

REPORT NUMBER: 214-CAL-05-01

**SAFETY COMPLIANCE TESTING FOR FMVSS 214  
SIDE IMPACT PROTECTION  
INDICANT**

GENERAL MOTORS CORPORATION  
2005 PONTIAC G6  
4-DOOR SEDAN

NHTSA NUMBER: C50107

ADVANCED INFORMATION ENGINEERING SERVICES TEST NUMBER: 8675-F214-20

GENERAL DYNAMICS  
ADVANCED INFORMATION ENGINEERING SERVICES  
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November 23, 2004

FINAL REPORT

U. S. DEPARTMENT OF TRANSPORTATION  
National Highway Traffic Safety Administration  
Enforcement  
Office of Vehicle Safety Compliance  
400 Seventh Street, SW  
Room 6111 (NVS-220)  
Washington, DC 20590

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16. Abstract <p>A 55/28 kph 90° Side Impact (Moving Deformable Barrier) Indicant Test was conducted on the subject Pontiac G6 4-Door Sedan. This test was performed at the New Car Assessment Program (NCAP) target test velocity of 62.0 kph, which is 8 kph faster than the target velocity required by the Office of Vehicle Safety Compliance's Laboratory Test Procedure (TP-214D-06, dated July 26, 2001). This test was conducted at the Advanced Information Engineering Services Crash Test Facility in Buffalo, New York, on November 23, 2004.</p> <p>The impact velocity of the Moving Deformable Barrier (MDB) was 62.12 kph, and the ambient temperature at the struck (driver's) side of the target vehicle at the time of impact was 21.0°C. The target vehicle post-test maximum crush was 250 mm at level 3.</p> <p>The test or target vehicle's performance is given below:</p> <table border="0" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;"></th> <th style="width: 20%; text-align: center;"><u>Front SID H3</u></th> <th style="width: 20%;"></th> <th style="width: 20%; text-align: center;"><u>Rear SID H3</u></th> </tr> </thead> <tbody> <tr> <td>Left Upper Rib Acceleration:</td> <td style="text-align: center;">79.8</td> <td style="text-align: center;">g's</td> <td style="text-align: center;">43.8</td> </tr> <tr> <td>Left Lower Rib Acceleration:</td> <td style="text-align: center;">71</td> <td style="text-align: center;">g's</td> <td style="text-align: center;">47.3</td> </tr> <tr> <td>Lower Spine Acceleration:</td> <td style="text-align: center;">67.7</td> <td style="text-align: center;">g's</td> <td style="text-align: center;">55.5</td> </tr> <tr> <td>Thoracic Trauma Index (TTI):</td> <td style="text-align: center;">74</td> <td style="text-align: center;">g's</td> <td style="text-align: center;">51</td> </tr> <tr> <td>Pelvis Acceleration (PEV):</td> <td style="text-align: center;">53</td> <td style="text-align: center;">g's</td> <td style="text-align: center;">58</td> </tr> </tbody> </table> <p>The two doors on the struck side of the vehicle did not separate from the body at the hinges or latches and the opposite doors did not open during the side impact event.</p>					<u>Front SID H3</u>		<u>Rear SID H3</u>	Left Upper Rib Acceleration:	79.8	g's	43.8	Left Lower Rib Acceleration:	71	g's	47.3	Lower Spine Acceleration:	67.7	g's	55.5	Thoracic Trauma Index (TTI):	74	g's	51	Pelvis Acceleration (PEV):	53	g's	58
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## **SECTION 1**

### **PURPOSE AND TEST PROCEDURE**

This side impact test is part of the FMVSS 214 Side Impact Protection Compliance Test Program sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract No. DTNH22-02-D-01114. The purpose of this indicant test was to evaluate side impact protection in a 2005 Pontiac G6 4-Door Sedan when tested at the New Car Assessment Program (NCAP) target test velocity of 62.0 kph, which is 8 kph faster than the target velocity required by the Office of Vehicle Safety Compliance's Laboratory Test Procedure (TP-214D-06, dated July 26, 2001).

## SECTION 2

### SUMMARY OF SIDE IMPACT TEST

This Side Impact Protection Indicant Test was performed at the New Car Assessment Program (NCAP) target test velocity of 62.0 kph, which is 8 kph faster than the target velocity required by the Office of Vehicle Safety Compliance's Laboratory Test Procedure (TP-214D-06, dated July 26, 2001).

A 2005 Pontiac G6 4-Door Sedan was impacted on the left or driver's side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the monorail at a velocity of 62.12 kph (38.6 mph). The target vehicle was stationary and was positioned at an angle of 63° to the line of forward motion. The side impact test was conducted by the Advanced Information Engineering Services Transportation Sciences Center in Buffalo, New York on November 23, 2004. Pre- and post-test photographs of the test vehicle, the moving deformable barrier (MDB), and the Side Impact Hybrid III Dummies (SID H3s) are included in Appendix A.

Two restrained Side Impact Hybrid III Dummies (SID H3s) were placed in the driver (Pos. #1) and left rear (Pos. #4) designated seating positions according to the instructions specified in the OCWS Side Impact Laboratory Test Procedure which is dated July, 1997. The side impact test was documented by one real-time camera and 9 high-speed cameras. Camera locations and other pertinent camera information are included in this report.

The SID H3s were instrumented with the following accelerometers:

1. Left Upper Rib (LUR) uniaxial and redundant accelerometer (Y-direction)
2. Left Lower Rib (LLR) uniaxial and redundant accelerometer (Y-direction)
3. Lower Thoracic Spine (T<sub>12</sub>) uniaxial and redundant accelerometer (Y-direction)
4. Pelvic (PEV) section uniaxial and redundant accelerometer (Y-direction)
5. Head triaxial accelerometers (X-, Y- and Z-direction)
6. Upper neck force and moment (X-, Y and Z-direction) load cells

A summary of the Side Impact Hybrid III Dummy (SID H3) configuration and verification test data can be found in Appendix C. A total of 60 channels of data were recorded. Appendix B contains the vehicle, MDB and dummy response data traces.

The following table summarizes the results of the test.

Injury Criteria	Front SID H3	Rear SID H3
TTI (g)	74	51
PEV (g)	53	58

#### AIR BAG DEPLOYMENT STATUS

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

#### AUTOMATIC DOOR LOCK SUMMARY

ADL Equipped Test Vehicle:	Yes
ADL Activation Status:	Activated (system cannot be deactivated)
Struck Side Door Lock Condition:	Locked

**SECTION 3**

**SUMMARY OF TEST RESULTS**

**DATA SHEET 1**

**GENERAL TEST AND VEHICLE PARAMETER DATA**

TEST VEHICLE INFORMATION:

Year/Make/Model/Body Style: 2005 Pontiac G6 4-Door Sedan  
 Vehicle Body Color: Granite metallic VIN: 1G2ZG528654117380  
 Vehicle NHTSA No.: C50107 Month & Year of Manufacture: 09/04  
 Engine Data: 6 Cylinders; - CID; 3.5 Liters; - cc  
 Engine Placement: - Longitudinal; or X Lateral  
 Transmission: 4 Speed; - Manual; X Automatic; X Overdrive  
 Final Drive: - Rear Wheel Drive; X Front Wheel Drive; - Four Wheel Drive  
 Odometer Reading 23 km  
 Supplemental Airbag Restraints:  
 Front Occupant: X Frontal; - Knee; - Side; - Curtain  
 Rear Occupant: - Frontal; - Knee; - Side; - Curtain  
 Options:  
X ADL; X A/C; X Power Steering; X Power Brakes; X Power Windows

DATA FROM TIRE PLACARD

Recommended Tire Size: P215/60R16  
 \*Recommended Cold Tire Pressure: 210 kpa FRONT; 210 kpa REAR

DATA FROM TIRE SIDEWALL:

Size of Tires on Test Vehicle: P215/60R16 94S ; Manufacturer: Uniroyal Tiger Paw  
 Tire Pressure with Maximum Capacity Vehicle Load: Front: 240 kPa; Rear: 240 kPa  
 Treadwear: 540 ; Traction: A ; Temperature: B

VEHICLE CAPACITY DATA:

Number of Occupants: 2 Front; 3 Rear; - 3rd Seat; 5 Total  
 Type of Front Seats: X Bucket; - Bench; - Split Bench;  
 Type of Rear Seats: - Bucket; - Bench; - Split Bench; X Contoured  
 Type of Front Seat Back: - Fixed; X Adjustable with X Lever or - Knob  
 Type of Rear Seat Back: X Fixed; - Adjustable with - Lever or - Knob  
 Vehicle Max Capacity Loading = 404 kg (A)  
 No. of Occupants x 68.04 kg. = 340.2 kg (B)  
 Vehicle Cargo Capacity = 63.8 kg (A-B)

TEST VEHICLE DELIVERED WEIGHT WITH MAXIMUM FLUIDS:

Left Front = 475.0 kg Left Rear = 303.0 kg  
 Right Front = 484.0 kg Right Rear = 283.0 kg  
 TOTAL FRONT = 959.0 kg TOTAL REAR = 586.0 kg  
 % of Total Weight = 62.1 % % of Total Weight = 37.9 %  
 TOTAL WEIGHT = 1545.0 kg

\* Tire pressure used in test.

**DATA SHEET 1 (continued)**

**GENERAL TEST VEHICLE PARAMETER DATA**

Vehicle: 2005 Pontiac G6 4-Door Sedan

NHTSA No. C50107

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:

Total Test Vehicle Delivered Weight with Max. Fluids	=	<u>1545.0</u>	kg (A)
Maximum Cargo Carrying Capacity of Test Vehicle	=	<u>63.8</u>	kg (B)
Weight of instrumented SID H3 Dummies ( 2 X 81.2 kg)	=	<u>162.4</u>	kg (C)
TEST VEHICLE TARGET WEIGHT:	=	<u>1771.2</u>	kg (A+B+C)

FULLY LOADED TEST VEHICLE (UDVW + 2 SID H3(s) + CARGO):

Left Front	=	<u>519.0</u>	kg	Left Rear	=	<u>396.0</u>	kg
Right Front	=	<u>490.5</u>	kg	Right Rear	=	<u>359.0</u>	kg
TOTAL FRONT	=	<u>1009.5</u>	kg	TOTAL REAR	=	<u>755.0</u>	kg
% of Total Weight	=	<u>57.2%</u>	%	% of Total Weight	=	<u>42.8%</u>	%
TOTAL TEST WEIGHT =		<u>1764.5</u>	kg				

AS TESTED WEIGHT OF TEST VEHICLE (1 OR 2 SID H3(s) + CARGO + EQUIPMENT & INSTRUMENTATION):

Left Front	=	<u>519.0</u>	kg	Left Rear	=	<u>396.0</u>	kg
Right Front	=	<u>490.5</u>	kg	Right Rear	=	<u>359.0</u>	kg
TOTAL FRONT	=	<u>1009.5</u>	kg	TOTAL REAR	=	<u>755.0</u>	kg
% of Total Weight	=	<u>57.2</u>	%	% of Total Weight	=	<u>42.8</u>	%
TOTAL TEST WEIGHT =		<u>1764.5</u>	kg				

TEST VEHICLE ATTITUDE (all dimensions in millimeters):

AS DELIVERED:

Left Front	<u>716</u>	Right Front	<u>727</u>	Left Rear	<u>731</u>	Right Rear	<u>731</u>
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FULLY LOADED:

Left Front	<u>700</u>	Right Front	<u>721</u>	Left Rear	<u>692</u>	Right Rear	<u>702</u>
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READY FOR TEST:

Left Front	<u>704</u>	Right Front	<u>721</u>	Left Rear	<u>693</u>	Right Rear	<u>702</u>
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Test Vehicle Wheelbase: 2849 millimeters

C.G. = 1219 millimeters rearward of front wheel centerline

TOTAL VEHICLE LENGTH:

Right Side =	<u>4643</u>	millimeters
Left Side =	<u>4640</u>	millimeters
Centerline =	<u>4808</u>	millimeters

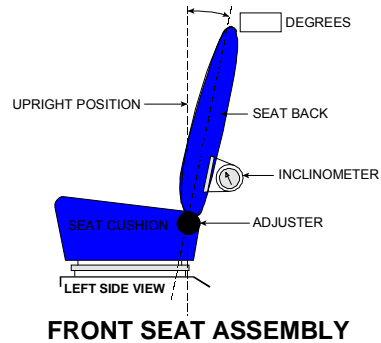
**DATA SHEET 1 (continued)**

**GENERAL TEST VEHICLE PARAMETER DATA**

Vehicle: 2005 Pontiac G6 4-Door Sedan

NHTSA No. C50107

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



FRONT SEAT CUSHION PLACEMENT: Midway between the absolute forward-most and rearward most positions, cushion full-down (140 mm forward of the rearward-most position).

Total Length of Adjustment Travel: 280 millimeters

Total Number of Adjustment Positions or Detents: 25

FRONT SEAT BACK ADJUSTMENT POSITION: With the vehicle rocker level, the seatback was placed 19 degrees from vertical when measured at the bottom center of the hard plastic seatback (in recessed area).

Seat Back Torso Angle: 25.5 degrees (H-point machine backpan)

SECOND POSITION SEAT:

Total Length of Fore/Aft Adjustment Travel: 0 millimeters

Seat Back Adjustment Position: Fixed

ADJUSTABLE STEERING COLUMN POSITION: Positioned at mid-telescope / mid-tilt

WINDOW POSITIONS: Left Front: Closed Left Rear: Closed

Right Front: Removed Right Rear: Removed

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

AMOUNT OF STODDARD SOLVENT IN FUEL TANK:

61.7 liters (Fuel Tank Usable Capacity)

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

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

Wheelbase = 2849 millimeters

Impact Point is 485 millimeters rearward of front axle centerline  
(which is 940 millimeters forward of the wheelbase midpoint)

Actual Impact Point is 475 millimeters rearward of front axle centerline

**DATA SHEET 2**

**TEST VEHICLE SUMMARY OF RESULTS**

VEHICLE IDENTIFICATION:

Vehicle Year/Make/Model: 2005 Pontiac G6

Body Style: 4-Door Sedan

VIN: 1G2ZG528654117380

NHTSA No.: C50107

Test Date: November 23, 2004

Overall Length = 4808 millimeters; Overall Width = 1778 millimeters

VEHICLE TEST WEIGHT (Pre-Test):

Left Front = 519.0 kg      Left Rear = 396.0 kg

Right Front = 490.5 kg      Right Rear = 359.0 kg

TOTAL FRONT = 1009.5 kg      TOTAL REAR = 755.0 kg

TOTAL VEHICLE WEIGHT 1764.5 kg

Wheelbase = 2849 millimeters

Longitudinal C.G. from Center of Front Axle = 1219.04 millimeters

Impact Angle with Respect to Impactor = 90 degrees

ACTUAL IMPACT POINT

Actual Impact Point is 10 mm Forward of nominal impact ref. line (Lateral)

Actual Impact Point is 5 mm Below nominal impact point (Vertical)

MAXIMUM EXTERIOR STATIC CRUSH:

1. LEVEL 1 ( 241 mm above ground) = 74 millimeters

2. LEVEL 2 ( 467 mm above ground) = 227 millimeters

3. LEVEL 3 ( 605 mm above ground) = 250 millimeters

4. LEVEL 4 ( 844 mm above ground) = 243 millimeters

5. LEVEL 5 ( 1346 mm above ground) = 9 millimeters

Maximum Post-Test Intrusion = 250 millimeters

OCCUPANTS:

Front Passenger:

Rear Passenger:

Dummy Identification SID H3/269

SID H3/270

Restraints Used 3-point safety belt

3-point safety belt

INSTRUMENTATION:

Number of Vehicle Data Channels: = 21

Number of Cameras:      Onboard = 3

                                 Offboard = 6

                                 TOTAL = 9

### DATA SHEET 3

#### MOVING DEFORMABLE BARRIER (MDB) SUMMARY

Vehicle: 2005 Pontiac G6 4-Door Sedan

NHTSA No. C50107

MDB FACE MANUFACTURER AND SERIAL NUMBER:

Plascore: 061B0604-2; 047A0504

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POSITION OF IMPACT (MDB) ON MONORAIL:

Crabbed 27° to left

MDB DETAILS:

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

MDB WEIGHT:

Left Front	=	<u>409.5</u>	kg	Left Rear	=	<u>281.5</u>	kg
Right Front	=	<u>372.5</u>	kg	Right Rear	=	<u>299.0</u>	kg
TOTAL FRONT	=	<u>782.0</u>	kg	TOTAL REAR	=	<u>580.5</u>	kg
TOTAL MDB WEIGHT	=	<u>1362.5</u>	kg				
Impact Angle (MDB C/L to Target Vehicle C/L)	=	<u>90</u>	degrees				
Impact Speed	=	<u>62.12</u>	kph				

MAXIMUM STATIC CRUSH OF HONEYCOMB IMPACT FACE:

1. Row A at Center of Bumper Level	=	<u>212</u>	millimeters
2. Row B at Top of Bumper Level	=	<u>144</u>	millimeters
3. Row C at Mid Level	=	<u>114</u>	millimeters
4. Row D at Top of Stack Level	=	<u>130</u>	millimeters

INSTRUMENTATION:

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

**POST-TEST OBSERVATIONS**

Vehicle: 2005 Pontiac G6 4-Door Sedan

NHTSA No. C50107

TEST DUMMY INFORMATION AND CONTACT POINTS:

DESCRIPTION	FRONT SEAT	REAR SEAT
ATD Type/Serial No.	SID H3/269	SID H3/270
Head Contact:	Left side of face to left shoulder and top of door trim	Left side of head to C-pillar trim
Upper Torso Contact:	Left arm to upper door trim above armrest	Left arm to upper door trim above armrest
Lower Torso Contact:	Pelvis to door trim below armrest	Pelvis to door trim below armrest
Left Knee Contact:	Left knee to door trim	Left knee to door trim
Right Knee Contact:	None	Right knee to left knee

POST TEST DOOR OPENING AND SEAT TRACK INFORMATION

DESCRIPTION	FRONT	REAR
Left Side Doors	Closed, latched and inoperable	Closed, latched and inoperable
Right Side Doors	Closed, latched and operable without tools	Closed, latched and operable without tools
Hatch/Other Door	N/A	N/A
Seat Movement (mm)	0	0
Seat Back Failure	None	None

POST TEST STRUCTURAL OBSERVATIONS

CRITICAL AREAS OF PERFORMANCE	
Pillar Performance	Moved inboard during the event with no visible tears or separations
Sill Separation	Moved inboard during the event with no visible tears or separations
Windshield Damage	None
Window Damage	Left front and rear side windows shattered during the event
Other Notable Effects	None

AIR BAG DEPLOYMENT STATUS:

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

MDB LEFT EDGE IMPACT DATA

Measured Parameter	Units	Requirement	Value
Horizontal Offset	mm	± 50 mm	10 mm forward
Vertical Offset	mm	± 20 mm	5 mm below

**SECTION 4**

**OCCUPANT AND VEHICLE INFORMATION**

**DATA SHEET 5**

**SID H3 INSTRUMENTATION DATA**

Vehicle: 2005 Pontiac G6 4-Door Sedan

NHTSA No. C50107

		Front Dummy ID# 269				Rear Dummy ID# 270			
		Pos. Direction		Neg. Direction		Pos. Direction		Neg. Direction	
		Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)
<b>HEAD ACCELERATIONS:</b>									
Longitudinal	X	1.3	199.1	-24.7	73.4	2.1	39.5	-46.2	54.5
Lateral	Y	30.5	70.9	-3.0	27.8	138.0	53.6	-5.9	76.0
Vertical	Z	36.2	51.6	-0.1	8.1	10.1	49.0	-27.2	62.2
Resultant	R	41.3	51.6	0.0	-5.5	144.7	53.6	0.0	-12.1
HIC		216.1				689.0			
<b>NECK FORCES:</b>									
Longitudinal	X	45.6	199.5	-613.8	57.5	585.5	61.3	-152.7	49.7
Lateral	Y	616.9	58.2	-120.3	184.0	219.2	55.1	-457.1	63.6
Vertical	Z	1449.2	47.8	-9.9	14.9	244.1	197.3	-2184.8	60.5
Resultant	R	1617.7	47.8	0.1	-17.0	2290.1	60.9	0.1	-18.4
<b>NECK MOMENTS:</b>									
	X	64.3	67.4	-41.9	38.7	12.4	167.3	-104.9	57.2
	Y	28.8	67.7	-20.4	36.3	18.8	105.3	-32.8	55.7
	Z	22.4	70.3	-12.6	33.9	18.0	93.8	-13.1	58.8
	Resultant R	73.6	67.5	0.0	-16.8	110.2	57.1	0.0	-15.3
<b>RIB ACCELERATIONS:</b>									
Upper Rib Lateral	Y	79.8	25.0	-17.9	75.6	43.8	36.2	-6.6	115.7
Upper Rib Lateral	Y(R)	82.4	25.0	-17.6	75.6	43.4	52.5	-6.8	115.7
Lower Rib Lateral	Y	71.0	25.0	-12.9	74.4	47.3	45.0	-8.4	116.2
Lower Rib Lateral	Y(R)	73.7	25.0	-11.2	75.0	47.1	45.0	-8.5	115.7
<b>SPINE ACCELERATIONS:</b>									
Lower Lateral	Y	67.7	29.4	-16.3	67.5	55.5	48.1	-9.9	73.1
Lower Lateral	Y(R)	67.2	29.4	-16.4	67.5	55.1	46.2	-10.0	73.1
<b>PELVIC ACCELERATIONS:</b>									
Lateral	Y	53.3	28.7	-6.6	92.5	57.9	47.5	-5.1	158.7
Lateral	Y(R)	52.6	28.7	-6.4	93.1	59.6	47.5	-5.3	159.4

REFERENCE: Positive Direction: Longitudinal (X) = forward; Lateral (Y) = to right; Vertical (Z) = down

Note: Rib, Spine and Pelvis data has been FIR filtered, Y(R) denotes redundant Y direction accelerometer.

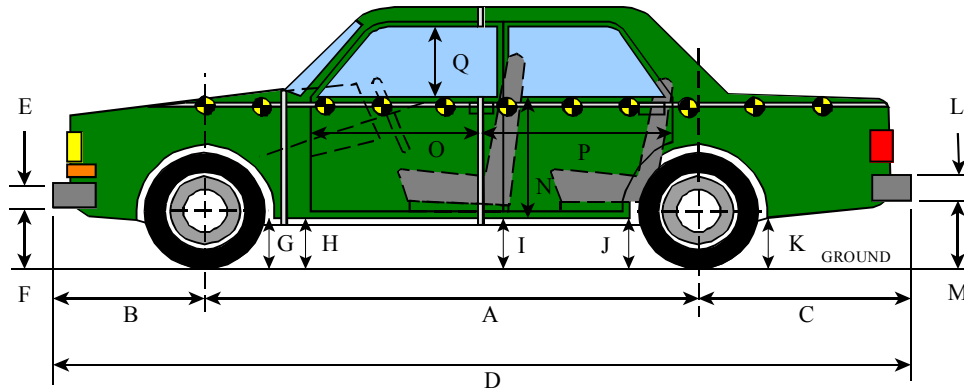
Head Accelerations and Neck Forces are filtered at SAE Class 1000, Neck Moments are filtered at SAE Class 600.

## DATA SHEET 6

### VEHICLE SIDE MEASUREMENTS

Vehicle: 2005 Pontiac G6 4-Door Sedan

NHTSA No. C50107



#### LEFT SIDE VIEW

NOTE: all dimensions are in millimeters with tolerance of  $\pm 3$  mm

	PRE-TEST (as delivered)	PRE-TEST (as tested)	POST-TEST (as tested)	$\Delta$ CHANGE
A	2855	2849	2838	-11
B	1016	-	1028	12
C	937	-	932	-5
D	4808	-	4798	-10
E	492	-	492	0
F	223	222	240	18
G	196	177	182	5
H	205	185	220	35
I	218	190	228	38
J1	204	170	186	16
J2	210	175	201	26
K	282	240	258	18
L	500	-	500	0
M	240	201	212	11
N	695	-	665	-30
O	879	-	840	-39
P	1197	-	1125	-72
Q	436	-	429	-7
R	4643	-	4655	12
S	4640	-	4626	-14
T	1778	-	1680	-98

D = Length at Centerline

E&L = Bumper Thickness

R = Right Side Length

S = Left Side Length

T = Width at B-Pillar

J1 = To Pinch Weld

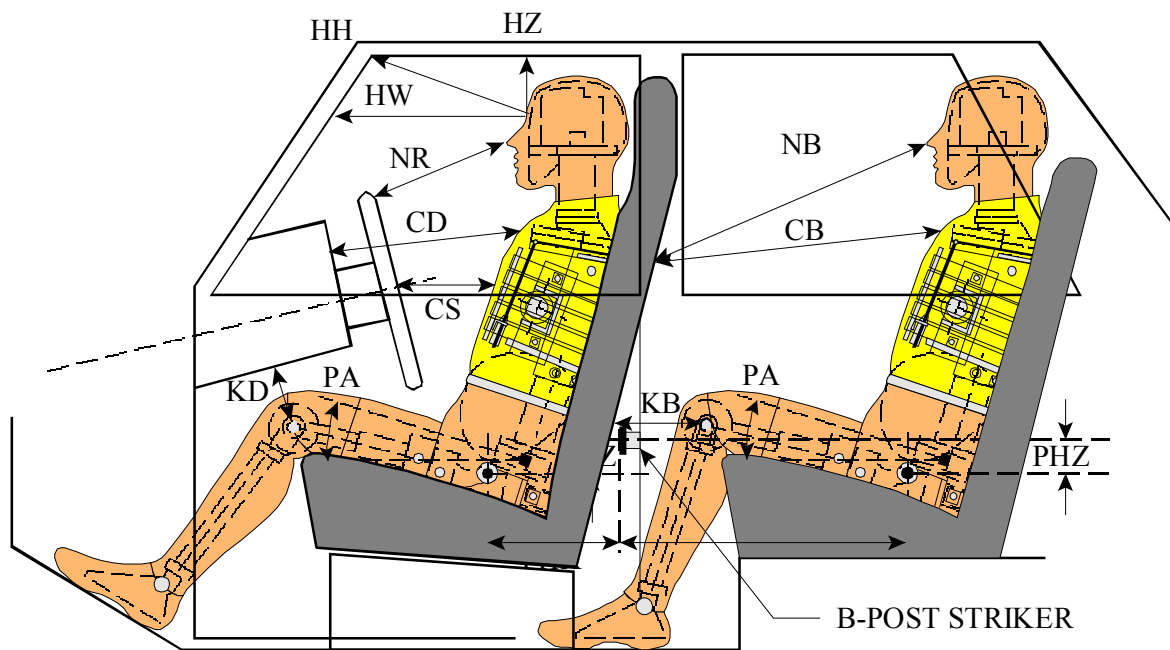
J2 = To Sill

## DATA SHEET 7

### SID H3 LONGITUDINAL CLEARANCE DIMENSIONS

Vehicle: 2005 Pontiac G6 4-Door Sedan

NHTSA No. C50107



### LEFT SIDE VIEW

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

NOTE: All dimensions are in millimeters with tolerance of  $\pm 3$  mm

	DRIVER ID# 269	LEFT REAR PASS. ID# 270
HH	431	N/A
HW	716	N/A
HZ	178	125
NR/NB	487	620
CD/CB	585	556
CS	344	N/A
KDL(KDA°)/KBL(KBA°)	194 / ( 37 °)	264 / ( 20 °)
KDR(KBA°)/KBR(KBA°)	204 / ( 37 °)	257 / ( 21 °)
PA°	23.9 °	24.7 °
PHX	200	302
PHZ	161	291

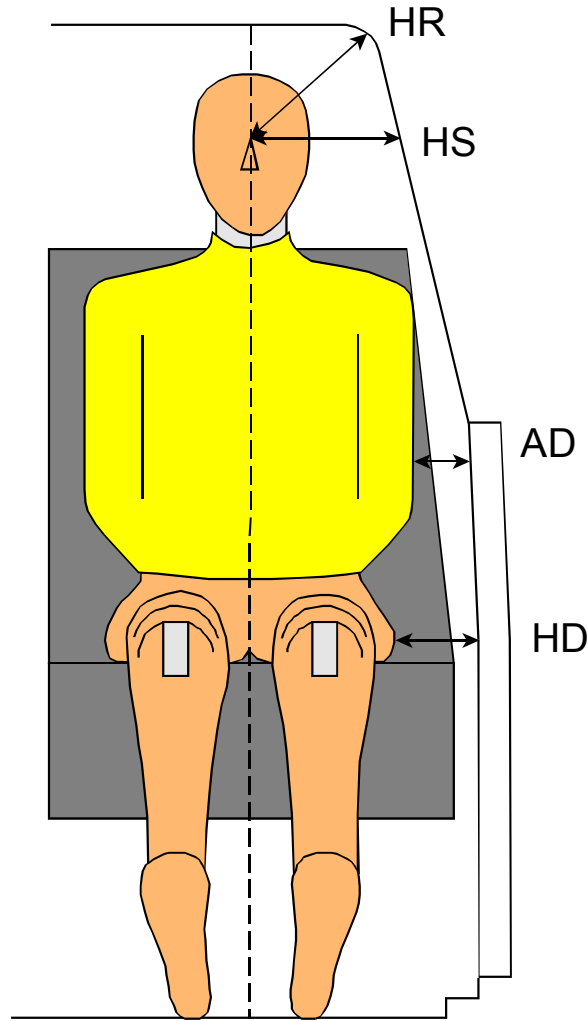
Note: 2-door vehicle shown. Rear dummy PHX & PHZ measurements for 4-door vehicle would use the C-post striker as a reference point.

**DATA SHEET 8**

**SID H3 LATERAL CLEARANCE DIMENSIONS**

Vehicle: 2005 Pontiac G6 4-Door Sedan

NHTSA No. C50107



NOTE: All dimensions are in millimeters with tolerance of  $\pm 3$  mm

	DRIVER ID # 269		LEFT REAR PASS. ID # 270	
HR	171		185	
HS	312		215 (to C-pillar trim)	
AD*	LOWER: 118	UPPER: 94	LOWER: 125	UPPER: 110
HD	140		157	

\* Lower measurement is taken laterally at the center of the lower rib accelerometer height from the SID H3 arm to the closest part of the vehicle side.

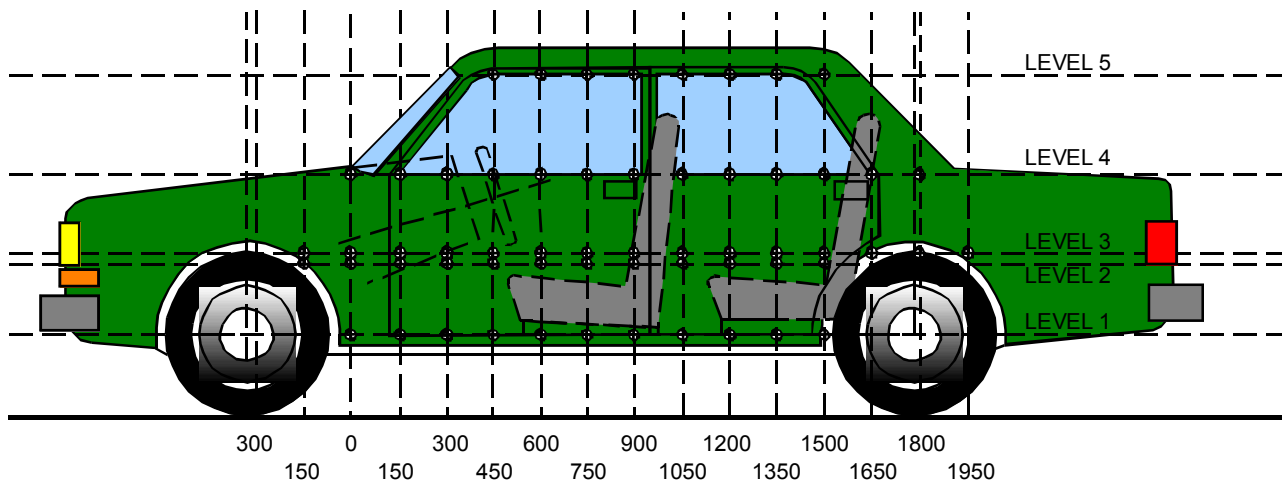
Upper measurement is taken laterally at the center of the upper rib accelerometer height from the SID H3 arm to the closest part of the vehicle side.

**DATA SHEET 9**

**VEHICLE SIDE MEASUREMENTS**

Vehicle: 2005 Pontiac G6 4-Door Sedan

NHTSA No. C50107



**LEFT SIDE VIEW**

**NOTE: All measurements are in millimeters (mm)**

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

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

Measurements Along the Vertical 750 mm Line Shown Above:

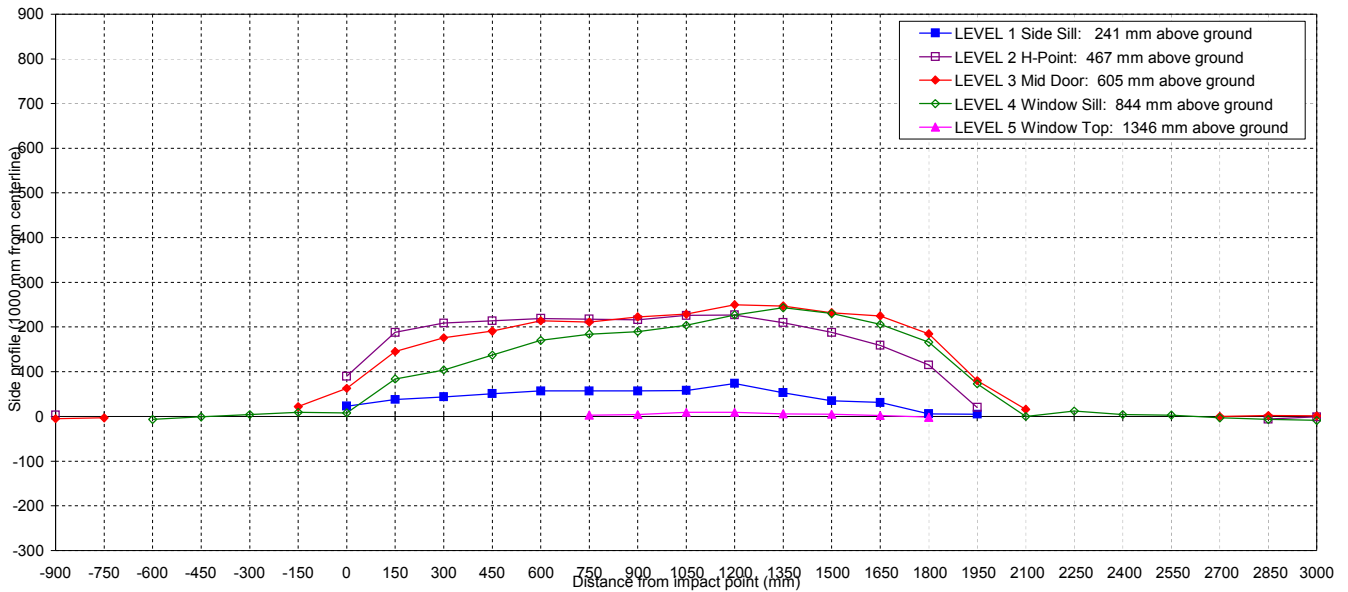
Level 5 @ Window Top	=	<u>1346</u>	millimeters
Level 4 @ Window Sill	=	<u>844</u>	millimeters
Level 3 @ Mid Door	=	<u>605</u>	millimeters
Level 2 @ Occupant H-Point	=	<u>467</u>	millimeters
Level 1 @ Axle Centerline Height (or Sill Top Height)	=	<u>241</u>	millimeters

DATA SHEET 10

VEHICLE EXTERIOR CRUSH PROFILES - ALL LEVELS

Vehicle: 2005 Pontiac G6 4-Door Sedan

NHTSA No. C50107



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

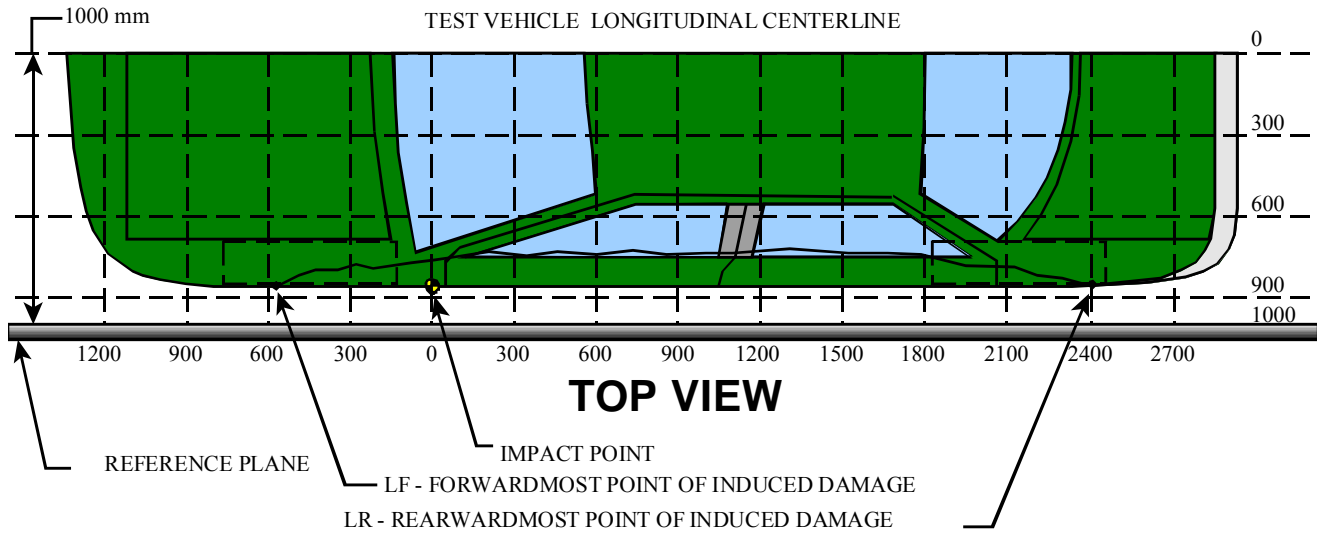
		DISTANCE IN MILLIMETERS (mm) FROM IMPACT POINT																												
LEVEL	HEIGHT (mm)		-900	-750	-600	-450	-300	-150	0	150	300	450	600	750	900	1050	1200	1350	1500	1650	1800	1950	2100	2250	2400	2550	2700	2850	3000	
LEVEL 1 SIDE SILL	241	PRE	--	--	--	--	--	--	172	186	190	193	195	196	198	201	200	199	202	193	185	163	--	--	--	--	--	--	--	
		POST	--	--	--	--	--	--	195	224	234	244	252	253	255	259	274	252	237	224	191	168	--	--	--	--	--	--	--	
		CRUSH	N/A	N/A	N/A	N/A	N/A	N/A	23	38	44	51	57	57	57	58	74	53	35	31	6	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
LEVEL 2 H POINT	467	PRE	159	--	--	--	--	--	134	141	139	142	143	143	144	144	144	144	145	146	142	126	--	--	--	--	--	193	232	
		POST	162	--	--	--	--	--	224	329	348	356	362	361	360	370	371	354	333	305	257	146	--	--	--	--	--	187	231	
		CRUSH	3	N/A	N/A	N/A	N/A	N/A	90	188	209	214	219	218	216	226	227	210	188	159	115	20	N/A	N/A	N/A	N/A	N/A	N/A	-6	-1
LEVEL 3 MID DOOR	605	PRE	180	137	--	--	--	118	123	121	123	124	124	123	124	125	127	129	129	129	128	125	110	--	--	--	149	201	240	
		POST	175	134	--	--	--	140	186	266	299	315	338	334	347	354	377	376	361	354	313	205	126	--	--	--	149	203	241	
		CRUSH	-5	-3	N/A	N/A	N/A	22	63	145	176	191	214	211	223	229	250	247	232	225	185	80	16	N/A	N/A	N/A	0	2	1	
LEVEL 4 WINDOW SILL	844	PRE	--	--	213	190	174	164	159	154	151	146	142	139	144	136	133	134	136	137	142	156	152	158	171	184	201	231	277	
		POST	--	--	206	189	178	173	167	238	255	283	312	323	334	340	360	377	366	343	308	229	152	170	175	187	198	224	268	
		CRUSH	N/A	N/A	-7	-1	4	9	8	84	104	137	170	184	190	204	227	243	230	206	166	73	0	12	4	3	-3	-7	-9	
LEVEL 5 WINDOW TOP	1346	PRE	--	--	--	--	--	--	--	--	--	--	--	426	412	411	412	416	417	424	455	--	--	--	--	--	--	--	--	
		POST	--	--	--	--	--	--	--	--	--	--	--	429	416	420	421	422	422	426	453	--	--	--	--	--	--	--	--	
		CRUSH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3	4	9	9	6	5	2	-2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**DATA SHEET 11**

**VEHICLE DAMAGE PROFILE DISTANCES**

Vehicle: 2005 Pontiac G6 4-Door Sedan

NHTSA No. C50107



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

NOTE: All dimensions are in millimeters with tolerance of  $\pm 3$  mm.

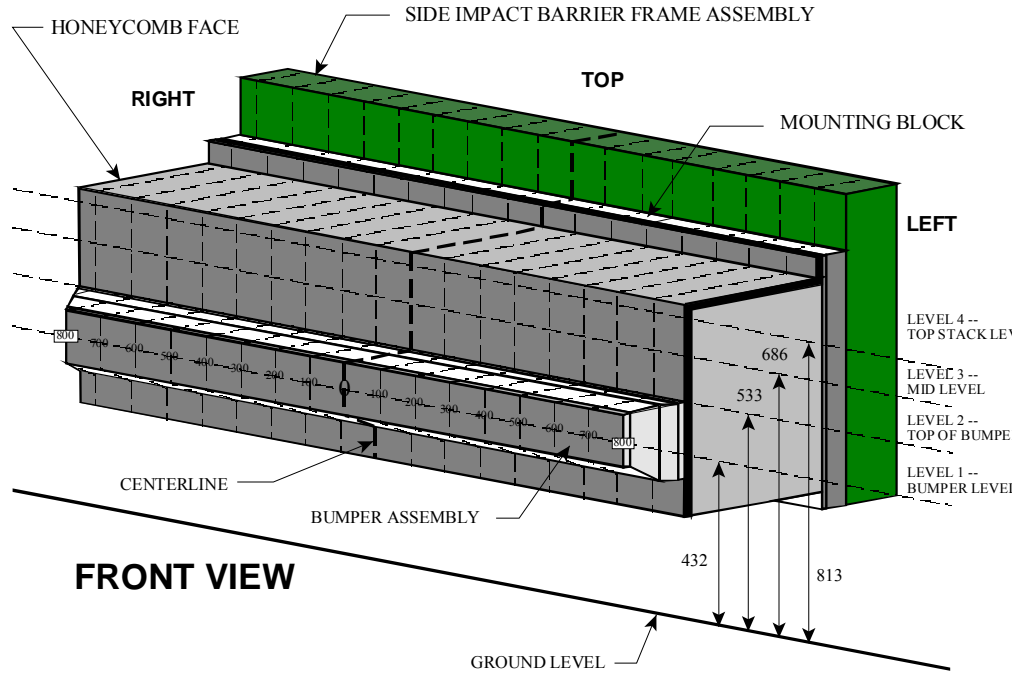
DPD MEASUREMENTS	POST TEST (mm)	PRETEST (mm)	STATIC CRUSH (mm)
1 (LR = 2110 mm)	153	152	1
2	1632	129	226
3	1154	126	244
4	676	143	218
5	198	140	195
6 (LF = -280 mm)	177	173	4

DATA SHEET 12

EXTERIOR STATIC CRUSH FOR IMPACTOR FACE

Vehicle: 2005 Pontiac G6 4-Door Sedan

NHTSA No. C50107



NOTE: Dimensions are shown in millimeters, mm

NOTE: All dimensions are in millimeters with a tolerance of  $\pm 3$  mm

LEVEL	HEIGHT AT CL (mm)*		DISTANCE RIGHT OF CENTER (mm)									DISTANCE LEFT OF CENTER (mm)								
			800	700	600	500	400	300	200	100	0	100	200	300	400	500	600	700	800	
LEVEL 4 TOP STACK	813	PRE	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	
		POST	695	652	627	620	627	646	666	649	656	660	662	661	673	686	706	723	749	
		CRUSH	76	33	8	1	8	27	47	30	37	41	43	42	54	67	87	104	130	
LEVEL 3 MID LEVEL	686	PRE	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	
		POST	687	656	642	641	640	644	661	653	645	643	642	646	648	661	670	695	733	
		CRUSH	68	37	23	22	21	25	42	34	26	24	23	27	29	42	51	76	114	
LEVEL 2 TOP BUMPER	533	PRE	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	
		POST	763	757	750	735	730	721	722	720	715	720	720	715	715	715	715	719	729	
		CRUSH	144	138	131	116	111	102	103	101	96	101	101	96	96	96	96	100	110	
LEVEL 1 MID BUMPER	432	PRE	535	519	518	518	518	518	518	518	518	518	518	518	518	518	518	519	535	
		POST	747	722	708	693	685	685	677	675	677	674	672	671	669	666	663	667	685	
		CRUSH	212	203	190	175	167	167	159	157	159	156	154	153	151	148	145	148	150	

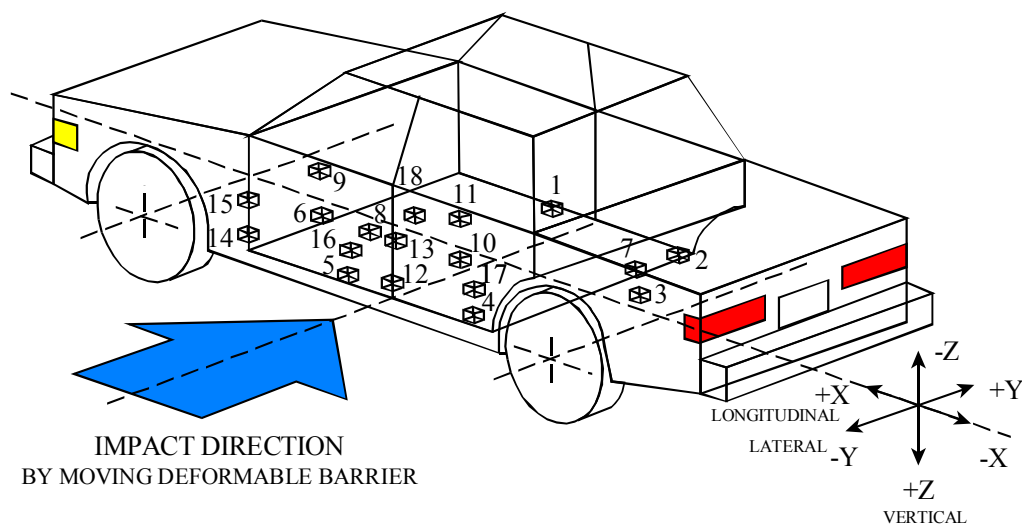
\*Heights measured above ground level.

## DATA SHEET 13

### TEST VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Vehicle: 2005 Pontiac G6 4-Door Sedan

NHTSA No. C50107



- |                                    |                                    |
|------------------------------------|------------------------------------|
| 1-Right Side Sill @ Front Seat     | 10-Midrear of Left Rear Door       |
| 2-Right Side Sill @ Rear Seat      | 11-Left Rear Door Upper Centerline |
| 3-Rear Floorpan Above Axle         | 12-Left Lower B-Pillar             |
| 4-Left Side Sill @ Rear Seat       | 13-Left Middle B-Pillar            |
| 5-Left Side Sill @ Front Seat      | 14-Left Lower A-Pillar             |
| 6-Left Front Door on Centerline    | 15-Left Middle A-Pillar            |
| 7-Right Rear Occupant Compartment  | 16-Front Seat Track                |
| 8-Midrear of Left Front Door       | 17-Rear Seat Track                 |
| 9-Left Front Door Upper Centerline | 18-Vehicle CG                      |

DATA SHEET 13 (continued)

VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Vehicle: 2005 Pontiac G6 4-Door Sedan

NHTSA No. C50107

Accel. No.	Location	Coordinates (mm)±3 mm				Long. (x)		Lat. (y)		Vert. (z)		Resultant	
		X*	Y*	Z*		Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)
						pos.	neg.	pos.	neg.	pos.	neg.	pos.	neg.
1	Right Side Sill at Front Seat	2930	675	-228	pos.	4.6	54.9	26.1	7.8	5.8	51.5	27.4	8.0
					neg.	-5.0	10.1	-6.1	58.9	-9.3	9.3	-	-
2	Right Side Sill at Rear Seat	2054	686	-213	pos.	5.4	59.3	20.5	10.1	5.2	40.0	21.3	10.1
					neg.	-5.6	9.9	-2.6	121.8	-6.8	19.5	-	-
3	Rear Floorpan Above Axle	1066	-4	-498	pos.	3.8	61.4	24.3	23.0	5.0	31.2	24.7	23.0
					neg.	-5.9	19.5	-2.1	98.1	-7.1	55.9	-	-
4	Left Side Sill at Rear Seat	2073	-665	-193	pos.	-	-	43.0	5.8	-	-	-	-
					neg.	-	-	-7.6	52.8	-	-	-	-
5	Left Side Sill at Front Seat	2996	-659	-241	pos.	-	-	93.3	4.4	-	-	-	-
					neg.	-	-	-21.1	9.8	-	-	-	-
6**	Left Front Door on Centerline	-	-	-	pos.	-	-	-	-	-	-	-	-
					neg.	-	-	-	-	-	-	-	-
7	Right Rear Occupant Compartment	2119	366	-190	pos.	-	-	22.2	11.0	-	-	-	-
					neg.	-	-	-4.5	81.4	-	-	-	-
8**	Midrear of Left Front Door	-	-	-	pos.	-	-	-	-	-	-	-	-
					neg.	-	-	-	-	-	-	-	-
9**	Left Front Door Upper Centerline	-	-	-	pos.	-	-	-	-	-	-	-	-
					neg.	-	-	-	-	-	-	-	-
10**	Midrear of Left Rear Door	-	-	-	Pos.	-	-	-	-	-	-	-	-
					neg.	-	-	-	-	-	-	-	-
11**	Left Rear Door Upper Centerline	-	-	-	pos.	-	-	-	-	-	-	-	-
					neg.	-	-	-	-	-	-	-	-

\*Reference: X - Rear Bumper (+ Forward)

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

\*\*Accelerometer was not requested by COTR.

4-11

8675-F214-20

**DATA SHEET 13 (continued)**

**VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY**

Vehicle: 2005 Pontiac G6 4-Door Sedan

NHTSA No. C50107

Accel. No.	Location	Coordinates (mm)±3 mm				Long. (x)		Lat. (y)		Vert. (z)		Resultant	
		X*	Y*	Z*		Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)
12	Left Lower B-Pillar	2184	-684	-881	pos.	-	-	125.6	4.0	-	-	-	-
					neg.	-	-	-119.9	15.9	-	-	-	-
13	Left Middle B-Pillar	2209	-680	-403	pos.	-	-	195.4	3.6	-	-	-	-
					neg.	-	-	-164.6	16.4	-	-	-	-
14	Left Lower A-Pillar	3228	-634	-314	pos.	-	-	70.9	6.3	-	-	-	-
					neg.	-	-	-104.4	11.2	-	-	-	-
15	Left Middle A-Pillar	3237	-646	-934	pos.	-	-	26.3	9.5	-	-	-	-
					neg.	-	-	-3.4	79.4	-	-	-	-
16	Front Seat Track	2317	-564	-274	pos.	-	-	51.5	5.4	-	-	-	-
					neg.	-	-	-17.2	21.0	-	-	-	-
17	Rear Seat Track	1036	-549	-605	pos.	-	-	24.0	17.4	-	-	-	-
					neg.	-	-	-2.5	101.1	-	-	-	-
18	Vehicle CG	2521	22	-498	pos.	7.8	22.0	84.7	22.1	10.9	26.5	86.0	22.1
					neg.	-16.5	27.6	-45.2	27.8	-16.0	32.4	-	-

\*Reference: X - Rear Bumper (+ Forward)

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

4-12

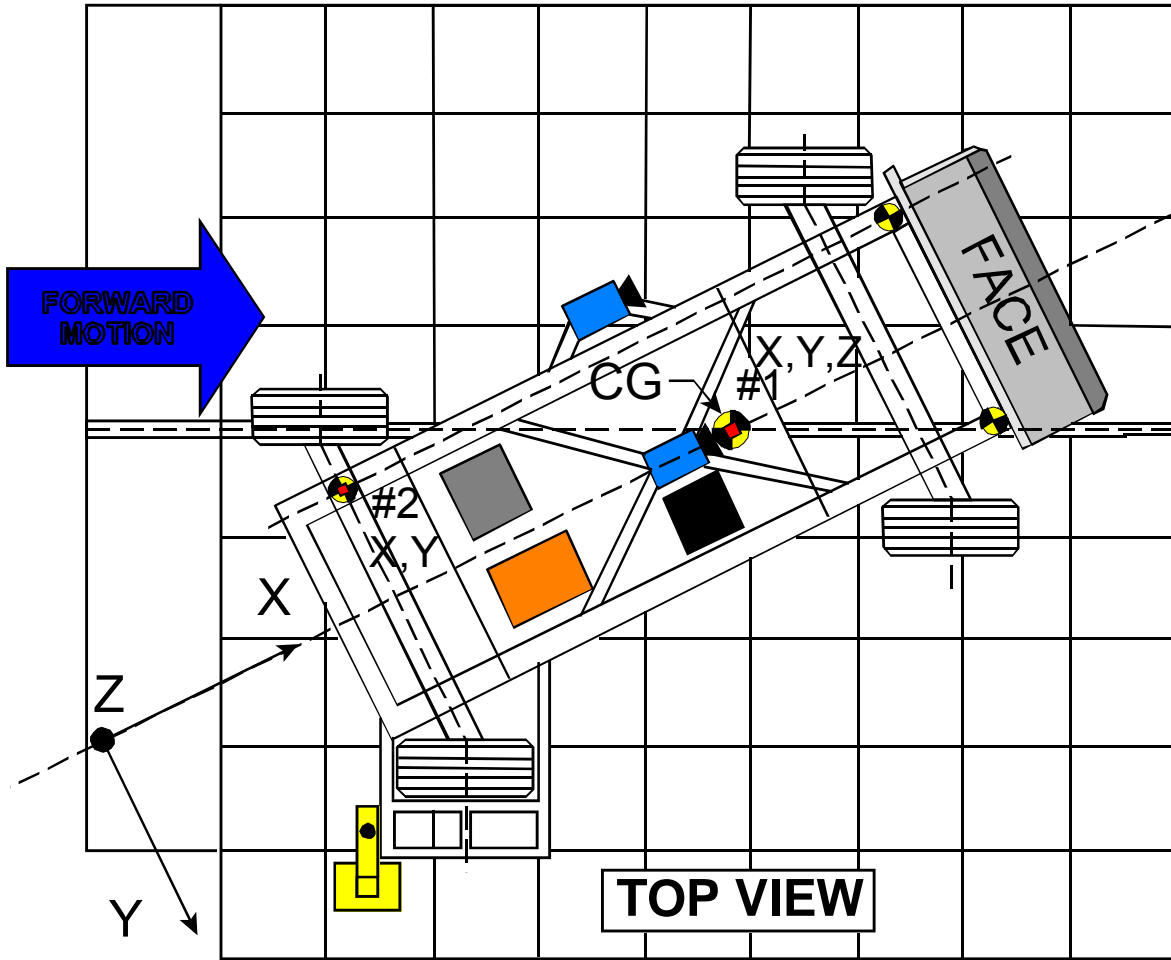
8675-F214-20

DATA SHEET 14

MDB ACCELEROMETER LOCATIONS AND DATA SUMMARY

Vehicle: 2005 Pontiac G6 4-Door Sedan

NHTSA No. C50107



Accel. No.	Location	Coordinates (millimeters)			Pos. Direct.		Neg. Direct.	
		X*	Y*	Z*	Max (g)	Time (msec)	Max (g)	Time (msec)
1	MDB Center of Gravity							
	Longitudinal... X	1859	0	-330	1.5	106.8	-21.1	36.3
	Lateral..... Y				1.6	58.9	-7.3	36.3
	Vertical..... Z				11.4	74.2	-15.0	79.4
	Resultant..... R				23.7	45.3	-	-
2	Rear Frame Member							
	Longitudinal... X	386	-660	-660	2.2	158.5	-23.6	40.5
	Lateral..... Y				3.4	18.3	-2.0	57.1

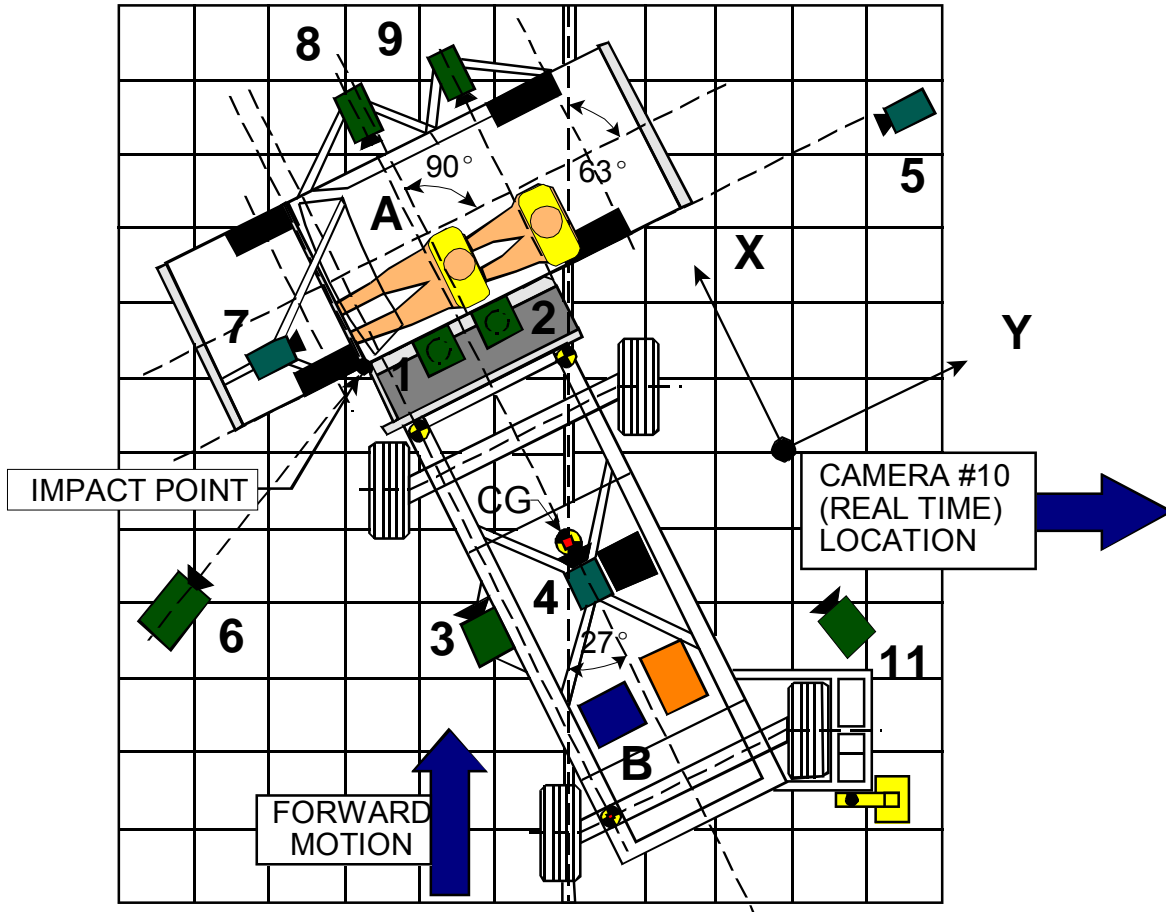
\*Reference: X = Rear Bumper (+ Forward)  
 Y = Vehicle Centerline (+ To Right)  
 Z = Ground Level (+ Down)  
 All measurements accurate to within ±3 mm.

DATA SHEET 15

HIGH SPEED CAMERA LOCATIONS AND DATA SUMMARY

Vehicle: 2005 Pontiac G6 4-Door Sedan

NHTSA No. C50107



Camera No.	View	Coordinates (millimeters)			Angle (deg.)	Lens (mm)	Film Speed (fps)
		X*	Y*	Z*			
1	Overhead view of test vehicle	70	802	-4880	-90	8	500
2	Overhead closeup view of impact plane	180	825	-4880	-90	12.5	500
3	MDB onboard closeup view of impact point	-1470	0	-847	0	13	500
4	MDB onboard view of driver dummy	-1140	838	-1586	-17	7.5	500
5	Right side ground level overall view	156	10110	-950	-2	50	1000
6	Left side ground level overall view	-2010	-1710	-1026	-10	28	1000
7	Test vehicle onboard driver front view	488	-555	-1248	-12	25	1000
8	Test vehicle onboard driver side view	1750	782	-1015	-9	12.5	1000
9	Test vehicle onboard passenger side view	1628	1638	-1089	-14	12.5	1000
10	Real time film coverage of test	-	-	-	-	-	30

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

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

**SECTION 5**

**FUEL SYSTEM INTEGRITY**

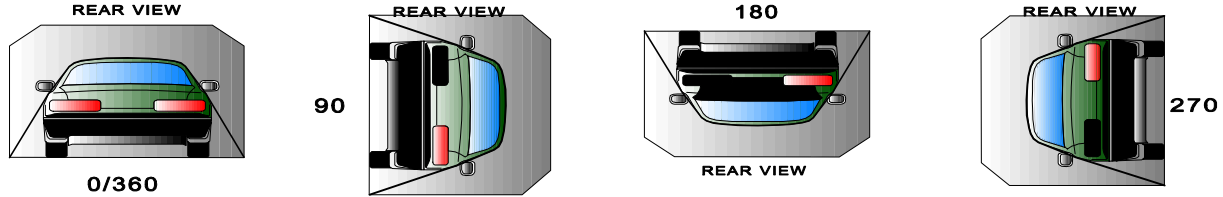


**DATA SHEET 17**

**ROLLOVER DATA**

Vehicle: 2005 Pontiac G6 4-Door Sedan

NHTSA No.: C50107



**I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:**

Rollover Stage	Rotation Time (spec. 1 -3 min)				FMVSS 301 Hold Time		Total Time				Next Whole Minute Interval	
	1	minutes	9	seconds	5	minutes	6	minutes	9	seconds	7	minutes
0° - 90°	1	minutes	9	seconds	5	minutes	6	minutes	9	seconds	7	minutes
90° - 180°	1	minutes	5	seconds	5	minutes	6	minutes	5	seconds	7	minutes
180°-270°	1	minutes	10	seconds	5	minutes	6	minutes	10	seconds	7	minutes
270°-360°	1	minutes	12	seconds	5	minutes	6	minutes	12	seconds	7	minutes

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

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

**III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:**

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

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

**IV. SOLVENT SPILLAGE LOCATION(S):**

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

**APPENDIX A**

**PHOTOGRAPHS**

**TABLE OF PHOTOGRAPHS**

<u>Figure</u>	<u>Photograph Title</u>	<u>Page</u>
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Figure A- 2	POST-TEST FRONTAL VIEW OF TEST VEHICLE	A- 4
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Figure A- 16	POST-TEST FRONTAL VIEW OF IMPACTOR FACE	A- 18
Figure A- 17	PRE-TEST LEFT SIDE VIEW OF IMPACTOR FACE	A- 19
Figure A- 18	POST-TEST LEFT SIDE VIEW OF IMPACTOR FACE	A- 20
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Figure A- 29	PRE-TEST LEFT OCCUPANT COMPARTMENT VIEW OF FRONT SID H3	A- 31
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Figure A-1 PRE-TEST FRONTAL VIEW OF TEST VEHICLE



A-4

8675-JF214-20

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

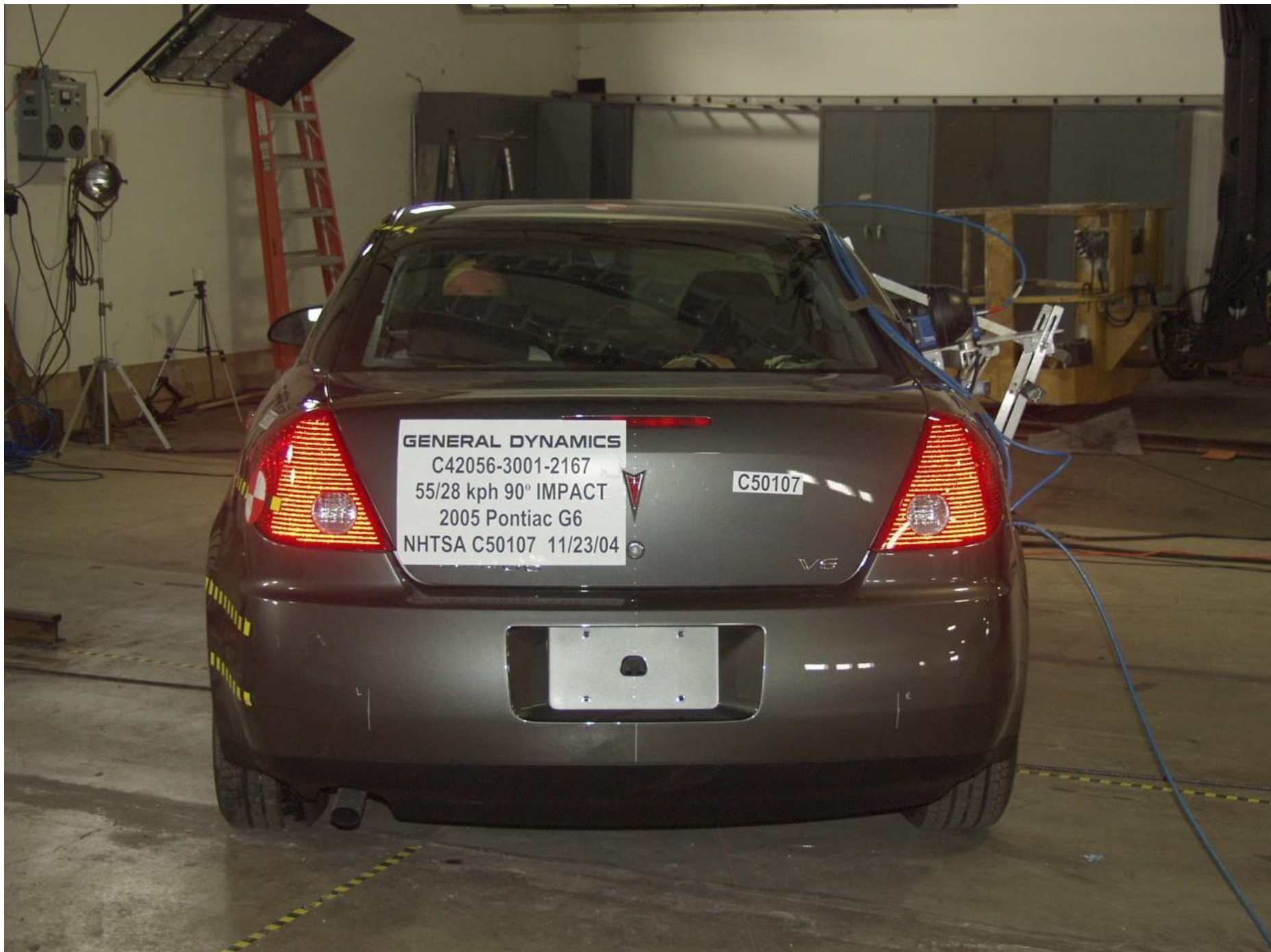


Figure A-3 PRE-TEST REAR VIEW OF TEST VEHICLE



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



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



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



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



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



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



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



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

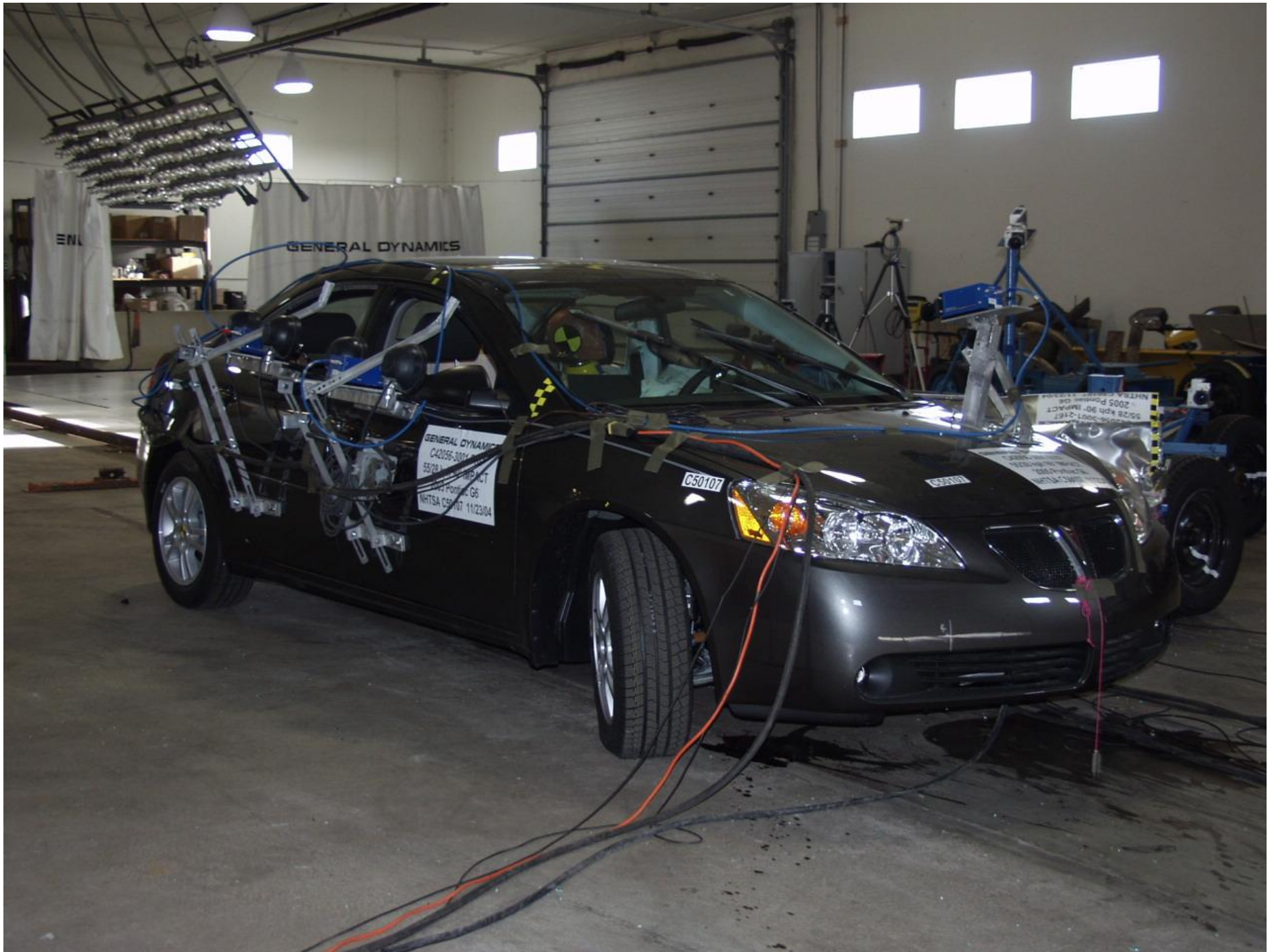


Figure A-12 POST-TEST RIGHT FRONT VIEW OF TEST VEHICLE



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



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



A-17

8675-F214-20

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



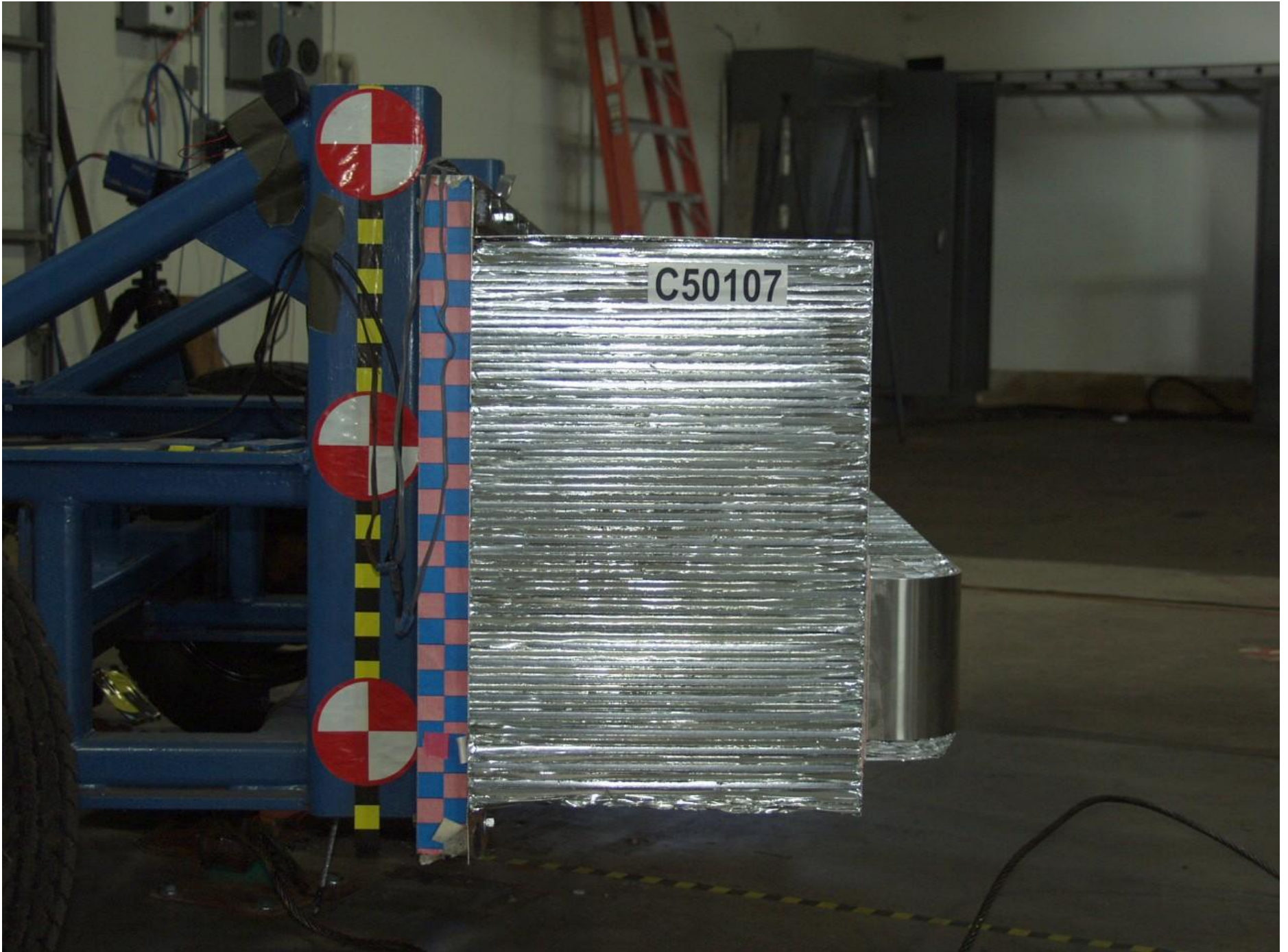
Figure A-16 POST-TEST FRONTAL VIEW OF IMPACTOR FACE



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



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



A-21

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



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

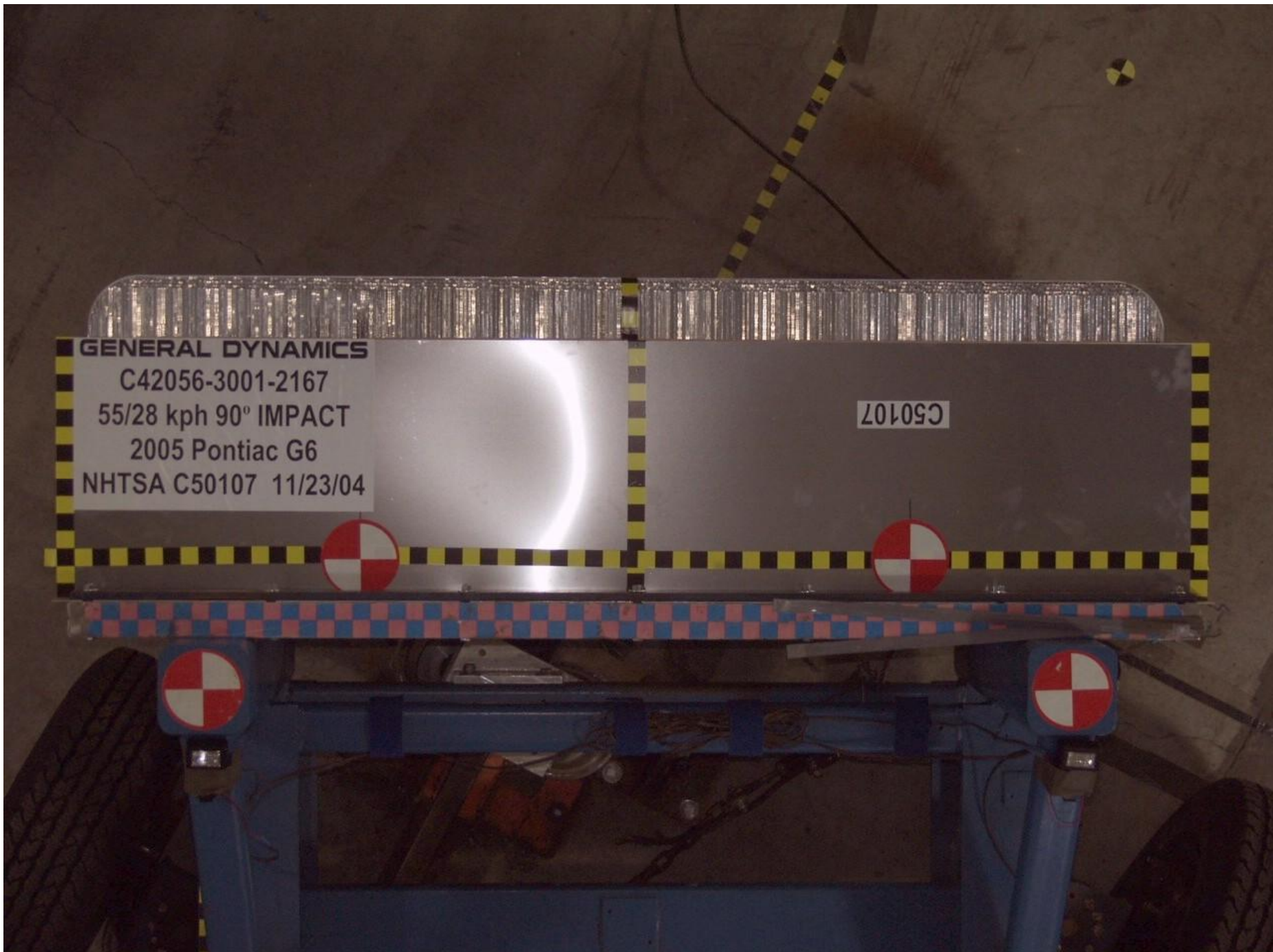


Figure A-21 PRE-TEST TOP VIEW OF IMPACTOR FACE



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

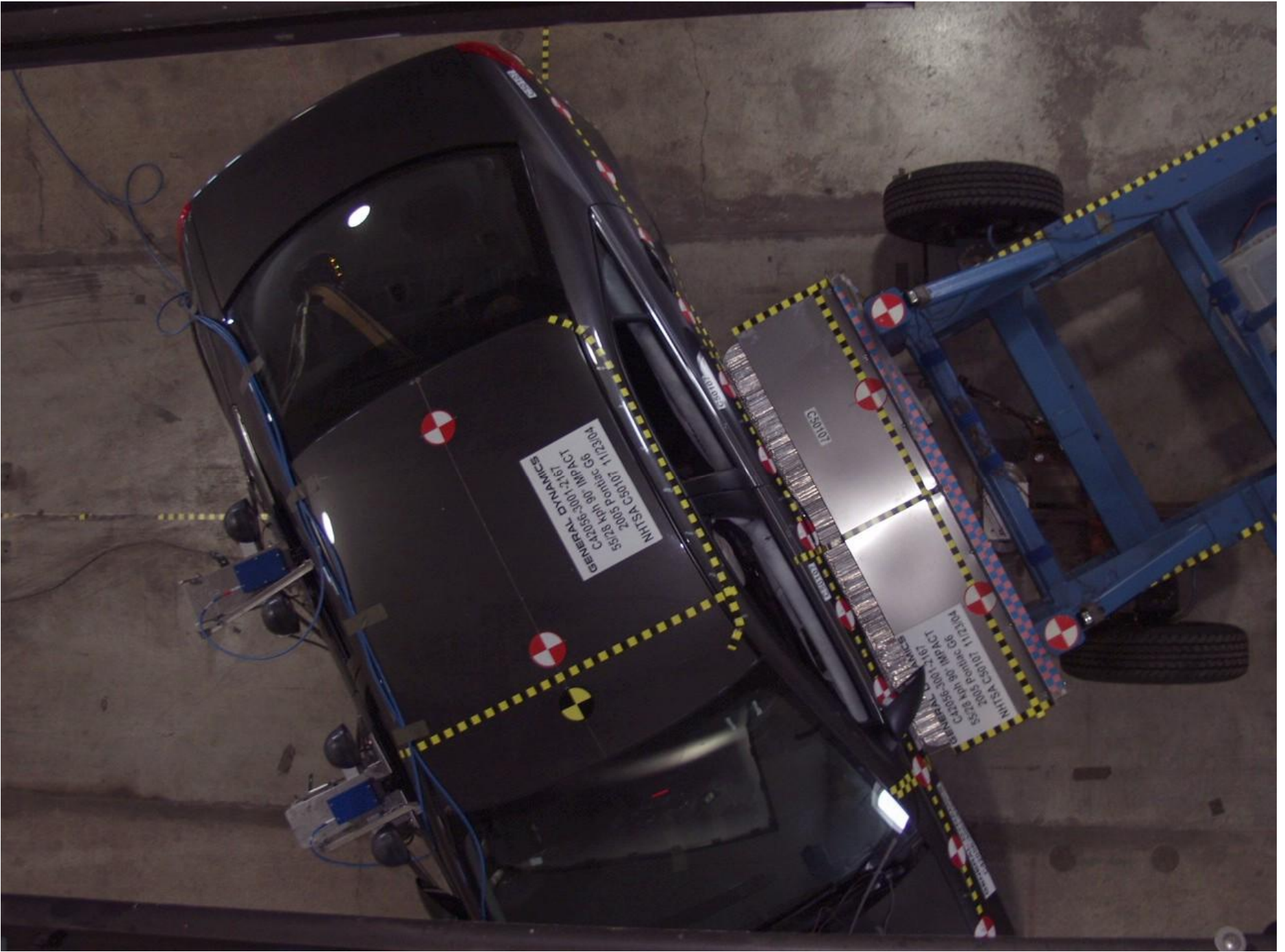


Figure A-23 PRE-TEST OVERHEAD VIEW OF ALIGNED MDB AND VEHICLE



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



A-27

8675-F214-20

Figure A-25 PRE-TEST RIGHT OCCUPANT COMPARTMENT VIEW OF FRONT SID H3



Figure A-26 POST-TEST RIGHT OCCUPANT COMPARTMENT VIEW OF FRONT SID H3



Figure A-27 PRE-TEST RIGHT OCCUPANT COMPARTMENT VIEW OF REAR SID H3



A-30

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Figure A-28 POST-TEST RIGHT OCCUPANT COMPARTMENT VIEW OF REAR SID H3



A-31

8675-F214-20

Figure A-29 PRE-TEST LEFT OCCUPANT COMPARTMENT VIEW OF FRONT SID H3



Figure A-30 POST-TEST LEFT OCCUPANT COMPARTMENT VIEW OF FRONT SID H3



Figure A-31 PRE-TEST LEFT OCCUPANT COMPARTMENT VIEW OF REAR SID H3



Figure A-32 POST-TEST LEFT OCCUPANT COMPARTMENT VIEW OF REAR SID H3



A-35

8675-F214-20

Figure A-33 PRE-TEST INTERIOR OF FRONT DOOR

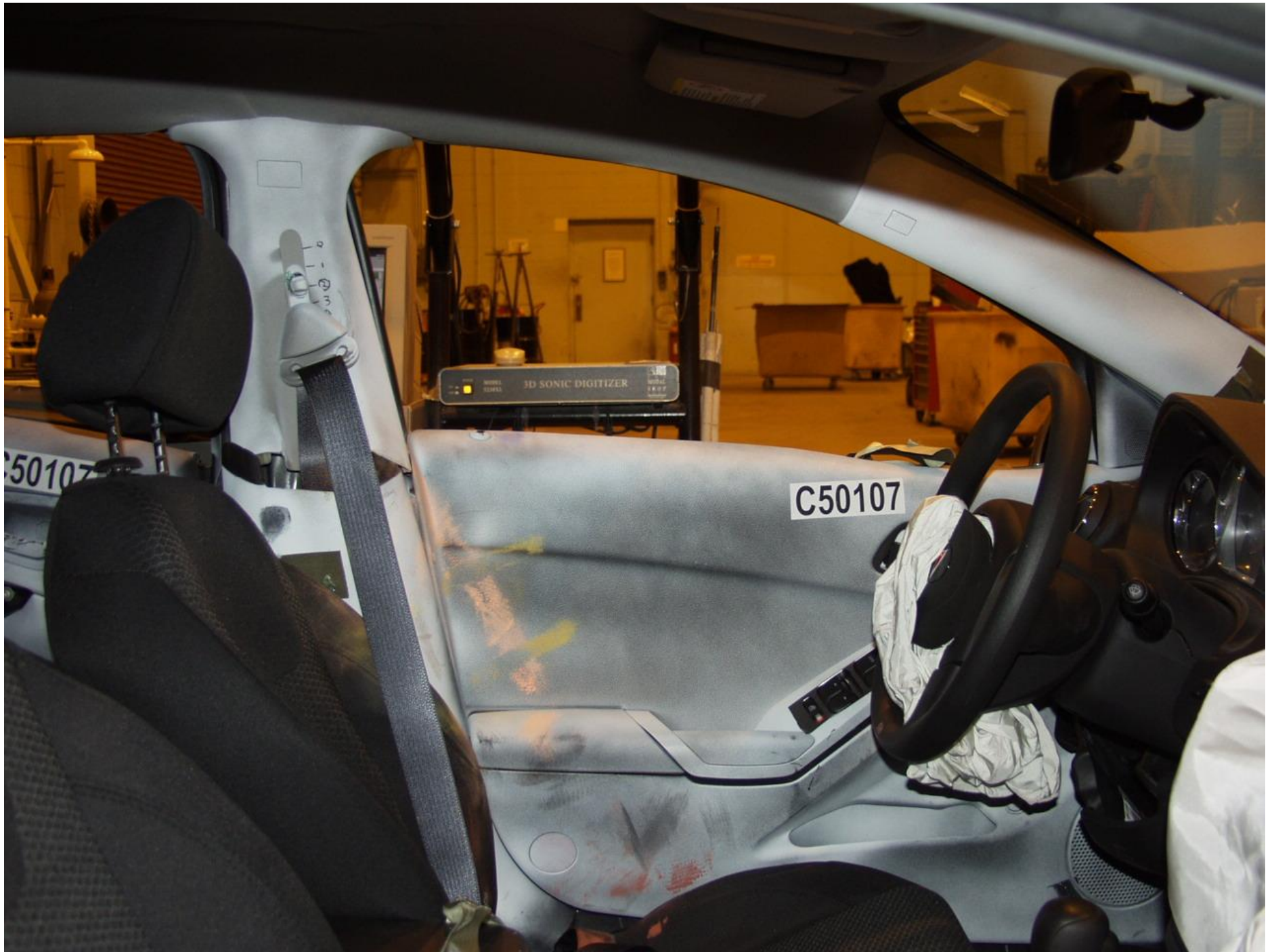


Figure A-34 POST-TEST INTERIOR OF FRONT DOOR SHOWING SID H3 IMPACT LOCATIONS



Figure A-35 PRE-TEST INTERIOR OF REAR DOOR



Figure A-36 POST-TEST INTERIOR OF REAR DOOR SHOWING SID H3 IMPACT LOCATIONS



Figure A-37 PRE-TEST LEFT SIDE VIEW OF MDB WITH IMPACTOR FACE IN POSITION



Figure A-38 PRE-TEST RIGHT SIDE VIEW OF MDB WITH IMPACTOR FACE IN POSITION

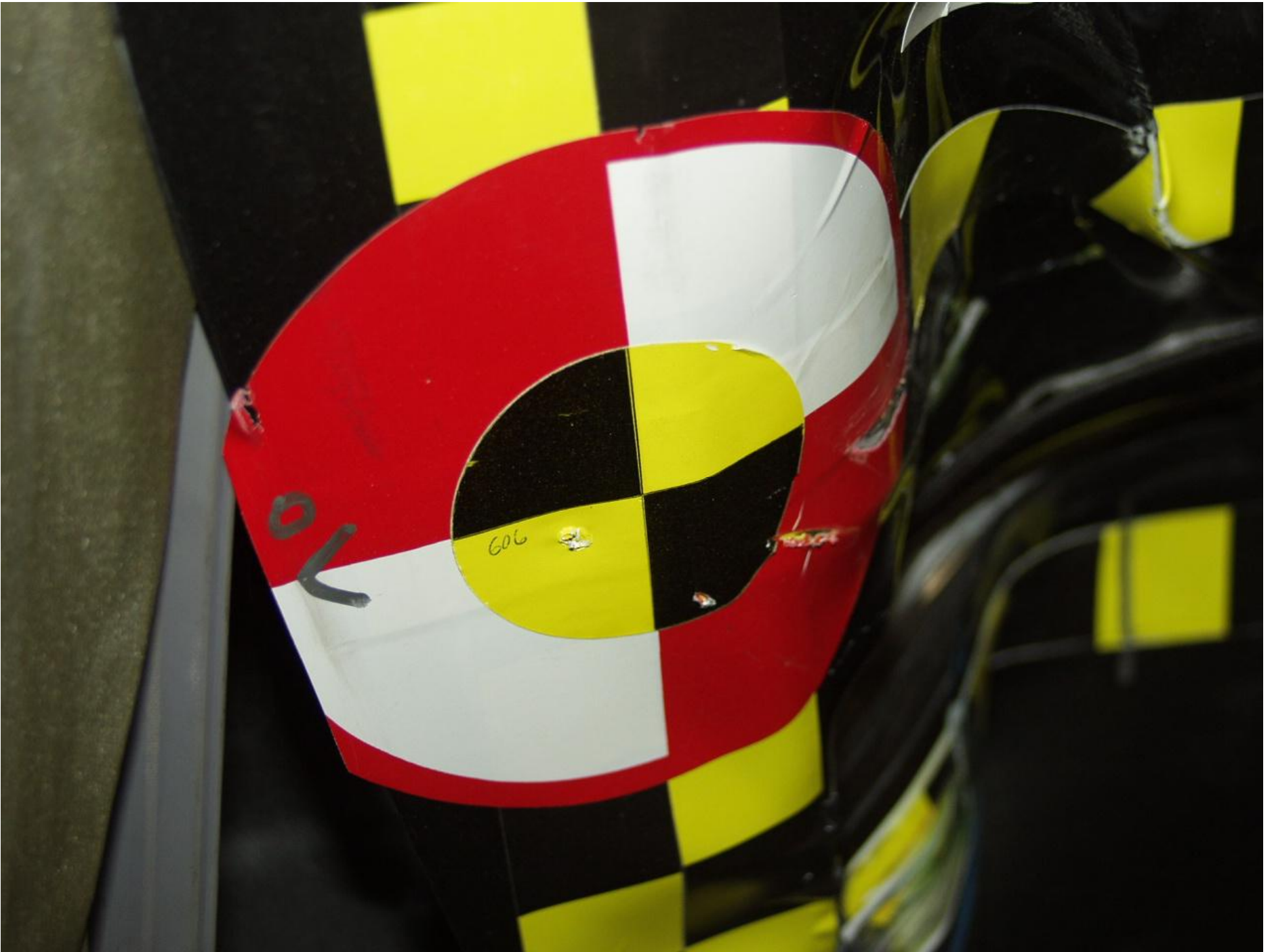


Figure A-39 POST-TEST CLOSE-UP VIEW OF IMPACT POINT TARGET



MFD BY GENERAL MOTORS CORP

DATE  
09/04

GVWR  
1967 KG  
4336 LB

GAWR FRT  
1071 KG  
2361 LB

GAWR RR  
896 KG  
1975 LB

THIS VEHICLE CONFORMS TO ALL APPLICABLE U.S. FEDERAL MOTOR  
VEHICLE SAFETY, BUMPER, AND THEFT PREVENTION STANDARDS IN  
EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE.

1G2ZG528654117380

TYPE: PASS CAR

Figure A-40 CLOSE-UP VIEW OF VEHICLE'S CERTIFICATION LABEL



# TIRE AND LOADING INFORMATION

SEATING CAPACITY | TOTAL 5 | FRONT 2 | CENTER 0 | REAR 3

The combined weight of occupants and cargo should never exceed 404 kg or 891 lbs.

