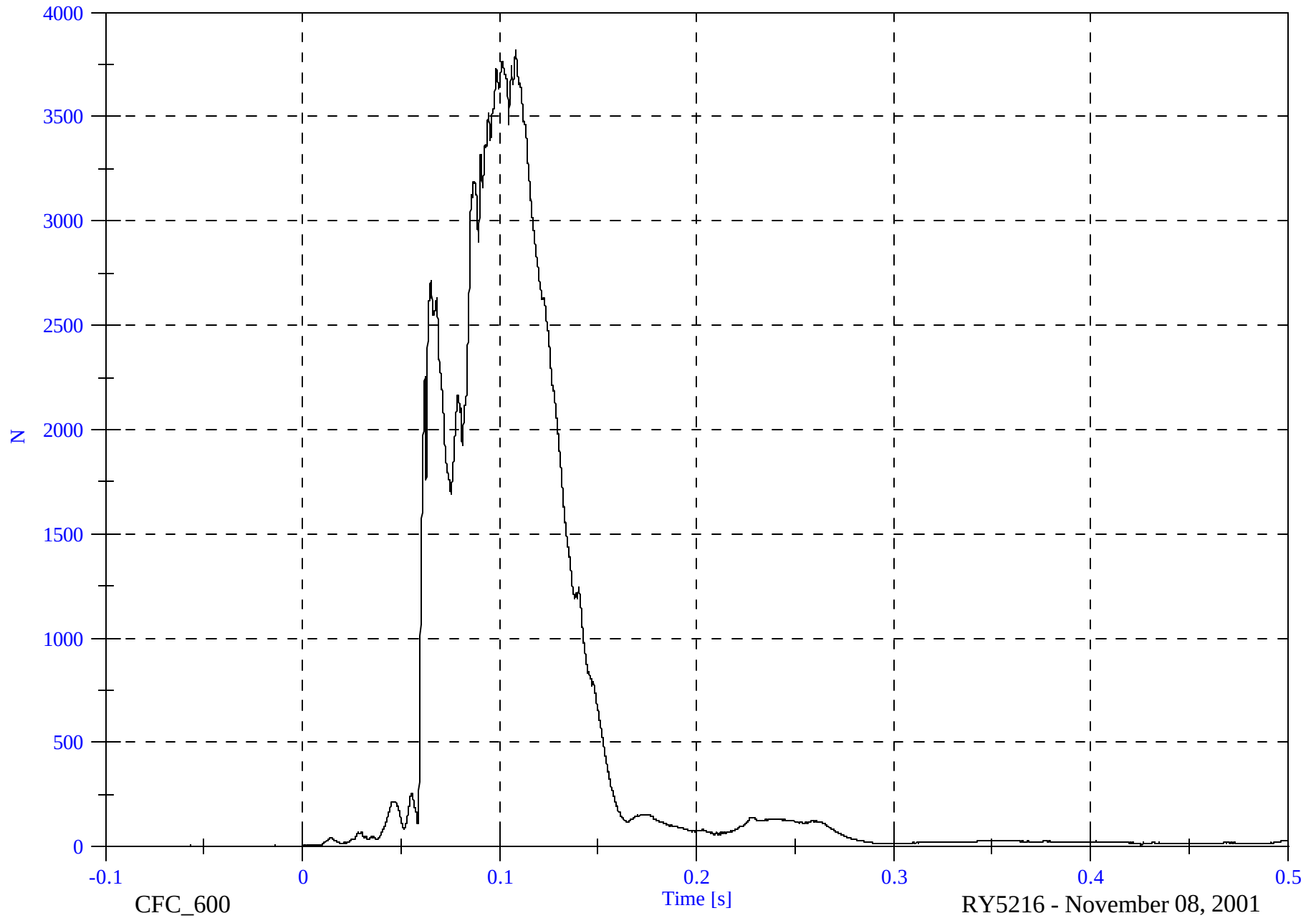


40% Frontal Offset Test #10 - 2000 Nissan Altima

P1 Left Femur F Resultant

Max: 3819.6 [N] at 0.108 [s]

Min: 0.3 [N] at -0.076 [s]



B-47

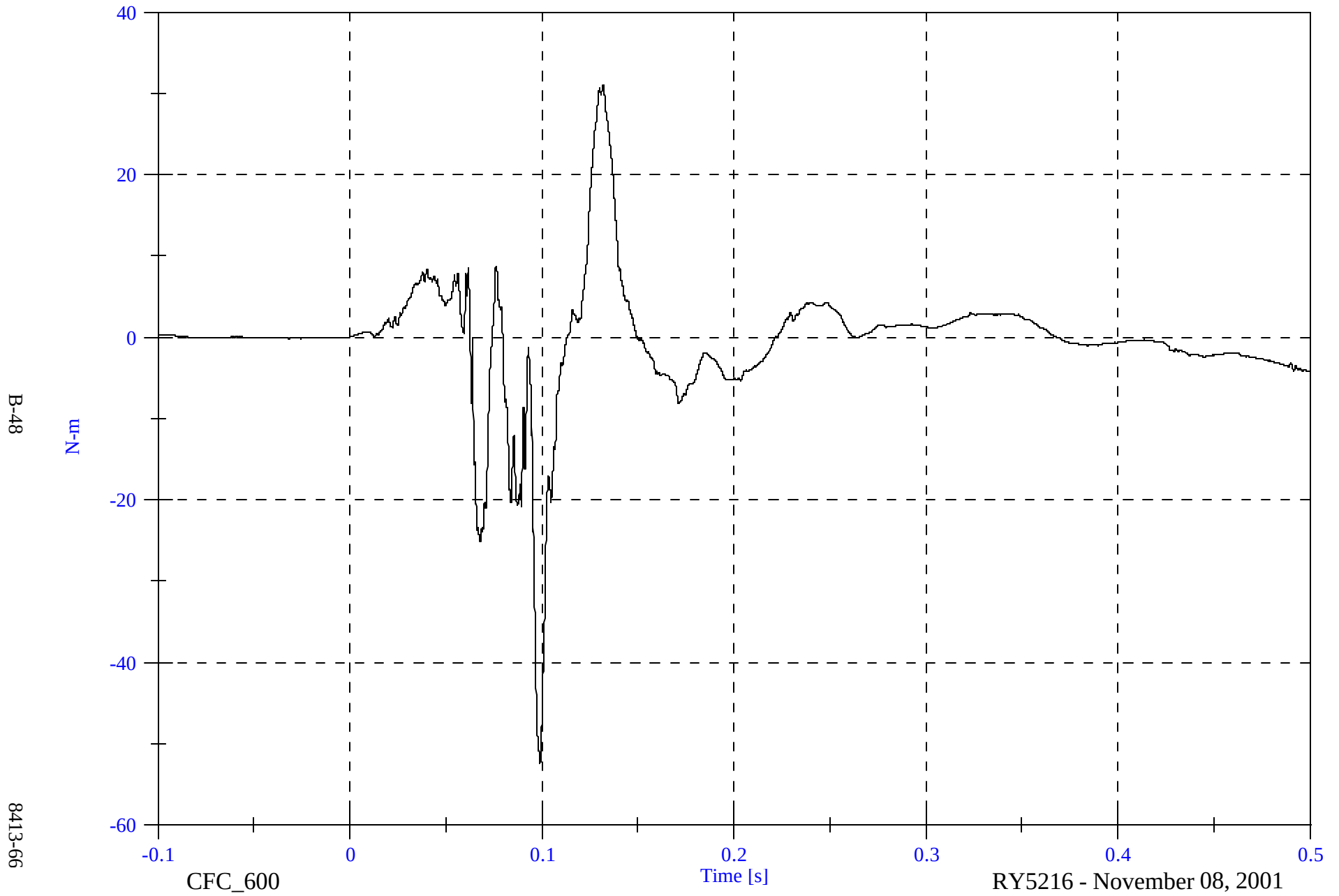
8413-66

40% Frontal Offset Test #10 - 2000 Nissan Altima

P1 Left Femur Mx

Max: 31.0 [N-m] at 0.132 [s]

Min: -52.4 [N-m] at 0.099 [s]

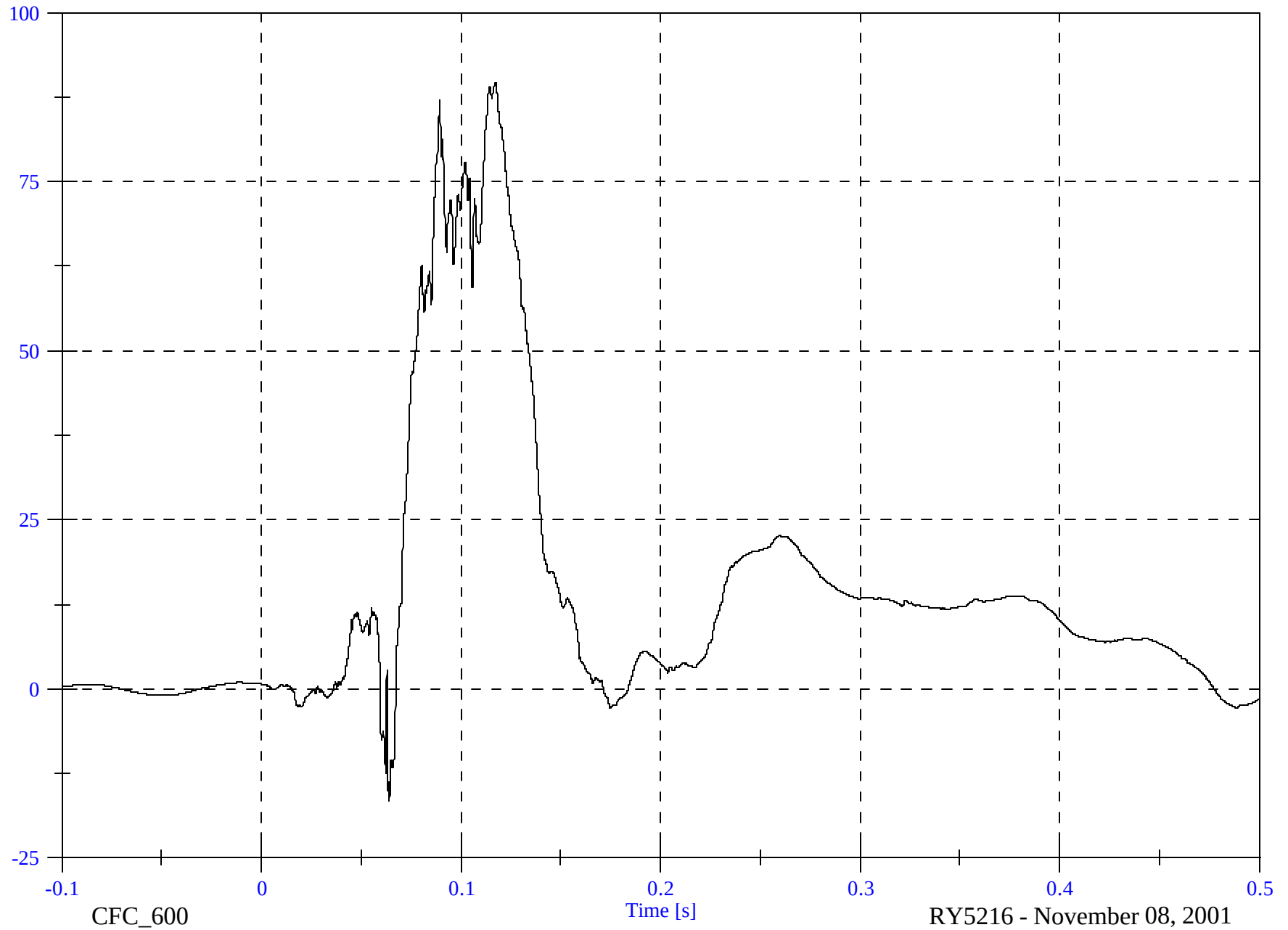


40% Frontal Offset Test #10 - 2000 Nissan Altima

P1 Left Femur My

Max: 89.7 [N-m] at 0.117 [s]

Min: -16.6 [N-m] at 0.064 [s]



B-49

8413-66

CFC_600

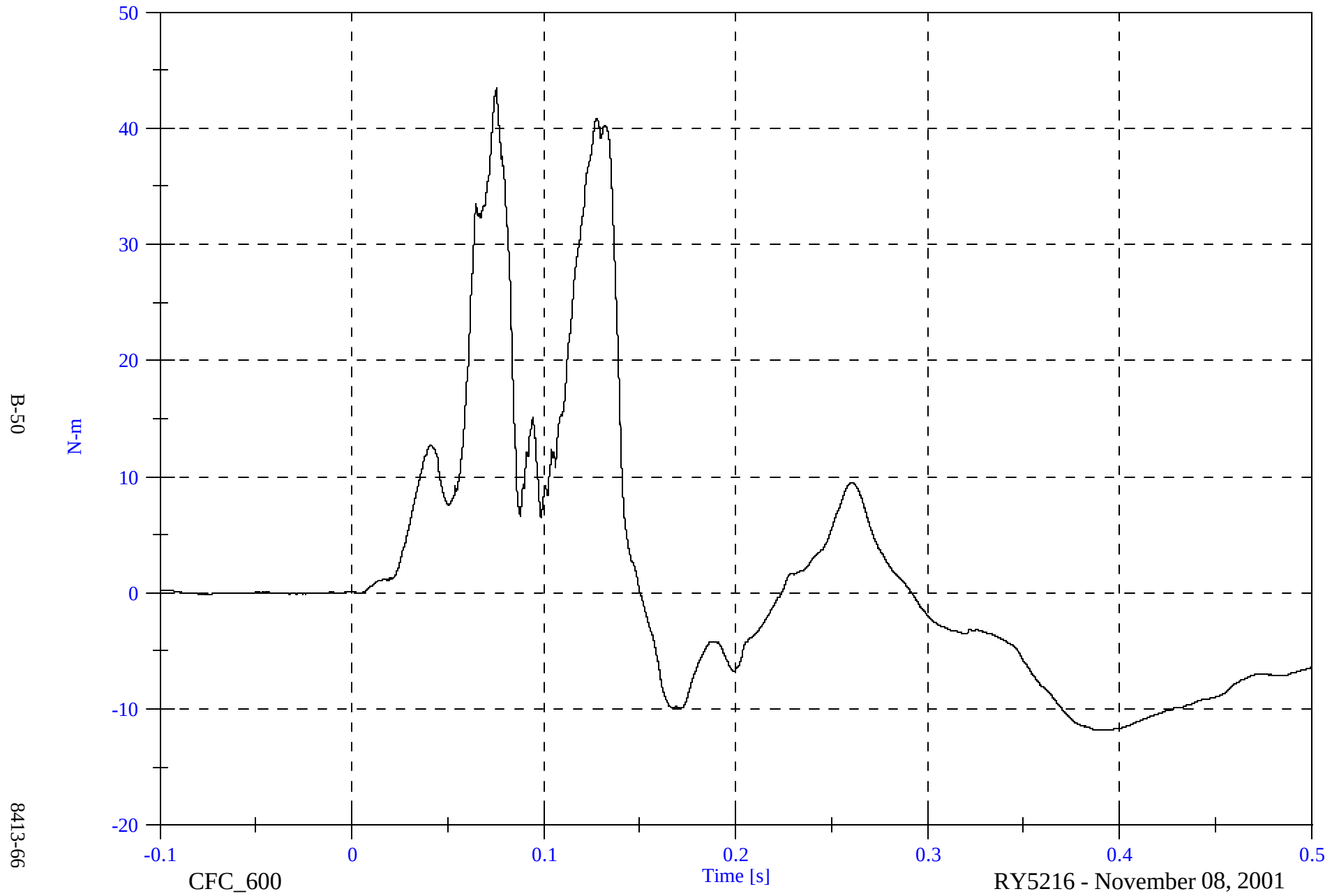
RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

P1 Left Femur Mz

Max: 43.4 [N-m] at 0.075 [s]

Min: -11.8 [N-m] at 0.389 [s]

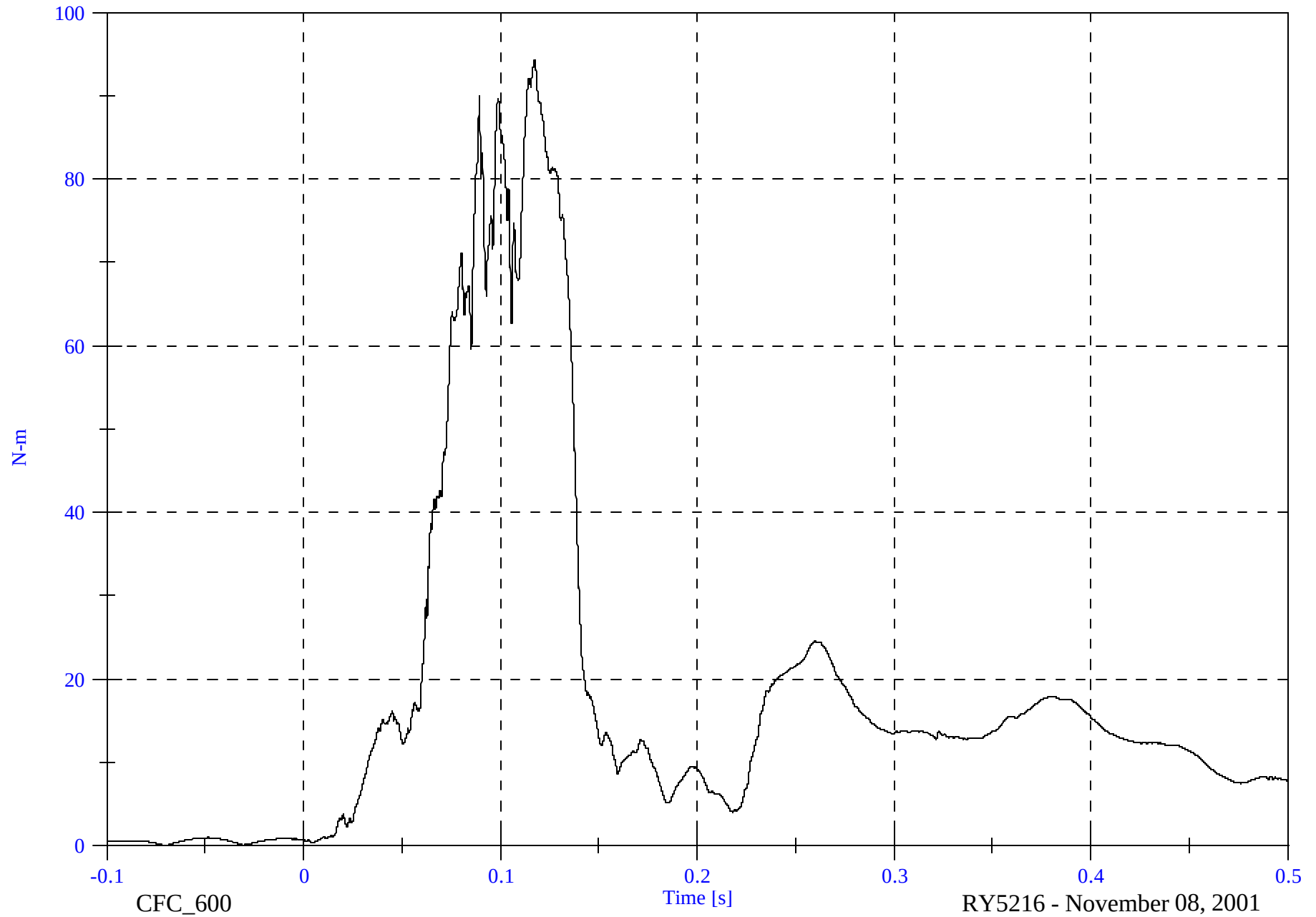


40% Frontal Offset Test #10 - 2000 Nissan Altima

P1 Left Femur M Resultant

Max: 94.3 [N-m] at 0.117 [s]

Min: 0.1 [N-m] at -0.070 [s]



B-51

8413-66

CFC_600

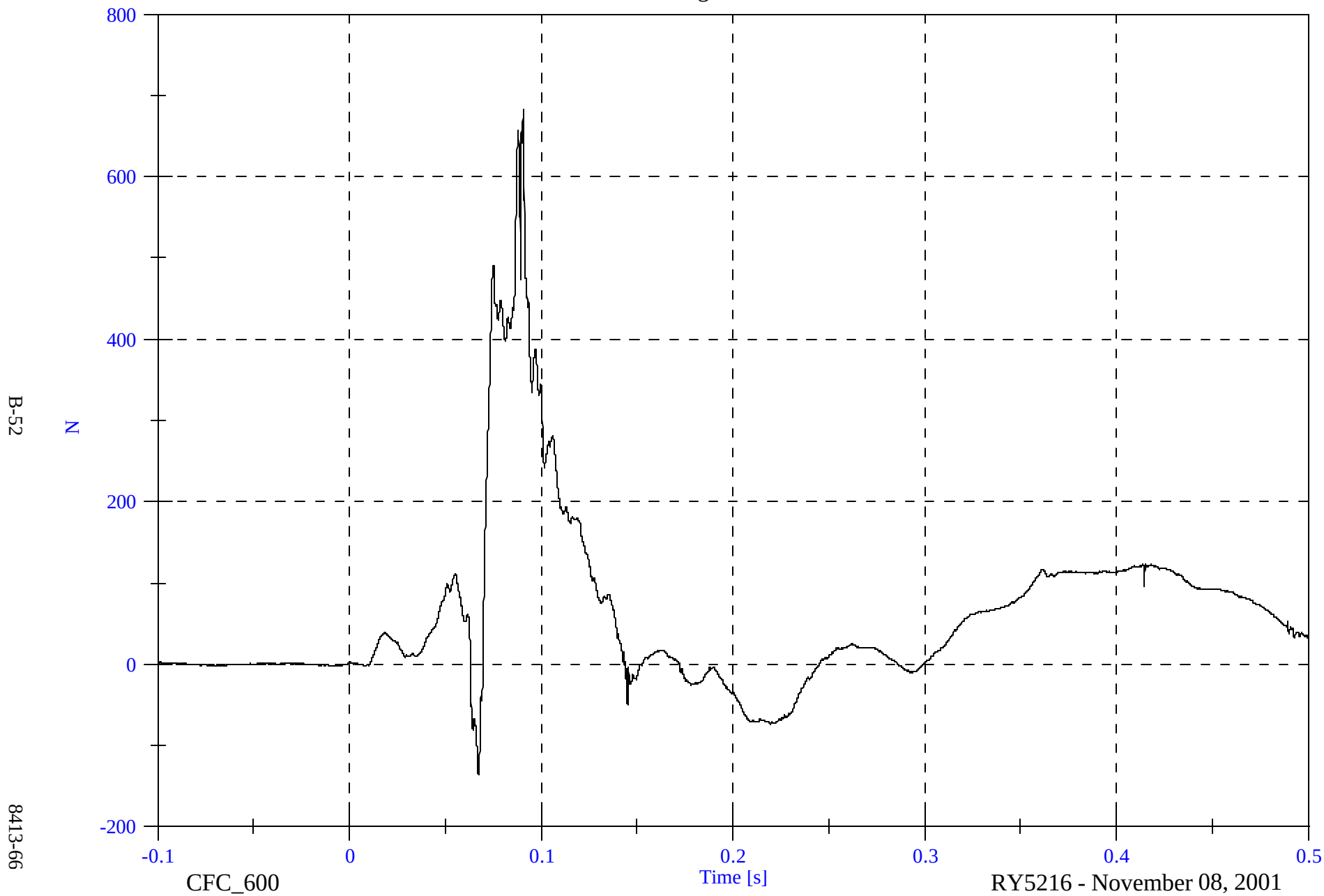
RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

P1 Right Femur Fx

Max: 682.7 [N] at 0.091 [s]

Min: -135.3 [N] at 0.067 [s]

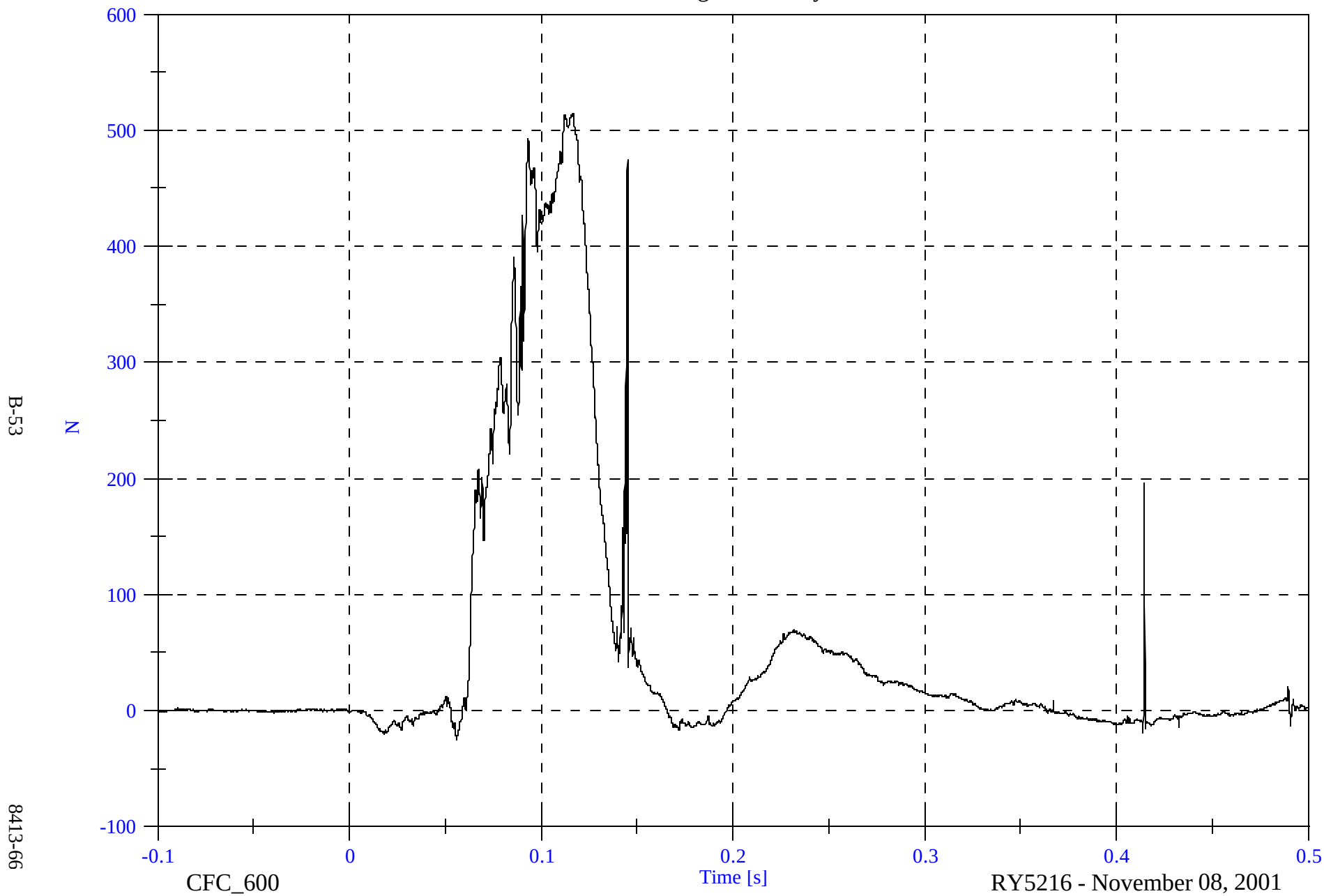


40% Frontal Offset Test #10 - 2000 Nissan Altima

P1 Right Femur Fy

Max: 514.6 [N] at 0.117 [s]

Min: -25.3 [N] at 0.056 [s]

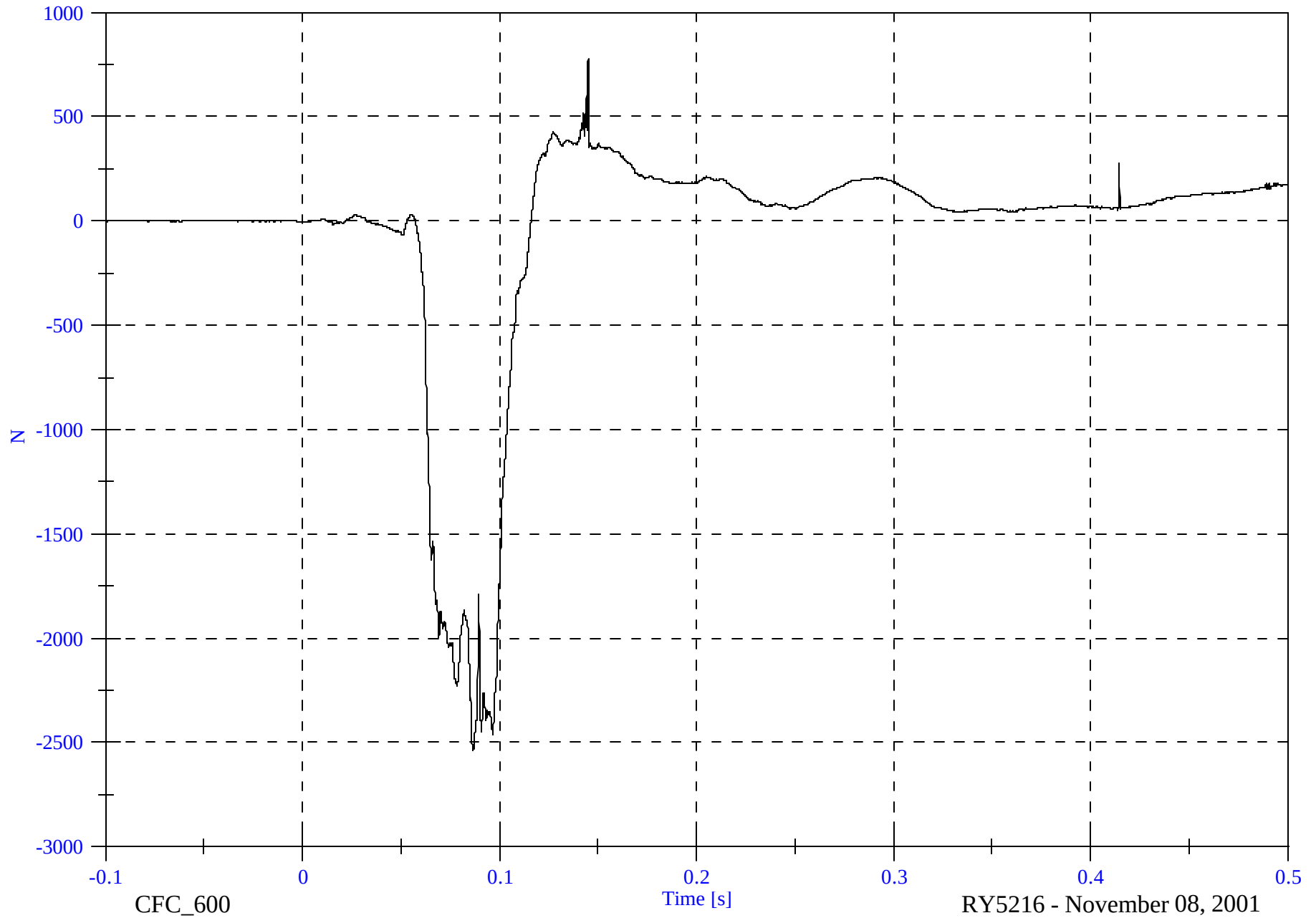


40% Frontal Offset Test #10 - 2000 Nissan Altima

P1 Right Femur Fz

Max: 776.7 [N] at 0.145 [s]

Min: -2535.3 [N] at 0.087 [s]



B-54

8413-66

CFC_600

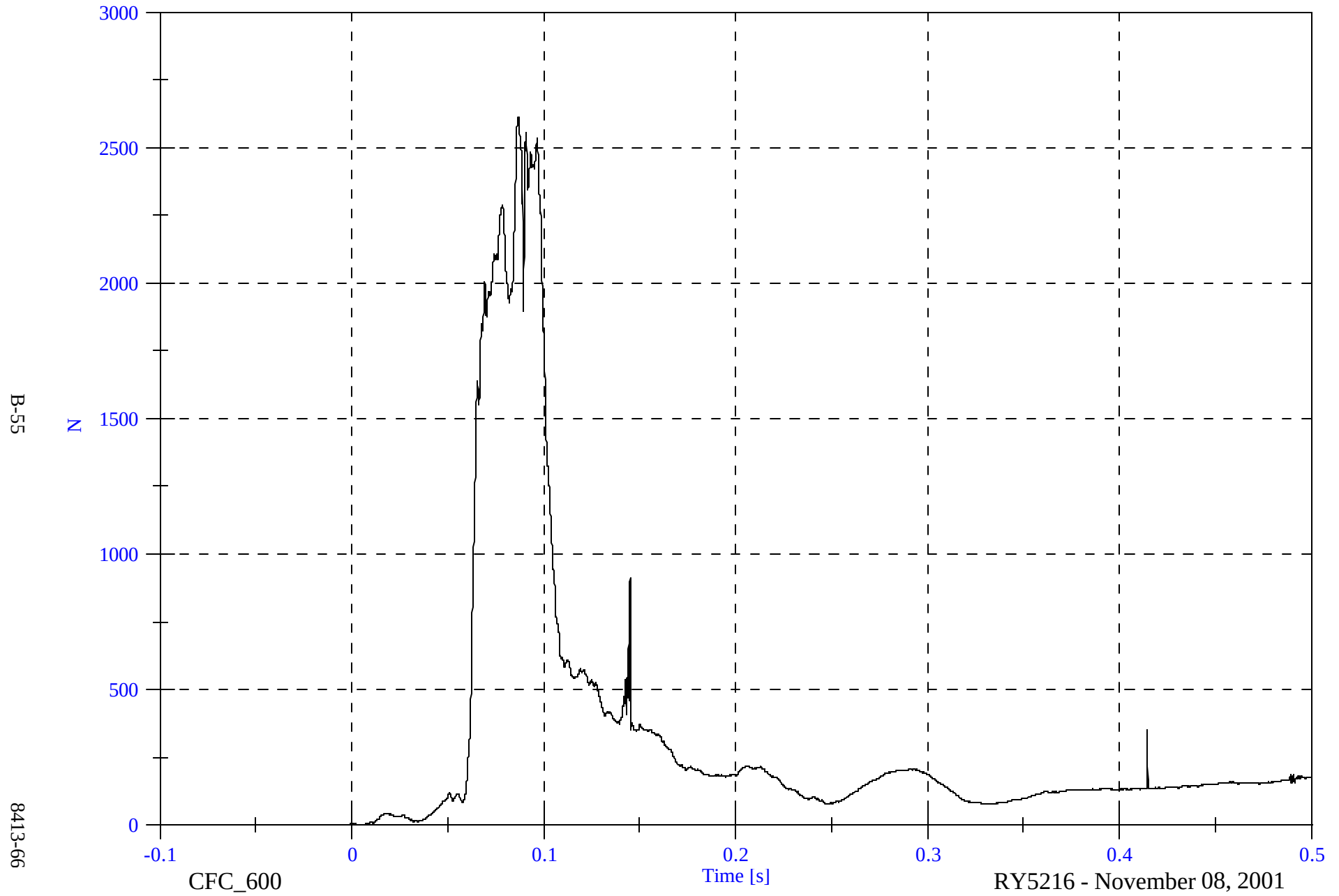
RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

P1 Right Femur F Resultant

Max: 2611.6 [N] at 0.087 [s]

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

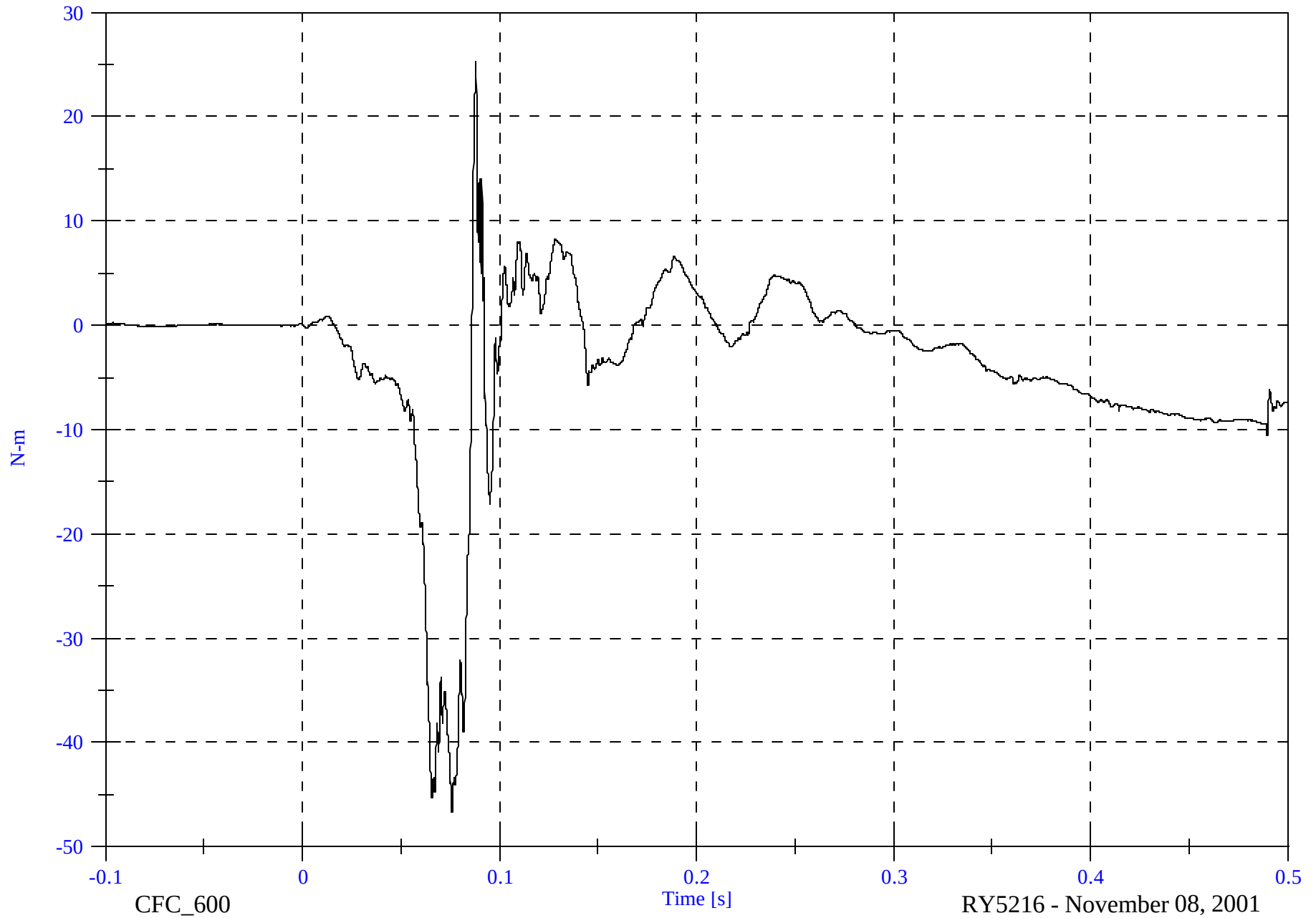


40% Frontal Offset Test #10 - 2000 Nissan Altima

P1 Right Femur Mx

Max: 25.3 [N-m] at 0.088 [s]

Min: -46.7 [N-m] at 0.076 [s]



B-56

8413-66

CFC_600

RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

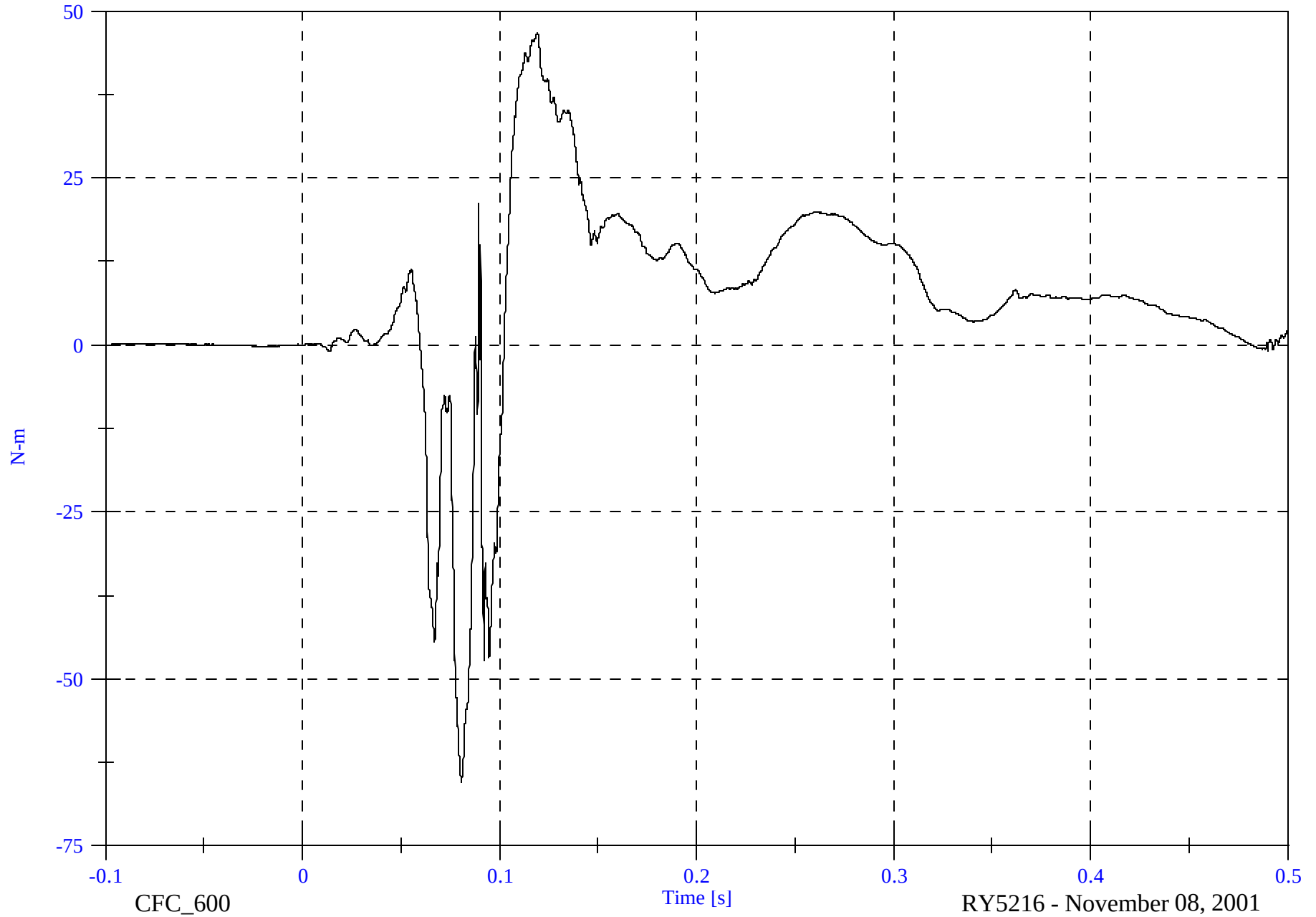
P1 Right Femur My

Max: 46.6 [N-m] at 0.119 [s]

Min: -65.6 [N-m] at 0.081 [s]

B-57

8413-66

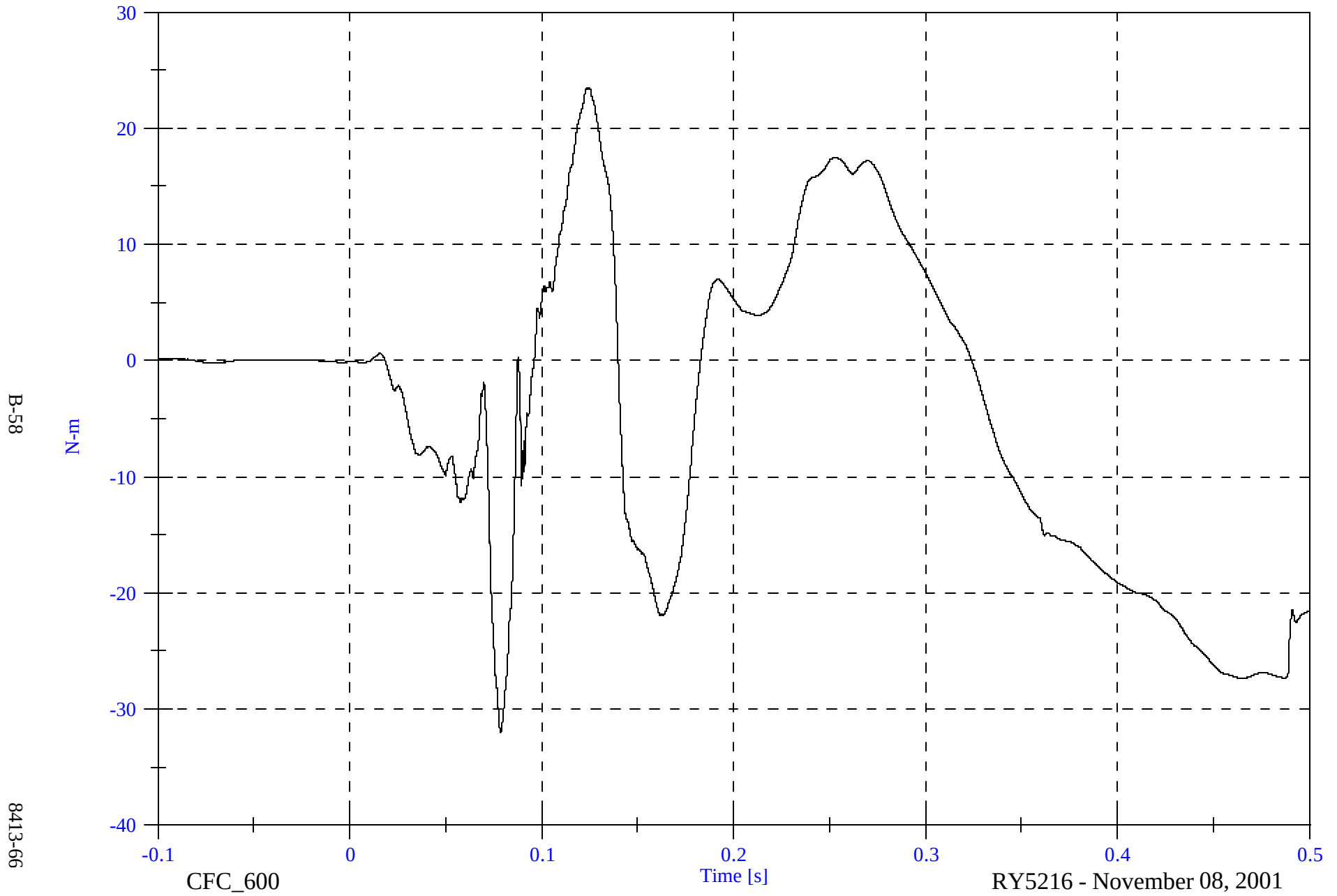


40% Frontal Offset Test #10 - 2000 Nissan Altima

P1 Right Femur Mz

Max: 23.5 [N-m] at 0.123 [s]

Min: -32.0 [N-m] at 0.079 [s]

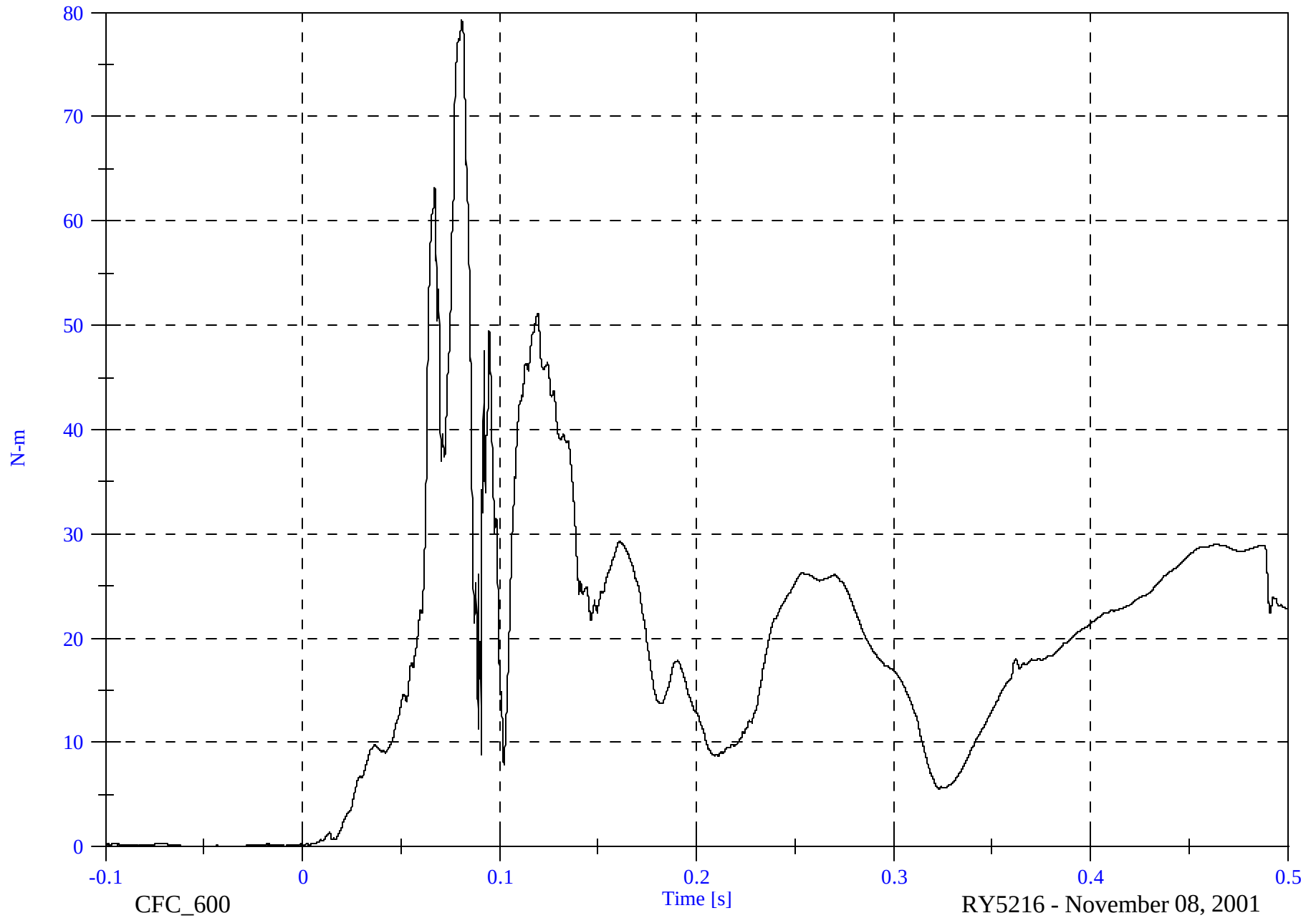


40% Frontal Offset Test #10 - 2000 Nissan Altima

P1 Right Femur M Resultant

Max: 79.2 [N-m] at 0.081 [s]

Min: 0.0 [N-m] at -0.034 [s]



B-59

8413-66

CFC_600

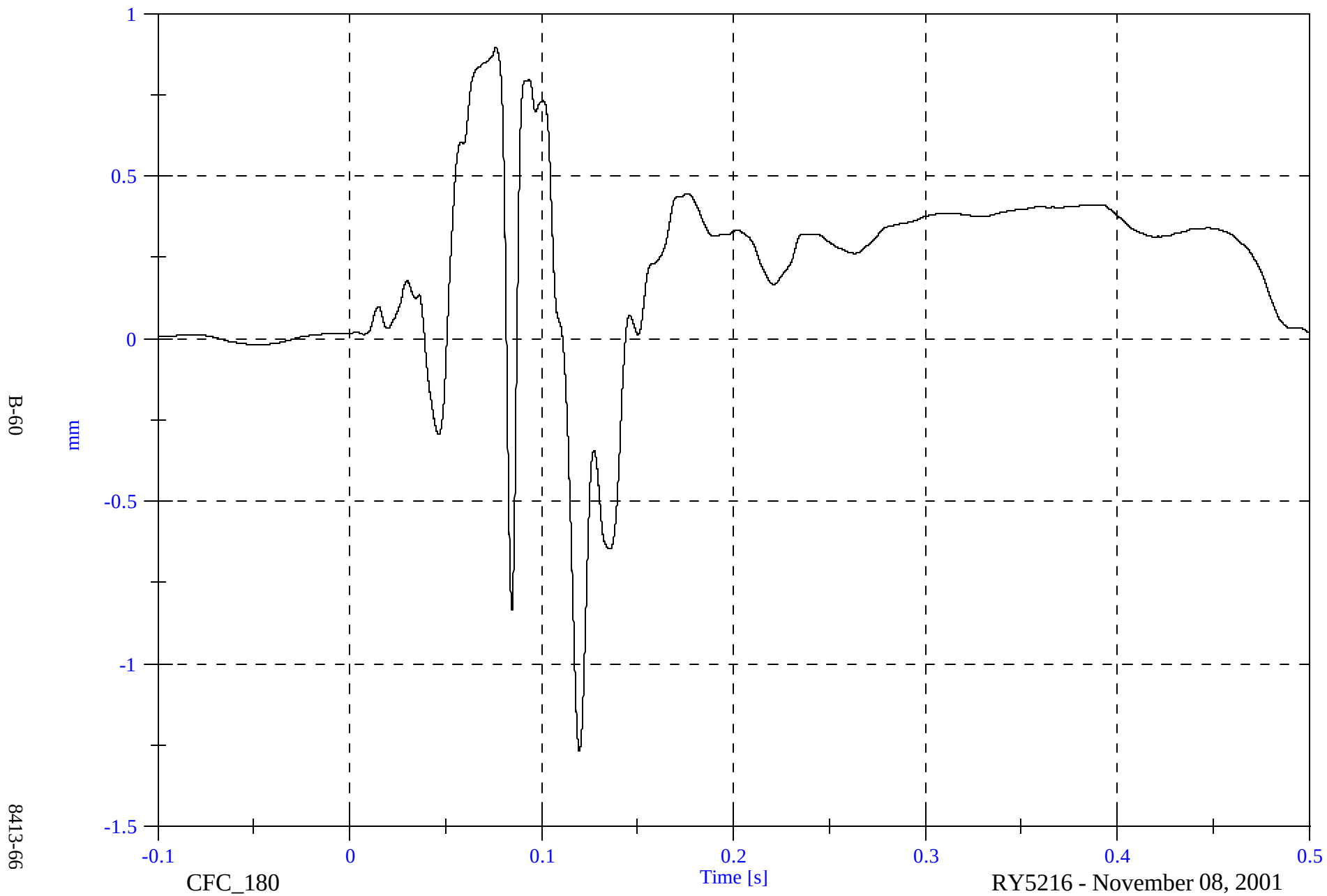
RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

P1 Left Knee Shear

Max: 0.9 [mm] at 0.076 [s]

Min: -1.3 [mm] at 0.120 [s]

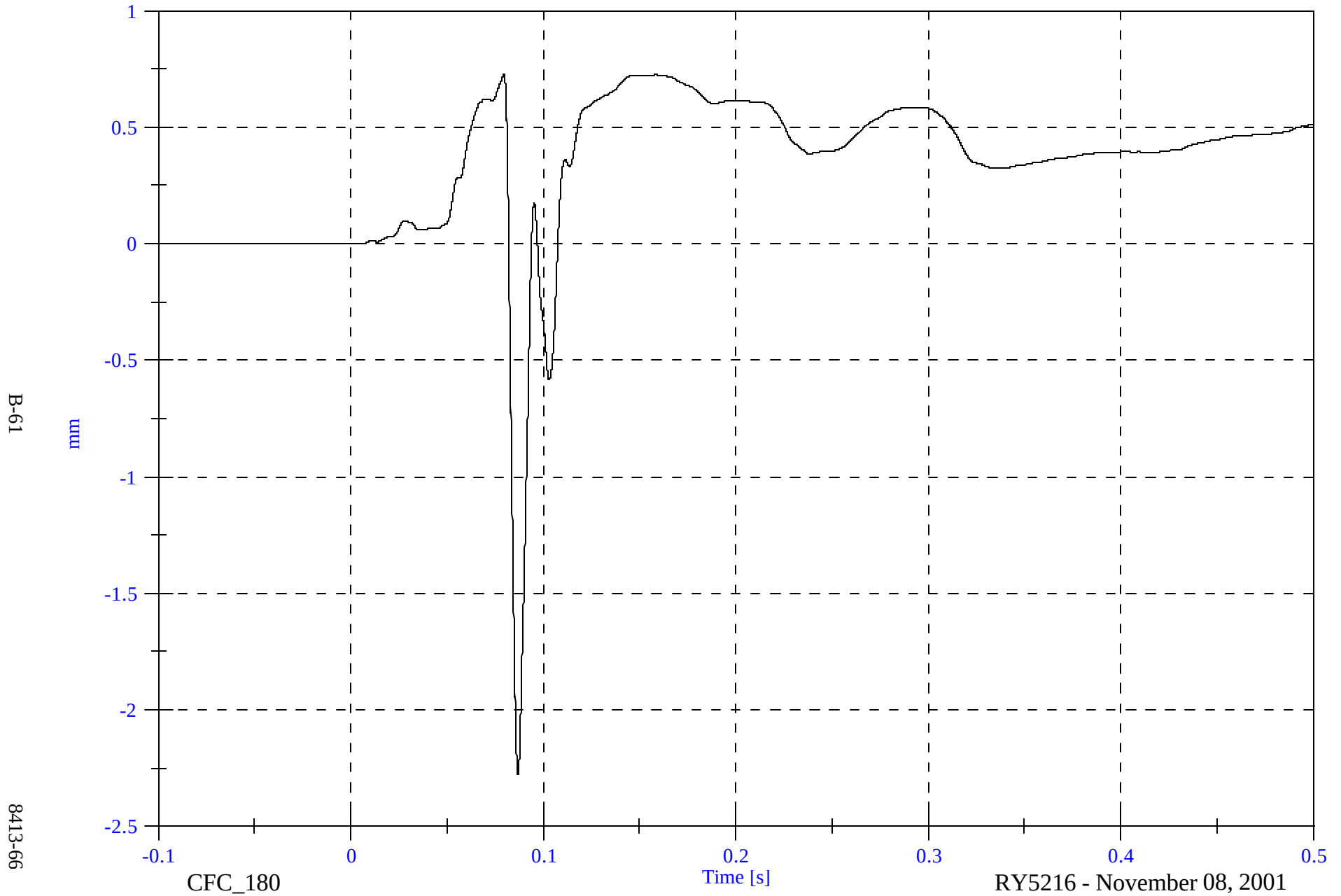


40% Frontal Offset Test #10 - 2000 Nissan Altima

P1 Right Knee Shear Dx

Max: 0.7 [mm] at 0.079 [s]

Min: -2.3 [mm] at 0.087 [s]

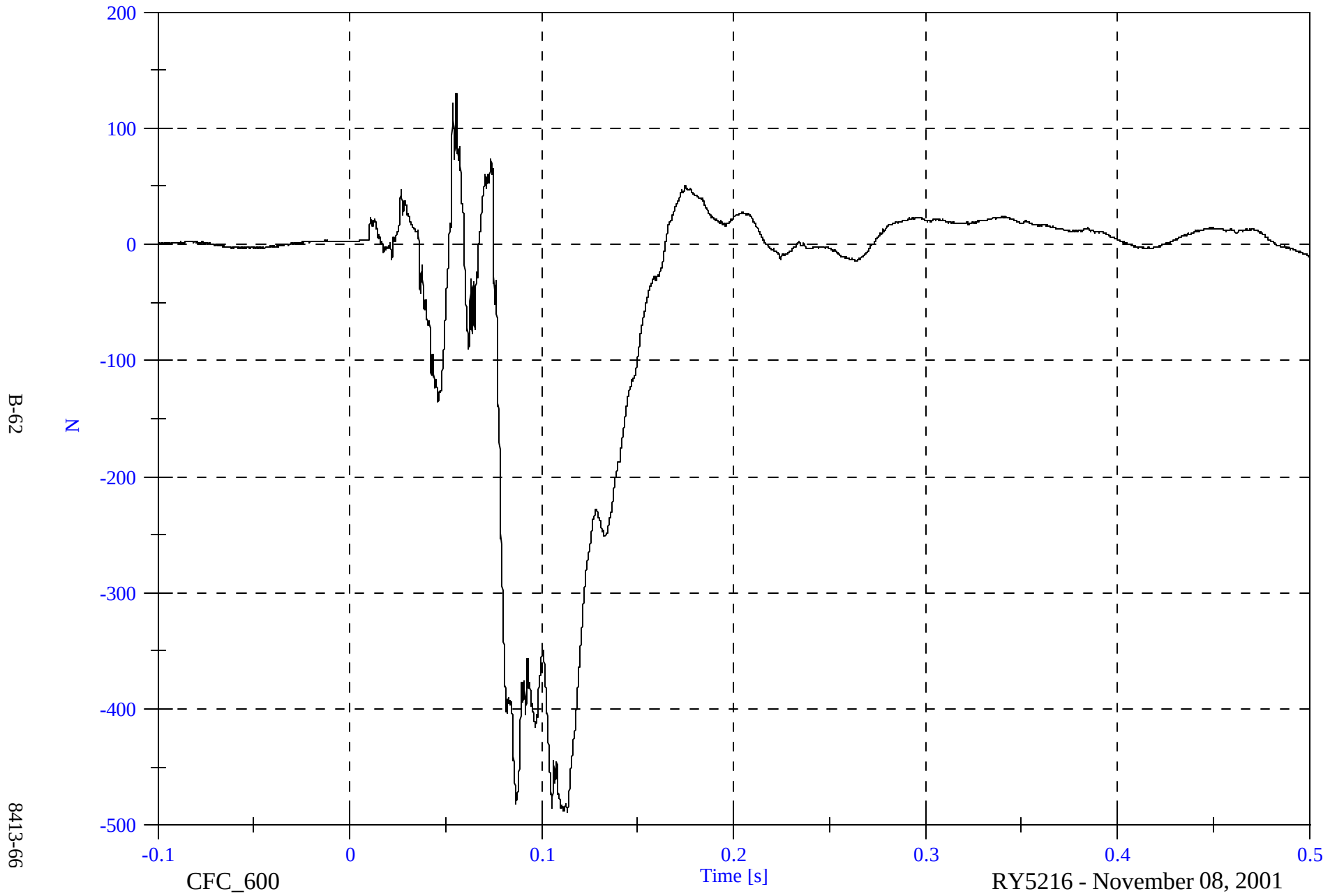


40% Frontal Offset Test #10 - 2000 Nissan Altima

Max: 129.7 [N] at 0.056 [s]

P1 Left Upper Tibia Fx

Min: -489.2 [N] at 0.113 [s]

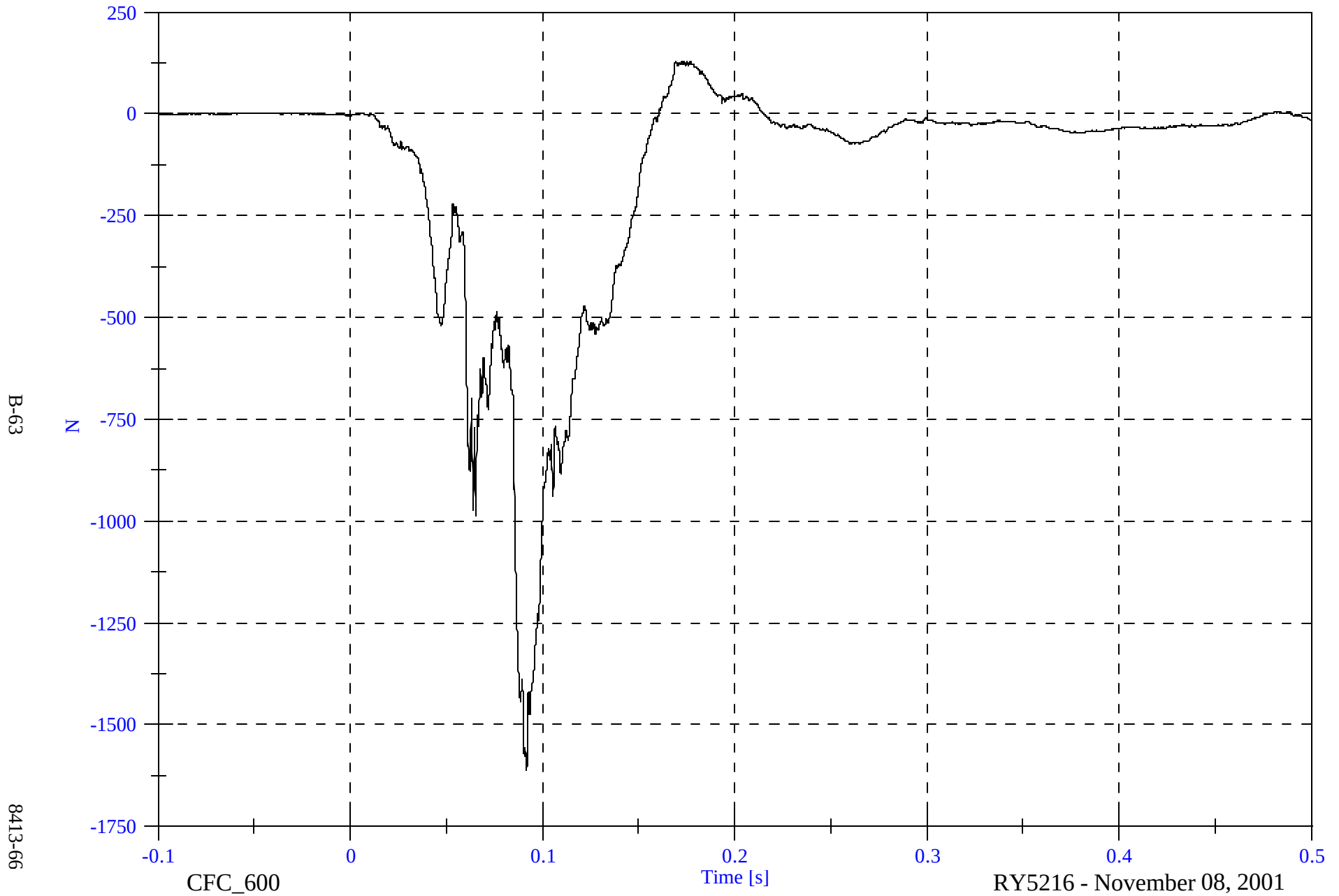


40% Frontal Offset Test #10 - 2000 Nissan Altima

Max: 128.8 [N] at 0.169 [s]

P1 Left Upper Tibia Fz

Min: -1611.3 [N] at 0.092 [s]

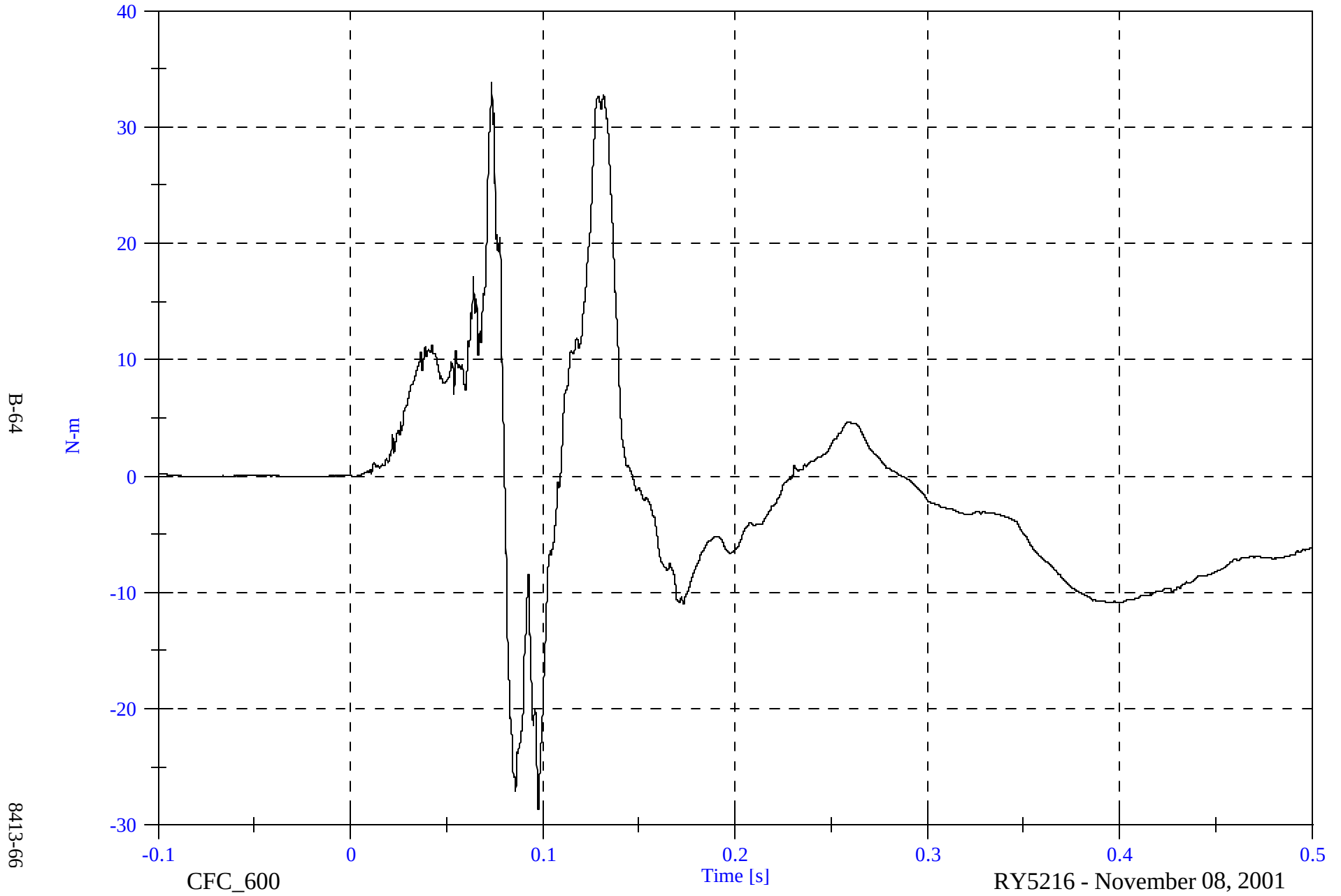


40% Frontal Offset Test #10 - 2000 Nissan Altima

P1 Left Upper Tibia Mx

Max: 33.8 [N-m] at 0.073 [s]

Min: -28.7 [N-m] at 0.098 [s]

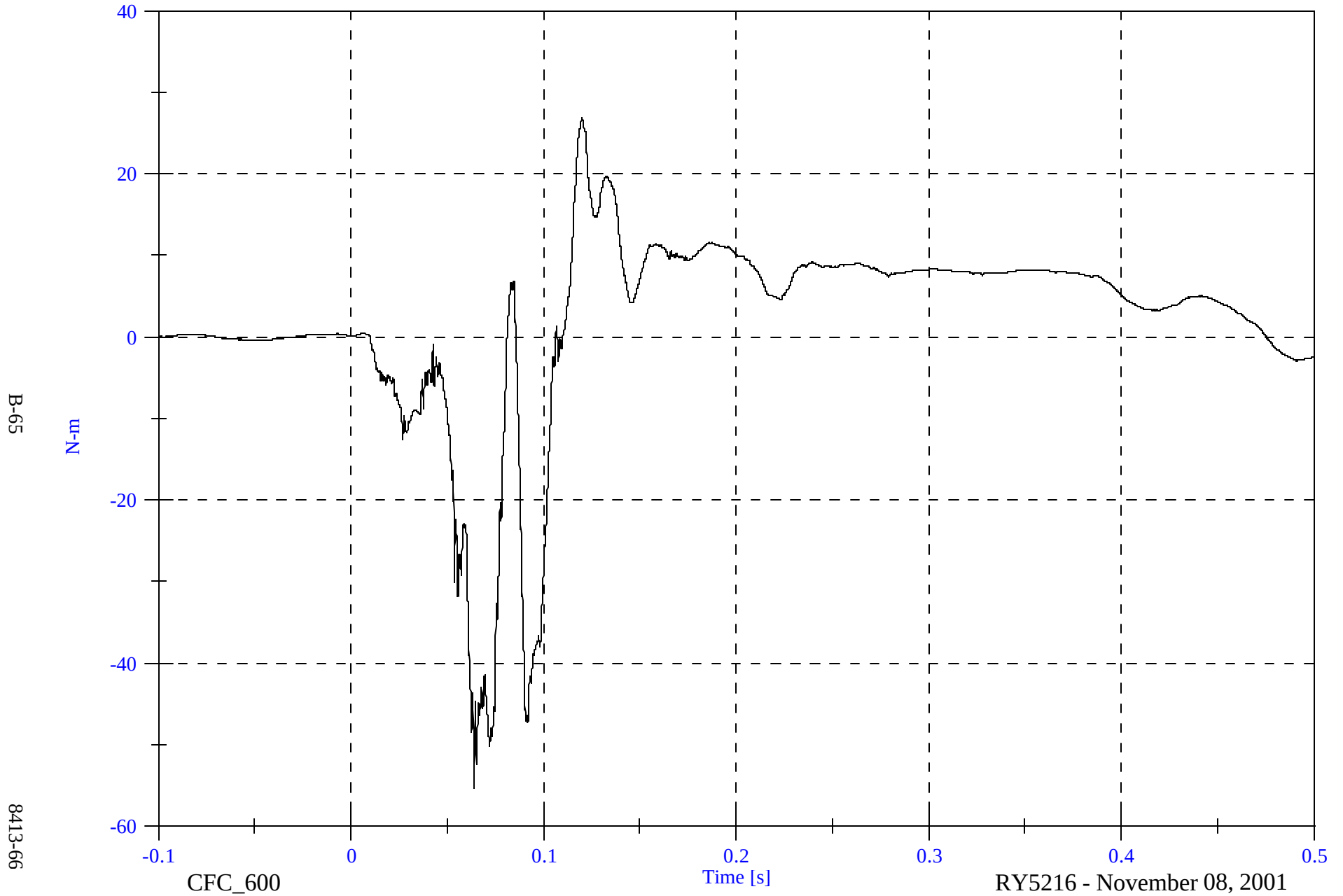


40% Frontal Offset Test #10 - 2000 Nissan Altima

P1 Left Upper Tibia My

Max: 27.0 [N-m] at 0.120 [s]

Min: -55.2 [N-m] at 0.064 [s]

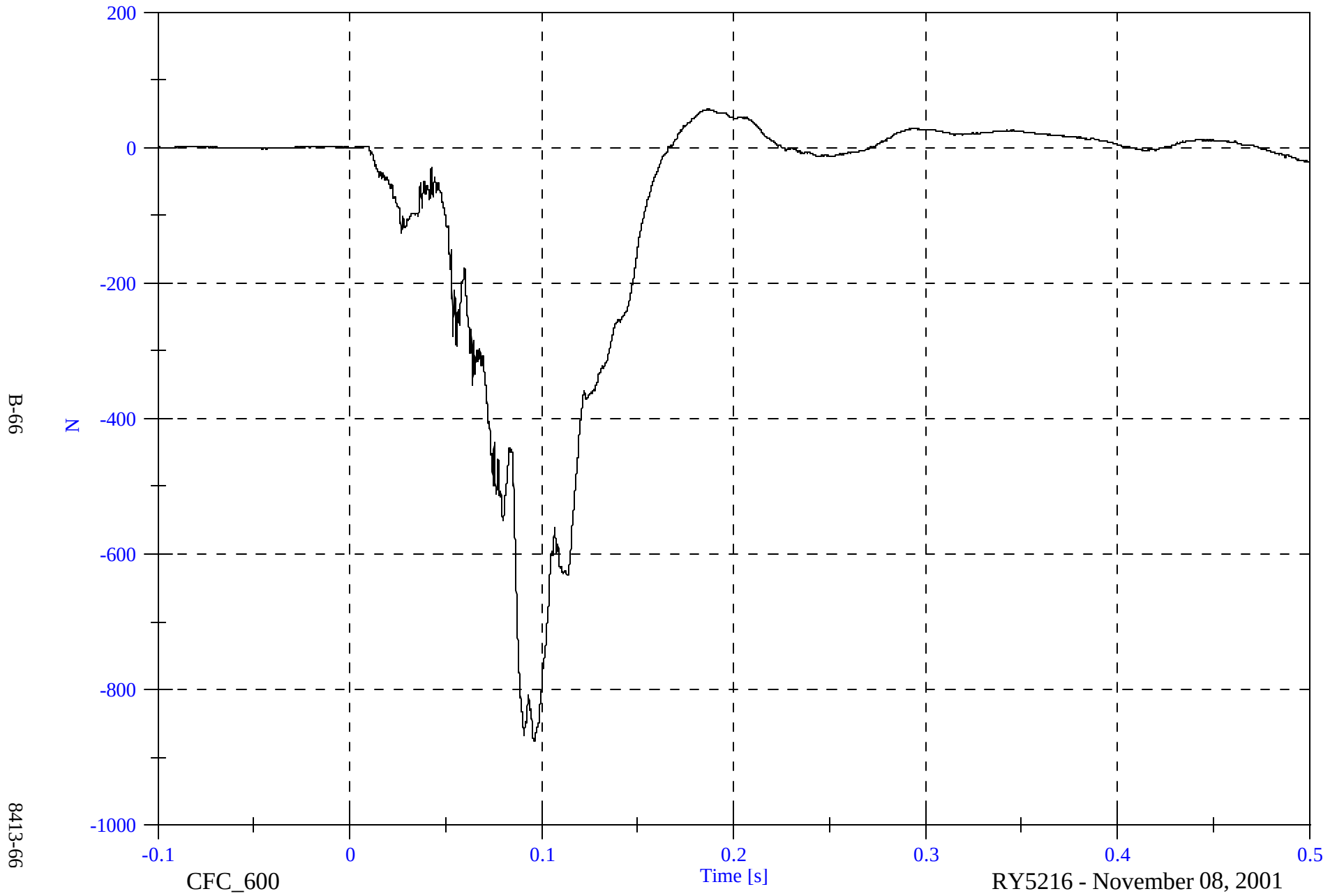


40% Frontal Offset Test #10 - 2000 Nissan Altima

P1 Left Lower Tibia Fx

Max: 56.3 [N] at 0.186 [s]

Min: -876.4 [N] at 0.096 [s]

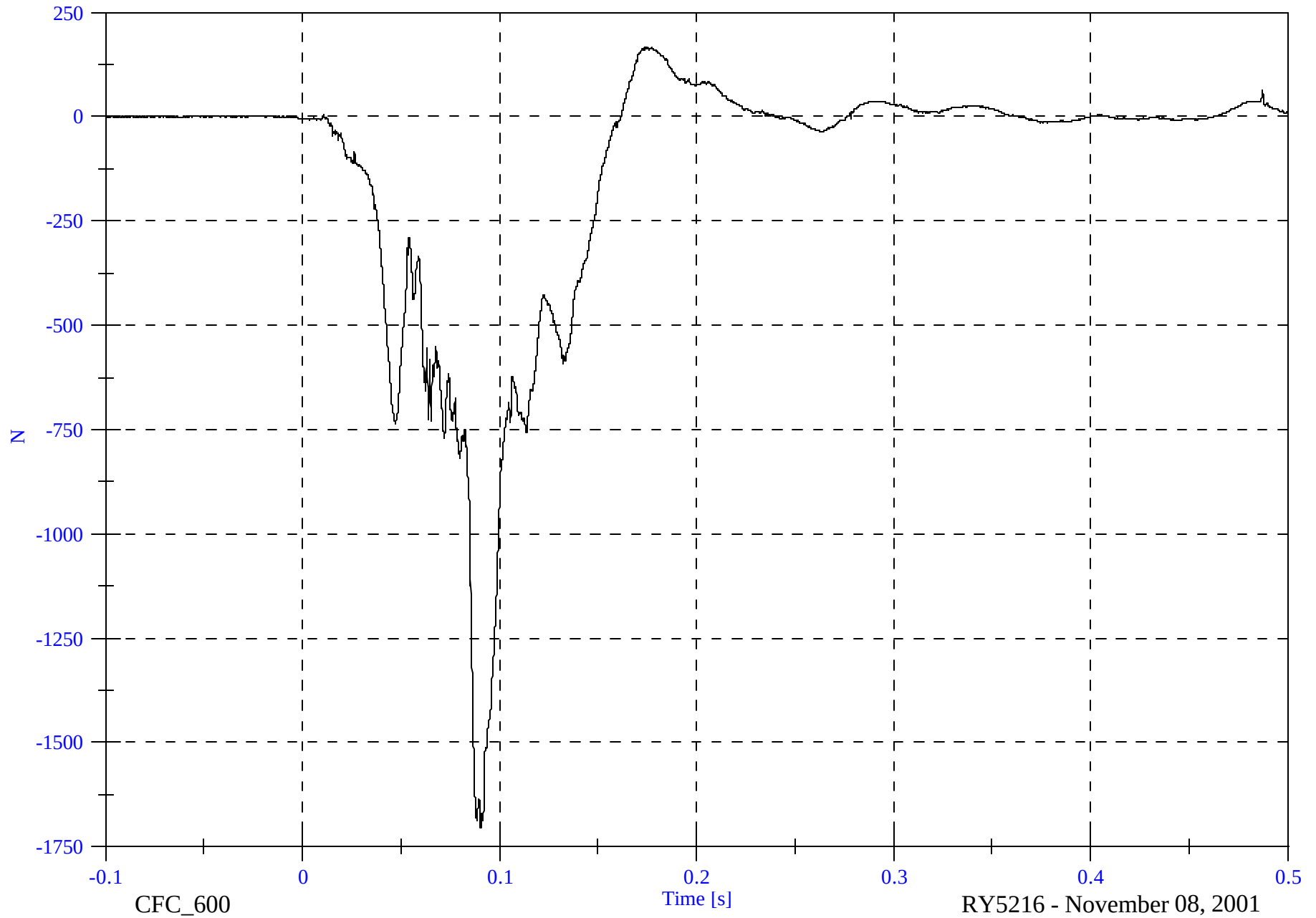


40% Frontal Offset Test #10 - 2000 Nissan Altima

Max: 167.8 [N] at 0.175 [s]

P1 Left Lower Tibia Fz

Min: -1705.8 [N] at 0.090 [s]



B-67

8413-66

CFC_600

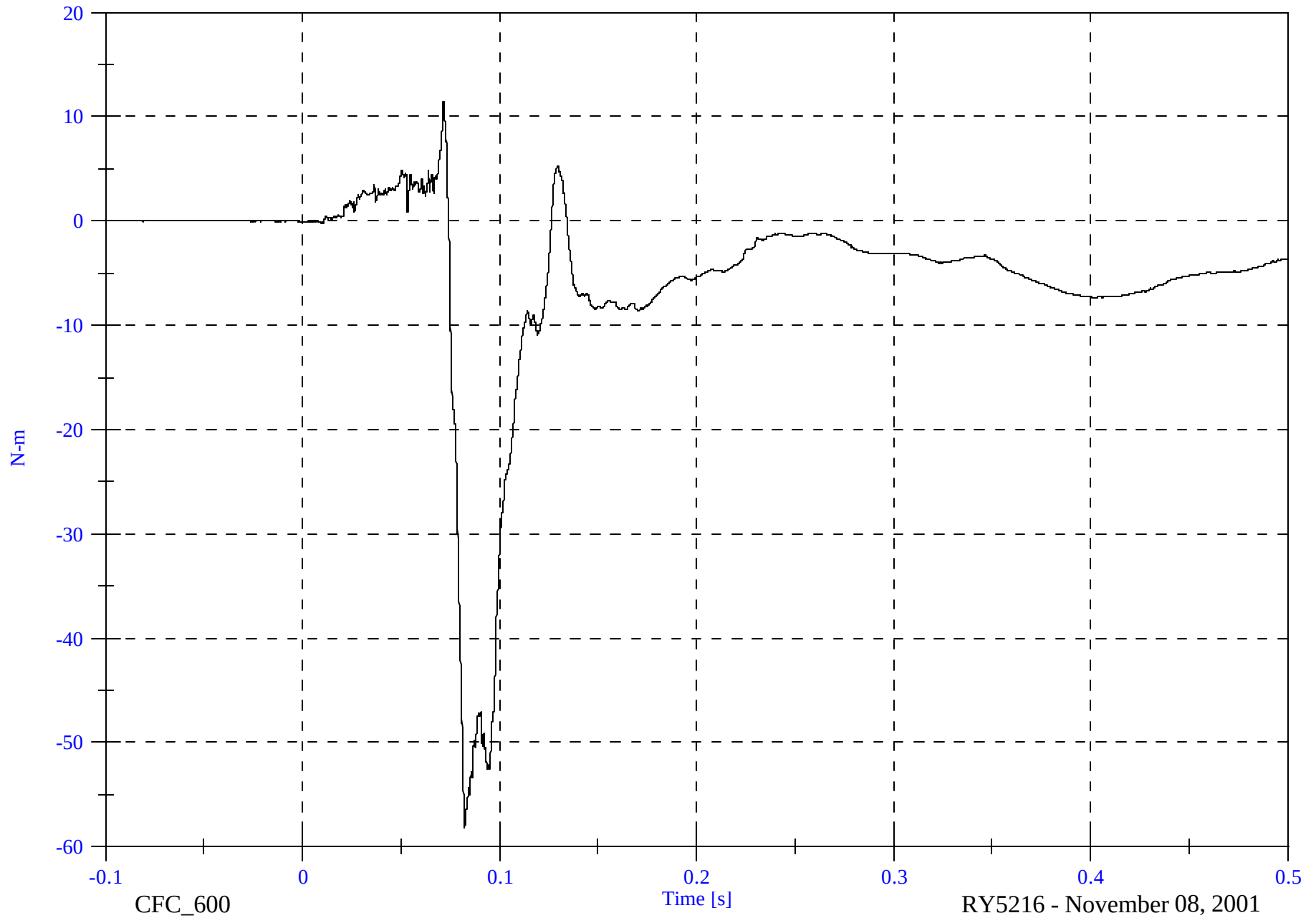
RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

P1 Left Lower Tibia Mx

Max: 11.4 [N-m] at 0.072 [s]

Min: -58.2 [N-m] at 0.082 [s]



B-68

8413-66

CFC_600

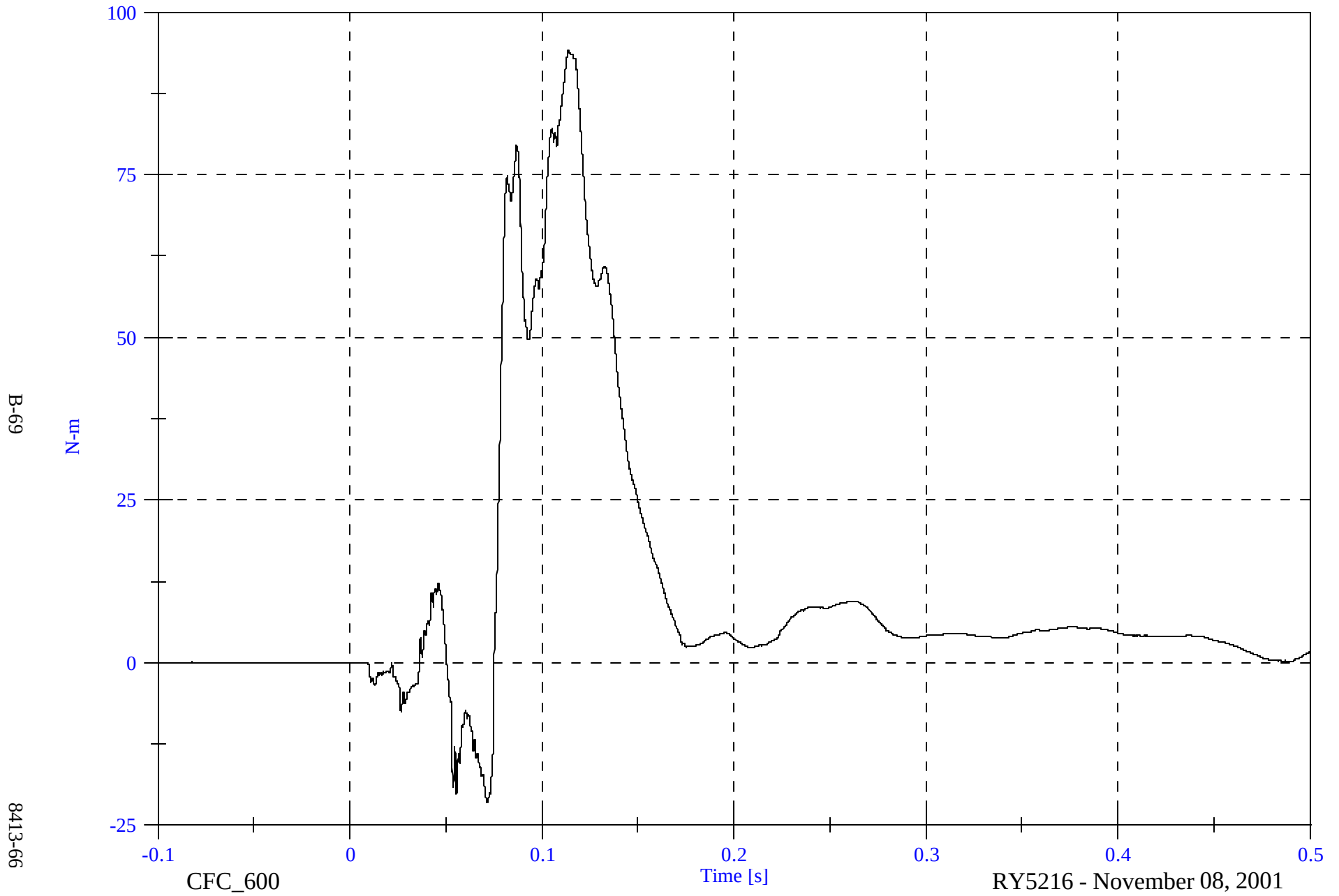
RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

P1 Left Lower Tibia My

Max: 94.1 [N-m] at 0.114 [s]

Min: -21.5 [N-m] at 0.072 [s]

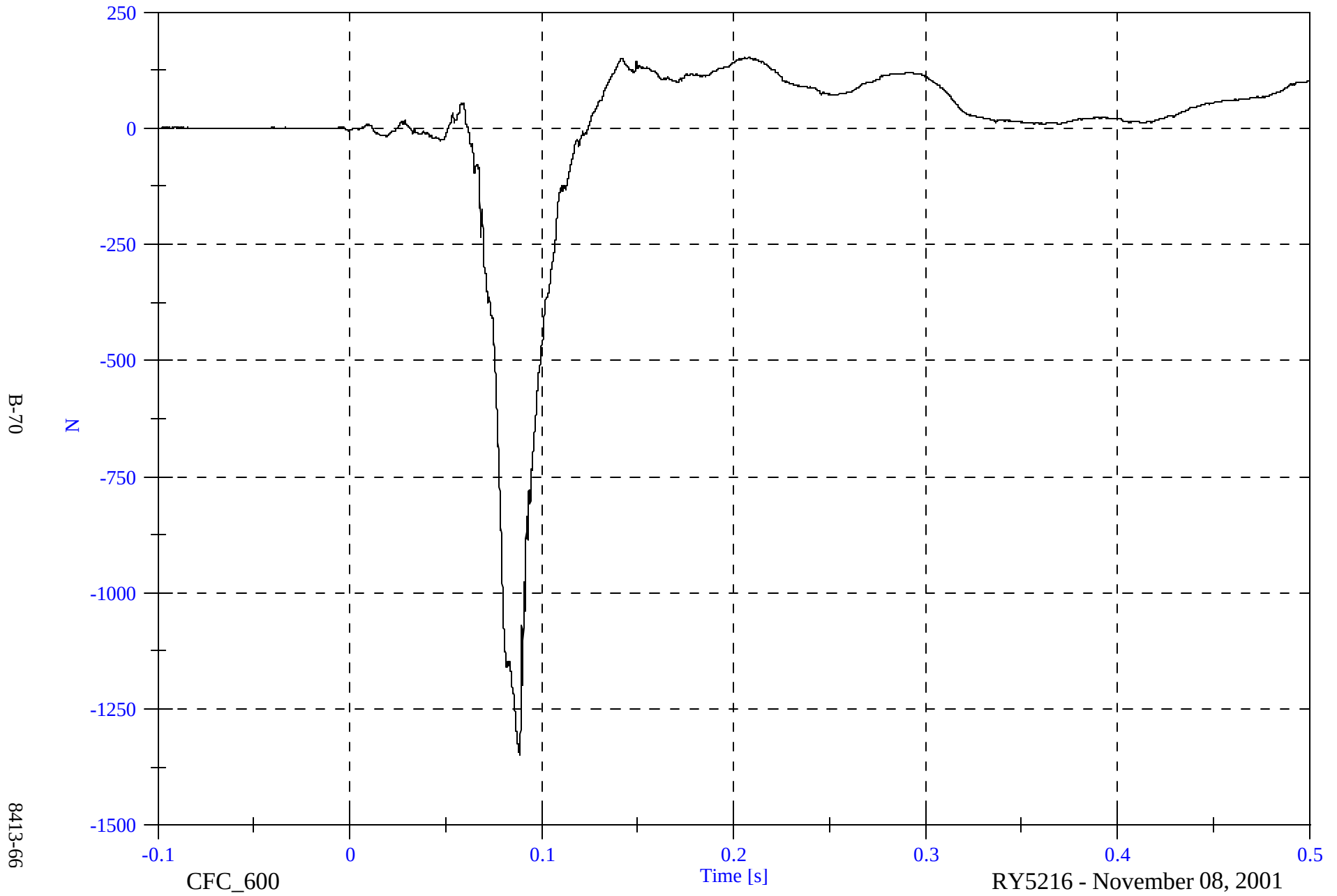


40% Frontal Offset Test #10 - 2000 Nissan Altima

P1 Right Upper Tibia Fx

Max: 151.5 [N] at 0.208 [s]

Min: -1349.1 [N] at 0.088 [s]

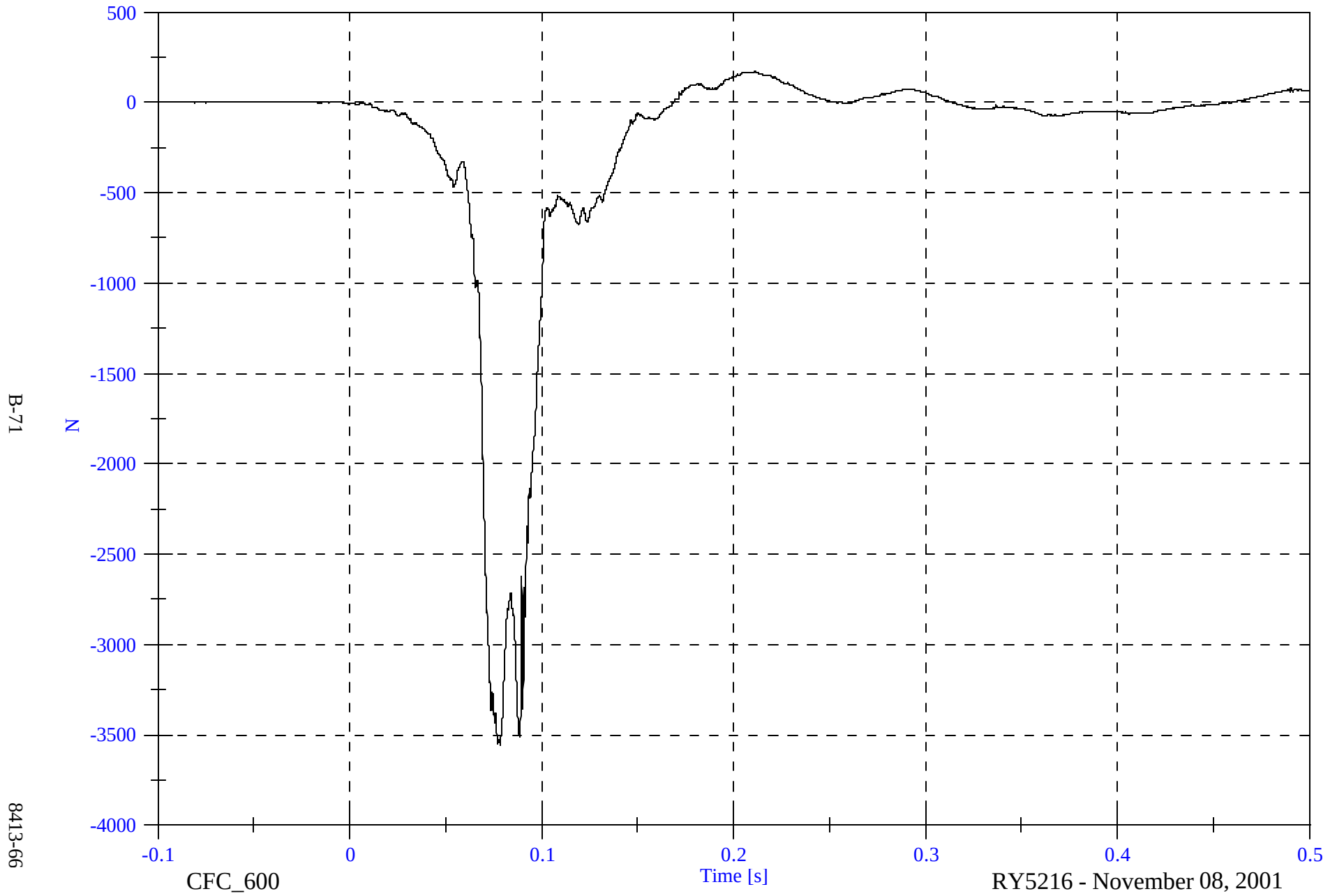


40% Frontal Offset Test #10 - 2000 Nissan Altima

P1 Right Upper Tibia Fz

Max: 170.2 [N] at 0.211 [s]

Min: -3554.2 [N] at 0.078 [s]

