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REPORT NUMBER 214-CAL-02-7

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

FORD MOTOR COMPANY OF CANADA, LTD
2002 FORD SVT F150 LIGHTNING
FLARE SIDE PICKUP

NHTSA NUMBER C20208

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



March 13, 2002

FINAL REPORT

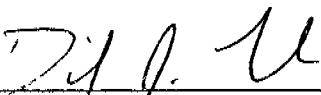
U S DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration
Safety Assurance
Office of Vehicle Safety Compliance
400 Seventh Street, SW
Room 6111 (NSA-30)
Washington, DC 20590

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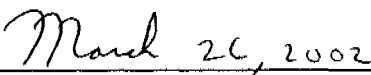
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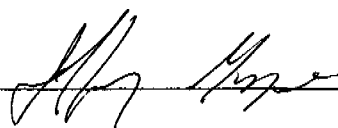

David J Travale, Program Manager
Transportation Sciences Center

Approval Date

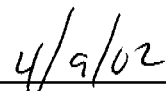

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16 Abstract A 48/24 kph 90° Impact Moving Deformable Barrier Side Impact Test was conducted on the subject 2002 Ford SVT F150 Lightning Flare Side Pickup in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No TP-214D-06 (July 26, 2001) to determine FMVSS 214 Side Impact Protection compliance This test was conducted at the Veridian Engineering Crash Test Facility in Buffalo, New York, on March 13, 2002. The impact velocity of the Moving Deformable Barrier (MDB) was 52 63 kph, and the ambient temperature at the struck (driver's) side of the target vehicle at the time of impact was 21°C The target vehicle post-test maximum crush was 334 mm at level 1 The test vehicle's performance follows <table border="1"> <thead> <tr> <th></th> <th>Front SID</th> <th></th> </tr> </thead> <tbody> <tr> <td>Left Upper Rib Acceleration (LUR)</td> <td>20</td> <td>g's</td> </tr> <tr> <td>Left Lower Rib Acceleration (LLR)</td> <td>22 1</td> <td>g's</td> </tr> <tr> <td>Lower Spine Acceleration (T₁₂)</td> <td>26 7</td> <td>g's</td> </tr> <tr> <td>Thoracic Trauma Index (TTI)</td> <td>24</td> <td>g's</td> </tr> <tr> <td>Pelvis Acceleration (PEV)</td> <td>33</td> <td>g's</td> </tr> </tbody> </table> 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							Front SID		Left Upper Rib Acceleration (LUR)	20	g's	Left Lower Rib Acceleration (LLR)	22 1	g's	Lower Spine Acceleration (T ₁₂)	26 7	g's	Thoracic Trauma Index (TTI)	24	g's	Pelvis Acceleration (PEV)	33	g's
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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 DTNH22-97-C-01033. The purpose of this test was to evaluate side impact protection in a 2002 Ford SVT F150 Lightning Flare Side Pickup. The test was conducted in accordance with the Office of Vehicle Safety Compliance's Laboratory Test Procedure (TP-214D-06, dated July 26, 2001).

SECTION 2

SUMMARY OF SIDE IMPACT TEST

A 2002 Ford SVT F150 Lightning Flare Side Pickup 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 52.63 kph (32.7 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 Veridian Engineering Transportation Sciences Center in Buffalo, New York on March 13, 2002. Pre- and post-test photographs of the test vehicle, the moving deformable barrier (MDB), and the side impact dummies (SIDs) are included in Appendix A.

One restrained Side Impact Dummy (SID) was placed in the driver (Pos #1) designated seating position according to the instructions specified in the OVSC Side Impact Laboratory Test Procedure (TP-214D-06, dated July 26, 2001). The SID was certified prior to this test. The side impact test was documented by one real-time camera and 8 high-speed cameras. Camera locations and other pertinent camera information are included in this report.

The SID was 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 (T₁₂) 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)

A summary of the side impact dummy (SID) configuration and verification test data can be found in Appendix C. A total of 38 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
TTI (g)	24
PEV (g)	33

FMVSS 214D requires that the TTI not exceed 85 g's for 4 door vehicles and not exceed 90 g's for 2 door vehicles. Peak lateral pelvis acceleration shall not exceed 130 g's.

The vehicle appeared to exceed the rotation leakage requirements of FMVSS 301 "Fuel System Integrity" during the 90° phase of the static rollover test. Details of the static rollover are presented on Data Sheets 4 and 17.

SECTION 3

SUMMARY OF TEST RESULTS

DATA SHEET 1

GENERAL TEST AND VEHICLE PARAMETER DATA

TEST VEHICLE INFORMATION

Year/Make/Model/Body Style	2002 Ford SVT F150 Lightning Flare Side Pickup		
Vehicle Body Color	Red	VIN	2FTZF07342CA33942
Vehicle NHTSA No	C20208	Month & Year of Manufacture	12/01
Engine Data	8 Cylinders;	- CID,	5 4 Liters, - cc
Engine Placement	X Longitudinal,	or -	Lateral
Transmission	4 Speed,	- Manual,	X Automatic, X Overdrive
Final Drive	X Rear Wheel Drive,	- Front Wheel Drive,	- Four Wheel Drive
Odometer Reading	24	km	
Options	X A/C,	X Power Steering,	X Power Brakes, X Power Windows

DATA FROM TIRE PLACARD

Tire Pressure* (at capacity); 221 kPa FRONT
221 kPa REAR

Recommended Tire Size	P295/45R18Z		
Tires on Test Vehicle	P295/45R18Z	Manufacturer	Goodyear

Vehicle Capacity Data

Number of Occupants	3 Front;	- Rear,	- 3rd Seat,	3 Total
Type of Front Seat	- Bucket,	- Bench,	X Split Bench	
Type of Rear Seat	- Bucket,	- Bench,	- Contoured	
Type of Front Seat Back	- Fixed,	X Adjustable with	X Lever or - Knob	
Type of Rear Seat Back	- Fixed,	- Adjustable with	- Lever or - Knob	
Vehicle Max Capacity Loading =	<u>330 0</u> kg (A)			
No of Occupants x 68.04 kg. =	<u>204 12</u> kg (B)			
Vehicle Cargo Capacity =	<u>125.88</u> kg (A-B)			

TEST VEHICLE DELIVERED WEIGHT WITH MAXIMUM FLUIDS.

Left Front =	<u>623 5</u> kg	Left Rear =	<u>463.0</u> kg
Right Front =	<u>609.0</u> kg	Right Rear =	<u>446.5</u> kg
TOTAL FRONT =	<u>1232.5</u> kg	TOTAL REAR =	<u>909 5</u> kg
% of Total Weight =	<u>57 5</u> %	% of Total Weight =	<u>42 5</u> %
TOTAL WEIGHT =	<u>2142 0</u> kg		

* Tire pressure used in test

DATA SHEET 1 (continued)

GENERAL TEST VEHICLE PARAMETER DATA

Vehicle 2002 Ford SVT F150 Lightning Flare Side Pickup

NHTSA No C20208

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT

Total Test Vehicle Delivered Weight with Max Fluids	=	<u>2142 0</u>	kg (A)
Maximum Cargo Carrying Capacity of Test Vehicle	=	<u>125 88</u>	kg (B)
Weight of instrumented Side Impact Dummy	=	<u>81 2</u>	kg (C)
TEST VEHICLE TARGET WEIGHT	=	<u>2349 08</u>	kg (A+B+C)

FULLY LOADED TEST VEHICLE (UDVW + 1 SID + CARGO)

Left Front	=	<u>653 5</u>	kg	Left Rear	=	<u>549 0</u>	kg
Right Front	=	<u>629 5</u>	kg	Right Rear	=	<u>519 0</u>	kg
TOTAL FRONT	=	<u>1283 0</u>	kg	TOTAL REAR	=	<u>1068.0</u>	kg
% of Total Weight	=	<u>54 6%</u>	%	% of Total Weight	=	<u>45 4%</u>	%
TOTAL TEST WEIGHT =		<u>2351 0</u>	kg				

AS TESTED WEIGHT OF TEST VEHICLE (1 SID + CARGO + EQUIPMENT & INSTRUMENTATION)

Left Front	=	<u>654 5</u>	kg	Left Rear	=	<u>536 5</u>	kg
Right Front	=	<u>633 5</u>	kg	Right Rear	=	<u>517 5</u>	kg
TOTAL FRONT	=	<u>1288 0</u>	kg	TOTAL REAR	=	<u>1054 0</u>	kg
% of Total Weight	=	<u>55 0%</u>	%	% of Total Weight	=	<u>45 0%</u>	%
TOTAL TEST WEIGHT =		<u>2342 0</u>	kg				

TEST VEHICLE ATTITUDE (all dimensions in millimeters).

AS DELIVERED.

Left Front	<u>843</u>	Right Front	<u>842</u>	Left Rear	<u>871</u>	Right Rear	<u>883</u>
------------	------------	-------------	------------	-----------	------------	------------	------------

FULLY LOADED

Left Front	<u>831</u>	Right Front	<u>831</u>	Left Rear	<u>847</u>	Right Rear	<u>863</u>
------------	------------	-------------	------------	-----------	------------	------------	------------

READY FOR TEST

Left Front	<u>833</u>	Right Front	<u>835</u>	Left Rear	<u>849</u>	Right Rear	<u>863</u>
------------	------------	-------------	------------	-----------	------------	------------	------------

Test Vehicle Wheelbase 3043 millimeters

C G = 1369.48 millimeters rearward of front wheel centerline

TOTAL VEHICLE LENGTH

Right Side =	<u>5222</u>	millimeters
Left Side =	<u>5222</u>	millimeters
Centerline =	<u>5295</u>	millimeters

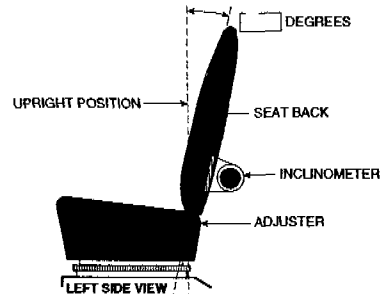
DATA SHEET 1 (continued)

GENERAL TEST VEHICLE PARAMETER DATA

Vehicle: 2002 Ford SVT F150 Lightning Flare Side Pickup

NHTSA No C20208

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



FRONT SEAT ASSEMBLY

FRONT SEAT CUSHION PLACEMENT: Mid-Position (100 mm of 200 mm total travel)

Total Length of Adjustment Travel 200 millimeters

Total Number of Adjustment Positions or Detents Electronically Adjustable

FRONT SEAT BACK ADJUSTMENT POSITION Measured 330 mm above pivot on outboard seat frame

Seat Back Torso Angle 21.5 degrees

SECOND POSITION SEAT:

Total Length of Fore/Aft Adjustment Travel N/A millimeters

Seat Back Adjustment Position N/A

ADJUSTABLE STEERING COLUMN POSITION Mid-Position

WINDOW POSITIONS. Left Front: Closed Left Rear: N/A

Right Front: Removed Right Rear: N/A

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

94.6 liters (Fuel Tank Usable Capacity)

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

LOCATION OF IMPACT POINT ON TEST VEHICLE SIDE TO BE IMPACTED

Wheelbase = 3043 Millimeters

Impact Point is 508 millimeters rearward of front axle centerline

Actual Impact Point is 504 millimeters rearward of front axle centerline

DATA SHEET 2

TEST VEHICLE SUMMARY OF RESULTS

VEHICLE IDENTIFICATION

Vehicle Year/Make/Model 2002 Ford SVT F150 Lightning

Body Style Flare Side Pickup

VIN 2FTZF07342CA33942

NHTSA No C20208

Test Date March 13, 2002

Overall Length = 5295 millimeters, Overall Width = 1950 millimeters

VEHICLE TEST WEIGHT (Pre-Test)

Left Front = 654 5 kg Left Rear = 536 5 kg

Right Front = 633 5 kg Right Rear = 517 5 kg

TOTAL FRONT = 1288 0 kg TOTAL REAR = 1054 0 kg

TOTAL VEHICLE WEIGHT 2342 0 kg

Wheelbase = 3043 millimeters

Longitudinal C G from Center of Front Axle = 1369 48 millimeters

Impact Angle with Respect to Impactor = 90 degrees

ACTUAL IMPACT POINT

Actual Impact Point is 4 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 (384 mm above ground) = 334 millimeters

2 LEVEL 2 (801 mm above ground) = 185 millimeters

3 LEVEL 3 (728 mm above ground) = 183 millimeters

4 LEVEL 4 (1088 mm above ground) = 29 millimeters

5 LEVEL 5 (1687 mm above ground) = -4 millimeters

Maximum Post-Test Intrusion = 334 millimeters

OCCUPANTS

Front Passenger

Dummy Identification 015

Restraints Used 3-Point Safety Belt

INSTRUMENTATION

Number of Vehicle Data Channels = 18

Number of Cameras Onboard = 2

Offboard = 8

TOTAL = 10

DATA SHEET 3

MOVING DEFORMABLE BARRIER (MDB) SUMMARY

Vehicle 2002 Ford SVT F150 Lightning Flare Side Pickup

NHTSA No. C20208

MDB FACE MANUFACTURER AND SERIAL NUMBER

Plascore, Inc 085B1001-1 020C1001

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>52 63</u>	kph				

MAXIMUM STATIC CRUSH OF HONEYCOMB IMPACT FACE

1 Row A at Center of Bumper Level	=	<u>28</u>	millimeters
2 Row B at Top of Bumper Level	=	<u>113</u>	millimeters
3 Row C at Mid Level	=	<u>117</u>	millimeters
4. Row D at Top of Stack Level	=	<u>148</u>	millimeters

INSTRUMENTATION

Number of MDB Data Channels = 5

DATA SHEET 4

POST-TEST OBSERVATIONS

Vehicle 2002 Ford SVT F150 Lightning Flare Side Pickup

NHTSA No C20208

VISIBLE DUMMY CONTACT POINTS

LEFT FRONT SID

Head	<u>Top of the Head to the side header, Back of the head to the headrest</u>
Upper Torso	<u>Door Trim Panel</u>
Lower Torso	<u>Door Trim Panel</u>
Left Knee	<u>Door Trim Panel</u>
Right Knee	<u>Left Knee</u>

DOOR OPENING

LEFT DOOR

RIGHT DOOR

Front	<u>Closed/Inoperable</u>	<u>Closed/Operable</u>
-------	--------------------------	------------------------

MDB DISTANCE FROM TARGET IMPACT POINT

Vertical. 5 mm below

Horizontal. 4 mm forward

ARM REST LOCATIONS

Front	<u>Pushed inboard and rotated upward during the event</u>
Rear	<u>N/A</u>

SEAT MOVEMENT

Front	<u>Pushed inboard during the event</u>
Rear	<u>N/A</u>

GLAZING DAMAGE

Windshield	<u>Cracked at lower left corner along left A-Pillar</u>
Window	<u>None</u>

PILLAR PERFORMANCE

The A- and B-Pillars were moved inboard during the event with no visible tears or separations.

SILL SEPARATION.

No visible tears or separations.

AIR BAG DEPLOYMENT STATUS.

	DRIVER	FRONT PASSENGER
FRONT	No	No
SIDE	N/A	N/A

OTHER NOTABLE IMPACT EFFECTS

The vehicle appeared to leak Stoddard solvent from the filler neck during the 90° phase of the rollover. Upon investigation it appeared that the fuel filler cap was separated from it's seal through interaction with the vehicle body panel during the event. A total of 2948 g of solvent were collected from the onset of the rollover stage until 1 minute and 22 seconds at the 90° position. The rollover was then terminated for visual inspection and not completed.

SECTION 4

OCCUPANT AND VEHICLE INFORMATION

DATA SHEET 5

SID INSTRUMENTATION DATA

Vehicle 2002 Ford SVT F150 Lightning Flare Side Pickup

NHTSA No C20208

		Front Dummy ID# 015			
		Pos Direction		Neg Direction	
		Max (g)	Time (msec)	Max (g)	Time (msec)
HEAD ACCELERATIONS					
Longitudinal	X	1 2	58 1	-5 6	123 1
Lateral	Y	24 3	65 7	-5 3	54 9
Vertical	Z	27 1	92 8	-11 0	39 3
Resultant	R	31 5	65 5	0 0	-9 6
HIC		52 6			
RIB ACCELERATIONS					
Upper Rib Lateral	Y	20 0	63 1	-3 2	119 4
Upper Rib Lateral	Y(R)	20.3	63 1	-3 4	119 4
Lower Rib Lateral	Y	22 1	56.9	-4 6	90 7
Lower Rib Lateral	Y(R)	21 3	56 9	-4 6	90 7
SPINE ACCELERATIONS					
Lower Lateral	Y	26 7	41 9	-18 8	78.2
Lower Lateral	Y(R)	26 9	41.9	-18.7	78 2
PELVIC ACCELERATIONS					
Lateral	Y	33 3	45 0	-8 2	88.1
Lateral	Y(R)	33 5	45.0	-8 2	88.1

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

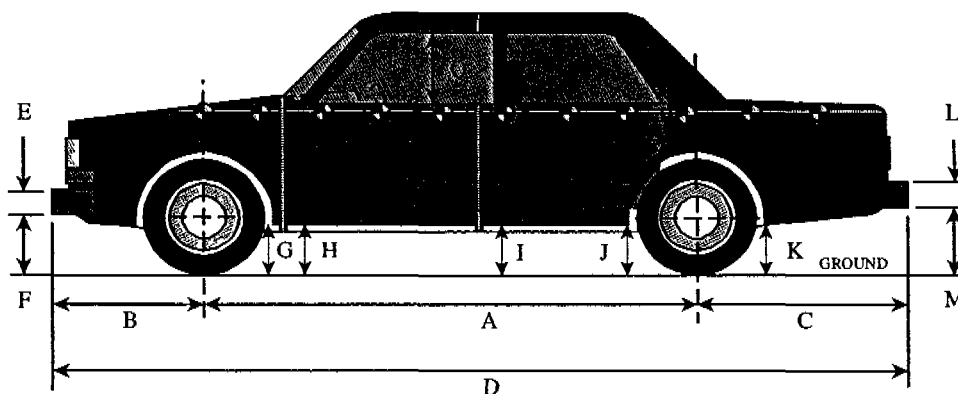
Note Above data has been FIR filtered, Y(R) denotes redundant Y direction accelerometer.
 Head Accelerations are filtered at SAE Class 1000

DATA SHEET 6

VEHICLE SIDE MEASUREMENTS

Vehicle 2002 Ford SVT F150 Lightning Flare Side Pickup

NHTSA No C20208



LEFT SIDE VIEW

NOTE all dimensions are in millimeters with tolerance of ± 3 mm

	PRE-TEST (as delivered)	PRE-TEST (as tested)	POST-TEST (as tested)	Δ CHANGE
A	3043	3043	3045	2
B	1018	1018	1013	-5
C	1234	1234	1240	6
D	5295	5295	5298	3
E	385	-	385	0
F	245	241	253	12
G	237	213	219	6
H	243	227	218	-9
I	240	223	237	14
J1	364	347	350	3
J2	262	245	264	19
K	315	291	321	30
L	222	-	222	0
M	440	420	408	-12
N	793	-	787	-6
O	761	-	746	-15
P	510	-	512	2
Q	553	-	788	235
R	5222	-	5220	-2
S	5222	-	5227	5
T	1950	-	1655	-295

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

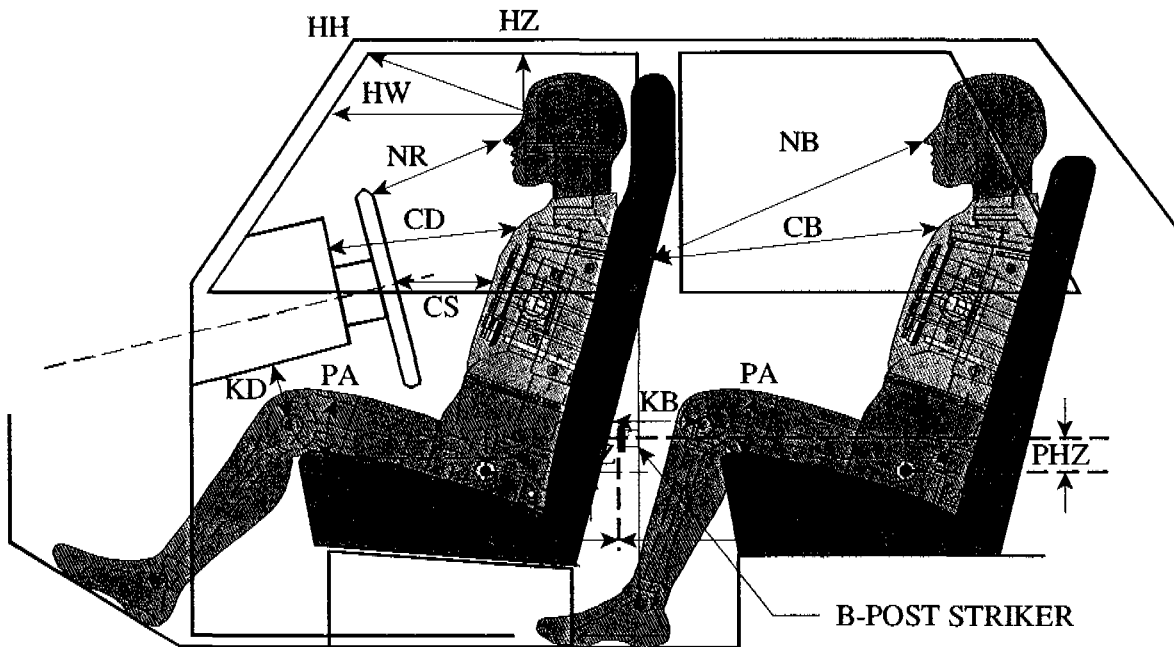
J2 = To Sill

DATA SHEET 7

SID LONGITUDINAL CLEARANCE DIMENSIONS

Vehicle 2002 Ford SVT F150 Lightning Flare Side Pickup

NHTSA No. C20208



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 ± 3 mm

DRIVER ID# 015	
HH	424
HW	659
HZ	231
NR/NB	418
CD/CB	577
CS	290
KDL(KDA°)/KBL(KDA°)	159 / (38 °)
KDR(KBA°)/KBR(KBA°)	159 / (37 °)
PA°	24.1 °
PHX	383
PHZ	51

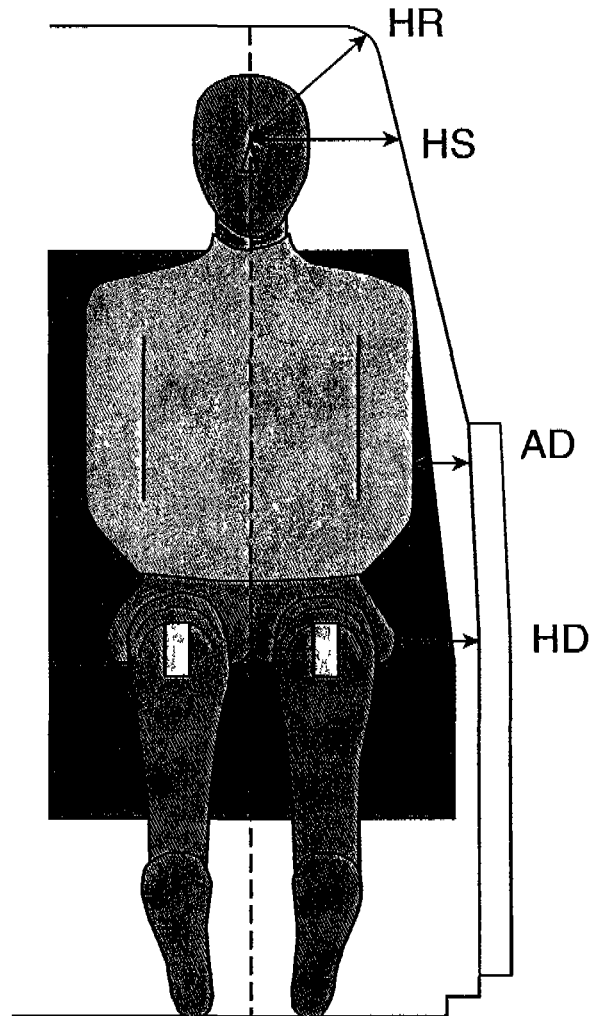
Note 2-door vehicle shown. Rear dummy PHX & PHZ measurements for 4-door vehicle would use the C-post striker as a reference point

DATA SHEET 8

SID LATERAL CLEARANCE DIMENSIONS

Vehicle. 2002 Ford SVT F150 Lightning Flare Side Pickup

NHTSA No. C20208



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

DRIVER ID # 015				
HR	241			
HS	315			
AD*	LOWER.	126	UPPER.	193
HD	165			

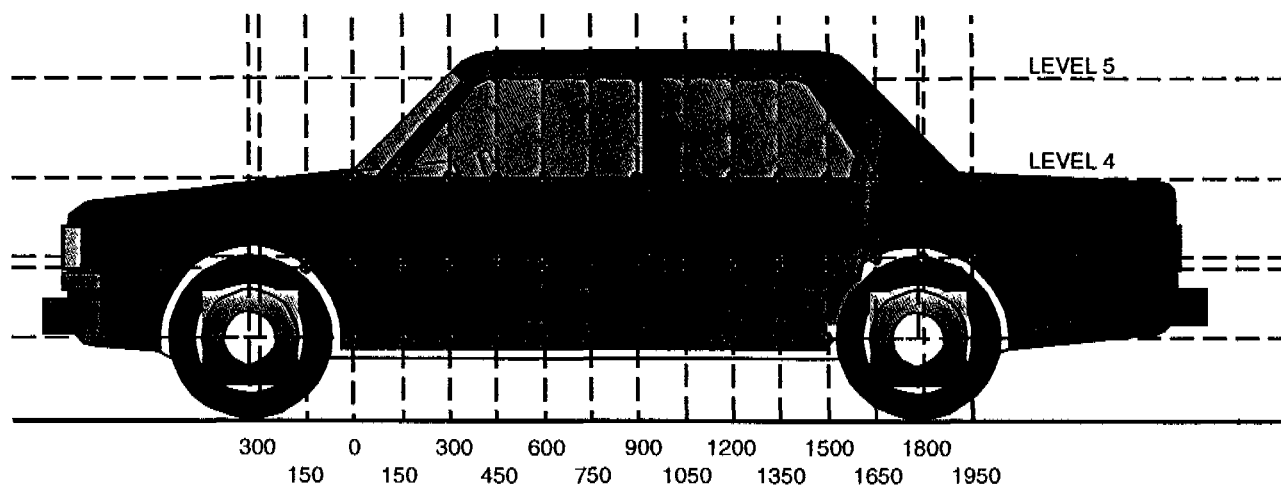
* Lower measurement is taken laterally at the center of the lower rib accelerometer height from the SID arm to the closest part of the vehicle side. Upper measurement is taken laterally at the center of the upper rib accelerometer height from the SID arm to the closest part of the vehicle side.

DATA SHEET 9

VEHICLE SIDE MEASUREMENTS

Vehicle 2002 Ford SVT F150 Lightning Flare Side Pickup

NHTSA No. C20208



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 - SILL TOP HEIGHT

MEASUREMENTS ARE TAKEN WHEN THE VEHICLE IS IN THE "AS TESTED" CONFIGURATION.
 Measurements Along the Vertical 750 mm Line Shown Above.

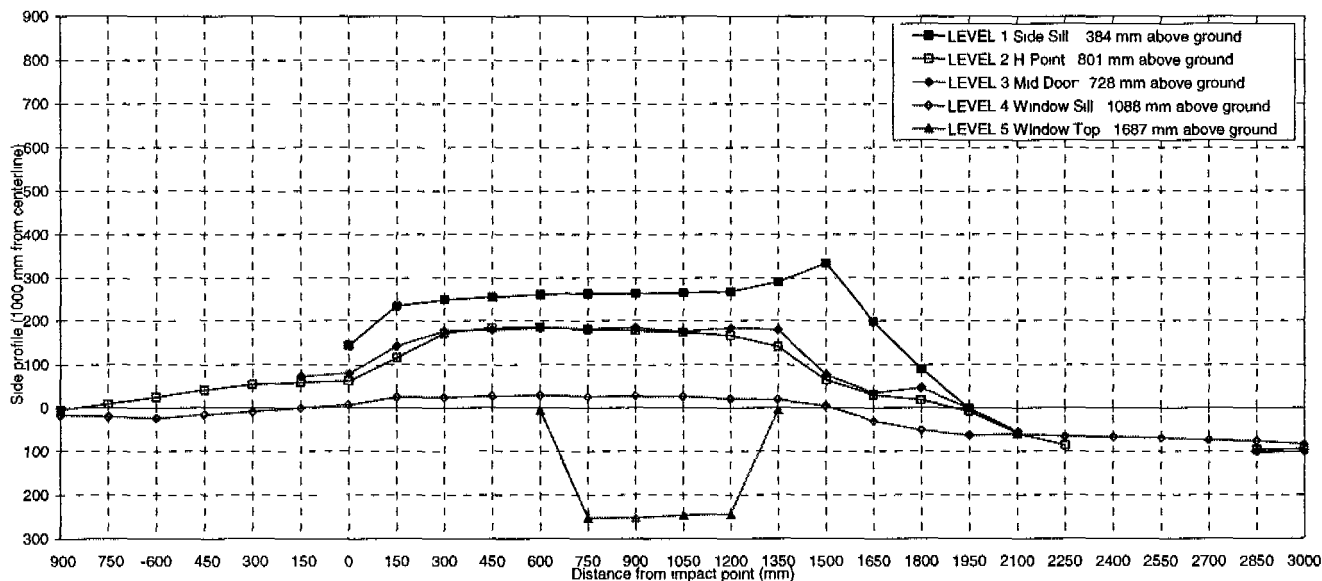
Level 5 @ Window Top	=	<u>1687</u>	millimeters
Level 4 @ Window Sill	=	<u>1088</u>	millimeters
Level 3 @ Mid Door	=	<u>728</u>	millimeters
Level 2 @ Occupant H-Point	=	<u>801</u>	millimeters
Level 1 @ Sill Top Height	=	<u>384</u>	millimeters

DATA SHEET 10

VEHICLE EXTERIOR CRUSH PROFILES - ALL LEVELS

Vehicle 2002 Ford SVT F150 Lightning Flare Side Pickup

NHTSA No C20208



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

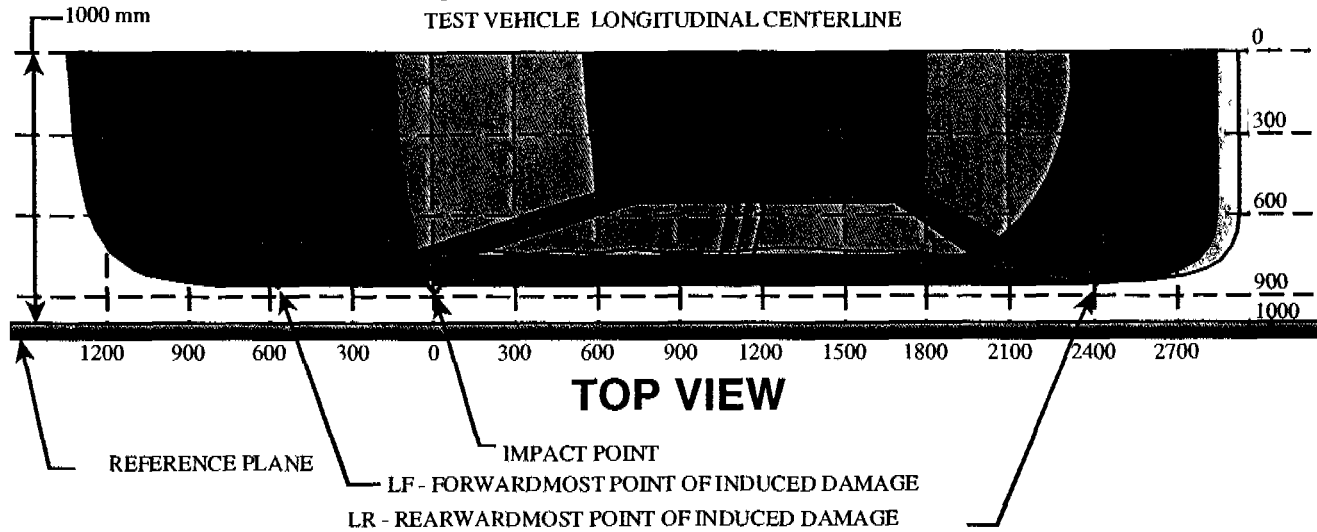
		DISTANCE IN MILLIMETERS (mm) FROM IMPACT POINT																											
LEVEL	HEIGHT (mm)		900	750	600	450	300	150	0	150	300	450	600	750	900	1050	1200	1350	1500	1650	1800	1950	2100	2250	2400	2550	2700	2850	3000
LEVEL 1	384	PRE				-			40	44	41	41	38	40	41	41	41	37	12	42	50	48		-					
SIDE		POST			-	-			133	278	290	296	299	303	304	306	309	327	346	239	139	47	-						-
SILL		CRUSH	N/A	N/A	N/A	N/A	N/A	N/A	143	234	249	255	261	263	263	265	268	290	334	197	89	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
LEVEL 2	801	PRE	82	43	28	20	13	25	30	25	21	19	17	15	14	16	12	17	39	121	74	26	6	5				17	39
H		POST	77	52	53	61	67	83	92	140	192	202	202	195	191	189	178	157	103	151	92	18	53	91		-		79	56
POINT		CRUSH	5	9	25	41	54	58	62	115	171	183	185	180	177	173	166	140	64	30	18	8	59	86	N/A	N/A	N/A	N/A	96
LEVEL 3	728	PRE	65					13	24	24	24	23	20	18	16	26	16	14	44	135	78	26	5					19	39
MID		POST	58		-	-		85	104	165	200	201	203	200	199	201	199	193	120	169	124	25	50	-	-			82	62
DOOR		CRUSH	7	N/A	N/A	N/A	N/A	72	80	141	176	178	183	182	183	175	183	179	76	34	46	1	55	N/A	N/A	N/A	N/A	101	101
LEVEL 4	1088	PRE	297	217	155	119	102	91	82	76	73	67	61	58	53	50	50	51	61	112	113	111	103	92	86	84	90	94	108
WINDOW		POST	280	197	131	103	93	91	89	101	97	94	90	84	80	76	71	70	66	82	62	48	42	27	19	15	16	18	24
SILL		CRUSH	17	20	24	-16	9	0	7	25	24	27	29	26	27	26	21	19	5	-30	51	63	61	65	67	-69	74	76	84
LEVEL 5	1687	PRE				-							458	318	309	301	297	299							-				
WINDOW		POST	-		-	-							452	66	57	55	53	295								-			-
TOP		CRUSH	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6	252	252	246	244	-4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

DATA SHEET 11

VEHICLE DAMAGE PROFILE DISTANCES

Vehicle: 2002 Ford SVT F150 Lightning Flare Side Pickup

NHTSA No C20208



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 ± 3 mm

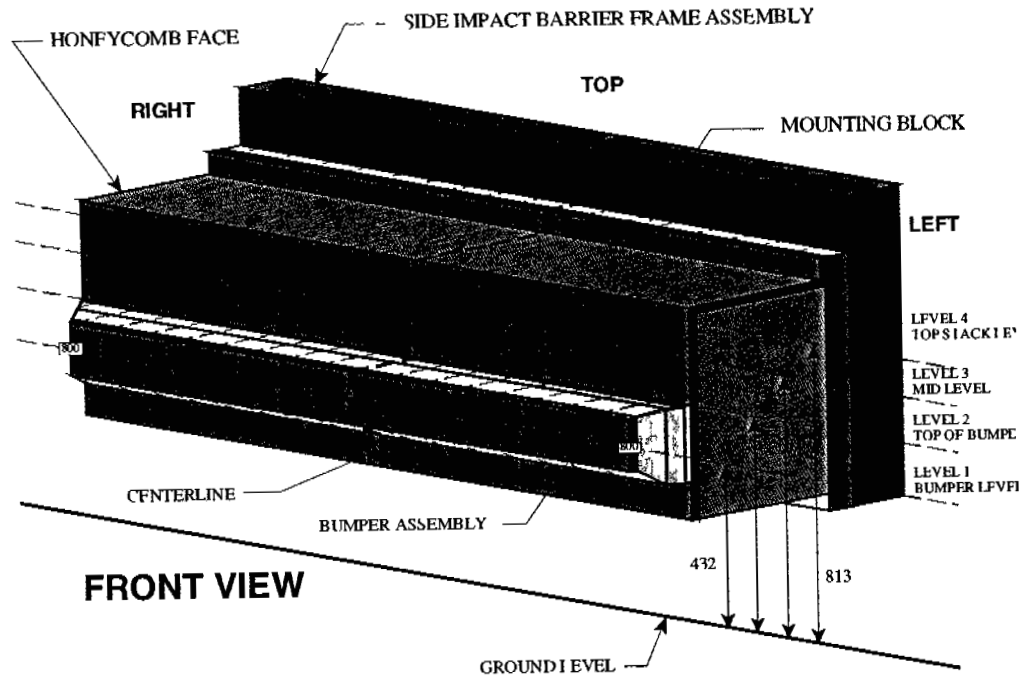
DPD MEASUREMENTS		POST TEST (mm)	PRETEST (mm)	STATIC CRUSH (mm)
1	(LR = 1950 mm)	47	48	-1
2	1400	333	29	304
3	850	304	41	263
4	300	290	41	249
5	-250	72	17	55
6	(LF = -800 mm)	60	56	4

DATA SHEET 12

EXTERIOR STATIC CRUSH FOR IMPACTOR FACE

Vehicle 2002 Ford SVT F150 Lightning Flare Side Pickup

NHTSA No C20208



NOTE Dimensions are shown in millimeters mm

NOTE All dimensions are in millimeters with a tolerance of ± 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	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
		POST	750	760	767	765	719	683	664	648	636	633	629	626	630	641	674	727
		CRUSH	131	141	148	146	100	64	45	29	17	14	10	7	11	22	55	108
LEVEL 3 MID LEVEL	686	PRE	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619
		POST	703	736	733	708	676	637	625	619	621	622	621	624	626	626	636	680
		CRUSH	84	117	114	89	57	18	6	0	2	3	2	5	7	7	17	61
LEVEL 2 TOP BUMPER	533	PRE	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619	619
		POST	732	701	658	637	635	637	637	638	641	642	644	645	645	647	649	654
		CRUSH	113	82	39	18	16	18	18	19	22	23	25	26	26	28	30	35
LEVEL 1 MID BUMPER	432	PRE	535	519	518	518	518	518	518	518	518	518	518	518	518	518	519	535
		POST	563	538	527	527	529	529	531	529	533	534	533	536	538	540	544	561
		CRUSH	28	19	9	9	11	11	13	11	15	16	15	18	20	22	25	26

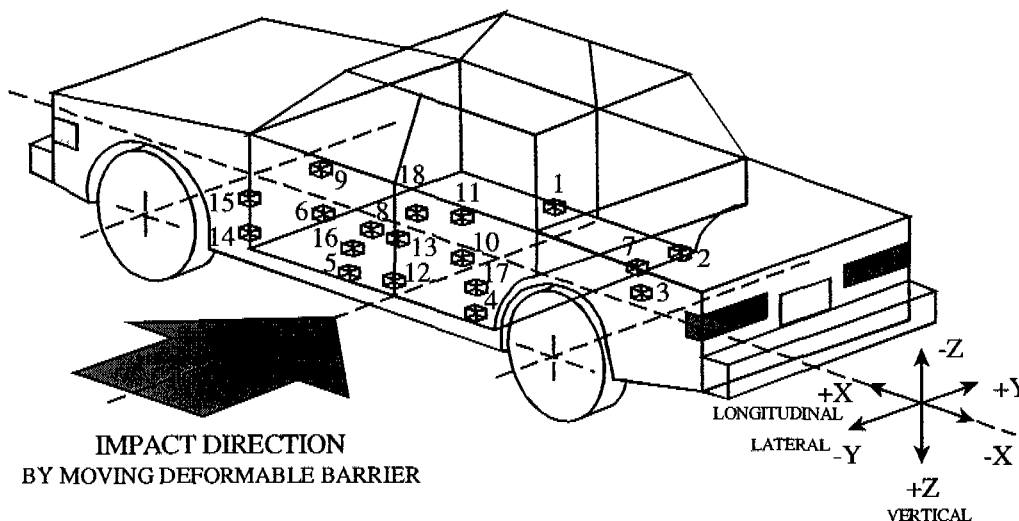
*Heights measured above ground level

DATA SHEET 13

TEST VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Vehicle 2002 Ford SVT F150 Lightning Flare Side Pickup

NHTSA No C20208



- 1-Right Side Sill @ Front Seat
- 2-Right Side Sill @ Rear Seat
- 3-Rear Floorpan Above Axle
- 4-Left Side Sill @ Rear Seat
- 5-Left Side Sill @ Front Seat
- 6-Left Front Door on Centerline
- 7-Right Rear Occupant Compartment
- 8-Midrear of Left Front Door
- 9-Left Front Door Upper Centerline

- 10-Midrear of Left Rear Door
- 11-Left Rear Door Upper Centerline
- 12-Left Lower B-Pillar
- 13-Left Middle B-Pillar
- 14-Left Lower A-Pillar
- 15-Left Middle A-Pillar
- 16-Front Seat Track
- 17-Rear Seat Track
- 18-Vehicle CG

DATA SHEET 13 (continued)

VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Vehicle. 2002 Ford SVT F150 Lightning Flare Side Pickup

NHTSA No C20208

Accel No	Location	Coordinates (mm)±3 mm			Long (x)		Lat (y)		Vert (z)		Resultant		
					Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)	Max (g)	Time (msec)	
		X*	Y*	Z*									
1	Right Side Sill at Front Seat	3455	722	-482	pos neg	3 4 -5 9	13 0 67 6	17 1 -6 4	11 2 69 9	12 5 -25 0	30 6 17 3	27 4 0 0	17 2 -14 9
2	Right Side Sill at Rear Seat	2573	848	-841	pos neg	4 1 -5 5	22 9 67 5	32 7 -8 1	10 1 68 1	9 2 -10 3	39 8 17 0	33 8 0 0	9 9 -16 8
3	Rear Floorpan Above Axle	2137	-8	-669	pos neg	1 8 -7 5	73 7 31 9	25 6 -6 8	30 9 71 2	10 7 -6 8	30 4 21 6	28 6 0 0	30 8 -20 0
4	Left Side Sill at Rear Seat	2581	-682	-519	pos neg	- -	- -	** **	** **	- -	- -	- -	- -
5	Left Side Sill at Front Seat	3508	-715	-449	pos neg	- -	- -	237 1 -63 1	9 3 23 7	- -	- -	- -	- -
6	Left Front Door on Centerline	-	-	-	pos. neg	- -	- -	- -	- -	- -	- -	- -	- -
7	Right Rear Occupant Compartment	2876	450	-496	pos neg	- -	- -	34 1 -7 7	9 9 68 1	- -	- -	- -	- -
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) **Data is Clipped

DATA SHEET 13 (continued)

VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Vehicle: 2002 Ford SVT F150 Lightning Flare Side Pickup

NHTSA No C20208

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	2403	-793	-663	-	-	146.9	16.2	-	-	-	-
					-	-	-146.2	48.2	-	-	-	-
13	Left Middle B-Pillar	2453	-742	-1102	-	-	89.9	32.1	-	-	-	-
					-	-	-117.3	35.8	-	-	-	-
14	Left Lower A-Pillar	3643	-748	-614	-	-	194.6	7.8	-	-	-	-
					-	-	-119.0	20.5	-	-	-	-
15	Left Middle A-Pillar	3528	-745	-1250	-	-	21.8	7.8	-	-	-	-
					-	-	-4.2	62.3	-	-	-	-
16	Front Seat Track	3133	-653	-526	-	-	52.3	15.2	-	-	-	-
					-	-	-17.3	32.9	-	-	-	-
17	Rear Seat Track	2695	-612	-558	-	-	34.5	22.0	-	-	-	-
					-	-	-22.7	62.7	-	-	-	-
18	Vehicle CG	3334	11	-575	14.1	24.8	27.4	7.2	42.5	61.9	51.6	11.1
					-15.4	6.6	-8.3	68.0	-48.8	11.4	0.0	-16.6

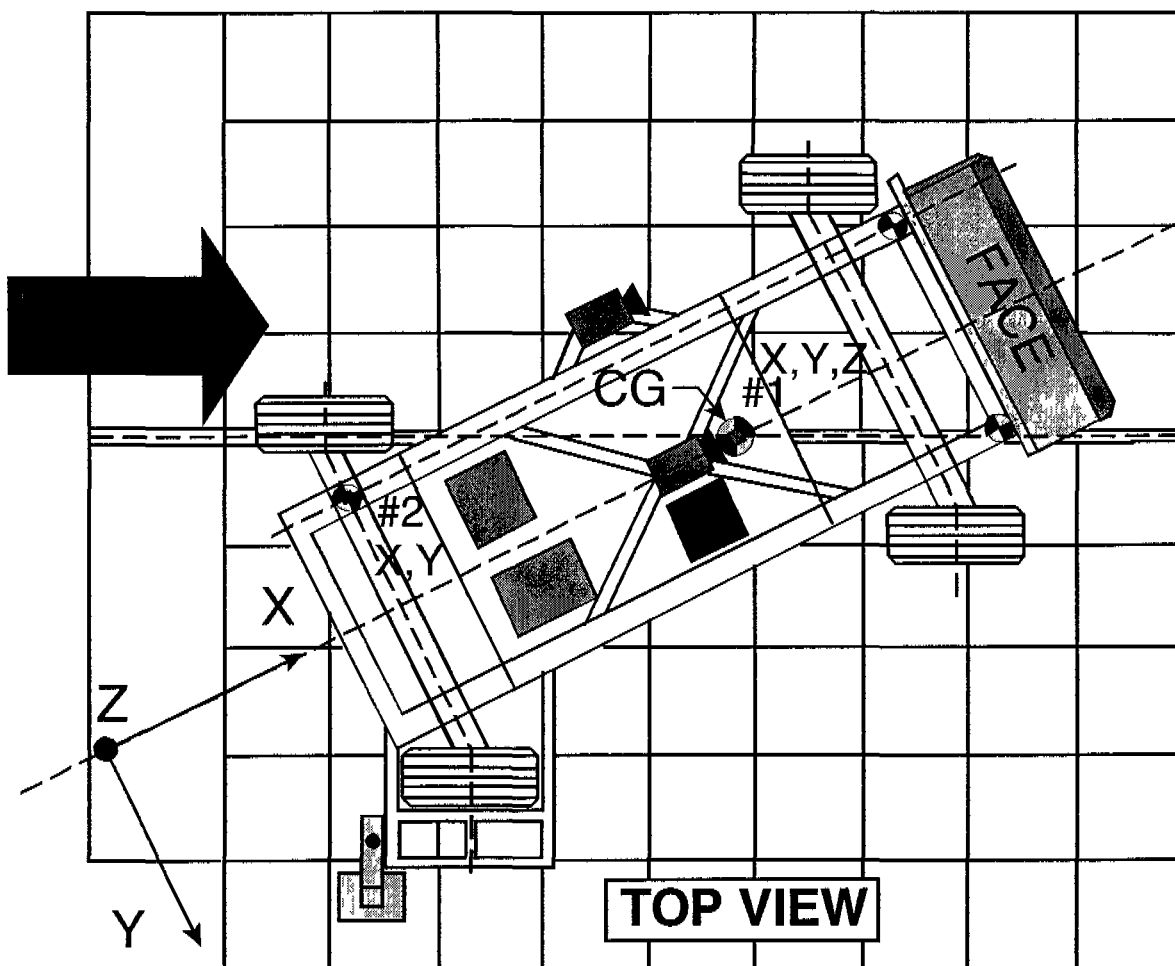
*Reference X - Rear Bumper (+ Forward) Y - Vehicle Centerline (+ To Right) Z - Ground Level (+ Down)

DATA SHEET 14

MDB ACCELEROMETER LOCATIONS AND DATA SUMMARY

Vehicle 2002 Ford SVT F150 Lightning Flare Side Pickup

NHTSA No C20208



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	0.9	126.4	-18.6	52.1
	Lateral Y				8.2	35.2	-0.9	68.6
	Vertical. . . Z				17.3	25.8	-13.5	30.3
	Resultant.. . R				21.6	25.9	0.1	-9.1
2	Rear Frame Member							
	Longitudinal X	386	-660	-660	1.9	122.6	-20.9	50.6
	Lateral Y				3.5	12.0	-4.1	68.5

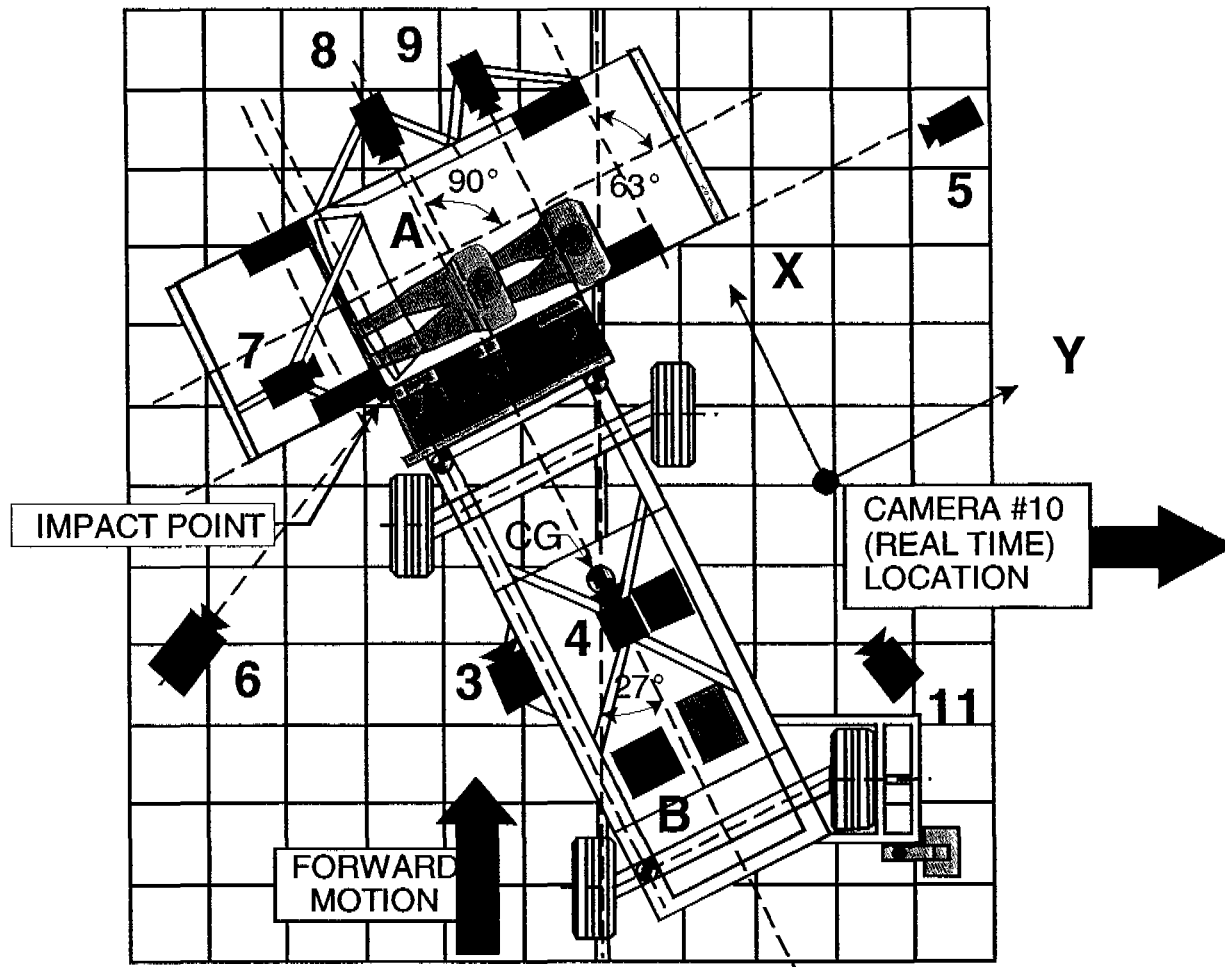
*Reference X = Rear Bumper (+ Forward)
Y = Vehicle Centerline (+ To Right)
Z = Ground Level (+ Down)
All measurements accurate to within ± 3 mm

DATA SHEET 15

HIGH SPEED CAMERA LOCATIONS AND DATA SUMMARY

Vehicle 2002 Ford SVT F150 Lightning Flare Side Pickup

NHTSA No C20208



Camera No	View	Coordinates (millimeters)			Angle (deg)	Lens (mm)	Film Speed (fps)
		X*	Y*	Z*			
1	Overhead view of test vehicle	211	831	-4880	-90	8	1005
2	Overhead closeup view of impact plane	327	869	-4880	-90	12.5	1005
3	MDB onboard closeup view of impact point	-1470	0	-847	0	13	1010
4	MDB onboard view of driver dummy	-1140	838	-1586	-17	7.5	1020
5	Right side ground level overall view	-13	9948	-1045	-3	25	1005
6	Left side ground level overall view	-1821	-1884	-1059	-4	13	1005
7	Test vehicle onboard driver front view	550	-475	-1529	-10	13	1015
8	Test vehicle onboard driver side view	2077	825	-1270	-8	8	1010
9	Test vehicle onboard passenger side view	-	-	-	-	-	-
10	Real time film coverage of test	-	-	-	-	-	24

* 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 16

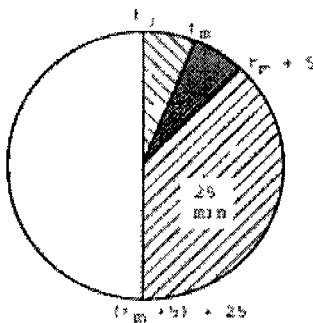
FMVSS 301 FUEL SYSTEM INTEGRITY DATA

NHTSA No. C20208 TEST DATE March 13, 2002
 Vehicle Mfr /Make/Model Ford Motor Company of Canada, Ltd 2002 Ford SVT F150 Lightning Flare Side Pickup

TEST VEHICLE IMPACT TYPE.

- Frontal (48 28 kph)
- Oblique (48 28 kph) with - ° barrier face first
 contacting the - side
 (driver/passenger)
- Rear Moving Barrier (48 28 kph)
- Lateral Moving Barrier (32 19 kph)
- X Side Impact Moving Deformable Barrier (52.63 kph)
 contacting the driver side side
 (driver/passenger)

FUEL SPILLAGE MEASUREMENT



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

ACTUAL	MAX ALLOWED
0 g	28 g
0 g	142 g
0 g	28 g/1 min.

SOLVENT SPILLAGE DETAILS

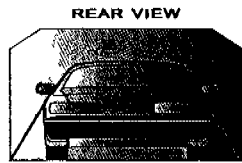
None

DATA SHEET 17

ROLLOVER DATA

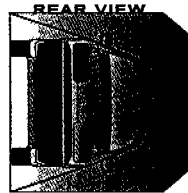
Vehicle 2002 Ford SVT F150 Lightning Flare Side Pickup

NHTSA No C20208

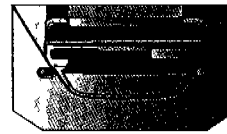


0/360

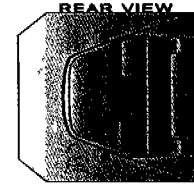
90



180



REAR VIEW



270

I DETERMINATION OF SOLVENT COLLECTION TIME PERIOD

Rollover Stage	Rotation Time (spec 1 -3 min)				FMVSS 301 Hold Time		Total Time				Next Whole Minute Interval	
0° - 90°	1	minutes	12	seconds	5	minutes	6	minutes	12	seconds	7	minutes
90° - 180°	N/A	minutes	N/A	seconds	N/A	minutes	N/A	minutes	N/A	seconds	N/A	minutes
180°-270°	N/A	minutes	N/A	seconds	N/A	minutes	N/A	minutes	N/A	seconds	N/A	minutes
270°-360°	N/A	minutes	N/A	seconds	N/A	minutes	N/A	minutes	N/A	seconds	N/A	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°	2948	N/A	N/A	N/A
90° - 180°	N/A	N/A	N/A	N/A
180°-270°	N/A	N/A	N/A	N/A
270°-360°	N/A	N/A	N/A	N/A

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

IV SOLVENT SPILLAGE LOCATION(S).

Rollover Stage	Spillage Location
0° - 90°	Filler Tube/Fuel Cap Seal
90° - 180°	None
180°-270°	None
270°-360°	None

APPENDIX A
PHOTOGRAPHS

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Figure A-1 PRE-TEST FRONTAL VIEW OF TEST VEHICLE



