

REPORT NUMBER: TO5-MGA-2002-003

RIGID POLE SIDE IMPACT TEST AT 285 DEGREES

Task Order T0004 / RFP 0005

2000 NISSAN MAXIMA WITH SIDE AIRBAG

ES-2 DRIVER POSITION

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June 12, 2002

FINAL REPORT SUBMITTED: July 18, 2003

**PREPARED FOR:
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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, with 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

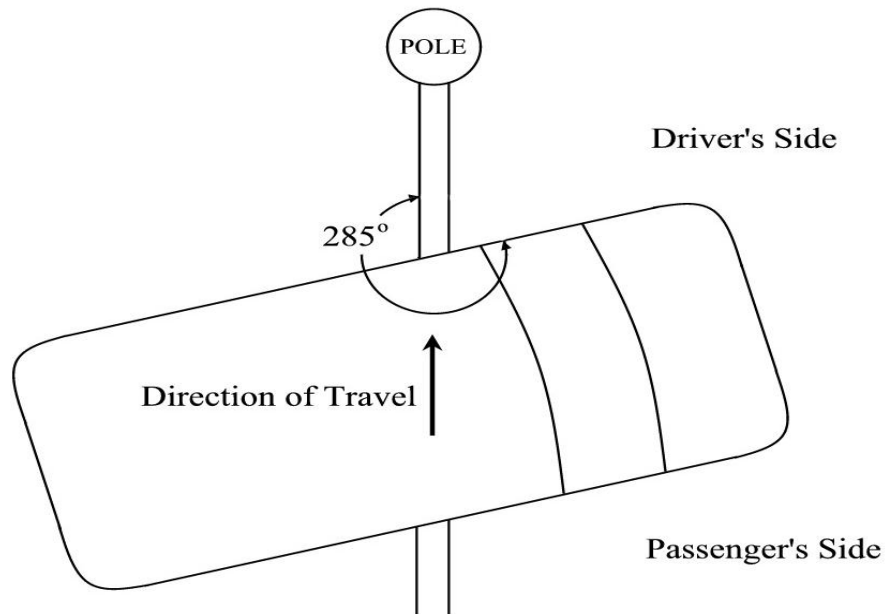
SUMMARY OF SIDE IMPACT TEST

A rigid pole side impact test at 285 degrees was performed on a model year 2000 Nissan Maxima 4 door with 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 12, 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)	58.9
	T2 (msec)	59.8
	HPC	5254
2) Thorax Performance Criteria		
2.1) Chest Deflection < 42 mm	Upper Rib Deflection	34.7
	Mid Rib Deflection	35.7
	Lower Rib Deflection	34.0
2.2) Viscous Criteria < 1.0 (m/sec)	Upper Rib	0.61
	Mid Rib	0.55
	Lower Rib	0.52
3) Abdominal Protection Criterion		
Sum < 2500 N	Front Abdominal Force	208
	Mid Abdominal Force	431
	Rear Abdominal Force	618
	Sum of Abdominal Force	1196
4) Pelvis Performance Criterion		
< 6000 N	Pubic Symphysis Force	2368

HIC		Left Front
	T1 (msec)	58.9
	T2 (msec)	59.8
	T2 - T1 (msec)	0.9
	HIC	5254

Fir Filtered	Left Front
Upper Rib Y (g's)	99.5
Mid Rib Y (g's)	135.7
Lower Rib Y (g's)	121.8
Lower Spine Y (g's)	43.8
Pelvis Y (g's)	57.6
TTI (g's)	90

Contacts	Left Front
Arm (msec)	26.7
Rib (msec)	22.2
Pelvis (msec)	22.4

TEST NOTES

The dummy and vehicle X and Y velocities presented in this report do not contain the correct initial velocity. The correct 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 12, 2002

TEST VEHICLE INFORMATION

Make	Nissan
Model	Maxima
Body Style	4 door
VIN	JN1CA31A8YT003079
Color	Painted Orange
Odometer Reading	121
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	yes
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	05/99	GAWR Front (kg)	1073
		GAWR Rear (kg)	902

DATA FROM TIRE PLACARD

Measured Parameter	Front	Rear
Maximum Tire Pressure (kPa)	230	210
Cold Pressure (kPa)	230	210
Recommend Tire Size	P215/55R16	P215/55R16
Tire Size on Vehicle	P215/55R16	P215/55R16
Tire Manufacturer	Toyo	Toyo

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 12, 2002

TEST VEHICLE WEIGHTS

	Units	As Delivered (UVW)			As Tested (ATW)		
		Front	Rear	Total	Front	Rear	Total
Left	kg	464.5	288.9		508.5	360.6	
Right	kg	460.0	270.8		490.3	330.7	
Ratio	%	62.3	37.7		59.1	40.9	
Totals	kg	924.5	559.7	1484.2	998.8	691.3	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	0.1 ND	0.2 BD	0.2 BD
Left Door Sill Angle	deg	0.1 ND	0.3 BD	0.2 BD
Front Bumper Angle	deg	0.6 LD	0.8 LD	0.6 LD
Rear Bumper Angle	deg	0.3 LD	0.5 LD	0.3 LD

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	47.6
Amount of Water in Fuel Tank	liters	60.6

TEST VEHICLE VERTICAL IMPACT LINE DATA

Measurement Description	Units	Value
Actual Impact Point	mm	15 Rear

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

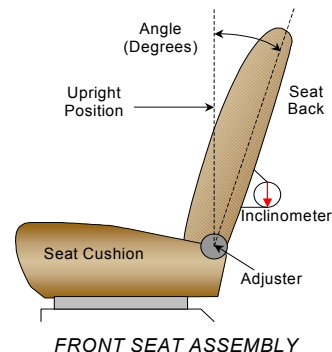
Test Vehicle: 2000 Nissan Maxima 4 door

Test Date: June 12, 2002

NORMAL DESIGN RIDING POSITION

Driver seat back angle: 11.9 deg. measured on headrest post
(adjusted forward 1.5 deg. to achieve
head clearance)

Passenger seat back angle: non adjustable



SEAT FORE/AFT POSITIONS

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

Driver seat fore/aft total travel: 230 mm

Rear passenger seat fore/aft total travel: non adjustable

Driver seat fore/aft position: 115 mm

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 12, 2002

TEST DUMMY INFORMATION AND CONTACT POINTS

Description	Left Front
Dummy Type	ES-2
Head Contact	Pole, header, headrest, side airbag
Upper Torso Contact	Door trim panel
Lower Torso Contact	Side airbag
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

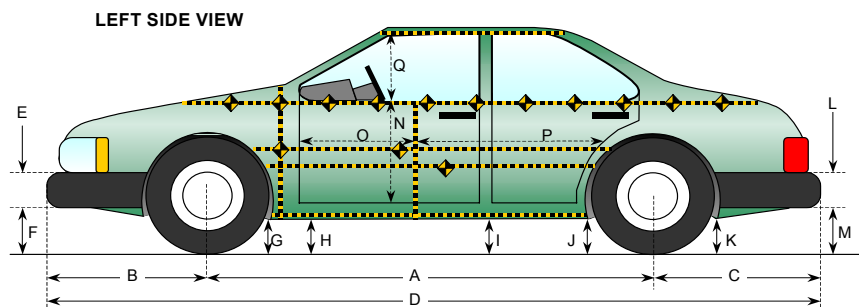
	Driver	Right Front	Left Rear
Front	no	no	
Side	yes	no	

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 12, 2002



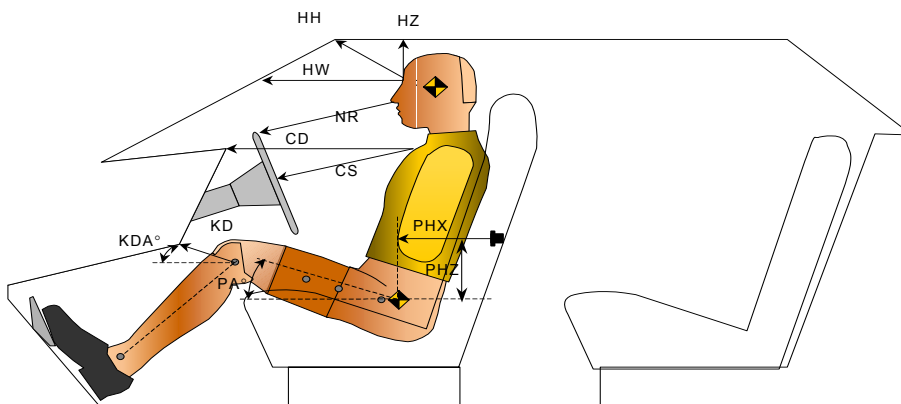
All Measurements in mm

Code	Measurement Description	Pre-Test	Post-Test	Difference
A	Wheelbase	2760	2534	226
B	Front Axle to FSOV	990	960	30
C	Rear Axle to RSOV	1124	1151	27
D	Total Length at Centerline	4874	4645	229
E	Front Bumper Thickness	125	125	0
F	Front Bumper Bottom to Ground	564	561	3
G	Sill Height at Front Wheel Well	337	335	2
H	Sill Height at Front Door Leading Edge	341	350	9
I	Sill Height at "B" Pillar	348	396	48
J1	Sill Height at Rear Wheel Well	328	375	47
J2	Pinch Weld Height at Rear Wheel Well	336	358	22
K	Sill Height Aft of Rear Wheel Well	385	415	30
L	Rear Bumper Thickness	205	205	0
M	Rear Bumper Bottom to Ground	531	533	2
N	Sill Height to Window Bottom Sill	635	654	19
O	Front Door Leading Edge to Impact CL	814	812	2
P	Rear Door Trailing Edge to Impact CL	1260	1205	55
Q	Front Window Opening	443	389	54
R	Right Side Length	4158	4215	57
S	Left Side Length	4157	3922	235
T	Vehicle Width at "B" Post	1767	1397	370

DATA SHEET NO. 4
ES-2 LONGITUDINAL CLEARANCE DIMENSIONS

Test Vehicle: 2000 Nissan Maxima 4 door

Test Date: June 12, 2002



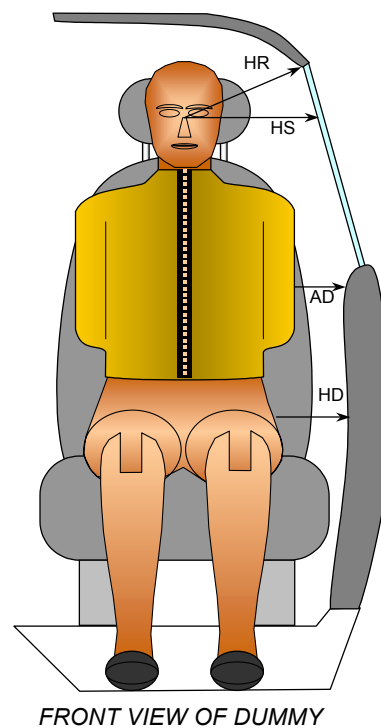
Driver Code	Measurement Description	Left Front	
		Length(mm)	Angle(°)
HH	Head to Header	299	
HW	Head to Windshield	502	
HZ	Head to Roof	130	
NR	Nose to Rim	435	
CD	Chest to Dash	563	
CS	Chest to Steering Wheel	563	
KDL	Left Knee to Dash	208	0.0
KDR	Right Knee to Dash	223	0.0
PA	Pelvic Angle (Longitudinal)		22.3
PA	Pelvic Angle (Lateral)		0.7
SA	Spine Angle (Longitudinal)		24.1
SA	Spine Angle (Lateral)		0.3
PHX	H-Point to Striker (X-Axis)	223	
PHZ	H-Point to Striker (Z-Axis)	118	

DATA SHEET NO. 5
ES-2 LATERAL CLEARANCE DIMENSIONS

Test Vehicle: 2000 Nissan Maxima 4 door

Test Date: June 12, 2002

Code	Measurement Description	Units	Left Front
HR	Head to Side Header	mm	228
HS	Head to Side Window	mm	305
AD	Arm to Door	mm	88
HD	H-Point to Door	mm	140



DATA SHEET NO. 6
DUMMY POSITIONING

Test Vehicle: 2000 Nissan Maxima 4 door

Test Date: June 12, 2002

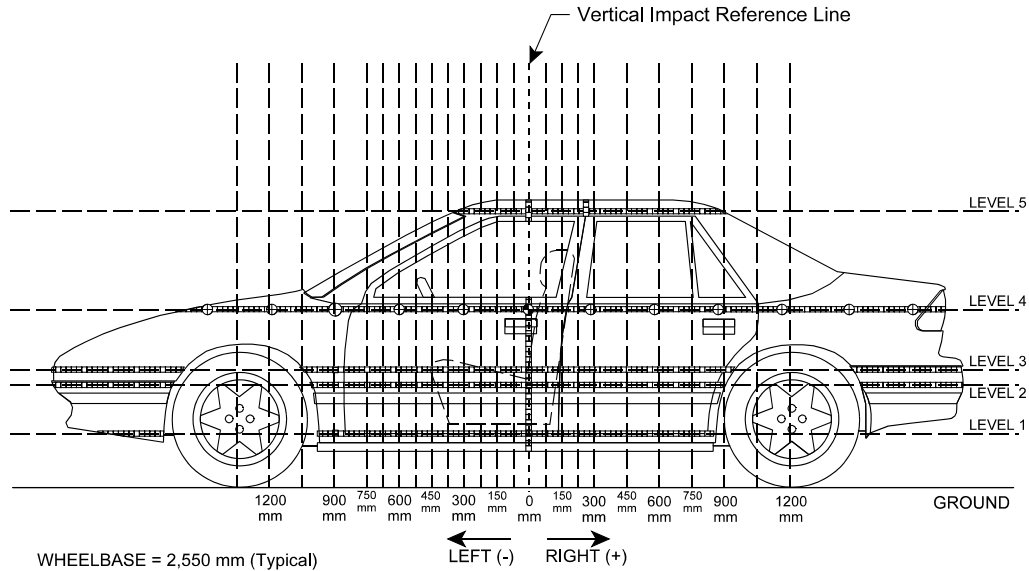
	Left Front	
	H-Point Machine	Dummy H Point after seat back adjustment
HP to Floor Z (mm)	176	177
HP to Hinge X (mm)	818	803
HP to Sill Y (mm)	223	226
HP to Striker X (mm)	362	363
HP to Dash X (mm)	573	572
HP to Header Z (mm)	789	780
H-POINT MACHINE (deg)		
Left Knee	128	
Right Knee	126	
Left Foot	104	
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 12, 2002

PRETEST AND POST TEST EXTERIOR PROFILE MEASUREMENTS



LEFT SIDE VIEW

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	1039
3	Mid Door	mm	740
2	Occupant H-Point	mm	630
1	Sill Top	mm	420

DATA SHEET NO. 8
VEHICLE EXTERIOR CRUSH PROFILES

Test Vehicle: 2000 Nissan Maxima 4 door

Test Date: June 12, 2002

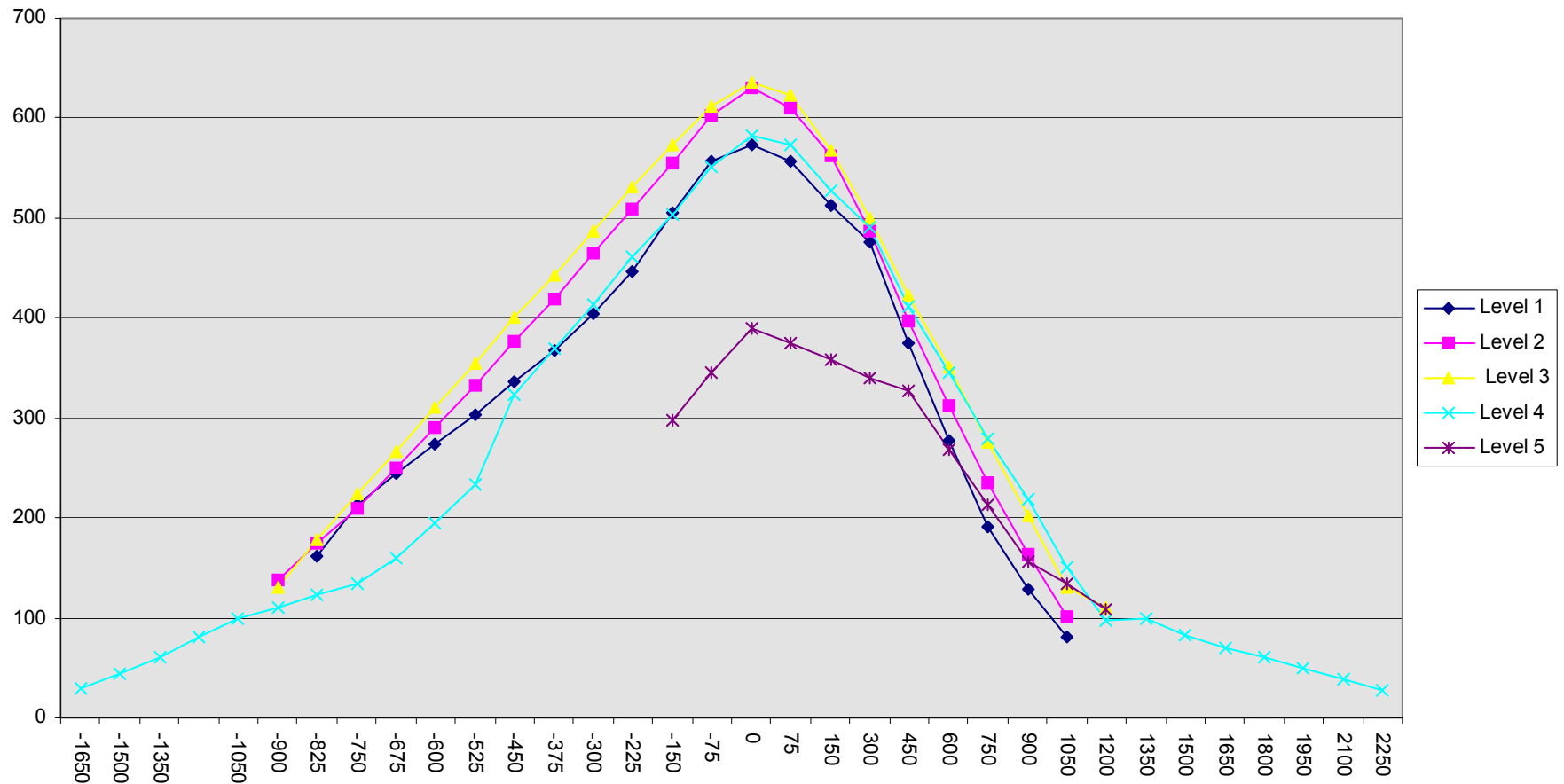
	Pre-Test					Post-Test					Difference				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
-1800															
-1650				341					370					29	
-1500				318					362					44	
-1350				301					362					61	
-1200				289					369					80	
-1050				283					382					99	
-900		231	228	280			369	359	390			138	131	110	
-825	281	232	227	277		443	406	405	401		162	174	178	124	
-750	281	231	226	275		494	441	450	409		213	210	224	134	
-675	281	230	225	275		525	480	491	435		244	250	266	160	
-600	280	230	224	275		553	520	535	469		273	290	311	194	
-525	280	229	224	274		584	562	578	507		304	333	354	233	
-450	280	229	223	274		616	605	623	598		336	376	400	324	
-375	280	229	223	273		647	647	665	642		367	418	442	369	
-300	280	228	223	273		685	692	710	687		405	464	487	414	
-225	280	228	222	273		727	737	753	734		447	509	531	461	
-150	280	228	222	273	499	786	783	795	777	796	506	555	573	504	297
-75	281	227	222	273	497	837	830	834	825	843	556	603	612	552	346
0	280	227	221	273	495	853	858	857	855	885	573	631	636	582	390
75	278	227	221	273	496	835	837	844	846	870	557	610	623	573	374
150	279	226	221	271	496	791	789	789	799	854	512	563	568	528	358
300	280	227	222	270	496	755	713	721	760	836	475	486	499	490	340
450	280	227	222	273	495	654	624	645	684	822	374	397	423	411	327
600	280	228	222	275	496	558	540	573	620	764	278	312	351	345	268
750	279	229	224	276	496	470	464	499	556	709	191	235	275	280	213
900	278	231	225	277	496	406	395	428	495	653	128	164	203	218	157
1050	274	227	227	280	498	354	328	357	431	632	80	101	130	151	134
1200			211	285	507			322	382	615			111	97	108
1350				290					389					99	
1500				295					378					83	
1650				304					374					70	
1800				316					376					60	
1950				330					379					49	
2100				348					386					38	
2250				370					397					27	

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

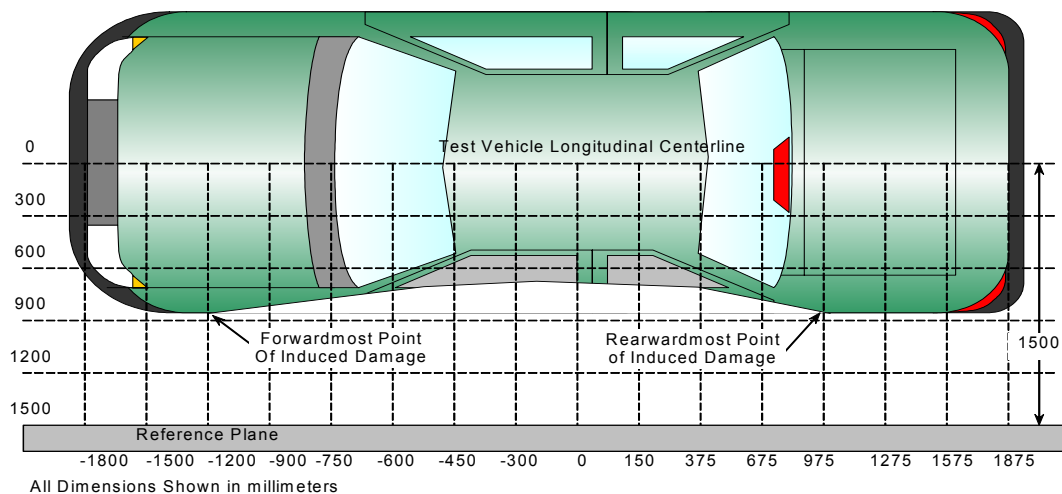
Test Date: June 12, 2002



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

Test Vehicle: 2000 Nissan Maxima 4 door

Test Date: June 12, 2002



TOP VIEW

Damage Profile Distances

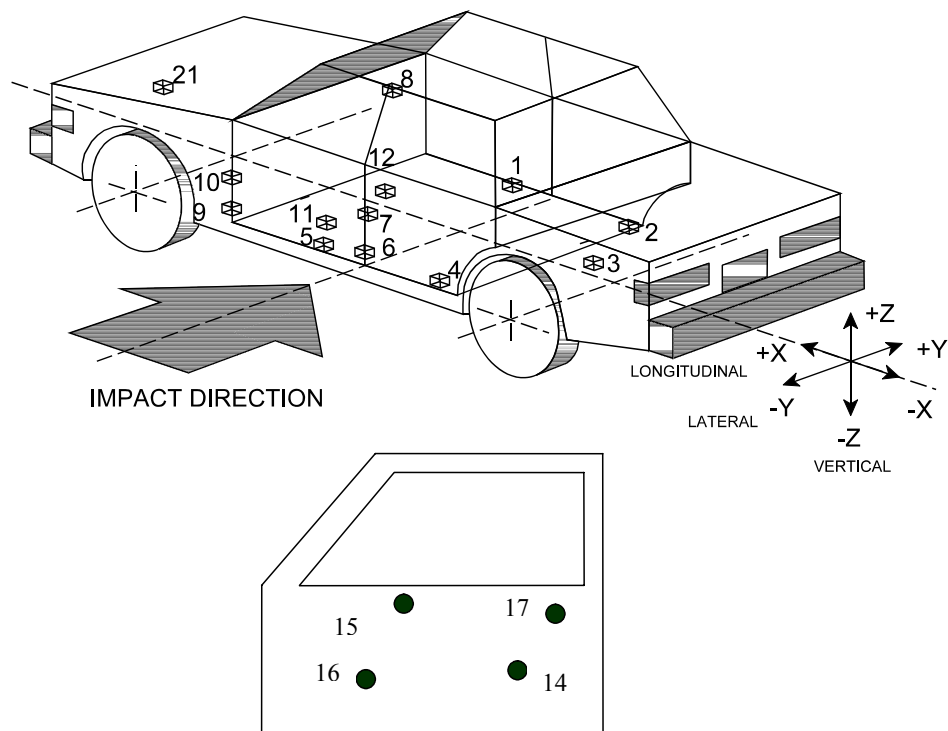
DPD	Distance from Impact Point in mm	Level	Pre-Test (mm)	Post-Test (mm)	Max Static Crush (mm)
1	2250 mm	4	370	397	27
2	1340 mm	4	295	380	85
3	555 mm	3	224	521	297
4	-390 mm	3	223	704	481
5	-1189 mm	4	283	389	106
6	-1800 mm	4	341	370	29

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 12, 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 12, 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	1.3	2.6	11.3	0.6	5.7	6.1	12.7
2	Right Side Sill at Rear Seat	1.6	2.5	13.5	0.1	5.5	4.8	13.7
3	Rear Floorpan Above Axle	1.9	2.9	12.8	0.1	4.1	3.3	12.8
4	Left Side Sill at Rear Door			17.9	1.4			
5	Left Side Sill at Front Door			65.1	22.6			
6	Left Lower B Post			48.9	23.0			
7	Left Mid B Post			64.4	6.4			
8	Left Upper B Post			38.2	16.1			
9	Left Lower A Post			23.8	1.4			
10	Left Mid A Post			10.4	0.8			
11	Driver Left Seat Track			48.4	18.1			
12	Vehicle CG	5.0	8.2	48.7	16.4	24.1	16.9	50.9
13	Left A Pillar @ Roof			89.9	37.8			
14	Left Front Door @ Pelvis			92.1	43.6			
15	Left Front Door @ Arm			151.8	59.6			
16	Left Rear Door @ Knee			92.4	59.1			
17	Left Rear Door @ Rib			104.9	17.5			
19	Left Driver Seat Frame			**	**			
20	Right Driver Seat Frame			**	**			
21	Lower Center Radiator Support	1.1	9.7	7.7	6.2	5.1	2.9	10.5

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

** Not used to avoid interference with side airbag

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

Test Vehicle: 2000 Nissan Maxima 4 door

Test Date: June 12, 2002

VEHICLE ACCELEROMETER COORDINATES

Loc. No.	Description	Coordinates (mm)*		
		X	Y	Z
1	Right Side Sill at Front Seat	2904	688	212
2	Right Side Sill at Rear Seat	1728	688	216
3	Rear Floorpan Above Axle	1024	0	523
4	Left Side Sill at Rear Door	1761	-688	210
5	Left Side Sill at Front Door	2888	-688	214
6	Left Lower B Post	2204	-691	301
7	Left Mid B Post	2229	-715	894
8	Left Upper B Post	2165	-487	1360
9	Left Lower A Post	3284	-720	300
10	Left Mid A Post	3355	-808	848
11	Driver Left Seat Track	2435	-485	331
12	Vehicle CG	2692	0	308
13	Left A Pillar @ Roof	2670	-539	1261
14	Left Front Door @ Pelvis	2457	-760	570
15	Left Front Door @ Arm	2754	-789	730
16	Left Front Door @ Knee	2935	-746	658
17	Left Front Door @ Rib	2431	-758	608
19	Left Driver Seat Frame	**	**	**
20	Right Driver Seat Frame	**	**	**
21	Lower Center Radiator Support	4563	0	218

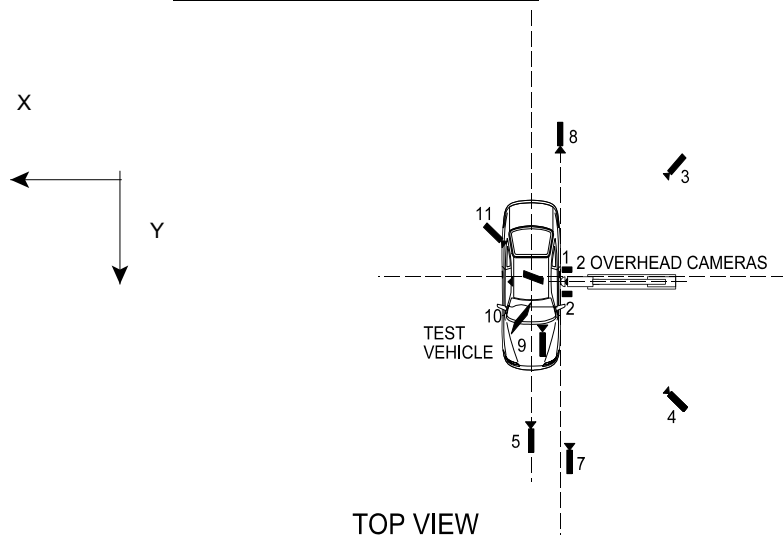
Sign Convention X - Rear Bumper (+ Forward)
 Y - Vehicle Centerline (+ to right)
 Z - Ground Plane (+ up)

** Not used to avoid interference with side airbag

DATA SHEET NO. 11
HIGH SPEED CAMERA LOCATIONS AND DATA

Test Vehicle: 2000 Nissan Maxima 4 door

Test Date: June 12, 2002



No.	Camera View	Location (mm)			Lens (mm)	Film Speed (fps)
		X	Y	Z		
1	Overhead Overall	-770	0	5080	8	1010
2	Overhead Close-up	0	0	5000	13	1000
3	Left Side 45° Rearward Pole View	1480	-7430	1510	50	1000
4	Left Side 45° Forward Pole View	1650	5180	1570	50	990
5	Real Time					
7	Front Ground Level Vehicle/Pole Impact	-820	9150	1330	25	741
8	Rear Ground Level Vehicle/Pole Impact	-300	-9150	1480	25	1005
9	Test Vehicle Onboard Driver Hip				13	505
10	Test Vehicle Onboard Hood				13	500
11	Test Vehicle Onboard Driver Head Contact				13	503

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.



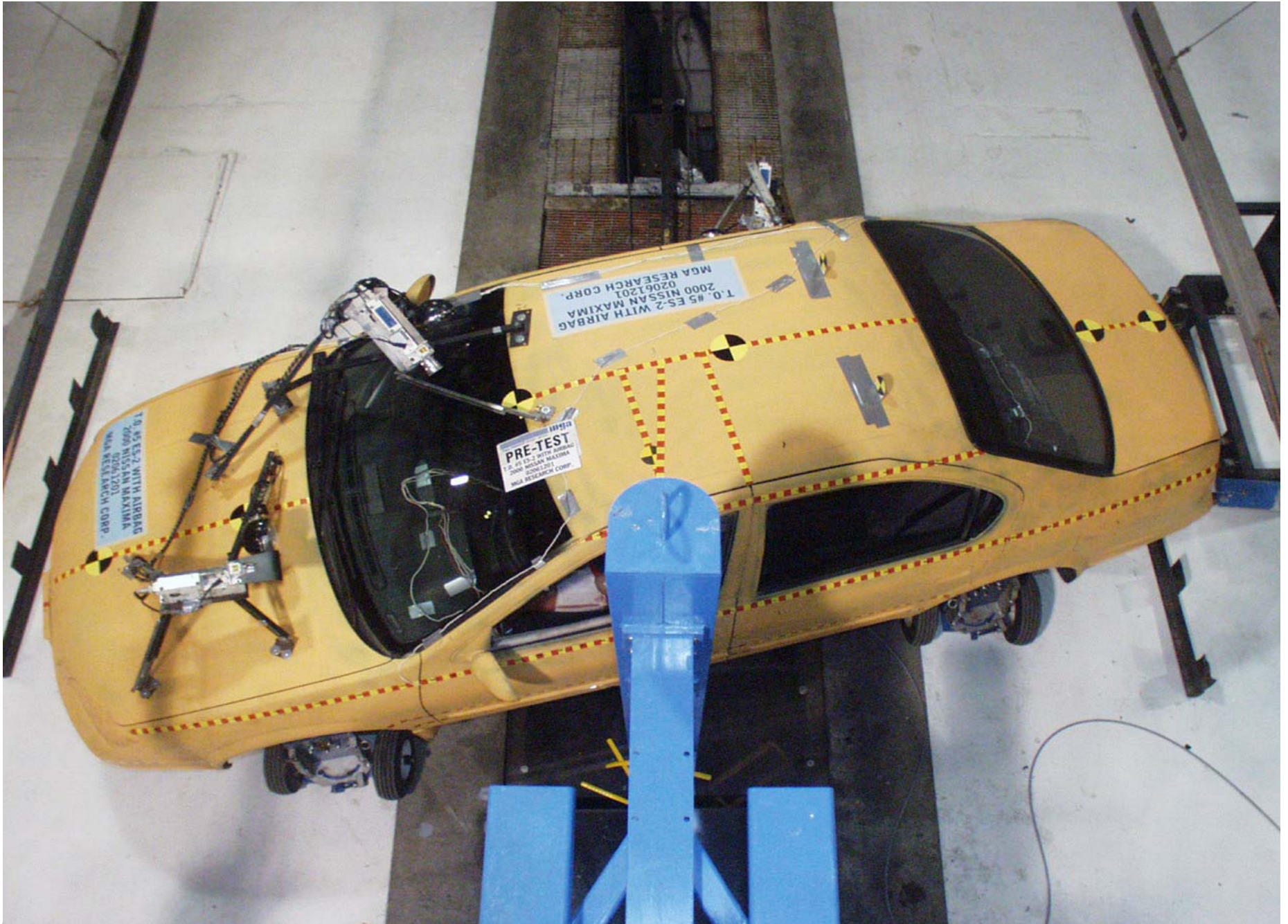
Pre-Test Left Side View of Test Vehicle



Post-Test Left Side View of Test Vehicle



Pre-Test Left Front View



Pre-Test Overhead View



Post-Test Overhead View



Pre-Test Left Rear Vehicle against Pole View

A-11.



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



Post-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

MFD.BY NISSAN MOTOR CO.,LTD

DATE 05/99

GVWR/PNBV 4333 LBS.

GAWR/PNBE FR. 2365 LBS. RR. 1988 LBS.

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

JN1CA31A8YT003079

PASSENGER CAR/VOITURE DE TOURISME



JN1CA31A8YT003079



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



Post-Test Driver Dummy Head 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 70 msec.

.



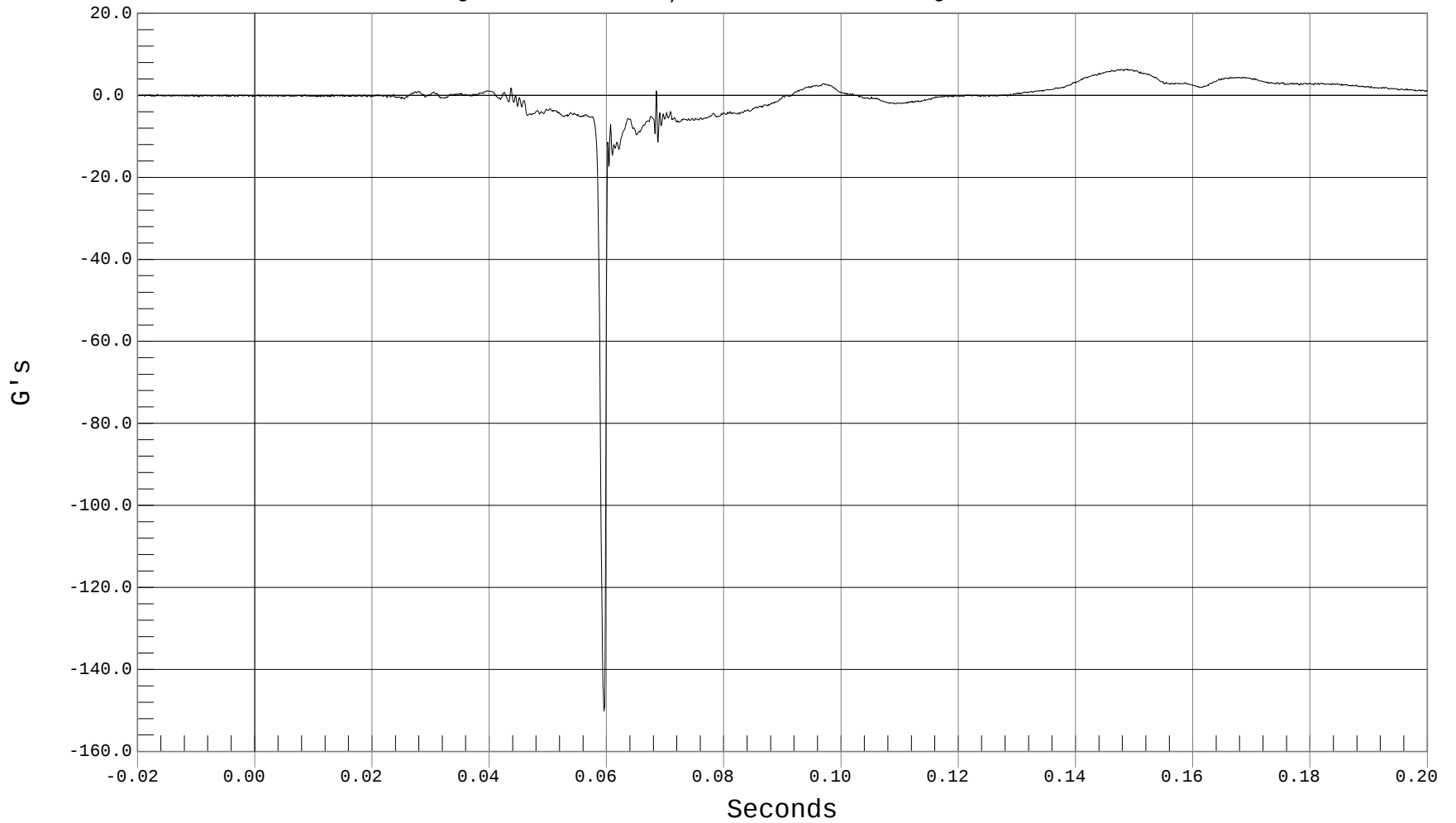
DRIVER HEAD X ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 1000

1 DRIVER HEAD X, B02048AT.A01

Ymin = -150.14 G's @ 0.0595 Seconds, Ymax = 6.38 G's @ 0.1484 Seconds





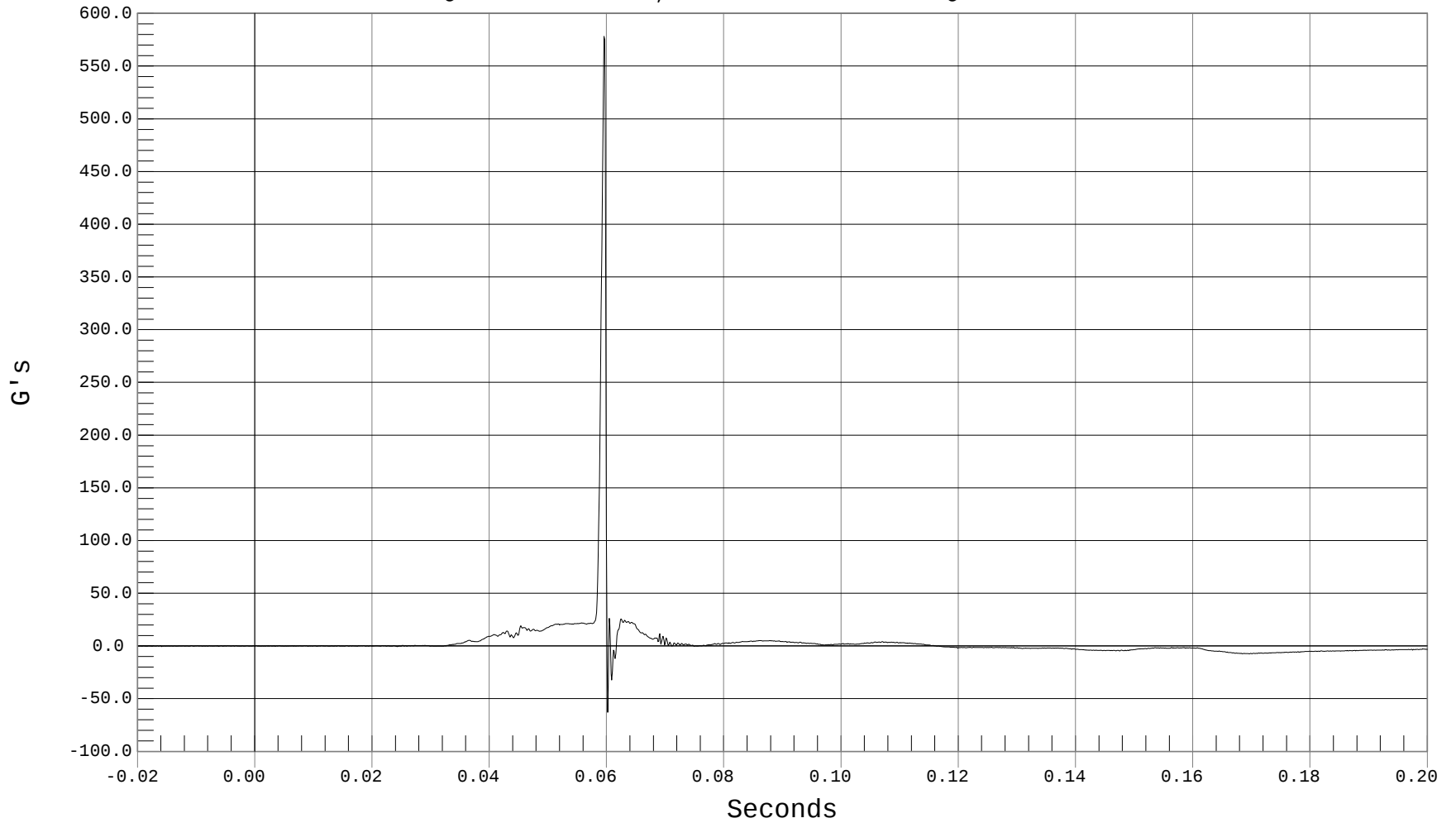
DRIVER HEAD Y ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 1000

1 DRIVER HEAD Y, B02048AT.A02

Ymin = -63.08 G's @ 0.0601 Seconds, Ymax = 578.11 G's @ 0.0595 Seconds





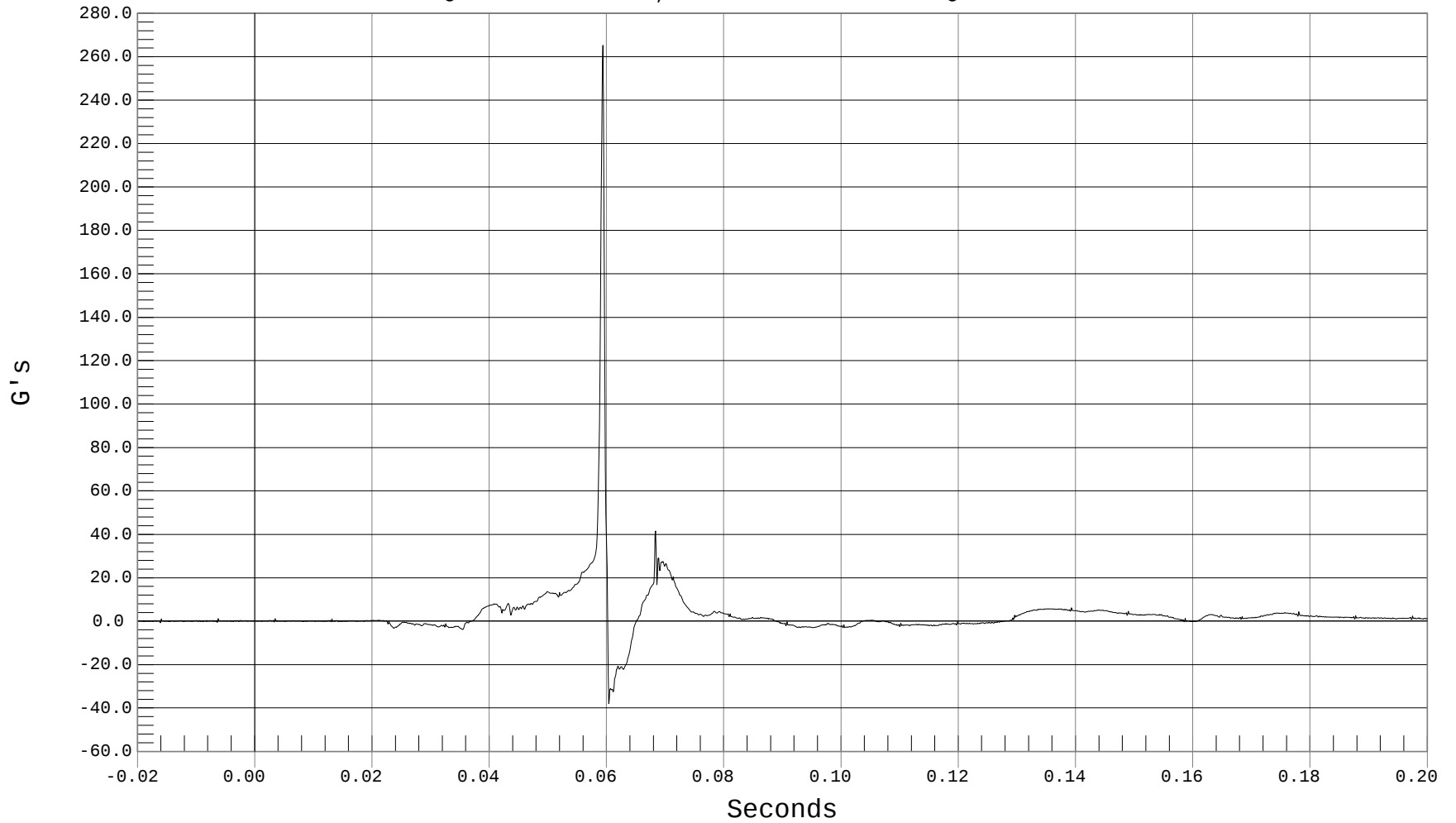
DRIVER HEAD Z ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 1000

1 DRIVER HEAD Z, B02048AT.A03

Ymin = -37.95 G's @ 0.0603 Seconds, Ymax = 265.27 G's @ 0.0593 Seconds





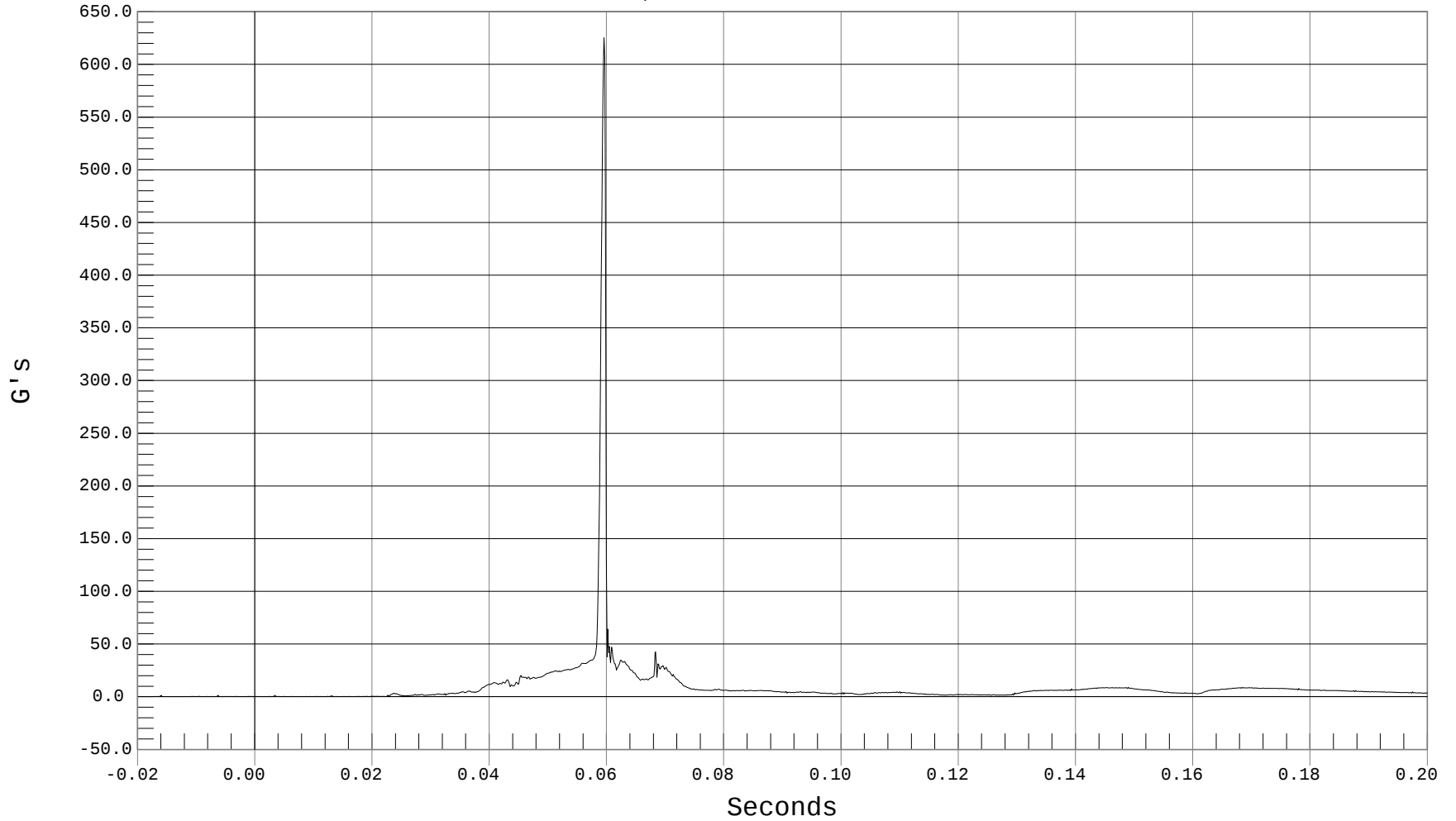
DRIVER HEAD RESULTANT ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 1000

1 DRIVER HEAD RESULTANT, B02048AV.A01

Ymin = .04 G's @ -0.0017 Seconds, Ymax = 625.11 G's @ 0.0595 Seconds





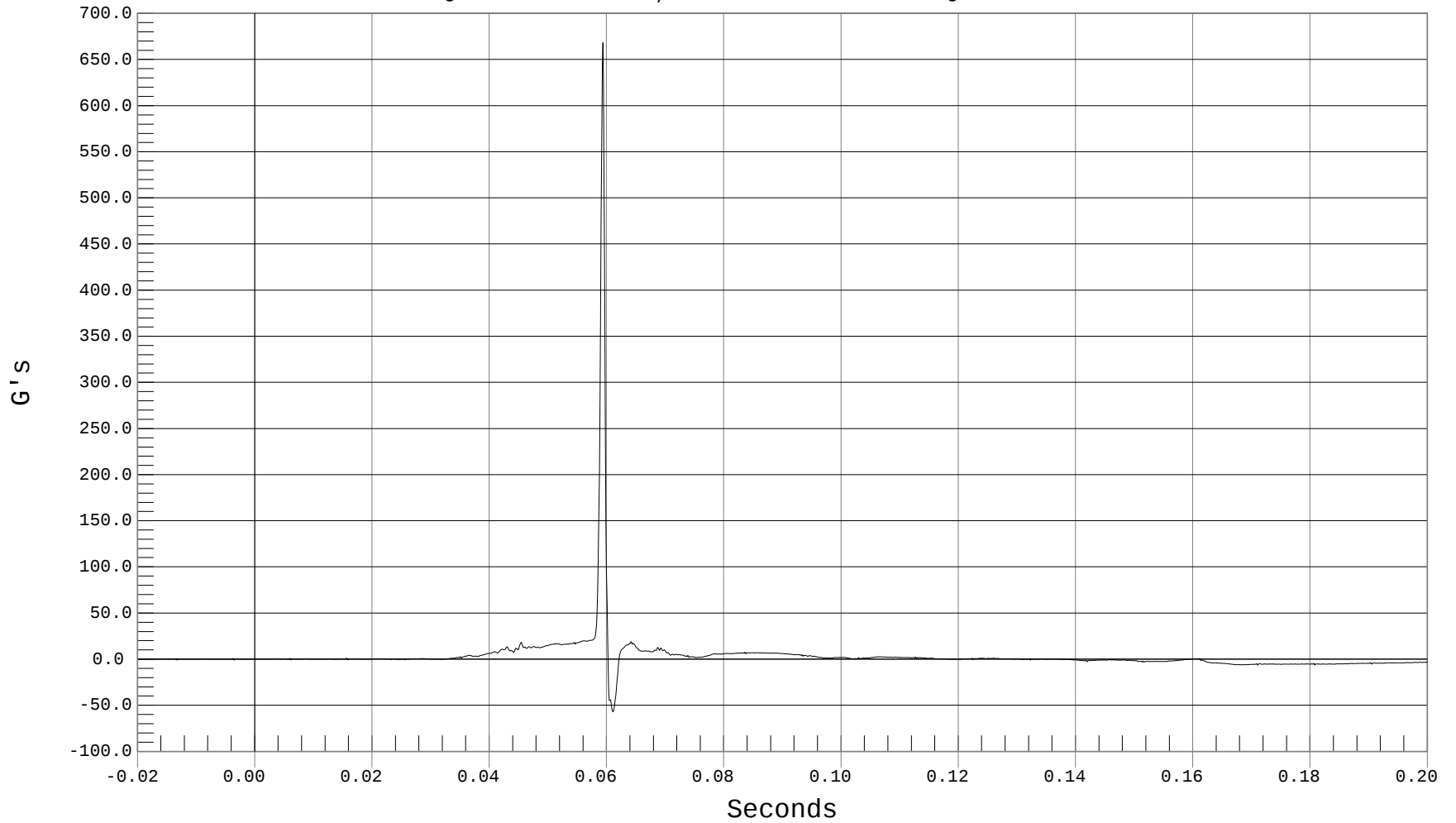
DRIVER HEAD FRONT Y ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 1000

1 DRIVER HEAD FRONT Y, B02048AT.A75

Ymin = -57.04 G's @ 0.0610 Seconds, Ymax = 668.25 G's @ 0.0593 Seconds





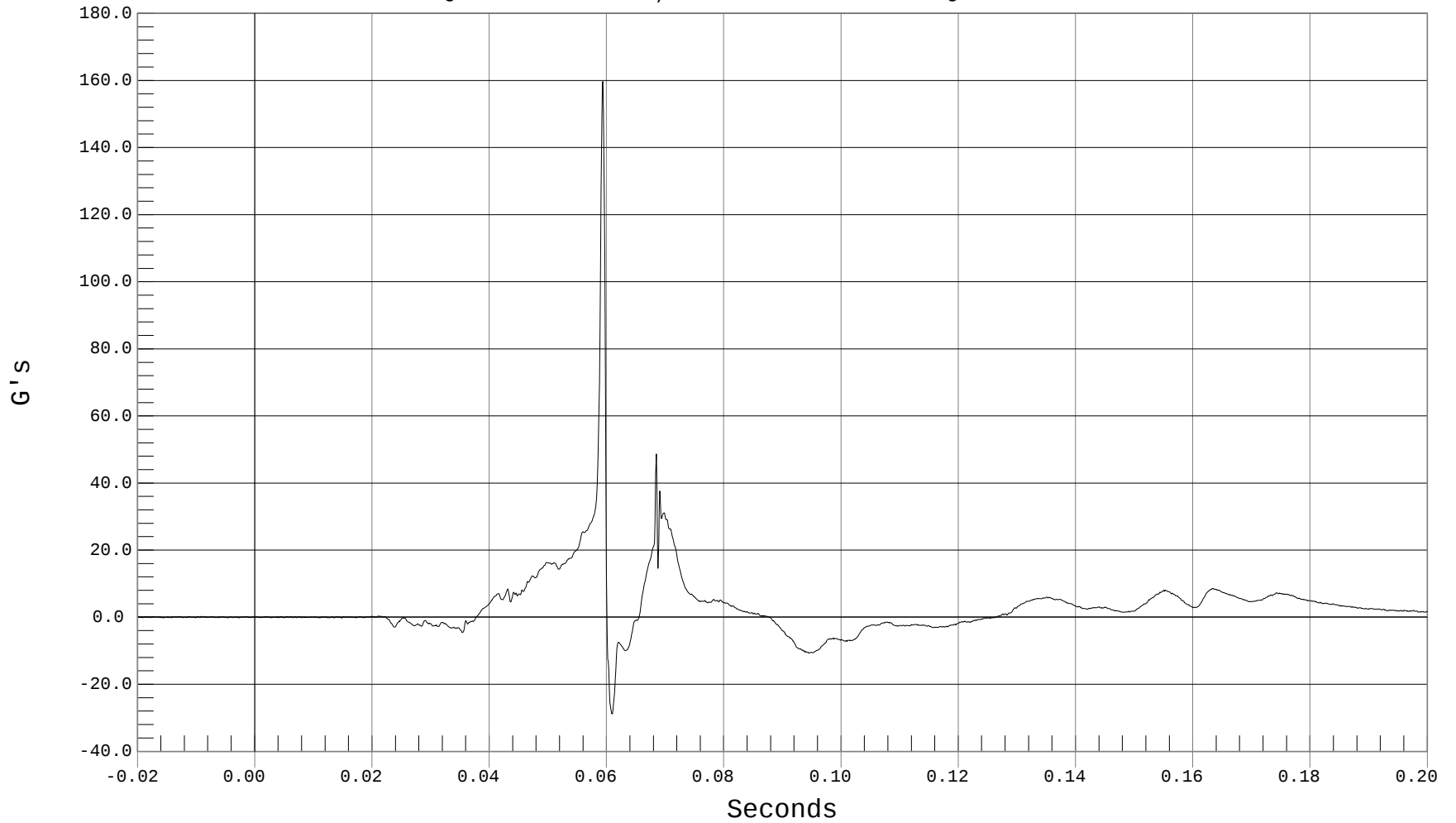
DRIVER HEAD FRONT Z ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 1000

1 DRIVER HEAD FRONT Z, B02048AT.A76

Ymin = -28.85 G's @ 0.0609 Seconds, Ymax = 159.66 G's @ 0.0593 Seconds





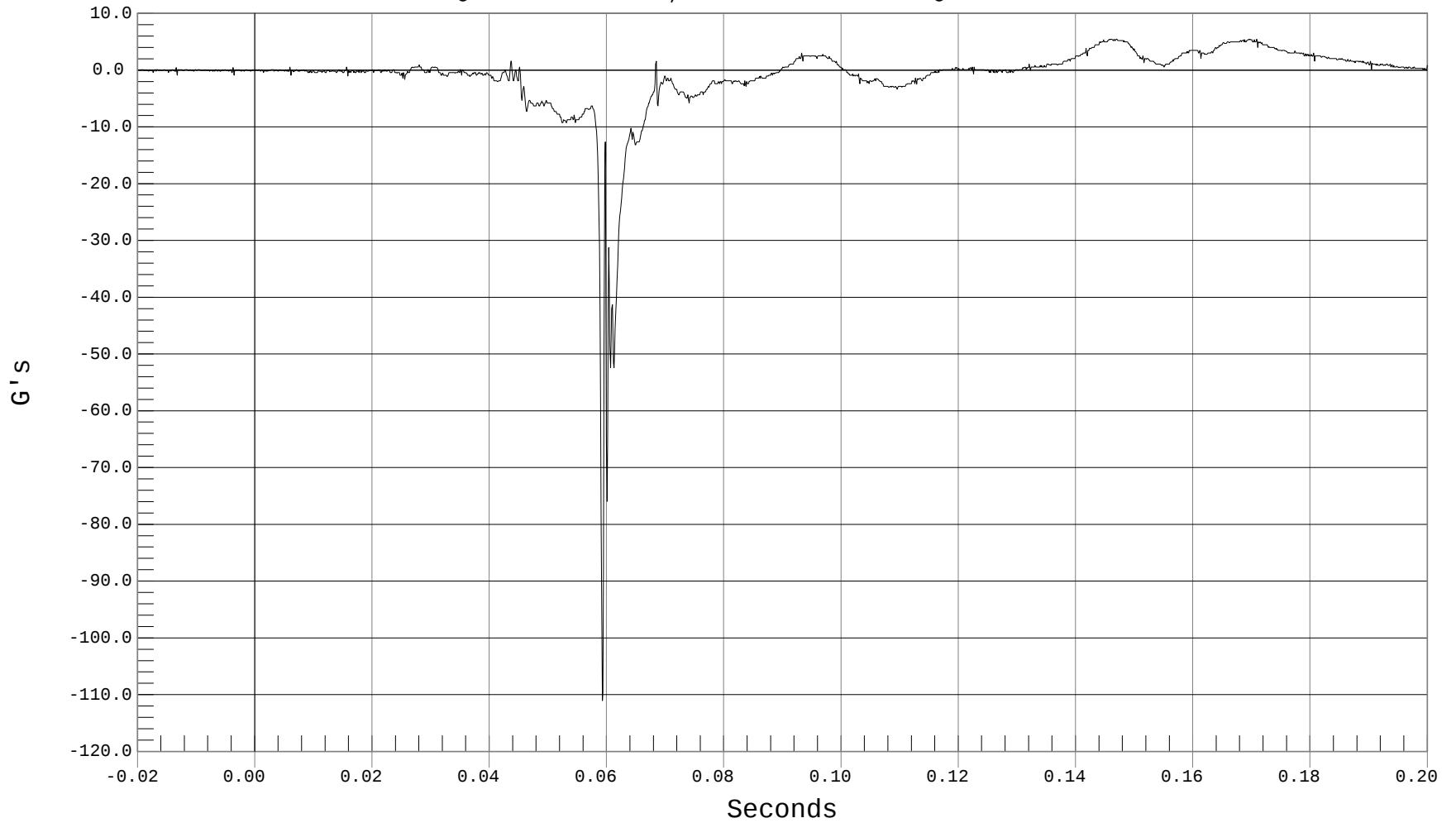
DRIVER HEAD LEFT X ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 1000

1 DRIVER HEAD LEFT X, B02048AT.A77

Ymin = -111.06 G's @ 0.0592 Seconds, Ymax = 5.46 G's @ 0.1457 Seconds





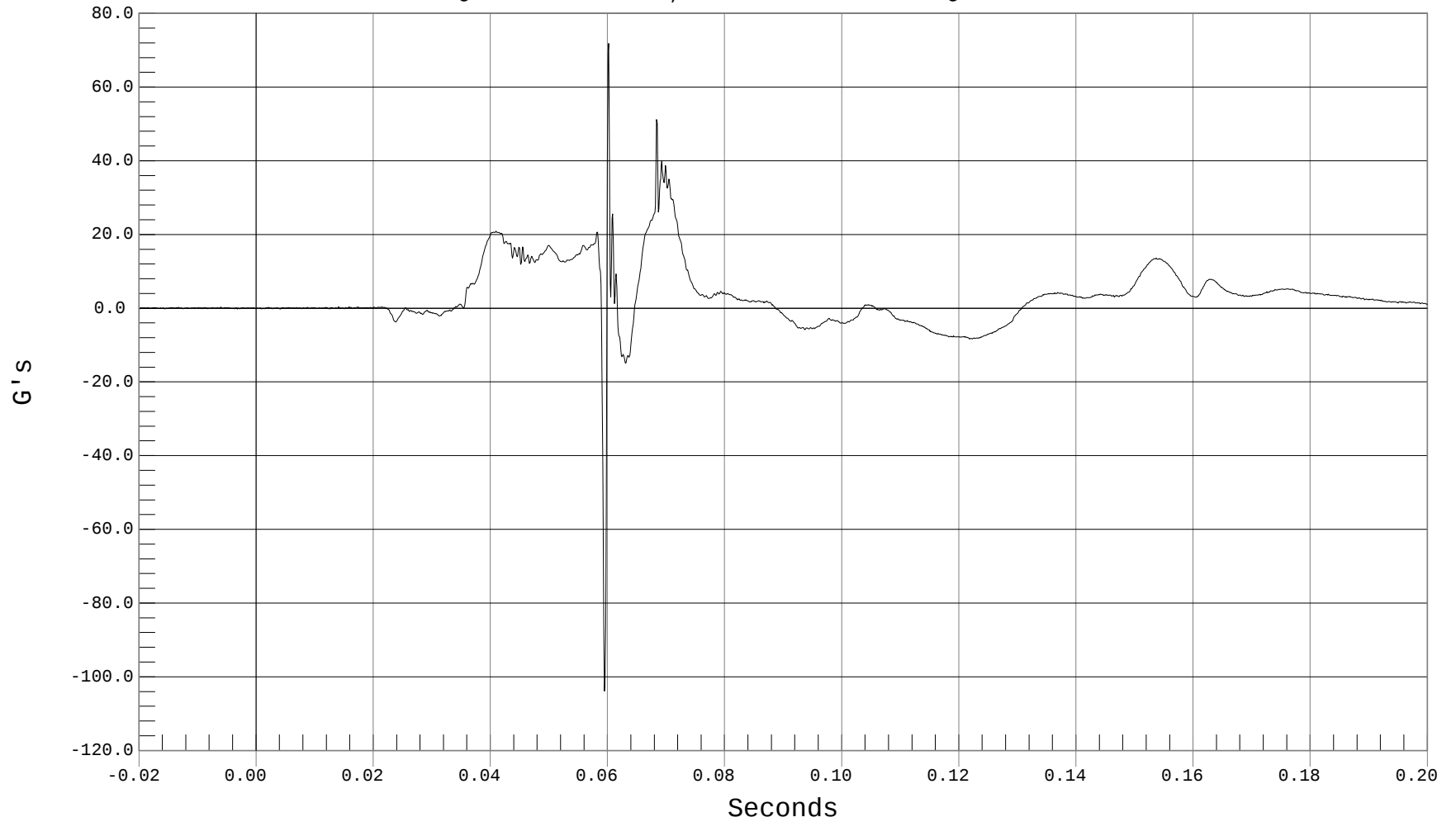
DRIVER HEAD LEFT Z ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 1000

1 DRIVER HEAD LEFT Z, B02048AT.A78

Ymin = -103.89 G's @ 0.0594 Seconds, Ymax = 71.81 G's @ 0.0601 Seconds





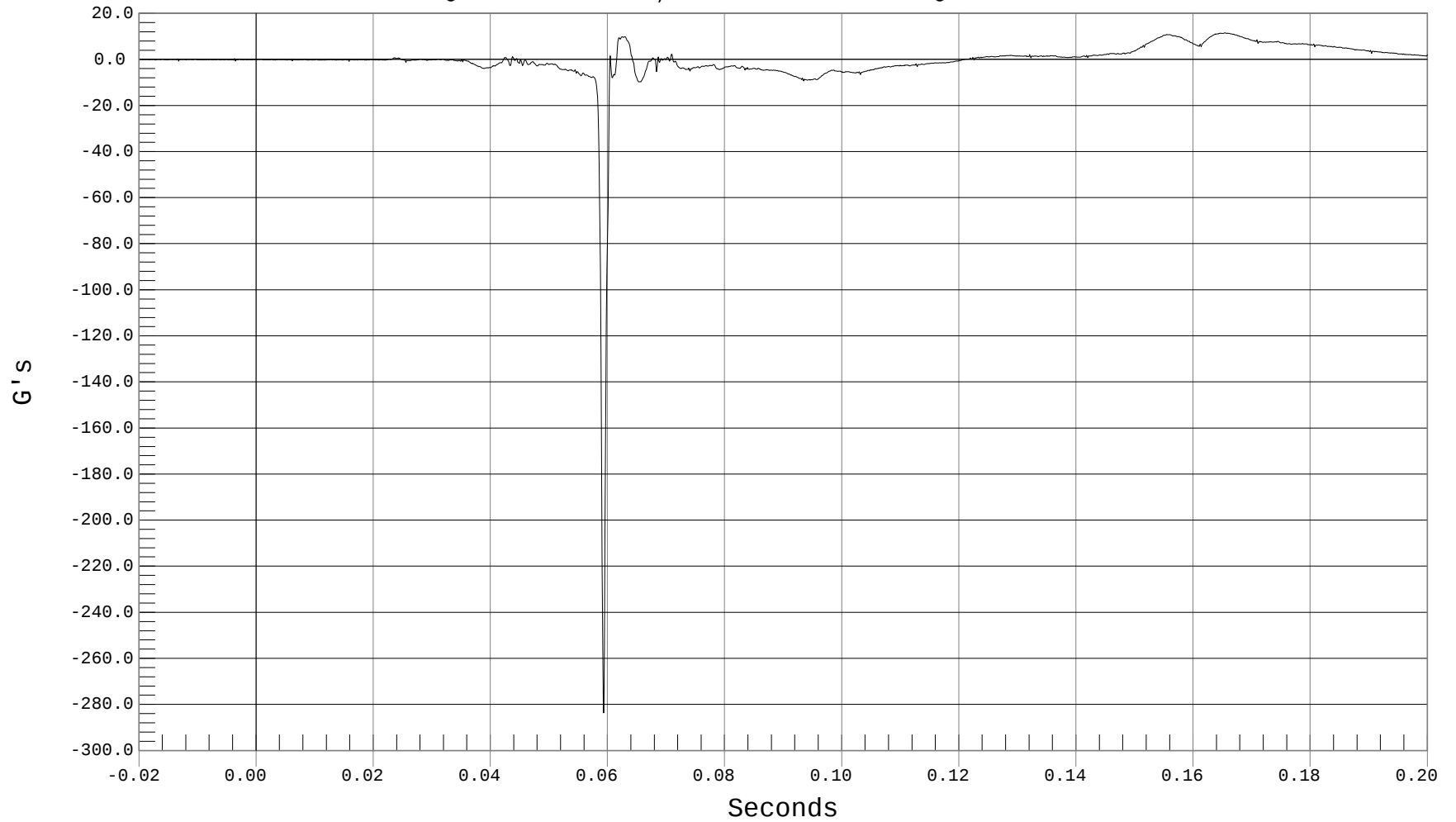
DRIVER HEAD TOP X ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 1000

1 DRIVER HEAD TOP X, B02048AT.A79

Ymin = -283.7 G's @ 0.0592 Seconds, Ymax = 11.48 G's @ 0.1653 Seconds





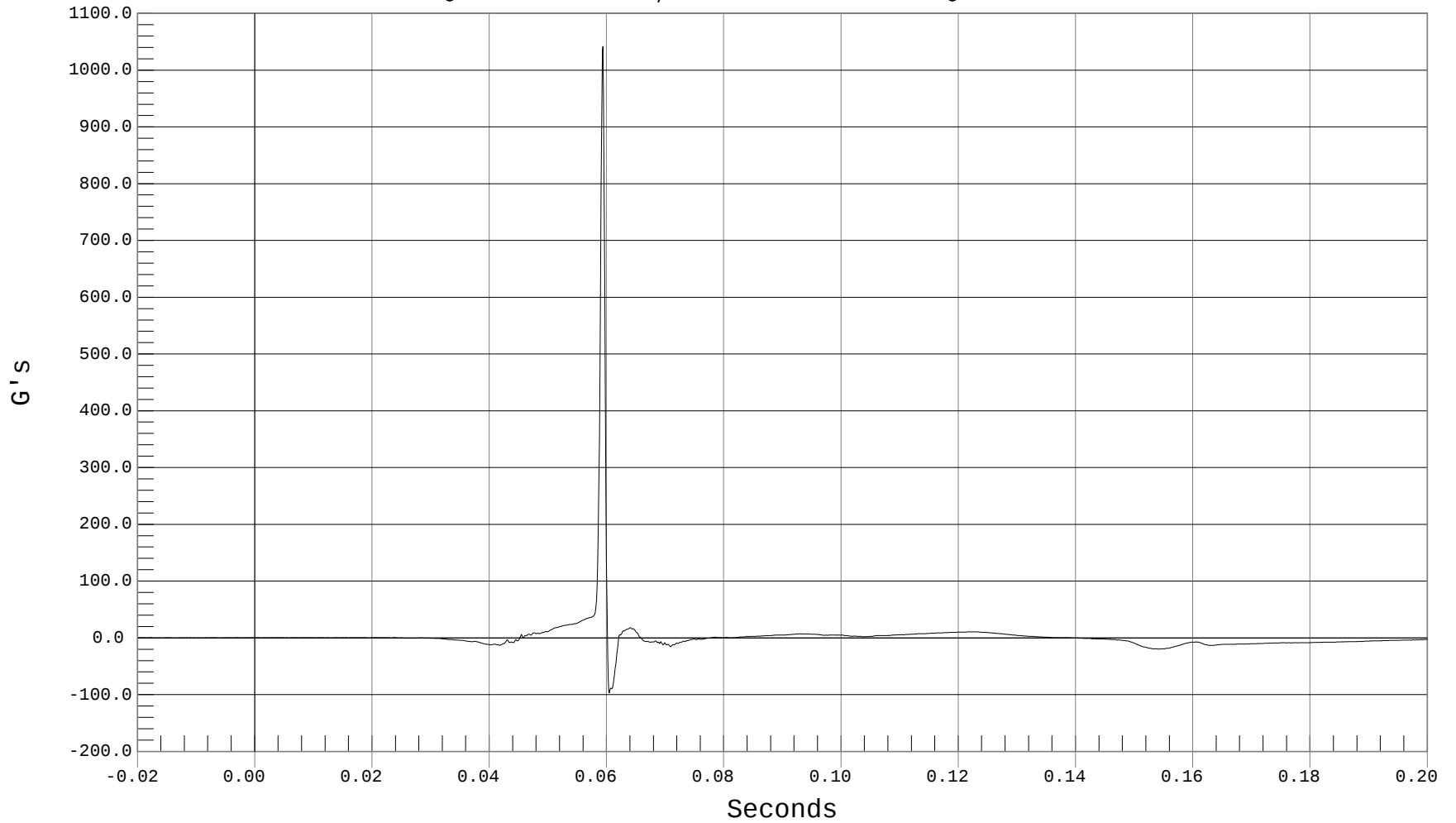
DRIVER HEAD TOP Y ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 1000