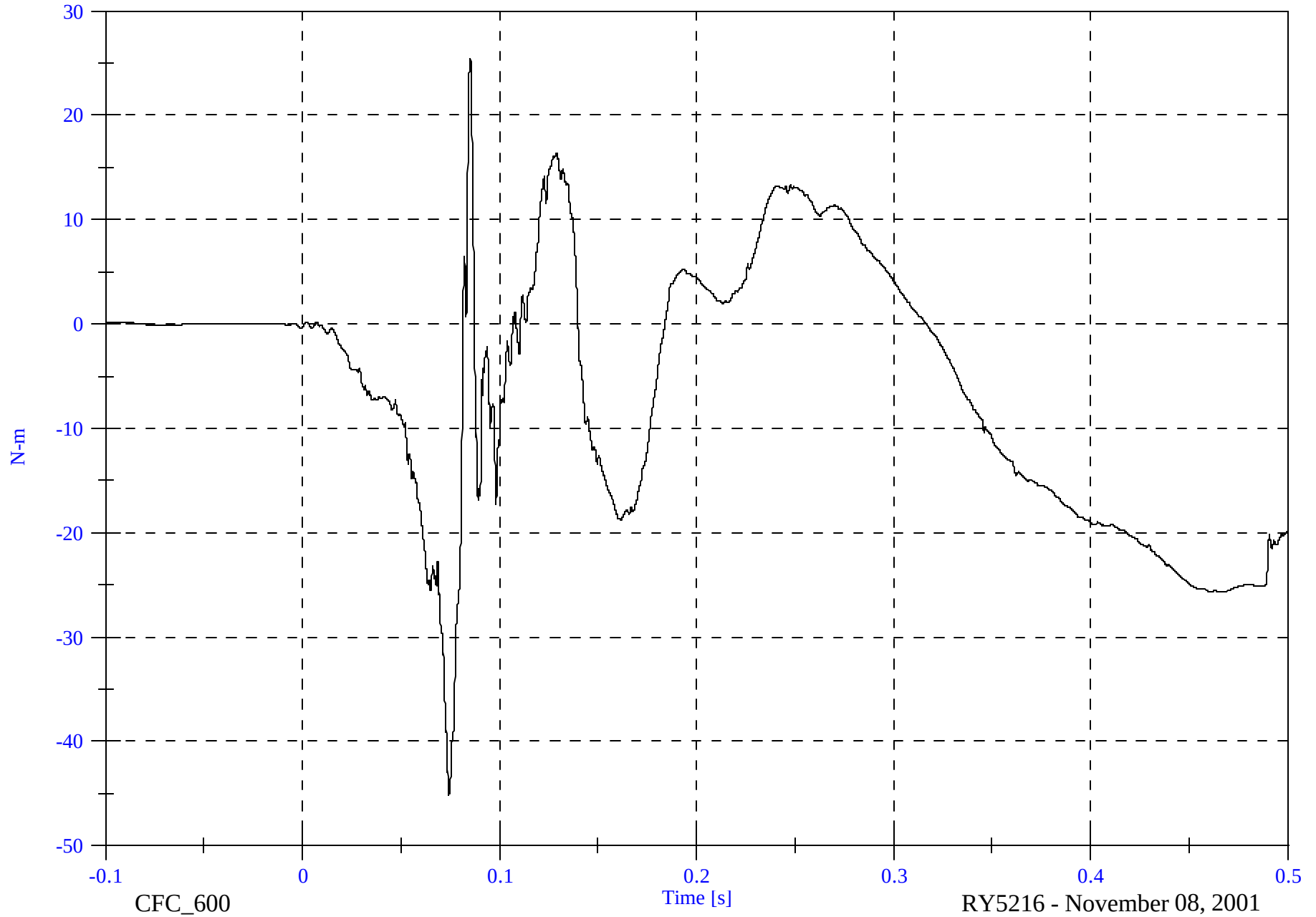


40% Frontal Offset Test #10 - 2000 Nissan Altima

Max: 25.5 [N-m] at 0.085 [s]

P1 Right Upper Tibia Mx

Min: -45.1 [N-m] at 0.074 [s]



B-72

8413-66

CFC_600

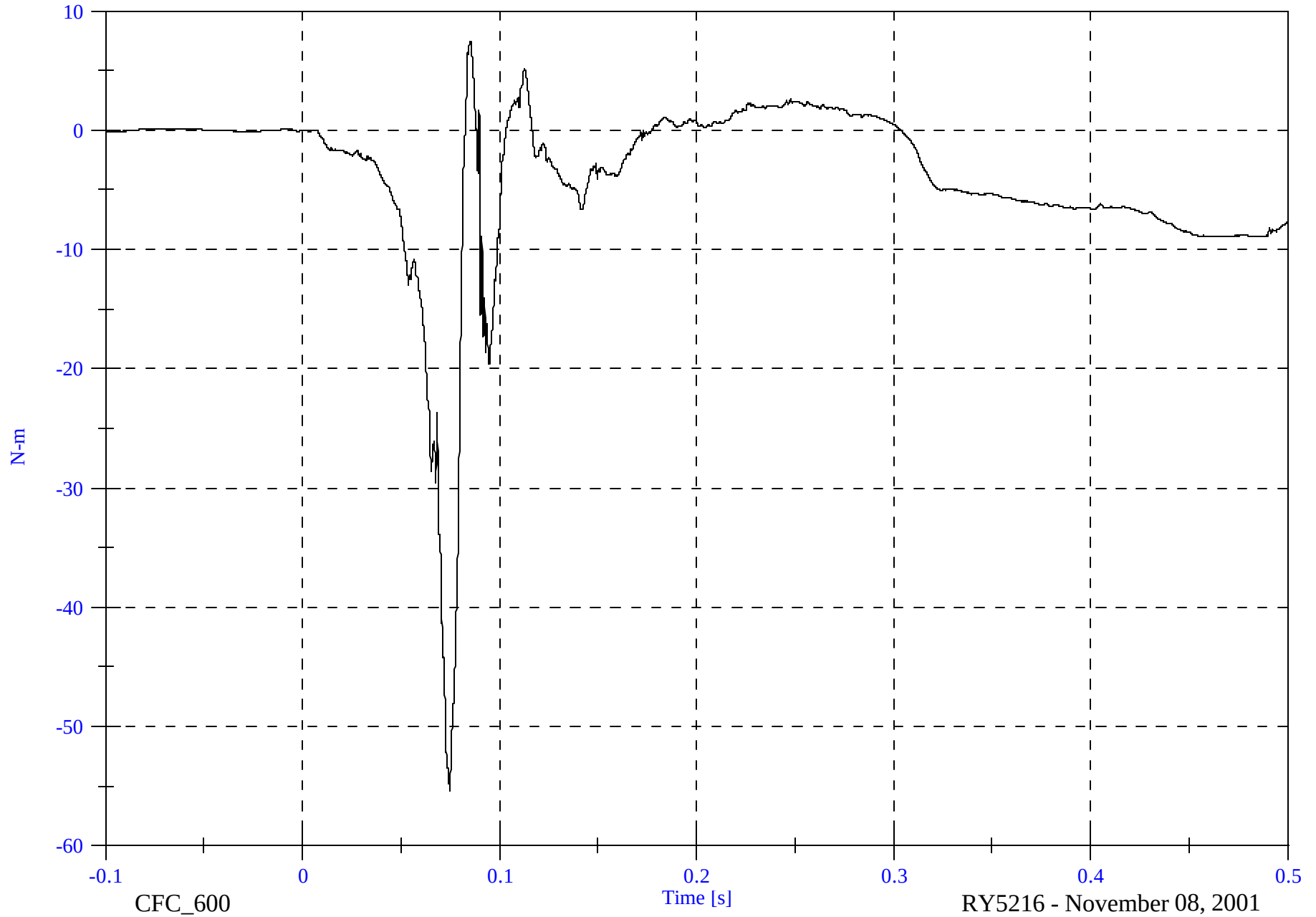
RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

P1 Right Upper Tibia My

Max: 7.4 [N-m] at 0.085 [s]

Min: -55.4 [N-m] at 0.075 [s]



B-73

8413-66

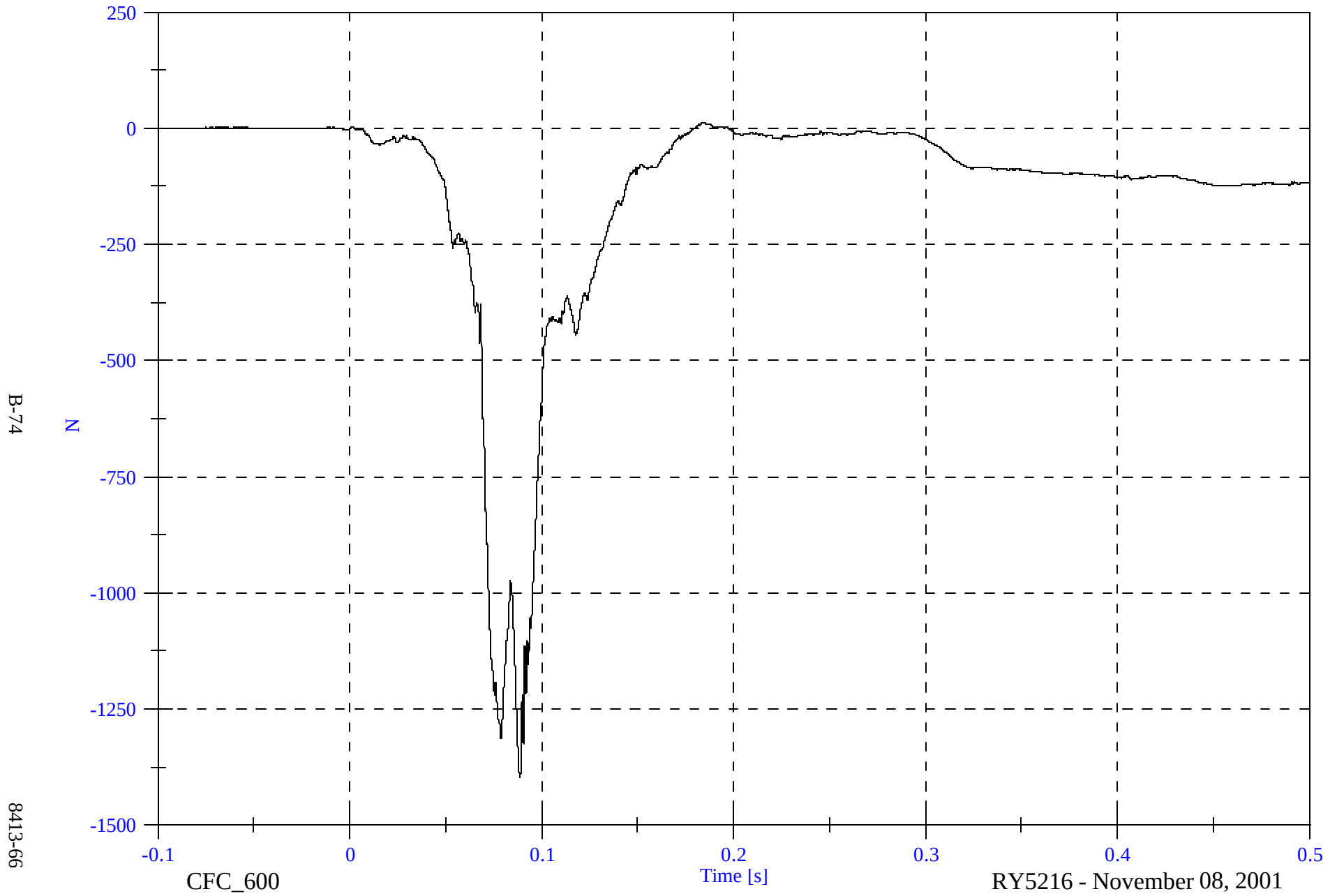
CFC_600

RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

P1 Right Lower Tibia Fx

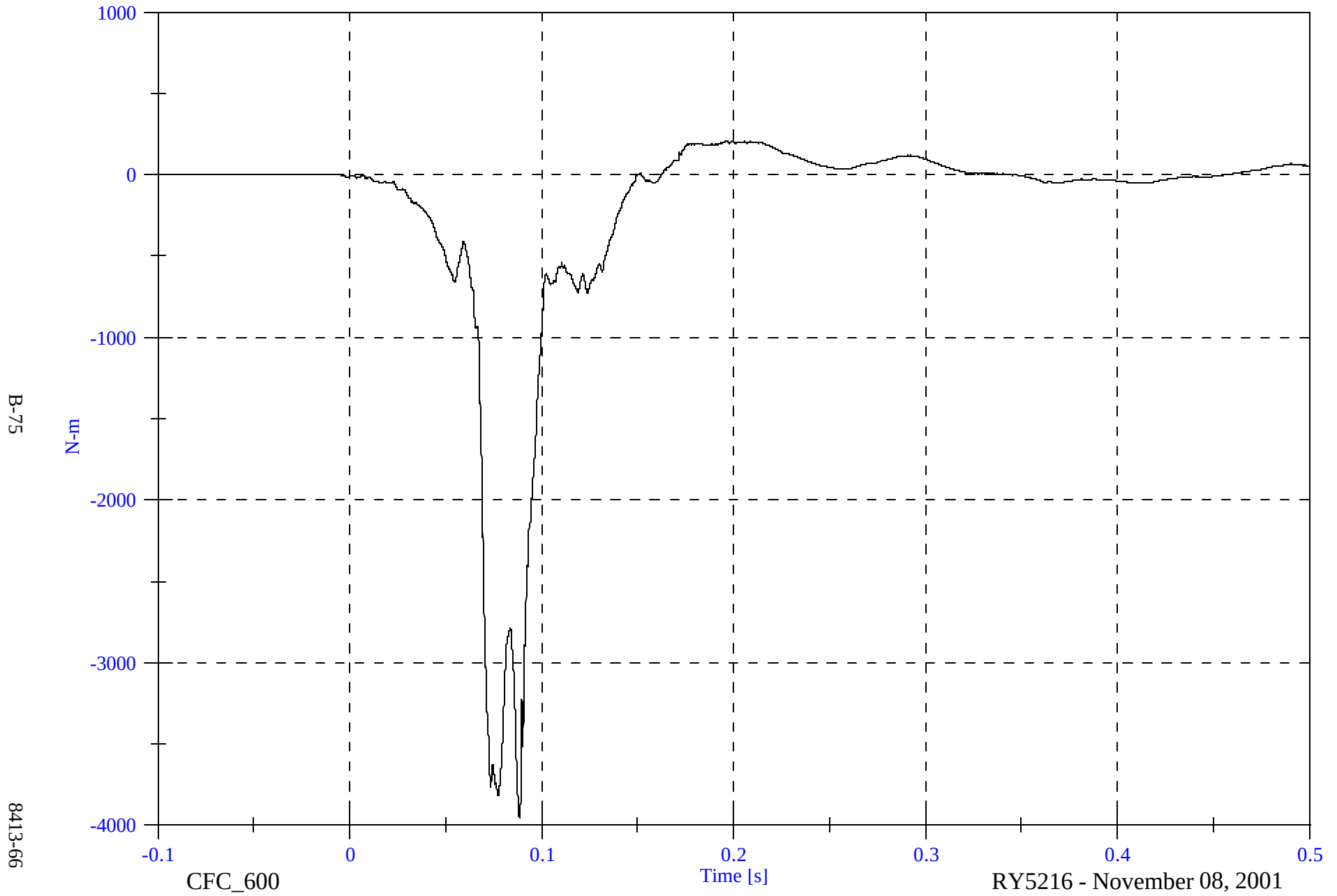
Max: 11.6 [N] at 0.184 [s]
Min: -1395.9 [N] at 0.089 [s]



40% Frontal Offset Test #10 - 2000 Nissan Altima

P1 Right Lower Tibia Fz

Max: 209.5 [N-m] at 0.196 [s]
Min: -3958.0 [N-m] at 0.088 [s]

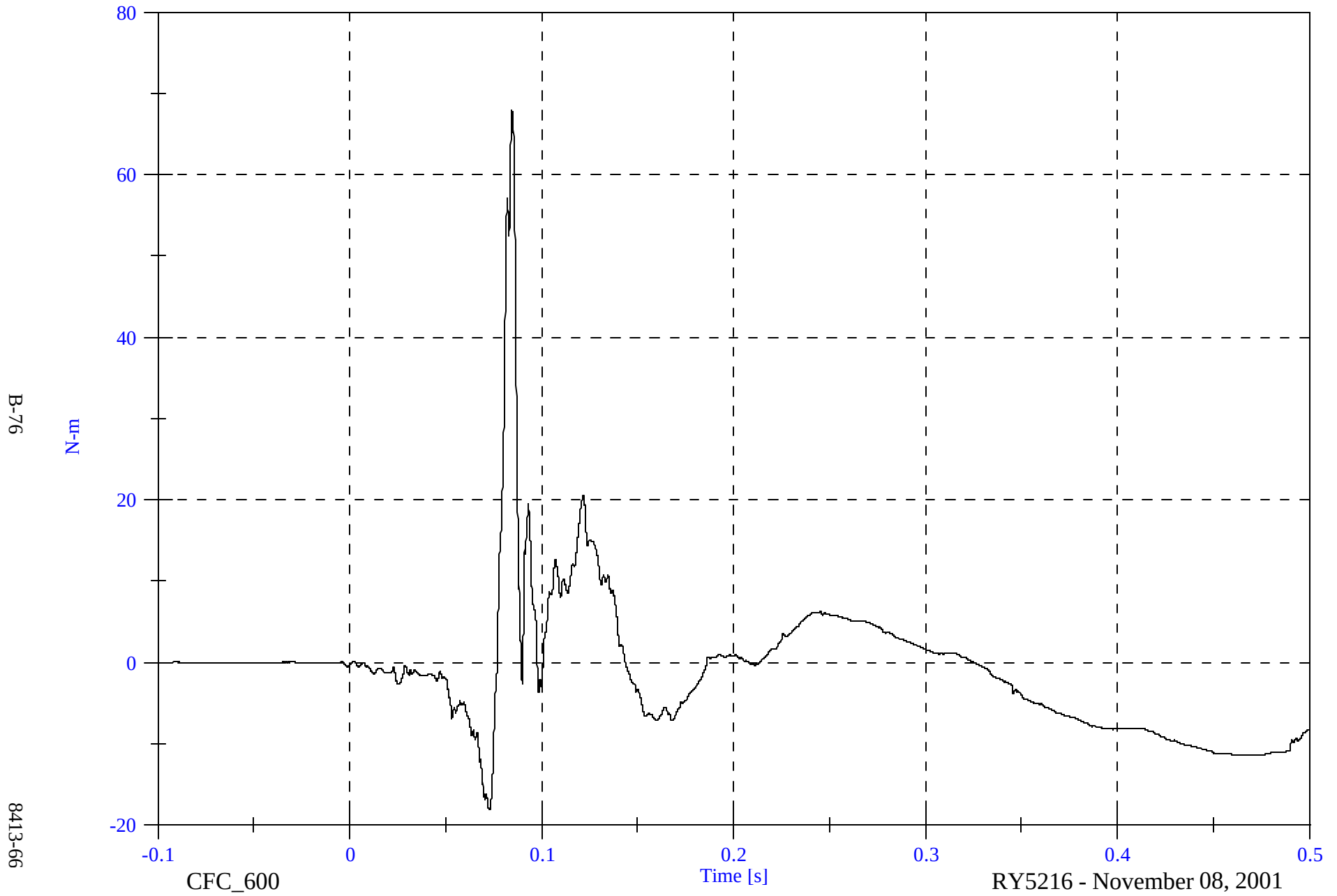


40% Frontal Offset Test #10 - 2000 Nissan Altima

P1 Right Lower Tibia Mx

Max: 67.8 [N-m] at 0.085 [s]

Min: -18.0 [N-m] at 0.073 [s]

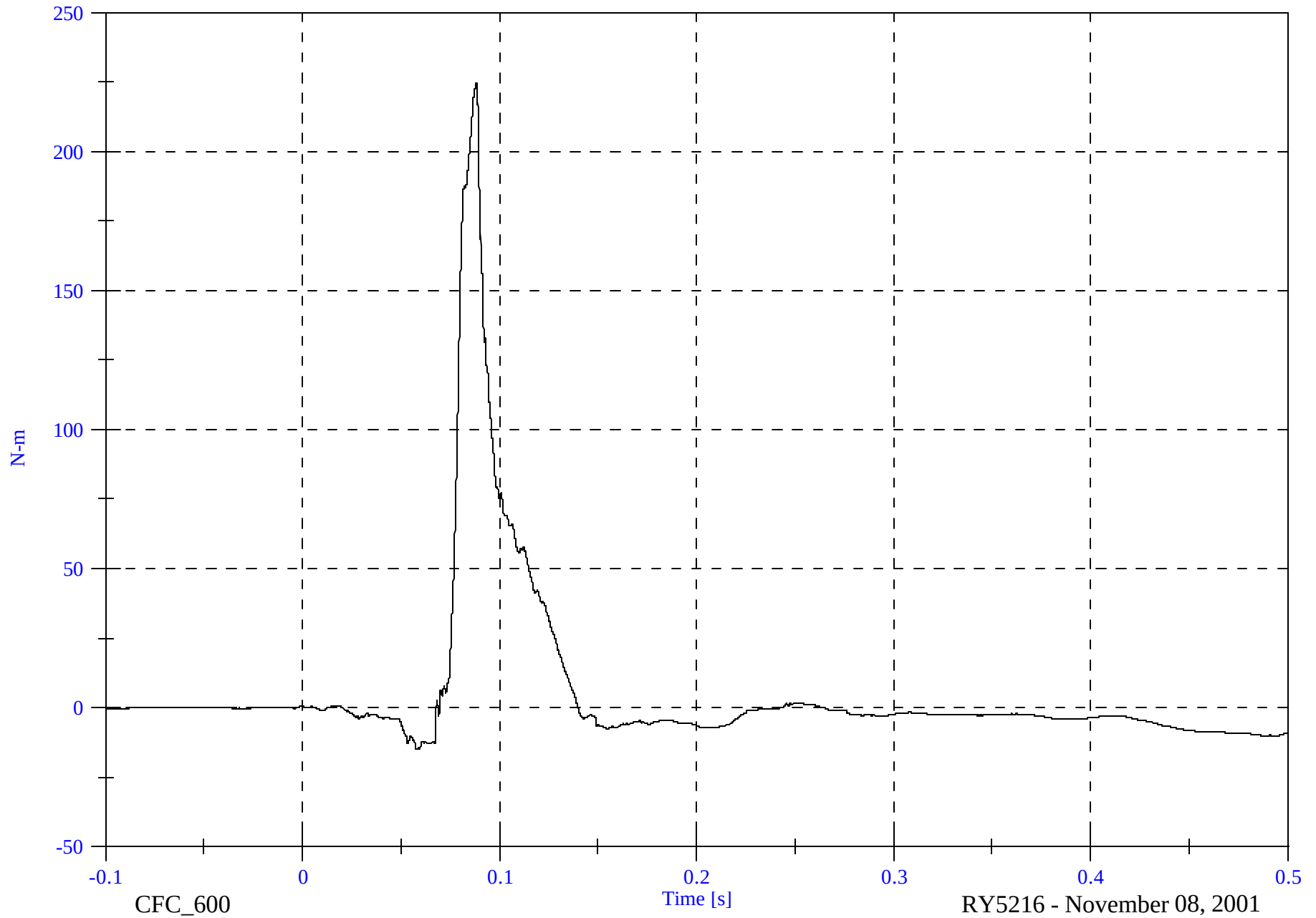


40% Frontal Offset Test #10 - 2000 Nissan Altima

P1 Right Lower Tibia My

Max: 224.6 [N-m] at 0.088 [s]

Min: -15.0 [N-m] at 0.058 [s]



B-77

8413-66

CFC_600

RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

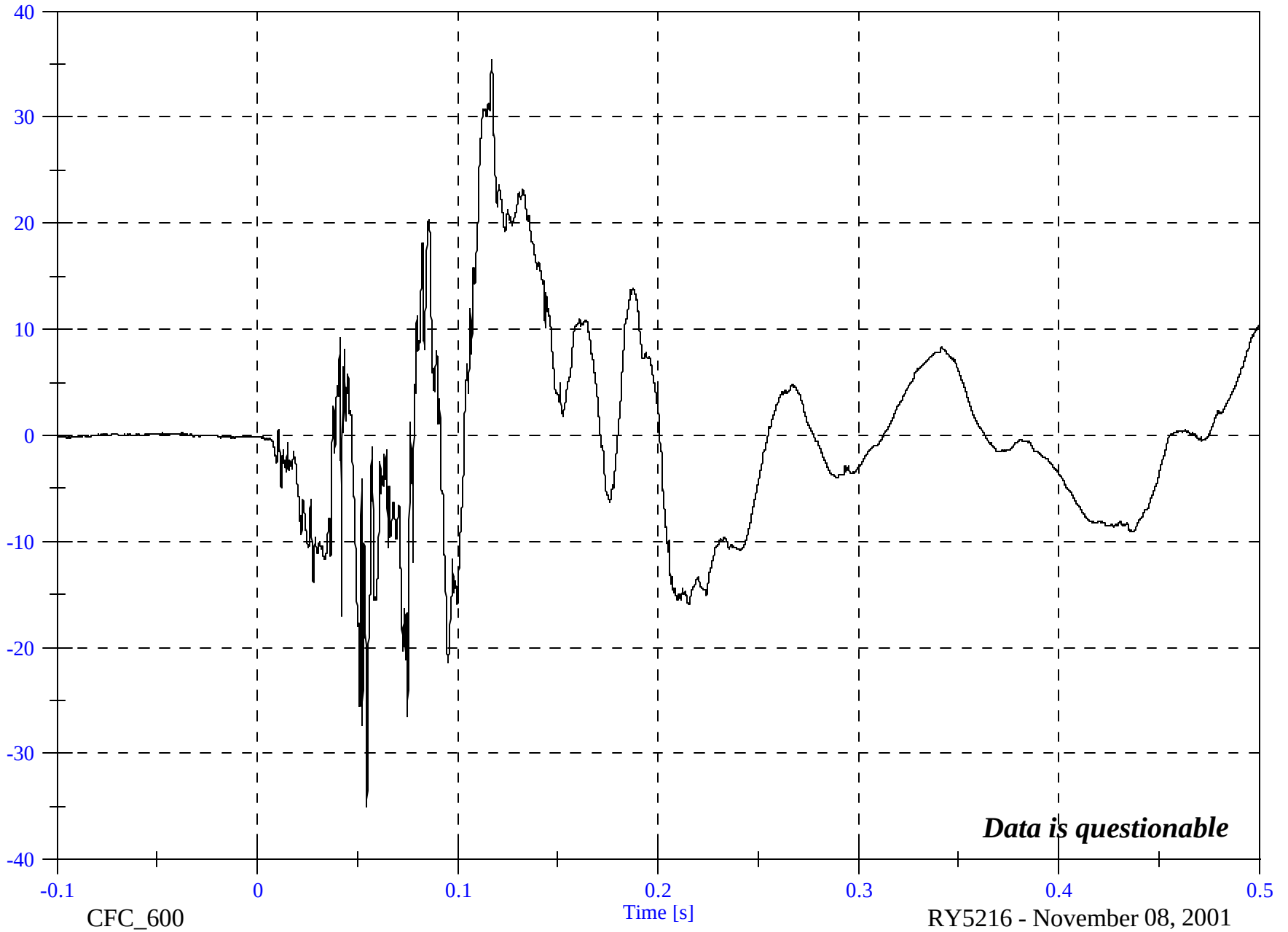
Max: 35.4 [g] at 0.117 [s]

P1 Left Ankle Ax

Min: -35.0 [g] at 0.055 [s]

B-78

g



8413-66

CFC_600

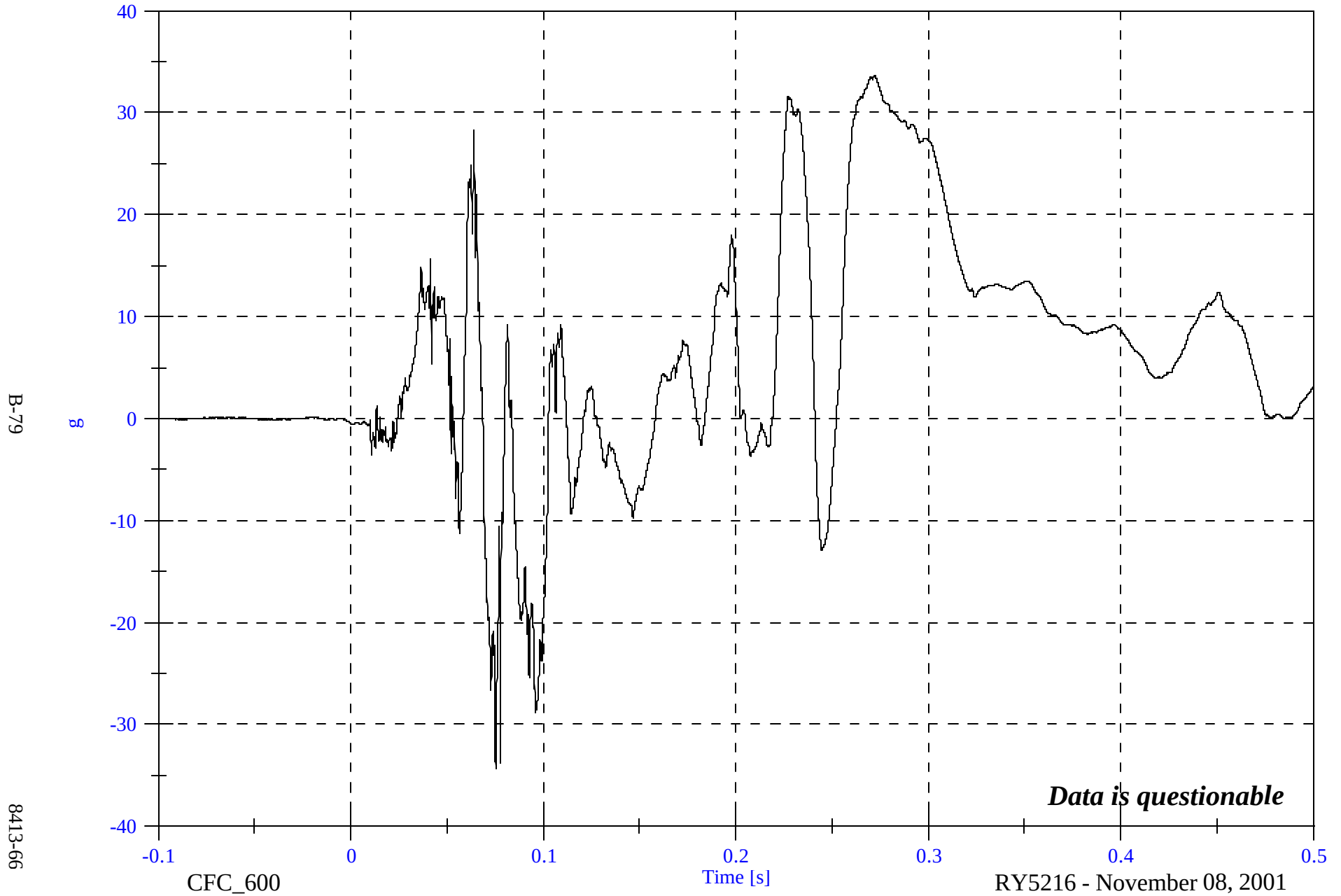
RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

Max: 33.6 [g] at 0.272 [s]

P1 Left Ankle Az

Min: -34.3 [g] at 0.075 [s]

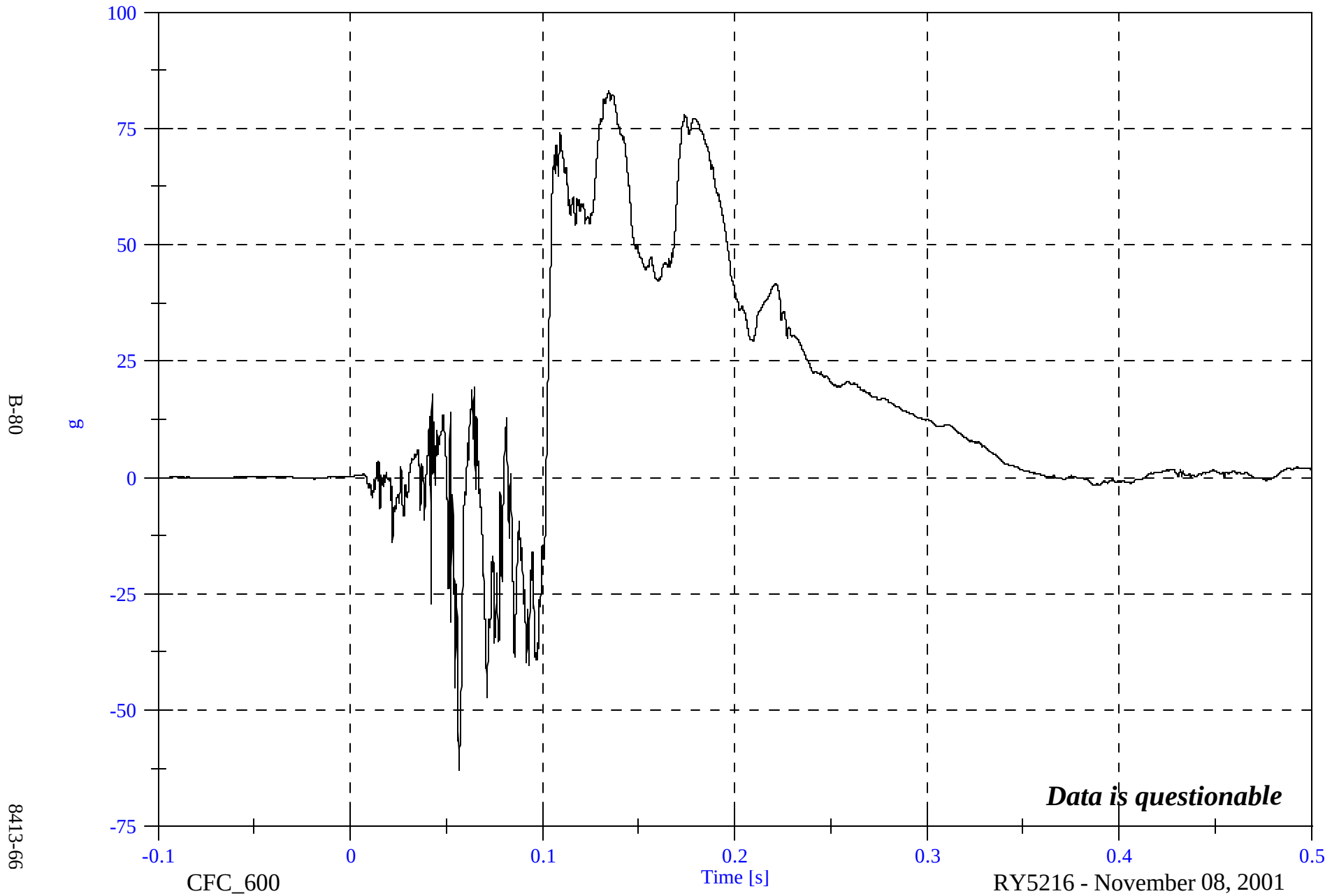


40% Frontal Offset Test #10 - 2000 Nissan Altima

Max: 83.2 [g] at 0.134 [s]

Min: -62.9 [g] at 0.057 [s]

P1 Left Toe Az



B-80

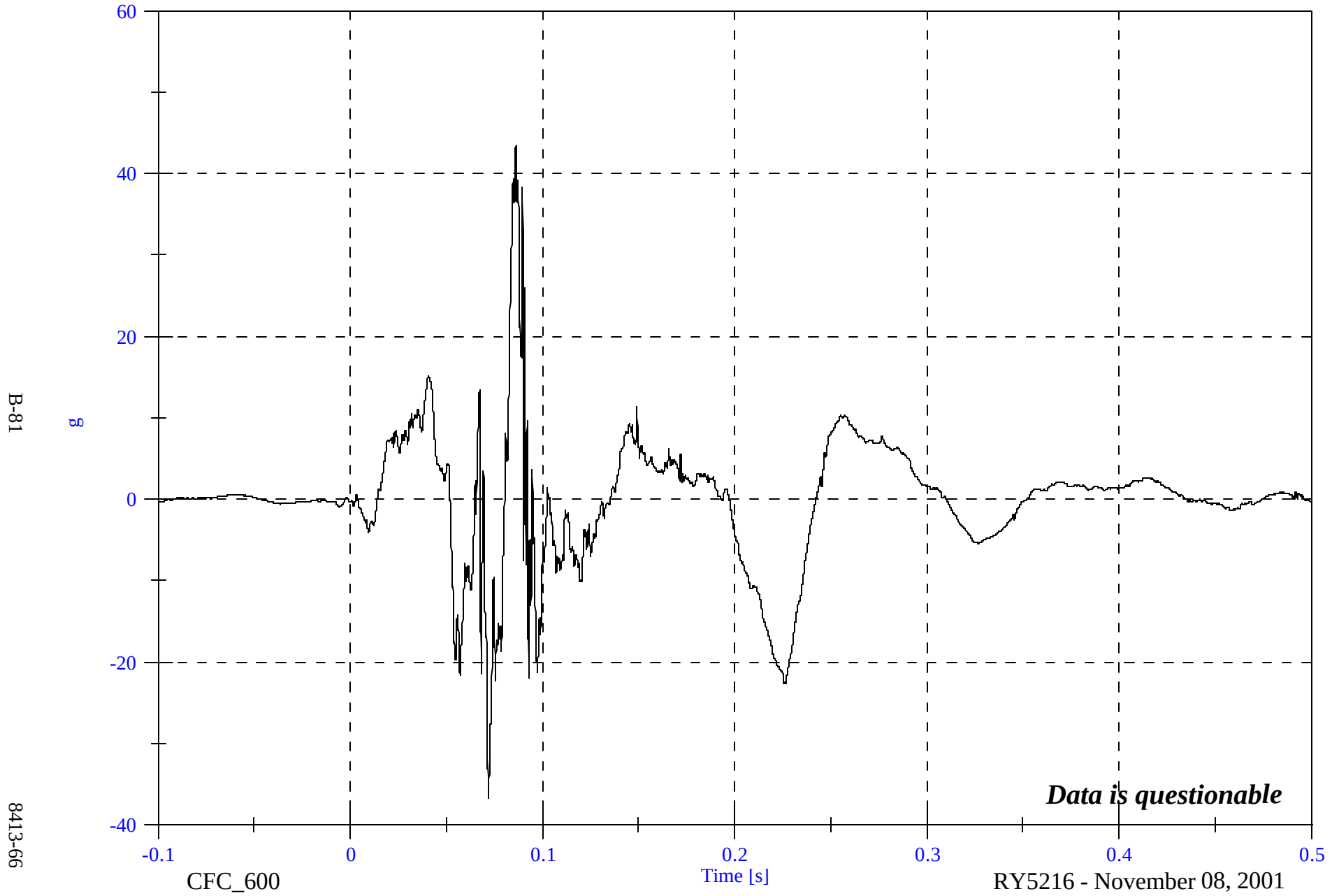
8413-66

40% Frontal Offset Test #10 - 2000 Nissan Altima

P1 Right Ankle Ax

Max: 43.4 [g] at 0.086 [s]

Min: -36.6 [g] at 0.072 [s]



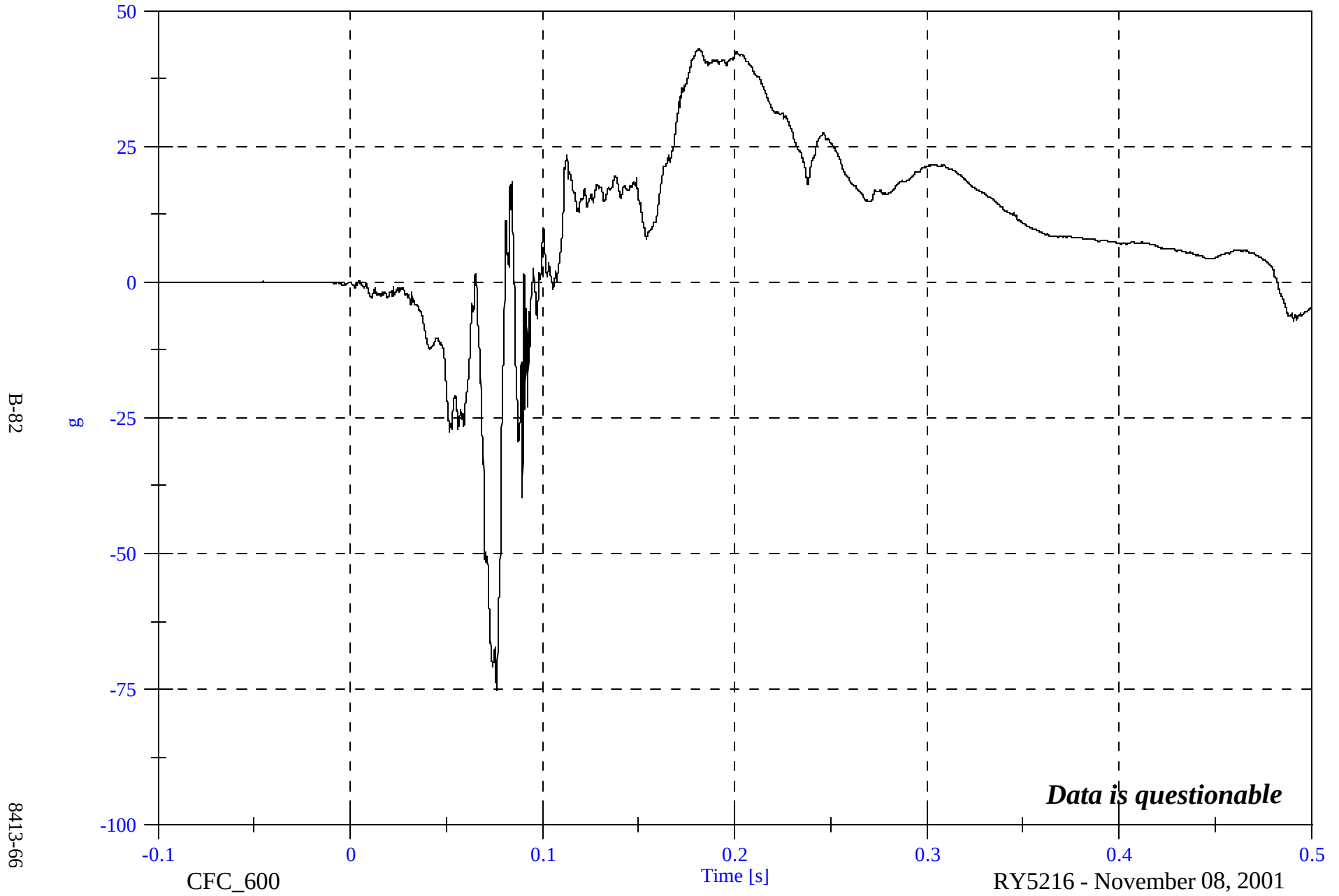
8413-66

40% Frontal Offset Test #10 - 2000 Nissan Altima

Max: 43.0 [g] at 0.182 [s]

P1 Right Ankle Az

Min: -75.2 [g] at 0.076 [s]

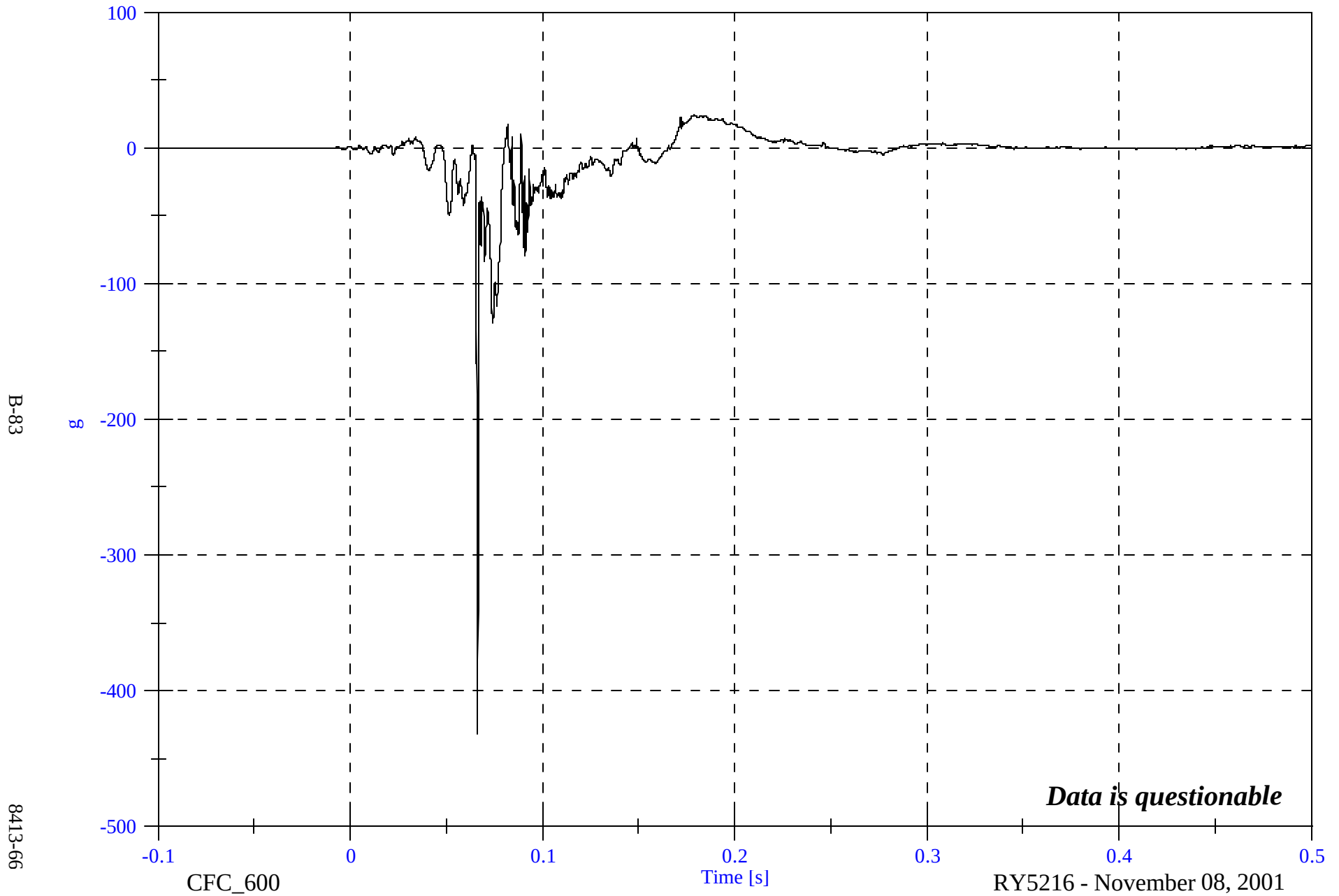


40% Frontal Offset Test #10 - 2000 Nissan Altima

Max: 24.1 [g] at 0.179 [s]

Min: -431.9 [g] at 0.066 [s]

P1 Right Toe Az

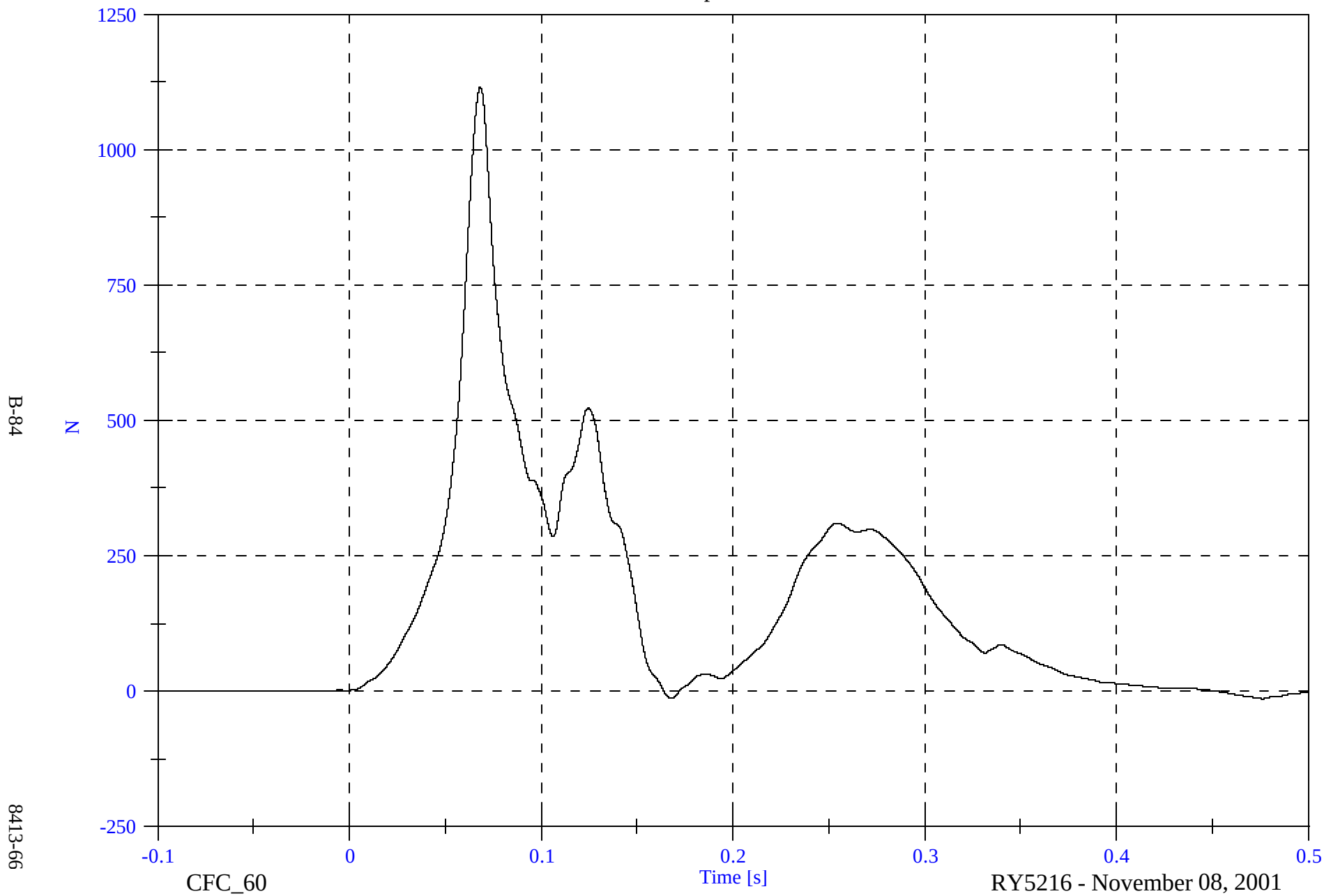


40% Frontal Offset Test #10 - 2000 Nissan Altima

P1 Lap Belt Force

Max: 1115.0 [N] at 0.068 [s]

Min: -13.8 [N] at 0.476 [s]



40% Frontal Offset Test #10 - 2000 Nissan Altima

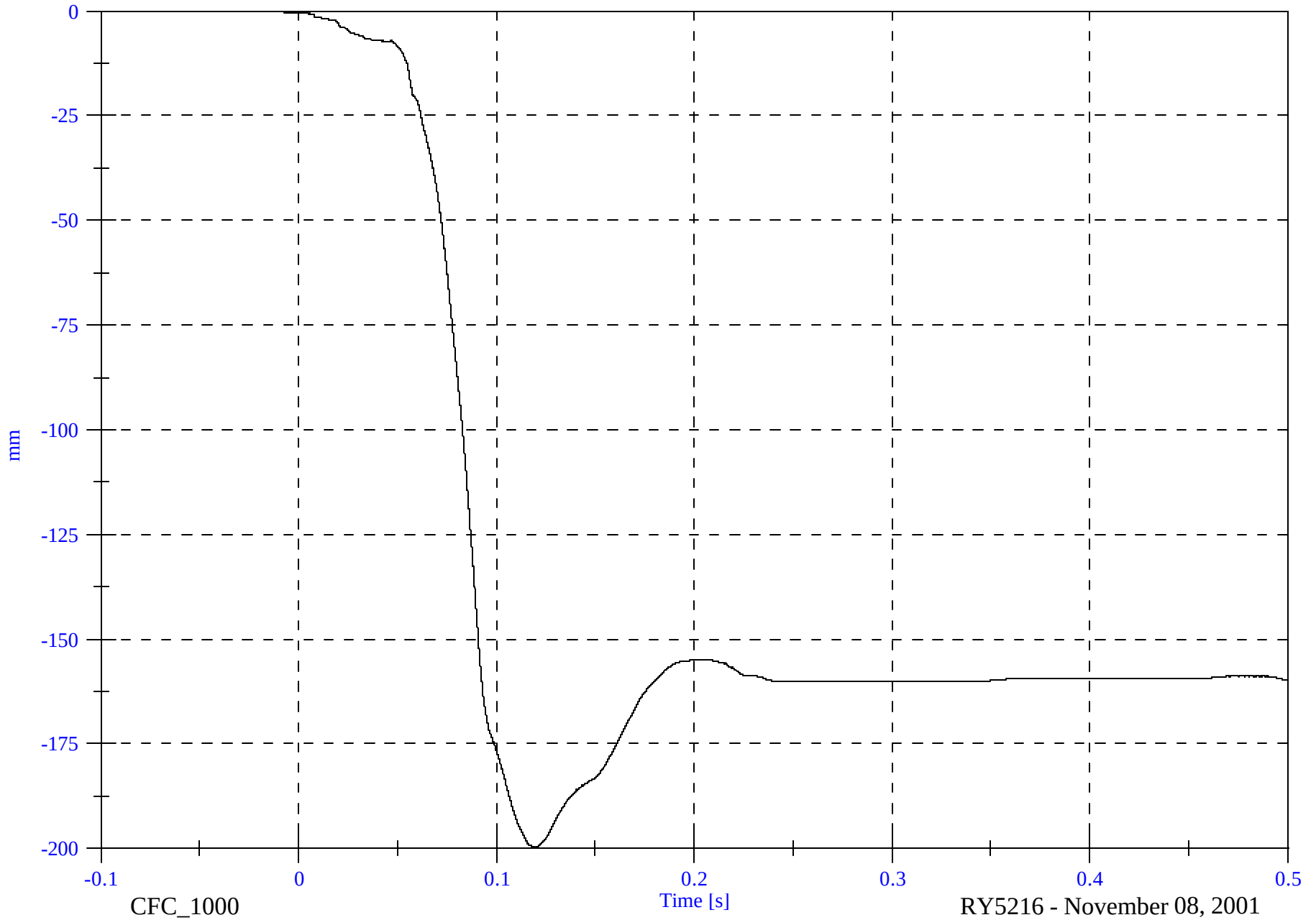
P1 Toe pan Left Displacement

Max: 0.0 [mm] at -0.064 [s]

Min: -199.8 [mm] at 0.120 [s]

B-85

8413-66



CFC_1000

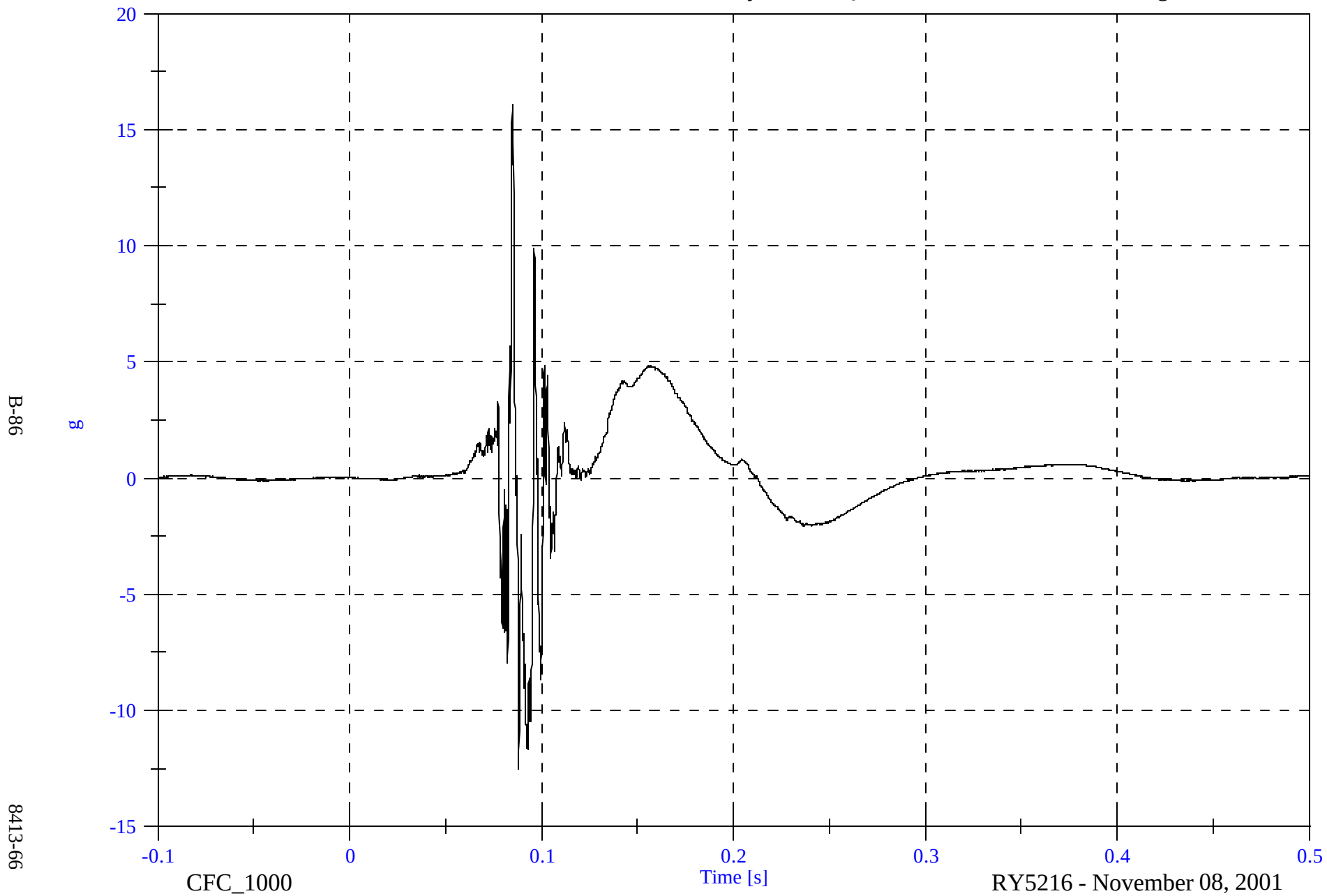
RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Head 9 Array X Arm Ay

Max: 16.1 [g] at 0.085 [s]

Min: -12.5 [g] at 0.088 [s]



40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Head 9 Array X Arm Az

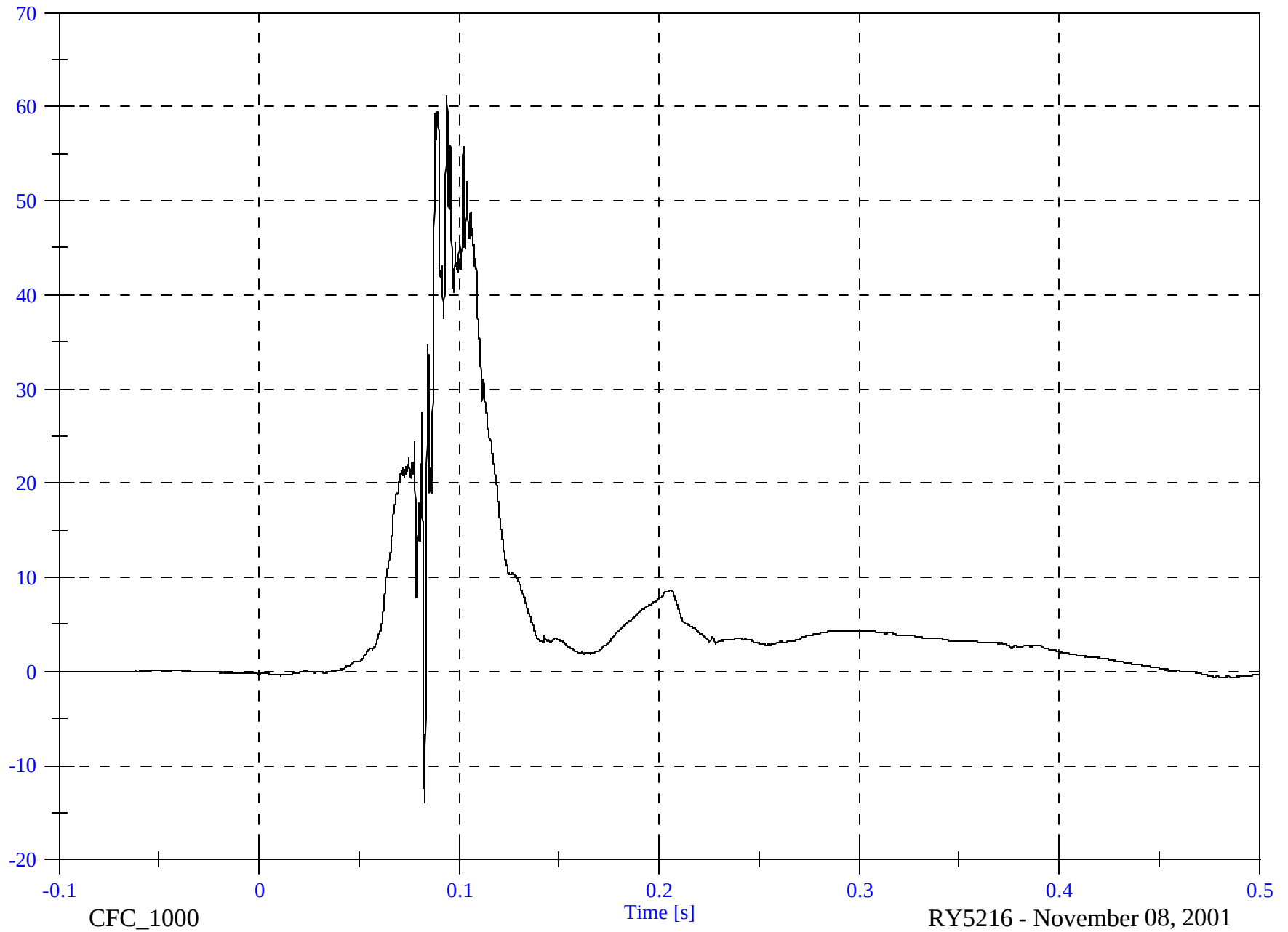
Max: 61.1 [g] at 0.094 [s]

Min: -13.9 [g] at 0.083 [s]

B-87

g

8413-66



CFC_1000

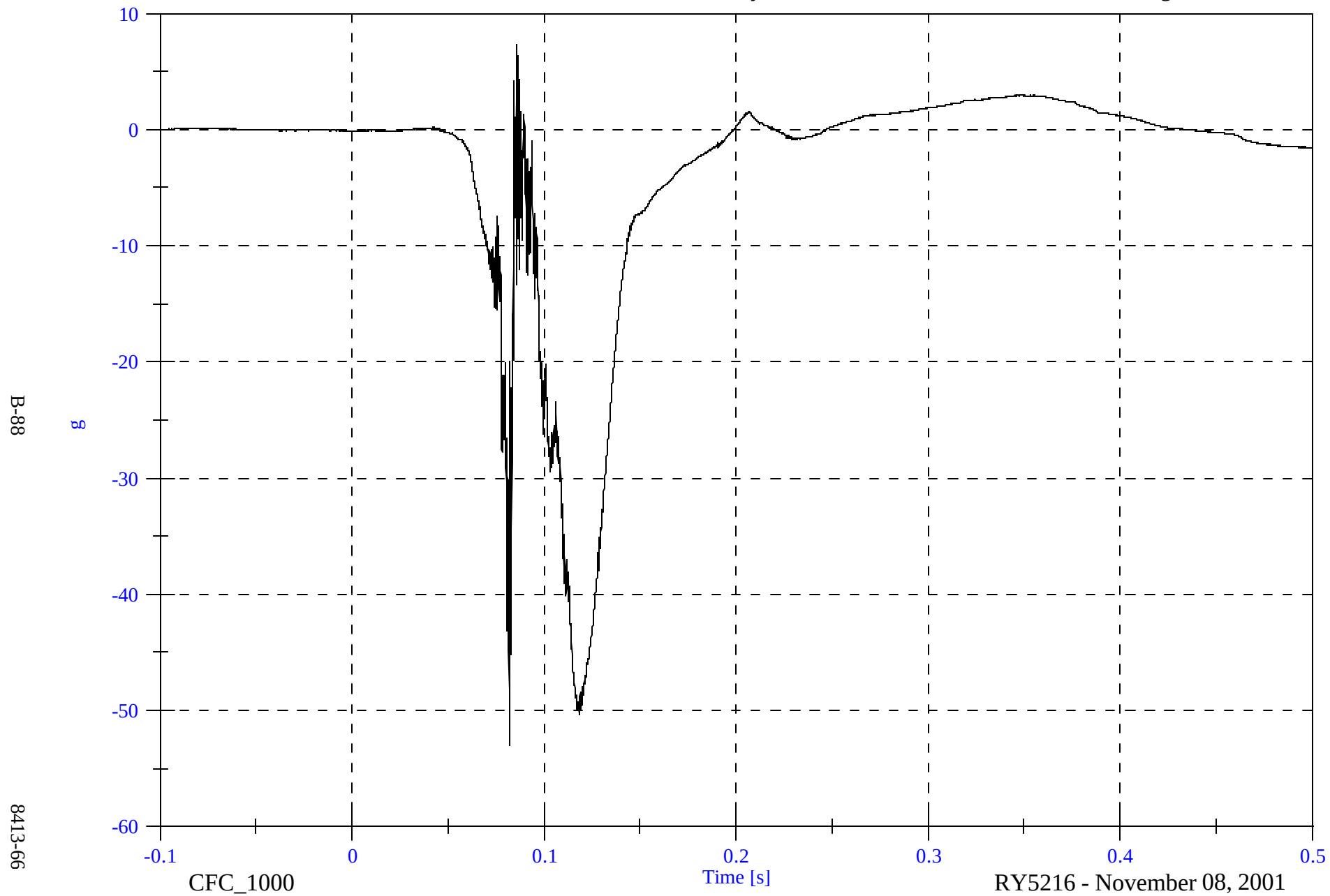
RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Head 9 Array Y Arm Ax

Max: 7.3 [g] at 0.086 [s]

Min: -52.9 [g] at 0.082 [s]



40% Frontal Offset Test #10 - 2000 Nissan Altima

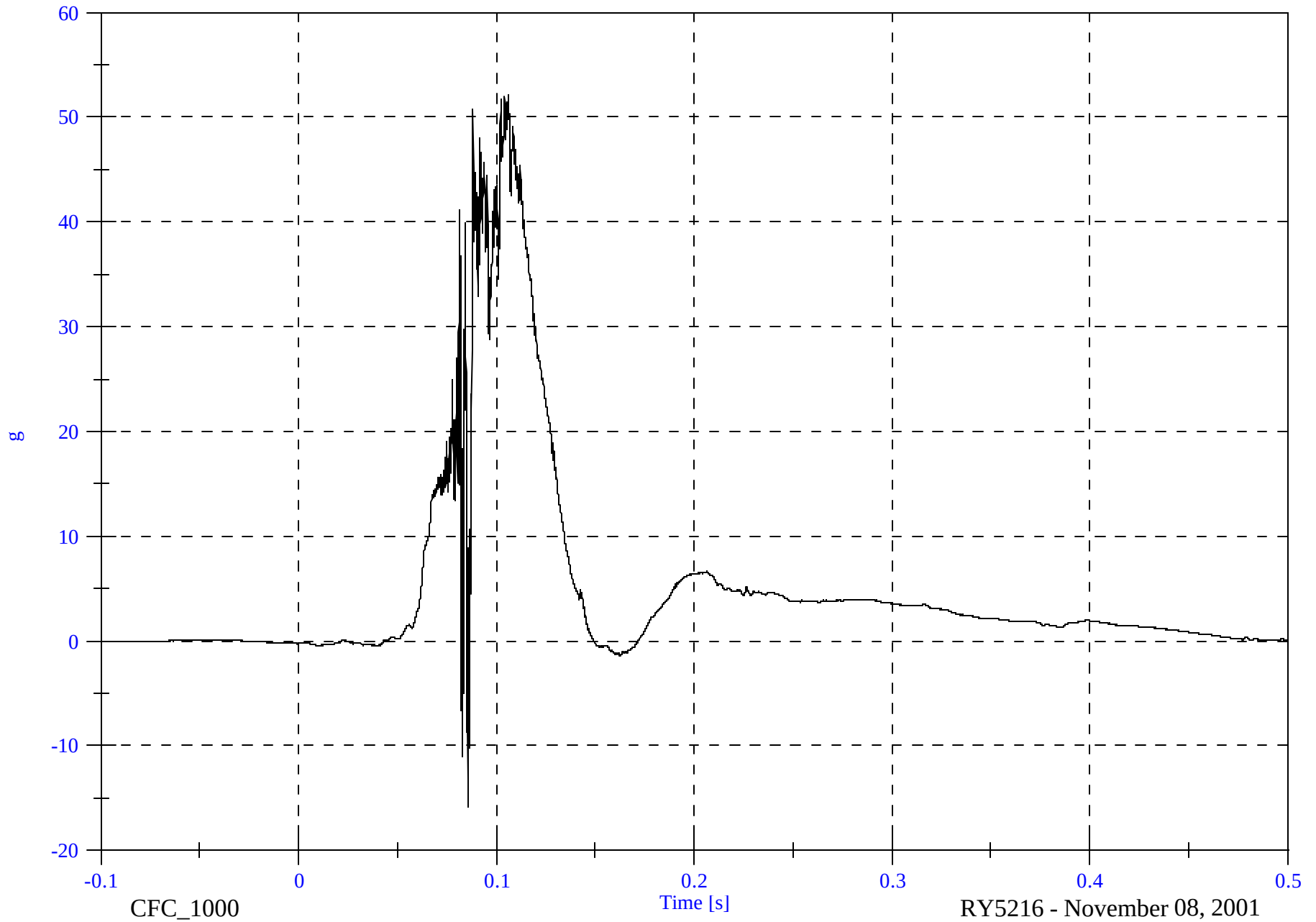
P2 Head 9 Array Y Arm Az

Max: 52.1 [g] at 0.106 [s]

Min: -15.9 [g] at 0.085 [s]

B-89

8413-66



CFC_1000

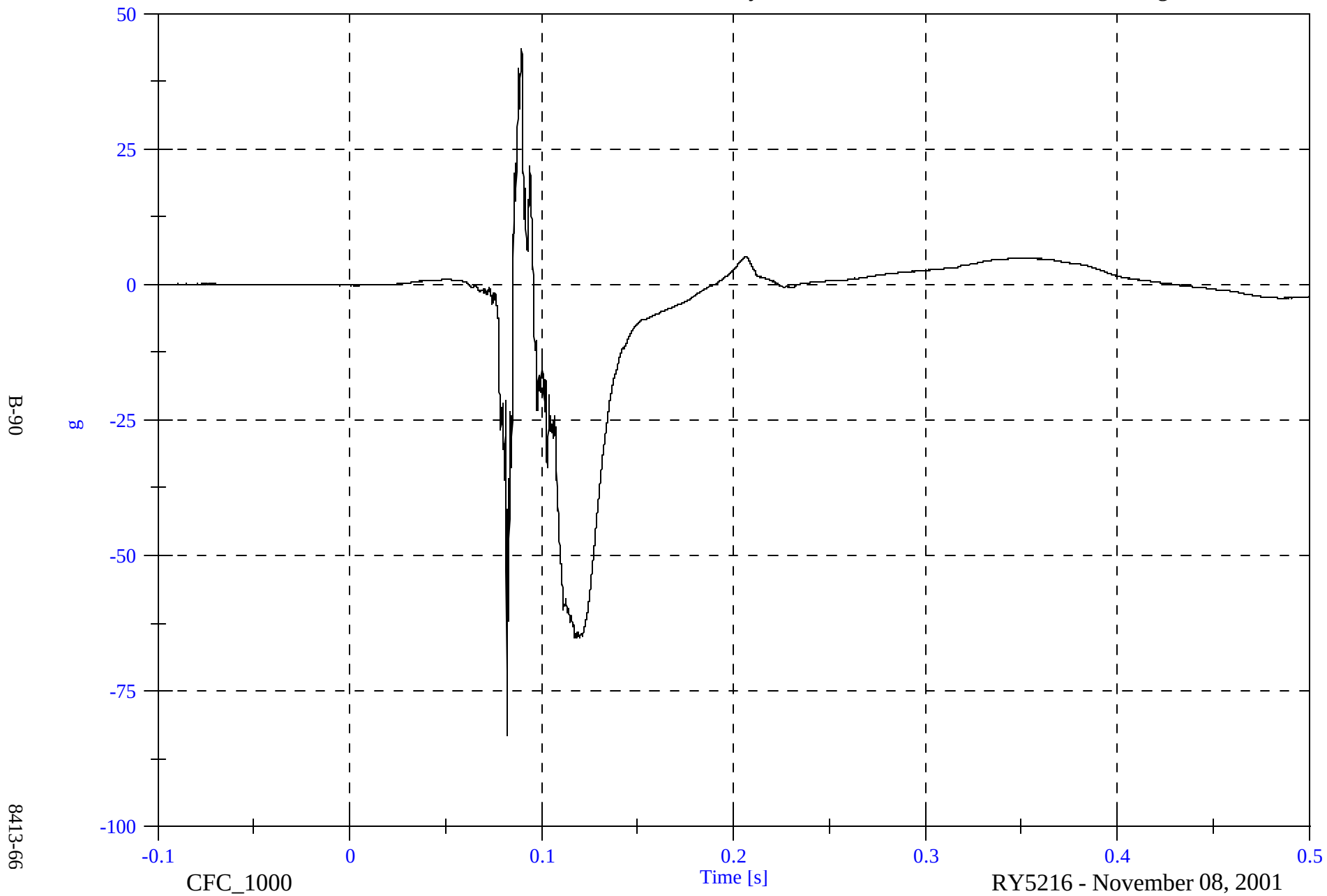
RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Head 9 Array Z Arm Ax

Max: 43.5 [g] at 0.090 [s]

Min: -83.2 [g] at 0.082 [s]



B-90

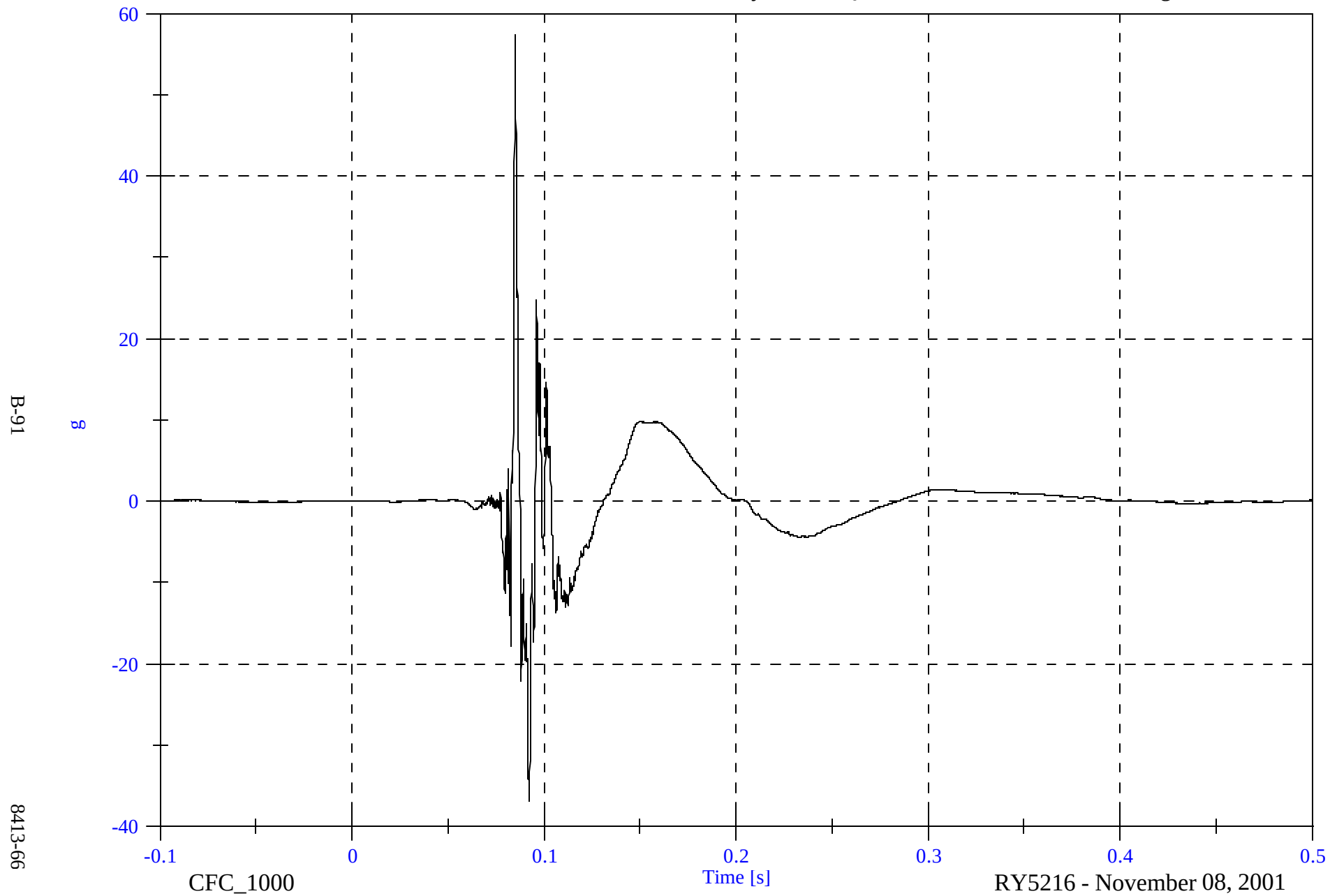
8413-66

40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Head 9 Array Z Arm Ay

Max: 57.4 [g] at 0.085 [s]

Min: -36.8 [g] at 0.092 [s]

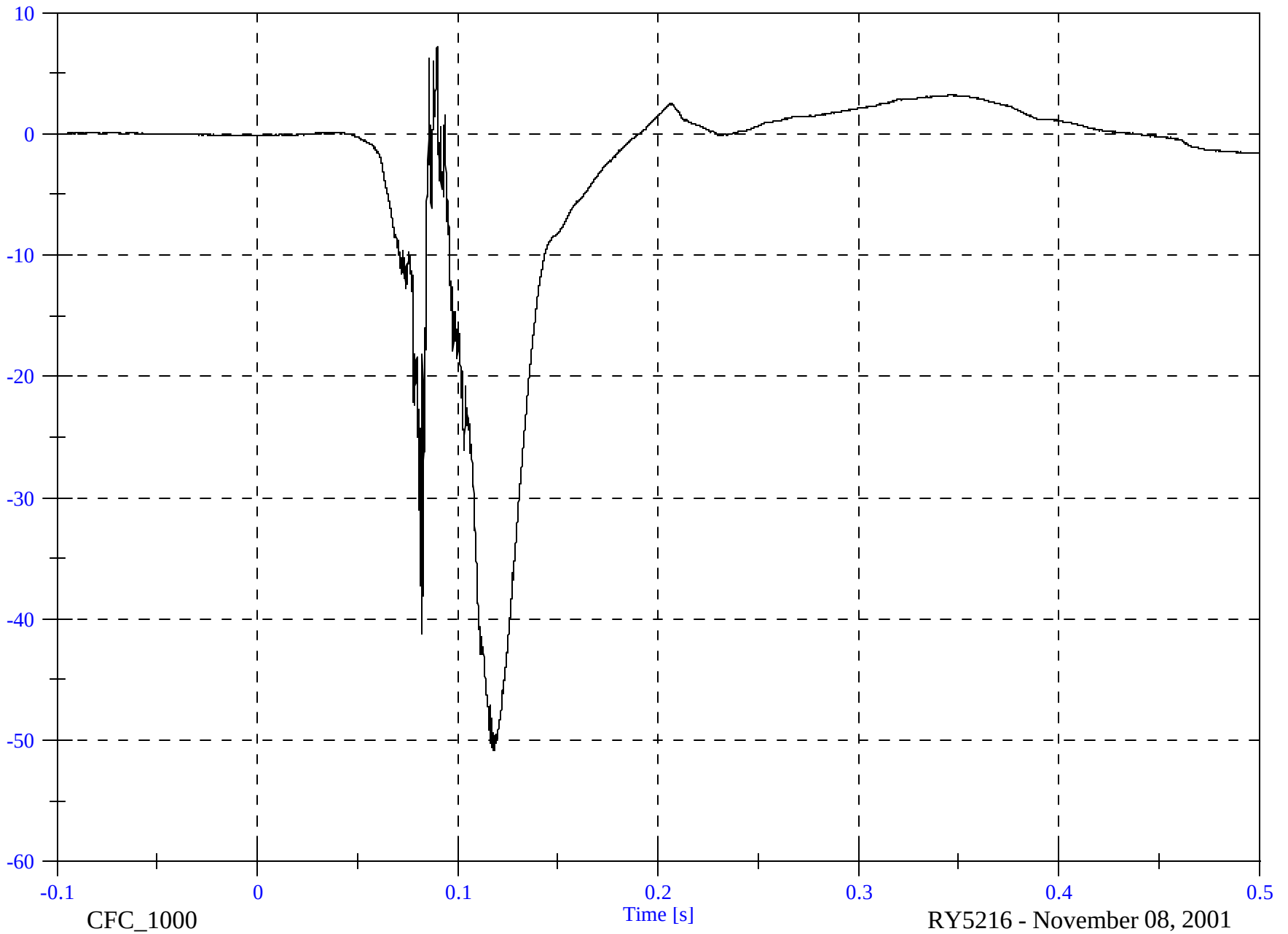


40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Head CG Ax

Max: 7.2 [g] at 0.090 [s]

Min: -50.9 [g] at 0.118 [s]

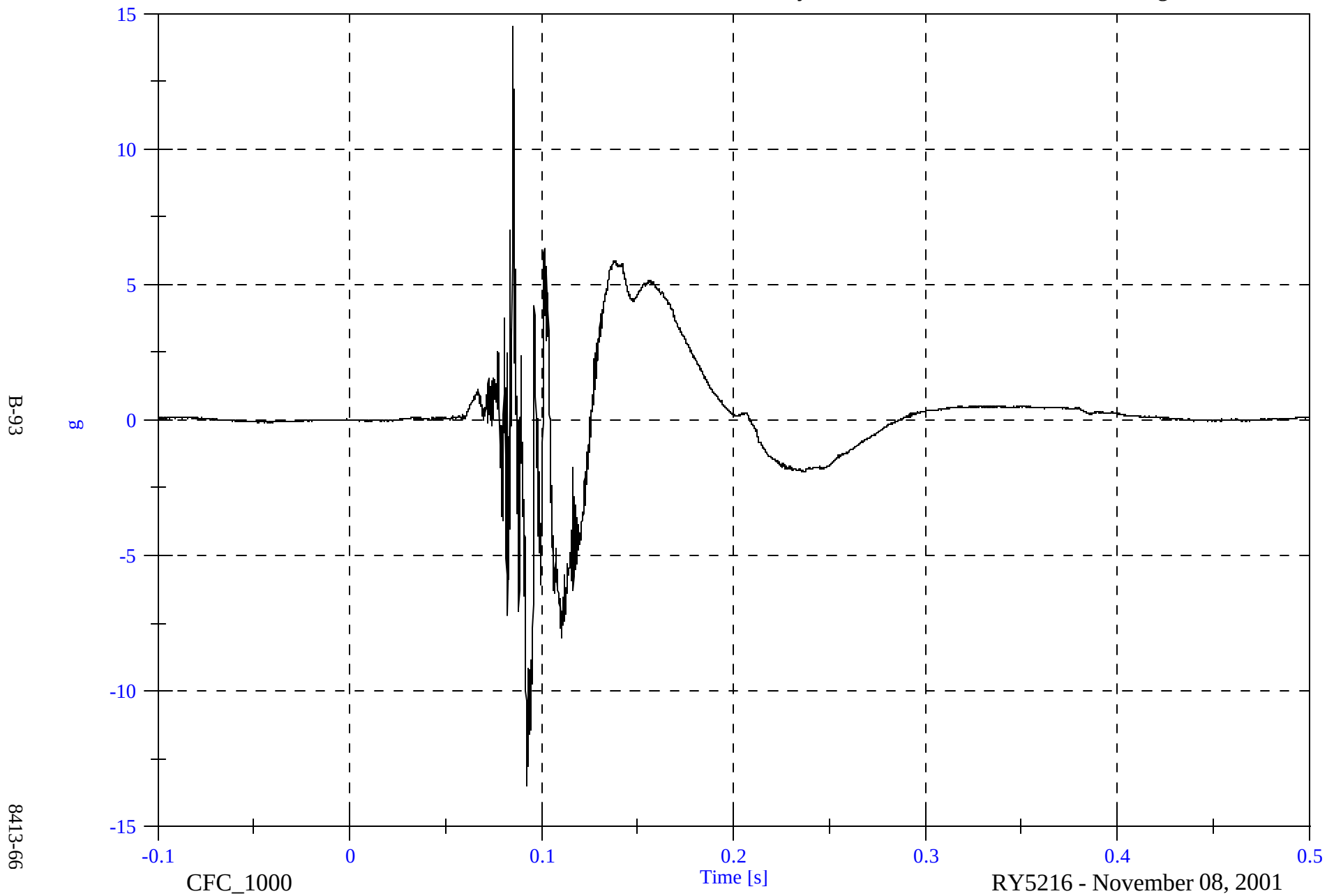


40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Head CG Ay

Max: 14.5 [g] at 0.085 [s]

Min: -13.5 [g] at 0.092 [s]

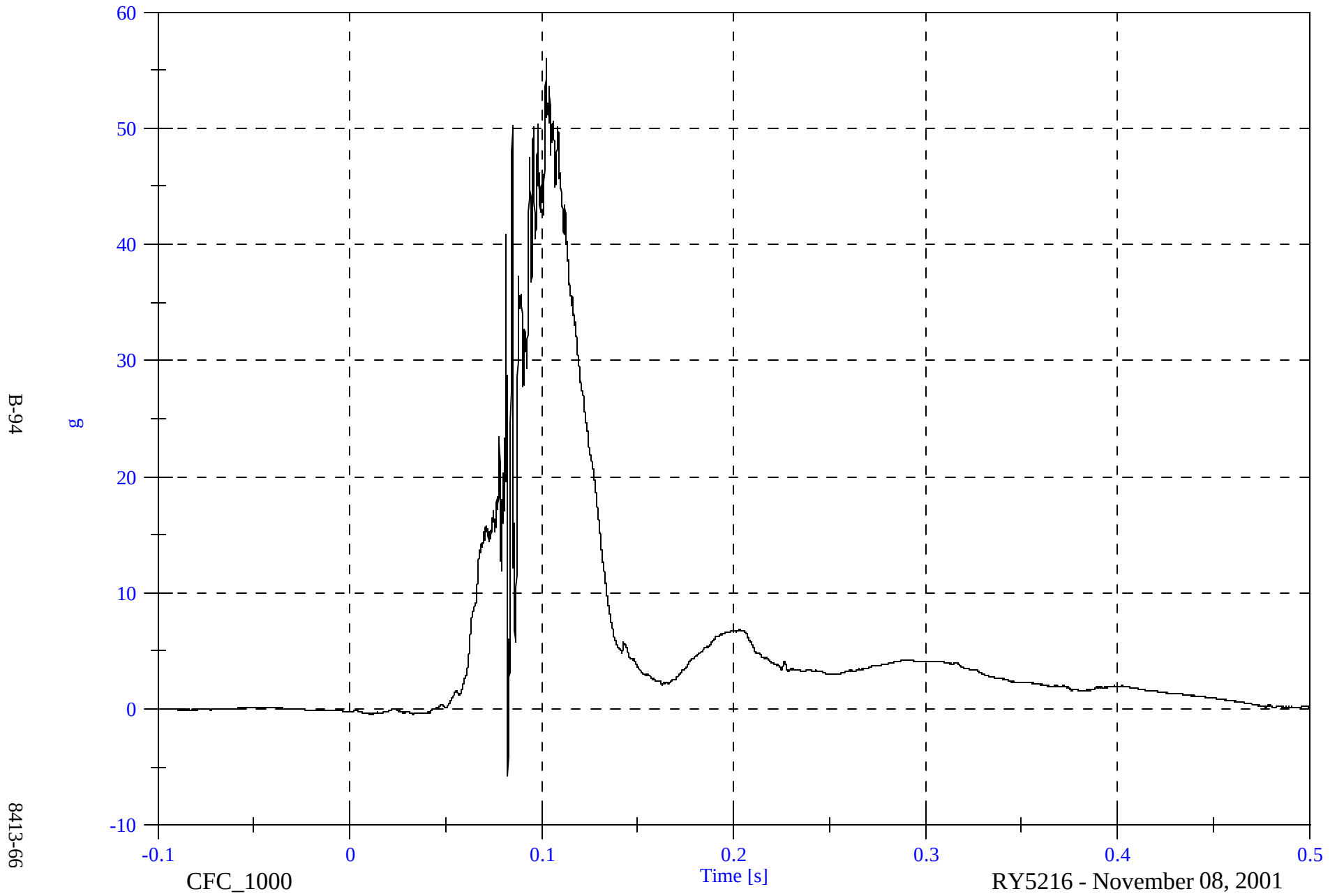


40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Head CG Az

Max: 56.0 [g] at 0.102 [s]

Min: -5.7 [g] at 0.082 [s]



40% Frontal Offset Test #10 - 2000 Nissan Altima

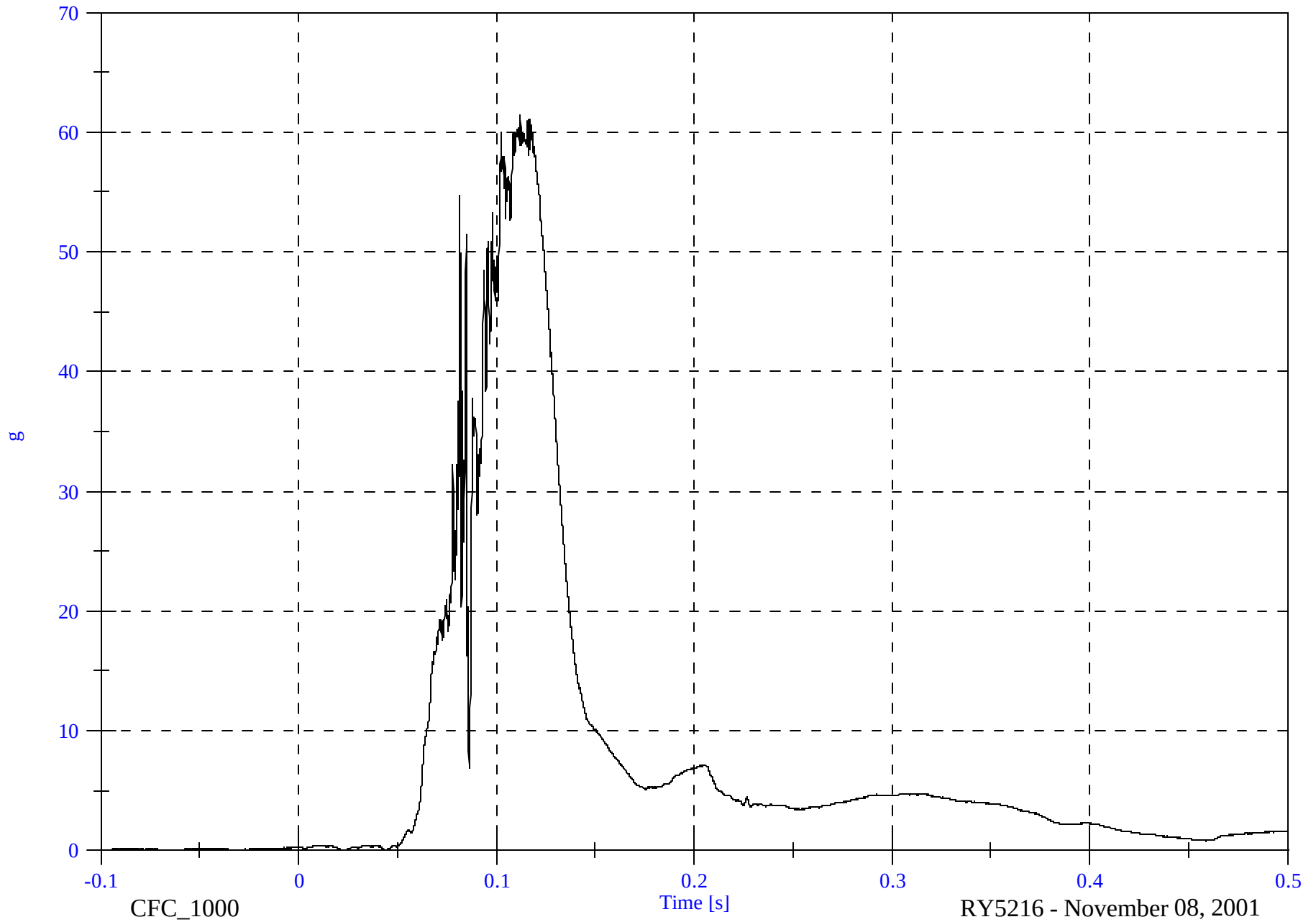
P2 Head CG A Resultant

Max: 61.4 [g] at 0.112 [s]

Min: 0.0 [g] at -0.067 [s]

B-95

8413-66

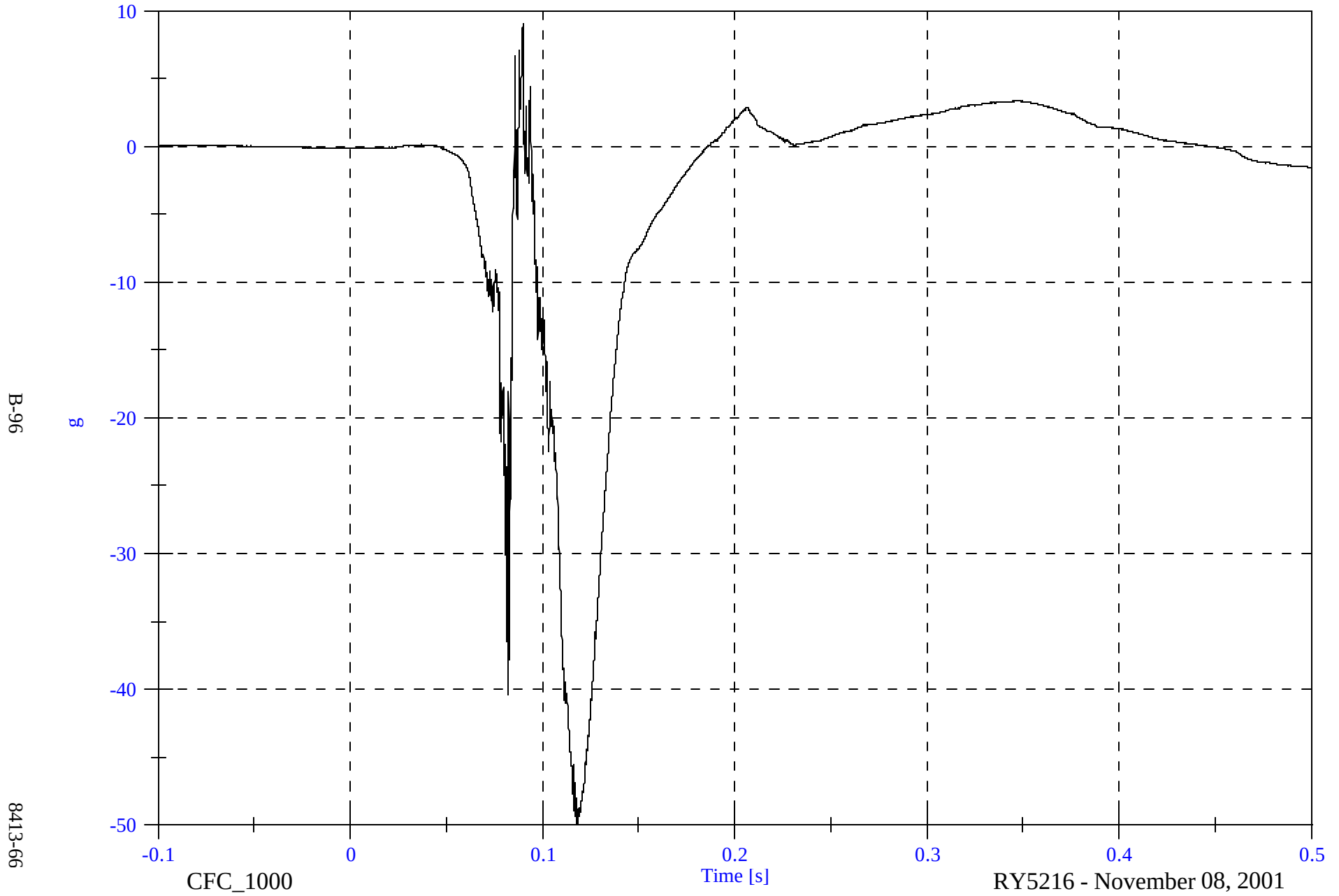


40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Head CG Red Ax

Max: 9.0 [g] at 0.090 [s]

Min: -50.0 [g] at 0.118 [s]

