

REPORT NUMBER: TO5-MGA-2002-004

**RIGID POLE SIDE IMPACT TEST AT 285 DEGREES
Task Order T0004 / RFP 0005
2000 NISSAN MAXIMA WITHOUT SIDE AIRBAG**

ES-2 DRIVER POSITION

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June 13, 2002

FINAL REPORT SUBMITTED: July 18, 2003

**PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
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This final test report was prepared for the U.S. Department of Transportation, Volpe National Transportation System Center, under Contract No. DTRS57-98-D-00041.

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SECTION 1
PURPOSE AND TEST PROCEDURE

This Side Impact test is conducted as part of Contract No. DTRS57-98-D-00041, Task Order T0004 / RFP 0005, sponsored by the U.S. Department of Transportation, Volpe National Transportation System Center. The purpose of this test is to evaluate the response of the ES-2 dummy in a 2000 Nissan Maxima, without side airbag, when subjected to a rigid pole side impact at 285 degrees.

MGA does not endorse or certify products. The manufacturer's name appears solely for identification purposes.

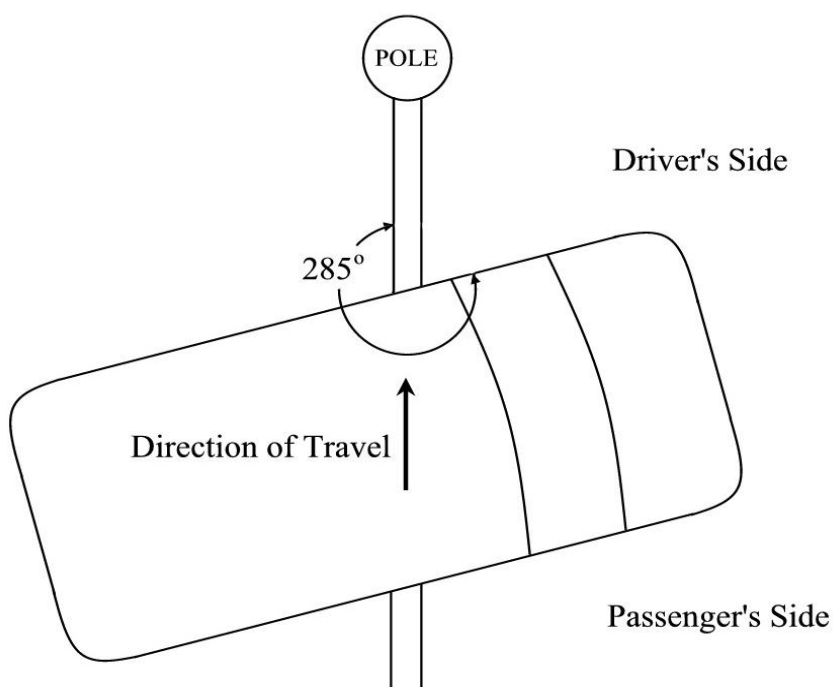
SECTION 2 SUMMARY OF SIDE IMPACT TEST

A rigid pole side impact test at 285 degrees was performed on a model year 2000 Nissan Maxima 4-door without side airbag. The subject vehicle was towed into a rigid pole at a velocity of 32.2 km/h. The weight of the vehicle as tested was 1690.1 kg. The test was conducted at MGA Research Corporation in Burlington, Wisconsin, on June 13, 2002. Pre- and post-test photographs of the test vehicle and the dummies are included in Appendix A.

One ES-2 side impact dummy was placed in the left front designated seating position according to instructions specified in the FMVSS 201P Laboratory Test Procedure which is dated April 21, 2000 and Evaluation of Eurosid-1 Positioning Procedure Appendix A dated February 5, 1997. The side impact event was documented by nine high speed cameras. Camera locations and other pertinent camera information can be found in this report.

Appendix B contains the vehicle and dummy response data traces. A summary of the side impact dummy (ES-2) configuration and performance verification test data is shown in Appendix C. Dummy and vehicle calibration data can be found in Appendix D of this report.

Appendix E contains a copy of the ES-2 dummy positioning procedure used and Appendix F contains the ES-2 peak responses.



The following table summarizes the results of the Left Side Impact test:

		Left Front
1) Head Performance Criteria		
< 1000	T1 (msec)	57.8
	T2 (msec)	58.5
	HPC	11983
2) Thorax Performance Criteria		
2.1) Chest Deflection < 42 mm	Upper Rib Deflection	41.5
	Mid Rib Deflection	38.6
	Lower Rib Deflection	38.4
2.2) Viscous Criteria < 1.0 (m/sec)	Upper Rib	0.85
	Mid Rib	0.85
	Lower Rib	0.83
3) Abdominal Protection Criterion		
Sum < 2500 N	Front Abdominal Force	336
	Mid Abdominal Force	733
	Rear Abdominal Force	1112
	Sum of Abdominal Force	2151
4) Pelvis Performance Criterion		
< 6000 N	Pubic Symphysis Force	2548

HIC		Left Front
	T1 (msec)	57.8
	T2 (msec)	58.5
	T2 - T1 (msec)	0.7
	HIC	11983

Fir Filtered	Left Front
Upper Rib Y (g's)	89.2
Mid Rib Y (g's)	121.6
Lower Rib Y (g's)	169.7
Lower Spine Y (g's)	81.7
Pelvis Y (g's)	58.8
TTI (g's)	126

Contacts	Left Front
Head (msec)	57.0
Arm (msec)	23.8
Rib (msec)	36.2
Pelvis (msec)	25.1

TEST NOTES

The dummy and vehicle X and Y velocities presented in this report do not contain the correct initial velocity. The correct initial velocities should be:

X - Test Speed * Sine 15 Degrees

Y - Test Speed * Cosine 15 Degrees

SECTION 3
SIDE IMPACT DUMMY (ES-2) AND VEHICLE TEST DATA

DATA SHEET NO. 1
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2000 Nissan Maxima 4 door

Test Date: June 13, 2002

TEST VEHICLE INFORMATION

Make	Nissan
Model	Maxima
Body Style	4 door
VIN	JN1CA31D6YT712281
Color	Painted Orange
Odometer Reading	60,210
Transmission	Automatic
Final Drive	Front
Number of Cylinders	6
Engine Displacement	3.0 Liters
Engine Placement	Lateral

TEST VEHICLE OPTIONS

Front Airbags	yes
Side Airbags	no
Power Windows	yes
Power Steering	yes
Power Door	yes
Tilt Wheel	yes
Air Conditioning	yes
Power Brakes	yes
Anti-lock Brakes	no
AM/FM/Cassette	yes
Cruise Control	yes

DATA FROM CERTIFICATION LABEL

Manufactured By	Nissan Motor Co., Ltd.	GVWR (kg)	1965
Date of Manufacture	06/99	GAWR Front (kg)	1073
		GAWR Rear (kg)	902

DATA FROM TIRE PLACARD

Measured Parameter	Front	Rear
Maximum Tire Pressure (kPa)	200	200
Cold Pressure (kPa)	200	200
Recommend Tire Size	P205/65R15	P205/65R15
Tire Size on Vehicle	P205/65R15	P205/65R15
Tire Manufacturer	Dunlop	Dunlop

Measured Parameter	Front	Rear	Third	Total
Type of Seats	bucket	bench		
Number of Occupants	2	3		5
Capacity Wt. (VCW) (kg)				400
Cargo Weight (RCLW) (kg)				60

DATA SHEET NO. 1...(continued)
GENERAL TEST AND VEHICLE PARAMETER DATA

Test Vehicle: 2000 Nissan Maxima 4 door

Test Date: June 13, 2002

TEST VEHICLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)		
		Front	Rear	Total	Front	Rear	Total
Left	kg	455.9	284.4		504.4	357.0	
Right	kg	461.8	271.7		496.2	332.5	
Ratio	%	62.3	37.7		59.2	40.8	
Totals	kg	917.7	556.1	1473.8	1000.6	689.5	1690.1

TARGET TEST WEIGHT CALCULATION

Measured Parameter	Units	Value
Vehicle Target Weight (TVTW)*	kg	1690

* Based on previous tests in this series.

TEST VEHICLE ATTITUDES

	Units	As Delivered	Fully Loaded	Ready for Test
Right Door Sill Angle	deg	0.2 ND	0.1 NU	0.1 ND
Left Door Sill Angle	deg	0.1 ND	0.2 NU	0.1 ND
Front Bumper Angle	deg	0.1 LD	0.3 LD	0.1 LD
Rear Bumper Angle	deg	0.4 RD	0.2 RD	0.4 RD

ND = Nose Down, BD = Back Down, LD = Left Down, RD = Right Down

GENERAL TEST VEHICLE DATA

Measurement Description	Units	Value
Test Vehicle Wheel Base	mm	2760
Total Vehicle Length at Left Side	mm	4158
Total Vehicle Length at Centerline	mm	4874
Total Vehicle Length at Right Side	mm	4158
Weight of Ballast in Cargo Area	kg	61.2
Amount of Water in Fuel Tank	liters	60.6

TEST VEHICLE VERTICAL IMPACT LINE DATA

Measurement Description	Units	Value
Actual Impact Point	mm	2 rear

DATA SHEET NO. 1...(continued)
GENERAL TEST AND VEHICLE PARAMETER DATA

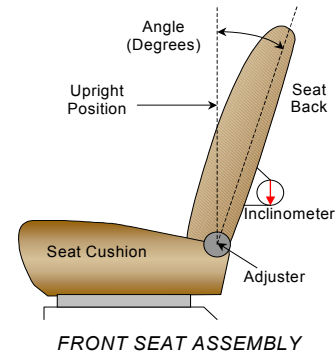
Test Vehicle: 2000 Nissan Maxima 4 door

Test Date: June 13, 2002

NORMAL DESIGN RIDING POSITION

Driver seat back angle: 11.6 deg. measured on headrest post
(adjusted forward 1.8 deg. to achieve
head clearance)

Passenger seat back angle: non adjustable



SEAT FORE/AFT POSITIONS

The driver's seat is manually operated and the rear passenger seat has no adjustments.

Driver seat fore/aft total travel: 230mm

Rear passenger seat fore/aft total travel: non adjustable

Driver seat fore/aft position: 115 mm rear

Rear passenger seat fore/aft position: non adjustable

SEAT BELT UPPER ANCHORAGE

The test vehicle "D" ring anchorage for the driver's seat position was placed in the full up position.

STEERING COLUMN ADJUSTMENT

Lowermost	21.9 deg
Geometric Center	23.4 deg
Uppermost	24.9 deg

**DATA SHEET NO. 2
POST TEST OBSERVATIONS**

Test Vehicle: 2000 Nissan Maxima 4 door

Test Date: June 13, 2002

TEST DUMMY INFORMATION AND CONTACT POINTS

Description	Left Front
Dummy Type	ES-2
Head Contact	Pole, headrest
Upper Torso Contact	Door trim panel
Lower Torso Contact	Armrest
Left Knee Contact	Door trim panel
Right Knee Contact	Left knee

POST TEST DOOR OPENING

Description	Left Front	Left Rear
Left Side Door Opening	Remained latched	Remained latched
Right Side Door Opening	Remained latched	Remained latched

POST TEST STRUCTURAL OBSERVATIONS

Critical Areas of Performance	Observations and Conclusions
Pillar Performance	No failures
Sill Separation	None
Windshield Damage	Windshield cracked
Window Damage	Struck side windows down for test
Other Notable Effects	None

AIRBAG DEPLOYMENT

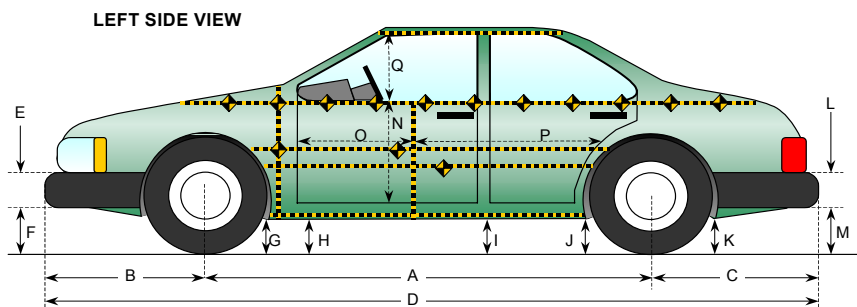
	Driver	Left Front	Left Rear
Front	no	no	
Side			

SECTION 4
OCCUPANT AND VEHICLE INFORMATION

DATA SHEET NO. 3
VEHICLE PRE-TEST AND POST-TEST MEASUREMENTS

Test Vehicle: 2000 Nissan Maxima 4 door

Test Date: June 13, 2002



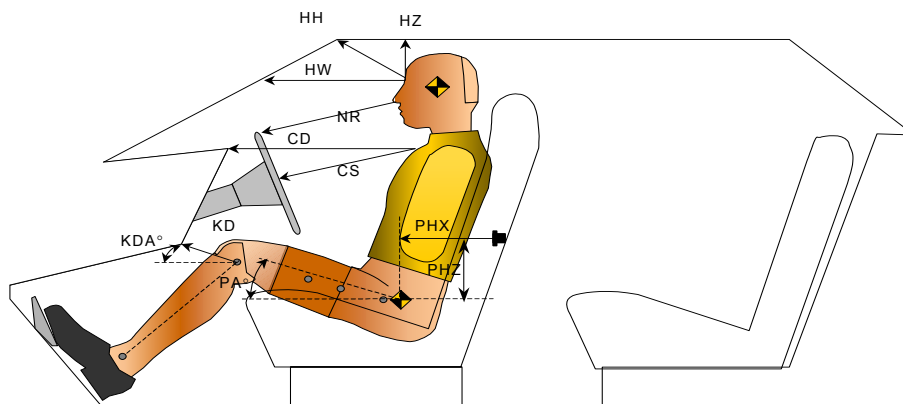
All Measurements in mm

Code	Measurement Description	Pre-Test	Post-Test	Difference
A	Wheelbase	2760	2579	181
B	Front Axle to FSOV	982	1022	40
C	Rear Axle to RSOV	1067	1118	51
D	Total Length at Centerline	4809	4719	90
E	Front Bumper Thickness	129	129	0
F	Front Bumper Bottom to Ground	422	510	88
G	Sill Height at Front Wheel Well	200	205	5
H	Sill Height at Front Door Leading Edge	203	211	8
I	Sill Height at "B" Pillar	205	251	46
J1	Sill Height at Rear Wheel Well	201	228	27
J2	Pinch Weld Height at Rear Wheel Well	199	239	40
K	Sill Height Aft of Rear Wheel Well	258	262	4
L	Rear Bumper Thickness	219	219	0
M	Rear Bumper Bottom to Ground	391	385	6
N	Sill Height to Window Bottom Sill	663	635	28
O	Front Door Leading Edge to Impact CL	813	645	168
P	Rear Door Trailing Edge to Impact CL	1235	1035	200
Q	Front Window Opening	470	419	51
R	Right Side Length	4184	4200	16
S	Left Side Length	4183	3881	302
T	Vehicle Width at "B" Post	1790	1371	419

DATA SHEET NO. 4
ES-2 LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2000 Nissan Maxima 4 door

Test Date: June 13, 2002



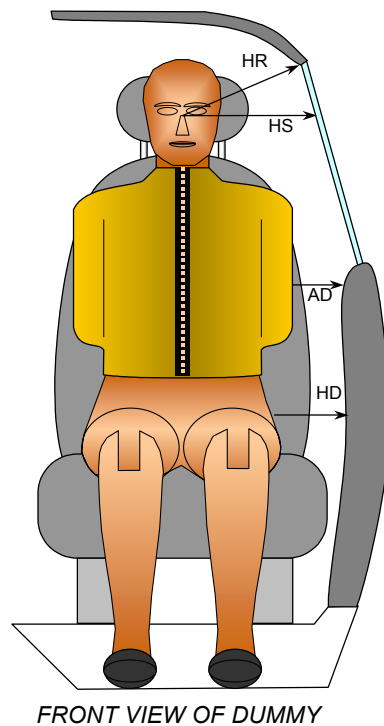
Driver Code	Measurement Description	Left Front	
		Length(mm)	Angle(°)
HH	Head to Header	296	
HW	Head to Windshield	470	
HZ	Head to Roof	126	
NR	Nose to Rim	439	
CD	Chest to Dash	561	
CS	Chest to Steering Wheel	356	
KDL	Left Knee to Dash	239	0
KDR	Right Knee to Dash	228	0
PA	Pelvic Angle (Longitudinal)		22.5
PA	Pelvic Angle (Lateral)		0.6
SA	Spine Angle (Longitudinal)		23.6
SA	Spine Angle (Lateral)		0.4
PHX	H-Point to Striker (X-Axis)	223	
PHZ	H-Point to Striker (Z-Axis)	128	

DATA SHEET NO. 5
ES-2 LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2000 Nissan Maxima 4 door

Test Date: June 13, 2002

Code	Measurement Description	Units	Left Front
HR	Head to Side Header	mm	175
HS	Head to Side Window	mm	306
AD	Arm to Door	mm	88
HD	H-Point to Door	mm	141



DATA SHEET NO. 6
DUMMY POSITIONING

Test Vehicle: 2000 Nissan Maxima 4 door

Test Date: June 13, 2002

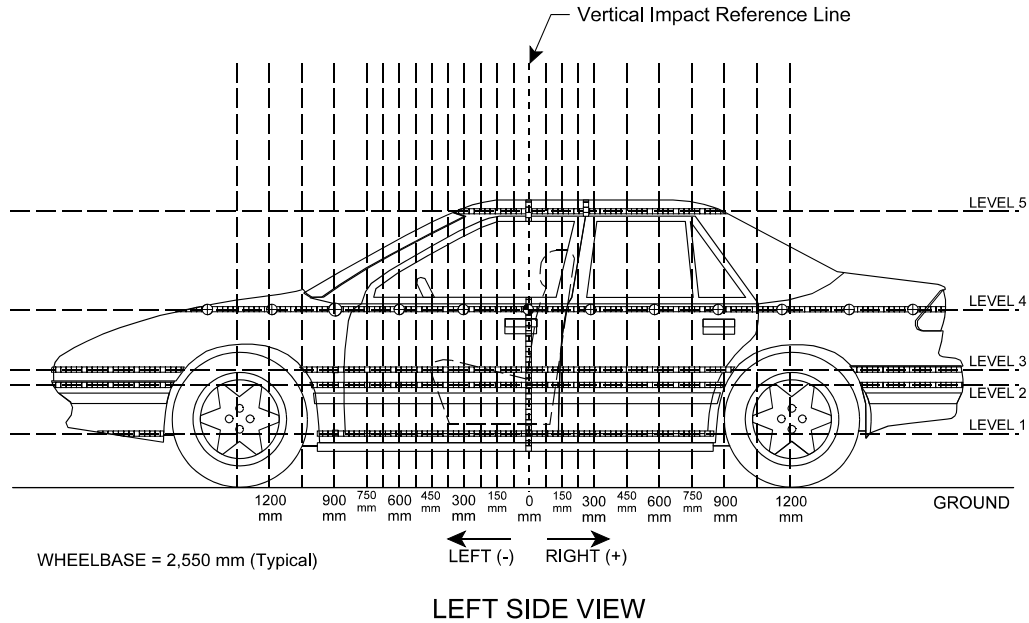
	Left Front	
	H-Point Machine	Dummy H Point after seat back adjustment
HP to Floor Z (mm)	176	189
HP to Hinge X (mm)	818	806
HP to Sill Y (mm)	223	230
HP to Striker X (mm)	362	358
HP to Dash X (mm)	573	570
HP to Header Z (mm)	789	774
H-POINT MACHINE (deg)		
Left Knee	128	
Right Knee	126	
Left Foot	104	
Right Foot	136	
Left Leg (mm)	192	
Right Leg (mm)	122	
Hip Angle	96	
Back Angle	23	

DATA SHEET NO. 7 **VEHICLE SIDE MEASUREMENTS**

Test Vehicle: 2000 Nissan Maxima 4 door

Test Date: June 13, 2002

PRETEST AND POST TEST EXTERIOR PROFILE MEASUREMENTS



Measurements are taken with vehicle in the as tested condition.
Measurements along the vertical 800 mm.

Level	Measurement Description	Units	Height Above Ground
5	Window	mm	1485
4	Window Sill	mm	1036
3	Mid Door	mm	733
2	Occupant H-Point	mm	627
1	Sill Top	mm	410

DATA SHEET NO. 8
VEHICLE EXTERIOR CRUSH PROFILES

Test Vehicle: 2000 Nissan Maxima 4 door

Test Date: June 13, 2002

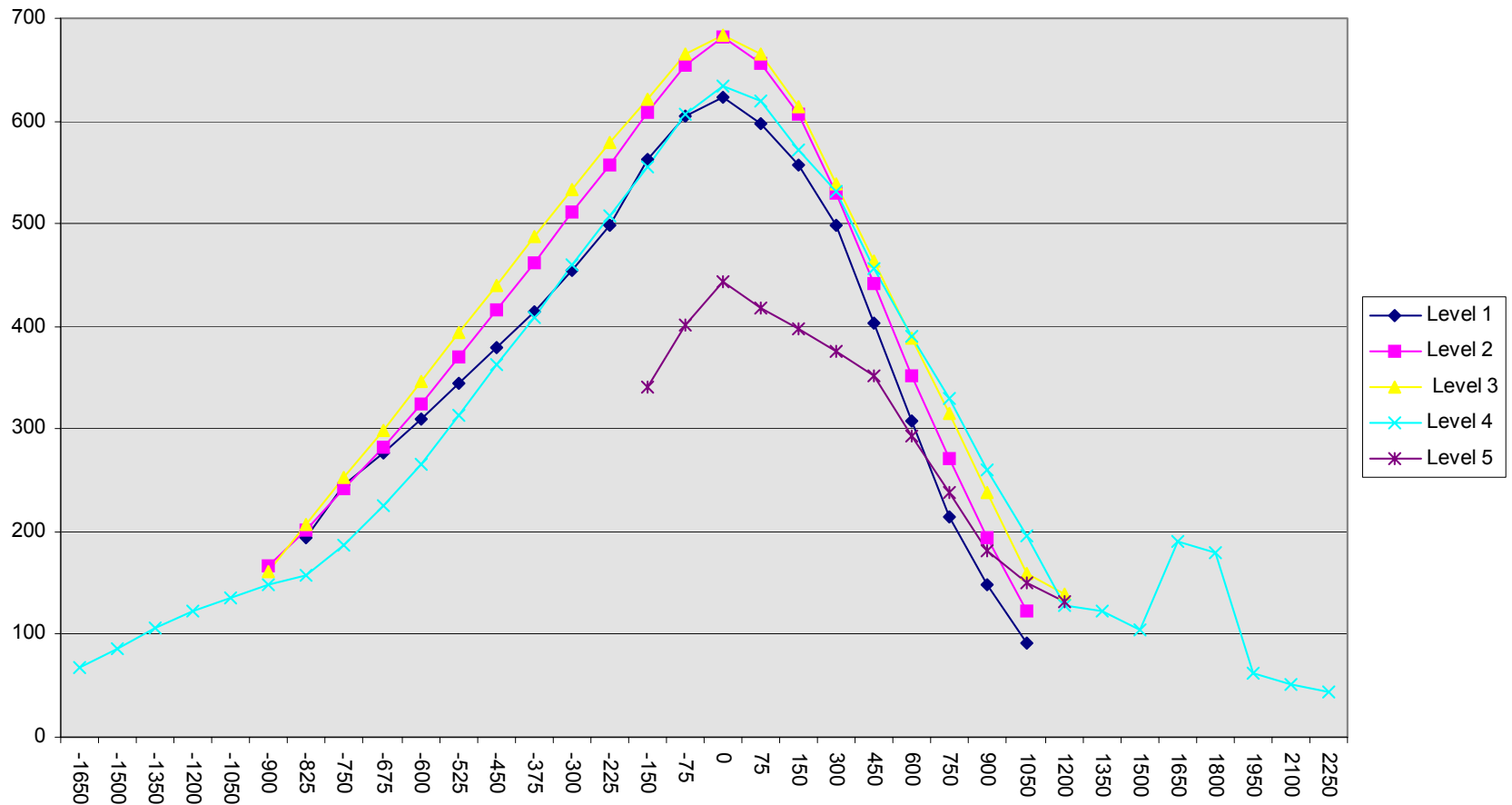
	Pre-Test					Post-Test					Difference				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-1800															
-1650				320					388					68	
-1500				299					386					87	
-1350				286					392					106	
-1200				279					402					123	
-1050				275					411					136	
-900		226	222	275			392	384	423			166	162	148	
-825	285	228	221	272		479	429	428	430		194	201	207	158	
-750	283	227	221	271		528	469	474	457		245	242	253	186	
-675	282	227	221	269		559	509	520	494		277	282	299	225	
-600	282	227	221	270		592	552	567	536		310	325	346	266	
-525	282	227	220	270		627	597	614	583		345	370	394	313	
-450	282	227	220	270		662	643	660	632		380	416	440	362	
-375	282	227	219	270		696	688	706	679		414	461	487	409	
-300	283	226	219	269		738	737	752	729		455	511	533	460	
-225	282	226	219	268		781	783	798	775		499	557	579	507	
-150	282	225	219	268	486	844	833	841	823	827	562	608	622	555	341
-75	282	224	219	268	482	887	879	884	875	883	605	655	665	607	401
0	282	225	219	268	480	905	907	903	902	923	623	682	684	634	443
75	282	225	219	268	480	880	881	885	887	898	598	656	666	619	418
150	282	225	219	269	480	839	832	832	840	878	557	607	613	571	398
300	281	225	220	268	480	780	754	758	799	855	499	529	538	531	375
450	282	225	220	270	481	686	667	684	726	832	404	442	464	456	351
600	282	227	221	270	481	589	579	609	661	775	307	352	388	391	294
750	282	228	222	271	483	497	500	537	601	721	215	272	315	330	238
900	283	231	223	276	483	432	426	462	536	665	149	195	239	260	182
1050	277	228	225	276	487	368	350	385	472	638	91	122	160	196	151
1200			210	286	499			350	415	631			140	129	132
1350				286					409					123	
1500				292					396					104	
1650				301					391					190	
1800				311					391					180	
1950				328					391					63	
2100				342					393					51	
2250				360					404					44	

Reference plane is parallel to test vehicle longitudinal centerline
 Given dimensions = Reference plane to car body
 Measurements are in mm.

DATA SHEET NO. 8...(continued)
VEHICLE EXTERIOR CRUSH PROFILES

Test Vehicle: 2000 Nissan Maxima 4 door

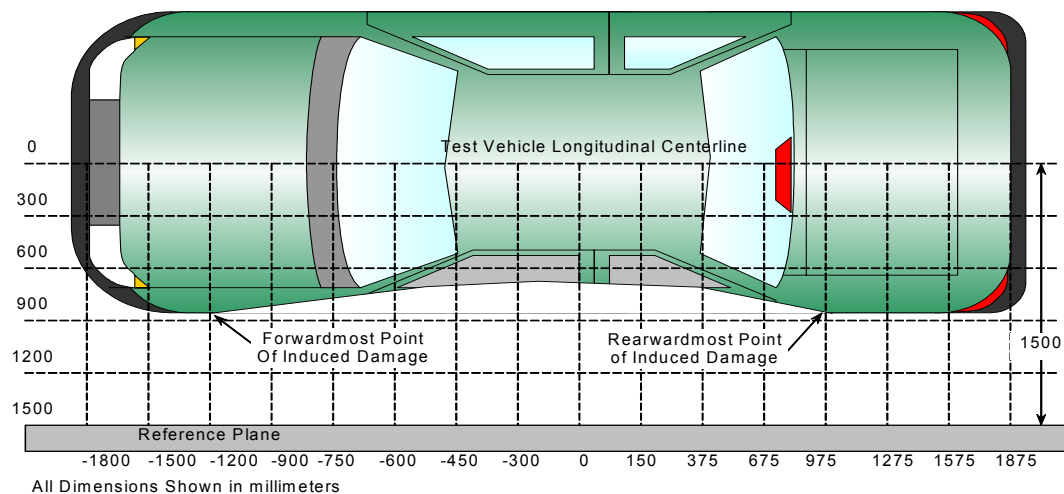
Test Date: June 13, 2002



DATA SHEET NO. 9 **VEHICLE DAMAGE PROFILE DISTANCES**

Test Vehicle: 2000 Nissan Maxima 4 door

Test Date: June 13, 2002



TOP VIEW

Damage Profile Distances

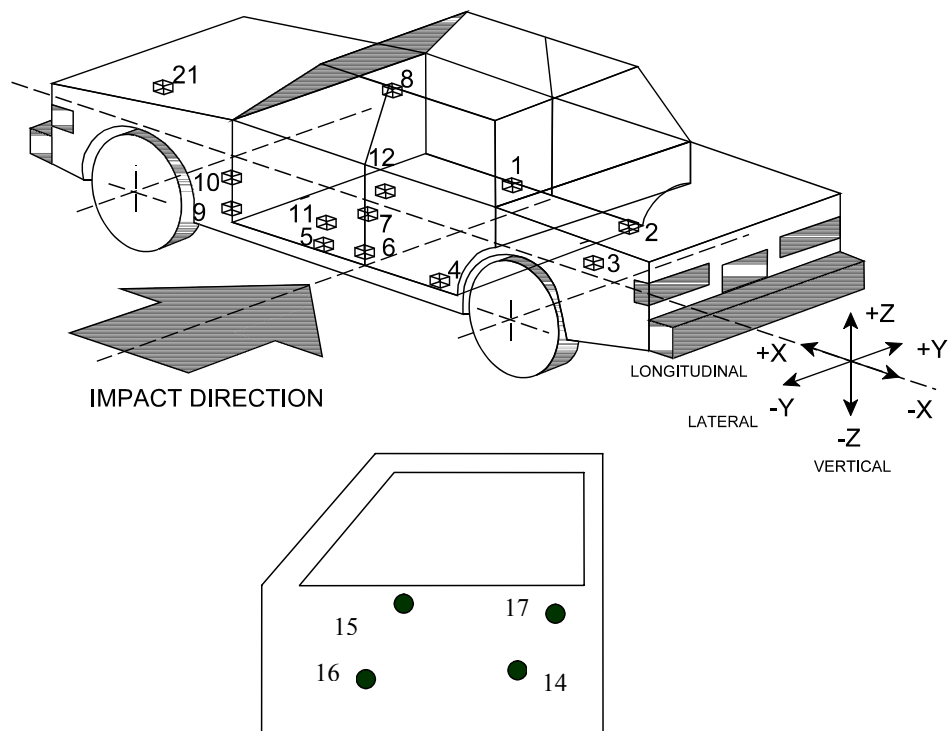
DPD	Distance from Impact Point in mm	Level	Pre-Test (mm)	Post-Test (mm)	Max Static Crush (mm)
1	2250 mm	4	360	404	44
2	1340 mm	4	292	396	104
3	535 mm	4	271	627	356
4	-340 mm	3	219	774	555
5	-1190 mm	4	275	409	134
6	-1800 mm	4	356	405	49

Reference plane is parallel to test vehicle longitudinal centerline
 Given dimensions = Reference plane to car body

DATA SHEET NO. 10 **VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY**

Test Vehicle: 2000 Nissan Maxima 4 door

Test Date: June 13, 2002



No.	Location
1	Right Side Sill at Front Seat
2	Right Side Sill at Rear Seat
3	Rear Floorpan Above Axle
4	Left Side Sill at Rear Door
5	Left Side Sill at Front Door
6	Left Lower B Post
7	Left Mid B Post
8	Left Upper B Post
9	Left Lower A Post
10	Left Mid A Post
11	Driver Seat Track

No.	Location
12	Vehicle CG
13	Left A Pillar @ Roof
14	Left Front Door @ Pelvis
15	Left Front Door @ Arm
16	Left Front Door @ Knee
17	Left front Door @ Rib
19	Left Driver Seat Frame
20	Right Driver Seat Frame
21	Lower Center Radiator Support

DATA SHEET NO. 10...(continued)
VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Test Vehicle: 2000 Nissan Maxima 4 door

Test Date: June 13, 2002

VEHICLE ACCELEROMETER PEAK DATA AND PRE-TEST LOCATIONS

Loc. No.	Accelerometer Location	Long. (X) Maximums (g's) (CFC 60)		Lat.. (Y) Maximums (g's) (CFC 60)		Vert. (Z) Maximums (g's) (CFC 60)		Resultant (g's) (CFC 60)
		Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	Max.
1	Right Side Sill at Front Seat	1.0	2.5	9.5	0.2	5.0	3.5	10.2
2	Right Side Sill at Rear Seat	1.3	2.4	11.0	0.1	3.9	3.2	11.6
3	Rear Floorpan Above Axle	3.3	3.5	11.7	0.0	3.9	4.0	12.3
4	Left Side Sill at Rear Door			16.9	4.3			
5	Left Side Sill at Front Door			40.2	14.4			
6	Left Lower B Post			51.4	11.4			
7	Left Mid B Post			68.8	12.8			
8	Left Upper B Post			33.0	18.5			
9	Left Lower A Post			20.0	0.3			
10	Left Mid A Post			8.4	1.0			
11	Driver Left Seat Track			50.2	33.6			
12	Vehicle CG	7.9	9.2	34.9	15.4	20.0	9.1	39.5
13	Left A Pillar @ Roof			83.7	59.5			
14	Left Front Door @ Pelvis			90.7	37.2			
15	Left Front Door @ Arm			140.2	48.2			
16	Left Rear Door @ Knee			91.1	64.6			
17	Left Rear Door @ Rib *			104.6	0.3			
19	Left Driver Seat Frame			63.1	13.1			
20	Right Driver Seat Frame			59.4	11.1			
21	Lower Center Radiator Support	0.4	5.7	8.9	3.8	4.5	5.3	9.3

Sign Convention X - (+ forward)
 Y - (+ to right)
 Z - (+ down)

* No valid data collected after 21 msec

DATA SHEET NO. 10...(continued)
VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Test Vehicle: 2000 Nissan Maxima 4 door

Test Date: June 13, 2002

VEHICLE ACCELEROMETER COORDINATES

Loc. No.	Description	Coordinates (mm)*		
		X	Y	Z
1	Right Side Sill at Front Seat	2944	705	210
2	Right Side Sill at Rear Seat	1929	705	216
3	Rear Floorpan Above Axle	1050	0	480
4	Left Side Sill at Rear Door	1616	-708	218
5	Left Side Sill at Front Door	2760	-705	214
6	Left Lower B Post	2180	-700	400
7	Left Mid B Post	2182	-700	892
8	Left Upper B Post	2100	-496	1345
9	Left Lower A Post	3233	-685	303
10	Left Mid A Post	3310	-790	833
11	Driver Left Seat Track	2376	-540	352
12	Vehicle CG	2706	0	316
13	Left A Pillar @ Roof	2650	535	1260
14	Left Front Door @ Pelvis	2429	-760	570
15	Left Front Door @ Arm	2649	-762	732
16	Left Front Door @ Knee	2845	-746	658
17	Left Front Door @ Rib	2429	-760	570
19	Left Driver Seat Frame	2227	-504	684
20	Right Driver Seat Frame	2227	-206	686
21	Lower Center Radiator Support	4560	25	278

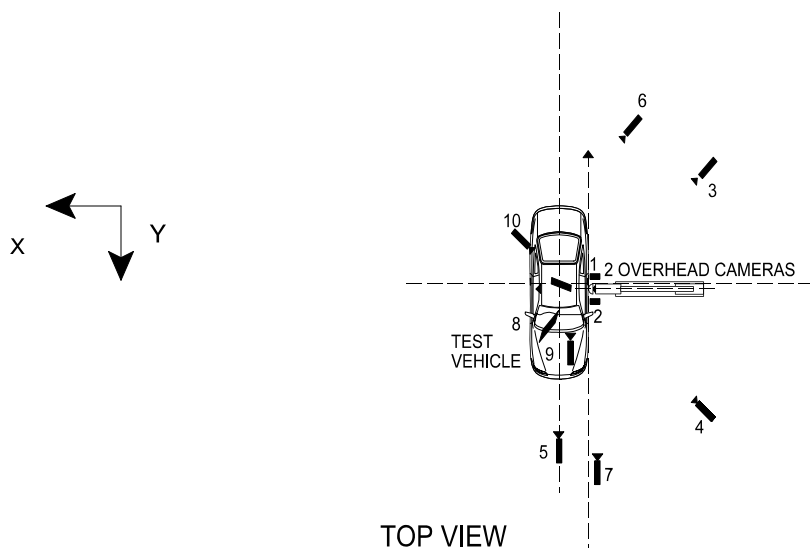
Sign Convention

X - Rear Bumper (+ Forward)
Y - Vehicle Centerline (+ to right)
Z - Ground Plane (+ up)

DATA SHEET NO. 11
HIGH SPEED CAMERA LOCATIONS AND DATA

Test Vehicle: 2000 Nissan Maxima 4 door

Test Date: June 13, 2002



No.	Camera View	Location (mm)			Lens (mm)	Film Speed (fps)
		X	Y	Z		
1	Overhead Overall	-770	0	5080	8	1015
2	Overhead Close-up	0	0	5000	13	1005
3	Left Side 45° Rearward Pole View	1480	-7430	1510	50	1000
4	Left Side 45° Forward Pole View	1650	5180	1570	50	1010
5	Real Time					
6	Left Side Rear Pole View	-300	-9150	14080	25	1005
7	Front Ground Level Vehicle/Pole Impact	-820	9150	1330	25	743
8	Test Vehicle Onboard Driver Side View				13	505
9	Test Vehicle Onboard Driver Front View				13	1031
10	Test Vehicle Onboard Driver 3/4 Rear View				13	501

Reference Points X - + Forward of Impact
 Y - + Right of Impact
 Z - + Up from Ground

APPENDIX A
PHOTOGRAPHS

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Pre-Test Front View of Test Vehicle



Post-Test Front View of Test Vehicle



Pre-Test Rear View of Test Vehicle



Post-Test Rear View of Test Vehicle

A-5.



Pre-Test Left Side View of Test Vehicle



Post-Test Left Side View of Test Vehicle



Pre-Test Left Front View

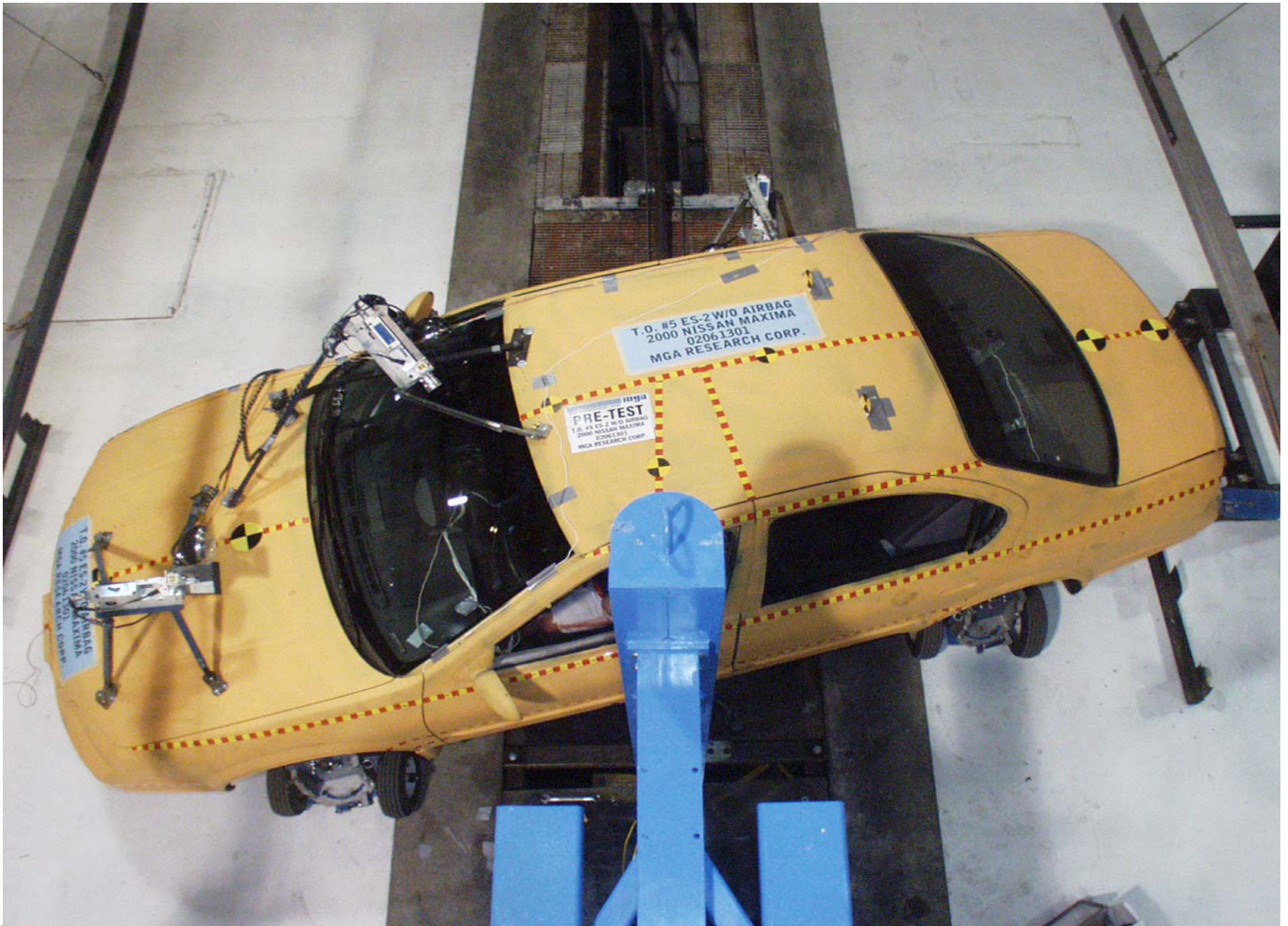
A-8.



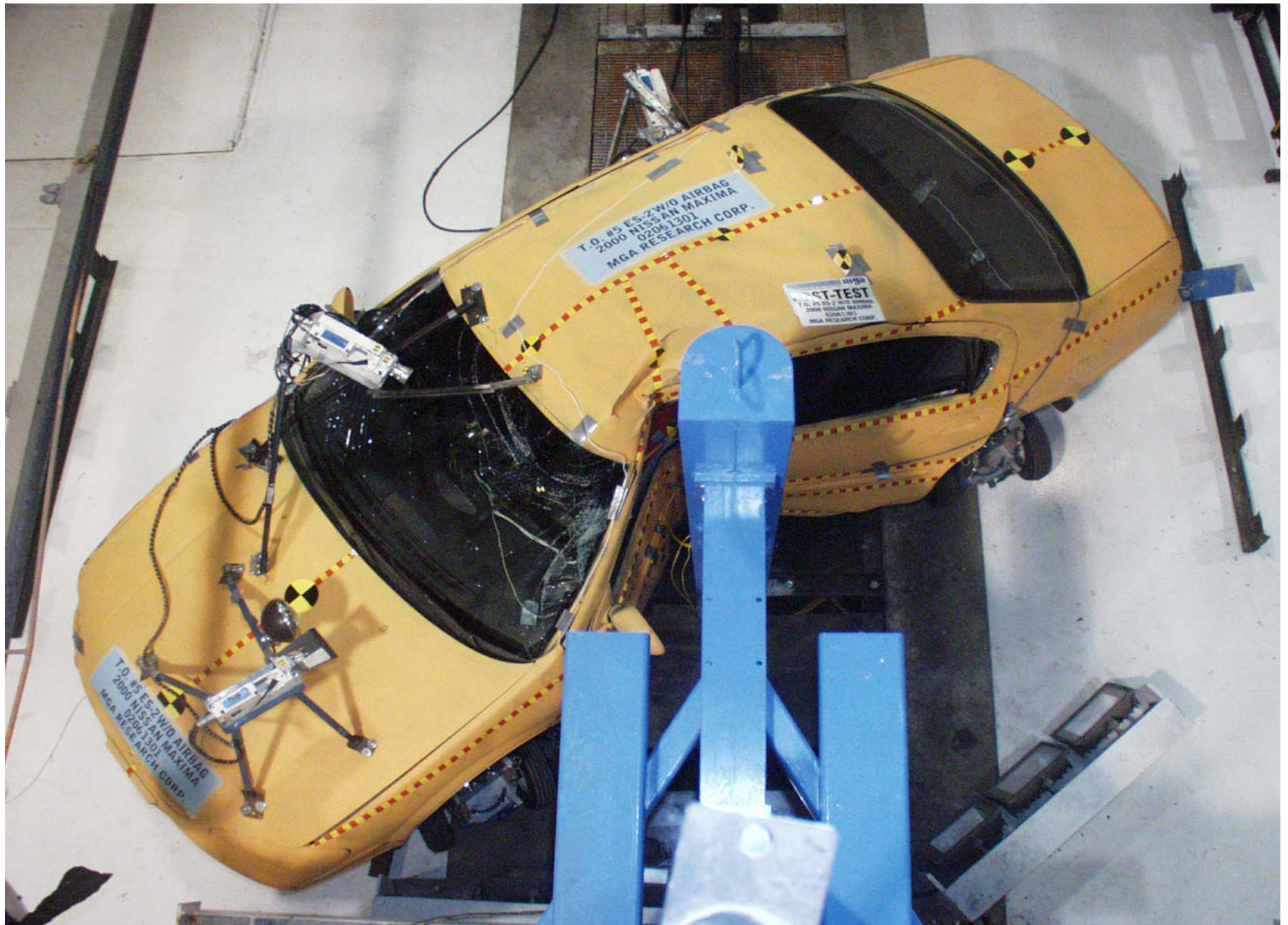
Pre-Test Left Rear View



Post-Test Left Rear View



Pre-Test Overhead View



Post-Test Overhead View



Pre-Test Left Rear Vehicle against Pole View



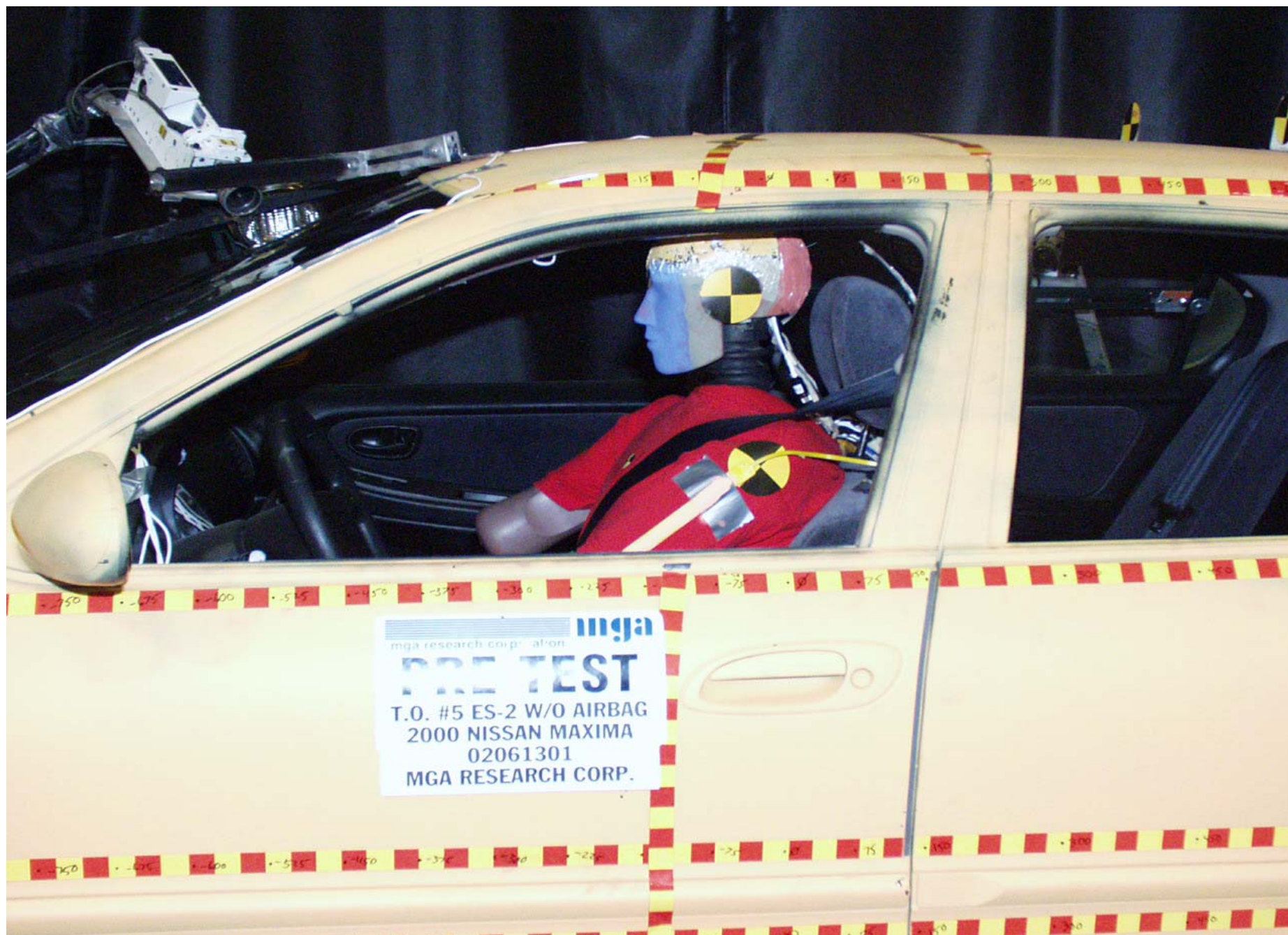
Post-Test Left Rear Vehicle against Pole View



Pre-Test Driver Dummy Right Side View



Post-Test Driver Dummy Right Side View



Pre-Test Driver Dummy Left Side View



Pre-Test Driver Dummy Left Side View (Door Open)



Pre-Test Driver Dummy Shoulder and Door Top View



Post-Test Driver Dummy Shoulder and Door Top View



Pre-Test Seat Position





Pre-Test Impact Point on Vehicle



Post-Test Impact Point on Vehicle



Post-Test Driver Dummy Head Contact with Pole



Post-Test Driver Dummy Contact



Impact

APPENDIX B
VEHICLE AND ES-2 RESPONSE DATA TRACES

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The dummy and vehicle X and Y velocities presented in this report do not contain the correct initial velocity. The correct initial velocities should be:

X - Test Speed * Sine 15 Degrees

Y - Test Speed * Cosine 15 Degrees

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* No valid data after approximately 21 msec.



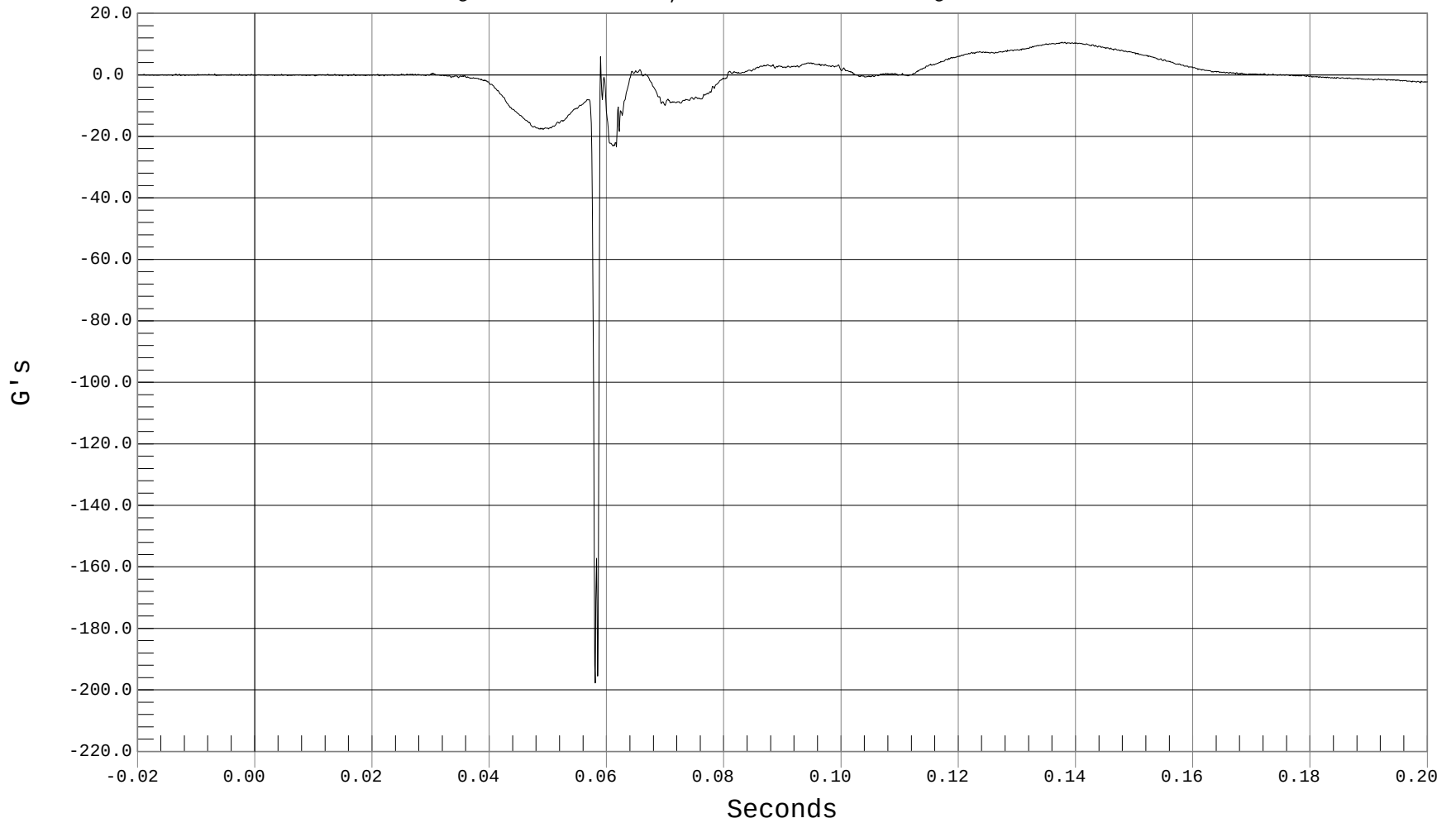
DRIVER HEAD X ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 1000

1 DRIVER HEAD X, B02049AT.A01

Ymin = -197.74 G's @ 0.0580 Seconds, Ymax = 10.6 G's @ 0.1376 Seconds





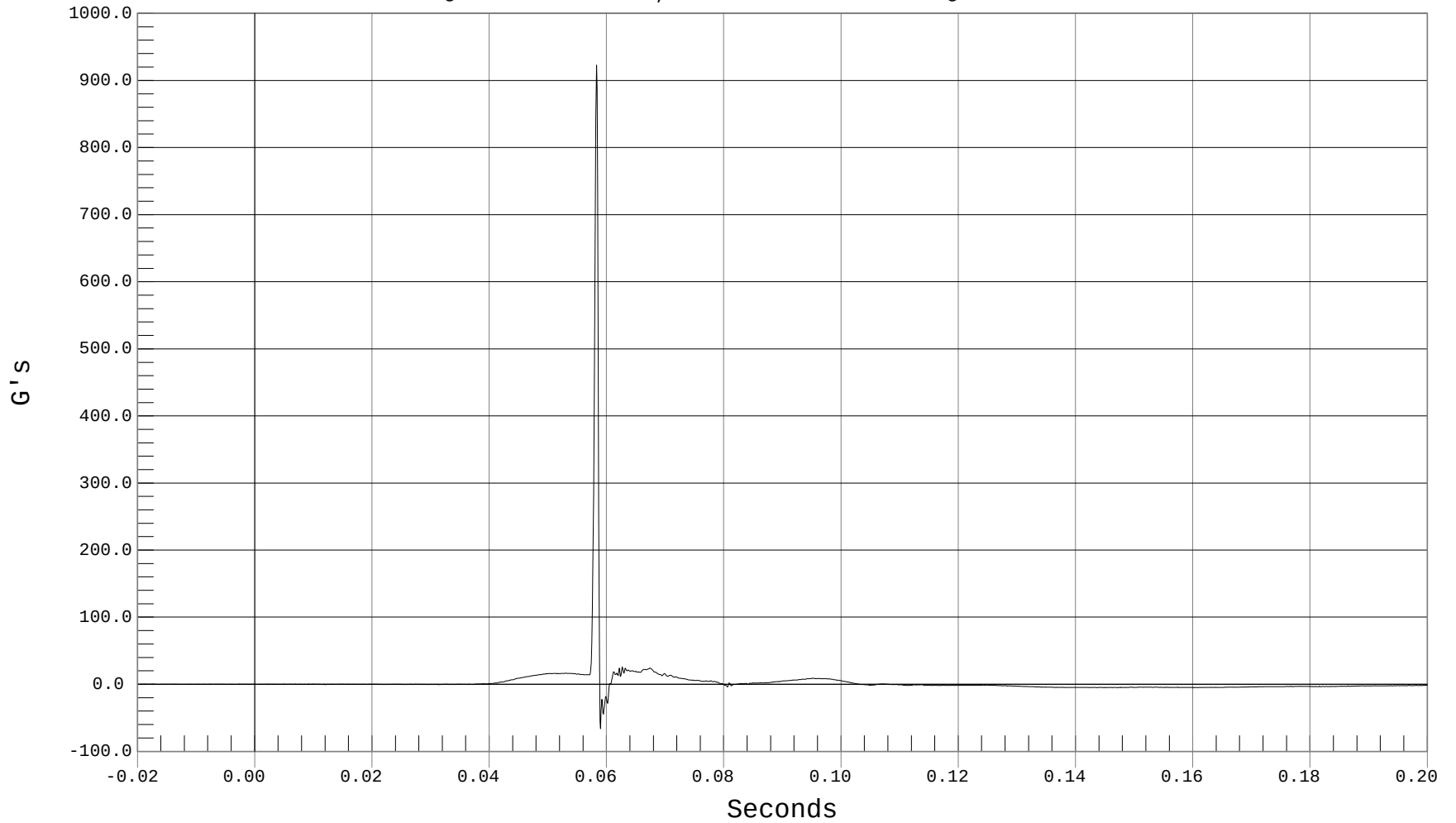
DRIVER HEAD Y ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 1000

1 DRIVER HEAD Y, B02049AT.A02

Ymin = -66.25 G's @ 0.0589 Seconds, Ymax = 922.73 G's @ 0.0582 Seconds





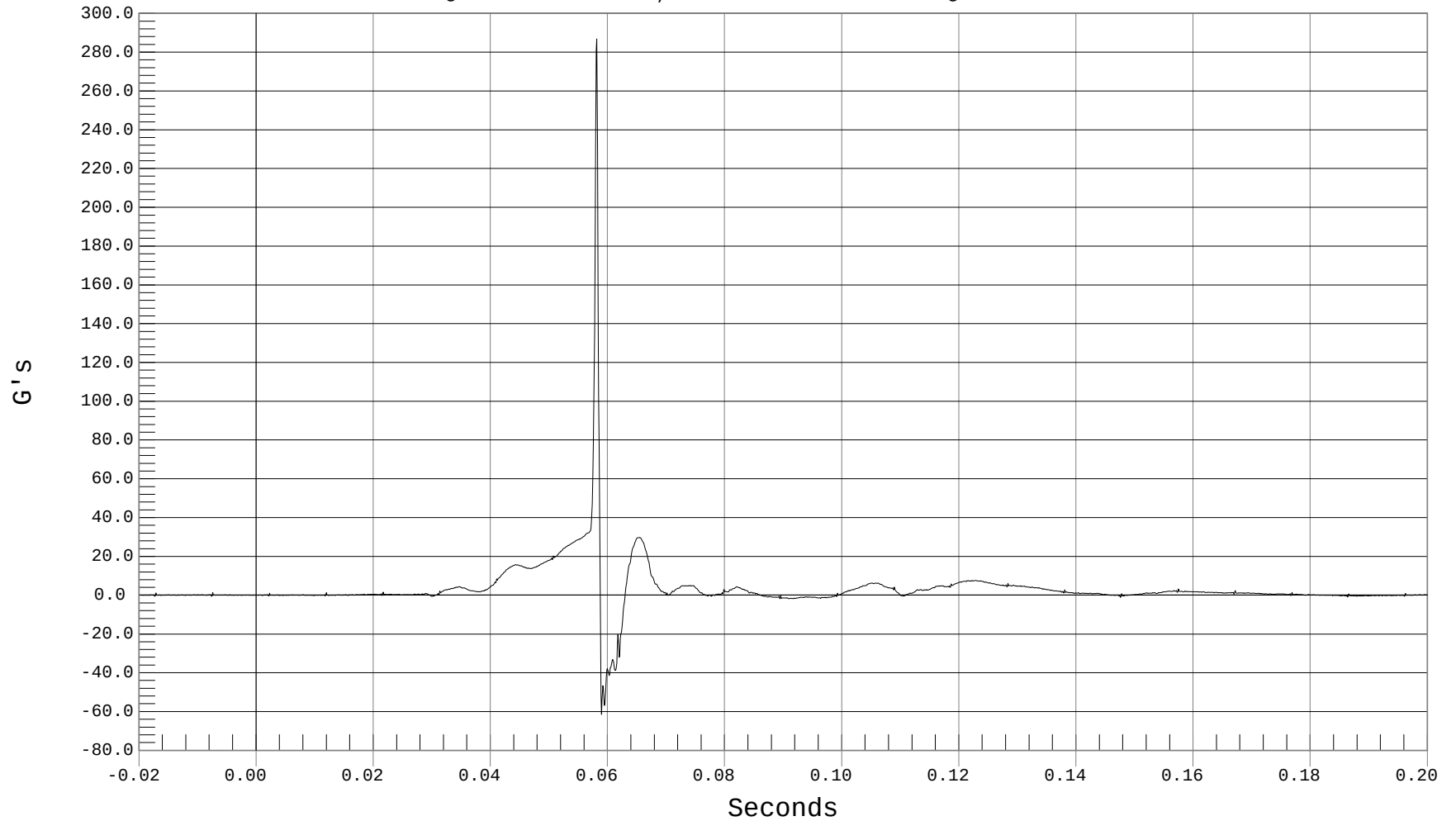
DRIVER HEAD Z ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 1000

1 DRIVER HEAD Z, B02049AT.A03

Ymin = -61.51 G's @ 0.0589 Seconds, Ymax = 286.76 G's @ 0.0581 Seconds





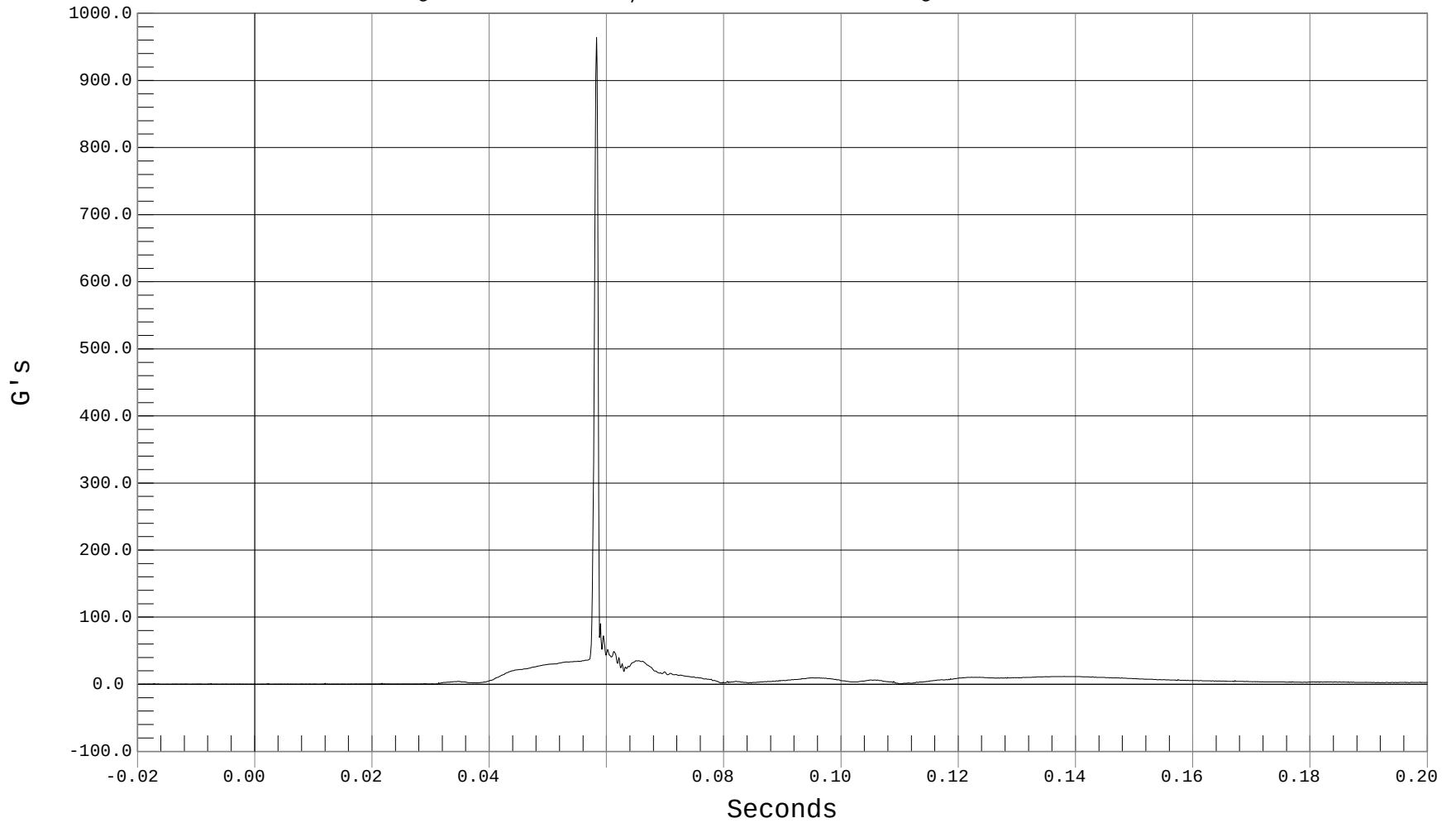
DRIVER HEAD RESULTANT ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 1000

— 1 DRIVER HEAD RESULTANT, B02049AV.A01

Ymin = .04 G's @ 0.0035 Seconds, Ymax = 964.09 G's @ 0.0582 Seconds





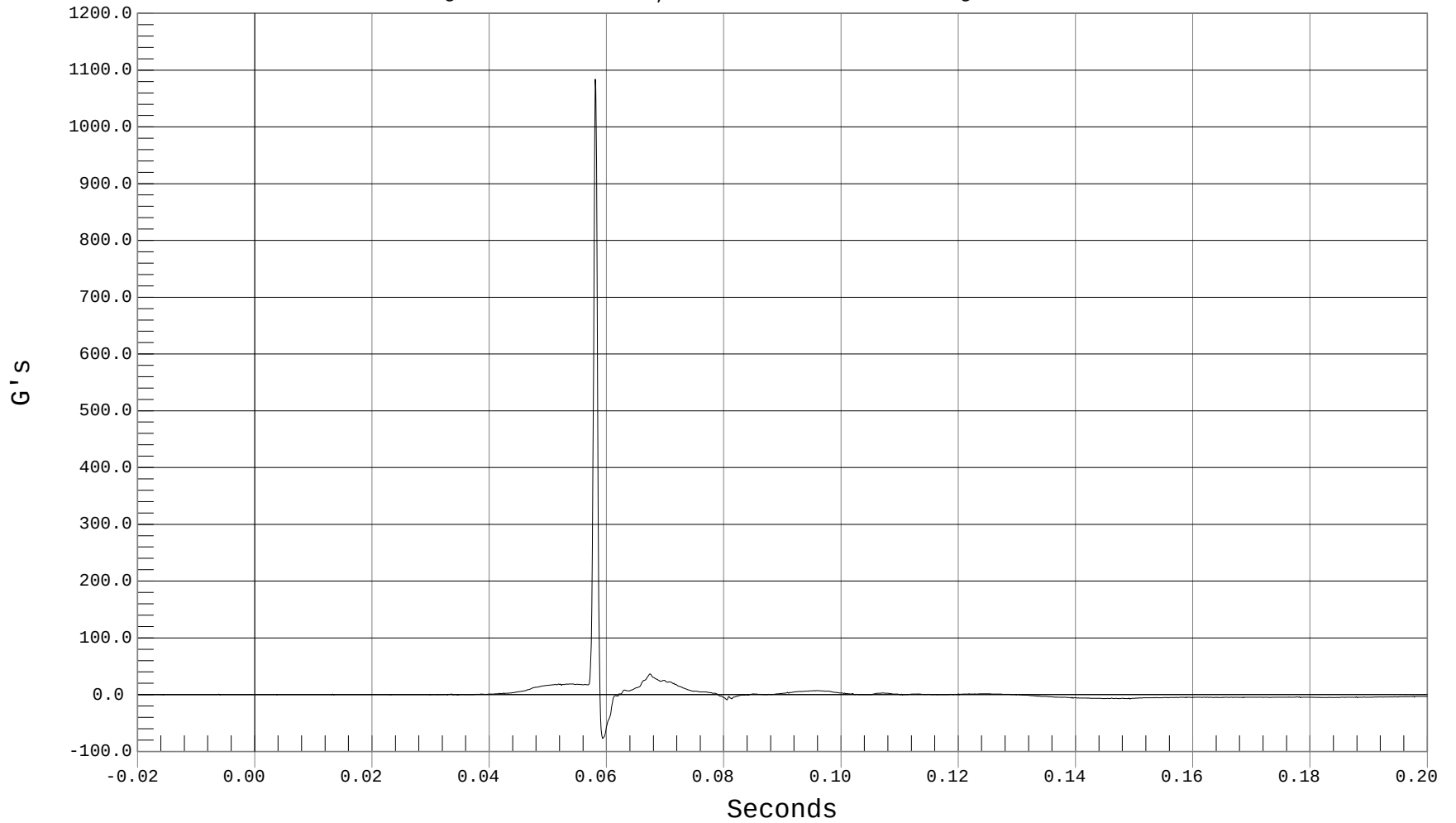
DRIVER HEAD FRONT Y ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 1000

1 DRIVER HEAD FRONT Y, B02049AT.A75

Ymin = -76.98 G's @ 0.0593 Seconds, Ymax = 1083.81 G's @ 0.0580 Seconds





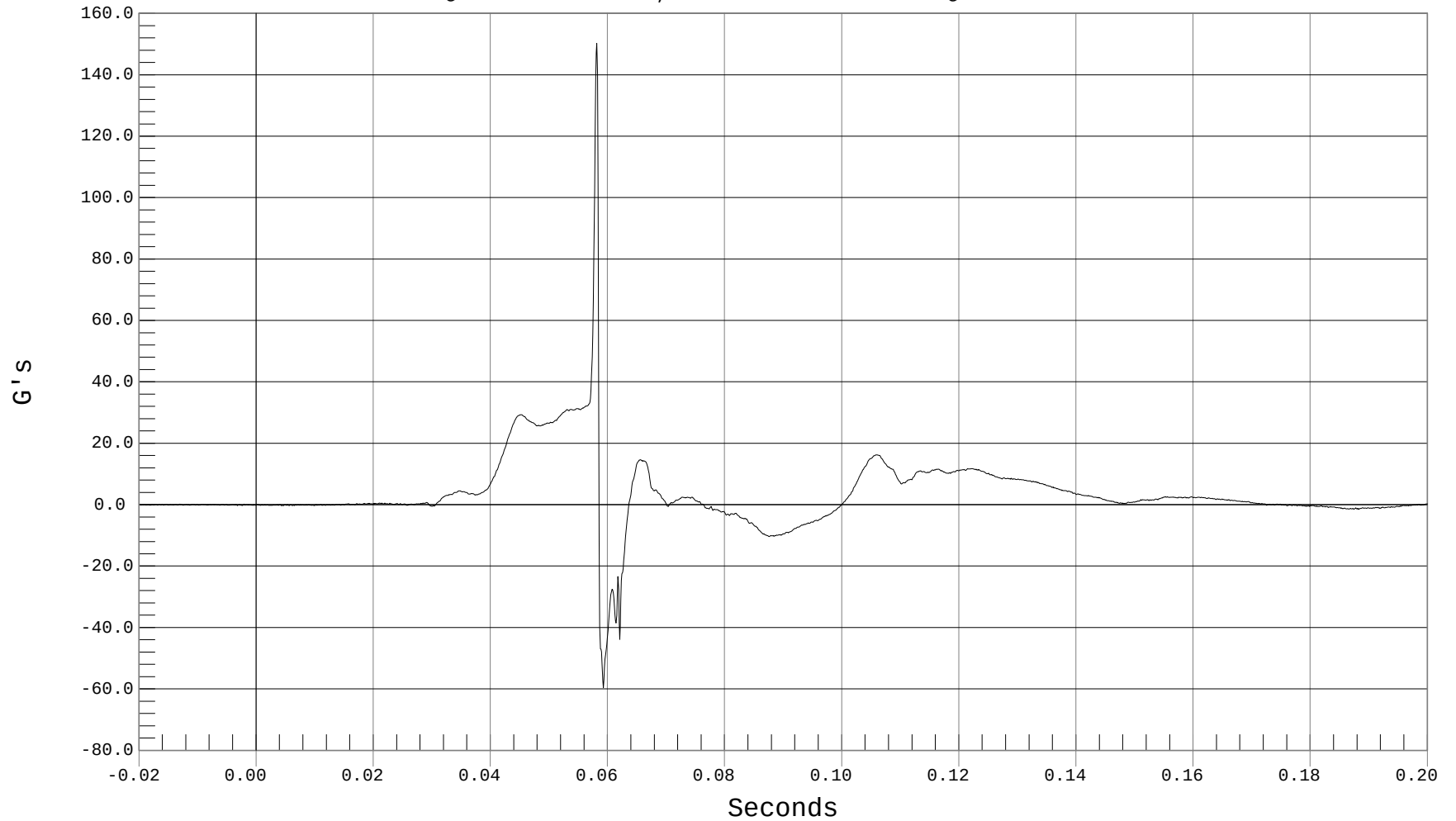
DRIVER HEAD FRONT Z ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 D00R

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 1000

— 1 DRIVER HEAD FRONT Z, B02049AT.A76

Ymin = -59.65 G's @ 0.0592 Seconds, Ymax = 150.16 G's @ 0.0581 Seconds





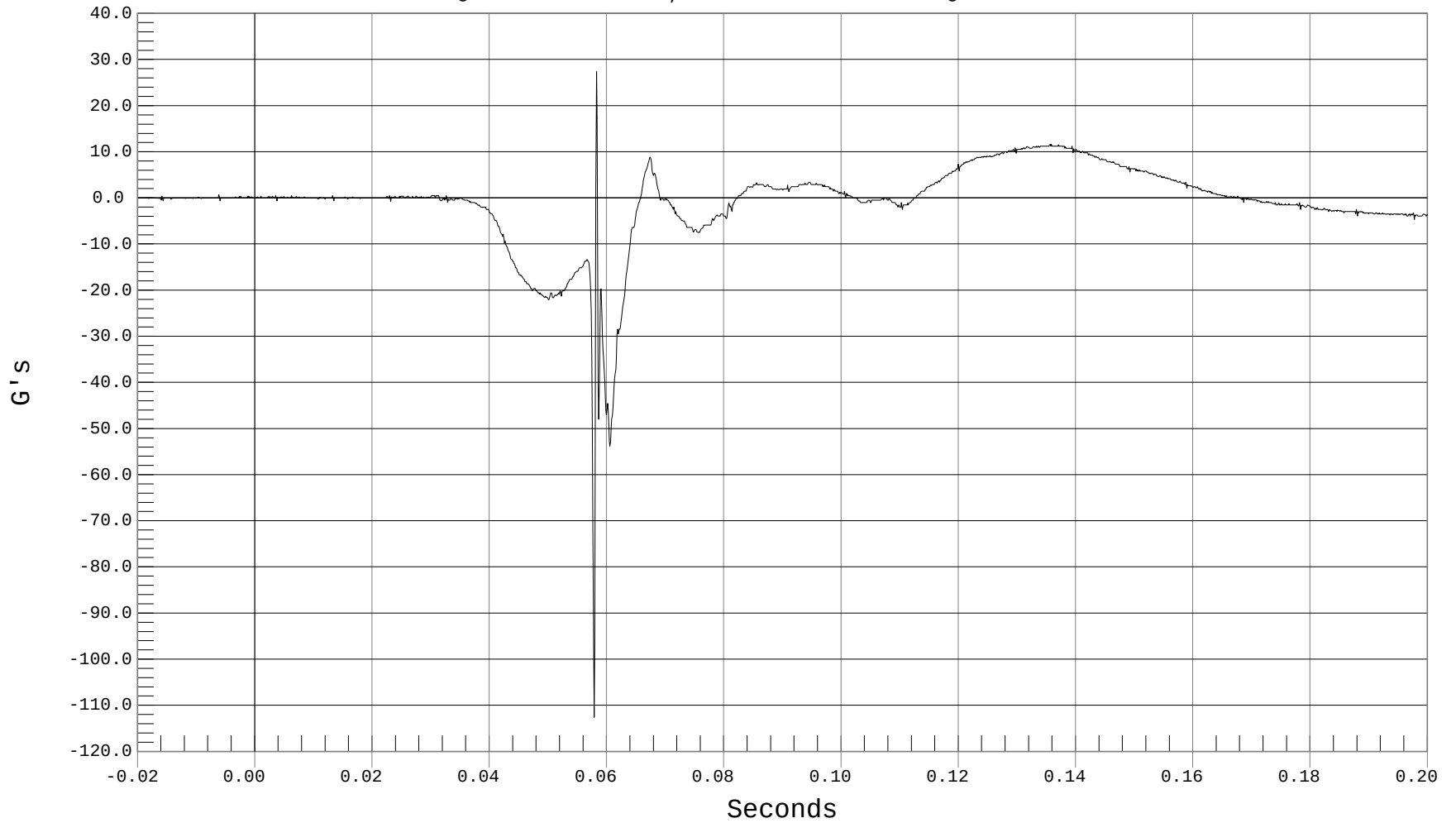
DRIVER HEAD LEFT X ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 1000

1 DRIVER HEAD LEFT X, B02049AT.A77

Ymin = -112.62 G's @ 0.0578 Seconds, Ymax = 27.38 G's @ 0.0582 Seconds





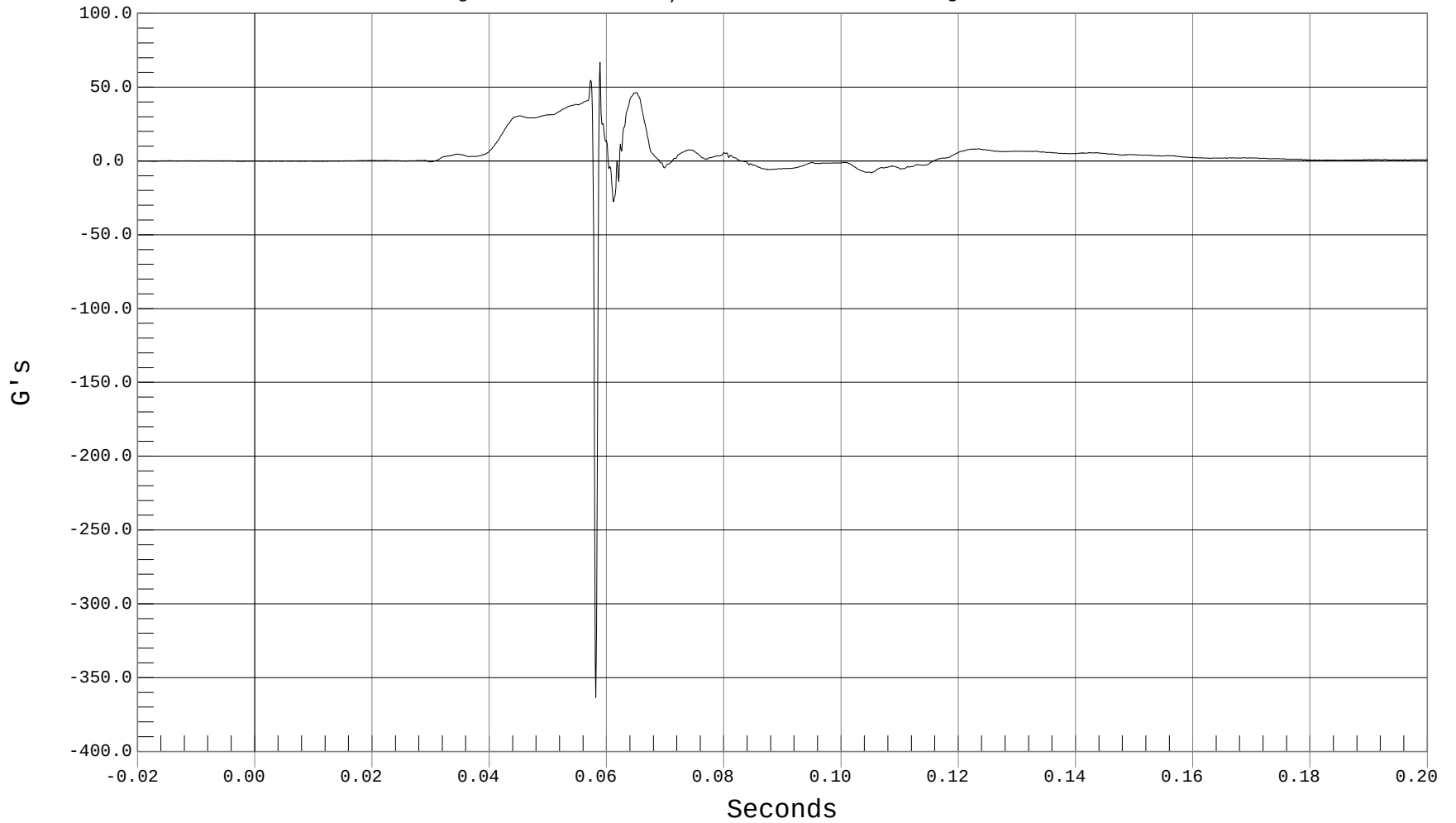
DRIVER HEAD LEFT Z ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 D00R

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 1000

1 DRIVER HEAD LEFT Z, B02049AT.A78

Ymin = -363.51 G's @ 0.0581 Seconds, Ymax = 66.86 G's @ 0.0588 Seconds





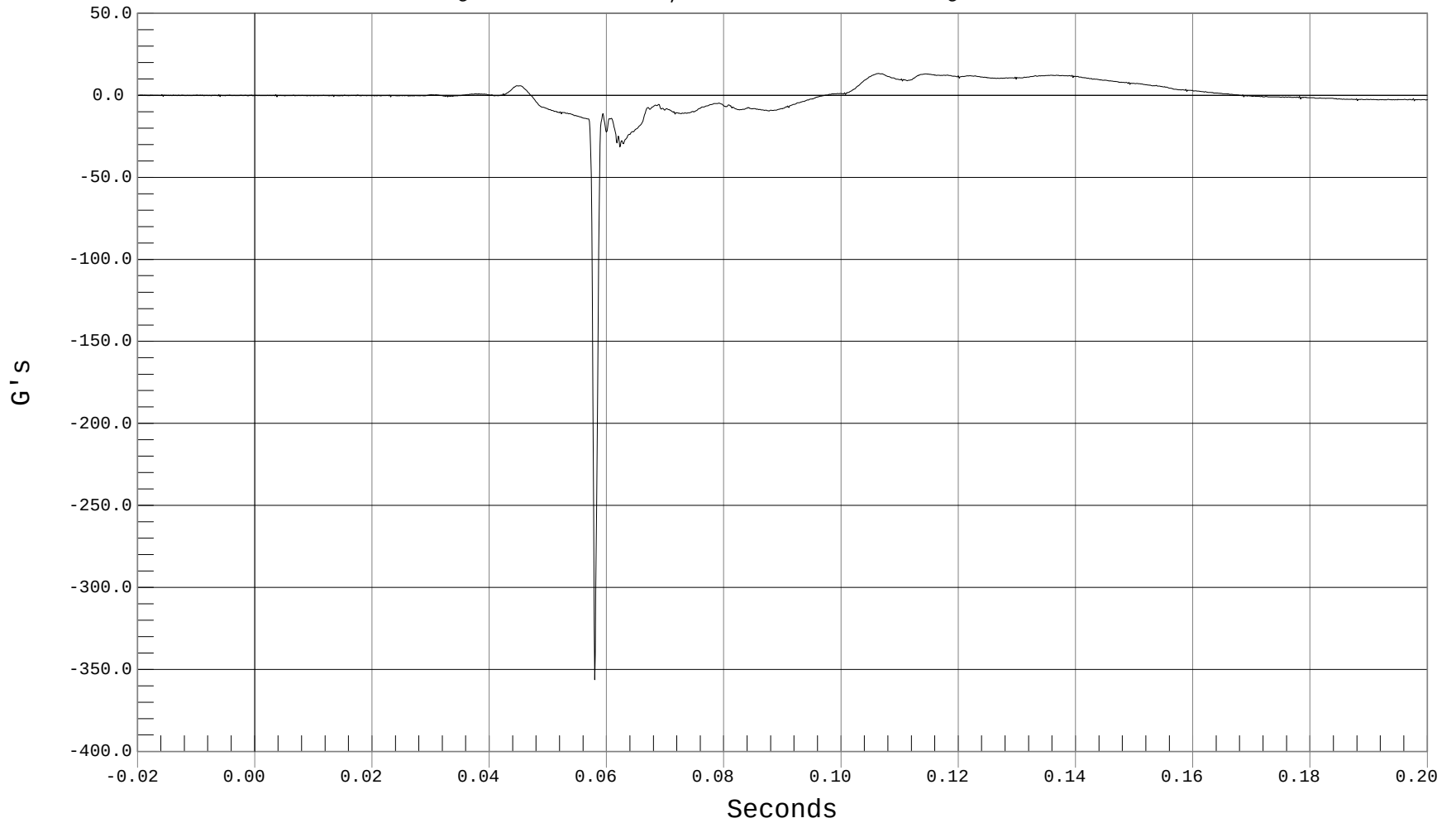
DRIVER HEAD TOP X ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 D00R

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 1000

1 DRIVER HEAD TOP X, B02049AT.A79

Ymin = -356.26 G's @ 0.0579 Seconds, Ymax = 13.38 G's @ 0.1063 Seconds





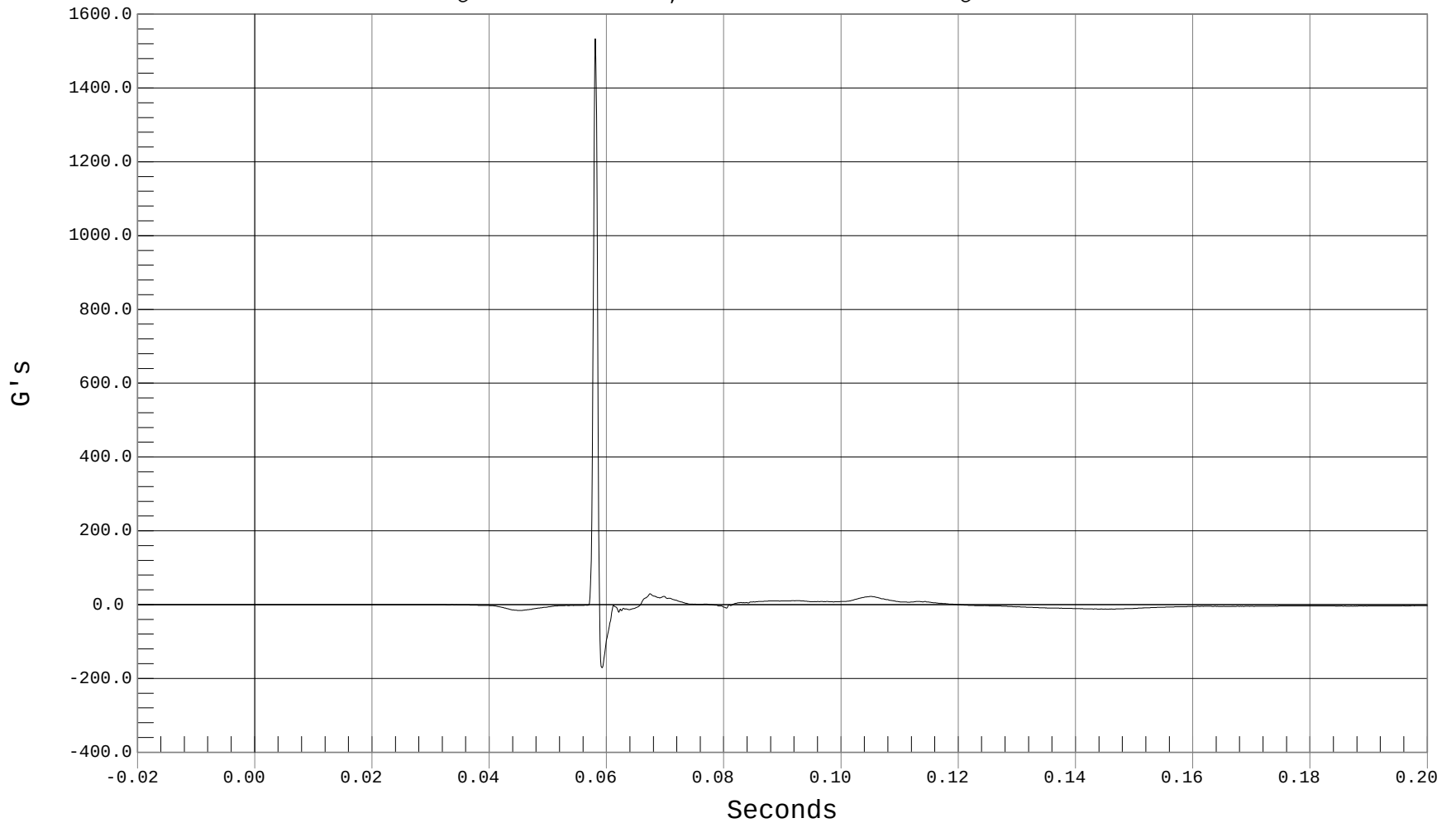
DRIVER HEAD TOP Y ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 1000