— 1 DRIVER HEAD TOP Y, B02048AT.A80

Ymin = -97.07 G's @ 0.0604 Seconds, Ymax = 1041.8 G's @ 0.0593 Seconds





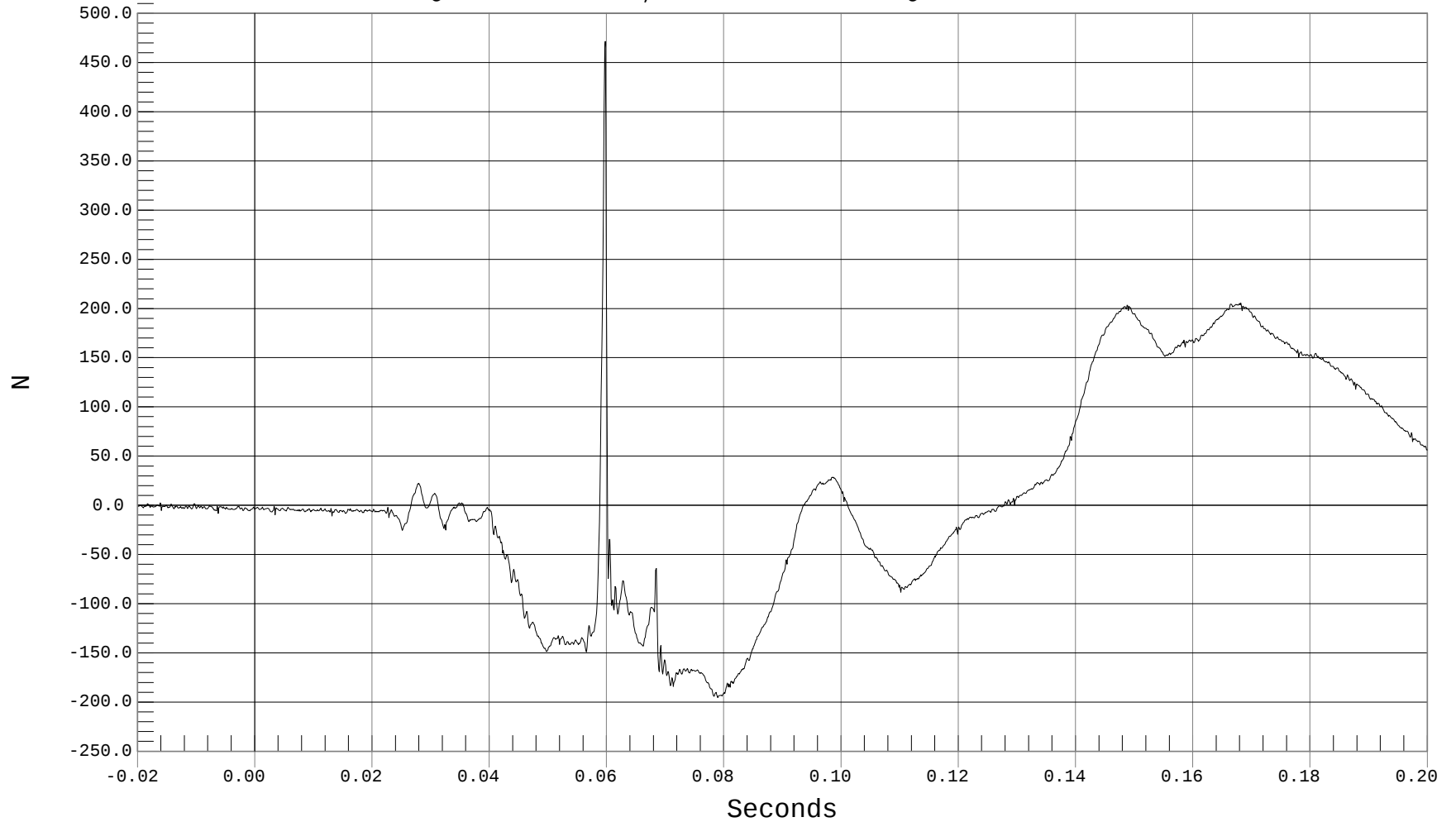
DRIVER UPPER NECK FORCE X

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 1000

1 DRIVER UPPER NECK FX, B02048FT.F15

Ymin = -195.53 N @ 0.0789 Seconds, Ymax = 471.56 N @ 0.0597 Seconds





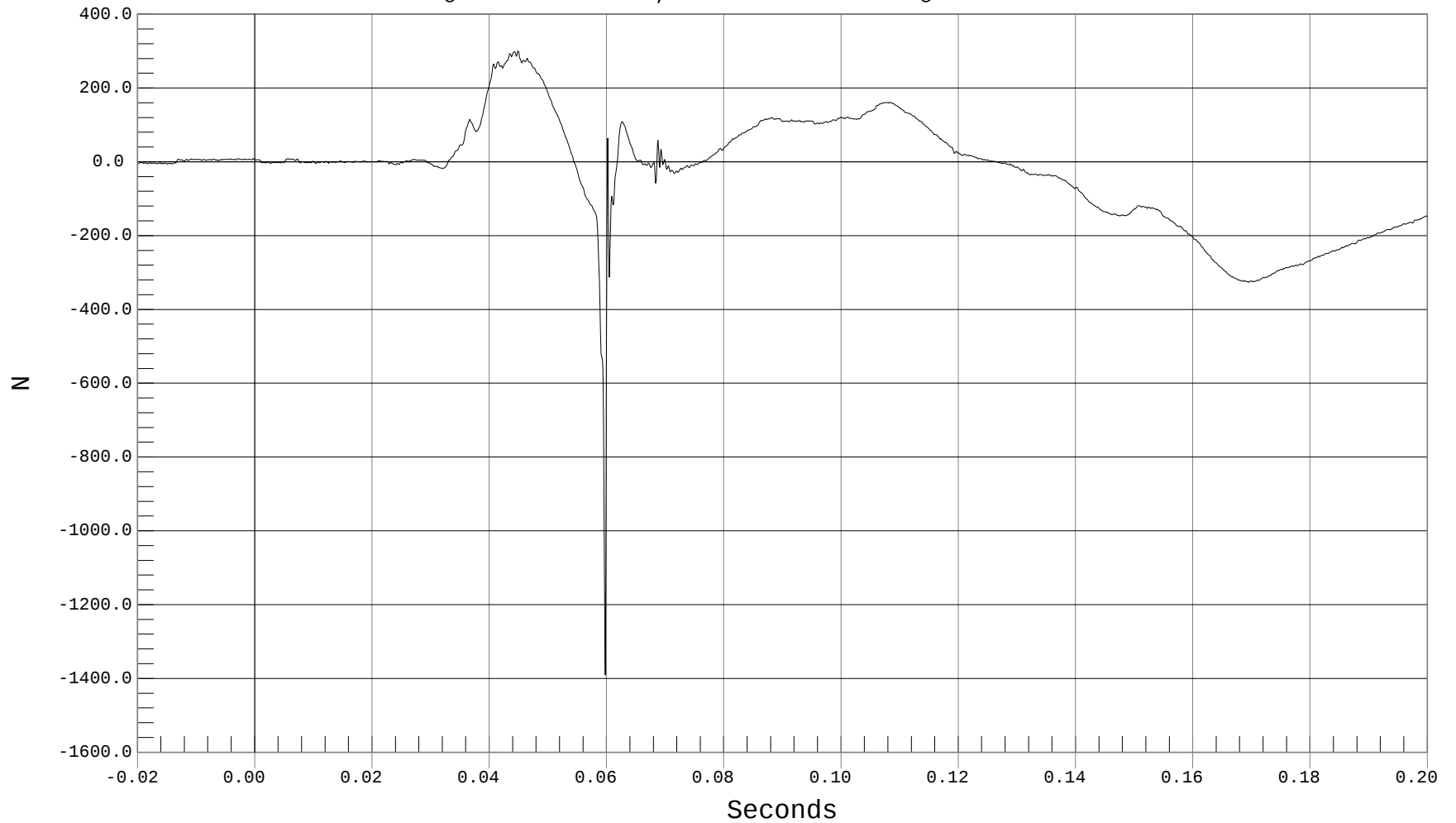
DRIVER UPPER NECK FORCE Y

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 1000

1 DRIVER UPPER NECK FY, B02048FT.F16

Ymin = -1390.79 N @ 0.0597 Seconds, Ymax = 299.69 N @ 0.0448 Seconds





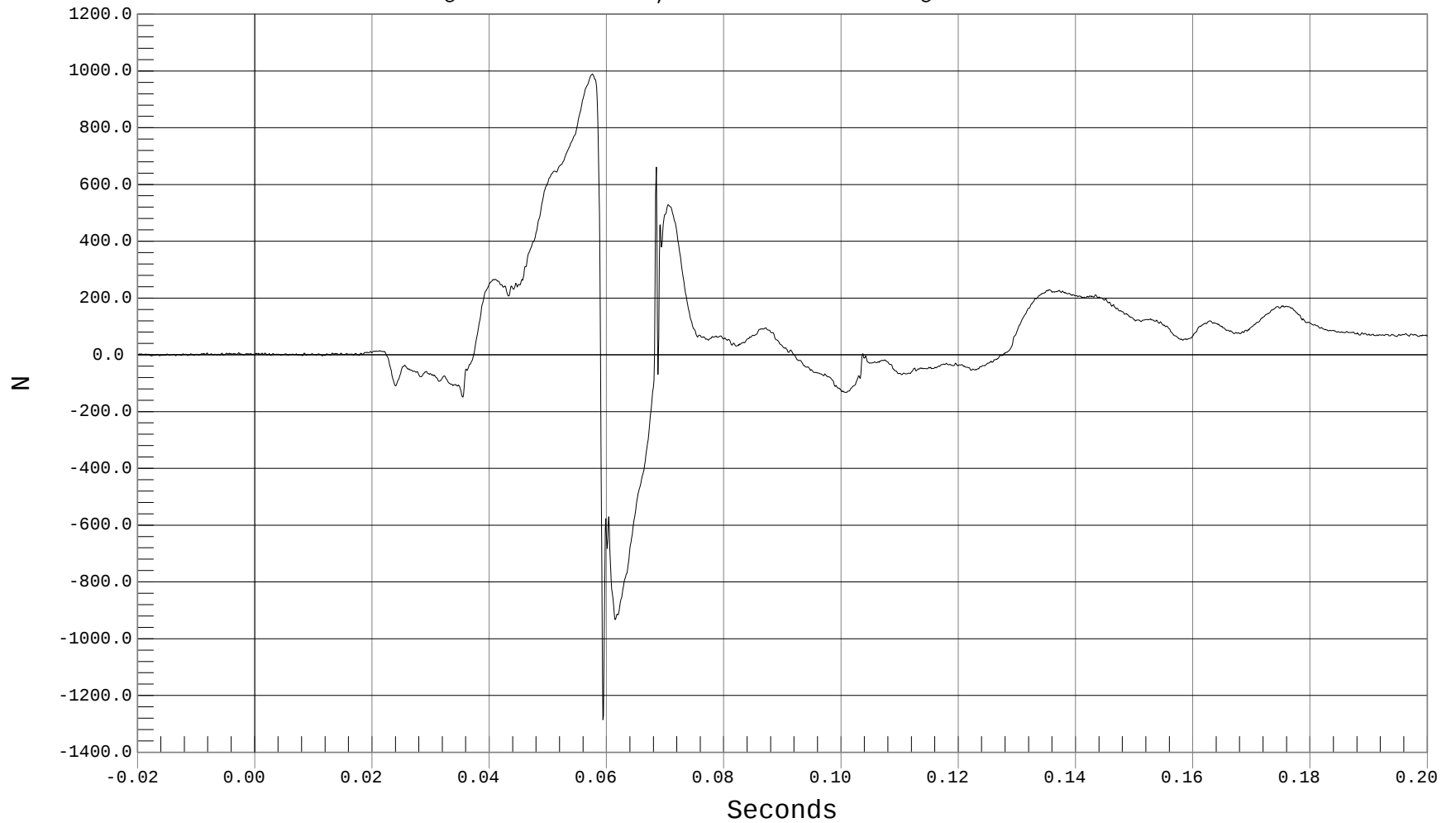
DRIVER UPPER NECK FORCE Z

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 1000

1 DRIVER UPPER NECK FZ, B02048FT.F17

Ymin = -1286.29 N @ 0.0593 Seconds, Ymax = 989.92 N @ 0.0575 Seconds





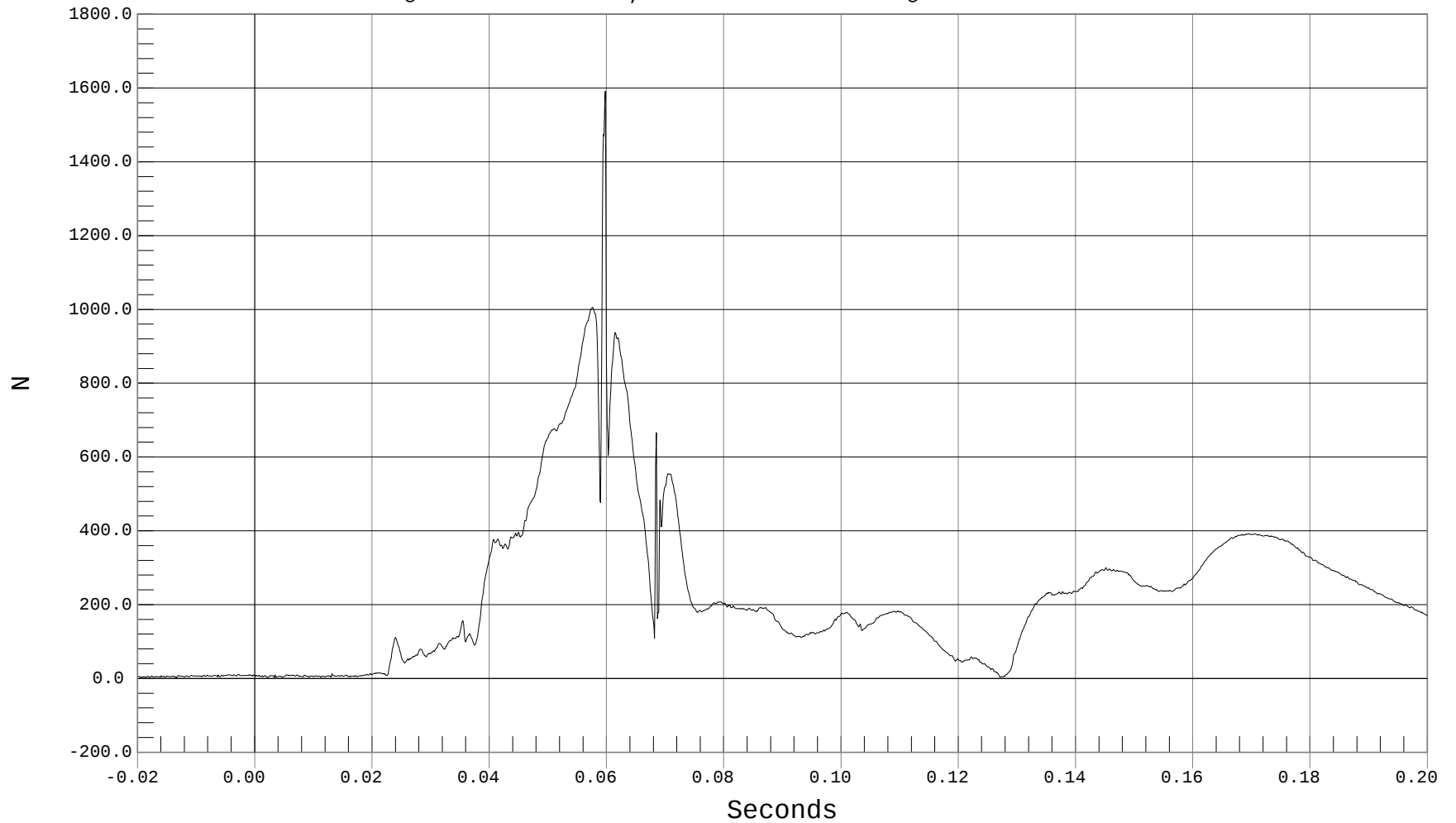
DRIVER UPPER NECK FORCE RESULTANT

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 1000

— 1 DRIVER UPPER NECK FORCE RESULTANT, B02048FV.F15

Ymin = 1.12 N @ -0.0134 Seconds, Ymax = 1591.31 N @ 0.0597 Seconds





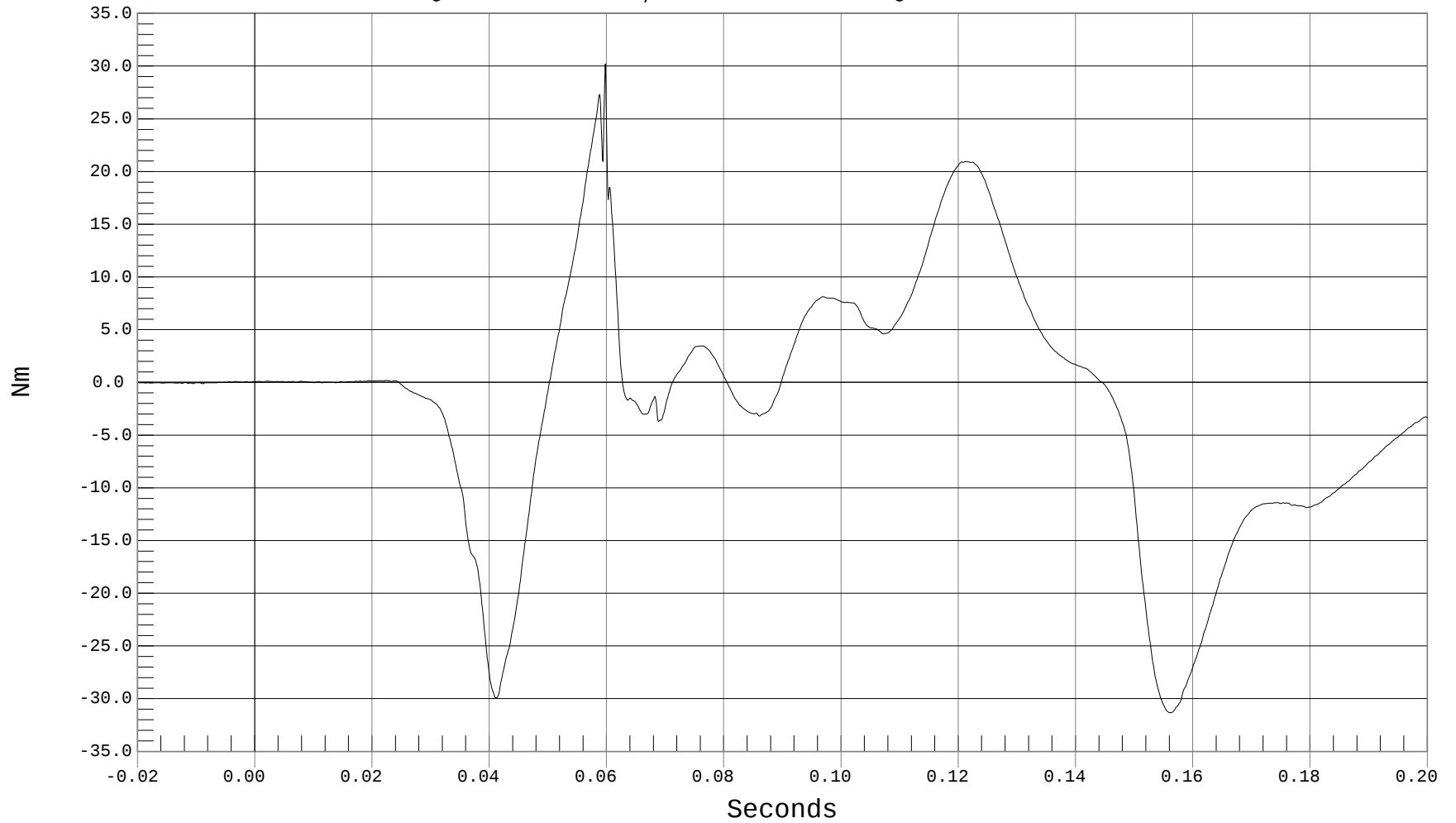
DRIVER UPPER NECK MOMENT X

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

1 DRIVER UPPER NECK MX, B02048MF.M18

Ymin = -31.33 Nm @ 0.1561 Seconds, Ymax = 30.2 Nm @ 0.0597 Seconds





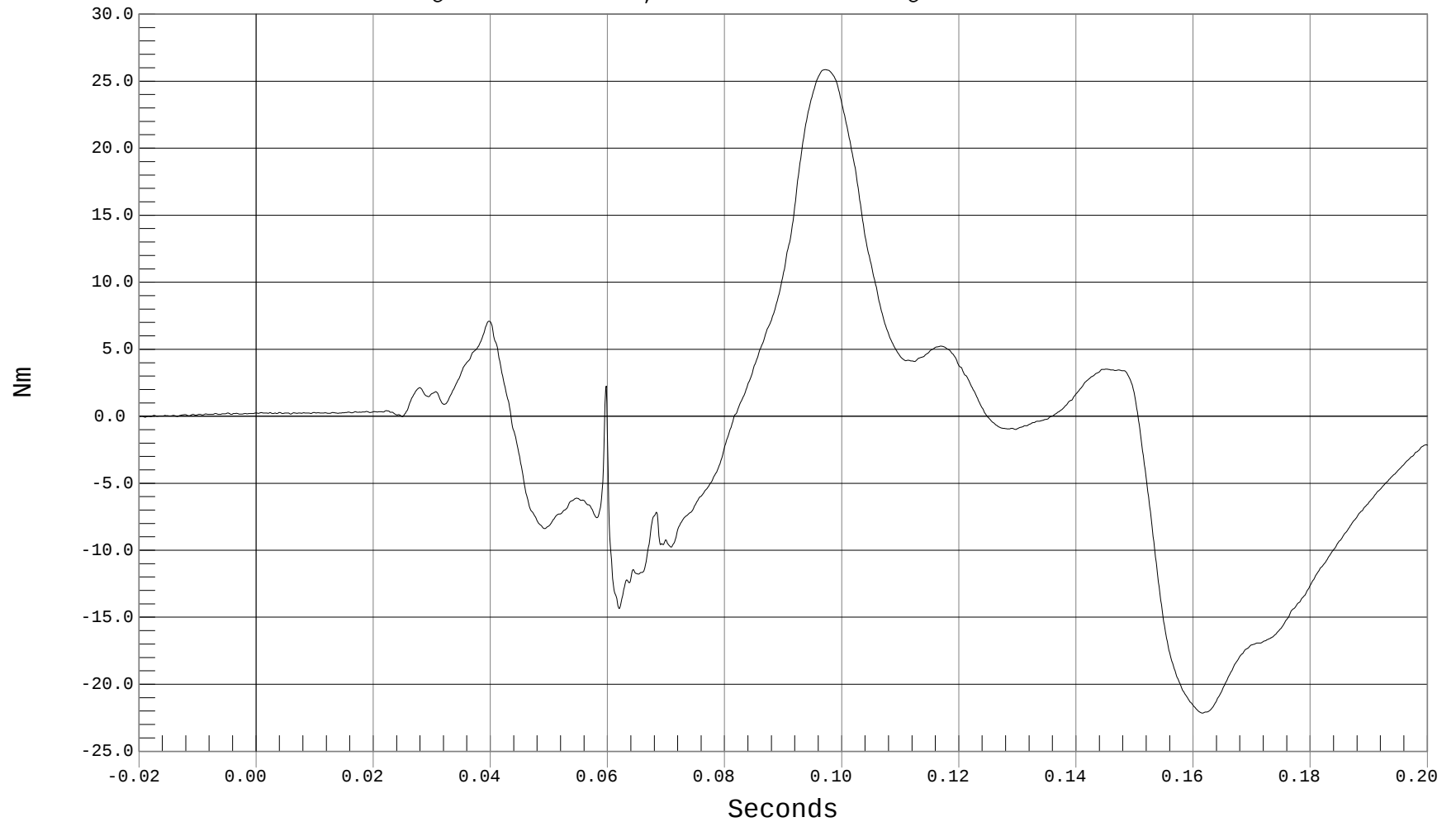
DRIVER UPPER NECK MOMENT Y

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER UPPER NECK MY, B02048MF.M19

Ymin = -22.15 Nm @ 0.1615 Seconds, Ymax = 25.87 Nm @ 0.0971 Seconds





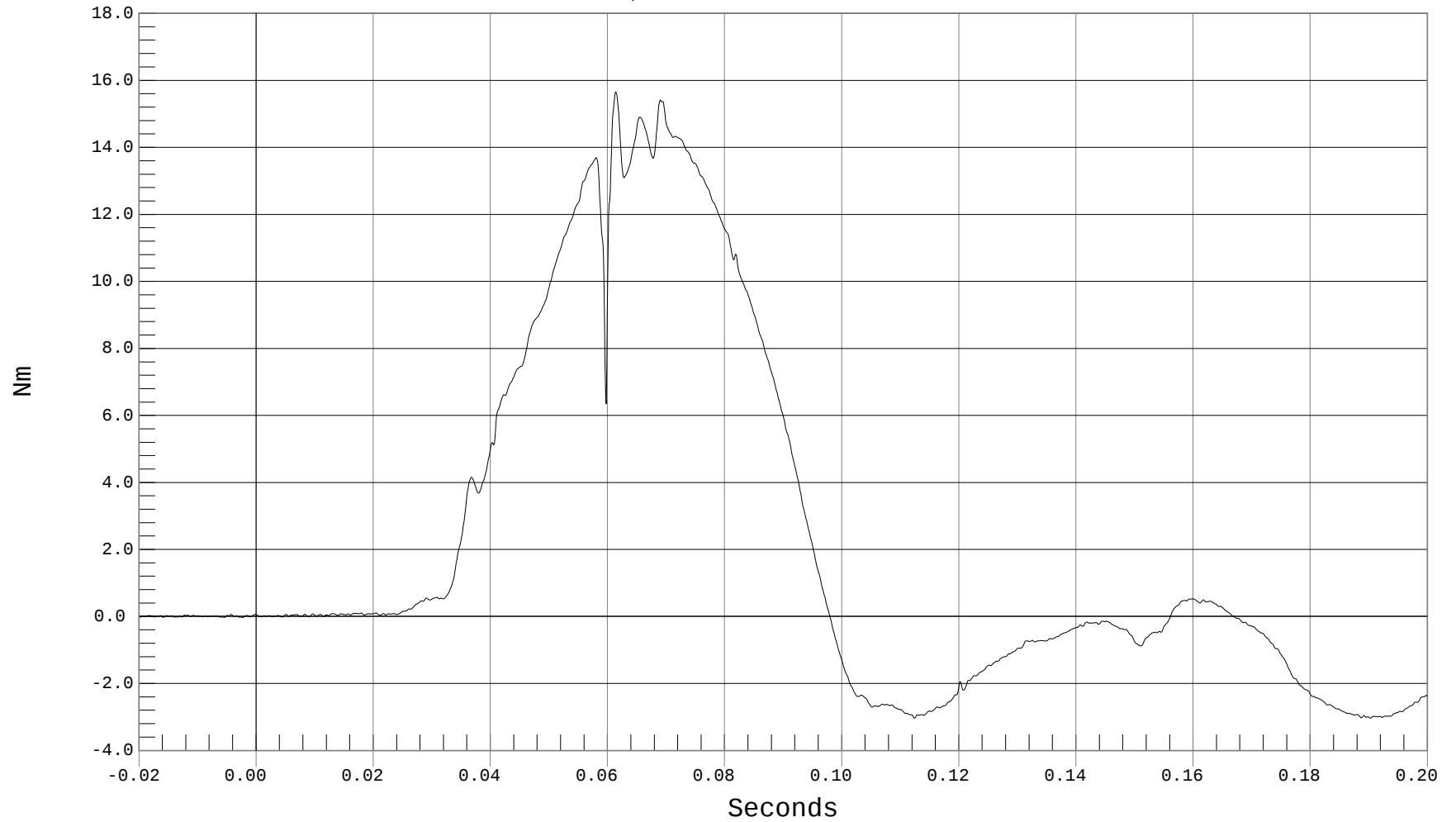
DRIVER UPPER NECK MOMENT Z

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER UPPER NECK MZ, B02048MF.M20

Ymin = -3.03 Nm @ 0.1123 Seconds, Ymax = 15.65 Nm @ 0.0613 Seconds





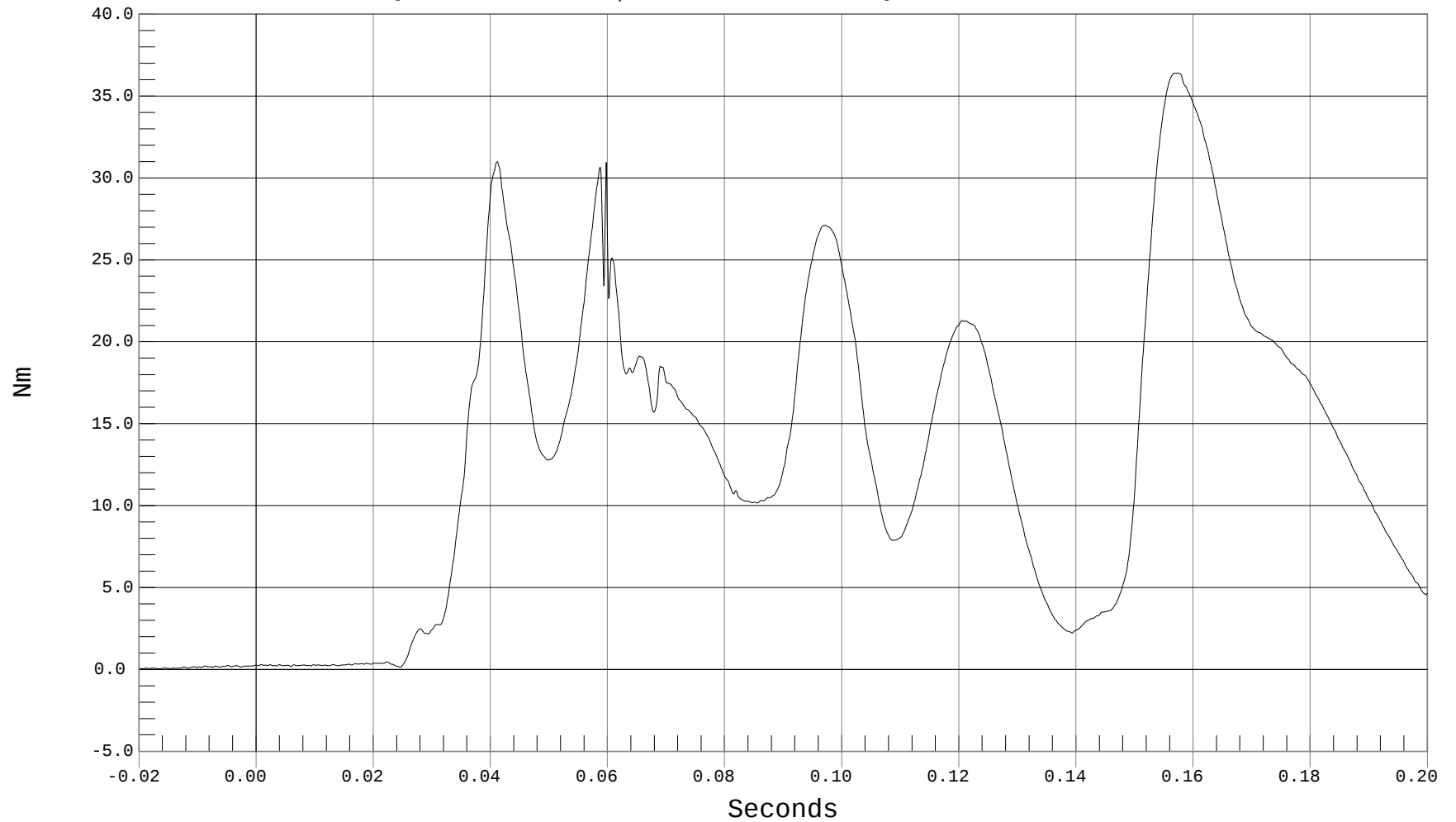
DRIVER UPPER NECK MOMENT RESULTANT

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER UPPER NECK MOMENT RESULTANT, B02048MV.M18

Ymin = .03 Nm @ -0.0196 Seconds, Ymax = 36.41 Nm @ 0.1573 Seconds





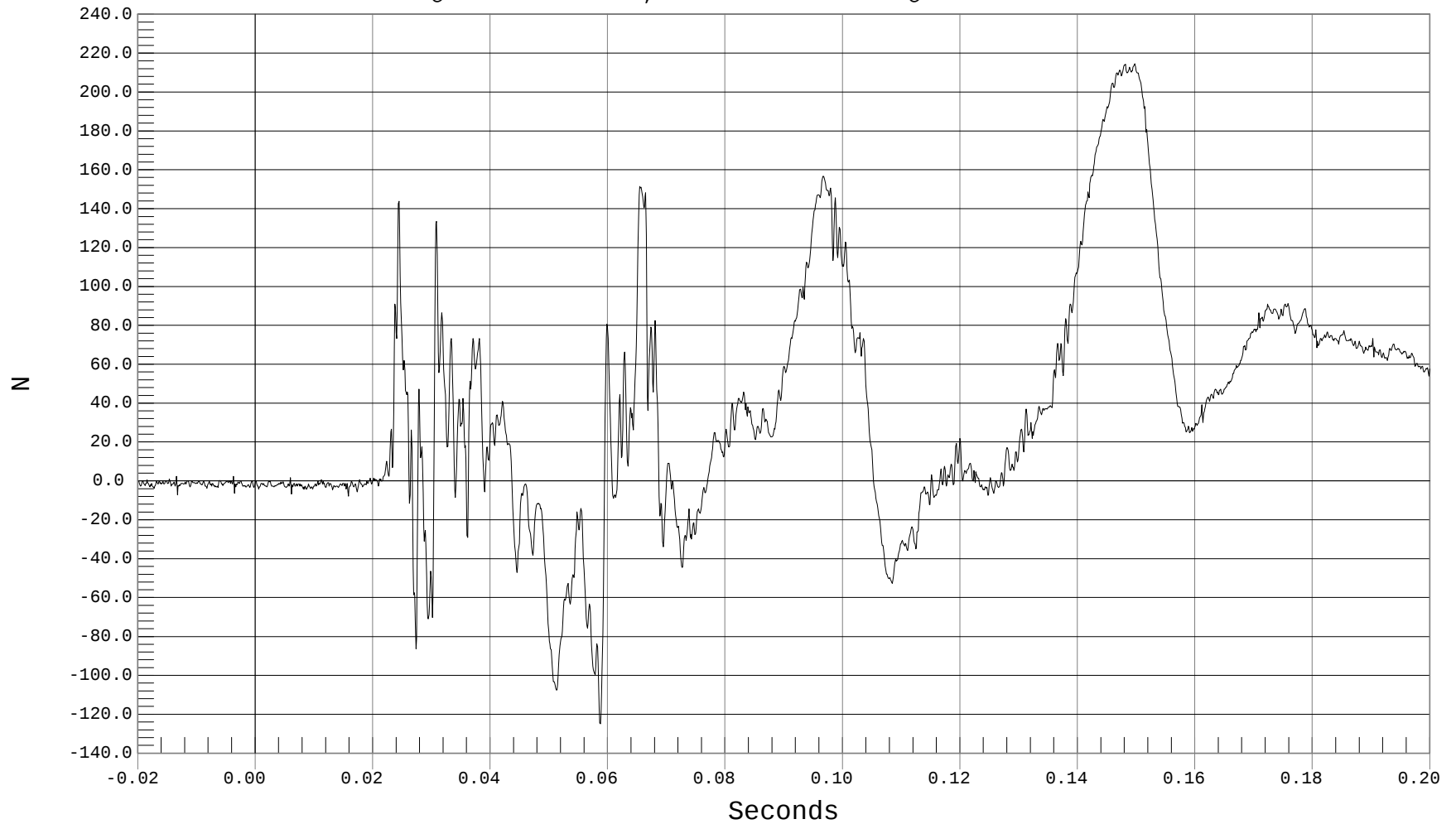
DRIVER LOWER NECK FORCE X

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 1000

— 1 DRIVER LOWER NECK FX, B02048FT.F69

Ymin = -124.94 N @ 0.0587 Seconds, Ymax = 214.57 N @ 0.1497 Seconds





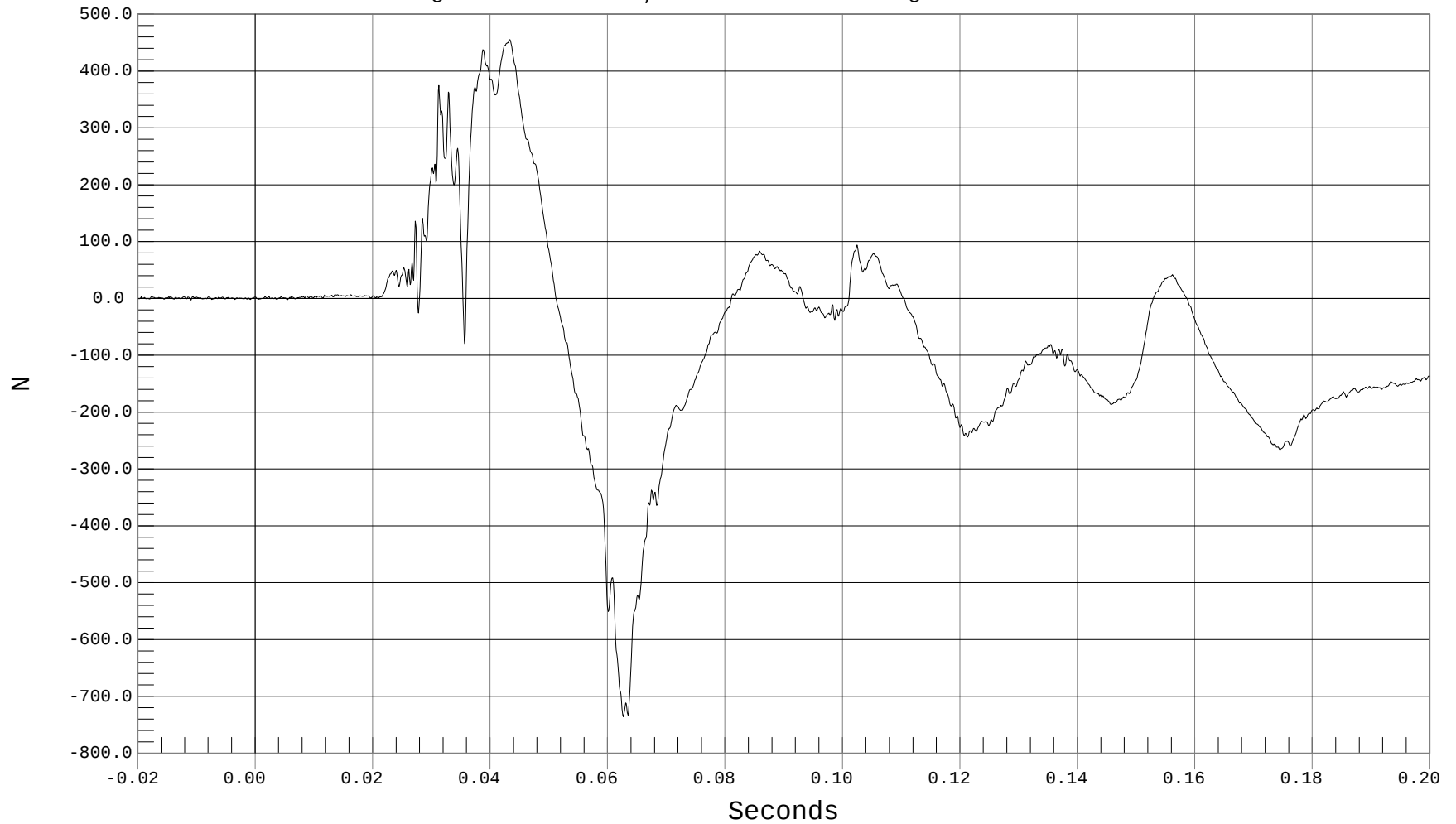
DRIVER LOWER NECK FORCE Y

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 1000

— 1 DRIVER LOWER NECK FY, B02048FT.F70

Ymin = -735.96 N @ 0.0626 Seconds, Ymax = 455.25 N @ 0.0432 Seconds





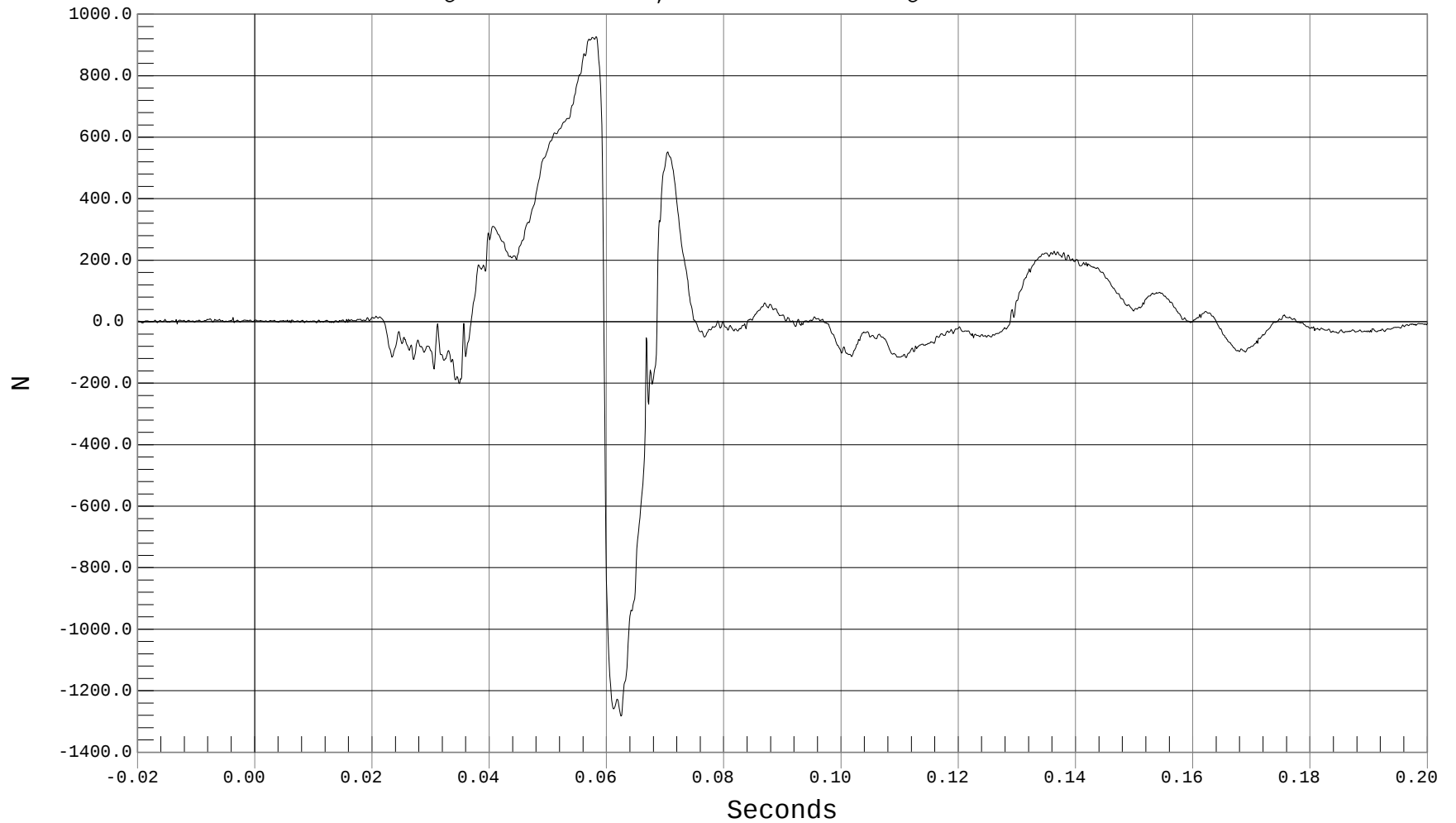
DRIVER LOWER NECK FORCE Z

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 1000

1 DRIVER LOWER NECK FZ, B02048FT.F71

Ymin = -1282.24 N @ 0.0624 Seconds, Ymax = 925.8 N @ 0.0581 Seconds





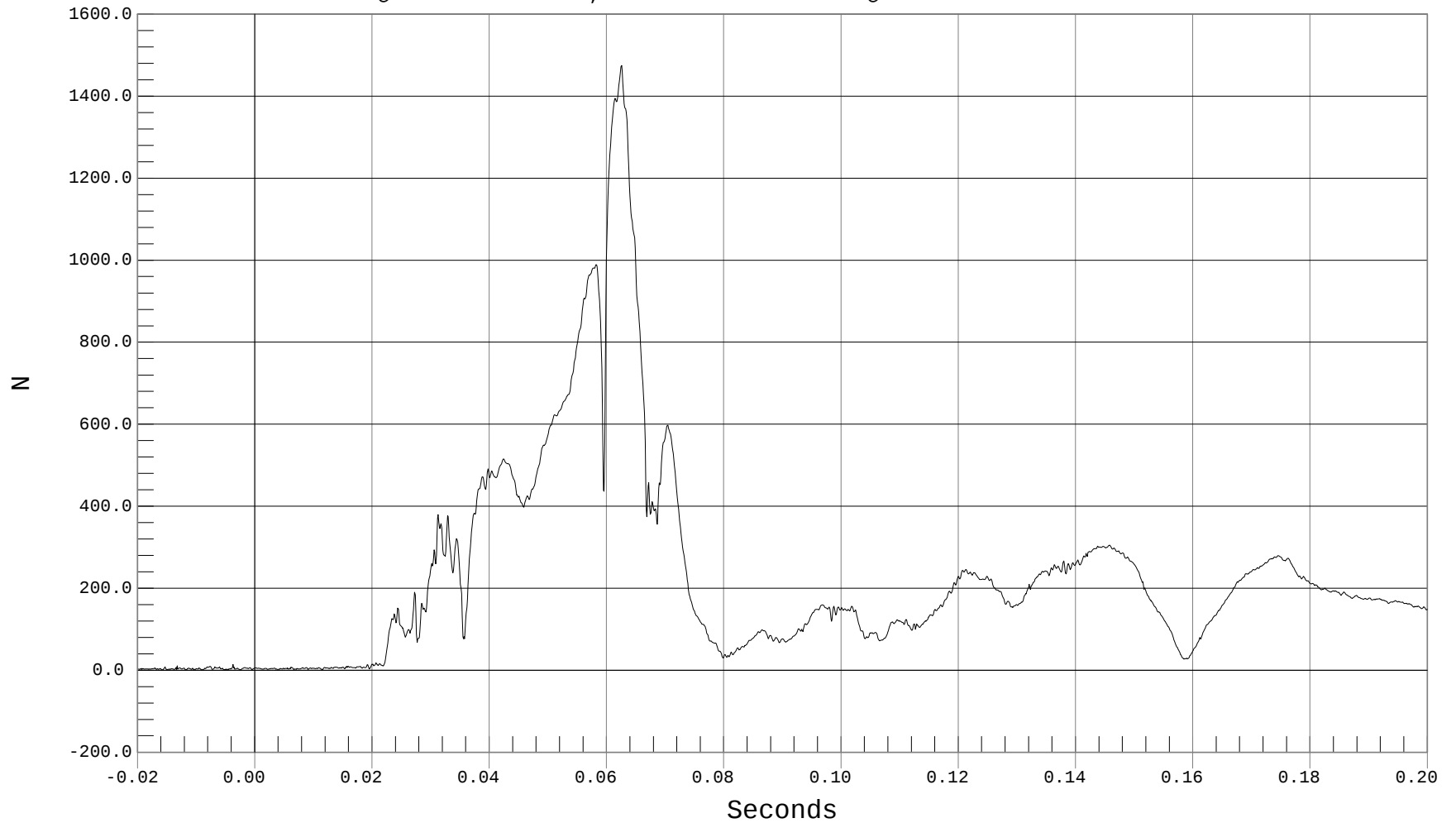
DRIVER LOWER NECK FORCE RESULTANT

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 1000

— 1 DRIVER LOWER NECK FORCE RESULTANT, B02048FV.F69

Ymin = .35 N @ 0.0158 Seconds, Ymax = 1475.09 N @ 0.0625 Seconds





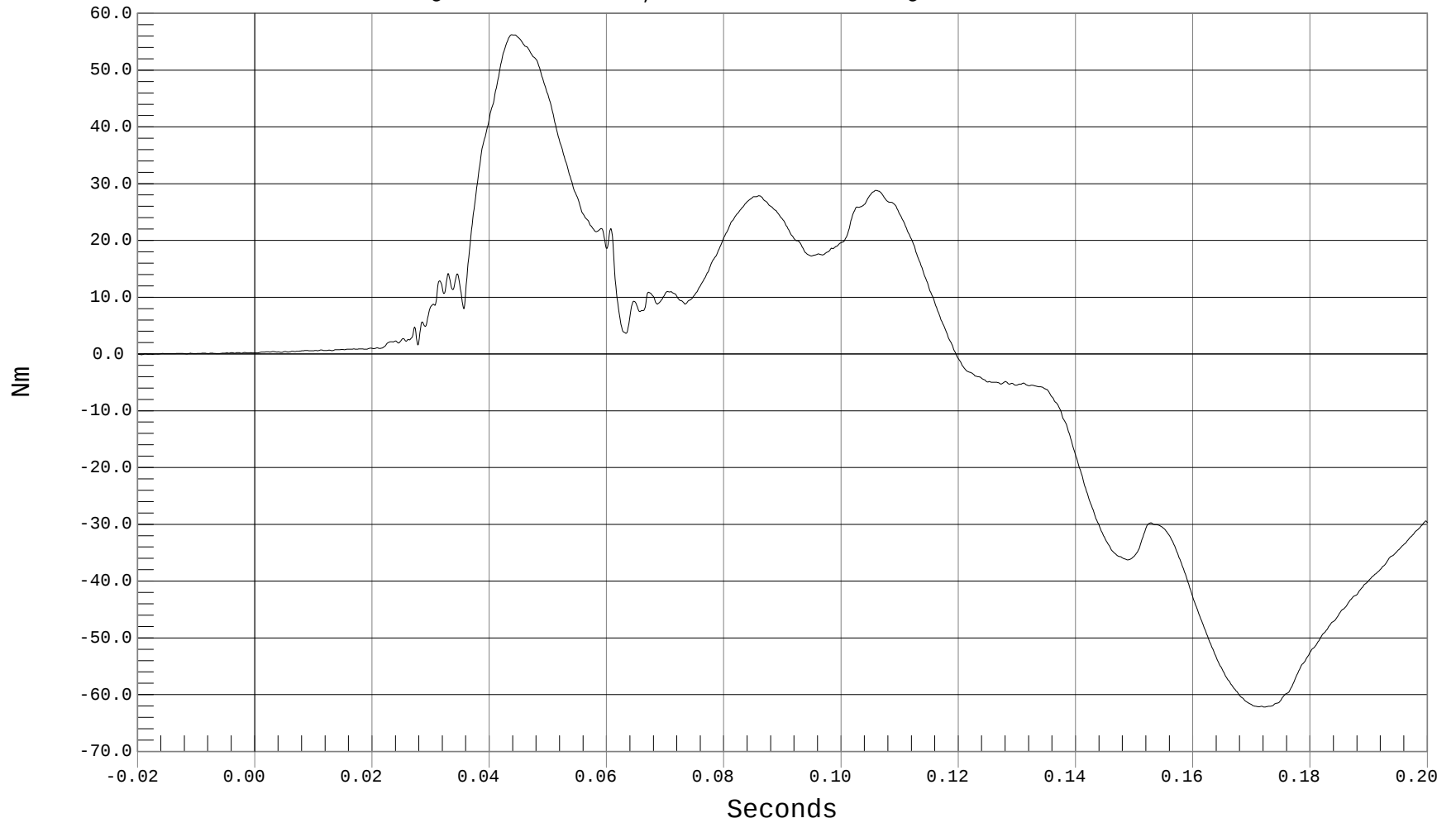
DRIVER LOWER NECK MOMENT X

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER LOWER NECK MX, B02048MF.M72

Ymin = -62.19 Nm @ 0.1722 Seconds, Ymax = 56.23 Nm @ 0.0437 Seconds





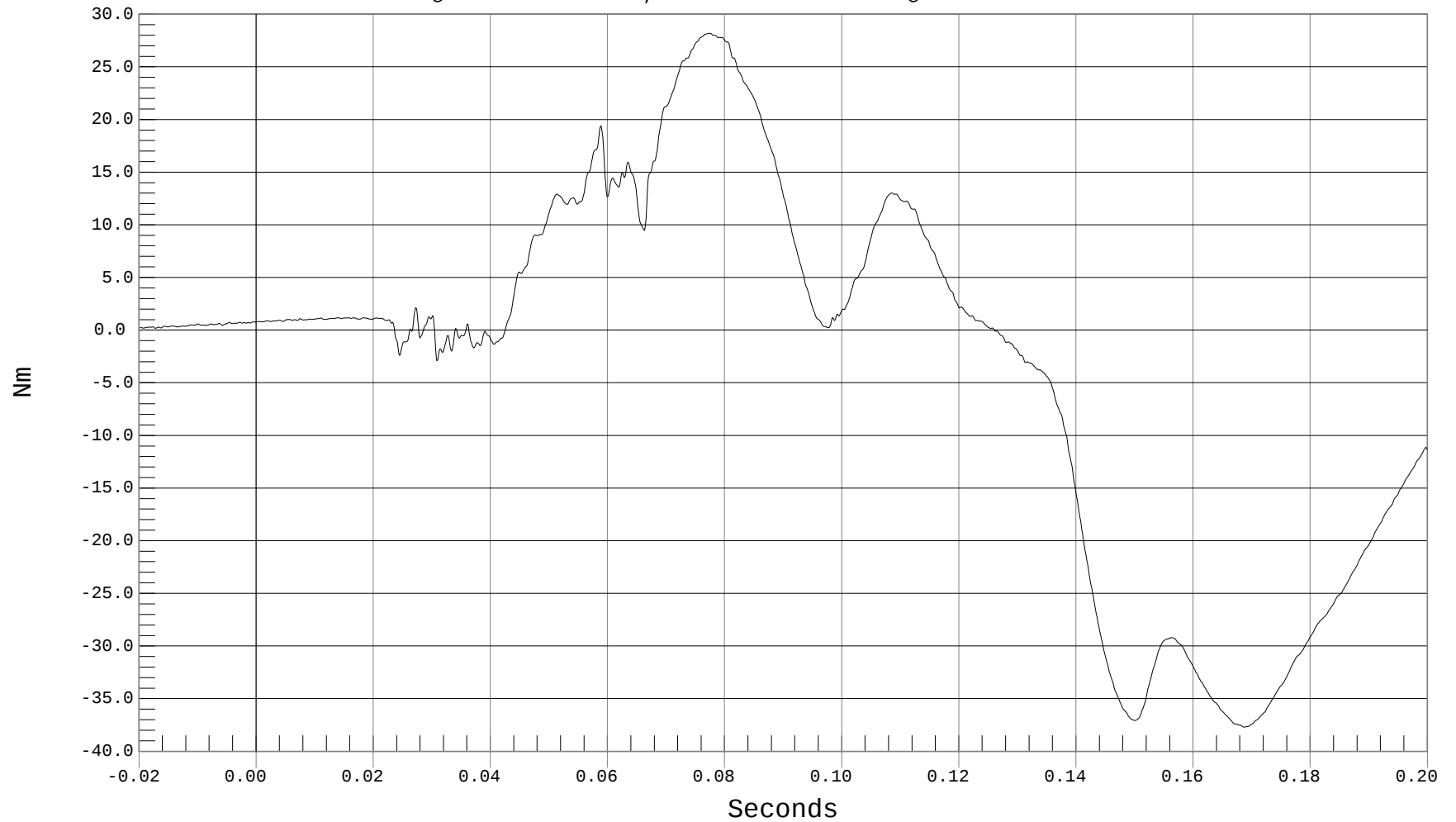
DRIVER LOWER NECK MOMENT Y

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER LOWER NECK MY, B02048MF.M73

Ymin = -37.71 Nm @ 0.1687 Seconds, Ymax = 28.19 Nm @ 0.0772 Seconds





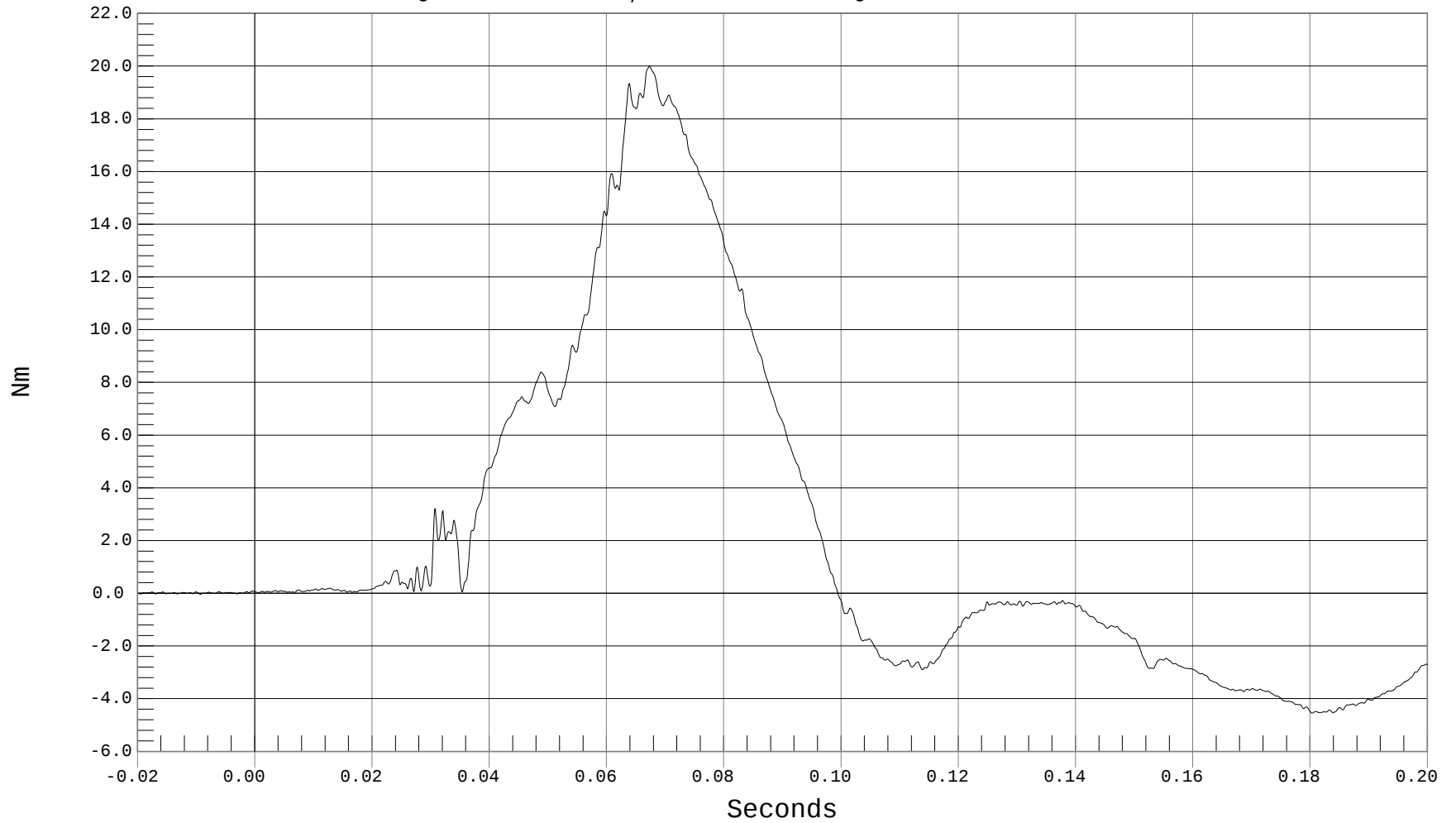
DRIVER LOWER NECK MOMENT Z

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

1 DRIVER LOWER NECK MZ, B02048MF.M74

Ymin = -4.55 Nm @ 0.1803 Seconds, Ymax = 20 Nm @ 0.0672 Seconds





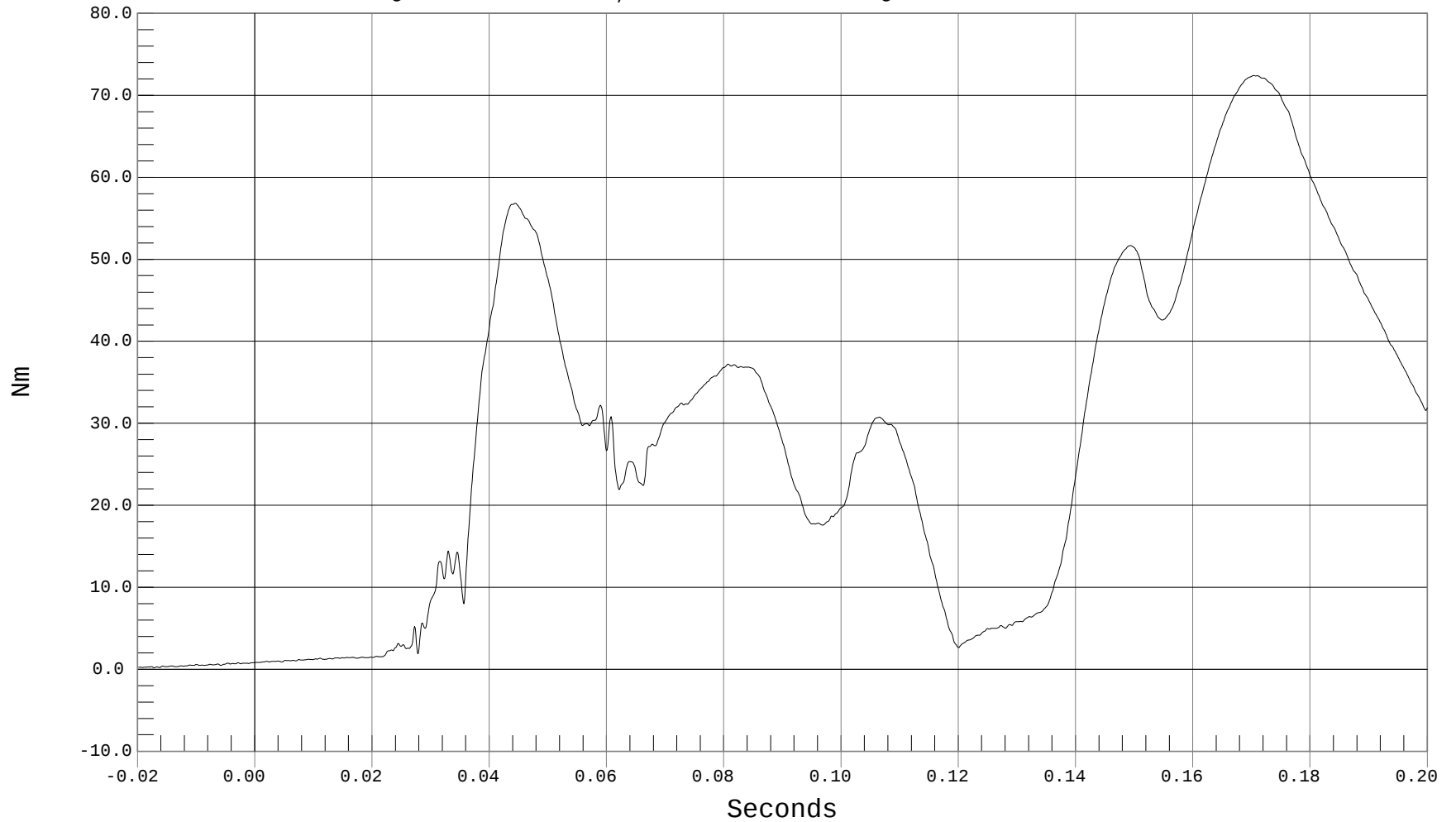
DRIVER LOWER NECK MOMENT RESULTANT

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER LOWER NECK MOMENT RESULTANT, B02048MV.M72

Ymin = .17 Nm @ -0.0173 Seconds, Ymax = 72.42 Nm @ 0.1703 Seconds





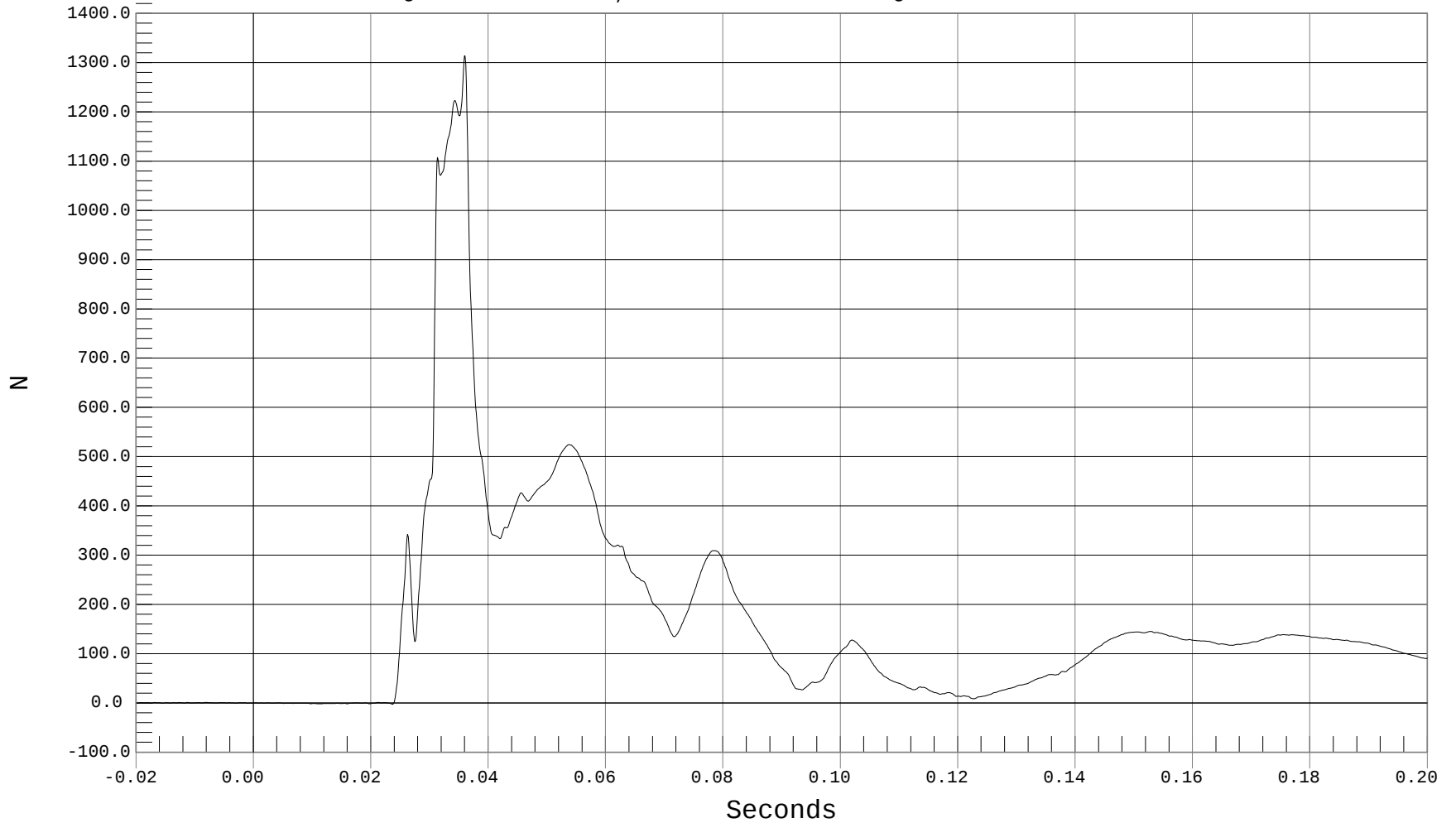
DRIVER SHOULDER FORCE X

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER SHOULDER FX, B02048FF.F81

Ymin = -2.92 N @ 0.0236 Seconds, Ymax = 1314.27 N @ 0.0359 Seconds





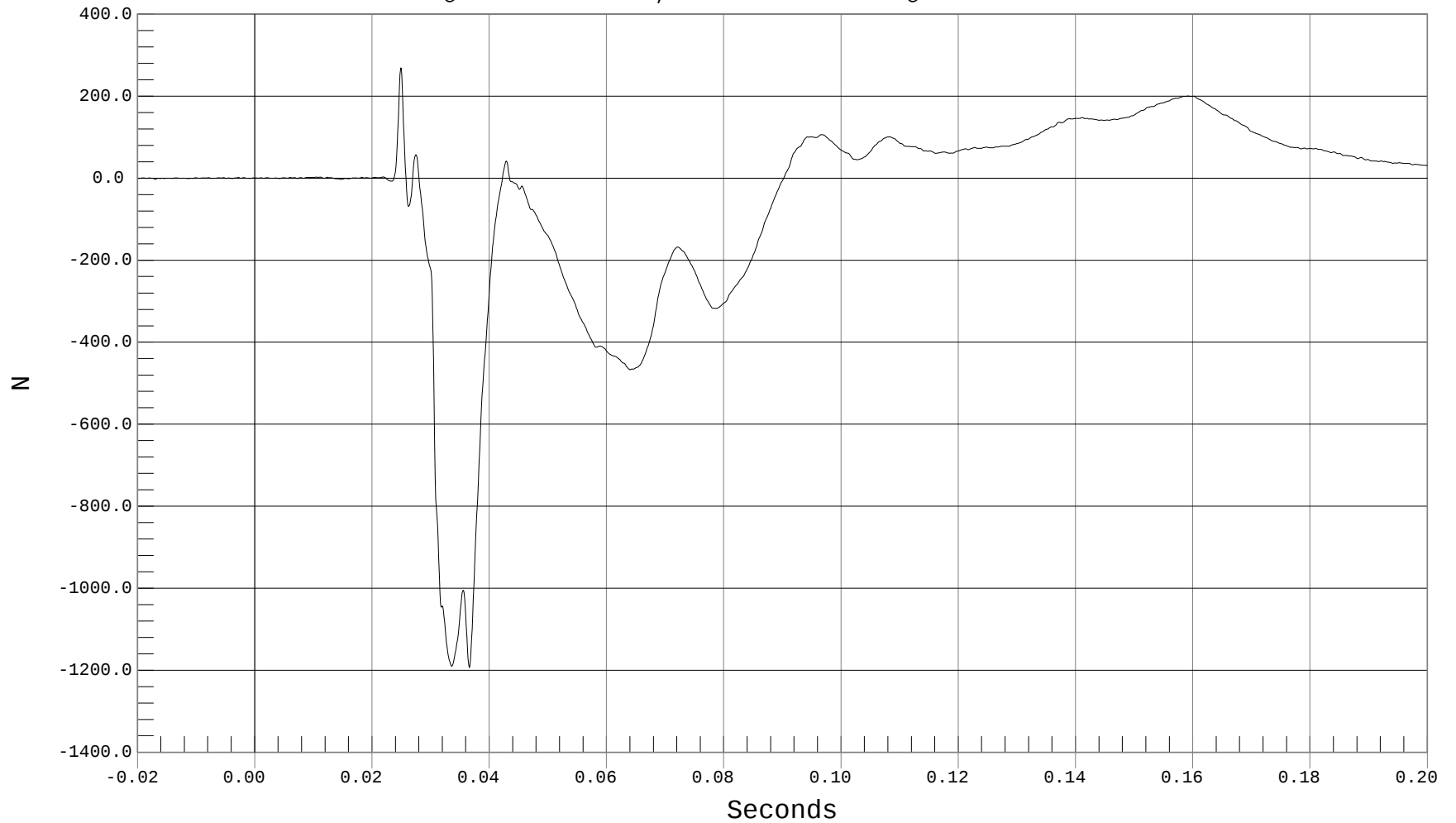
DRIVER SHOULDER FORCE Y

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

1 DRIVER SHOULDER FY, B02048FF.F82

Ymin = -1193.96 N @ 0.0365 Seconds, Ymax = 269.2 N @ 0.0248 Seconds





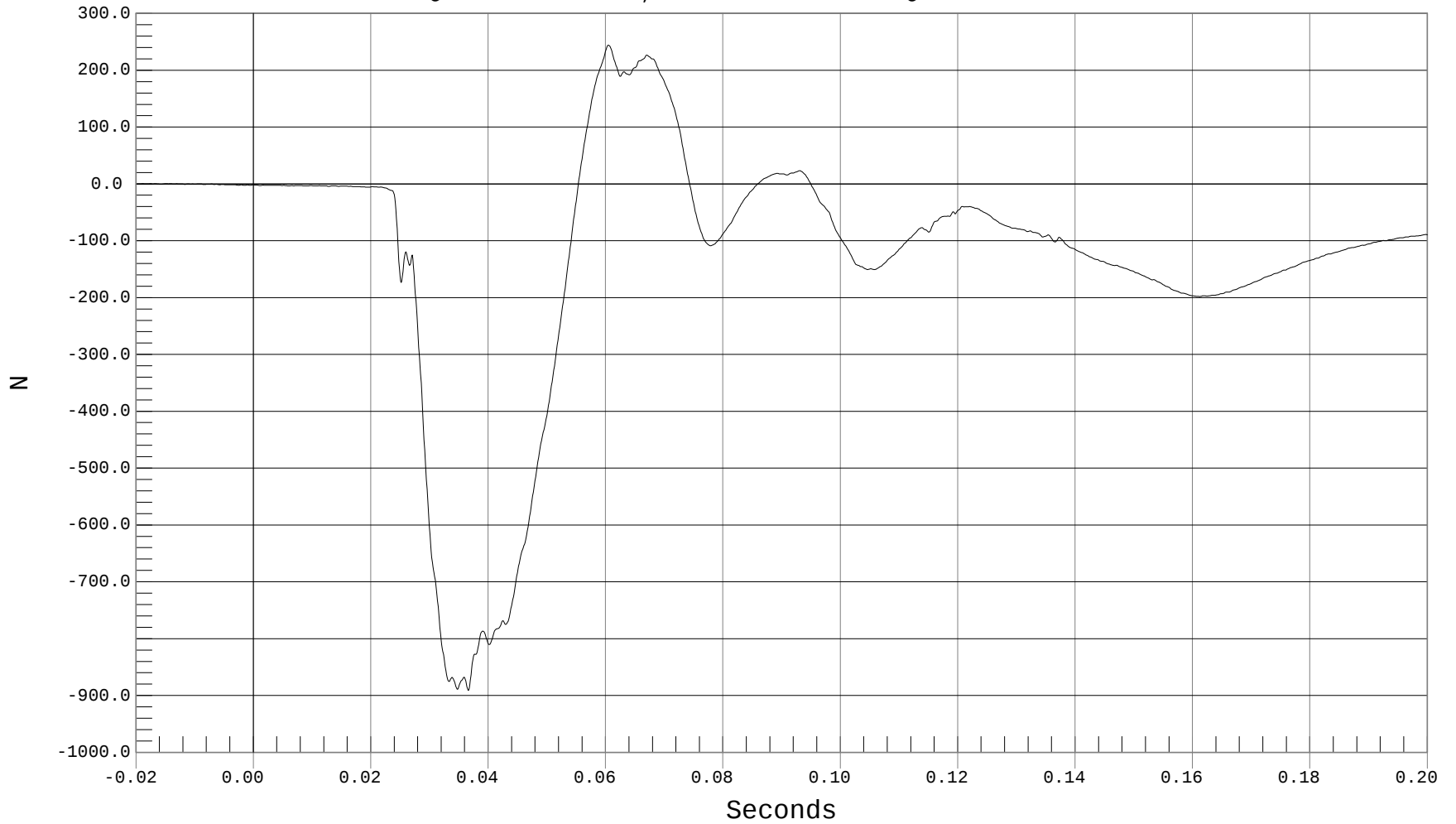
DRIVER SHOULDER FORCE Z

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER SHOULDER FZ, B02048FF.F83

Ymin = -891.21 N @ 0.0365 Seconds, Ymax = 244.14 N @ 0.0604 Seconds





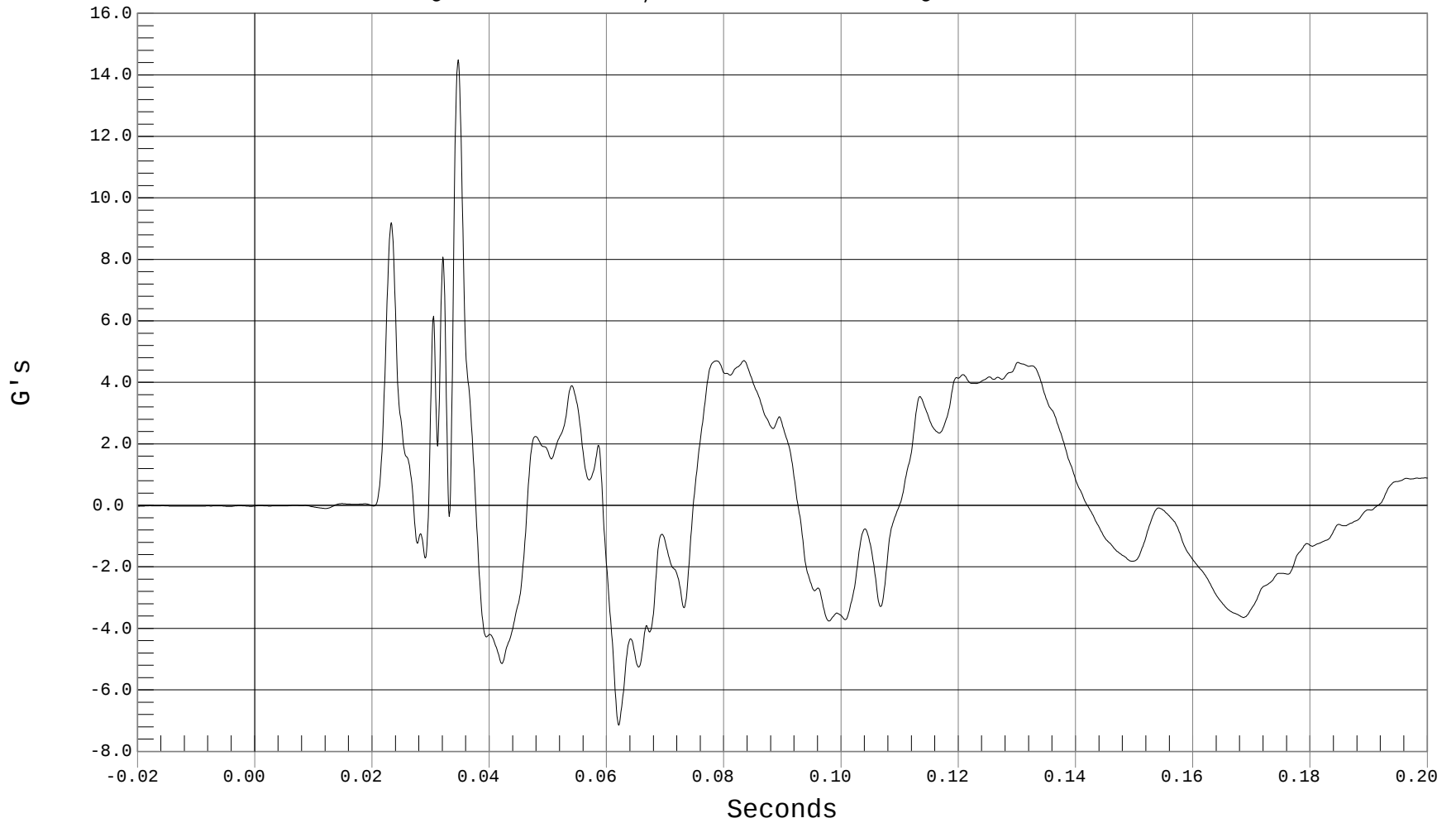
DRIVER UPPER SPINE X ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 180

— 1 DRIVER UPPER SPINE X, B02048AF.A06

Ymin = -7.15 G's @ 0.0620 Seconds, Ymax = 14.49 G's @ 0.0346 Seconds





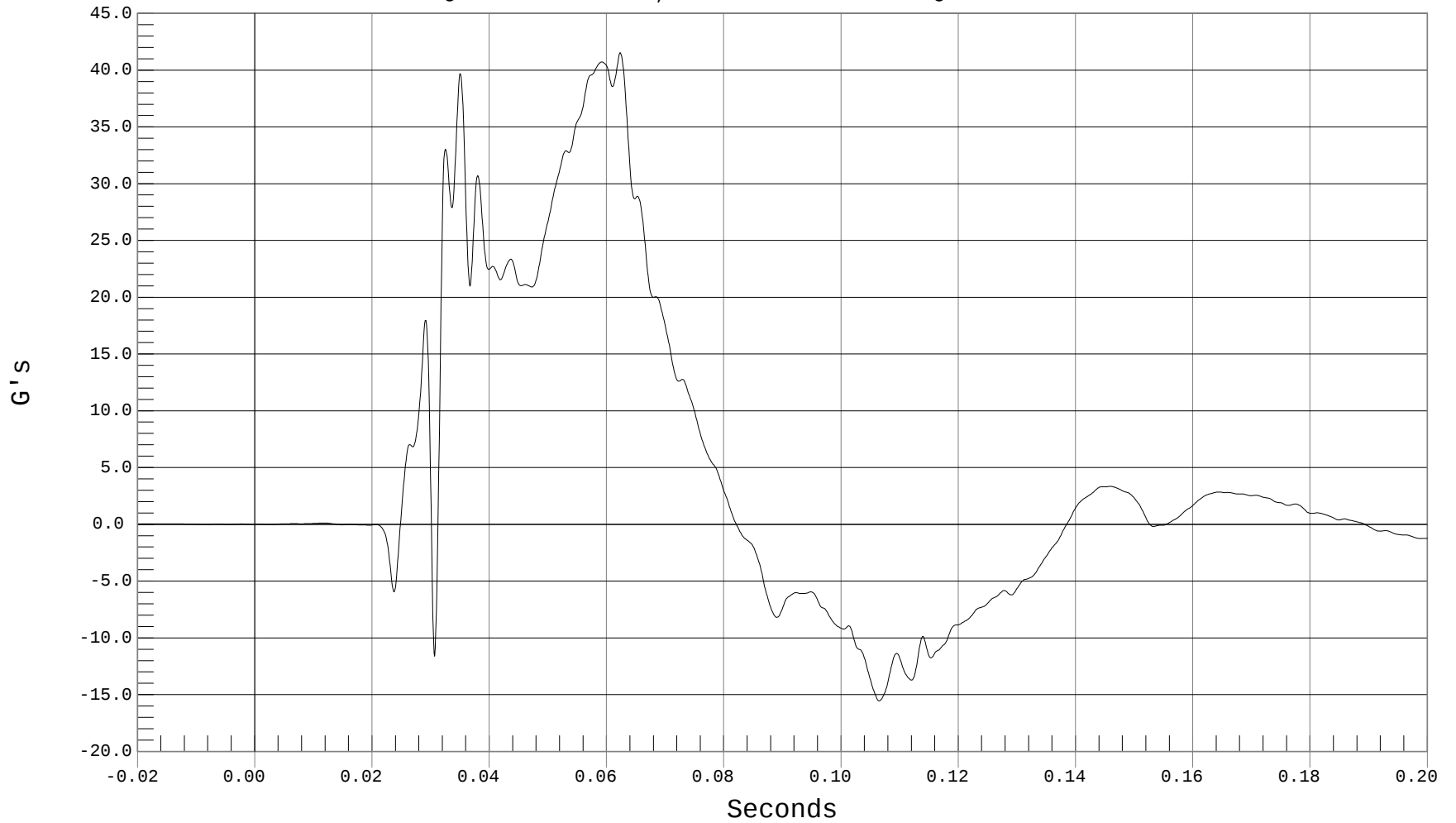
DRIVER UPPER SPINE Y ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 180