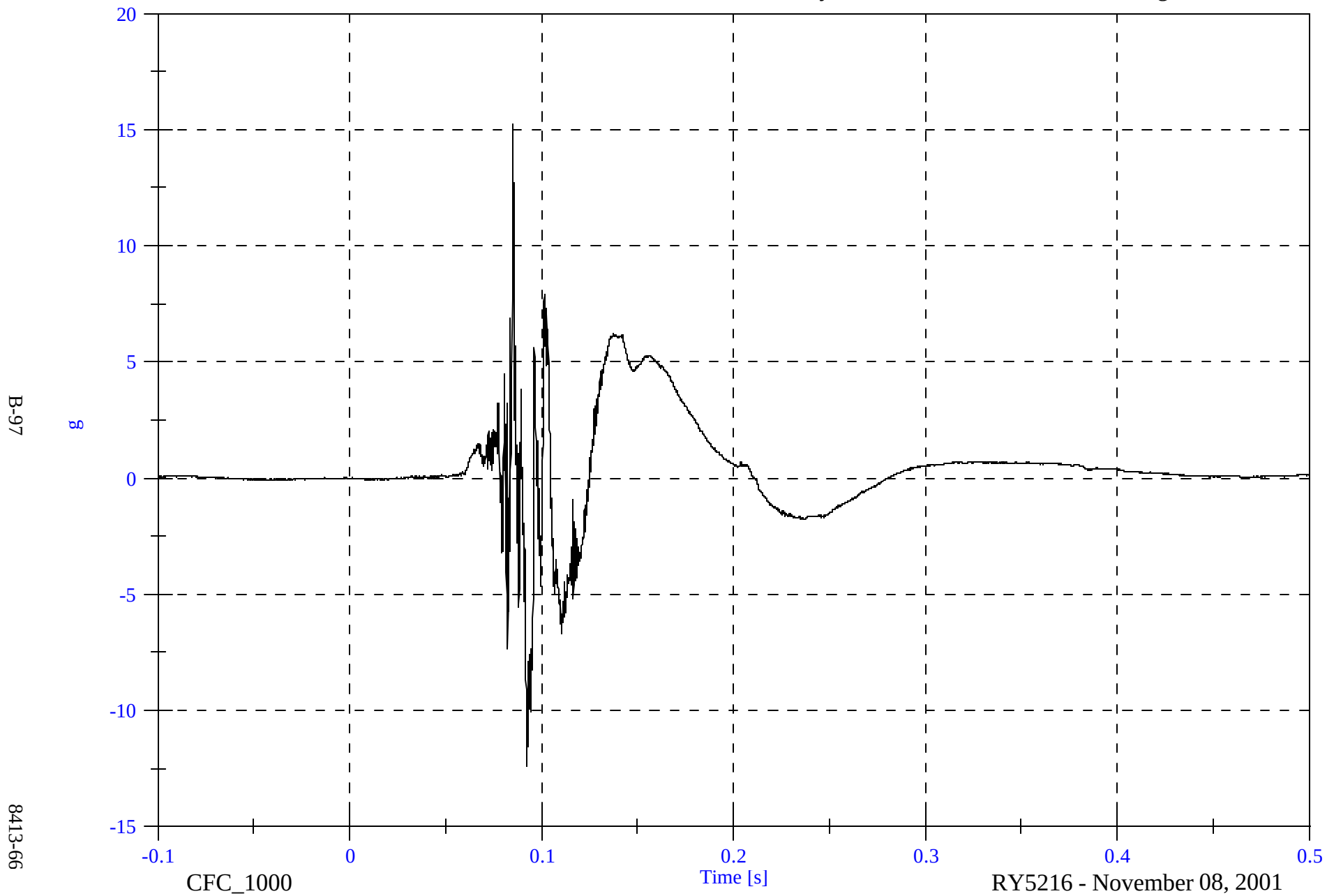


40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Head CG Red Ay

Max: 15.2 [g] at 0.085 [s]

Min: -12.4 [g] at 0.092 [s]

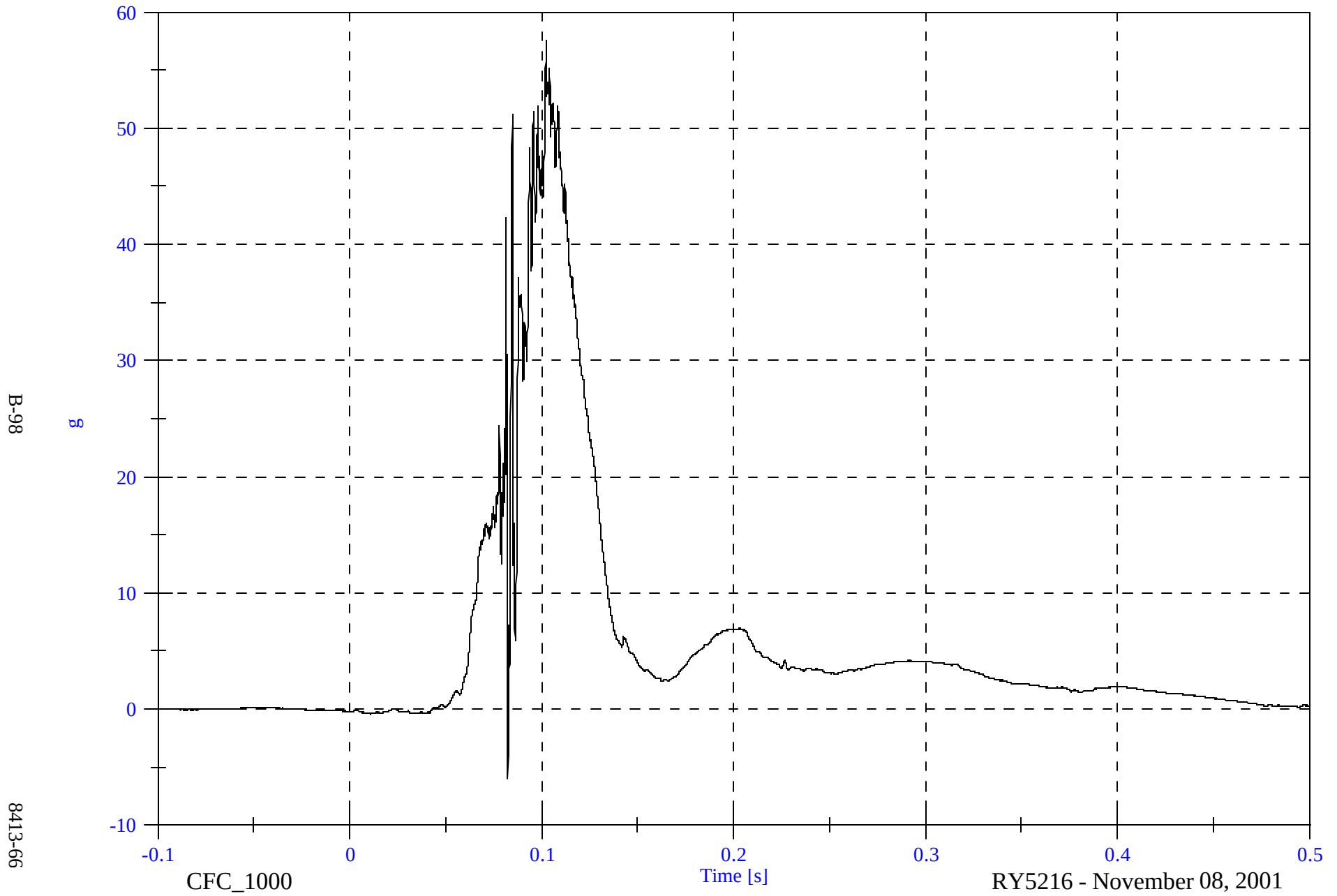


40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Head CG Red Az

Max: 57.6 [g] at 0.102 [s]

Min: -6.0 [g] at 0.082 [s]

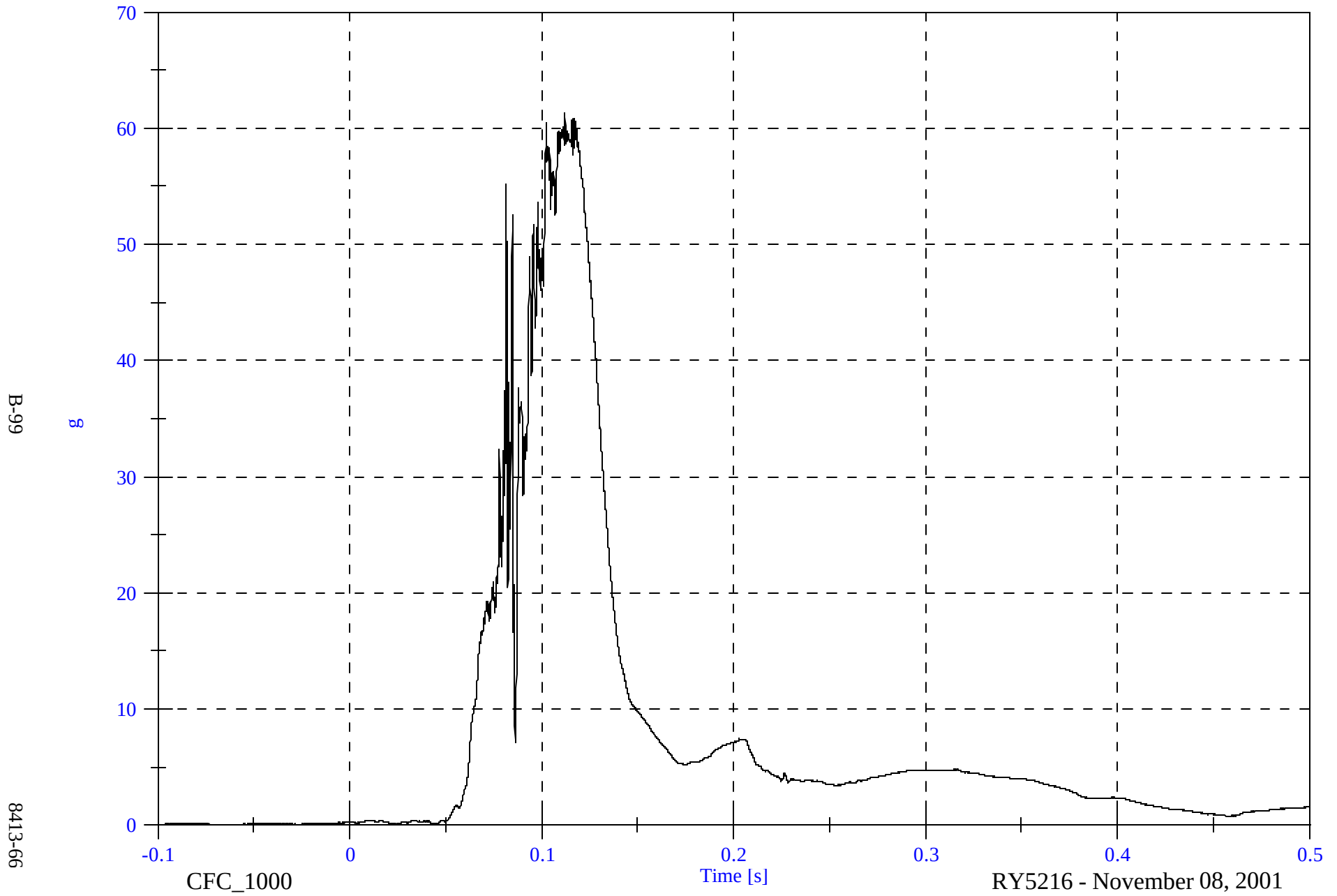


40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Head CG Red A Resultant

Max: 61.3 [g] at 0.112 [s]

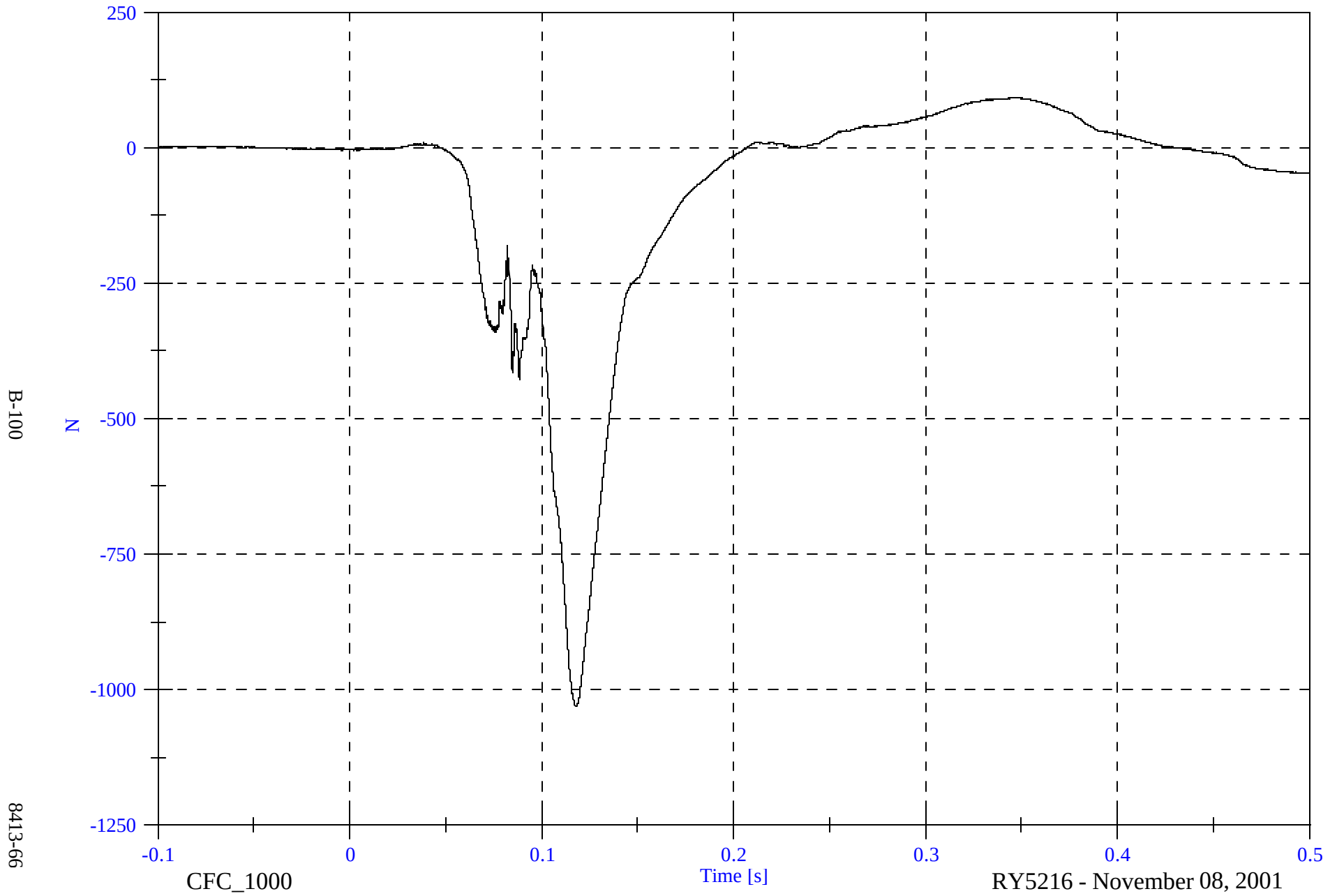
Min: 0.0 [g] at -0.062 [s]



40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Upper Neck Fx

Max: 92.3 [N] at 0.347 [s]
Min: -1030.8 [N] at 0.118 [s]



40% Frontal Offset Test #10 - 2000 Nissan Altima

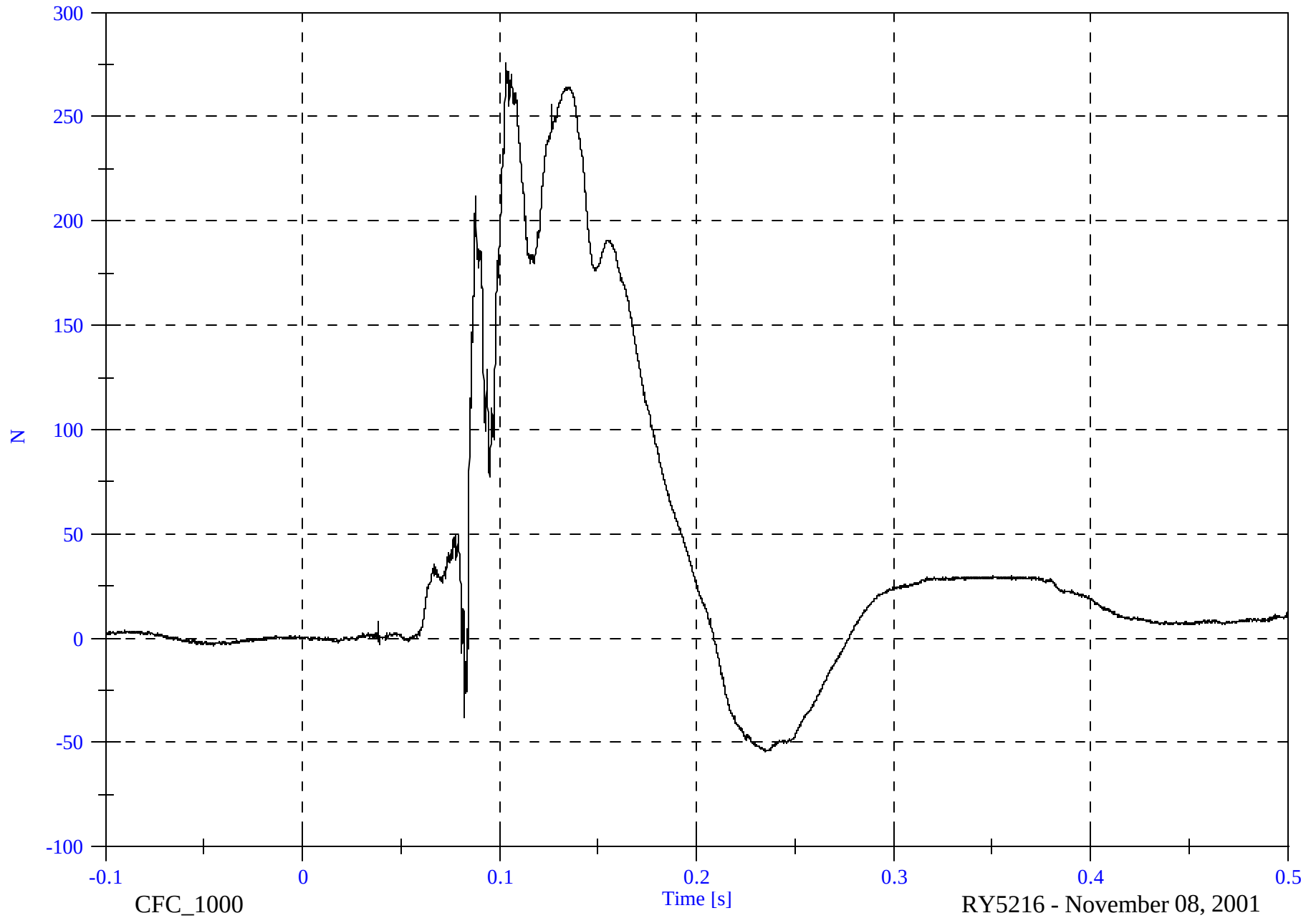
P2 Upper Neck Fy

Max: 275.9 [N] at 0.103 [s]

Min: -54.2 [N] at 0.235 [s]

B-101

8413-66

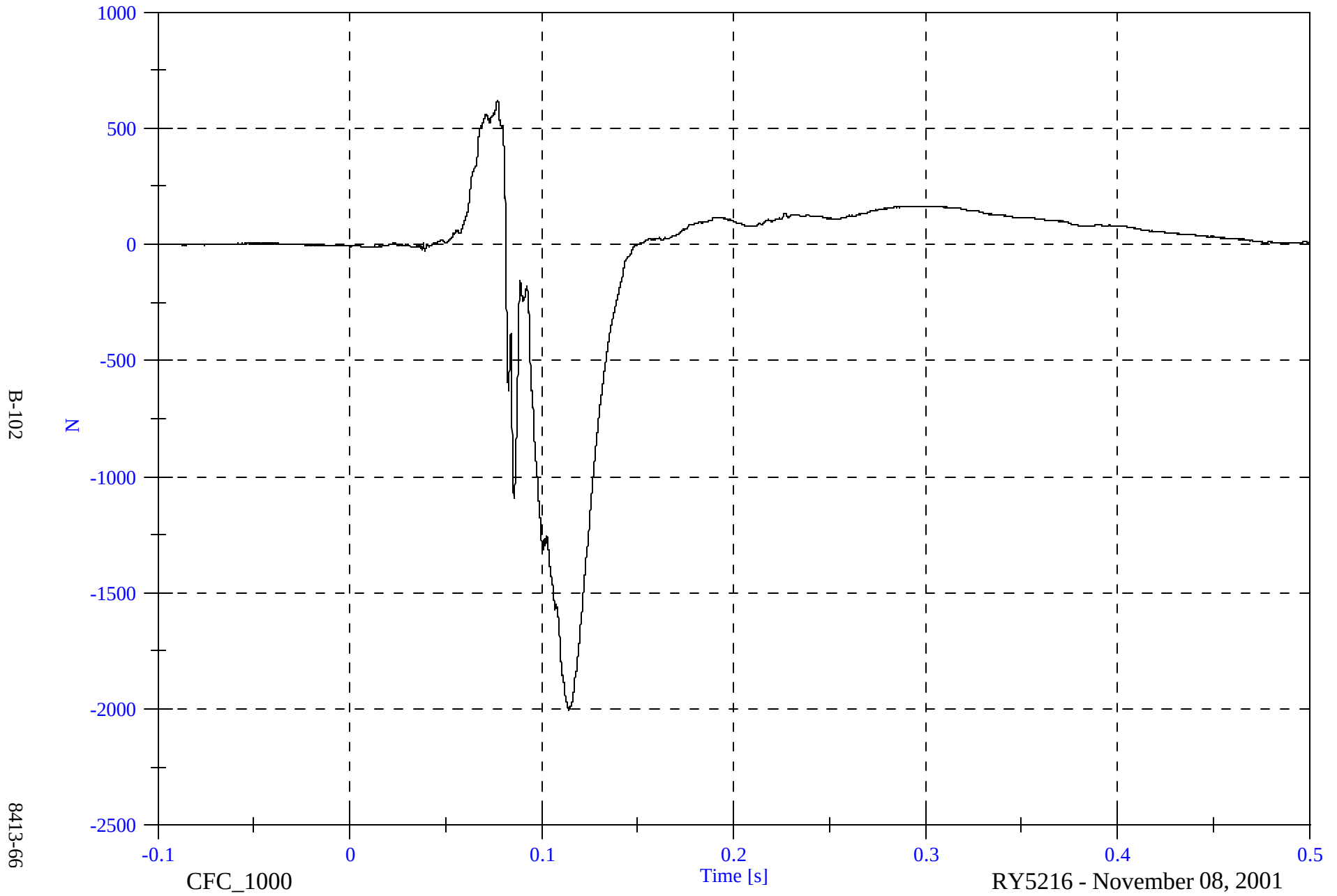


40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Upper Neck Fz

Max: 618.9 [N] at 0.077 [s]

Min: -2003.1 [N] at 0.114 [s]

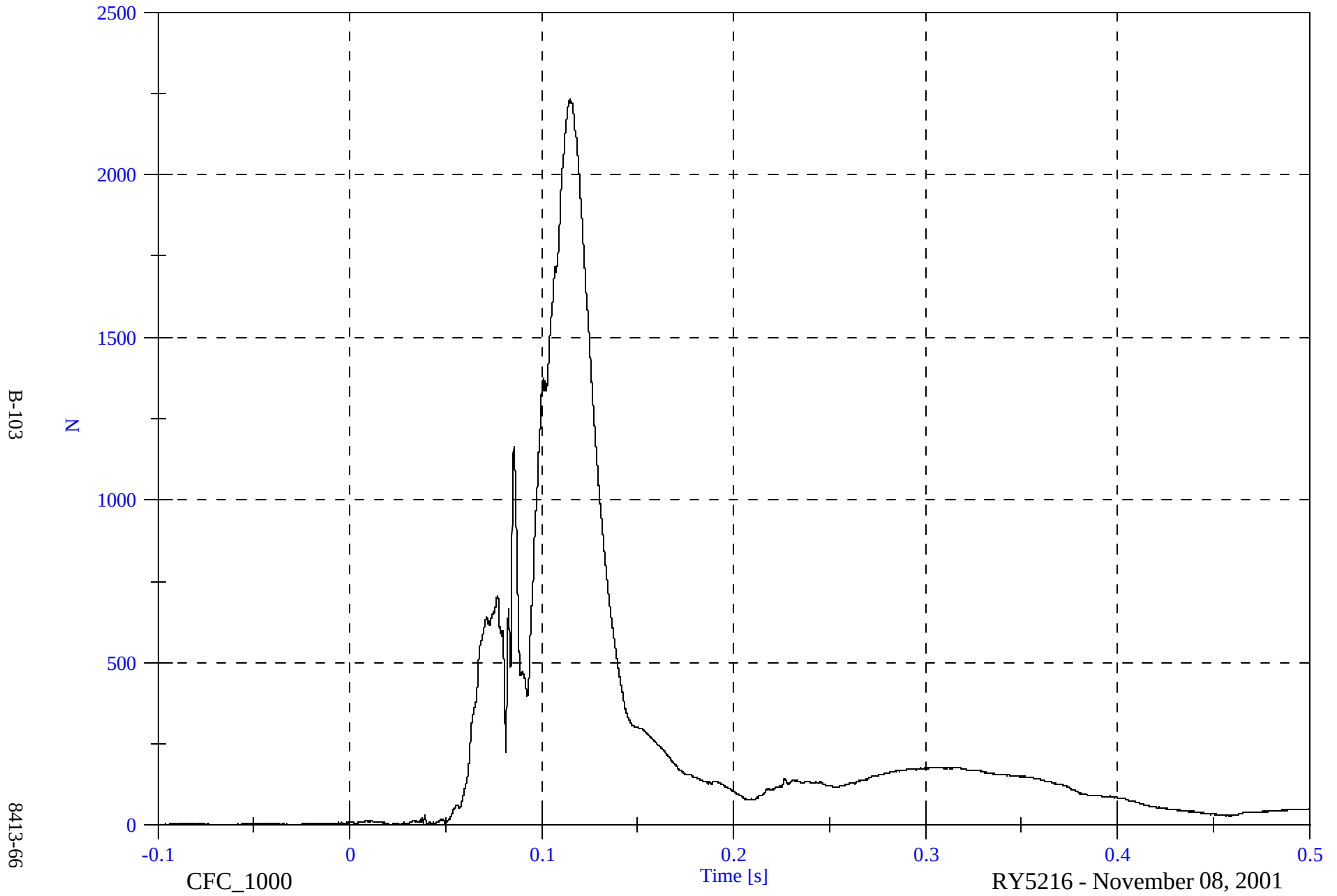


40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Upper Neck F Resultant

Max: 2234.3 [N] at 0.115 [s]

Min: 1.0 [N] at 0.024 [s]

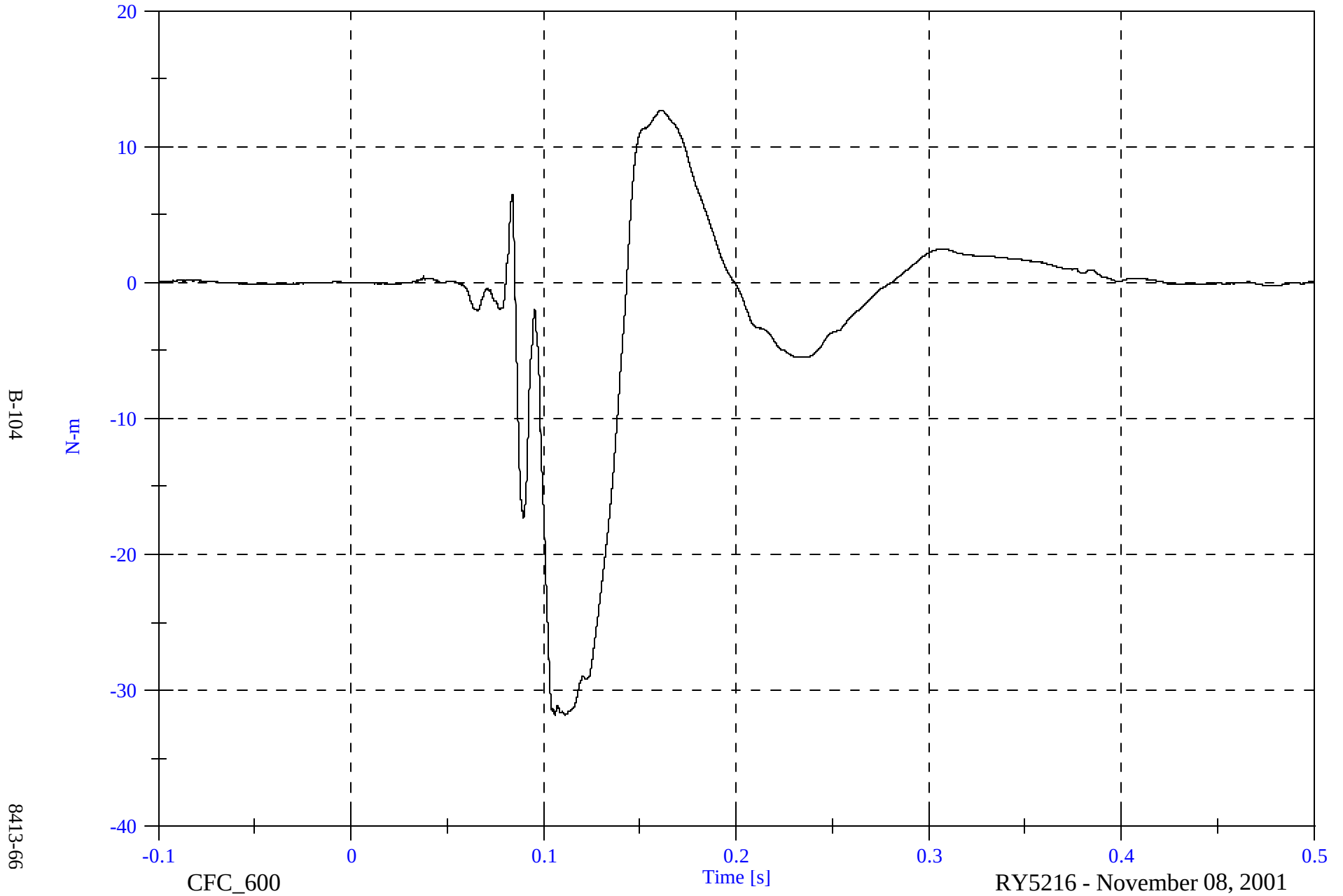


40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Upper Neck Mx

Max: 12.7 [N-m] at 0.161 [s]

Min: -31.8 [N-m] at 0.106 [s]

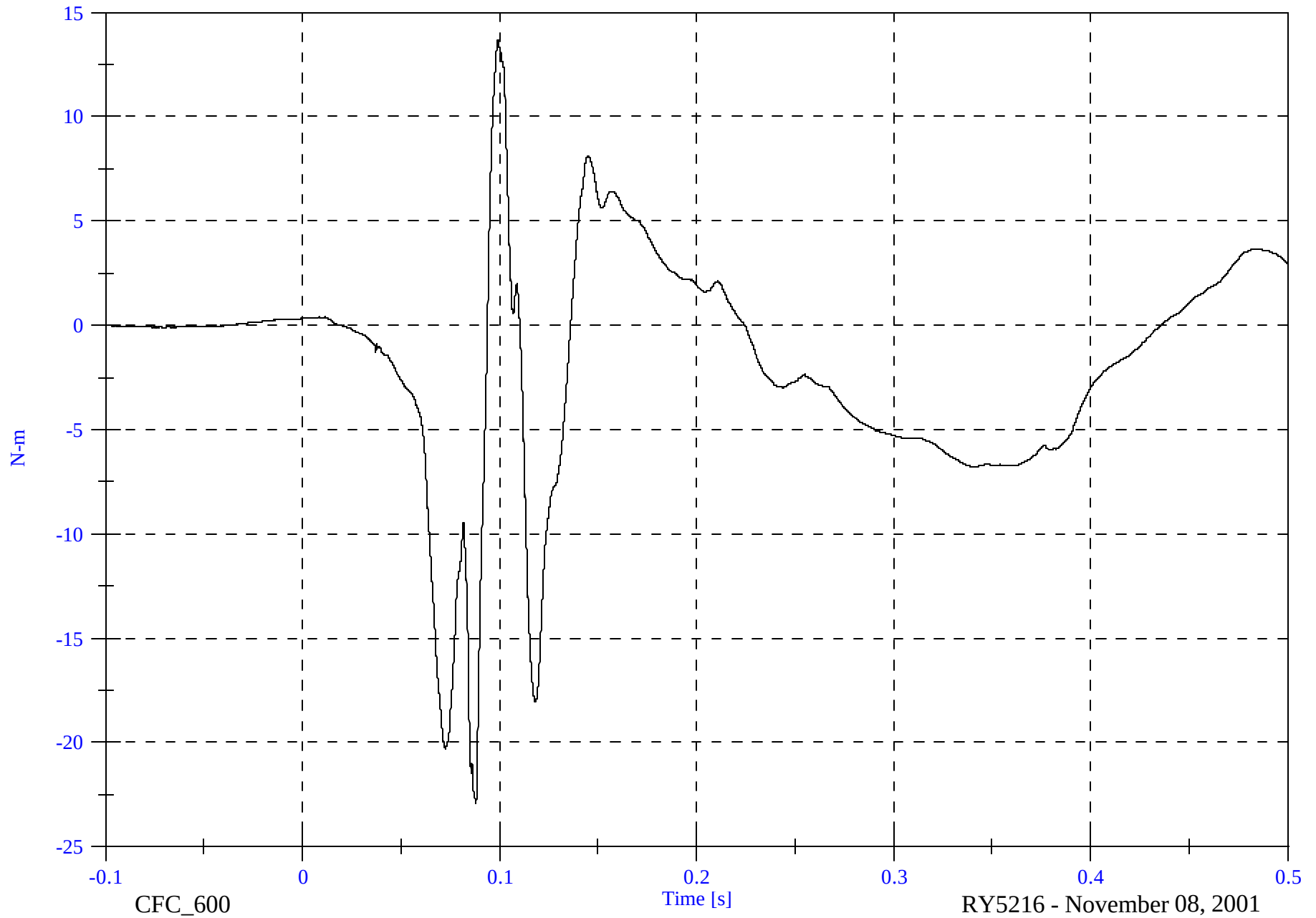


40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Upper Neck My

Max: 13.6 [N-m] at 0.099 [s]

Min: -22.9 [N-m] at 0.088 [s]



B-105

8413-66

CFC_600

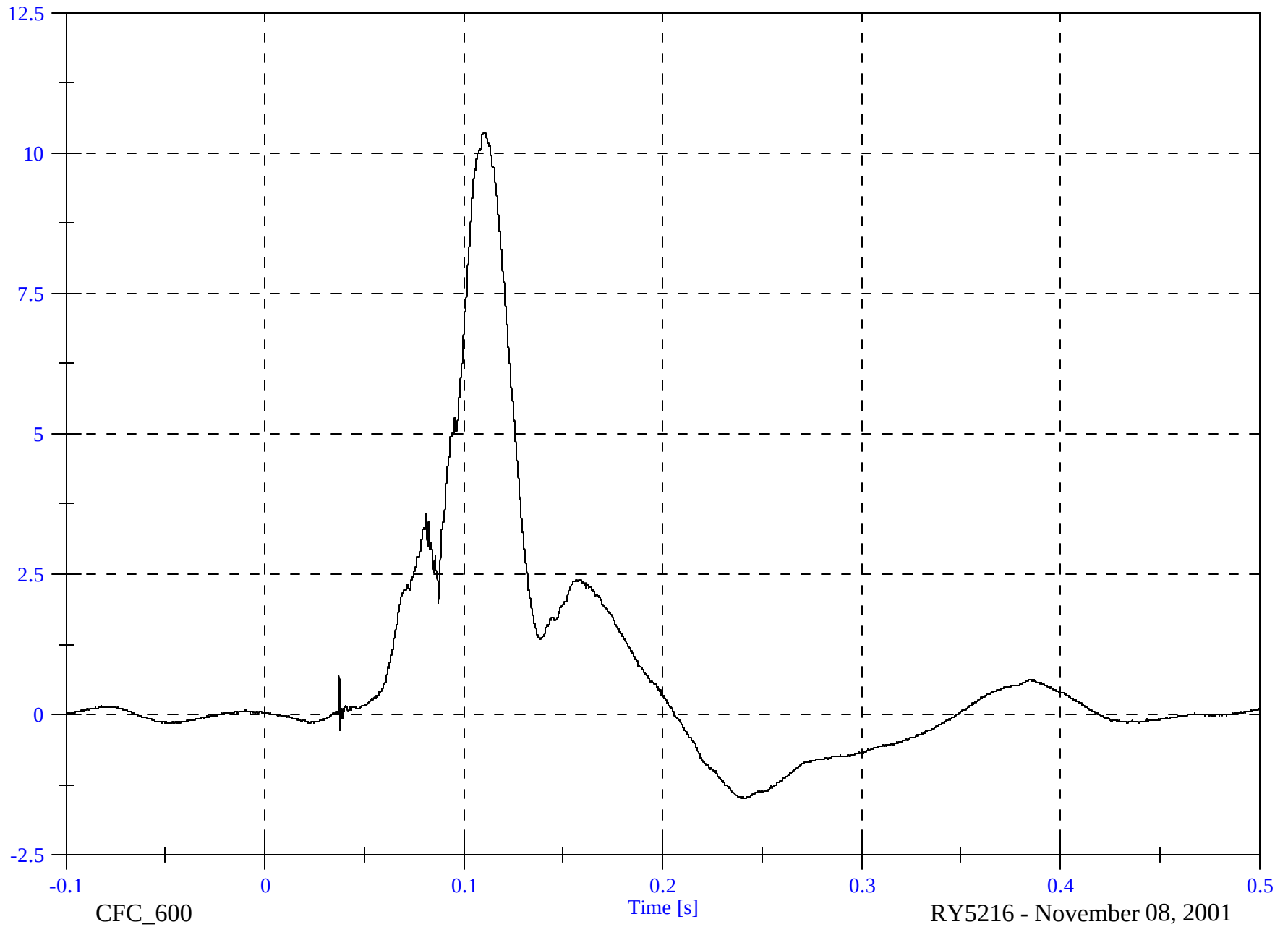
RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Upper Neck Mz

Max: 10.4 [N-m] at 0.111 [s]

Min: -1.5 [N-m] at 0.239 [s]



B-106

8413-66

CFC_600

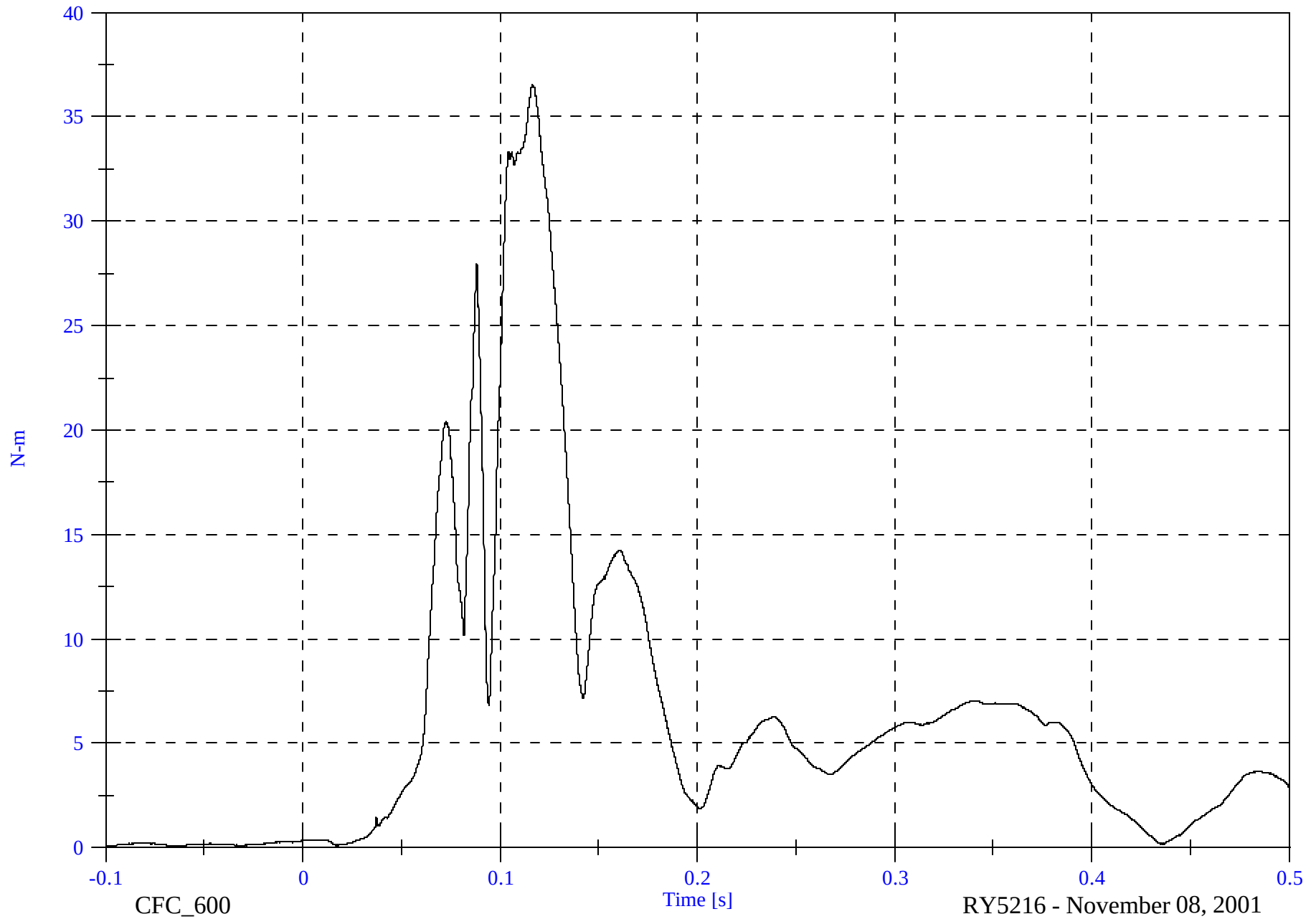
RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Upper Neck M Resultant

Max: 36.5 [N-m] at 0.116 [s]

Min: 0.1 [N-m] at -0.065 [s]



B-107

8413-66

CFC_600

RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

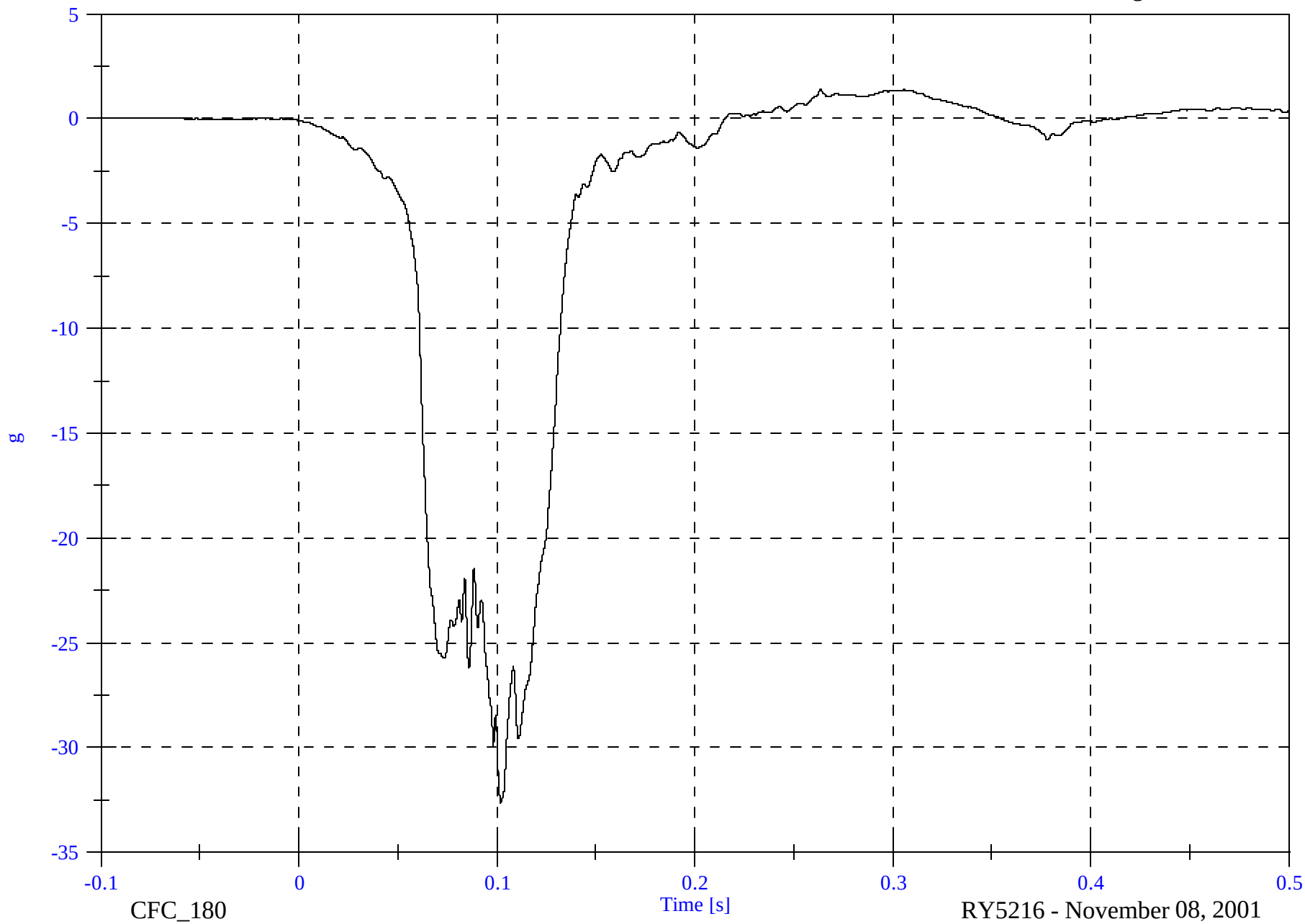
P2 Chest Ax

Max: 1.4 [g] at 0.263 [s]

Min: -32.6 [g] at 0.102 [s]

B-108

8413-66

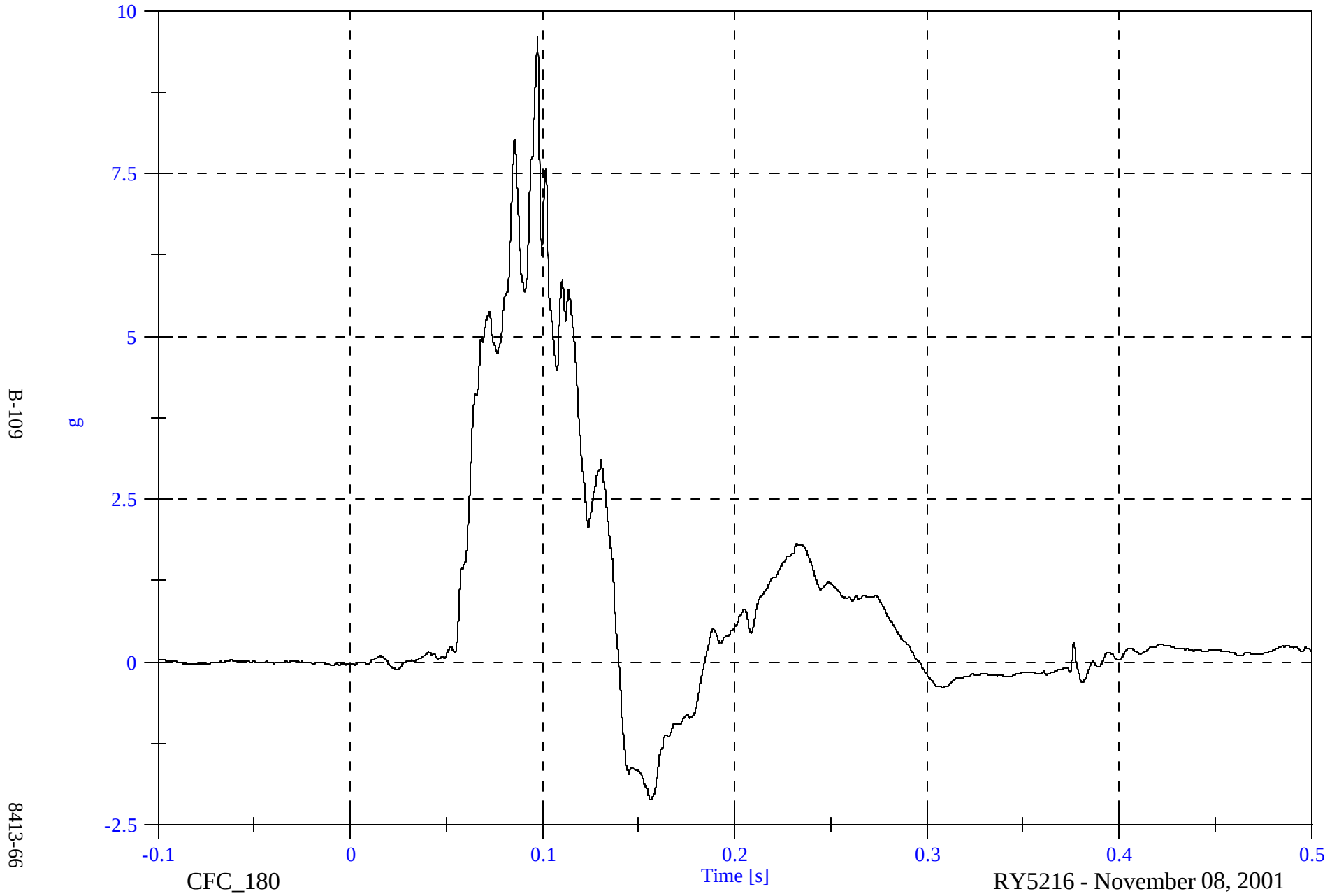


40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Chest Ay

Max: 9.6 [g] at 0.097 [s]

Min: -2.1 [g] at 0.156 [s]

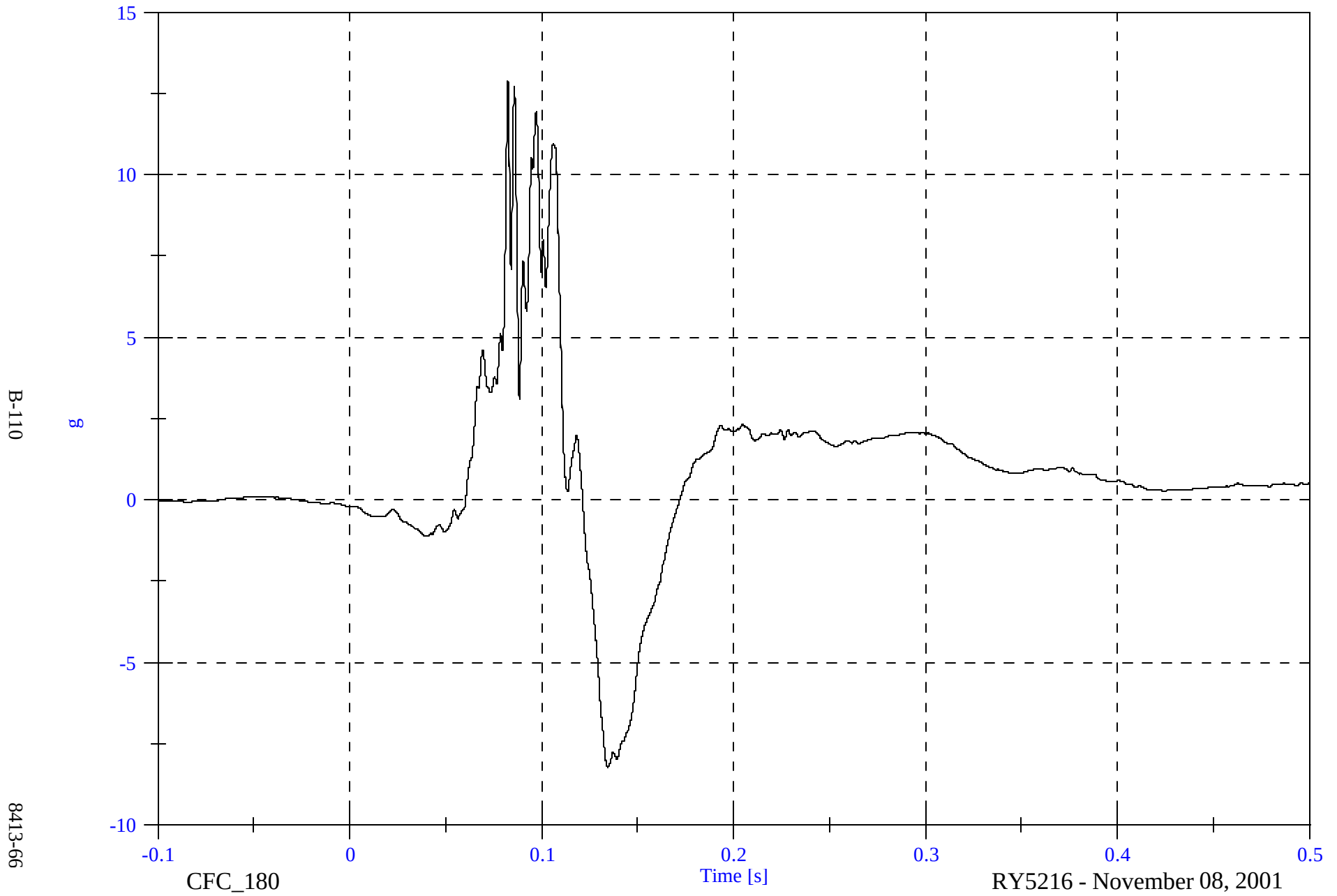


40% Frontal Offset Test #10 - 2000 Nissan Altima

Max: 12.9 [g] at 0.082 [s]

P2 Chest Az

Min: -8.2 [g] at 0.134 [s]

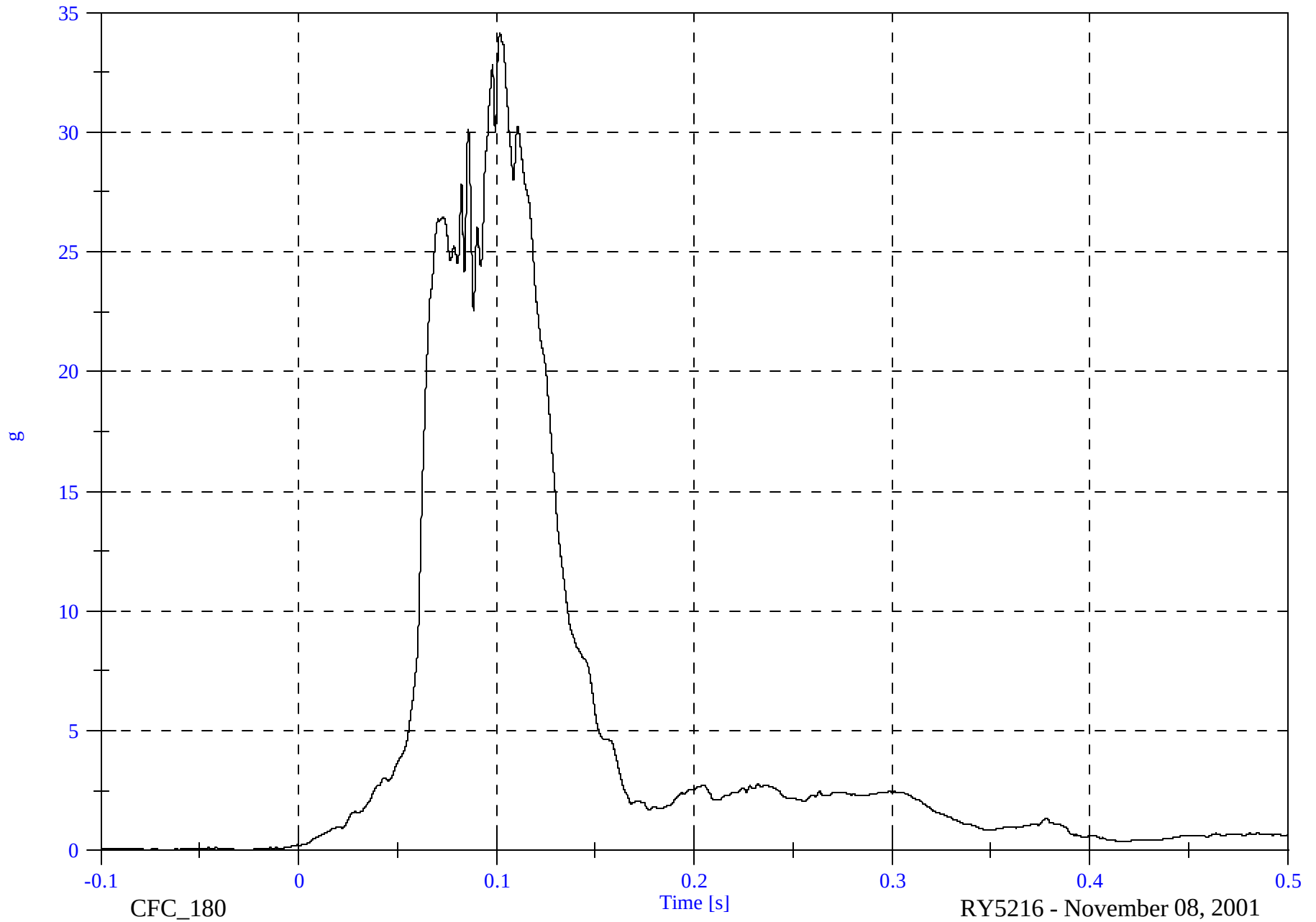


40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Chest A Resultant

Max: 34.1 [g] at 0.102 [s]

Min: 0.0 [g] at -0.027 [s]



B-111

8413-66

CFC_180

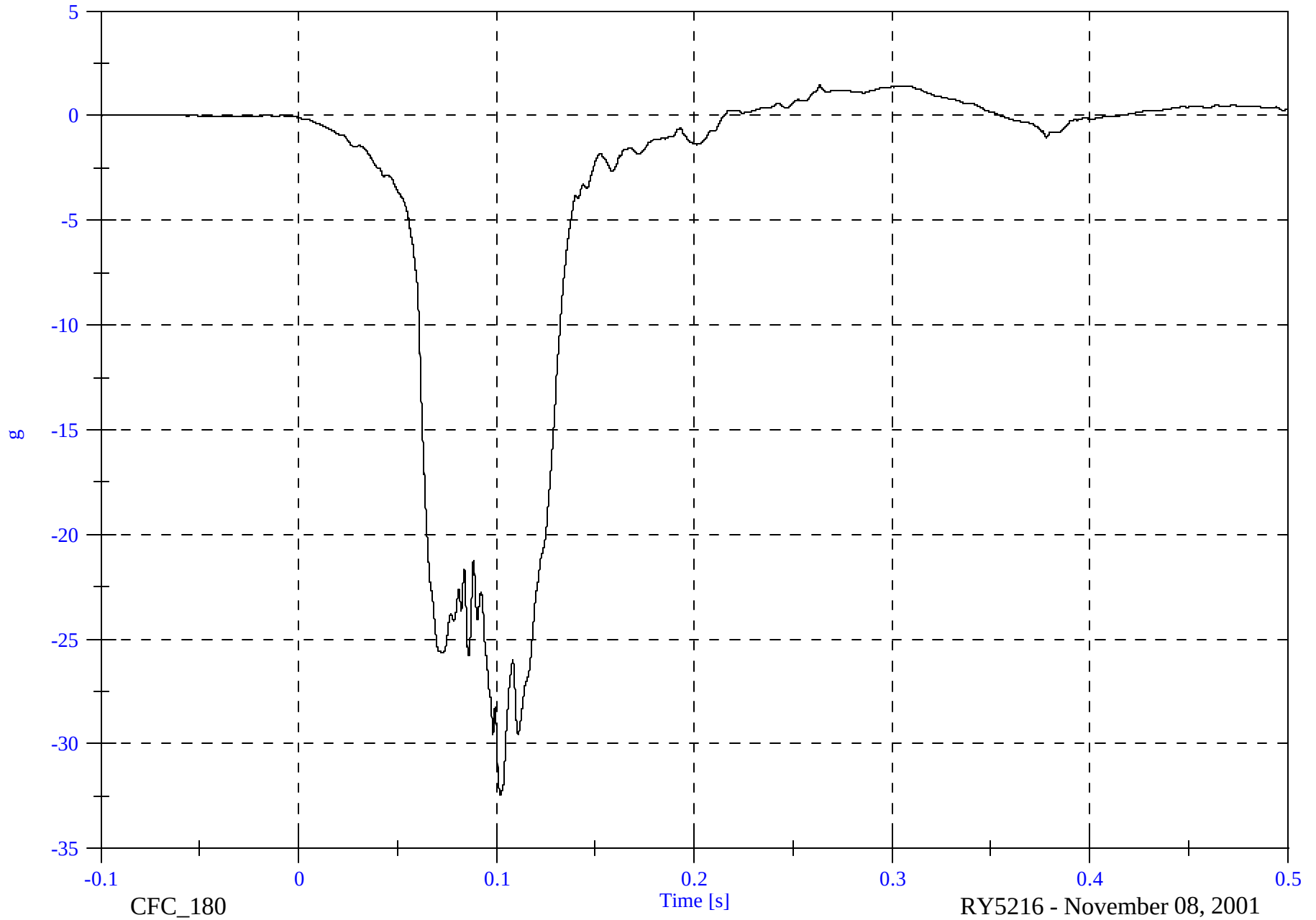
RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Chest Red Ax

Max: 1.5 [g] at 0.263 [s]

Min: -32.4 [g] at 0.102 [s]



B-112

8413-66

CFC_180

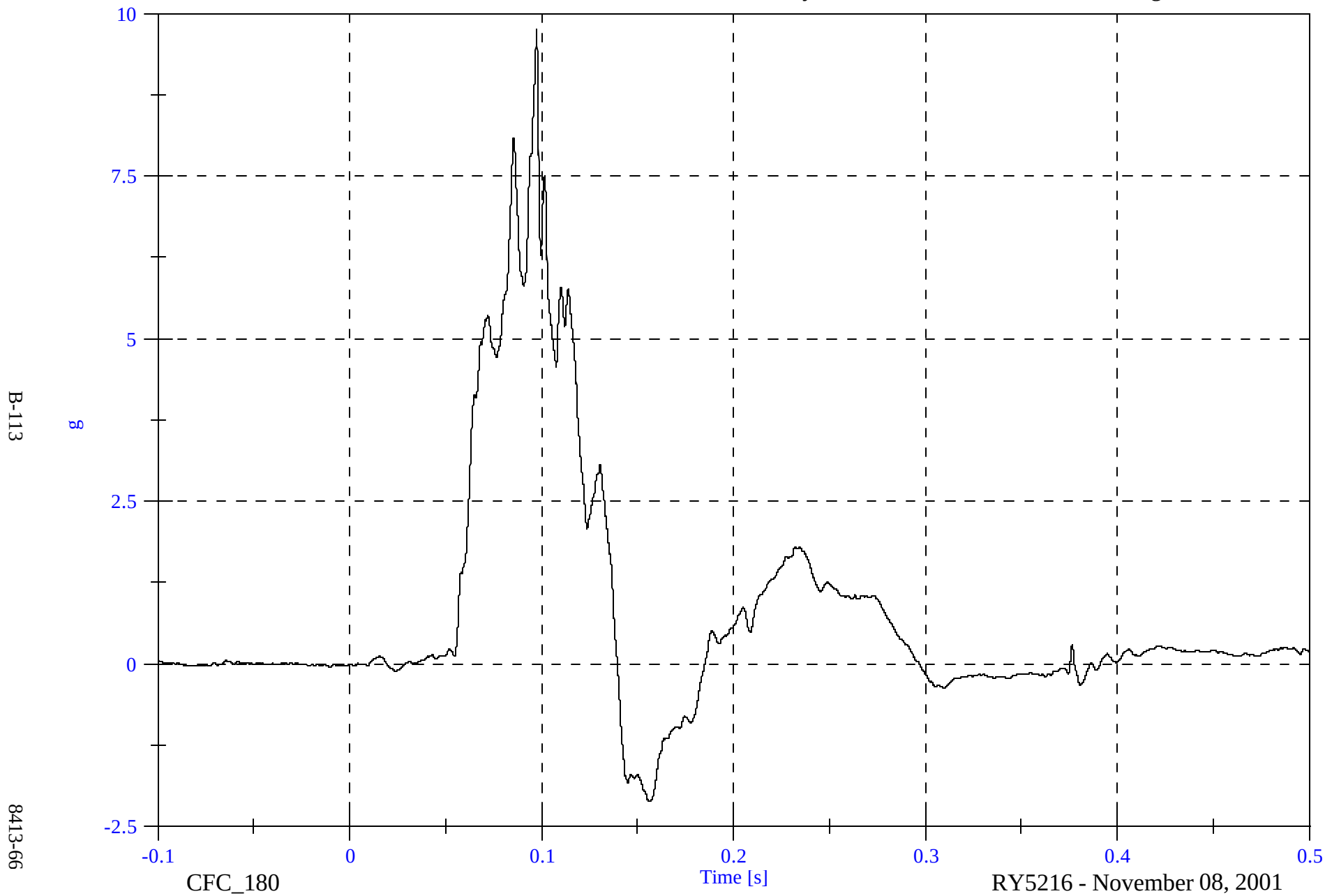
RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Chest Red Ay

Max: 9.7 [g] at 0.097 [s]

Min: -2.1 [g] at 0.156 [s]

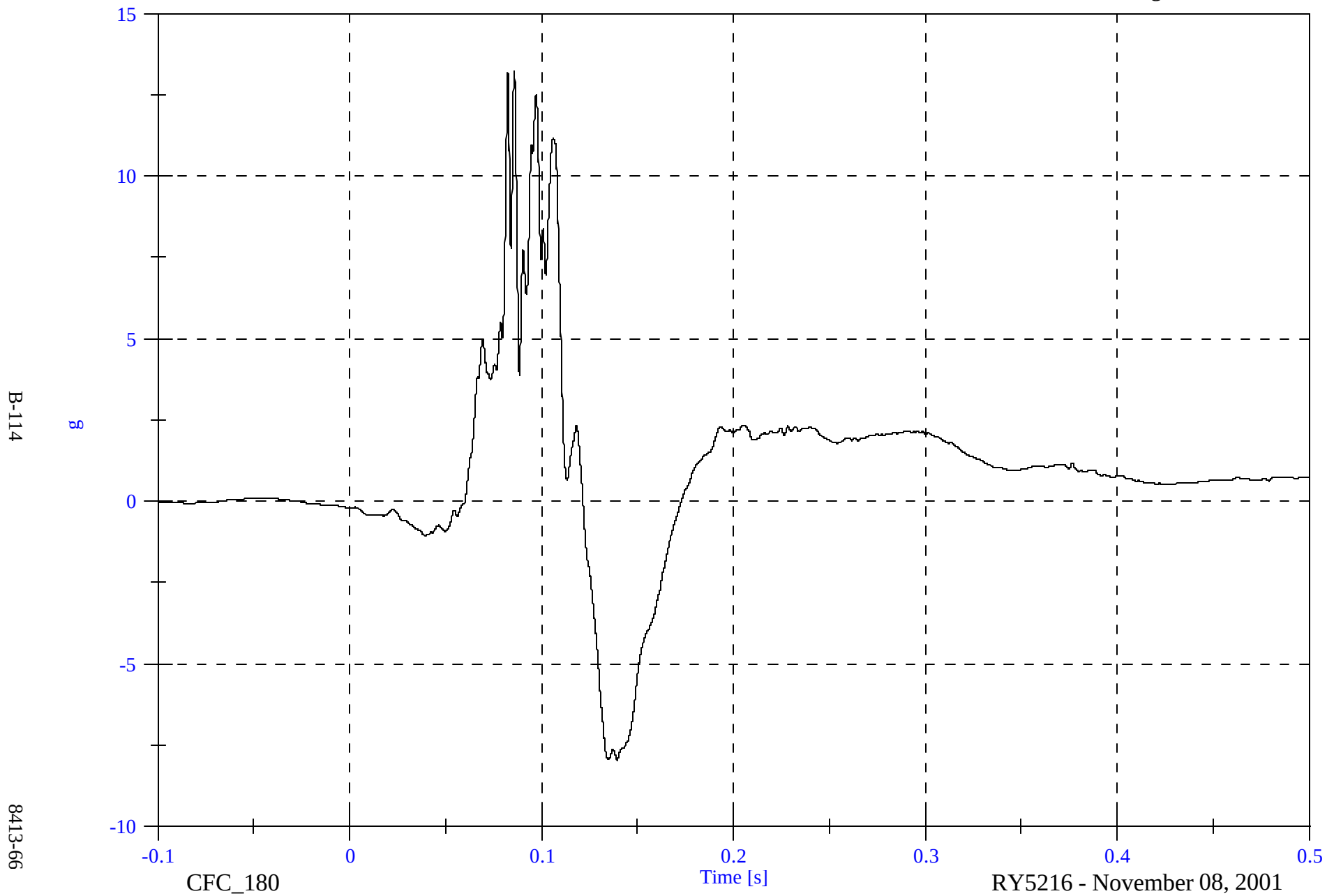


40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Chest Red Az

Max: 13.2 [g] at 0.086 [s]

Min: -8.0 [g] at 0.139 [s]



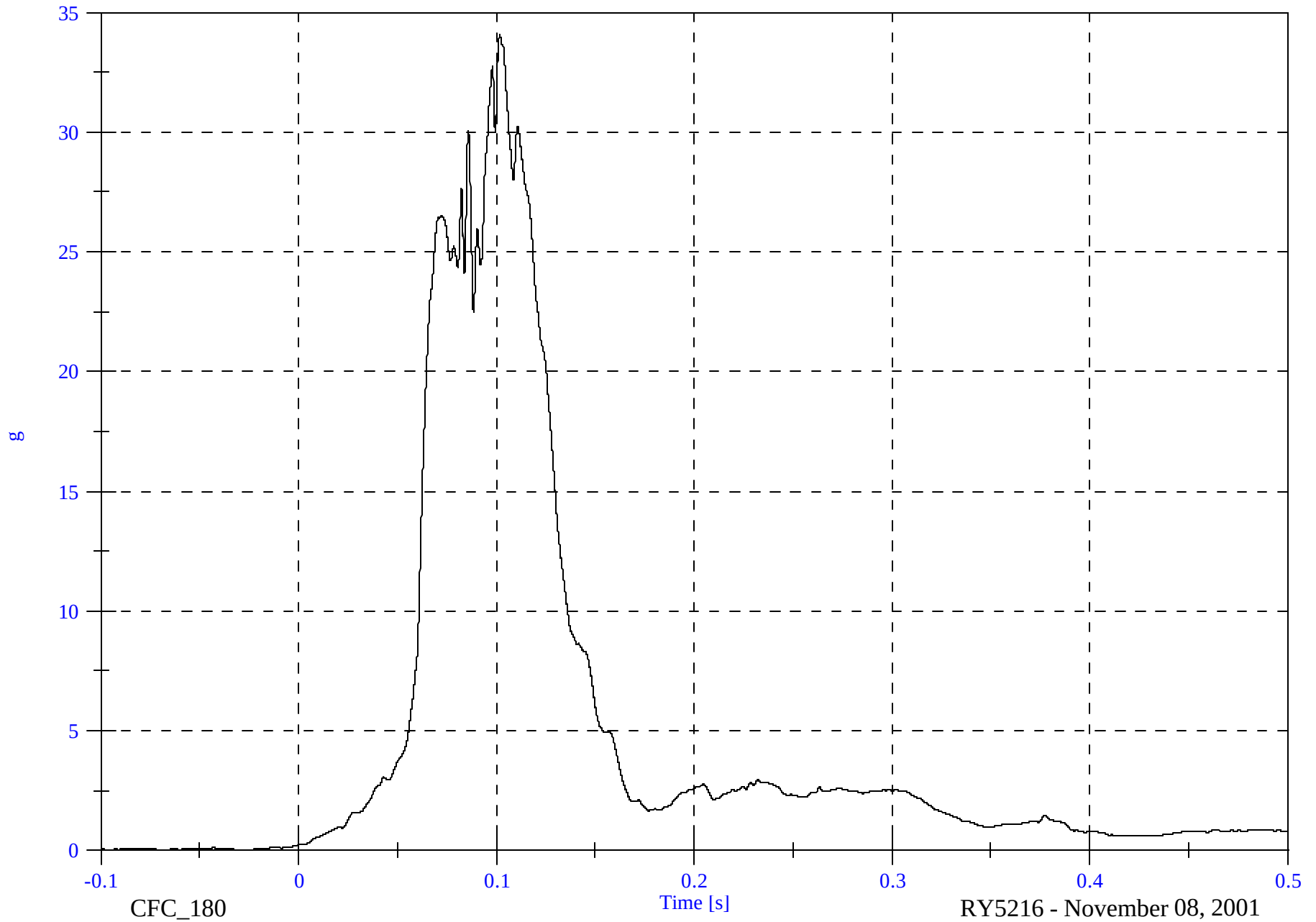
8413-66

40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Chest Red A Resultant

Max: 34.1 [g] at 0.102 [s]

Min: 0.0 [g] at -0.027 [s]



B-115

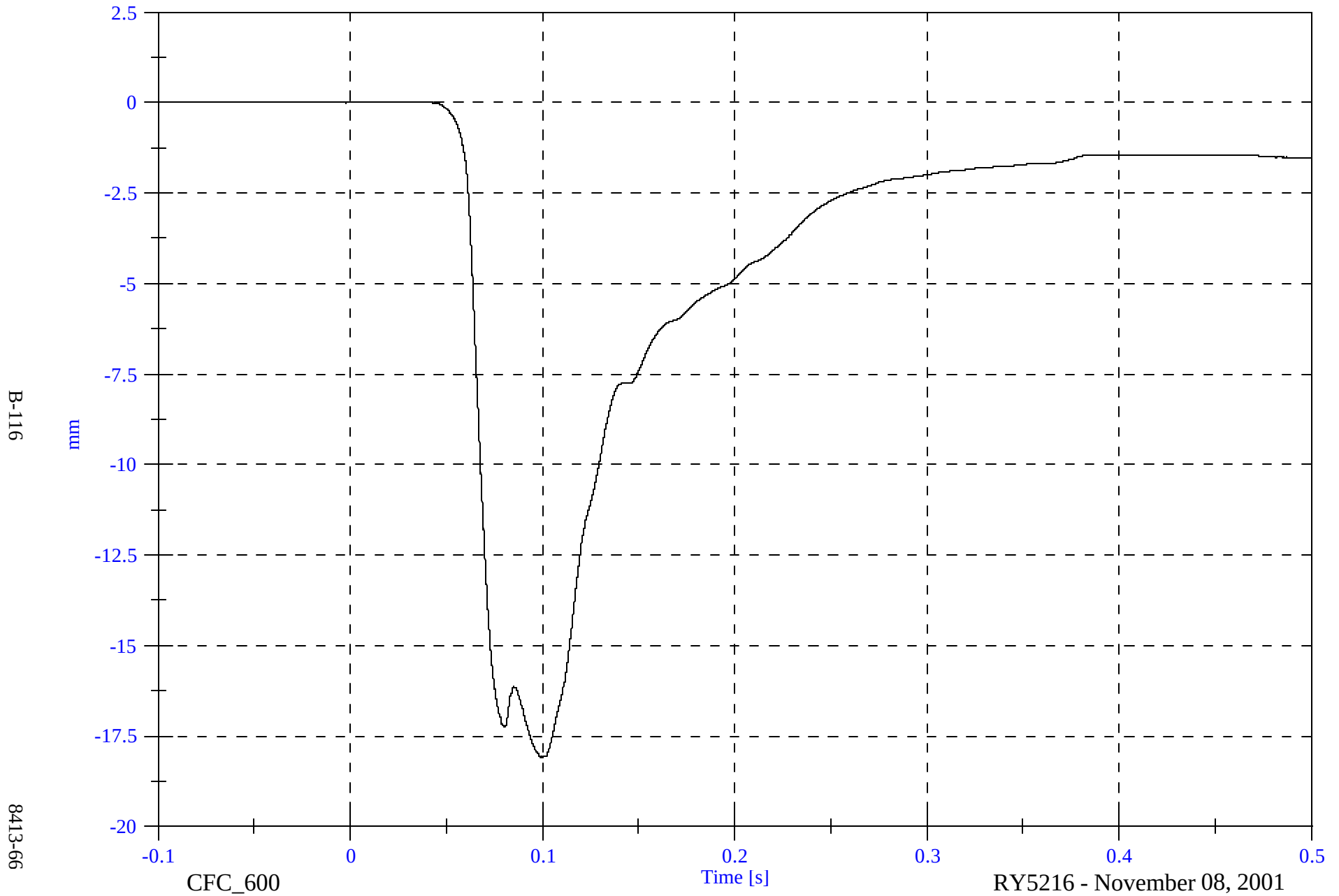
8413-66

40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Chest Displacement

Max: 0.0 [mm] at 0.034 [s]

Min: -18.1 [mm] at 0.100 [s]

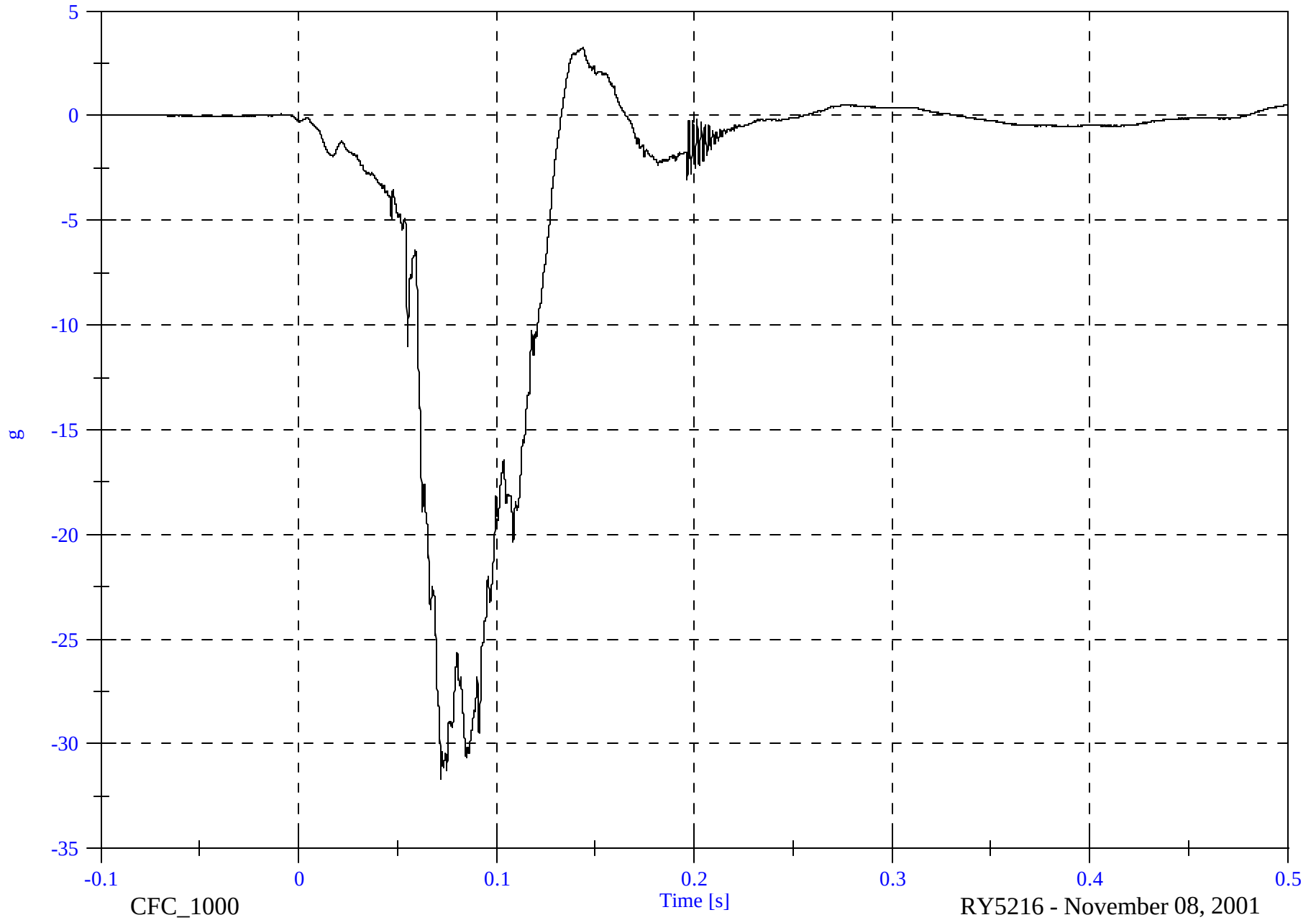


40% Frontal Offset Test #10 - 2000 Nissan Altima

Max: 3.3 [g] at 0.144 [s]

Min: -31.7 [g] at 0.072 [s]

P2 Pelvic Ax



B-117

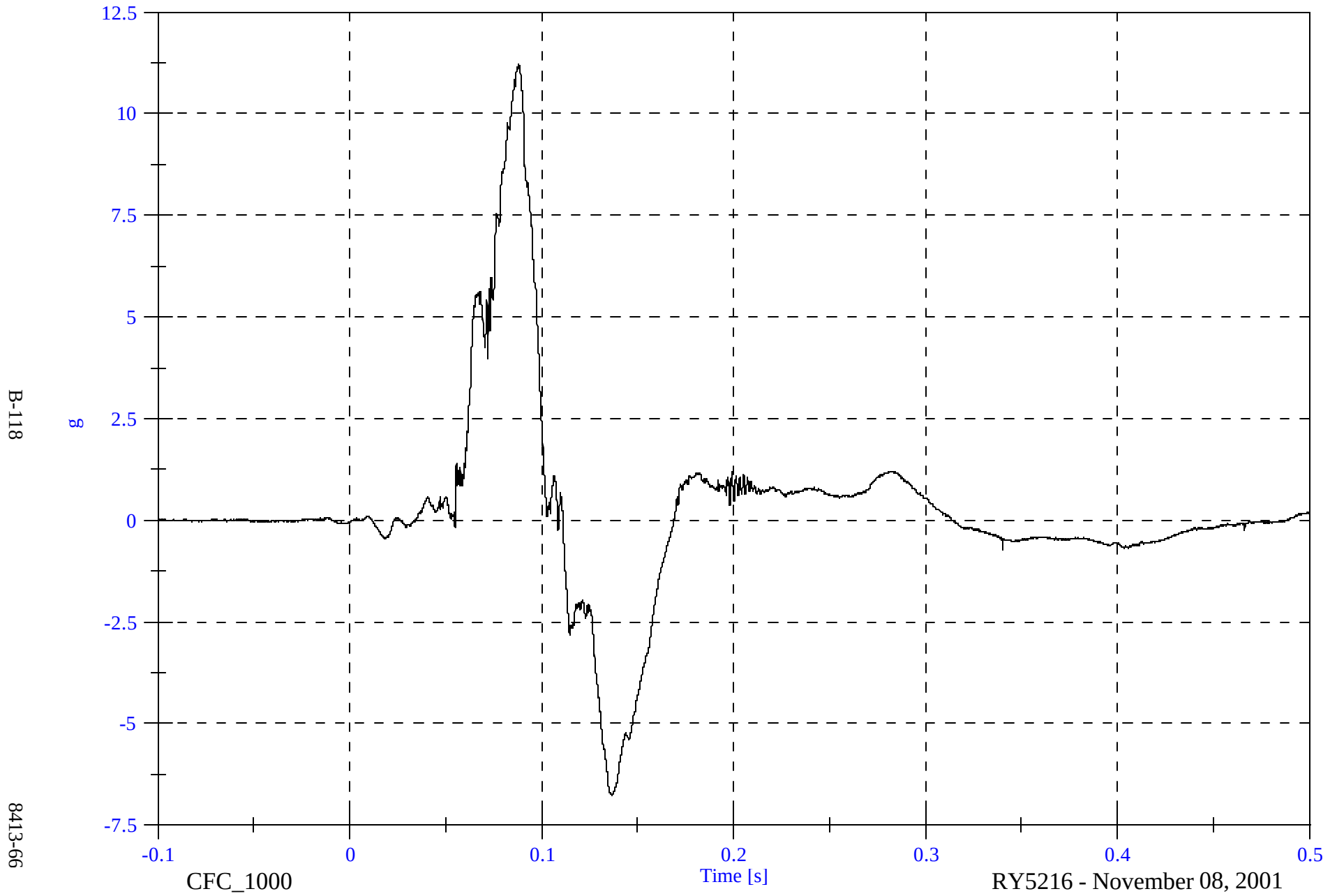
8413-66

40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Pelvic Ay

Max: 11.2 [g] at 0.088 [s]

Min: -6.8 [g] at 0.136 [s]

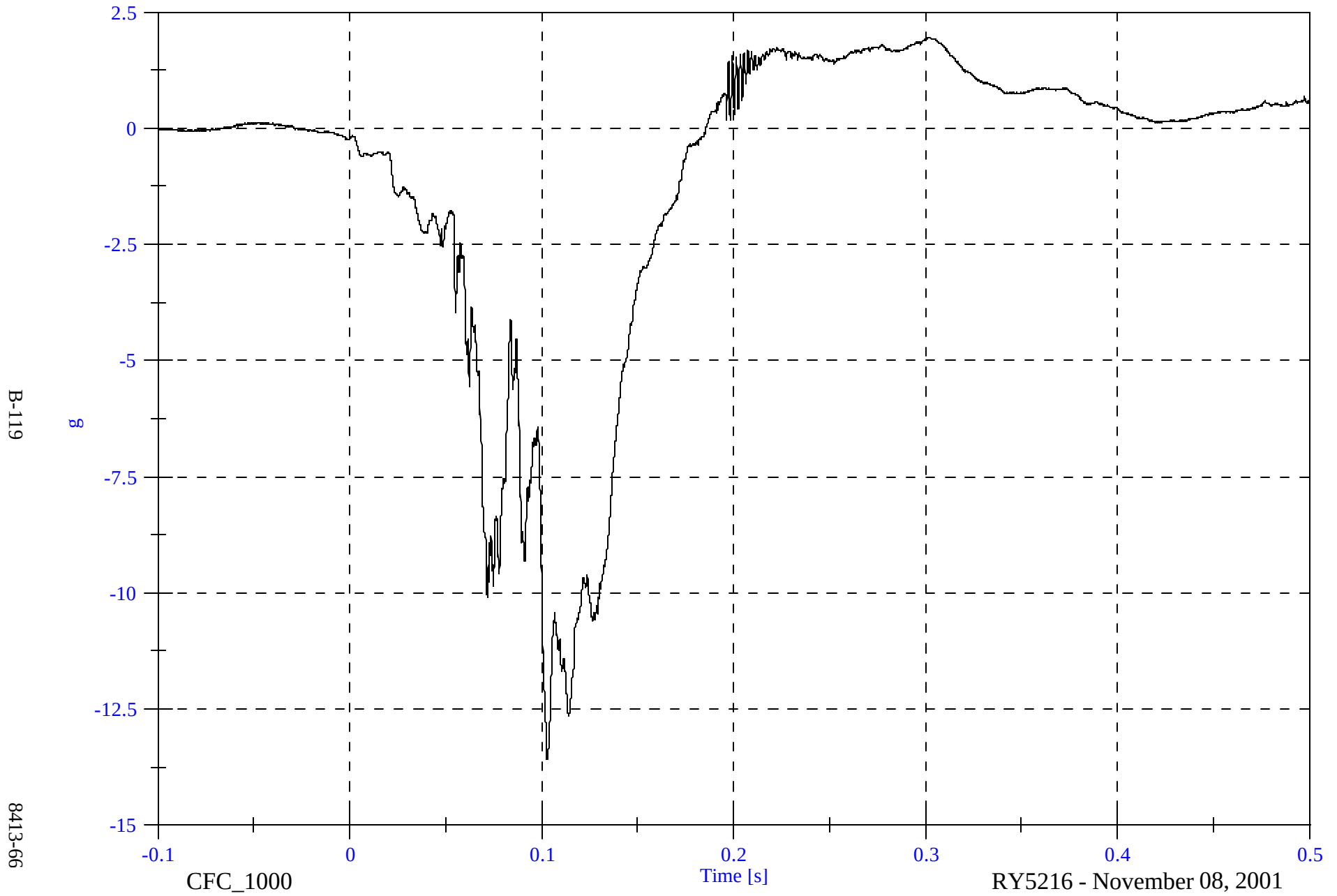


40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Pelvic Az

Max: 2.0 [g] at 0.303 [s]

Min: -13.6 [g] at 0.103 [s]

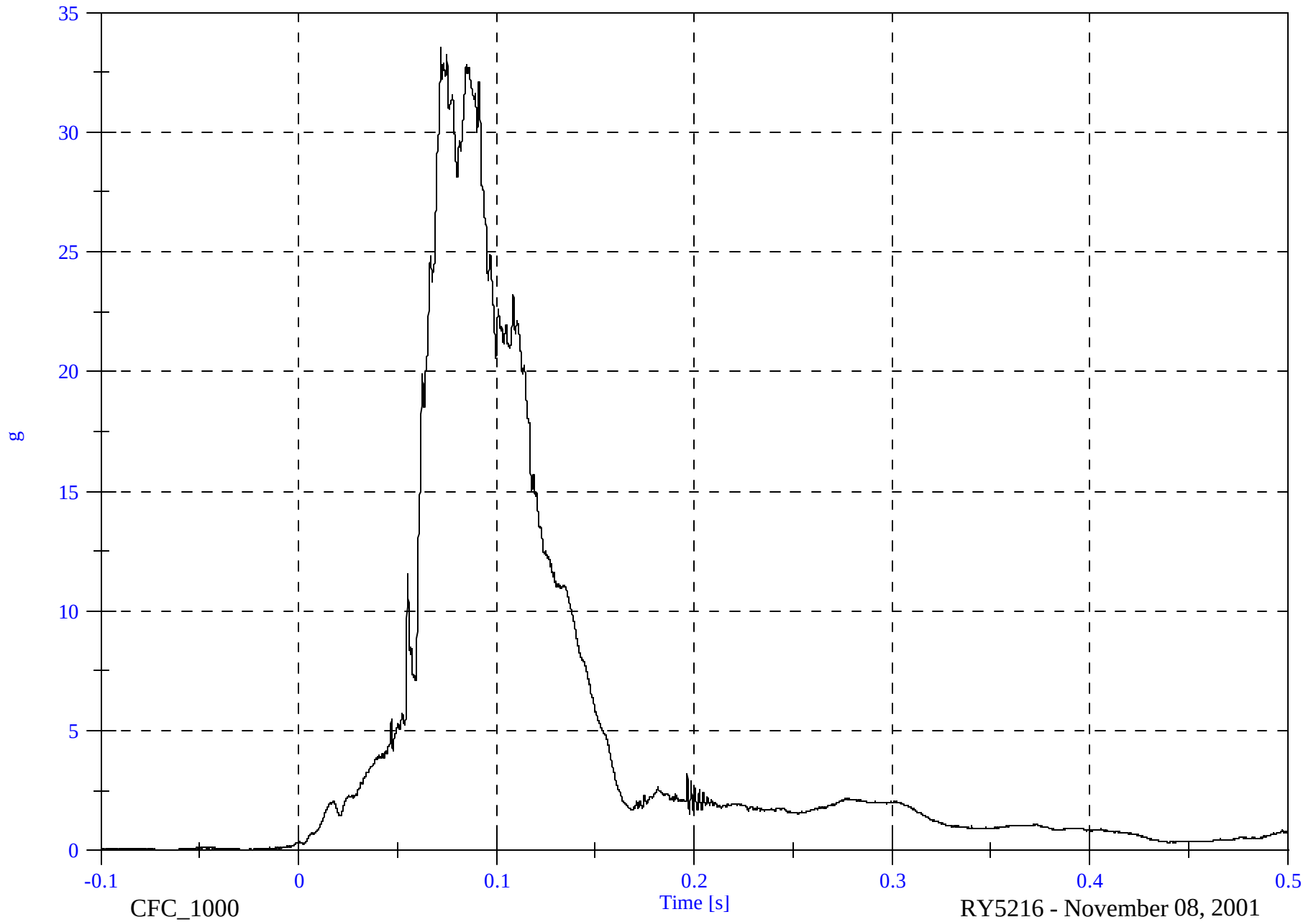


40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Pelvic A Resultant

Max: 33.6 [g] at 0.072 [s]

Min: 0.0 [g] at -0.066 [s]



B-120

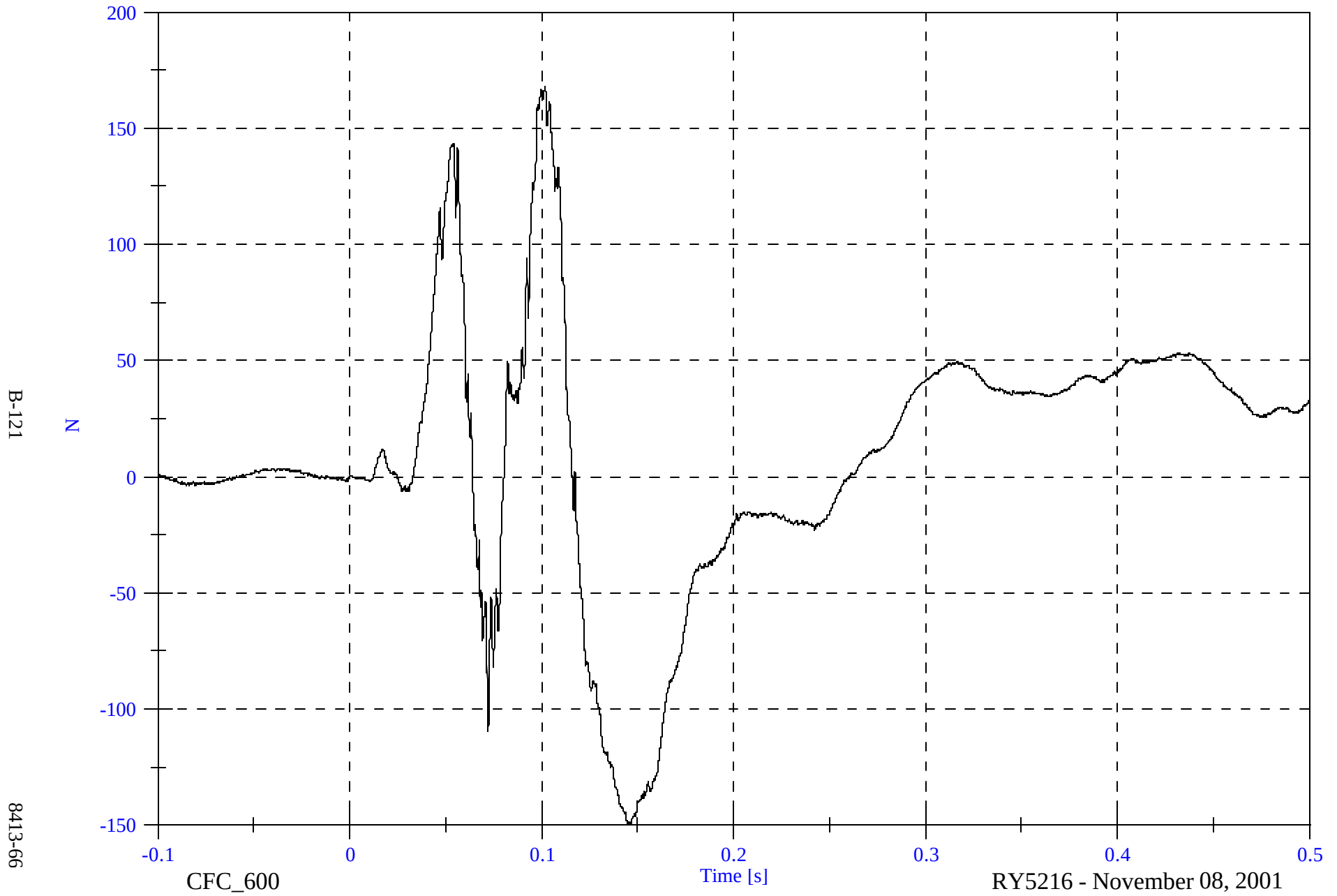
8413-66

40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Left Femur Fx

Max: 167.9 [N] at 0.102 [s]

Min: -149.8 [N] at 0.145 [s]