ORIGINAL TIRE SIZE	COLD TIRE INFLATION PRESSURE	
	P215/60R16	FRONT
P215/60R16	REAR	210 kPa, 30 PSI
T125/70R16	SPARE	420 kPa, 60 PSI

**SEE OWNER'S  
MANUAL FOR  
ADDITIONAL  
INFORMATION**

Figure A-41 CLOSE-UP VIEW OF VEHICLE'S TIRE PLACARD LABEL



Figure A-42 IMPACT PHOTO



Figure A-43 ROLLOVER 90 DEGREES

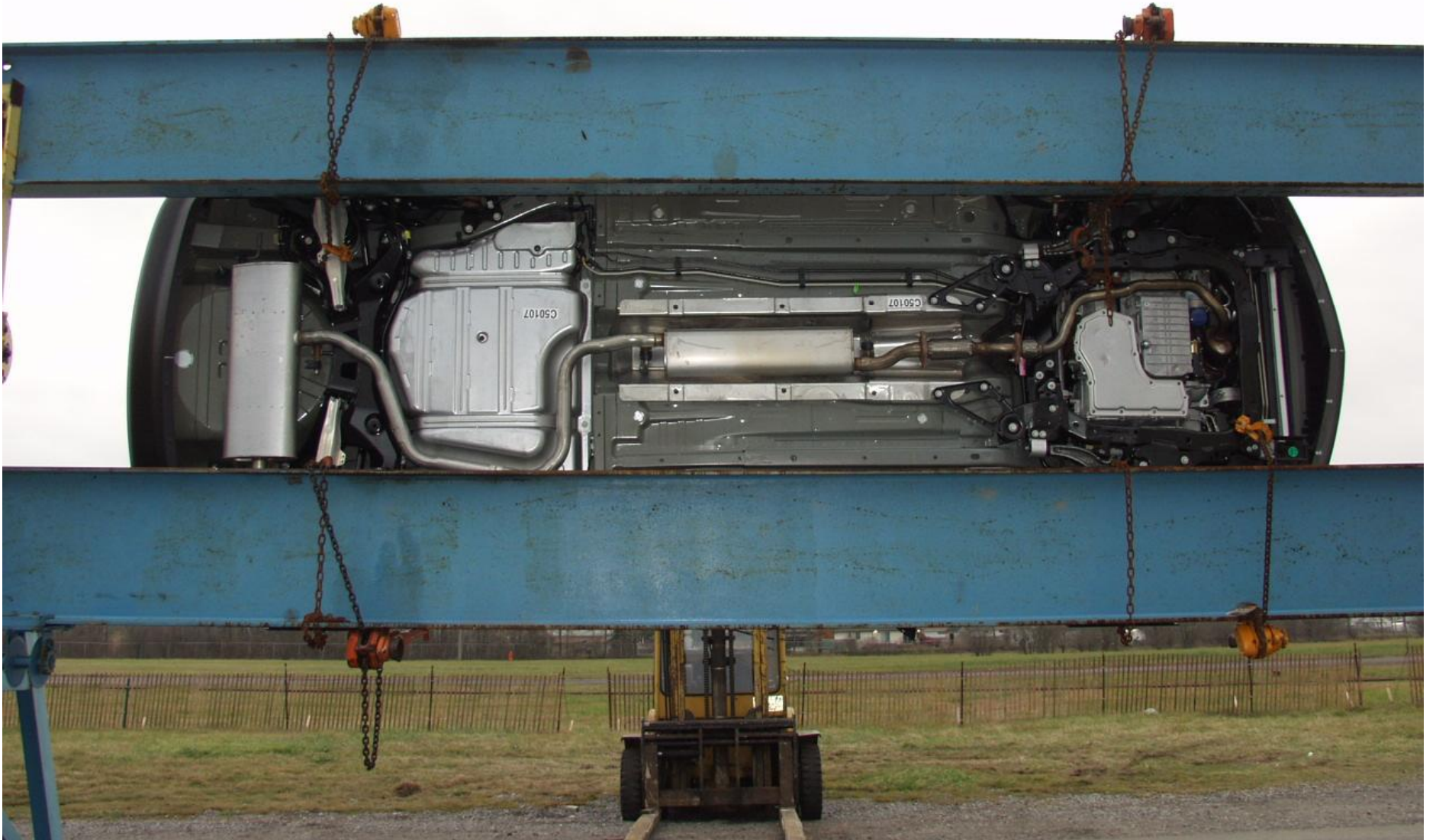


Figure A-45 ROLLOVER 270 DEGREES



Figure A-45 ROLLOVER 270 DEGREES



Figure A-46 ROLLOVER 360 DEGREES

**APPENDIX B**

**VEHICLE, MDB AND SID HYBRID III RESPONSE DATA**

**TABLE OF DATA PLOTS**

**DRIVER AND PASSENGER DUMMY INSTRUMENTATION PLOTS**

ACCELERATION, FORCE AND MOMENT DATA - FILTER CLASS 1000, LOWER SPINE - FILTER CLASS 180  
INTEGRATION DATA - FILTER CLASS 180

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
1	DRIVER HEAD (X) ACCELERATION VS TIME	B- 6
2	DRIVER HEAD (X) VELOCITY VS TIME	B- 7
3	DRIVER HEAD (Y) ACCELERATION VS TIME	B- 8
4	DRIVER HEAD (Y) VELOCITY VS TIME	B- 9
5	DRIVER HEAD (Z) ACCELERATION VS TIME	B- 10
6	DRIVER HEAD (Z) VELOCITY VS TIME	B- 11
7	DRIVER HEAD RESULTANT ACCELERATION VS TIME	B- 12
8	DRIVER UPPER NECK (X) FORCE VS TIME	B- 13
9	DRIVER UPPER NECK (Y) FORCE VS TIME	B- 14
10	DRIVER UPPER NECK (Z) FORCE VS TIME	B- 15
11	DRIVER UPPER NECK RESULTANT FORCE VS TIME	B- 16
12	DRIVER UPPER NECK (X) MOMENT VS TIME	B- 17
13	DRIVER UPPER NECK (Y) MOMENT VS TIME	B- 18
14	DRIVER UPPER NECK (Z) MOMENT VS TIME	B- 19
15	DRIVER UPPER NECK RESULTANT MOMENT VS TIME	B- 20
16	DRIVER UPPER RIB (Y) ACCELERATION VS TIME	B- 21
17	DRIVER UPPER RIB (Y) VELOCITY VS TIME	B- 22
18	DRIVER LOWER RIB (Y) ACCELERATION VS TIME	B- 23
19	DRIVER LOWER RIB (Y) VELOCITY VS TIME	B- 24
20	DRIVER LOWER SPINE (Y) ACCELERATION VS TIME	B- 25
21	DRIVER LOWER SPINE (Y) VELOCITY VS TIME	B- 26
22	DRIVER PELVIC (Y) ACCELERATION VS TIME	B- 27
23	DRIVER PELVIC (Y) VELOCITY VS TIME	B- 28
24	PASSENGER HEAD (X) ACCELERATION VS TIME	B- 29
25	PASSENGER HEAD (X) VELOCITY VS TIME	B- 30
26	PASSENGER HEAD (Y) ACCELERATION VS TIME	B- 31
27	PASSENGER HEAD (Y) VELOCITY VS TIME	B- 32
28	PASSENGER HEAD (Z) ACCELERATION VS TIME	B- 33
29	PASSENGER HEAD (Z) VELOCITY VS TIME	B- 34
30	PASSENGER HEAD RESULTANT ACCELERATION VS TIME	B- 35
31	PASSENGER UPPER NECK (X) FORCE VS TIME	B- 36
32	PASSENGER UPPER NECK (Y) FORCE VS TIME	B- 37
33	PASSENGER UPPER NECK (Z) FORCE VS TIME	B- 38
34	PASSENGER UPPER NECK RESULTANT FORCE VS TIME	B- 39
35	PASSENGER UPPER NECK (X) MOMENT VS TIME	B- 40
36	PASSENGER UPPER NECK (Y) MOMENT VS TIME	B- 41
37	PASSENGER UPPER NECK (Z) MOMENT VS TIME	B- 42
38	PASSENGER UPPER NECK RESULTANT MOMENT VS TIME	B- 43
39	PASSENGER UPPER RIB (Y) ACCELERATION VS TIME	B- 44
40	PASSENGER UPPER RIB (Y) VELOCITY VS TIME	B- 45
41	PASSENGER LOWER RIB (Y) ACCELERATION VS TIME	B- 46
42	PASSENGER LOWER RIB (Y) VELOCITY VS TIME	B- 47
43	PASSENGER LOWER SPINE (Y) ACCELERATION VS TIME	B- 48
44	PASSENGER LOWER SPINE (Y) VELOCITY VS TIME	B- 49
45	PASSENGER PELVIC (Y) ACCELERATION VS TIME	B- 50
46	PASSENGER PELVIC (Y) VELOCITY VS TIME	B- 51

**DRIVER & PASSENGER DUMMY INSTRUMENTATION PLOTS**

ACCELERATION DATA - FIR FILTERED

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
47	DRIVER UPPER RIB (Y) ACCELERATION VS TIME	B- 52
48	DRIVER LOWER RIB (Y) ACCELERATION VS TIME	B- 53
49	DRIVER LOWER SPINE (Y) ACCELERATION VS TIME	B- 54
50	DRIVER PELVIC (Y) ACCELERATION VS TIME	B- 55
51	PASSENGER UPPER RIB (Y) ACCELERATION VS TIME	B- 56
52	PASSENGER LOWER RIB (Y) ACCELERATION VS TIME	B- 57
53	PASSENGER LOWER SPINE (Y) ACCELERATION VS TIME	B- 58
54	PASSENGER PELVIC (Y) ACCELERATION VS TIME	B- 59

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

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
55	RIGHT SIDE SILL AT FRONT SEAT (X) ACCELERATION VS TIME	B- 60
56	RIGHT SIDE SILL AT FRONT SEAT (X) VELOCITY VS TIME	B- 61
57	RIGHT SIDE SILL AT FRONT SEAT (Y) ACCELERATION VS TIME	B- 62
58	RIGHT SIDE SILL AT FRONT SEAT (Y) VELOCITY VS TIME	B- 63
59	RIGHT SIDE SILL AT FRONT SEAT (Z) ACCELERATION VS TIME	B- 64
60	RIGHT SIDE SILL AT FRONT SEAT (Z) VELOCITY VS TIME	B- 65
61	RIGHT SIDE SILL AT FRONT SEAT RESULTANT ACCELERATION VS TIME	B- 66
62	RIGHT SIDE SILL AT REAR SEAT (X) ACCELERATION VS TIME	B- 67
63	RIGHT SIDE SILL AT REAR SEAT (X) VELOCITY VS TIME	B- 68
64	RIGHT SIDE SILL AT REAR SEAT (Y) ACCELERATION VS TIME	B- 69
65	RIGHT SIDE SILL AT REAR SEAT (Y) VELOCITY VS TIME	B- 70
66	RIGHT SIDE SILL AT REAR SEAT (Z) ACCELERATION VS TIME	B- 71
67	RIGHT SIDE SILL AT REAR SEAT (Z) VELOCITY VS TIME	B- 72
68	RIGHT SIDE SILL AT REAR SEAT RESULTANT ACCELERATION VS TIME	B- 73
69	REAR FLOORPAN ABOVE AXLE (X) ACCELERATION VS TIME	B- 74
70	REAR FLOORPAN ABOVE AXLE (X) VELOCITY VS TIME	B- 75
71	REAR FLOORPAN ABOVE AXLE (Y) ACCELERATION VS TIME	B- 76
72	REAR FLOORPAN ABOVE AXLE (Y) VELOCITY VS TIME	B- 77
73	REAR FLOORPAN ABOVE AXLE (Z) ACCELERATION VS TIME	B- 78
74	REAR FLOORPAN ABOVE AXLE (Z) VELOCITY VS TIME	B- 79
75	REAR FLOORPAN ABOVE AXLE RESULTANT ACCELERATION VS TIME	B- 80
76	LEFT SIDE SILL AT REAR SEAT (Y) ACCELERATION VS TIME	B- 81
77	LEFT SIDE SILL AT REAR SEAT (Y) VELOCITY VS TIME	B- 82
78	LEFT SIDE SILL AT FRONT SEAT (Y) ACCELERATION VS TIME	B- 83
79	LEFT SIDE SILL AT FRONT SEAT (Y) VELOCITY VS TIME	B- 84
80	RIGHT REAR OCCUPANT COMPARTMENT (Y) ACCELERATION VS TIME	B- 85
81	RIGHT REAR OCCUPANT COMPARTMENT (Y) VELOCITY VS TIME	B- 86
82	LOWER B-POST (Y) ACCELERATION VS TIME	B- 87
83	LOWER B-POST (Y) VELOCITY VS TIME	B- 88
84	UPPER B-POST (Y) ACCELERATION VS TIME	B- 89
85	UPPER B-POST (Y) VELOCITY VS TIME	B- 90
86	LOWER A-POST (Y) ACCELERATION VS TIME	B- 91
87	LOWER A-POST (Y) VELOCITY VS TIME	B- 92
88	UPPER A-POST (Y) ACCELERATION VS TIME	B- 93
89	UPPER A-POST (Y) VELOCITY VS TIME	B- 94
90	FRONT SEAT TRACK (Y) ACCELERATION VS TIME	B- 95
91	FRONT SEAT TRACK (Y) VELOCITY VS TIME	B- 96
92	REAR SEAT TRACK (Y) ACCELERATION VS TIME	B- 97
93	REAR SEAT TRACK (Y) VELOCITY VS TIME	B- 98

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

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
94	VEHICLE CENTER OF GRAVITY (X) ACCELERATION VS TIME	B- 99
95	VEHICLE CENTER OF GRAVITY (X) VELOCITY VS TIME	B- 100
96	VEHICLE CENTER OF GRAVITY (Y) ACCELERATION VS TIME	B- 101
97	VEHICLE CENTER OF GRAVITY (Y) VELOCITY ACCELERATION VS TIME	B- 102
98	VEHICLE CENTER OF GRAVITY (Z) ACCELERATION VS TIME	B- 103
99	VEHICLE CENTER OF GRAVITY (Z) VELOCITY VS TIME	B- 104
100	VEHICLE CENTER OF GRAVITY RESULTANT ACCELERATION VS TIME	B- 105

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

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
101	MDB CENTER OF GRAVITY (X) ACCELERATION VS TIME	B- 106
102	MDB CENTER OF GRAVITY (X) VELOCITY VS TIME	B- 107
103	MDB CENTER OF GRAVITY (Y) ACCELERATION VS TIME	B- 108
104	MDB CENTER OF GRAVITY (Y) VELOCITY VS TIME	B- 109
105	MDB CENTER OF GRAVITY (Z) ACCELERATION VS TIME	B- 110
106	MDB CENTER OF GRAVITY (Z) VELOCITY VS TIME	B- 111
107	MDB CENTER OF GRAVITY RESULTANT ACCELERATION VS TIME	B- 112
108	MDB REAR (X) ACCELERATION VS TIME	B- 113
109	MDB REAR (X) VELOCITY VS TIME	B- 114
110	MDB REAR (Y) ACCELERATION VS TIME	B- 115
111	MDB REAR (Y) VELOCITY VS TIME	B- 116

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

<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
112	DRIVER UPPER RIB (Y) ACCELERATION VS TIME	B- 117
113	DRIVER UPPER RIB (Y) VELOCITY VS TIME	B- 118
114	DRIVER LOWER RIB (Y) ACCELERATION VS TIME	B- 119
115	DRIVER LOWER RIB (Y) VELOCITY VS TIME	B- 120
116	DRIVER LOWER SPINE (Y) ACCELERATION VS TIME	B- 121
117	DRIVER LOWER SPINE (Y) VELOCITY VS TIME	B- 122
118	DRIVER PELVIC (Y) ACCELERATION VS TIME	B- 123
119	DRIVER PELVIC (Y) VELOCITY VS TIME	B- 124
120	PASSENGER UPPER RIB (Y) ACCELERATION VS TIME	B- 125
121	PASSENGER UPPER RIB (Y) VELOCITY VS TIME	B- 126
122	PASSENGER LOWER RIB (Y) ACCELERATION VS TIME	B- 127
123	PASSENGER LOWER RIB (Y) VELOCITY VS TIME	B- 128
124	PASSENGER LOWER SPINE (Y) ACCELERATION VS TIME	B- 129
125	PASSENGER LOWER SPINE (Y) VELOCITY VS TIME	B- 130
126	PASSENGER PELVIC (Y) ACCELERATION VS TIME	B- 131
127	PASSENGER PELVIC (Y) VELOCITY VS TIME	B- 132

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

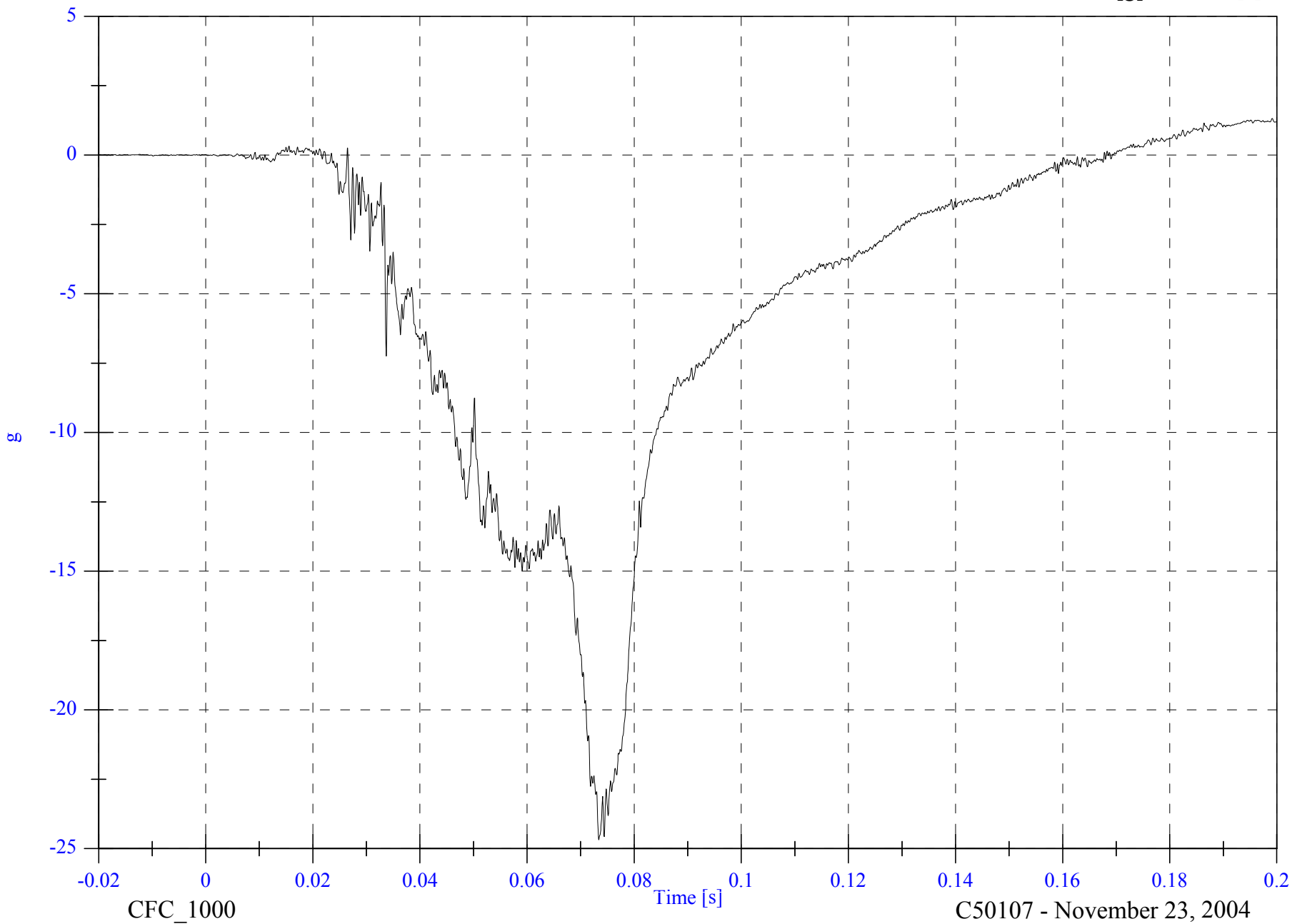
<u>Plot No.</u>	<u>Data Plot Title</u>	<u>Page</u>
128	DRIVER UPPER RIB (Y) ACCELERATION VS TIME	B- 133
129	DRIVER LOWER RIB (Y) ACCELERATION VS TIME	B- 134
130	DRIVER LOWER SPINE (Y) ACCELERATION VS TIME	B- 135
131	DRIVER PELVIC (Y) ACCELERATION VS TIME	B- 136
132	PASSENGER UPPER RIB (Y) ACCELERATION VS TIME	B- 137
133	PASSENGER LOWER RIB (Y) ACCELERATION VS TIME	B- 138
134	PASSENGER LOWER SPINE (Y) ACCELERATION VS TIME	B- 139
135	PASSENGER PELVIC (Y) ACCELERATION VS TIME	B- 140

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2P1 Head x

Max: 1.3 [g] at 0.199 [s]

Min: -24.7 [g] at 0.073 [s]



B-6

8675-F214-20

CFC\_1000

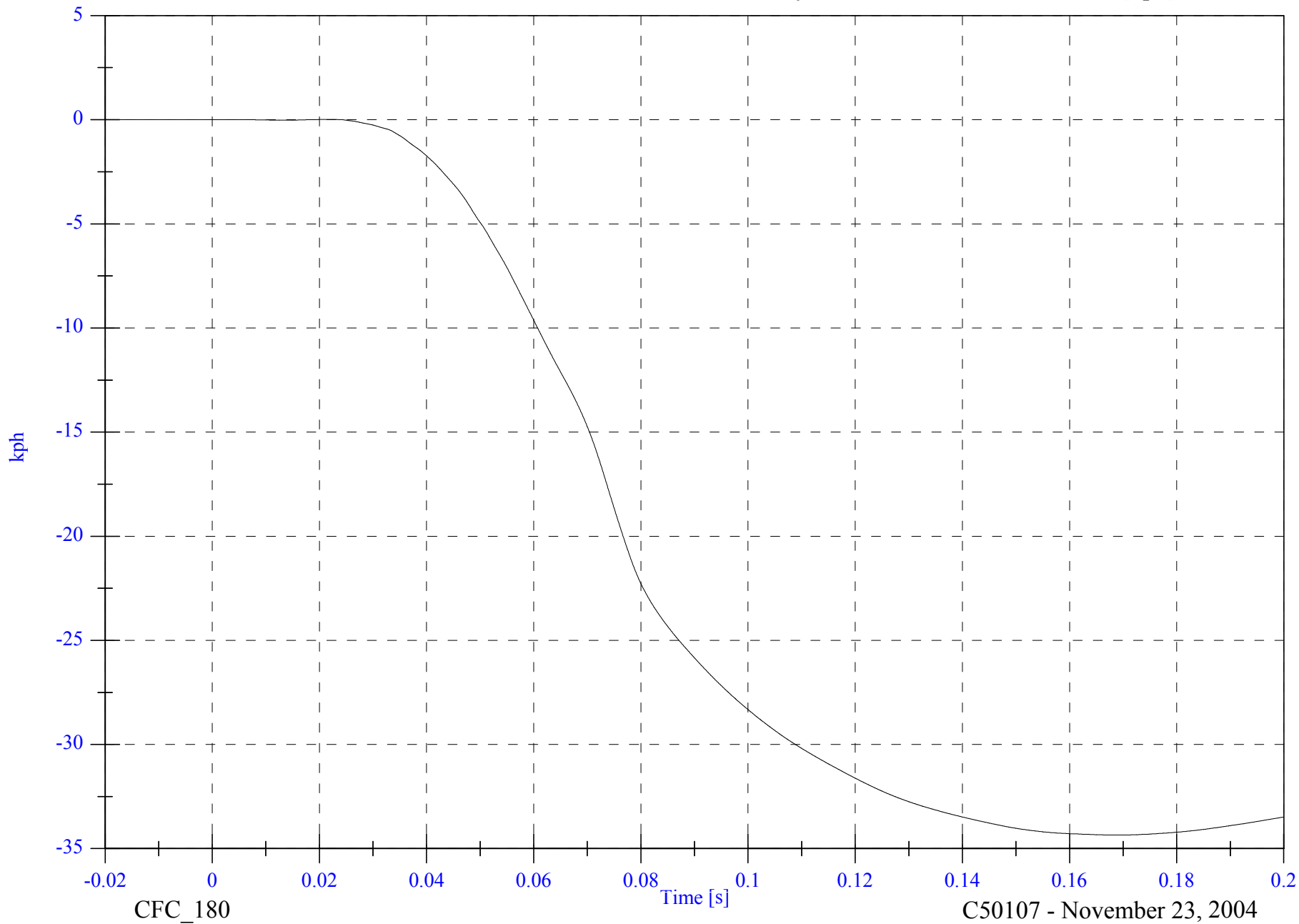
C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2P1 Head x Velocity

Max: 0.0 [kph] at 0.022 [s]

Min: -34.4 [kph] at 0.169 [s]



B-7

8675-F214-20

CFC\_180

Time [s]

C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2P1 Head y

Max: 30.5 [g] at 0.071 [s]

Min: -3.0 [g] at 0.028 [s]



B-8

8675-F214-20

CFC\_1000

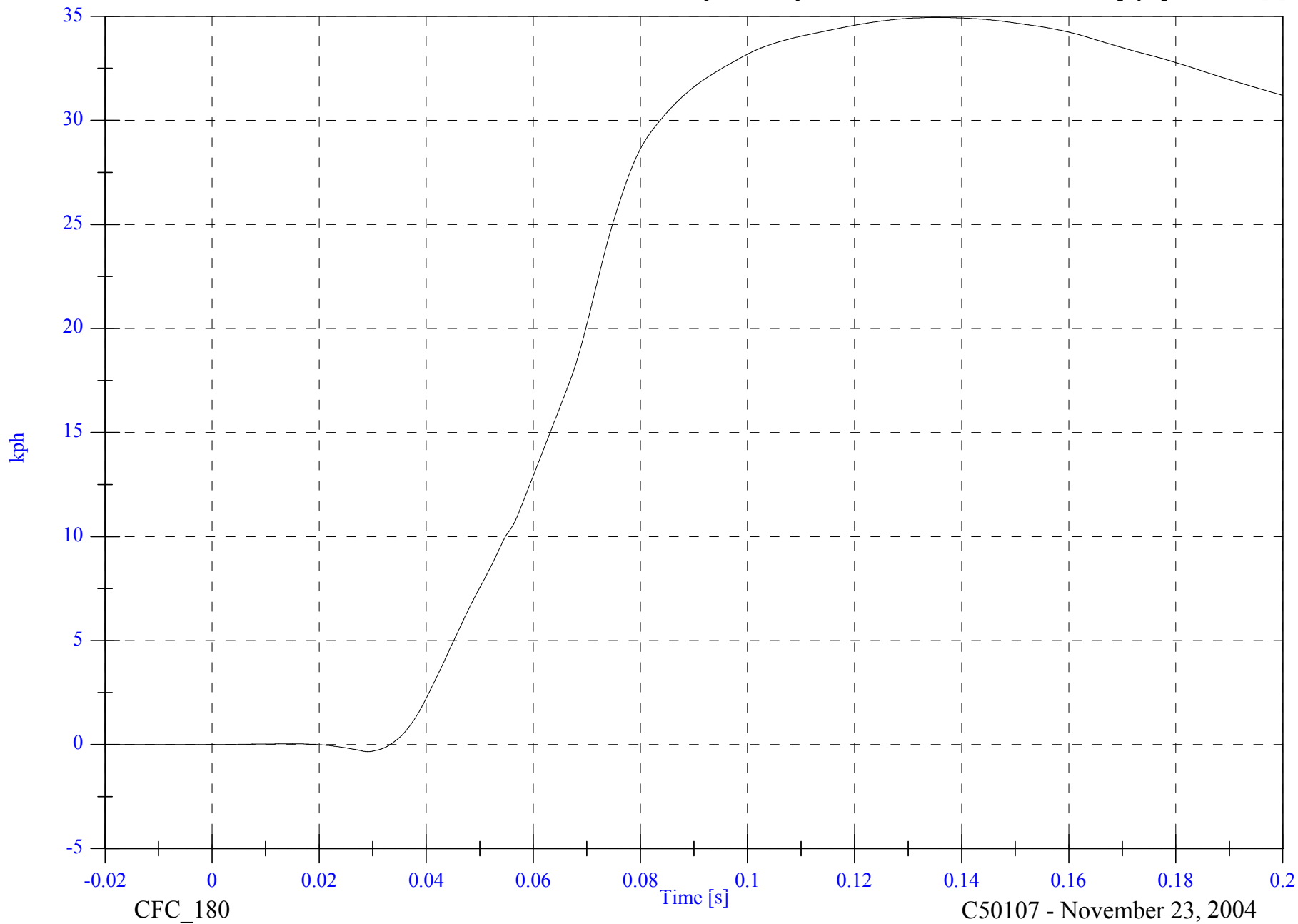
C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2P1 Head y Velocity

Max: 34.9 [kph] at 0.135 [s]

Min: -0.3 [kph] at 0.029 [s]



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8675-F214-20

CFC\_180

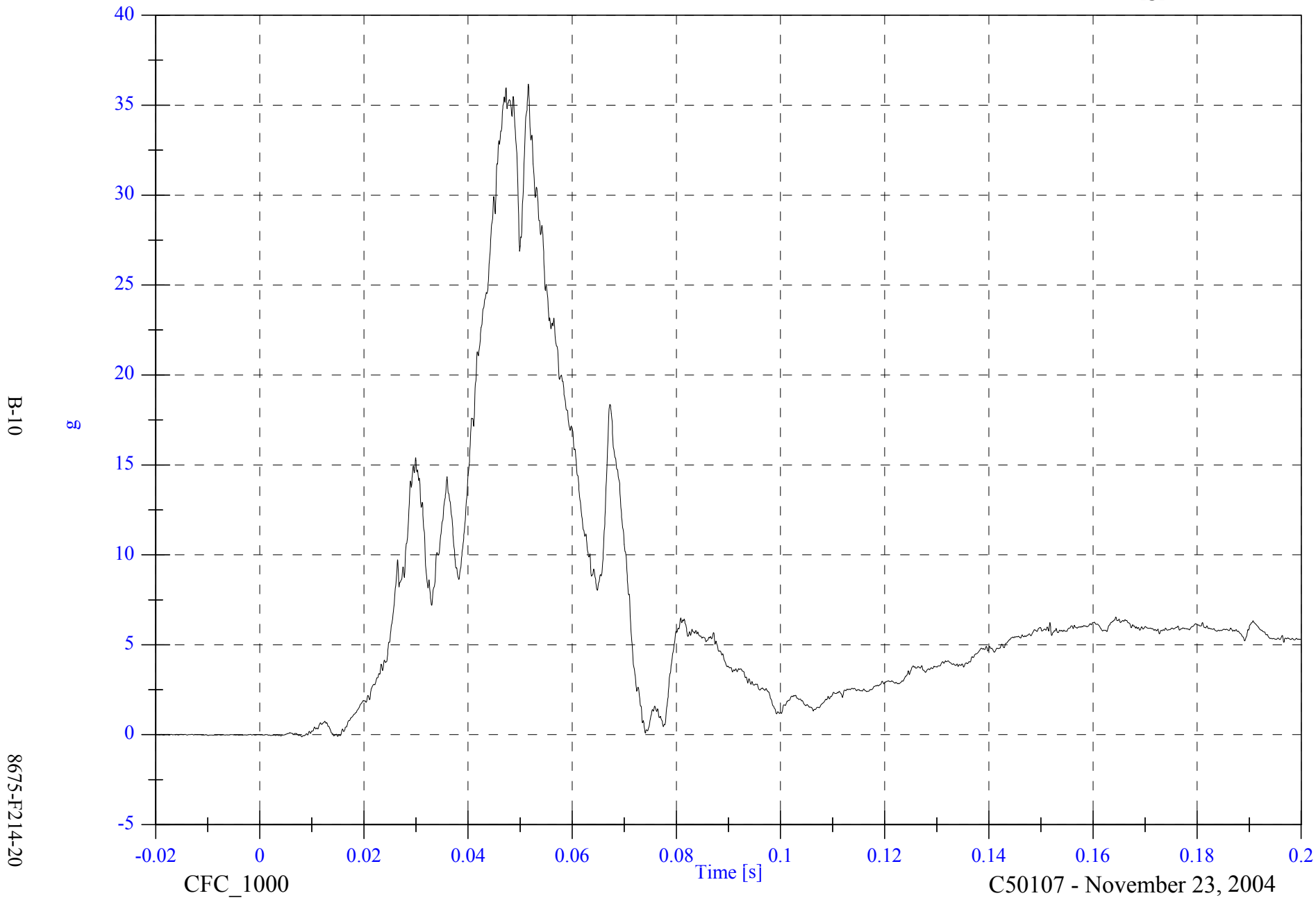
C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2P1 Head z

Max: 36.2 [g] at 0.052 [s]

Min: -0.1 [g] at 0.008 [s]



2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

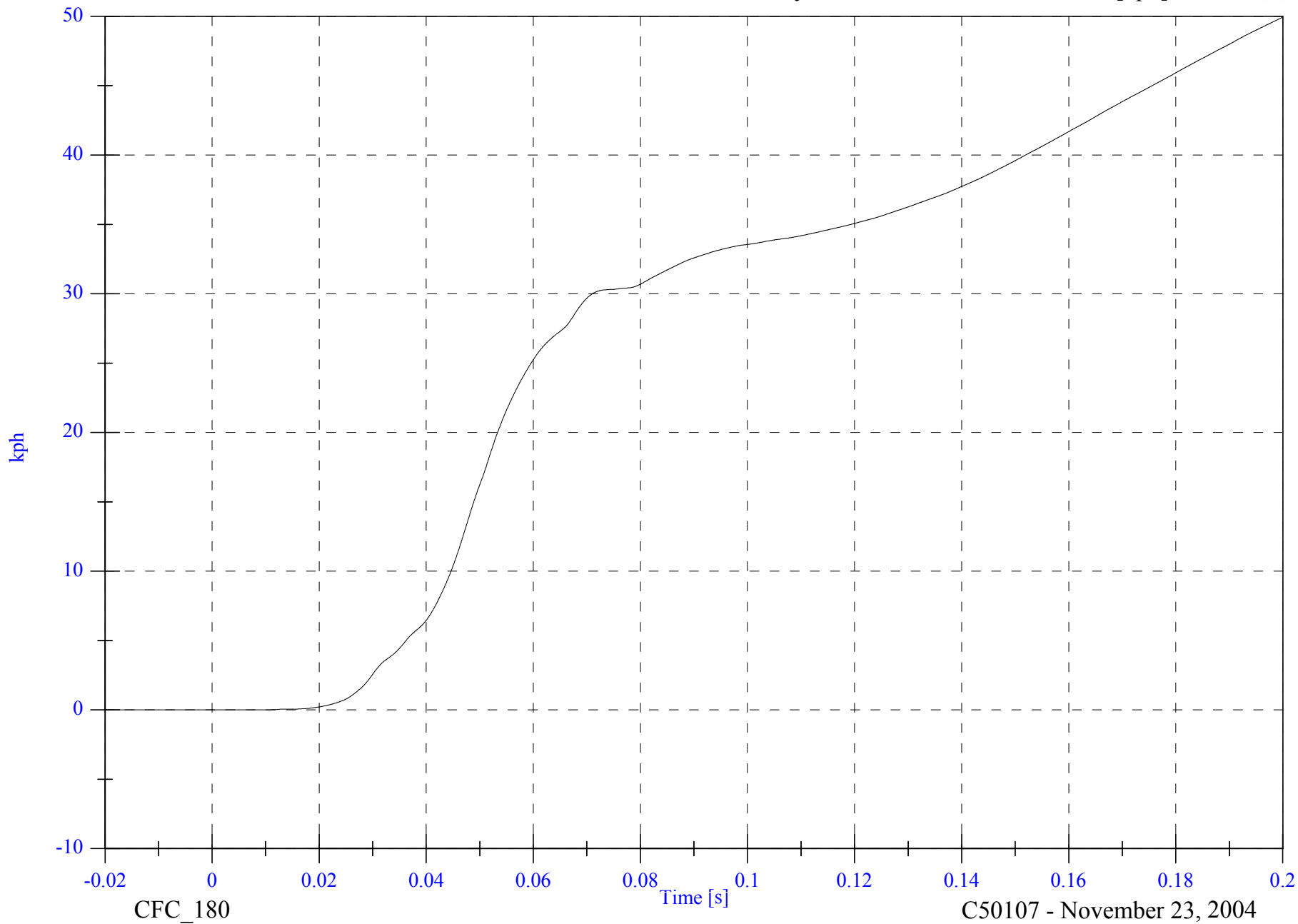
V2P1 Head z Velocity

Max: 49.9 [kph] at 0.200 [s]

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

B-11

8675-F214-20



2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

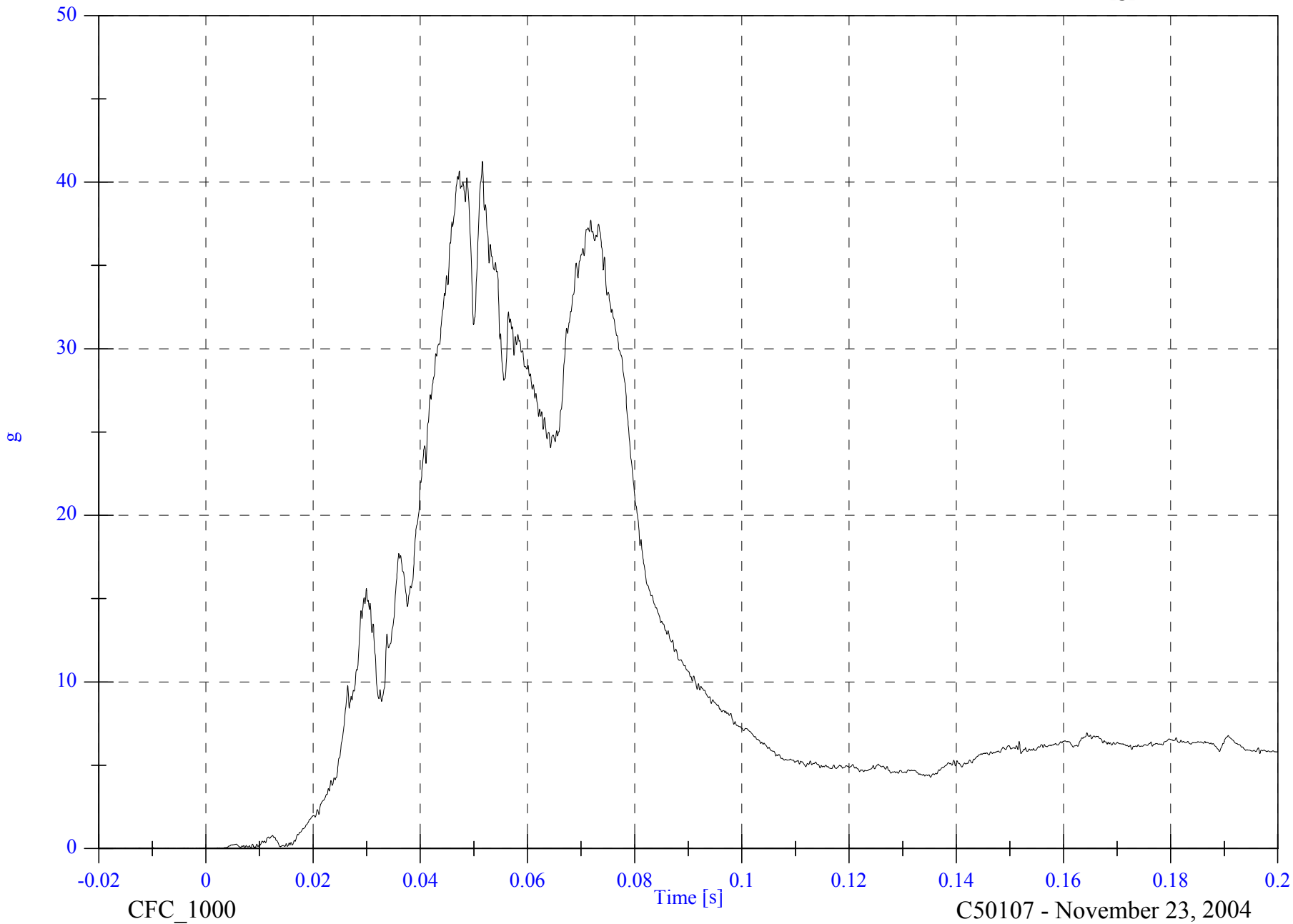
V2P1 Head Resultant

Max: 41.3 [g] at 0.052 [s]

Min: 0.0 [g] at -0.006 [s]

B-12

8675-F214-20



CFC\_1000

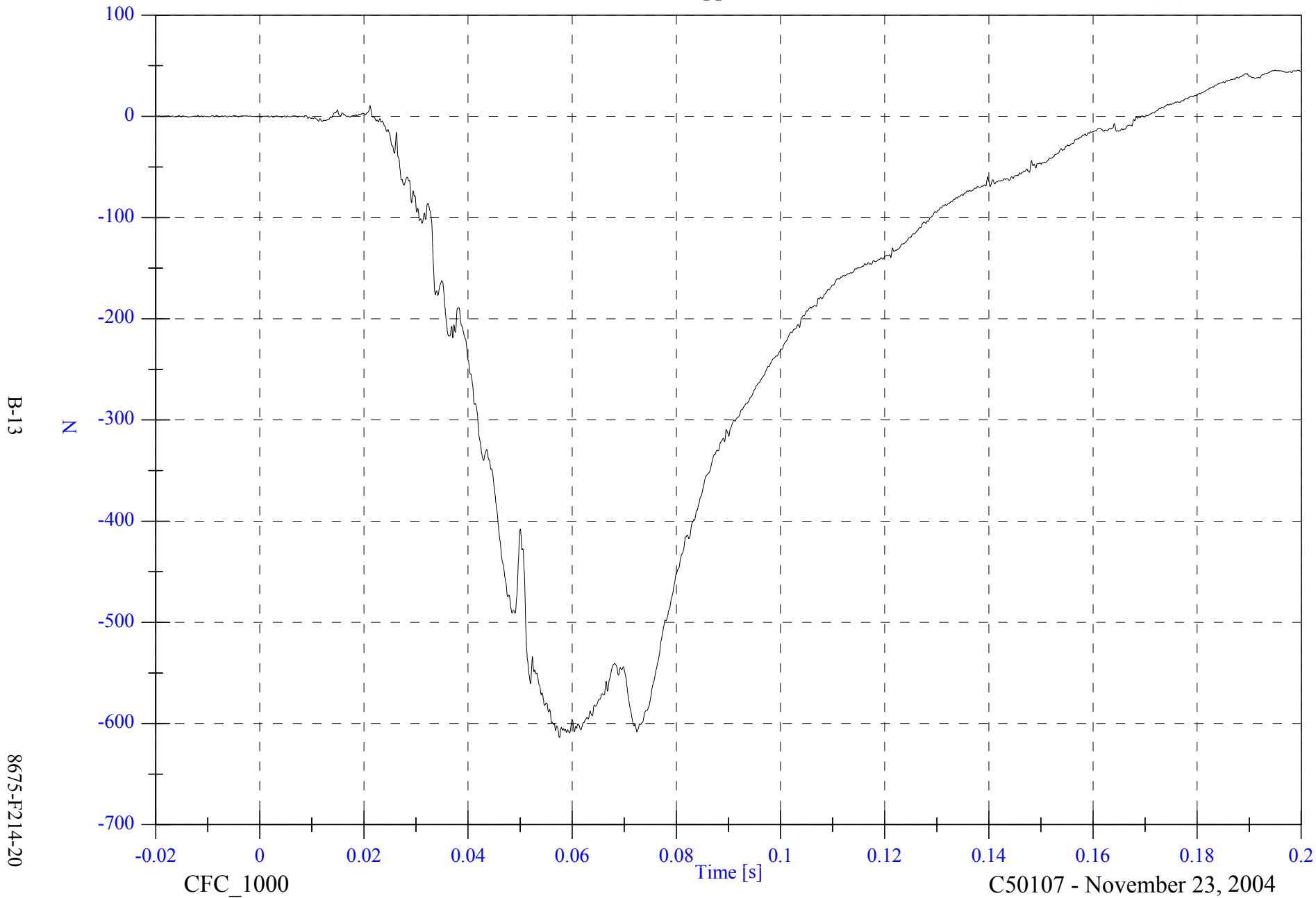
C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2P1 Upper Neck Fx

Max: 45.6 [N] at 0.200 [s]

Min: -613.8 [N] at 0.058 [s]



B-13

8675-F214-20

CFC\_1000

Time [s]

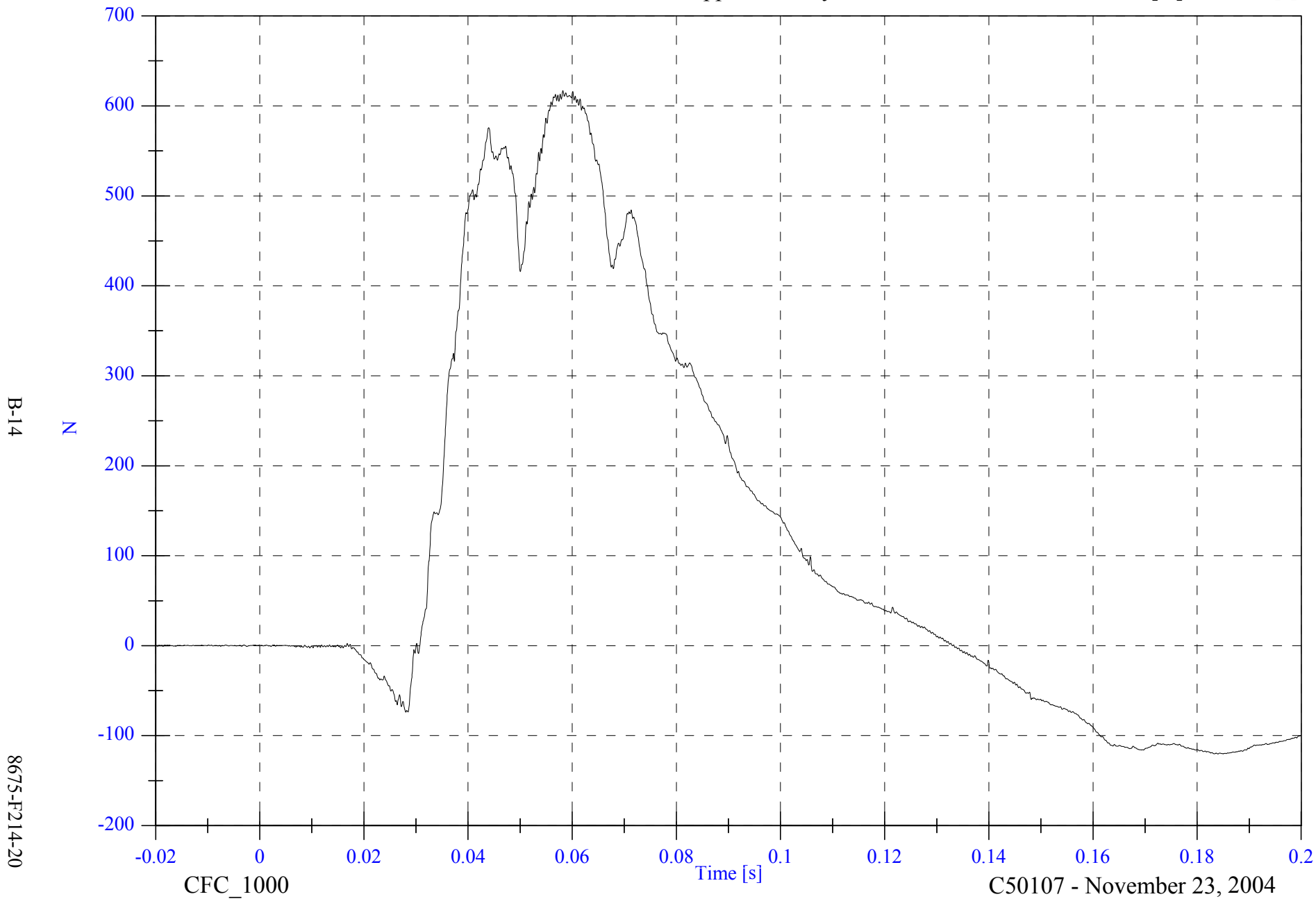
C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2P1 Upper Neck Fy

Max: 616.9 [N] at 0.058 [s]

Min: -120.3 [N] at 0.184 [s]



B-14

N

8675-F214-20

CFC\_1000

Time [s]

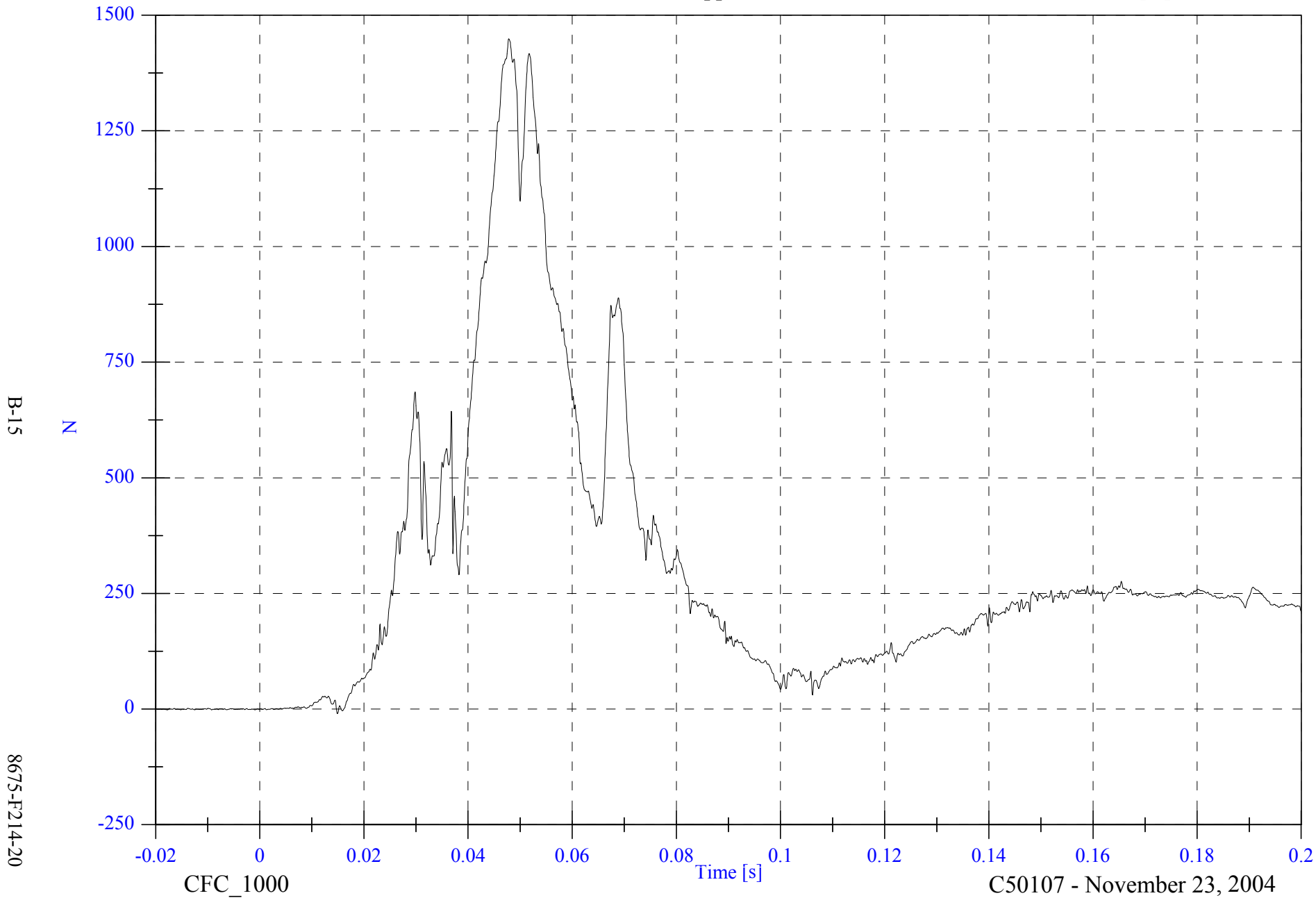
C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2P1 Upper Neck Fz

Max: 1449.2 [N] at 0.048 [s]

Min: -9.9 [N] at 0.015 [s]



B-15

8675-F214-20

CFC\_1000

Time [s]

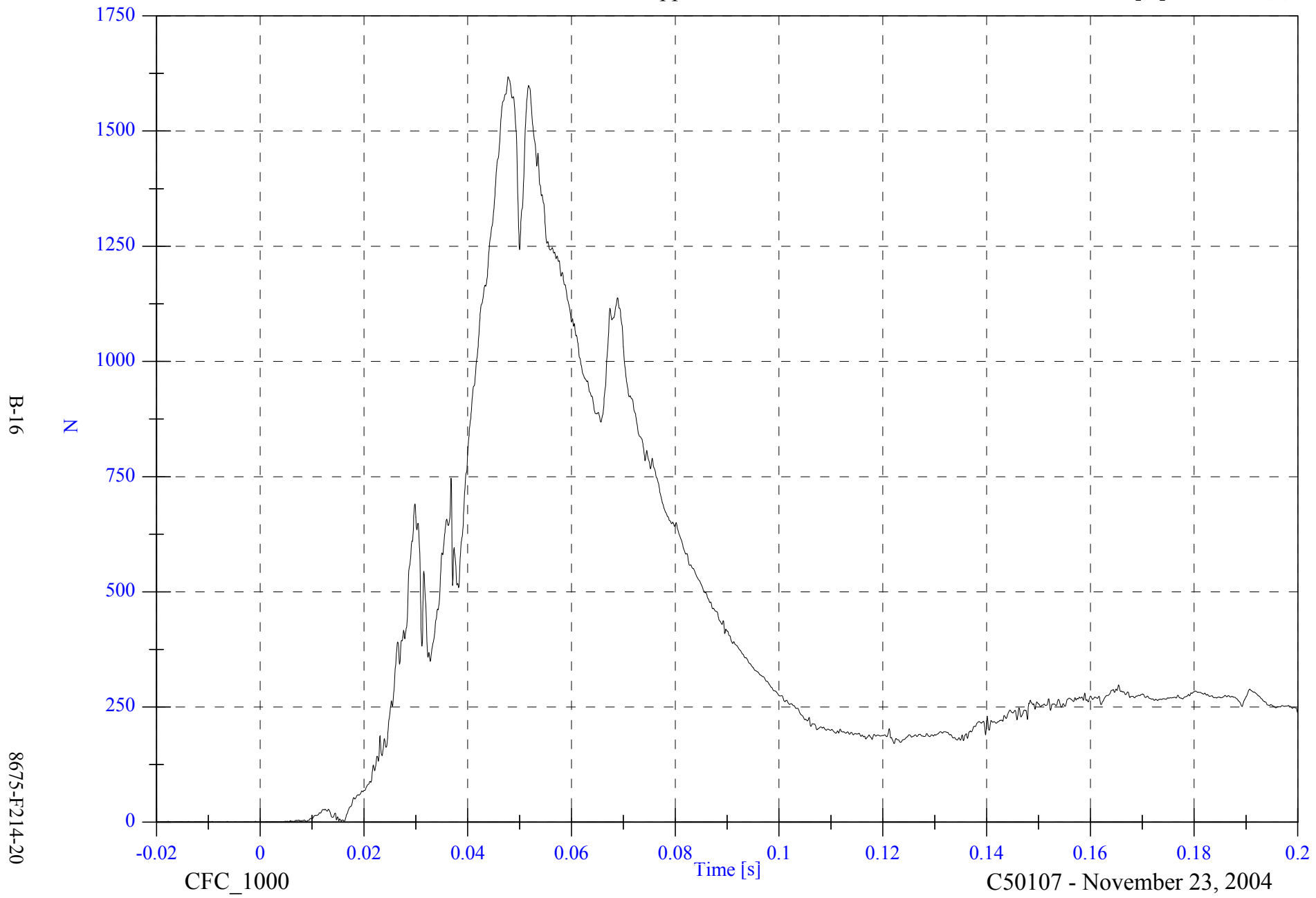
C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2P1 Upper Neck F Resultant

Max: 1617.7 [N] at 0.048 [s]

Min: 0.1 [N] at -0.017 [s]



B-16

8675-F214-20

CFC\_1000

Time [s]

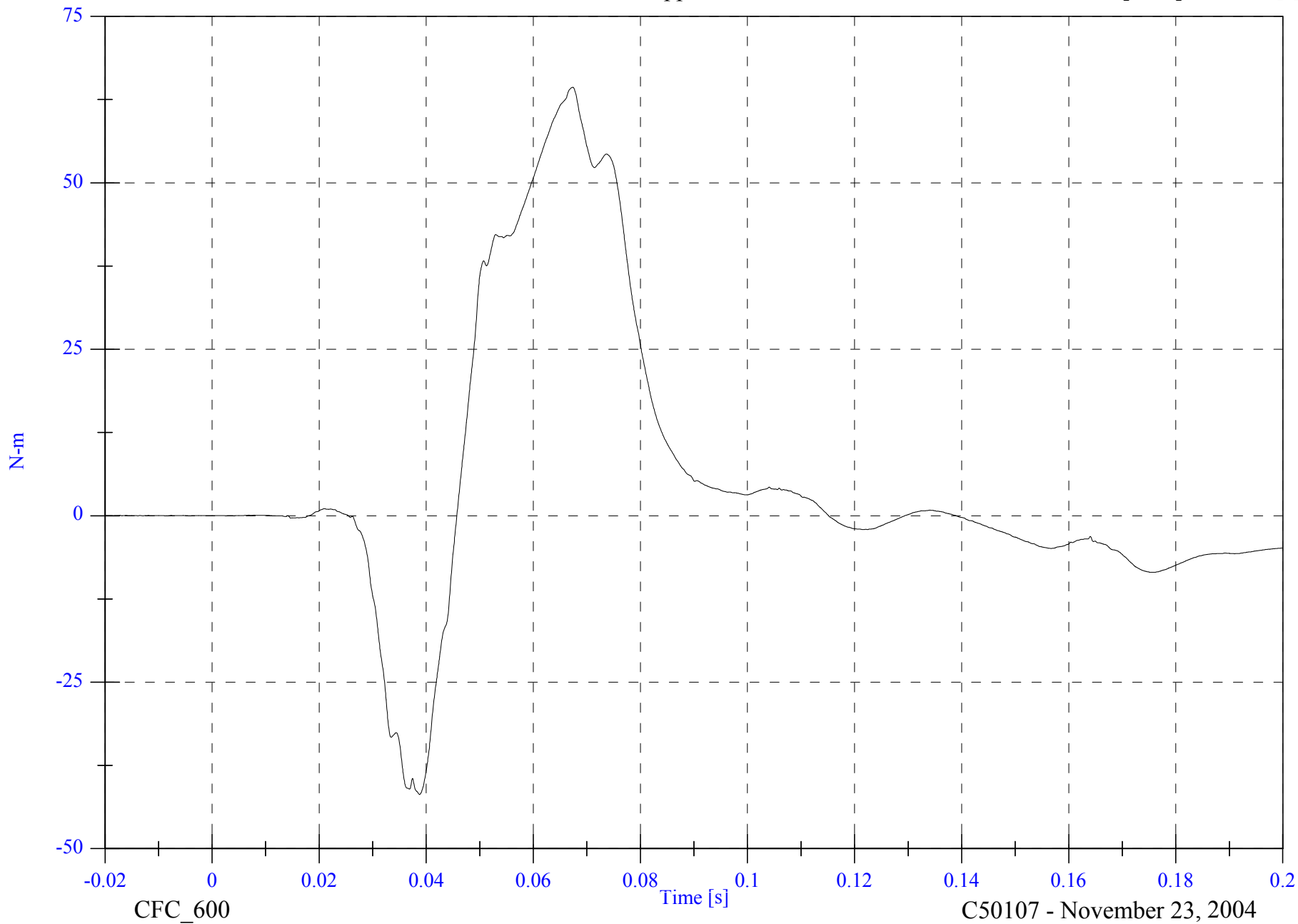
C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2P1 Upper Neck Mx

Max: 64.3 [N-m] at 0.067 [s]

Min: -41.9 [N-m] at 0.039 [s]



B-17

8675-F214-20

CFC\_600

Time [s]

C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

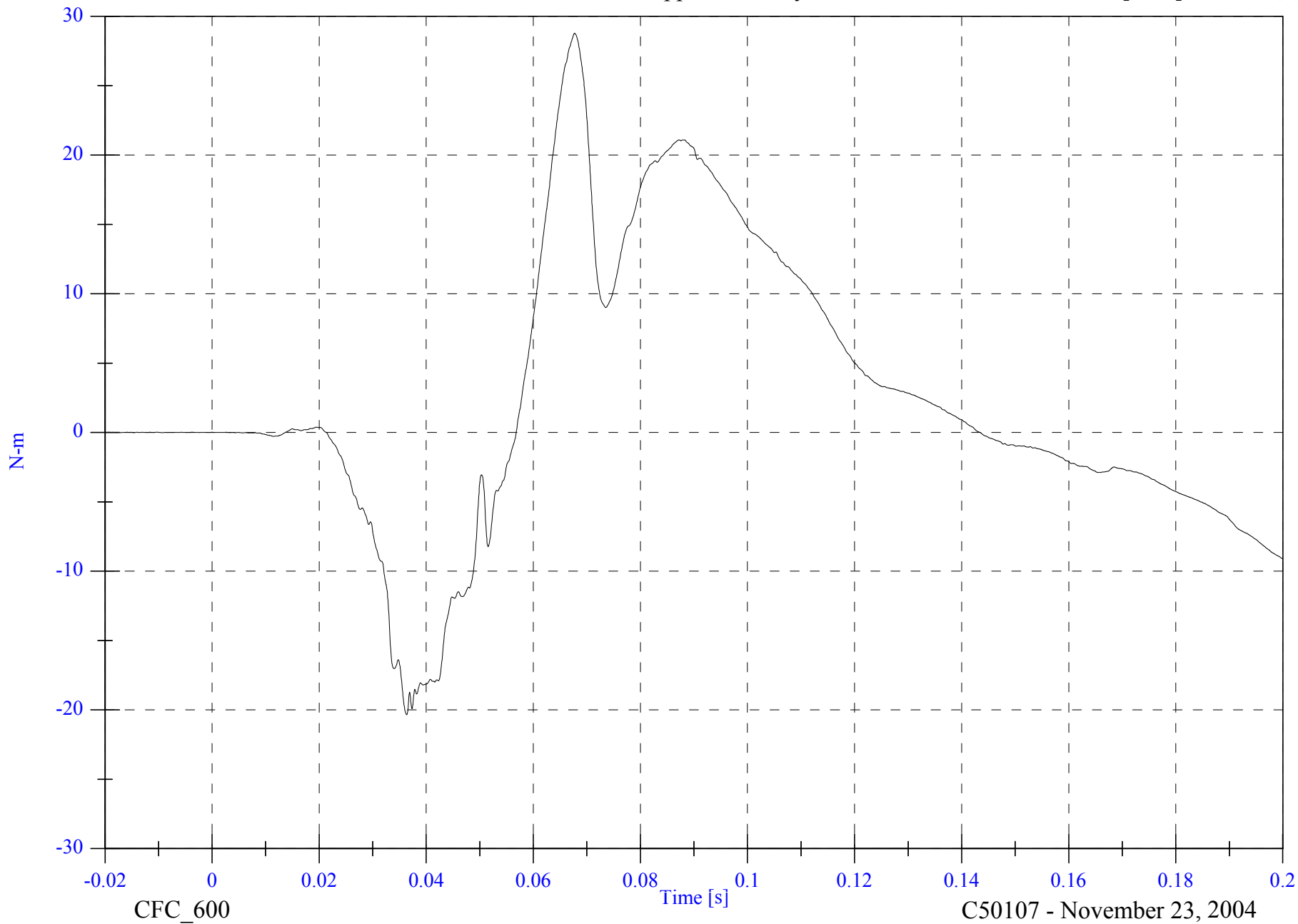
V2P1 Upper Neck My

Max: 28.8 [N-m] at 0.068 [s]

Min: -20.4 [N-m] at 0.036 [s]

B-18

8675-F214-20



CFC\_600

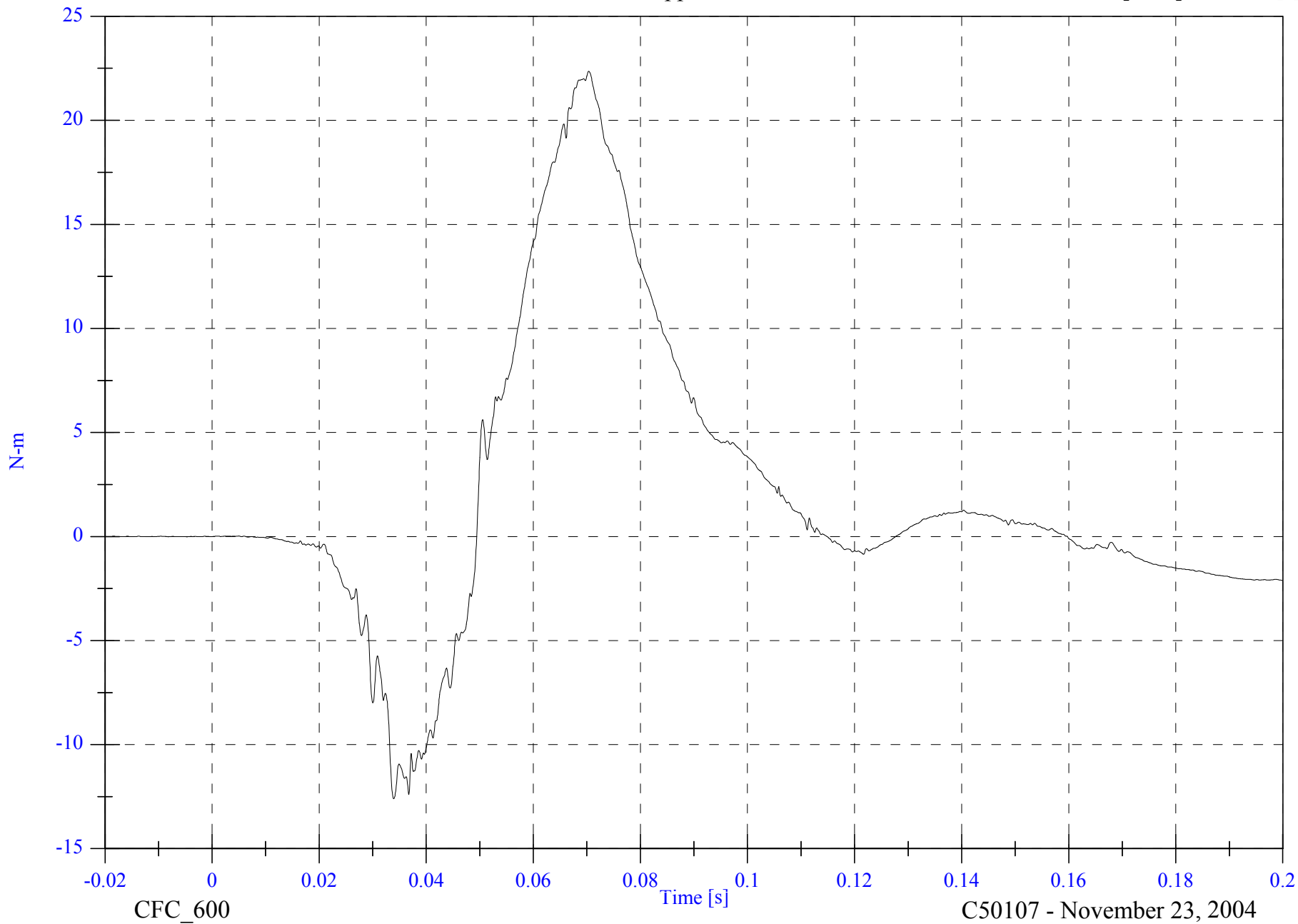
C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2P1 Upper Neck Mz

Max: 22.4 [N-m] at 0.070 [s]

Min: -12.6 [N-m] at 0.034 [s]



B-19

8675-F214-20

CFC\_600

Time [s]

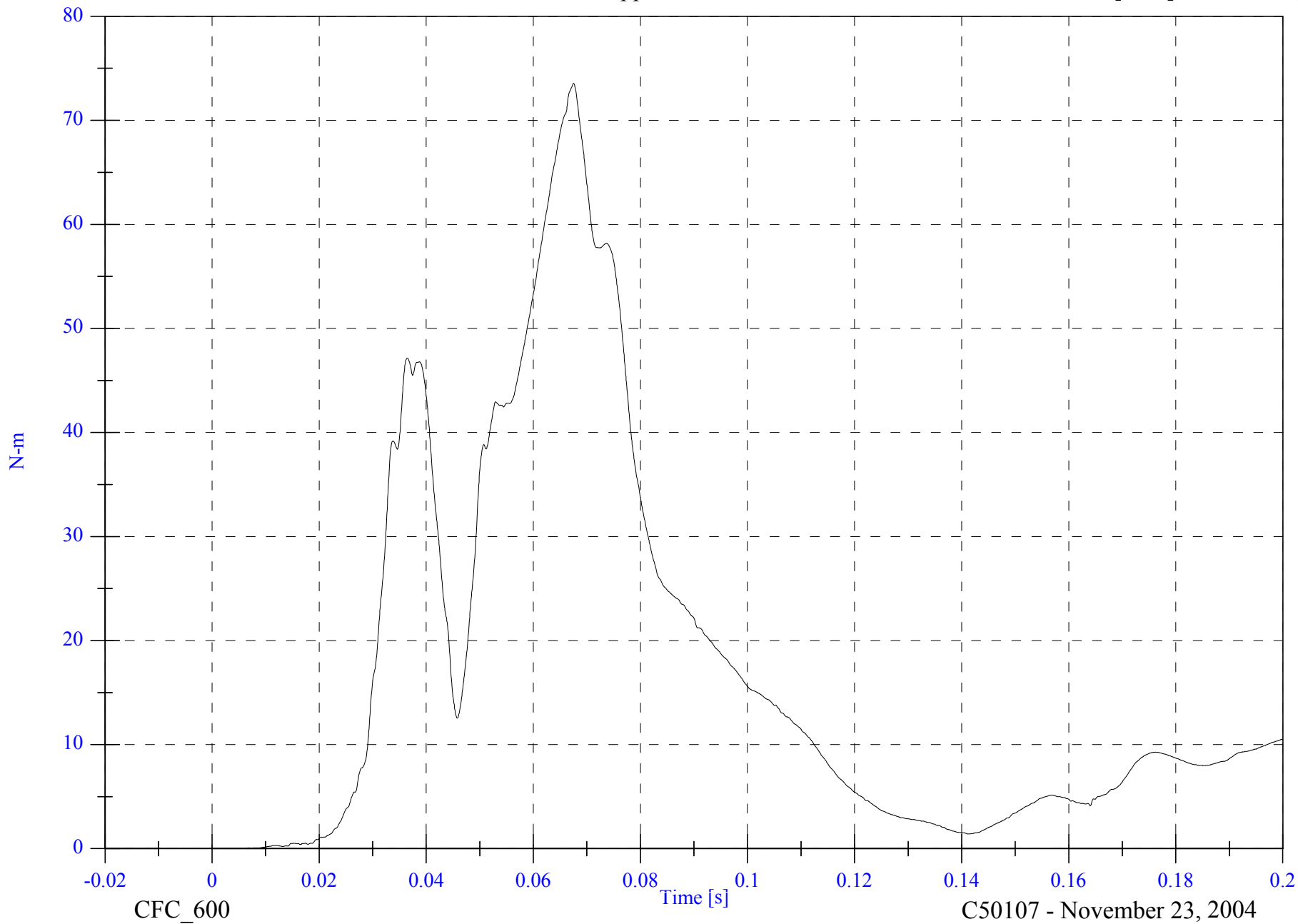
C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2P1 Upper Neck M Resultant

Max: 73.6 [N-m] at 0.068 [s]

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



B-20

8675-F214-20

CFC\_600

C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

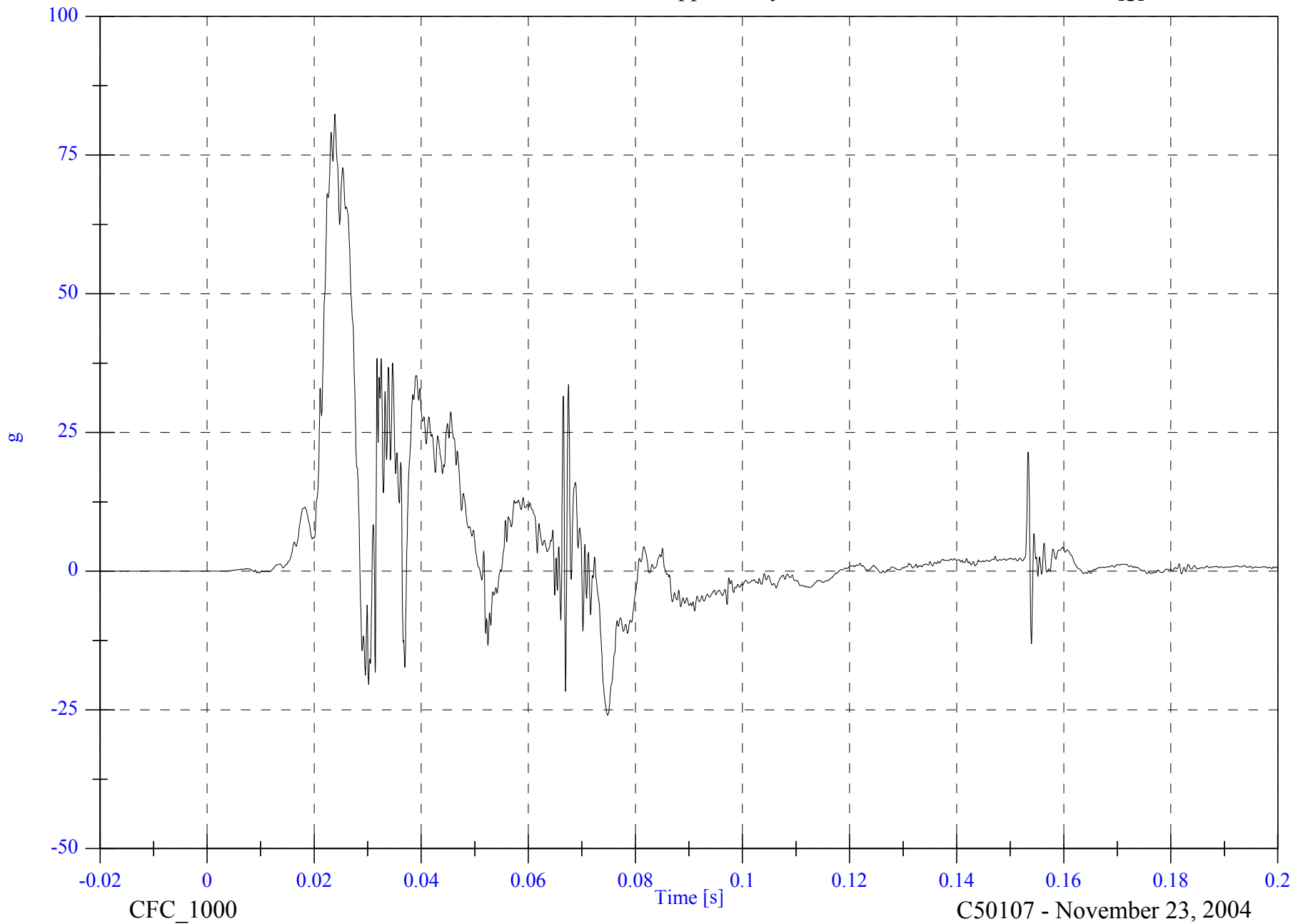
V2P1 Upper Rib y

Max: 82.4 [g] at 0.024 [s]

Min: -26.0 [g] at 0.075 [s]

B-21

8675-F214-20



CFC\_1000

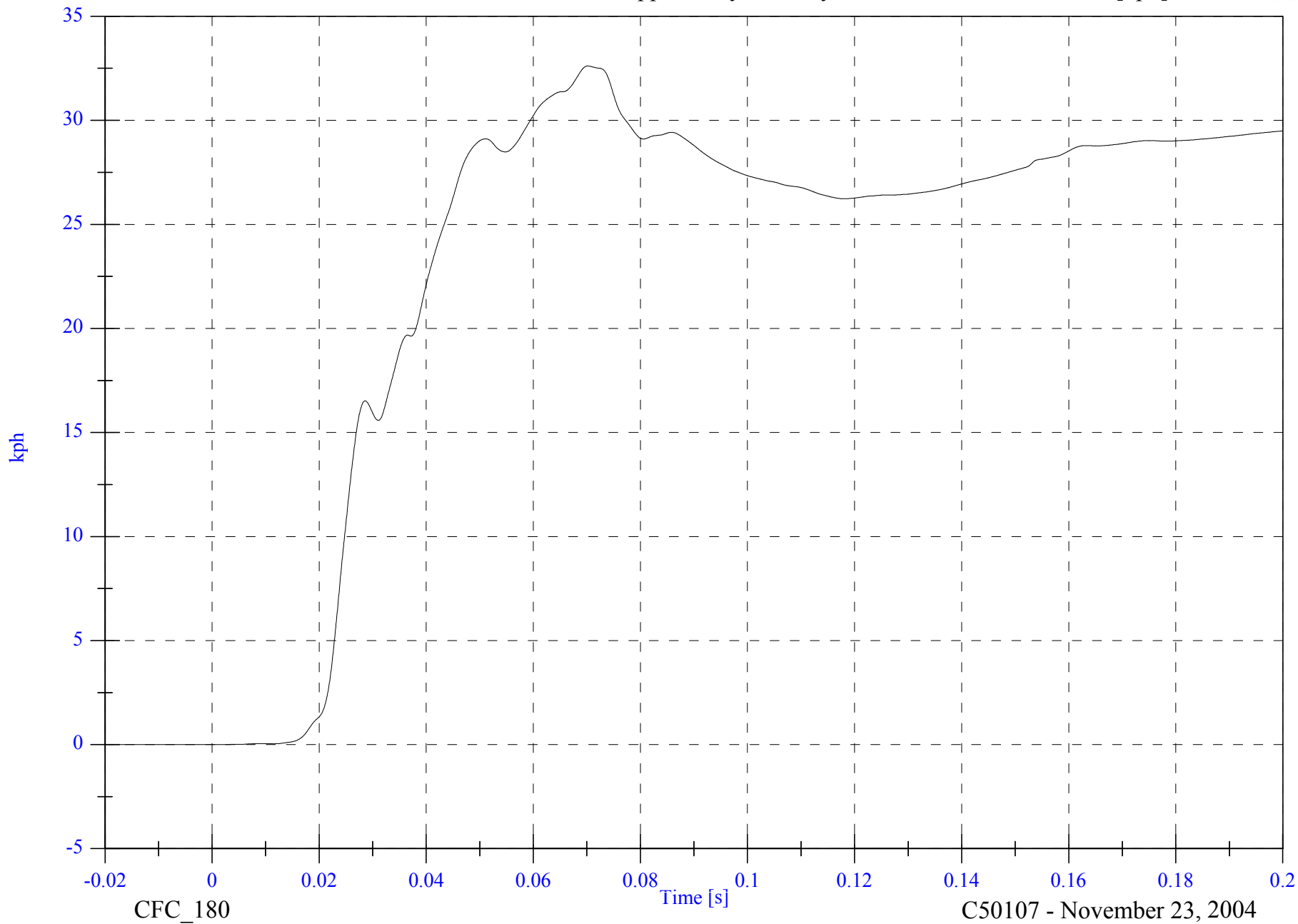
C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2P1 Upper Rib y Velocity

Max: 32.6 [kph] at 0.070 [s]

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



B-22

8675-F214-20

CFC\_180

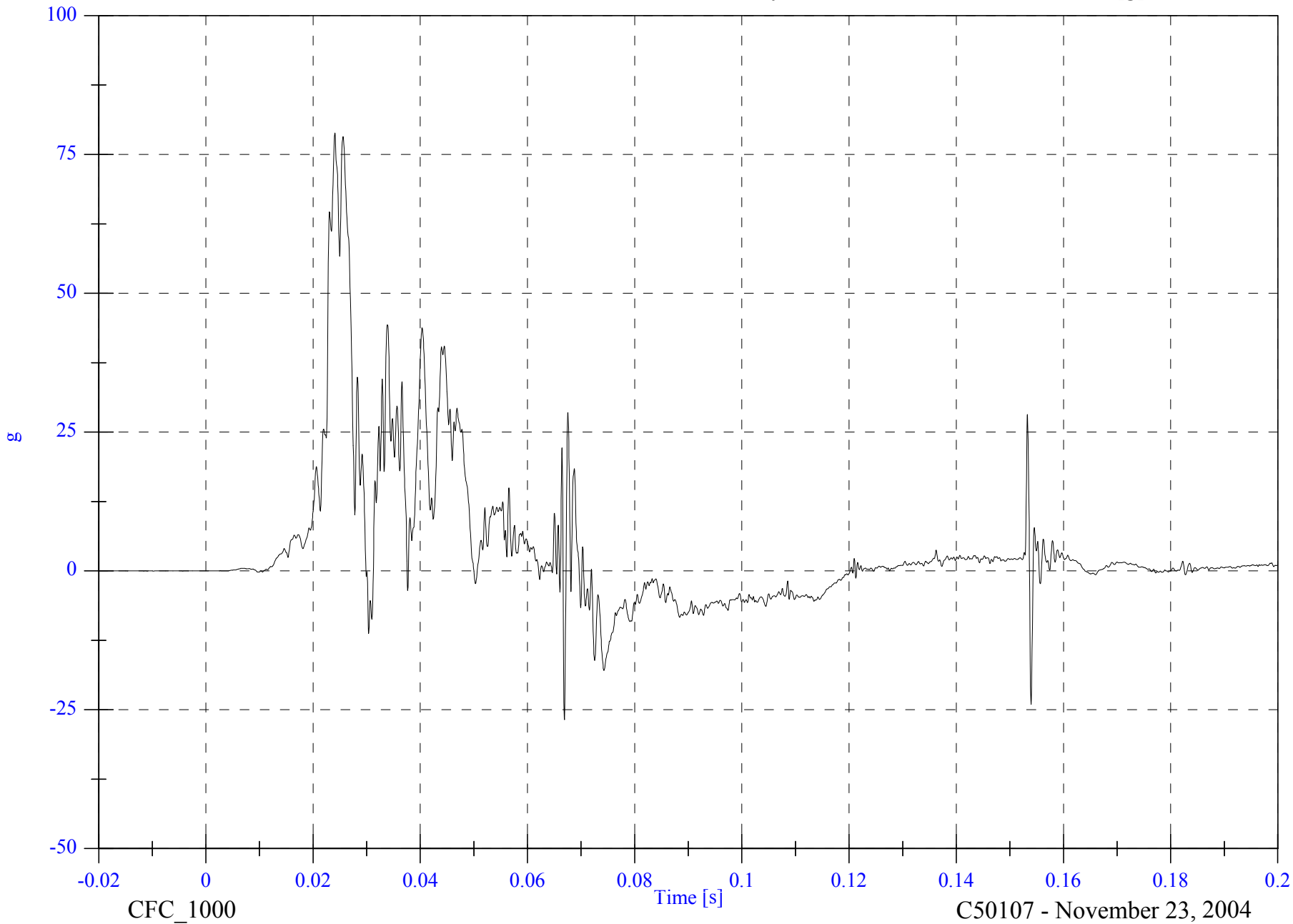
C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2P1 Lower Rib y

Max: 78.9 [g] at 0.024 [s]

Min: -26.8 [g] at 0.067 [s]



B-23

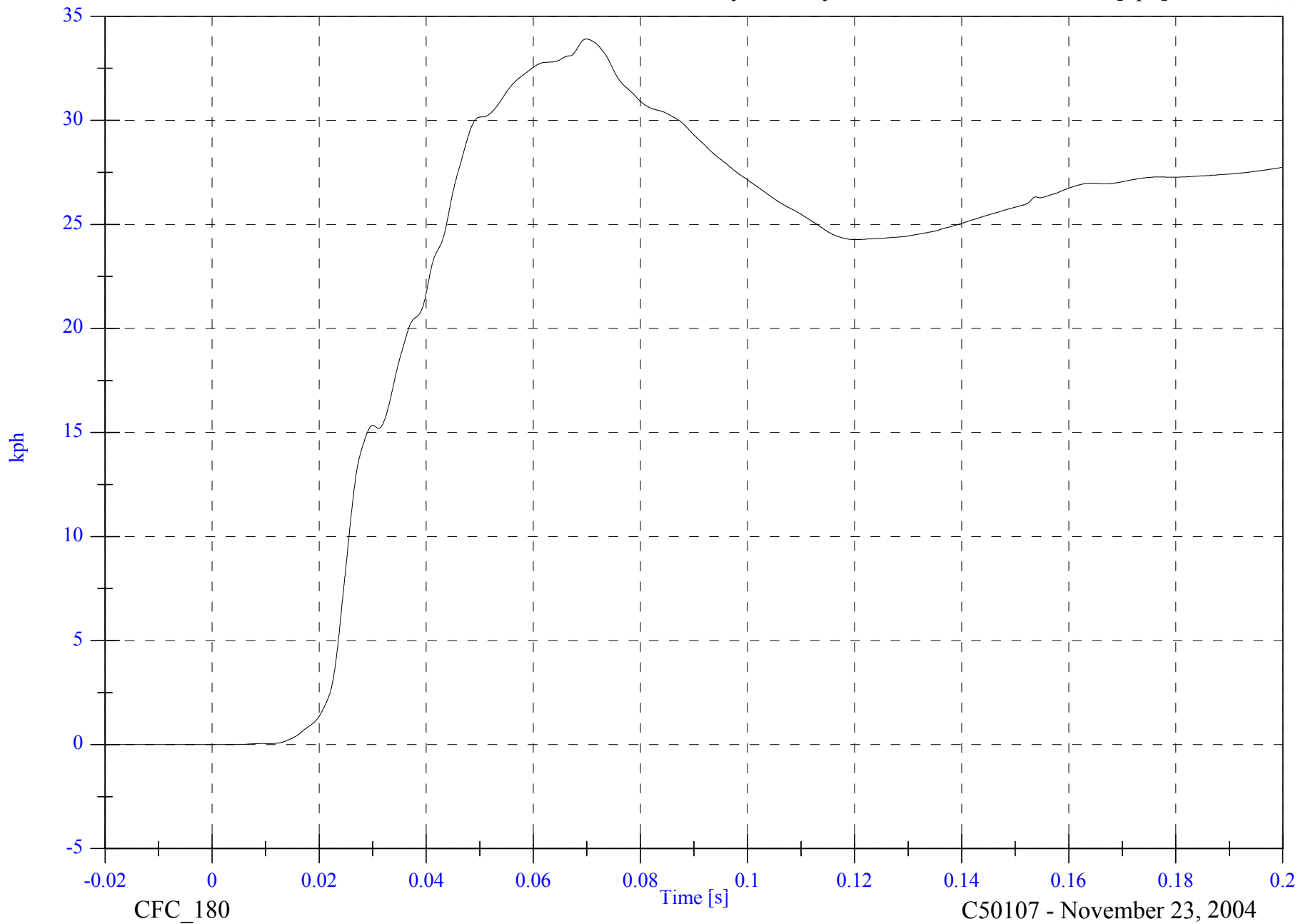
8675-F214-20

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2P1 Lower Rib y Velocity

Max: 33.9 [kph] at 0.070 [s]

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



B-24

8675-F214-20

CFC\_180

Time [s]

C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

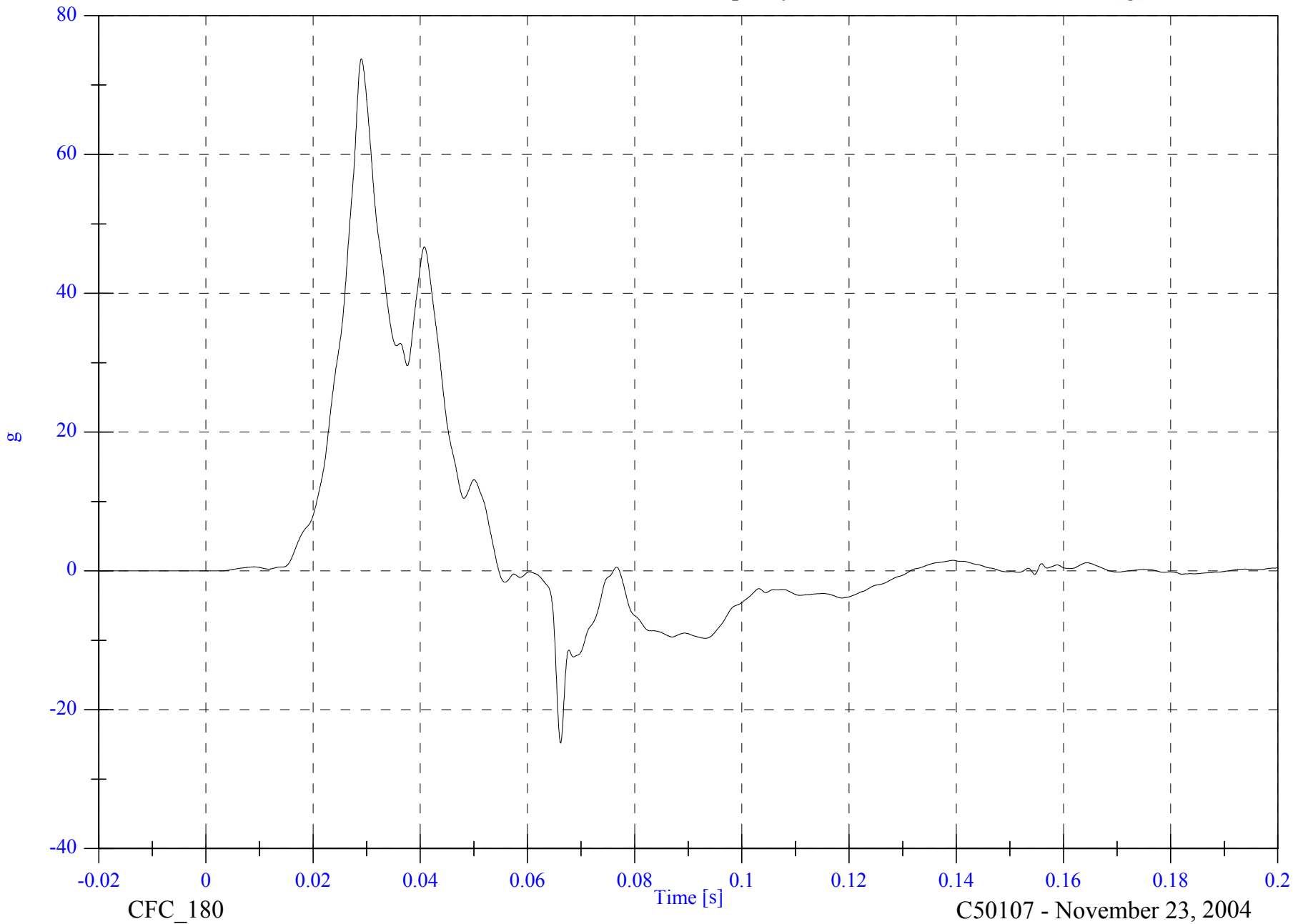
V2P1 Lower Spine y

Max: 73.8 [g] at 0.029 [s]

Min: -24.8 [g] at 0.066 [s]

B-25

8675-F214-20



CFC\_180

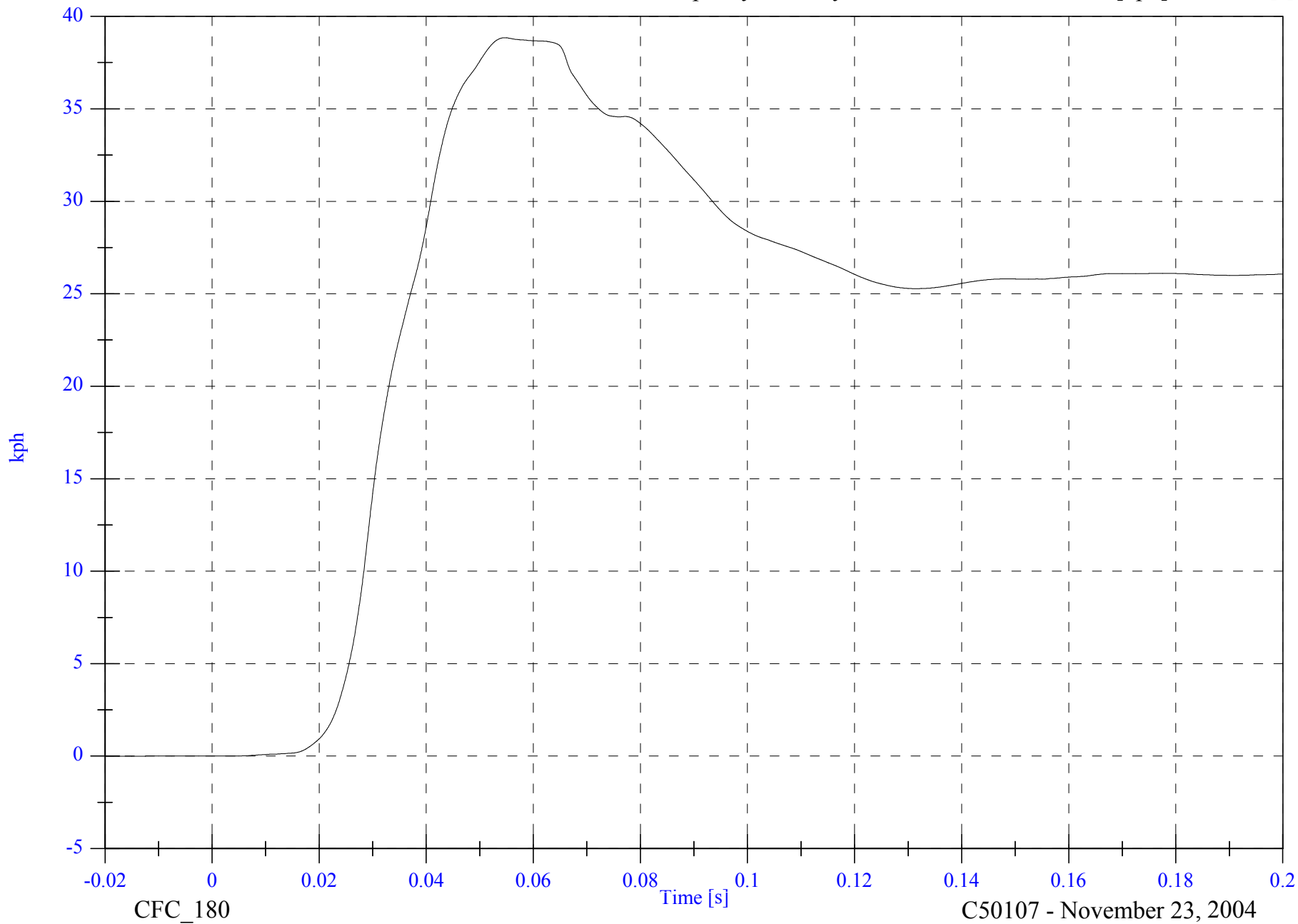
C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2P1 Lower Spine y Velocity

Max: 38.8 [kph] at 0.055 [s]

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



B-26

8675-F214-20

CFC\_180

C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

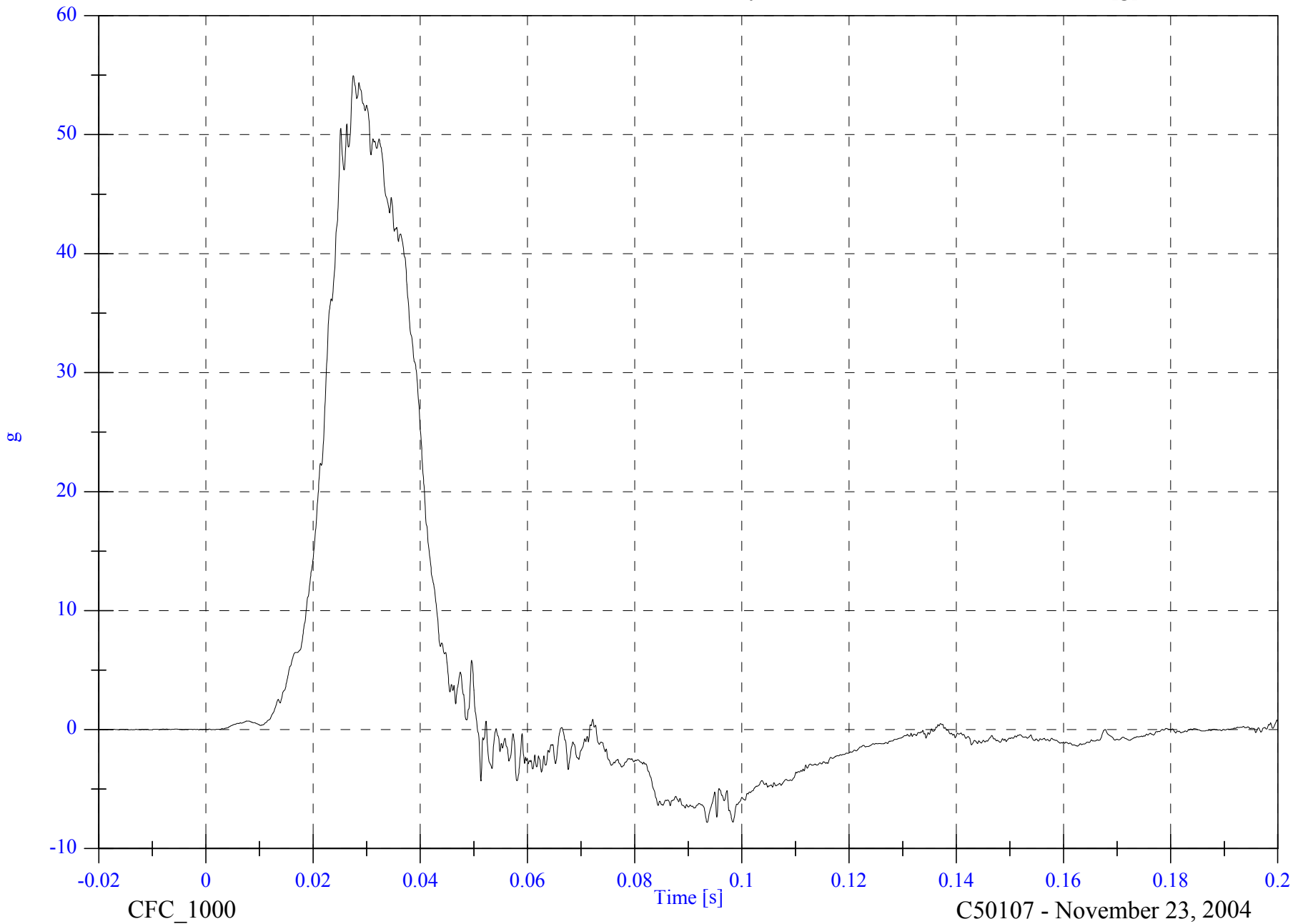
V2P1 Pelvic y

Max: 55.0 [g] at 0.027 [s]

Min: -7.8 [g] at 0.093 [s]

B-27

8675-F1214-20

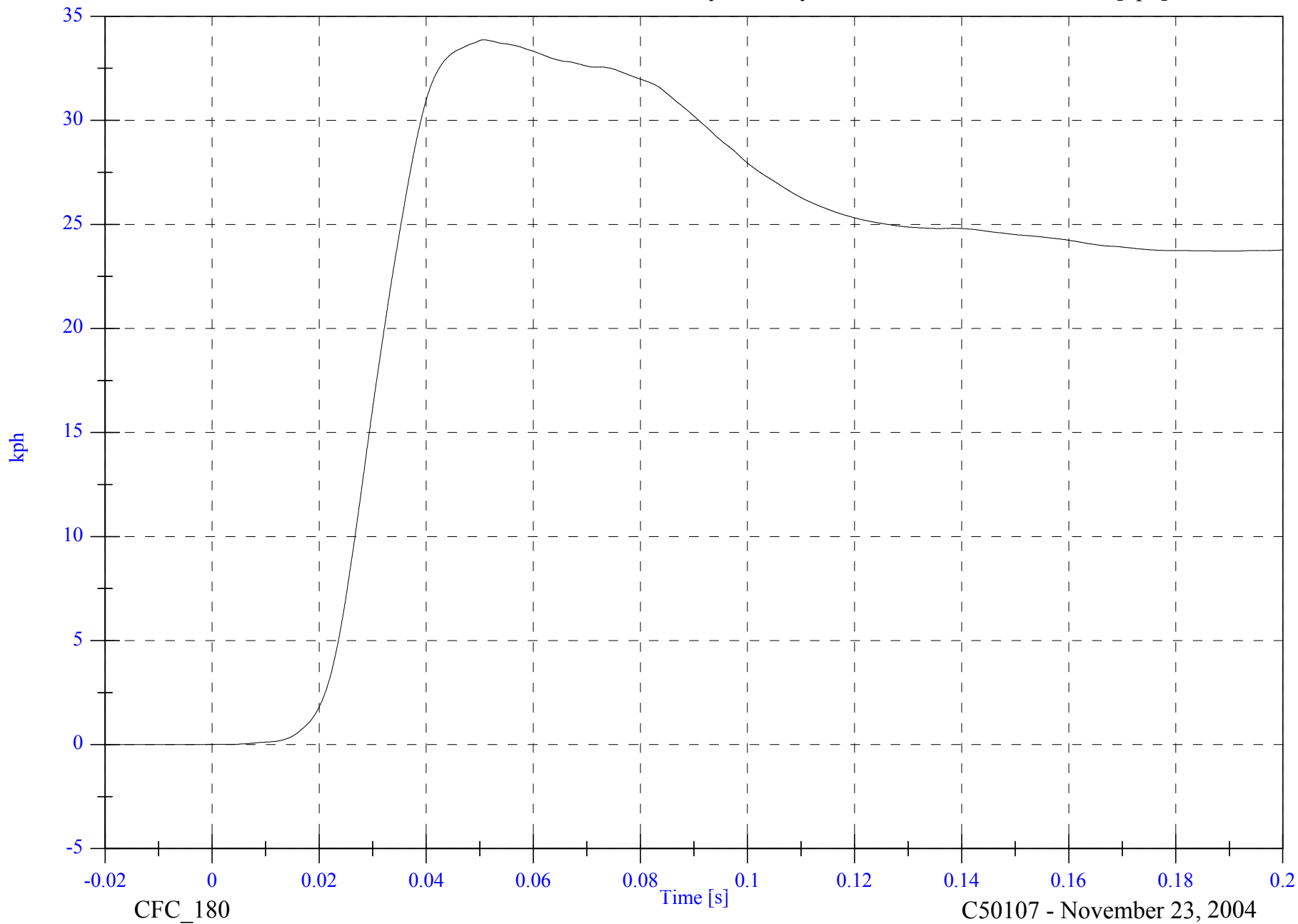


2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

Max: 33.9 [kph] at 0.051 [s]