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

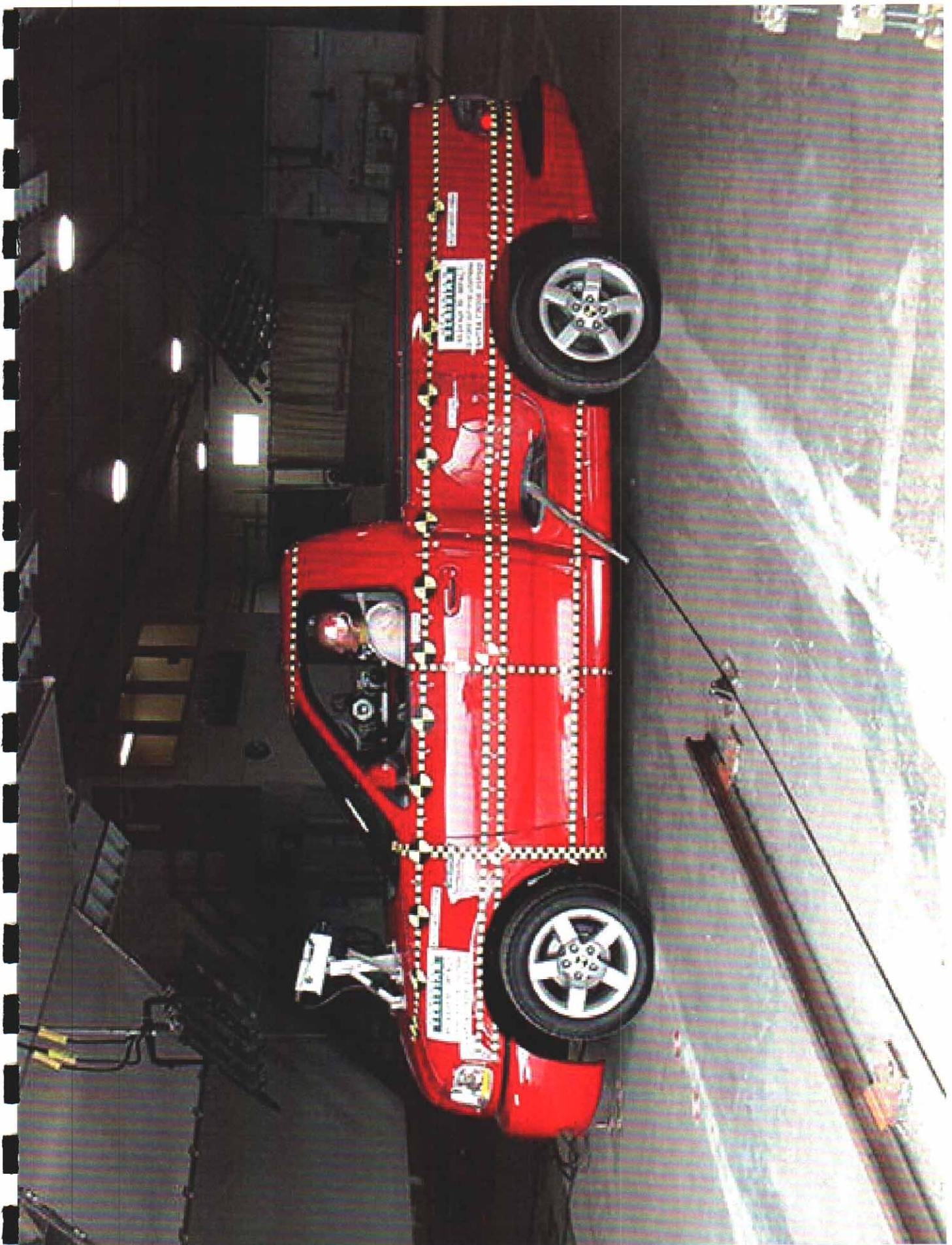


Figure A-5 PRE-TEST IMPACTED SIDE VIEW OF TEST VEHICLE

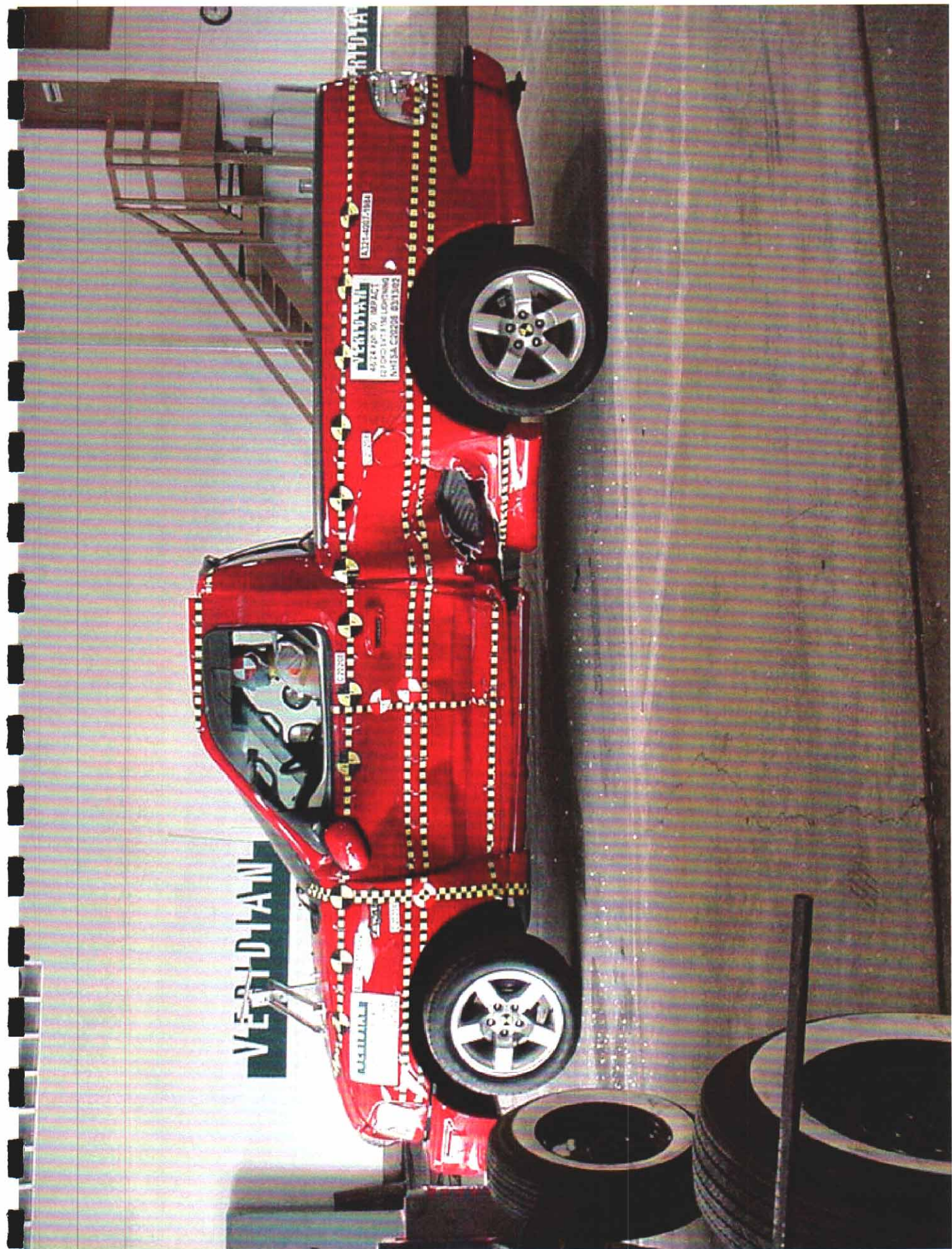


Figure A-6 POST-TEST IMPACTED SIDE VIEW OF TEST VEHICLE



Figure A-7 PRE-TEST FRONTAL VIEW OF IMPACTOR FACE

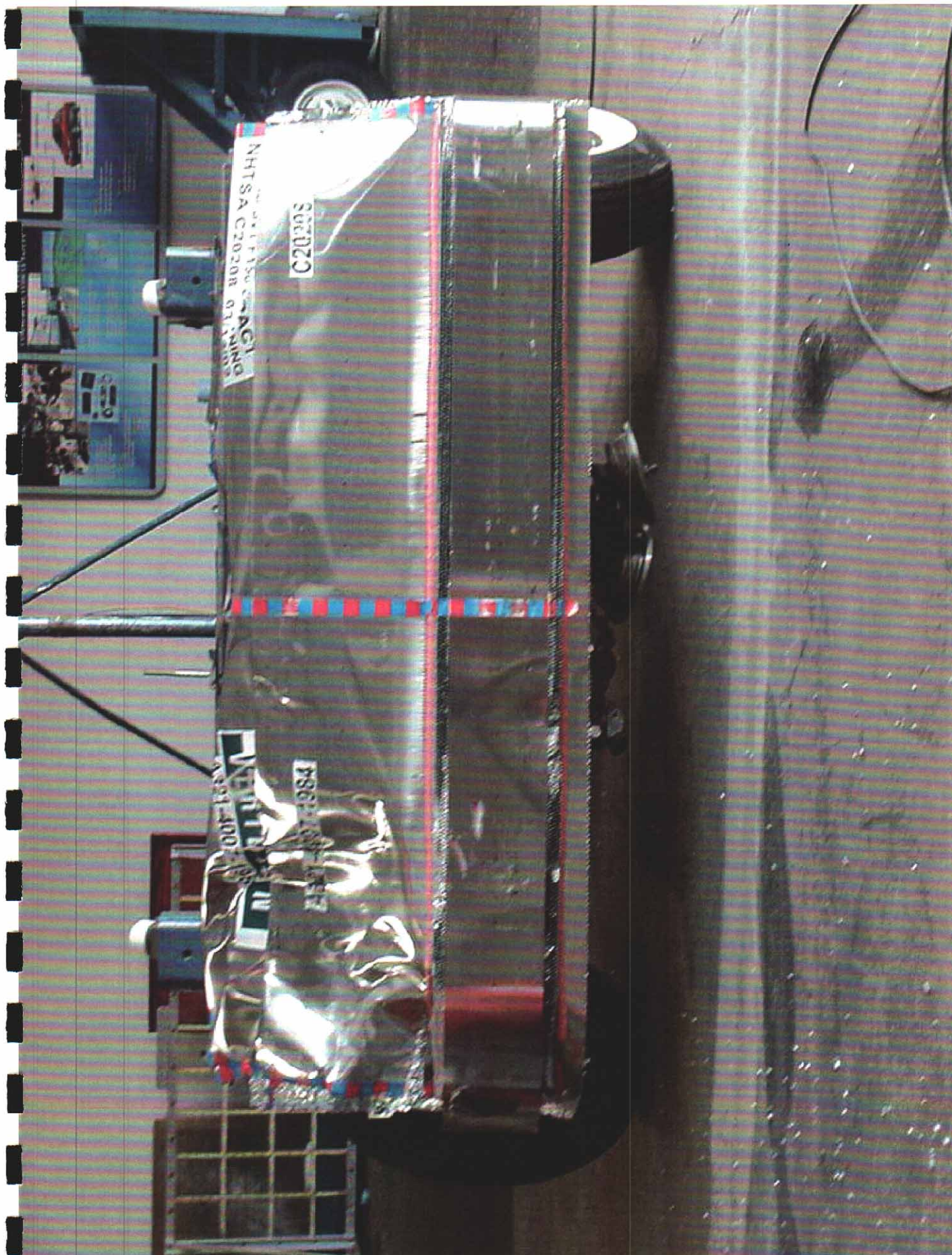


Figure A-8 POST-TEST FRONTAL VIEW OF IMPACTOR FACE

A321-4007-1984

Figure A-9 PRE-TEST LEFT SIDE VIEW OF IMPACTOR FACE

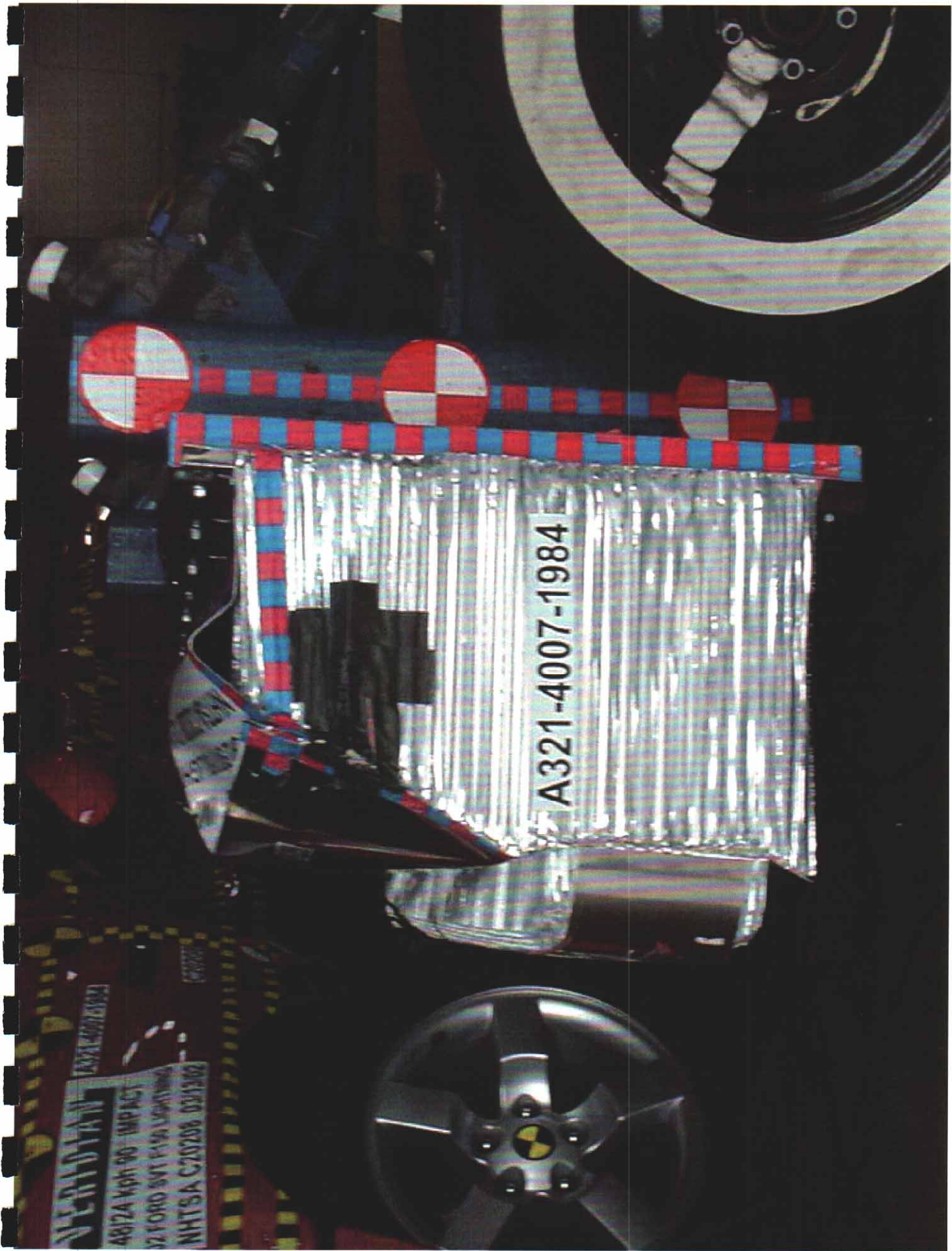


Figure A-10 POST-TEST LEFT SIDE VIEW OF IMPACTOR FACE

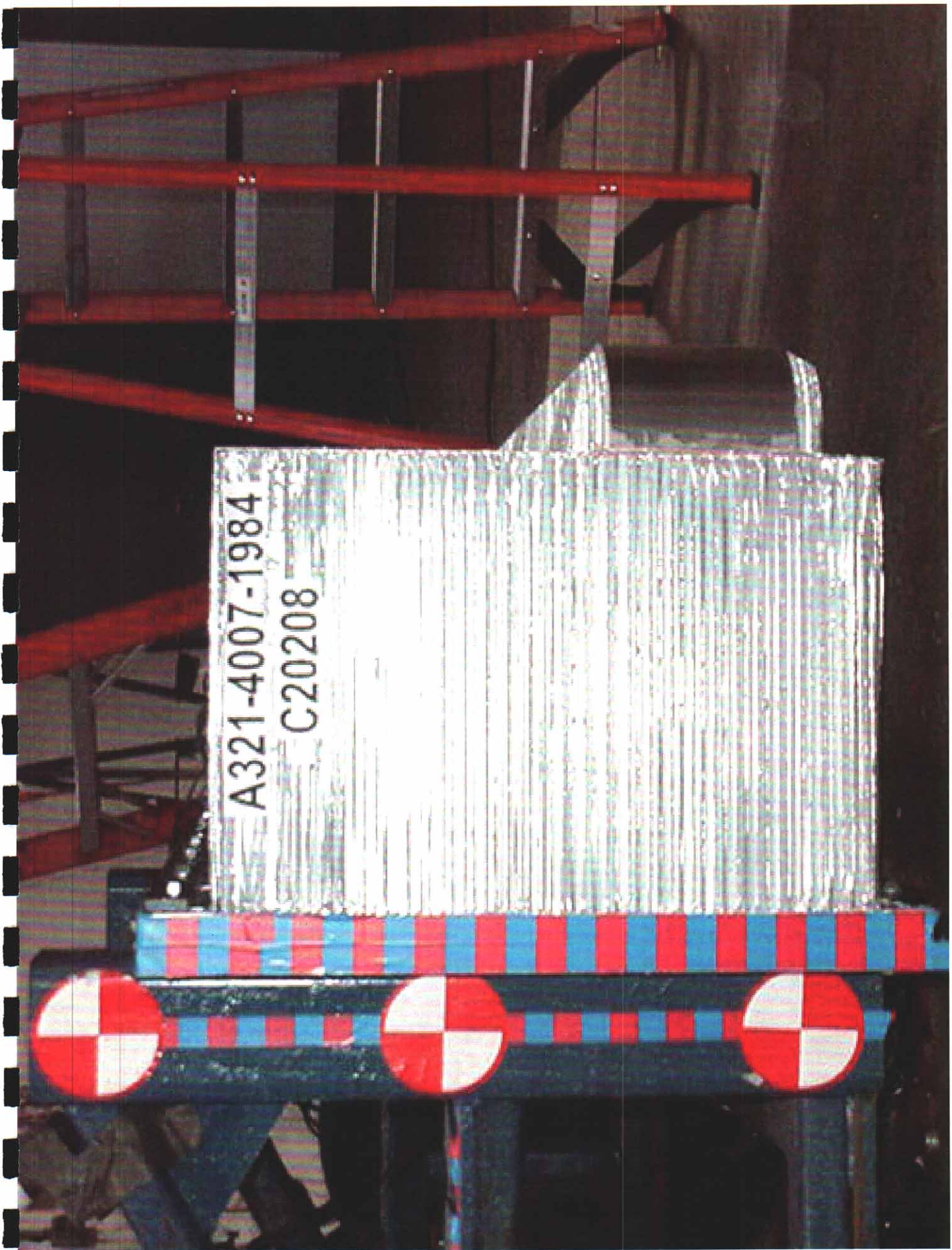


Figure A-11 PRE-TEST RIGHT SIDE VIEW OF IMPACTOR FACE

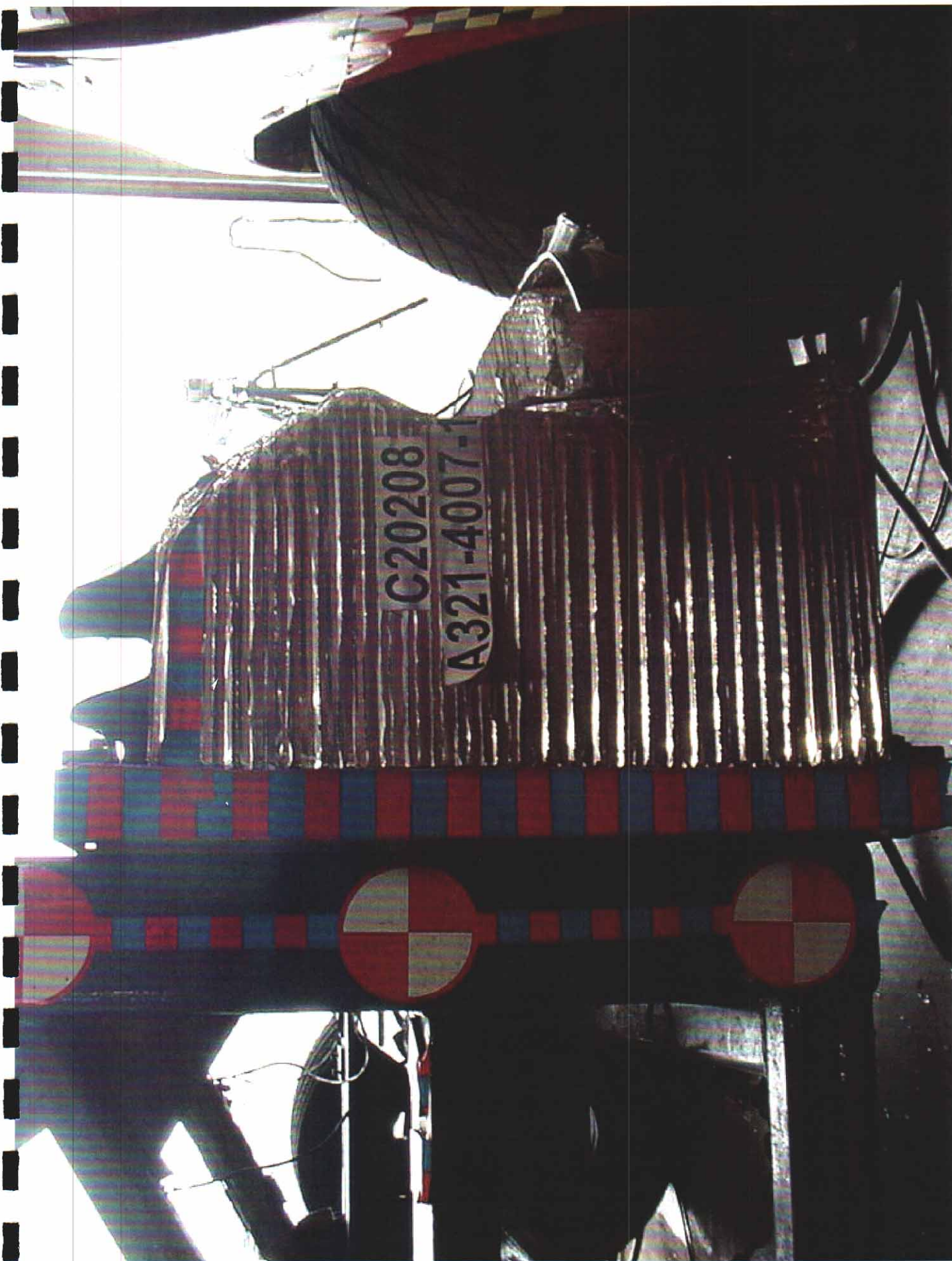


Figure A-12 POST-TEST RIGHT SIDE VIEW OF IMPACTOR FACE



Figure A-13 PRE-TEST TOP VIEW OF IMPACTOR FACE

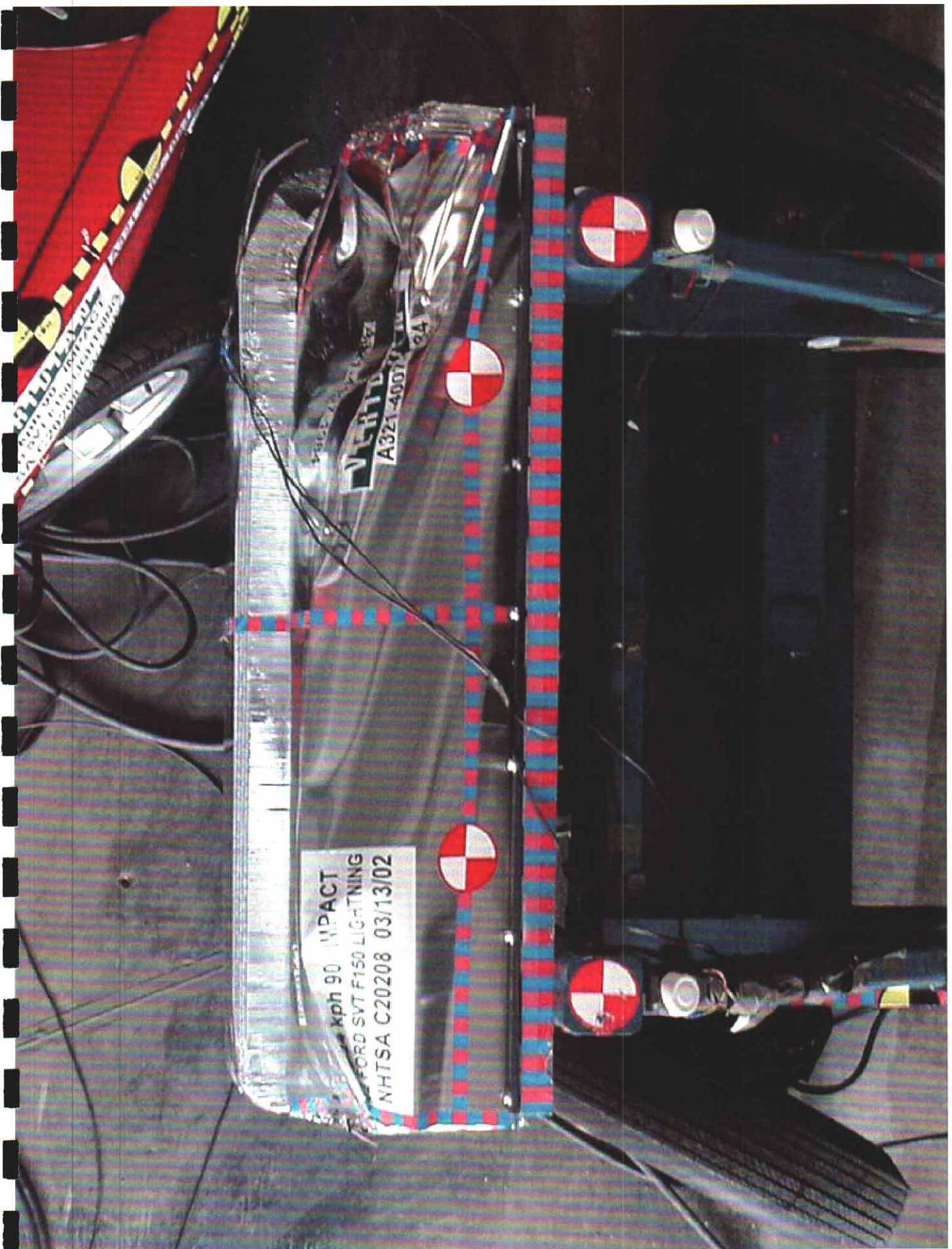


Figure A-14 POST-TEST TOP VIEW OF IMPACTOR FACE



Figure A-15 PRE-TEST OVERHEAD VIEW OF ALIGNED MDB AND VEHICLE



Figure A-16 POST-TEST OVERHEAD VIEW OF MDB AND VEHICLE



Figure A-17 PRE-TEST RIGHT OCCUPANT COMPARTMENT VIEW OF FRONT SID



Figure A-18 POST-TEST RIGHT OCCUPANT COMPARTMENT VIEW OF FRONT SID



Figure A-19 PRE-TEST LEFT OCCUPANT COMPARTMENT VIEW OF FRONT SID



Figure A-20 POST-TEST LEFT OCCUPANT COMPARTMENT VIEW OF FRONT SID

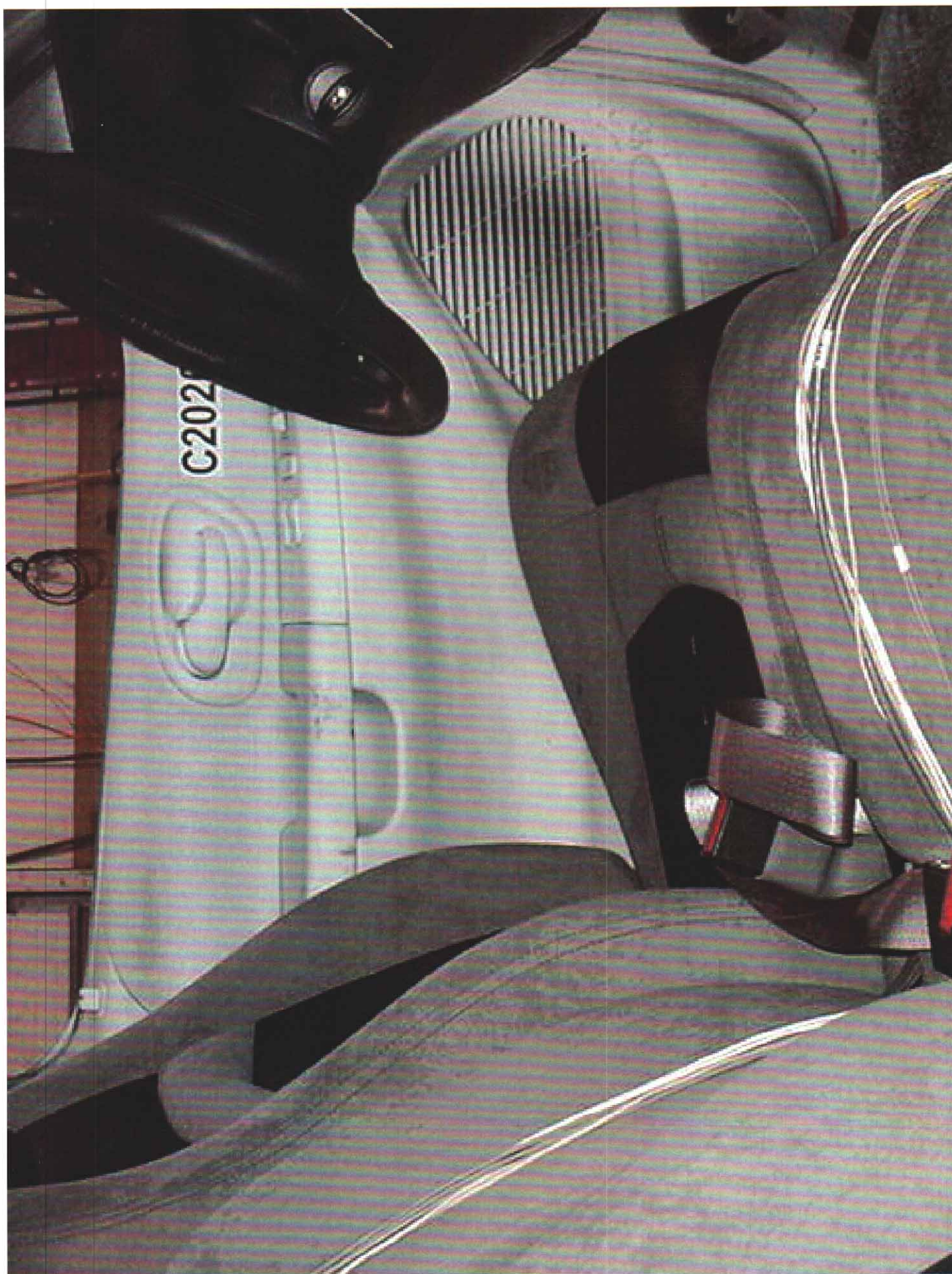




Figure A-22 POST-TEST INTERIOR OF FRONT DOOR SHOWING SID IMPACT LOCATIONS



Figure A-23 PRE-TEST LEFT SIDE VIEW OF MDB WITH IMPACTOR FACE IN POSITION



Figure A-24 PRE-TEST RIGHT SIDE VIEW OF MDB WITH IMPACTOR FACE IN POSITION

C20208



Figure A-25 POST-TEST CLOSE-UP VIEW OF IMPACT POINT TARGET

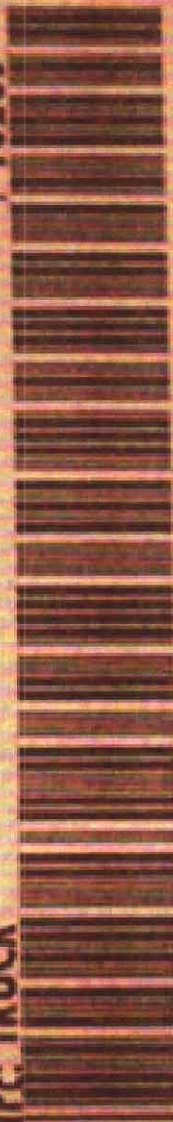
MFD. BY FORD MOTOR CO. OF CANADA, LTD.

DATE: 12/01
 FRONT GAWR: 2950LB
 1338KG
 P295/45R18Z
 18X9.5J
 AT 221 kPa/32
 PSI COLD
 WITH
 TIRES
 RIMS
 REAR GAWR: 2800LB
 1270KG
 P295/45R18Z
 18X9.5J
 AT 221 kPa/32
 PSI COLD
 WITH
 TIRES
 RIMS

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

VIN: 2FTZF07342CA33942
 TYPE: TRUCK

F0085
 T0265



EXT PNT: E4
 WB BRK INT TR TP/PS R AXLE TR SPR 2F514
 120 B L2 L B6 7 WS Y05
 MADE IN CANADA CTC ∇ 2USA1520472AA

Figure A-32 CLOSE-UP VIEW OF VEHICLE'S CERTIFICATION LABEL



Figure A-26 IMPACT PHOTO

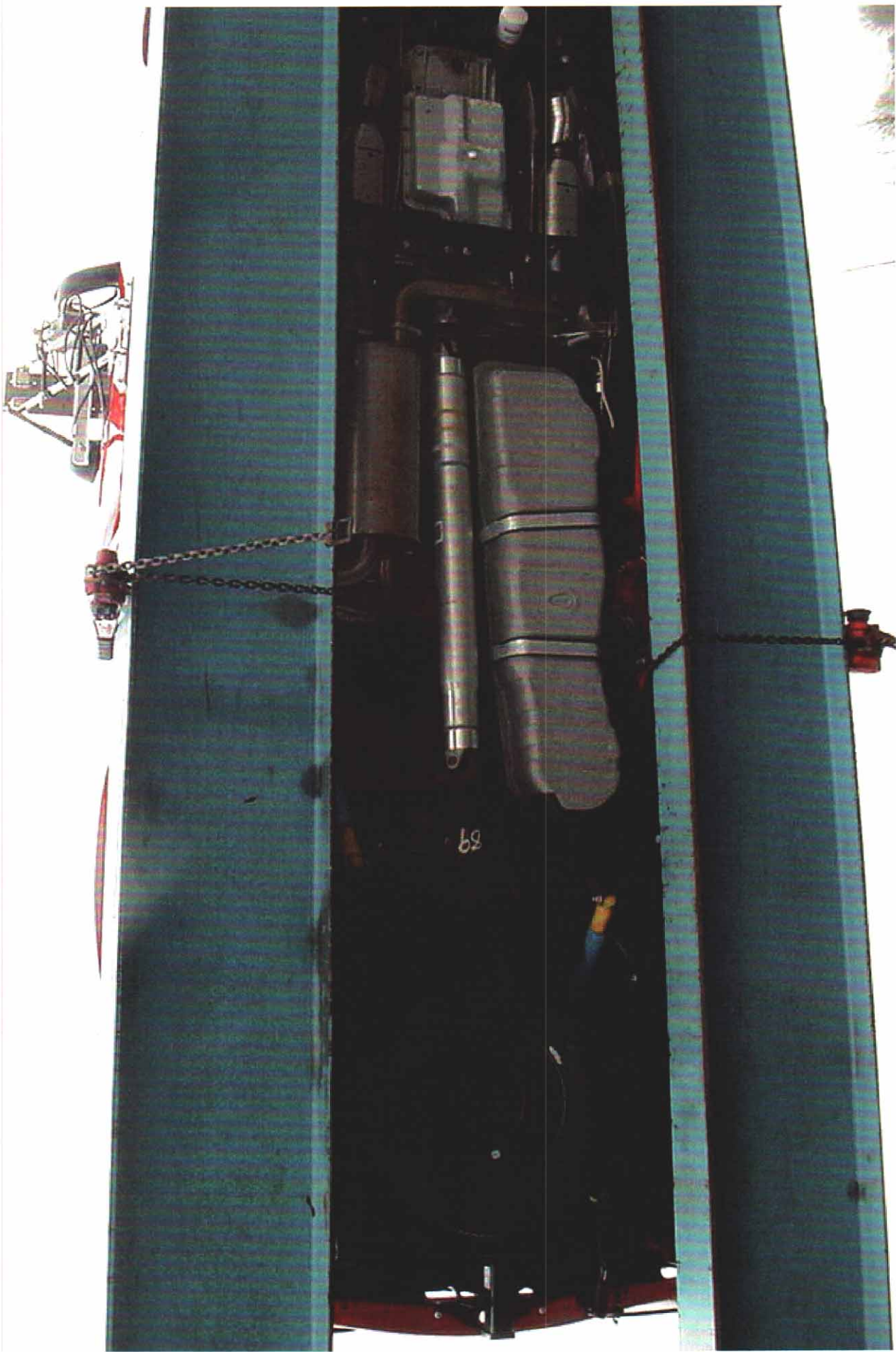


Figure A-27 ROLLOVER 90 DEGREES

APPENDIX B

VEHICLE, MDB AND SID RESPONSE DATA

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>
59	VEHICLE CENTER OF GRAVITY (X) ACCELERATION VS TIME	B- 64
60	VEHICLE CENTER OF GRAVITY (X) VELOCITY VS TIME	B- 65
62	VEHICLE CENTER OF GRAVITY (Y) ACCELERATION VS TIME	B- 66
62	VEHICLE CENTER OF GRAVITY (Y) VELOCITY ACCELERATION VS TIME	B- 67
63	VEHICLE CENTER OF GRAVITY (Z) ACCELERATION VS TIME	B- 68
64	VEHICLE CENTER OF GRAVITY (Z) VELOCITY VS TIME	B- 69
65	VEHICLE CENTER OF GRAVITY RESULTANT ACCELERATION VS TIME	B- 70

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>
66	MDB CENTER OF GRAVITY (X) ACCELERATION VS TIME	B- 71
67	MDB CENTER OF GRAVITY (X) VELOCITY VS TIME	B- 72
68	MDB CENTER OF GRAVITY (Y) ACCELERATION VS TIME	B- 73
69	MDB CENTER OF GRAVITY (Y) VELOCITY VS TIME	B- 74
70	MDB CENTER OF GRAVITY (Z) ACCELERATION VS TIME	B- 75
71	MDB CENTER OF GRAVITY (Z) VELOCITY VS TIME	B- 76
72	MDB CENTER OF GRAVITY RESULTANT ACCELERATION VS TIME	B- 77
73	MDB REAR (X) ACCELERATION VS TIME	B- 78
74	MDB REAR (X) VELOCITY VS TIME	B- 79
75	MDB REAR (Y) ACCELERATION VS TIME	B- 80
76	MDB REAR (Y) VELOCITY VS TIME	B- 81

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>
77	DRIVER UPPER RIB (Y) ACCELERATION VS TIME	B- 82
78	DRIVER UPPER RIB (Y) VELOCITY VS TIME	B- 83
79	DRIVER LOWER RIB (Y) ACCELERATION VS TIME	B- 84
80	DRIVER LOWER RIB (Y) VELOCITY VS TIME	B- 85
81	DRIVER LOWER SPINE (Y) ACCELERATION VS TIME	B- 86
82	DRIVER LOWER SPINE (Y) VELOCITY VS TIME	B- 87
83	DRIVER PELVIC (Y) ACCELERATION VS TIME	B- 88
84	DRIVER PELVIC (Y) VELOCITY VS TIME	B- 89

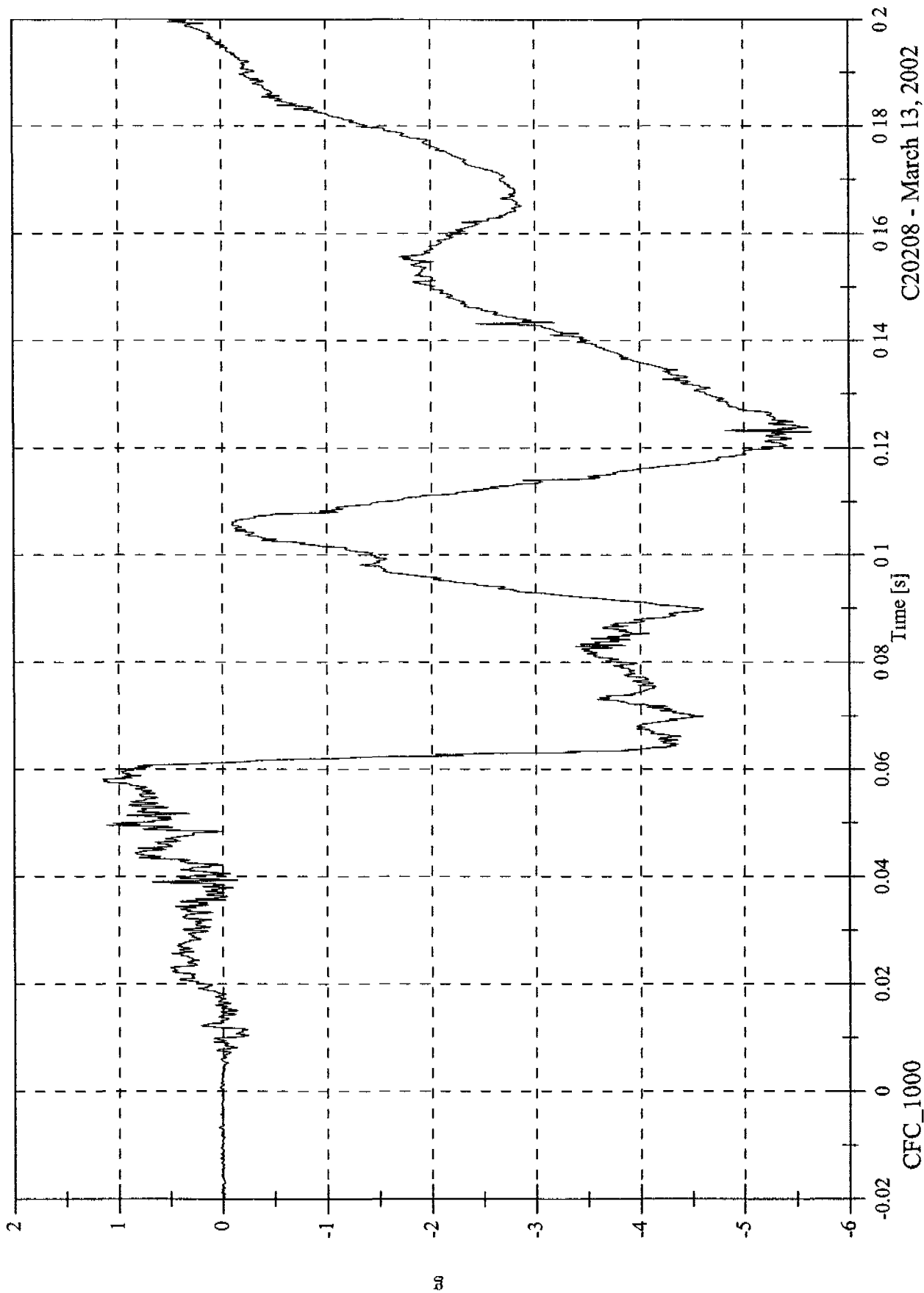
DRIVER & PASSENGER DUMMY INSTRUMENTATION PLOTS (REDUNDANT)
ACCELERATION DATA - FIR FILTERED

<u>Plot No</u>	<u>Data Plot Title</u>	<u>Page</u>
85	DRIVER UPPER RIB (Y) ACCELERATION VS TIME	B- 90
86	DRIVER LOWER RIB (Y) ACCELERATION VS TIME	B- 91
87	DRIVER LOWER SPINE (Y) ACCELERATION VS TIME	B- 92
88	DRIVER PELVIC (Y) ACCELERATION VS TIME	B- 93

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

Max: 1.2 [g] at 0.058 [s]
Min: -5.6 [g] at 0.123 [s]

P1 Head x



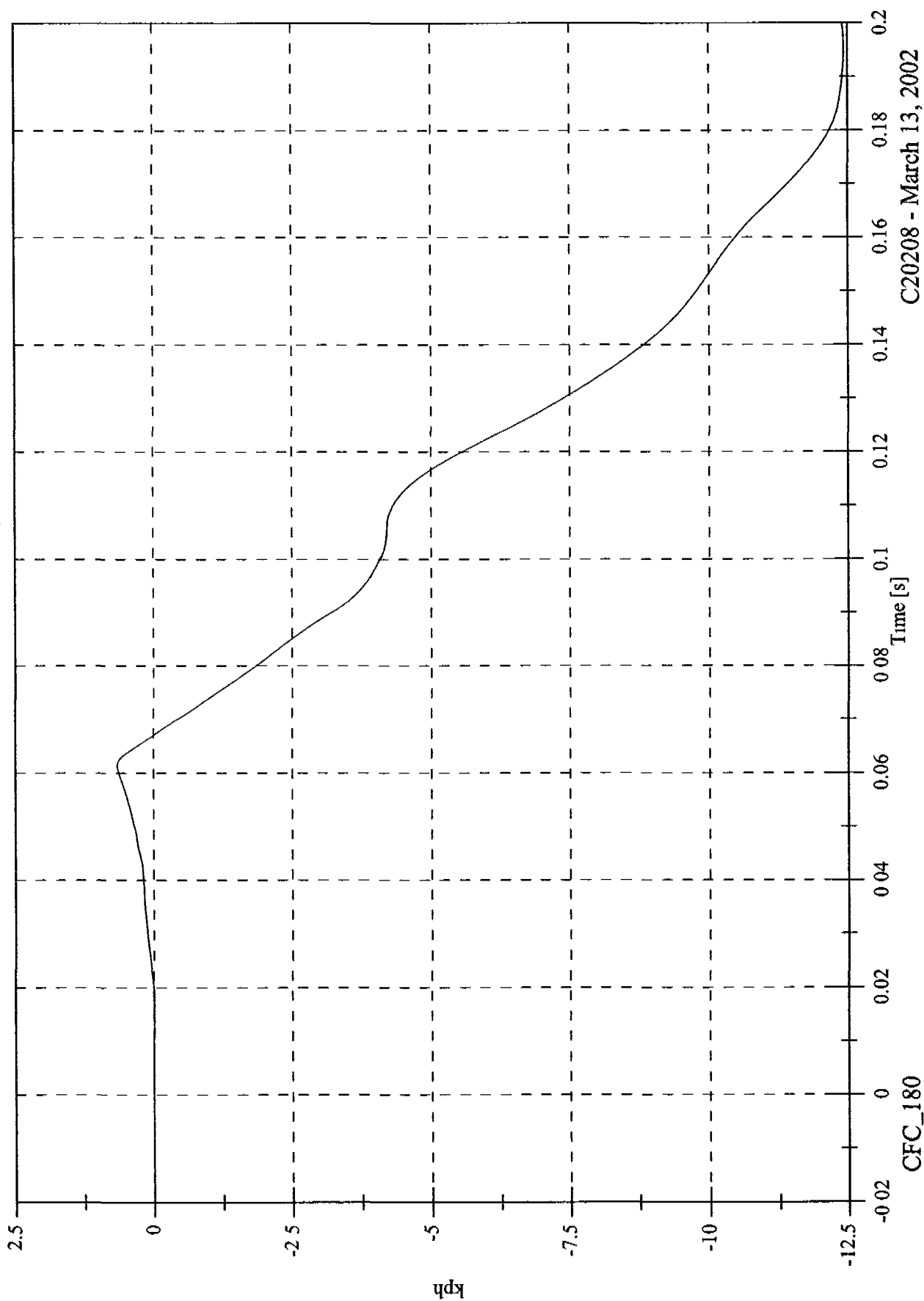
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FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

P1 Head x Velocity

Max: 0.7 [kph] at 0.061 [s]

Min: -12.4 [kph] at 0.195 [s]

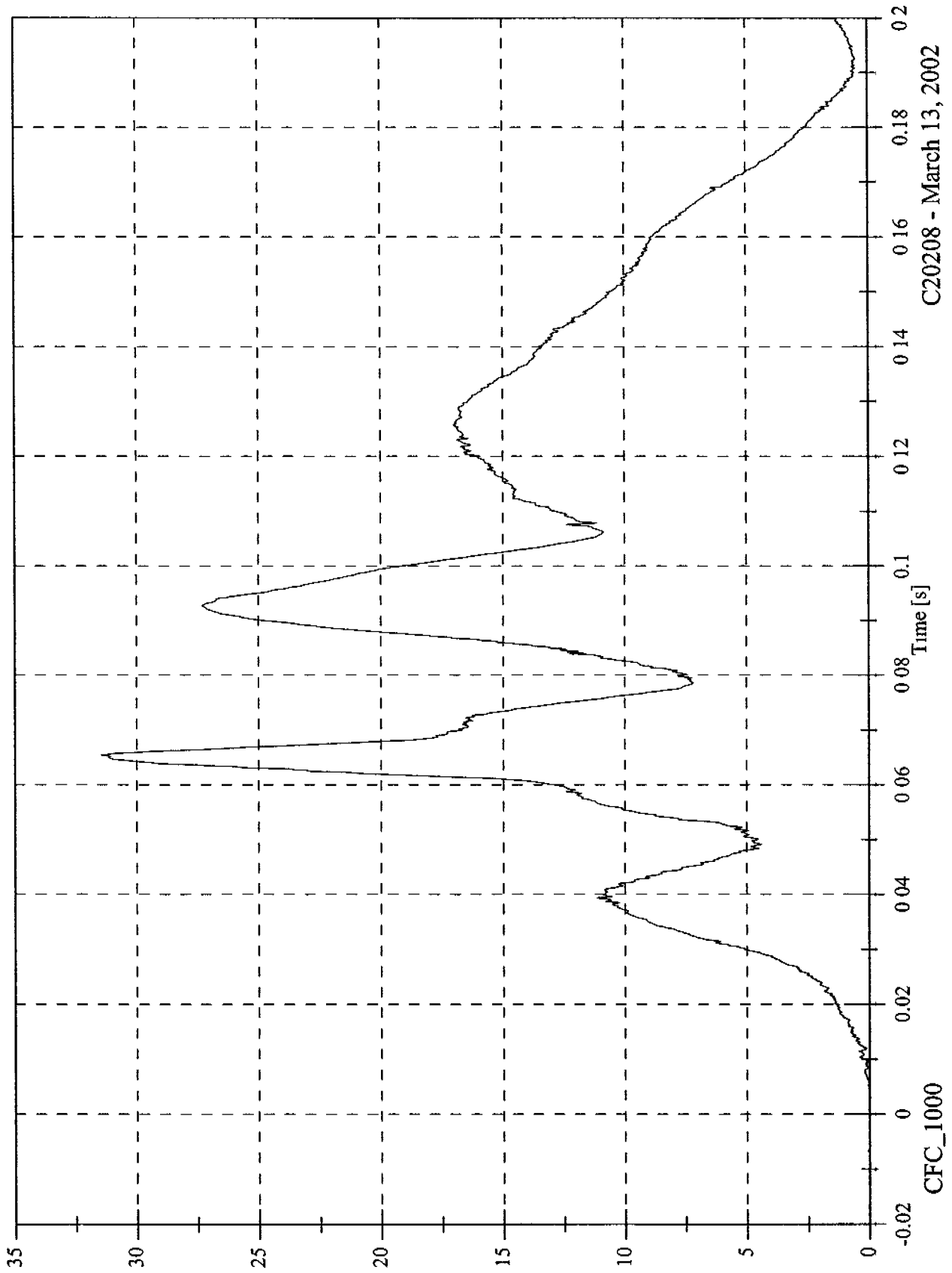


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FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

P1 Head Resultant

Max: 31.5 [g] at 0.065 [s]
 Min: 0.0 [g] at -0.010 [s]

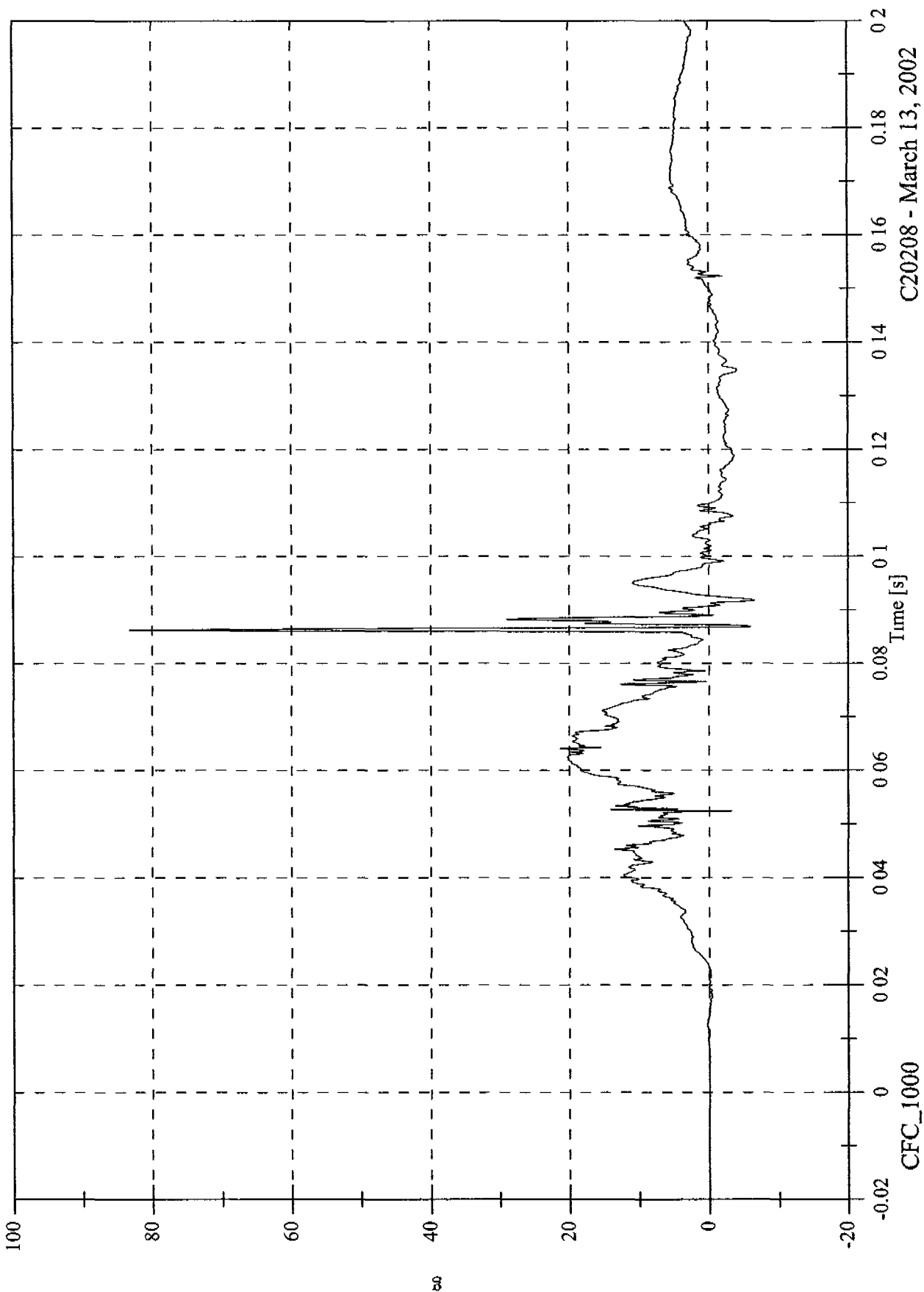


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FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

P1 Upper Rib y

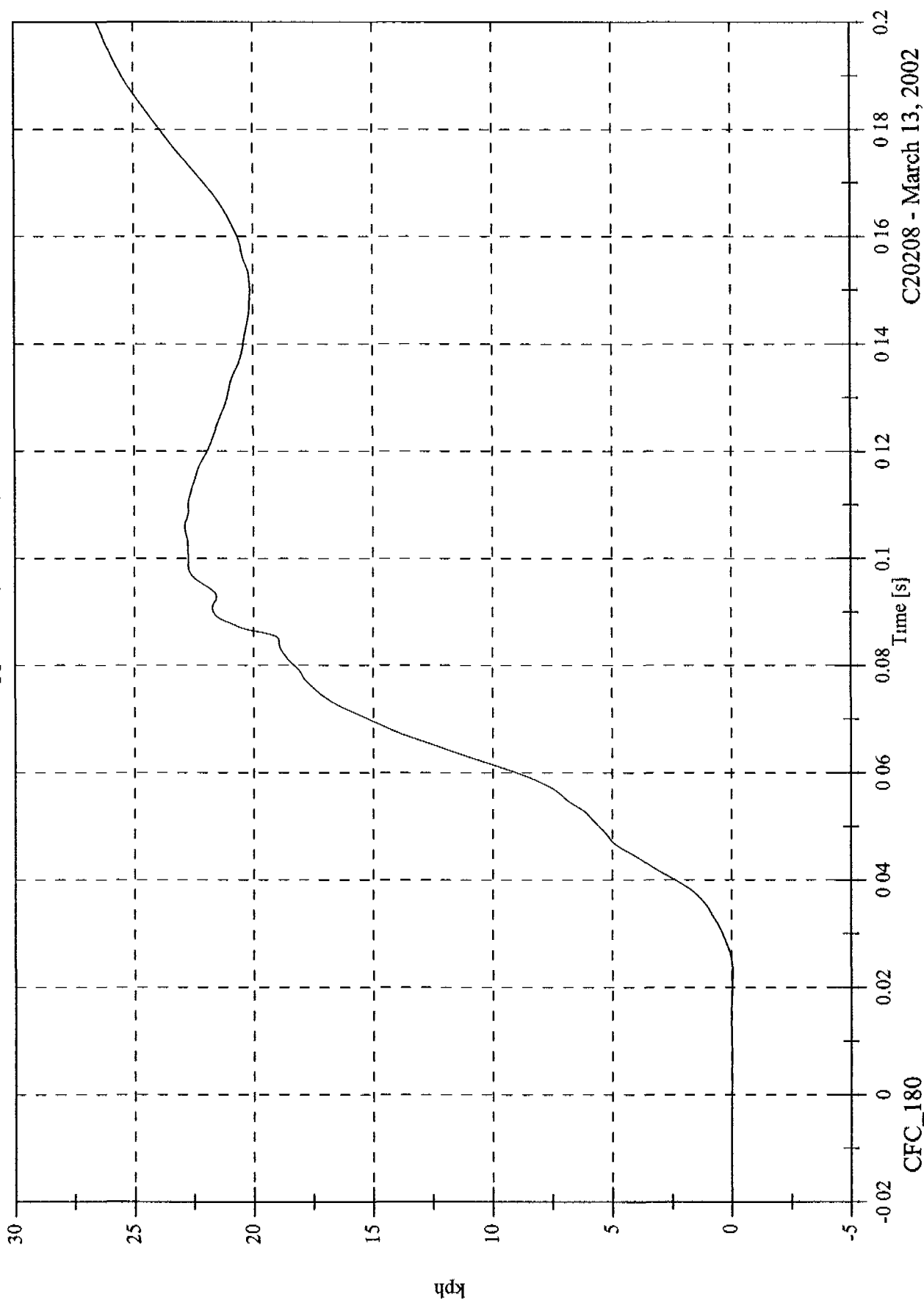
Max: 83.3 [g] at 0.086 [s]
Min: -6.6 [g] at 0.092 [s]



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Max: 26.5 [kph] at 0.200 [s]
Min: -0.0 [kph] at 0.023 [s]

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning
P1 Upper Rib y Velocity

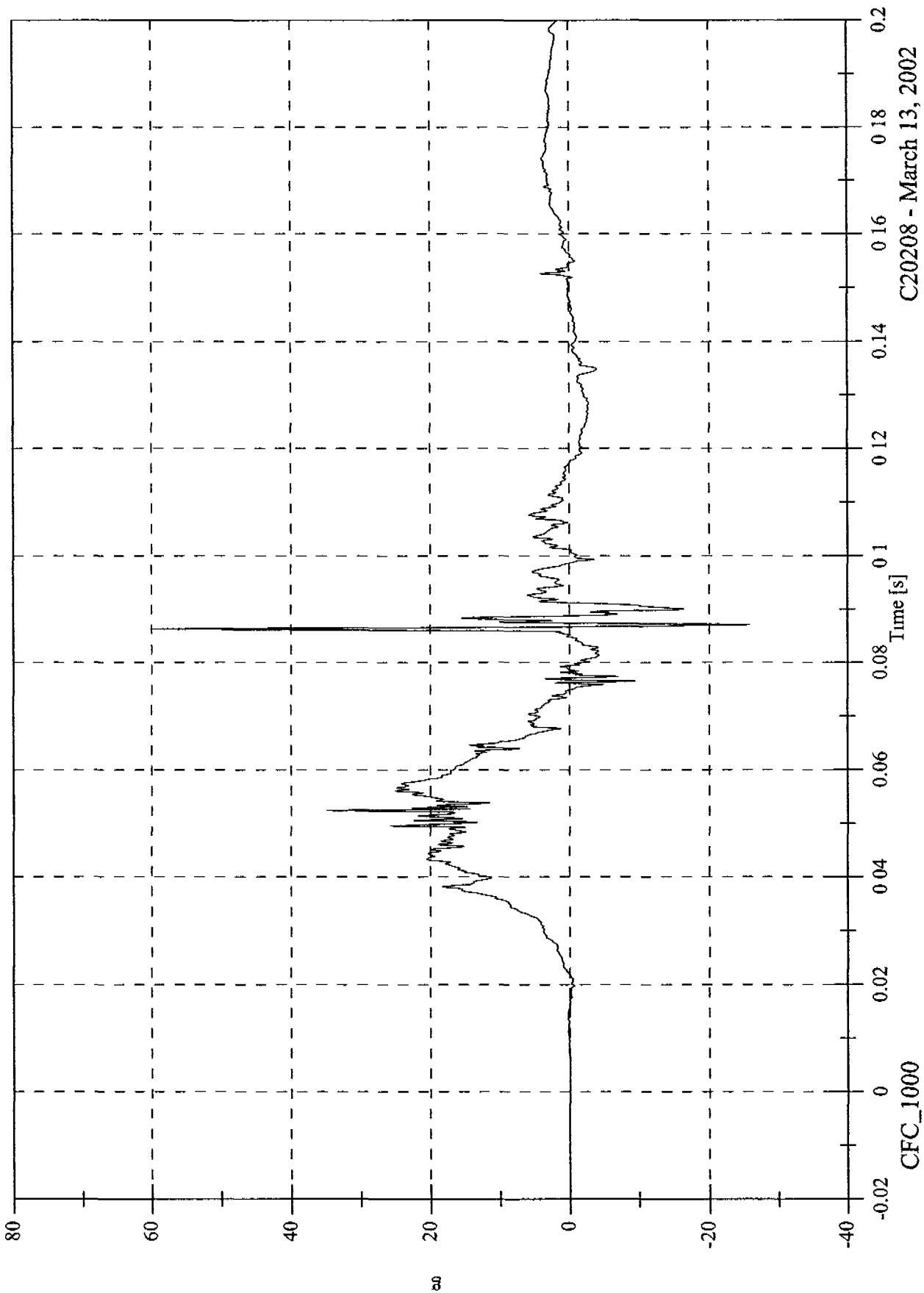


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FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

P1 Lower Rib y

Max: 60.1 [g] at 0.086 [s]
Min: -25.8 [g] at 0.087 [s]

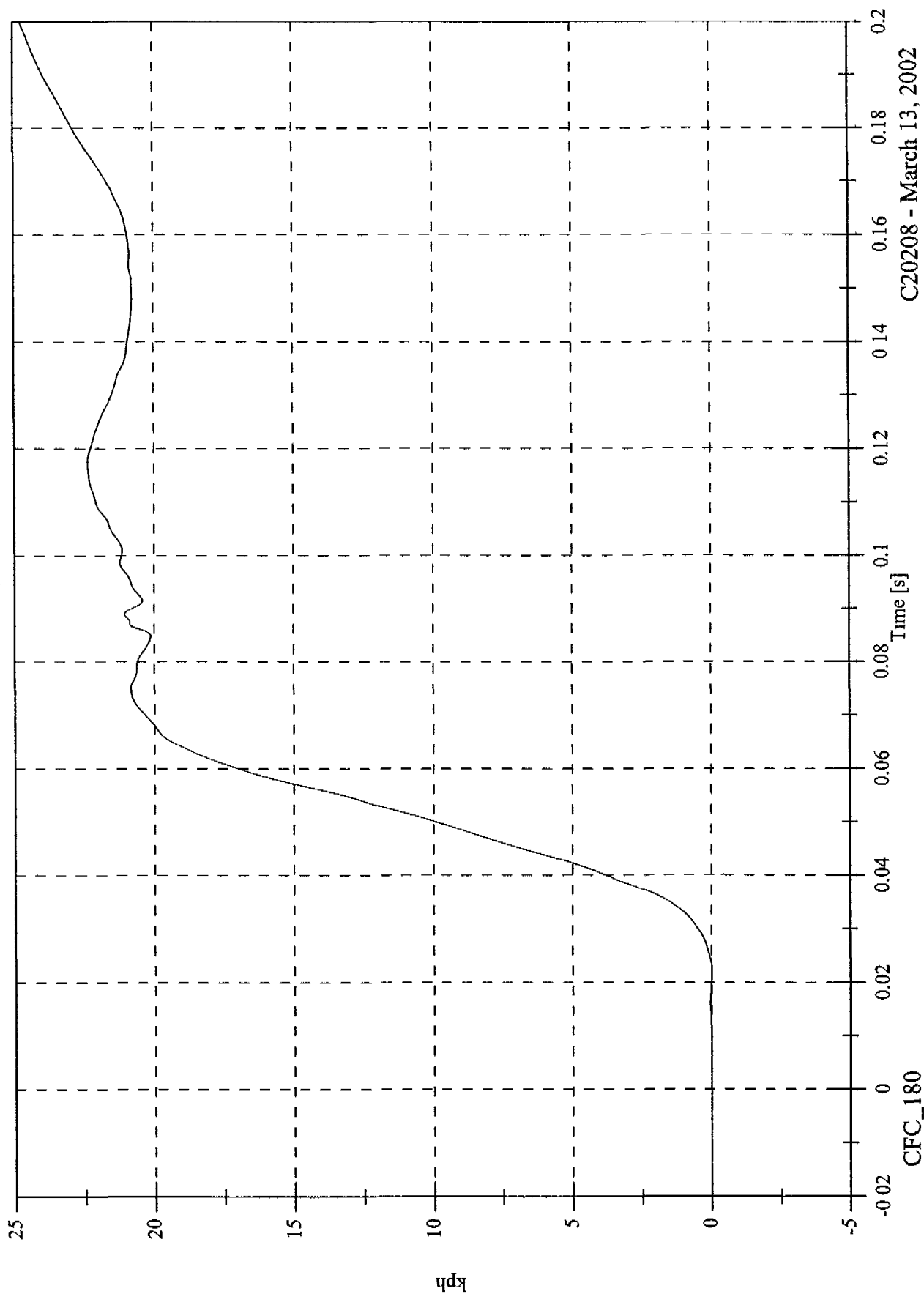


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FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

P1 Lower Rib y Velocity

Max: 24.7 [kph] at 0.200 [s]
Min: -0.0 [kph] at 0.022 [s]



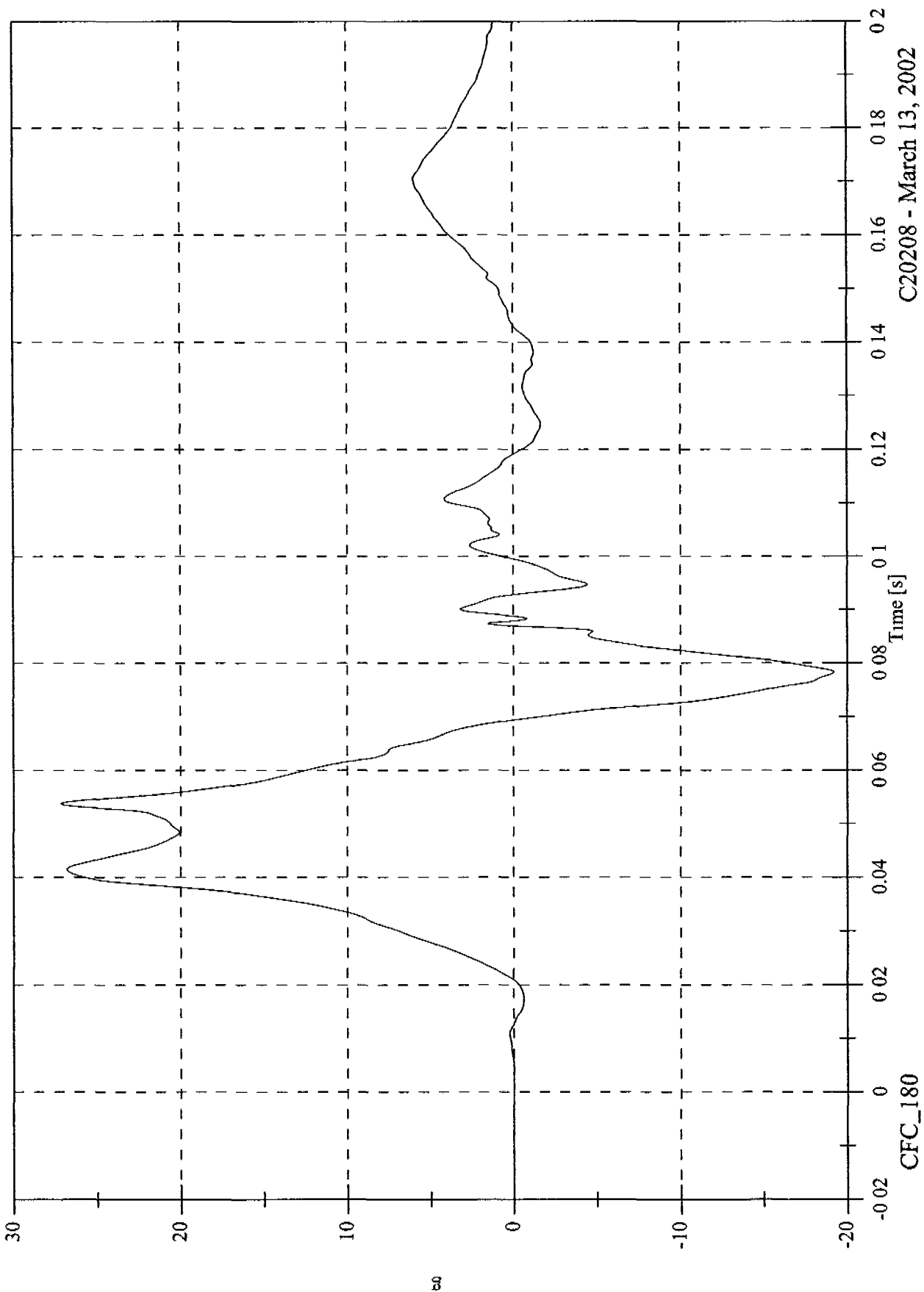
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FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

P1 Lower Spine y

Max: 27.2 [g] at 0.054 [s]

Min: -19.2 [g] at 0.078 [s]



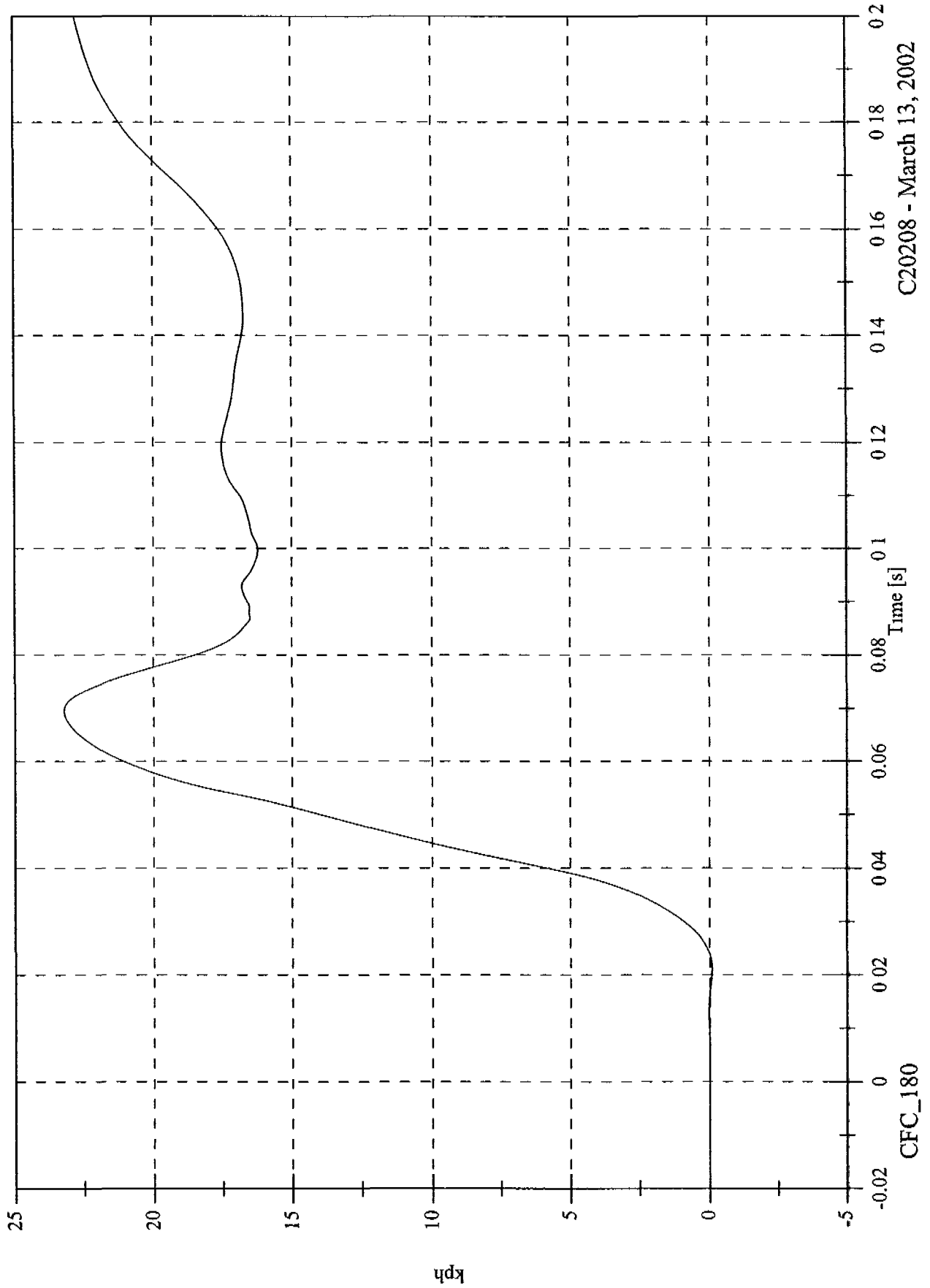
C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

P1 Lower Spine y Velocity

Max: 23.2 [kph] at 0.069 [s]

Min: -0.1 [kph] at 0.021 [s]

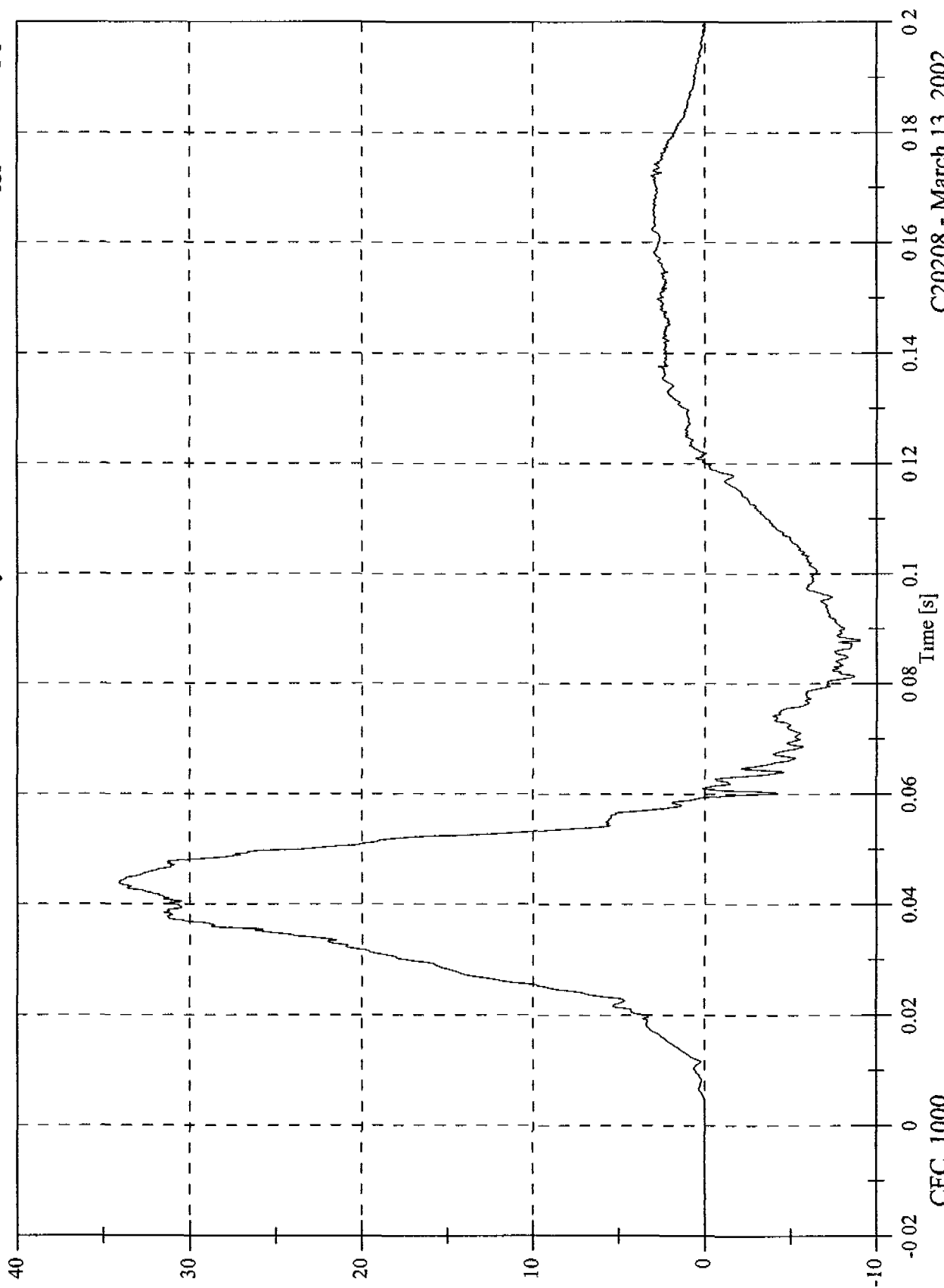


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FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

P1 Pelvic y

Max: 34.1 [g] at 0.044 [s]
Min: -9.0 [g] at 0.088 [s]

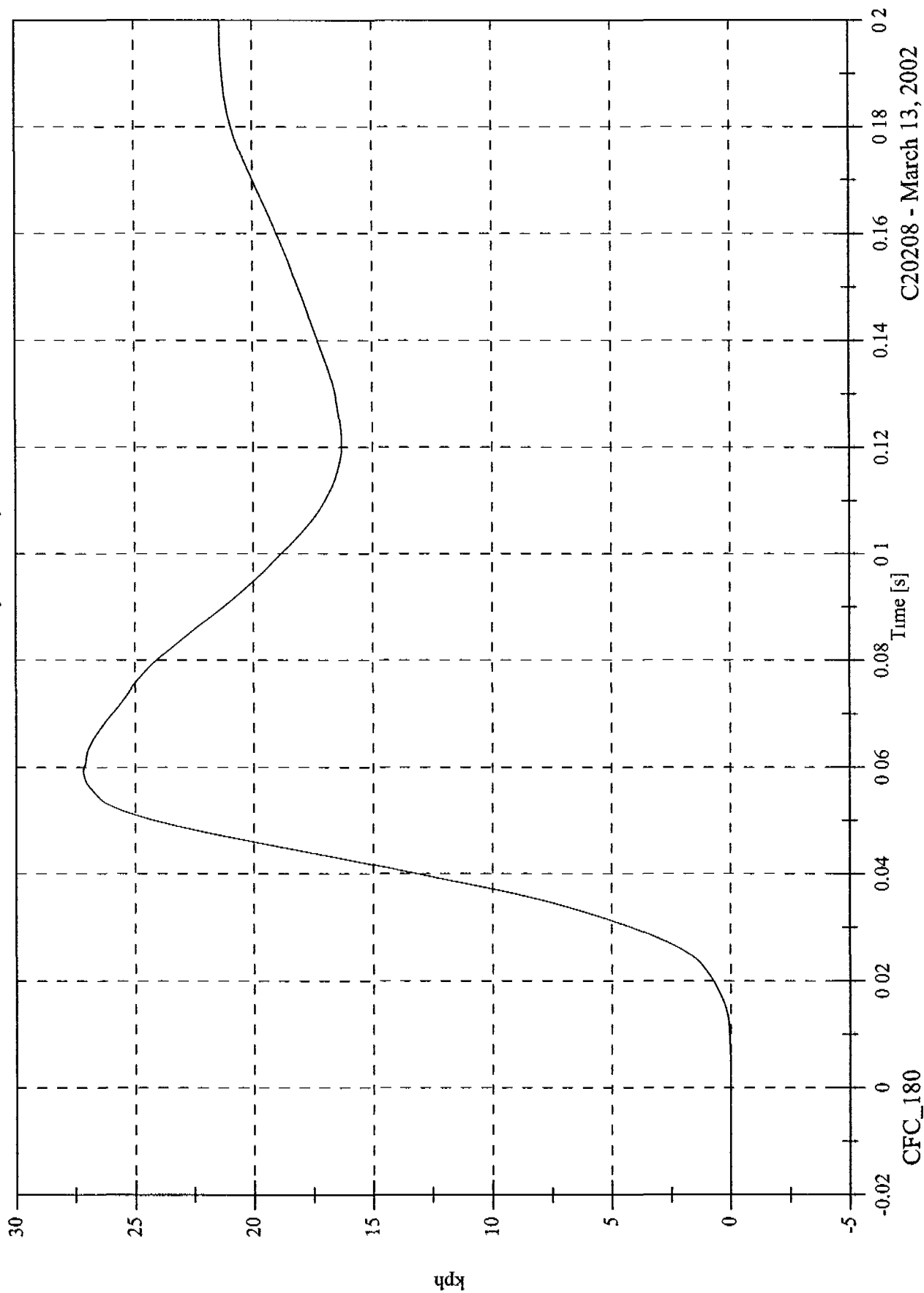


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FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