— 1 DRIVER UPPER SPINE Y, B02048AF.A07

Ymin = -15.56 G's @ 0.1064 Seconds, Ymax = 41.52 G's @ 0.0622 Seconds





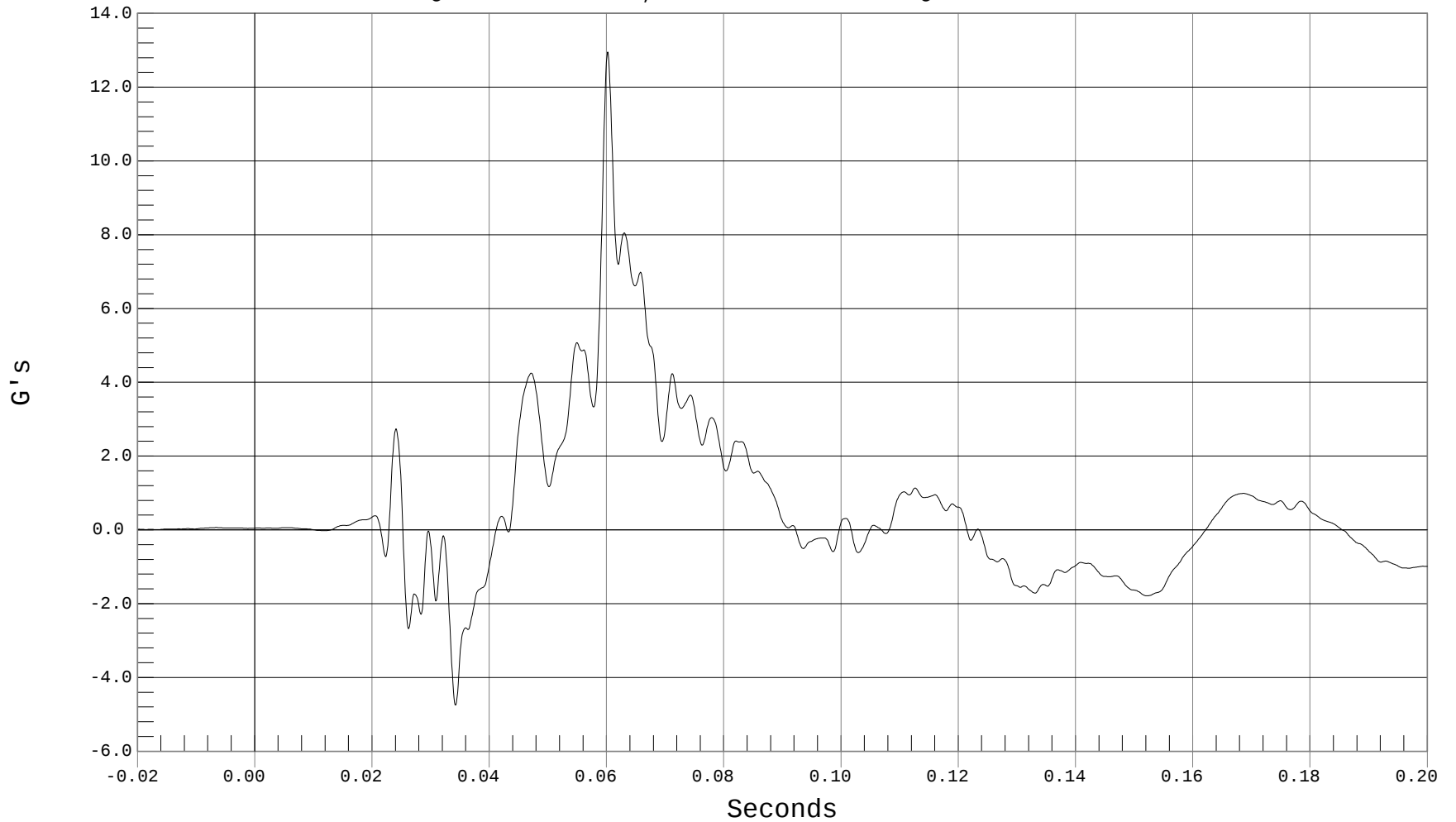
DRIVER UPPER SPINE Z ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 180

1 DRIVER UPPER SPINE Z, B02048AF.A08

Ymin = -4.75 G's @ 0.0342 Seconds, Ymax = 12.95 G's @ 0.0601 Seconds





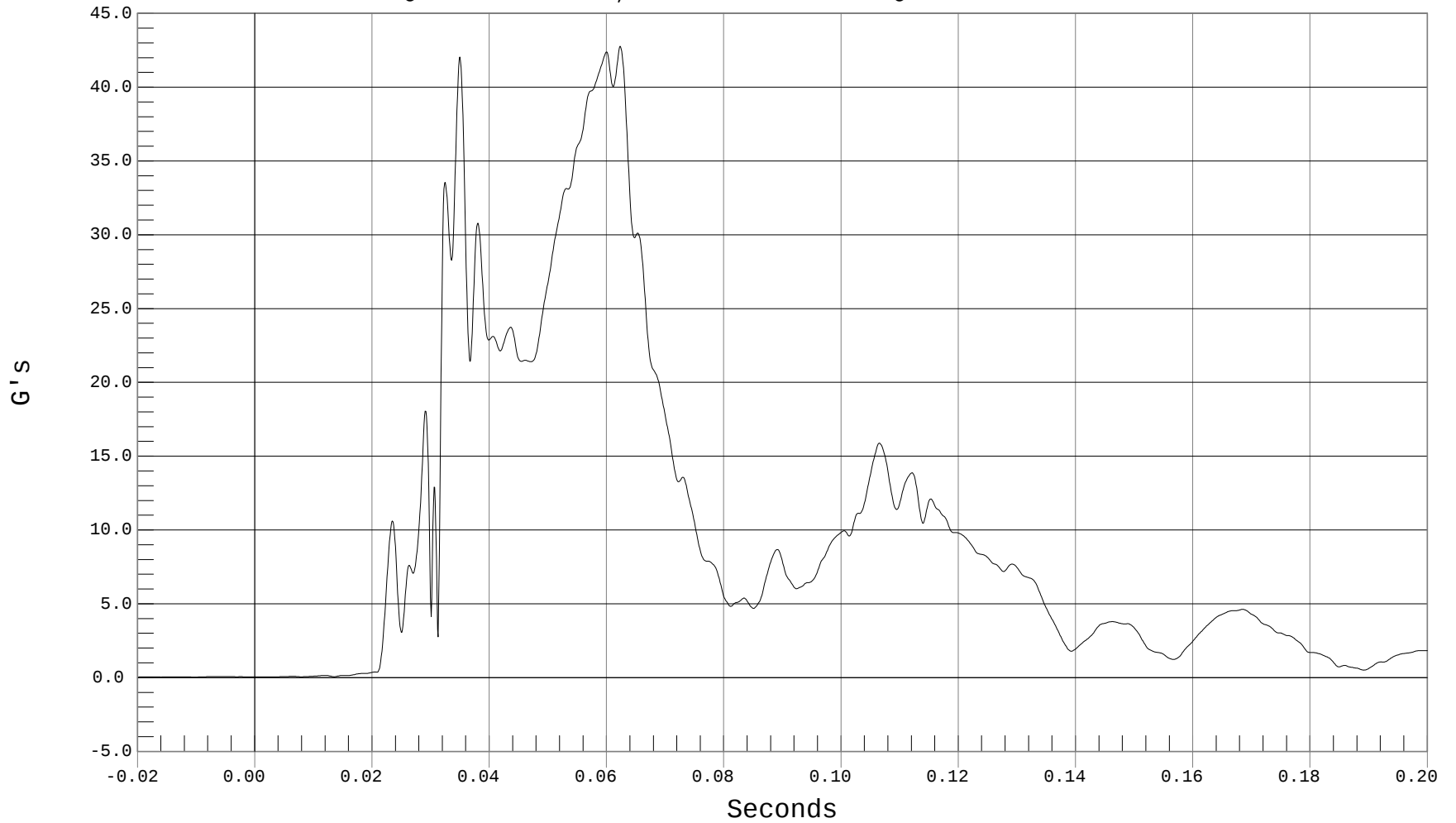
DRIVER UPPER SPINE RESULTANT ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 180

— 1 DRIVER UPPER SPINE RESULTANT, B02048AV.A06

Ymin = .04 G's @ 0.0103 Seconds, Ymax = 42.76 G's @ 0.0623 Seconds





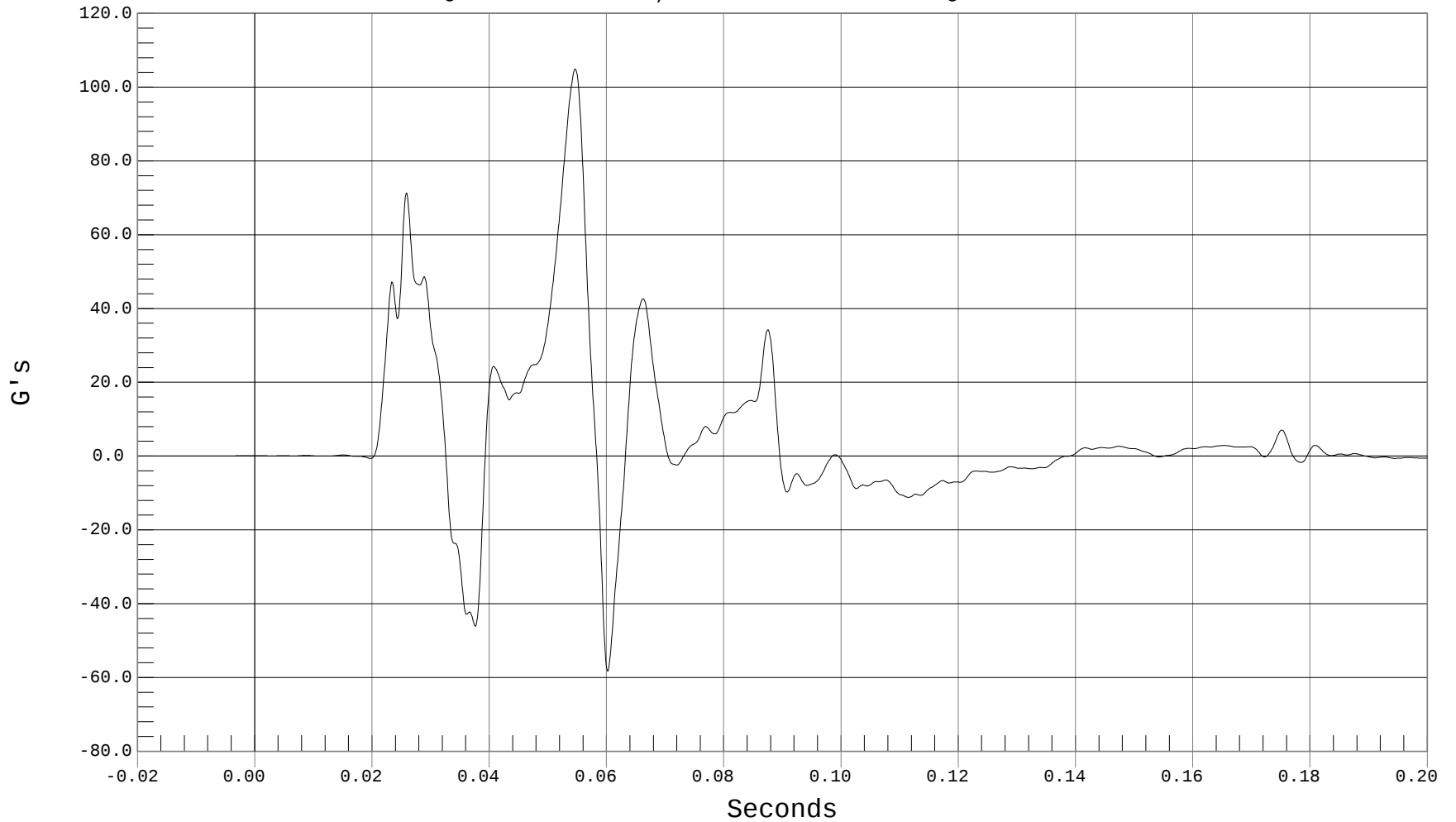
DRIVER UPPER RIB Y ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 180

— 1 DRIVER UPPER RIB Y, B02048AF.A04

Ymin = -58.32 G's @ 0.0601 Seconds, Ymax = 104.89 G's @ 0.0546 Seconds





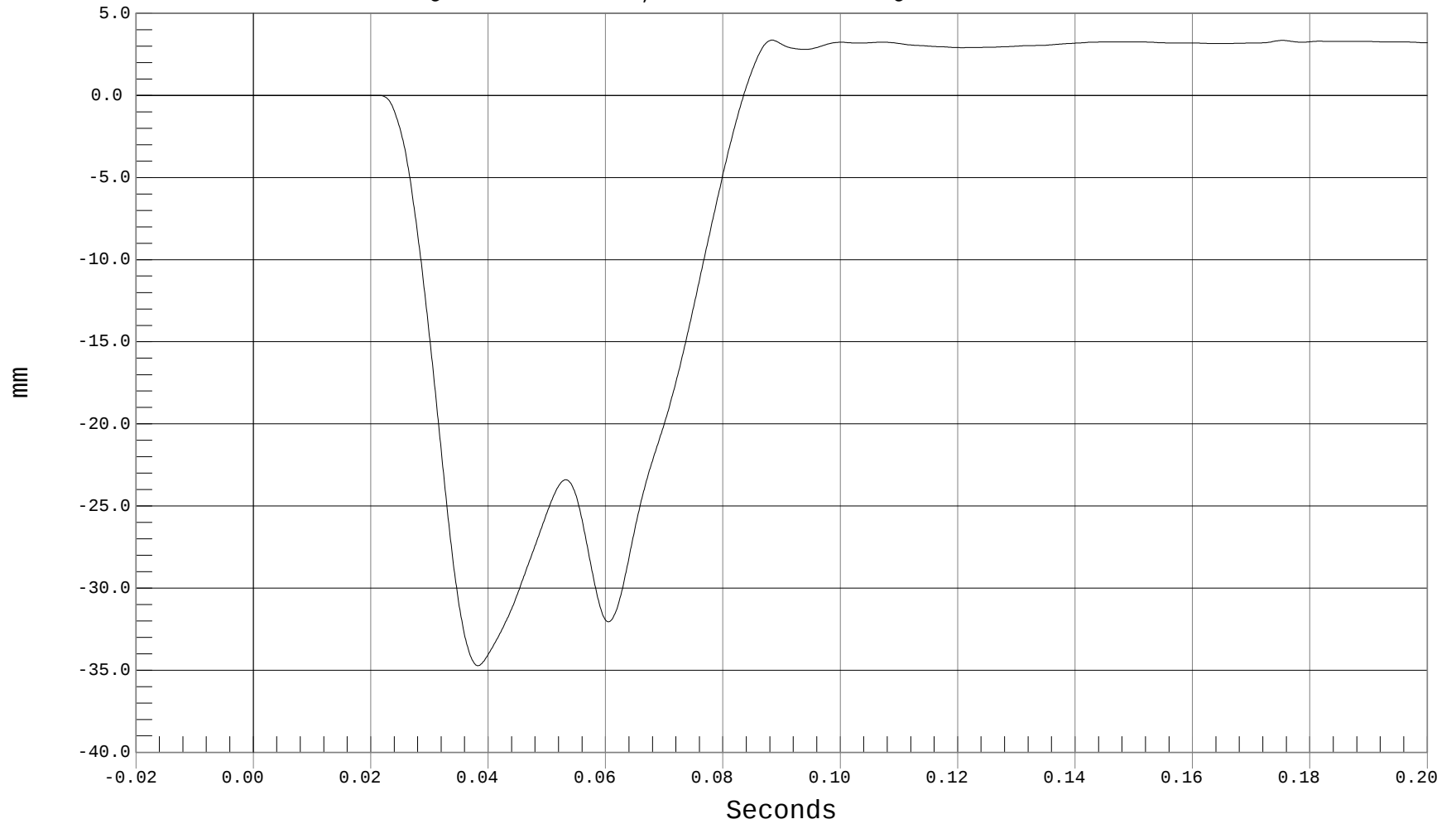
DRIVER UPPER RIB DISPLACEMENT

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 180

— 1 DRIVER UPPER RIB DISP, B02048AF.A55

Ymin = -34.73 mm @ 0.0382 Seconds, Ymax = 3.37 mm @ 0.0883 Seconds





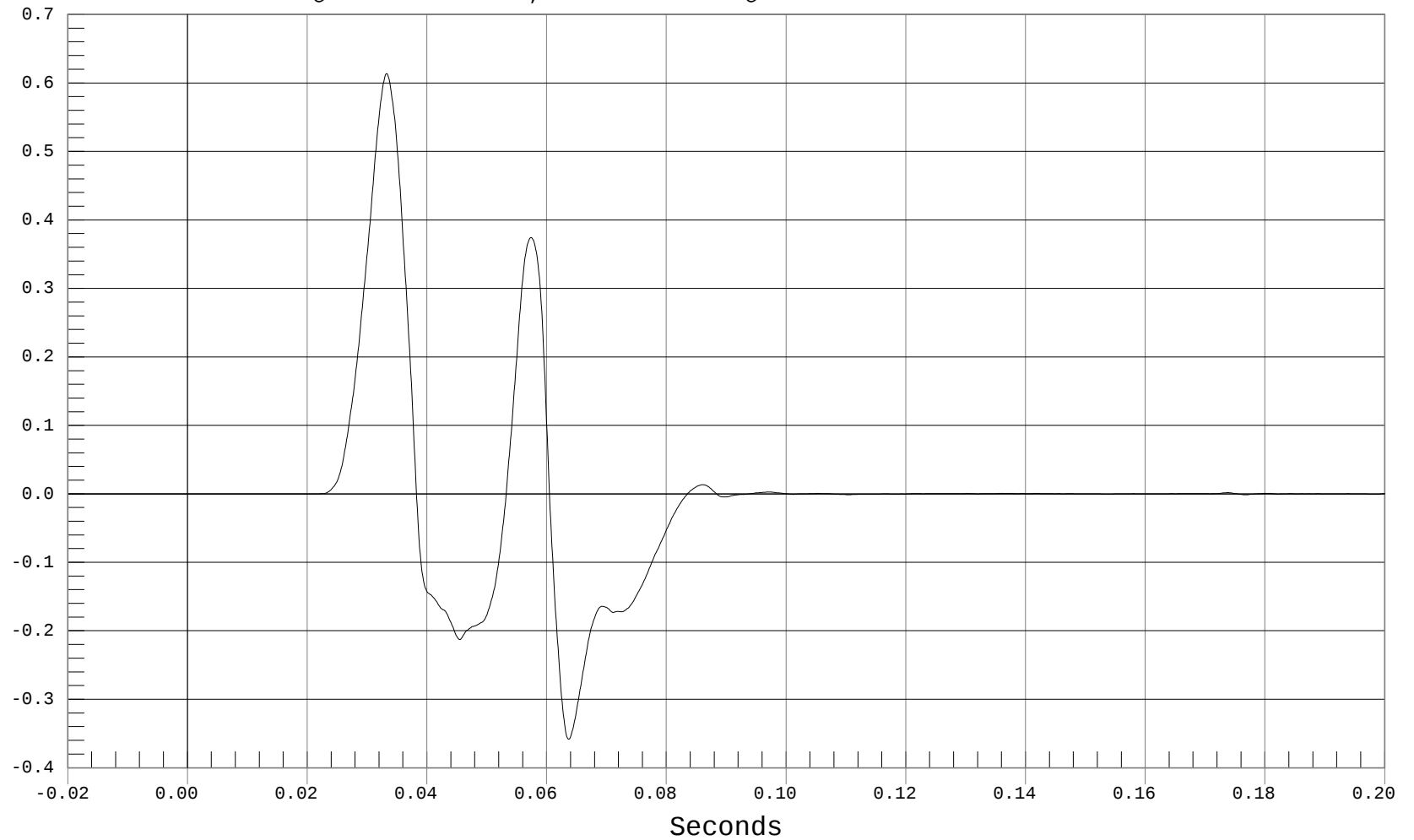
DRIVER UPPER RIB VISCOUS CRITERIA

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 180

— 1 Viscous Criterion, B02048DV.C55

Ymin = -.36 @ 0.0636 Seconds, Ymax = .61 @ 0.0332 Seconds





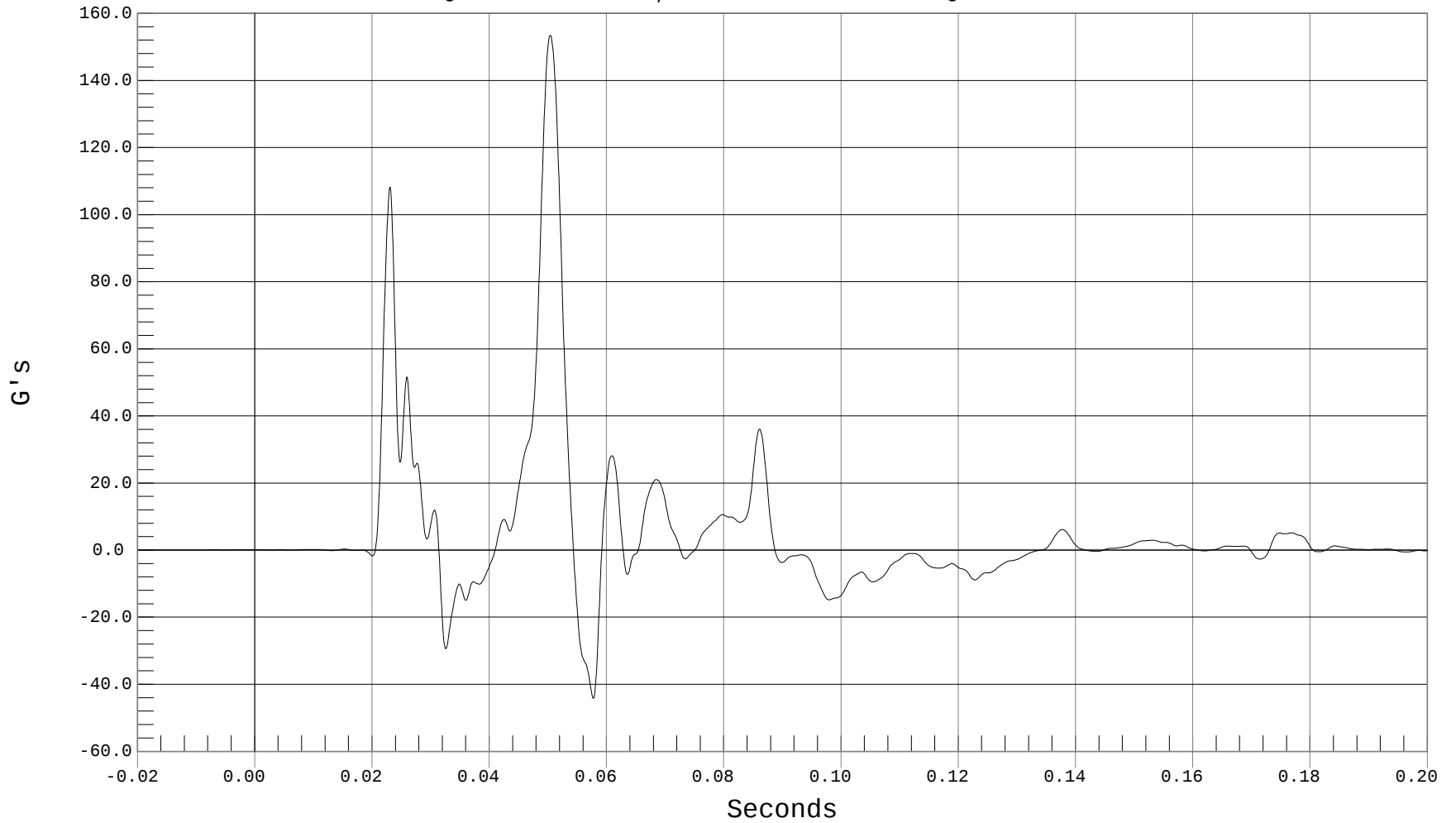
DRIVER MID RIB Y ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 180

— 1 DRIVER MID RIB Y, B02048AF.A58

Ymin = -44.17 G's @ 0.0577 Seconds, Ymax = 153.51 G's @ 0.0503 Seconds





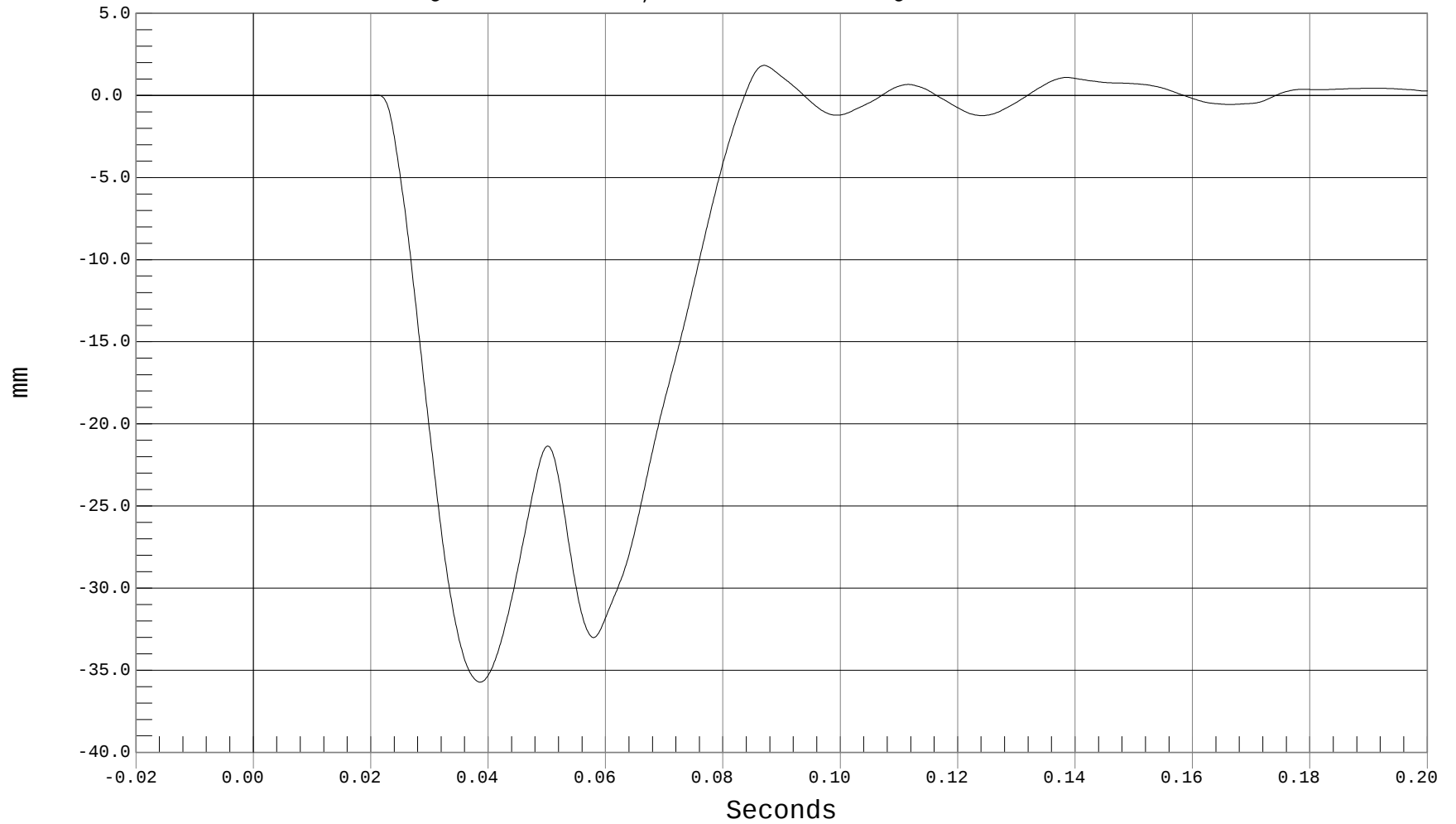
DRIVER MID RIB DISPLACEMENT

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 180

— 1 DRIVER MID RIB DISP, B02048AF.A56

Ymin = -35.72 mm @ 0.0385 Seconds, Ymax = 1.83 mm @ 0.0869 Seconds





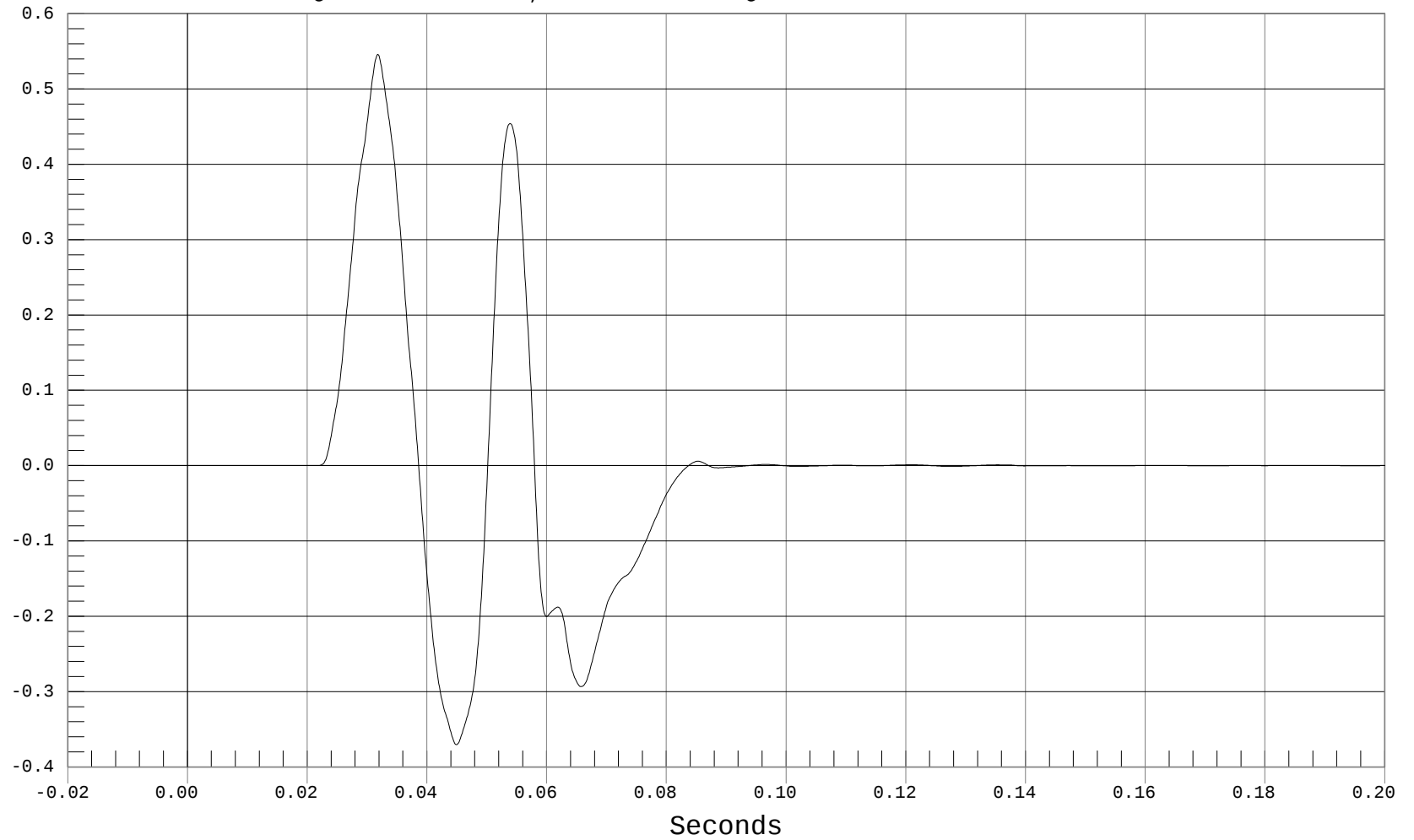
DRIVER MID RIB VISCOUS CRITERIA

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 180

— 1 Viscous Criterion, B02048DV.C56

Ymin = -.37 @ 0.0448 Seconds, Ymax = .55 @ 0.0317 Seconds





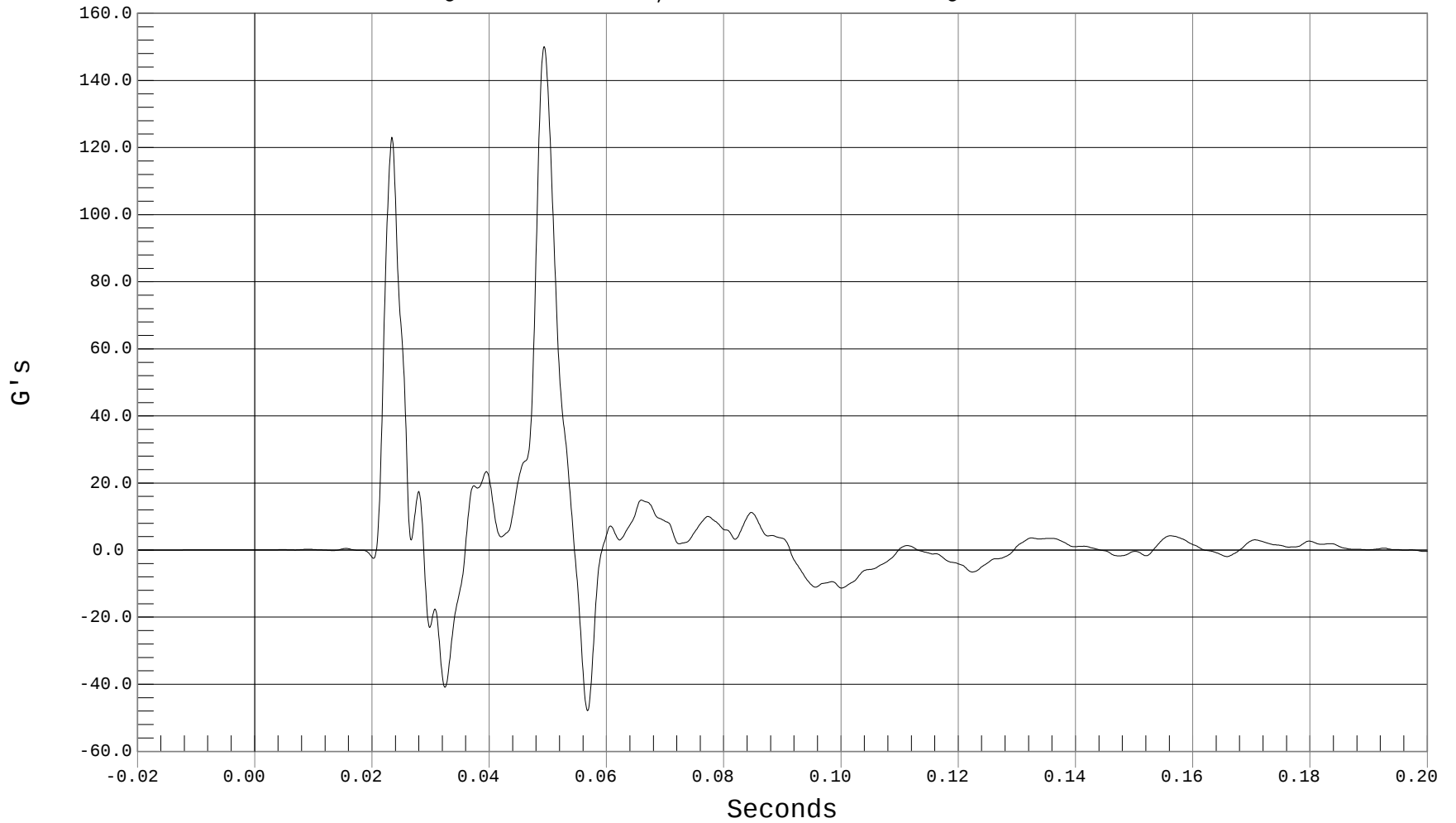
DRIVER LOWER RIB Y ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 180

— 1 DRIVER LOWER RIB Y, B02048AF.A05

Ymin = -47.87 G's @ 0.0567 Seconds, Ymax = 150.07 G's @ 0.0493 Seconds





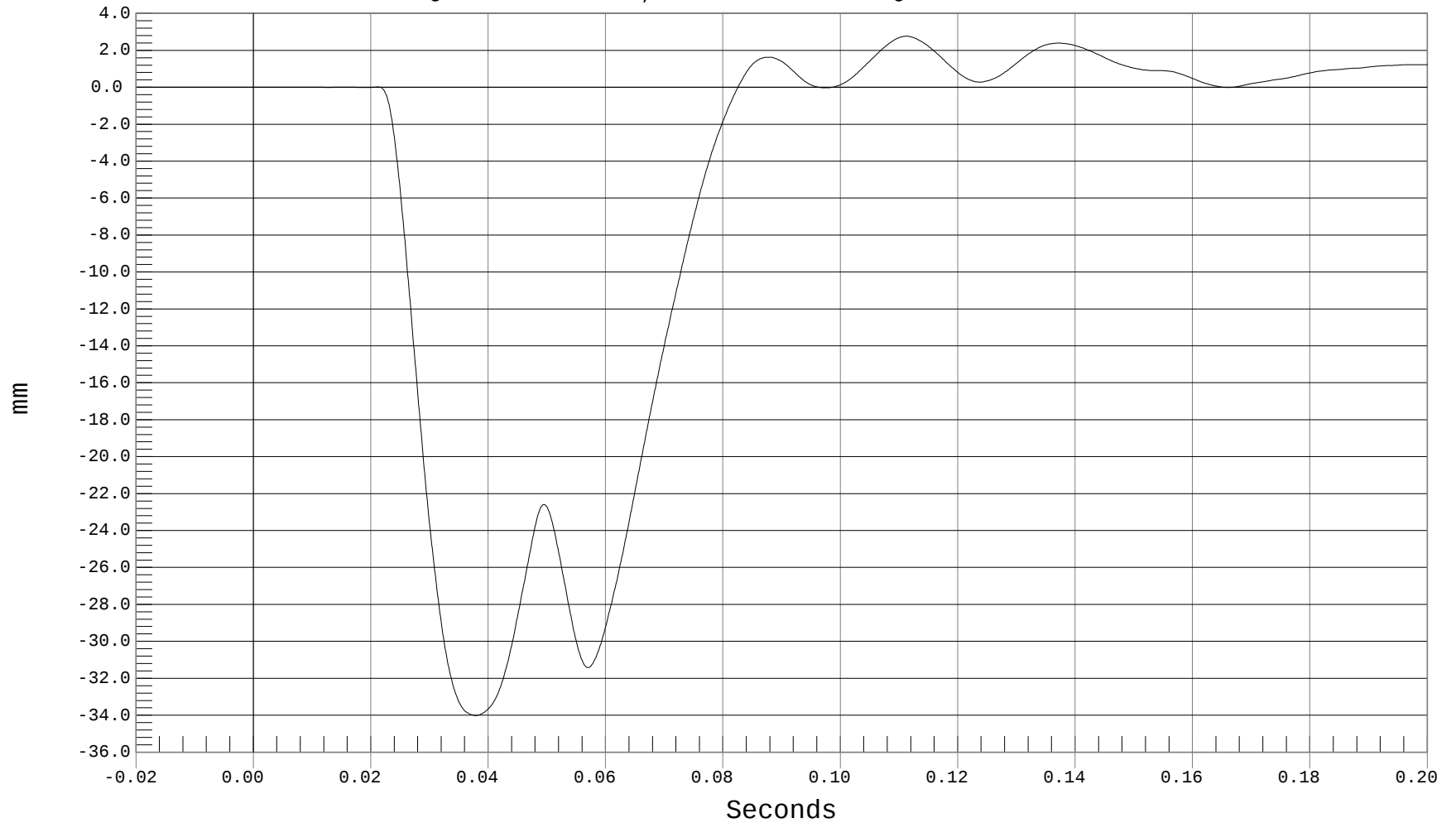
DRIVER LOWER RIB DISPLACEMENT

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 180

— 1 DRIVER LOWER RIB DISP, B02048AF.A57

Ymin = -34.02 mm @ 0.0378 Seconds, Ymax = 2.76 mm @ 0.1112 Seconds





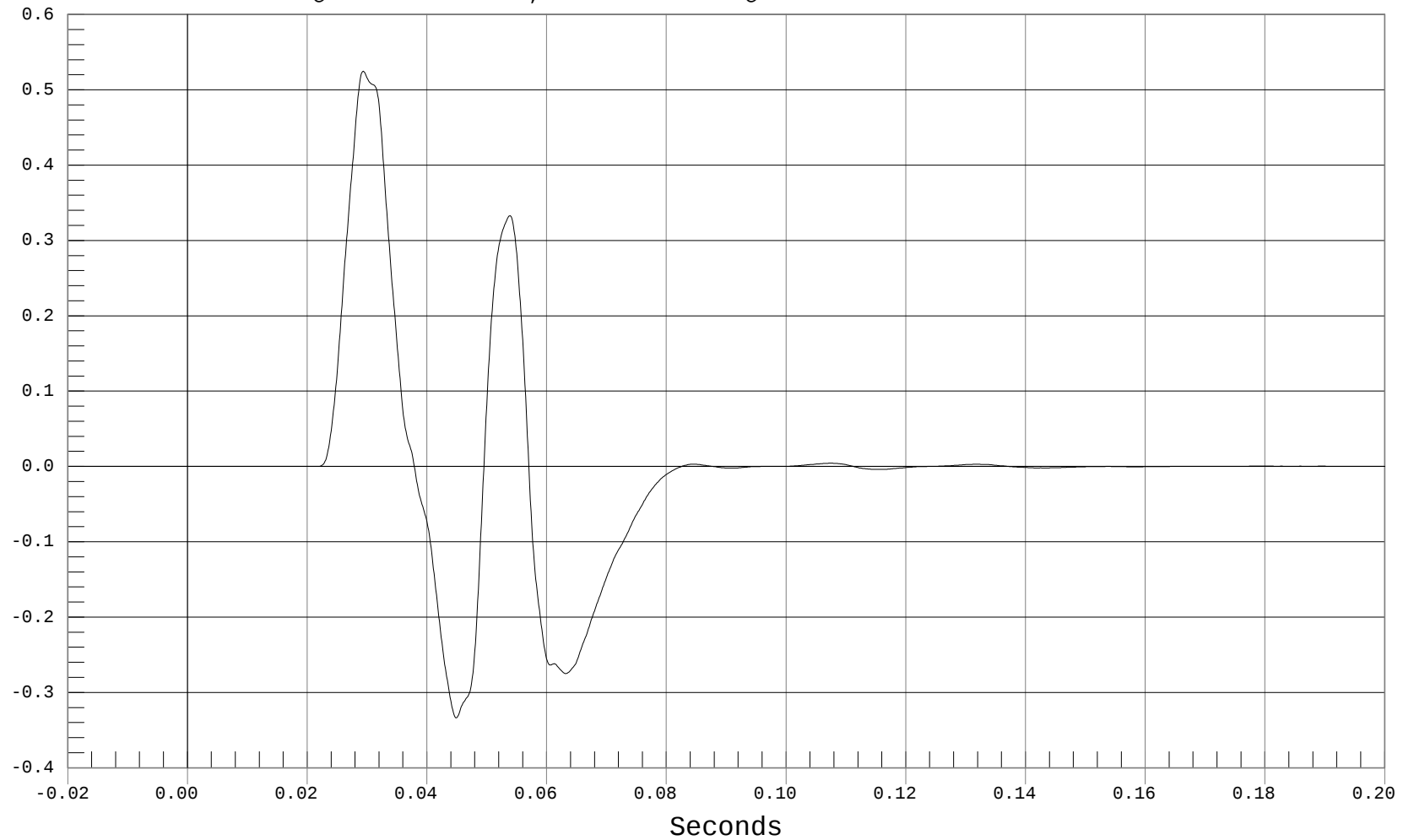
DRIVER LOWER RIB VISCOUS CRITERIA

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 180

— 1 Viscous Criterion, B02048DV.C57

Ymin = -.33 @ 0.0448 Seconds, Ymax = .52 @ 0.0293 Seconds





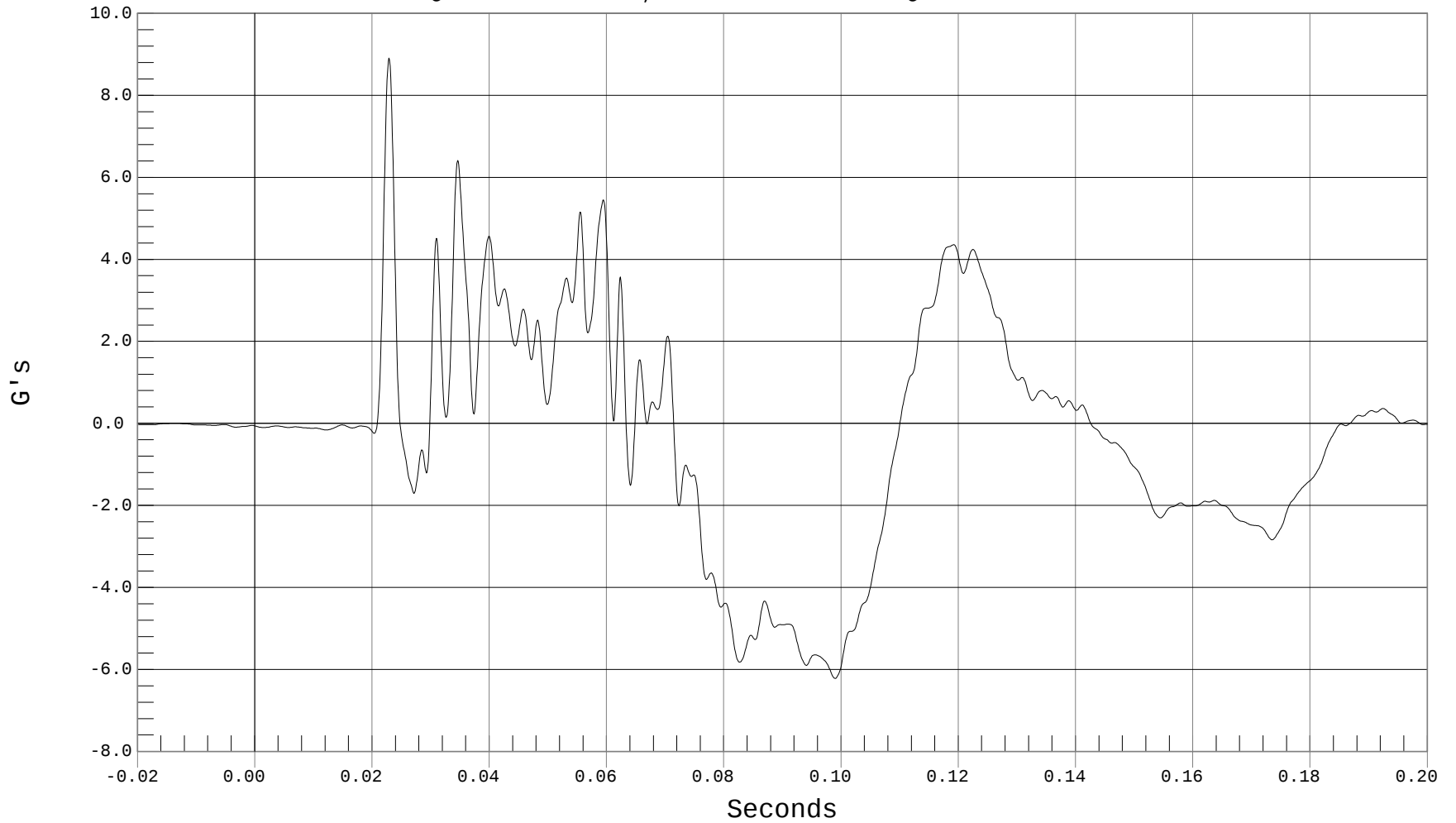
DRIVER LOWER SPINE X ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 180

— 1 DRIVER LOWER SPINE X, B02048AF.A09

Ymin = -6.22 G's @ 0.0989 Seconds, Ymax = 8.91 G's @ 0.0228 Seconds





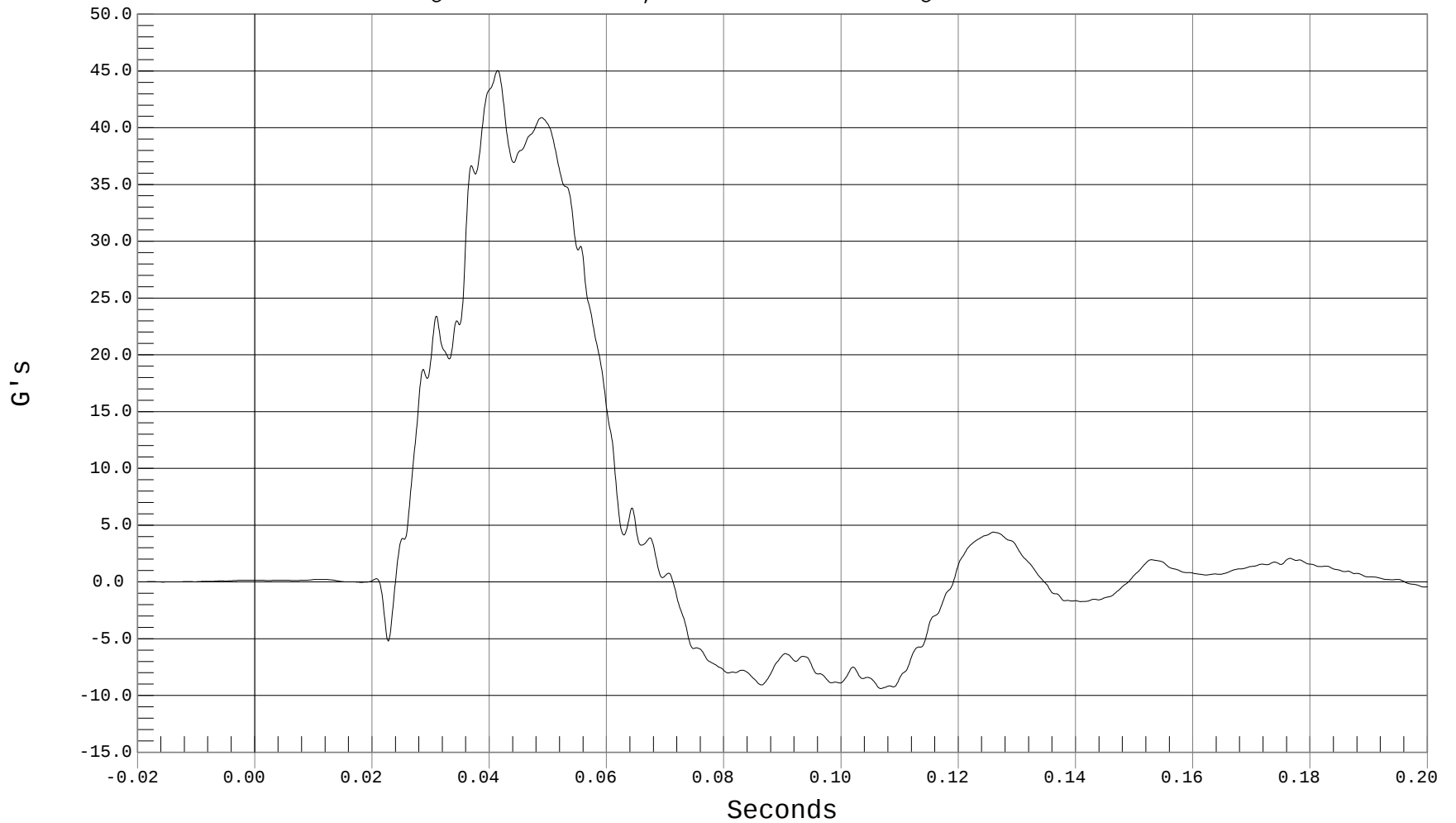
DRIVER LOWER SPINE Y ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 180

— 1 DRIVER LOWER SPINE Y, B02048AF.A10

Ymin = -9.39 G's @ 0.1067 Seconds, Ymax = 45.04 G's @ 0.0413 Seconds





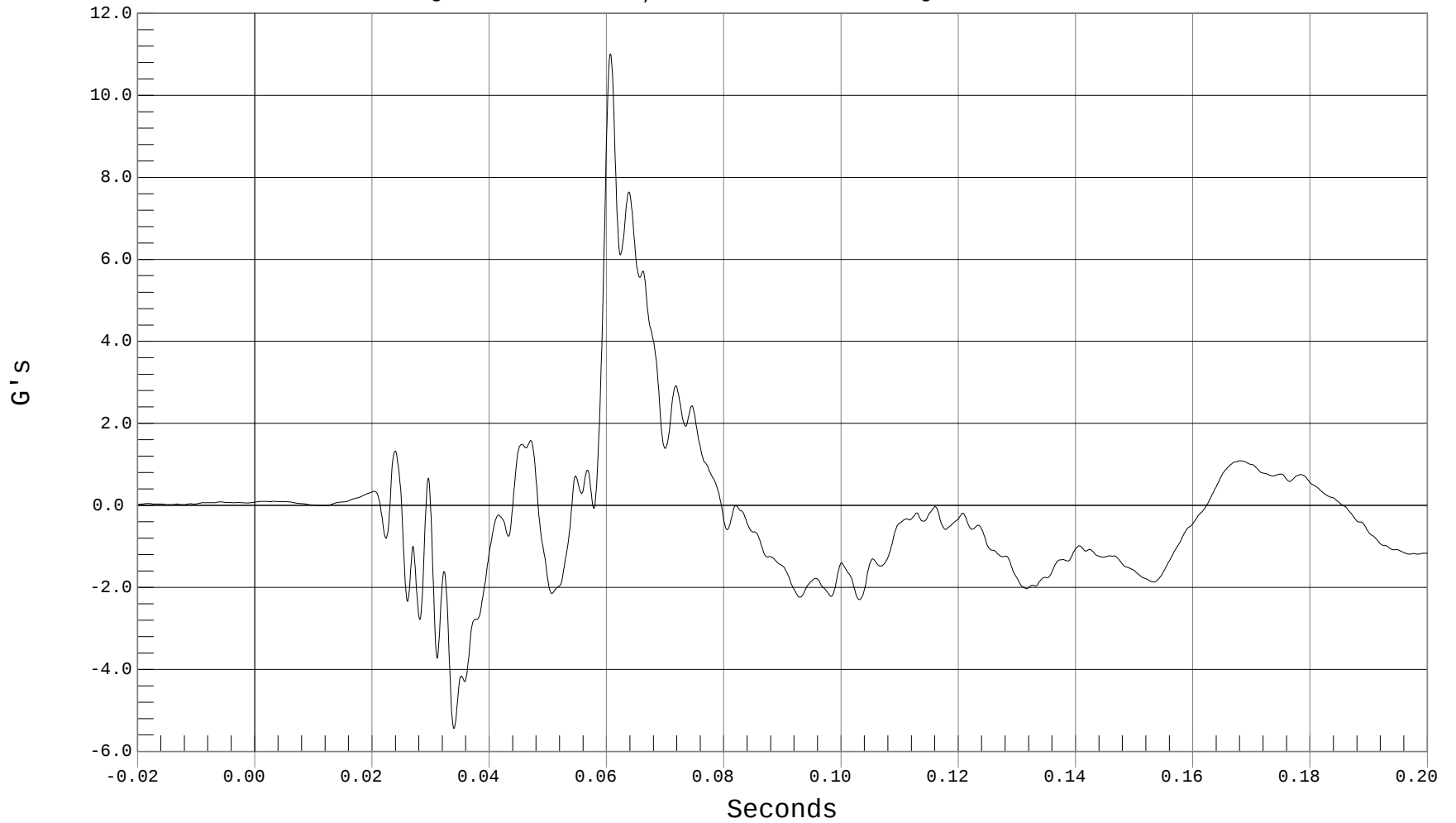
DRIVER LOWER SPINE Z ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 180

1 DRIVER LOWER SPINE Z, B02048AF.A11

Ymin = -5.44 G's @ 0.0339 Seconds, Ymax = 11.02 G's @ 0.0606 Seconds





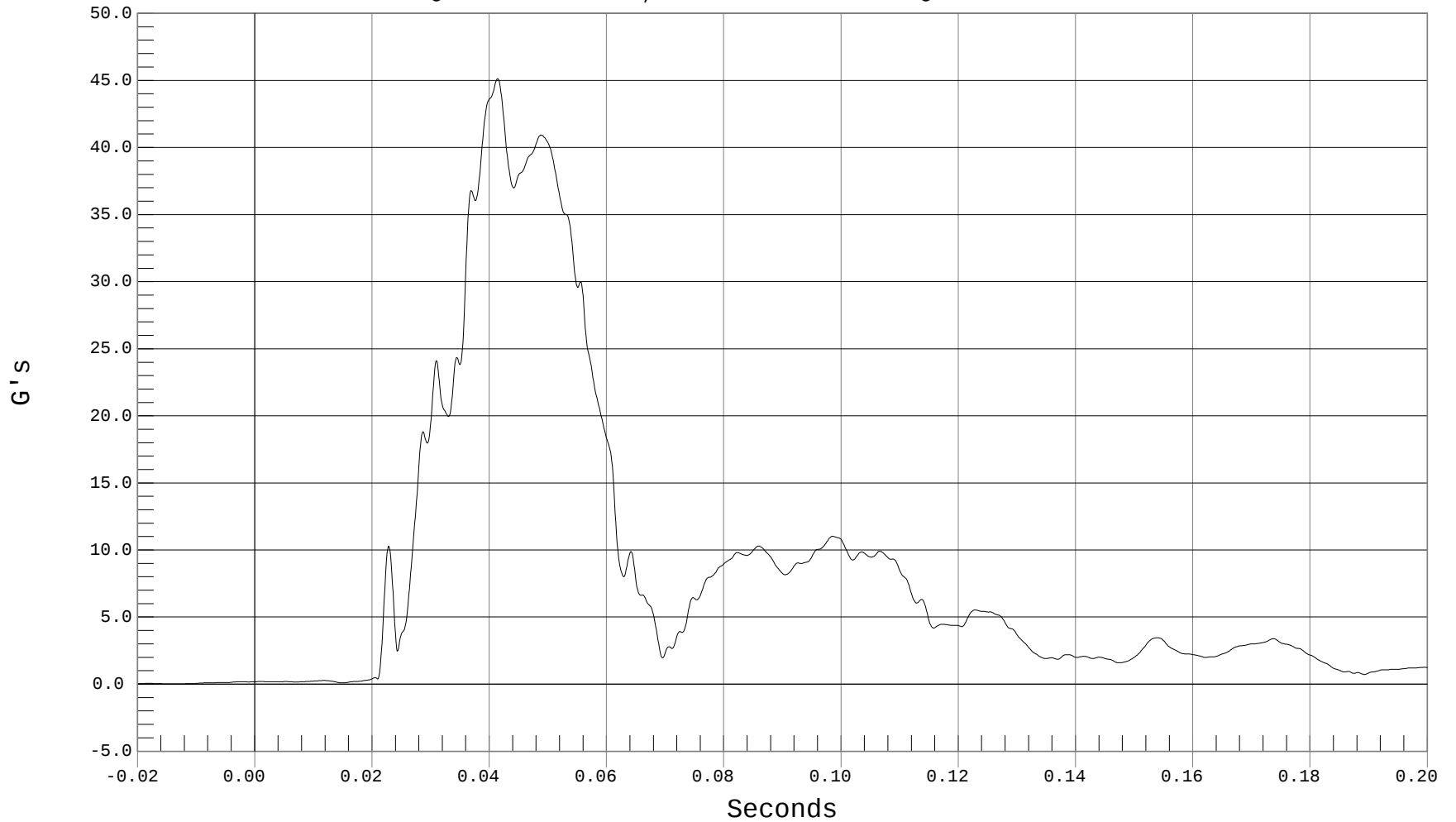
DRIVER LOWER SPINE RESULTANT ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 180