— 1 DRIVER HEAD TOP Y, B02049AT.A80

Ymin = -170.97 G's @ 0.0591 Seconds, Ymax = 1533.3 G's @ 0.0580 Seconds





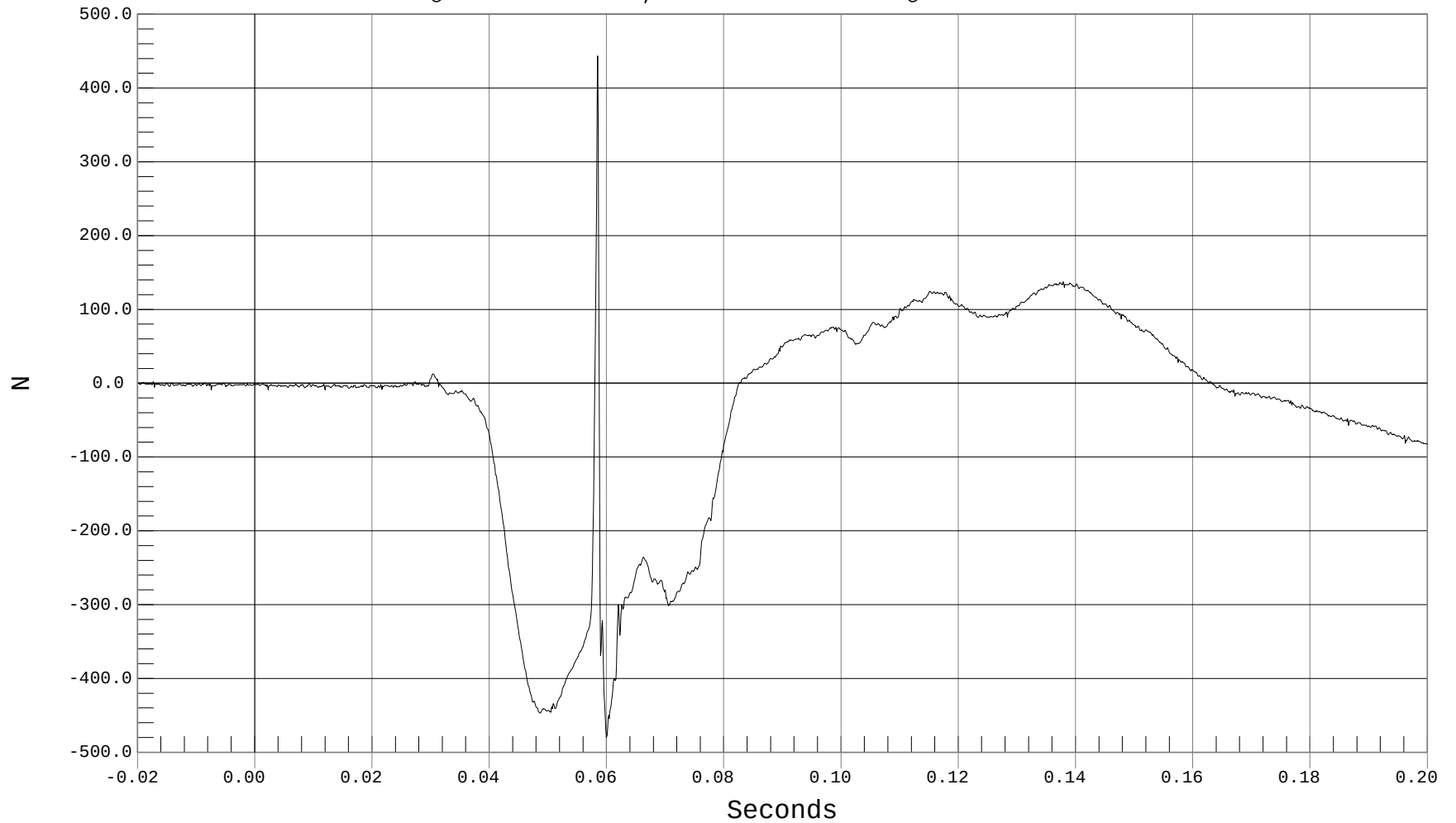
DRIVER UPPER NECK FORCE X

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 D00R

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 1000

1 DRIVER UPPER NECK FX, B02049FT.F15

Ymin = -480.09 N @ 0.0599 Seconds, Ymax = 443.52 N @ 0.0584 Seconds





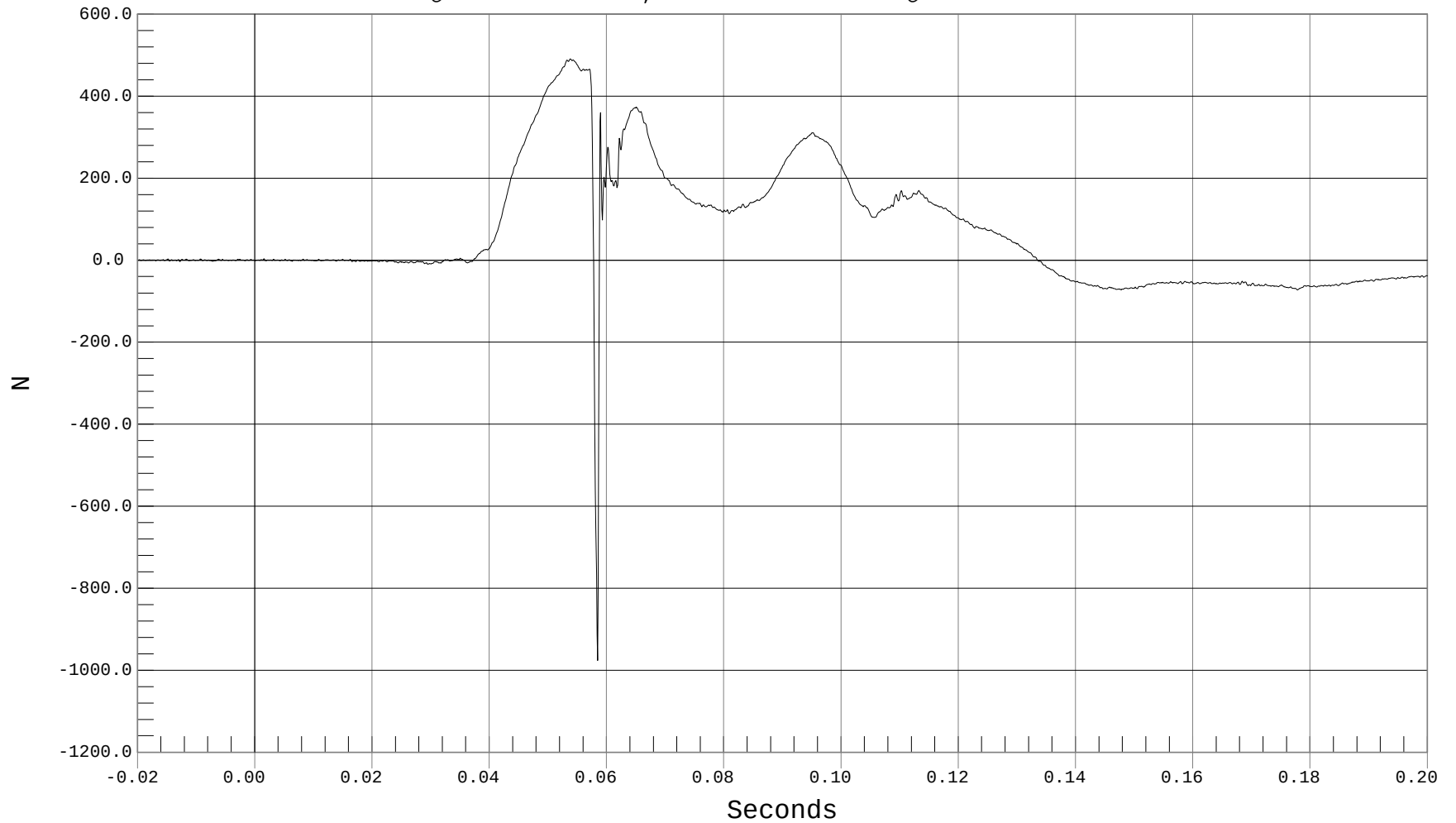
DRIVER UPPER NECK FORCE Y

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 D00R

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 1000

1 DRIVER UPPER NECK FY, B02049FT.F16

Ymin = -976.49 N @ 0.0584 Seconds, Ymax = 491.07 N @ 0.0537 Seconds





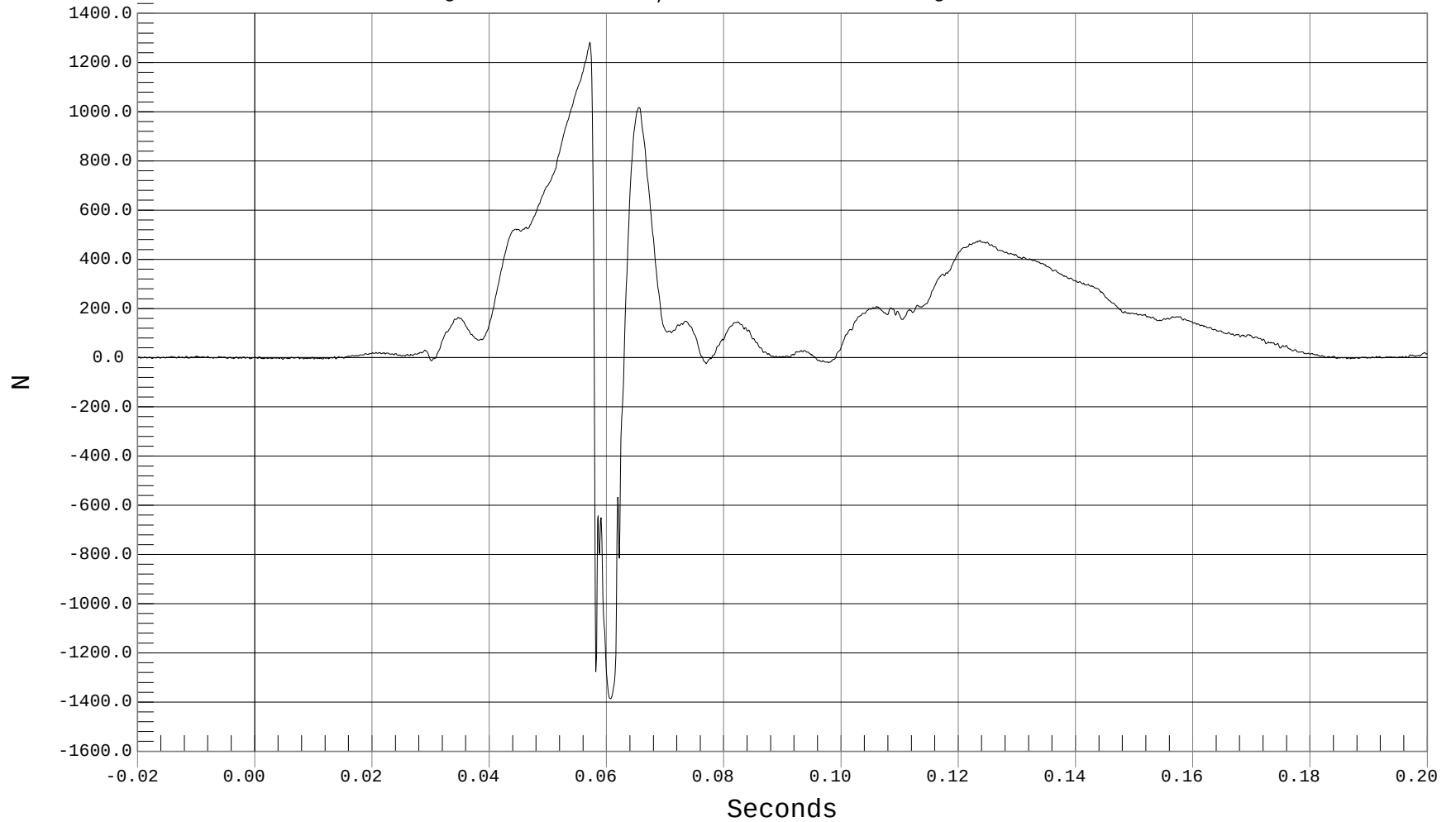
DRIVER UPPER NECK FORCE Z

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 D00R

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 1000

— 1 DRIVER UPPER NECK FZ, B02049FT.F17

Ymin = -1386.11 N @ 0.0606 Seconds, Ymax = 1282.52 N @ 0.0571 Seconds





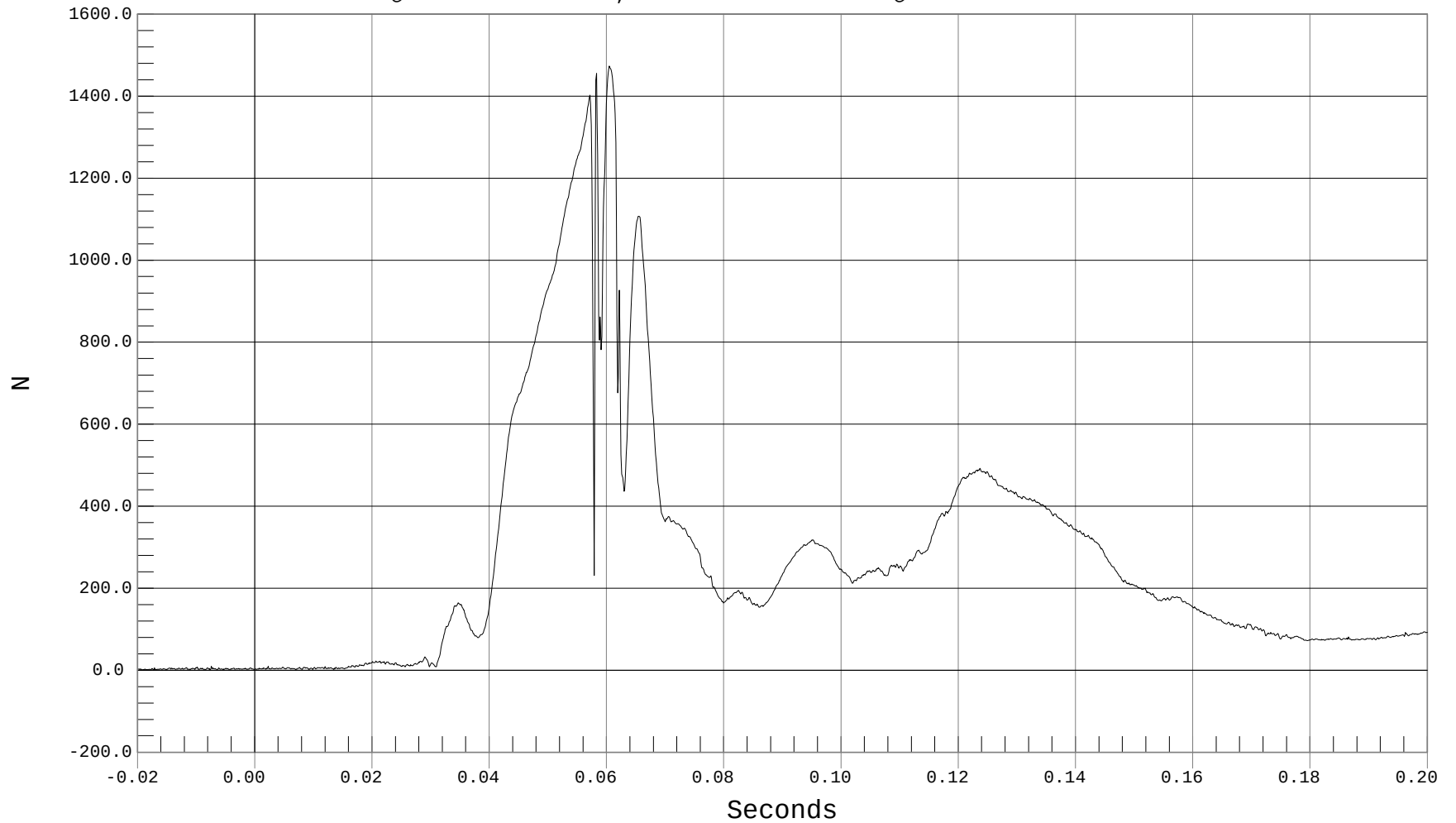
DRIVER UPPER NECK FORCE RESULTANT

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 1000

1 DRIVER UPPER NECK FORCE RESULTANT, B02049FV.F15

Ymin = .39 N @ -0.0173 Seconds, Ymax = 1473.68 N @ 0.0604 Seconds





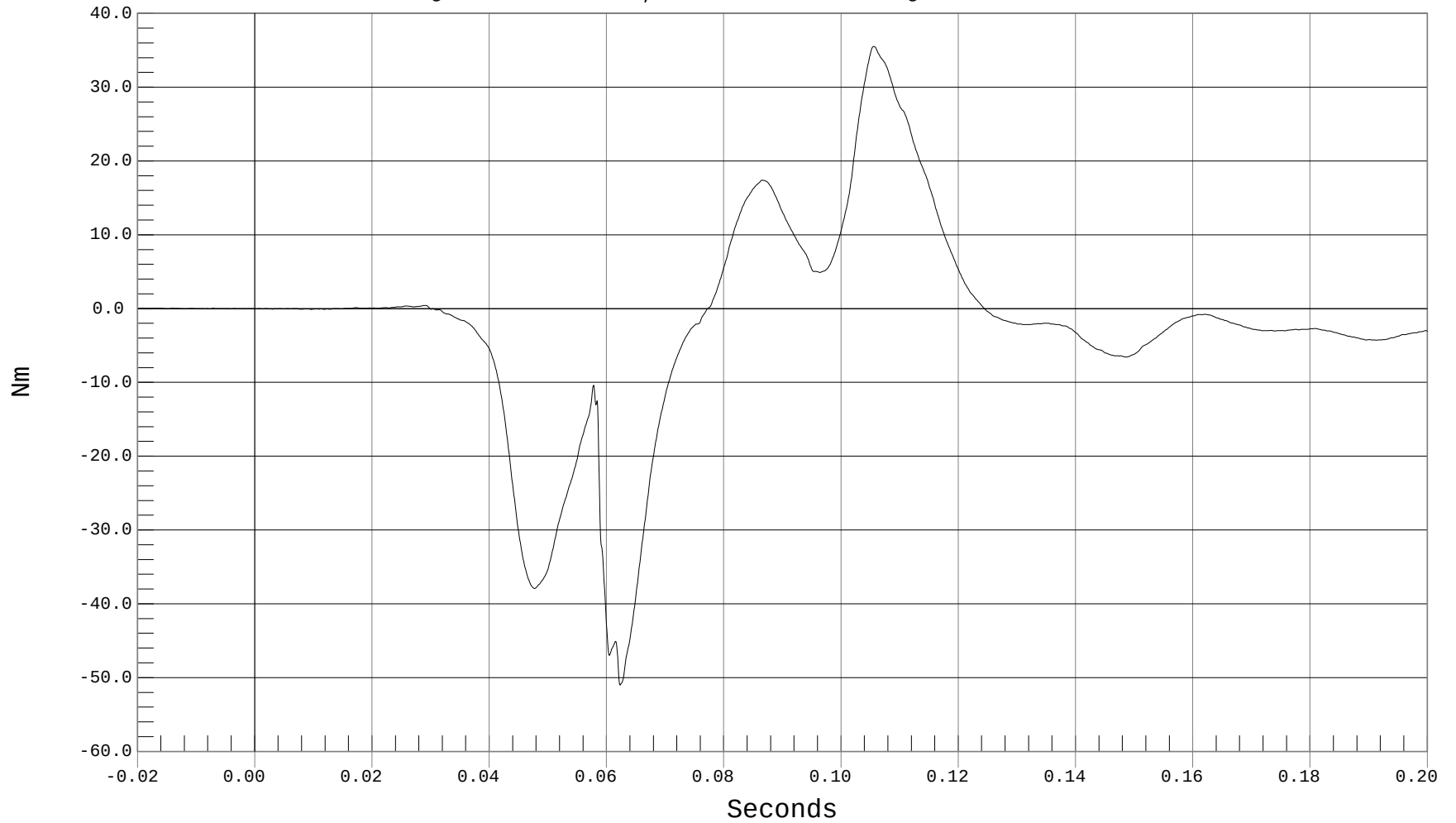
DRIVER UPPER NECK MOMENT X

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

1 DRIVER UPPER NECK MX, B02049MF.M18

Ymin = -51.01 Nm @ 0.0622 Seconds, Ymax = 35.53 Nm @ 0.1055 Seconds





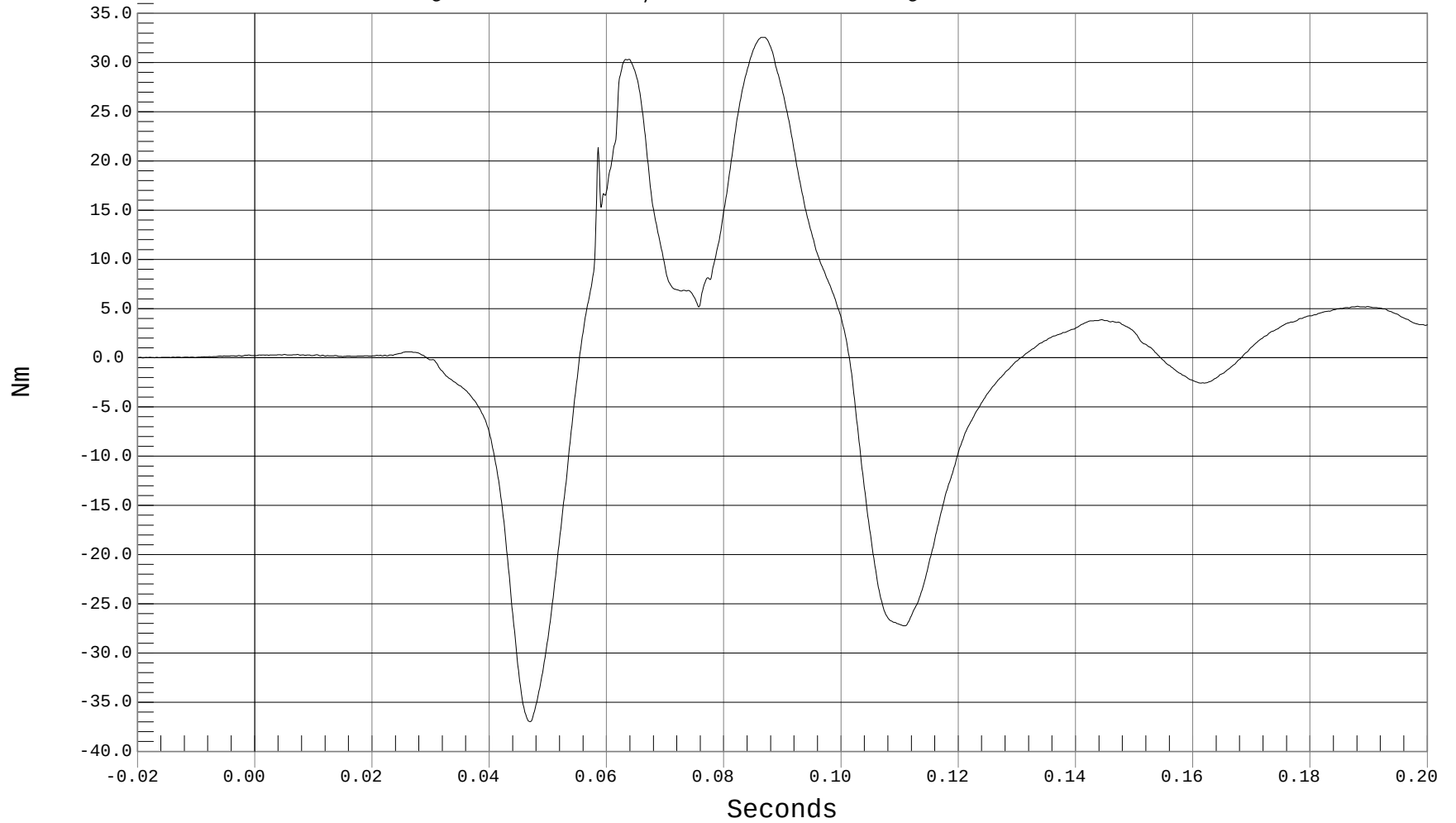
DRIVER UPPER NECK MOMENT Y

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER UPPER NECK MY, B02049MF.M19

Ymin = -36.99 Nm @ 0.0469 Seconds, Ymax = 32.57 Nm @ 0.0868 Seconds





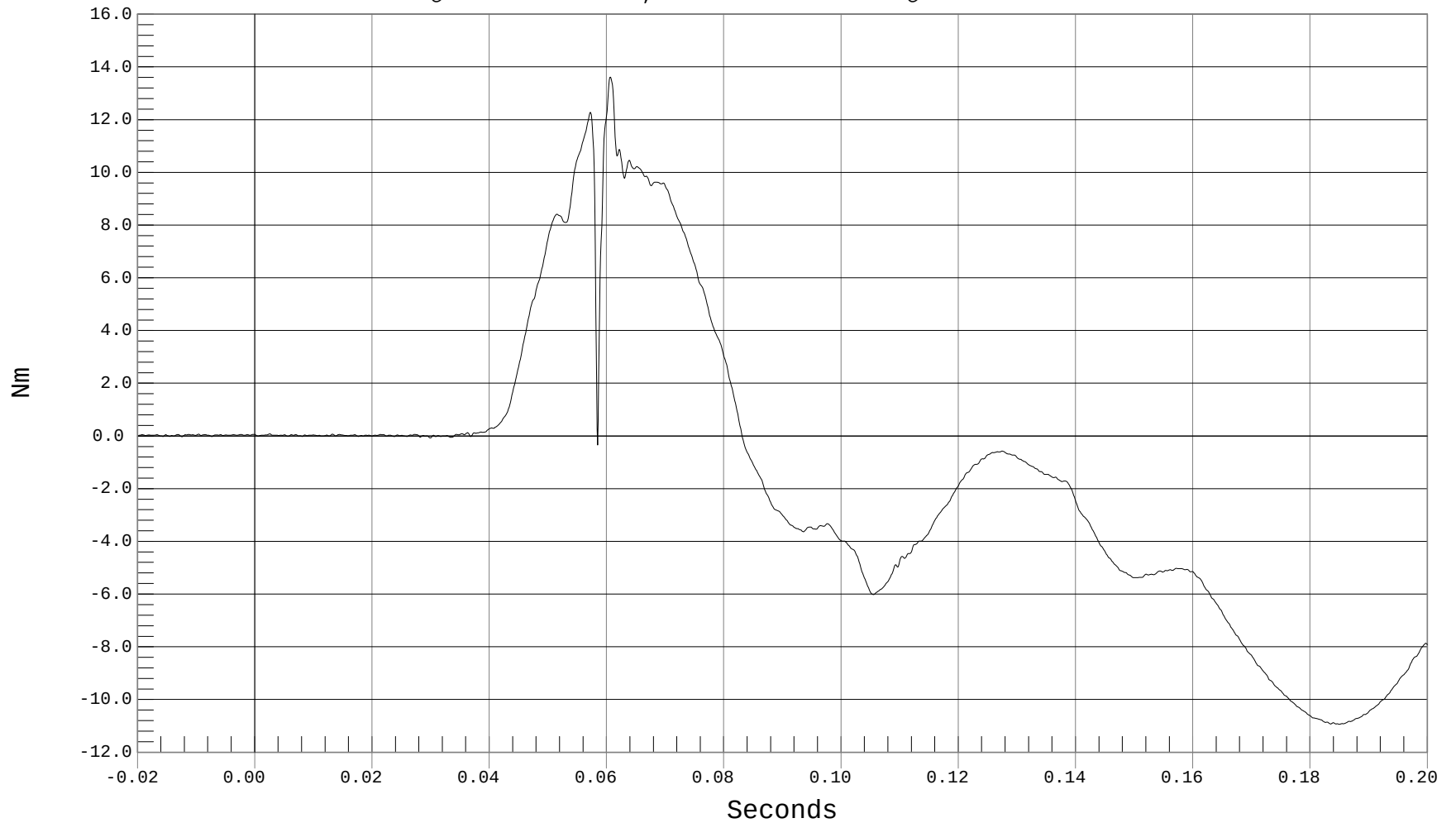
DRIVER UPPER NECK MOMENT Z

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

1 DRIVER UPPER NECK MZ, B02049MF.M20

Ymin = -10.94 Nm @ 0.1849 Seconds, Ymax = 13.62 Nm @ 0.0606 Seconds





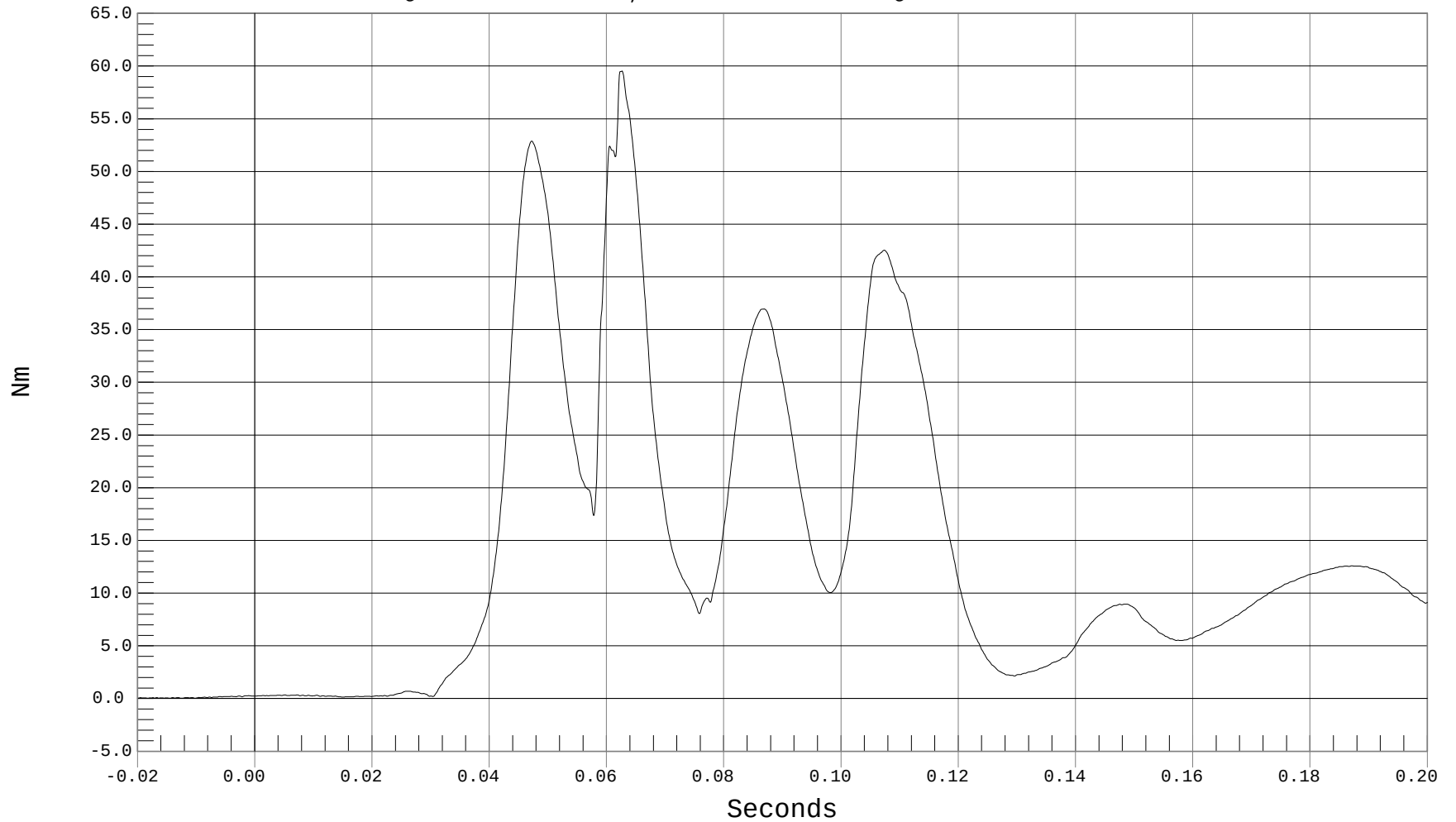
DRIVER UPPER NECK MOMENT RESULTANT

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER UPPER NECK MOMENT RESULTANT, B02049MV.M18

Ymin = .03 Nm @ -0.0145 Seconds, Ymax = 59.54 Nm @ 0.0626 Seconds





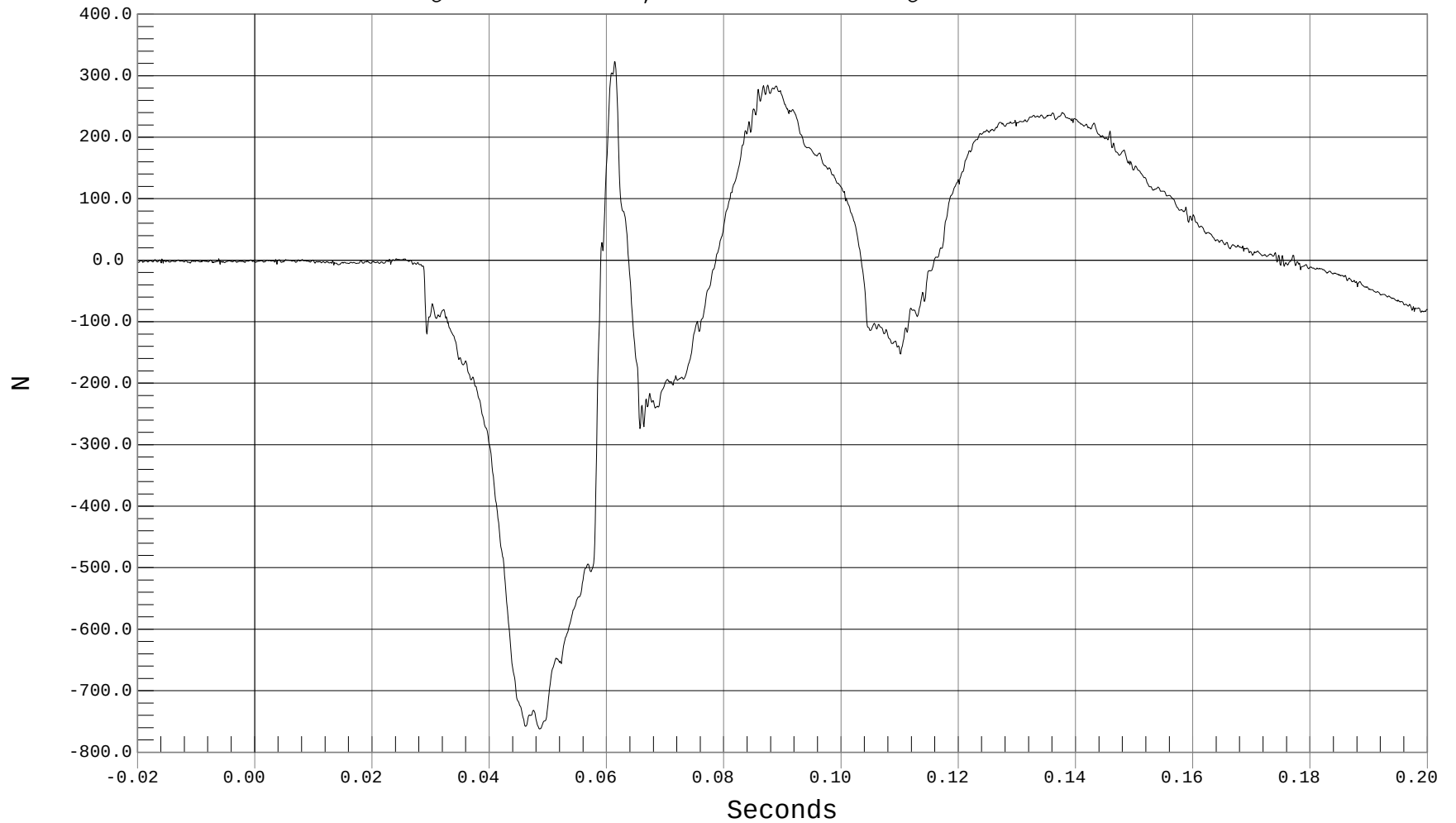
DRIVER LOWER NECK FORCE X

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 D00R

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 1000

— 1 DRIVER LOWER NECK FX, B02049FT.F69

Ymin = -762.37 N @ 0.0485 Seconds, Ymax = 323.27 N @ 0.0613 Seconds





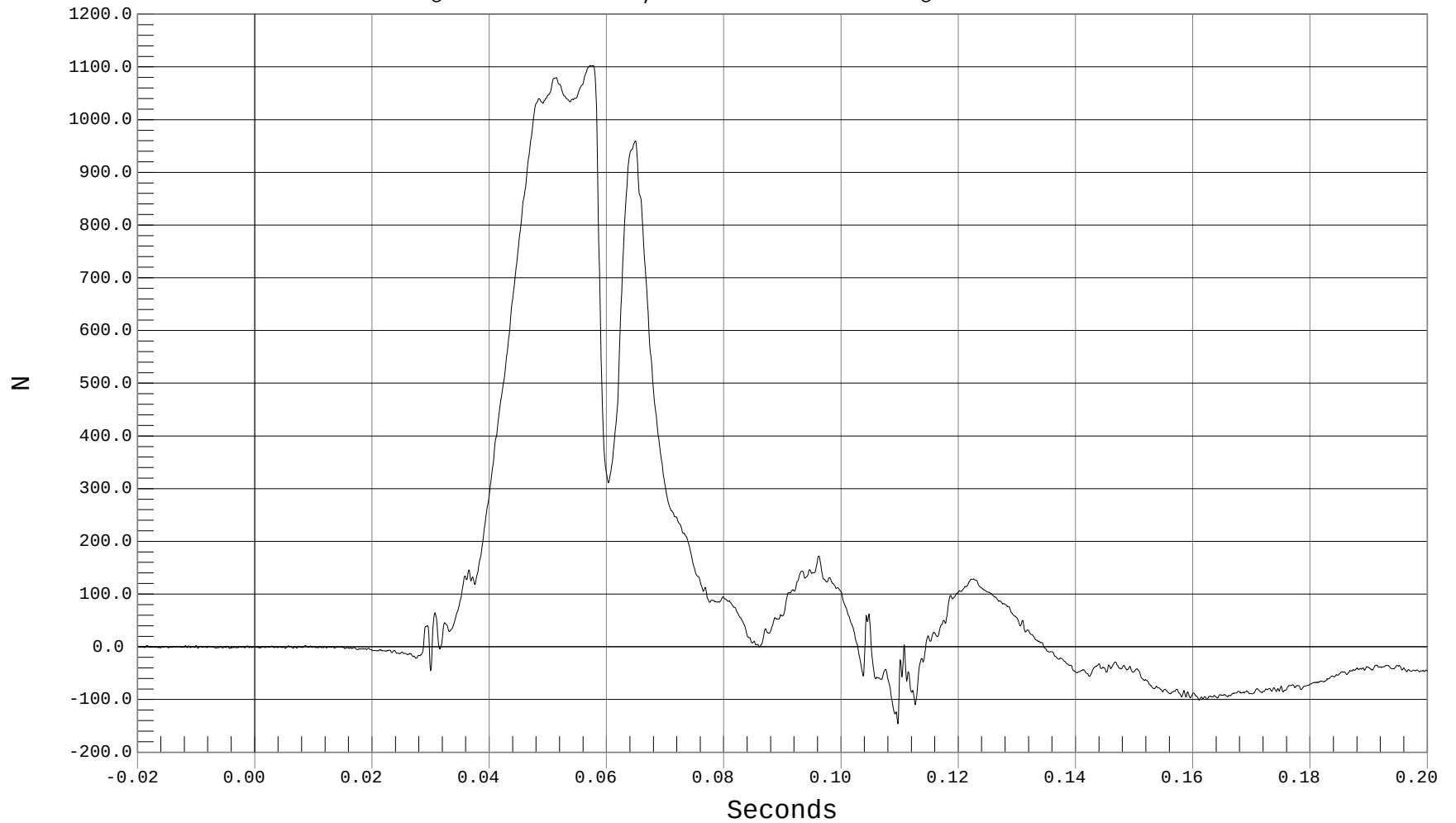
DRIVER LOWER NECK FORCE Y

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 1000

— 1 DRIVER LOWER NECK FY, B02049FT.F70

Ymin = -145.87 N @ 0.1096 Seconds, Ymax = 1103.02 N @ 0.0571 Seconds





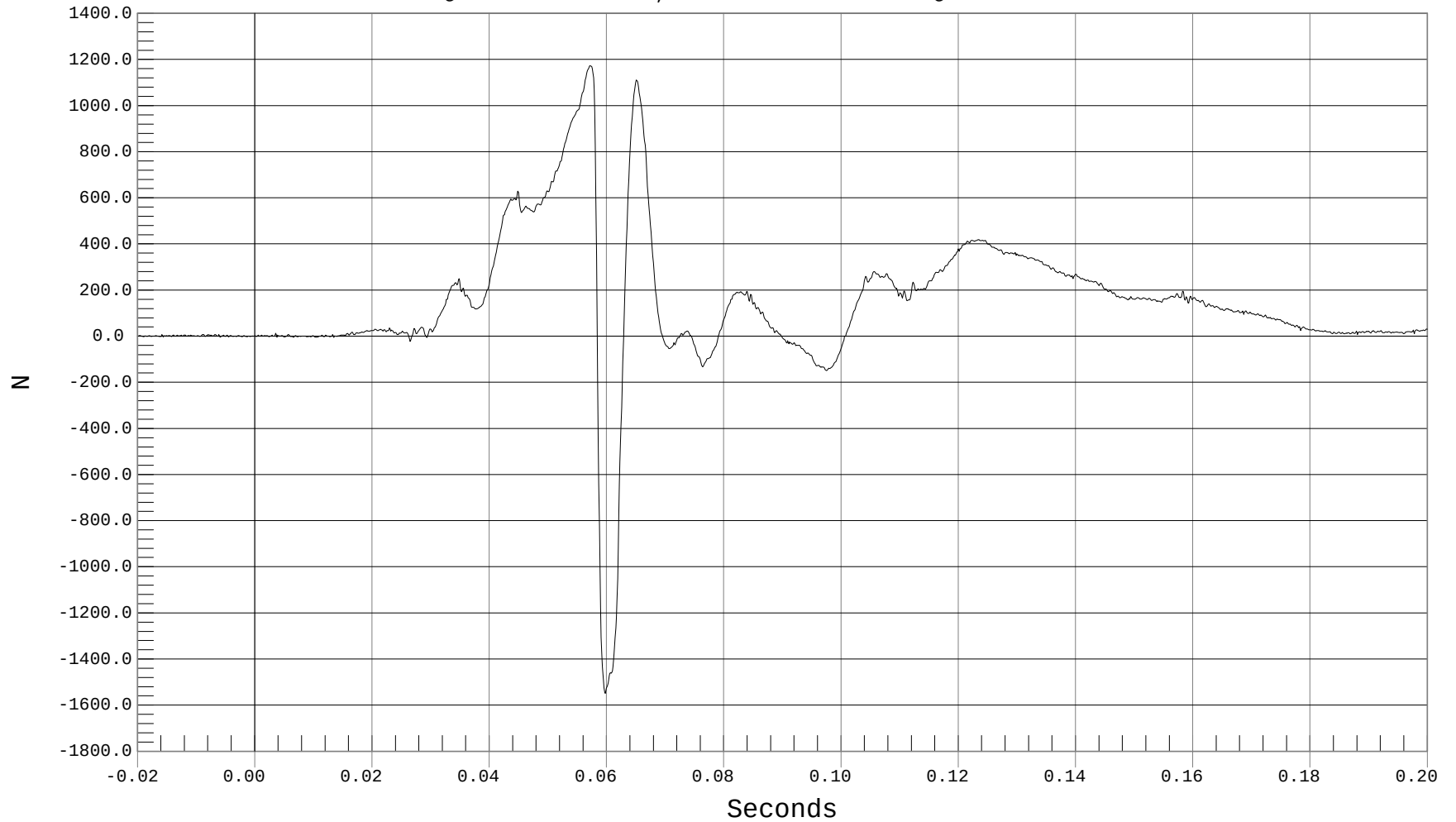
DRIVER LOWER NECK FORCE Z

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 1000

— 1 DRIVER LOWER NECK FZ, B02049FT.F71

Ymin = -1549.32 N @ 0.0597 Seconds, Ymax = 1173.11 N @ 0.0571 Seconds





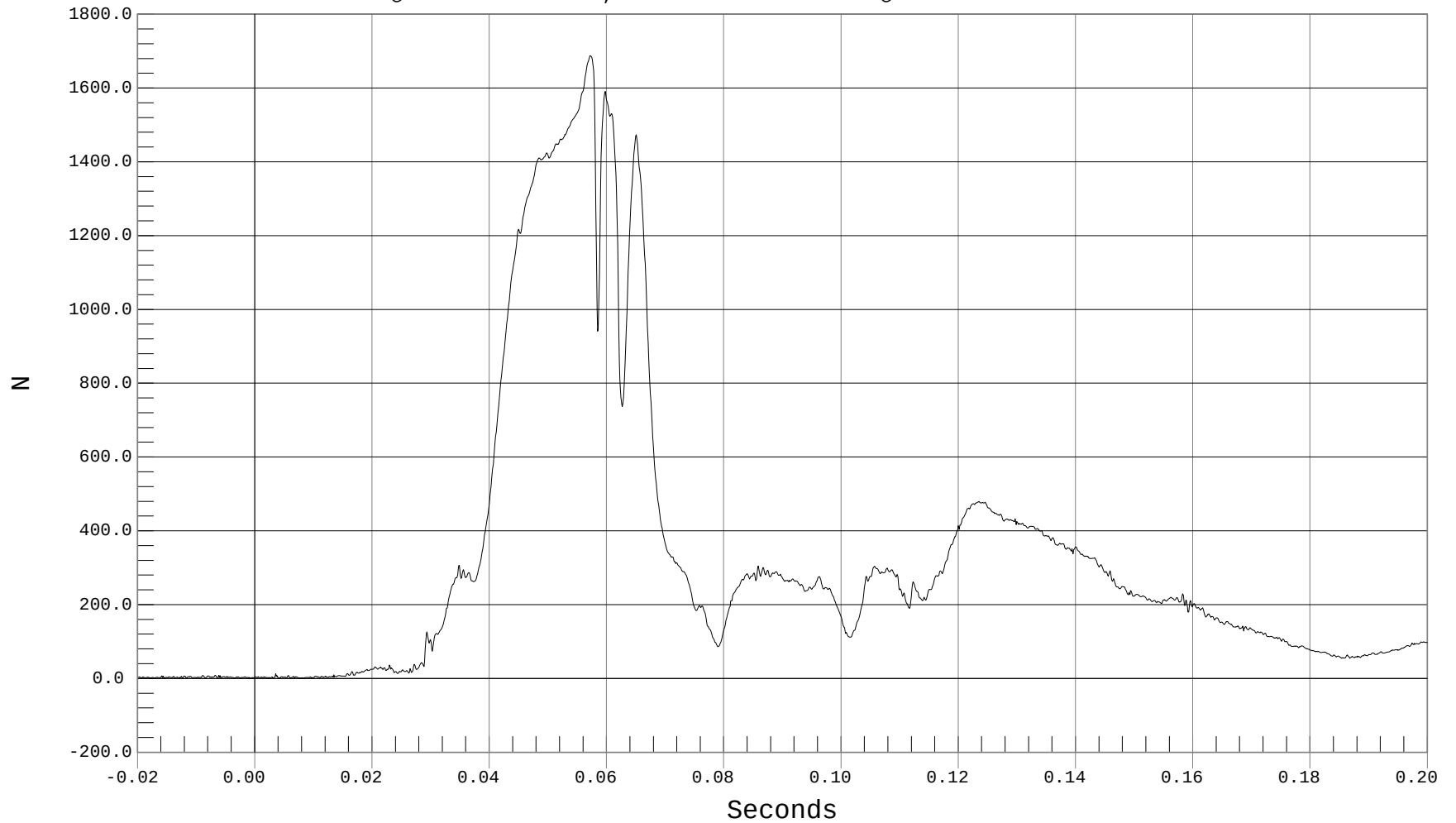
DRIVER LOWER NECK FORCE RESULTANT

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 1000

— 1 DRIVER LOWER NECK FORCE RESULTANT, B02049FV.F69

Ymin = .56 N @ 0.0059 Seconds, Ymax = 1687.32 N @ 0.0571 Seconds





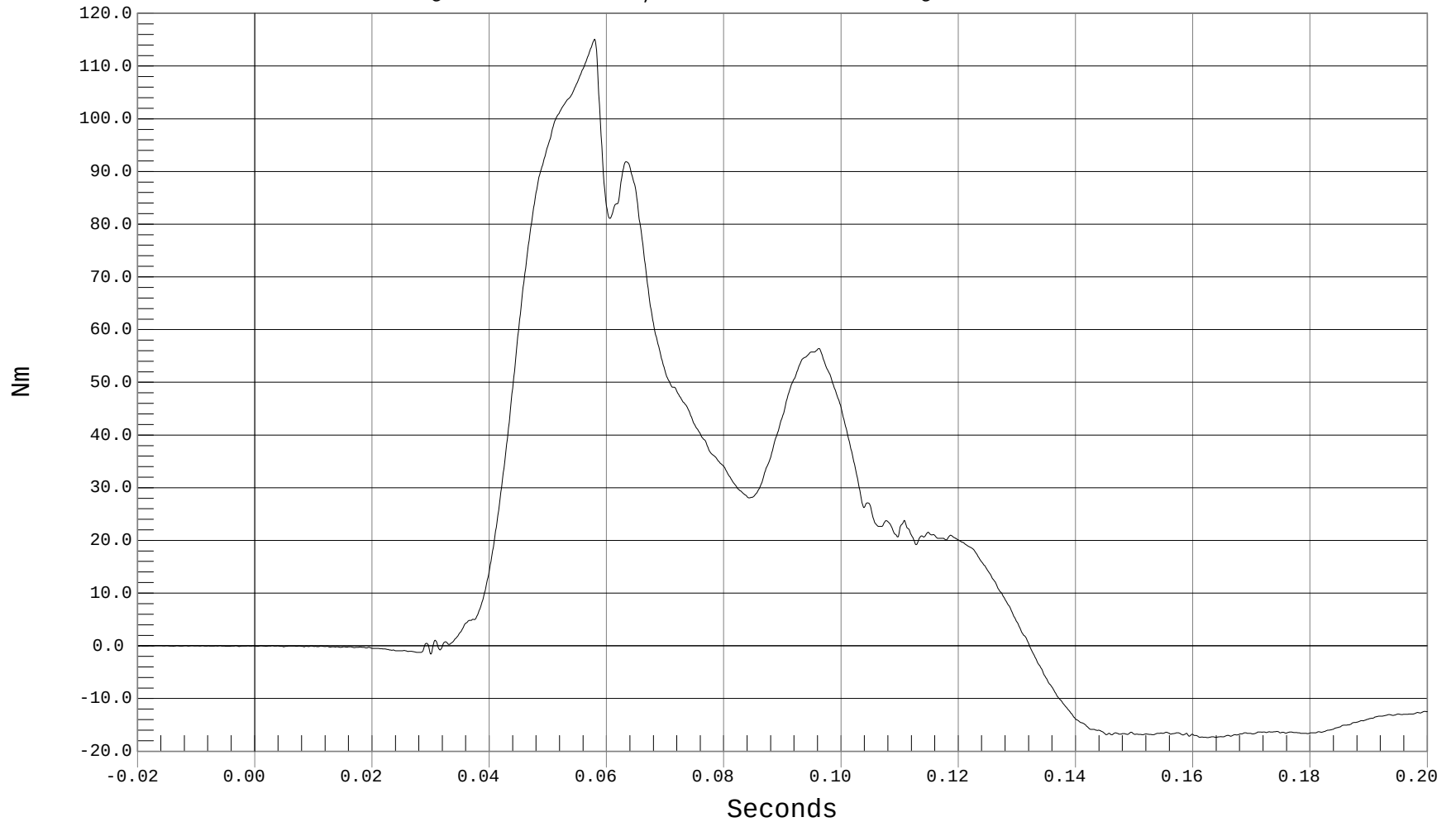
DRIVER LOWER NECK MOMENT X

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

1 DRIVER LOWER NECK MX, B02049MF.M72

Ymin = -17.43 Nm @ 0.1625 Seconds, Ymax = 115.09 Nm @ 0.0579 Seconds





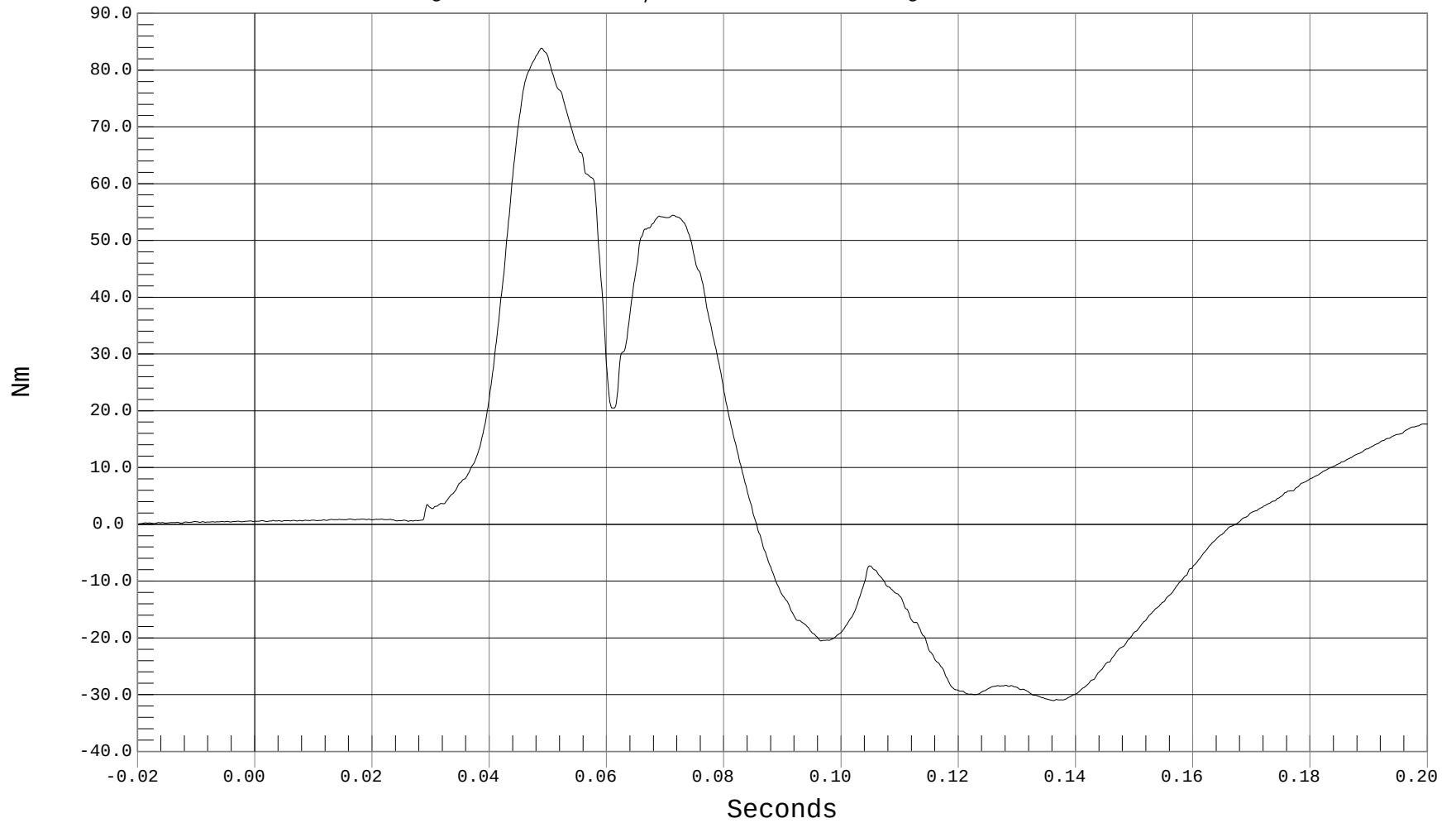
DRIVER LOWER NECK MOMENT Y

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER LOWER NECK MY, B02049MF.M73

Ymin = -31.07 Nm @ 0.1361 Seconds, Ymax = 83.86 Nm @ 0.0488 Seconds





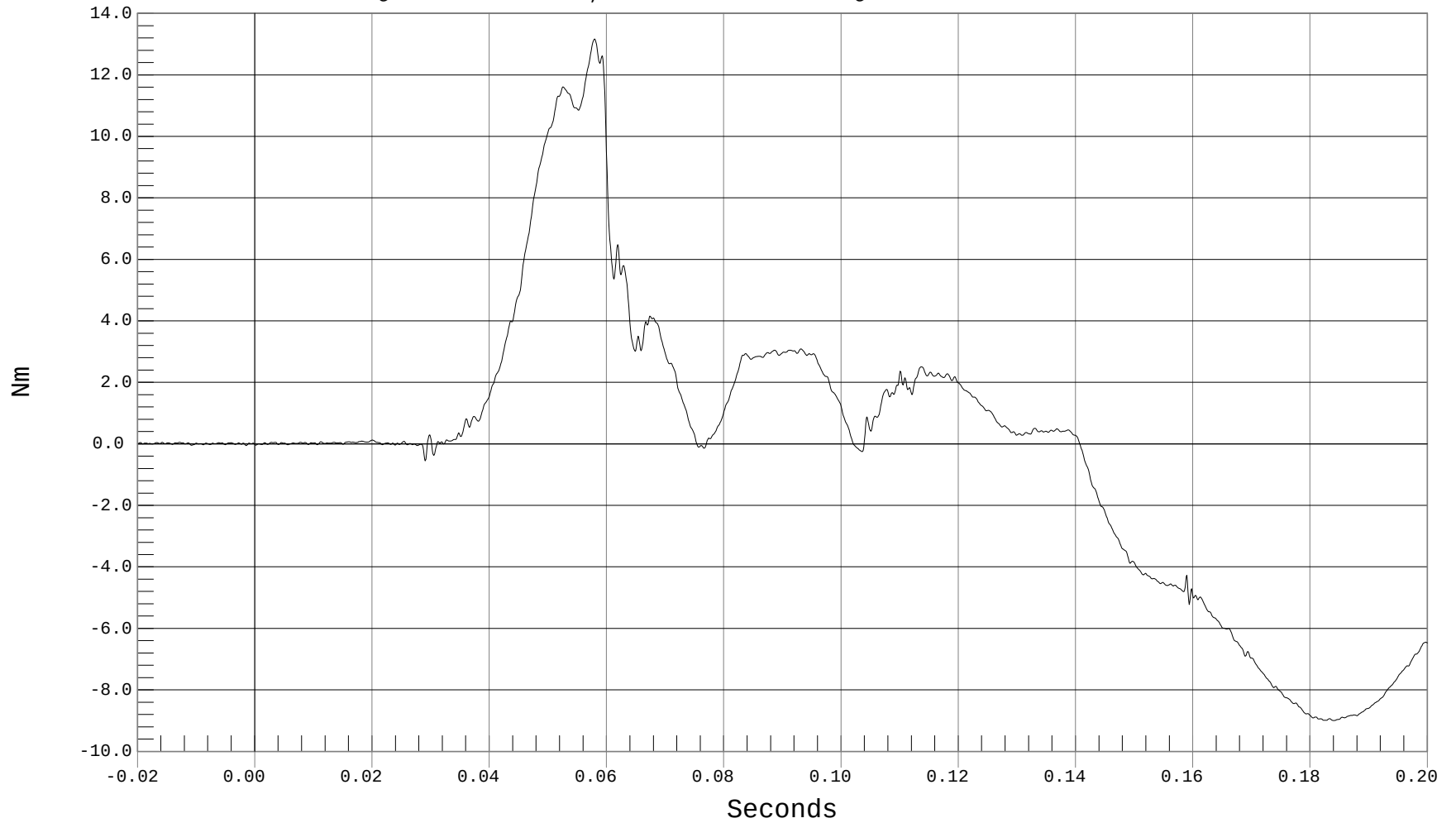
DRIVER LOWER NECK MOMENT Z

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER LOWER NECK MZ, B02049MF.M74

Ymin = -9 Nm @ 0.1840 Seconds, Ymax = 13.17 Nm @ 0.0579 Seconds





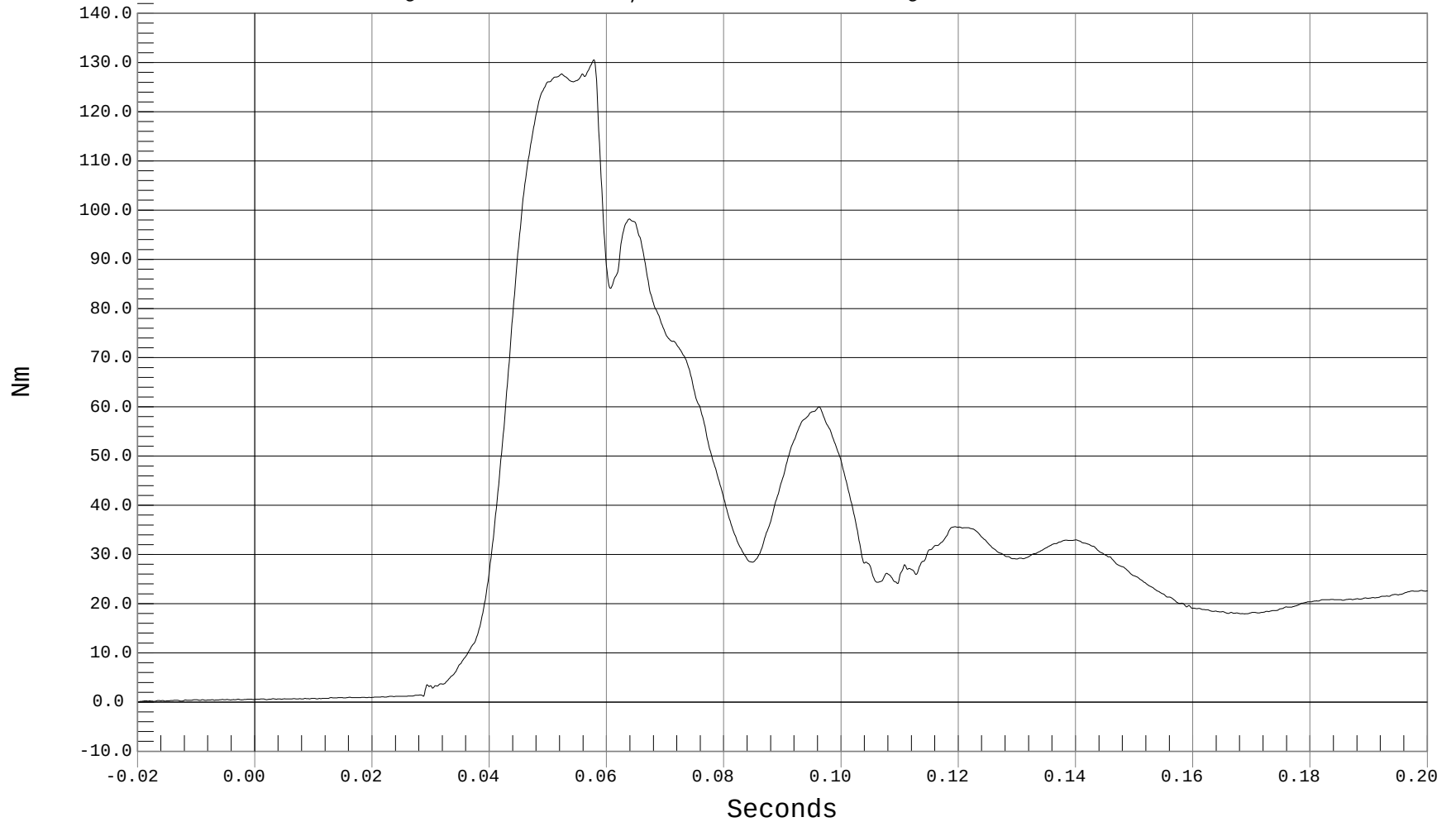
DRIVER LOWER NECK MOMENT RESULTANT

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

1 DRIVER LOWER NECK MOMENT RESULTANT, B02049MV.M72

Ymin = .08 Nm @ -0.0199 Seconds, Ymax = 130.53 Nm @ 0.0578 Seconds





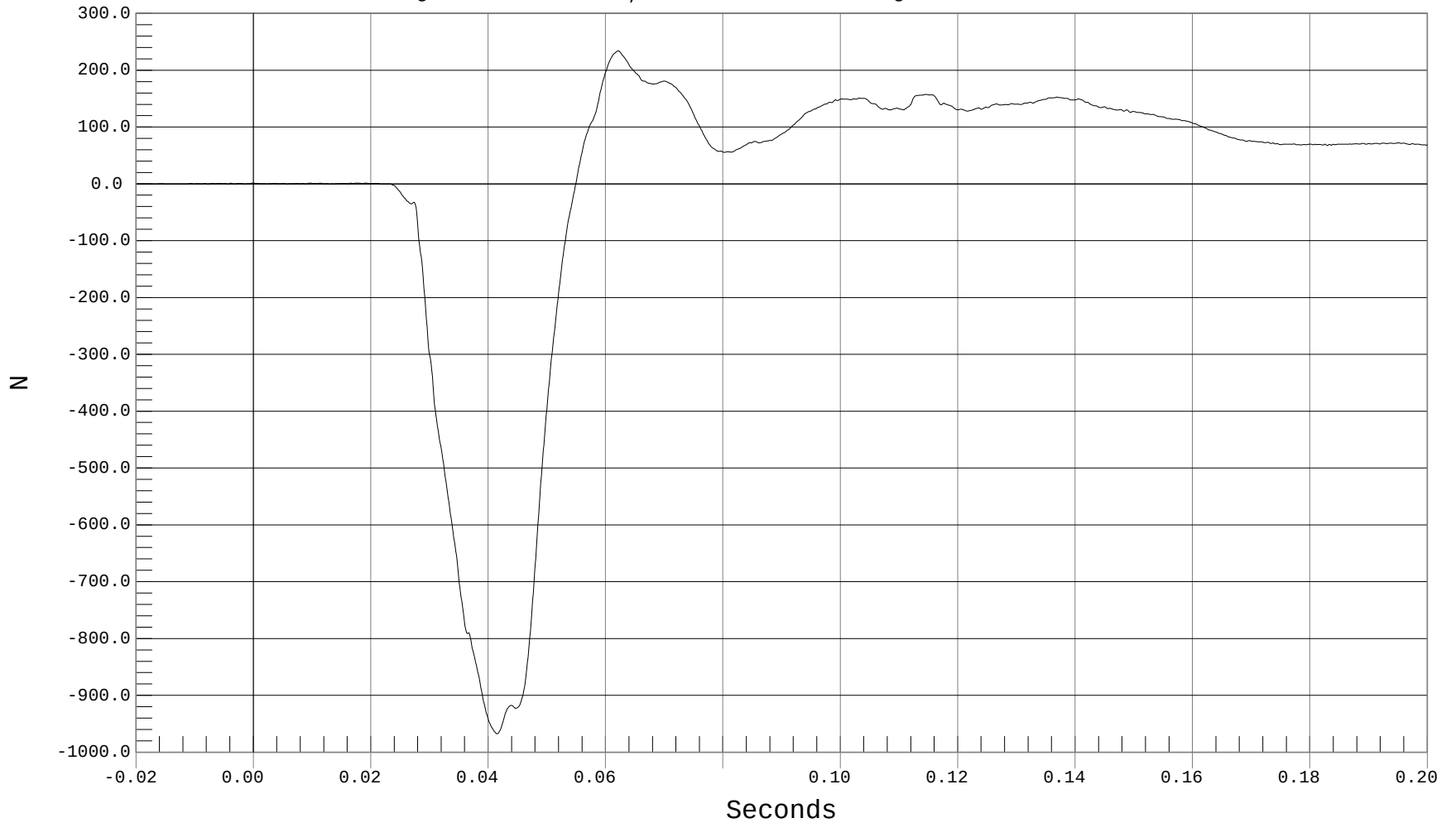
DRIVER SHOULDER FORCE X

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER SHOULDER FX, B02049FF.F81

Ymin = -967.8 N @ 0.0414 Seconds, Ymax = 234.18 N @ 0.0621 Seconds





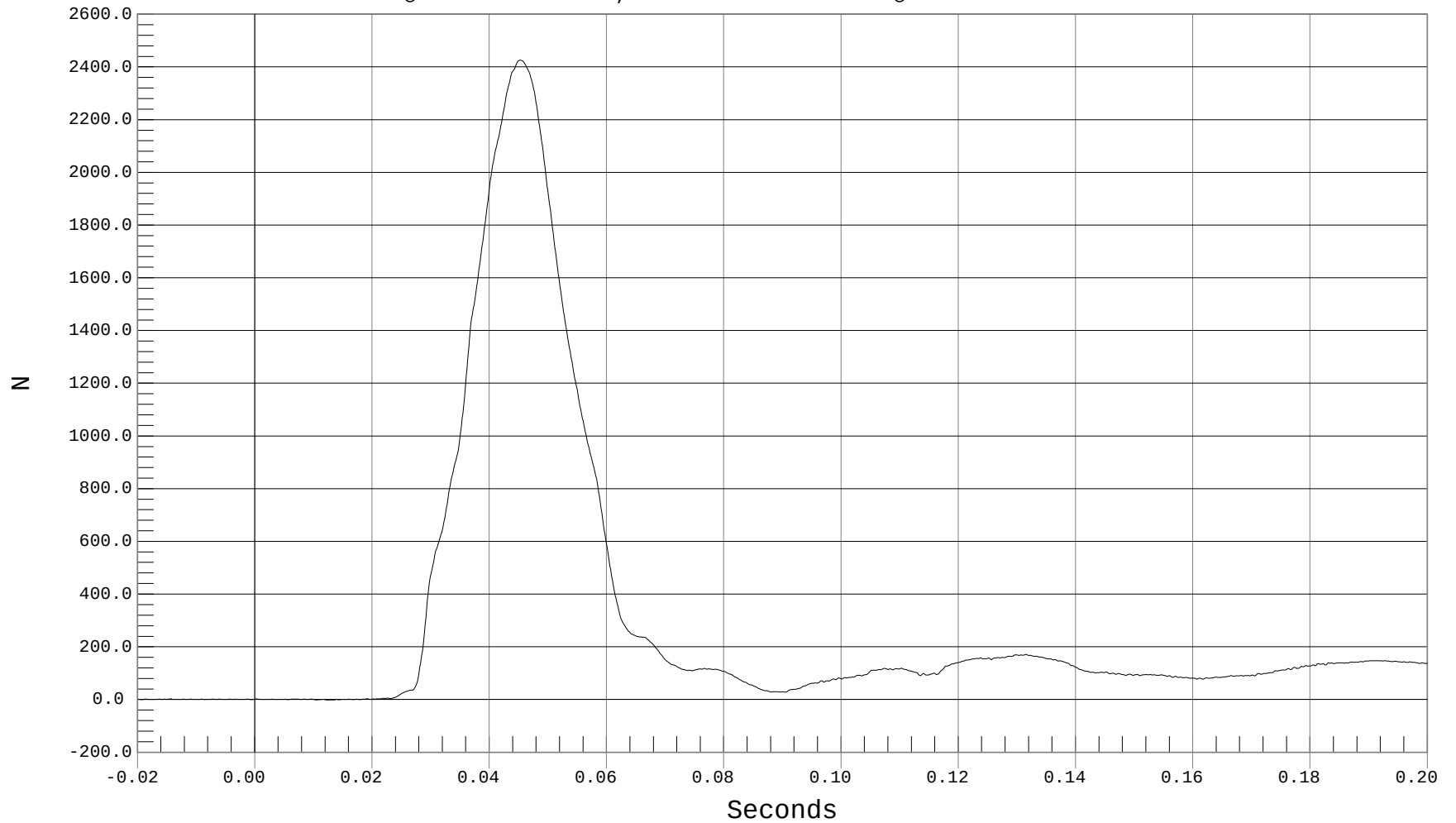
DRIVER SHOULDER FORCE Y

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

1 DRIVER SHOULDER FY, B02049FF.F82

Ymin = -2.05 N @ 0.0134 Seconds, Ymax = 2425.35 N @ 0.0452 Seconds





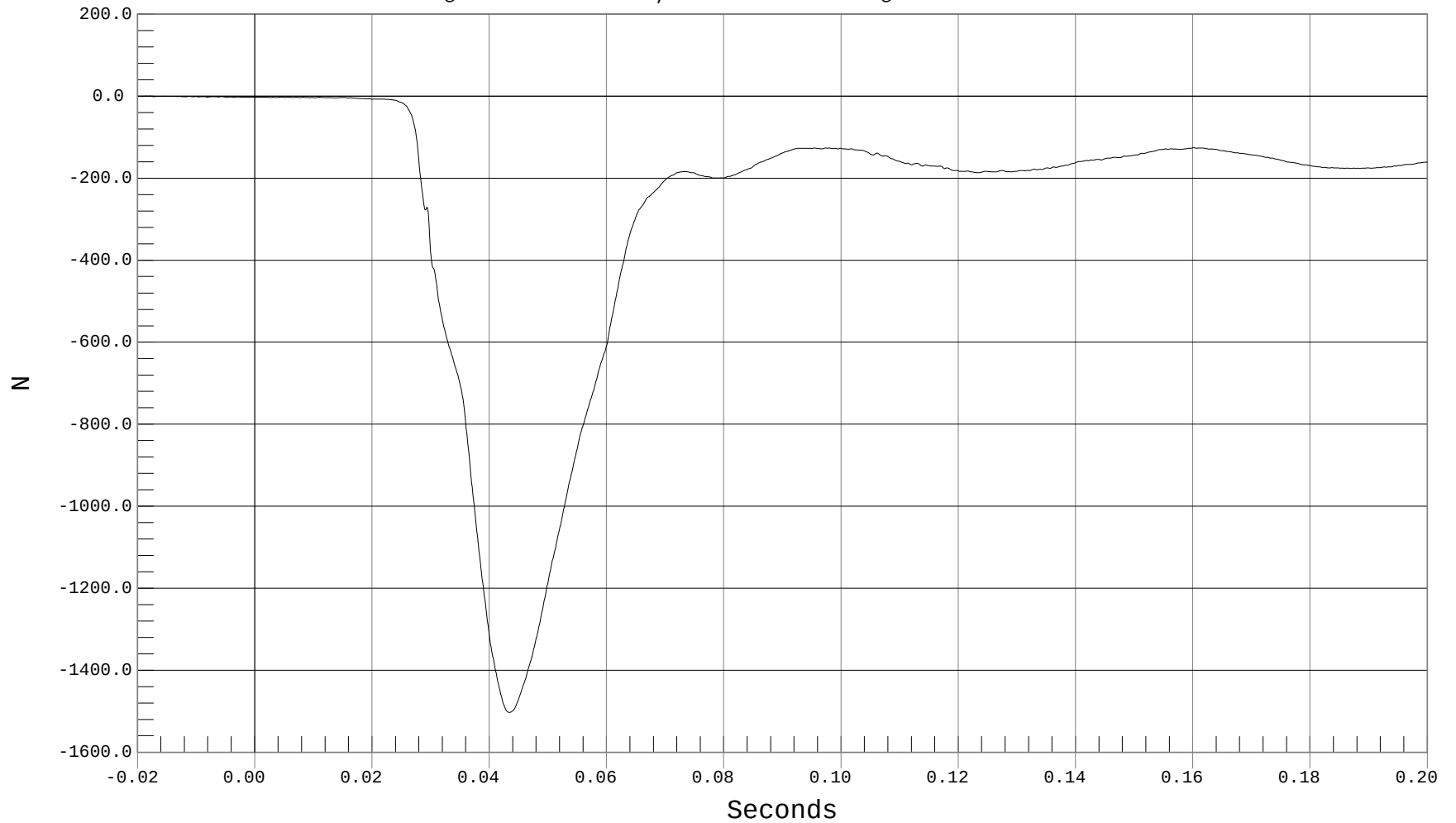
DRIVER SHOULDER FORCE Z

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER SHOULDER FZ, B02049FF.F83

Ymin = -1502.76 N @ 0.0434 Seconds, Ymax = .04 N @ -0.0180 Seconds





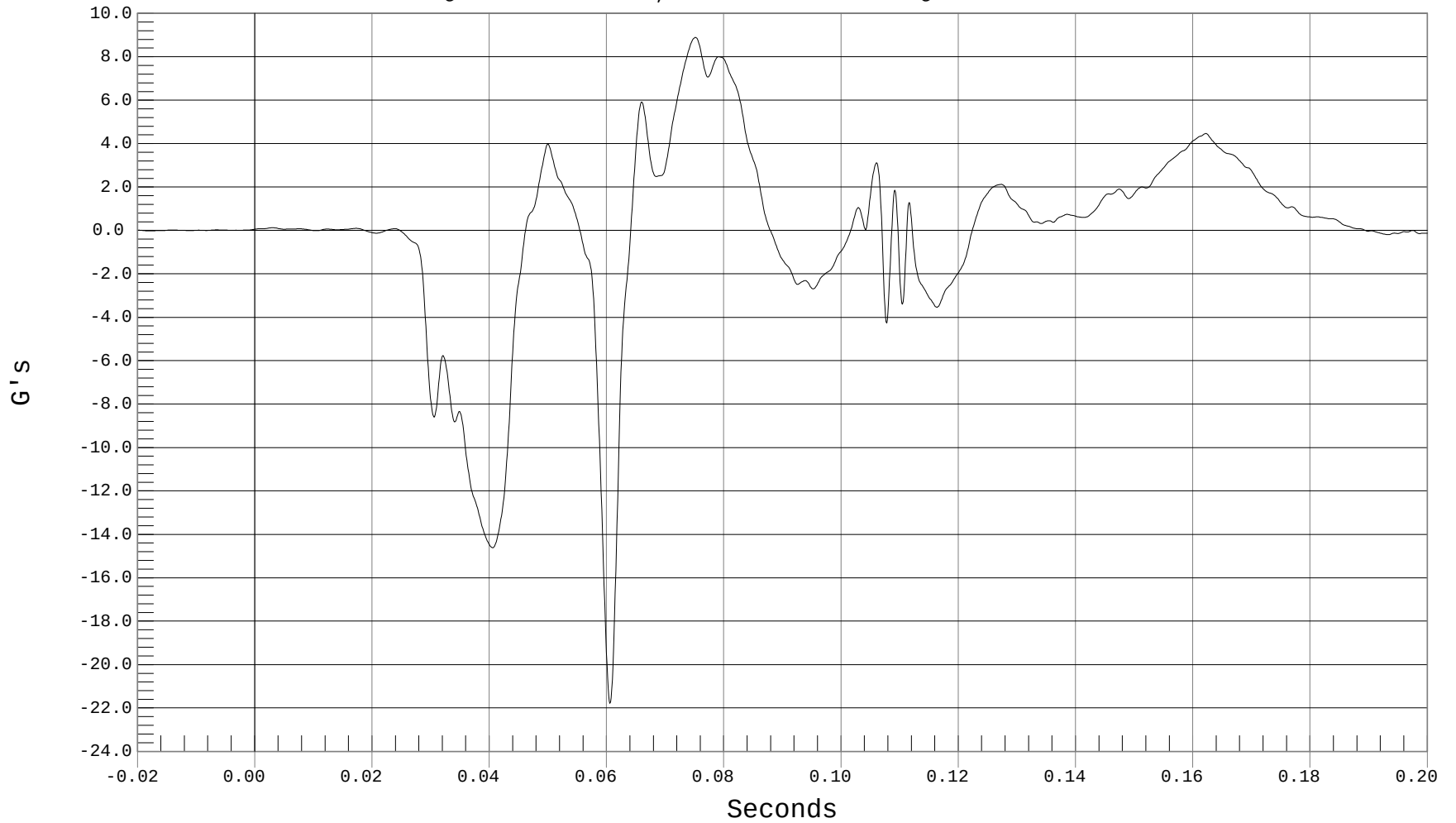
UPPER SPINE X ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 180

1 DRIVER UPPER SPINE X, B02049AF.A06

Ymin = -21.78 G's @ 0.0605 Seconds, Ymax = 8.89 G's @ 0.0751 Seconds





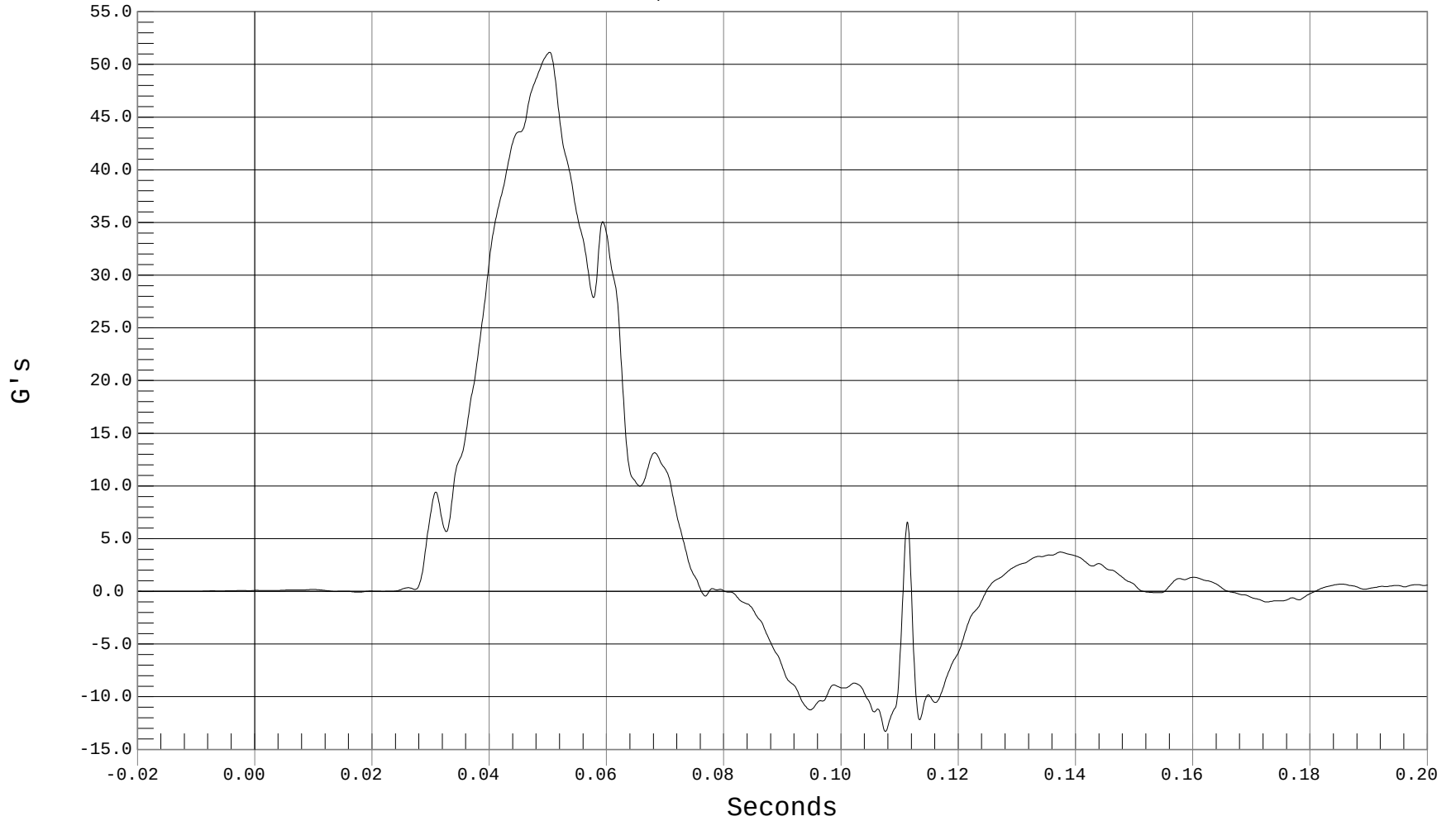
DRIVER UPPER SPINE Y ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 180

— 1 DRIVER UPPER SPINE Y, B02049AF.A07

Ymin = -13.31 G's @ 0.1075 Seconds, Ymax = 51.15 G's @ 0.0502 Seconds





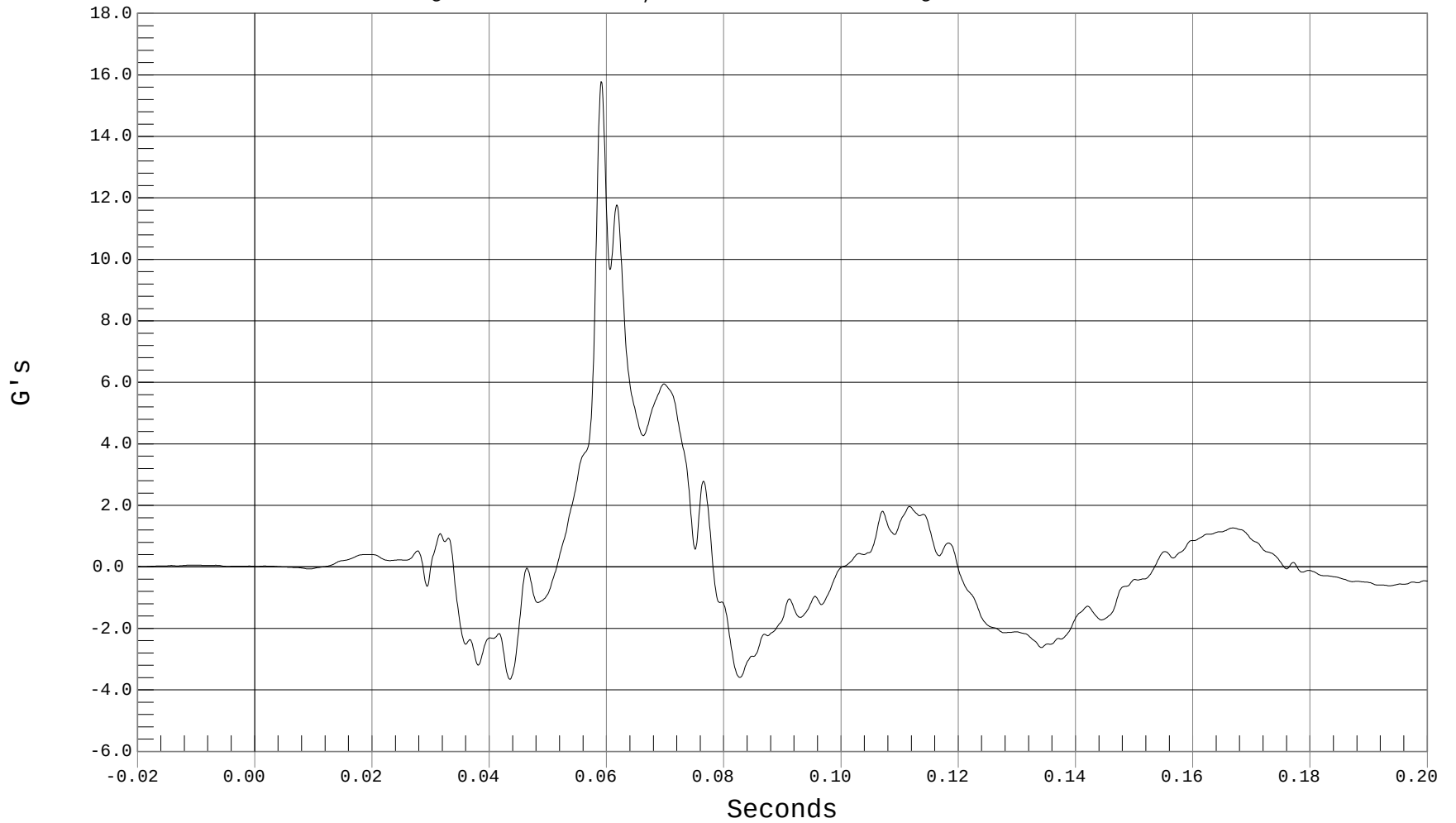
DRIVER UPPER SPINE Z ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 180

— 1 DRIVER UPPER SPINE Z, B02049AF.A08

Ymin = -3.66 G's @ 0.0434 Seconds, Ymax = 15.78 G's @ 0.0590 Seconds





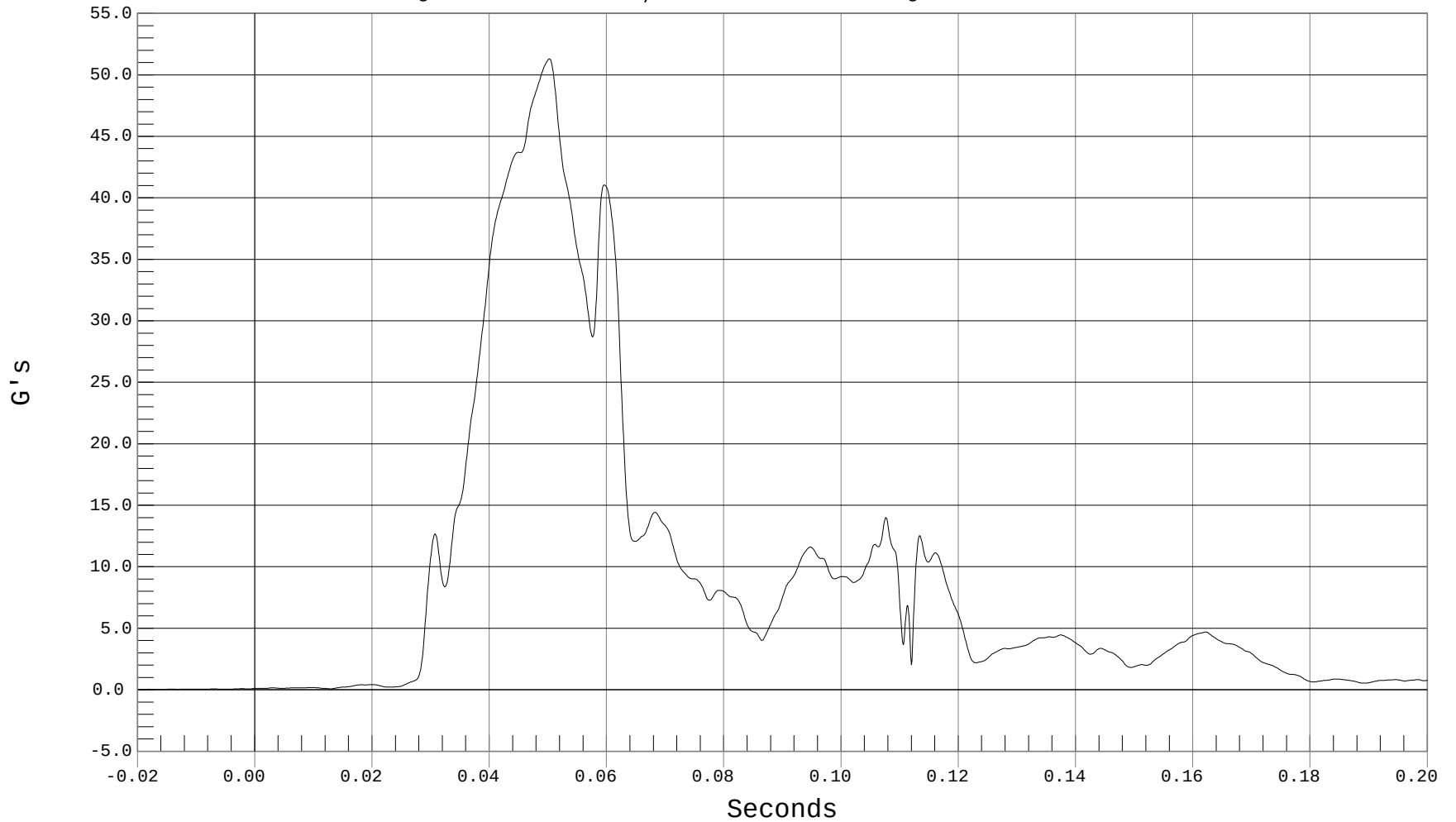
DRIVER UPPER SPINE RESULTANT ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 180

— 1 DRIVER UPPER SPINE RESULTANT, B02049AV.A06

Ymin = .02 G's @ -0.0196 Seconds, Ymax = 51.3 G's @ 0.0502 Seconds





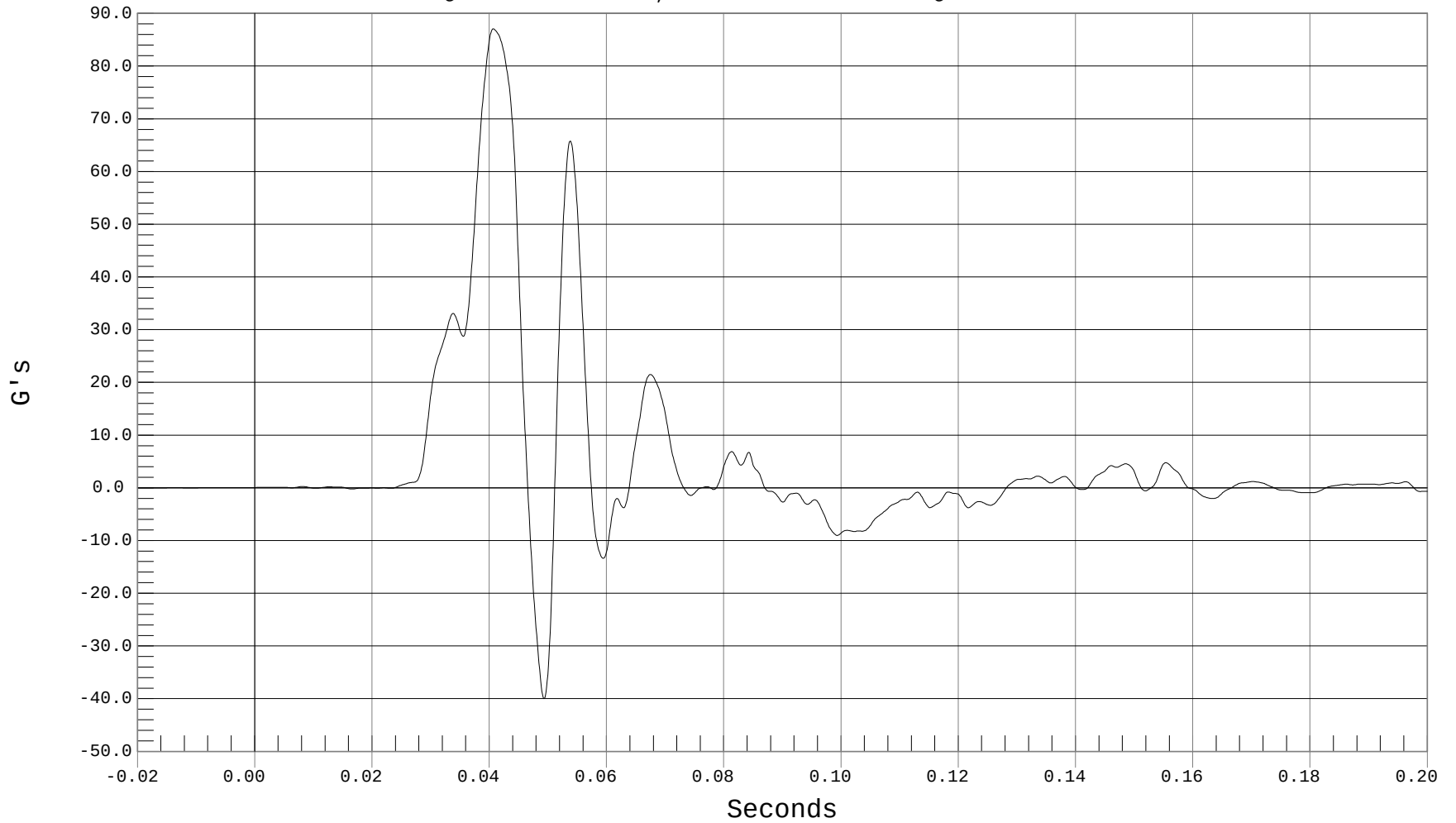
DRIVER UPPER RIB Y ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 180