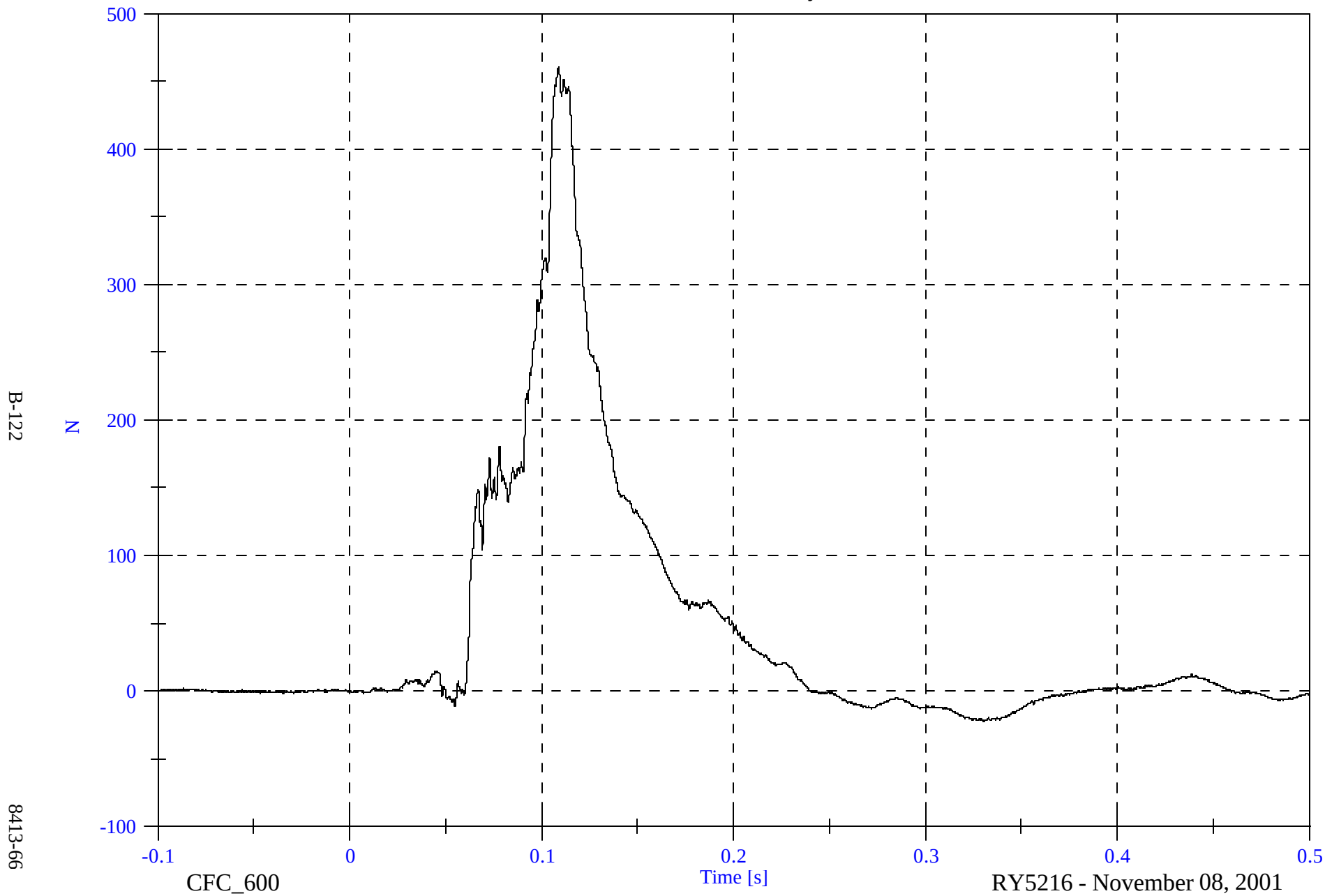


40% Frontal Offset Test #10 - 2000 Nissan Altima

Max: 460.1 [N] at 0.109 [s]

P2 Left Femur Fy

Min: -22.4 [N] at 0.330 [s]

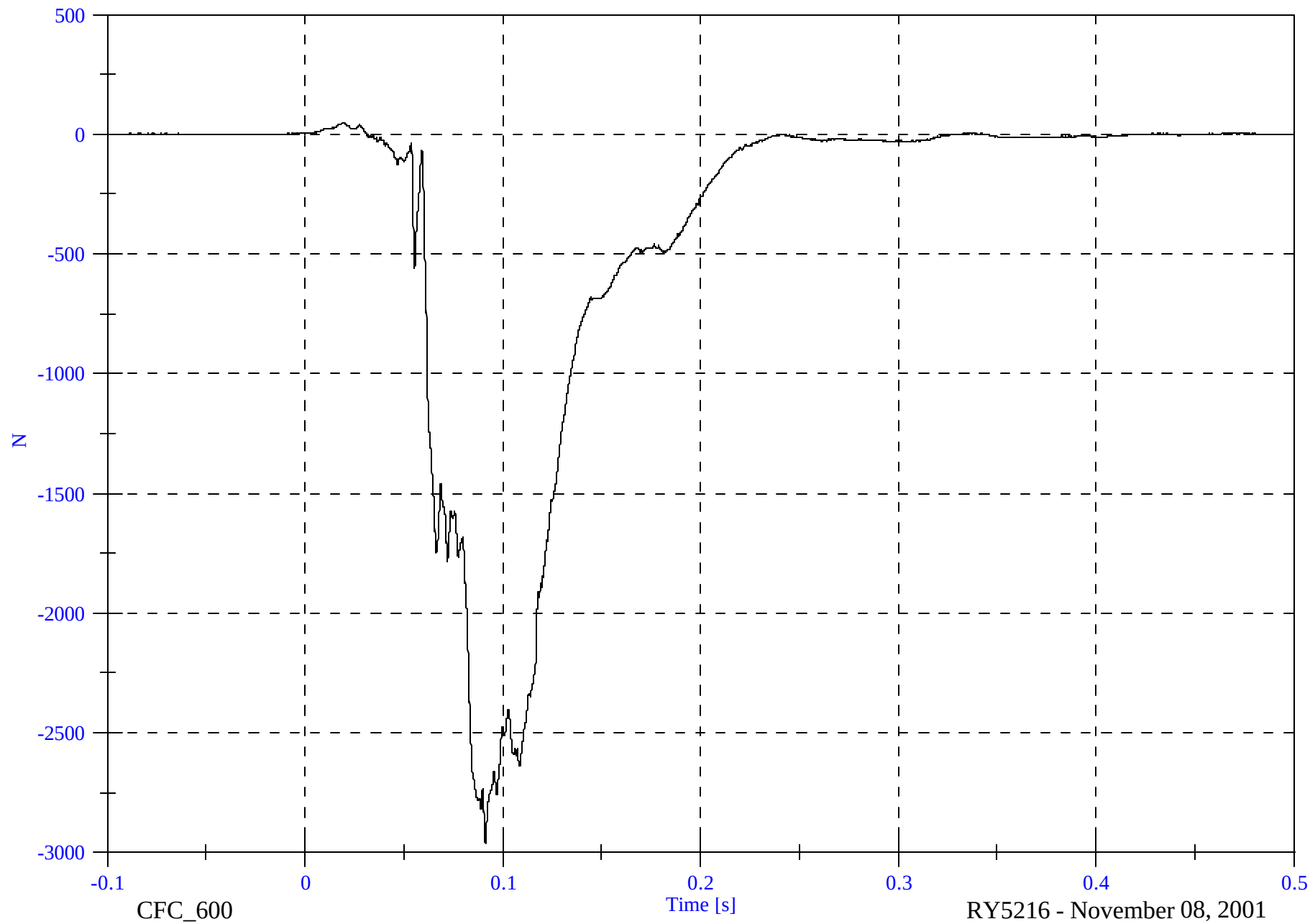


40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Left Femur Fz

Max: 47.3 [N] at 0.019 [s]

Min: -2962.7 [N] at 0.091 [s]



B-123

8413-66

CFC_600

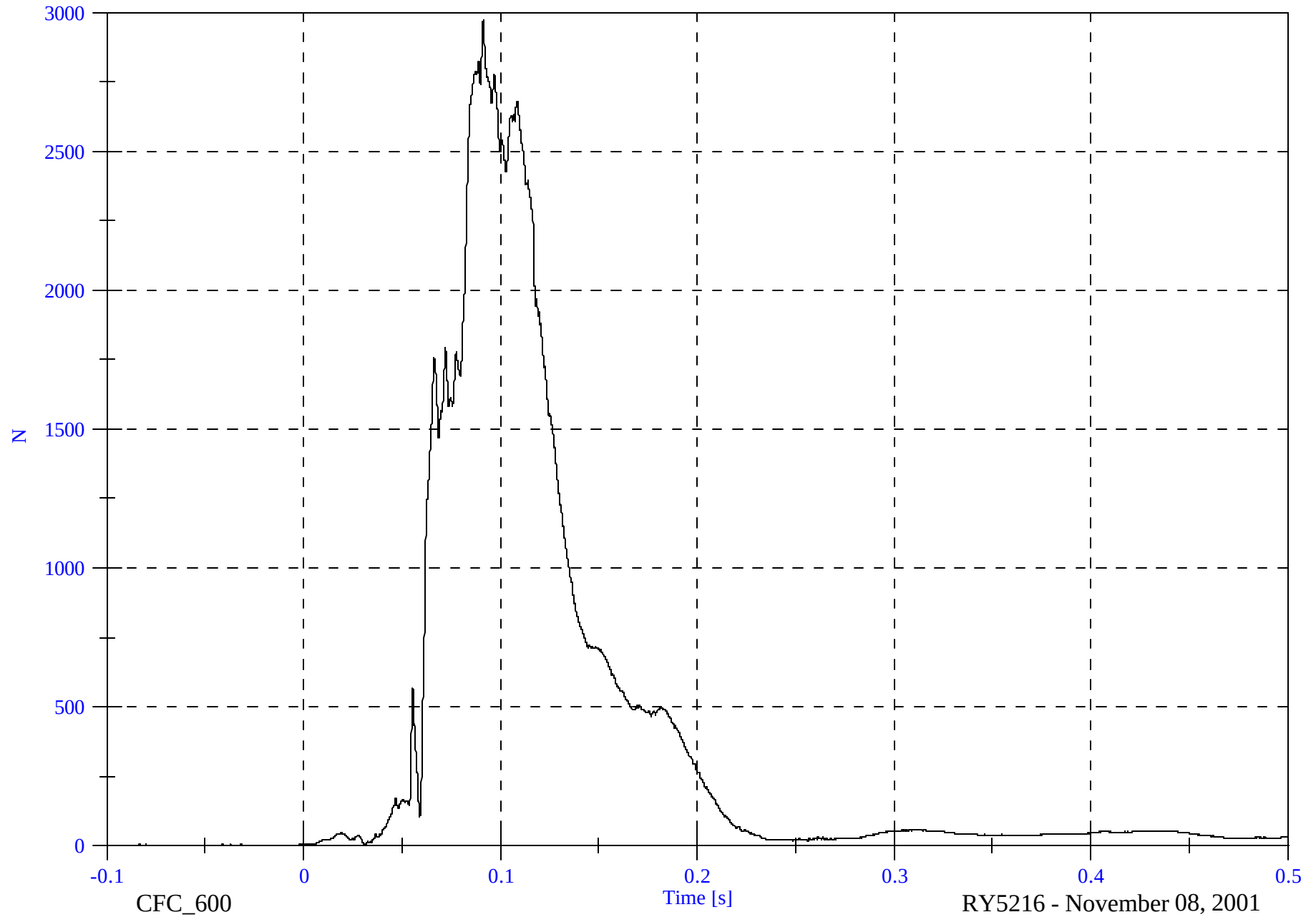
RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Left Femur F Resultant

Max: 2969.7 [N] at 0.091 [s]

Min: 0.1 [N] at -0.015 [s]



B-124

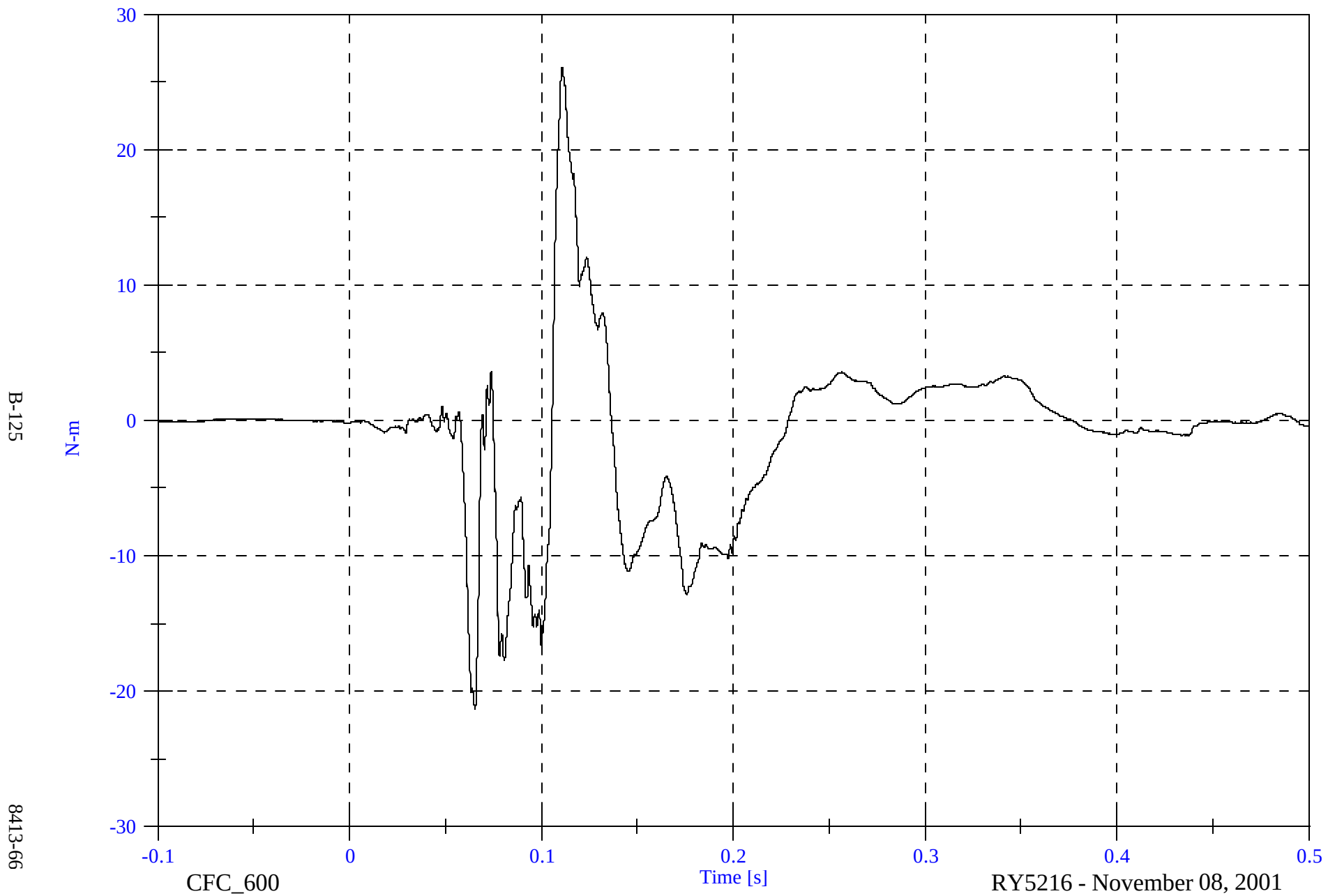
8413-66

40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Left Femur Mx

Max: 26.1 [N-m] at 0.111 [s]

Min: -21.3 [N-m] at 0.066 [s]

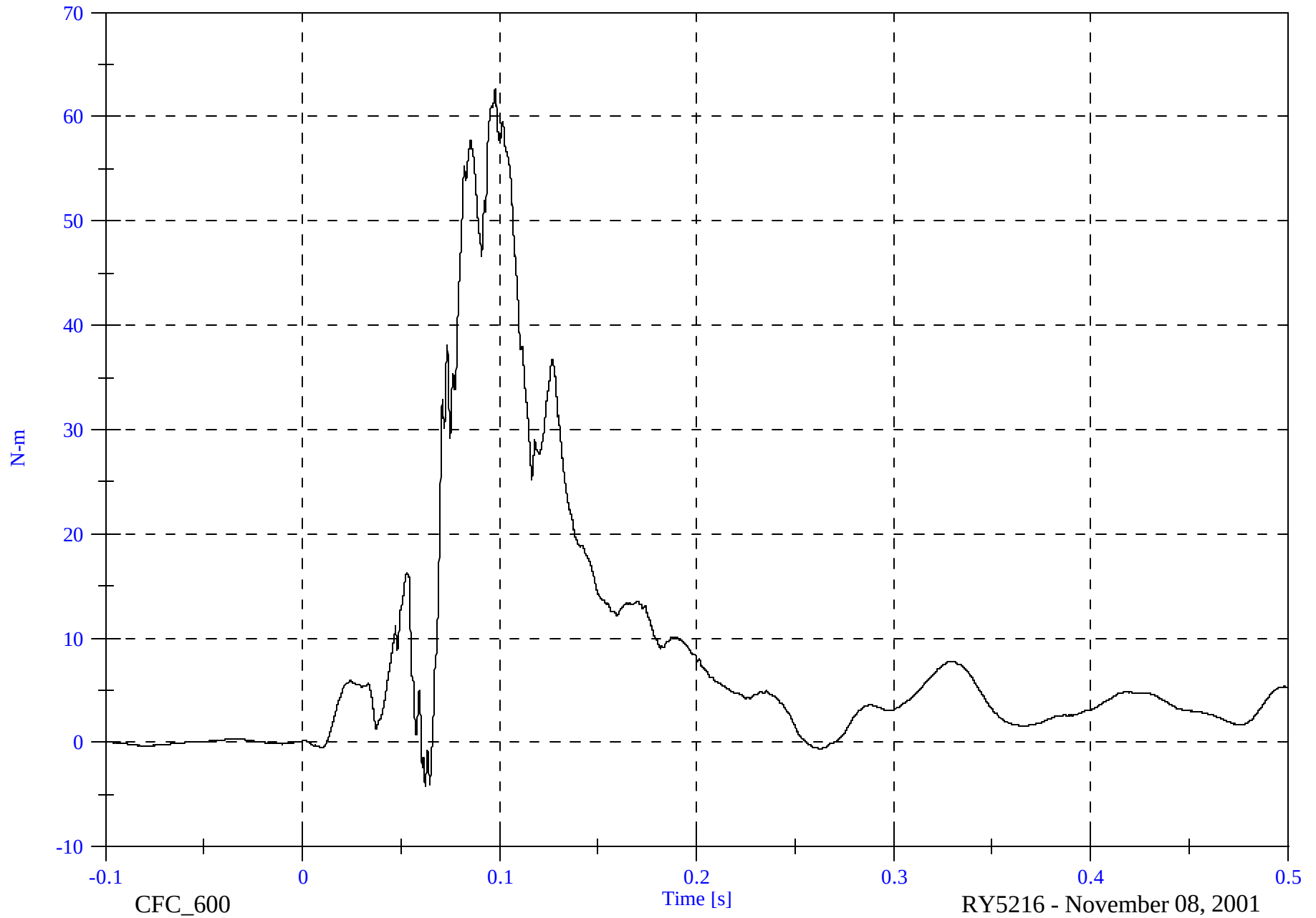


40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Left Femur My

Max: 62.6 [N-m] at 0.098 [s]

Min: -4.3 [N-m] at 0.062 [s]



B-126

8413-66

CFC_600

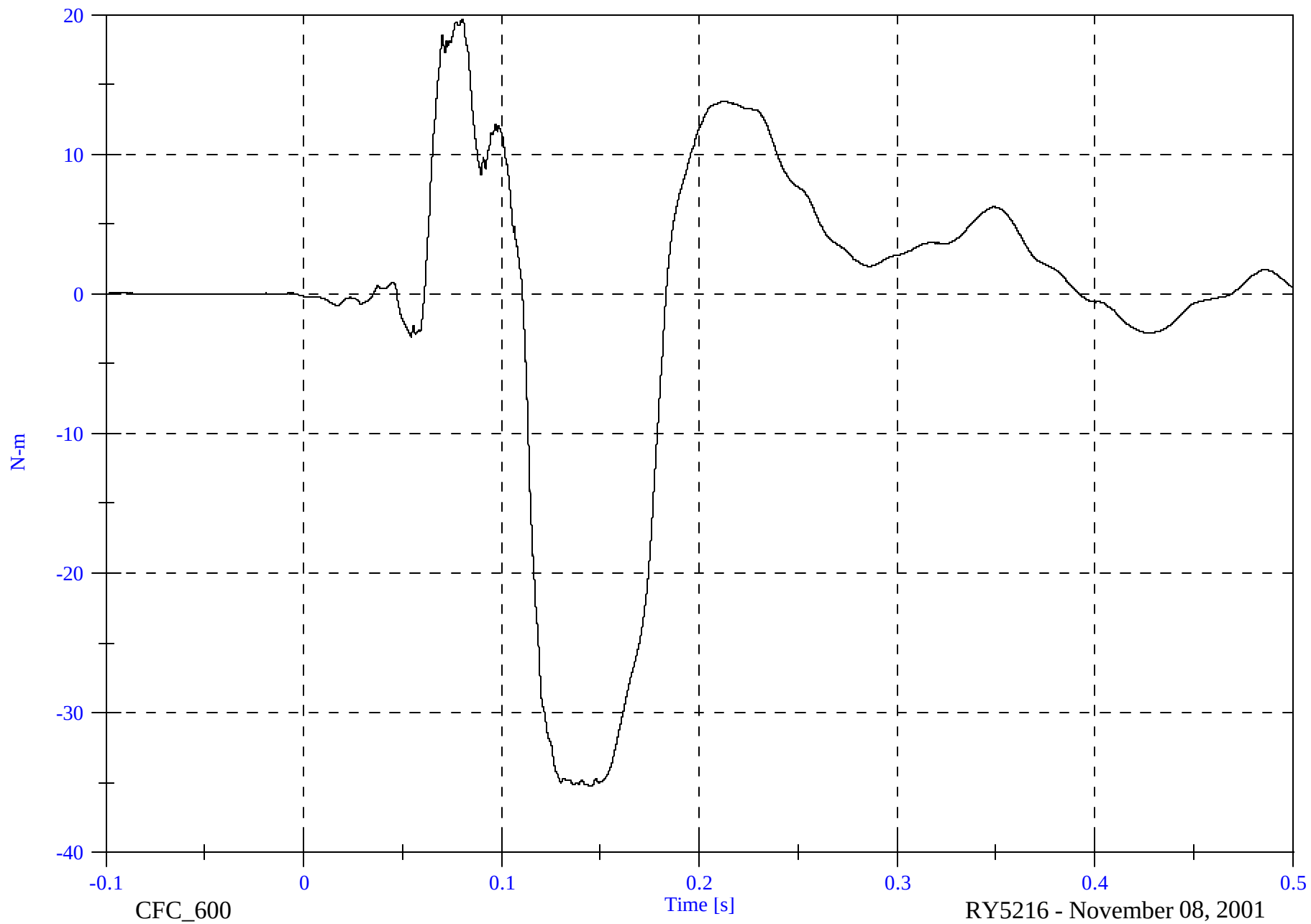
RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Left Femur Mz

Max: 19.7 [N-m] at 0.080 [s]

Min: -35.3 [N-m] at 0.145 [s]



B-127

8413-66

CFC_600

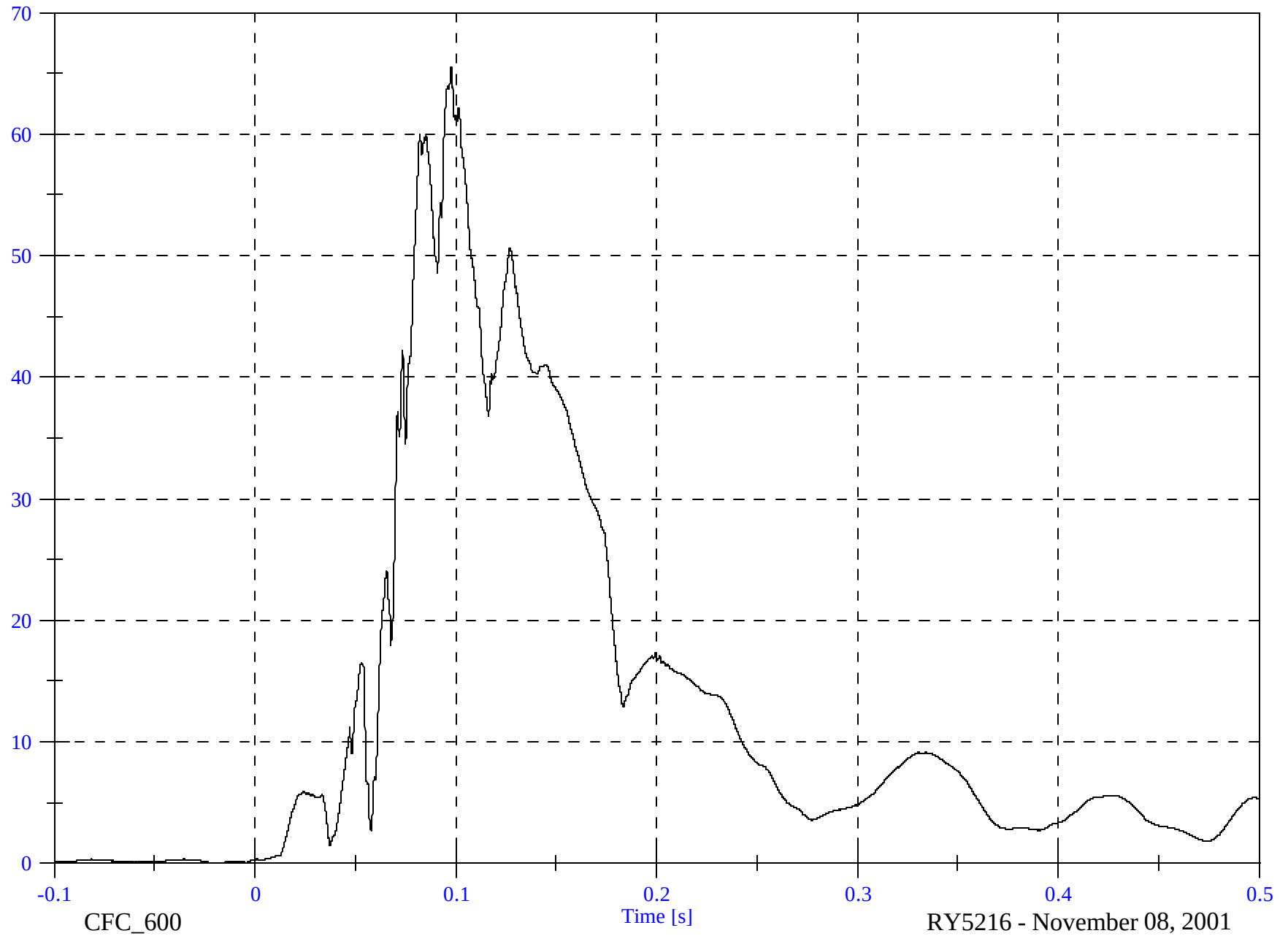
RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Left Femur M Resultant

Max: 65.5 [N-m] at 0.098 [s]

Min: 0.0 [N-m] at -0.021 [s]

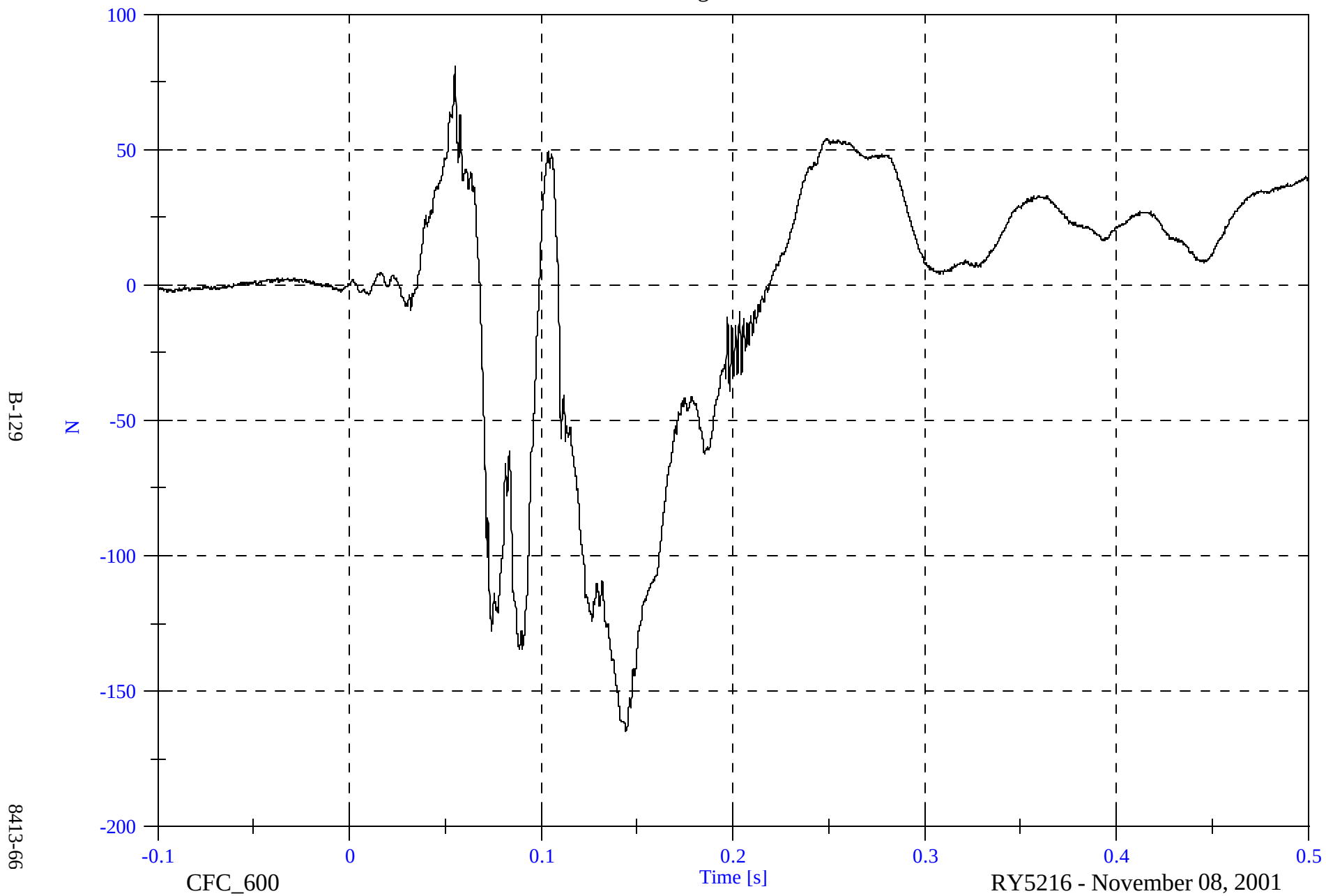


40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Right Femur Fx

Max: 80.8 [N] at 0.055 [s]

Min: -164.6 [N] at 0.144 [s]

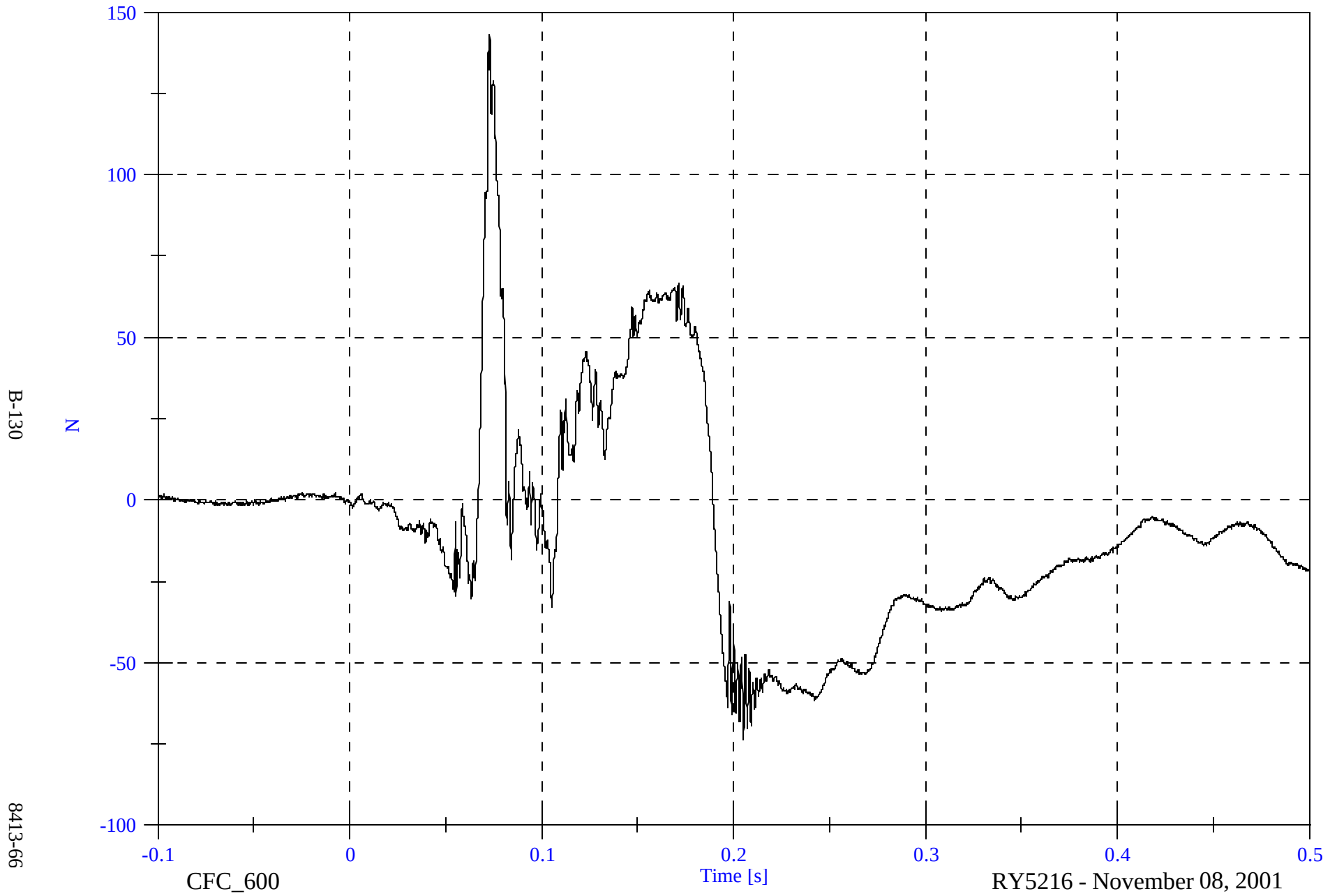


40% Frontal Offset Test #10 - 2000 Nissan Altima

Max: 143.1 [N] at 0.073 [s]

P2 Right Femur Fy

Min: -73.7 [N] at 0.205 [s]

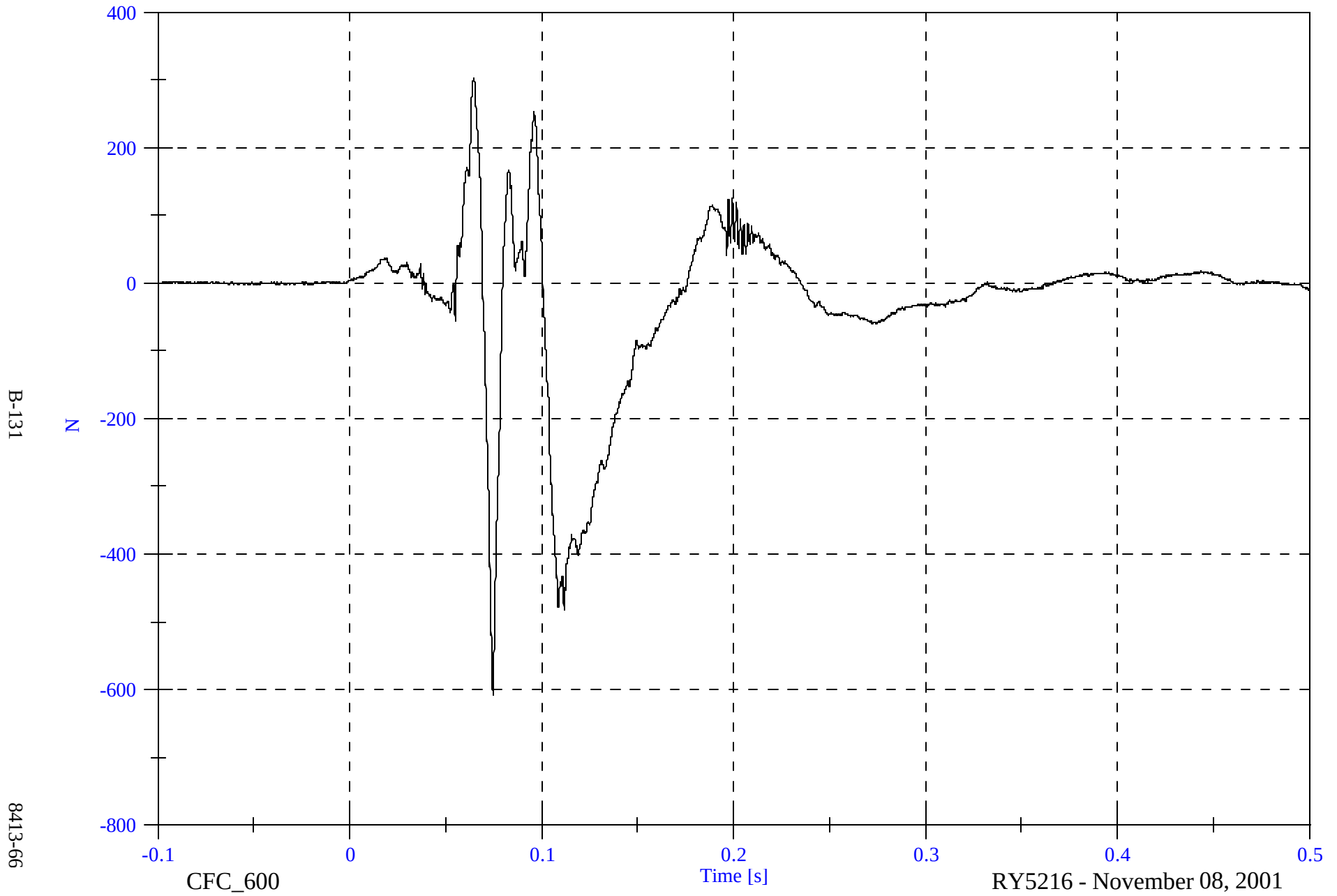


40% Frontal Offset Test #10 - 2000 Nissan Altima

Max: 302.8 [N] at 0.065 [s]

P2 Right Femur Fz

Min: -608.0 [N] at 0.075 [s]

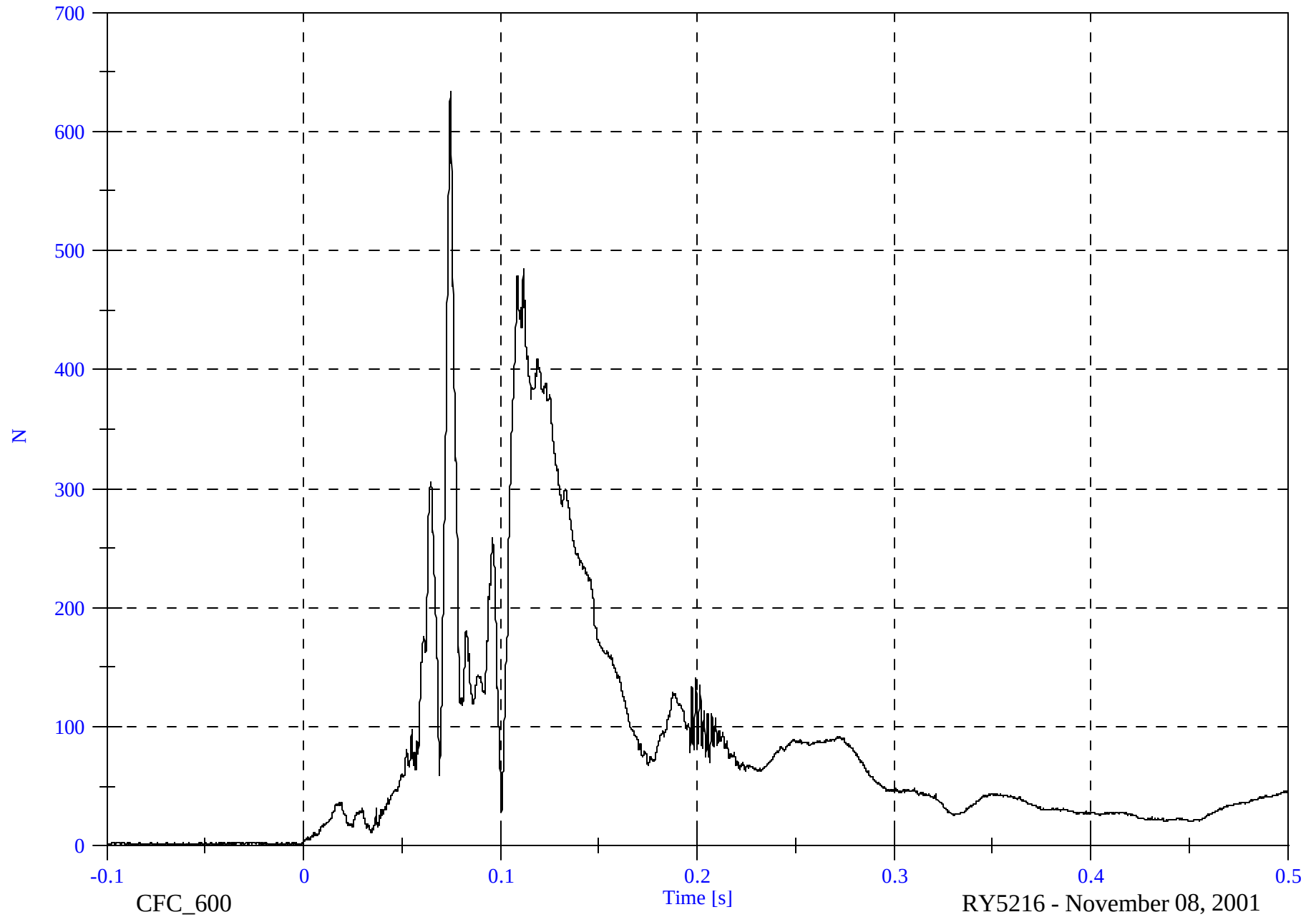


40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Right Femur F Resultant

Max: 633.8 [N] at 0.075 [s]

Min: 0.4 [N] at -0.060 [s]



B-132

8413-66

CFC_600

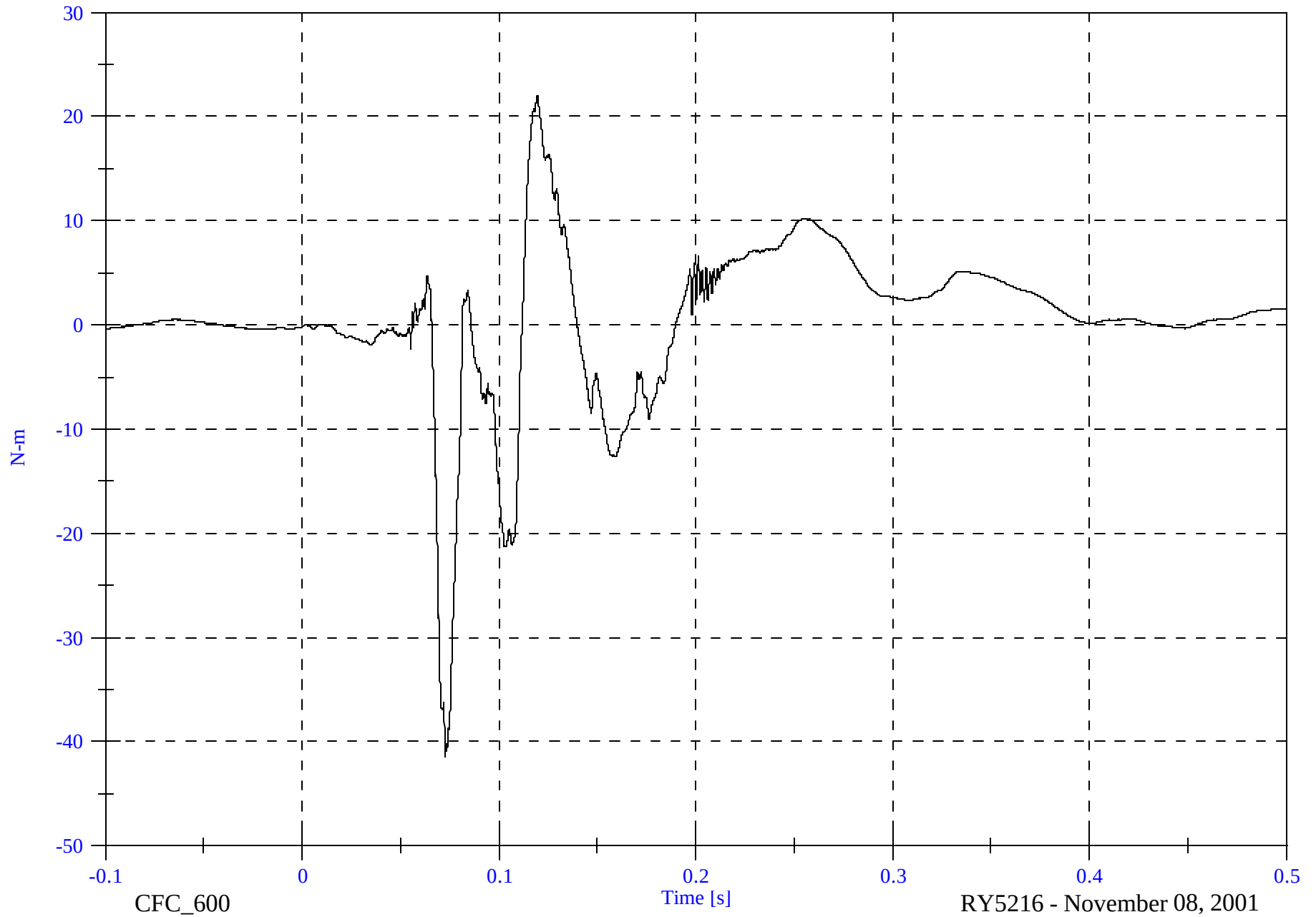
RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Right Femur Mx

Max: 21.9 [N-m] at 0.120 [s]

Min: -41.5 [N-m] at 0.073 [s]



B-133

8413-66

CFC_600

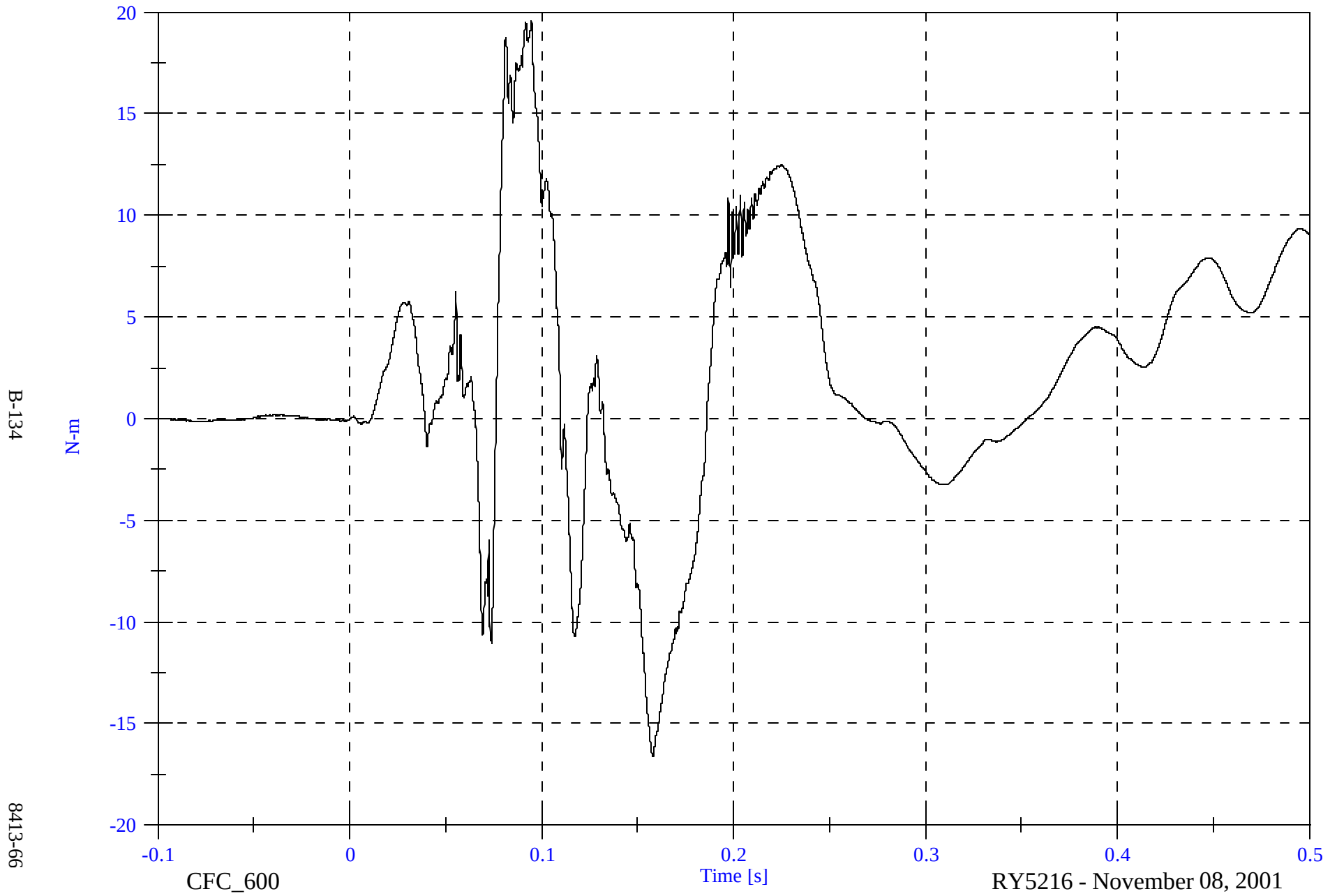
RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Right Femur My

Max: 19.6 [N-m] at 0.095 [s]

Min: -16.6 [N-m] at 0.158 [s]

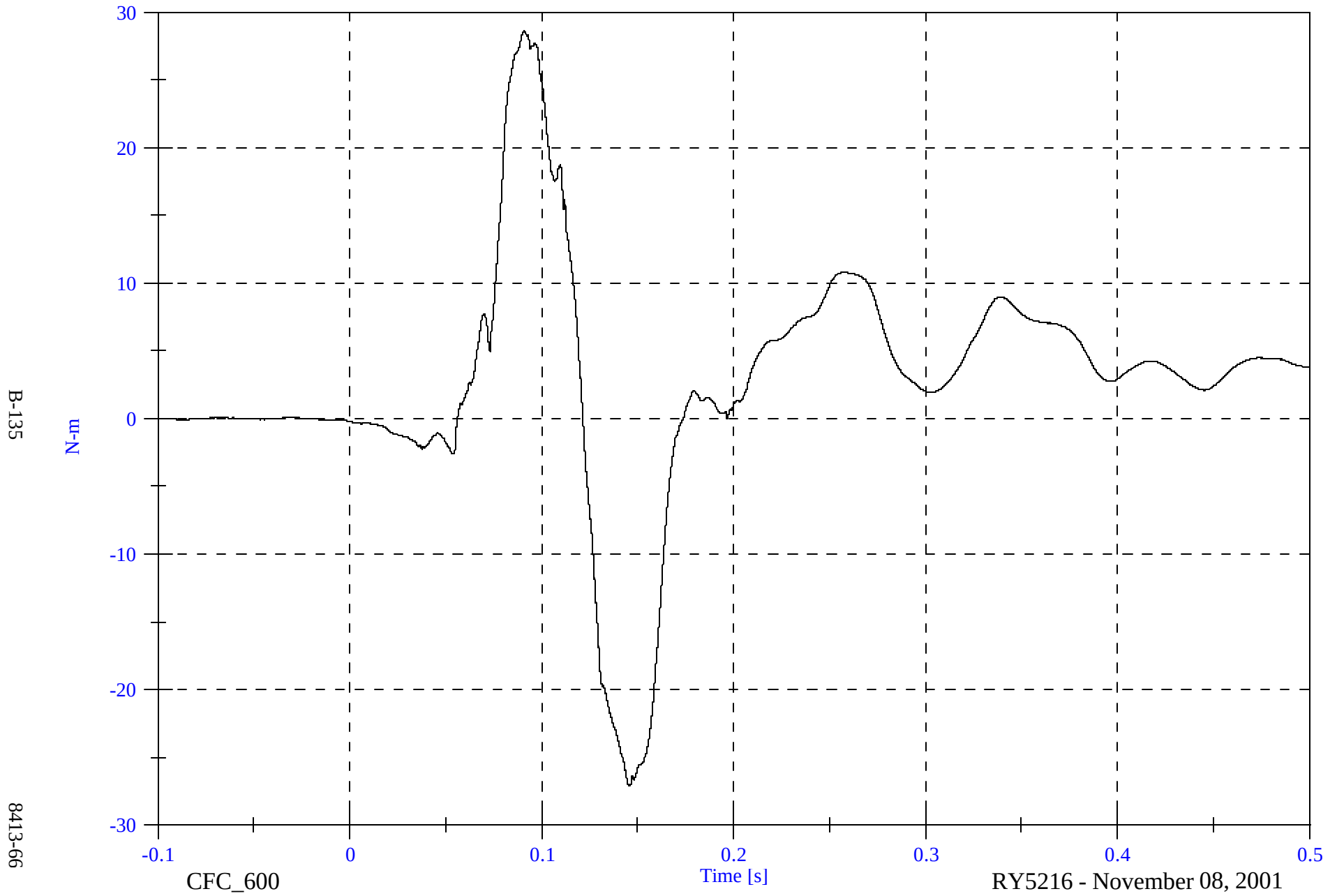


40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Right Femur Mz

Max: 28.6 [N-m] at 0.091 [s]

Min: -27.1 [N-m] at 0.145 [s]

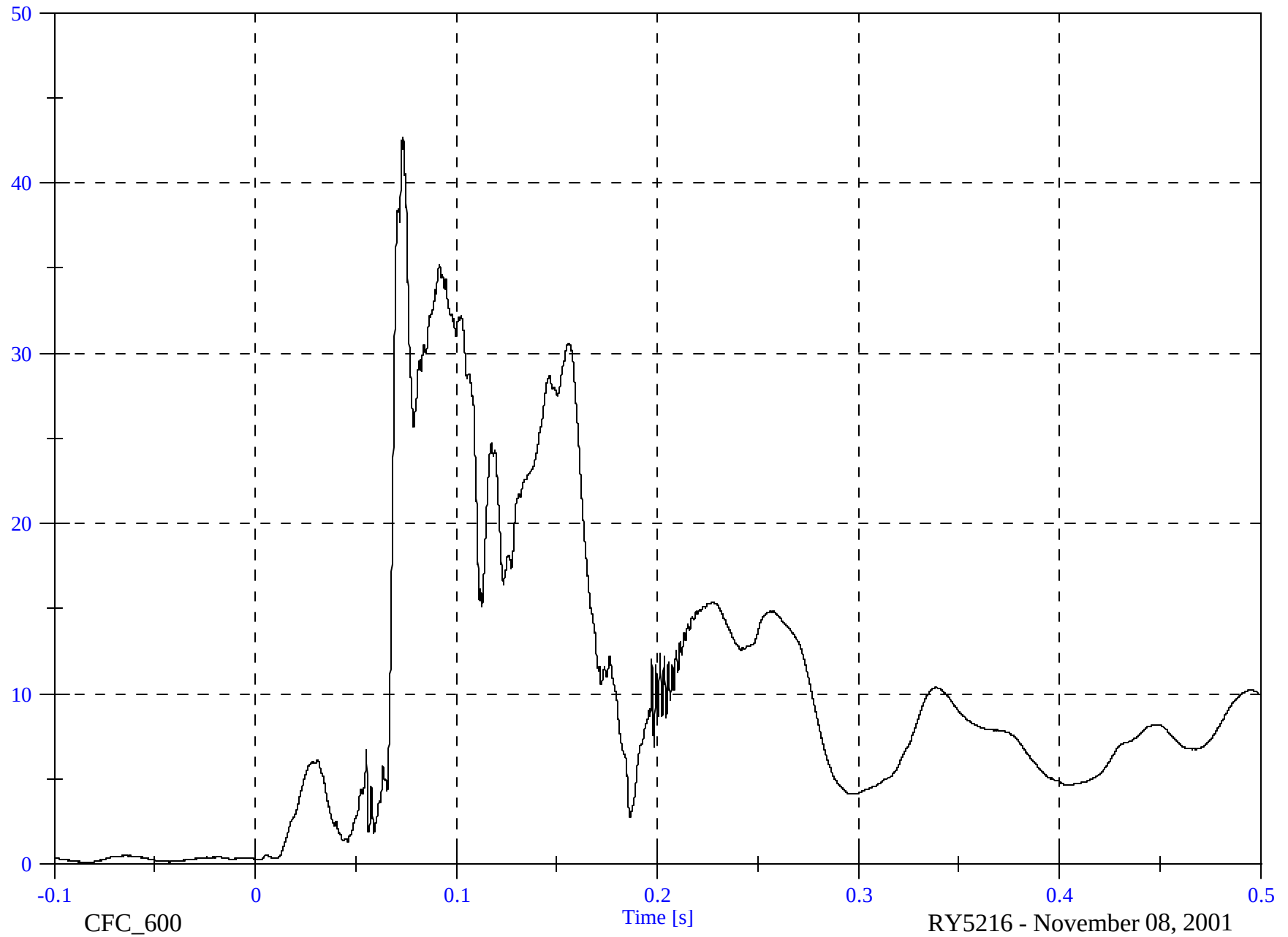


40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Right Femur M Resultant

Max: 42.6 [N-m] at 0.074 [s]

Min: 0.1 [N-m] at -0.083 [s]



B-136

8413-66

CFC_600

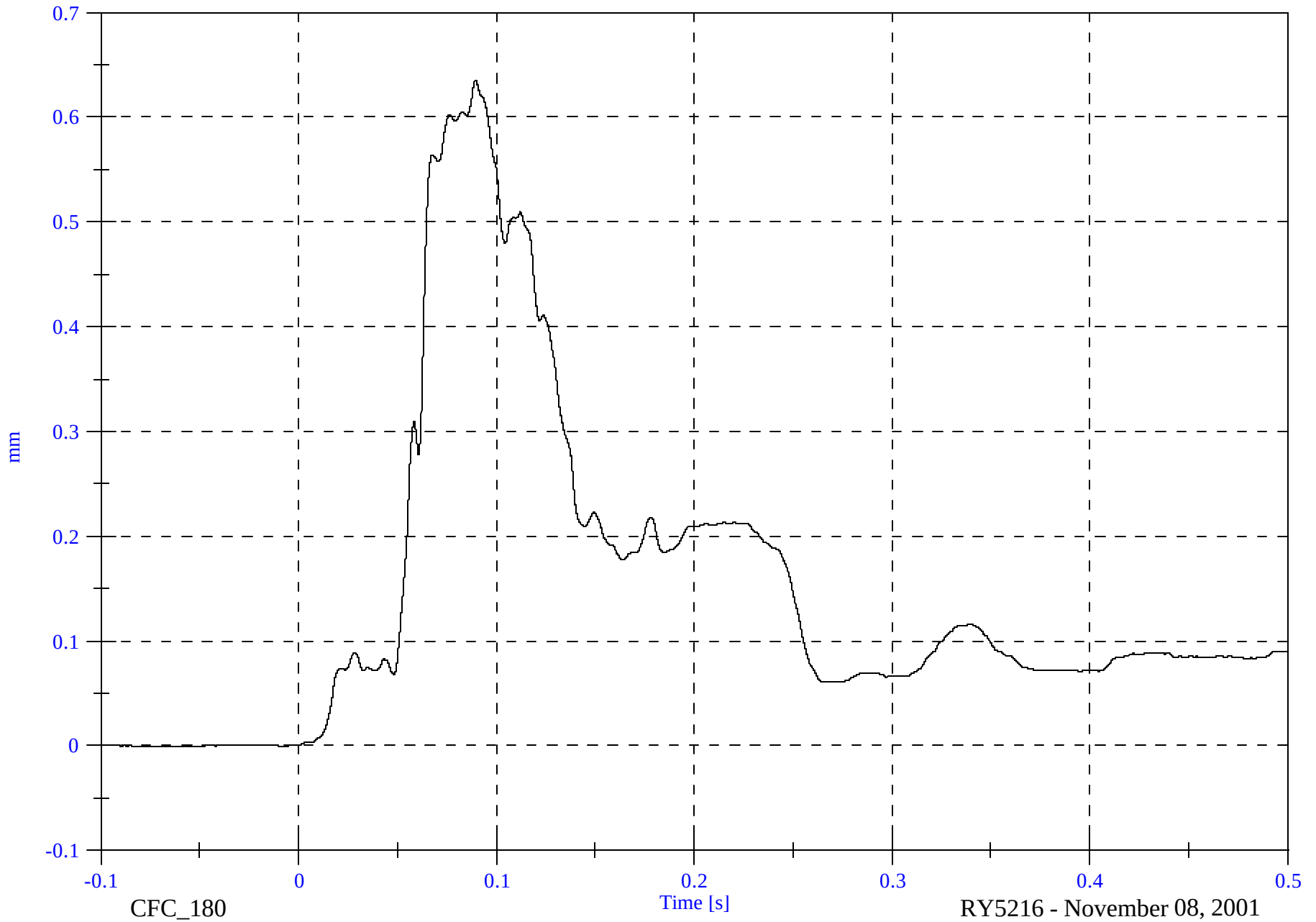
RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Left Knee Shear Dx

Max: 0.6 [mm] at 0.089 [s]

Min: -0.0 [mm] at -0.073 [s]



B-137

8413-66

CFC_180

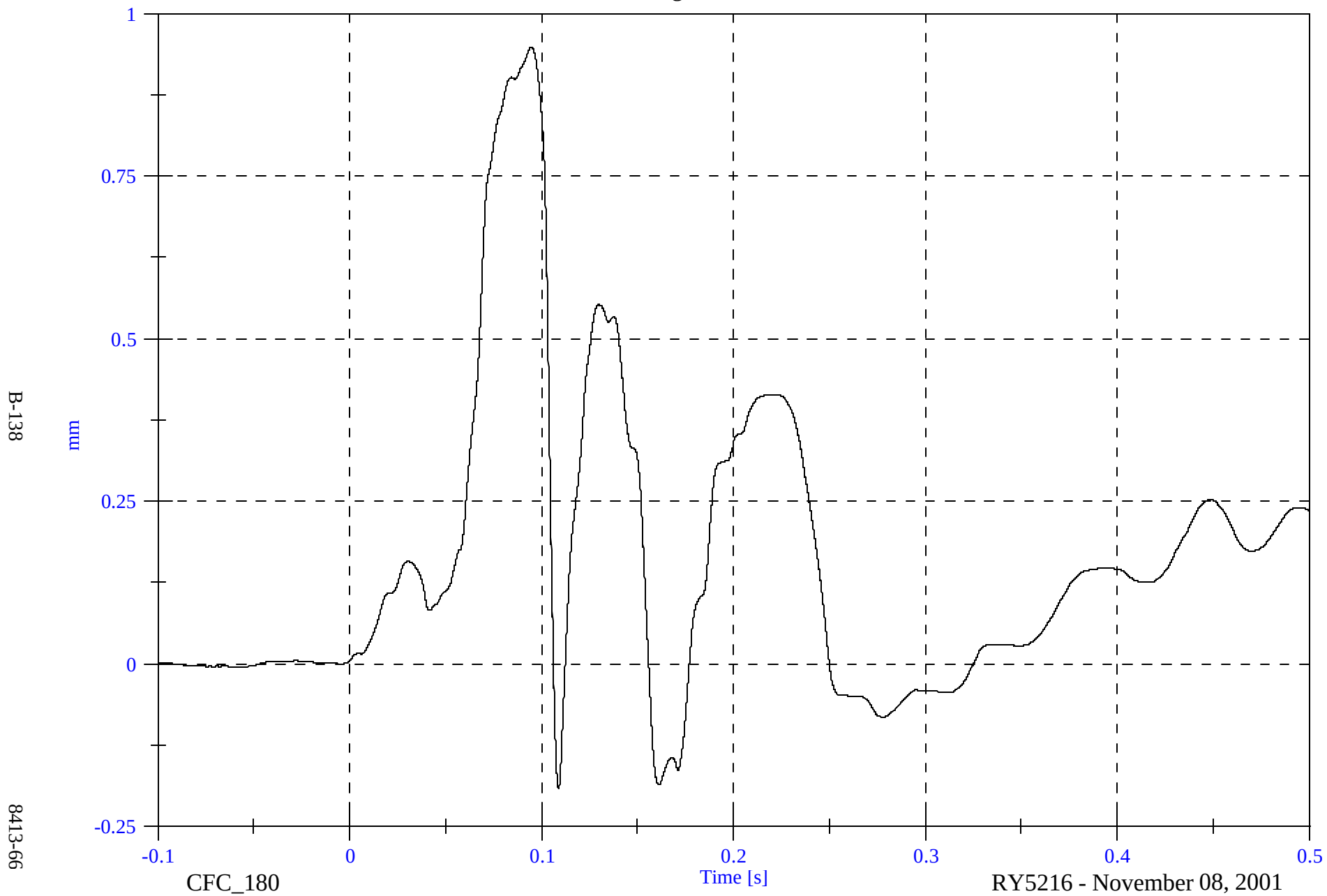
RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Right Knee Shear Dx

Max: 0.9 [mm] at 0.095 [s]

Min: -0.2 [mm] at 0.109 [s]

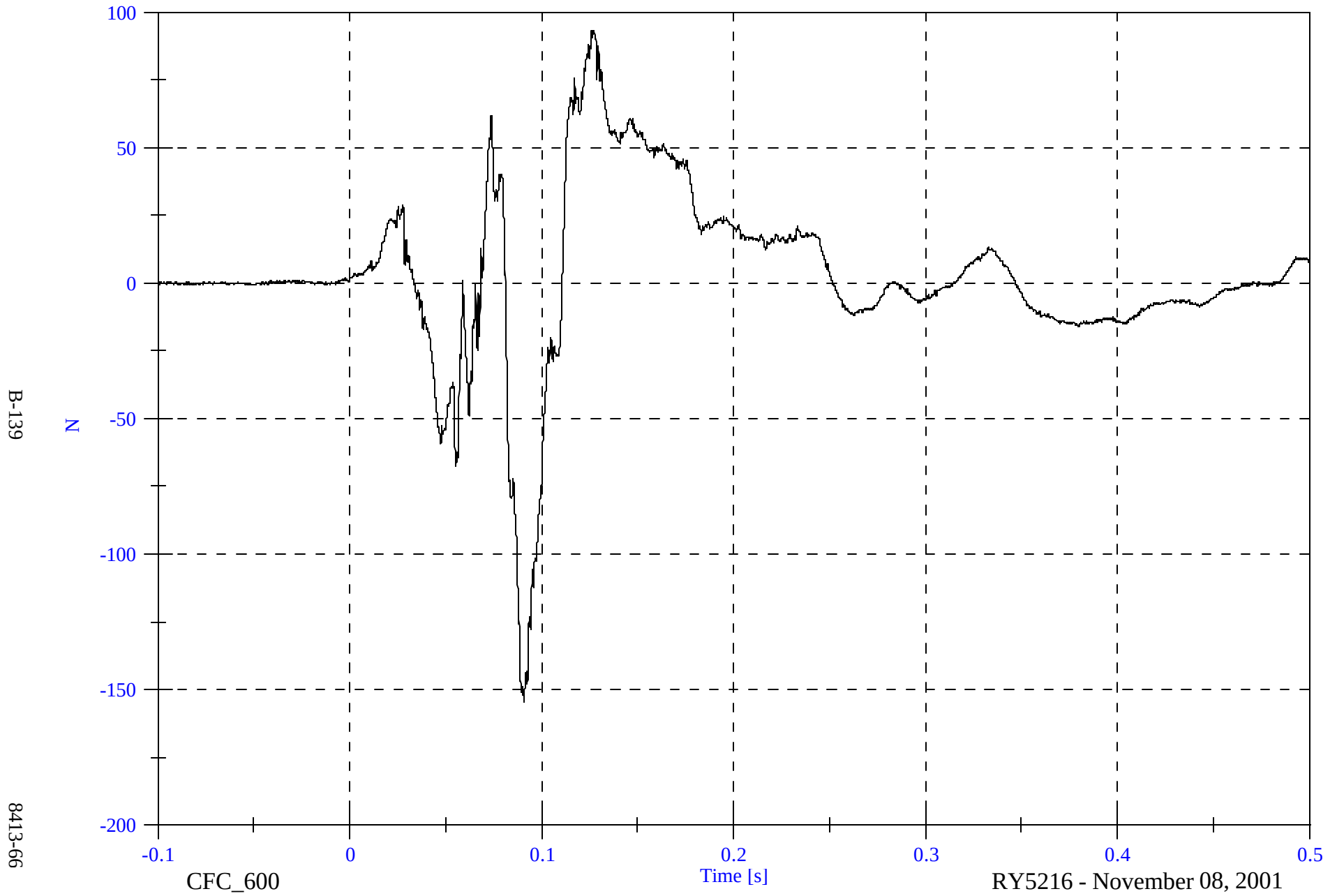


40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Left Upper Tibia Fx

Max: 93.2 [N] at 0.126 [s]

Min: -154.5 [N] at 0.091 [s]

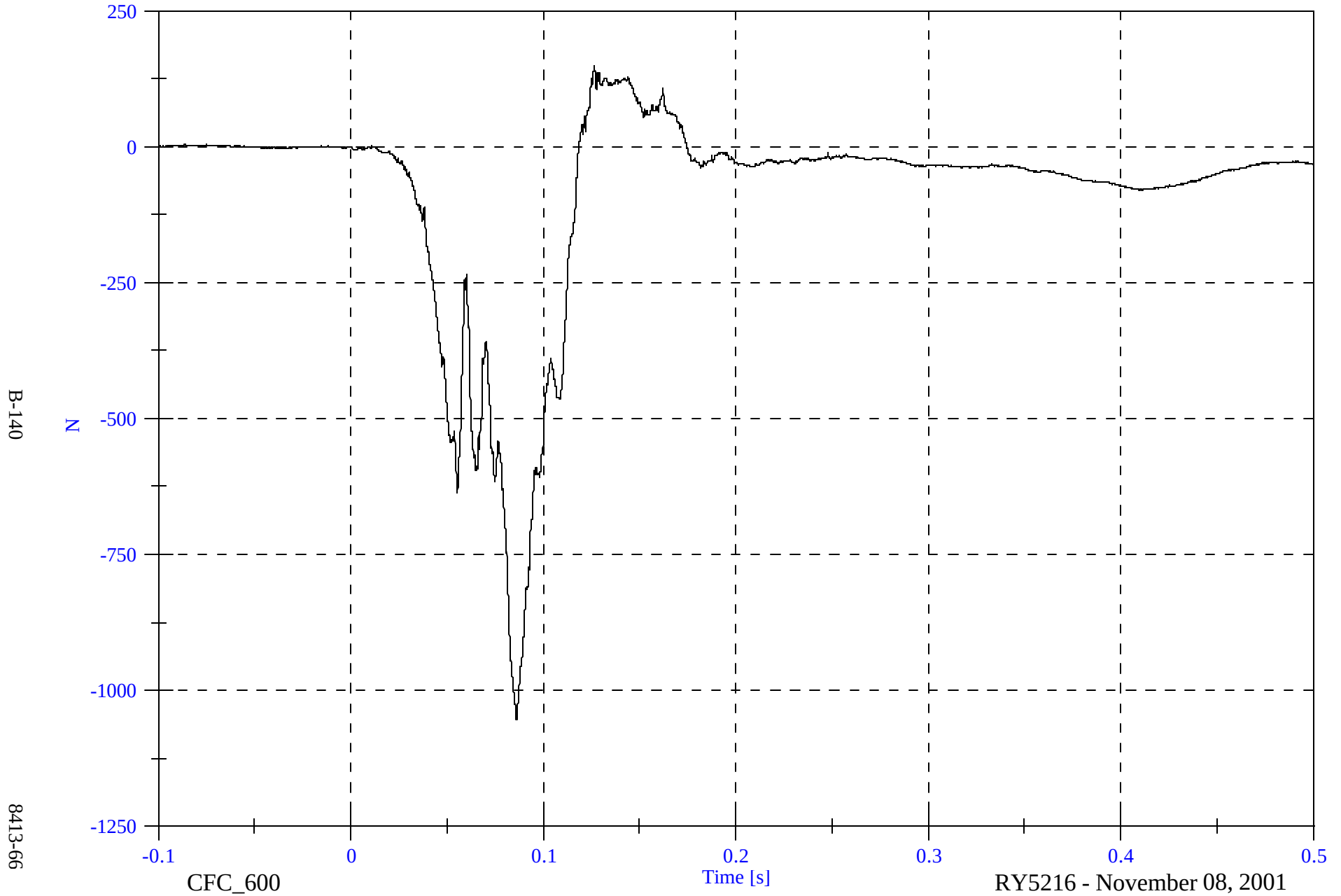


40% Frontal Offset Test #10 - 2000 Nissan Altima

Max: 149.5 [N] at 0.127 [s]

P2 Left UpperTibia Fz

Min: -1054.2 [N] at 0.086 [s]



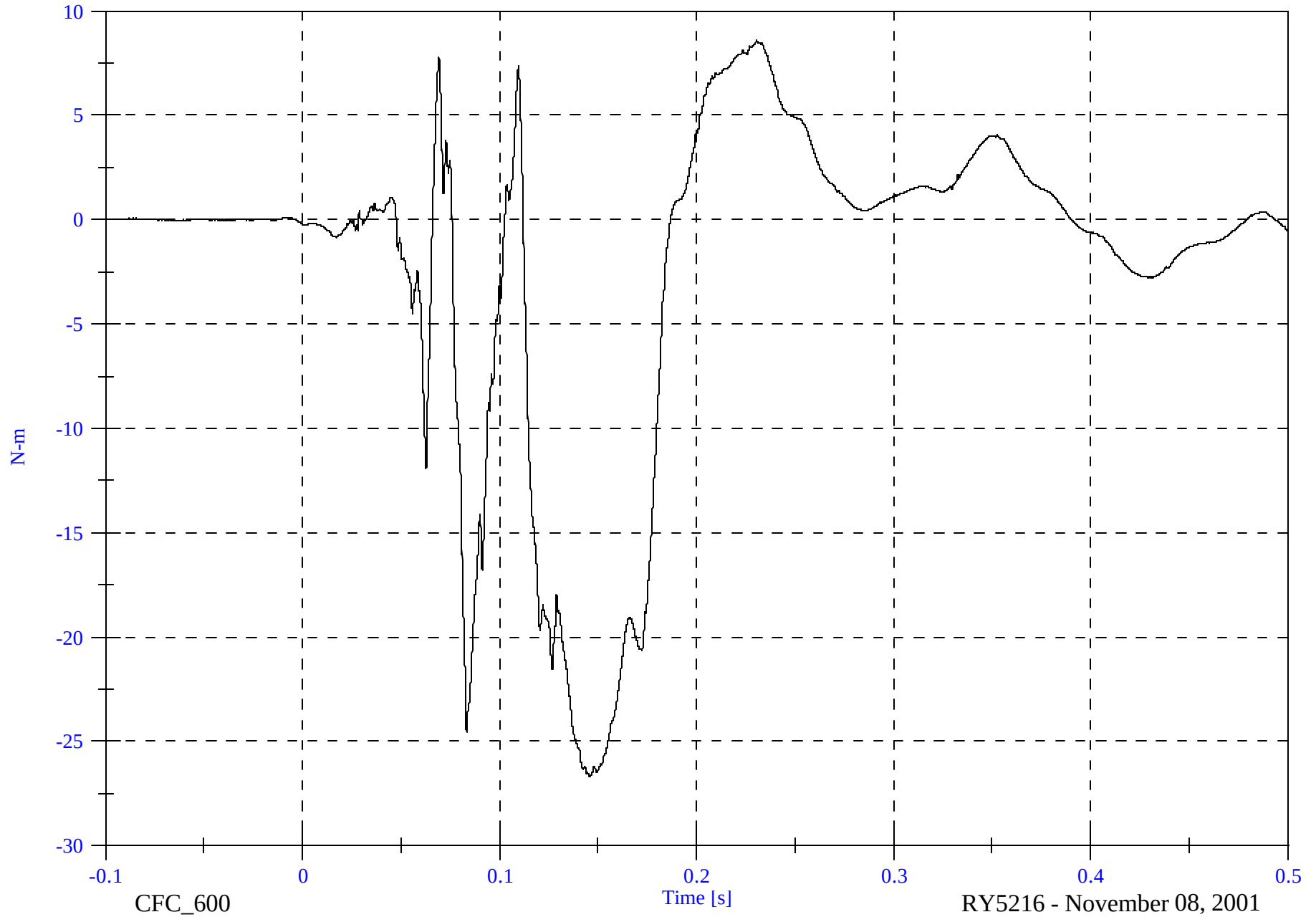
8413-66

40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Left Upper Tibia Mx

Max: 8.6 [N-m] at 0.231 [s]

Min: -26.7 [N-m] at 0.146 [s]



B-141

8413-66

CFC_600

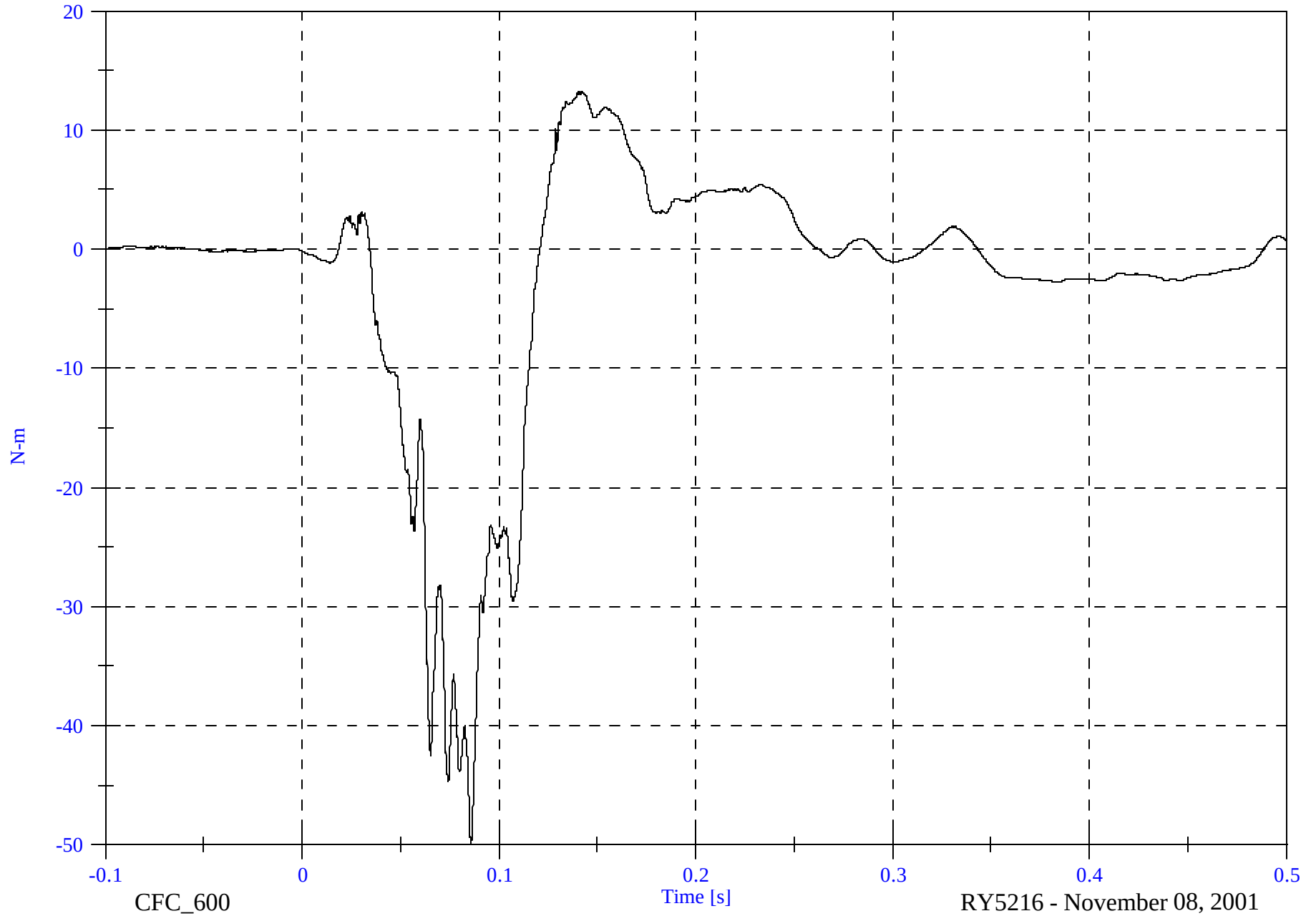
RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Left Upper Tibia My

Max: 13.3 [N-m] at 0.141 [s]

Min: -49.8 [N-m] at 0.086 [s]



B-142

8413-66

CFC_600

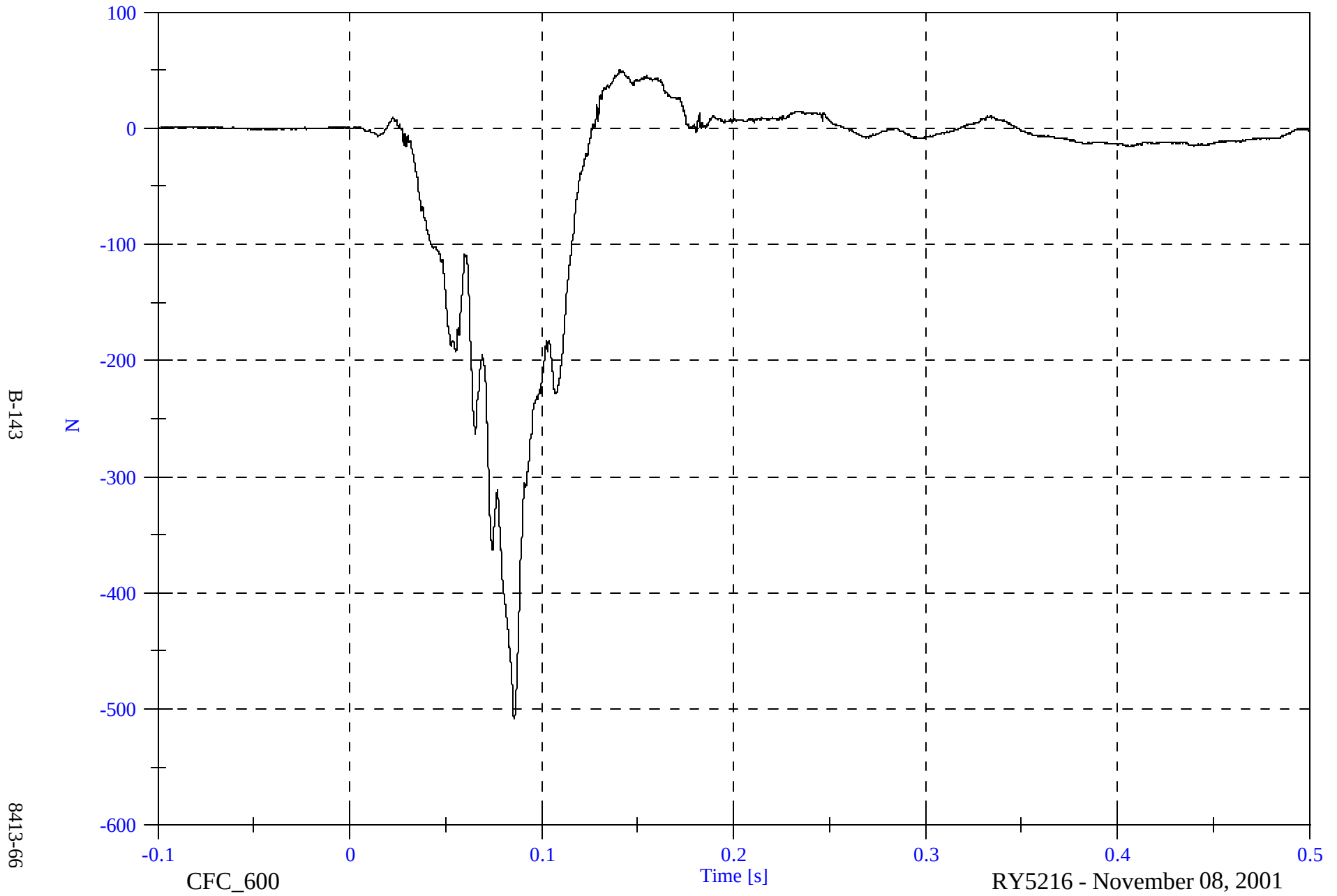
RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Left Lower Tibia Fx

Max: 49.7 [N] at 0.141 [s]

Min: -508.7 [N] at 0.086 [s]

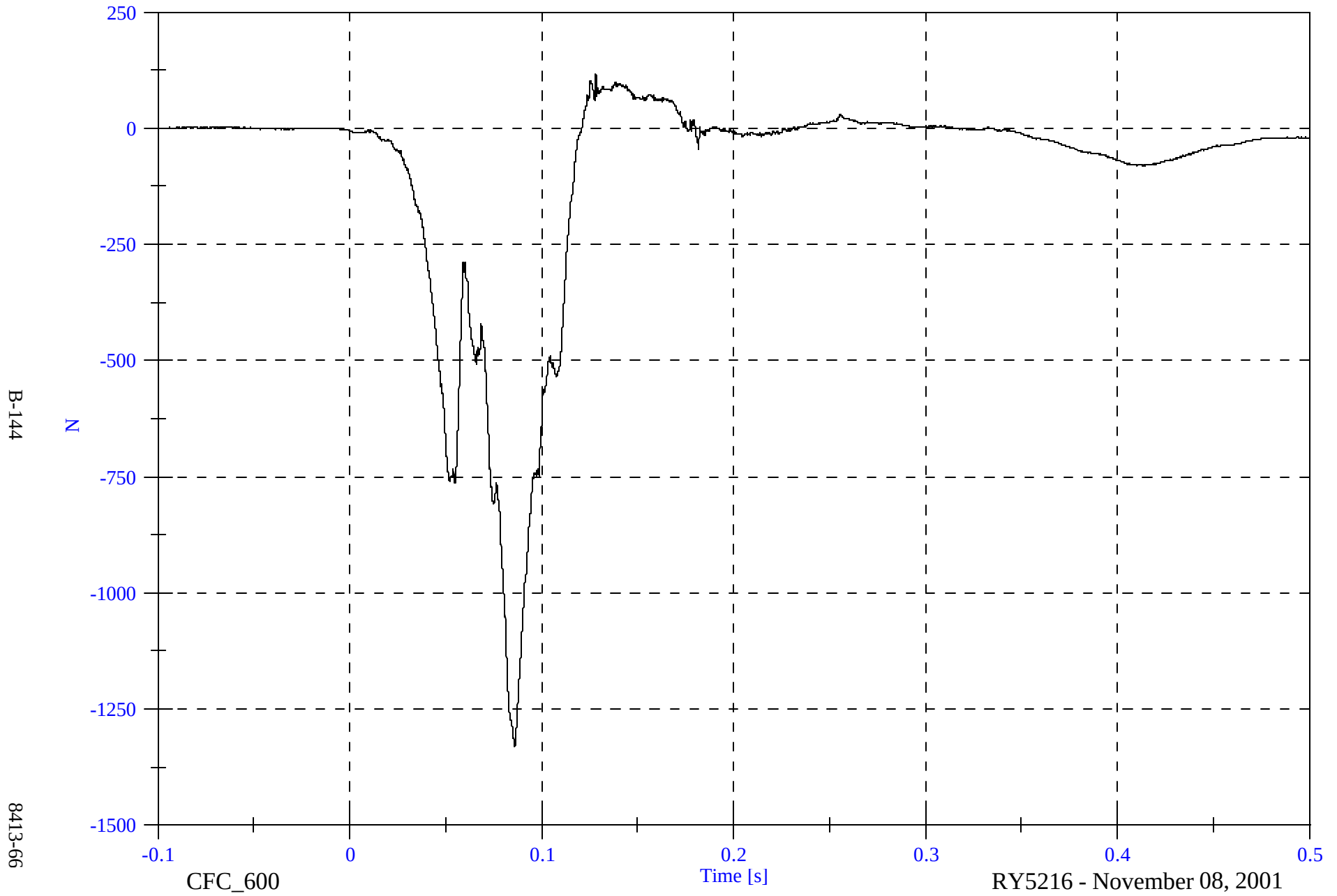


40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Left Lower Tibia Fz

Max: 116.3 [N] at 0.128 [s]

Min: -1330.2 [N] at 0.086 [s]

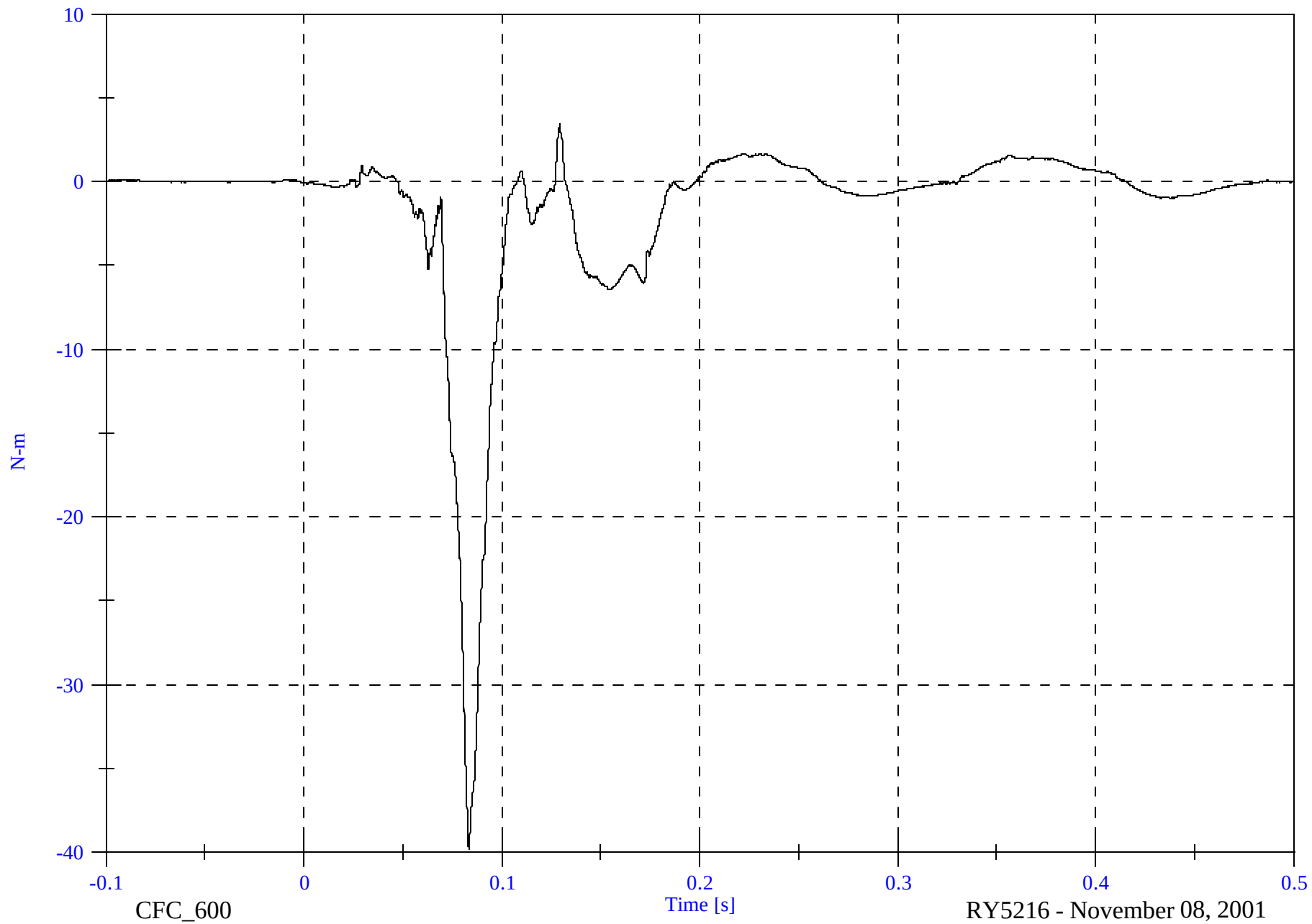


40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Left Lower Tibia Mx

Max: 3.5 [N-m] at 0.129 [s]

Min: -39.8 [N-m] at 0.083 [s]



B-145

8413-66

CFC_600

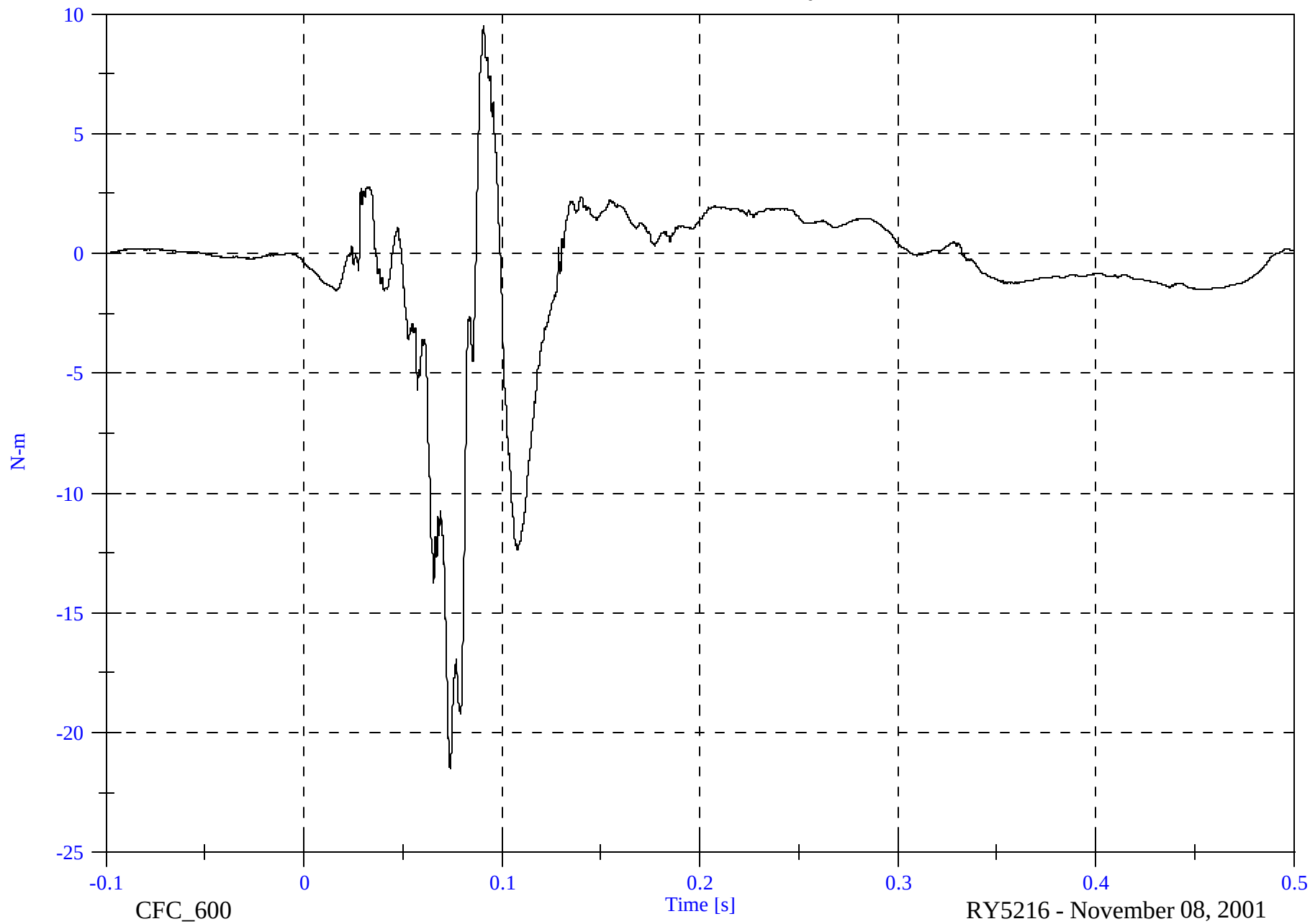
RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Left Lower Tibia My

Max: 9.5 [N-m] at 0.091 [s]

Min: -21.5 [N-m] at 0.074 [s]



B-146

8413-66

CFC_600

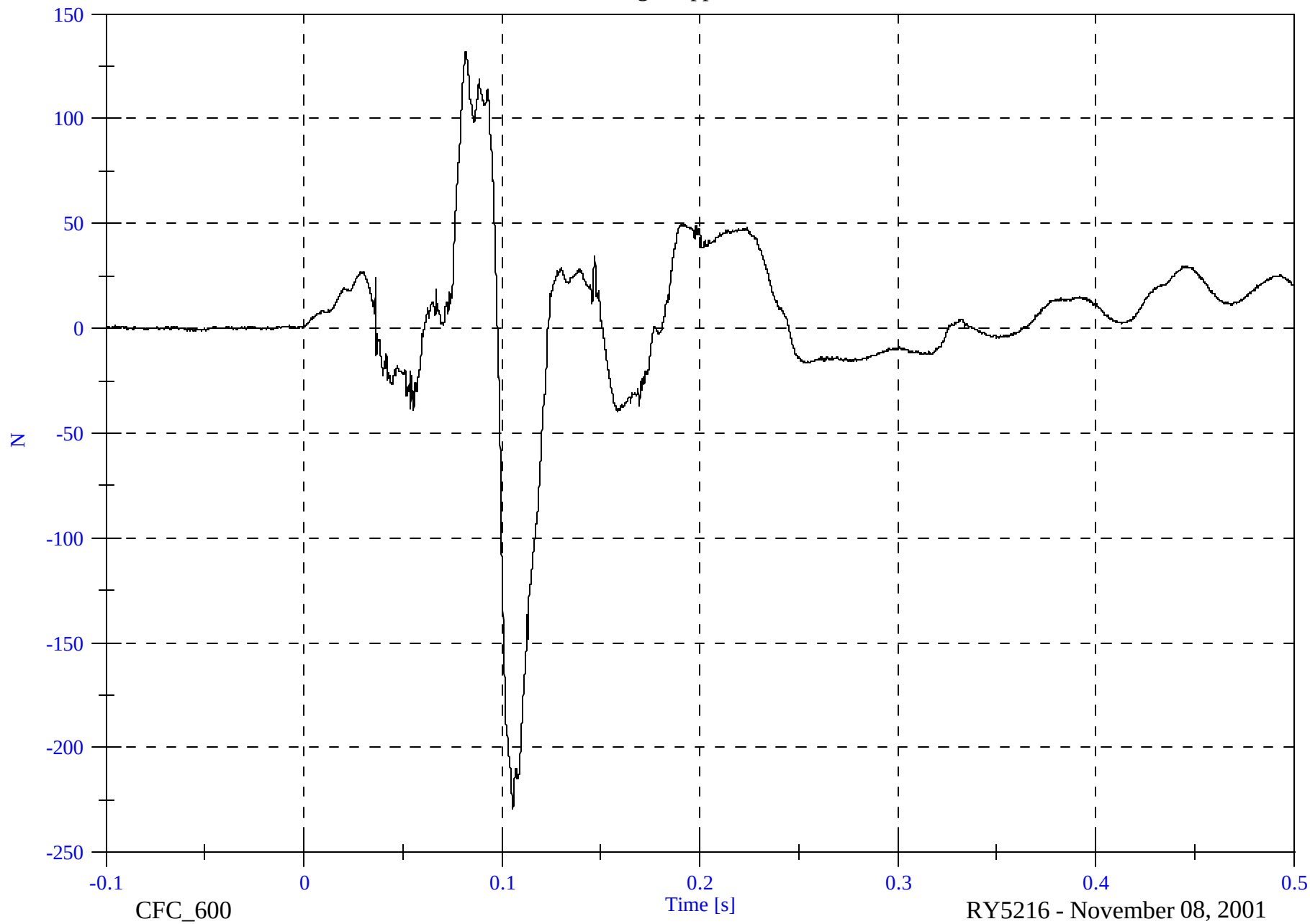
RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Right Upper Tibia Fx