— 1 DRIVER LOWER SPINE RESULTANT, B02048AV.A09

Ymin = 0.093 G's @ 0.0148 Seconds, Ymax = 45.14 G's @ 0.0413 Seconds





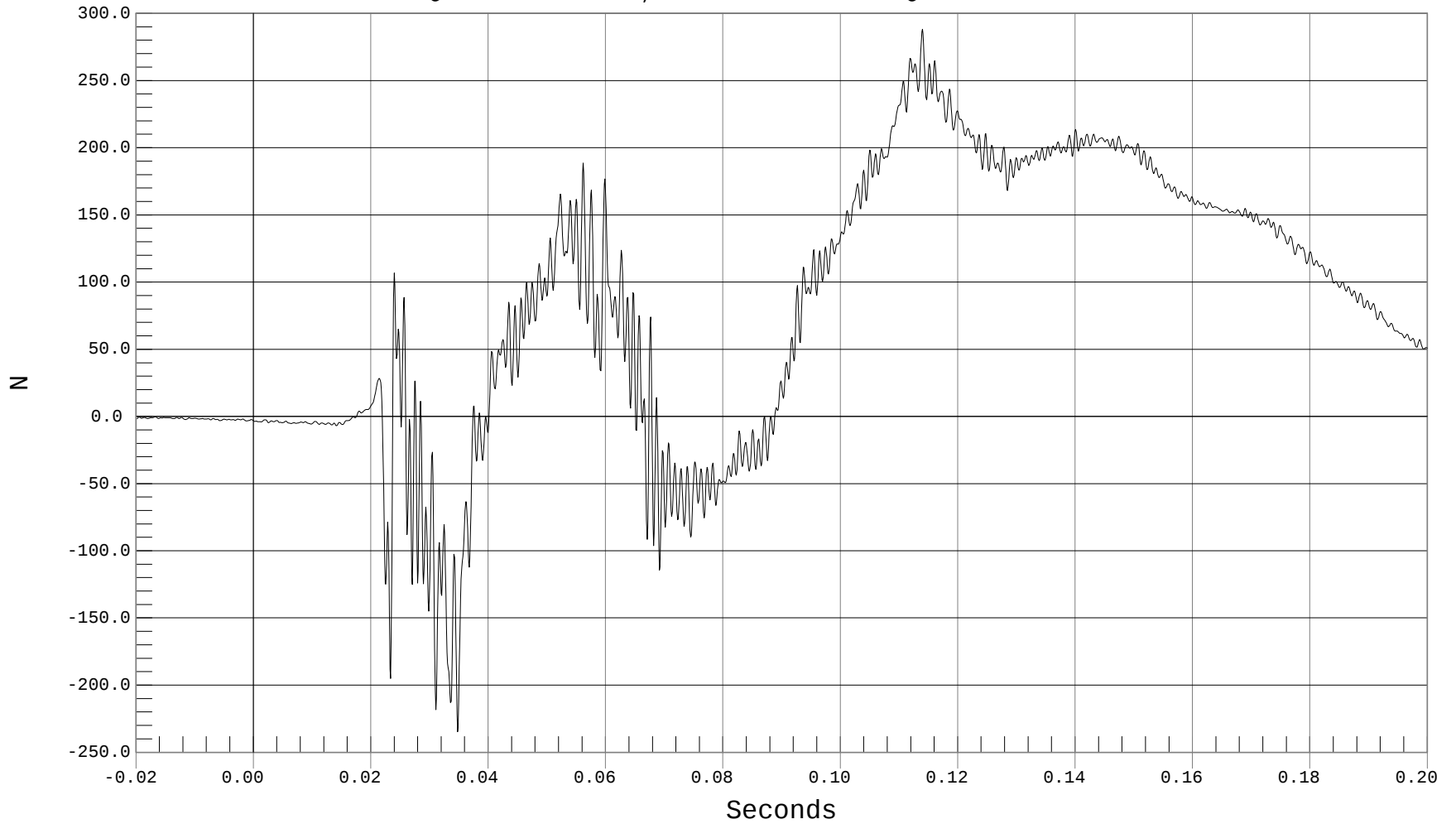
DRIVER TORSO FORCE X

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER TORSO FX, B02048FF.F59

Ymin = -234.68 N @ 0.0347 Seconds, Ymax = 288.19 N @ 0.1139 Seconds





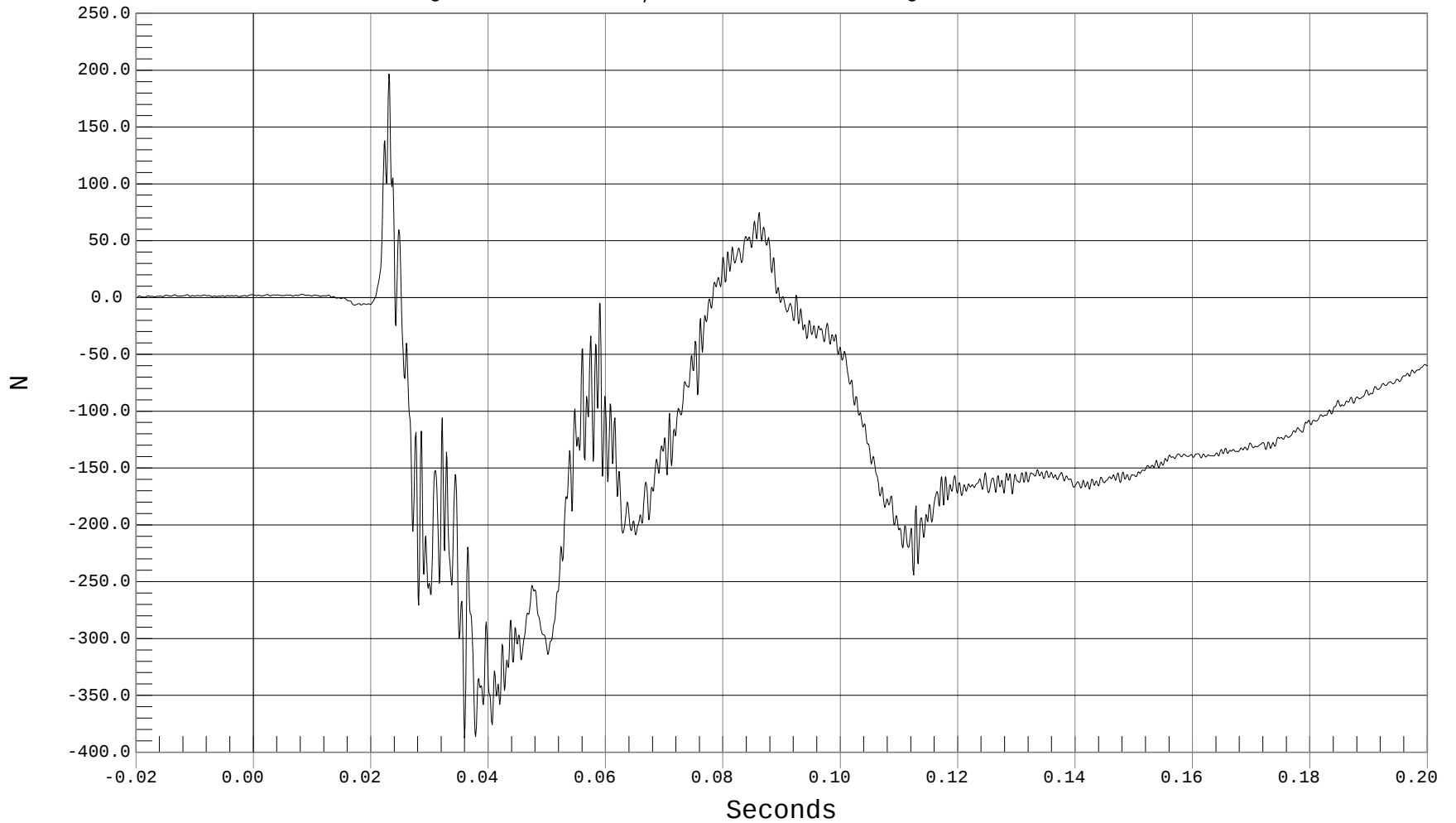
DRIVER TORSO FORCE Y

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER TORSO FY, B02048FF.F60

Ymin = -387.47 N @ 0.0359 Seconds, Ymax = 196.78 N @ 0.0230 Seconds





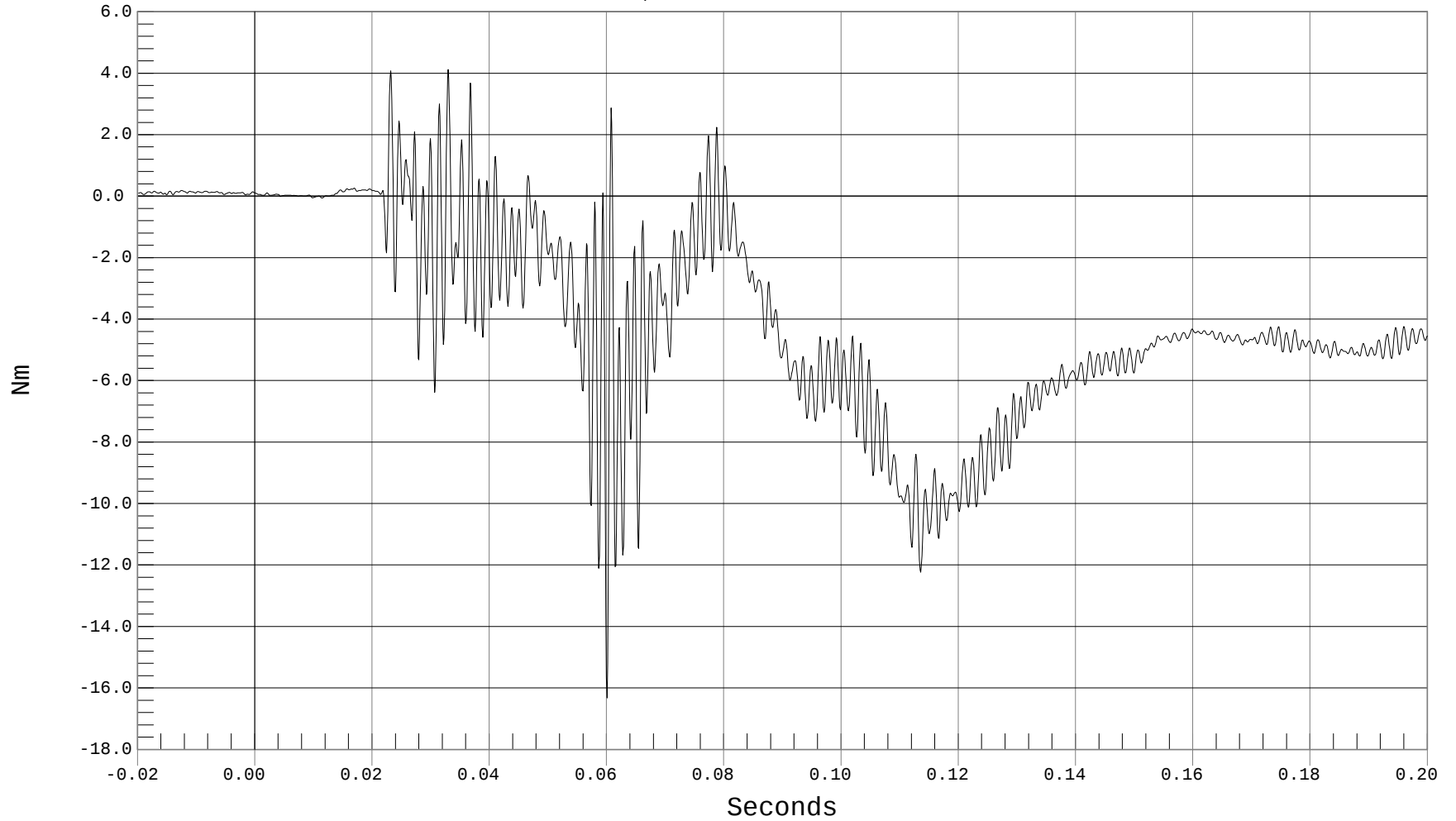
DRIVER TORSO MOMENT Y

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER TORSO MY, B02048MF.M61

Ymin = -16.33 Nm @ 0.0600 Seconds, Ymax = 4.12 Nm @ 0.0329 Seconds





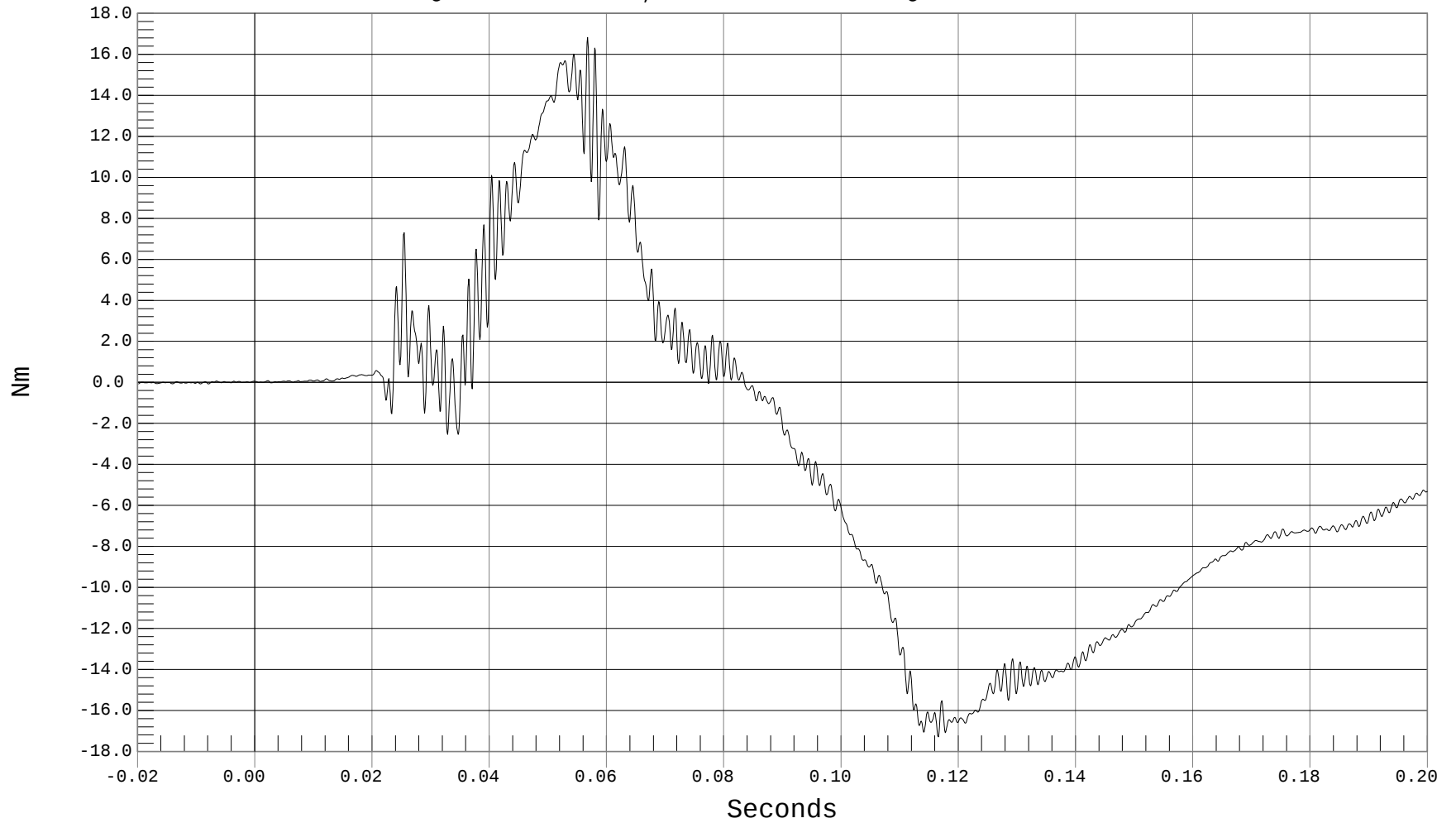
DRIVER TORSO MOMENT Z

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

1 DRIVER TORSO MZ, B02048MF.M62

Ymin = -17.29 Nm @ 0.1165 Seconds, Ymax = 16.82 Nm @ 0.0567 Seconds





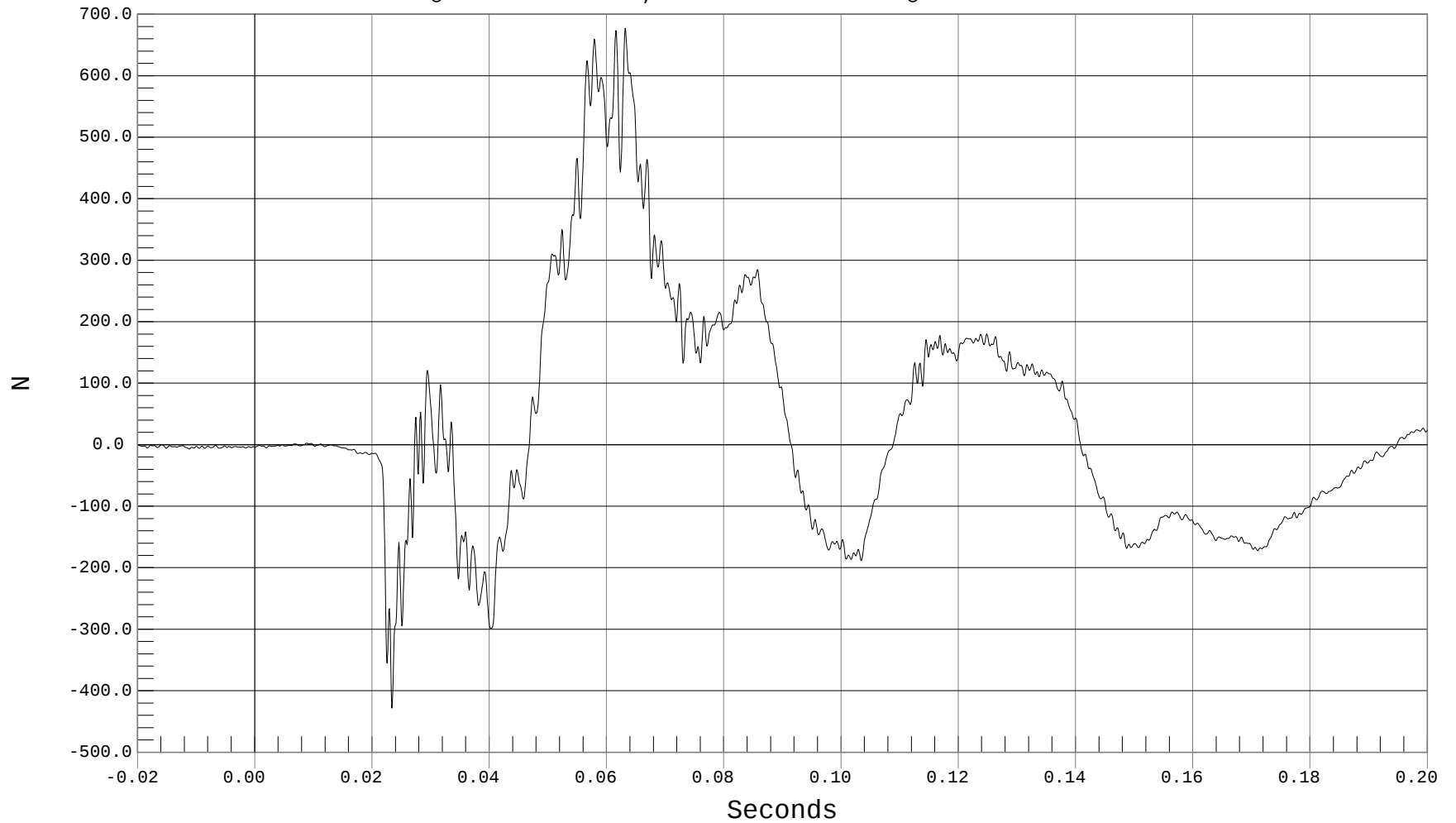
DRIVER T-12 FORCE X

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER T-12 FX, B02048FF.F65

Ymin = -428.25 N @ 0.0233 Seconds, Ymax = 677.22 N @ 0.0631 Seconds





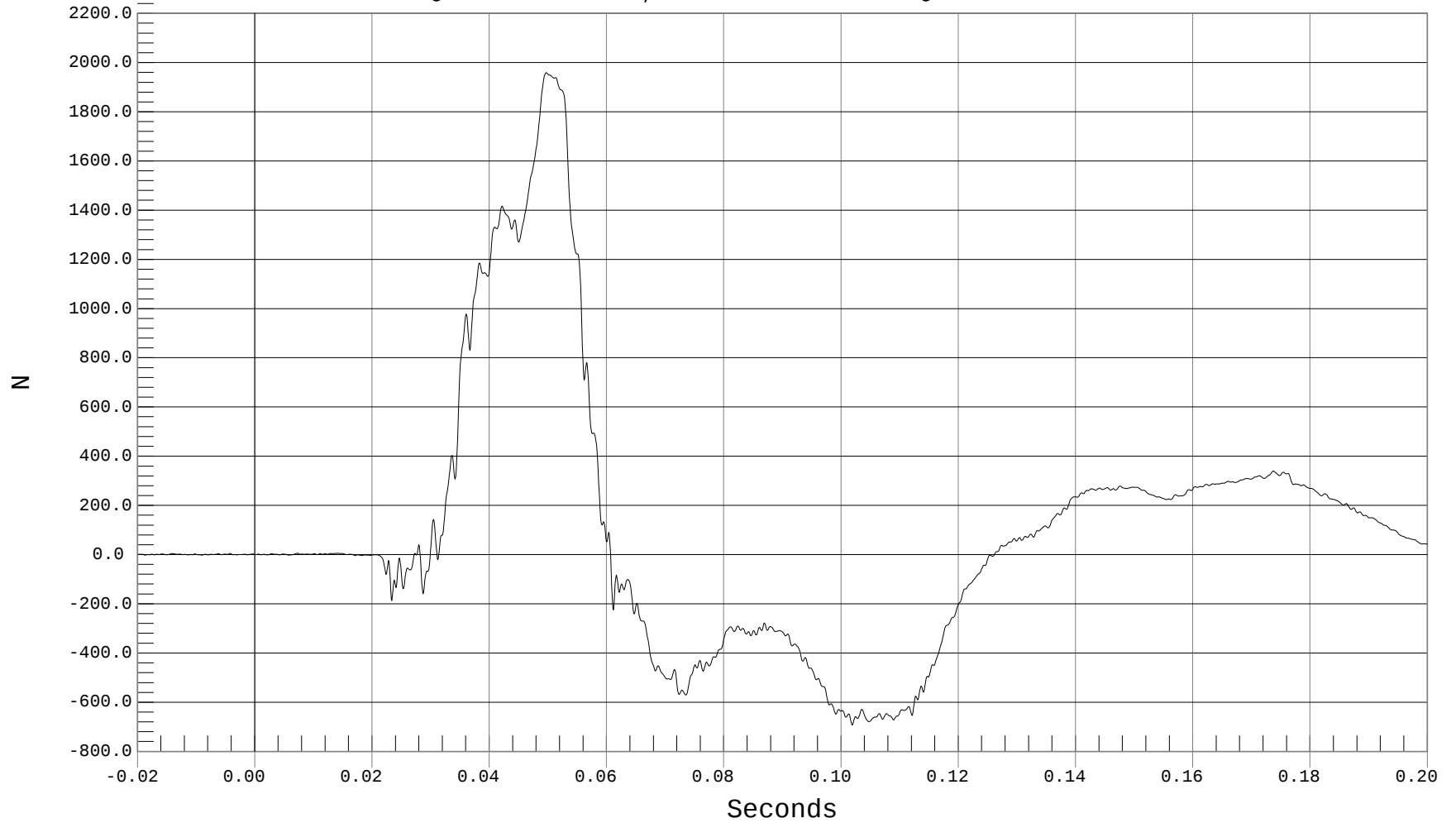
DRIVER T-12 FORCE Y

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER T-12 FY, B02048FF.F66

Ymin = -692.21 N @ 0.1018 Seconds, Ymax = 1959.36 N @ 0.0496 Seconds





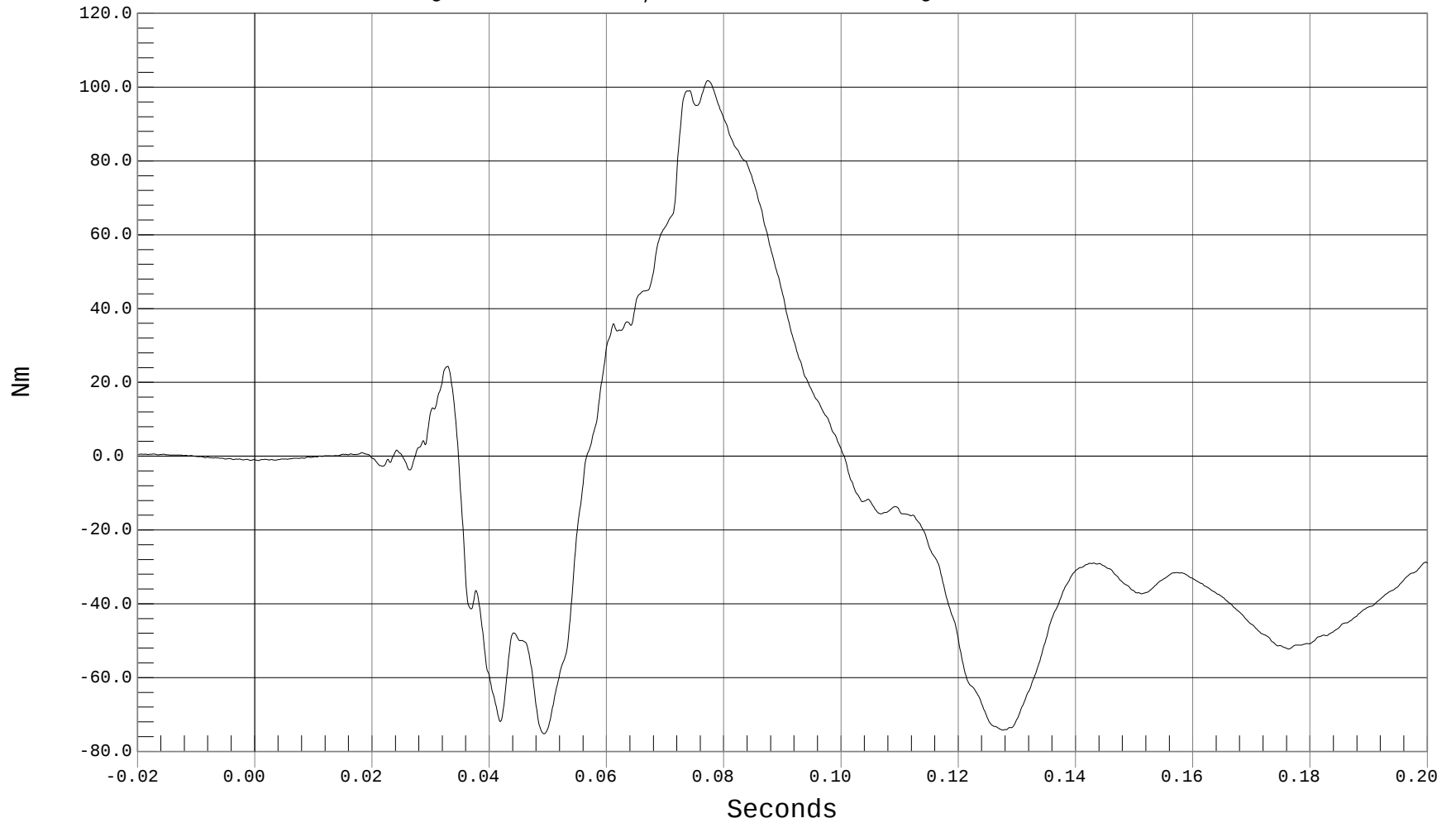
DRIVER T-12 MOMENT X

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER T-12 MX, B02048MF.M67

Ymin = -75.22 Nm @ 0.0492 Seconds, Ymax = 101.79 Nm @ 0.0772 Seconds





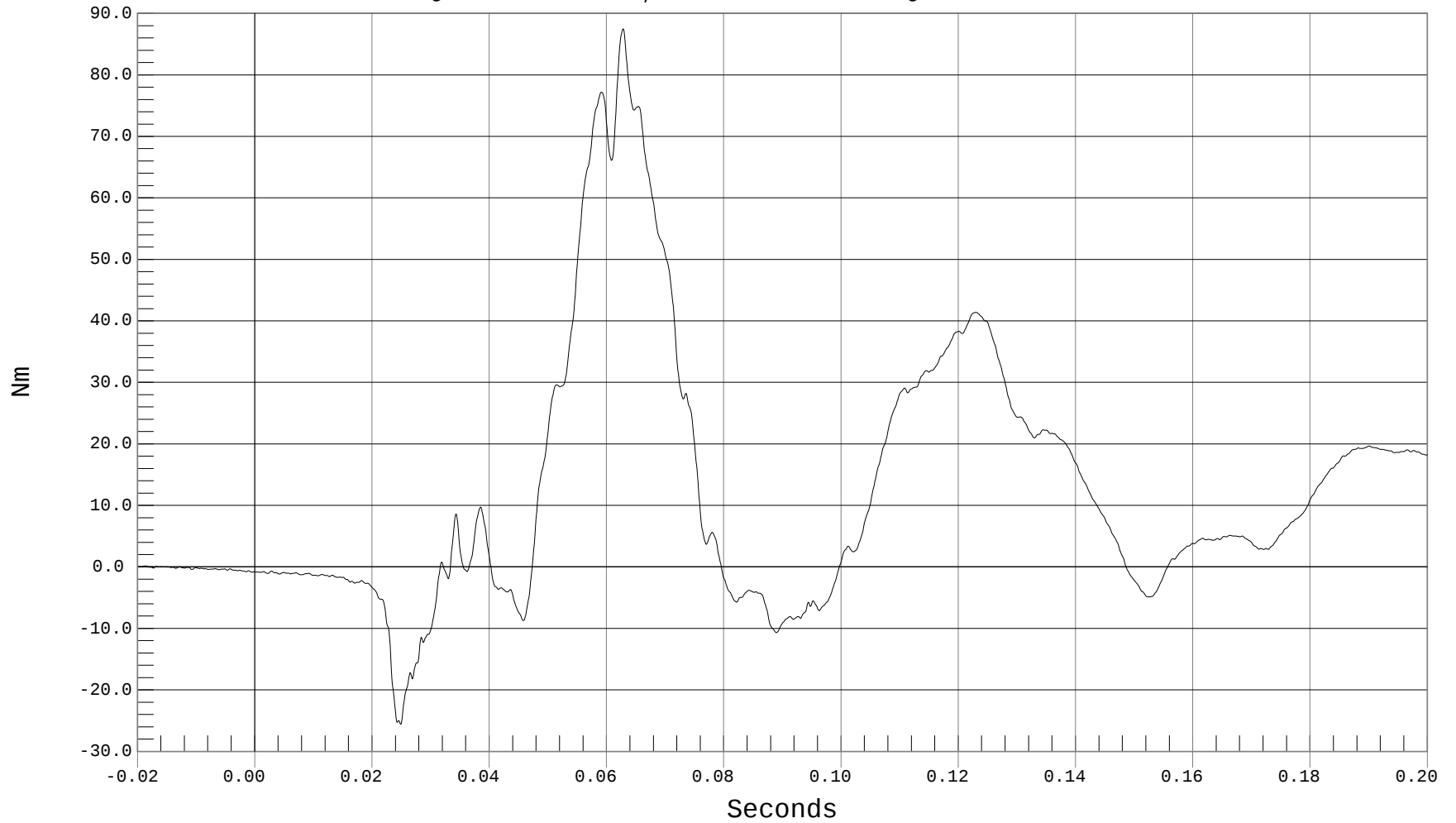
DRIVER T-12 MOMENT Y

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

1 DRIVER T-12 MY, B02048MF.M68

Ymin = -25.59 Nm @ 0.0248 Seconds, Ymax = 87.46 Nm @ 0.0627 Seconds





DRIVER LUMBAR FORCE Y

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG

Test Date: 06-12-02

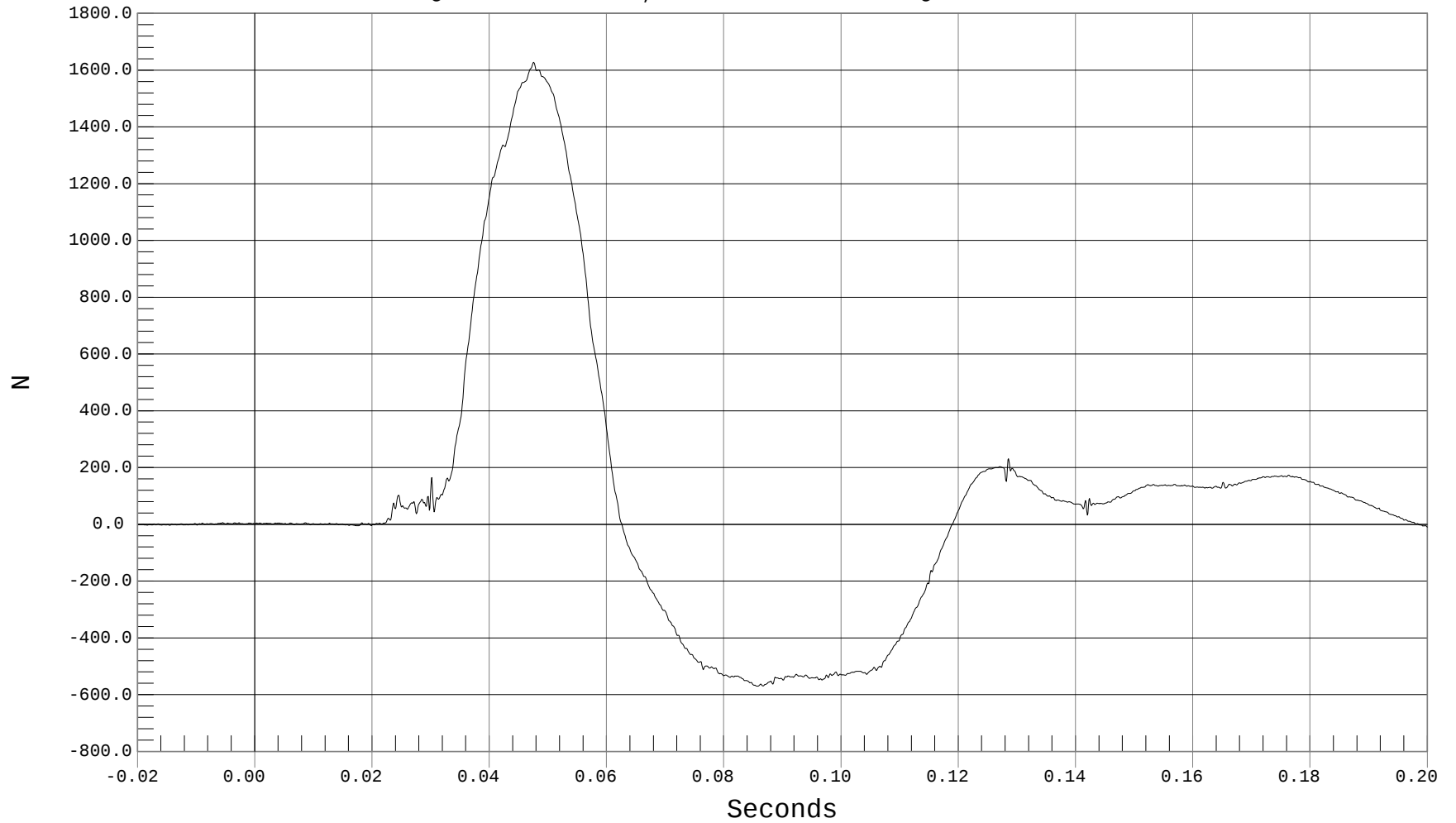
Component: 2000 NISSAN MAXIMA 4 DOOR

Speed: 20.0 MPH, 32.2 KPH

Filter Class: 1000

1 DRIVER LUMBAR FY, B02048FT.F84

Ymin = -570.16 N @ 0.0855 Seconds, Ymax = 1627.95 N @ 0.0475 Seconds





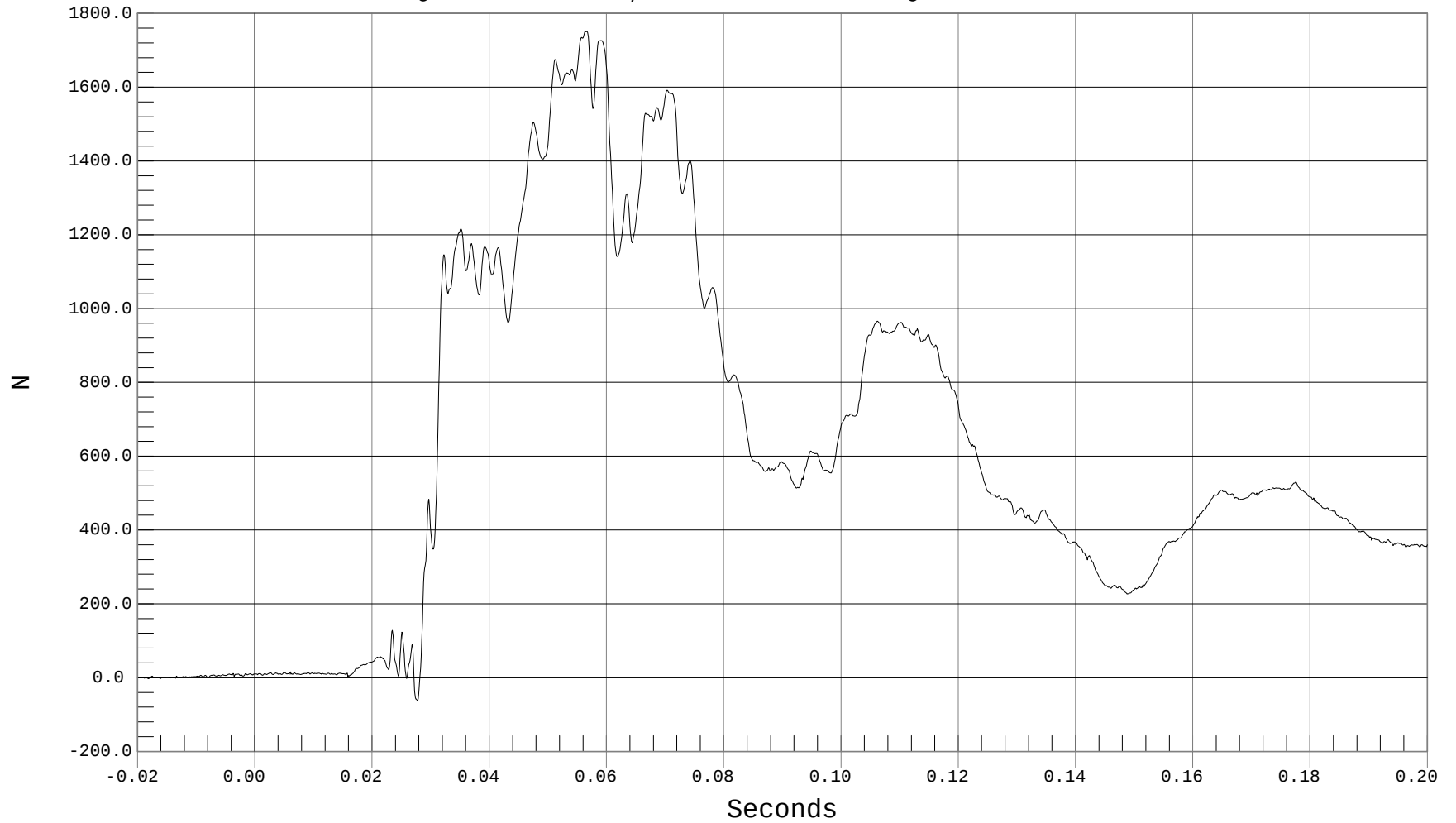
DRIVER LUMBAR FORCE Z

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 1000

1 DRIVER LUMBAR FZ, B02048FT.F85

Ymin = -62.34 N @ 0.0277 Seconds, Ymax = 1751.16 N @ 0.0563 Seconds



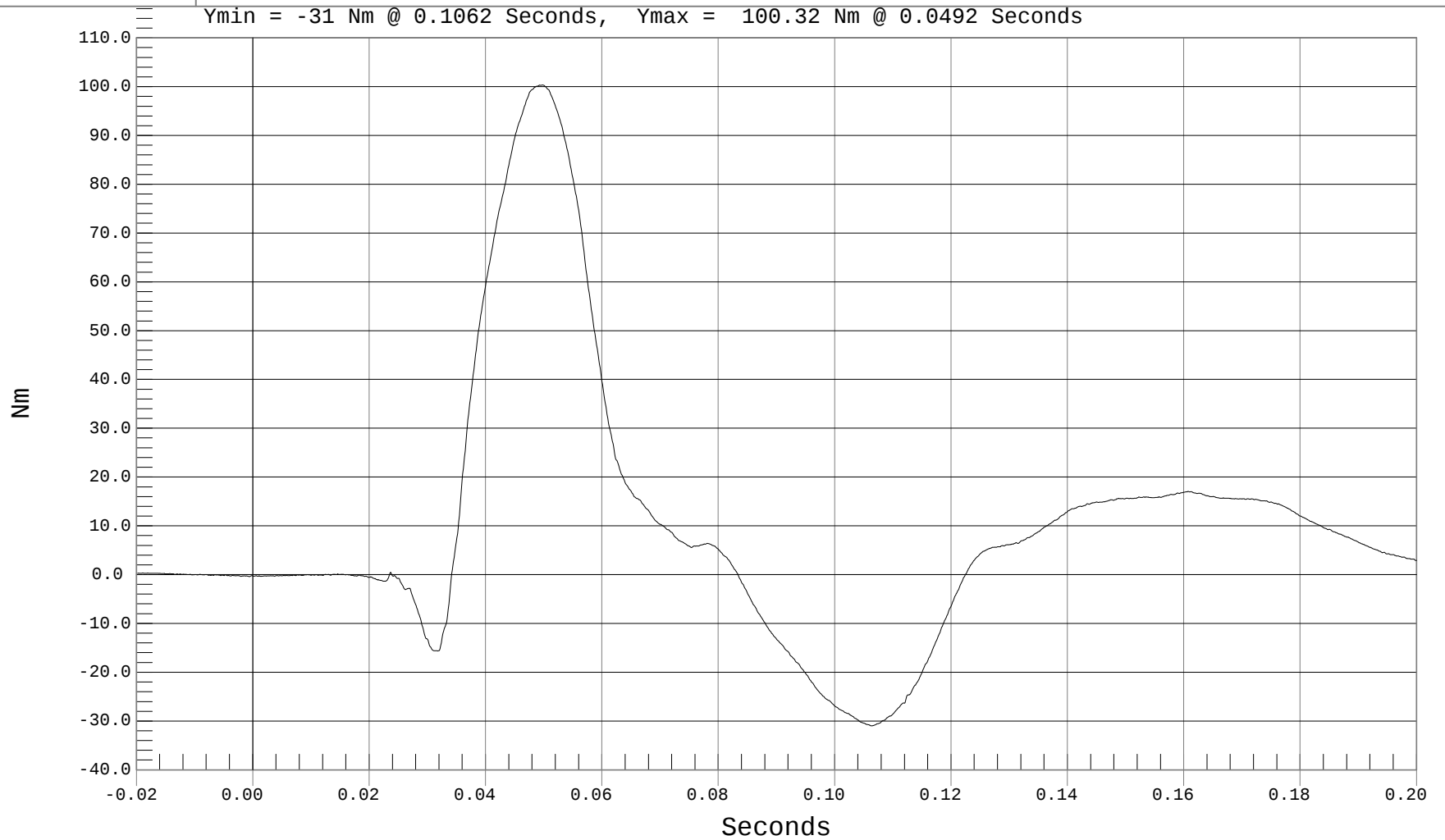


DRIVER LUMBAR MOMENT X

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 1000

— 1 DRIVER LUMBAR MX, B02048MT.M86





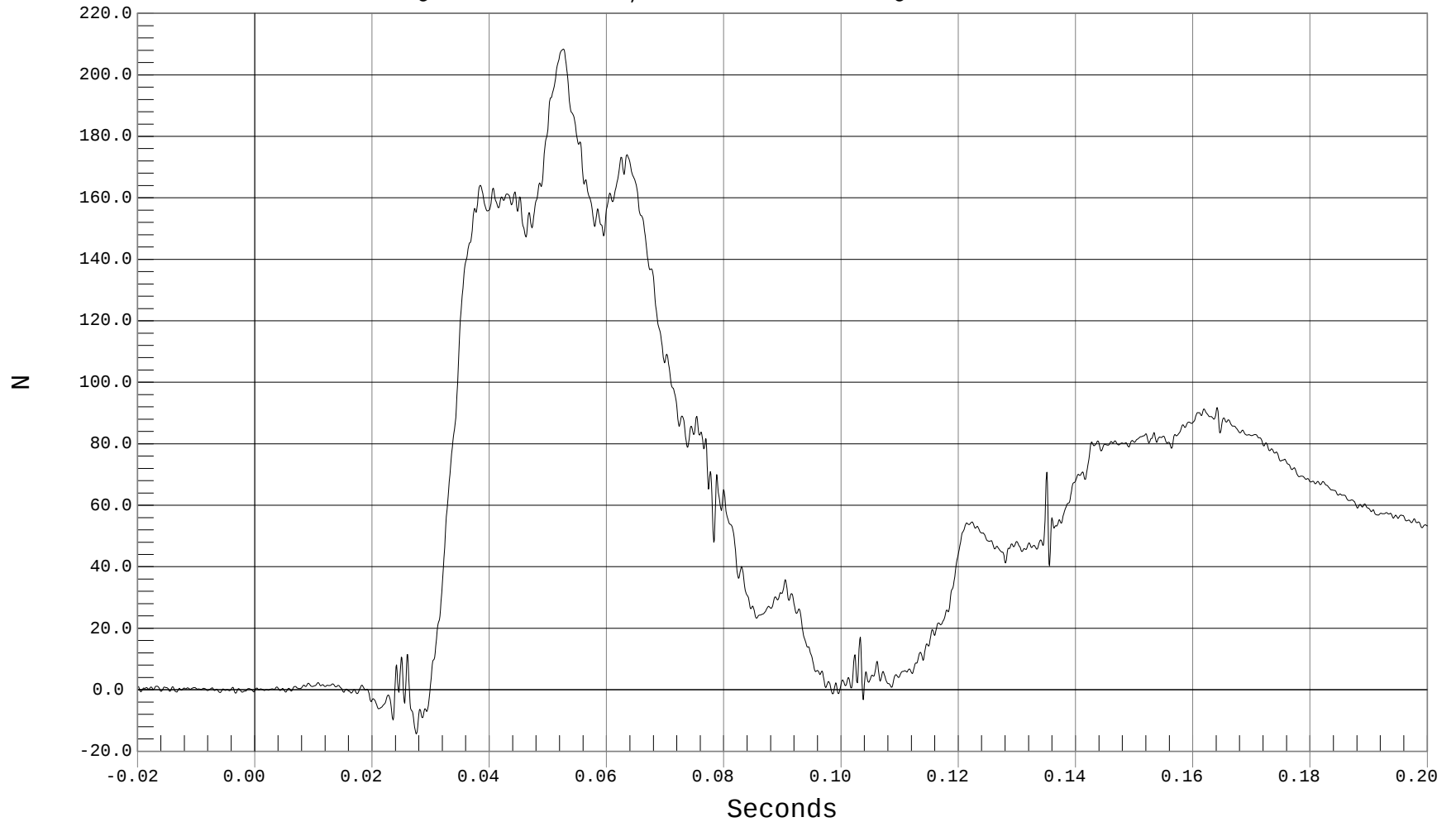
DRIVER ABDOMEN FRONT FORCE

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER FRONT ABDOMEN FY, B02048FF.F87

Ymin = -14.35 N @ 0.0275 Seconds, Ymax = 208.44 N @ 0.0526 Seconds





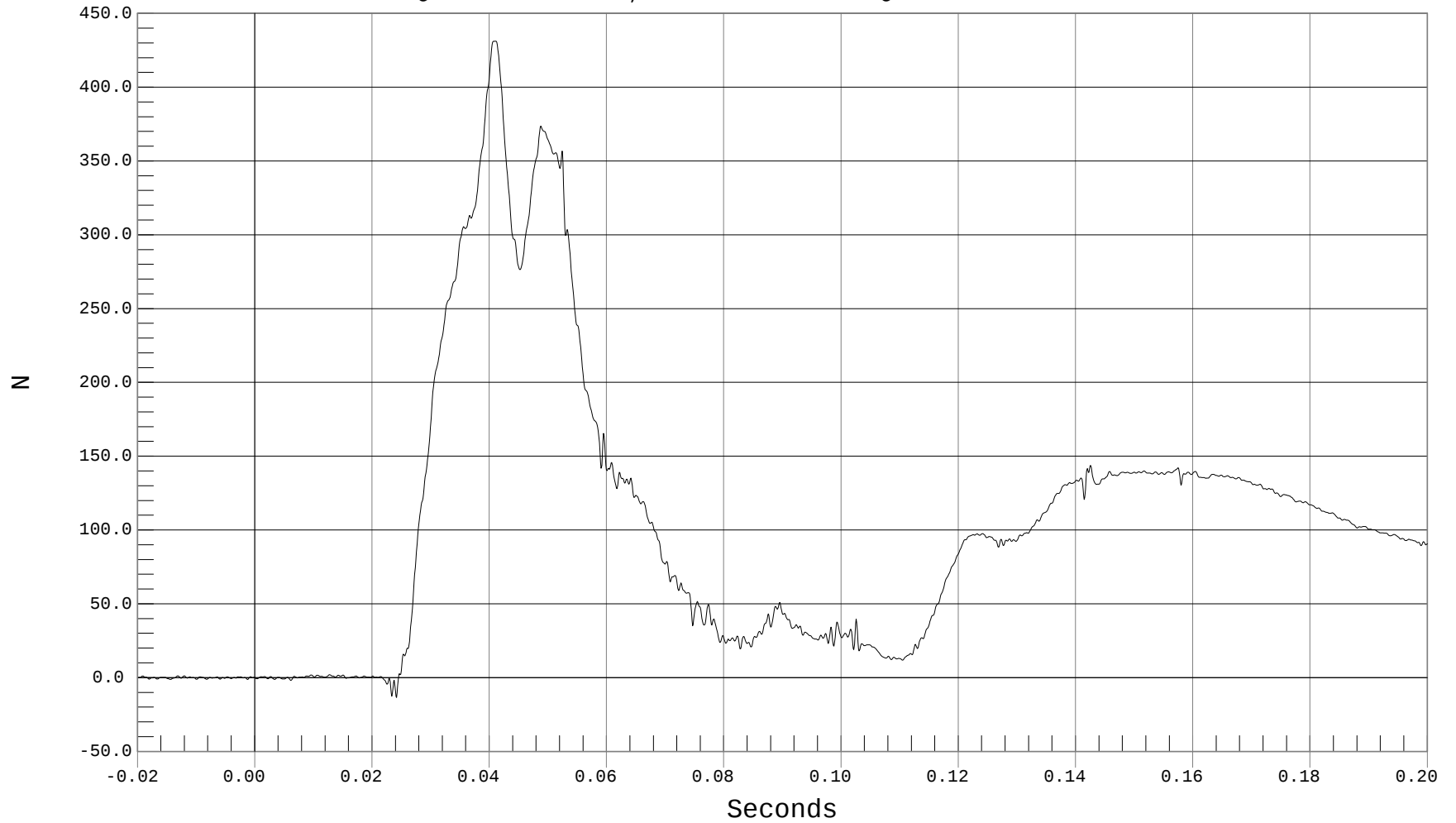
DRIVER ABDOMEN MID FORCE

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER MID ABDOMEN FY, B02048FF.F88

Ymin = -13.44 N @ 0.0241 Seconds, Ymax = 431.2 N @ 0.0407 Seconds





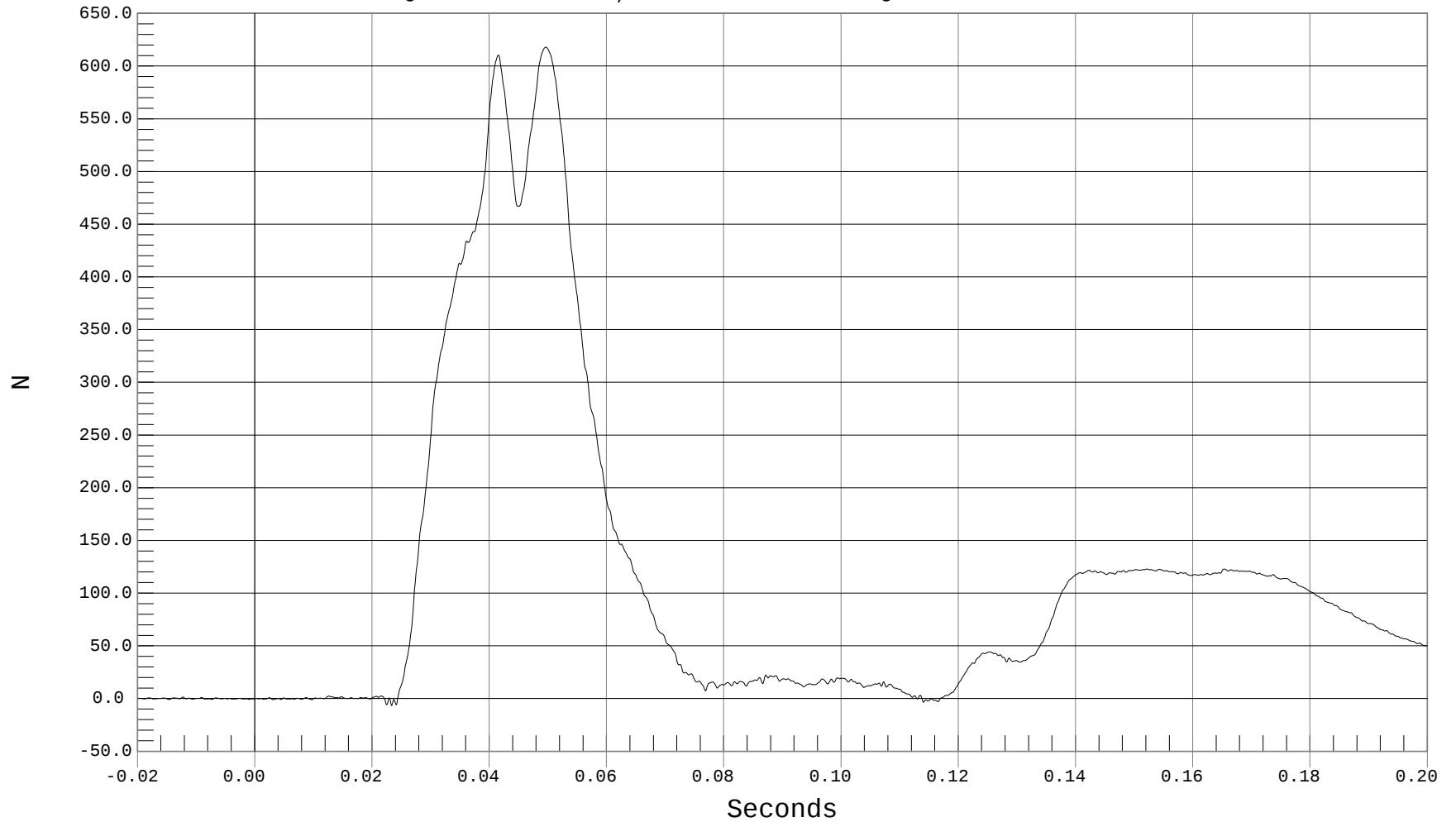
DRIVER ABDOMEN REAR FORCE

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER REAR ABDOMEN FY, B02048FF.F89

Ymin = -6.59 N @ 0.0233 Seconds, Ymax = 617.98 N @ 0.0496 Seconds





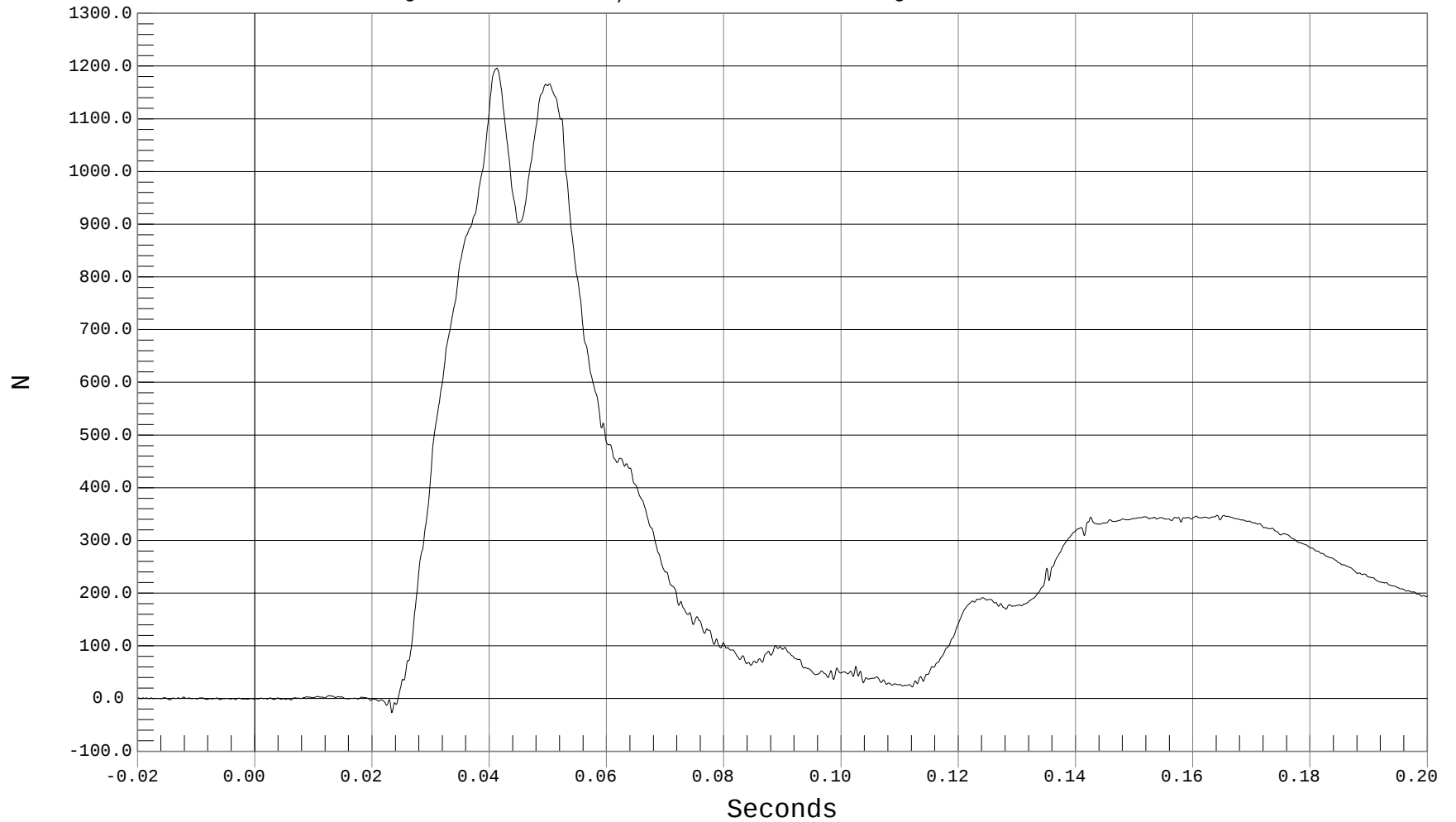
DRIVER SUMMED ABDOMEN FORCE

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER SUMMED ABDOMEN FORCE, B02048FU.F87

Ymin = -26.7 N @ 0.0233 Seconds, Ymax = 1196.01 N @ 0.0412 Seconds





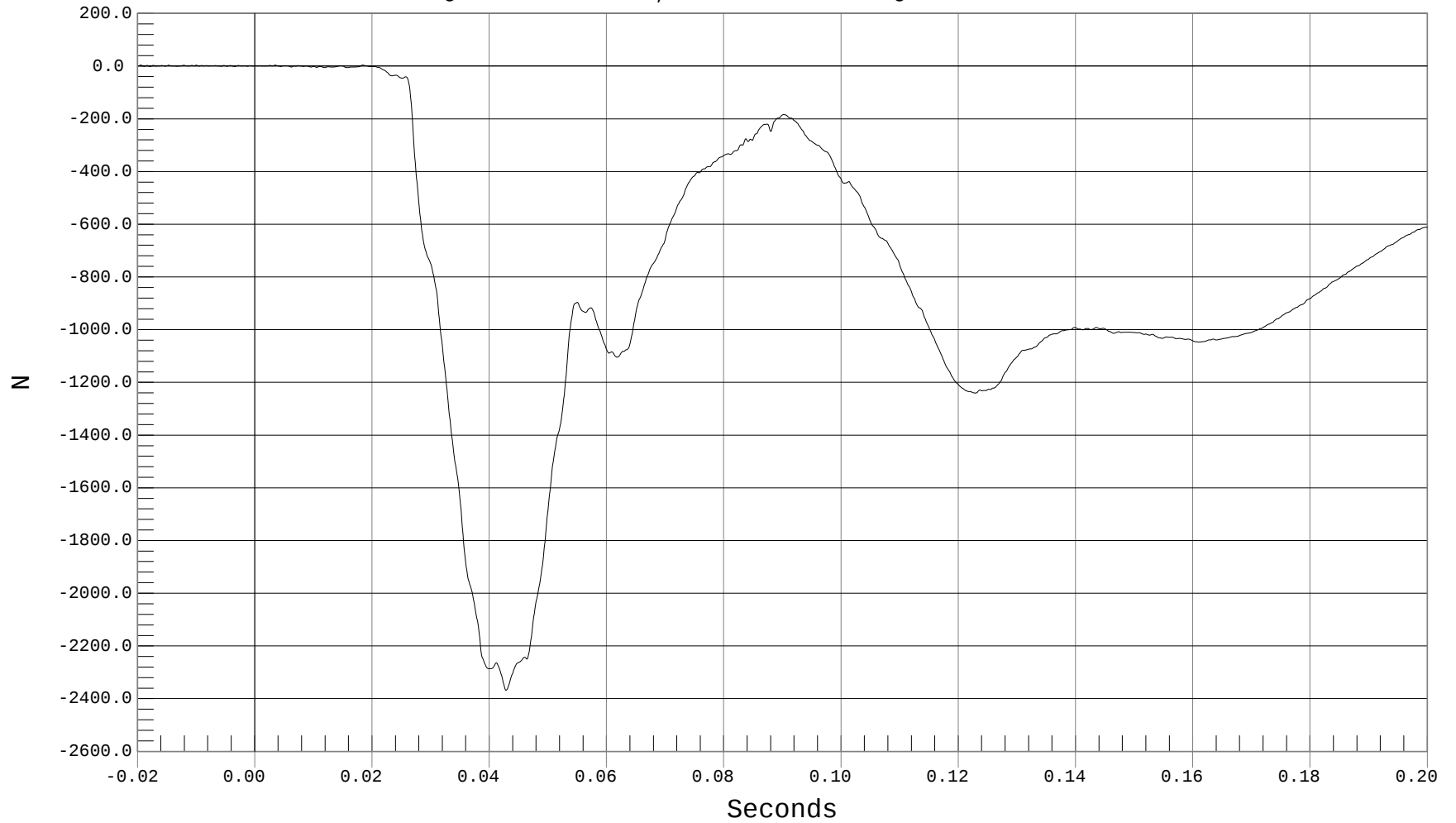
DRIVER PUBIC SYMPHYSIS FORCE

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 PUBIC SYMPHYSIS FORCE, B02048FF.F90

Ymin = -2368.35 N @ 0.0428 Seconds, Ymax = 3.56 N @ 0.0034 Seconds





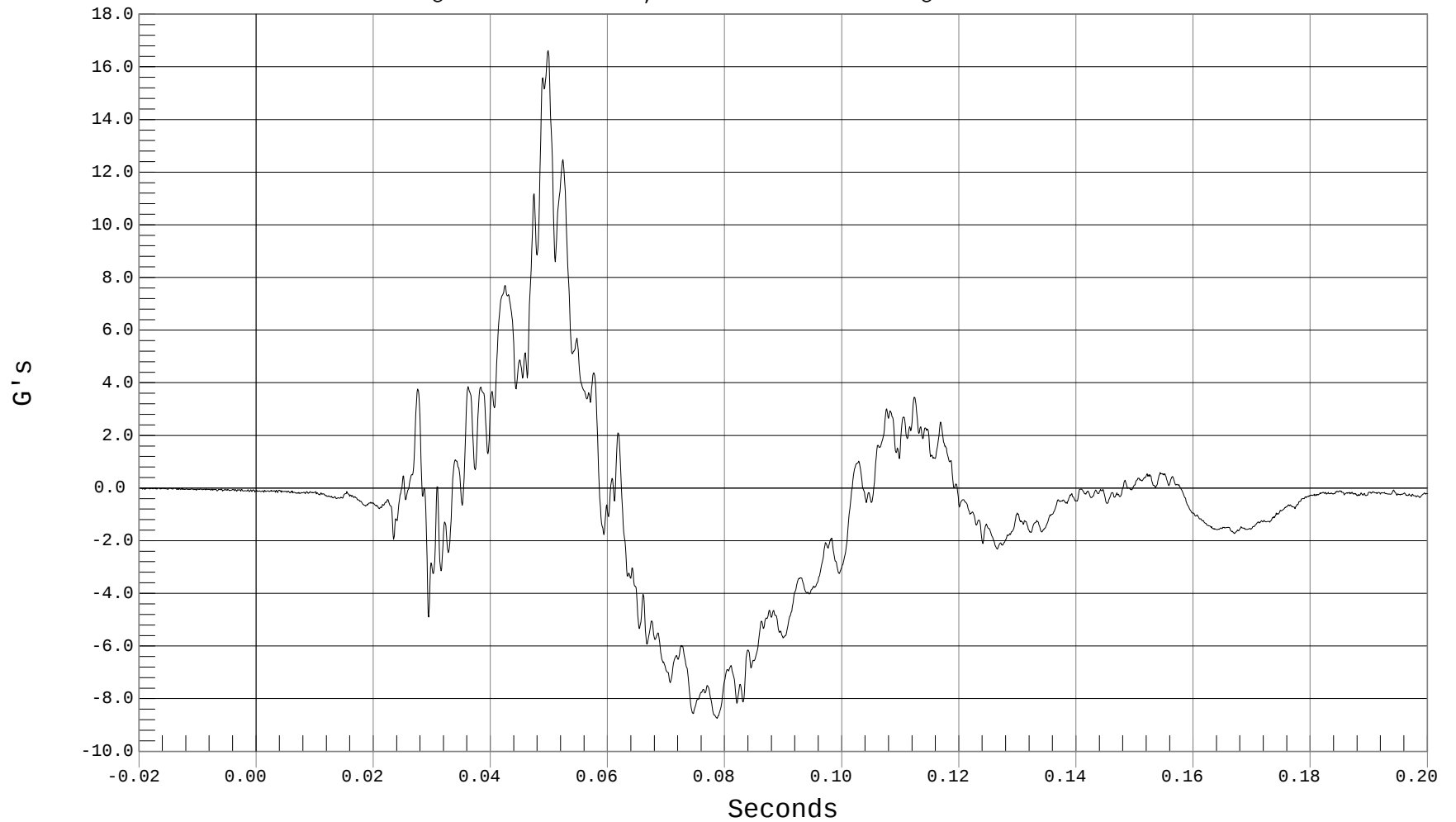
DRIVER PELVIS X ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 1000

— 1 DRIVER PELVIS X, B02048AT.A12

Ymin = -8.74 G's @ 0.0786 Seconds, Ymax = 16.62 G's @ 0.0498 Seconds





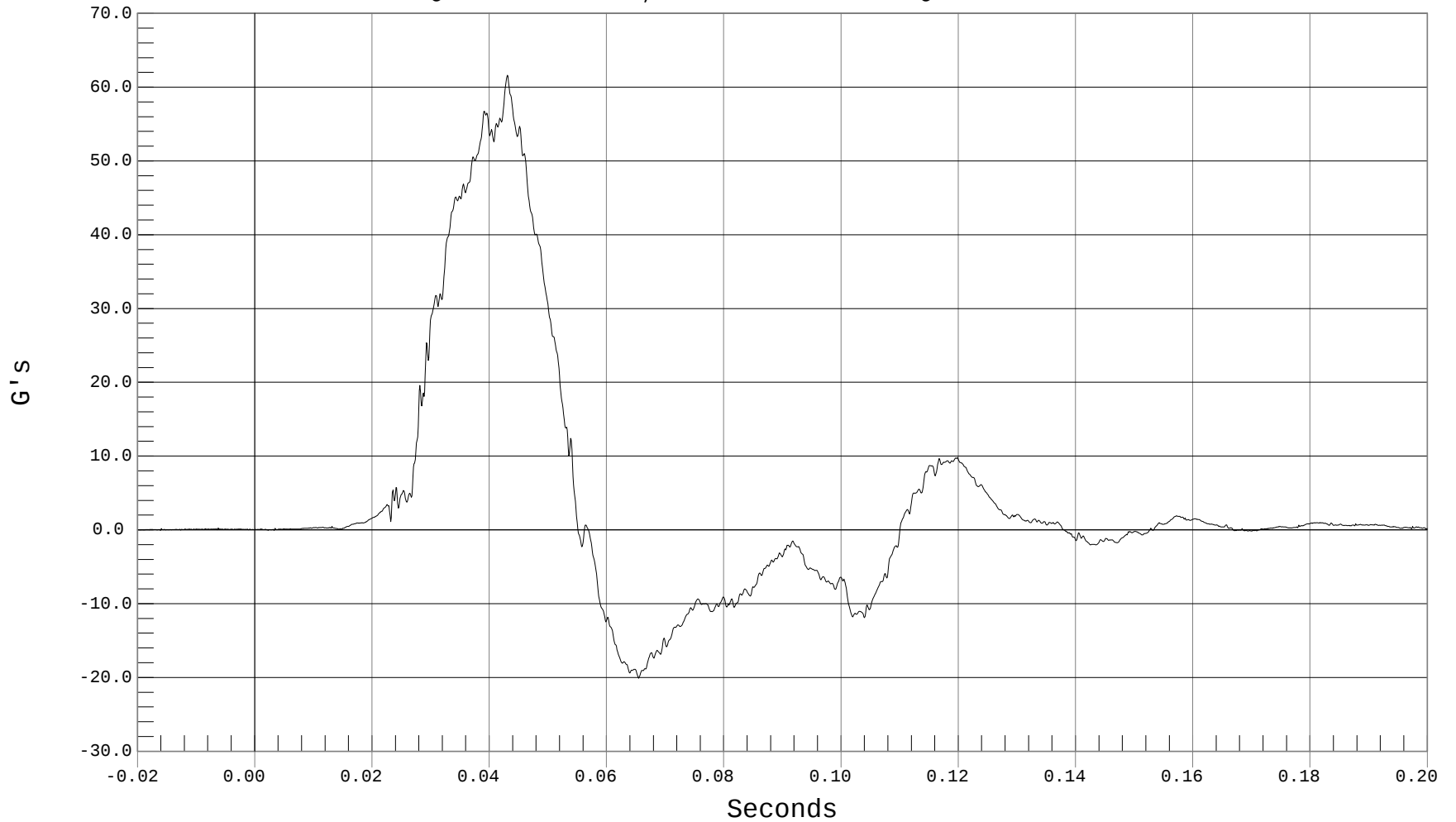
DRIVER PELVIS Y ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 1000

— 1 DRIVER PELVIS Y, B02048AT.A13

Ymin = -20.1 G's @ 0.0654 Seconds, Ymax = 61.62 G's @ 0.0430 Seconds





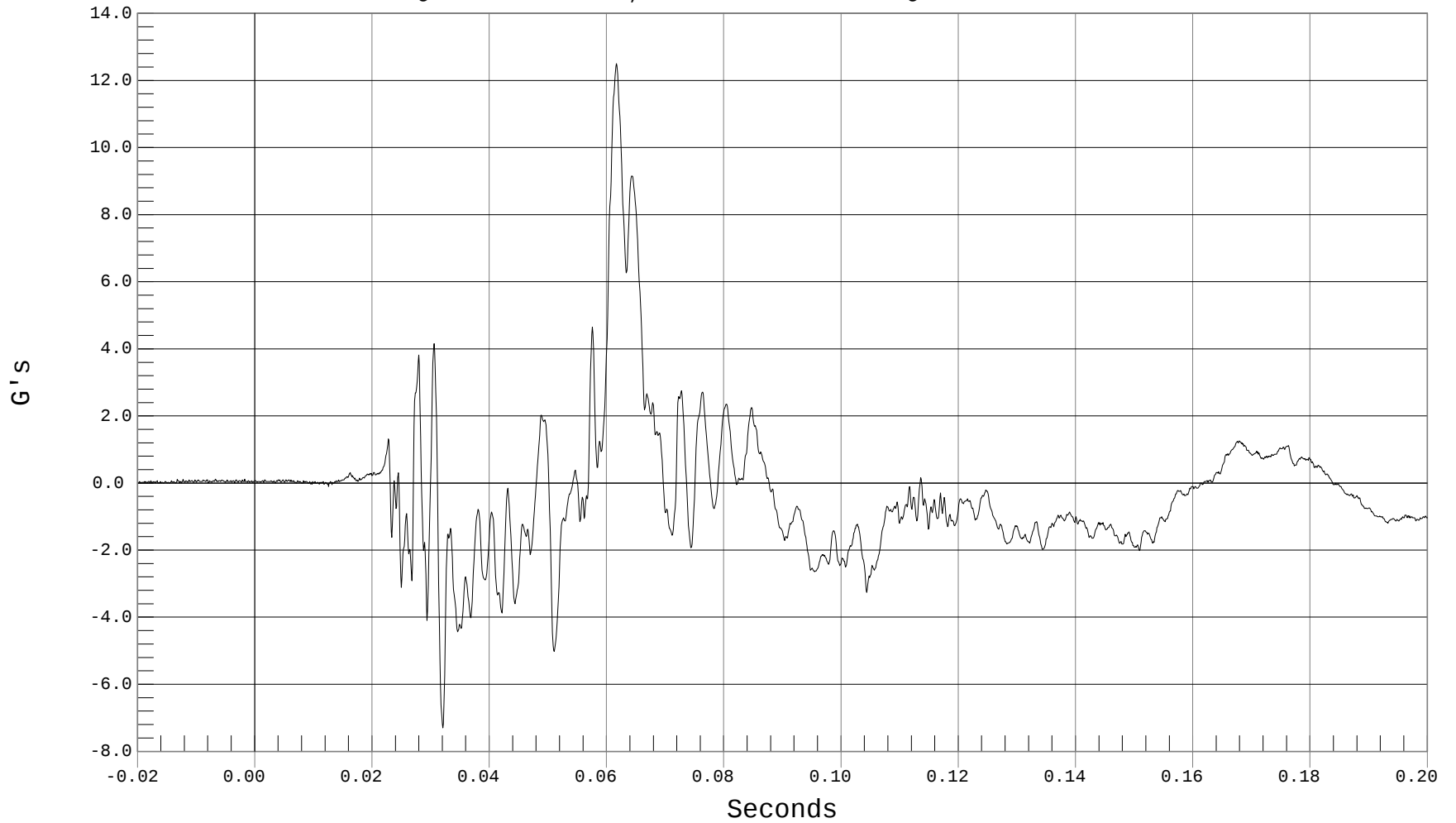
DRIVER PELVIS Z ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 1000

— 1 DRIVER PELVIS Z, B02048AT.A14

Ymin = -7.3 G's @ 0.0320 Seconds, Ymax = 12.51 G's @ 0.0616 Seconds





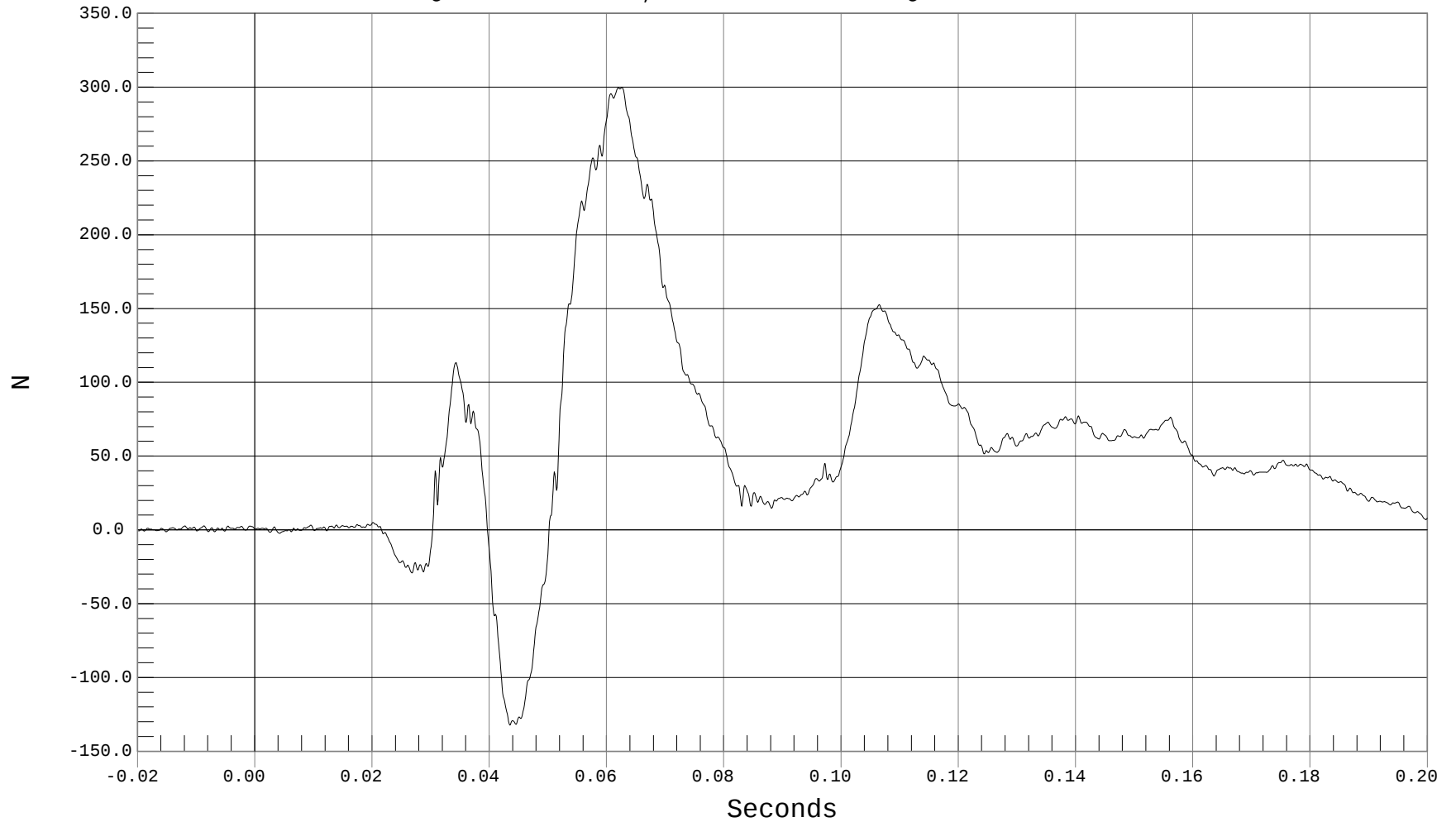
DRIVER LEFT FEMUR FORCE X

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER LEFT FEMUR FX, B02048FF.F01

Ymin = -132.39 N @ 0.0434 Seconds, Ymax = 299.79 N @ 0.0625 Seconds





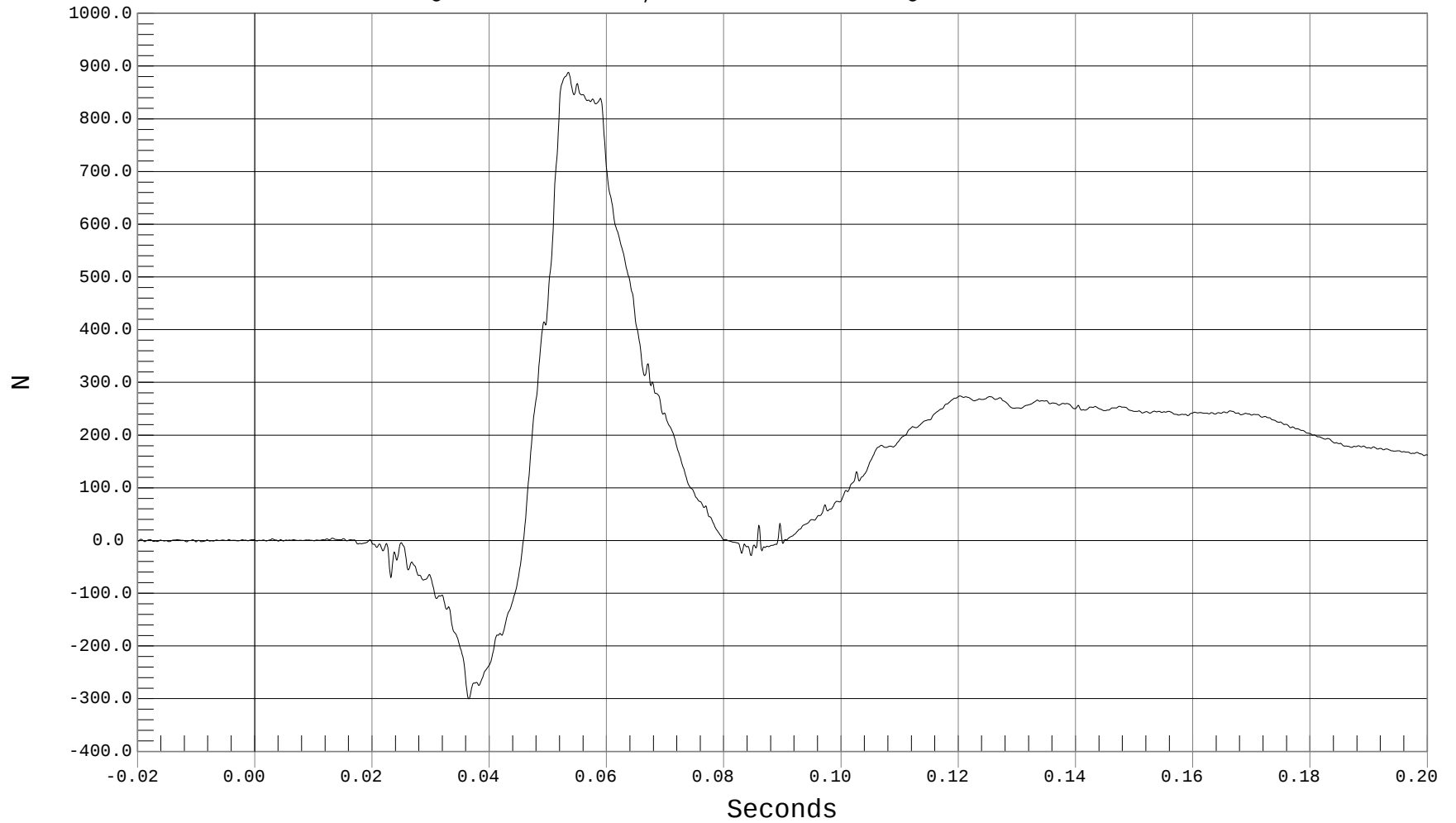
DRIVER LEFT FEMUR FORCE Y

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER LEFT FEMUR FY, B02048FF.F02

Ymin = -300.23 N @ 0.0364 Seconds, Ymax = 888.21 N @ 0.0534 Seconds





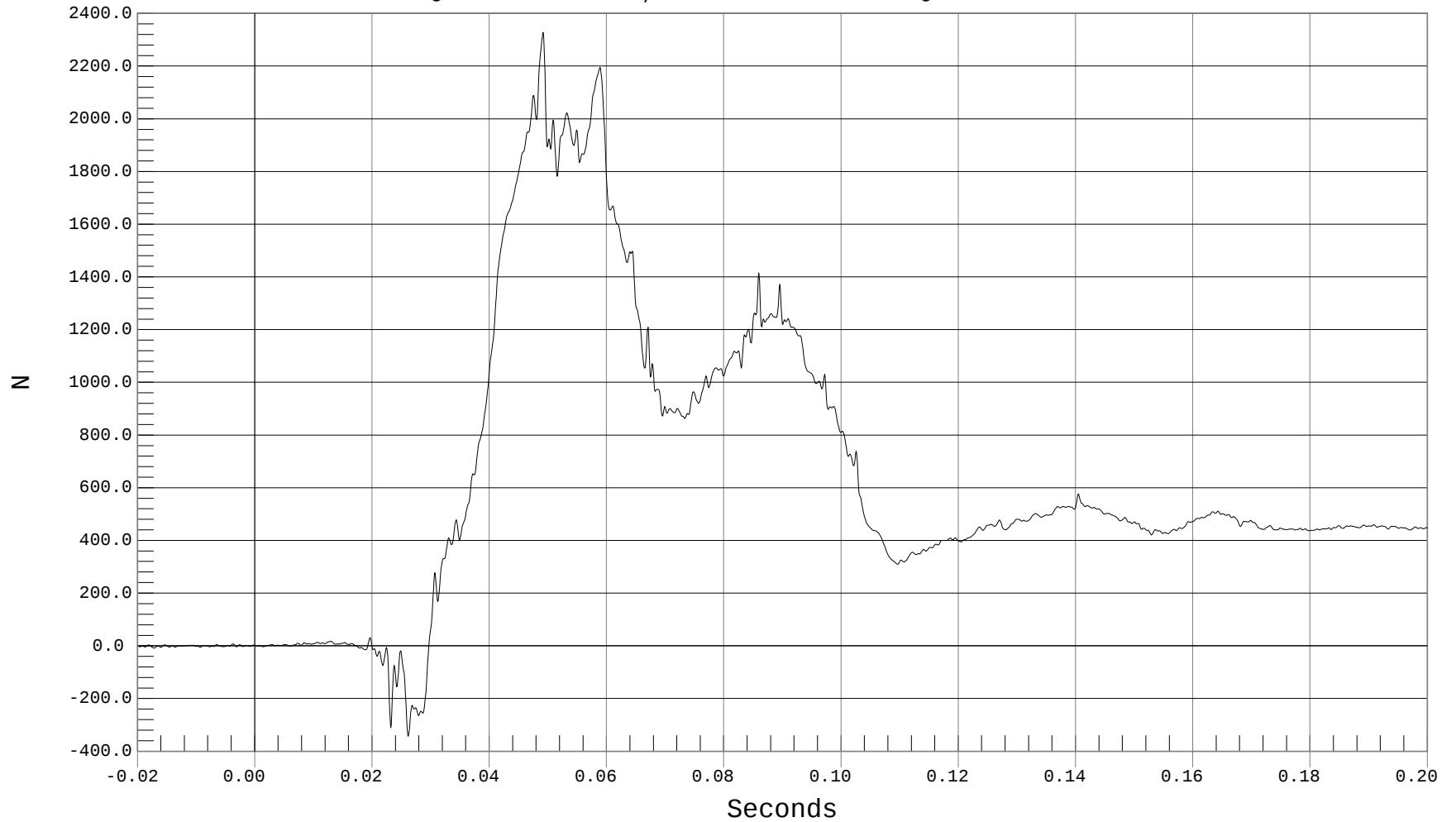
DRIVER LEFT FEMUR FORCE Z

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

1 DRIVER LEFT FEMUR FZ, B02048FF.F03

Ymin = -343.23 N @ 0.0261 Seconds, Ymax = 2327.74 N @ 0.0491 Seconds





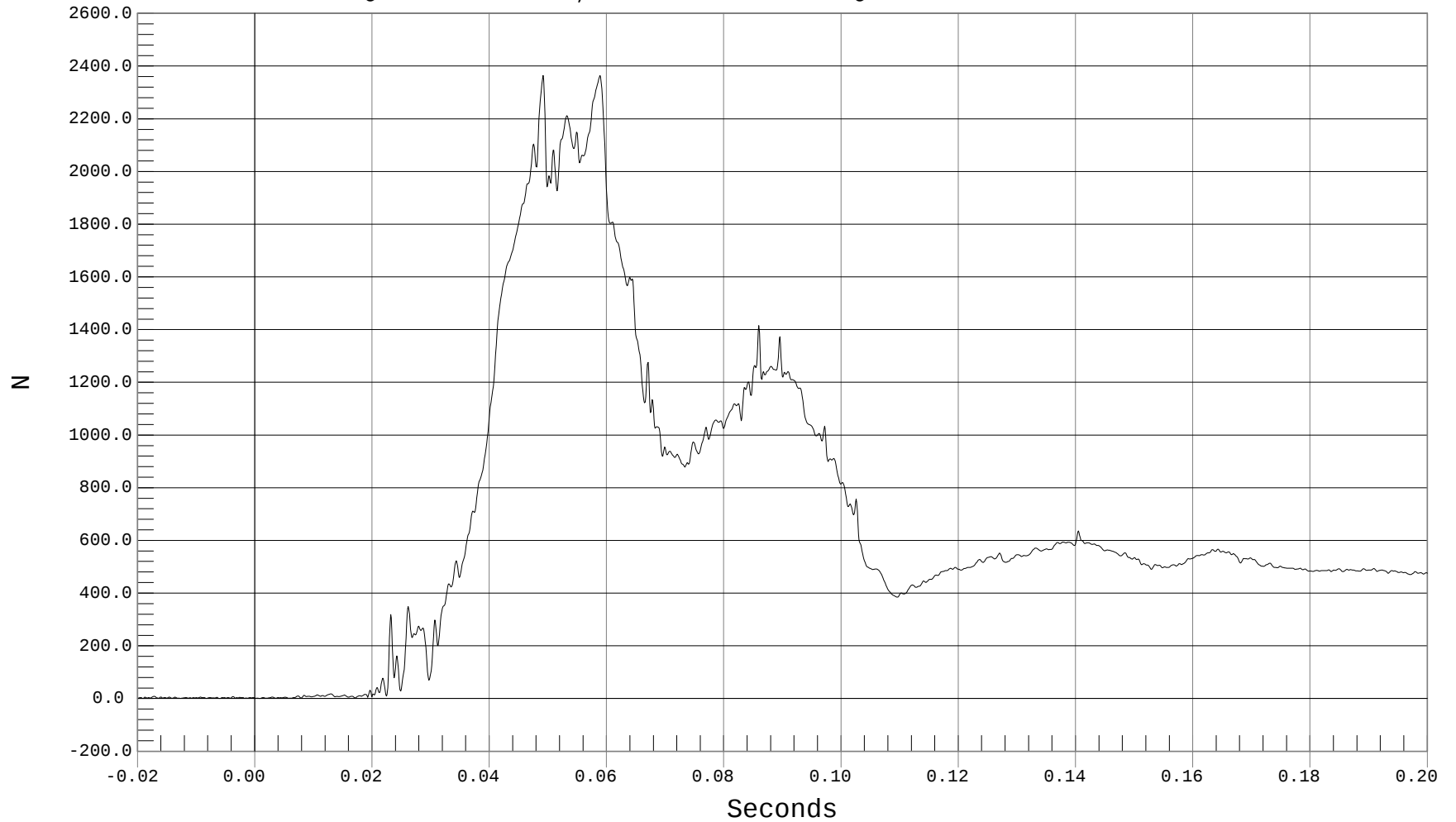
DRIVER LEFT FEMUR FORCE RESULTANT

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER LEFT FEMUR FORCE RESULTANT, B02048FV.F01

Ymin = .3 N @ 0.0060 Seconds, Ymax = 2364.11 N @ 0.0588 Seconds





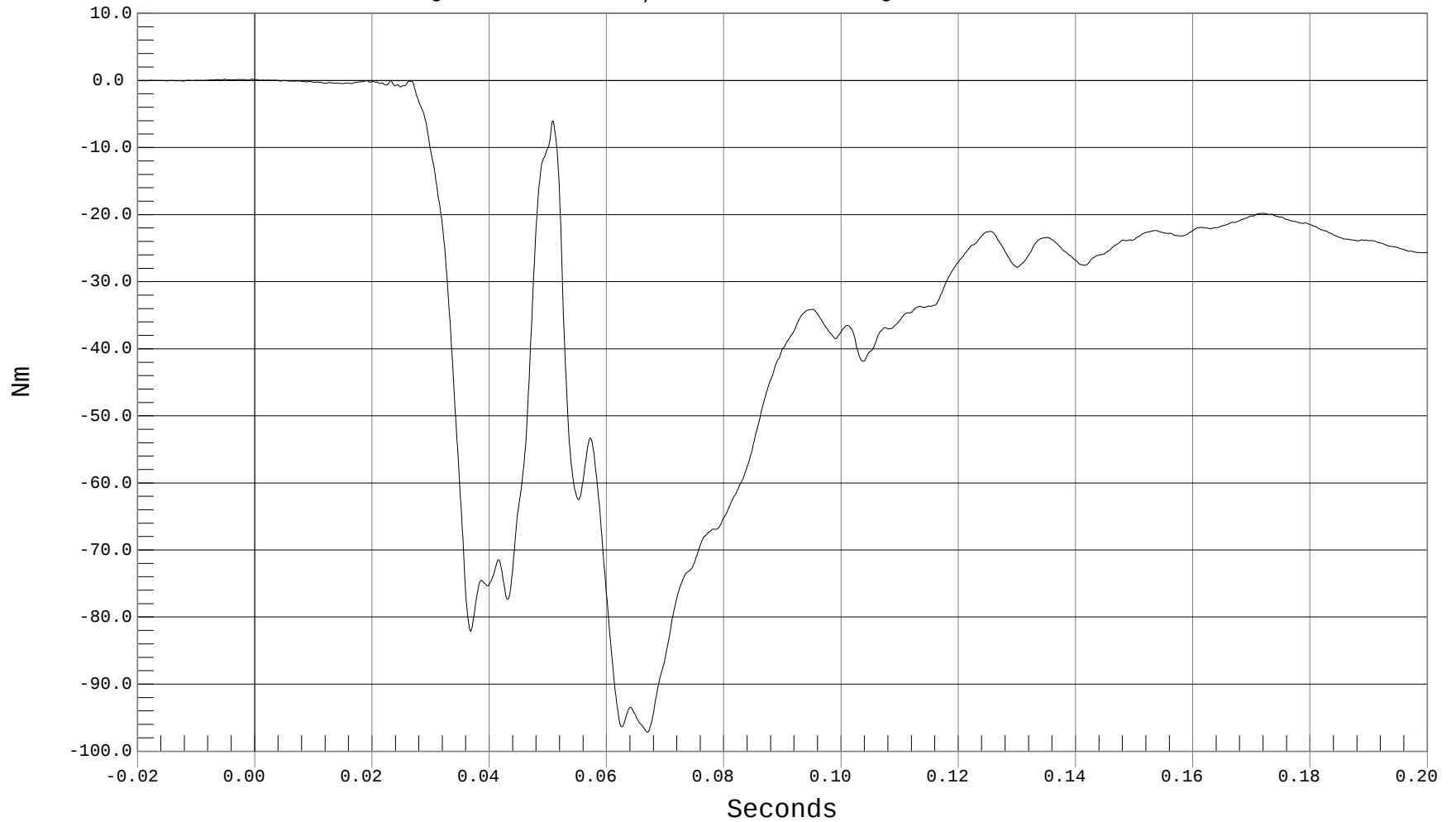
DRIVER LEFT FEMUR MOMENT X

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER LEFT FEMUR MX, B02048MF.M04

Ymin = -97.15 Nm @ 0.0669 Seconds, Ymax = .18 Nm @ -0.0006 Seconds





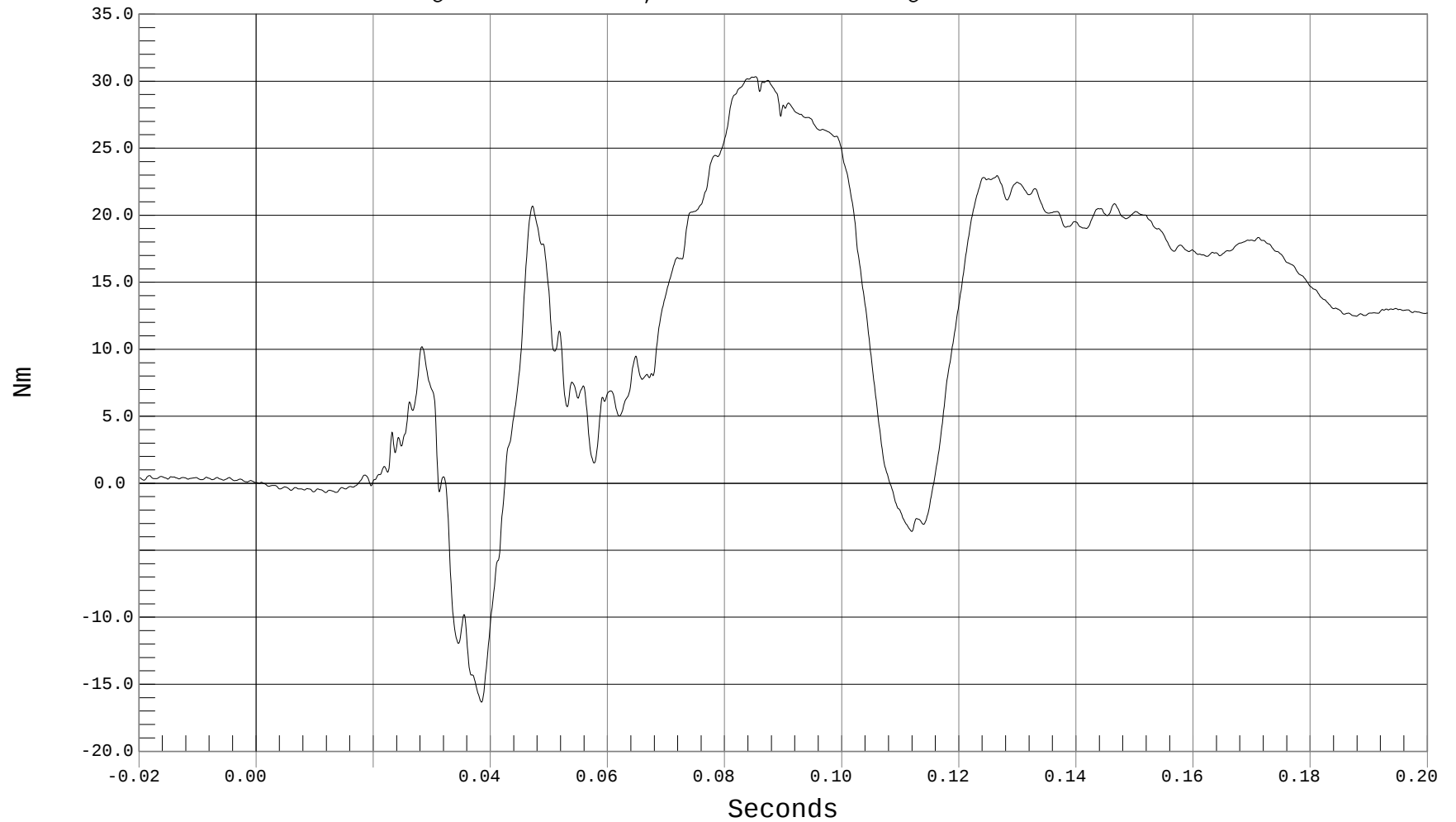
DRIVER LEFT FEMUR MOMENT Y

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER LEFT FEMUR MY, B02048MF.M05