— 1 DRIVER UPPER RIB Y, B02049AF.A04

Ymin = -39.99 G's @ 0.0493 Seconds, Ymax = 87.06 G's @ 0.0406 Seconds





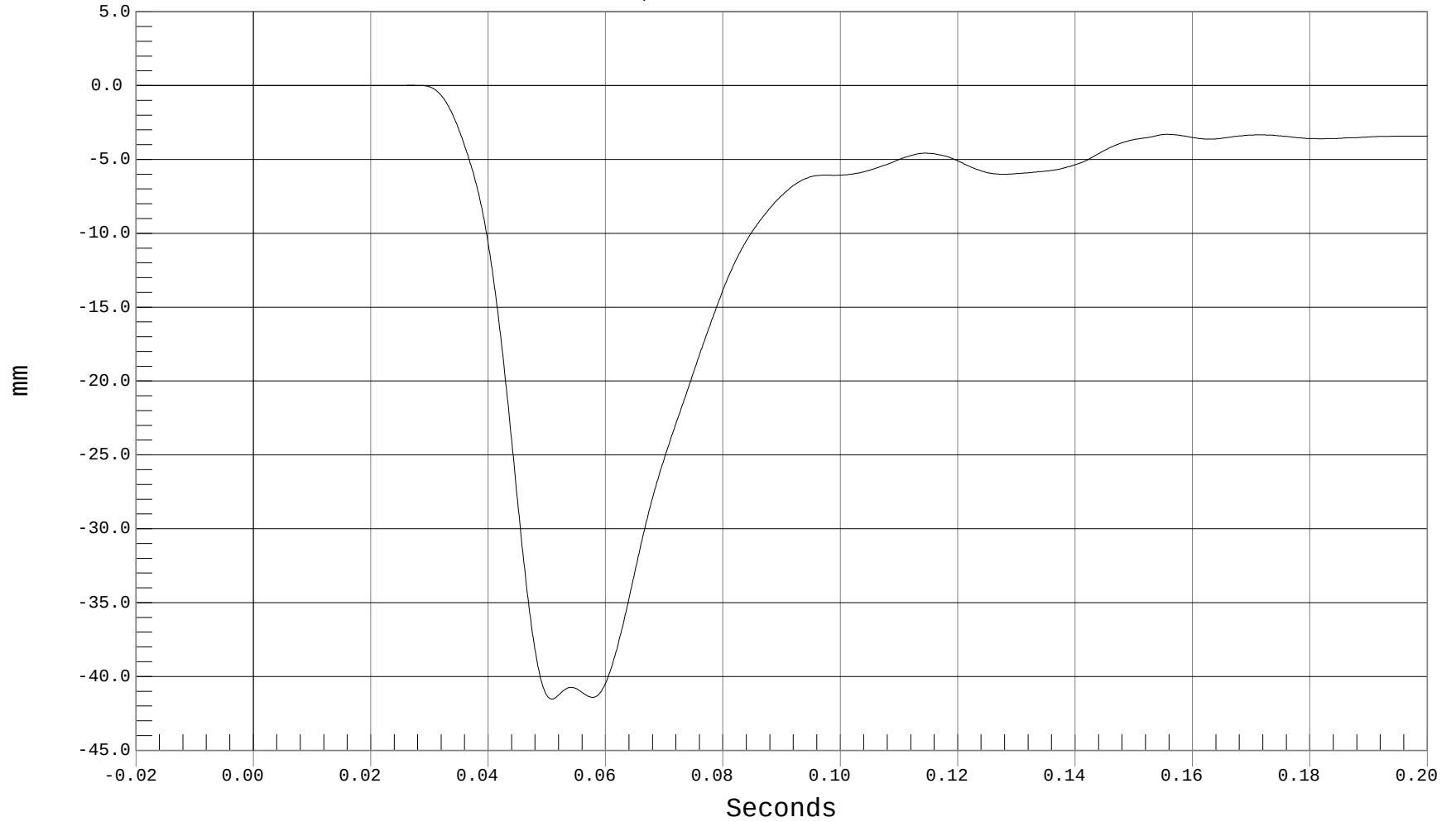
DRIVER UPPER RIB DISPLACEMENT

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 180

— 1 DRIVER UPPER RIB DISP, B02049AF.A55

Ymin = -41.53 mm @ 0.0508 Seconds, Ymax = .02 mm @ 0.0266 Seconds





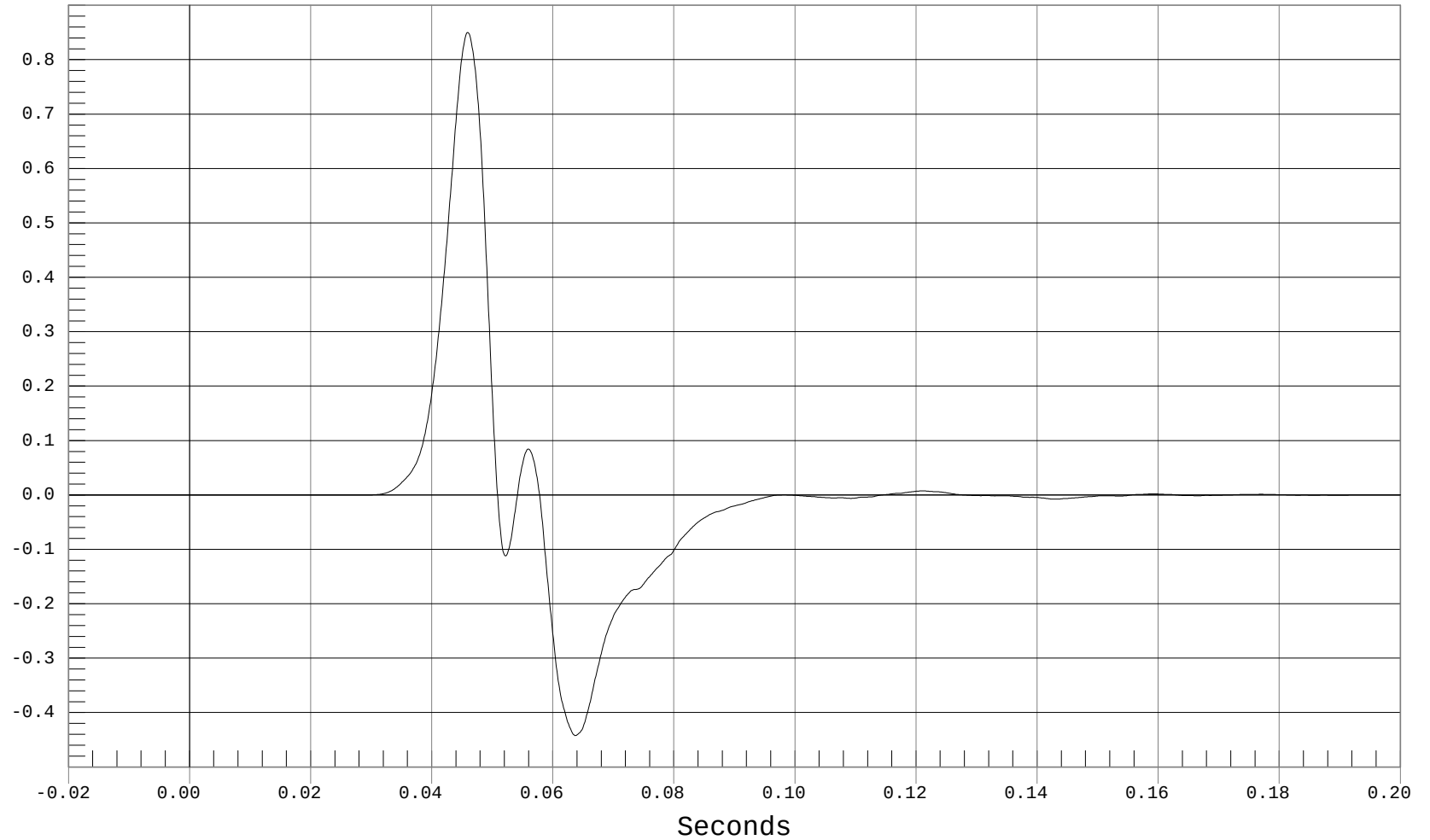
DRIVER UPPER RIB VISCOUS CRITERIA

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 180

— 1 Viscous Criterion, B02049DV.C55

Ymin = -.44 @ 0.0636 Seconds, Ymax = .85 @ 0.0459 Seconds





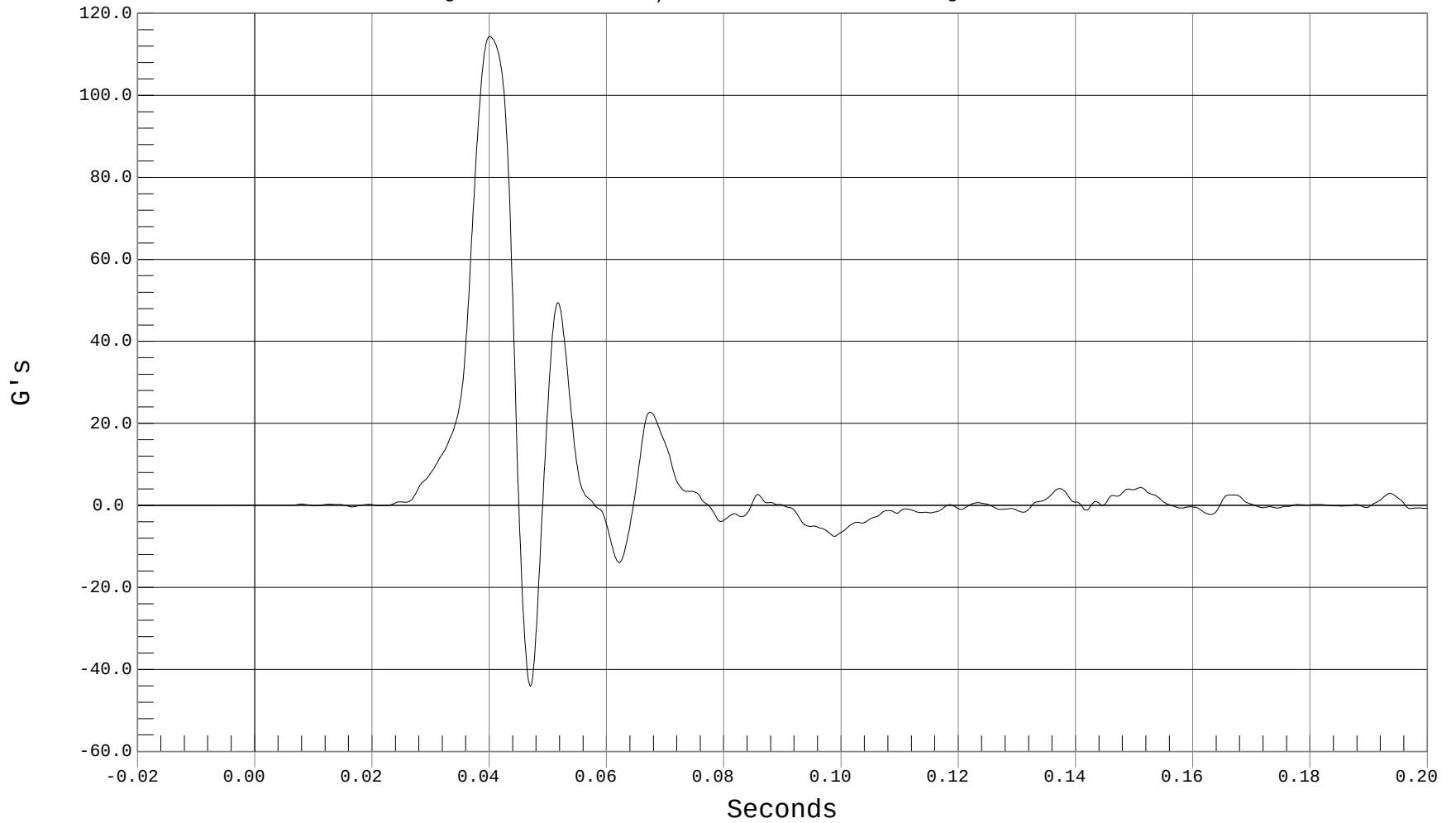
DRIVER MID RIB Y ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 D00R

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 180

— 1 DRIVER MID RIB Y, B02049AF.A58

Ymin = -44.06 G's @ 0.0469 Seconds, Ymax = 114.39 G's @ 0.0400 Seconds





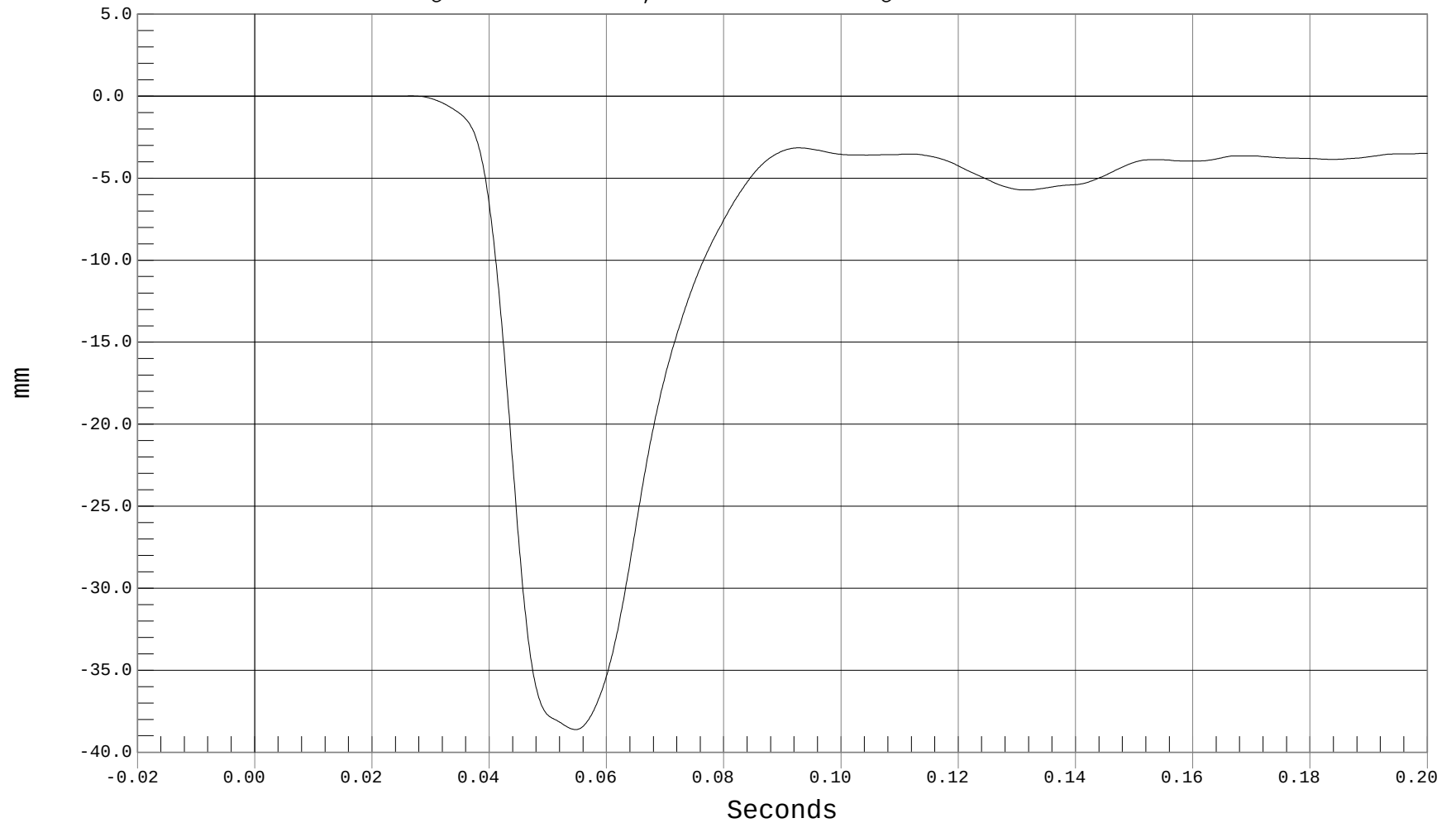
DRIVER MID RIB DISPLACEMENT

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 D00R

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 180

— 1 DRIVER MID RIB DISP, B02049AF.A56

Ymin = -38.62 mm @ 0.0546 Seconds, Ymax = .02 mm @ 0.0265 Seconds





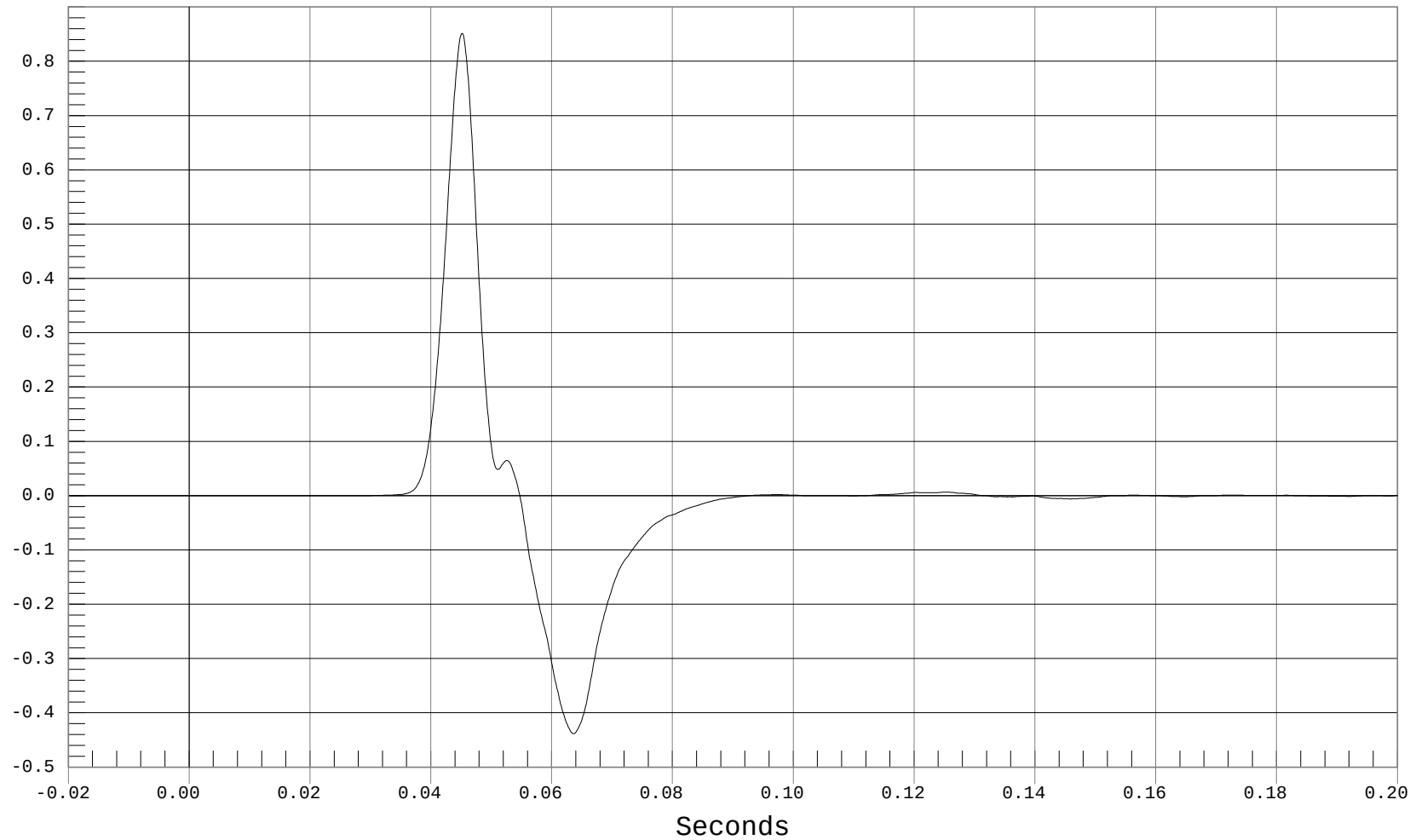
DRIVER MID RIB VISCOUS CRITERIA

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 D00R

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 180

— 1 Viscous Criterion, B02049DV.C56

Ymin = -.44 @ 0.0635 Seconds, Ymax = .85 @ 0.0451 Seconds





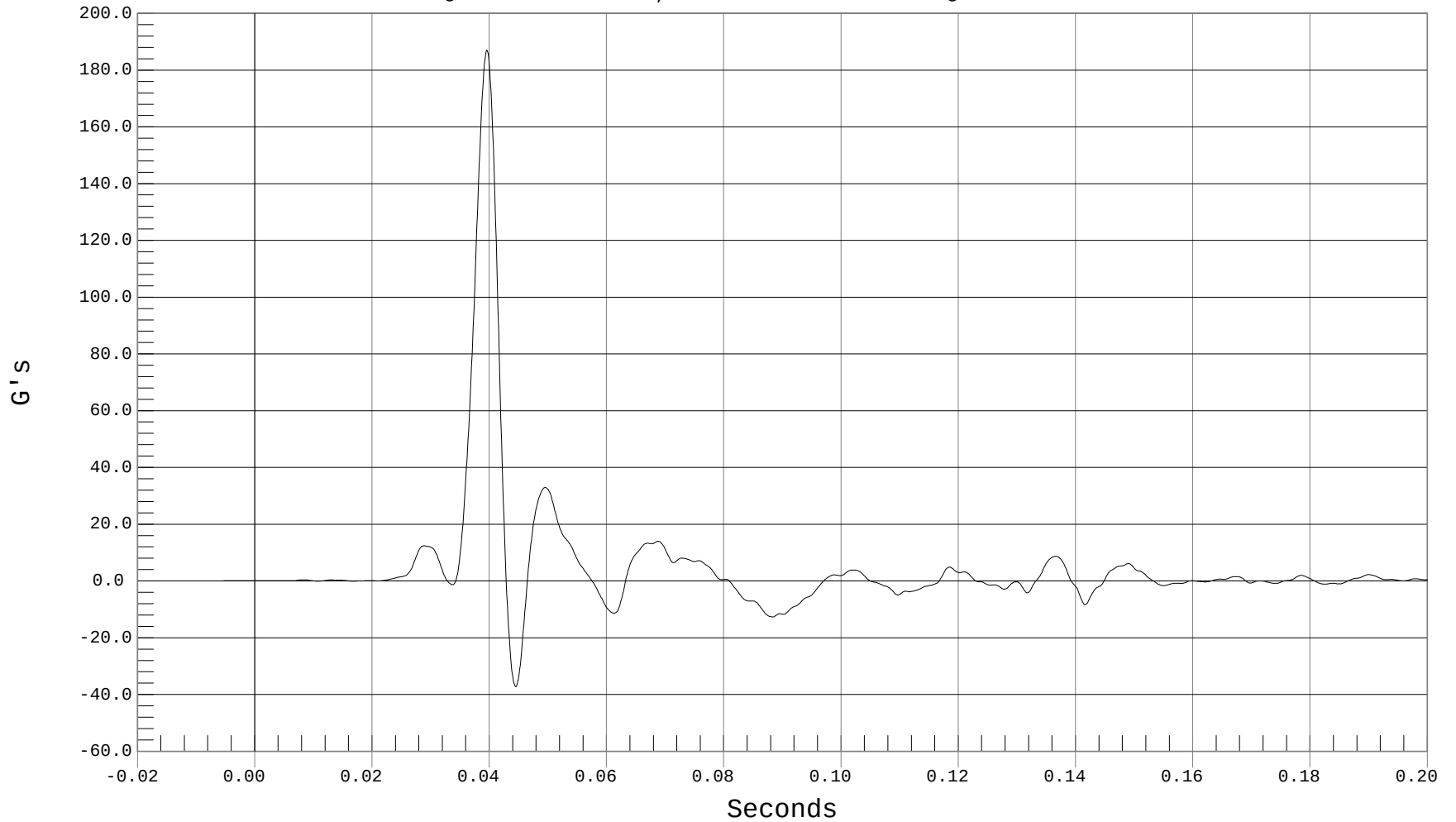
DRIVER LOWER RIB Y ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 180

1 DRIVER LOWER RIB Y, B02049AF.A05

Ymin = -37.25 G's @ 0.0444 Seconds, Ymax = 187.07 G's @ 0.0395 Seconds





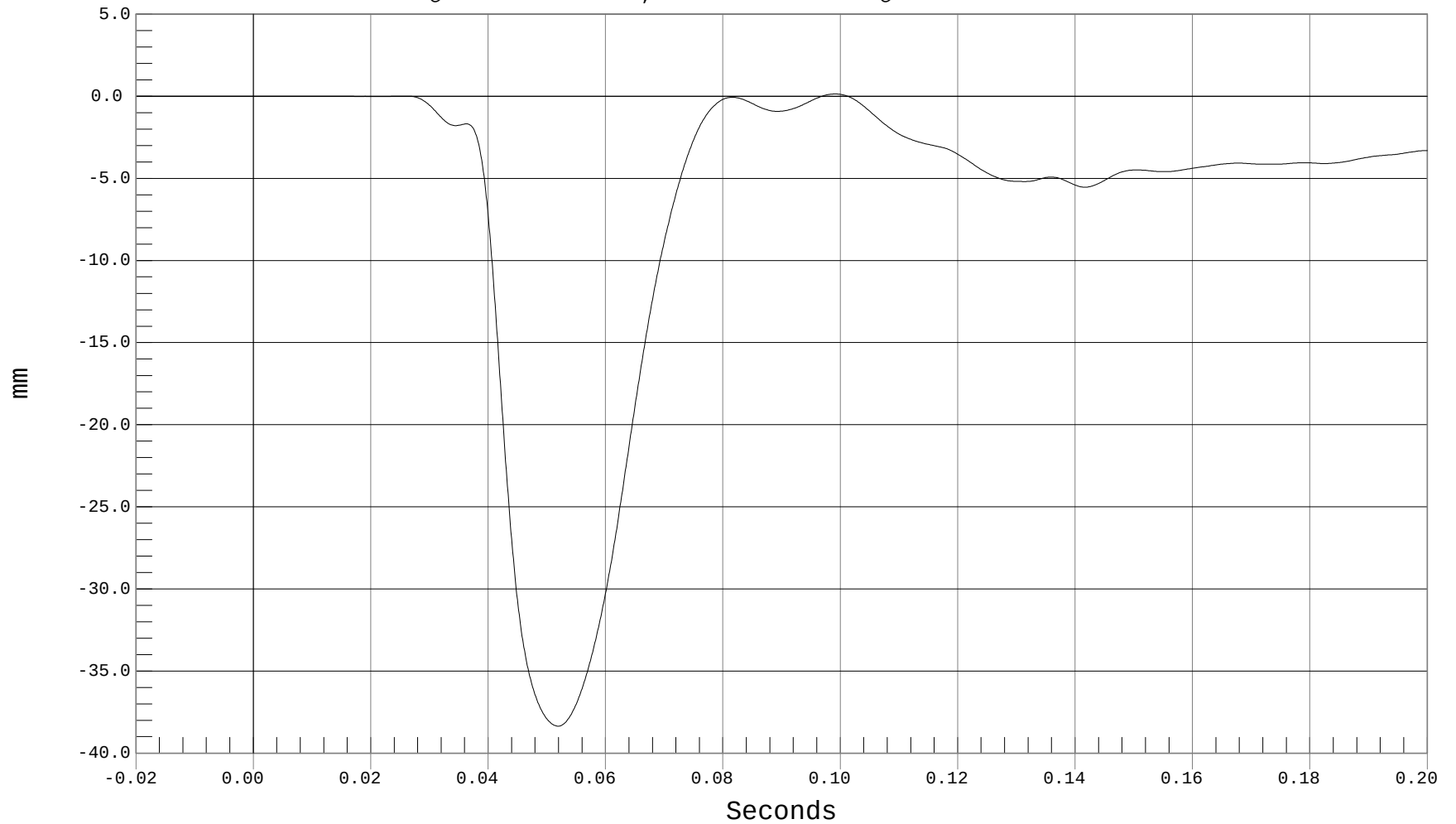
DRIVER LOWER RIB DISPLACEMENT

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 D00R

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 180

— 1 DRIVER LOWER RIB DISP, B02049AF.A57

Ymin = -38.36 mm @ 0.0518 Seconds, Ymax = .14 mm @ 0.0991 Seconds





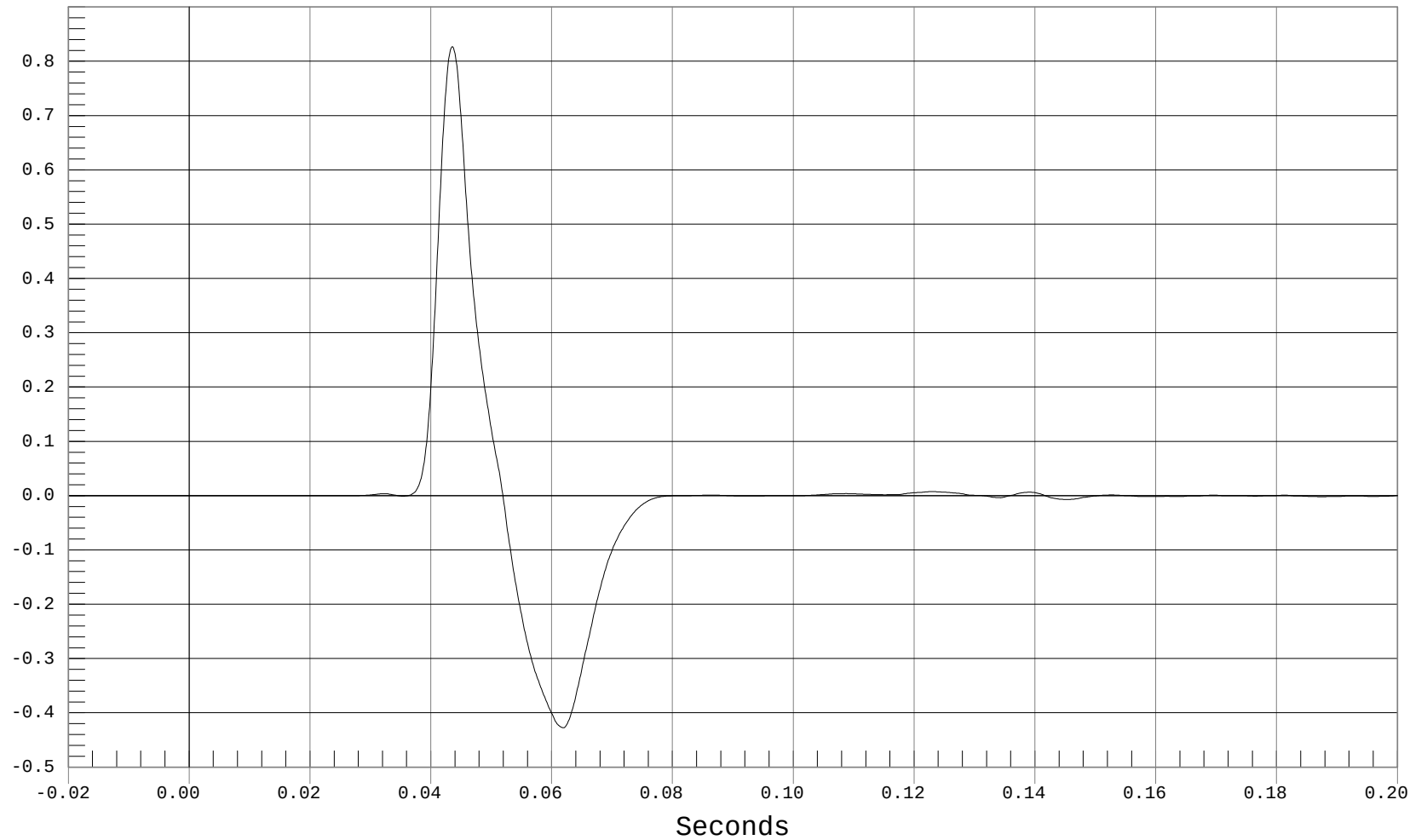
DRIVER LOWER RIB VISCOUS CRITERIA

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 D00R

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 180

— 1 Viscous Criterion, B02049DV.C57

Ymin = -.43 @ 0.0618 Seconds, Ymax = .83 @ 0.0435 Seconds





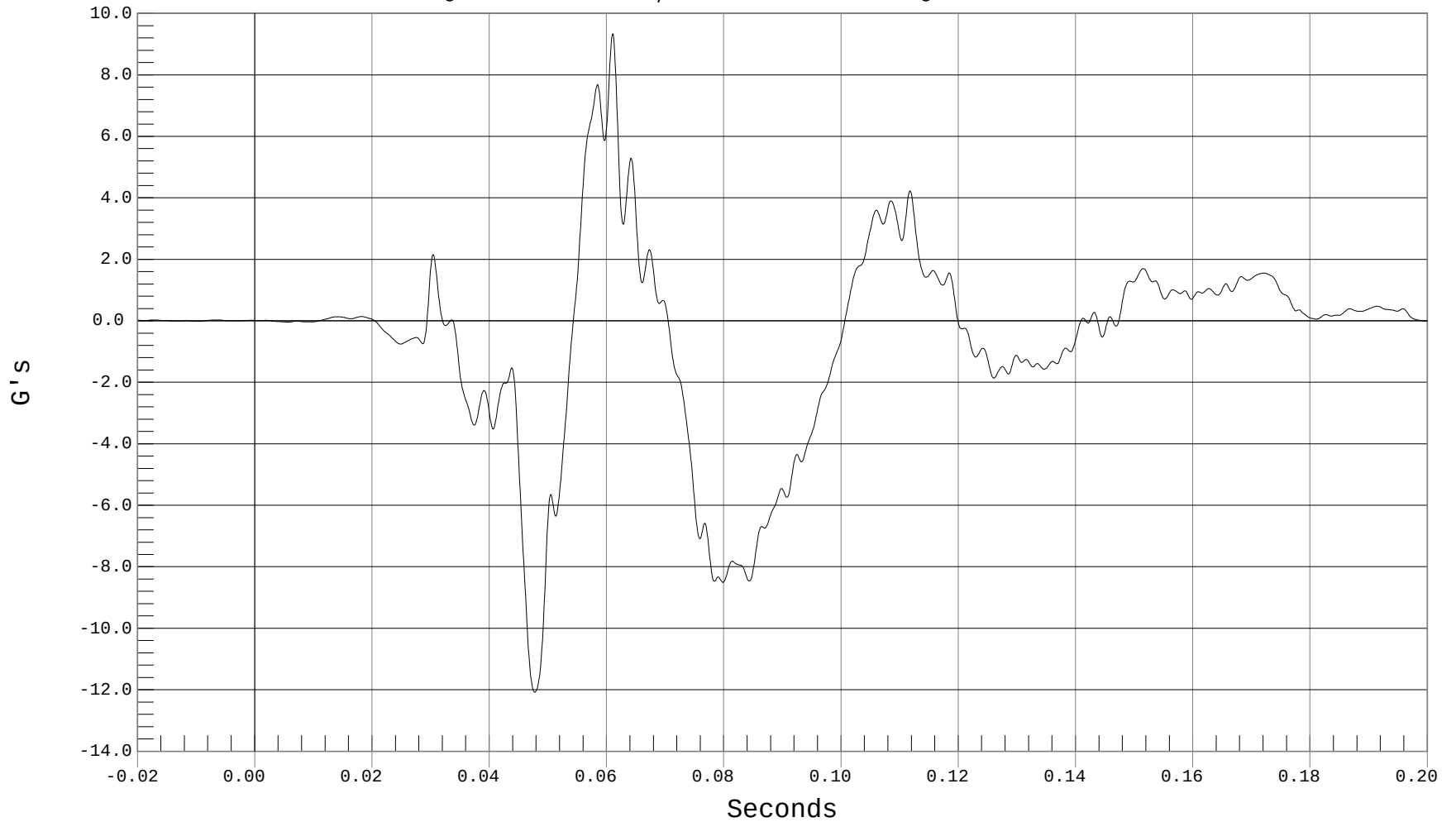
DRIVER LOWER SPINE X ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 180

— 1 DRIVER LOWER SPINE X, B02049AF.A09

Ymin = -12.08 G's @ 0.0477 Seconds, Ymax = 9.34 G's @ 0.0610 Seconds





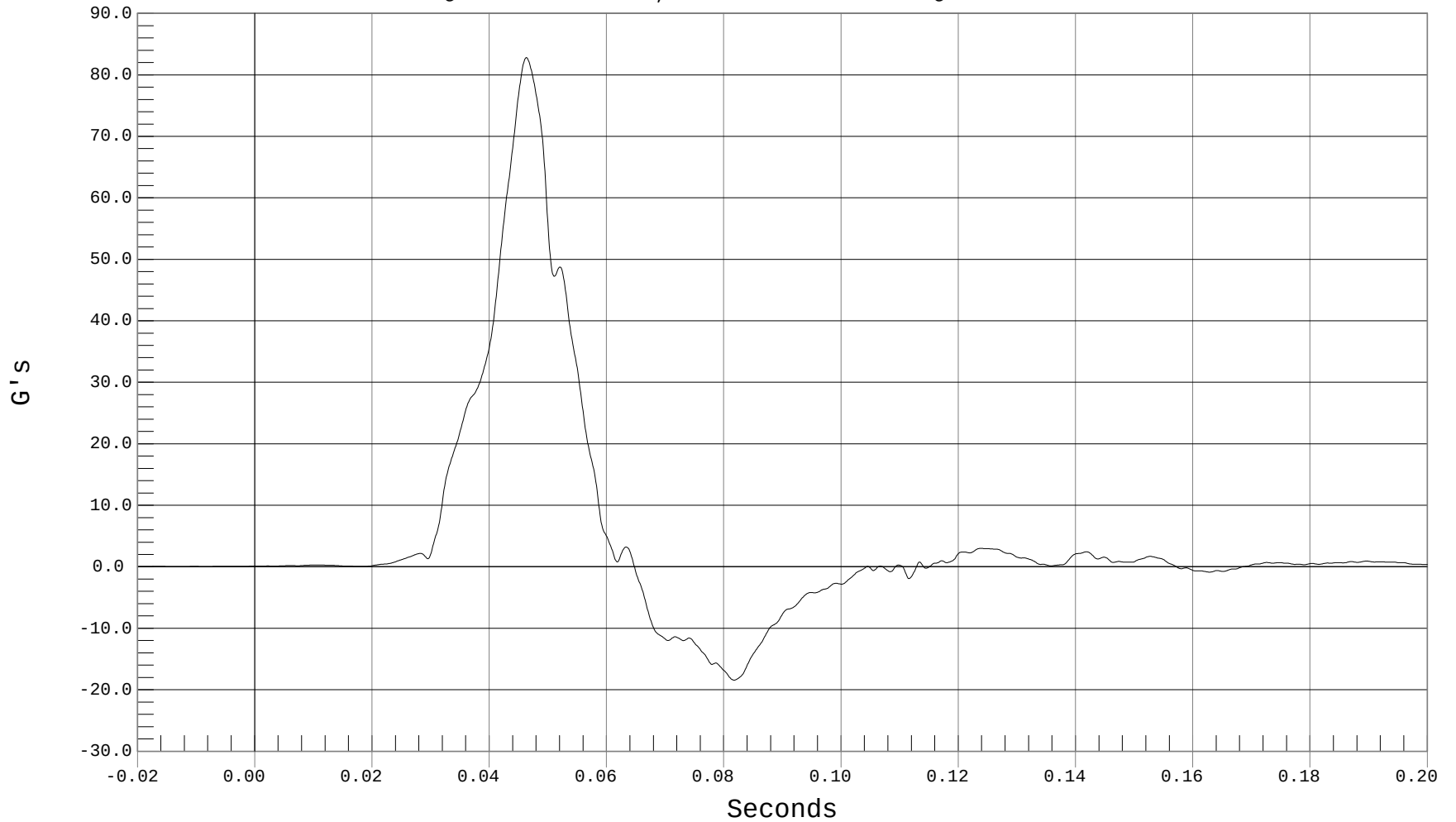
DRIVER LOWER SPINE Y ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 180

— 1 DRIVER LOWER SPINE Y, B02049AF.A10

Ymin = -18.45 G's @ 0.0817 Seconds, Ymax = 82.81 G's @ 0.0462 Seconds





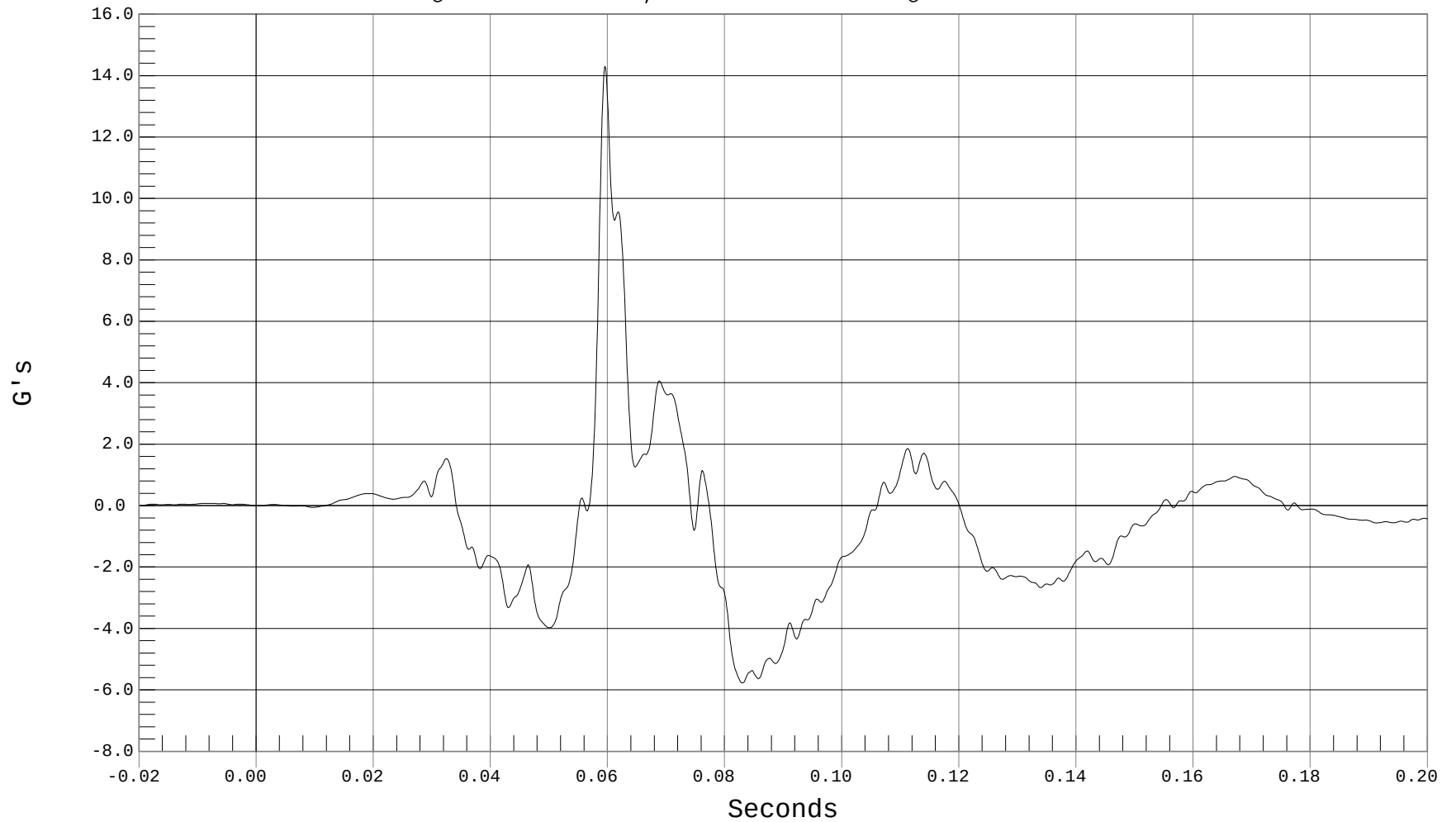
DRIVER LOWER SPINE Z ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 180

— 1 DRIVER LOWER SPINE Z, B02049AF.A11

Ymin = -5.78 G's @ 0.0830 Seconds, Ymax = 14.3 G's @ 0.0595 Seconds





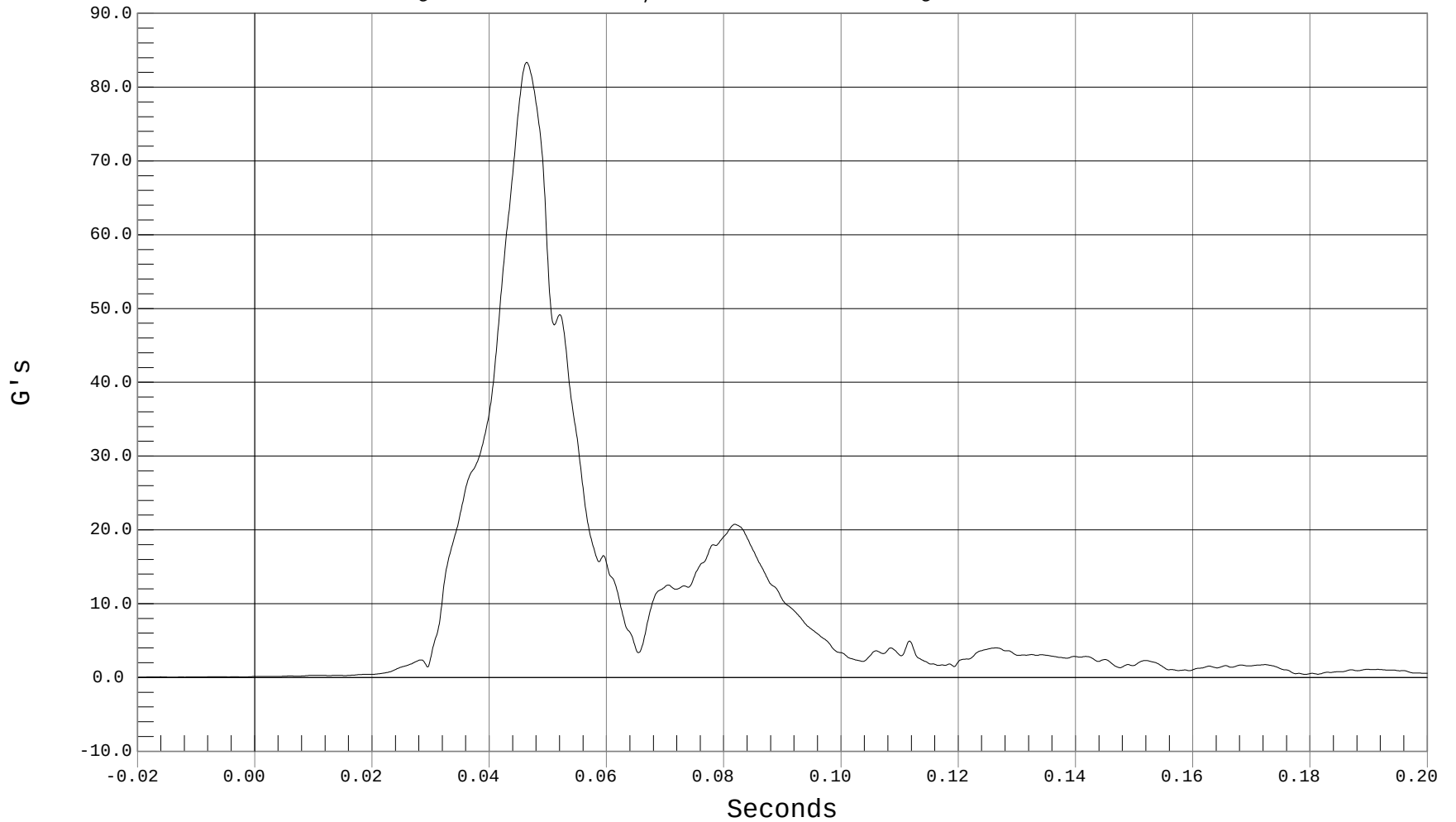
DRIVER LOWER SPINE RESULTANT ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 180

— 1 DRIVER LOWER SPINE RESULTANT, B02049AV.A09

Ymin = .03 G's @ -0.0142 Seconds, Ymax = 83.39 G's @ 0.0463 Seconds





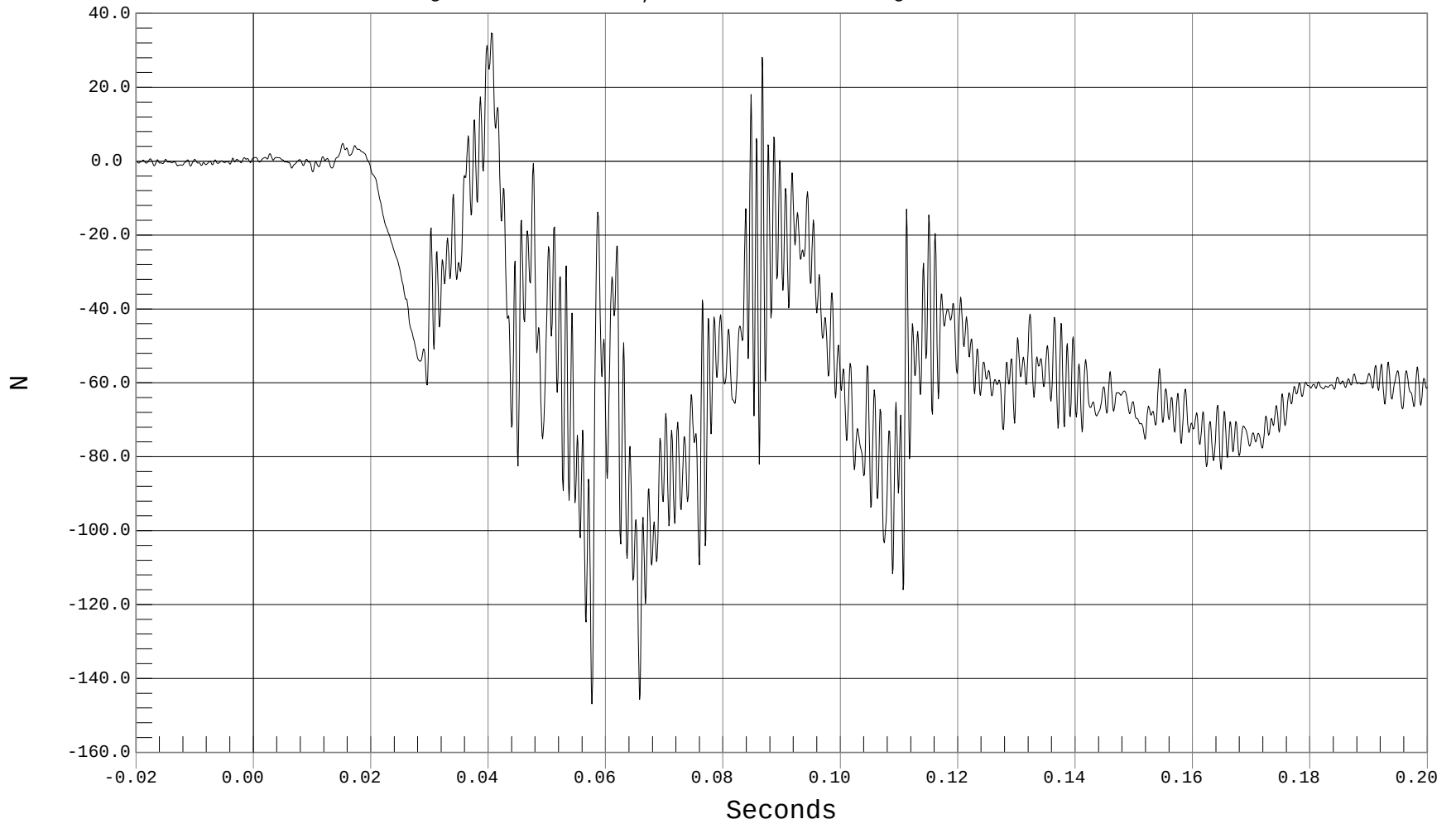
DRIVER TORSO FORCE X

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 D00R

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER TORSO FX, B02049FF.F59

Ymin = -146.94 N @ 0.0576 Seconds, Ymax = 34.69 N @ 0.0405 Seconds





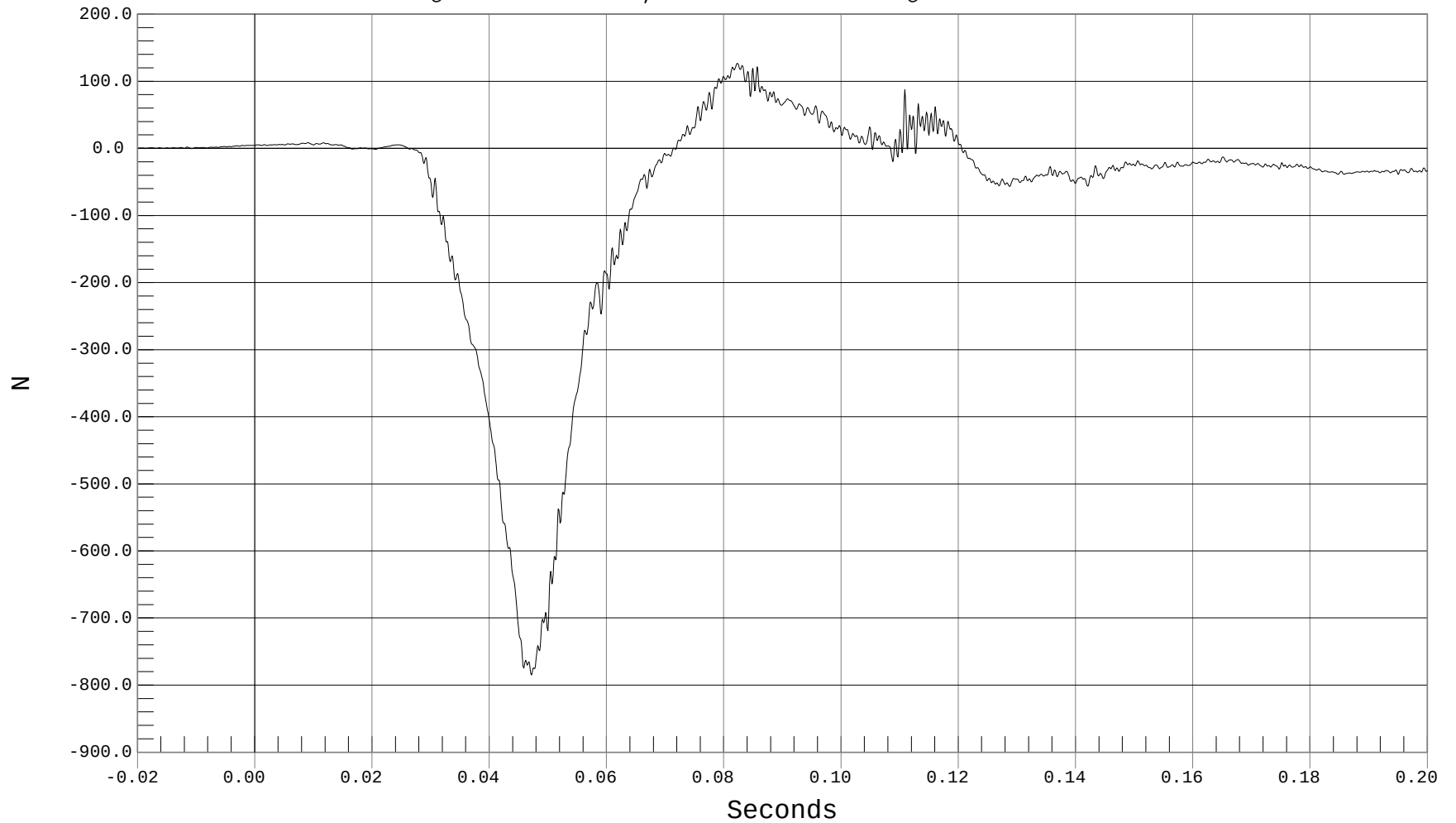
DRIVER TORSO FORCE Y

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER TORSO FY, B02049FF.F60

Ymin = -785.01 N @ 0.0471 Seconds, Ymax = 126.48 N @ 0.0822 Seconds





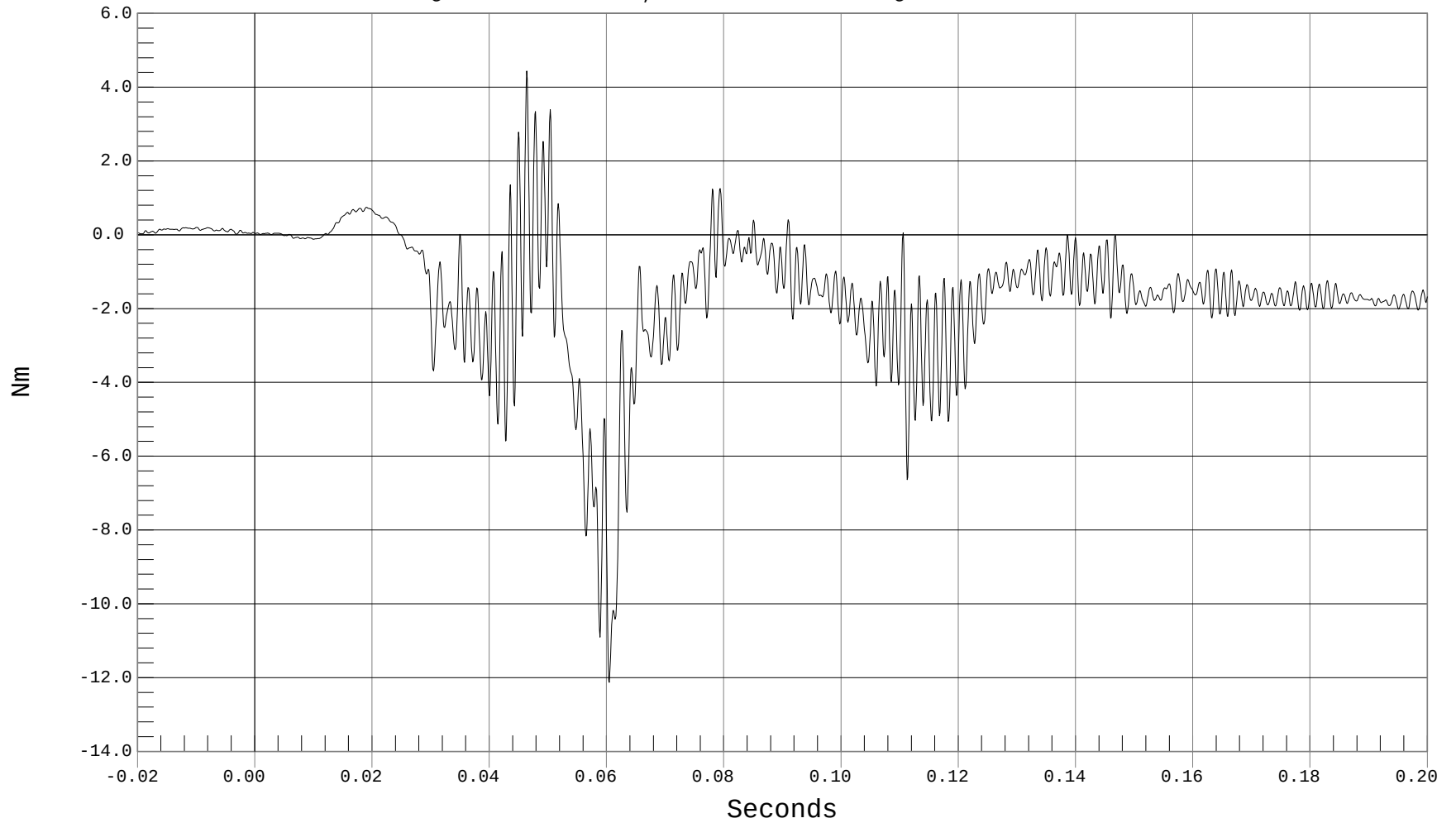
DRIVER TORSO MOMENT Y

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER TORSO MY, B02049MF.M61

Ymin = -12.13 Nm @ 0.0604 Seconds, Ymax = 4.44 Nm @ 0.0463 Seconds





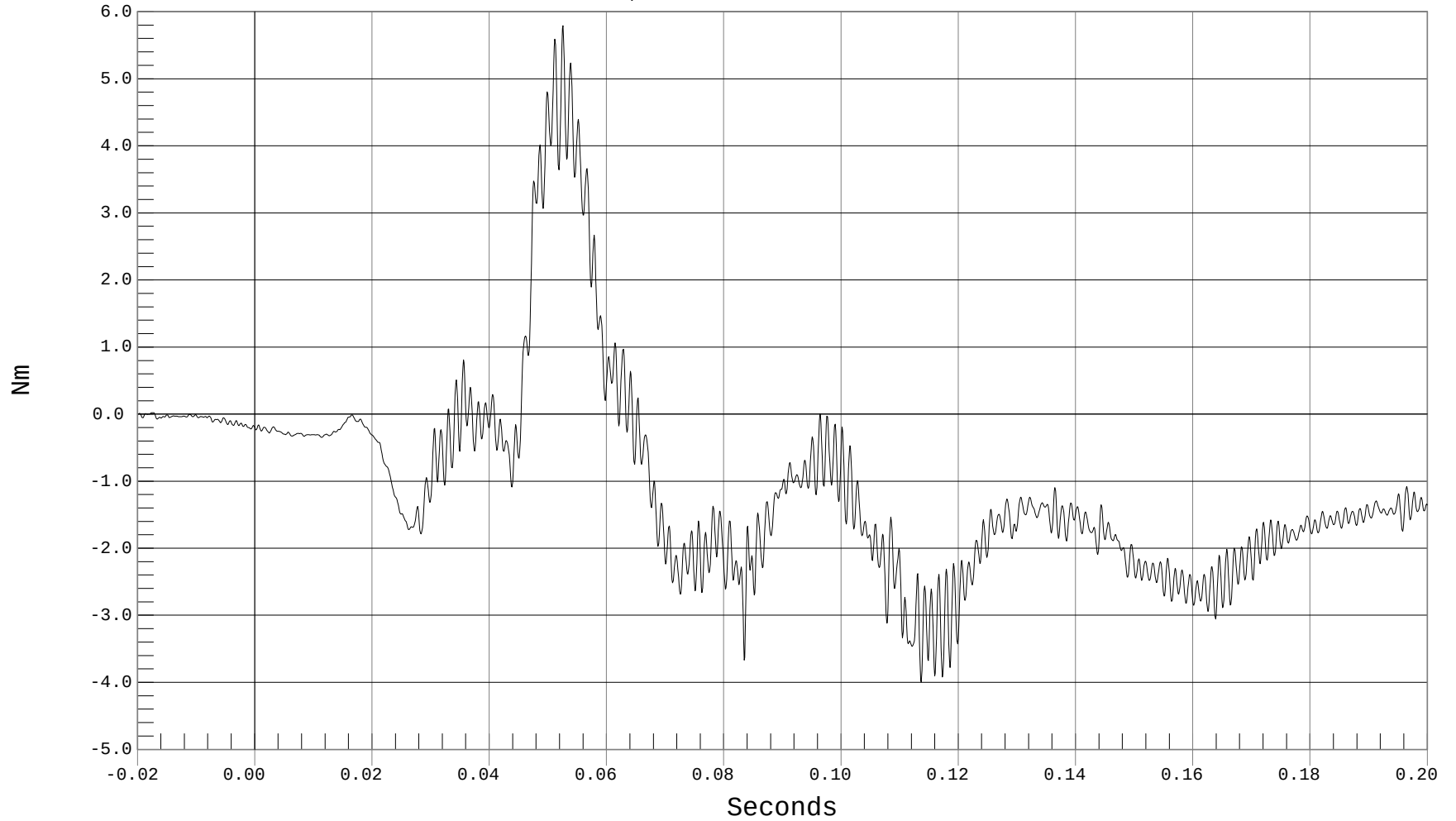
DRIVER TORSO MOMENT Z

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER TORSO MZ, B02049MF.M62

Ymin = -3.99 Nm @ 0.1136 Seconds, Ymax = 5.79 Nm @ 0.0525 Seconds





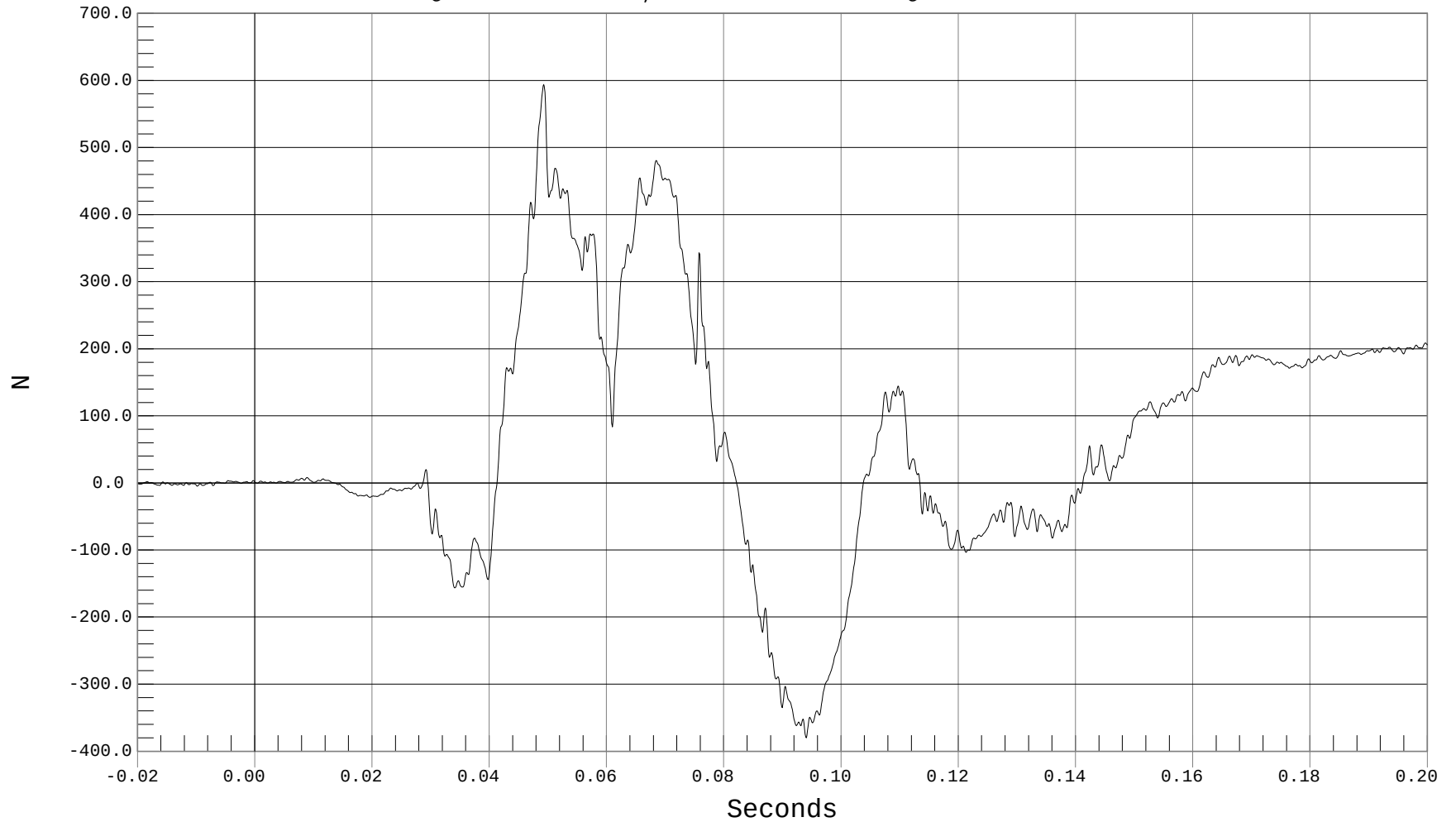
DRIVER T-12 FORCE X

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER T-12 FX, B02049FF.F65

Ymin = -379.89 N @ 0.0940 Seconds, Ymax = 594.14 N @ 0.0492 Seconds





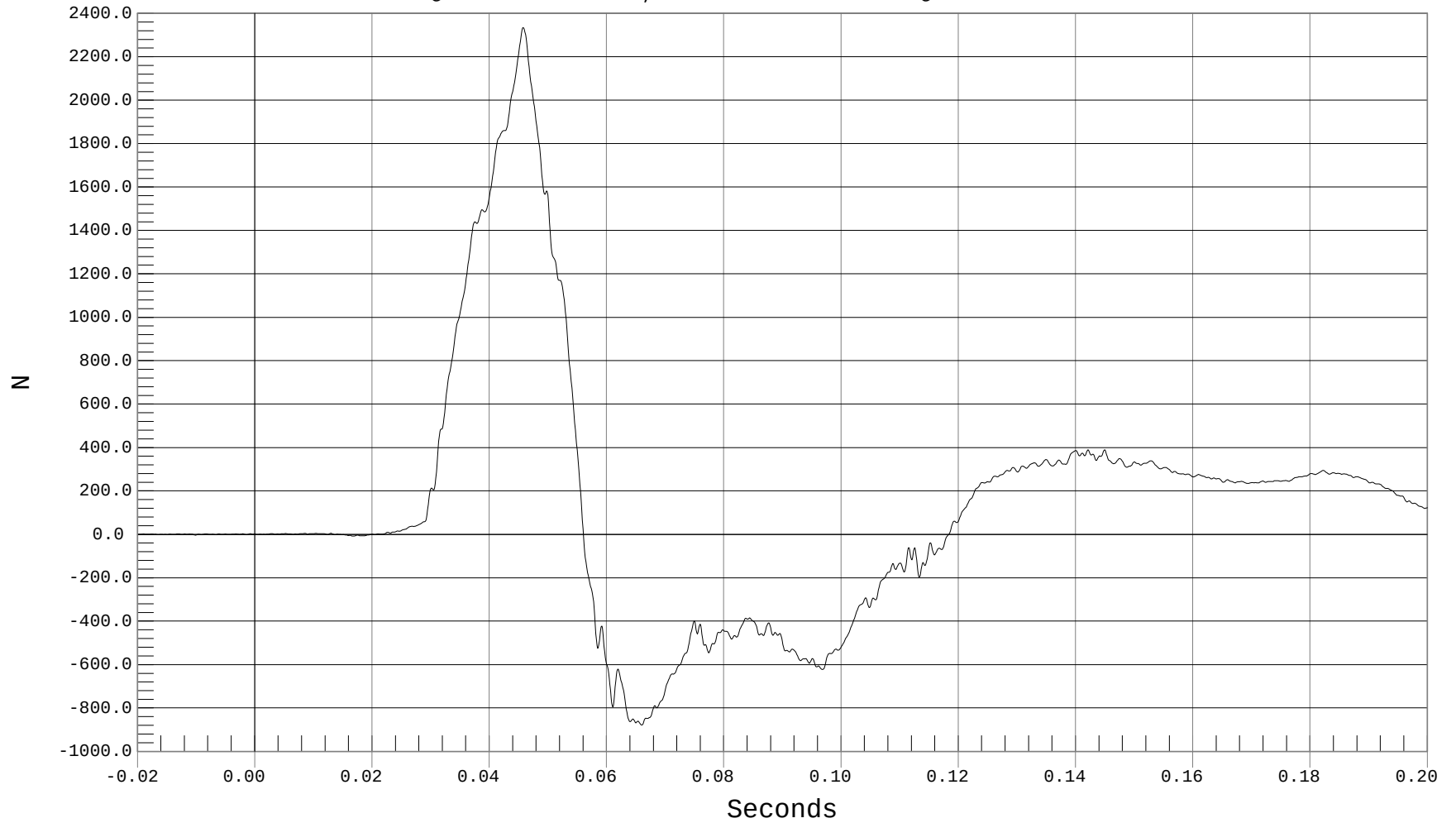
DRIVER T-12 FORCE Y

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER T-12 FY, B02049FF.F66

Ymin = -878.94 N @ 0.0659 Seconds, Ymax = 2334.95 N @ 0.0457 Seconds





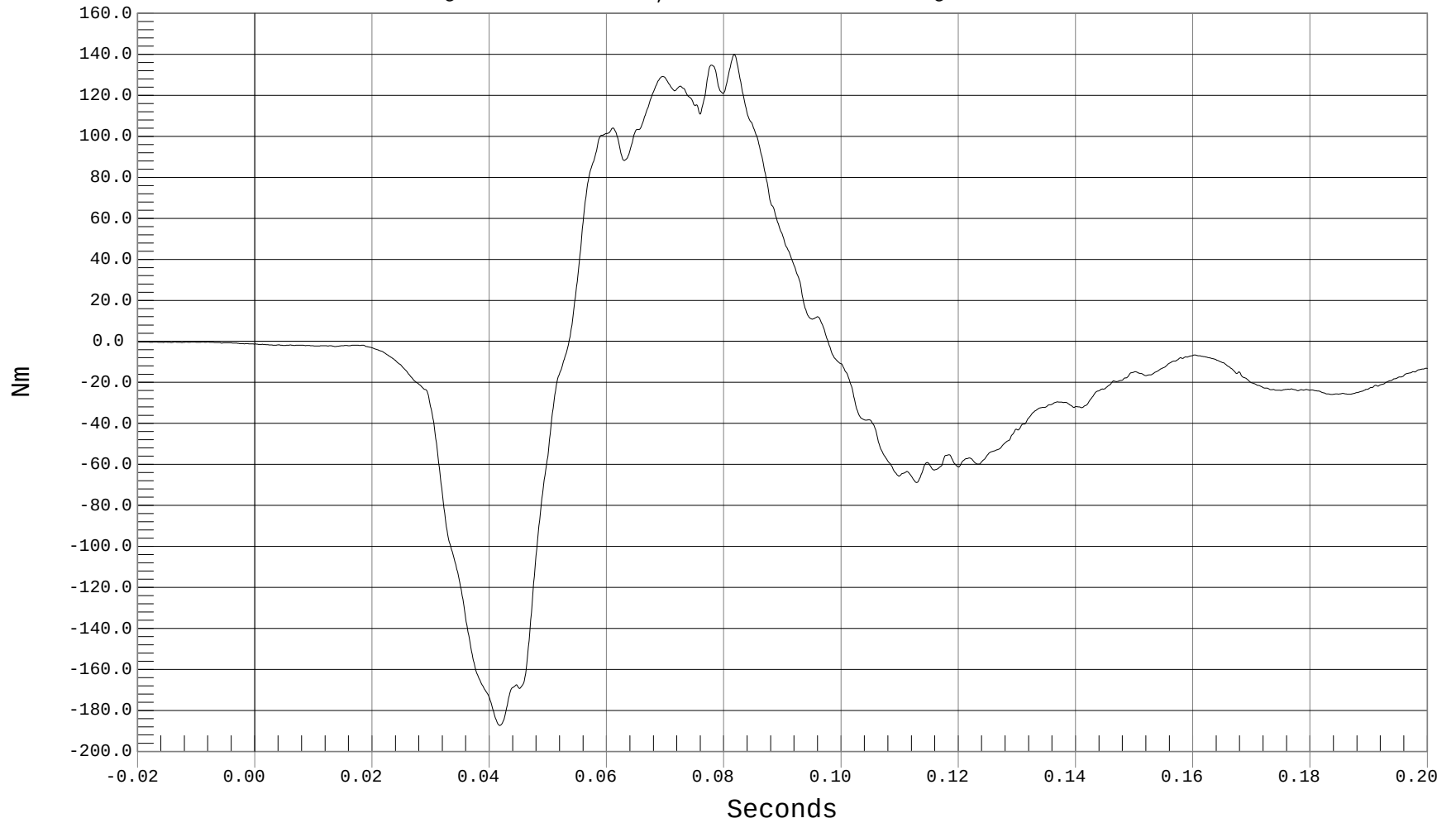
DRIVER T-12 MOMENT X

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER T-12 MX, B02049MF.M67

Ymin = -187.39 Nm @ 0.0417 Seconds, Ymax = 139.97 Nm @ 0.0817 Seconds





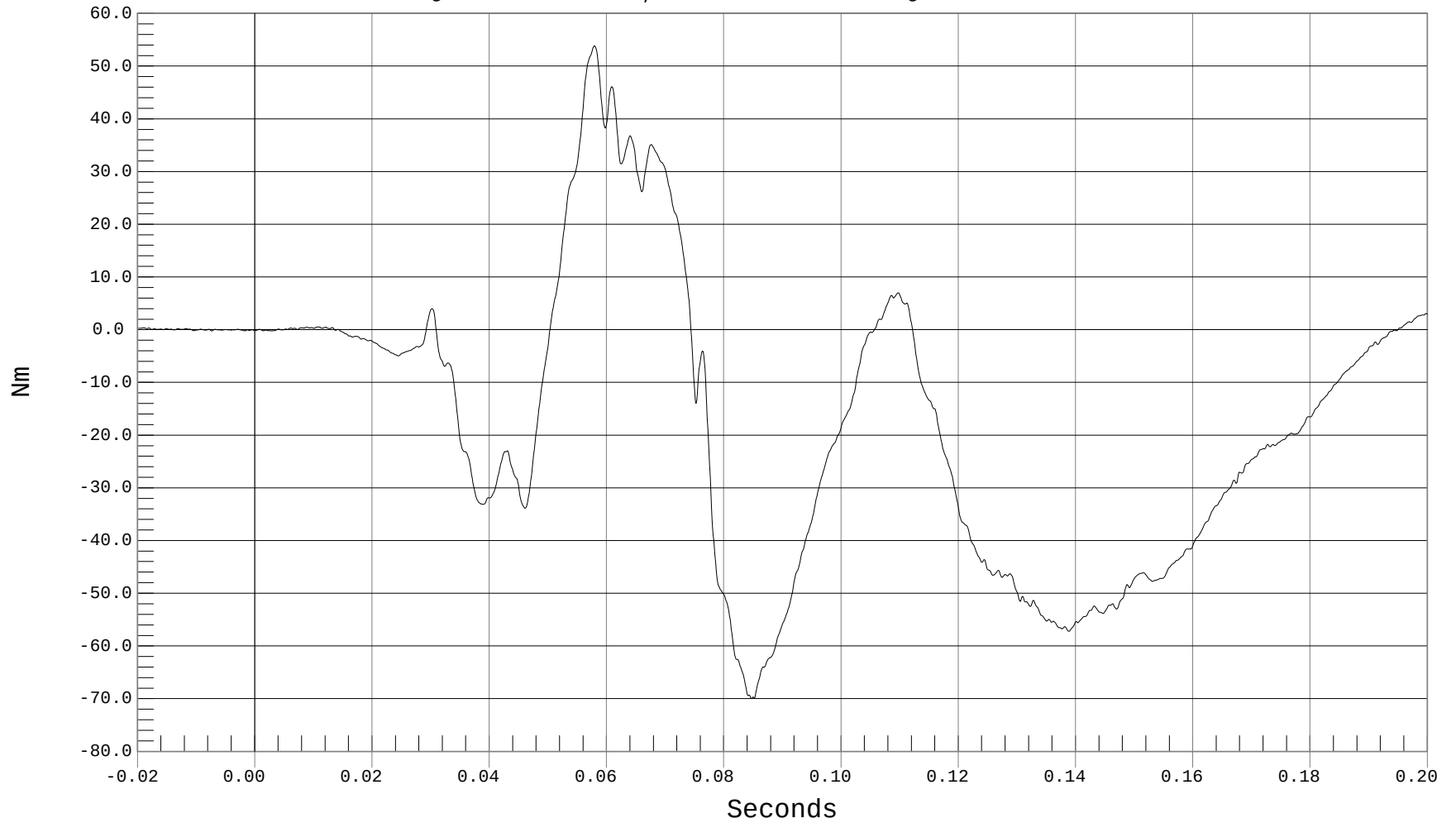
DRIVER T-12 MOMENT Y

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER T-12 MY, B02049MF.M68

Ymin = -69.97 Nm @ 0.0846 Seconds, Ymax = 53.84 Nm @ 0.0579 Seconds





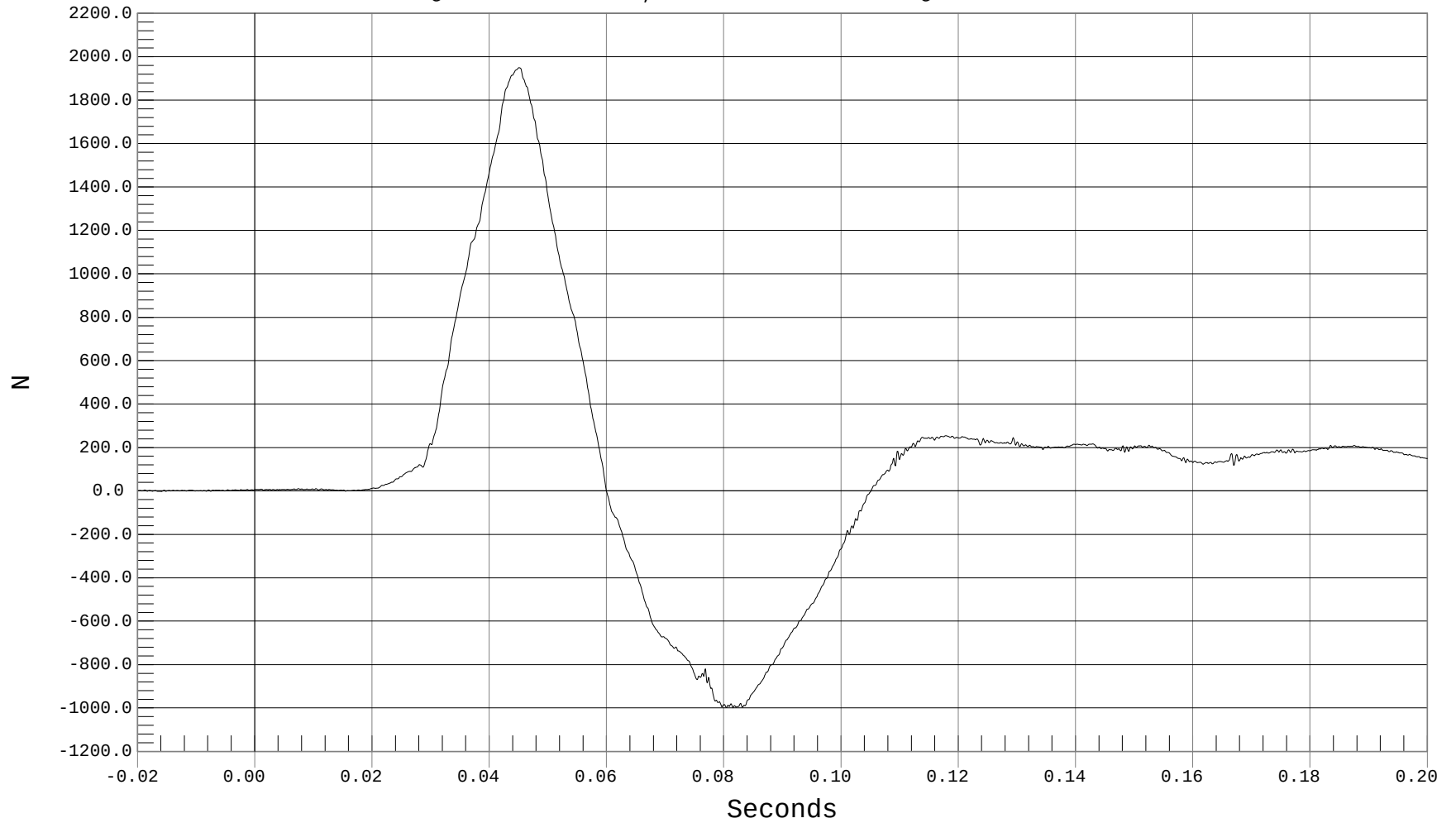
DRIVER LUMBAR FORCE Y

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 1000

— 1 DRIVER LUMBAR FY, B02049FT.F84

Ymin = -998.61 N @ 0.0815 Seconds, Ymax = 1950.55 N @ 0.0450 Seconds





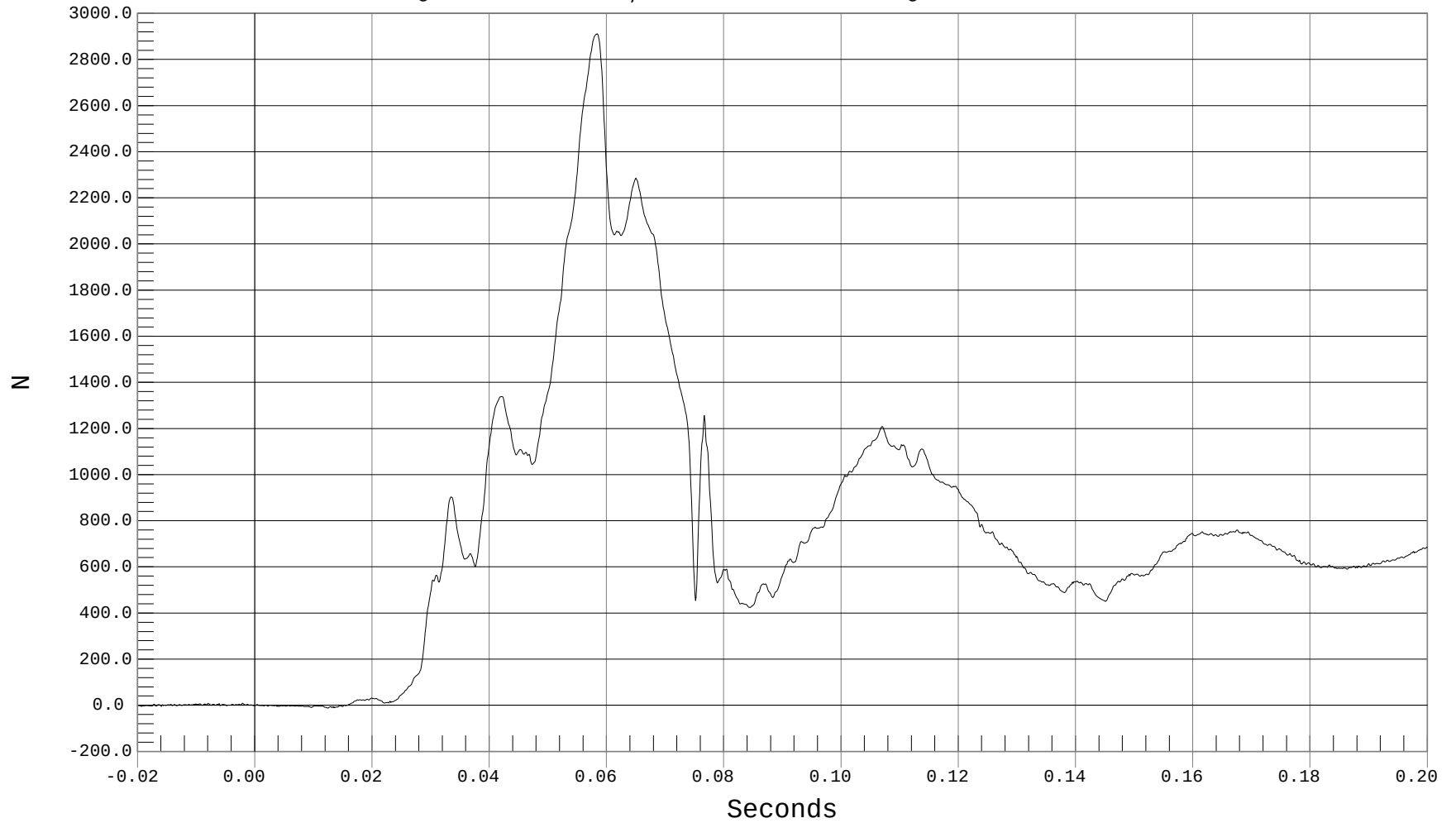
DRIVER LUMBAR FORCE Z

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 D00R

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 1000

1 DRIVER LUMBAR FZ, B02049FT.F85

Ymin = -12.42 N @ 0.0124 Seconds, Ymax = 2911.74 N @ 0.0583 Seconds





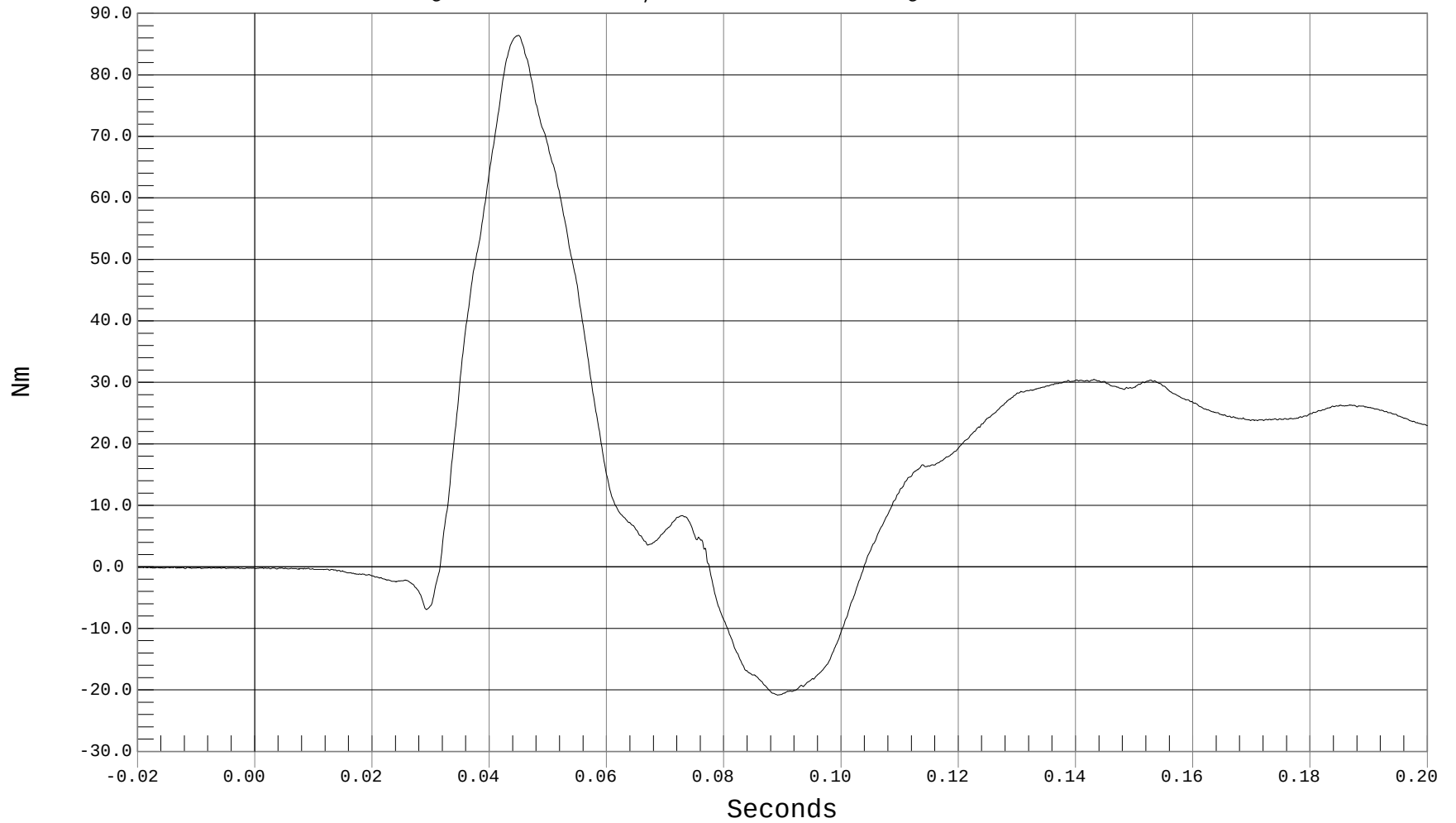
DRIVER LUMBAR MOMENT X

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 1000

— 1 DRIVER LUMBAR MX, B02049MT.M86

Ymin = -20.86 Nm @ 0.0891 Seconds, Ymax = 86.43 Nm @ 0.0449 Seconds





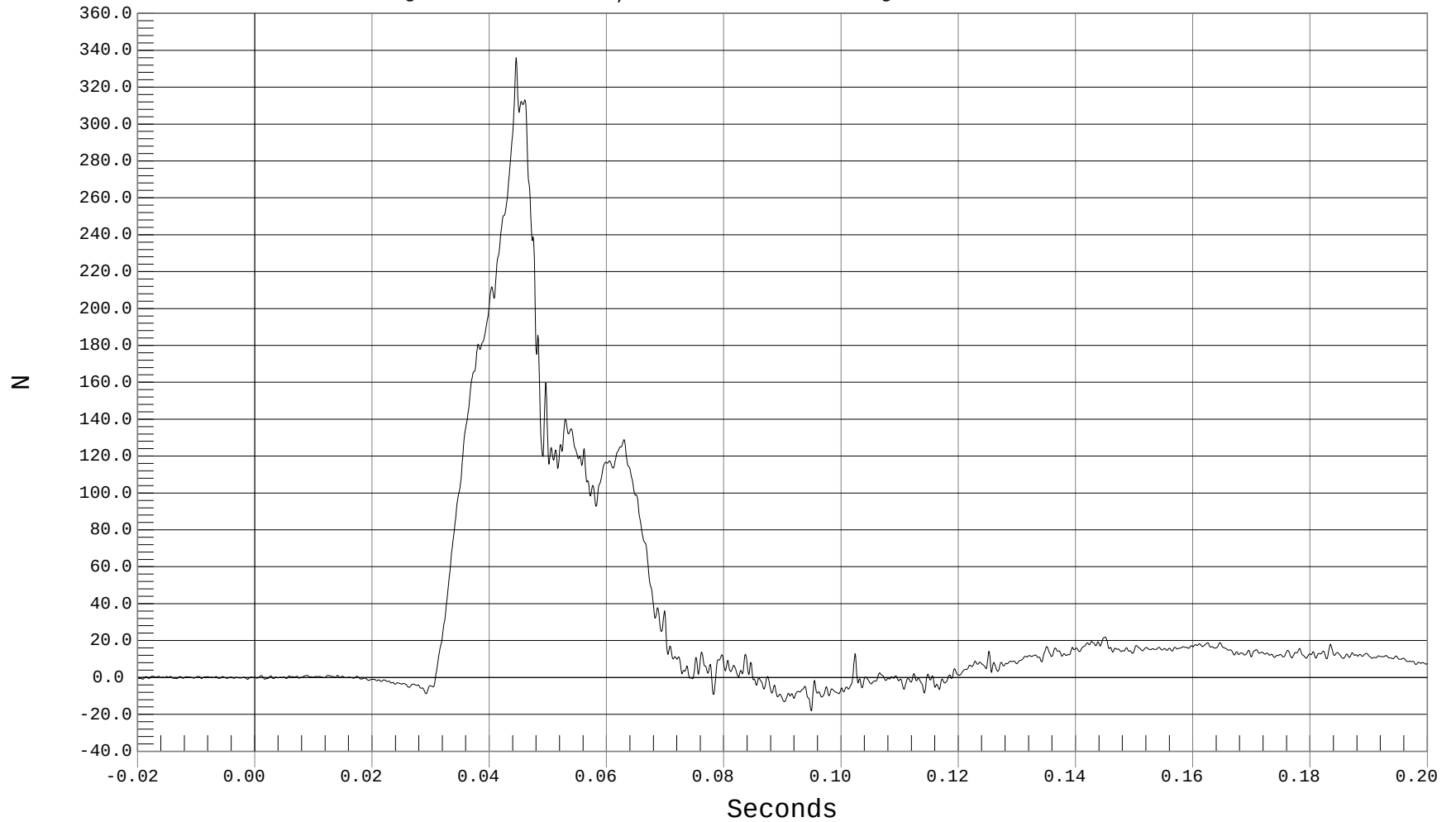
DRIVER ABDOMEN FRONT FORCE

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER FRONT ABDOMEN FY, B02049FF.F87