V2P1 Pelvic y Velocity

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



B-28

8675-F214-20

CFC\_180

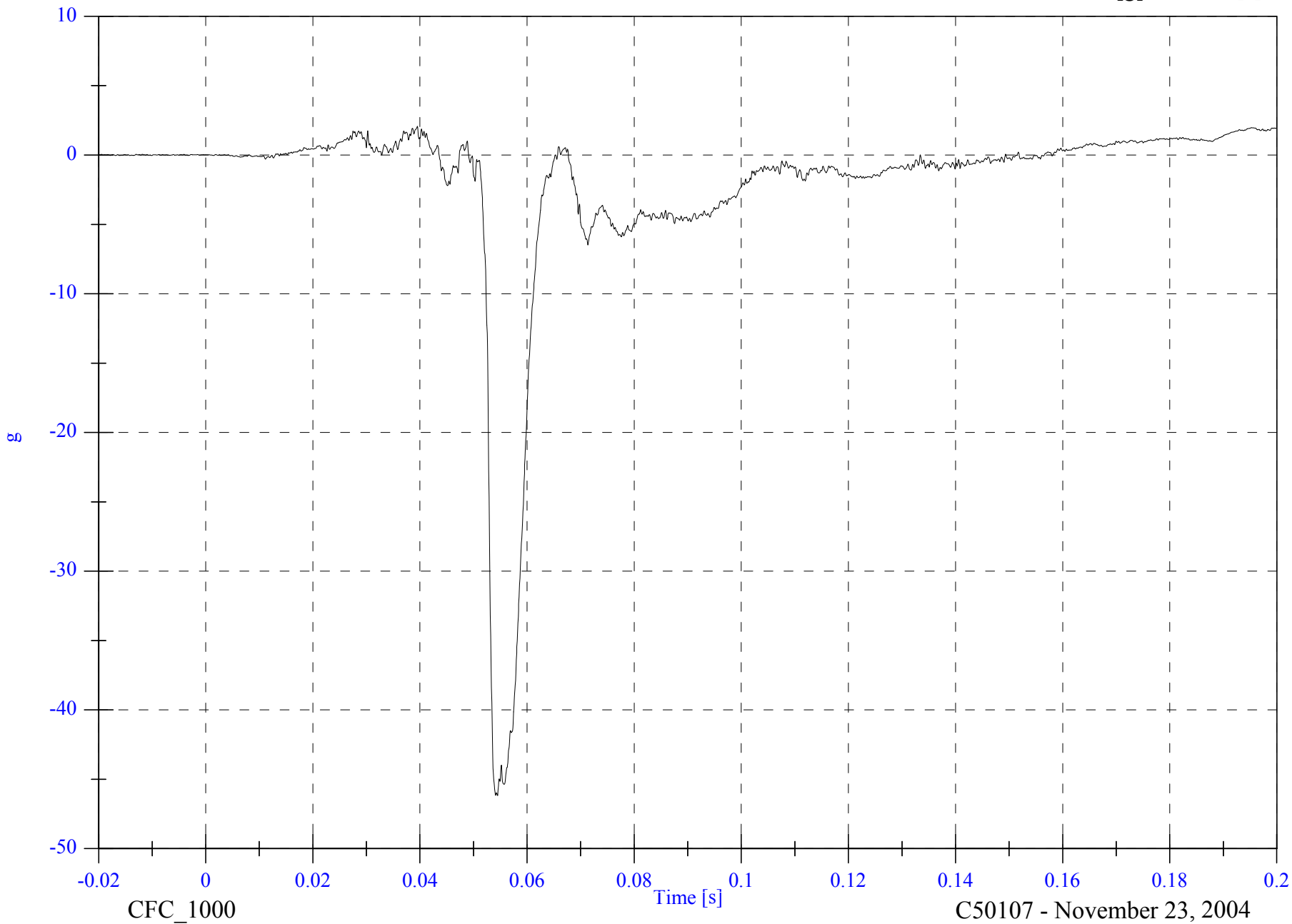
C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2P4 Head x

Max: 2.1 [g] at 0.039 [s]

Min: -46.2 [g] at 0.054 [s]



B-29

8675-F214-20

CFC\_1000

Time [s]

C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

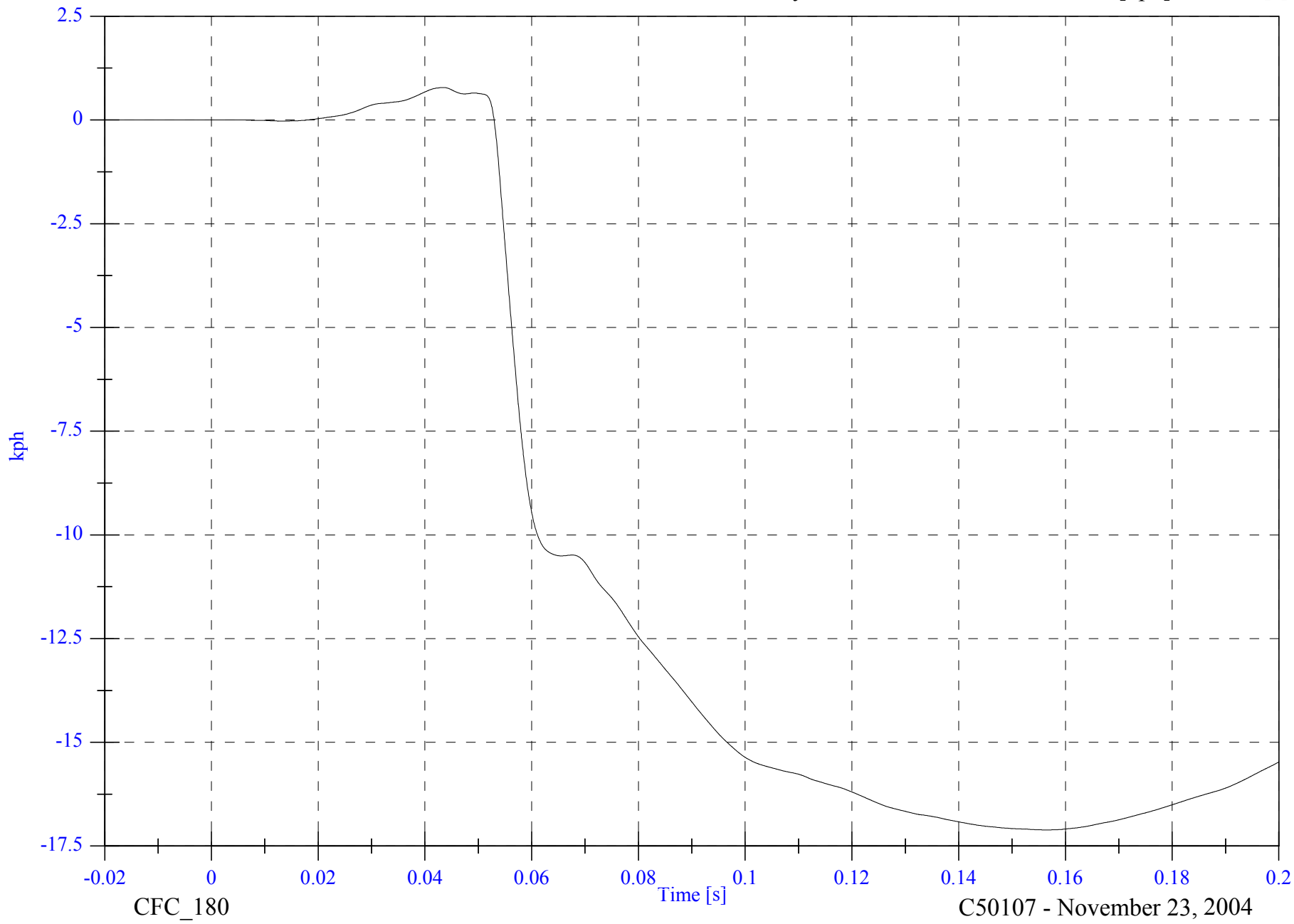
V2P4 Head x Velocity

Max: 0.8 [kph] at 0.043 [s]

Min: -17.1 [kph] at 0.156 [s]

B-30

8675-F214-20



CFC\_180

Time [s]

C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

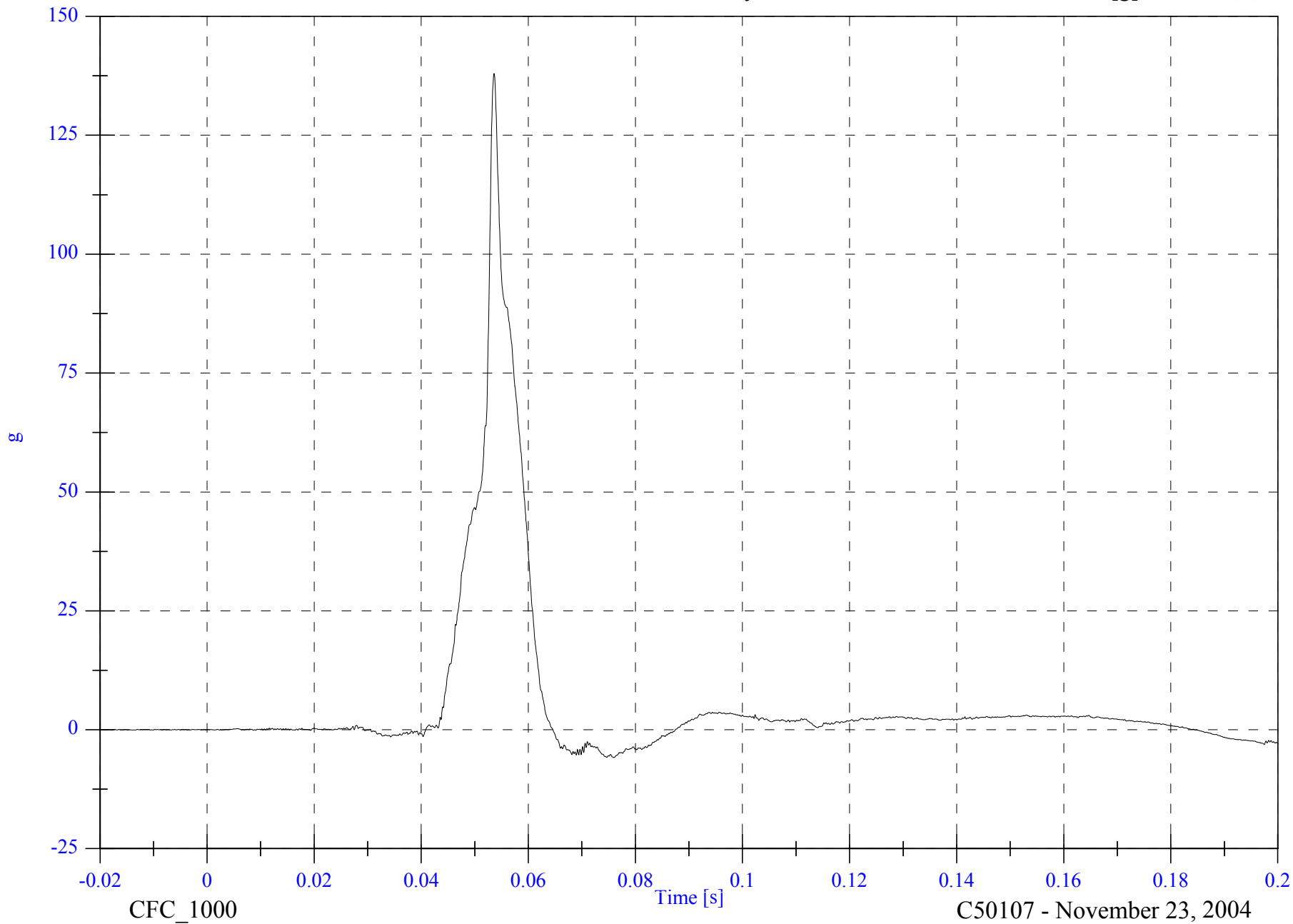
V2P4 Head y

Max: 138.0 [g] at 0.054 [s]

Min: -5.9 [g] at 0.076 [s]

B-31

8675-F214-20



CFC\_1000

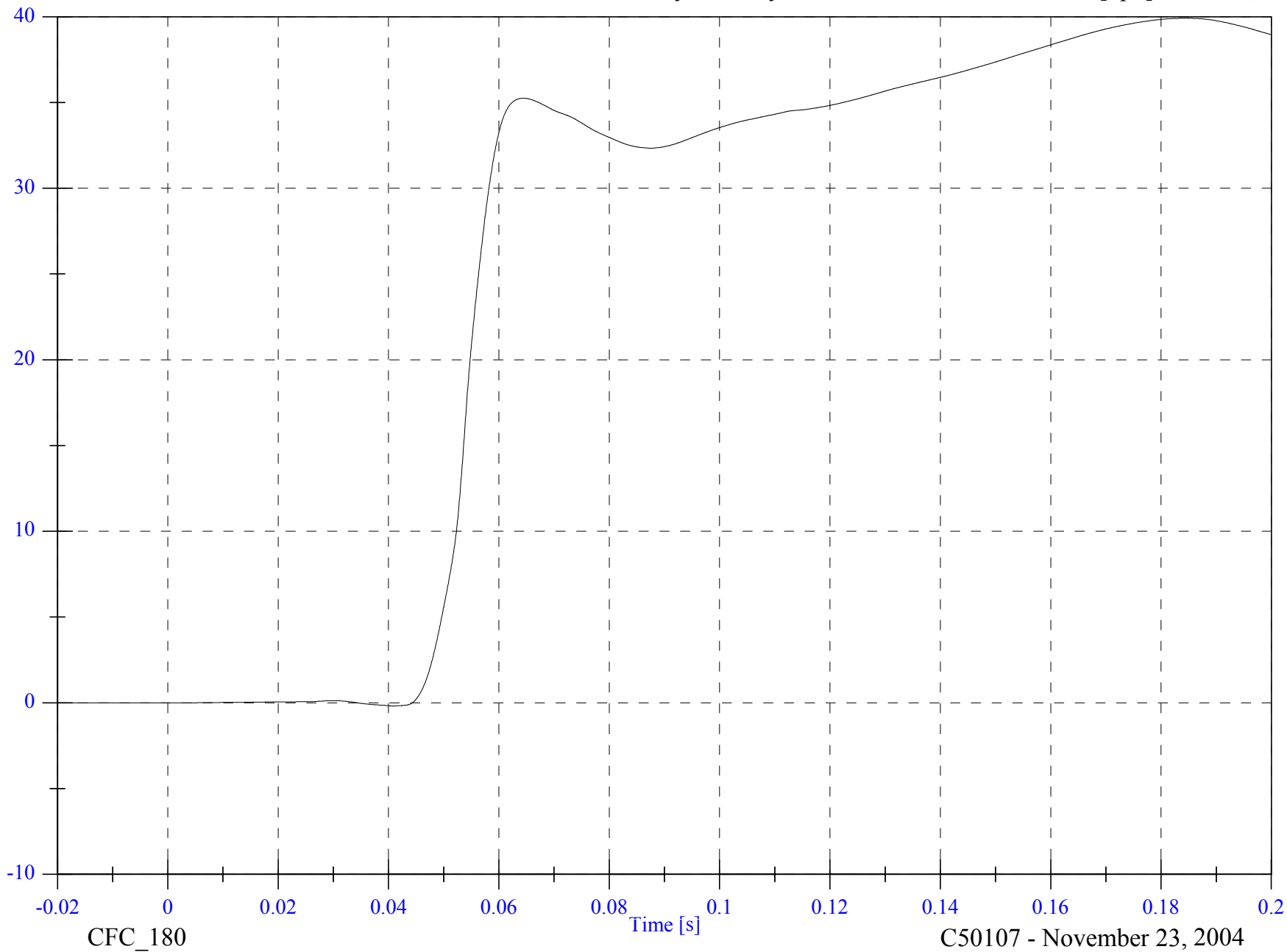
C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2P4 Head y Velocity

Max: 39.9 [kph] at 0.184 [s]

Min: -0.2 [kph] at 0.041 [s]



B-32

8675-F214-20

CFC\_180

Time [s]

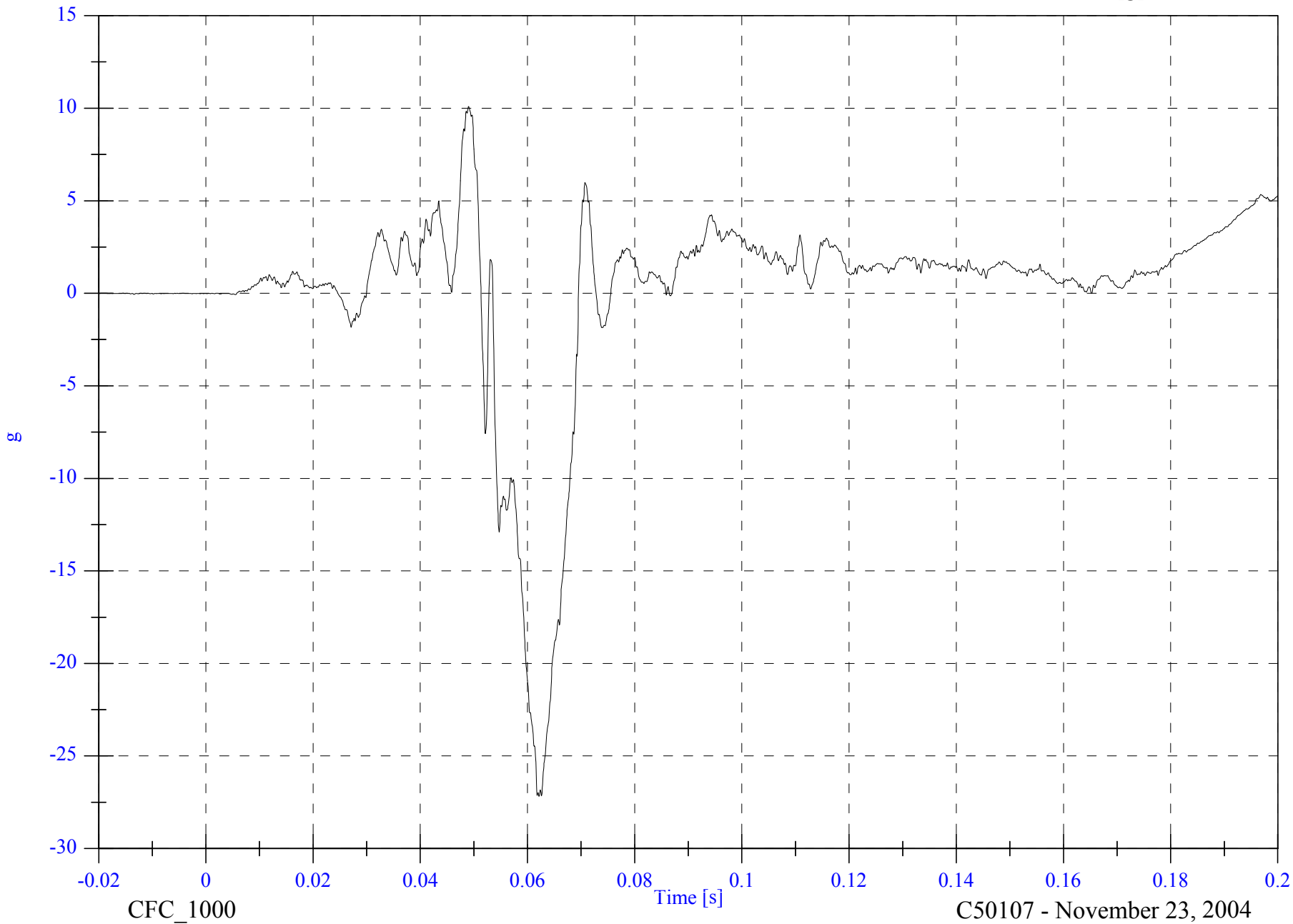
C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2P4 Head z

Max: 10.1 [g] at 0.049 [s]

Min: -27.2 [g] at 0.062 [s]



B-33

8675-F1214-20

CFC\_1000

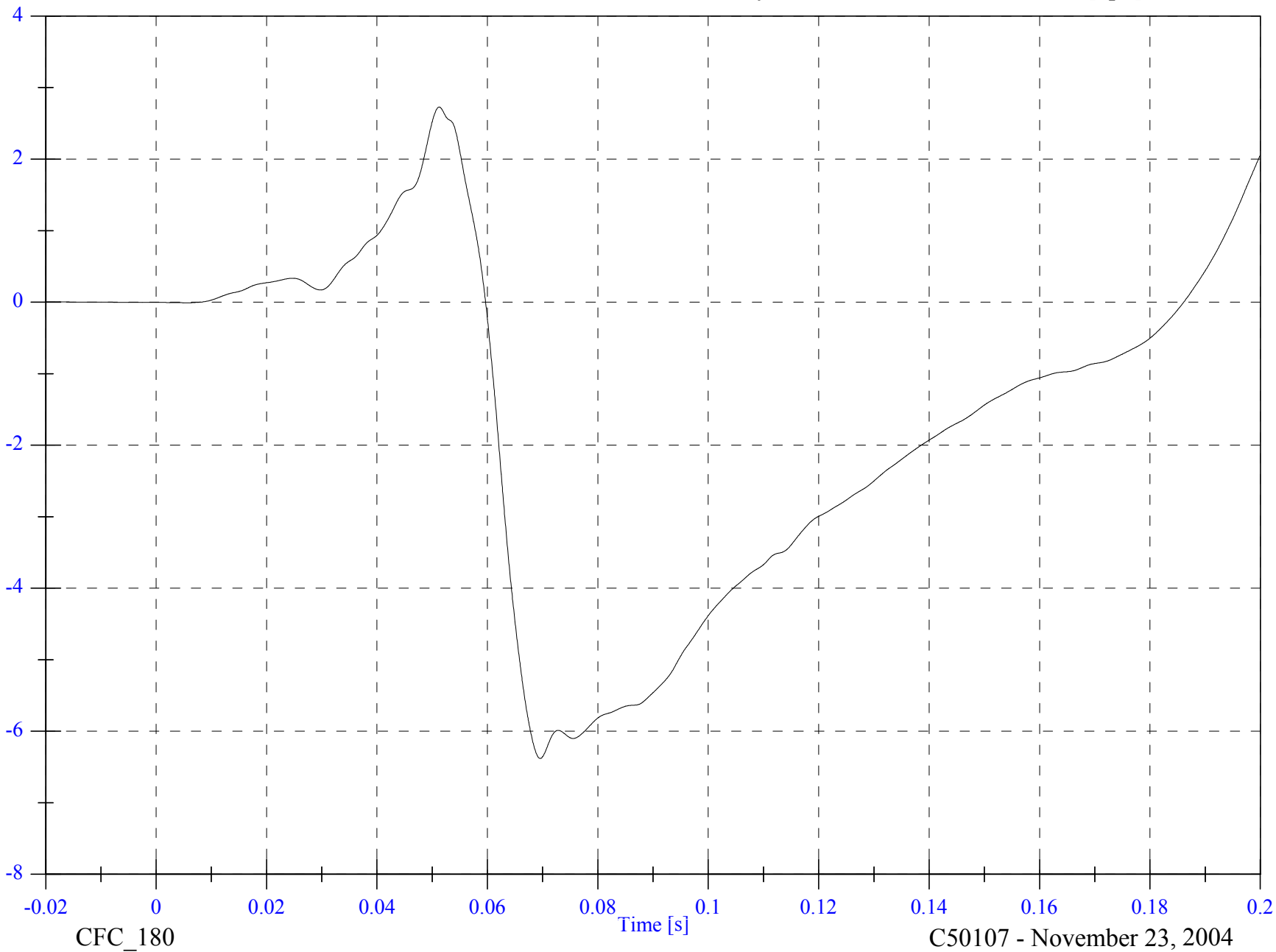
C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2P4 Head z Velocity

Max: 2.7 [kph] at 0.051 [s]

Min: -6.4 [kph] at 0.070 [s]



B-34

kph

8675-F214-20

CFC\_180

Time [s]

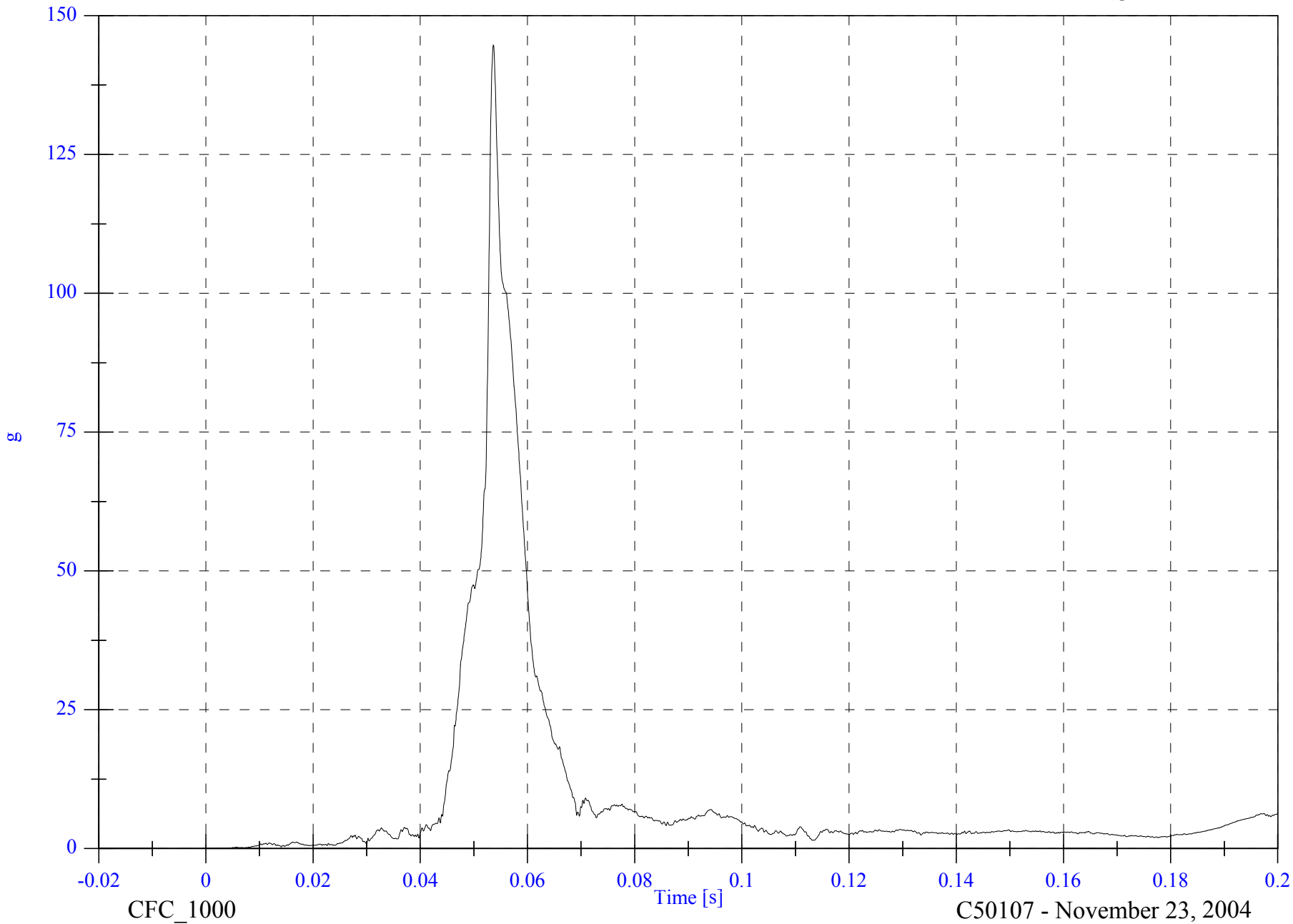
C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2P4 Head Resultant

Max: 144.7 [g] at 0.054 [s]

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



B-35

8675-F214-20

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

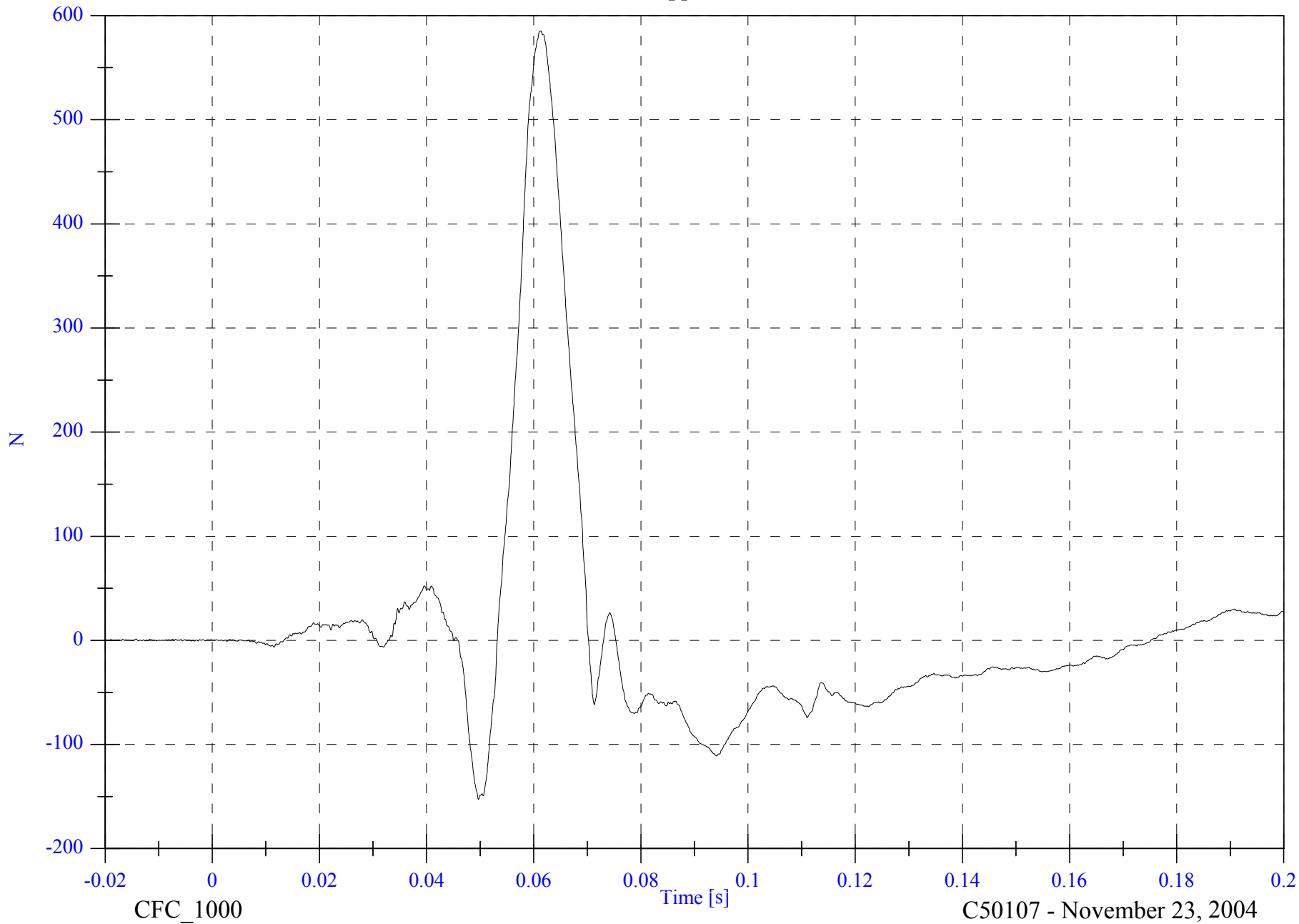
V2P4 Upper Neck Fx

Max: 585.5 [N] at 0.061 [s]

Min: -152.7 [N] at 0.050 [s]

B-36

8675-F214-20



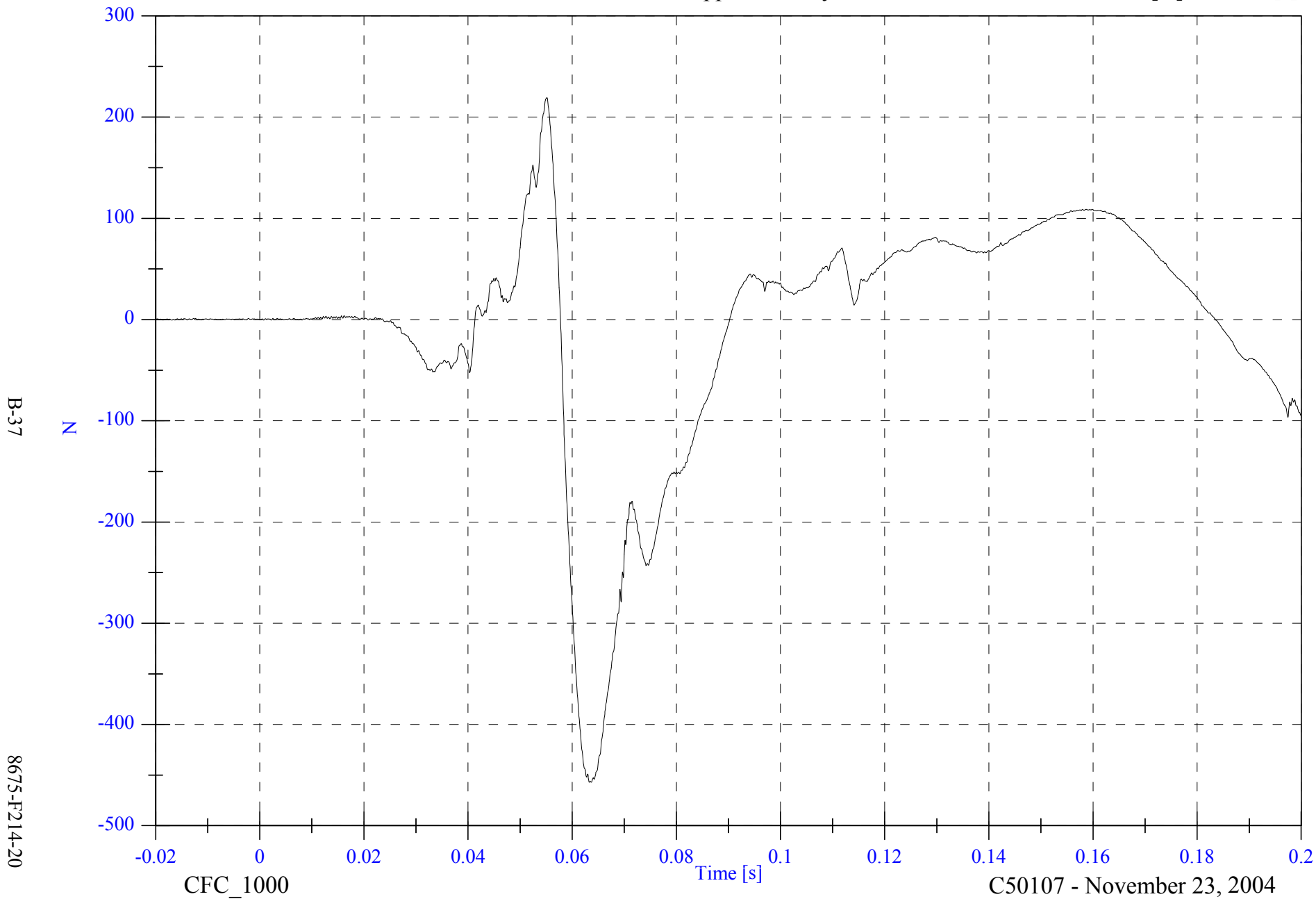
C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2P4 Upper Neck Fy

Max: 219.2 [N] at 0.055 [s]

Min: -457.1 [N] at 0.064 [s]



B-37

8675-F214-20

CFC\_1000

Time [s]

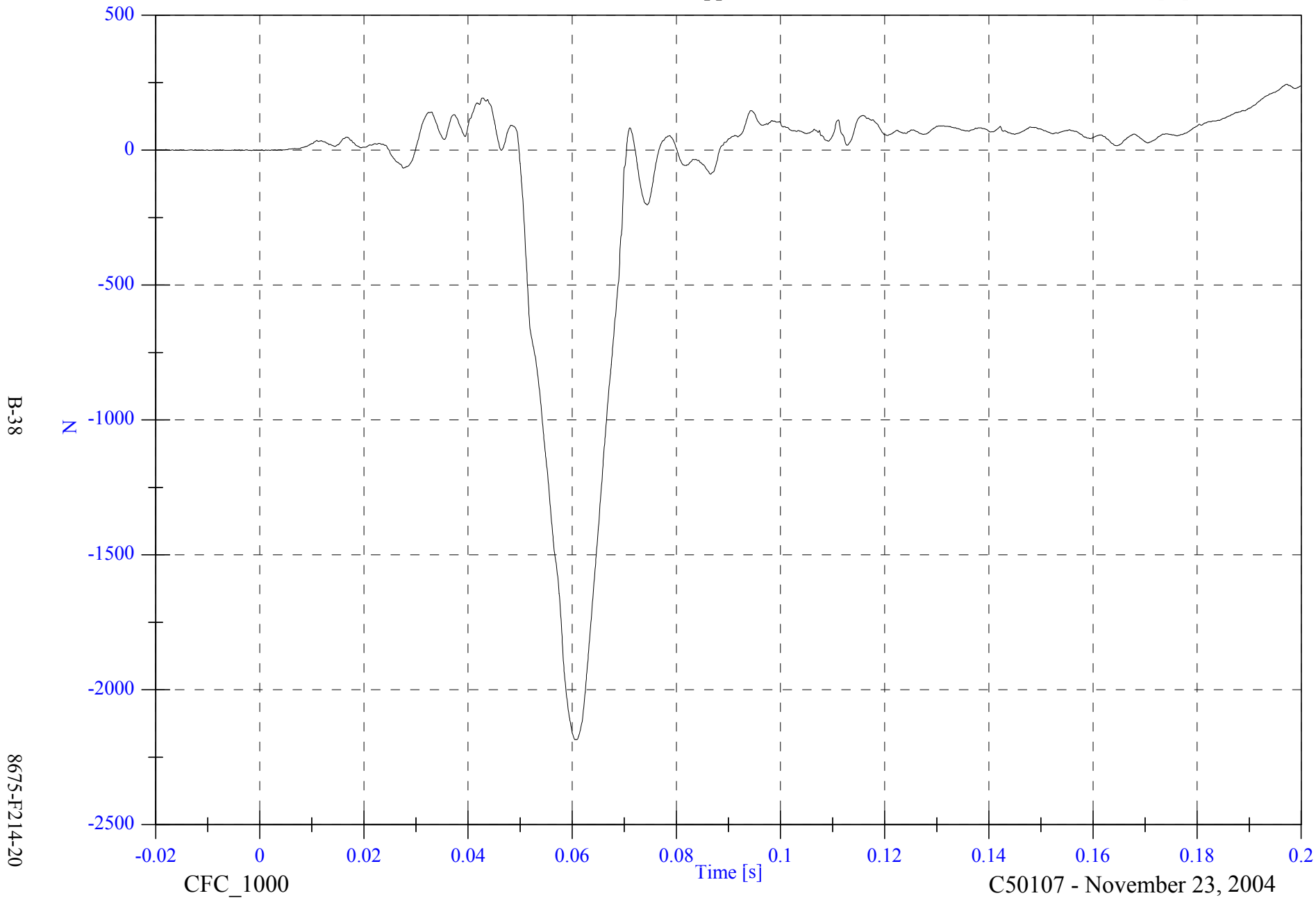
C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2P4 Upper Neck Fz

Max: 244.1 [N] at 0.197 [s]

Min: -2184.8 [N] at 0.061 [s]



B-38

8675-F214-20

CFC\_1000

Time [s]

C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

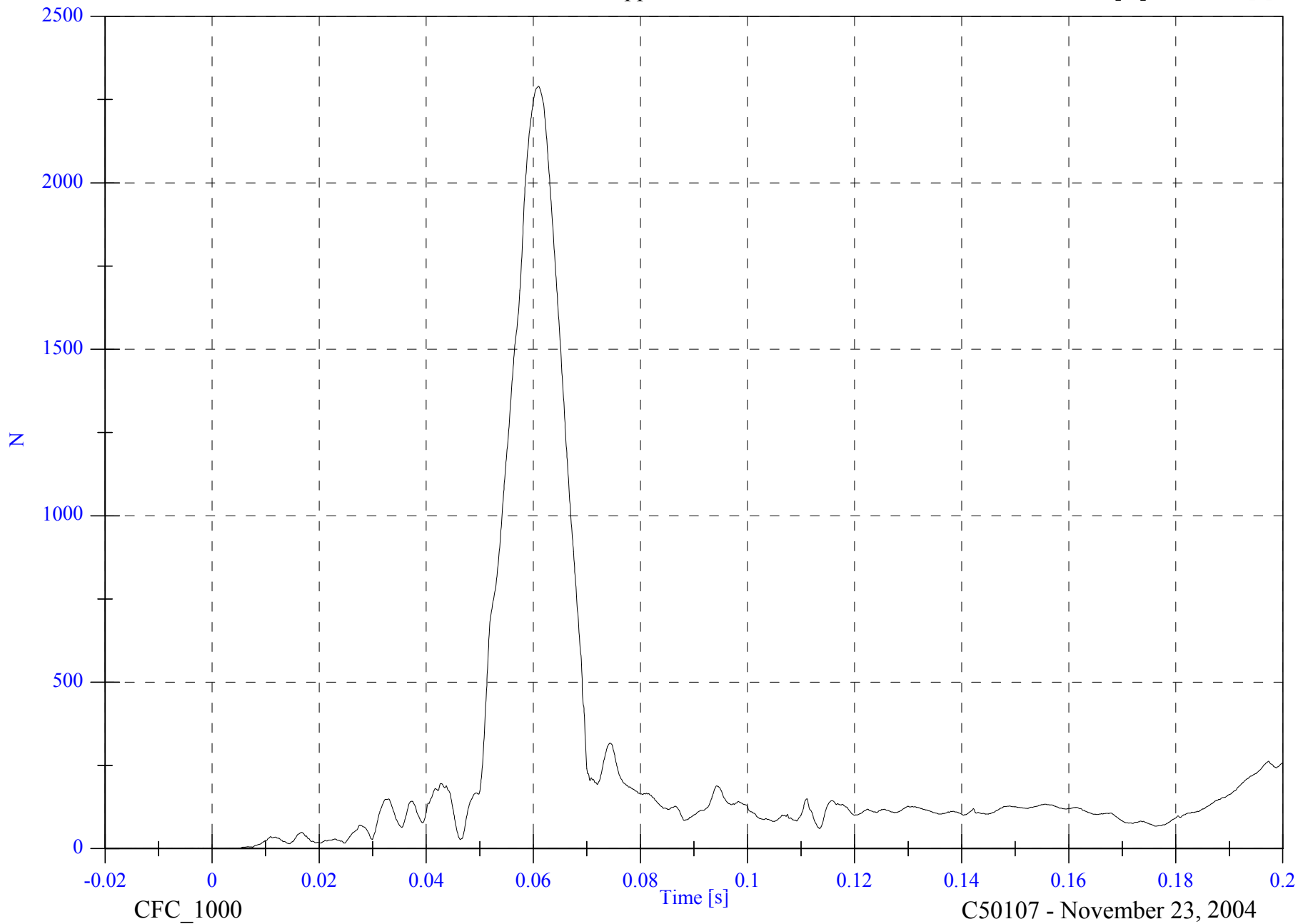
V2P4 Upper Neck F Resultant

Max: 2290.1 [N] at 0.061 [s]

Min: 0.1 [N] at -0.018 [s]

B-39

8675-F214-20



CFC\_1000

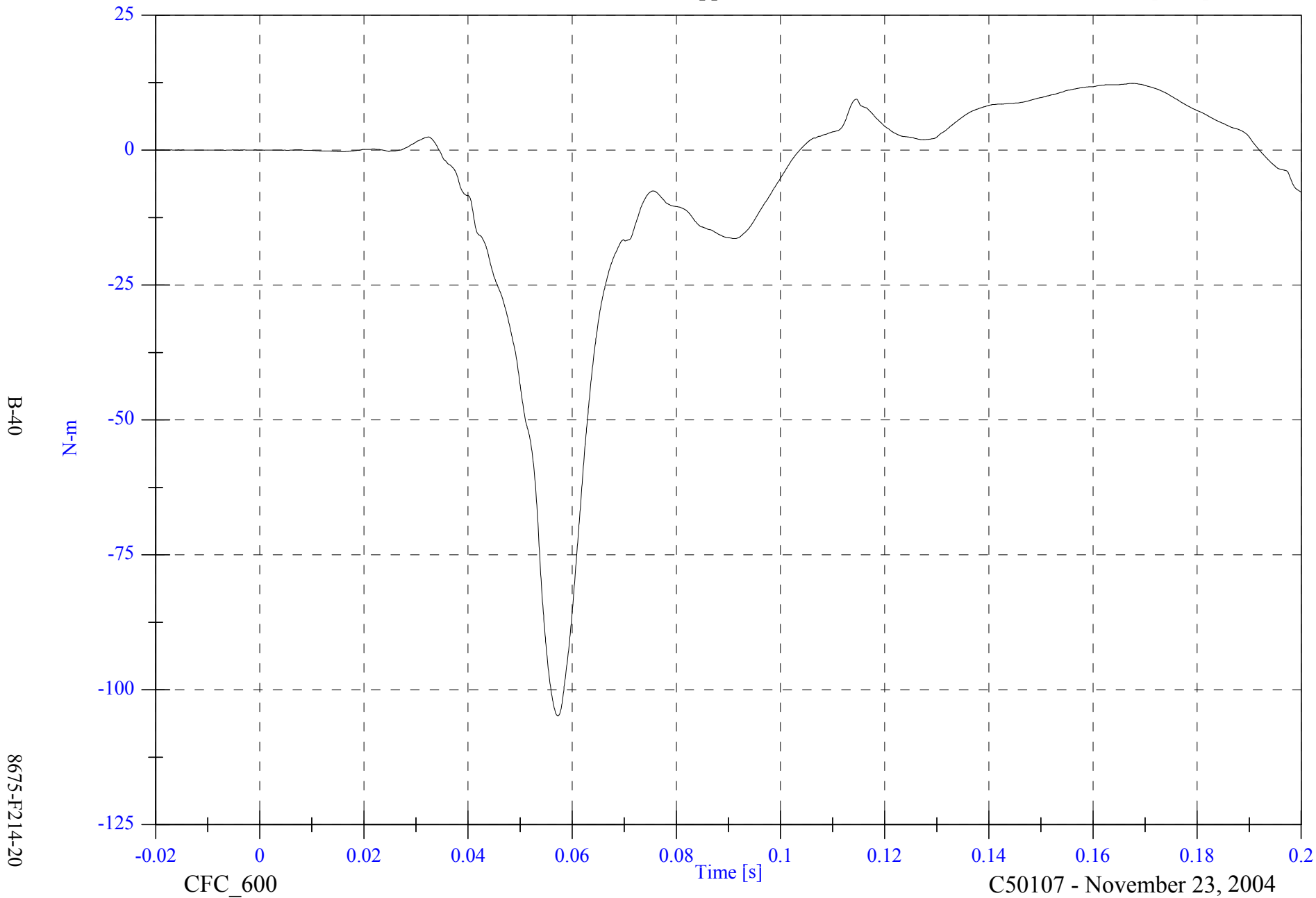
C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2P4 Upper Neck Mx

Max: 12.4 [N-m] at 0.167 [s]

Min: -104.9 [N-m] at 0.057 [s]



B-40

8675-F214-20

CFC\_600

Time [s]

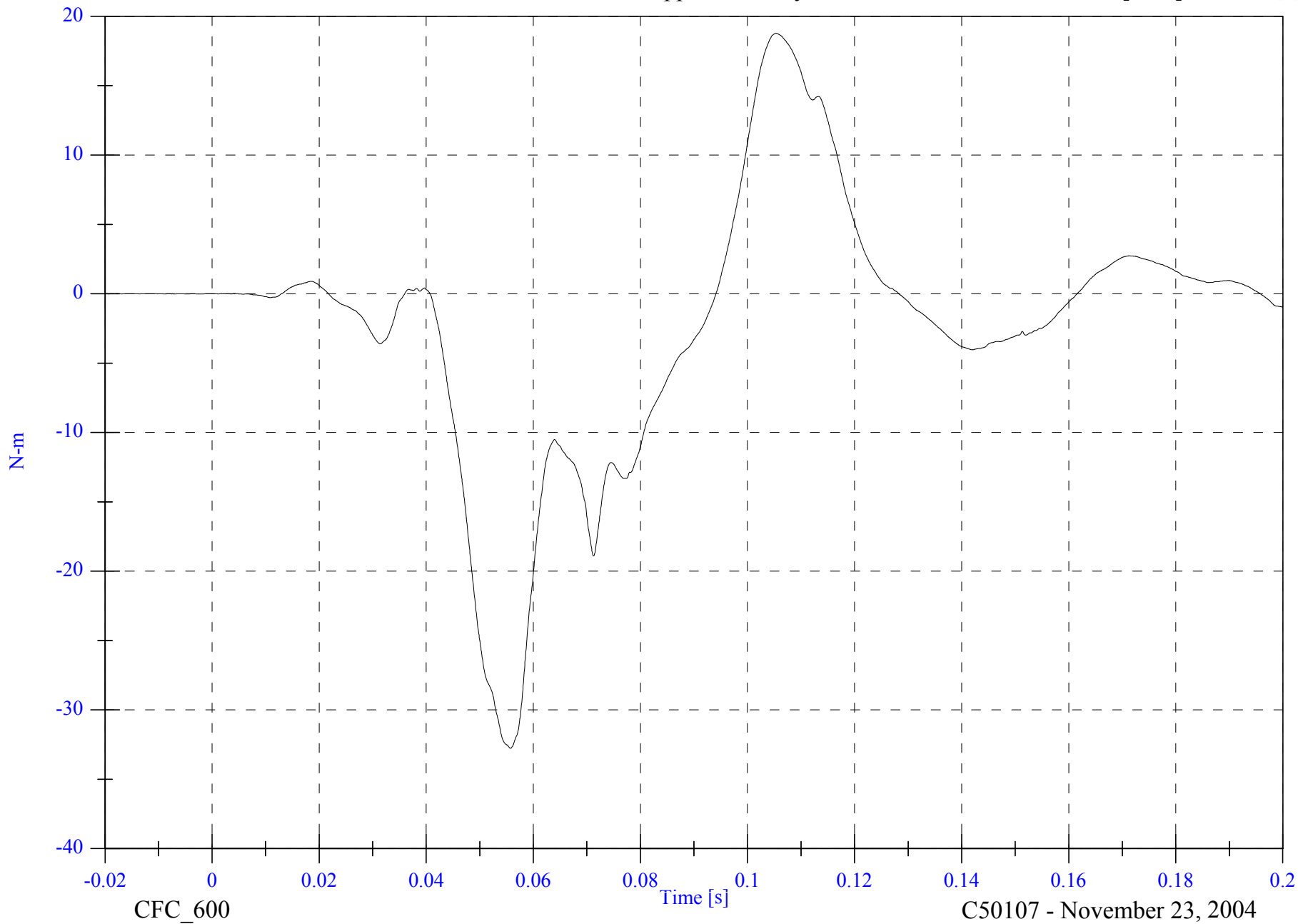
C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2P4 Upper Neck My

Max: 18.8 [N-m] at 0.105 [s]

Min: -32.8 [N-m] at 0.056 [s]



B-41

8675-F214-20

CFC\_600

Time [s]

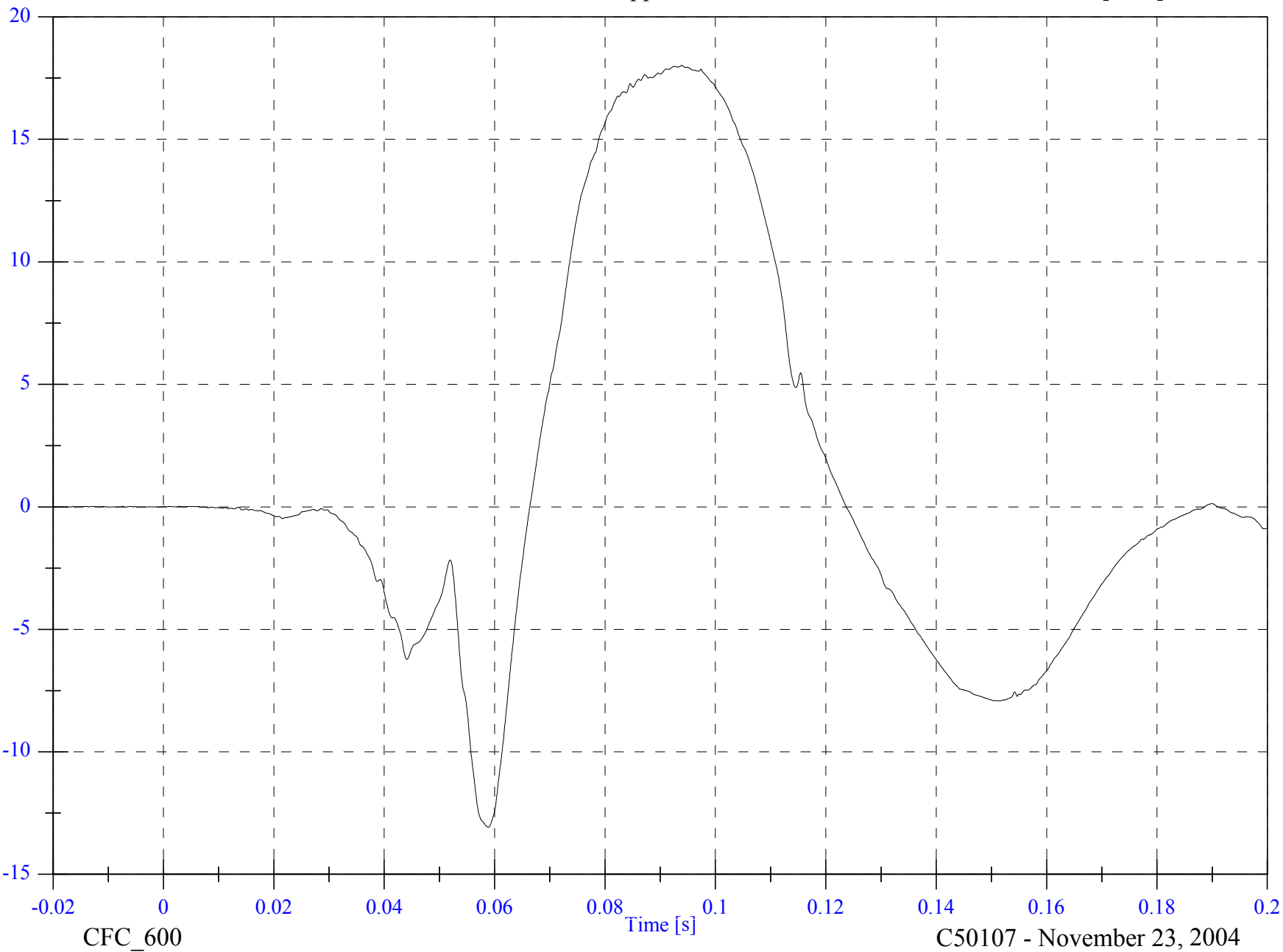
C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2P4 Upper Neck Mz

Max: 18.0 [N-m] at 0.094 [s]

Min: -13.1 [N-m] at 0.059 [s]



B-42

8675-F214-20

CFC\_600

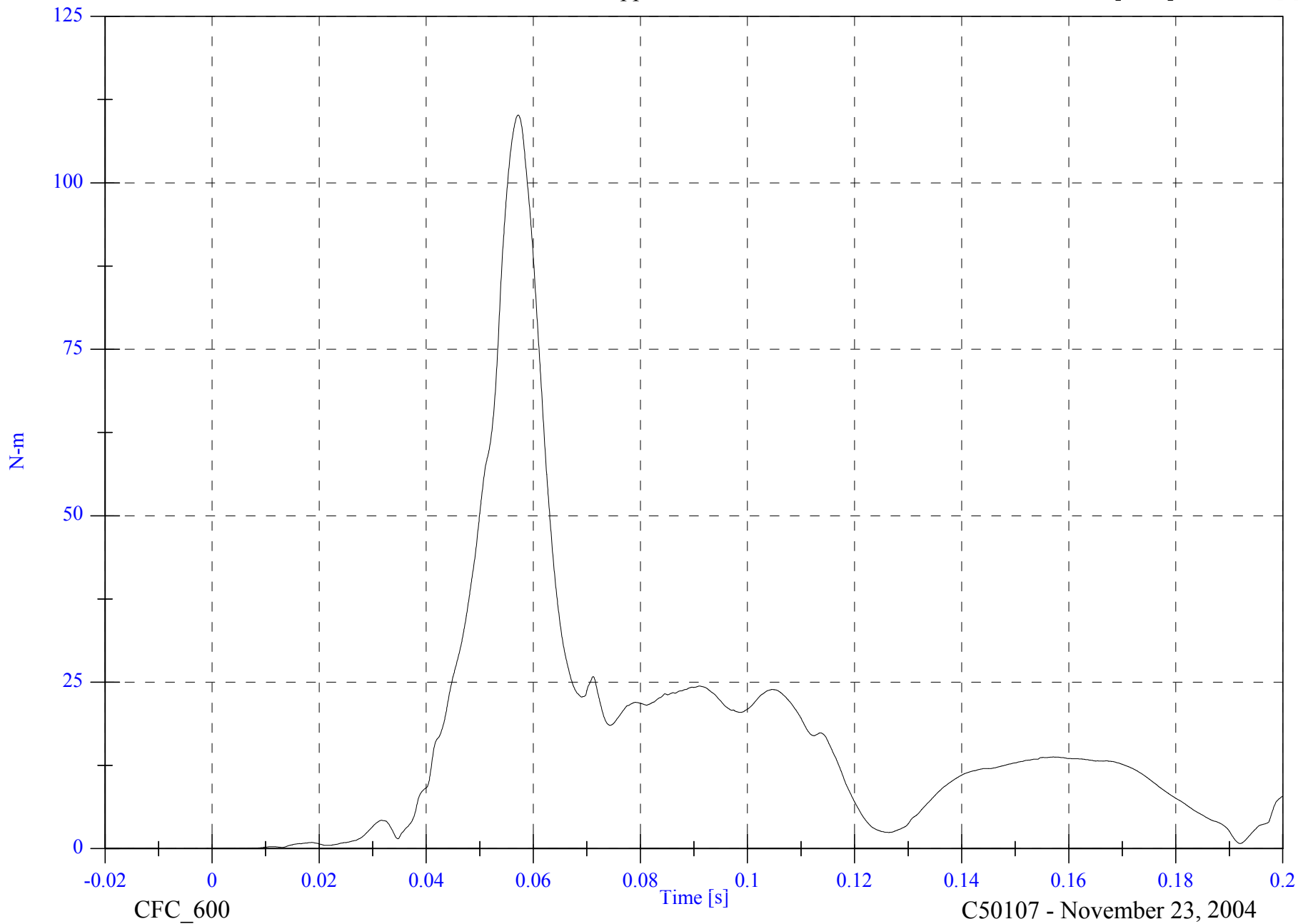
C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2P4 Upper Neck M Resultant

Max: 110.2 [N-m] at 0.057 [s]

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



B-43

8675-F214-20

CFC\_600

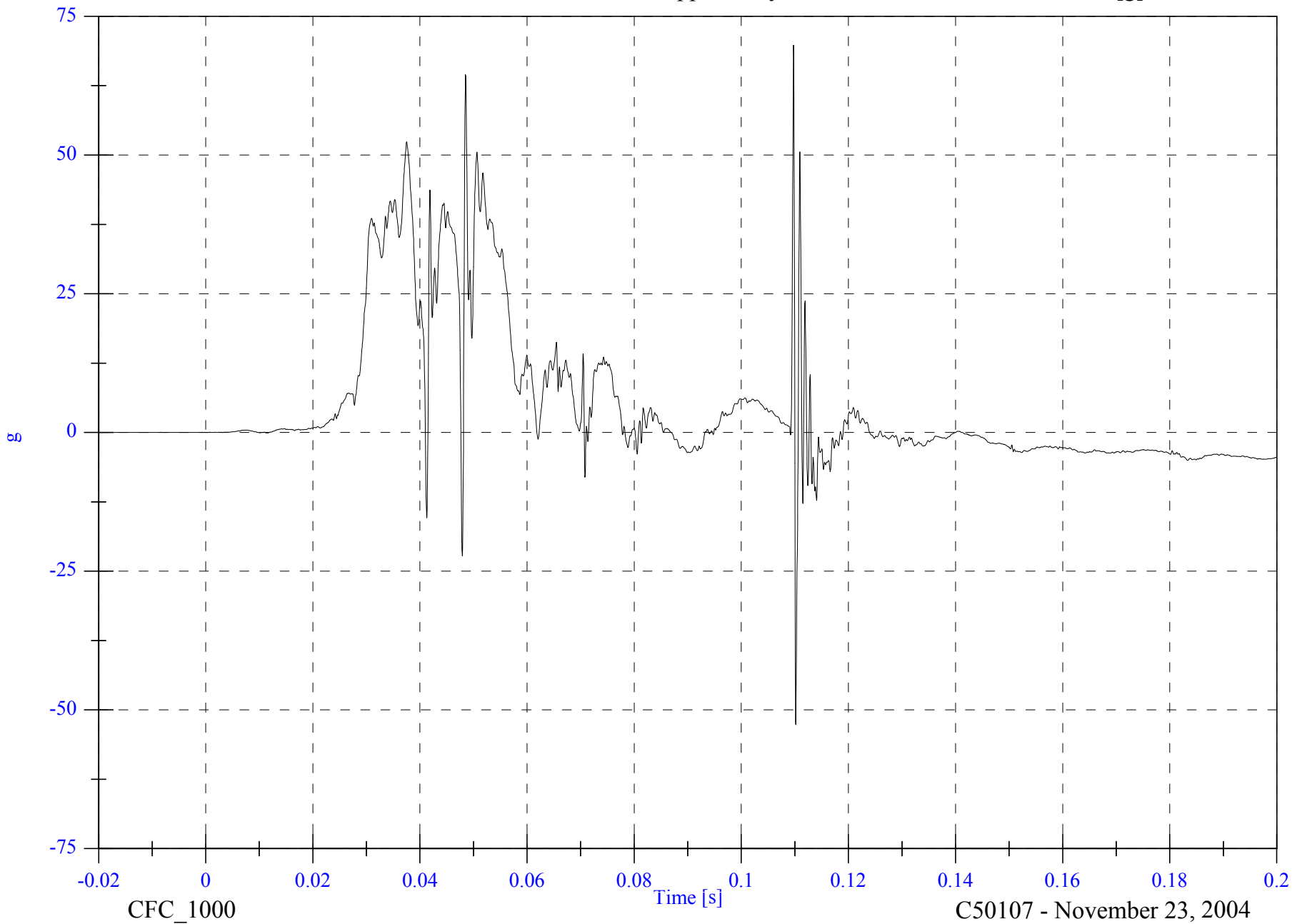
C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2P4 Upper Rib y

Max: 69.8 [g] at 0.110 [s]

Min: -52.7 [g] at 0.110 [s]



B-44

8675-F214-20

CFC\_1000

C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

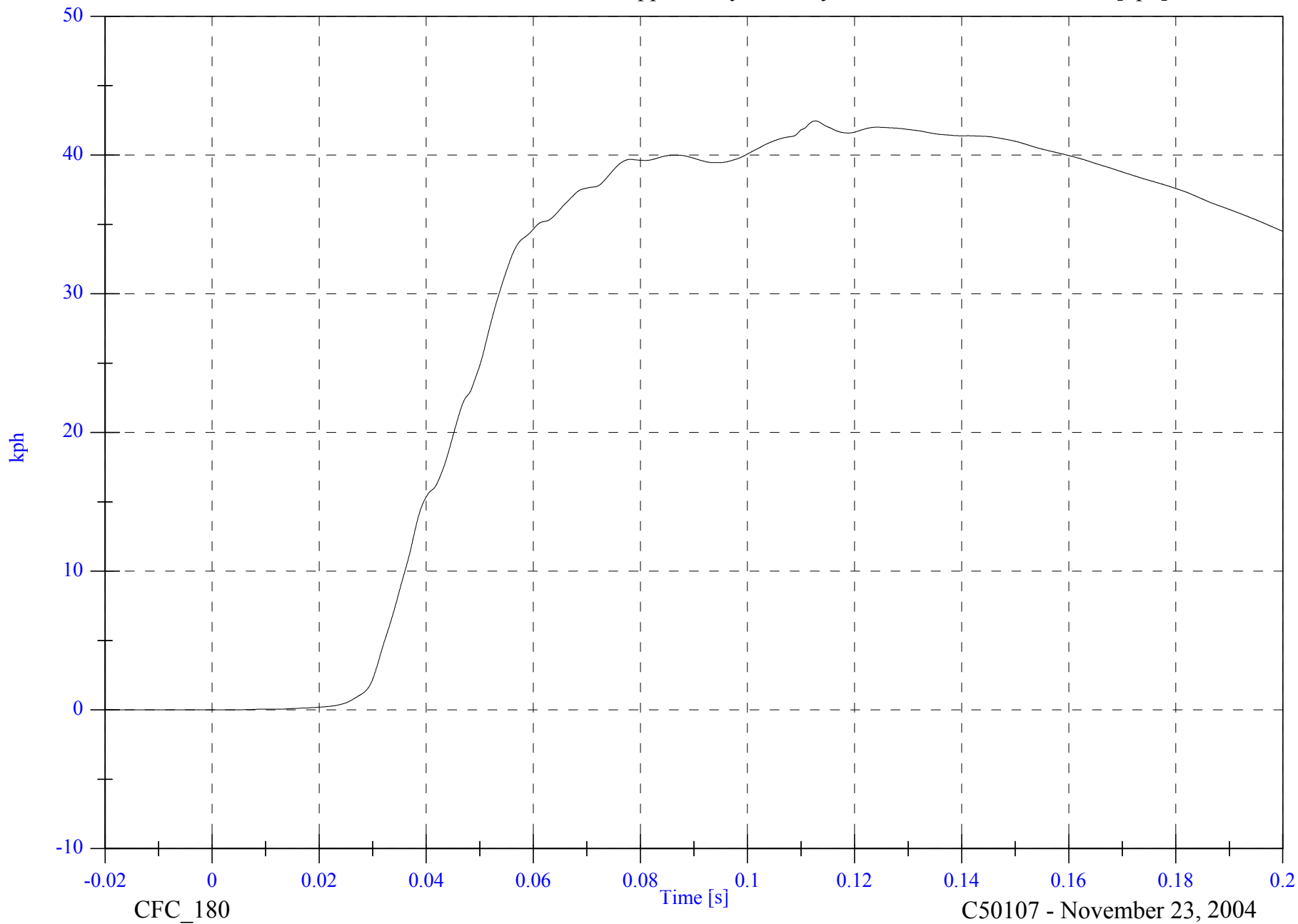
V2P4 Upper Rib y Velocity

Max: 42.5 [kph] at 0.113 [s]

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

B-45

8675-F214-20



CFC\_180

C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

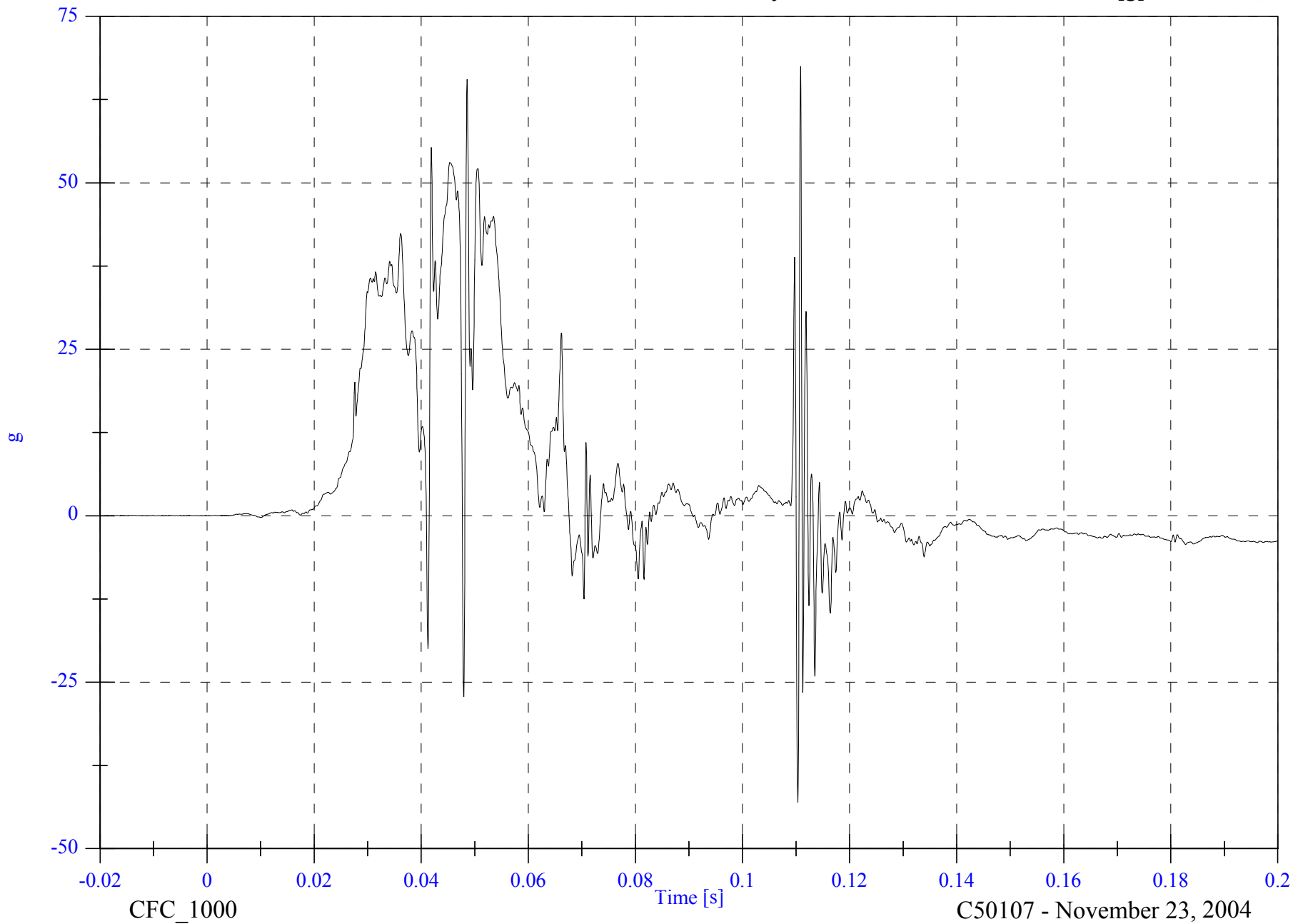
V2P4 Lower Rib y

Max: 67.5 [g] at 0.111 [s]

Min: -43.0 [g] at 0.110 [s]

B-46

8675-F214-20



2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

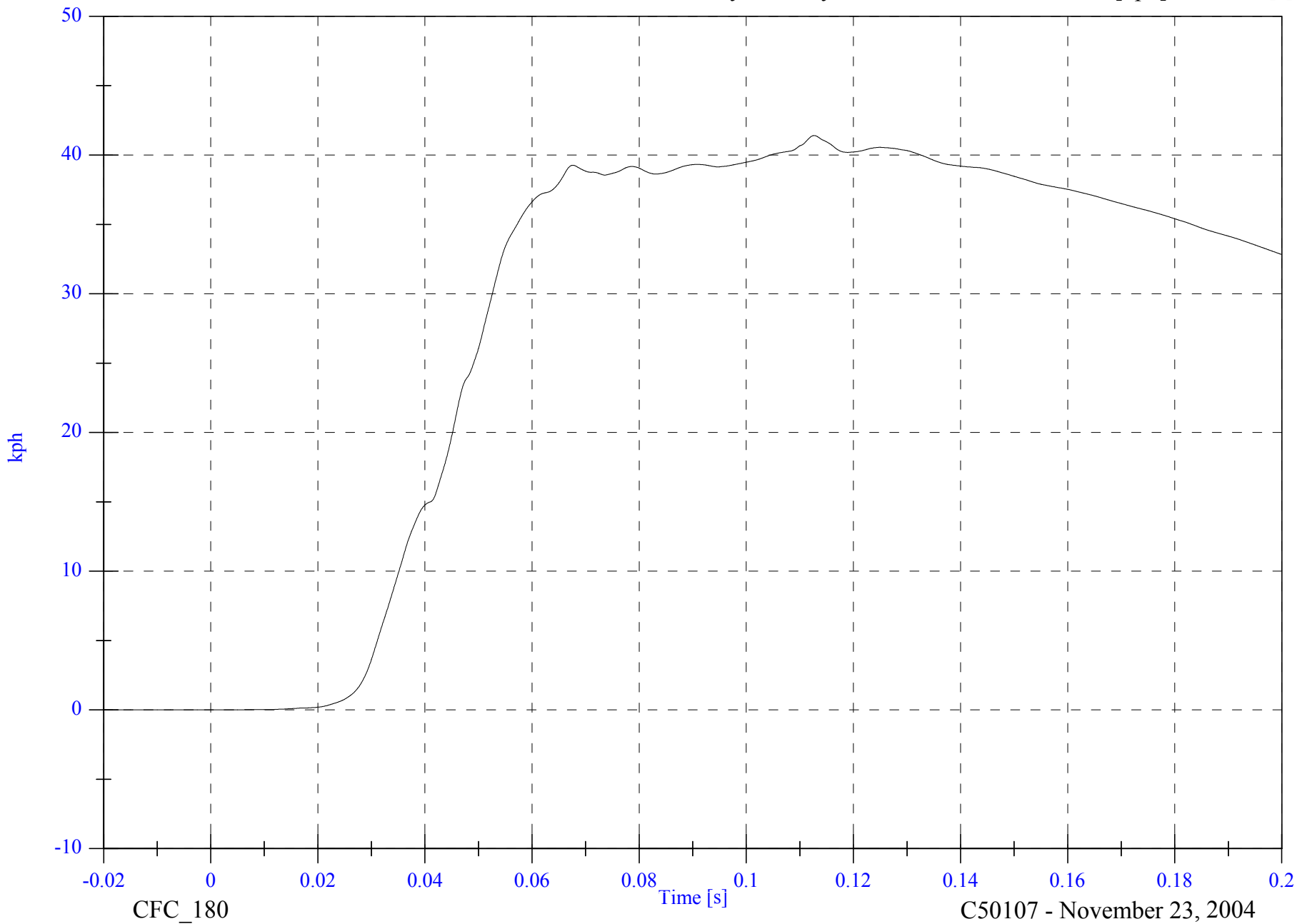
V2P4 Lower Rib y Velocity

Max: 41.4 [kph] at 0.113 [s]

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

B-47

8675-F214-20



CFC\_180

Time [s]

C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

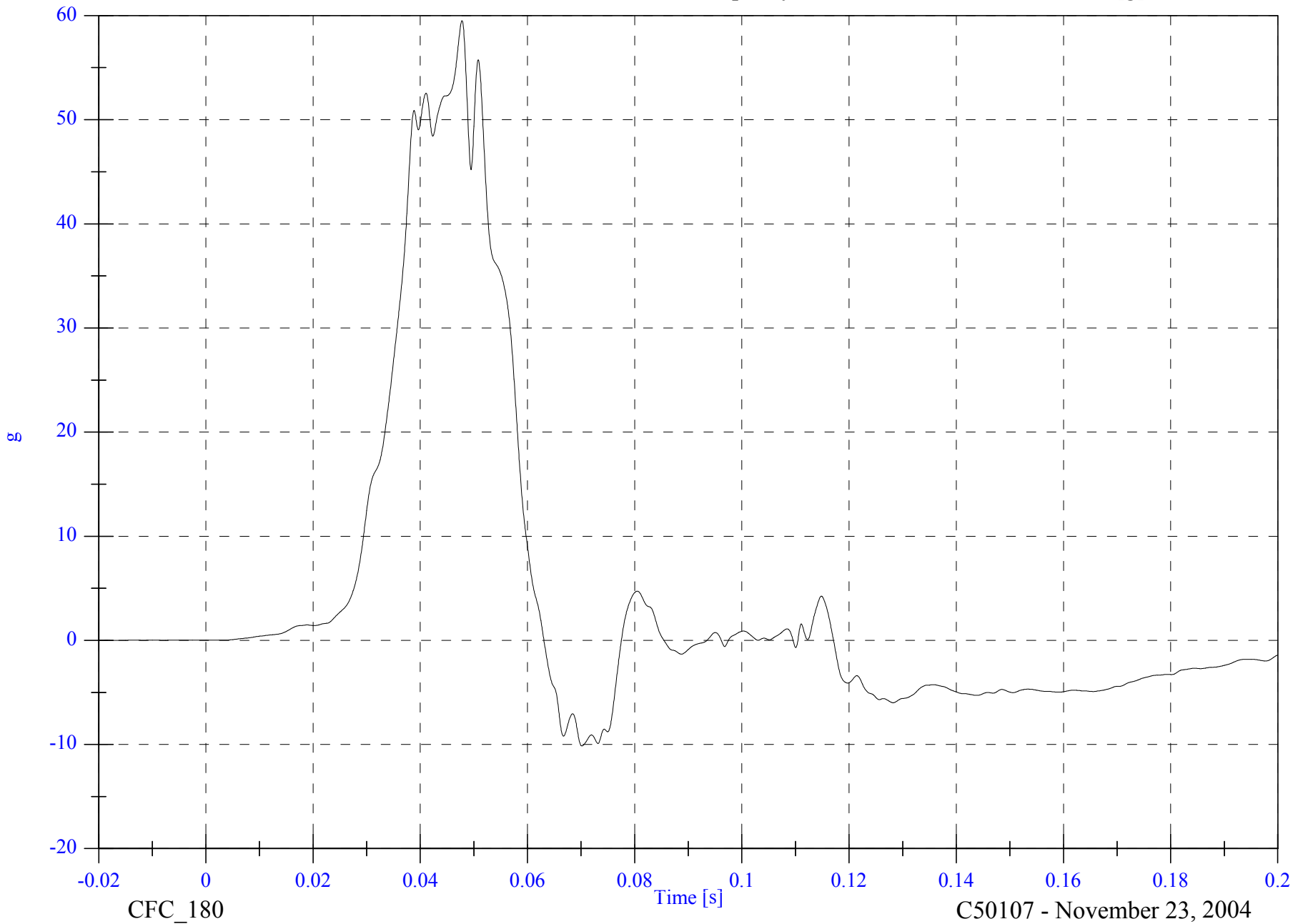
V2P4 Lower Spine y

Max: 59.5 [g] at 0.048 [s]

Min: -10.1 [g] at 0.070 [s]

B-48

8675-F214-20



2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

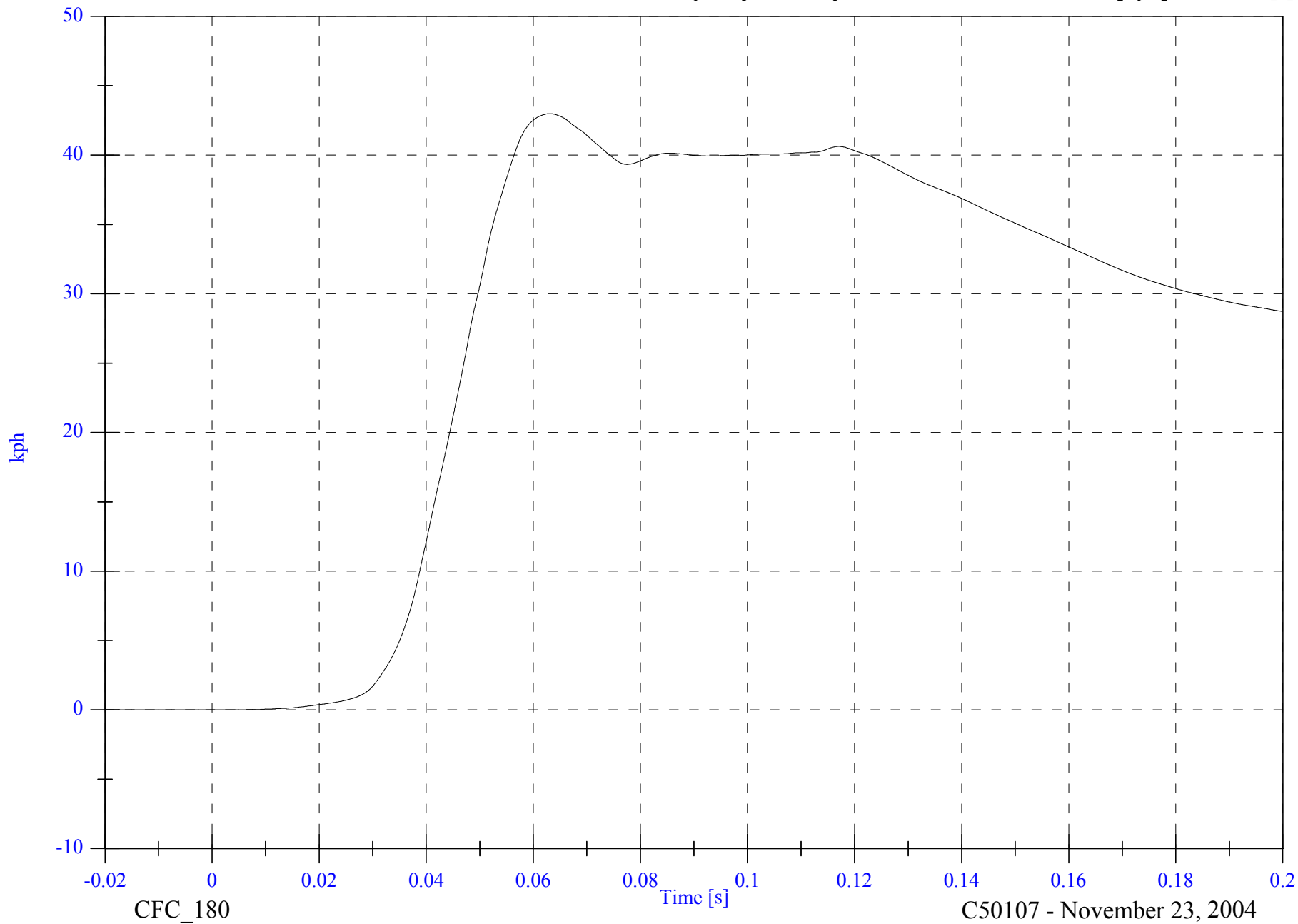
V2P4 Lower Spine y Velocity

Max: 43.0 [kph] at 0.063 [s]

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

B-49

8675-F214-20



CFC\_180

C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

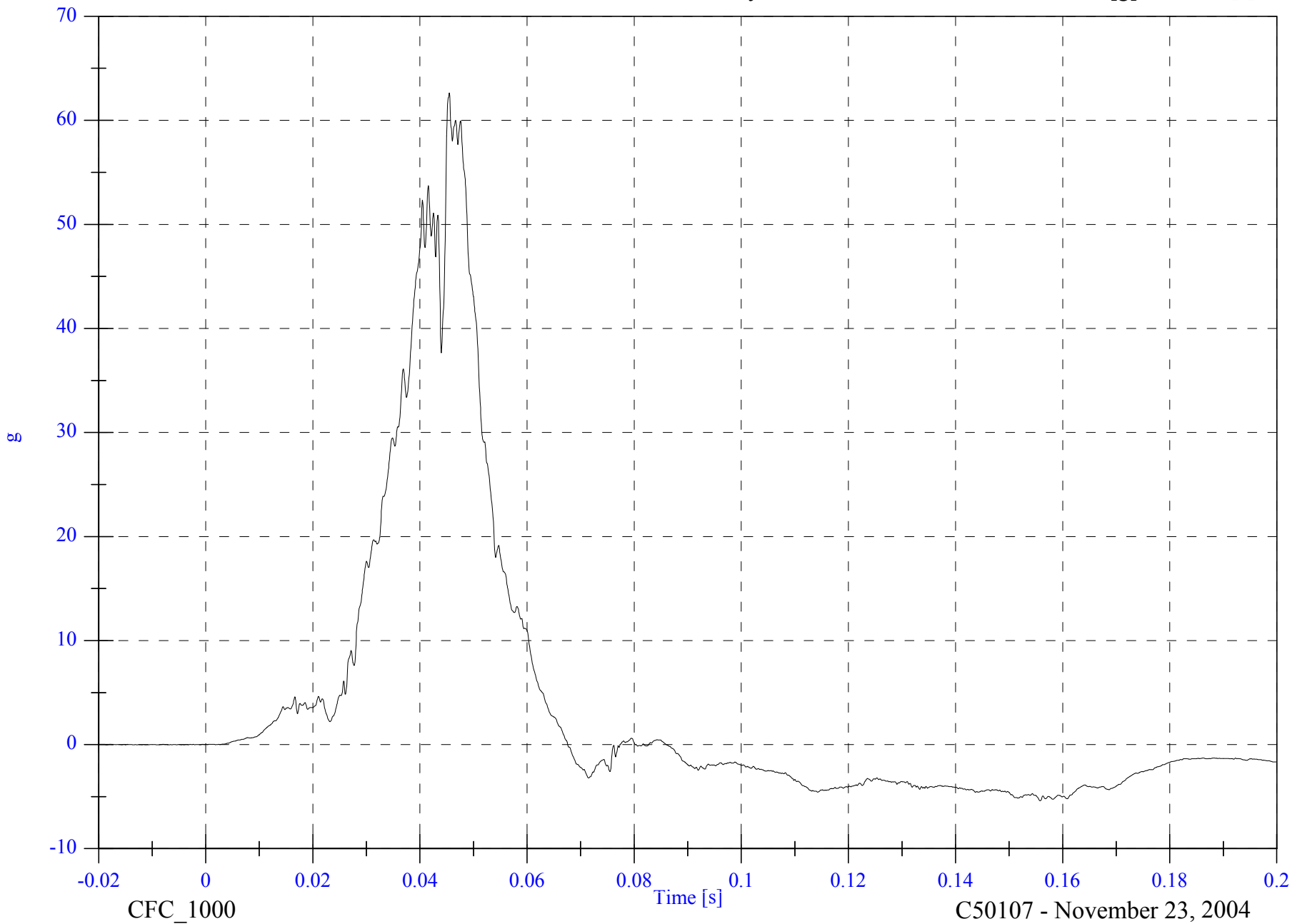
V2P4 Pelvic y

Max: 62.7 [g] at 0.045 [s]

Min: -5.4 [g] at 0.156 [s]

B-50

8675-F214-20



C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

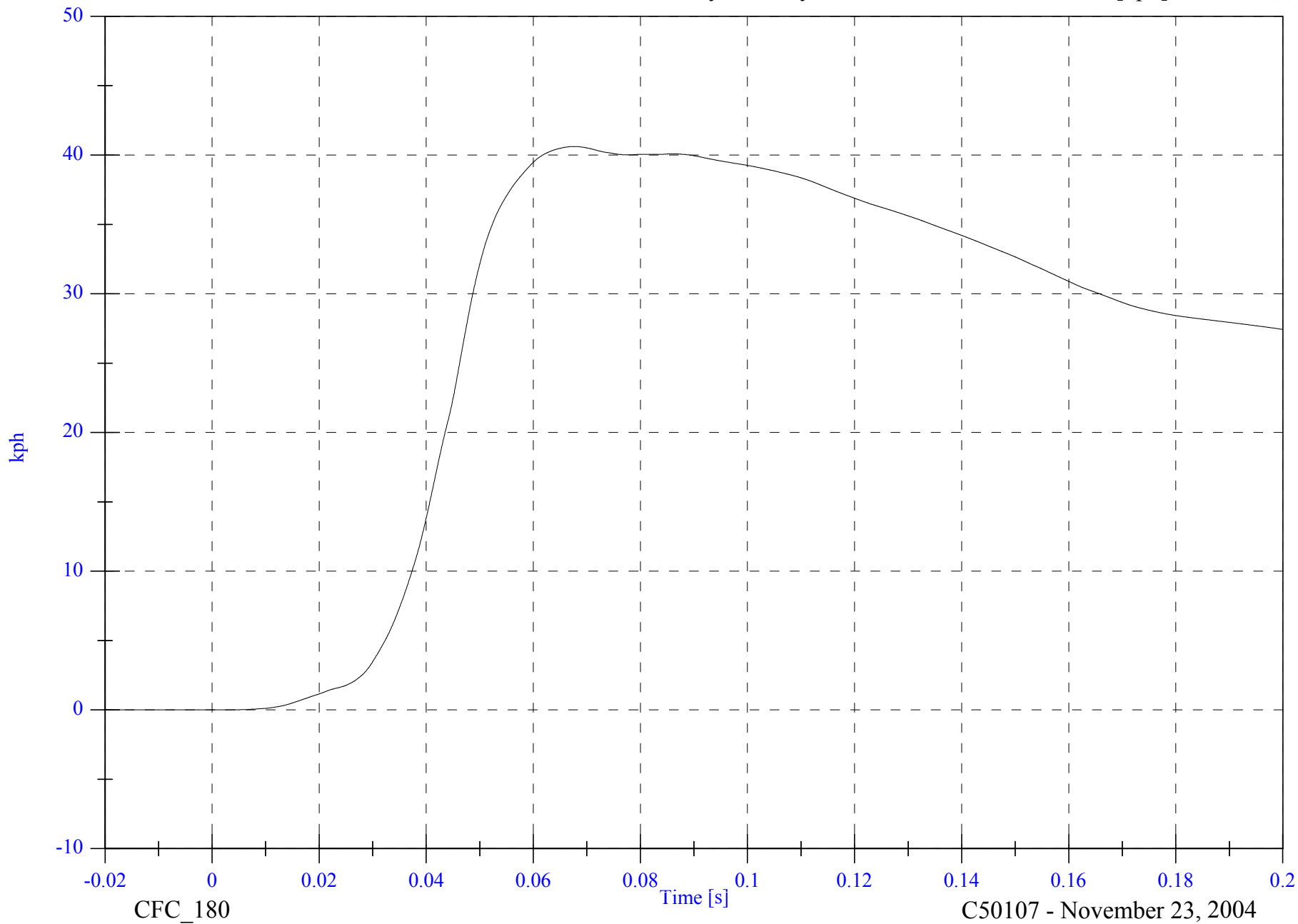
V2P4 Pelvic y Velocity

Max: 40.6 [kph] at 0.068 [s]

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

B-51

8675-F214-20



2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

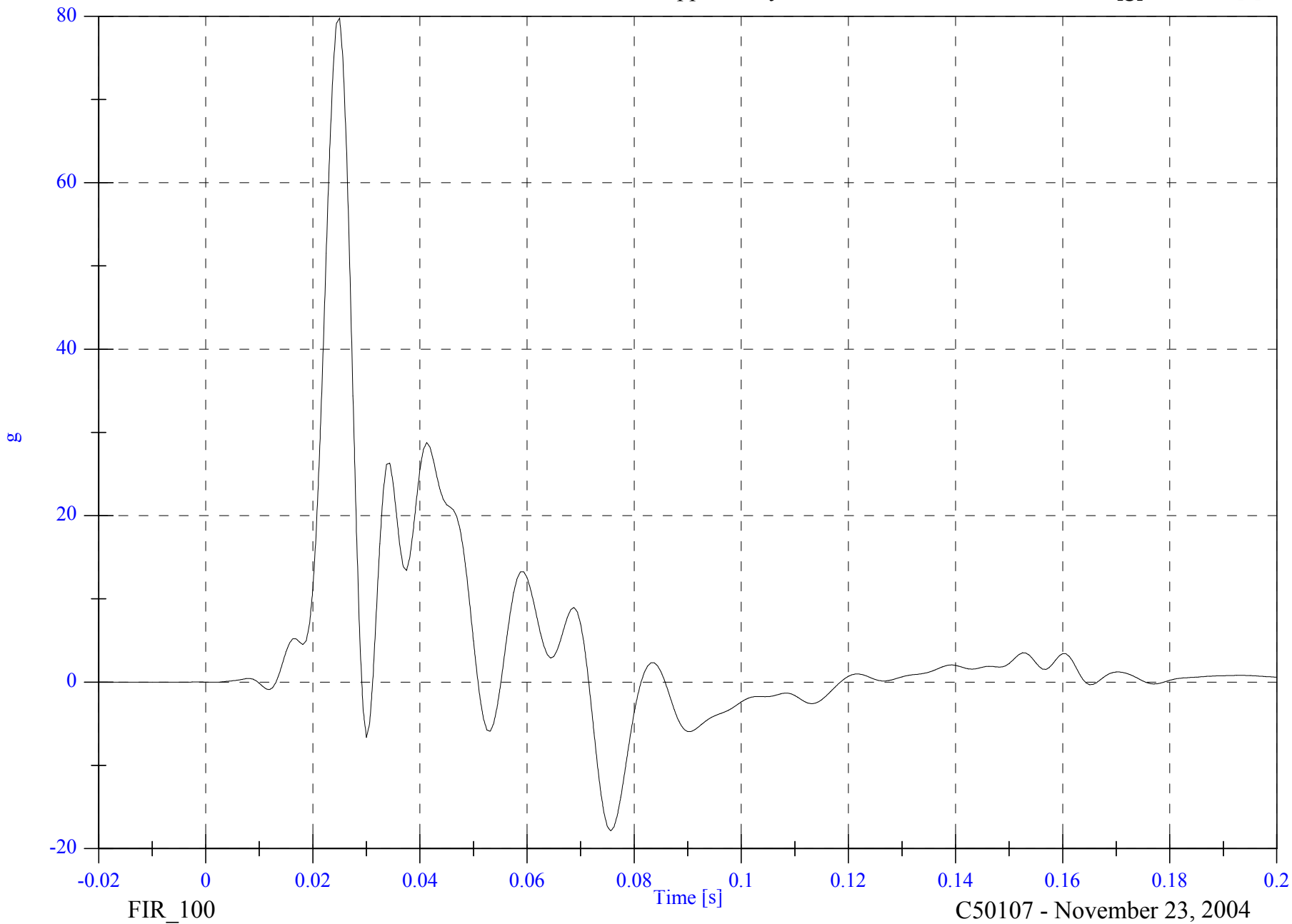
V2P1 Upper Rib y

Max: 79.8 [g] at 0.025 [s]

Min: -17.9 [g] at 0.076 [s]