P1 Pelvic y Velocity

Max: 27.2 [kph] at 0.059 [s]
Min: -0.0 [kph] at -0.019 [s]

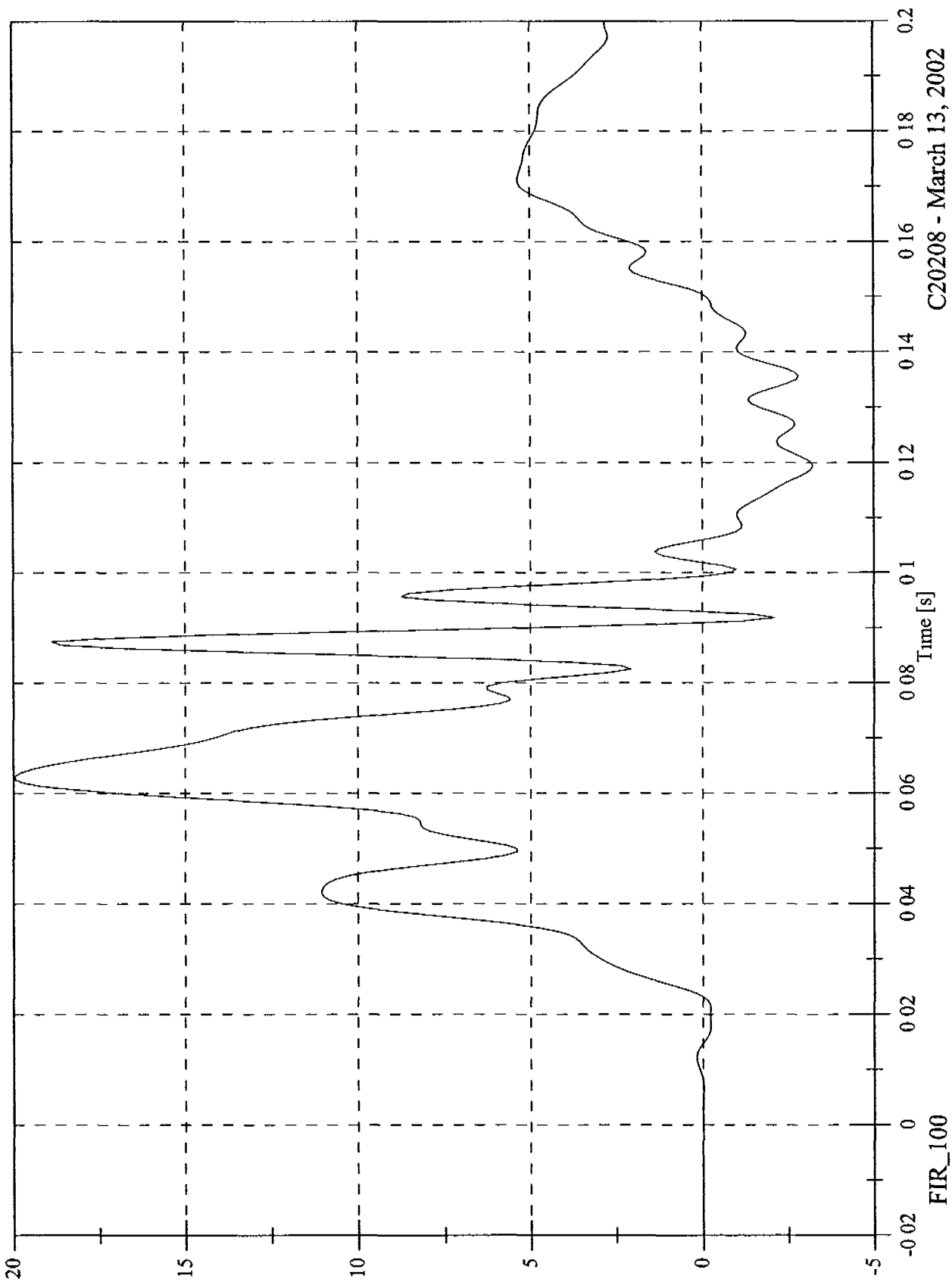


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FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

P1 Upper Rib y

Max: 20.0 [g] at 0.063 [s]
Min: -3.2 [g] at 0.119 [s]

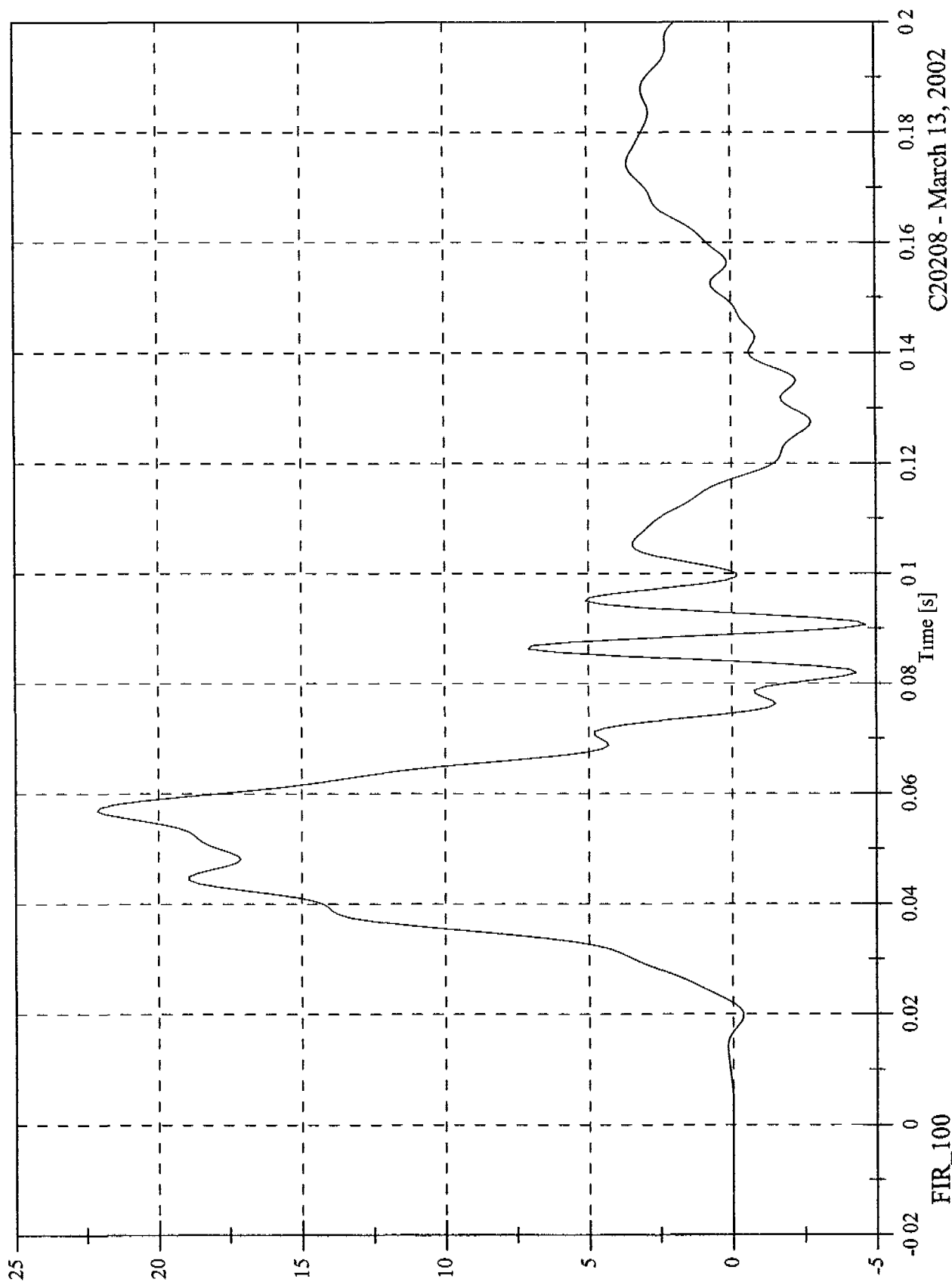


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FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

P1 Lower Rib y

Max: 22.1 [g] at 0.057 [s]
Min: -4.6 [g] at 0.091 [s]



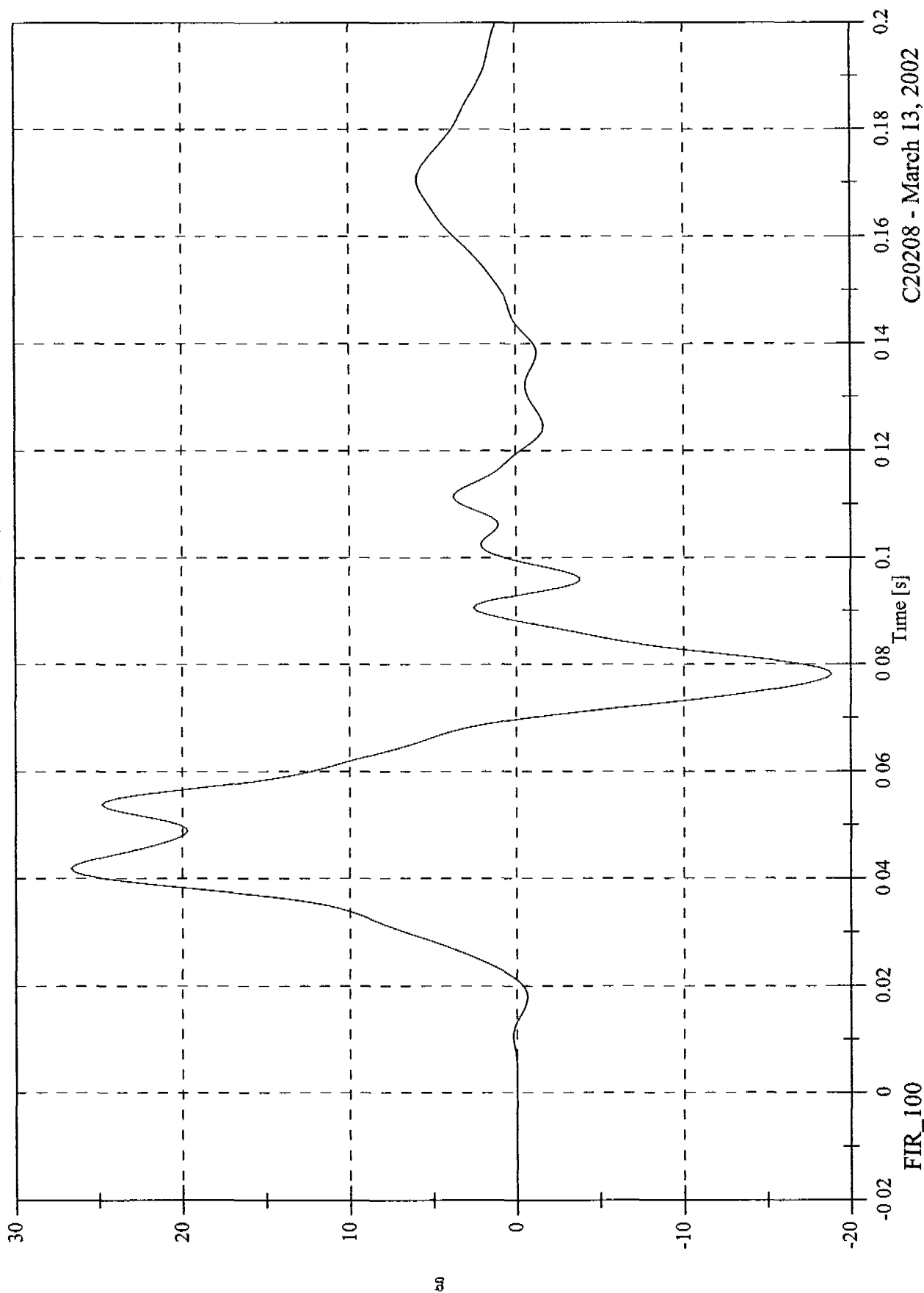
C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

P1 Lower Spine y

Max: 26.7 [g] at 0.042 [s]

Min: -18.8 [g] at 0.078 [s]

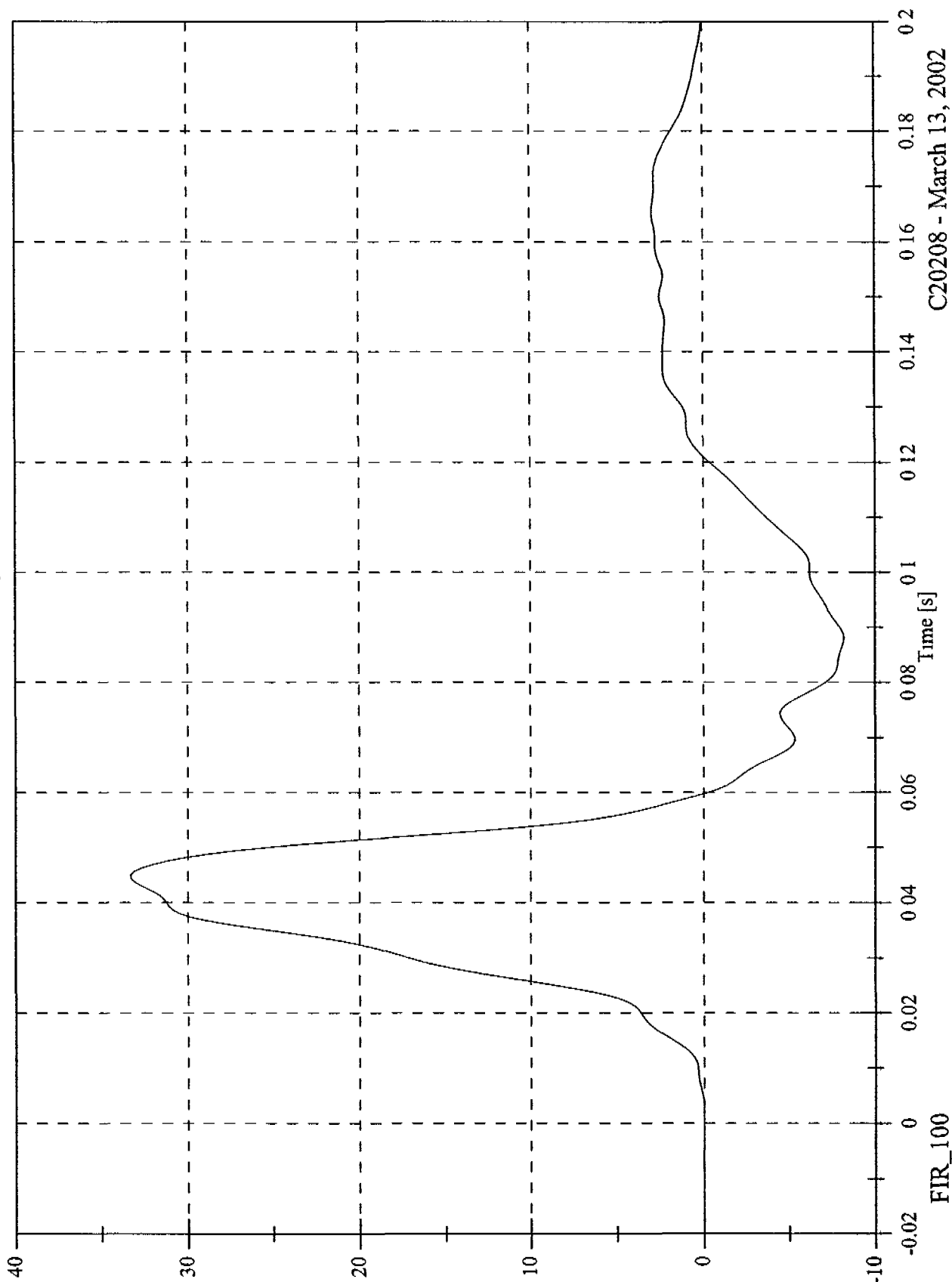


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FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

Max: 33.3 [g] at 0.045 [s]
 Min: -8.2 [g] at 0.088 [s]

P1 Pelvic y



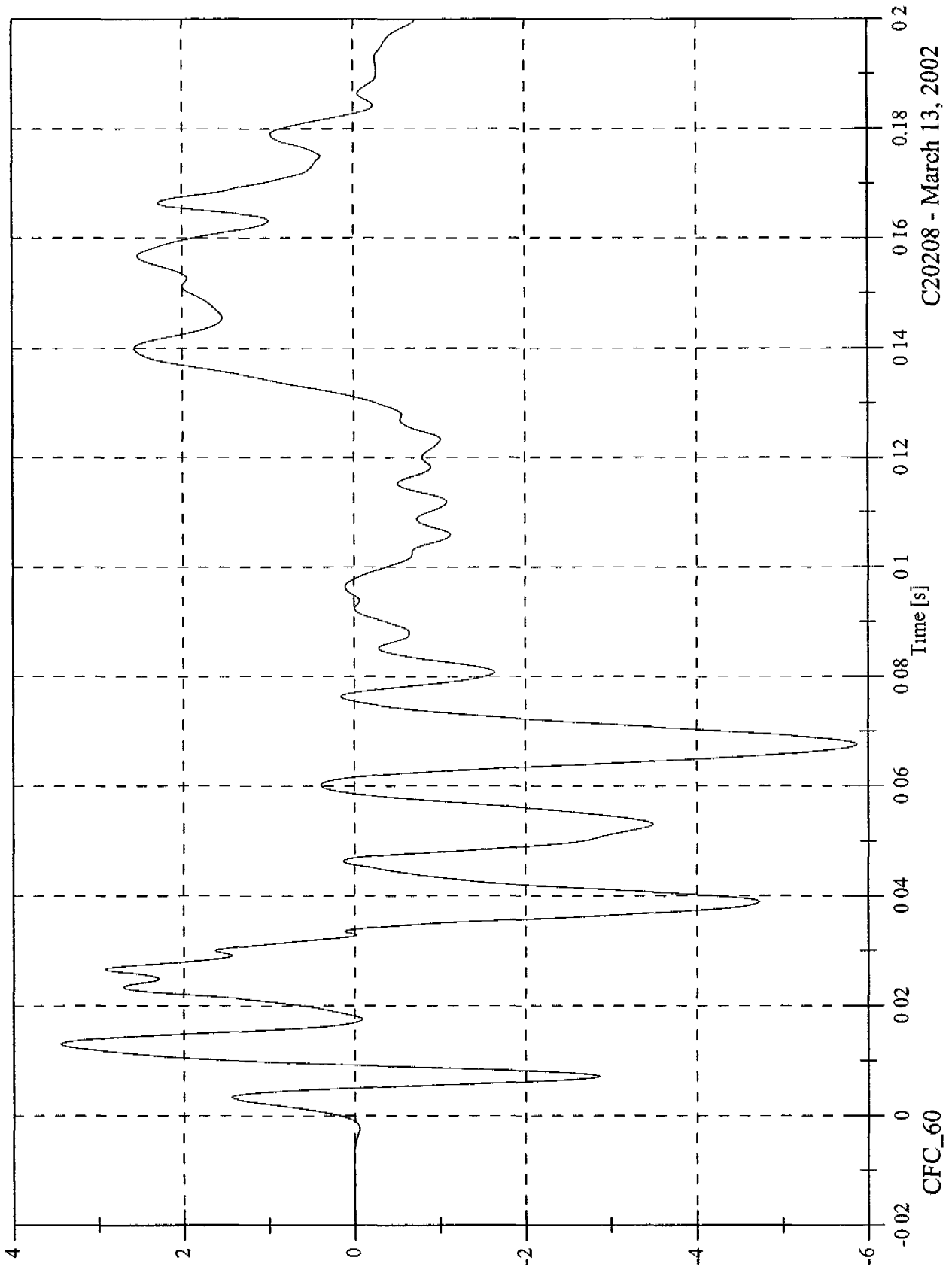
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FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

Acc 1 Right Front Sill at Front Seat X

Max: 3.4 [g] at 0.013 [s]

Min: -5.9 [g] at 0.068 [s]



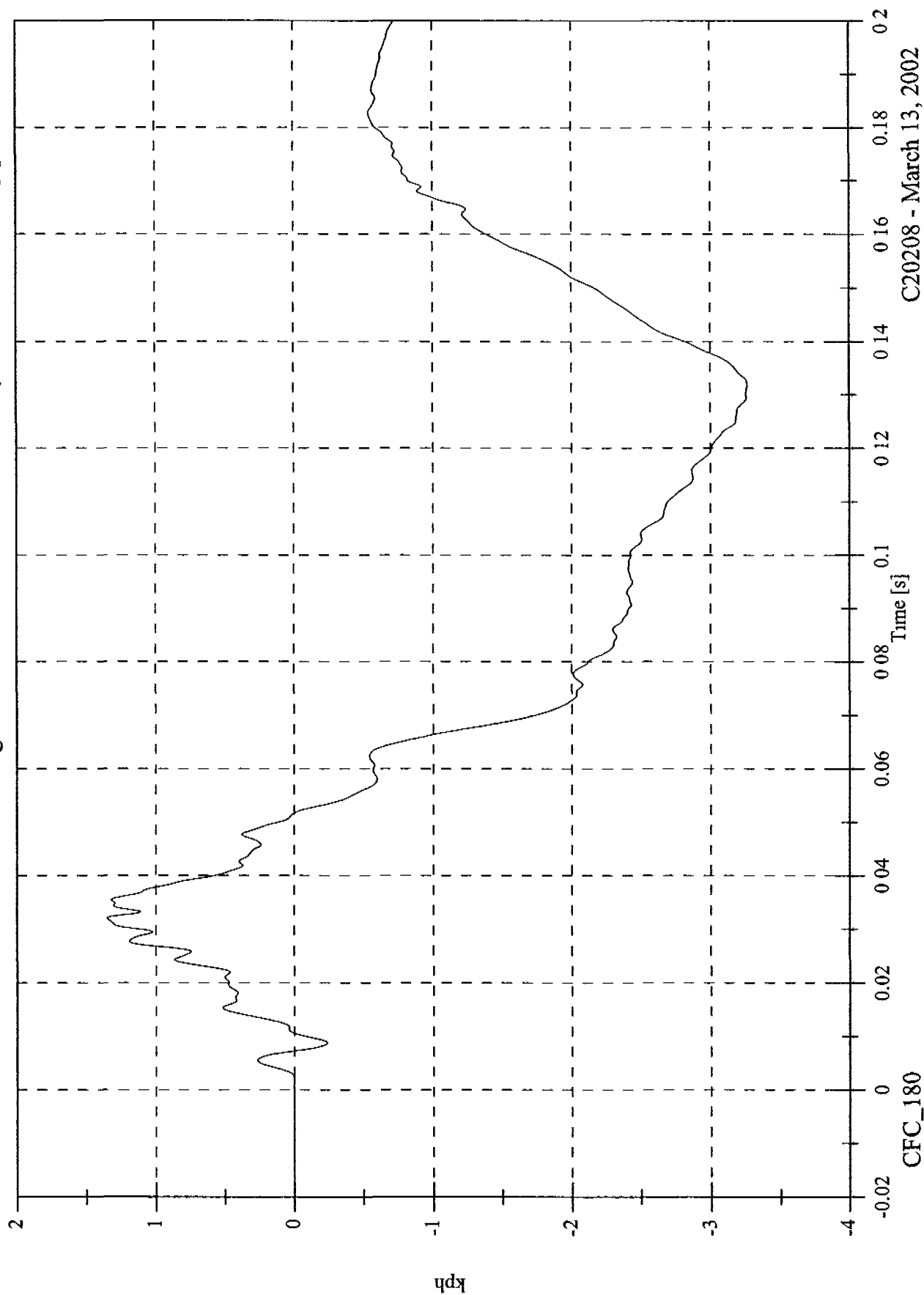
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FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

Max: 1.4 [kph] at 0.032 [s]

Acc 1 Right Front Sill at Front Seat X Velocity

Min: -3.3 [kph] at 0.132 [s]



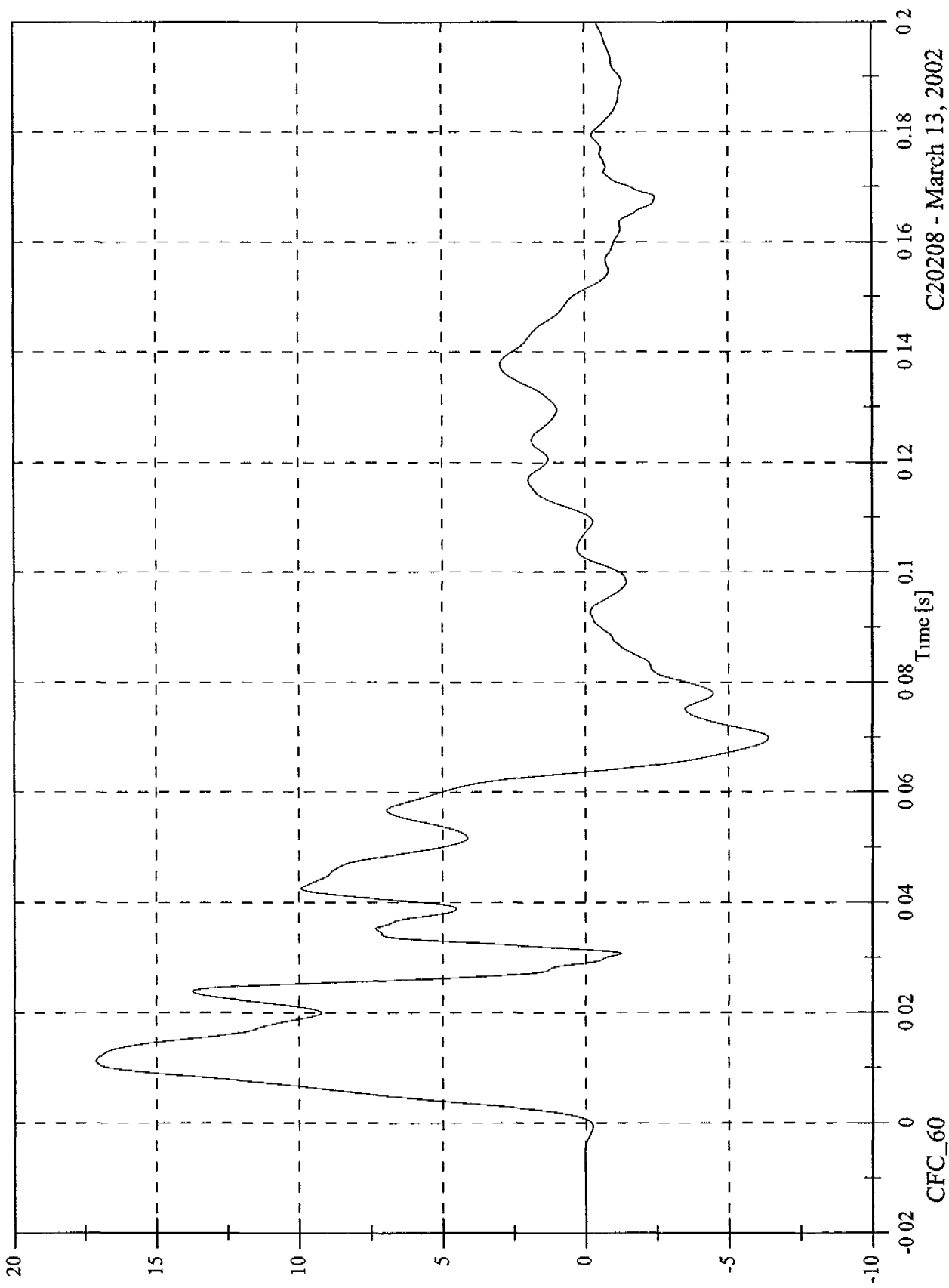
C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

Acc 1 Right Front Sill at Front Seat Y

Max: 17.1 [g] at 0.011 [s]

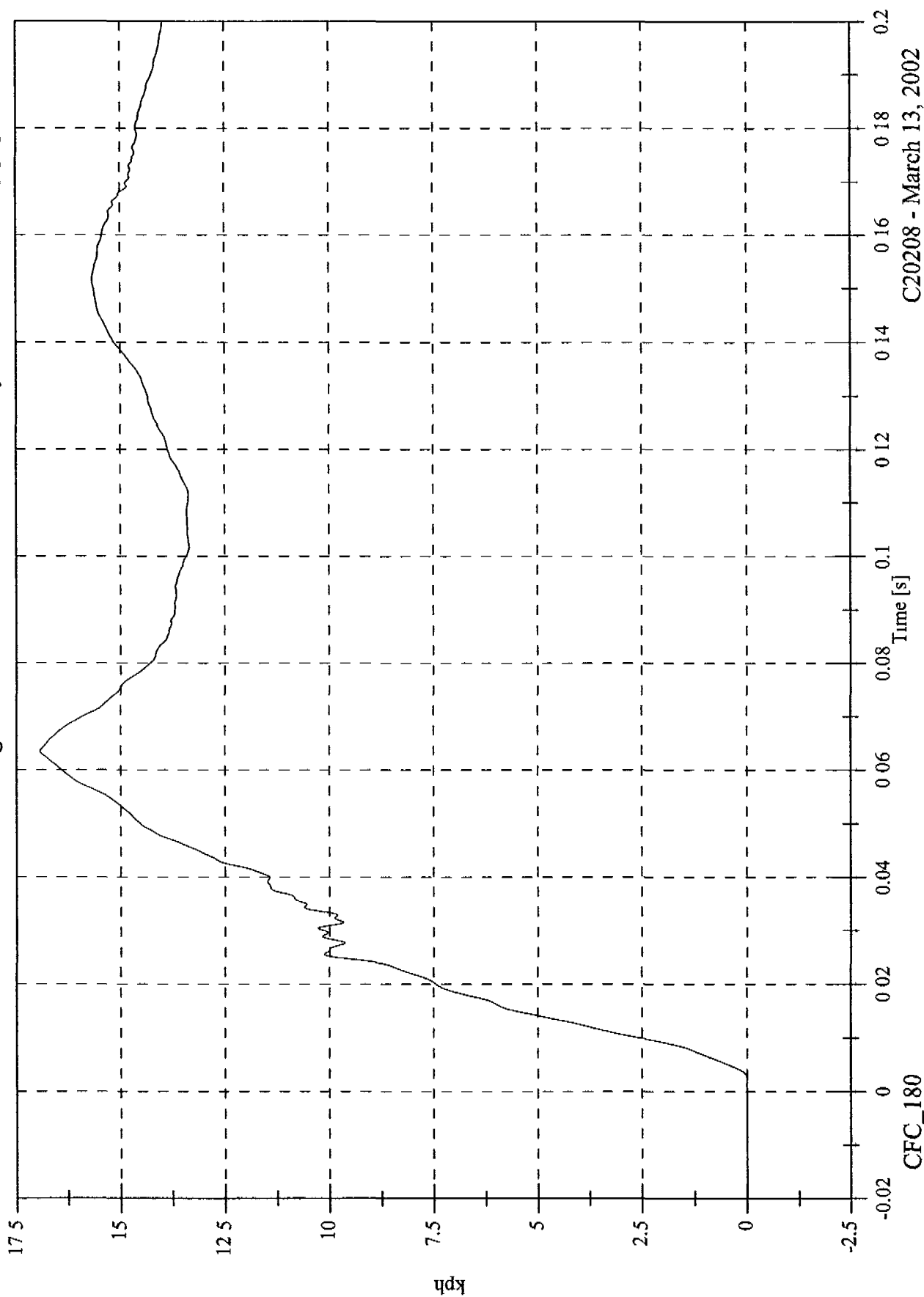
Min: -6.4 [g] at 0.070 [s]



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FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning
Acc 1 Right Front Sill at Front Seat Y Velocity

Max: 16.9 [kph] at 0.063 [s]
Min: -0.0 [kph] at -0.017 [s]



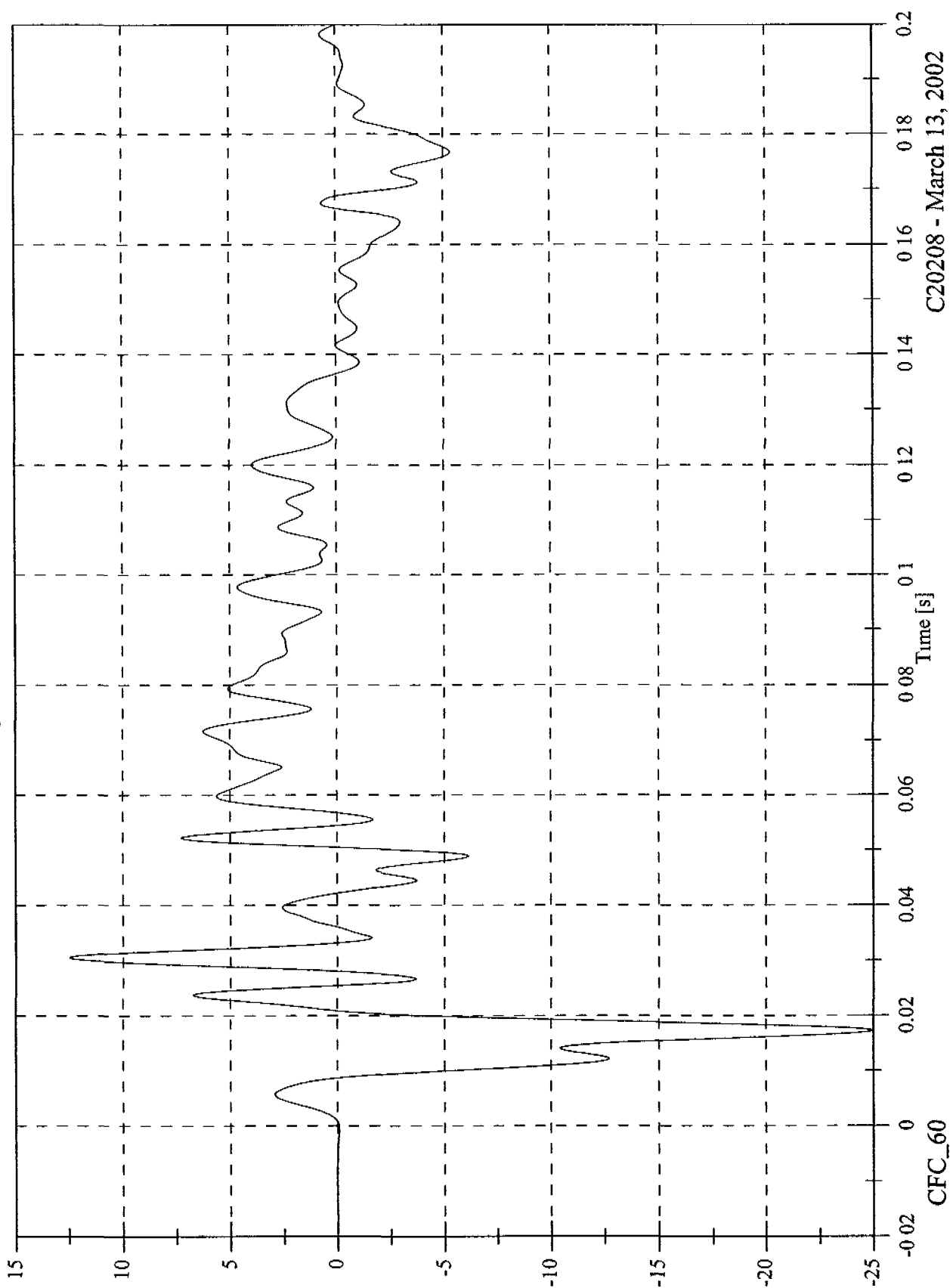
C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

Max: 12.5 [g] at 0.031 [s]

Min: -25.0 [g] at 0.017 [s]

Acc 1 Right Front Sill at Front Seat Z



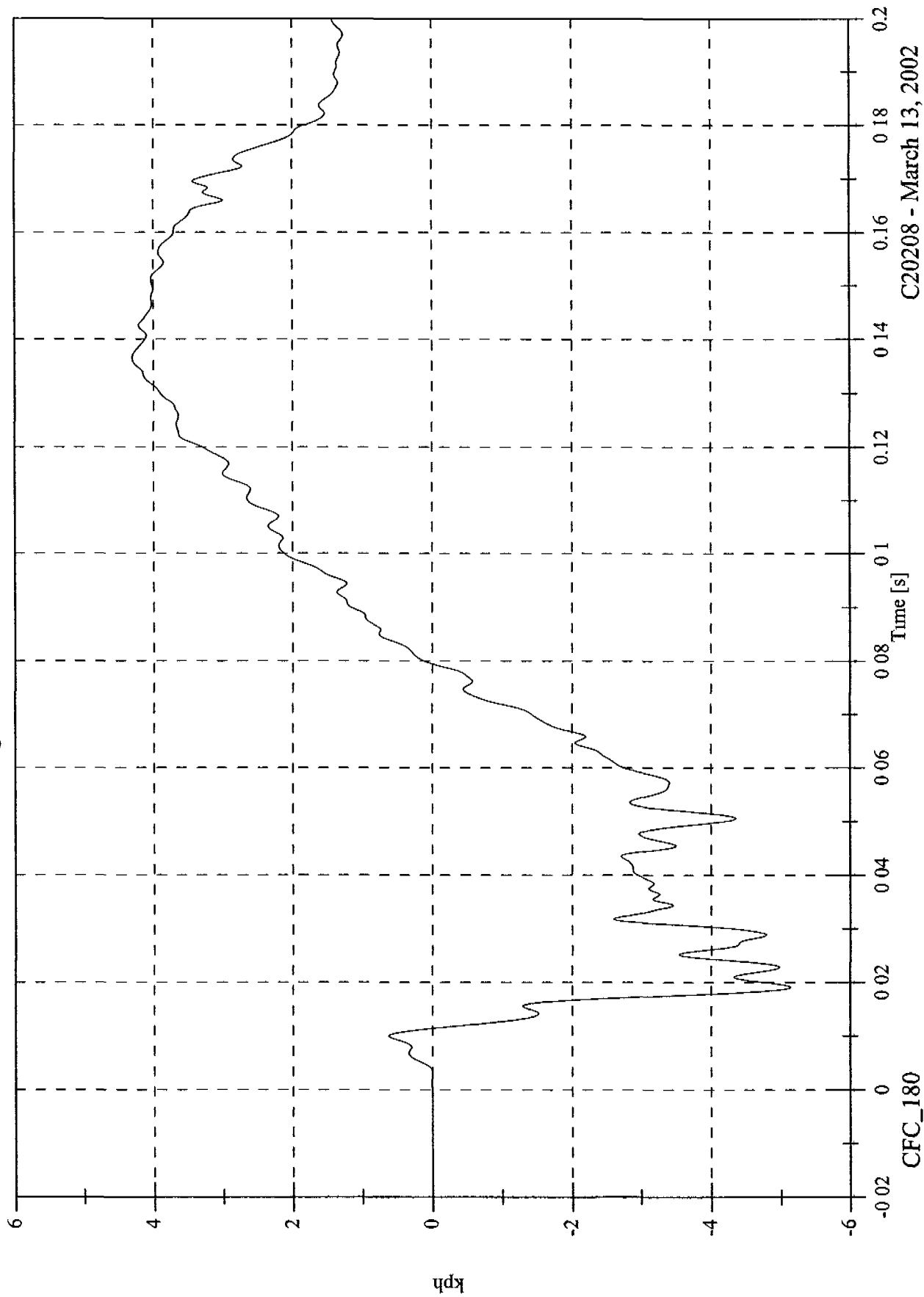
C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

Acc 1 Right Front Sill at Front Seat Z Velocity

Max: 4.3 [kph] at 0.136 [s]

Min: -5.1 [kph] at 0.019 [s]



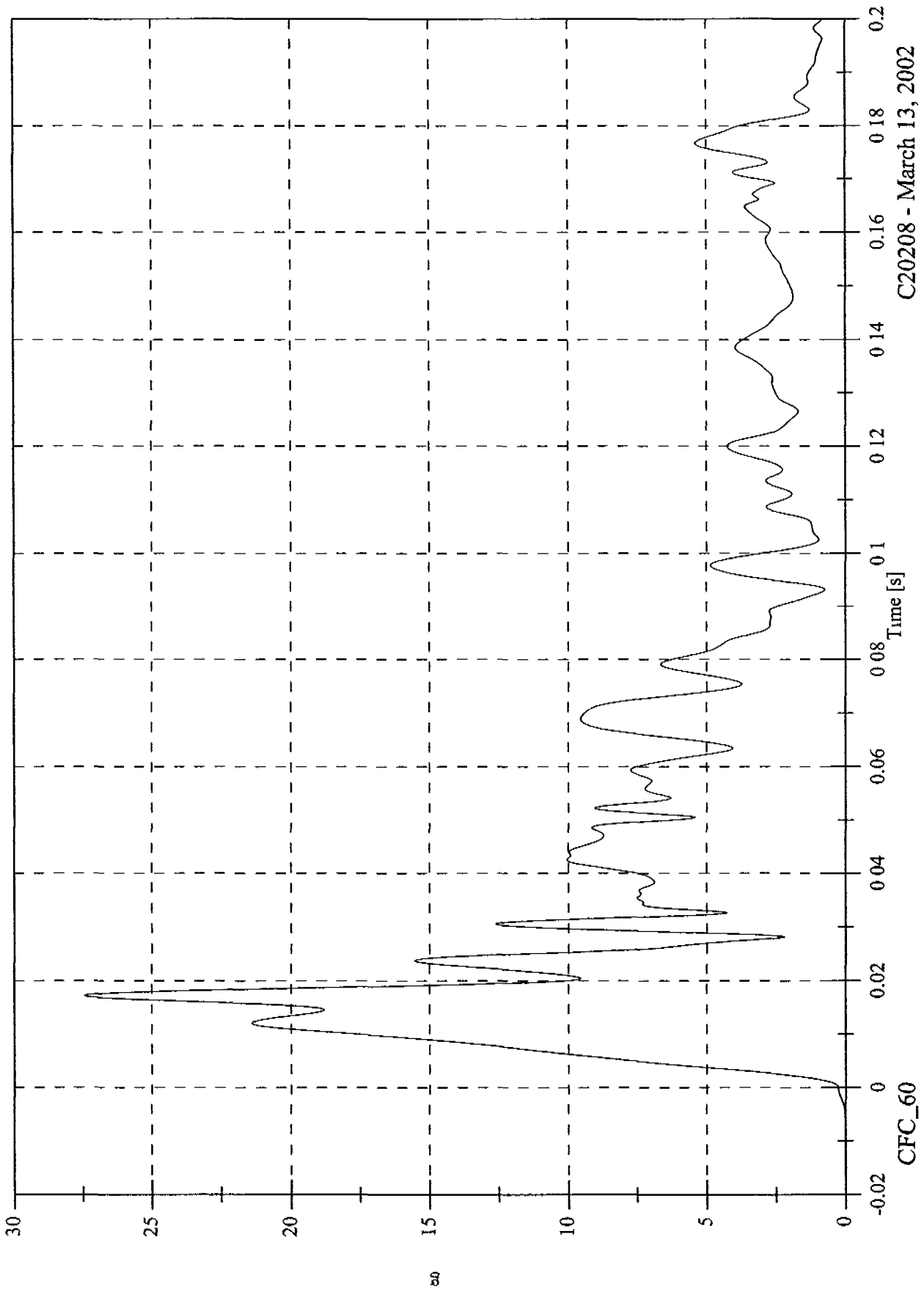
C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

Acc 1 Right Front Sill at Front Seat Resultant

Max: 27.4 [g] at 0.017 [s]

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

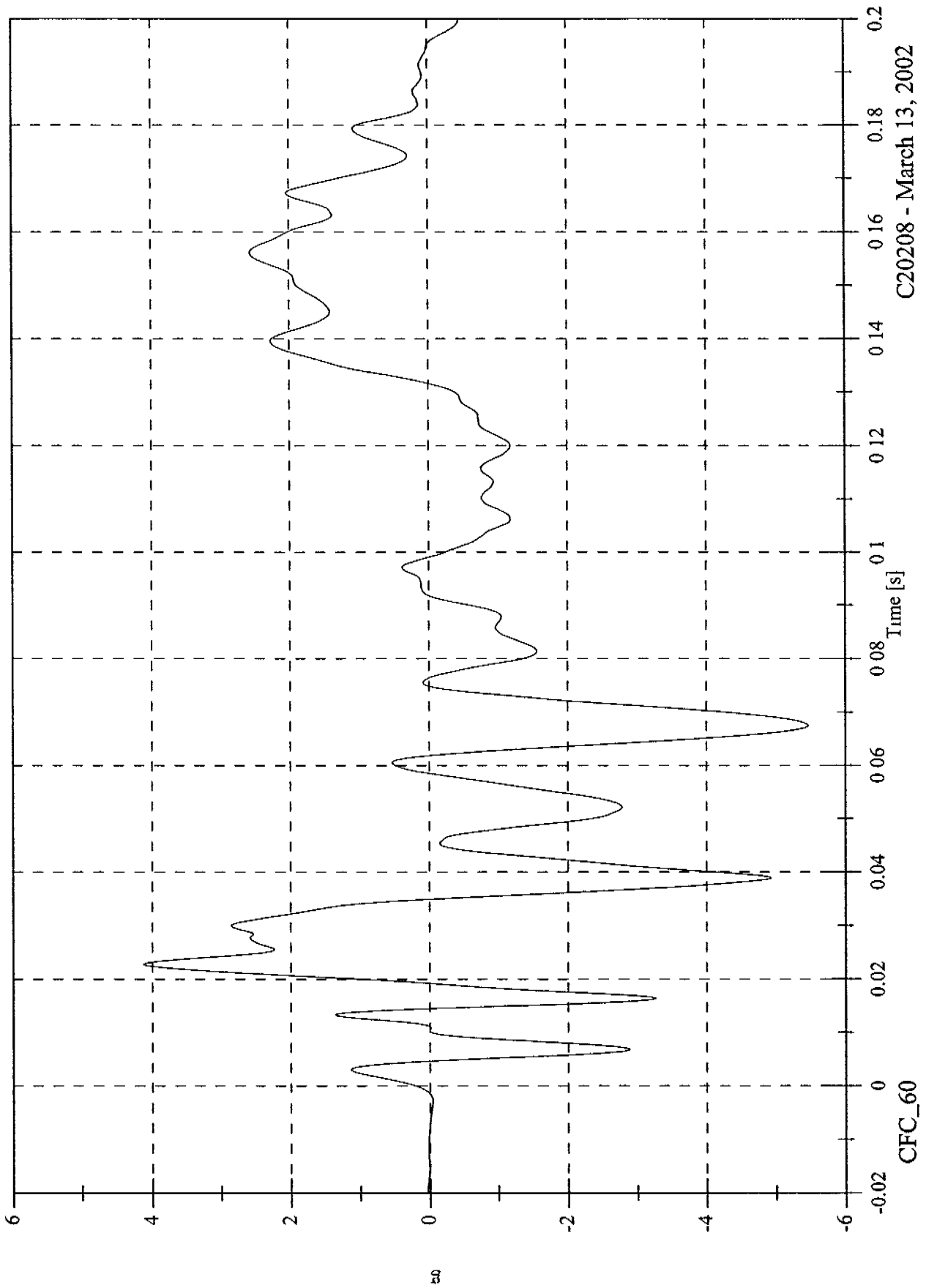


C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

Acc 2 Right Rear Sill at Rear Seat X

Max: 4.1 [g] at 0.023 [s]
Min: -5.5 [g] at 0.068 [s]

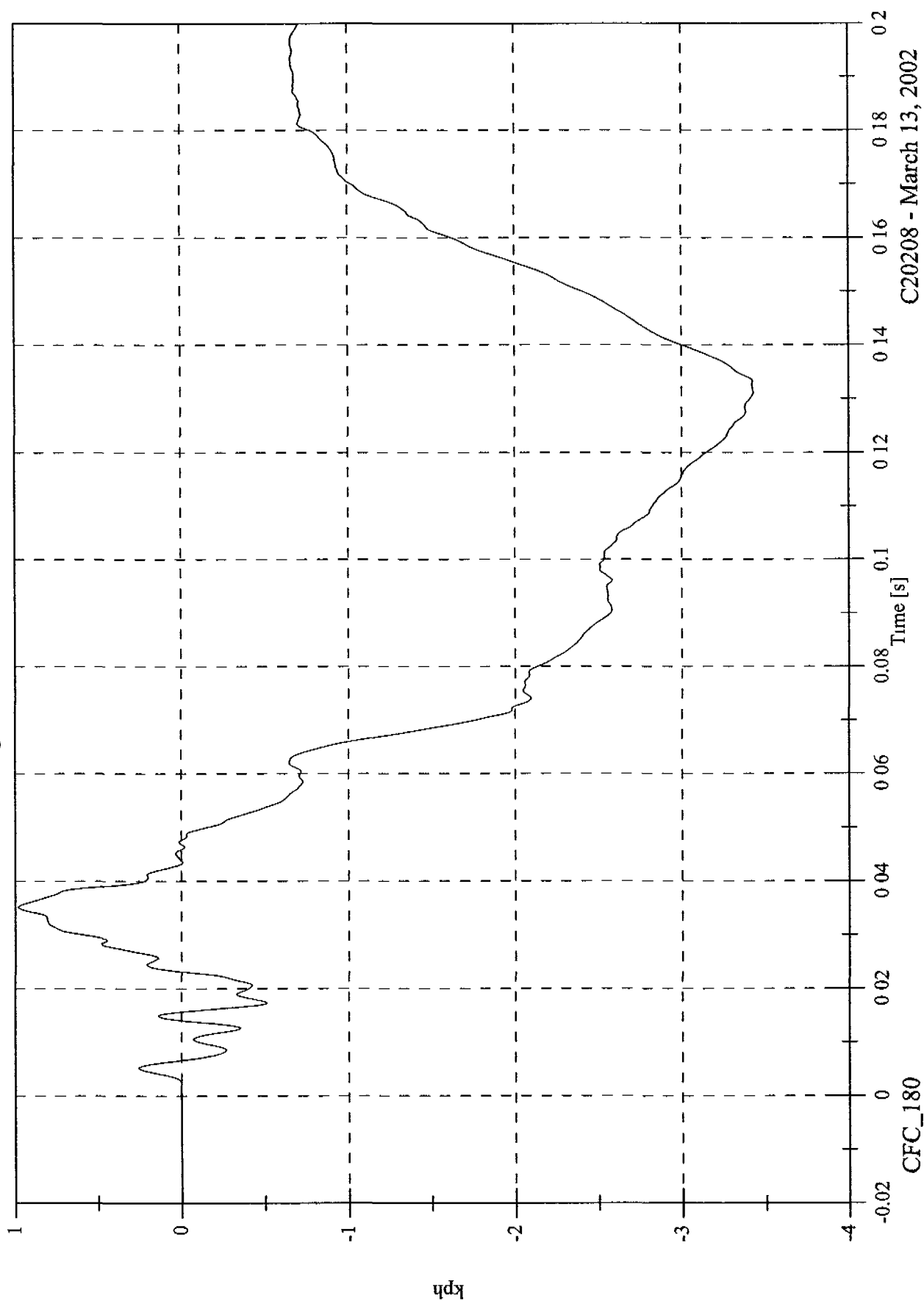


C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning
 Acc 2 Right Rear Sill at Rear Seat X Velocity

Max: 1.0 [kph] at 0.035 [s]

Min: -3.4 [kph] at 0.131 [s]

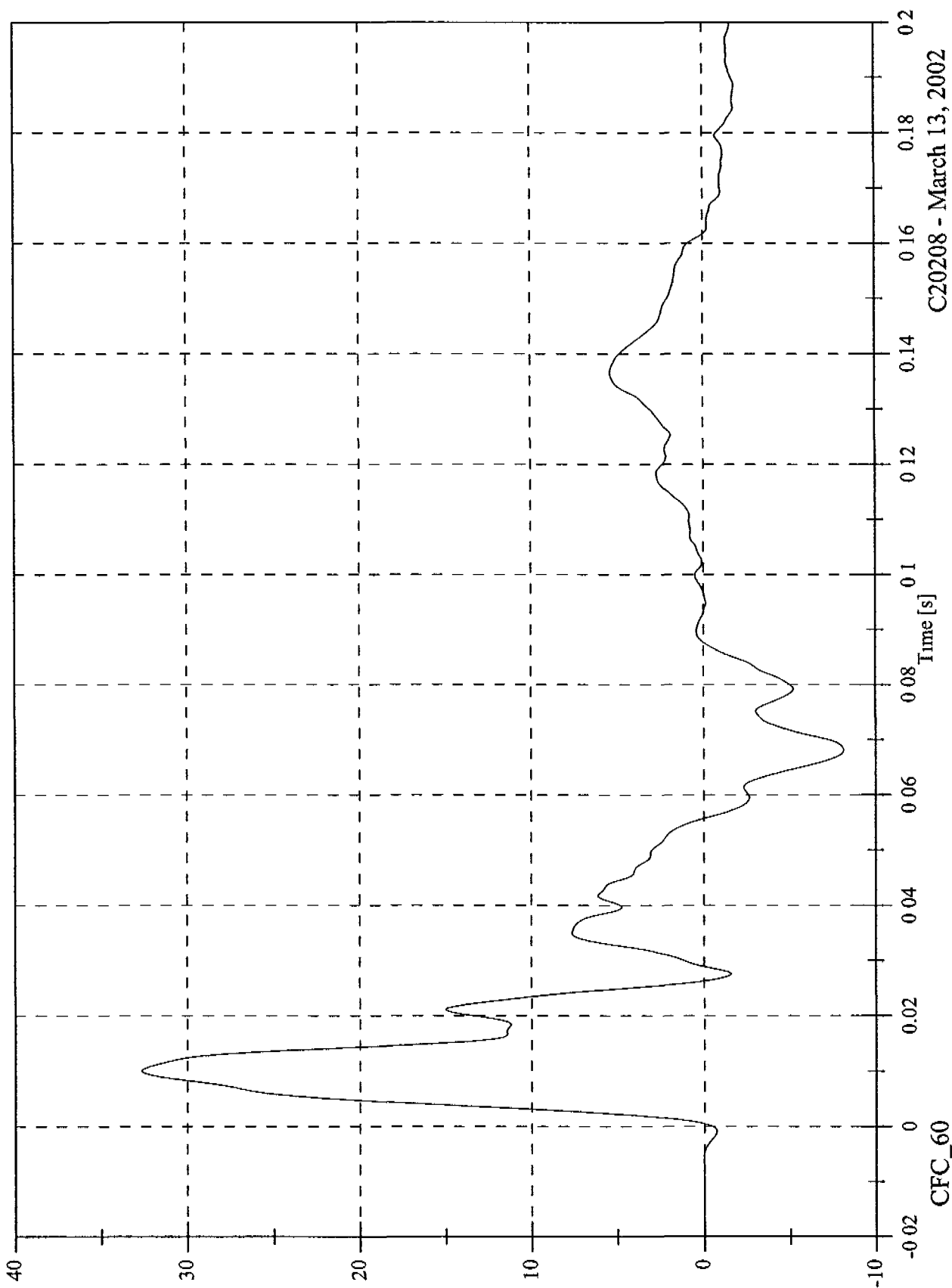


C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

Acc 2 Right Rear Sill at Rear Seat Y

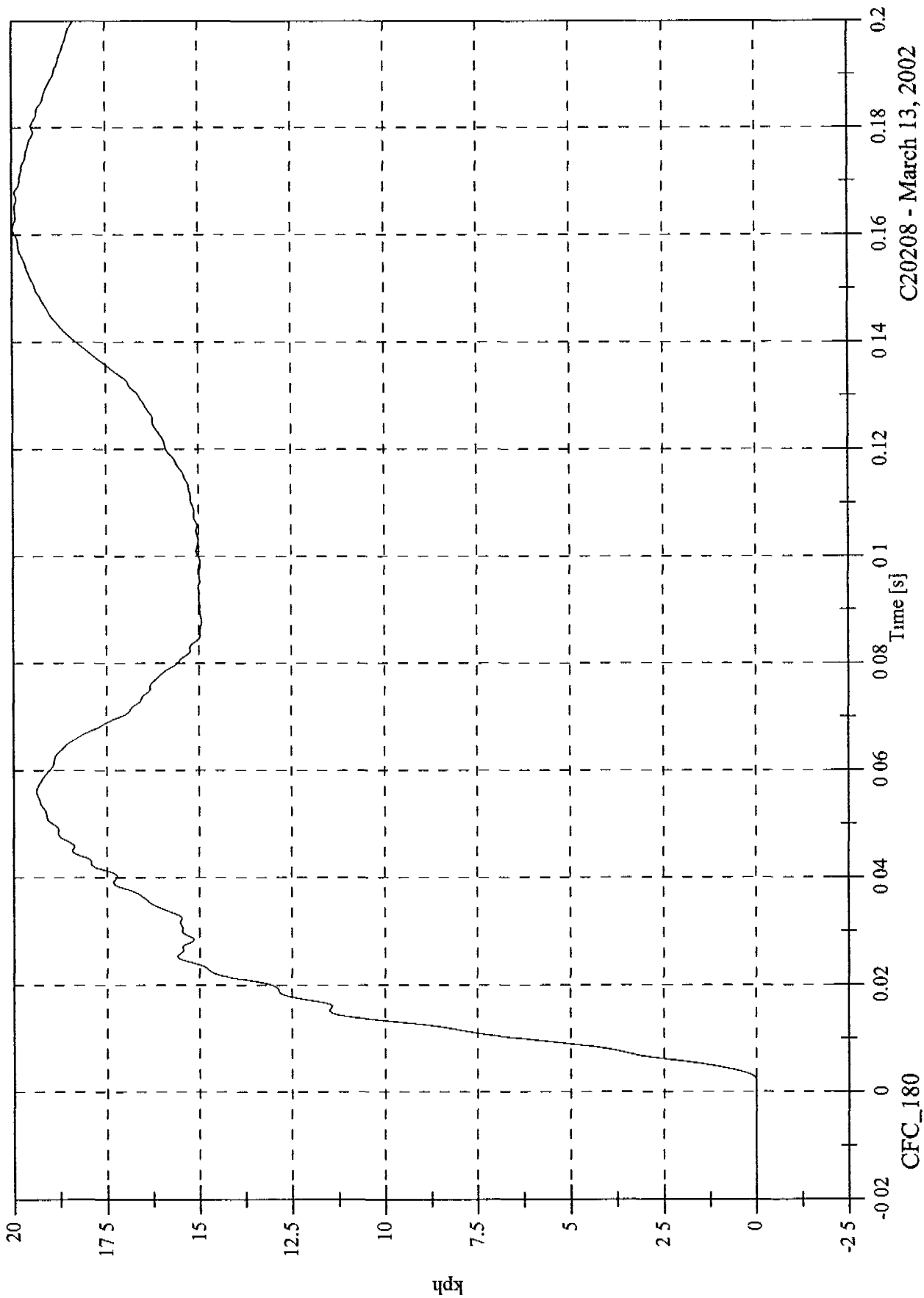
Max: 32.7 [g] at 0.010 [s]
Min: -8.1 [g] at 0.068 [s]



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FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning
Acc 2 Right Rear Sill at Rear Seat Y Velocity

Max: 20.0 [kph] at 0.161 [s]
Min: -0.0 [kph] at -0.018 [s]

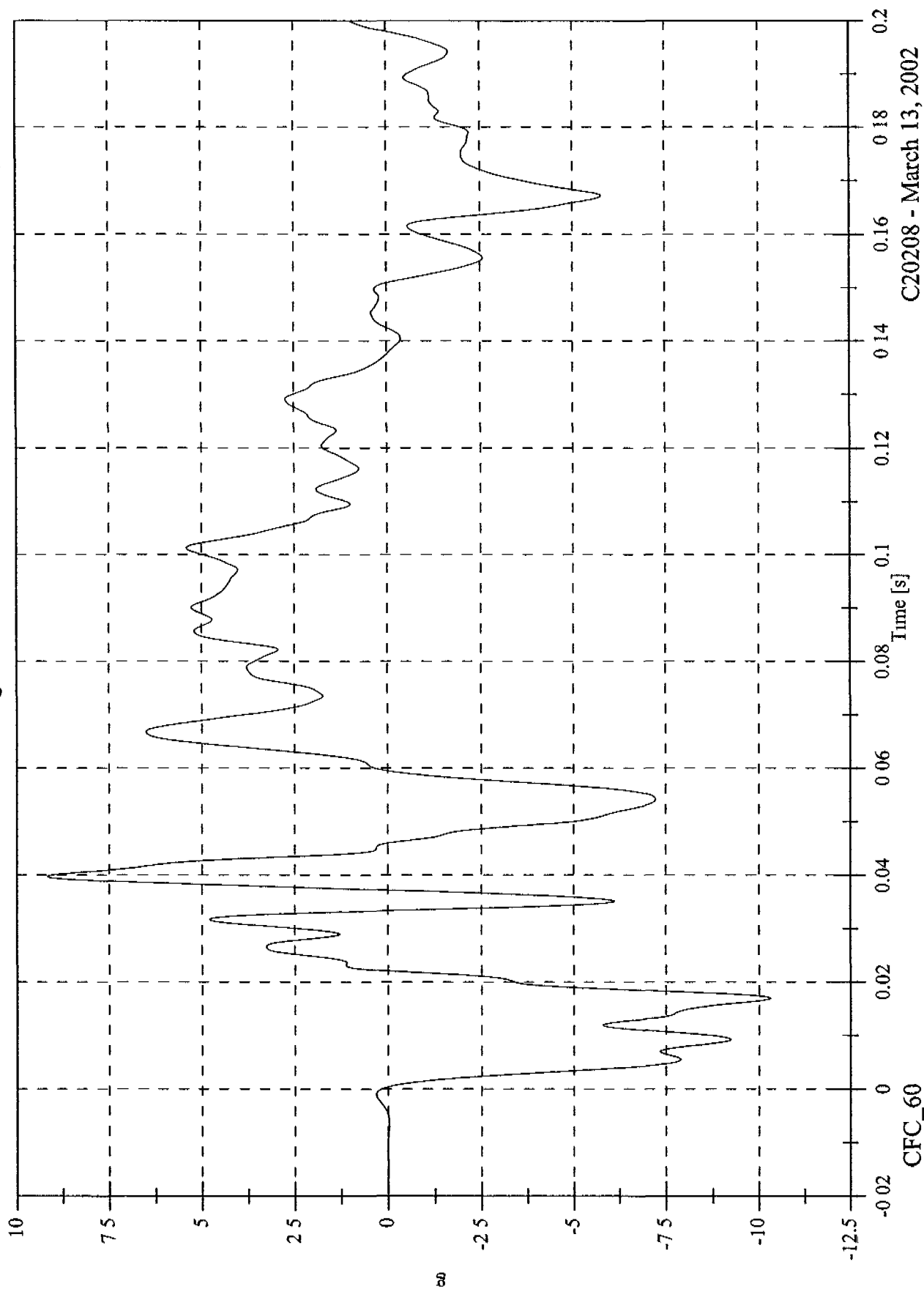


C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

Acc 2 Right Rear Sill at Rear Seat Z

Max: 9.2 [g] at 0.040 [s]
Min: -10.3 [g] at 0.017 [s]



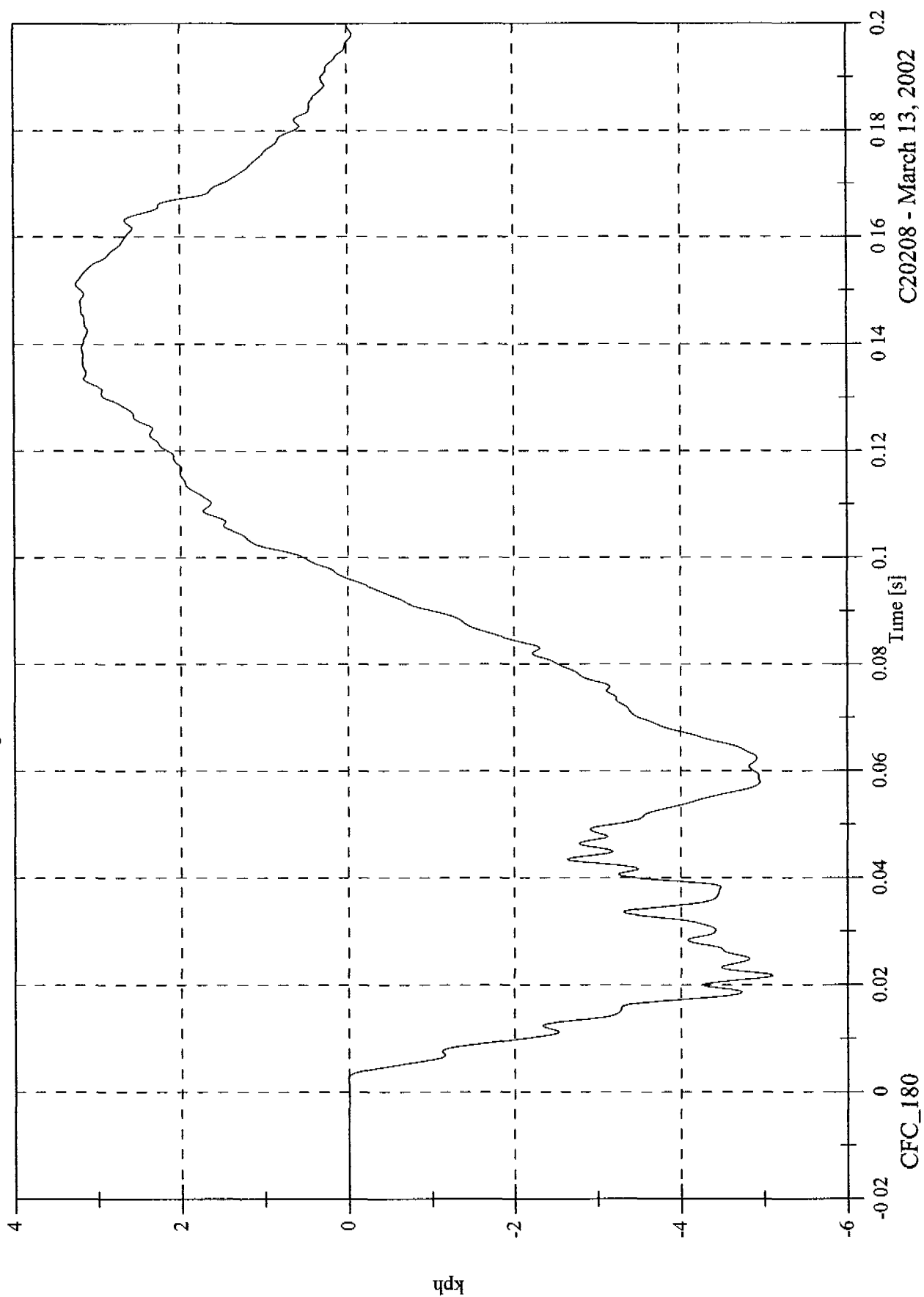
C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

Acc 2 Right Rear Sill at Rear Seat Z Velocity

Max: 3.3 [kph] at 0.151 [s]

Min: -5.1 [kph] at 0.022 [s]