Ymin = -18.1 N @ 0.0948 Seconds, Ymax = 335.91 N @ 0.0445 Seconds





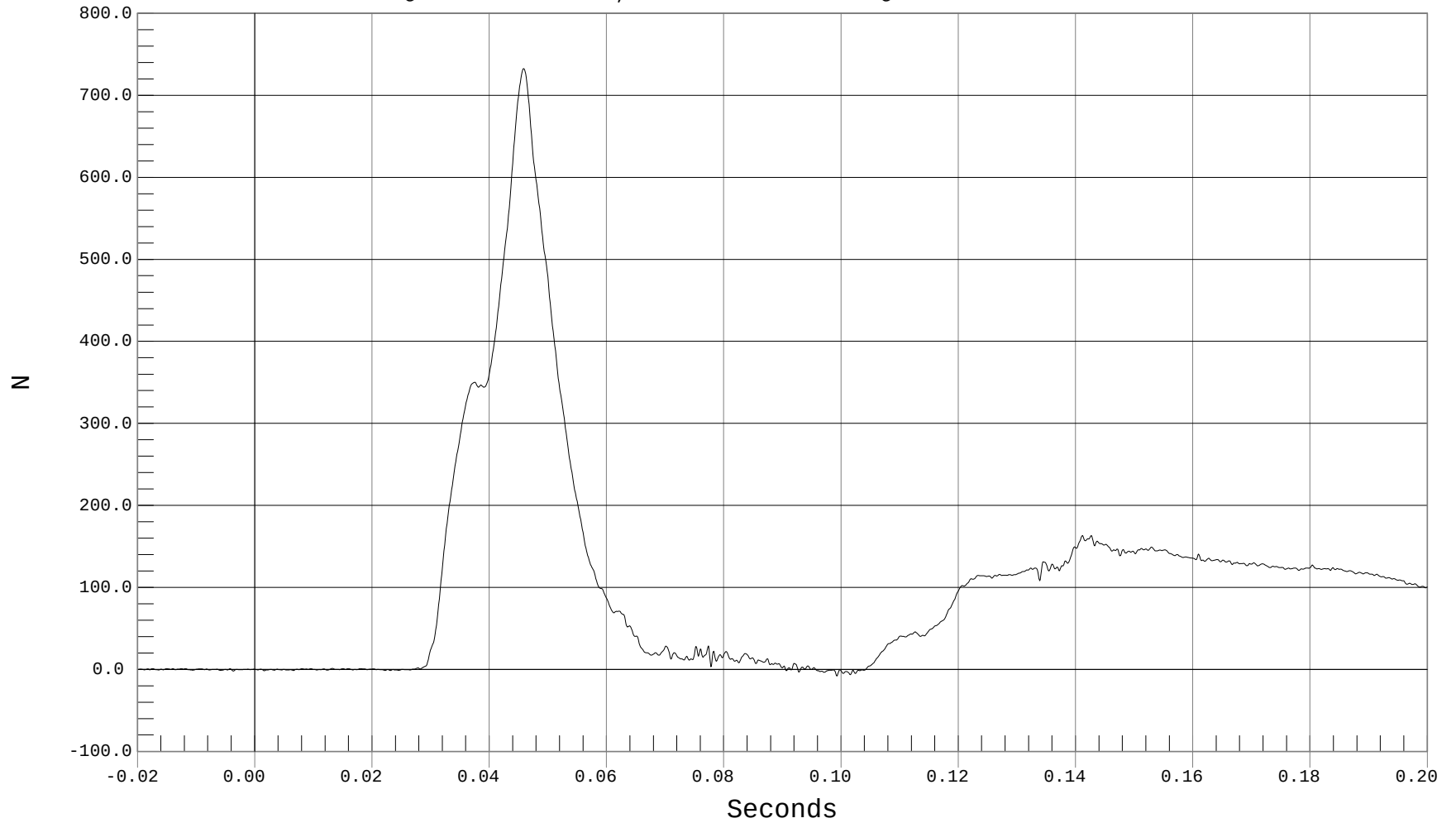
DRIVER ABDOMEN MID FORCE

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER MID ABDOMEN FY, B02049FF.F88

Ymin = -8.26 N @ 0.0992 Seconds, Ymax = 732.82 N @ 0.0458 Seconds





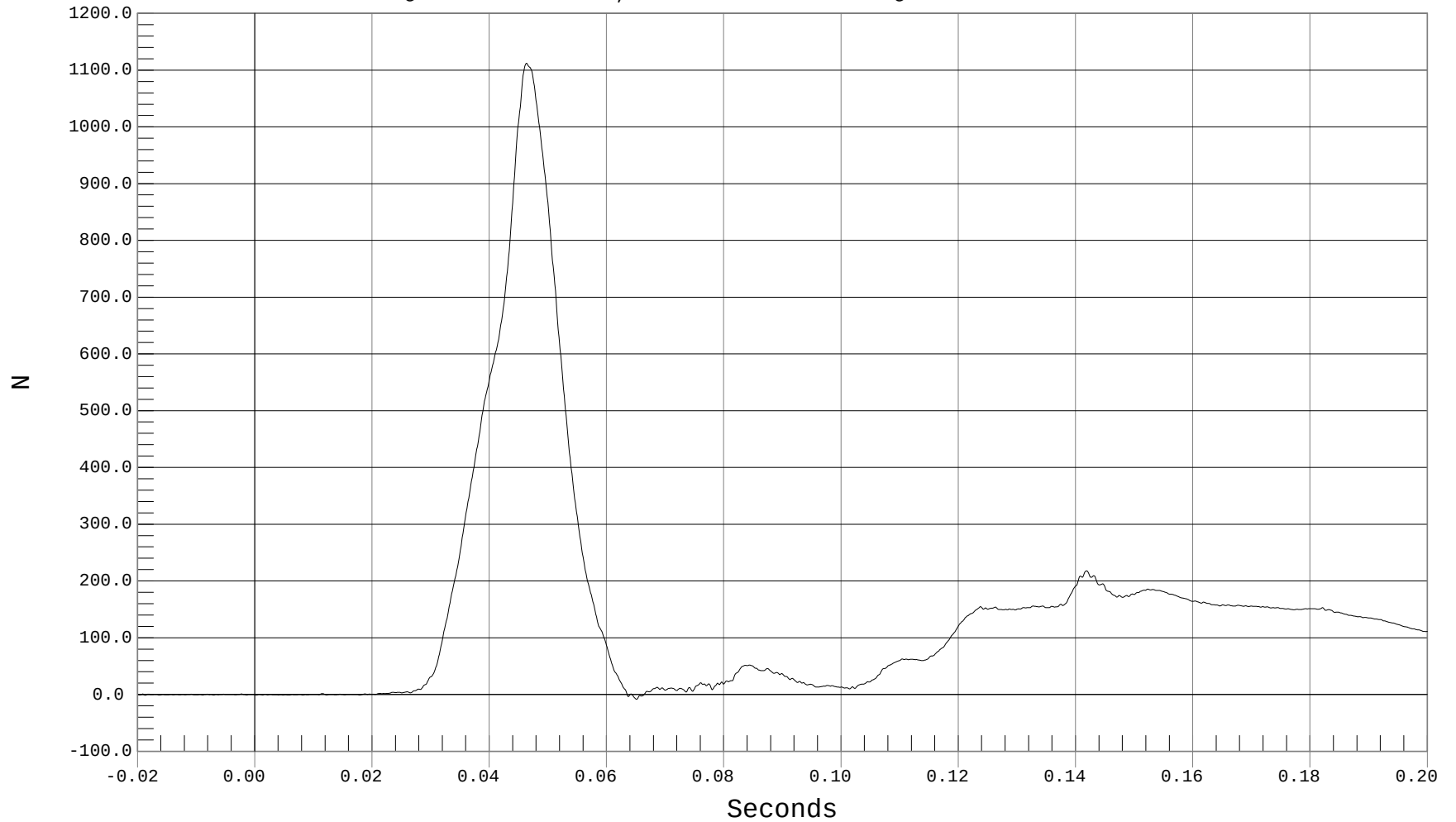
DRIVER ABDOMEN REAR FORCE

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER REAR ABDOMEN FY, B02049FF.F89

Ymin = -8.49 N @ 0.0650 Seconds, Ymax = 1112.21 N @ 0.0462 Seconds





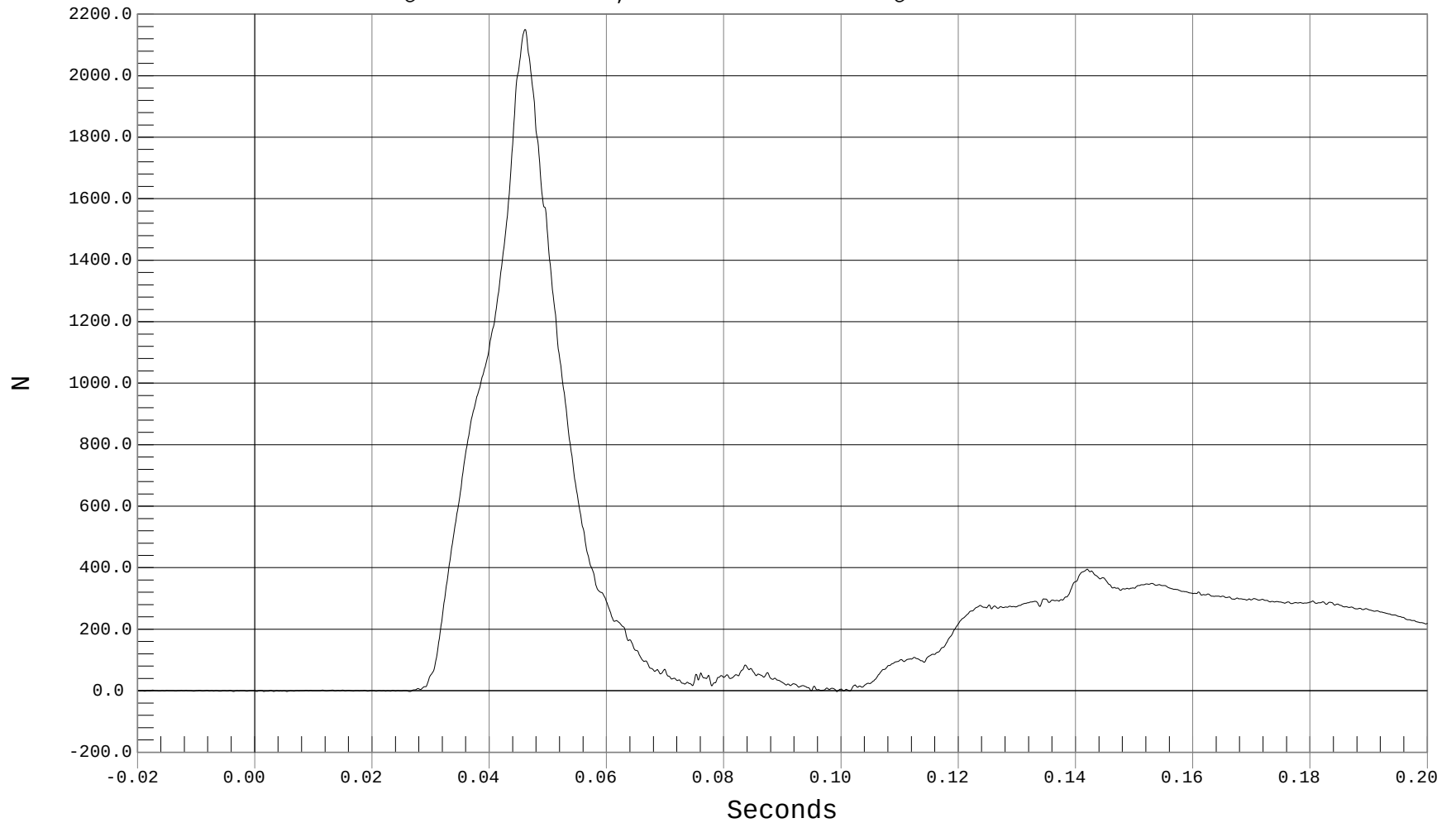
DRIVER SUMMED ABDOMEN FORCE

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER SUMMED ABDOMEN FORCE, B02049FU.F87

Ymin = -3.15 N @ 0.0992 Seconds, Ymax = 2150.61 N @ 0.0460 Seconds





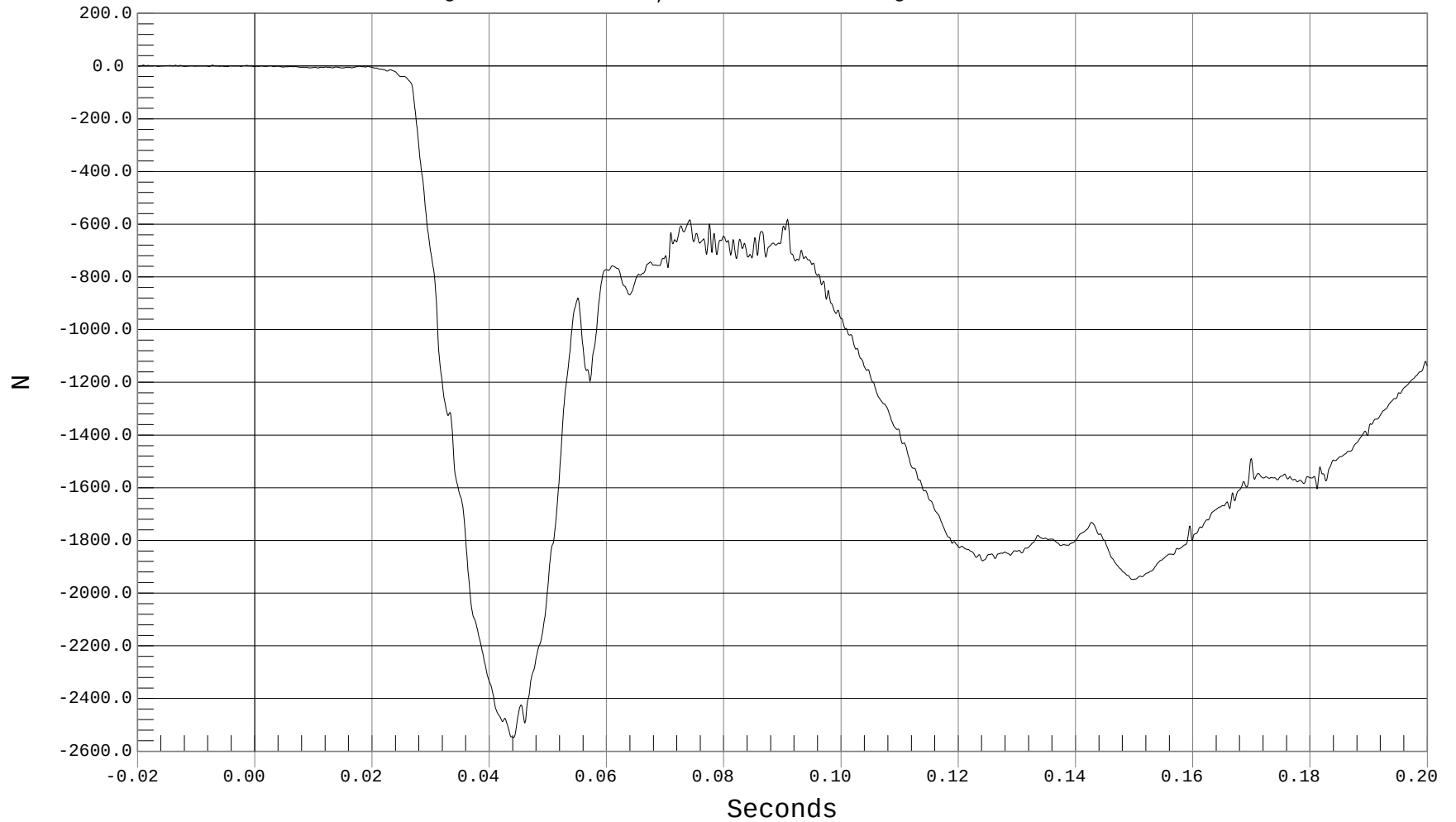
DRIVER PUBIC SYMPHYSIS FORCE

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 PUBIC SYMPHYSIS FORCE, B02049FF.F90

Ymin = -2548.02 N @ 0.0440 Seconds, Ymax = 3.27 N @ -0.0191 Seconds





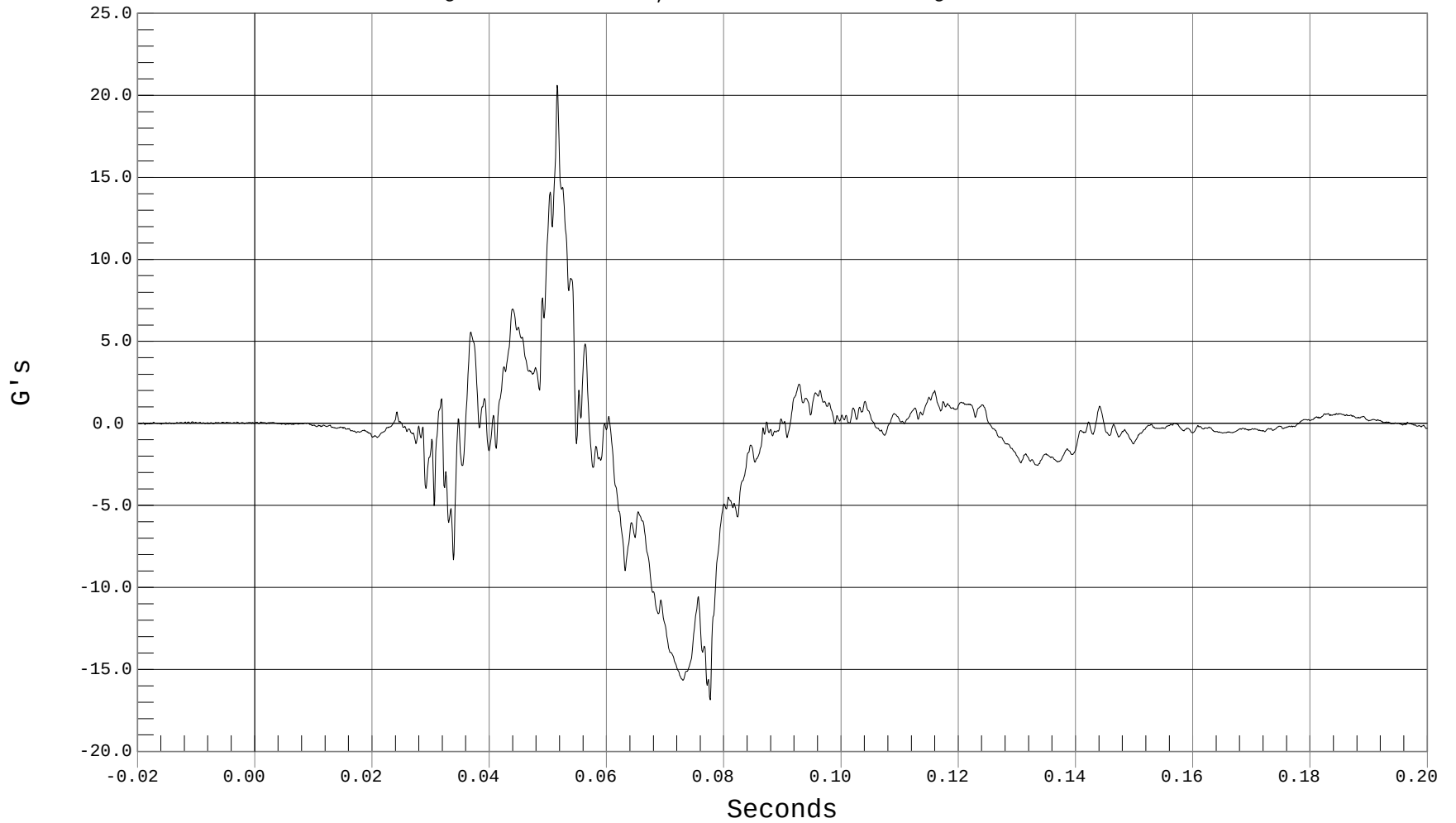
DRIVER PELVIS X ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 1000

1 DRIVER PELVIS X, B02049AT.A12

Ymin = -16.86 G's @ 0.0776 Seconds, Ymax = 20.61 G's @ 0.0515 Seconds





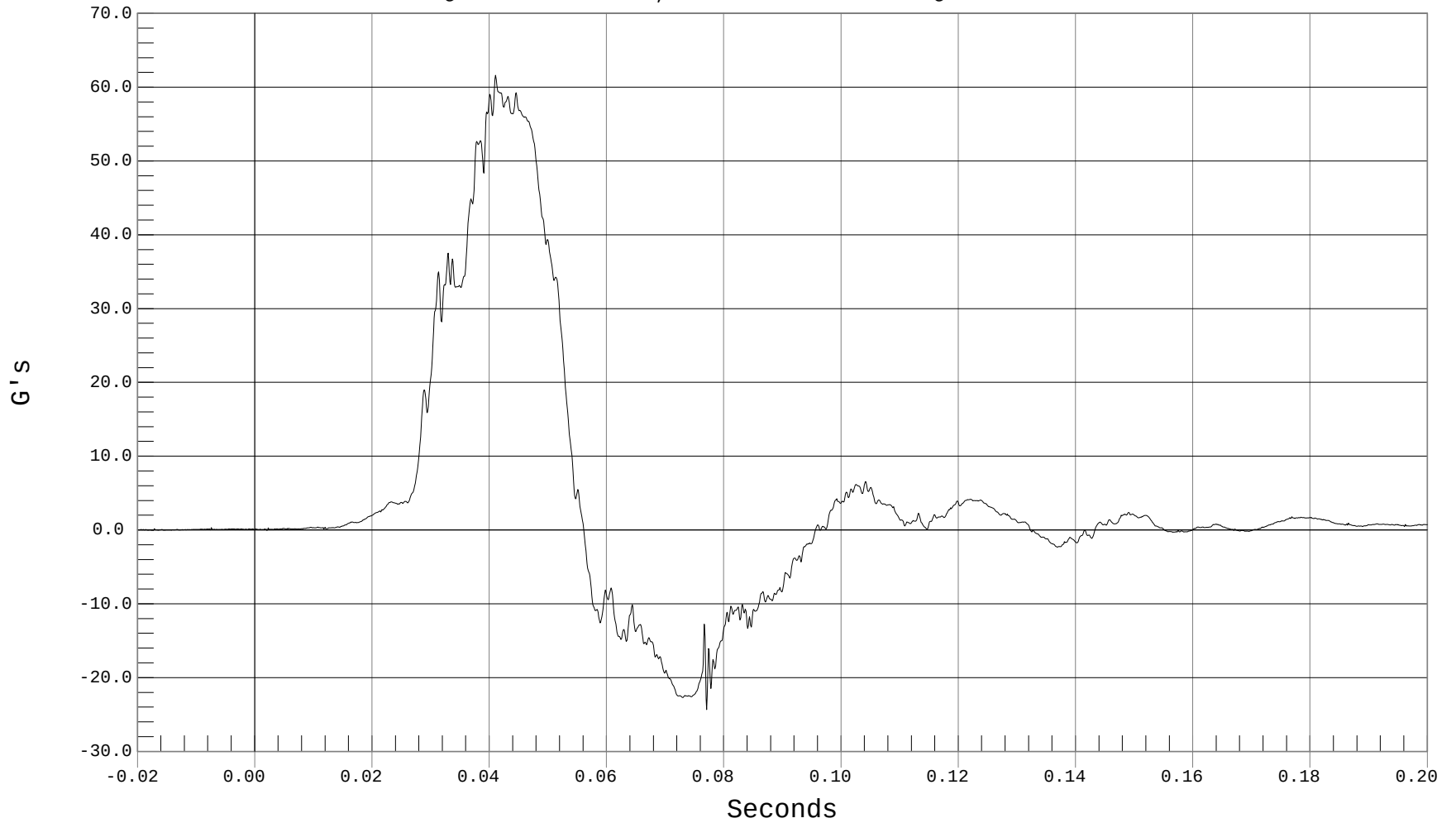
DRIVER PELVIS Y ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 1000

— 1 DRIVER PELVIS Y, B02049AT.A13

Ymin = -24.35 G's @ 0.0770 Seconds, Ymax = 61.61 G's @ 0.0410 Seconds





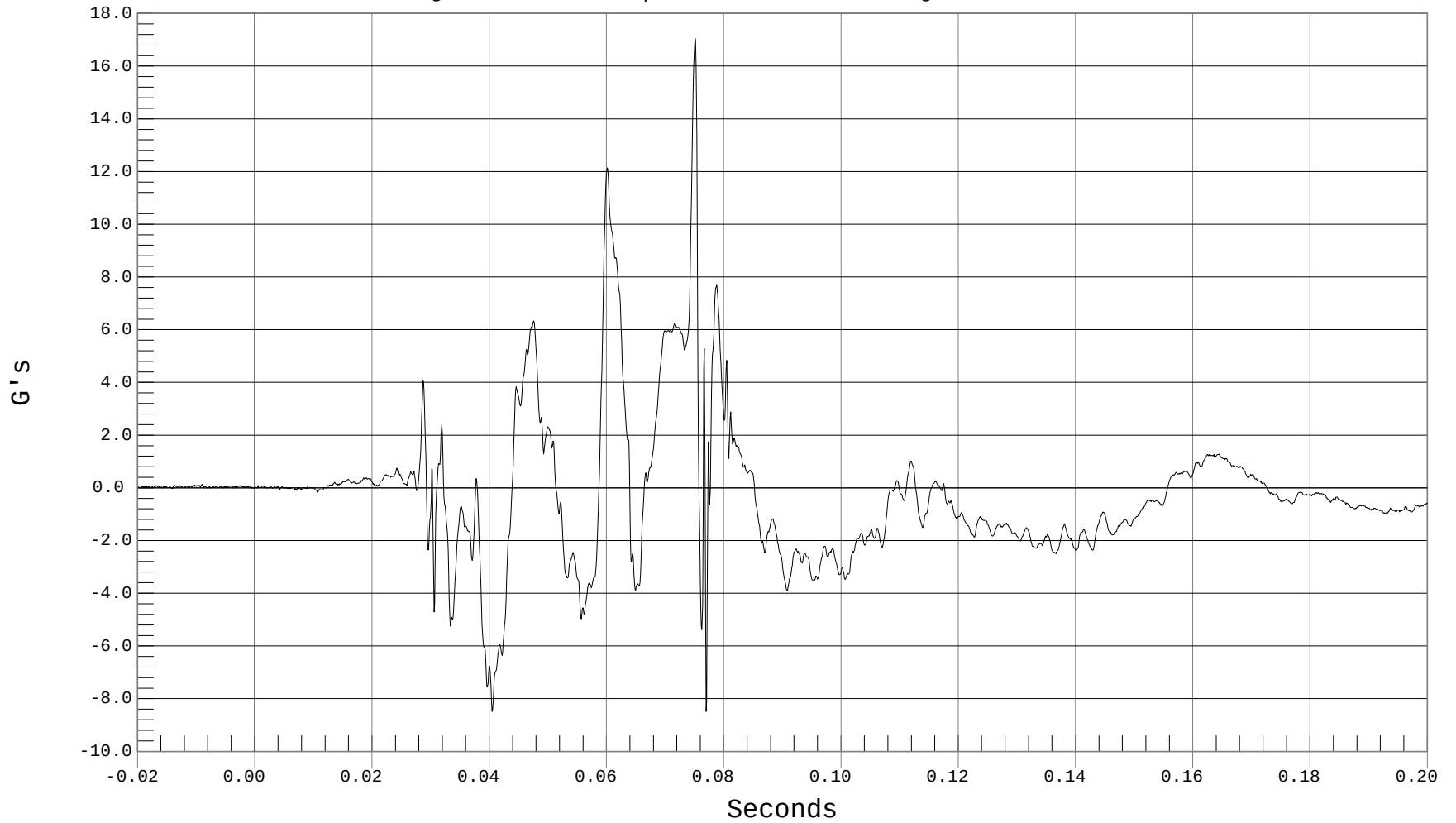
DRIVER PELVIS Z ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 1000

1 DRIVER PELVIS Z, B02049AT.A14

Ymin = -8.49 G's @ 0.0404 Seconds, Ymax = 17.06 G's @ 0.0750 Seconds





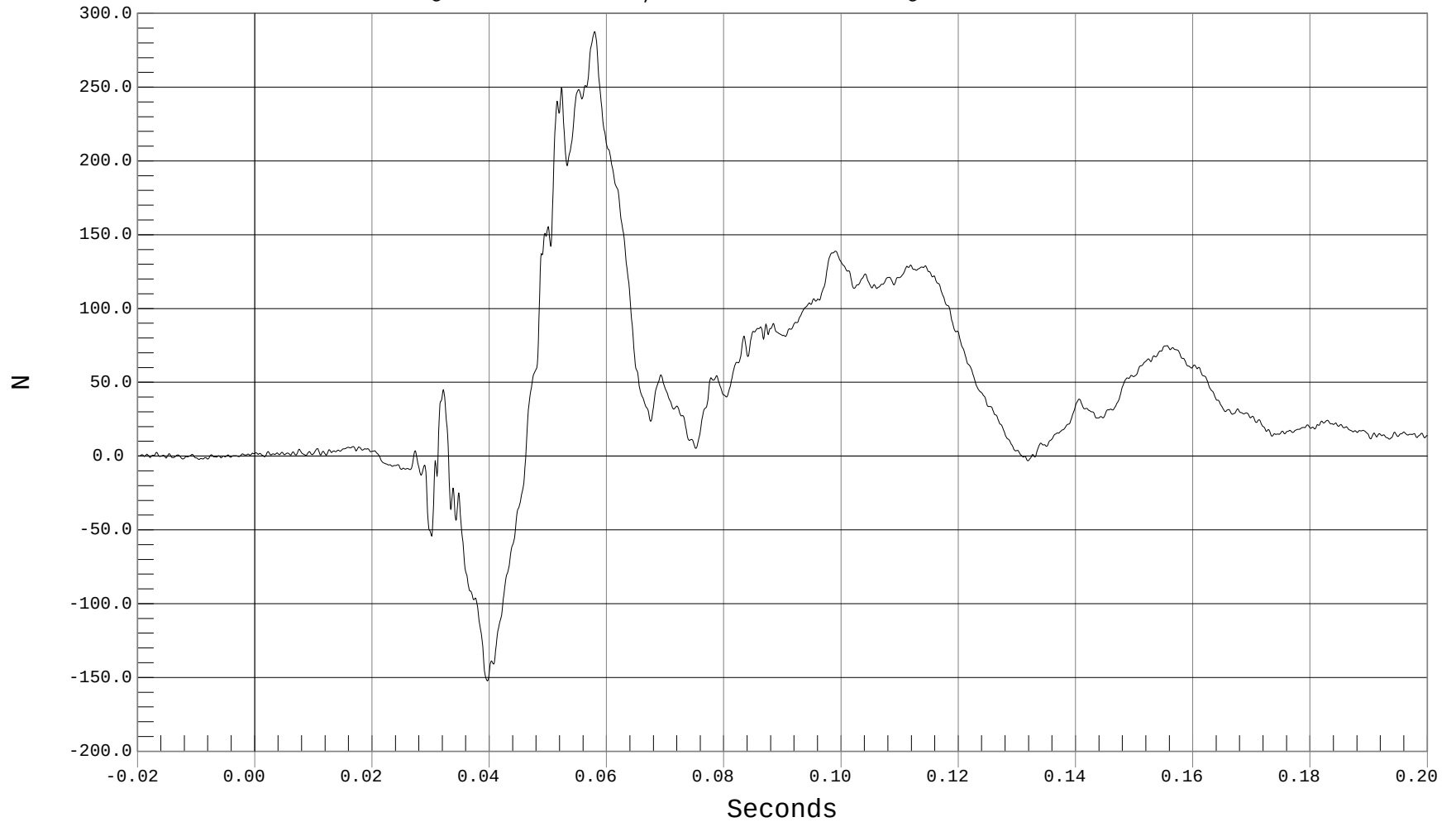
DRIVER LEFT FEMUR FORCE X

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

1 DRIVER LEFT FEMUR FX, B02049FF.F01

Ymin = -152.33 N @ 0.0396 Seconds, Ymax = 287.59 N @ 0.0579 Seconds





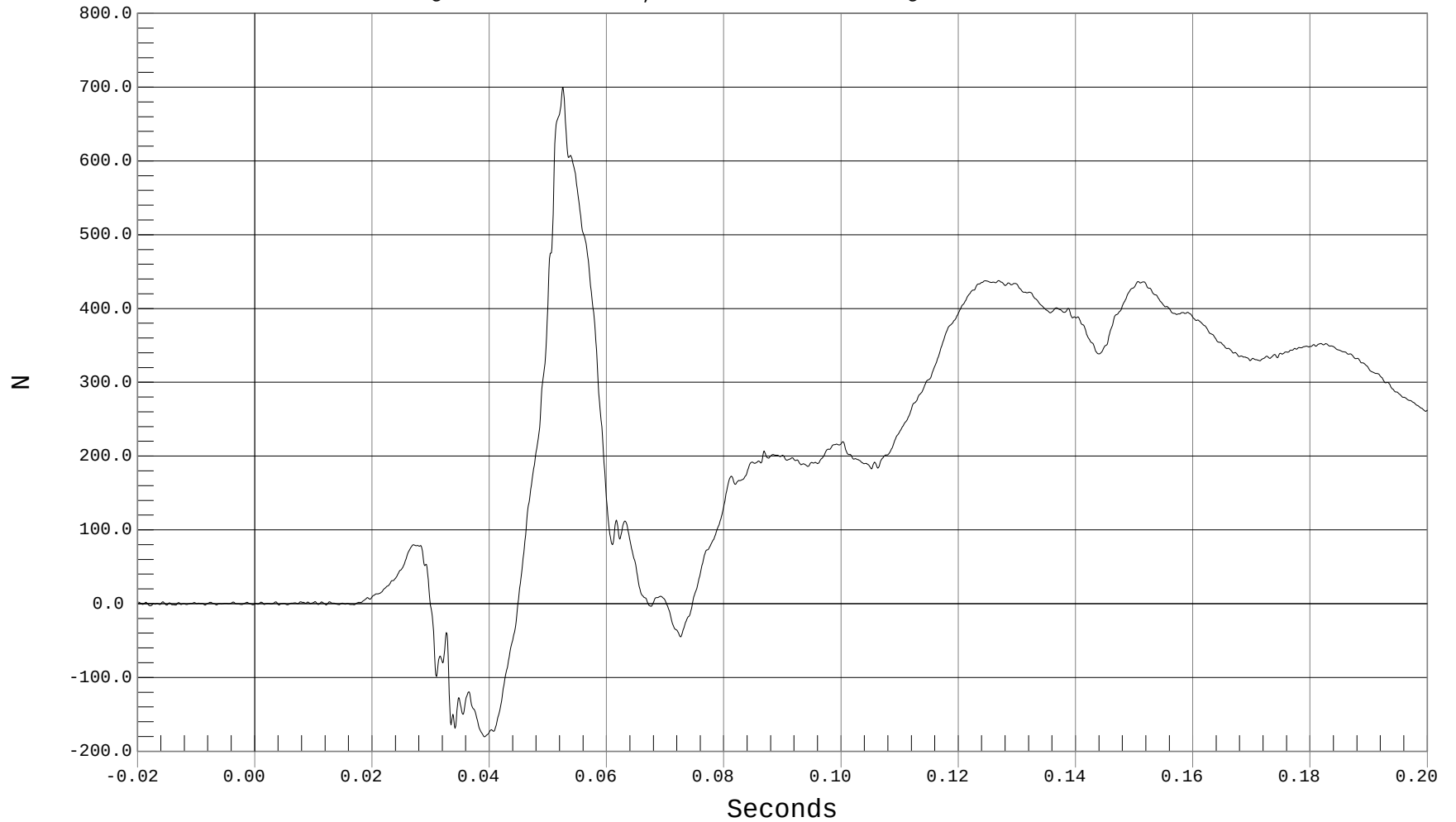
DRIVER LEFT FEMUR FORCE Y

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER LEFT FEMUR FY, B02049FF.F02

Ymin = -180.42 N @ 0.0391 Seconds, Ymax = 699.87 N @ 0.0525 Seconds





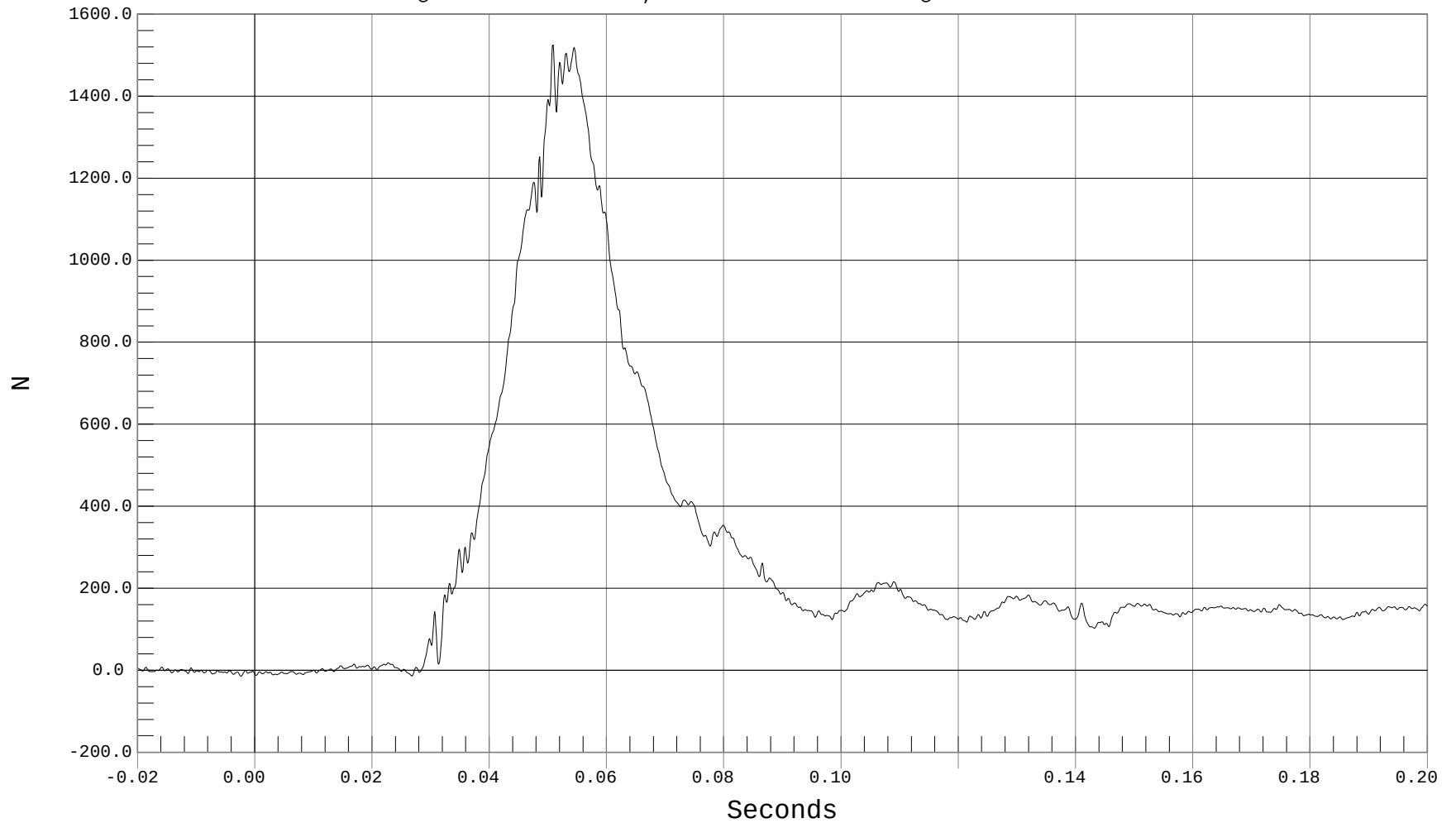
DRIVER LEFT FEMUR FORCE Z

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER LEFT FEMUR FZ, B02049FF.F03

Ymin = -14.24 N @ -0.0025 Seconds, Ymax = 1525.25 N @ 0.0508 Seconds





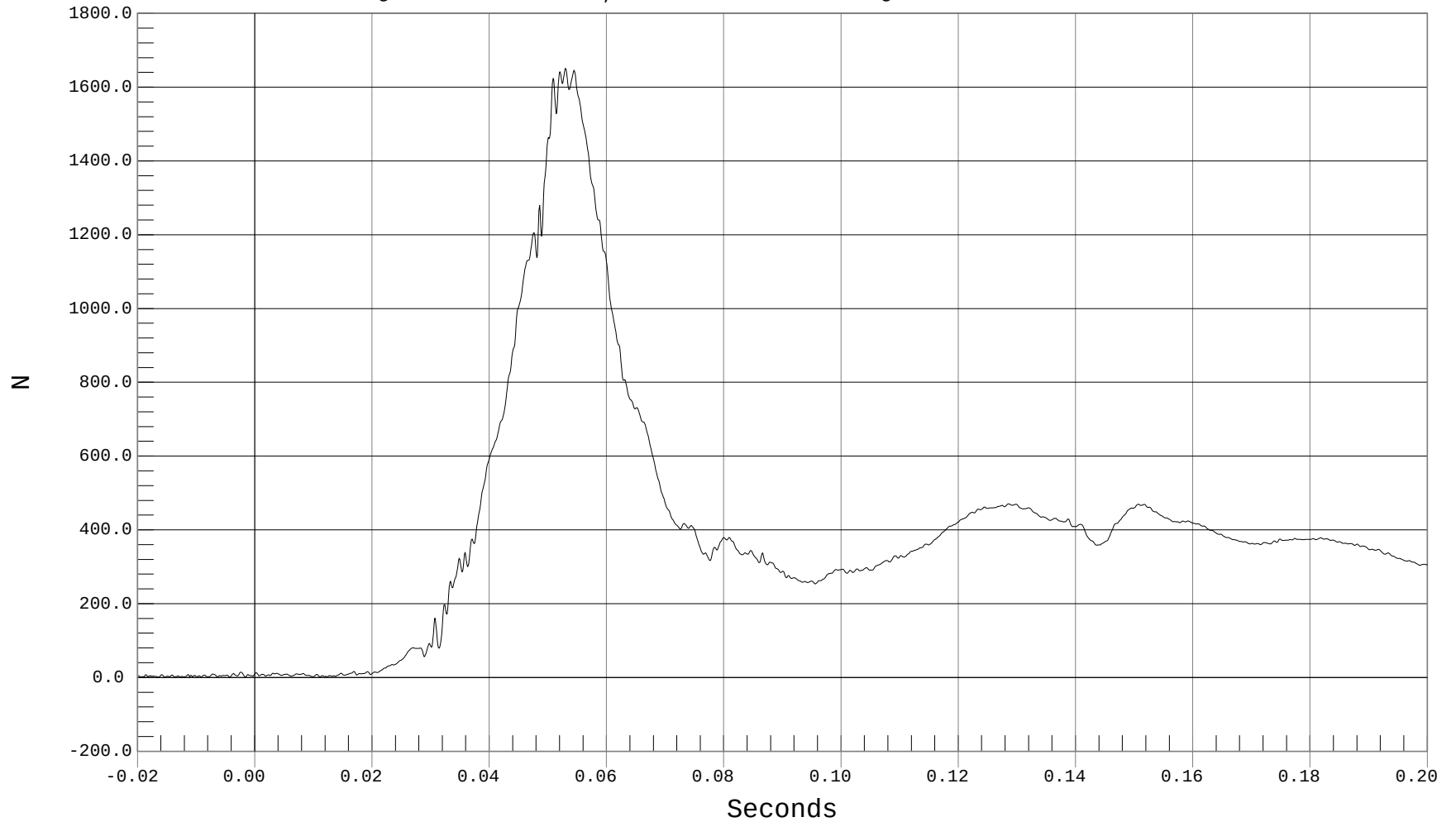
DRIVER LEFT FEMUR FORCE RESULTANT

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER LEFT FEMUR FORCE RESULTANT, B02049FV.F01

Ymin = .3 N @ -0.0190 Seconds, Ymax = 1650.84 N @ 0.0529 Seconds





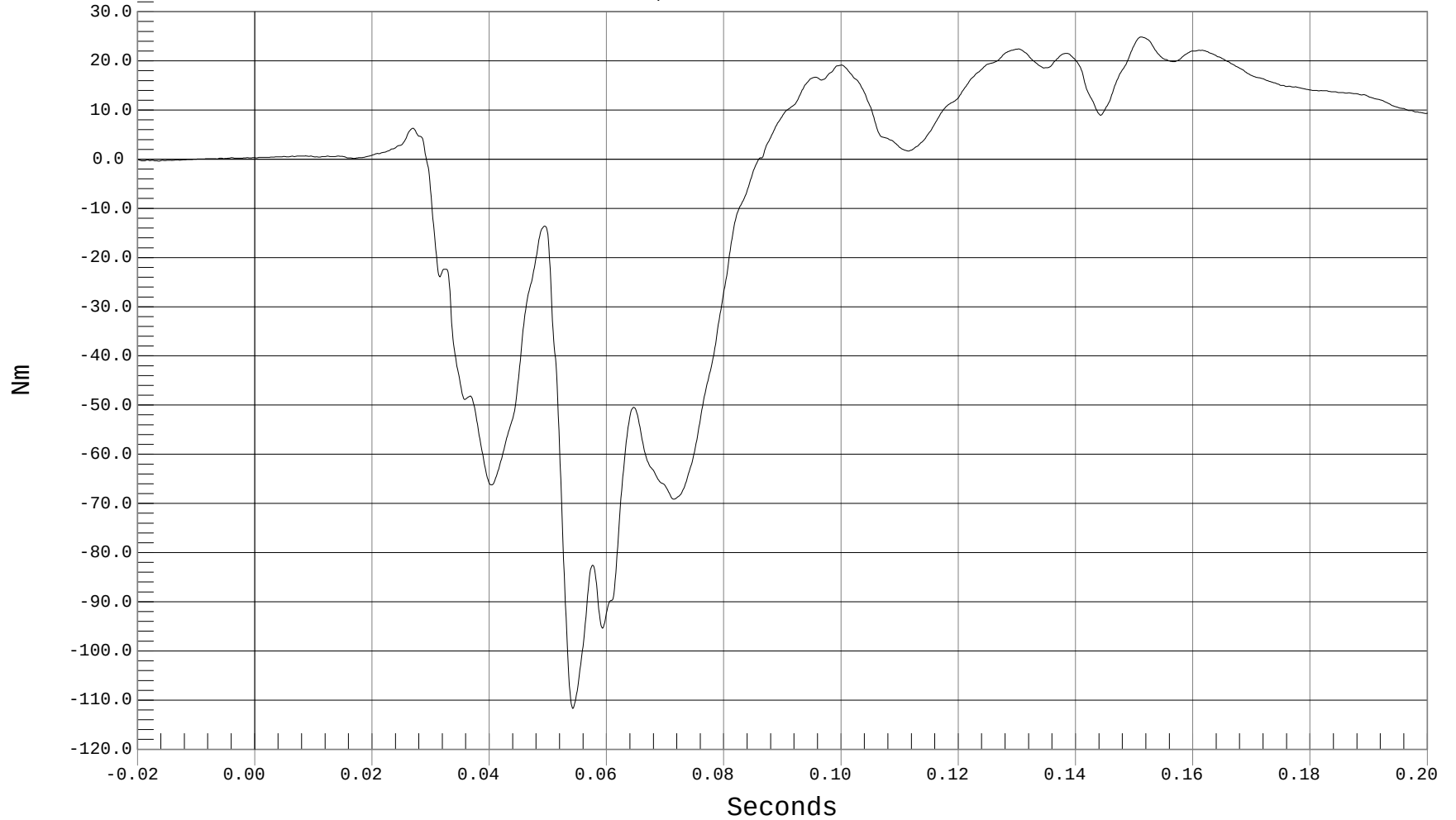
DRIVER LEFT FEMUR MOMENT X

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER LEFT FEMUR MX, B02049MF.M04

Ymin = -111.71 Nm @ 0.0542 Seconds, Ymax = 24.87 Nm @ 0.1511 Seconds





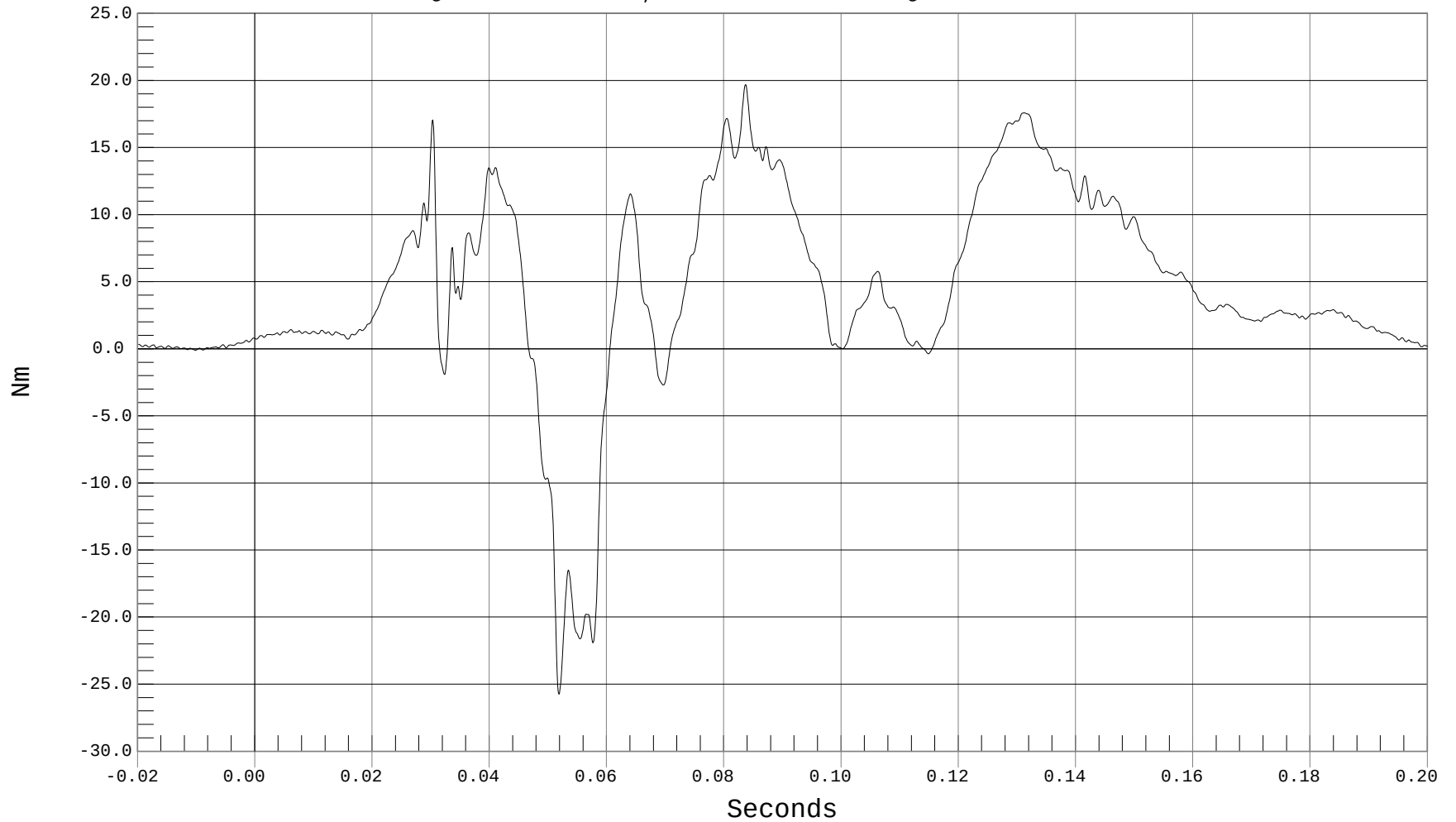
DRIVER LEFT FEMUR MOMENT Y

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER LEFT FEMUR MY, B02049MF.M05

Ymin = -25.75 Nm @ 0.0518 Seconds, Ymax = 19.68 Nm @ 0.0836 Seconds





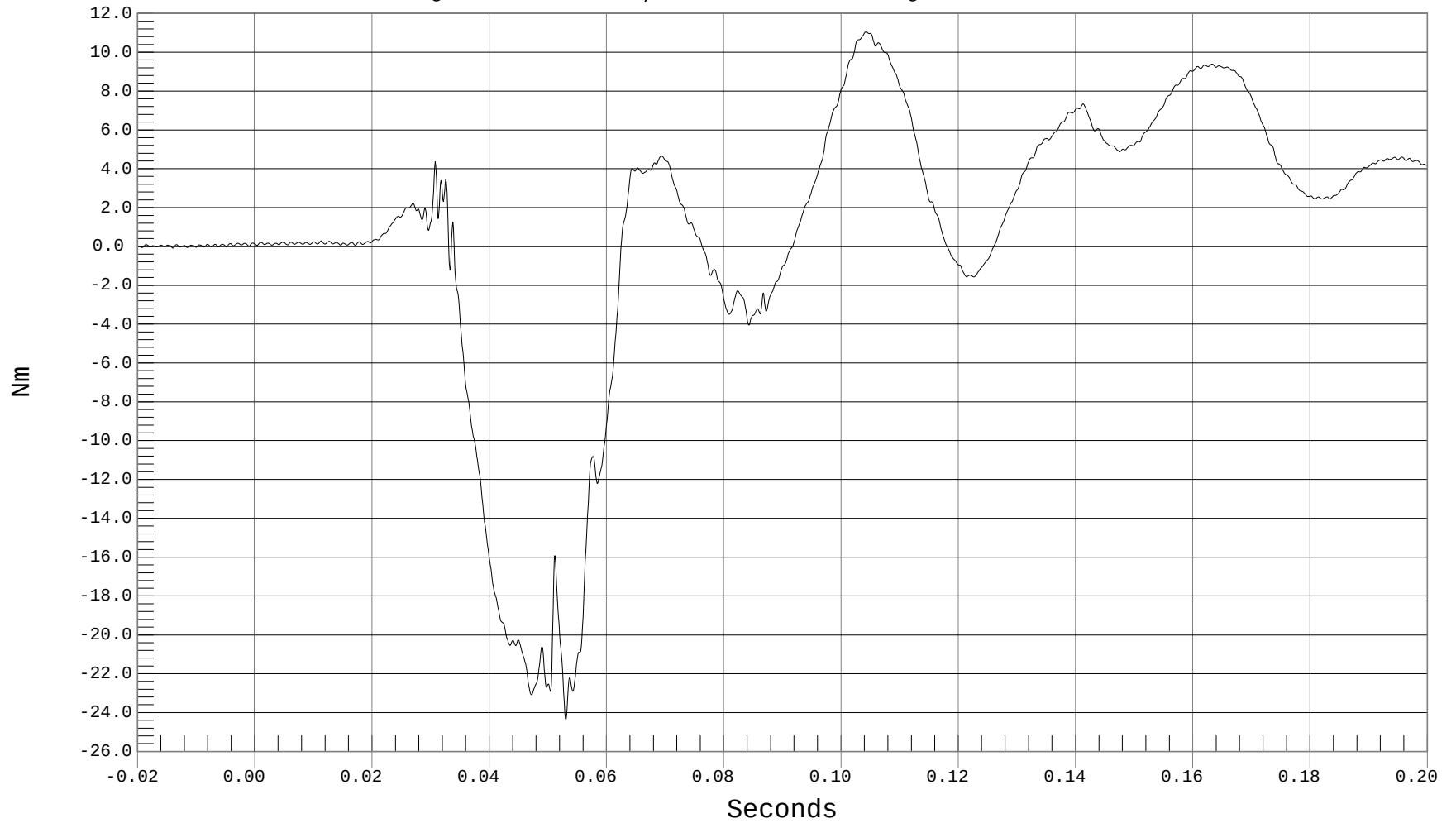
DRIVER LEFT FEMUR MOMENT Z

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

1 DRIVER LEFT FEMUR MZ, B02049MF.M06

Ymin = -24.33 Nm @ 0.0530 Seconds, Ymax = 11.06 Nm @ 0.1042 Seconds





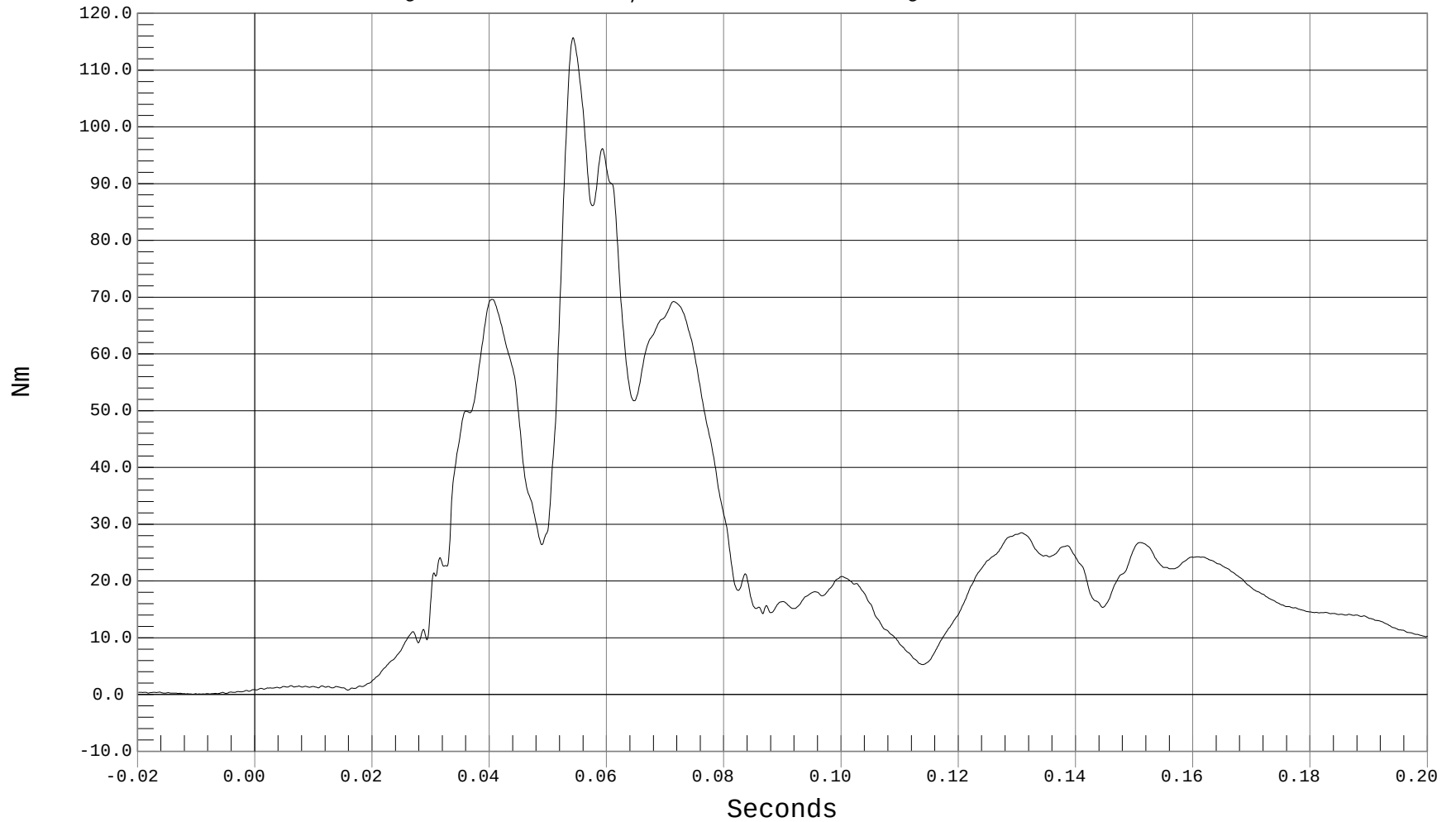
DRIVER LEFT FEMUR MOMENT RESULTANT

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER LEFT FEMUR MOMENT RESULTANT, B02049MV.M04

Ymin = .05 Nm @ -0.0098 Seconds, Ymax = 115.71 Nm @ 0.0542 Seconds





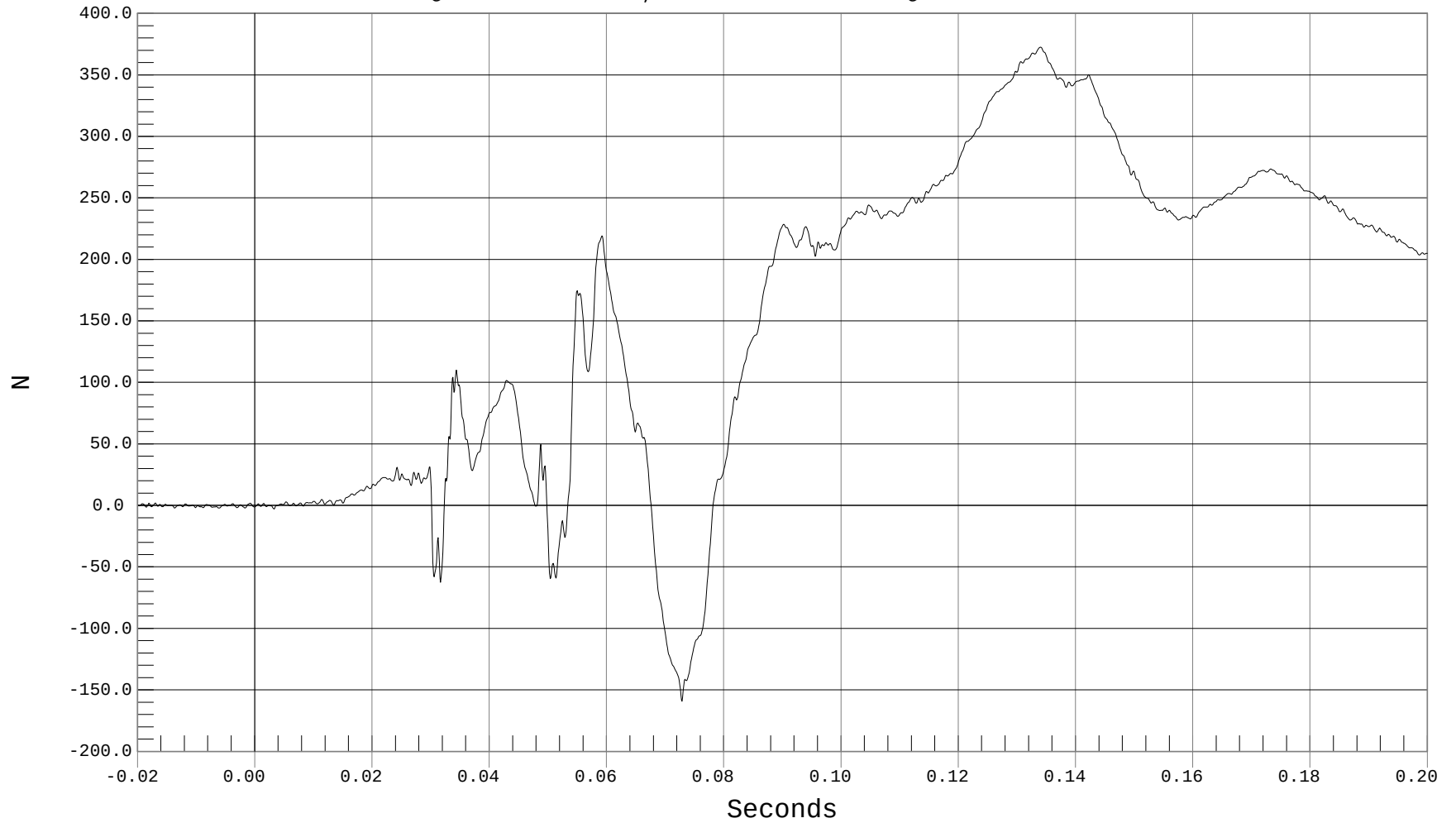
DRIVER RIGHT FEMUR FORCE X

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 D00R

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER RIGHT FEMUR FX, B02049FF.F91

Ymin = -159.14 N @ 0.0728 Seconds, Ymax = 372.61 N @ 0.1339 Seconds





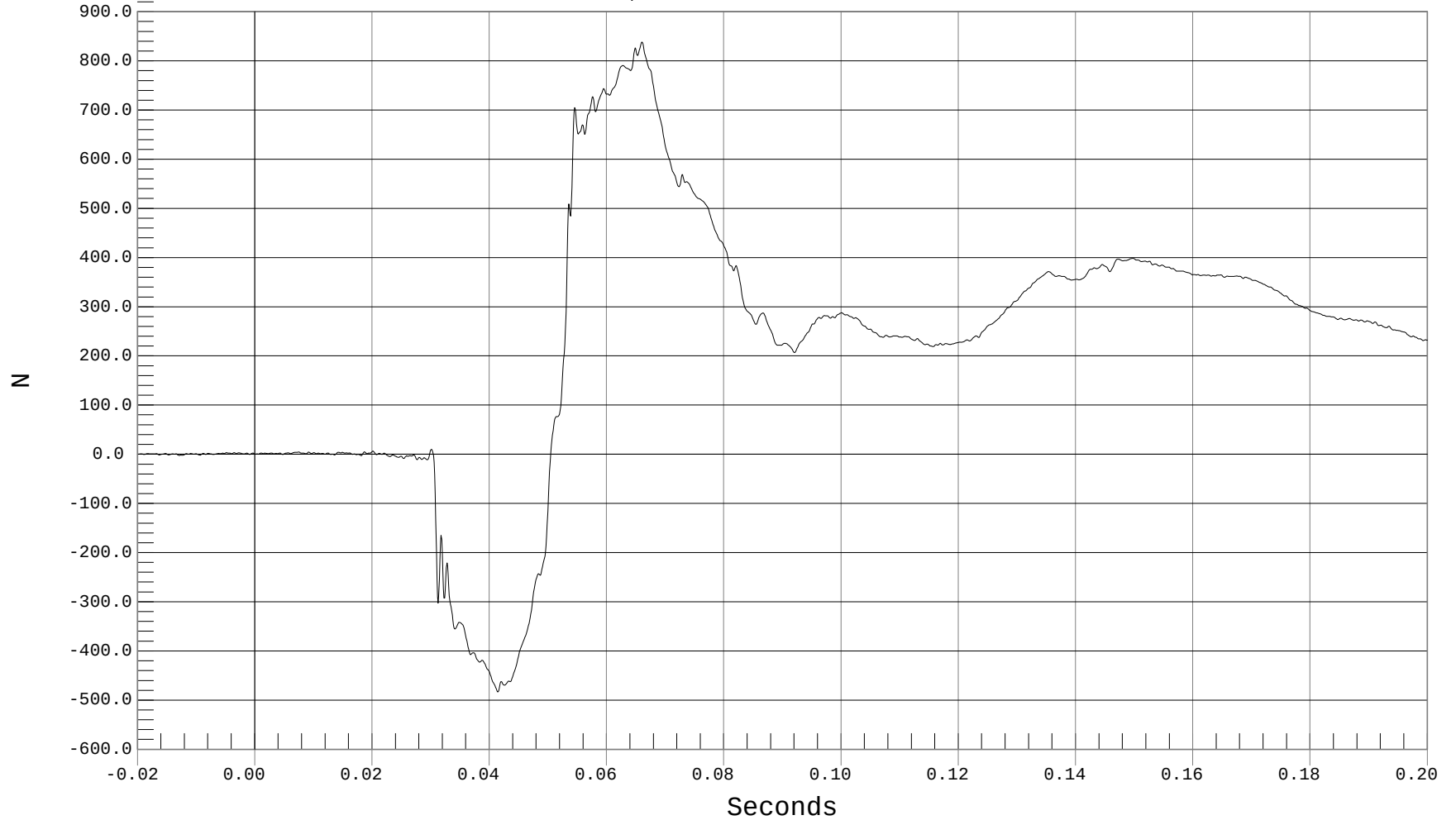
DRIVER RIGHT FEMUR FORCE Y

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER RIGHT FEMUR FY, B02049FF.F92

Ymin = -483.5 N @ 0.0414 Seconds, Ymax = 838.1 N @ 0.0660 Seconds





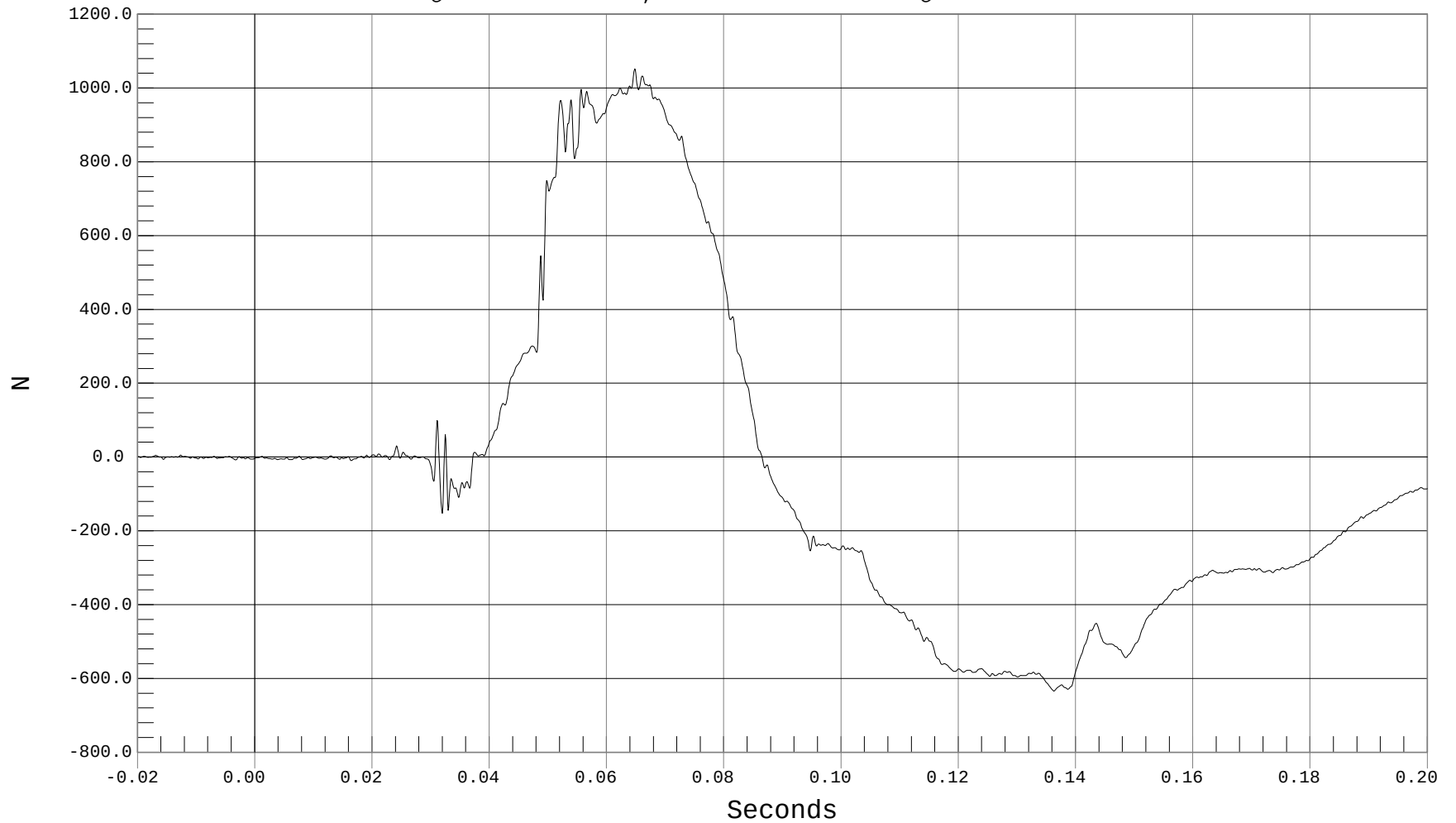
DRIVER RIGHT FEMUR FORCE Z

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

1 DRIVER RIGHT FEMUR FZ, B02049FF.F93

Ymin = -634.25 N @ 0.1362 Seconds, Ymax = 1051.77 N @ 0.0647 Seconds





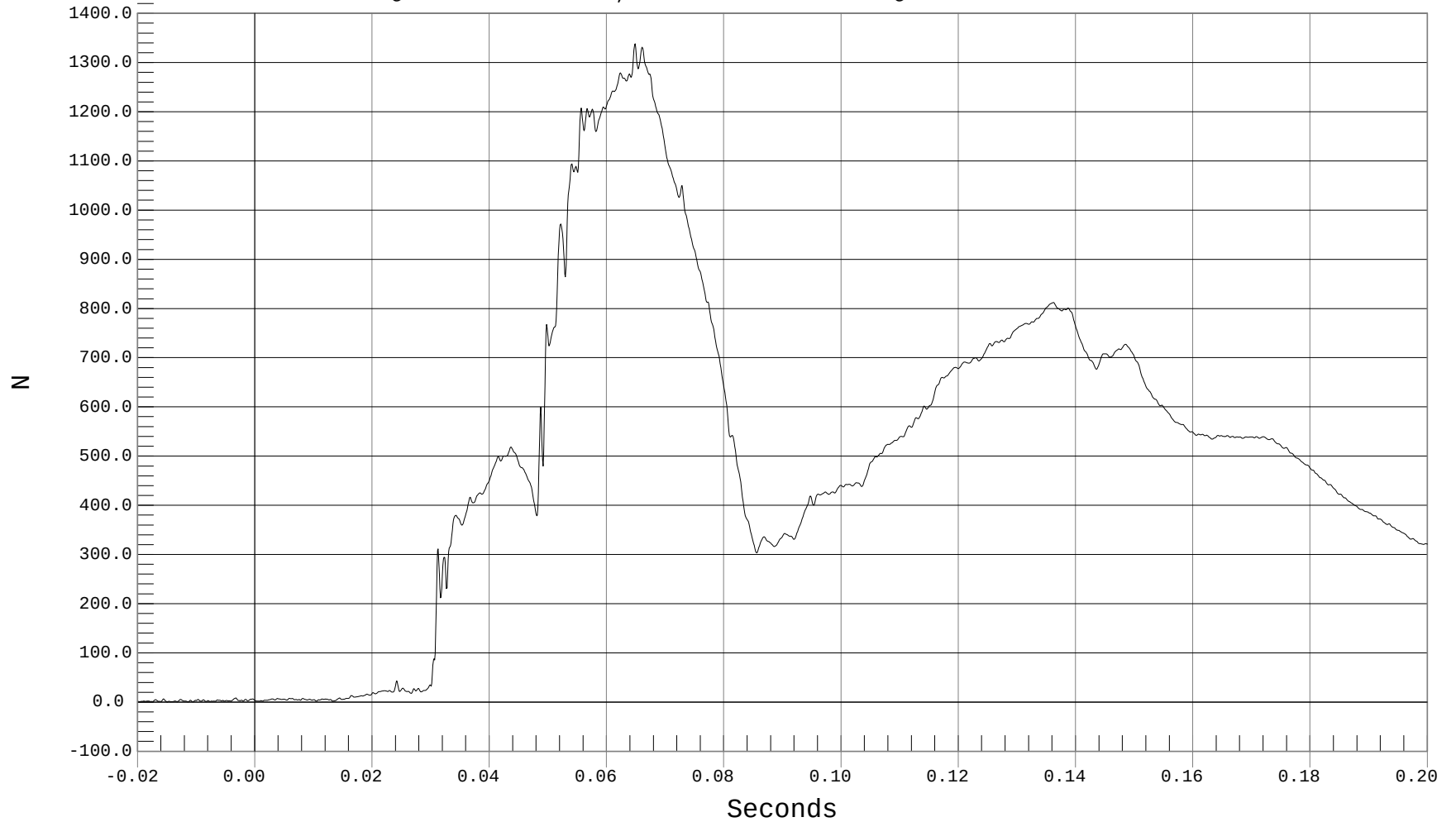
DRIVER RIGHT FEMUR FORCE RESULTANT

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER RIGHT FEMUR FORCE RESULTANT, B02049FV.F91

Ymin = .11 N @ -0.0150 Seconds, Ymax = 1338.28 N @ 0.0648 Seconds





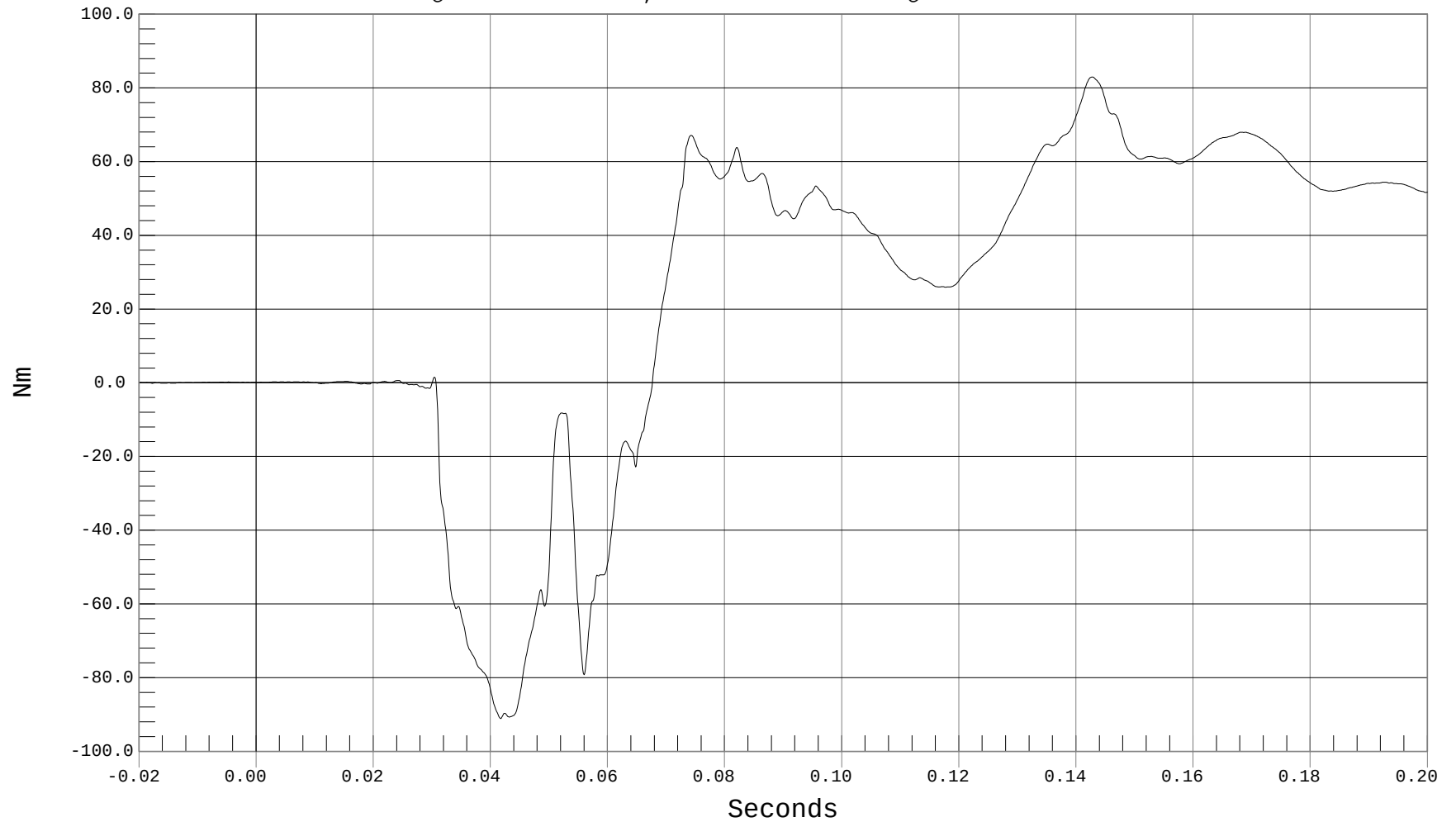
DRIVER RIGHT FEMUR MOMENT X

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 D00R

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER RIGHT FEMUR MX, B02049MF.M94

Ymin = -91.12 Nm @ 0.0417 Seconds, Ymax = 82.98 Nm @ 0.1427 Seconds





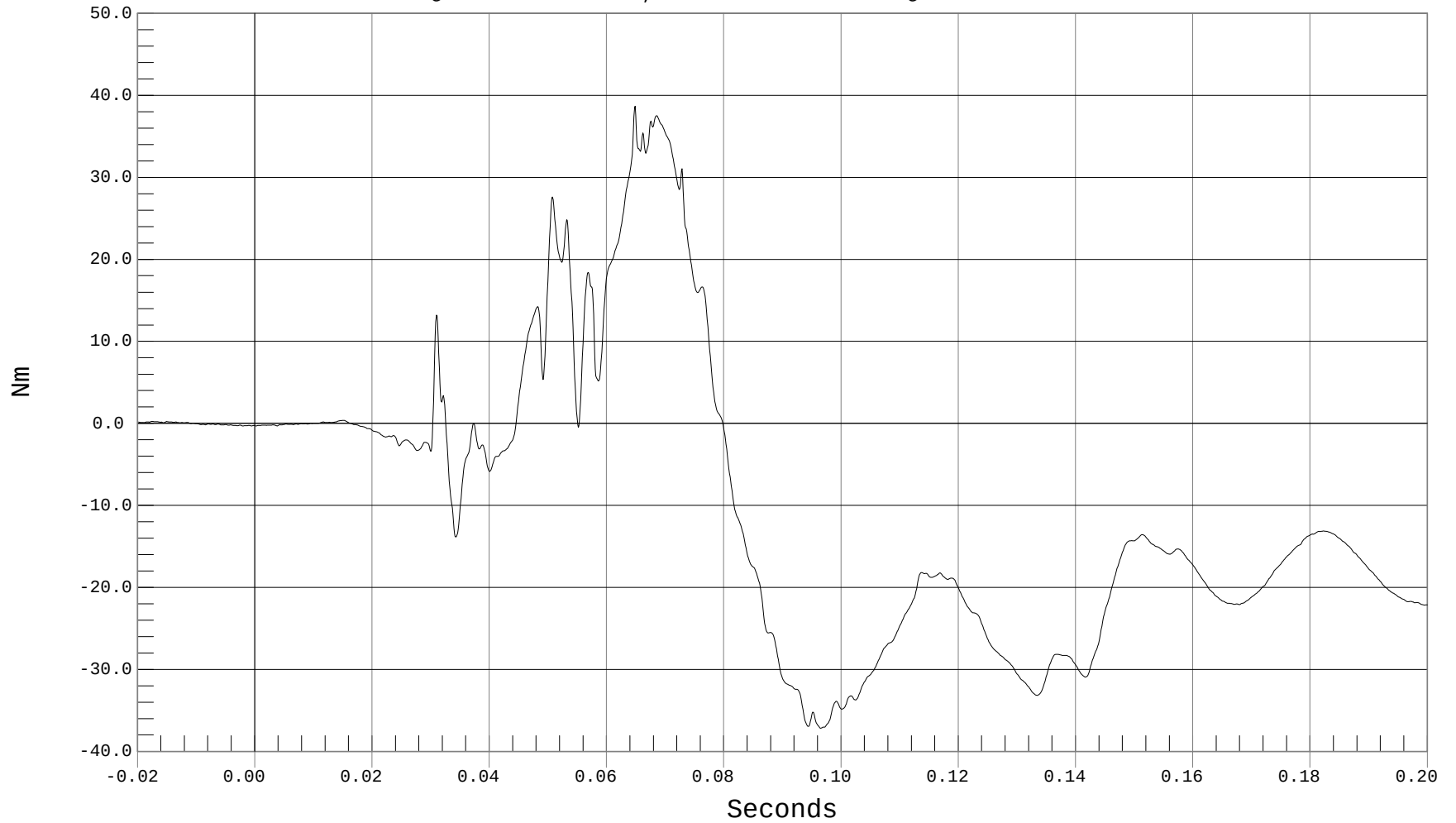
DRIVER RIGHT FEMUR MOMENT Y

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER RIGHT FEMUR MY, B02049MF.M95

Ymin = -37.17 Nm @ 0.0964 Seconds, Ymax = 38.66 Nm @ 0.0648 Seconds





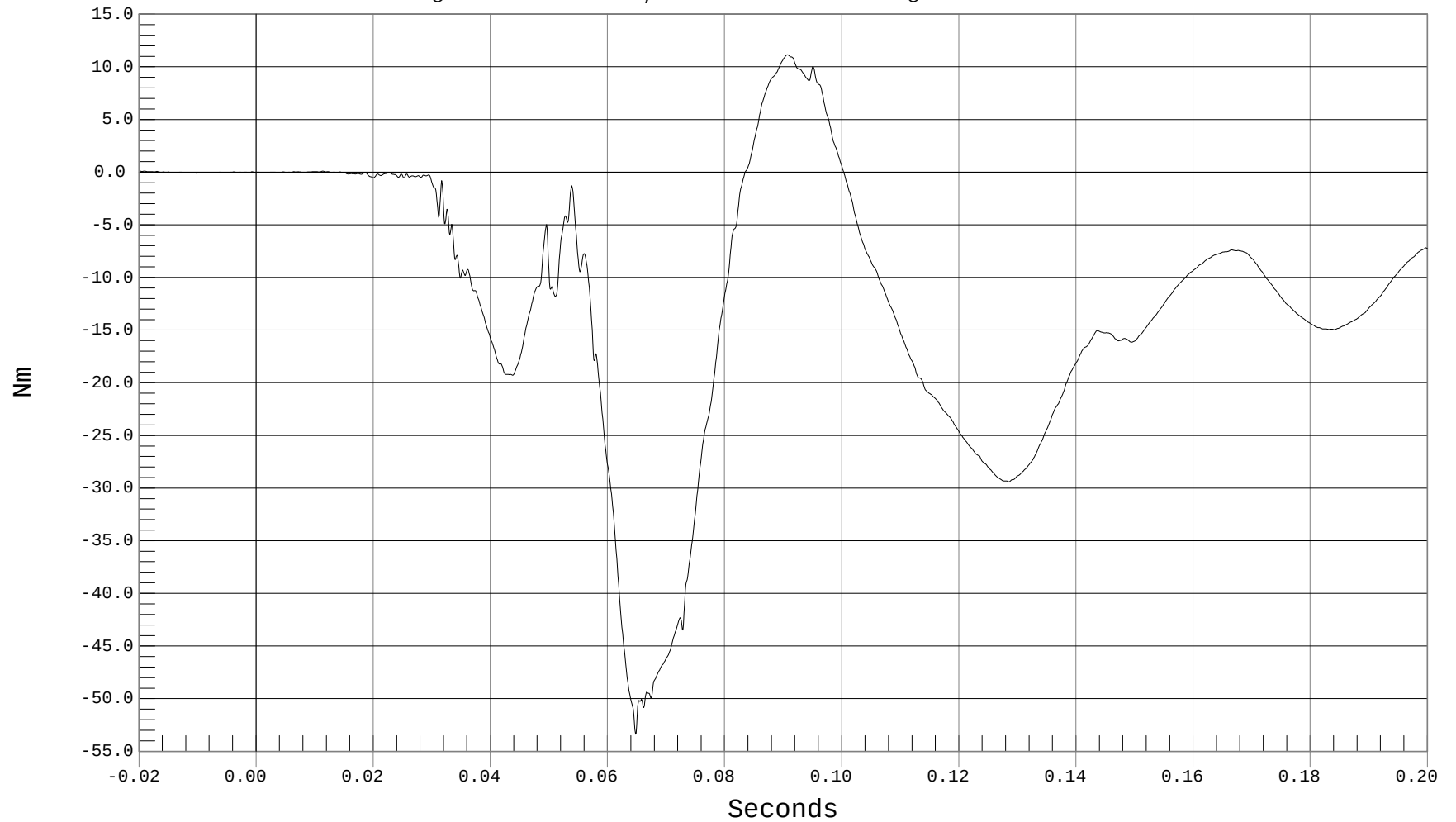
DRIVER RIGHT FEMUR MOMENT Z

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

1 DRIVER RIGHT FEMUR MZ, B02049MF.M96

Ymin = -53.38 Nm @ 0.0647 Seconds, Ymax = 11.14 Nm @ 0.0907 Seconds





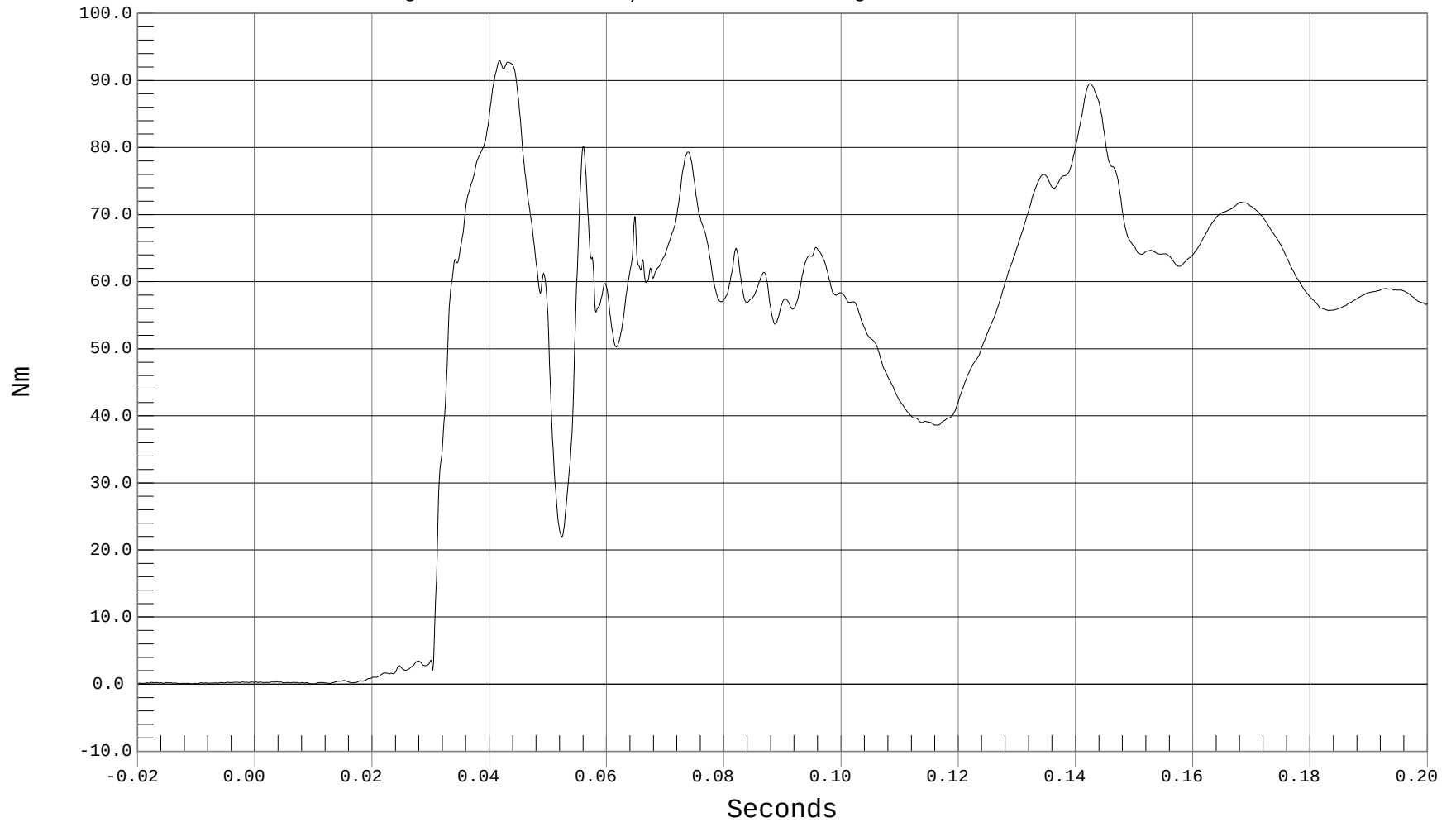
DRIVER RIGHT FEMUR MOMENT RESULTANT

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER RIGHT FEMUR MOMENT RESULTANT, B02049MV.M94