Ymin = -16.33 Nm @ 0.0384 Seconds, Ymax = 30.33 Nm @ 0.0852 Seconds





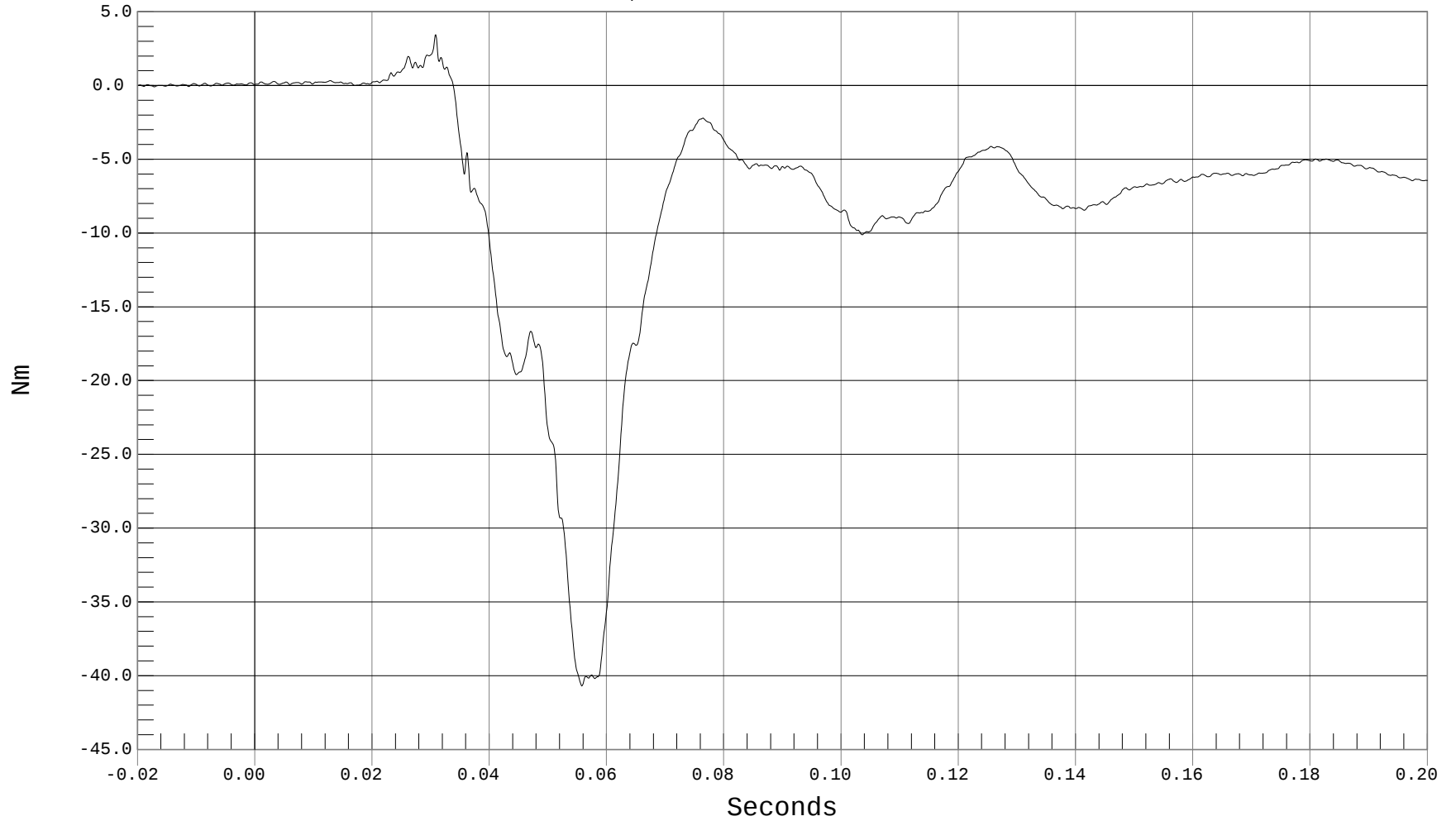
DRIVER LEFT FEMUR MOMENT Z

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

1 DRIVER LEFT FEMUR MZ, B02048MF.M06

Ymin = -40.7 Nm @ 0.0557 Seconds, Ymax = 3.44 Nm @ 0.0308 Seconds





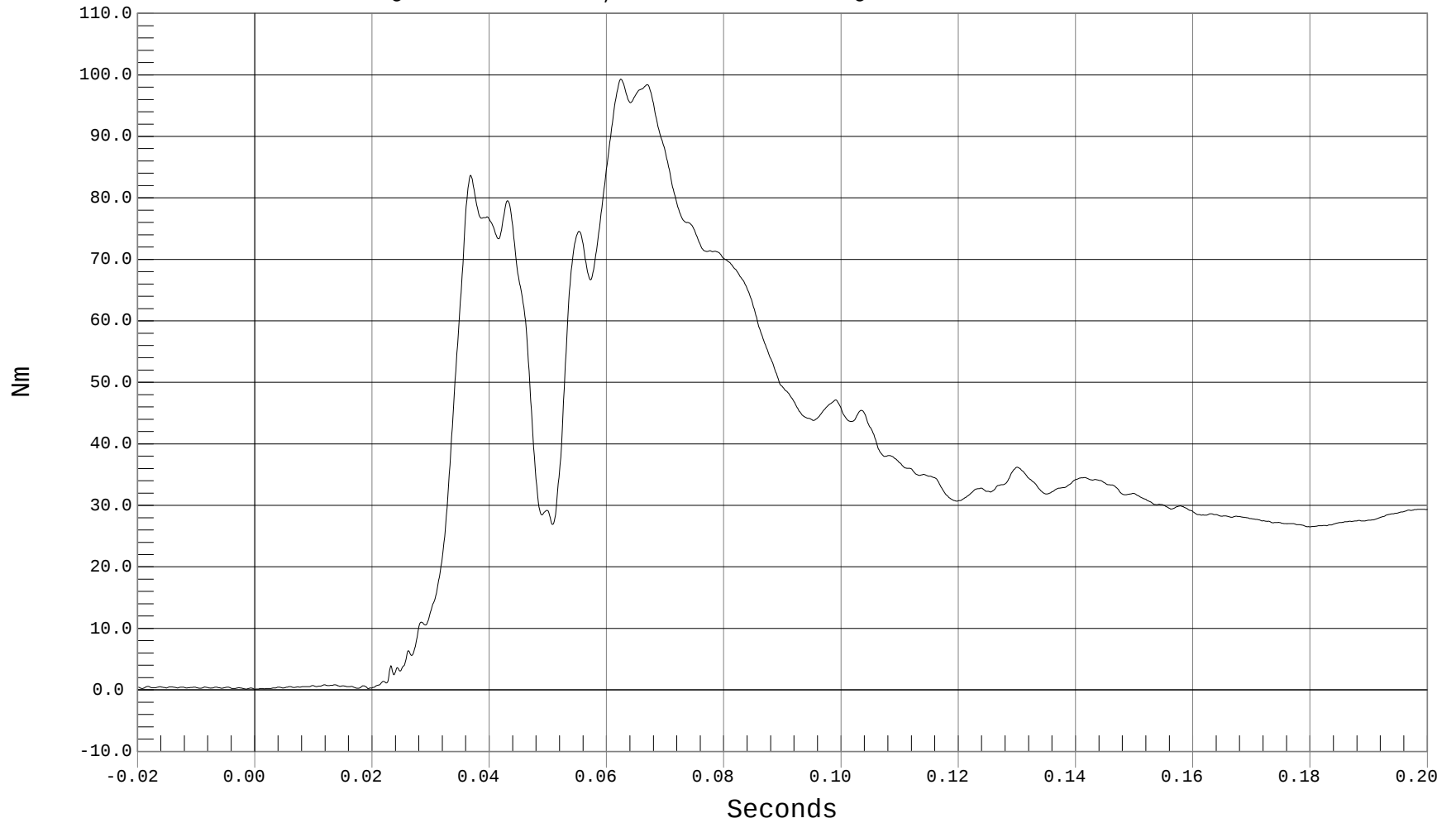
DRIVER LEFT FEMUR MOMENT RESULTANT

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER LEFT FEMUR MOMENT RESULTANT, B02048MV.M04

Ymin = .12 Nm @ 0.0001 Seconds, Ymax = 99.3 Nm @ 0.0624 Seconds





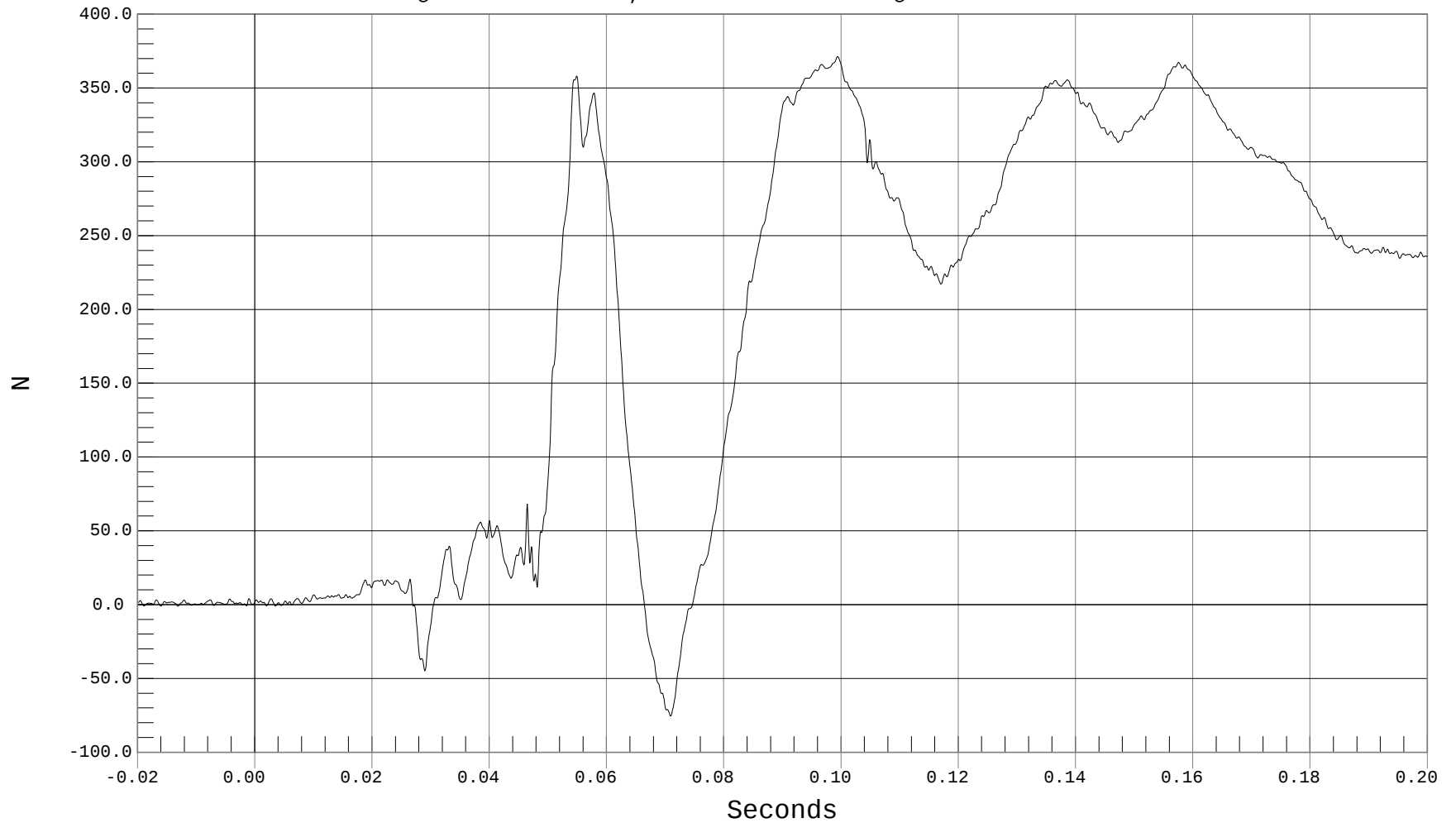
DRIVER RIGHT FEMUR FORCE X

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER RIGHT FEMUR FX, B02048FF.F91

Ymin = -75.57 N @ 0.0708 Seconds, Ymax = 371.33 N @ 0.0993 Seconds





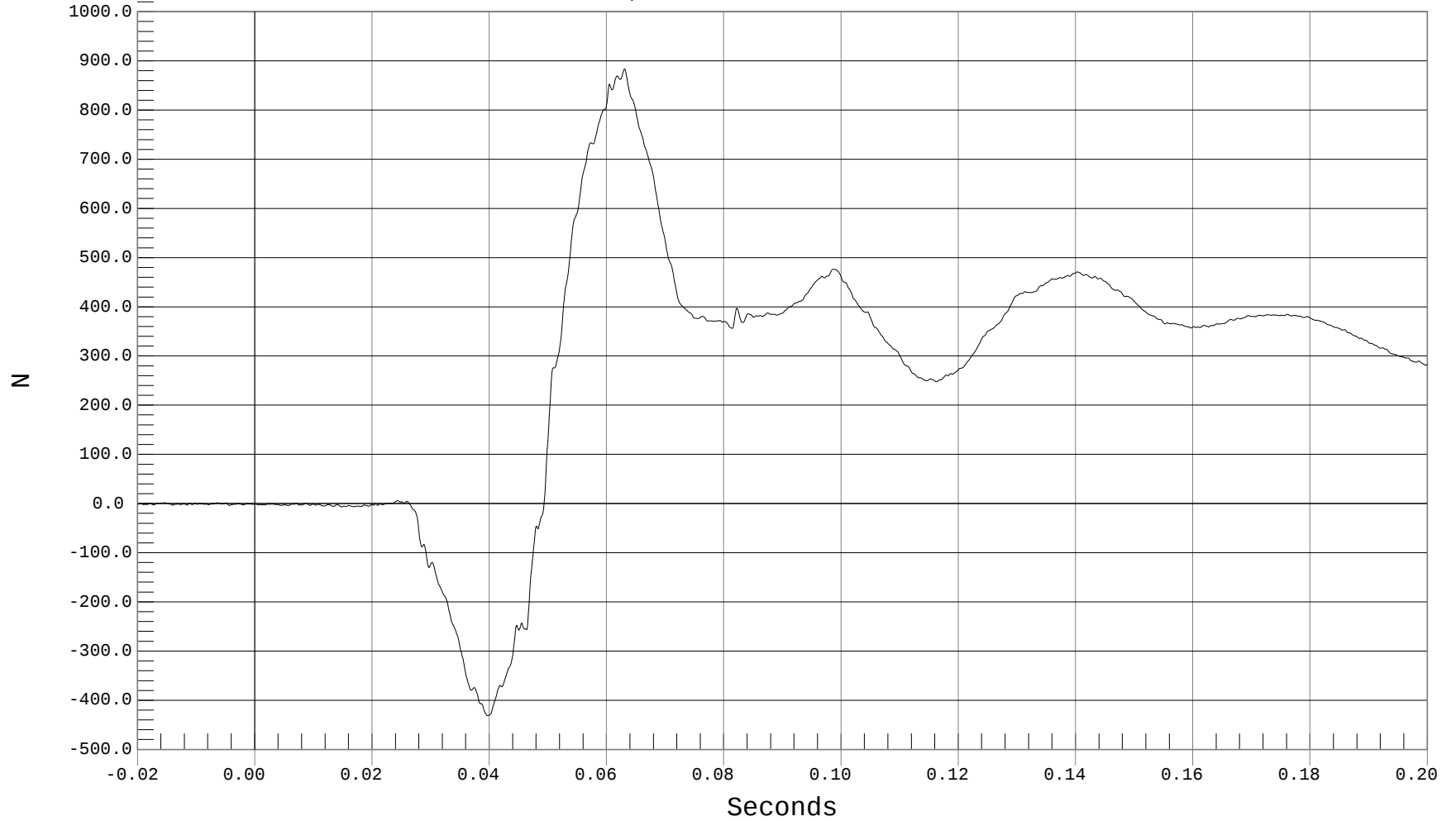
DRIVER RIGHT FEMUR FORCE Y

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER RIGHT FEMUR FY, B02048FF.F92

Ymin = -431.7 N @ 0.0396 Seconds, Ymax = 883.99 N @ 0.0630 Seconds





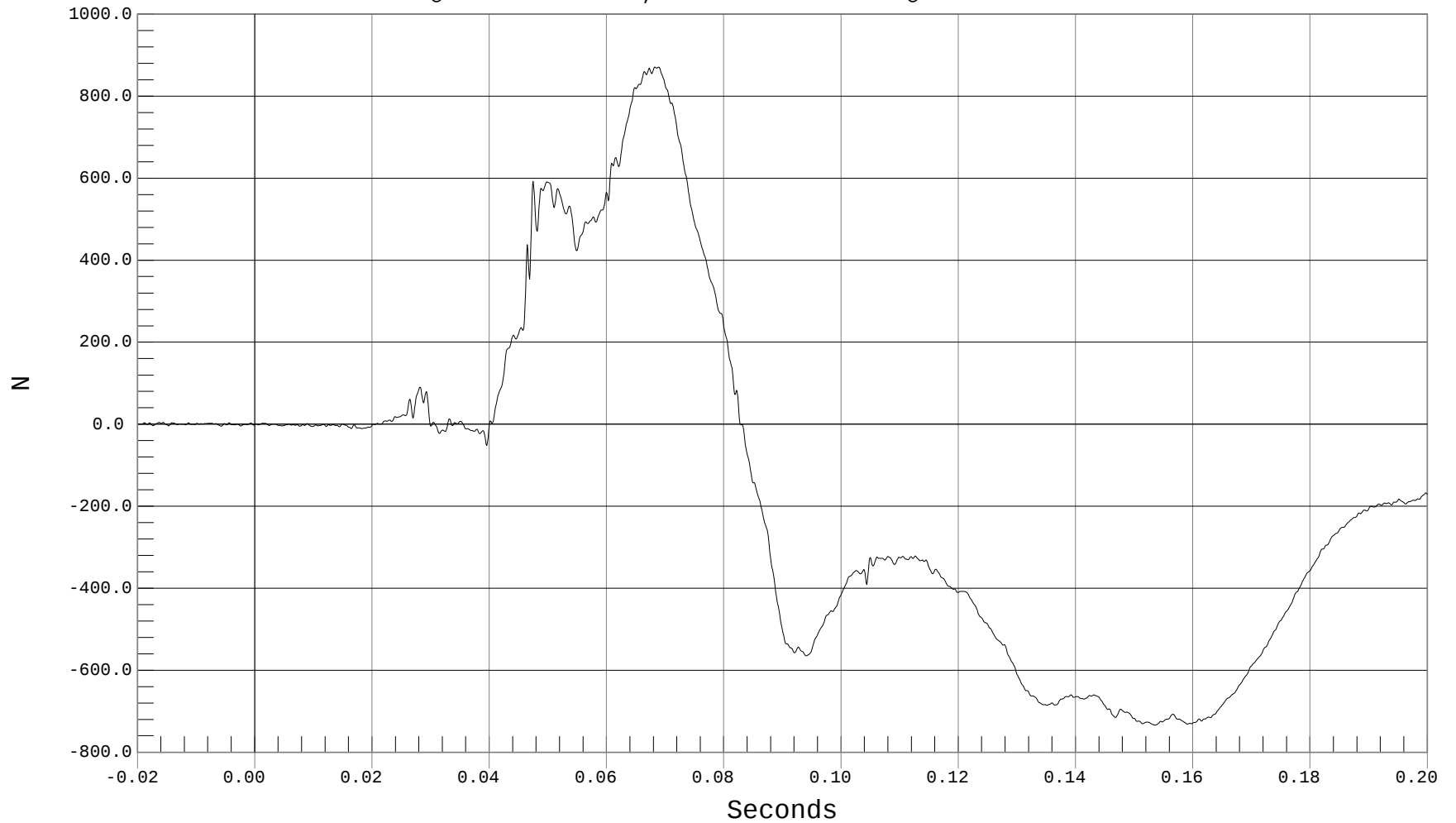
DRIVER RIGHT FEMUR FORCE Z

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER RIGHT FEMUR FZ, B02048FF.F93

Ymin = -734.15 N @ 0.1535 Seconds, Ymax = 871.14 N @ 0.0681 Seconds





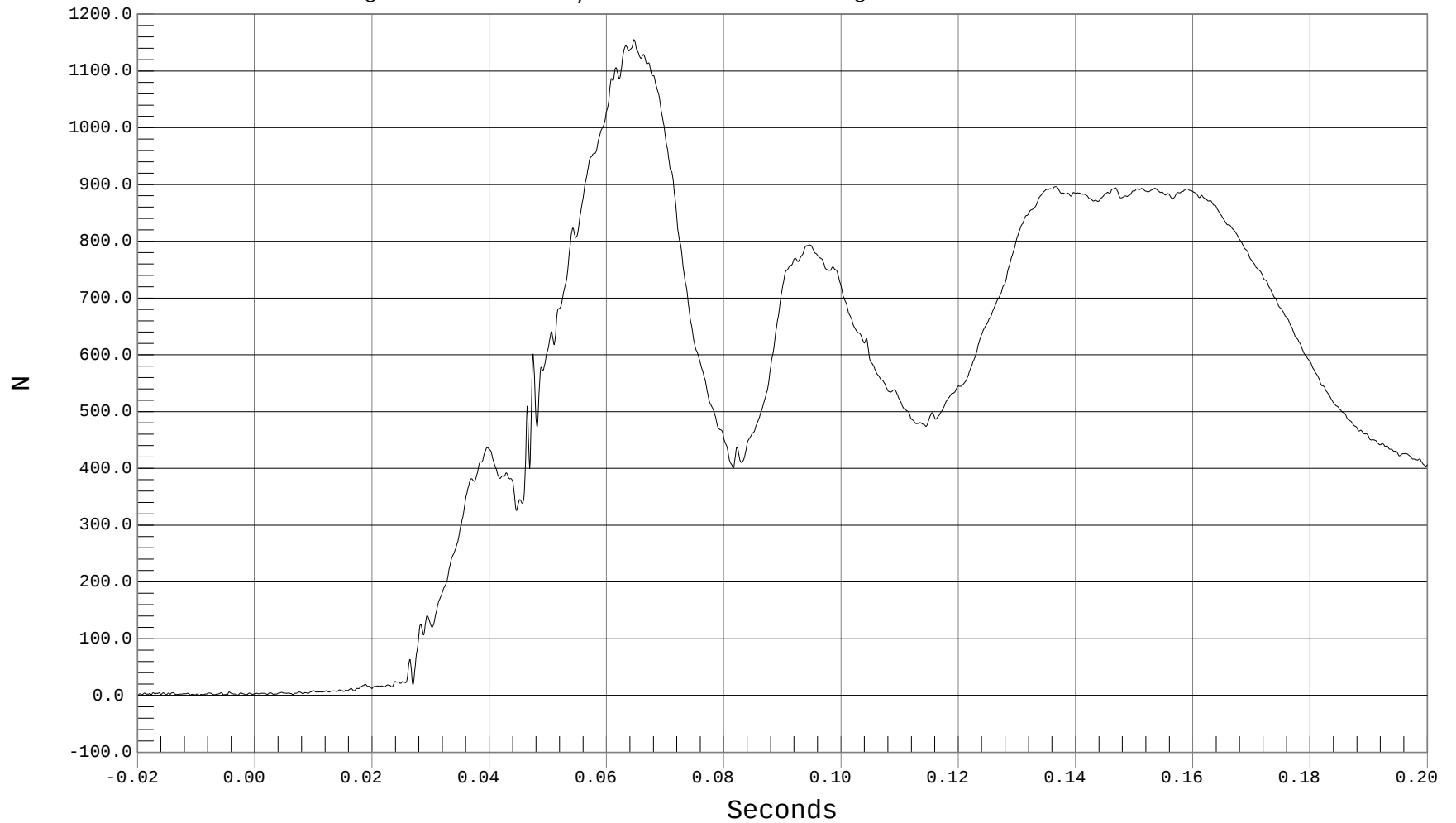
DRIVER RIGHT FEMUR FORCE RESULTANT

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER RIGHT FEMUR FORCE RESULTANT, B02048FV.F91

Ymin = 21 N @ 0.0095 Seconds, Ymax = 1155.34 N @ 0.0646 Seconds





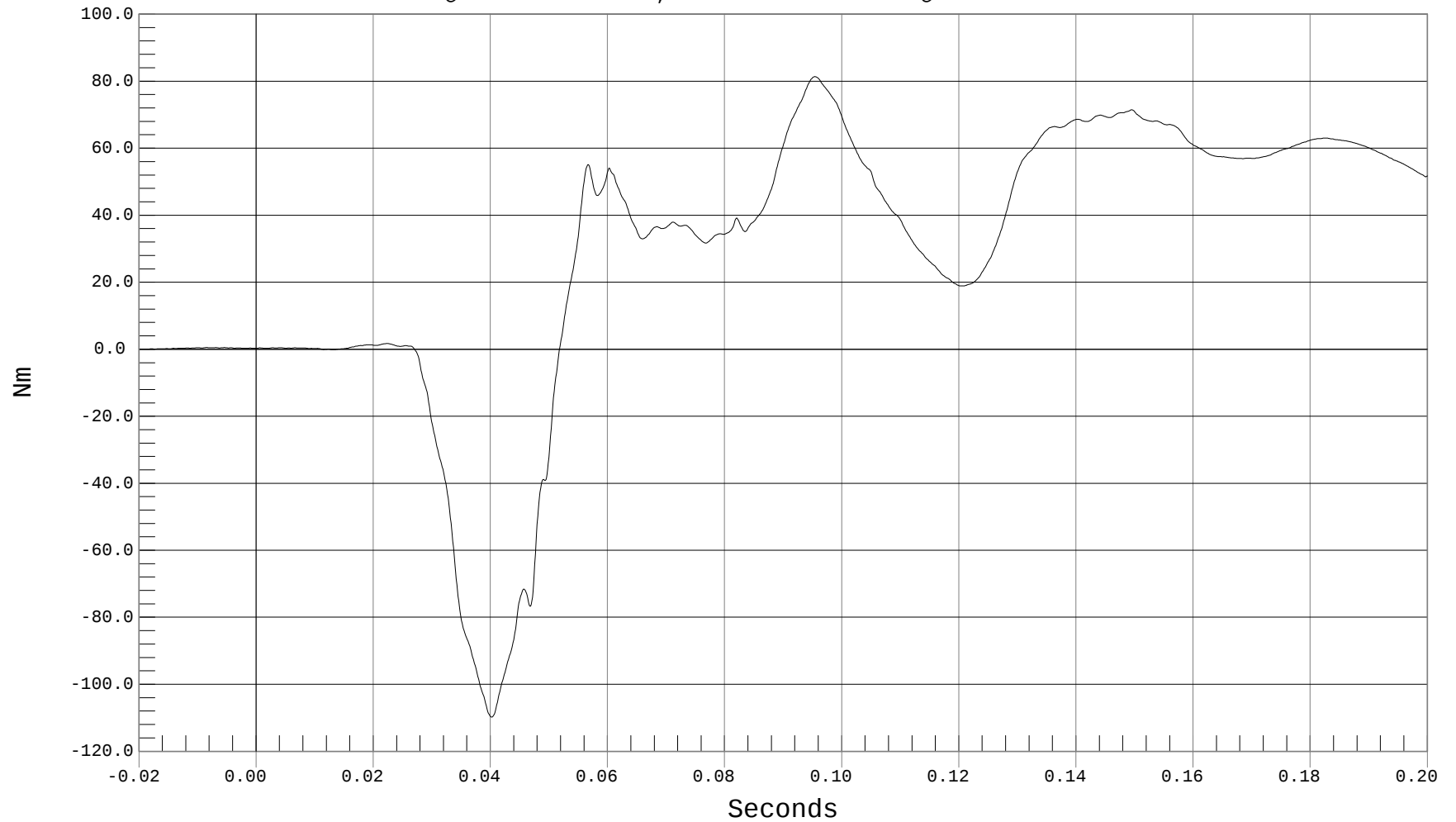
DRIVER RIGHT FEMUR MOMENT X

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER RIGHT FEMUR MX, B02048MF.M94

Ymin = -109.77 Nm @ 0.0401 Seconds, Ymax = 81.35 Nm @ 0.0953 Seconds





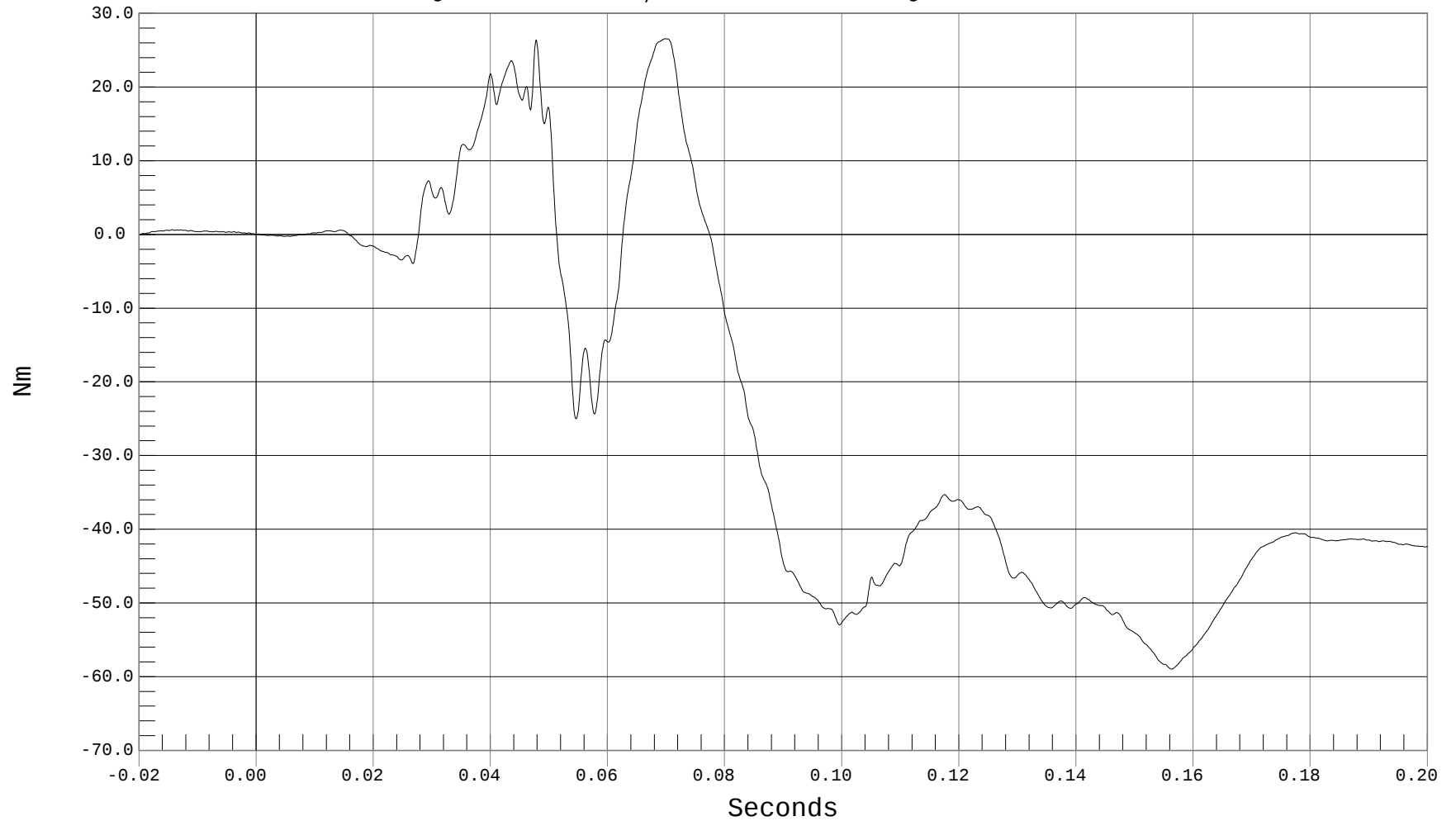
DRIVER RIGHT FEMUR MOMENT Y

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER RIGHT FEMUR MY, B02048MF.M95

Ymin = -58.97 Nm @ 0.1563 Seconds, Ymax = 26.54 Nm @ 0.0697 Seconds





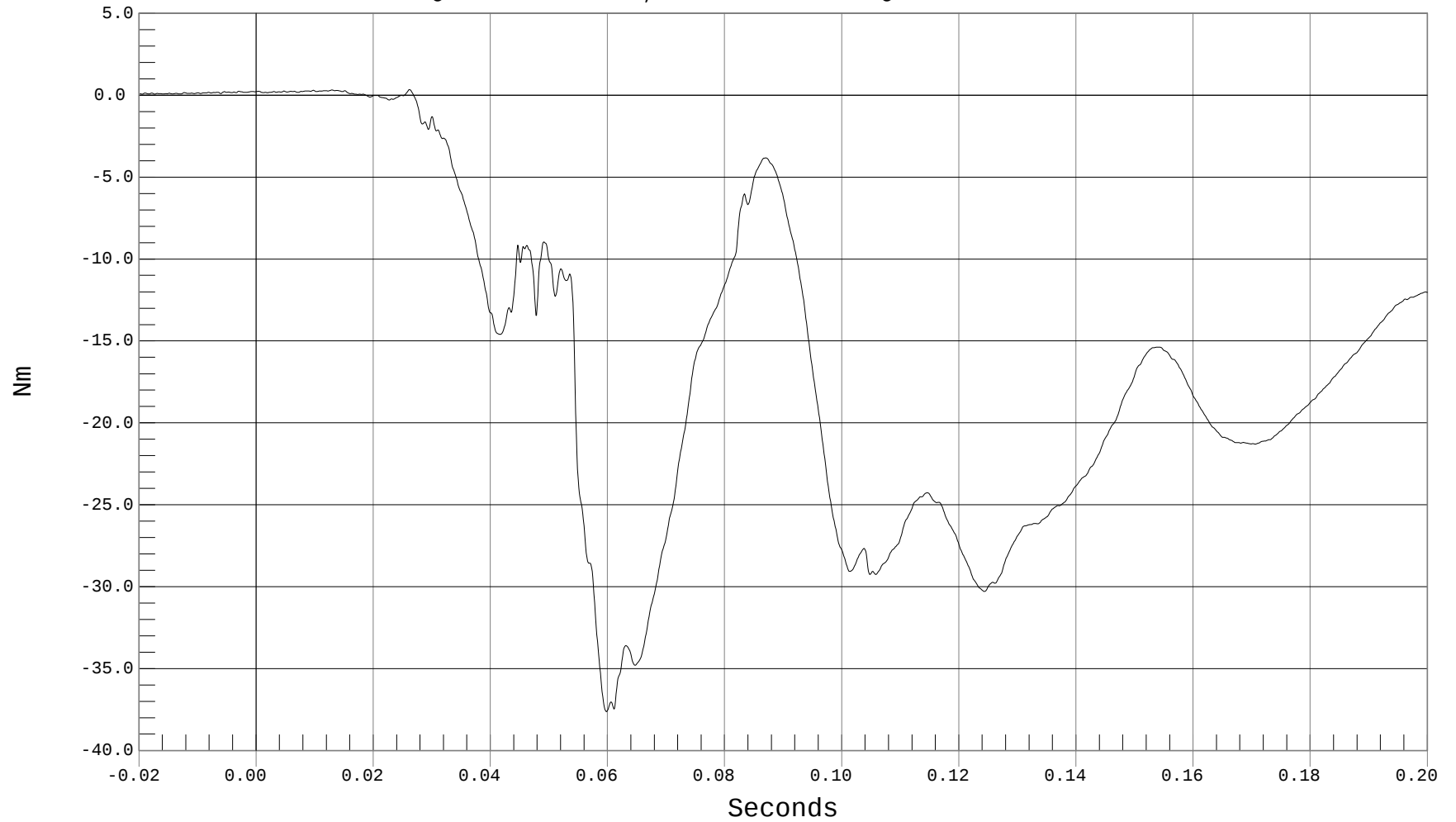
DRIVER RIGHT FEMUR MOMENT Z

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

1 DRIVER RIGHT FEMUR MZ, B02048MF.M96

Ymin = -37.63 Nm @ 0.0597 Seconds, Ymax = .35 Nm @ 0.0261 Seconds





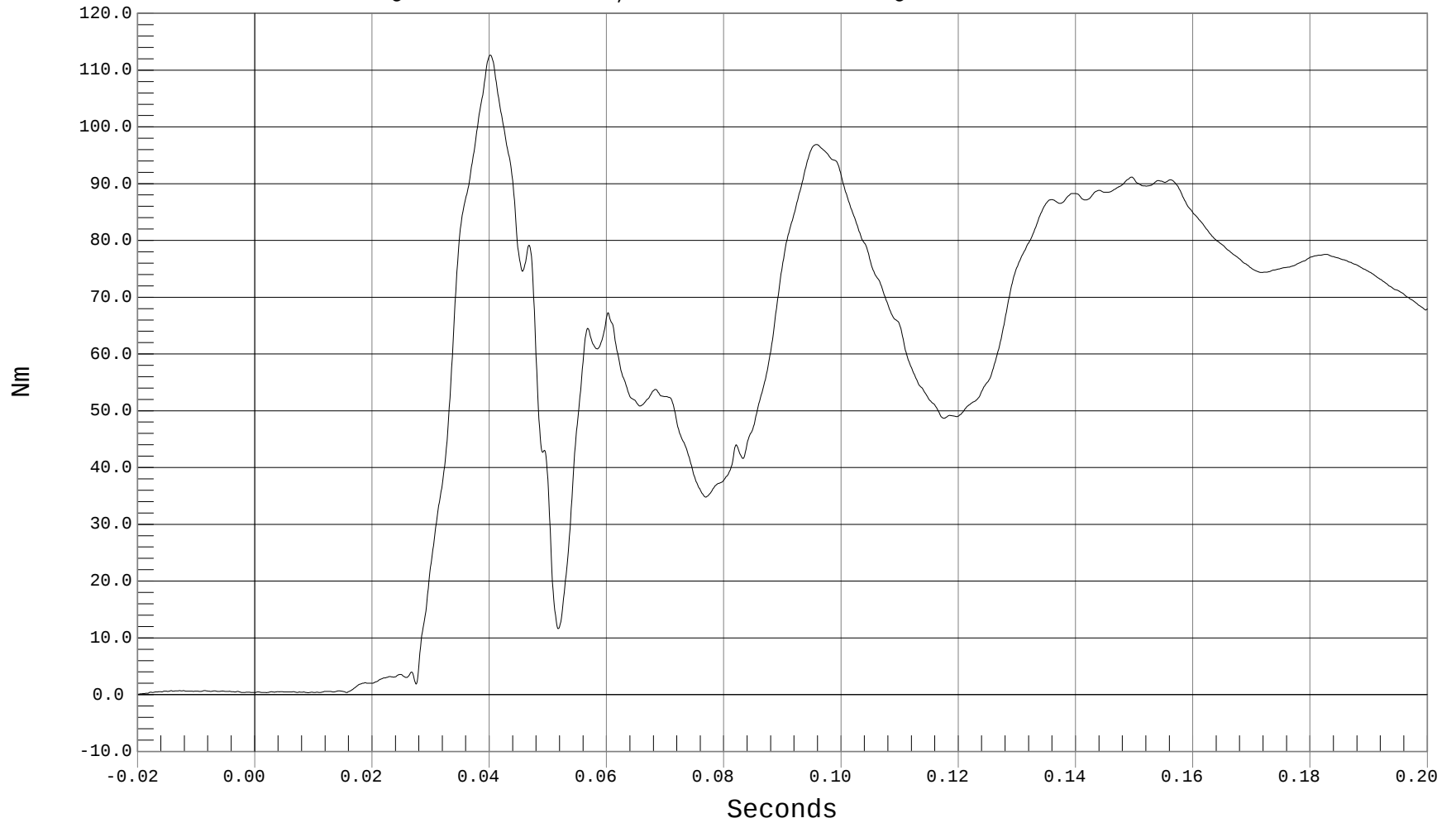
DRIVER RIGHT FEMUR MOMENT RESULTANT

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 600

— 1 DRIVER RIGHT FEMUR MOMENT RESULTANT, B02048MV.M94

Ymin = .1 Nm @ -0.0198 Seconds, Ymax = 112.65 Nm @ 0.0401 Seconds





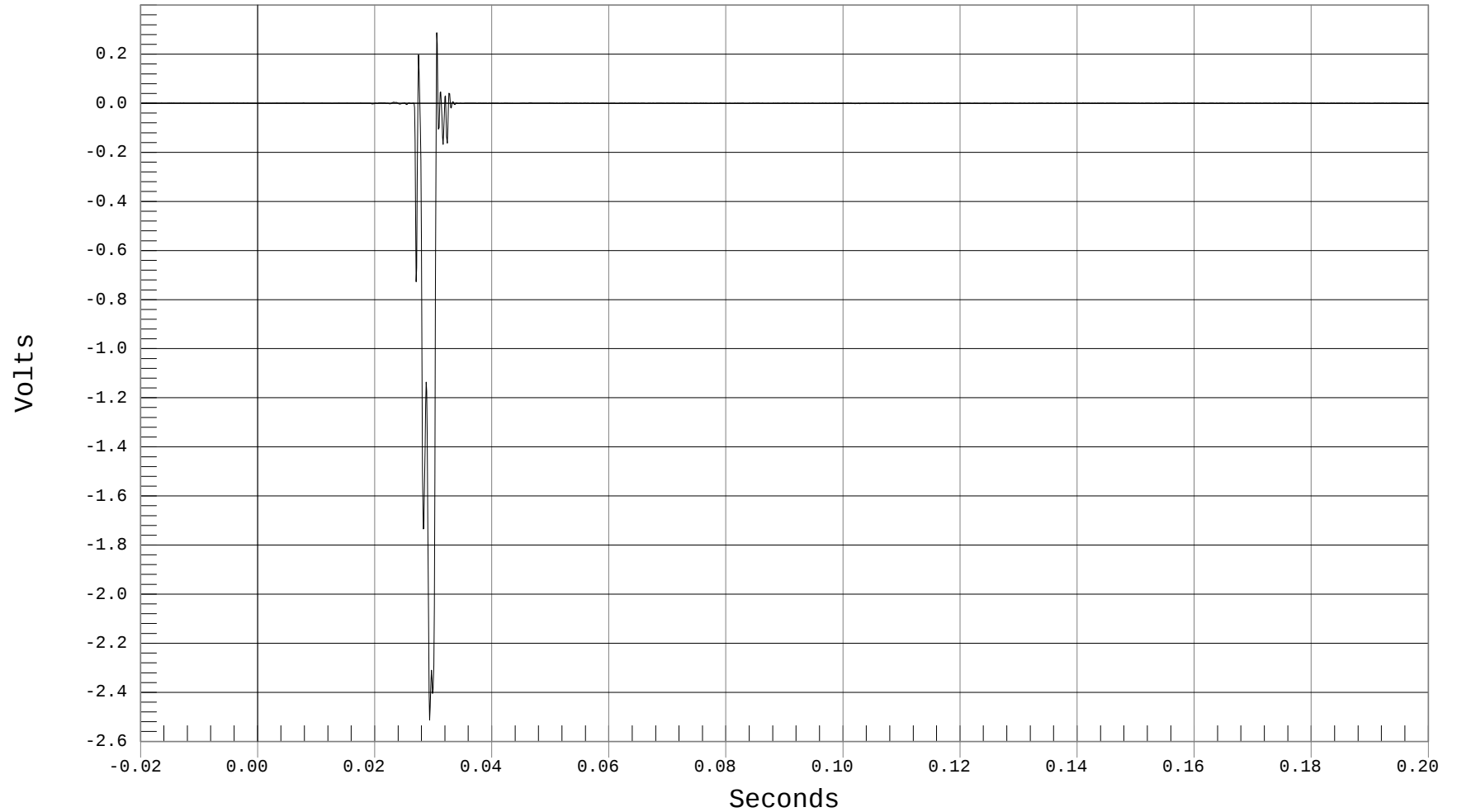
DRIVER ARM CONTACT

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 1000

1 DRIVER ARM CONTACT, B020480T.030

Ymin = -2.51 Volts @ 0.0293 Seconds, Ymax = .29 Volts @ 0.0305 Seconds





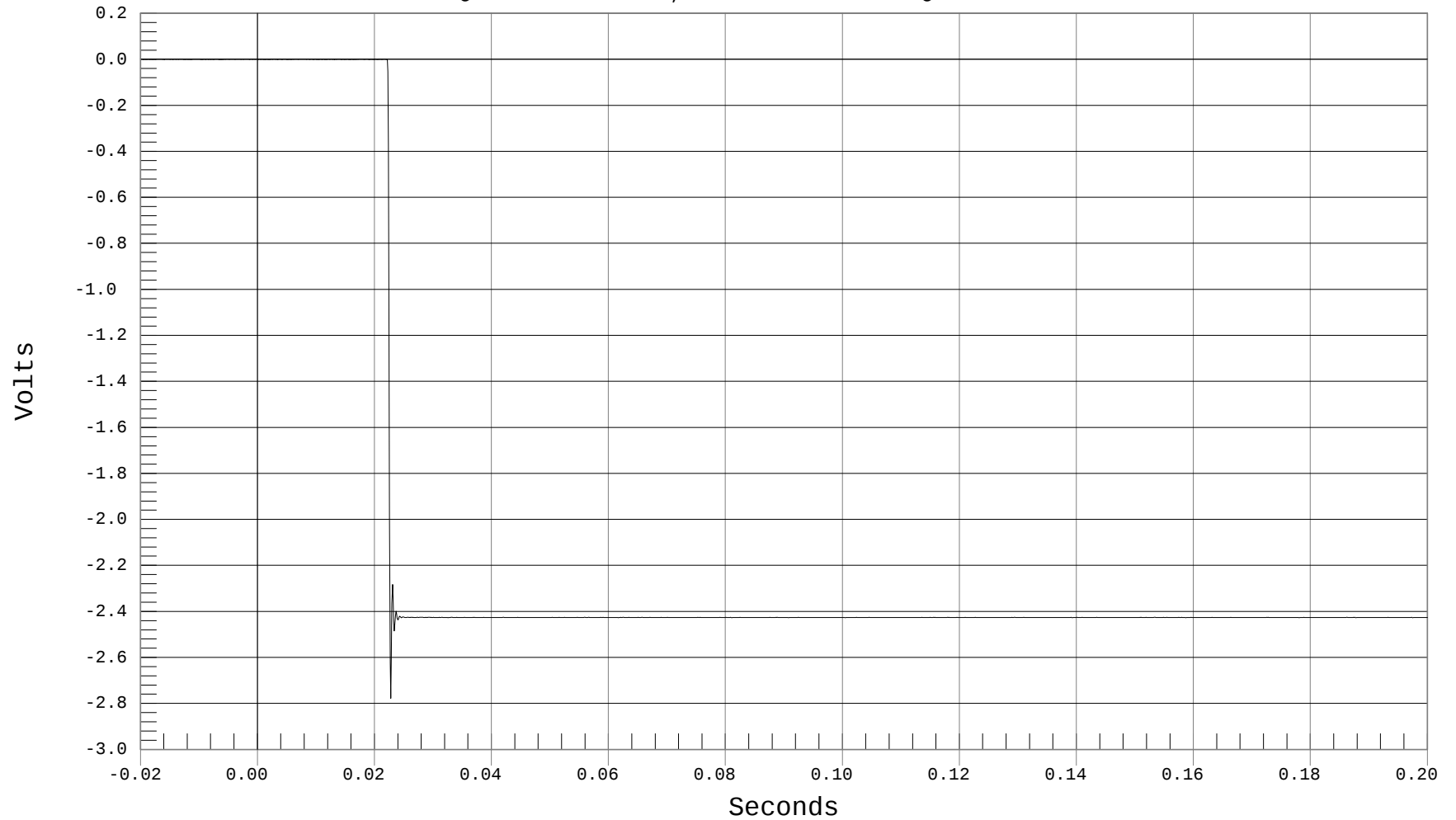
DRIVER RIB CONTACT

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 1000

1 DRIVER RIB CONTACT, B020480T.031

Ymin = -2.78 Volts @ 0.0227 Seconds, Ymax = 0 Volts @ -0.0162 Seconds





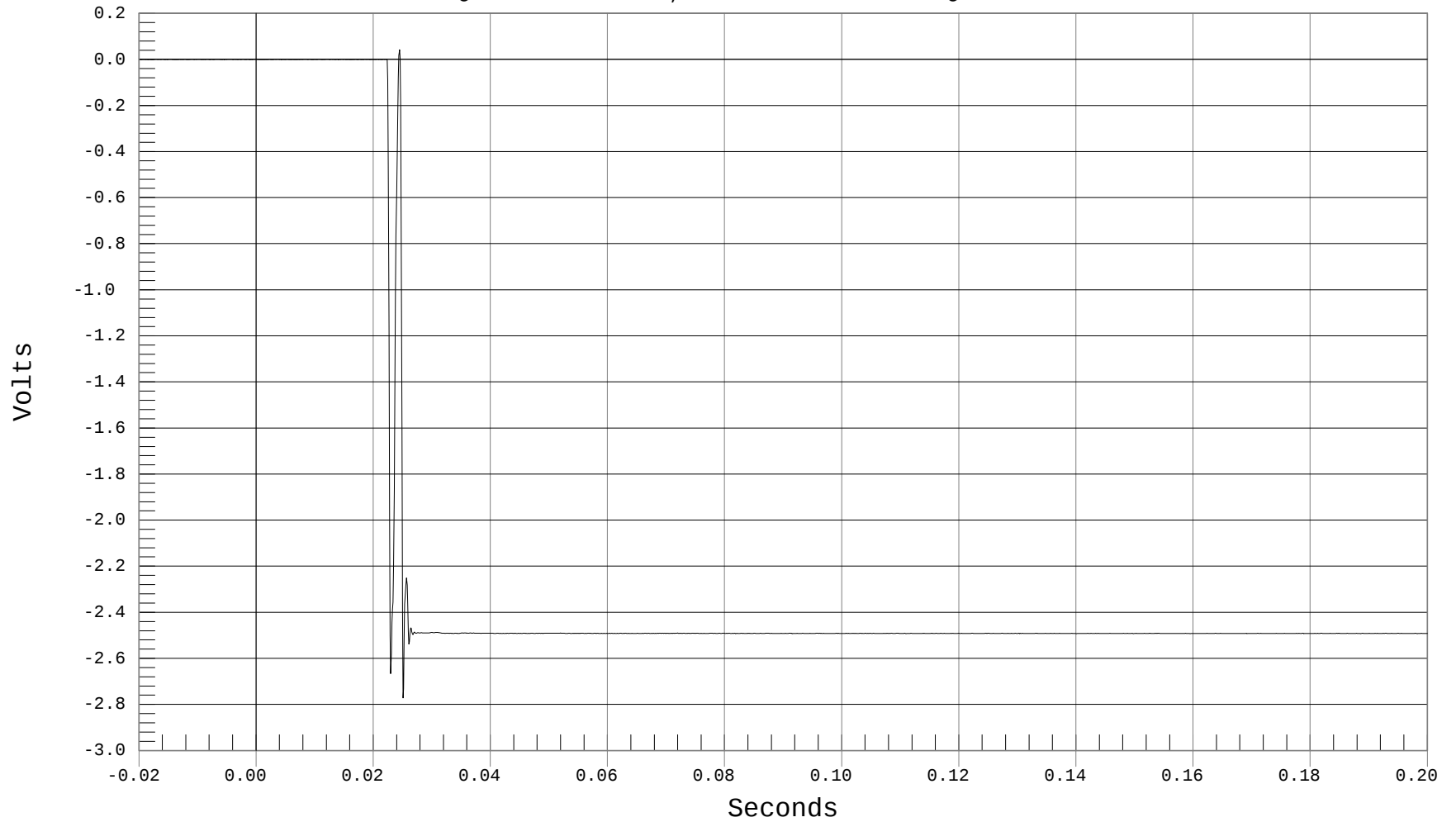
DRIVER PELVIS CONTACT

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 1000

— 1 DRIVER PELVIS CONTACT, B020480T.063

Ymin = -2.77 Volts @ 0.0250 Seconds, Ymax = .04 Volts @ 0.0244 Seconds





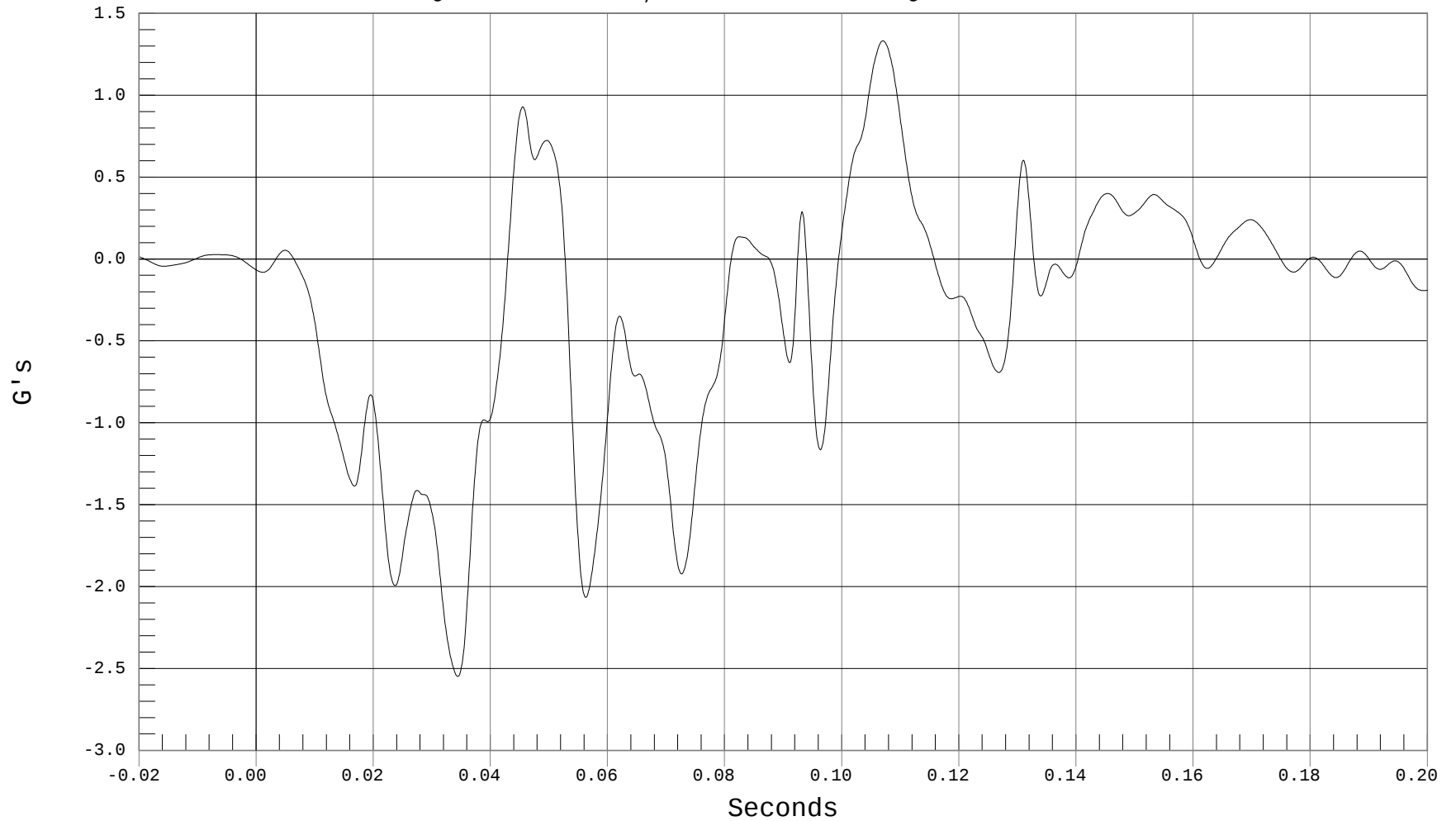
RIGHT SIDE SILL AT FRONT SEAT X ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

1 RIGHT FRONT SILL X, B02048AF.A36

Ymin = -2.55 G's @ 0.0344 Seconds, Ymax = 1.33 G's @ 0.1069 Seconds





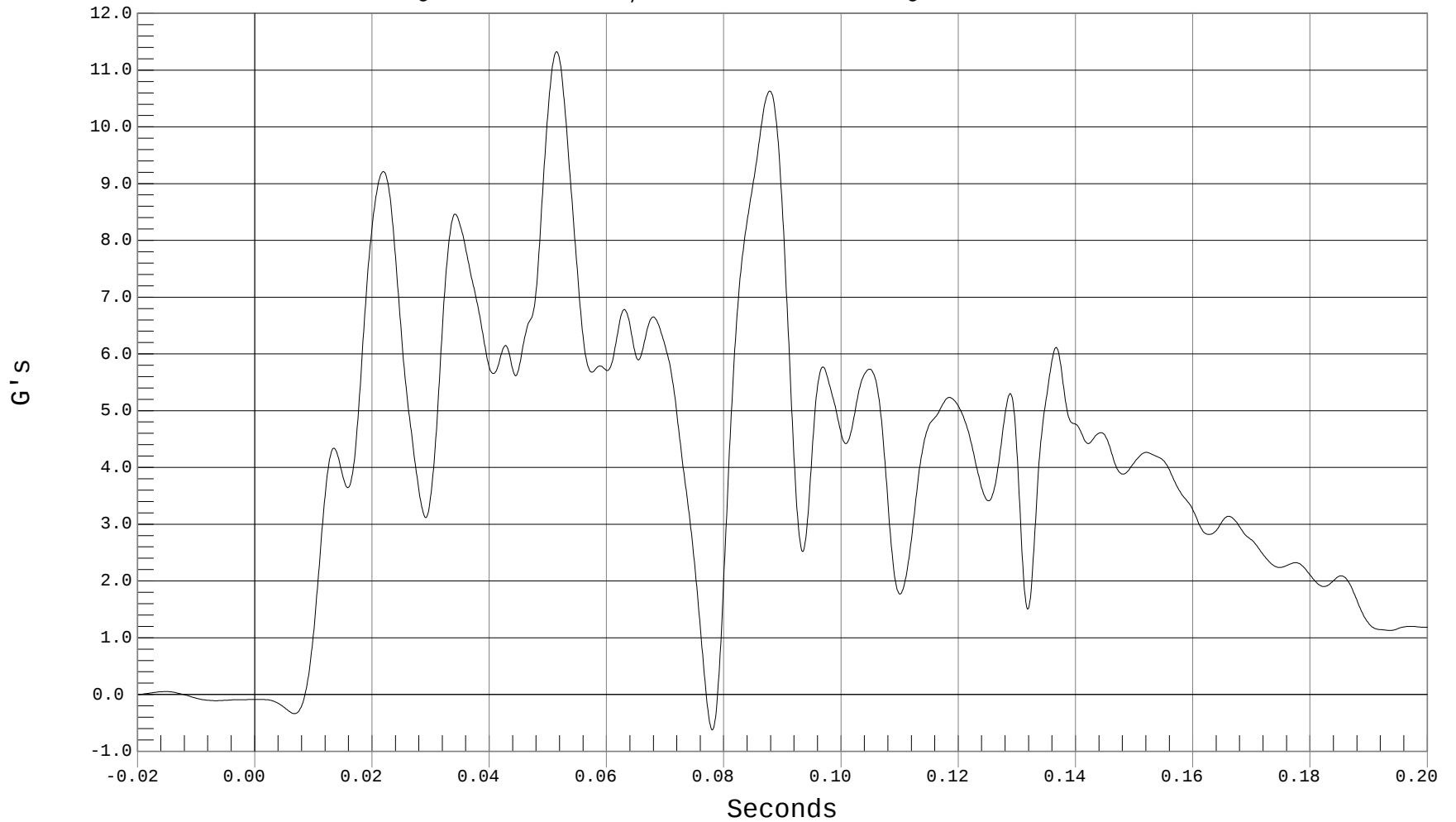
RIGHT SIDE SILL AT FRONT SEAT Y ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

— 1 RIGHT FRONT SILL Y, B02048AF.A37

Ymin = -.62 G's @ 0.0780 Seconds, Ymax = 11.33 G's @ 0.0514 Seconds





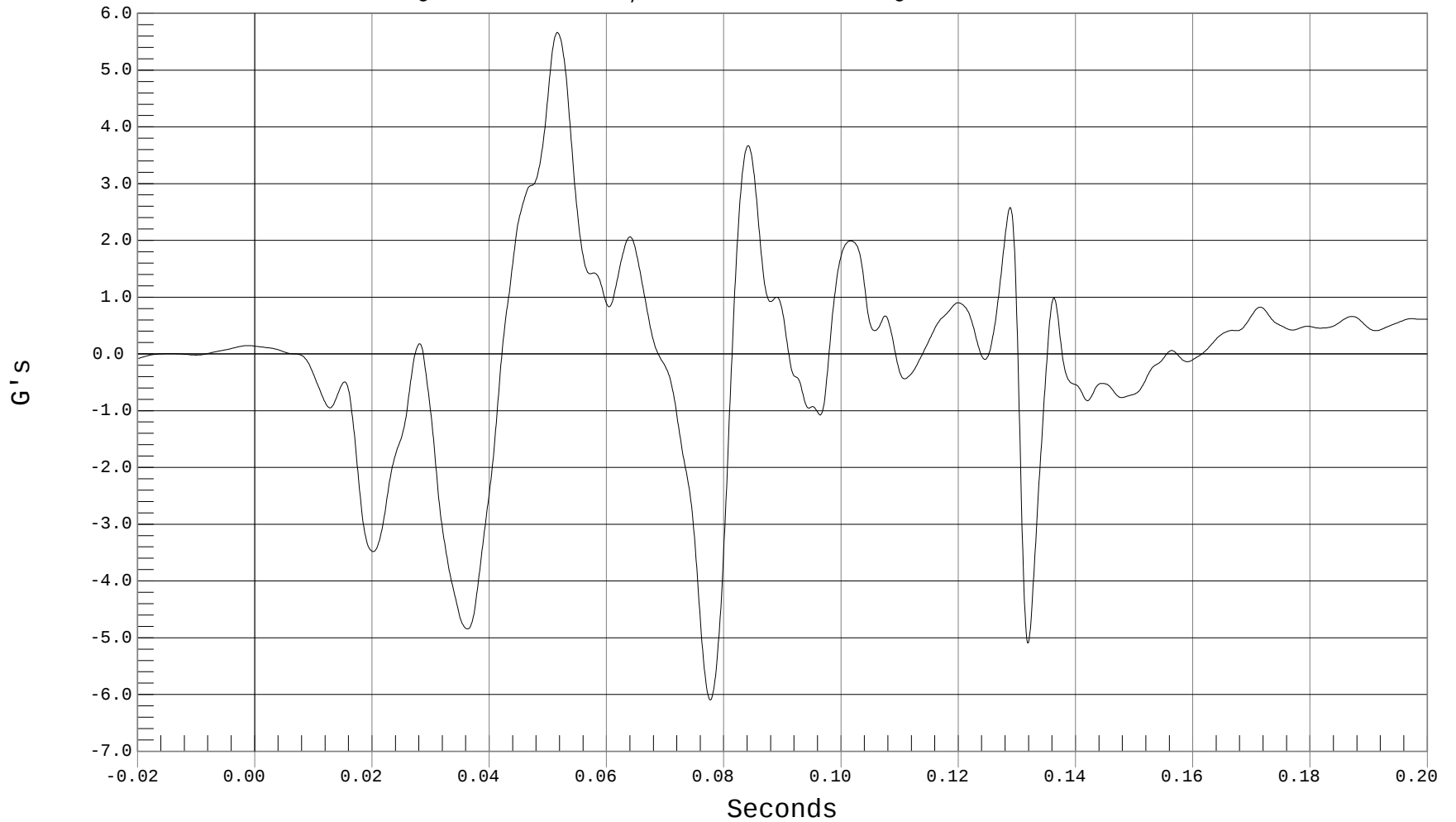
RIGHT SIDE SILL AT FRONT SEAT Z ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

— 1 RIGHT FRONT SILL Z, B02048AF.A38

Ymin = -6.1 G's @ 0.0776 Seconds, Ymax = 5.66 G's @ 0.0515 Seconds





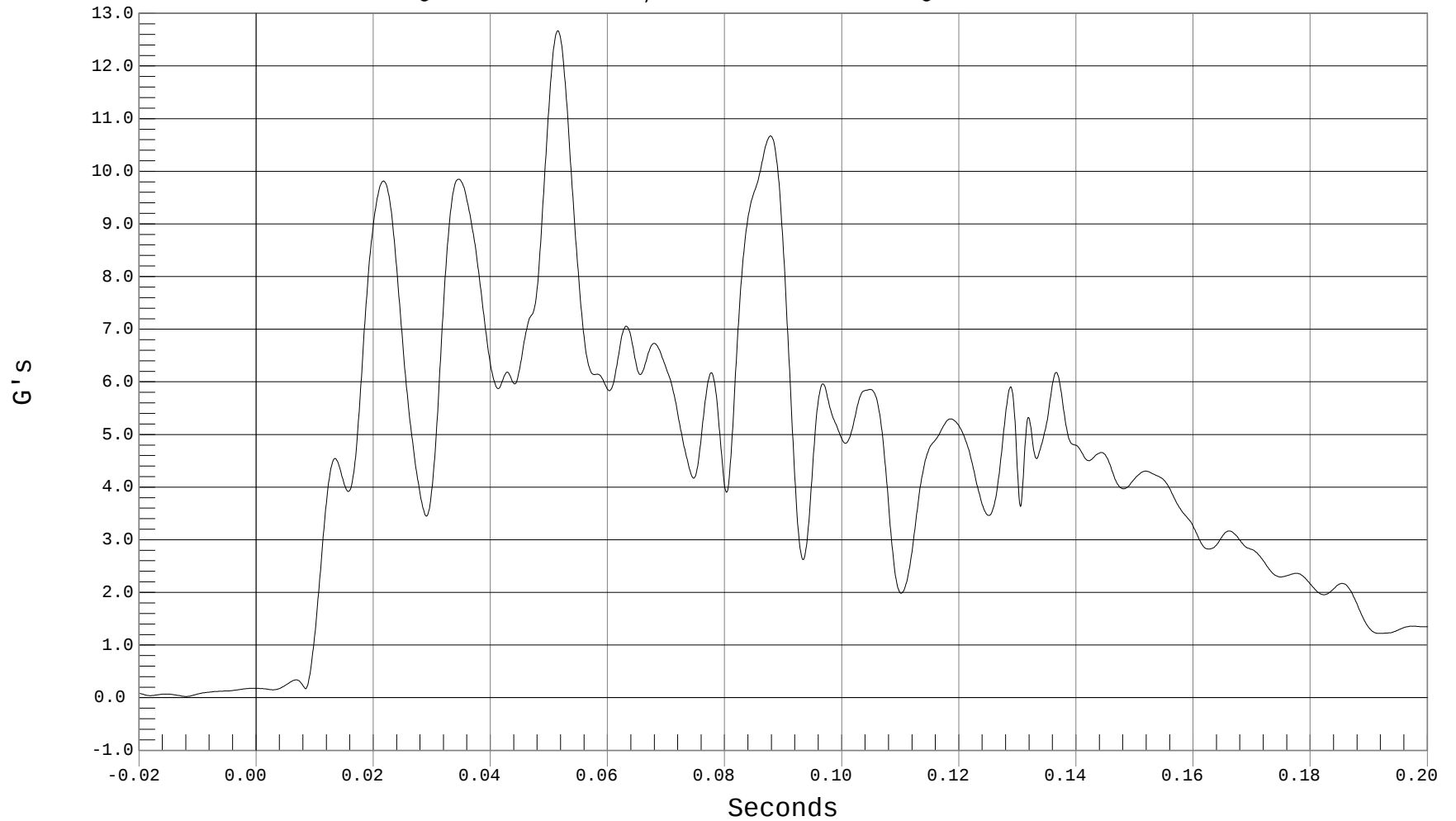
RIGHT SIDE SILL AT FRONT SEAT RESULTANT ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

— 1 RIGHT FRONT SILL RESULTANT ACCELERATION, B02048AV.A36

Ymin = .02 G's @ -0.0120 Seconds, Ymax = 12.67 G's @ 0.0514 Seconds





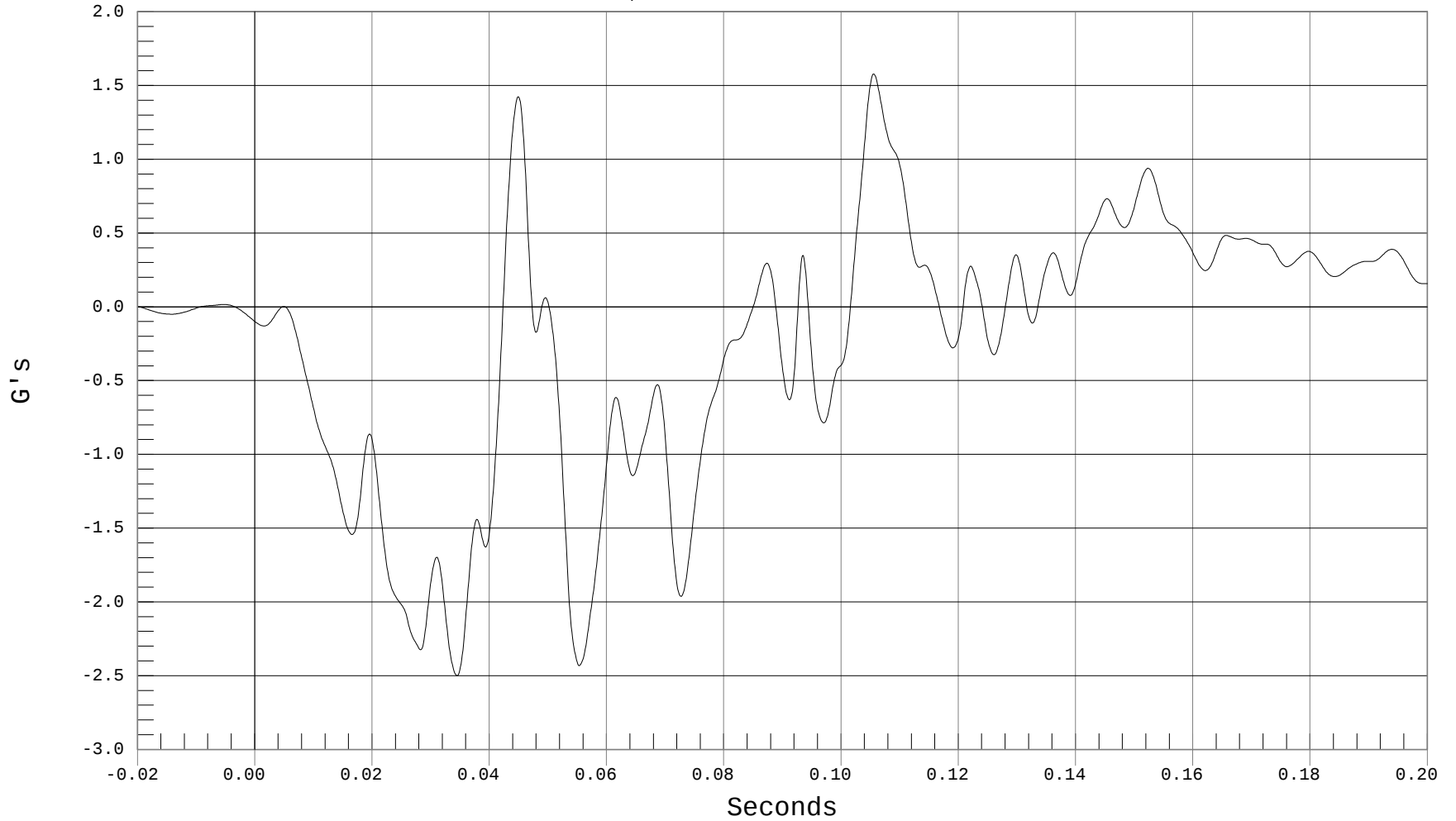
RIGHT SIDE SILL AT REAR SEAT X ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

— 1 RIGHT REAR SILL X, B02048AF.A39

Ymin = -2.5 G's @ 0.0344 Seconds, Ymax = 1.58 G's @ 0.1055 Seconds





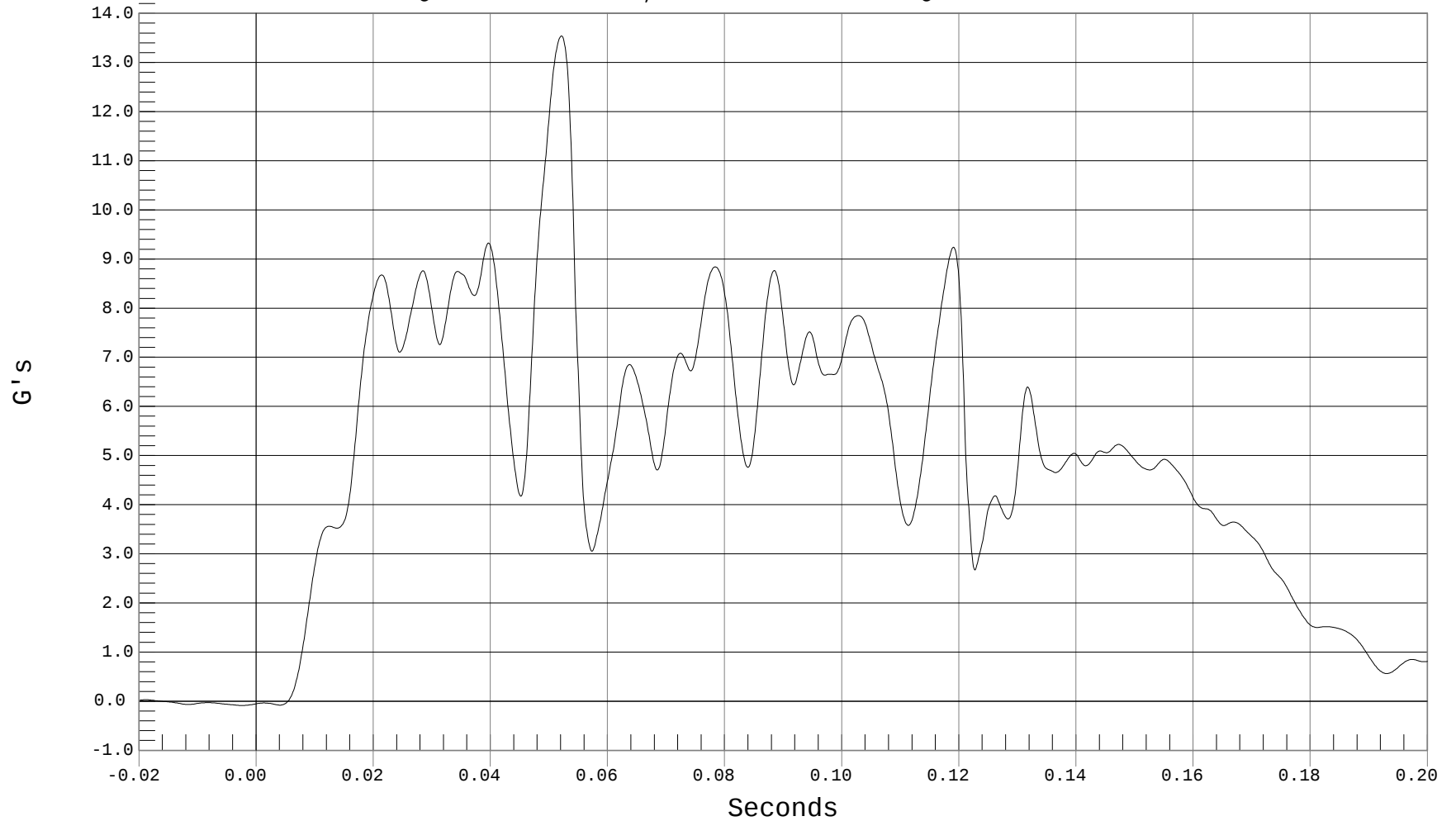
RIGHT SIDE SILL AT REAR SEAT Y ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

— 1 RIGHT REAR SILL Y, B02048AF.A40

Ymin = -.09 G's @ -0.0025 Seconds, Ymax = 13.54 G's @ 0.0521 Seconds





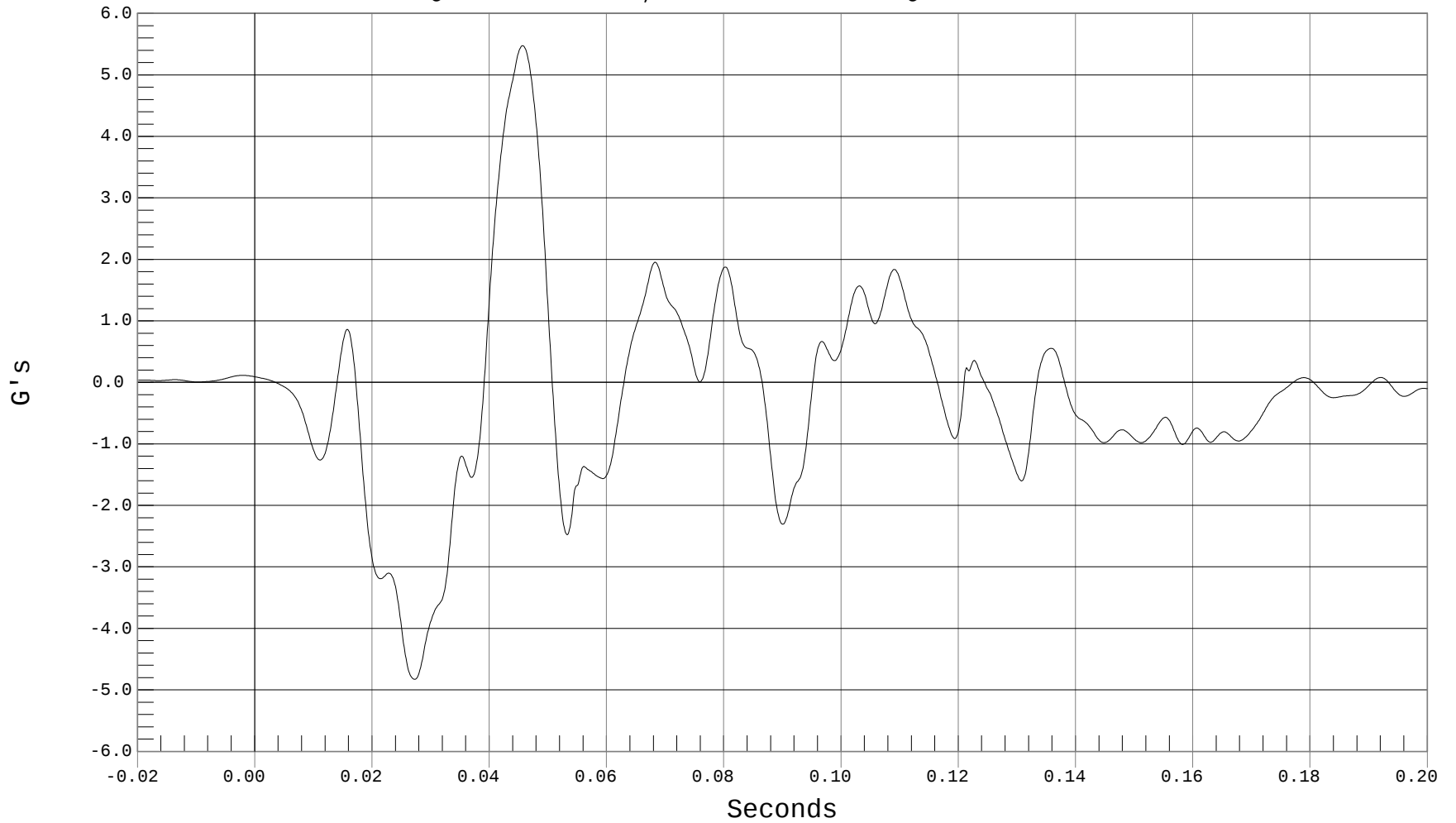
RIGHT SIDE SILL AT REAR SEAT Z ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