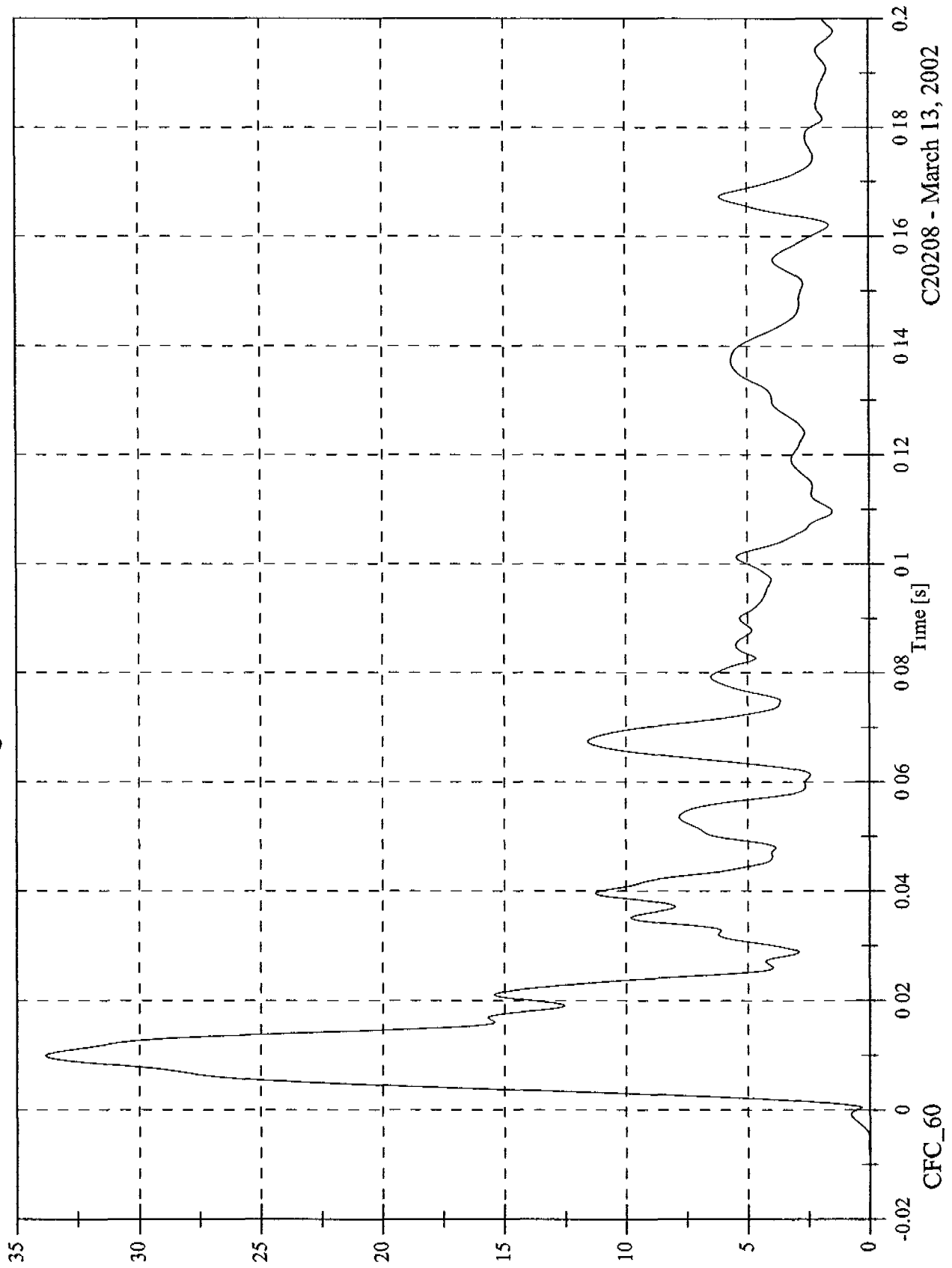


C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

Acc 2 Right Rear Sill at Rear Seat Resultant

Max: 33.8 [g] at 0.010 [s]
Min: 0.0 [g] at -0.017 [s]



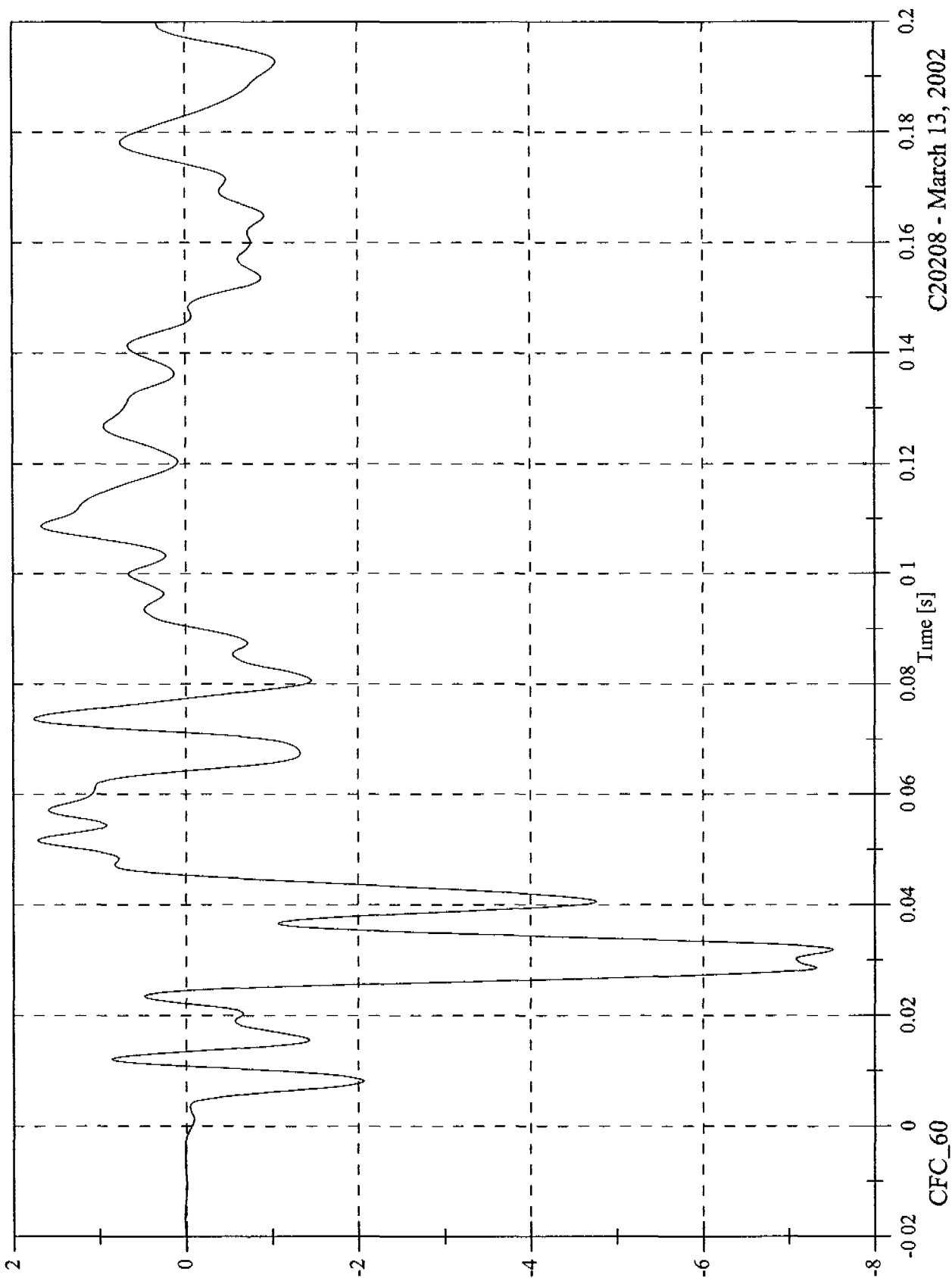
C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

Acc 3 Rear Floorpan X

Max: 1.8 [g] at 0.074 [s]

Min: -7.5 [g] at 0.032 [s]

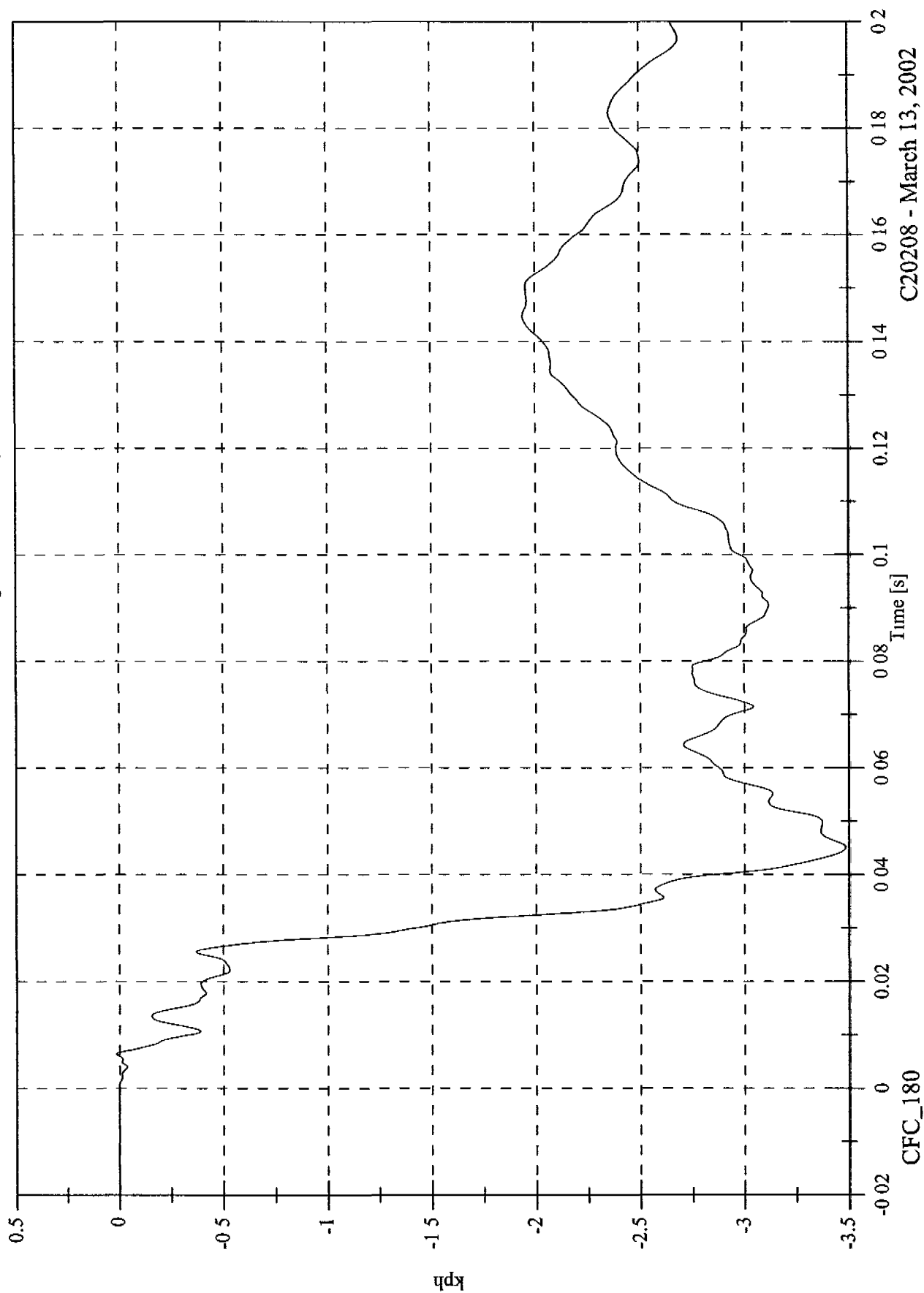


C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

Acc 3 Rear Floorpan X Velocity

Max: 0.0 [kph] at 0.006 [s]
Min: -3.5 [kph] at 0.045 [s]



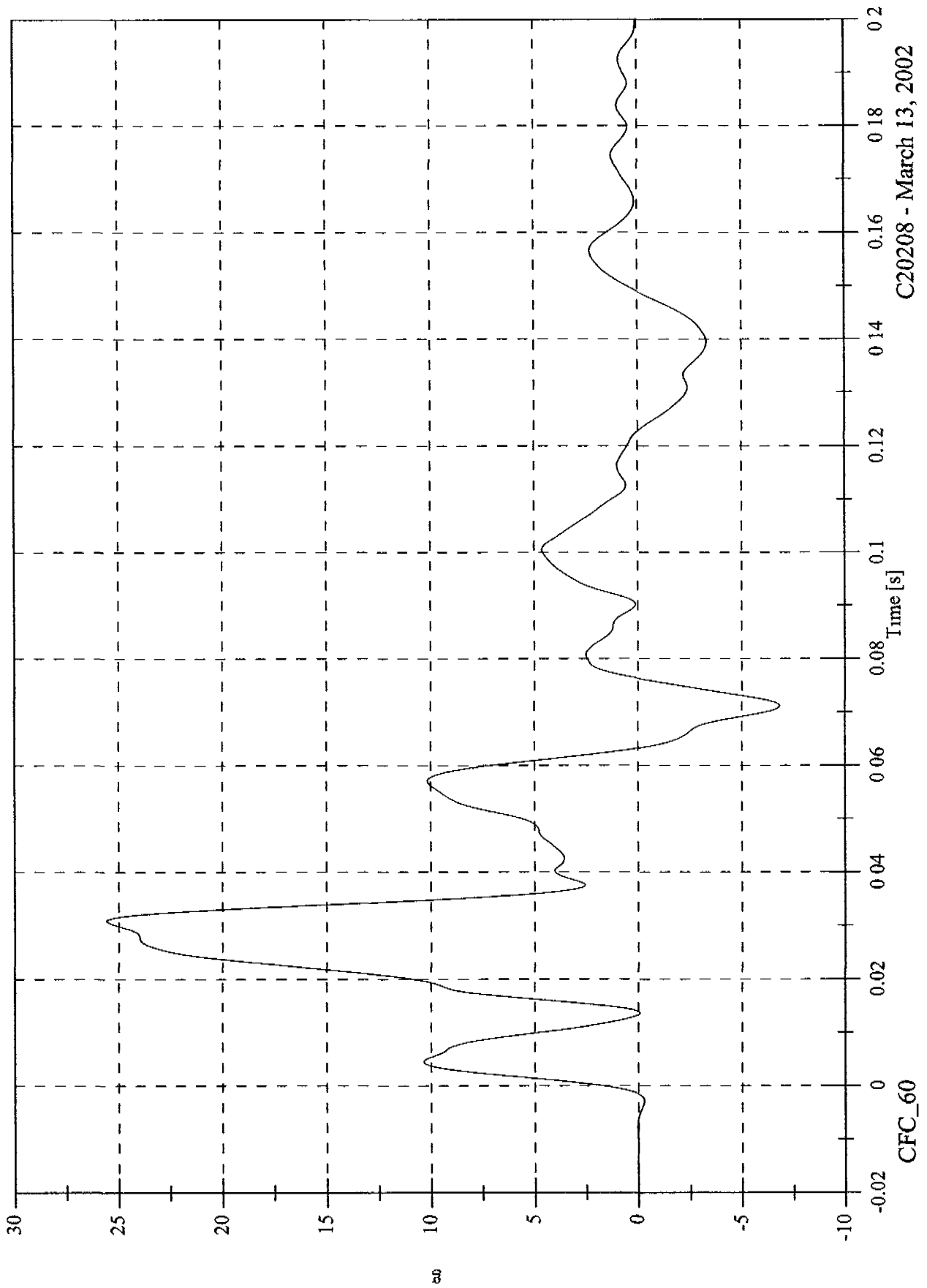
C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

Acc 3 Rear Floorpan Y

Max: 25.6 [g] at 0.031 [s]

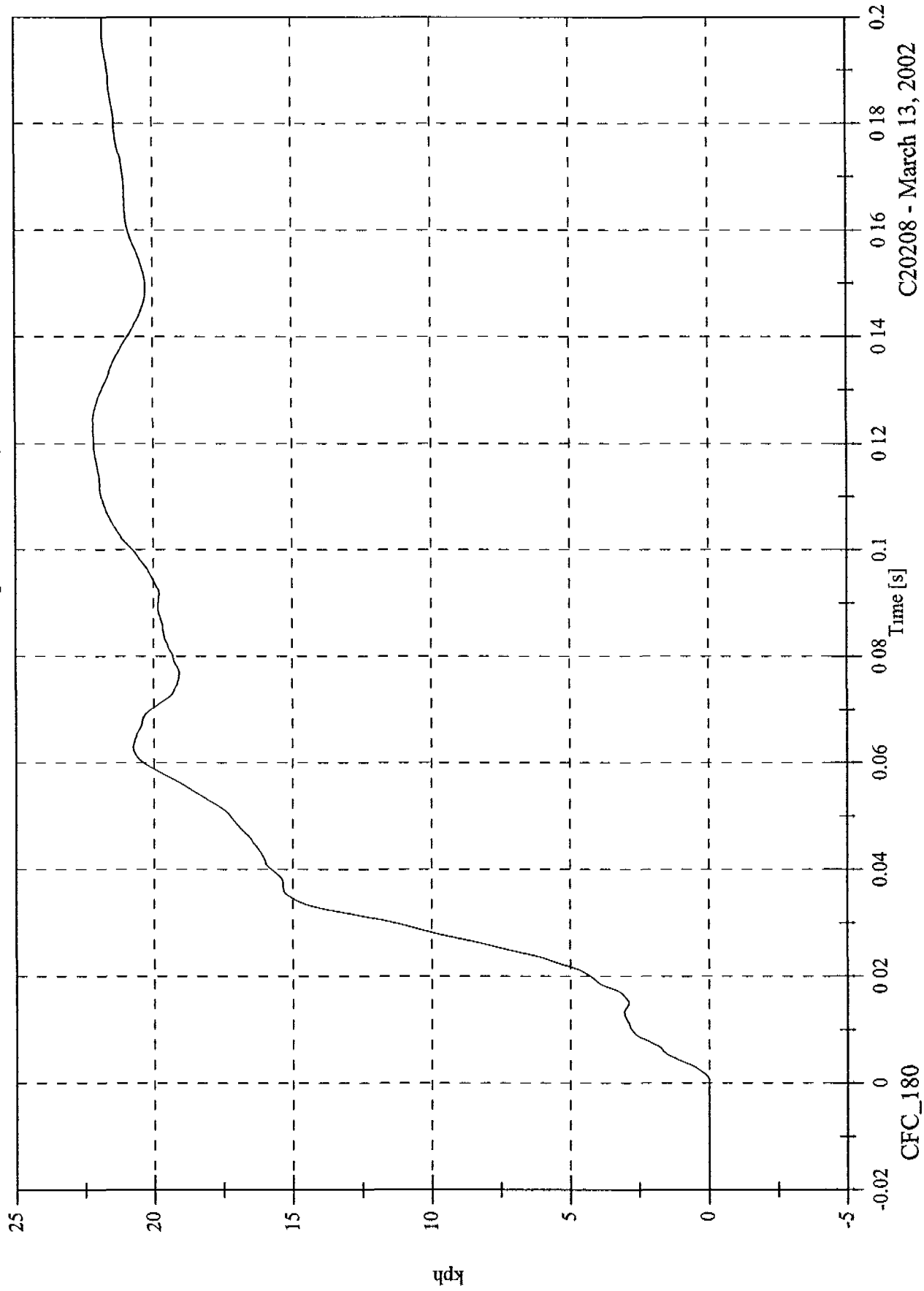
Min: -6.8 [g] at 0.071 [s]



C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning
Acc 3 Rear Floorpan Y Velocity

Max: 22.2 [kph] at 0.122 [s]
Min: -0.0 [kph] at -0.018 [s]



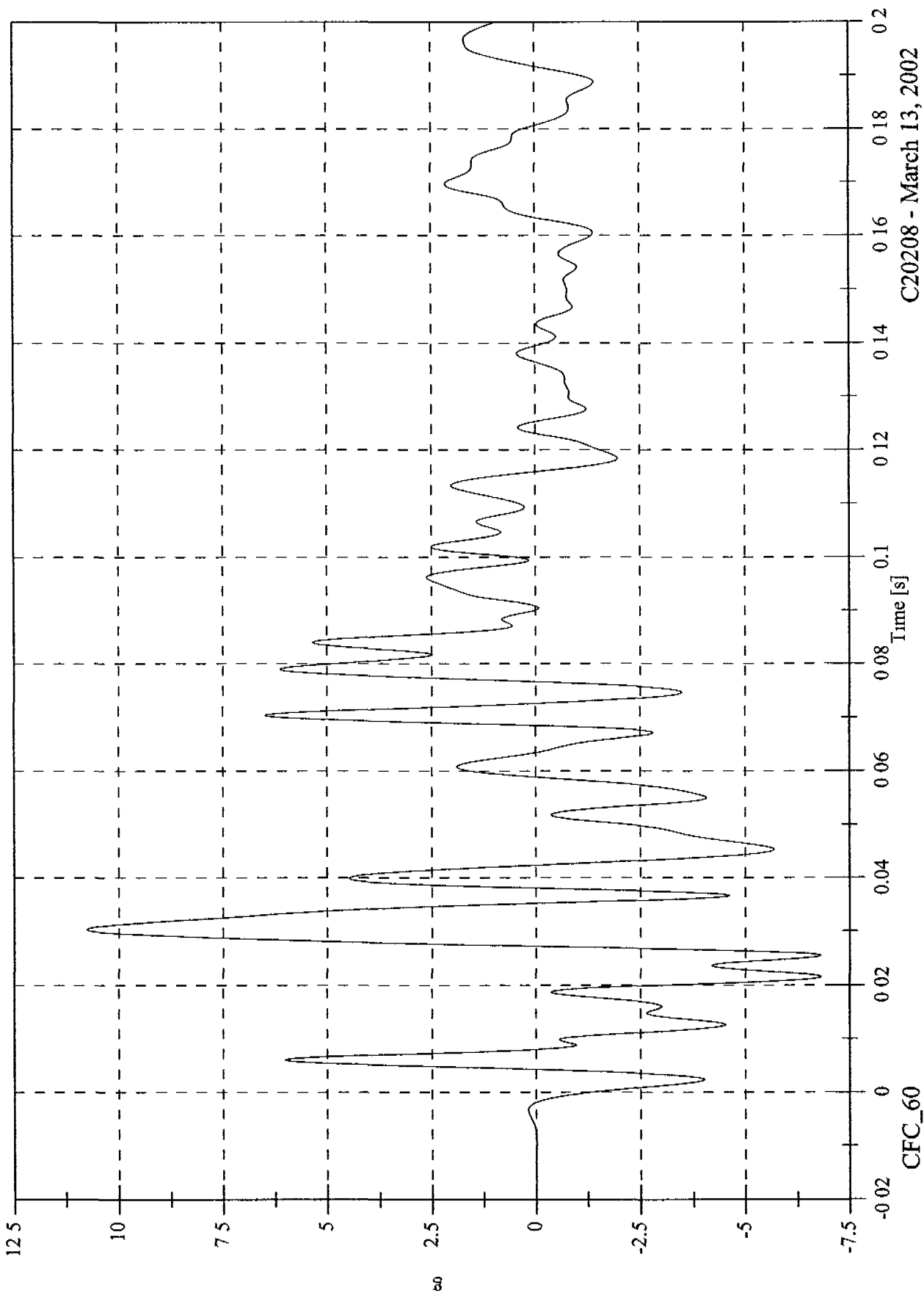
C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

Acc 3 Rear Floorpan Z

Max: 10.7 [g] at 0.030 [s]

Min: -6.8 [g] at 0.022 [s]

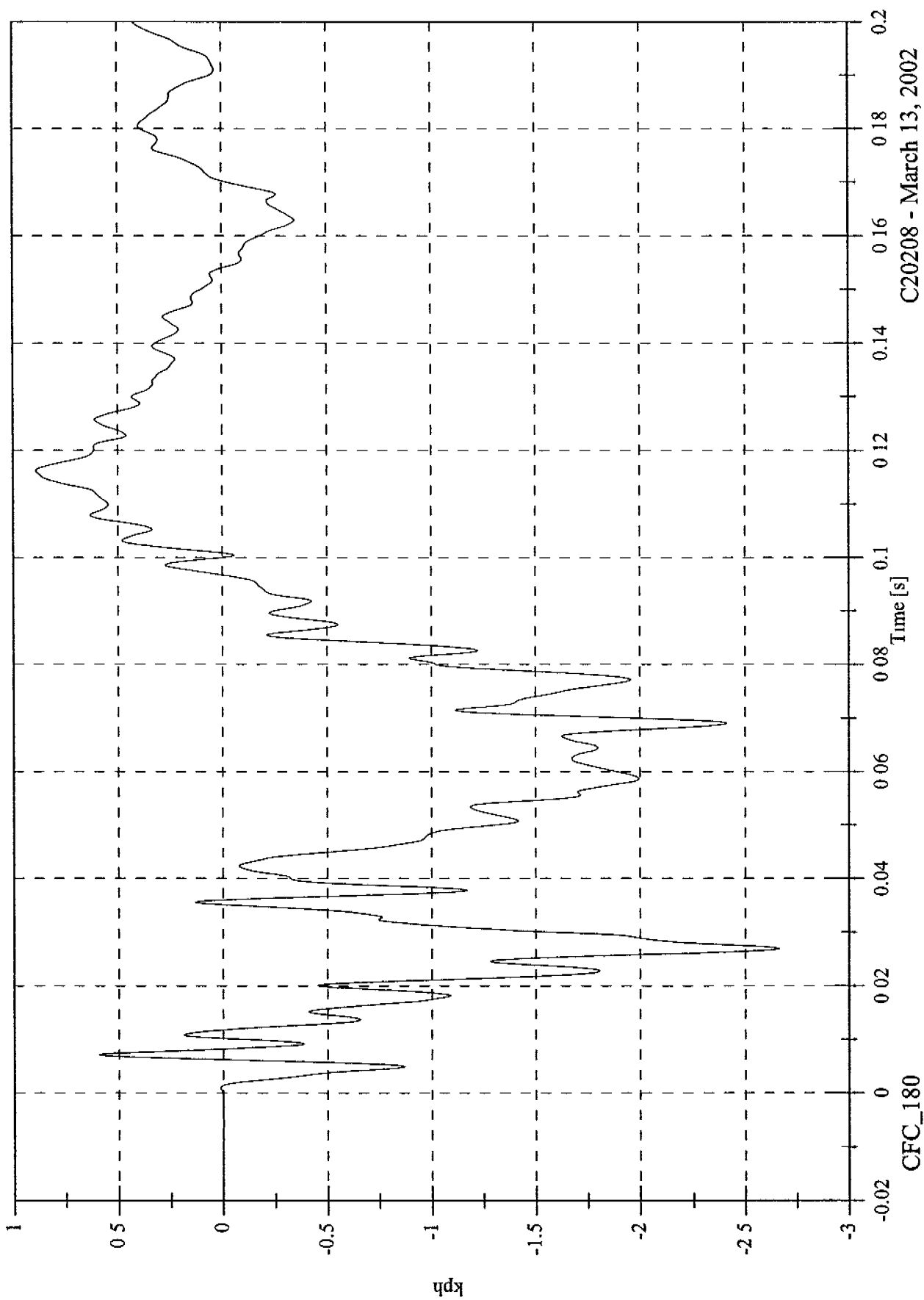


C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

Acc 3 Rear Floorpan Z Velocity

Max: 0.9 [kph] at 0.116 [s]
Min: -2.7 [kph] at 0.027 [s]



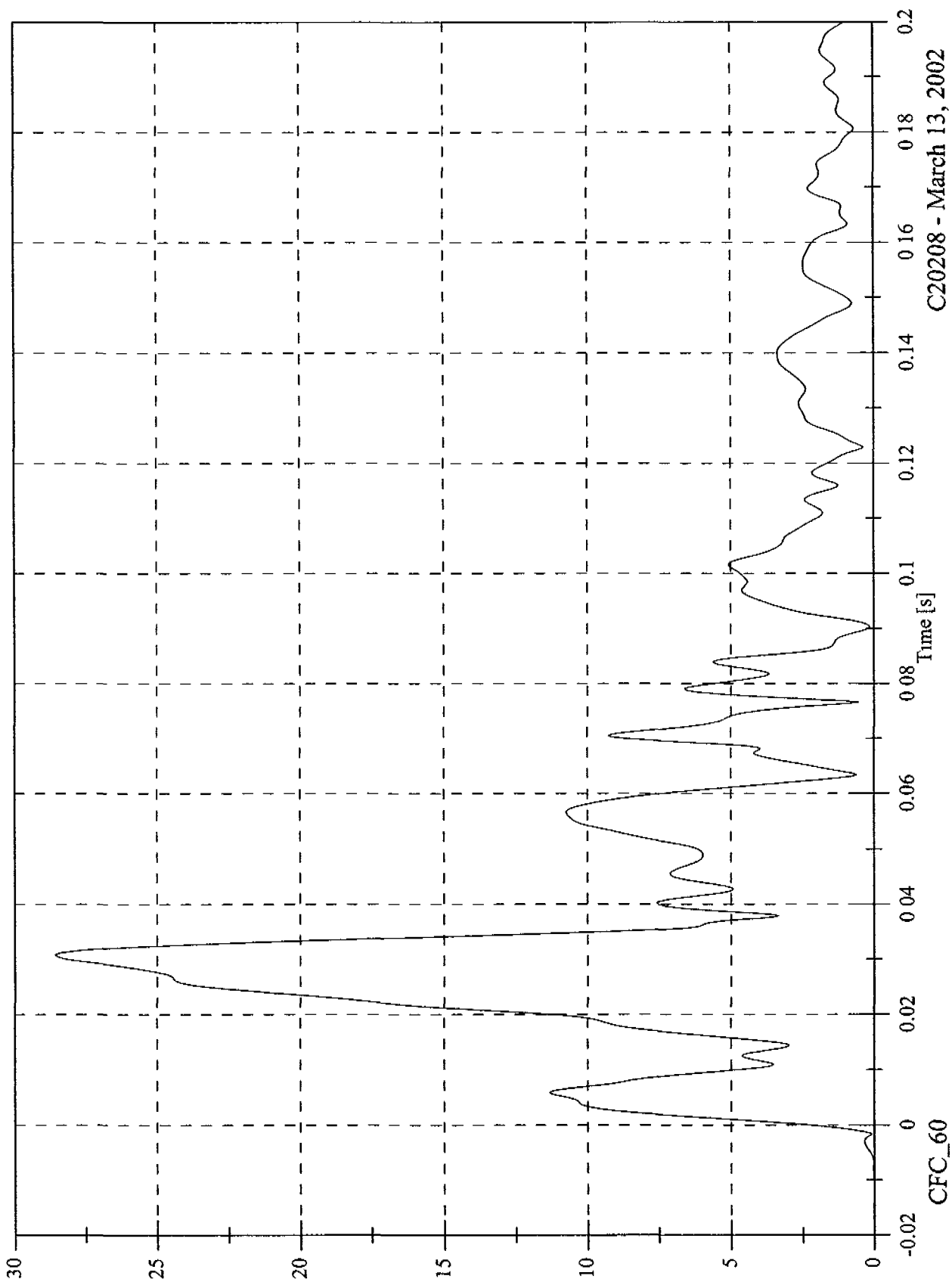
C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

Acc 3 Rear Floorpan Resultant

Max: 28.6 [g] at 0.031 [s]

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

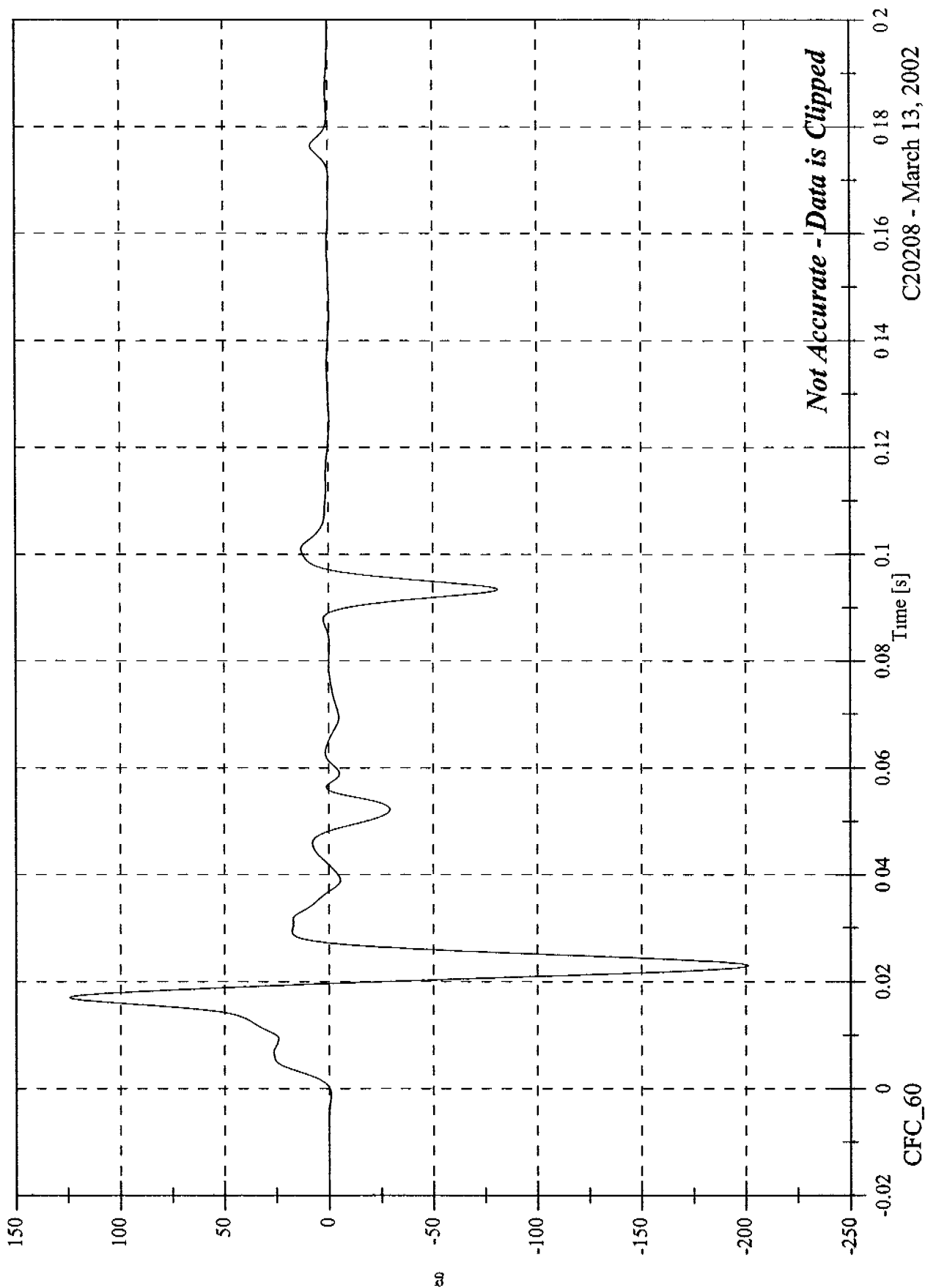


C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

Acc 4 Left Rear Sill Y

Max: 124.3 [g] at 0.017 [s]
Min: -201.1 [g] at 0.023 [s]



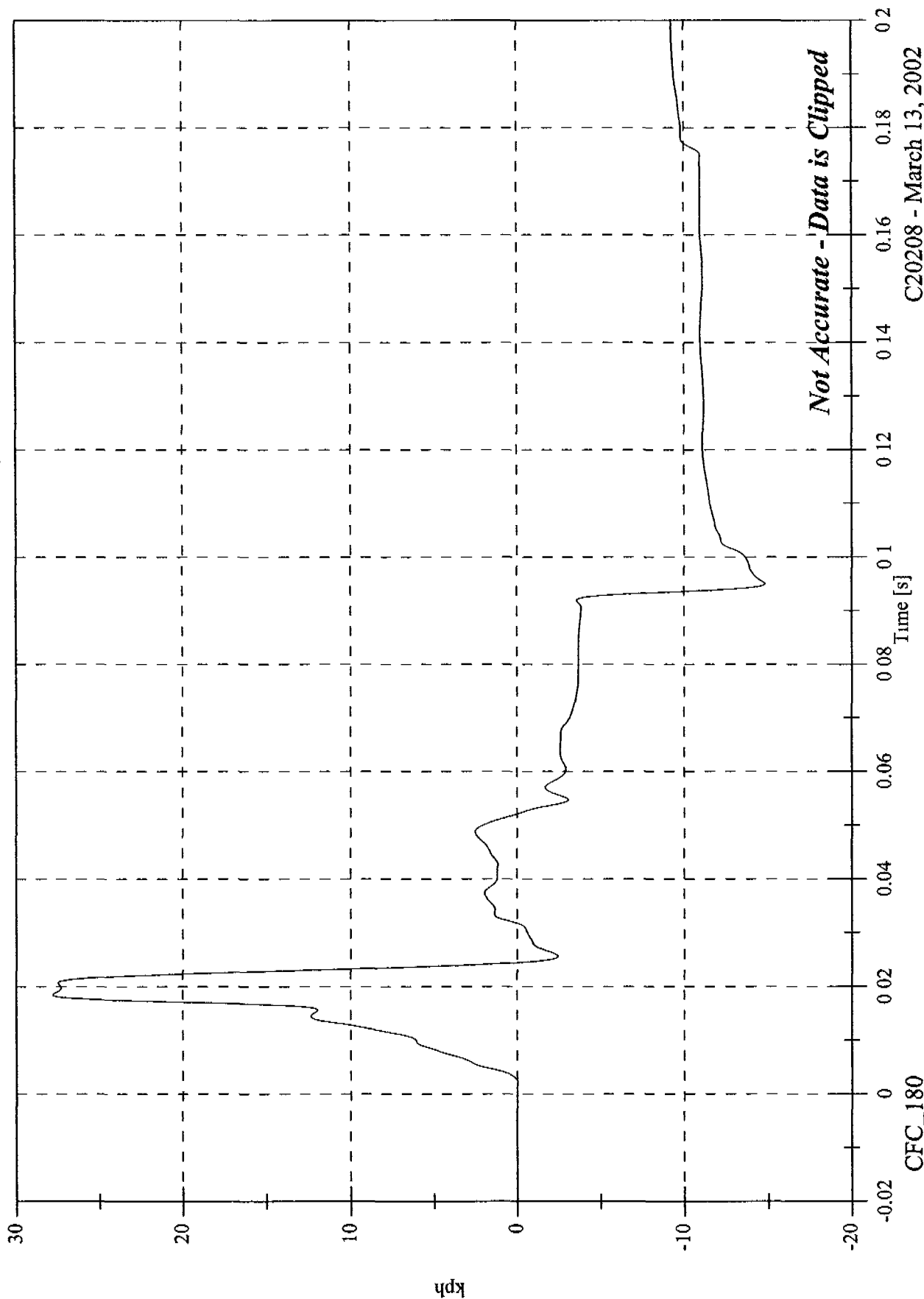
C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

Max: 27.8 [kph] at 0.018 [s]

Min: -14.8 [kph] at 0.095 [s]

Acc 4 Left Rear Sill Y Velocity

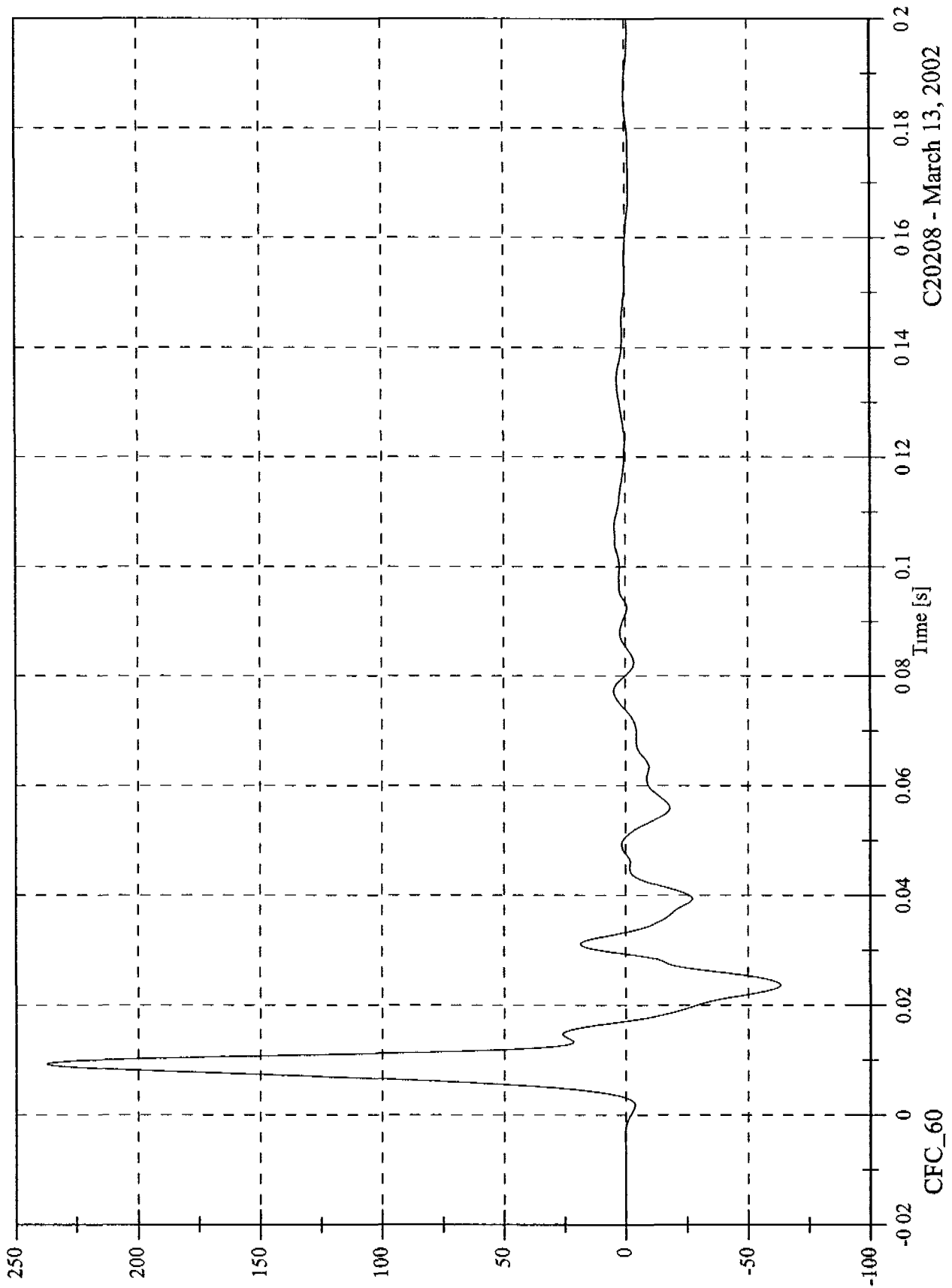


CFC_180

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

Acc 5 Left Front Sill Y

Max: 237.1 [g] at 0.009 [s]
Min: -63.1 [g] at 0.024 [s]



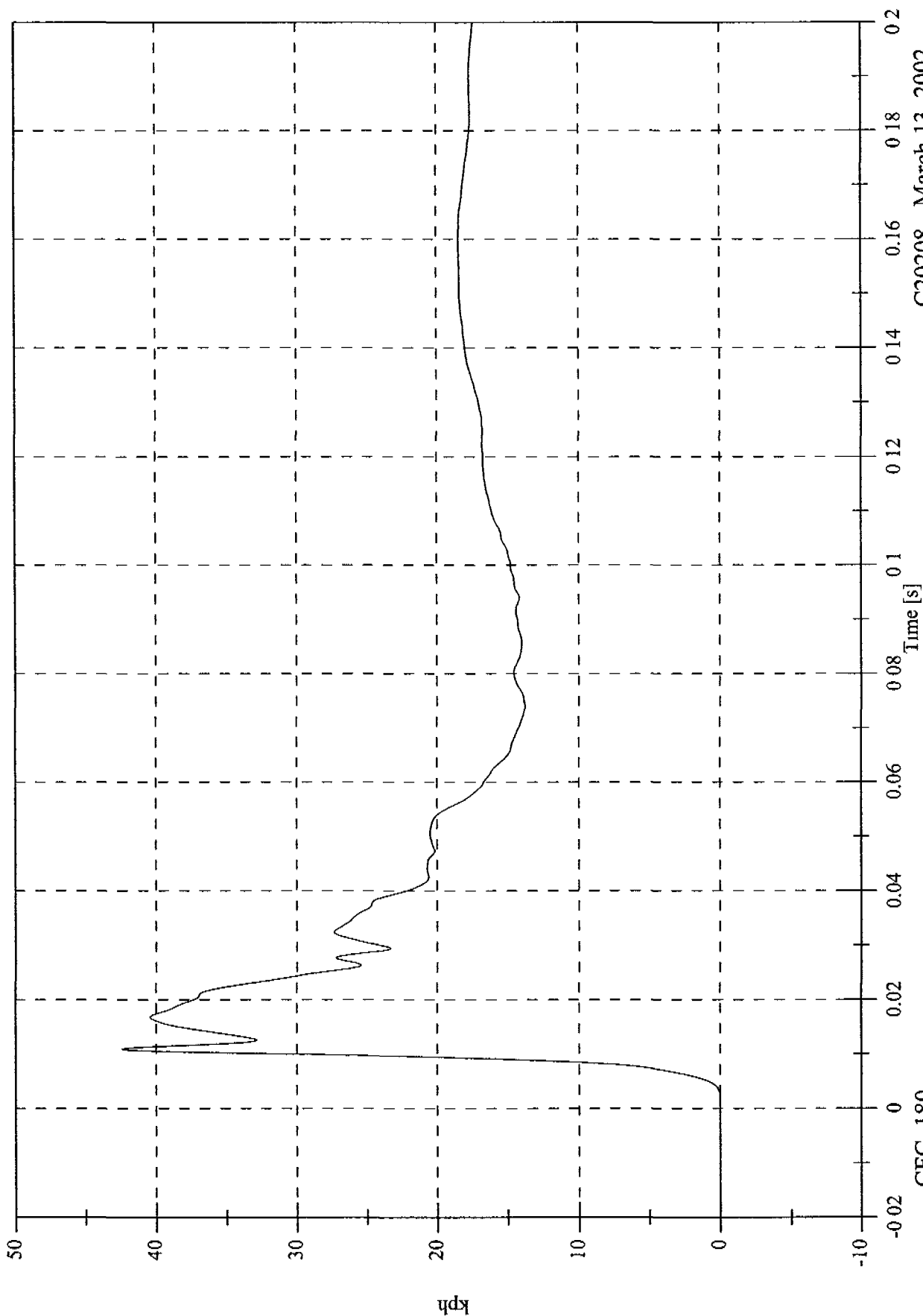
C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

Max: 42.4 [kph] at 0.011 [s]

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

Acc 5 Left Front Sill Y Velocity



CFC_180

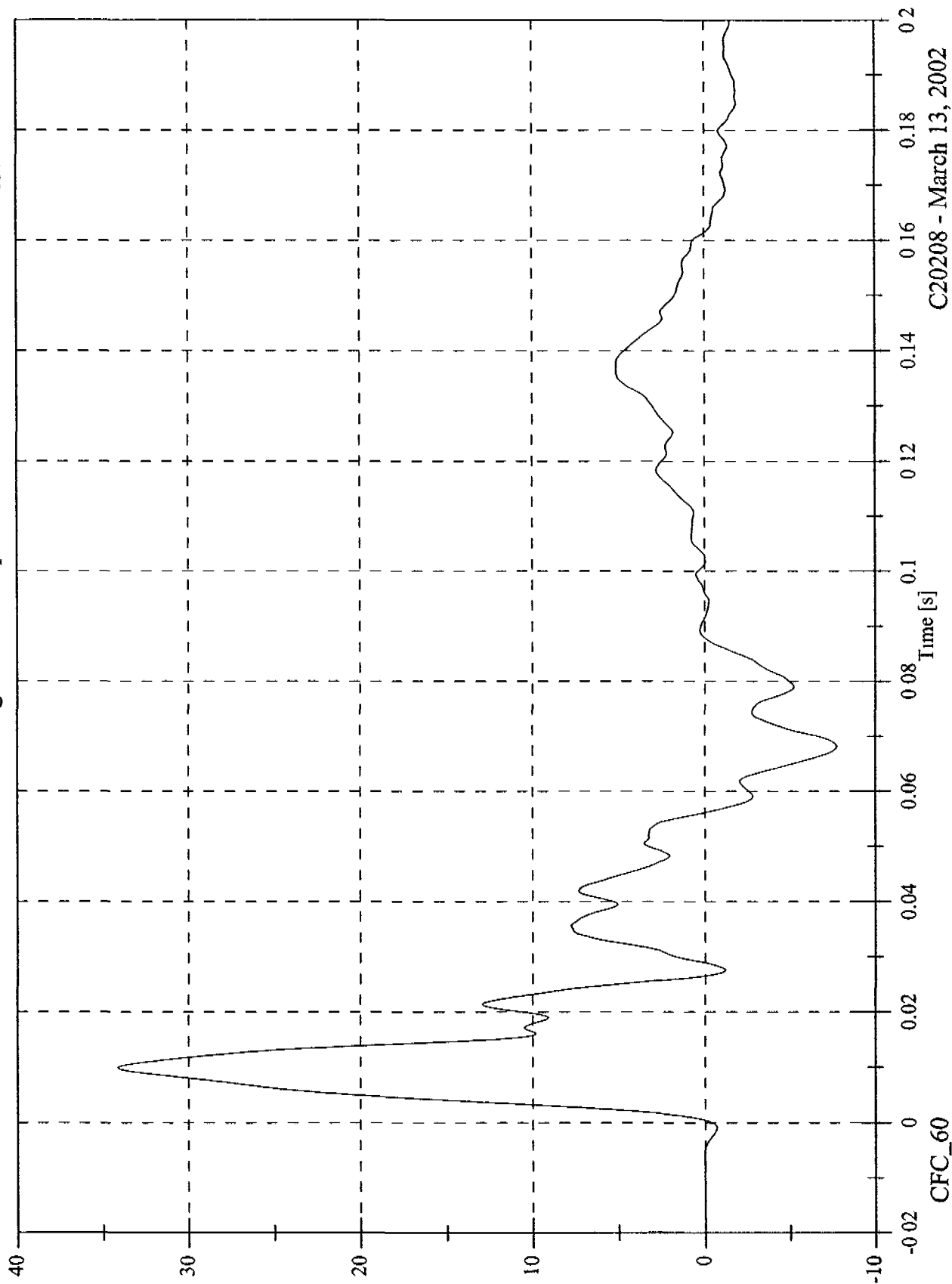
C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

Max: 34.1 [g] at 0.010 [s]

Min: -7.7 [g] at 0.068 [s]

Acc 7 Right Rear Compartment Y

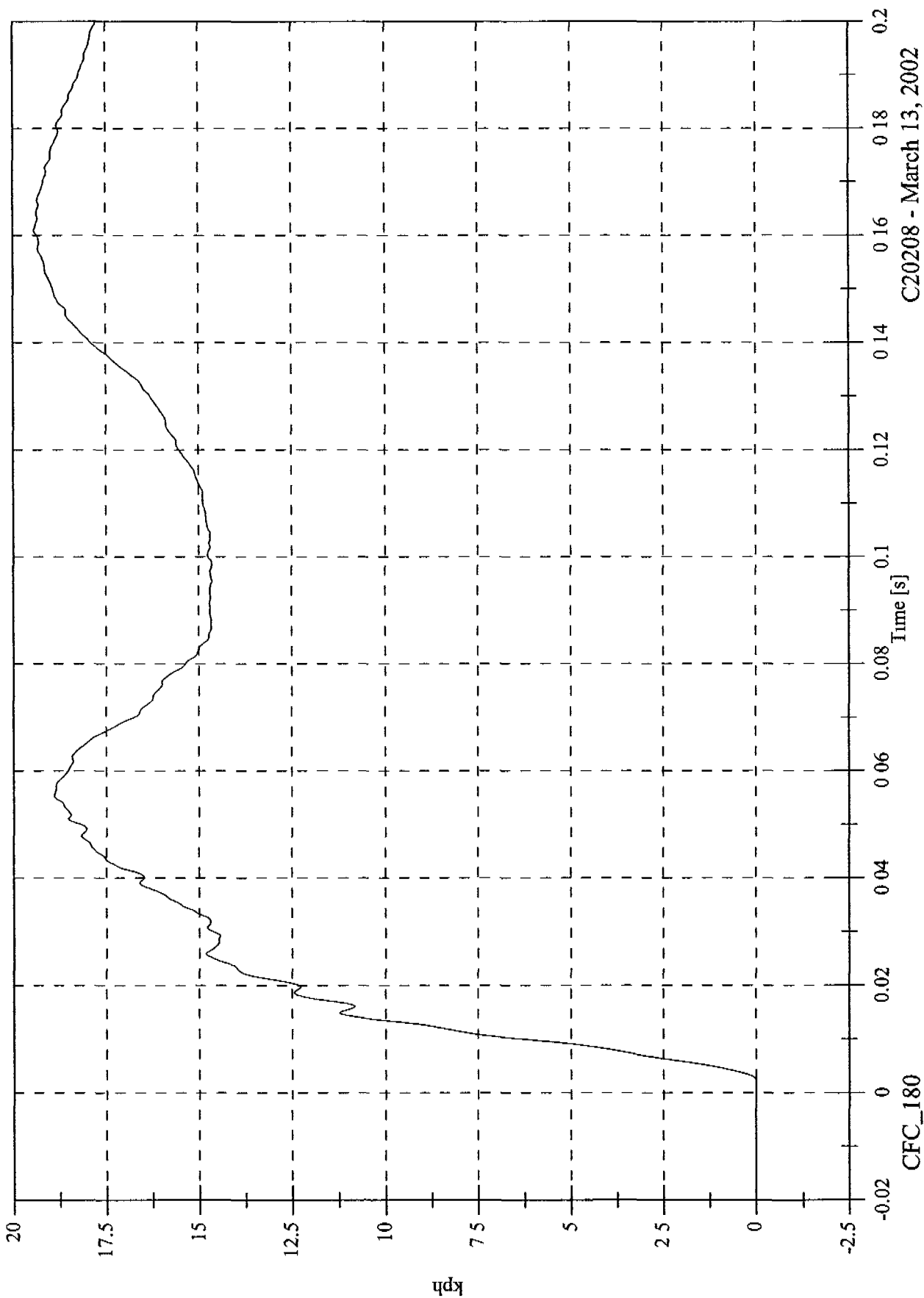


C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

Acc 7 Right Rear Compartment Y Velocity

Max: 19.4 [kph] at 0.161 [s]
Min: -0.0 [kph] at 0.002 [s]



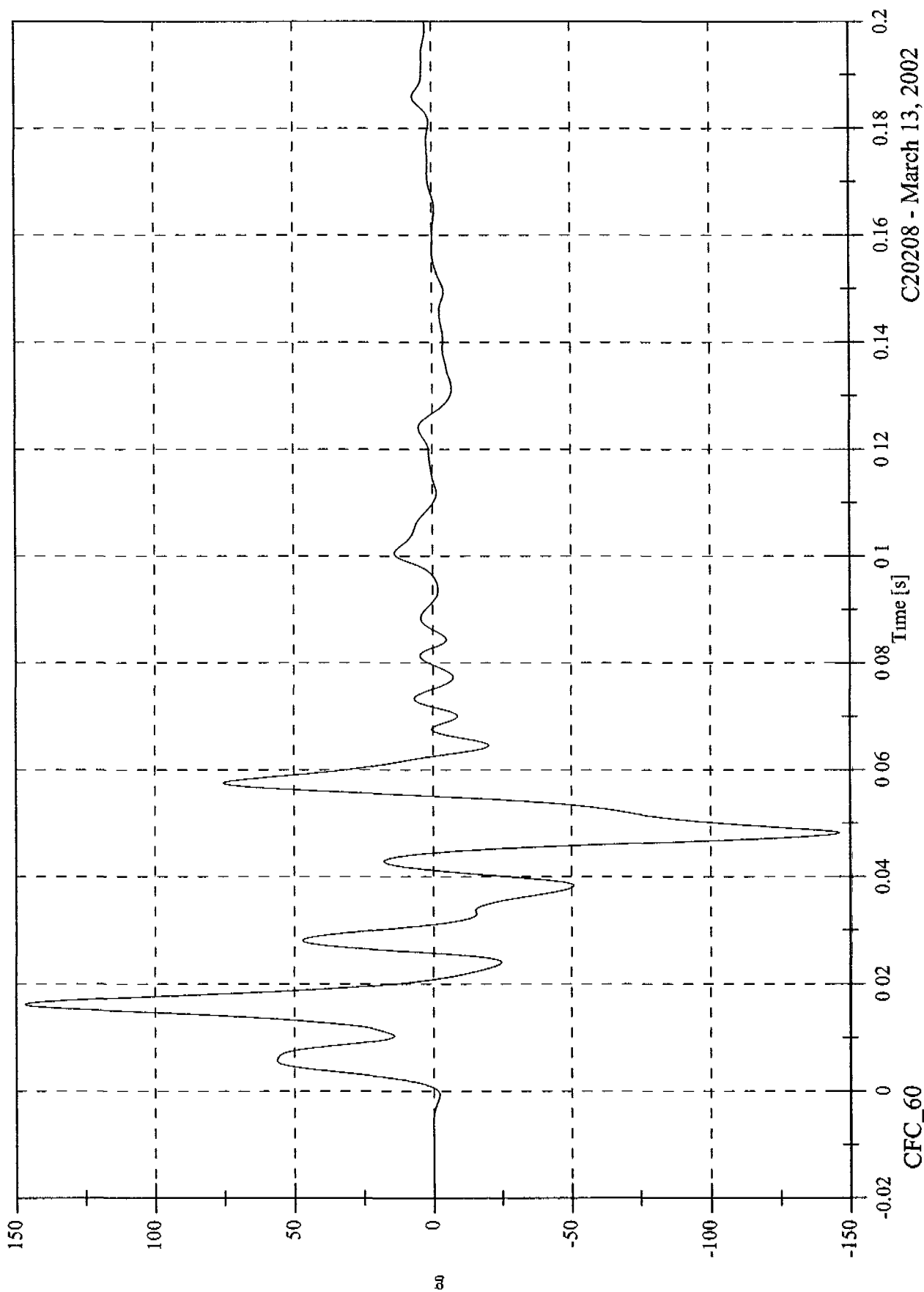
C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

Acc 12 Left Lower B-Pillar Y

Max: 146.9 [g] at 0.016 [s]

Min: -146.2 [g] at 0.048 [s]



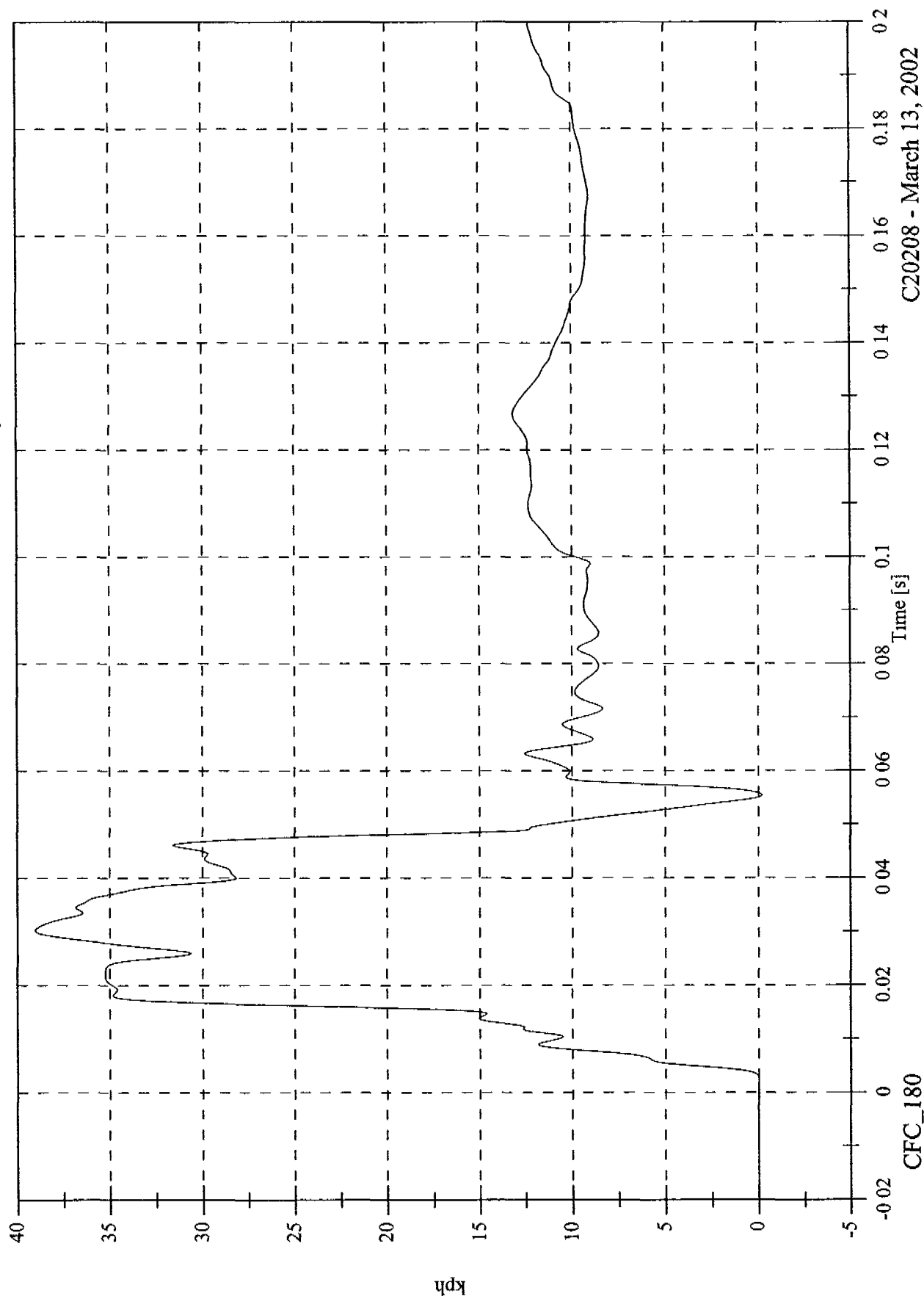
C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

Acc 12 Left Lower B-Pillar Y Velocity

Max: 39.0 [kph] at 0.030 [s]

Min: -0.2 [kph] at 0.055 [s]



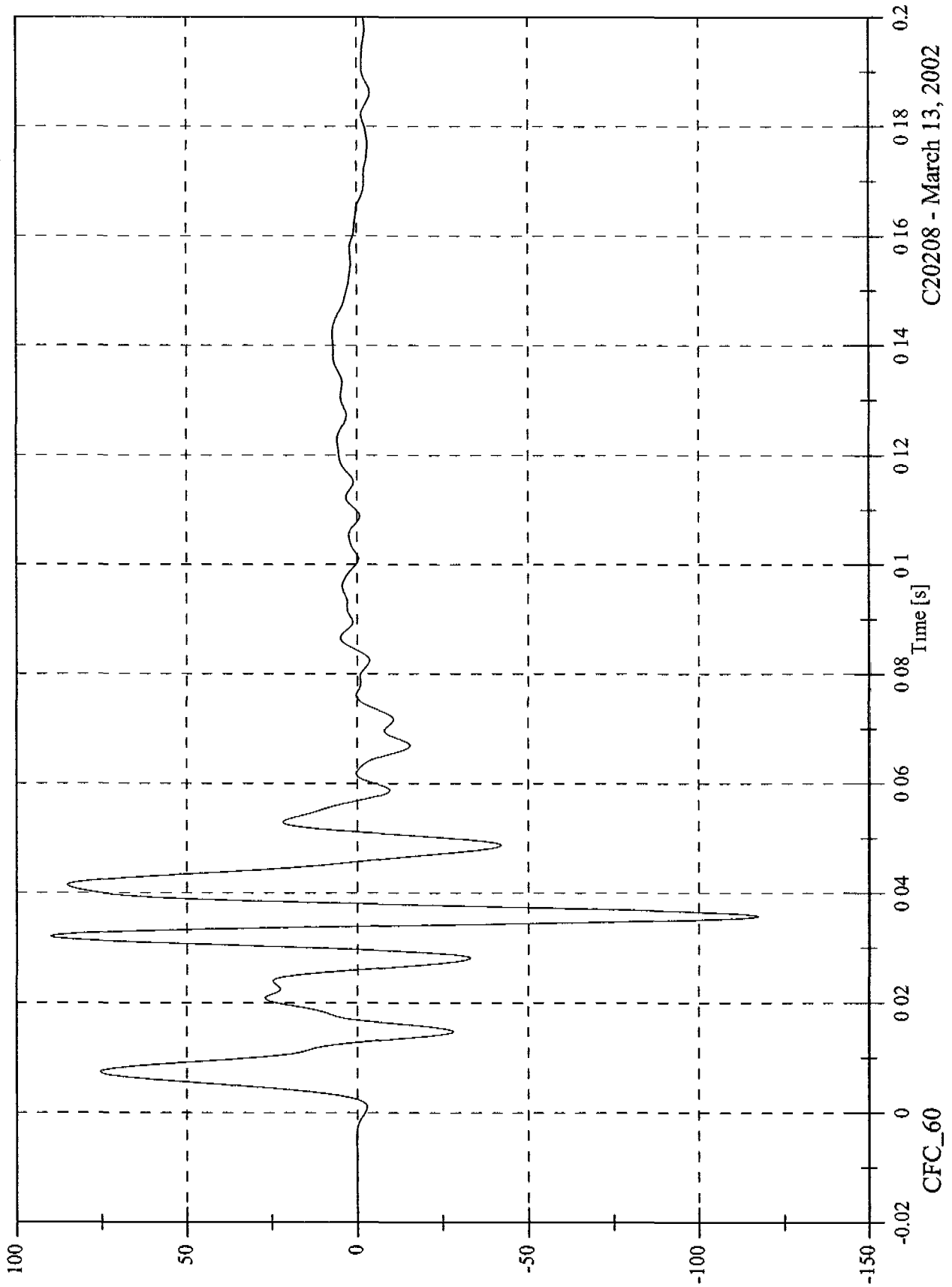
C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

Acc 13 Left Middle B-Pillar Y

Max: 89.9 [g] at 0.032 [s]

Min: -117.3 [g] at 0.036 [s]



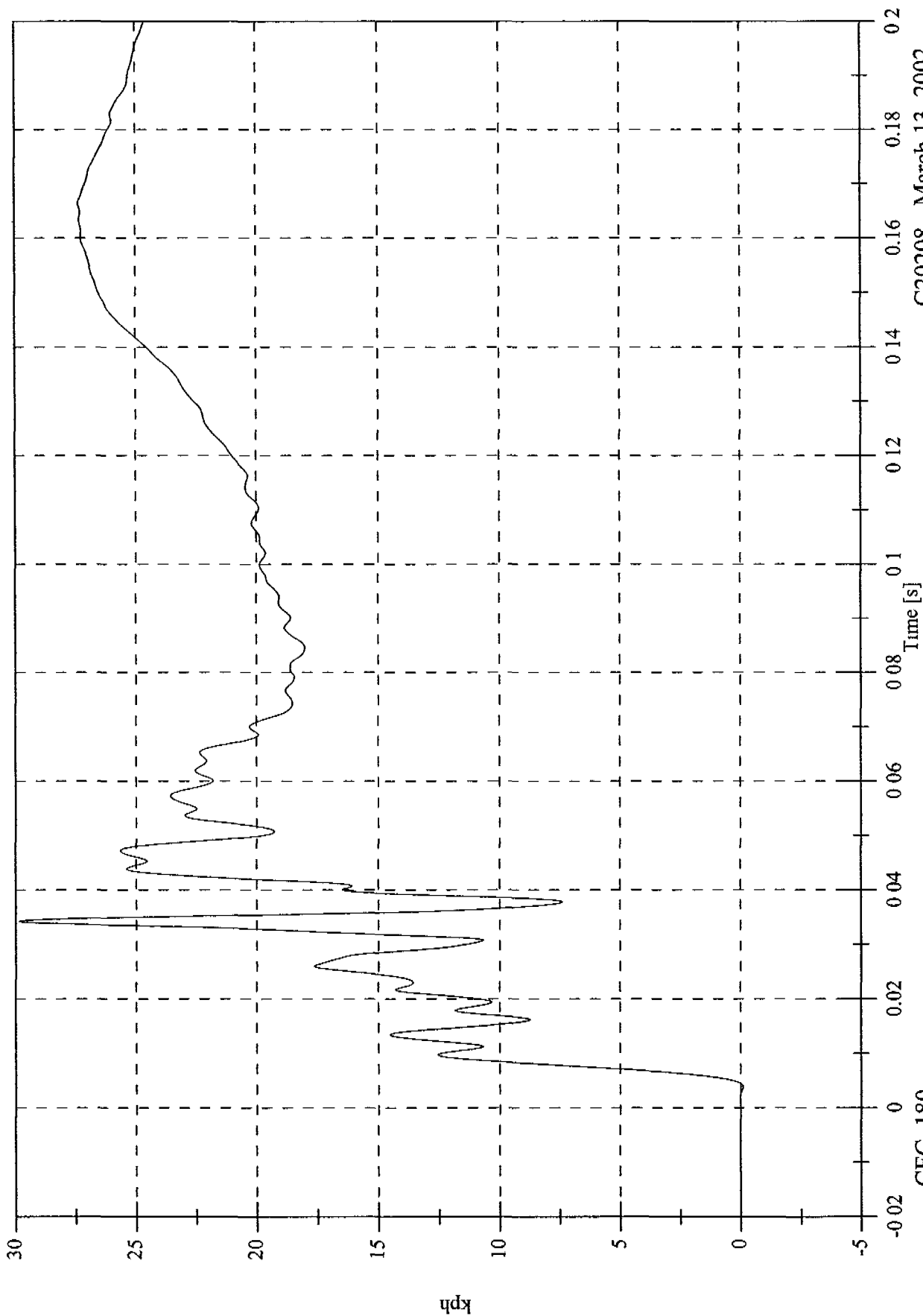
C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

Acc 13 Left Middle B-Pillar Y Velocity

Max: 29.9 [kph] at 0.034 [s]