Ymin = .04 Nm @ -0.0107 Seconds, Ymax = 93 Nm @ 0.0417 Seconds





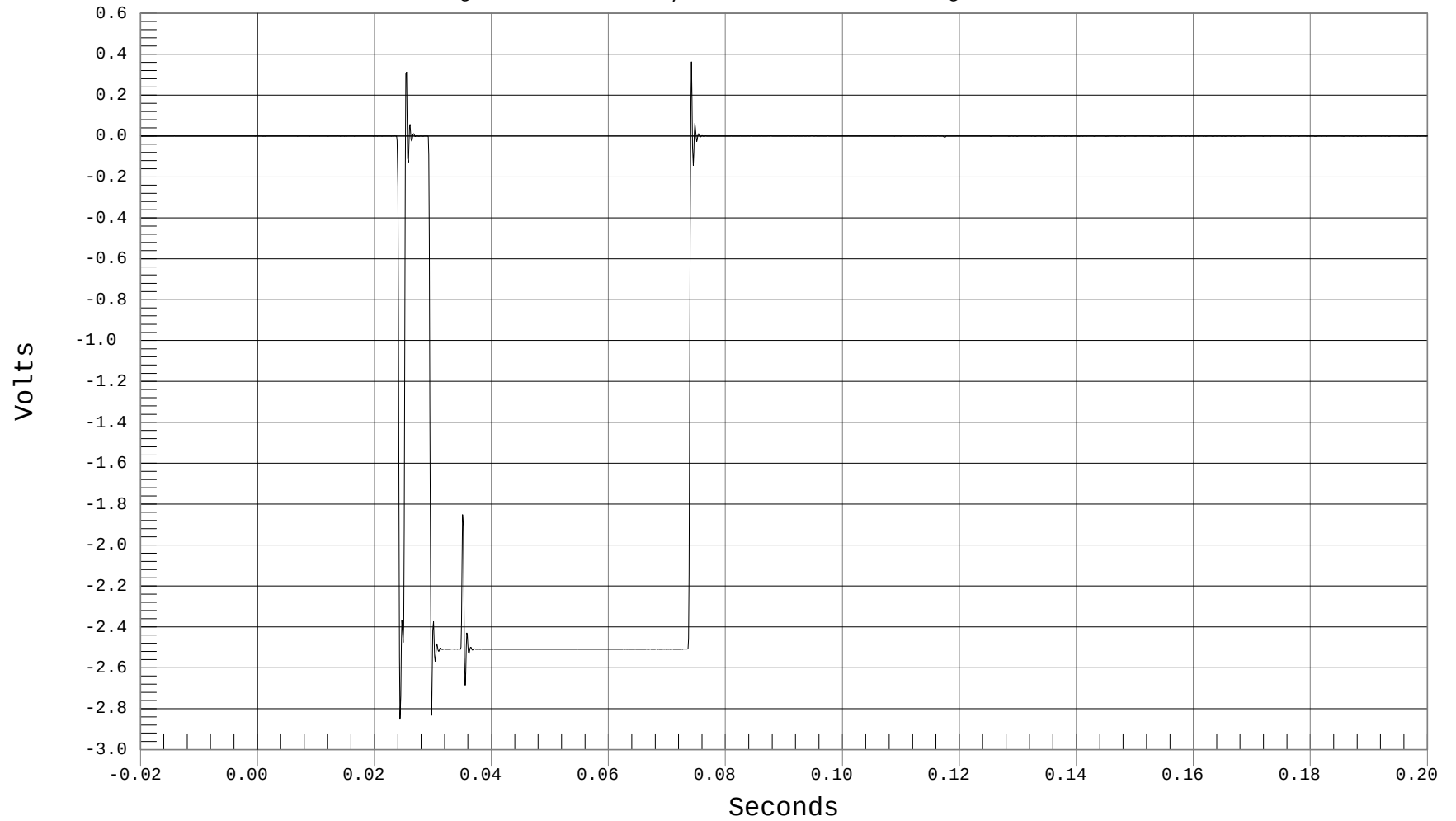
DRIVER ARM CONTACT

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 1000

1 DRIVER ARM CONTACT, B020490T.030

Ymin = -2.85 Volts @ 0.0243 Seconds, Ymax = .36 Volts @ 0.0741 Seconds





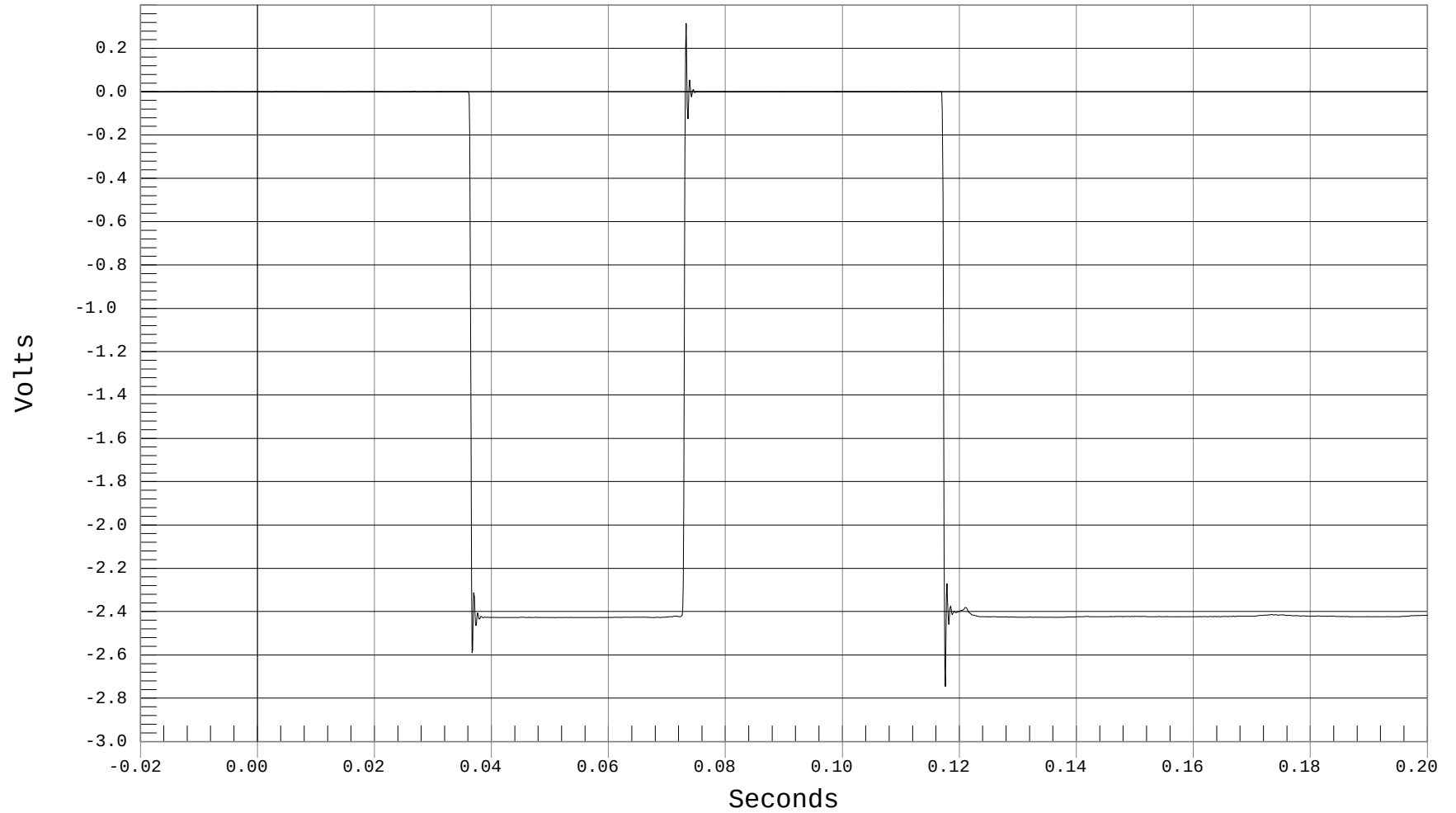
DRIVER RIB CONTACT

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 1000

1 DRIVER RIB CONTACT, B020490T.031

Ymin = -2.75 Volts @ 0.1175 Seconds, Ymax = .31 Volts @ 0.0732 Seconds



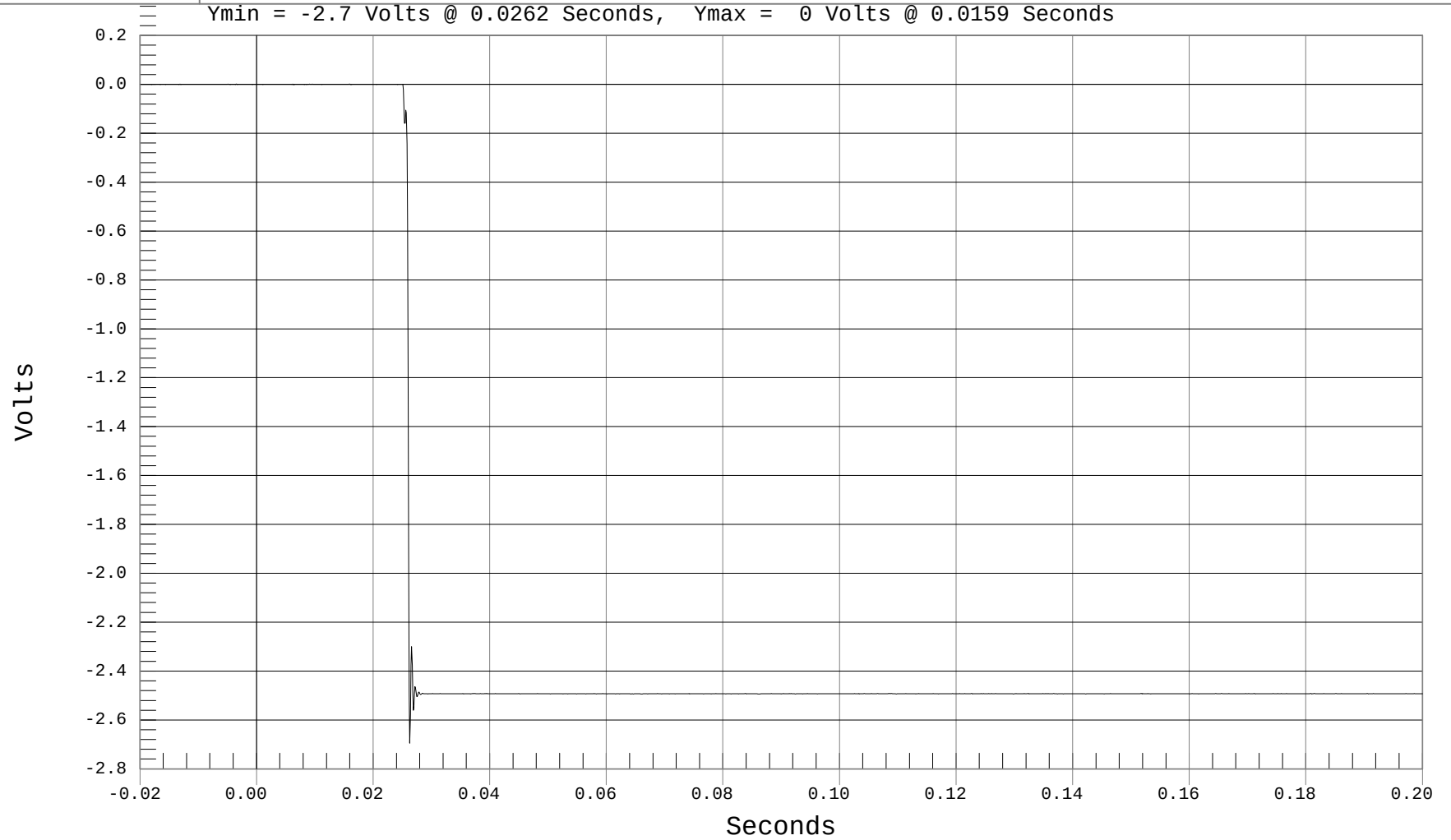


DRIVER PELVIS CONTACT

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 1000

1 DRIVER PELVIS CONTACT, B020490T.063





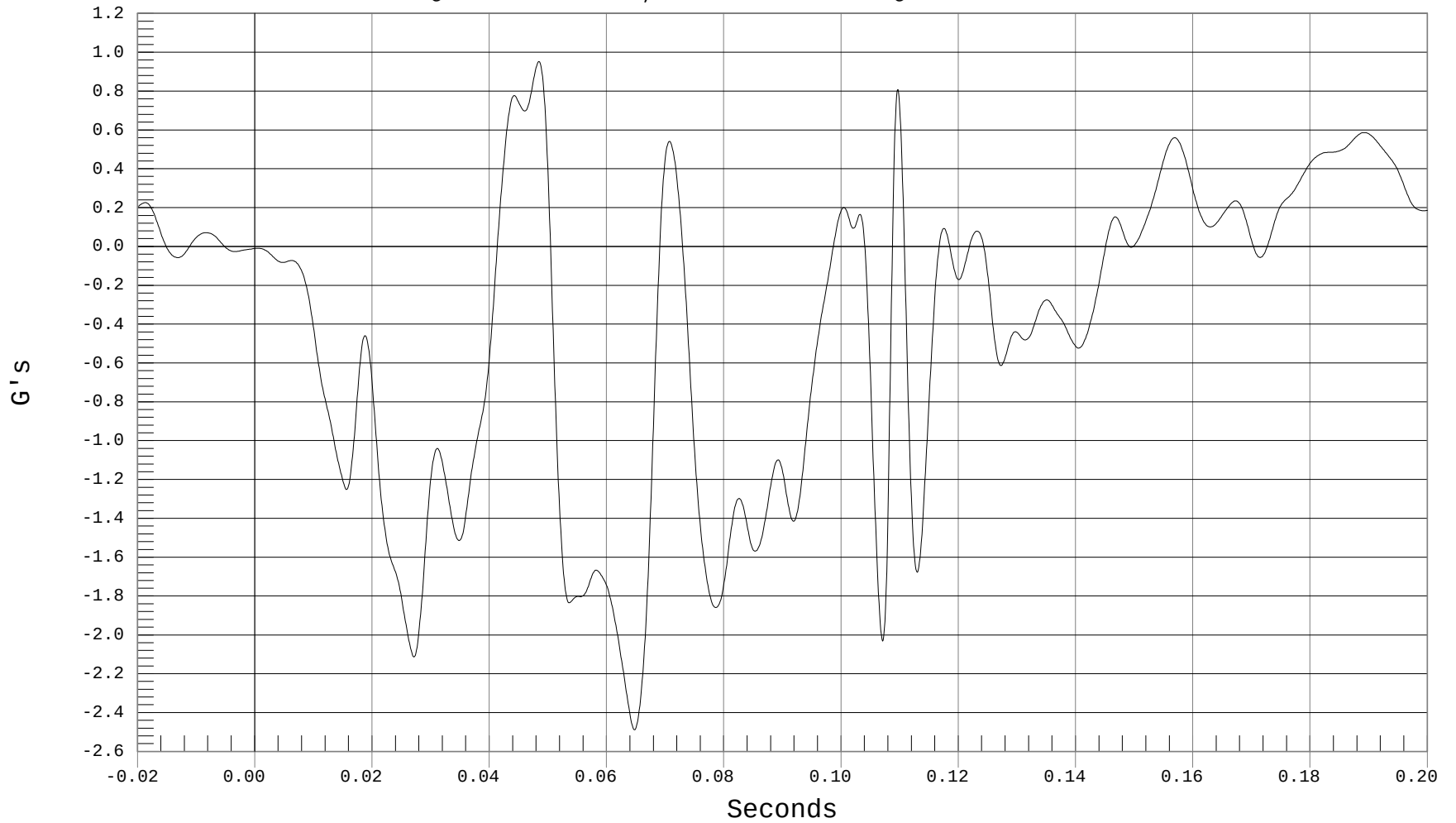
RIGHT SIDE SILL AT FRONT SEAT X ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

1 RIGHT FRONT SILL X, B02049AF.A36

Ymin = -2.49 G's @ 0.0647 Seconds, Ymax = .95 G's @ 0.0484 Seconds





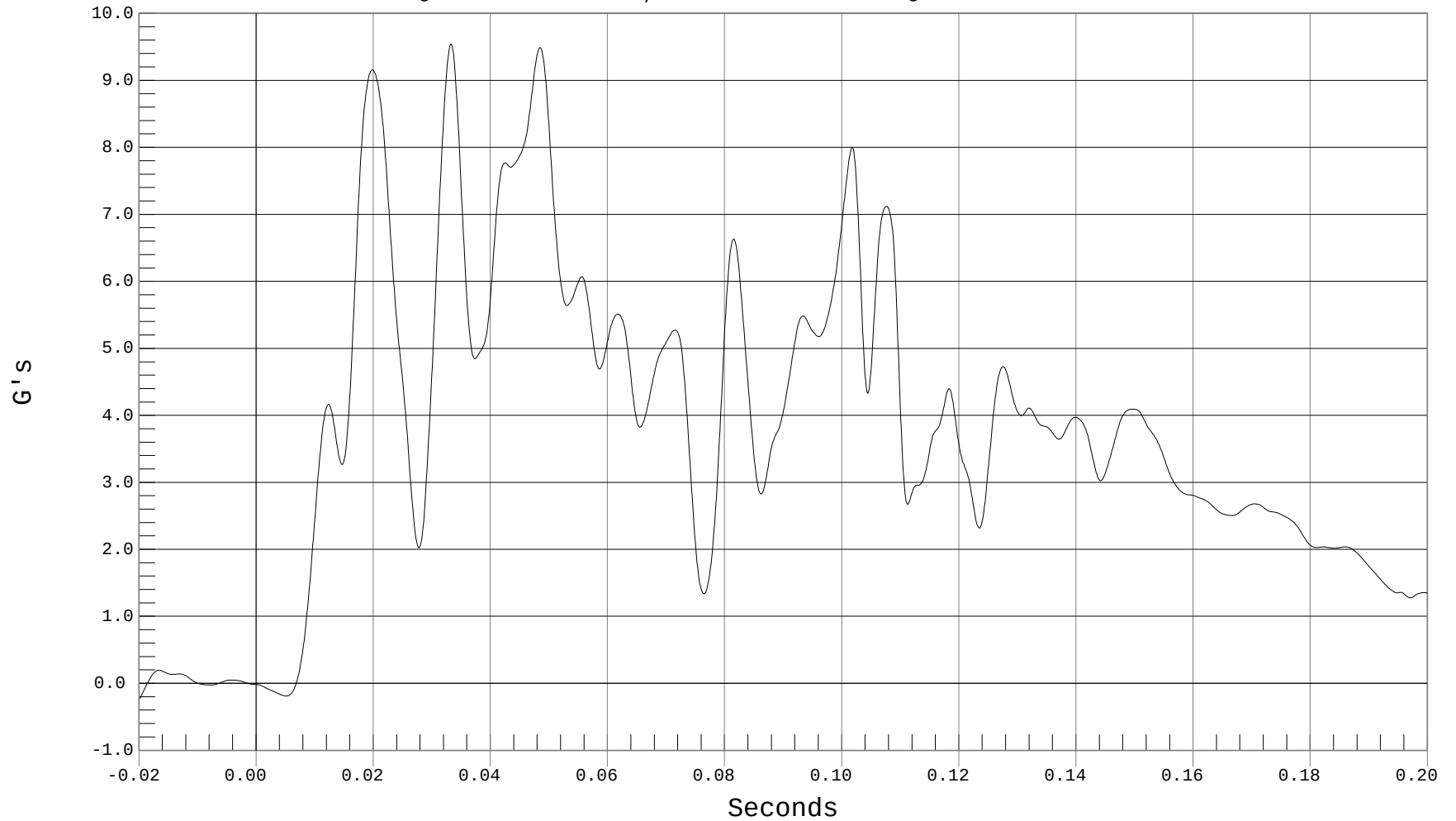
RIGHT SIDE SILL AT FRONT SEAT Y ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

— 1 RIGHT FRONT SILL Y, B02049AF.A38

Ymin = -.22 G's @ -0.0199 Seconds, Ymax = 9.54 G's @ 0.0332 Seconds





RIGHT SIDE SILL AT FRONT SEAT Z ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG

Test Date: 06-13-02

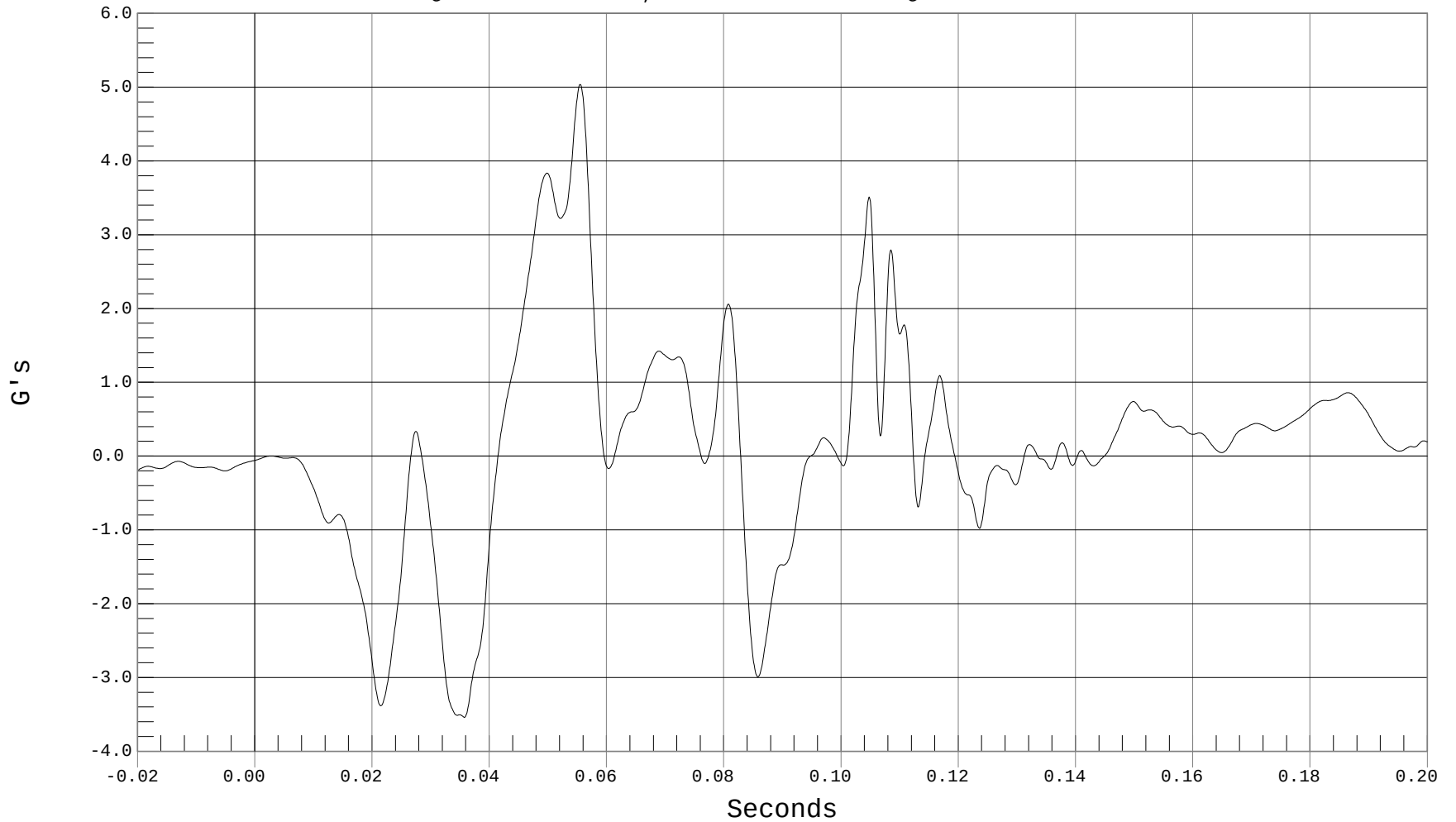
Component: 2000 NISSAN MAXIMA 4 DOOR

Speed: 20.0 MPH, 32.2 KPH

Filter Class: 60

1 RIGHT FRONT SILL Z, B02049AF.A37

Ymin = -3.54 G's @ 0.0357 Seconds, Ymax = 5.04 G's @ 0.0554 Seconds





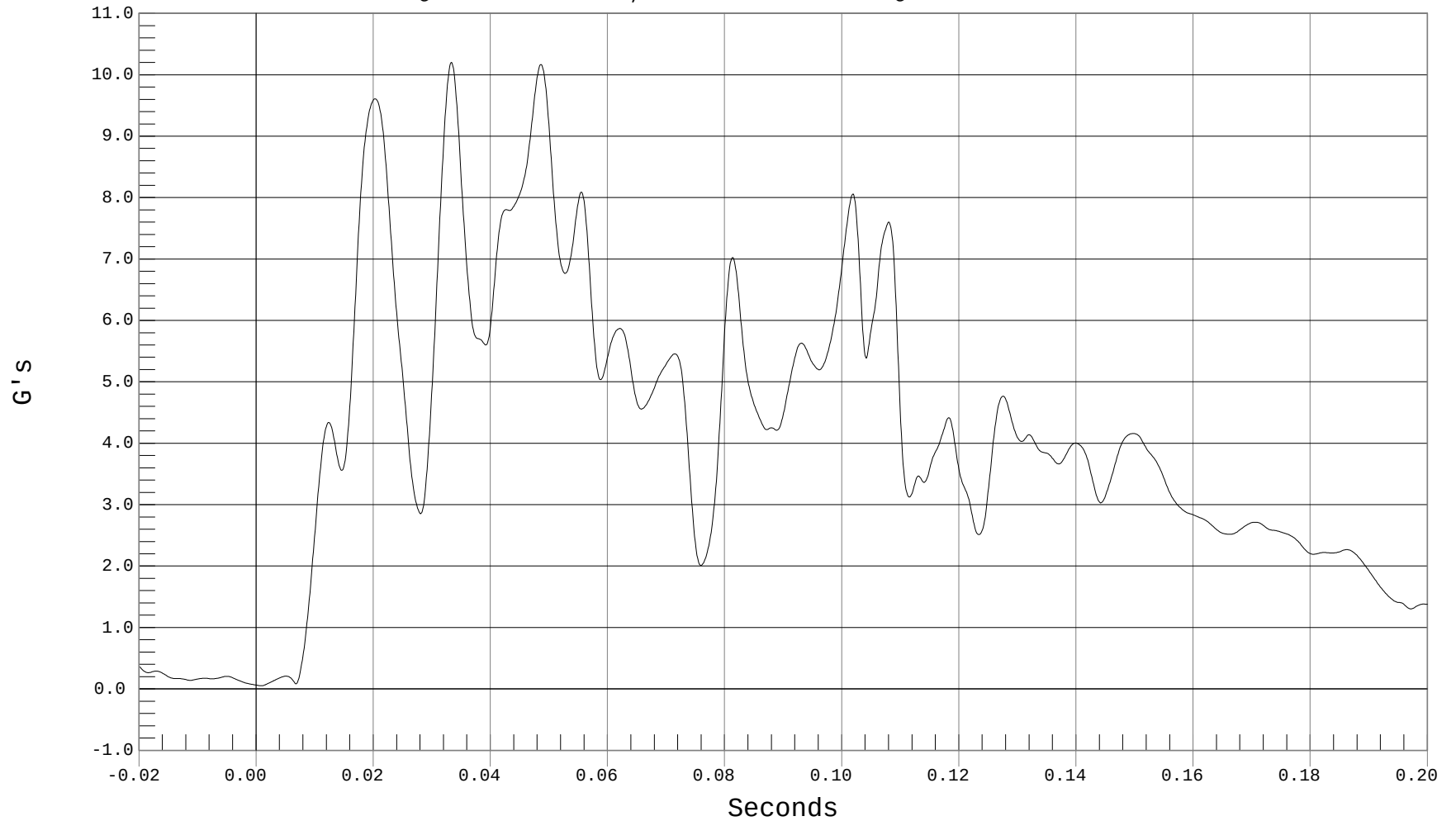
RIGHT SIDE SILL AT FRONT SEAT RESULTANT ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

— 1 RIGHT FRONT SILL RESULTANT ACCELERATION, B02049AV.A36

Ymin = .05 G's @ 0.0008 Seconds, Ymax = 10.2 G's @ 0.0333 Seconds





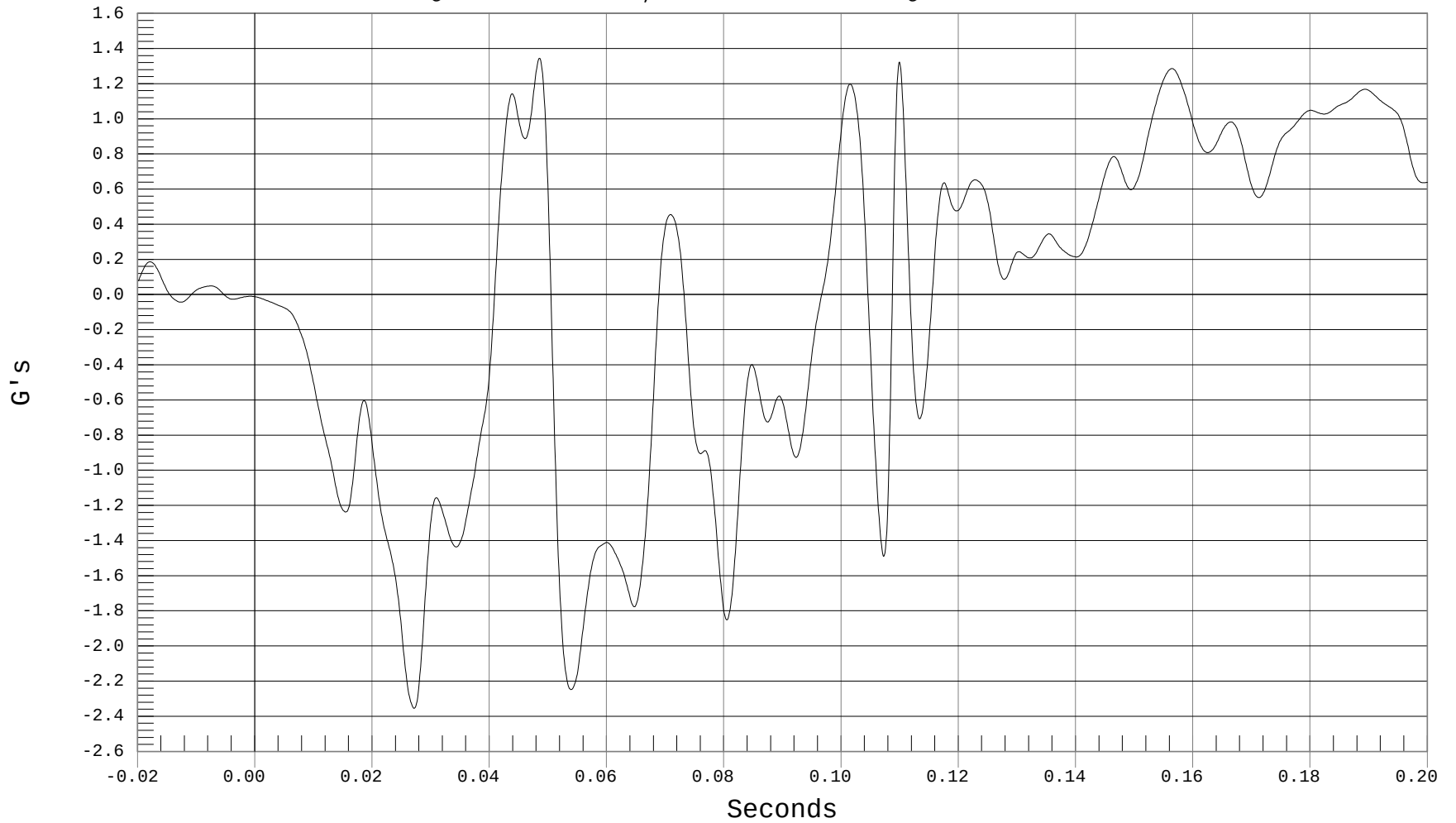
RIGHT SIDE SILL AT REAR SEAT X ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

1 RIGHT REAR SILL X, B02049AF.A39

Ymin = -2.36 G's @ 0.0271 Seconds, Ymax = 1.34 G's @ 0.0485 Seconds





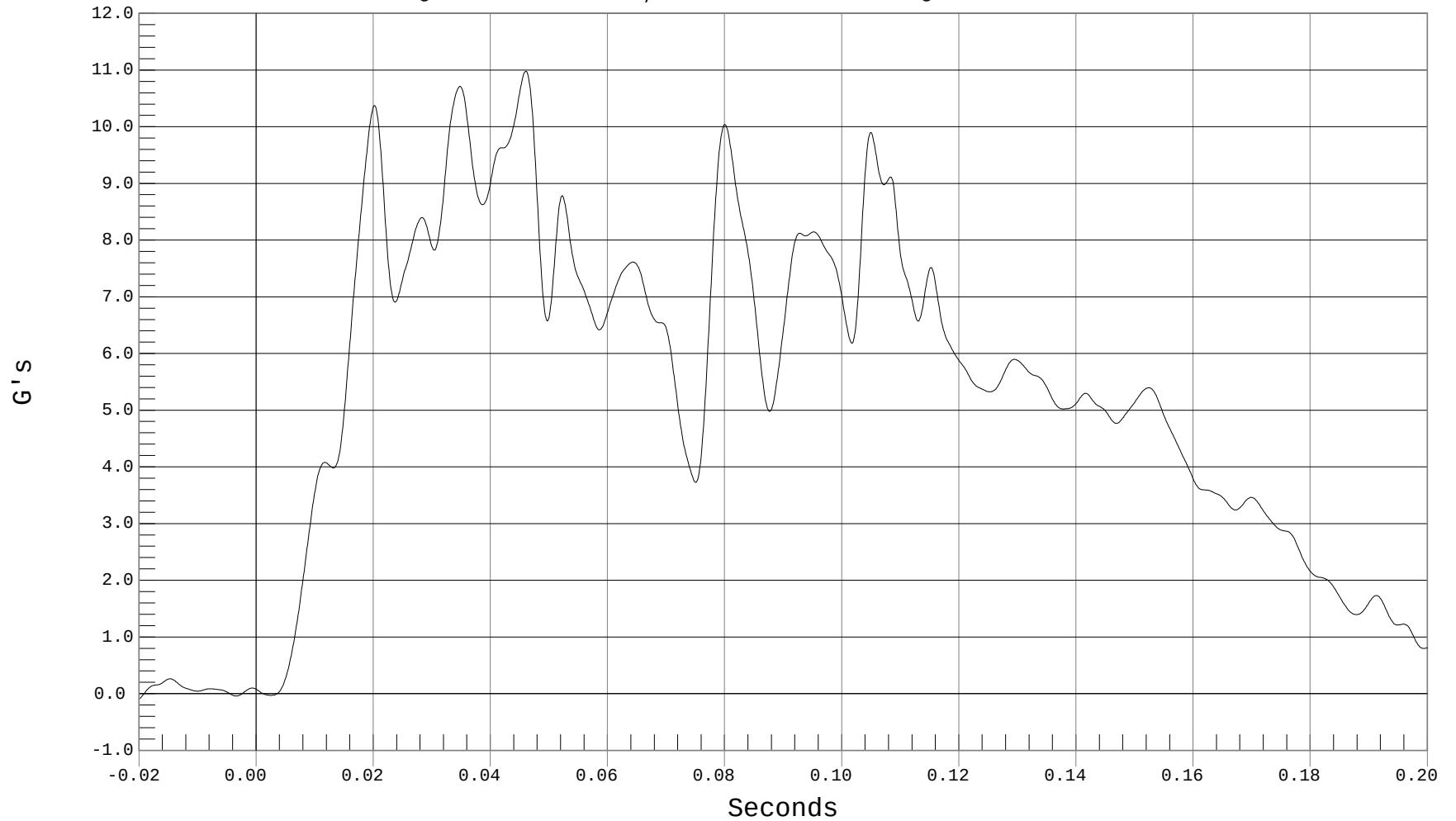
RIGHT SIDE SILL AT REAR SEAT Y ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

— 1 RIGHT REAR SILL Y, B02049AF.A40

Ymin = -.09 G's @ -0.0199 Seconds, Ymax = 10.98 G's @ 0.0460 Seconds





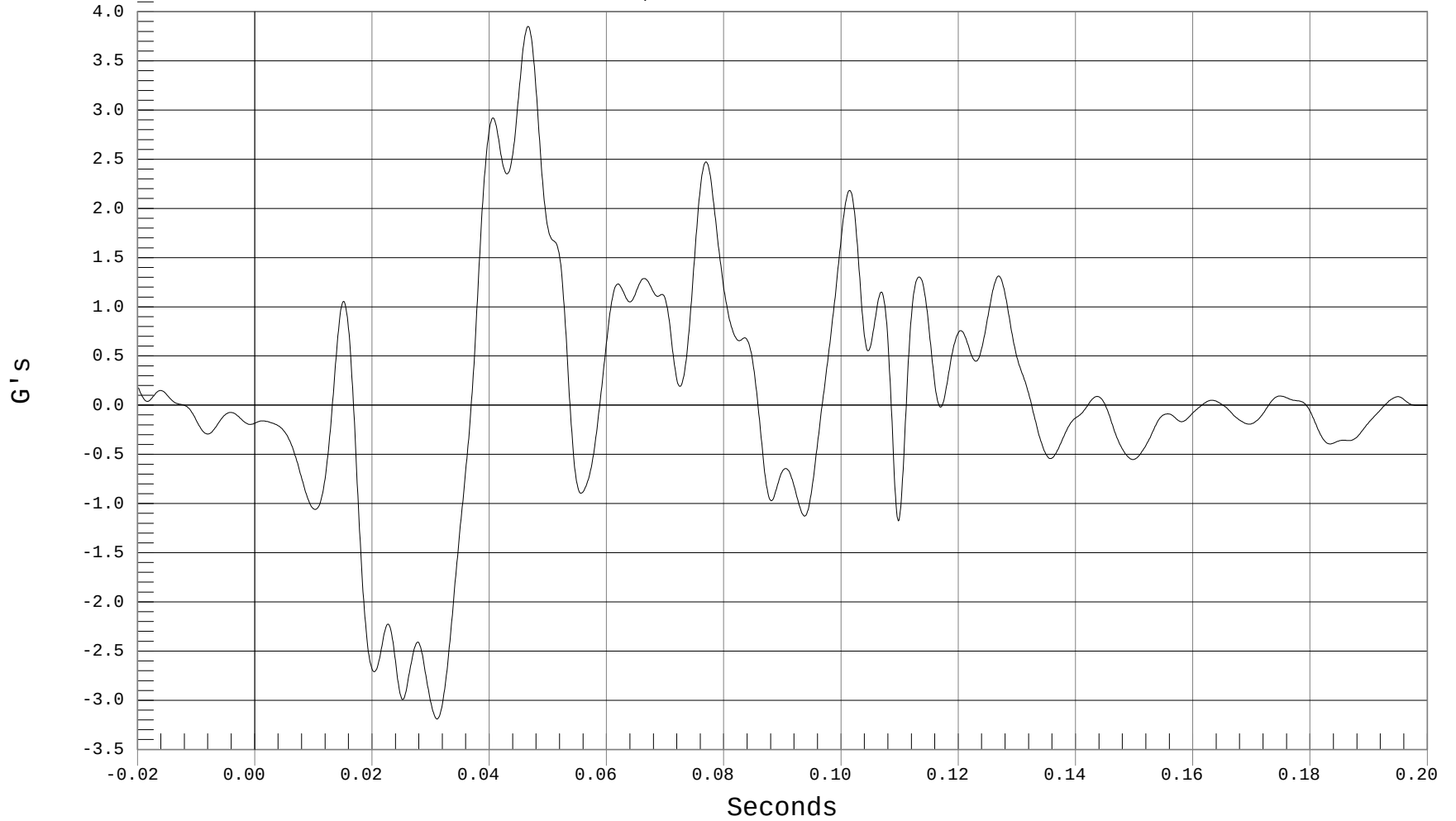
RIGHT SIDE SILL AT REAR SEAT Z ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH

1 RIGHT REAR SILL Z, B02049AF.A41

Ymin = -3.19 G's @ 0.0310 Seconds, Ymax = 3.85 G's @ 0.0465 Seconds





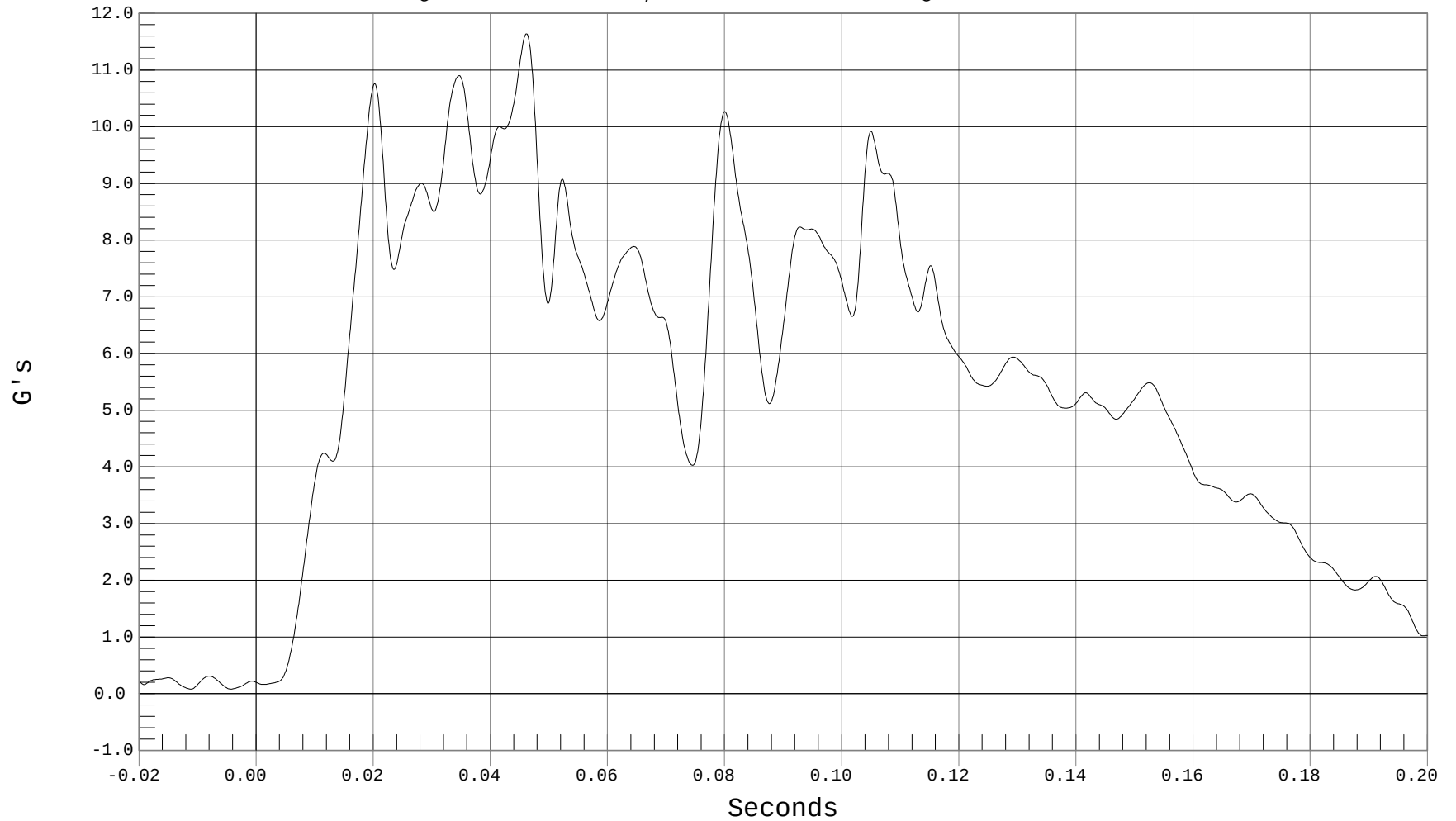
RIGHT SIDE SILL AT REAR SEAT RESULTANT ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

— 1 RIGHT REAR SILL RESULTANT ACCELERATION, B02049AV.A39

Ymin = .08 G's @ -0.0112 Seconds, Ymax = 11.64 G's @ 0.0461 Seconds





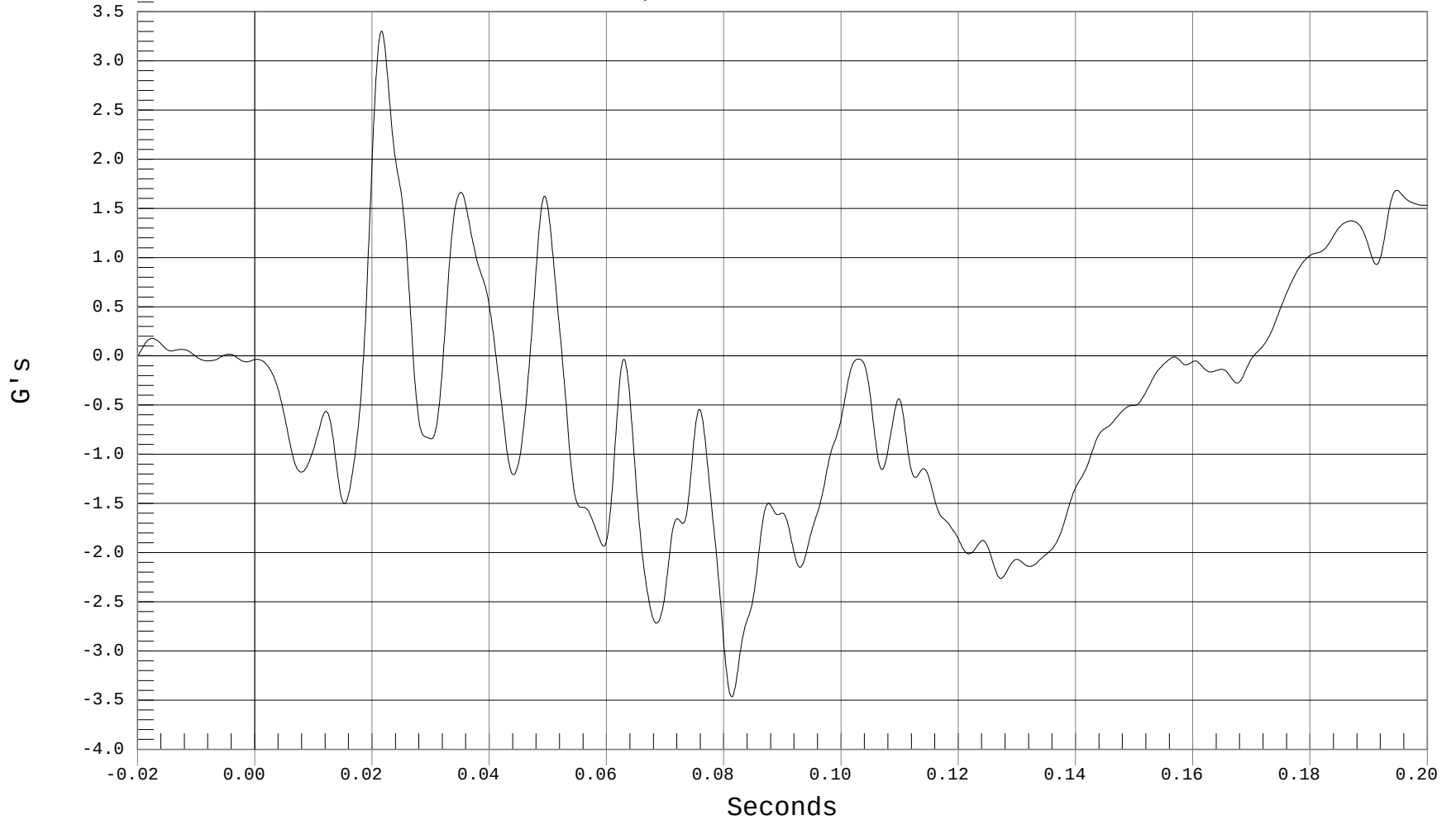
REAR FLOORPAN ABOVE AXLE X ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

— 1 FLOORPAN @ REAR AXLE X, B02049AF.A42

Ymin = -3.47 G's @ 0.0813 Seconds, Ymax = 3.3 G's @ 0.0215 Seconds





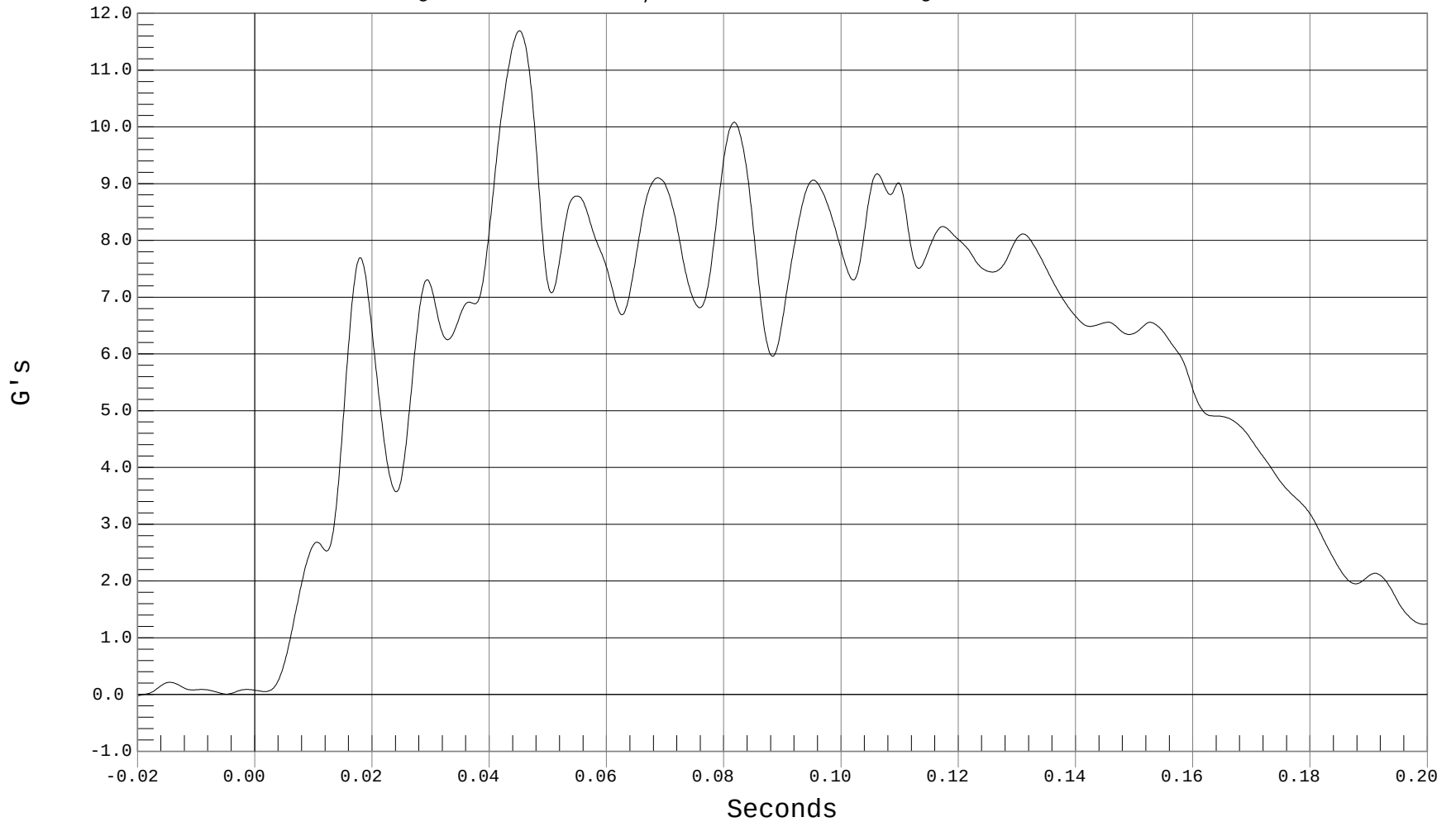
REAR FLOORPAN ABOVE AXLE Y ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

— 1 FLOORPAN @ REAR AXLE Y, B02049AF.A43

Ymin = -.02 G's @ -0.0199 Seconds, Ymax = 11.69 G's @ 0.0451 Seconds





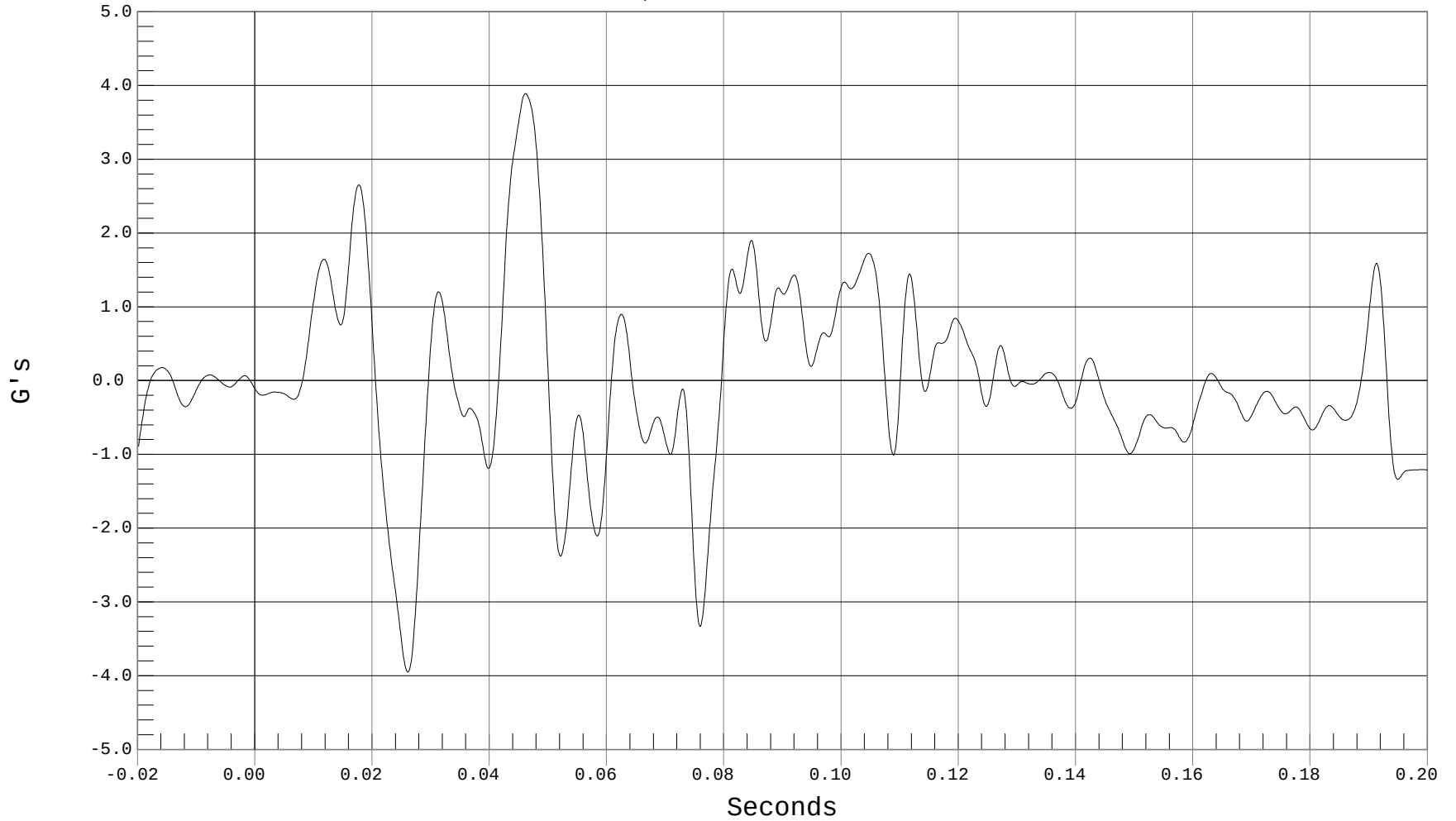
REAR FLOORPAN ABOVE AXLE Z ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

— 1 FLOORPAN @ REAR AXLE Z, B02049AF.A44

Ymin = -3.95 G's @ 0.0260 Seconds, Ymax = 3.89 G's @ 0.0461 Seconds





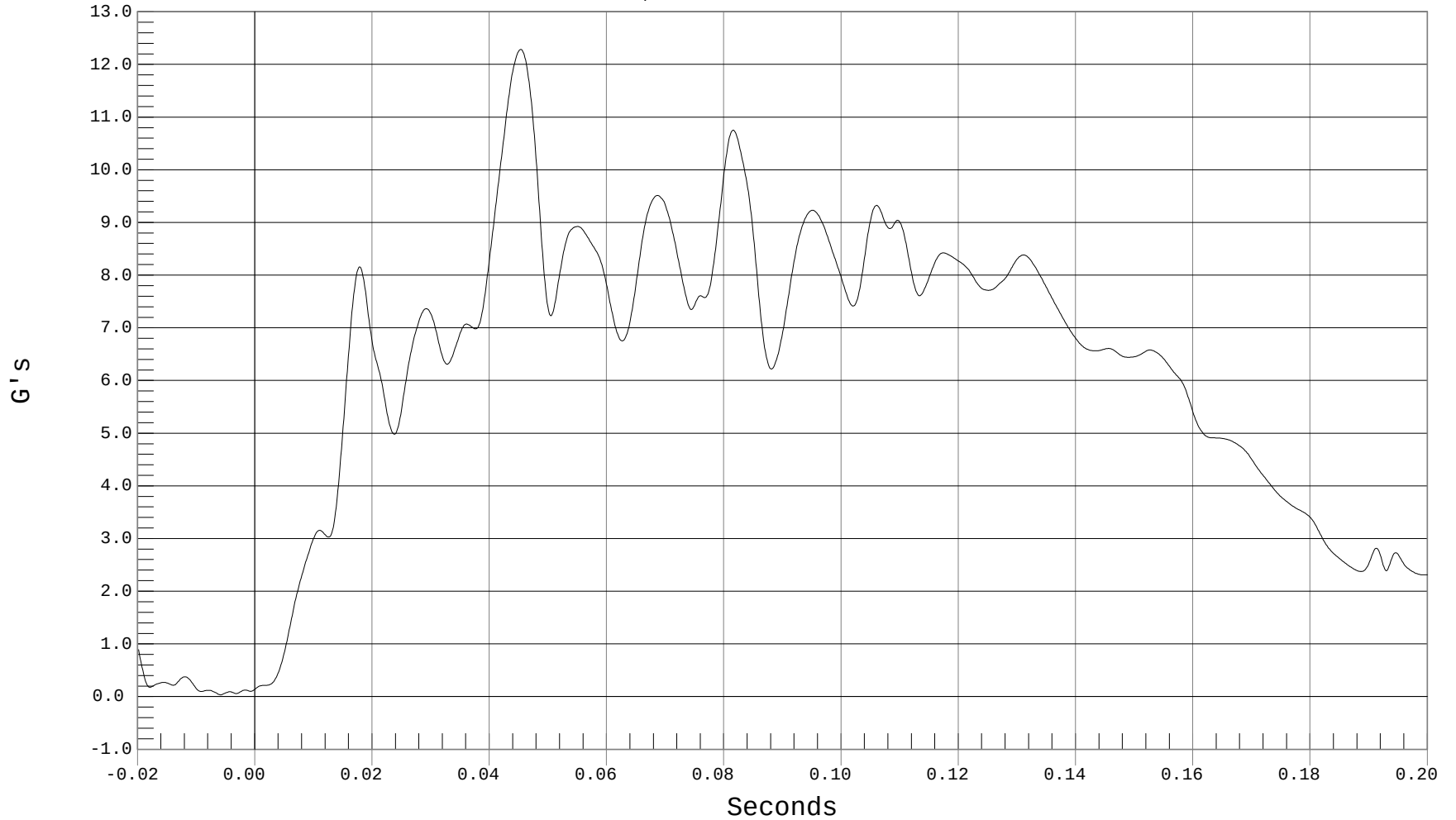
REAR FLOORPAN ABOVE AXLE RESULTANT ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

— 1 FLOORPAN @ REAR AXLE ACCELERATION, B02049AV.A42

Ymin = .03 G's @ -0.0059 Seconds, Ymax = 12.29 G's @ 0.0453 Seconds





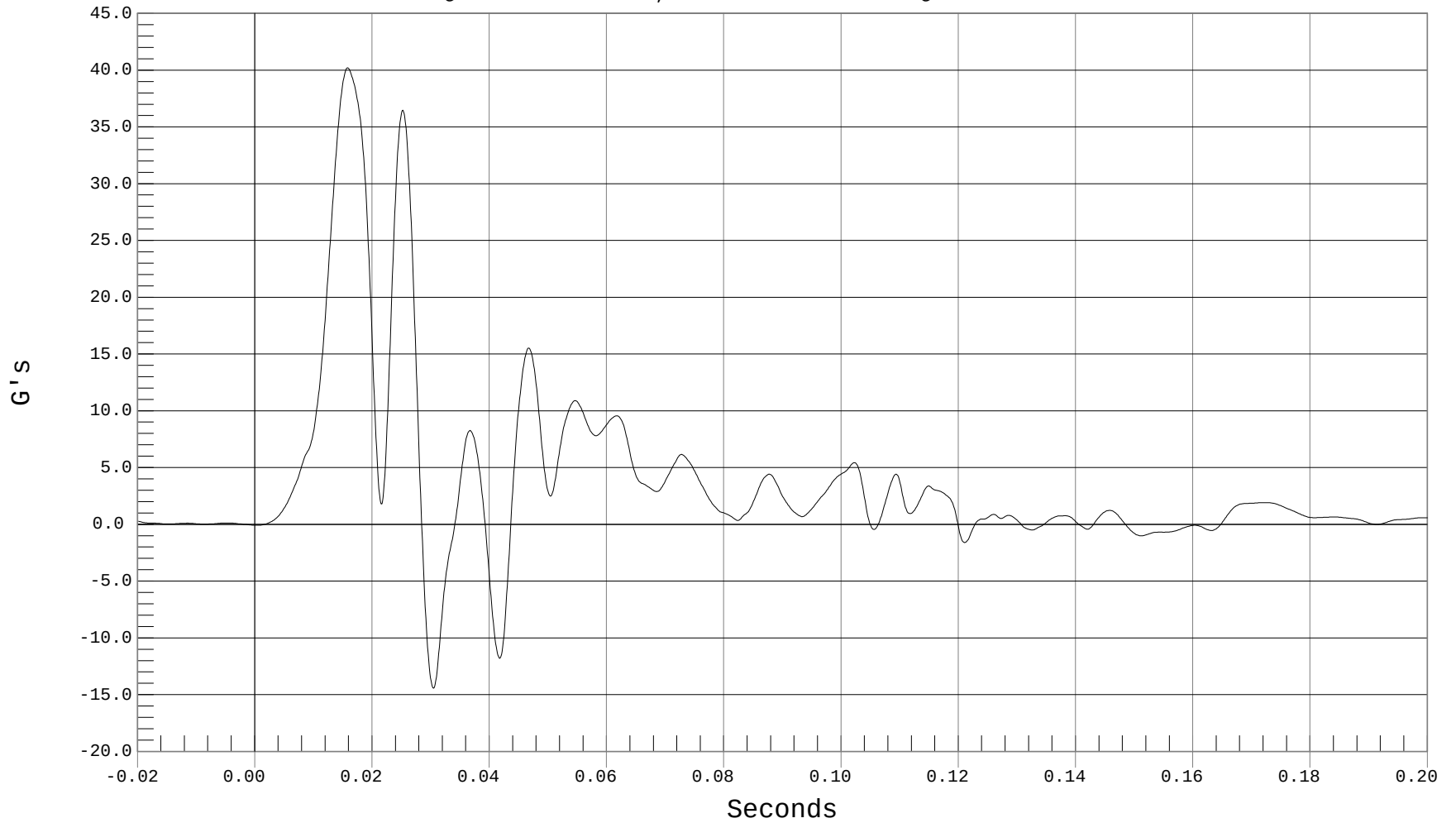
LEFT SIDE SILL AT FRONT SEAT Y ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

— 1 LEFT FRONT SILL Y, B02049AF.A46

Ymin = -14.43 G's @ 0.0304 Seconds, Ymax = 40.2 G's @ 0.0158 Seconds





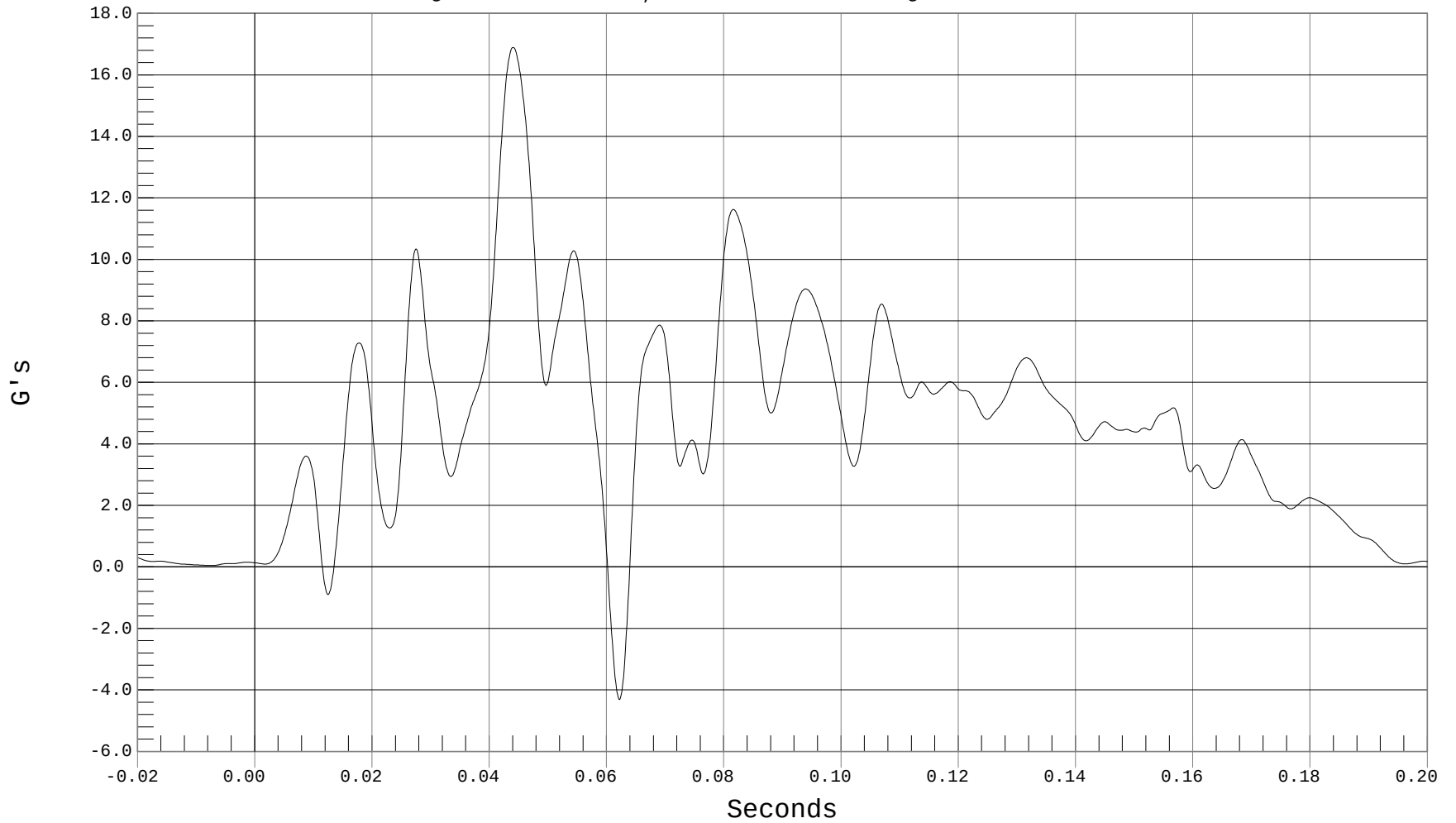
LEFT SIDE SILL AT REAR SEAT Y ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

— 1 LEFT REAR SILL Y, B02049AF.A45

Ymin = -4.32 G's @ 0.0621 Seconds, Ymax = 16.9 G's @ 0.0440 Seconds





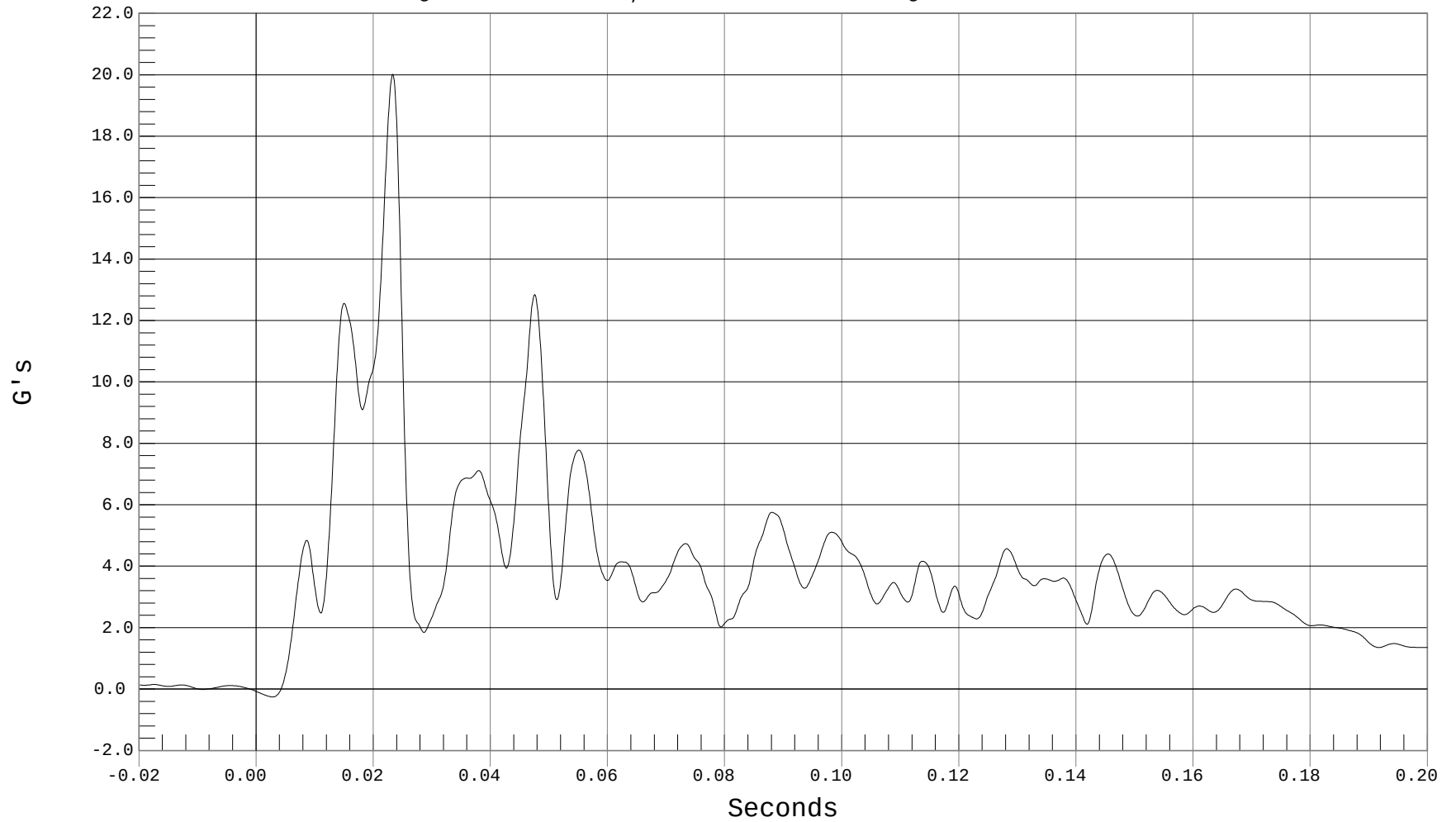
LEFT LOWER A-POST Y ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 D00R

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH

1 LEFT LOWER A-POST Y, B02049AF.A52

Ymin = -.26 G's @ 0.0027 Seconds, Ymax = 20.02 G's @ 0.0232 Seconds





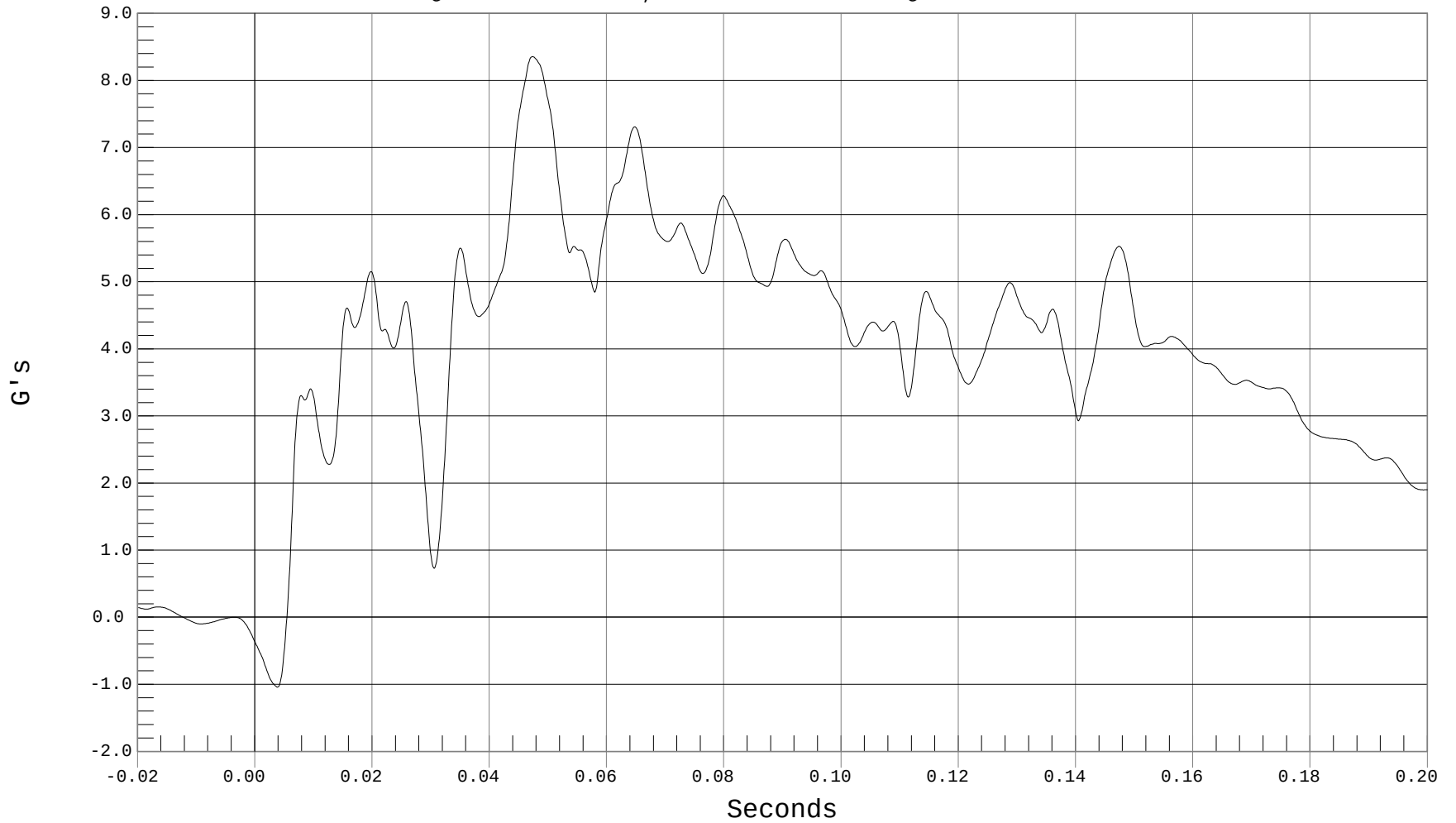
LEFT MID A-POST Y ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 D00R

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

— 1 LEFT MID A-POST, B02049AF.A53

Ymin = -1.04 G's @ 0.0038 Seconds, Ymax = 8.36 G's @ 0.0473 Seconds





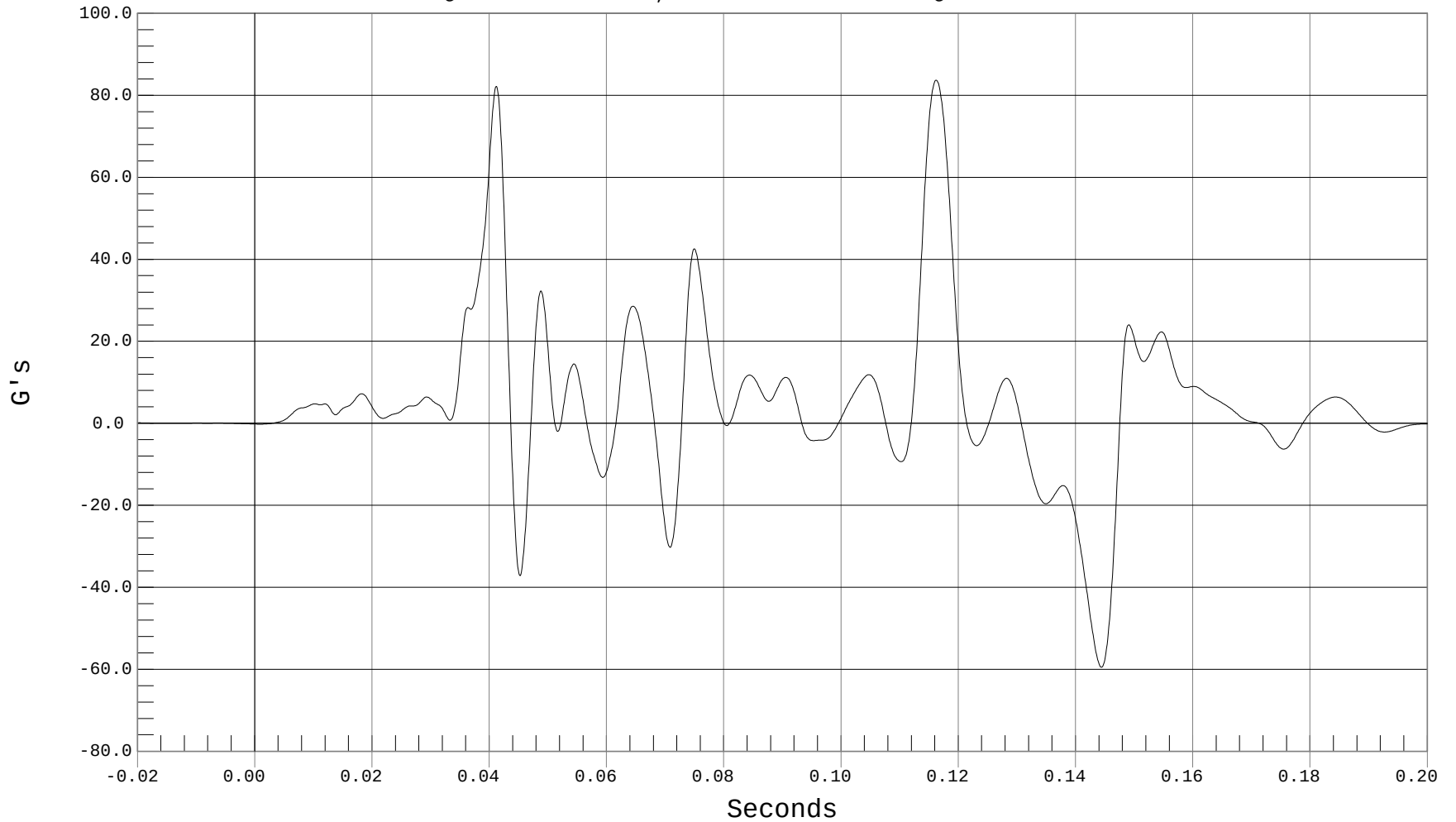
LEFT A-POST @ ROOF Y ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

— 1 LEFT A-PILLAR @ ROOF Y, B02049AF.A54

Ymin = -59.53 G's @ 0.1443 Seconds, Ymax = 83.71 G's @ 0.1161 Seconds





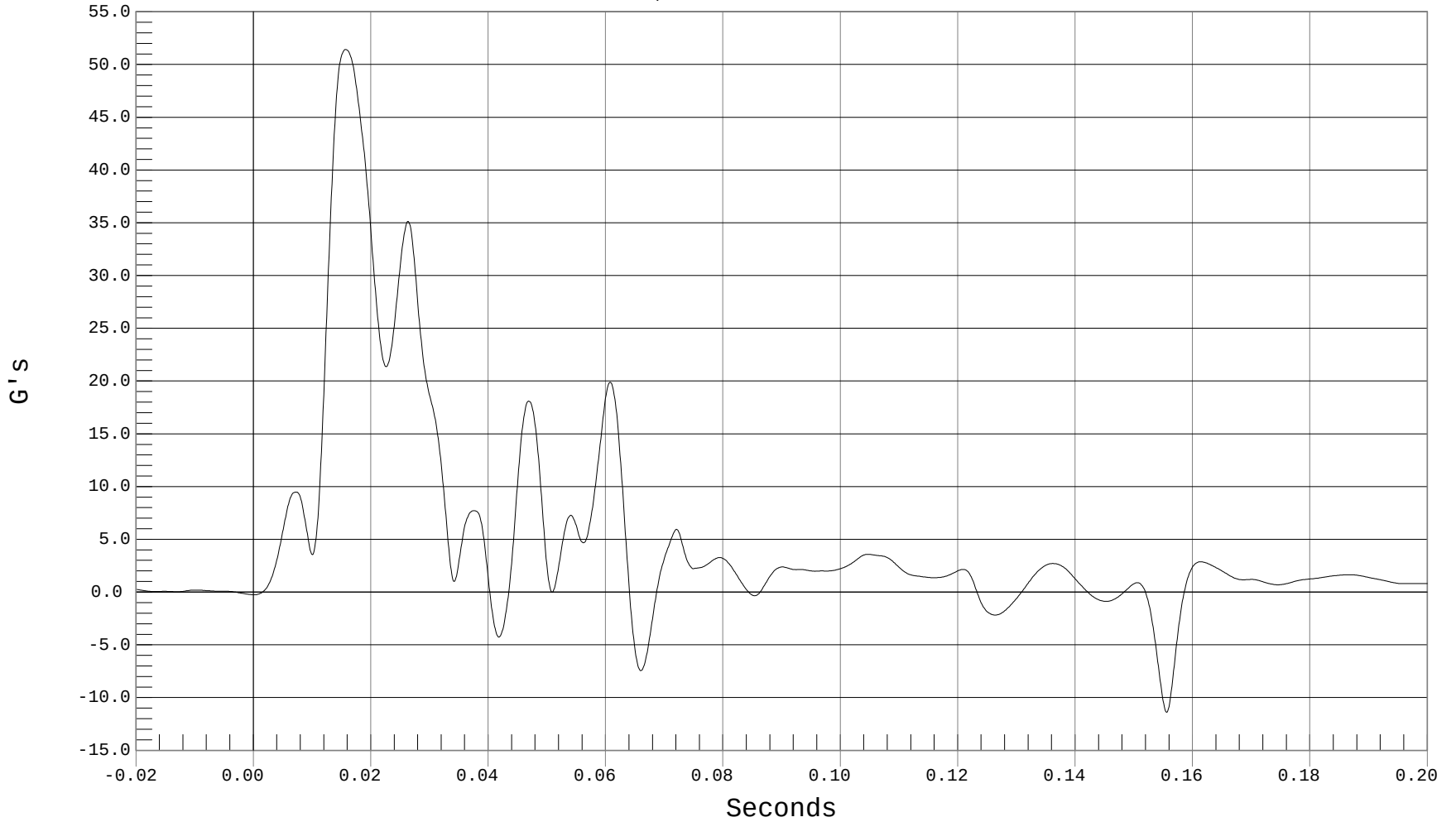
LEFT LOWER B-POST Y ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

— 1 LEFT LOWER B-POST Y, B02049AF.A49

Ymin = -11.38 G's @ 0.1555 Seconds, Ymax = 51.43 G's @ 0.0156 Seconds





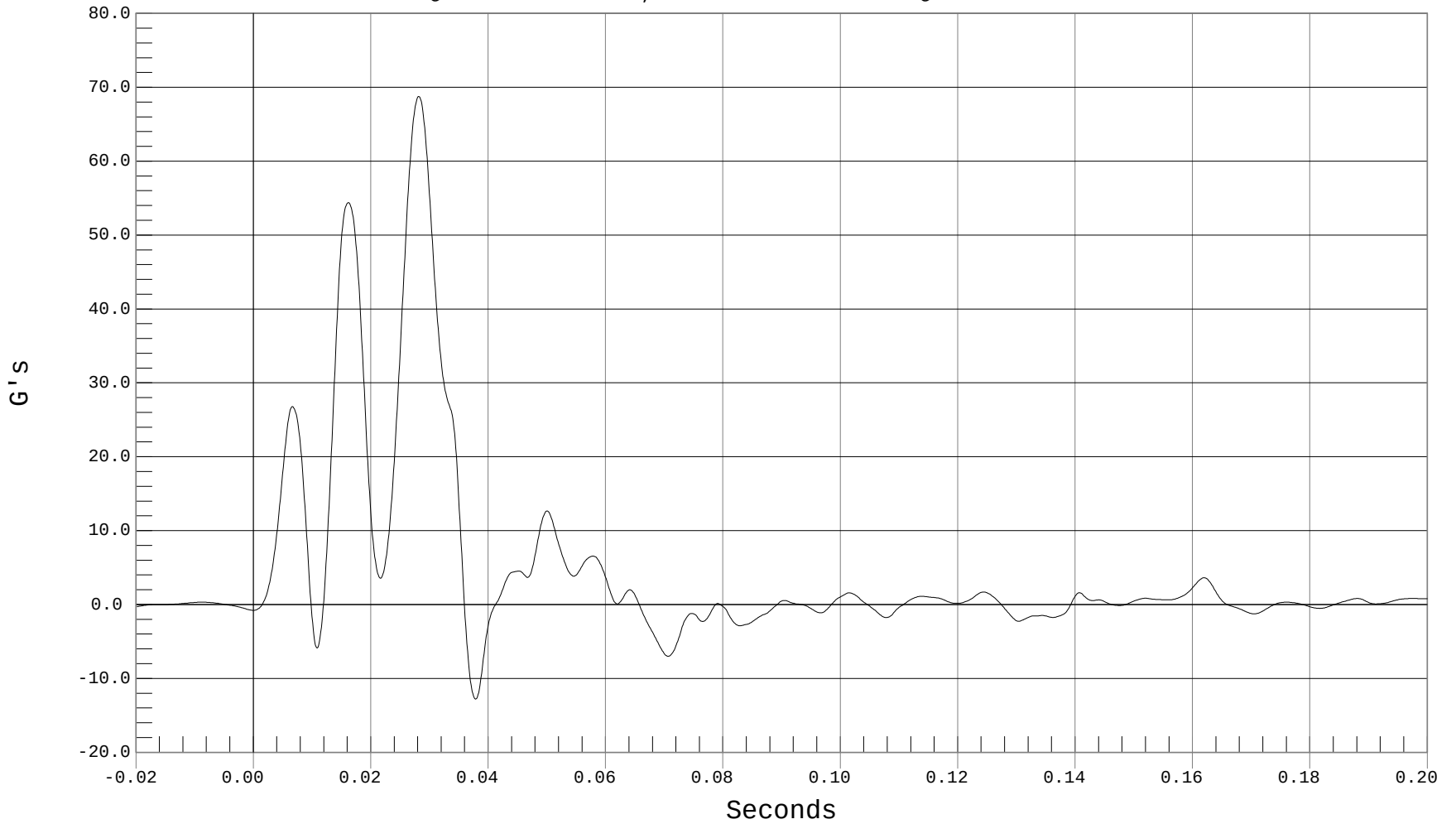
LEFT MID B-POST Y ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