— 1 RIGHT REAR SILL Z, B02048AF.A41

Ymin = -4.83 G's @ 0.0272 Seconds, Ymax = 5.48 G's @ 0.0456 Seconds





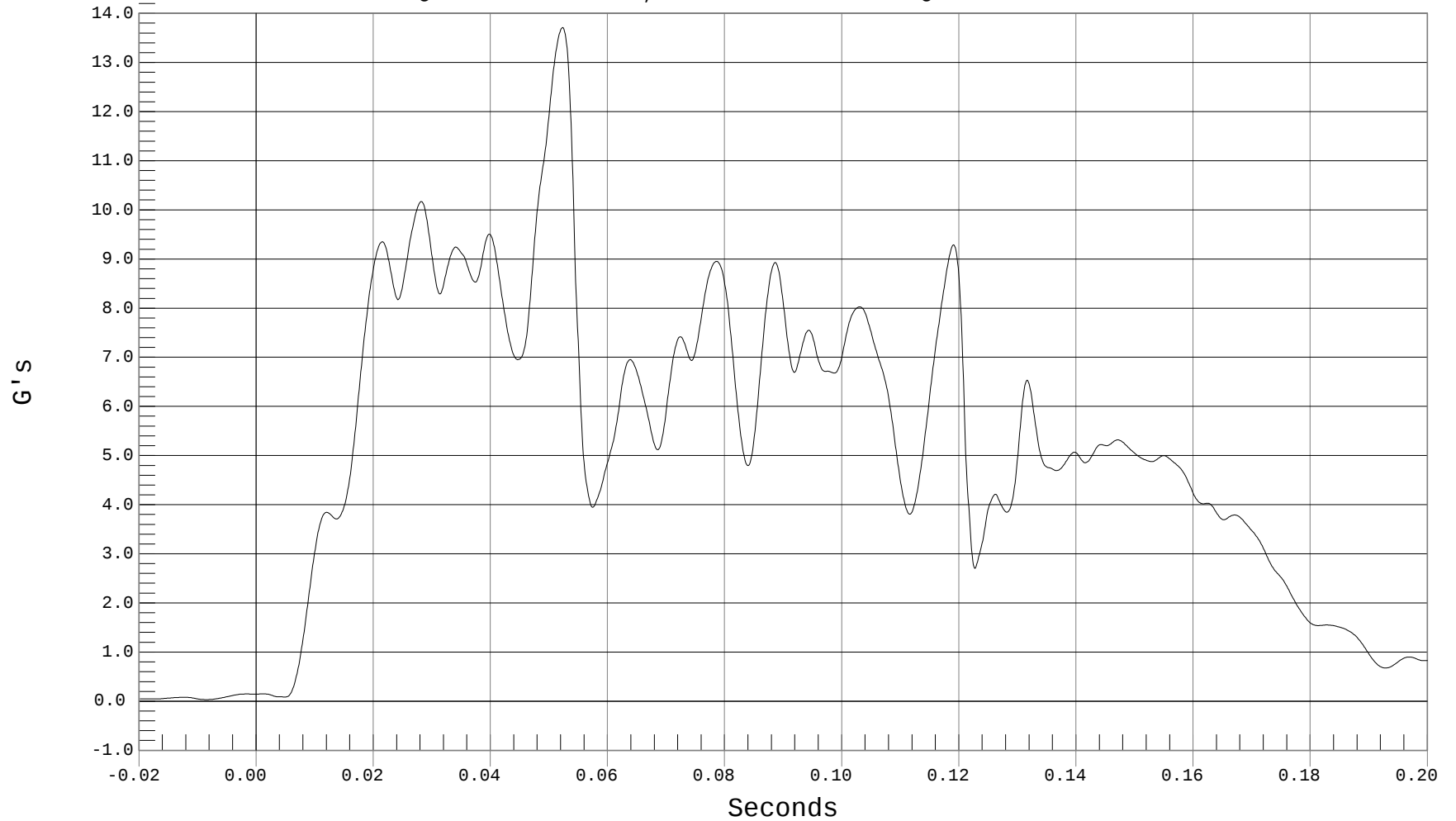
RIGHT SIDE SILL AT REAR SEAT RESULTANT ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

— 1 RIGHT REAR SILL RESULTANT ACCELERATION, B02048AV.A39

Ymin = .03 G's @ -0.0085 Seconds, Ymax = 13.71 G's @ 0.0522 Seconds





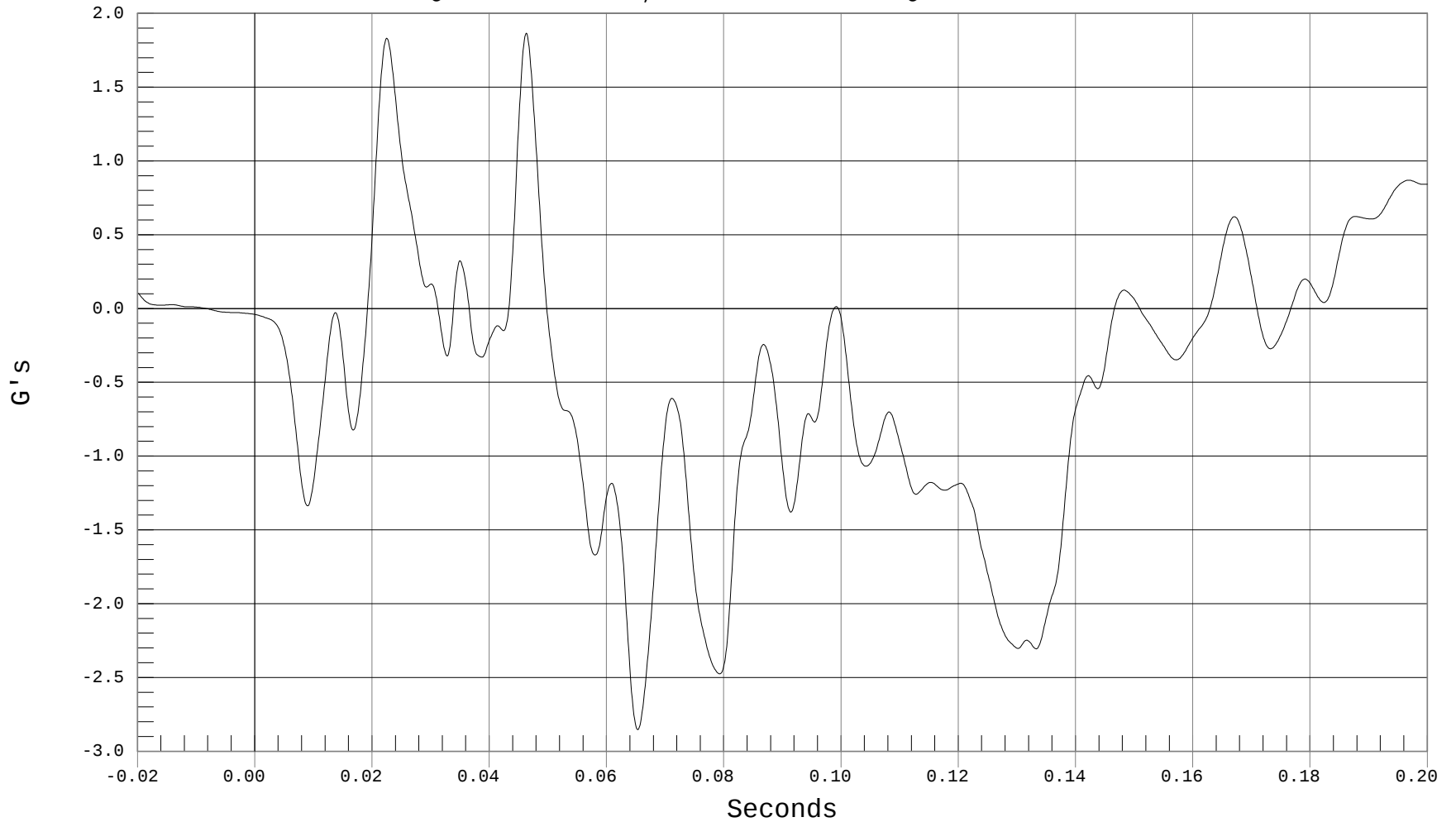
REAR FLOORPAN ABOVE AXLE X ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

— 1 FLOORPAN @ REAR AXLE X, B02048AF.A42

Ymin = -2.85 G's @ 0.0652 Seconds, Ymax = 1.87 G's @ 0.0462 Seconds





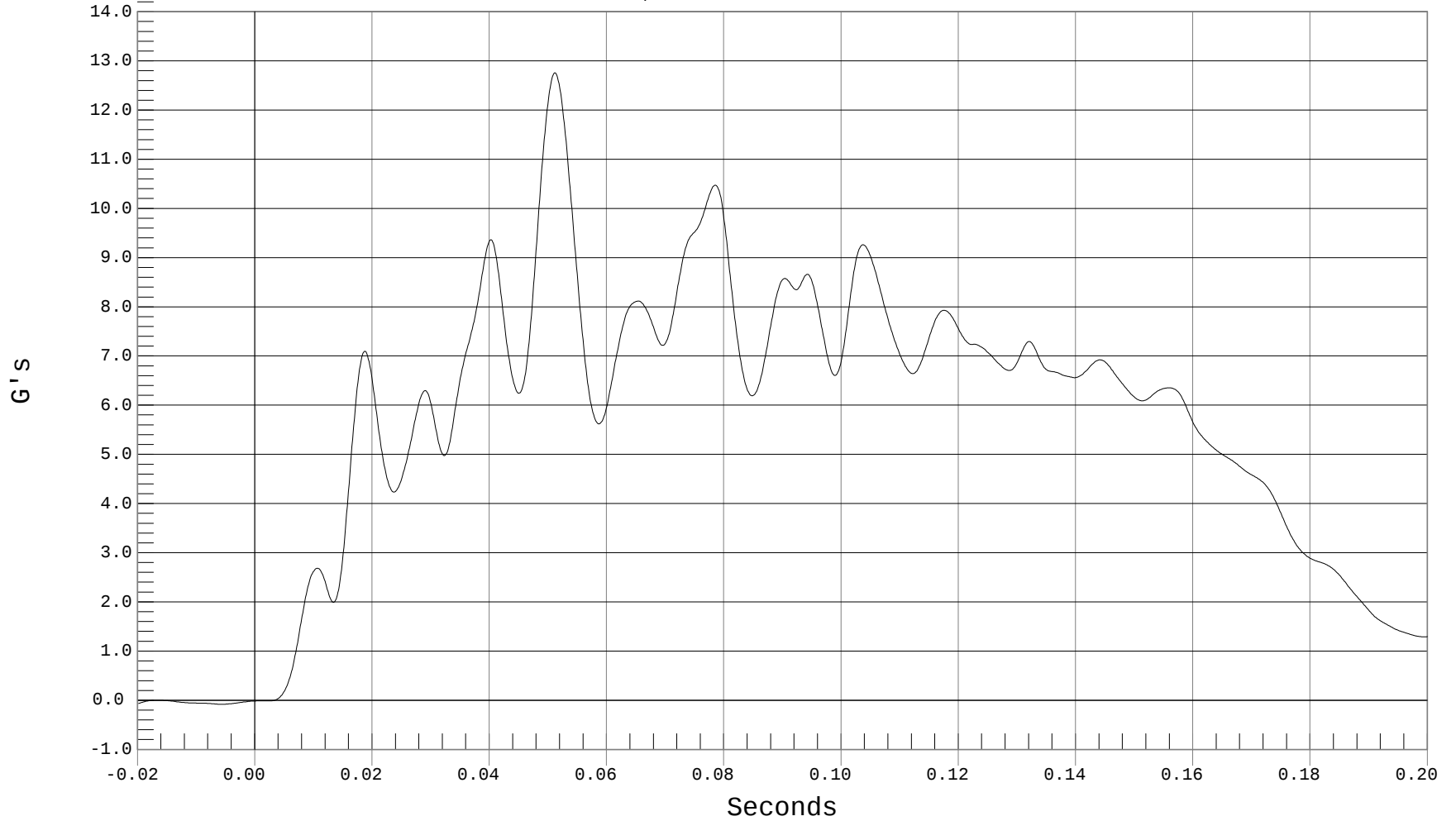
REAR FLOORPAN ABOVE AXLE Y ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

— 1 FLOORPAN @ REAR AXLE Y, B02048AF.A43

Ymin = -.08 G's @ -0.0057 Seconds, Ymax = 12.76 G's @ 0.0511 Seconds





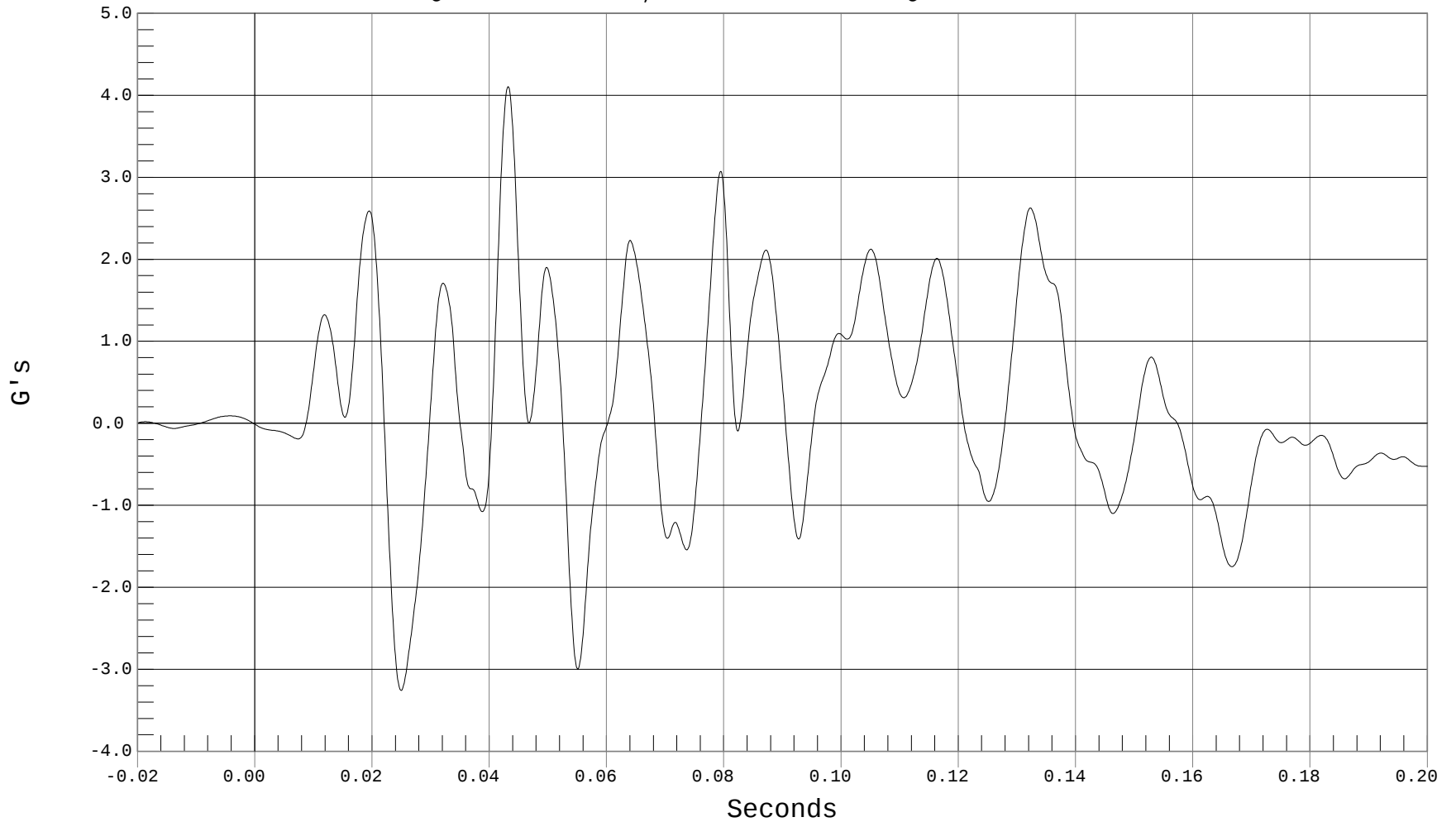
REAR FLOORPAN ABOVE AXLE Z ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

1 FLOORPAN @ REAR AXLE Z, B02048AF.A44

Ymin = -3.26 G's @ 0.0249 Seconds, Ymax = 4.11 G's @ 0.0431 Seconds





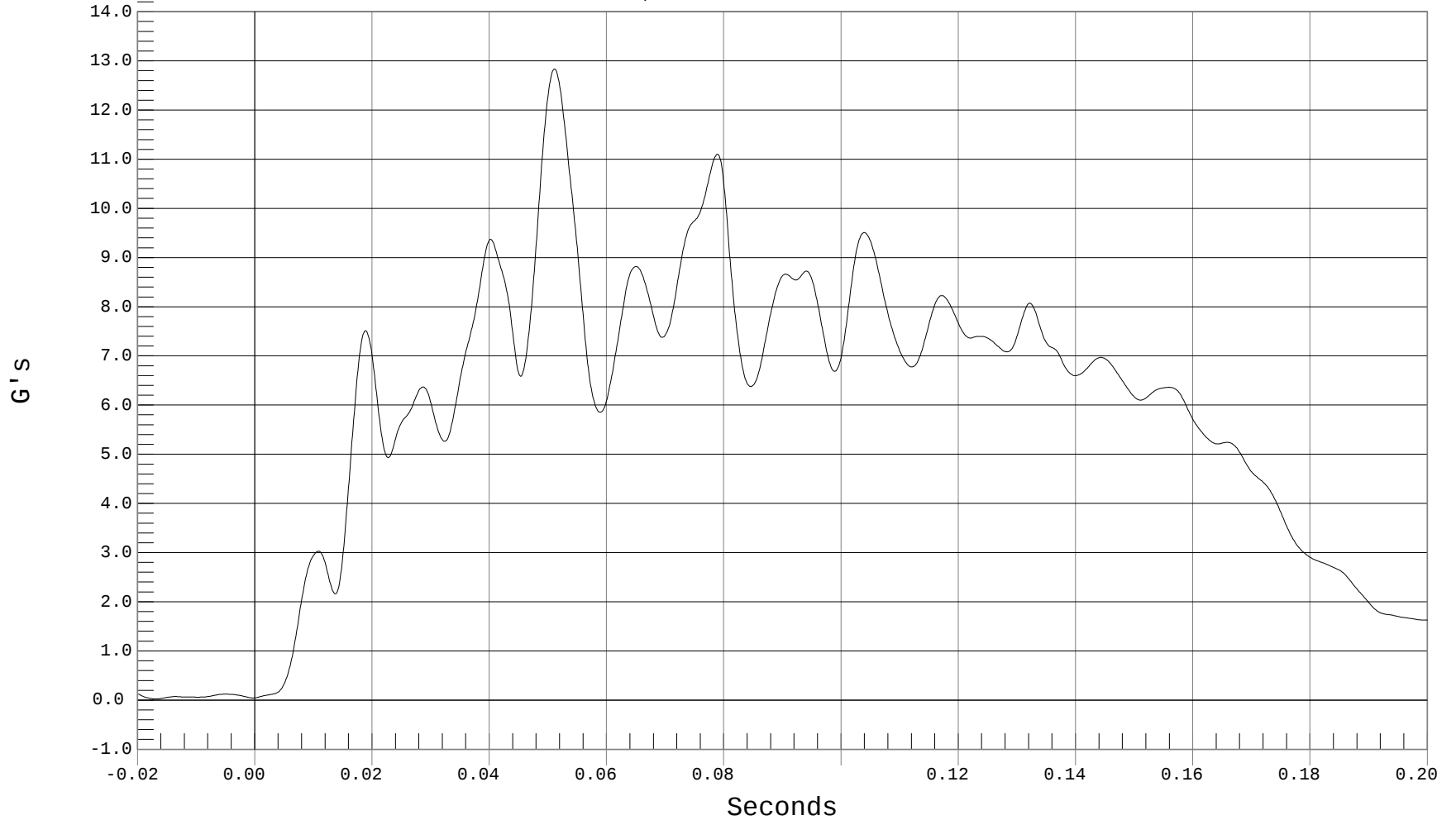
REAR FLOORPAN ABOVE AXLE RESULTANT ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

— 1 FLOORPAN @ REAR AXLE ACCELERATION, B02048AV.A42

Ymin = .02 G's @ -0.0169 Seconds, Ymax = 12.84 G's @ 0.0510 Seconds





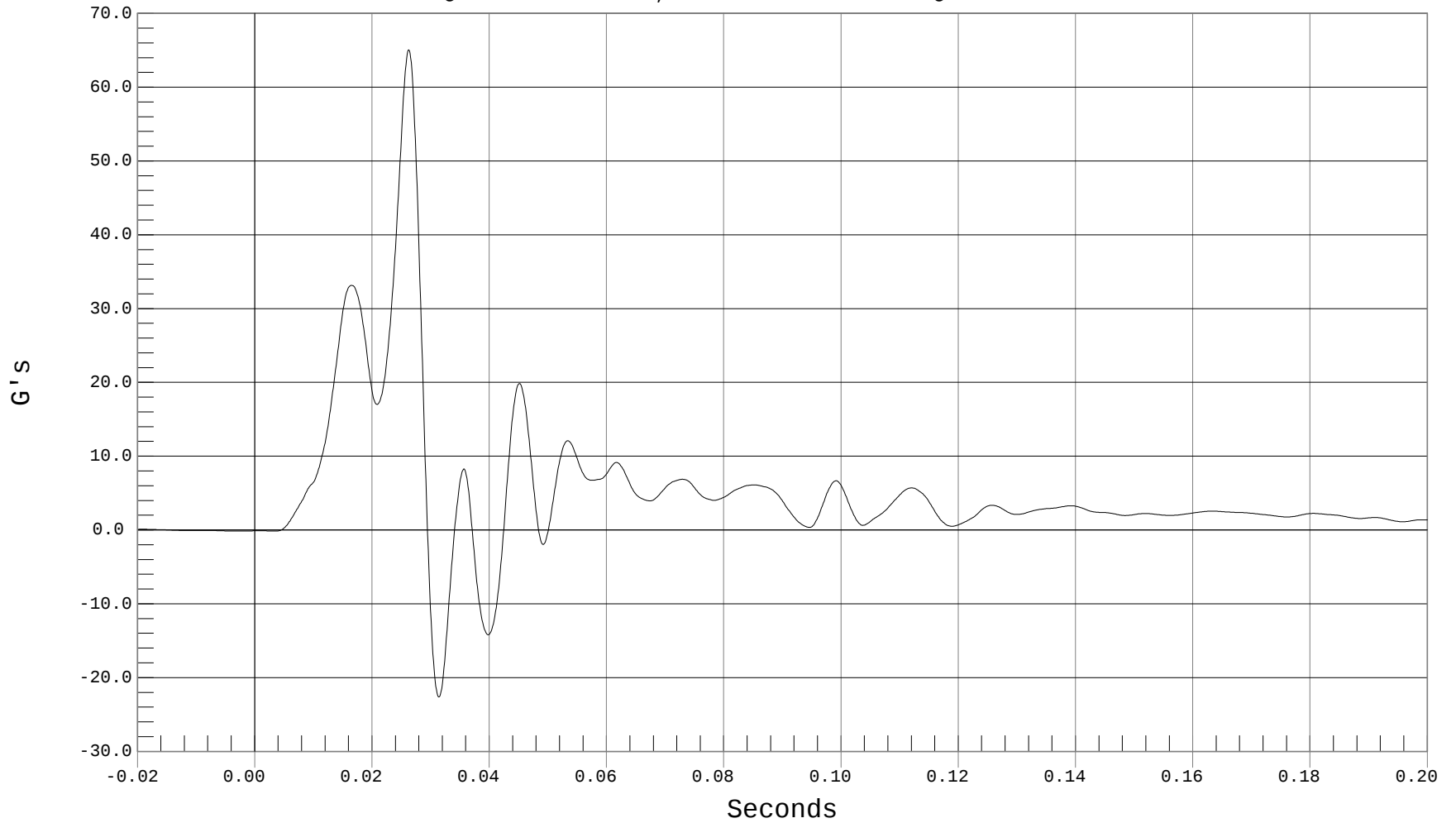
LEFT SIDE SILL AT FRONT SEAT Y ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

— 1 LEFT FRONT SILL Y, B02048AF.A46

Ymin = -22.63 G's @ 0.0313 Seconds, Ymax = 65.07 G's @ 0.0262 Seconds





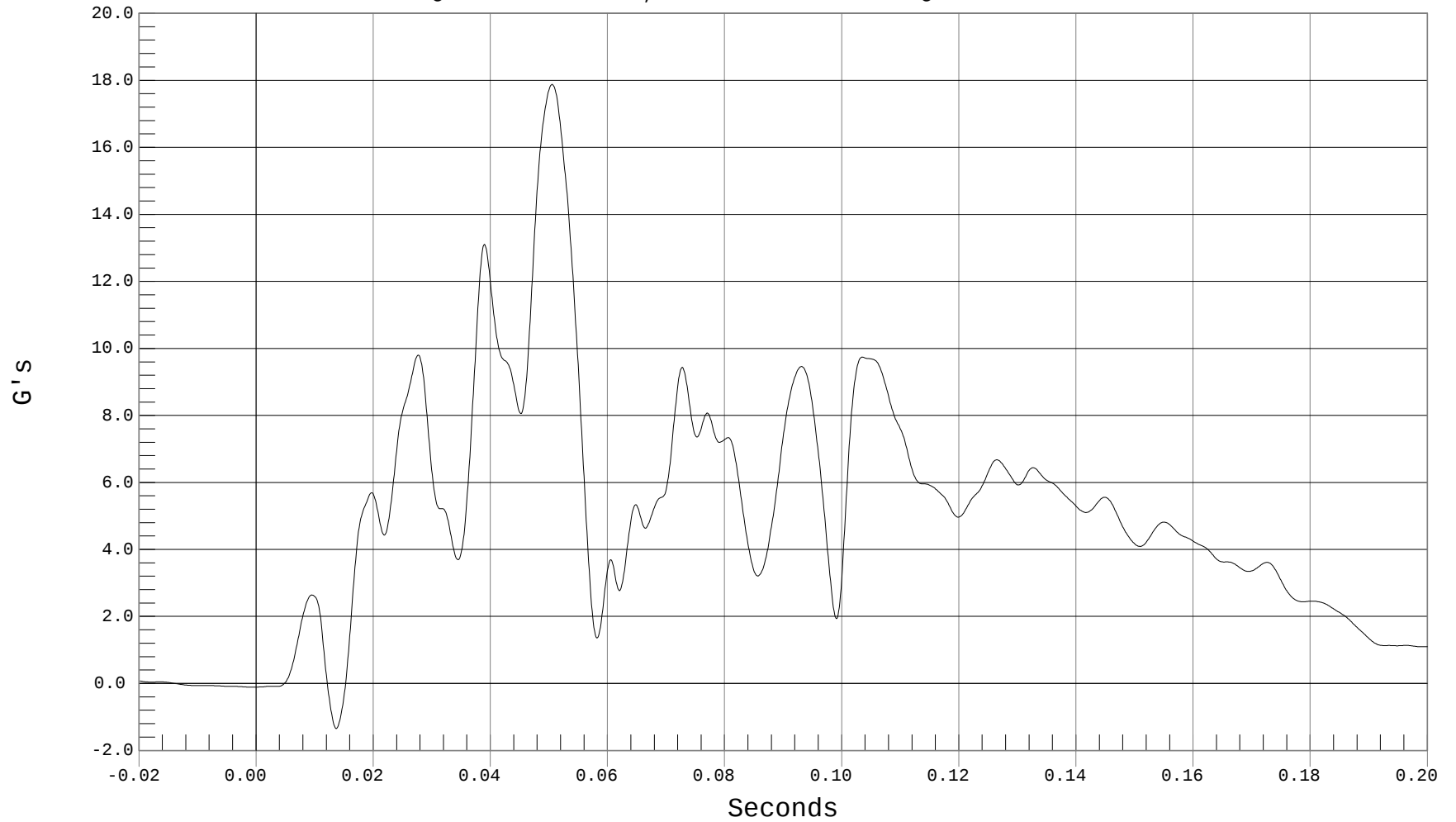
LEFT SIDE SILL AT REAR SEAT Y ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

— 1 LEFT REAR SILL Y, B02048AF.A45

Ymin = -1.35 G's @ 0.0136 Seconds, Ymax = 17.88 G's @ 0.0505 Seconds





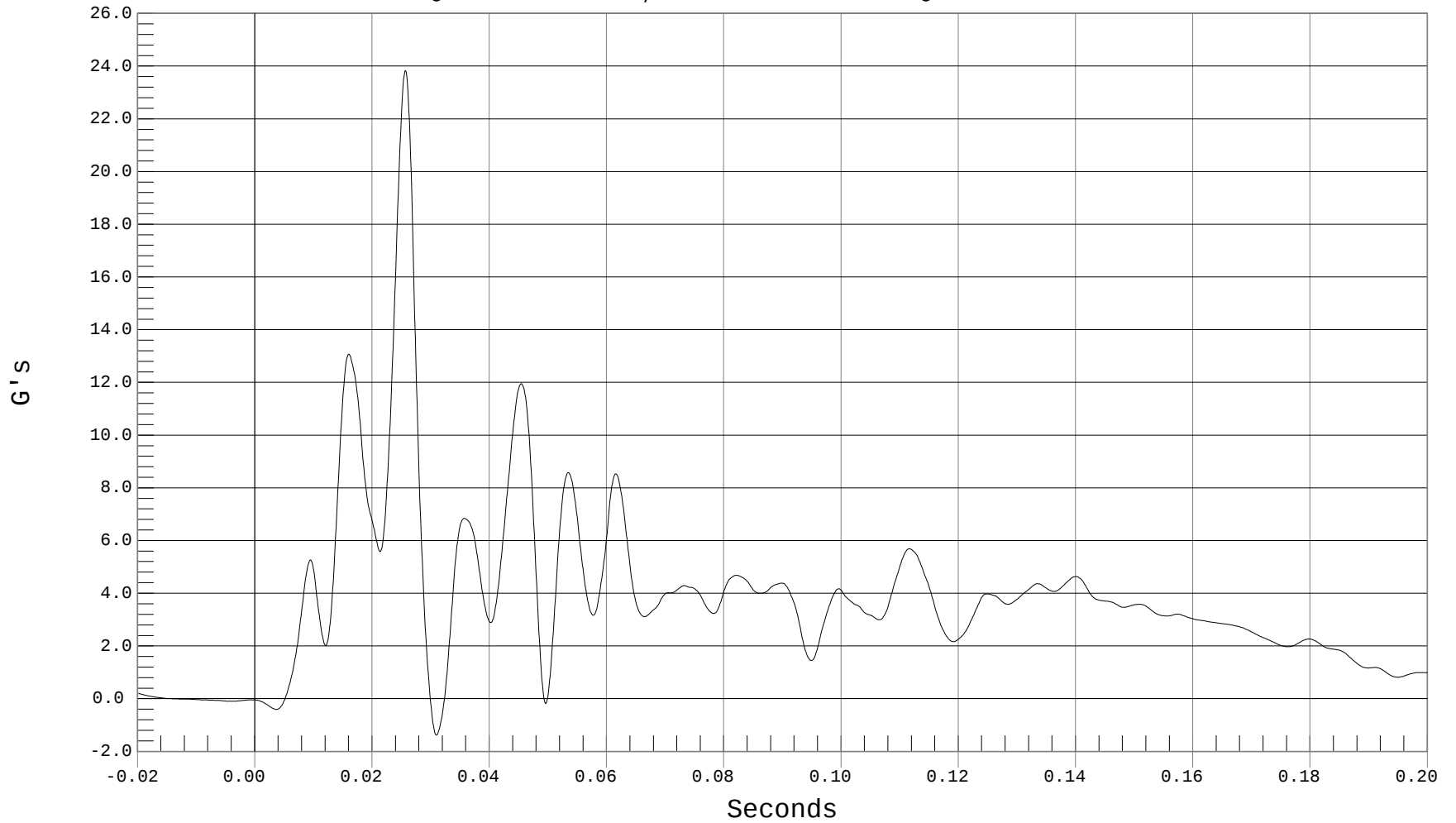
LEFT LOWER A-POST Y ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

— 1 LEFT LOWER A-POST Y, B02048AF.A52

Ymin = -1.38 G's @ 0.0309 Seconds, Ymax = 23.83 G's @ 0.0256 Seconds





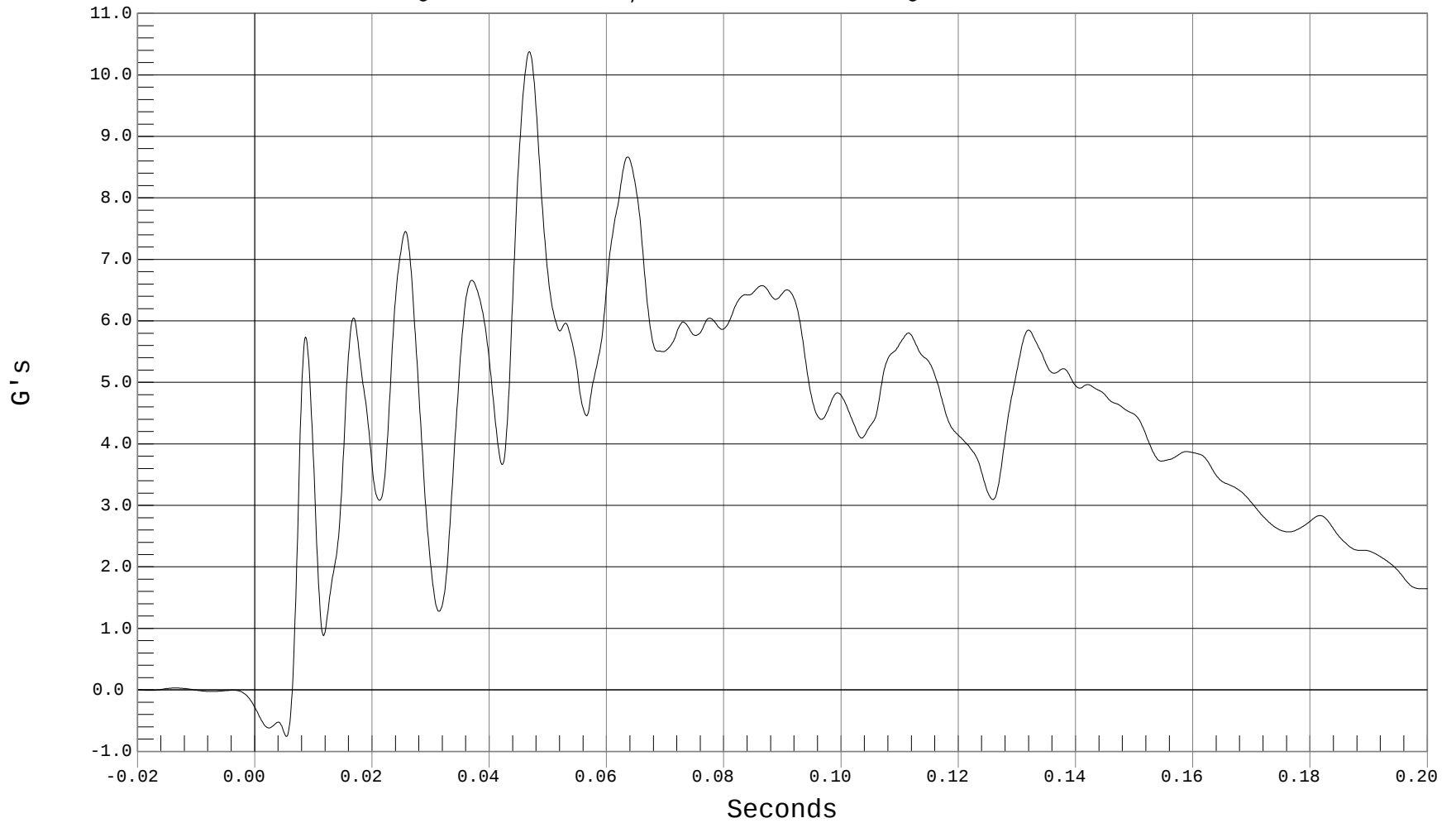
LEFT MID A-POST Y ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

— 1 LEFT MID A-POST, B02048AF.A53

Ymin = -0.76 G's @ 0.0053 Seconds, Ymax = 10.38 G's @ 0.0468 Seconds





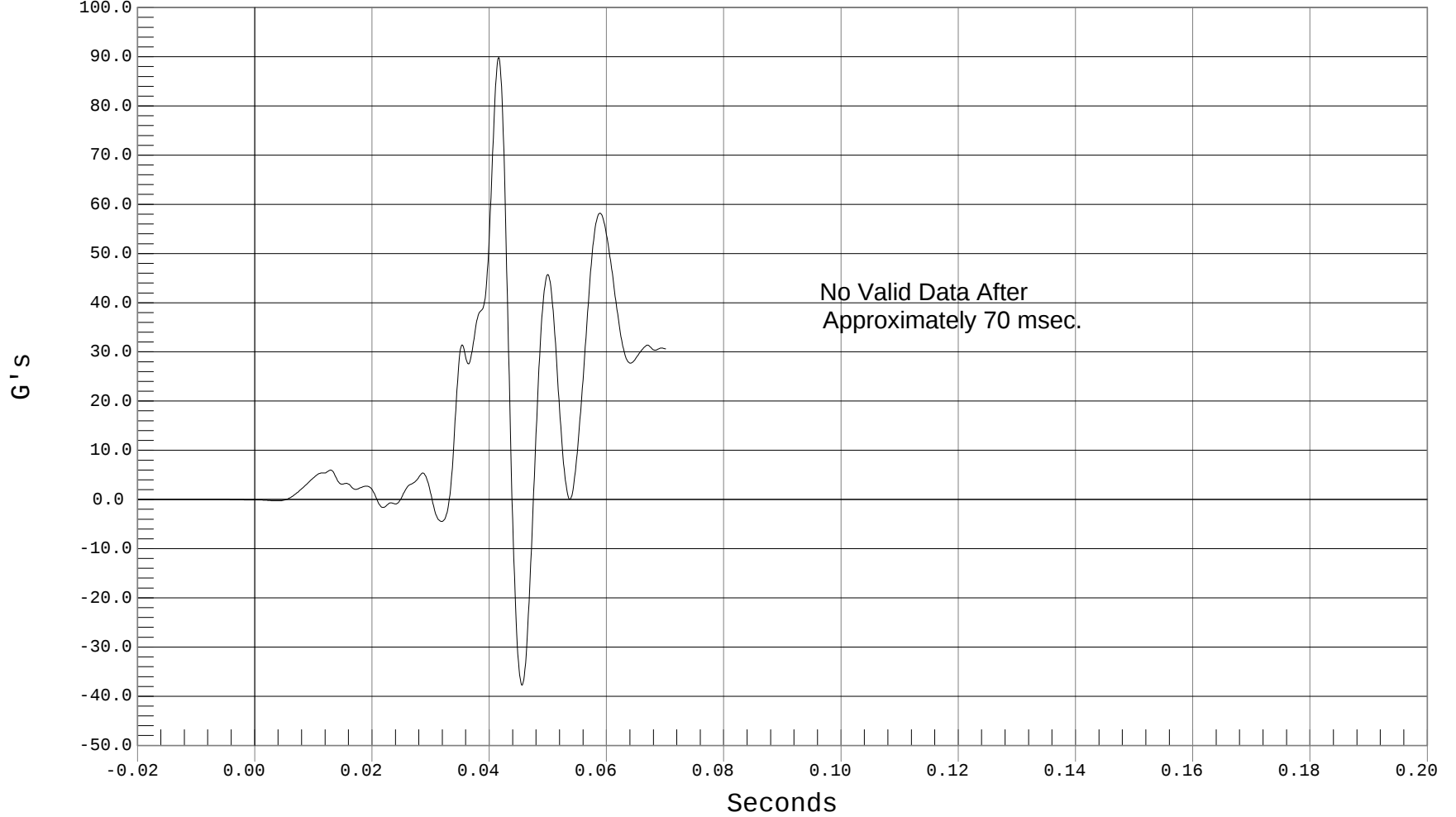
LEFT A-POST @ ROOF Y ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

1 LEFT A-PILLAR @ ROOF Y, B02048AF.A54

Ymin = -37.77 G's @ 0.0455 Seconds, Ymax = 89.86 G's @ 0.0415 Seconds





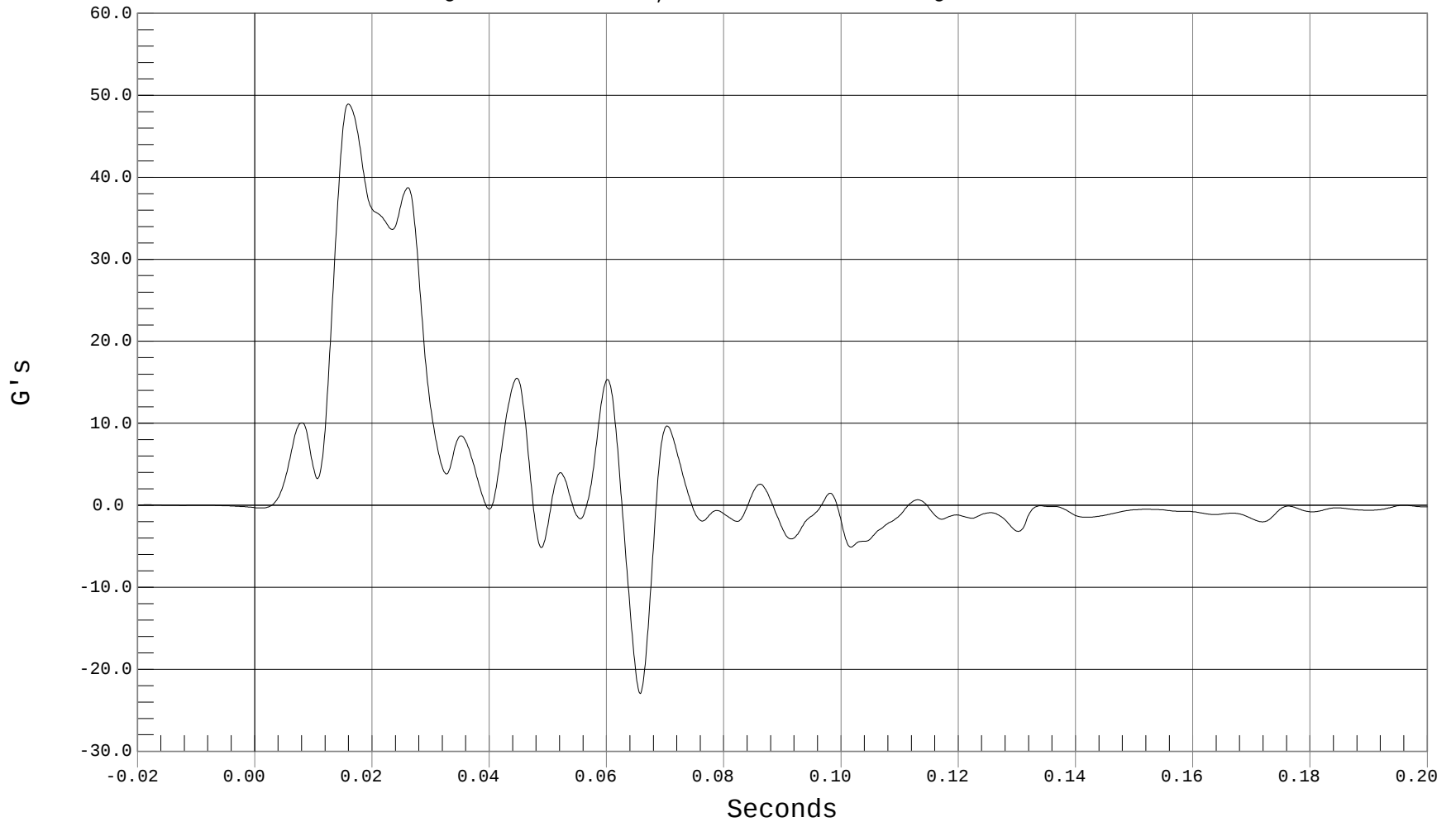
LEFT LOWER B-POST Y ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

— 1 LEFT LOWER B-POST Y, B02048AF.A49

Ymin = -22.96 G's @ 0.0657 Seconds, Ymax = 48.94 G's @ 0.0159 Seconds





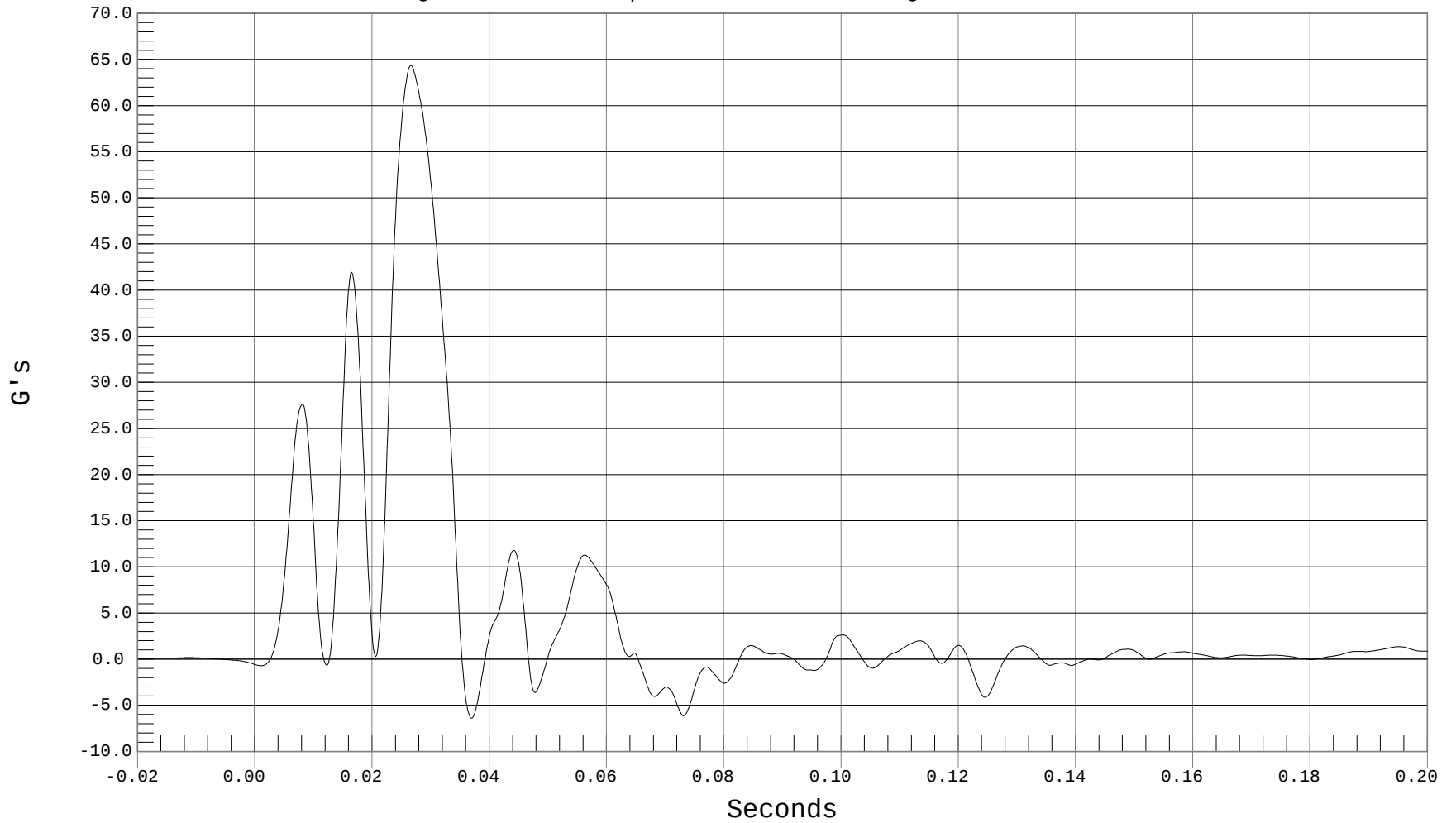
LEFT MID B-POST Y ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

1 LEFT MID B-POST Y, B02048AF.A50

Ymin = -6.4 G's @ 0.0369 Seconds, Ymax = 64.36 G's @ 0.0266 Seconds





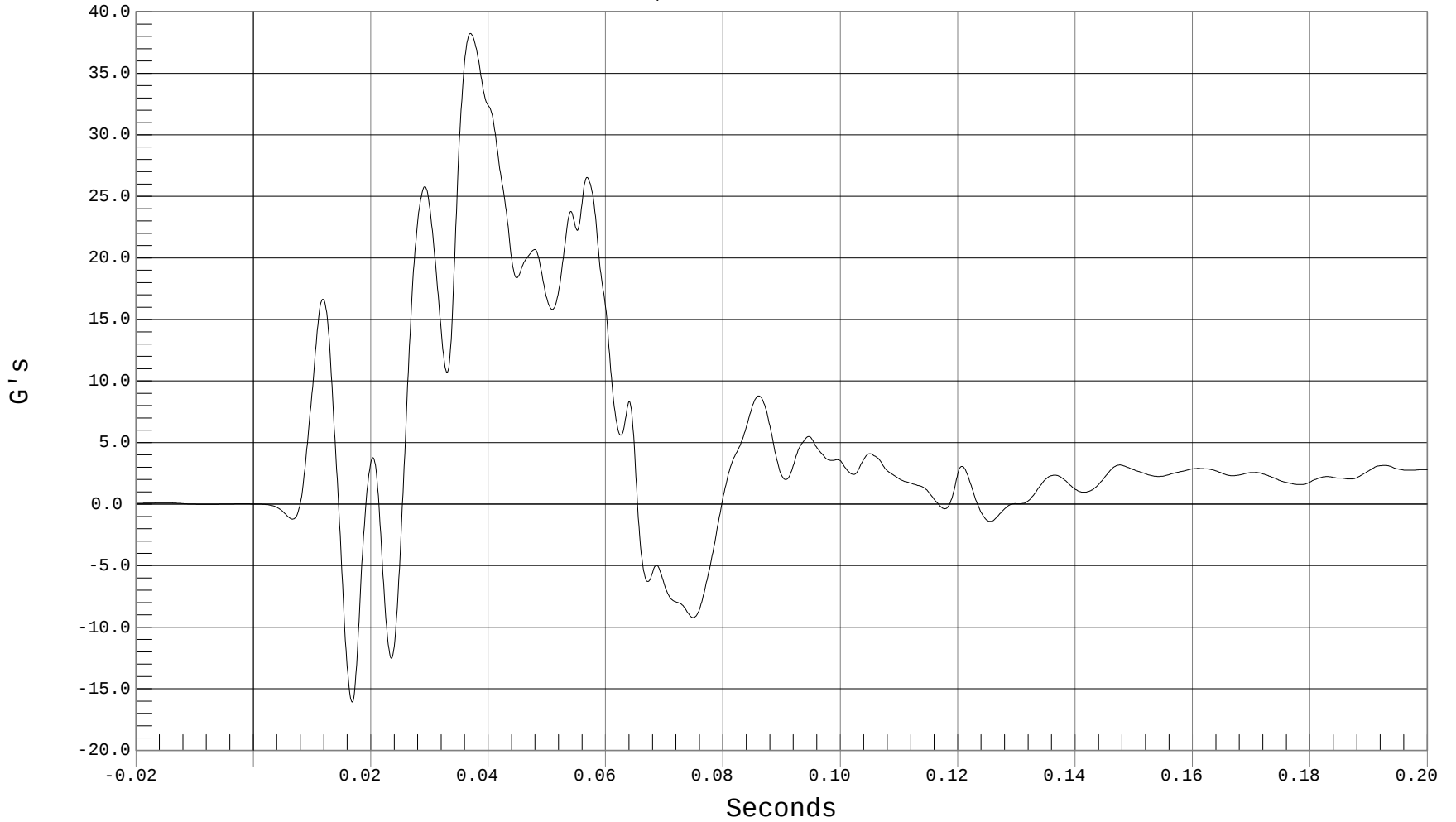
LEFT UPPER B-POST Y ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

— 1 LEFT UPPER B-POST Y, B02048AF.A47

Ymin = -16.07 G's @ 0.0167 Seconds, Ymax = 38.24 G's @ 0.0369 Seconds





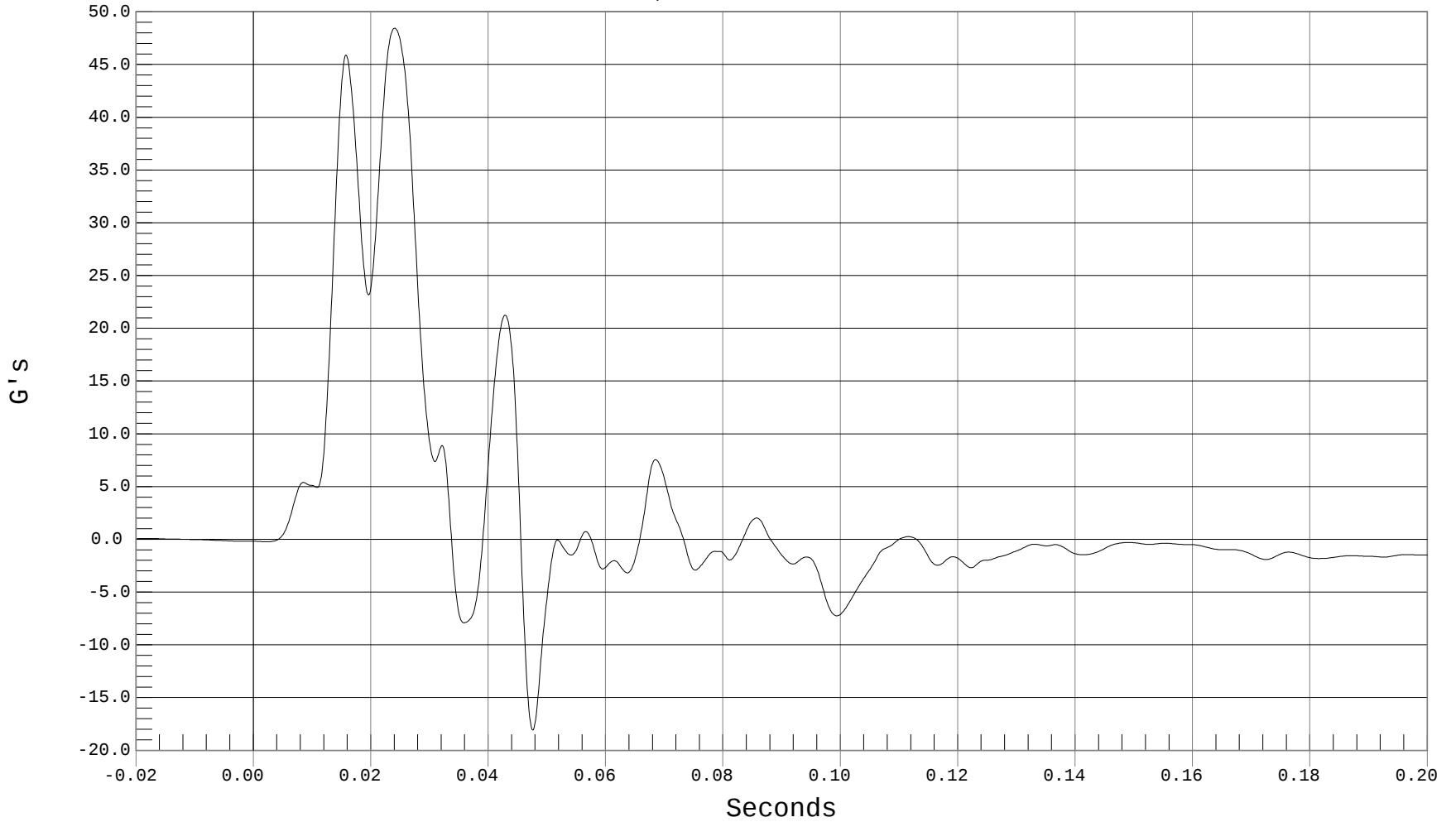
LEFT DRIVER SEAT TRACK Y ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

— 1 DRIVER SEAT TRACK Y, B02048AF.A51

Ymin = -18.07 G's @ 0.0475 Seconds, Ymax = 48.44 G's @ 0.0240 Seconds





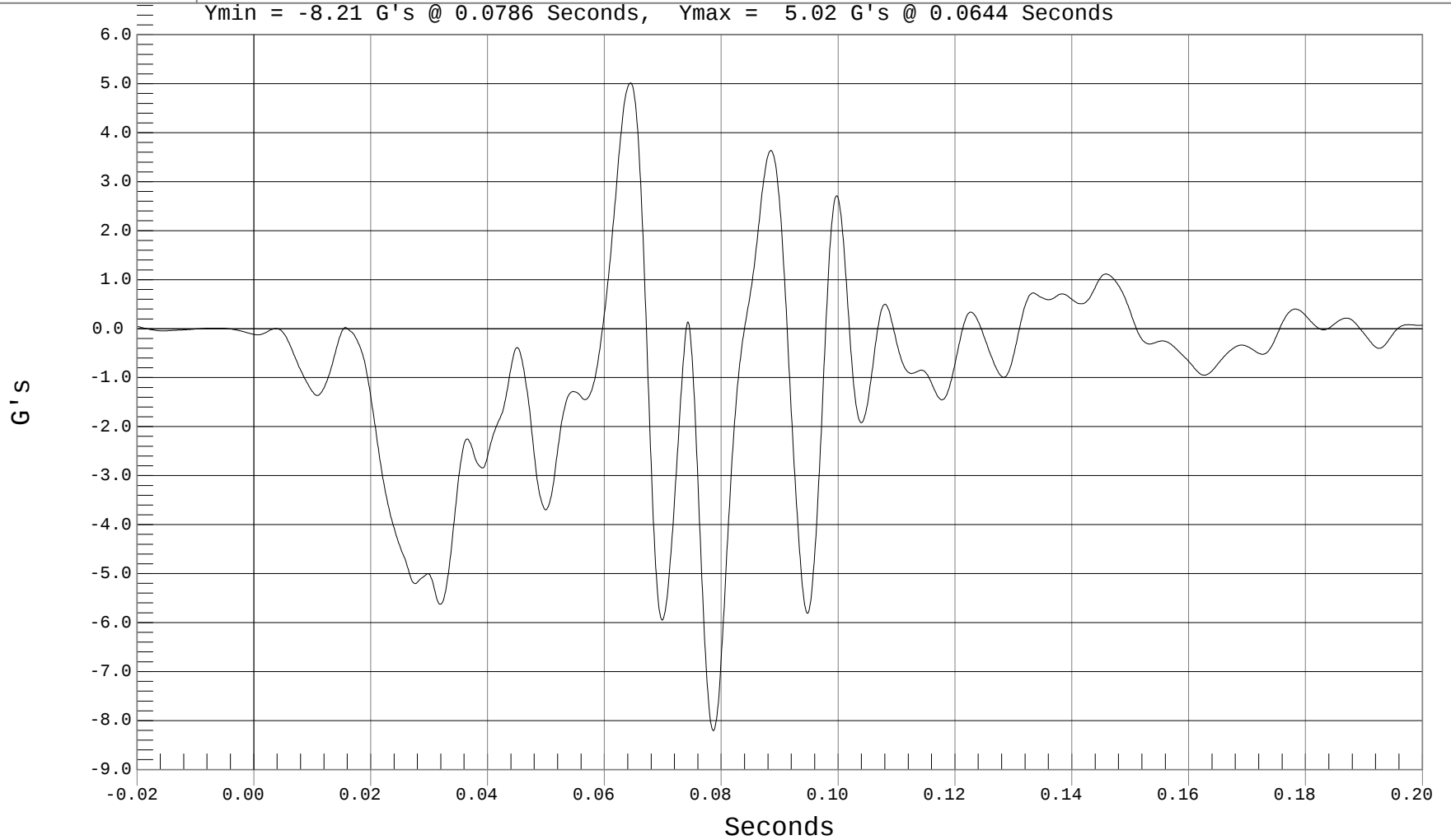
VEHICLE CG X ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

— 1 VEHICLE CG X, B02048AF.A33

Ymin = -8.21 G's @ 0.0786 Seconds, Ymax = 5.02 G's @ 0.0644 Seconds





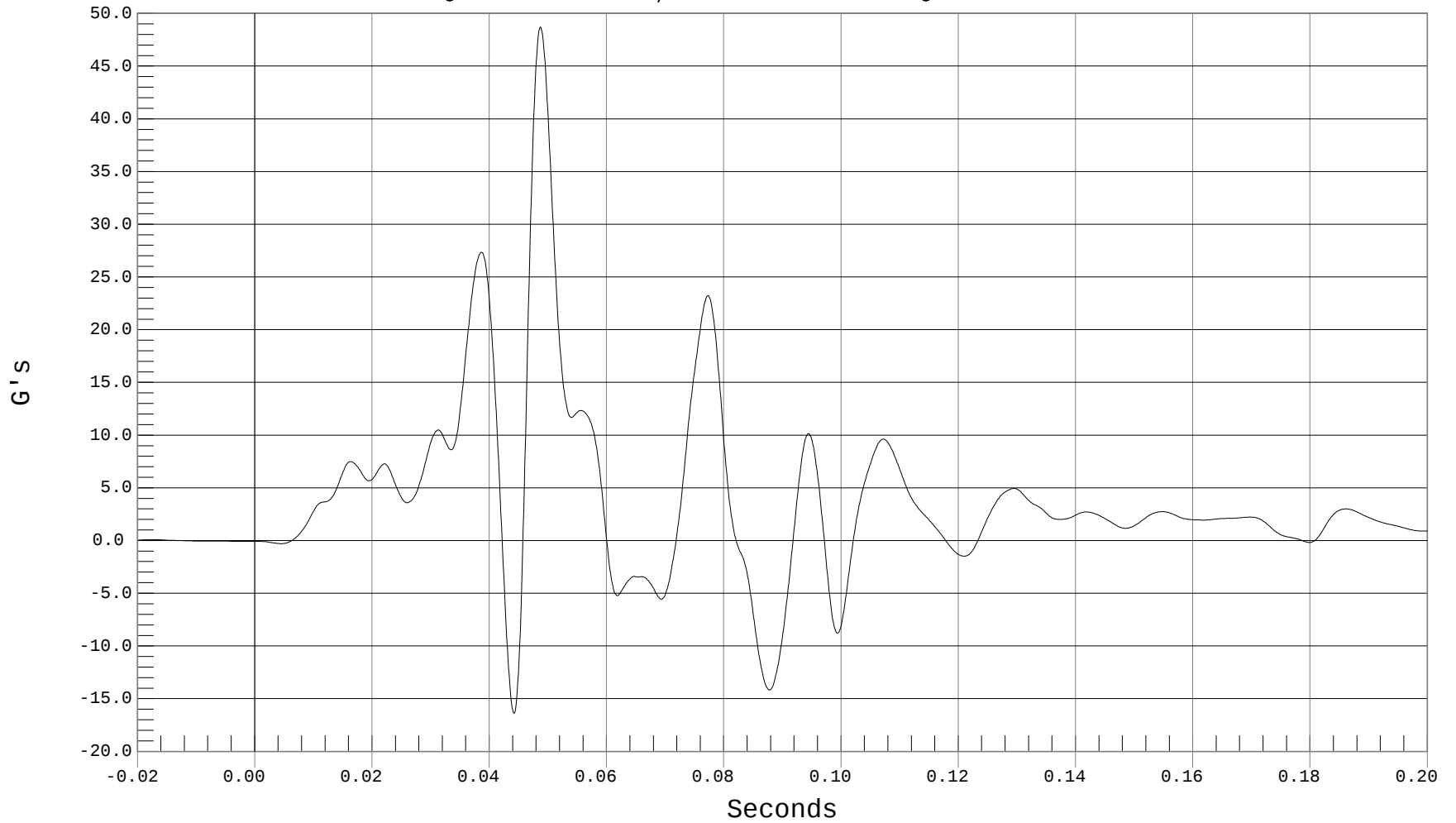
VEHICLE CG Y ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

— 1 VEHICLE CG Y, B02048AF.A34

Ymin = -16.38 G's @ 0.0441 Seconds, Ymax = 48.7 G's @ 0.0486 Seconds





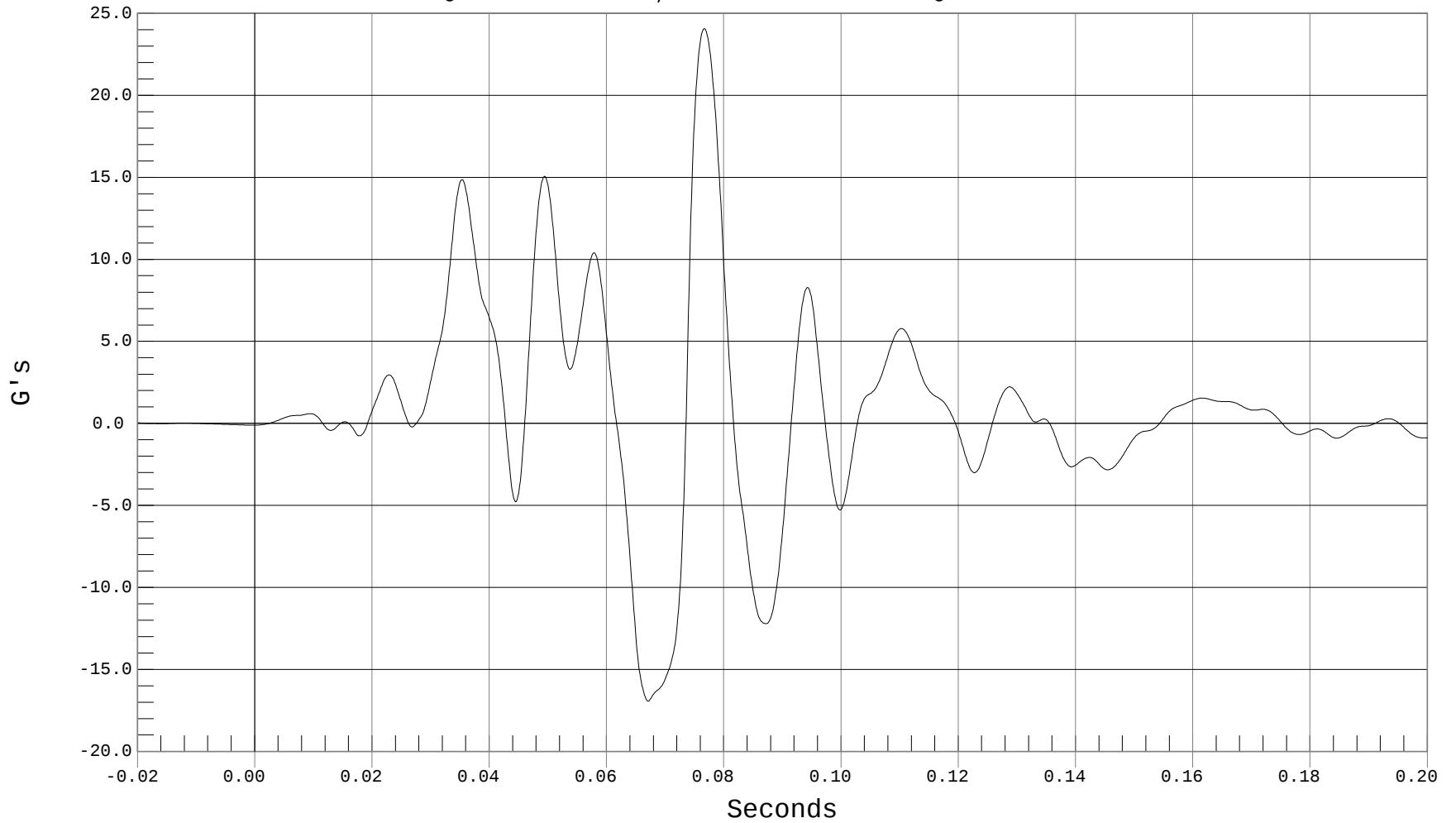
VEHICLE CG Z ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

— 1 VEHICLE CG Z, B02048AF.A35

Ymin = -16.94 G's @ 0.0670 Seconds, Ymax = 24.08 G's @ 0.0766 Seconds





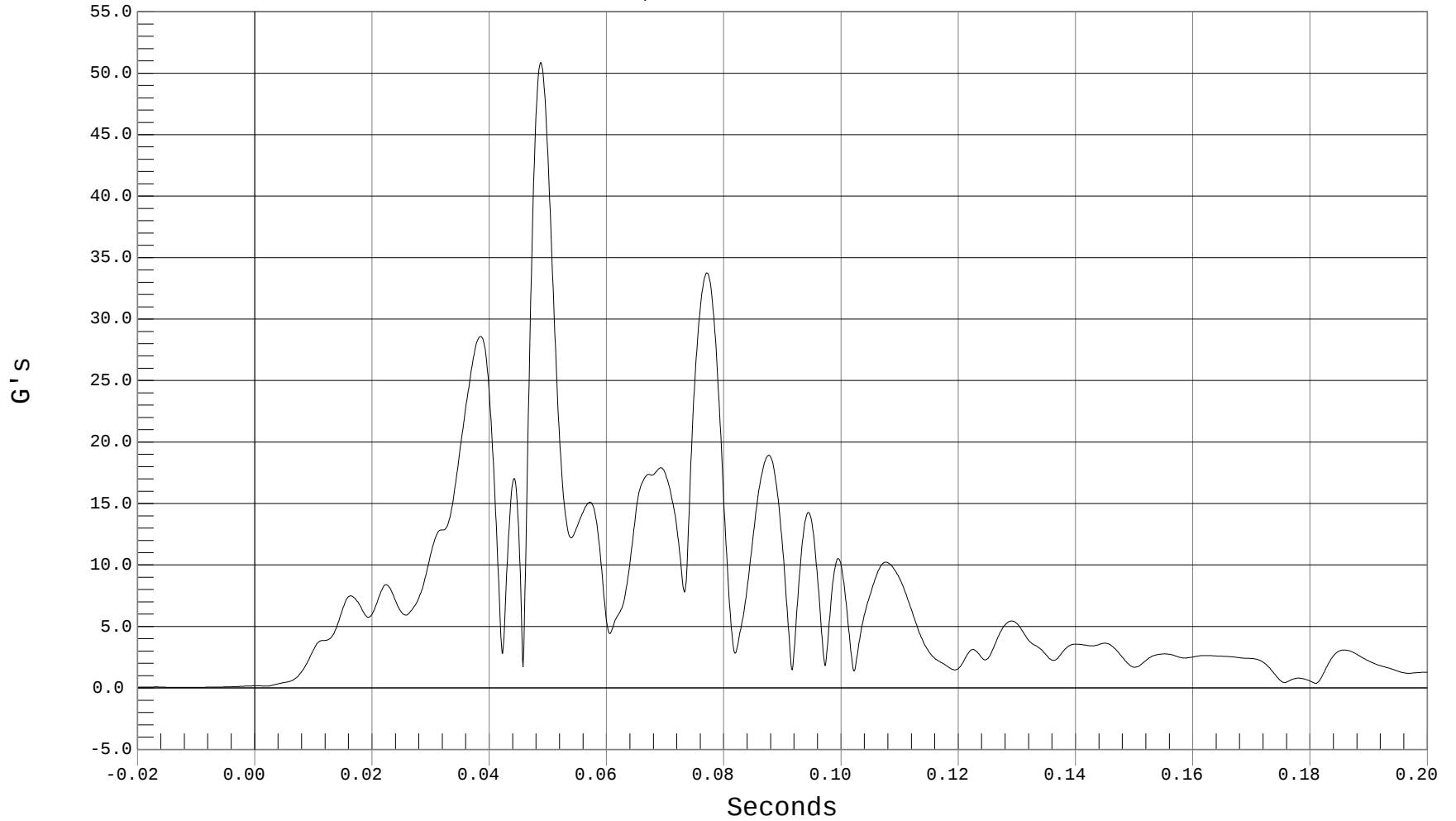
VEHICLE CG RESULTANT ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

— 1 VEHICLE CG RESULTANT ACCELERATION, B02048AV.A33

Ymin = .04 G's @ -0.0134 Seconds, Ymax = 50.88 G's @ 0.0487 Seconds





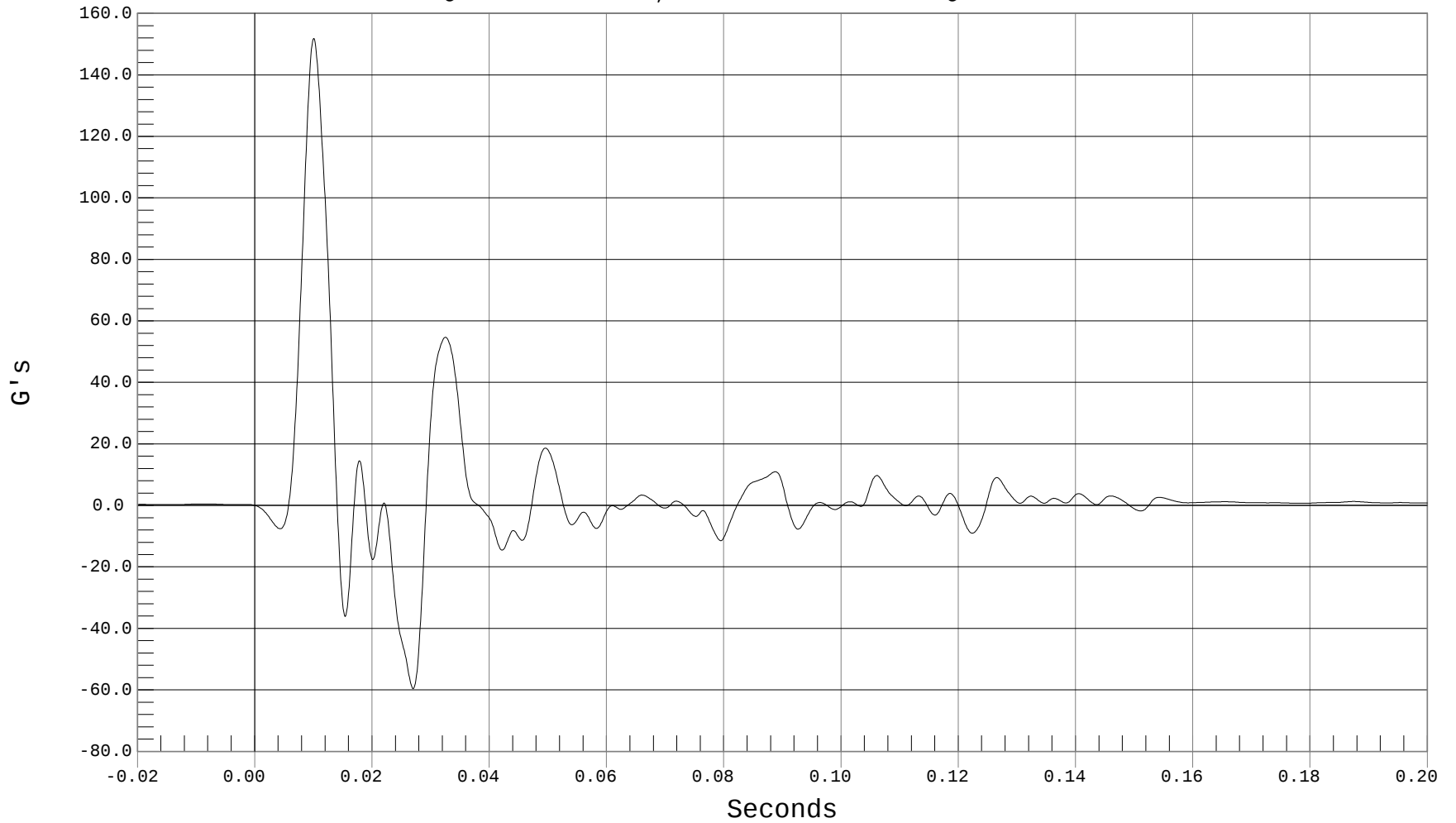
LEFT FRONT DOOR @ ARM Y ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

— 1 LEFT FRONT DOOR @ ARM Y, B02048AF.A26

Ymin = -59.63 G's @ 0.0269 Seconds, Ymax = 151.83 G's @ 0.0100 Seconds





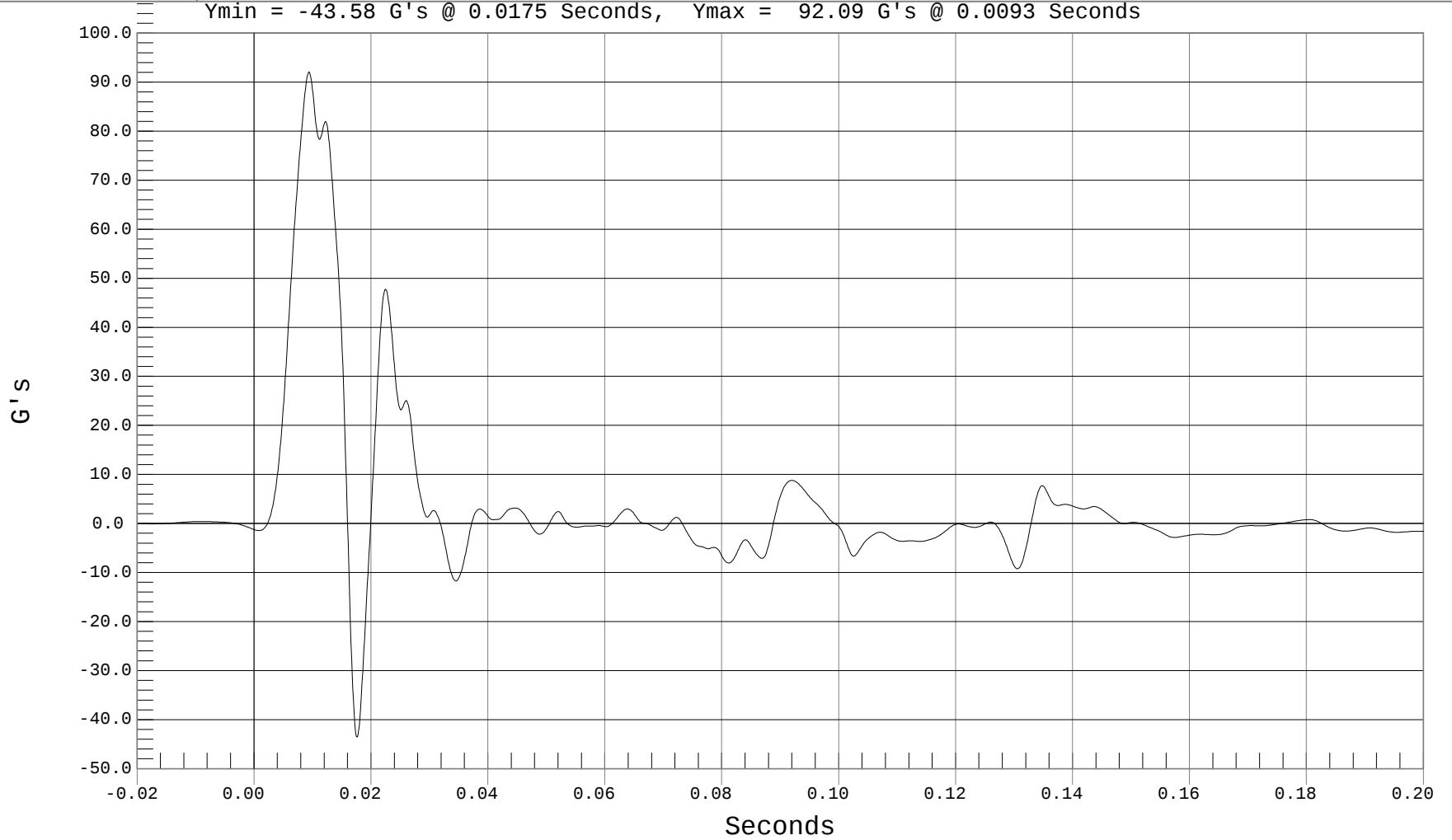
LEFT FRONT DOOR @ PELVIS Y ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