B-52

8675-F214-20



FIR\_100

C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

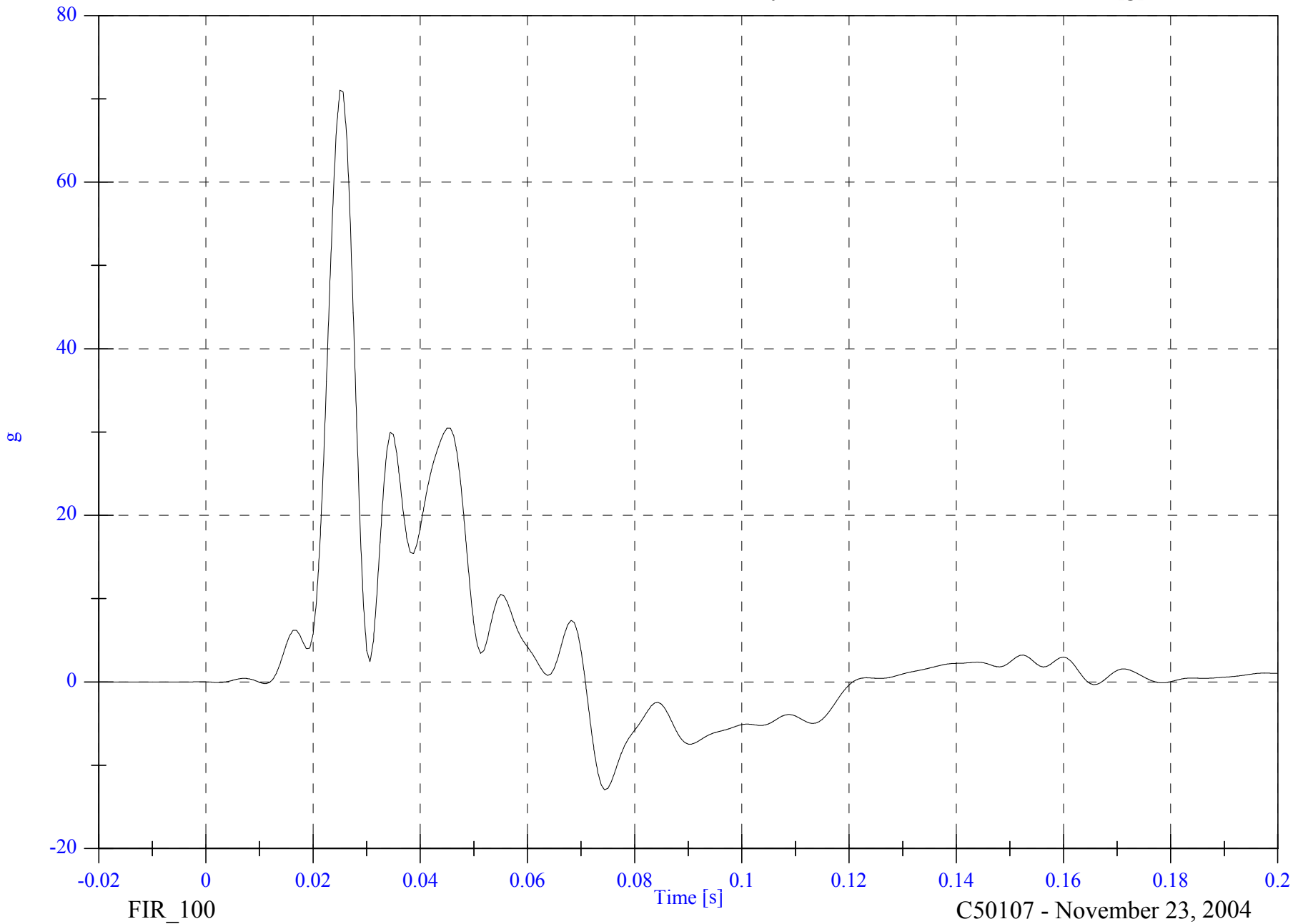
V2P1 Lower Rib y

Max: 71.0 [g] at 0.025 [s]

Min: -12.9 [g] at 0.074 [s]

B-53

8675-F214-20



C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2P1 Lower Spine y

Max: 67.7 [g] at 0.029 [s]

Min: -16.3 [g] at 0.068 [s]

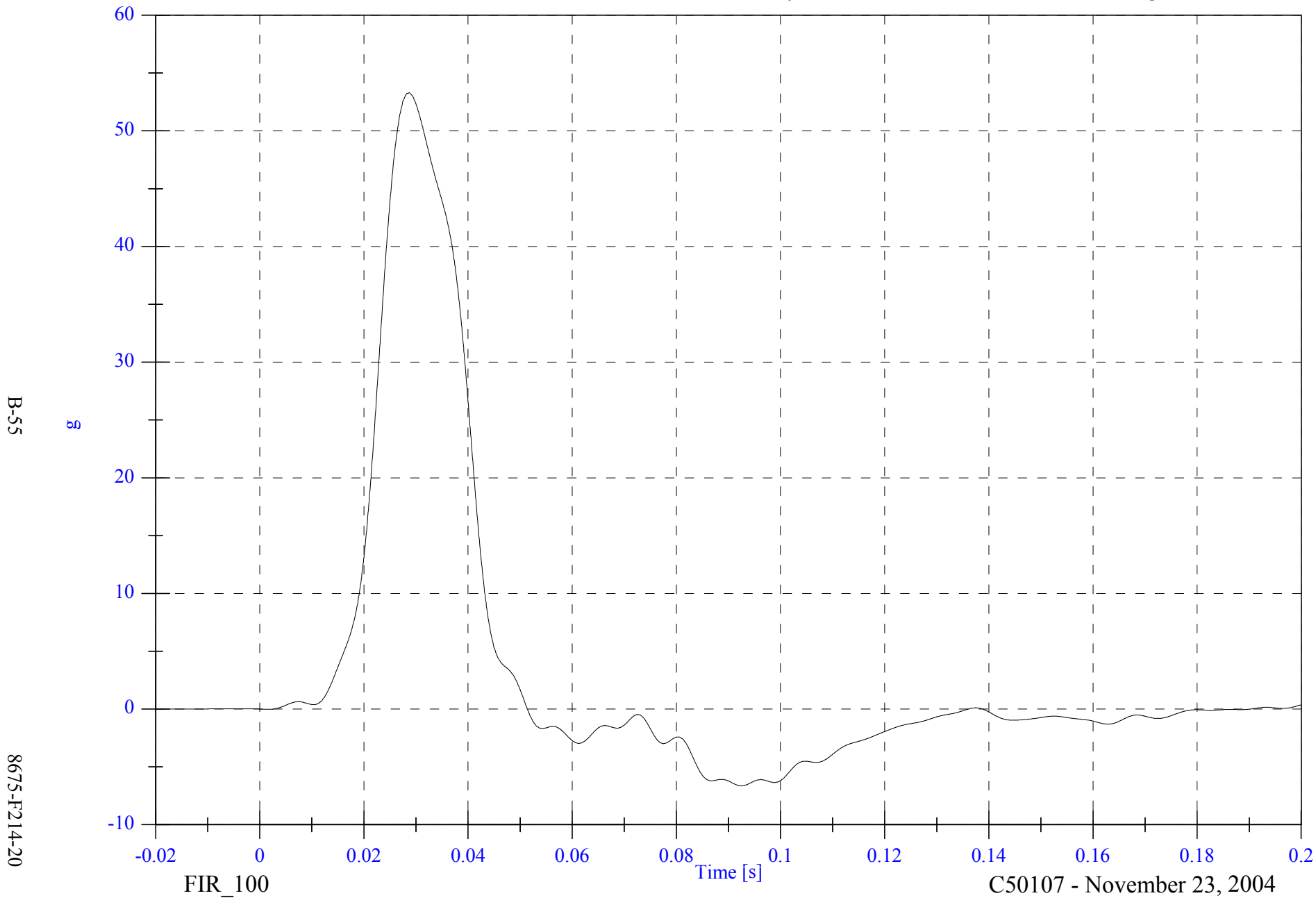


2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2P1 Pelvic y

Max: 53.3 [g] at 0.029 [s]

Min: -6.6 [g] at 0.093 [s]

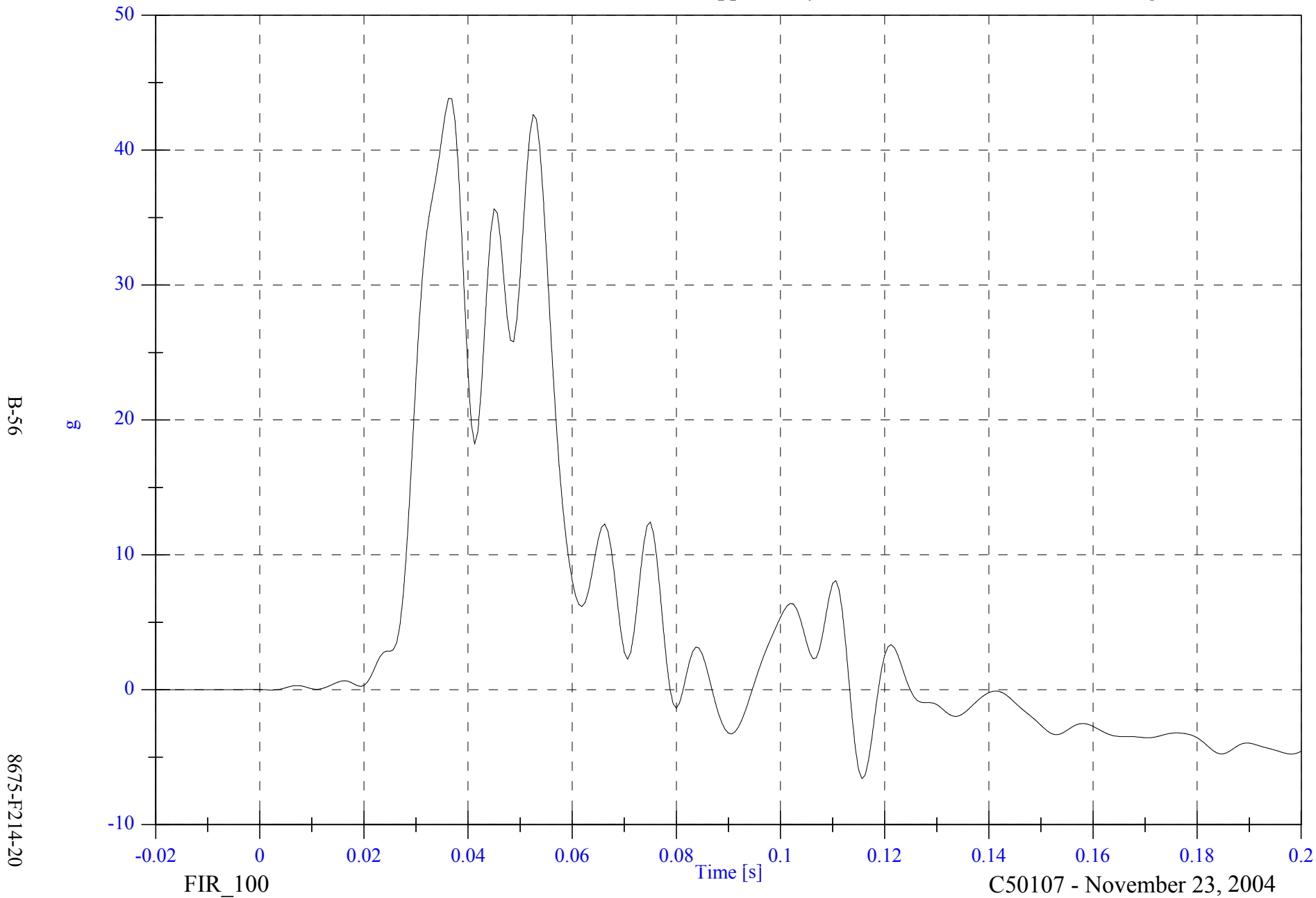


2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2P4 Upper Rib y

Max: 43.8 [g] at 0.036 [s]

Min: -6.6 [g] at 0.116 [s]

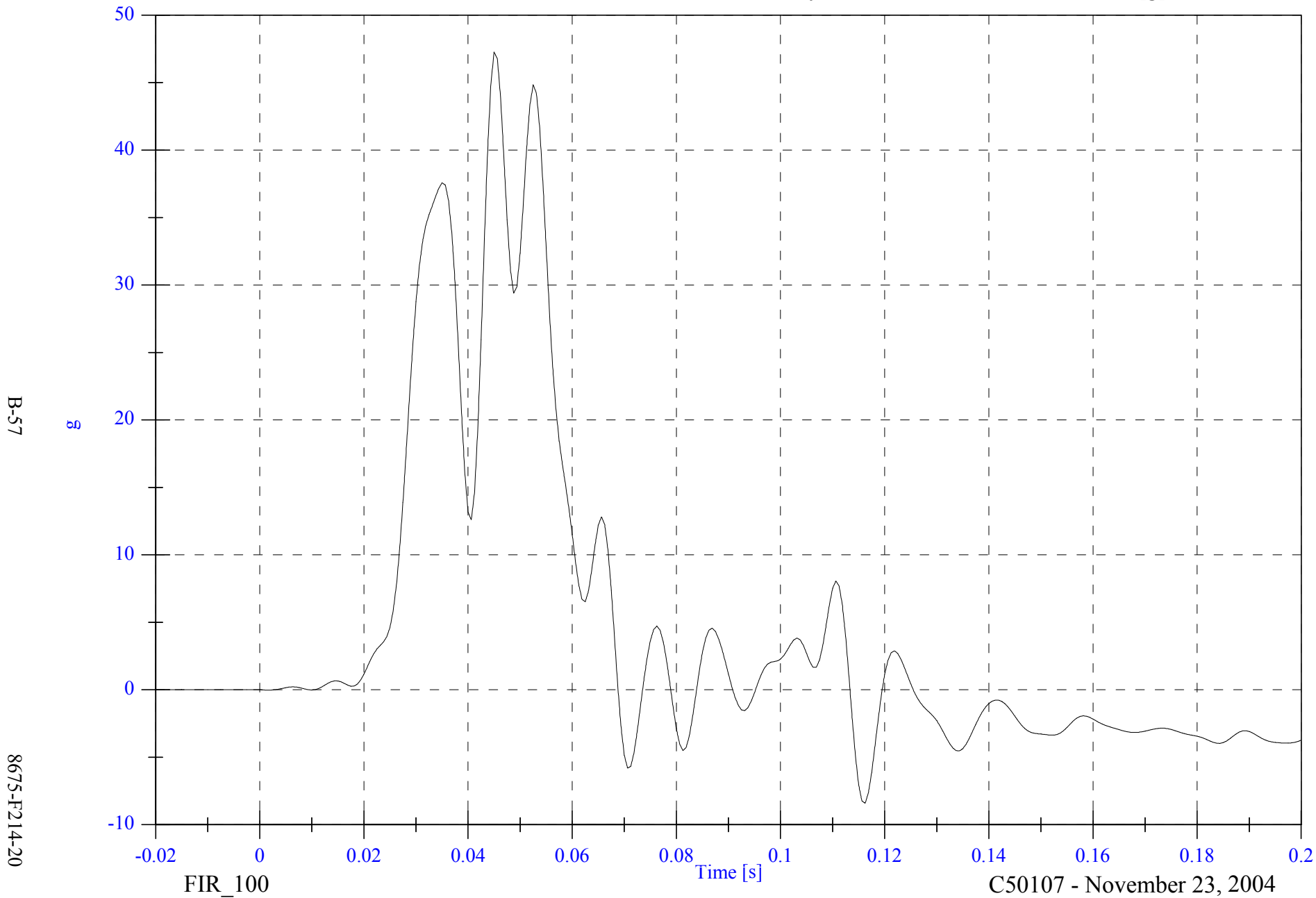


2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2P4 Lower Rib y

Max: 47.3 [g] at 0.045 [s]

Min: -8.4 [g] at 0.116 [s]

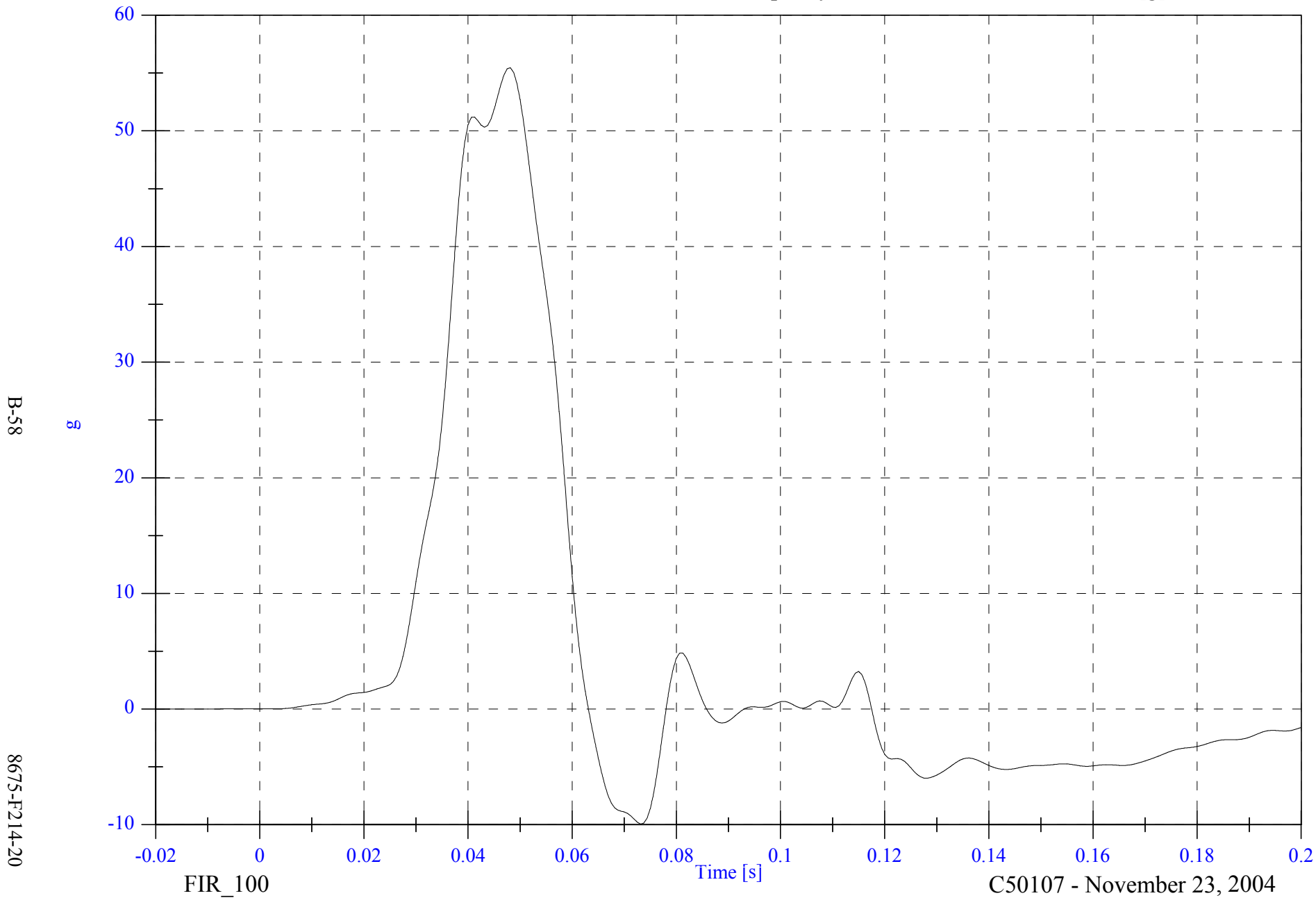


2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2P4 Lower Spine y

Max: 55.5 [g] at 0.048 [s]

Min: -9.9 [g] at 0.073 [s]

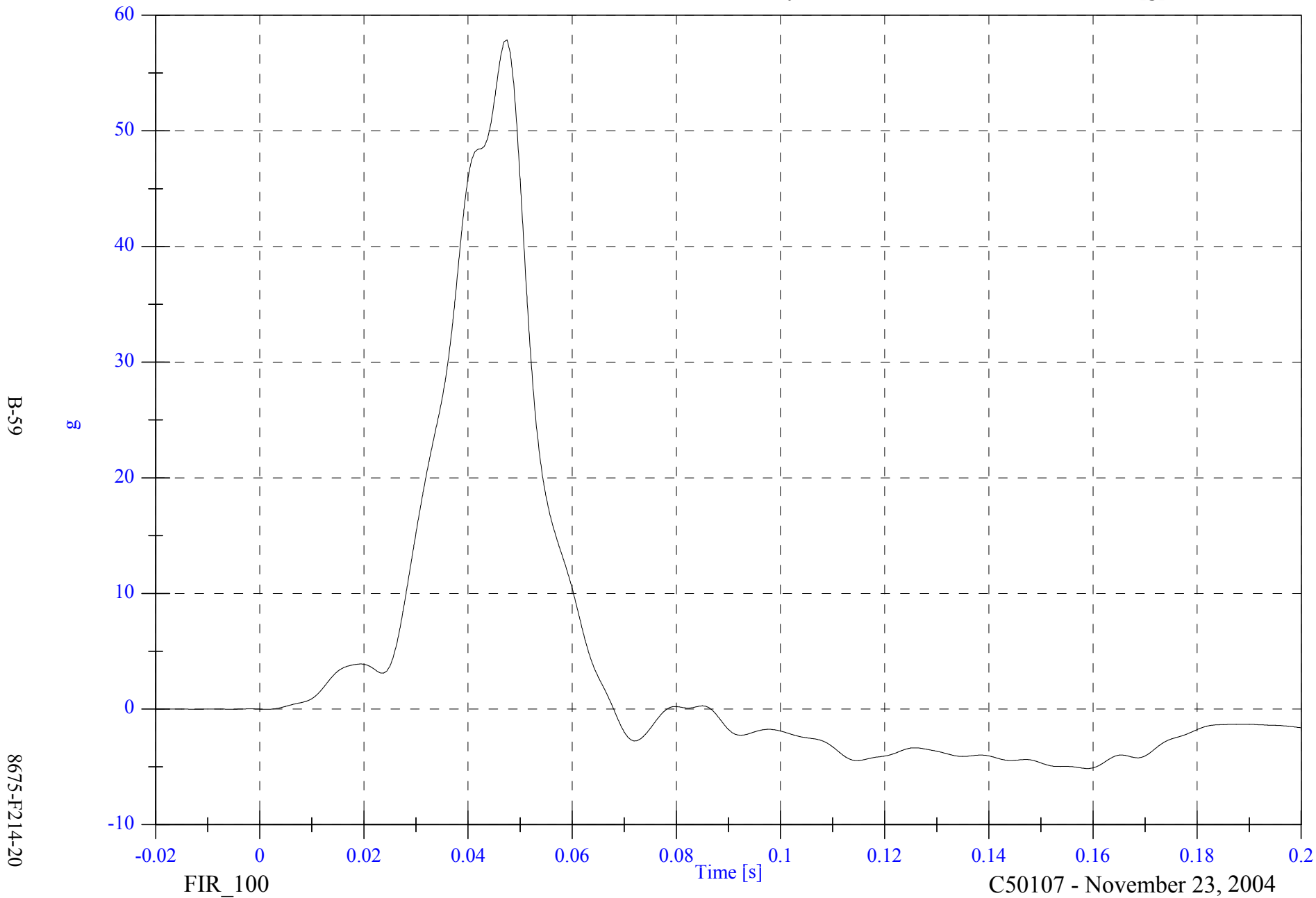


2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2P4 Pelvic y

Max: 57.9 [g] at 0.047 [s]

Min: -5.1 [g] at 0.159 [s]



B-59

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FIR\_100

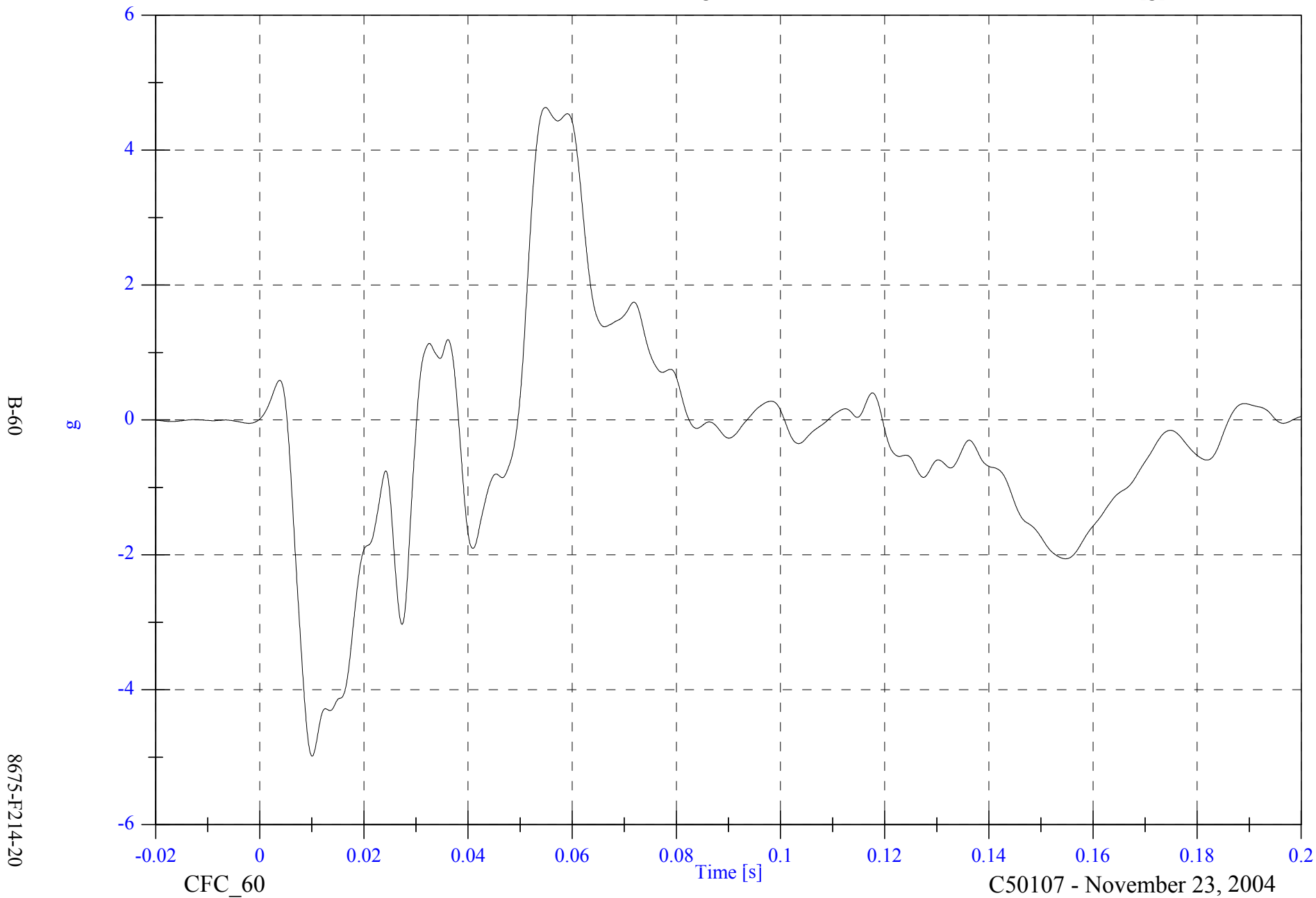
C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2A1 Right Front Sill x

Max: 4.6 [g] at 0.055 [s]

Min: -5.0 [g] at 0.010 [s]



B-60

8675-F214-20

CFC\_60

Time [s]

C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

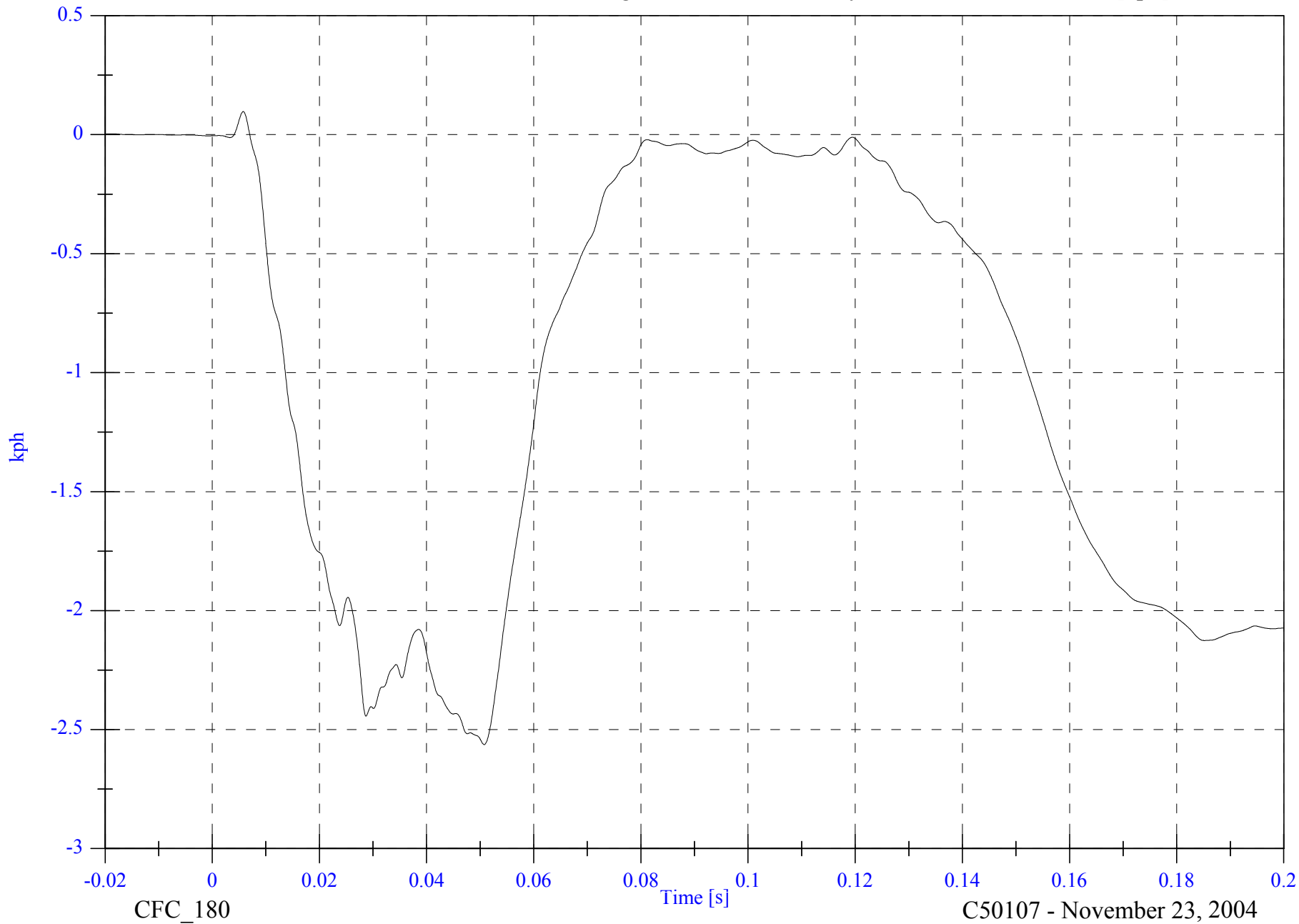
V2A1 Right Front Sill x Velocity

Max: 0.1 [kph] at 0.006 [s]

Min: -2.6 [kph] at 0.051 [s]

B-61

8675-F214-20



CFC\_180

C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

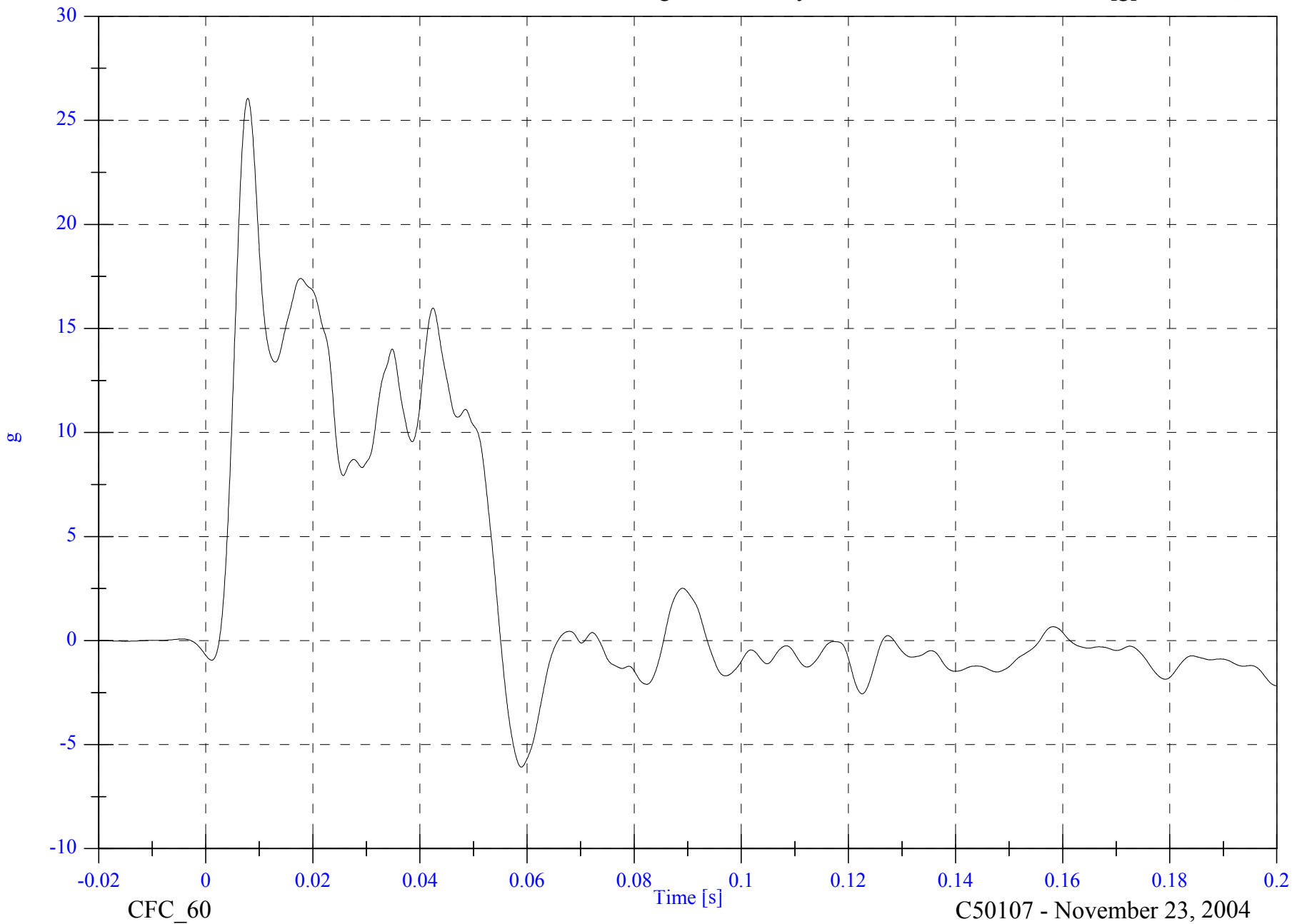
V2A1 Right Front Sill y

Max: 26.1 [g] at 0.008 [s]

Min: -6.1 [g] at 0.059 [s]

B-62

8675-F214-20

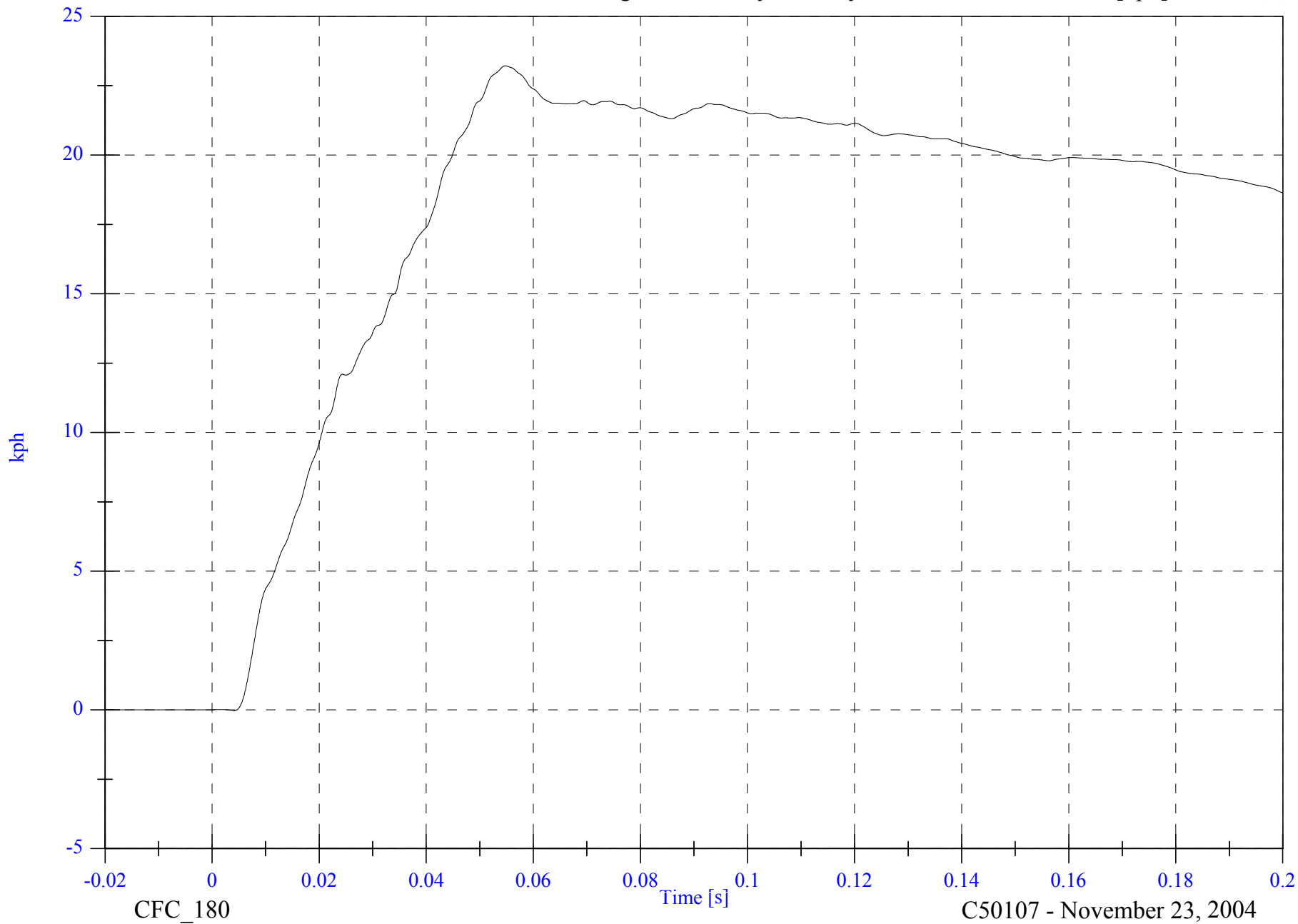


2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2A1 Right Front Sill y Velocity

Max: 23.2 [kph] at 0.055 [s]

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



B-63

8675-F214-20

CFC\_180

Time [s]

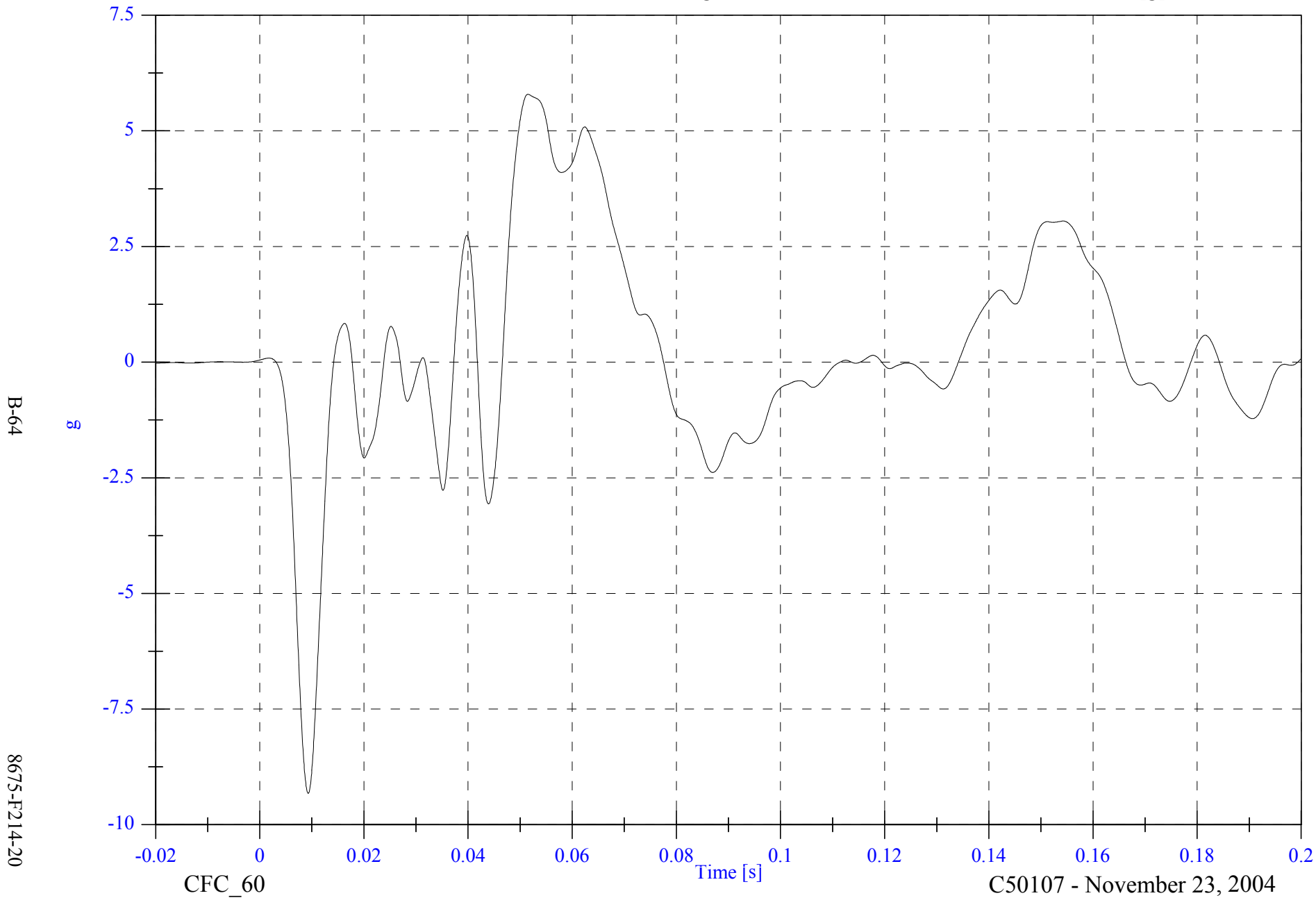
C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2A1 Right Front Sill z

Max: 5.8 [g] at 0.051 [s]

Min: -9.3 [g] at 0.009 [s]



2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

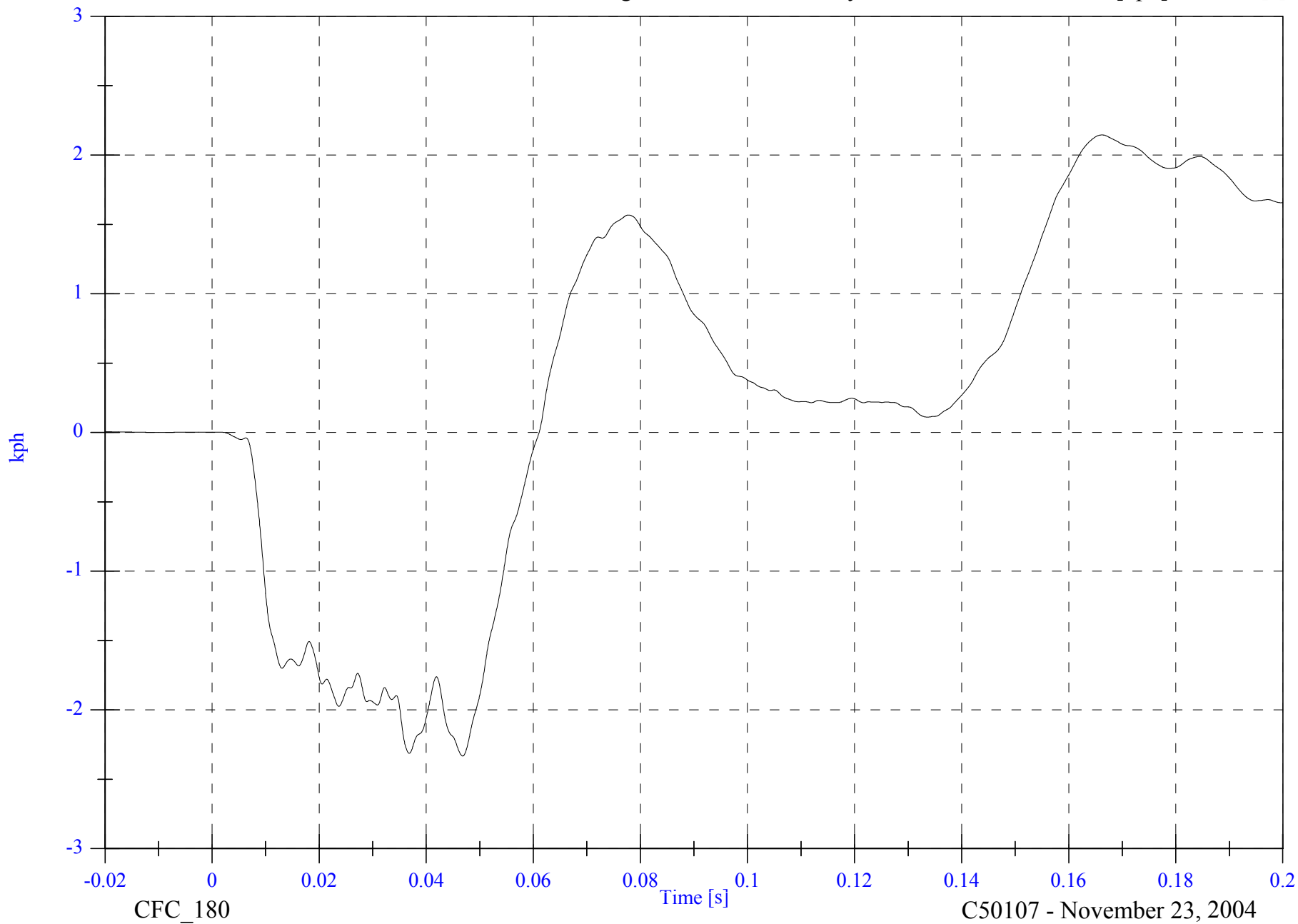
V2A1 Right Front Sill z Velocity

Max: 2.1 [kph] at 0.166 [s]

Min: -2.3 [kph] at 0.047 [s]

B-65

8675-F214-20



2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

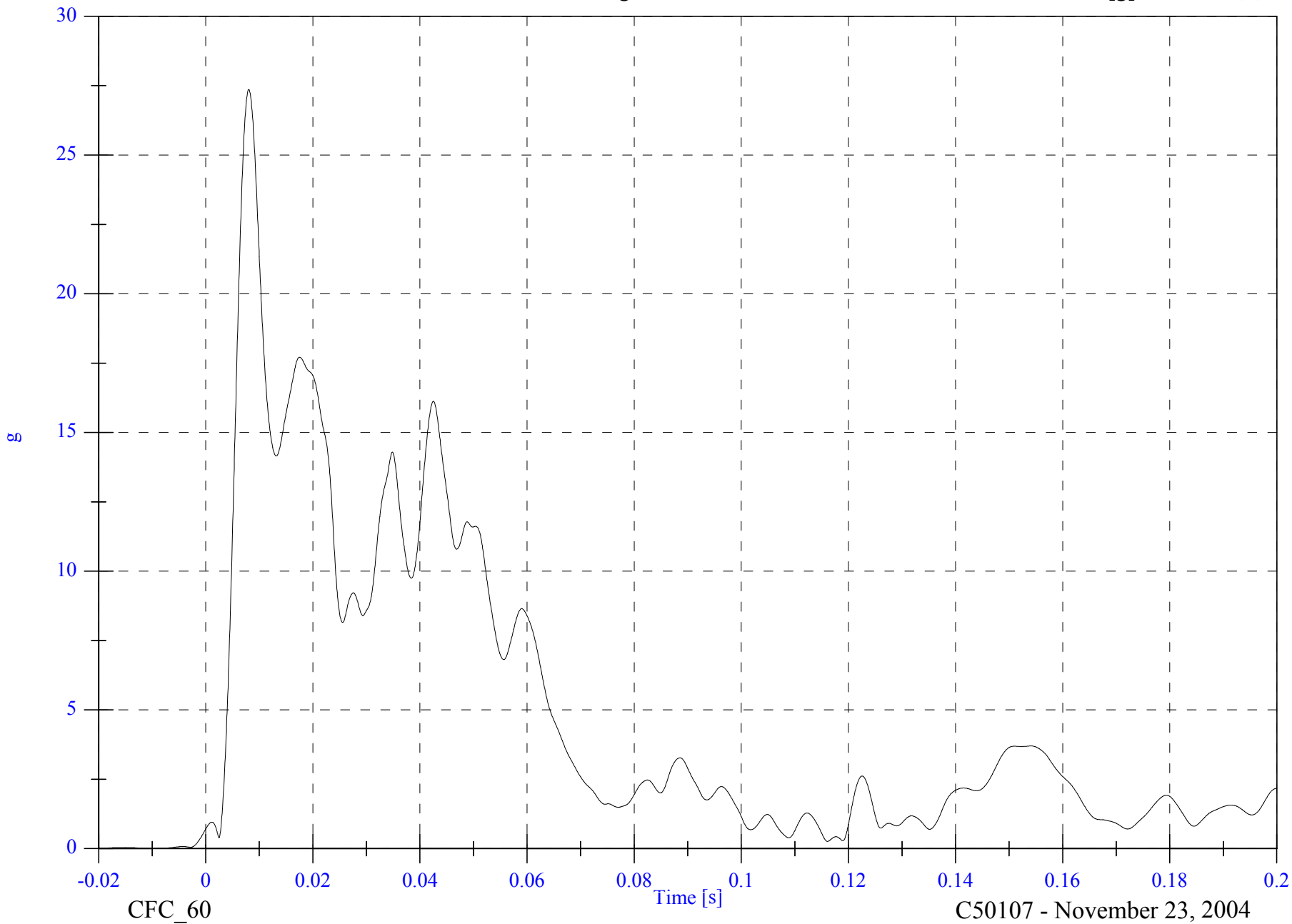
V2A1 Right Front Sill Resultant

Max: 27.4 [g] at 0.008 [s]

Min: 0.0 [g] at -0.011 [s]

B-66

8675-F214-20



2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

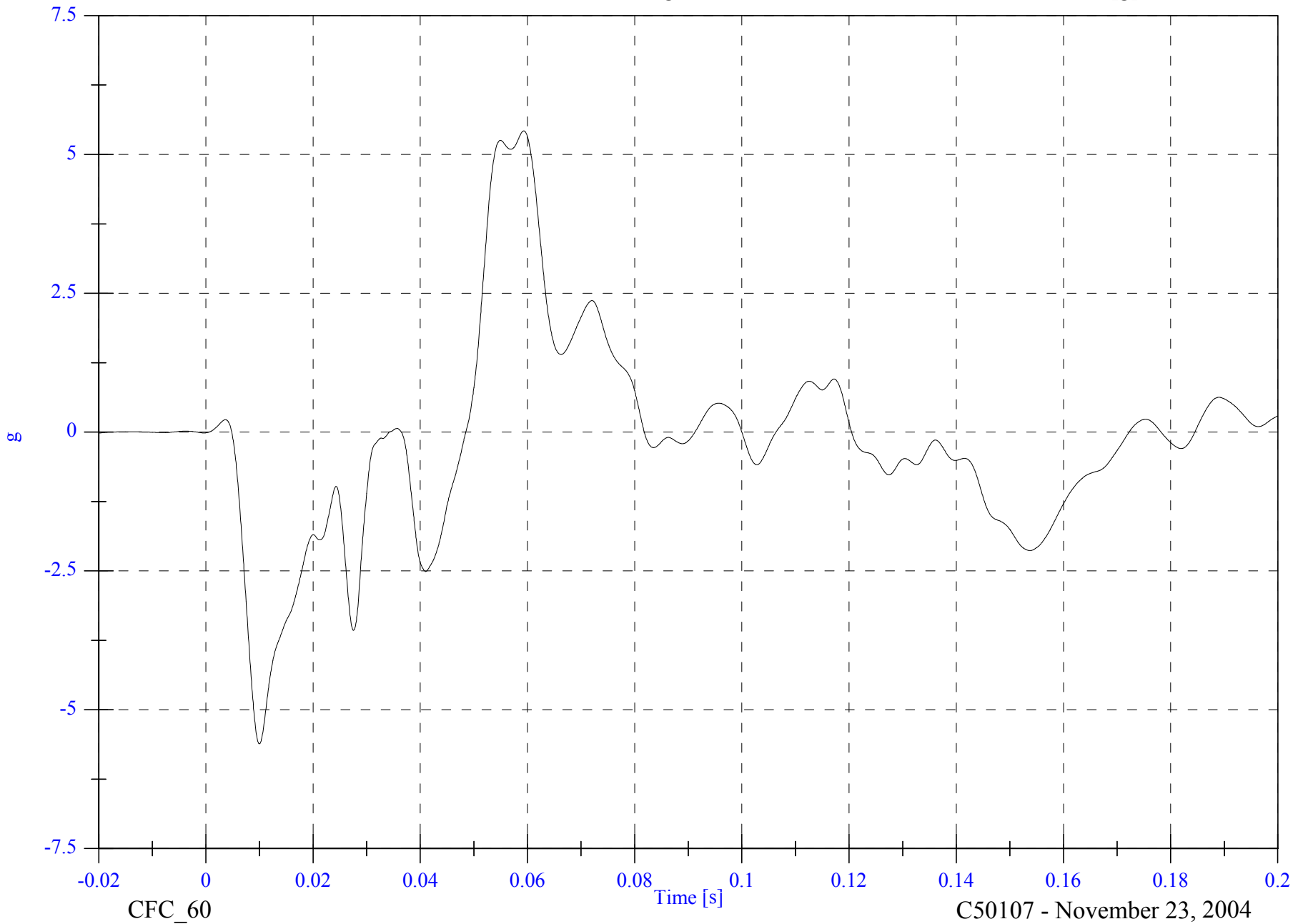
V2A2 Right Rear Sill x

Max: 5.4 [g] at 0.059 [s]

Min: -5.6 [g] at 0.010 [s]

B-67

8675-F214-20



CFC\_60

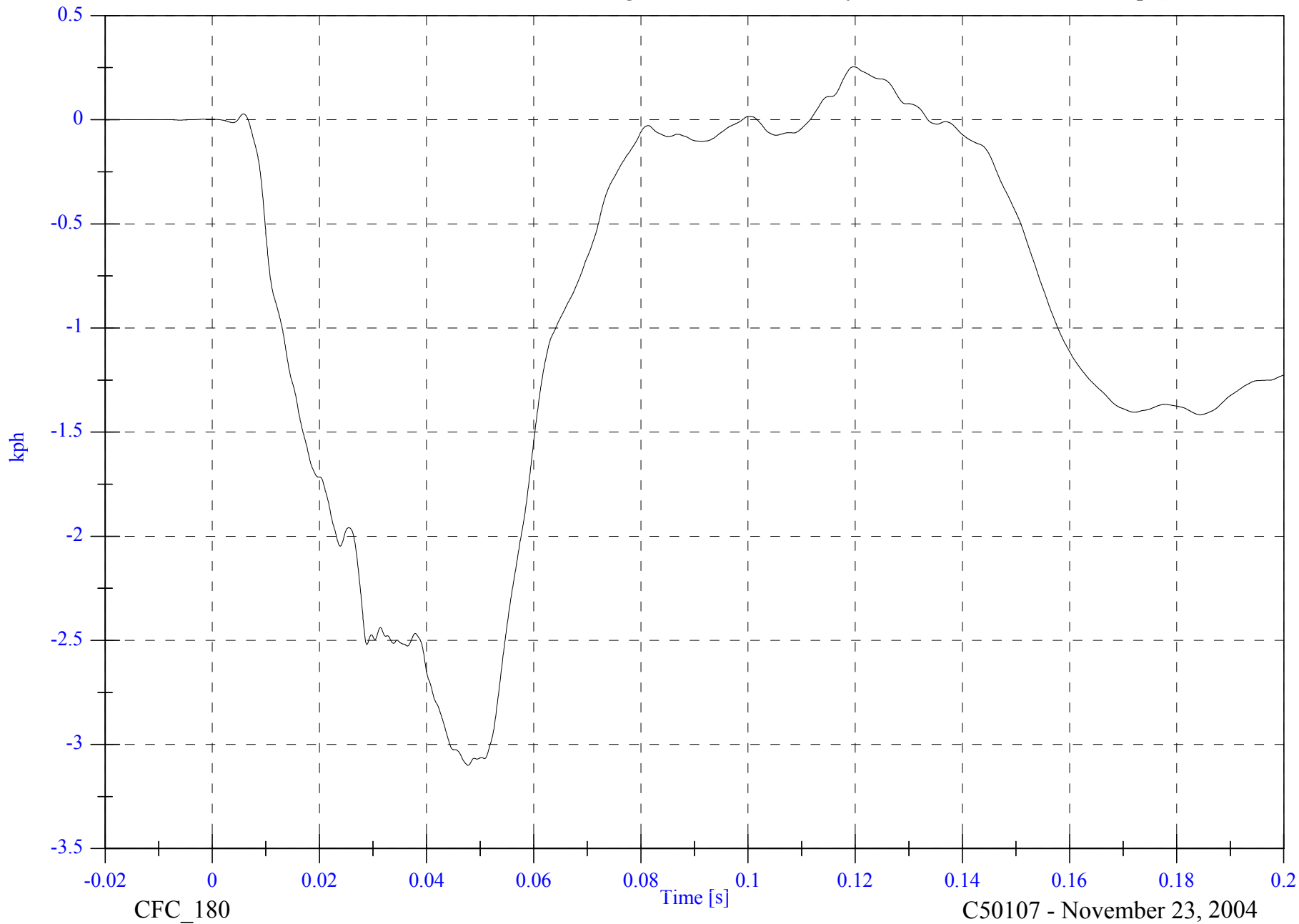
C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2A2 Right Rear Sill x Velocity

Max: 0.3 [kph] at 0.120 [s]

Min: -3.1 [kph] at 0.048 [s]



B-68

8675-F214-20

CFC\_180

C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

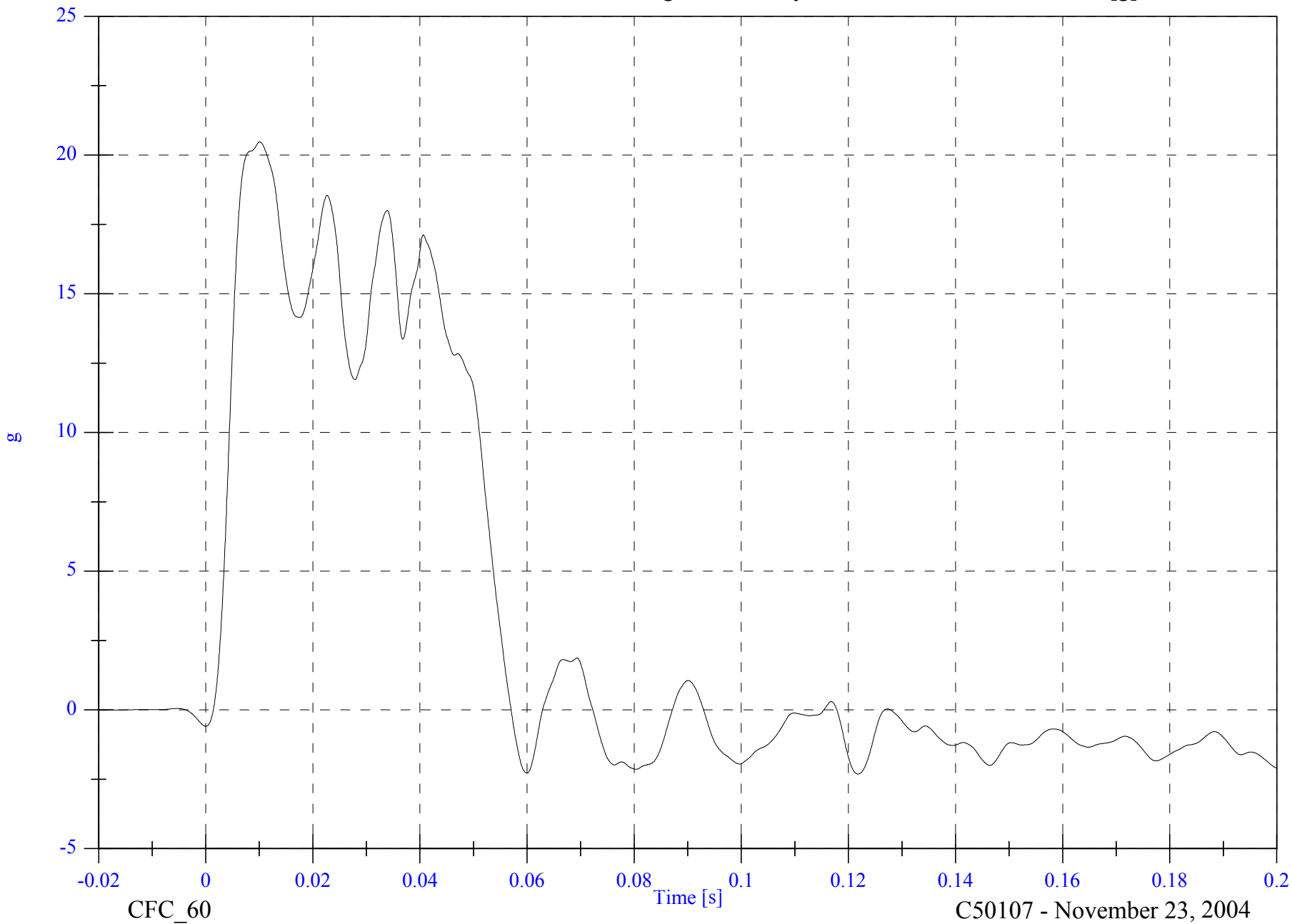
V2A2 Right Rear Sill y

Max: 20.5 [g] at 0.010 [s]

Min: -2.3 [g] at 0.122 [s]

B-69

8675-F214-20



2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

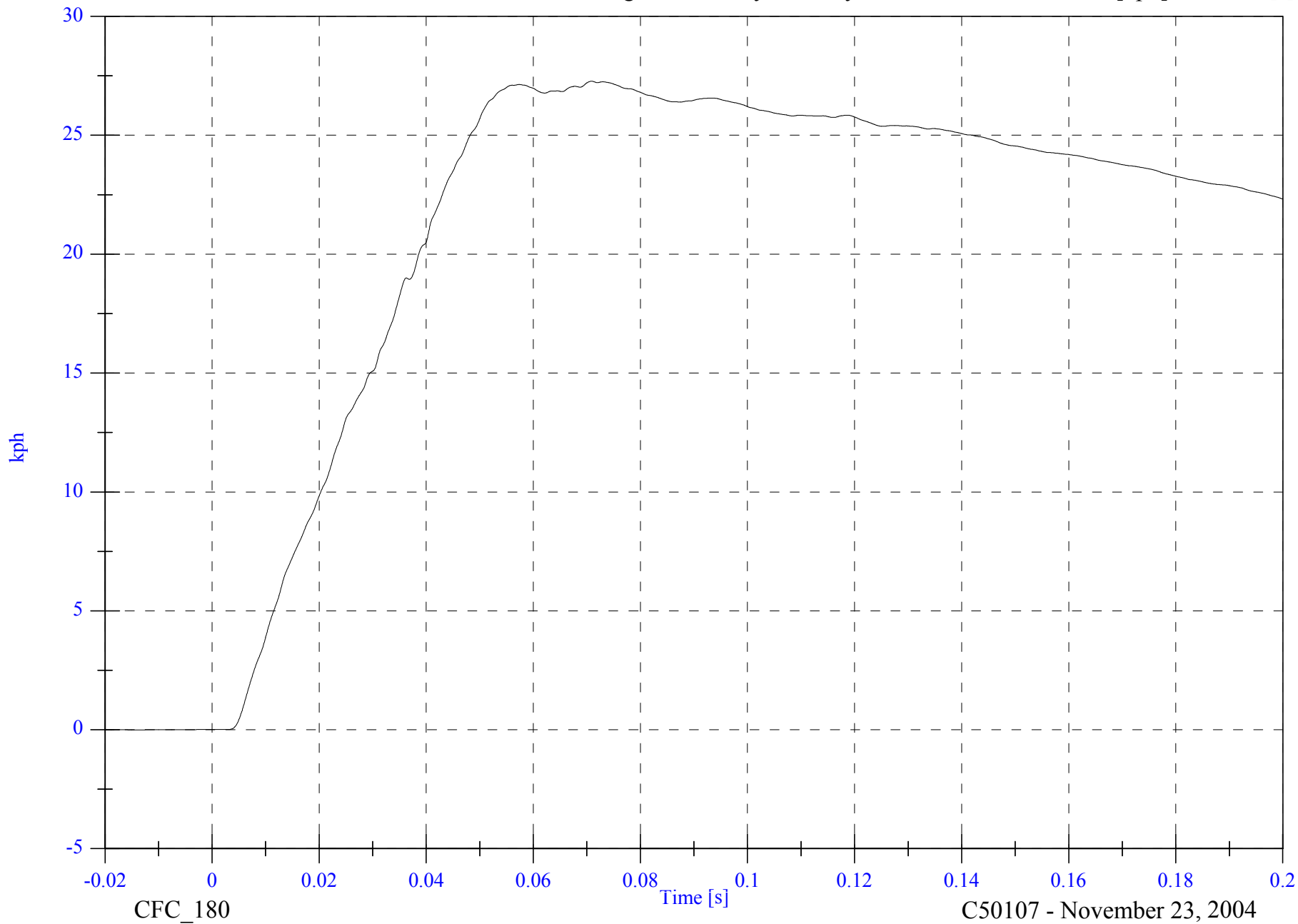
V2A2 Right Rear Sill y Velocity

Max: 27.3 [kph] at 0.071 [s]

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

B-70

8675-F214-20



CFC\_180

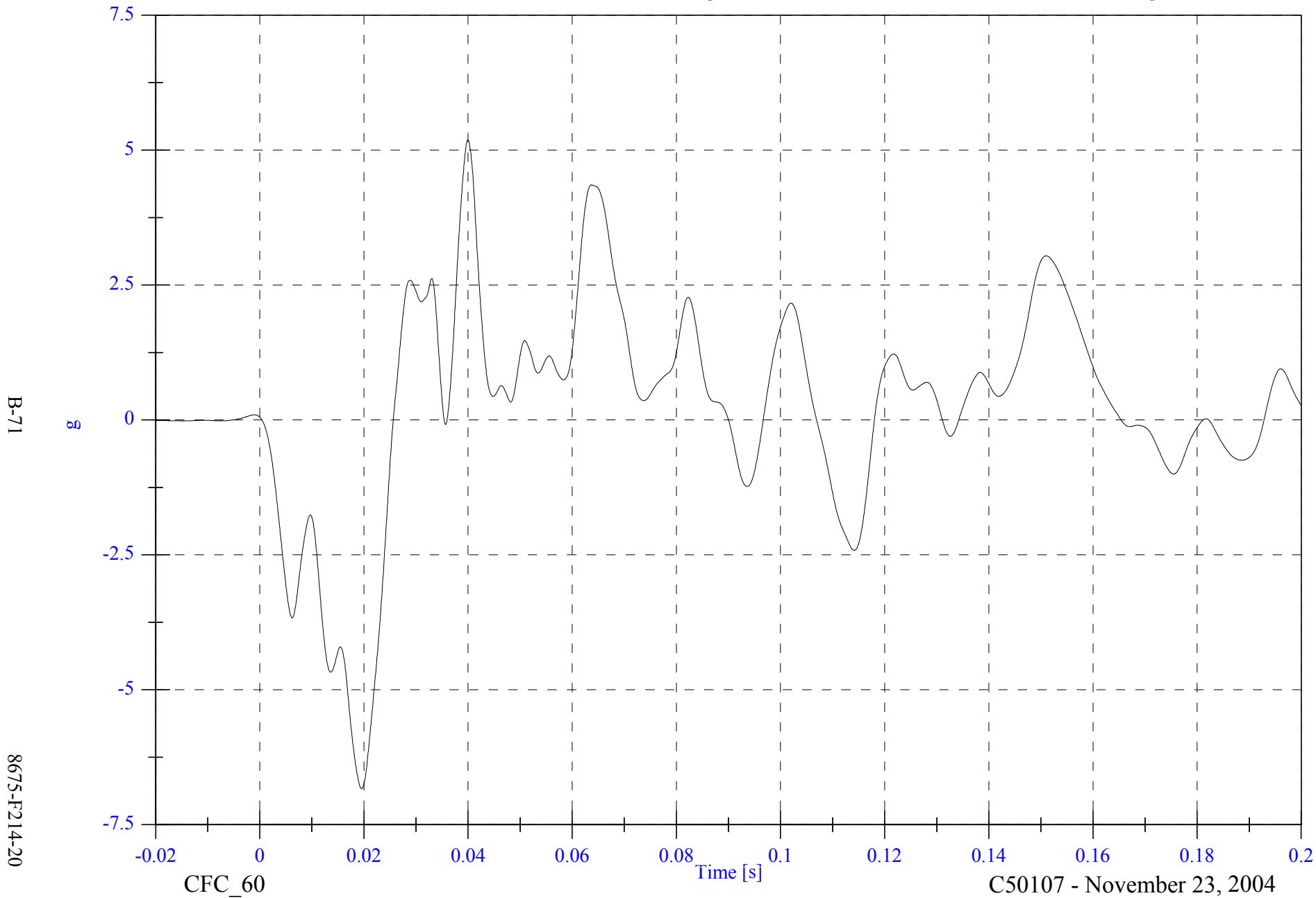
C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2A2 Right Rear Sill z

Max: 5.2 [g] at 0.040 [s]

Min: -6.8 [g] at 0.020 [s]



B-71

8675-F214-20

CFC\_60

C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2A2 Right Rear Sill z Velocity

Max: 2.2 [kph] at 0.165 [s]

Min: -3.1 [kph] at 0.025 [s]

B-72

8675-F214-20



CFC\_180

C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

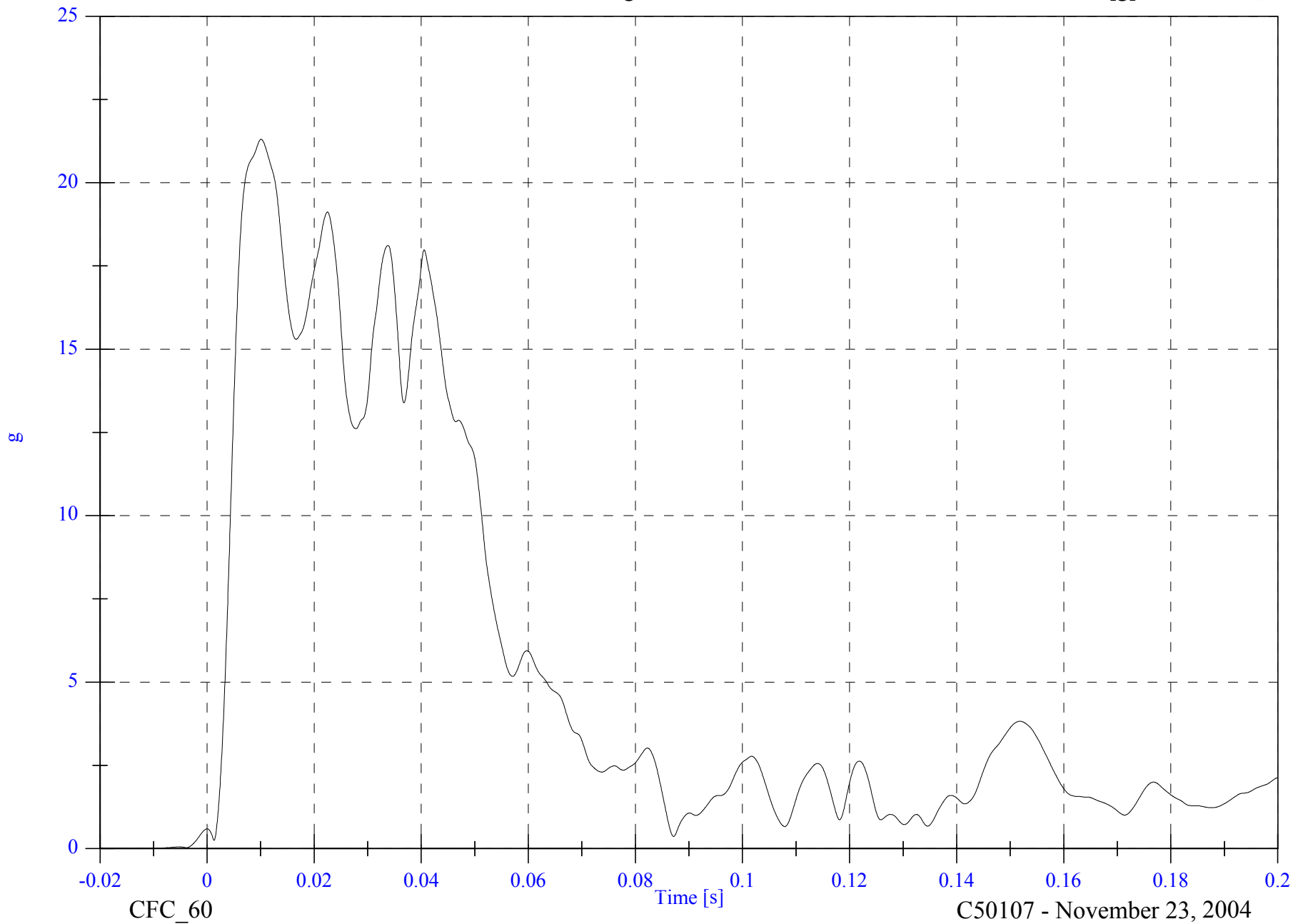
V2A2 Right Rear Sill Resultant

Max: 21.3 [g] at 0.010 [s]

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

B-73

8675-F214-20



CFC\_60

C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2A3 Rear Floorpan x

Max: 3.8 [g] at 0.061 [s]

Min: -5.9 [g] at 0.019 [s]



B-74

g

8675-F214-20

CFC\_60

Time [s]

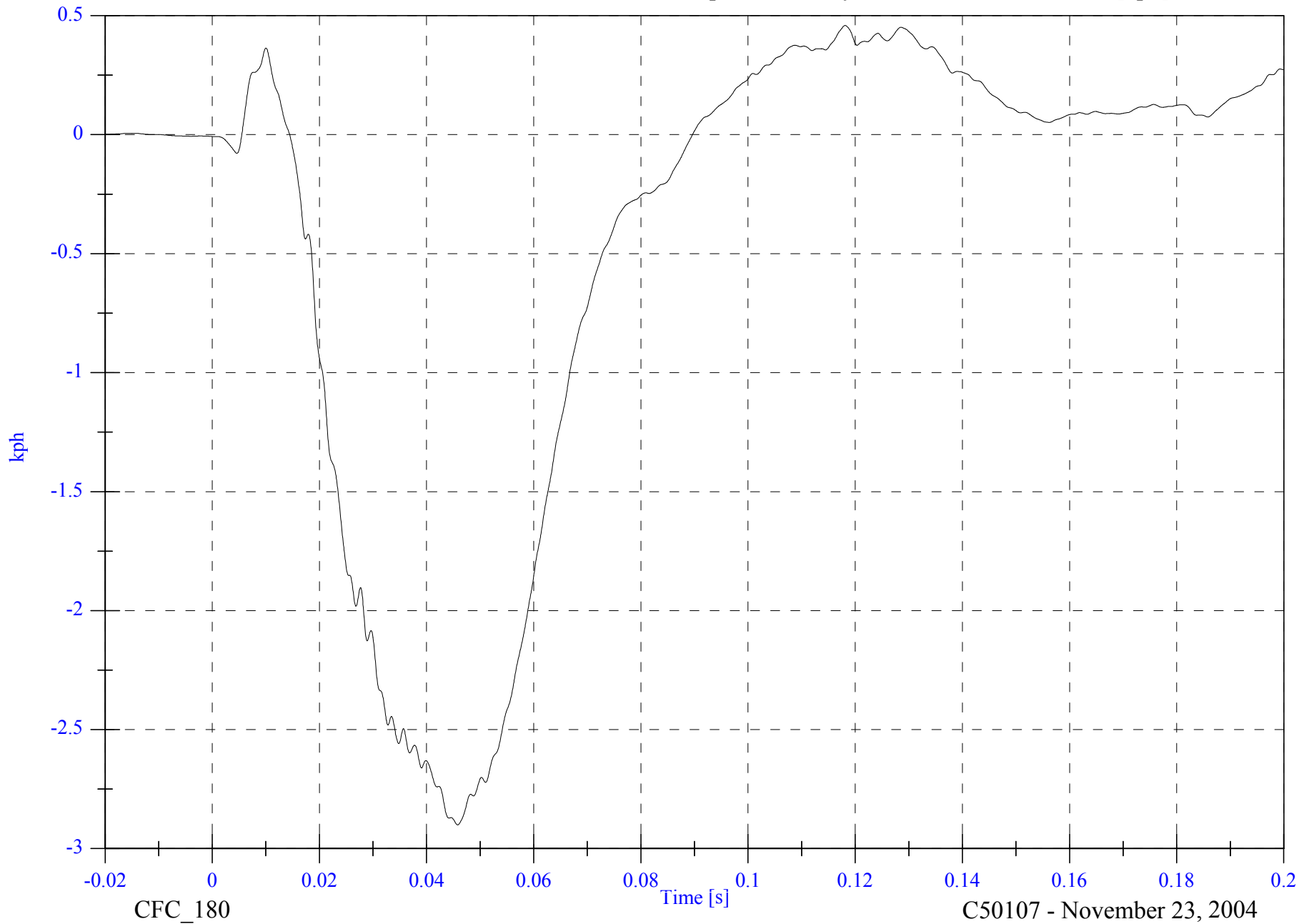
C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2A3 Rear Floorpan x Velocity

Max: 0.5 [kph] at 0.118 [s]

Min: -2.9 [kph] at 0.046 [s]



B-75

8675-F214-20

CFC\_180

C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

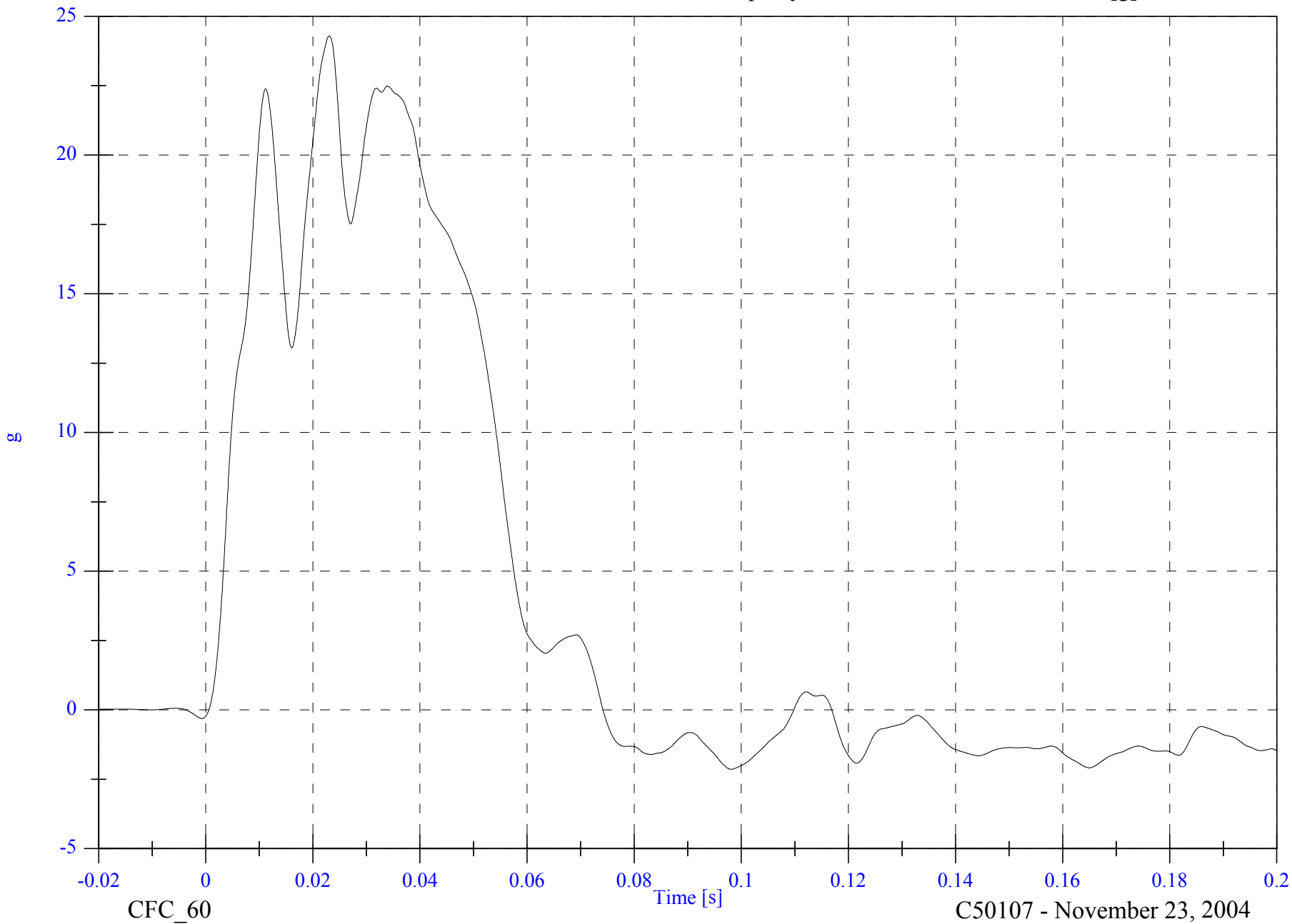
V2A3 Rear Floorpan y

Max: 24.3 [g] at 0.023 [s]

Min: -2.1 [g] at 0.098 [s]

B-76

8675-F214-20

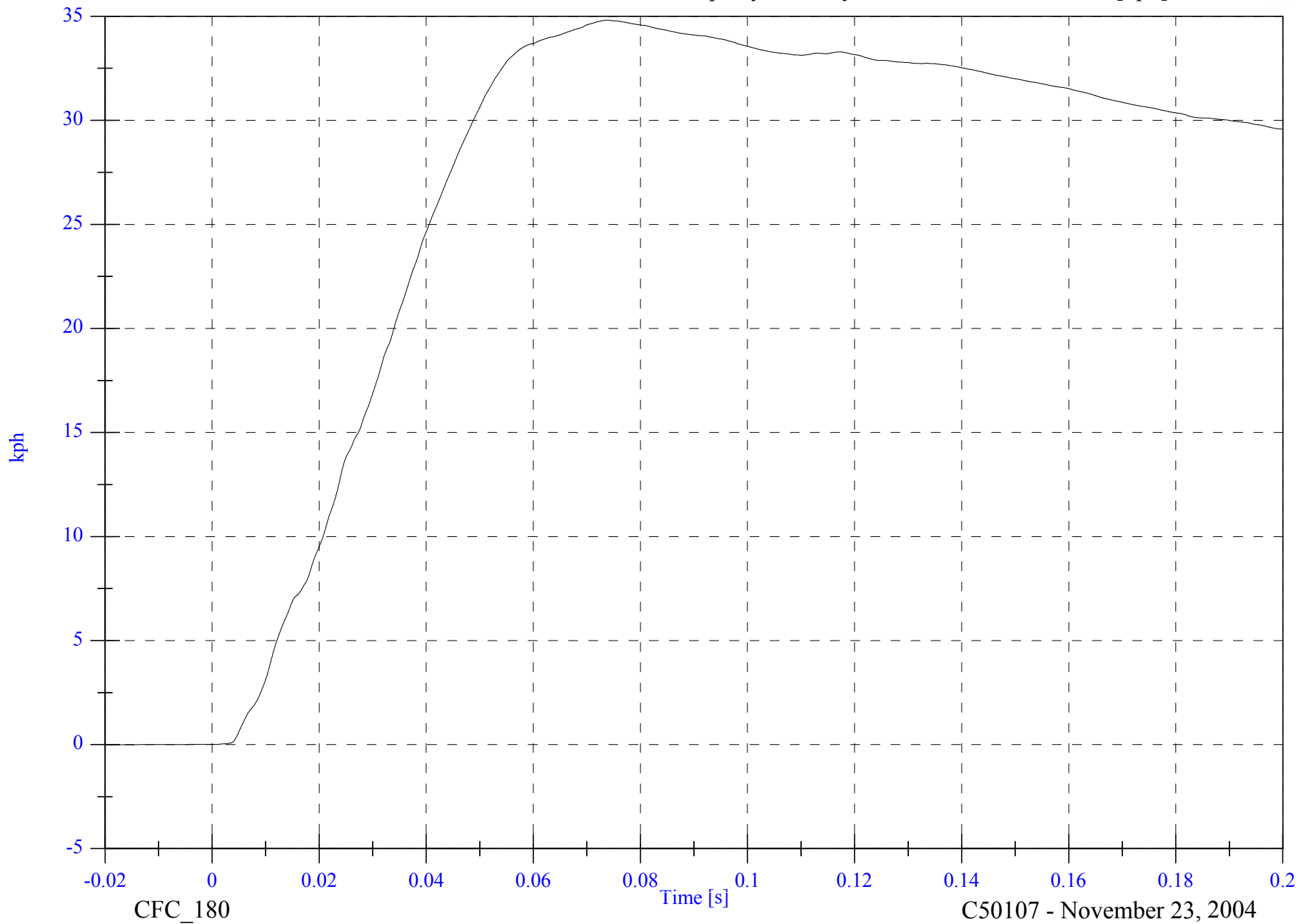


2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2A3 Rear Floorpan y Velocity

Max: 34.8 [kph] at 0.074 [s]

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



B-77

8675-F214-20

CFC\_180

Time [s]

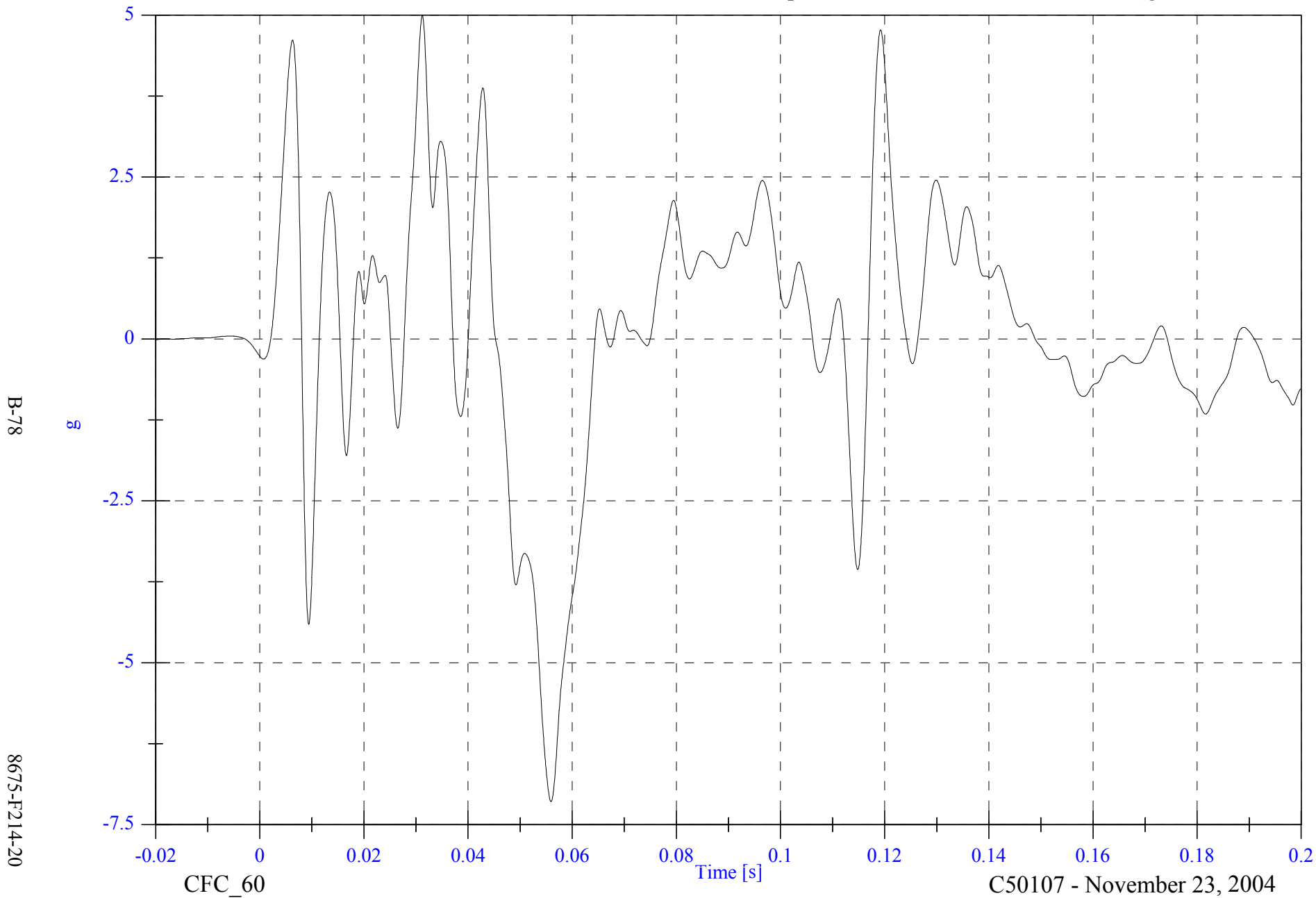
C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2A3 Rear Floorpan z

Max: 5.0 [g] at 0.031 [s]

Min: -7.1 [g] at 0.056 [s]



2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

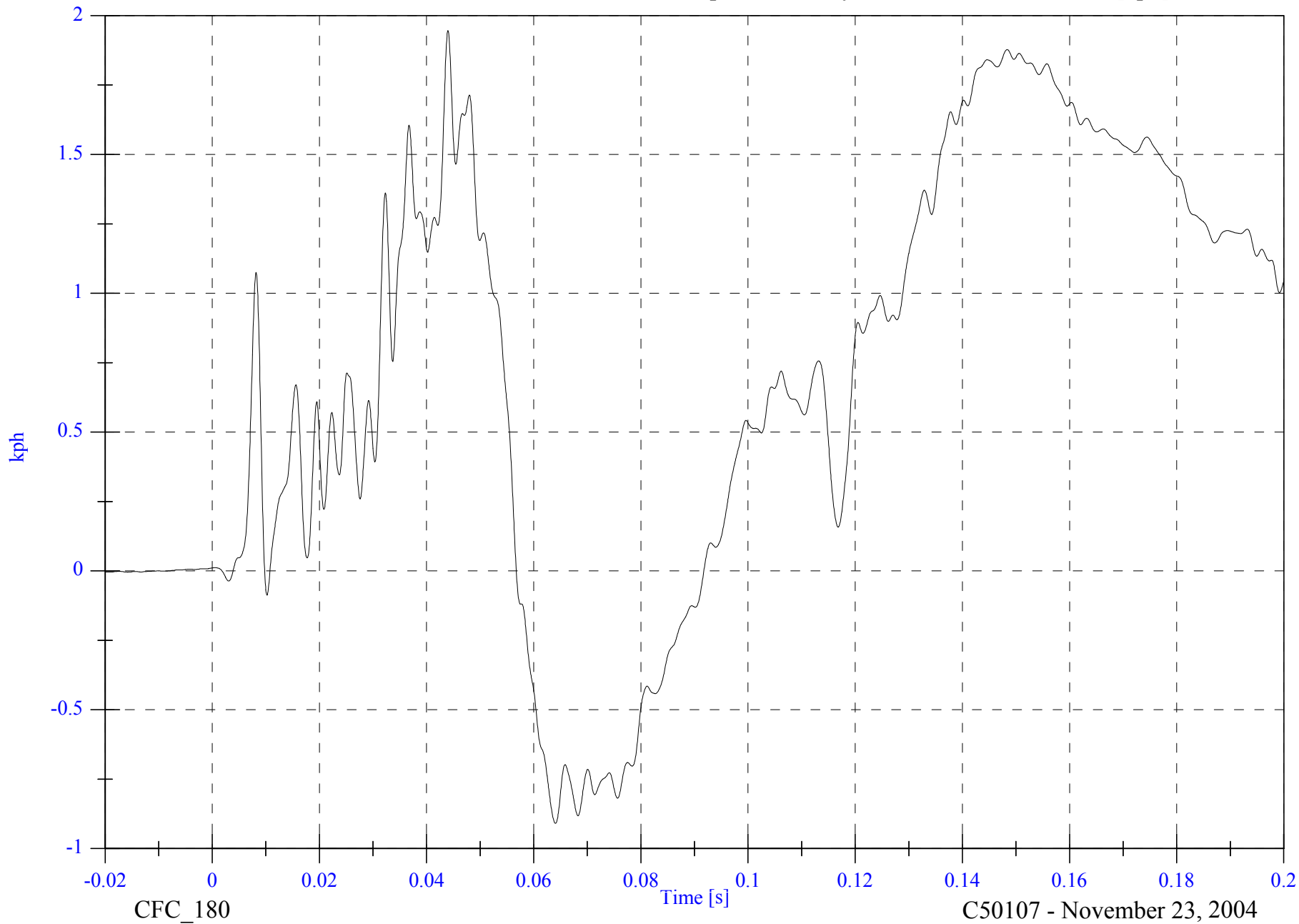
V2A3 Rear Floorpan z Velocity

Max: 1.9 [kph] at 0.044 [s]

Min: -0.9 [kph] at 0.064 [s]

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8675-F214-20



CFC\_180

C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

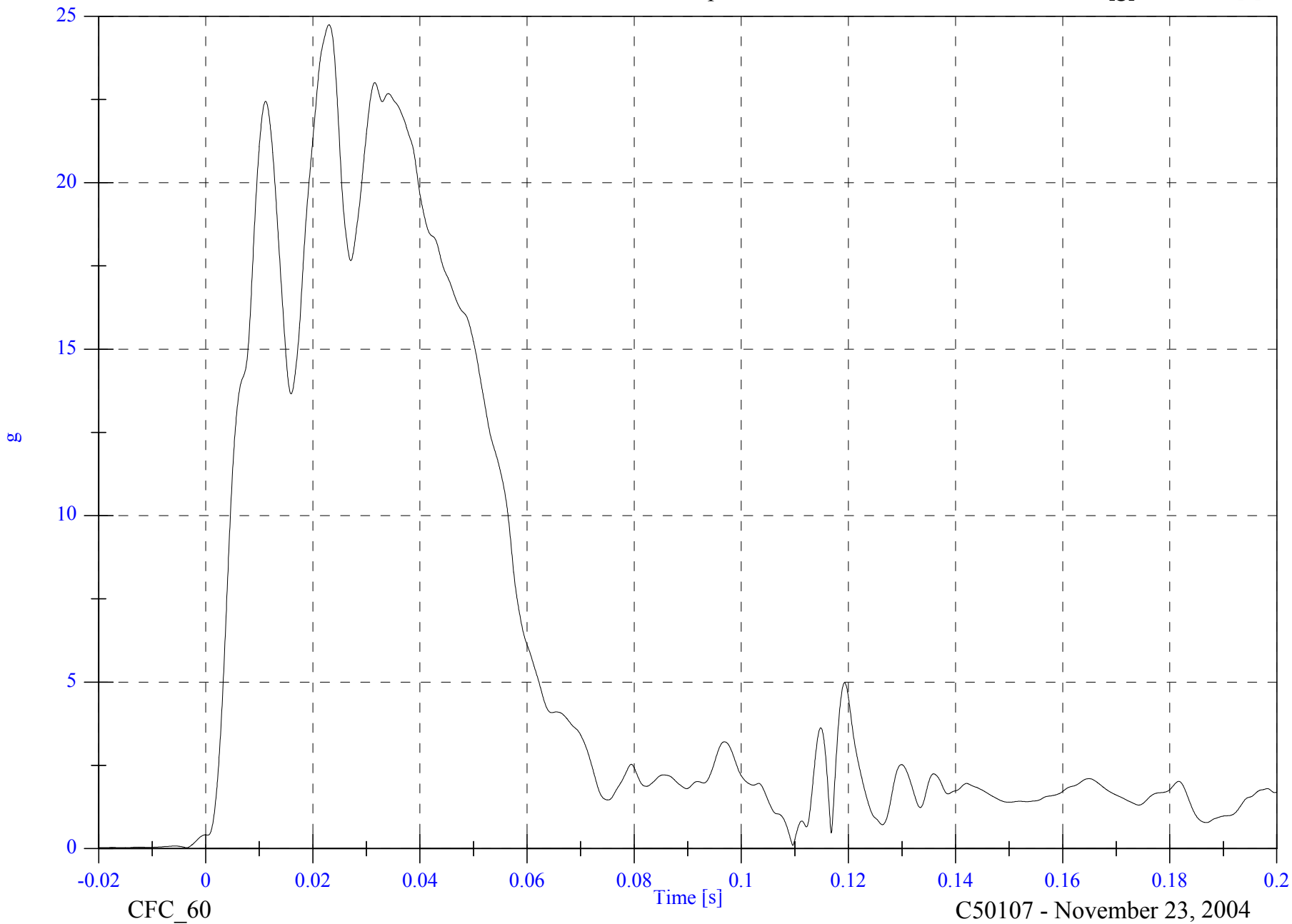
V2A3 Rear Floorpan Resultant

Max: 24.7 [g] at 0.023 [s]

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

B-80

8675-F214-20



CFC\_60

Time [s]