— 1 LEFT MID B-POST Y, B02049AF.A50

Ymin = -12.8 G's @ 0.0378 Seconds, Ymax = 68.77 G's @ 0.0281 Seconds





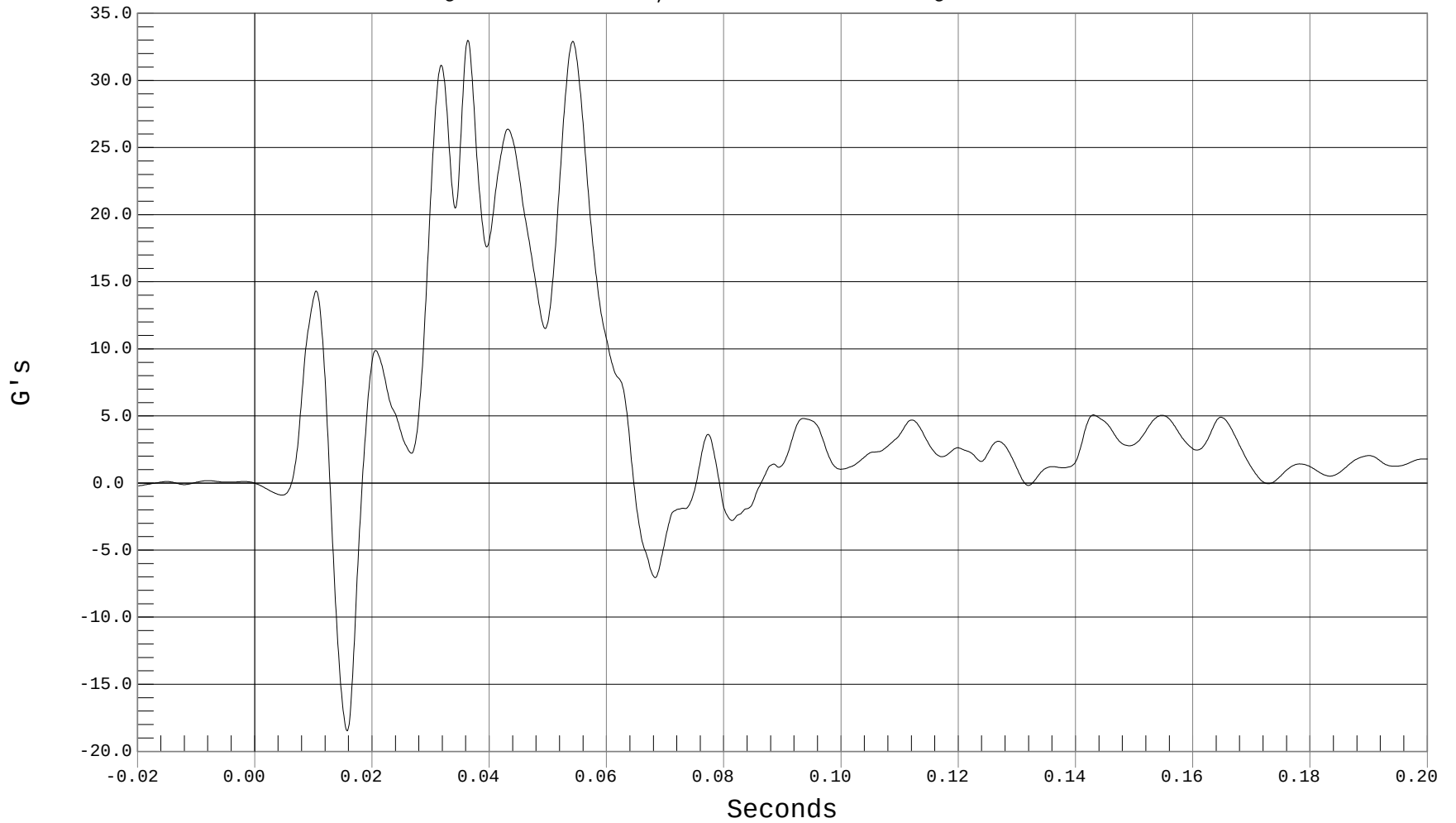
LEFT UPPER B-POST Y ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

— 1 LEFT UPPER B-POST Y, B02049AF.A47

Ymin = -18.46 G's @ 0.0157 Seconds, Ymax = 32.99 G's @ 0.0363 Seconds





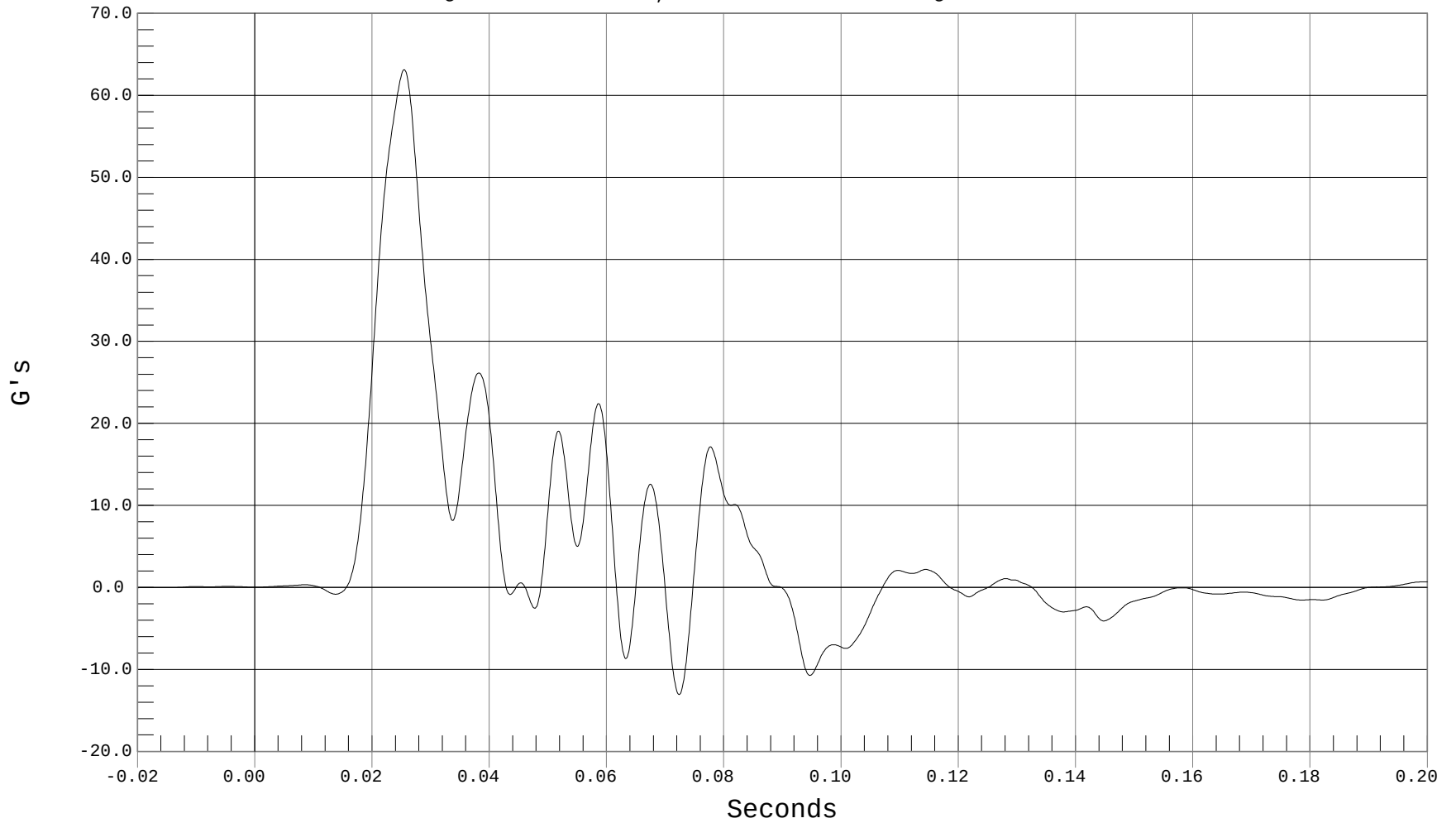
LEFT DRIVER SEAT FRAME Y ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

— 1 LEFT DRIVER SEAT FRAME Y, B02049AF.A07

Ymin = -13.06 G's @ 0.0723 Seconds, Ymax = 63.13 G's @ 0.0254 Seconds





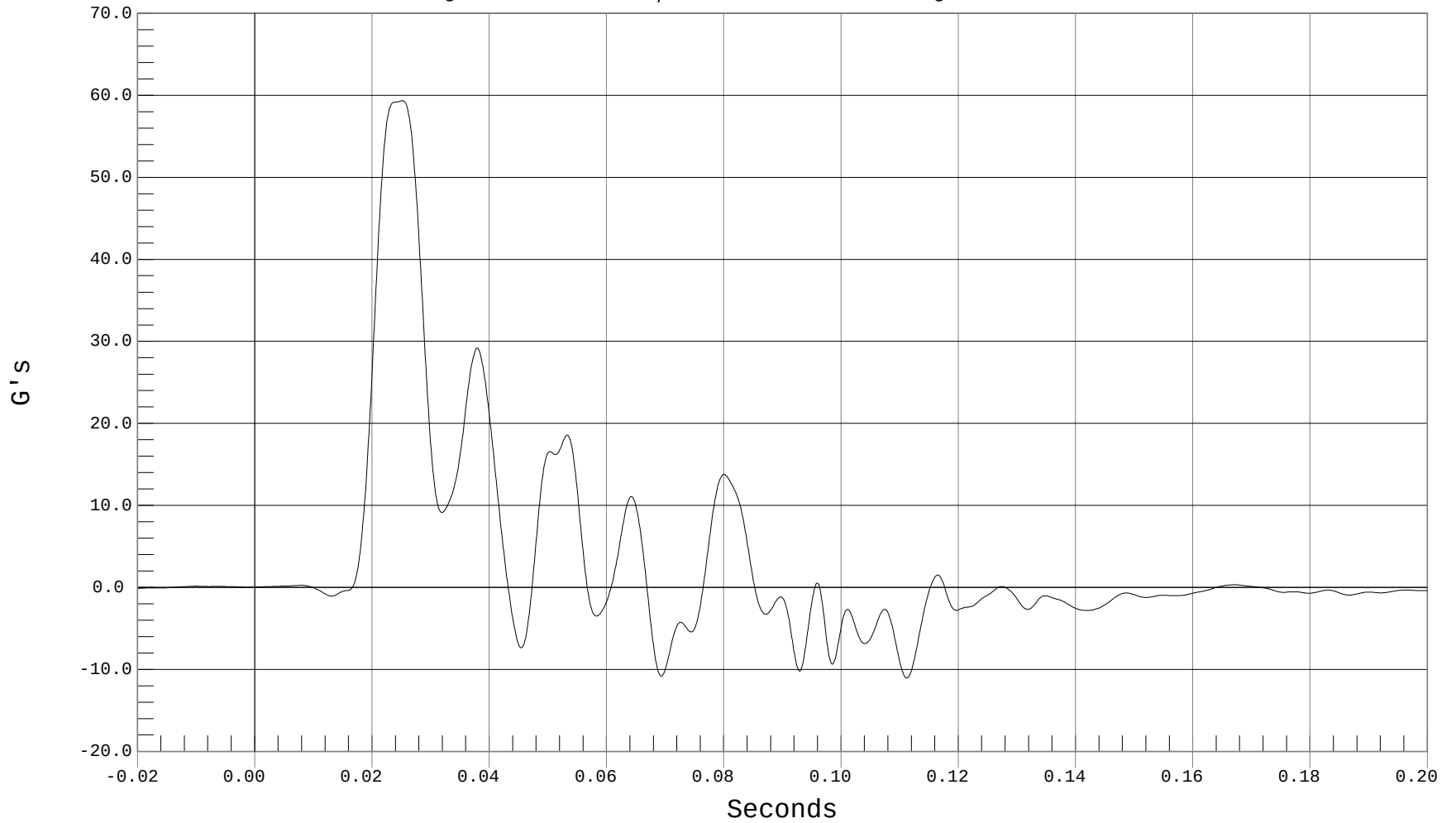
RIGHT DRIVER SEAT FRAME Y ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

— 1 RIGHT DRIVER SEAT FRAME Y, B02049AF.A08

Ymin = -11.05 G's @ 0.1111 Seconds, Ymax = 59.35 G's @ 0.0251 Seconds





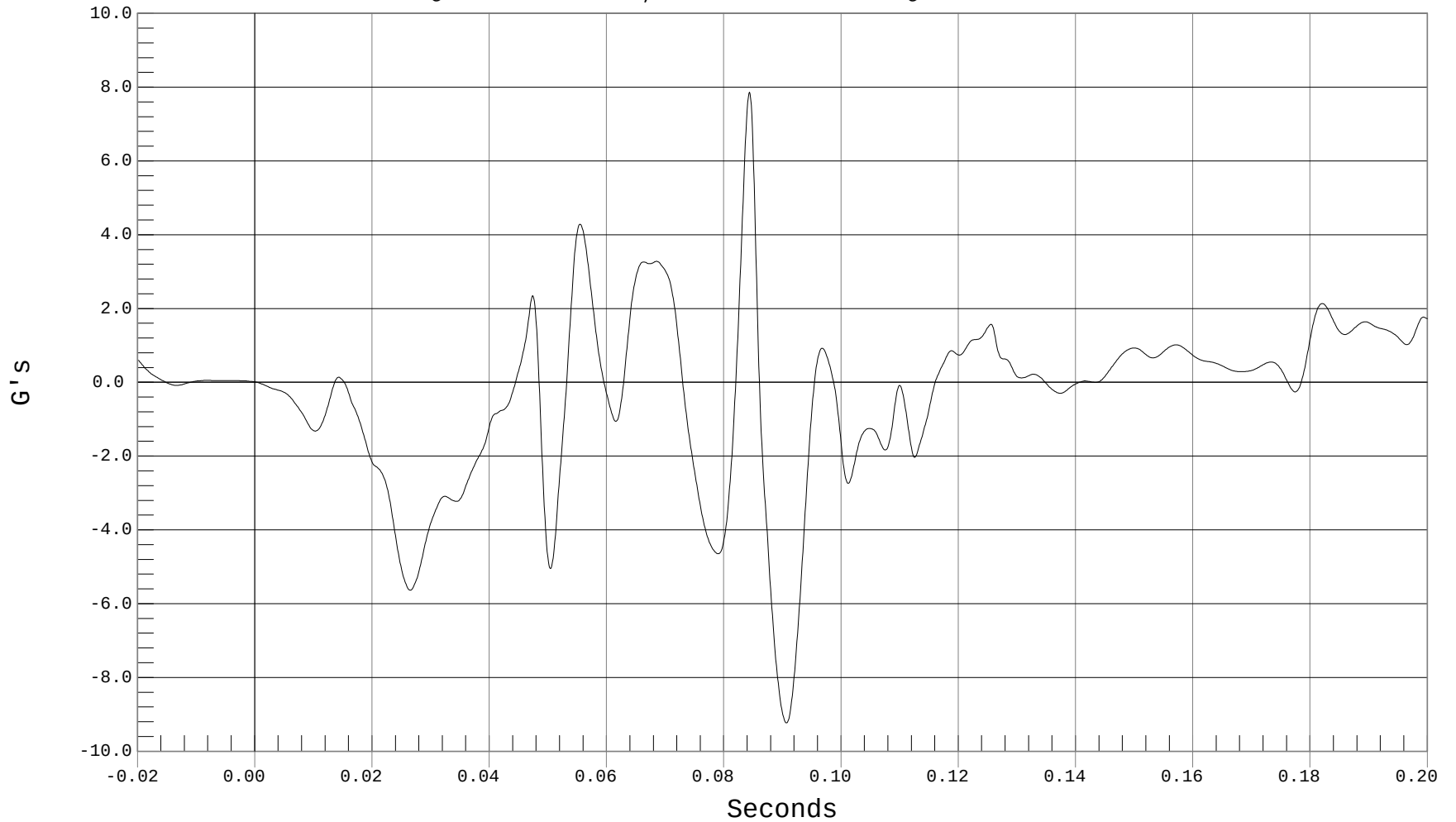
VEHICLE CG X ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

— 1 VEHICLE CG X, B02049AF.A33

Ymin = -9.23 G's @ 0.0906 Seconds, Ymax = 7.87 G's @ 0.0843 Seconds





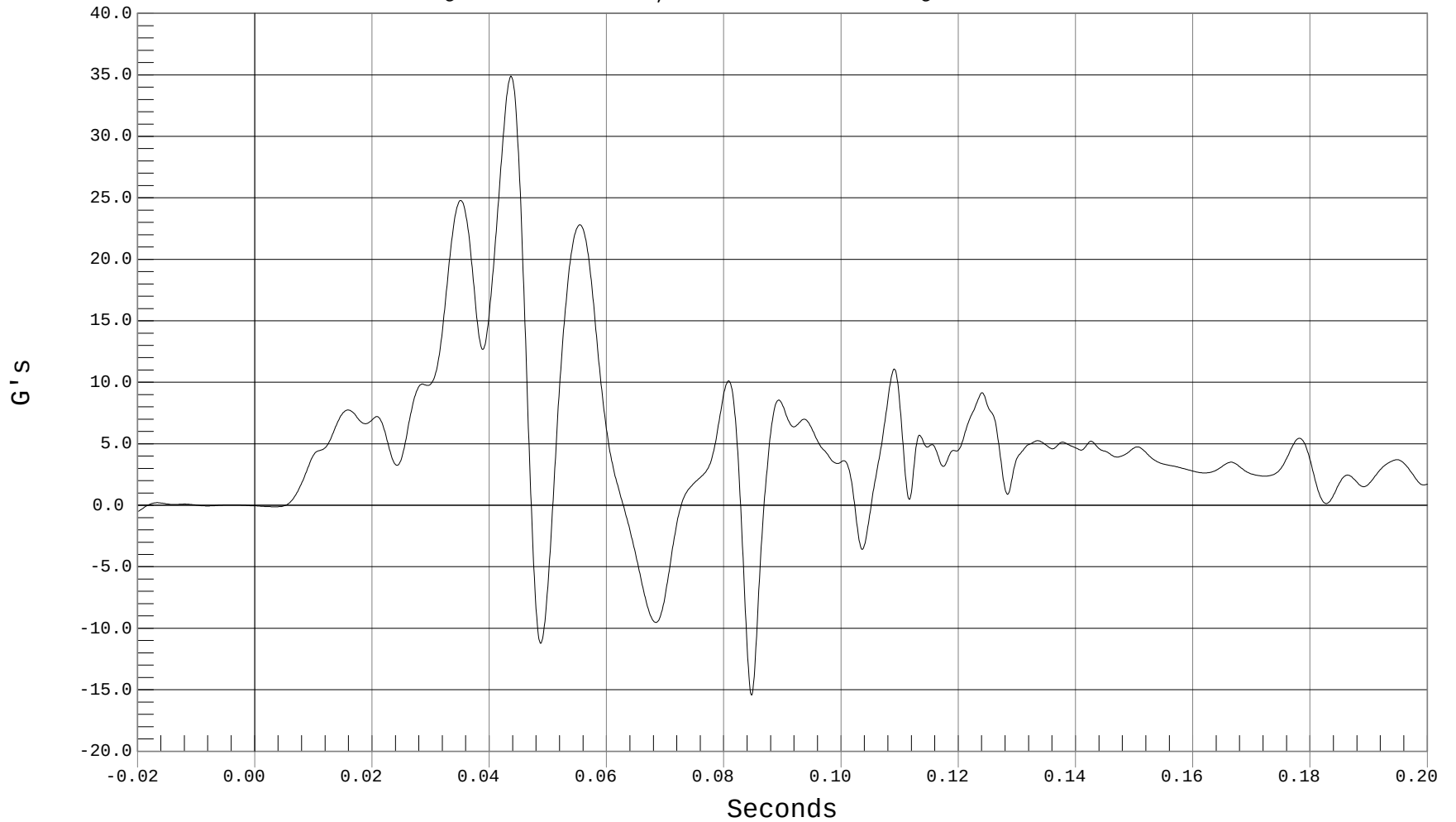
VEHICLE CG Y ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

— 1 VEHICLE CG Y, B02049AF.A34

Ymin = -15.44 G's @ 0.0847 Seconds, Ymax = 34.9 G's @ 0.0436 Seconds





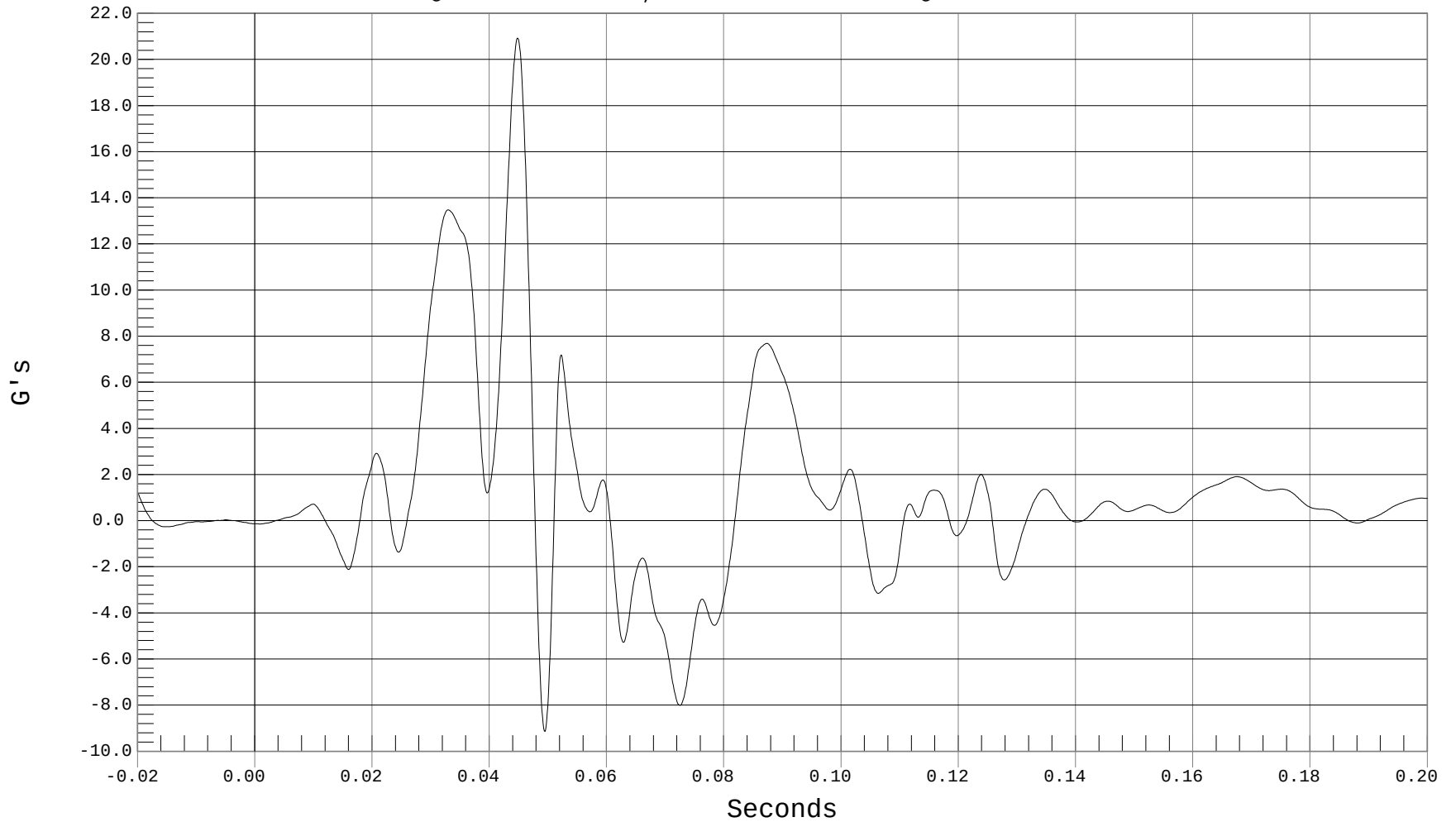
VEHICLE CG Z ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

— 1 VEHICLE CG Z, B02049AF.A35

Ymin = -9.14 G's @ 0.0494 Seconds, Ymax = 20.93 G's @ 0.0448 Seconds





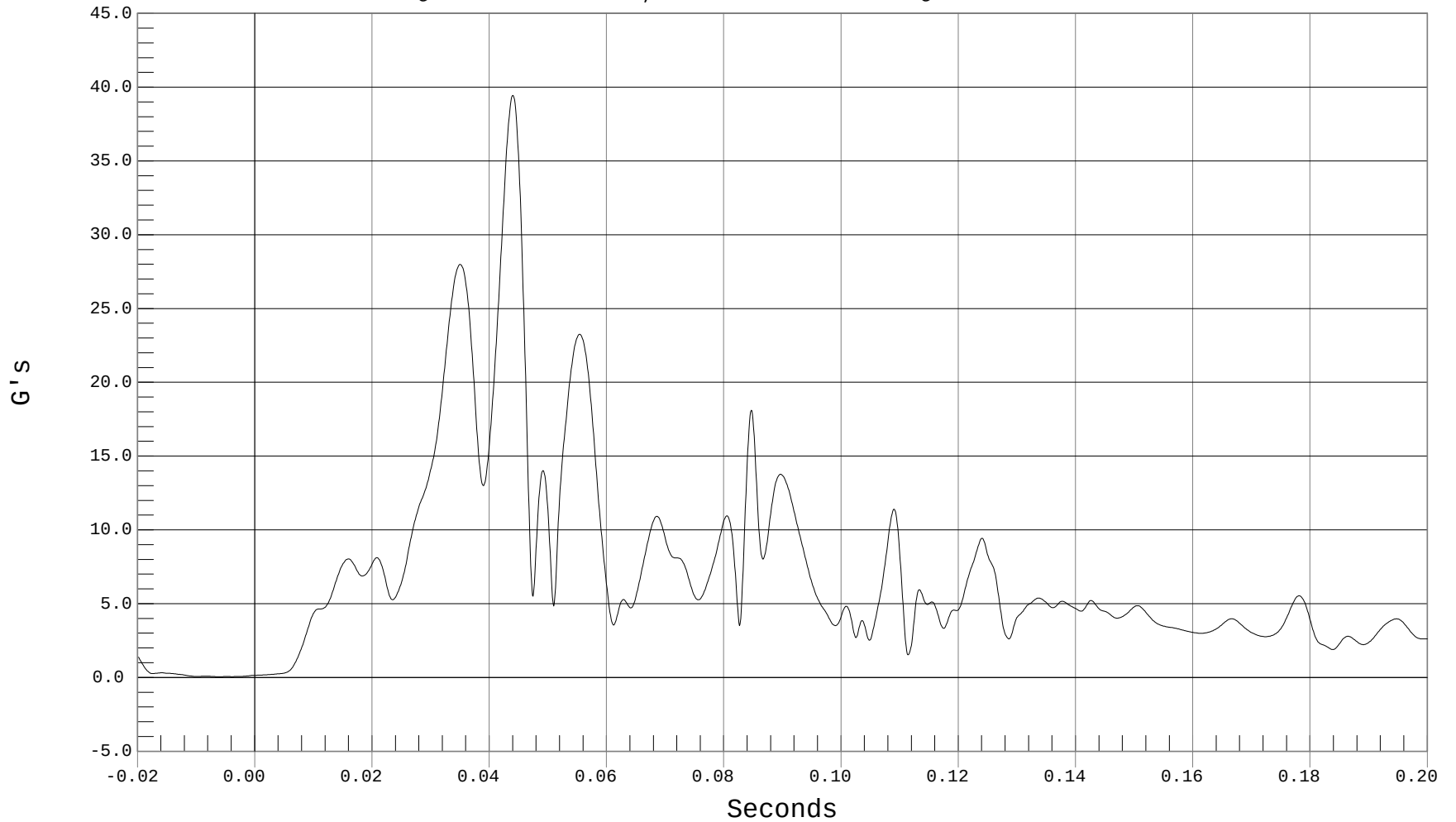
VEHICLE CG RESULTANT ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

— 1 VEHICLE CG RESULTANT ACCELERATION, B02049AV.A33

Ymin = .05 G's @ -0.0060 Seconds, Ymax = 39.45 G's @ 0.0439 Seconds





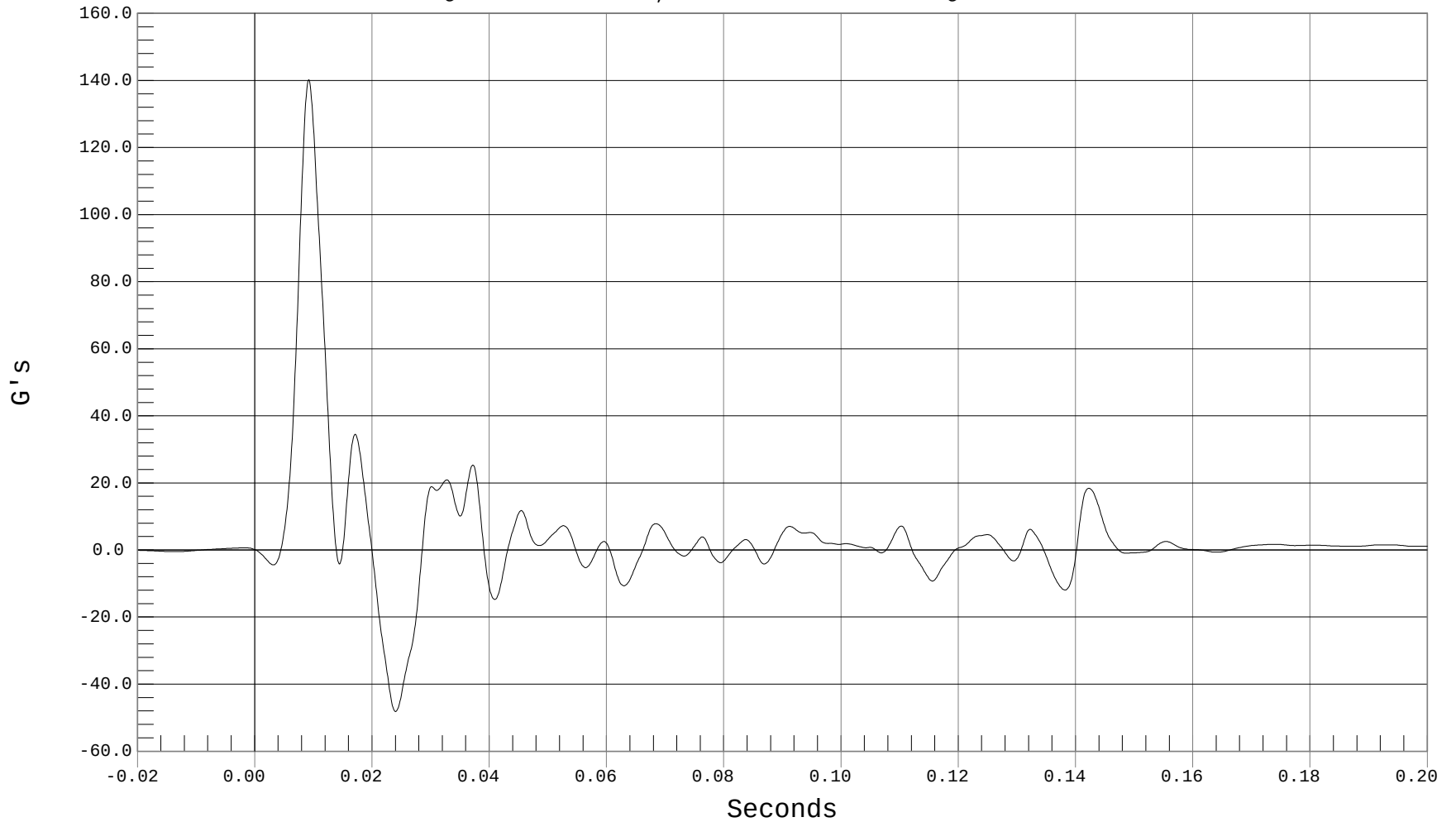
LEFT FRONT DOOR @ ARM Y ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

— 1 LEFT FRONT DOOR @ ARM Y, B02049AF.A26

Ymin = -48.15 G's @ 0.0239 Seconds, Ymax = 140.22 G's @ 0.0091 Seconds





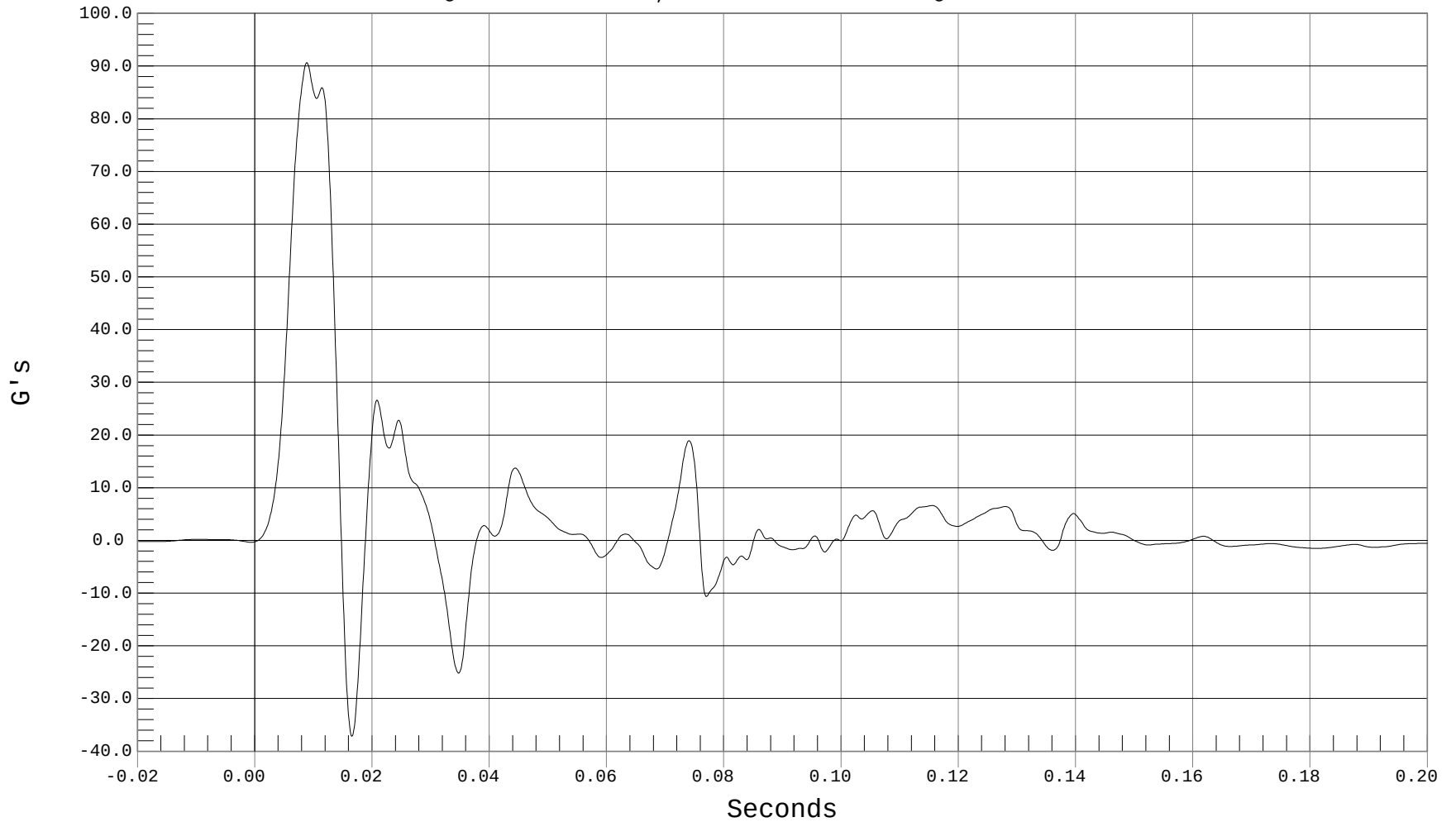
LEFT FRONT DOOR @ PELVIS Y ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

— 1 LEFT FRONT DOOR @ PELVIS Y, B02049AF.A25

Ymin = -37.17 G's @ 0.0165 Seconds, Ymax = 90.65 G's @ 0.0088 Seconds





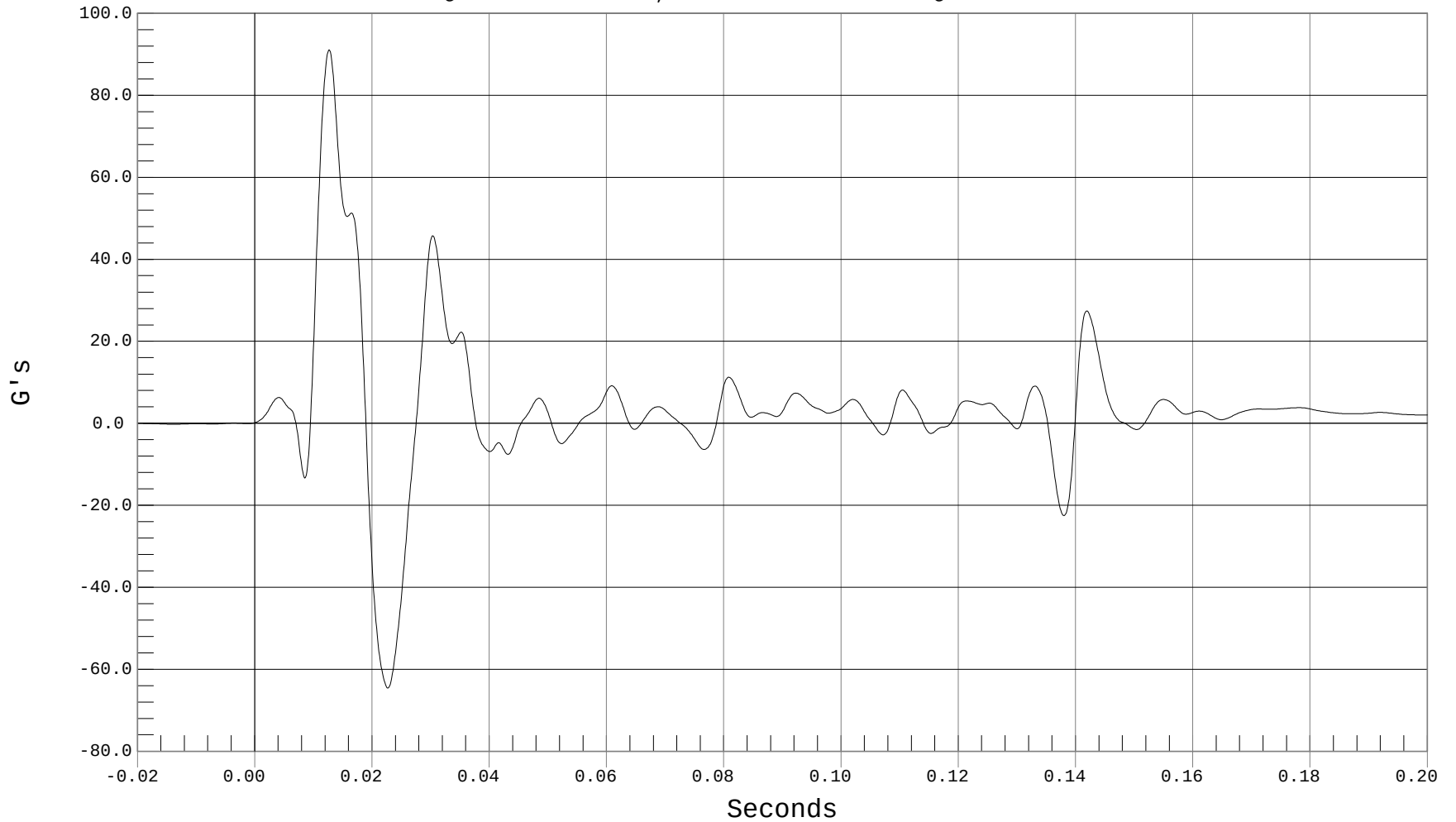
LEFT FRONT DOOR @ KNEE Y ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

— 1 LEFT FRONT DOOR @ KNEE Y, B02049AF.A27

Ymin = -64.58 G's @ 0.0226 Seconds, Ymax = 91.12 G's @ 0.0126 Seconds





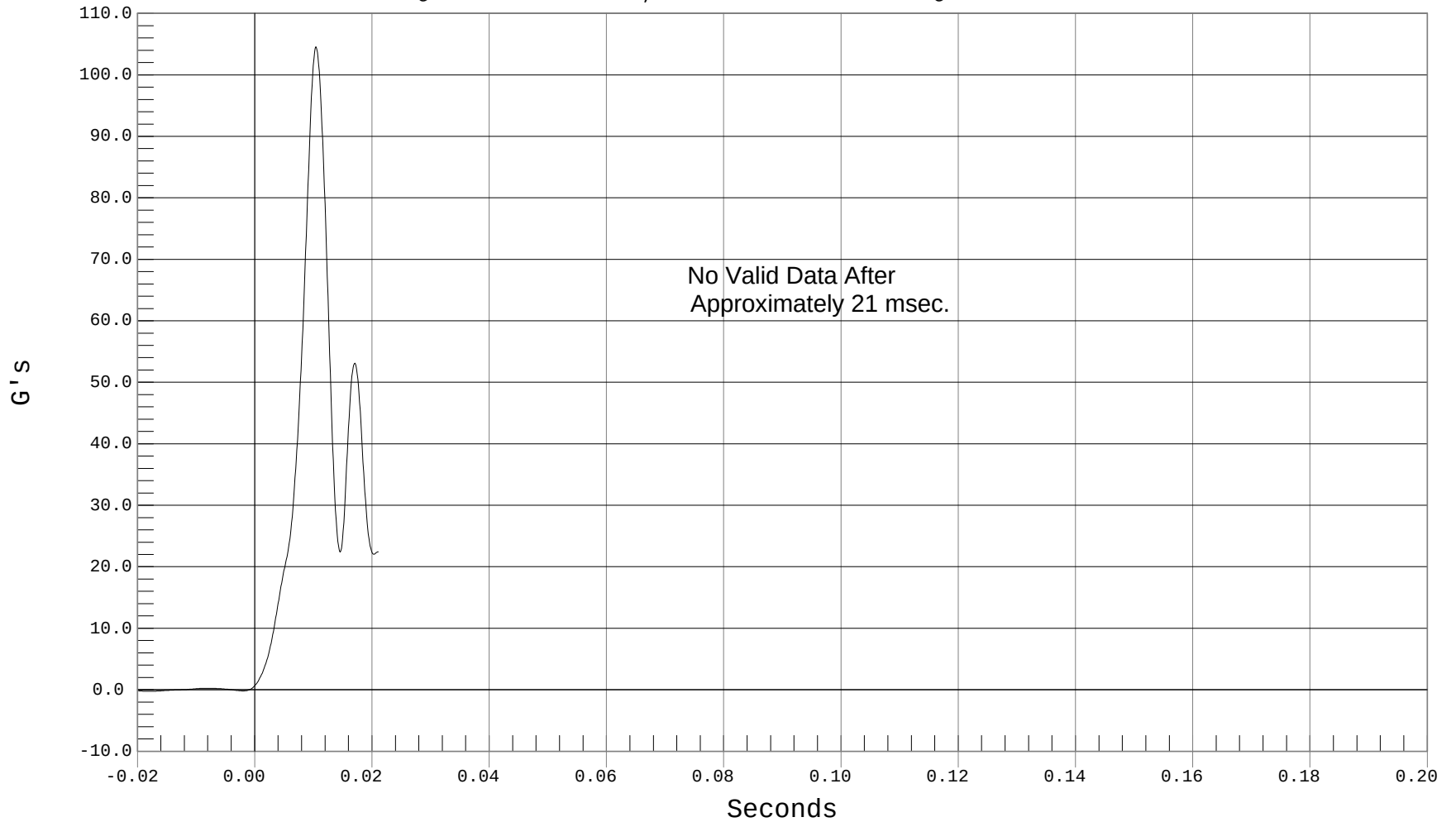
LEFT FRONT DOOR @ RIB Y ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

— 1 LEFT FRONT DOOR @ RIB Y, B02049AF.A28

Ymin = -.26 G's @ -0.0179 Seconds, Ymax = 104.55 G's @ 0.0103 Seconds





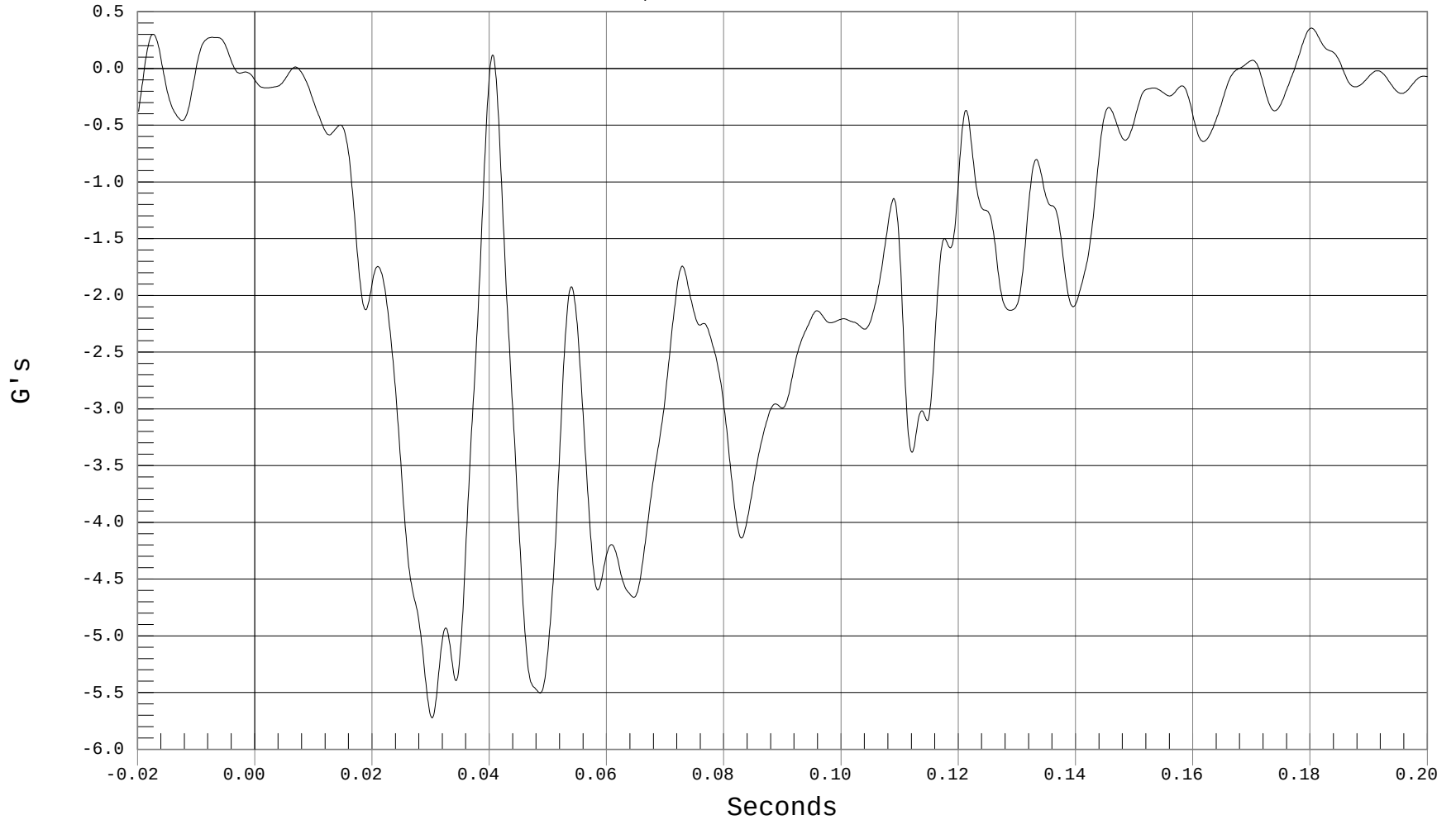
LOWER CENTER RADIATOR SUPPORT X ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

1 LOWER CENTER RADIATOR SUPPORT X, B02049AF.A22

Ymin = -5.72 G's @ 0.0302 Seconds, Ymax = .36 G's @ 0.1801 Seconds





LOWER CENTER RADIATOR SUPPORT Y ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG

Component: 2000 NISSAN MAXIMA 4 DOOR

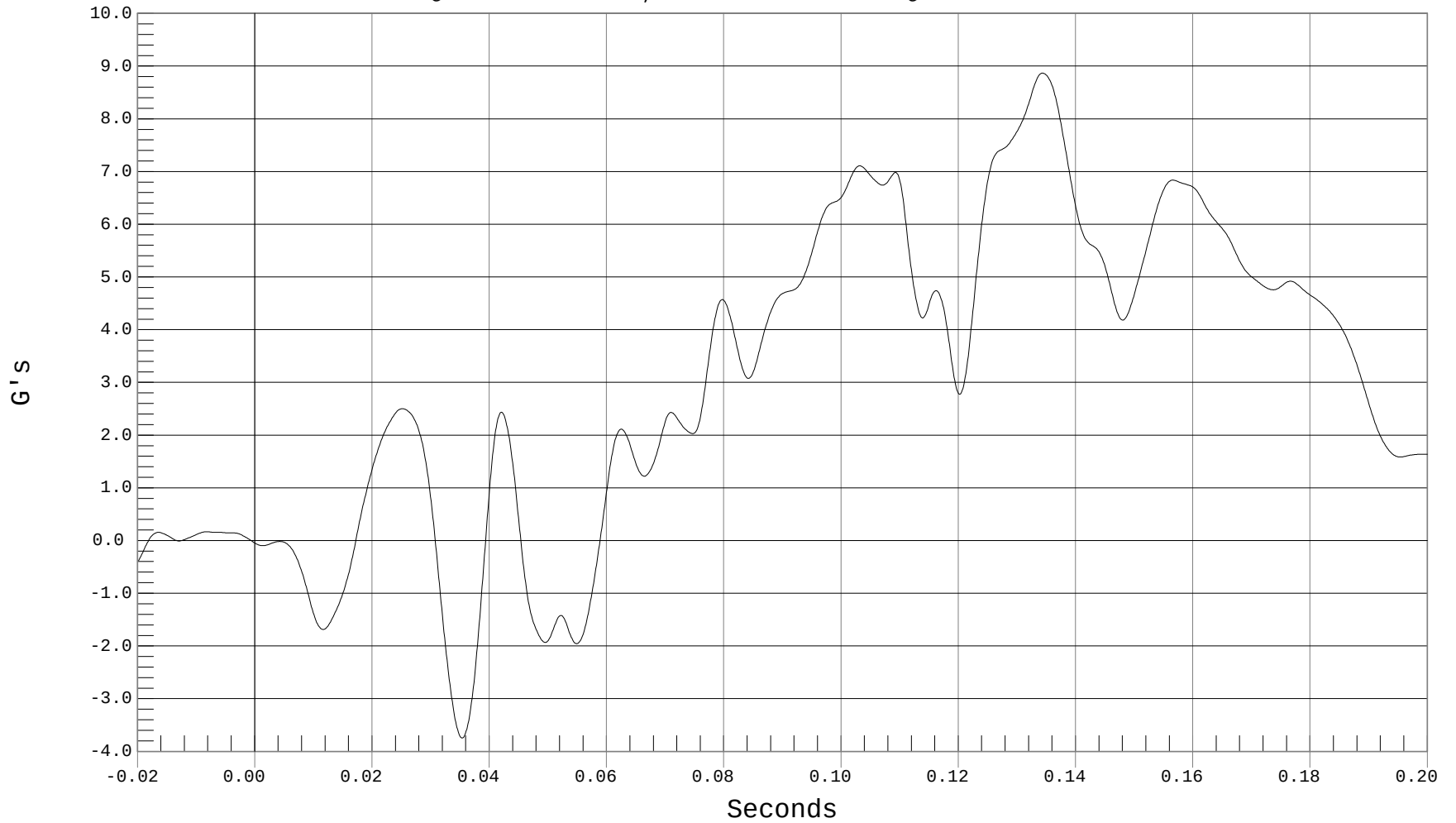
Test Date: 06-13-02

Speed: 20.0 MPH, 32.2 KPH

Filter Class: 60

— 1 LOWER CENTER RADIATOR SUPPORT Y, B02049AF.A23

Ymin = -3.75 G's @ 0.0353 Seconds, Ymax = 8.87 G's @ 0.1343 Seconds





LOWER CENTER RADIATOR SUPPORT Z ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG

Component: 2000 NISSAN MAXIMA 4 DOOR

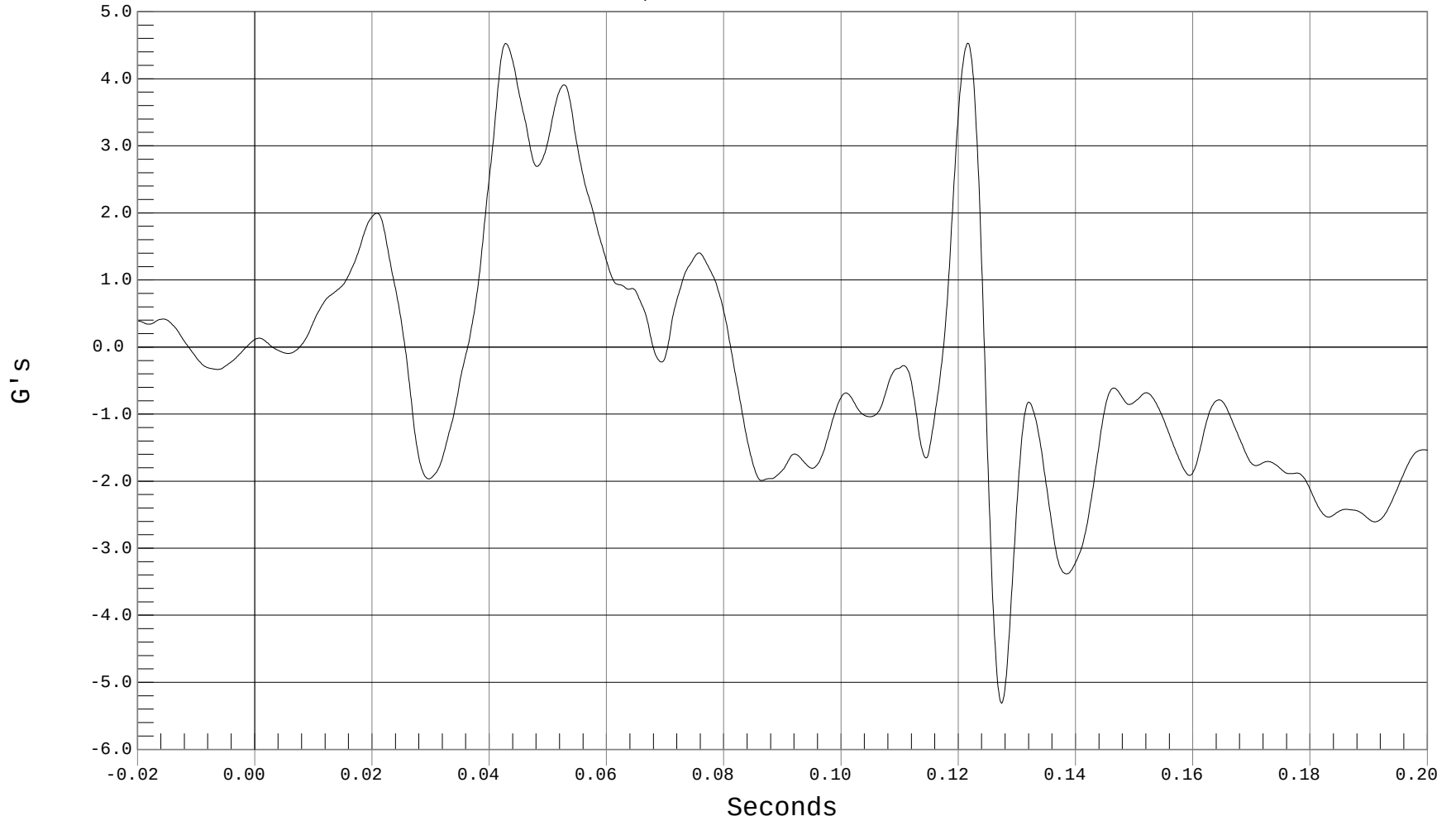
Test Date: 06-13-02

Speed: 20.0 MPH, 32.2 KPH

Filter Class: 60

— 1 LOWER CENTER RADIATOR SUPPORT Z, B02049AF.A24

Ymin = -5.31 G's @ 0.1273 Seconds, Ymax = 4.53 G's @ 0.1215 Seconds





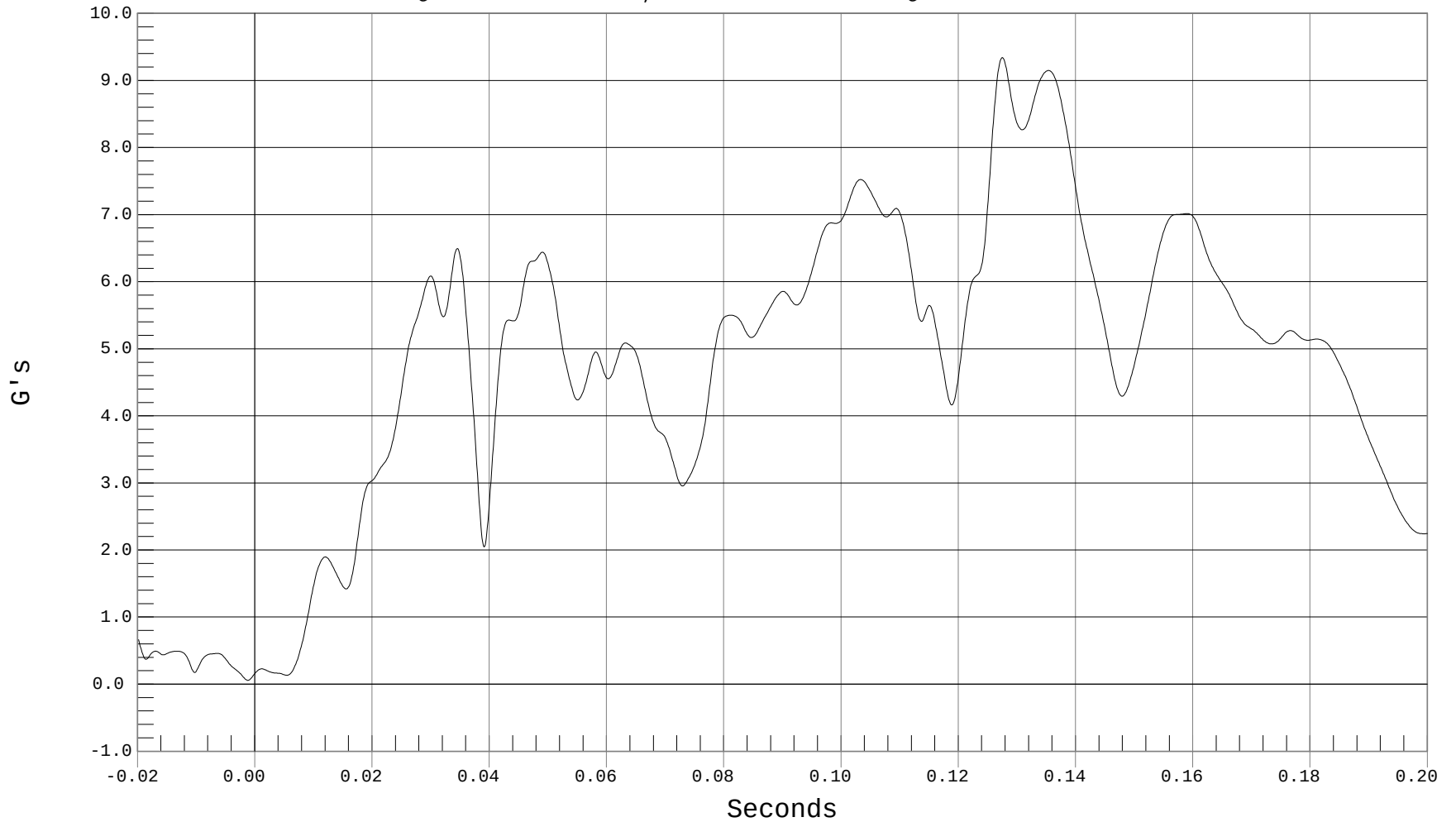
LOWER CENTER RADIATOR SUPPORT RESULTANT ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

— 1 LOWER RADIATOR SUPPORT RESULTANT ACCELERATION, B02049AV.A22

Ymin = .06 G's @ -0.0013 Seconds, Ymax = 9.34 G's @ 0.1274 Seconds





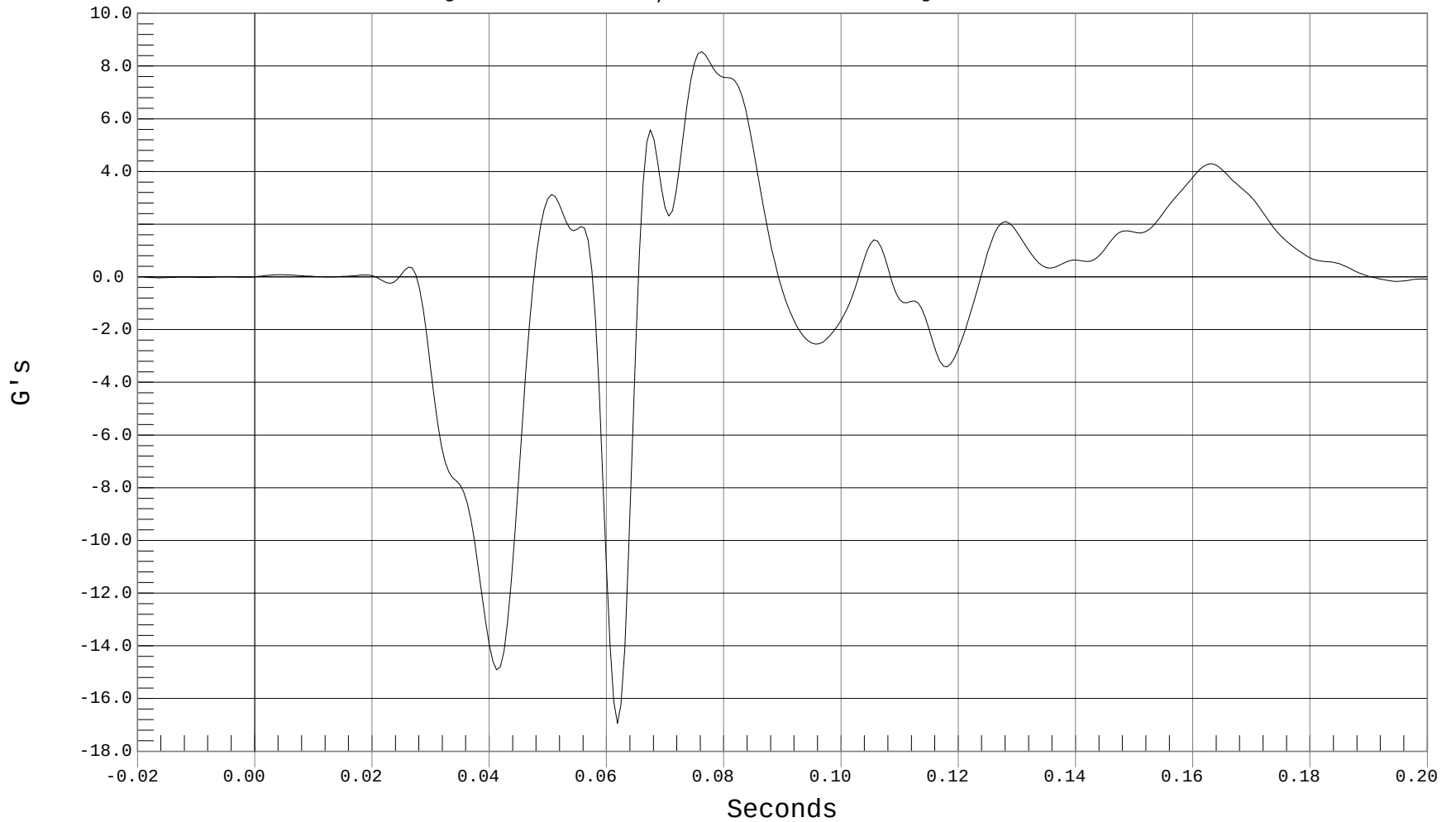
DRIVER UPPER SPINE X ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 D00R

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Fir Filtered

— 1 DRIVER UPPER SPINE X, B02049FI.R06

Ymin = -16.94 G's @ 0.0618 Seconds, Ymax = 8.54 G's @ 0.0762 Seconds





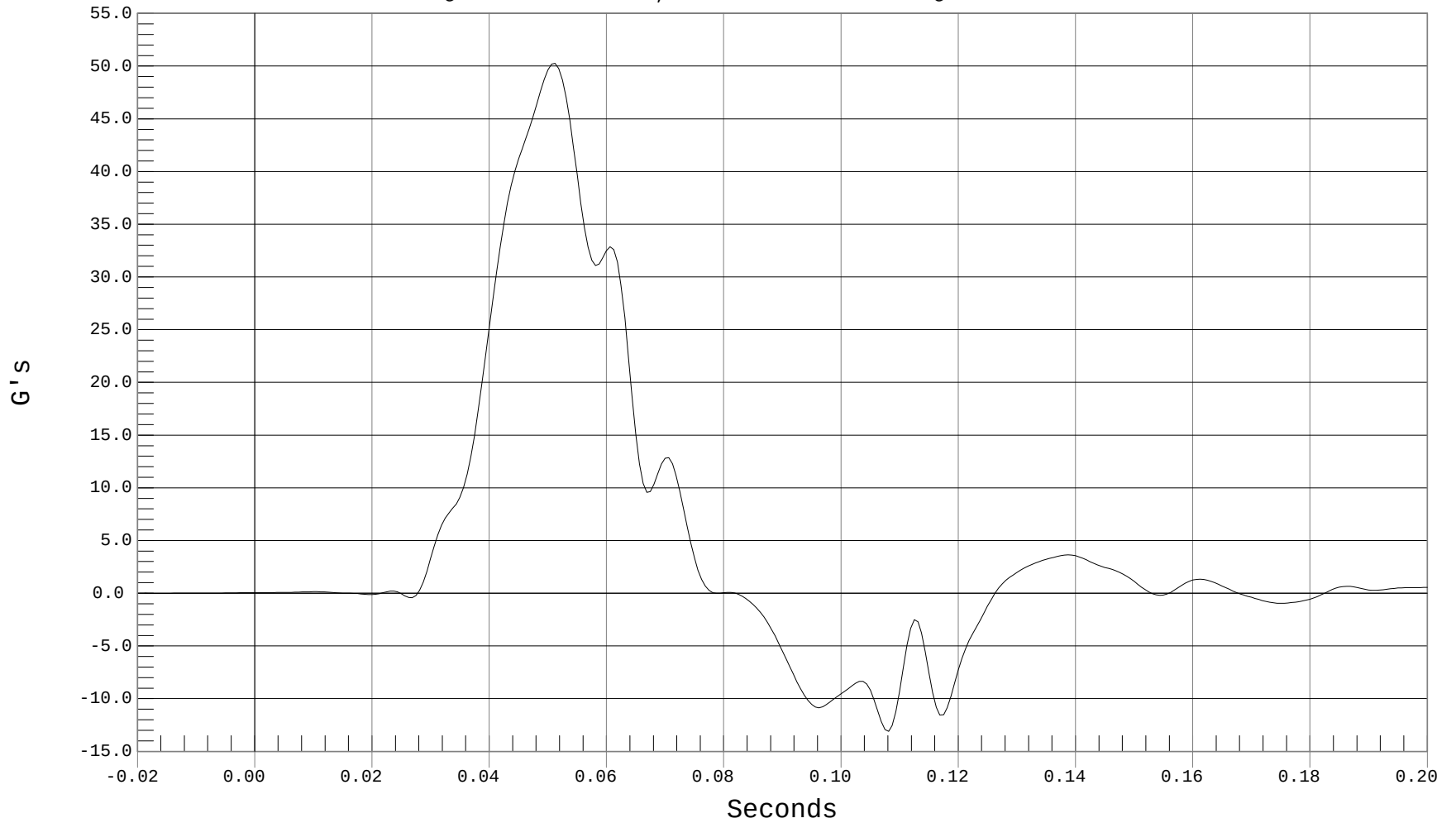
DRIVER UPPER SPINE Y ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 D00R

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Fir Filtered

— 1 DRIVER UPPER SPINE Y, B02049FI.R07

Ymin = -13.11 G's @ 0.1080 Seconds, Ymax = 50.26 G's @ 0.0512 Seconds





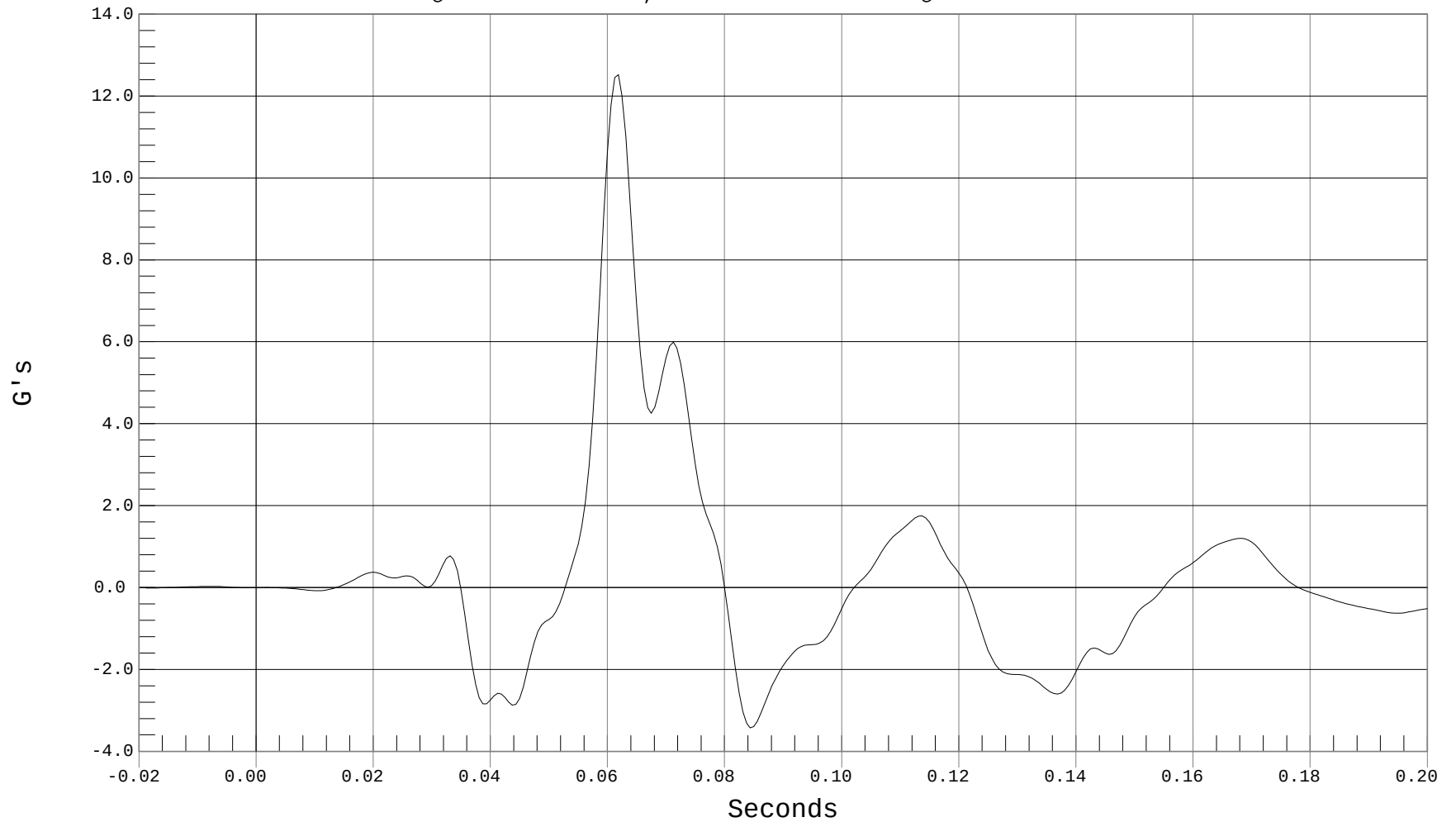
DRIVER UPPER SPINE Z ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 D00R

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Fir Filtered

— 1 DRIVER UPPER SPINE Z, B02049FI.R08

Ymin = -3.43 G's @ 0.0843 Seconds, Ymax = 12.53 G's @ 0.0618 Seconds





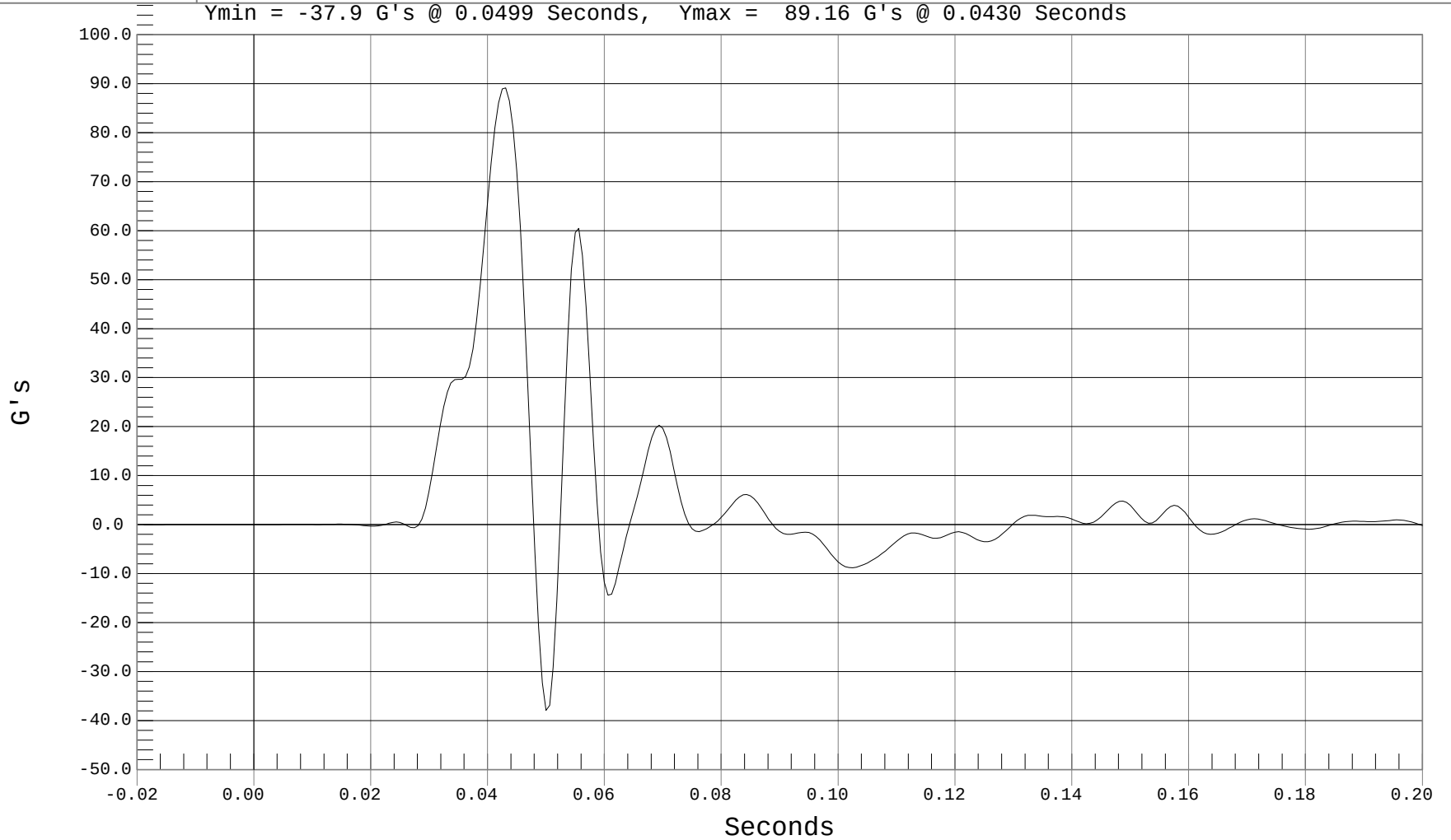
DRIVER UPPER RIB Y ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Fir Filtered

— 1 DRIVER UPPER RIB Y, B02049FI.R04

Ymin = -37.9 G's @ 0.0499 Seconds, Ymax = 89.16 G's @ 0.0430 Seconds





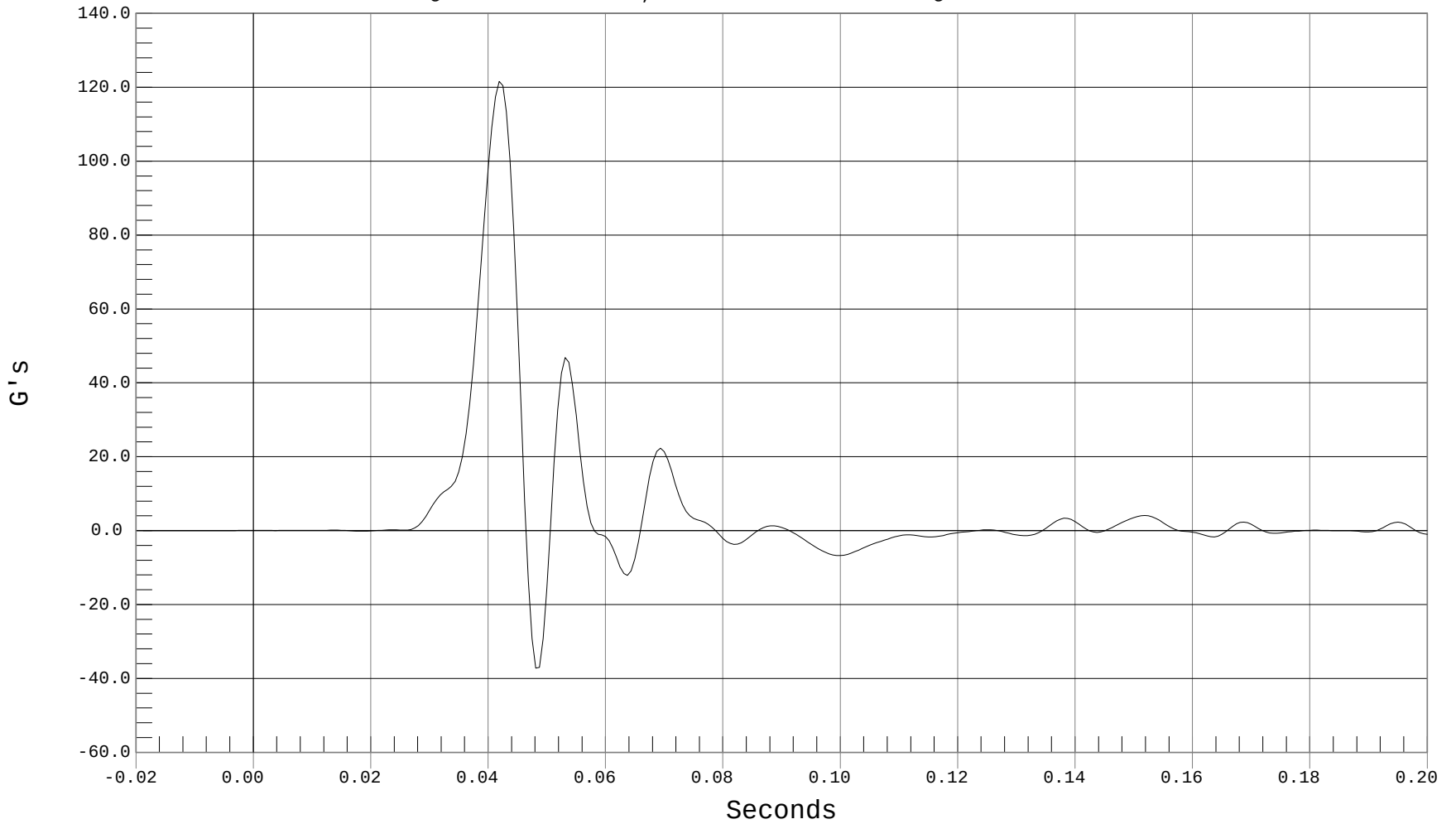
DRIVER MID RIB Y ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 D00R

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Fir Filtered

— 1 DRIVER MID RIB Y, B02049FI.R58

Ymin = -37.2 G's @ 0.0480 Seconds, Ymax = 121.57 G's @ 0.0418 Seconds





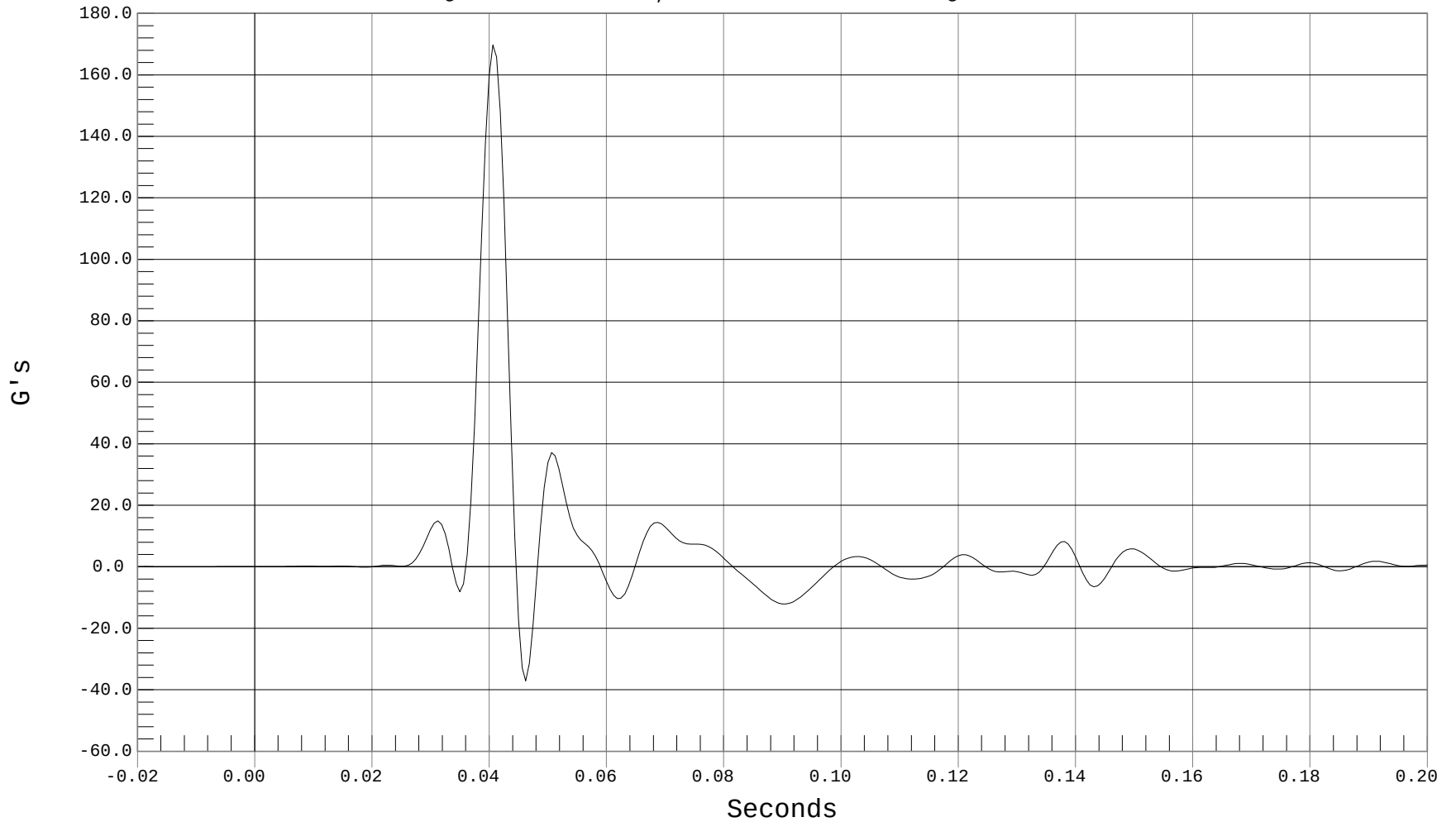
DRIVER LOWER RIB Y ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Fir Filtered

— 1 DRIVER LOWER RIB Y, B02049FI.R05

Ymin = -37.11 G's @ 0.0462 Seconds, Ymax = 169.73 G's @ 0.0405 Seconds





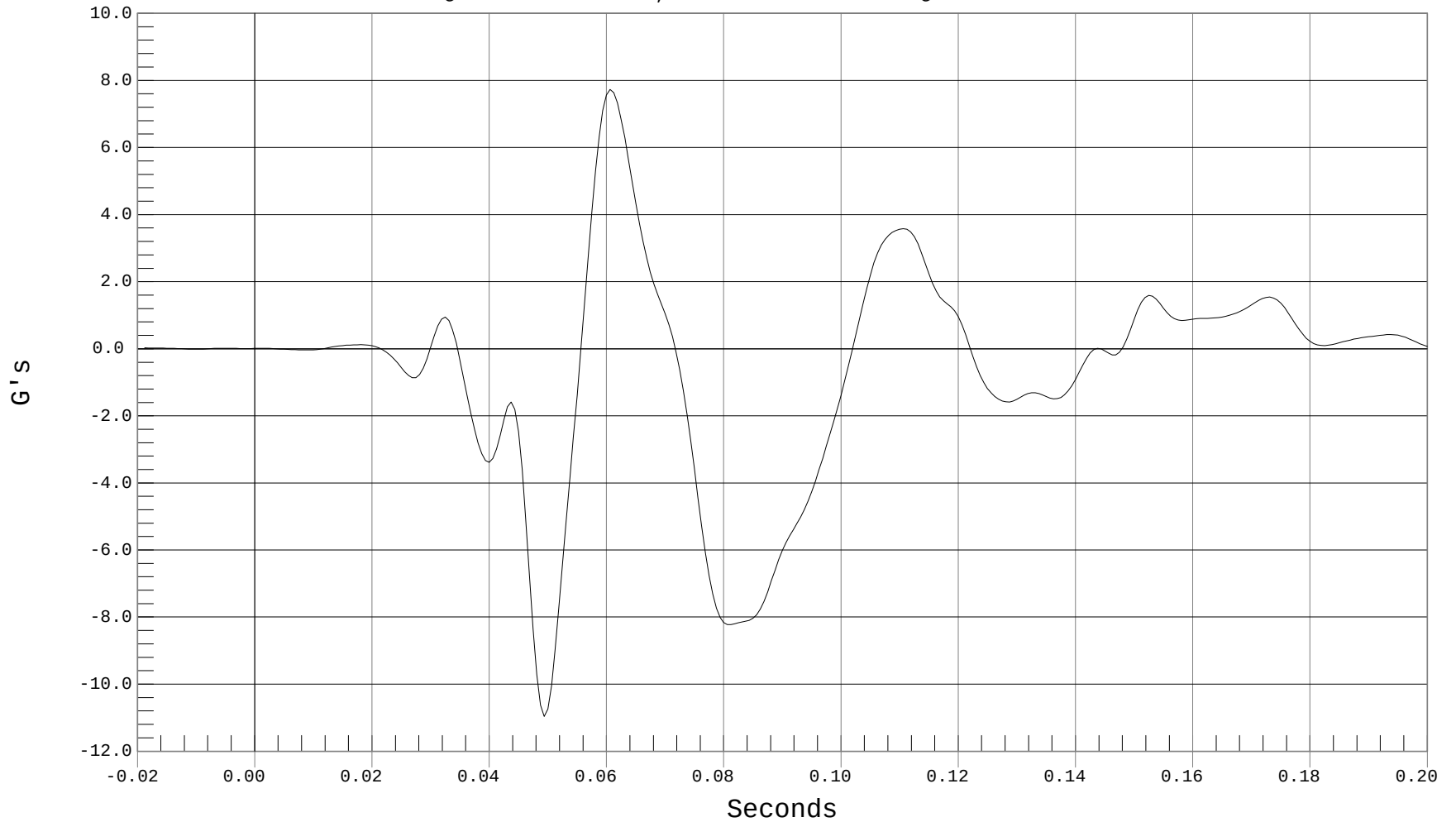
DRIVER LOWER SPINE X ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 D00R

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Fir Filtered

— 1 DRIVER LOWER SPINE X, B02049FI.R09

Ymin = -10.96 G's @ 0.0493 Seconds, Ymax = 7.73 G's @ 0.0605 Seconds





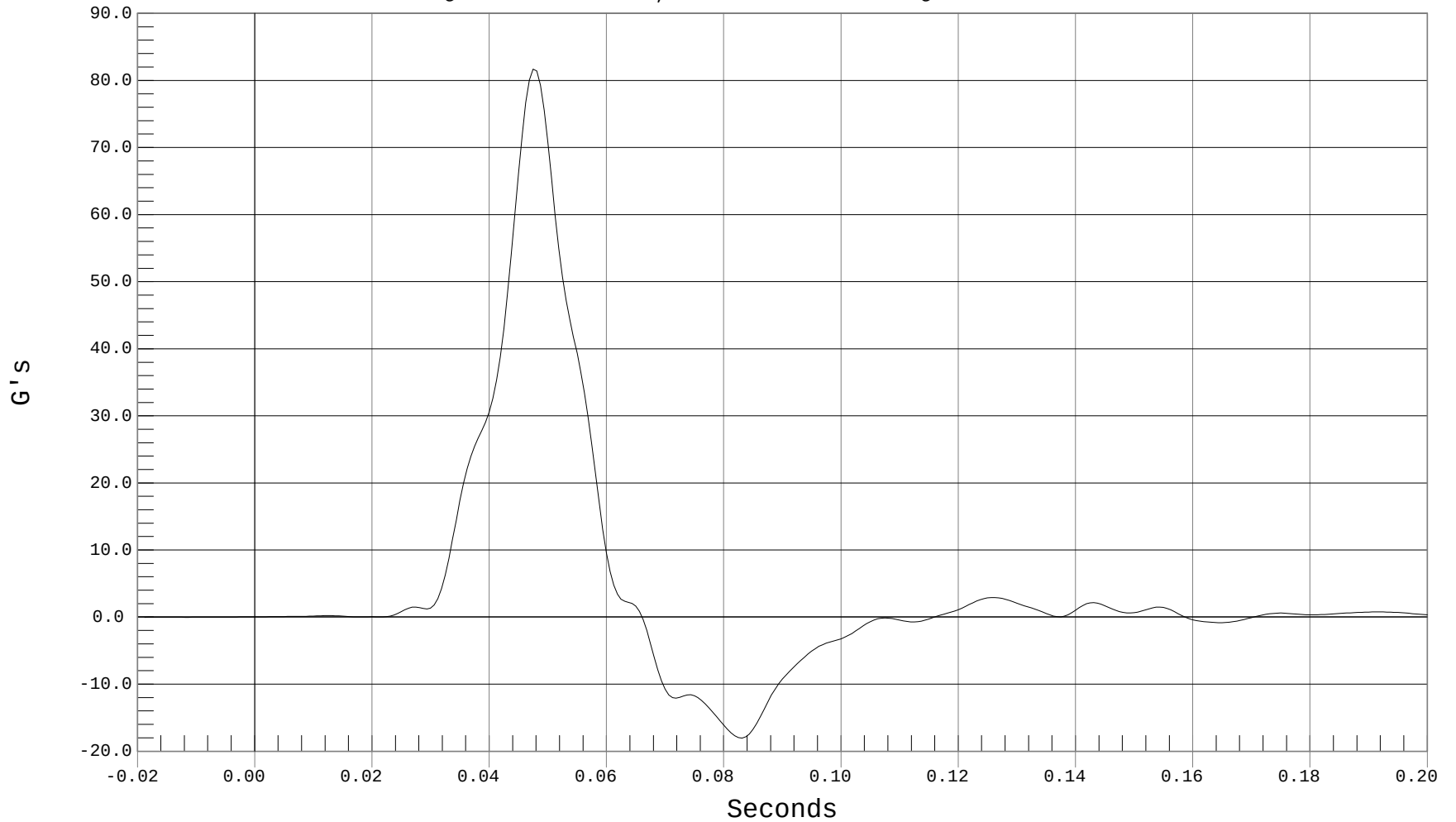
DRIVER LOWER SPINE Y ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Fir Filtered

— 1 DRIVER LOWER SPINE Y, B02049FI.R10

Ymin = -18.04 G's @ 0.0830 Seconds, Ymax = 81.7 G's @ 0.0474 Seconds





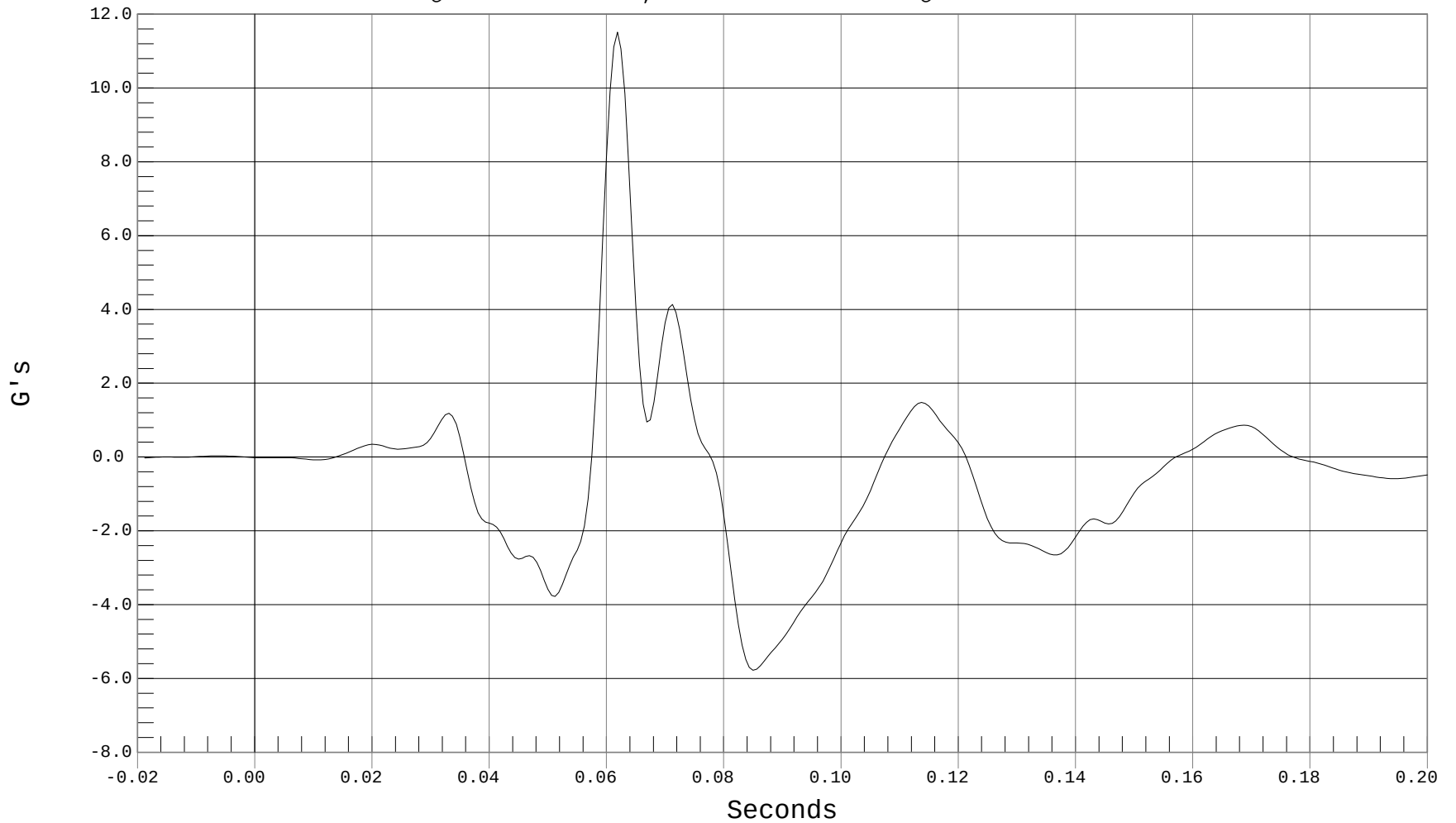
DRIVER LOWER SPINE Z ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 D00R