Max: 131.9 [N] at 0.082 [s]

Min: -229.2 [N] at 0.106 [s]



B-147

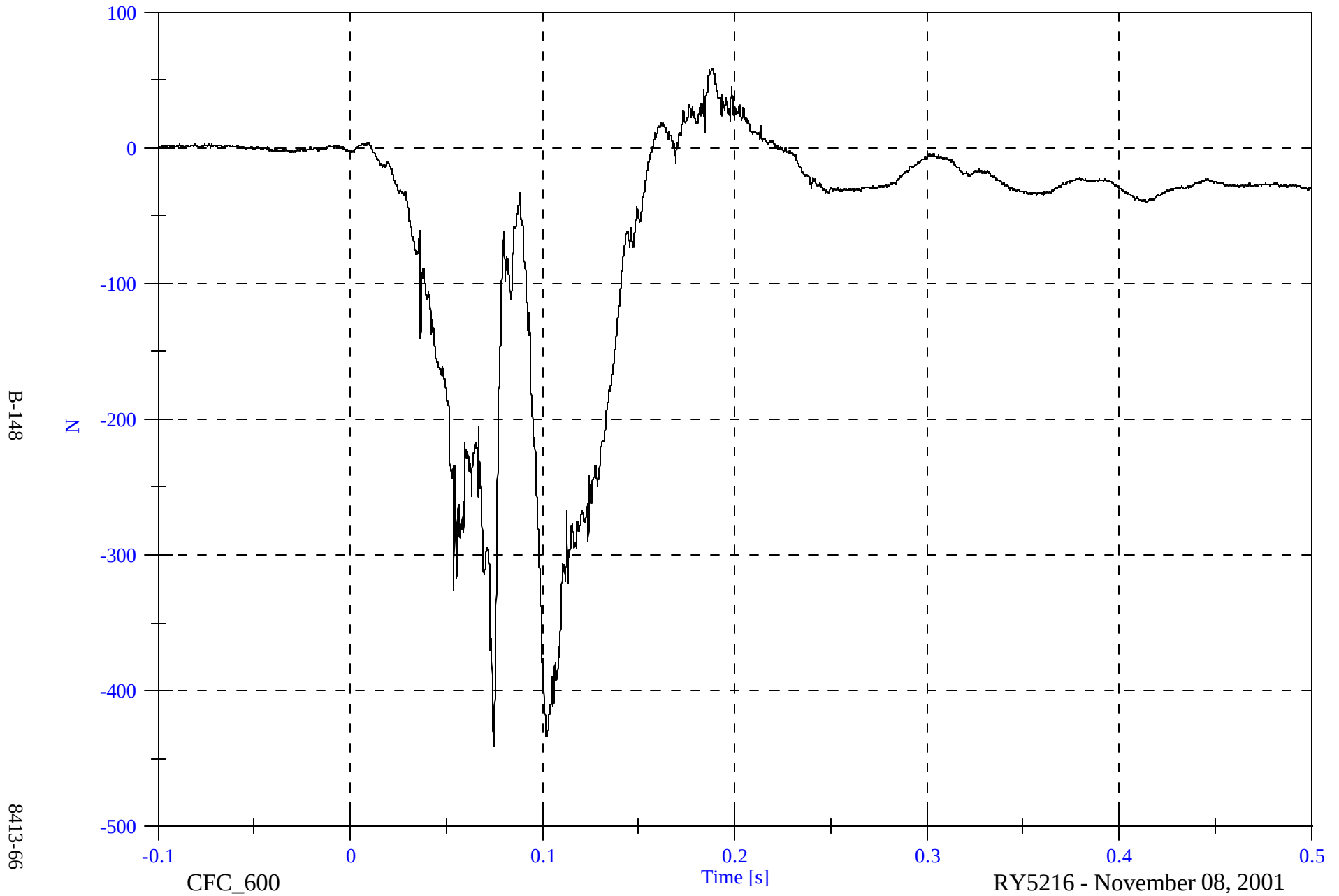
8413-66

40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Right Upper Tibia Fz

Max: 58.8 [N] at 0.188 [s]

Min: -441.5 [N] at 0.075 [s]

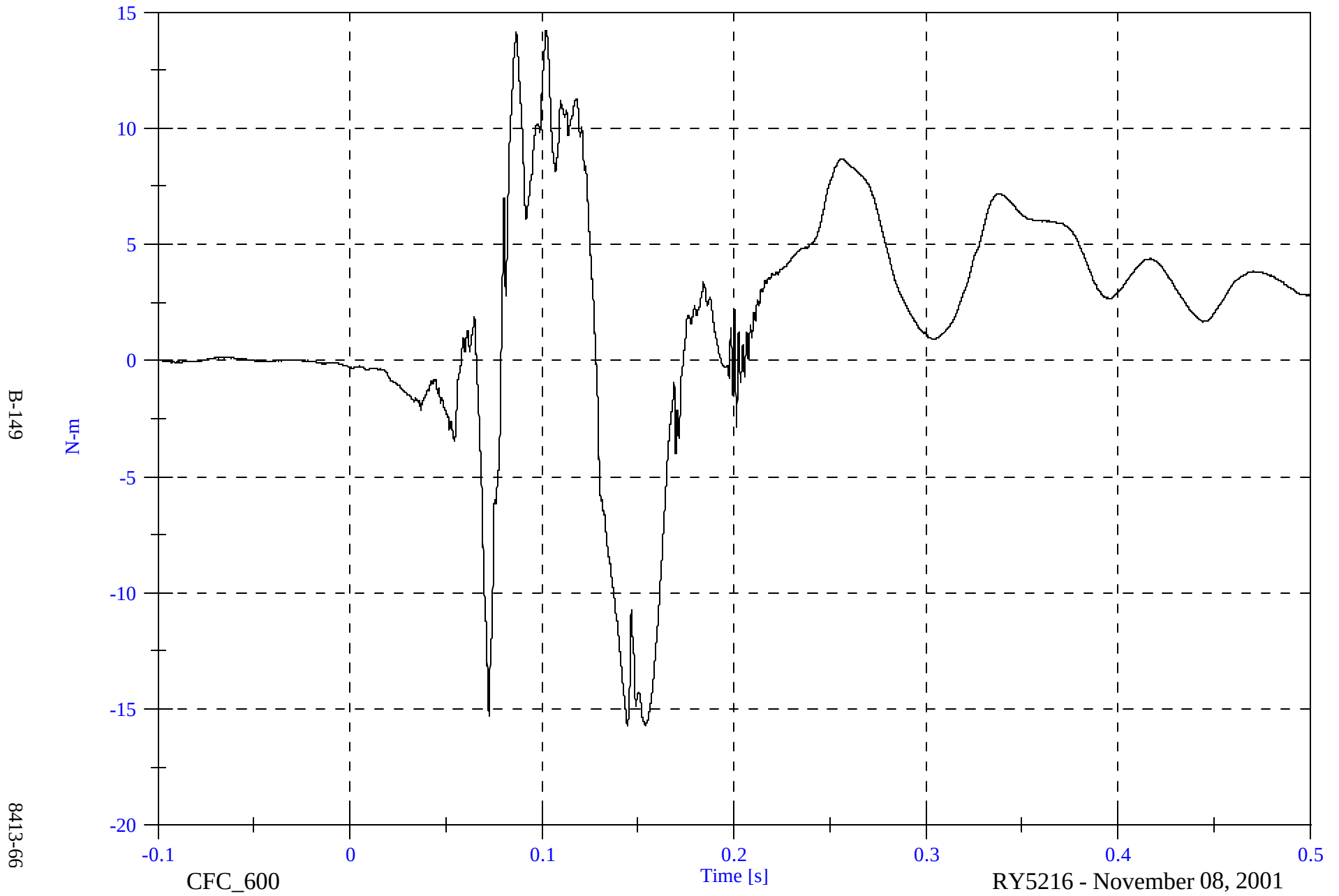


40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Right Upper Tibia Mx

Max: 14.2 [N-m] at 0.102 [s]

Min: -15.7 [N-m] at 0.145 [s]

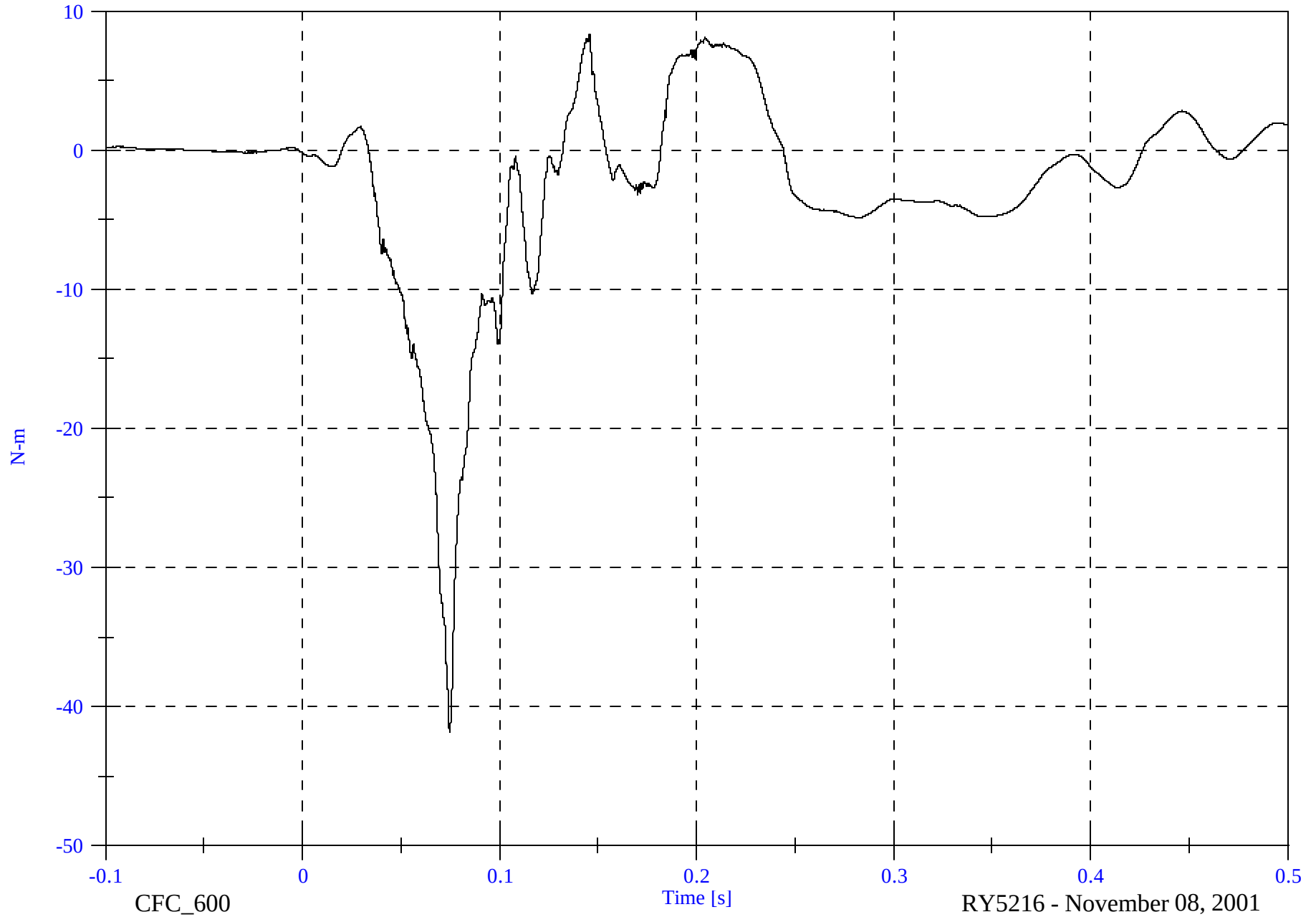


40% Frontal Offset Test #10 - 2000 Nissan Altima

Max: 8.3 [N-m] at 0.146 [s]

P2 Right Upper Tibia My

Min: -41.8 [N-m] at 0.075 [s]



B-150

8413-66

CFC_600

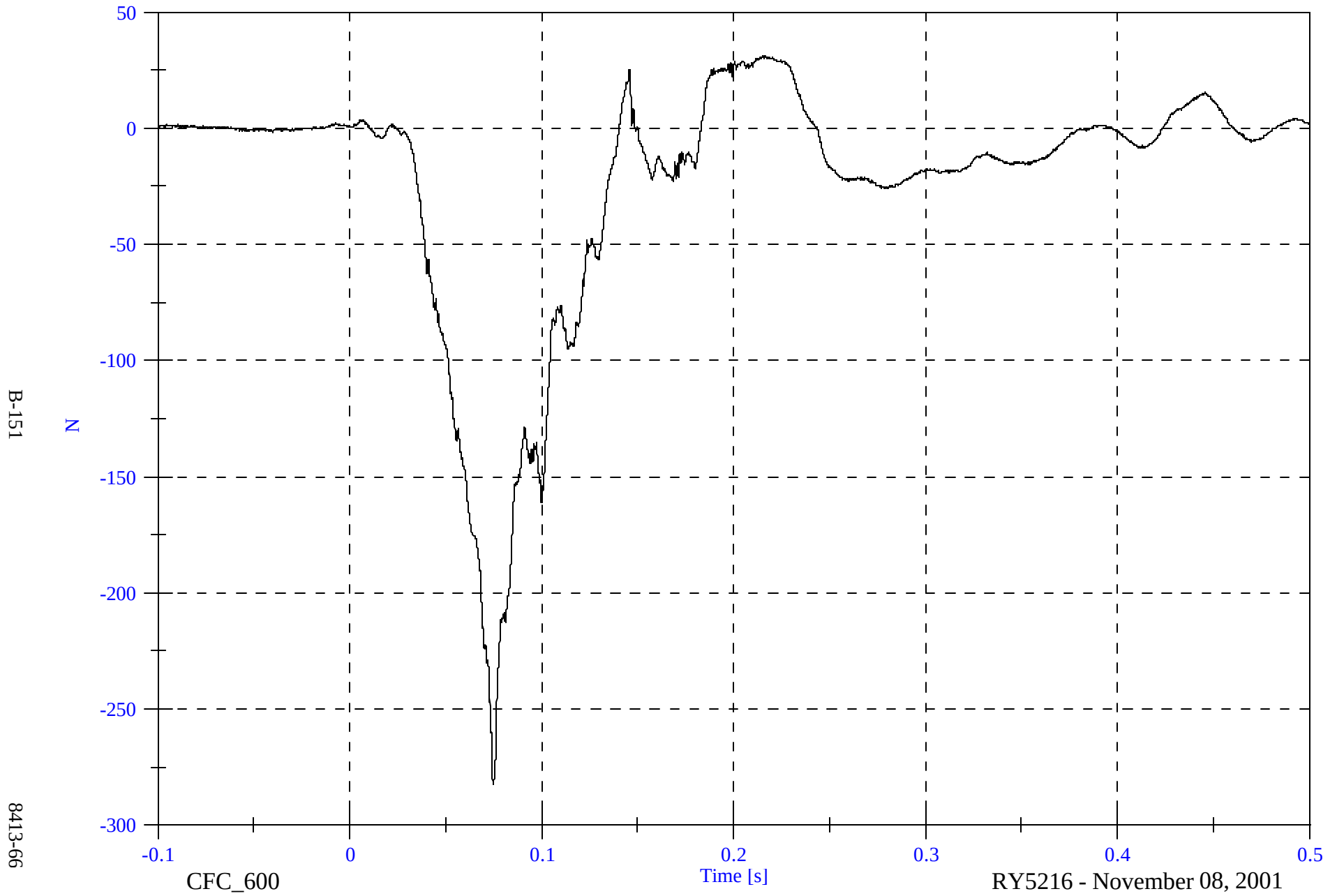
RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Right Lower Tibia Fx

Max: 31.1 [N] at 0.216 [s]

Min: -282.1 [N] at 0.075 [s]

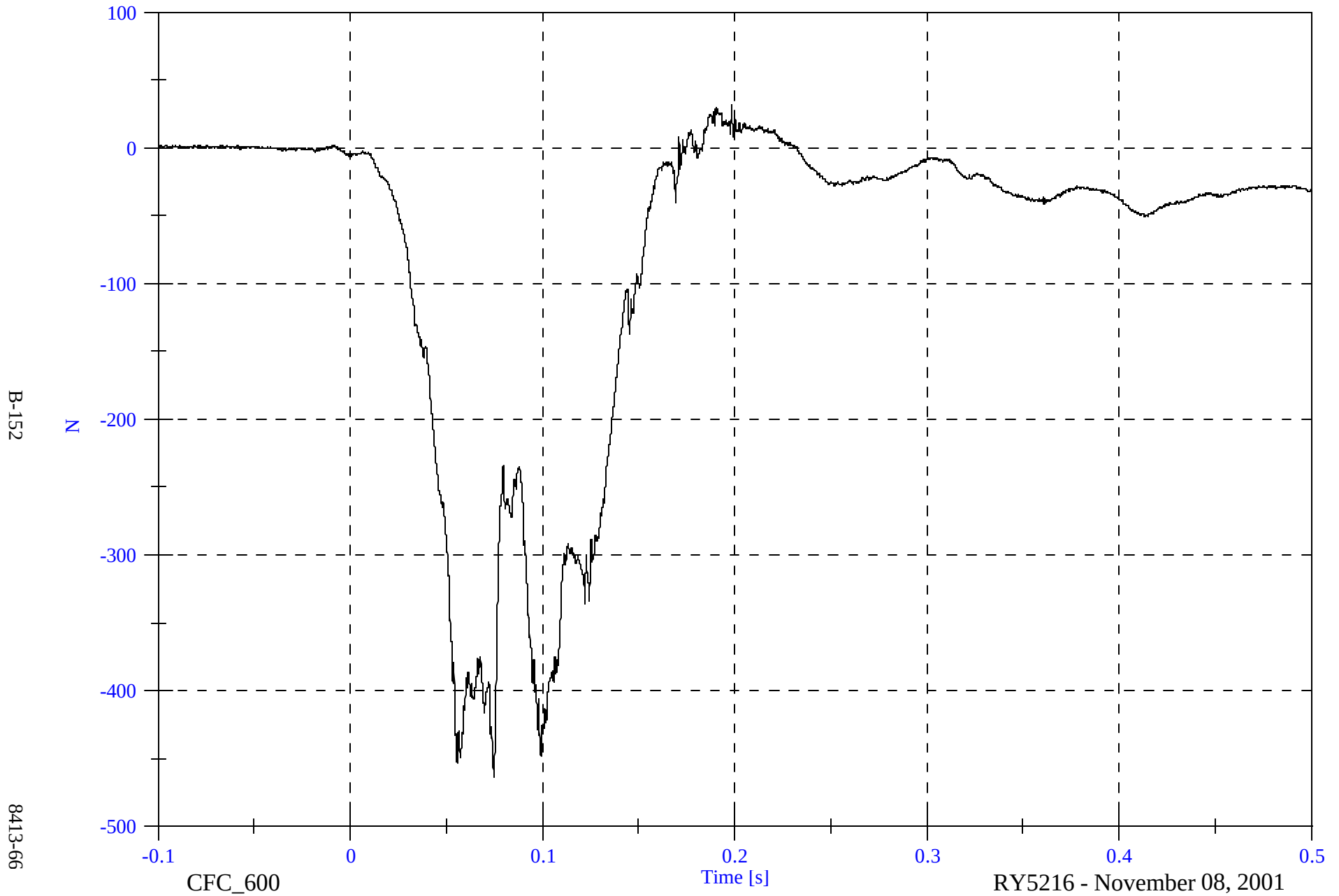


40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Right Lower Tibia Fz

Max: 31.2 [N] at 0.198 [s]

Min: -463.2 [N] at 0.075 [s]

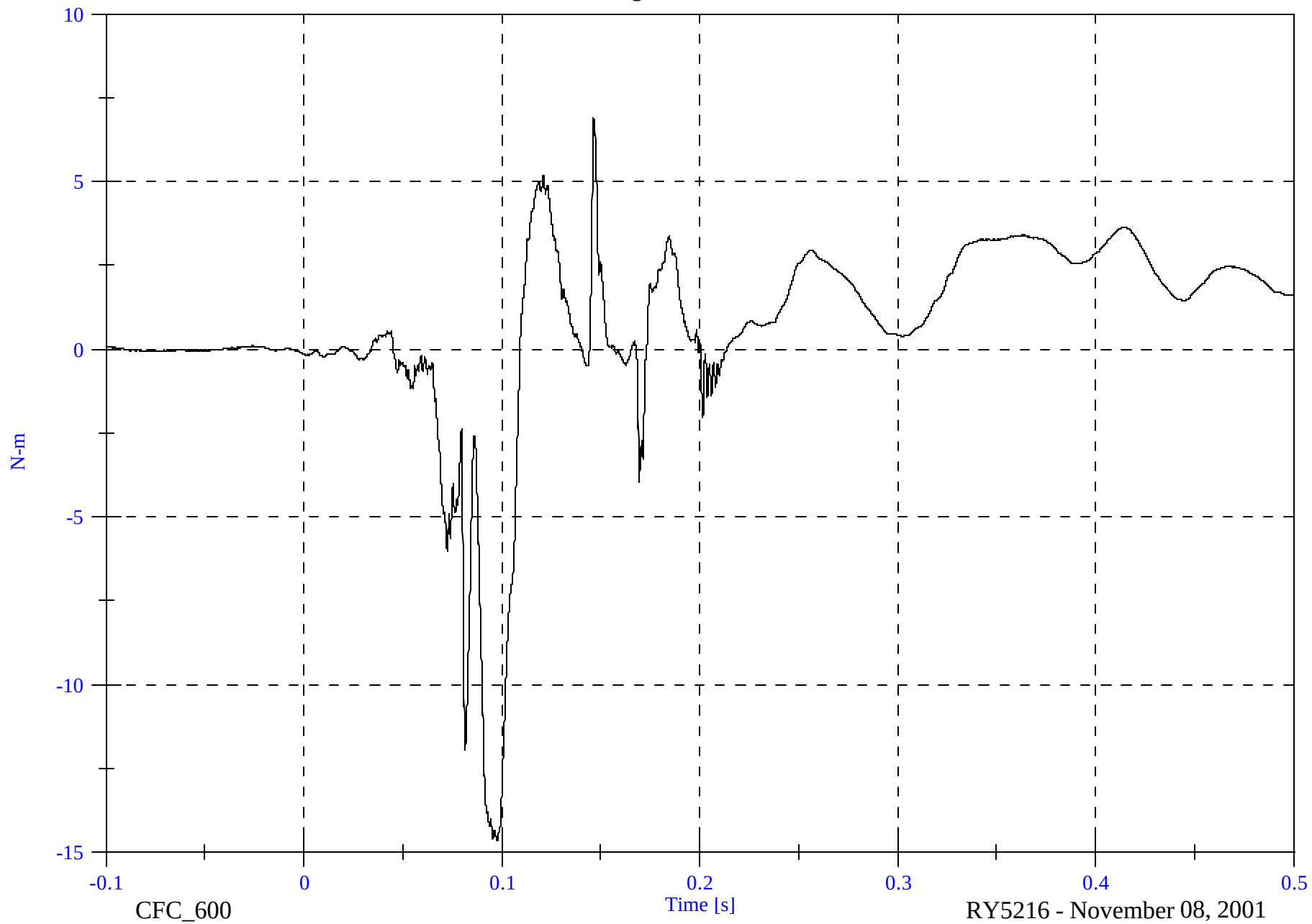


40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Right Lower Tibia Mx

Max: 6.9 [N-m] at 0.146 [s]

Min: -14.7 [N-m] at 0.098 [s]



B-153

8413-66

CFC_600

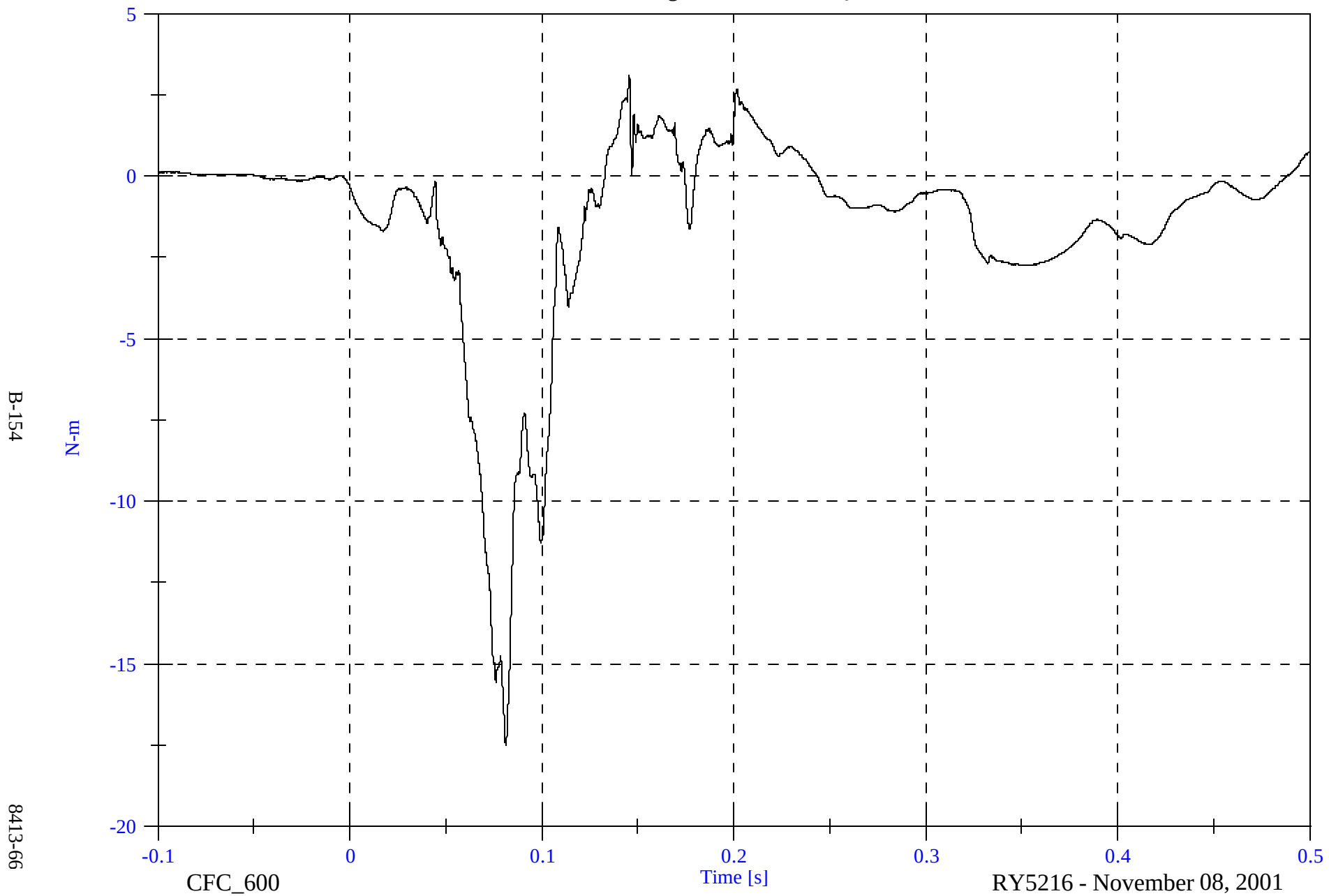
RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Right Lower Tibia My

Max: 3.1 [N-m] at 0.146 [s]

Min: -17.5 [N-m] at 0.081 [s]

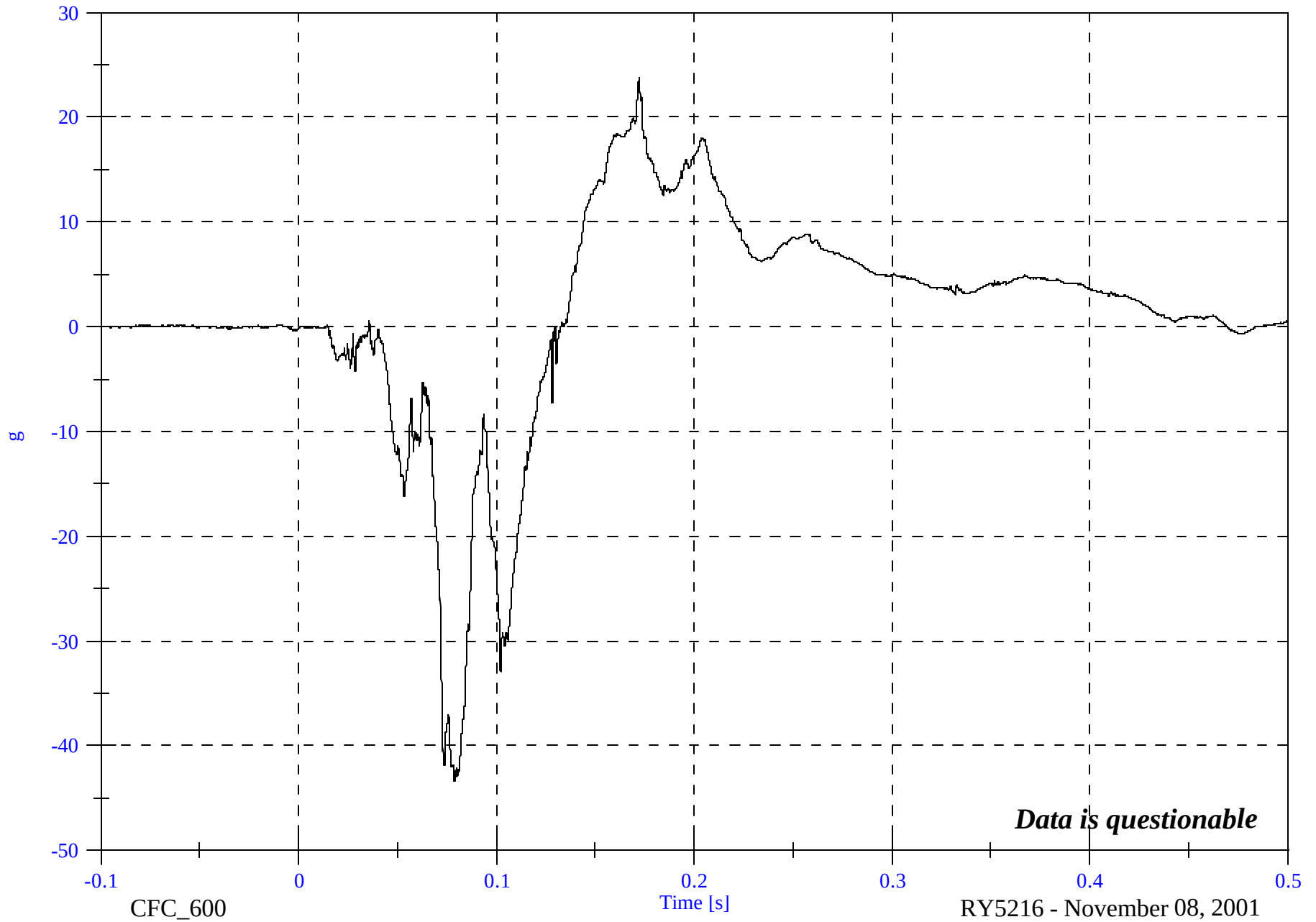


40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Left Ankle Ax

Max: 23.8 [g] at 0.172 [s]

Min: -43.4 [g] at 0.079 [s]



B-155

8413-66

CFC_600

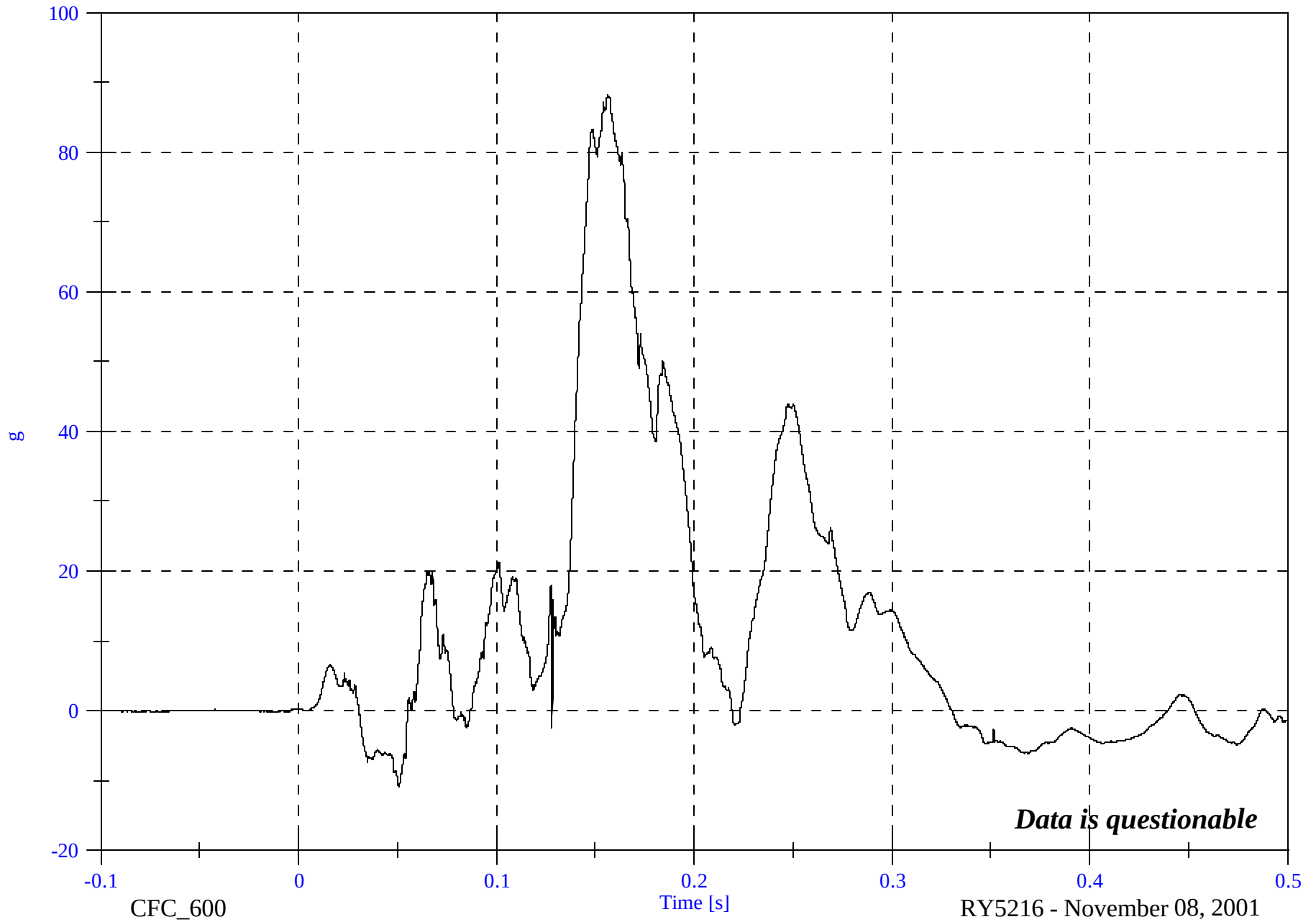
RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

Max: 88.1 [g] at 0.156 [s]

P2 Left Ankle Az

Min: -10.8 [g] at 0.051 [s]



B-156

8413-66

CFC_600

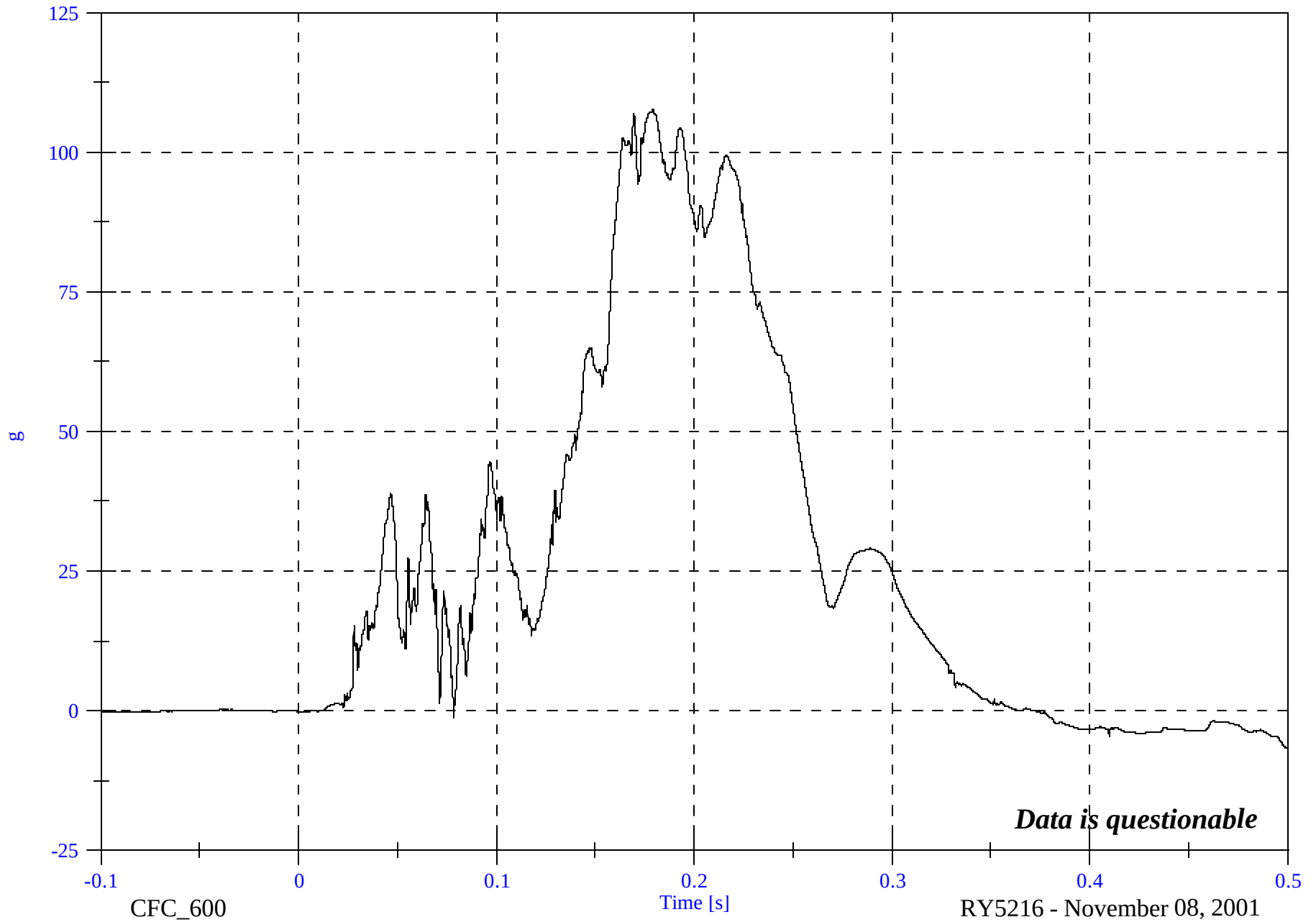
RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

Max: 107.7 [g] at 0.179 [s]

Min: -6.7 [g] at 0.500 [s]

P2 Left Toe Az



B-157

8413-66

CFC_600

RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

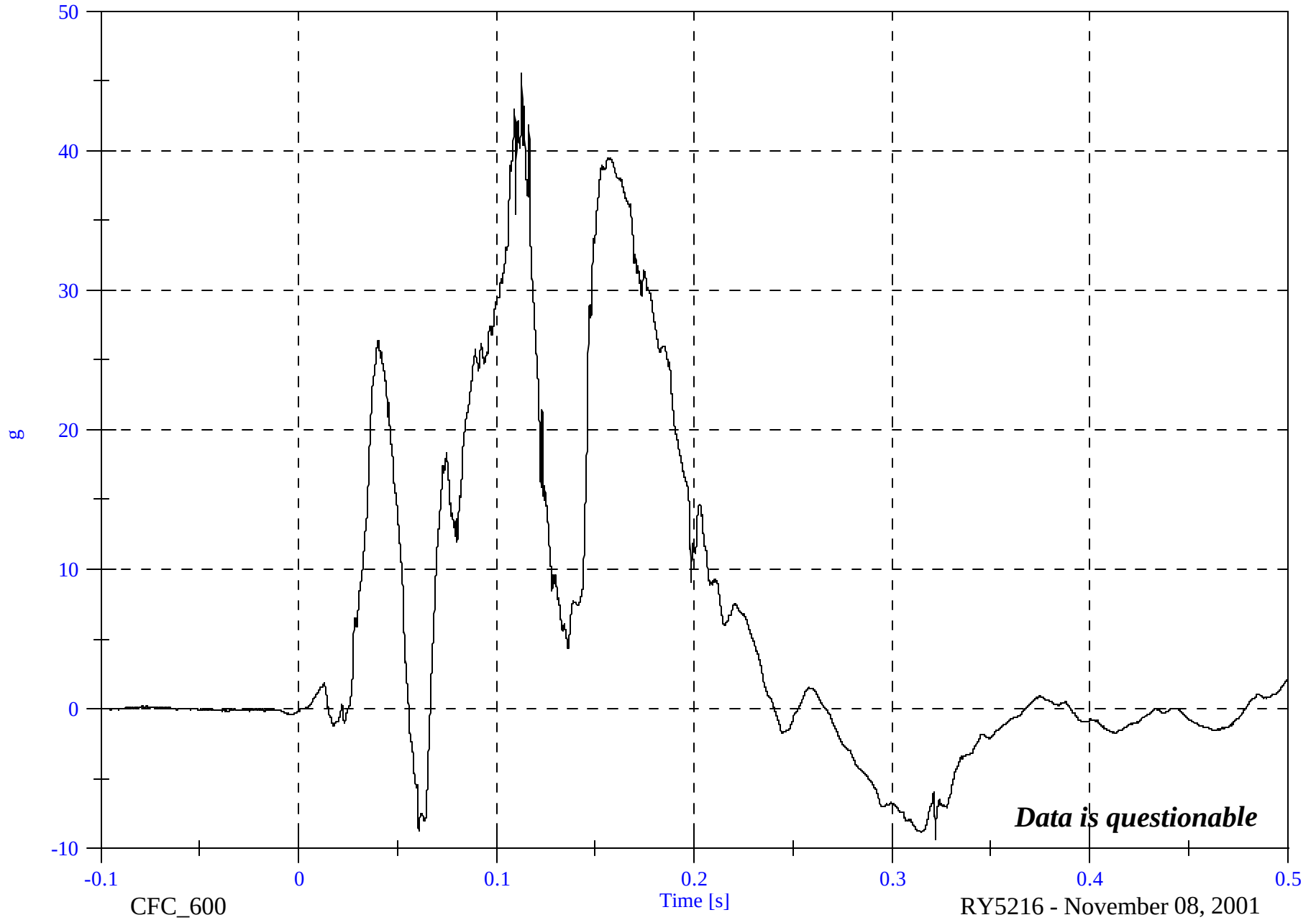
P2 Right Ankle Ax

Max: 45.5 [g] at 0.113 [s]

Min: -9.3 [g] at 0.322 [s]

B-158

8413-66



40% Frontal Offset Test #10 - 2000 Nissan Altima

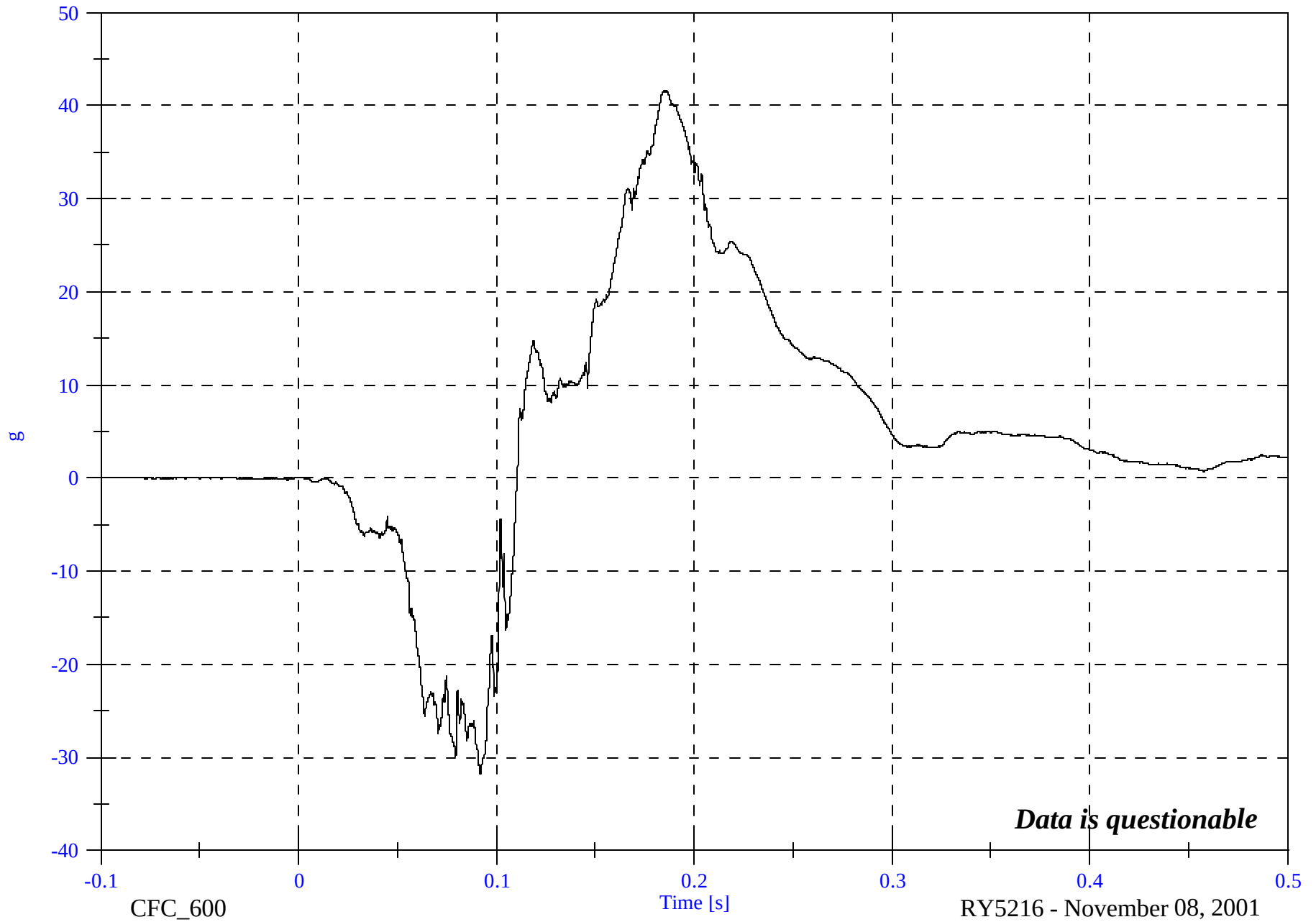
P2 Right Ankle Az

Max: 41.6 [g] at 0.186 [s]

Min: -31.8 [g] at 0.092 [s]

B-159

8413-66

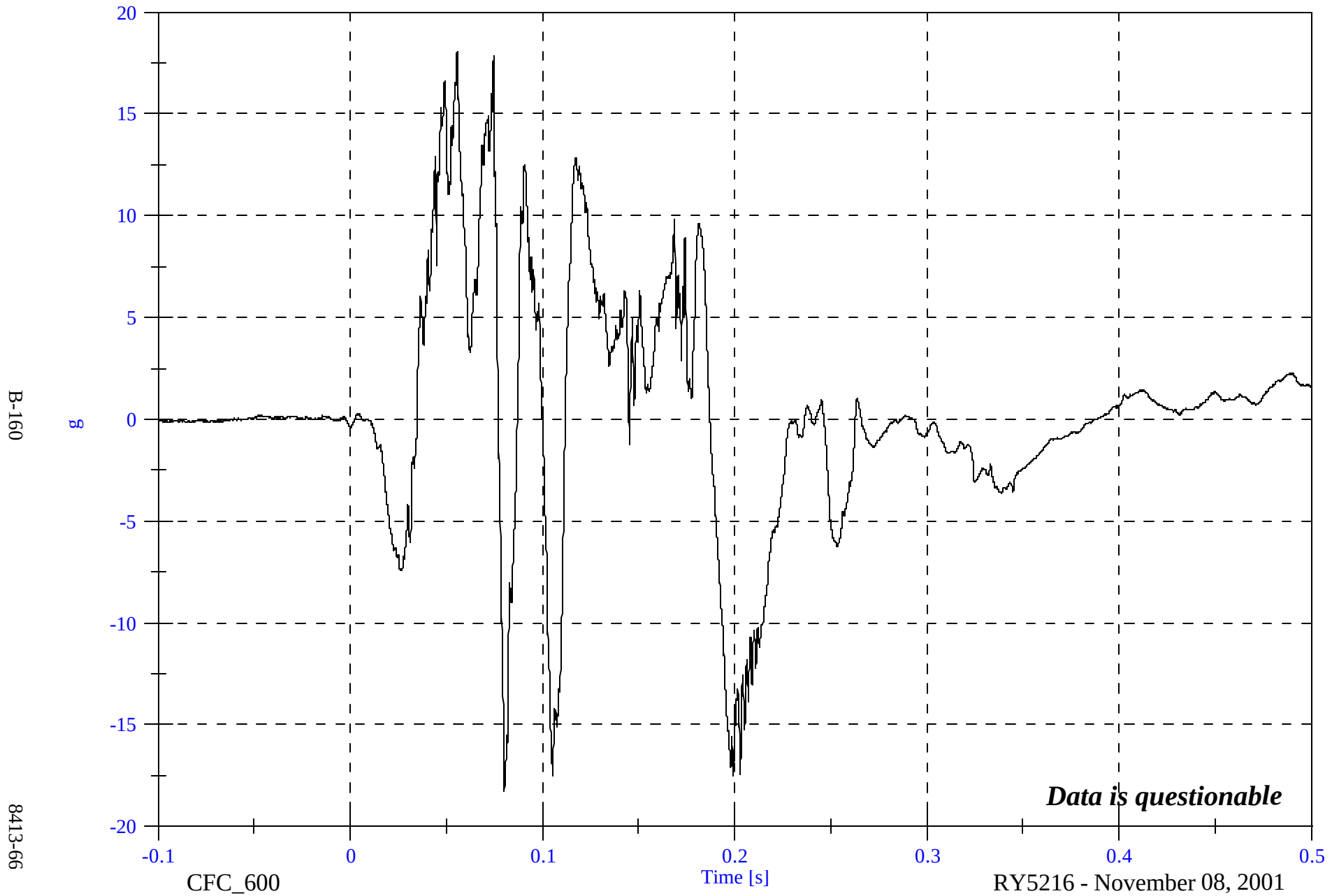


40% Frontal Offset Test #10 - 2000 Nissan Altima

Max: 18.0 [g] at 0.056 [s]

P2 Right Toe Az

Min: -18.3 [g] at 0.080 [s]

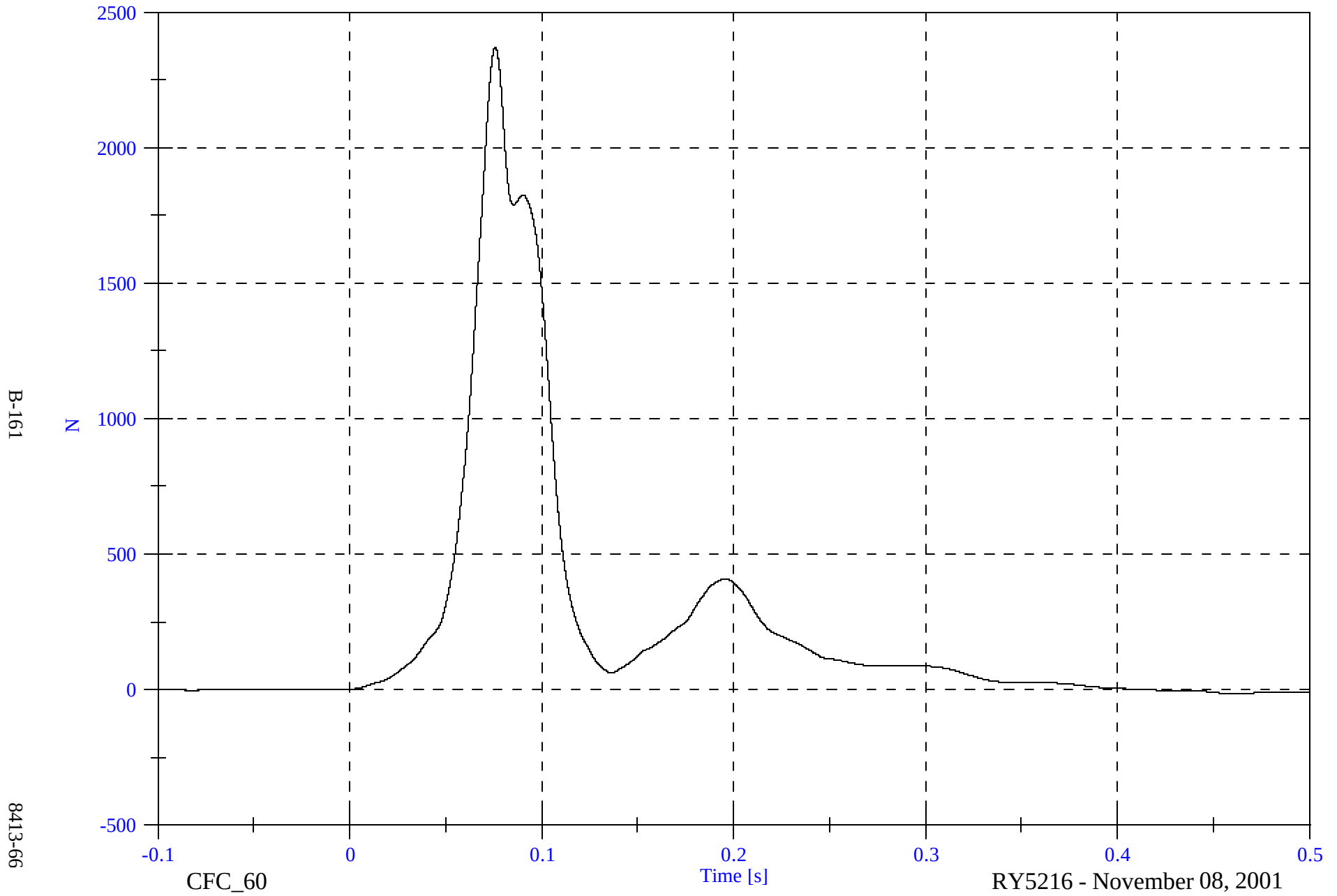


40% Frontal Offset Test #10 - 2000 Nissan Altima

P2 Lap Belt Force

Max: 2368.5 [N] at 0.076 [s]

Min: -12.0 [N] at 0.462 [s]

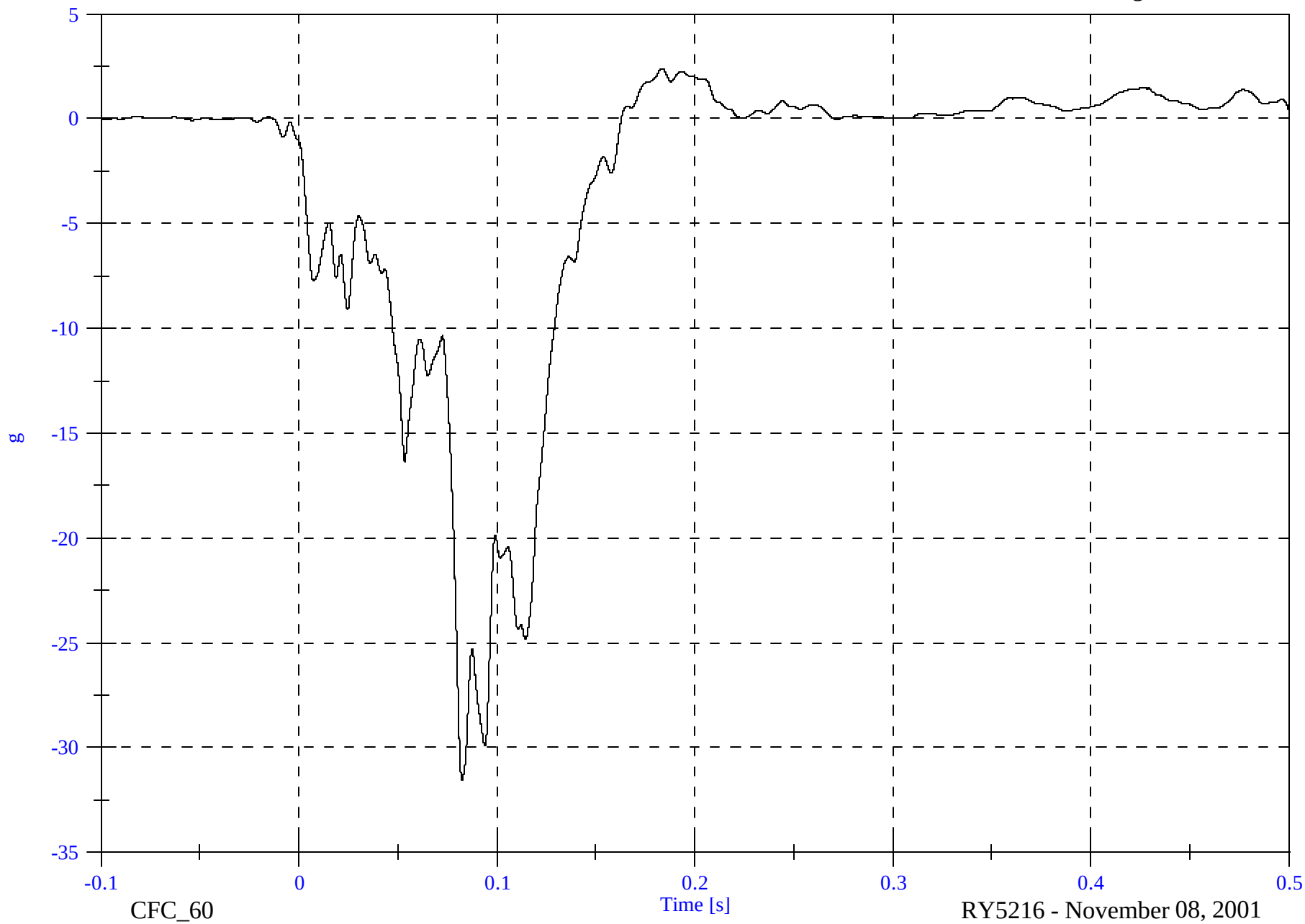


40% Frontal Offset Test #10 - 2000 Nissan Altima

Acc 1 Rear XMBR Left X

Max: 2.4 [g] at 0.183 [s]

Min: -31.6 [g] at 0.082 [s]



B-162

8413-66

CFC_60

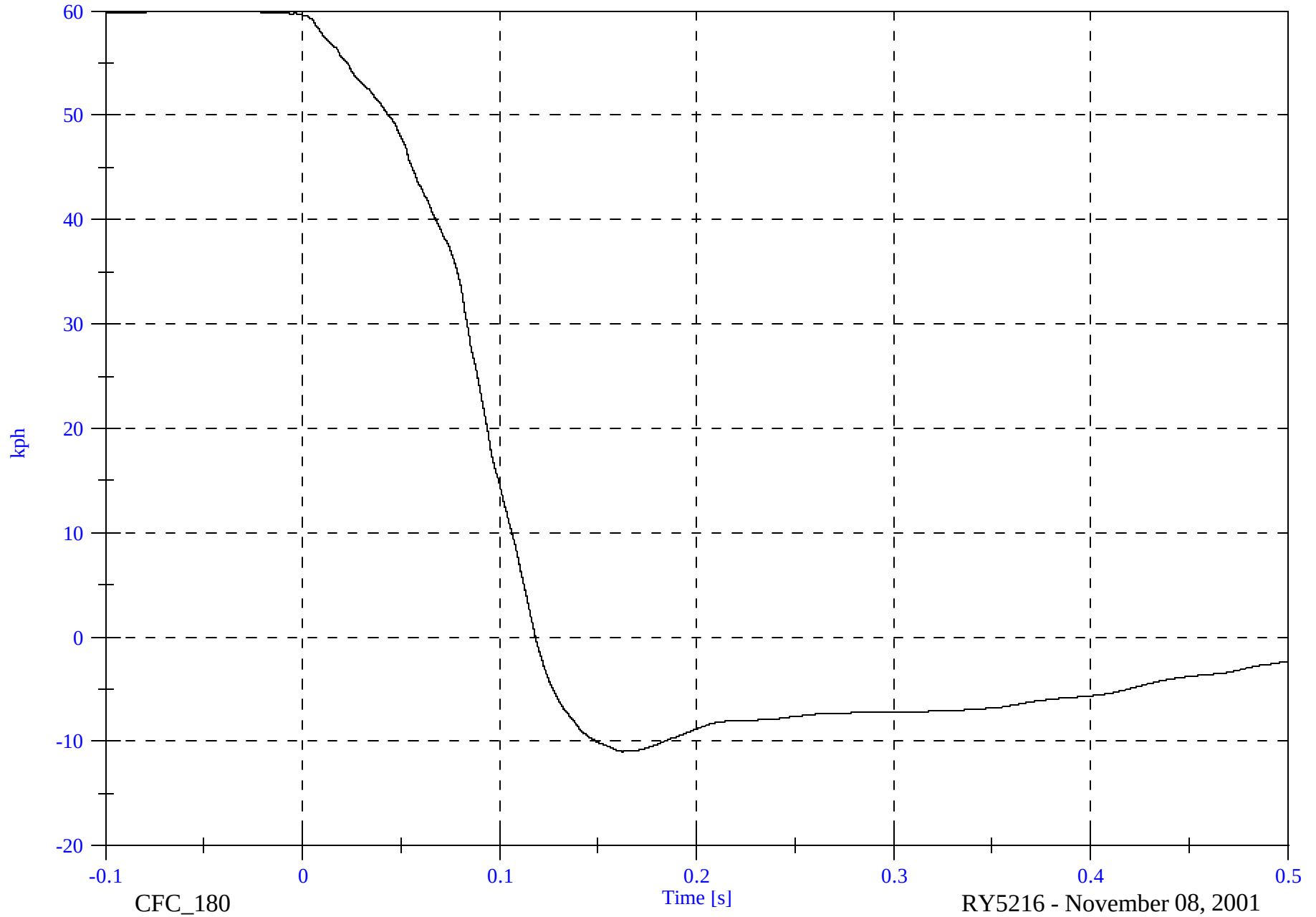
RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

Max: 59.9 [kph] at -0.058 [s]

Acc 1 Rear XMBR Left X Velocity

Min: -11.0 [kph] at 0.162 [s]



B-163

8413-66

CFC_180

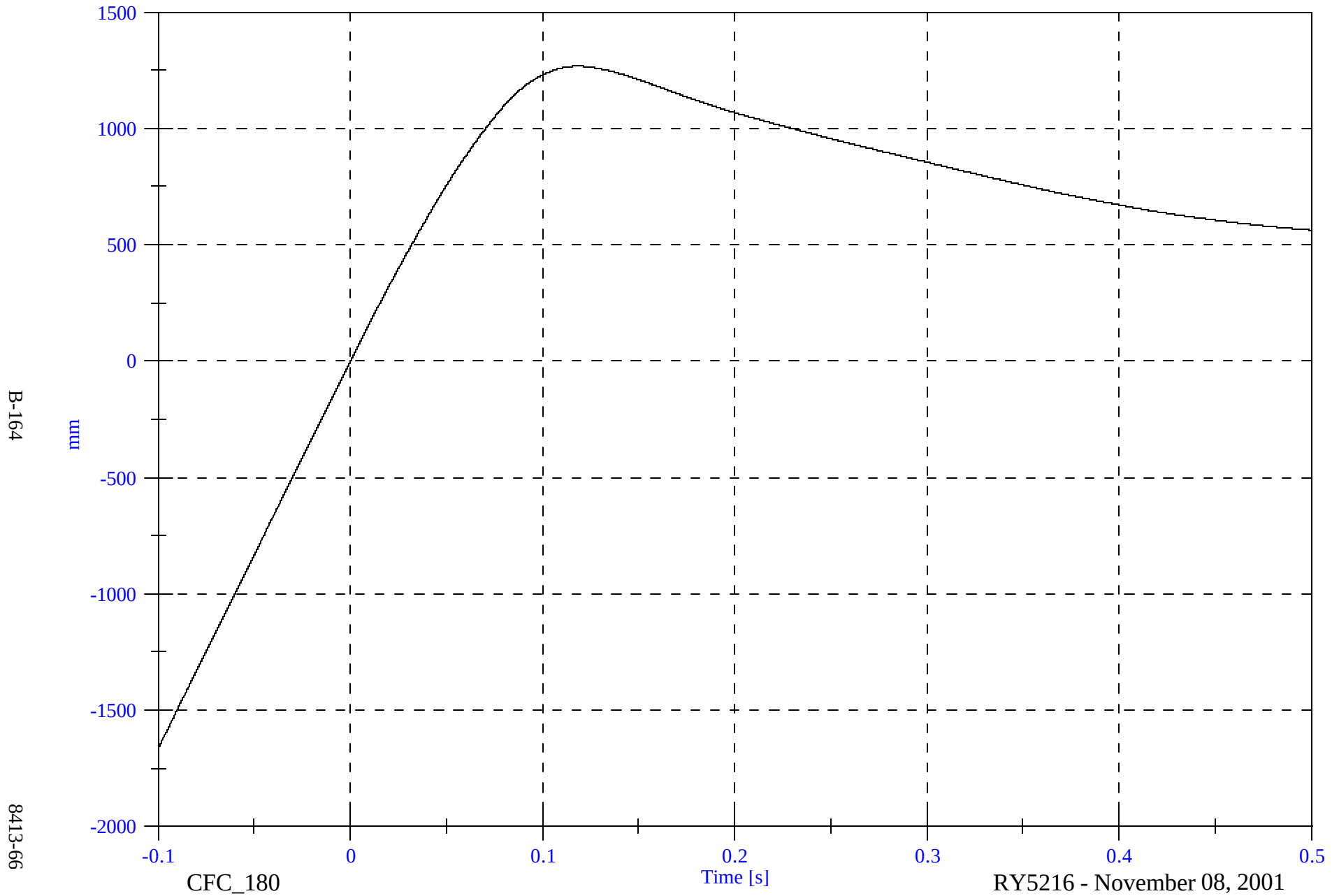
RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

Acc 1 Rear XMBR Left X Displacement

Max: 1267.3 [mm] at 0.118 [s]

Min: -1663.0 [mm] at -0.100 [s]

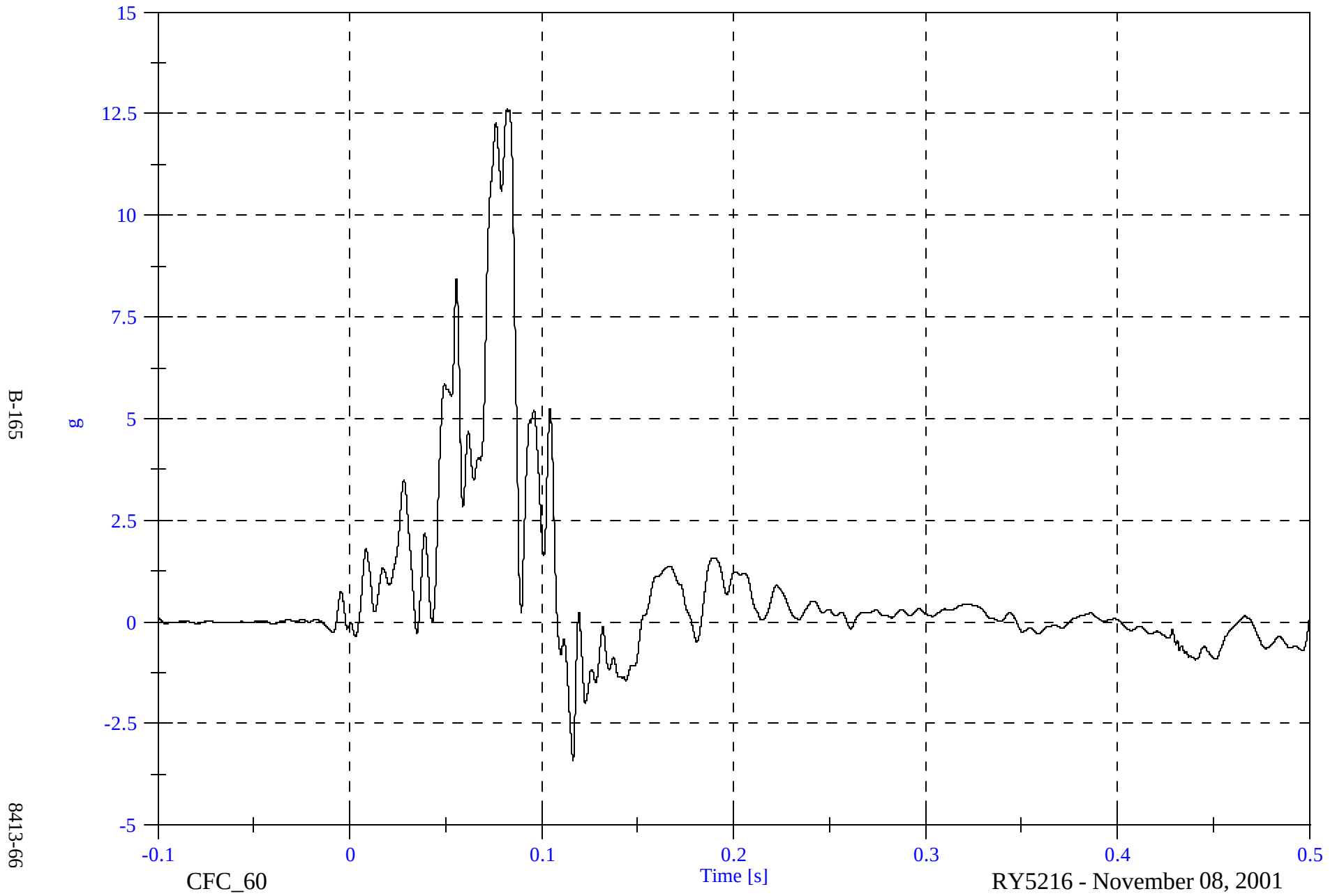


40% Frontal Offset Test #10 - 2000 Nissan Altima

Acc 2 Rear XMBR Left Y

Max: 12.6 [g] at 0.082 [s]

Min: -3.4 [g] at 0.116 [s]

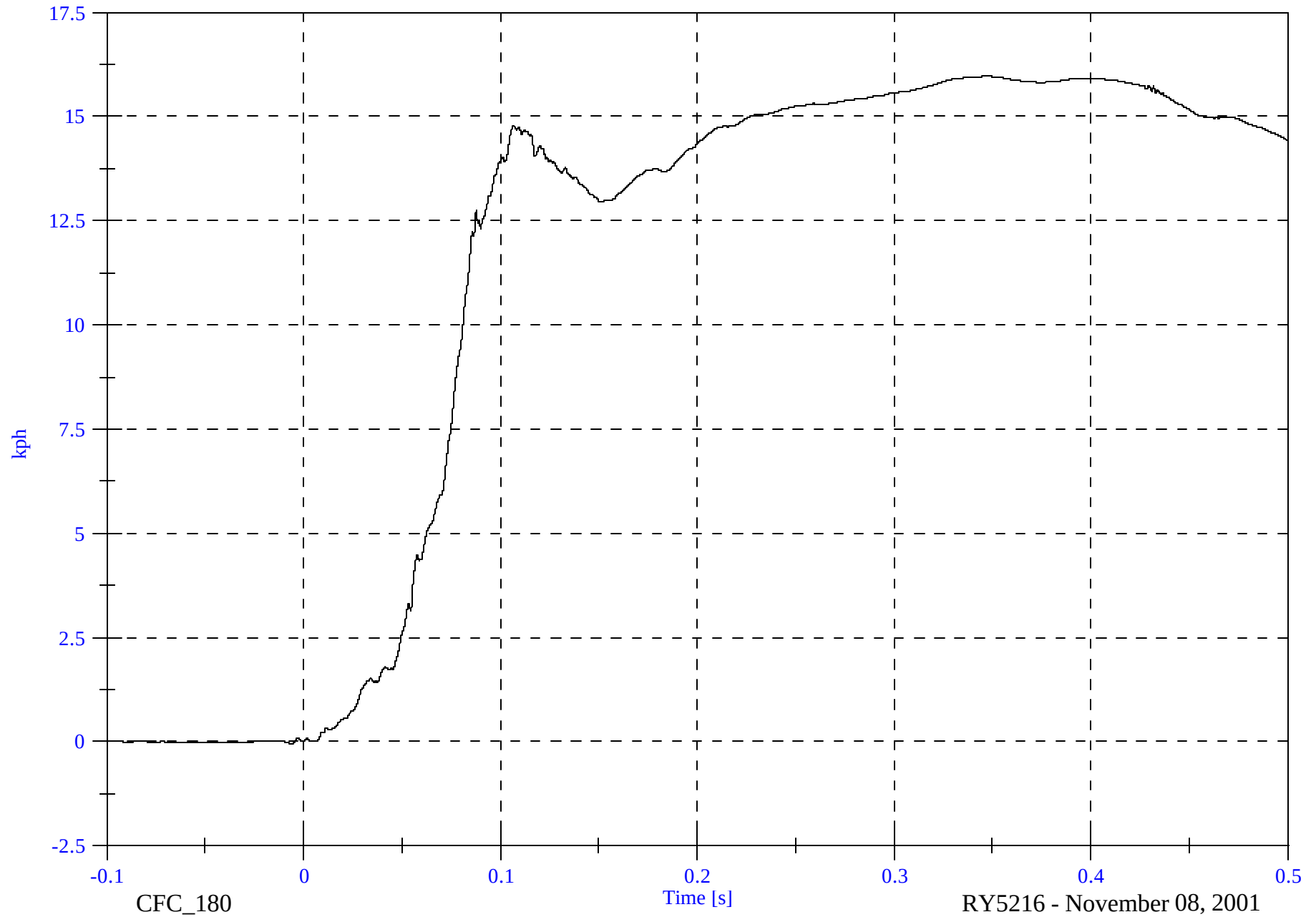


40% Frontal Offset Test #10 - 2000 Nissan Altima

Acc 2 Rear XMBR Left Y Velocity

Max: 16.0 [kph] at 0.348 [s]

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



B-166

8413-66

CFC_180

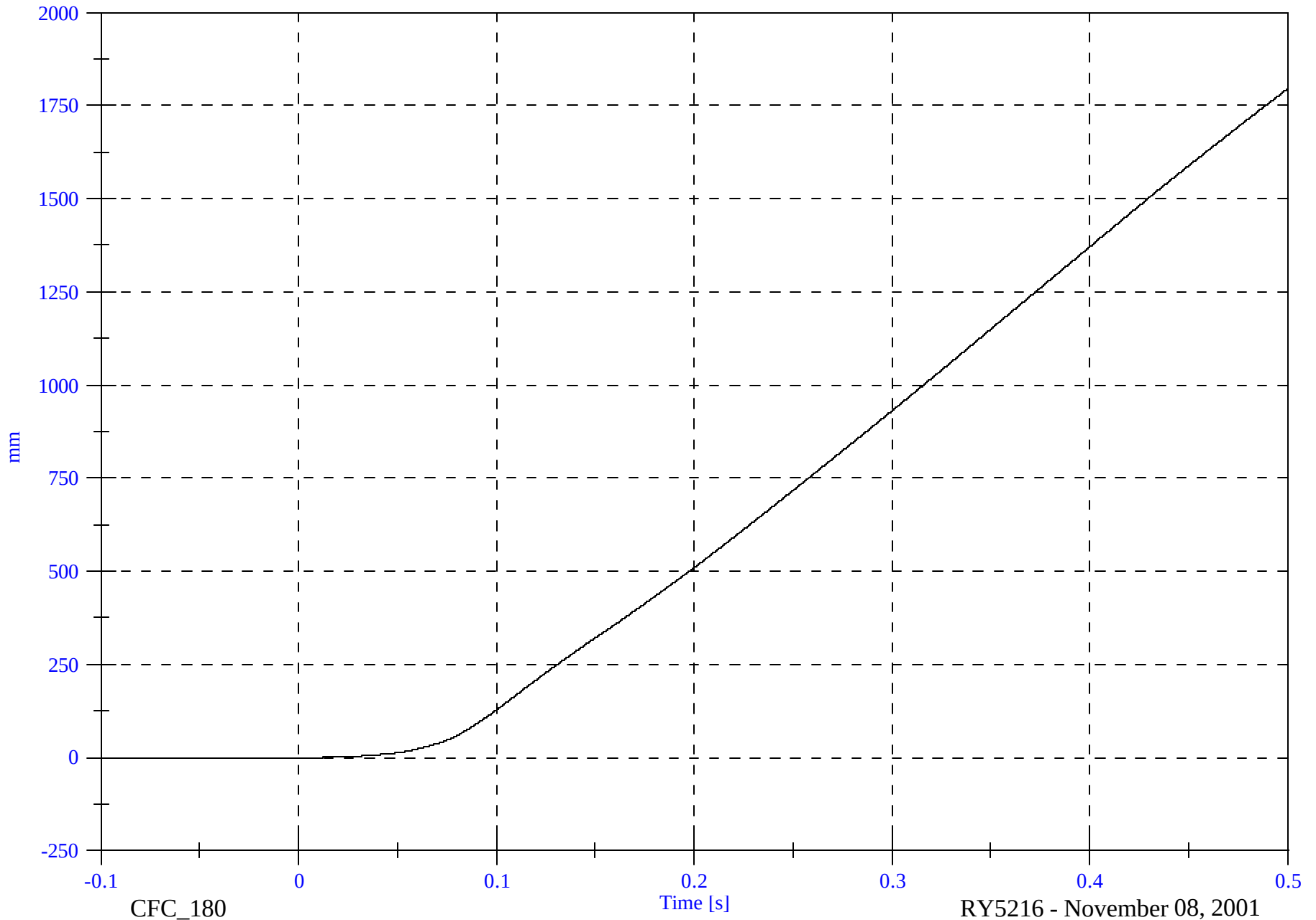
RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

Max: 1793.8 [mm] at 0.500 [s]

Acc 2 Rear XMBR Left Y Displacement

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



B-167

8413-66

CFC_180

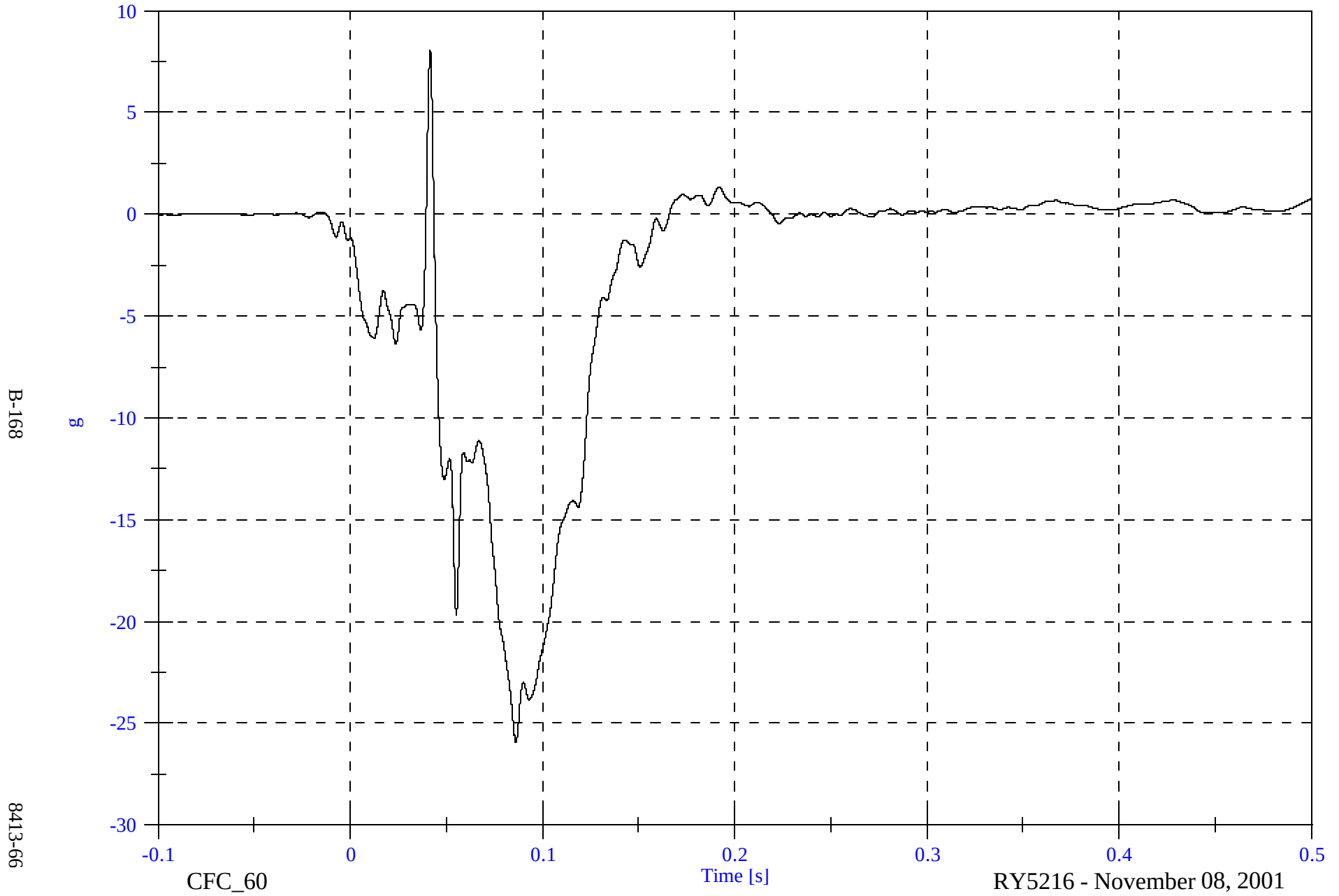
RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

Acc 3 Rear XMBR Right X

Max: 8.1 [g] at 0.042 [s]

Min: -25.9 [g] at 0.086 [s]

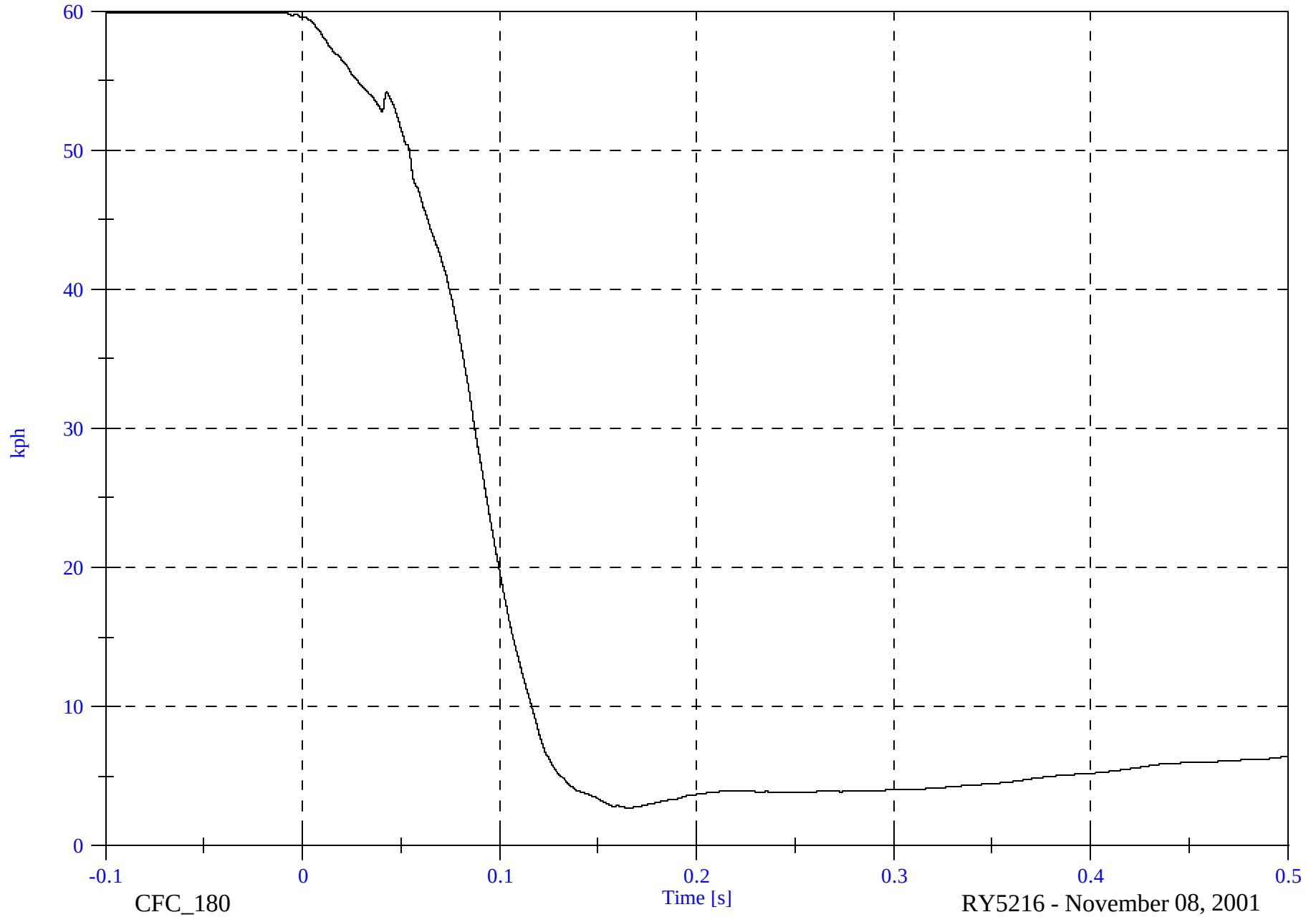


40% Frontal Offset Test #10 - 2000 Nissan Altima

Max: 59.9 [kph] at -0.024 [s]

Acc 3 Rear XMBR Right X Velocity

Min: 2.7 [kph] at 0.166 [s]



B-169

8413-66

CFC_180

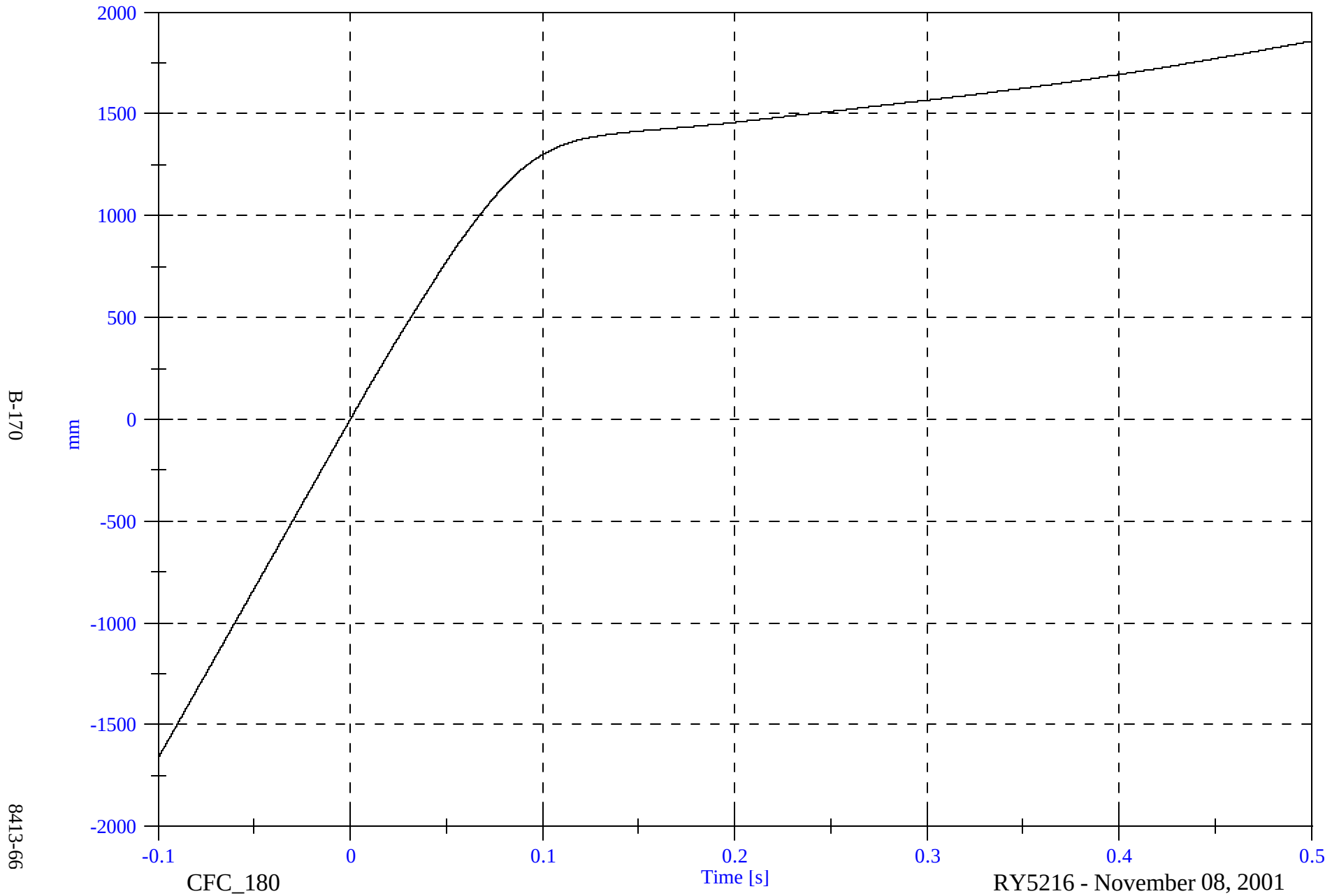
RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

Acc 3 Rear XMBR Right X Displacement

Max: 1856.3 [mm] at 0.500 [s]

Min: -1662.7 [mm] at -0.100 [s]

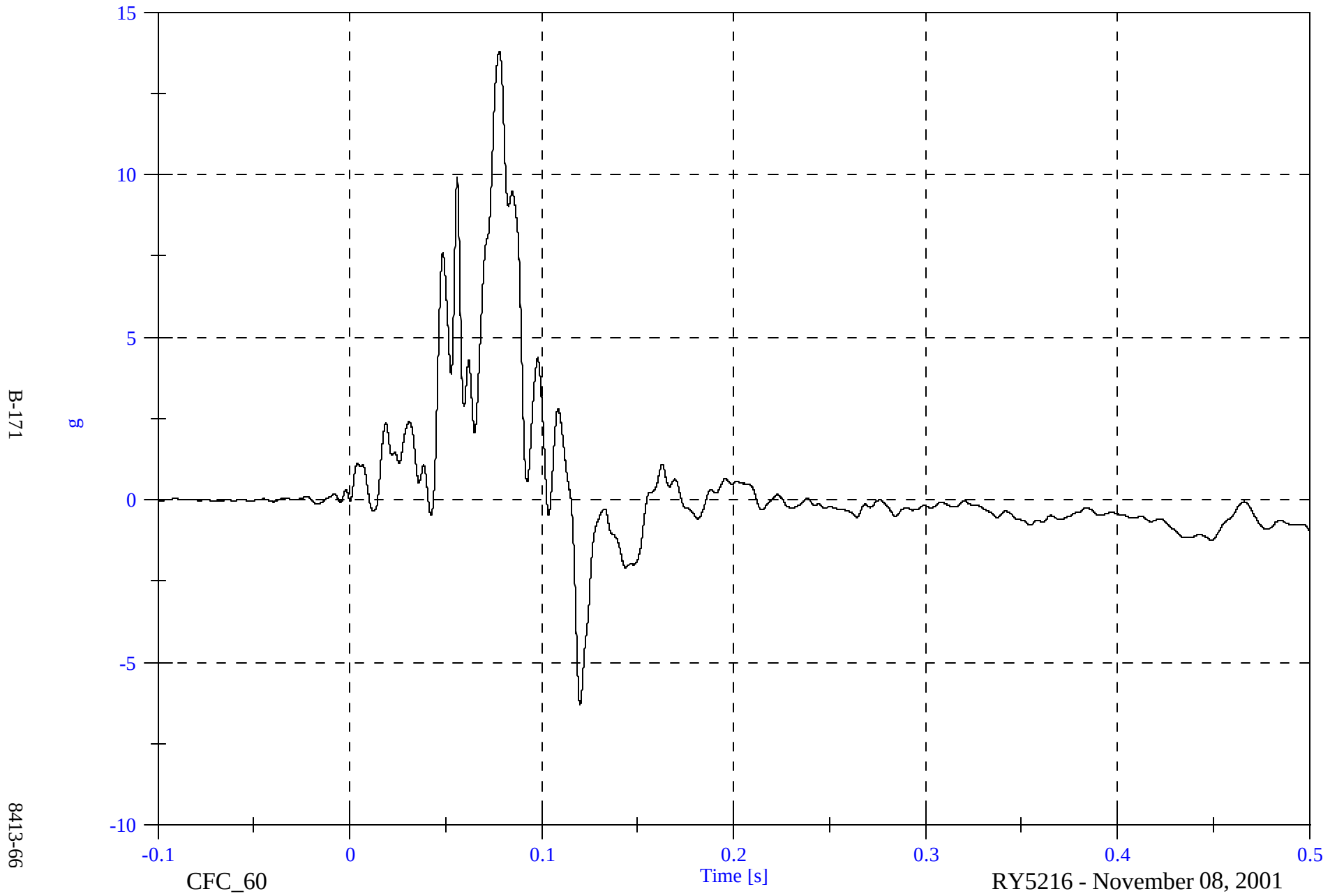


40% Frontal Offset Test #10 - 2000 Nissan Altima

Acc 4 Rear XMBR Right Y

Max: 13.8 [g] at 0.078 [s]

Min: -6.3 [g] at 0.120 [s]

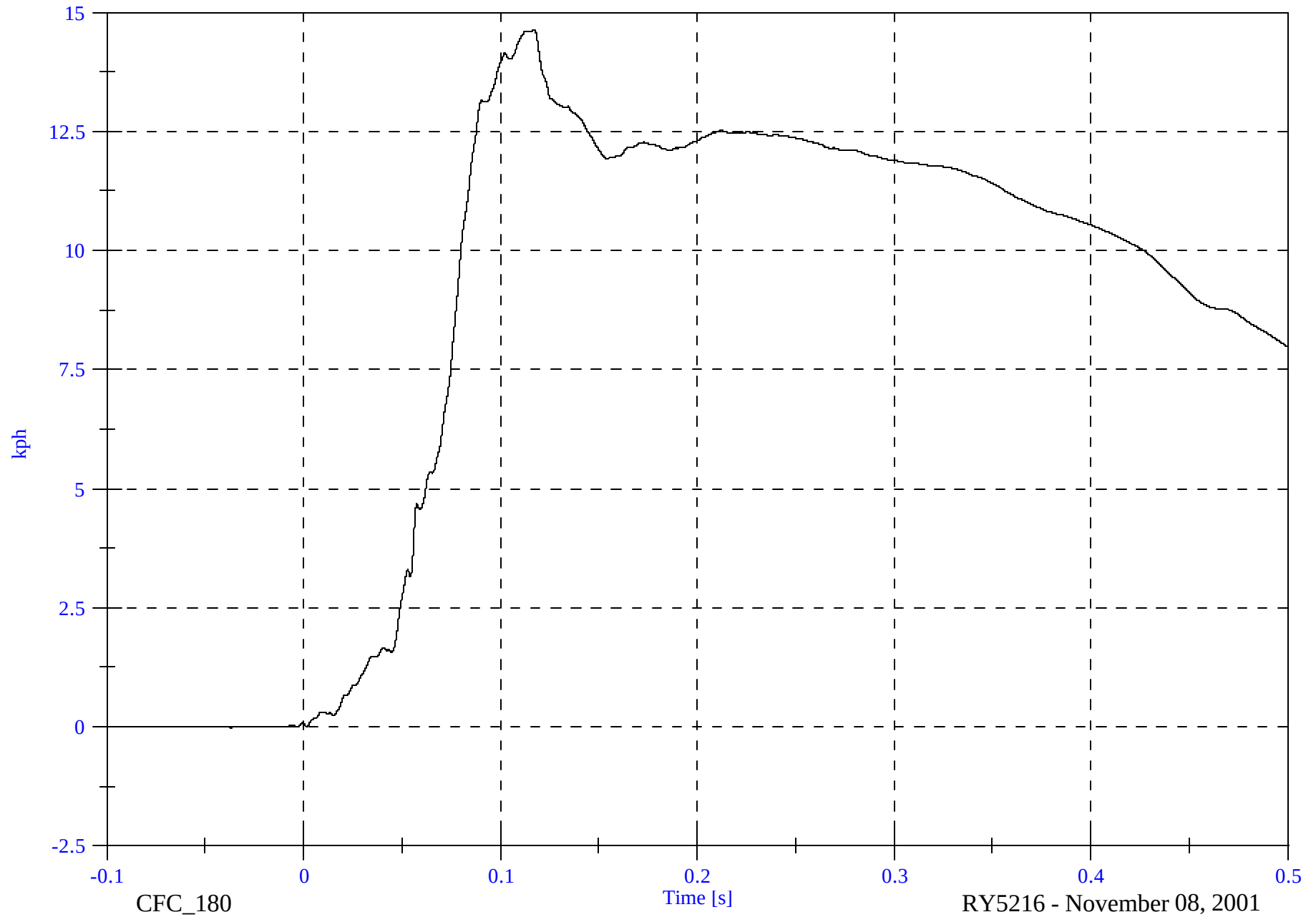


40% Frontal Offset Test #10 - 2000 Nissan Altima

Max: 14.6 [kph] at 0.117 [s]