C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

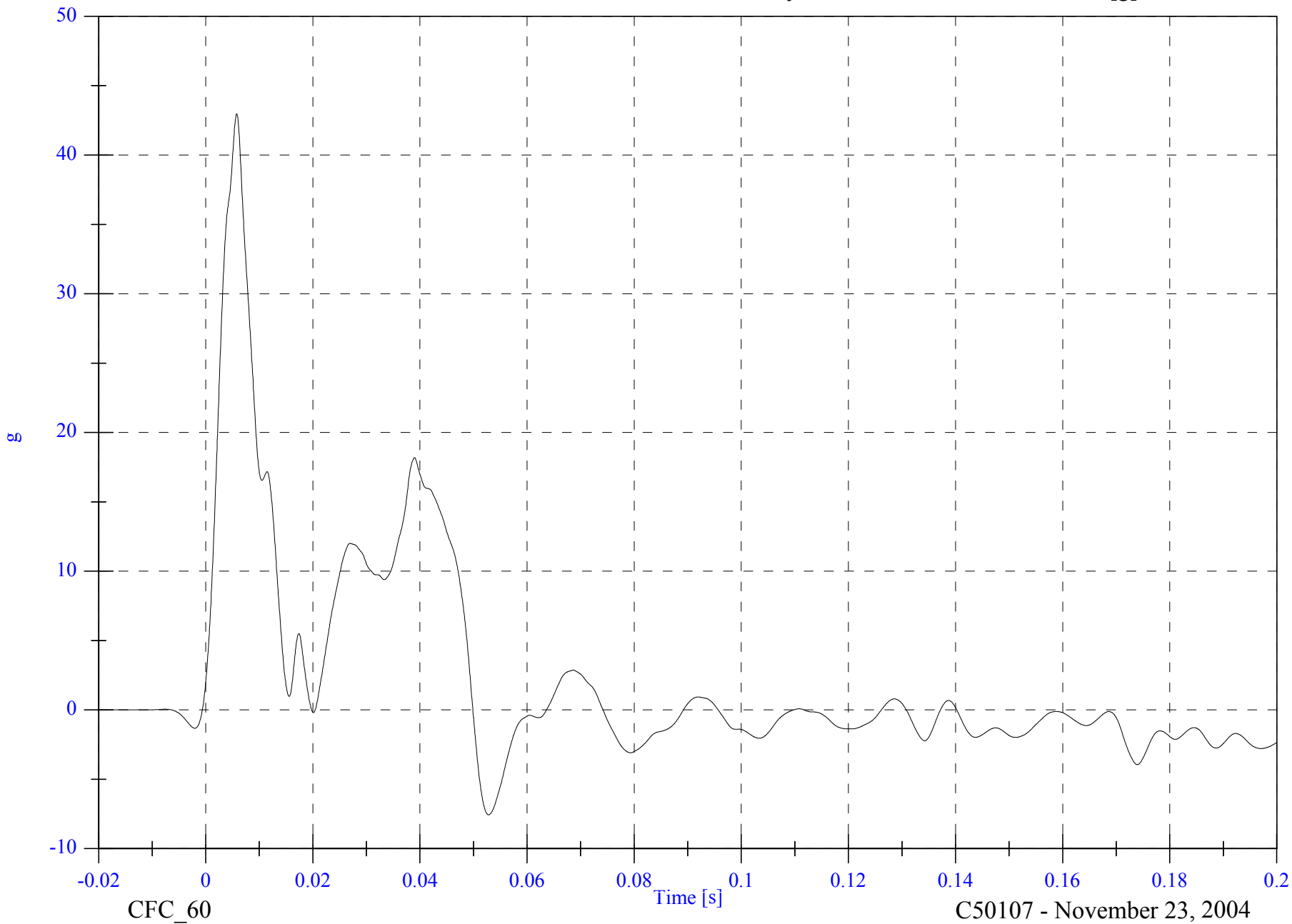
V2A4 Left Rear Sill y

Max: 43.0 [g] at 0.006 [s]

Min: -7.6 [g] at 0.053 [s]

B-81

8675-F214-20

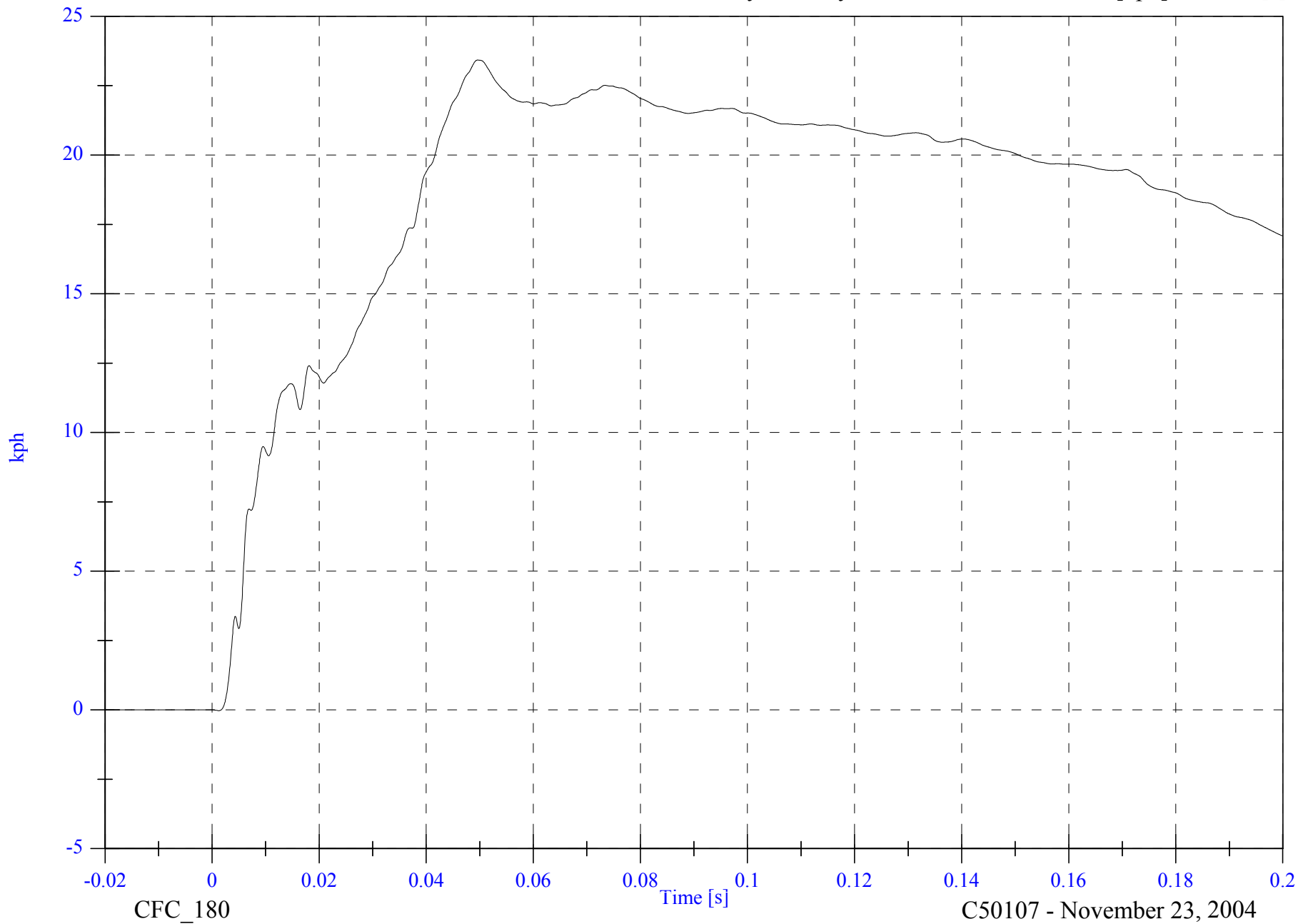


2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2A4 Left Rear Sill y Velocity

Max: 23.4 [kph] at 0.050 [s]

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



B-82

8675-F214-20

CFC\_180

Time [s]

C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

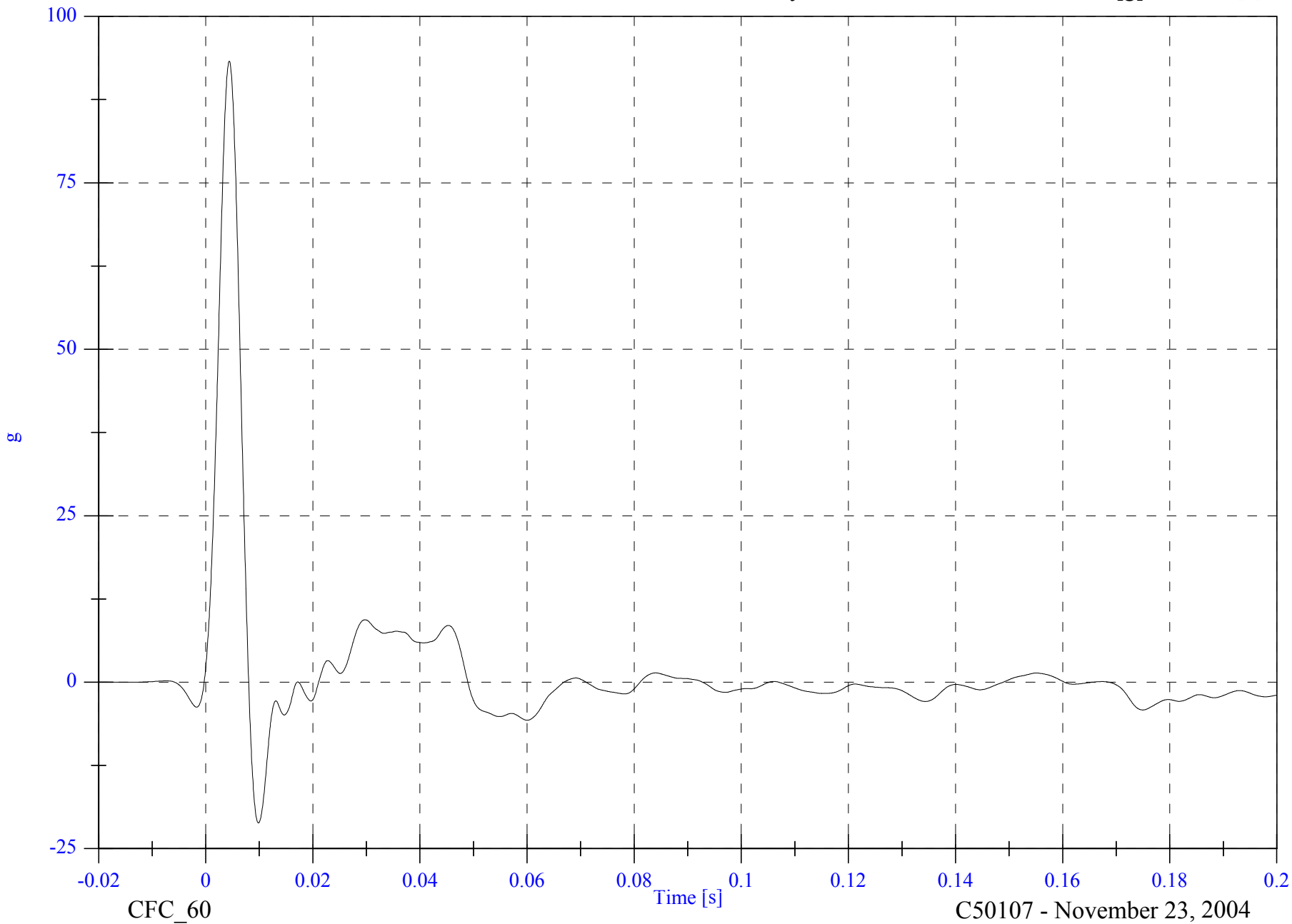
V2A5 Left Front Sill y

Max: 93.3 [g] at 0.004 [s]

Min: -21.1 [g] at 0.010 [s]

B-83

8675-F214-20

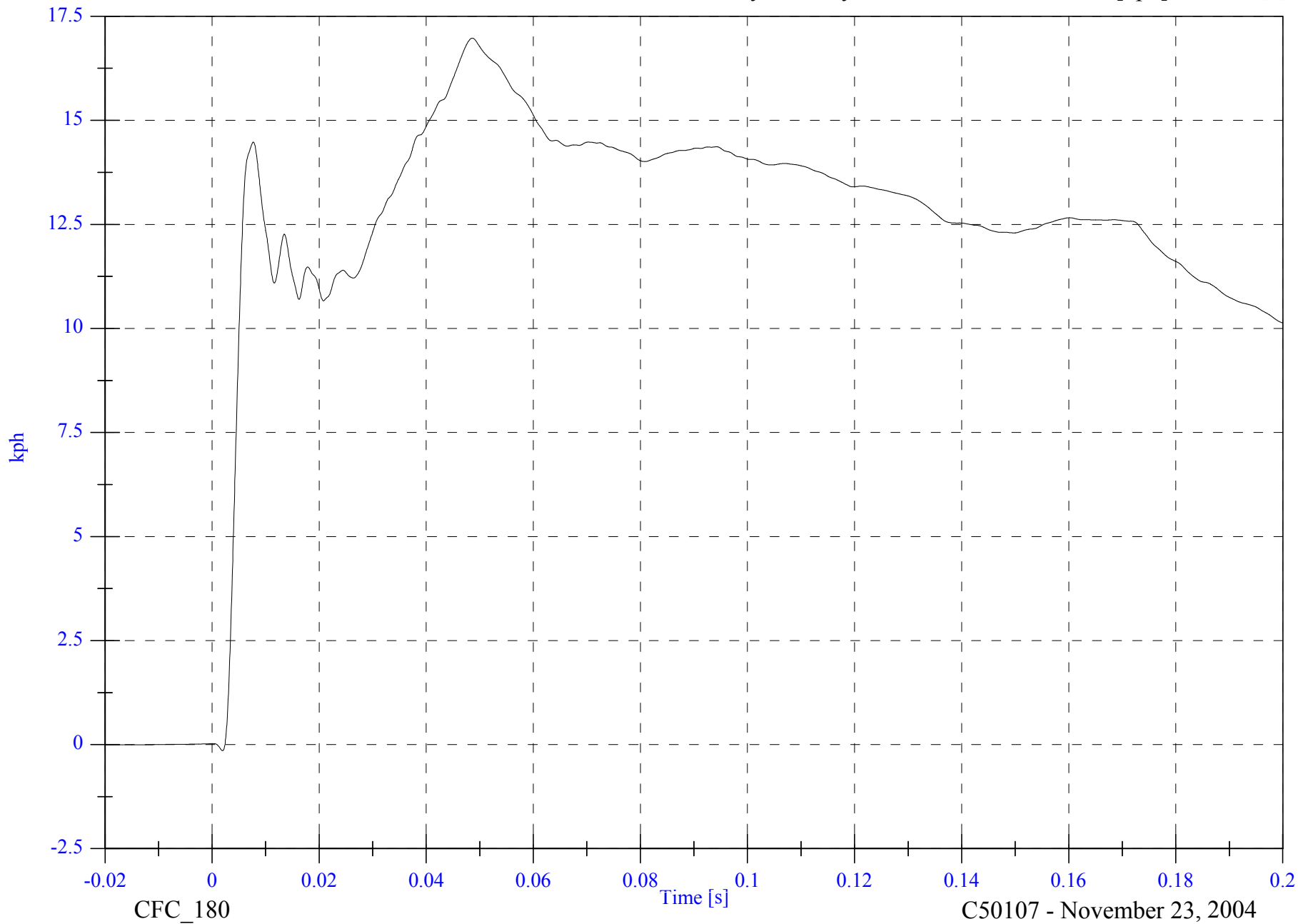


2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2A5 Left Front Sill y Velocity

Max: 17.0 [kph] at 0.049 [s]

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



B-84

8675-F214-20

CFC\_180

Time [s]

C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

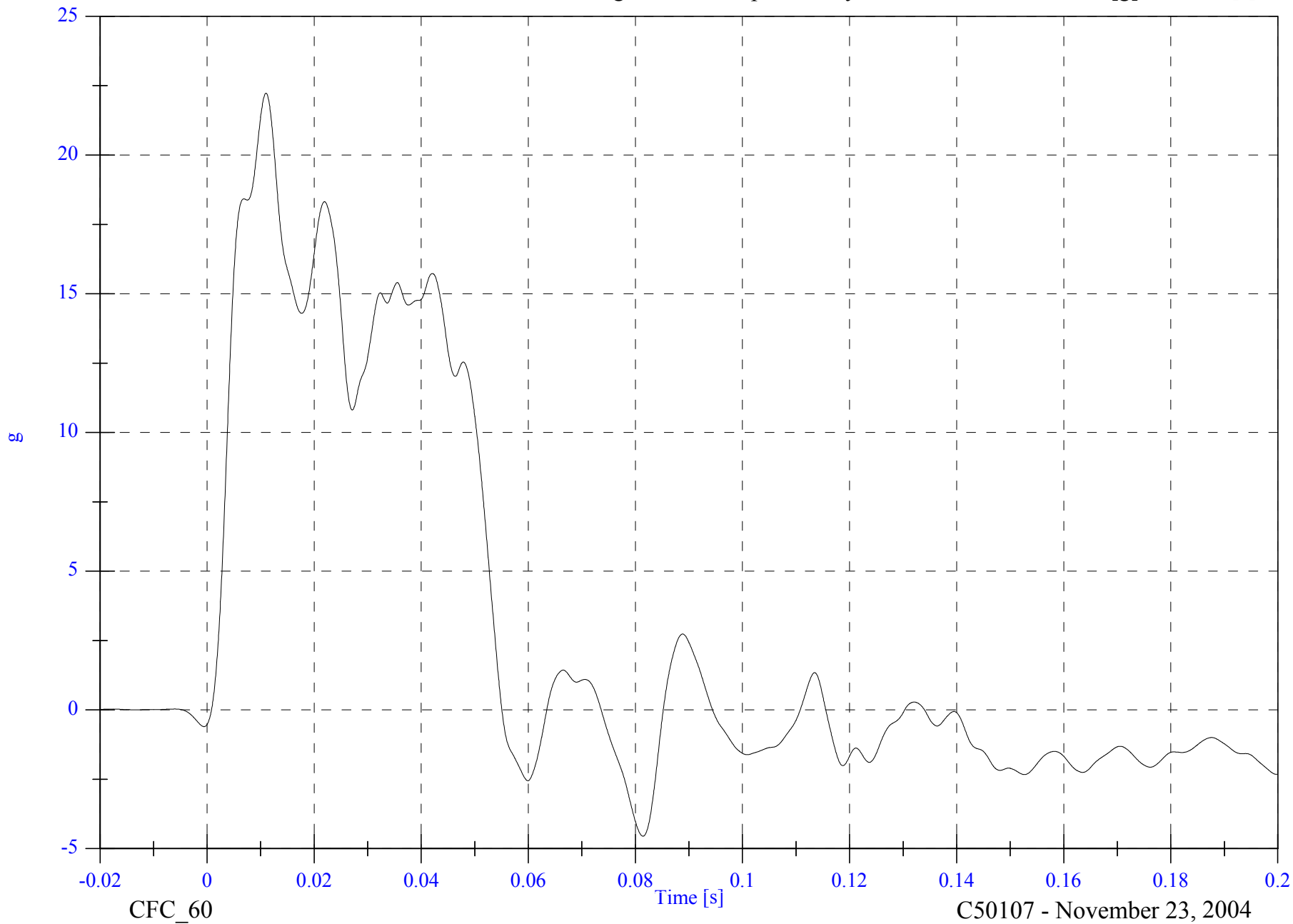
V2A7 Right Rear Compartment y

Max: 22.2 [g] at 0.011 [s]

Min: -4.5 [g] at 0.081 [s]

B-85

8675-F214-20



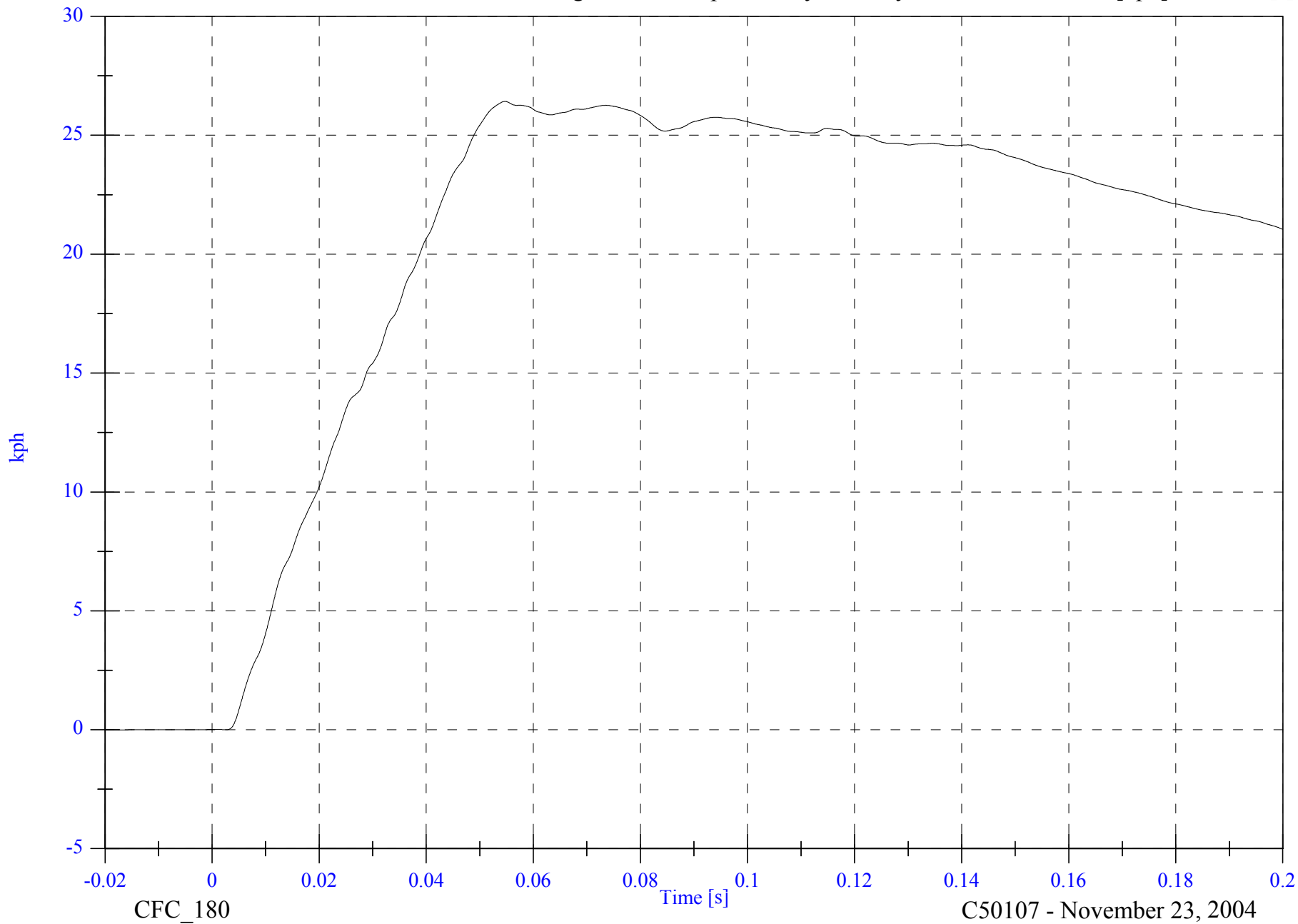
C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2A7 Right Rear Compartment y Velocity

Max: 26.4 [kph] at 0.055 [s]

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



B-86

8675-F214-20

CFC\_180

Time [s]

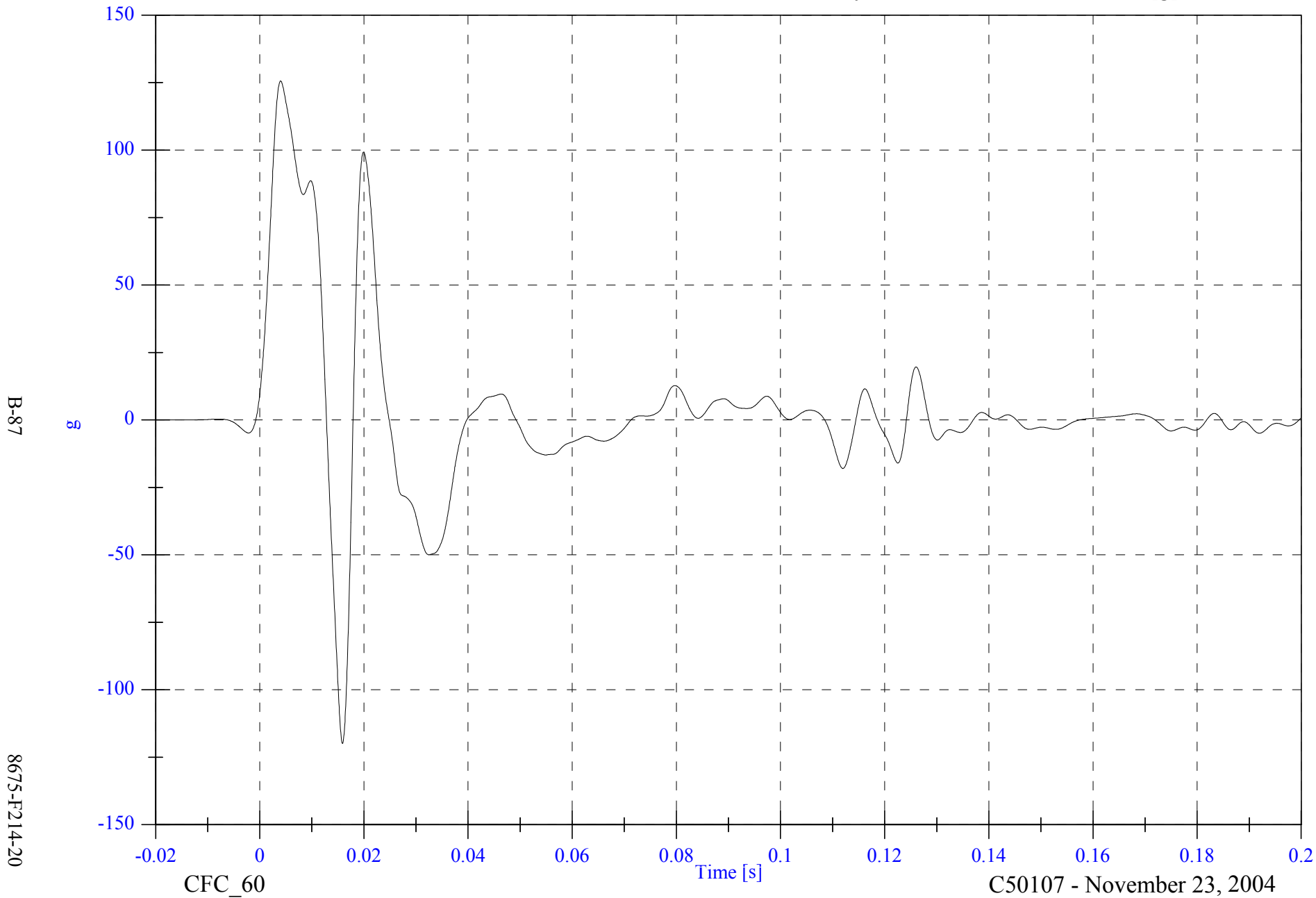
C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2A12 Left Lower B Post y

Max: 125.6 [g] at 0.004 [s]

Min: -119.9 [g] at 0.016 [s]



2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

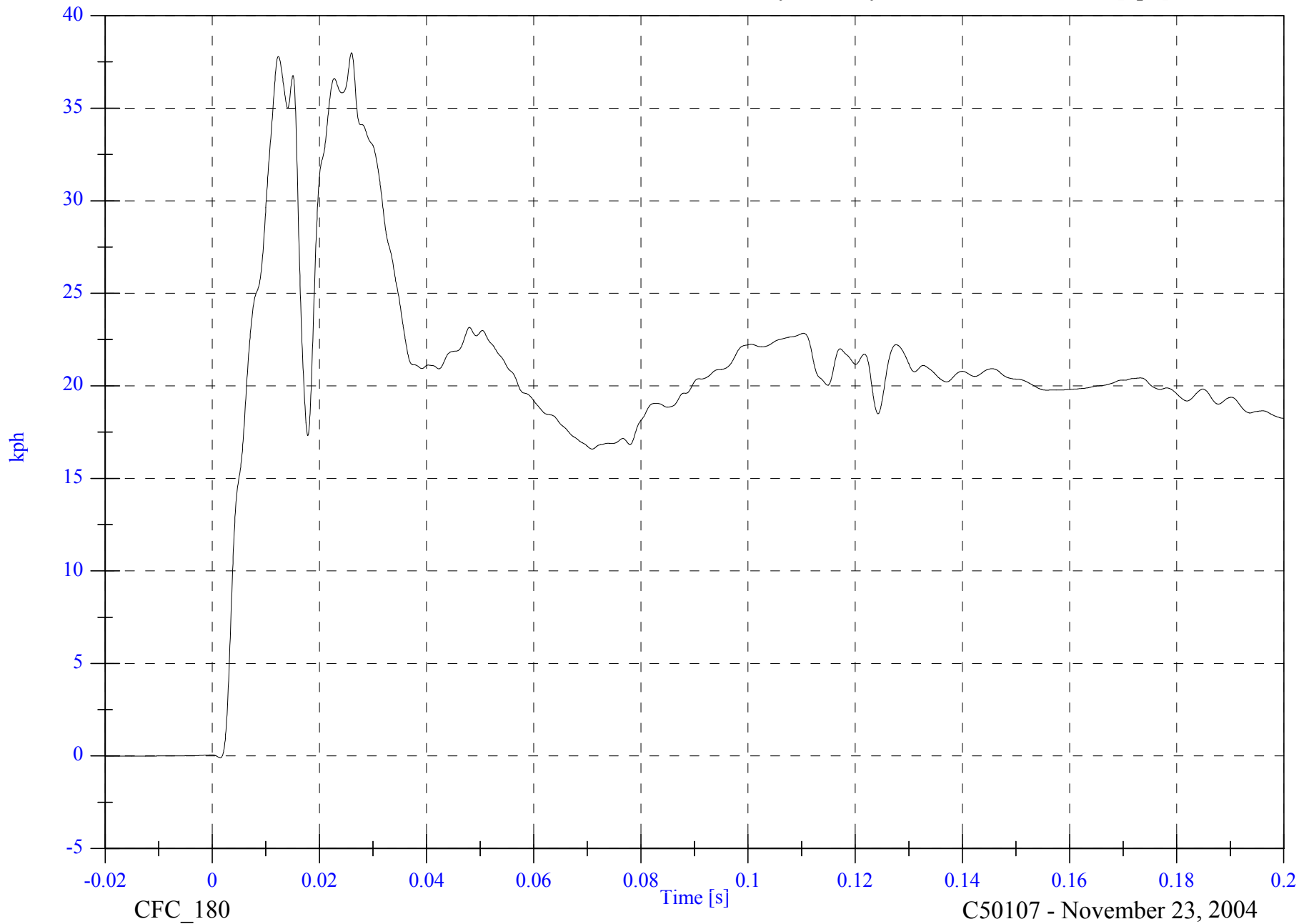
Max: 38.0 [kph] at 0.026 [s]

V2A12 Left Lower B Post y Velocity

Min: -0.1 [kph] at 0.001 [s]

B-88

8675-F214-20



CFC\_180

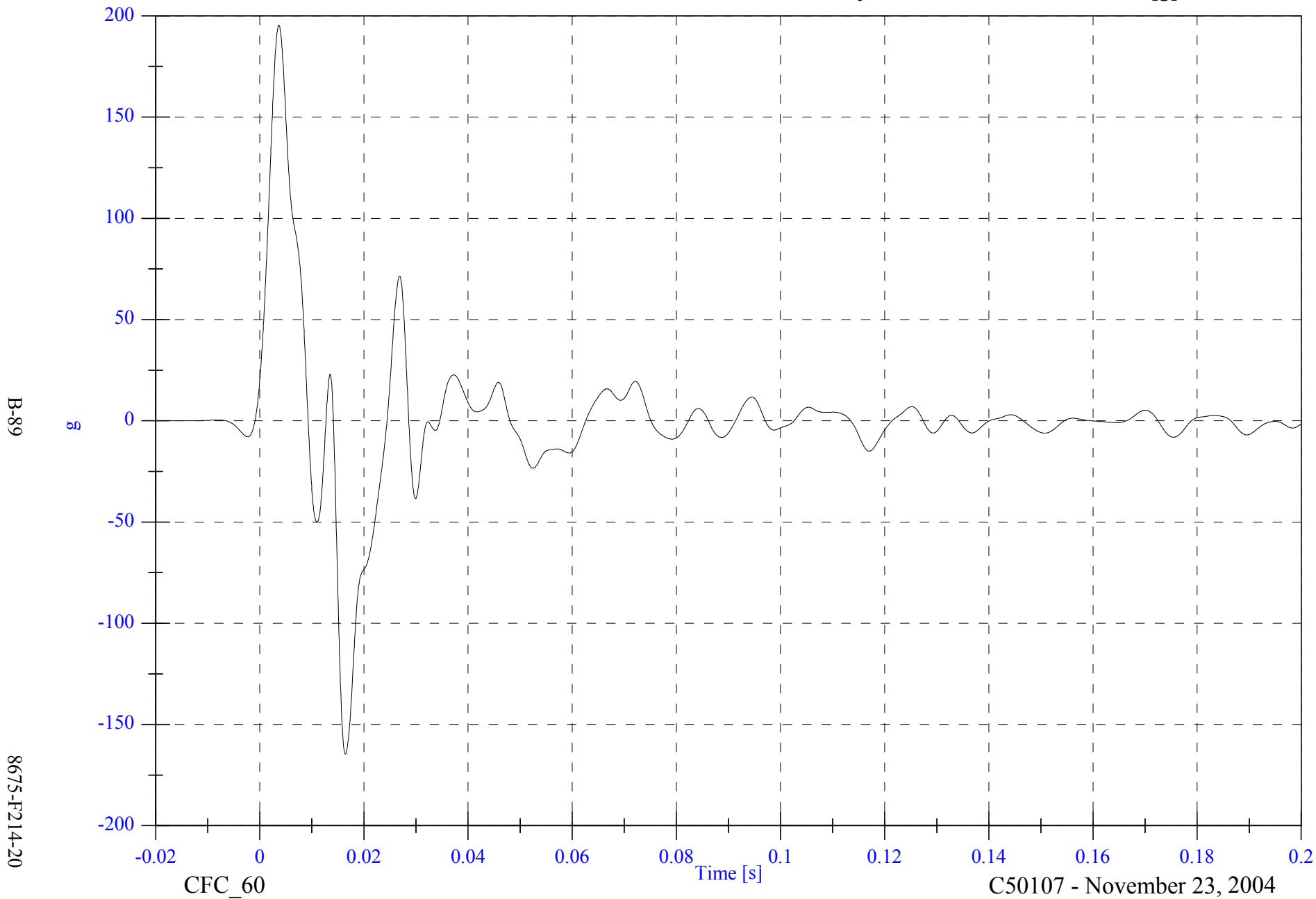
C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2A13 Left Middle B Post y

Max: 195.4 [g] at 0.004 [s]

Min: -164.6 [g] at 0.016 [s]



B-89

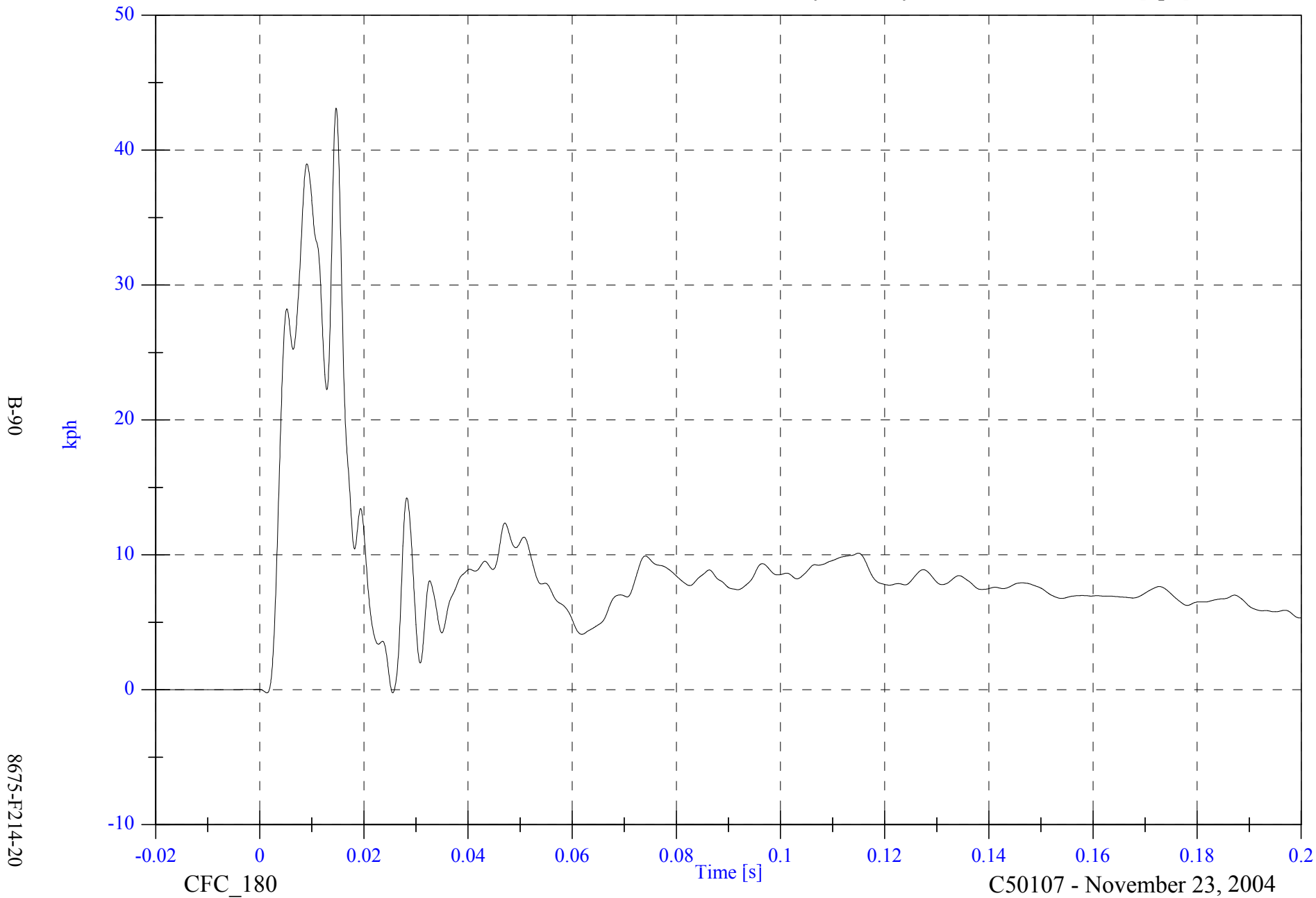
8675-F214-20

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2A13 Left Middle B Post y Velocity

Max: 43.1 [kph] at 0.015 [s]

Min: -0.2 [kph] at 0.026 [s]



B-90

8675-F214-20

CFC\_180

Time [s]

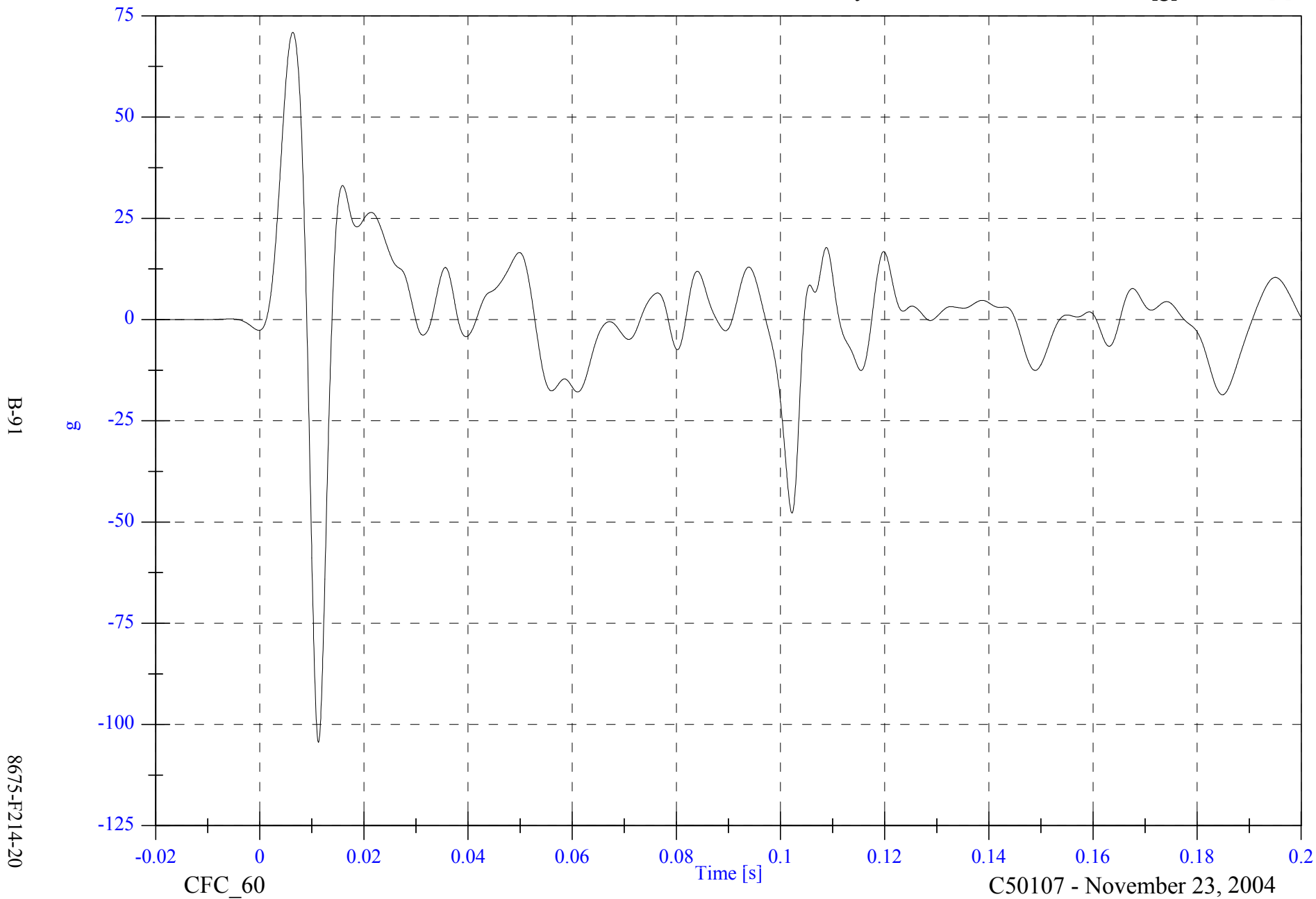
C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2A14 Left Lower A Post y

Max: 70.9 [g] at 0.006 [s]

Min: -104.4 [g] at 0.011 [s]



2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

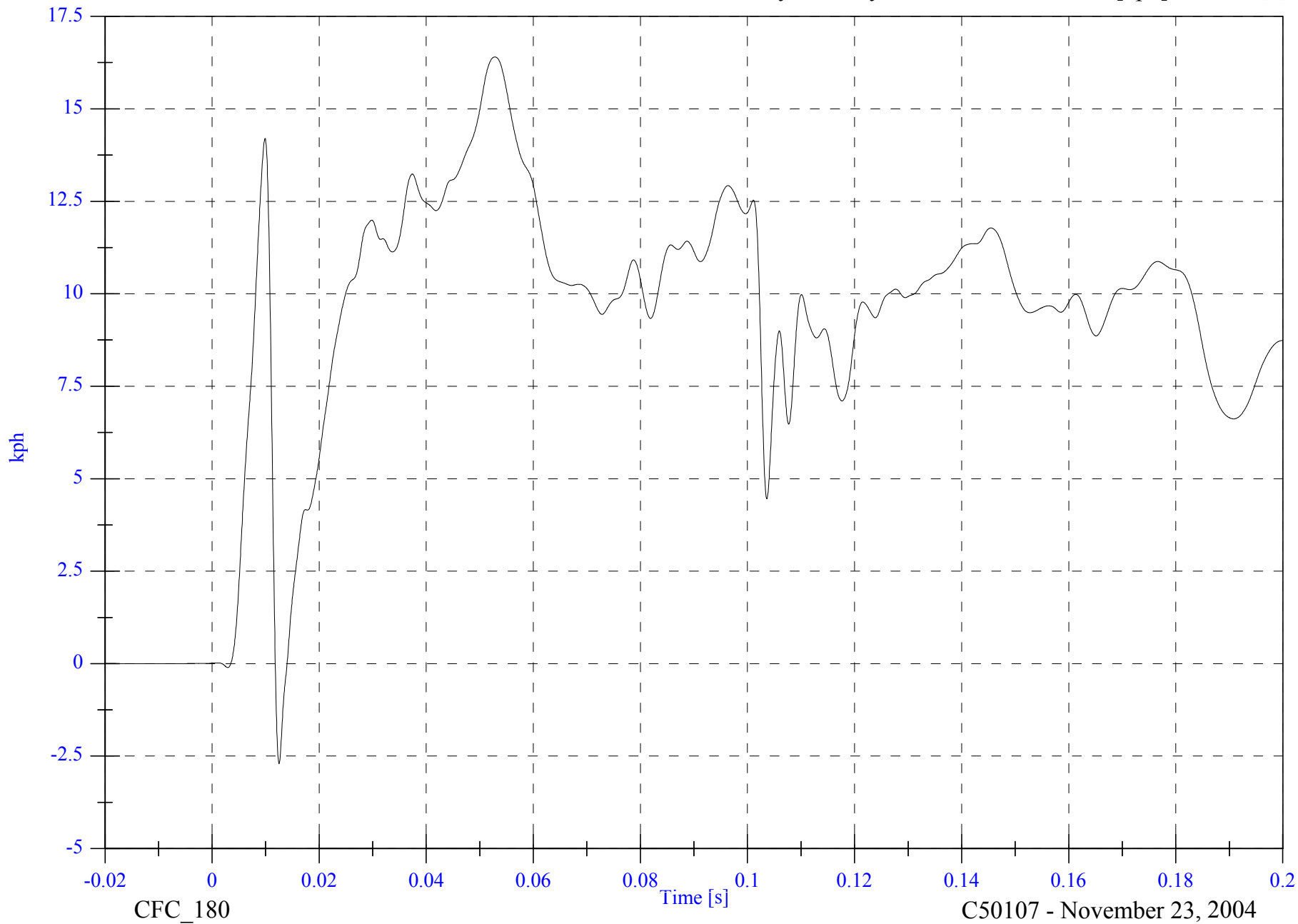
Max: 16.4 [kph] at 0.053 [s]

V2A14 Left Lower A Post y Velocity

Min: -2.7 [kph] at 0.012 [s]

B-92

8675-F214-20



CFC\_180

C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

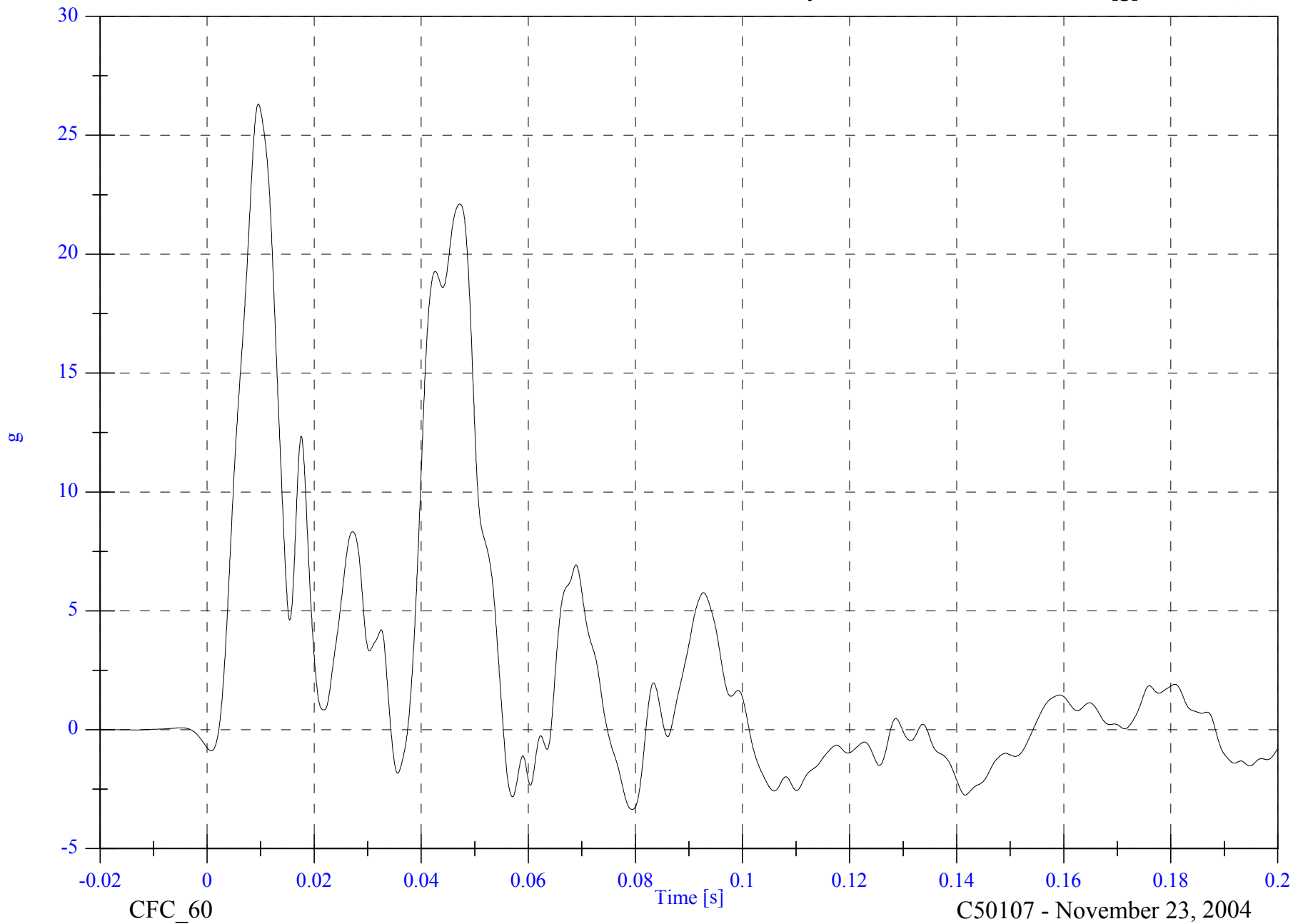
V2A15 Left Mid A Post y

Max: 26.3 [g] at 0.010 [s]

Min: -3.4 [g] at 0.079 [s]

B-93

8675-F1214-20



2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

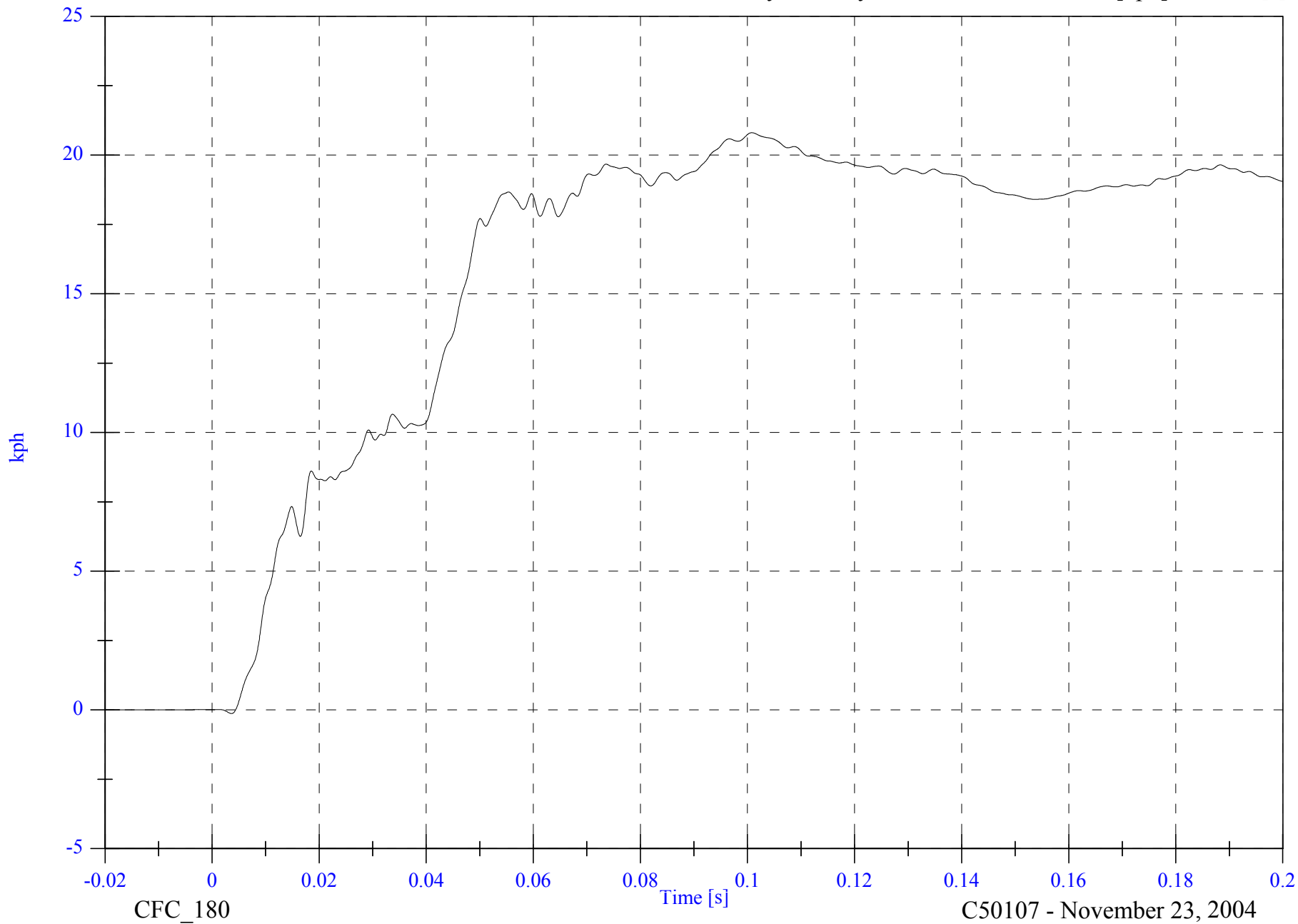
V2A15 Left Mid A Post y Velocity

Max: 20.8 [kph] at 0.101 [s]

Min: -0.1 [kph] at 0.004 [s]

B-94

8675-F214-20



CFC\_180

C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

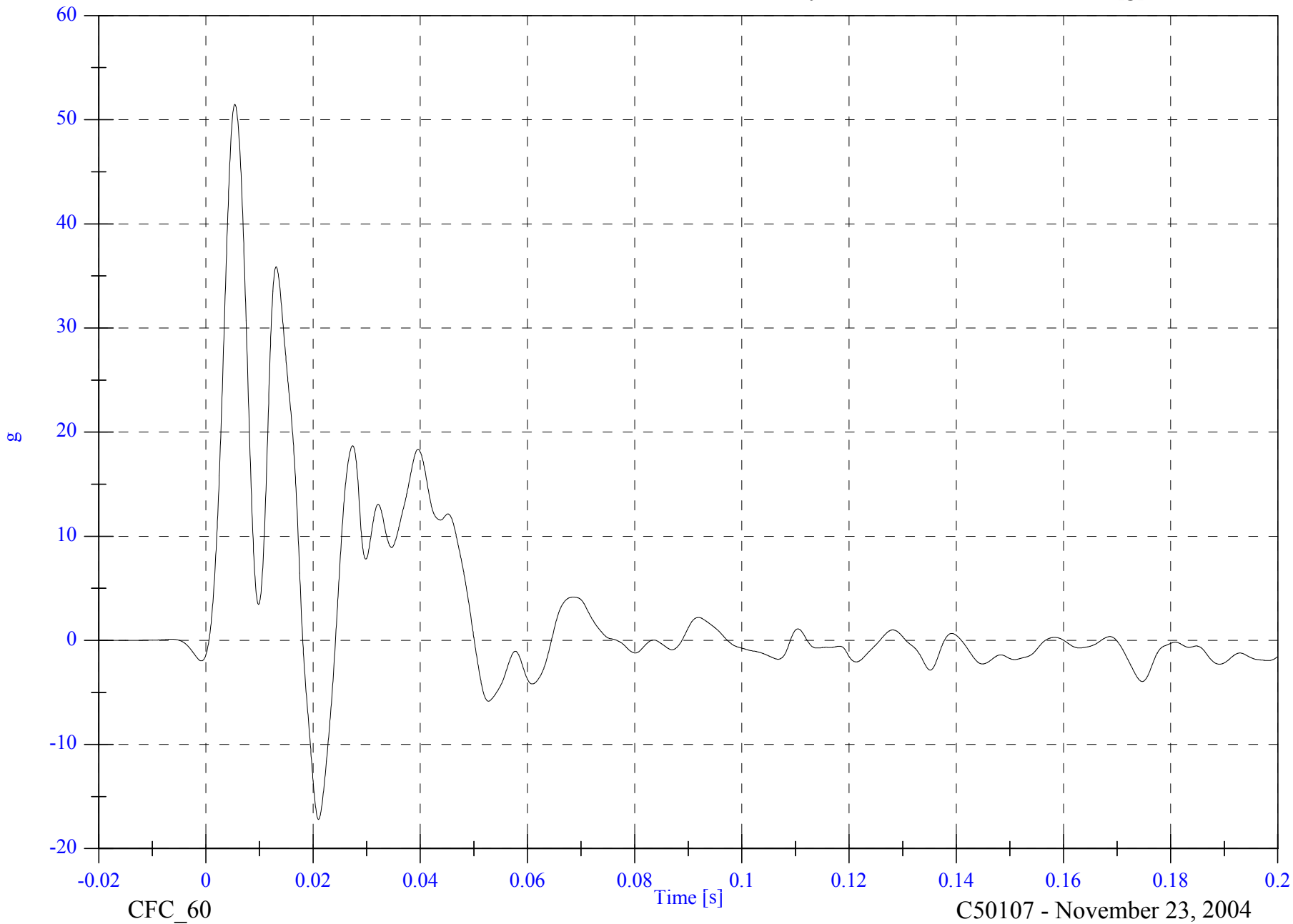
V2A16 Front Seat Track y

Max: 51.5 [g] at 0.005 [s]

Min: -17.2 [g] at 0.021 [s]

B-95

8675-F214-20

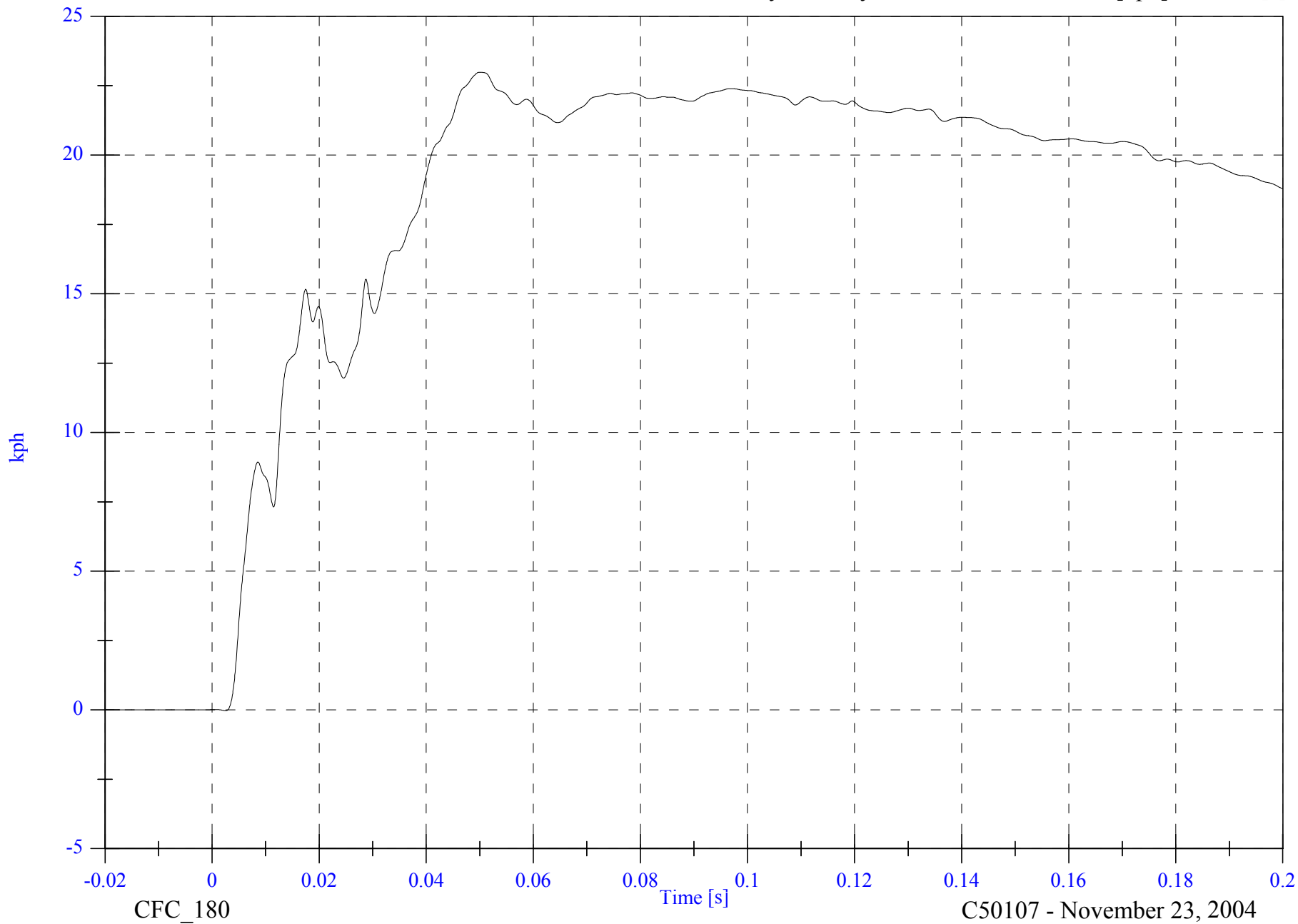


2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2A16 Front Seat Track y Velocity

Max: 23.0 [kph] at 0.050 [s]

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



B-96

8675-F214-20

CFC\_180

C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

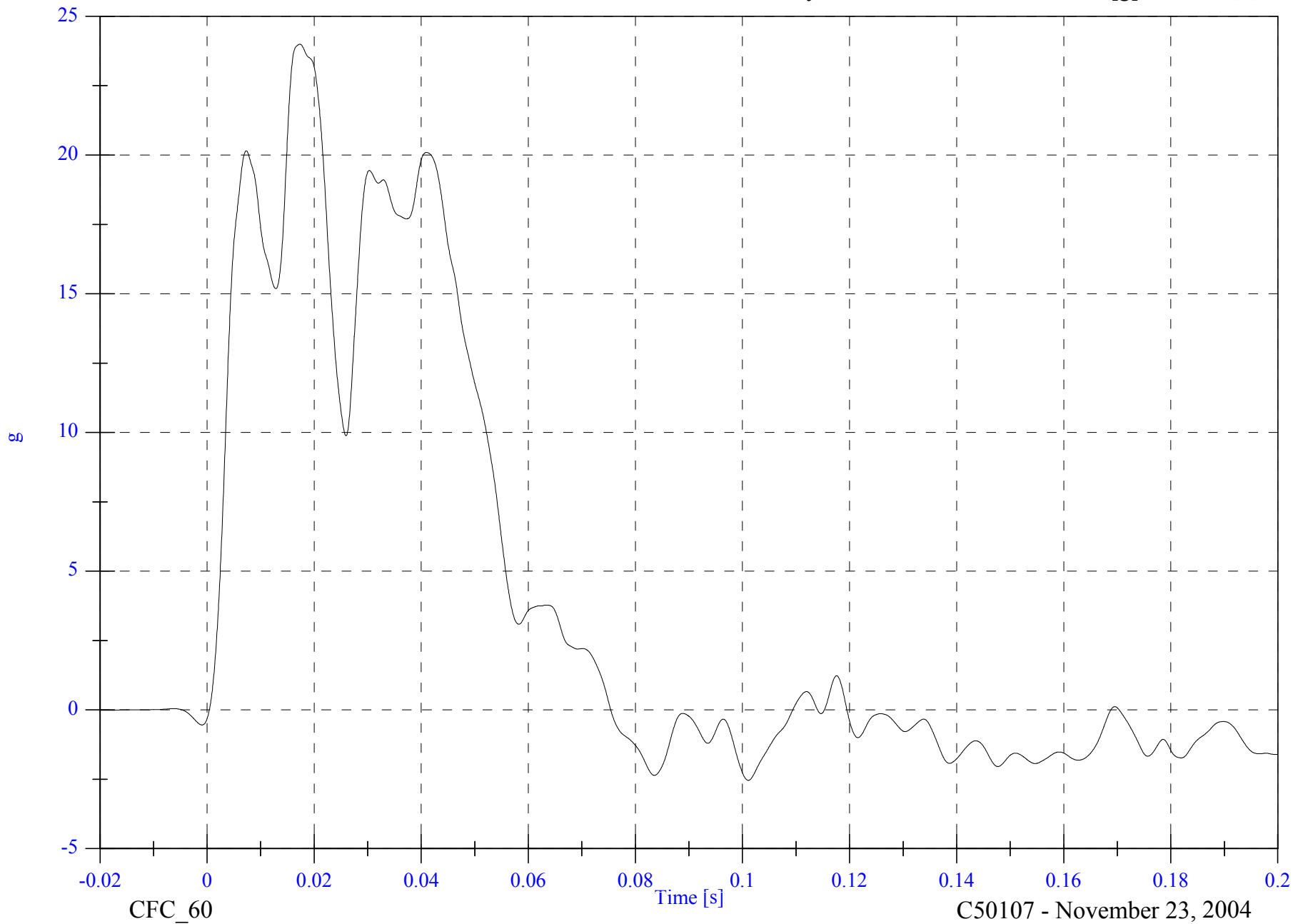
V2A17 Rear Seat Track y

Max: 24.0 [g] at 0.017 [s]

Min: -2.5 [g] at 0.101 [s]

B-97

8675-F214-20

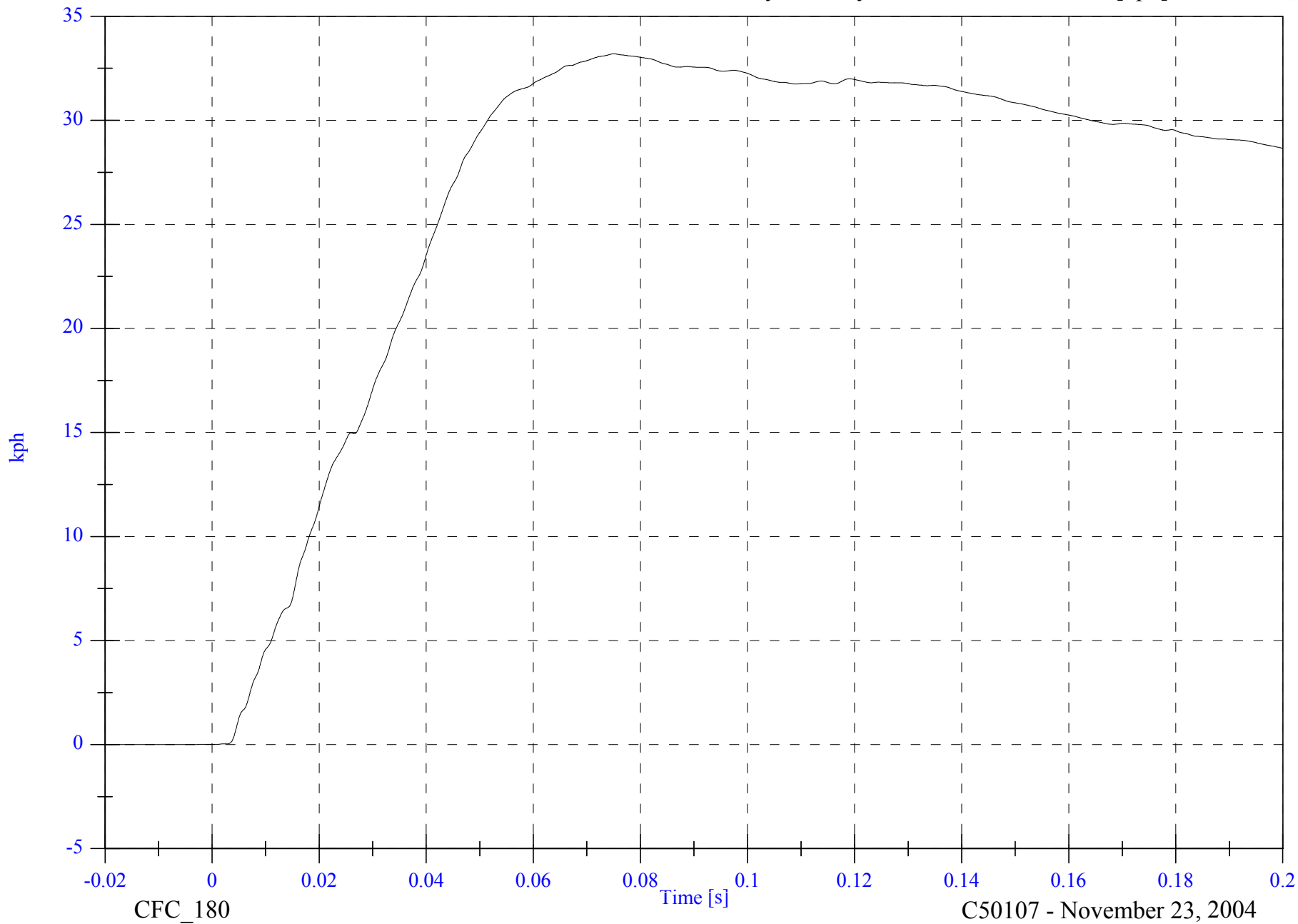


2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2A17 Rear Seat Track y Velocity

Max: 33.2 [kph] at 0.075 [s]

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



B-98

8675-F214-20

CFC\_180

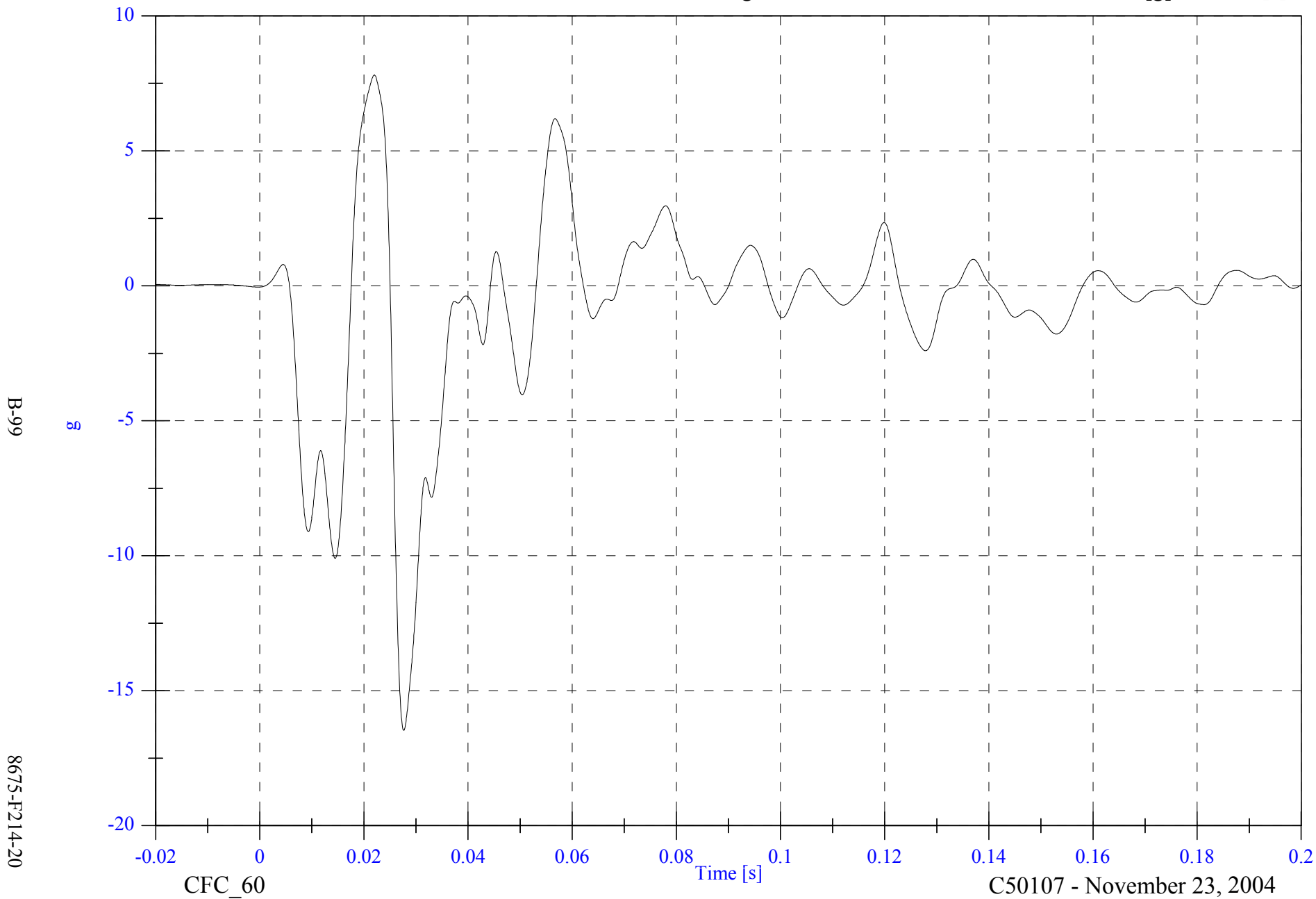
C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2A18 Target CG x

Max: 7.8 [g] at 0.022 [s]

Min: -16.5 [g] at 0.028 [s]



B-99

8675-F214-20

CFC\_60

C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

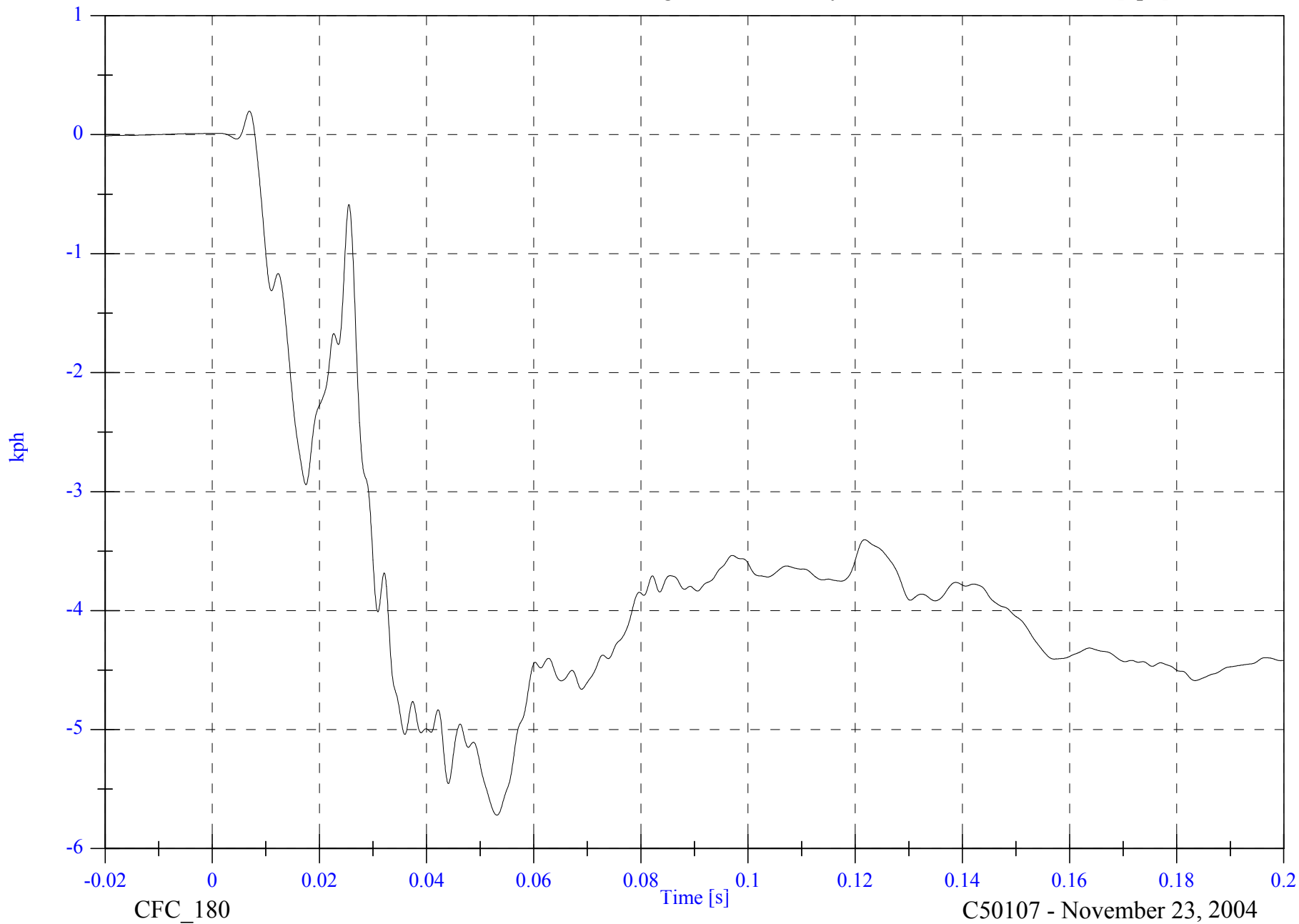
V2A18 Target CG x Velocity

Max: 0.2 [kph] at 0.007 [s]

Min: -5.7 [kph] at 0.053 [s]

B-100

8675-F214-20



CFC\_180

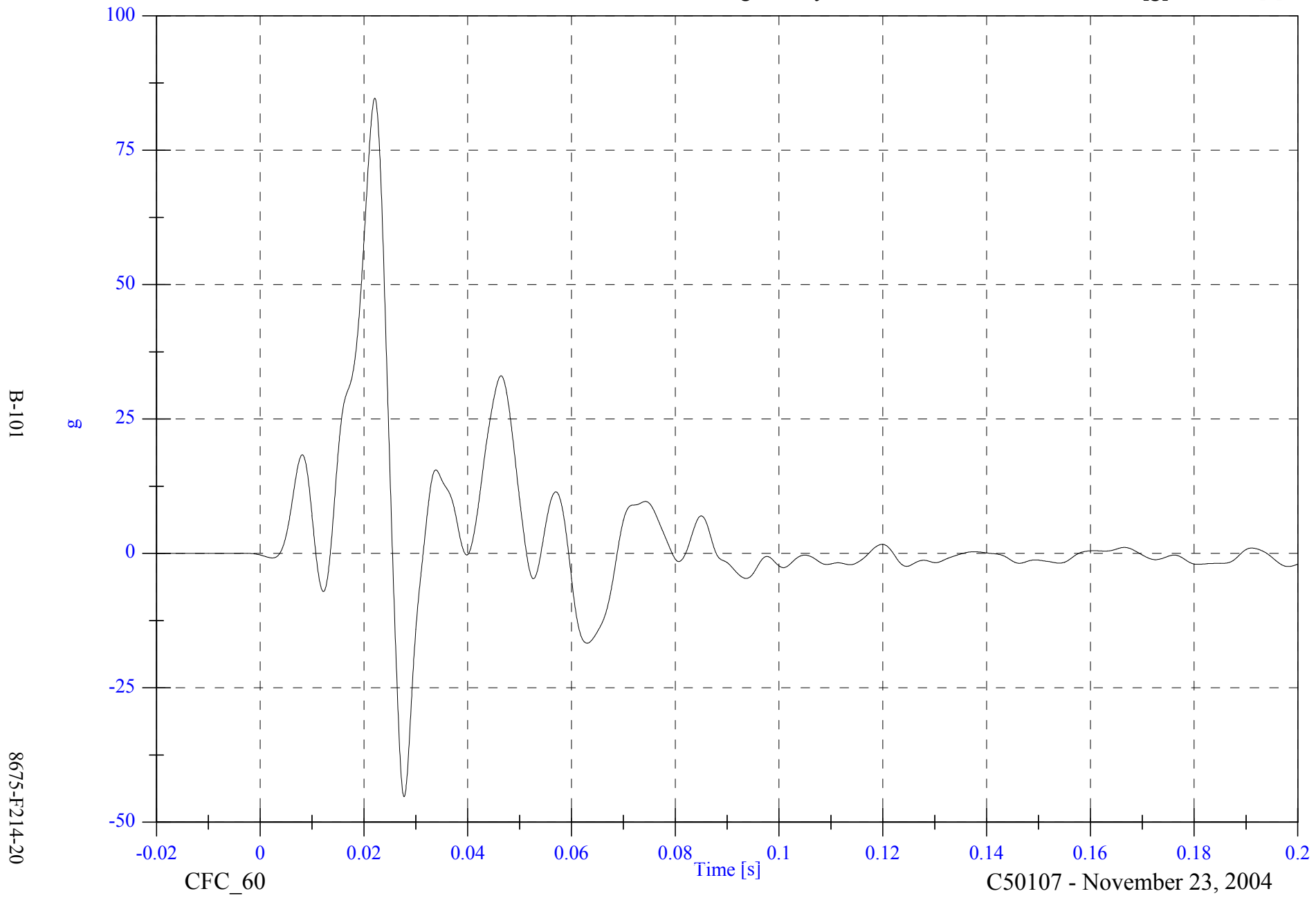
C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2A18 Target CG y

Max: 84.7 [g] at 0.022 [s]

Min: -45.2 [g] at 0.028 [s]



B-101

8675-F214-20

CFC\_60

Time [s]

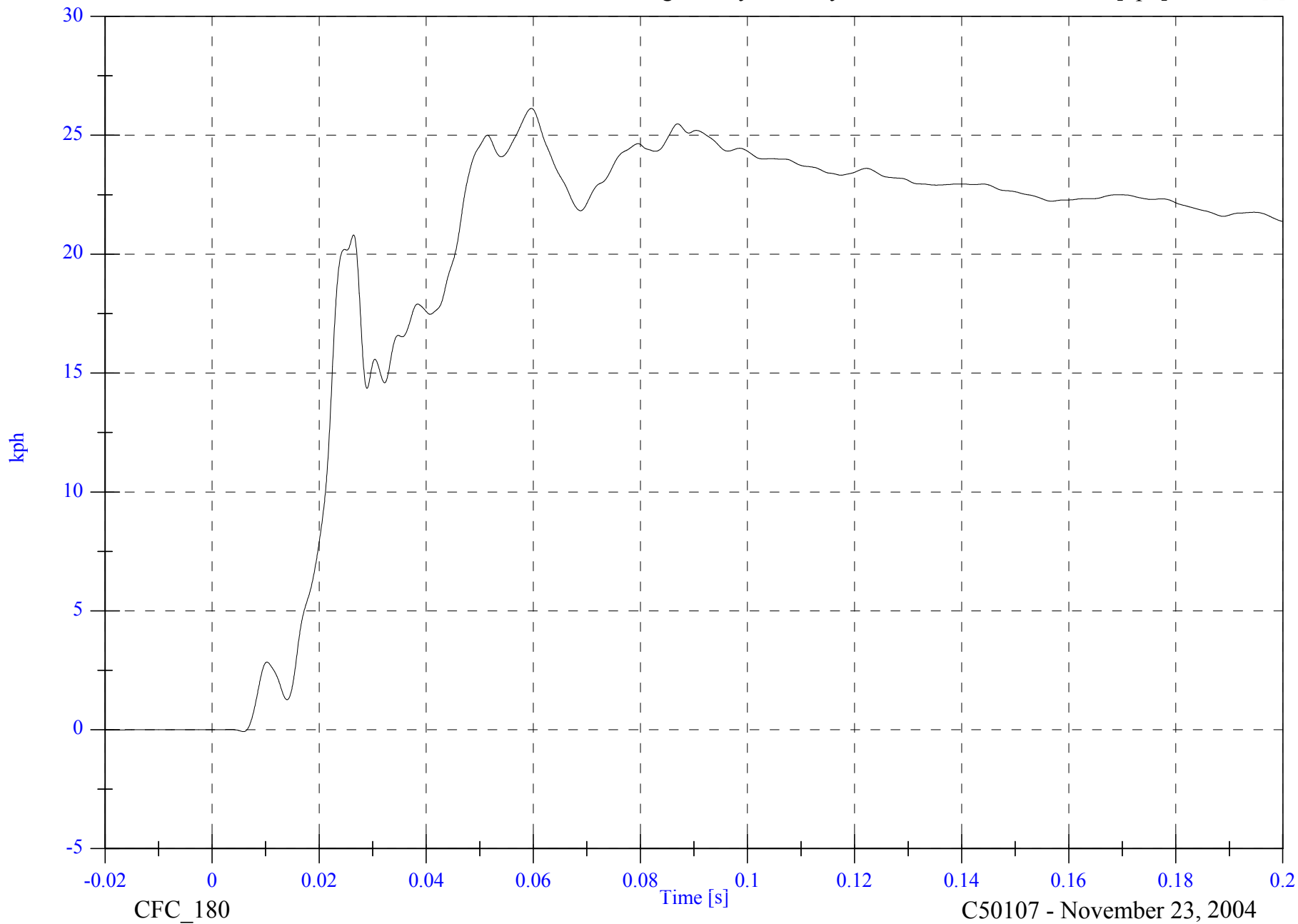
C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2A18 Target CG y Velocity

Max: 26.1 [kph] at 0.060 [s]

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



B-102

8675-F214-20

CFC\_180

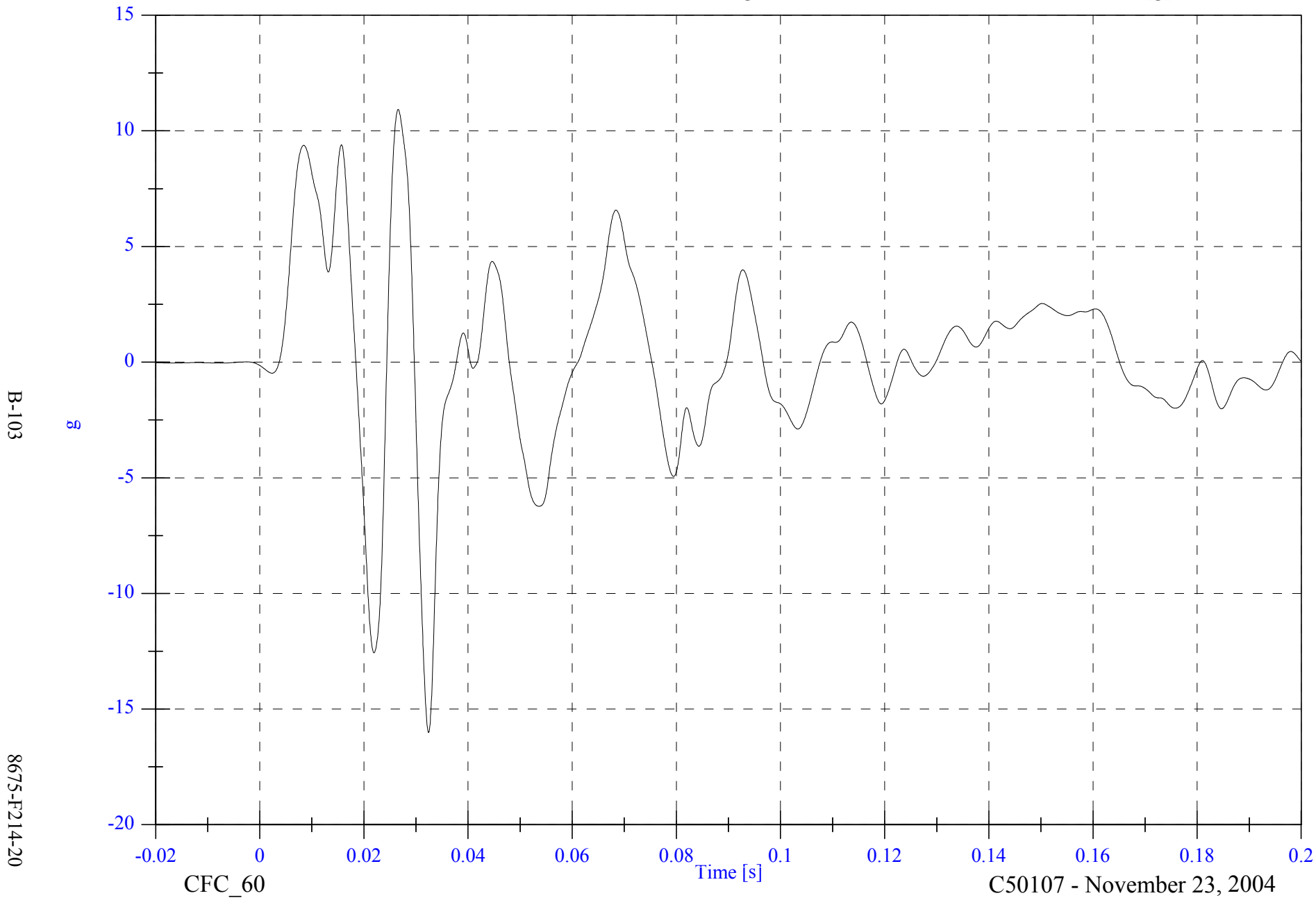
C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2A18 Target CG z

Max: 10.9 [g] at 0.027 [s]

Min: -16.0 [g] at 0.032 [s]



2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

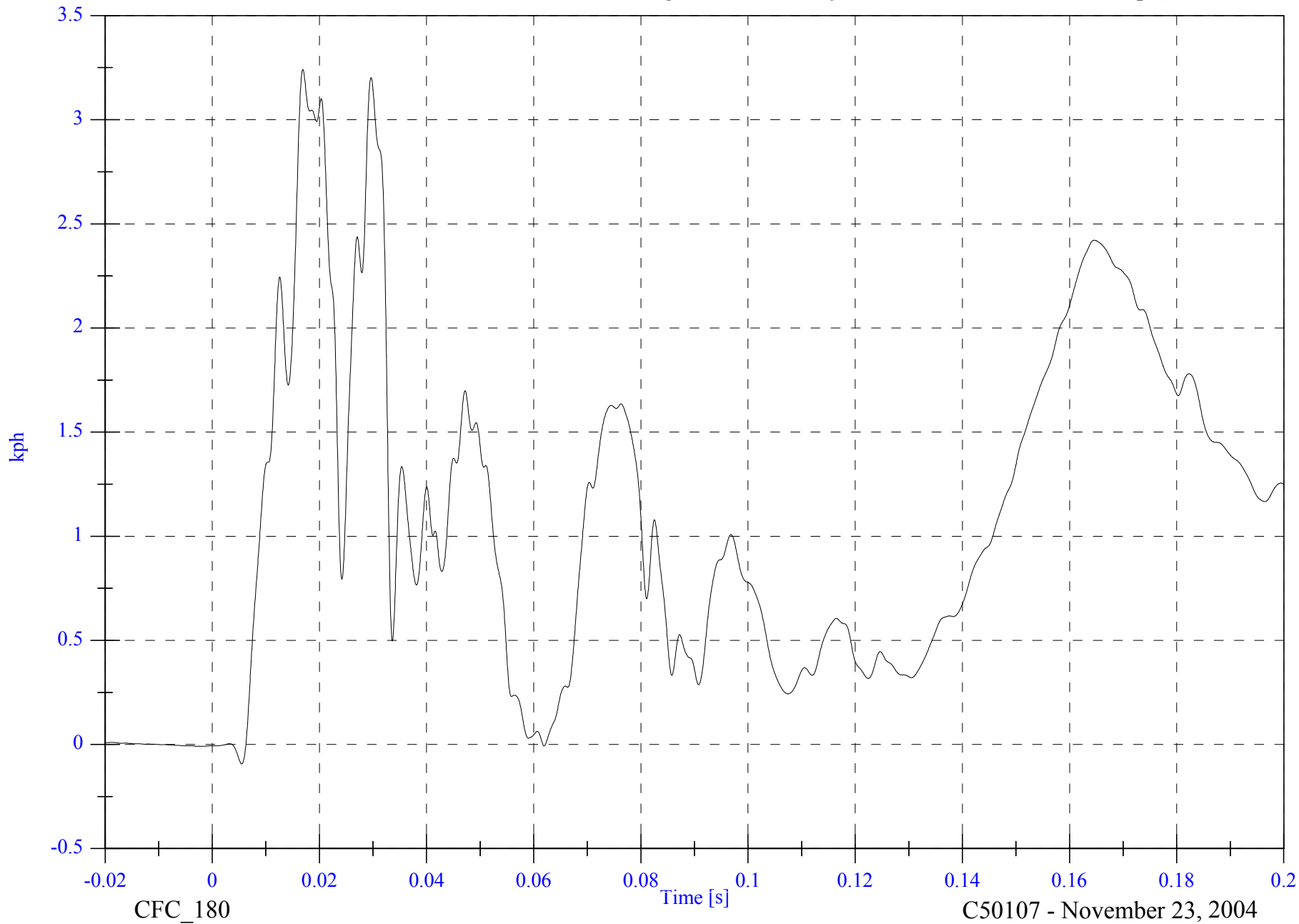
V2A18 Target CG z Velocity

Max: 3.2 [kph] at 0.017 [s]

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

B-104

8675-F214-20



CFC\_180

C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

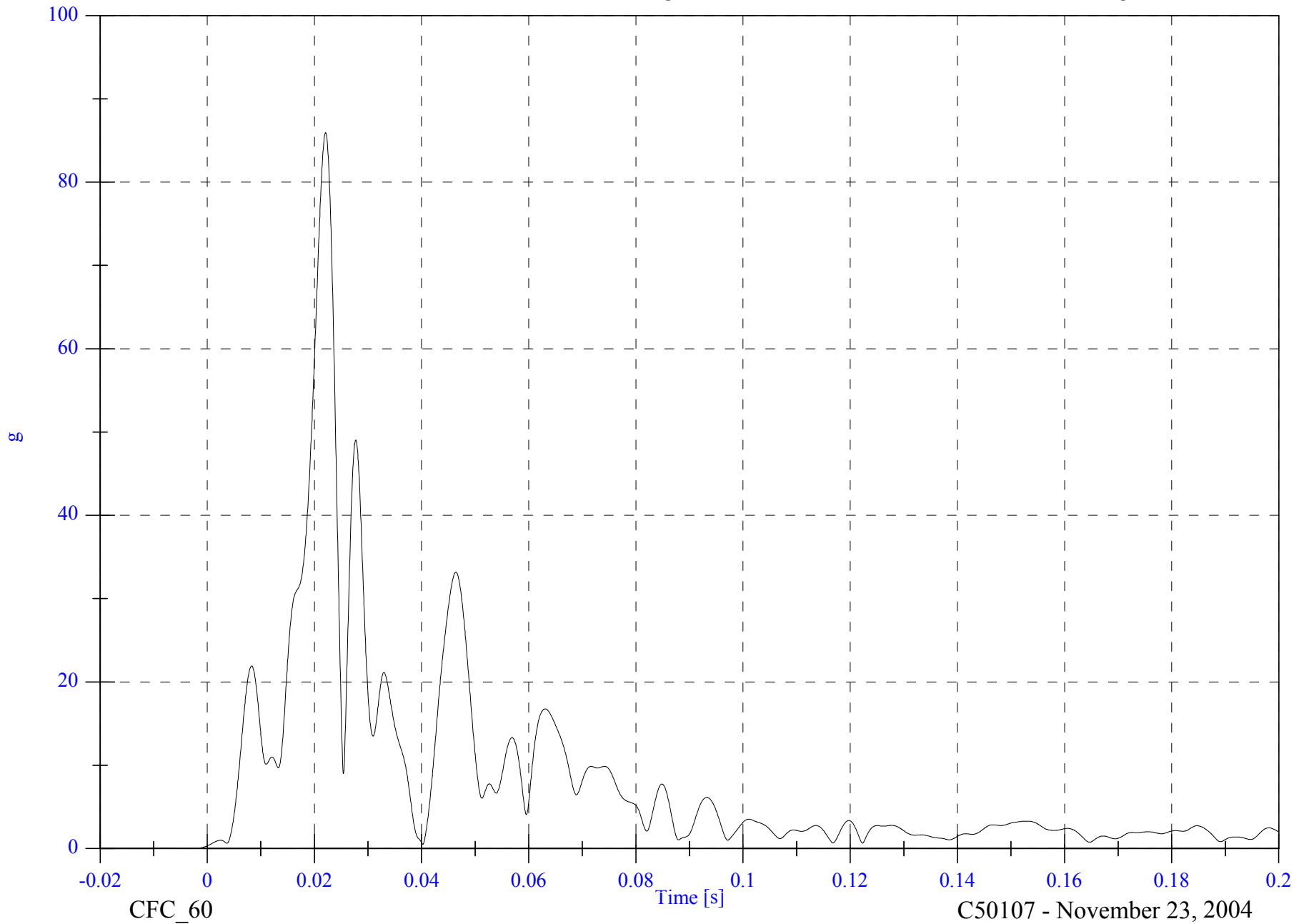
V2A18 Target CG Resultant

Max: 86.0 [g] at 0.022 [s]