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Fir Filtered

— 1 DRIVER LOWER SPINE Z, B02049FI.R11

Ymin = -5.78 G's @ 0.0849 Seconds, Ymax = 11.52 G's @ 0.0618 Seconds





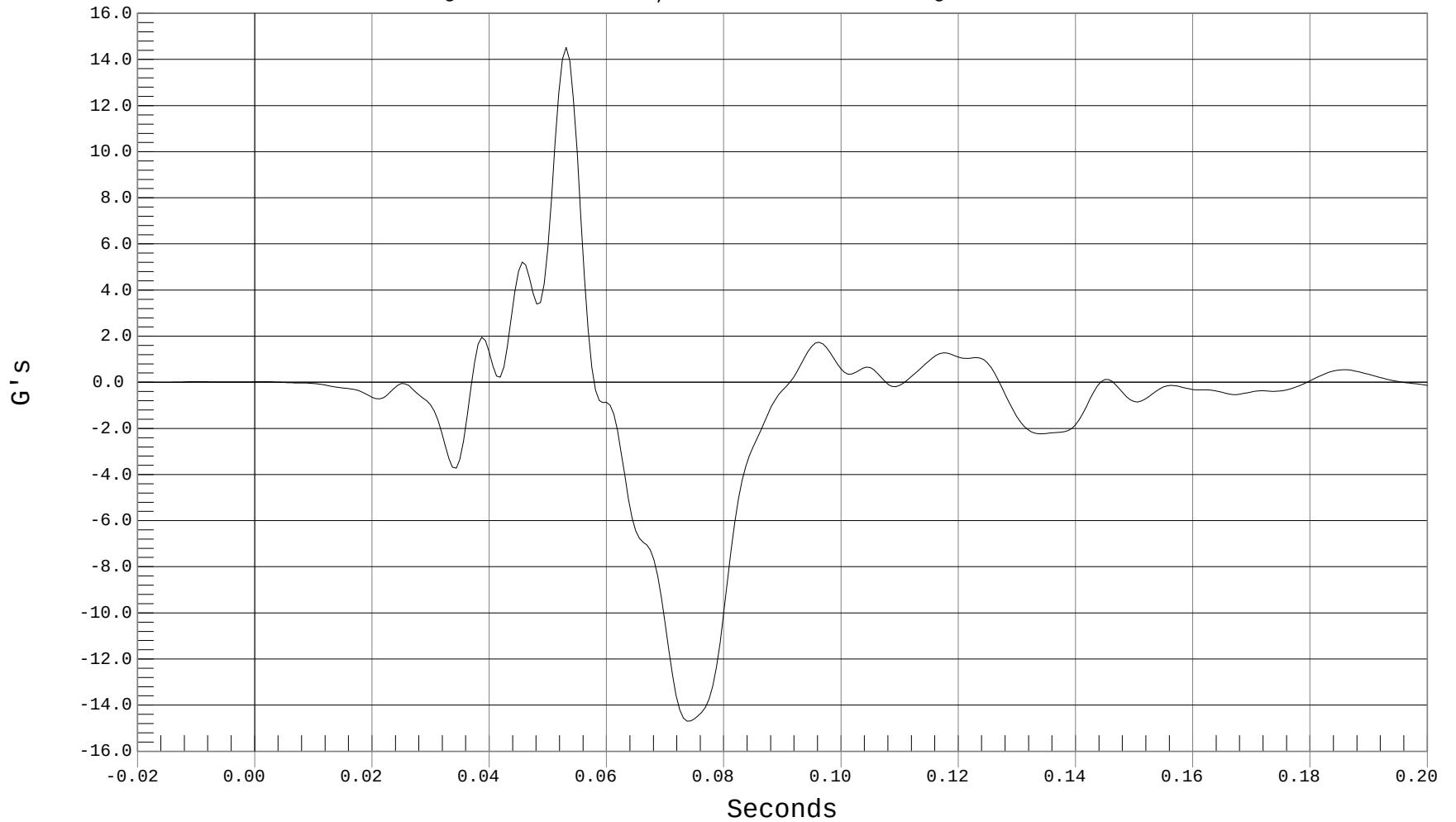
DRIVER PELVIS X ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Fir Filtered

— 1 DRIVER PELVIS X, B02049FI.R12

Ymin = -14.69 G's @ 0.0736 Seconds, Ymax = 14.53 G's @ 0.0530 Seconds





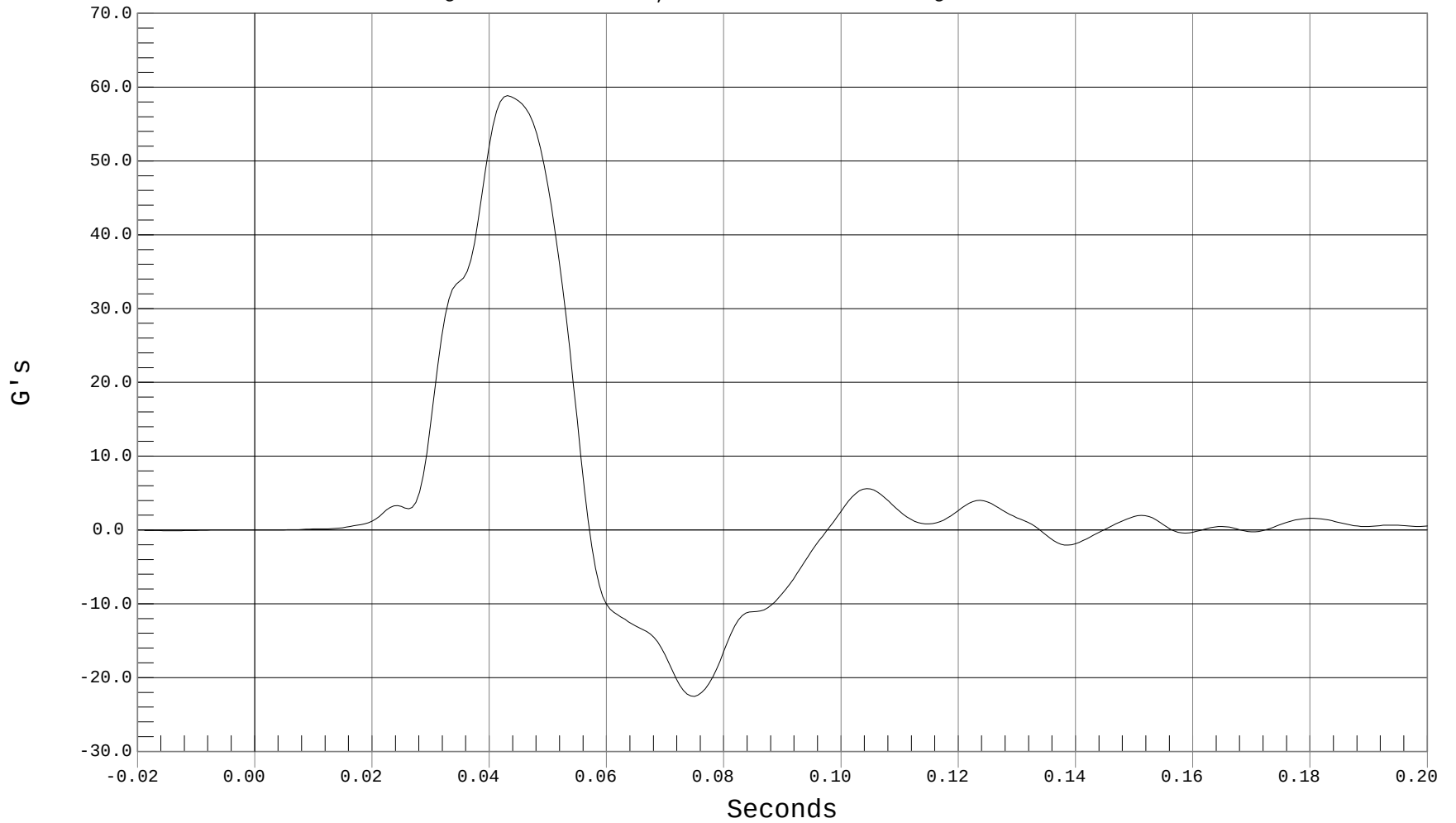
DRIVER PELVIS Y ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Fir Filtered

— 1 DRIVER PELVIS Y, B02049FI.R13

Ymin = -22.54 G's @ 0.0749 Seconds, Ymax = 58.84 G's @ 0.0430 Seconds





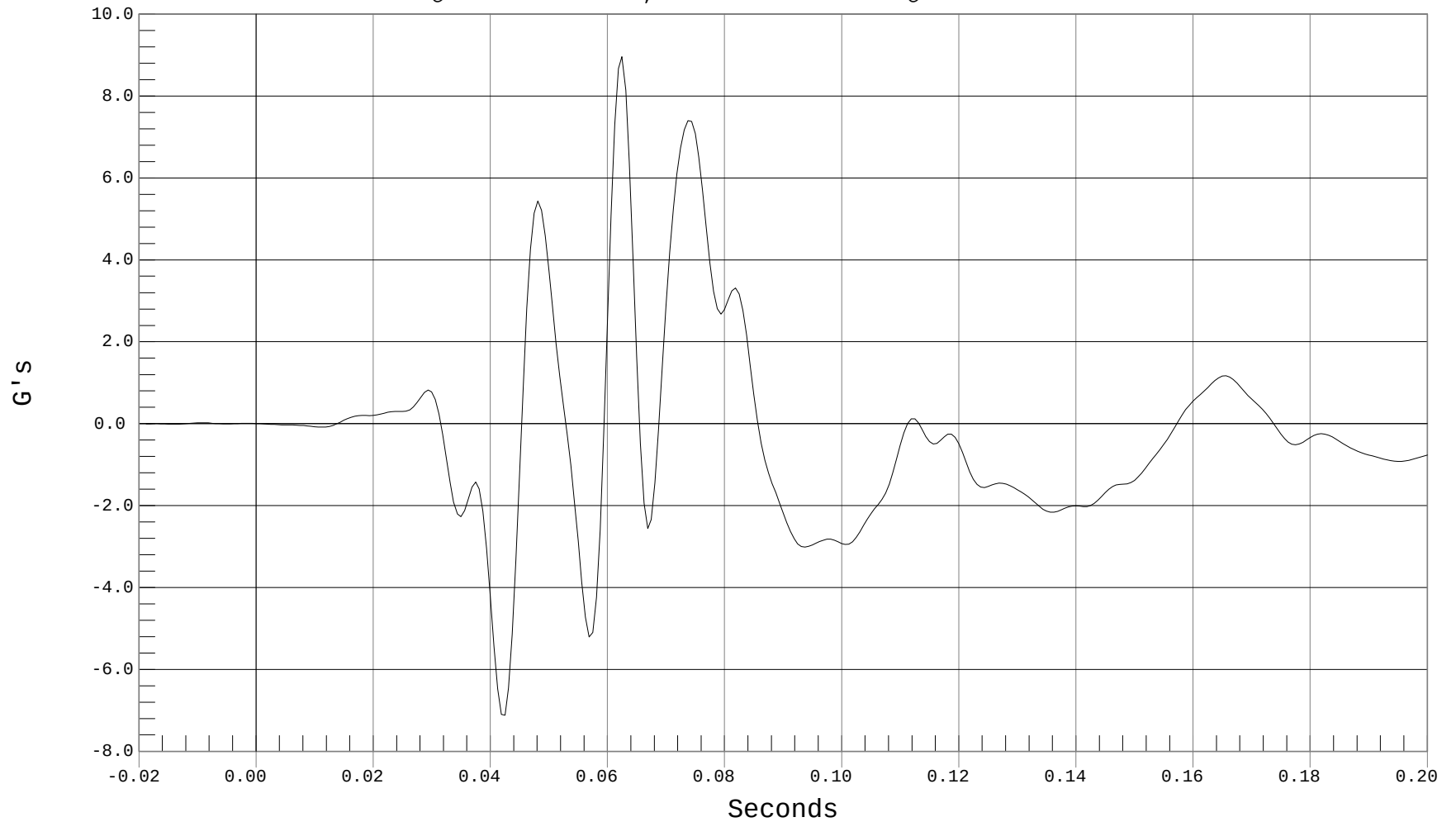
DRIVER PELVIS Z ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG
Component: 2000 NISSAN MAXIMA 4 DOOR

Test Date: 06-13-02
Speed: 20.0 MPH, 32.2 KPH
Fir Filtered

1 DRIVER PELVIS Z, B02049FI.R14

Ymin = -7.12 G's @ 0.0424 Seconds, Ymax = 8.96 G's @ 0.0624 Seconds



APPENDIX C
ES-2 CONFIGURATION AND PERFORMANCE VERIFICATION DATA

CERTIFICATION DATA

Dummy Serial Number: 009

Calibration Test Results Summary

Dummy Serial Number: 009

Pre-Test Calibration

Head Drop Test:	The head passed all drop test requirements.
Neck Pendulum Test:	The neck passed all impact test requirements.
Shoulder Impact Test:	The shoulder passed all impact test requirements.
Rib Tests:	All ribs passed all impact test requirements.
Abdomen Test:	The abdomen passed all impact test requirements.
Lumbar Spine Test:	The lumbar spine passed all impact test requirements.
Pelvis Test:	The pelvis passed all impact test requirements.

MGA RESEARCH CORPORATION
HEAD DROP TEST
EUROSID 2 DUMMY

Date: 6/12/02

Dummy Serial Number: 009

Test Number: D02781

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.0 – 22.0	21.3
Relative Humidity (%)	10 – 70	48
Peak Resultant Acceleration	100 – 150 g's	144
Time of Max. Res. Acceleration	msec	23.3

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____

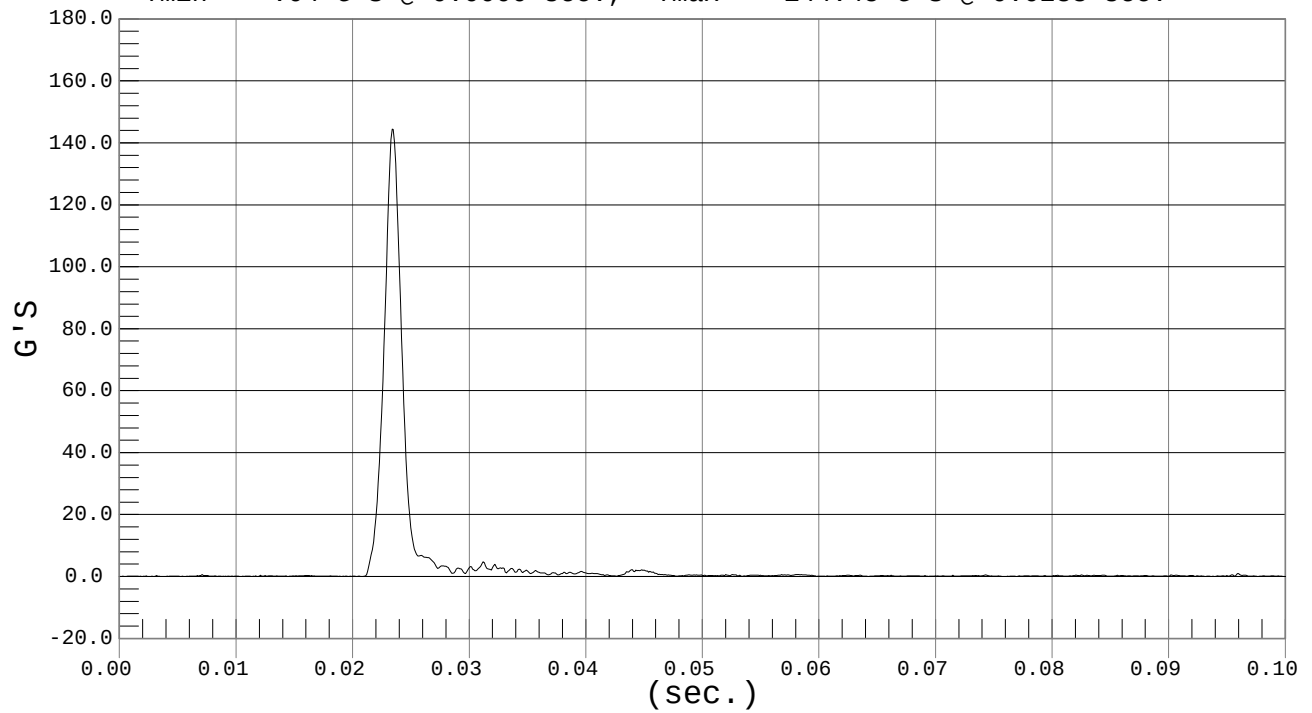


PEAK RESULTANT ACCELERATION

Test Desc.: Head Drop
Component: Dummy #009

Test Date: 06-12-02
Speed: 0.0 fps, 0.00 M/s

Ymin = .04 G'S @ 0.0000 sec., Ymax = 144.45 G'S @ 0.0233 sec.



MGA RESEARCH CORPORATION
NECK PENDULUM TEST
EUROSID 2 DUMMY

Date: 6/12/02

Dummy Serial Number: 009

Test Number: D02782

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature (°C)		18.0 – 22.0	21.1
Relative Humidity (%)		10 – 70	47
Pendulum Speed		3.3 - 3.5	3.4
Pendulum Deceleration	3 msec	ˆ.25 - ˆ.53 m/sec	-.32
	8 msec	ˆ1.59 - ˆ2.04 m/sec	-1.72
	14 msec	ˆ3.20 - ˆ3.85 m/sec	-3.39
Maximum Flexion Angle		49.0 – 59.0 deg	53.5
Time of Max. Flexion Angle		54.0 – 66.0 ms	57.1
Maximum Angle Theta (A)		32.0 – 37.0 deg	33.2
Time of Max. Theta (A)		53.0 – 63.0 ms	56.8
Maximum Angle Theta (B)		28.62 – 31.14 deg	29.69
Time of Max. Theta (B)		54.0 – 64.0 ms	56.0

TEST MEETS SPECIFICATIONS

Technician: _____

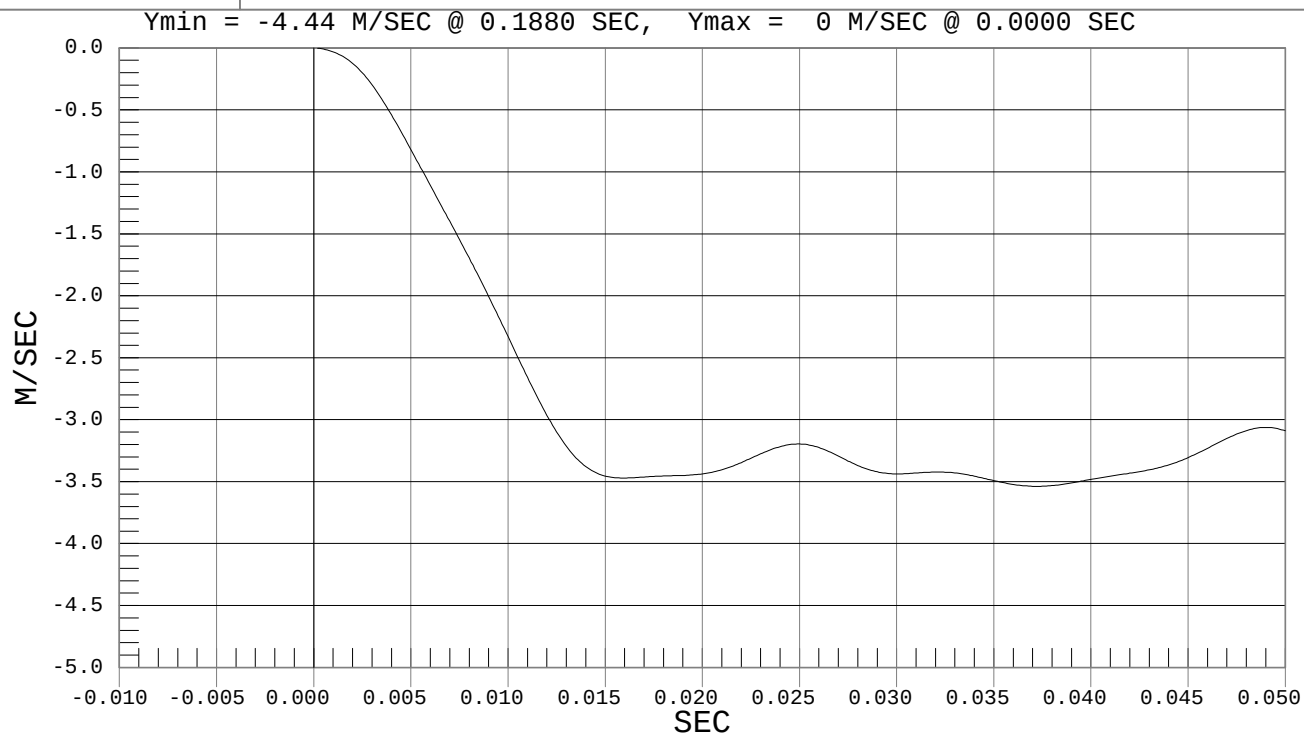
Approved By: _____



PENDULUM DECELERATION

Test Desc.: Neck Bending
Component: Dummy #009

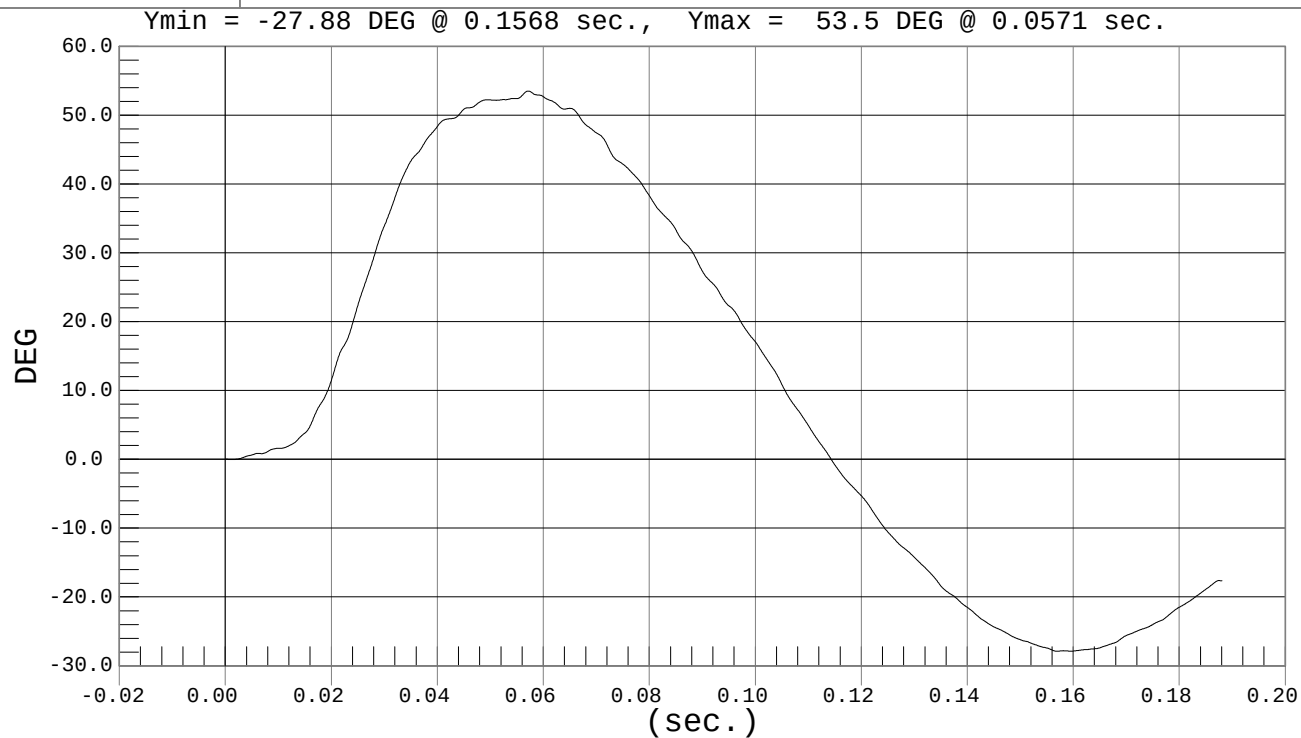
Test Date: 06-12-02
Speed: 11.0 fps, 3.35 M/s



FLEXION ANGLE

Test Desc.: Neck Bending
Component: Dummy #009

Test Date: 06-12-02
Speed: 11.0 fps, 3.35 M/s



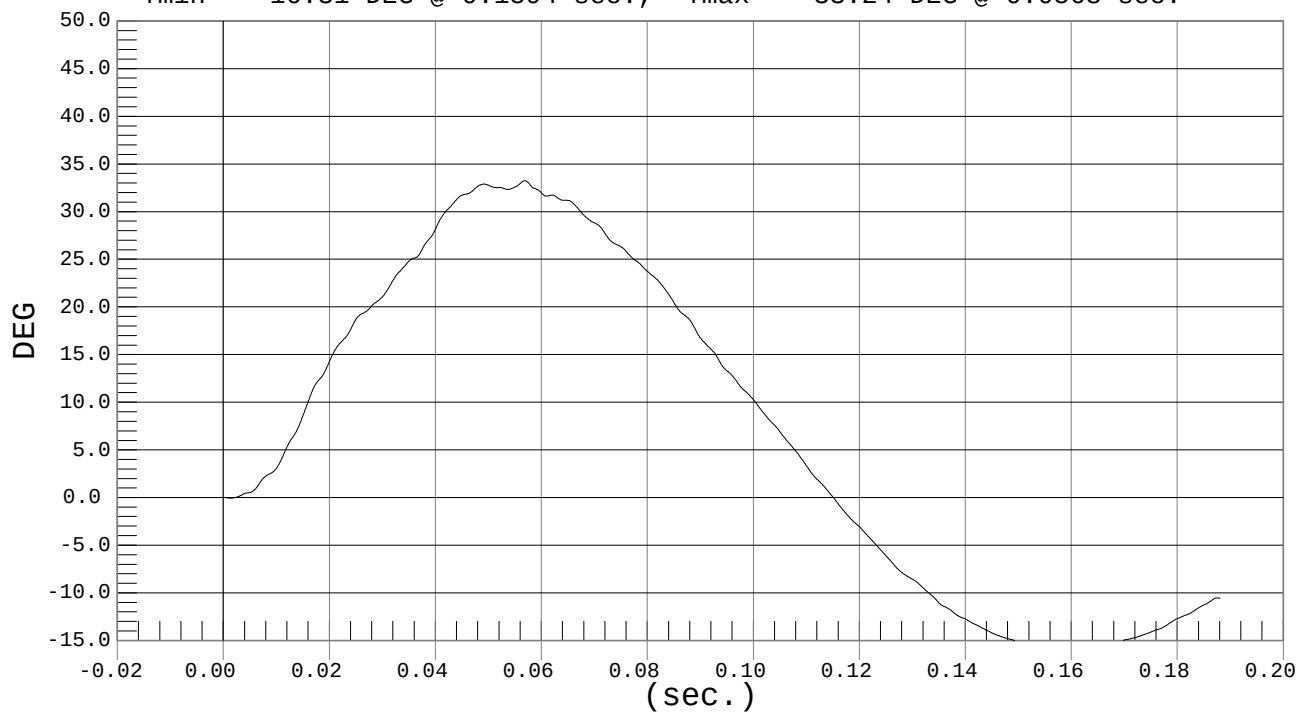


Test Desc.: Neck Bending
Component: Dummy #009

THETA A

Test Date: 06-12-02
Speed: 11.0 fps, 3.35 M/s

Ymin = -16.31 DEG @ 0.1594 sec., Ymax = 33.24 DEG @ 0.0568 sec.

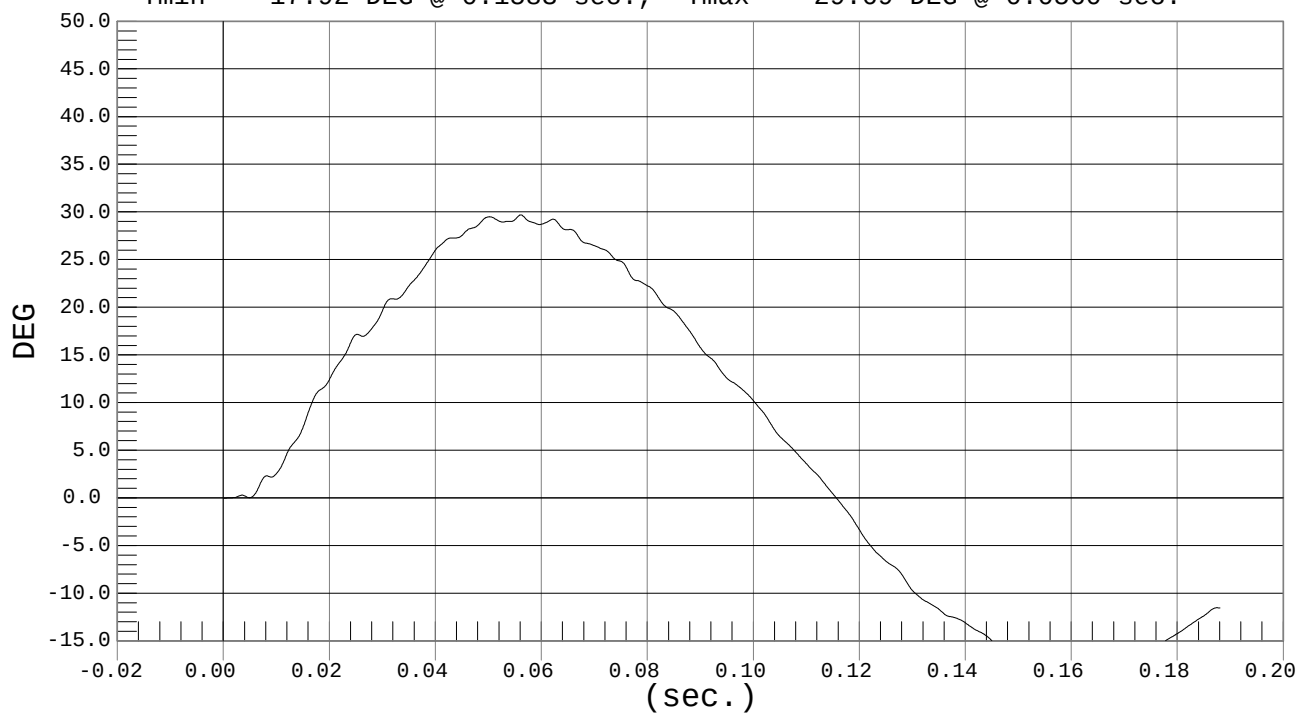


Test Desc.: Neck Bending
Component: Dummy #009

THETA B

Test Date: 06-12-02
Speed: 11.0 fps, 3.35 M/s

Ymin = -17.92 DEG @ 0.1583 sec., Ymax = 29.69 DEG @ 0.0560 sec.



MGA RESEARCH CORPORATION
SHOULDER IMPACT TEST
EUROSID 2 DUMMY

Date: 6/12/02

Dummy Serial Number: 009

Test Number: D02783

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.0 – 22.0	21.2
Relative Humidity (%)	10 – 70	48
Pendulum Speed	4.2 – 4.4 m/s	4.3
Max. Resultant Acceleration	7.5 – 10.5 g's	9.8
Time of Max. Pendulum Acceleration	msec	22.7

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____

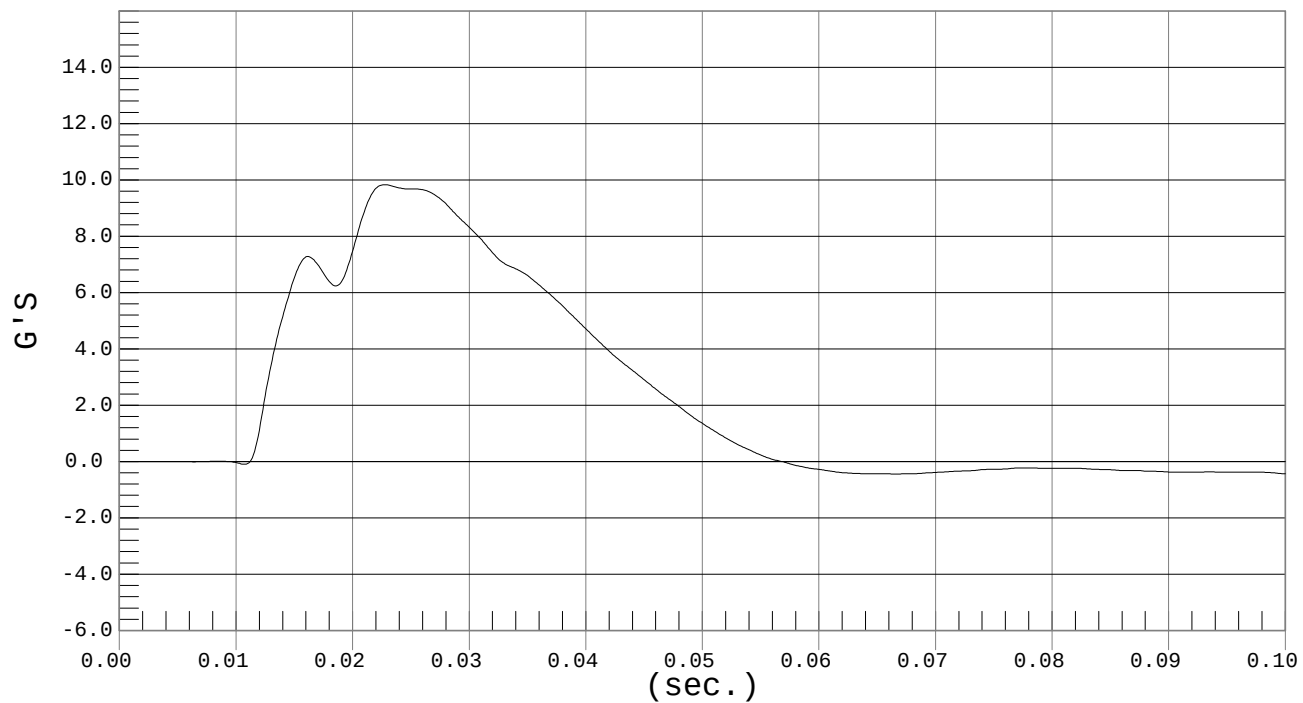


SHOULDER ACCELERATION

Test Desc.: Shoulder Impact
Component: Dummy #009

Test Date: 06-12-02
Speed: 14.1 fps, 4.30 M/s

Ymin = -.51 G'S @ 0.1066 sec., Ymax = 9.83 G'S @ 0.0227 sec.



MGA RESEARCH CORPORATION
UPPER/MIDDLE/LOWER RIB TESTS
EUROSID 2 DUMMY

Date: 6/11/02
Dummy Serial Number: 009
Test Number: D02784/5/6

UPPER RIB - TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.9 – 25.5	21.7
Relative Humidity (%)	10 – 70	49
Displacement at 2 m/s	23.5 – 27.5 mm	24.4
Displacement at 3 m/s	36.0 – 40.0 mm	38.9
Displacement at 4 m/s	46.0 – 51.0 mm	49.2

MIDDLE RIB - TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.9 – 25.5	21.7
Relative Humidity (%)	10 – 70	49
Displacement at 2 m/s	23.5 – 27.5 mm	24.5
Displacement at 3 m/s	36.0 – 40.0 mm	38.3
Displacement at 4 m/s	46.0 – 51.0 mm	50.2

LOWER RIB - TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.9 – 25.5	21.7
Relative Humidity (%)	10 – 70	49
Displacement at 2 m/s	23.5 – 27.5 mm	24.8
Displacement at 3 m/s	36.0 – 40.0 mm	38.6
Displacement at 4 m/s	46.0 – 51.0 mm	50.2

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____

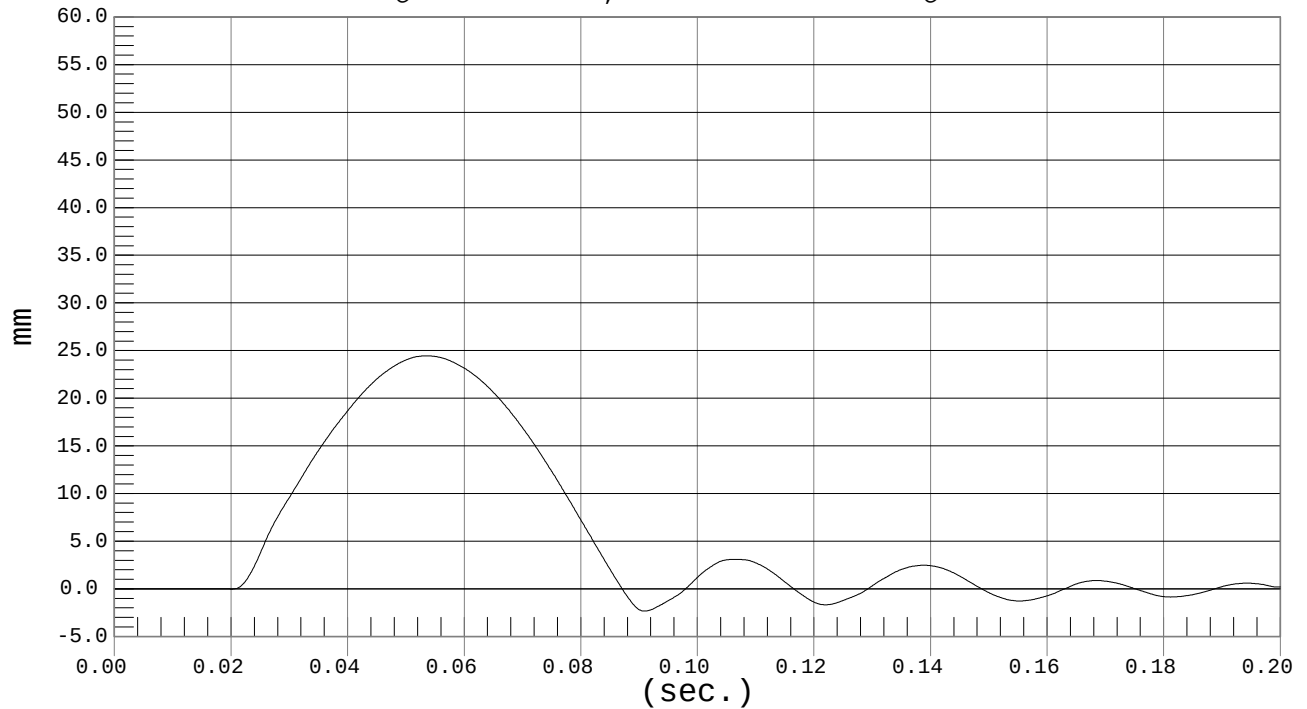


UPPER RIB DISPLACEMENT

Test Desc.: RIB MODULE
Component: Dummy #009

Test Date: 06-11-02
Speed: 6.6 fps, 2.00 M/s

Ymin = -2.34 mm @ 0.0908 sec., Ymax = 24.44 mm @ 0.0533 sec.

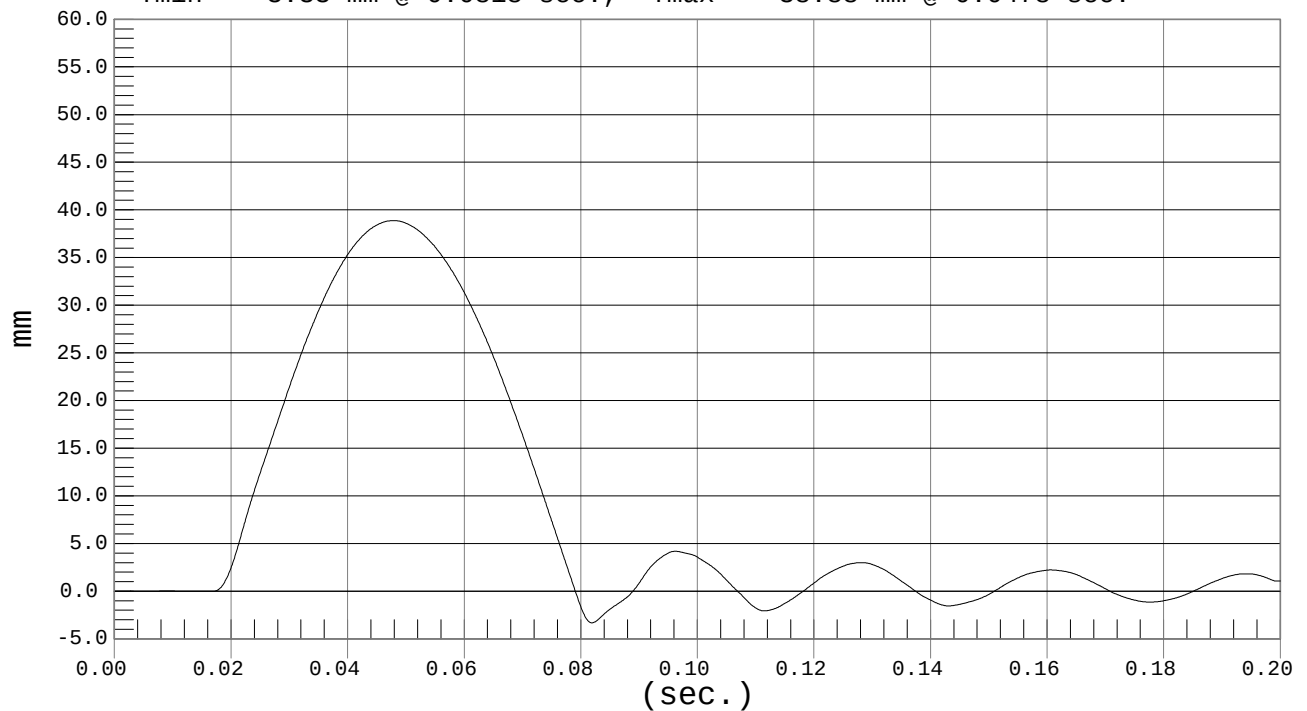


UPPER RIB DISPLACEMENT

Test Desc.: RIB MODULE
Component: Dummy #009

Test Date: 06-11-02
Speed: 9.8 fps, 3.00 M/s

Ymin = -3.33 mm @ 0.0818 sec., Ymax = 38.88 mm @ 0.0478 sec.



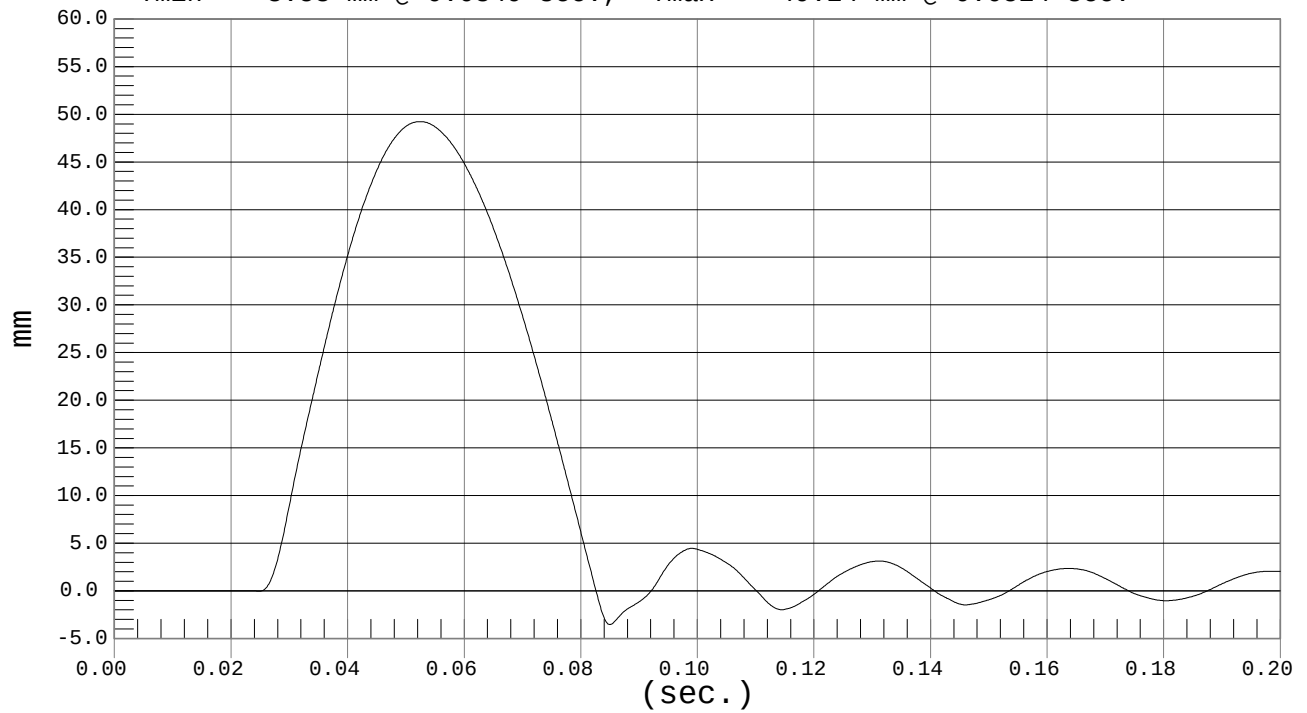


UPPER RIB DISPLACEMENT

Test Desc.: RIB MODULE
Component: Dummy #009

Test Date: 06-11-02
Speed: 13.1 fps, 4.00 M/s

Ymin = -3.53 mm @ 0.0849 sec., Ymax = 49.24 mm @ 0.0524 sec.



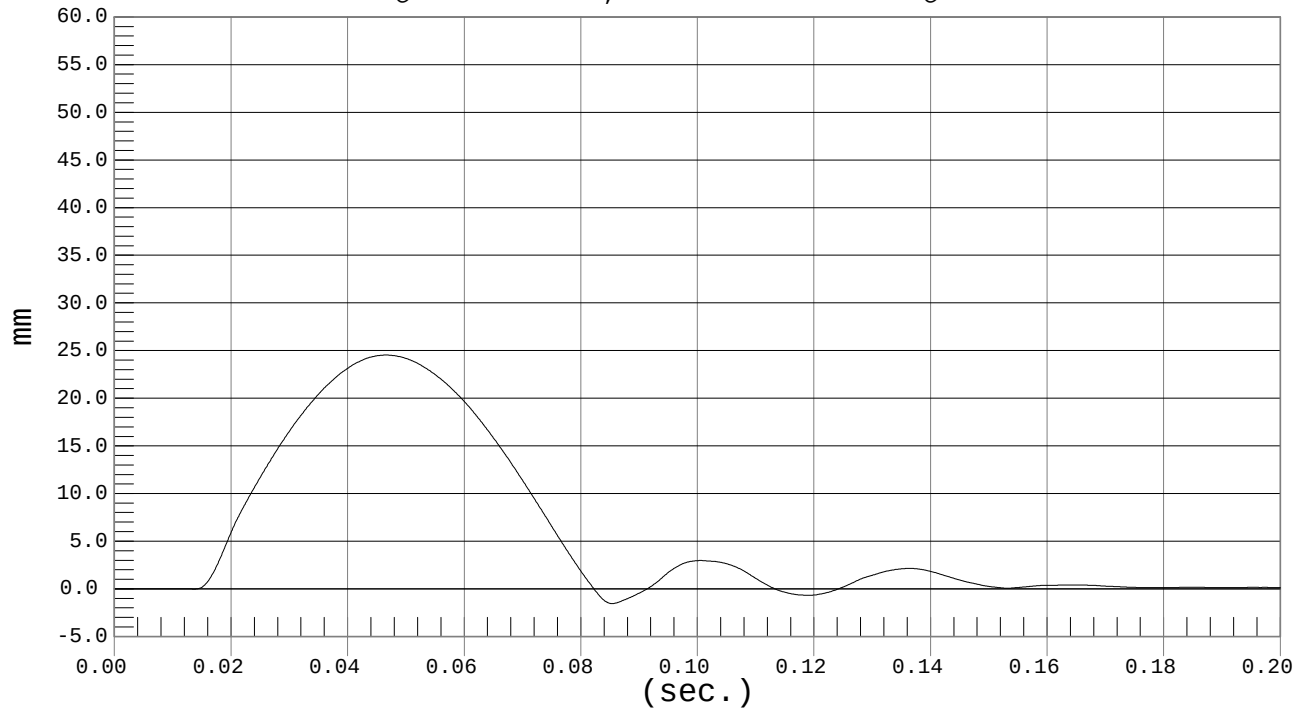


MIDDLE RIB DISPLACEMENT

Test Desc.: RIB MODULE
Component: Dummy #009

Test Date: 06-11-02
Speed: 6.6 fps, 2.00 M/s

Ymin = -1.54 mm @ 0.0853 sec., Ymax = 24.53 mm @ 0.0465 sec.

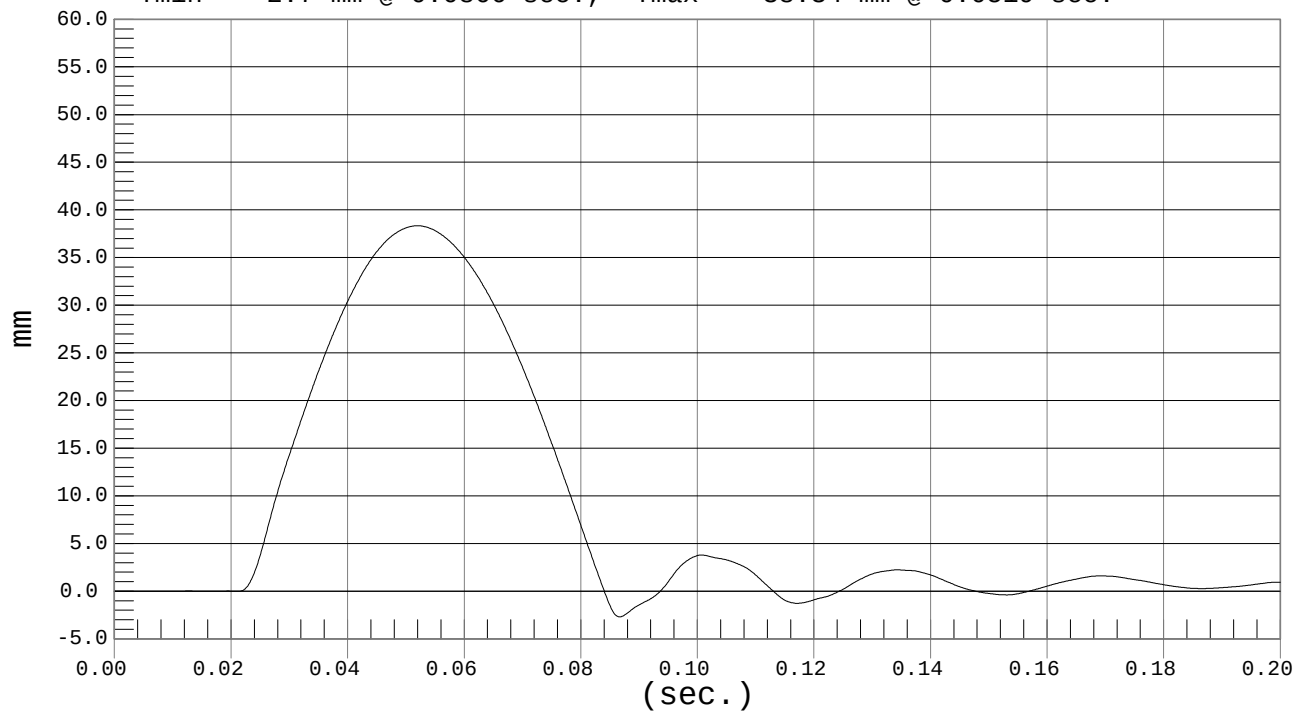


MIDDLE RIB DISPLACEMENT

Test Desc.: RIB MODULE
Component: Dummy #009

Test Date: 06-11-02
Speed: 9.8 fps, 3.00 M/s

Ymin = -2.7 mm @ 0.0866 sec., Ymax = 38.34 mm @ 0.0519 sec.



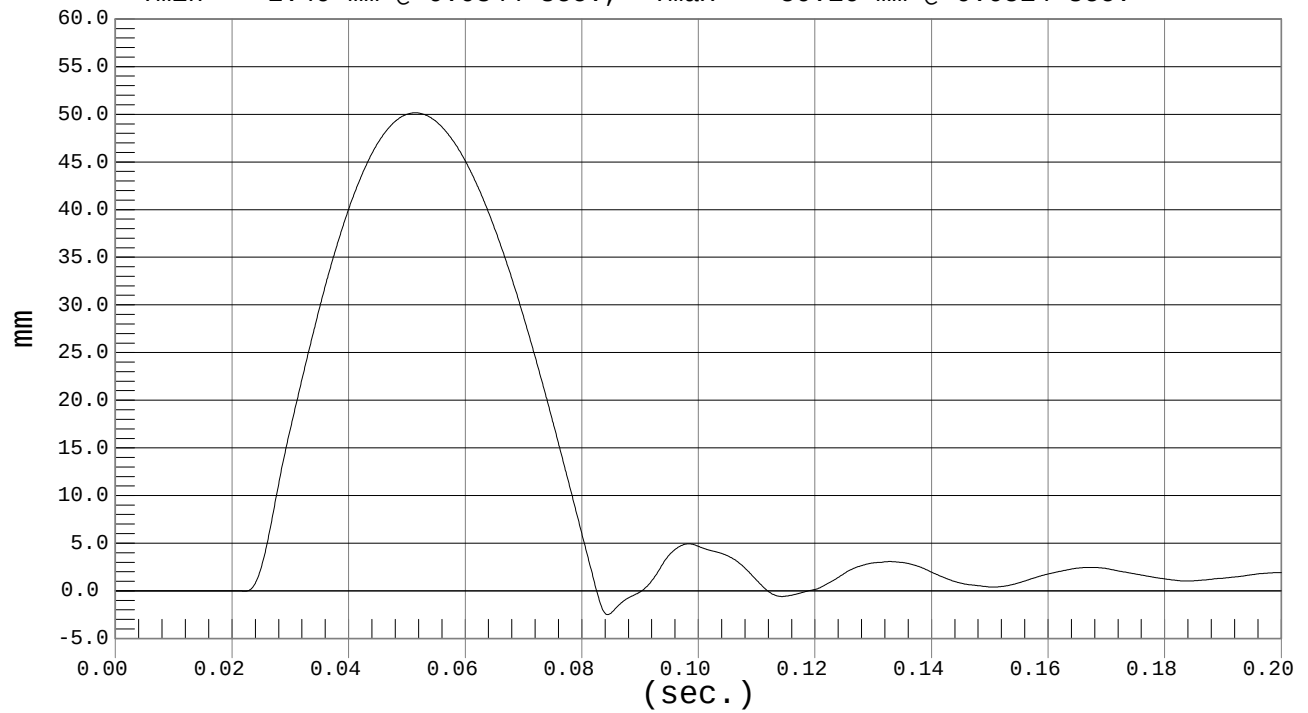


MIDDLE RIB DISPLACEMENT

Test Desc.: RIB MODULE
Component: Dummy #009

Test Date: 06-11-02
Speed: 13.1 fps, 4.00 M/s

Ymin = -2.49 mm @ 0.0844 sec., Ymax = 50.16 mm @ 0.0514 sec.



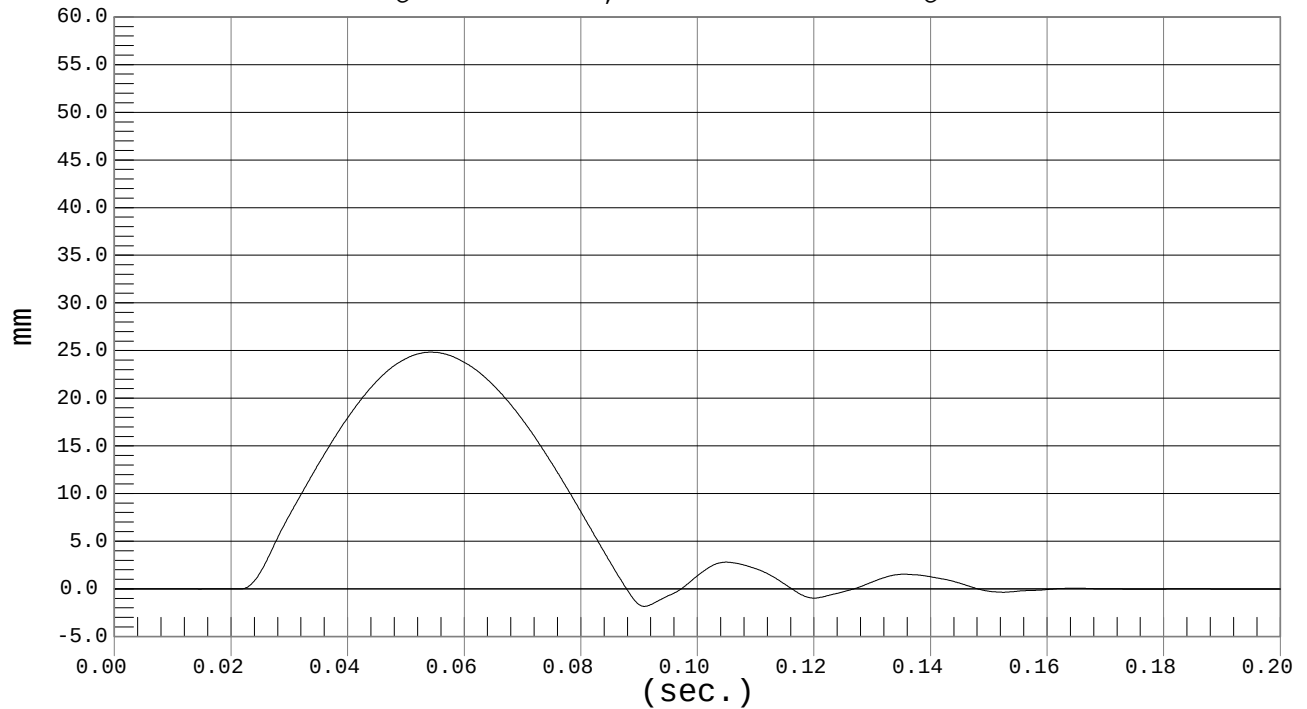


LOWER RIB DISPLACEMENT

Test Desc.: RIB MODULE
Component: Dummy #009

Test Date: 06-11-02
Speed: 6.6 fps, 2.00 M/s

Ymin = -1.84 mm @ 0.0908 sec., Ymax = 24.83 mm @ 0.0541 sec.

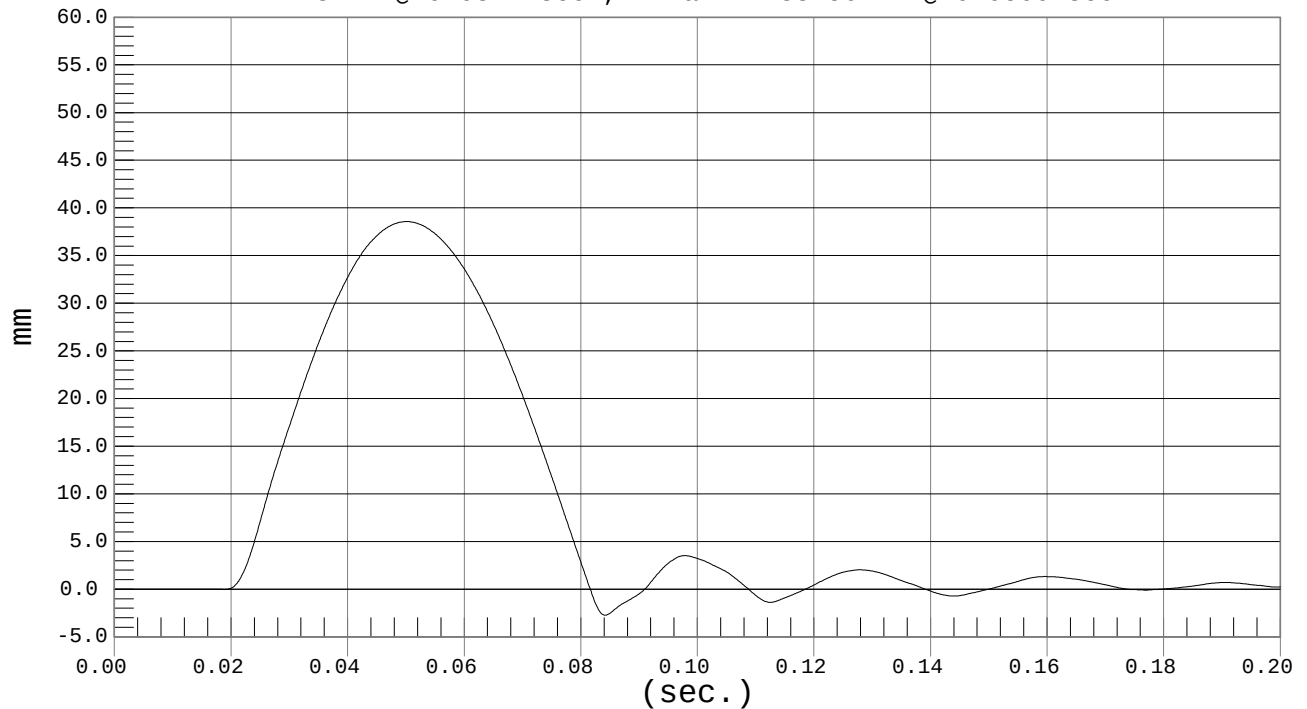


LOWER RIB DISPLACEMENT

Test Desc.: RIB MODULE
Component: Dummy #009

Test Date: 06-11-02
Speed: 9.8 fps, 3.00 M/s

Ymin = -2.73 mm @ 0.0841 sec., Ymax = 38.56 mm @ 0.0500 sec.



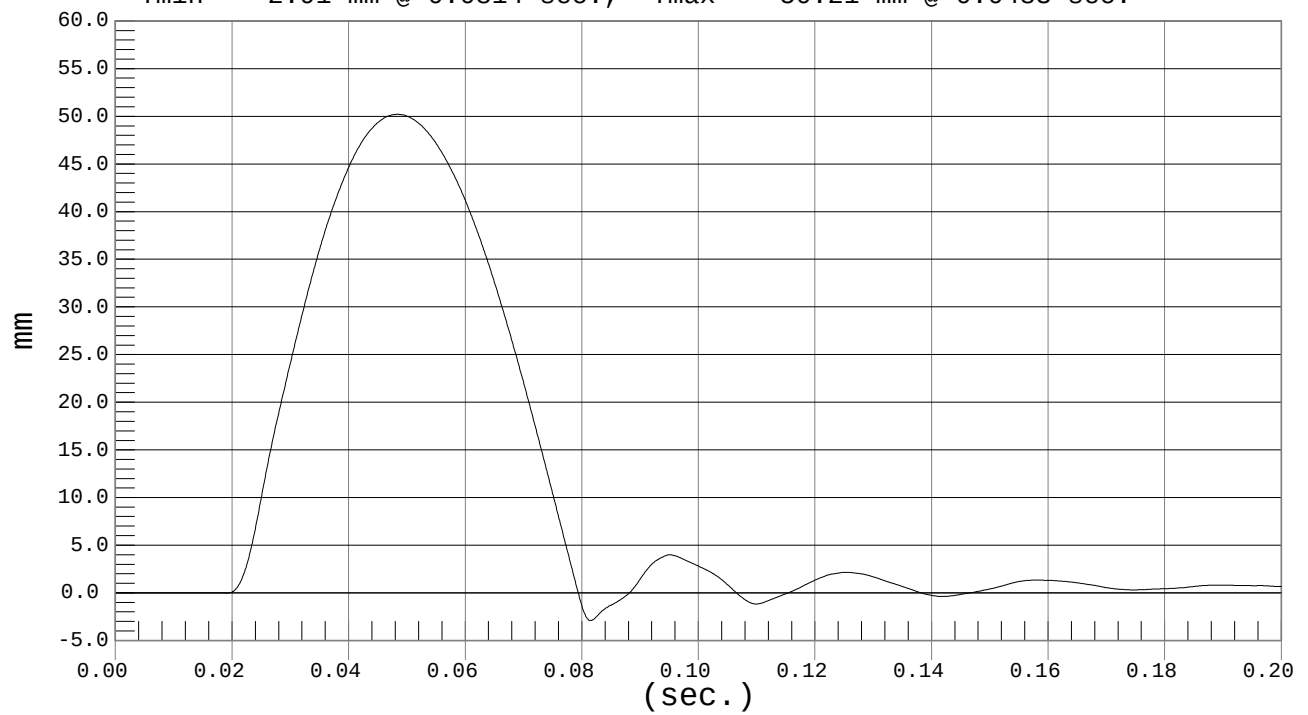


LOWER RIB DISPLACEMENT

Test Desc.: RIB MODULE
Component: Dummy #009

Test Date: 06-11-02
Speed: 13.1 fps, 4.00 M/s

Ymin = -2.91 mm @ 0.0814 sec., Ymax = 50.21 mm @ 0.0483 sec.



MGA RESEARCH CORPORATION
ABDOMEN TEST
EUROSID 2 DUMMY

Date: 6/12/02

Dummy Serial Number: 009

Test Number: D02787

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.0 – 22.0	21.2
Relative Humidity (%)	10 – 70	48
Probe Speed (m/s)	3.90 – 4.10	4.04
Maximum Impact Force	4.00 – 4.80 kN	4.73
Time of Maximum Force	10.60 – 13.00 ms	11.50
Maximum Total Abdomen Force	2.20 – 2.70 kN	2.40
Time of Max. Total Force	10.00 – 12.30 ms	11.10

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____

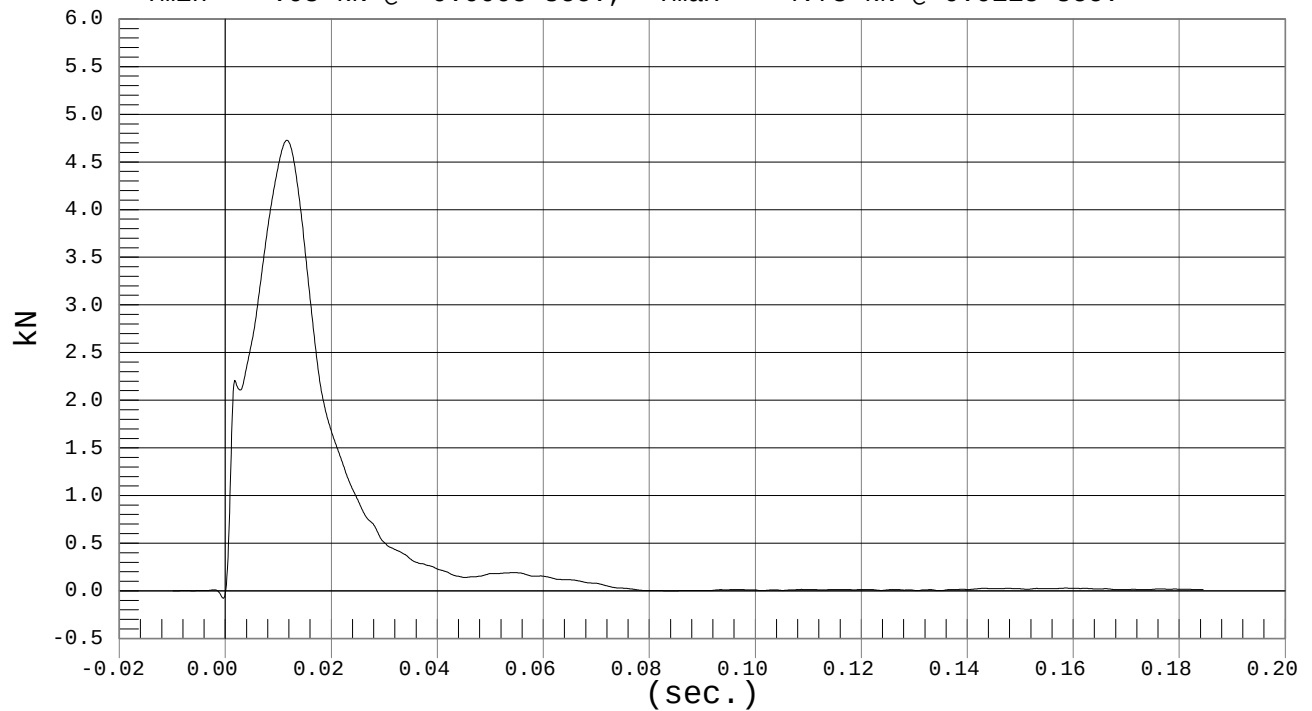


IMPACTOR FORCE

Test Desc.: Abdomen Impact
Component: Dummy #009

Test Date: 06-12-02
Speed: 13.3 fps, 4.04 M/s

Ymin = -.08 kN @ -0.0005 sec., Ymax = 4.73 kN @ 0.0115 sec.

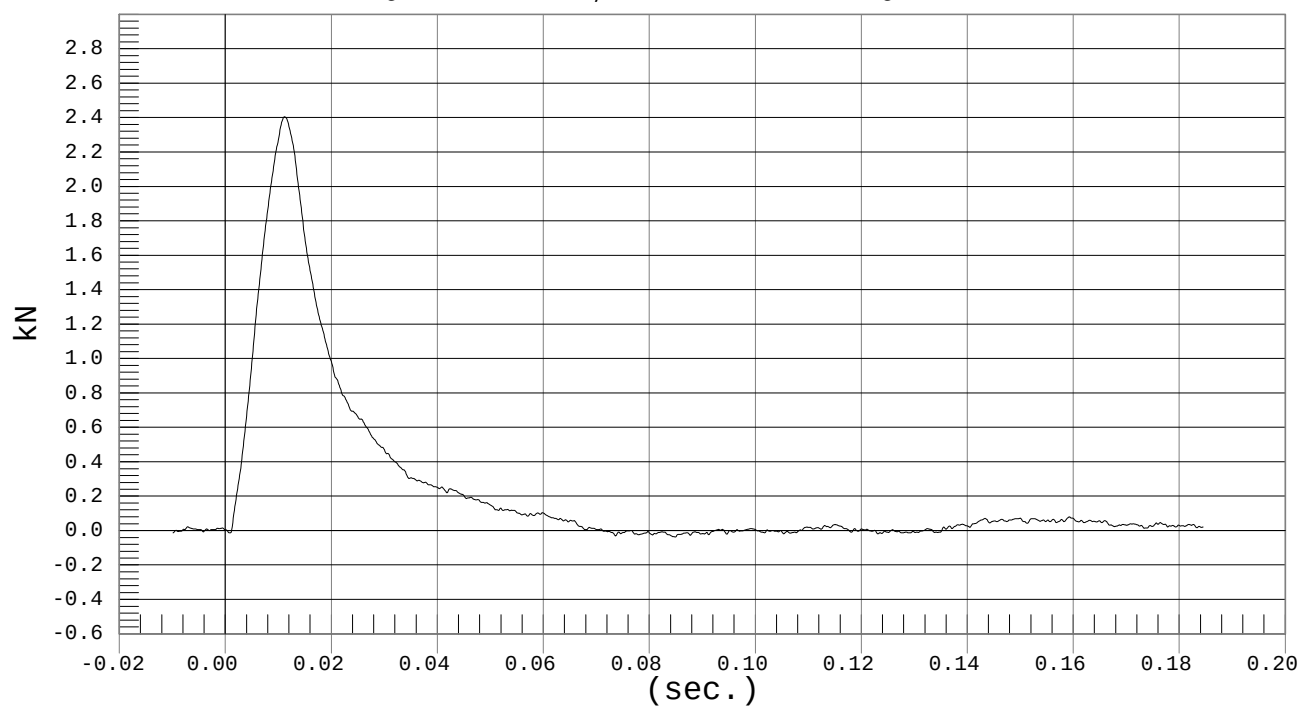


ABDOMEN FORCE

Test Desc.: Abdomen Impact
Component: Dummy #009

Test Date: 06-12-02
Speed: 13.3 fps, 4.04 M/s

Ymin = -.04 kN @ 0.0848 sec., Ymax = 2.4 kN @ 0.0111 sec.



MGA RESEARCH CORPORATION
LUMBAR SPINE TEST
EUROSID 2 DUMMY

Date: 6/12/02

Dummy Serial Number: 009

Test Number: D02788

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature (°C)		18.0 – 22.0	21.1
Relative Humidity (%)		10 – 70	47
Pendulum Speed		5.95 – 6.15	6.00
Pendulum Deceleration	10 msec	$\bar{2}.46 - \bar{1}.59$ m/sec	-1.85
	20 msec	$\bar{5}.25 - \bar{4}.07$ m/sec	-4.25
	25 msec	$\bar{6}.64 - \bar{5}.30$ m/sec	-5.32
	30 msec	≥ -6.5 m/sec	-6.15
Maximum Flexion Angle		45.0 – 55.0 deg	48.7
Time of Max. Flexion Angle		39.0 – 53.0 ms	44.1
Maximum Angle Theta (A)		31.0 – 35.0 deg	31.4
Time of Max. Theta (A)		44.0 – 52.0 ms	44.1
Maximum Angle Theta (B)		27.12– 29.62 deg	27.7
Time of Max. Theta (B)		44.0 – 52.0 ms	44.1

TEST MEETS SPECIFICATIONS

Technician: _____

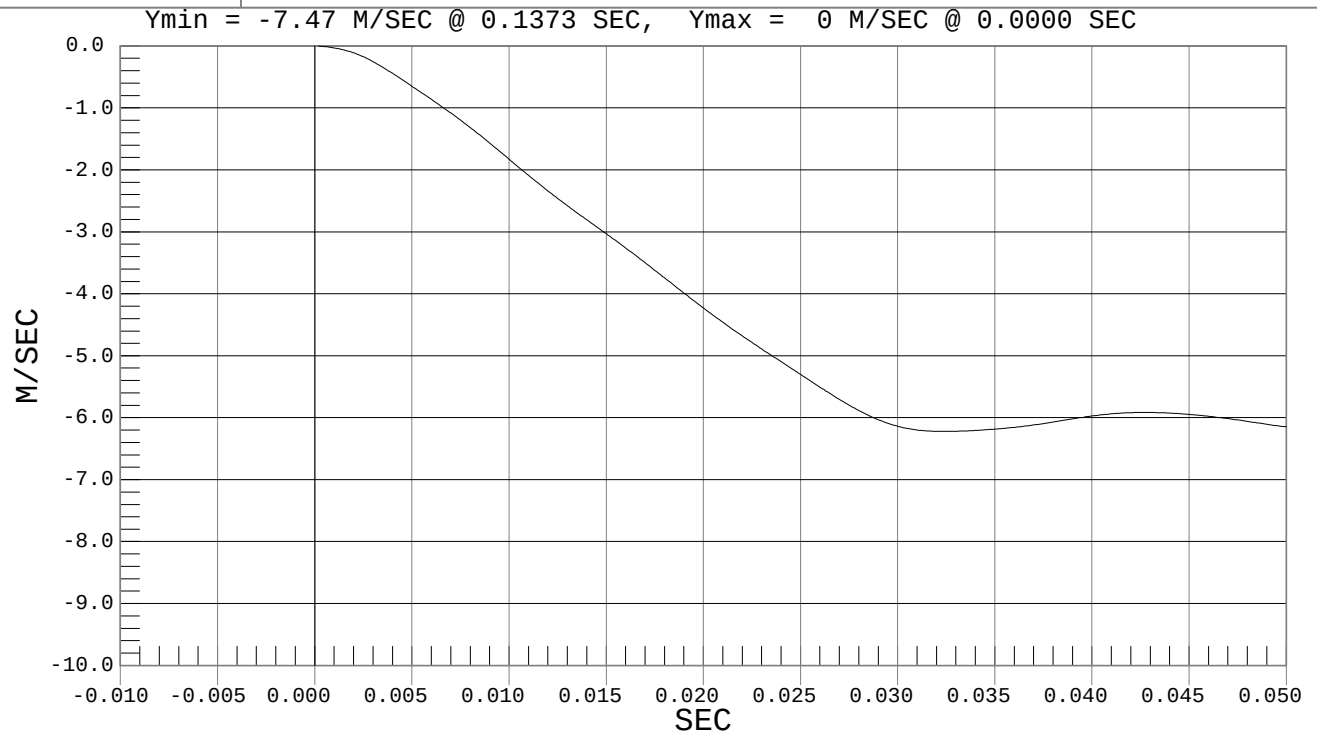
Approved By: _____



PENDULUM DECELERATION

Test Desc.: Lumbar Flexion
Component: Dummy #009

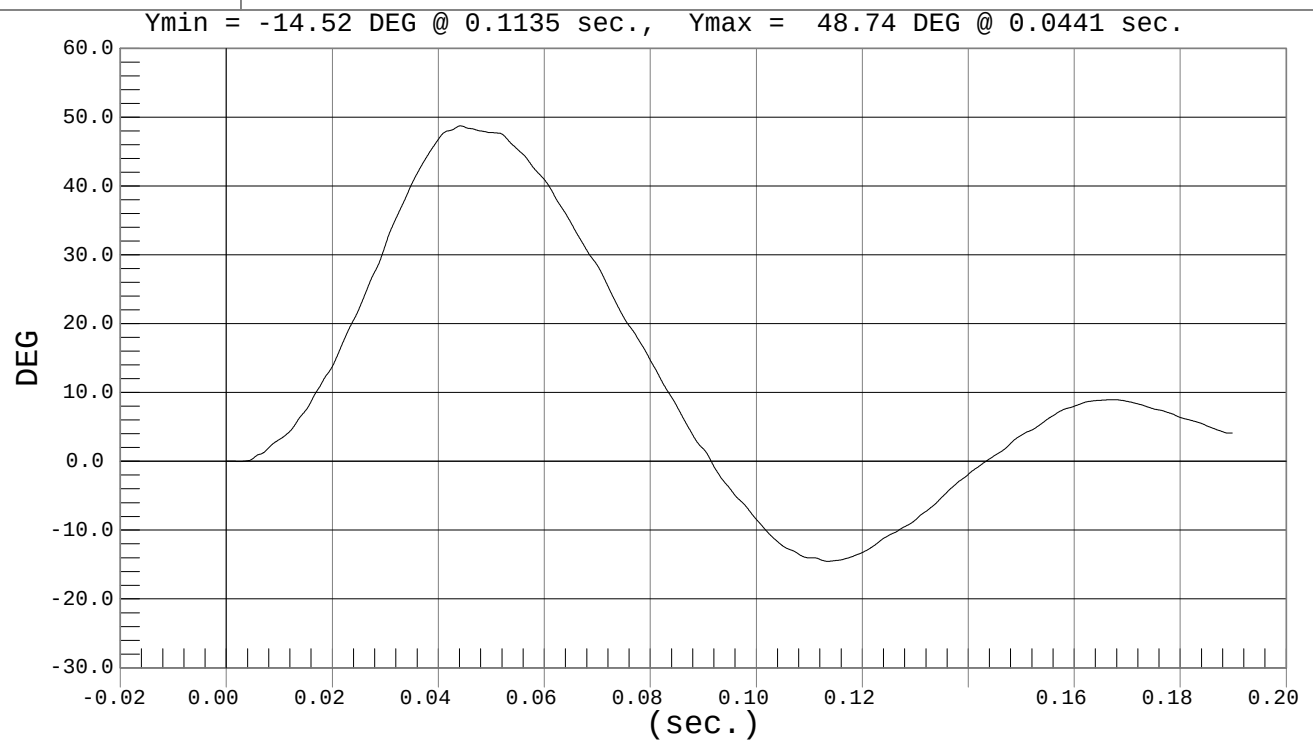
Test Date: 06-12-02
Speed: 19.7 fps, 6.00 M/s



FLEXION ANGLE

Test Desc.: Lumbar Flexion
Component: Dummy #009

Test Date: 06-12-02
Speed: 19.7 fps, 6.00 M/s



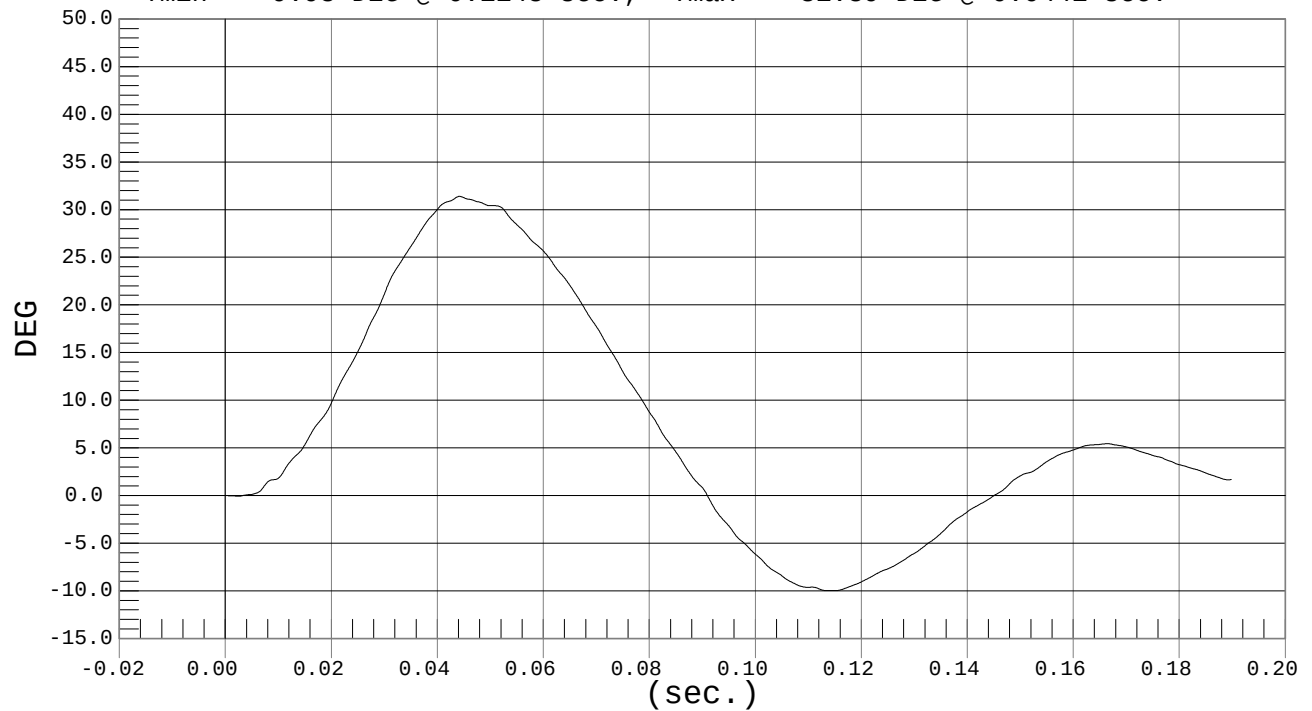


Test Desc.: Lumbar Flexion
Component: Dummy #009

THETA A

Test Date: 06-12-02
Speed: 19.7 fps, 6.00 M/s

Ymin = -9.98 DEG @ 0.1148 sec., Ymax = 31.39 DEG @ 0.0441 sec.

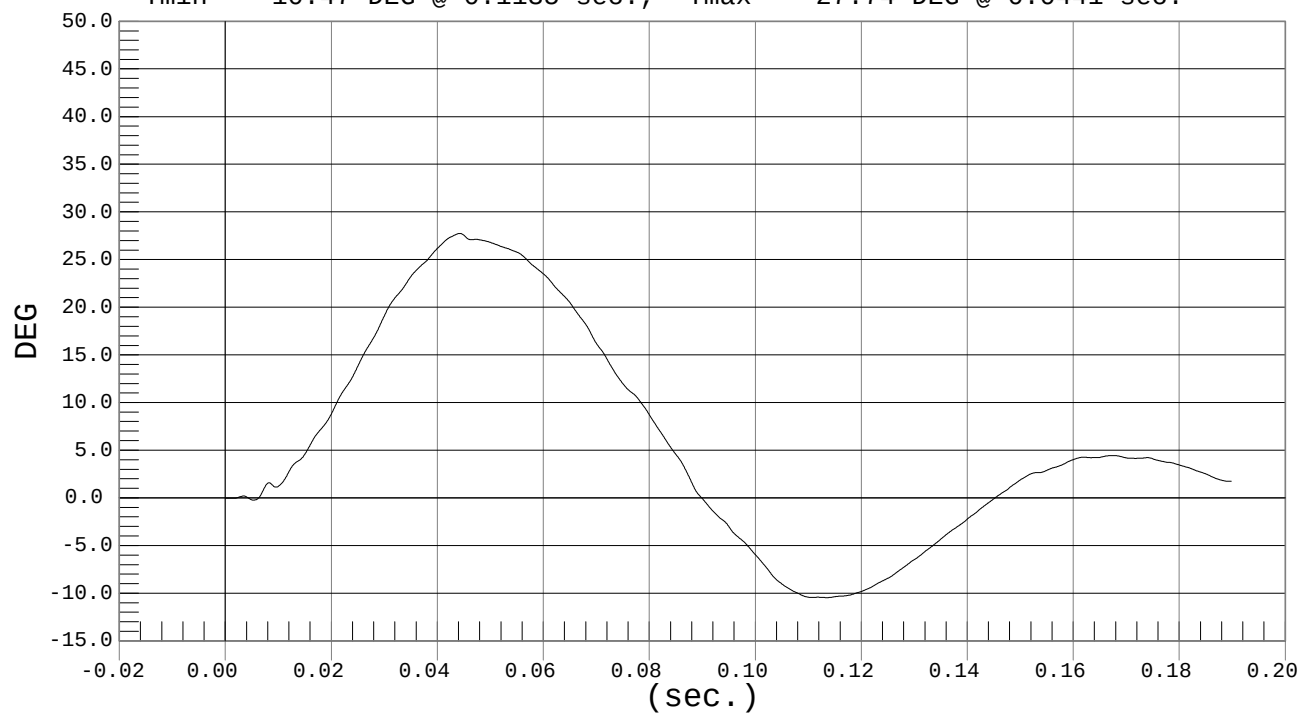


Test Desc.: Lumbar Flexion
Component: Dummy #009

THETA B

Test Date: 06-12-02
Speed: 19.7 fps, 6.00 M/s

Ymin = -10.47 DEG @ 0.1135 sec., Ymax = 27.74 DEG @ 0.0441 sec.



MGA RESEARCH CORPORATION
PELVIS TEST
EUROSID 2 DUMMY

Date: 6/12/02

Dummy Serial Number: 009

Test Number: D02789

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.0 – 22.0	21.1
Relative Humidity (%)	10 – 70	47
Pendulum Speed	6.20 – 6.30 m/s	6.27
Maximum Impactor Force	9.80 – 12.20 kN	10.61
Time of Max. Impactor Force	9.50 – 12.50 ms	11.00
Maximum Pubic Force	2.65 – 3.35 kN	3.14
Time of Max. Pubic Force	10.00 – 13.00 ms	11.20

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____

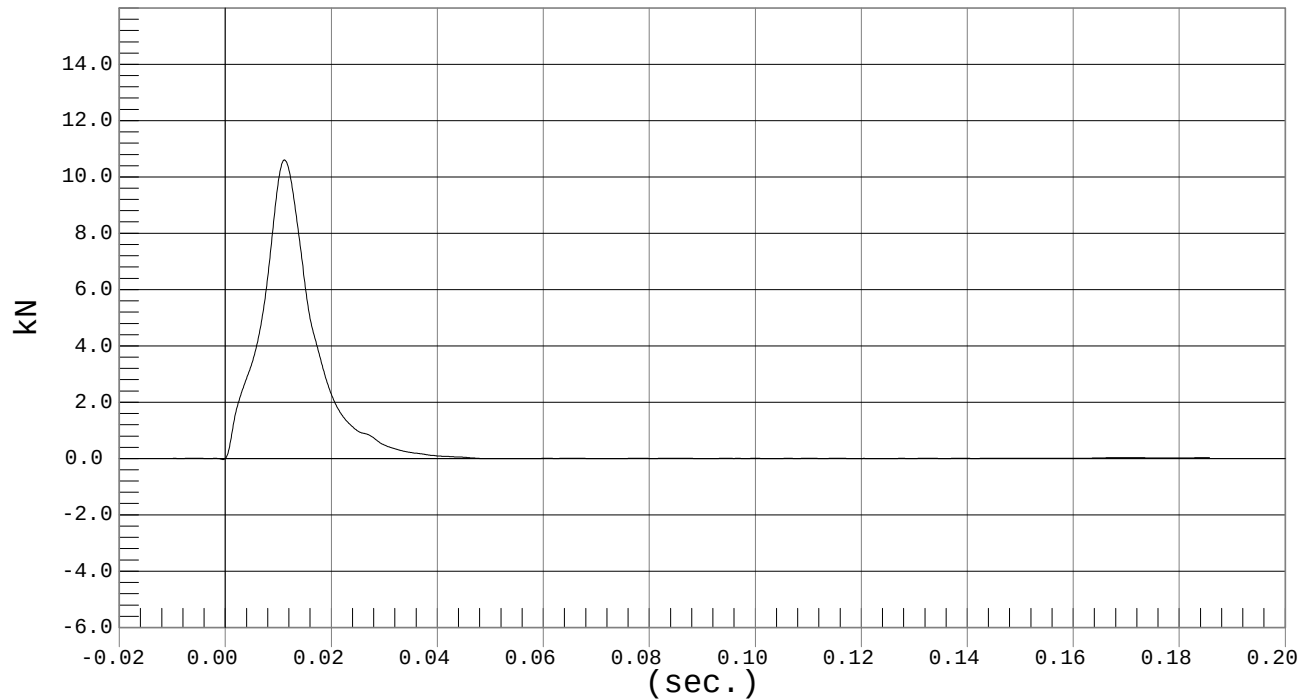


IMPACTOR FORCE

Test Desc.: Pelvis Impact
Component: Dummy #009

Test Date: 06-12-02
Speed: 20.6 fps, 6.27 M/s

Ymin = -.03 kN @ -0.0005 sec., Ymax = 10.61 kN @ 0.0110 sec.