Acc 4 Rear XMBR Right Y Velocity

Min: -0.0 [kph] at -0.037 [s]



B-172

8413-66

CFC_180

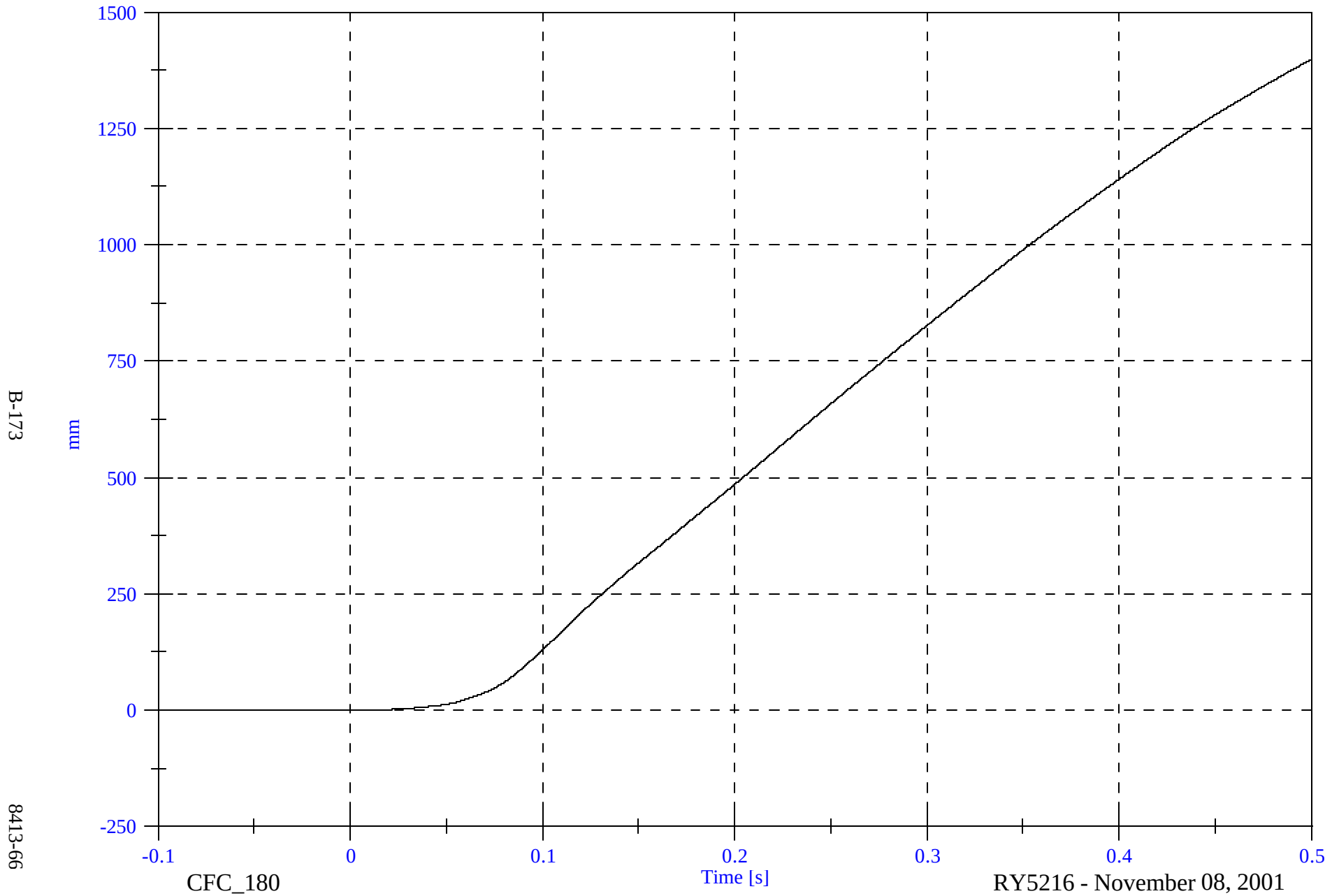
RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

Acc 4 Rear XMBR Right Y Displacement

Max: 1397.7 [mm] at 0.500 [s]

Min: -0.1 [mm] at -0.024 [s]

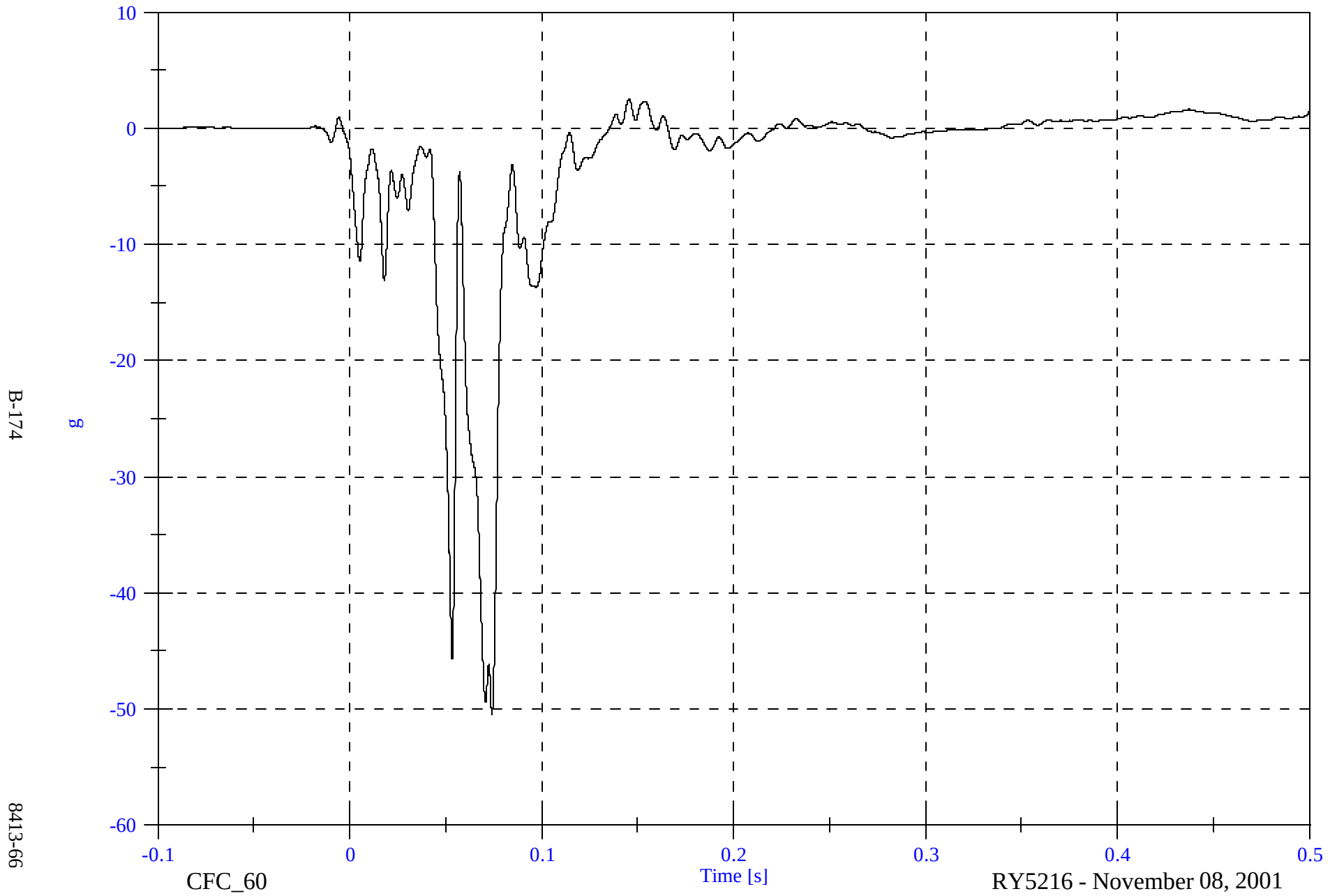


40% Frontal Offset Test #10 - 2000 Nissan Altima

Acc 5 P1 Toeplan Left X

Max: 2.5 [g] at 0.146 [s]

Min: -50.4 [g] at 0.074 [s]

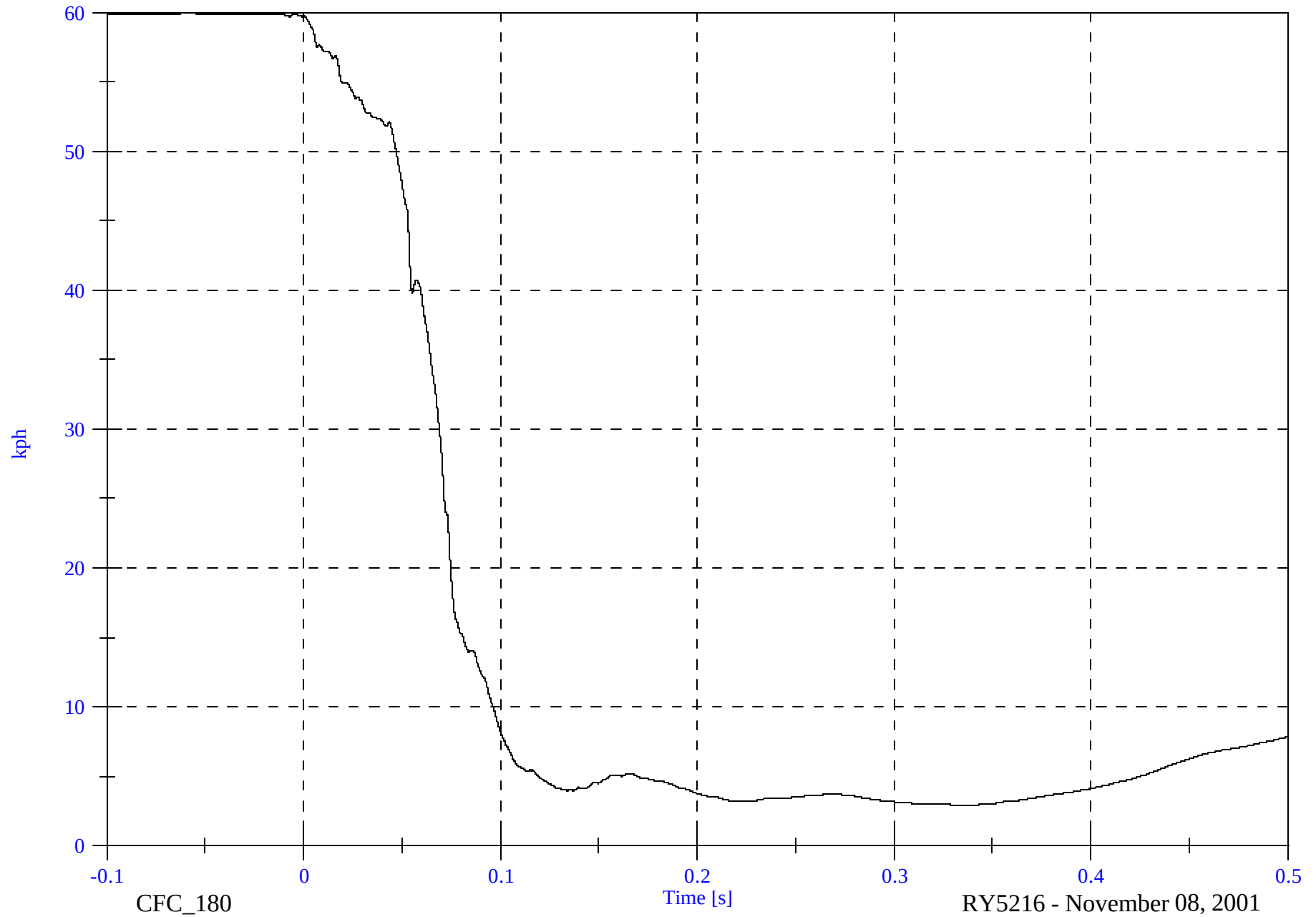


40% Frontal Offset Test #10 - 2000 Nissan Altima

Acc 5 P1 Toeplan Left X Velocity

Max: 59.9 [kph] at -0.060 [s]

Min: 3.0 [kph] at 0.335 [s]



B-175

8413-66

CFC_180

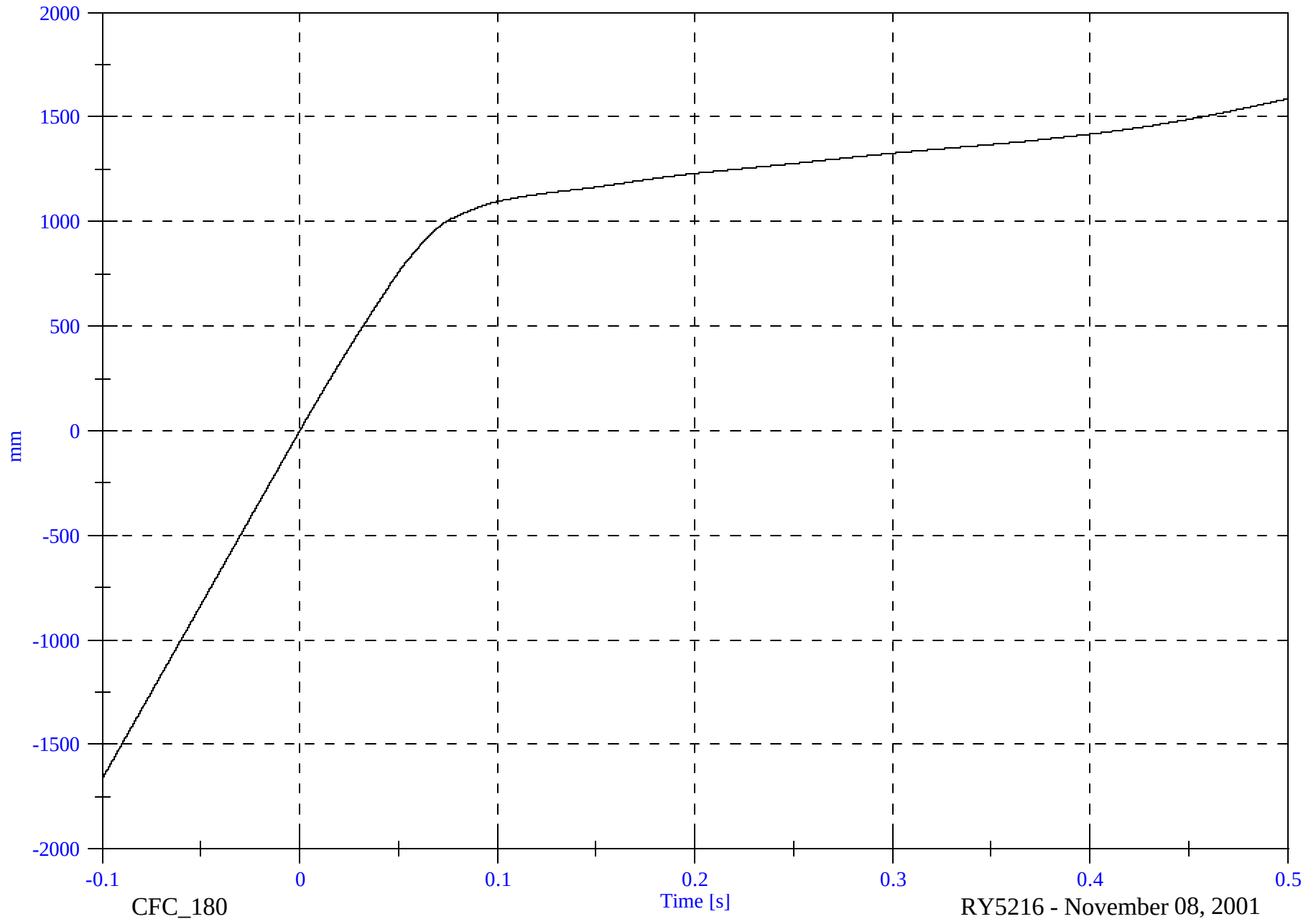
RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

Acc 5 P1 Toepan Left X Displacement

Max: 1586.5 [mm] at 0.500 [s]

Min: -1663.2 [mm] at -0.100 [s]



B-176

8413-66

CFC_180

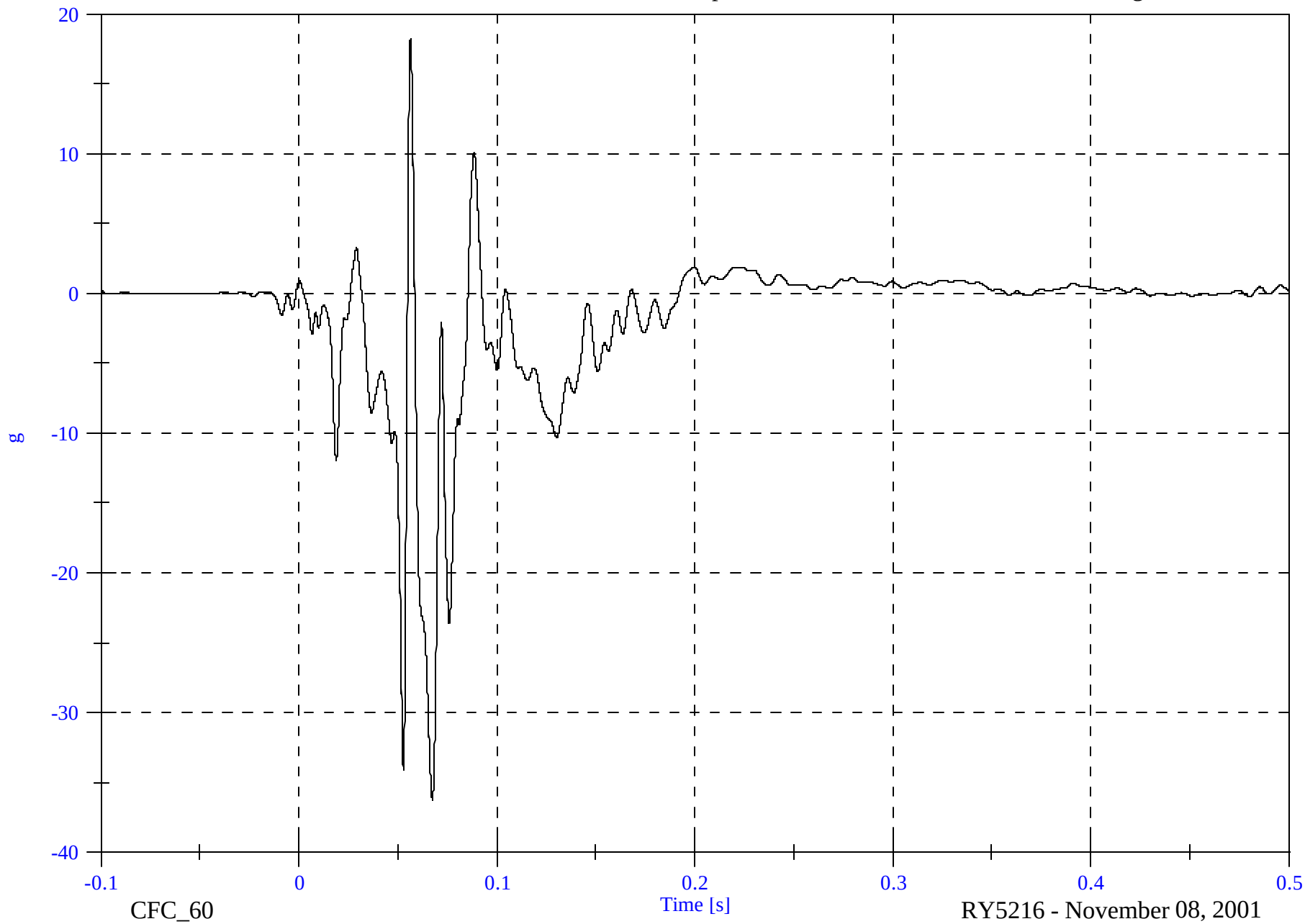
RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

Acc 6 P1 Toepan Left Z

Max: 18.2 [g] at 0.056 [s]

Min: -36.2 [g] at 0.067 [s]

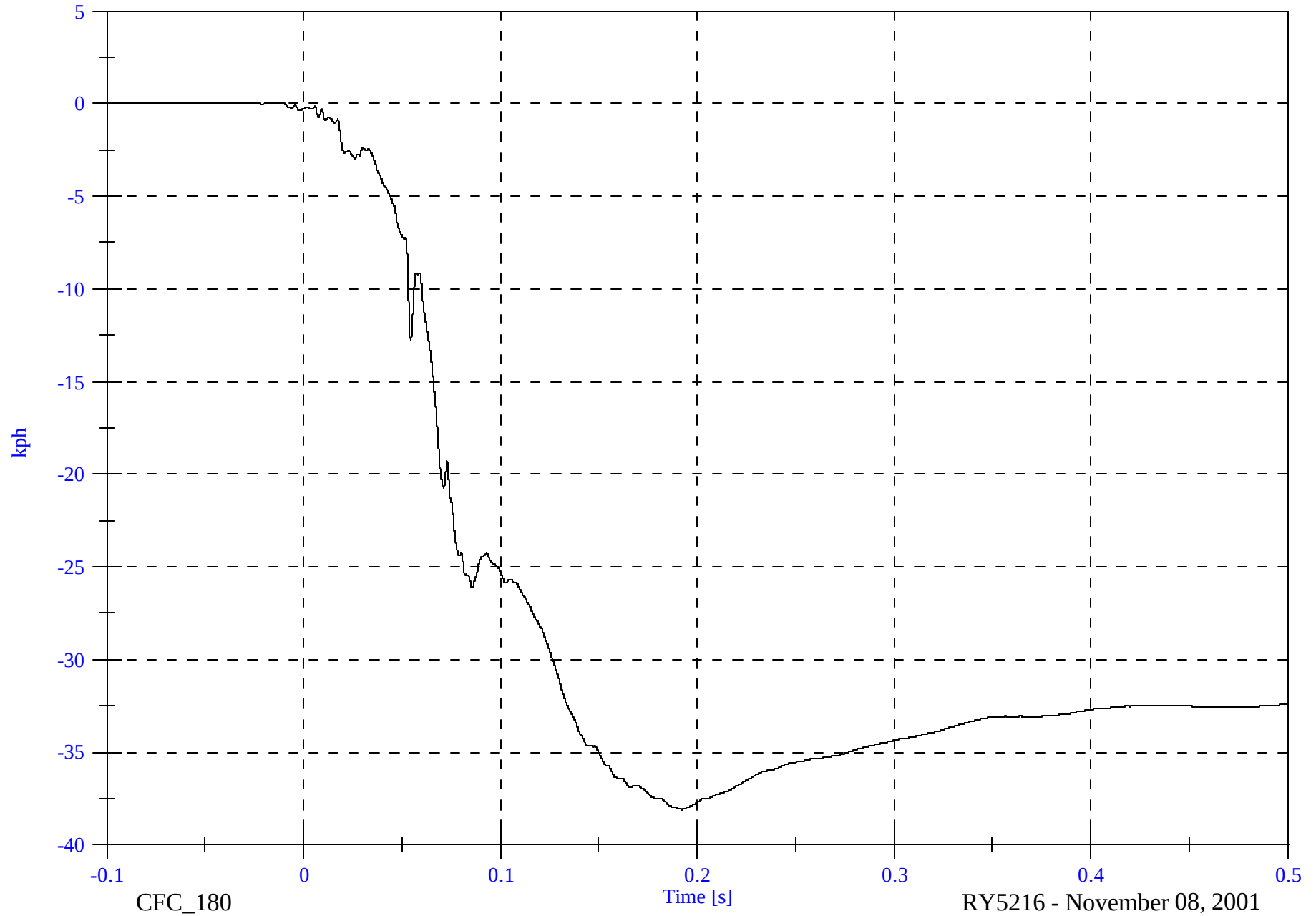


40% Frontal Offset Test #10 - 2000 Nissan Altima

Acc 6 P1 Toe pan Left Z Velocity

Max: 0.0 [kph] at -0.024 [s]

Min: -38.1 [kph] at 0.192 [s]



B-178

8413-66

CFC_180

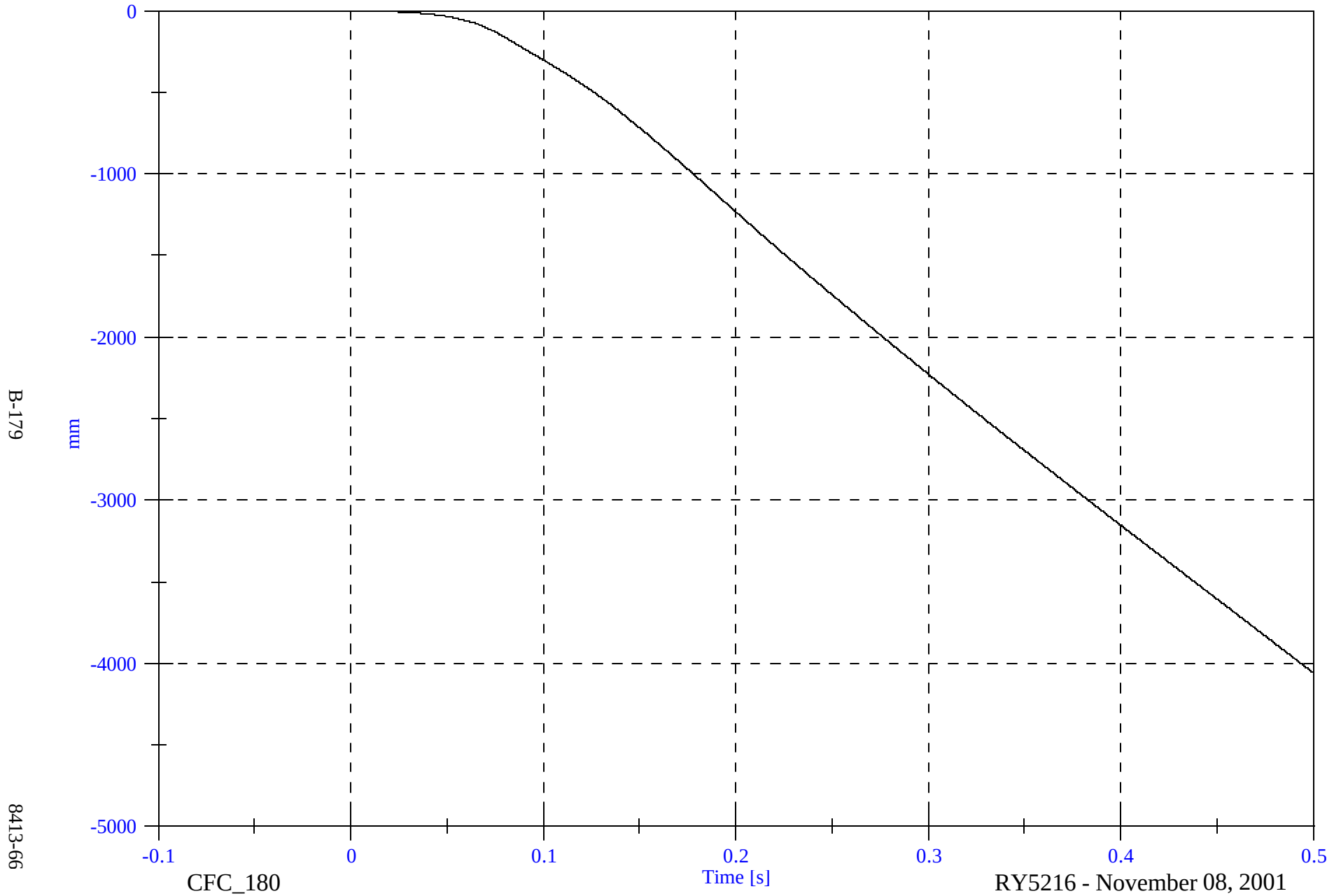
RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

Max: 0.7 [mm] at -0.077 [s]

Acc 6 P1 Toe pan Left Z Displacement

Min: -4056.8 [mm] at 0.500 [s]

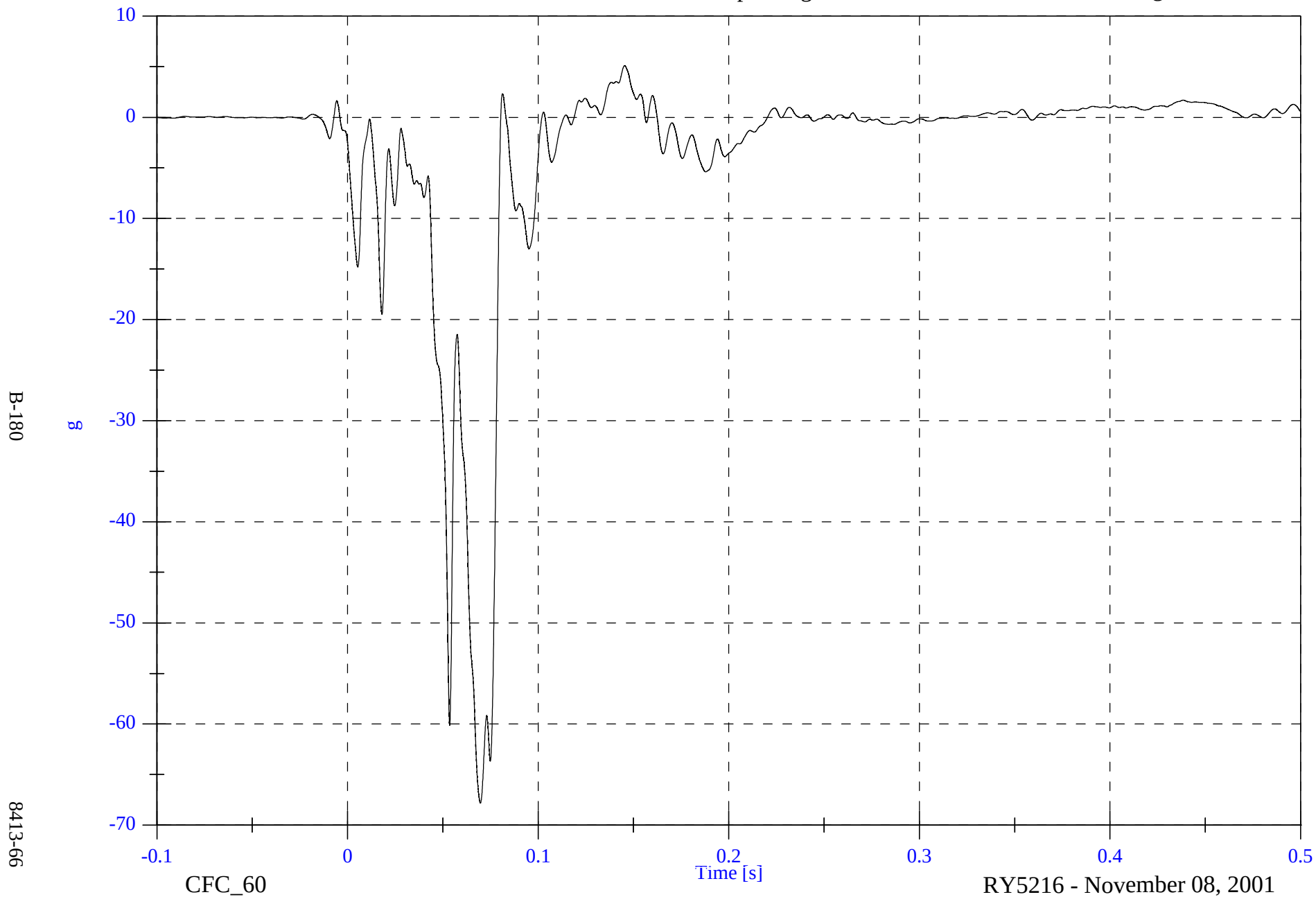


40% Frontal Offset Test #10 - 2000 Nissan Altima

Acc 7 P1 Toeplan Right X

Max: 5.1 [g] at 0.145 [s]

Min: -67.8 [g] at 0.070 [s]

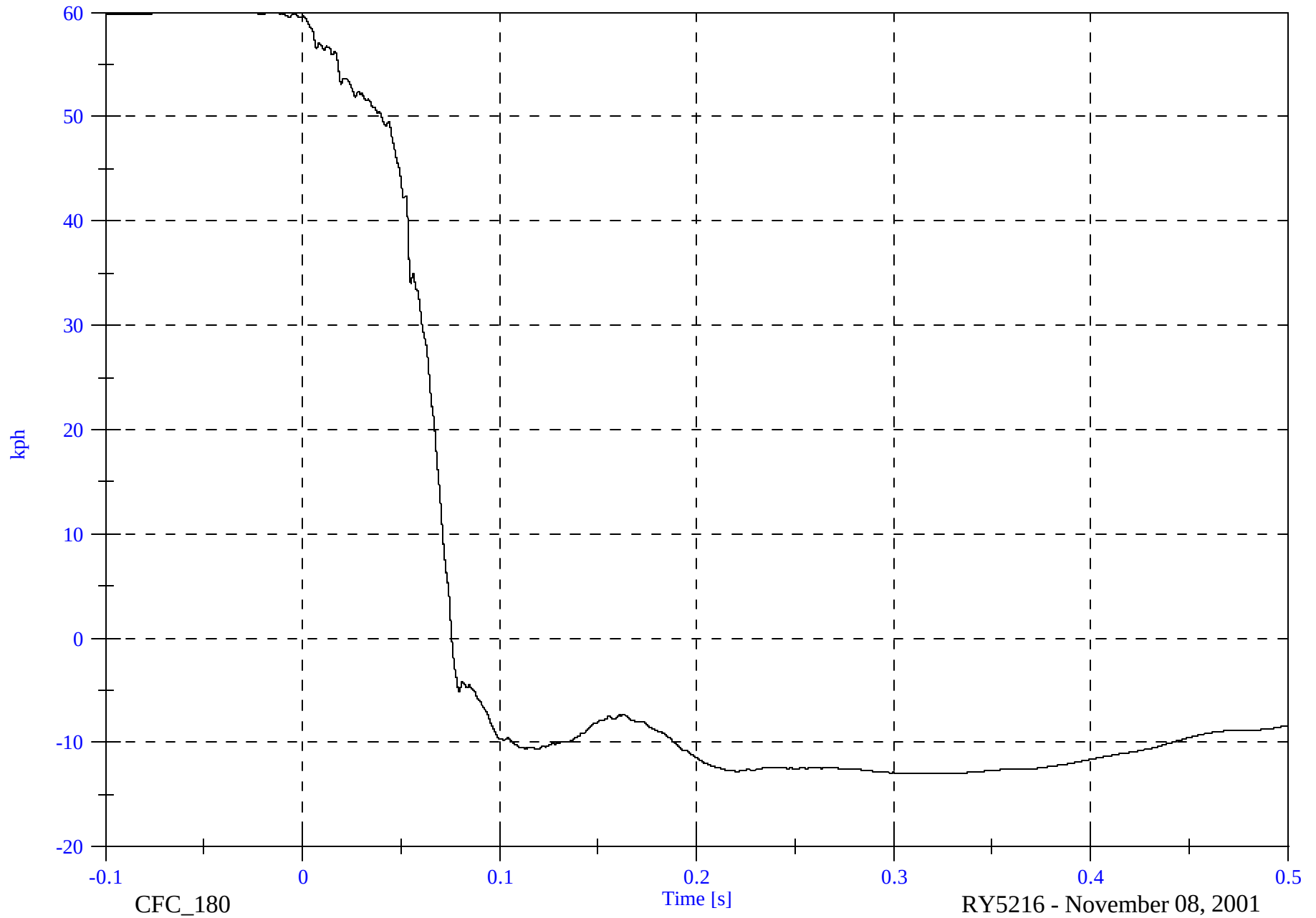


40% Frontal Offset Test #10 - 2000 Nissan Altima

Acc 7 P1 Toe pan Right X Velocity

Max: 59.9 [kph] at -0.015 [s]

Min: -13.0 [kph] at 0.321 [s]



B-181

8413-66

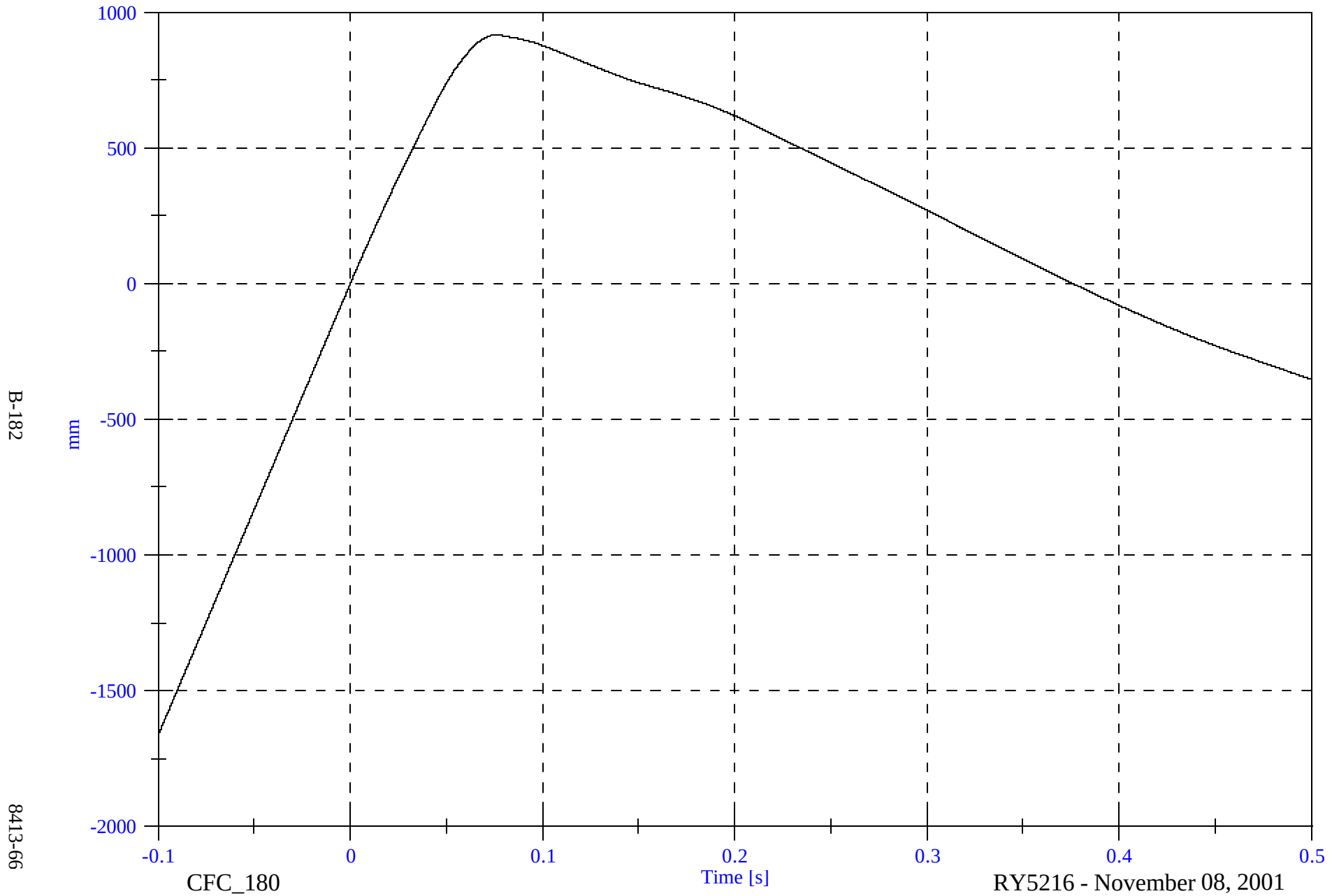
CFC_180

RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

Acc 7 P1 Toe Pan Right X Displacement

Max: 915.5 [mm] at 0.076 [s]
Min: -1662.8 [mm] at -0.100 [s]

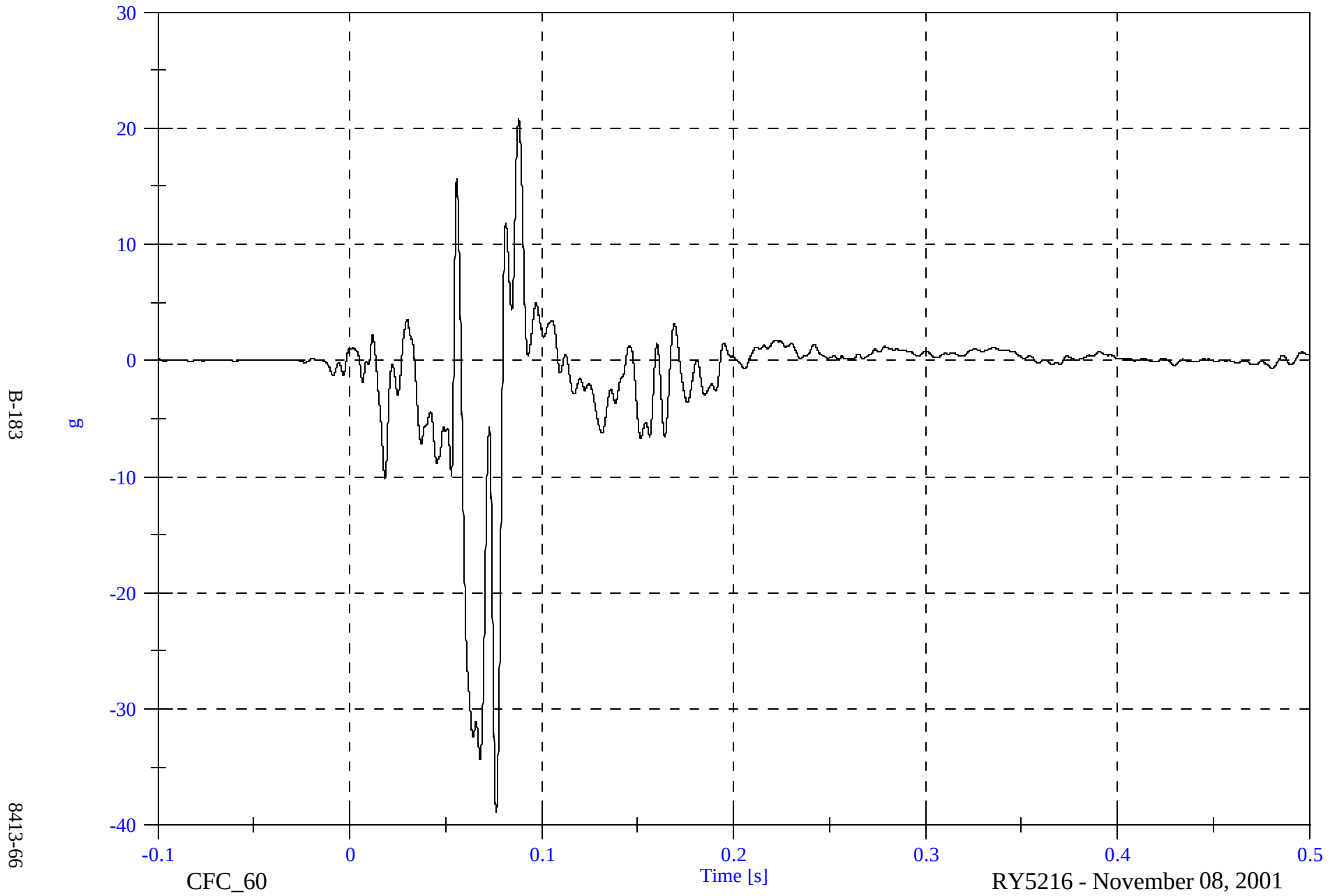


40% Frontal Offset Test #10 - 2000 Nissan Altima

Acc 8 P1 Toe pan Right Z

Max: 20.8 [g] at 0.088 [s]

Min: -38.9 [g] at 0.076 [s]

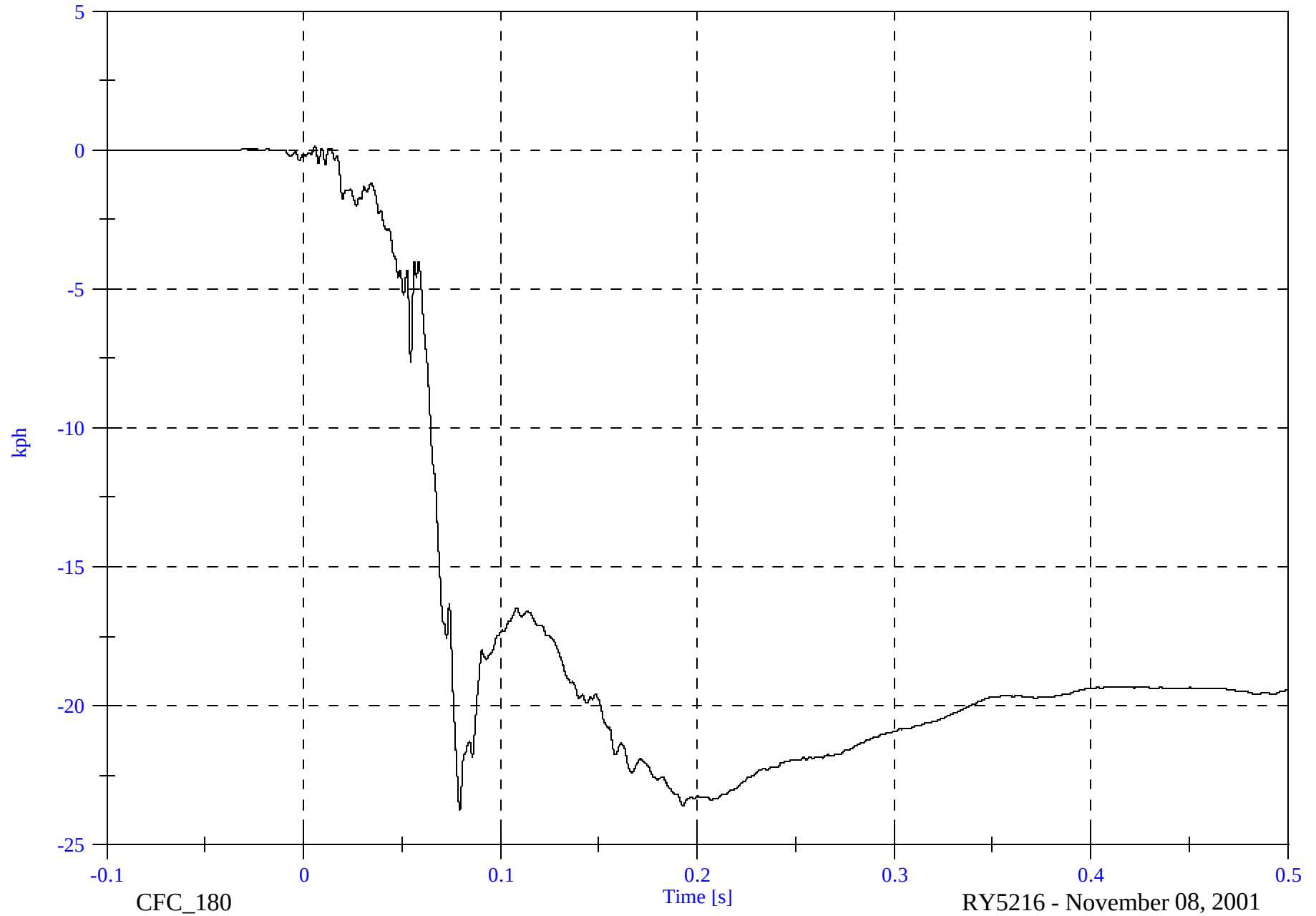


40% Frontal Offset Test #10 - 2000 Nissan Altima

Acc 8 P1 Toe Pan Right Z Velocity

Max: 0.1 [kph] at 0.006 [s]

Min: -23.8 [kph] at 0.079 [s]



B-184

8413-66

CFC_180

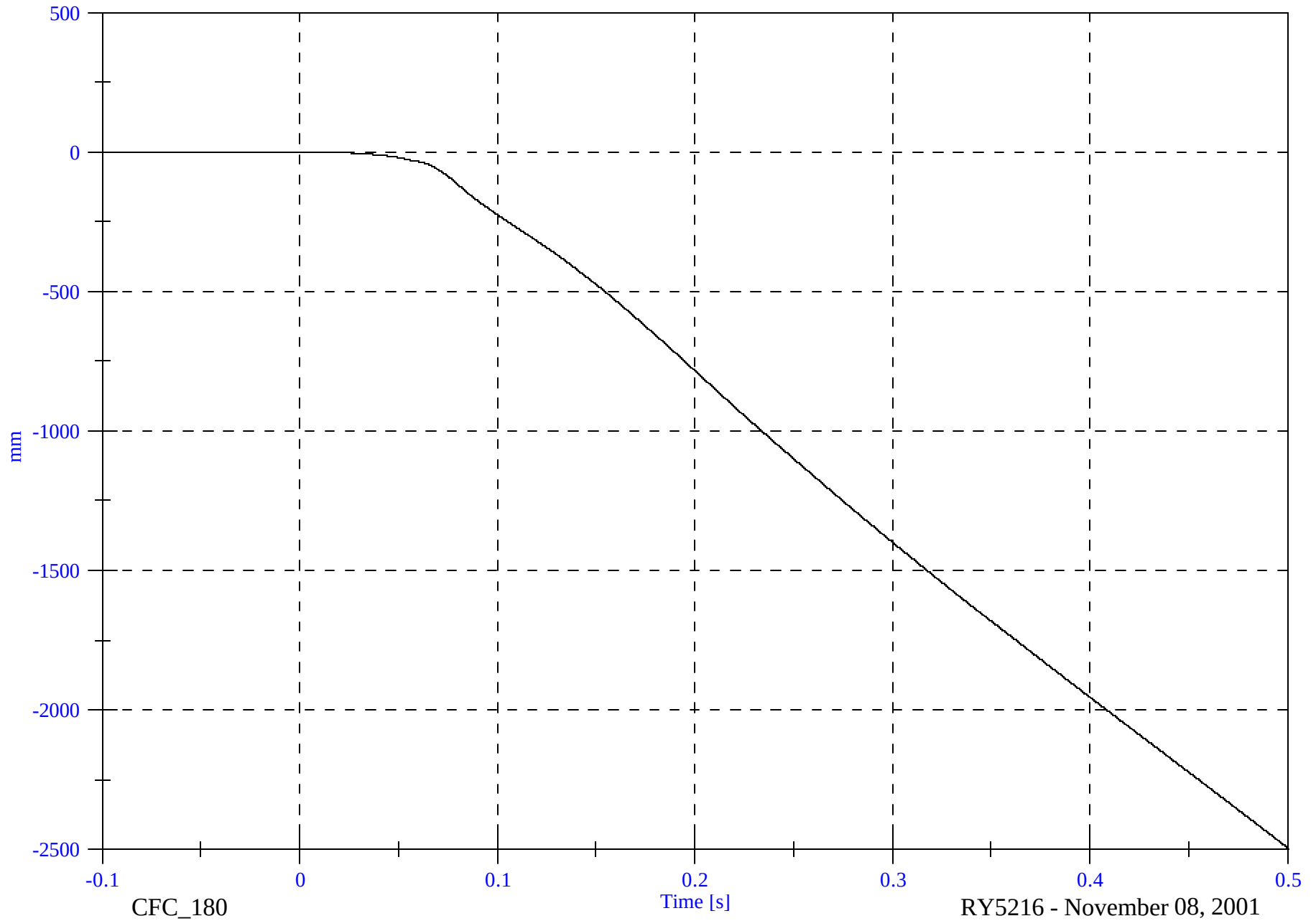
RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

Acc 8 P1 Toe pan Right Z Displacement

Max: 0.5 [mm] at -0.012 [s]

Min: -2492.0 [mm] at 0.500 [s]



B-185

8413-66

CFC_180

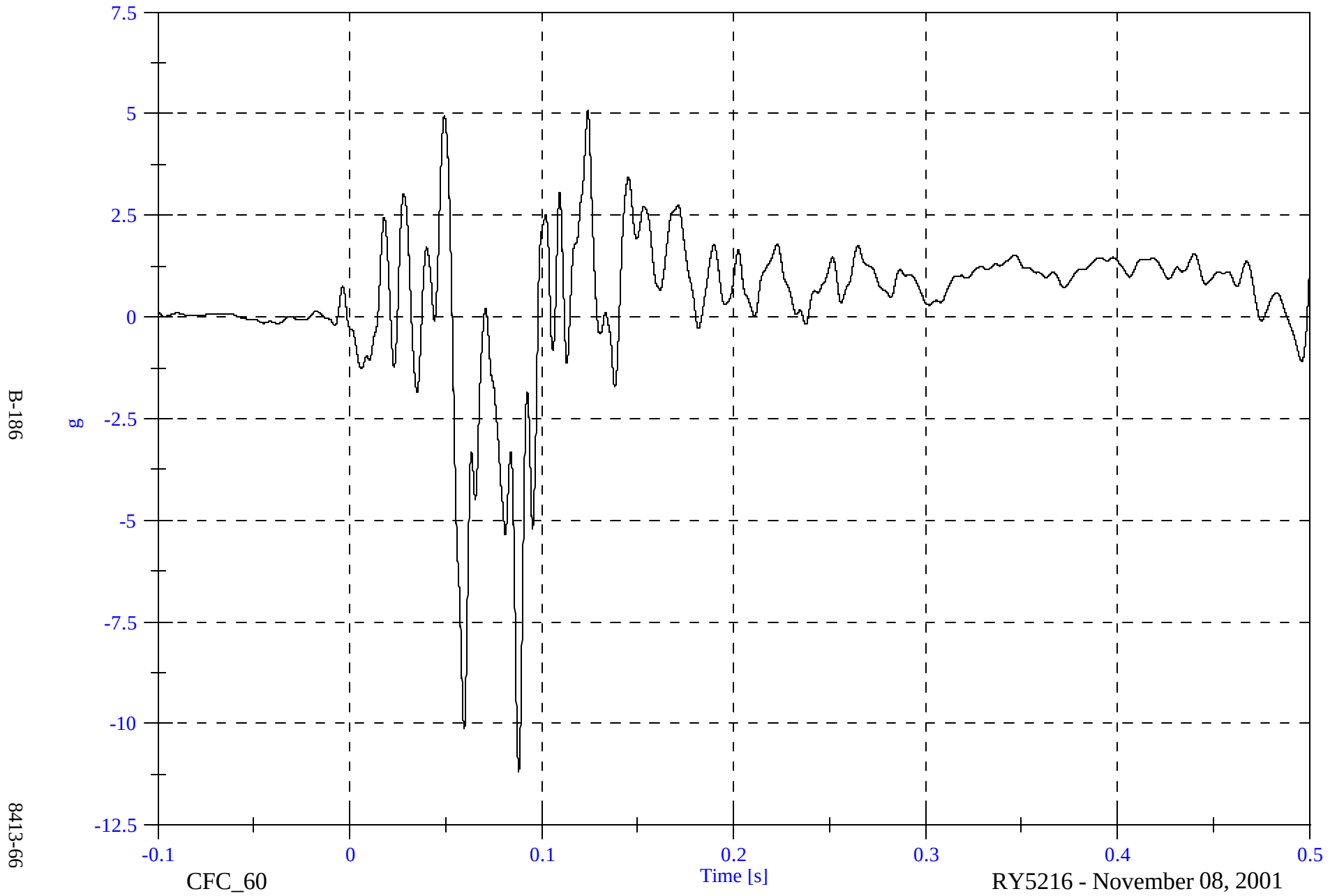
RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

Acc 9 Trunk Z

Max: 5.1 [g] at 0.124 [s]

Min: -11.2 [g] at 0.088 [s]



40% Frontal Offset Test #10 - 2000 Nissan Altima

Acc 9 Trunk Z Velocity

Max: 9.3 [kph] at 0.488 [s]

Min: -5.6 [kph] at 0.098 [s]



B-187

8413-66

CFC_180

RY5216 - November 08, 2001

40% Frontal Offset Test #10 - 2000 Nissan Altima

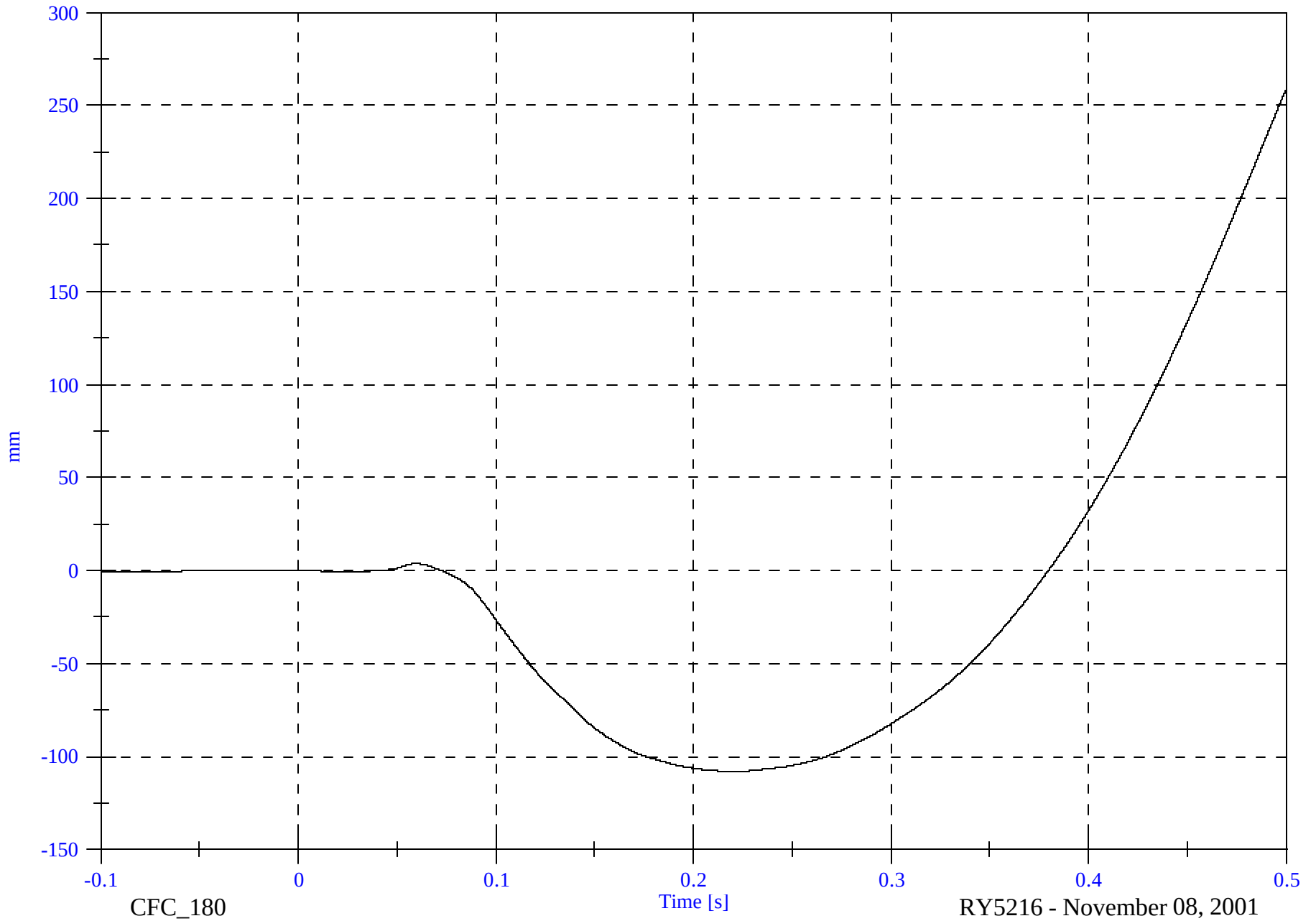
Acc 9 Trunk Z Displacement

Max: 258.3 [mm] at 0.500 [s]

Min: -108.1 [mm] at 0.221 [s]

B-188

8413-66



CFC_180

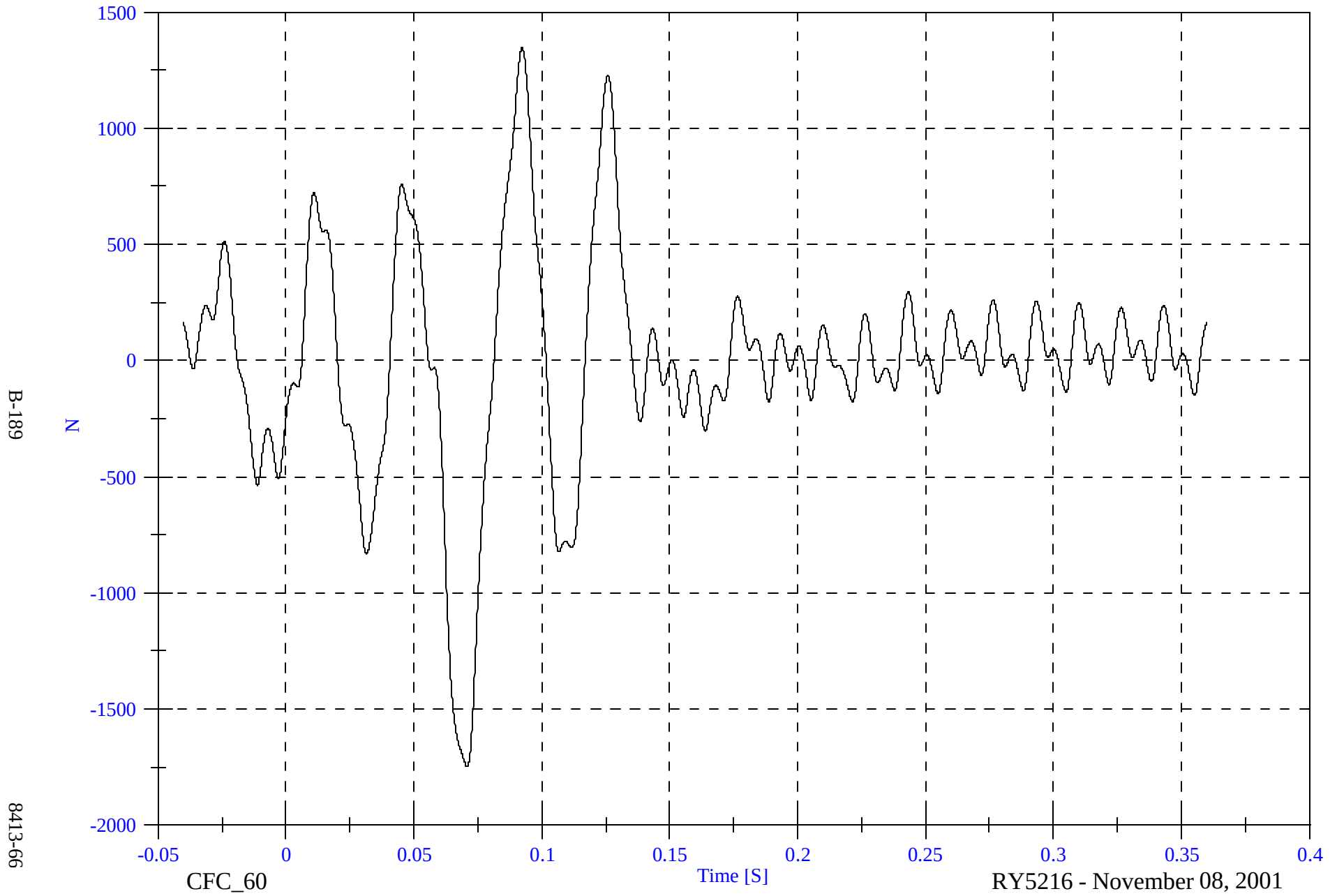
RY5216 - November 08, 2001

40 % Frontal Offset Test #10 - 2000 Nissan Altima

Barrier Load Cell E2 FY

Max: 1344.9 [N] at 0.092 [S]

Min: -1747.8 [N] at 0.071 [S]

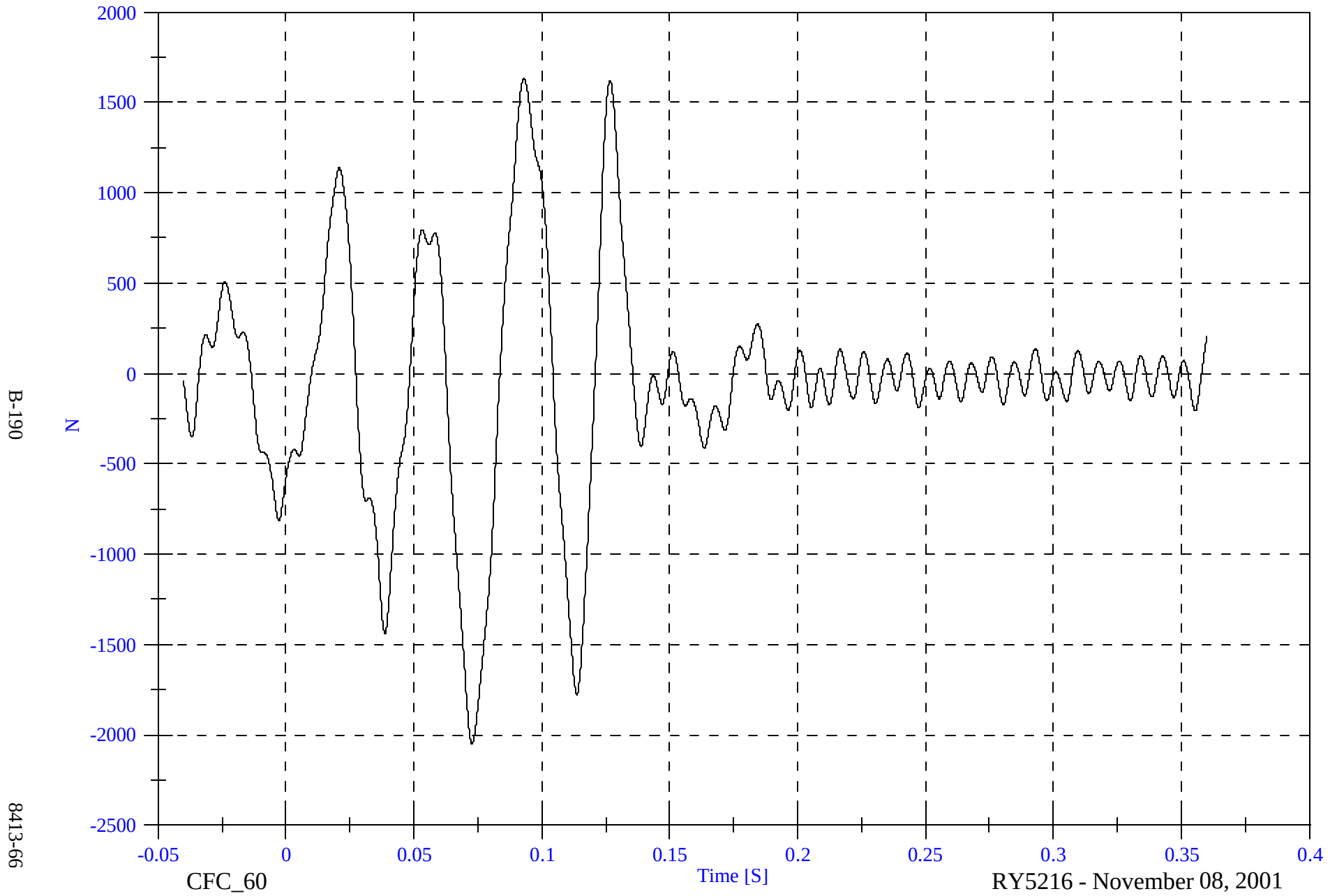


40 % Frontal Offset Test #10 - 2000 Nissan Altima

Barrier Load Cell E3 FY

Max: 1631.5 [N] at 0.093 [S]

Min: -2048.5 [N] at 0.073 [S]

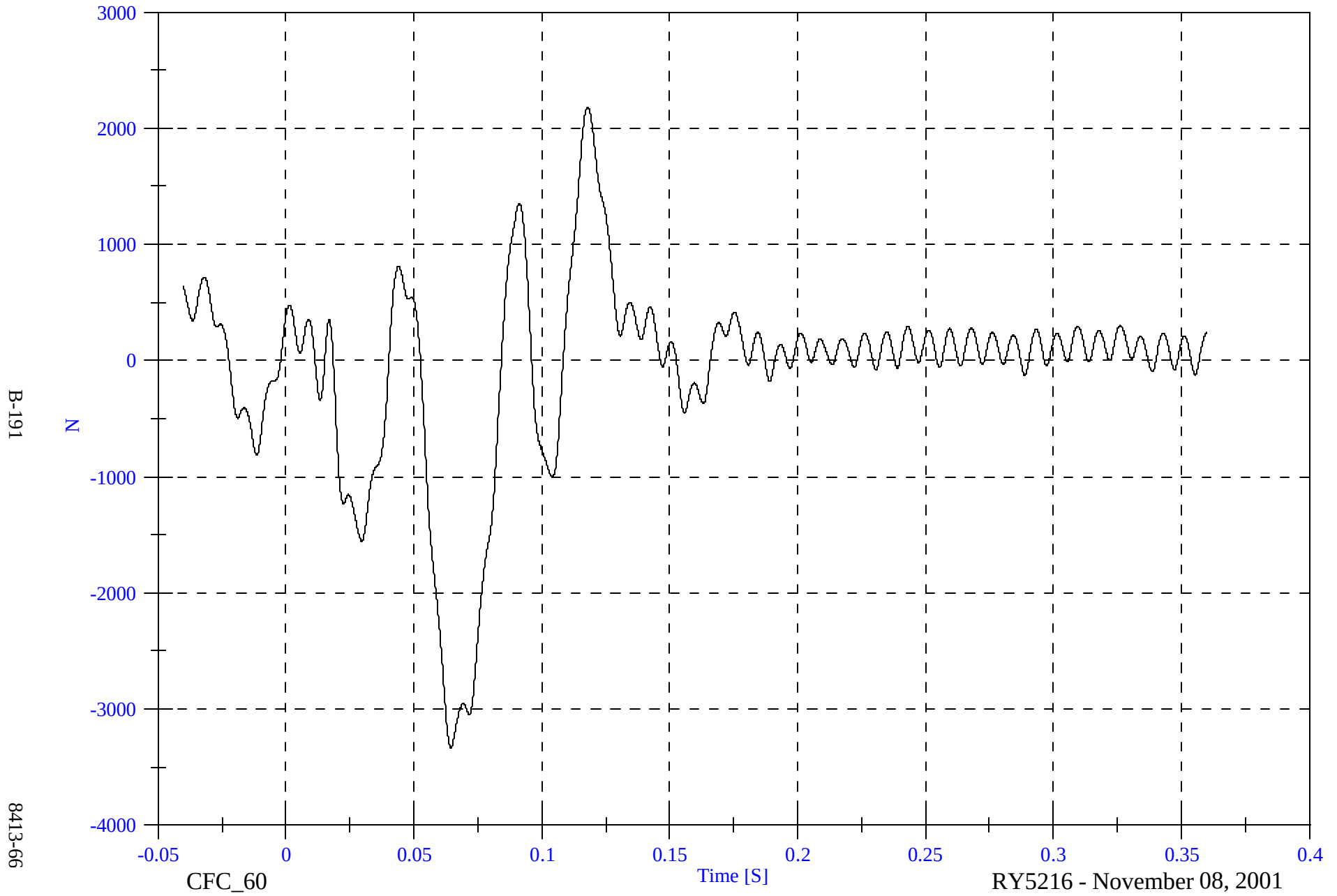


40 % Frontal Offset Test #10 - 2000 Nissan Altima

Barrier Load Cell E4 FY

Max: 2180.4 [N] at 0.118 [S]

Min: -3335.9 [N] at 0.064 [S]

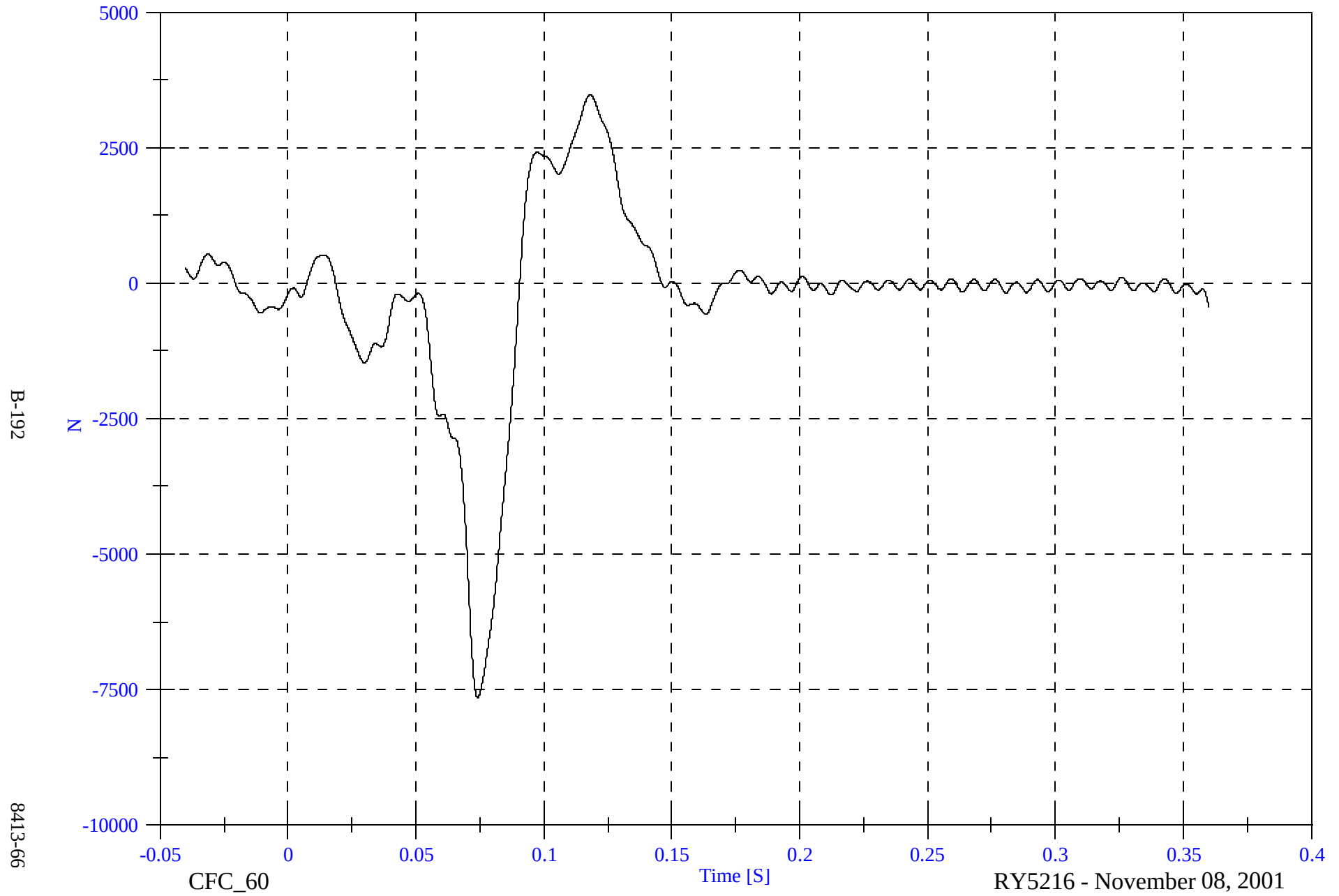


40 % Frontal Offset Test #10 - 2000 Nissan Altima

Barrier Load Cell E5 FY

Max: 3469.4 [N] at 0.118 [S]

Min: -7646.2 [N] at 0.074 [S]

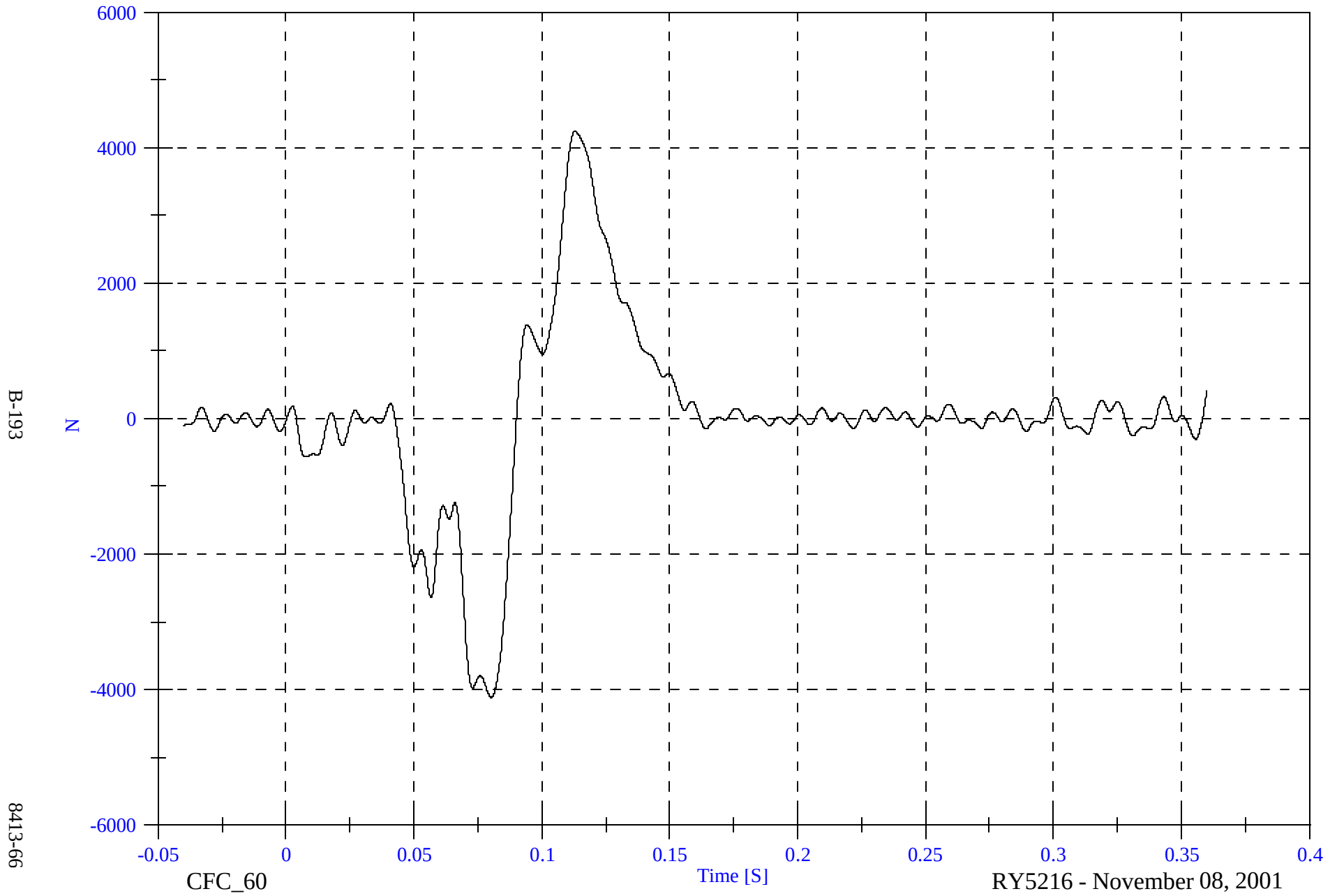


40 % Frontal Offset Test #10 - 2000 Nissan Altima

Barrier Load Cell E6 FY

Max: 4242.6 [N] at 0.113 [S]

Min: -4114.9 [N] at 0.080 [S]

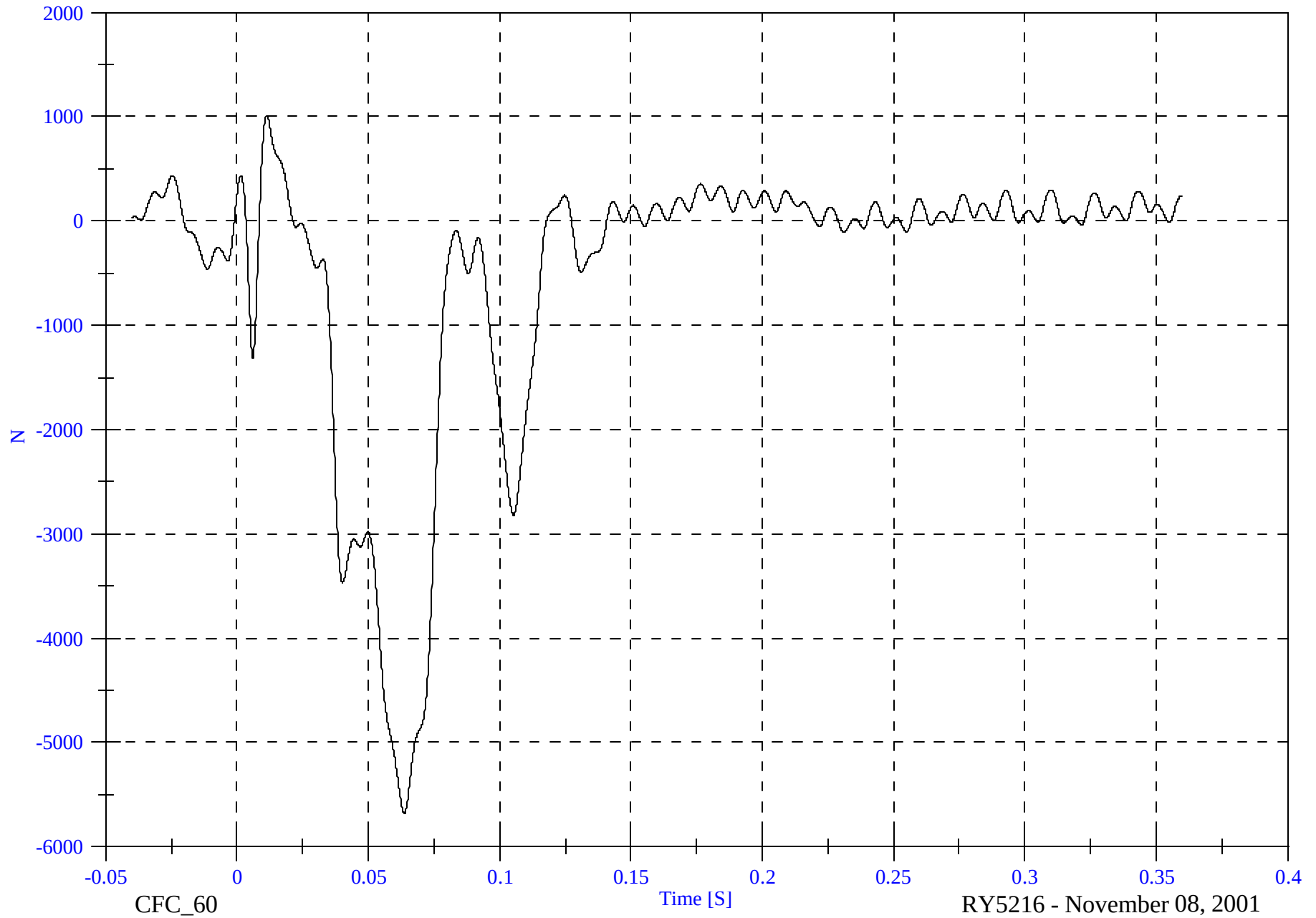


40 % Frontal Offset Test #10 - 2000 Nissan Altima

Barrier Load Cell E1 FX

Max: 1011.7 [N] at 0.011 [S]

Min: -5676.5 [N] at 0.064 [S]



B-194

8413-66

CFC_60

Time [S]

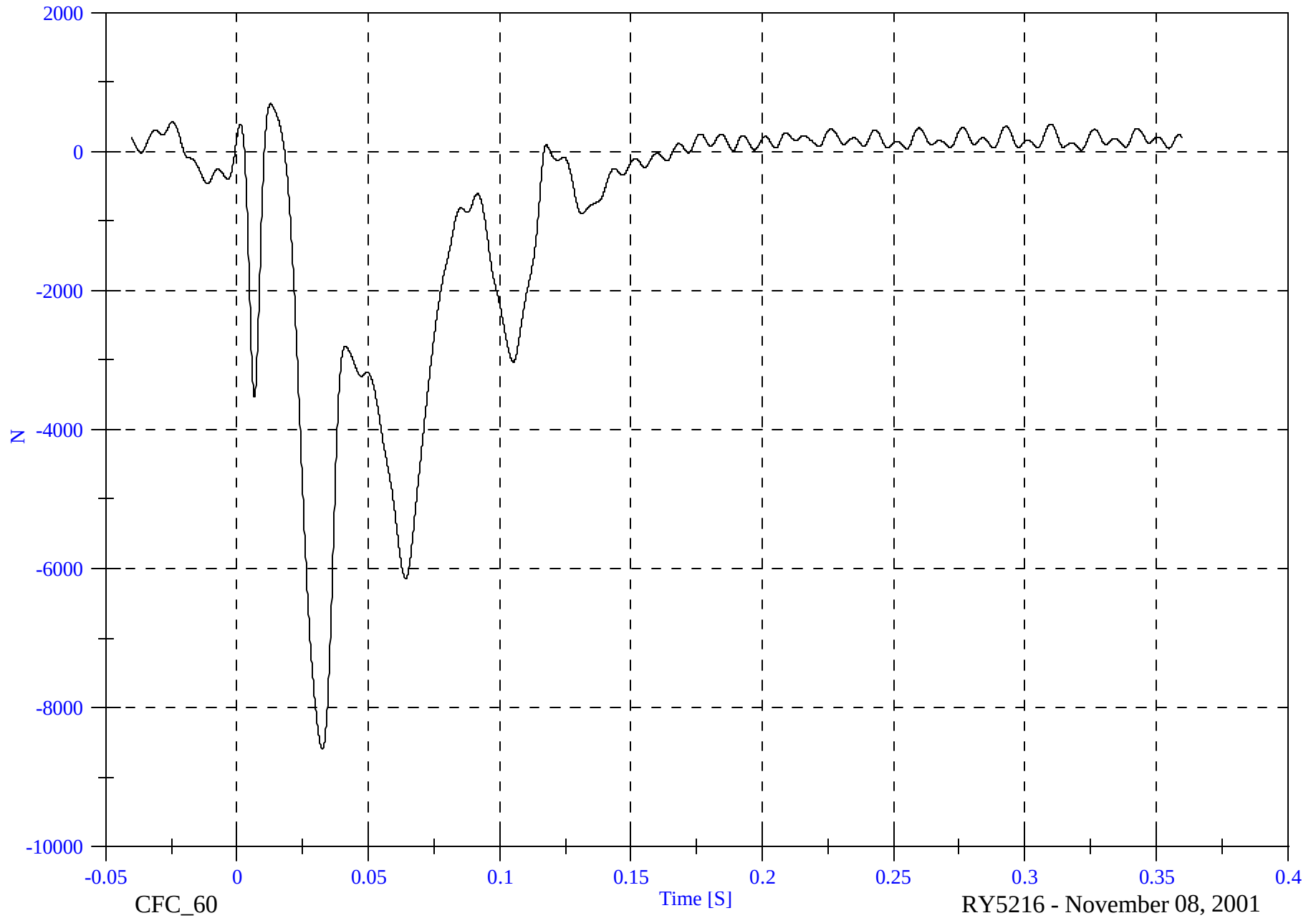
RY5216 - November 08, 2001

40 % Frontal Offset Test #10 - 2000 Nissan Altima

Barrier Load Cell E2 FX

Max: 685.1 [N] at 0.013 [S]

Min: -8594.8 [N] at 0.032 [S]



B-195

8413-66

CFC_60

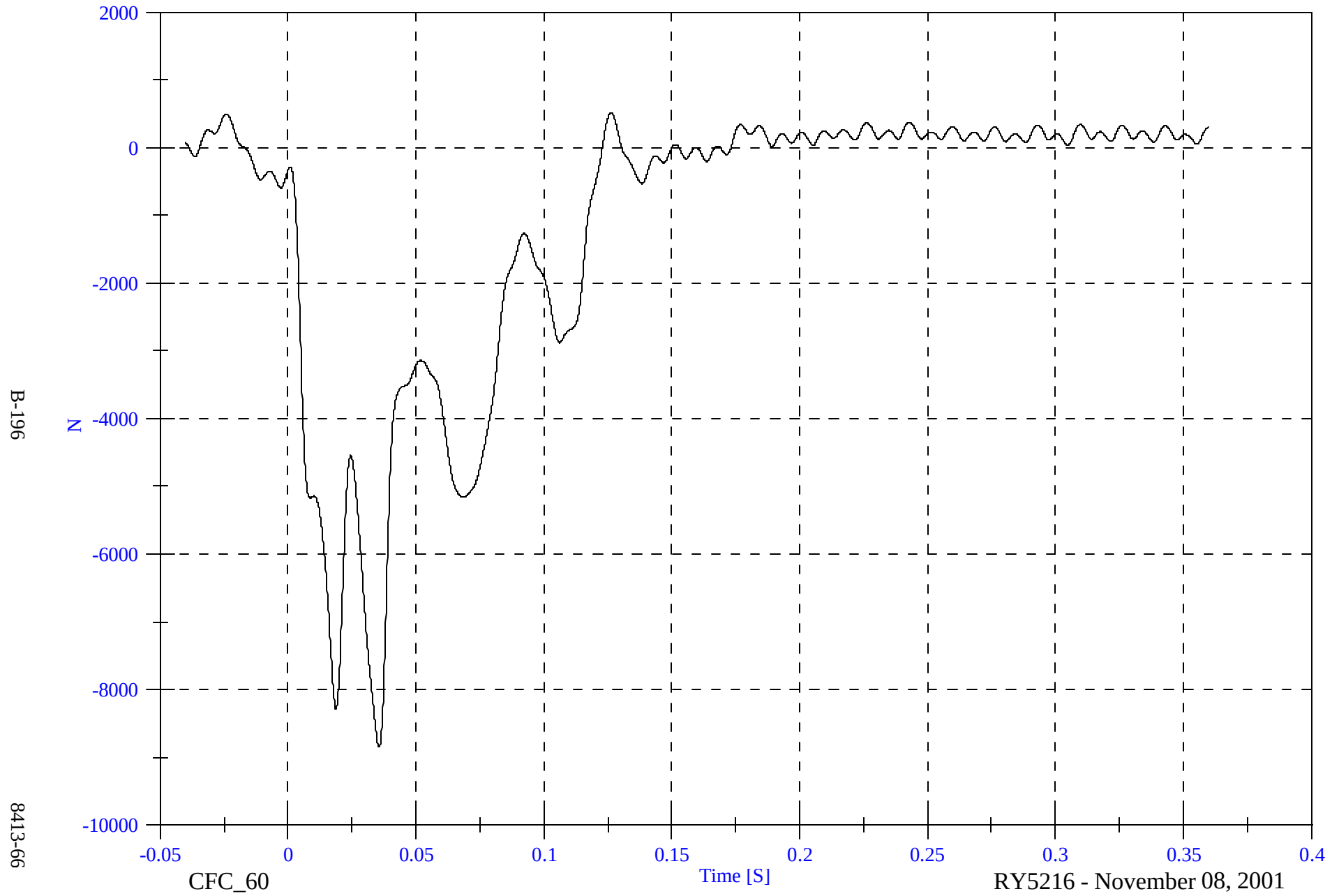
RY5216 - November 08, 2001

40 % Frontal Offset Test #10 - 2000 Nissan Altima

Barrier Load Cell E3 FX

Max: 513.1 [N] at 0.126 [S]

Min: -8848.8 [N] at 0.036 [S]

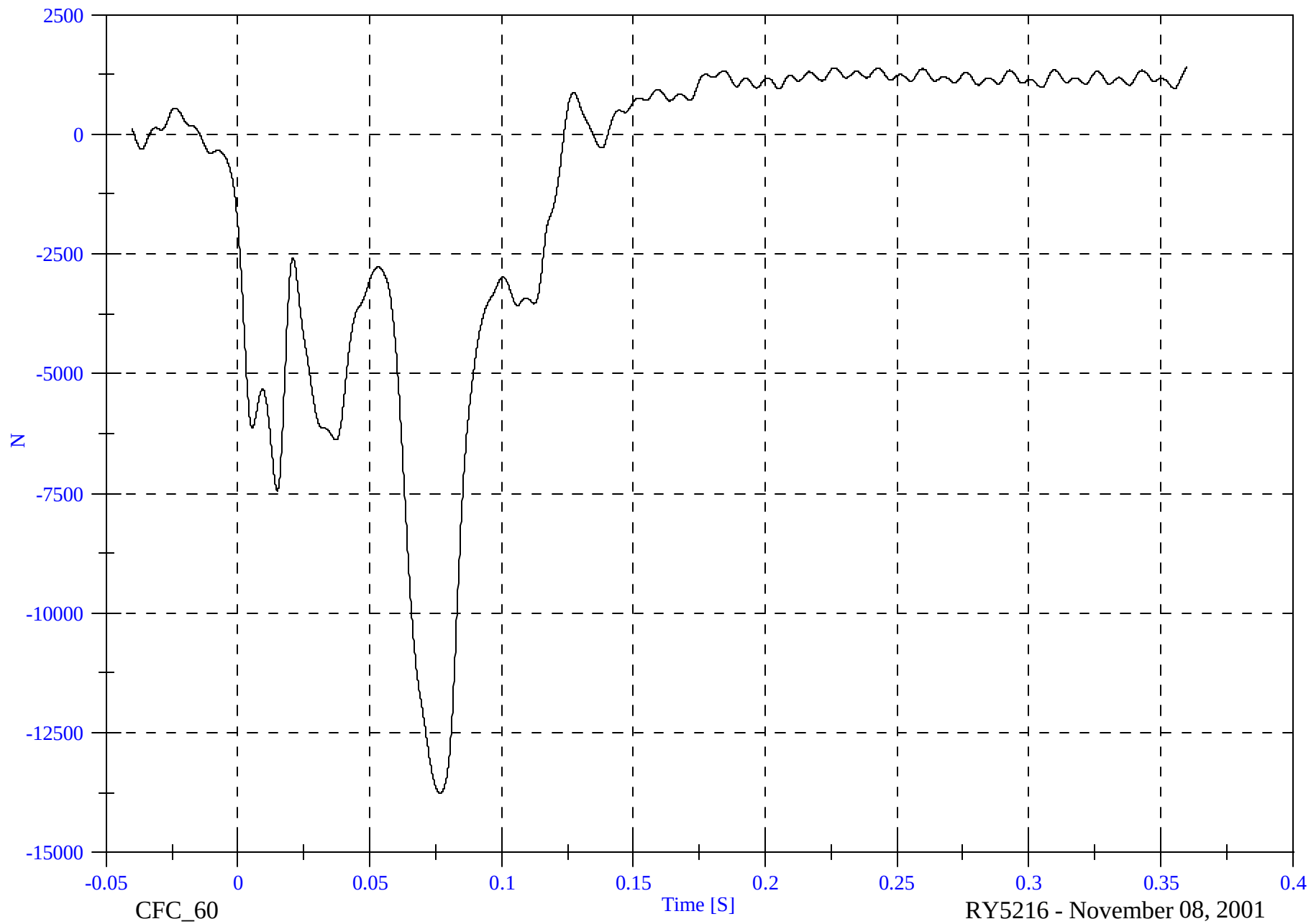


40 % Frontal Offset Test #10 - 2000 Nissan Altima

Barrier Load Cell E4 FX

Max: 1403.5 [N] at 0.360 [S]

Min: -13756.7 [N] at 0.077 [S]