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

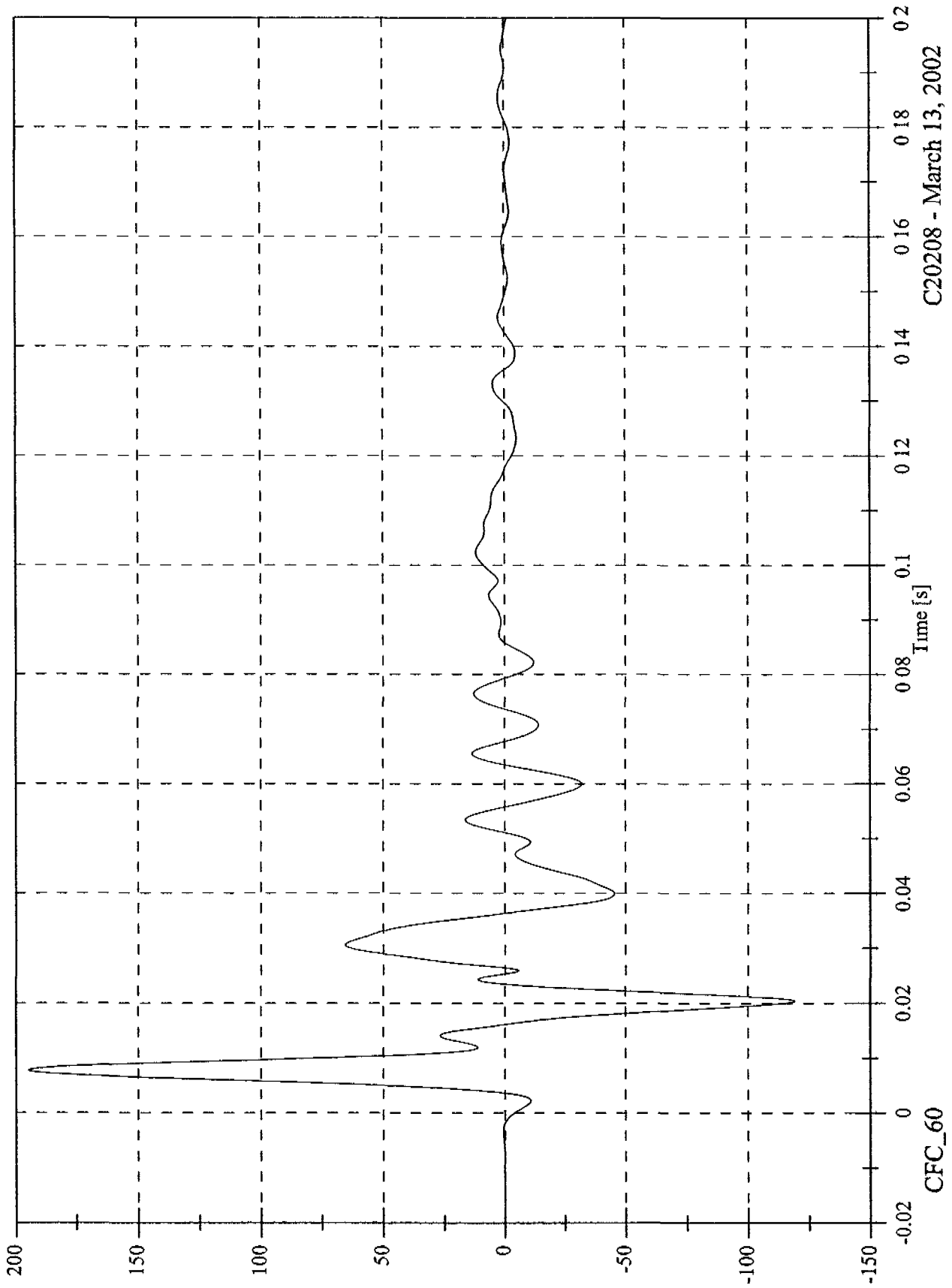


C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

Acc 14 Left Lower A-Pillar Y

Max: 194.6 [g] at 0.008 [s]
Min: -119.0 [g] at 0.020 [s]

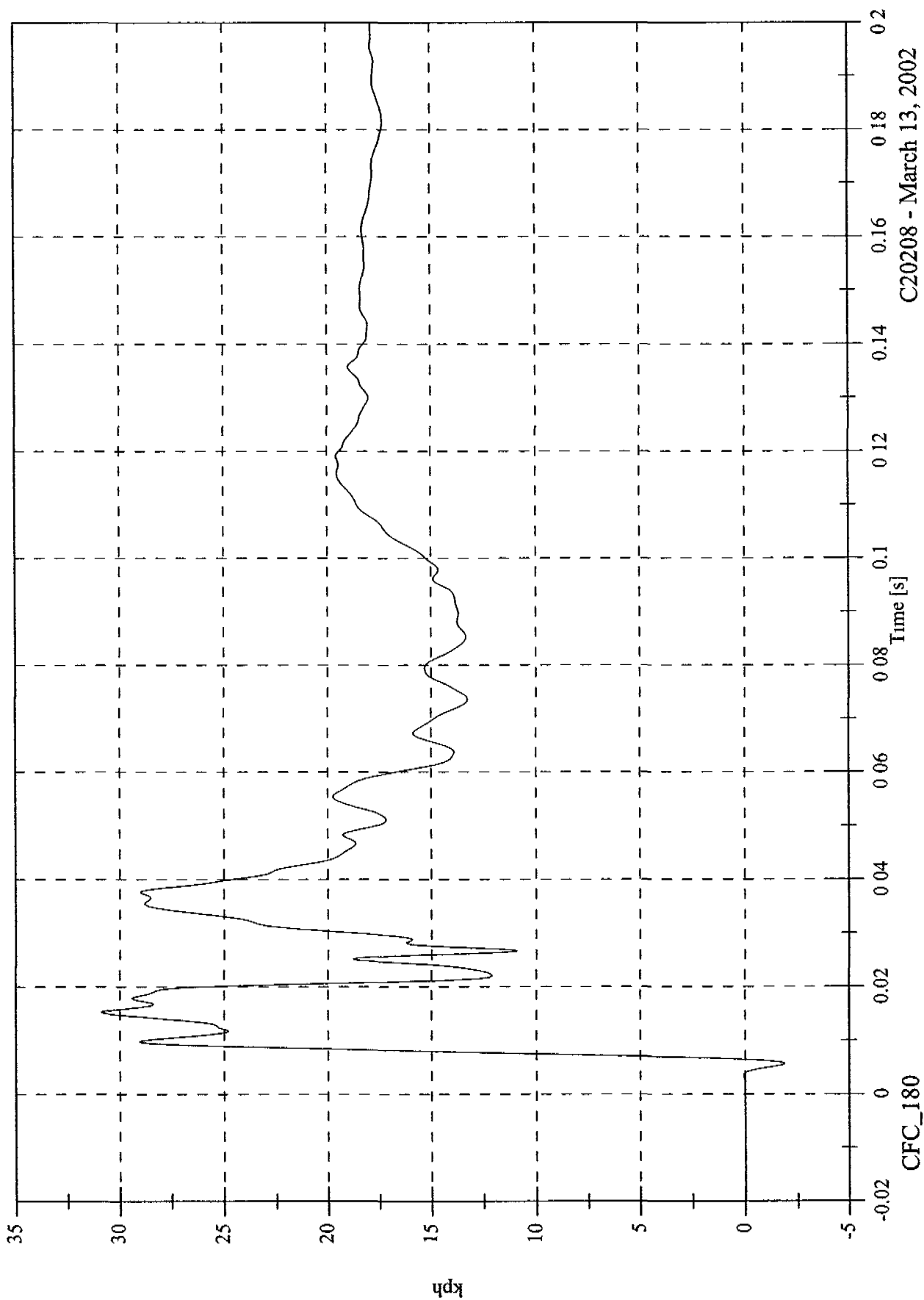


C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

Acc 14 Left Lower A-Pillar Y Velocity

Max: 30.9 [kph] at 0.015 [s]
Min: -1.9 [kph] at 0.006 [s]

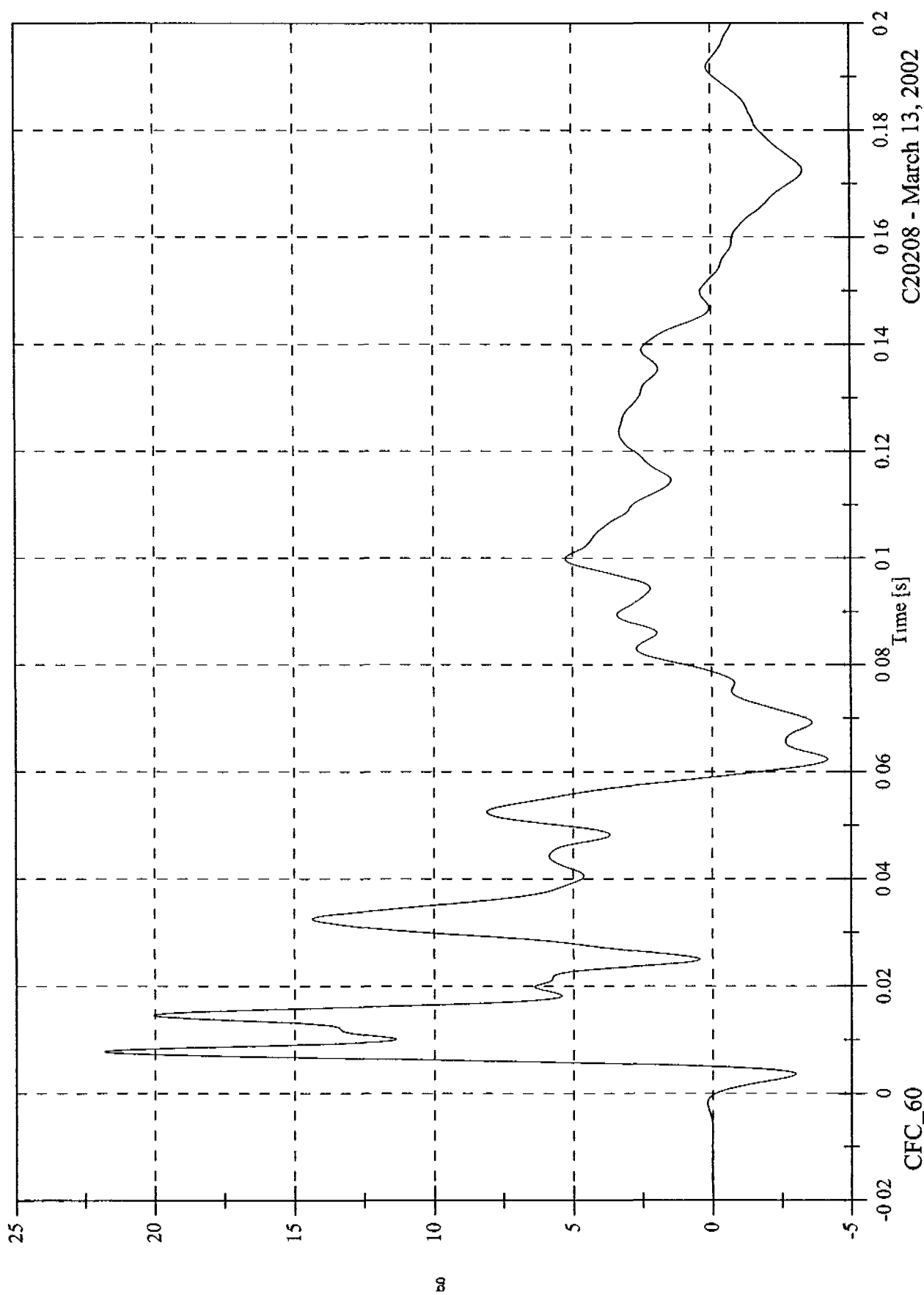


C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

Acc 15 Left Middle A-Pillar Y

Max: 21.8 [g] at 0.008 [s]
Min: -4.2 [g] at 0.062 [s]

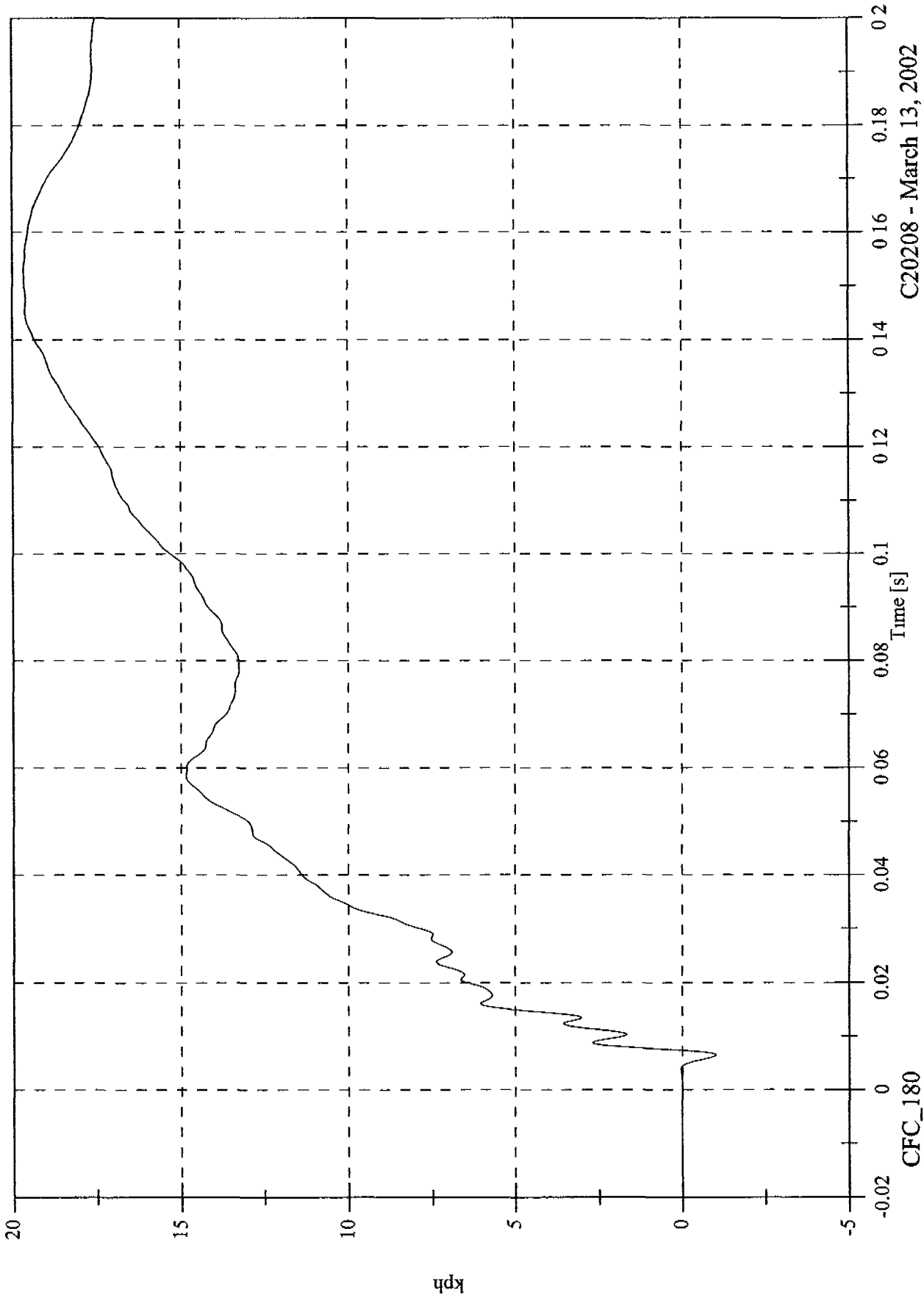


C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

Acc 15 Left Middle A-Pillar Y Velocity

Max: 19.7 [kph] at 0.153 [s]
Min: -1.0 [kph] at 0.006 [s]



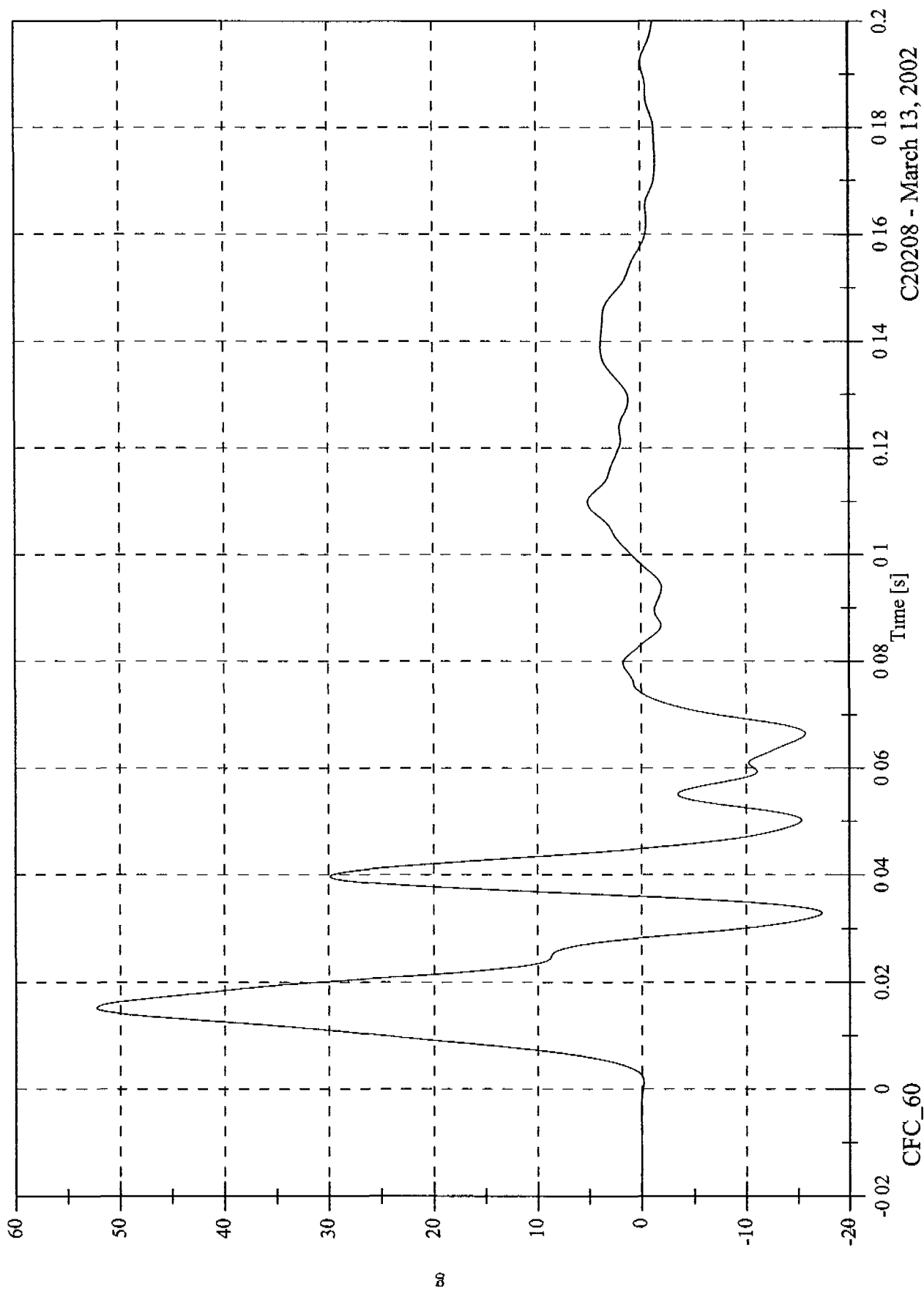
C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

Acc 16 Front Seat Track Y

Max: 52.3 [g] at 0.015 [s]

Min: -17.3 [g] at 0.033 [s]

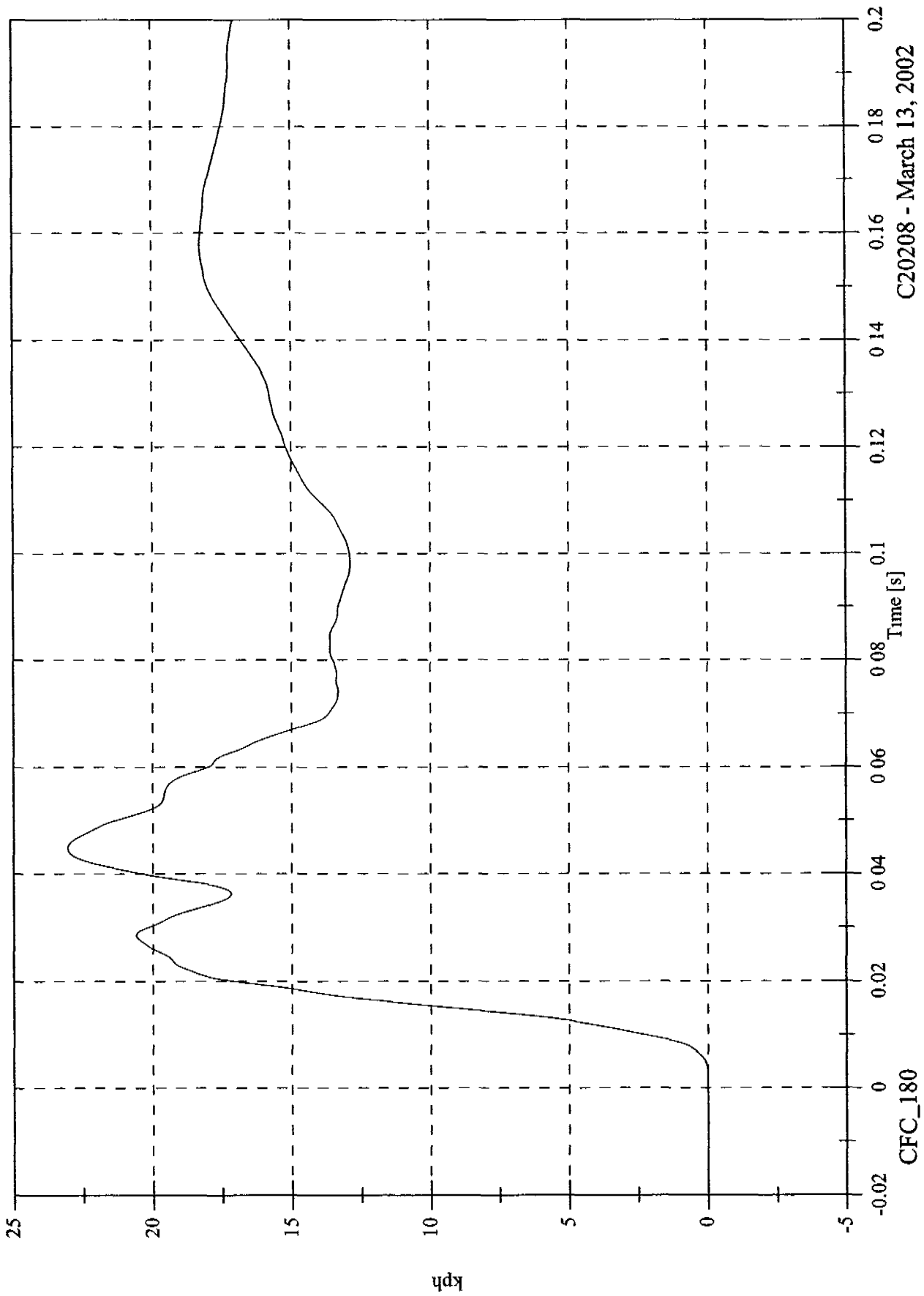


C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

Acc 16 Front Seat Track Y Velocity

Max: 23.1 [kph] at 0.045 [s]
Min: -0.0 [kph] at -0.020 [s]



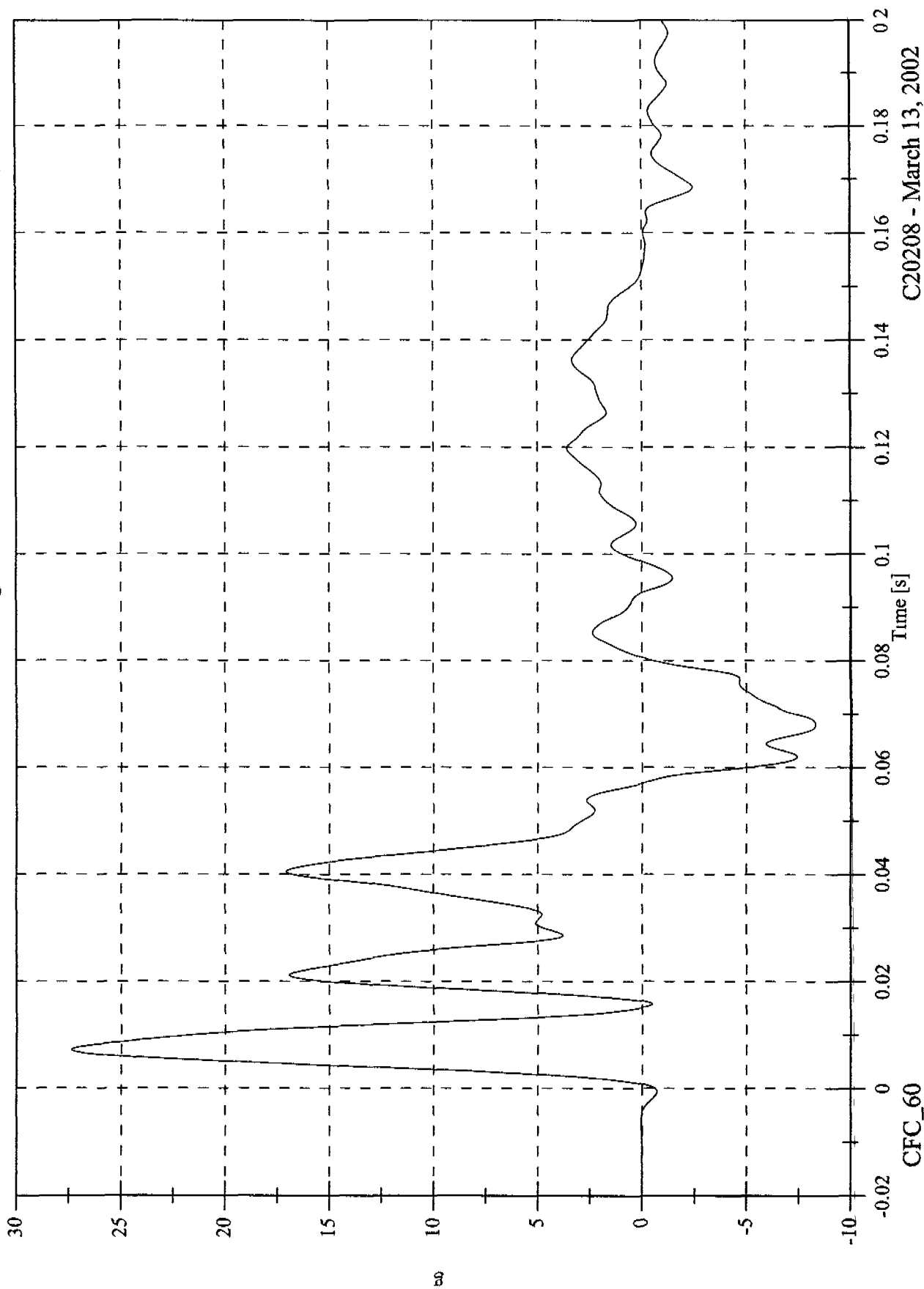
C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

Acc 18 Target CG Y

Max: 27.4 [g] at 0.007 [s]

Min: -8.3 [g] at 0.068 [s]



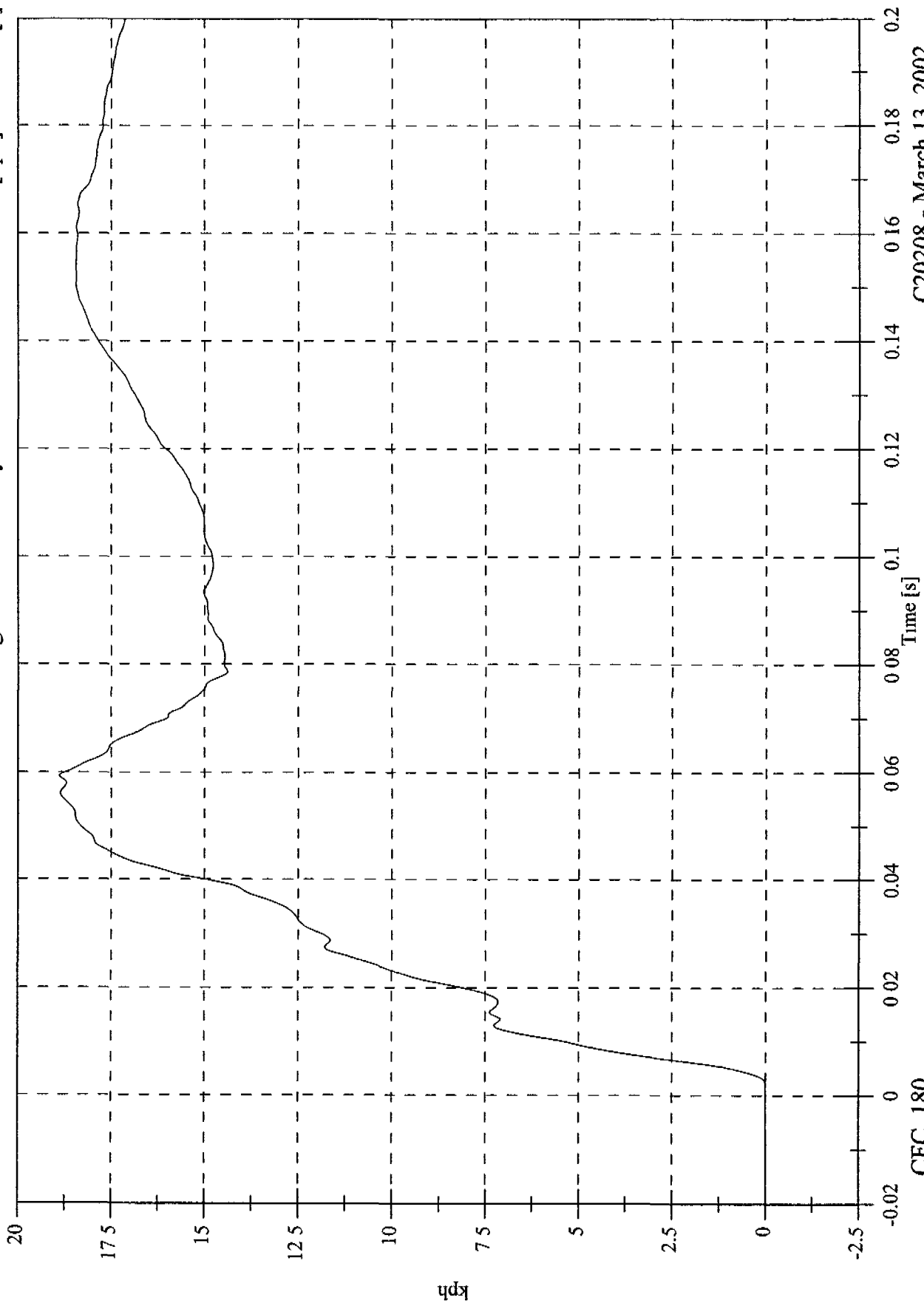
C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

Acc 18 Target CG Y Velocity

Max: 18.9 [kph] at 0.059 [s]

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



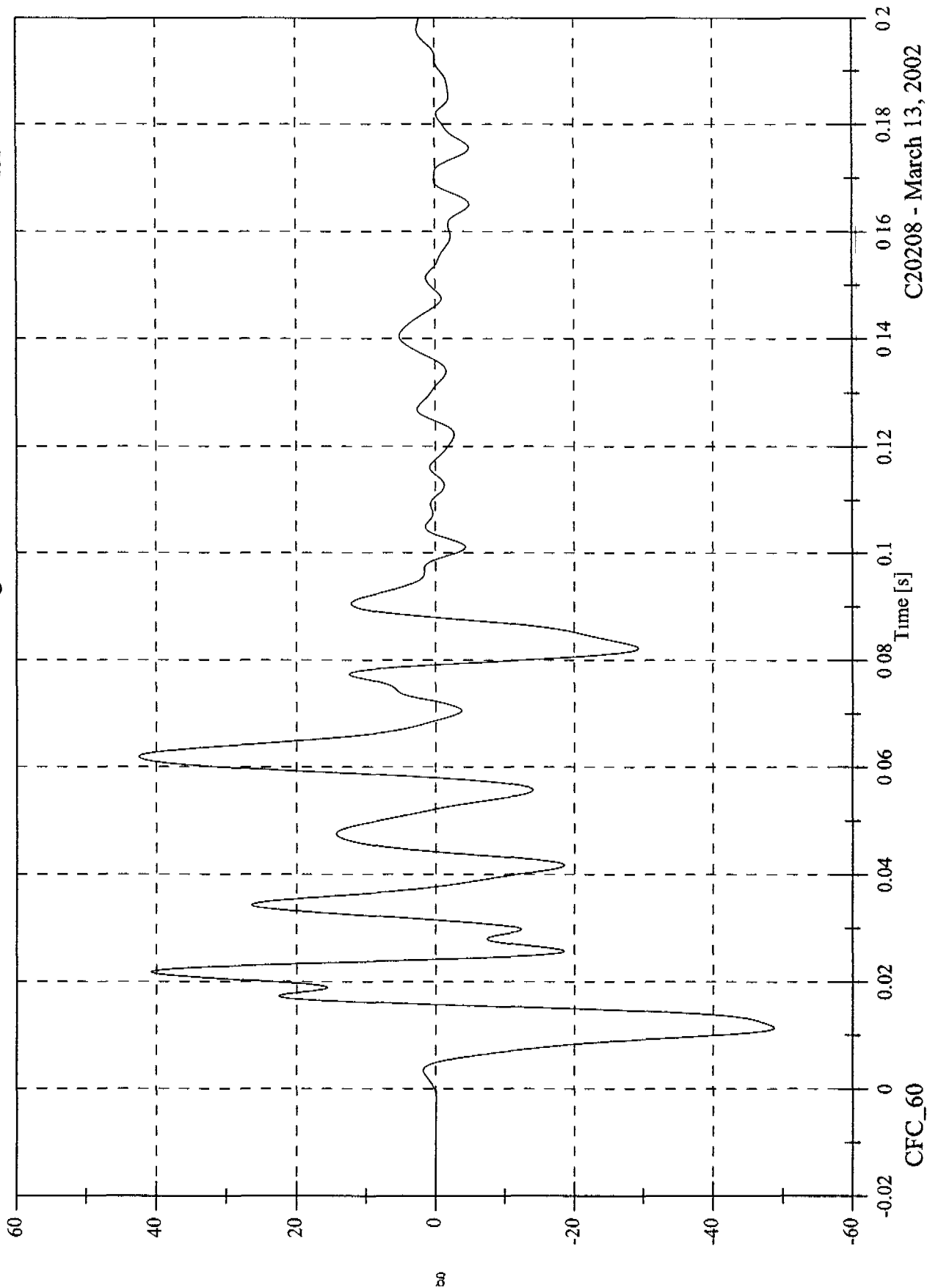
C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

Acc 18 Target CG Z

Max: 42.5 [g] at 0.062 [s]

Min: -48.8 [g] at 0.011 [s]

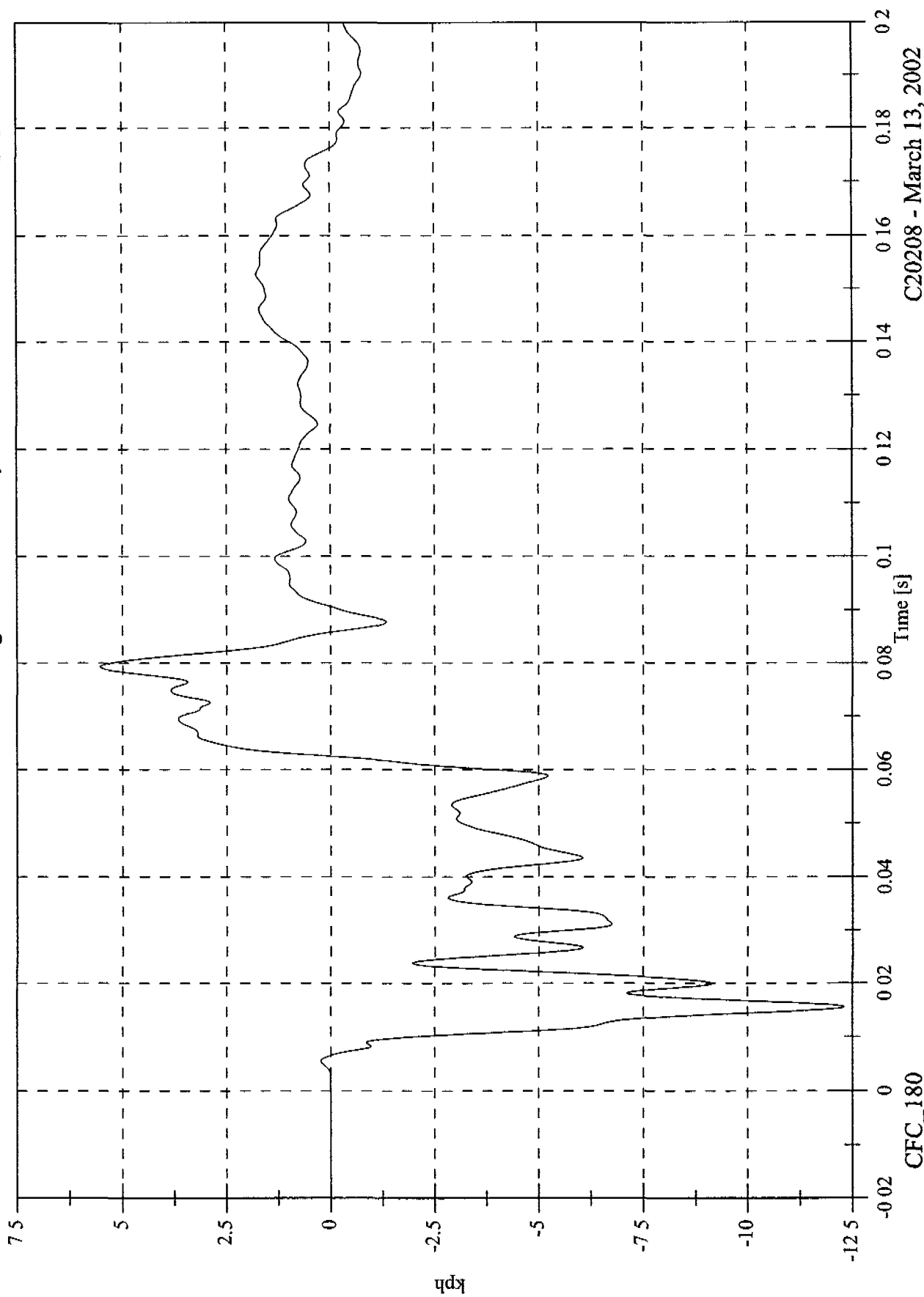


C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

Acc 18 Target CG Z Velocity

Max: 5.5 [kph] at 0.079 [s]
Min: -12.3 [kph] at 0.016 [s]



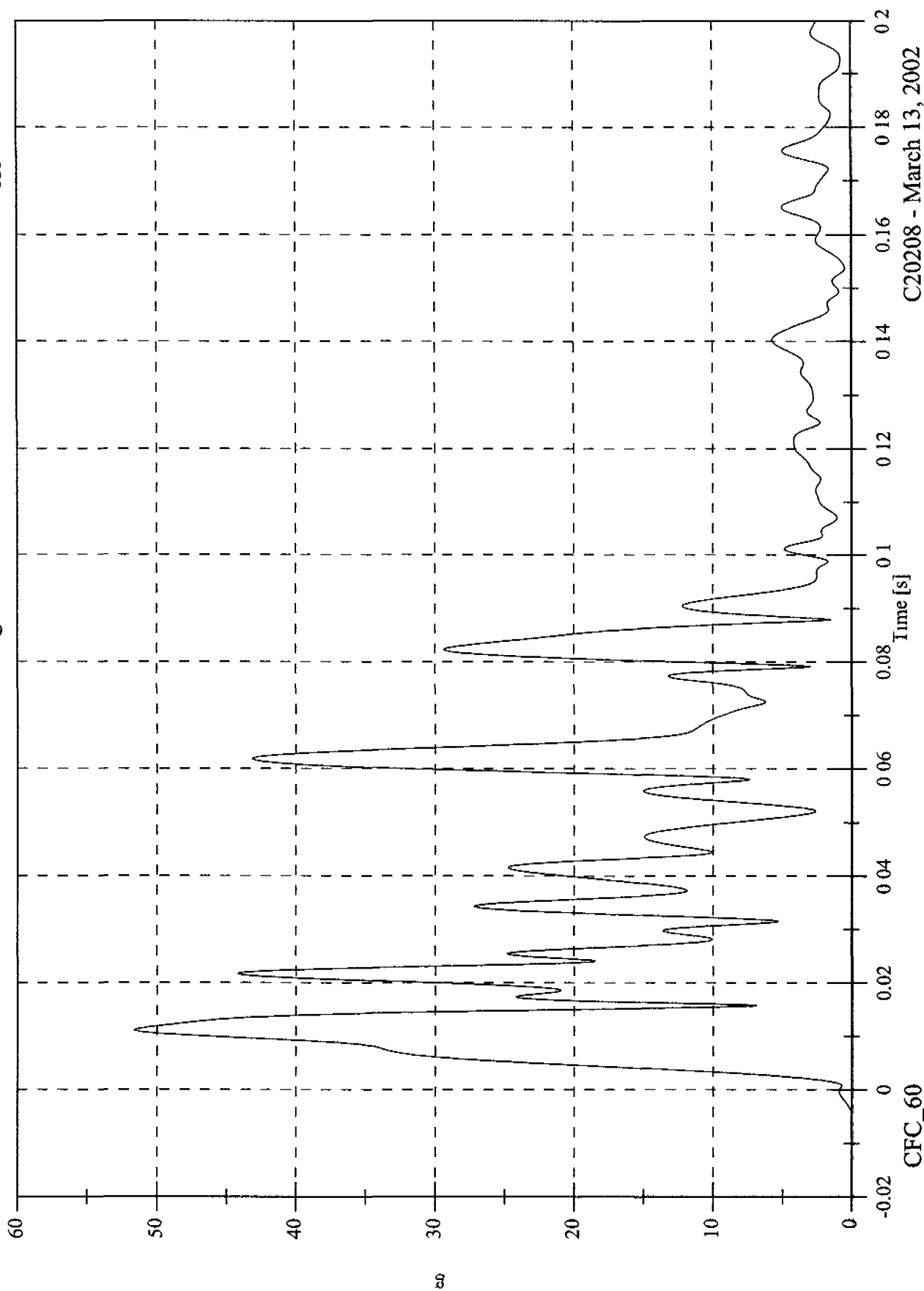
C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

Acc 18 Target CG Resultant

Max: 51.6 [g] at 0.011 [s]

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

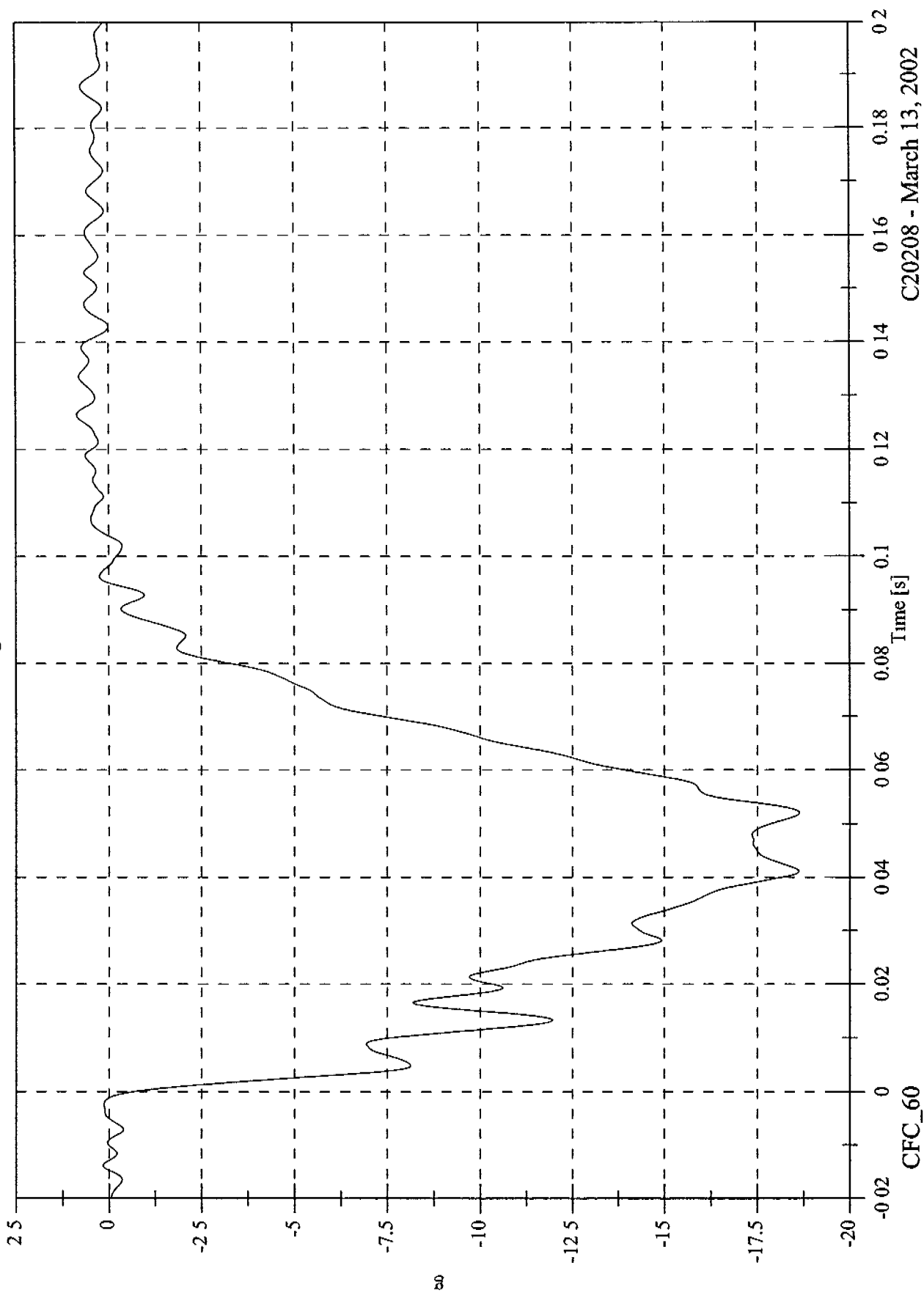


C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

Moving Barrier CG X

Max: 0.9 [g] at 0.126 [s]
Min: -18.6 [g] at 0.052 [s]



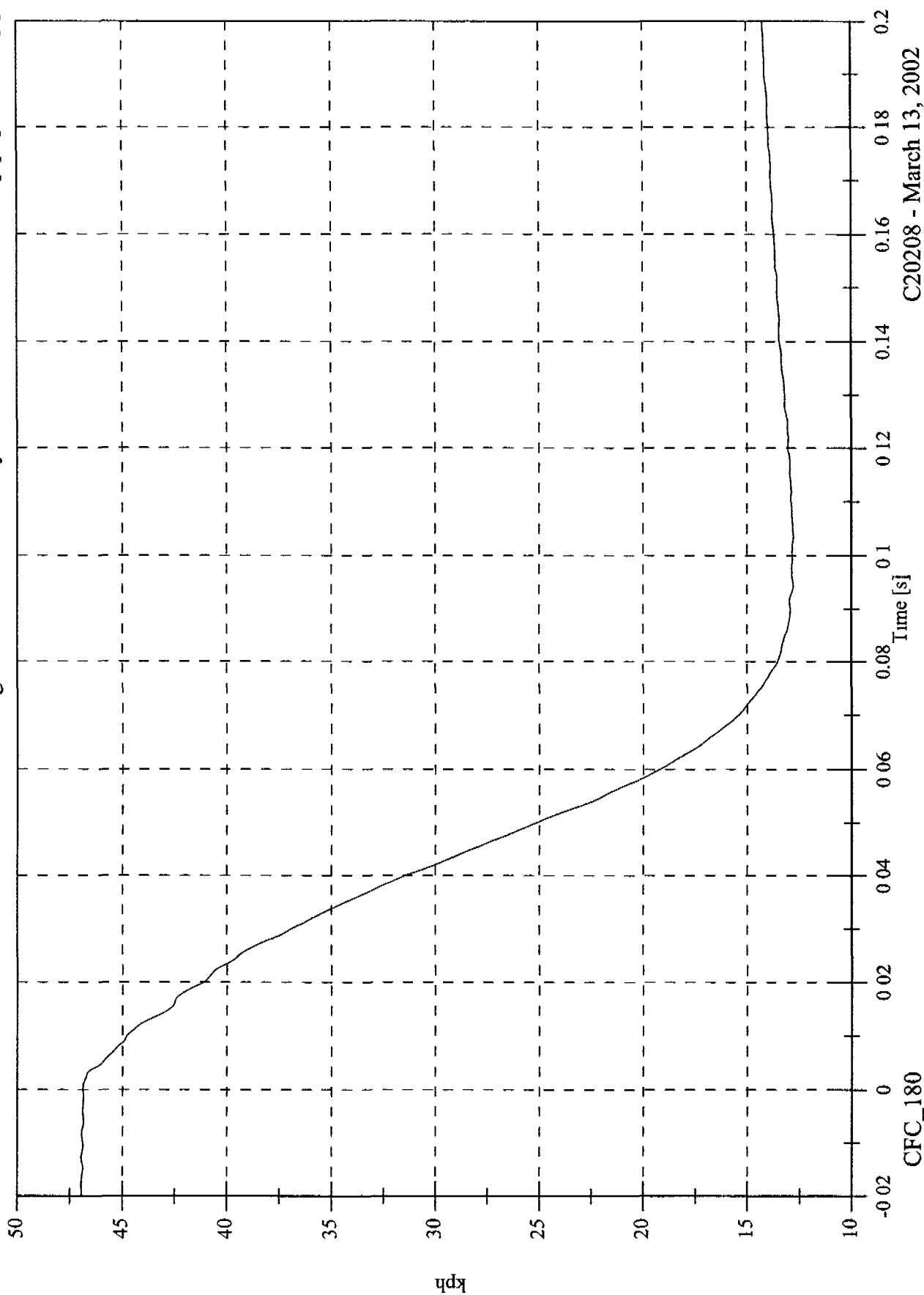
C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

Moving Barrier CG X Velocity

Max: 47.0 [kph] at -0.013 [s]

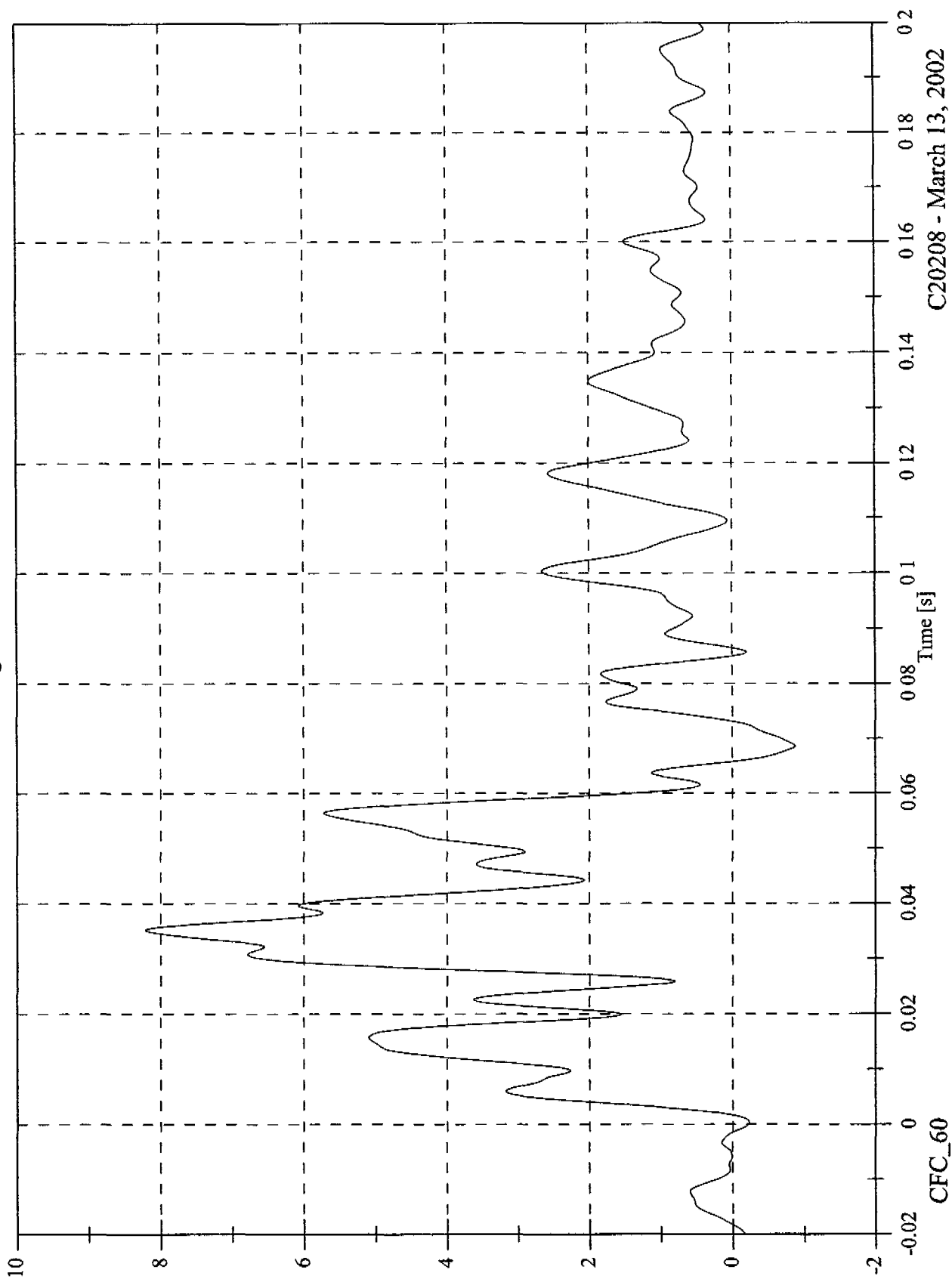
Min: 12.8 [kph] at 0.104 [s]



C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lighting
Moving Barrier CG Y

Max: 8.2 [g] at 0.035 [s]
Min: -0.9 [g] at 0.069 [s]



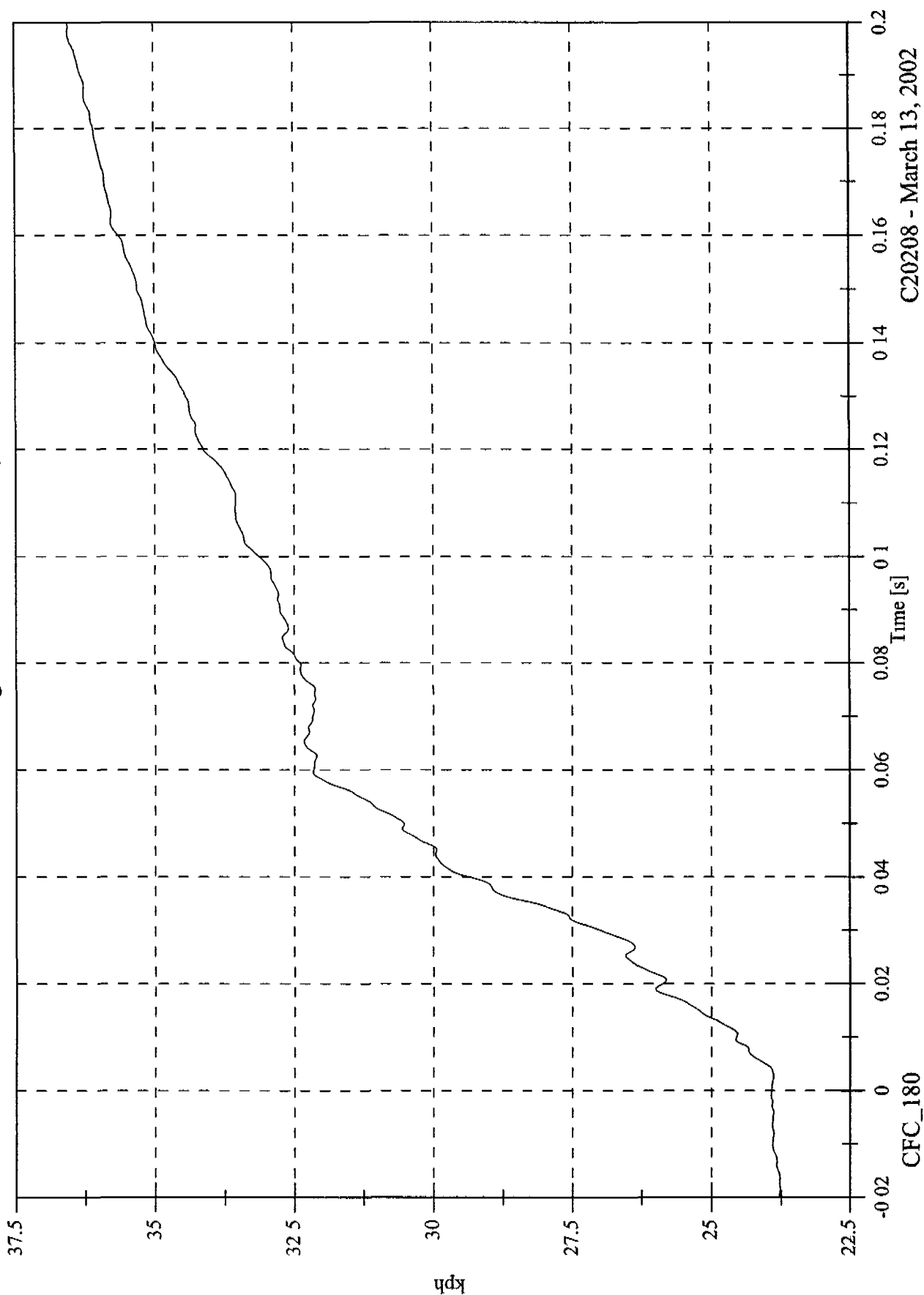
C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

Moving Barrier CG Y Velocity

Max: 36.5 [kph] at 0.200 [s]

Min: 23.8 [kph] at -0.019 [s]



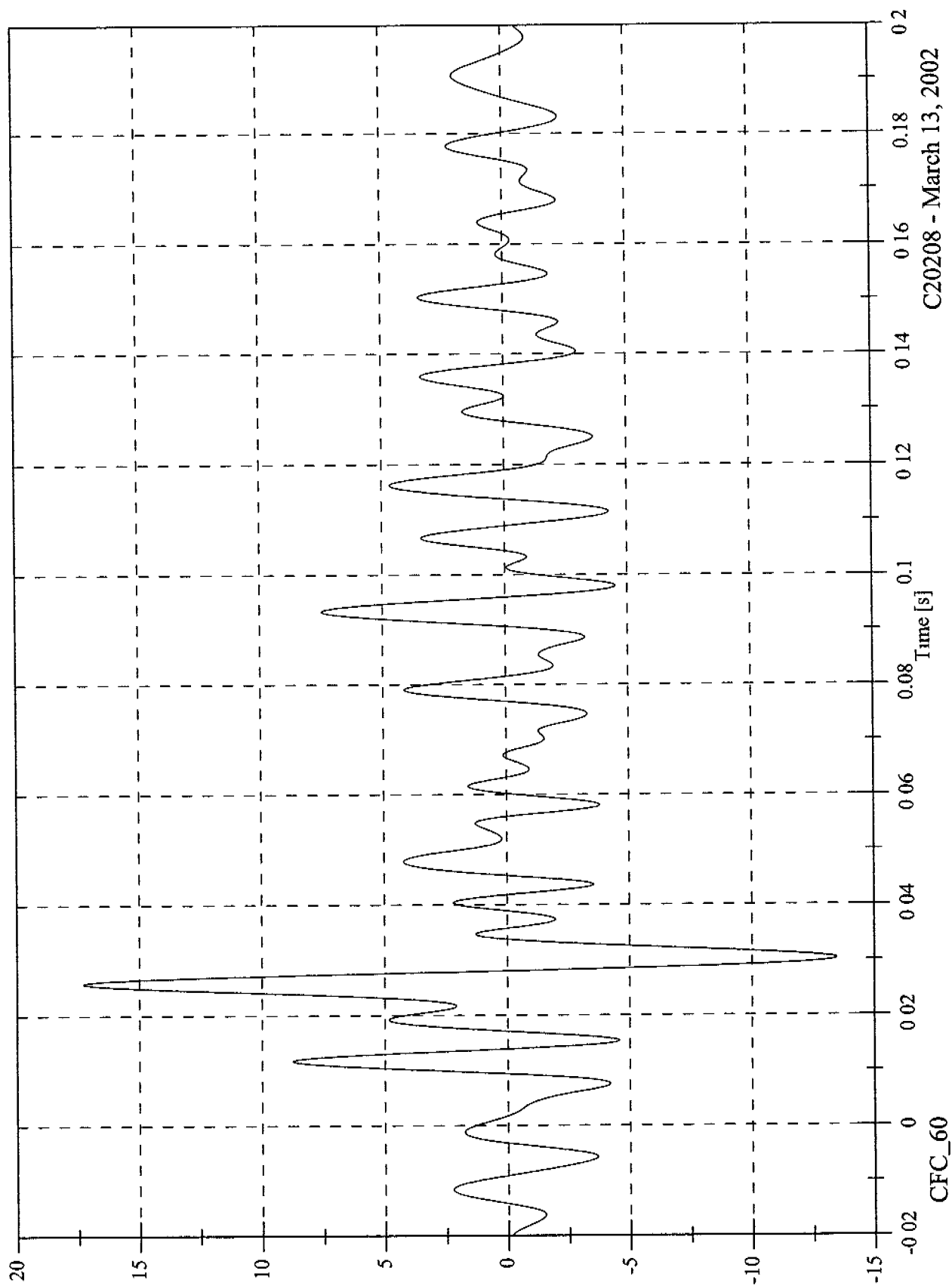
C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

Moving Barrier CG Z

Max: 17.3 [g] at 0.026 [s]

Min: -13.5 [g] at 0.030 [s]

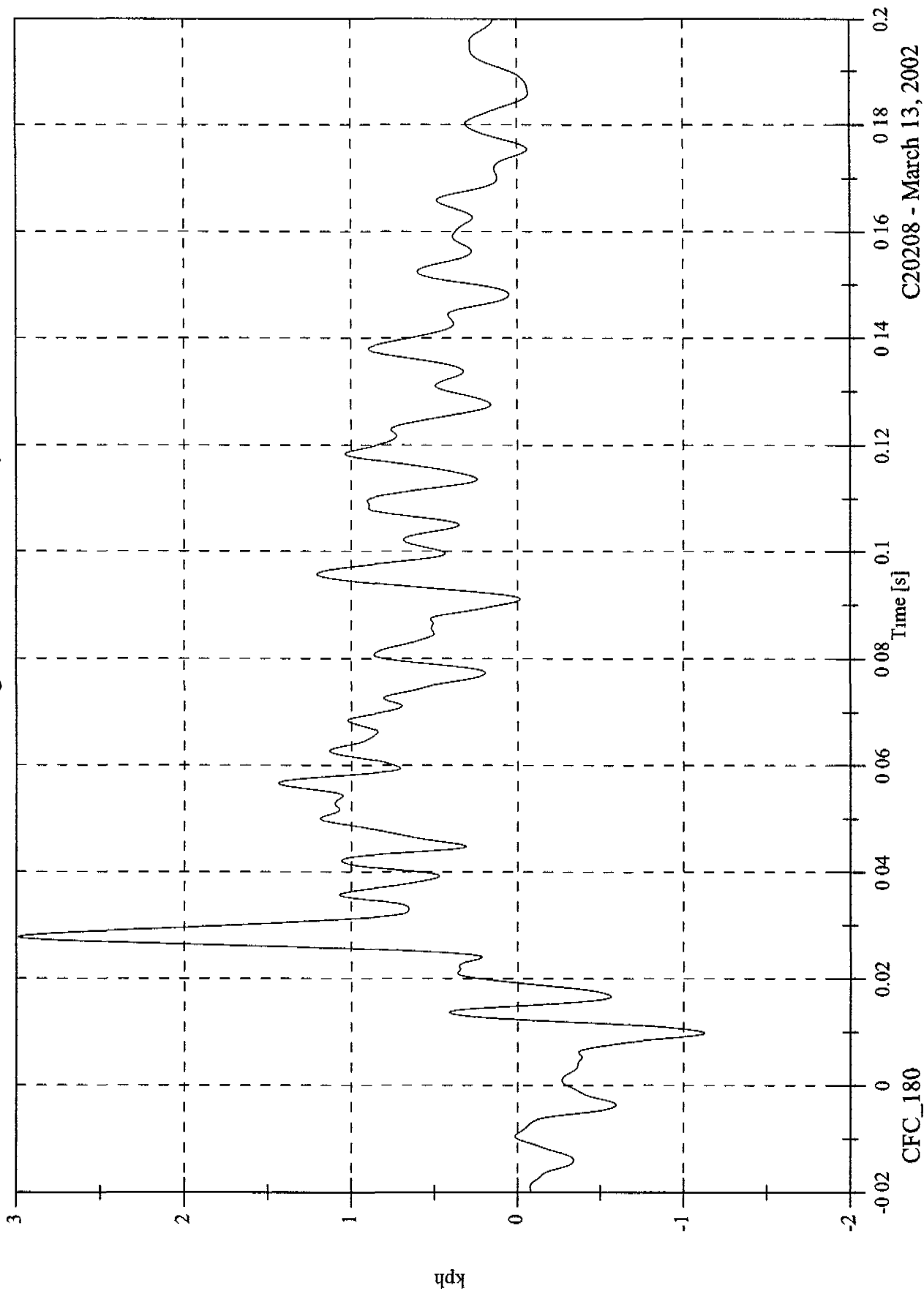


C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

Moving Barrier CG Z Velocity

Max: 3.0 [kph] at 0.028 [s]
 Min: -1.1 [kph] at 0.010 [s]

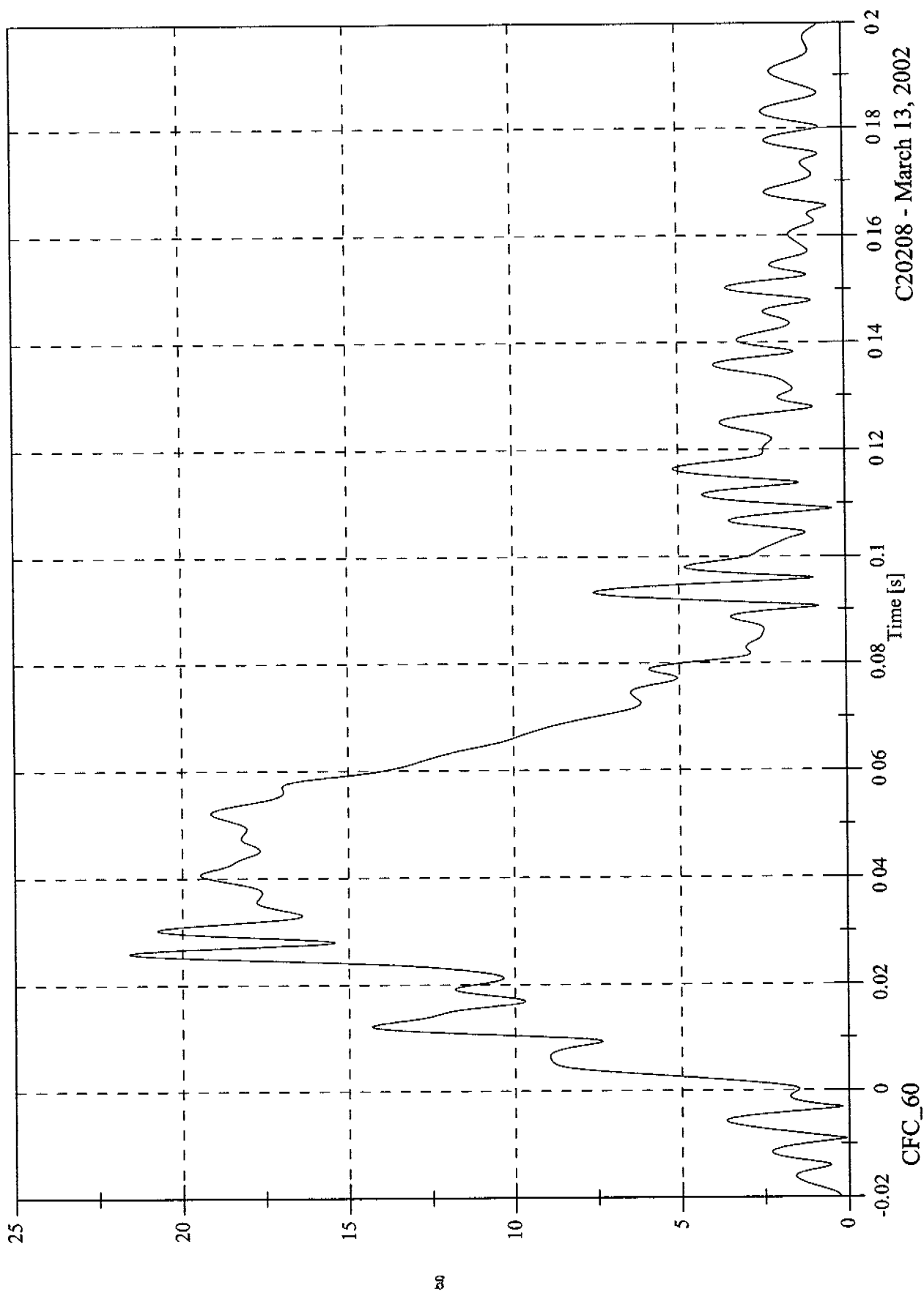


C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

Moving Barrier CG Resultant

Max: 21.6 [g] at 0.026 [s]
Min: 0.1 [g] at -0.009 [s]