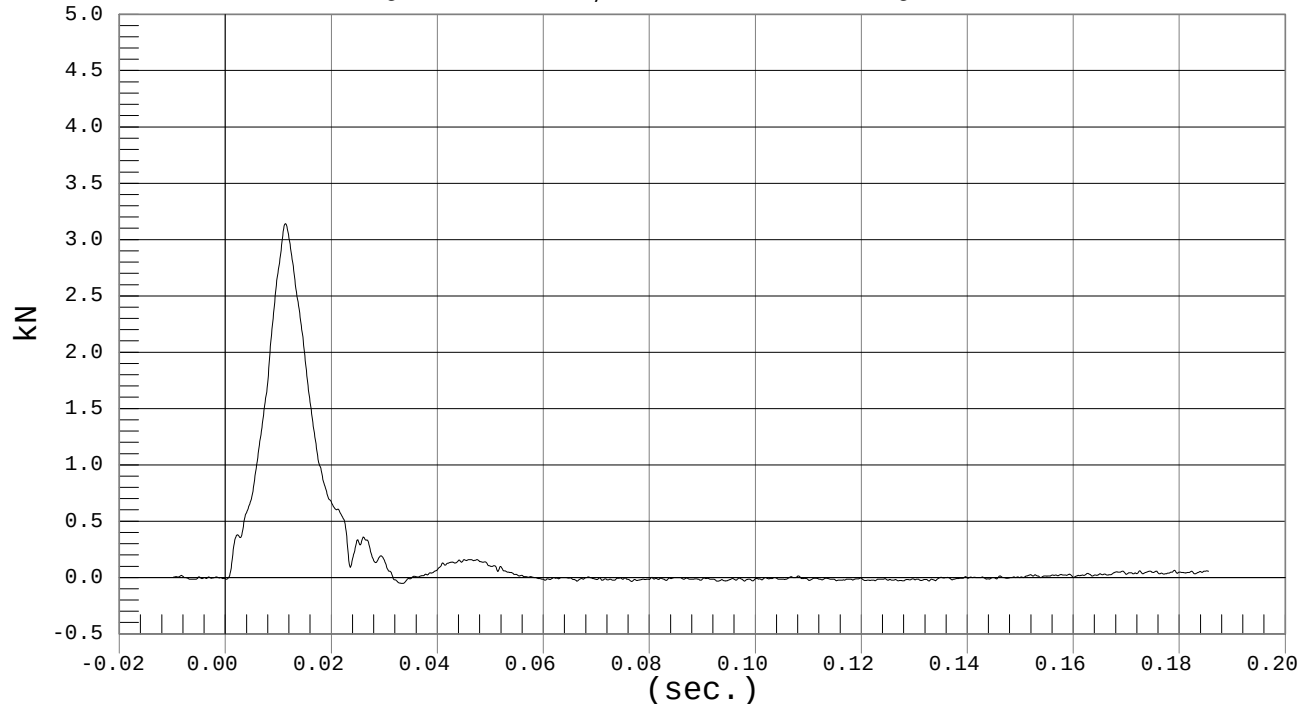


PUBIC FORCE

Test Desc.: Pelvis Impact
Component: Dummy #009

Test Date: 06-12-02
Speed: 20.6 fps, 6.27 M/s

Ymin = -.05 kN @ 0.0333 sec., Ymax = 3.14 kN @ 0.0112 sec.



CERTIFICATION DATA

Dummy Serial Number: 009

Calibration Test Results Summary

Dummy Serial Number: 009

Post-Test Calibration

Head Drop Test:	The head passed all drop test requirements.
Neck Pendulum Test:	The neck passed all impact test requirements.
Shoulder Impact Test:	The shoulder passed all impact test requirements.
Rib Tests:	All ribs passed all impact test requirements.
Abdomen Test:	The abdomen passed all impact test requirements.
Lumbar Spine Test:	The lumbar spine passed all impact test requirements.
Pelvis Test:	The pelvis passed all impact test requirements.

MGA RESEARCH CORPORATION
HEAD DROP TEST
EUROSID 2 DUMMY

Date: 6/18/02

Dummy Serial Number: 009

Test Number: D02811

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.0 – 22.0	21.1
Relative Humidity (%)	10 – 70	50
Peak Resultant Acceleration	100 – 150 g's	145
Time of Max. Res. Acceleration	msec	23.7

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____

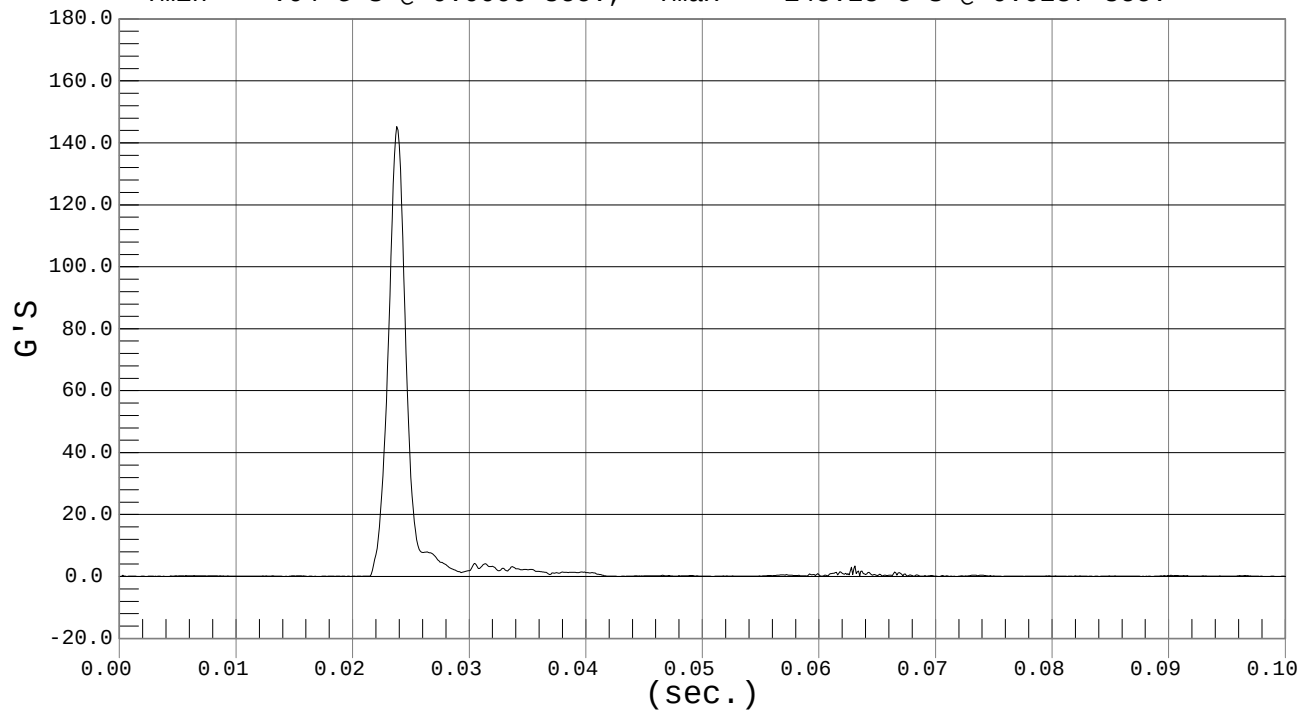


PEAK RESULTANT ACCELERATION

Test Desc.: Head Drop
Component: Dummy #009

Test Date: 06-18-02
Speed: 0.0 fps, 0.00 M/s

Ymin = .04 G'S @ 0.0000 sec., Ymax = 145.25 G'S @ 0.0237 sec.



MGA RESEARCH CORPORATION
NECK PENDULUM TEST
EUROSID 2 DUMMY

Date: 6/18/02

Dummy Serial Number: 009

Test Number: D02812

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature (°C)		18.0 – 22.0	21.7
Relative Humidity (%)		10 – 70	55
Pendulum Speed		3.3 - 3.5	3.4
Pendulum Deceleration	3 msec	~.25 - ~.53 m/sec	-.32
	8 msec	~1.59 - ~2.04 m/sec	-1.71
	14 msec	~3.20 - ~3.85 m/sec	-3.38
Maximum Flexion Angle		49.0 – 59.0 deg	54.1
Time of Max. Flexion Angle		54.0 – 66.0 ms	57.3
Maximum Angle Theta (A)		32.0 – 37.0 deg	33.5
Time of Max. Theta (A)		53.0 – 63.0 ms	57.0
Maximum Angle Theta (B)		28.89 – 31.39 deg	29.69
Time of Max. Theta (B)		54.0 – 64.0 ms	57.6

TEST MEETS SPECIFICATIONS

Technician: _____

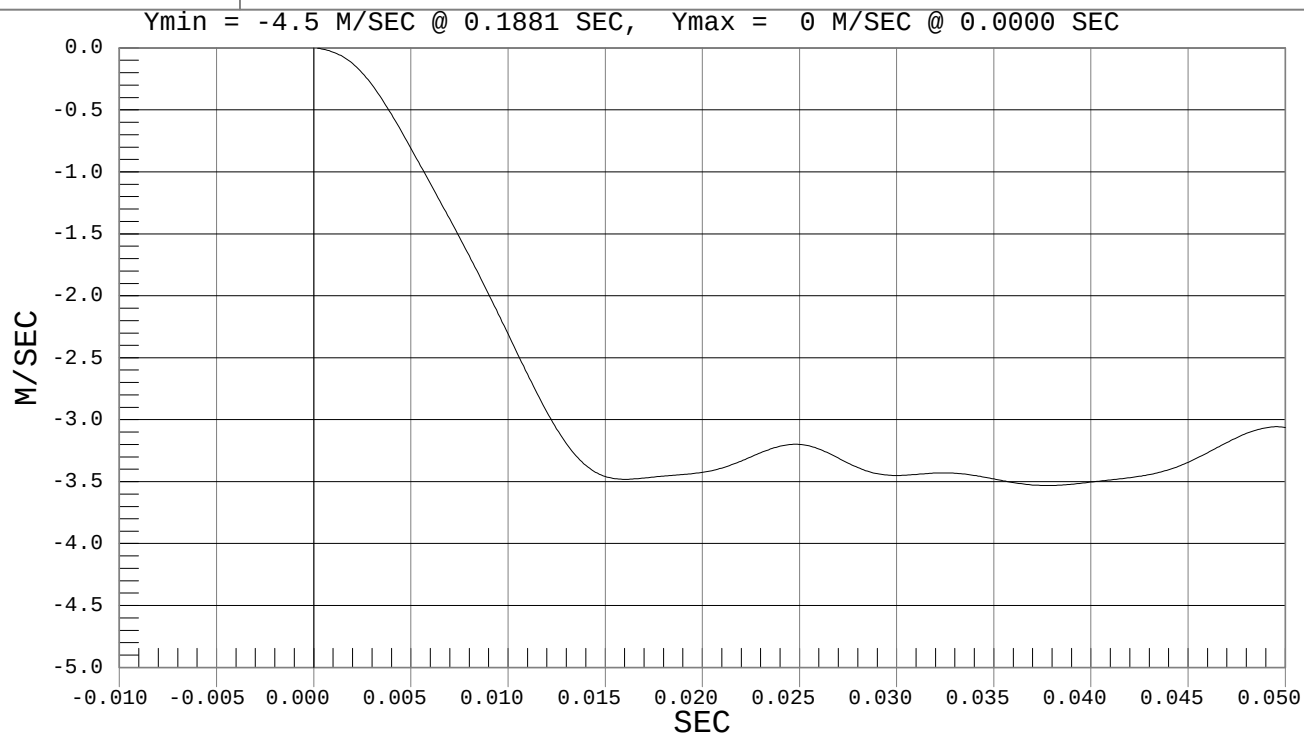
Approved By: _____



PENDULUM DECELERATION

Test Desc.: Neck Bending
Component: Dummy #009

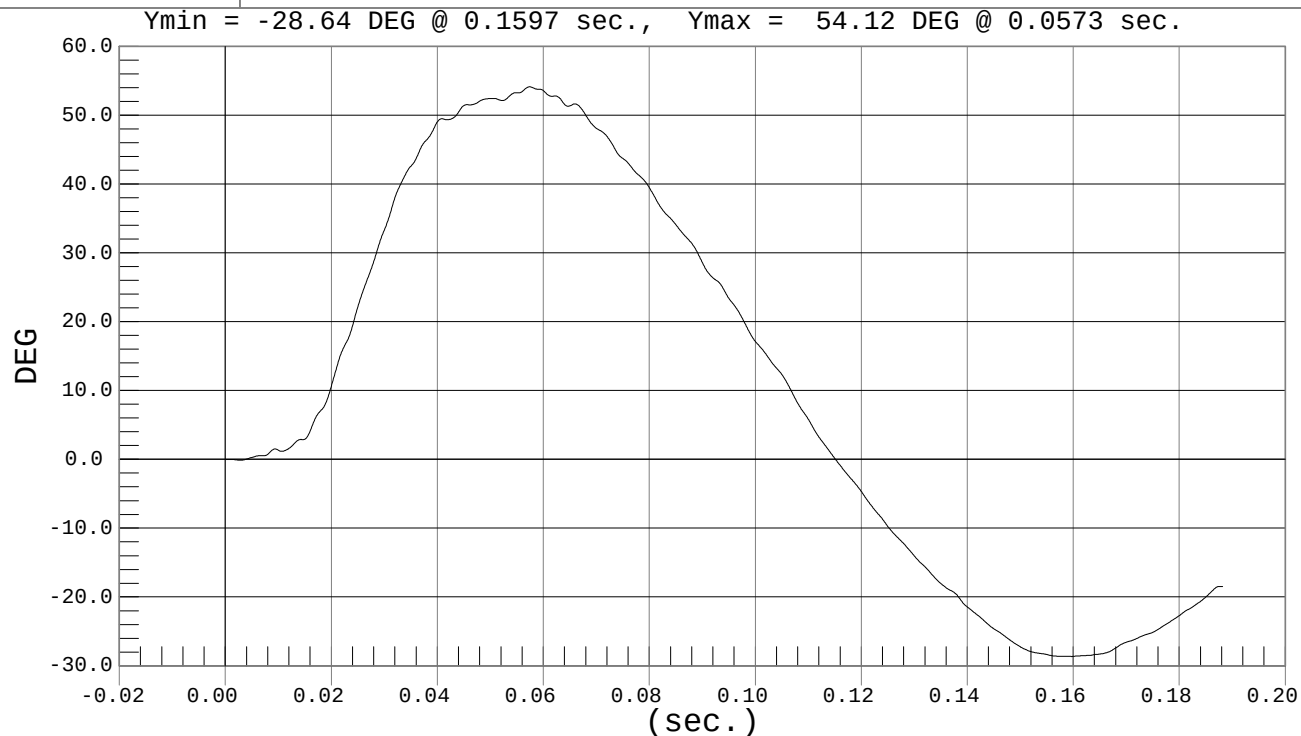
Test Date: 06-18-02
Speed: 11.1 fps, 3.38 M/s



FLEXION ANGLE

Test Desc.: Neck Bending
Component: Dummy #009

Test Date: 06-18-02
Speed: 11.1 fps, 3.38 M/s



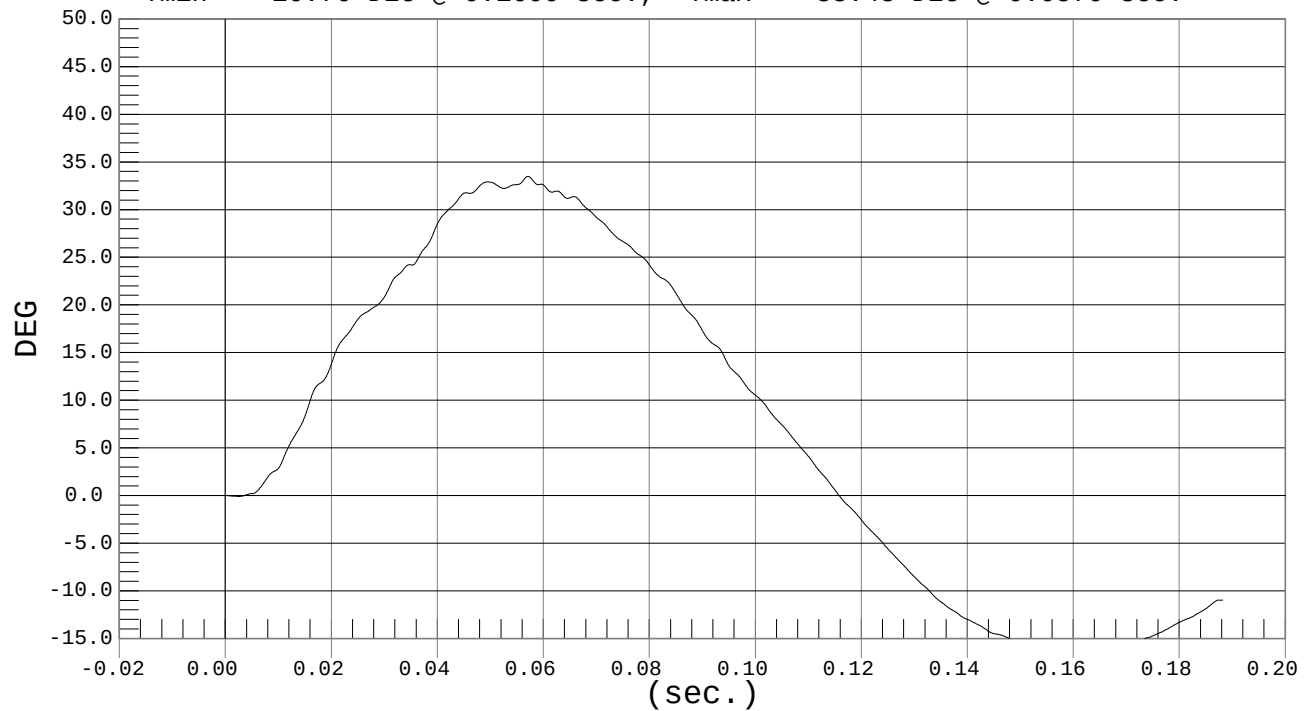


Test Desc.: Neck Bending
Component: Dummy #009

THETA A

Test Date: 06-18-02
Speed: 11.1 fps, 3.38 M/s

Ymin = -16.76 DEG @ 0.1600 sec., Ymax = 33.48 DEG @ 0.0570 sec.

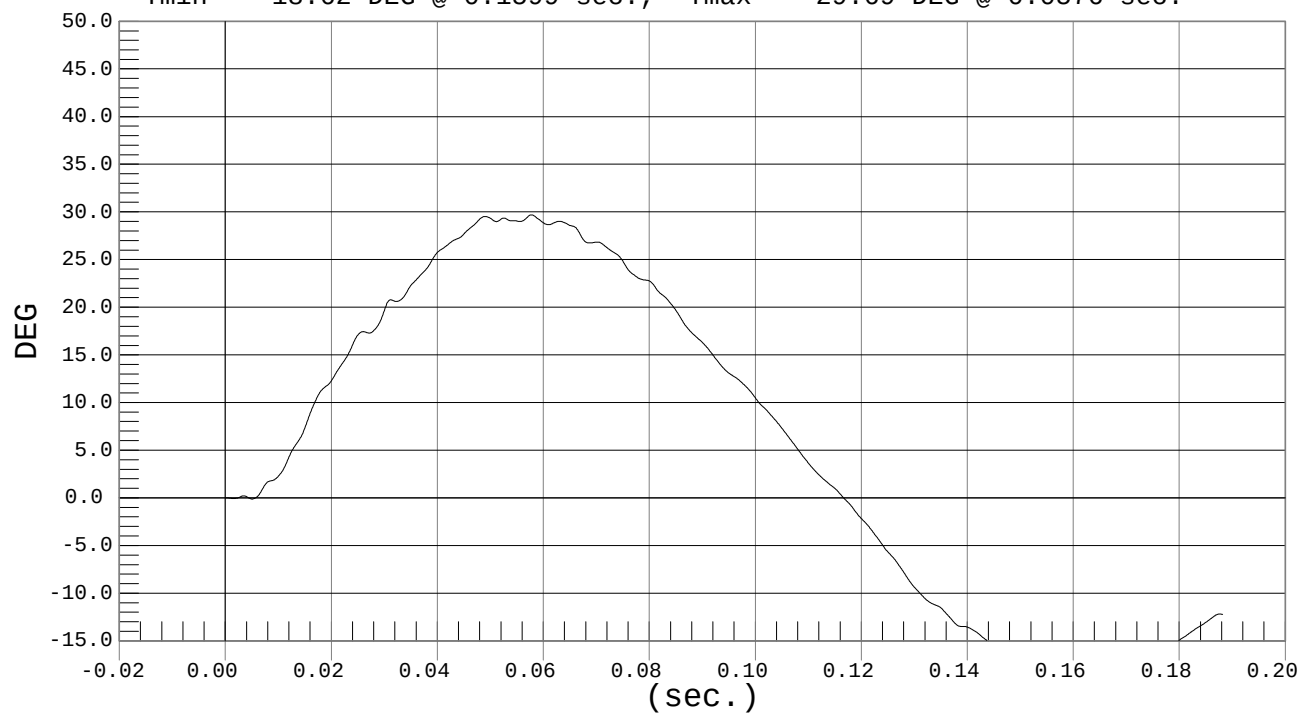


Test Desc.: Neck Bending
Component: Dummy #009

THETA B

Test Date: 06-18-02
Speed: 11.1 fps, 3.38 M/s

Ymin = -18.62 DEG @ 0.1599 sec., Ymax = 29.69 DEG @ 0.0576 sec.



MGA RESEARCH CORPORATION
SHOULDER IMPACT TEST
EUROSID 2 DUMMY

Date: 6/19/02

Dummy Serial Number: 009

Test Number: D02813

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.0 – 22.0	21.1
Relative Humidity (%)	10 – 70	51
Pendulum Speed	4.2 – 4.4 m/s	4.3
Max. Resultant Acceleration	7.5 – 10.5 g's	10.3
Time of Max. Pendulum Acceleration	msec	25.1

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____

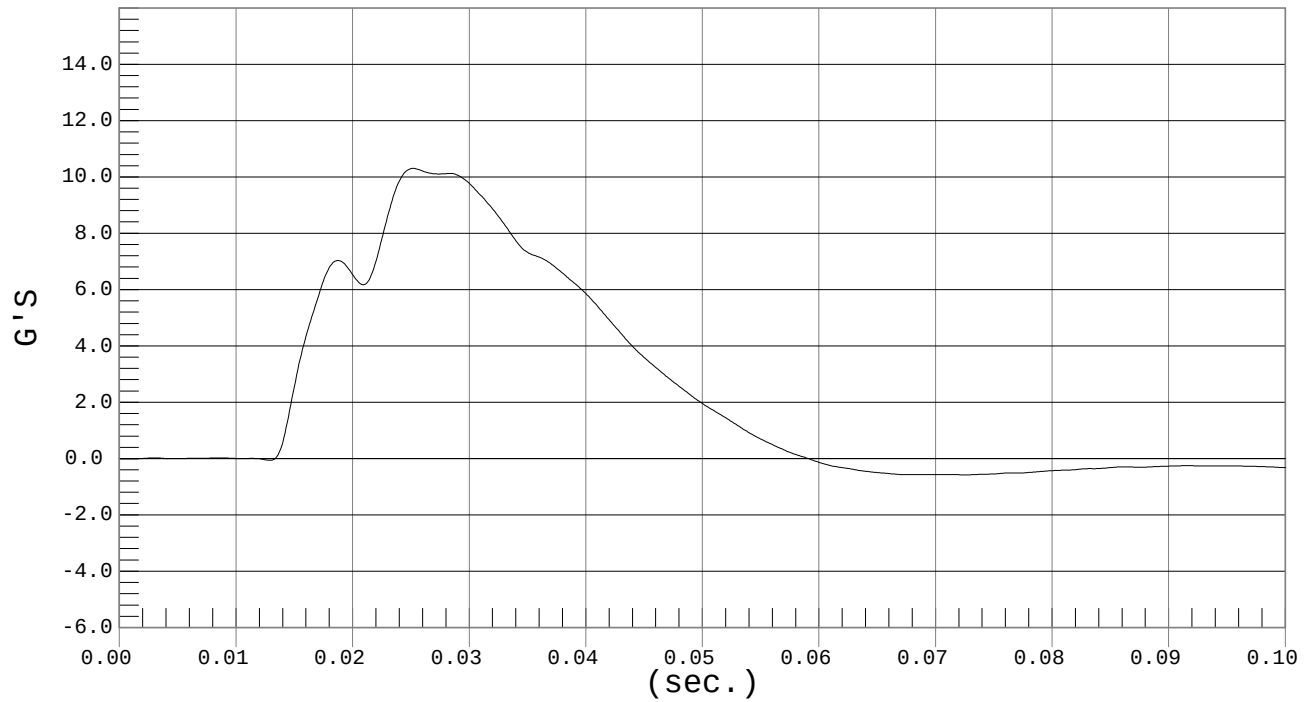


SHOULDER ACCELERATION

Test Desc.: Shoulder Impact
Component: Dummy #009

Test Date: 06-19-02
Speed: 14.1 fps, 4.29 M/s

Ymin = -.58 G'S @ 0.0725 sec., Ymax = 10.3 G'S @ 0.0251 sec.



MGA RESEARCH CORPORATION
UPPER/MIDDLE/LOWER RIB TESTS
EUROSID 2 DUMMY

Date: 6/14/02
Dummy Serial Number: 009
Test Number: D02814/5/6

UPPER RIB - TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.9 – 25.5	21.9
Relative Humidity (%)	10 – 70	50
Displacement at 2 m/s	23.5 – 27.5 mm	24.9
Displacement at 3 m/s	36.0 – 40.0 mm	39
Displacement at 4 m/s	46.0 – 51.0 mm	50.4

MIDDLE RIB - TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.9 – 25.5	21.9
Relative Humidity (%)	10 – 70	50
Displacement at 2 m/s	23.5 – 27.5 mm	25.4
Displacement at 3 m/s	36.0 – 40.0 mm	38.6
Displacement at 4 m/s	46.0 – 51.0 mm	50.6

LOWER RIB - TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.9 – 25.5	21.9
Relative Humidity (%)	10 – 70	50
Displacement at 2 m/s	23.5 – 27.5 mm	25.3
Displacement at 3 m/s	36.0 – 40.0 mm	38.4
Displacement at 4 m/s	46.0 – 51.0 mm	50.5

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____

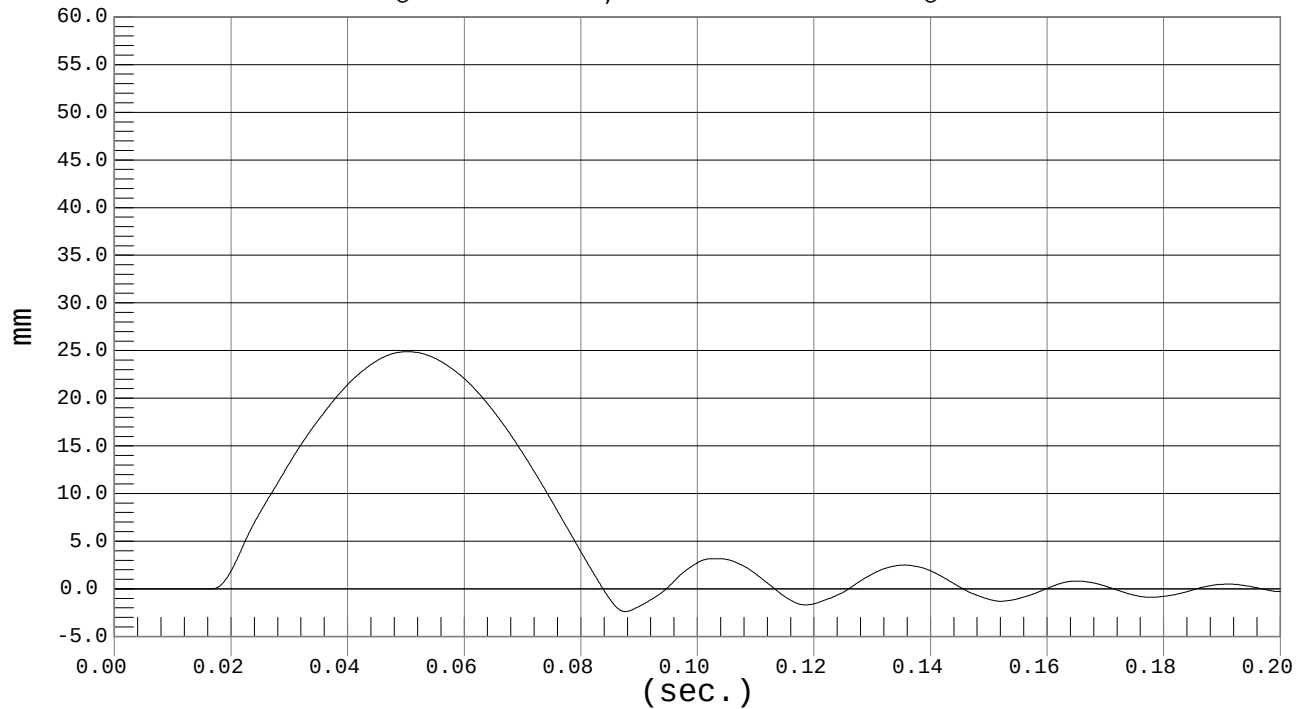


UPPER RIB DISPLACEMENT

Test Desc.: RIB MODULE
Component: Dummy #009

Test Date: 06-14-02
Speed: 6.6 fps, 2.00 M/s

Ymin = -2.38 mm @ 0.0875 sec., Ymax = 24.88 mm @ 0.0501 sec.

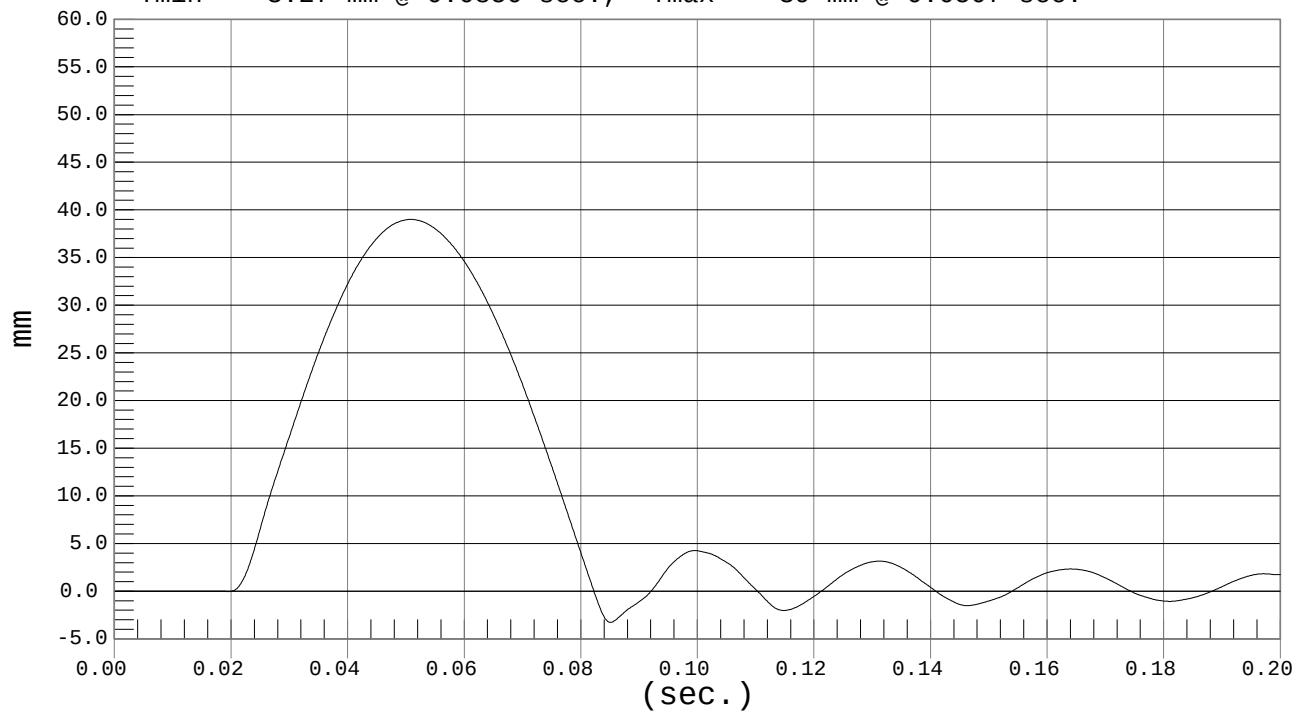


UPPER RIB DISPLACEMENT

Test Desc.: RIB MODULE
Component: Dummy #009

Test Date: 06-14-02
Speed: 9.8 fps, 3.00 M/s

Ymin = -3.27 mm @ 0.0850 sec., Ymax = 39 mm @ 0.0507 sec.



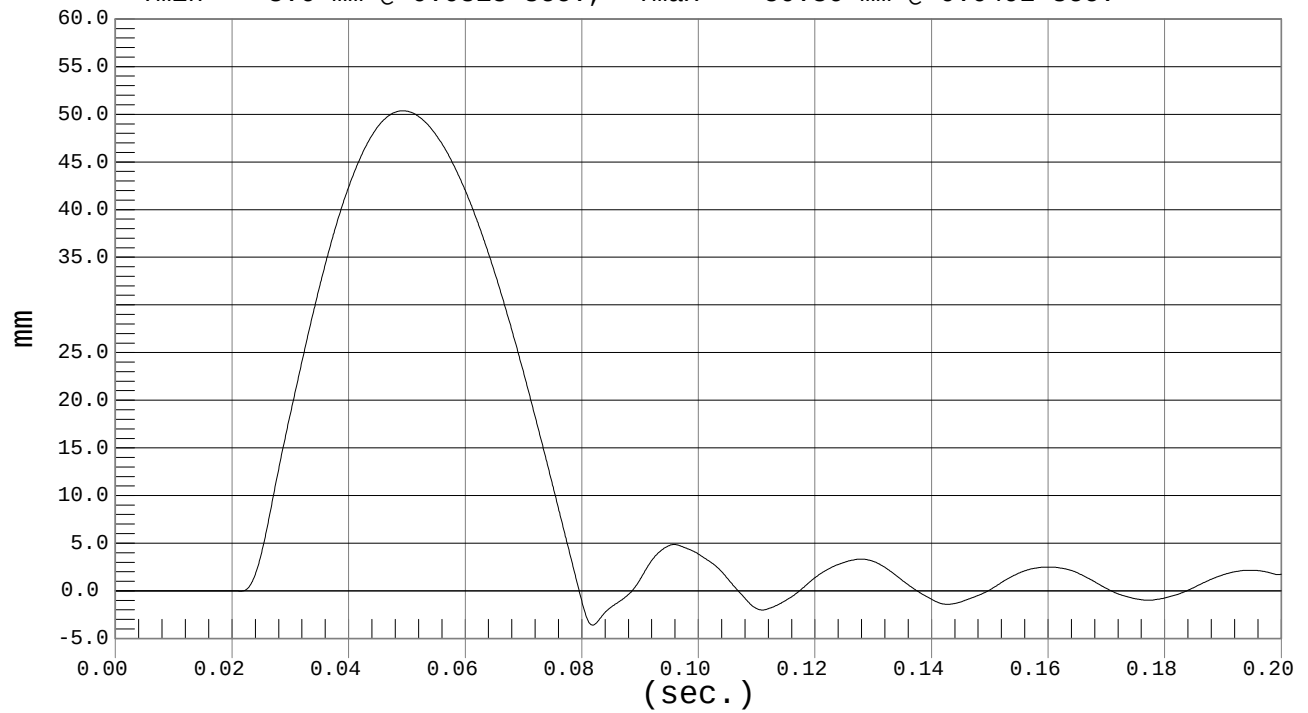


UPPER RIB DISPLACEMENT

Test Desc.: RIB MODULE
Component: Dummy #009

Test Date: 06-14-02
Speed: 13.1 fps, 4.00 M/s

Ymin = -3.6 mm @ 0.0818 sec., Ymax = 50.36 mm @ 0.0492 sec.



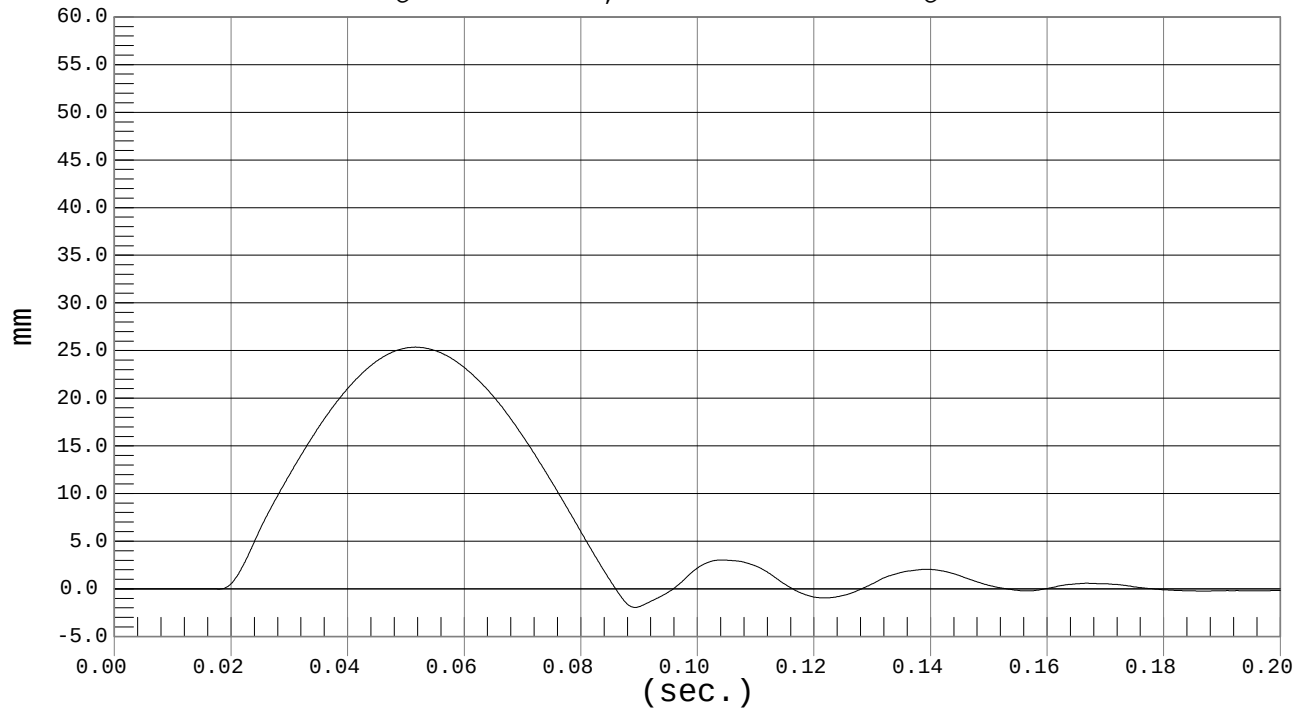


MIDDLE RIB DISPLACEMENT

Test Desc.: RIB MODULE
Component: Dummy #009

Test Date: 06-14-02
Speed: 6.6 fps, 2.00 M/s

Ymin = -1.95 mm @ 0.0892 sec., Ymax = 25.36 mm @ 0.0515 sec.

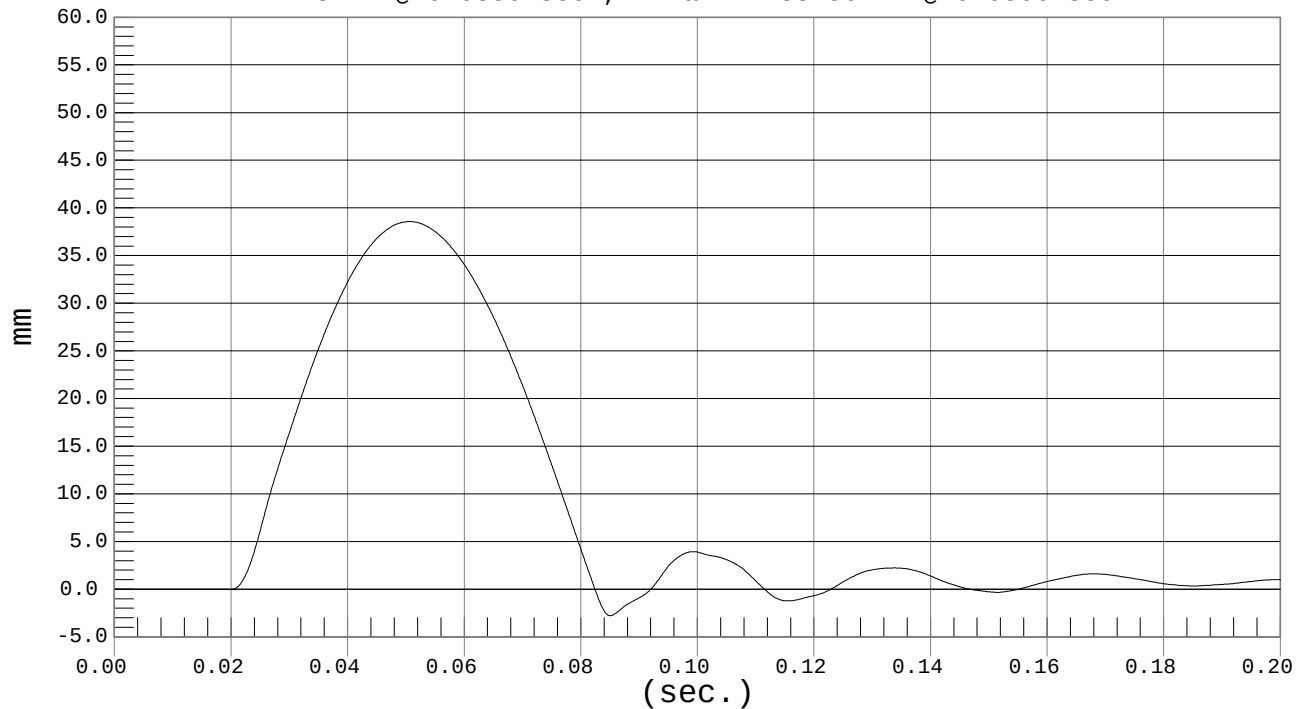


MIDDLE RIB DISPLACEMENT

Test Desc.: RIB MODULE
Component: Dummy #009

Test Date: 06-14-02
Speed: 9.8 fps, 3.00 M/s

Ymin = -2.78 mm @ 0.0850 sec., Ymax = 38.56 mm @ 0.0506 sec.



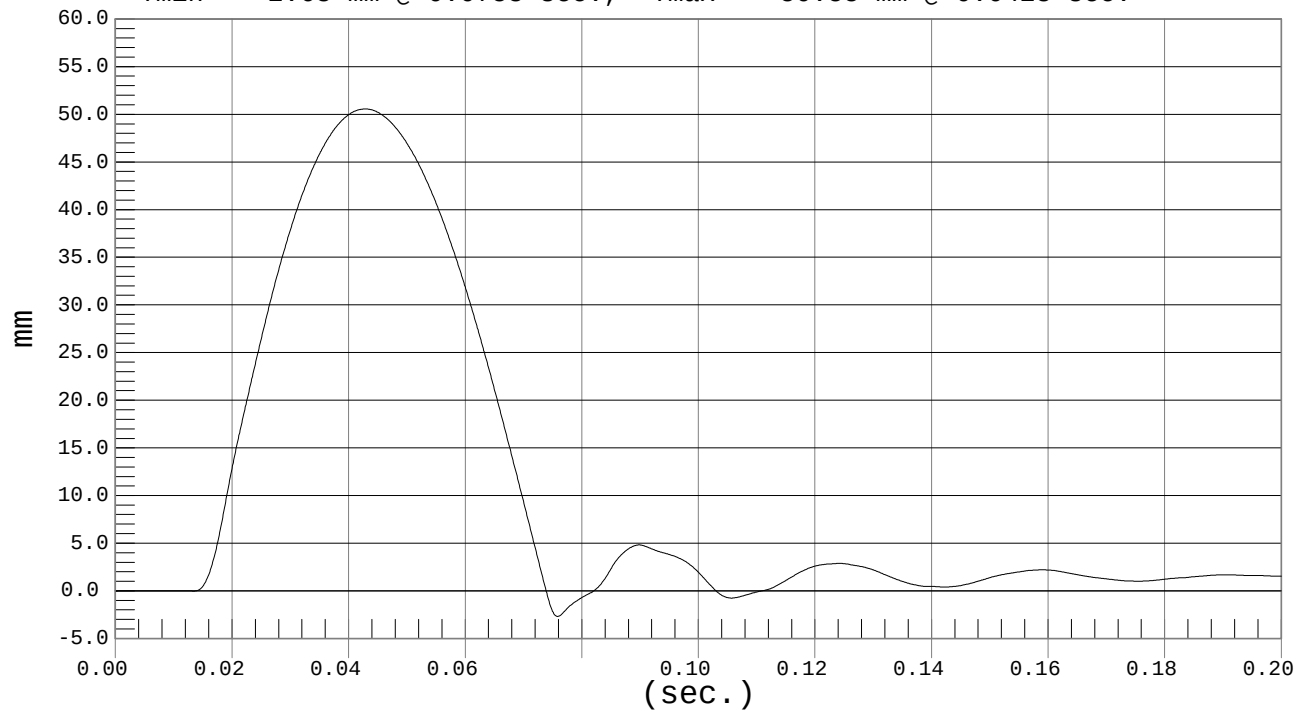


MIDDLE RIB DISPLACEMENT

Test Desc.: Rib Module
Component: Dummy #009

Test Date: 06-14-02
Speed: 13.1 fps, 4.00 M/s

Ymin = -2.68 mm @ 0.0758 sec., Ymax = 50.55 mm @ 0.0428 sec.



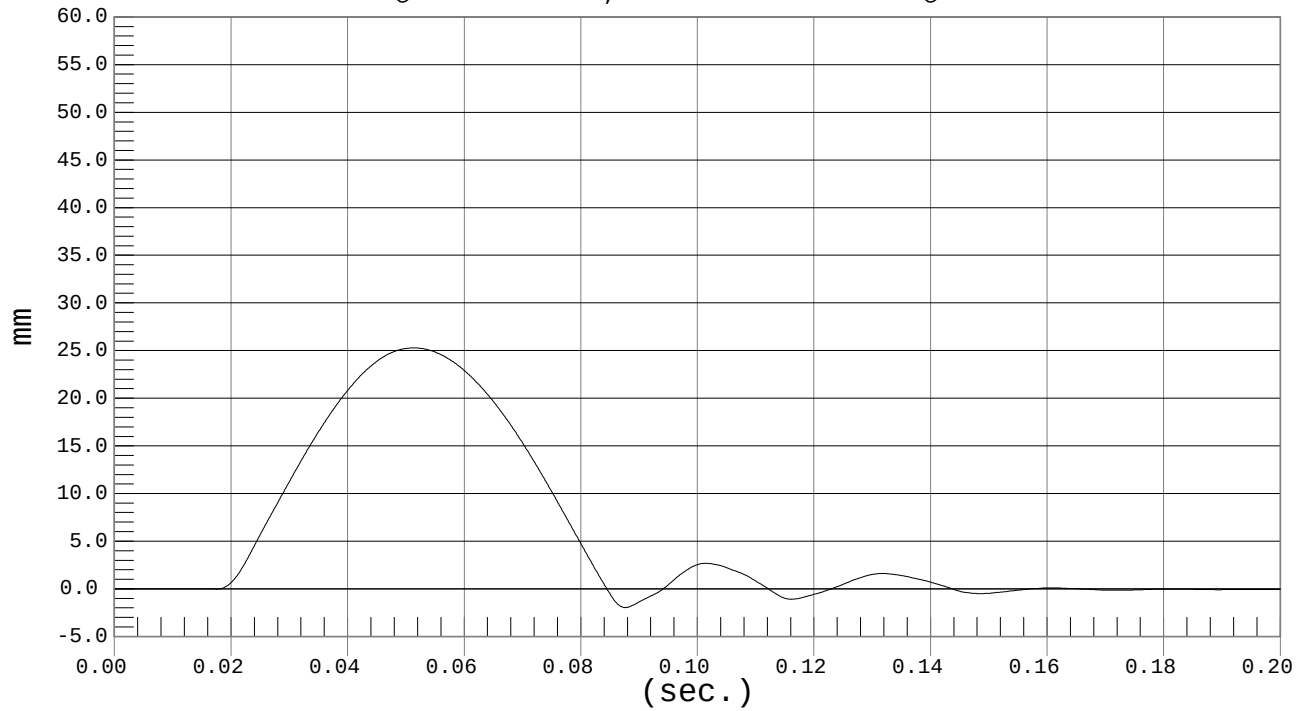


LOWER RIB DISPLACEMENT

Test Desc.: RIB MODULE
Component: Dummy #009

Test Date: 06-14-02
Speed: 6.6 fps, 2.00 M/s

Ymin = -1.96 mm @ 0.0875 sec., Ymax = 25.28 mm @ 0.0513 sec.

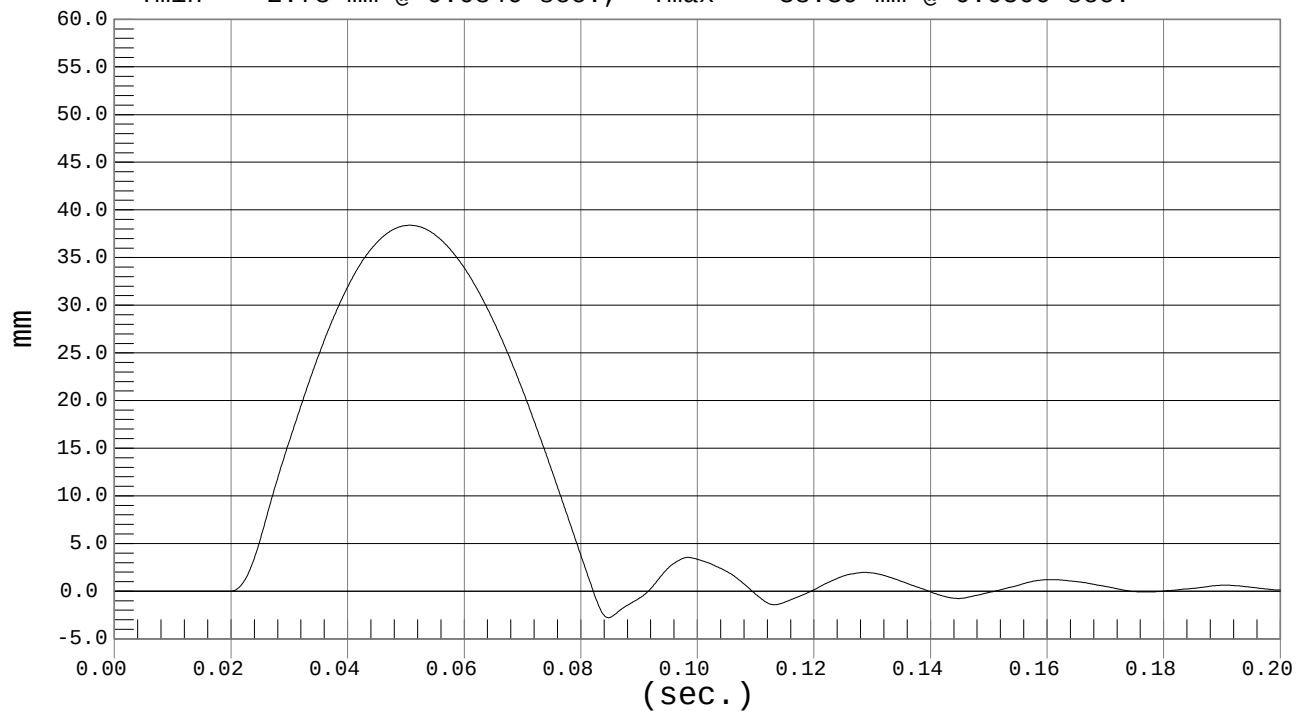


LOWER RIB DISPLACEMENT

Test Desc.: RIB MODULE
Component: Dummy #009

Test Date: 06-14-02
Speed: 9.8 fps, 3.00 M/s

Ymin = -2.78 mm @ 0.0846 sec., Ymax = 38.39 mm @ 0.0506 sec.



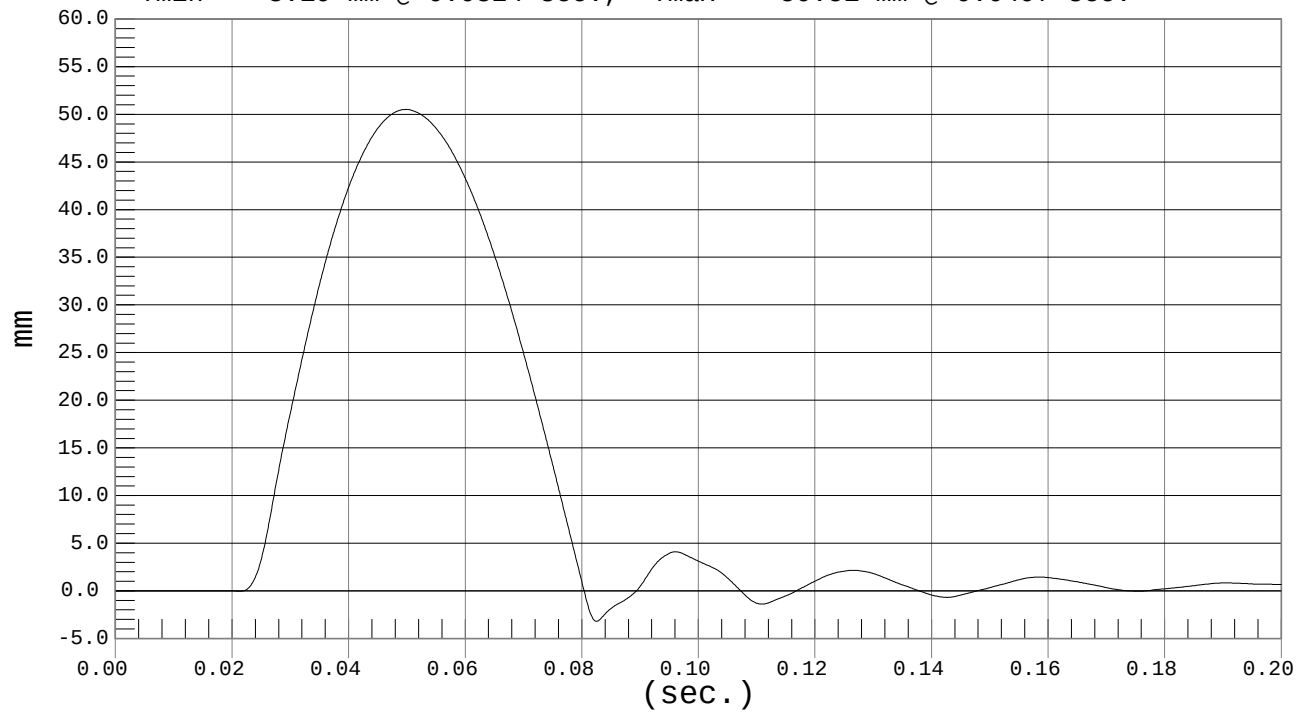


LOWER RIB DISPLACEMENT

Test Desc.: RIB MODULE
Component: Dummy #009

Test Date: 06-14-02
Speed: 13.1 fps, 4.00 M/s

Ymin = -3.19 mm @ 0.0824 sec., Ymax = 50.51 mm @ 0.0497 sec.



MGA RESEARCH CORPORATION
ABDOMEN TEST
EUROSID 2 DUMMY

Date: 6/19/02

Dummy Serial Number: 009

Test Number: D02817

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.0 – 22.0	21.4
Relative Humidity (%)	10 – 70	52
Probe Speed (m/s)	3.90 – 4.10	4.02
Maximum Impact Force	4.00 – 4.80 kN	4.75
Time of Maximum Force	10.60 – 13.00 ms	11.50
Maximum Total Abdomen Force	2.20 – 2.70 kN	2.31
Time of Max. Total Force	10.00 – 12.30 ms	11.20

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____

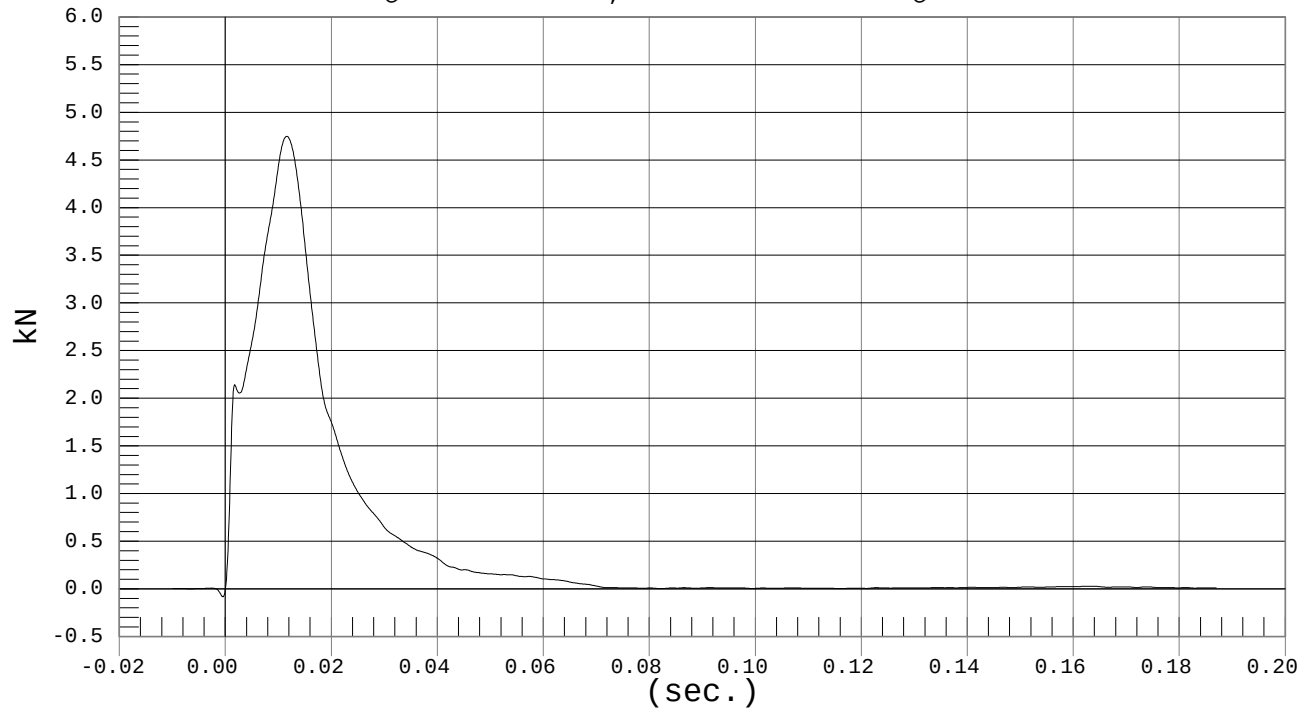


IMPACTOR FORCE

Test Desc.: Abdomen Impact
Component: Dummy #009

Test Date: 06-19-02
Speed: 13.2 fps, 4.02 M/s

Ymin = -.08 kN @ -0.0005 sec., Ymax = 4.75 kN @ 0.0115 sec.

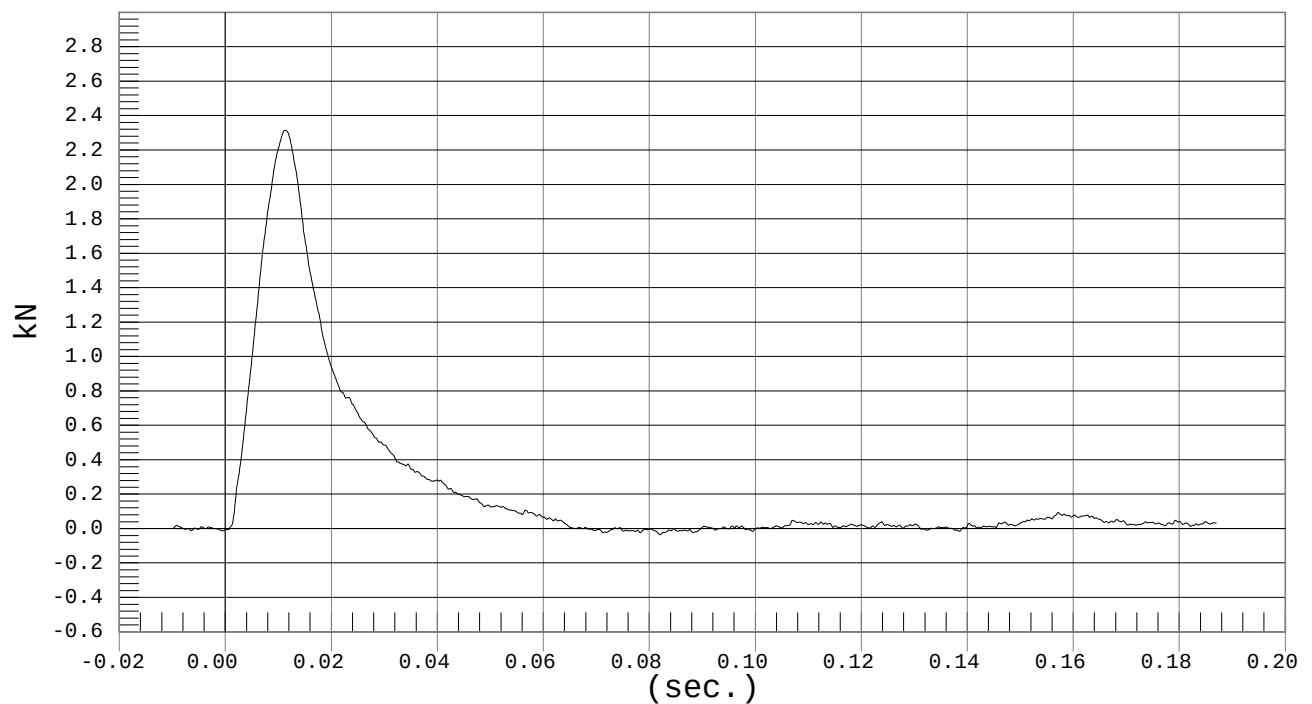


ABDOMEN FORCE

Test Desc.: Abdomen Impact
Component: Dummy #009

Test Date: 06-19-02
Speed: 13.2 fps, 4.02 M/s

Ymin = -.04 kN @ 0.0819 sec., Ymax = 2.31 kN @ 0.0112 sec.



MGA RESEARCH CORPORATION
LUMBAR SPINE TEST
EUROSID 2 DUMMY

Date: 6/18/02

Dummy Serial Number: 009

Test Number: D02818

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature (°C)		18.0 – 22.0	21.6
Relative Humidity (%)		10 – 70	50
Pendulum Speed		5.95 – 6.15	6.04
Pendulum Deceleration	10 msec	$\bar{2}.46 - \bar{1}.59$ m/sec	-2.07
	20 msec	$\bar{5}.25 - \bar{4}.07$ m/sec	-4.74
	25 msec	$\bar{6}.64 - \bar{5}.30$ m/sec	-5.92
	30 msec	≥ -6.5 m/sec	-6.20
Maximum Flexion Angle		45.0 – 55.0 deg	51.5
Time of Max. Flexion Angle		39.0 – 53.0 ms	46.4
Maximum Angle Theta (A)		31.0 – 35.0 deg	32.9
Time of Max. Theta (A)		44.0 – 52.0 ms	46.4
Maximum Angle Theta (B)		28.08– 30.58 deg	29.2
Time of Max. Theta (B)		44.0 – 52.0 ms	46.5

TEST MEETS SPECIFICATIONS

Technician: _____

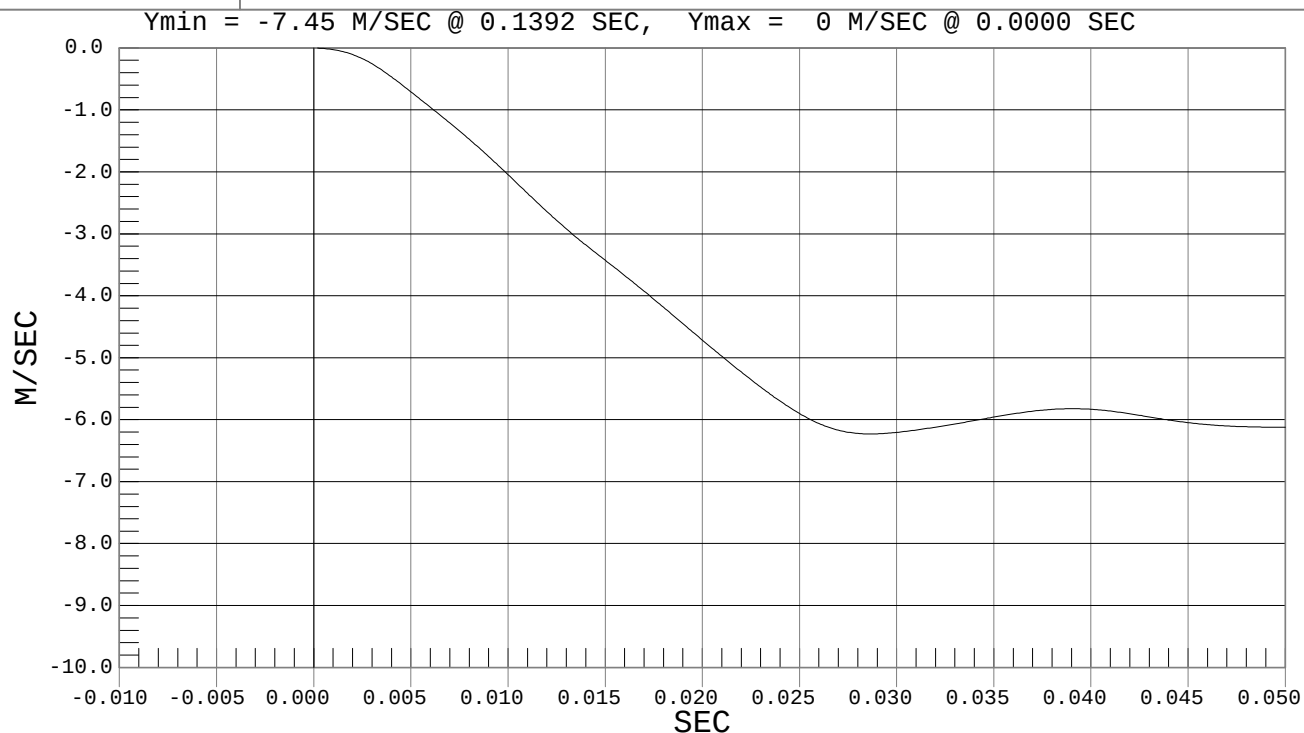
Approved By: _____



PENDULUM DECELERATION

Test Desc.: Lumbar Flexion
Component: Dummy #009

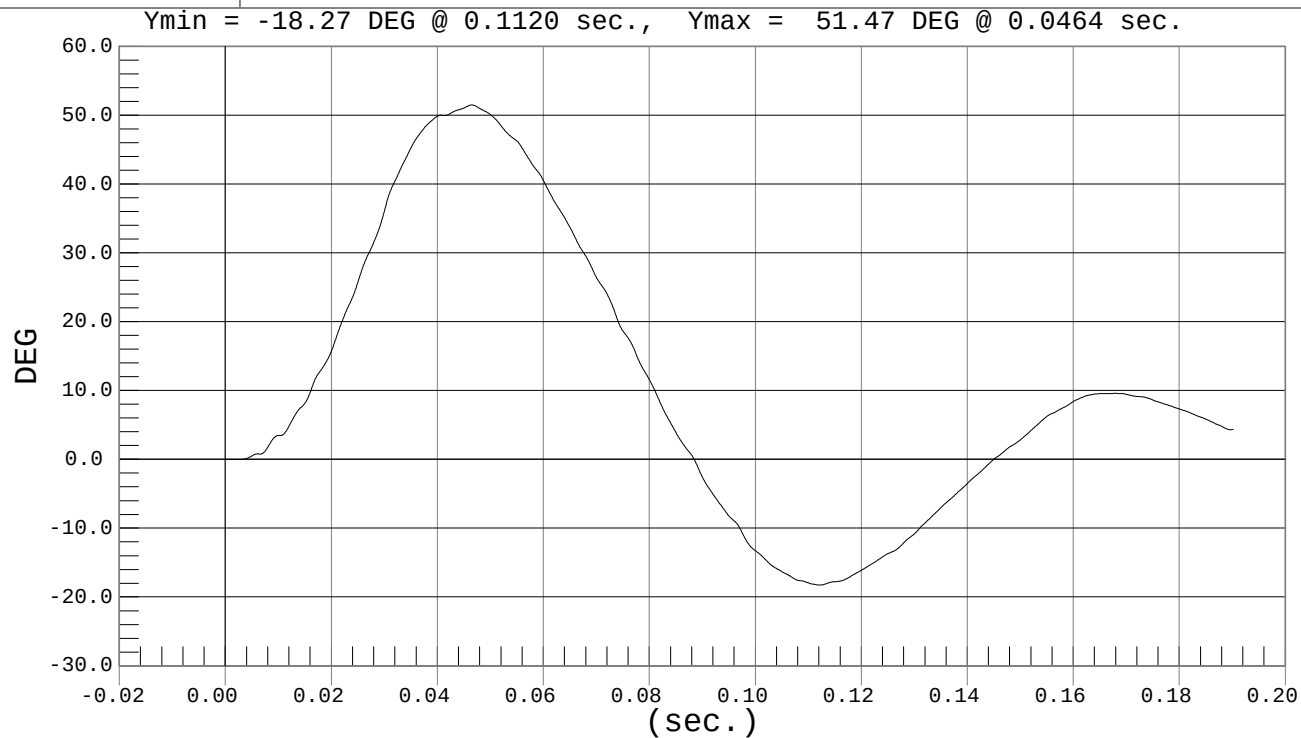
Test Date: 06-18-02
Speed: 19.8 fps, 6.04 M/s



FLEXION ANGLE

Test Desc.: Lumbar Flexion
Component: Dummy #009

Test Date: 06-18-02
Speed: 19.8 fps, 6.04 M/s



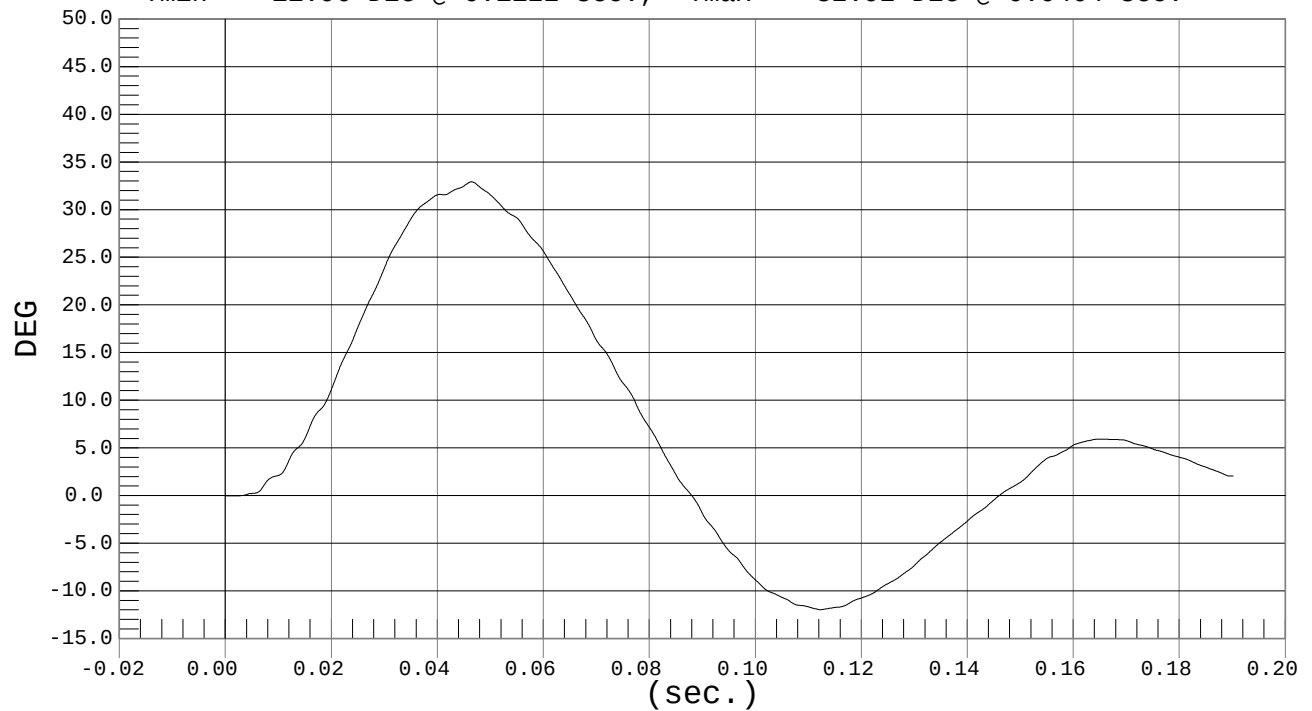


Test Desc.: Lumbar Flexion
Component: Dummy #009

THETA A

Test Date: 06-18-02
Speed: 19.8 fps, 6.04 M/s

Ymin = -11.96 DEG @ 0.1122 sec., Ymax = 32.92 DEG @ 0.0464 sec.

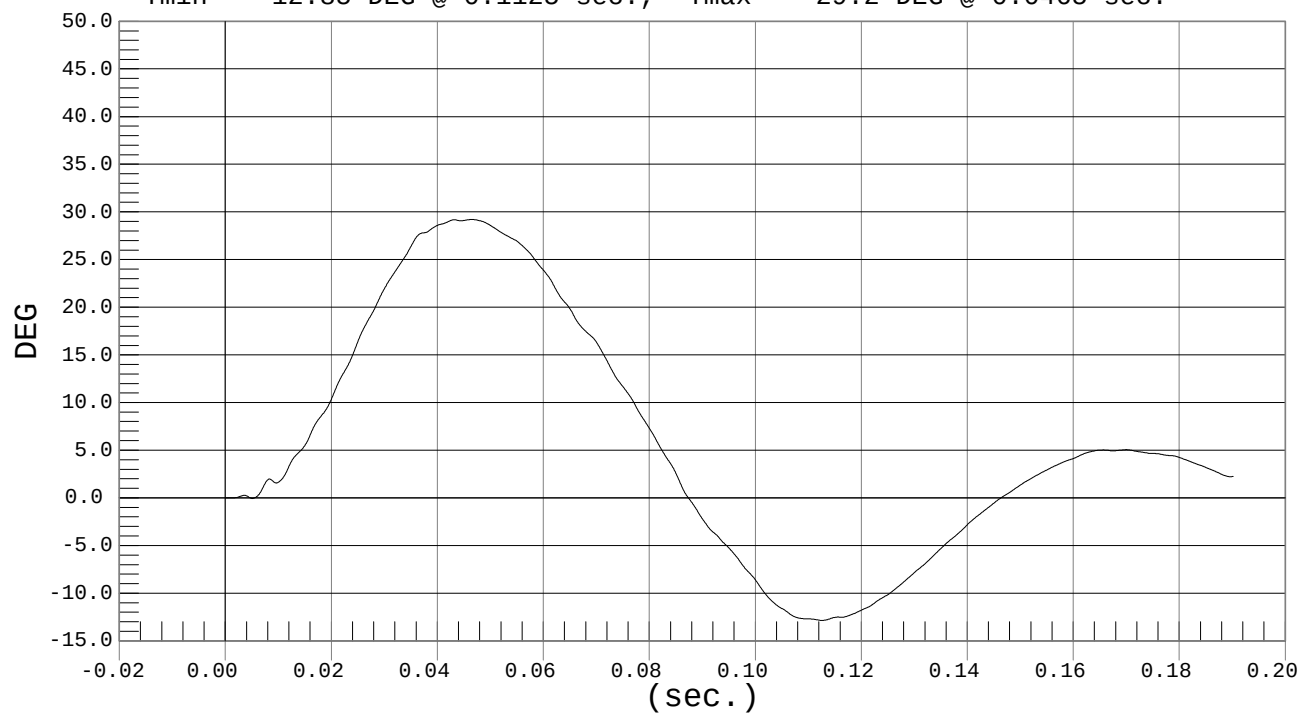


Test Desc.: Lumbar Flexion
Component: Dummy #009

THETA B

Test Date: 06-18-02
Speed: 19.8 fps, 6.04 M/s

Ymin = -12.85 DEG @ 0.1125 sec., Ymax = 29.2 DEG @ 0.0465 sec.



MGA RESEARCH CORPORATION
PELVIS TEST
EUROSID 2 DUMMY

Date: 6/19/02

Dummy Serial Number: 009

Test Number: D02819

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.0 – 22.0	21.2
Relative Humidity (%)	10 – 70	51
Pendulum Speed	6.20 – 6.30 m/s	6.29
Maximum Impactor Force	9.80 – 12.20 kN	10.60
Time of Max. Impactor Force	9.50 – 12.50 ms	11.20
Maximum Pubic Force	2.65 – 3.35 kN	3.07
Time of Max. Pubic Force	10.00 – 13.00 ms	11.50

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____

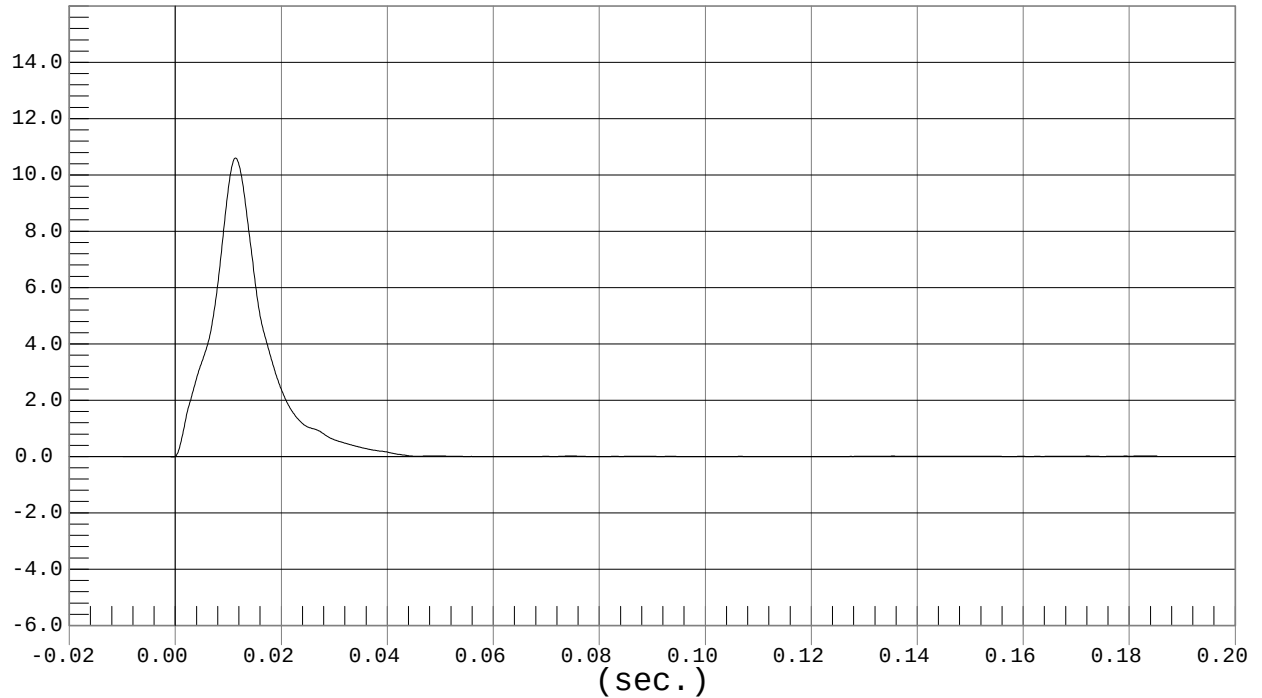


IMPACTOR FORCE

Test Desc.: Pelvis Impact
Component: Dummy #009

Test Date: 06-19-02
Speed: 20.6 fps, 6.29 M/s

Ymin = -.02 kN @ -0.0005 sec., Ymax = 10.6 kN @ 0.0112 sec.

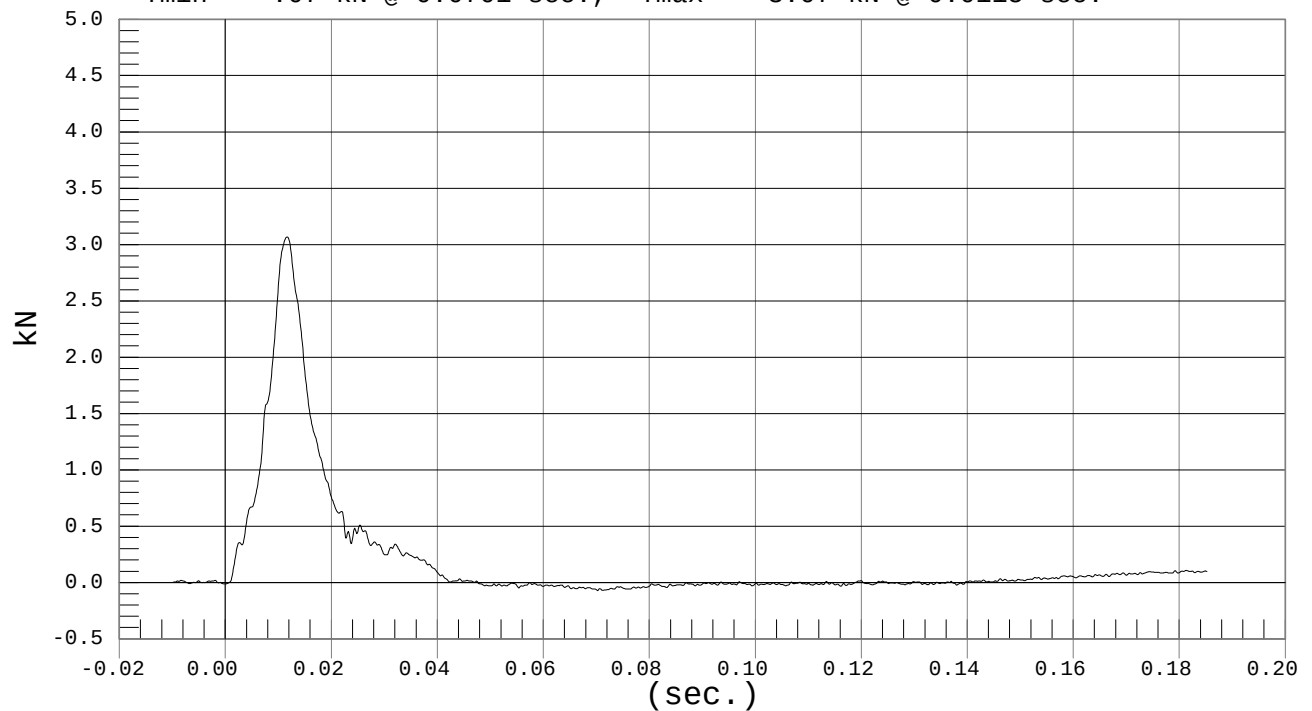


PUBIC FORCE

Test Desc.: Pelvis Impact
Component: Dummy #009

Test Date: 06-19-02
Speed: 20.6 fps, 6.29 M/s

Ymin = -.07 kN @ 0.0701 sec., Ymax = 3.07 kN @ 0.0115 sec.



APPENDIX D
TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

DUMMY AND VEHICLE CALIBRATION DATA

	INSTRUMENTS FOR LEFT FRONT ES-2		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Head X Accelerometer	AGTG8	Endevco	3/15/02
Head Y Accelerometer	AJ820	Endevco	3/15/02
Head Z Accelerometer	AJ8Y6	Endevco	3/15/02
Upper Neck Load Cell	105	FTSS	5/13/02
Lower Neck Load Cell	110	FTSS	5/16/02
Shoulder Force Load Cell	119	FTSS	5/10/02
Upper Spine X Accelerometer	AHW95	Endevco	4/8/02
Upper Spine Y Accelerometer	AHR15	Endevco	4/8/02
Upper Spine Z Accelerometer	AP179	Endevco	4/8/02
Upper Rib Y Accelerometer	AHT12	Endevco	3/1/02
Mid Rib Y Accelerometer	AHTN3	Endevco	3/1/02
Lower Rib Y Accelerometer	AH0C3	Endevco	3/1/02
Upper Rib Displacement	009U	Honeywell	5/22/01
Mid Rib Displacement	009M	Honeywell	5/22/01
Lower Rib Displacement	009L	Honeywell	5/22/01
Lower Spine X Accelerometer	ALDD6	Endevco	1/10/02
Lower Spine Y Accelerometer	AGT18	Endevco	1/10/02
Lower Spine Z Accelerometer	J20392	Endevco	1/10/02
Torso Load Cell	122	FTSS	5/13/02
T-12 Load Cell	103	FTSS	5/13/02
Front Abdomen Load Cell	122	FTSS	5/16/02
Mid Abdomen Load Cell	123	FTSS	5/16/02
Rear Abdomen Load Cell	124	FTSS	5/16/02
Pubic Symphysis Load Cell	115	Denton	5/13/02
Pelvis X Accelerometer	AMRR4	Endevco	2/11/02
Pelvis Y Accelerometer	AJ417	Endevco	1/21/02
Pelvis Z Accelerometer	ALCR0	Endevco	2/11/02
Right Femur Load Cell	135	FTSS	5/13/02
Left Femur Load Cell	136	FTSS	5/13/02
Lumbar Load Cell	104	FTSS	5/10/02

VEHICLE INSTRUMENT CALIBRATION

	VEHICLE ACCELEROMETERS		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Left A Post @ Roof Y	H14-N11	Entran	5/30/02
Left Mid A-Post Y	L23-A08	Entran	5/30/02
Left Lower A-Post Y	L23-A05	Entran	5/30/02
Left Upper B-Post Y	L23-A02	Entran	5/30/02
Left Mid B-Post Y	K21-N28	Entran	1/17/02
Left Lower B-Post Y	H14-N07	Entran	5/30/02
Rear Floorpan Above Axle X	G03-N15	Entran	3/1/02
Rear Floorpan Above Axle Y	G03-N02	Entran	3/1/02
Rear Floorpan Above Axle Z	A08-A13	Entran	3/1/02
Driver Seat Track Y	I25-J09	Entran	1/16/02
Right Side Sill at Front Seat X	E03-H16	Entran	1/14/02
Right Side Sill at Front Seat Y	I25-J02	Entran	1/14/02
Right Side Sill at Front Seat Z	E03-H13	Entran	1/14/02
Right Side Sill at Rear Seat X	K21-N29	Entran	3/6/02
Right Side Sill at Rear Seat Y	K21-N31	Entran	3/6/02
Right Side Sill at Rear Seat Z	G13-F15	Entran	3/6/02
Left Side Sill at Front Seat Y	K11-G07	Entran	3/6/02
Left Side Sill at Rear Seat Y	K16-X06	Entran	5/29/02
Vehicle CG X	K21-N10	Entran	12/11/01
Vehicle CG Y	K21-N11	Entran	12/11/01
Vehicle CG Z	K21-N09	Entran	12/11/01
Left Front Door @ Pelvis Y	L23-A03	Entran	5/30/02
Left Front Door @ End of Arm Y	L23-A07	Entran	5/30/02
Left Front Door @ Knee Y	L23-A04	Entran	5/30/02
Left Front Door @ Rib Y	L23-A10	Entran	5/30/02
Lower Center Radiator Support X	A08-A05	Entran	3/6/02
Lower Center Radiator Support Y	99F252	Entran	4/22/02
Lower Center Radiator Support Z	G13-B07	Entran	1/16/02

Note: All Endevco accelerometers are Model No. 7264-2000

All Entran accelerometers are Model No. EGE-72

APPENDIX E
PROCEDURE USED FOR ES-2 POSITIONING

Installation of the Side Impact Dummy (recommended practice)

1. GENERAL

- 1.1 The dummy to be used for the following installation procedure is described in Annex 6 to this regulation.
- 1.2 Adjust the knee joints so that they just support the leg when it is extended horizontally (1 to 2 g).
- 1.3 Clothe the dummy in form fitting cotton stretch mid-calf length pants. Each foot is equipped with a shoe.

2. INSTALLATION

- 2.1 Place the dummy in the outboard front seat of the impact side as described in the test specifications.
- 2.2 The mid-sagittal plane of the dummy shall coincide with the centerplane of the occupant (as determined according to Annex 3, paragraph 2.8) with a tolerance of 2°.
- 2.3 The pelvis of the dummy shall be positioned according to the following:
 - 2.3.1 The pelvis pitch angle shall be 20.0° +/- 2.5°.
 - 2.3.2 A line passing through the dummy H-points shall pass through an imaginary circle in the mid-sagittal plane of the dummy. This circle has a radius of 10 mm and is located 20 mm horizontally forward and 5 mm vertically above the reference H-point, determined by the 3D H-point machine.
- 2.4 The upper torso of the dummy shall be positioned according to the following:
 - 2.4.1 The upper torso shall be bent forward and then laid back against the seat back. The shoulder of the dummy shall be set fully rearward.
 - 2.4.2 The torso reference line pitch angle shall be 25.0° +/- 2.5°. The torso reference line is defined as the thoracic spine center line.
- 2.5 The arms shall be positioned in such as way that the angle between the projection of the arm centerline on the mid-sagittal plane of the dummy and the torso reference line is 40° +/- 5°.

- 2.6 For the driver's seating position, without inducing pelvis or torso movement, place the right foot of the dummy on the undepressed accelerator pedal with the heel resting as far forward as possible on the floorpan. Set the left foot perpendicular to the lower leg with the heel resting on the floorpan in the same lateral line as the right heel. Set the knees of the dummy such that their outside surfaces are 150 +/- 10mm from the plane of symmetry of the dummy. If possible, within these constraints, place the thighs of the dummy in contact with the seat cushion.
- 2.7 For other seating positions, without inducing pelvis or torso movement, place the heels of the dummy as far forward as possible on the floorpan without compressing the seat cushion more than the compression due to the weight of the leg. Set the knees of the dummy such that their outside surfaces are 150 +/- 10 mm from the plane of symmetry of the dummy.

APPENDIX F
ES-2 PEAK RESPONSES

DRIVER PEAK RESPONSE TABLE

Location	Peak Values						
				2000 Nissan Maxima 6/12/02		2000 Nissan Maxima 6/13/02	
	Class	Axis	Units	Peak	Time	Peak	Time
Head	1000	X	G	-150.1	60	-197.7	58
	1000	Y	G	578.1	60	922.7	58
	1000	Z	G	265.3	59	286.8	58
	1000	RES	G	625.1	60	964.1	58
Head Injury Criteria (HIC)				5254		11983	
t1				58.9		57.8	
t2				59.8		58.5	
Upper Neck Force	1000	X	N	472	60	-480	60
	1000	Y	N	-1391	60	-977	58
	1000	Z	N	-1286	59	-1386	61
	1000	RES	N	1591	60	1474	60
Upper Neck Moment	600	X	Nm	-31.3	156	-51.0	62
	600	Y	Nm	25.9	97	-37.0	47
	600	Z	Nm	15.7	61	13.6	61
	600	RES	Nm	36.4	157	59.5	63
Lower Neck Force	1000	X	N	215	150	-762	49
	1000	Y	N	-736	63	1103	57
	1000	Z	N	-1282	62	-1549	60
	1000	RES	N	1475	63	1687	57
Lower Neck Moment	600	X	Nm	-62.2	172	115.1	58
	600	Y	Nm	-37.7	169	83.9	49
	600	Z	Nm	20.0	67	13.2	58
	600	RES	Nm	72.4	170	130.5	58
Shoulder Force	600	X	N	1314	36	-968	41
	600	Y	N	-1194	37	2425	45
	600	Z	N	-891	37	-1503	43

DRIVER PEAK RESPONSE TABLE (CONTINUED)

Location	Peak Values						
				2000 Nissan Maxima 6/12/02		2000 Nissan Maxima 6/13/02	
	Class	Axis	Units	Peak	Time	Peak	Time
Upper Spine	180	X	G	14.5	35	-21.8	61
	180	Y	G	41.5	62	51.2	50
	180	Z	G	13.0	60	15.8	59
	180	Res	G	42.8	62	51.3	50
Lower Spine	180	X	G	8.9	23	-12.1	48
	180	Y	G	45.0	41	82.8	46
	180	Z	G	11.0	61	14.3	60
	180	Res	G	45.1	41	83.4	46
Upper Rib	180	Y	G	104.9	55	87.1	41
Mid Rib	180	Y	G	153.5	50	114.4	40
Lower Rib	180	Y	G	150.0	49	187.1	40
Upper Rib Deflection	180	Y	mm	-34.7	38	-41.5	51
Mid Rib Deflection	180	Y	mm	-35.7	39	-38.6	55
Lower Rib Deflection	180	Y	mm	-34.0	38	-38.4	52
Upper Rib VC	180	Y	m/sec	0.61	33	0.85	46
Mid Rib VC	180	Y	m/sec	0.55	32	0.85	45
Lower Rib VC	180	Y	m/sec	0.52	29	0.83	44
Torso Force	600	X	N	288	114	-147	58
	600	Y	N	-388	36	-785	47
Torso Moment	600	Y	Nm	-16.3	60	-12.1	60
	600	Z	Nm	-17.3	117	5.8	53

DRIVER PEAK RESPONSE TABLE (CONTINUED)

Location	Peak Values							
				2000 Nissan Maxima 6/12/02		2000 Nissan Maxima 6/13/02		
	Class	Axis	Units	Peak	Time	Peak	Time	
T12 Force	600	X	N	677	63	594	49	
	600	Y	N	1959	50	2335	46	
T12 Moment	600	X	Nm	101.8	77	-187.4	42	
	600	Y	Nm	87.5	63	-70.0	85	
Pelvis	1000	X	G	16.6	50	20.6	52	
	1000	Y	G	61.6	43	61.6	41	
	1000	Z	G	12.5	62	17.1	75	