B-197

8413-66

CFC_60

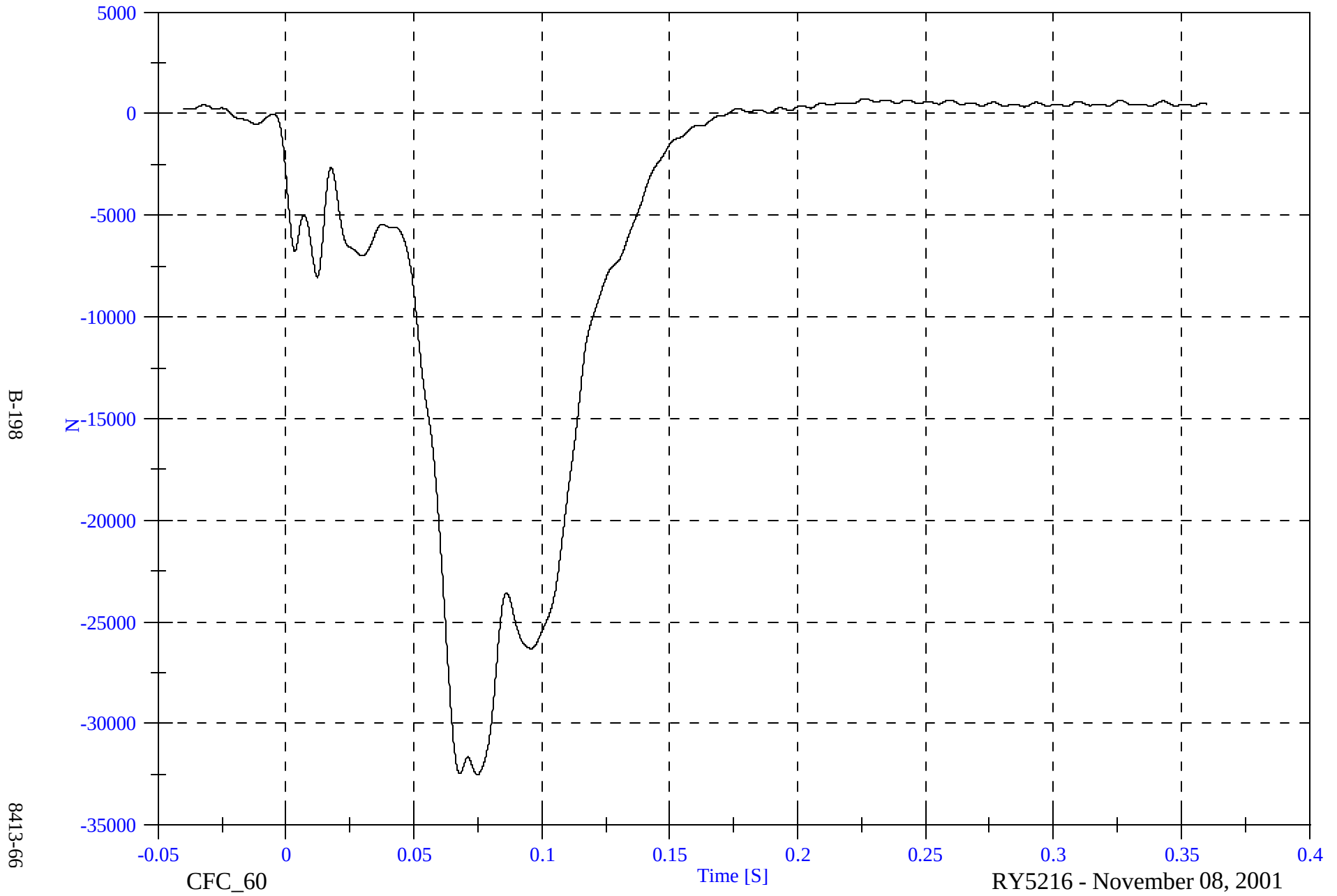
RY5216 - November 08, 2001

40 % Frontal Offset Test #10 - 2000 Nissan Altima

Barrier Load Cell E5 FX

Max: 735.7 [N] at 0.226 [S]

Min: -32503.3 [N] at 0.075 [S]

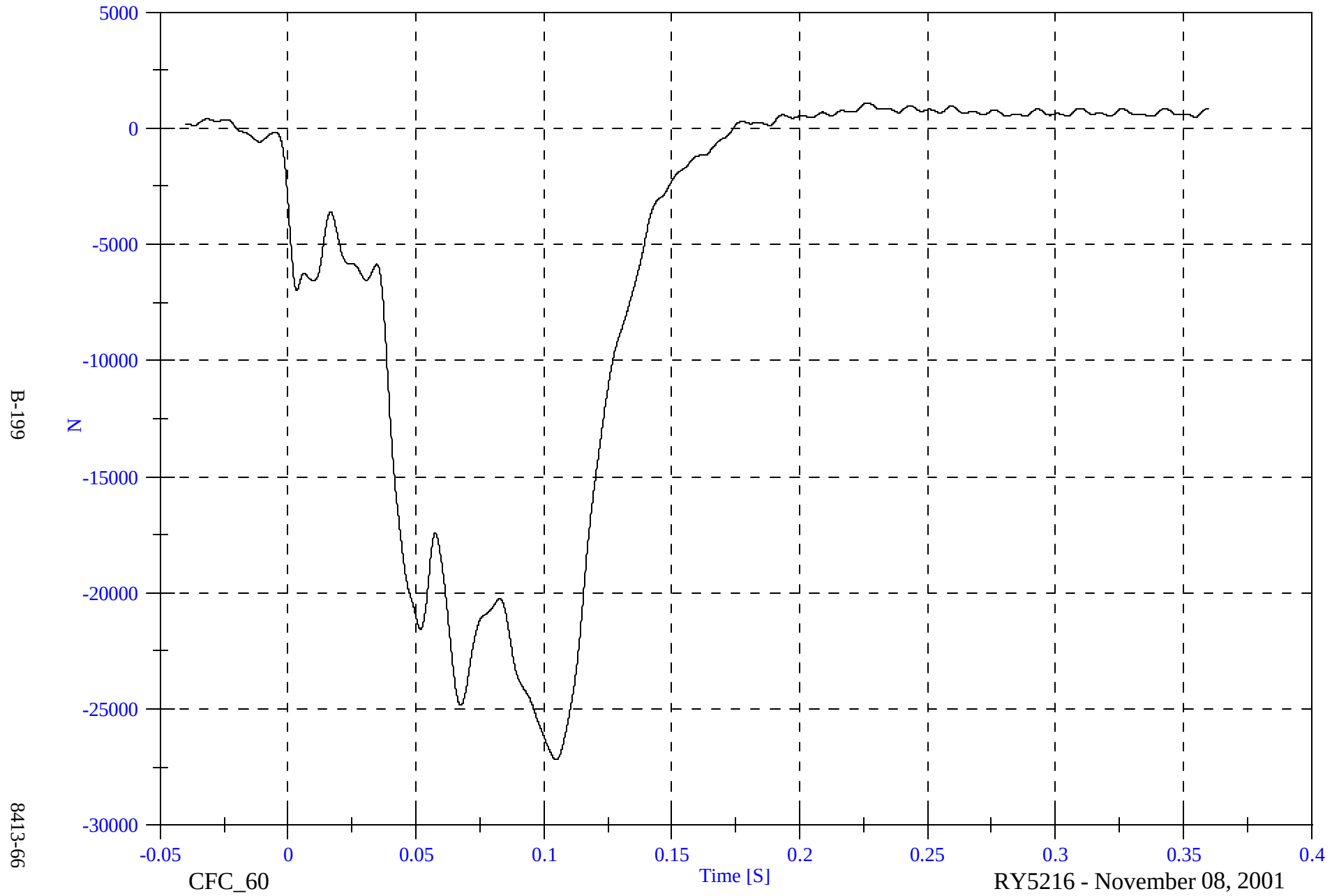


40 % Frontal Offset Test #10 - 2000 Nissan Altima

Barrier Load Cell E6 FX

Max: 1082.5 [N] at 0.226 [S]

Min: -27164.8 [N] at 0.105 [S]

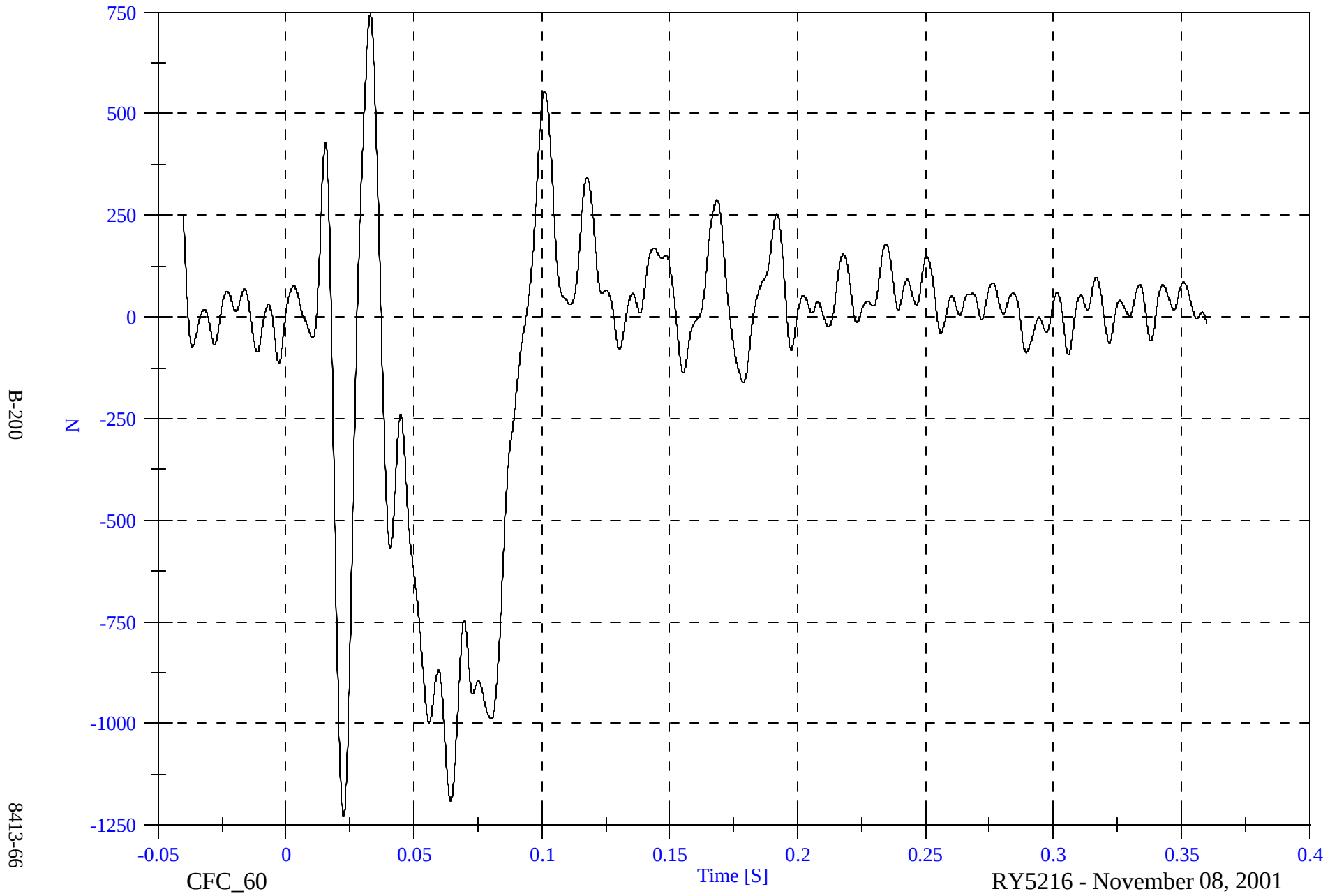


40 % Frontal Offset Test #10 - 2000 Nissan Altima

Barrier Load Cell D2 FY

Max: 743.5 [N] at 0.033 [S]

Min: -1228.9 [N] at 0.022 [S]

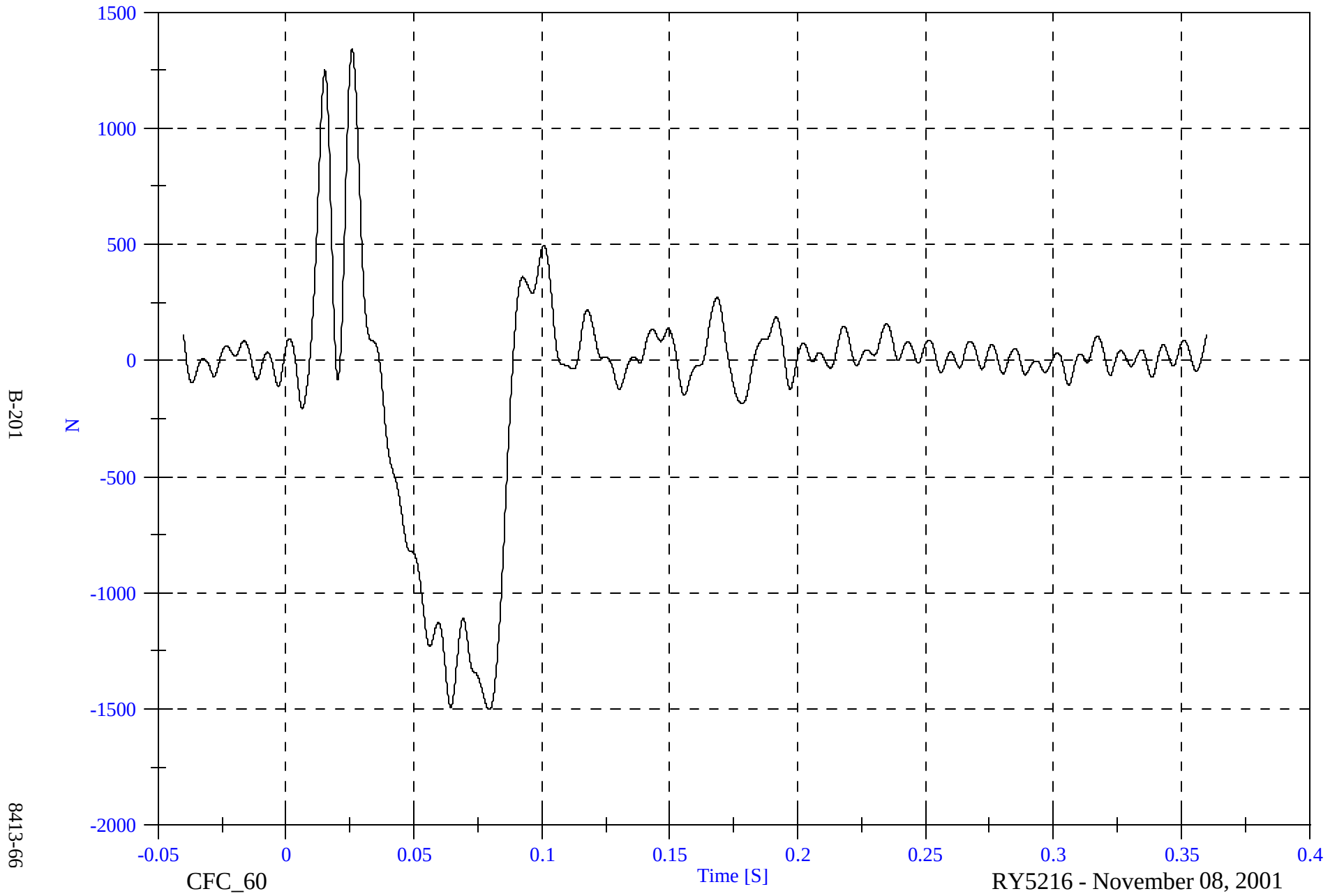


40 % Frontal Offset Test #10 - 2000 Nissan Altima

Barrier Load Cell D3 FY

Max: 1339.4 [N] at 0.026 [S]

Min: -1501.5 [N] at 0.079 [S]

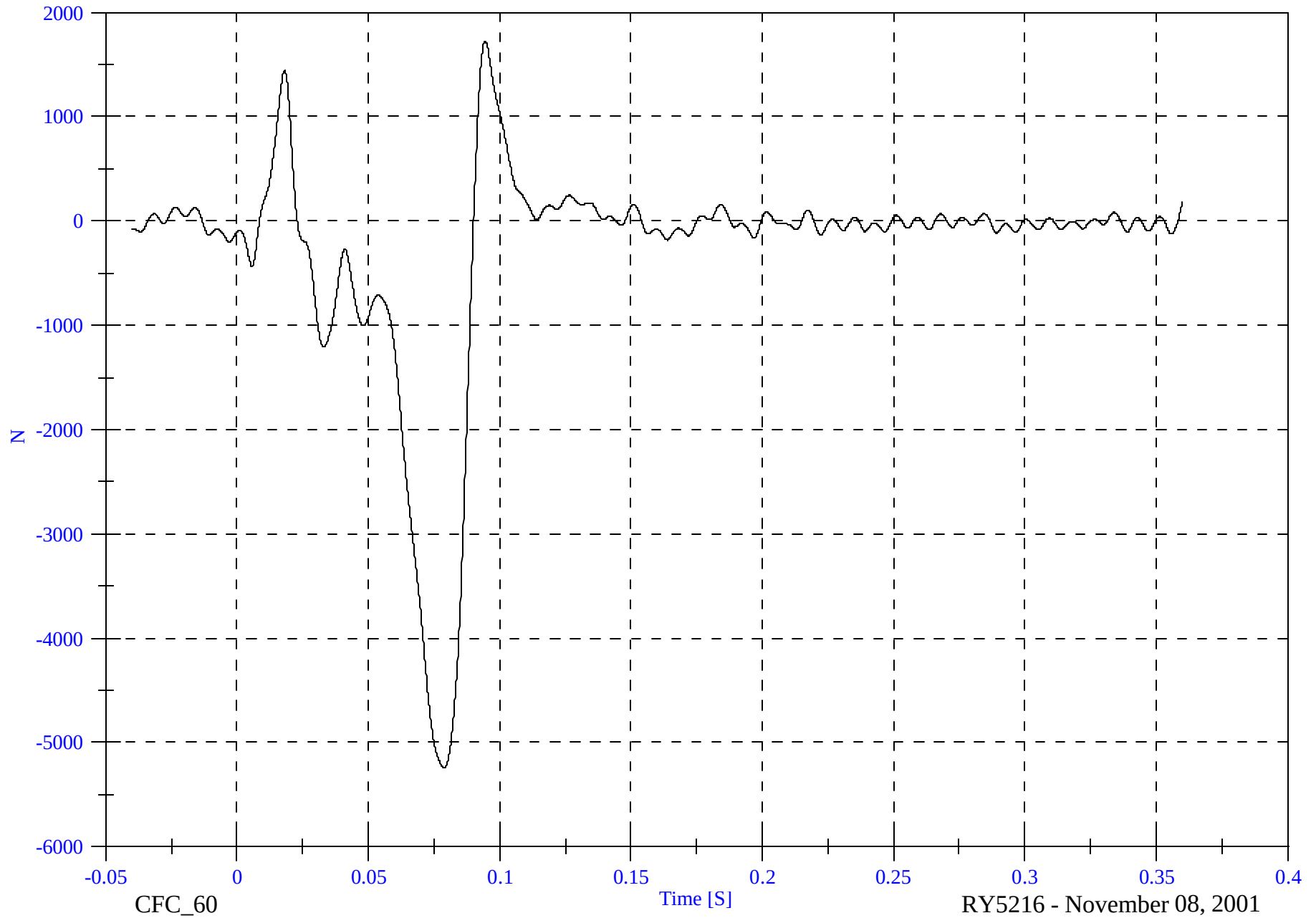


40 % Frontal Offset Test #10 - 2000 Nissan Altima

Barrier Load Cell D4 FY

Max: 1725.3 [N] at 0.094 [S]

Min: -5237.5 [N] at 0.079 [S]



B-202

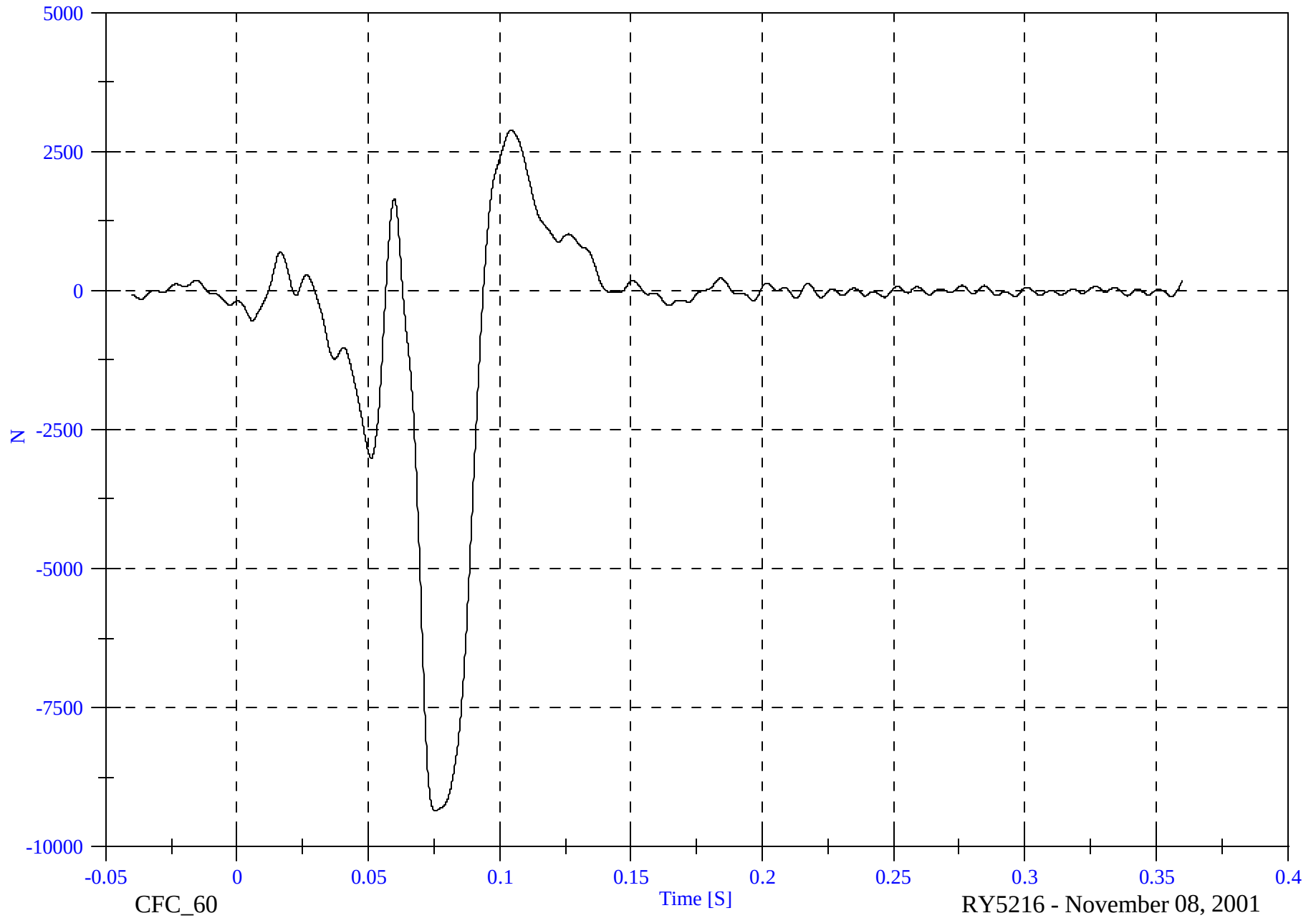
8413-66

40 % Frontal Offset Test #10 - 2000 Nissan Altima

Barrier Load Cell D5 FY

Max: 2878.9 [N] at 0.104 [S]

Min: -9352.8 [N] at 0.075 [S]



B-203

8413-66

CFC_60

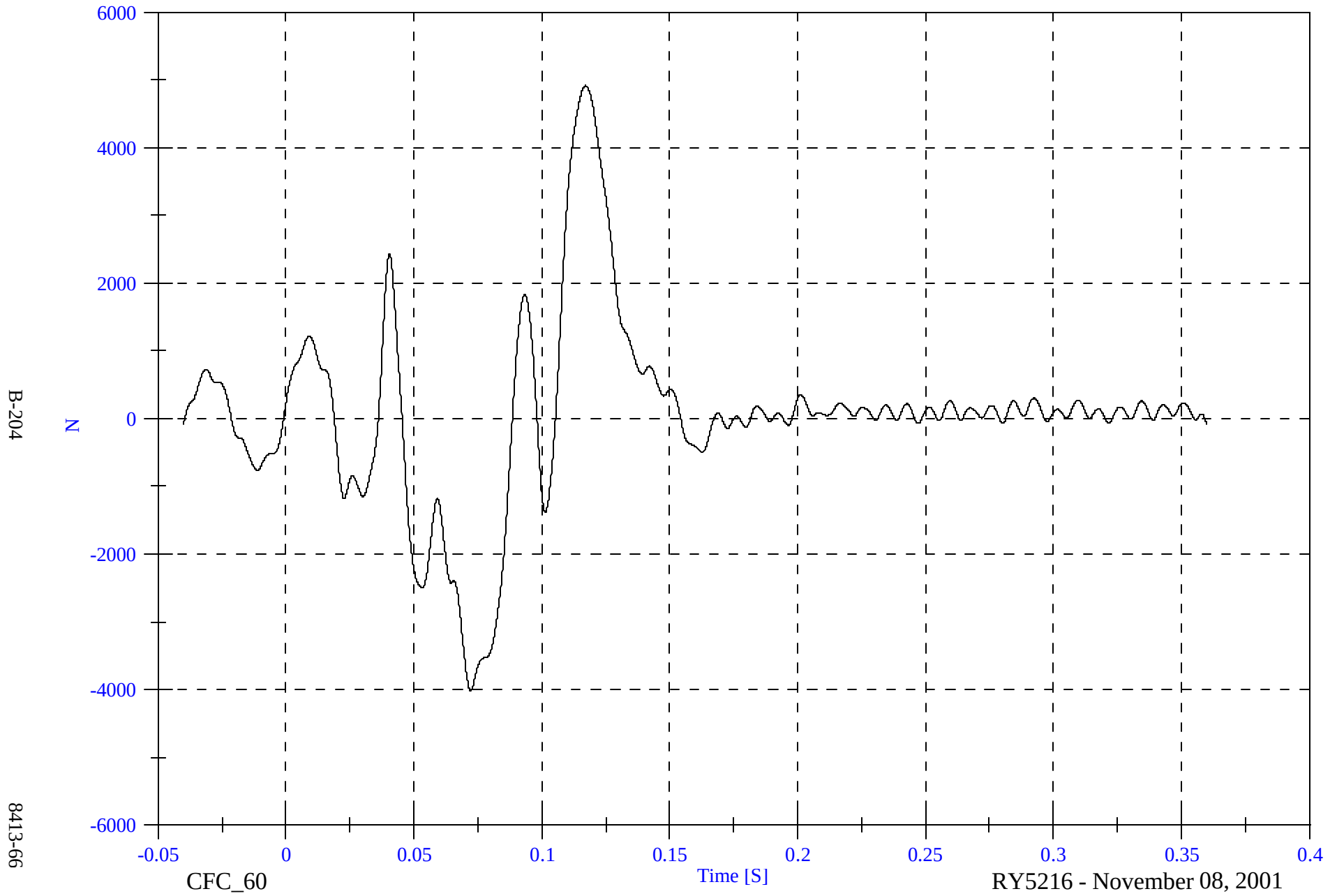
RY5216 - November 08, 2001

40 % Frontal Offset Test #10 - 2000 Nissan Altima

Barrier Load Cell D6 FY

Max: 4910.7 [N] at 0.117 [S]

Min: -4011.7 [N] at 0.072 [S]

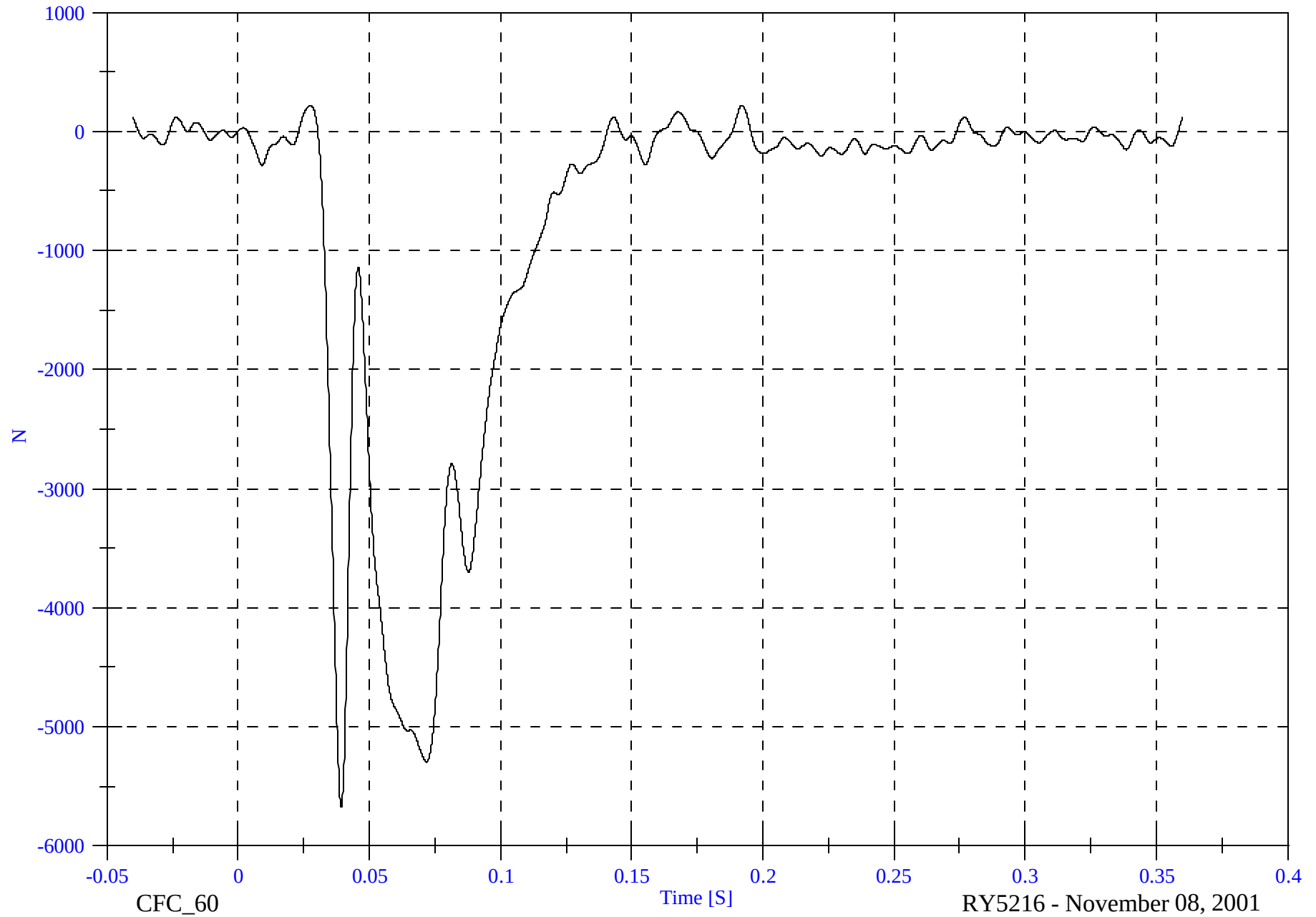


40 % Frontal Offset Test #10 - 2000 Nissan Altima

Barrier Load Cell D1 FX

Max: 217.9 [N] at 0.192 [S]

Min: -5669.7 [N] at 0.039 [S]



B-205

8413-66

CFC_60

Time [S]

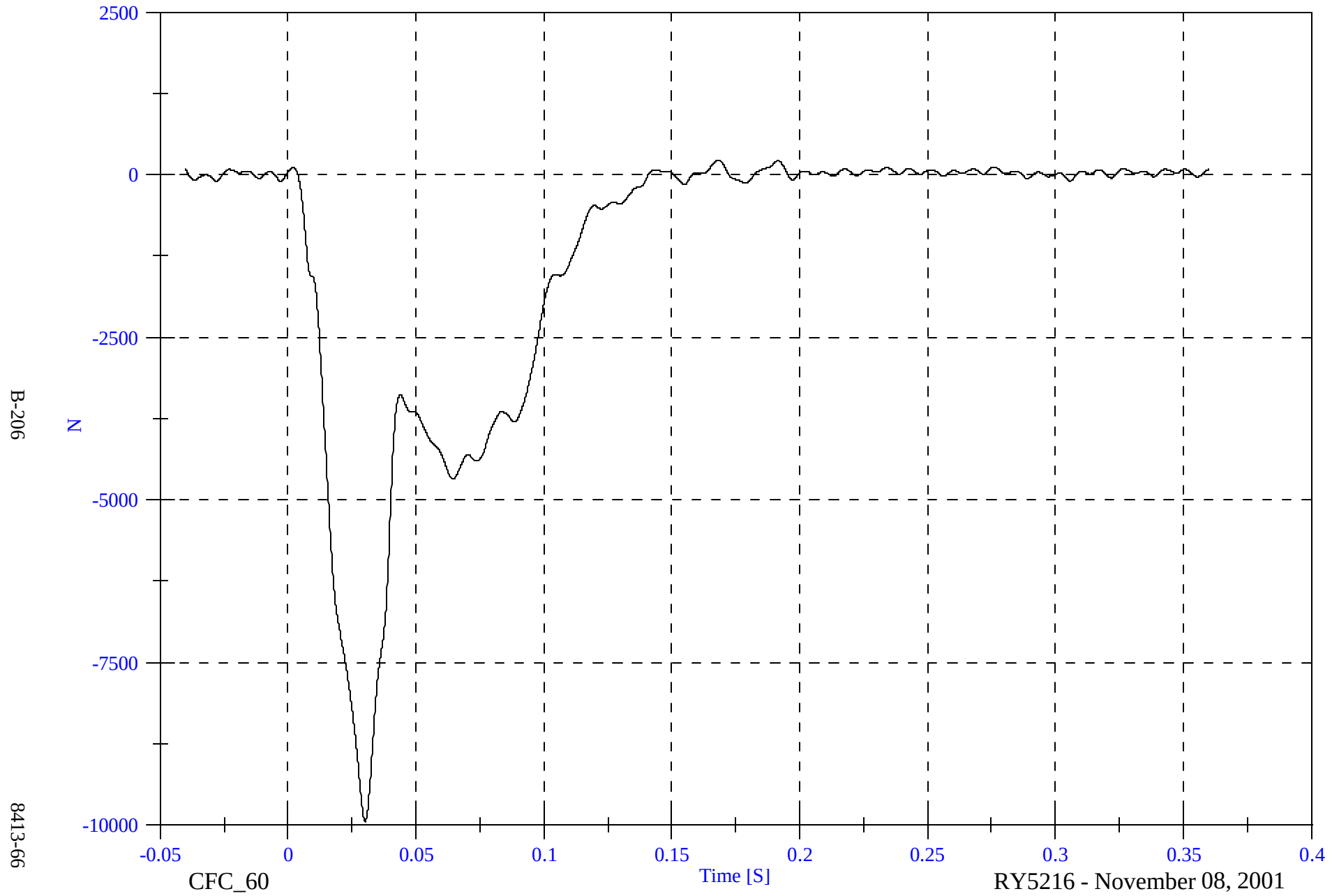
RY5216 - November 08, 2001

40 % Frontal Offset Test #10 - 2000 Nissan Altima

Barrier Load Cell D2 FX

Max: 217.9 [N] at 0.168 [S]

Min: -9939.6 [N] at 0.030 [S]

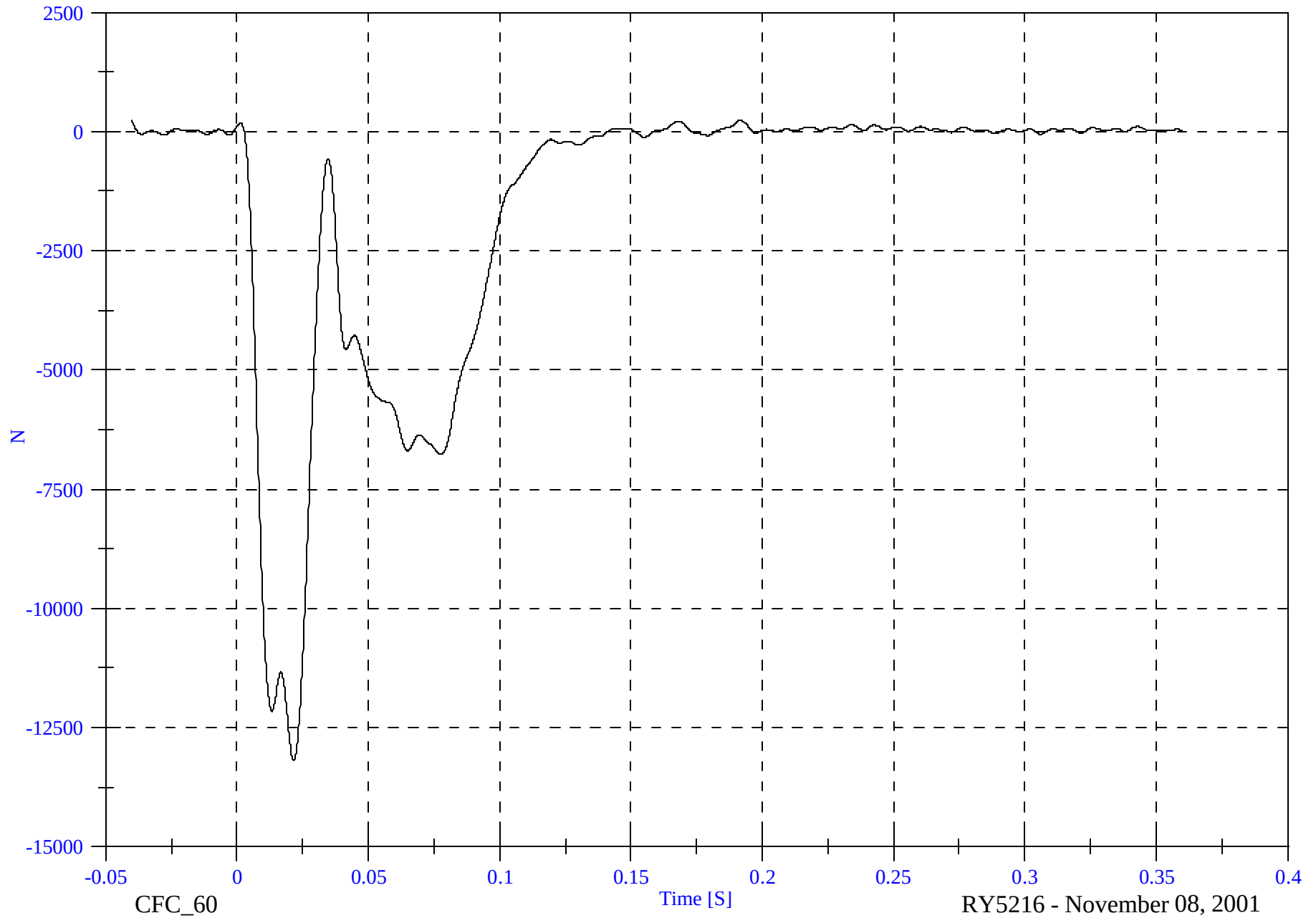


40 % Frontal Offset Test #10 - 2000 Nissan Altima

Barrier Load Cell D3 FX

Max: 230.6 [N] at -0.040 [S]

Min: -13186.1 [N] at 0.022 [S]



B-207

8413-66

CFC_60

Time [S]

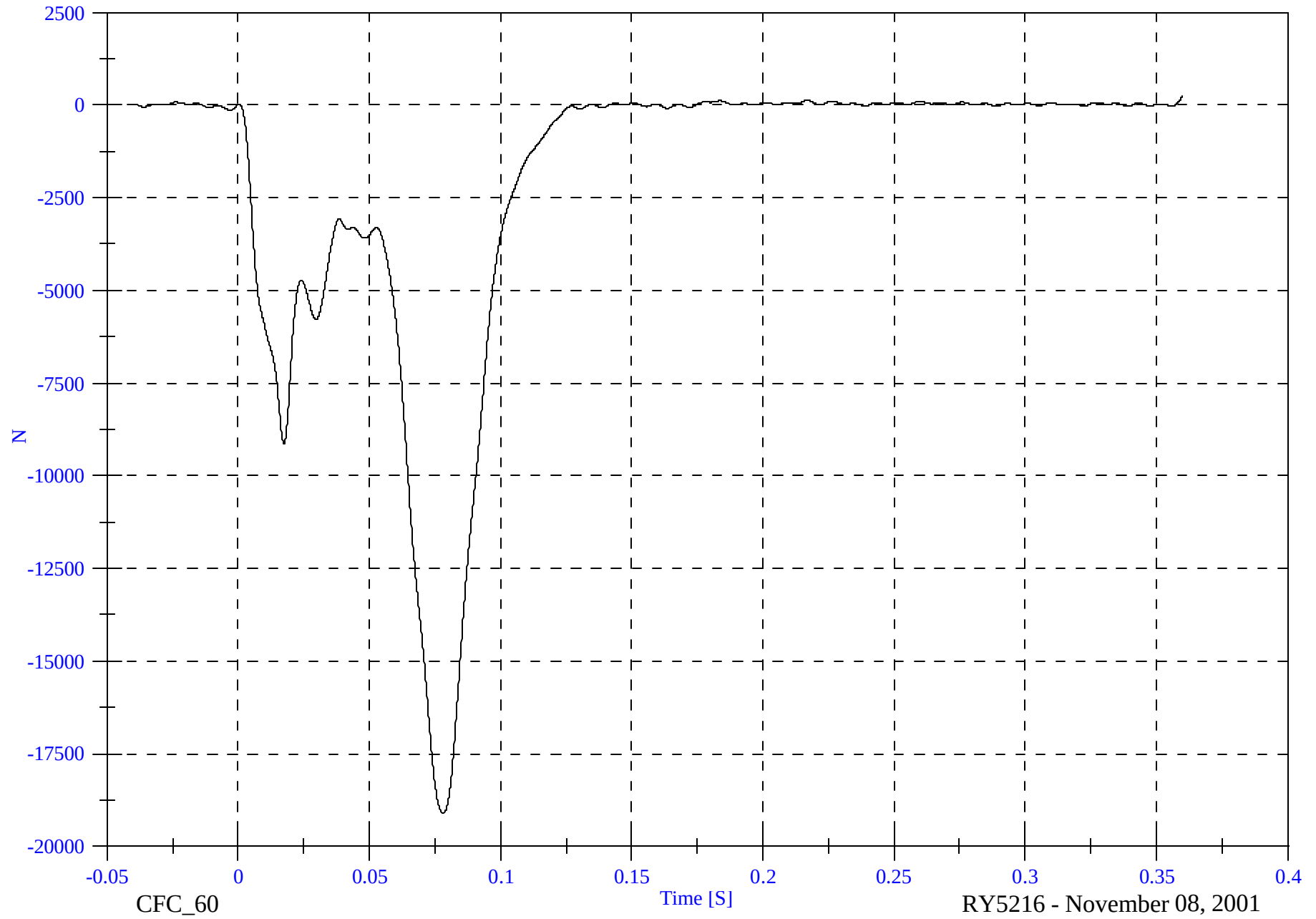
RY5216 - November 08, 2001

40 % Frontal Offset Test #10 - 2000 Nissan Altima

Barrier Load Cell D4 FX

Max: 236.6 [N] at 0.360 [S]

Min: -19101.7 [N] at 0.078 [S]



B-208

8413-66

CFC_60

Time [S]

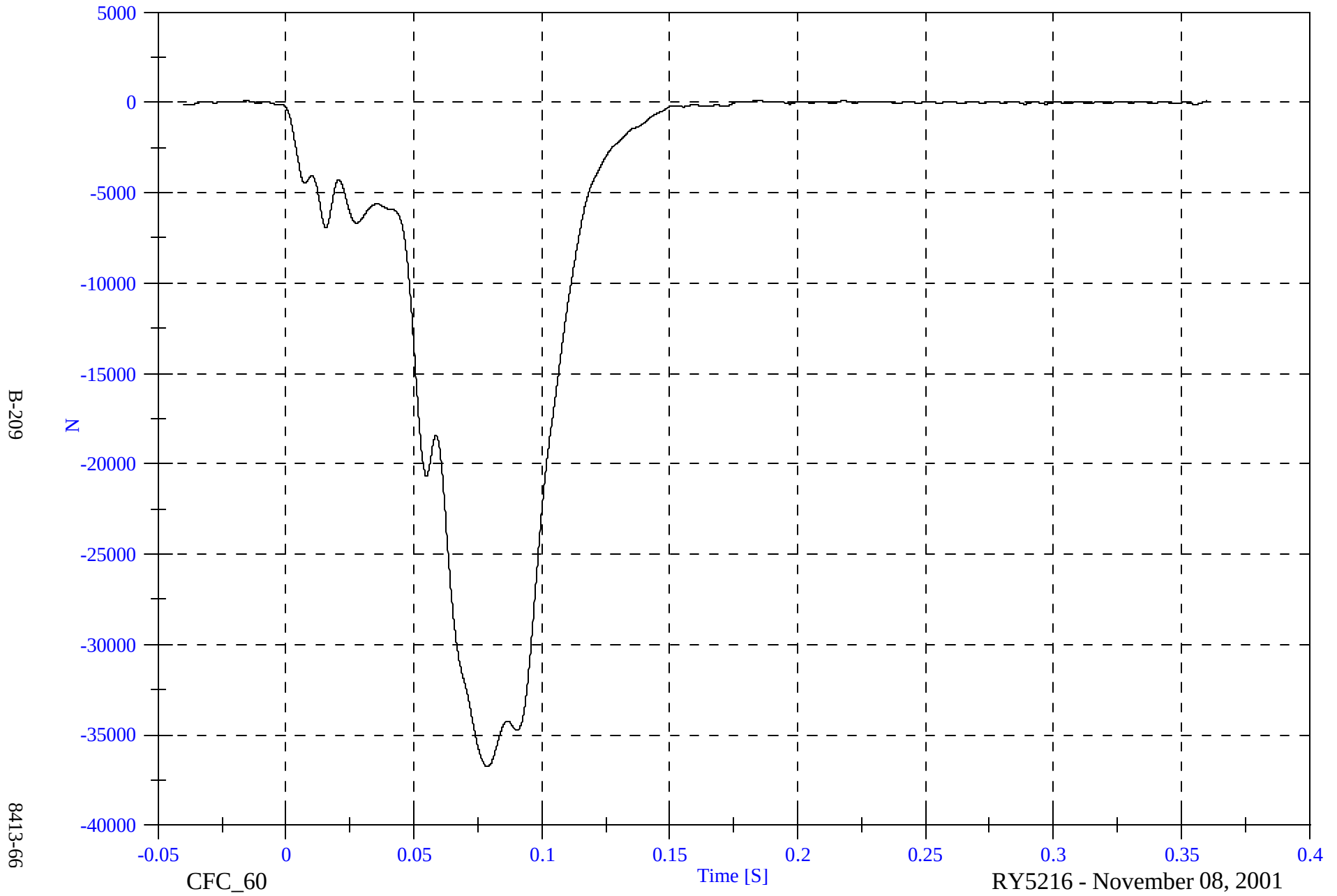
RY5216 - November 08, 2001

40 % Frontal Offset Test #10 - 2000 Nissan Altima

Barrier Load Cell D5 FX

Max: 85.0 [N] at 0.184 [S]

Min: -36753.6 [N] at 0.079 [S]

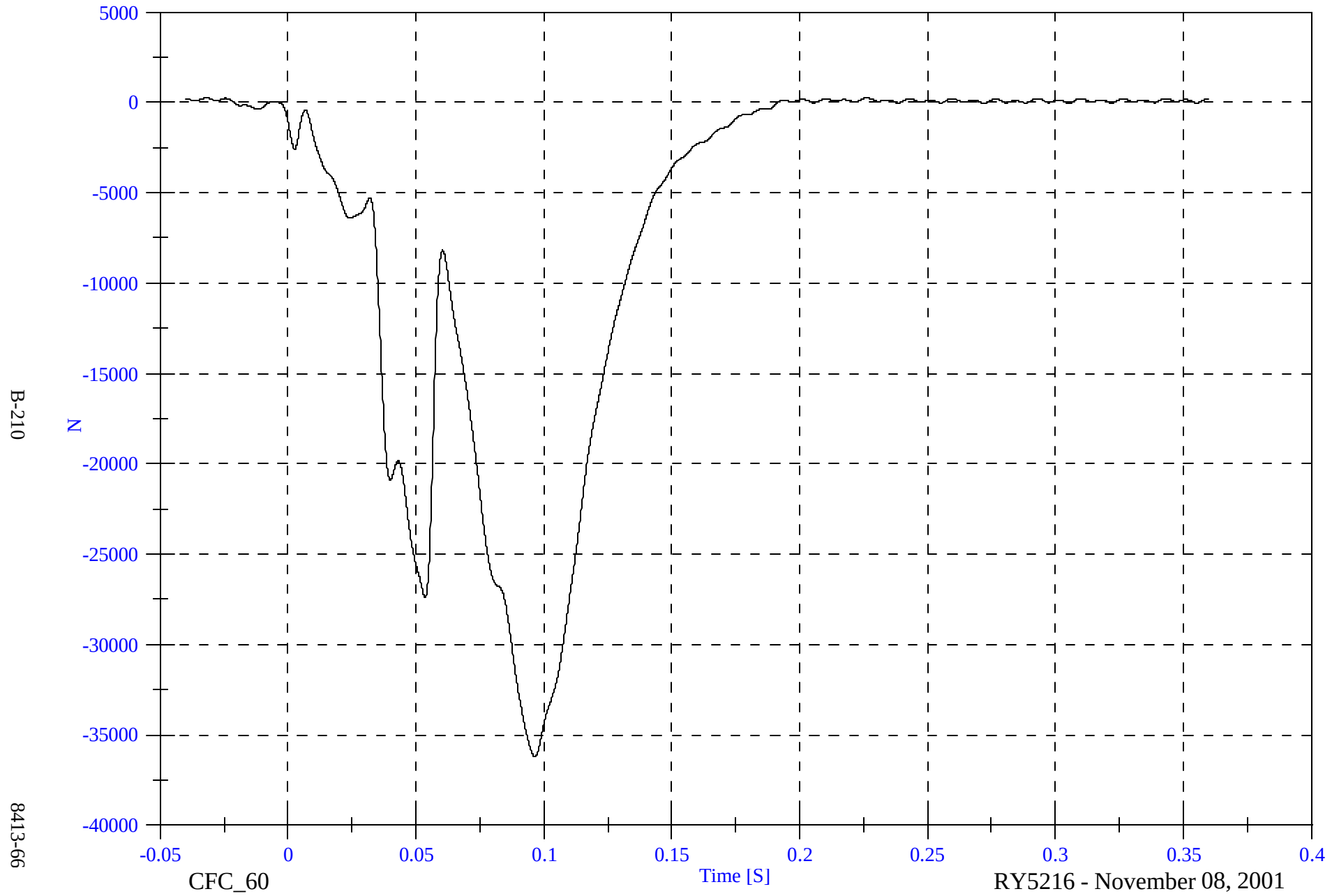


40 % Frontal Offset Test #10 - 2000 Nissan Altima

Barrier Load Cell D6 FX

Max: 240.9 [N] at -0.032 [S]

Min: -36189.5 [N] at 0.097 [S]

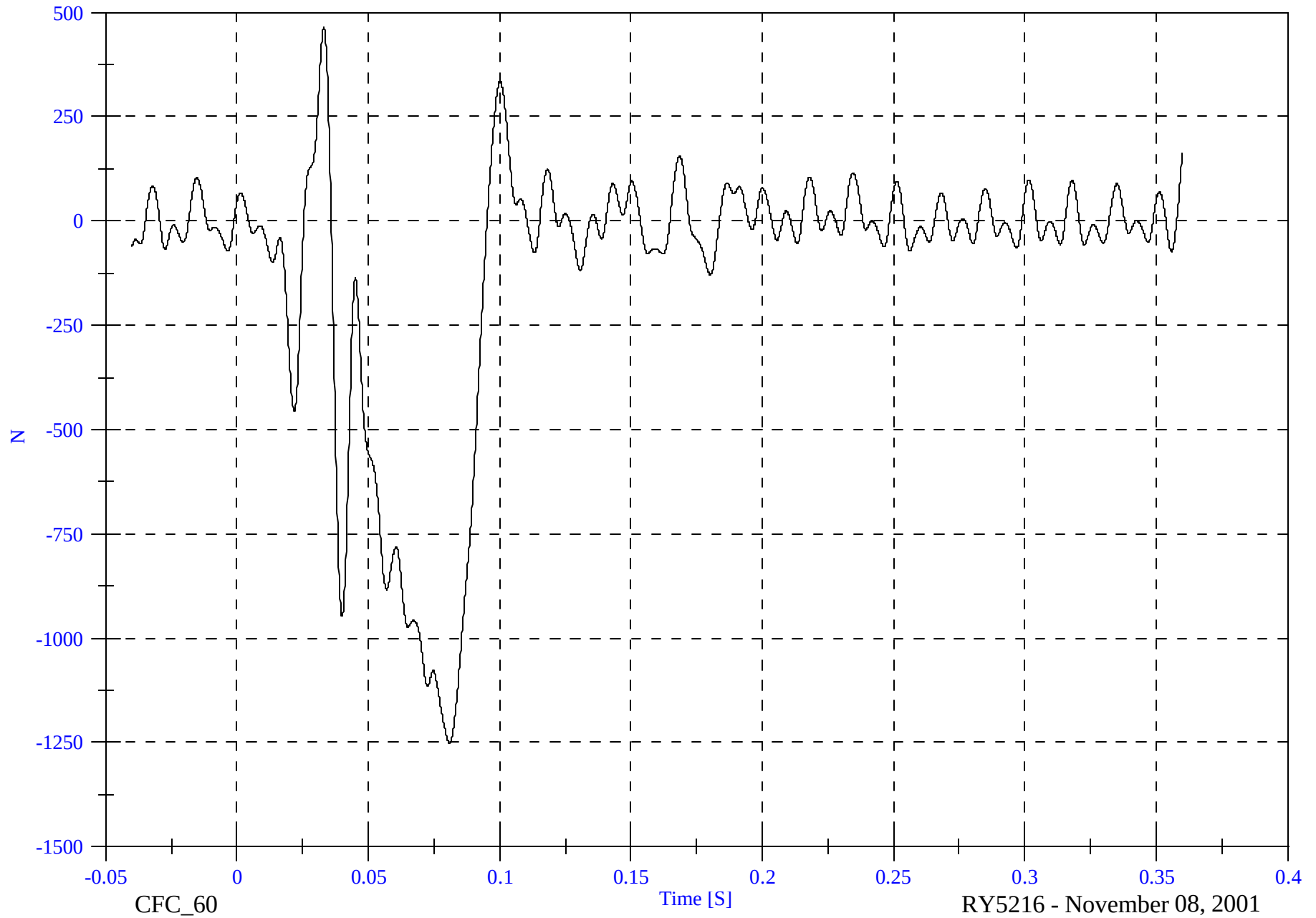


40 % Frontal Offset Test #10 - 2000 Nissan Altima

Barrier Load Cell C2 FY

Max: 463.5 [N] at 0.033 [S]

Min: -1253.4 [N] at 0.081 [S]



B-211

8413-66

CFC_60

Time [S]

RY5216 - November 08, 2001

40 % Frontal Offset Test #10 - 2000 Nissan Altima

Barrier Load Cell C3 FY

Max: 731.4 [N] at 0.027 [S]

Min: -975.6 [N] at 0.081 [S]

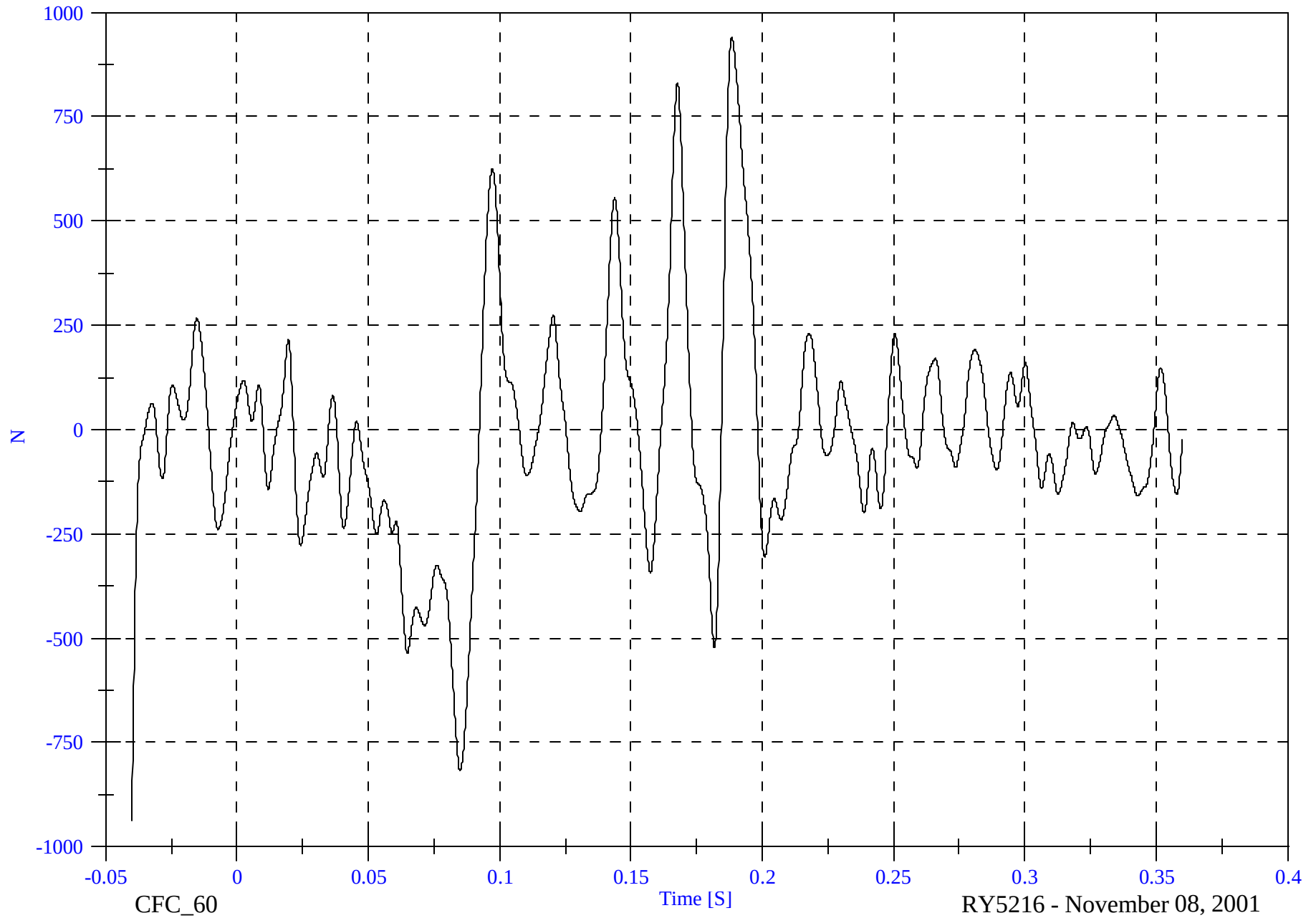


40 % Frontal Offset Test #10 - 2000 Nissan Altima

Barrier Load Cell C4 FY

Max: 939.7 [N] at 0.188 [S]

Min: -938.0 [N] at -0.040 [S]



B-213

8413-66

RY5216 - November 08, 2001

40 % Frontal Offset Test #10 - 2000 Nissan Altima

Barrier Load Cell C5 FY

Max: 1314.6 [N] at 0.016 [S]

Min: -1760.7 [N] at 0.081 [S]



40 % Frontal Offset Test #10 - 2000 Nissan Altima

Barrier Load Cell C6 FY

Max: 1044.6 [N] at 0.118 [S]

Min: -1876.1 [N] at 0.081 [S]

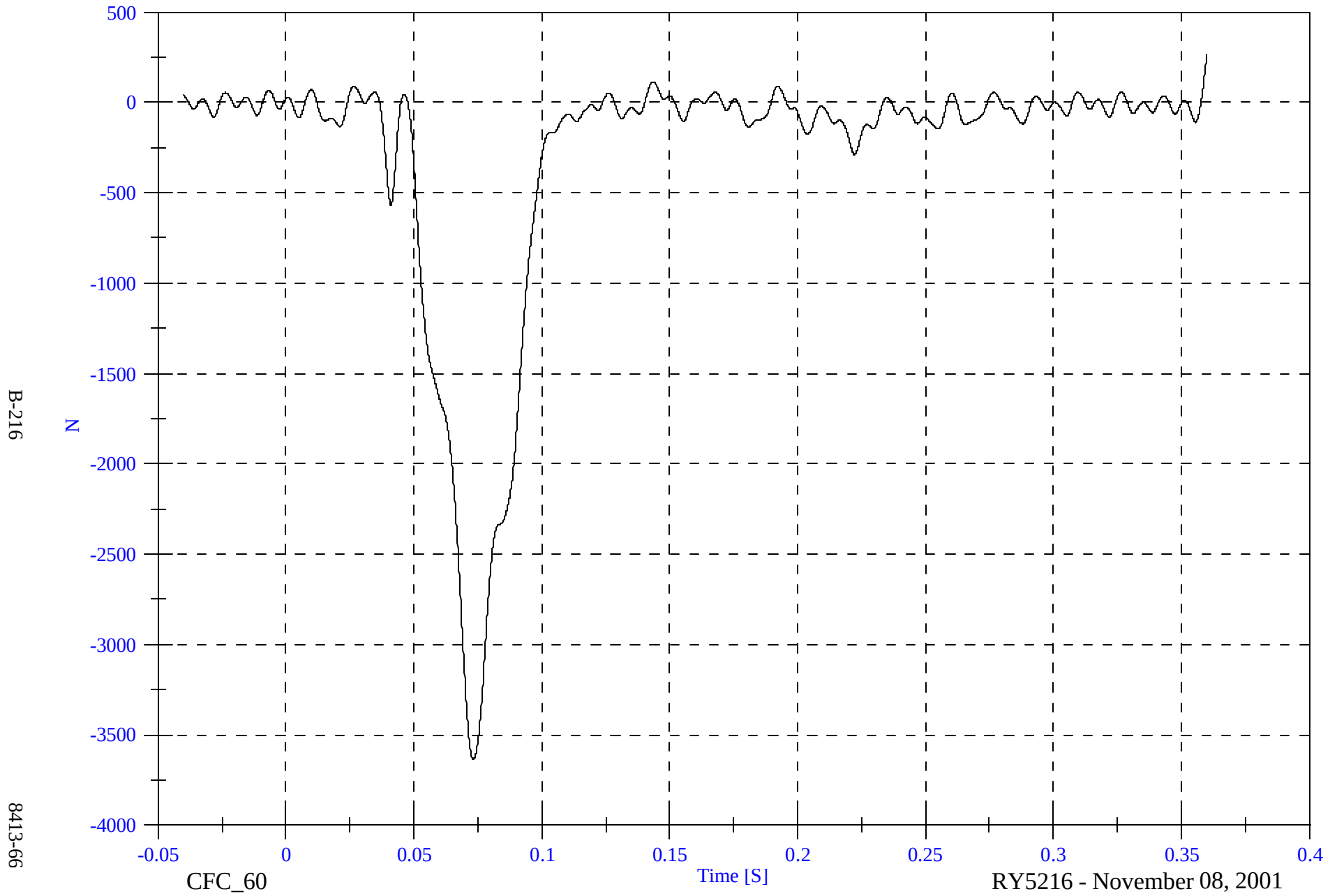


40 % Frontal Offset Test #10 - 2000 Nissan Altima

Barrier Load Cell C1 FX

Max: 262.1 [N] at 0.360 [S]

Min: -3636.2 [N] at 0.073 [S]

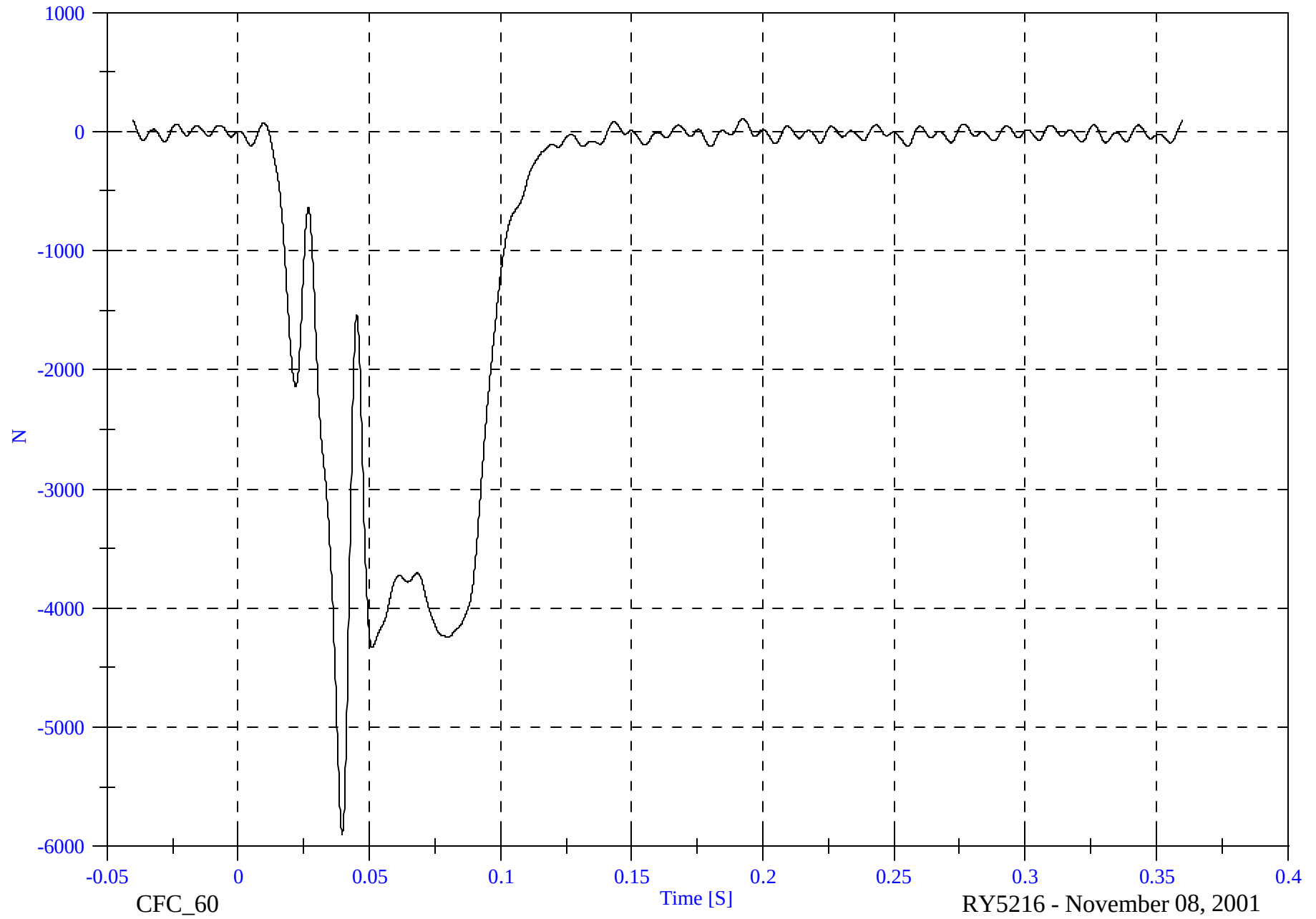


40 % Frontal Offset Test #10 - 2000 Nissan Altima

Barrier Load Cell C2 FX

Max: 104.8 [N] at 0.192 [S]

Min: -5894.2 [N] at 0.040 [S]



B-217

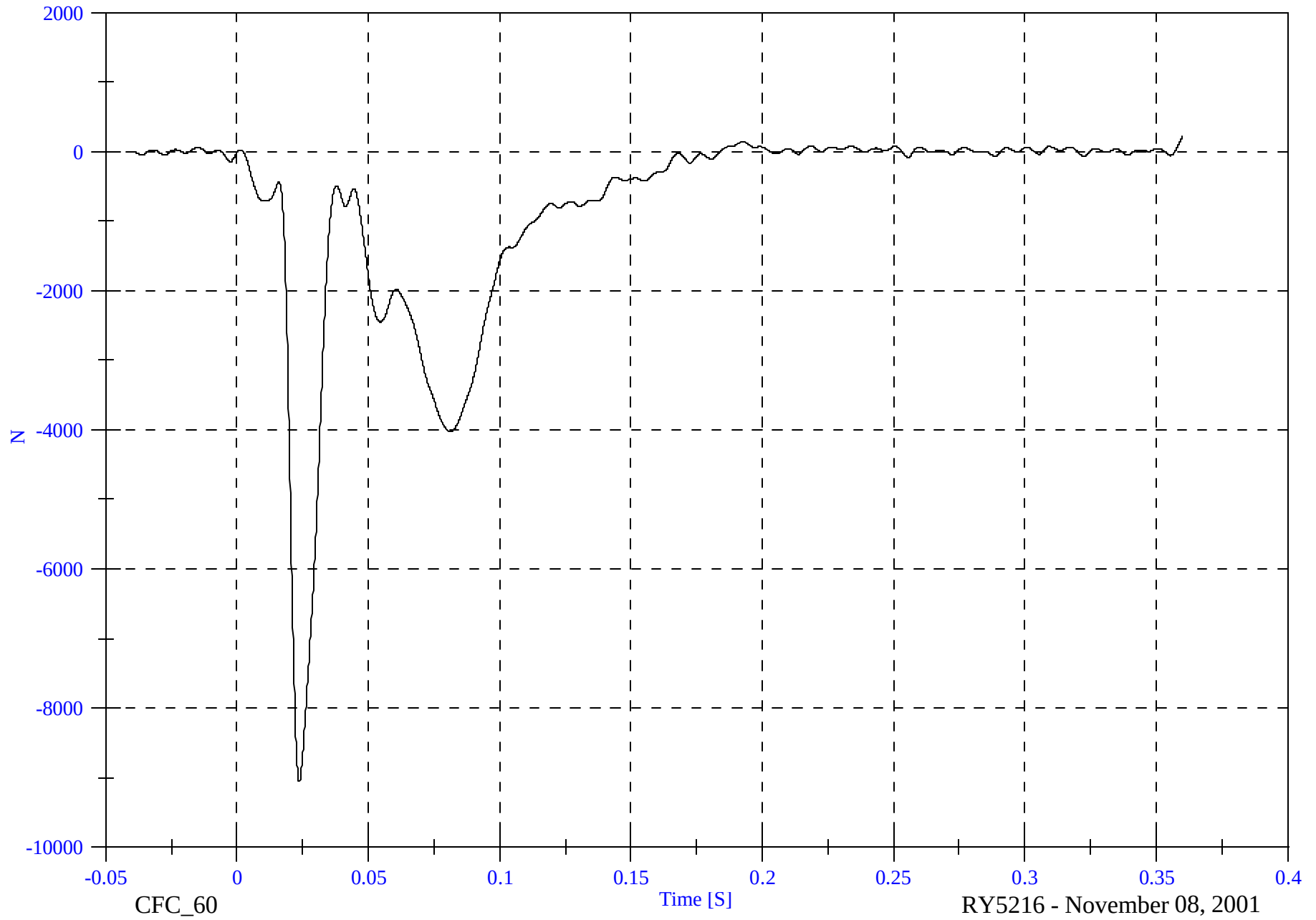
8413-66

40 % Frontal Offset Test #10 - 2000 Nissan Altima

Barrier Load Cell C3 FX

Max: 212.3 [N] at 0.360 [S]

Min: -9055.3 [N] at 0.024 [S]



B-218

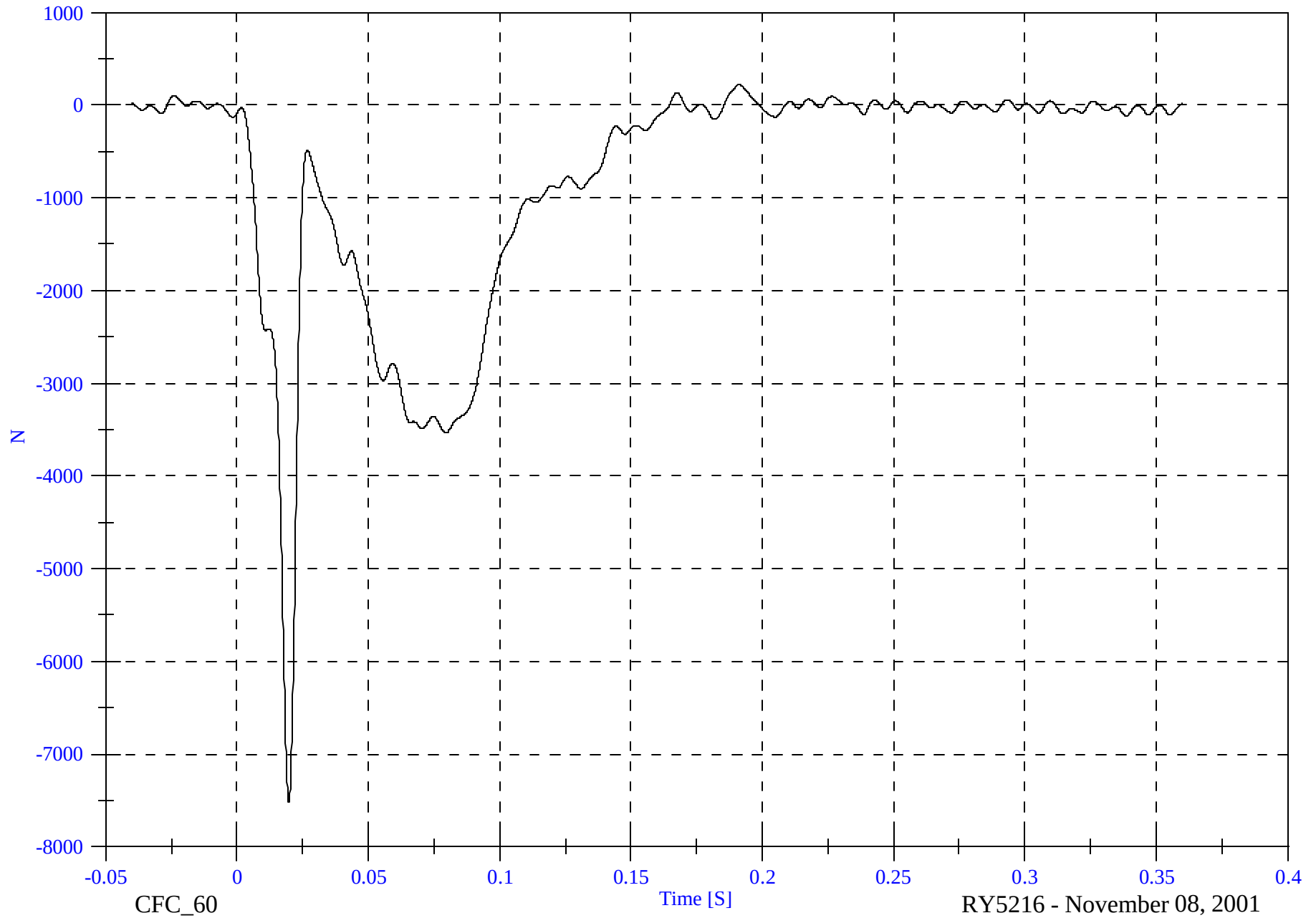
8413-66

40 % Frontal Offset Test #10 - 2000 Nissan Altima

Barrier Load Cell C4 FX

Max: 222.8 [N] at 0.191 [S]

Min: -7523.9 [N] at 0.020 [S]



B-219

8413-66

CFC_60

Time [S]

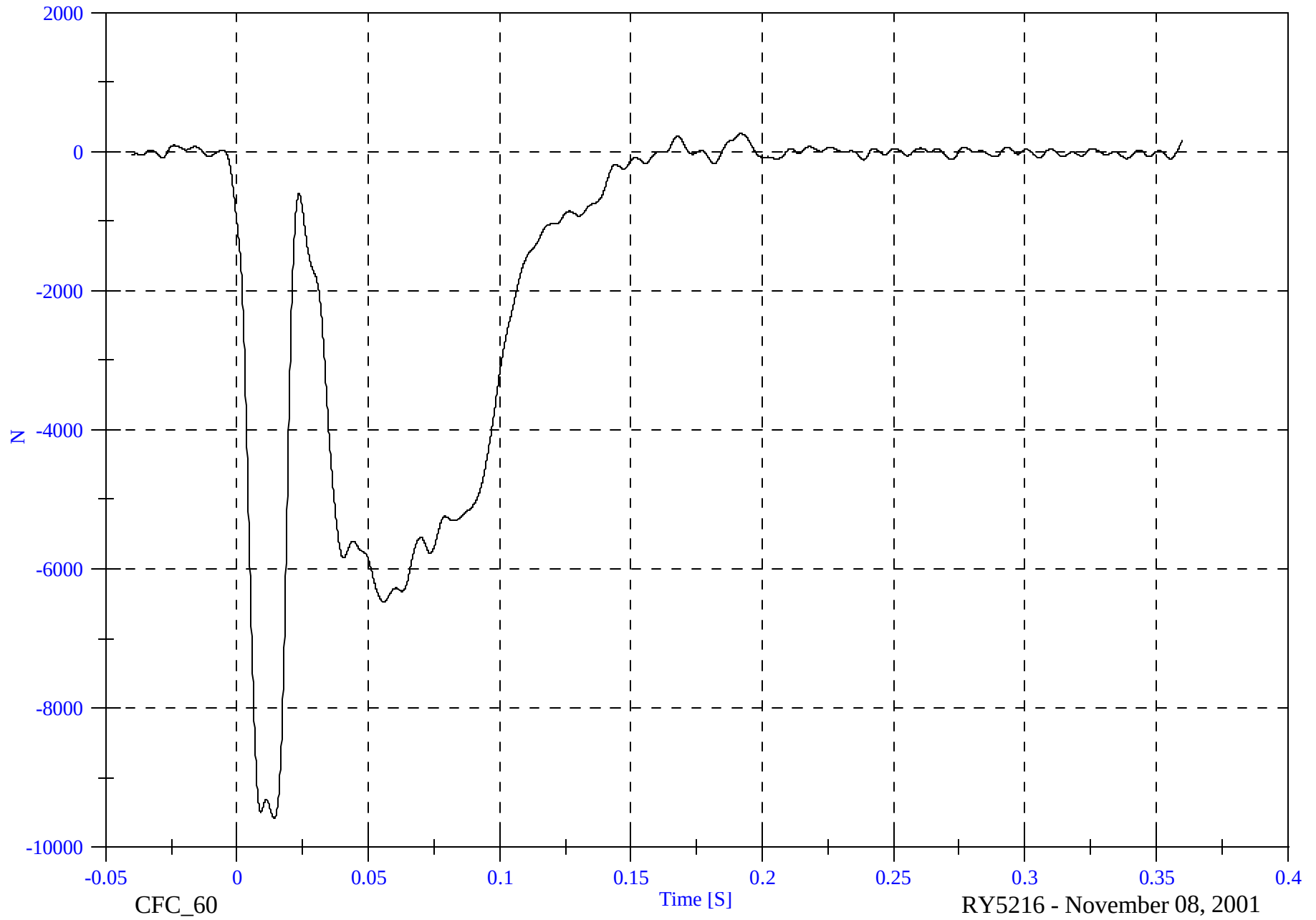
RY5216 - November 08, 2001

40 % Frontal Offset Test #10 - 2000 Nissan Altima

Barrier Load Cell C5 FX

Max: 256.2 [N] at 0.192 [S]

Min: -9580.7 [N] at 0.014 [S]



B-220

8413-66

CFC_60

Time [S]

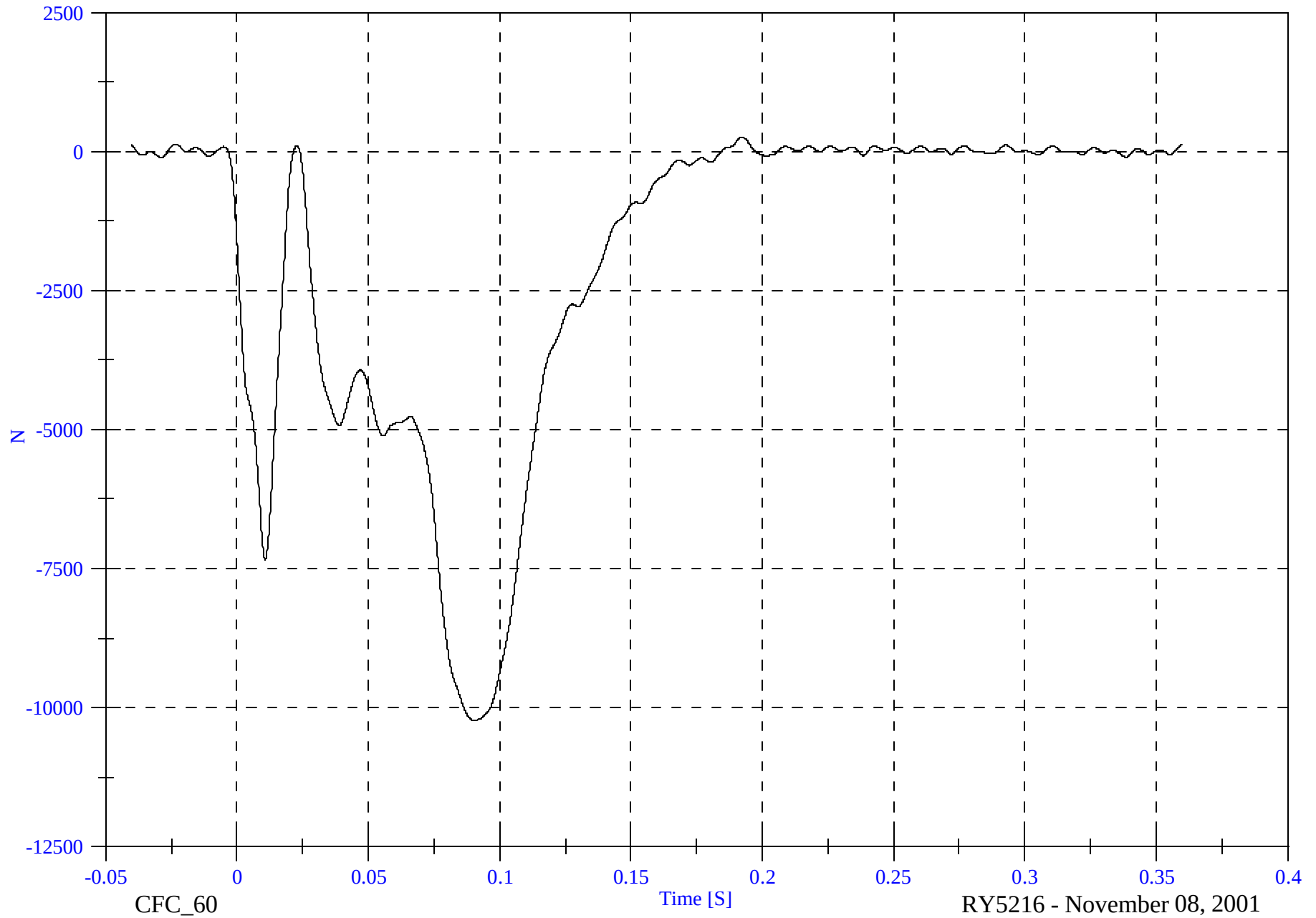
RY5216 - November 08, 2001

40 % Frontal Offset Test #10 - 2000 Nissan Altima

Barrier Load Cell C6 FX

Max: 254.4 [N] at 0.192 [S]

Min: -10222.8 [N] at 0.090 [S]



B-221

8413-66

CFC_60

Time [S]

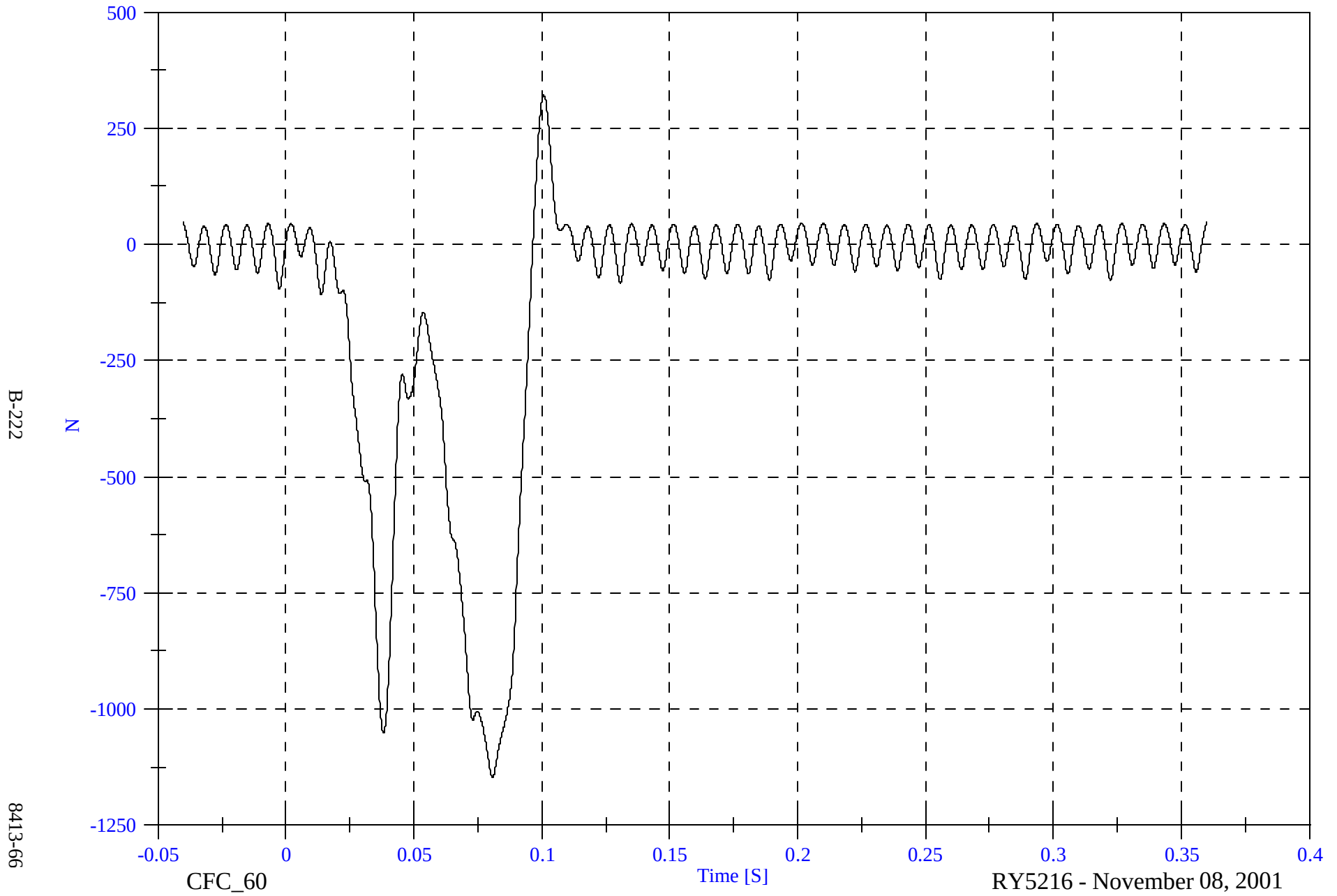
RY5216 - November 08, 2001

40 % Frontal Offset Test #10 - 2000 Nissan Altima

Barrier Load Cell B3 FY

Max: 320.6 [N] at 0.101 [S]

Min: -1146.8 [N] at 0.081 [S]

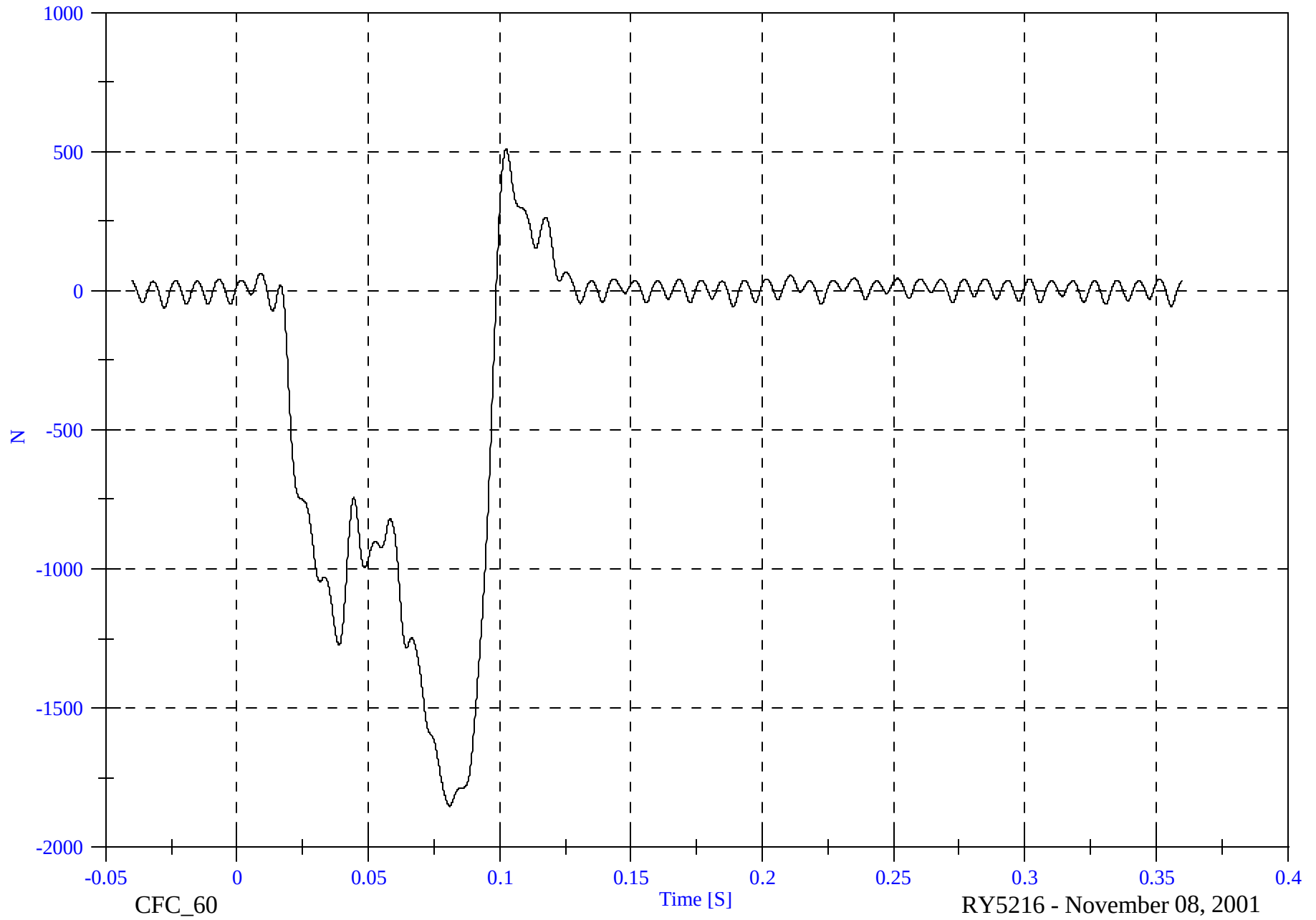


40 % Frontal Offset Test #10 - 2000 Nissan Altima

Barrier Load Cell B4 FY

Max: 507.9 [N] at 0.102 [S]

Min: -1851.5 [N] at 0.081 [S]



B-223

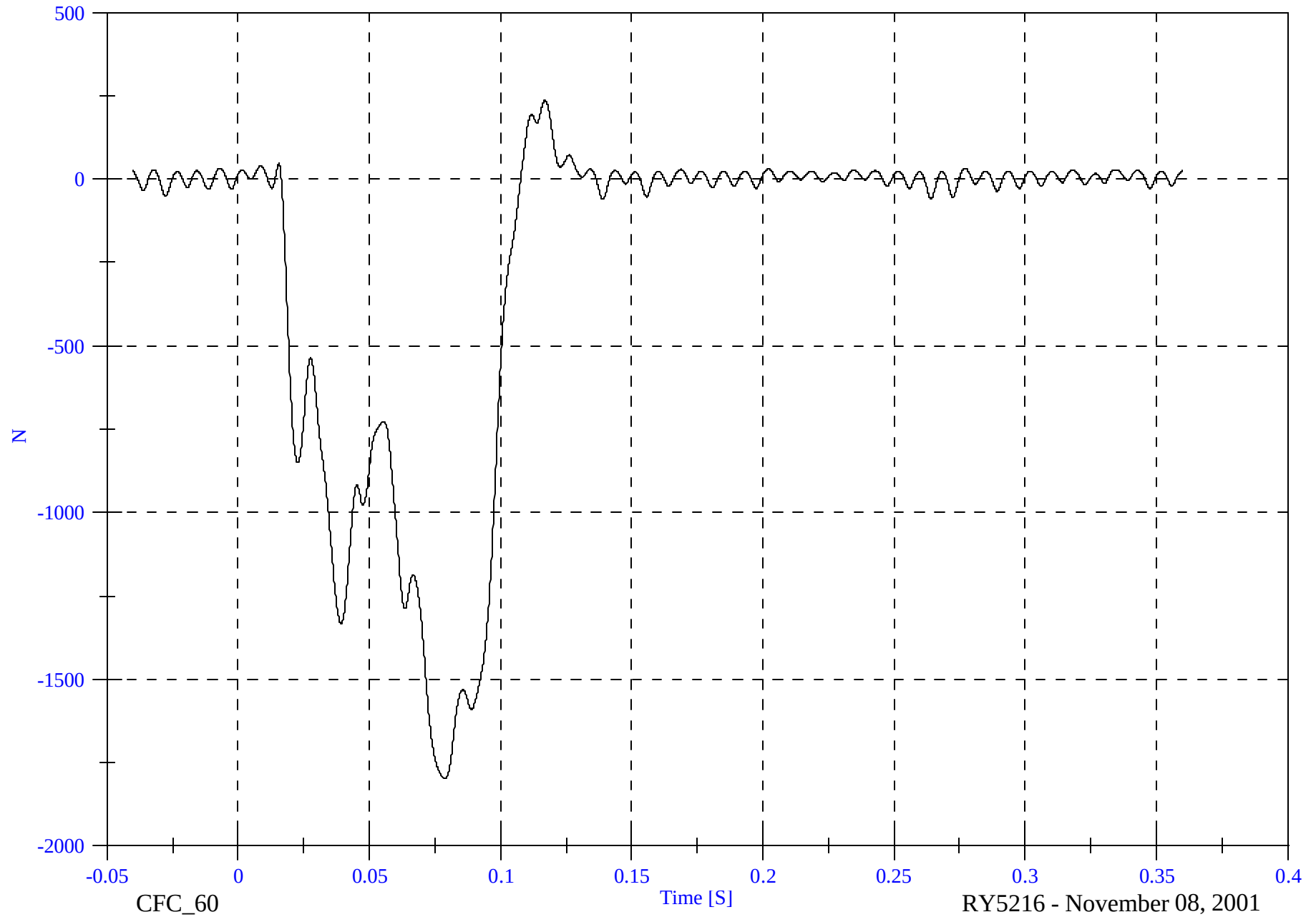
8413-66

40 % Frontal Offset Test #10 - 2000 Nissan Altima

Barrier Load Cell B5 FY

Max: 234.9 [N] at 0.117 [S]

Min: -1798.2 [N] at 0.079 [S]



B-224

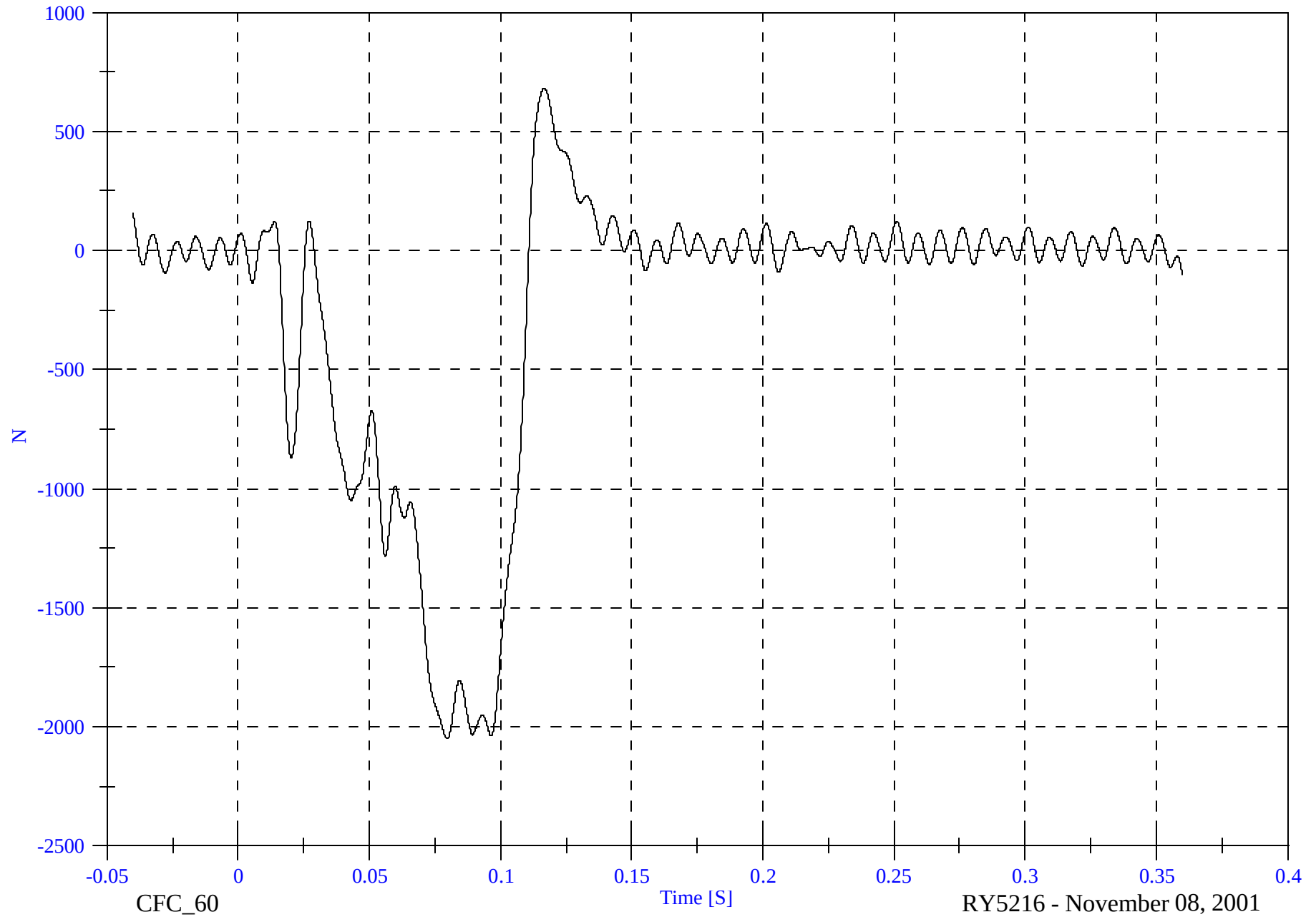
8413-66

40 % Frontal Offset Test #10 - 2000 Nissan Altima

Barrier Load Cell B6 FY

Max: 680.2 [N] at 0.117 [S]