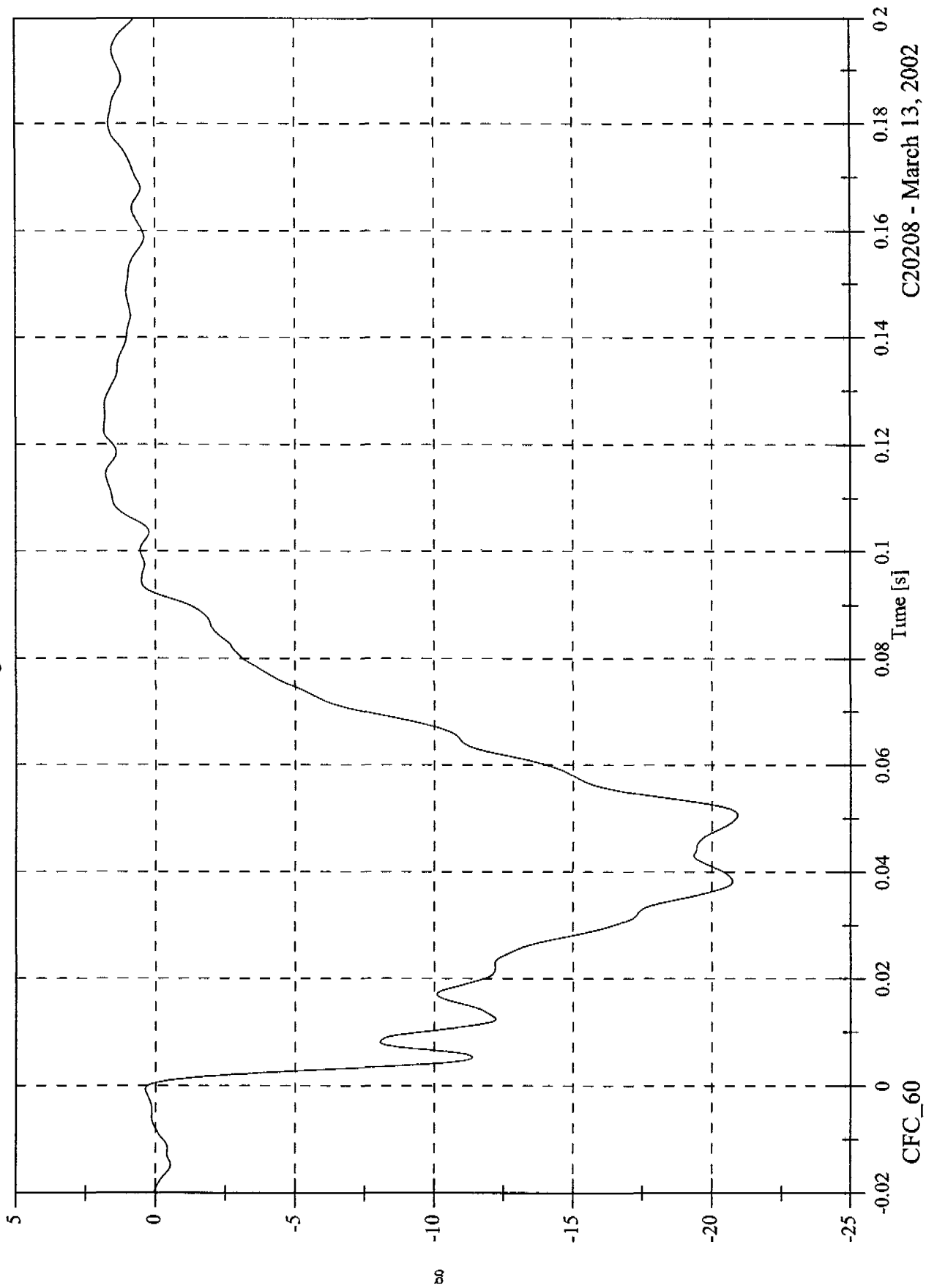


C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

Moving Barrier Left Rail X

Max: 1.9 [g] at 0.123 [s]
Min: -20.9 [g] at 0.051 [s]



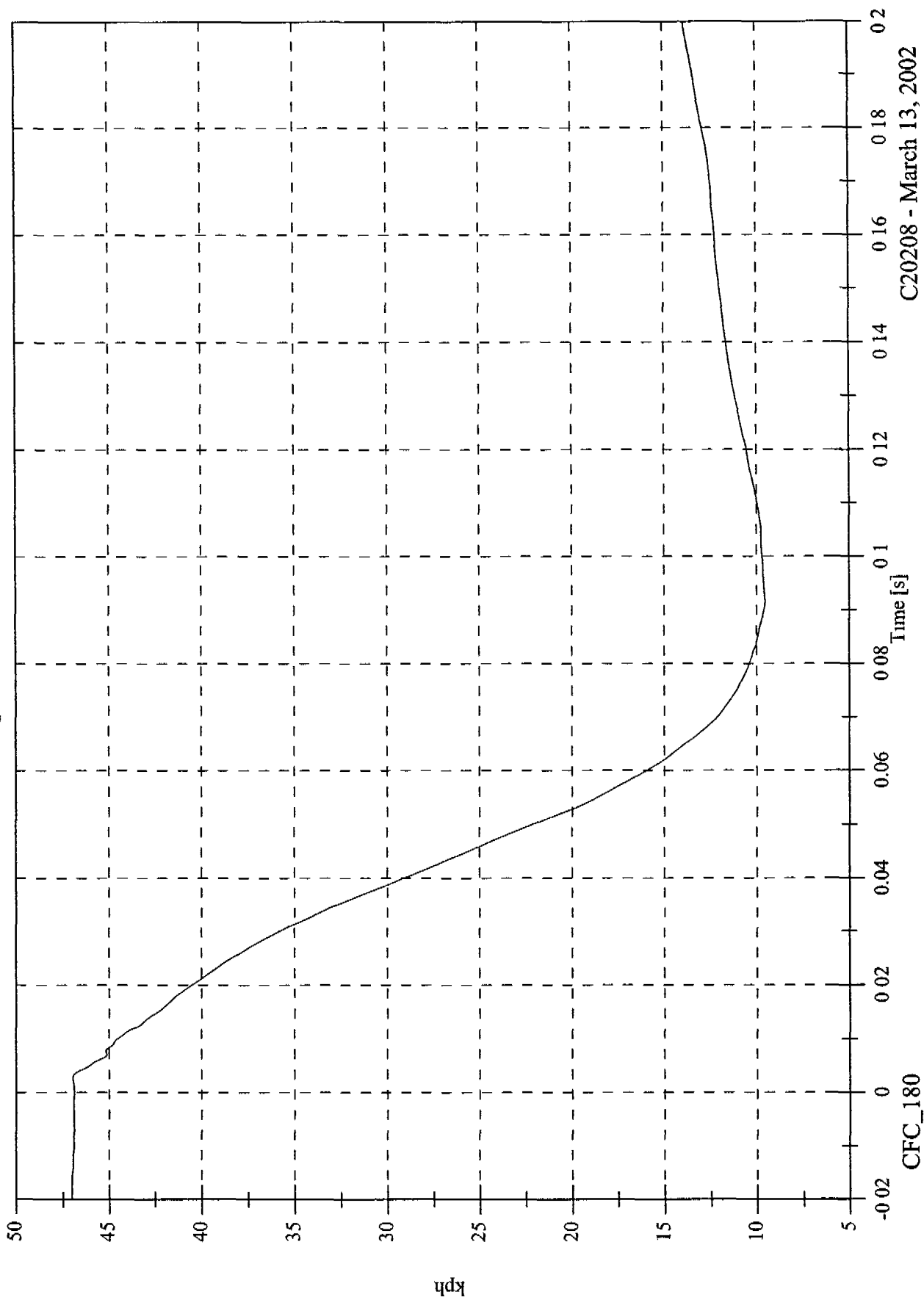
C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

Max: 47.0 [kph] at -0.020 [s]

Min: 9.5 [kph] at 0.092 [s]

Moving Barrier Left Rail X Velocity



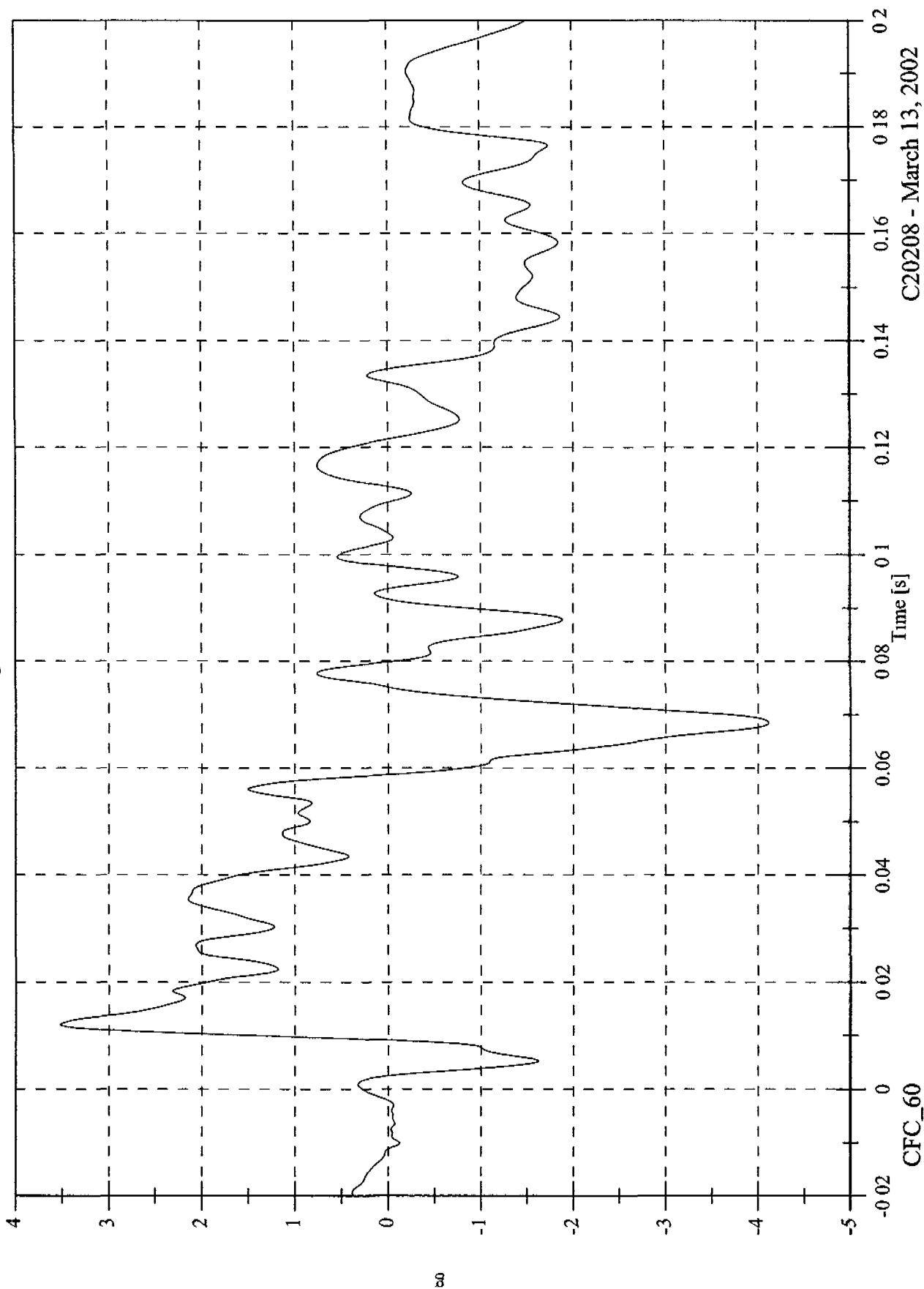
C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lighting

Moving Barrier Left Rail Y

Max: 3.5 [g] at 0.012 [s]

Min: -4.1 [g] at 0.068 [s]

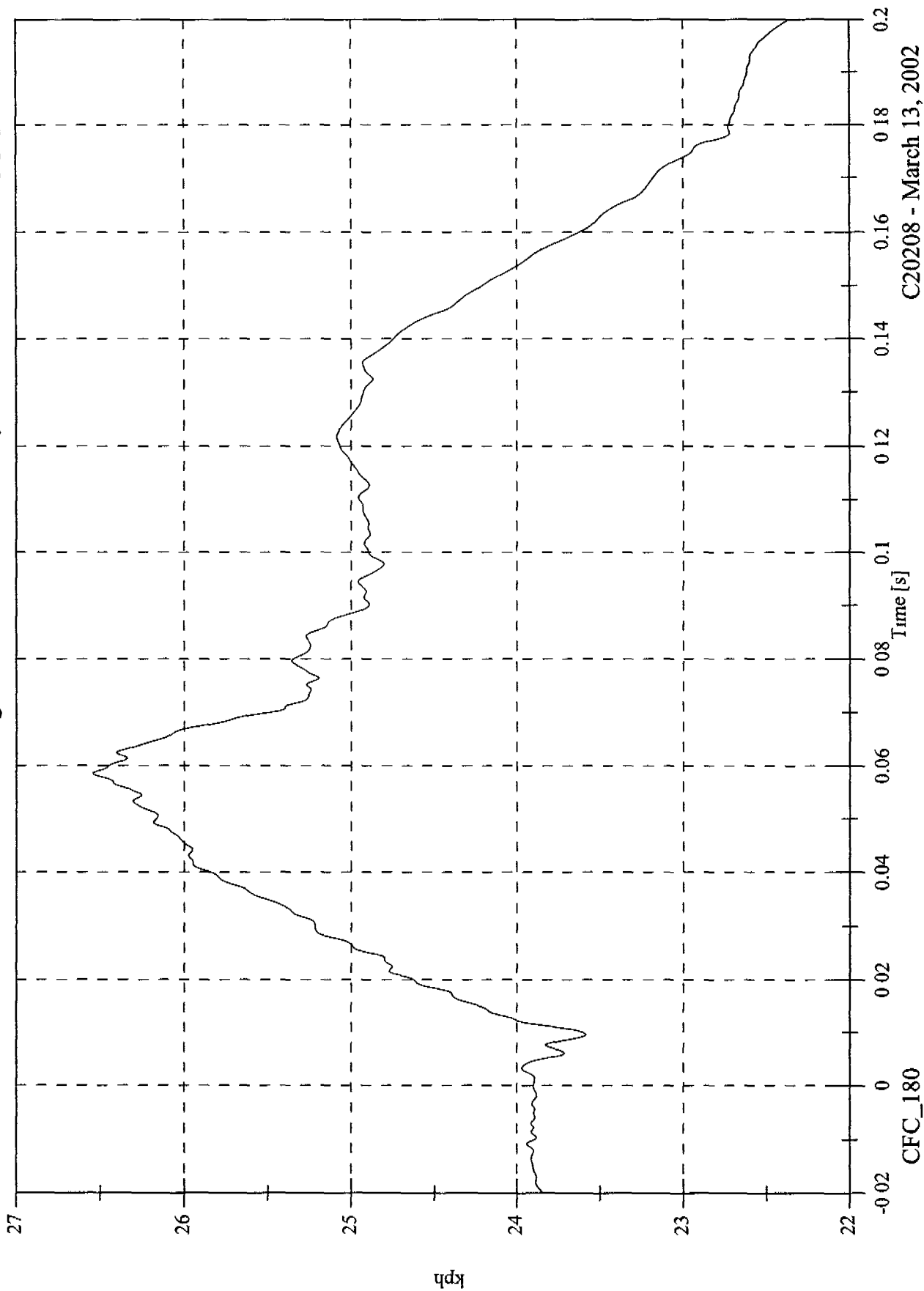


C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

Moving Barrier Left Rail Y Velocity

Max: 26.5 [kph] at 0.059 [s]
Min: 22.4 [kph] at 0.200 [s]



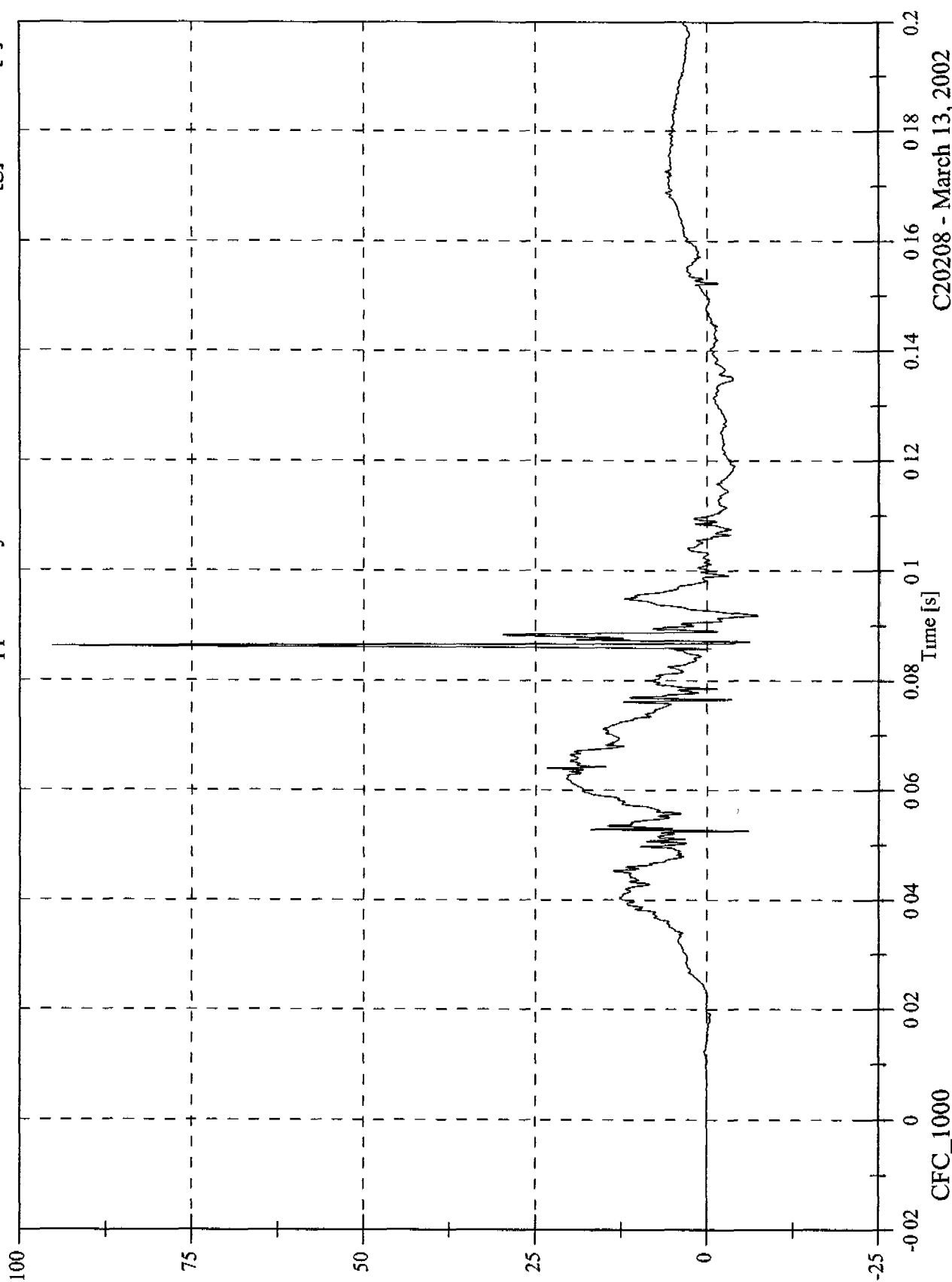
C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

P1 Upper Rib Ry

Max: 95.3 [g] at 0.086 [s]

Min: -7.4 [g] at 0.092 [s]



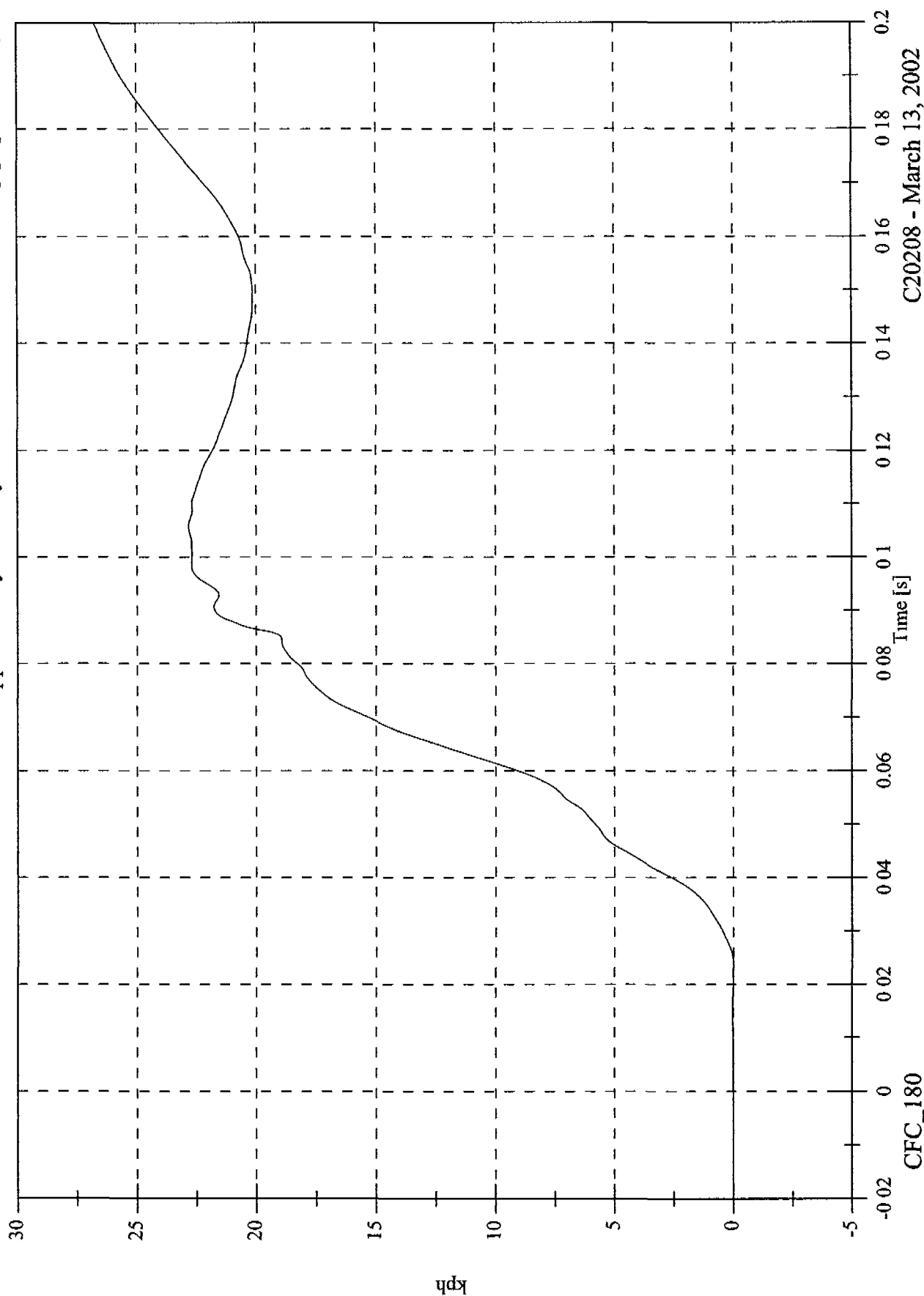
C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

Max: 26.8 [kph] at 0.200 [s]

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

P1 Upper Rib Ry Velocity

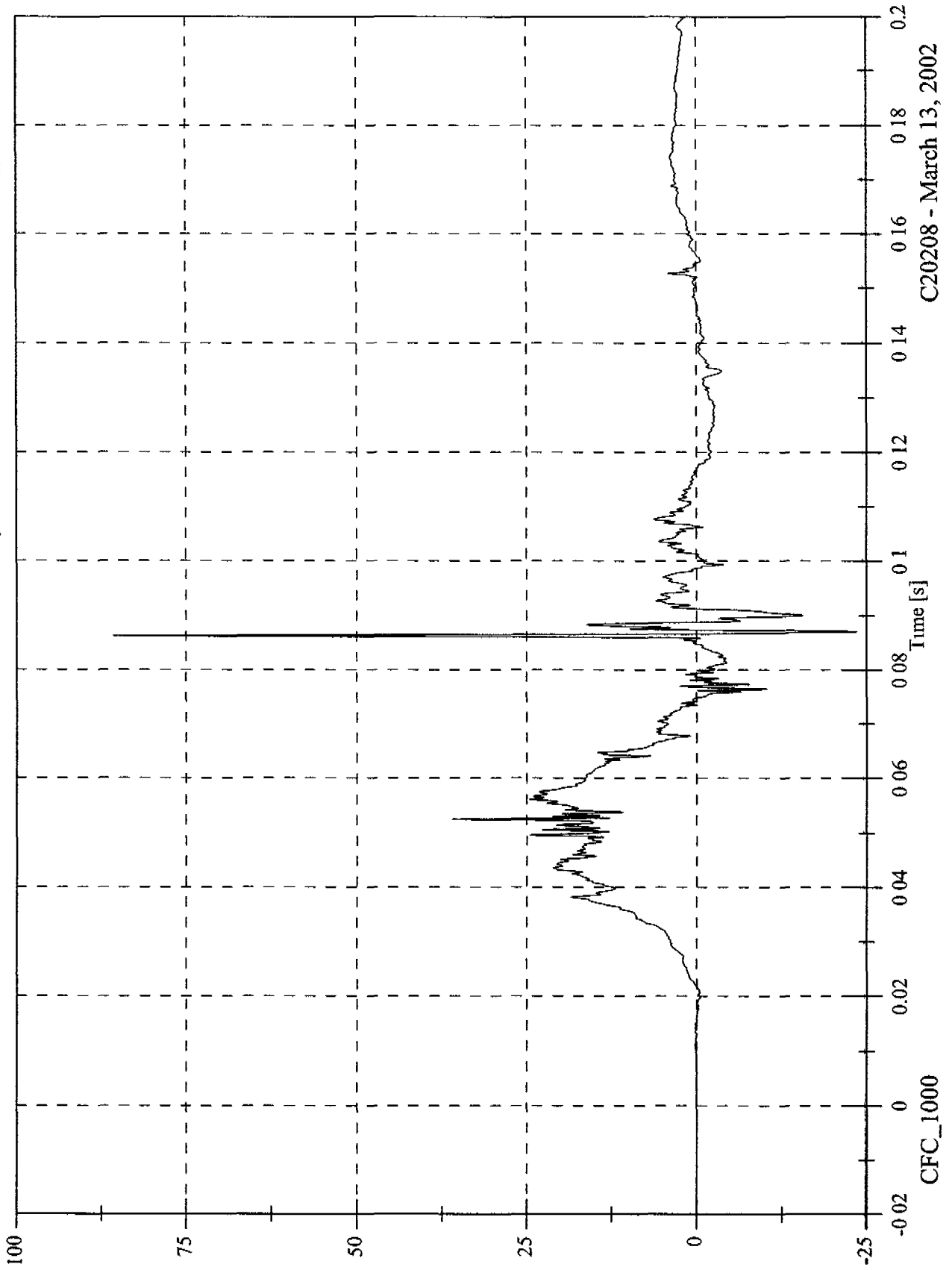


C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

P1 Lower Rib Ry

Max: 85.7 [g] at 0.086 [s]
Min: -23.5 [g] at 0.087 [s]



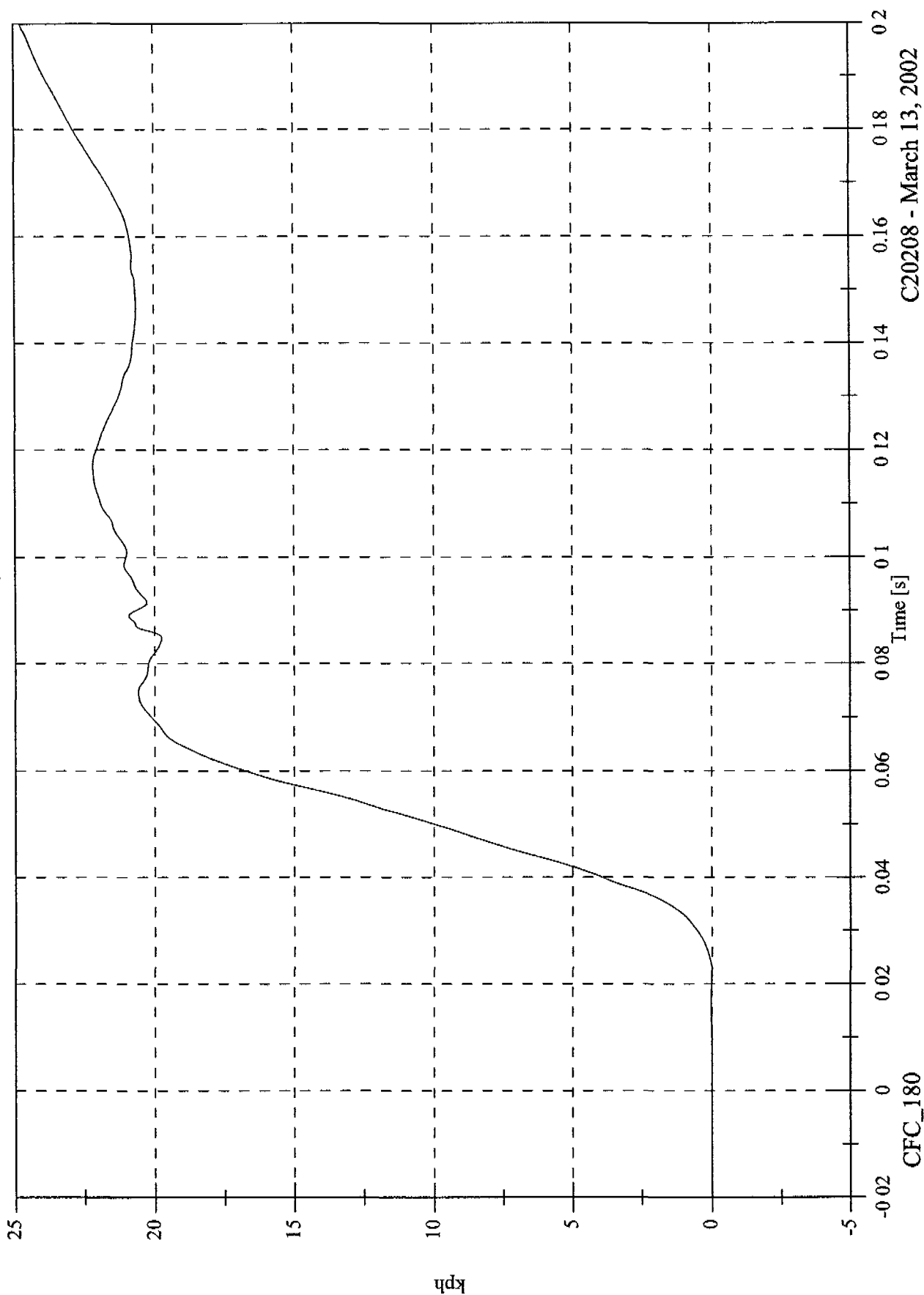
C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

Max: 24.7 [kph] at 0.200 [s]

Min: -0.0 [kph] at 0.022 [s]

P1 Lower Rib Ry Velocity

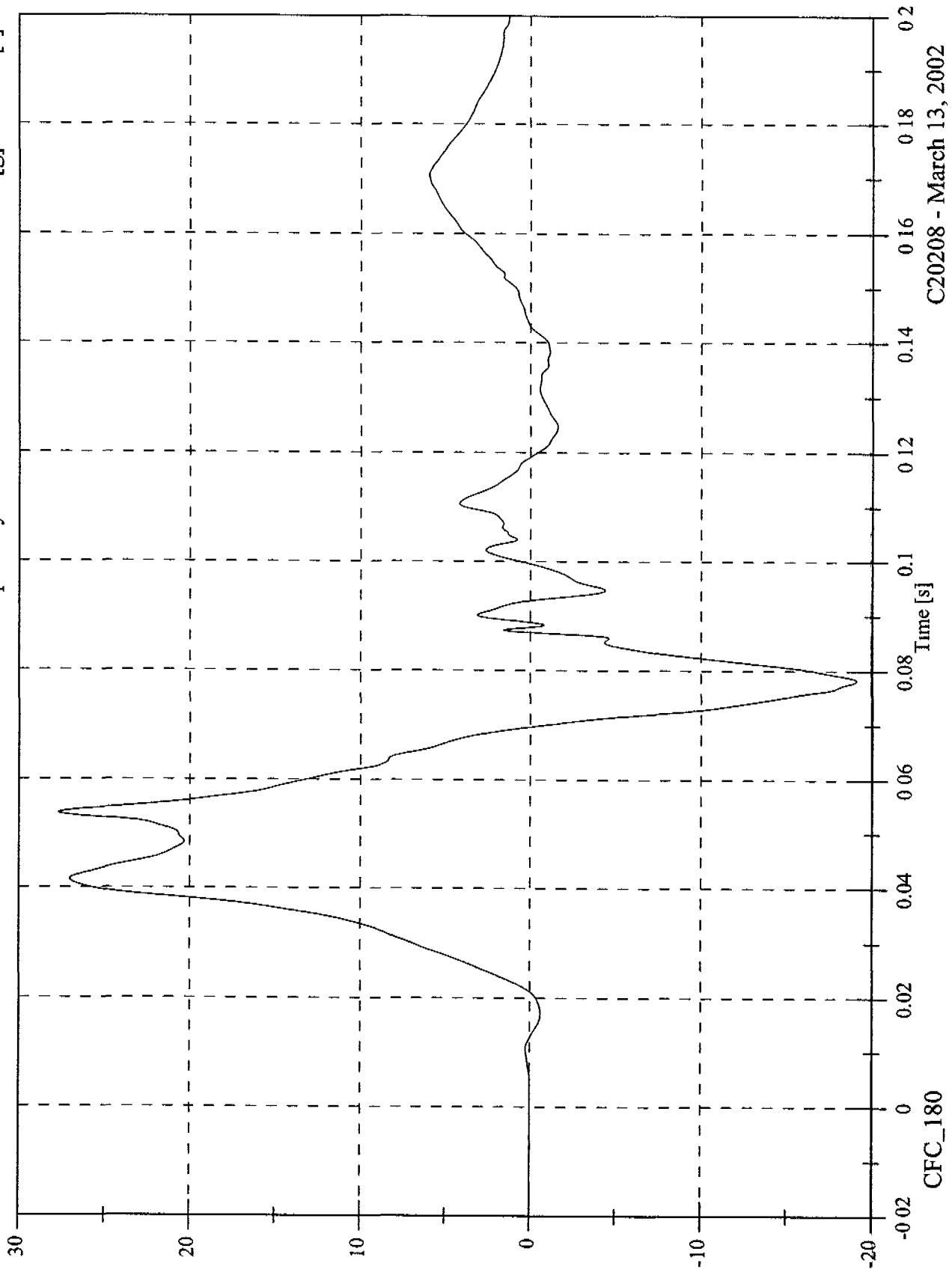


C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

P1 Lower Spine Ry

Max: 27.7 [g] at 0.054 [s]
Min: -19.1 [g] at 0.078 [s]

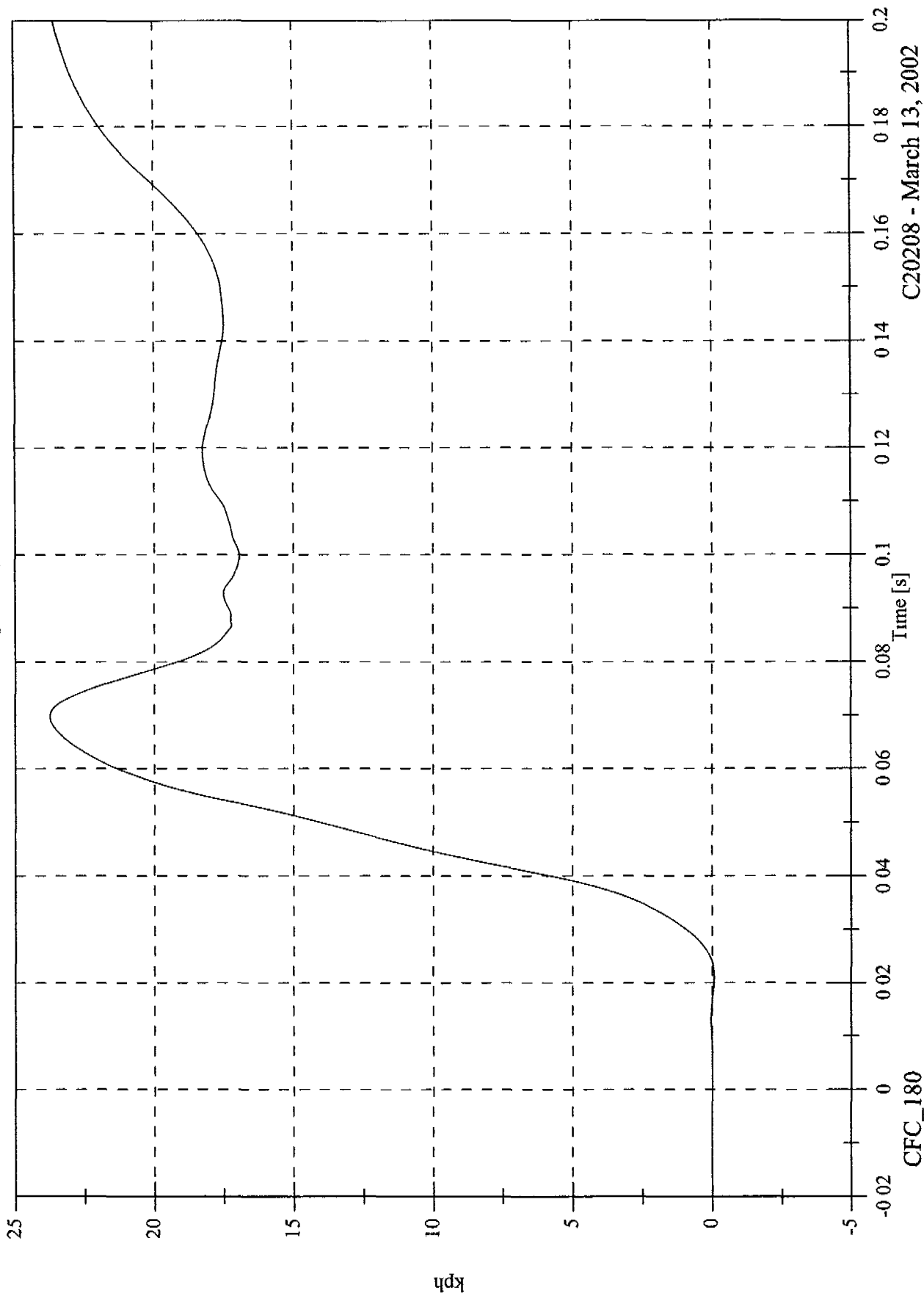


C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

P1 Lower Spine Ry Velocity

Max: 23.7 [kph] at 0.070 [s]
Min: -0.1 [kph] at 0.021 [s]



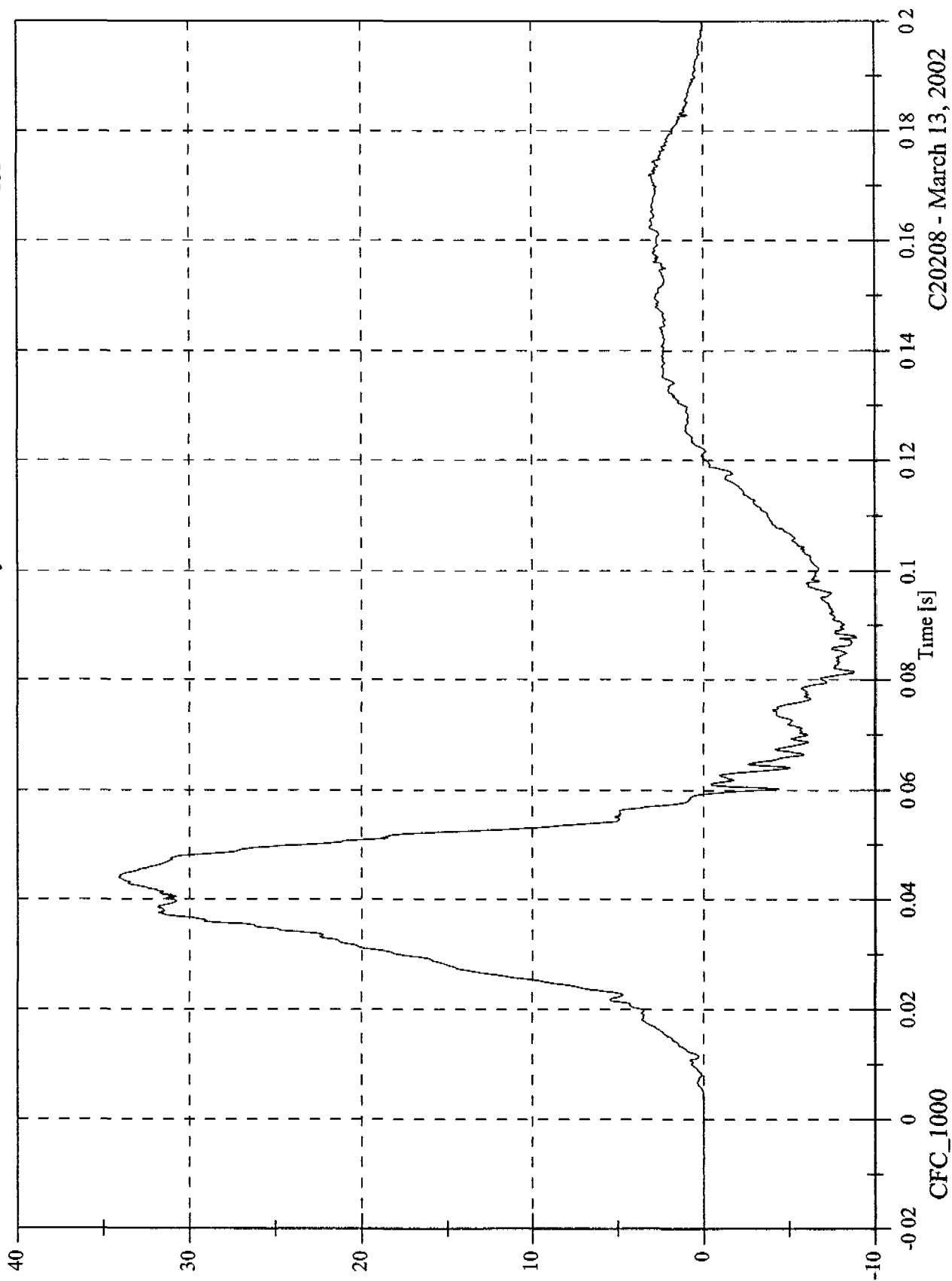
C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

P1 Pelvic Ry

Max: 34.1 [g] at 0.044 [s]

Min: -8.9 [g] at 0.088 [s]

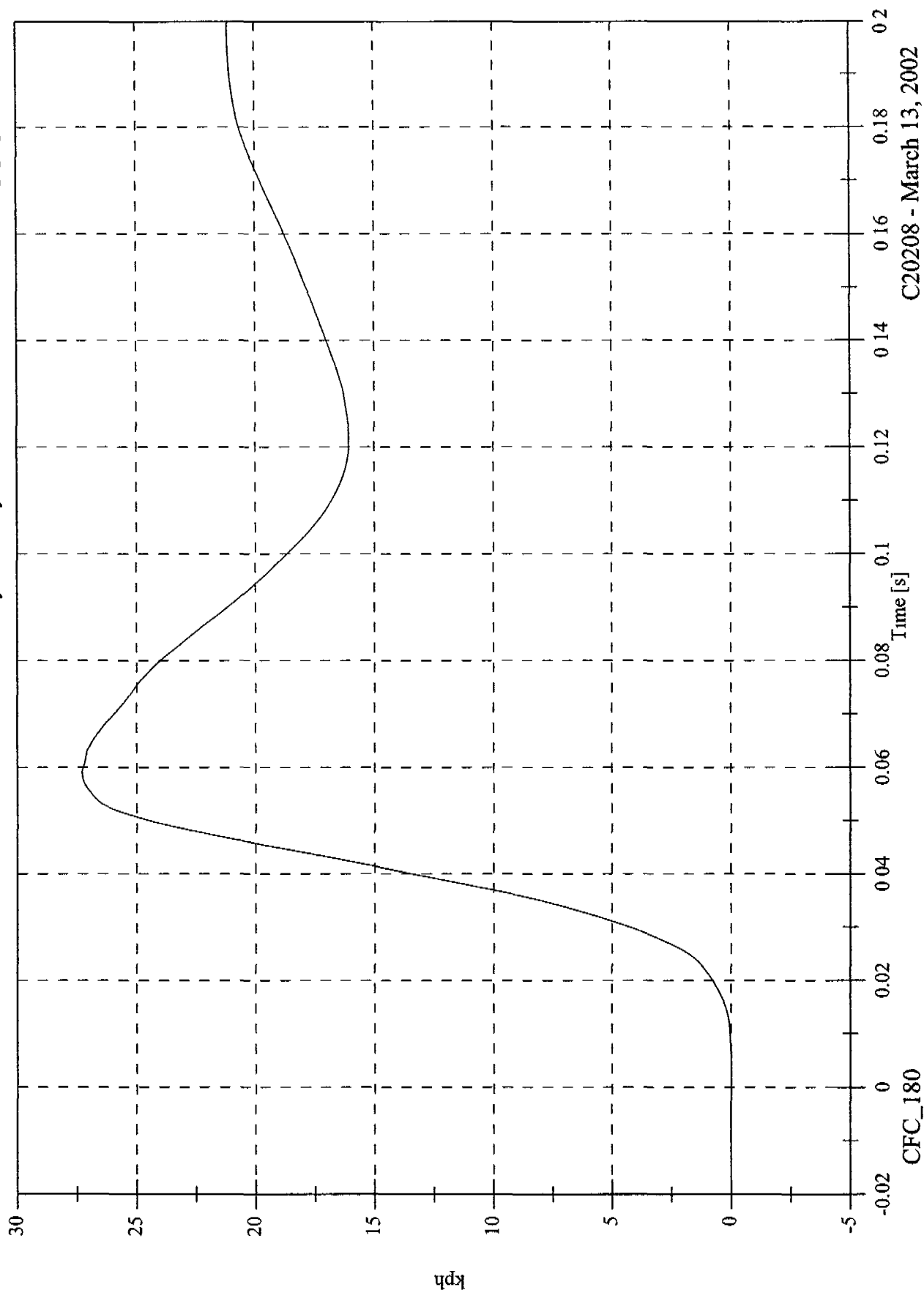


C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

P1 Pelvic Ry Velocity

Max: 27.3 [kph] at 0.059 [s]
Min: -0.0 [kph] at -0.014 [s]



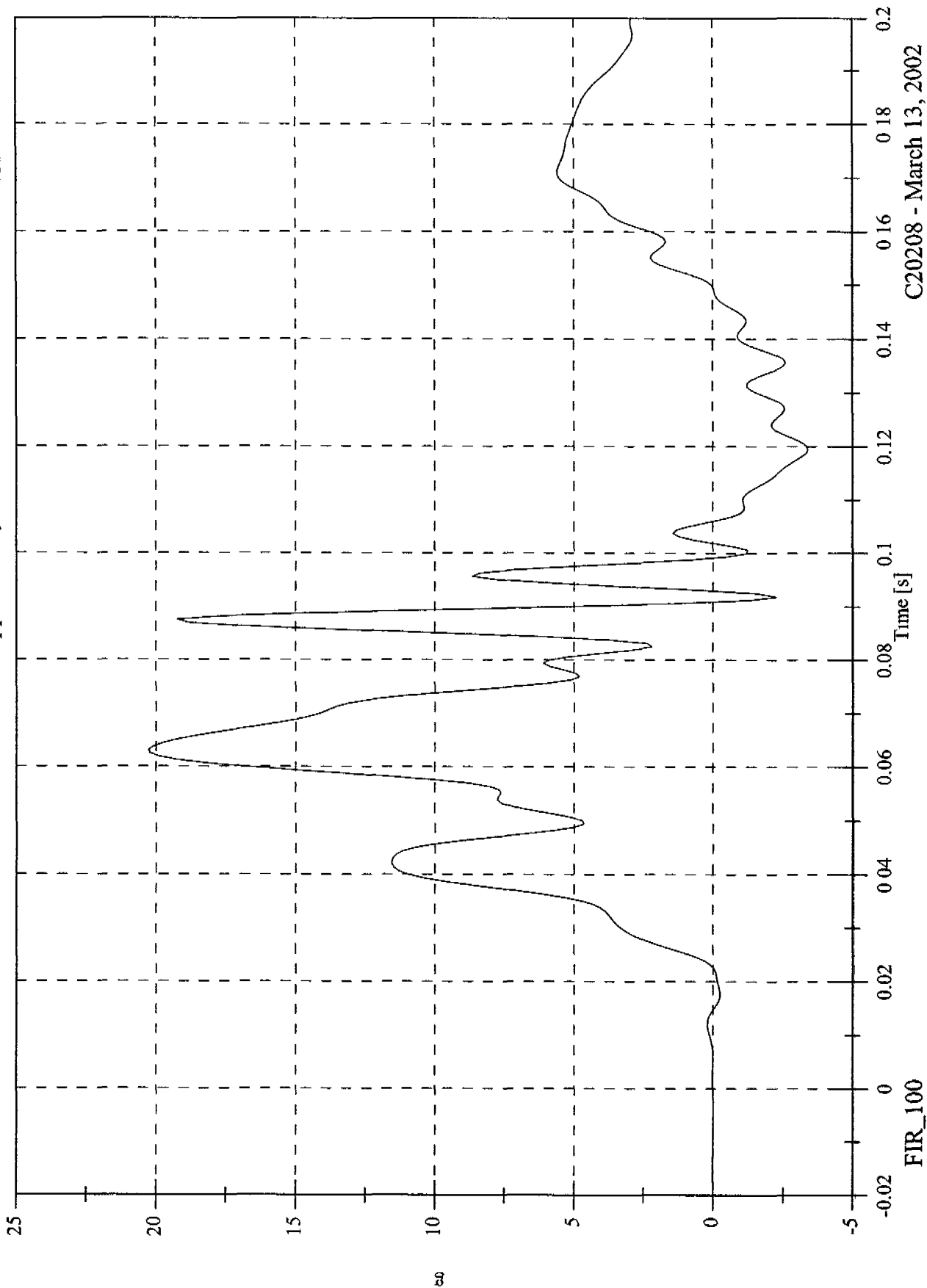
CFC_180

C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

P1 Upper Rib Ry

Max: 20.3 [g] at 0.063 [s]
Min: -3.4 [g] at 0.119 [s]

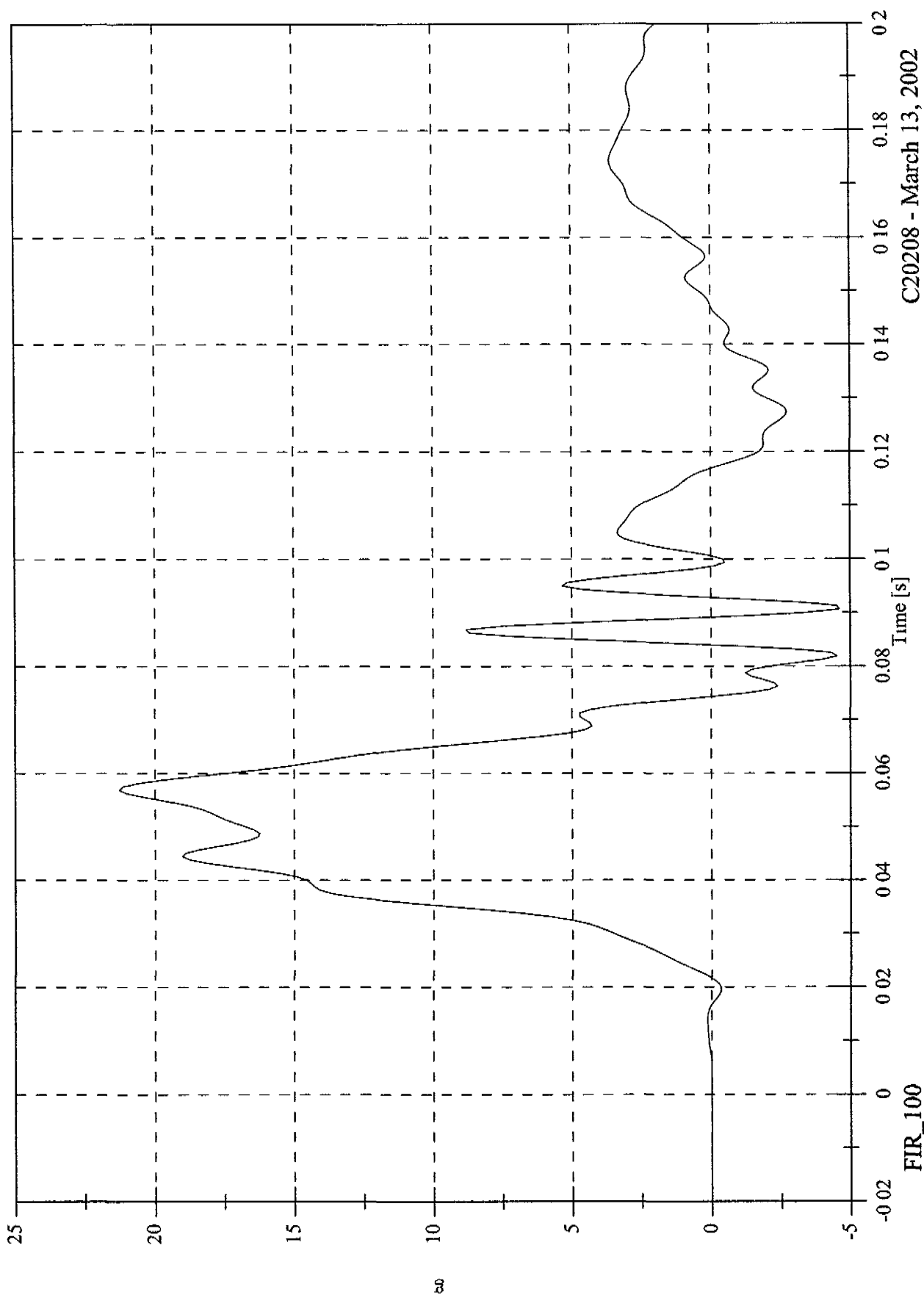


C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

P1 Lower Rib Ry

Max: 21.3 [g] at 0.057 [s]
Min: -4.6 [g] at 0.091 [s]



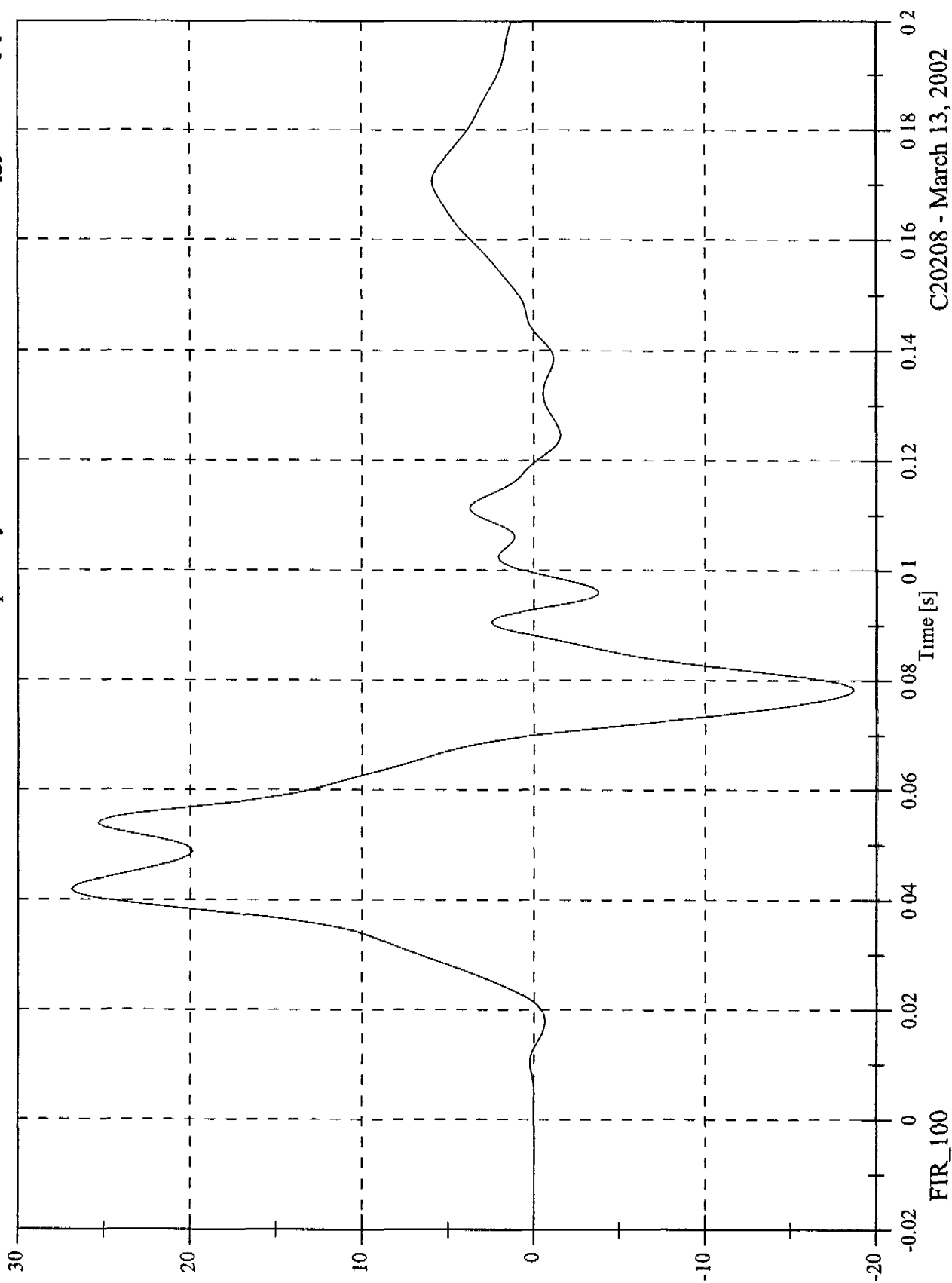
C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

P1 Lower Spine Ry

Max: 26.9 [g] at 0.042 [s]

Min: -18.7 [g] at 0.078 [s]

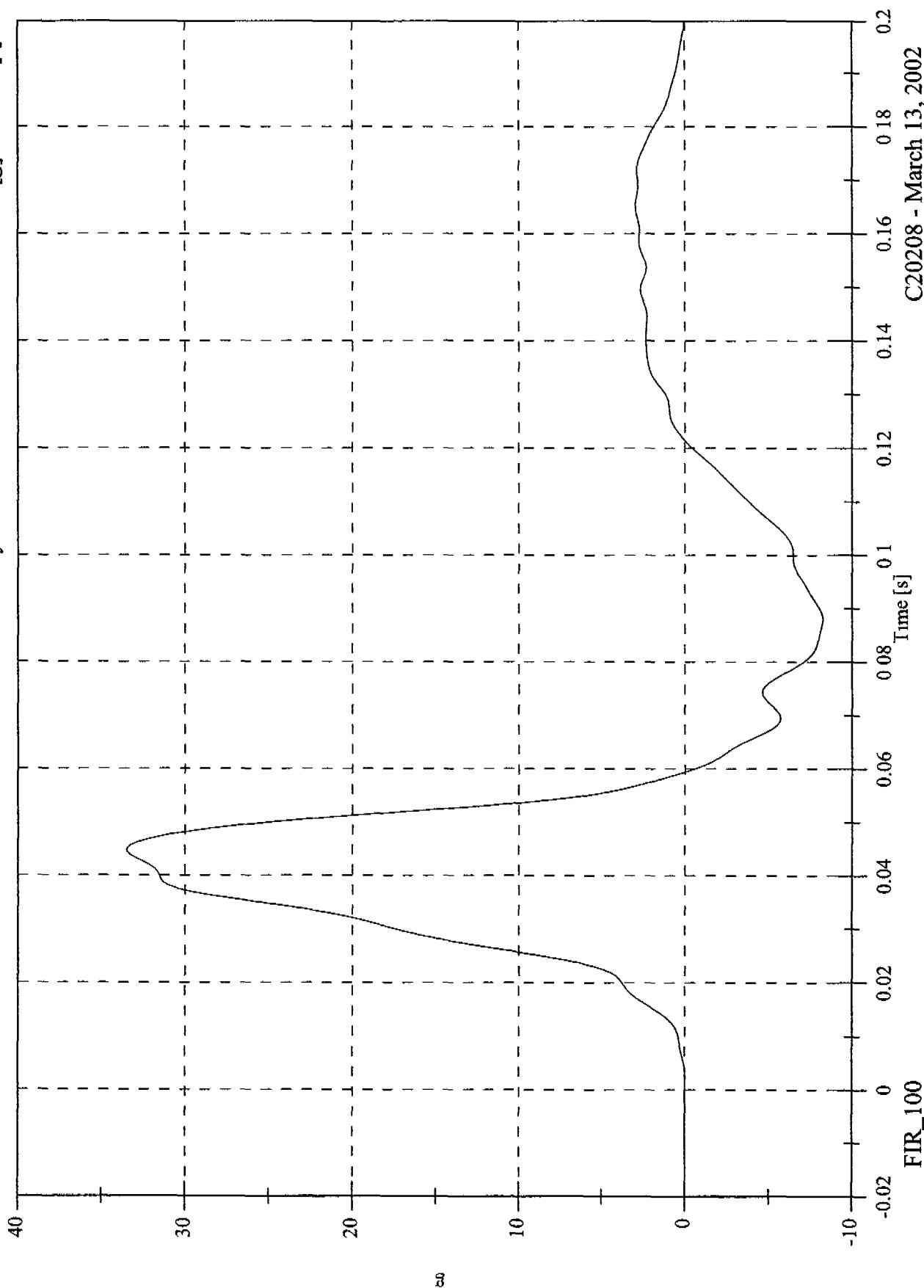


C20208 - March 13, 2002

FMVSS 214D Test 7 - 2002 Ford SVT F150 Lightning

P1 Pelvic Ry

Max: 33.5 [g] at 0.045 [s]
Min: -8.2 [g] at 0.088 [s]



C20208 - March 13, 2002

APPENDIX C

SID CONFIGURATION AND PERFORMANCE VERIFICATION DATA

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

Date March 8, 2002, March 19, 2002

Sequential Test Number
Laboratory Technician.