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

B-105

8675-F214-20



2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

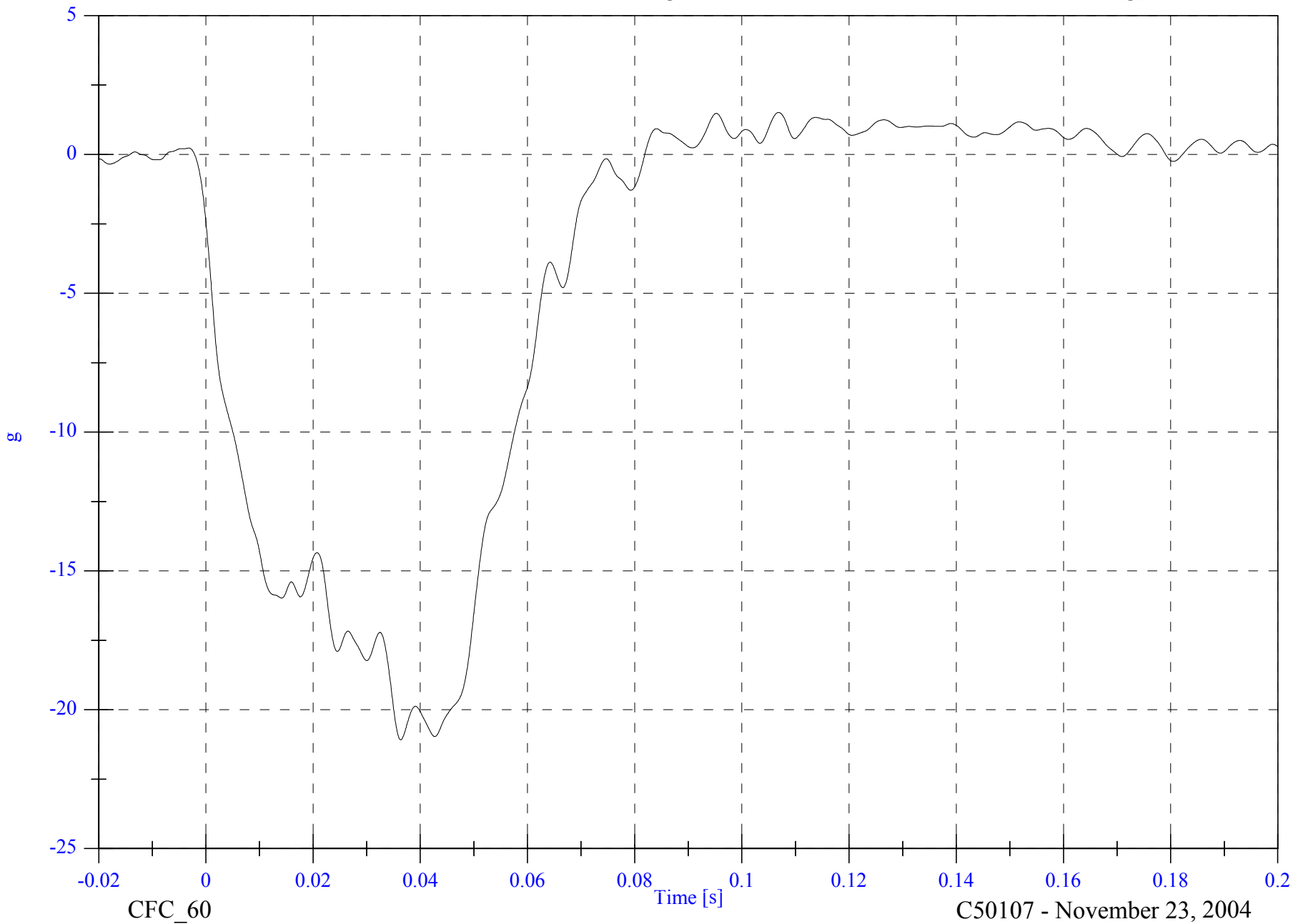
V1 Moving Barrier CG X

Max: 1.5 [g] at 0.107 [s]

Min: -21.1 [g] at 0.036 [s]

B-106

8675-F214-20

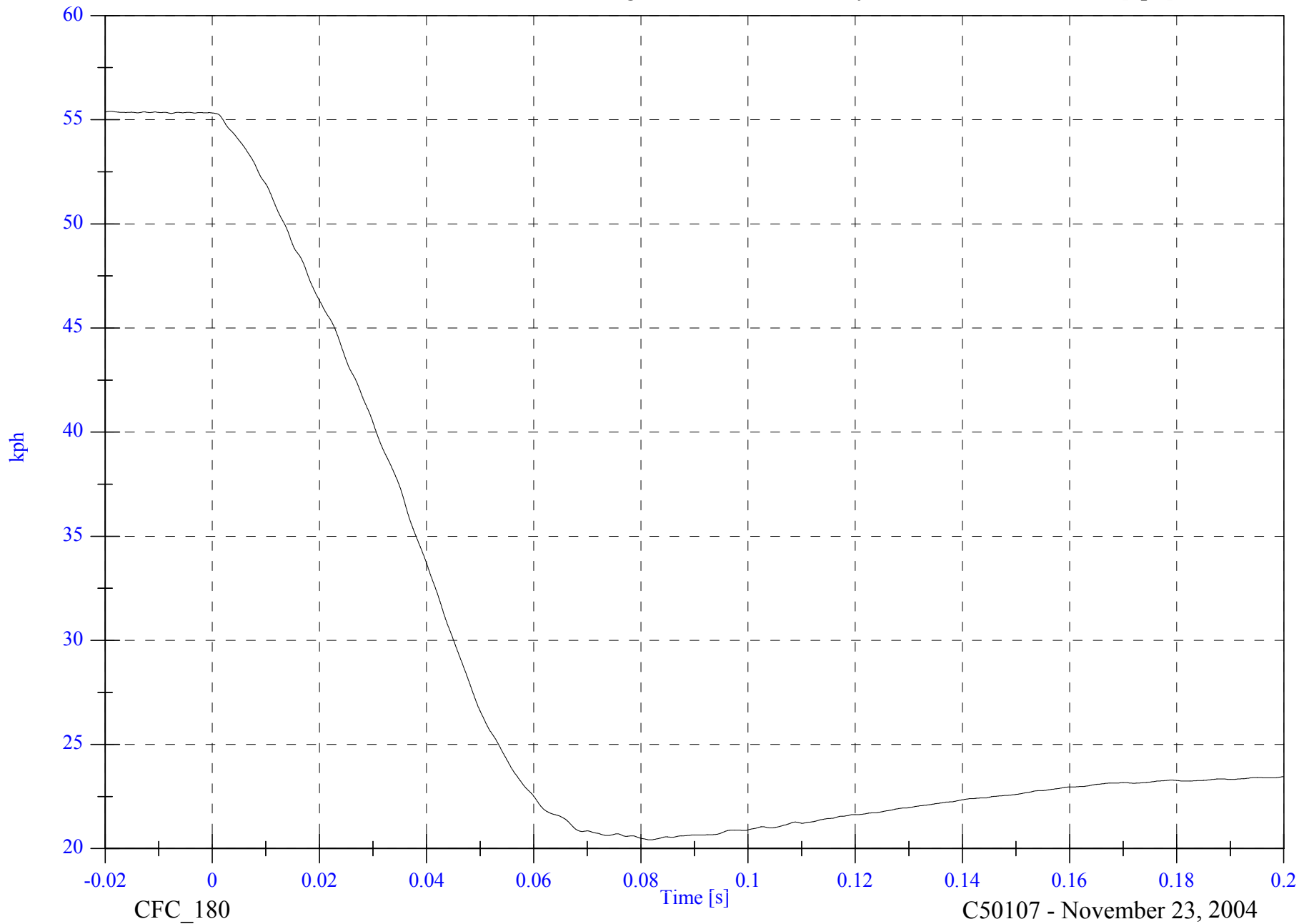


2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V1 Moving Barrier CG X Velocity

Max: 55.4 [kph] at -0.019 [s]

Min: 20.4 [kph] at 0.082 [s]



B-107

8675-F214-20

CFC\_180

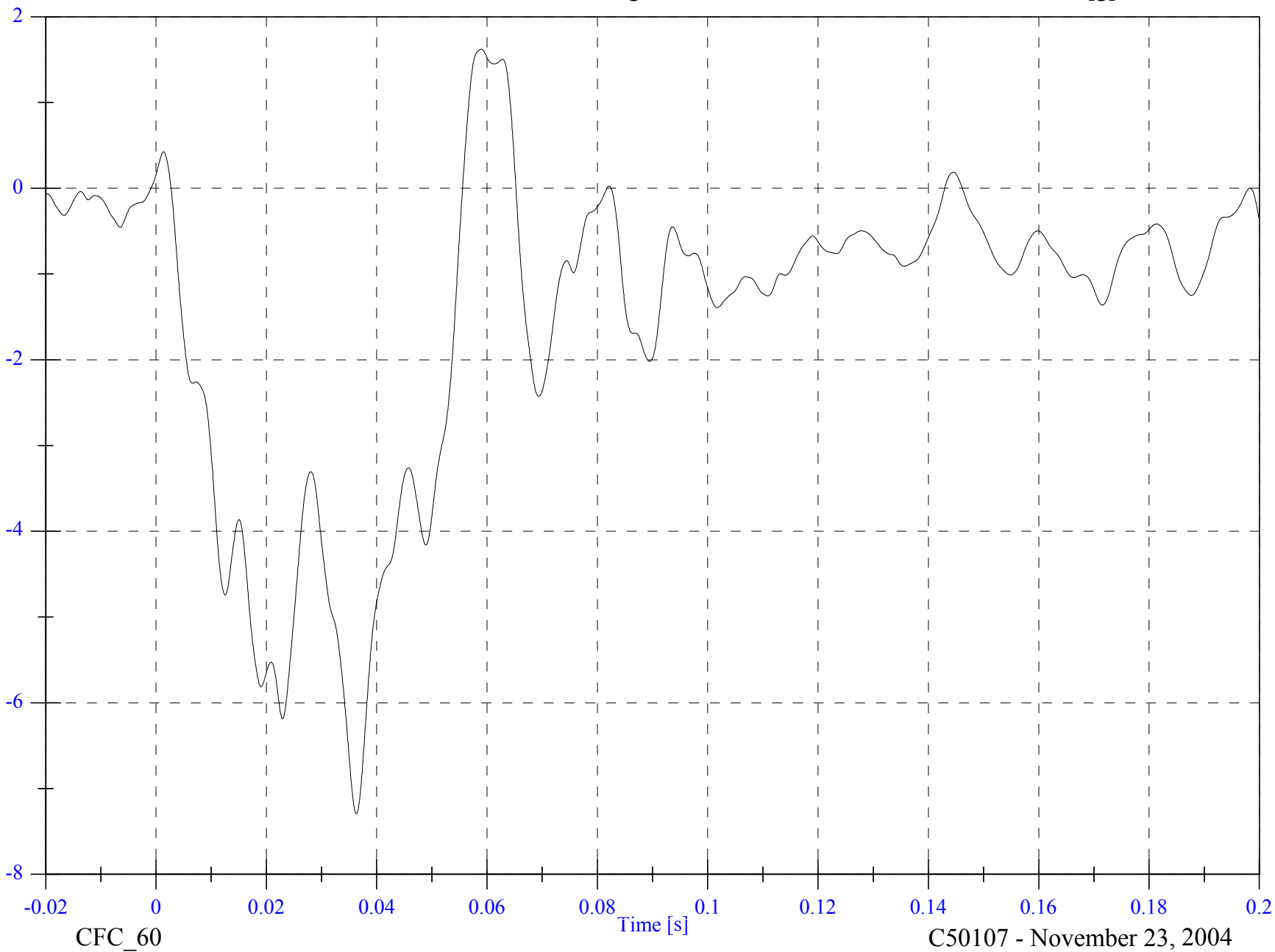
C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V1 Moving Barrier CG Y

Max: 1.6 [g] at 0.059 [s]

Min: -7.3 [g] at 0.036 [s]



B-108

8675-F214-20

CFC\_60

C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

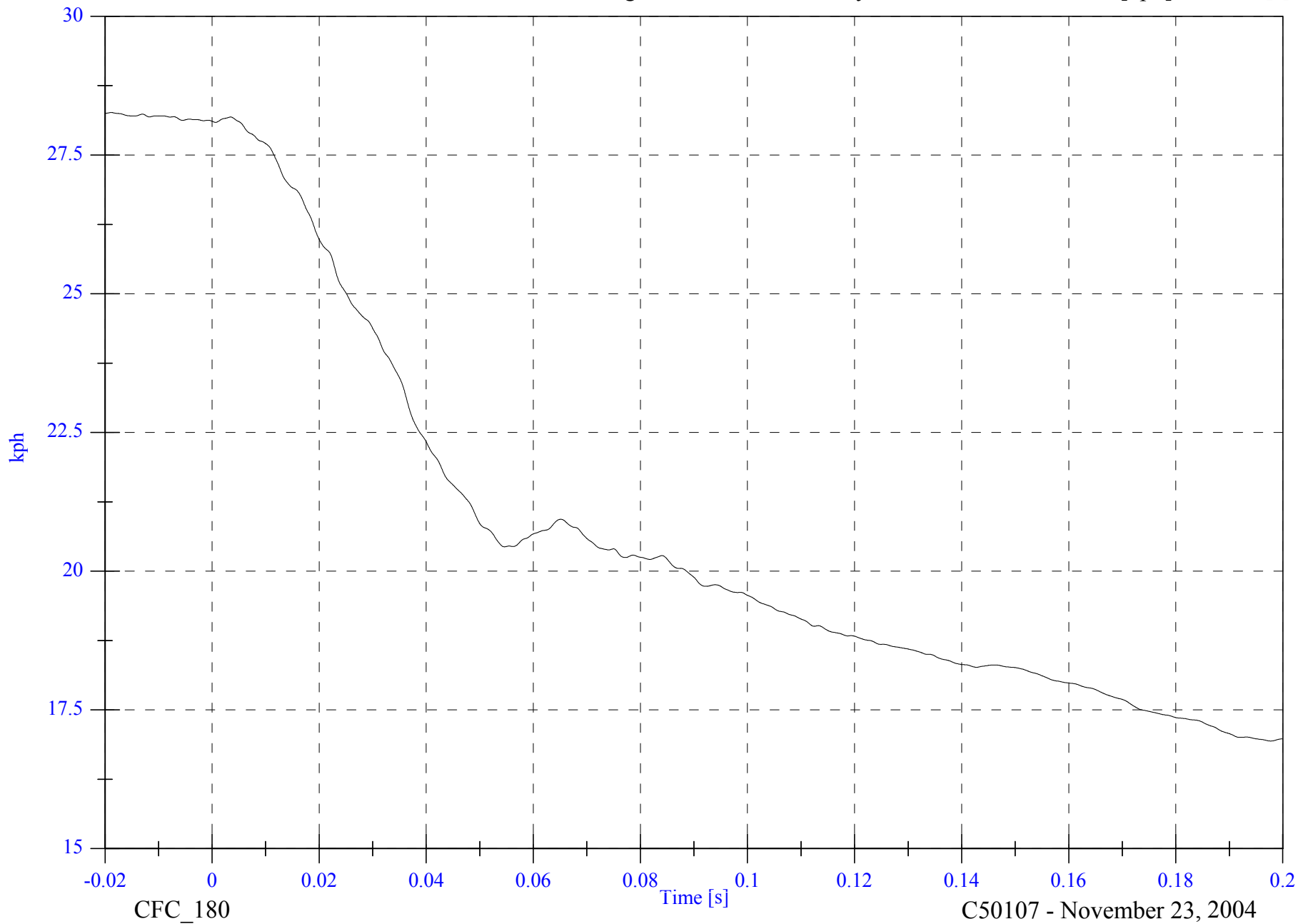
V1 Moving Barrier CG Y Velocity

Max: 28.3 [kph] at -0.019 [s]

Min: 16.9 [kph] at 0.198 [s]

B-109

8675-F214-20



CFC\_180

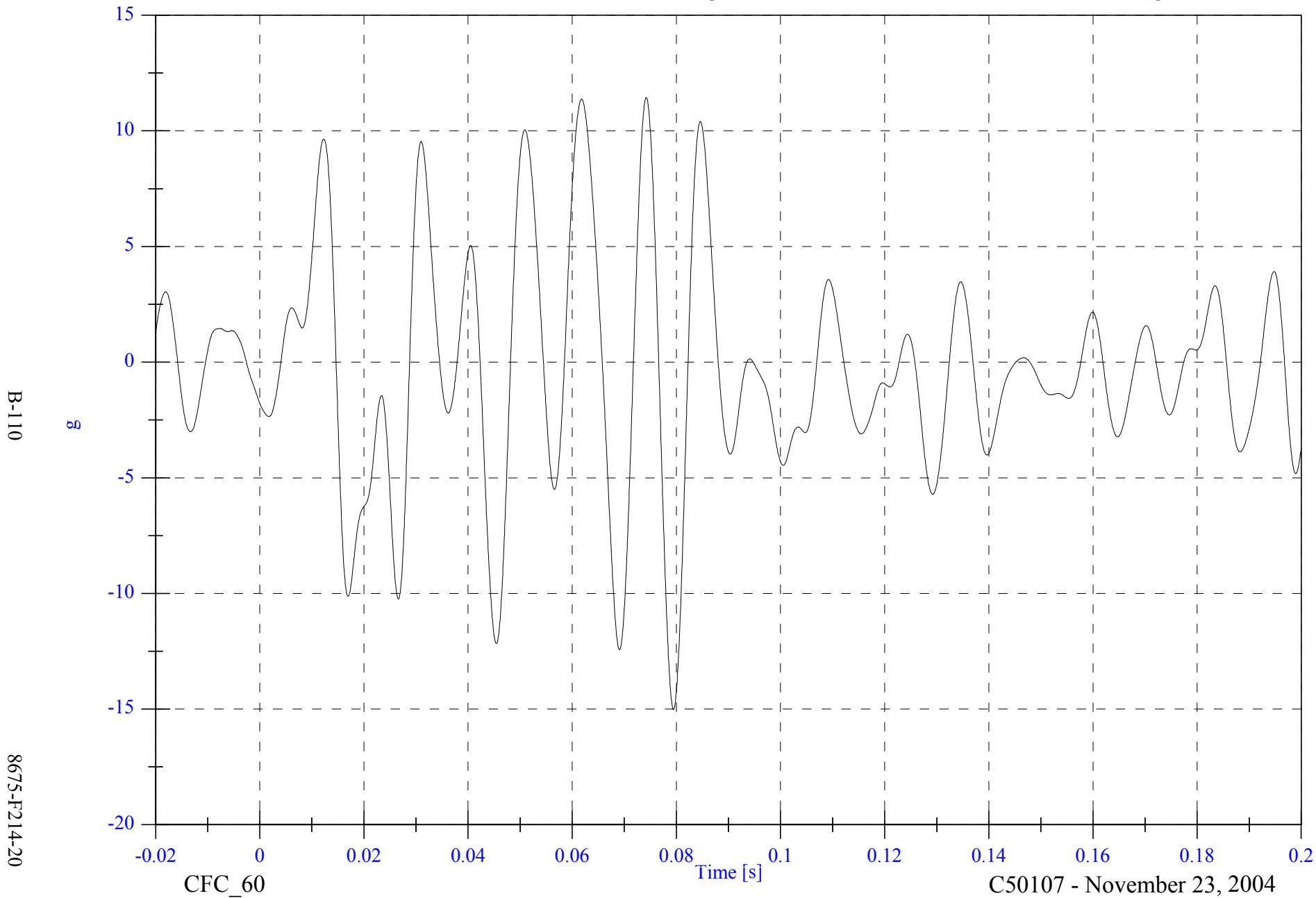
C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V1 Moving Barrier CG Z

Max: 11.4 [g] at 0.074 [s]

Min: -15.0 [g] at 0.079 [s]



B-110

8675-F214-20

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

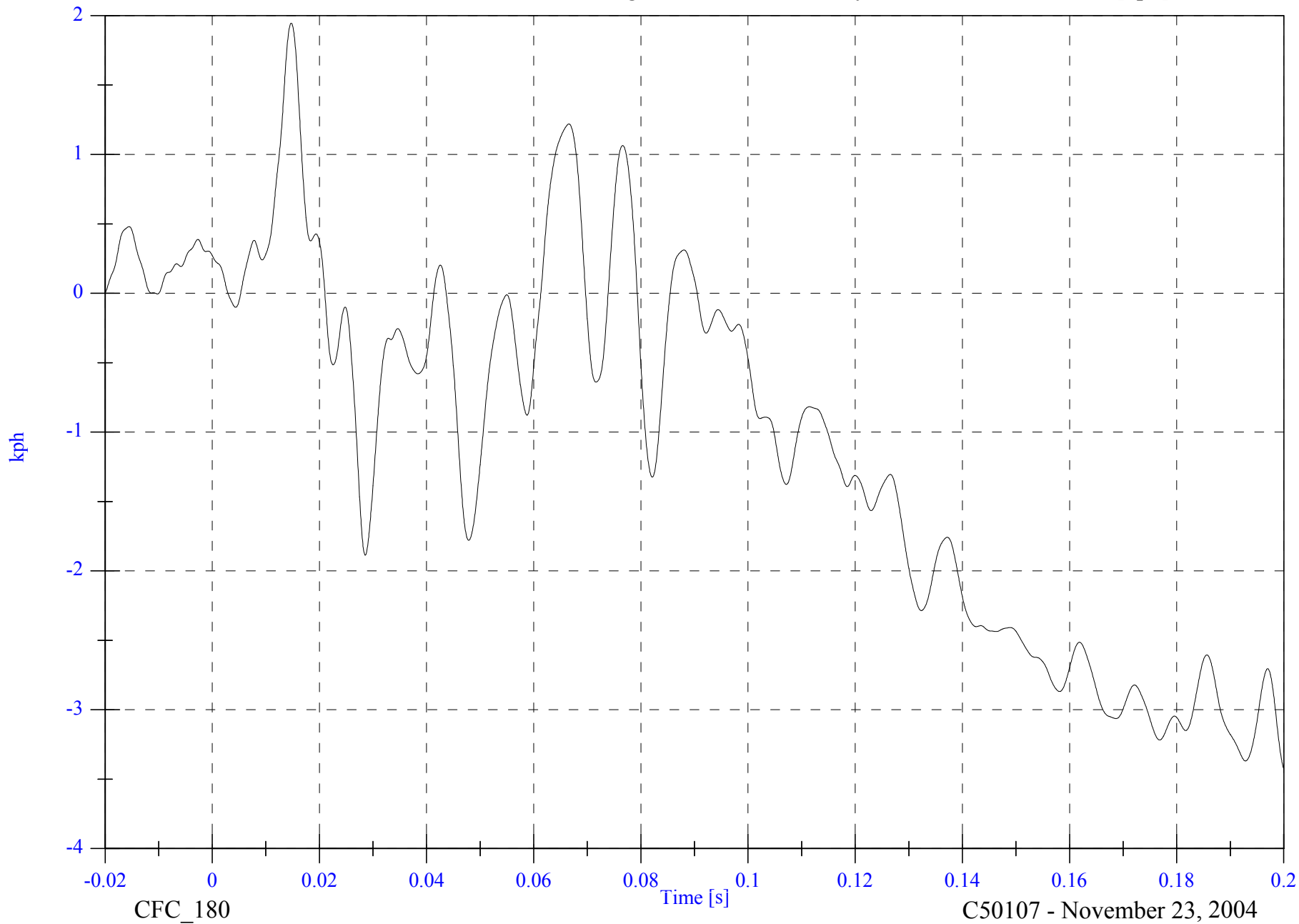
V1 Moving Barrier CG Z Velocity

Max: 1.9 [kph] at 0.015 [s]

Min: -3.4 [kph] at 0.200 [s]

B-111

8675-F214-20



CFC\_180

C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

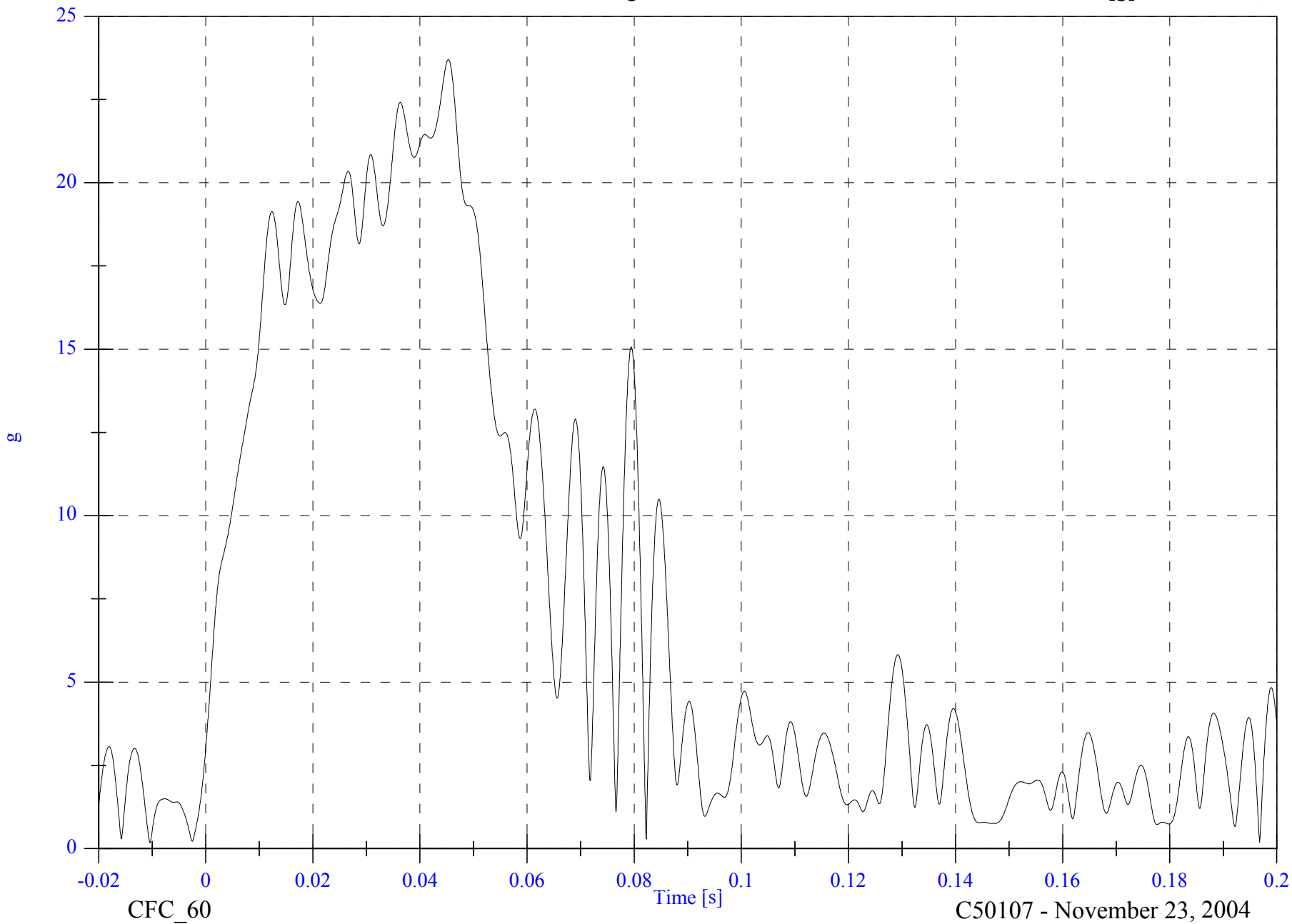
V1 Moving Barrier CG Resultant

Max: 23.7 [g] at 0.045 [s]

Min: 0.2 [g] at -0.010 [s]

B-112

8675-F214-20

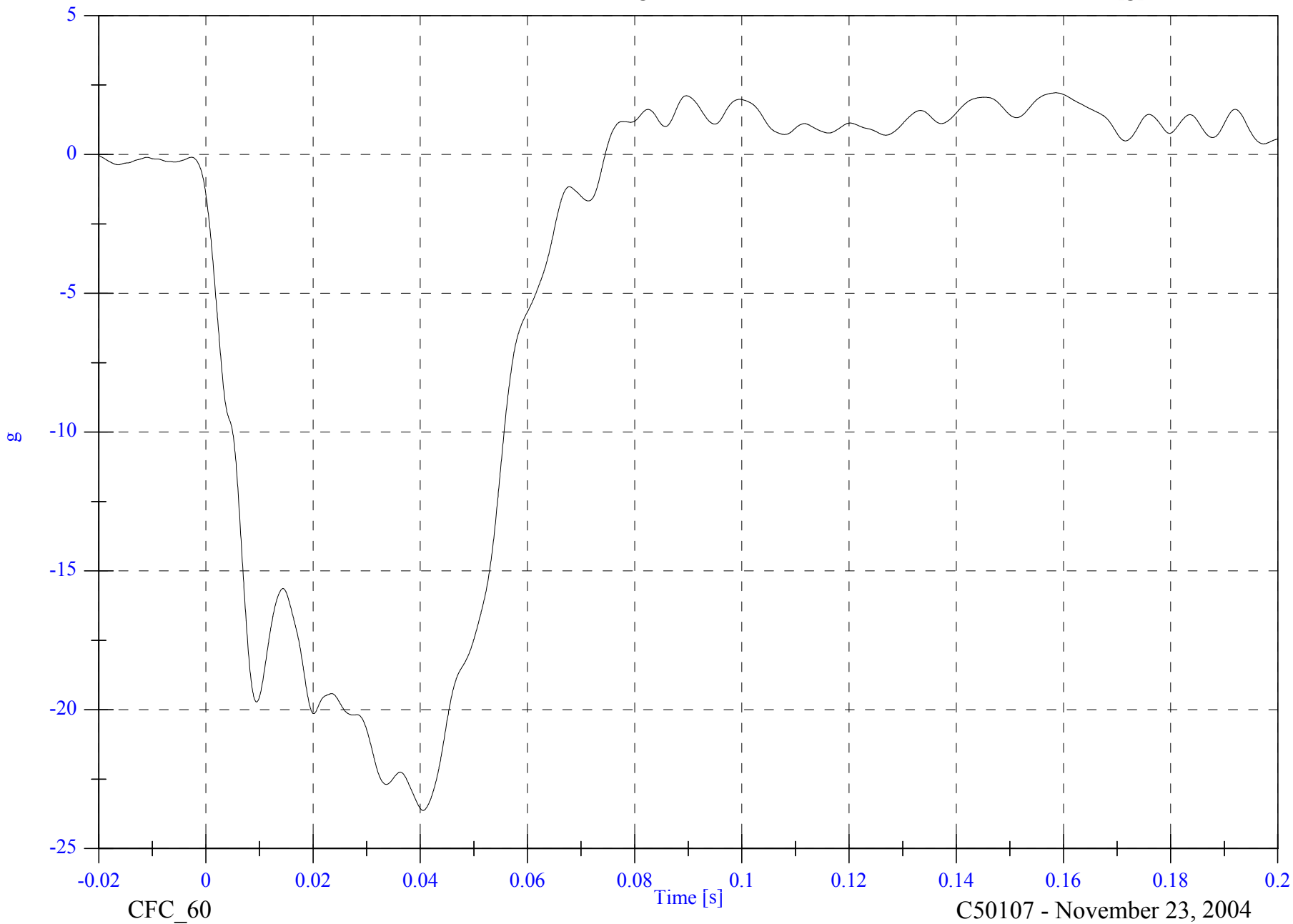


2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V1 Moving Barrier Left Rail X

Max: 2.2 [g] at 0.159 [s]

Min: -23.6 [g] at 0.040 [s]



B-113

8675-F214-20

CFC\_60

Time [s]

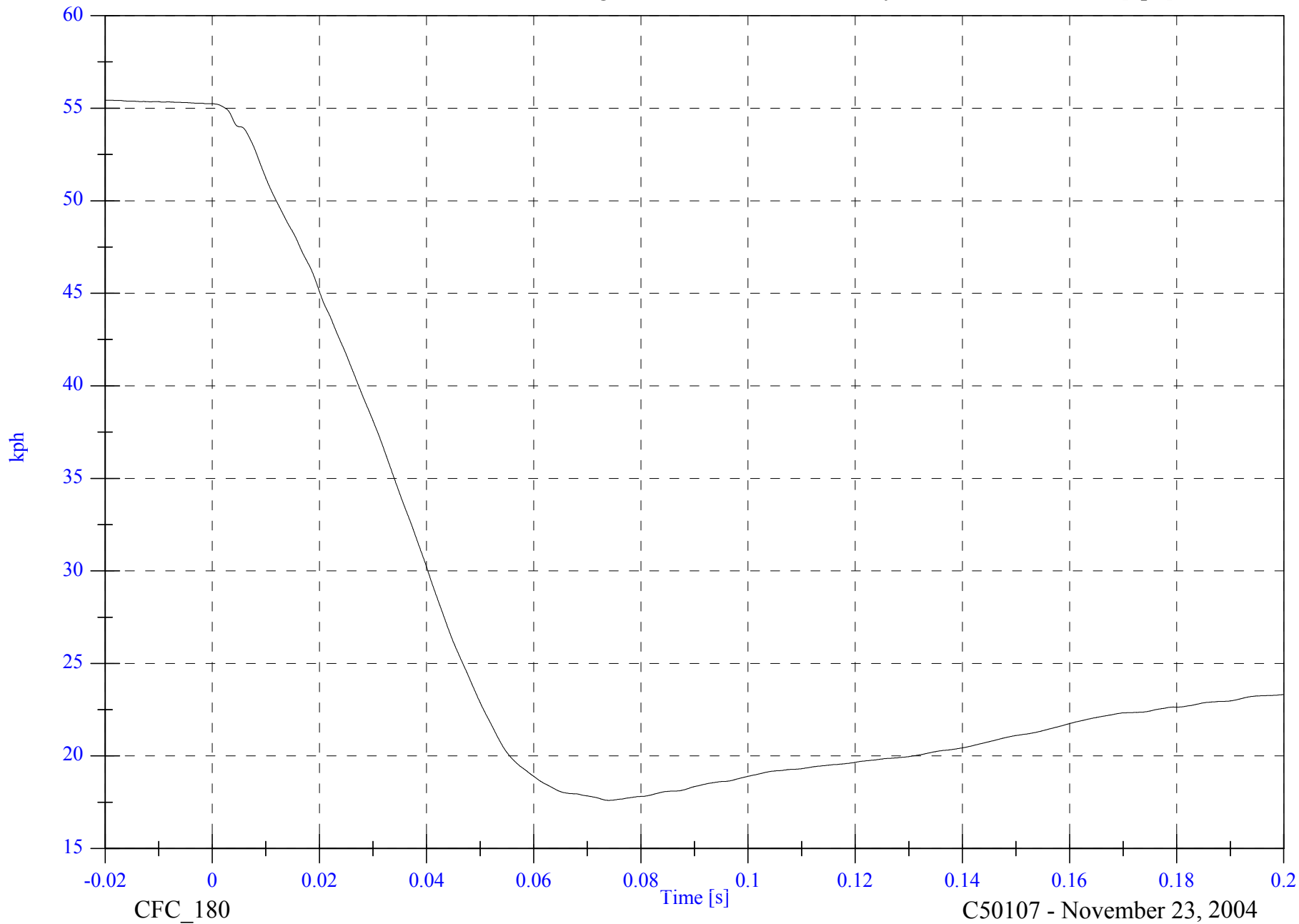
C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V1 Moving Barrier Left Rail X Velocity

Max: 55.4 [kph] at -0.020 [s]

Min: 17.6 [kph] at 0.074 [s]



B-114

8675-F214-20

CFC\_180

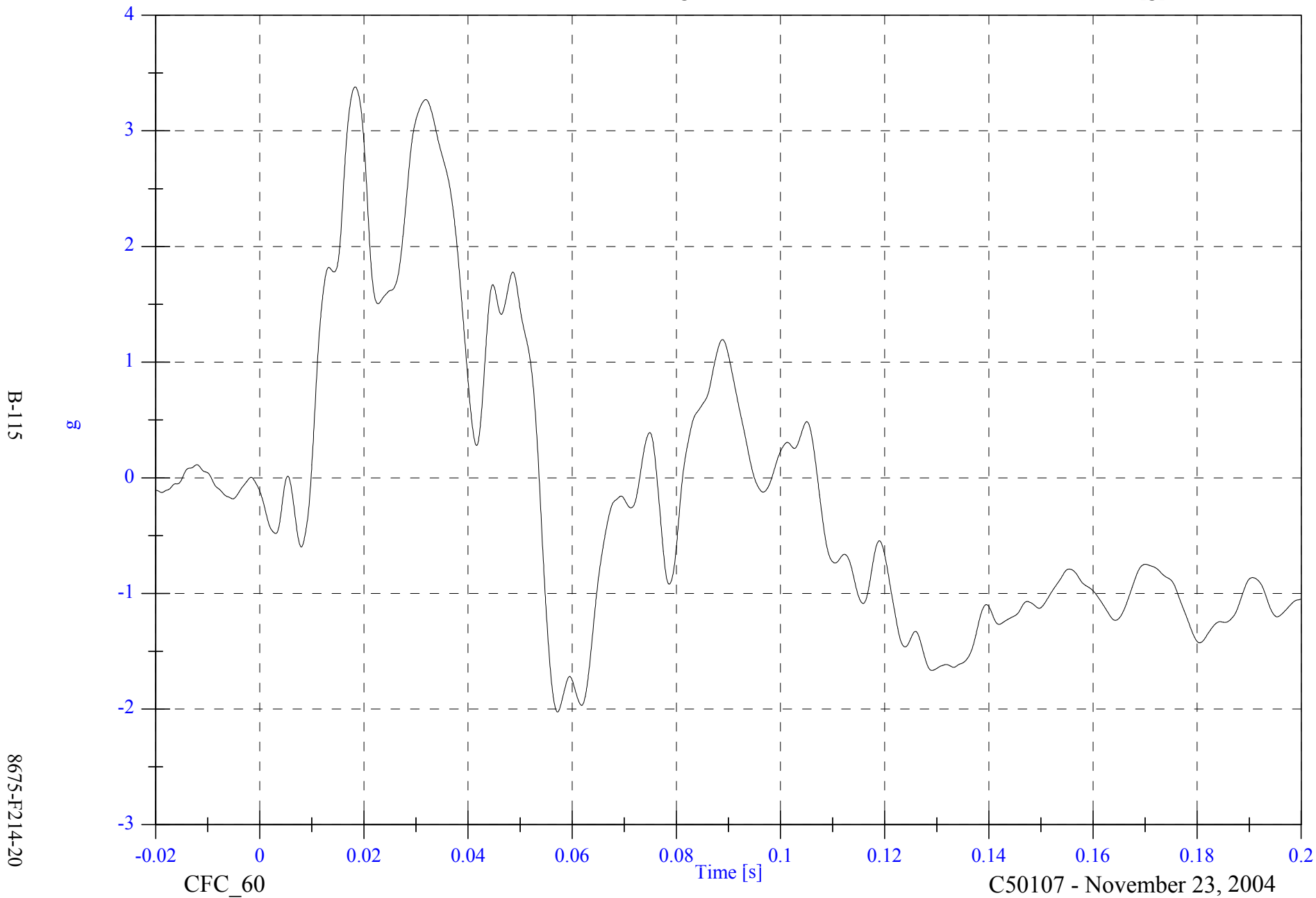
C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V1 Moving Barrier Left Rail Y

Max: 3.4 [g] at 0.018 [s]

Min: -2.0 [g] at 0.057 [s]



B-115

8675-F214-20

CFC\_60

Time [s]

C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

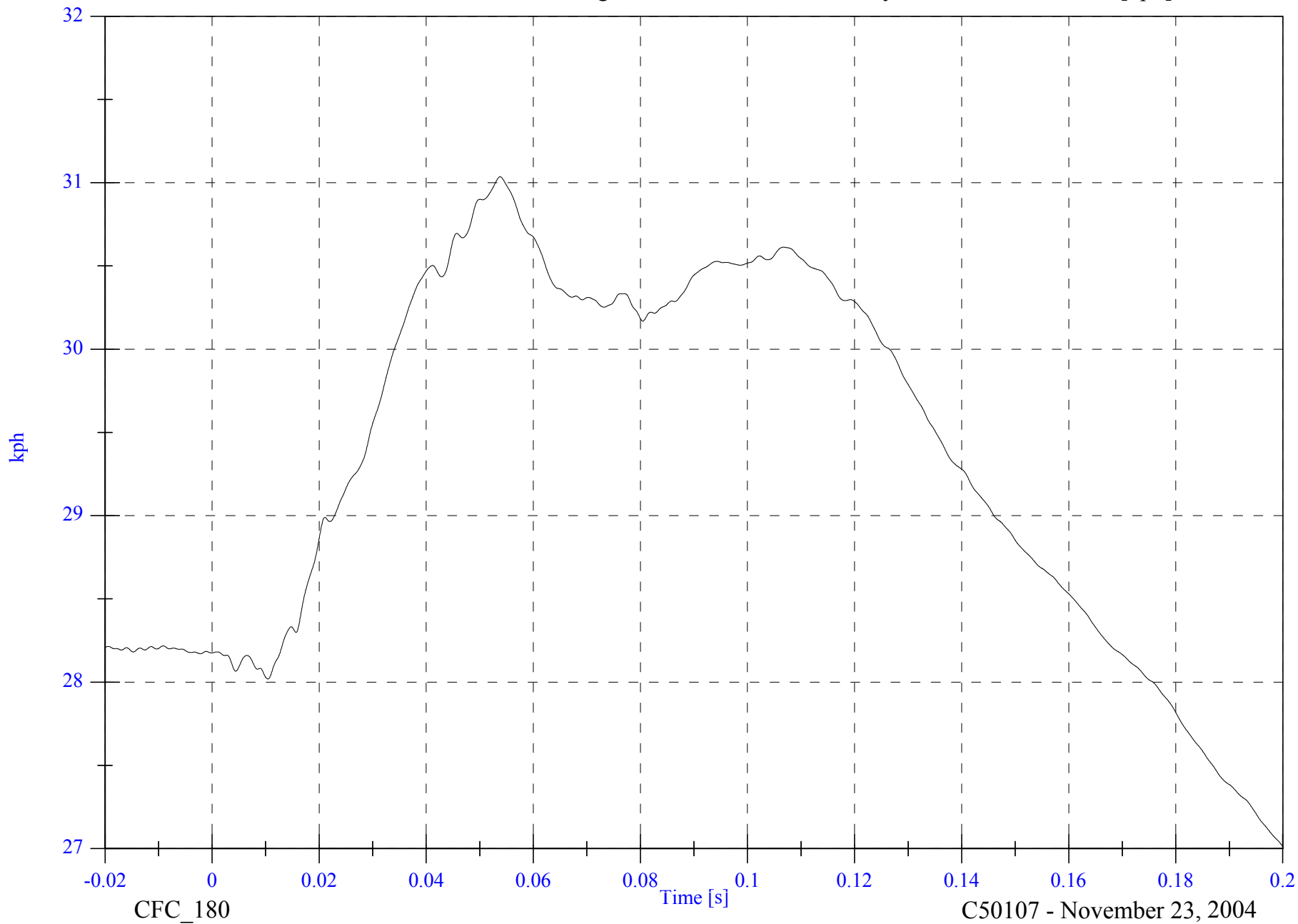
V1 Moving Barrier Left Rail Y Velocity

Max: 31.0 [kph] at 0.054 [s]

Min: 27.0 [kph] at 0.200 [s]

B-116

8675-F214-20



CFC\_180

C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

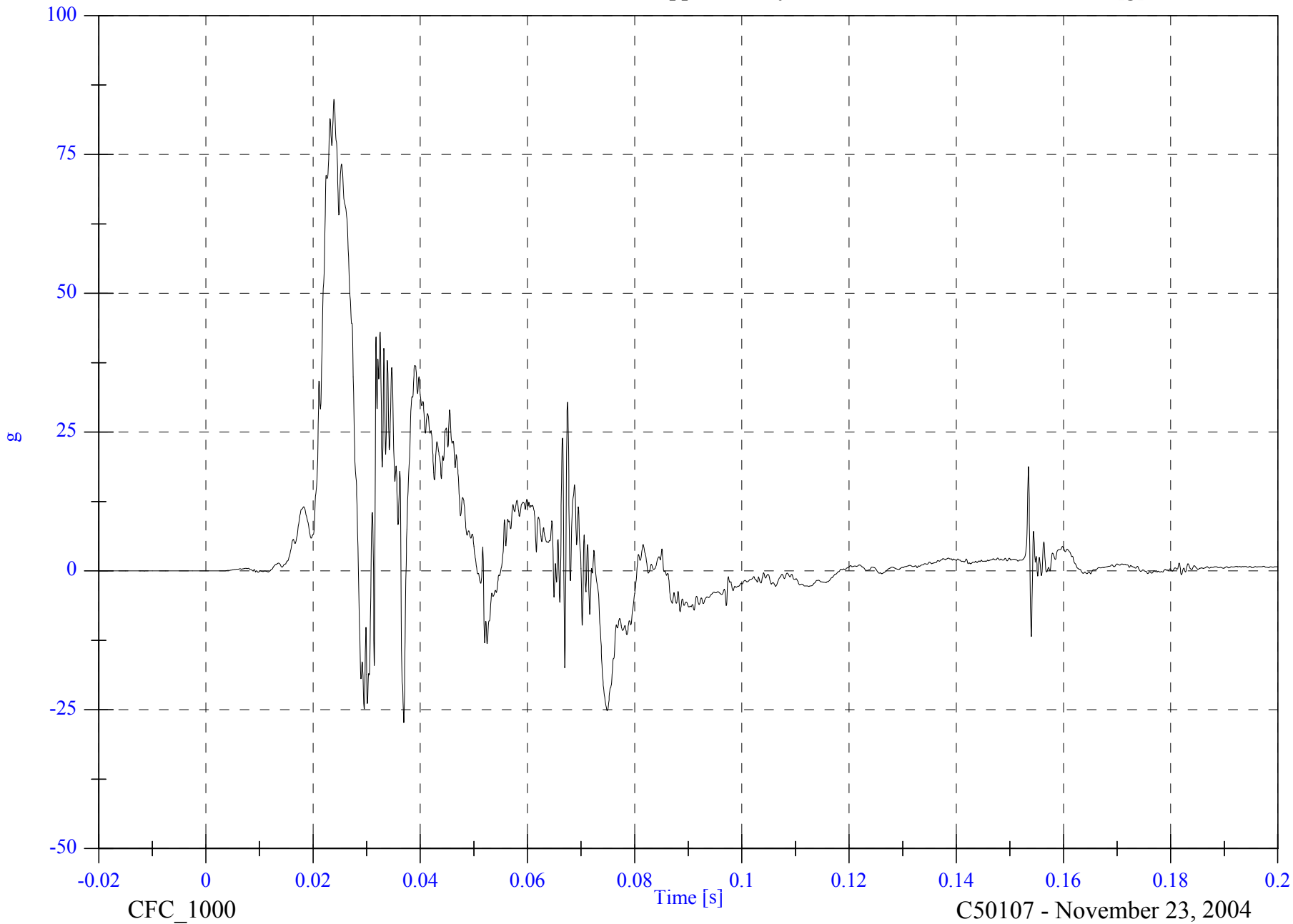
V2P1 Upper Rib Ry

Max: 84.9 [g] at 0.024 [s]

Min: -27.3 [g] at 0.037 [s]

B-117

8675-F214-20

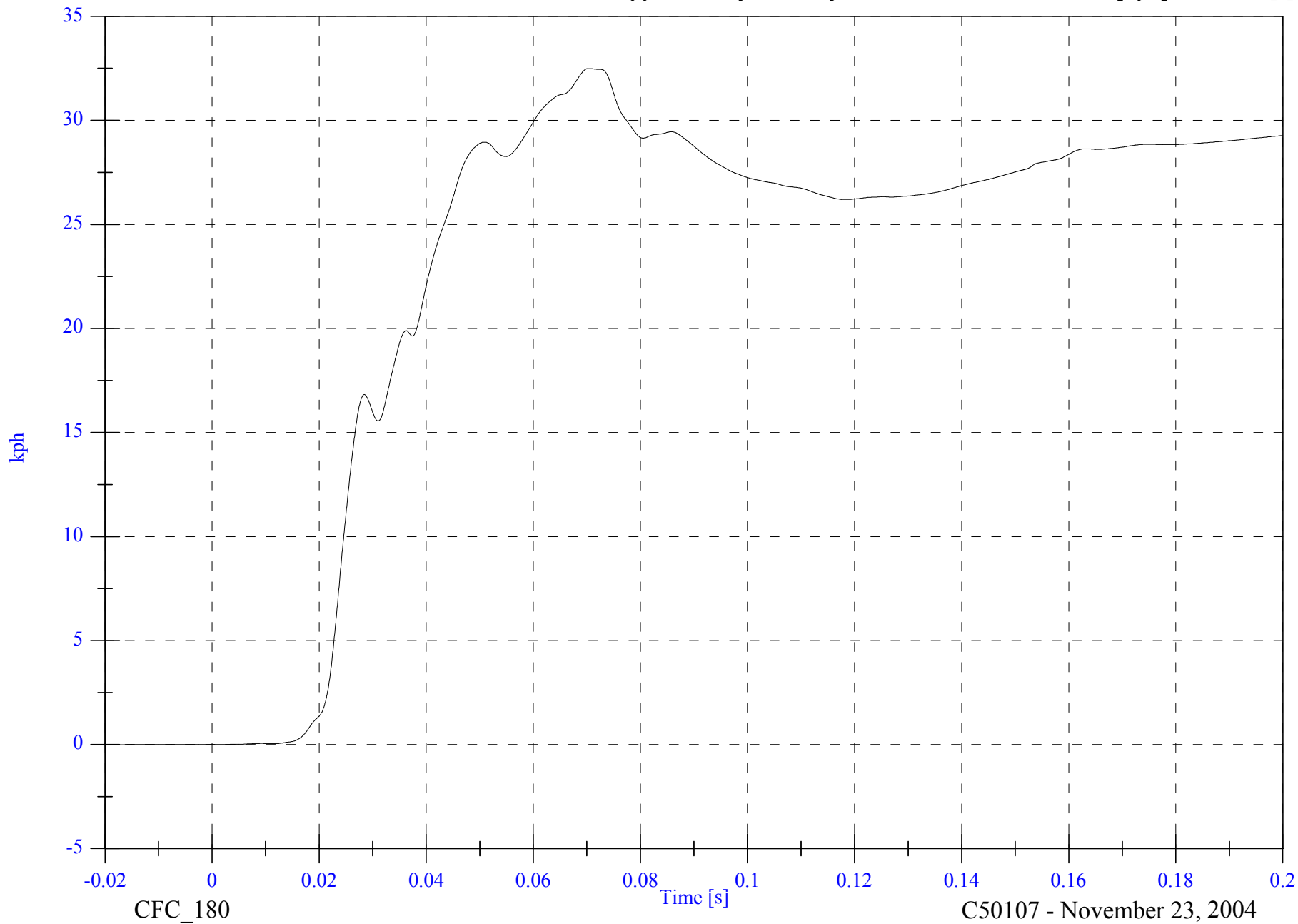


2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2P1 Upper Rib Ry Velocity

Max: 32.5 [kph] at 0.070 [s]

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



B-118

8675-F214-20

CFC\_180

Time [s]

C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

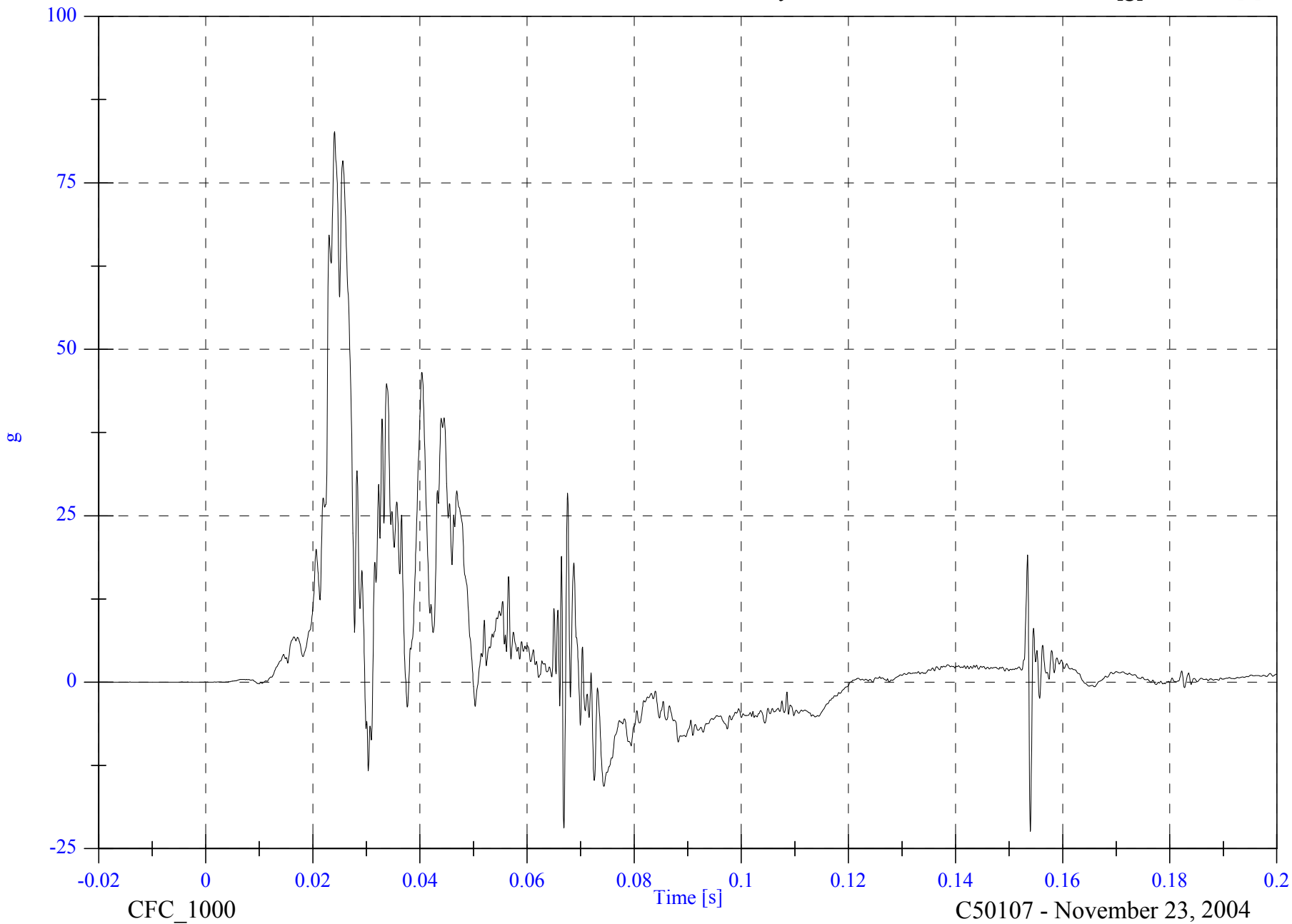
V2P1 Lower Rib Ry

Max: 82.7 [g] at 0.024 [s]

Min: -22.4 [g] at 0.154 [s]

B-119

8675-F214-20

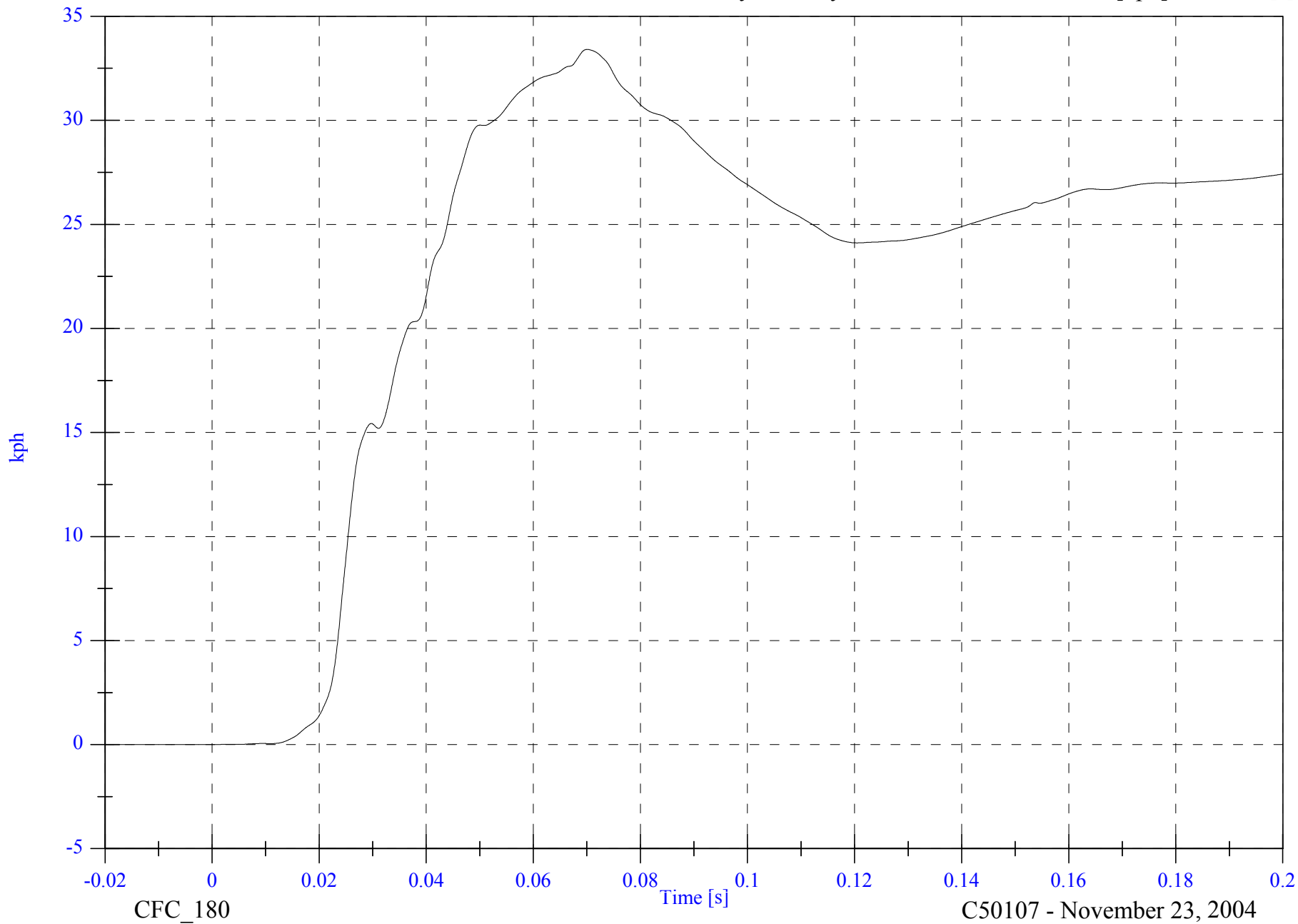


2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2P1 Lower Rib Ry Velocity

Max: 33.4 [kph] at 0.070 [s]

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



B-120

8675-F214-20

CFC\_180

Time [s]

C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

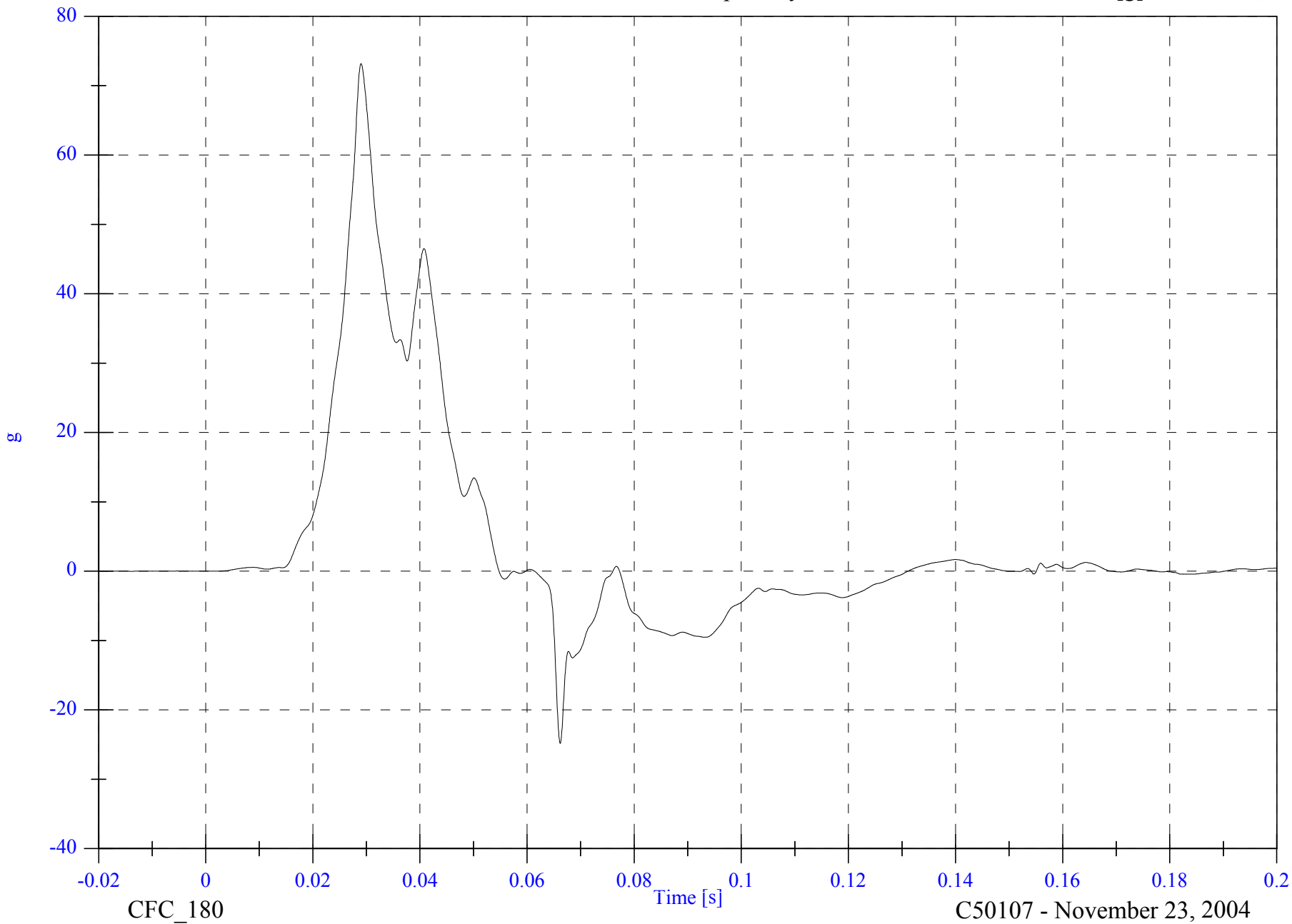
V2P1 Lower Spine Ry

Max: 73.2 [g] at 0.029 [s]

Min: -24.8 [g] at 0.066 [s]

B-121

8675-F214-20



CFC\_180

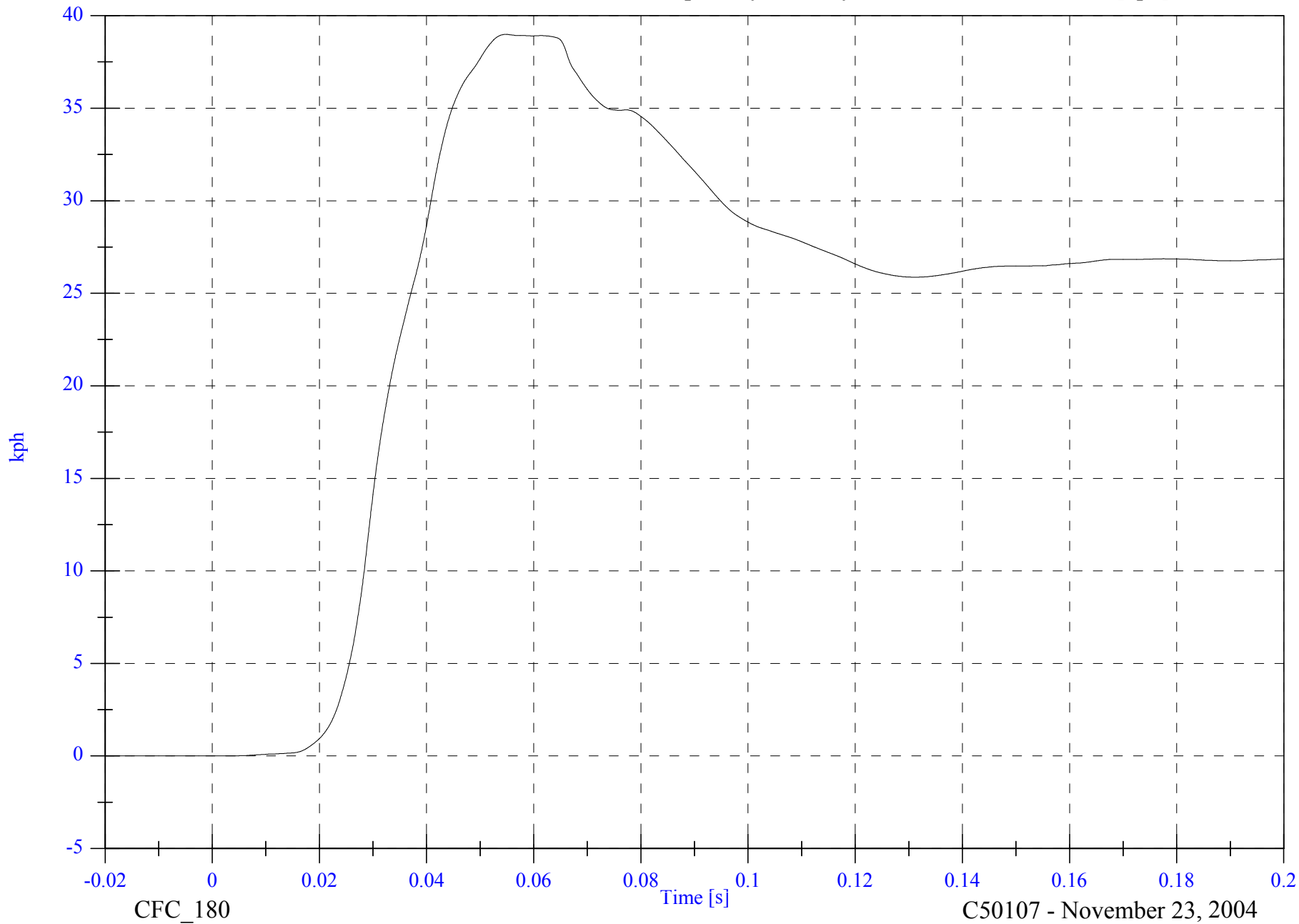
C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2P1 Lower Spine Ry Velocity

Max: 39.0 [kph] at 0.055 [s]

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



B-122

8675-F214-20

CFC\_180

C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

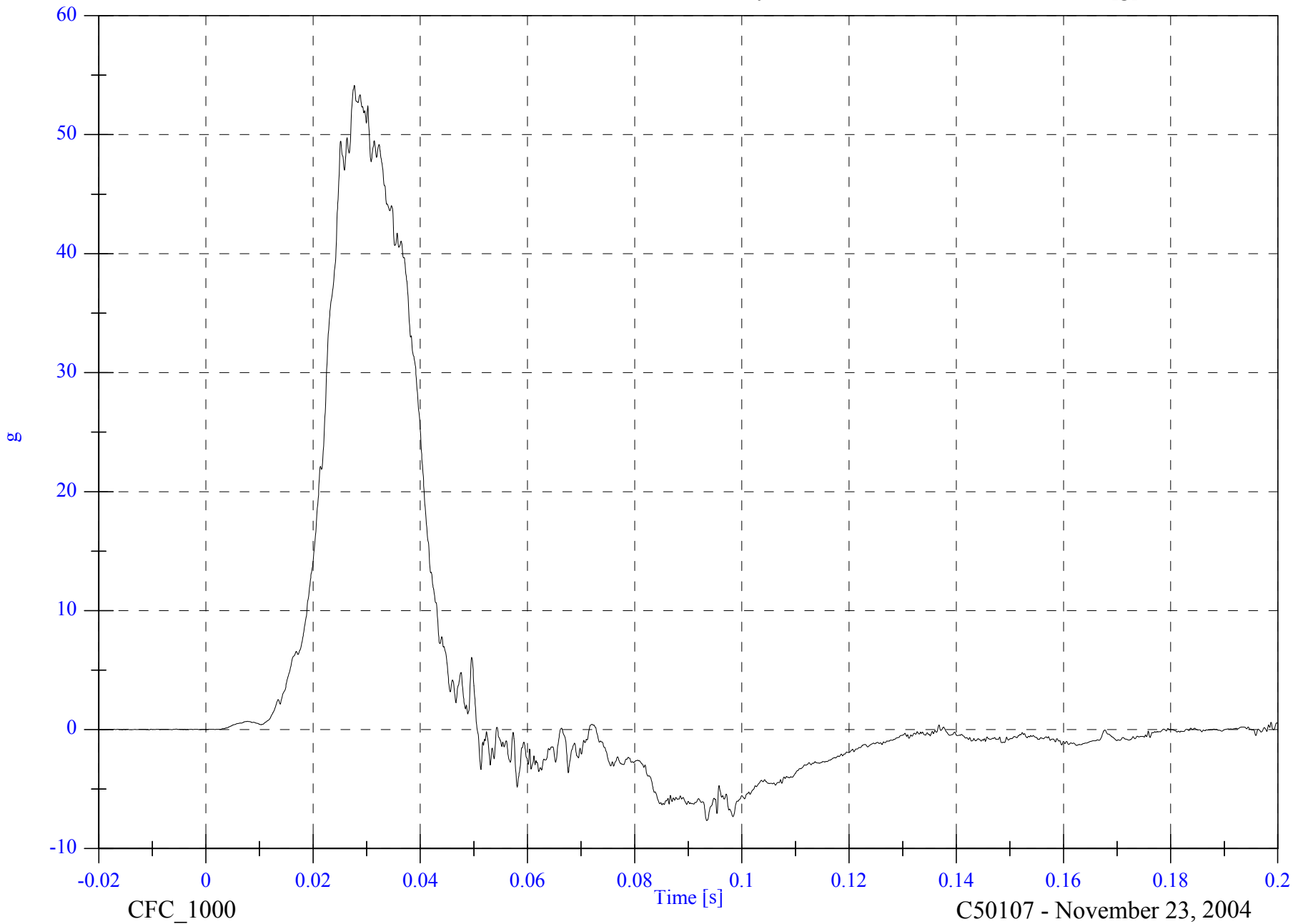
V2P1 Pelvic Ry

Max: 54.1 [g] at 0.028 [s]

Min: -7.6 [g] at 0.093 [s]

B-123

8675-F214-20



CFC\_1000

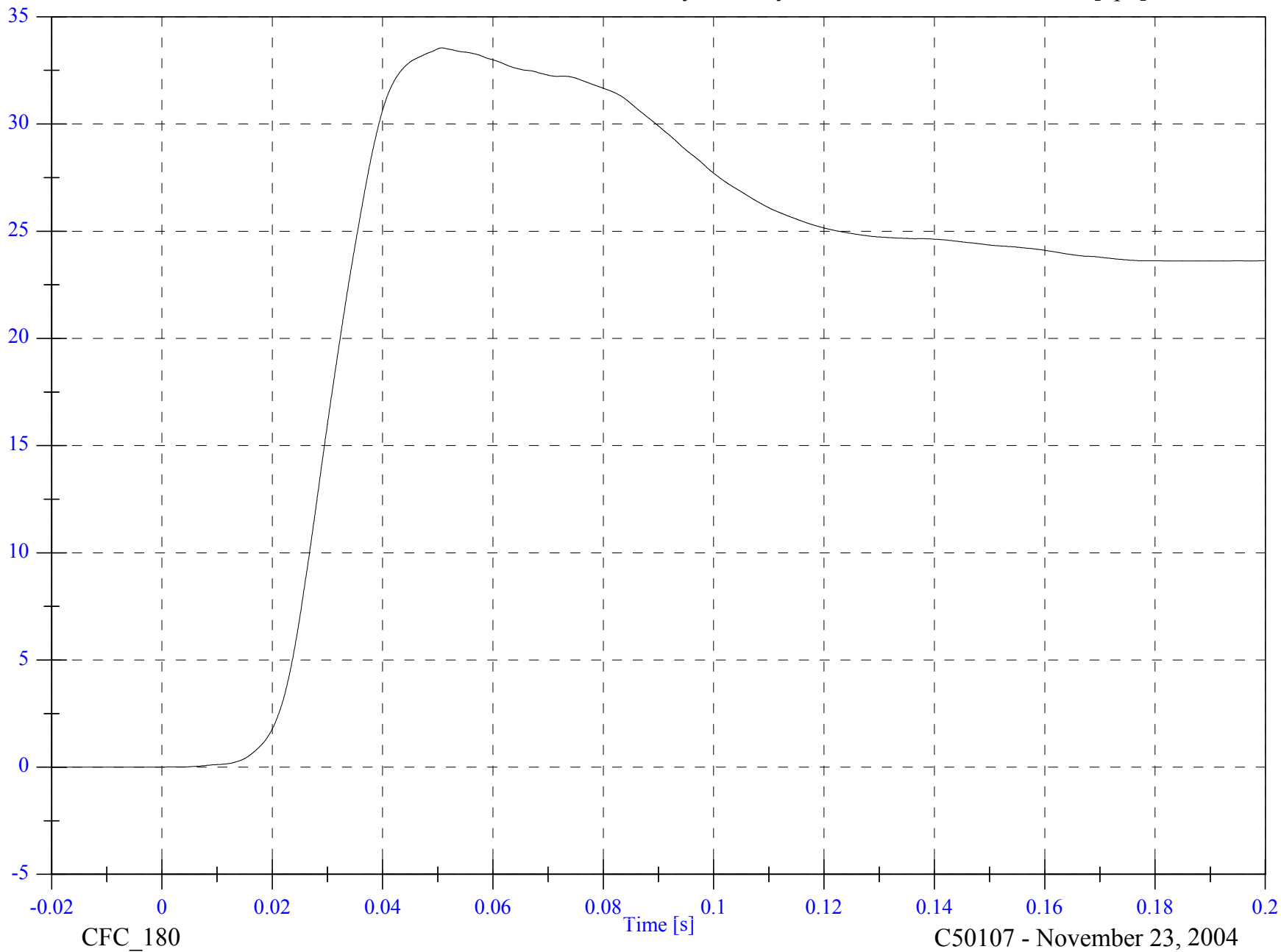
C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2P1 Pelvic Ry Velocity

Max: 33.5 [kph] at 0.051 [s]

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



B-124

8675-F214-20

CFC\_180

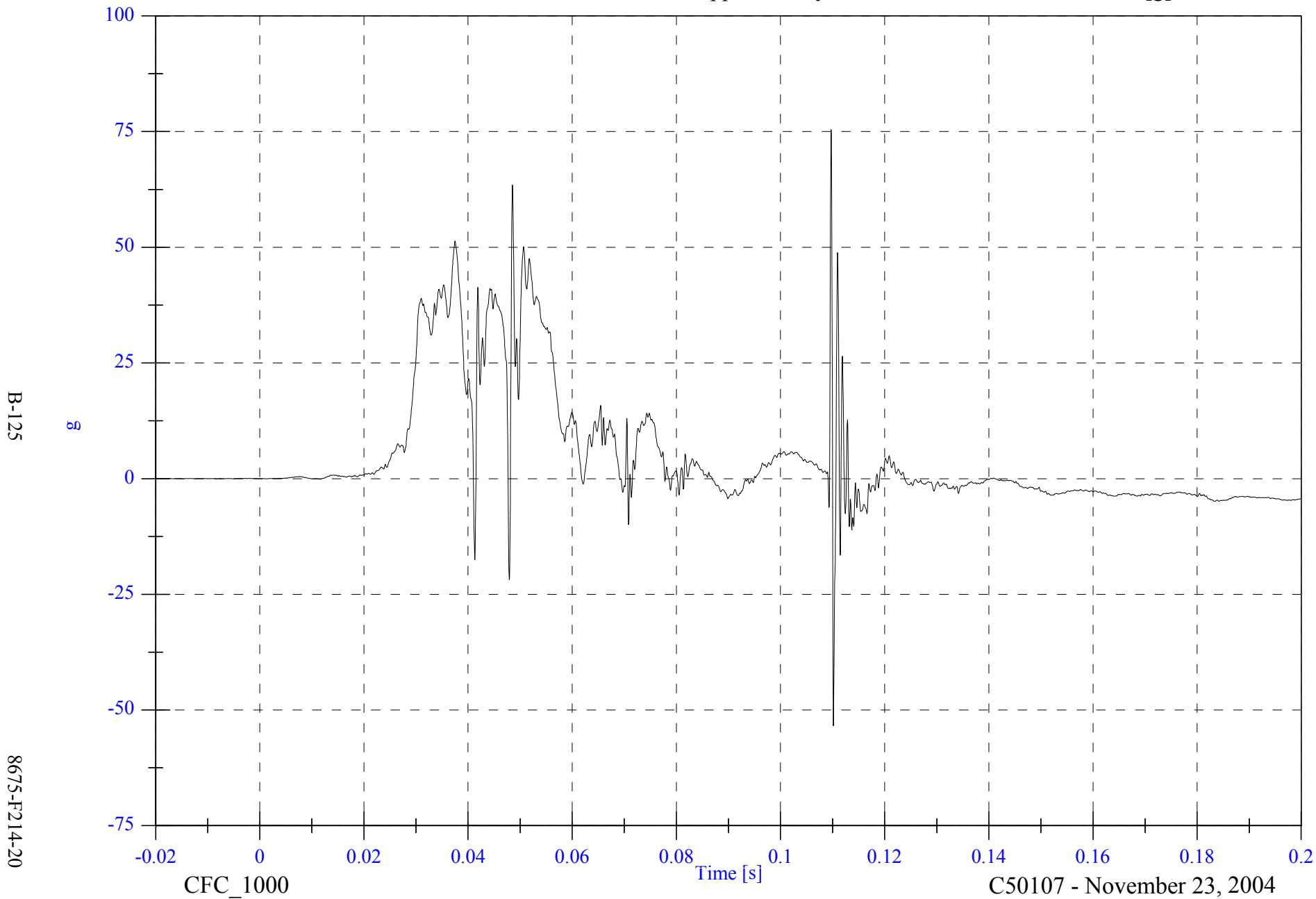
C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2P4 Upper Rib Ry

Max: 75.4 [g] at 0.110 [s]

Min: -53.4 [g] at 0.110 [s]



B-125

8675-F214-20

CFC\_1000

Time [s]

C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

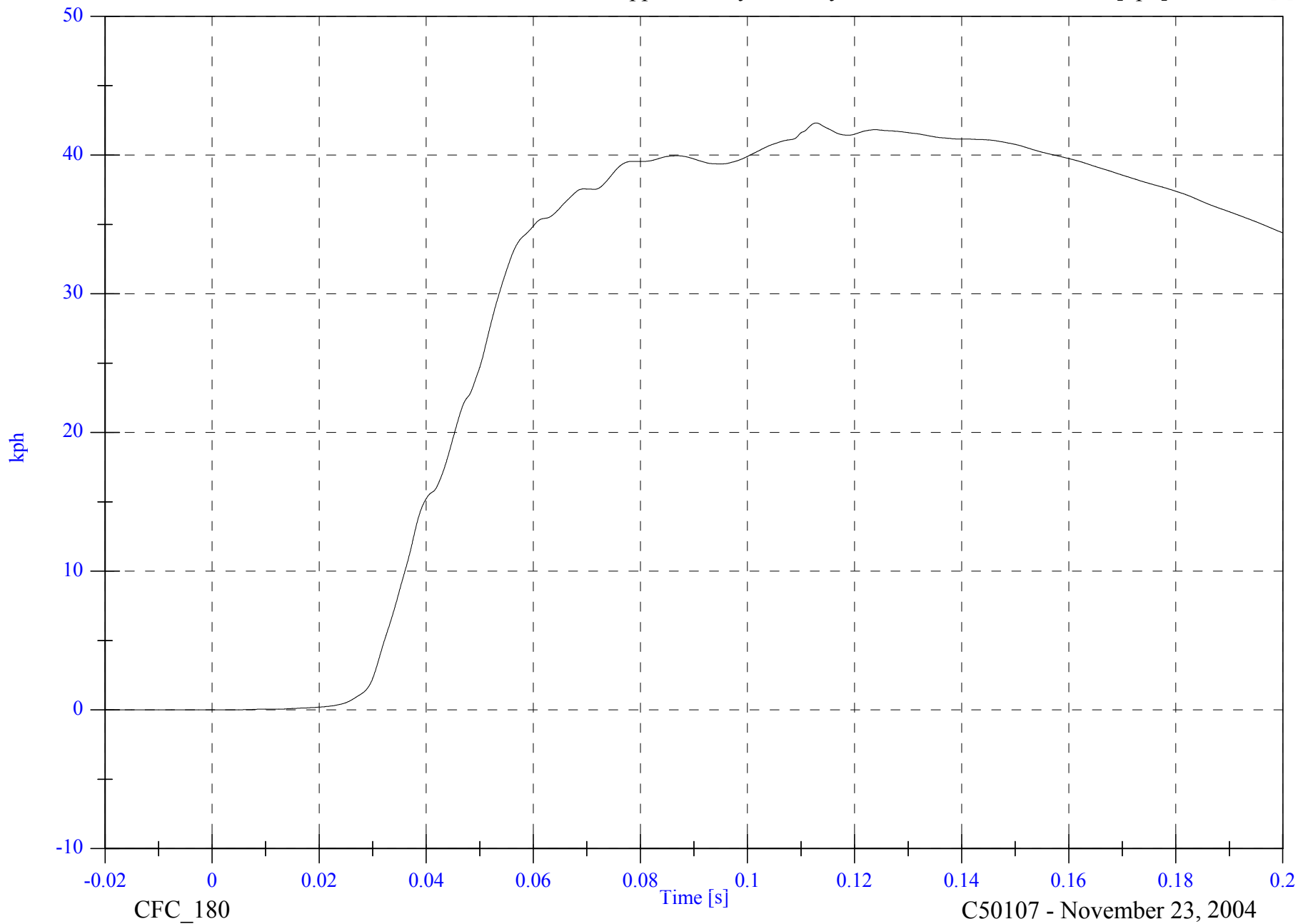
V2P4 Upper Rib Ry Velocity

Max: 42.3 [kph] at 0.113 [s]

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

B-126

8675-F214-20



2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

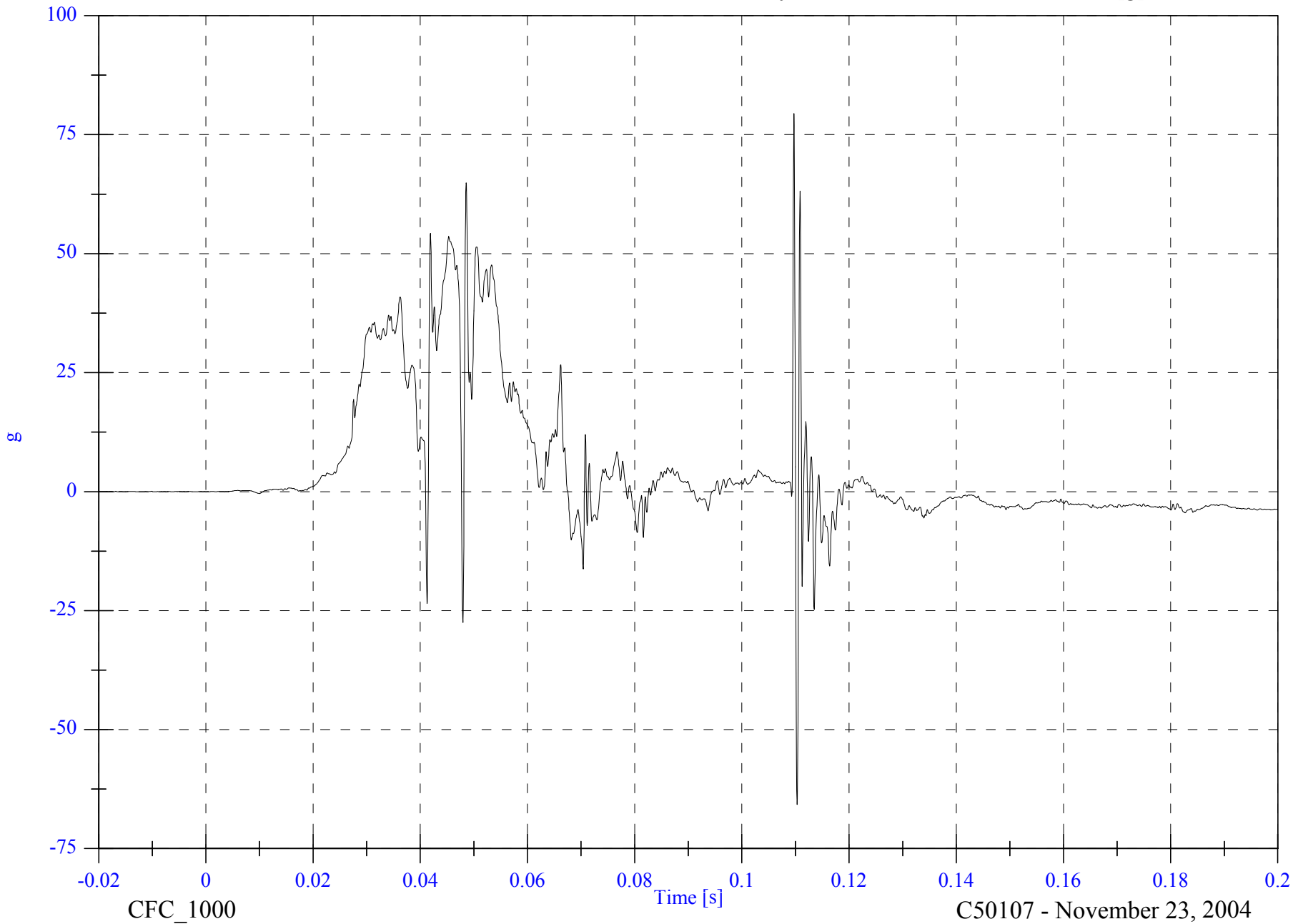
V2P4 Lower Rib Ry

Max: 79.4 [g] at 0.110 [s]

Min: -65.8 [g] at 0.110 [s]

B-127

8675-F214-20



2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

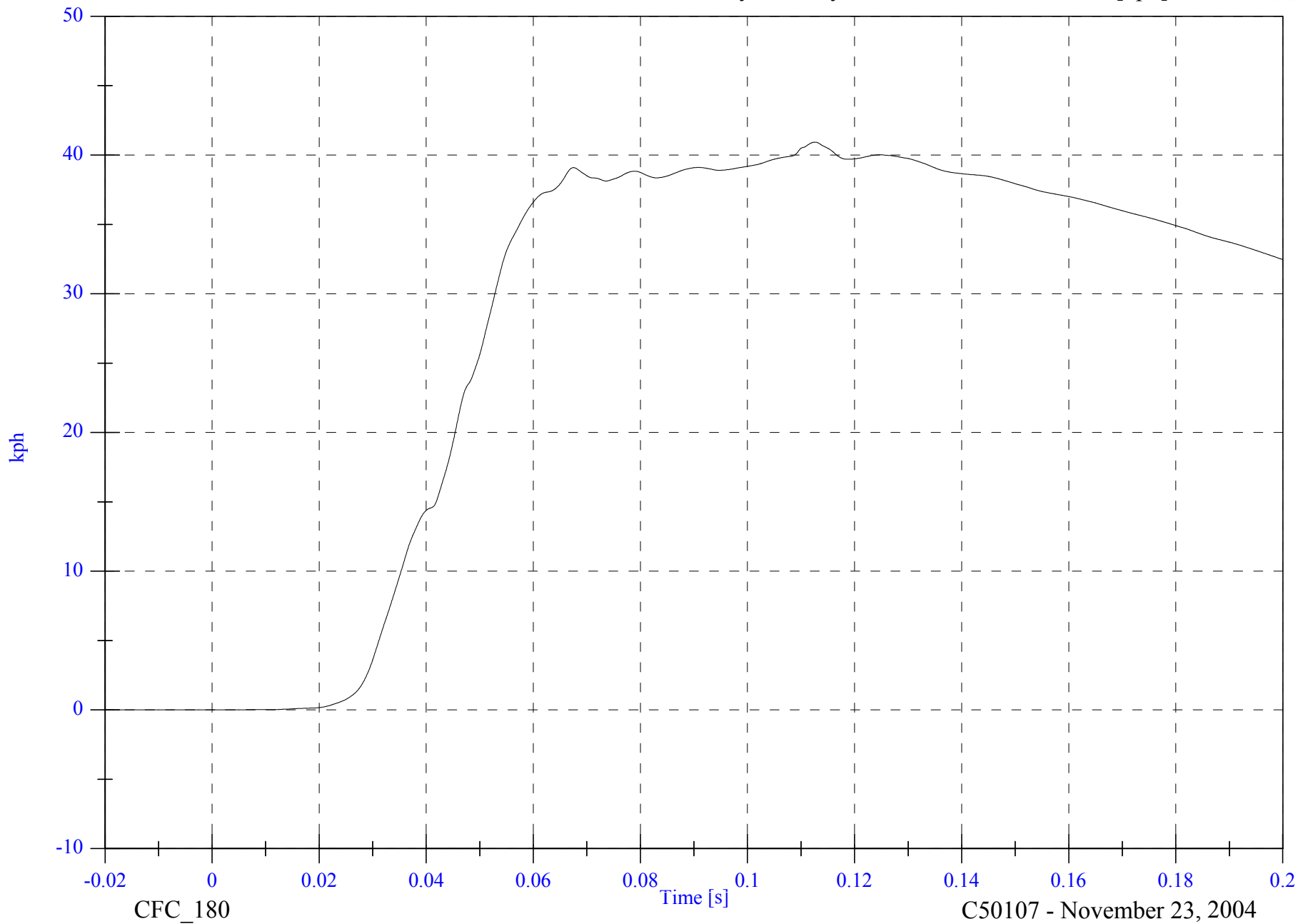
V2P4 Lower Rib Ry Velocity

Max: 40.9 [kph] at 0.113 [s]

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

B-128

8675-F214-20



CFC\_180

C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

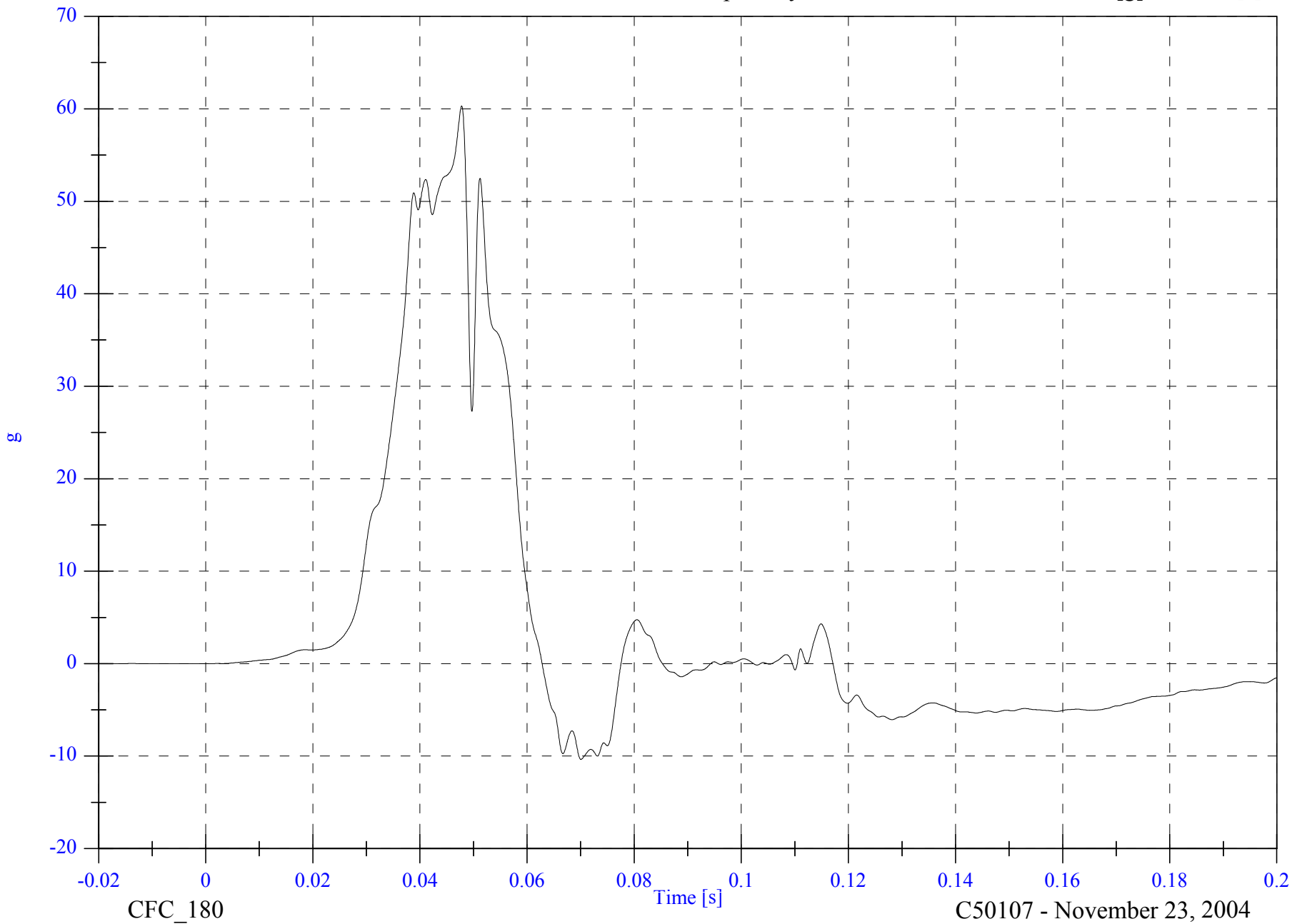
V2P4 Lower Spine Ry

Max: 60.3 [g] at 0.048 [s]

Min: -10.4 [g] at 0.070 [s]

B-129

8675-F214-20



CFC\_180

C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

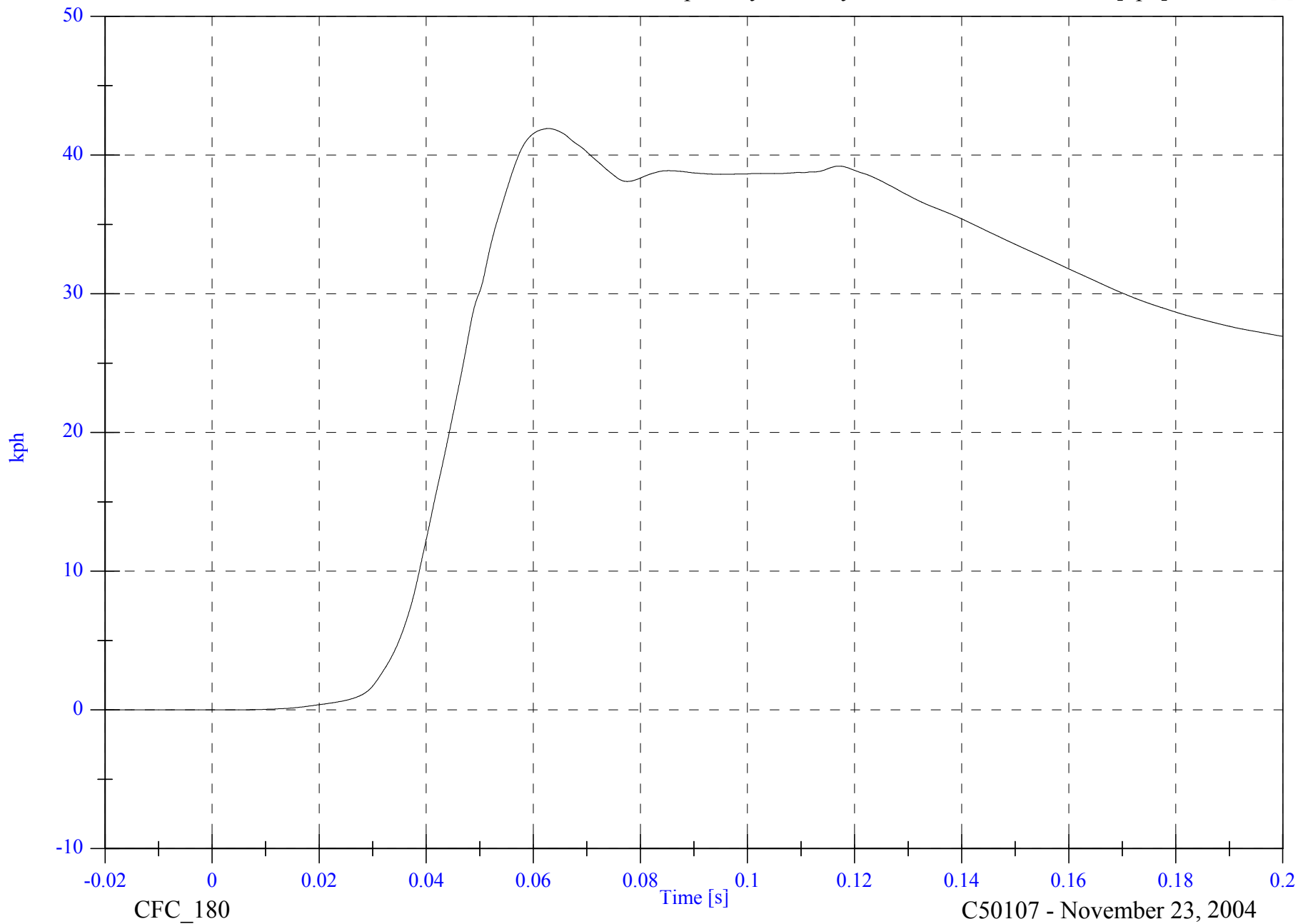
V2P4 Lower Spine Ry Velocity

Max: 41.9 [kph] at 0.063 [s]