— 1 LEFT FRONT DOOR @ PELVIS Y, B02048AF.A25

Ymin = -43.58 G's @ 0.0175 Seconds, Ymax = 92.09 G's @ 0.0093 Seconds





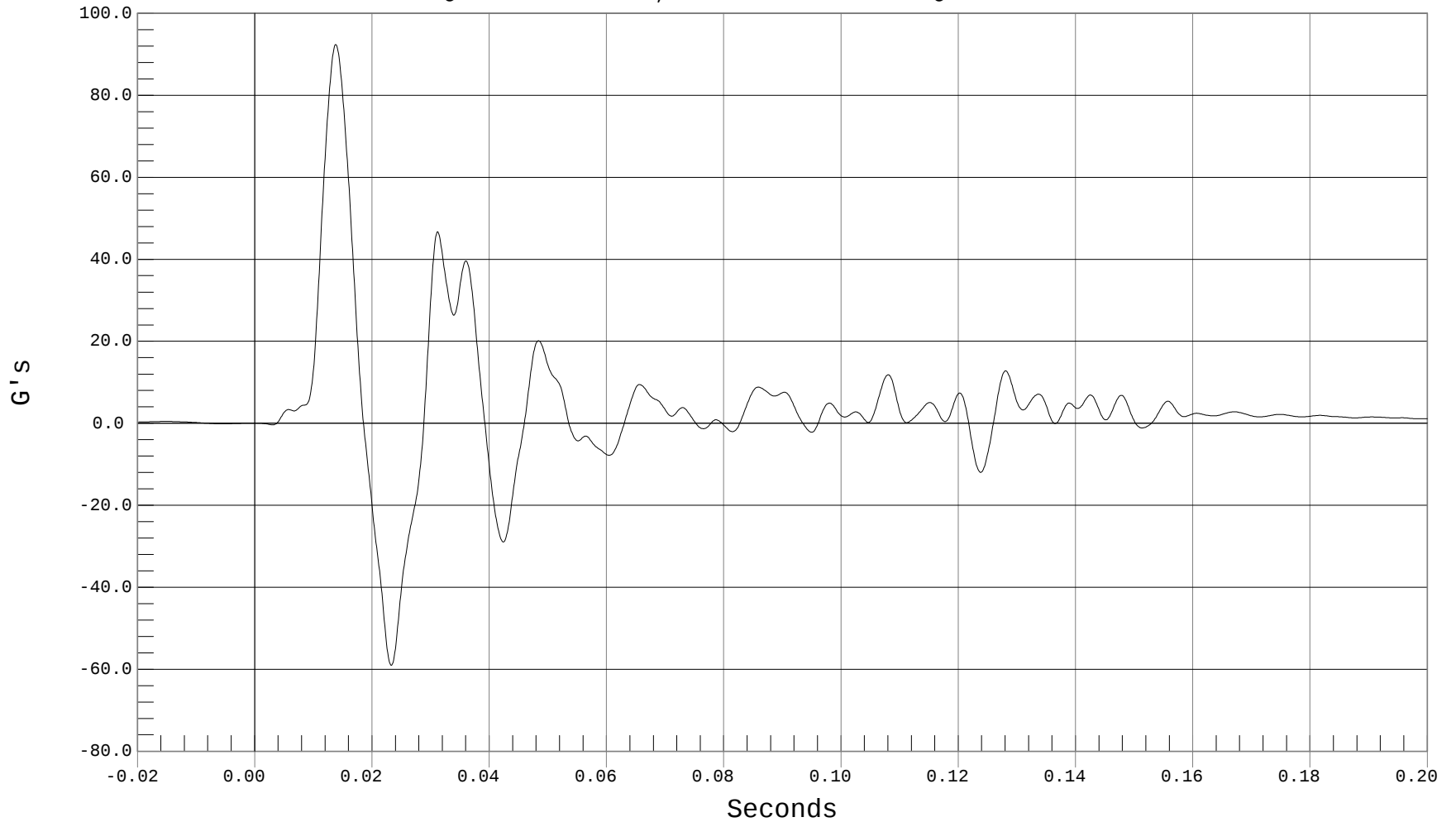
LEFT FRONT DOOR @ KNEE Y ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

— 1 LEFT FRONT DOOR @ KNEE Y, B02048AF.A27

Ymin = -59.06 G's @ 0.0232 Seconds, Ymax = 92.41 G's @ 0.0137 Seconds





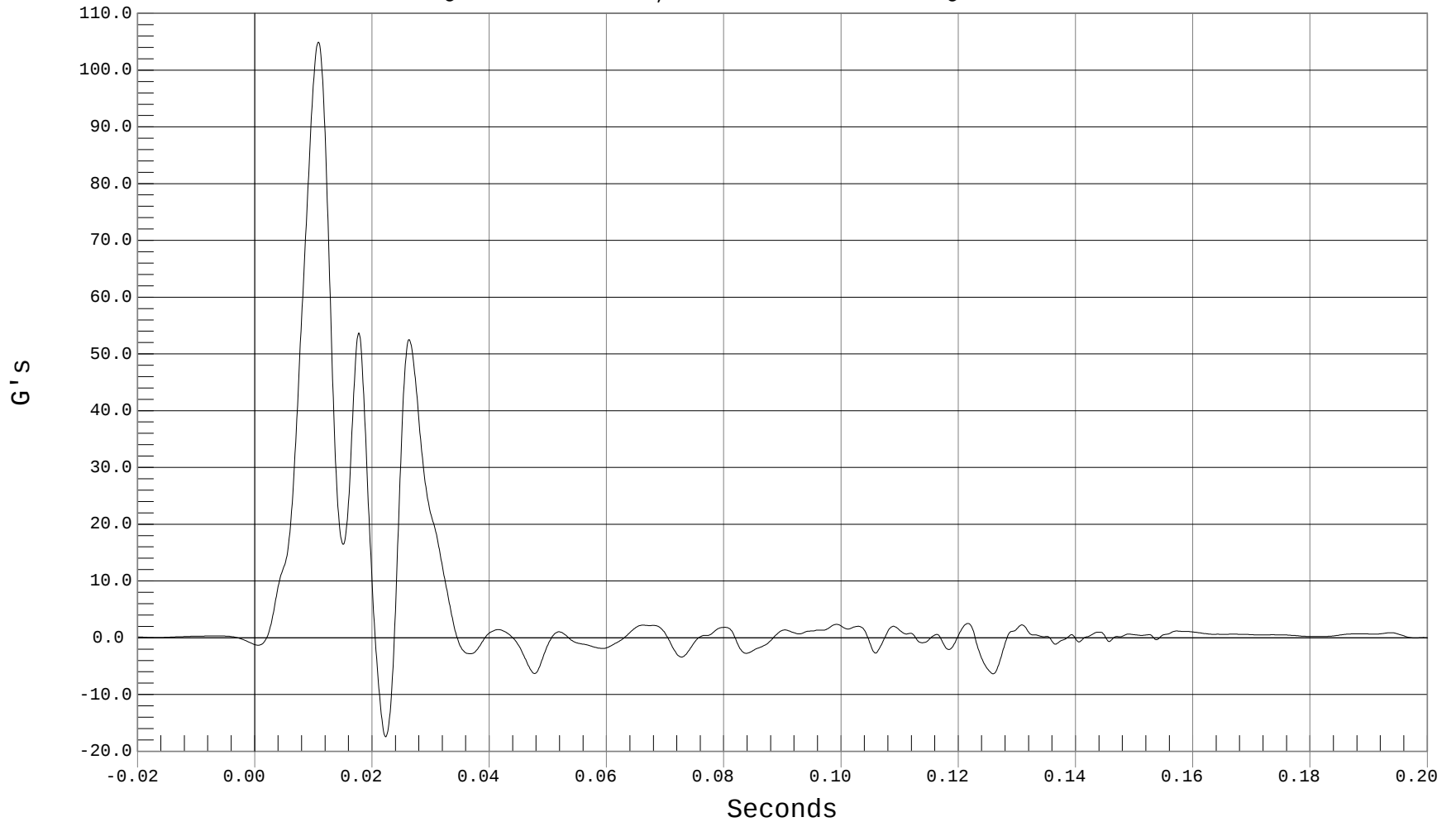
LEFT FRONT DOOR @ RIB Y ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

— 1 LEFT FRONT DOOR @ RIB Y, B02048AF.A28

Ymin = -17.46 G's @ 0.0222 Seconds, Ymax = 104.93 G's @ 0.0108 Seconds





LOWER CENTER RADIATOR SUPPORT X ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG

Component: 2000 NISSAN MAXIMA 4 DOOR

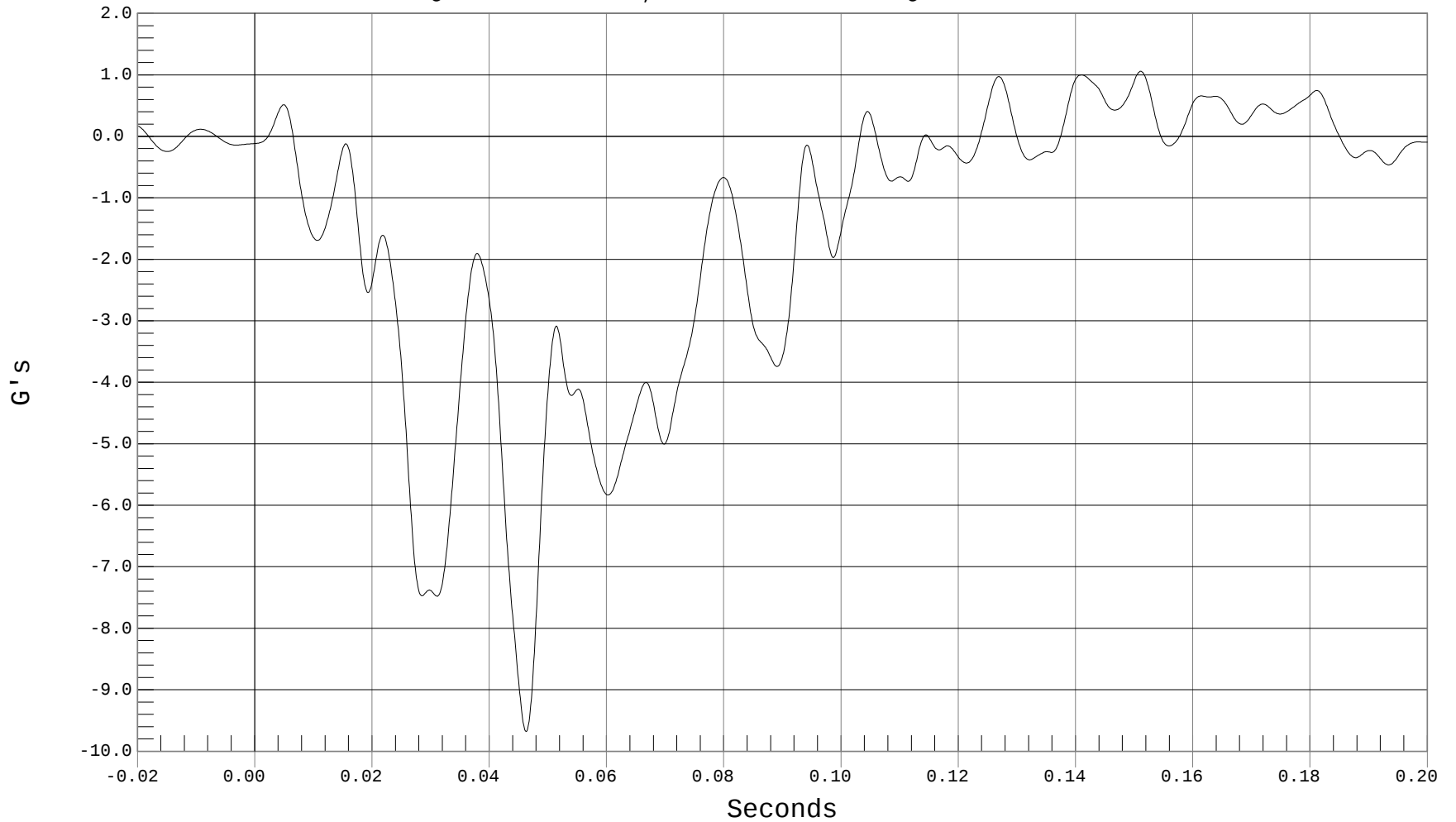
Test Date: 06-12-02

Speed: 20.0 MPH, 32.2 KPH

Filter Class: 60

— 1 LOWER CENTER RADIATOR SUPPORT X, B02048AF.A22

Ymin = -9.68 G's @ 0.0462 Seconds, Ymax = 1.06 G's @ 0.1510 Seconds





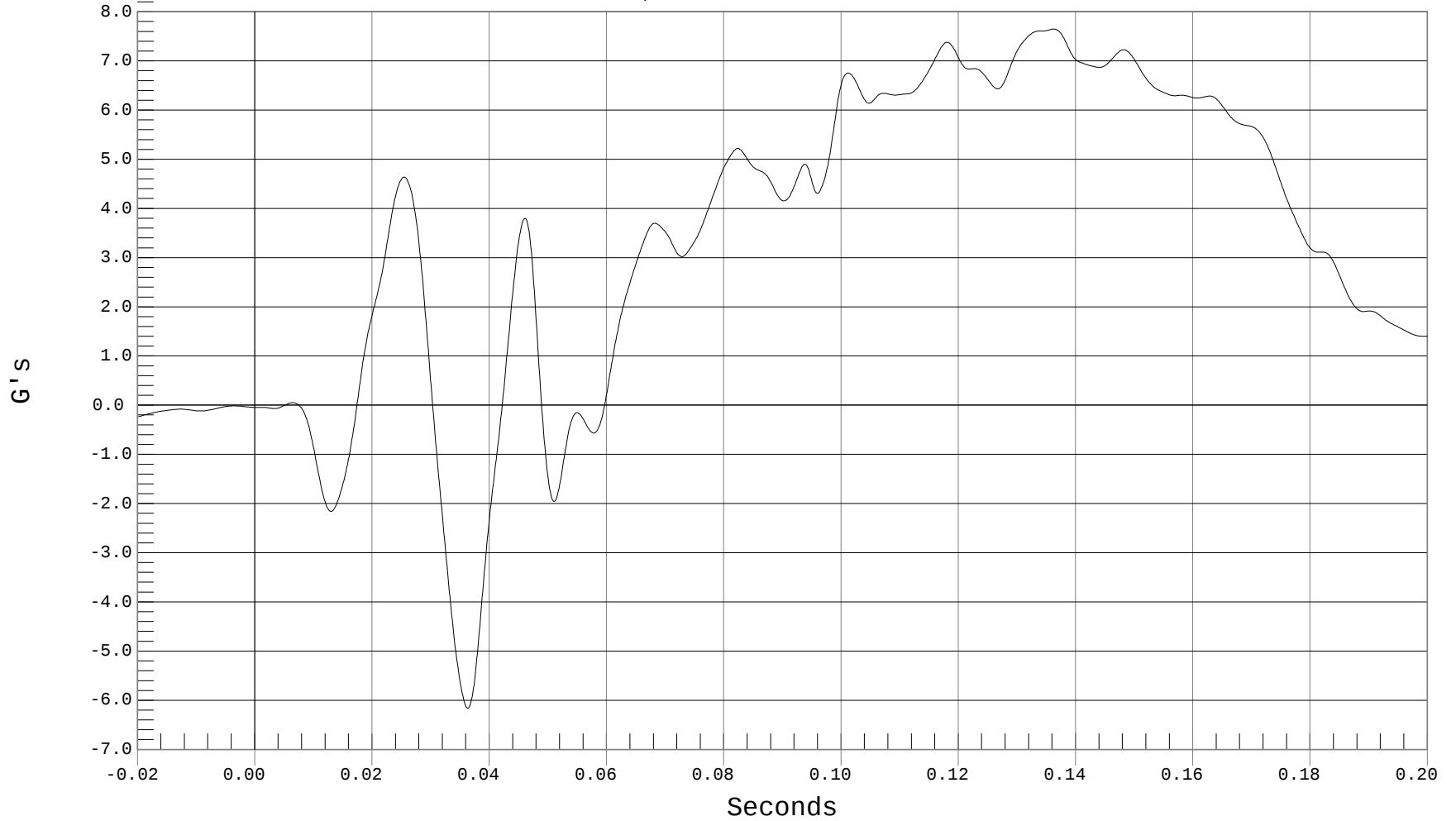
LOWER CENTER RADIATOR SUPPORT Y ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

— 1 LOWER CENTER RADIATOR SUPPORT Y, B02048AF.A23

Ymin = -6.16 G's @ 0.0362 Seconds, Ymax = 7.65 G's @ 0.1362 Seconds





LOWER CENTER RADIATOR SUPPORT Z ACCELERATION

Test Desc.: RIGID POLE SIDE IMPACT AT 285 DEG

Component: 2000 NISSAN MAXIMA 4 DOOR

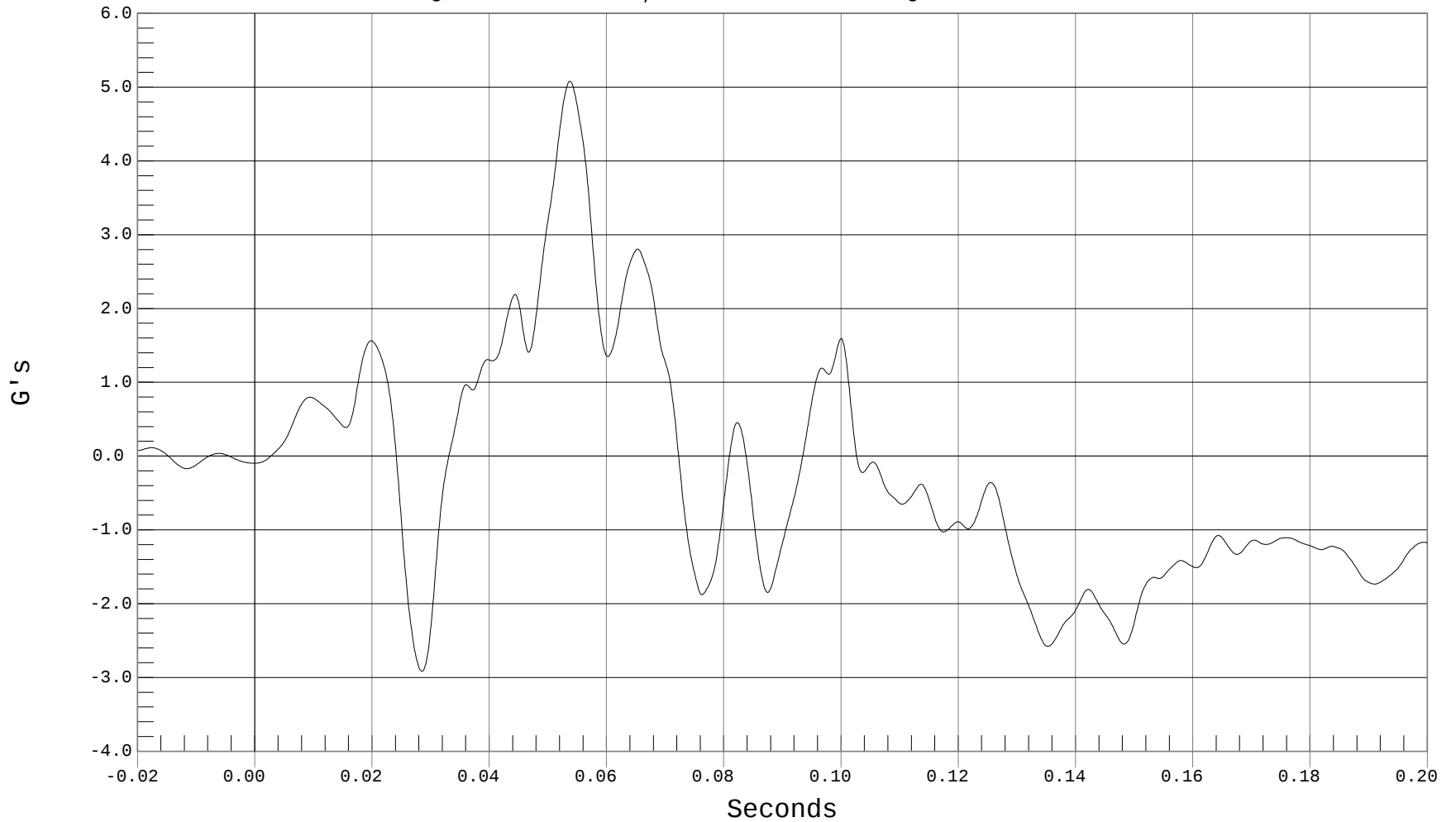
Test Date: 06-12-02

Speed: 20.0 MPH, 32.2 KPH

Filter Class: 60

— 1 LOWER CENTER RADIATOR SUPPORT Z, B02048AF.A24

Ymin = -2.92 G's @ 0.0284 Seconds, Ymax = 5.08 G's @ 0.0537 Seconds





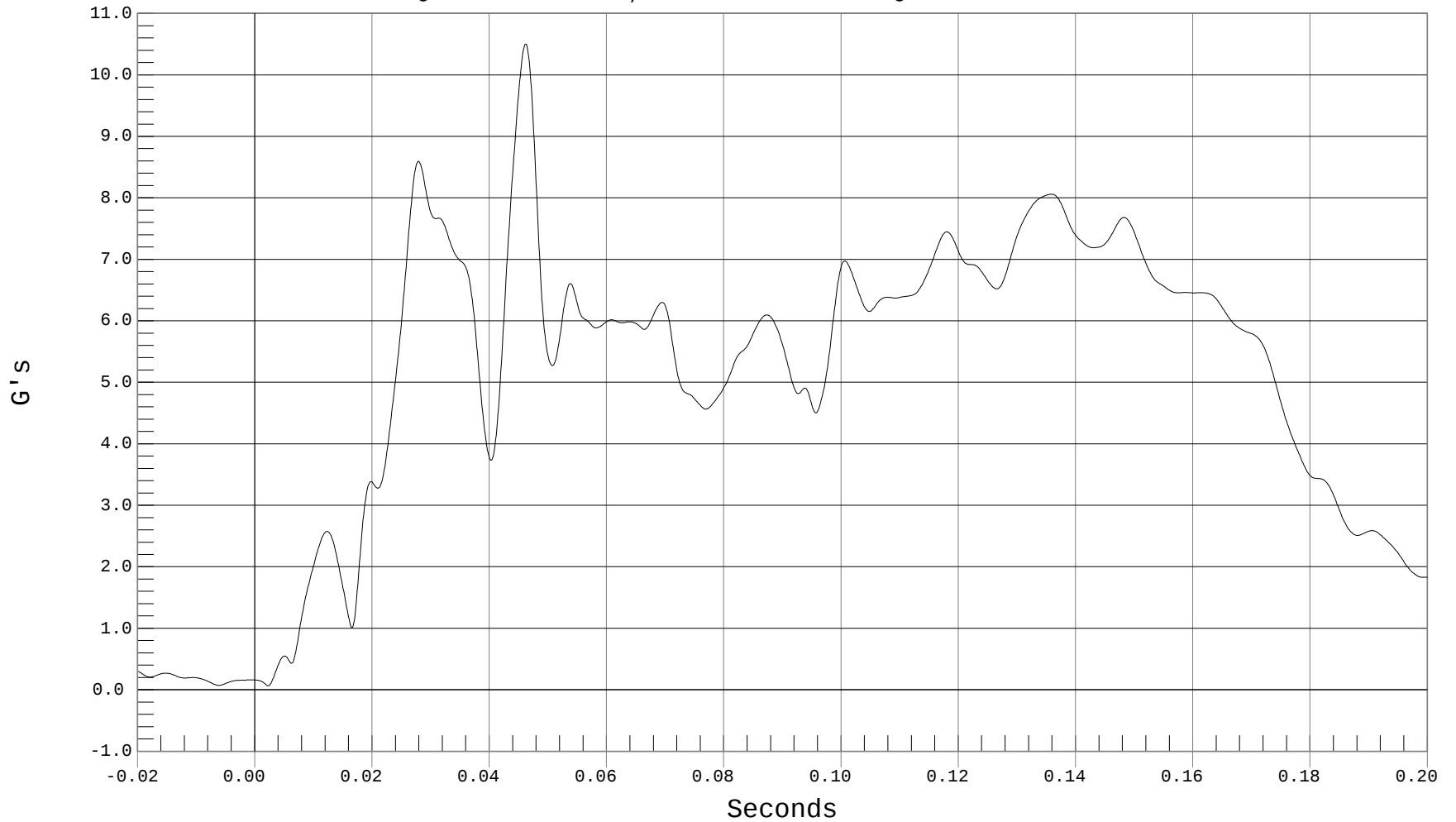
LOWER CENTER RADIATOR SUPPORT RESULTANT ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Filter Class: 60

— 1 LOWER RADIATOR SUPPORT RESULTANT ACCELERATION, B02048AV.A22

Ymin = .06 G's @ 0.0022 Seconds, Ymax = 10.5 G's @ 0.0461 Seconds





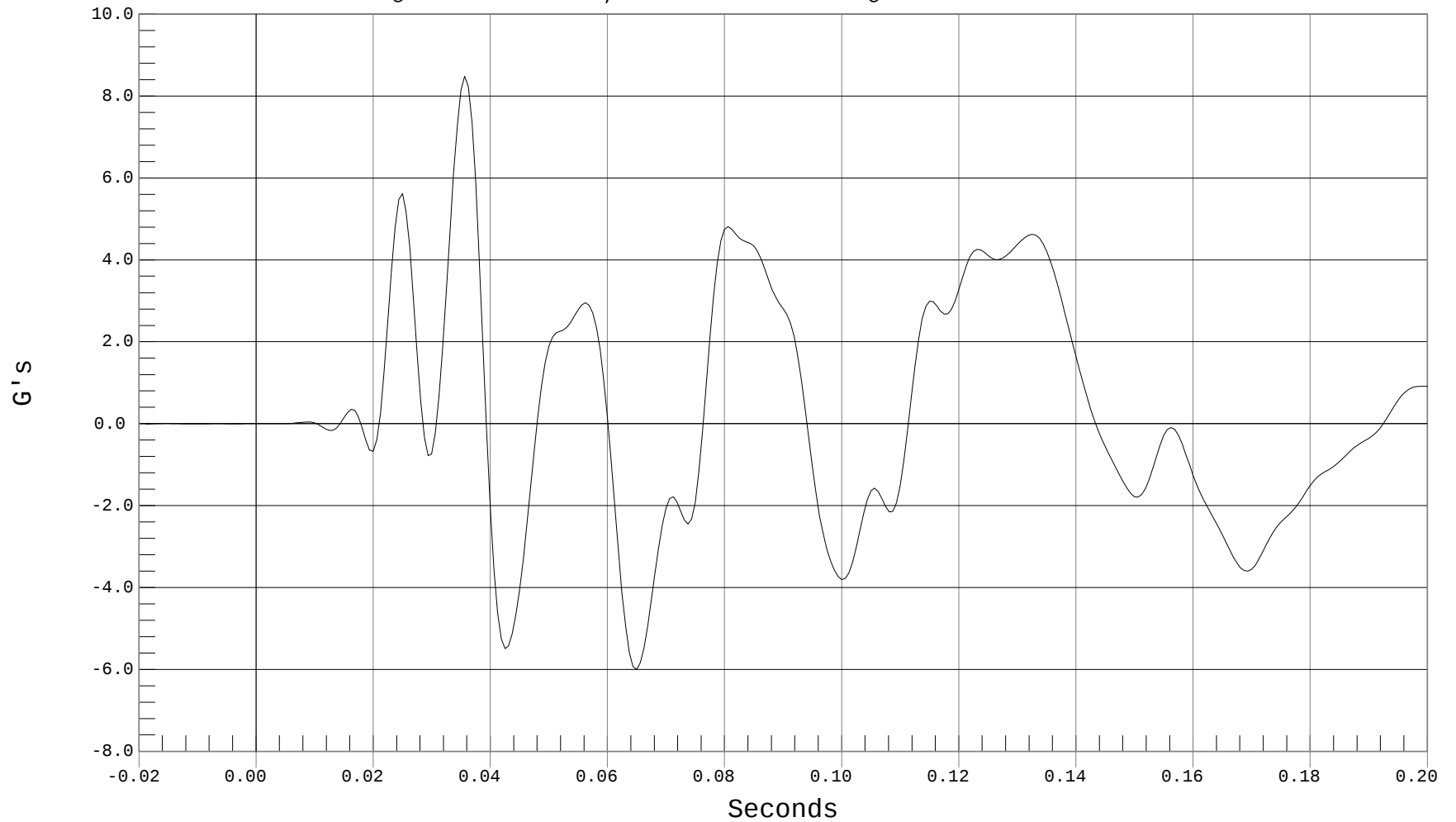
DRIVER UPPER SPINE X ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Fir Filtered

— 1 DRIVER UPPER SPINE X, B02048FI.R06

Ymin = -6 G's @ 0.0649 Seconds, Ymax = 8.49 G's @ 0.0355 Seconds





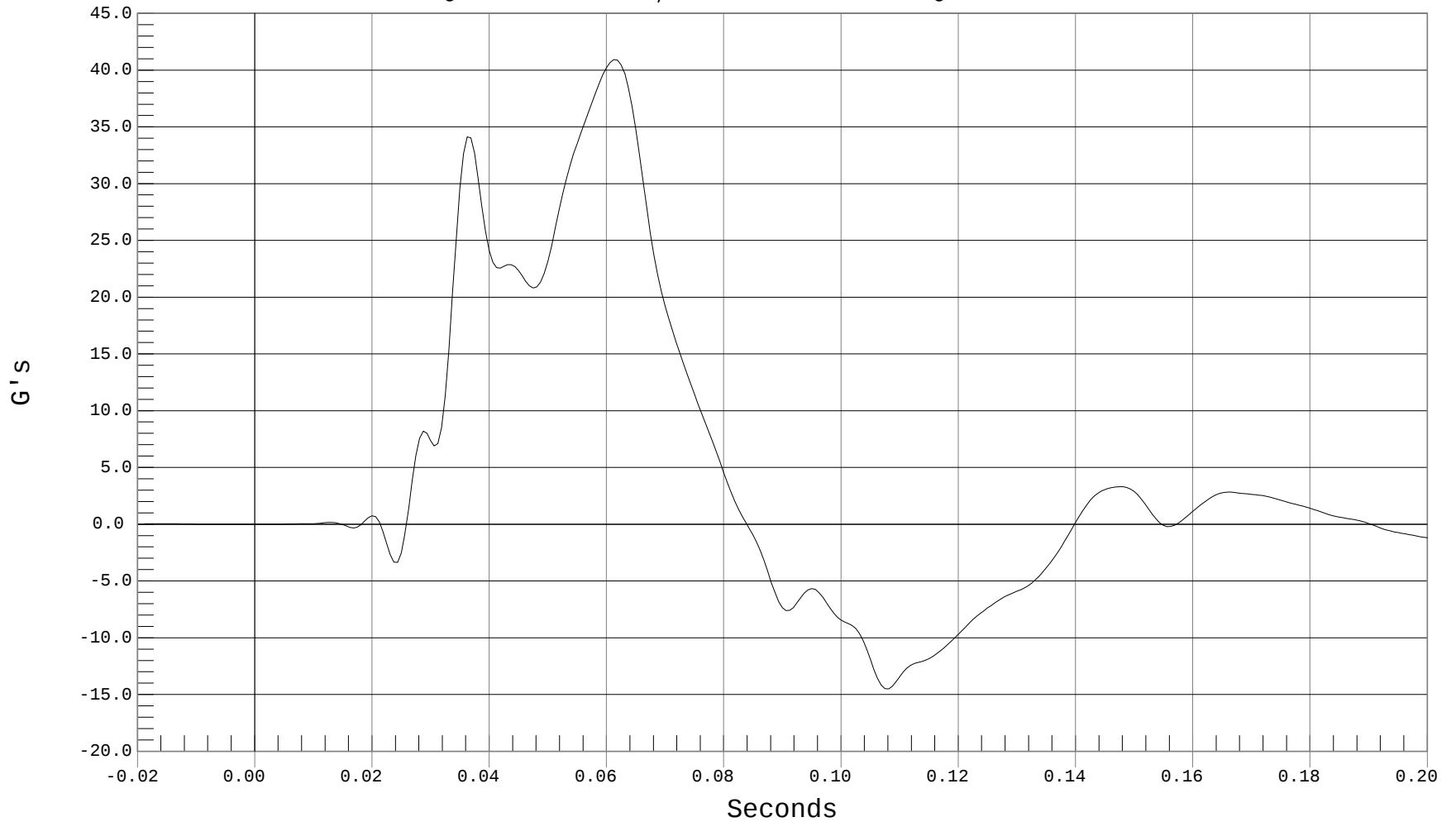
DRIVER UPPER SPINE Y ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Fir Filtered

— 1 DRIVER UPPER SPINE Y, B02048FI.R07

Ymin = -14.51 G's @ 0.1080 Seconds, Ymax = 40.92 G's @ 0.0612 Seconds





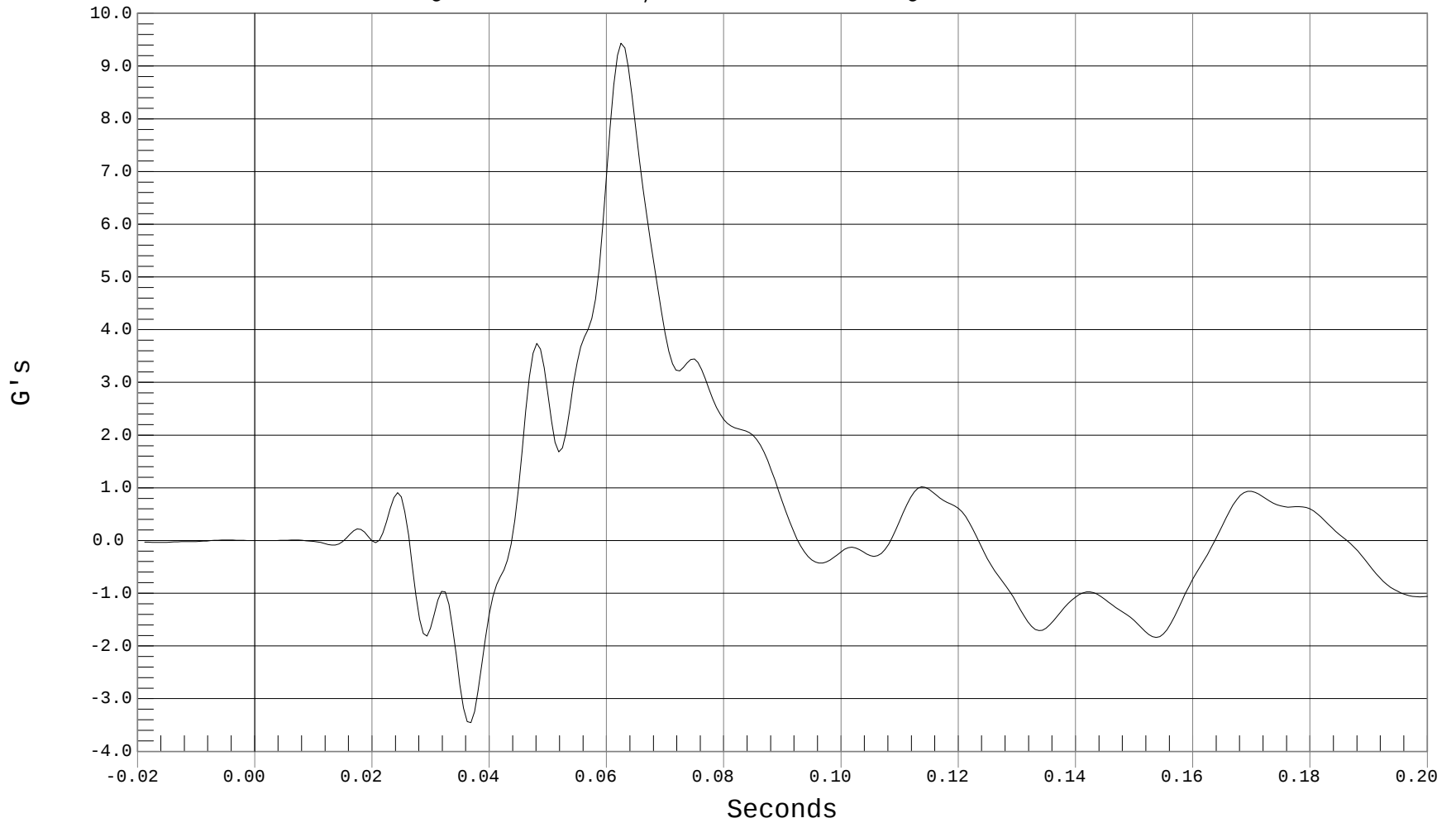
DRIVER UPPER SPINE Z ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Fir Filtered

— 1 DRIVER UPPER SPINE Z, B02048FI.R08

Ymin = -3.46 G's @ 0.0368 Seconds, Ymax = 9.44 G's @ 0.0624 Seconds





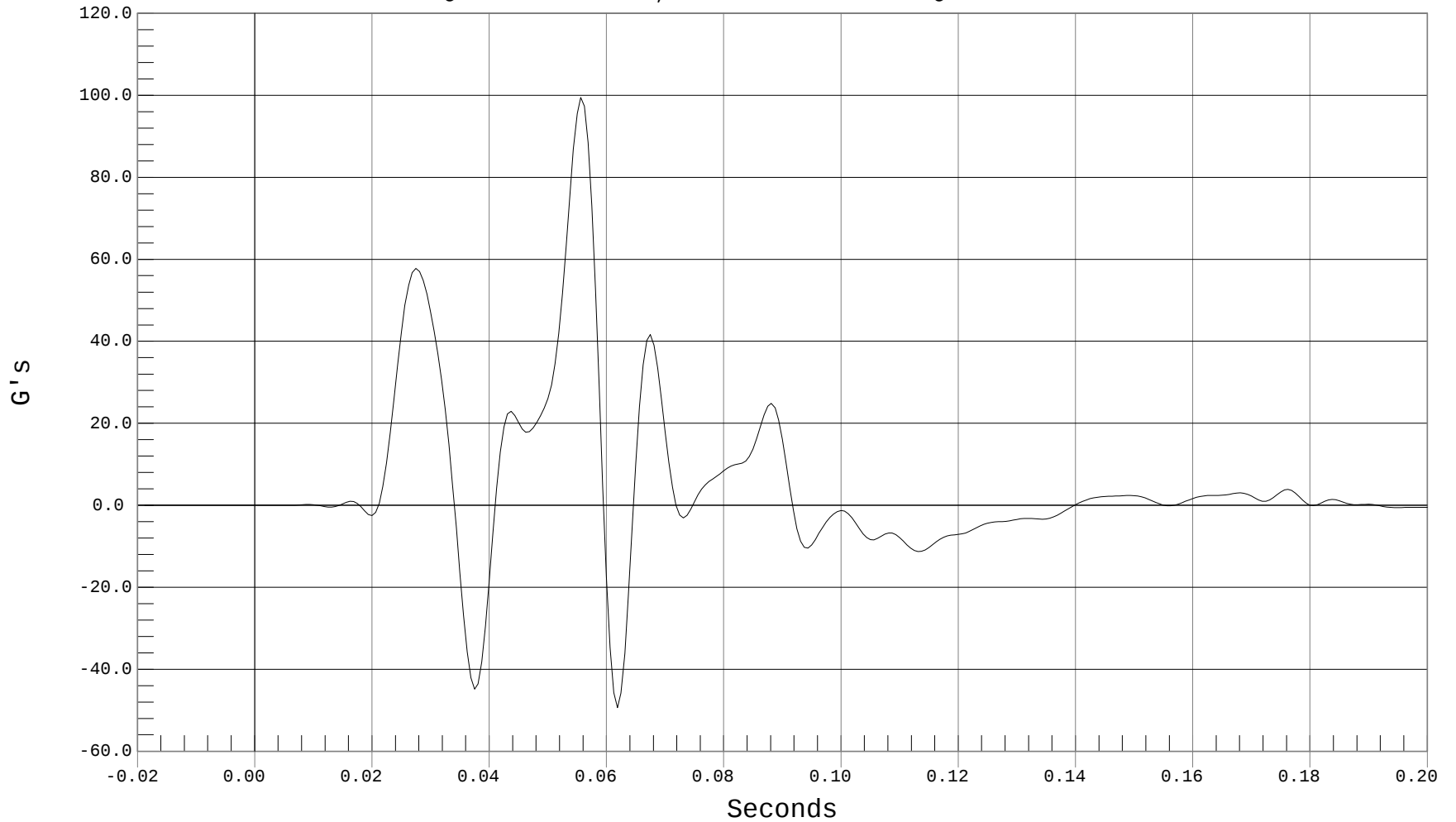
DRIVER UPPER RIB Y ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Fir Filtered

— 1 DRIVER UPPER RIB Y, B02048FI.R04

Ymin = -49.33 G's @ 0.0618 Seconds, Ymax = 99.47 G's @ 0.0555 Seconds





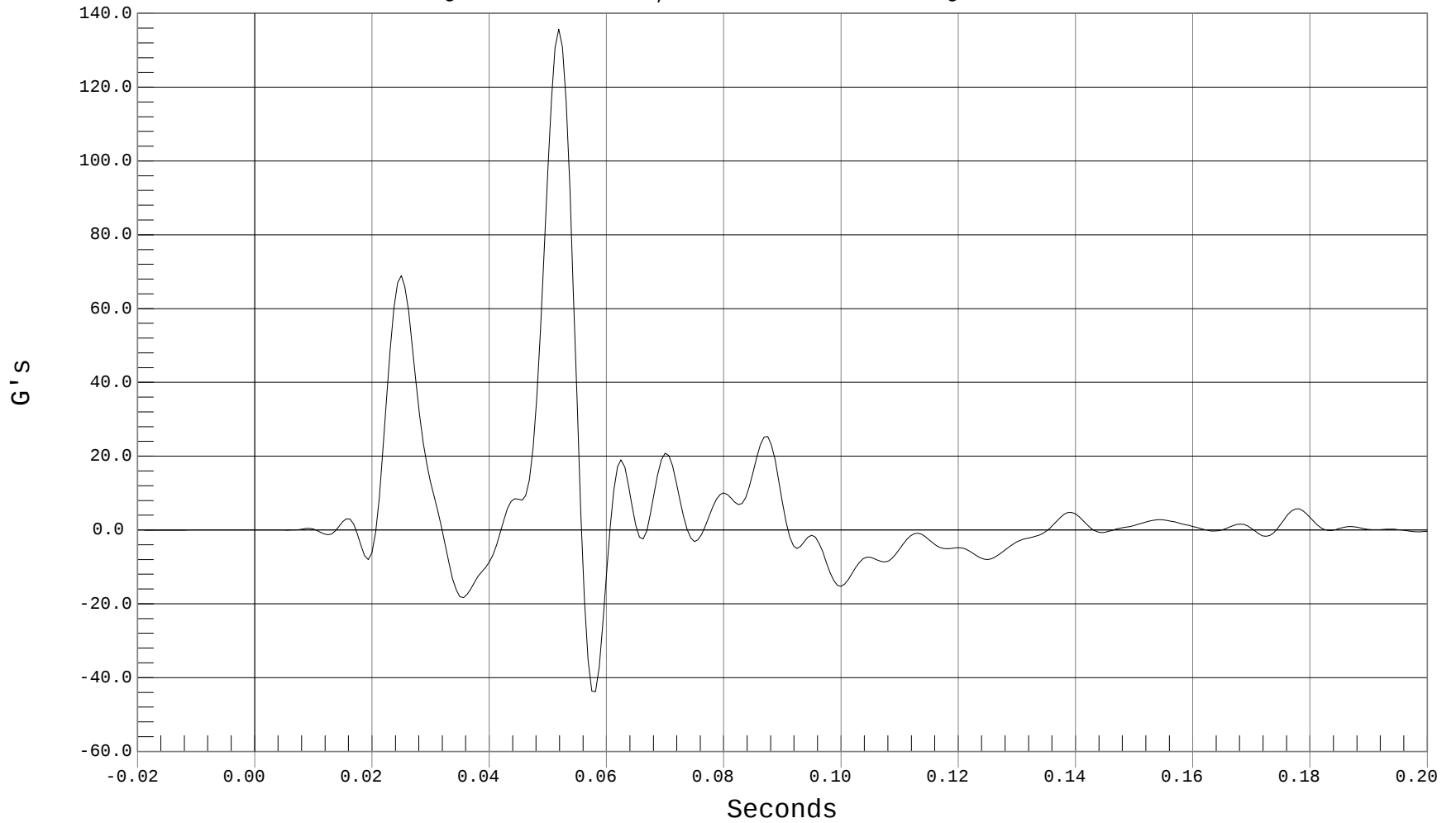
DRIVER MID RIB Y ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Fir Filtered

— 1 DRIVER MID RIB Y, B02048FI.R58

Ymin = -43.82 G's @ 0.0580 Seconds, Ymax = 135.69 G's @ 0.0518 Seconds





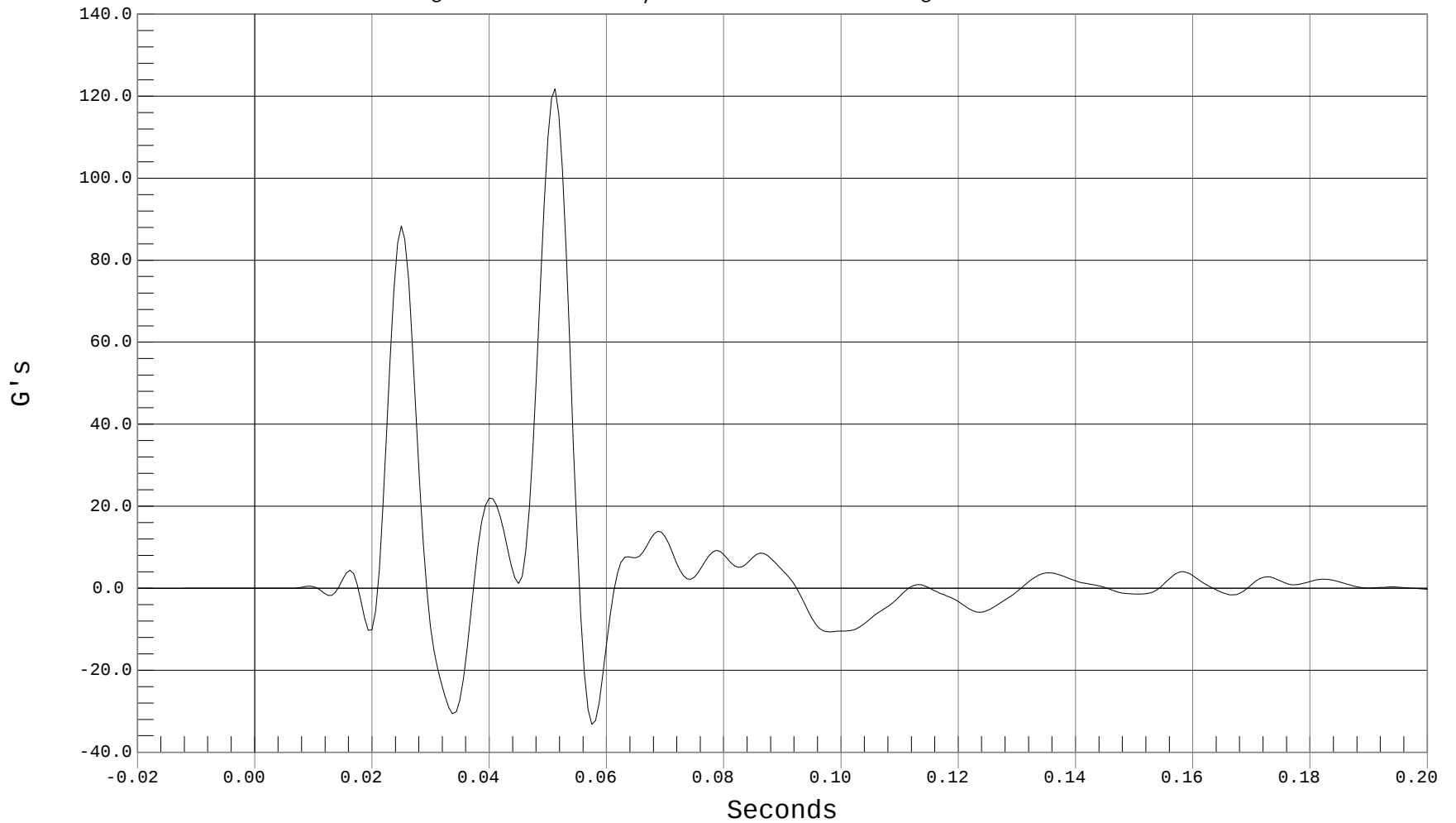
DRIVER LOWER RIB Y ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Fir Filtered

— 1 DRIVER LOWER RIB Y, B02048FI.R05

Ymin = -33.2 G's @ 0.0574 Seconds, Ymax = 121.8 G's @ 0.0512 Seconds





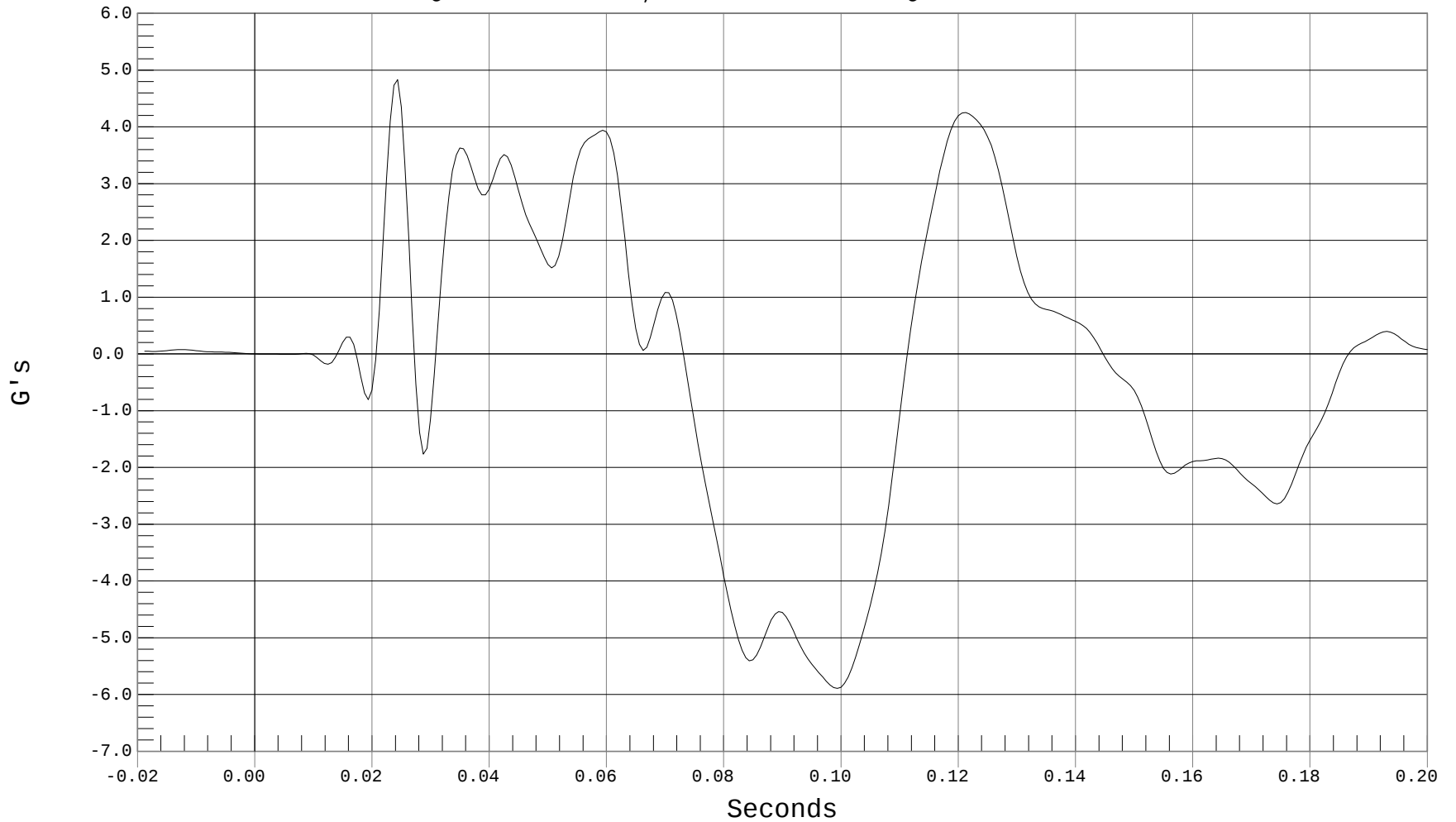
DRIVER LOWER SPINE X ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Fir Filtered

— 1 DRIVER LOWER SPINE X, B02048FI.R09

Ymin = -5.89 G's @ 0.0993 Seconds, Ymax = 4.83 G's @ 0.0243 Seconds





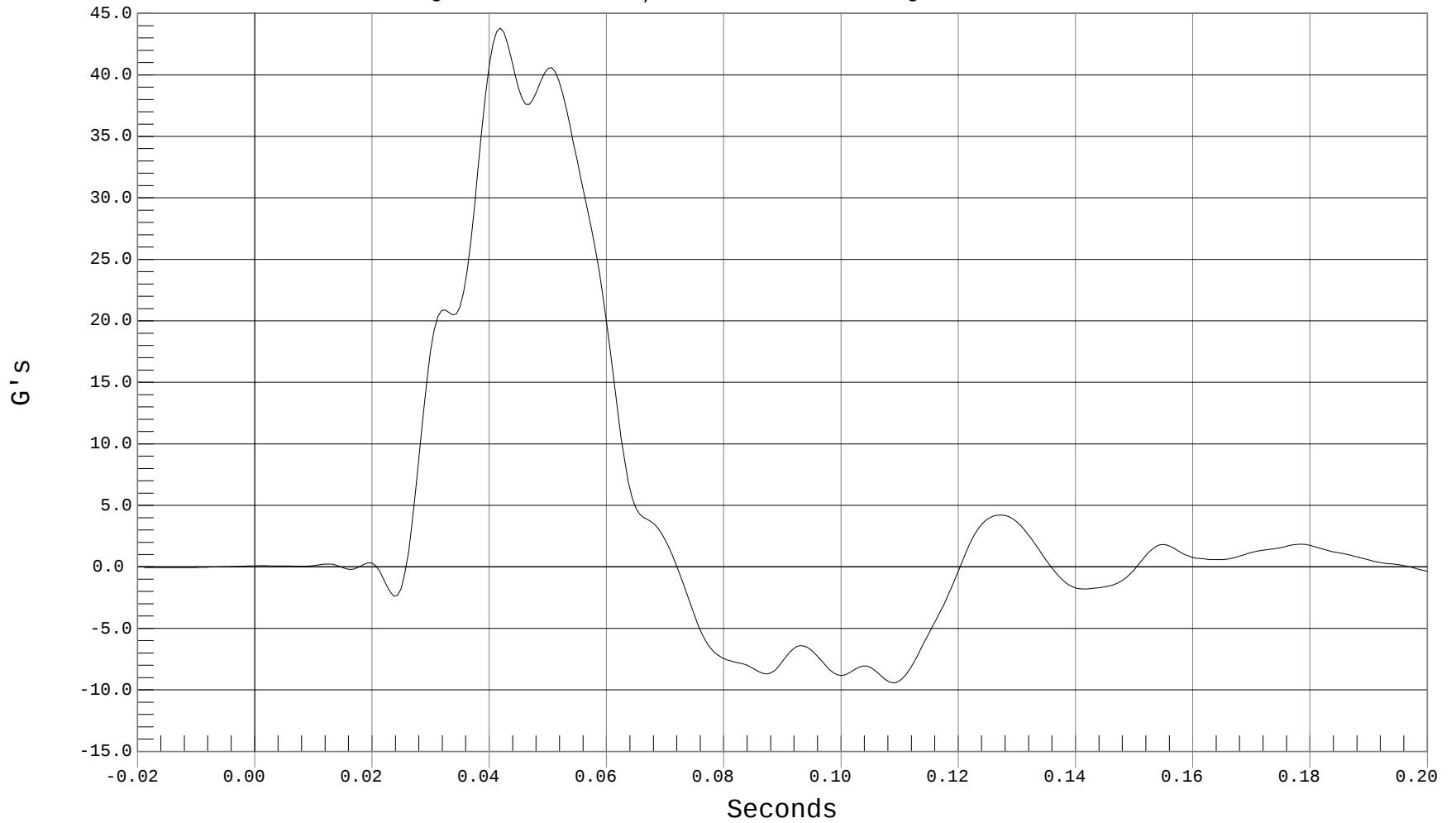
DRIVER LOWER SPINE Y ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Fir Filtered

— 1 DRIVER LOWER SPINE Y, B02048FI.R10

Ymin = -9.42 G's @ 0.1087 Seconds, Ymax = 43.8 G's @ 0.0418 Seconds





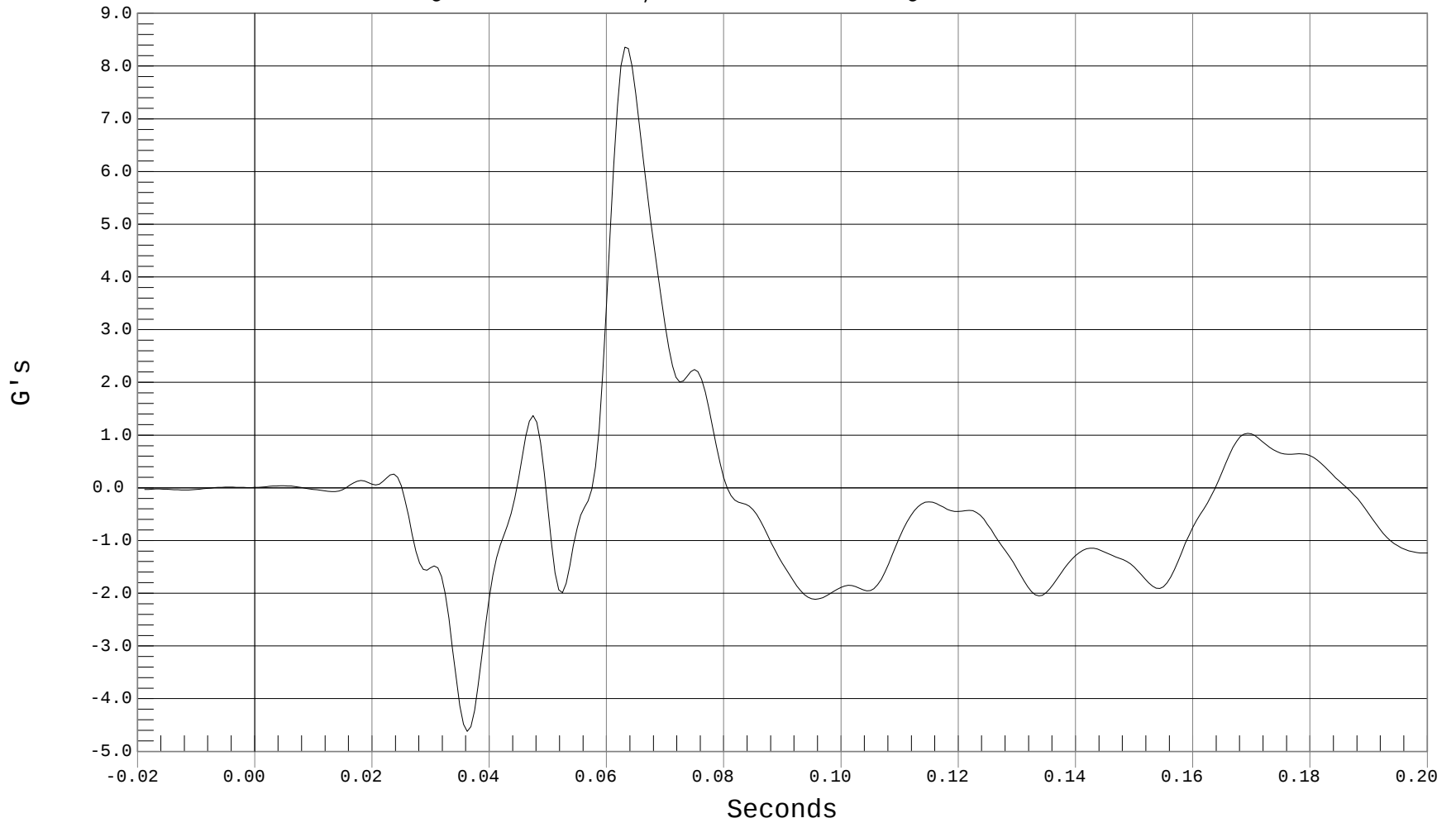
DRIVER LOWER SPINE Z ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Fir Filtered

— 1 DRIVER LOWER SPINE Z, B02048FI.R11

Ymin = -4.62 G's @ 0.0361 Seconds, Ymax = 8.36 G's @ 0.0630 Seconds





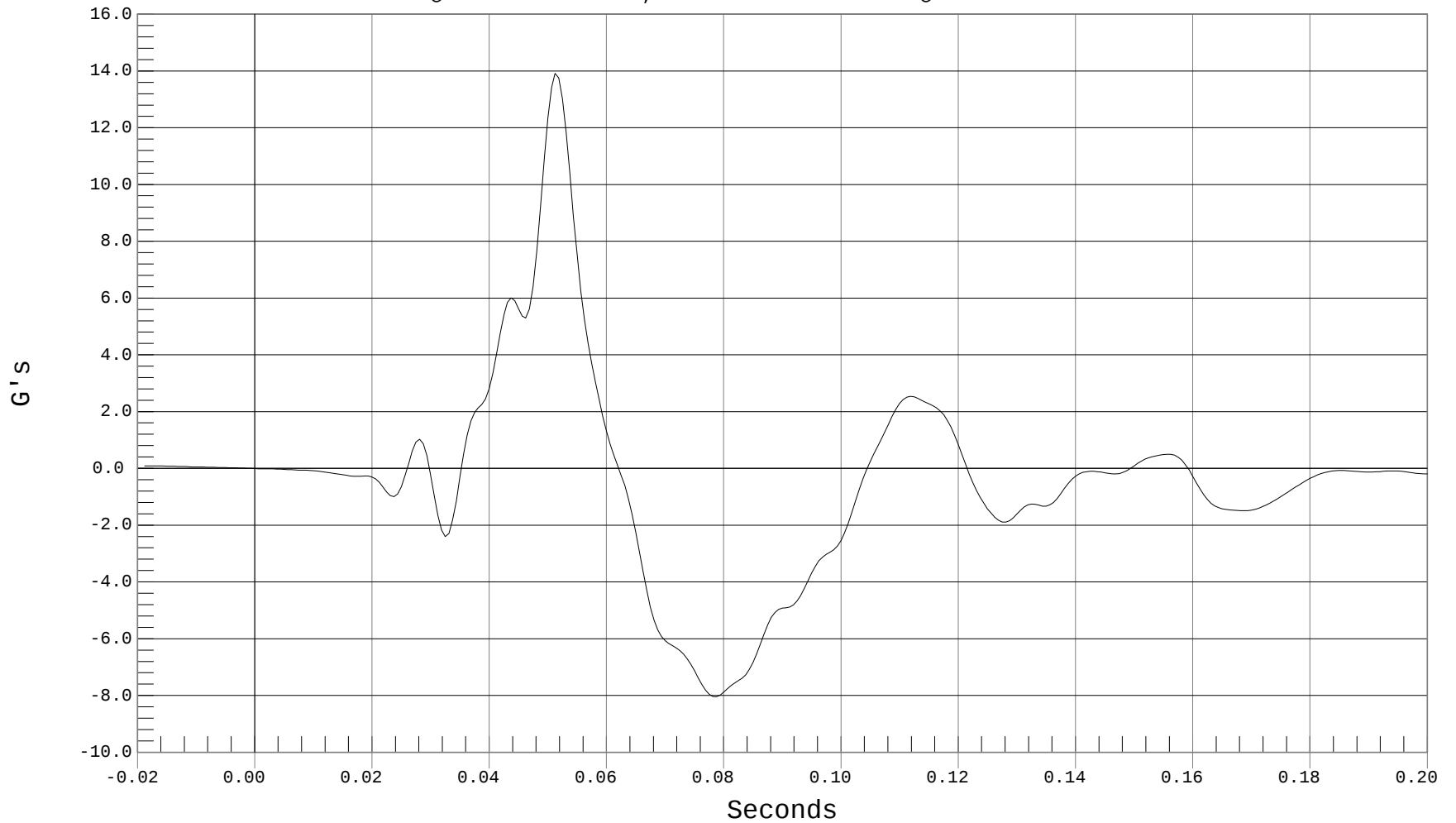
DRIVER PELVIS X ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Fir Filtered

— 1 DRIVER PELVIS X, B02048FI.R12

Ymin = -8.05 G's @ 0.0787 Seconds, Ymax = 13.91 G's @ 0.0512 Seconds





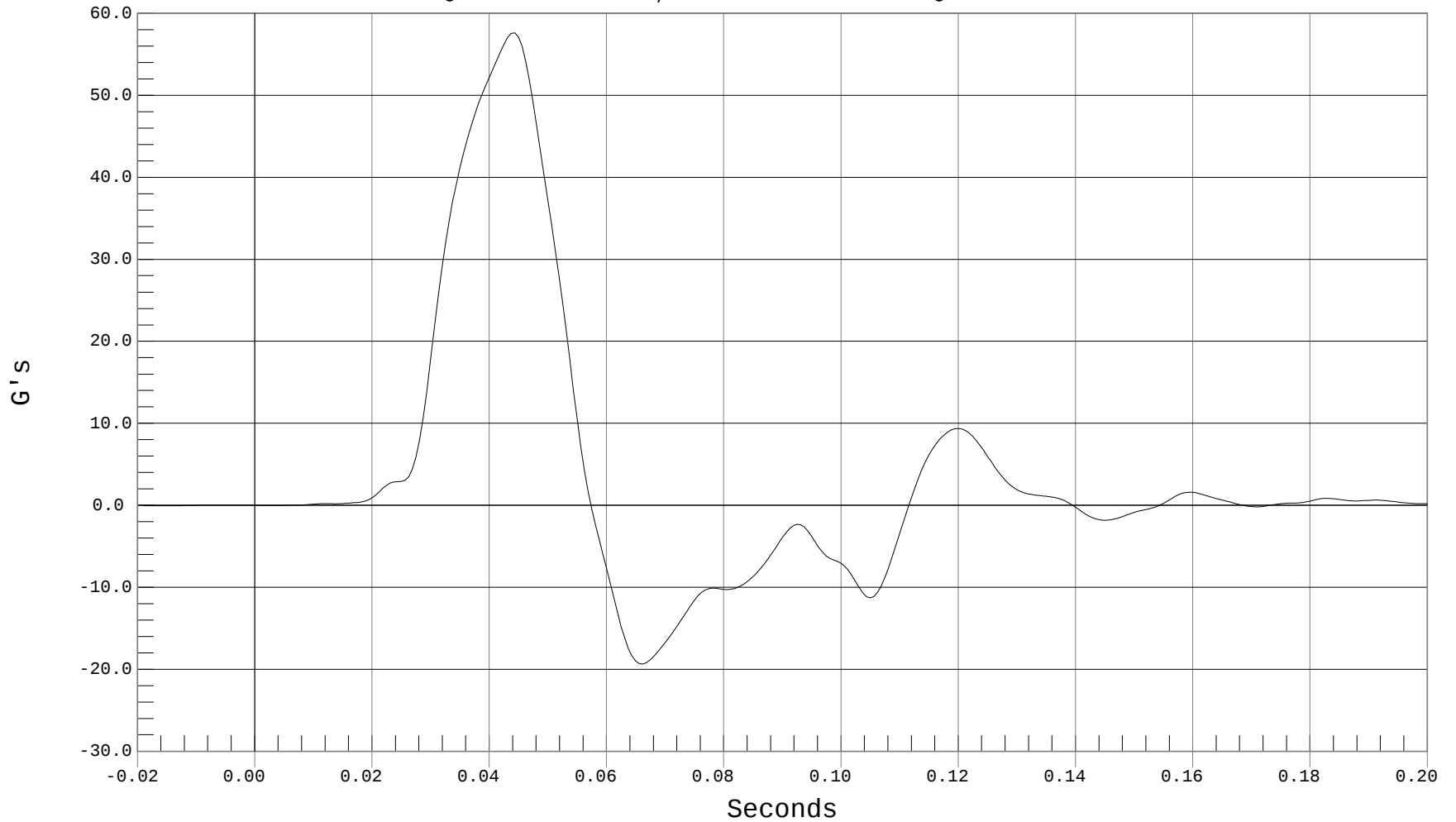
DRIVER PELVIS Y ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Fir Filtered

— 1 DRIVER PELVIS Y, B02048FI.R13

Ymin = -19.35 G's @ 0.0662 Seconds, Ymax = 57.61 G's @ 0.0443 Seconds





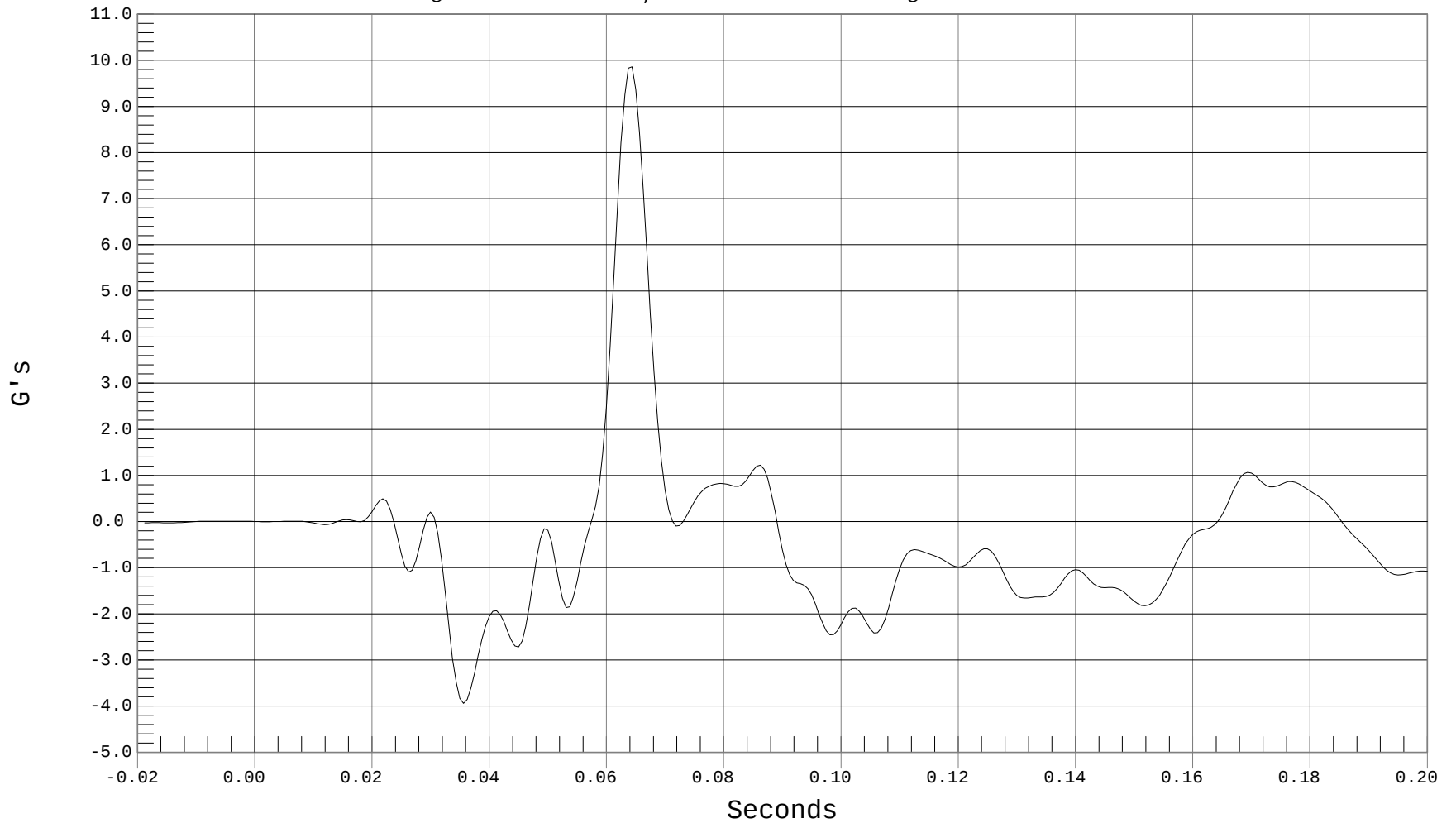
DRIVER PELVIS Z ACCELERATION

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

Test Date: 06-12-02
Speed: 20.0 MPH, 32.2 KPH
Fir Filtered

— 1 DRIVER PELVIS Z, B02048FI.R14

Ymin = -3.94 G's @ 0.0355 Seconds, Ymax = 9.86 G's @ 0.0643 Seconds



APPENDIX C
ES-2 CONFIGURATION AND PERFORMANCE VERIFICATION DATA

CERTIFICATION DATA

Dummy Serial Number: 010

Calibration Test Results Summary

Dummy Serial Number: 010

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: 6/11/02

Dummy Serial Number: 010

Test Number: D02771

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.0 – 22.0	21.6
Relative Humidity (%)	10 – 70	53
Peak Resultant Acceleration	100 – 150 g's	144
Time of Max. Res. Acceleration	msec	24.6

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____

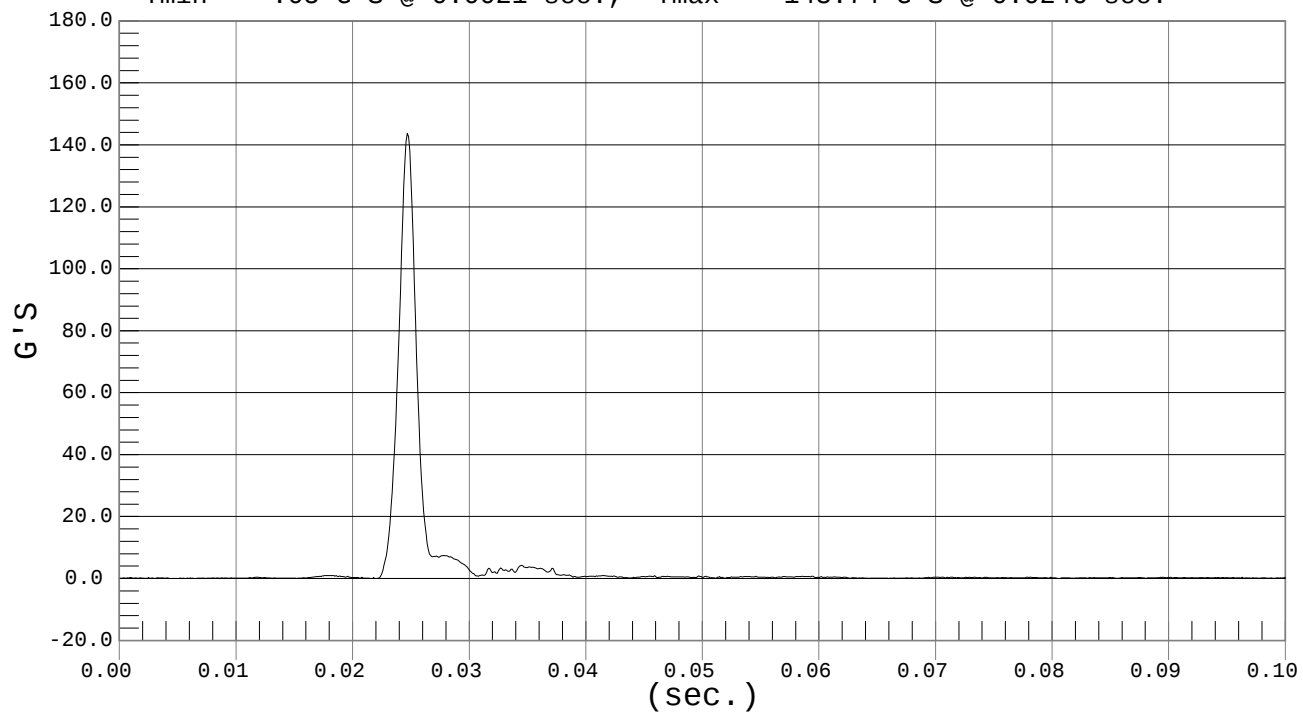


PEAK RESULTANT ACCELERATION

Test Desc.: Head Drop
Component: Dummy #010

Test Date: 06-11-02
Speed: 0.0 fps, 0.00 M/s

Ymin = .05 G'S @ 0.0021 sec., Ymax = 143.74 G'S @ 0.0246 sec.