3,4

B Swiecicki

TEST PARAMETER	SPECIFICATION	SID NO.. 015	
		PRE TEST	POST TEST
SH- Seated Height (mm)	889 - 909	902	902
RH- Rib Height (mm)	501 - 521	511	513
HP- Hip Pivot Height (mm)	99 ref	99	99
RD- Rib from Back Line (mm)	229 - 241	236	236
KV- Knee Pivot from Back Line (mm)	511 - 526	518	518
SW- Knee Pivot to Floor (mm)	490 - 505	493	493
HW- Hip Width (mm)	356 - 391	378	378
THORAX IMPACTS			
TEMPERATURE (°C)	18 9 - 25 5	21.7	21 1
RELATIVE HUMIDITY (%)	10 - 70	31	34
PROBE SPEED (m/s)	4 27 - 4 33	4 3	4 32
UPPER RIB (g's)	37 - 46	42	42 2
LOWER RIB (g's)	37 - 46	42 8	41 1
LOWER SPINE (g's)	15 - 22	20	19 2
PELVIS IMPACT			
TEMPERATURE (°C)	18 9 - 25 5	21 7	21 1
RELATIVE HUMIDITY (%)	10 - 70	31	34 0
PROBE SPEED (m/s)	4 27 - 4 33	4 31	4 30
PELVIS (g's)	40 - 60	47 5	50 1

REMARKS: None

CALIBRATION TEST RESULTS

PRE-TEST

SID NO.: 015

CONFIGURED FOR LEFT SIDE IMPACT

**CALIBRATION TEST RESULTS SUMMARY
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No	<u>015</u>	Sequential Test Number	<u>3</u>
Date	<u>March 8, 2002</u>	Laboratory Technician	<u>B Swiecicki</u>

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
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 Serial No	<u>015</u>	Sequential Test Number	<u>3</u>
Date	<u>March 8, 2002</u>	Laboratory Technician	<u>B Swiecicki</u>

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 – 909	902
RH- Rib Height (mm)	502 – 520	511
HP- Hip Pivot Height (mm)	99 ref	99
RD- Rib from Back Line (mm)	229 – 241	236
KH- Knee Pivot from Back Line (mm)	511 – 526	518
KV- Knee Pivot to Floor (mm)	490 – 505	493
HW- Hip Width (mm)	356 - 391	378

REMARKS: None

**THORACIC SHOCK ABSORBER TESTS
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No	015	Sequential Test Number	13
Date	December 6, 2002	Laboratory Technician	B Swiecicki

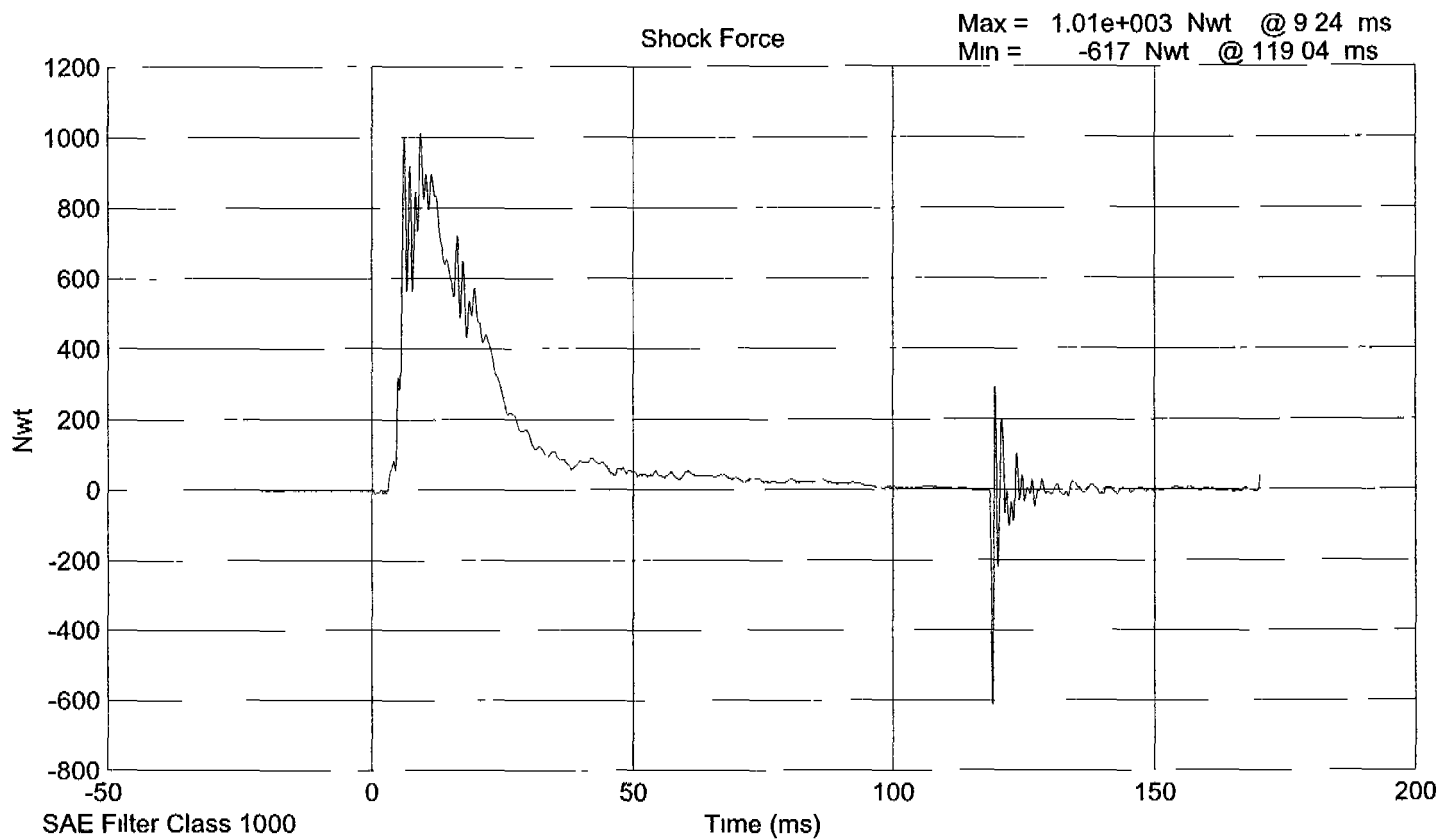
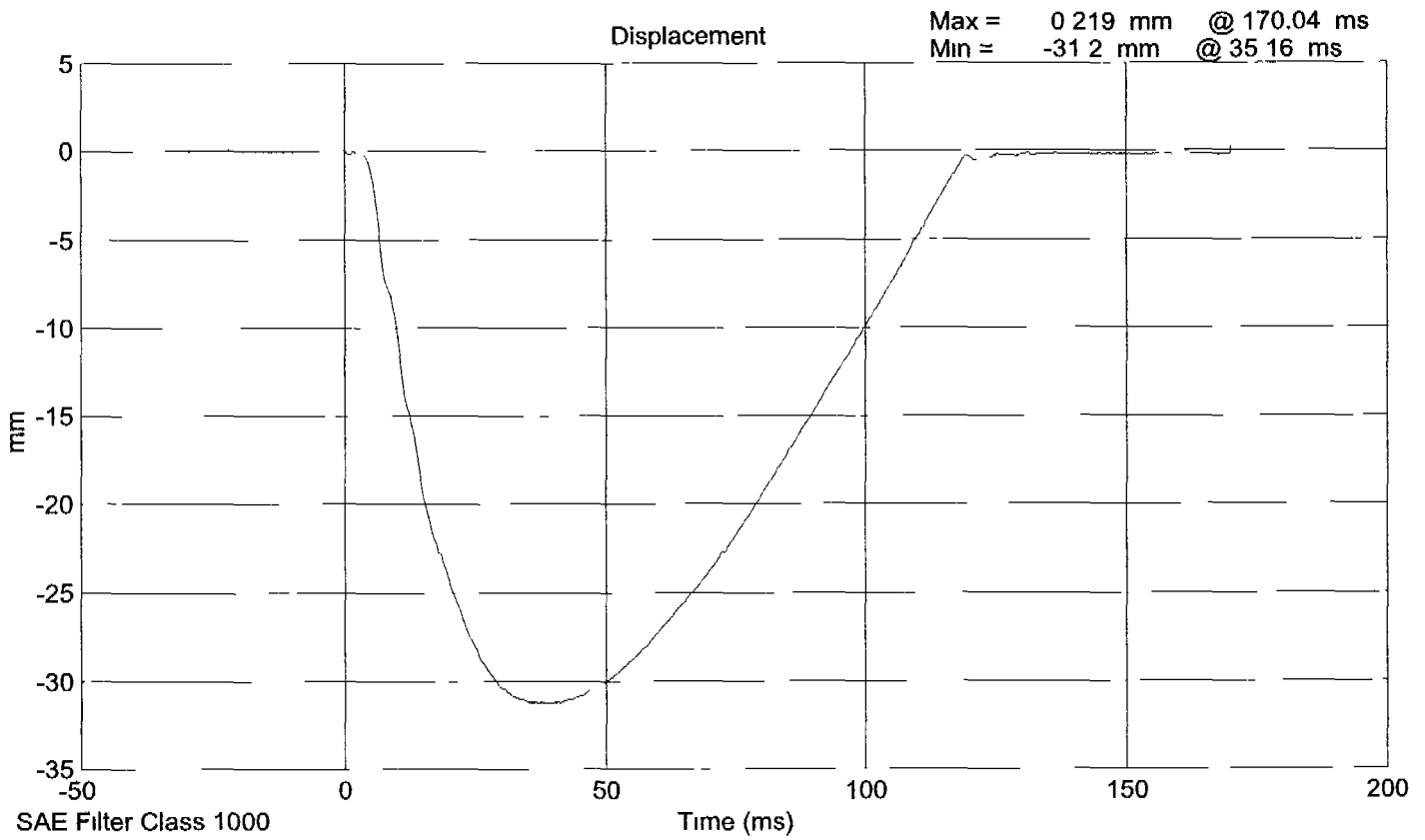
DAMPER IDENTIFICATION

TEST PARAMETER		SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)		18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)		10 - 70	31.0
VELOCITY 3.05 m/s	FORCE (N)	836 - 1125	1014.3
	DISPLACEMENT (mm)	30 - 35	31.2
VELOCITY 4.27 m/s	FORCE (N)	1730 - 2099	2000.5
	DISPLACEMENT (mm)	32 - 37	34.0
VELOCITY 6.10 m/s	FORCE (N)	3741 - 4448	4254.7
	DISPLACEMENT (mm)	33 - 40	37.5

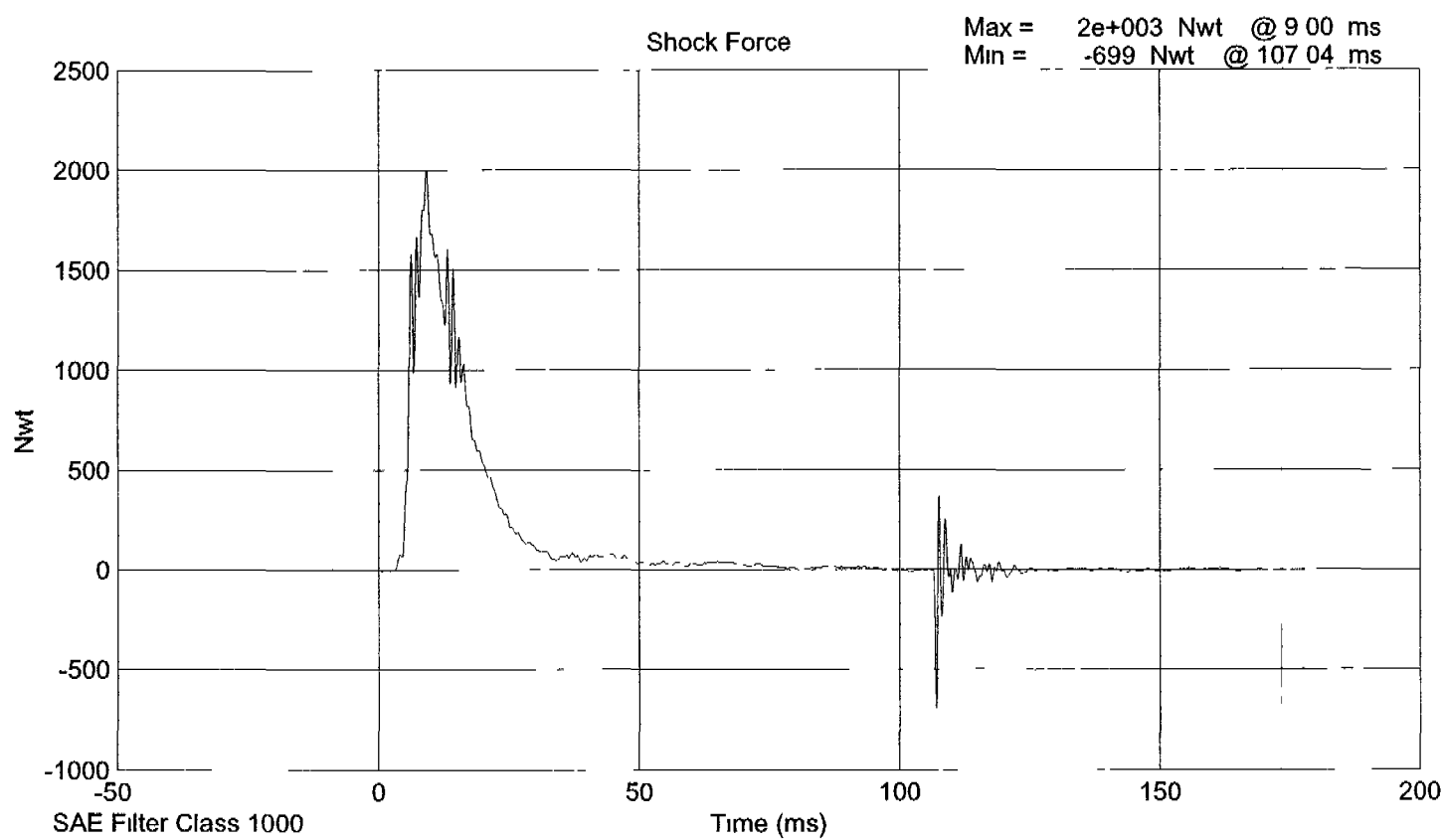
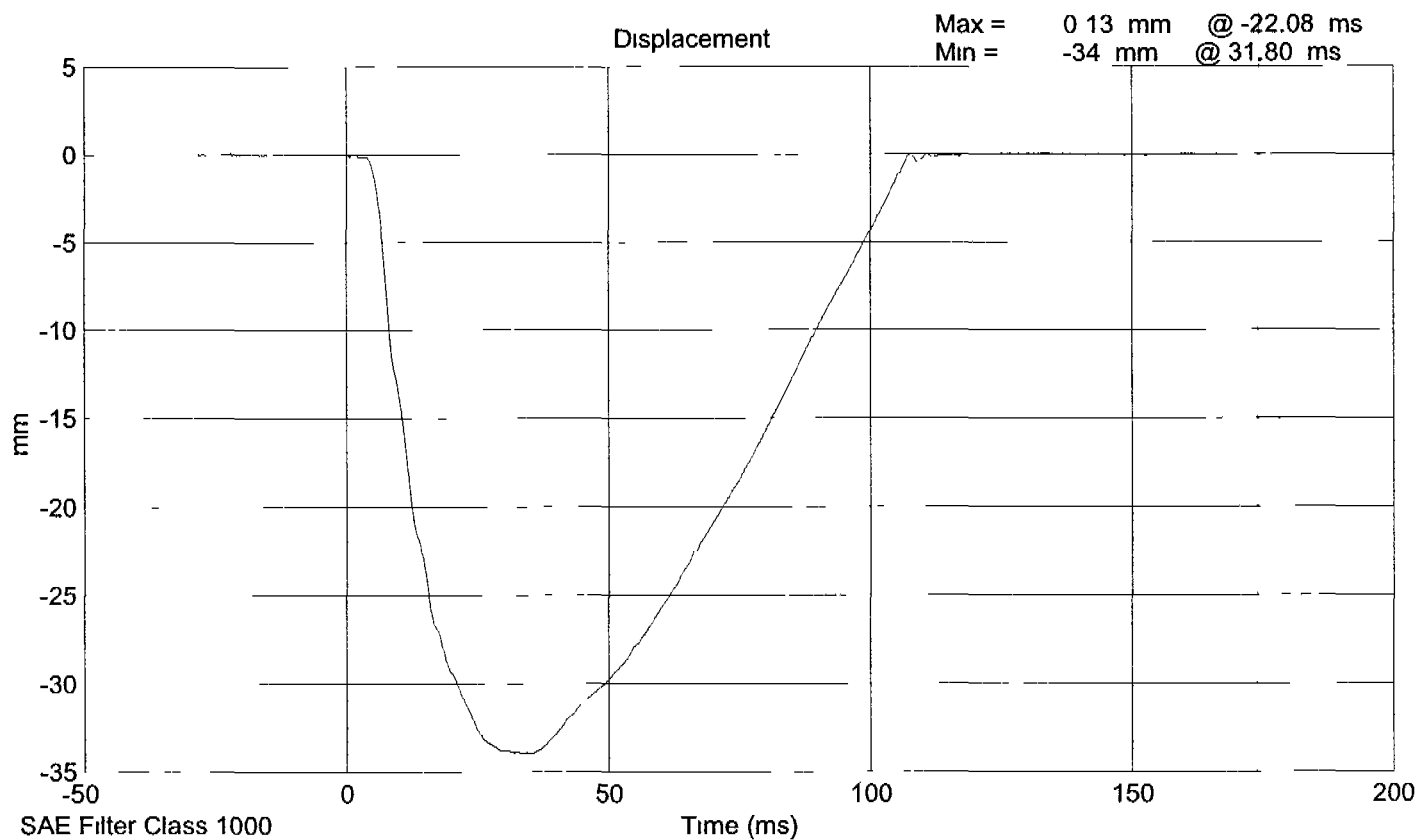
DAMPER SETTING 5

REMARKS: None

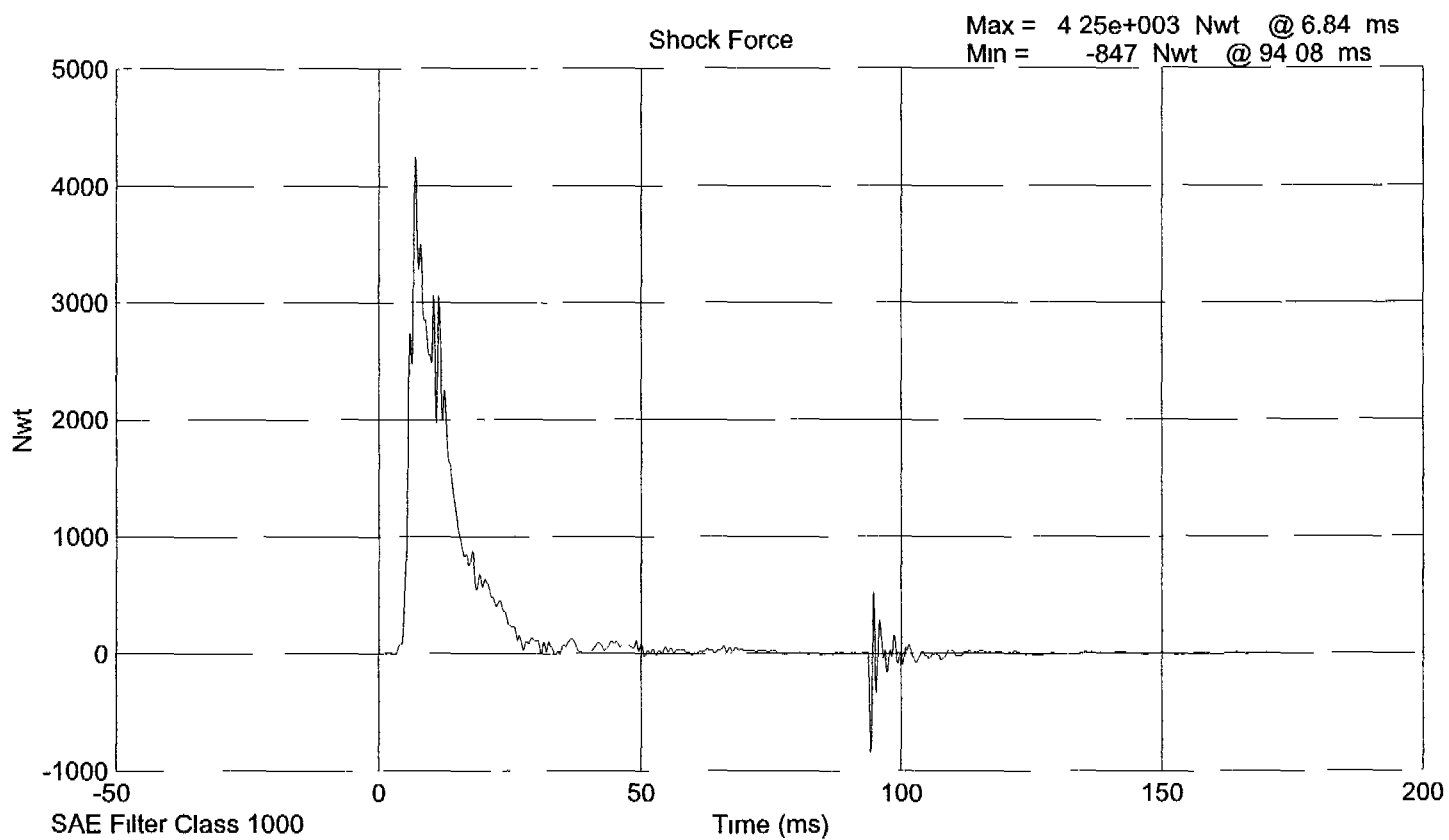
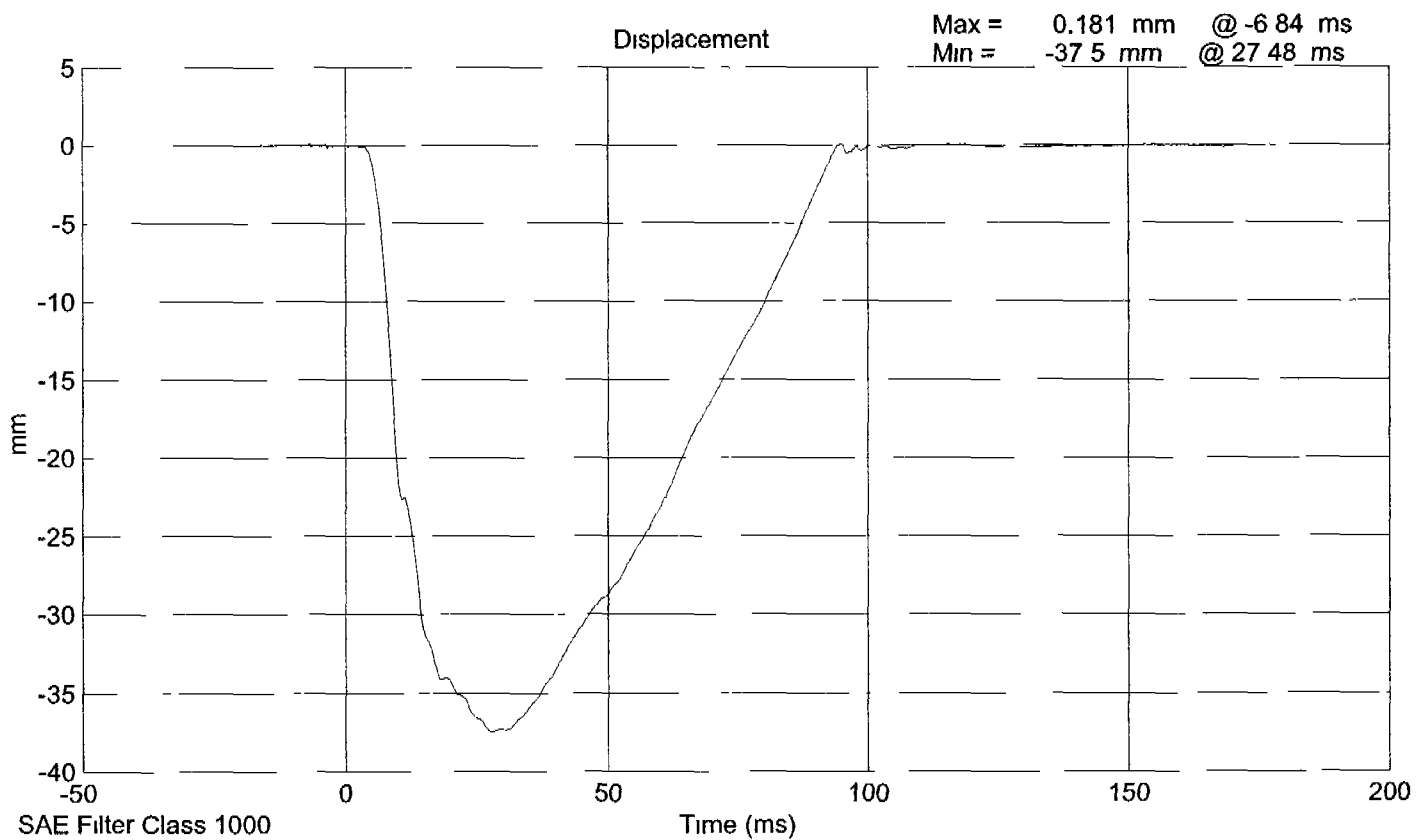
SID 015 Shock Absorber Impact Test @ 3 048 m/s



SID 015 Shock Absorber Impact Test @ 4.2672 m/s



SID 015 Shock Absorber Impact Test @ 6 096 m/s



**LATERAL THORAX IMPACT TEST
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No	015	Sequential Test Number	3
Date	March 8, 2002	Laboratory Technician	B Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	31.0
PROBE SPEED (m/s)	4.27 - 4.33	4.30
UPPER RIB (g's)	37 - 46	42.0
LOWER RIB (g's)	37 - 46	42.8
LOWER SPINE (g's)	15 - 22	20.0

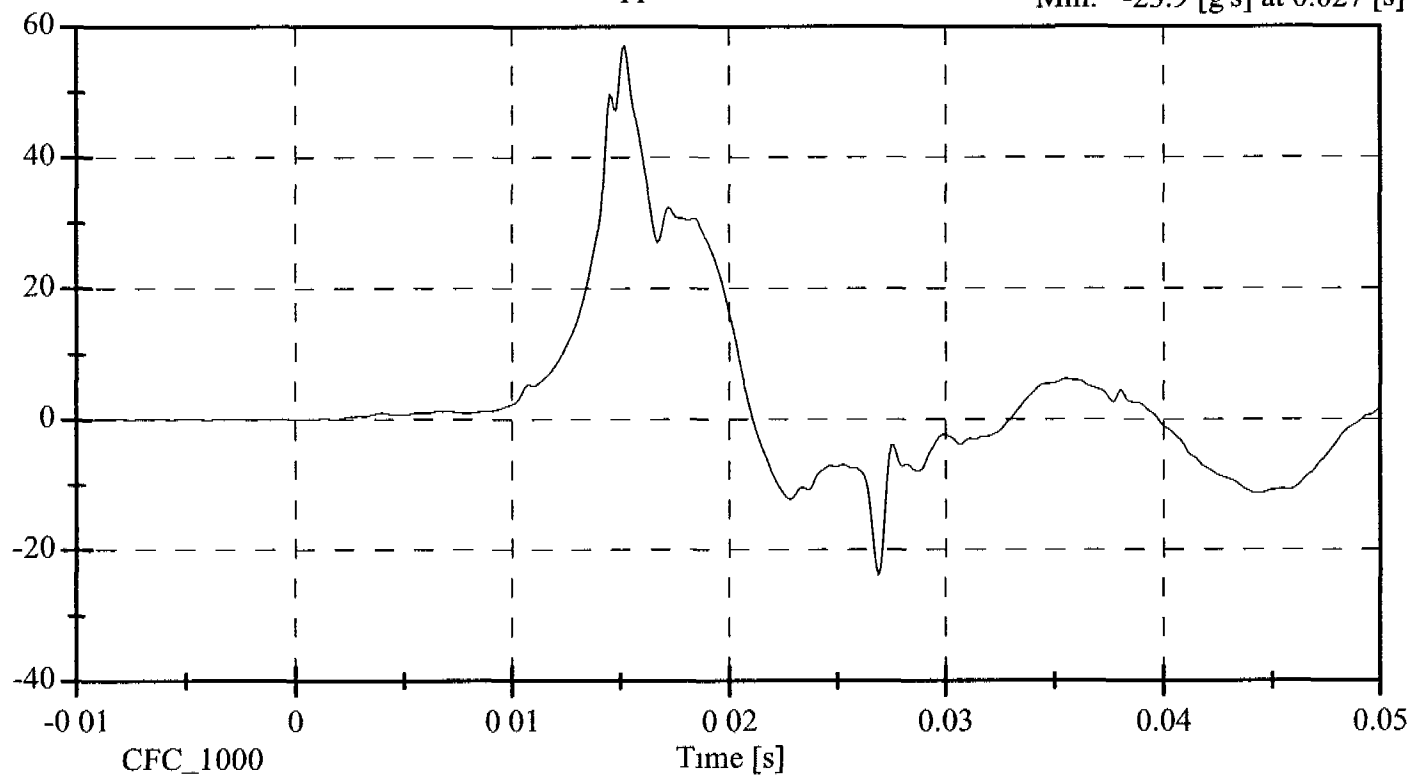
REMARKS: None

UPRib Ay [g's]

Upper Rib Y Acceleration

Max: 57.1 [g's] at 0.015 [s]

Min: -23.9 [g's] at 0.027 [s]

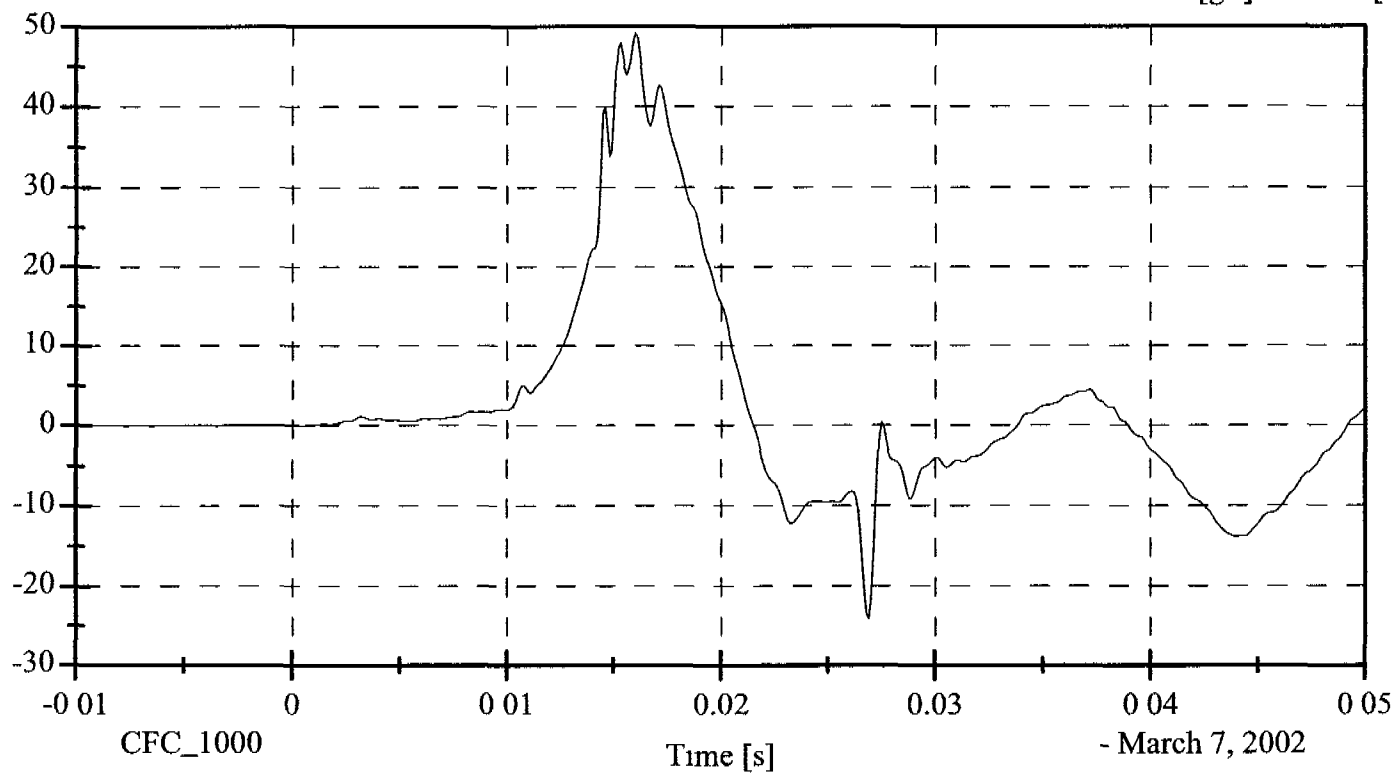


LoRib Ay [g's]

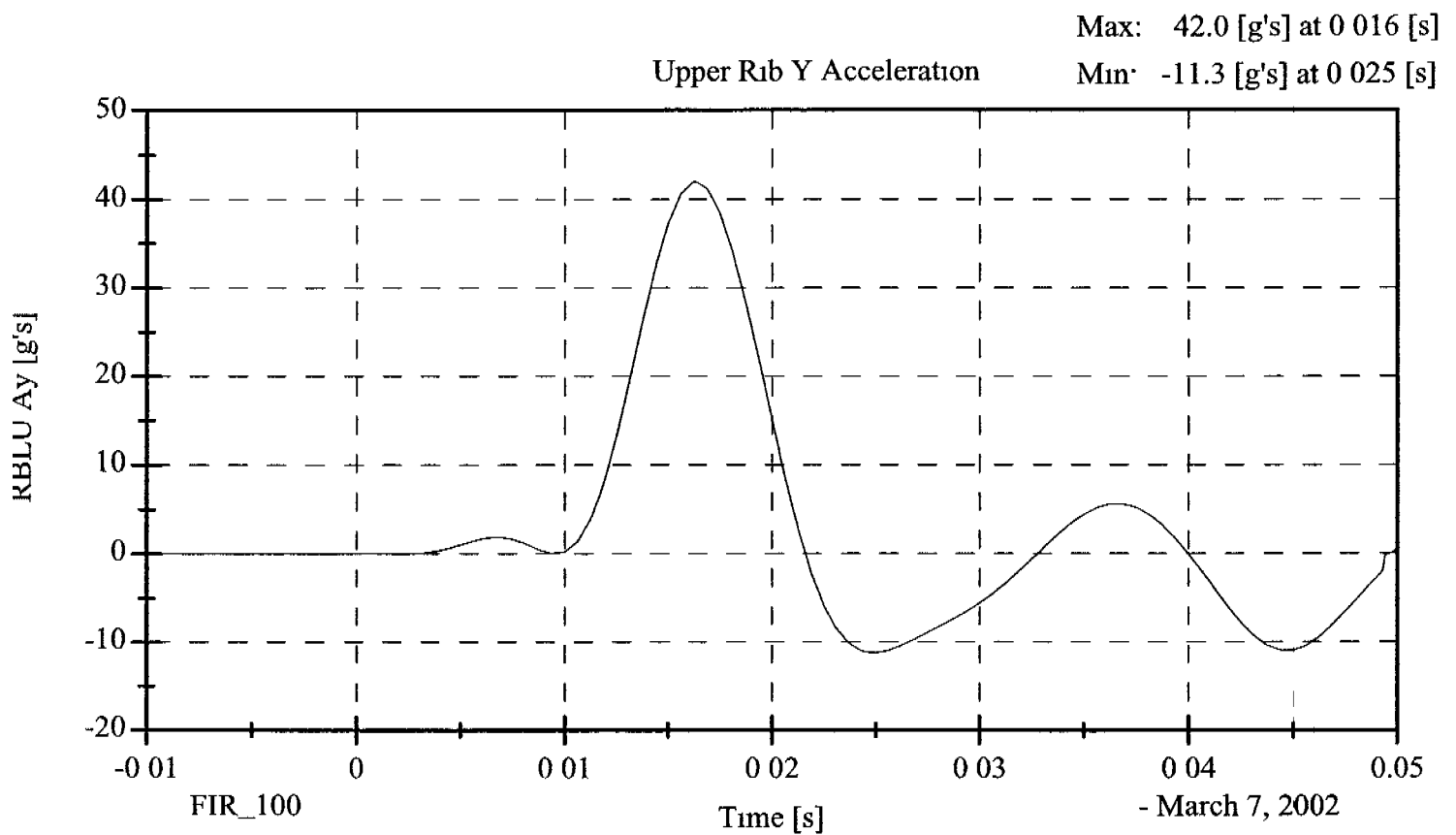
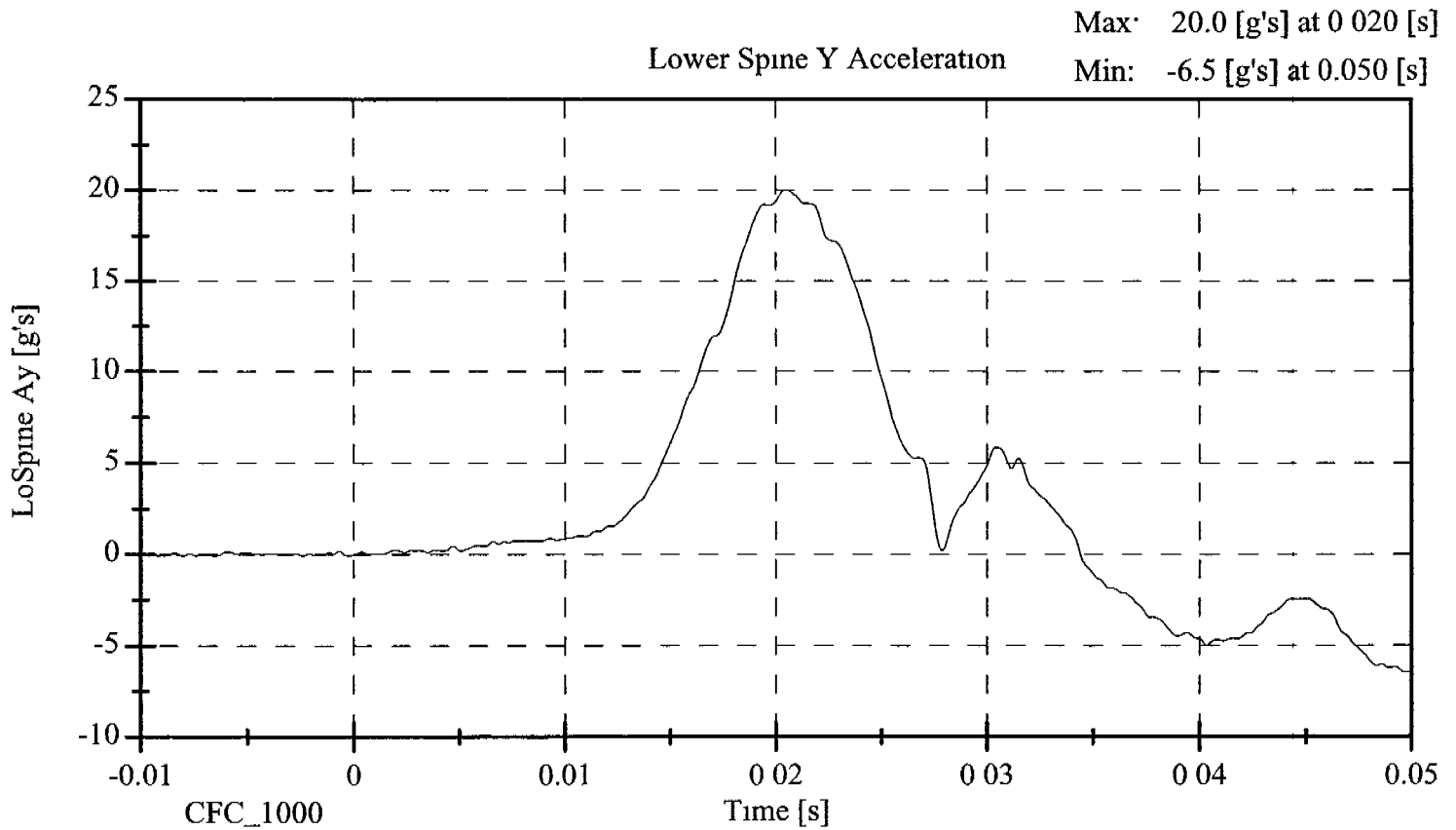
Lower Rib Y Acceleration

Max: 49.2 [g's] at 0.016 [s]

Min: -24.1 [g's] at 0.027 [s]



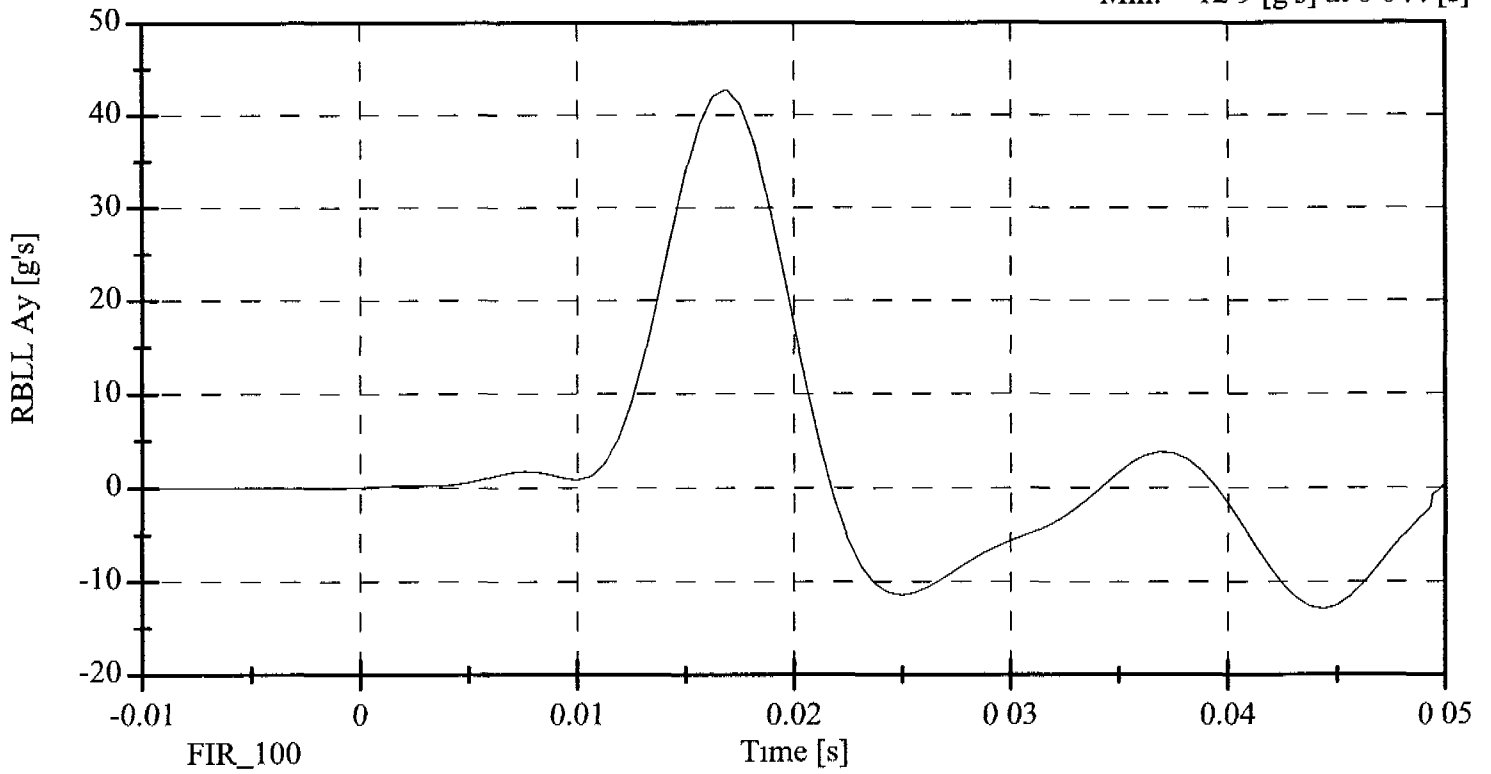
- March 7, 2002



Lower Rib Y Acceleration

Max: 42.8 [g's] at 0.017 [s]

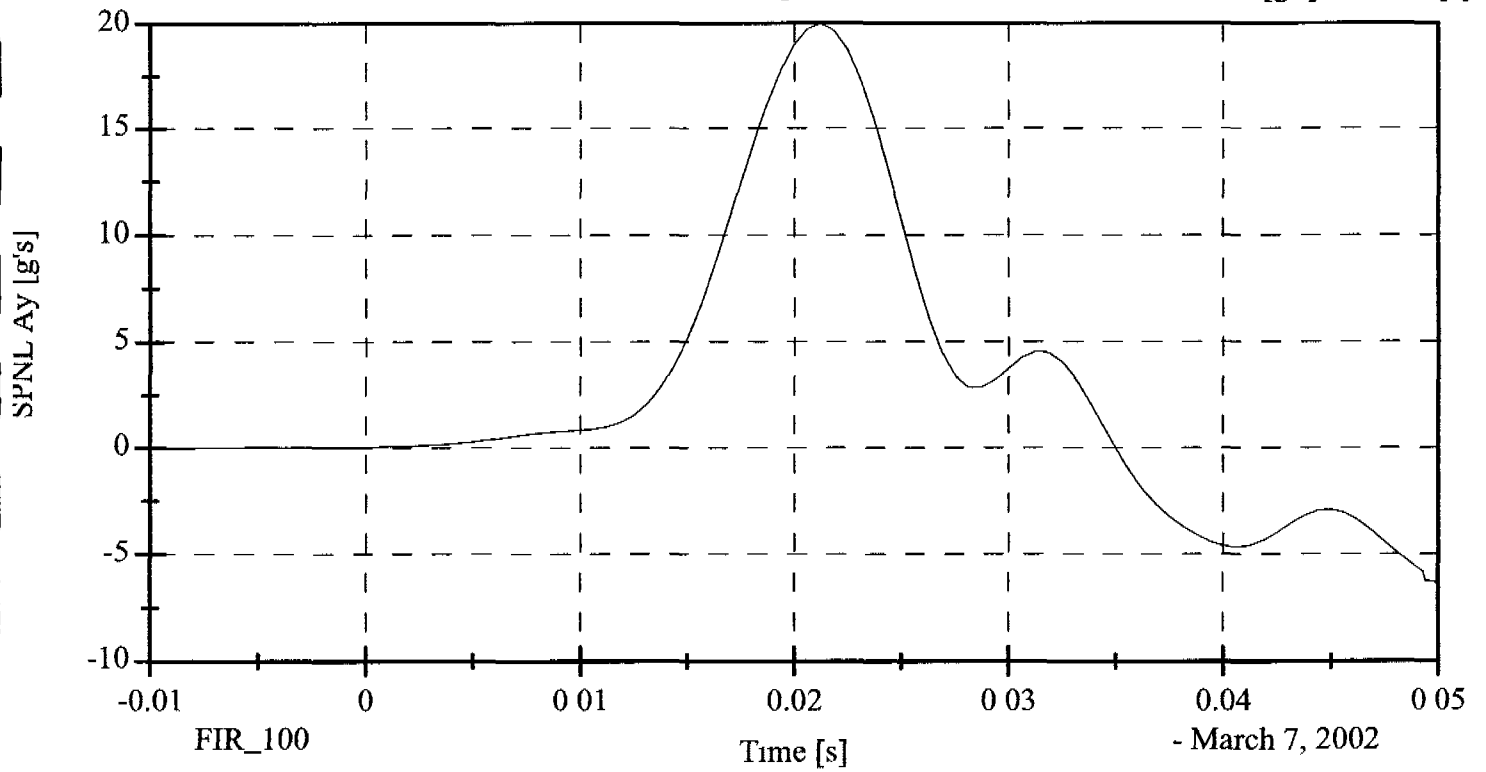
Min: -12.9 [g's] at 0.044 [s]



Lower Spine Y Acceleration

Max: 20.0 [g's] at 0.021 [s]

Min: -6.3 [g's] at 0.050 [s]



- March 7, 2002

**LATERAL PELVIS IMPACT TEST
PRE-TEST**

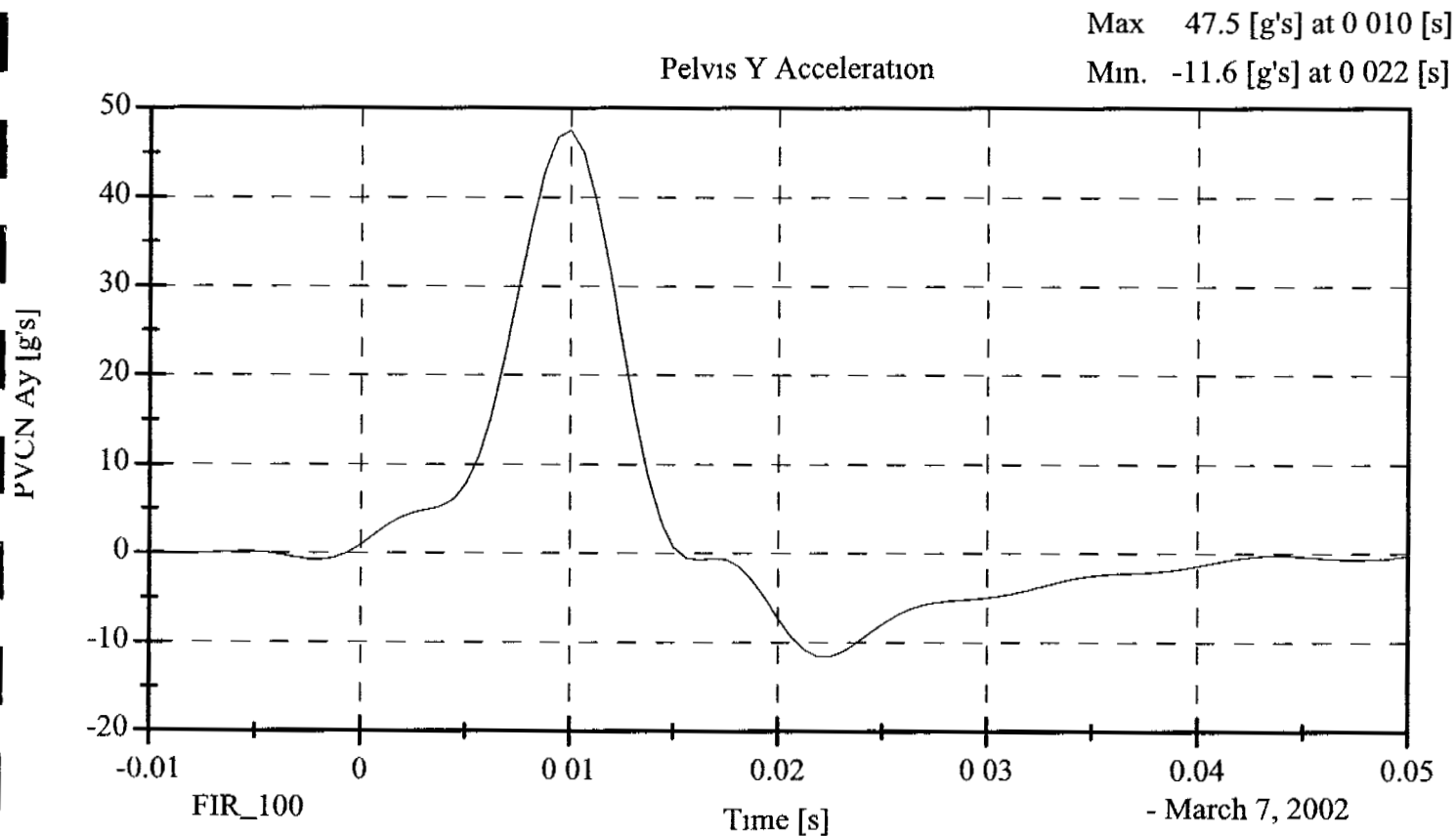
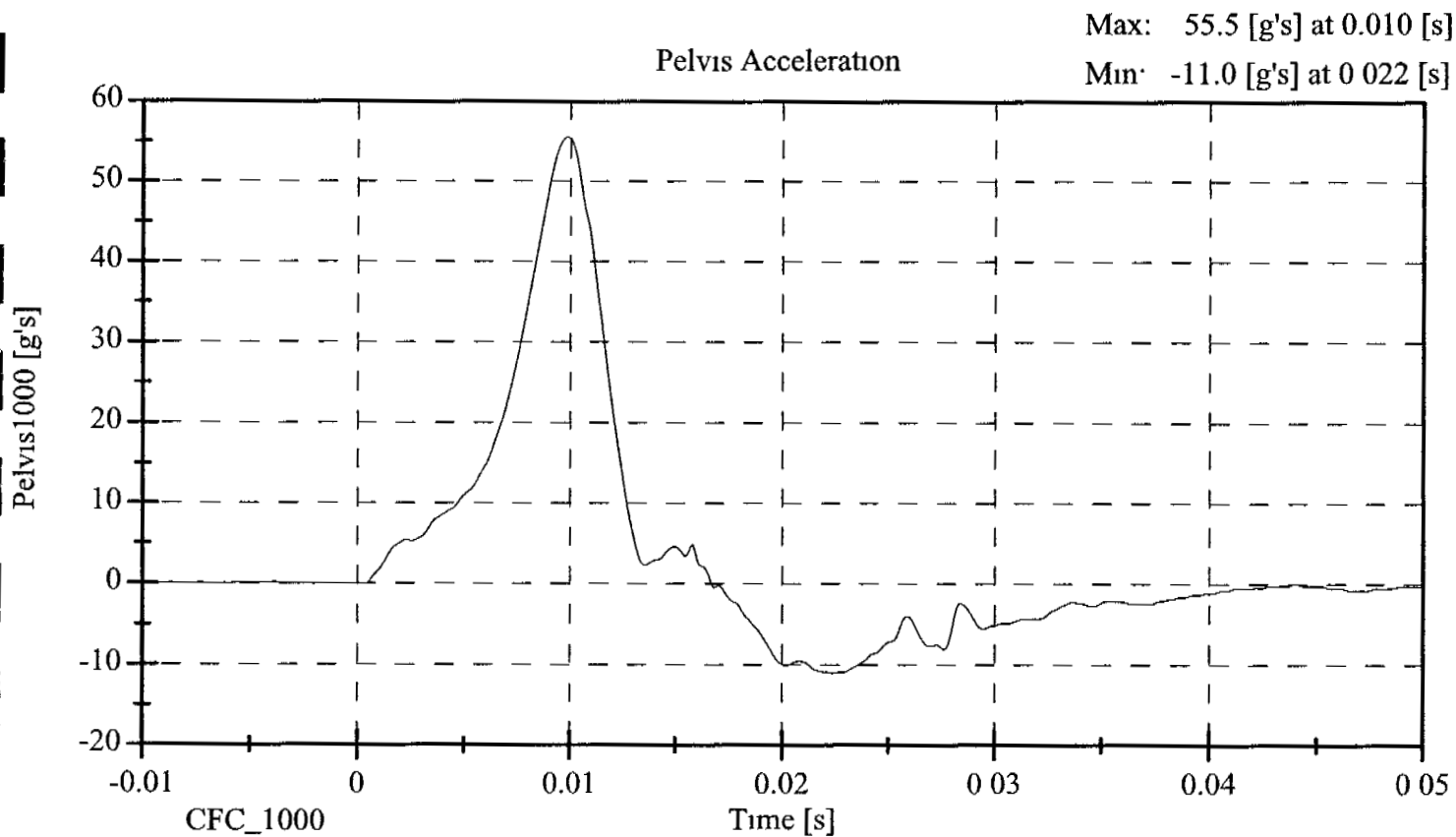
CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No	<u>015</u>	Sequential Test Number	<u>3</u>
Date	<u>March 8, 2002</u>	Laboratory Technician	<u>B Swiecicki</u>

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	31.0
PROBE SPEED (m/s)	4.27 - 4.33	4.31
PELVIS ACCELERATION (g's)	40 - 60	47.5

REMARKS: None

SID 015 Pelvis Impact Test at 4.31 m/s



HEAD DROP TEST
PRE-TEST
(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No 015 Sequential Test Number 3
Date February 27, 2002 Laboratory Technician B Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	20.0
RELATIVE HUMIDITY (%)	10 - 70	32
PEAK RESULTANT ACCELERATION (Gs)	210 - 260	211.79
PEAK LATERAL ACCELERATION (Gs)	Not to Exceed 10	6.62
UNIMODAL CRITERIA ABOVE 100 Gs (ms)	0.9 - 1.5	1.40

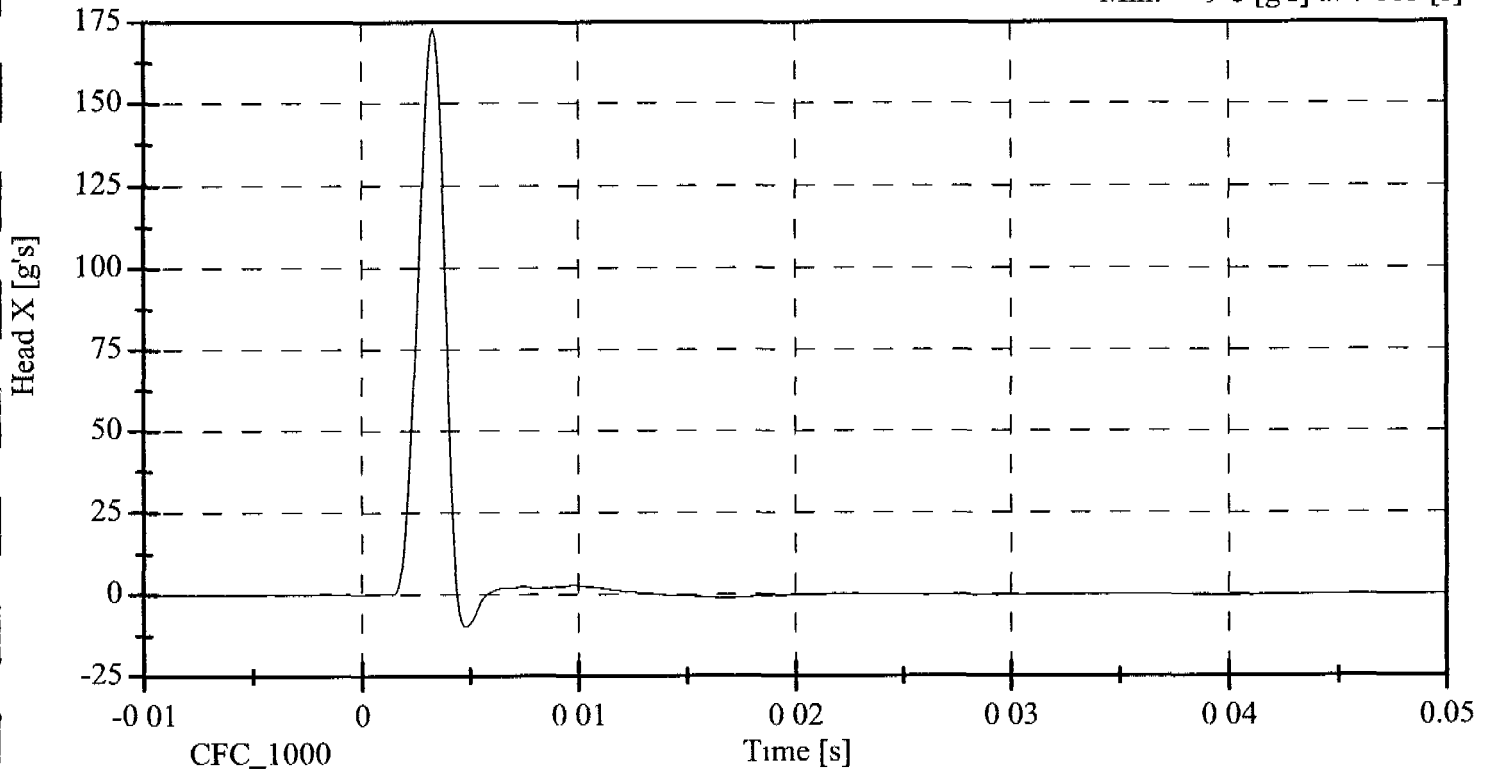
REMARKS: None

015 Head Drop

Headform X Acceleration

Max: 173.0 [g's] at 0.003 [s]

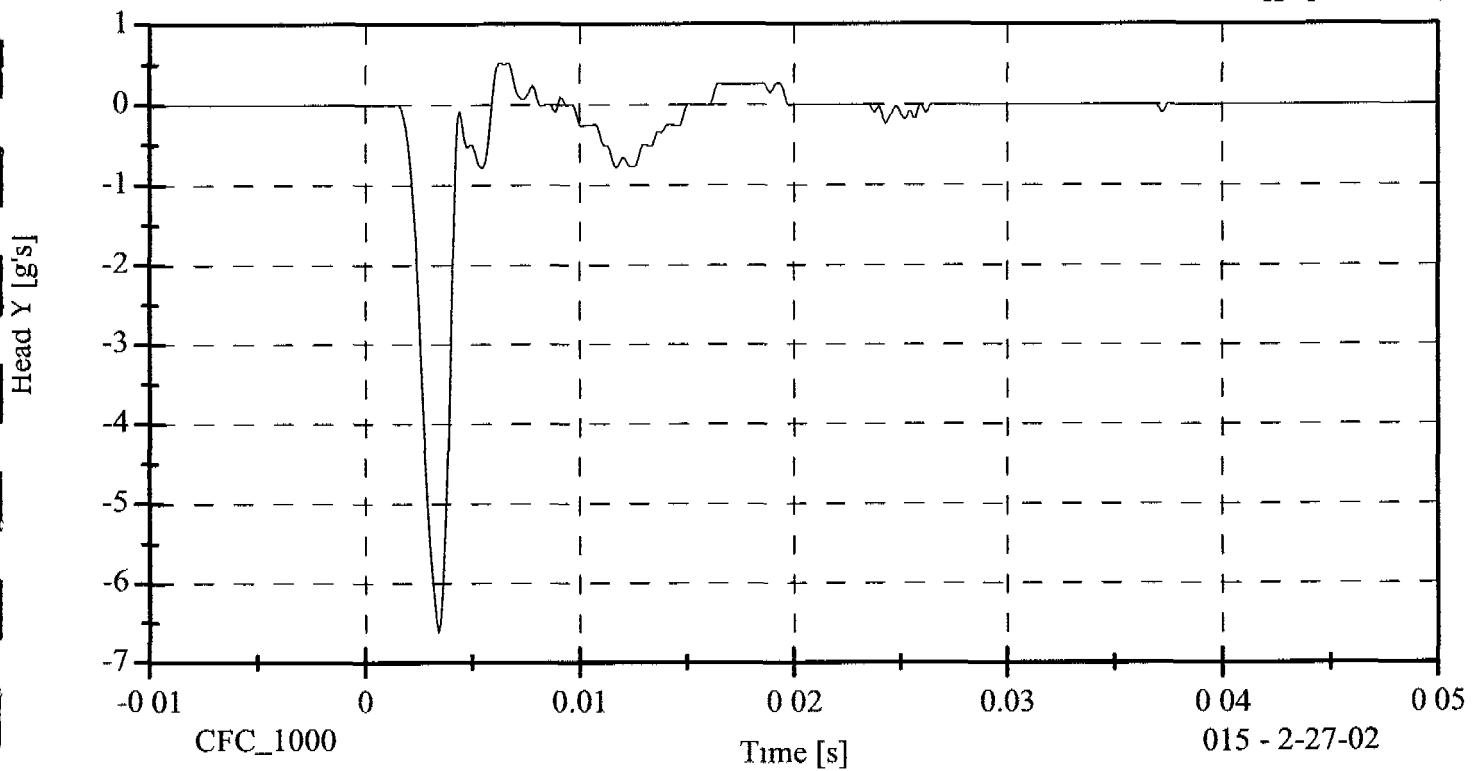
Min: -9.8 [g's] at 0.005 [s]

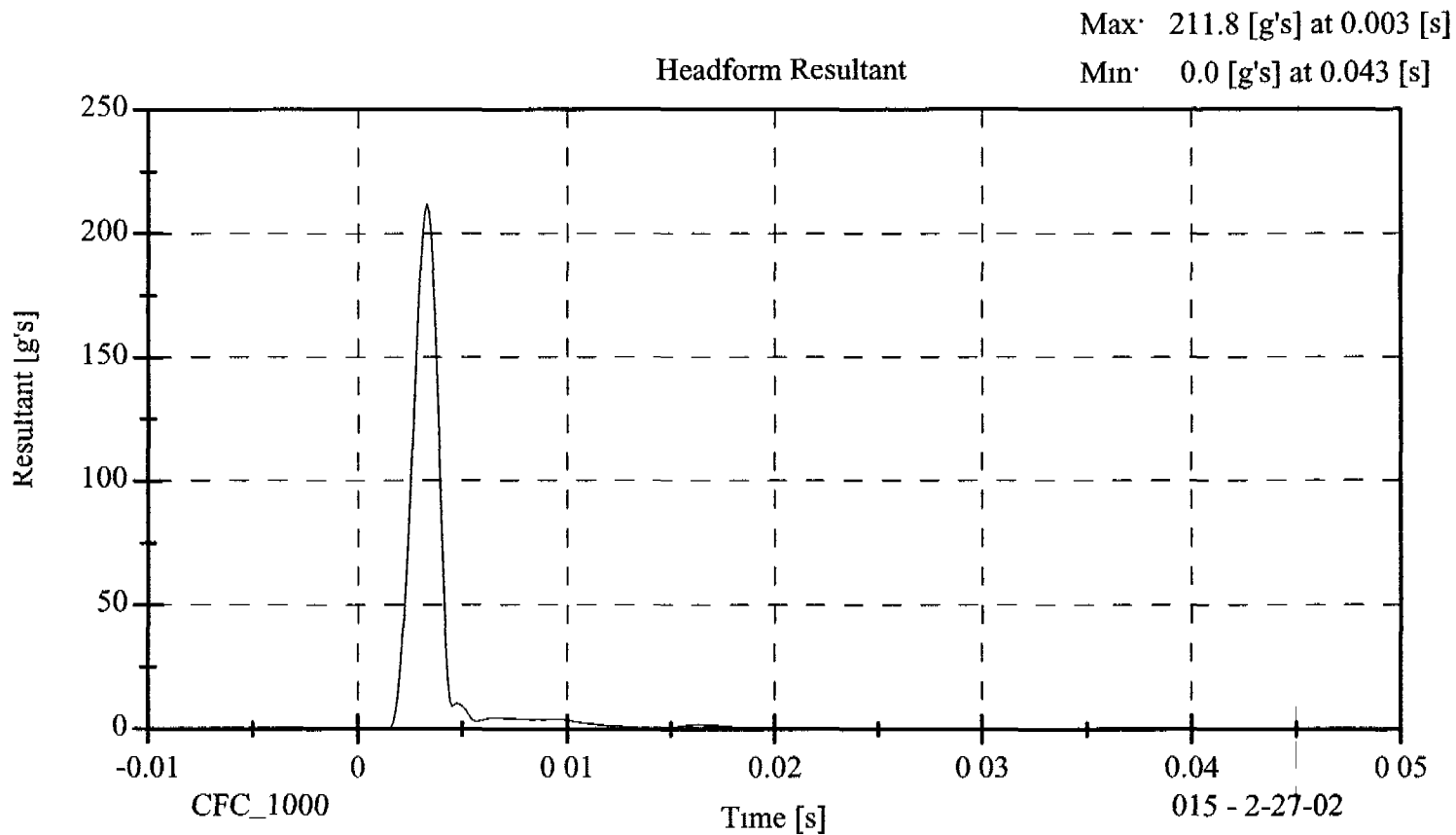
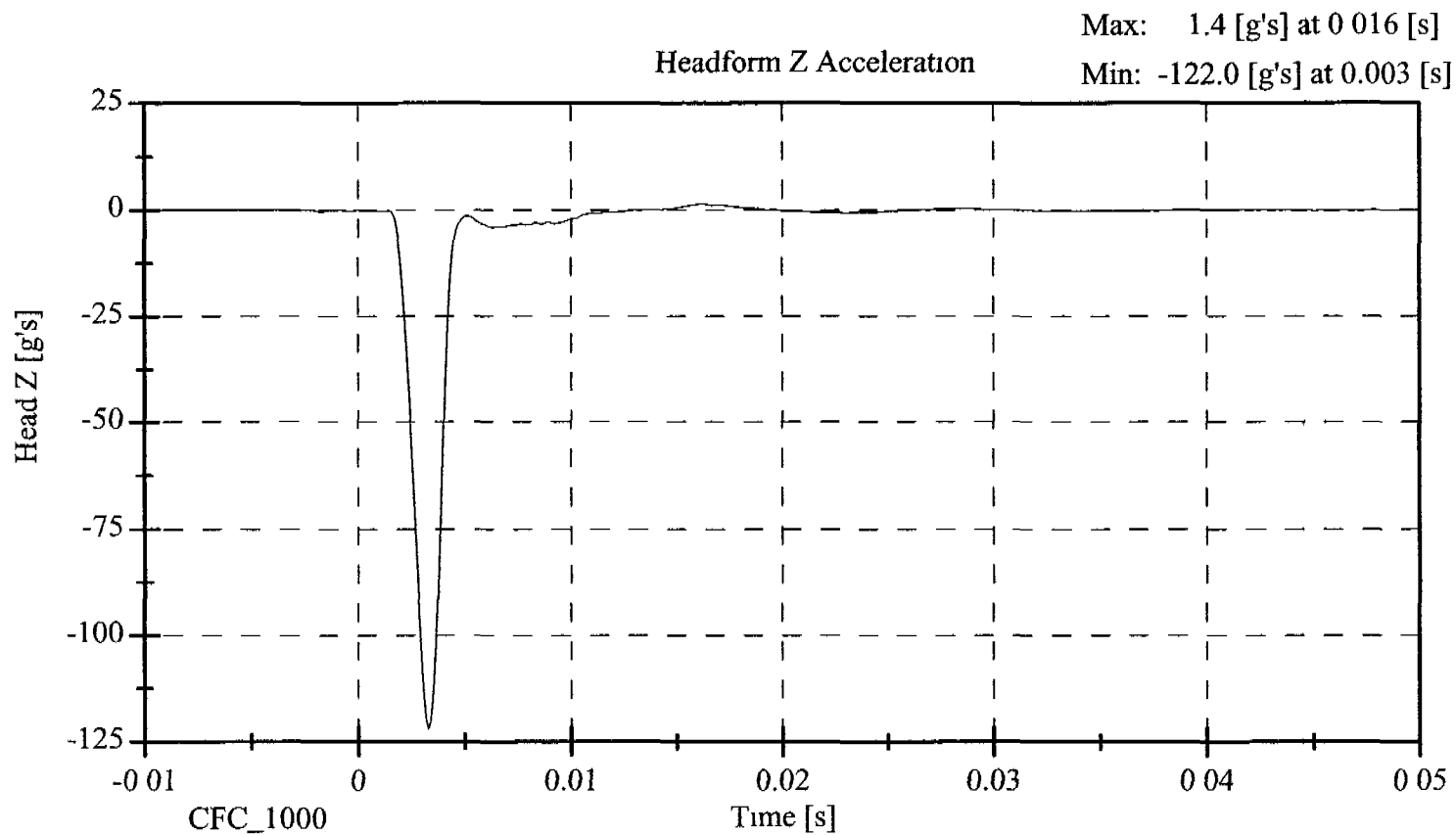


Headform Y Acceleration

Max: 0.5 [g's] at 0.006 [s]

Min: -6.6 [g's] at 0.003 [s]





015 - 2-27-02

ABDOMINAL COMPRESSION TEST**PRE-TEST**

(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No 015 Sequential Test Number 3
Date March 7, 2002 Laboratory Technician B Swiecicki

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	21.7
RELATIVE HUMIDITY (%)	10 - 70	31.0
FORCE @ 13 mm (N)	104 - 162	116.8
FORCE @ 19 mm (N)	163 - 221	181.9
FORCE @ 25 mm (N)	222 - 280	258.0
FORCE @ 33 mm (N)	325 - 391	355.9

REMARKS: None

Dummy S/N 015

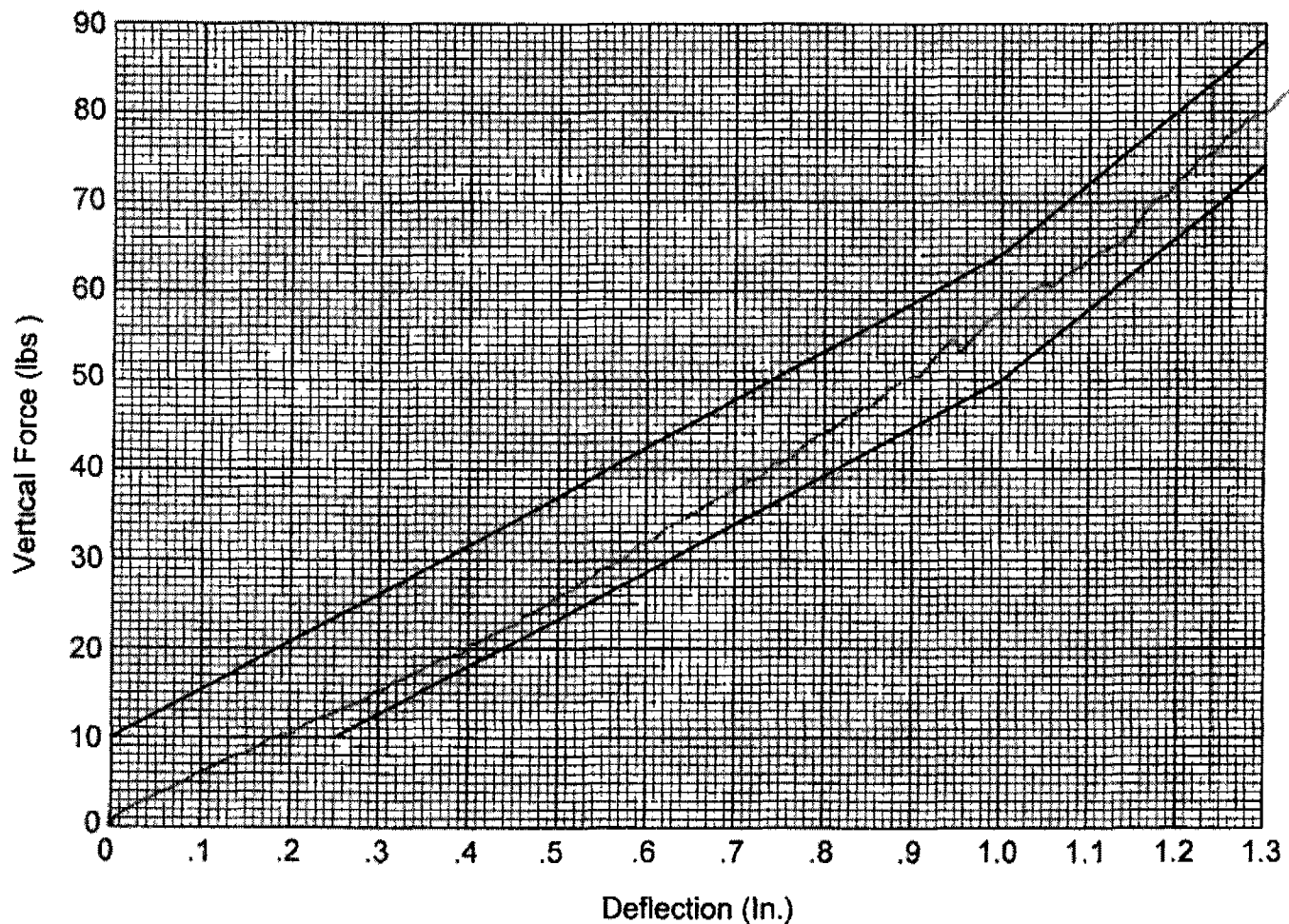
W/A _____

Date 3-7-02

Performed By [Signature]