Min: -2050.1 [N] at 0.080 [S]



B-225

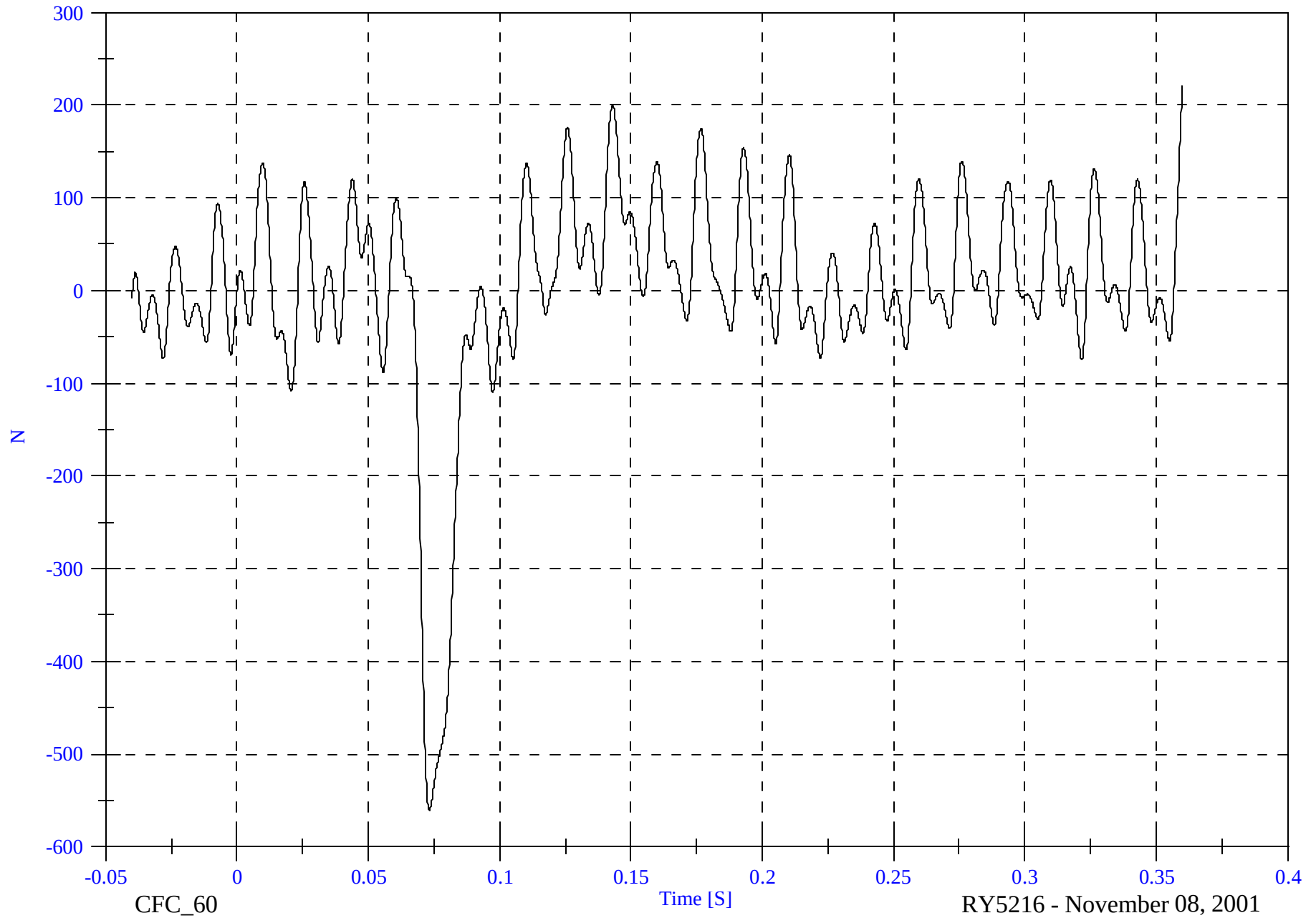
8413-66

40 % Frontal Offset Test #10 - 2000 Nissan Altima

Barrier Load Cell B1 FX

Max: 220.5 [N] at 0.360 [S]

Min: -560.3 [N] at 0.073 [S]



B-226

8413-66

CFC_60

Time [S]

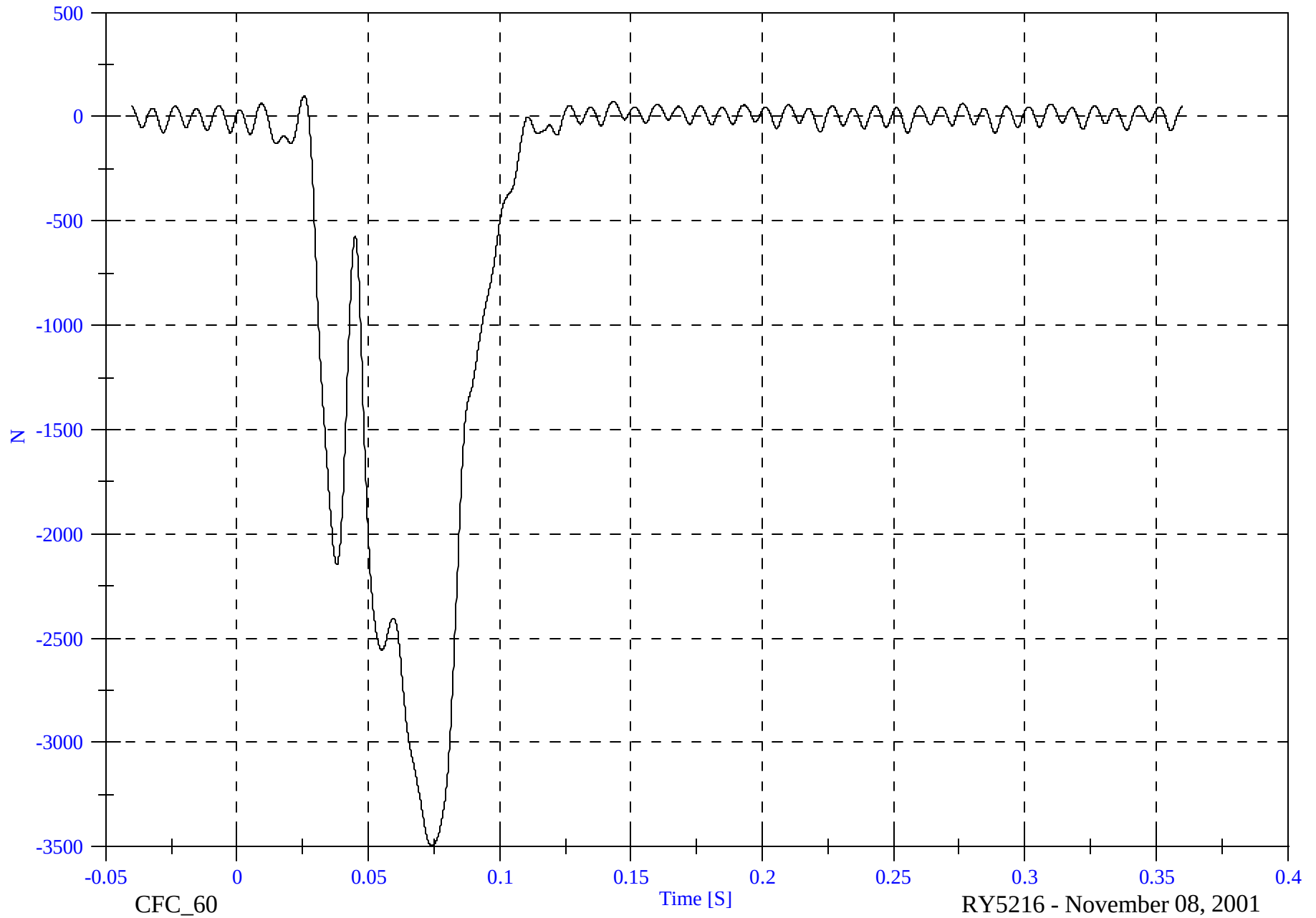
RY5216 - November 08, 2001

40 % Frontal Offset Test #10 - 2000 Nissan Altima

Barrier Load Cell B2 FX

Max: 100.2 [N] at 0.026 [S]

Min: -3495.5 [N] at 0.074 [S]



B-227

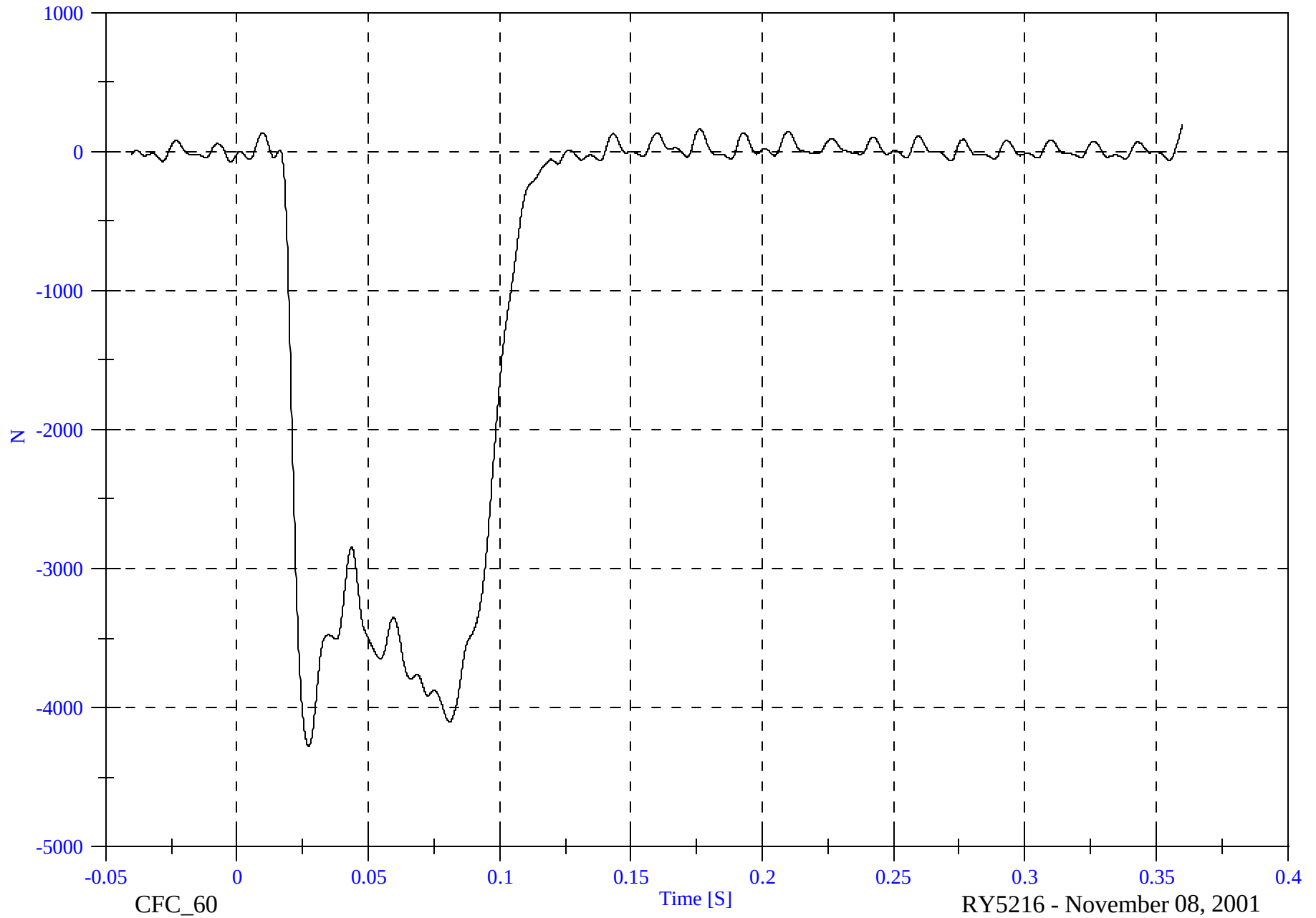
8413-66

40 % Frontal Offset Test #10 - 2000 Nissan Altima

Barrier Load Cell B3 FX

Max: 188.7 [N] at 0.360 [S]

Min: -4276.8 [N] at 0.027 [S]



B-228

8413-66

CFC_60

Time [S]

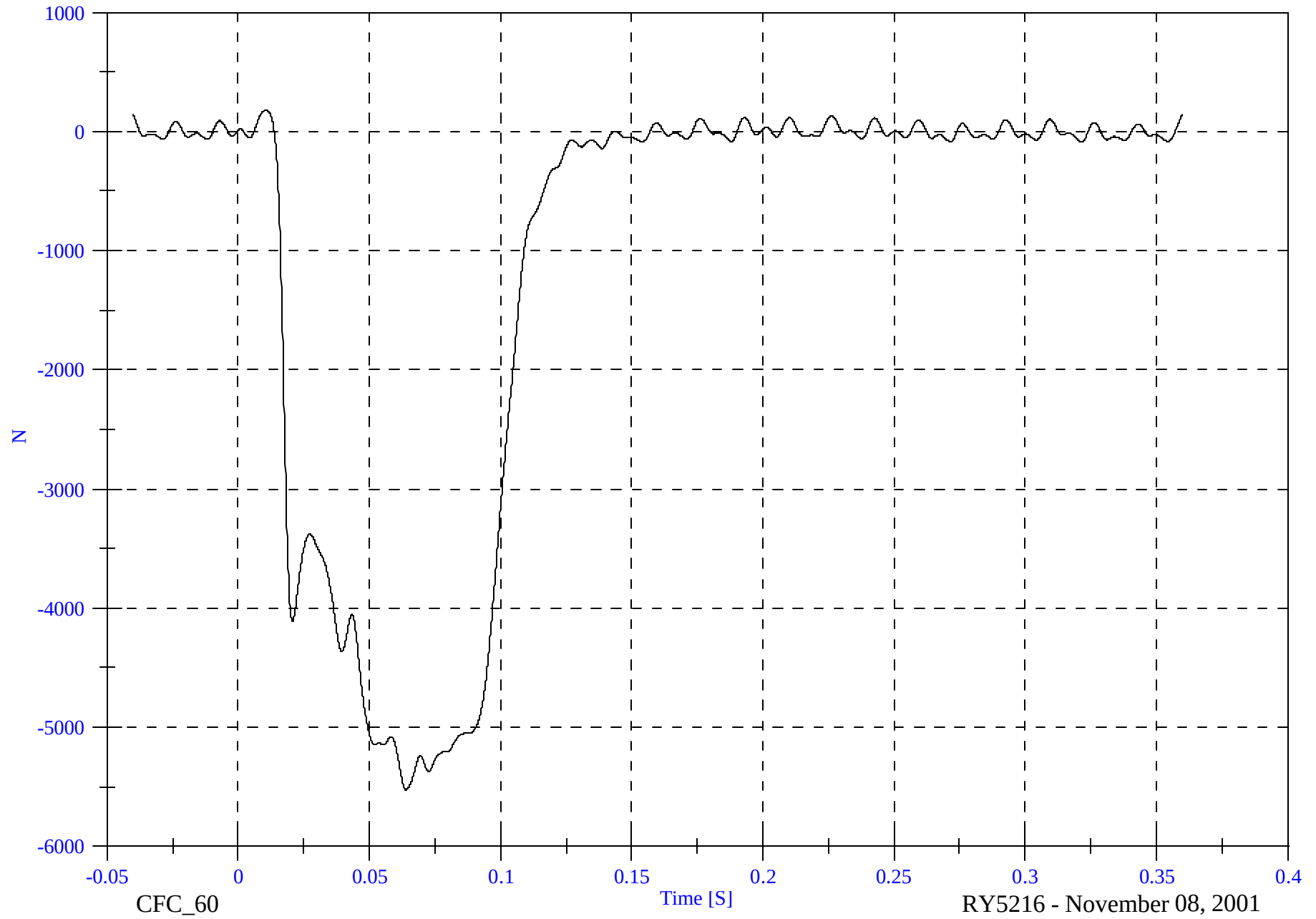
RY5216 - November 08, 2001

40 % Frontal Offset Test #10 - 2000 Nissan Altima

Barrier Load Cell B4 FX

Max: 177.4 [N] at 0.011 [S]

Min: -5523.6 [N] at 0.064 [S]



B-229

8413-66

CFC_60

Time [S]

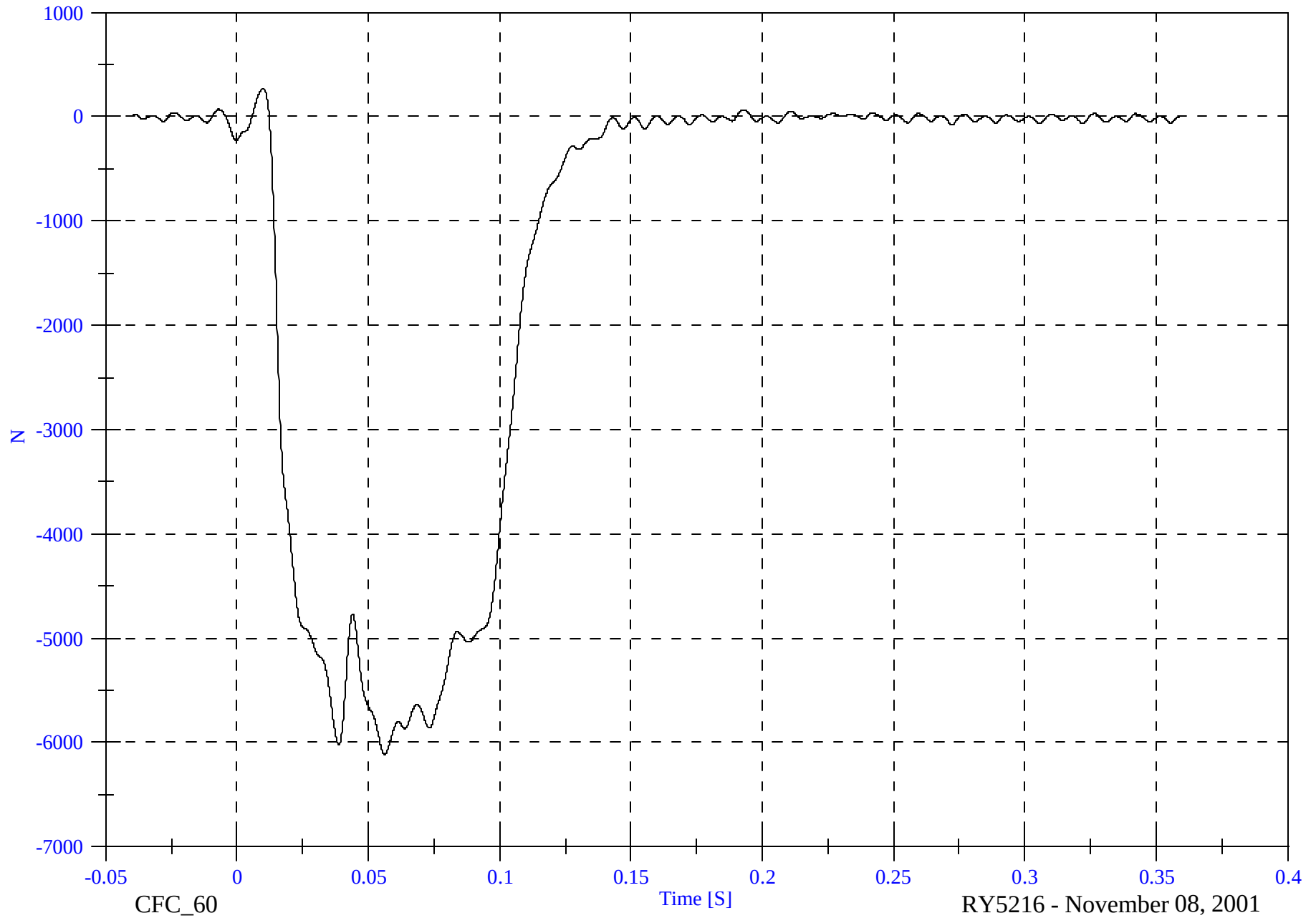
RY5216 - November 08, 2001

40 % Frontal Offset Test #10 - 2000 Nissan Altima

Barrier Load Cell B5 FX

Max: 267.9 [N] at 0.010 [S]

Min: -6115.7 [N] at 0.056 [S]



B-230

8413-66

CFC_60

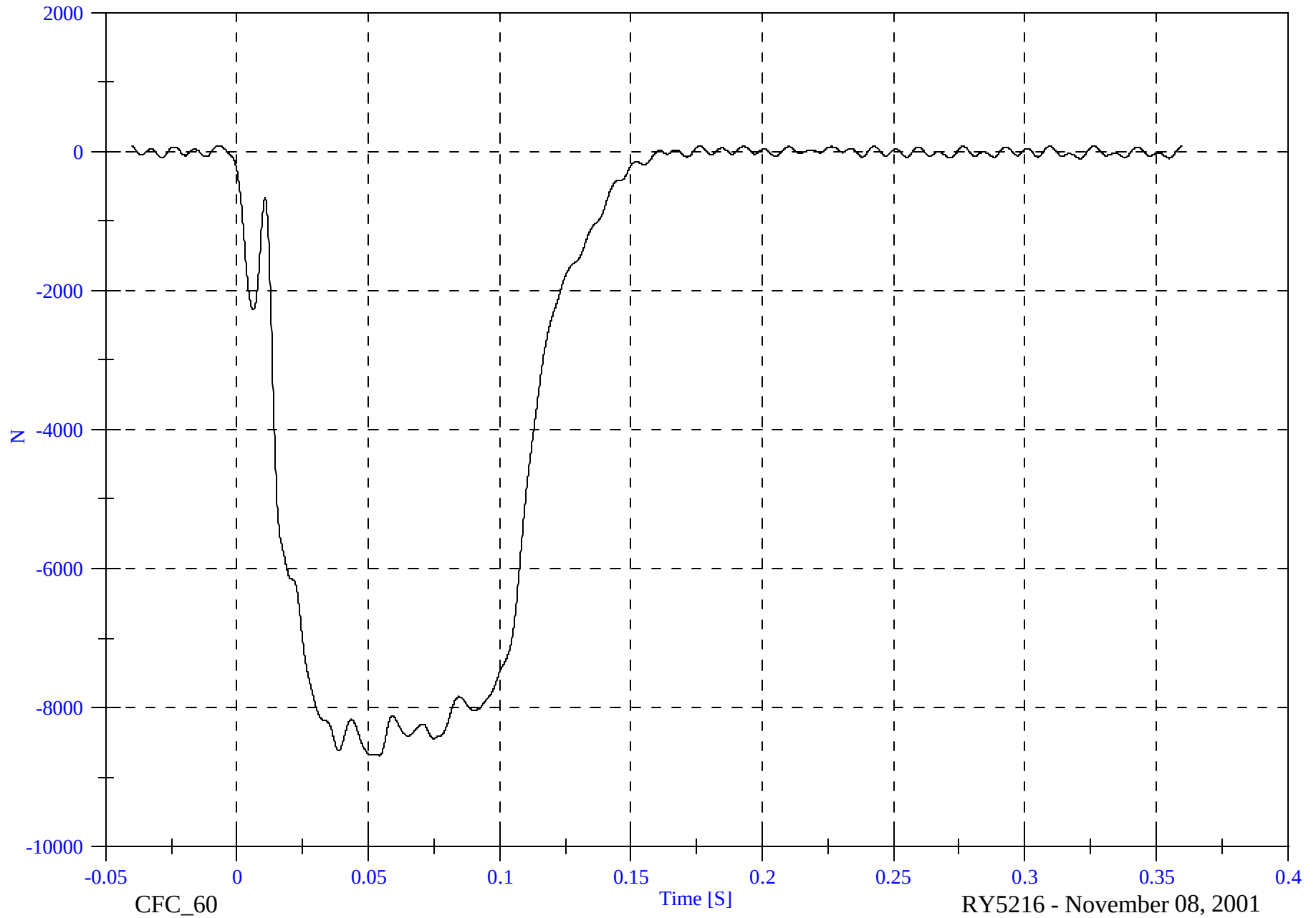
RY5216 - November 08, 2001

40 % Frontal Offset Test #10 - 2000 Nissan Altima

Barrier Load Cell B6 FX

Max: 81.7 [N] at -0.007 [S]

Min: -8686.4 [N] at 0.054 [S]



B-231

8413-66

CFC_60

Time [S]

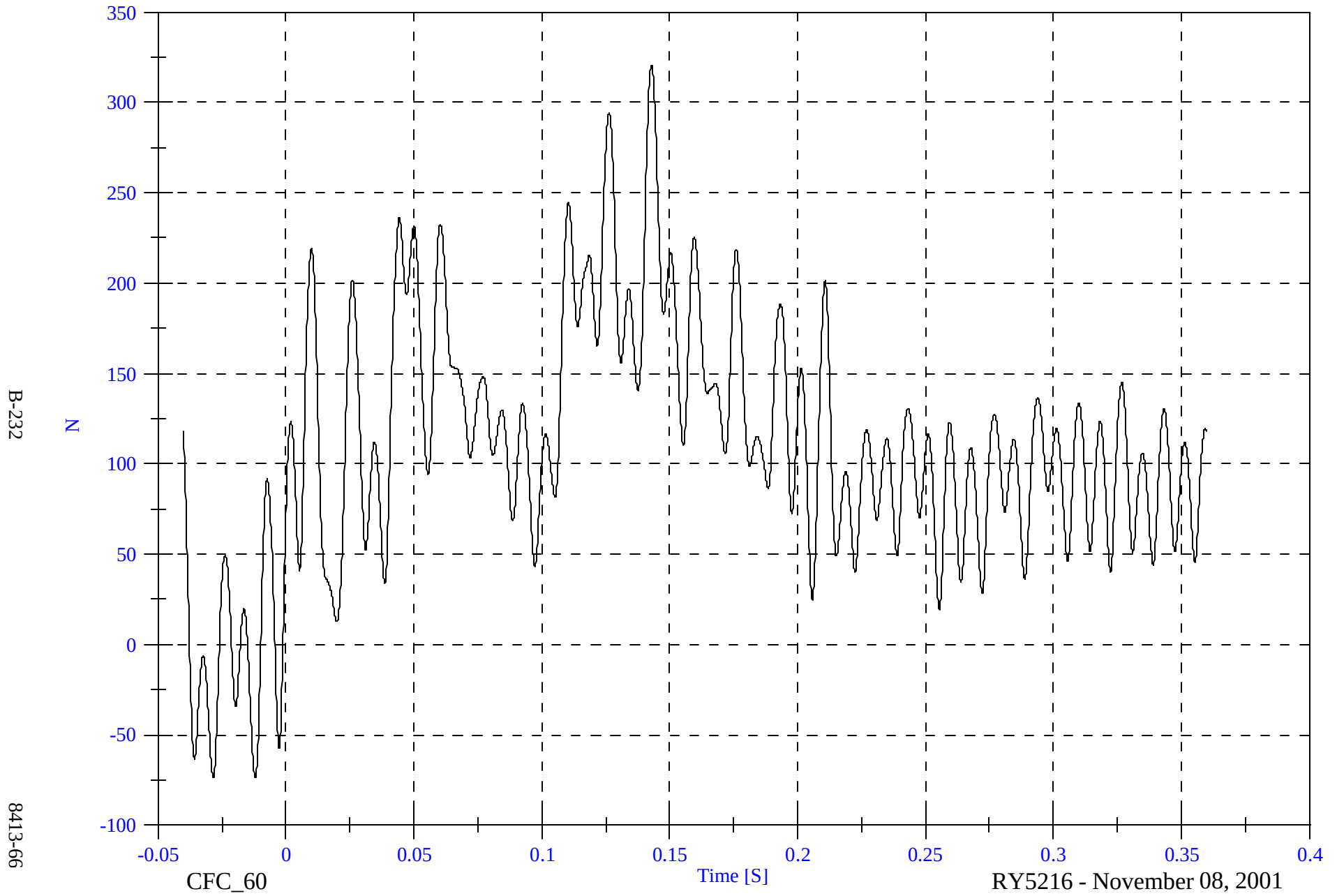
RY5216 - November 08, 2001

40 % Frontal Offset Test #10 - 2000 Nissan Altima

Max: 320.7 [N] at 0.143 [S]

Barrier Load Cell A1 FX

Min: -73.8 [N] at -0.012 [S]

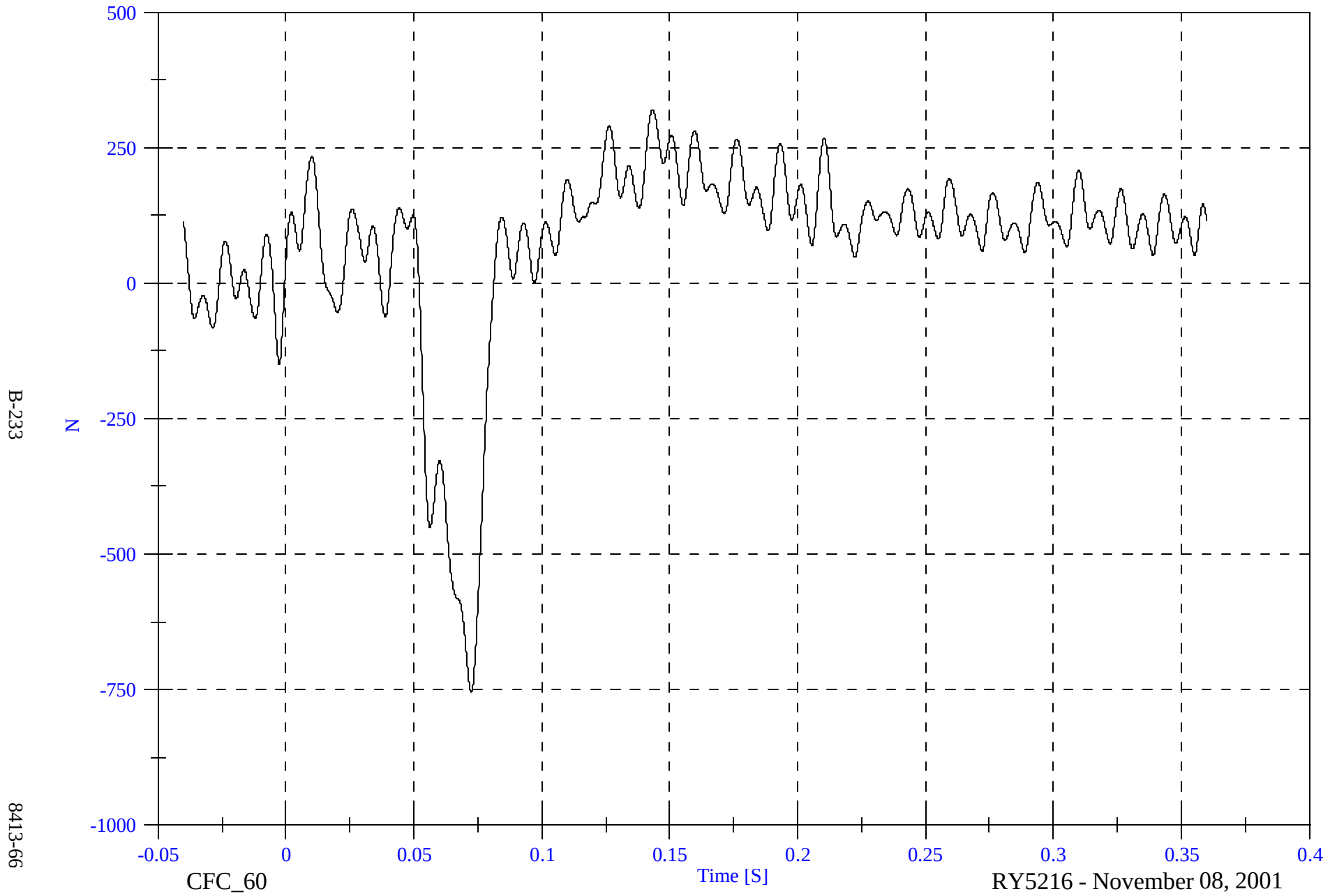


40 % Frontal Offset Test #10 - 2000 Nissan Altima

Barrier Load Cell A2 FX

Max: 319.6 [N] at 0.143 [S]

Min: -754.3 [N] at 0.072 [S]

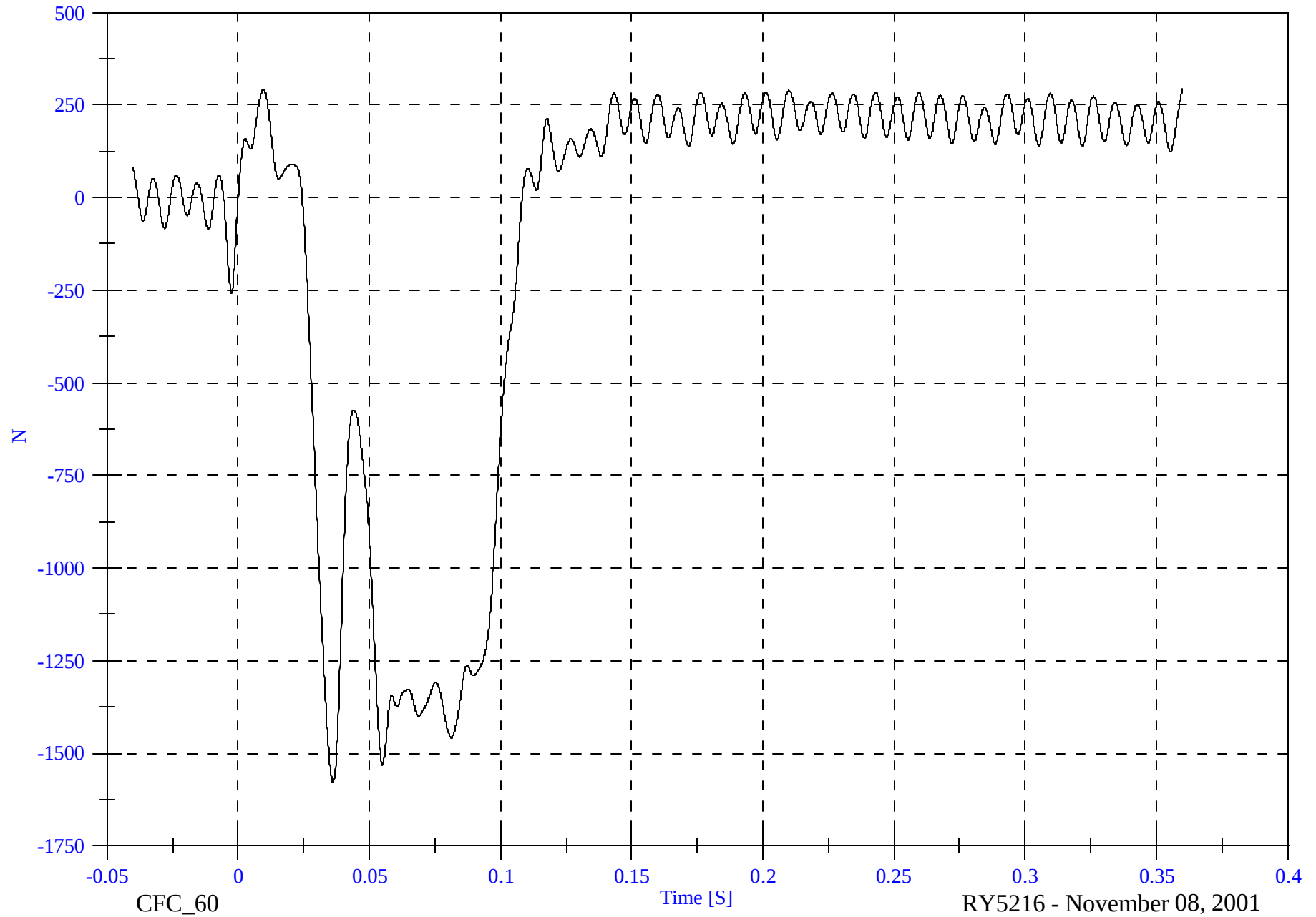


40 % Frontal Offset Test #10 - 2000 Nissan Altima

Barrier Load Cell A3 FX

Max: 293.6 [N] at 0.360 [S]

Min: -1578.7 [N] at 0.036 [S]



B-234

8413-66

CFC_60

Time [S]

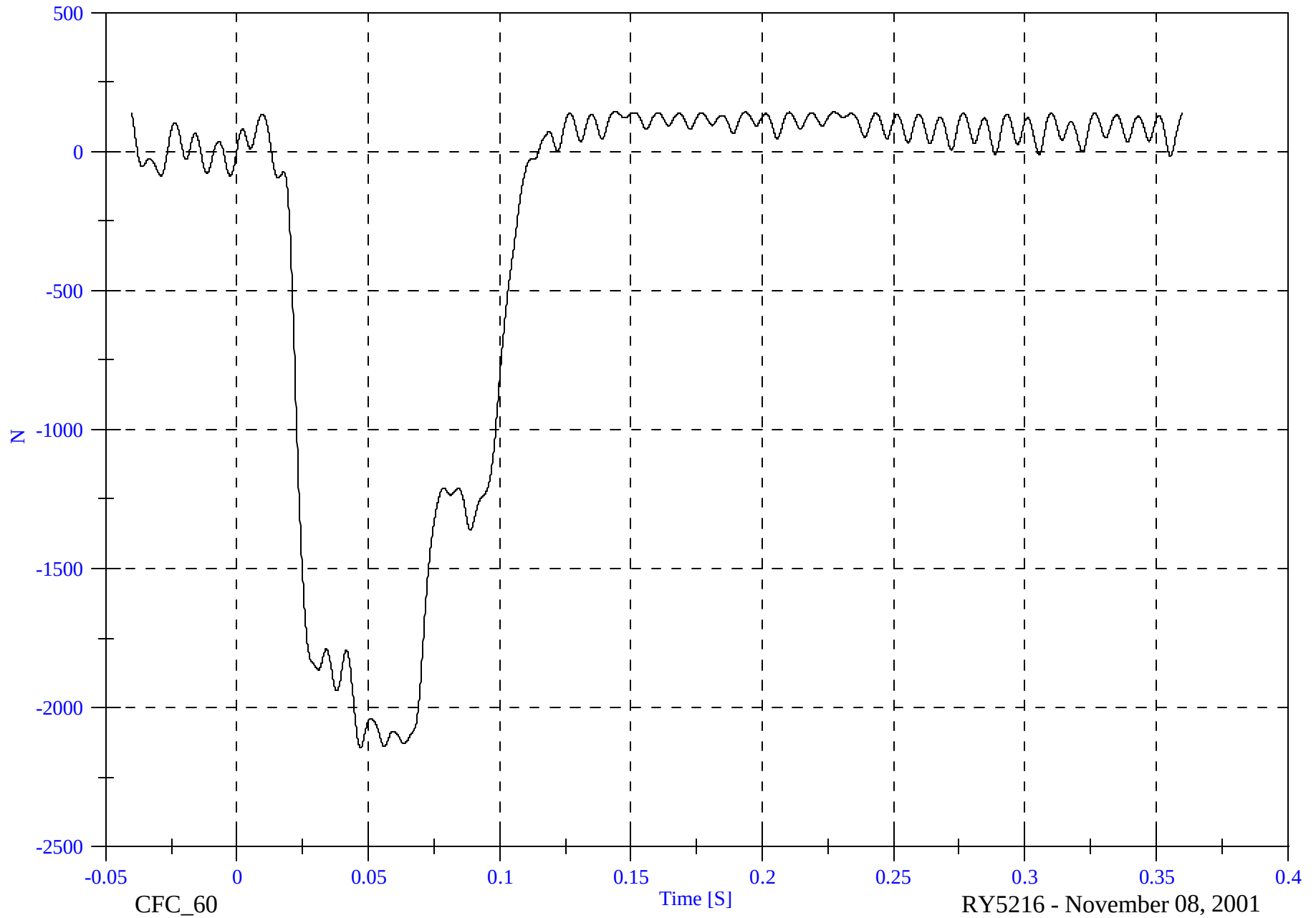
RY5216 - November 08, 2001

40 % Frontal Offset Test #10 - 2000 Nissan Altima

Barrier Load Cell A4 FX

Max: 142.3 [N] at 0.144 [S]

Min: -2144.9 [N] at 0.047 [S]



B-235

8413-66

CFC_60

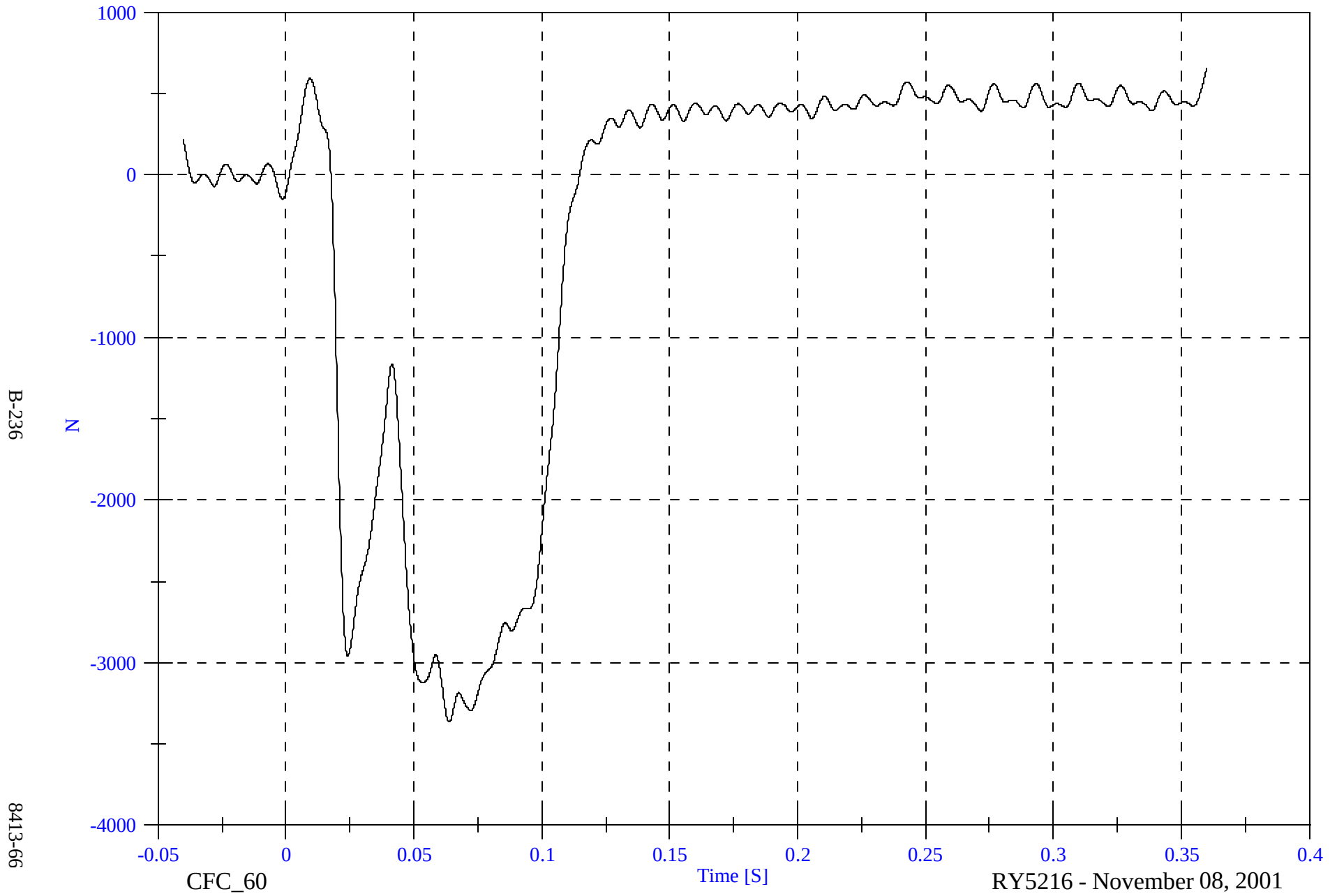
RY5216 - November 08, 2001

40 % Frontal Offset Test #10 - 2000 Nissan Altima

Barrier Load Cell A5 FX

Max: 655.5 [N] at 0.360 [S]

Min: -3366.0 [N] at 0.064 [S]

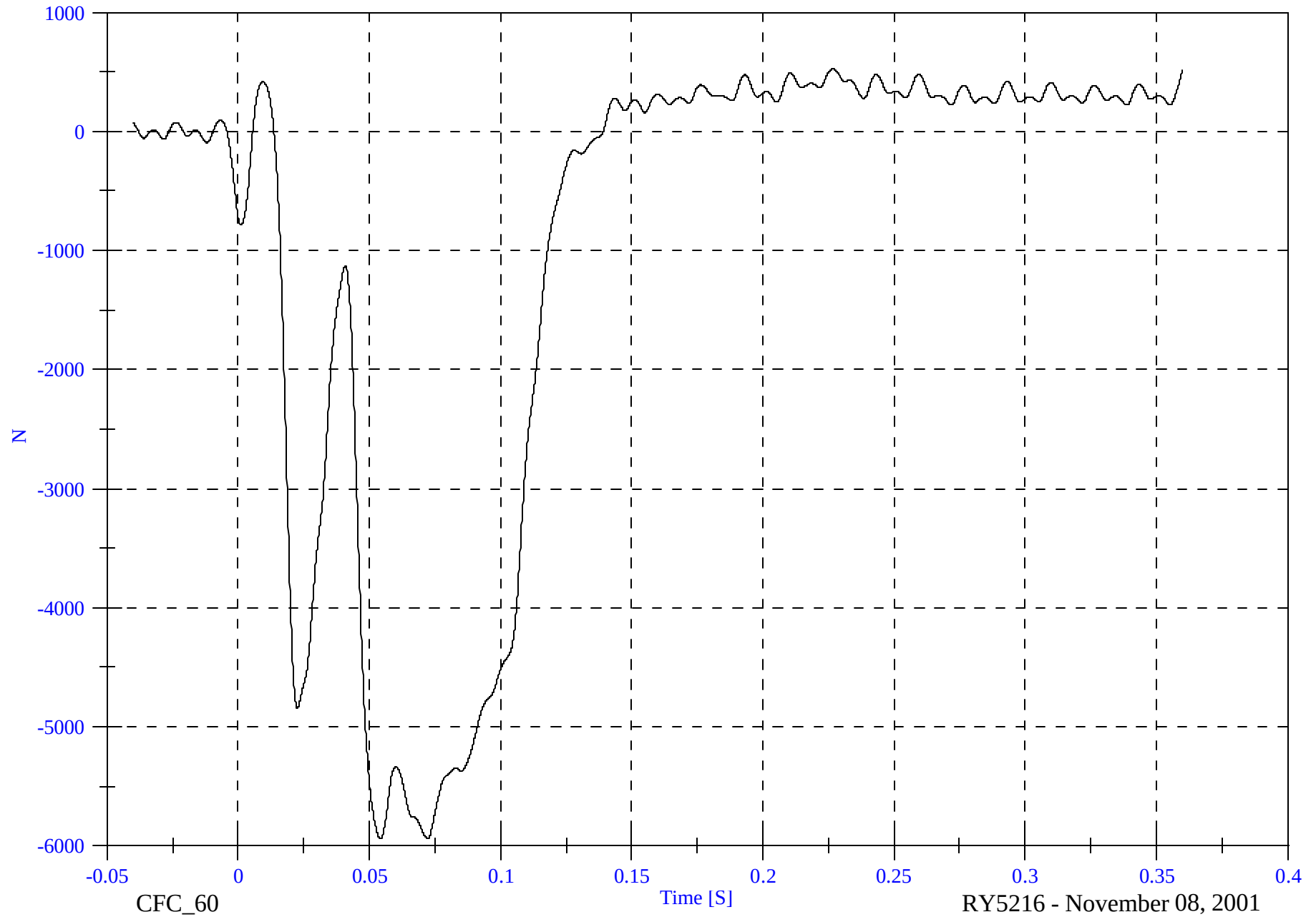


40 % Frontal Offset Test #10 - 2000 Nissan Altima

Barrier Load Cell A6 FX

Max: 522.8 [N] at 0.227 [S]

Min: -5939.1 [N] at 0.054 [S]



B-237

8413-66

CFC_60

Time [S]

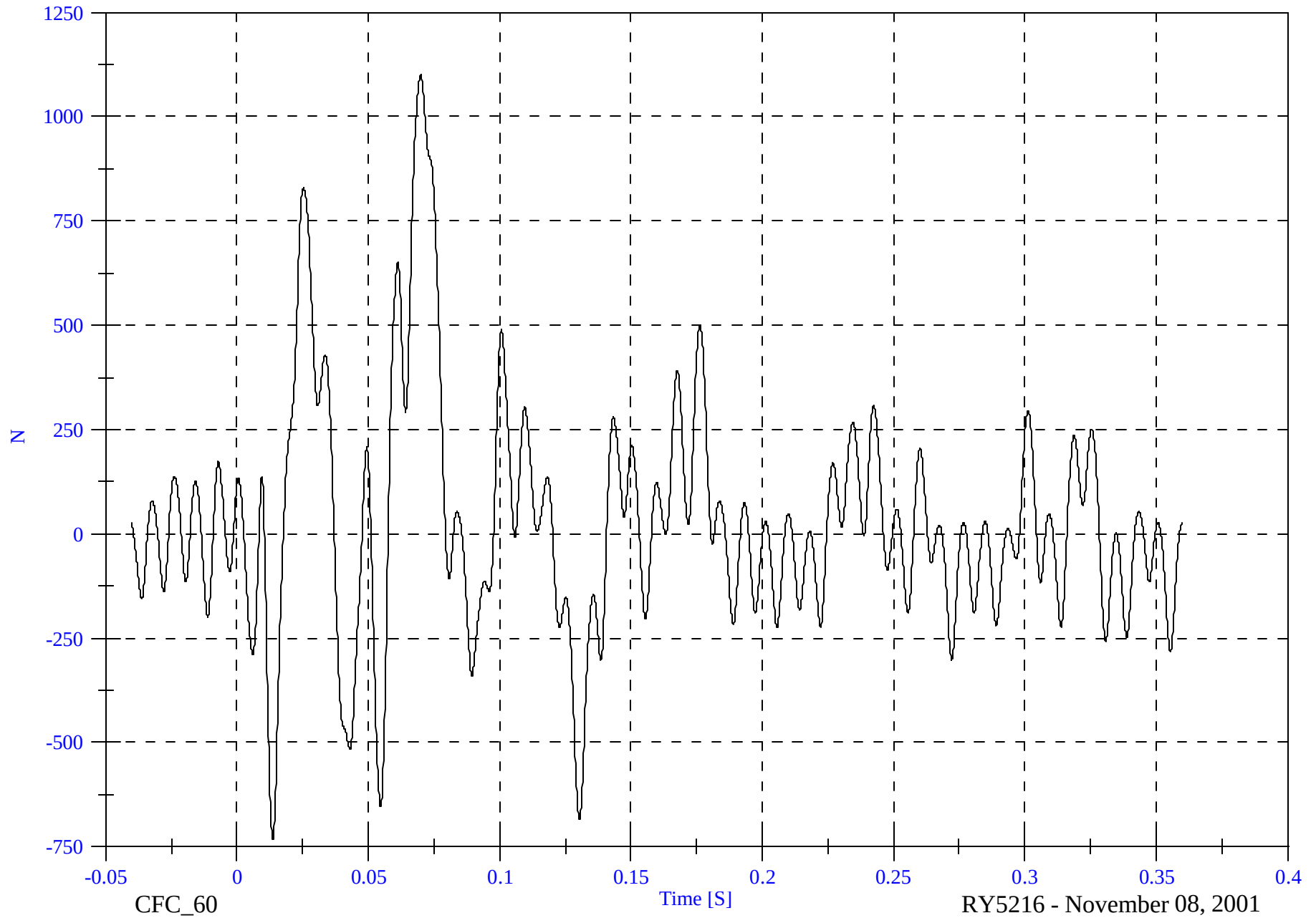
RY5216 - November 08, 2001

40 % Frontal Offset Test #10 - 2000 Nissan Altima

Barrier Load Cell UH1 TL FX

Max: 1099.9 [N] at 0.070 [S]

Min: -732.4 [N] at 0.014 [S]



B-238

8413-66

CFC_60

Time [S]

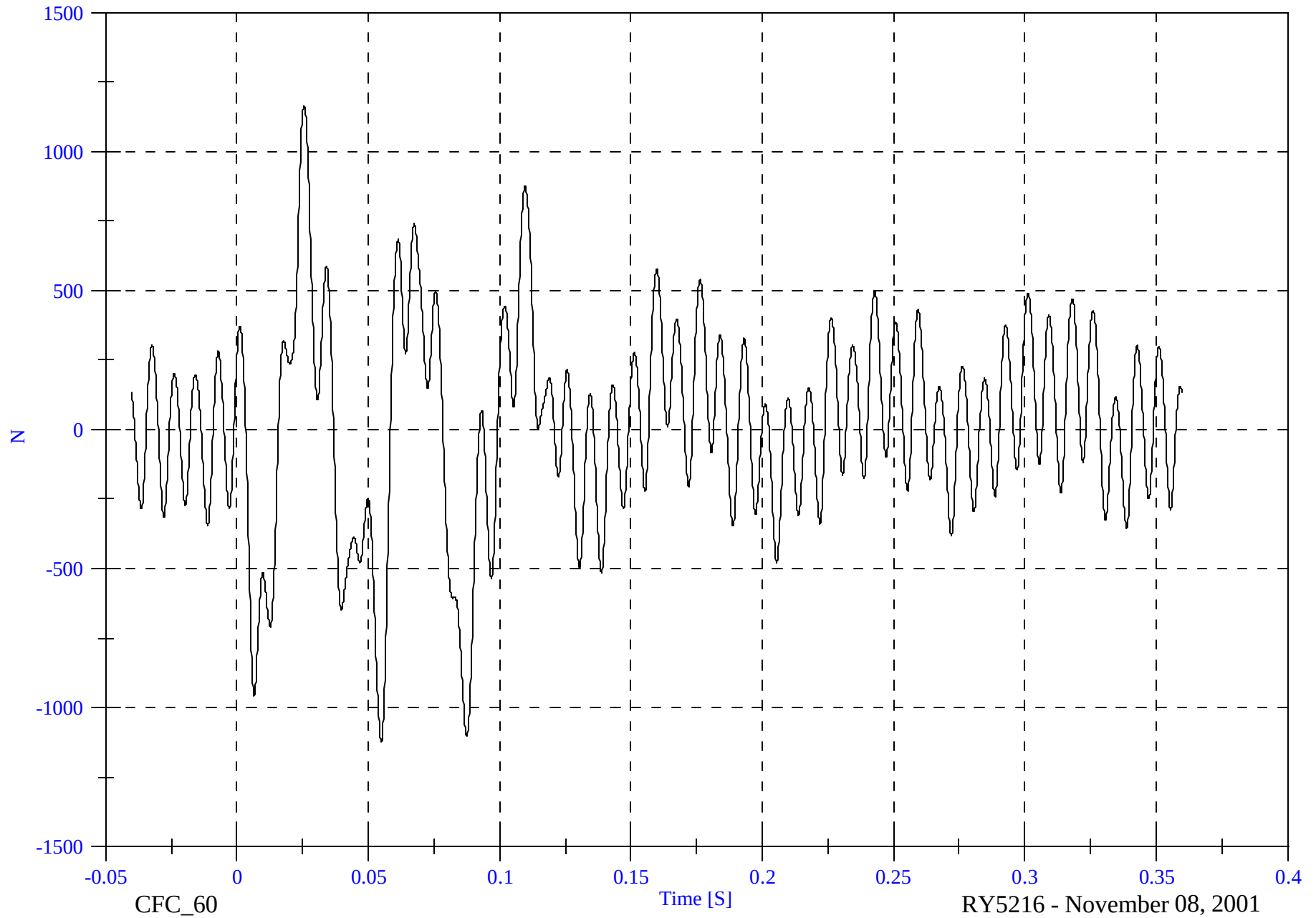
RY5216 - November 08, 2001

40 % Frontal Offset Test #10 - 2000 Nissan Altima

Barrier Load Cell UH2 TR FX

Max: 1164.2 [N] at 0.026 [S]

Min: -1121.8 [N] at 0.055 [S]



B-239

8413-66

CFC_60

Time [S]

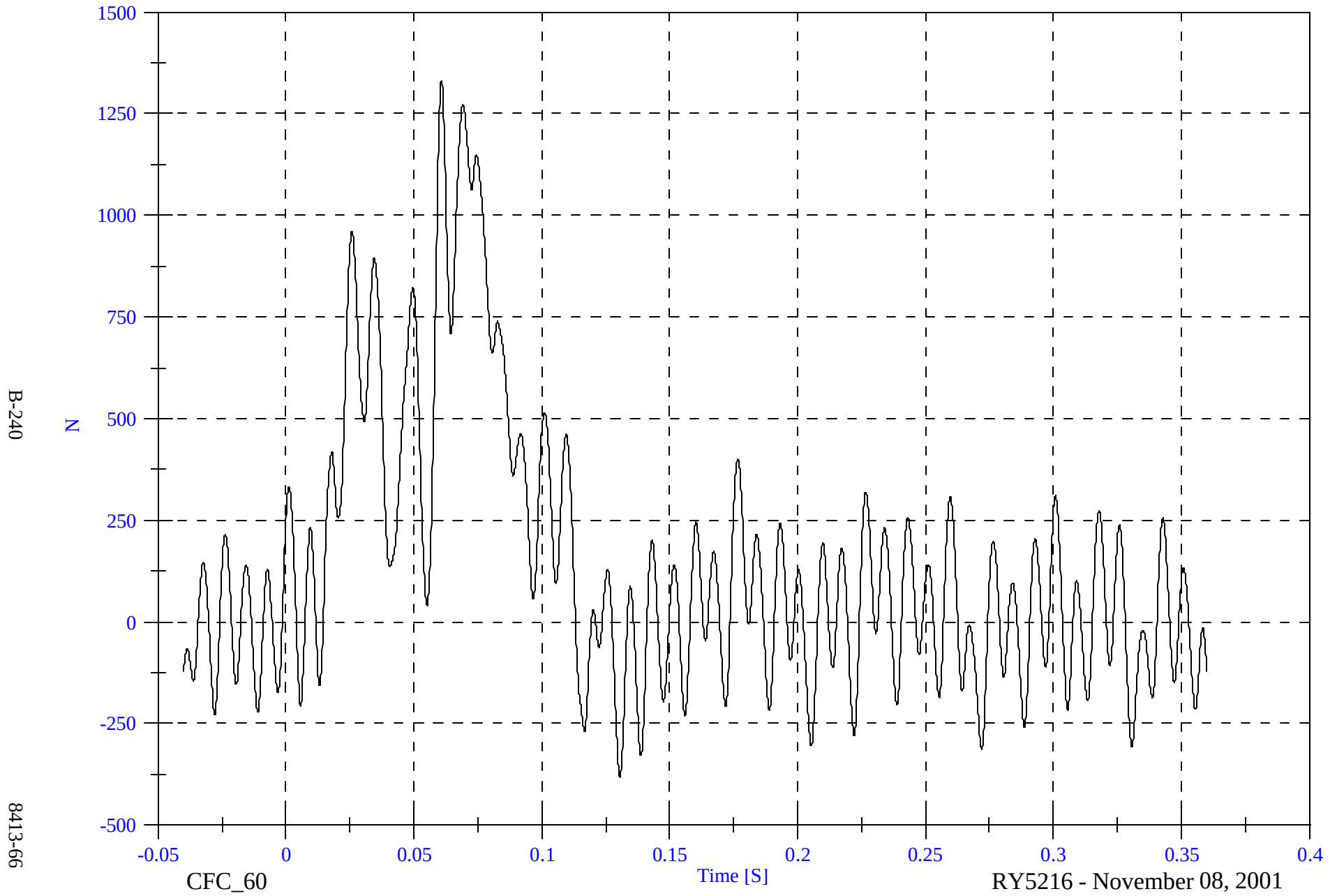
RY5216 - November 08, 2001

40 % Frontal Offset Test #10 - 2000 Nissan Altima

Barrier Load Cell UH3 CL FX

Max: 1332.0 [N] at 0.061 [S]

Min: -381.9 [N] at 0.131 [S]

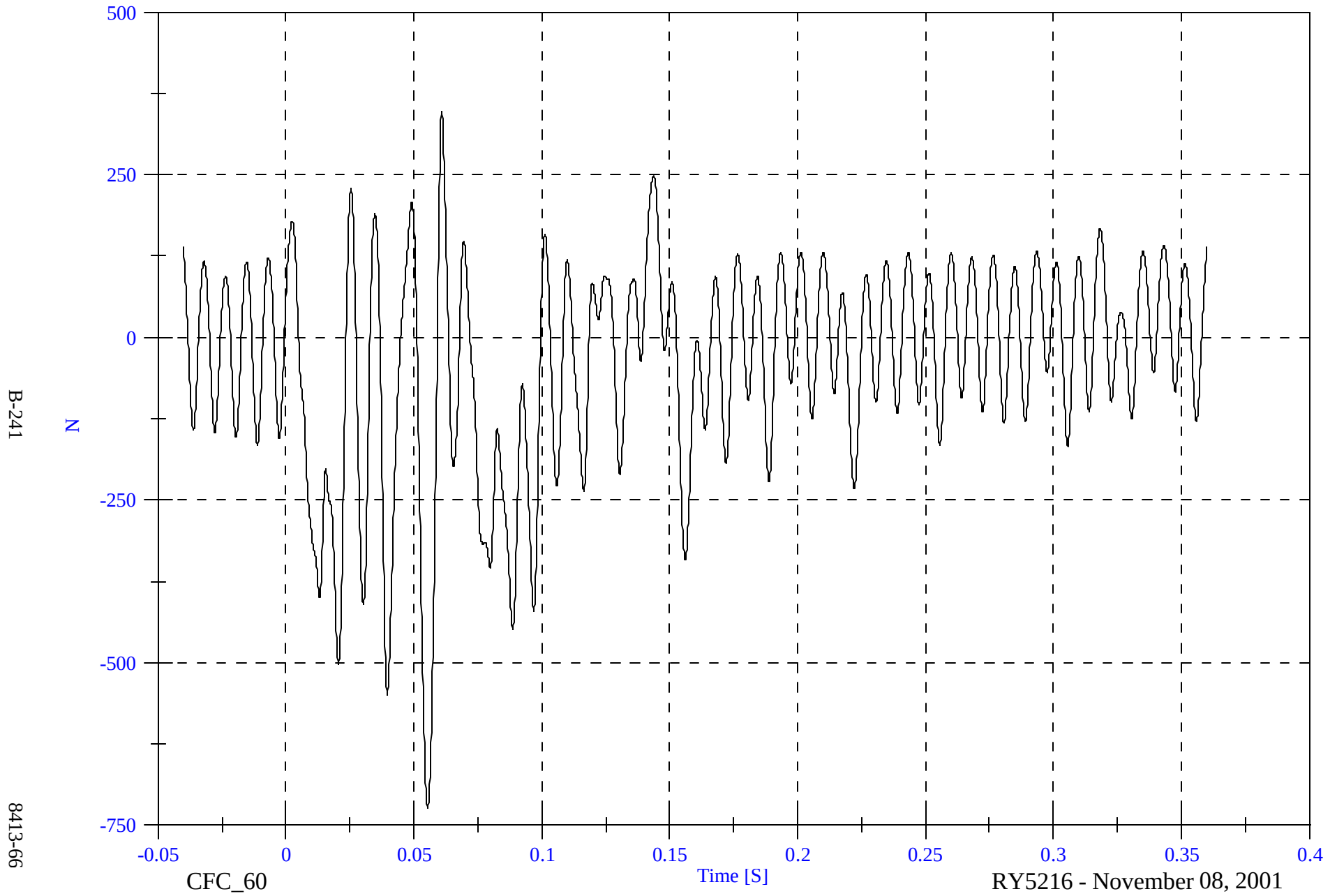


40 % Frontal Offset Test #10 - 2000 Nissan Altima

Barrier Load Cell UH4 BL FX

Max: 347.7 [N] at 0.061 [S]

Min: -724.0 [N] at 0.055 [S]

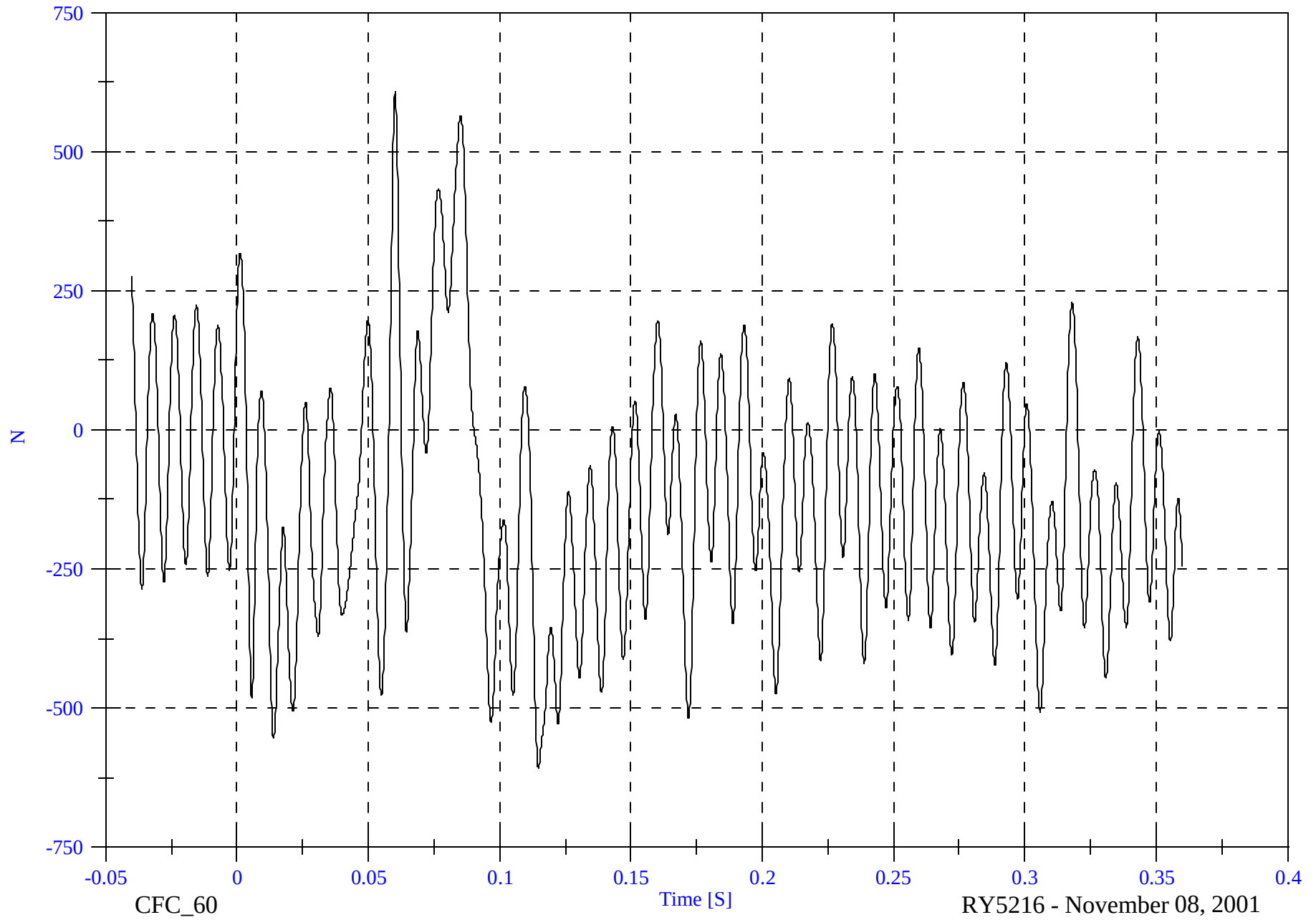


40 % Frontal Offset Test #10 - 2000 Nissan Altima

Barrier Load Cell UH5 BR FX

Max: 606.3 [N] at 0.060 [S]

Min: -606.7 [N] at 0.115 [S]



APPENDIX C

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

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

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

Dummy serial numbers and certification dates are:

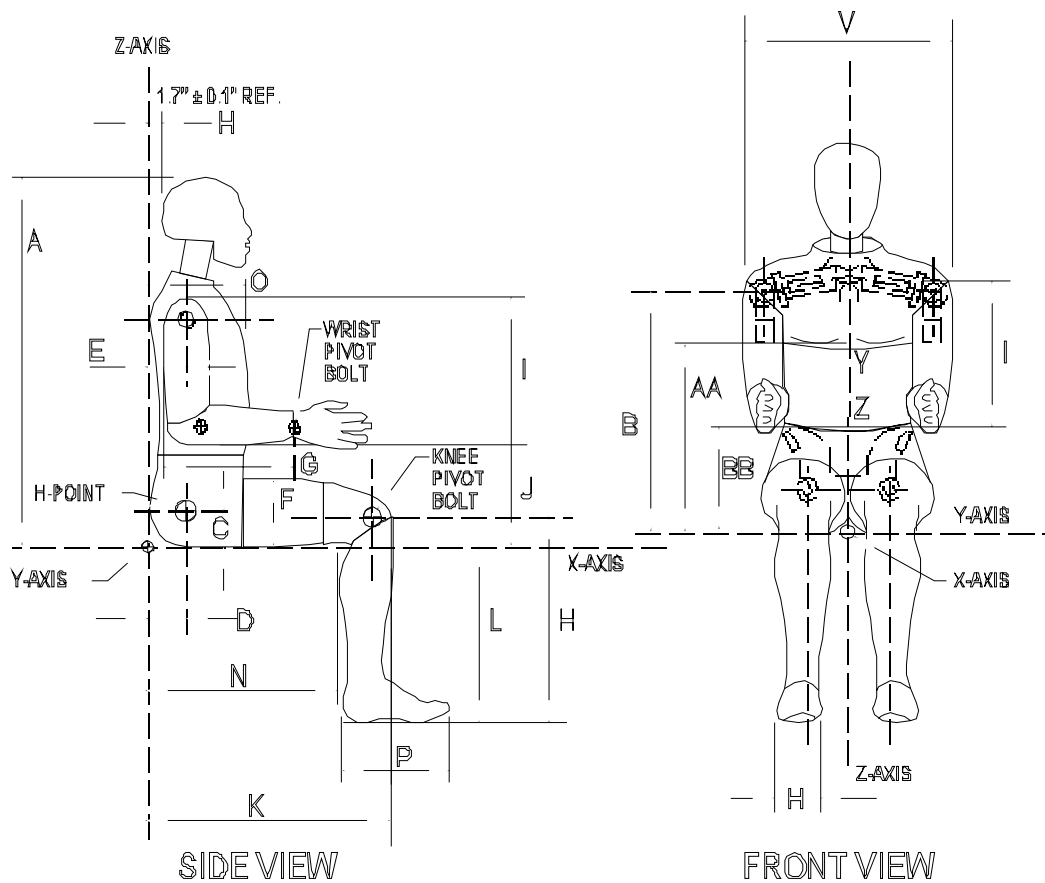
<u>Position No./Location</u>	<u>Serial No.</u>	<u>Completion Date</u>
#1/Driver	416	October 15, 2001
#2/Right Front Passenger	421	October 13, 2001

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 Inducant Testing Final Report No. 6525-V-1.

DUMMY CONFIGURATION DIMENSIONS

EXTERNAL DIMENSIONS SPECIFICATIONS



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

PART 572O
HEAD DROP TEST

Dummy Serial Number 416

Sequential Test Number 1

Date October 12, 2001

Workfile 416C12HD1

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	18.9-25.6 Deg C	21.7
Relative Humidity	10% - 70%	60.0
Peak Resultant Acceleration	250-300 G's	274.54
Peak Lateral Acceleration	15 G's Max	0.95
Is Acceleration Curve Unimodal?	YES	YES

Remarks:

Laboratory Technician: B. Swiecicki

PART 572O
NECK FLEXION TEST

Dummy Serial Number	<u>416</u>	
Sequential Test Number	<u>1</u>	
Date	<u>October 13, 2001</u>	6 Axis Neck Transducer
Workfile	<u>416C12NF3</u>	

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature		20.6-22.2 Deg C	21.7
Relative Humidity		10% - 70%	61.0
Impact Velocity		6.89 - 7.13 m/s	6.99
Integrated	10 ms	2.0 – 2.5 m/s	2.34
Pendulum	20 ms	4.0 – 5.0 m/s	4.82
Velocity	30 ms	5.8 – 7.0 m/s	6.98
Peak D-Plane Rotation		77 – 91 Deg	83.34
Peak Moment During Rotation Interval		69 – 83 Nm	80.17
Positive Moment Decay Time to 10 Nm Level		80- 100 ms	87.20

Remarks:

Laboratory Technician: B. Swiecicki

PART 572O
NECK EXTENSION TEST

Dummy Serial Number	<u>416</u>	
Sequential Test Number	<u>1</u>	
Date	<u>October 15, 2001</u>	6 Axis Neck Transducer
Workfile	<u>416C12NE2</u>	

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature		20.6-22.2 Deg C	21.7
Relative Humidity		10% - 70%	41.0
Impact Velocity		5.95 – 6.19 m/s	6.14
Integrated Pendulum Velocity	10 ms	1.5 – 1.9 m/s	1.77
	20 ms	3.1 – 3.9 m/s	3.52
	30 ms	4.6 – 5.6 m/s	5.18
Peak D-Plane Rotation		99 – 114 Deg	105.74
Peak Moment During Rotation Interval		-53 - -65 Nm	-59.35
Positive Moment Decay Time to -10 Nm Level		94 - 114 ms	103.36

Remarks:

Laboratory Technician: B. Swiecicki

PART 572O
THORAX IMPACT TEST

Dummy Serial Number	<u>416</u>
Sequential Test Number	<u>1</u>
Date	<u>October 15, 2001</u>
Workfile	<u>416C12TH1</u>

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	20.6 – 22.2 Deg C	21.7
Relative Humidity	10% - 70%	41.0
Pendulum Velocity	6.59 – 6.83 m/s	6.65
Maximum Deflection	50 – 58 mm	56.6
Maximum Resistive Force	3900 – 4400 N	4380.0
Internal Hysteresis	69 - 85 %	73.9
Peak Force During 18 to 50 mm Deflection	≤ 105%	94

Remarks:

Laboratory Technician:	<u>B. Swiecicki</u>
------------------------	---------------------

PART 5720
KNEE IMPACT TEST

Dummy Serial Number 416

Sequential Test Number 1

Date October 12, 2001

Workfile 416C12LK1/416C12RK1

TEST PARAMETER	SPECIFICATION	TEST RESULTS
LEFT KNEE		
Temperature	18.9 – 25.6 Deg C	21.7
Relative Humidity	10% - 70%	63.0
Probe Velocity	2.07 – 2.13 m/s	2.10
Peak Knee Impact Force	3450 – 4060 N	3984.3
RIGHT KNEE		
Temperature	18.9 – 25.6 Deg C	21.7
Relative Humidity	10% - 70%	62.0
Probe Velocity	2.07 – 2.13 m/s	2.10
Peak Knee Impact Force	3450 – 4060 N	3784.0

Remarks:

Laboratory Technician: B. Swiecicki

PART 572O
KNEE SLIDER TEST

Dummy Serial Number	<u>416</u>
Sequential Test Number	<u>1</u>
Date	<u>October 12, 2001</u>
Workfile	<u>416C12LS1/416C12RS1</u>

TEST PARAMETER	SPECIFICATION	TEST RESULTS
LEFT KNEE		
Temperature	18.9 – 25.6 Deg C	21.7
Relative Humidity	10% - 70%	60.0
Pendulum Velocity	2.70 – 2.80 m/s	2.70
Peak Displacement	12.7 – 15.5 mm	14.3
RIGHT KNEE		
Temperature	18.9 – 25.6 Deg C	21.7
Relative Humidity	10% - 70%	65.0
Probe Velocity	2.70 – 2.80 m/s	2.70
Peak Knee Impact Force	12.7 – 15.5 mm	14.3

Remarks:

Laboratory Technician:	<u>B. Swiecicki</u>
------------------------	---------------------

PART 572O
EXTERNAL DIMENSIONS

Dummy Serial Number 416
Sequential Test Number 1
Date October 15, 2001

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Total Sitting Height	A	774.7 – 800.1 mm	782.32
Shoulder Pivot Height	B	431.8 – 457.2 mm	447.04
H-Point Height	C	81.3 – 86.3 mm	83.82
H-Point from Backline	D	144.8 – 149.8 mm	149.86
Shoulder Pivot from Backline	E	68.6 – 83.8 mm	73.66
Thigh Clearance	F	119.4 – 134.6 mm	129.54
Back of Elbow to Wrist Pivot	G	243.9 – 259.1 mm	256.54
Skull Cap to Backline	H	40.7 – 45.7 mm	45.72
Shoulder - Elbow Length	I	276.8 – 297.2 mm	294.64
Elbow Rest Height	J	182.8 – 203.2 mm	190.5
Buttock Knee Length	K	520.7 – 546.1 mm	546.1
Popliteal Height	L	355.6 – 376 mm	373.38
Knee Pivot Height	M	393.7 – 419.1 mm	403.86
Buttock Popliteal Length	N	414 – 439.4 mm	419.1
Chest Depth	O	175.3 – 190.5 mm	185.42
Foot Length	P	218.5 – 233.7 mm	228.6
Buttock to Knee Pivot Length	R	457.2 – 482.6 mm	467.36
Head Breadth	S	137.1 – 147.3 mm	142.24
Head Depth	T	177.8 – 188 mm	185.42
Hip Breadth	U	299.7 – 314.9 mm	307.34
Shoulder Breadth	V	350.5 – 365.7 mm	353.06
Foot Breadth	W	78.8 – 94 mm	88.9
Head Circumference	X	528.3 – 548.7 mm	538.48
Chest Circumference (With Jacket)	Y	850.9 – 881.3 mm	863.6
Waist Circumference	Z	759.5 – 789.9 mm	777.24
Location for Chest Circumference	AA	299.7 – 309.9 mm	304.8
Location for Waist Circumference	BB	160 – 170.2 mm	165.1

Remarks:

Laboratory Technician:

B. Swiecicki

PART 572O

HEAD DROP TEST

Dummy Serial Number	421
Sequential Test Number	1
Date	October 12, 2001
Workfile	421C05HD1

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	18.9-25.6 Deg C	21.7
Relative Humidity	10% - 70%	64.0
Peak Resultant Acceleration	250-300 G's	264.91
Peak Lateral Acceleration	15 G's Max	6.46
Is Acceleration Curve Unimodal?	YES	YES

Remarks:

Laboratory Technician: B. Swiecicki

PART 572O
NECK FLEXION TEST

Dummy Serial Number	<u>421</u>	
Sequential Test Number	<u>1</u>	
Date	<u>October 12, 2001</u>	6 Axis Neck Transducer
Workfile	<u>421C05NF2</u>	

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature		20.6-22.2 Deg C	21.7
Relative Humidity		10% - 70%	64.0
Impact Velocity		6.89 - 7.13 m/s	7.12
Integrated	10 ms	2.0 – 2.5 m/s	2.30
Pendulum	20 ms	4.0 – 5.0 m/s	4.63
Velocity	30 ms	5.8 – 7.0 m/s	6.85
Peak D-Plane Rotation		77 – 91 Deg	85.82
Peak Moment During Rotation Interval		69 – 83 Nm	78.19
Positive Moment Decay Time to 10 Nm Level		80- 100 ms	89.92

Remarks:

Laboratory Technician: B. Swiecicki

PART 572O
NECK EXTENSION TEST

Dummy Serial Number	<u>421</u>	
Sequential Test Number	<u>1</u>	
Date	<u>October 13, 2001</u>	6 Axis Neck Transducer
Workfile	<u>421C05NE3</u>	

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature		20.6-22.2 Deg C	21.7
Relative Humidity		10% - 70%	65.0
Impact Velocity		5.95 – 6.19 m/s	6.16
Integrated Pendulum Velocity	10 ms	1.5 – 1.9 m/s	1.71
	20 ms	3.1 – 3.9 m/s	3.48
	30 ms	4.6 – 5.6 m/s	5.21
Peak D-Plane Rotation		99 – 114 Deg	107.28
Peak Moment During Rotation Interval		-53 - -65 Nm	-62.12
Positive Moment Decay Time to -10 Nm Level		94 - 114 ms	103.36

Remarks:

Laboratory Technician: B. Swiecicki

PART 572O
THORAX IMPACT TEST

Dummy Serial Number	421
Sequential Test Number	1
Date	October 15, 2001
Workfile	421C05TH2

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	20.6 – 22.2 Deg C	21.7
Relative Humidity	10% - 70%	41.0
Pendulum Velocity	6.59 – 6.83 m/s	6.80
Maximum Deflection	50 – 58 mm	51.3
Maximum Resistive Force	3900 – 4400 N	4179
Internal Hysteresis	69 - 85 %	73.1
Peak Force During 18 to 50 mm Deflection	≤ 105%	102

Remarks:

Laboratory Technician:	B. Swiecicki
------------------------	--------------

PART 5720
KNEE IMPACT TEST

Dummy Serial Number 421

Sequential Test Number 1

Date October 12, 2001

Workfile 421C05LK1/421C05RK1

TEST PARAMETER	SPECIFICATION	TEST RESULTS
LEFT KNEE		
Temperature	18.9 – 25.6 Deg C	21.7
Relative Humidity	10% - 70%	62.0
Probe Velocity	2.07 – 2.13 m/s	2.09
Peak Knee Impact Force	3450 – 4060 N	4052.6
RIGHT KNEE		
Temperature	18.9 – 25.6 Deg C	21.7
Relative Humidity	10% - 70%	61.0
Probe Velocity	2.07 – 2.13 m/s	2.13
Peak Knee Impact Force	3450 – 4060 N	4057.2

Remarks:

Laboratory Technician: B. Swiecicki

PART 572O
KNEE SLIDER TEST

Dummy Serial Number	421	
Sequential Test Number	1	
Date	October 12, 2001	
Workfile	421C05LS1/421C05RS1	

TEST PARAMETER	SPECIFICATION	TEST RESULTS
LEFT KNEE		
Temperature	18.9 – 25.6 Deg C	21.7
Relative Humidity	10% - 70%	65.0
Pendulum Velocity	2.70 – 2.80 m/s	2.70
Peak Displacement	12.7 – 15.5 mm	14.4
RIGHT KNEE		
Temperature	18.9 – 25.6 Deg C	21.7
Relative Humidity	10% - 70%	68.0
Probe Velocity	2.70 – 2.80 m/s	2.70
Peak Knee Impact Force	12.7 – 15.5 mm	14.5

Remarks:

Laboratory Technician:	B. Swiecicki	
------------------------	--------------	--

PART 572O
EXTERNAL DIMENSIONS

Dummy Serial Number 421
Sequential Test Number 1
Date October 13, 2001

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Total Sitting Height	A	774.7 – 800.1 mm	784.86
Shoulder Pivot Height	B	431.8 – 457.2 mm	447.04
H-Point Height	C	81.3 – 86.3 mm	83.82
H-Point from Backline	D	144.8 – 149.8 mm	144.78
Shoulder Pivot from Backline	E	68.6 – 83.8 mm	73.66
Thigh Clearance	F	119.4 – 134.6 mm	134.62
Back of Elbow to Wrist Pivot	G	243.9 – 259.1 mm	256.54
Skull Cap to Backline	H	40.7 – 45.7 mm	45.72
Shoulder - Elbow Length	I	276.8 – 297.2 mm	281.94
Elbow Rest Height	J	182.8 – 203.2 mm	185.42
Buttock Knee Length	K	520.7 – 546.1 mm	535.94
Popliteal Height	L	355.6 – 376 mm	373.38
Knee Pivot Height	M	393.7 – 419.1 mm	408.94
Buttock Popliteal Length	N	414 – 439.4 mm	429.26
Chest Depth	O	175.3 – 190.5 mm	180.34
Foot Length	P	218.5 – 233.7 mm	228.6
Buttock to Knee Pivot Length	R	457.2 – 482.6 mm	469.9
Head Breadth	S	137.1 – 147.3 mm	142.24
Head Depth	T	177.8 – 188 mm	185.42
Hip Breadth	U	299.7 – 314.9 mm	307.34
Shoulder Breadth	V	350.5 – 365.7 mm	353.06
Foot Breadth	W	78.8 – 94 mm	88.9
Head Circumference	X	528.3 – 548.7 mm	546.1
Chest Circumference (With Jacket)	Y	850.9 – 881.3 mm	871.22
Waist Circumference	Z	759.5 – 789.9 mm	764.54
Location for Chest Circumference	AA	299.7 – 309.9 mm	304.8
Location for Waist Circumference	BB	160 – 170.2 mm	165.1

Remarks:

Laboratory Technician:

B. Swiecicki

APPENDIX D

DUMMY, VEHICLE AND LABORATORY INSTRUMENT CALIBRATION

INSTRUMENT CALIBRATION FOR PASSENGER DUMMY
(6 Month Calibration Minimum)

DRIVER DUMMY (S/N 416)		Manufacturer	Serial #	Calibration	
				Last	Next
Head X Arm	Y	ENTRAN	AC-98H14-K20	10/05/01	04/05/02
	Z	ENDEVCO	AC-P23142	09/24/01	03/25/02
Head Y Arm	X	ENTRAN	AC-98H10-F10	10/08/01	04/08/02
	Z	ENDEVCO	AC-P23303	10/05/01	04/05/02
Head Z Arm	X	ENTRAN	AC-98H10-F19	10/05/01	04/05/02
	Y	ENTRAN	AC-98H13-F07	10/05/01	04/05/02
Head CG	X	ENTRAN	AC-98H13-F01	10/08/01	04/08/02
	Y	ENTRAN	AC-98H10-F12	10/08/01	04/08/02
	Z	ENTRAN	AC-99H12-F30	10/08/01	04/08/02
Head CG	X (R)	ENTRAN	AC-99H12-F06	10/08/01	04/08/02
	Y (R)	ENTRAN	AC-98H13-F04	10/08/01	04/08/02
	Z (R)	ENDEVCO	AC-DJ64J	10/08/01	04/08/02
Neck Load Cell	X	DENTON	LC-1039FX	05/24/01	11/22/01
	Y	DENTON	LC-1039FY	05/24/01	11/22/01
	Z	DENTON	LC-1039FZ	05/24/01	11/22/01
Neck Moment	X	DENTON	LC-1039MX	05/24/01	11/22/01
	Y	DENTON	LC-1039MY	05/24/01	11/22/01
	Z	DENTON	LC-1039MZ	05/24/01	11/22/01
Chest	X	ENTRAN	AC-99H12-F15	10/05/01	04/05/02
	Y	ENDEVCO	AC-AAMD5	10/05/01	04/05/02
	Z	ENTRAN	AC-99H12-F08	10/05/01	04/05/02
Chest	X (R)	ENDEVCO	AC-J19868	10/05/01	04/05/02
	Y (R)	ENDEVCO	AC-AJ7R1	10/05/01	04/05/02
	Z (R)	ENDEVCO	AC-DC33J	10/05/01	04/05/02
Chest Deflection Gauge		SERVO	DS-416	10/12/01	04/12/02
Pelvic	X	ENDEVCO	AC-J19547	10/05/01	04/05/02
	Y	ENDEVCO	AC-J27079	10/05/01	04/05/02
	Z	ENDEVCO	AC-ADAT0	10/05/01	04/05/02

INSTRUMENT CALIBRATION FOR PASSENGER DUMMY
(6 Month Calibration Minimum)

DRIVER DUMMY (S/N 416)		Manufacturer	Serial #	Calibration	
				Last	Next
Left Femur Load	X	FTSS	LC-111FX	02/06/01	08/07/01
	Y	FTSS	LC-111FY	02/06/01	08/07/01
	Z	FTSS	LC-111FZ	02/06/01	08/07/01
Left Femur Moment	X	FTSS	LC-111MX	02/06/01	08/07/01
	Y	FTSS	LC-111MY	02/06/01	08/07/01
	Z	FTSS	LC-111MZ	02/06/01	08/07/01
Right Femur Load	X	FTSS	LC-112FX	02/06/01	08/07/01
	Y	FTSS	LC-112FY	02/06/01	08/07/01
	Z	FTSS	LC-112FZ	02/06/01	08/07/01
Right Femur Moment	X	FTSS	LC-112MX	02/06/01	08/07/01
	Y	FTSS	LC-112MY	02/06/01	08/07/01
	Z	FTSS	LC-112MZ	02/06/01	08/07/01
Left Knee Shear Dx		SPACEAGE CONTROL	DS-13742	10/09/01	04/09/02
Right Knee Shear Dx		SPACEAGE CONTROL	DS-18127	10/10/01	04/10/02
Left Upper Tibia	Fx	DENTON	LC-265FX-	02/01/01	08/02/01
	Fz	DENTON	LC-265FZ-	02/01/01	08/02/01
	Mx	DENTON	LC-265MX-	02/01/01	08/02/01
	My	DENTON	LC-265MY-	02/01/01	08/02/01
Left Lower Tibia	Fx	DENTON	LC-178FX	02/01/01	08/02/01
	Fz	DENTON	LC-178FZ	02/01/01	08/02/01
	Mx	DENTON	LC-178MX	02/01/01	08/02/01
	My	DENTON	LC-178MY	02/01/01	08/02/01
Right Upper Tibia	Fx	DENTON	LC-266FX	02/02/01	08/03/01
	Fz	DENTON	LC-266FZ	02/02/01	08/03/01
	Mx	DENTON	LC-266MX	02/02/01	08/03/01
	My	DENTON	LC-266MY	02/02/01	08/03/01

INSTRUMENT CALIBRATION FOR PASSENGER DUMMY
(6 Month Calibration Minimum)

DRIVER DUMMY (S/N 416)		Manufacturer	Serial #	Calibration	
				Last	Next
Right Lower Tibia	Fx	DENTON	LC-179FX	02/02/01	08/03/01
	Fz	DENTON	LC-179FZ	02/02/01	08/03/01
	Mx	DENTON	LC-179MX	02/02/01	08/03/01
	My	DENTON	LC-179MY	02/02/01	08/03/01
Left Foot Rear	Ax	ENDEVCO	AC-J18059	10/10/01	04/10/02
	Az	ENDEVCO	AC-J20014	10/10/01	04/10/02
Left Foot Front	Az	ENDEVCO	AC-J26976	10/10/01	04/10/02
Right Foot Rear	Ax	ENDEVCO	AC-AC9F9	10/10/01	04/10/02
	Az	ENDEVCO	AC-J18738	10/10/01	04/10/02
Right Foot Front	Az	ENDEVCO	AC-AAKC3	10/10/01	04/10/02
Lap Belt	F	LEBOW	LC-707	07/24/01	01/22/02
Toe pan	Dx	PATRIOT	DS-M97	06/22/01	12/21/01

INSTRUMENT CALIBRATION FOR PASSENGER DUMMY
(6 Month Calibration Minimum)

PASSENGER DUMMY (S/N 421)		Manufacturer	Serial #	Calibration	
				Last	Next
Head X Arm	Y	ENTRAN	AC-99102-F15	10/05/01	04/05/02
	Z	ENTRAN	AC-99108-F29	10/05/01	04/05/02
Head Y Arm	X	ENTRAN	AC-99102-F12	10/05/01	04/05/02
	Z	ENTRAN	AC-99102-F06	10/05/01	04/05/02
Head Z Arm	X	ENTRAN	AC-99H30-Z03	10/05/01	04/05/02
	Y	ENTRAN	AC-99108-F28	10/05/01	04/05/02
Head CG	X	ENTRAN	AC-98G18-F18	10/05/01	04/05/02
	Y	ENTRAN	AC-99H30-Z05	10/05/01	04/05/02
	Z	ENTRAN	AC-99102-F09	10/05/01	04/05/02
Head CG	X (R)	ENTRAN	AC-00L13-F03	10/05/01	04/05/02
	Y (R)	ENTRAN	AC-99H30-Z08	10/05/01	04/05/02
	Z (R)	ENTRAN	AC-99H30-Z04	10/05/01	04/05/02
Neck Load Cell	X	DENTON	LC-852FX	10/05/01	04/05/02
	Y	DENTON	LC-852FY	10/05/01	04/05/02
	Z	DENTON	LC-852FZ	10/05/01	04/05/02
Neck Moment	X	DENTON	LC-852MX	10/05/01	04/05/02
	Y	DENTON	LC-852MY	10/05/01	04/05/02
	Z	DENTON	LC-852MZ	10/05/01	04/05/02
Chest	X	ENTRAN	AC-01G19-F01	10/08/01	04/08/02
	Y	ENDEVCO	AC-P15321	10/05/01	04/05/02
	Z	ENDEVCO	AC-P17743	10/05/01	04/05/02
Chest	X (R)	ENTRAN	AC-99H30-Z07	10/05/01	04/05/02
	Y (R)	ENDEVCO	AC-P15334	10/05/01	04/05/02
	Z (R)	ENTRAN	AC-99G29-Q13	10/05/01	04/05/02
Chest Deflection Gauge		SERVO	DS-421	10/10/01	04/10/02
Pelvic	X	ENTRAN	AC-99108-F26	10/05/01	04/05/02
	Y	ENTRAN	AC-99H30-Z02	10/05/01	04/05/02
	Z	ENTRAN	AC-99108-F30	04/12/01	10/11/01

INSTRUMENT CALIBRATION FOR PASSENGER DUMMY
(6 Month Calibration Minimum)

PASSENGER DUMMY (S/N 421)		Manufacturer	Serial #	Calibration	
				Last	Next
Left Femur Load	X	DENTON	LC-383FX	05/24/01	11/22/01
	Y	DENTON	LC-383FY	05/24/01	11/22/01
	Z	DENTON	LC-383FZ	05/24/01	11/22/01
L. Femur Moment	X	DENTON	LC-383MX	05/24/01	11/22/01
	Y	DENTON	LC-383MY	05/24/01	11/22/01
	Z	DENTON	LC-383MZ	05/24/01	11/22/01
Right Femur Load	X	DENTON	LC-376FX	05/24/01	11/22/01
	Y	DENTON	LC-376FY	05/24/01	11/22/01
	Z	DENTON	LC-376FZ	05/24/01	11/22/01
R. Femur Moment	X	DENTON	LC-376MX	05/24/01	11/22/01
	Y	DENTON	LC-376MY	05/24/01	11/22/01
	Z	DENTON	LC-376MZ	05/24/01	11/22/01
Left Knee Shear Dx		DENTON	DS-15021	10/09/01	04/09/02
Right Knee Shear Dx		DENTON	DS-14949	10/11/01	04/11/02
Left Upper Tibia	Fx	DENTON	LC-263-UTLFX	10/09/01	04/09/02
	Fz	DENTON	LC-263-UTLFZ	10/09/01	04/09/02
	Mx	DENTON	LC-263-UTLMX	10/09/01	04/09/02
	My	DENTON	LC-263-UTLMY	10/09/01	04/09/02
Left Lower Tibia	Fx	DENTON	LC-174-LTLFX	10/09/01	04/09/02
	Fz	DENTON	LC-174-LTLFZ	10/09/01	04/09/02
	Mx	DENTON	LC-174-LTLMX	10/09/01	04/09/02
	My	DENTON	LC-174-LTLMY	10/09/01	04/09/02
Right Upper Tibia	Fx	DENTON	LC-264-UTRFX	10/09/01	04/09/02
	Fz	DENTON	LC-264-UTRFZ	10/09/01	04/09/02
	Mx	DENTON	LC-264-UTRMX	10/09/01	04/09/02
	My	DENTON	LC-264-UTRMY	10/09/01	04/09/02

INSTRUMENT CALIBRATION FOR PASSENGER DUMMY
(6 Month Calibration Minimum)

PASSENGER DUMMY (S/N 421)		Manufacturer	Serial #	Calibration	
				Last	Next
Right Lower Tibia	Fx	DENTON	LC-177-LTRFX	10/09/01	04/09/02
	Fz	DENTON	LC-177-LTRFZ	10/09/01	04/09/02
	Mx	DENTON	LC-177-LTRMX	10/09/01	04/09/02
	My	DENTON	LC-177-LTRMY	10/09/01	04/09/02
Left Foot Rear	Ax	ENDEVCO	AC-J27467	10/10/01	04/10/02
	Az	ENDEVCO	AC-J27490	10/10/01	04/10/02
Left Foot Front	Az	ENDEVCO	AC-J13739	10/10/01	04/10/02
Right Foot Rear	Ax	ENDEVCO	AC-AJ4Y5	10/10/01	04/10/02
	Az	ENDEVCO	AC-J27496	10/10/01	04/10/02
Right Foot Front	Az	ENDEVCO	AC-AJ5R6	10/10/01	04/10/02
Lap Belt	F	LEBOW	LC-712	07/24/01	01/22/02

INSTRUMENT CALIBRATION FOR VEHICLE ACCELEROMETERS

(6 Month Calibration Minimum)

	Manufacturer	Serial #	Calibration	
			Last	Next
Left Seat Rear Crossmember X	ICS	AC-X88	10/30/01	04/30/02
Left Seat Rear Crossmember Y	ICS	AC-D52	09/25/01	03/26/02
Right Seat Rear Crossmember X	ICS	AC-D79	09/25/01	03/26/02
Right Rear Seat Crossmember Y	ICS	AC-D88	09/25/01	03/26/02
Driver Left Side Toepan X	ENDEVCO	AC-P16597	08/29/01	02/27/02
Driver Left Side Toepan Z	ENDEVCO	AC-A13513	08/29/01	02/27/02
Driver Right Side Toepan X	ENDEVCO	AC-B10481	09/25/01	03/26/02
Driver Right Side Toepan Z	ENDEVCO	AC-A14433	09/25/01	03/26/02
Driver Toepan X	ENDEVCO	AC-J31058	08/29/01	02/27/02