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

B-130

8675-F214-20



CFC\_180

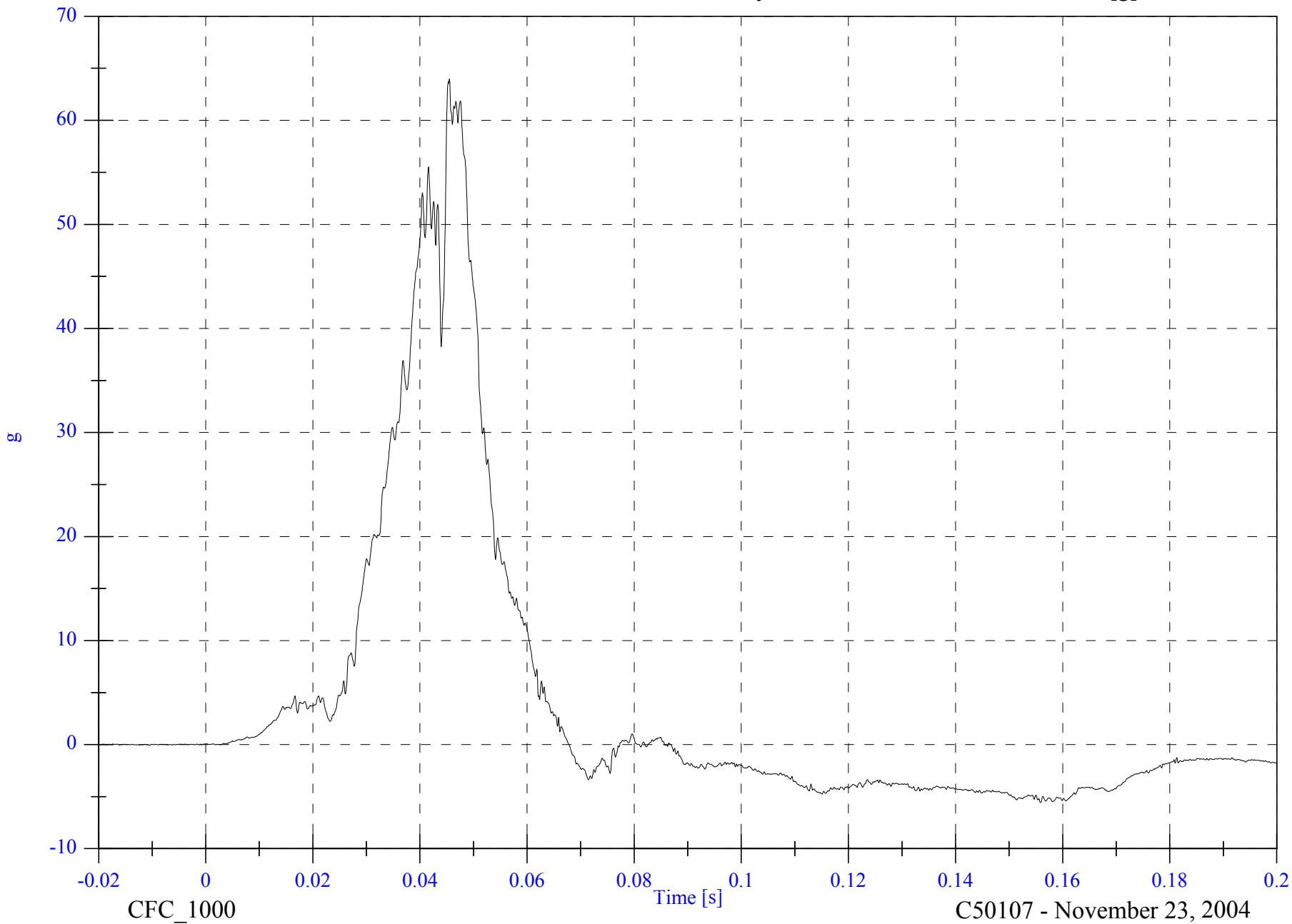
C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2P4 Pelvic Ry

Max: 64.0 [g] at 0.045 [s]

Min: -5.6 [g] at 0.156 [s]



B-131

8675-F214-20

CFC\_1000

C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

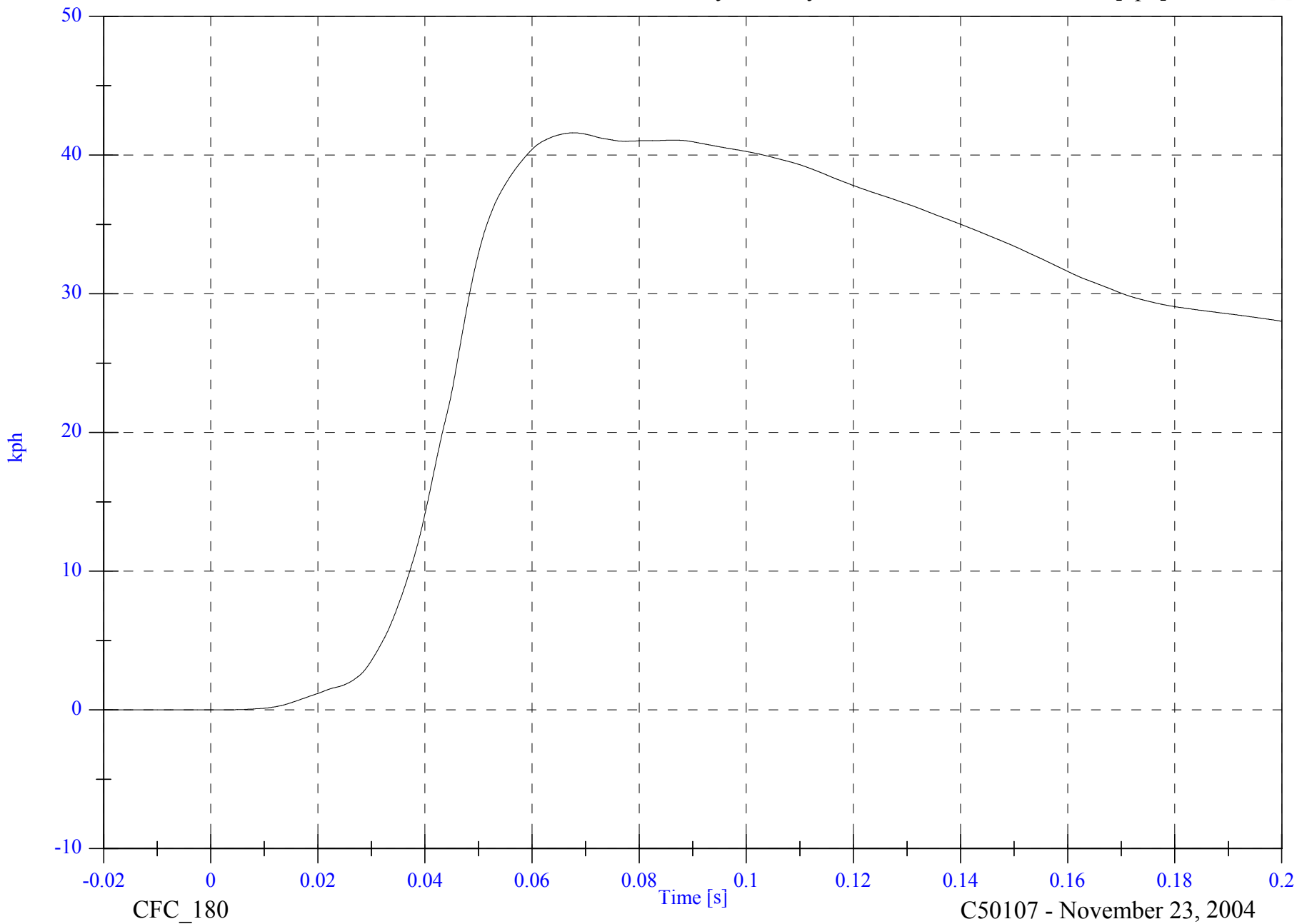
V2P4 Pelvic Ry Velocity

Max: 41.6 [kph] at 0.068 [s]

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

B-132

8675-F214-20



CFC\_180

C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

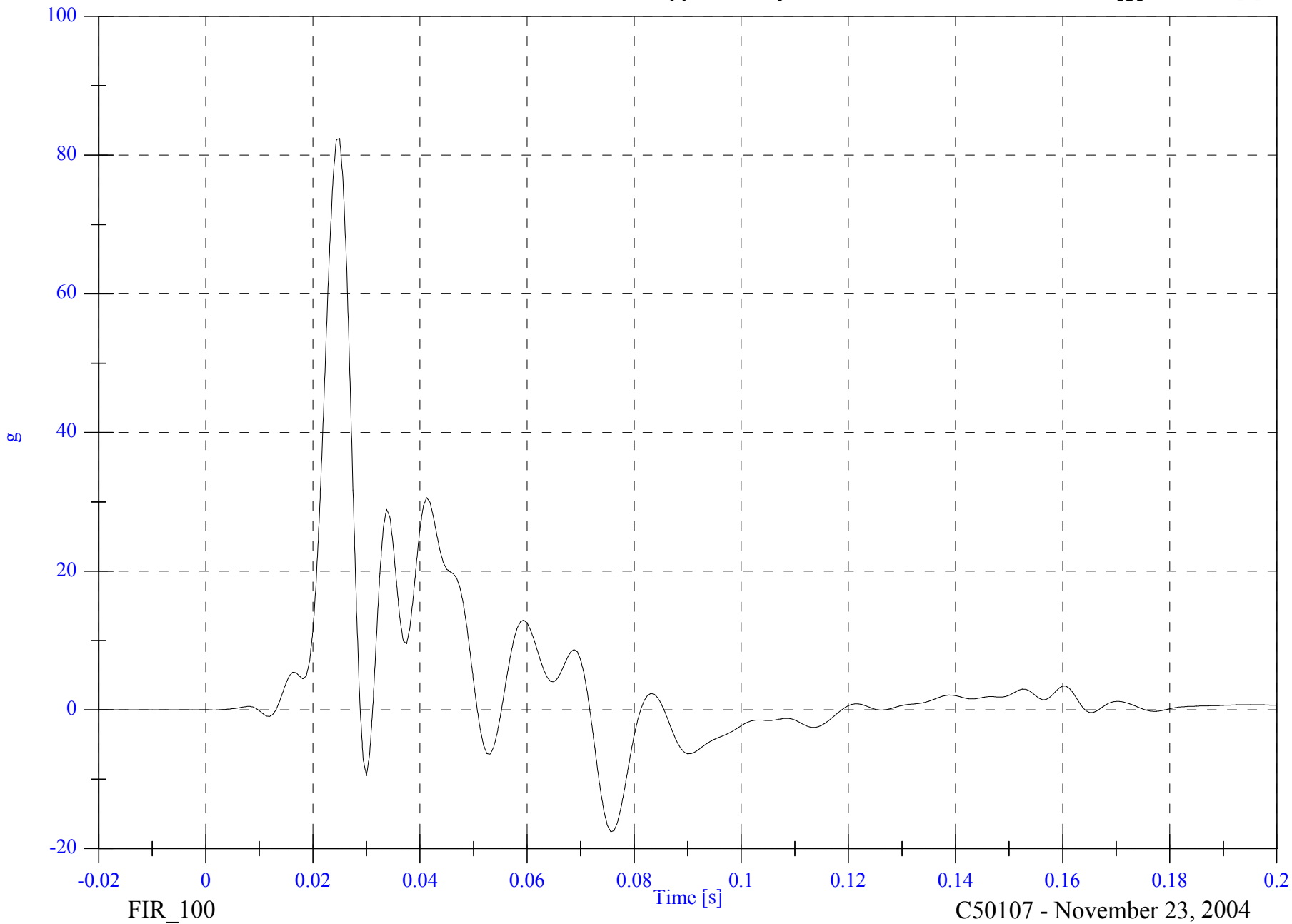
V2P1 Upper Rib Ry

Max: 82.4 [g] at 0.025 [s]

Min: -17.6 [g] at 0.076 [s]

B-133

8675-F214-20



FIR\_100

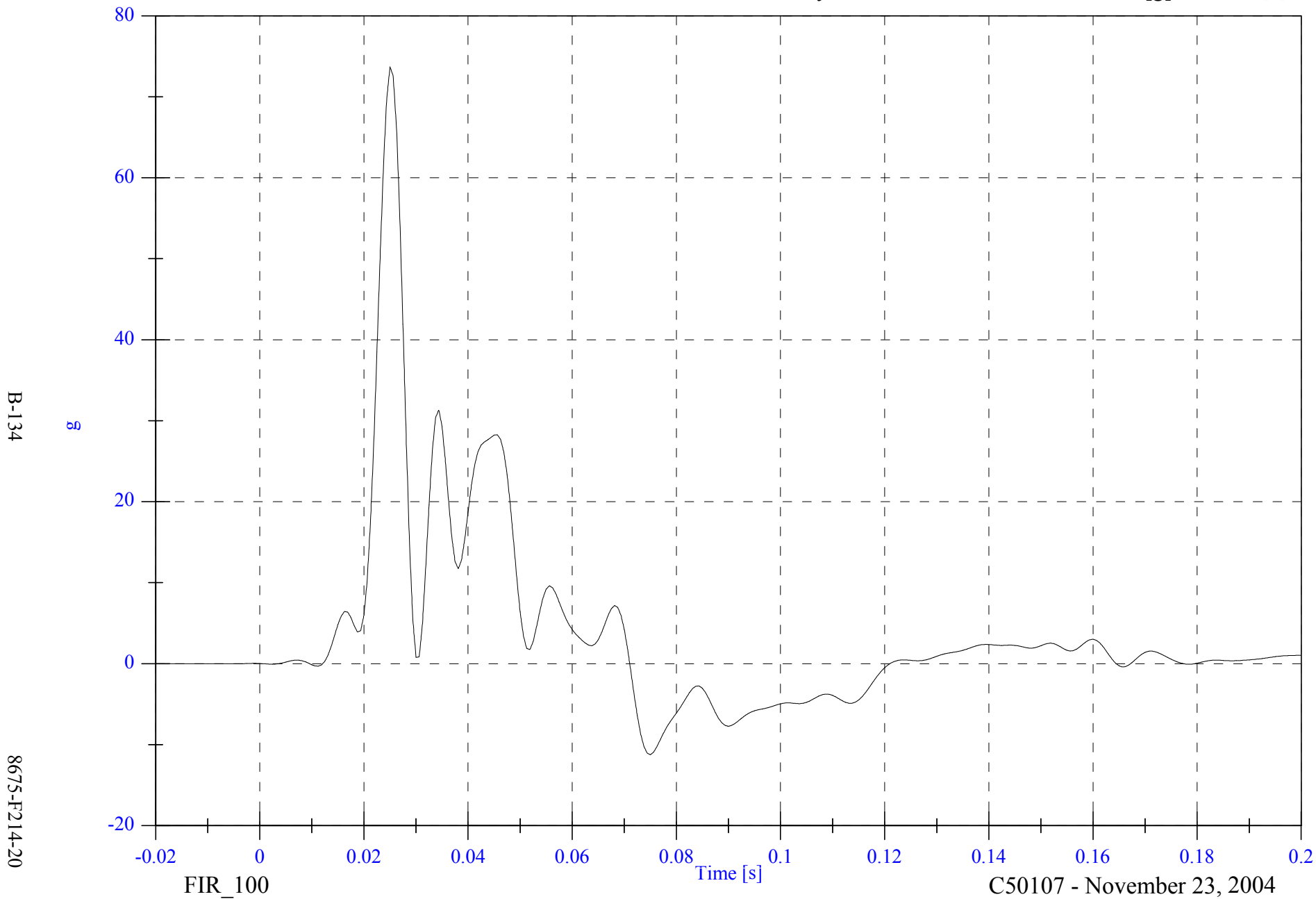
C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2P1 Lower Rib Ry

Max: 73.7 [g] at 0.025 [s]

Min: -11.2 [g] at 0.075 [s]



2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2P1 Lower Spine Ry

Max: 67.2 [g] at 0.029 [s]

Min: -16.4 [g] at 0.068 [s]



2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

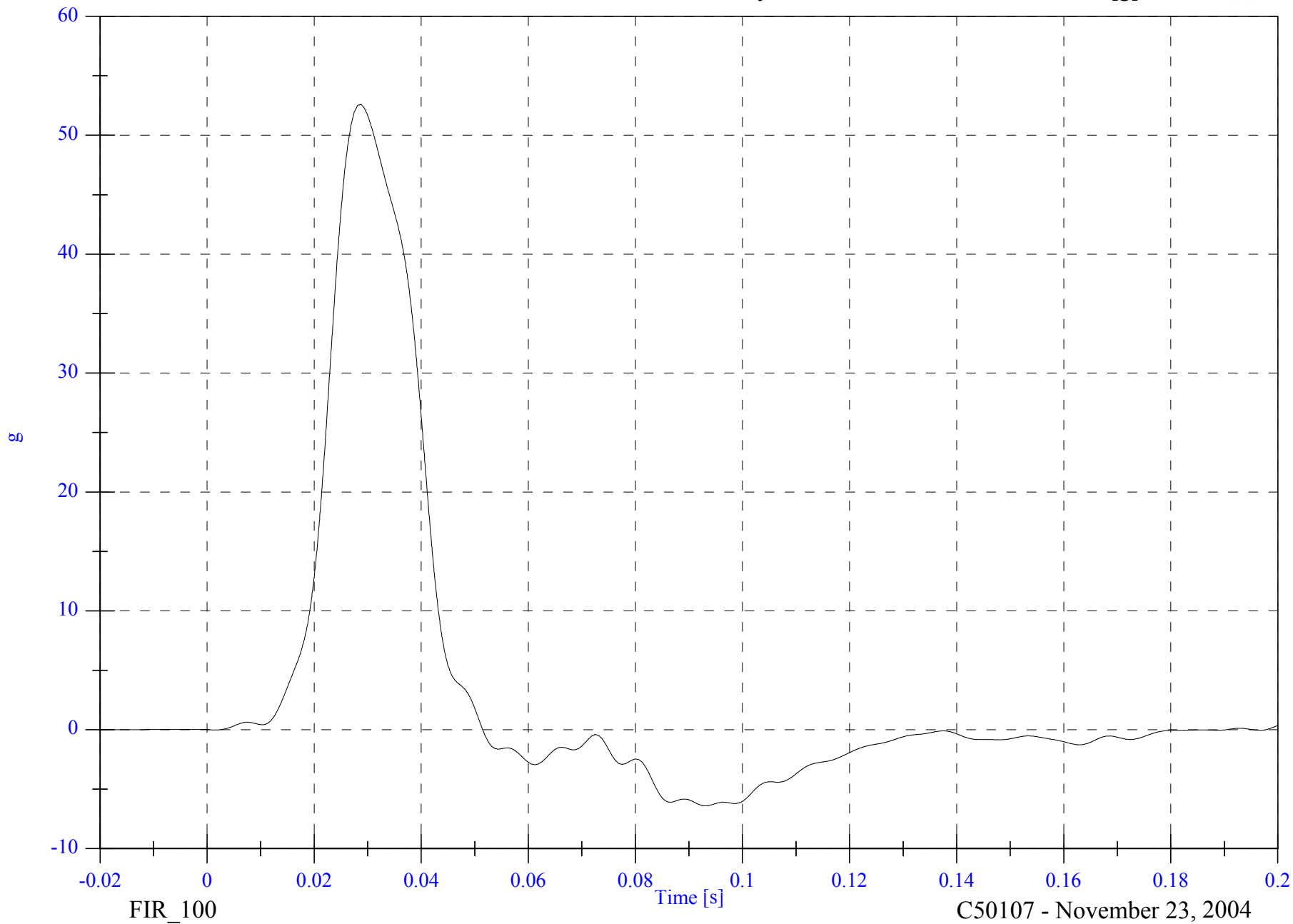
V2P1 Pelvic Ry

Max: 52.6 [g] at 0.029 [s]

Min: -6.4 [g] at 0.093 [s]

B-136

8675-F214-20



2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

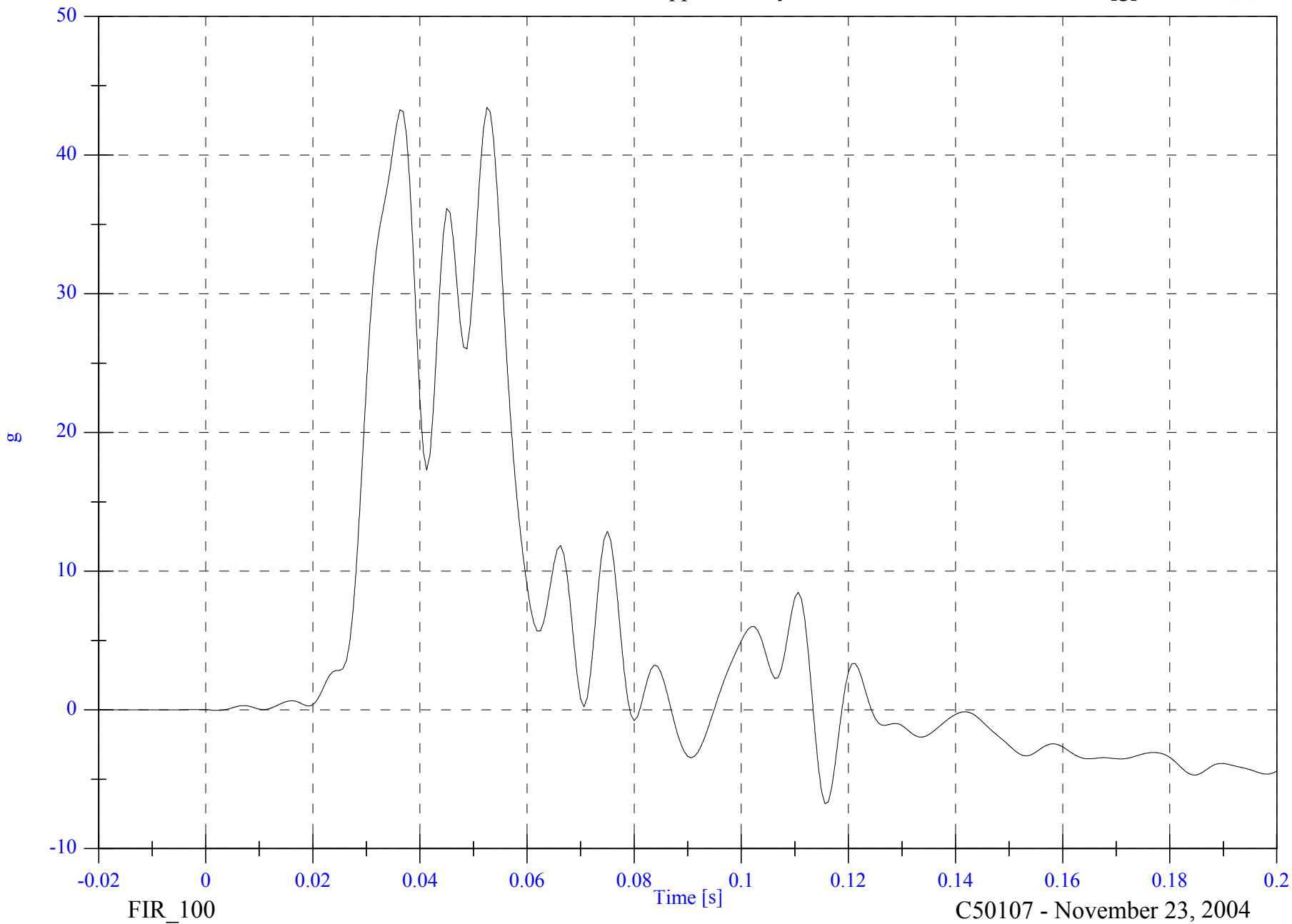
V2P4 Upper Rib Ry

Max: 43.4 [g] at 0.052 [s]

Min: -6.8 [g] at 0.116 [s]

B-137

8675-F214-20



2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

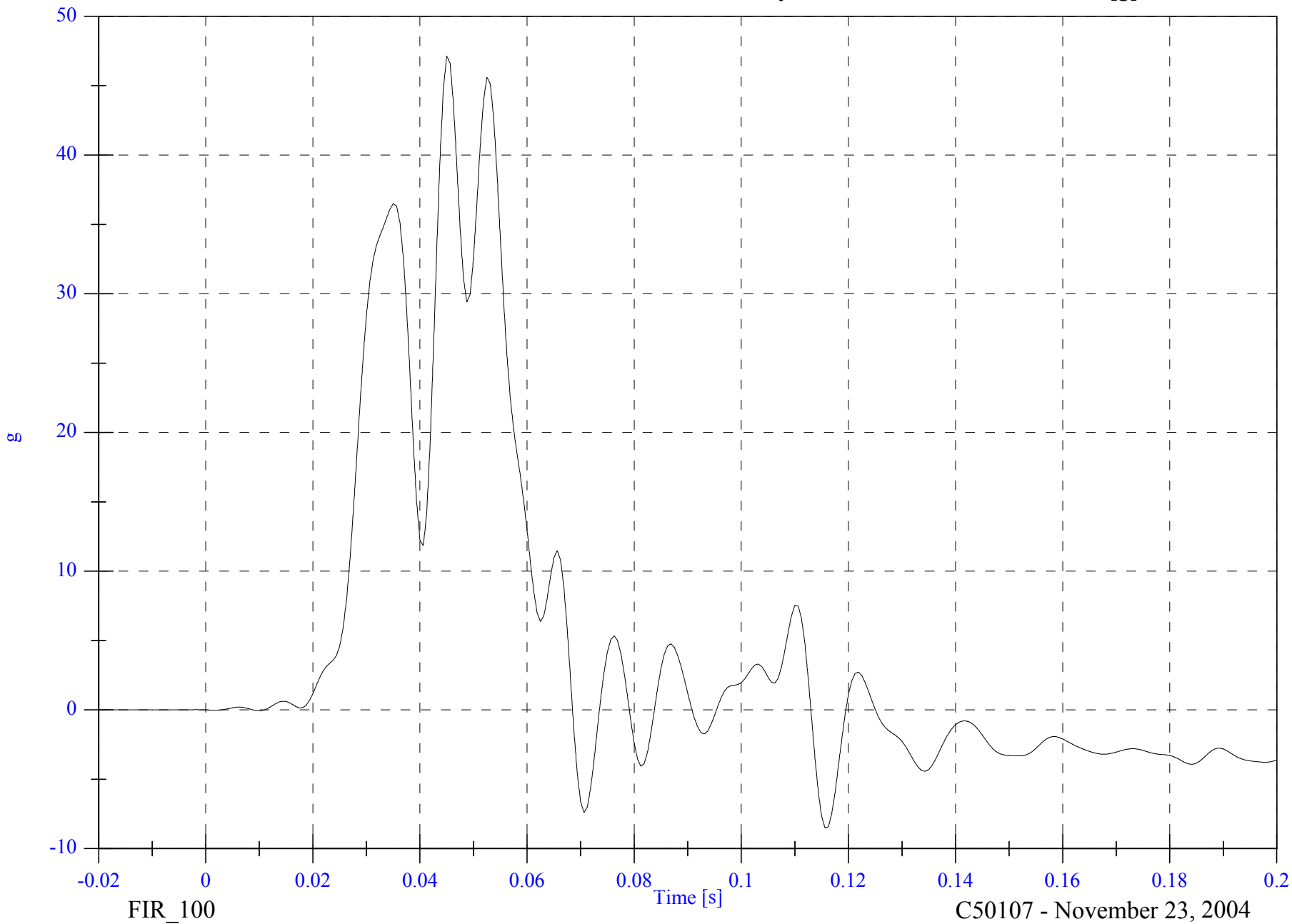
V2P4 Lower Rib Ry

Max: 47.1 [g] at 0.045 [s]

Min: -8.5 [g] at 0.116 [s]

B-138

8675-F214-20



2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

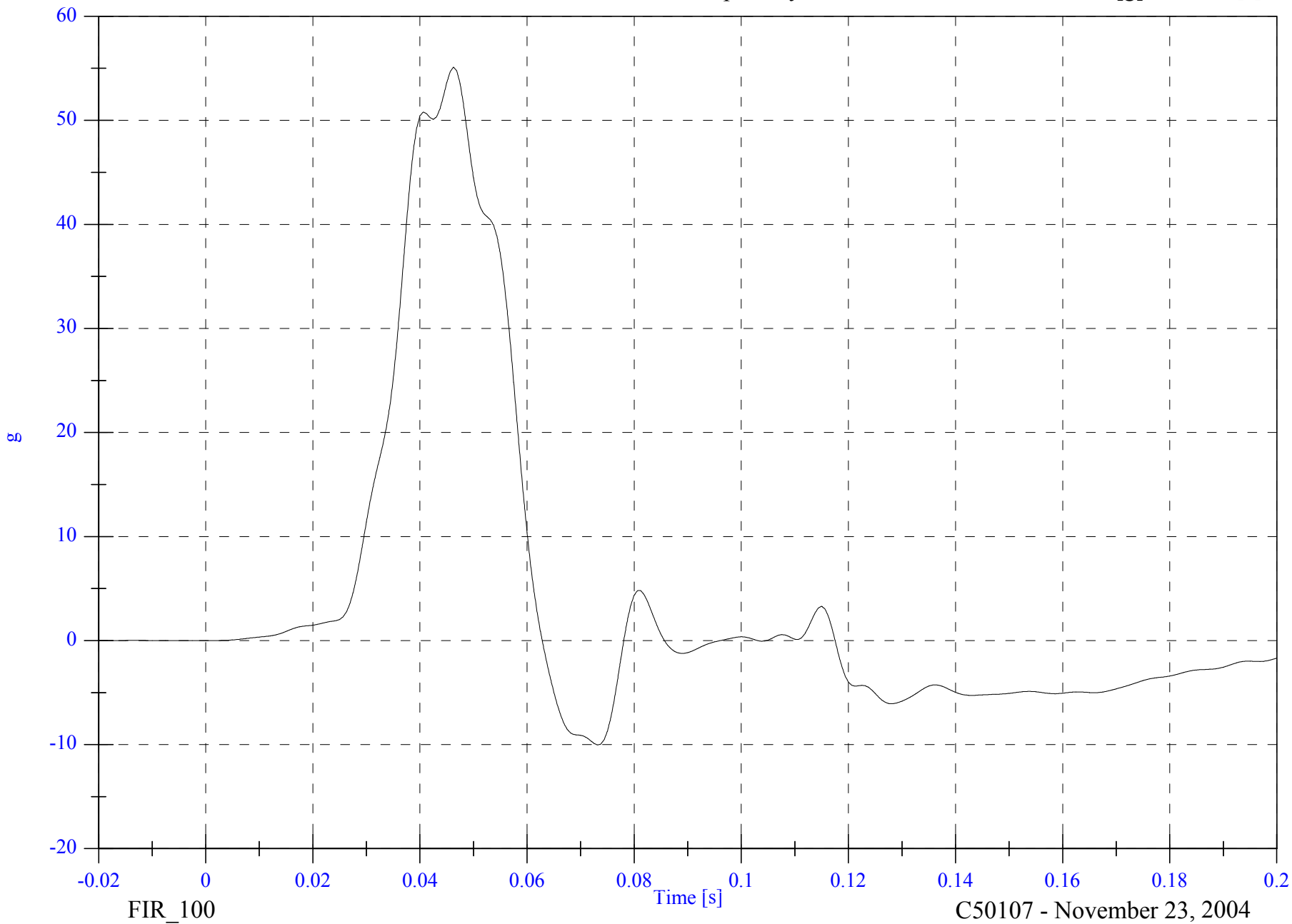
V2P4 Lower Spine Ry

Max: 55.1 [g] at 0.046 [s]

Min: -10.0 [g] at 0.073 [s]

B-139

8675-F214-20



FIR\_100

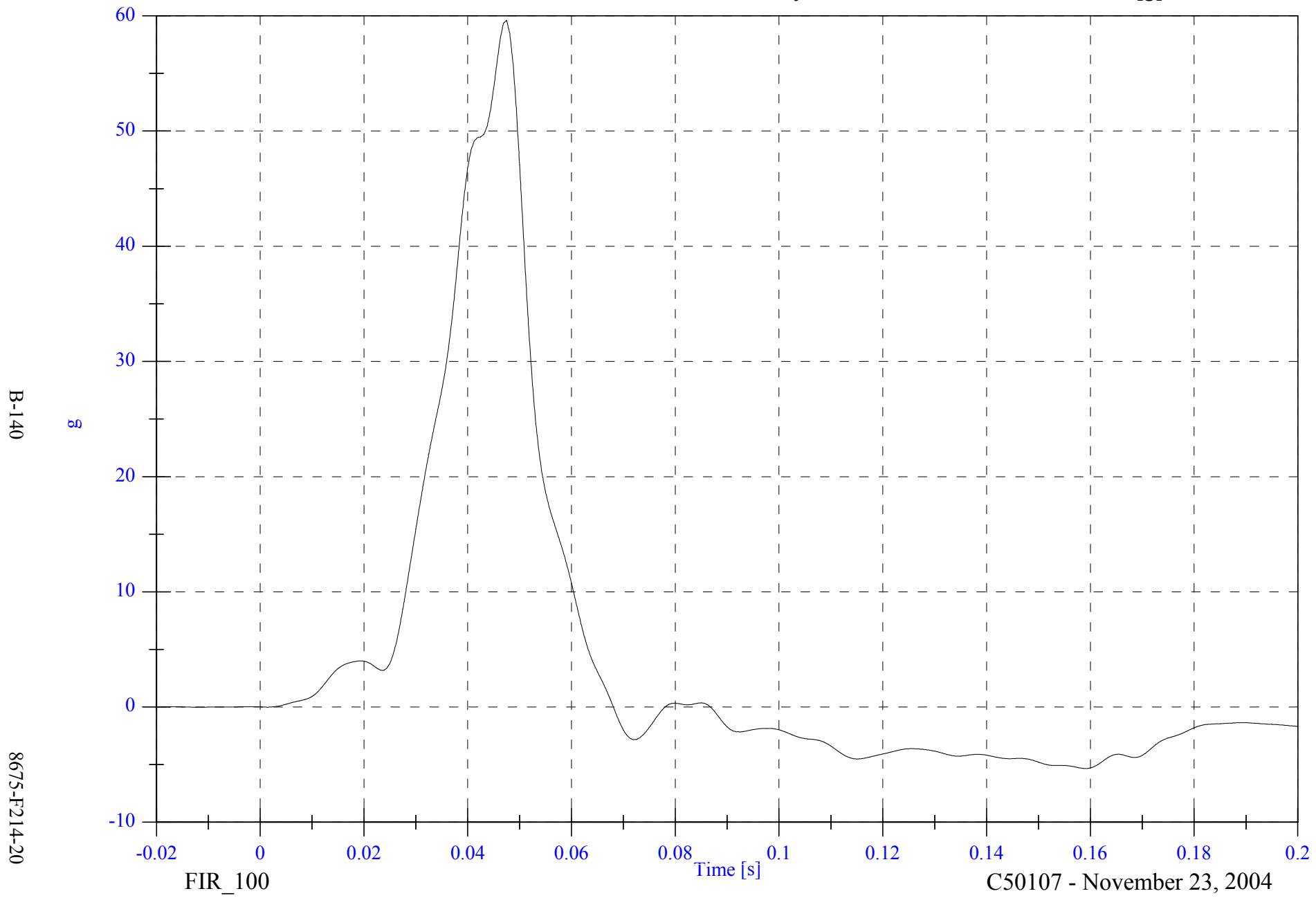
C50107 - November 23, 2004

2005 FMVSS 214D Indicant Test 1 - 2005 Pontiac G6

V2P4 Pelvic Ry

Max: 59.6 [g] at 0.047 [s]

Min: -5.3 [g] at 0.159 [s]



**APPENDIX C**

**SID HYBRID III CONFIGURATION AND PERFORMANCE VERIFICATION DATA**

**SUMMARY**  
**SID H3 PRE & POST TEST CALIBRATION**  
**CONFIGURED FOR LEFT SIDE IMPACT**

Date: November 18, 2004

Sequential Test Number:

4,4

Laboratory Technician:

B. Swiecicki

TEST PARAMETER	SPECIFICATION	SID H3 269		SID H3 270	
		PRE TEST	POST TEST	PRE TEST	POST TEST
SH- Seated Height (mm)	889 - 909	902	902	902	902
RH- Rib Height (mm)	501 - 521	503	503	503	503
HP- Hip Pivot Height (mm)	99 ref.	99	99	99	99
RD- Rib from Back Line (mm)	229 - 241	234	234	234	234
KV- Knee Pivot from Back Line (mm)	511 - 526	518	518	513	513
SW- Knee Pivot to Floor (mm)	490 - 505	495	495	495	495
HW- Hip Width (mm)	356 - 391	379	379	384	384
<b>THORAX IMPACTS</b>					
TEMPERATURE (°C)	18.9 - 25.5	21.1	21.1	21.1	21.1
RELATIVE HUMIDITY (%)	10 - 70	37.00	33.00	37.00	33.00
PROBE SPEED (m/s)	4.27 - 4.33	4.28	4.27	4.28	4.29
UPPER RIB (g's)	37 - 46	38.41	38.72	41.02	42.20
LOWER RIB (g's)	37 - 46	38.14	40.23	39.88	41.58
LOWER SPINE (g's)	15 - 22	19.18	19.30	20.70	21.64
<b>PELVIS IMPACT</b>					
TEMPERATURE (°C)	18.9 - 25.5	21.1	21.1	21.1	21.1
RELATIVE HUMIDITY (%)	10 - 70	37.00	33.00	37.00	33.00
PROBE SPEED (m/s)	4.27 - 4.33	4.28	4.28	4.28	4.31
PELVIS (g's)	40 - 60	46.23	46.53	50.94	54.52

**REMARKS:** None

**CALIBRATION TEST RESULTS**

**PRE-TEST**

**SID H3 NO.: 269**

**CONFIGURED FOR LEFT SIDE IMPACT**

**CALIBRATION TEST RESULTS SUMMARY  
PRE-TEST**

**CONFIGURED FOR LEFT SIDE IMPACT**

SID H3 Serial No.: 269 Sequential Test Number: 4  
Date: November 18, 2004 Laboratory Technician: B. Swiecicki

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

\* Test not required for SID certification.

**REMARKS:** None

**EXTERNAL DIMENSIONS  
PRE-TEST**

**CONFIGURED FOR LEFT SIDE IMPACT**

SID H3 Serial No.: 269 Sequential Test Number: 4  
Date: November 18, 2004 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 - 909	902
RH- Rib Height (mm)	502 - 520	503
HP- Hip Pivot Height (mm)	99 ref.	99
RD- Rib from Back Line (mm)	229 - 241	234
KH- Knee Pivot from Back Line (mm)	511 - 526	518
KV- Knee Pivot to Floor (mm)	490 - 505	495
HW- Hip Width (mm)	356 - 391	379

**REMARKS:** None

**Shock Impact - Low ( 3.05 m/s )**

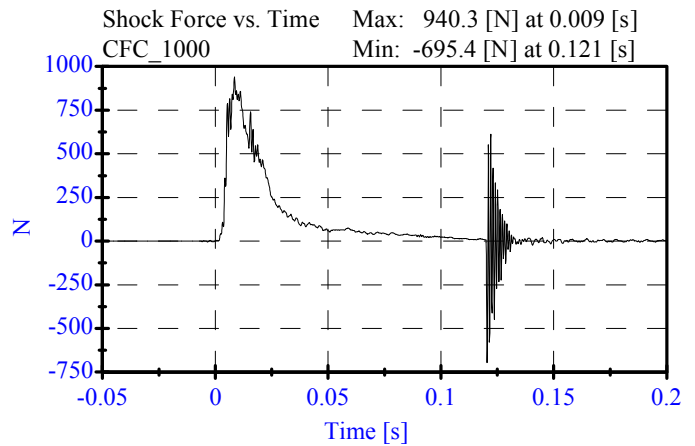
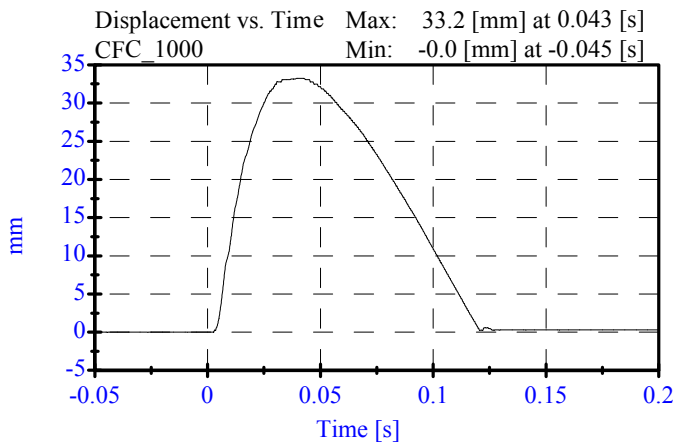
**PRE TEST**

**CONFIGURED FOR LEFT SIDE IMPACT**

ATD Serial No: 269  
Date: 07-23-04

Sequential Test Number: 1 File: 269SL 07-23-04  
Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	40.00 %	Passed
Displacement:	30.00-35.00 mm	33.24 mm	Passed
Maximum Force:	836.00-1125.00 N	940.32 N	Passed
Impact Test Velocity:	3.05 m/s		
Damper Identification:	269		
Damper Setting:	5		



Shock Impact - Med ( 4.27 m/s )

PRE TEST

CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 269

Date: 07-23-04

Sequential Test Number: 1 File: 269SM 07-23-04

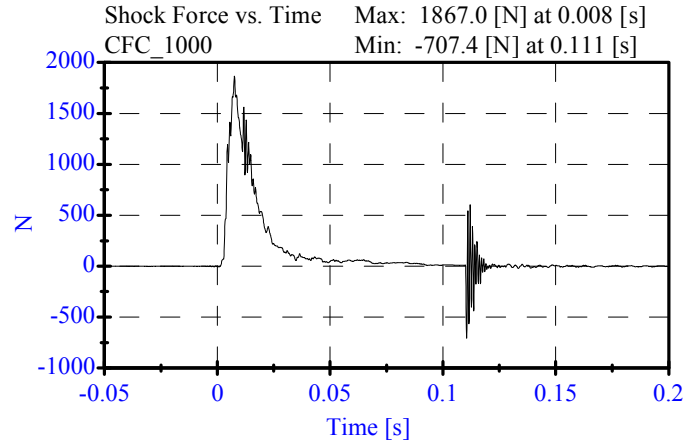
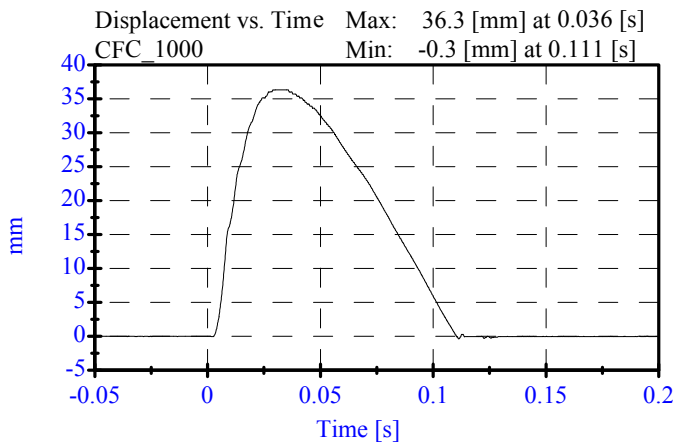
Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	40.00 %	Passed
Displacement:	32.00-37.00 mm	36.33 mm	Passed
Maximum Force:	1730.00-2099.00 N	1866.97 N	Passed

Impact Test Velocity: 4.27 m/s

Damper Identification: 269

Damper Setting: 5



**Shock Impact - High ( 6.10 m/s )**

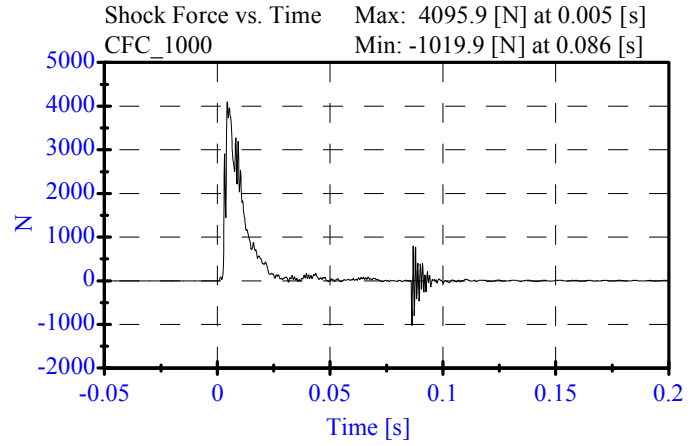
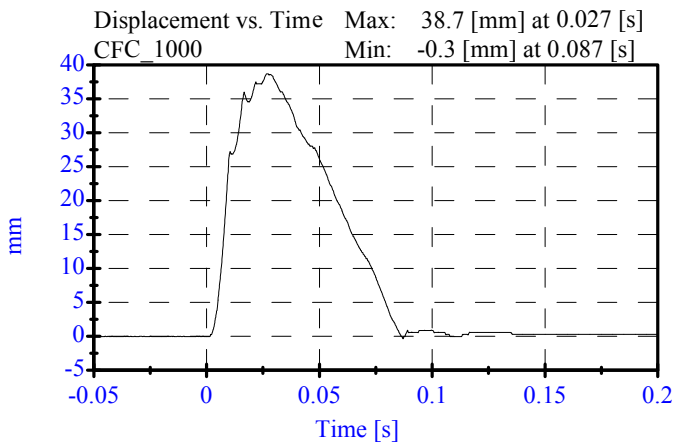
**PRE TEST**

**CONFIGURED FOR LEFT SIDE IMPACT**

ATD Serial No: 269  
Date: 07-23-04

Sequential Test Number: 1 File: 269SH6 07-23-04  
Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	40.00 %	Passed
Displacement:	33.00-40.00 mm	38.71 mm	Passed
Maximum Force:	3741.00-4448.00 N	4095.92 N	Passed
Impact Test Velocity:	6.10 m/s		
Damper Identification:	269		
Damper Setting:	5		

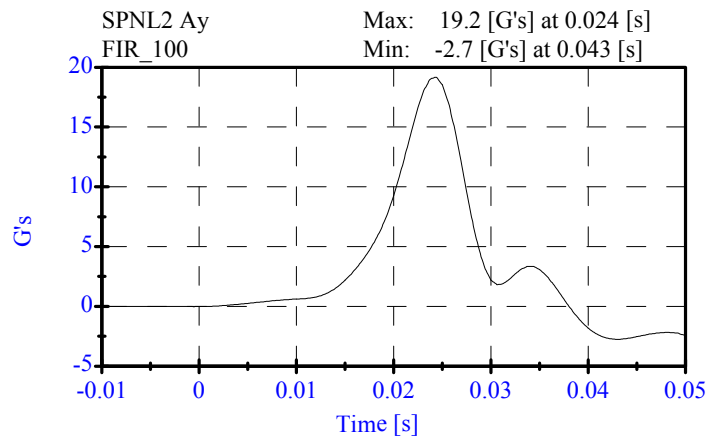
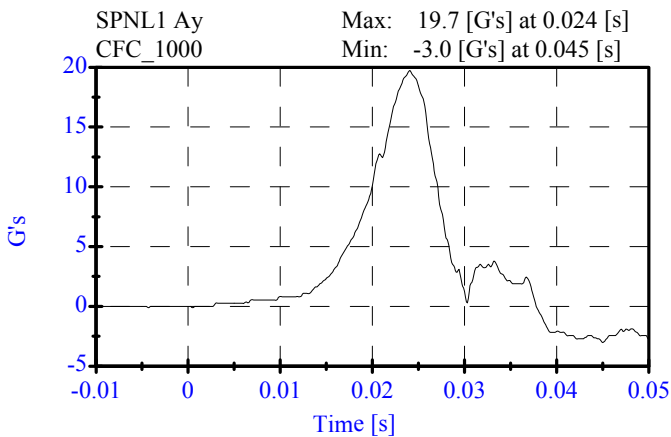
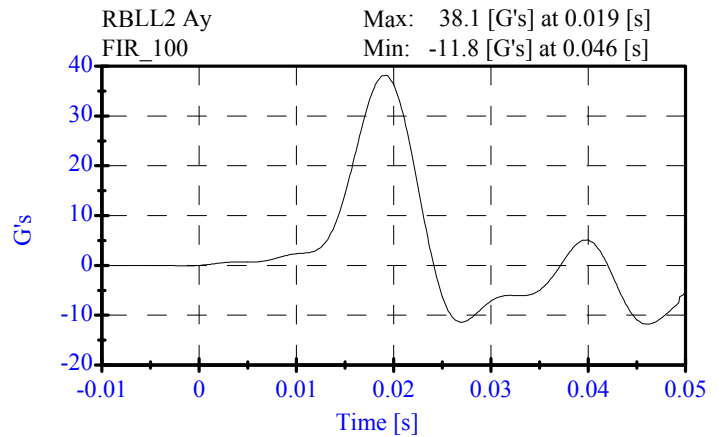
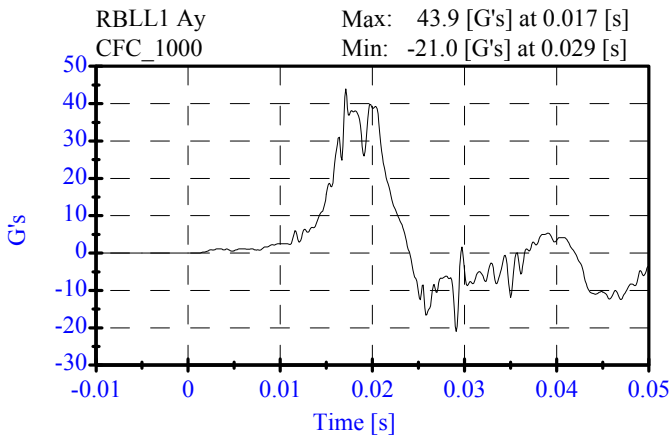
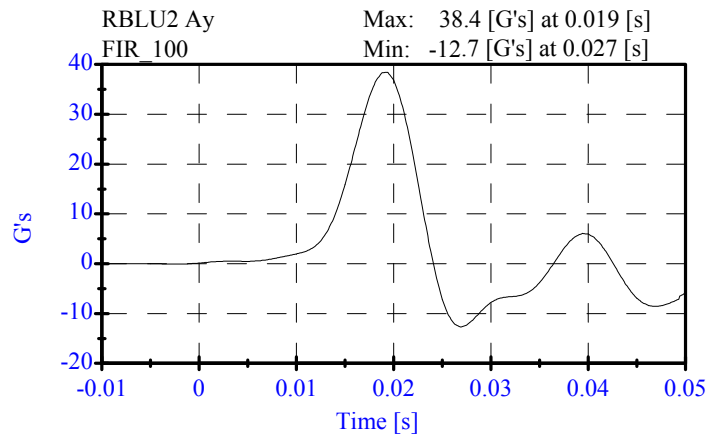
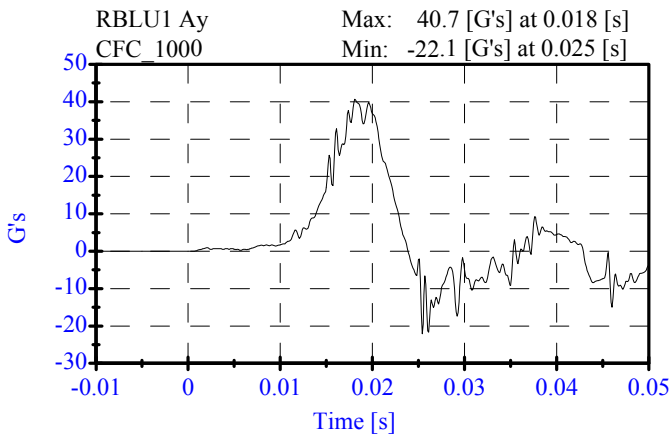


**Thorax Impact**  
**Pre-Test**  
**CONFIGURED FOR LEFT SIDE IMPACT**

ATD Serial No: 269  
 Date: November 18, 2004

Sequential Test Number: 1 File: 269T 11-18-04  
 Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	37.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.28 m/s	Passed
Upper Rib Acceleration:	37.00-46.00 G's	38.41 G's	Passed
Lower Rib Acceleration:	37.00-46.00 G's	38.14 G's	Passed
Lower Spine Acceleration:	15.00-22.00 G's	19.18 G's	Passed



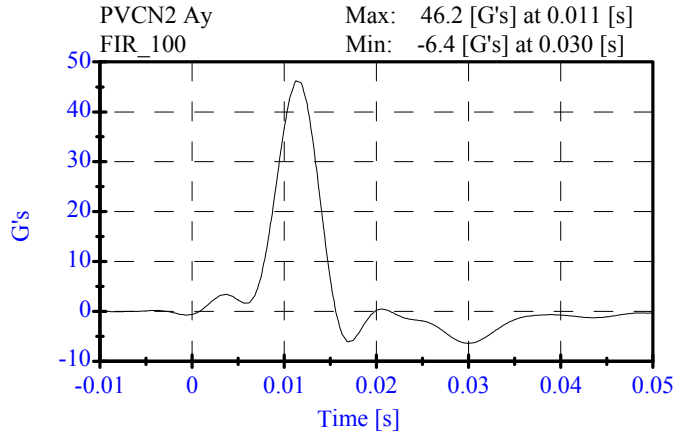
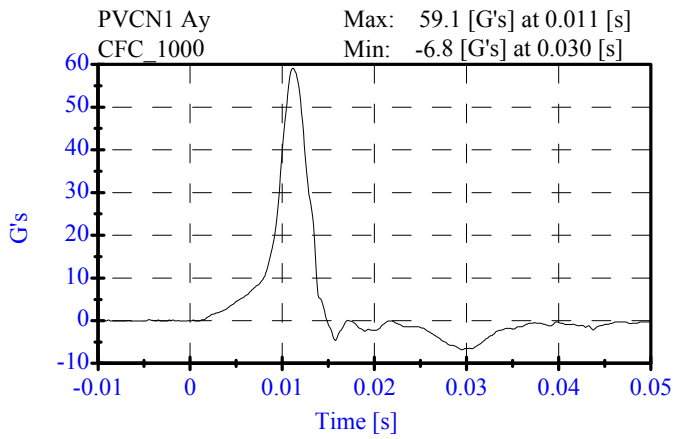
**Pelvic Impact  
Pre-Test**

**CONFIGURED FOR LEFT SIDE IMPACT**

ATD Serial No: 269  
Date: November 18, 2004

Sequential Test Number: 1 File: 269P 11-18-04  
Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	37.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.28 m/s	Passed
Pelvis Y Acceleration:	40.00-60.00 G's	46.23 G's	Passed
Time Above 20 Gs	3.0-7.0 ms	5.3 ms	Passed



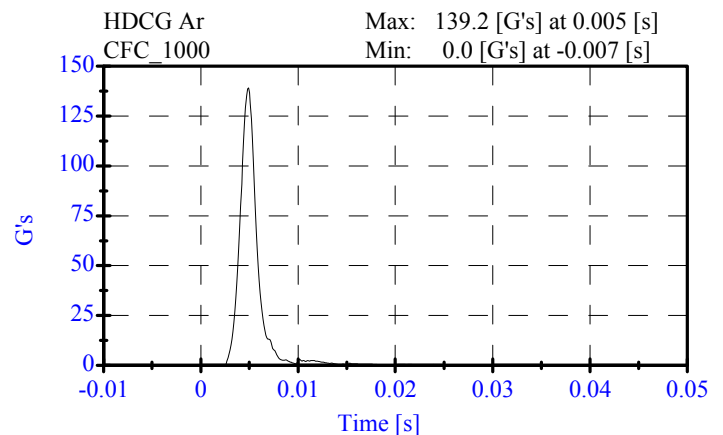
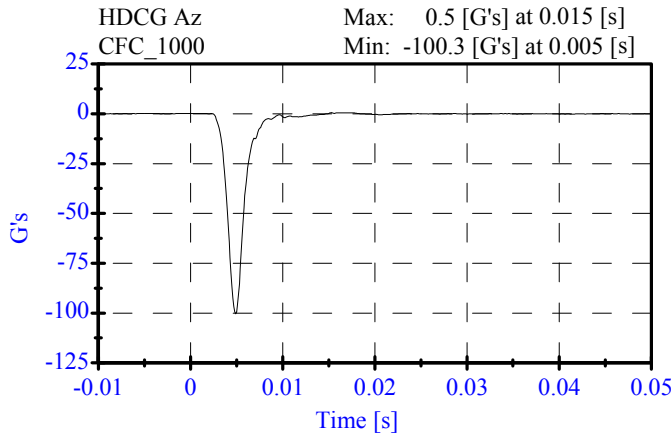
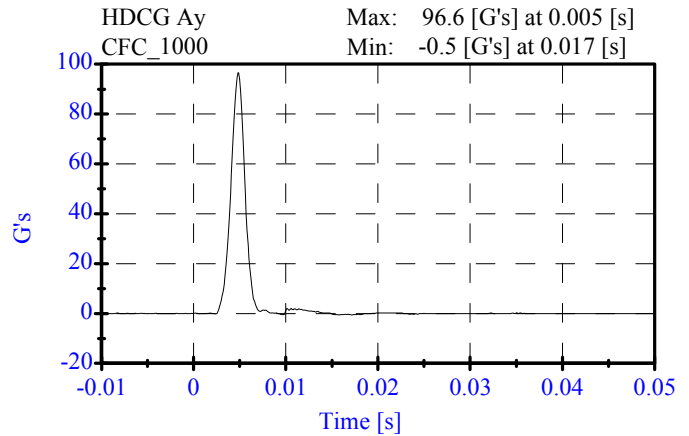
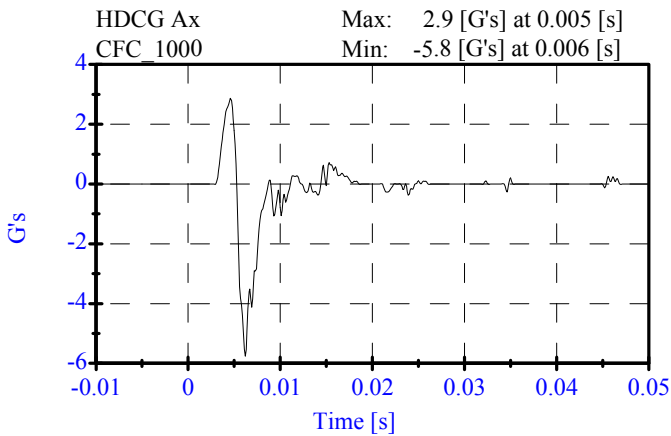
**Head Drop  
Pre-Test**

**CONFIGURED FOR LEFT SIDE IMPACT**

ATD Serial No: 269  
Date: November 17, 2004

Sequential Test Number: 1 File: 269H 11-17-04  
Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.6 C	21.1 C	Passed
Lab Humidity:	10-70 %	33.00 %	Passed
Peak Resultant Accel.:	120-150 Gs	139.21 Gs	Passed
Peak Lateral Accel.:	15 Gs Max	2.86 Gs	Passed
Curve PerCent NonModal:	< 15%	2.14 %	Passed



**Neck Test  
Pre-Test**

**CONFIGURED FOR LEFT SIDE IMPACT**

ATD Serial No: 269  
Date: November 17, 2004

Sequential Test Number: 1 File: 269N 11-17-04  
Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	20.6-22.2 C	21.1 C	Passed
Lab Humidity:	10-70 %	33.00 %	Passed
Impact Velocity:	6.89- 7.13 m/s	7.01 m/s	Passed
<b>PENDULUM DELTA V</b>			
Delta V at 10 ms:	1.96- 2.55 m/s	1.96 m/s	Passed
Delta V at 20 ms:	4.12- 5.10 m/s	4.15 m/s	Passed
Delta V at 30 ms:	5.73- 7.01 m/s	6.03 m/s	Passed
Delta V between 40-70 ms:	6.27- 7.64 m/s	7.12 m/s	Passed
<b>D PLANE ROTATION</b>			
Maximum Rotation:	66.0-82.0 Deg	69.39 Deg	Passed
Rotation Angle Decay:	58.0-67.0 ms	58.00 ms	Passed
<b>MOMENT ABOUT THE OCCIPITAL CONDYLE</b>			
Max Occipital Moment:	73.00- 88.00 N-m	86.56 N-m	Passed
Occipital Moment Decay:	49.0-64.0 ms	51.00 ms	Passed
<b>HEAD ROTATION TIME WITH RESPECT TO THE OCCIPITAL CONDYLE MOMENT</b>			
Moment to Rotation Peak:	2.0-16.0 ms	9.90 ms	Passed

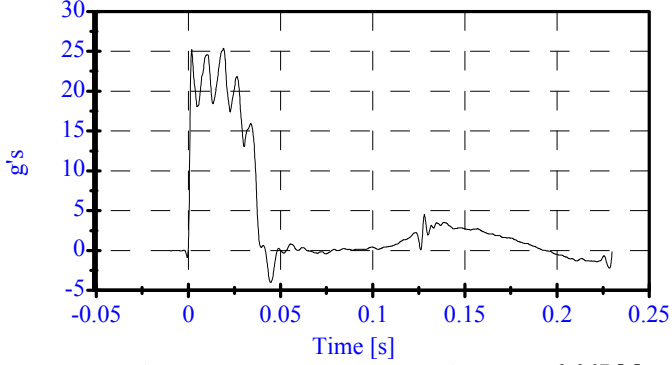
Neck Test  
Pre-Test

CONFIGURED FOR LEFT SIDE IMPACT

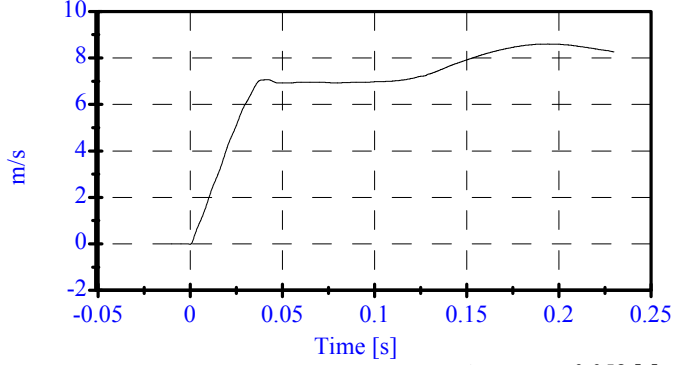
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Date: November 17, 2004

Sequential Test Number: 1 File: 269N 11-17-04  
Laboratory Technician: B. Swiecicki

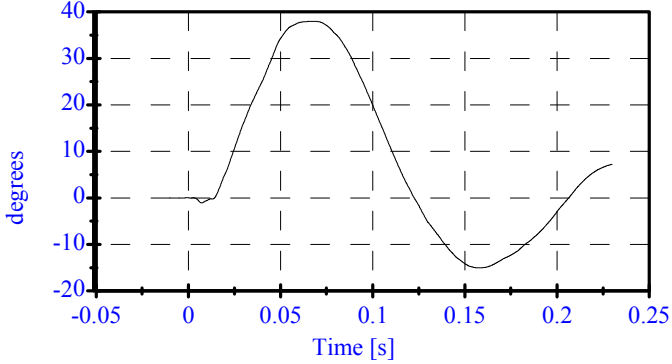
Pend Ax  
CFC\_180 Max: 25.4 [g's] at 0.019 [s]  
Min: -4.0 [g's] at 0.045 [s]



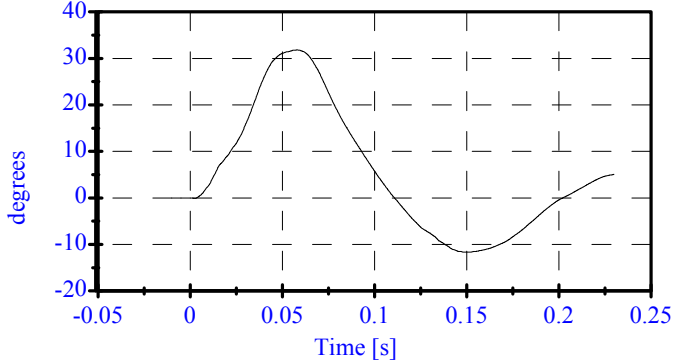
Pend Vx  
CFC\_180 Max: 8.6 [m/s] at 0.194 [s]  
Min: -0.0 [m/s] at -0.000 [s]



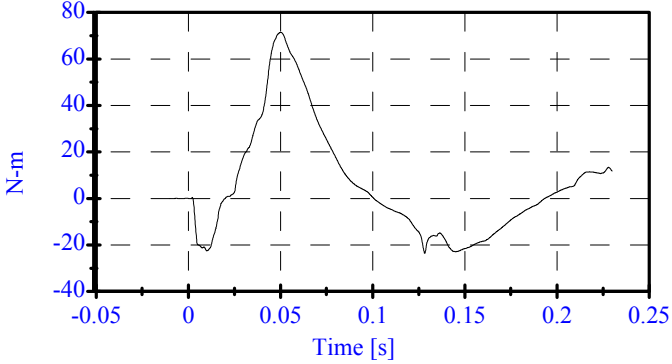
Head Rot  
CFC\_180 Max: 38.0 [degrees] at 0.067 [s]  
Min: -15.0 [degrees] at 0.158 [s]



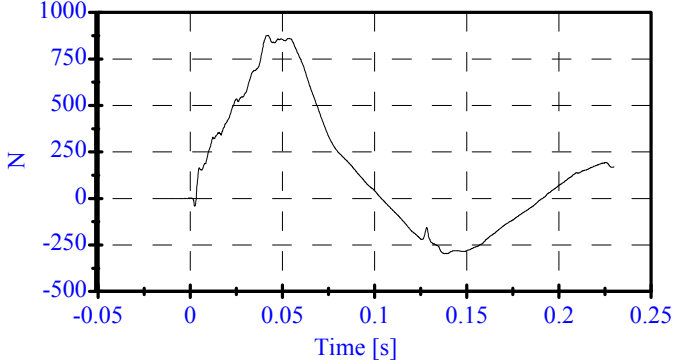
Arm Rot  
CFC\_180 Max: 31.8 [degrees] at 0.058 [s]  
Min: -11.7 [degrees] at 0.149 [s]



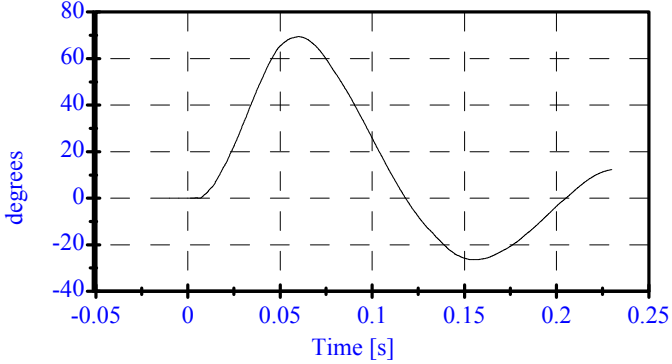
Neck Mx  
CFC\_600 Max: 71.4 [N-m] at 0.050 [s]  
Min: -23.7 [N-m] at 0.128 [s]



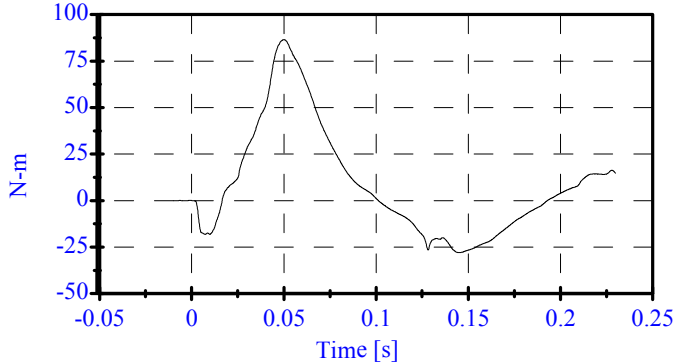
Neck Fy  
CFC\_1000 Max: 876.8 [N] at 0.042 [s]  
Min: -297.0 [N] at 0.138 [s]



Tot Rot  
CFC\_180 Max: 69.4 [degrees] at 0.060 [s]  
Min: -26.4 [degrees] at 0.156 [s]



MOCX  
Max: 86.6 [N-m] at 0.050 [s]  
Min: -27.9 [N-m] at 0.145 [s]



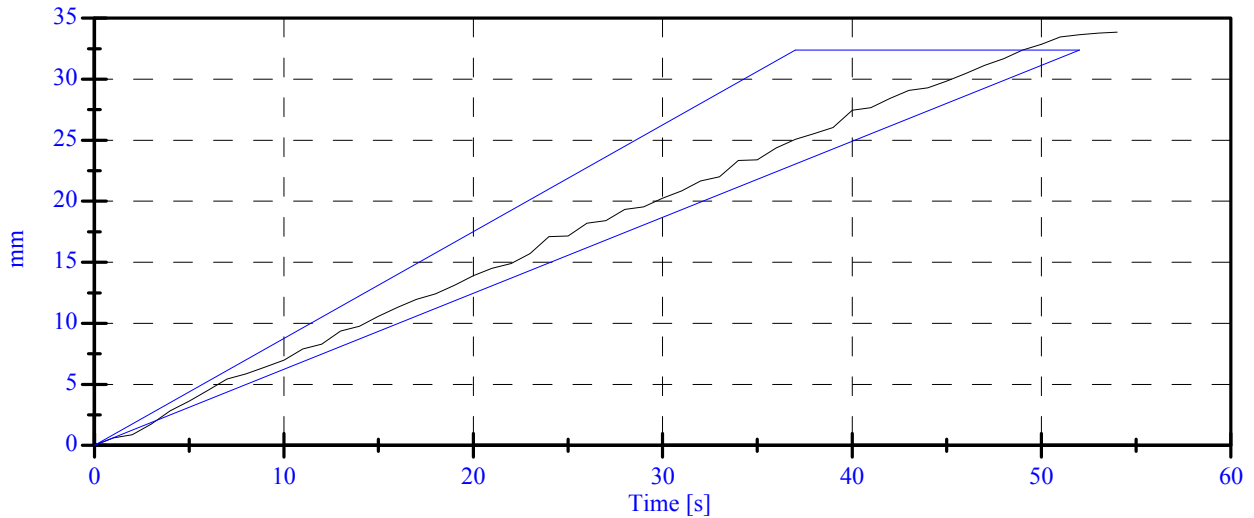
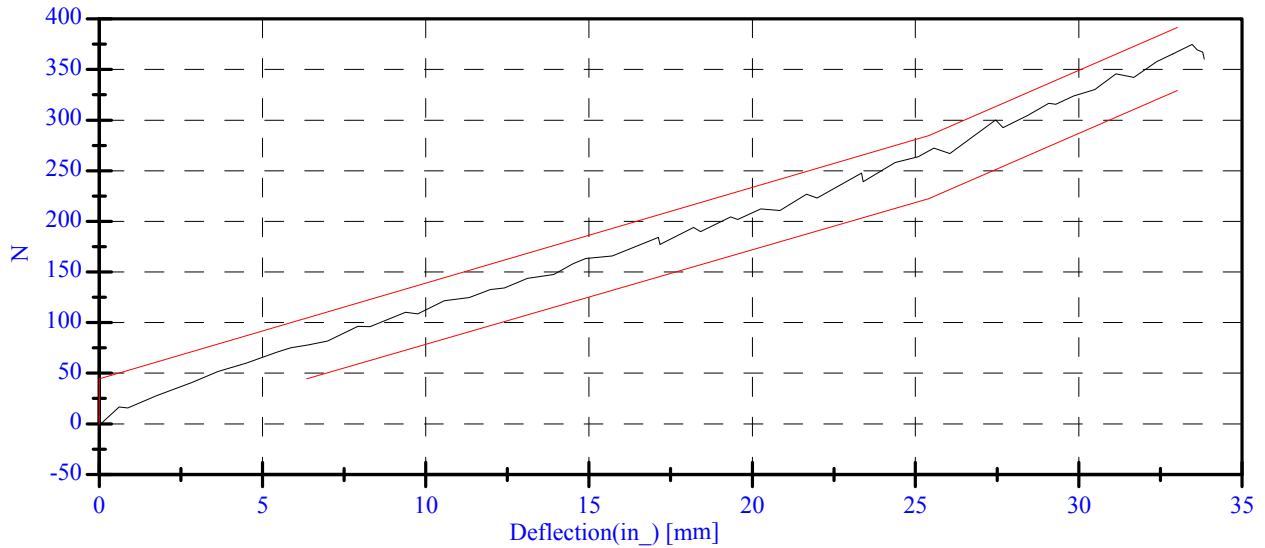
**Abdomen Compression Test  
PRE TEST  
CONFIGURED FOR LEFT SIDE IMPACT**

ATD Serial No: 269  
Date: November 18, 2004

Sequential Test Number: 1 File: 269A-2T 11-18-04  
Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	37.00 %	Passed
Force at 12.95 mm :	104.00-162.00 N	143.73 N	Passed
Force at 19.05 mm :	162.98-220.99 N	204.40 N	Passed
Force at 25.40 mm :	221.97-280.02 N	272.39 N	Passed
Force at 33.02 mm :	324.99-391.00 N	365.24 N	Passed

**ABDOMINAL COMPRESSION TEST**



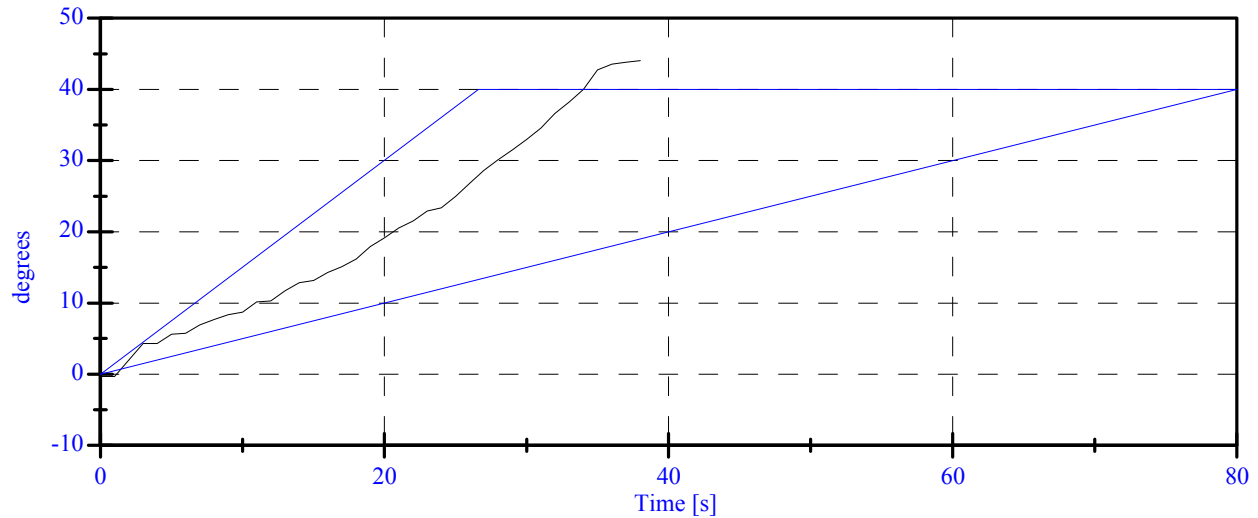
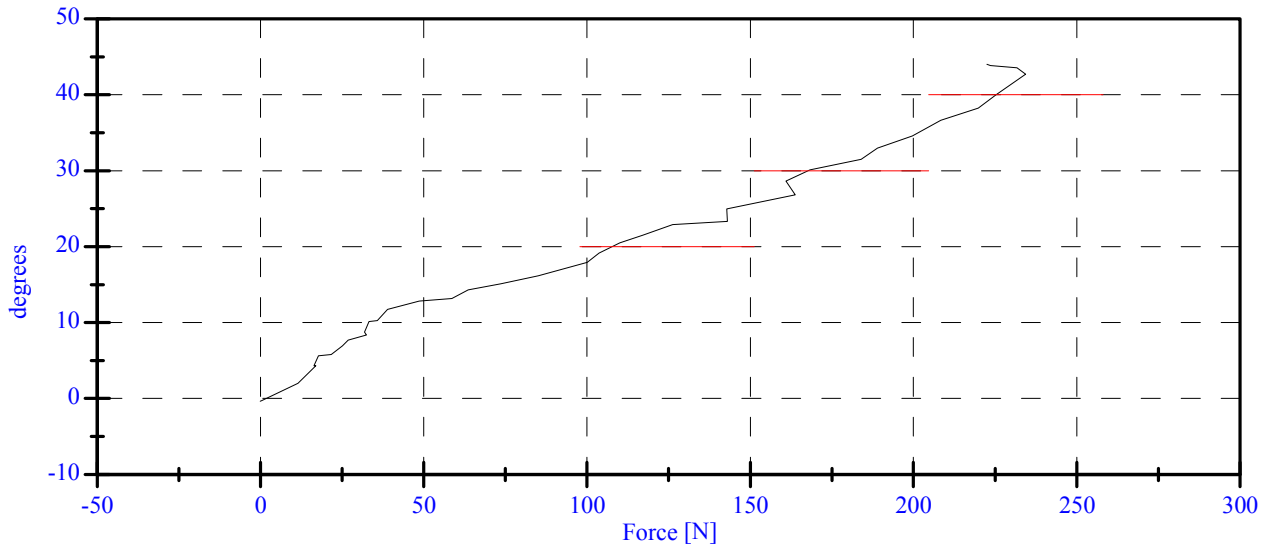
**Lumbar Spine Test**  
**PRE TEST**  
**CONFIGURED FOR LEFT SIDE IMPACT**

ATD Serial No: 269  
 Date: November 18, 2004

Sequential Test Number: 1 File: 269S1 11-18-04  
 Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	37.00 %	Passed
Force at 0 Deg:	0.00-26.69 N	0.40 N	Passed
Force at 20 Deg:	97.86-151.24 N	110.00 N	Passed
Force at 30 Deg:	151.24-204.62 N	168.21 N	Passed
Force at 40 Deg:	204.62-258.00 N	225.38 N	Passed
Return Angle	12 Deg Max	3.14 deg	Passed

**LUMBAR SPINE FLEXION TEST**



**PRE-TEST DUMMY INSPECTION LIST**

**CONFIGURED FOR LEFT SIDE IMPACT**

SID H3 Serial No.: 269 Sequential Test Number: 4  
Date: November 18, 2004 Laboratory Technician: B. Swiecicki

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

**REMARKS:** None

**CALIBRATION TEST RESULTS**

**PRE-TEST**

**SID H3 NO.: 270**

**CONFIGURED FOR LEFT SIDE IMPACT**

**CALIBRATION TEST RESULTS SUMMARY  
PRE-TEST**

**CONFIGURED FOR LEFT SIDE IMPACT**

SID H3 Serial No.: 270 Sequential Test Number: 4  
Date: November 18, 2004 Laboratory Technician: B. Swiecicki

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

\* Test not required for SID certification.

**REMARKS:** None

**EXTERNAL DIMENSIONS  
PRE-TEST**

**CONFIGURED FOR LEFT SIDE IMPACT**

SID H3 Serial No.: 270 Sequential Test Number: 4  
Date: November 18, 2004 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 - 909	902
RH- Rib Height (mm)	502 - 520	503
HP- Hip Pivot Height (mm)	99 ref.	99
RD- Rib from Back Line (mm)	229 - 241	234
KH- Knee Pivot from Back Line (mm)	511 - 526	513
KV- Knee Pivot to Floor (mm)	490 - 505	495
HW- Hip Width (mm)	356 - 391	384

**REMARKS:** None

**Shock Impact - Low ( 3.05 m/s )**

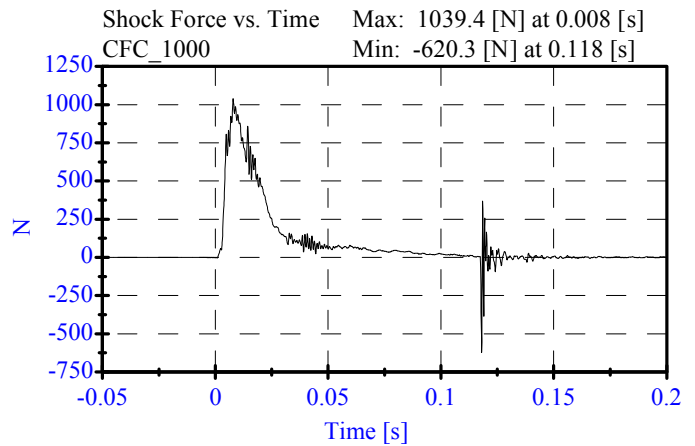
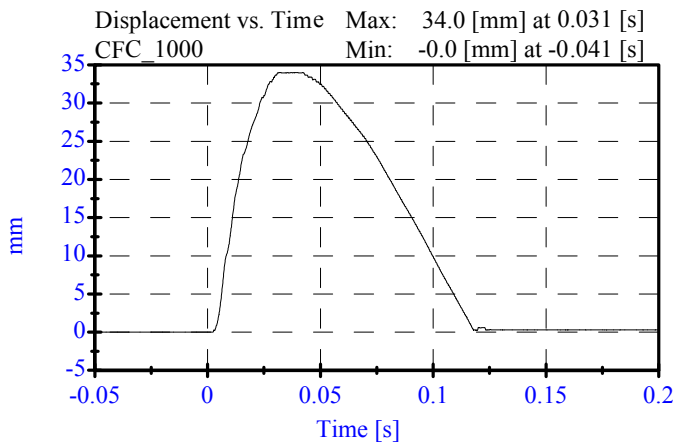
**PRE TEST**

**CONFIGURED FOR LEFT SIDE IMPACT**

ATD Serial No: 270  
Date: 07-23-04

Sequential Test Number: 1 File: 270SL 07-23-04  
Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	40.00 %	Passed
Displacement:	30.00-35.00 mm	34.00 mm	Passed
Maximum Force:	836.00-1125.00 N	1039.45 N	Passed
Impact Test Velocity:	3.05 m/s		
Damper Identification:	270		
Damper Setting:	5		



**Shock Impact - Med ( 4.27 m/s )**

**PRE TEST**

**CONFIGURED FOR LEFT SIDE IMPACT**

ATD Serial No: 270

Date: 07-23-04

Sequential Test Number: 1 File: 270SM 07-23-04

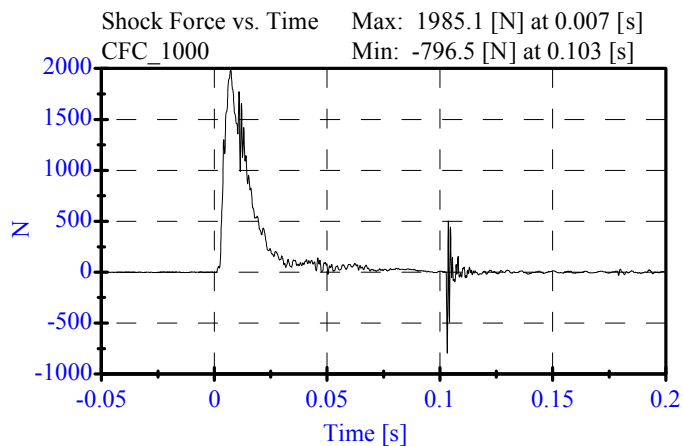
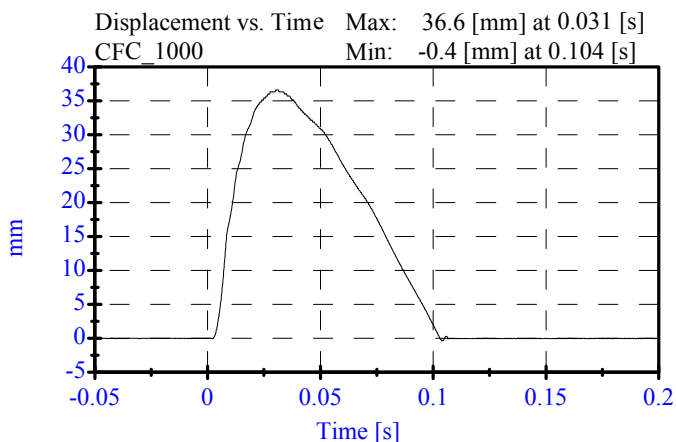
Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	40.00 %	Passed
Displacement:	32.00-37.00 mm	36.64 mm	Passed
Maximum Force:	1730.00-2099.00 N	1985.06 N	Passed

Impact Test Velocity: 4.27 m/s

Damper Identification: 270

Damper Setting: 5



**Shock Impact - High ( 6.10 m/s )**

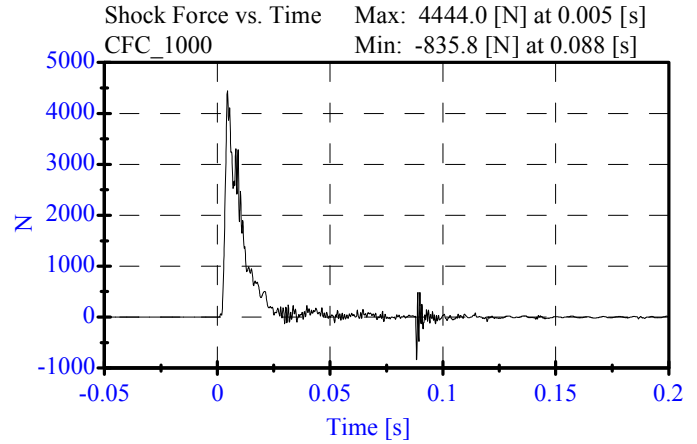
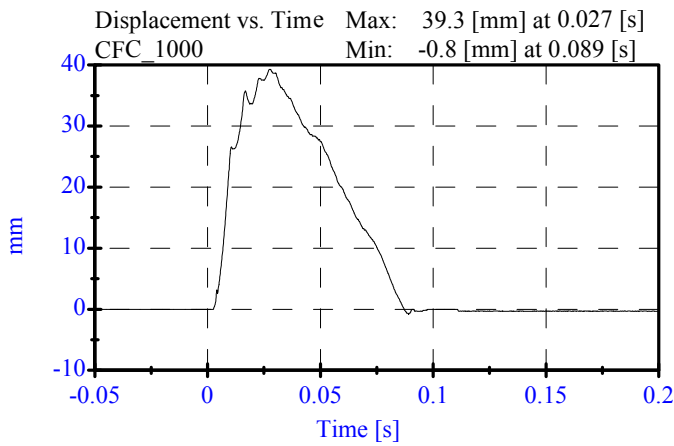
**PRE TEST**

**CONFIGURED FOR LEFT SIDE IMPACT**

ATD Serial No: 270  
Date: 07-23-04

Sequential Test Number: 1 File: 270SH 07-23-04  
Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	40.00 %	Passed
Displacement:	33.00-40.00 mm	39.29 mm	Passed
Maximum Force:	3741.00-4448.00 N	4444.01 N	Passed
Impact Test Velocity:	6.10 m/s		
Damper Identification:	270		
Damper Setting:	5		

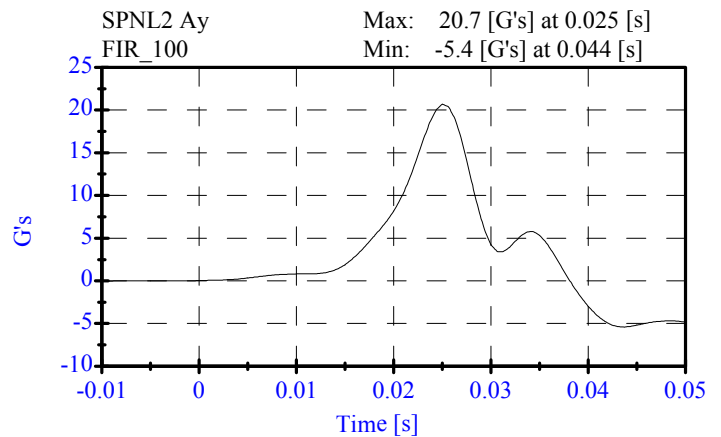
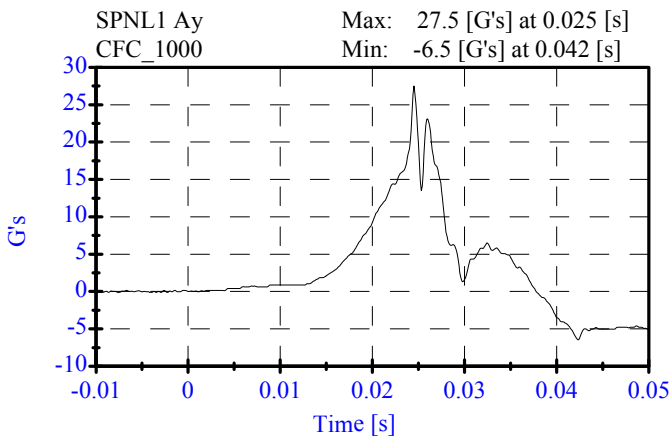
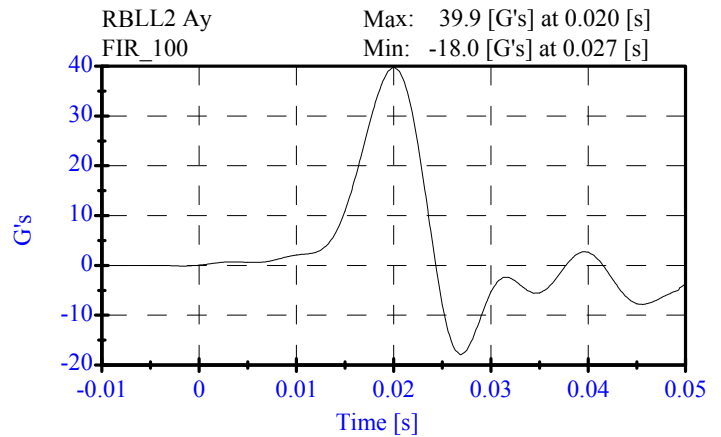
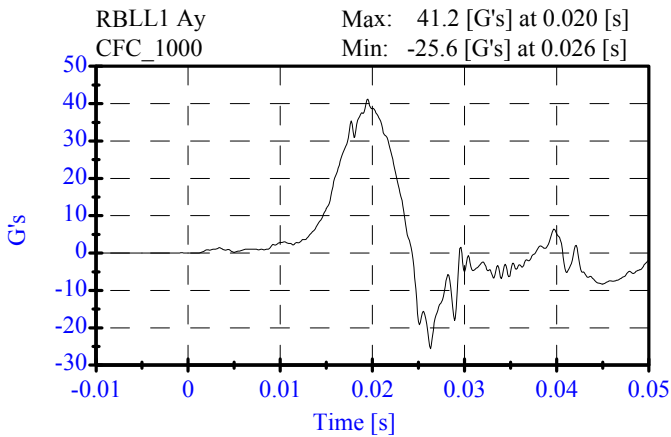
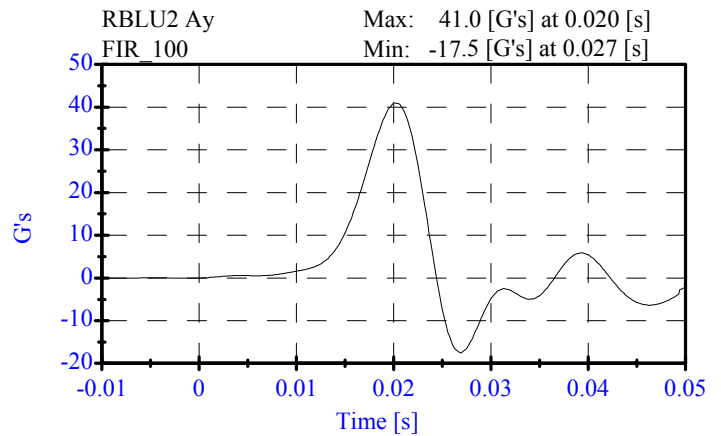
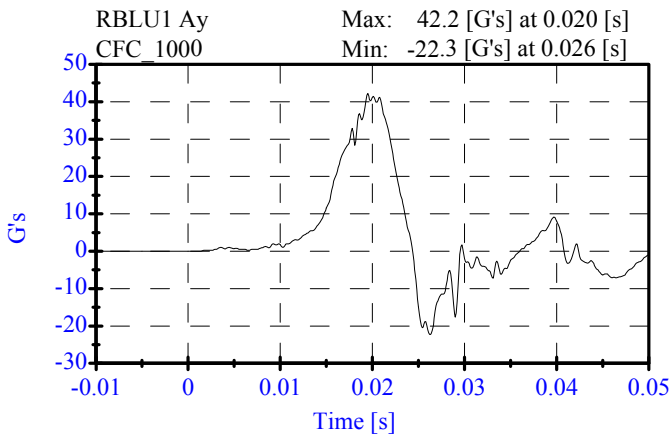


**Thorax Impact  
Pre-Test  
CONFIGURED FOR LEFT SIDE IMPACT**

ATD Serial No: 270  
Date: November 18, 2004

Sequential Test Number: 1 File: 270T 11-18-04  
Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	37.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.28 m/s	Passed
Upper Rib Acceleration:	37.00-46.00 G's	41.02 G's	Passed
Lower Rib Acceleration:	37.00-46.00 G's	39.88 G's	Passed
Lower Spine Acceleration:	15.00-22.00 G's	20.70 G's	Passed



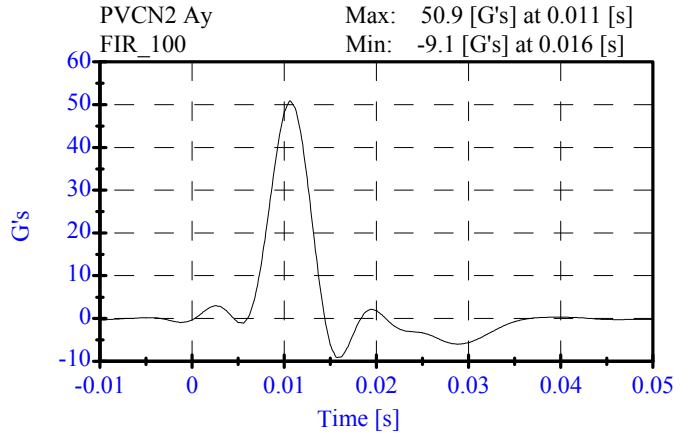
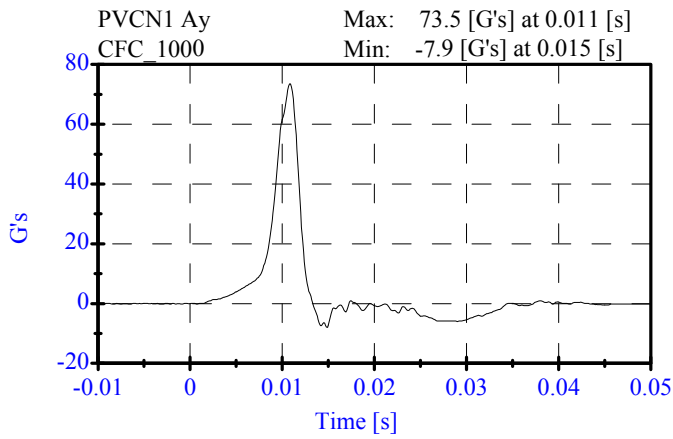
**Pelvis Impact  
Pre-Test**

**CONFIGURED FOR LEFT SIDE IMPACT**

ATD Serial No: 270  
Date: November 18, 2004

Sequential Test Number: 1 File: 270P 11-18-04  
Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	37.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.28 m/s	Passed
Pelvis Y Acceleration:	40.00-60.00 G's	50.94 G's	Passed
Time Above 20 Gs	3.0-7.0 ms	5.2 ms	Passed



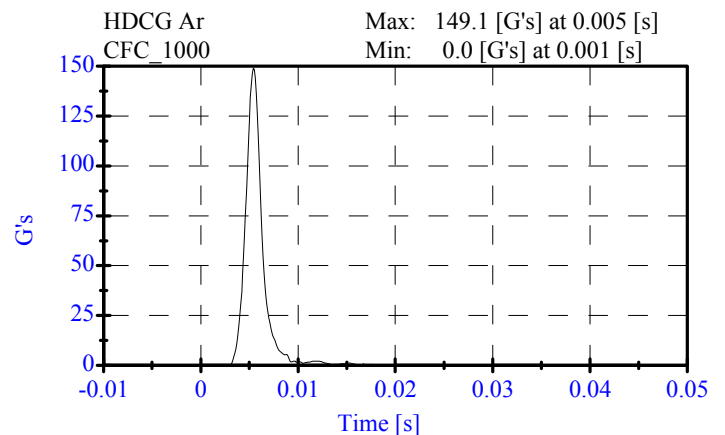
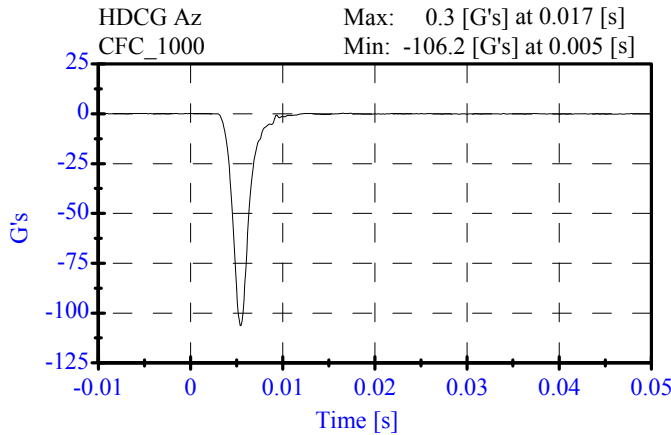
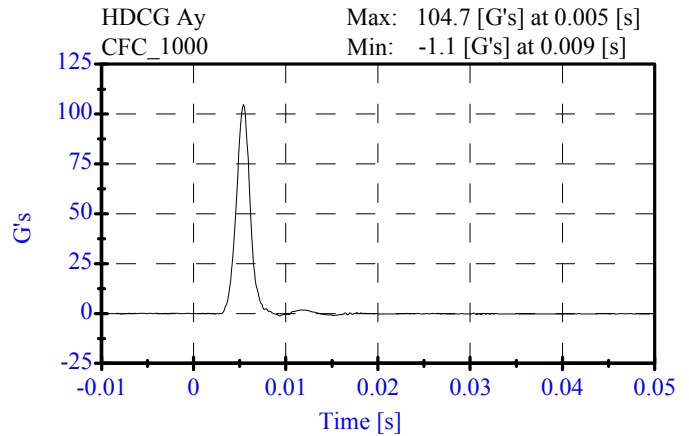
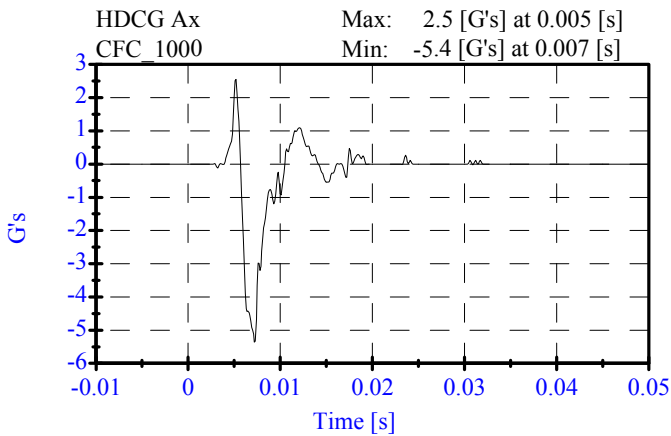
**Head Drop  
Pre-Test**