Temp. 71°

Humidity 31%



Hybrid II
Abdomen Static Press

LUMBAR FLEXION TEST
PRE-TEST
(Test not required for SID certification)

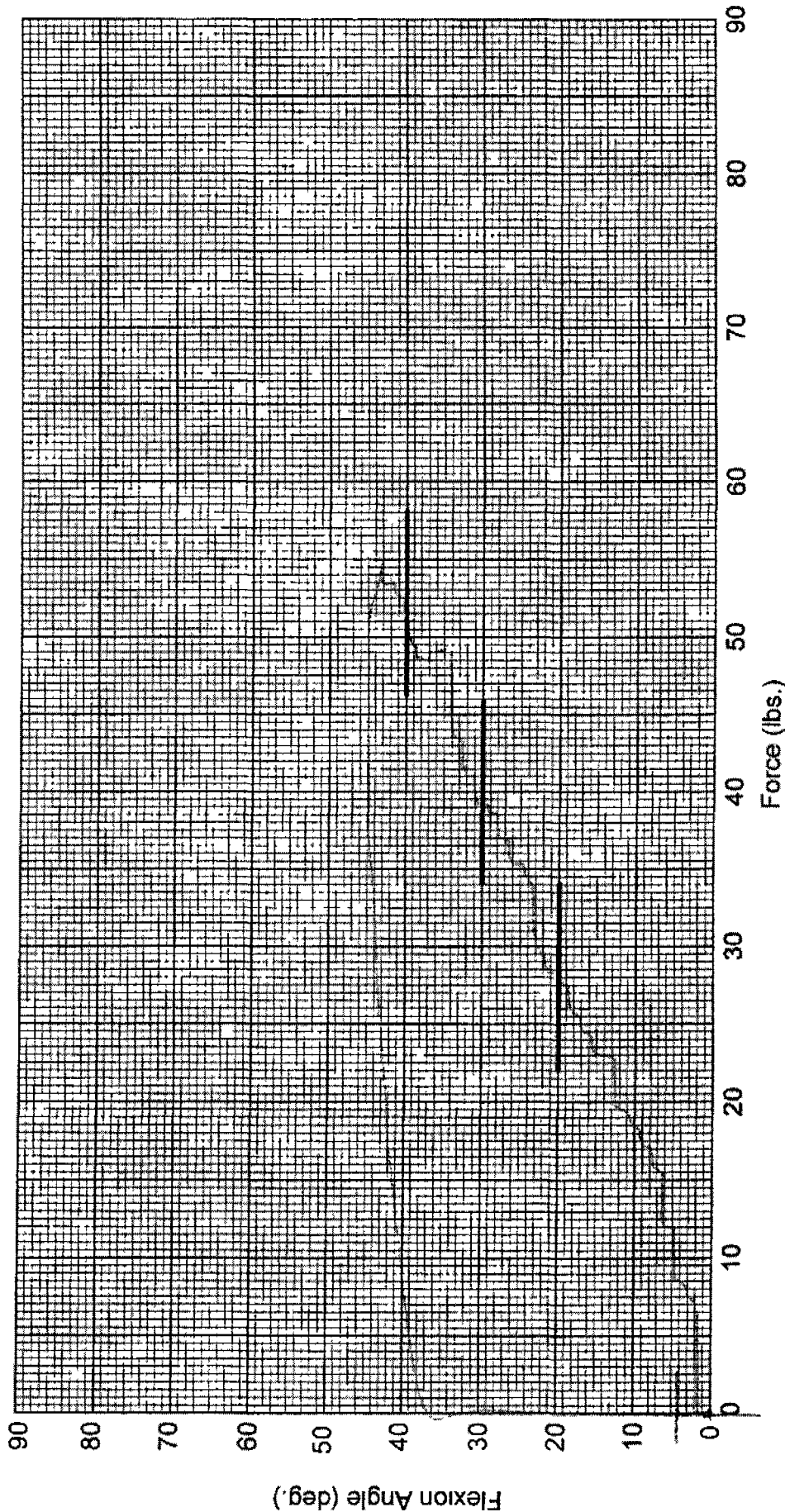
CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No	<u>015</u>	Sequential Test Number	<u>3</u>
Date	<u>March 8, 2002</u>	Laboratory Technician	<u>B Swiecicki</u>

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	20.0
RELATIVE HUMIDITY (%)	10 - 70	31.0
FORCE @ 0° (N)	0 - 26.7	0.0
FORCE @ 20° (N)	97.8 - 151.2	123.4
FORCE @ 30° (N)	151.2 - 204.6	174.6
FORCE @ 40° (N)	204.6 - 258	224.6
RETURN ANGLE	12° max	4°

REMARKS: None

Dummy S/N 015
 WIA _____
 Date 3-8-02
 Performed By JBD
 Temp 69°
 Humidity 51%



Hybrid II Lumbar Spine Flexion Test

PRE-TEST DUMMY INSPECTION LIST
CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No 015 Sequential Test Number. 3
 Date March 8, 2002 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 NO.: 015

CONFIGURED FOR LEFT SIDE IMPACT

**CALIBRATION TEST RESULTS SUMMARY
POST TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No	<u>015</u>	Sequential Test Number	<u>4</u>
Date	<u>March 19, 2002</u>	Laboratory Technician	<u>B Swiecicki</u>

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
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 Serial No	<u>015</u>	Sequential Test Number	<u>4</u>
Date	<u>March 19, 2002</u>	Laboratory Technician	<u>B Swiecicki</u>

TEST PARAMETER	SPECIFICATION	TEST RESULTS
SH- Seated Height (mm)	889 - 909	902
RH- Rib Height (mm)	502 - 520	513
HP- Hip Pivot Height (mm)	99 ref	99
RD- Rib from Back Line (mm)	229 - 241	236
KH- Knee Pivot from Back Line (mm)	511 - 526	518
KV- Knee Pivot to Floor (mm)	490 - 505	493
HW- Hip Width (mm)	356 - 391	378

REMARKS: None

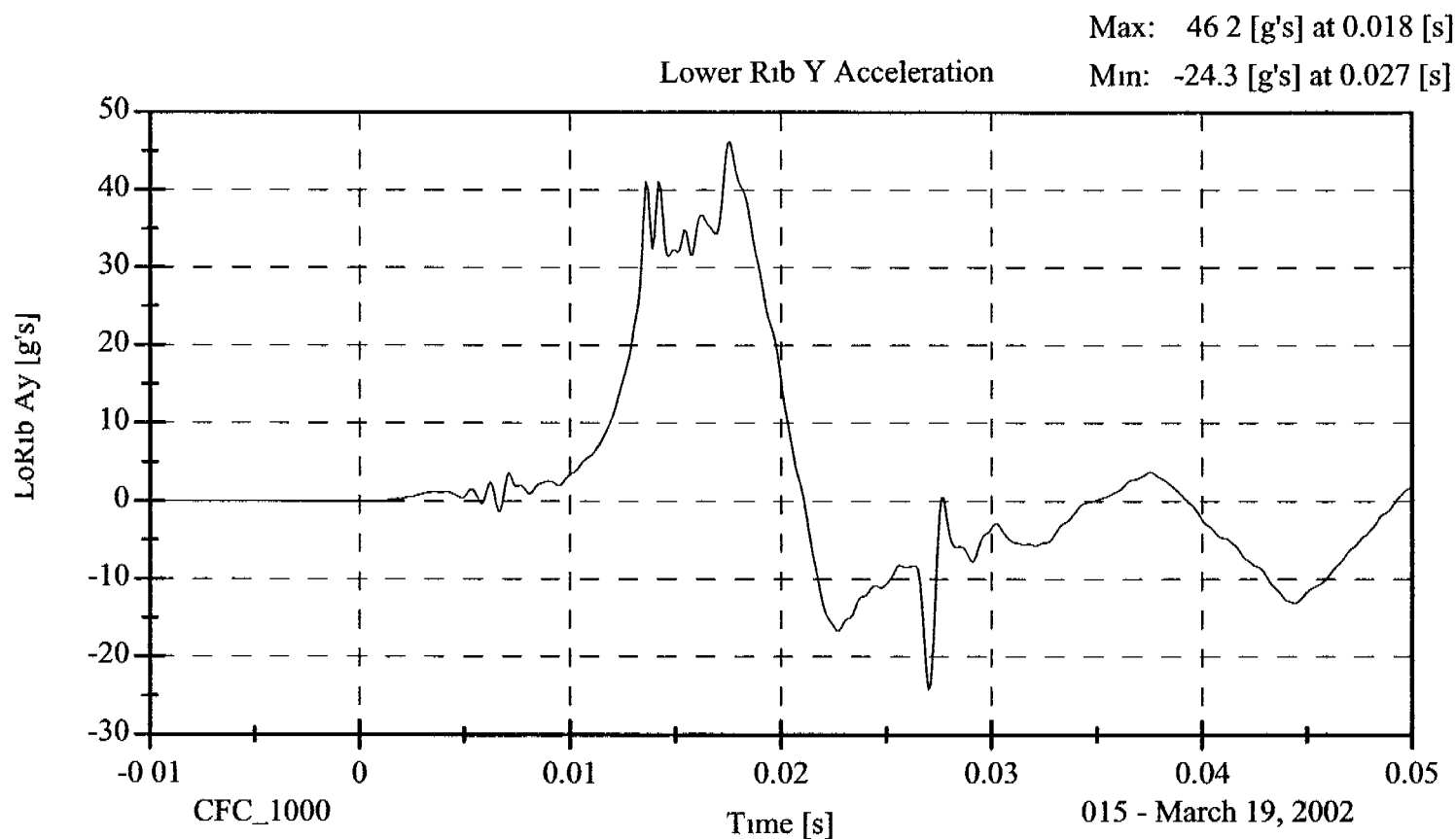
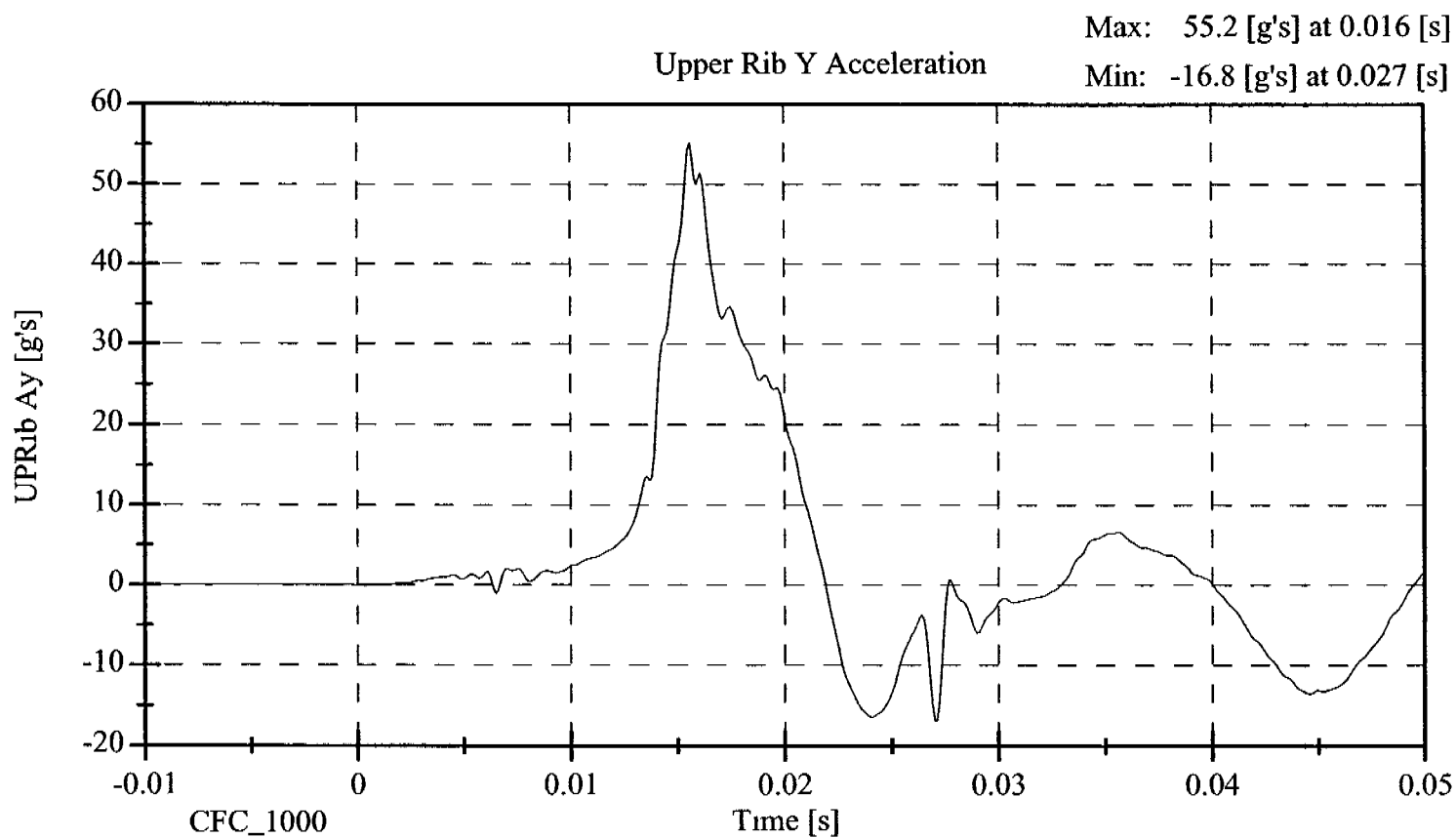
**LATERAL THORAX IMPACT TEST
POST TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No	<u>015</u>	Sequential Test Number	<u>4</u>
Date	<u>March 19, 2002</u>	Laboratory Technician	<u>B Swiecicki</u>

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18 9 - 25 5	21 1
RELATIVE HUMIDITY (%)	10 - 70	34
PROBE SPEED (m/s)	4 27 - 4 33	4 32
UPPER RIB (g's)	37 - 46	42 2
LOWER RIB (g's)	37 - 46	41 1
LOWER SPINE (g's)	15 - 22	19 2

REMARKS: None



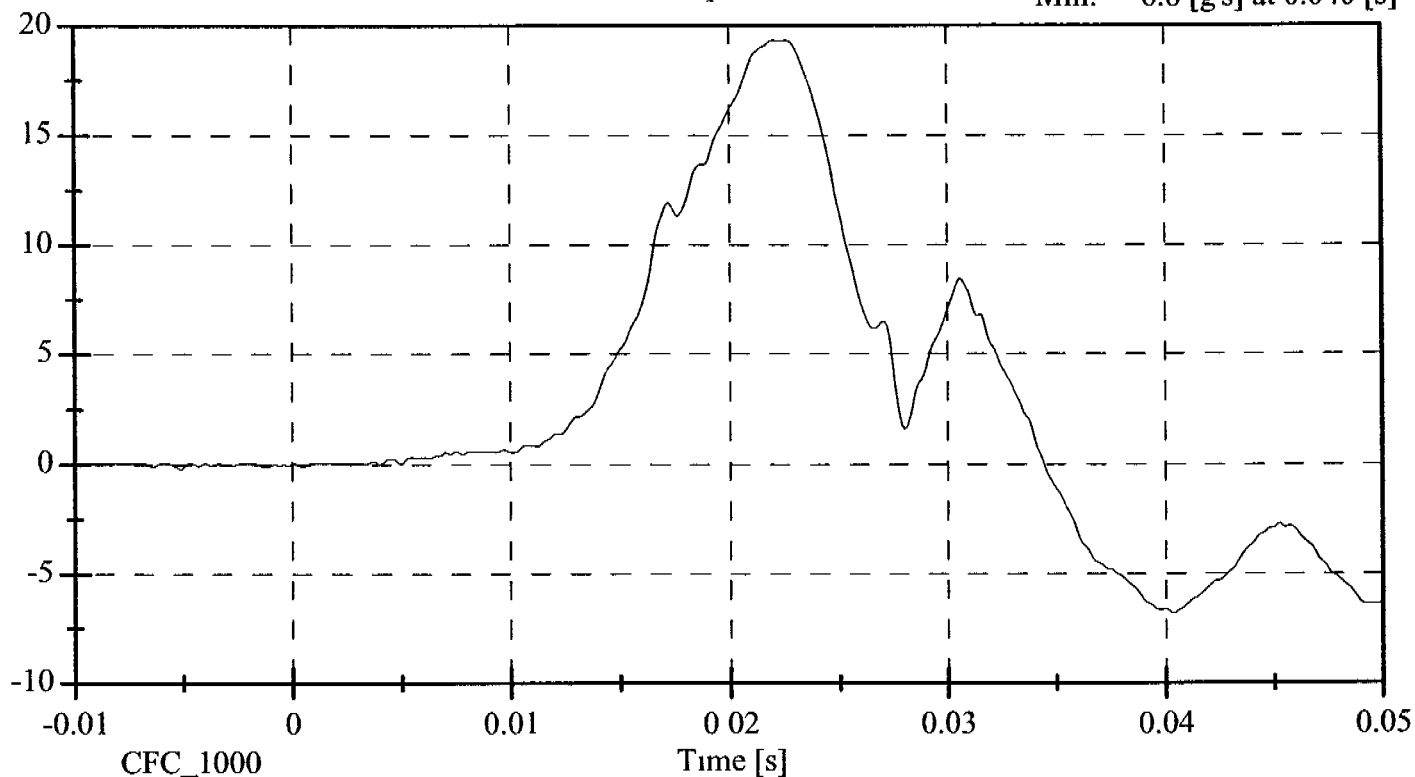
015 - March 19, 2002

LoSpine Ay [g's]

Lower Spine Y Acceleration

Max: 19.3 [g's] at 0.022 [s]

Min: -6.8 [g's] at 0.040 [s]

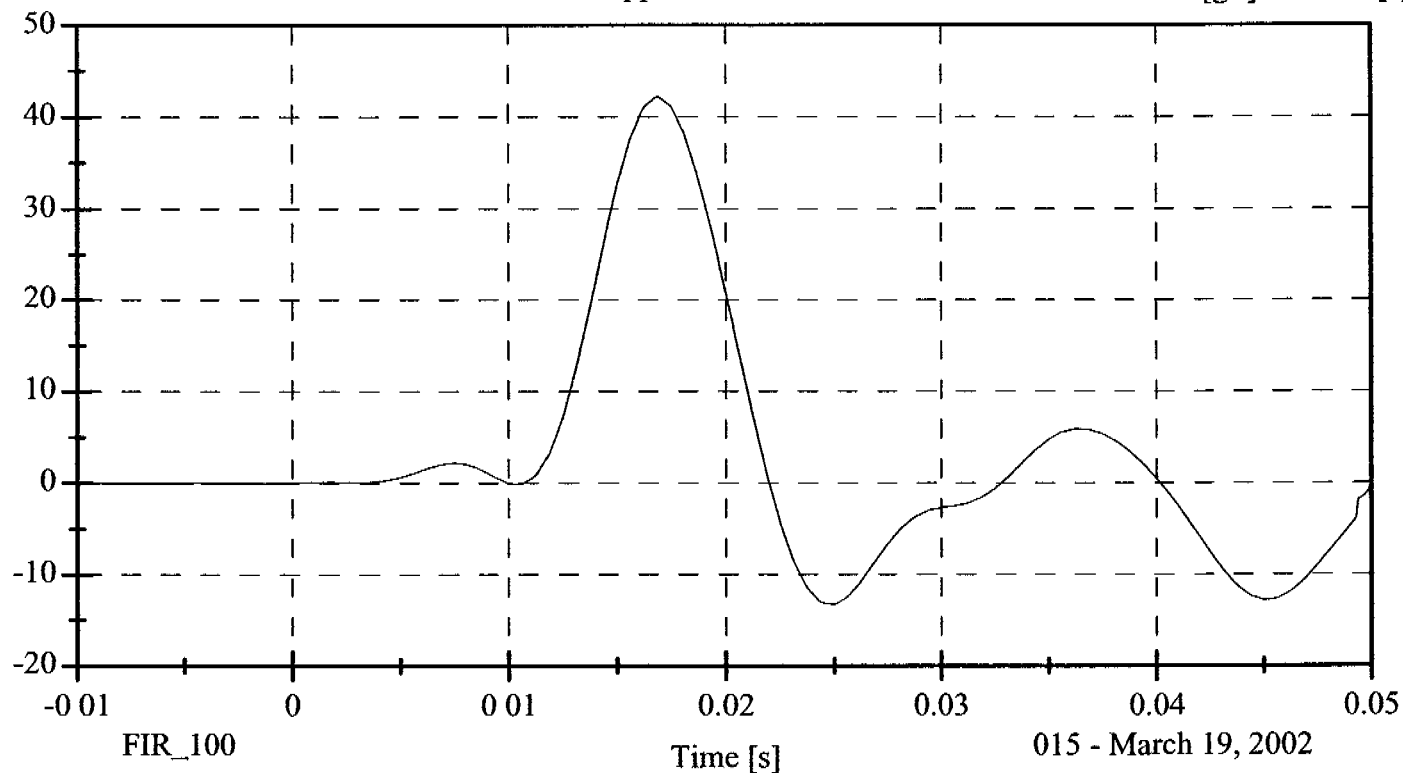


RBLU Ay [g's]

Upper Rib Y Acceleration

Max: 42.2 [g's] at 0.017 [s]

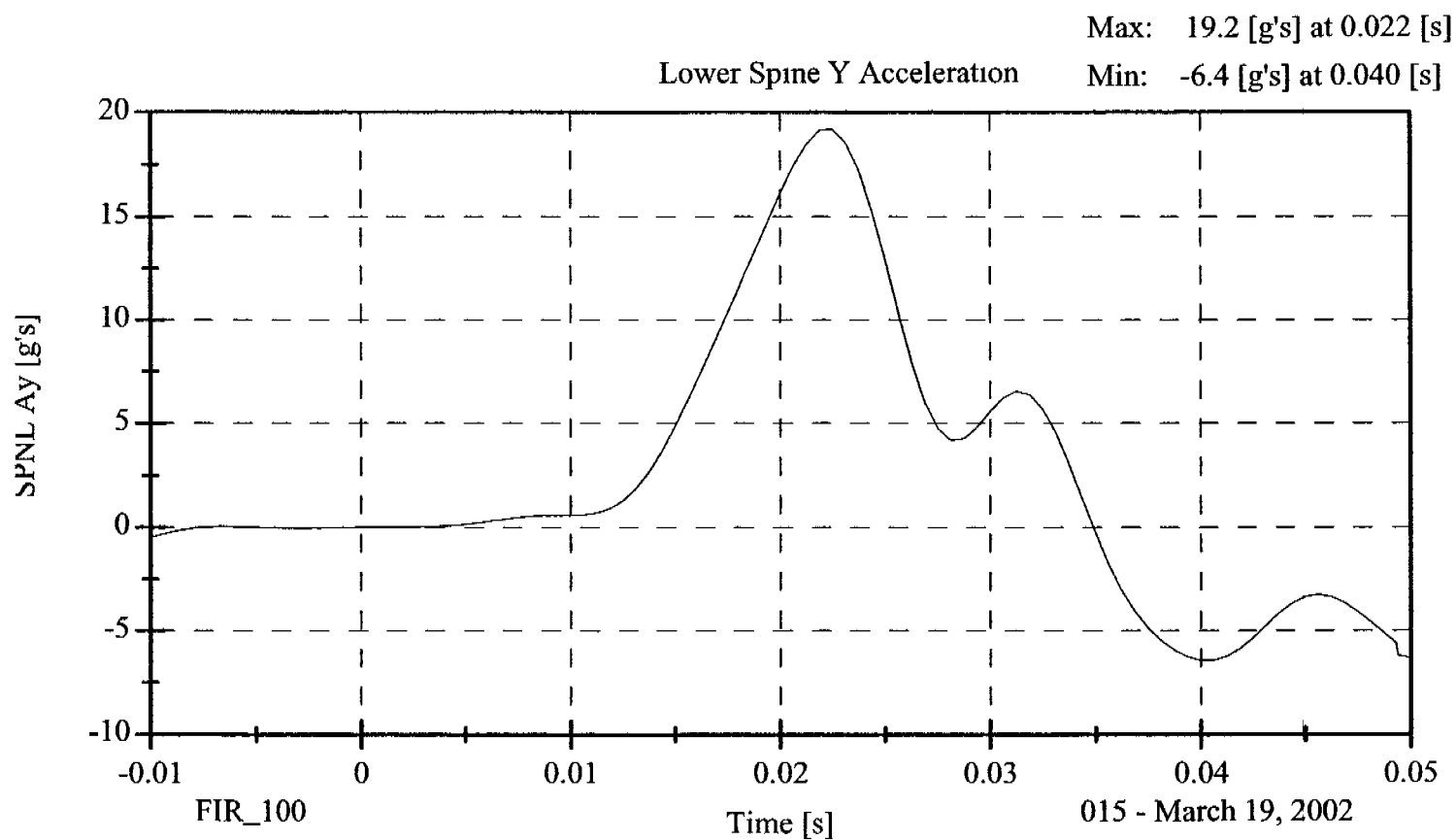
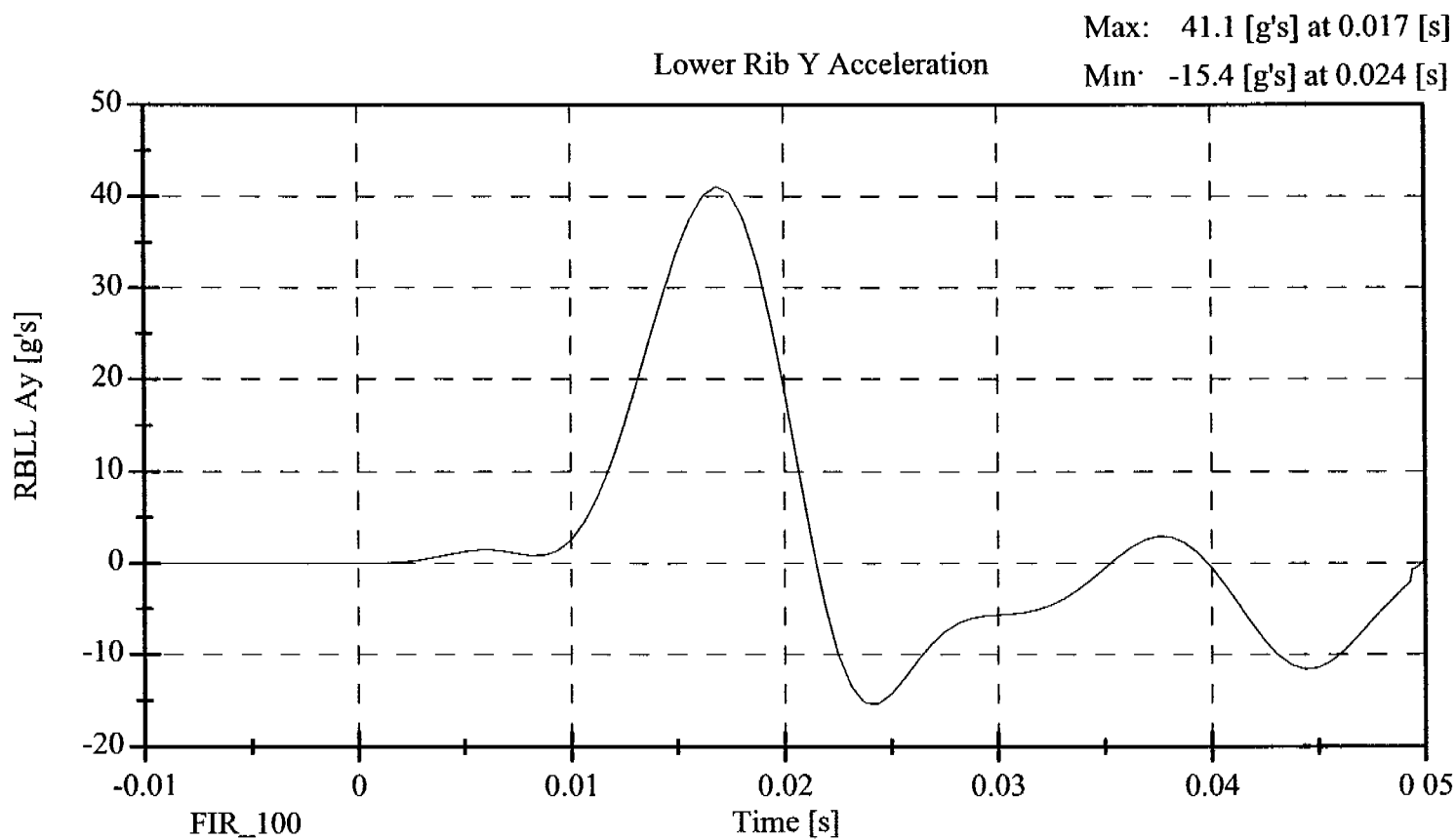
Min: -13.3 [g's] at 0.025 [s]



FIR_100

Time [s]

015 - March 19, 2002



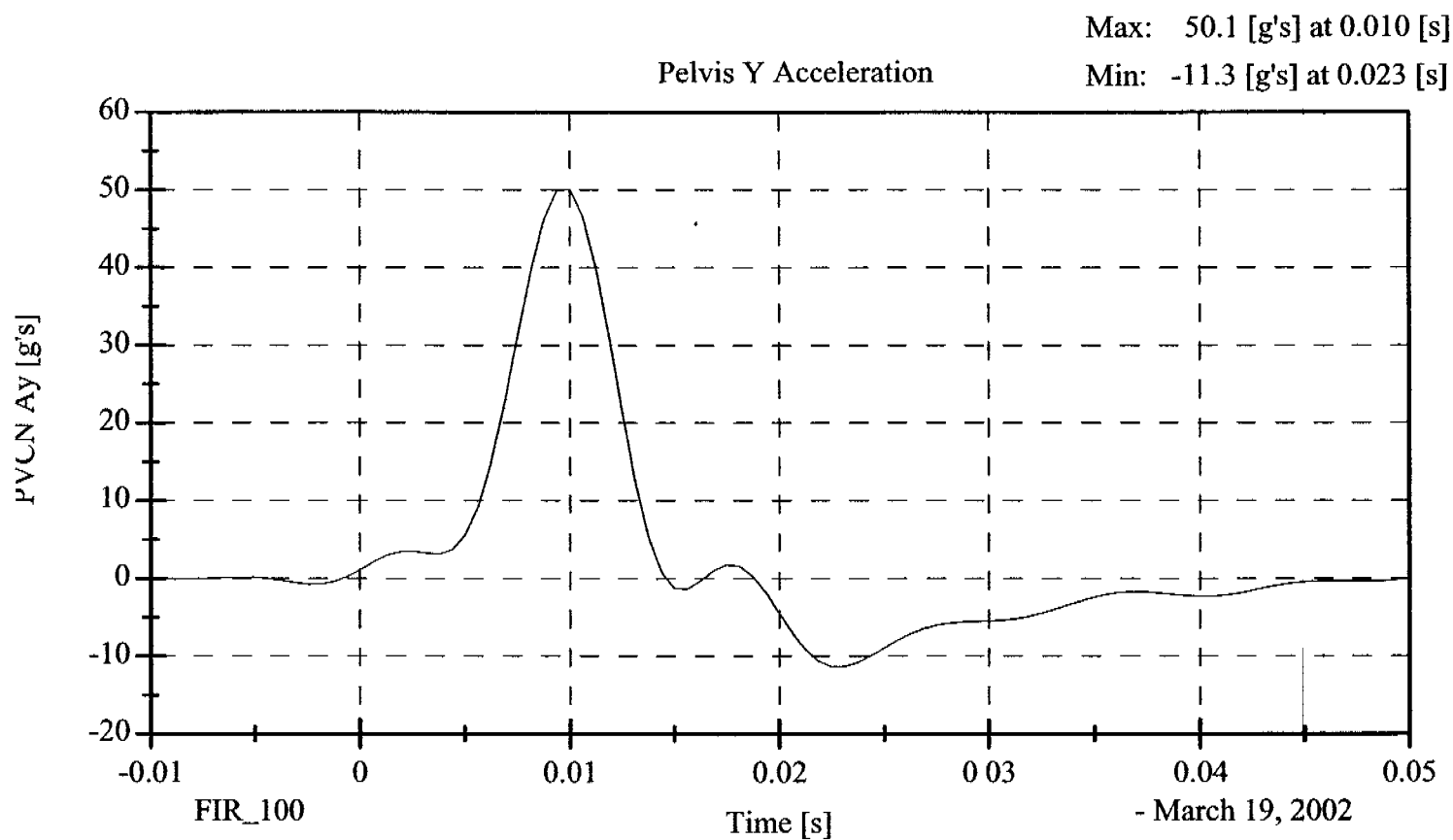
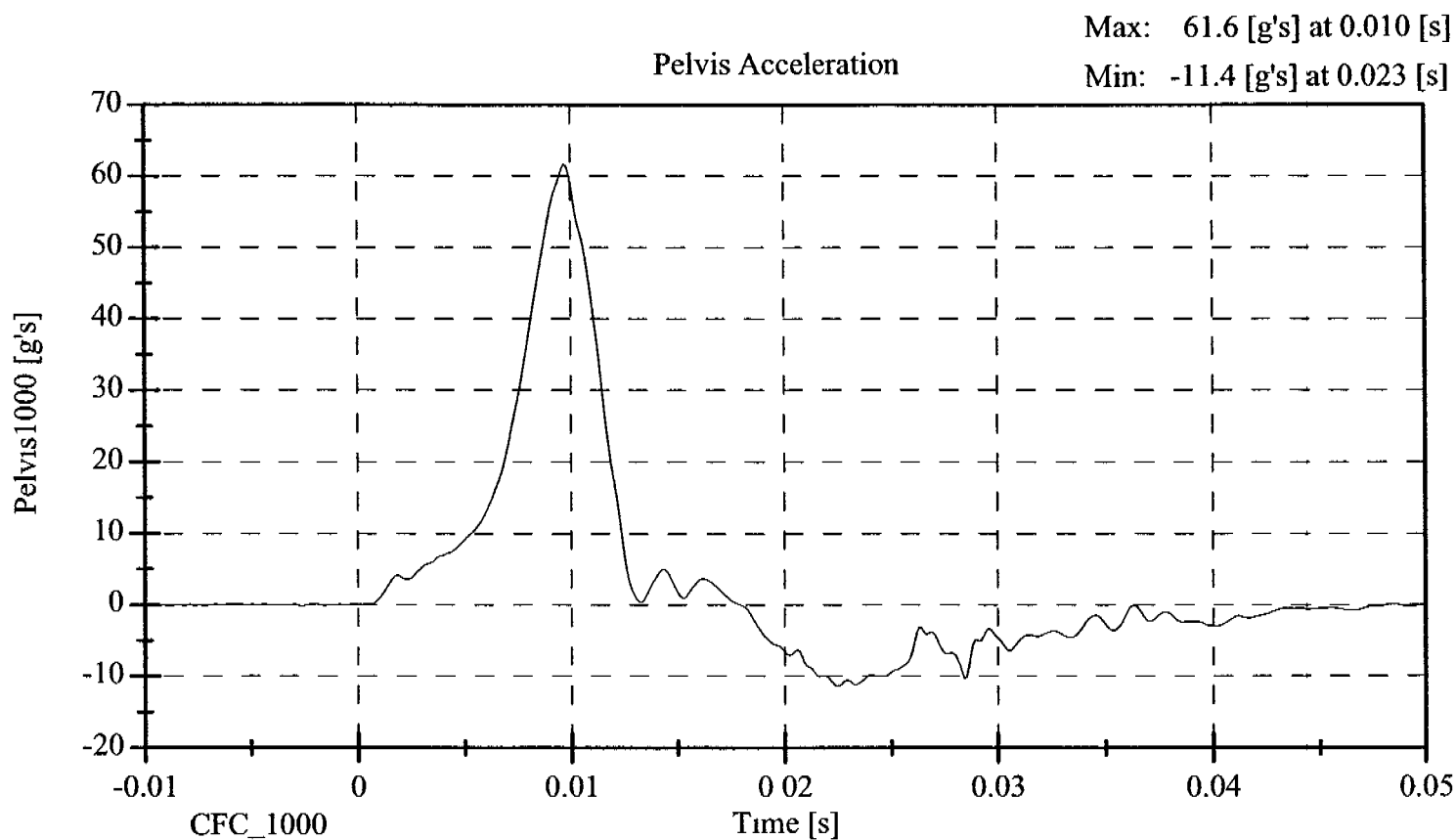
**LATERAL PELVIS IMPACT TEST
POST TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No	<u>015</u>	Sequential Test Number	<u>4</u>
Date	<u>March 19, 2002</u>	Laboratory Technician	<u>B Swiecicki</u>

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18 9 - 25 5	21 1
RELATIVE HUMIDITY (%)	10 - 70	34 0
PROBE SPEED (m/s)	4 27 - 4 33	4 30
PELVIS ACCELERATION (g's)	40 - 60	50 1

REMARKS: None



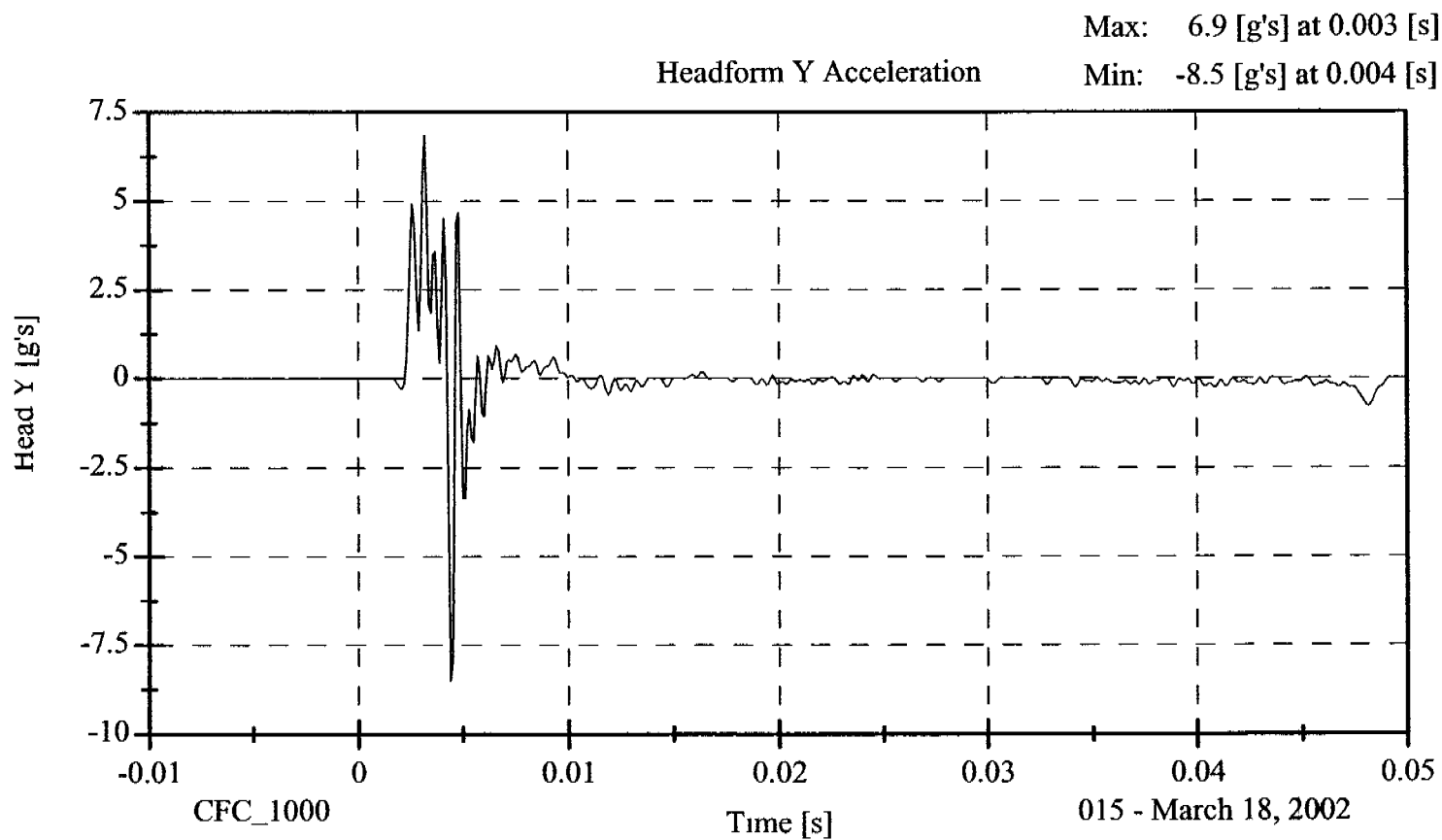
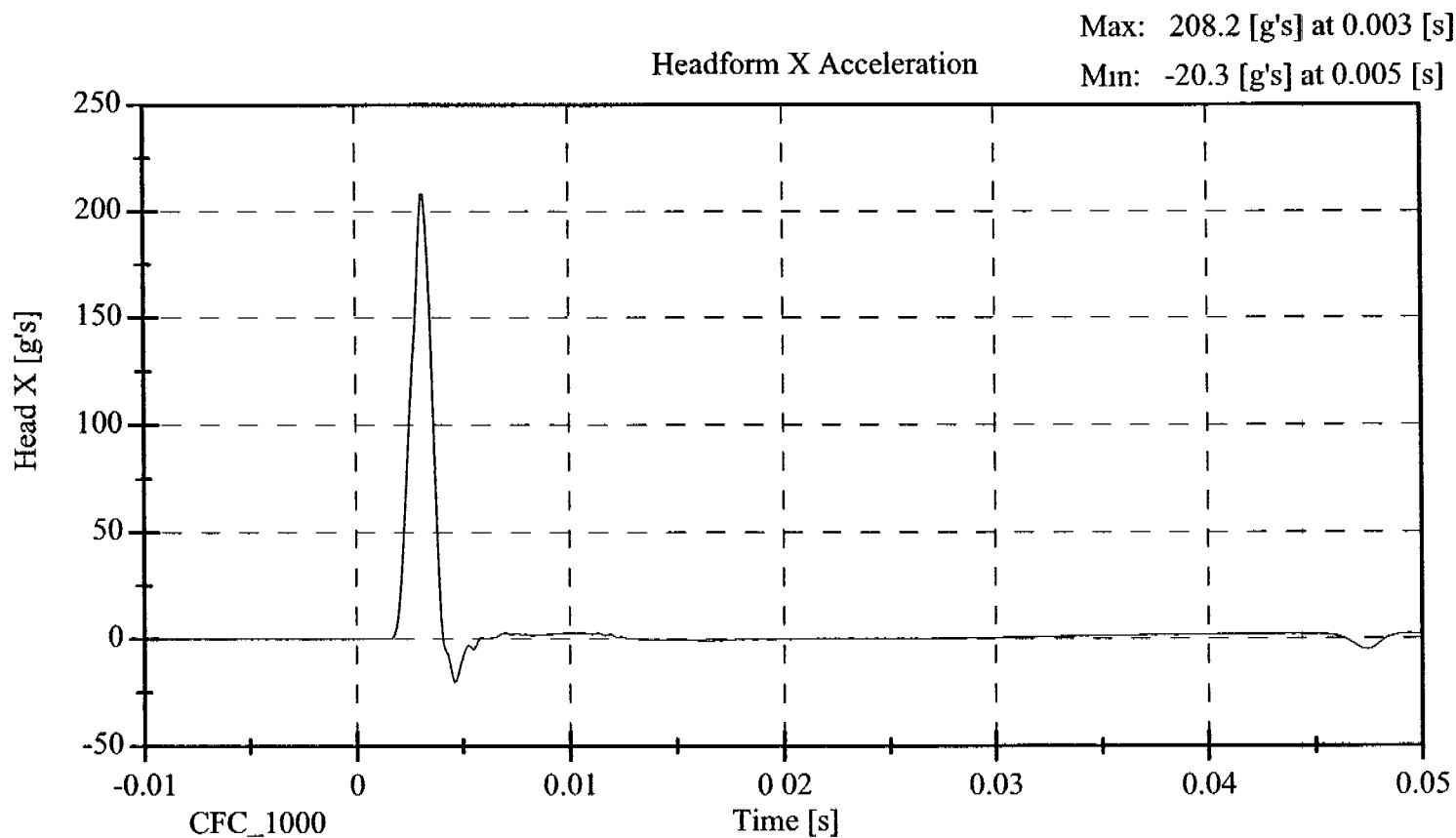
**HEAD DROP TEST
POST-TEST**
(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No	<u>015</u>	Sequential Test Number	<u>4</u>
Date	<u>March 19, 2002</u>	Laboratory Technician	<u>B Swiecicki</u>

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18.9 - 25.5	20.6
RELATIVE HUMIDITY (%)	10 - 70	28.0
PEAK RESULTANT ACCELERATION (Gs)	210 - 260	241.89
PEAK LATERAL ACCELERATION (Gs)	Not to Exceed 10	8.51
UNIMODAL CRITERIA ABOVE 100 Gs (ms)	0.9 - 1.5	1.28

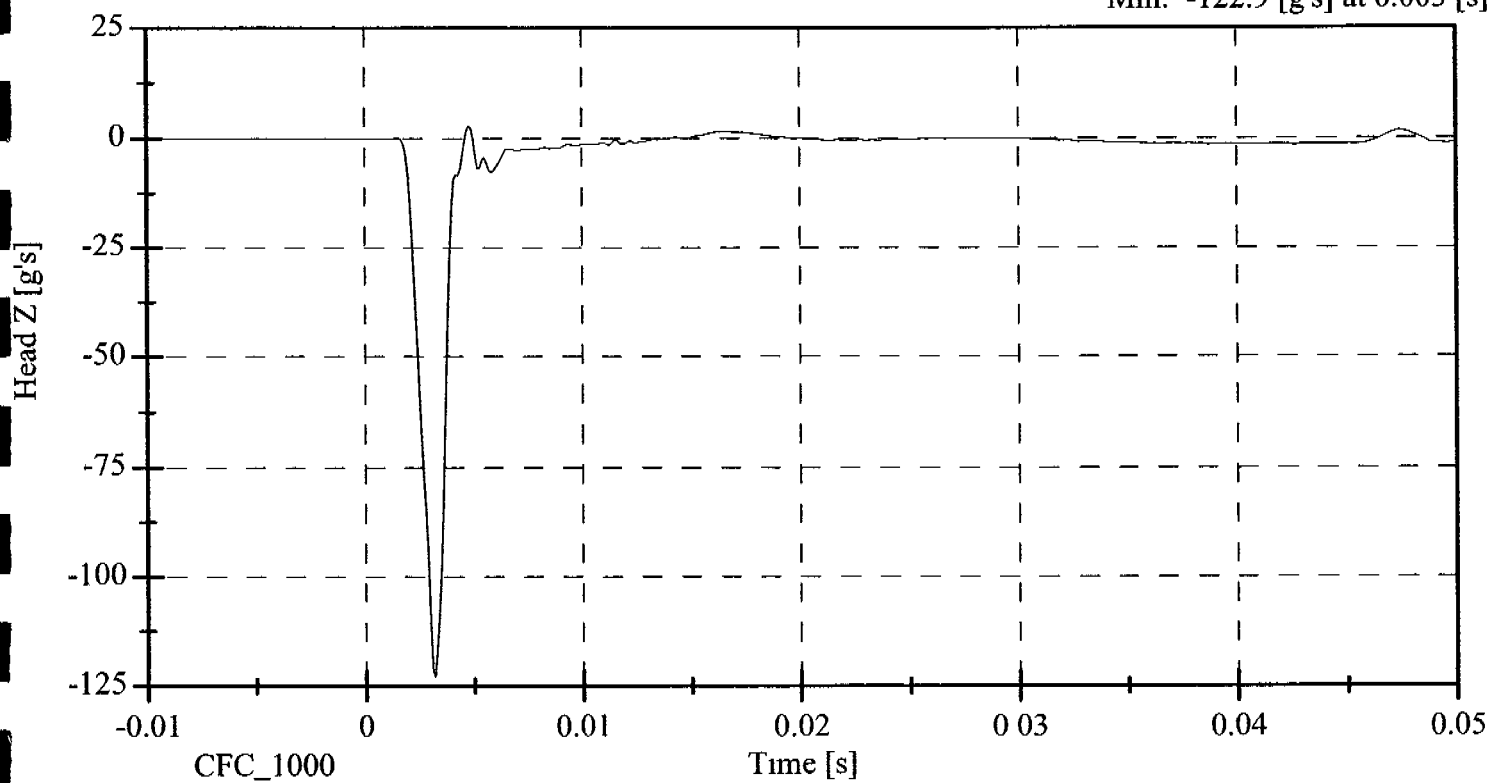
REMARKS: None



Headform Z Acceleration

Max: 2.8 [g's] at 0.005 [s]

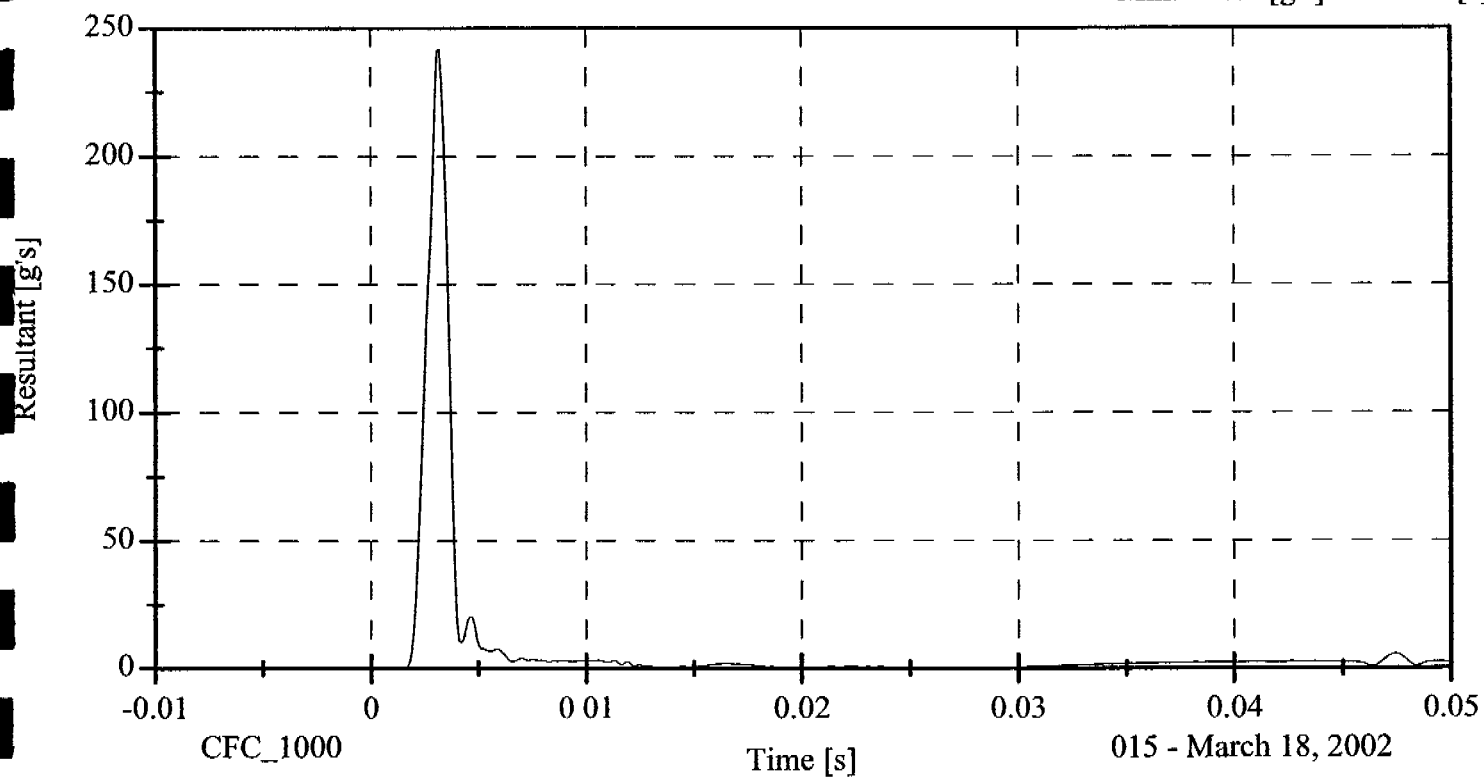
Min: -122.9 [g's] at 0.003 [s]



Headform Resultant

Max: 241.9 [g's] at 0.003 [s]

Min: 0.0 [g's] at -0.001 [s]



015 - March 18, 2002

**ABDOMINAL COMPRESSION TEST
POST TEST**

(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No	<u>015</u>	Sequential Test Number	<u>4</u>
Date	<u>March 19, 2002</u>	Laboratory Technician.	<u>B Swiecicki</u>

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18 9 - 25 5	21 7
RELATIVE HUMIDITY (%)	10 - 70	30 0
FORCE @ 13 mm (N)	104 - 162	120 1
FORCE @ 19 mm (N)	163 - 221	180 2
FORCE @ 25 mm (N)	222 - 280	255 8
FORCE @ 33 mm (N)	325 - 391	374 1

REMARKS: None

Dummy S/N 015

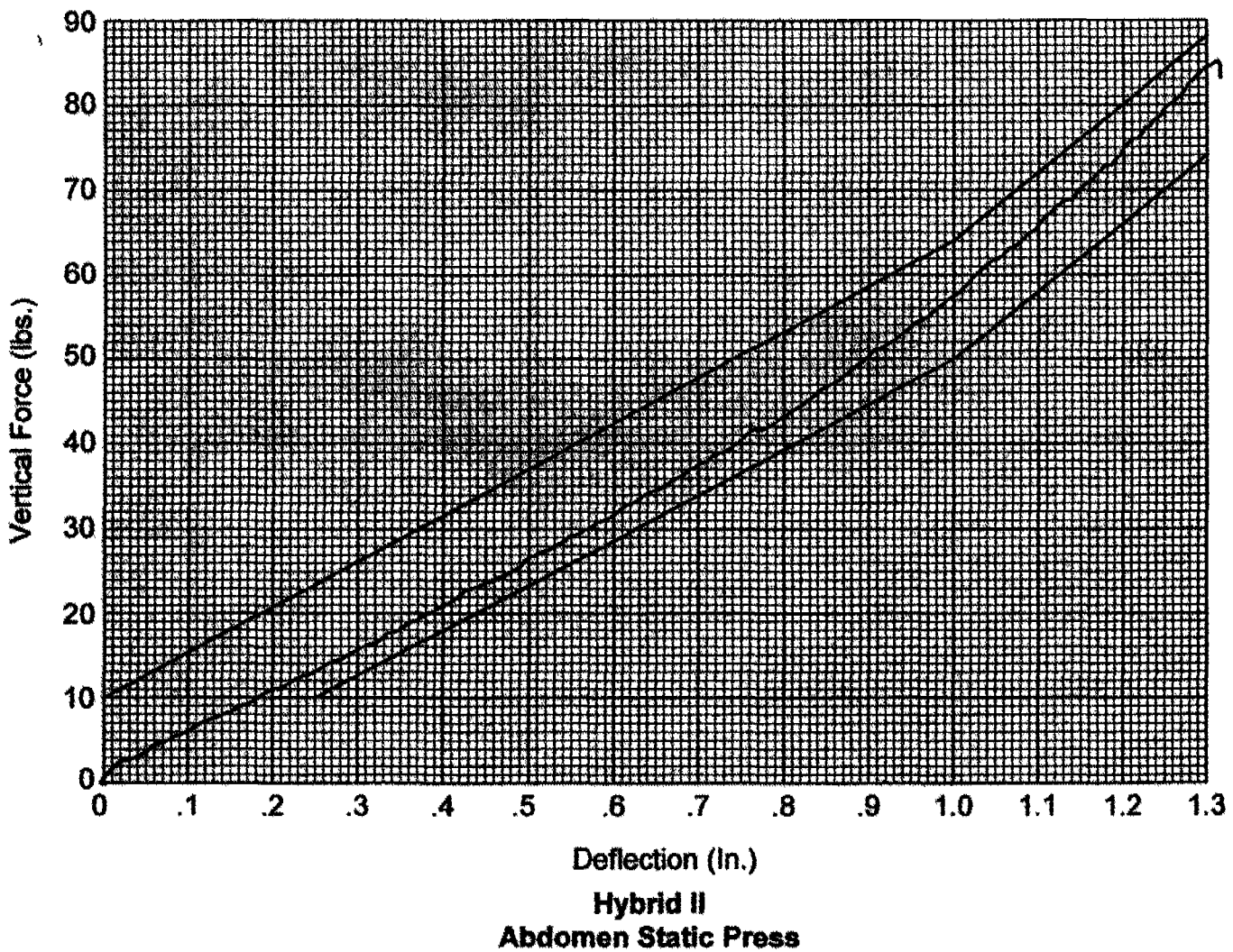
W/A _____

Date 3-19-02

Performed By [Signature]

Temp. 71°

Humidity 30%



LUMBAR FLEXION TEST
POST TEST
(Test not required for SID certification)

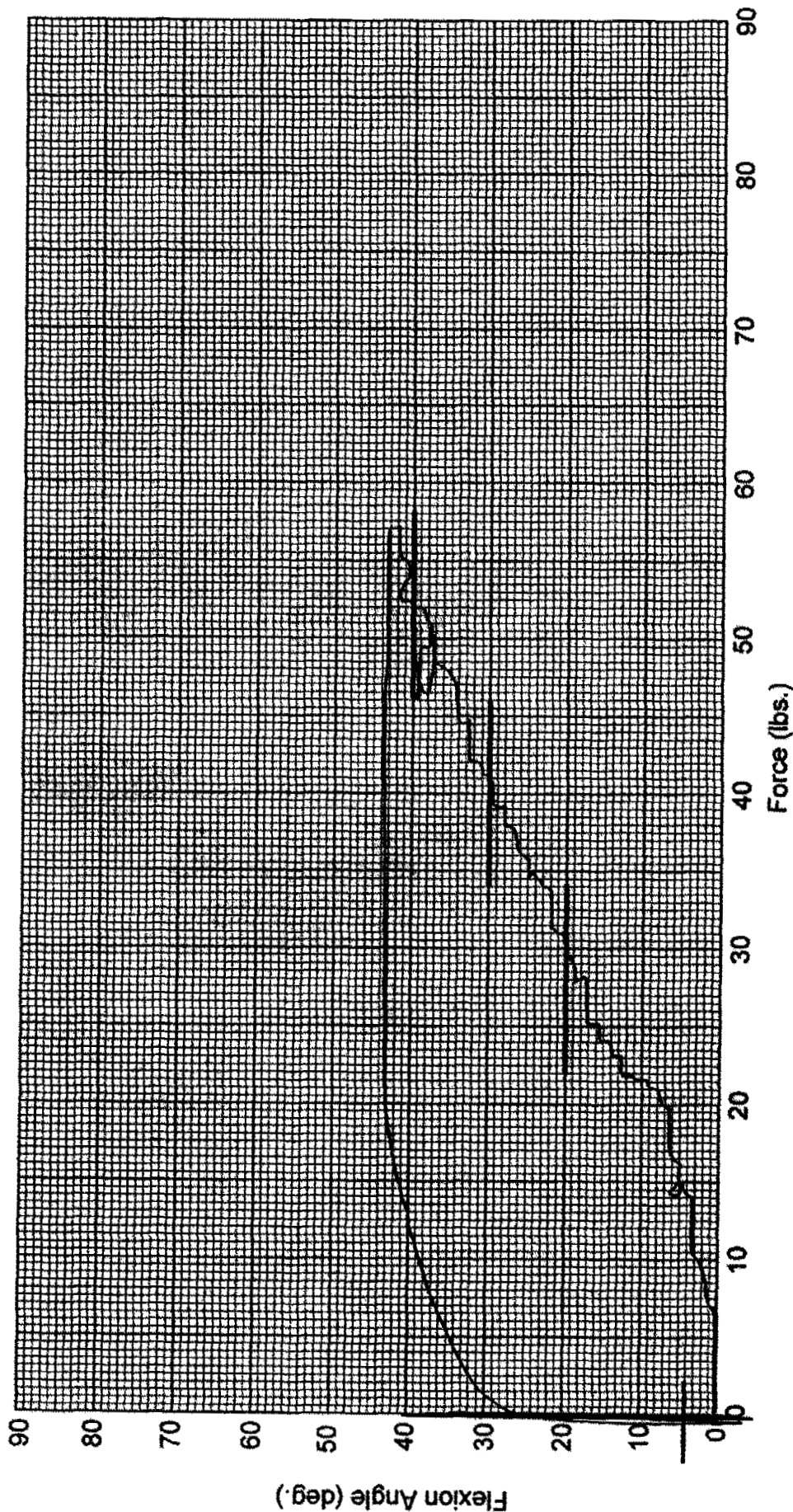
CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No	<u>015</u>	Sequential Test Number	<u>4</u>
Date	<u>March 19, 2002</u>	Laboratory Technician	<u>B Swiecicki</u>

TEST PARAMETER	SPECIFICATION	TEST RESULTS
TEMPERATURE (°C)	18 9 - 25 5	21 1
RELATIVE HUMIDITY (%)	10 - 70	29 0
FORCE @ 0° (N)	0 - 26 7	0
FORCE @ 20° (N)	97 8 - 151 2	131 2
FORCE @ 30° (N)	151 2 - 204 6	182 4
FORCE @ 40° (N)	204 6 - 258	231 3
RETURN ANGLE	12° max	4°

REMARKS: None

Dummy S/N 015
 W/A _____
 Date 3-19-02
 Performed By BE
 Temp. 70
 Humidity 29%



Hybrid II Lumbar Spine FI xlon Test

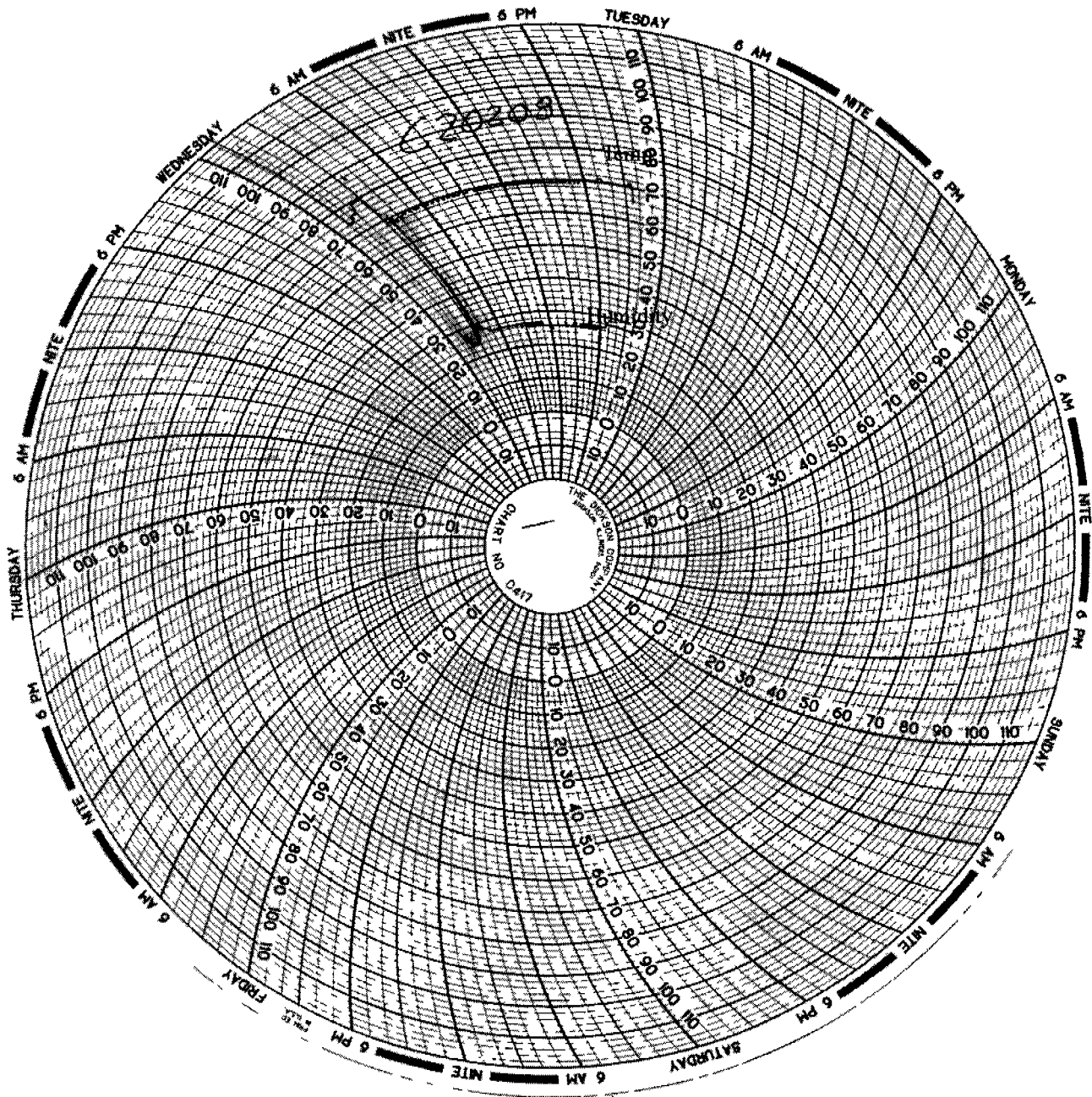
POST TEST DUMMY INSPECTION LIST
CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No 015 Sequential Test Number 4
 Date March 19, 2002 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 015		
	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
HEAD AX	AC-P13331	ENDEVCO	19-Feb-02
HEAD AY	AC-P13356	ENDEVCO	19-Feb-02
HEAD AZ	AC-P13323	ENDEVCO	19-Feb-02
UPPER RIB	AC-P16862	ENDEVCO	19-Feb-02
LOWER RIB	AC-P16656	ENDEVCO	18-Feb-02
LOWER SPINE	AC-P16866	ENDEVCO	19-Feb-02
PELVIS	AC-P16676	ENDEVCO	19-Feb-02
UPPER RIB REDUNDANT	AC-P23156	ENDEVCO	19-Feb-02
LOWER RIB REDUNDANT	AC-P16645	ENDEVCO	19-Feb-02
LOWER SPINE REDUNDANT	AC-P16823	ENDEVCO	19-Feb-02
PELVIS REDUNDANT	AC-P16843	ENDEVCO	19-Feb-02

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-B10827	ENDEVCO	14-Feb-02
RIGHT FRONT SILL (Y)	AC-A13513	ENDEVCO	14-Feb-02
RIGHT FRONT SILL (Z)	AC-B11408	ENDEVCO	14-Feb-02
RIGHT REAR SILL (X)	AC-J32143	ENDEVCO	07-Jan-02
RIGHT REAR SILL (Y)	AC-J32838	ENDEVCO	07-Jan-02
RIGHT REAR SILL (Z)	AC-J32174	ENDEVCO	07-Jan-02
REAR FLOORPAN ABOVE AXLE (X)	AC-J31042	ENDEVCO	18-Feb-02
REAR FLOORPAN ABOVE AXLE (Y)	AC-J31009	ENDEVCO	18-Feb-02
REAR FLOORPAN ABOVE AXLE (Z)	AC-J33030	ENDEVCO	18-Feb-02
LEFT REAR SILL (Y)	AC-Y22	ICS	11-Feb-02
LEFT FRONT SILL (Y)	AC-D36	ICS	30-Oct-01
RIGHT REAR SEAT OCCUPANT COMP (Y)	AC-X86	ICS	30-Oct-01
LOWER LEFT B- PILLAR (Y)	AC-J32186	ENDEVCO	11-Feb-02
MIDDLE LEFT B-PILLAR (Y)	AC-J33156	ENDEVCO	14-Feb-02
LOWER LEFT A-PILLAR (Y)	AC-J33032	ENDEVCO	11-Feb-02
UPPER LEFT A-PILLAR (Y)	AC-J24754	ENDEVCO	25-Feb-02
FRONT SEAT TRACK (Y)	AC-J26604	ENDEVCO	05-Oct-01
REAR SEAT TRACK (Y)	AC-A14433	ENDEVCO	07-Mar-02
VEHICLE CG (X)	AC-P23471	ENDEVCO	26-Feb-02
VEHICLE CG (Y)	AC-P18948	ENDEVCO	26-Feb-02
VEHICLE CG (Z)	AC-P22943	ENDEVCO	26-Feb-02
MDB CG (X)	AC-C16682	ENDEVCO	26-Sep-01
MDB CG (Y)	AC-CJ54	ENDEVCO	26-Sep-01
MDB CG (Z)	AC-GK12	ENDEVCO	26-Sep-01
MDB REAR FRAME MEMBER (X)	AC-CX05	ENDEVCO	26-Sep-01
MDB REAR FRAME MEMBER (Y)	AC-C16685	ENDEVCO	26-Sep-01

REMARKS: None