**CONFIGURED FOR LEFT SIDE IMPACT**

ATD Serial No: 270  
Date: November 17, 2004

Sequential Test Number: 1 File: 270H 11-17-04  
Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.6 C	21.1 C	Passed
Lab Humidity:	10-70 %	33.00 %	Passed
Peak Resultant Accel.:	120-150 Gs	149.15 Gs	Passed
Peak Lateral Accel.:	15 Gs Max	2.55 Gs	Passed
Curve PerCent NonModal:	< 15%	3.64 %	Passed



**Neck Test  
Pre-Test**

**CONFIGURED FOR LEFT SIDE IMPACT**

ATD Serial No: 270  
Date: November 17, 2004

Sequential Test Number: 1 File: 270N1 11-17-04  
Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	20.6-22.2 C	21.1 C	Passed
Lab Humidity:	10-70 %	33.00 %	Passed
Impact Velocity:	6.89- 7.13 m/s	7.01 m/s	Passed
<b>PENDULUM DELTA V</b>			
Delta V at 10 ms:	1.96- 2.55 m/s	2.18 m/s	Passed
Delta V at 20 ms:	4.12- 5.10 m/s	4.43 m/s	Passed
Delta V at 30 ms:	5.73- 7.01 m/s	6.38 m/s	Passed
Delta V between 40-70 ms:	6.27- 7.64 m/s	7.10 m/s	Passed
<b>D PLANE ROTATION</b>			
Maximum Rotation:	66.0-82.0 Deg	71.87 Deg	Passed
Rotation Angle Decay:	58.0-67.0 ms	59.80 ms	Passed
<b>MOMENT ABOUT THE OCCIPITAL CONDYLE</b>			
Max Occipital Moment:	73.00- 88.00 N-m	86.72 N-m	Passed
Occipital Moment Decay:	49.0-64.0 ms	52.20 ms	Passed
<b>HEAD ROTATION TIME WITH RESPECT TO THE OCCIPITAL CONDYLE MOMENT</b>			
Moment to Rotation Peak:	2.0-16.0 ms	10.90 ms	Passed

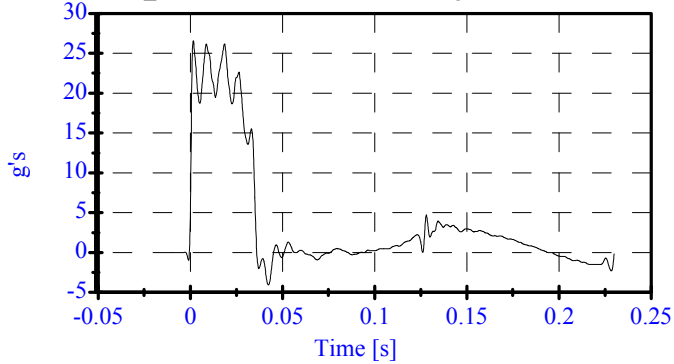
Neck Test  
Pre-Test

CONFIGURED FOR LEFT SIDE IMPACT

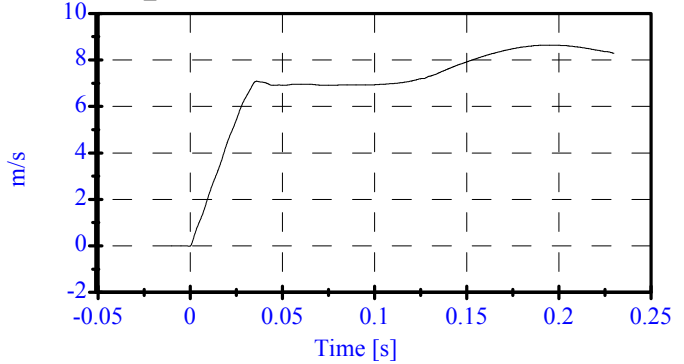
ATD Serial No: 270  
Date: November 17, 2004

Sequential Test Number: 1 File: 270N1 11-17-04  
Laboratory Technician: B. Swiecicki

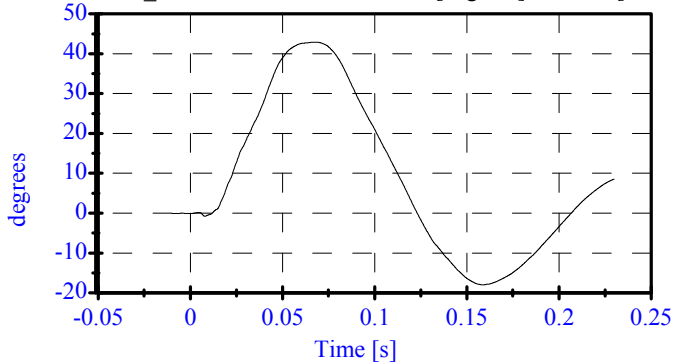
Pend Ax  
CFC\_180 Max: 26.6 [g/s] at 0.002 [s]  
Min: -4.1 [g/s] at 0.042 [s]



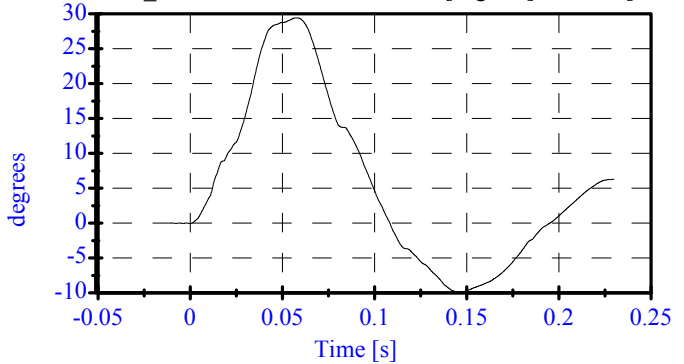
Pend Vx  
CFC\_180 Max: 8.6 [m/s] at 0.194 [s]  
Min: -0.0 [m/s] at -0.001 [s]



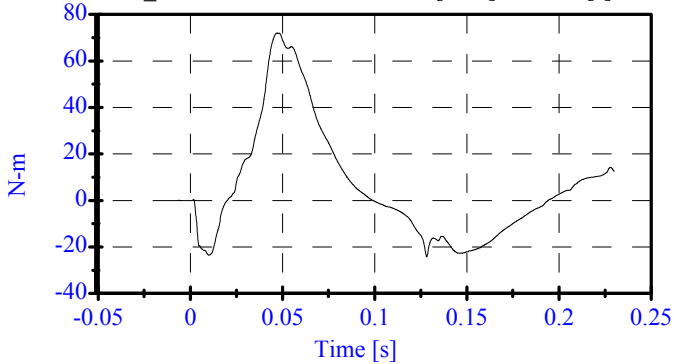
Head Rot  
CFC\_180 Max: 42.9 [degrees] at 0.067 [s]  
Min: -18.0 [degrees] at 0.159 [s]



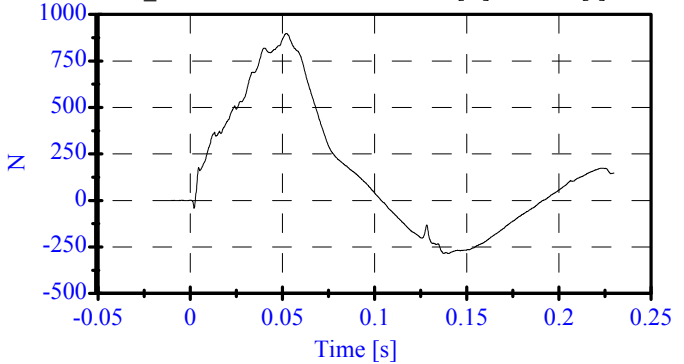
Arm Rot  
CFC\_180 Max: 29.5 [degrees] at 0.058 [s]  
Min: -9.9 [degrees] at 0.145 [s]



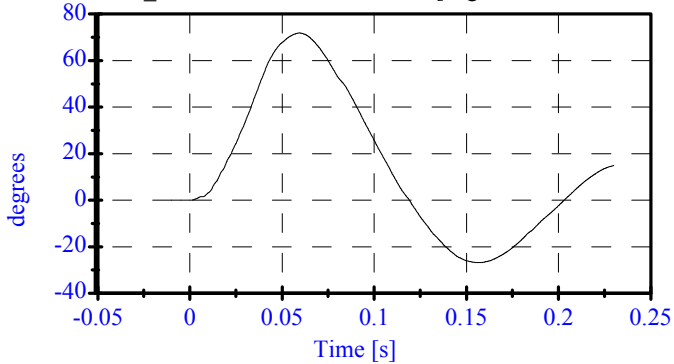
Neck Mx  
CFC\_600 Max: 72.0 [N-m] at 0.047 [s]  
Min: -24.3 [N-m] at 0.128 [s]



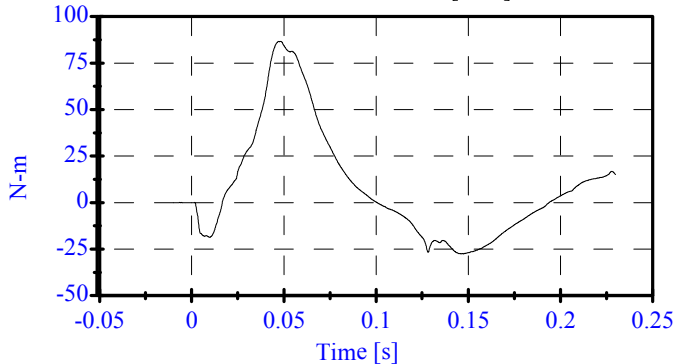
Neck Fy  
CFC\_1000 Max: 897.2 [N] at 0.052 [s]  
Min: -284.5 [N] at 0.137 [s]



Tot Rot  
CFC\_180 Max: 71.9 [degrees] at 0.059 [s]  
Min: -26.8 [degrees] at 0.156 [s]



MOCX  
Max: 86.7 [N-m] at 0.048 [s]  
Min: -27.5 [N-m] at 0.147 [s]



# Abdomen Test

## PRE TEST

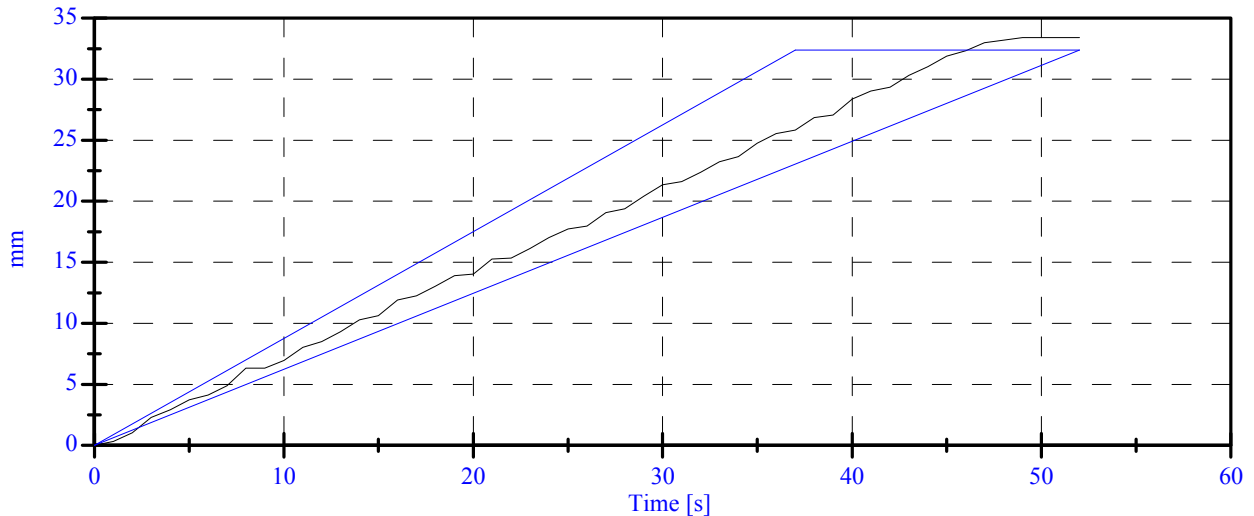
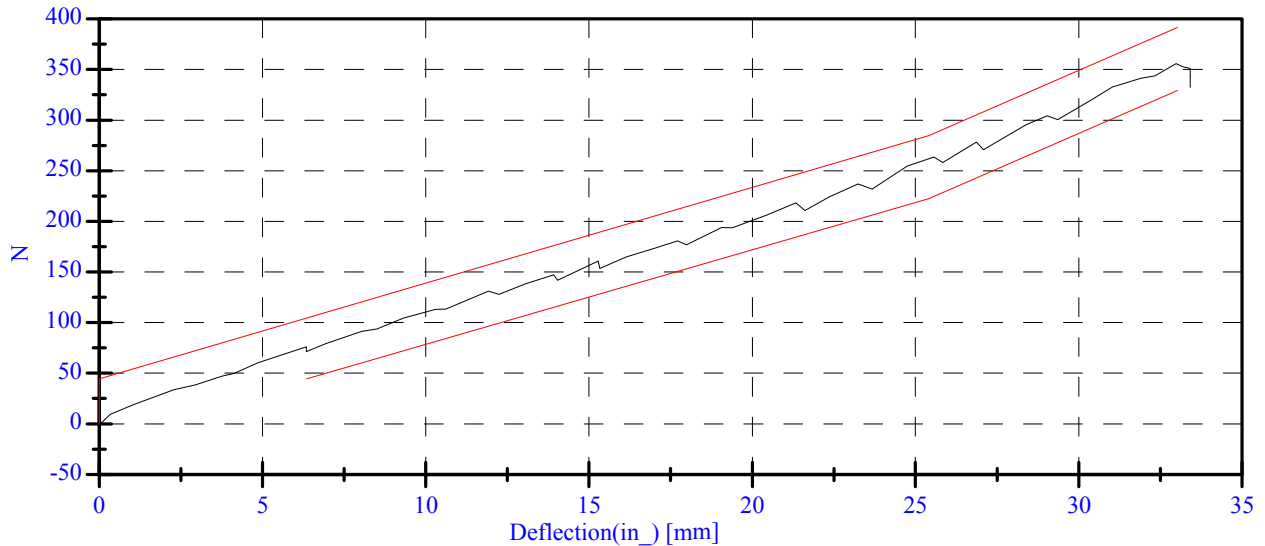
### CONFIGURED FOR LEFT SIDE IMPACT

ATD Serial No: 270  
Date: November 18, 2004

Sequential Test Number: 1 File: 270A-2T 11-18-04  
Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	37.00 %	Passed
Force at 12.95 mm :	104.00-162.00 N	138.24 N	Passed
Force at 19.05 mm :	162.98-220.99 N	193.80 N	Passed
Force at 25.40 mm :	221.97-280.02 N	263.62 N	Passed
Force at 33.02 mm :	324.99-391.00 N	355.73 N	Passed

### ABDOMINAL COMPRESSION TEST



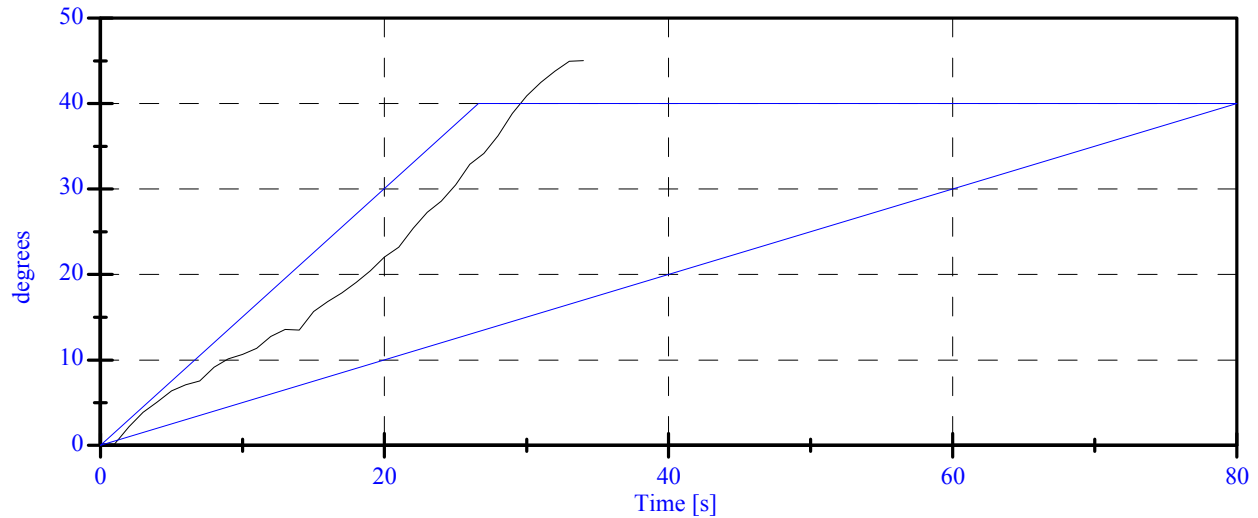
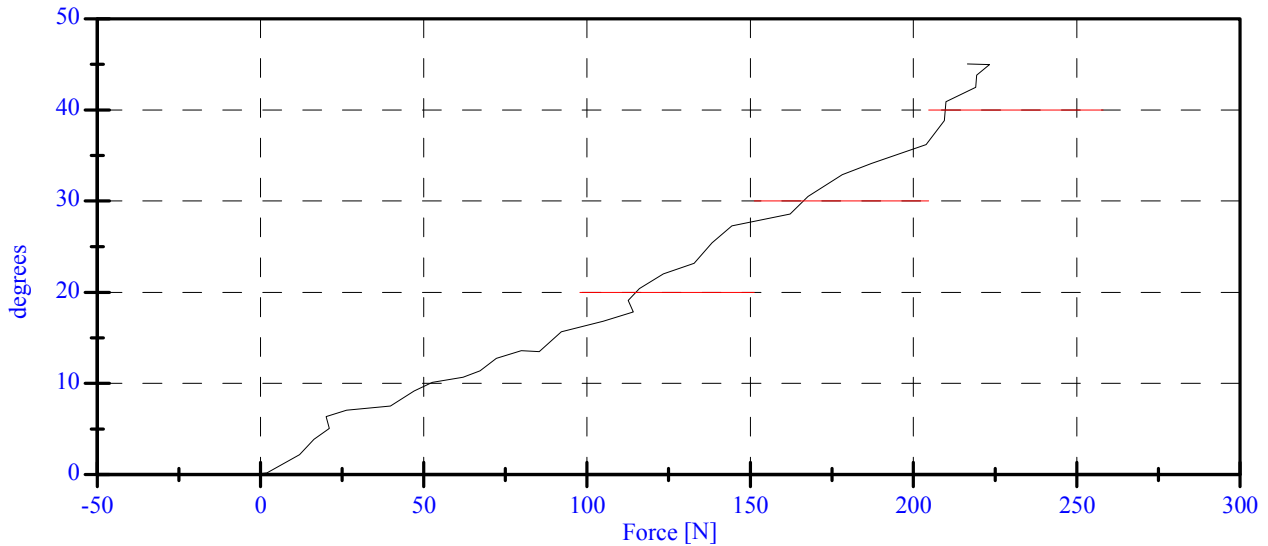
**Lumbar Spine Test**  
**PRE TEST**  
**CONFIGURED FOR LEFT SIDE IMPACT**

ATD Serial No: 270  
 Date: 11-18-04

Sequential Test Number: 1 File: 270S1 11-18-04  
 Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	37.00 %	Passed
Force at 0 Deg:	0.00-26.69 N	0.00 N	Passed
Force at 20 Deg:	97.86-151.24 N	116.69 N	Passed
Force at 30 Deg:	151.24-204.62 N	168.34 N	Passed
Force at 40 Deg:	204.62-258.00 N	210.56 N	Passed
Return Angle	12 Deg Max	7.69 deg	Passed

**LUMBAR SPINE FLEXION TEST**



**PRE-TEST DUMMY INSPECTION LIST**

**CONFIGURED FOR LEFT SIDE IMPACT**

SID H3 Serial No.: 270 Sequential Test Number: 4  
Date: November 18, 2004 Laboratory Technician: B. Swiecicki

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

**REMARKS:** None

**CALIBRATION TEST RESULTS**

**POST TEST**

**SID H3 NO.: 269**

**CONFIGURED FOR LEFT SIDE IMPACT**

**CALIBRATION TEST RESULTS SUMMARY  
POST TEST**

**CONFIGURED FOR LEFT SIDE IMPACT**

SID H3 Serial No.: 269 Sequential Test Number: 5  
Date: December 3, 2004 Laboratory Technician: B. Swiecicki

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

\* Test not required for SID certification.

**REMARKS:** None

**EXTERNAL DIMENSIONS  
POST TEST**

**CONFIGURED FOR LEFT SIDE IMPACT**

SID H3 Serial No.: 269 Sequential Test Number: 5  
Date: December 3, 2004 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 - 909	902
RH- Rib Height (mm)	502 - 520	503
HP- Hip Pivot Height (mm)	99 ref.	99
RD- Rib from Back Line (mm)	229 - 241	234
KH- Knee Pivot from Back Line (mm)	511 - 526	518
KV- Knee Pivot to Floor (mm)	490 - 505	495
HW- Hip Width (mm)	356 - 391	379

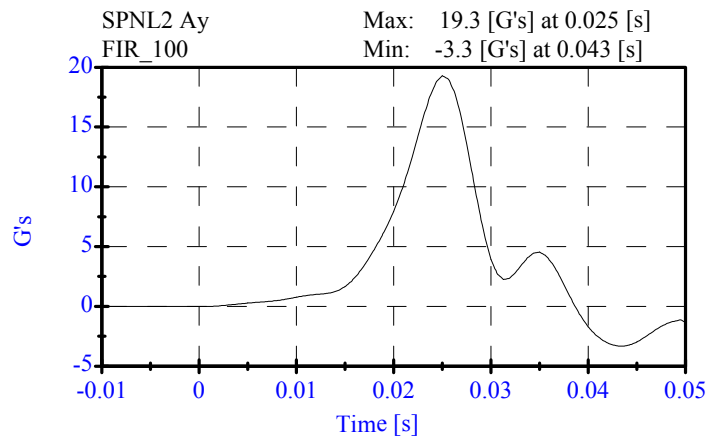
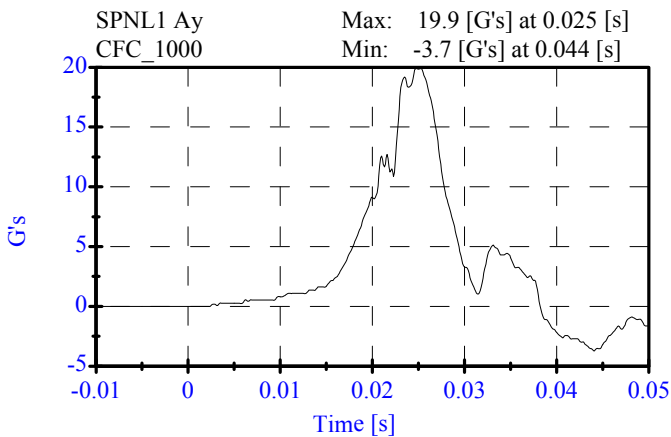
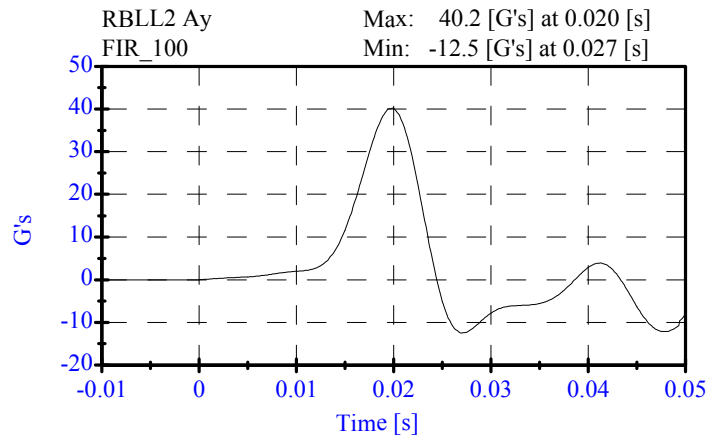
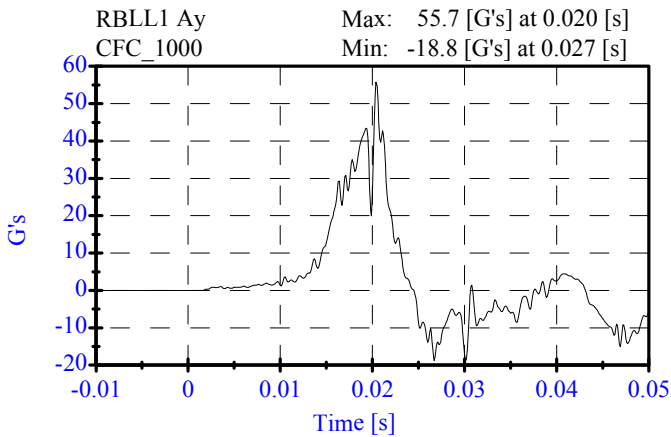
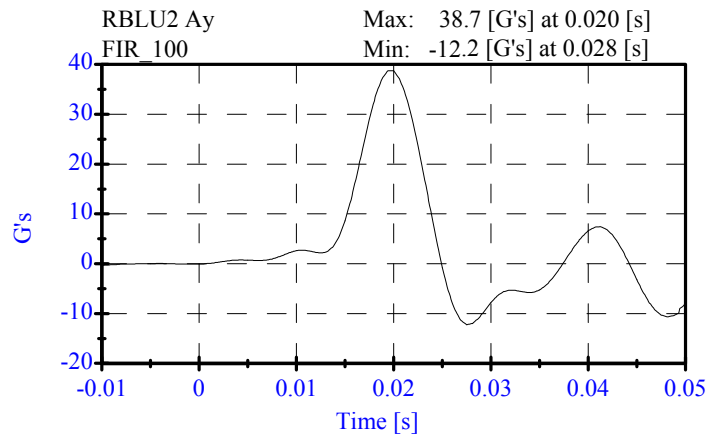
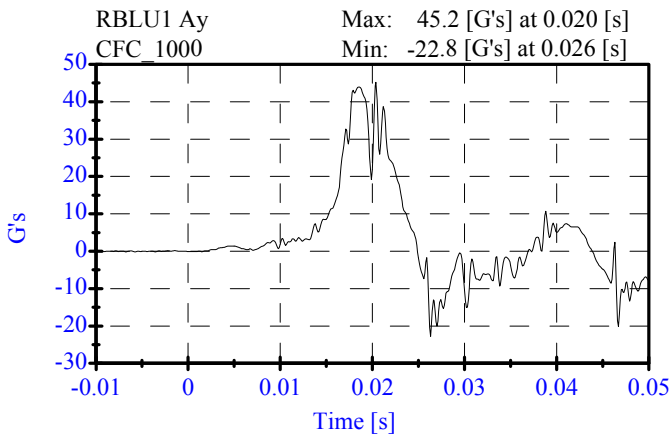
**REMARKS:** None

**Thorax Impact  
POST TEST  
CONFIGURED FOR LEFT SIDE IMPACT**

ATD Serial No: 269  
Date: 12-03-04

Sequential Test Number: 1 File: 269T 12-03-04  
Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	33.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.27 m/s	Passed
Upper Rib Acceleration:	37.00-46.00 G's	38.72 G's	Passed
Lower Rib Acceleration:	37.00-46.00 G's	40.23 G's	Passed
Lower Spine Acceleration:	15.00-22.00 G's	19.30 G's	Passed



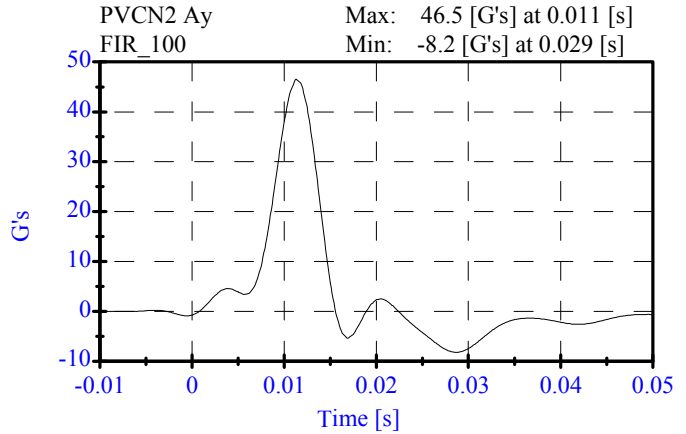
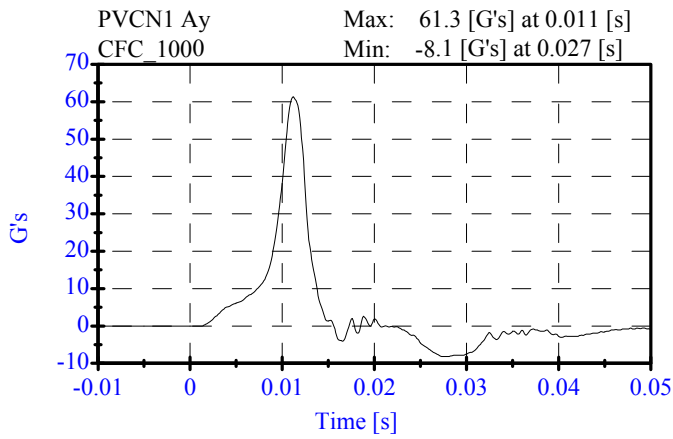
**Pelvic Test  
POST TEST**

**CONFIGURED FOR LEFT SIDE IMPACT**

ATD Serial No: 269  
Date: 12-03-04

Sequential Test Number: 1 File: 269P 12-03-04  
Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	33.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.28 m/s	Passed
Pelvis Y Acceleration:	40.00-60.00 G's	46.53 G's	Passed
Time Above 20 Gs	3.0-7.0 ms	5.4 ms	Passed



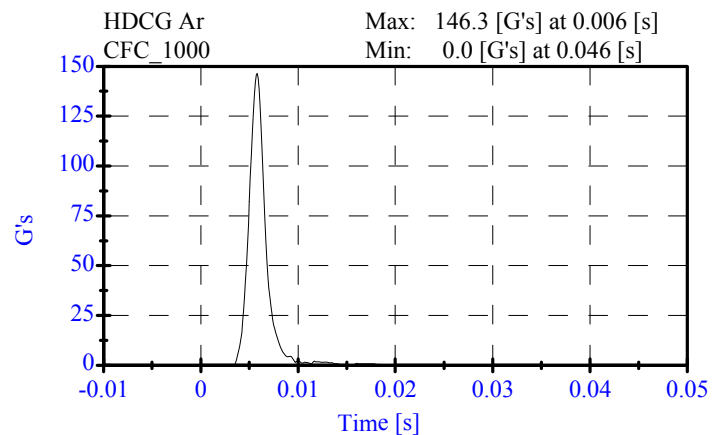
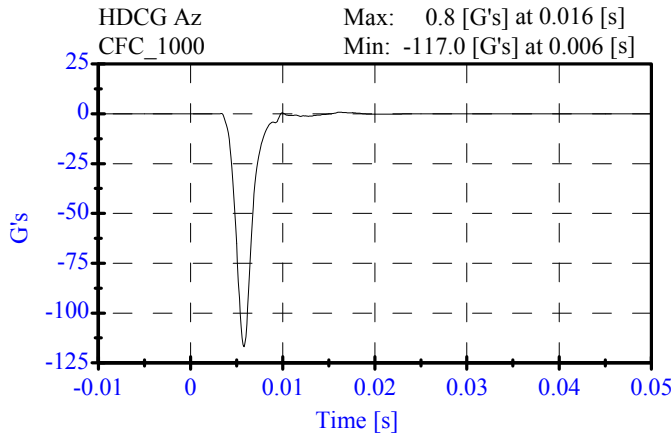
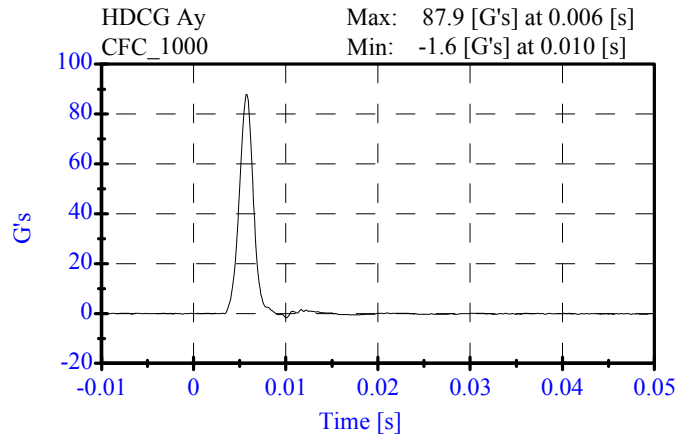
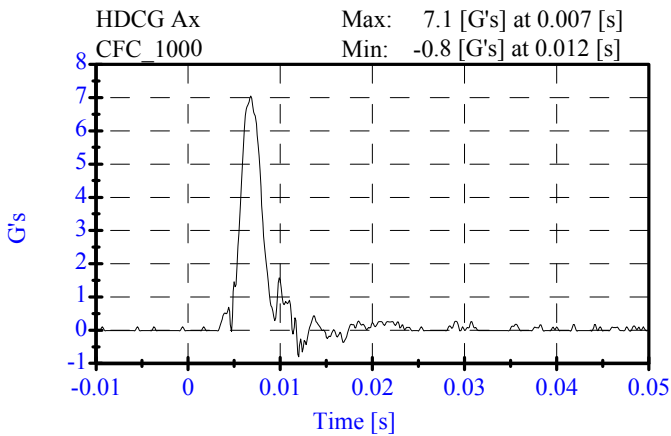
**Head Drop  
POST TEST**

**CONFIGURED FOR LEFT SIDE IMPACT**

ATD Serial No: 269  
Date: 12-01-04

Sequential Test Number: 1 File: 269H 12-01-04  
Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.6 C	21.1 C	Passed
Lab Humidity:	10-70 %	31.00 %	Passed
Peak Resultant Accel.:	120-150 Gs	146.33 Gs	Passed
Peak Lateral Accel.:	15 Gs Max	7.05 Gs	Passed
Curve PerCent NonModal:	< 15%	3.14 %	Passed



**Neck Test  
POST TEST**

**CONFIGURED FOR LEFT SIDE IMPACT**

ATD Serial No: 269  
Date: 12-02-04

Sequential Test Number: 1 File: 269N 12-02-04  
Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	20.6-22.2 C	21.1 C	Passed
Lab Humidity:	10-70 %	33.00 %	Passed
Impact Velocity:	6.89- 7.13 m/s	6.92 m/s	Passed
<b>PENDULUM DELTA V</b>			
Delta V at 10 ms:	1.96- 2.55 m/s	2.10 m/s	Passed
Delta V at 20 ms:	4.12- 5.10 m/s	4.25 m/s	Passed
Delta V at 30 ms:	5.73- 7.01 m/s	6.15 m/s	Passed
Delta V between 40-70 ms:	6.27- 7.64 m/s	7.21 m/s	Passed
<b>D PLANE ROTATION</b>			
Maximum Rotation:	66.0-82.0 Deg	73.79 Deg	Passed
Rotation Angle Decay:	58.0-67.0 ms	58.30 ms	Passed
<b>MOMENT ABOUT THE OCCIPITAL CONDYLE</b>			
Max Occipital Moment:	73.00- 88.00 N-m	85.62 N-m	Passed
Occipital Moment Decay:	49.0-64.0 ms	52.30 ms	Passed
<b>HEAD ROTATION TIME WITH RESPECT TO THE OCCIPITAL CONDYLE MOMENT</b>			
Moment to Rotation Peak:	2.0-16.0 ms	9.80 ms	Passed

Neck Test  
POST TEST

CONFIGURED FOR LEFT SIDE IMPACT

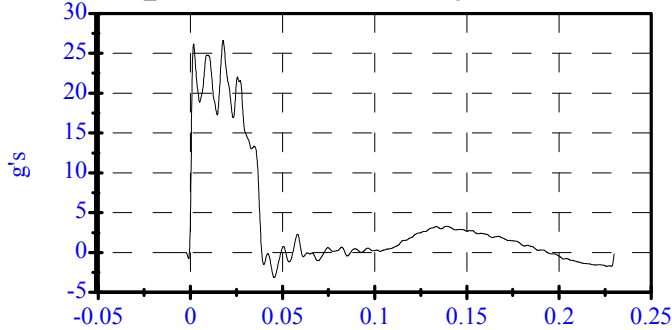
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Date: 12-02-04

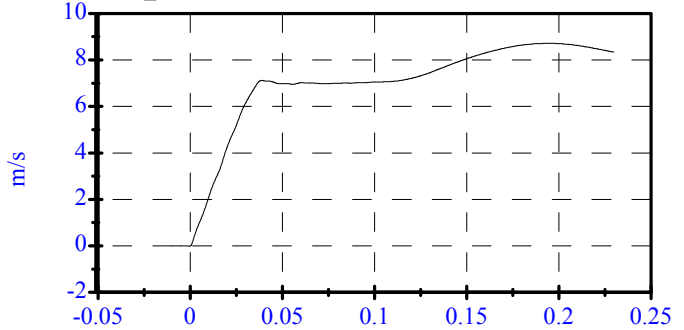
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Laboratory Technician: B. Swiecicki

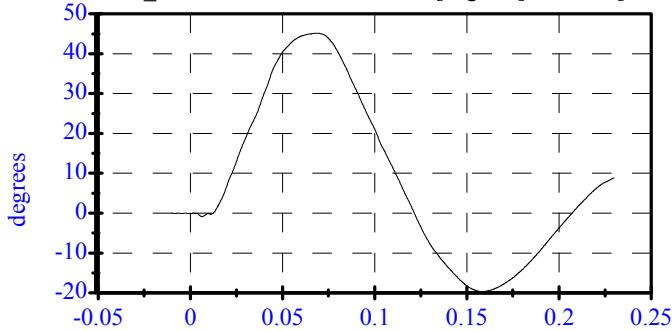
Pend Ax  
CFC\_180 Max: 26.6 [g's] at 0.018 [s]  
Min: -3.1 [g's] at 0.046 [s]



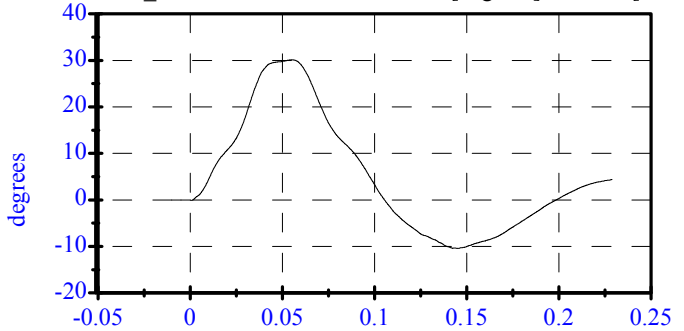
Pend Vx  
CFC\_180 Max: 8.7 [m/s] at 0.194 [s]  
Min: -0.0 [m/s] at -0.000 [s]



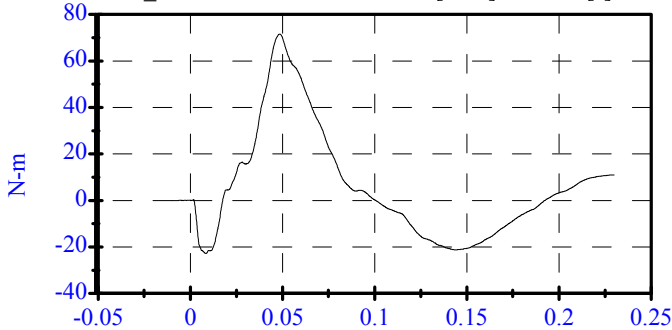
Head Rot  
CFC\_180 Max: 45.1 [degrees] at 0.070 [s]  
Min: -19.6 [degrees] at 0.158 [s]



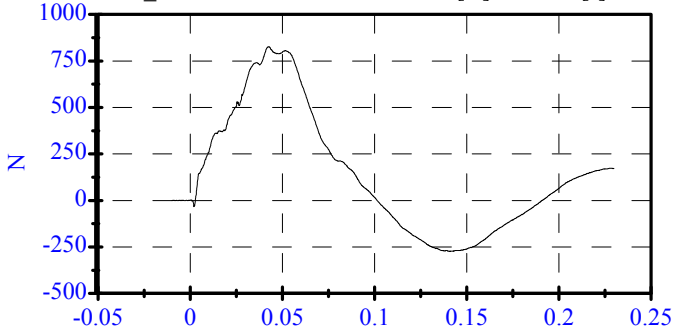
Arm Rot  
CFC\_180 Max: 30.1 [degrees] at 0.055 [s]  
Min: -10.4 [degrees] at 0.145 [s]



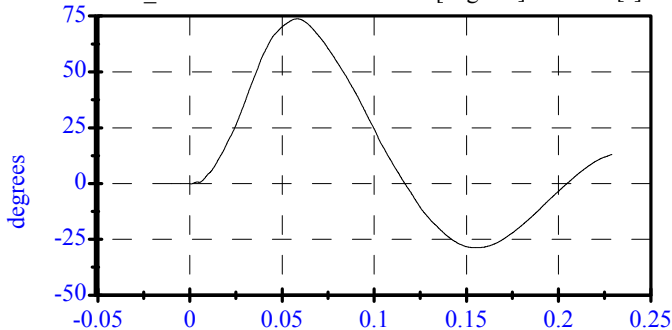
Neck Mx  
CFC\_600 Max: 71.6 [N-m] at 0.049 [s]  
Min: -22.8 [N-m] at 0.009 [s]



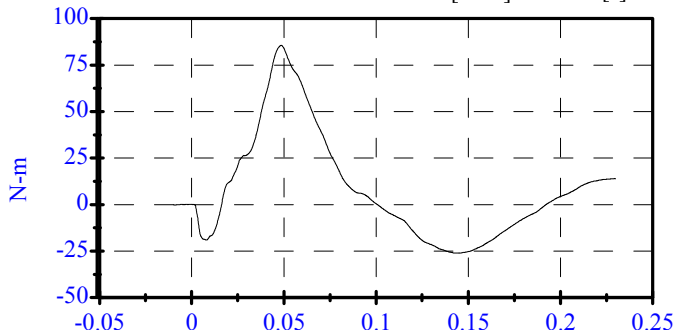
Neck Fy  
CFC\_1000 Max: 826.0 [N] at 0.043 [s]  
Min: -274.2 [N] at 0.141 [s]



Tot Rot  
CFC\_180 Max: 73.8 [degrees] at 0.058 [s]  
Min: -28.8 [degrees] at 0.156 [s]



Mocx  
Max: 85.6 [N-m] at 0.049 [s]  
Min: -26.1 [N-m] at 0.144 [s]



**Abdomen Test  
POST TEST**

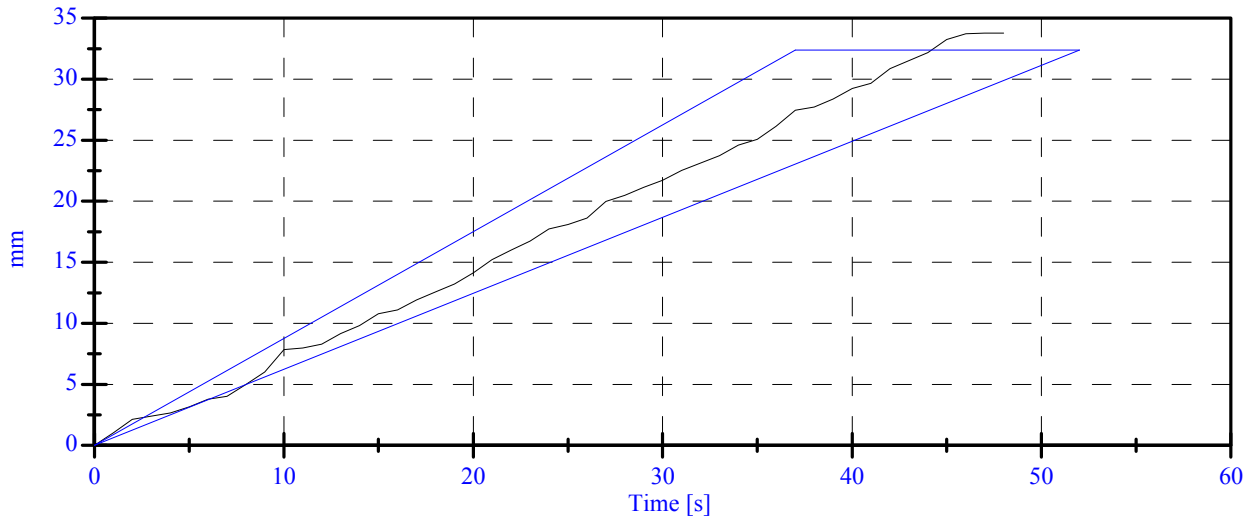
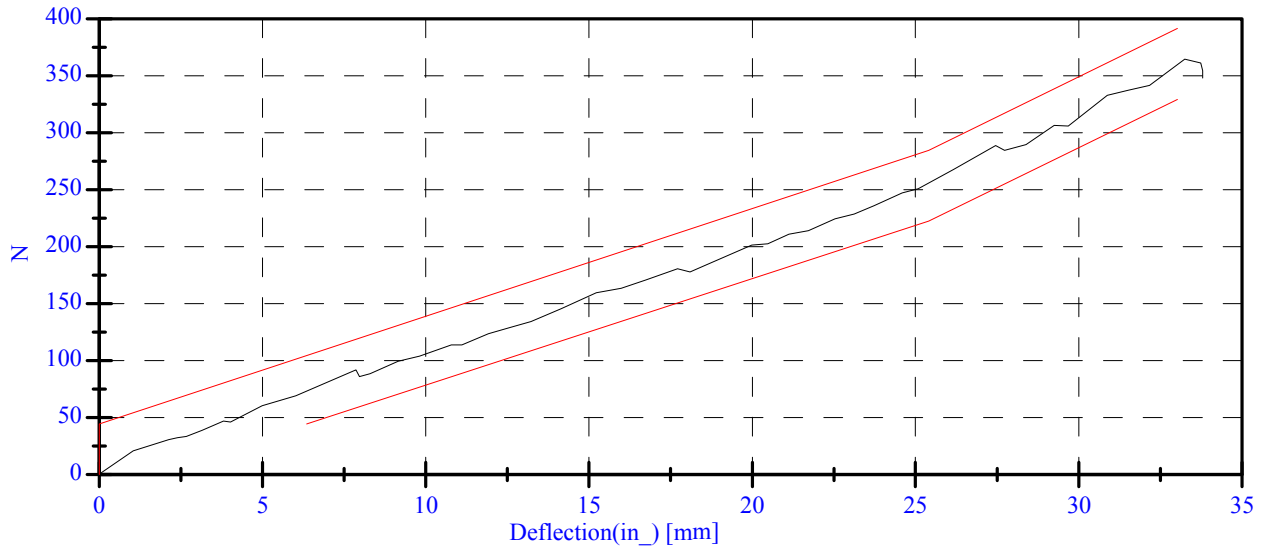
**CONFIGURED FOR LEFT SIDE IMPACT**

ATD Serial No: 269  
Date: 12-03-04

Sequential Test Number: 1 File: 269AB 12-03-04  
Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	33.00 %	Passed
Force at 12.95 mm :	104.00-162.00 N	134.22 N	Passed
Force at 19.05 mm :	162.98-220.99 N	184.67 N	Passed
Force at 25.40 mm :	221.97-280.02 N	250.83 N	Passed
Force at 33.02 mm :	324.99-391.00 N	364.51 N	Passed

**ABDOMINAL COMPRESSION TEST**



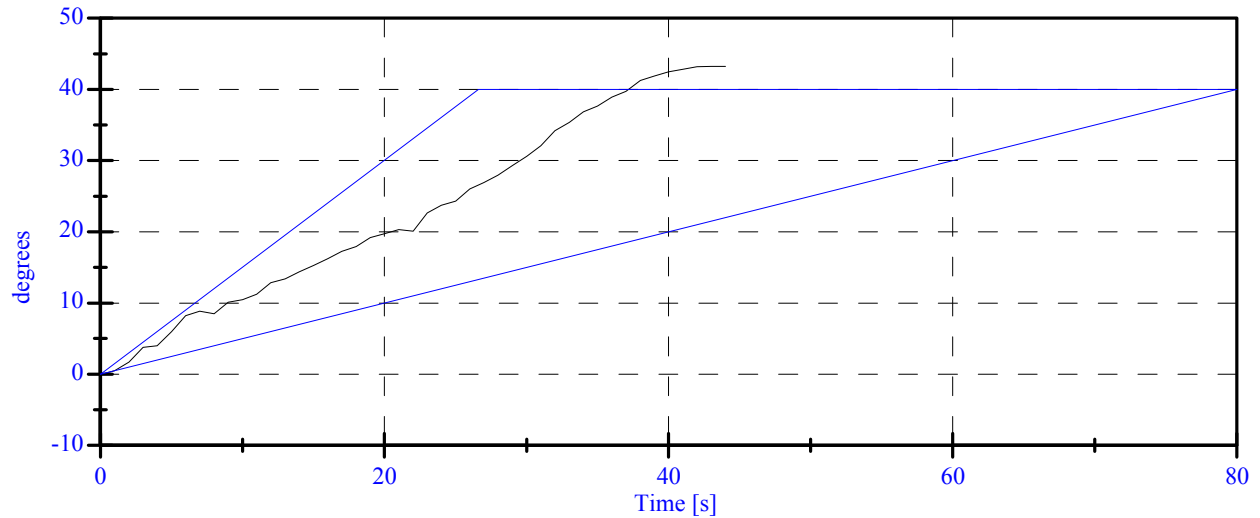
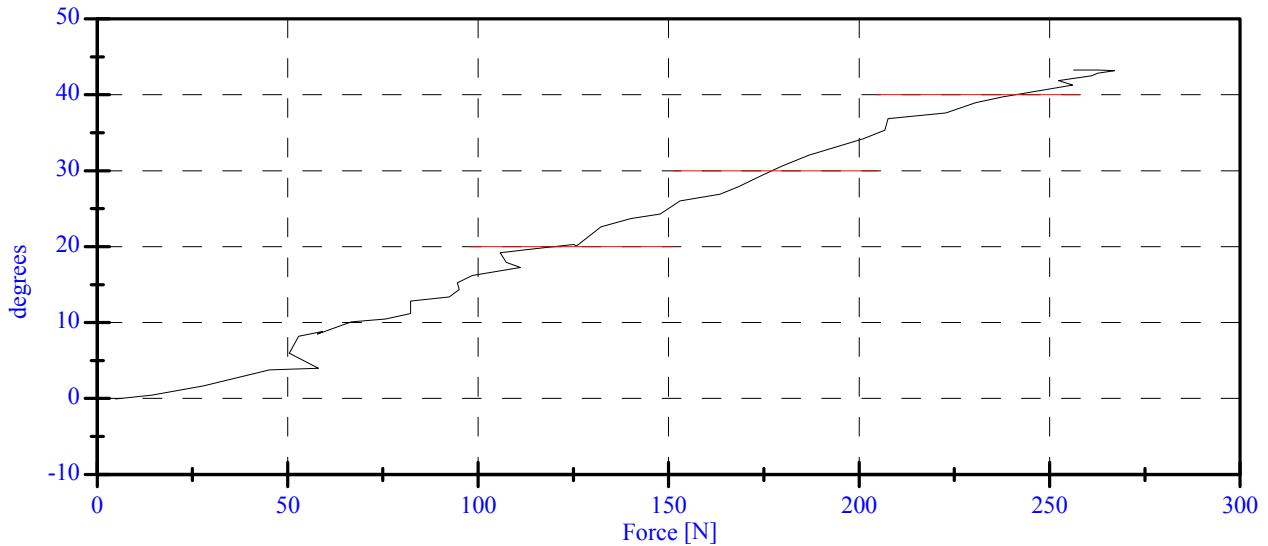
**Lumbar Spine Test**  
**POST TEST**  
**CONFIGURED FOR LEFT SIDE IMPACT**

ATD Serial No: 269  
 Date: 12-03-04

Sequential Test Number: 1 File: 269Spine 12-03-04  
 Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	33.00 %	Passed
Force at 0 Deg:	0.00-26.69 N	4.86 N	Passed
Force at 20 Deg:	97.86-151.24 N	125.74 N	Passed
Force at 30 Deg:	151.24-204.62 N	179.75 N	Passed
Force at 40 Deg:	204.62-258.00 N	237.70 N	Passed
Return Angle	12 Deg Max	4.35 deg	Passed

**LUMBAR SPINE FLEXION TEST**



**POST TEST DUMMY INSPECTION LIST**  
**CONFIGURED FOR LEFT SIDE IMPACT**

SID H3 Serial No.: 269 Sequential Test Number: 5  
 Date: December 3, 2004 Laboratory Technician: B. Swiecicki

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

**REMARKS:** None

**CALIBRATION TEST RESULTS**

**POST TEST**

**SID H3 NO.: 270**

**CONFIGURED FOR LEFT SIDE IMPACT**

**CALIBRATION TEST RESULTS SUMMARY  
POST TEST**

**CONFIGURED FOR LEFT SIDE IMPACT**

SID H3 Serial No.: 270 Sequential Test Number: 5  
Date: December 3, 2004 Laboratory Technician: B. Swiecicki

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

\* Test not required for SID certification.

**REMARKS:** None

**EXTERNAL DIMENSIONS  
POST TEST**

**CONFIGURED FOR LEFT SIDE IMPACT**

SID H3 Serial No.: 270 Sequential Test Number: 5  
Date: December 3, 2004 Laboratory Technician: B. Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 - 909	902
RH- Rib Height (mm)	502 - 520	503
HP- Hip Pivot Height (mm)	99 ref.	99
RD- Rib from Back Line (mm)	229 - 241	234
KH- Knee Pivot from Back Line (mm)	511 - 526	513
KV- Knee Pivot to Floor (mm)	490 - 505	495
HW- Hip Width (mm)	356 - 391	384

**REMARKS:** None

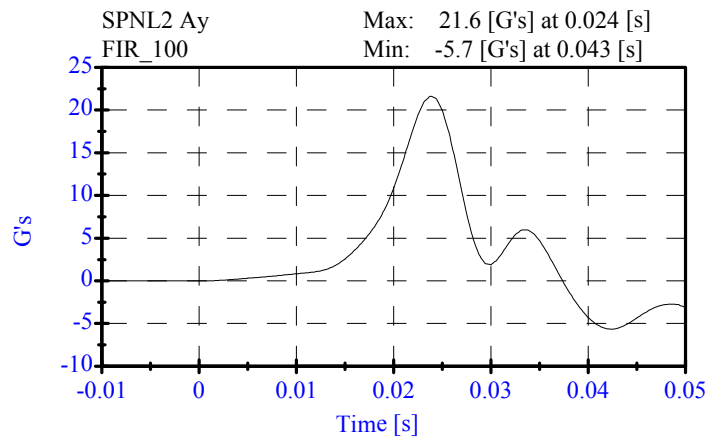
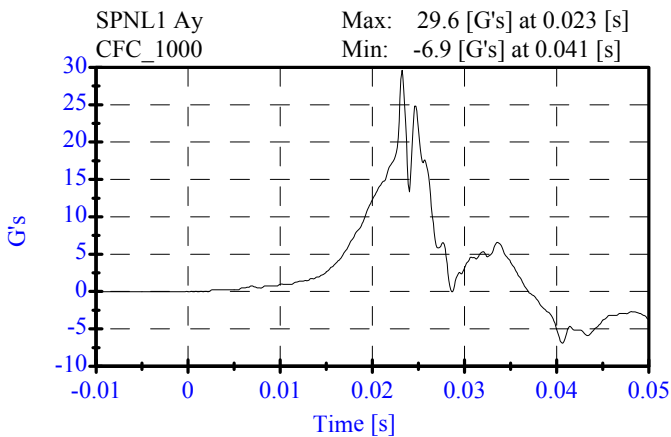
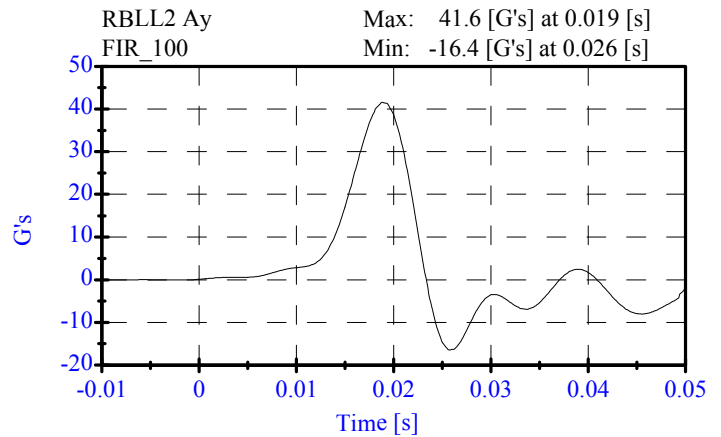
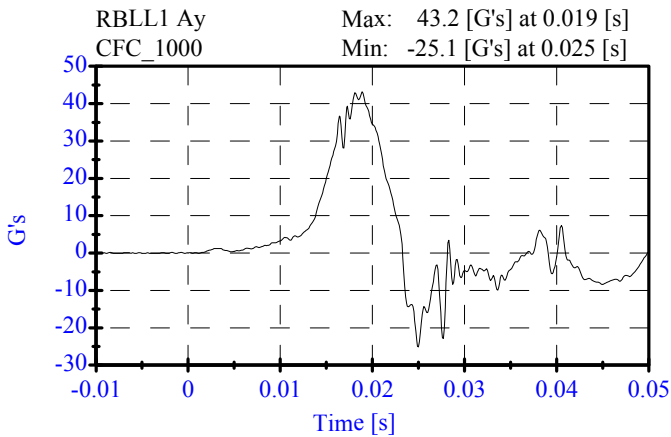
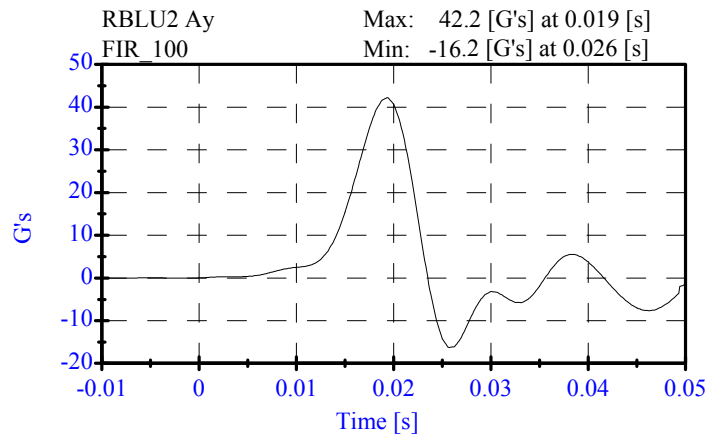
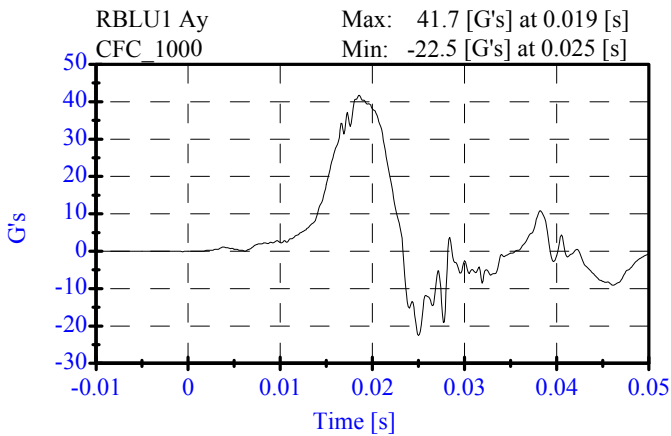
**Thorax Impact  
POST TEST**

**CONFIGURED FOR LEFT SIDE IMPACT**

ATD Serial No: 270  
Date: 12-03-04

Sequential Test Number: 1 File: 270T 12-03-04  
Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	33.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.29 m/s	Passed
Upper Rib Acceleration:	37.00-46.00 G's	42.20 G's	Passed
Lower Rib Acceleration:	37.00-46.00 G's	41.58 G's	Passed
Lower Spine Acceleration:	15.00-22.00 G's	21.64 G's	Passed



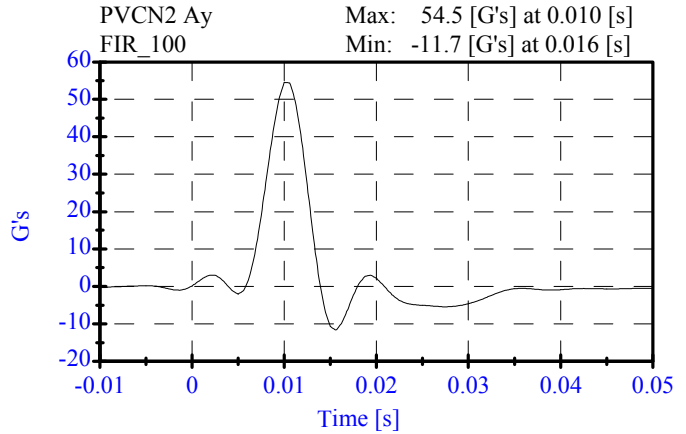
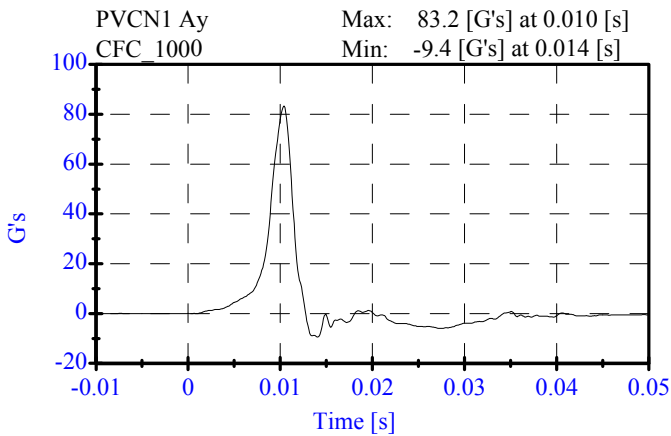
**Pelvic Impact  
POST TEST**

**CONFIGURED FOR LEFT SIDE IMPACT**

ATD Serial No: 270  
Date: 12-03-04

Sequential Test Number: 1 File: 270P 12-03-04  
Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	33.00 %	Passed
Probe Velocity:	4.27- 4.33 m/s	4.31 m/s	Passed
Pelvis Y Acceleration:	40.00-60.00 G's	54.52 G's	Passed
Time Above 20 Gs	3.0-7.0 ms	5.3 ms	Passed



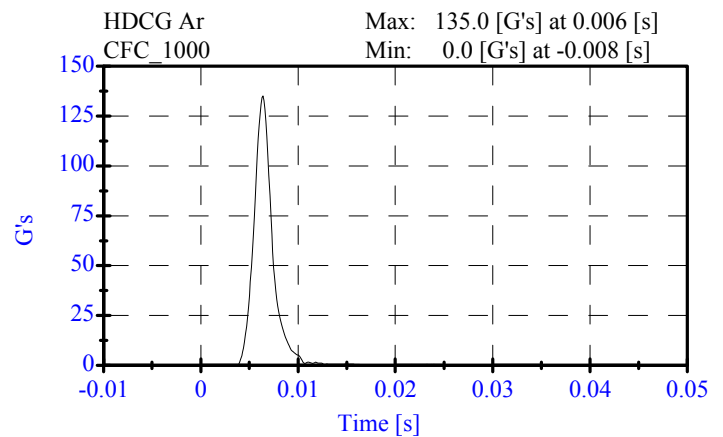
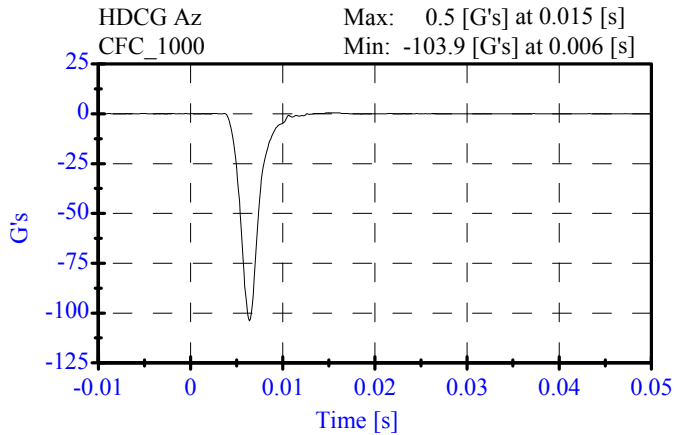
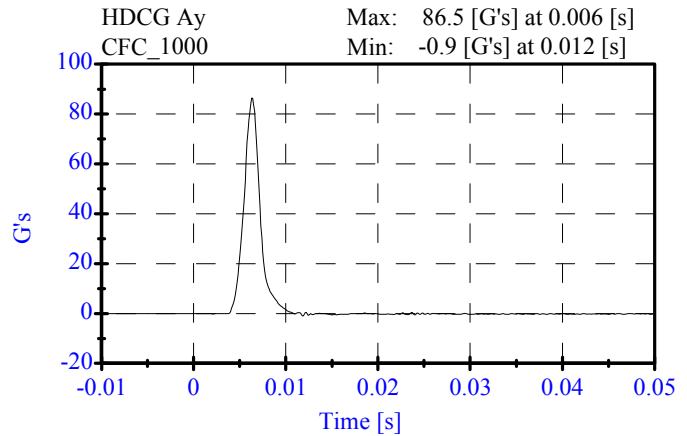
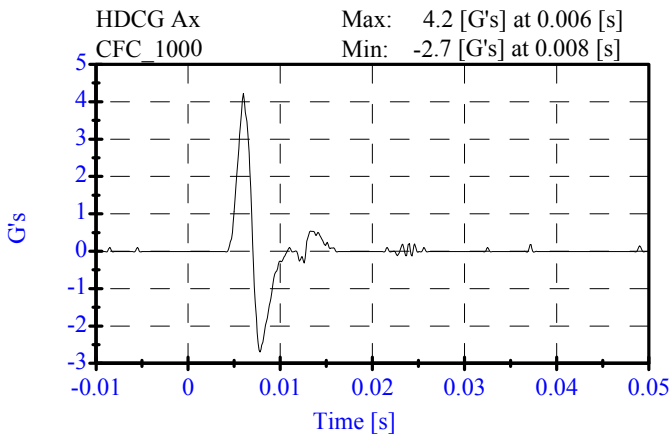
**Head Drop  
POST TEST**

**CONFIGURED FOR LEFT SIDE IMPACT**

ATD Serial No: 270  
Date: 12-01-04

Sequential Test Number: 1 File: 270H1 12-01-04  
Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.6 C	21.1 C	Passed
Lab Humidity:	10-70 %	31.00 %	Passed
Peak Resultant Accel.:	120-150 Gs	135.01 Gs	Passed
Peak Lateral Accel.:	15 Gs Max	4.23 Gs	Passed
Curve PerCent NonModal:	< 15%	1.22 %	Passed



**Neck Test  
POST TEST**

**CONFIGURED FOR LEFT SIDE IMPACT**

ATD Serial No: 270  
Date: 12-02-04

Sequential Test Number: 1 File: 270N5 12-02-04  
Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	20.6-22.2 C	21.1 C	Passed
Lab Humidity:	10-70 %	31.00 %	Passed
Impact Velocity:	6.89- 7.13 m/s	6.90 m/s	Passed
<b>PENDULUM DELTA V</b>			
Delta V at 10 ms:	1.96- 2.55 m/s	2.25 m/s	Passed
Delta V at 20 ms:	4.12- 5.10 m/s	4.54 m/s	Passed
Delta V at 30 ms:	5.73- 7.01 m/s	6.49 m/s	Passed
Delta V between 40-70 ms:	6.27- 7.64 m/s	7.18 m/s	Passed
<b>D PLANE ROTATION</b>			
Maximum Rotation:	66.0-82.0 Deg	68.34 Deg	Passed
Rotation Angle Decay:	58.0-67.0 ms	58.50 ms	Passed
<b>MOMENT ABOUT THE OCCIPITAL CONDYLE</b>			
Max Occipital Moment:	73.00- 88.00 N-m	86.65 N-m	Passed
Occipital Moment Decay:	49.0-64.0 ms	51.90 ms	Passed
<b>HEAD ROTATION TIME WITH RESPECT TO THE OCCIPITAL CONDYLE MOMENT</b>			
Moment to Rotation Peak:	2.0-16.0 ms	12.20 ms	Passed

Neck Test  
POST TEST

CONFIGURED FOR LEFT SIDE IMPACT

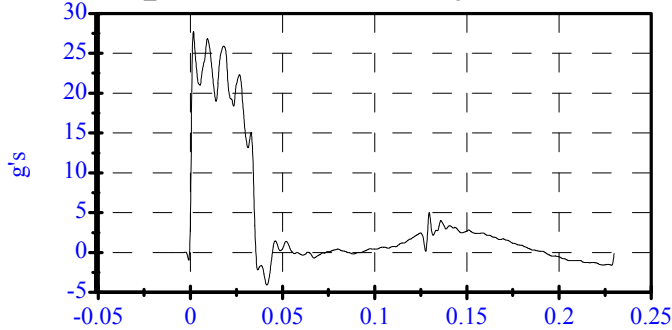
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Date: 12-02-04

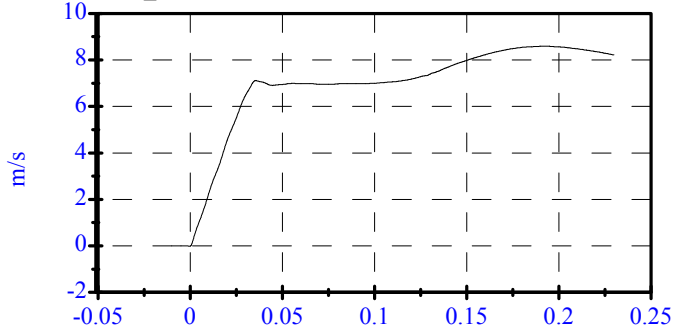
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Laboratory Technician: B. Swiecicki

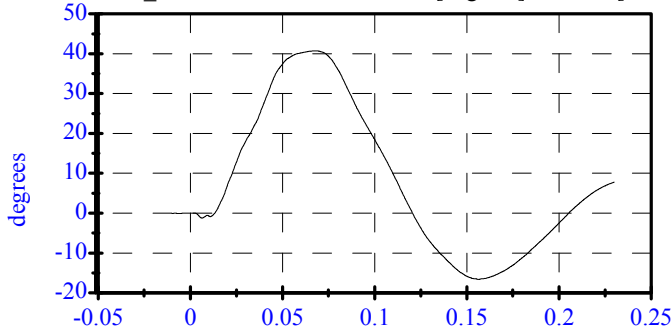
Pend Ax  
CFC\_180 Max: 27.7 [g's] at 0.002 [s]  
Min: -4.1 [g's] at 0.042 [s]



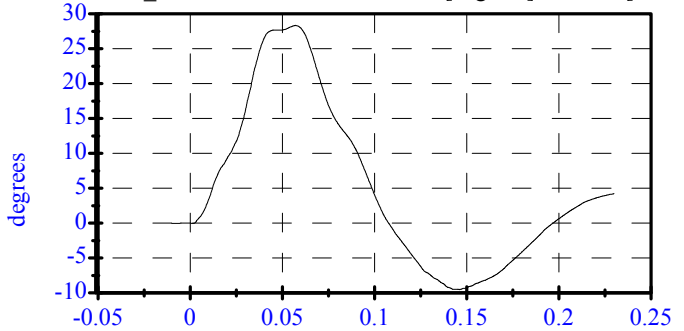
Pend Vx  
CFC\_180 Max: 8.6 [m/s] at 0.193 [s]  
Min: -0.0 [m/s] at -0.000 [s]



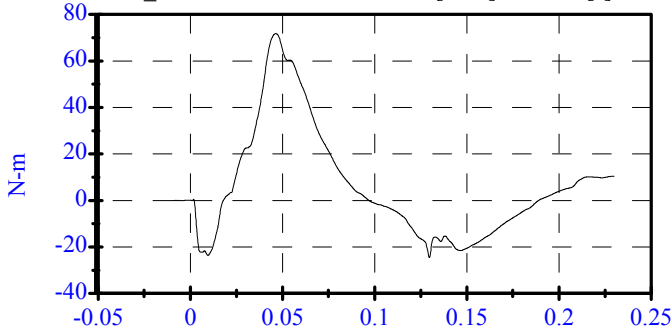
Head Rot  
CFC\_180 Max: 40.7 [degrees] at 0.068 [s]  
Min: -16.6 [degrees] at 0.156 [s]



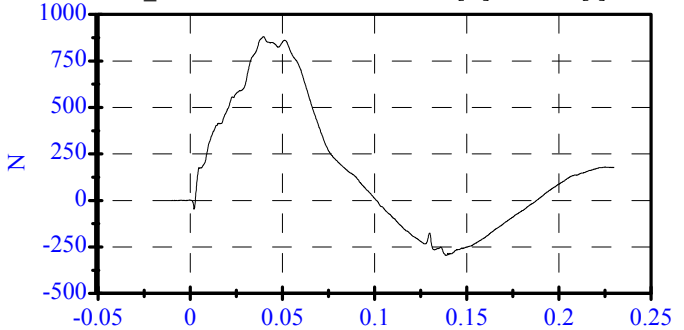
Arm Rot  
CFC\_180 Max: 28.3 [degrees] at 0.057 [s]  
Min: -9.5 [degrees] at 0.146 [s]



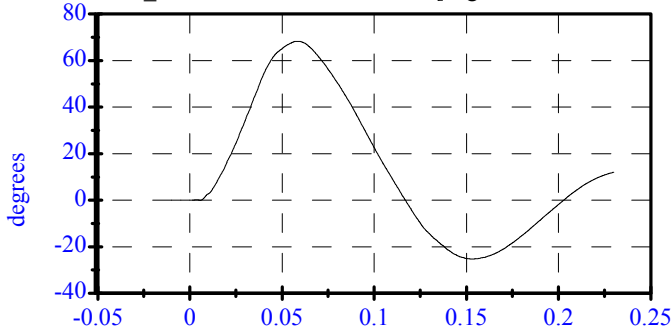
Neck Mx  
CFC\_600 Max: 71.7 [N-m] at 0.046 [s]  
Min: -24.6 [N-m] at 0.130 [s]



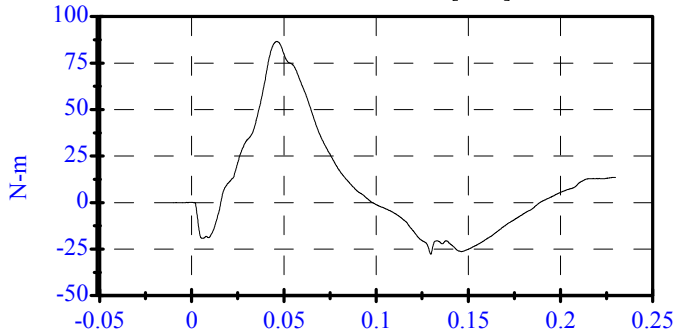
Neck Fy  
CFC\_1000 Max: 880.3 [N] at 0.040 [s]  
Min: -296.0 [N] at 0.139 [s]



Tot Rot  
CFC\_180 Max: 68.3 [degrees] at 0.058 [s]  
Min: -25.3 [degrees] at 0.153 [s]



Mocx  
Max: 86.7 [N-m] at 0.046 [s]  
Min: -27.8 [N-m] at 0.130 [s]



**Abdomen Test  
POST TEST**

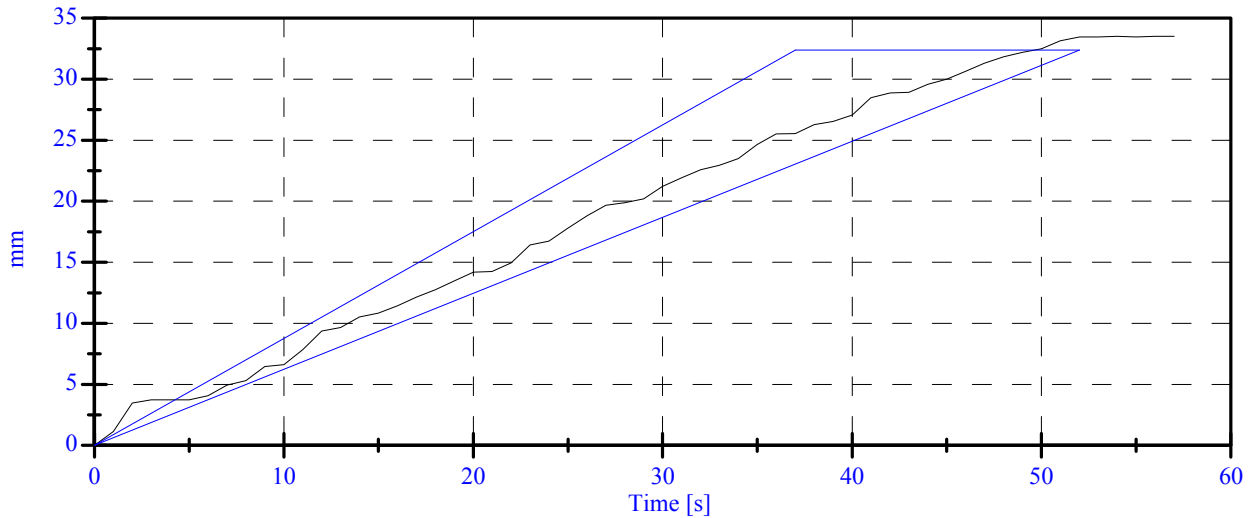
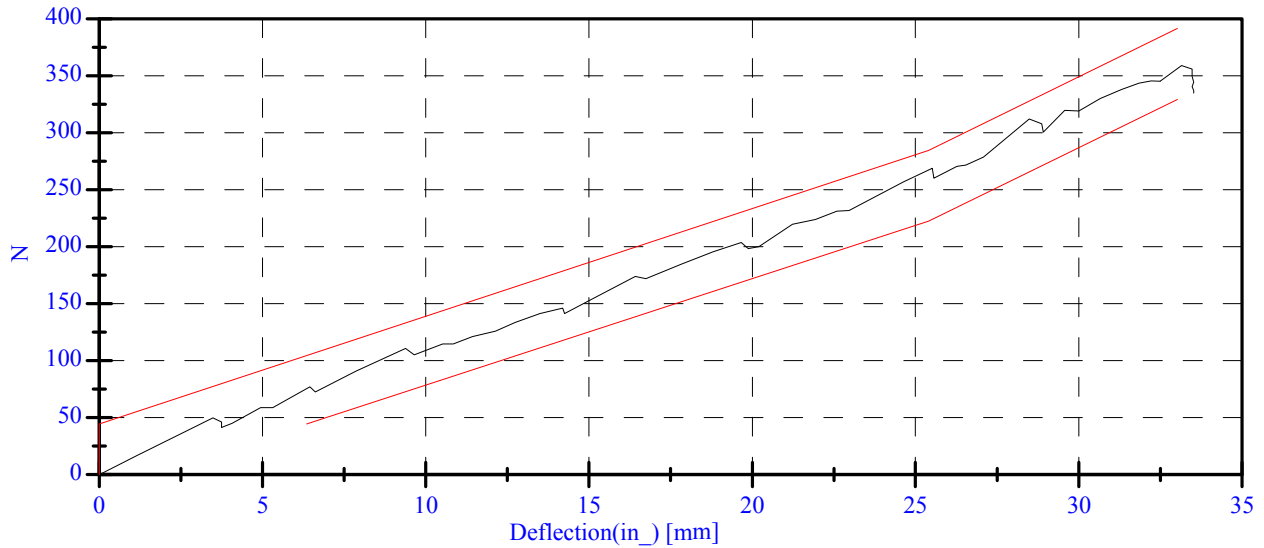
**CONFIGURED FOR LEFT SIDE IMPACT**

ATD Serial No: 270  
Date: 12-03-04

Sequential Test Number: 1 File: 270AB 12-03-04  
Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	33.00 %	Passed
Force at 12.95 mm :	104.00-162.00 N	133.49 N	Passed
Force at 19.05 mm :	162.98-220.99 N	195.63 N	Passed
Force at 25.40 mm :	221.97-280.02 N	268.74 N	Passed
Force at 33.02 mm :	324.99-391.00 N	359.02 N	Passed

**ABDOMINAL COMPRESSION TEST**



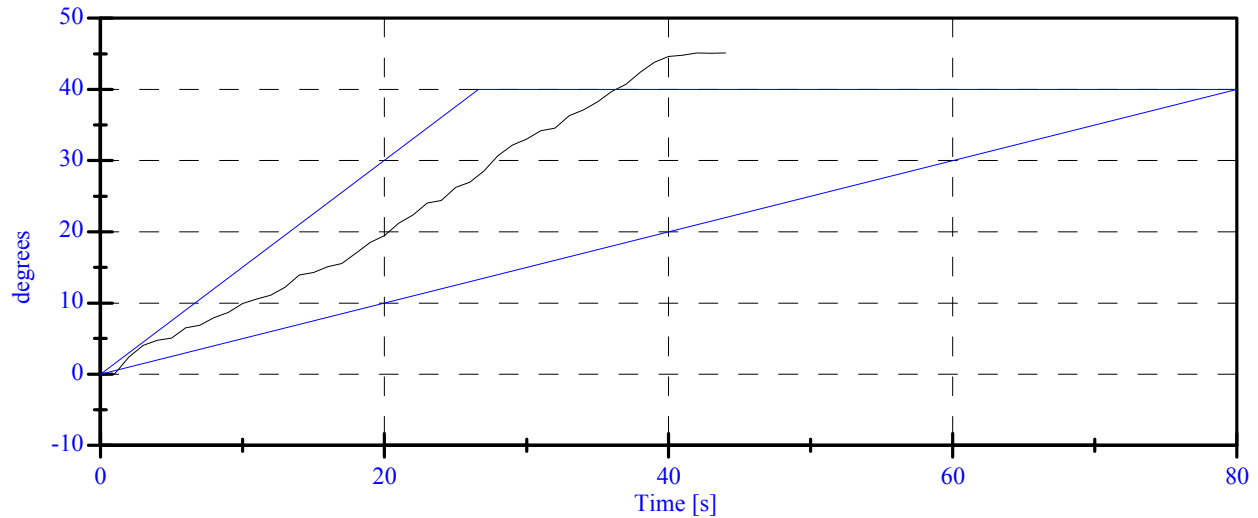
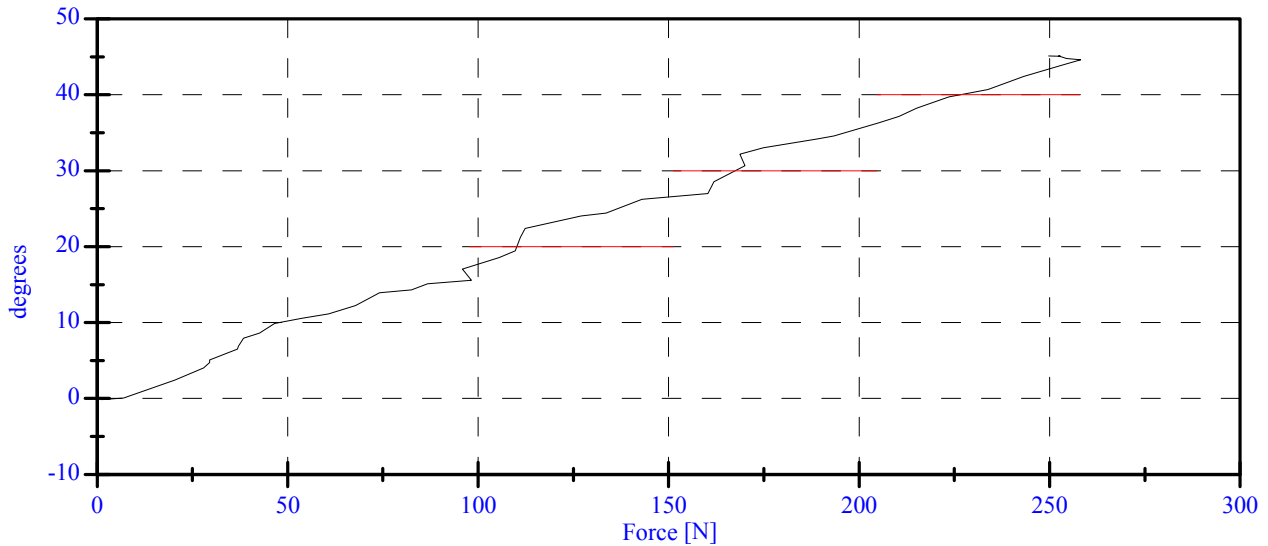
**Lumbar Spine Test**  
**POST TEST**  
**CONFIGURED FOR LEFT SIDE IMPACT**

ATD Serial No: 270  
 Date: 12-03-04

Sequential Test Number: 1 File: 270Spine 12-03-04  
 Laboratory Technician: B. Swiecicki

<u>TEST PARAMETER</u>	<u>SPECIFICATION</u>	<u>TEST RESULTS</u>	<u>STATUS</u>
Lab Temperature:	18.9-25.5 C	21.1 C	Passed
Lab Humidity:	10-70 %	33.00 %	Passed
Force at 0 Deg:	0.00-26.69 N	6.95 N	Passed
Force at 20 Deg:	97.86-151.24 N	109.74 N	Passed
Force at 30 Deg:	151.24-204.62 N	170.05 N	Passed
Force at 40 Deg:	204.62-258.00 N	223.54 N	Passed
Return Angle	12 Deg Max	4.66 deg	Passed

**LUMBAR SPINE FLEXION TEST**



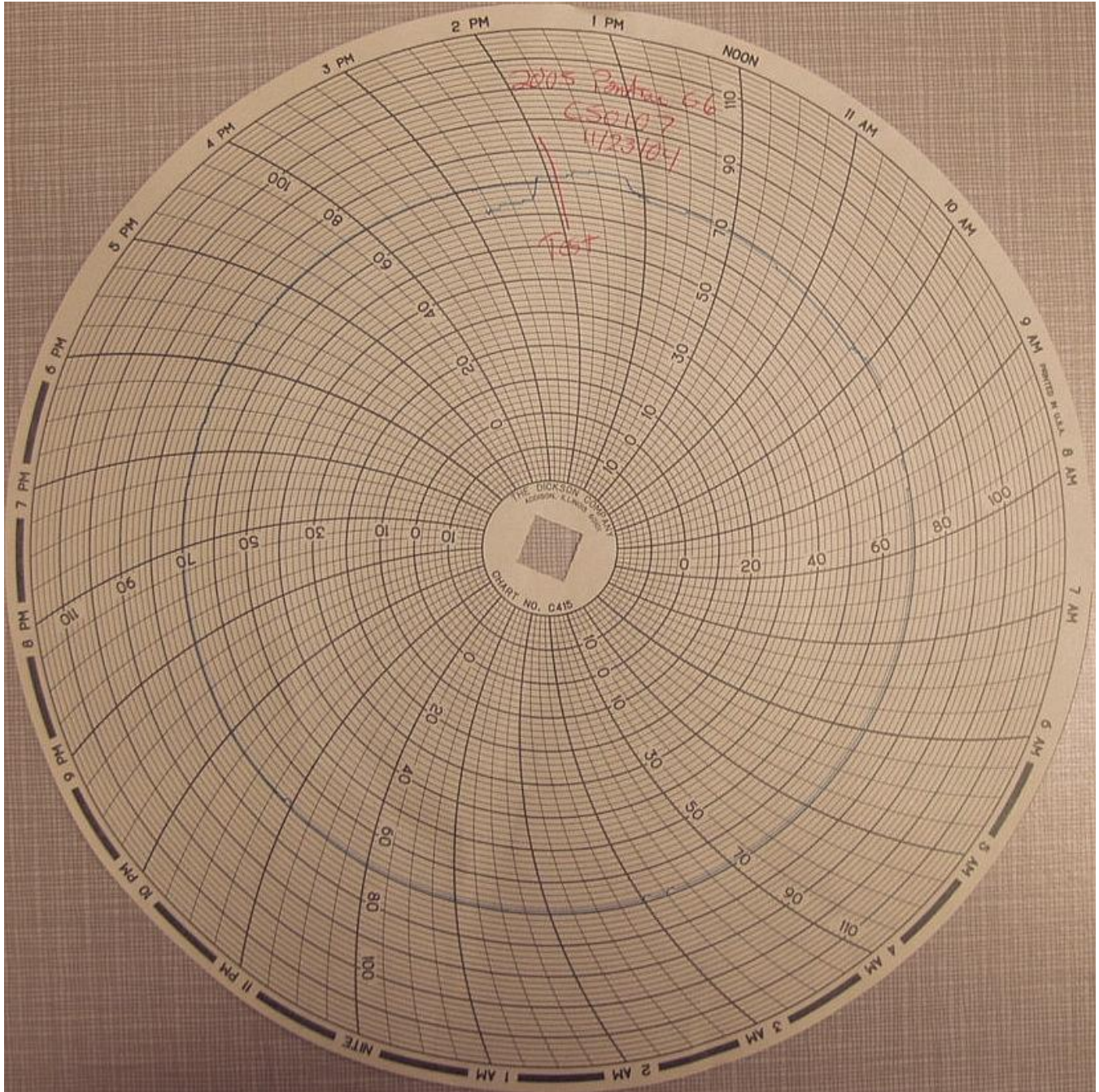
**POST TEST DUMMY INSPECTION LIST**  
**CONFIGURED FOR LEFT SIDE IMPACT**

SID H3 Serial No.: 270 Sequential Test Number: 5  
 Date: December 3, 2004 Laboratory Technician: B. Swiecicki

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

**REMARKS:** None

# TEMPERATURE TRACE



**APPENDIX D**

**TEST EQUIPMENT LIST AND CALIBRATION INFORMATION**

**TEST EQUIPMENT LIST AND CALIBRATION INFORMATION**

**SID INSTRUMENTATION**

	FRONT SID NO.: 269		
	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
HEAD AX	AC-P18738	ENDEVCO	13-Jul-04
HEAD AY	AC-P18739	ENDEVCO	13-Jul-04
HEAD AZ	AC-P19212	ENDEVCO	13-Jul-04
UPPER NECK FX	LC-440Fx	DENTON	6-Nov-04
UPPER NECK FY	LC-440Fy	DENTON	6-Nov-04
UPPER NECK FZ	LC-440Fz	DENTON	6-Nov-04
UPPER NECK MX	LC-440Mx	DENTON	6-Nov-04
UPPER NECK MY	LC-440My	DENTON	6-Nov-04
UPPER NECK MZ	LC-440Mz	DENTON	6-Nov-04
UPPER RIB	AC-P16862	ENDEVCO	7-Oct-04
LOWER RIB	AC-P23156	ENDEVCO	7-Oct-04
LOWER SPINE	AC-P16645	ENDEVCO	7-Oct-04
PELVIS	AC-P16843	ENDEVCO	7-Oct-04
UPPER RIB REDUNDANT	AC-P16866	ENDEVCO	7-Oct-04
LOWER RIB REDUNDANT	AC-P16656	ENDEVCO	7-Oct-04
LOWER SPINE REDUNDANT	AC-P19343	ENDEVCO	7-Oct-04
PELVIS REDUNDANT	AC-P16676	ENDEVCO	7-Oct-04

	REAR SID NO.: 270		
	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
HEAD AX	AC-P16845	ENDEVCO	18-Aug-04
HEAD AY	AC-P23788	ENDEVCO	18-Aug-04
HEAD AZ	AC-P21393	ENDEVCO	18-Aug-04
UPPER NECK FX	LC-205Fx	DENTON	6-Nov-04
UPPER NECK FY	LC-205Fy	DENTON	6-Nov-04
UPPER NECK FZ	LC-205Fz	DENTON	6-Nov-04
UPPER NECK MX	LC-205Mx	DENTON	6-Nov-04
UPPER NECK MY	LC-205My	DENTON	6-Nov-04
UPPER NECK MZ	LC-205Mz	DENTON	6-Nov-04
UPPER RIB	AC-P15736	ENDEVCO	12-Jul-04
LOWER RIB	AC-P16289	ENDEVCO	12-Jul-04
LOWER SPINE	AC-P16761	ENDEVCO	13-Jul-04
PELVIS	AC-P32221	ENDEVCO	12-Jul-04
UPPER RIB REDUNDANT	AC-P16593	ENDEVCO	12-Jul-04
LOWER RIB REDUNDANT	AC-P23142	ENDEVCO	12-Jul-04
LOWER SPINE REDUNDANT	AC-P21516	ENDEVCO	12-Nov-04
PELVIS REDUNDANT	AC-P23960	ENDEVCO	12-Jul-04

**REMARKS:** None

**TEST EQUIPMENT LIST AND CALIBRATION INFORMATION**

**VEHICLE AND MDB INSTRUMENTATION**

	VEHICLE AND MDB INSTRUMENTS		
	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
RIGHT FRONT SILL (X)	AC-J31101	ENDEVCO	4-Nov-05
RIGHT FRONT SILL (Y)	AC-J31059	ENDEVCO	4-Nov-04
RIGHT FRONT SILL (Z)	AC-J31020	ENDEVCO	4-Nov-04
RIGHT REAR SILL (X)	AC-P19246	ENDEVCO	28-Jul-04
RIGHT REAR SILL (Y)	AC-J31034	ENDEVCO	28-Jul-04
RIGHT REAR SILL (Z)	AC-P23873	ENDEVCO	28-Jul-04
REAR FLOORPAN ABOVE AXLE (X)	AC-J33843	ENDEVCO	8-Sep-04
REAR FLOORPAN ABOVE AXLE (Y)	AC-J30041	ENDEVCO	29-May-04
REAR FLOORPAN ABOVE AXLE (Z)	AC-J32185	ENDEVCO	4-Nov-04
LEFT REAR SILL (Y)	AC-FGP20	ICS	27-Aug-04
LEFT FRONT SILL (Y)	AC-FGP03	ICS	19-Jul-04
LEFT FRONT DOOR CENTERLINE (Y)	-	-	-
RIGHT REAR SEAT OCCUPANT COMP. (Y)	AC-9440-045	GS SENSORS	9-Jun-04
MID REAR OF LEFT FRONT DOOR (Y)	-	-	-
LEFT FRONT DOOR UPPER C\L (Y)	-	-	-
MID REAR OF LEFT REAR DOOR (Y)	-	-	-
LEFT REAR DOOR UPPER C\L (Y)	-	-	-
LOWER LEFT B- PILLAR (Y)	AC-FGP16	ICS	27-Aug-04
MIDDLE LEFT B-PILLAR (Y)	AC-FGP46	ICS	24-Aug-04
LOWER LEFT A-PILLAR (Y)	AC-FGP37	ICS	27-Aug-04
UPPER LEFT A-PILLAR (Y)	AC-FGP39	ICS	27-Aug-04
FRONT SEAT TRACK (Y)	AC-FGP22	ICS	27-Aug-04
REAR SEAT TRACK (Y)	AC-FGP18	ICS	20-Aug-04
VEHICLE CG (X)	AC-J37854	ENDEVCO	7-Oct-04
VEHICLE CG (Y)	AC-J37980	ENDEVCO	7-Oct-04
VEHICLE CG (Z)	AC-J38127	ENDEVCO	7-Oct-04
MDB CG (X)	AC-C16433	ENDEVCO	31-Aug-04
MDB CG (Y)	AC-C16416	ENDEVCO	31-Aug-04
MDB CG (Z)	AC-C16499	ENDEVCO	31-Aug-04
MDB REAR FRAME MEMBER (X)	AC-C14948	ENDEVCO	31-Aug-04
MDB REAR FRAME MEMBER (Y)	AC-C16680	ENDEVCO	31-Aug-04

**REMARKS:** None