MGA RESEARCH CORPORATION
NECK PENDULUM TEST
EUROSID 2 DUMMY

Date: 6/10/02

Dummy Serial Number: 010

Test Number: D02772

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature (°C)		18.0 – 22.0	21.8
Relative Humidity (%)		10 – 70	47
Pendulum Speed		3.3 - 3.5	3.3
Pendulum Deceleration	3 msec	~.25 - ~.53 m/sec	-.32
	8 msec	~1.59 - ~2.04 m/sec	-1.73
	14 msec	~3.20 - ~3.85 m/sec	-3.39
Maximum Flexion Angle		49.0 – 59.0 deg	57.2
Time of Max. Flexion Angle		54.0 – 66.0 ms	58.2
Maximum Angle Theta (A)		32.0 – 37.0 deg	34.6
Time of Max. Theta (A)		53.0 – 63.0 ms	58.1
Maximum Angle Theta (B)		29.78 – 32.28 deg	31.26
Time of Max. Theta (B)		54.0 – 64.0 ms	59.2

TEST MEETS SPECIFICATIONS

Technician: _____

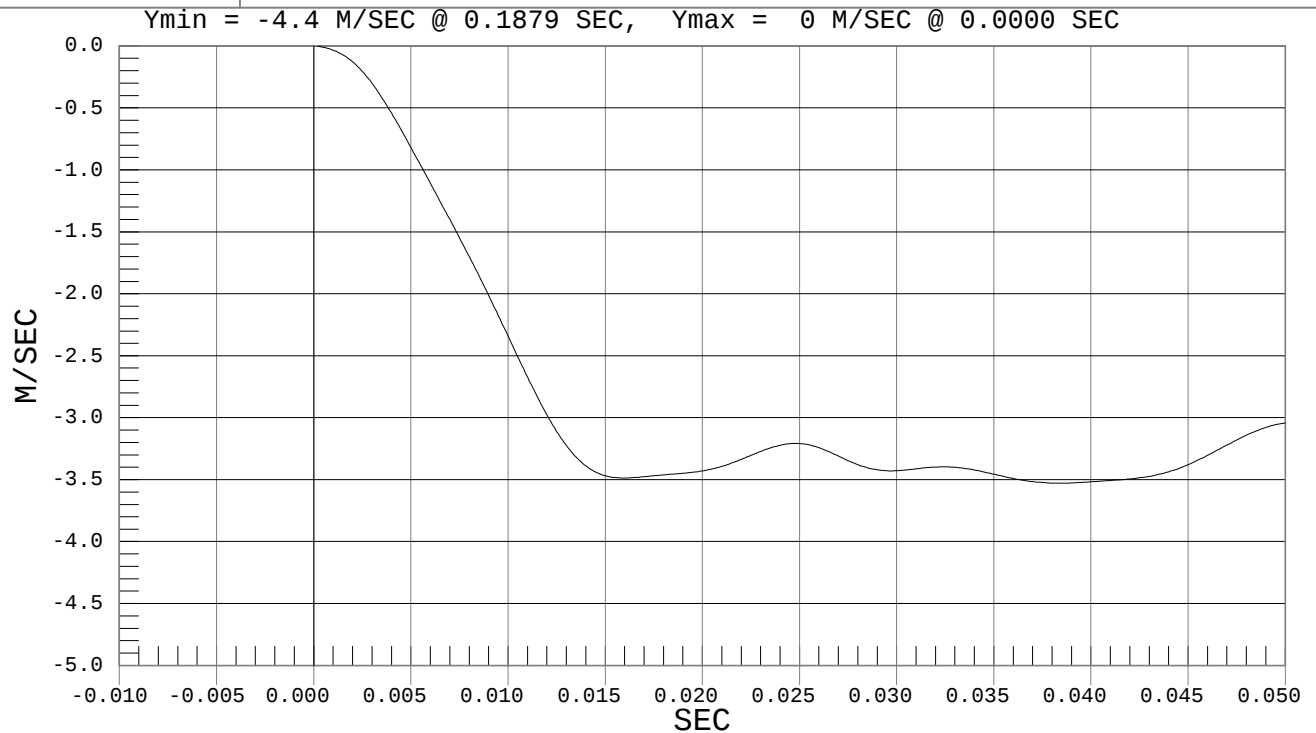
Approved By: _____



PENDULUM DECELERATION

Test Desc.: Neck Bending
Component: Dummy #010

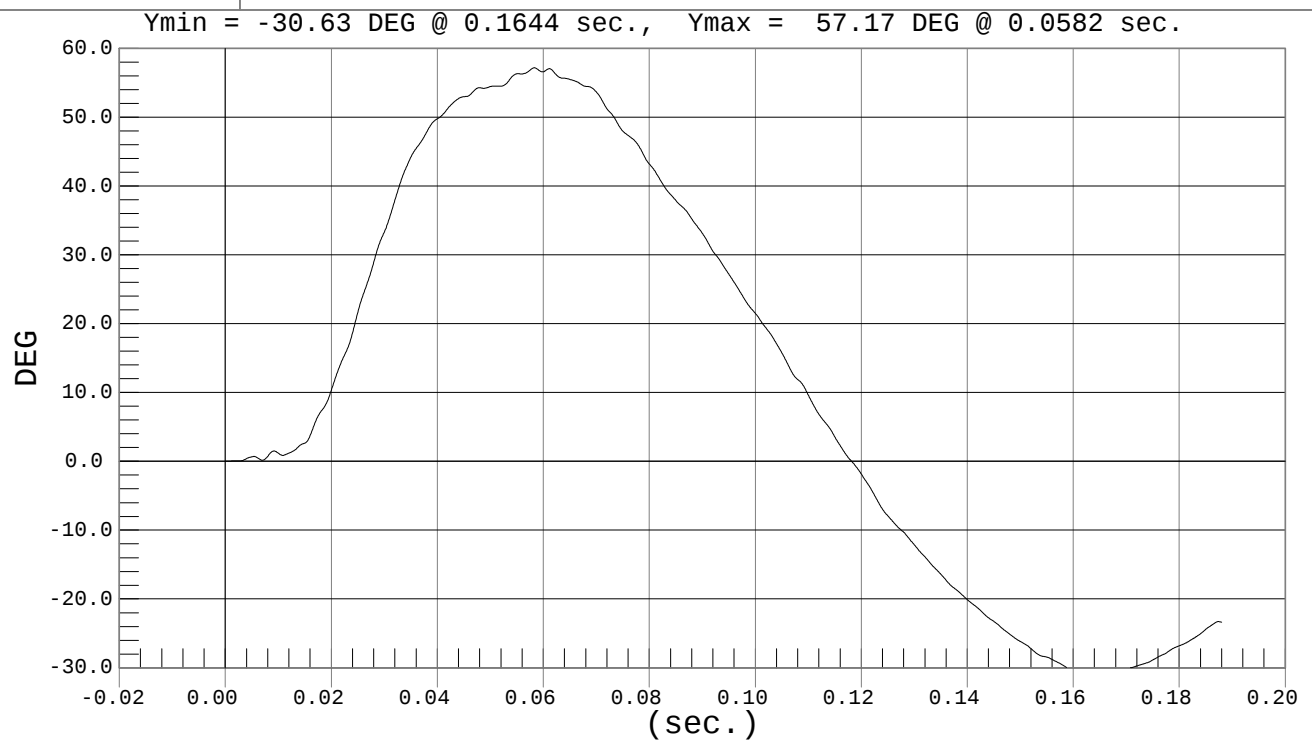
Test Date: 06-10-02
Speed: 10.9 fps, 3.33 M/s



FLEXION ANGLE

Test Desc.: Neck Bending
Component: Dummy #010

Test Date: 06-10-02
Speed: 10.9 fps, 3.33 M/s



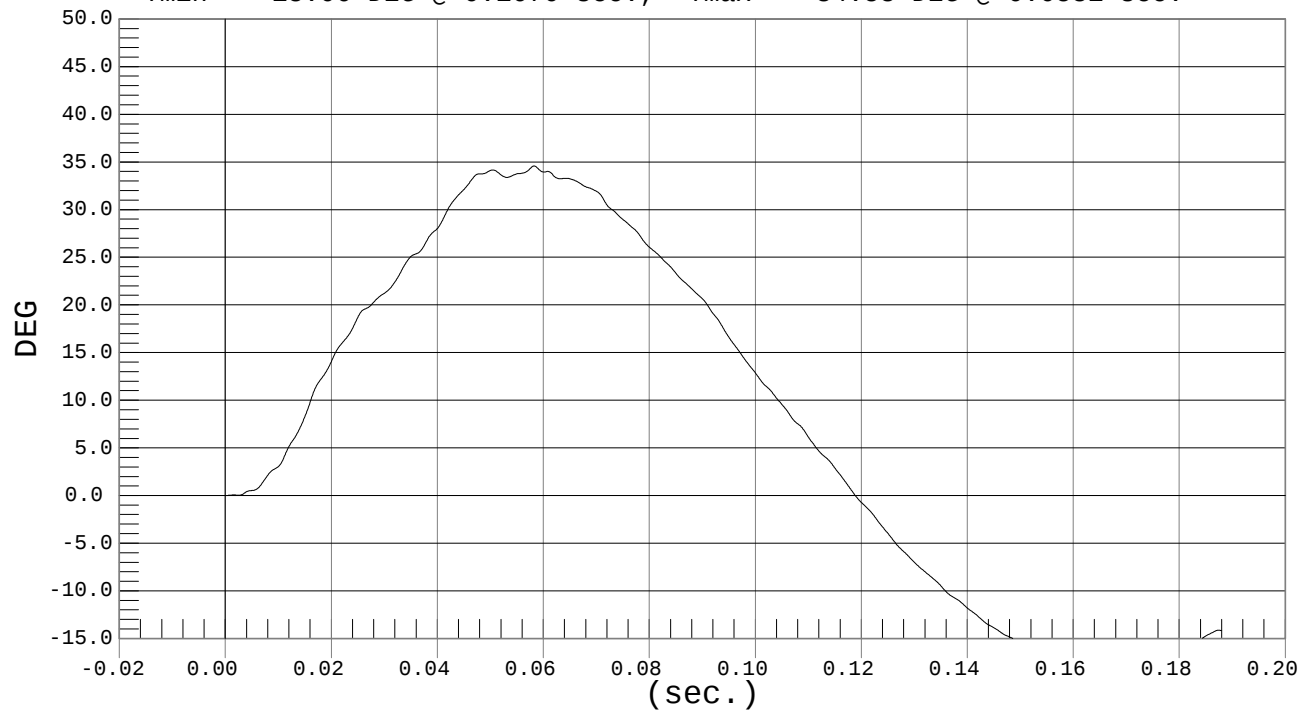


Test Desc.: Neck Bending
Component: Dummy #010

THETA A

Test Date: 06-10-02
Speed: 10.9 fps, 3.33 M/s

Ymin = -18.06 DEG @ 0.1670 sec., Ymax = 34.58 DEG @ 0.0581 sec.

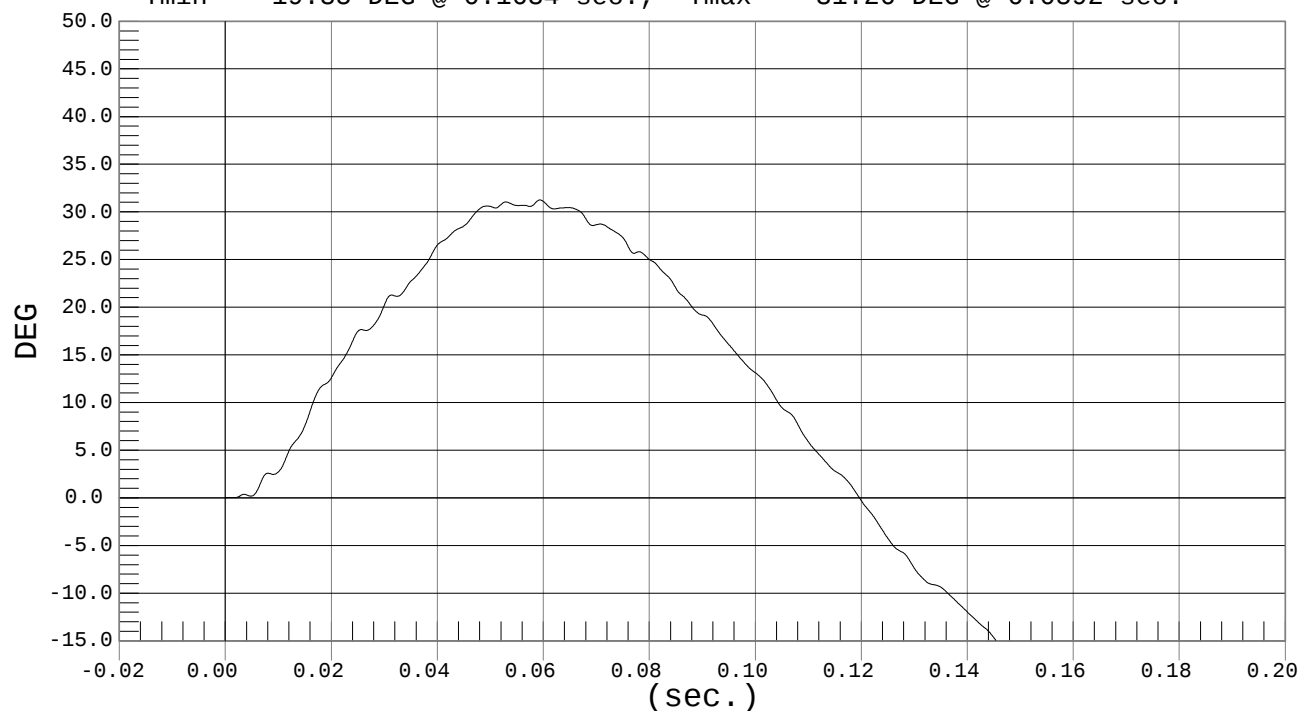


Test Desc.: Neck Bending
Component: Dummy #010

THETA B

Test Date: 06-10-02
Speed: 10.9 fps, 3.33 M/s

Ymin = -19.85 DEG @ 0.1684 sec., Ymax = 31.26 DEG @ 0.0592 sec.



MGA RESEARCH CORPORATION
SHOULDER IMPACT TEST
EUROSID 2 DUMMY

Date: 6/11/02

Dummy Serial Number: 010

Test Number: D02773

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.0 – 22.0	21.5
Relative Humidity (%)	10 – 70	51
Pendulum Speed	4.2 – 4.4 m/s	4.3
Max. Resultant Acceleration	7.5 – 10.5 g's	9.3
Time of Max. Pendulum Acceleration	msec	25.2

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____

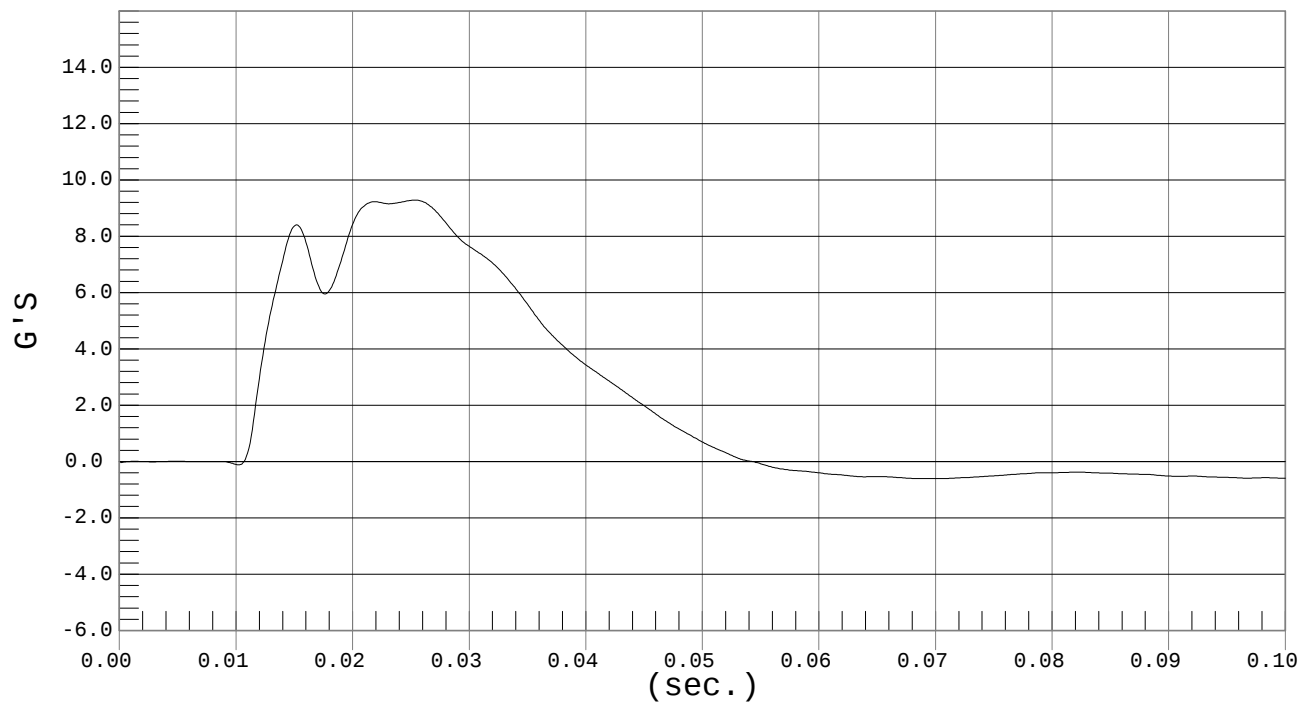


SHOULDER ACCELERATION

Test Desc.: Shoulder Impact
Component: Dummy #010

Test Date: 06-11-02
Speed: 14.2 fps, 4.32 M/s

Ymin = -.61 G'S @ 0.0690 sec., Ymax = 9.28 G'S @ 0.0252 sec.



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

Date: 6/10/02
Dummy Serial Number: 010
Test Number: D02774/5/6

UPPER RIB - TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.9 – 25.5	21.7
Relative Humidity (%)	10 – 70	52
Displacement at 2 m/s	23.5 – 27.5 mm	25.8
Displacement at 3 m/s	36.0 – 40.0 mm	37.4
Displacement at 4 m/s	46.0 – 51.0 mm	50.7

MIDDLE RIB - TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.9 – 25.5	21.7
Relative Humidity (%)	10 – 70	52
Displacement at 2 m/s	23.5 – 27.5 mm	24.5
Displacement at 3 m/s	36.0 – 40.0 mm	37.6
Displacement at 4 m/s	46.0 – 51.0 mm	49.3

LOWER RIB - TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.9 – 25.5	21.7
Relative Humidity (%)	10 – 70	52
Displacement at 2 m/s	23.5 – 27.5 mm	24.4
Displacement at 3 m/s	36.0 – 40.0 mm	37.4
Displacement at 4 m/s	46.0 – 51.0 mm	49.1

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____

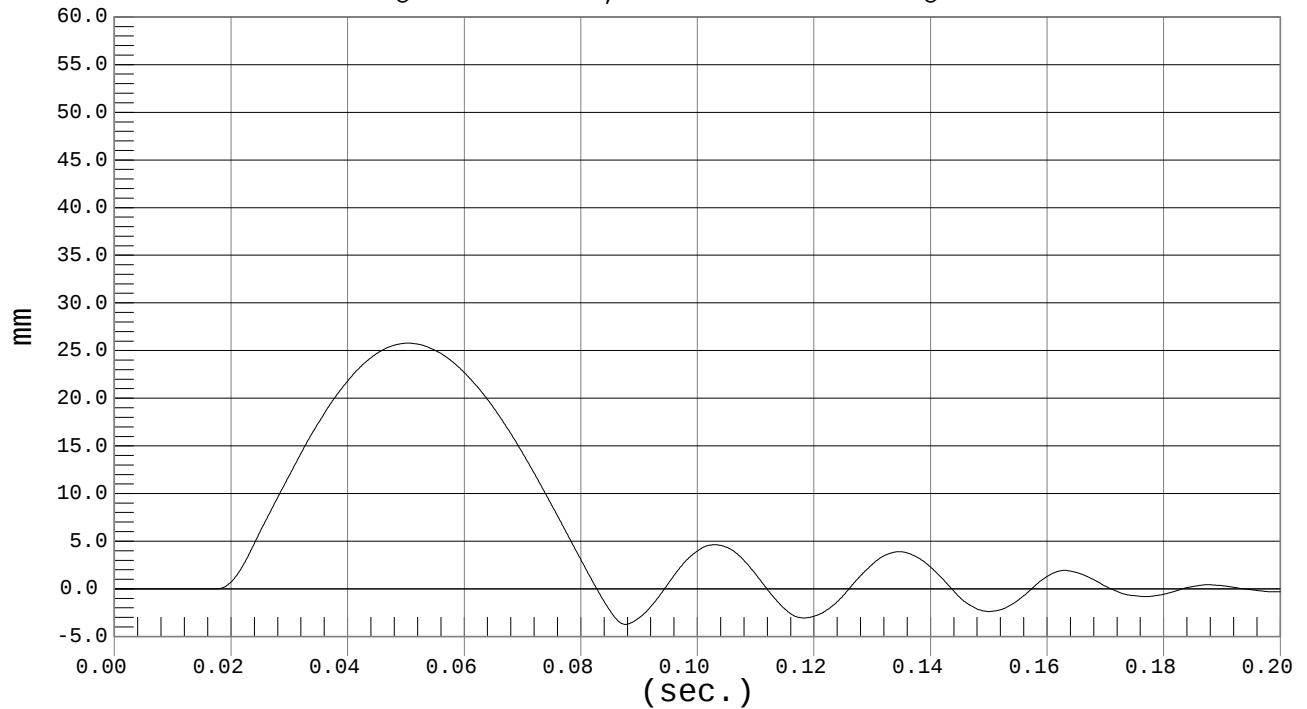


UPPER RIB DISPLACEMENT

Test Desc.: UPPER RIB
Component: Dummy #010

Test Date: 06-10-02
Speed: 6.6 fps, 2.00 M/s

Ymin = -3.72 mm @ 0.0876 sec., Ymax = 25.78 mm @ 0.0502 sec.

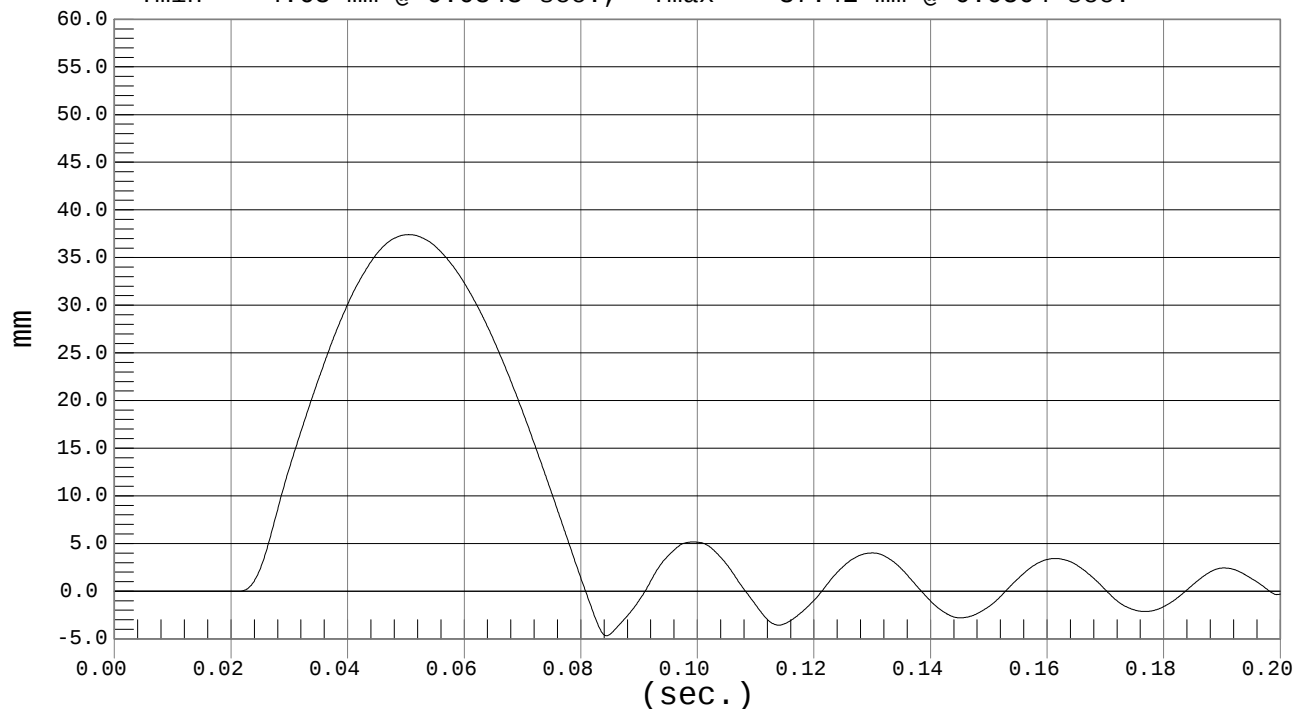


UPPER RIB DISPLACEMENT

Test Desc.: UPPER RIB
Component: Dummy #010

Test Date: 06-10-02
Speed: 9.8 fps, 3.00 M/s

Ymin = -4.68 mm @ 0.0843 sec., Ymax = 37.42 mm @ 0.0504 sec.



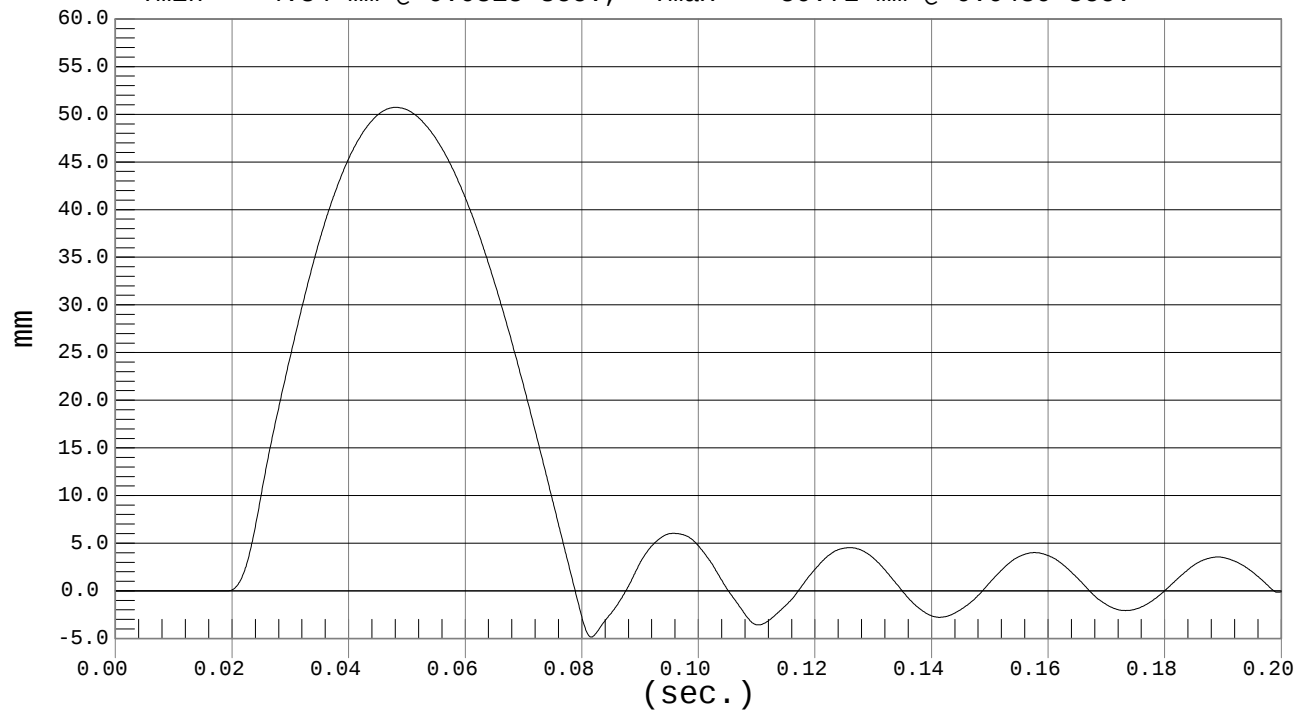


UPPER RIB DISPLACEMENT

Test Desc.: UPPER RIB
Component: Dummy #010

Test Date: 06-10-02
Speed: 13.1 fps, 4.00 M/s

Ymin = -4.84 mm @ 0.0815 sec., Ymax = 50.72 mm @ 0.0480 sec.



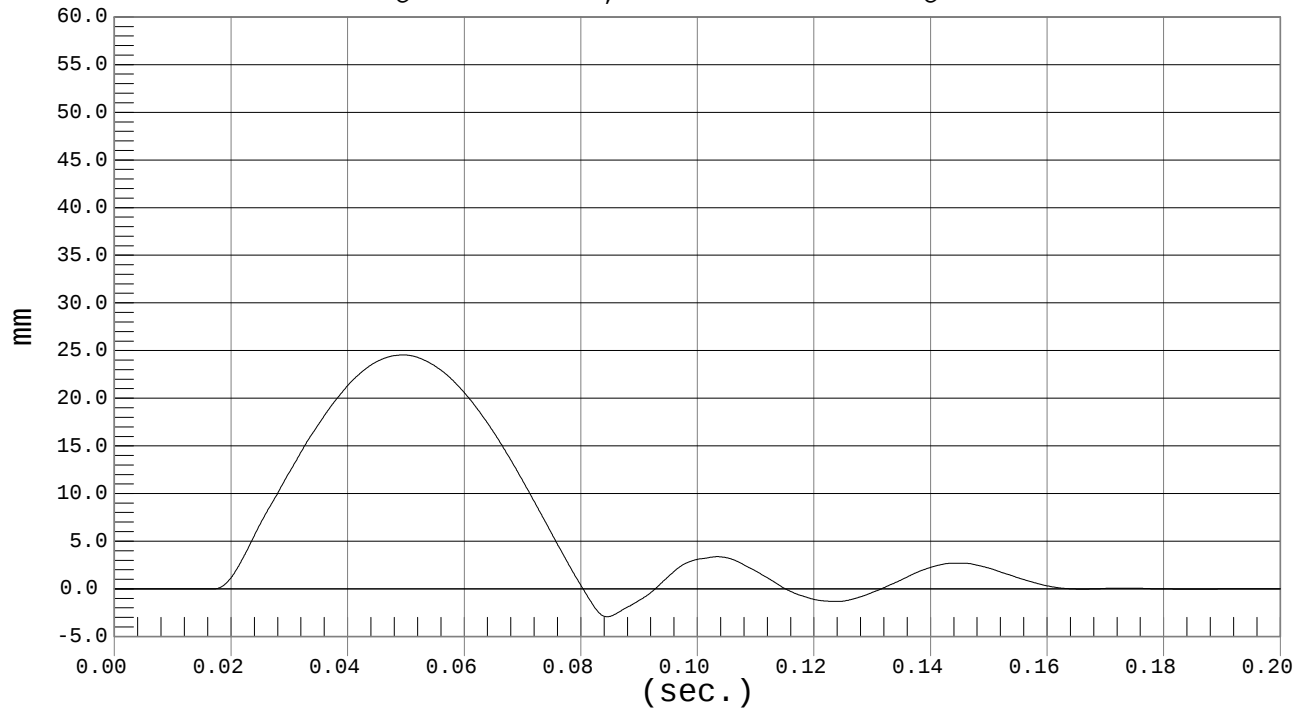


MIDDLE RIB DISPLACEMENT

Test Desc.: MIDDLE RIB
Component: Dummy #010

Test Date: 06-10-02
Speed: 6.6 fps, 2.00 M/s

Ymin = -2.93 mm @ 0.0844 sec., Ymax = 24.54 mm @ 0.0495 sec.

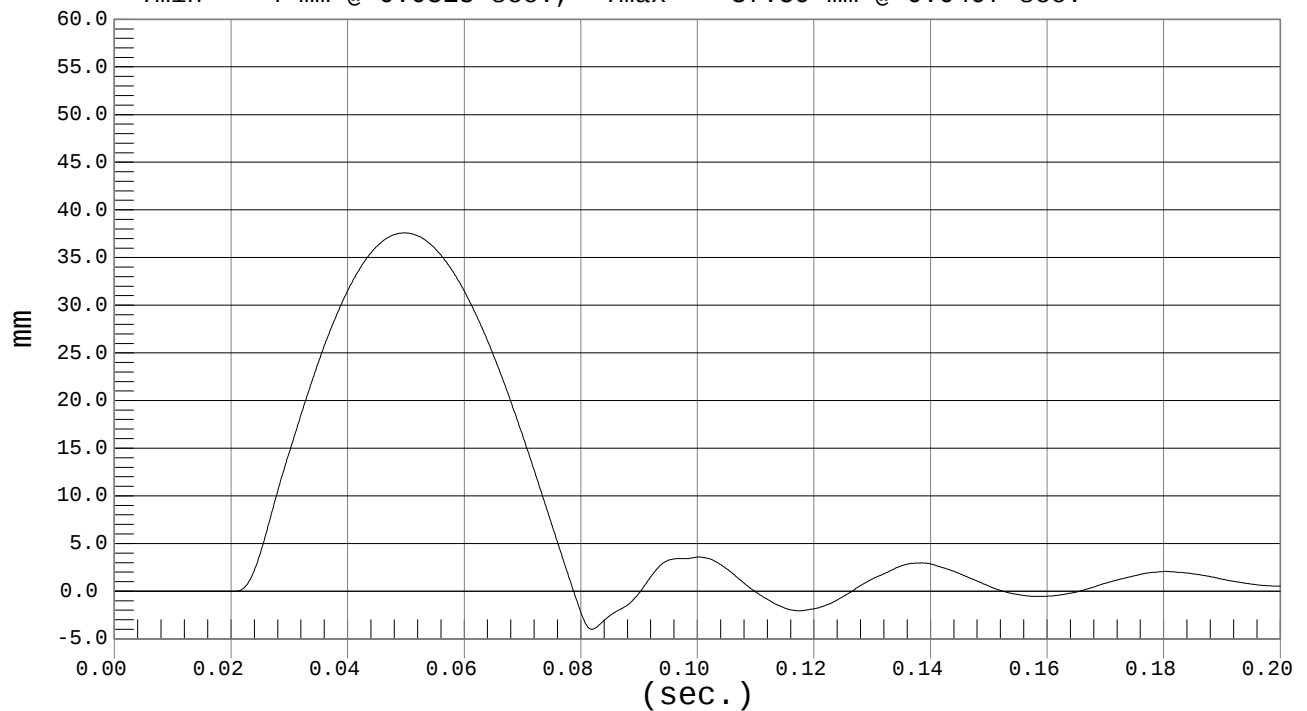


MIDDLE RIB DISPLACEMENT

Test Desc.: MIDDLE RIB
Component: Dummy #010

Test Date: 06-10-02
Speed: 9.8 fps, 3.00 M/s

Ymin = -4 mm @ 0.0818 sec., Ymax = 37.59 mm @ 0.0497 sec.



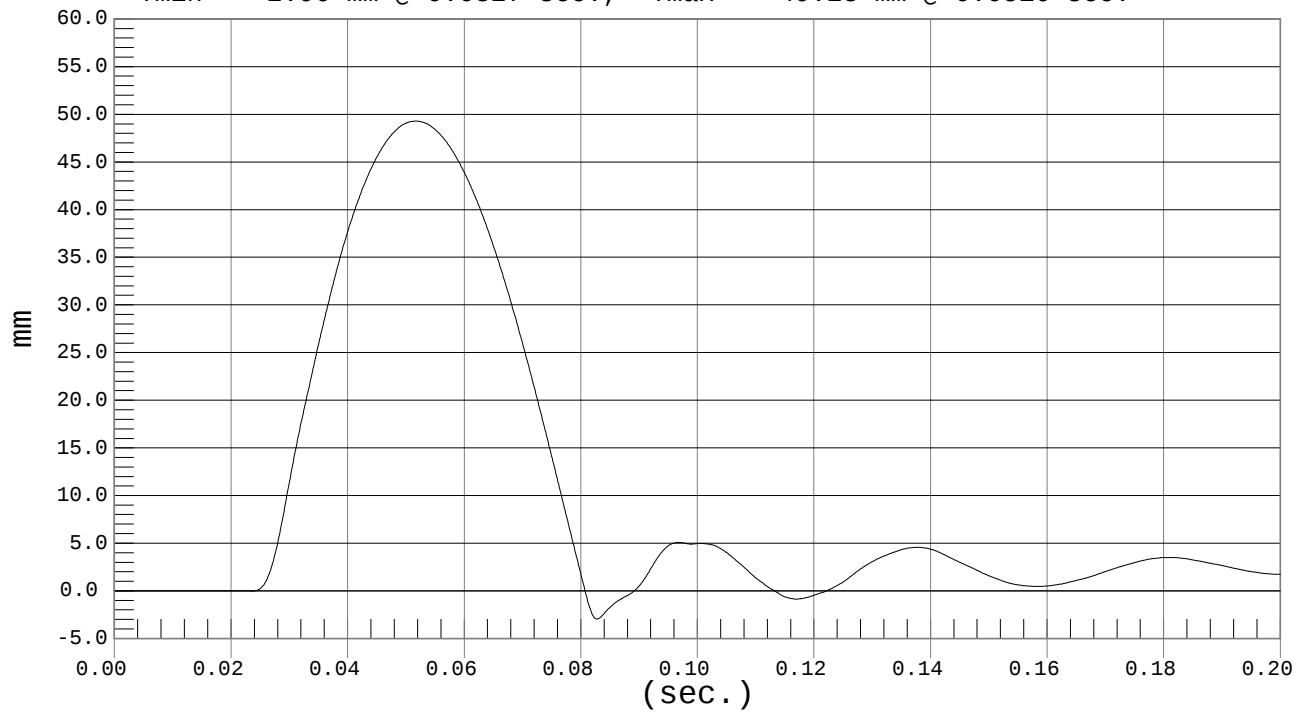


MIDDLE RIB DISPLACEMENT

Test Desc.: MIDDLE RIB
Component: Dummy #010

Test Date: 06-10-02
Speed: 13.1 fps, 4.00 M/s

Ymin = -2.96 mm @ 0.0827 sec., Ymax = 49.28 mm @ 0.0516 sec.



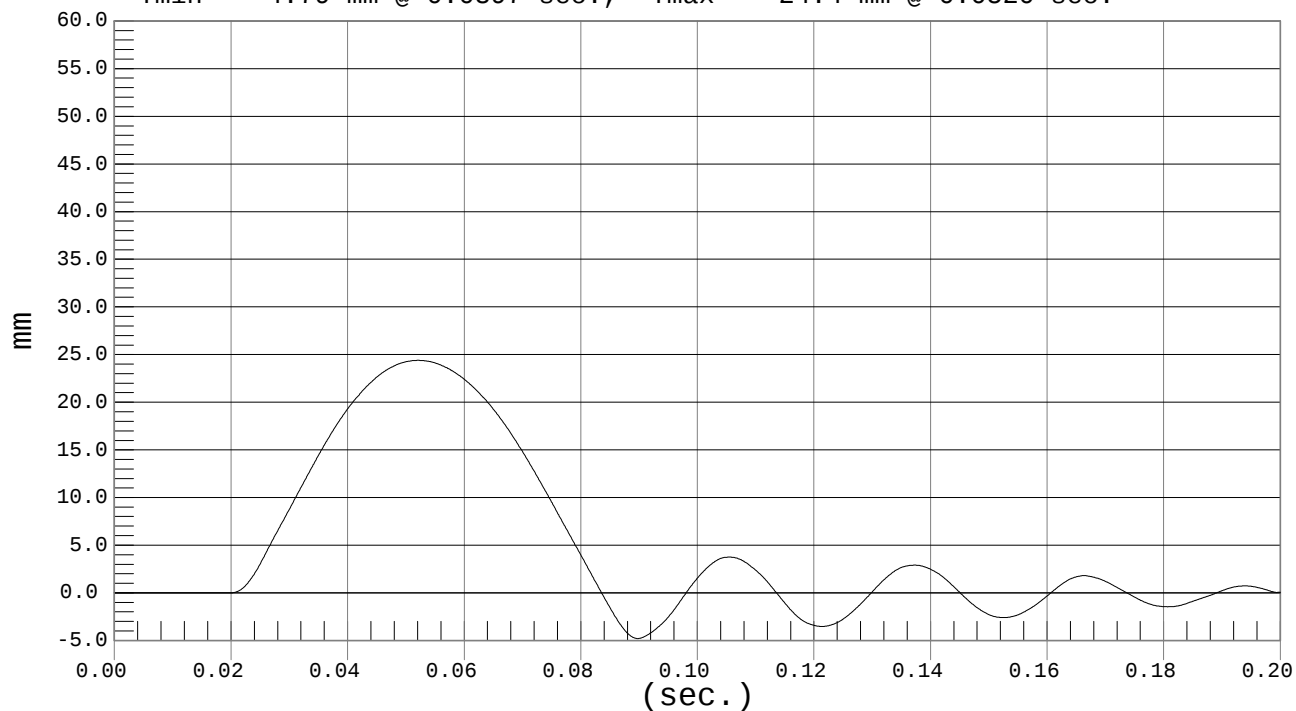


LOWER RIB DISPLACEMENT

Test Desc.: LOWER RIB
Component: Dummy #010

Test Date: 06-10-02
Speed: 6.6 fps, 2.00 M/s

Ymin = -4.79 mm @ 0.0897 sec., Ymax = 24.4 mm @ 0.0520 sec.

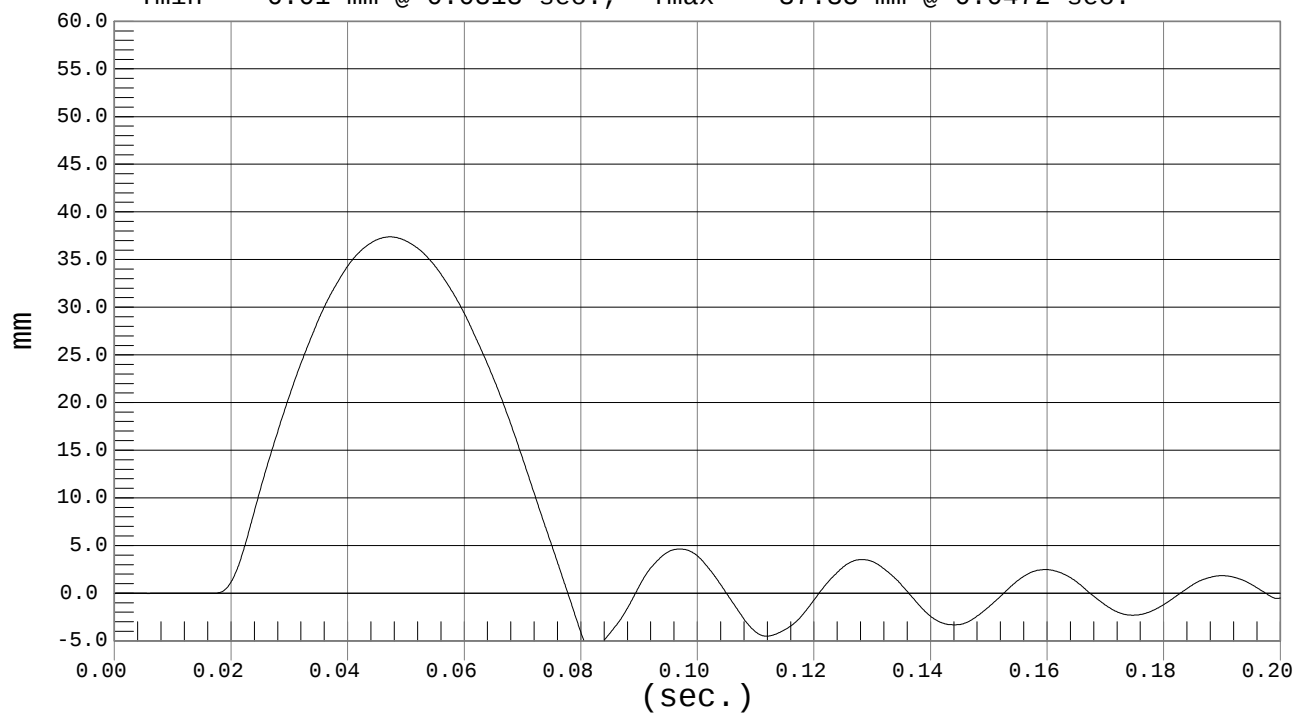


LOWER RIB DISPLACEMENT

Test Desc.: LOWER RIB
Component: Dummy #010

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

Ymin = -6.01 mm @ 0.0818 sec., Ymax = 37.38 mm @ 0.0472 sec.



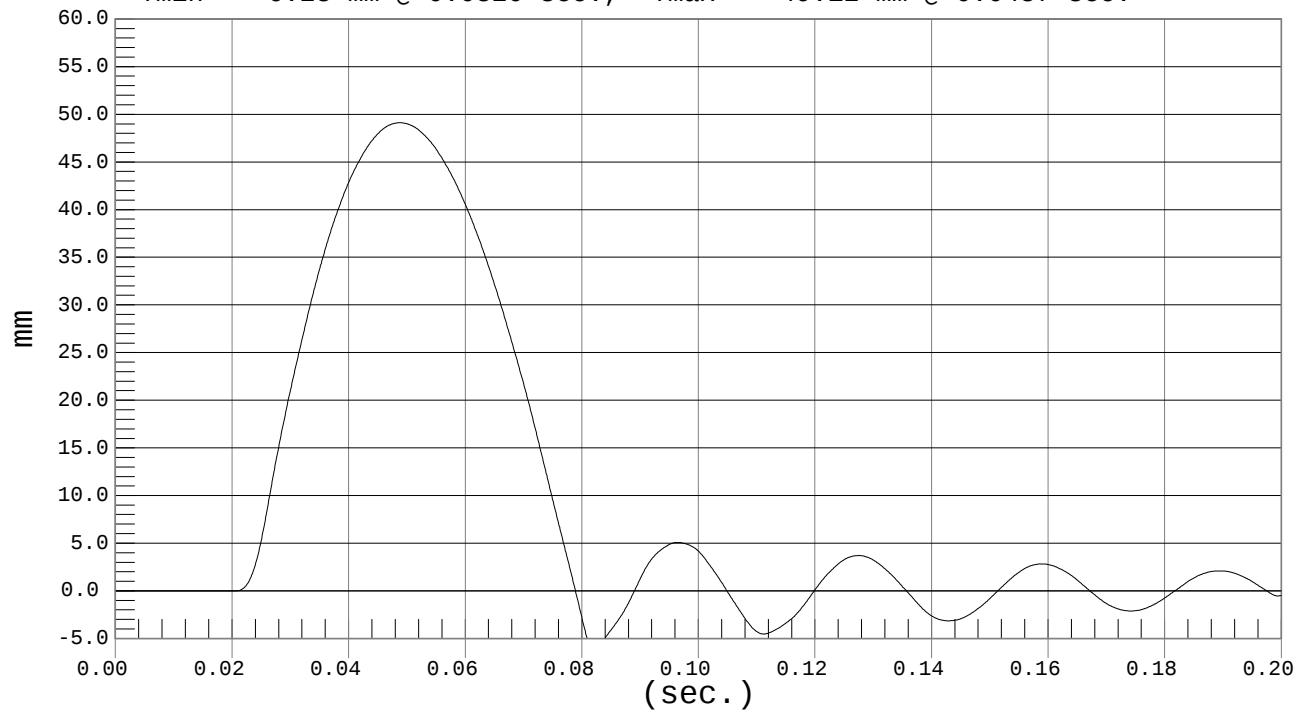


LOWER RIB DISPLACEMENT

Test Desc.: LOWER RIB
Component: Dummy #010

Test Date: 06-10-02
Speed: 13.1 fps, 4.00 M/s

Ymin = -6.28 mm @ 0.0820 sec., Ymax = 49.12 mm @ 0.0487 sec.



MGA RESEARCH CORPORATION
ABDOMEN TEST
EUROSID 2 DUMMY

Date: 6/11/02

Dummy Serial Number: 010

Test Number: D02777

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.0 – 22.0	21.5
Relative Humidity (%)	10 – 70	53
Probe Speed (m/s)	3.90 – 4.10	4.03
Maximum Impact Force	4.00 – 4.80 kN	4.78
Time of Maximum Force	10.60 – 13.00 ms	12.70
Maximum Total Abdomen Force	2.20 – 2.70 kN	2.28
Time of Max. Total Force	10.00 – 12.30 ms	12.20

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____

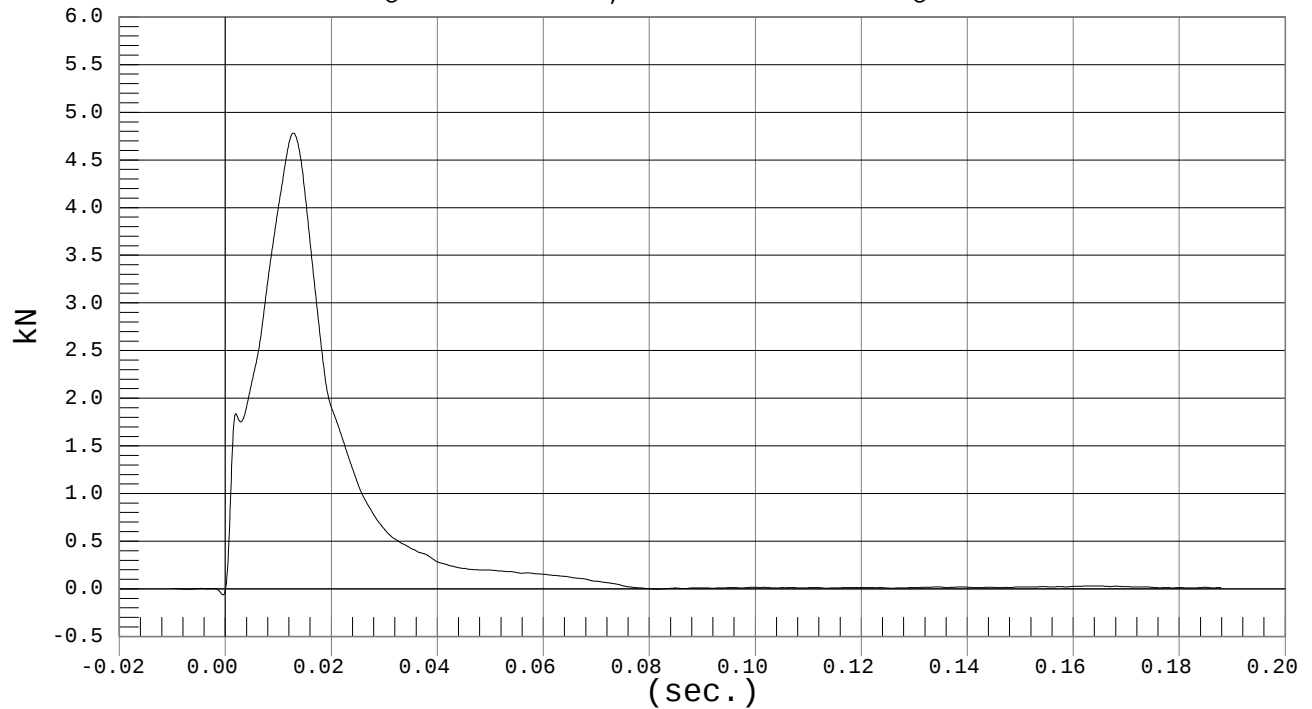


IMPACTOR FORCE

Test Desc.: Abdomen Impact
Component: Dummy #010

Test Date: 06-11-02
Speed: 13.2 fps, 4.03 M/s

Ymin = -.06 kN @ -0.0005 sec., Ymax = 4.78 kN @ 0.0127 sec.

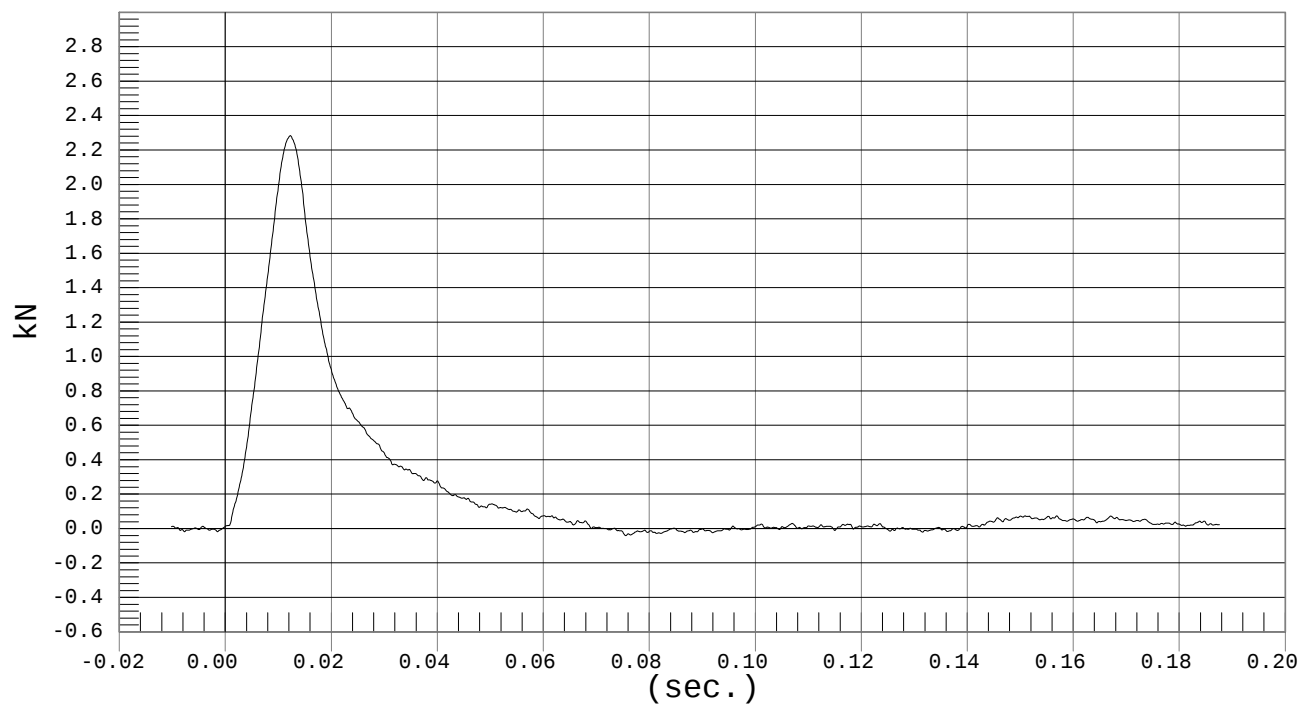


ABDOMEN FORCE

Test Desc.: Abdomen Impact
Component: Dummy #010

Test Date: 06-11-02
Speed: 13.2 fps, 4.03 M/s

Ymin = -.04 kN @ 0.0755 sec., Ymax = 2.28 kN @ 0.0122 sec.



MGA RESEARCH CORPORATION
LUMBAR SPINE TEST
EUROSID 2 DUMMY

Date: 6/10/02

Dummy Serial Number: 010

Test Number: D02778

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature (°C)		18.0 – 22.0	21.8
Relative Humidity (%)		10 – 70	47
Pendulum Speed		5.95 – 6.15	5.99
Pendulum Deceleration	10 msec	ˆ2.46 - ˆ1.59 m/sec	-2.07
	20 msec	ˆ5.25 - ˆ4.07 m/sec	-4.60
	25 msec	ˆ6.64 - ˆ5.30 m/sec	-5.74
	30 msec	≥ -6.5 m/sec	-6.17
Maximum Flexion Angle		45.0 – 55.0 deg	48.5
Time of Max. Flexion Angle		39.0 – 53.0 ms	47.4
Maximum Angle Theta (A)		31.0 – 35.0 deg	31.3
Time of Max. Theta (A)		44.0 – 52.0 ms	47.3
Maximum Angle Theta (B)		27.04– 29.54 deg	27.50
Time of Max. Theta (B)		44.0 – 52.0 ms	48.7

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____

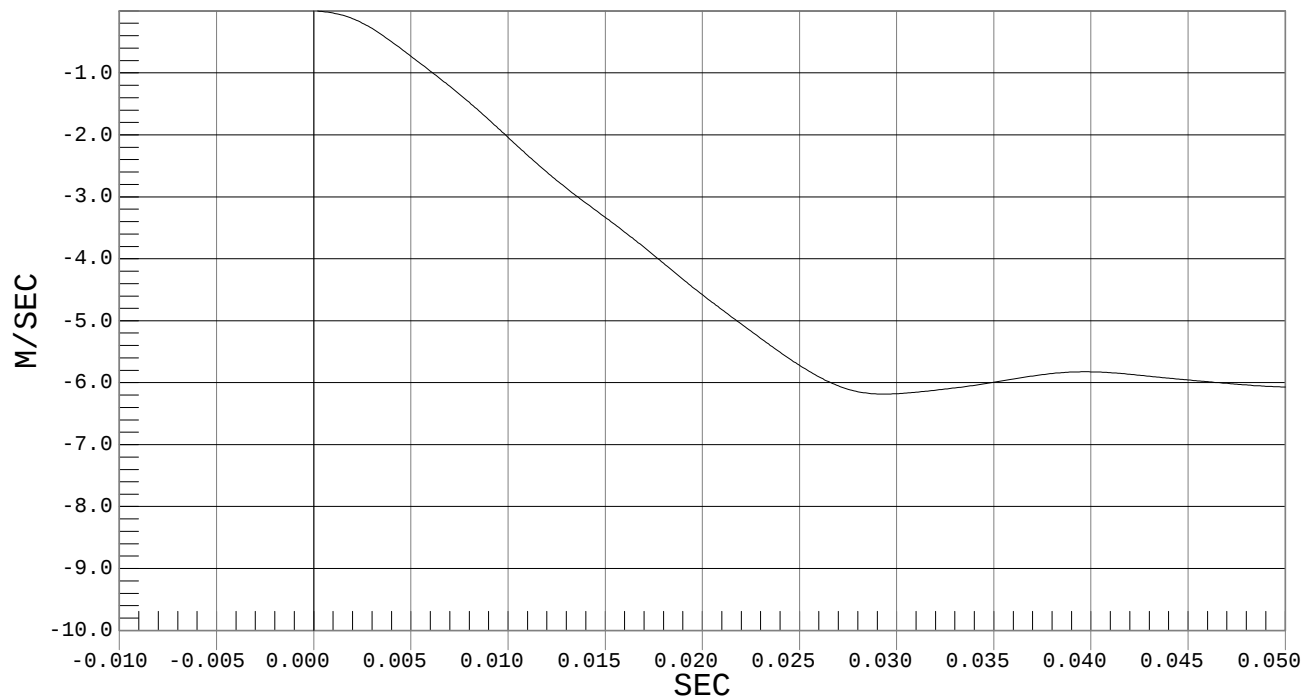


PENDULUM DECELERATION

Test Desc.: Lumbar Flexion
Component: Dummy #010

Test Date: 06-10-02
Speed: 19.6 fps, 5.99 M/s

Ymin = -7.36 M/SEC @ 0.1362 SEC, Ymax = 0 M/SEC @ 0.0000 SEC

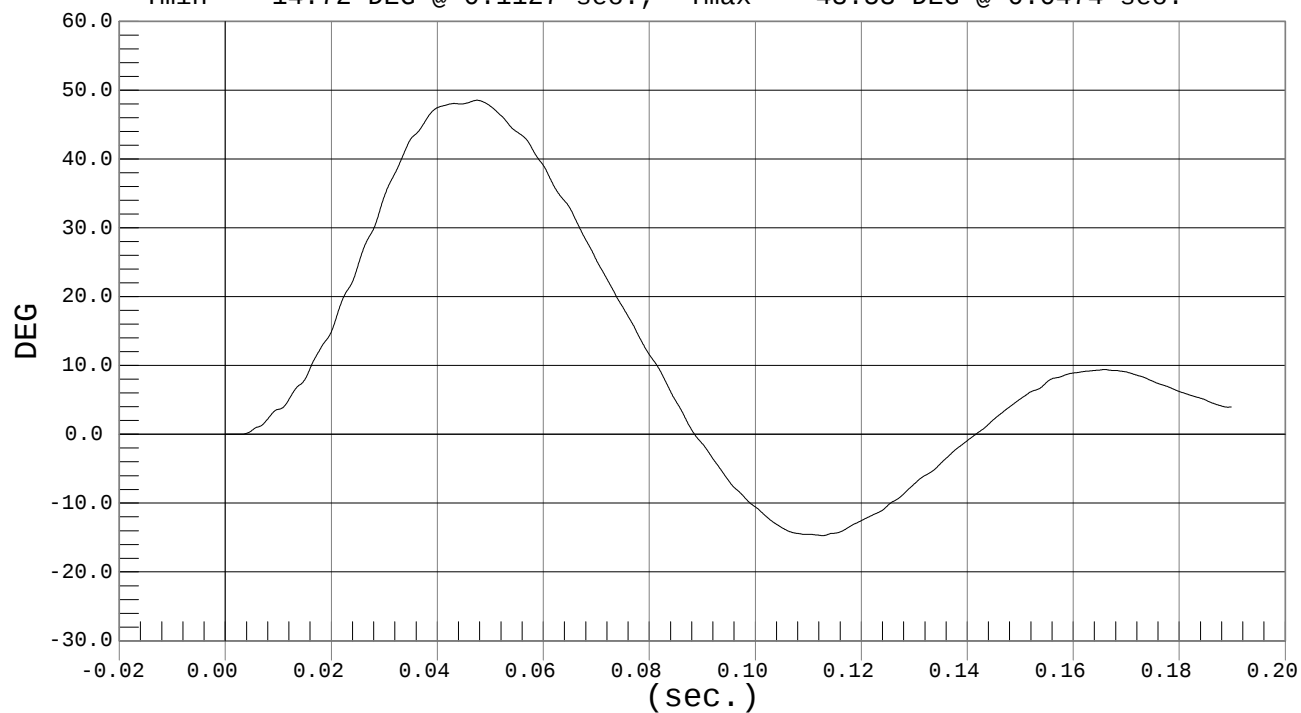


FLEXION ANGLE

Test Desc.: Lumbar Flexion
Component: Dummy #010

Test Date: 06-10-02
Speed: 19.6 fps, 5.99 M/s

Ymin = -14.72 DEG @ 0.1127 sec., Ymax = 48.53 DEG @ 0.0474 sec.



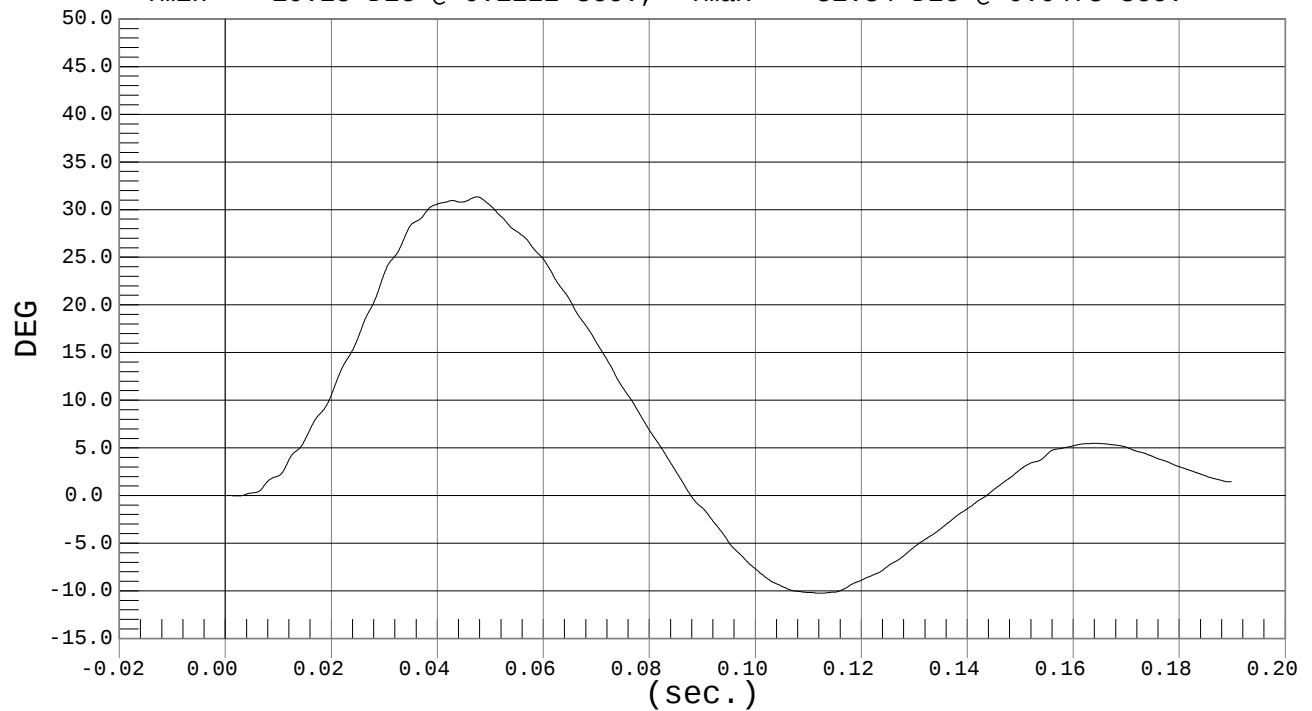


Test Desc.: Lumbar Flexion
Component: Dummy #010

THETA A

Test Date: 06-10-02
Speed: 19.6 fps, 5.99 M/s

Ymin = -10.25 DEG @ 0.1122 sec., Ymax = 31.34 DEG @ 0.0473 sec.

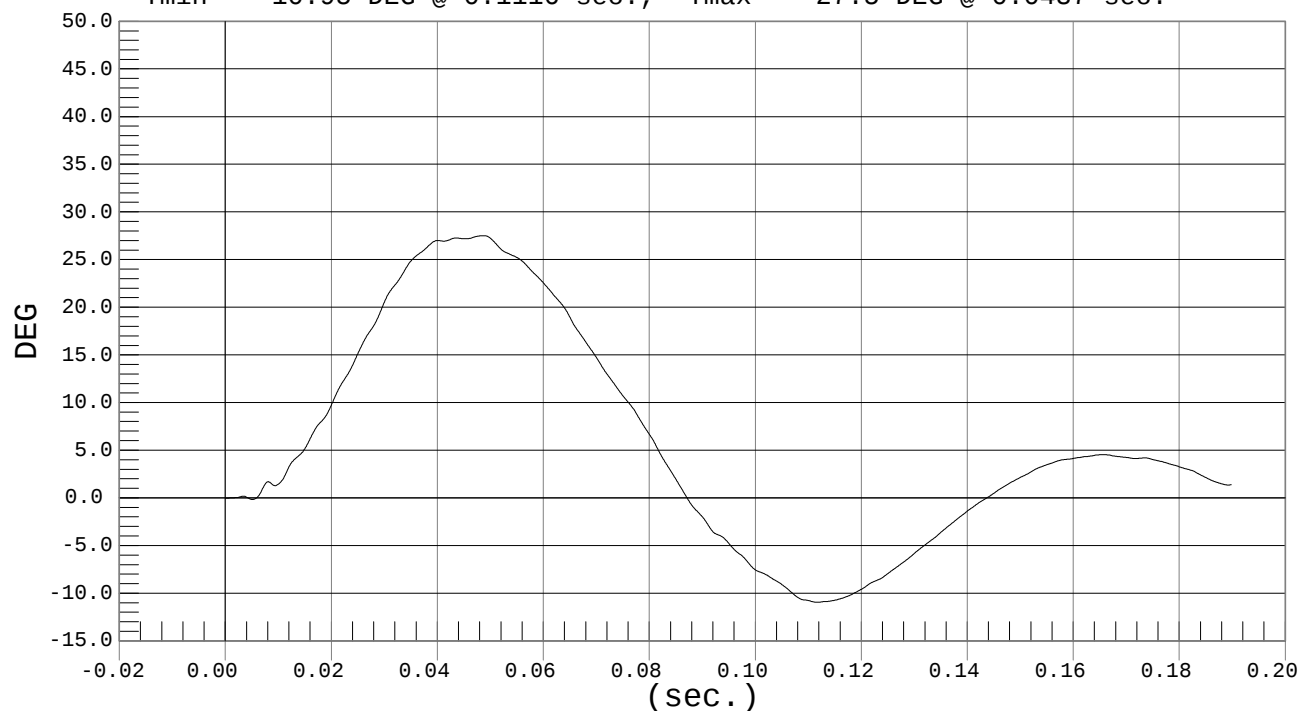


Test Desc.: Lumbar Flexion
Component: Dummy #010

THETA B

Test Date: 06-10-02
Speed: 19.6 fps, 5.99 M/s

Ymin = -10.95 DEG @ 0.1116 sec., Ymax = 27.5 DEG @ 0.0487 sec.



MGA RESEARCH CORPORATION
PELVIS TEST
EUROSID 2 DUMMY

Date: 6/11/02

Dummy Serial Number: 010

Test Number: D02779

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.0 – 22.0	21.5
Relative Humidity (%)	10 – 70	53
Pendulum Speed	6.20 – 6.30 m/s	6.29
Maximum Impactor Force	9.80 – 12.20 kN	10.56
Time of Max. Impactor Force	9.50 – 12.50 ms	11.50
Maximum Pubic Force	2.65 – 3.35 kN	3.21
Time of Max. Pubic Force	10.00 – 13.00 ms	12.00

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____

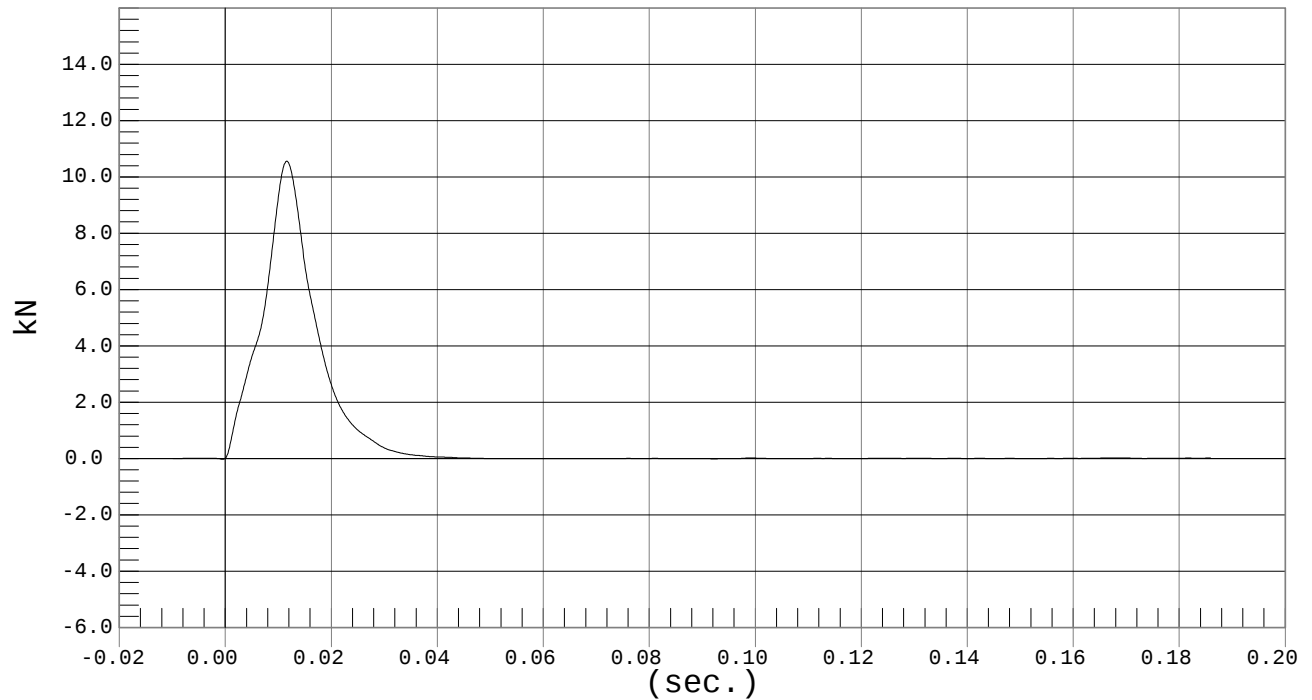


IMPACTOR FORCE

Test Desc.: Pelvis Impact
Component: Dummy #010

Test Date: 06-11-02
Speed: 20.6 fps, 6.29 M/s

Ymin = -.03 kN @ -0.0006 sec., Ymax = 10.56 kN @ 0.0115 sec.

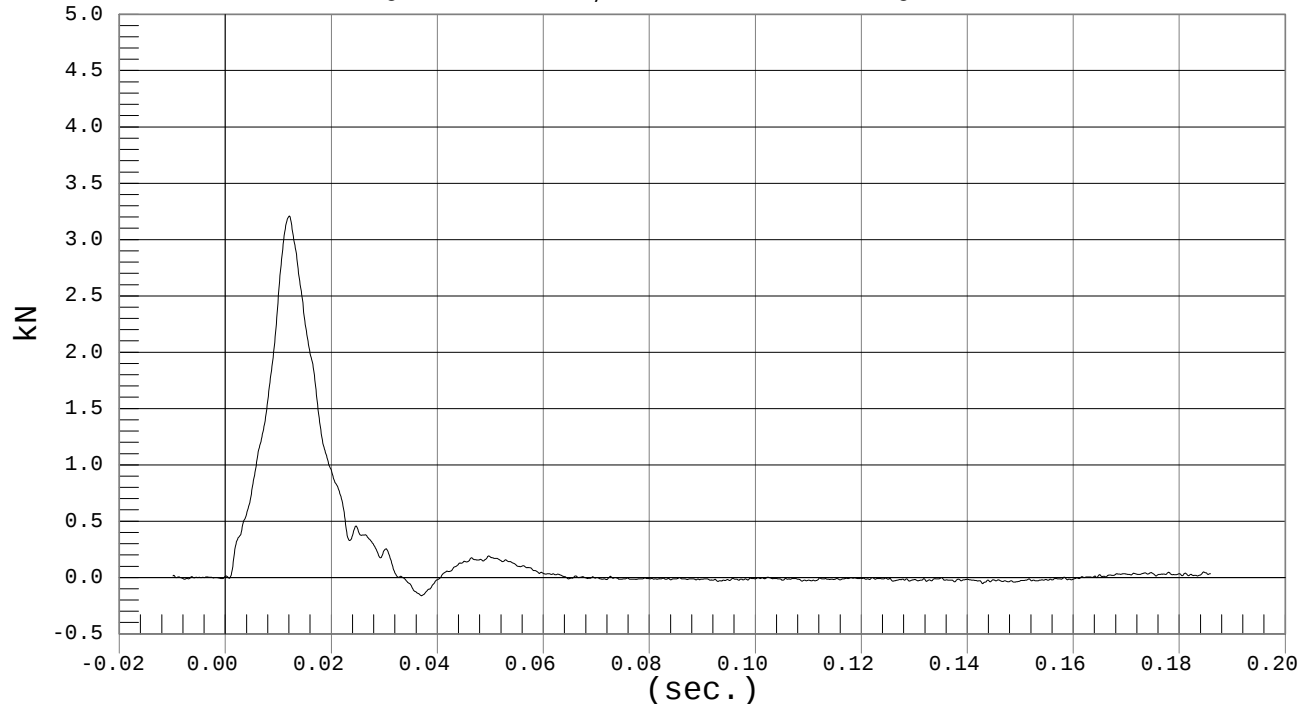


PUBIC FORCE

Test Desc.: Pelvis Impact
Component: Dummy #010

Test Date: 06-11-02
Speed: 20.6 fps, 6.29 M/s

Ymin = -.16 kN @ 0.0369 sec., Ymax = 3.21 kN @ 0.0120 sec.



CERTIFICATION DATA

Dummy Serial Number: 010

Calibration Test Results Summary

Dummy Serial Number: 010

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: 010

Test Number: D02791

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.0 – 22.0	21.1
Relative Humidity (%)	10 – 70	49
Peak Resultant Acceleration	100 – 150 g's	143
Time of Max. Res. Acceleration	msec	24.2

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____

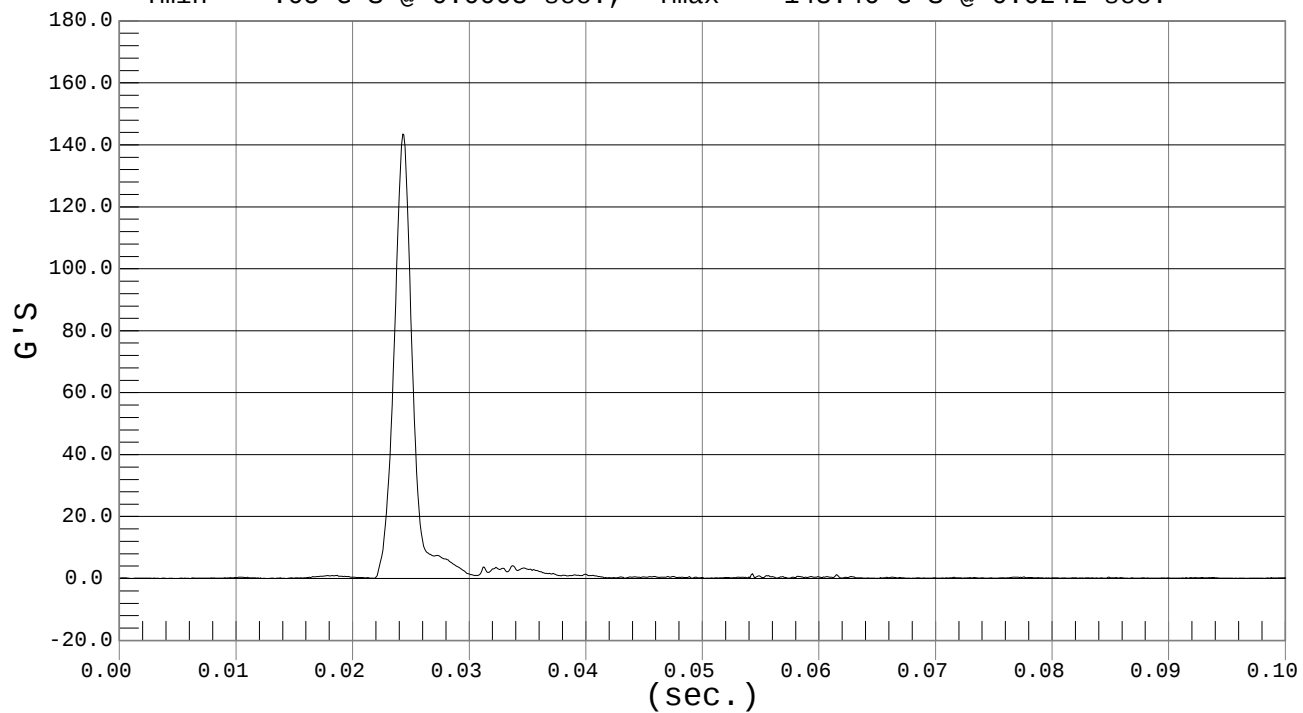


PEAK RESULTANT ACCELERATION

Test Desc.: Head Drop
Component: Dummy #010

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

Ymin = .05 G'S @ 0.0008 sec., Ymax = 143.46 G'S @ 0.0242 sec.



MGA RESEARCH CORPORATION
NECK PENDULUM TEST
EUROSID 2 DUMMY

Date: 6/18/02

Dummy Serial Number: 010

Test Number: D02792

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	ˆ.25 - ˆ.53 m/sec	-.32
	8 msec	ˆ1.59 - ˆ2.04 m/sec	-1.71
	14 msec	ˆ3.20 - ˆ3.85 m/sec	-3.38
Maximum Flexion Angle		49.0 – 59.0 deg	57.2
Time of Max. Flexion Angle		54.0 – 66.0 ms	58.8
Maximum Angle Theta (A)		32.0 – 37.0 deg	35.1
Time of Max. Theta (A)		53.0 – 63.0 ms	58.6
Maximum Angle Theta (B)		30.18 – 32.68 deg	31.8
Time of Max. Theta (B)		54.0 – 64.0 ms	57.8

TEST MEETS SPECIFICATIONS

Technician: _____

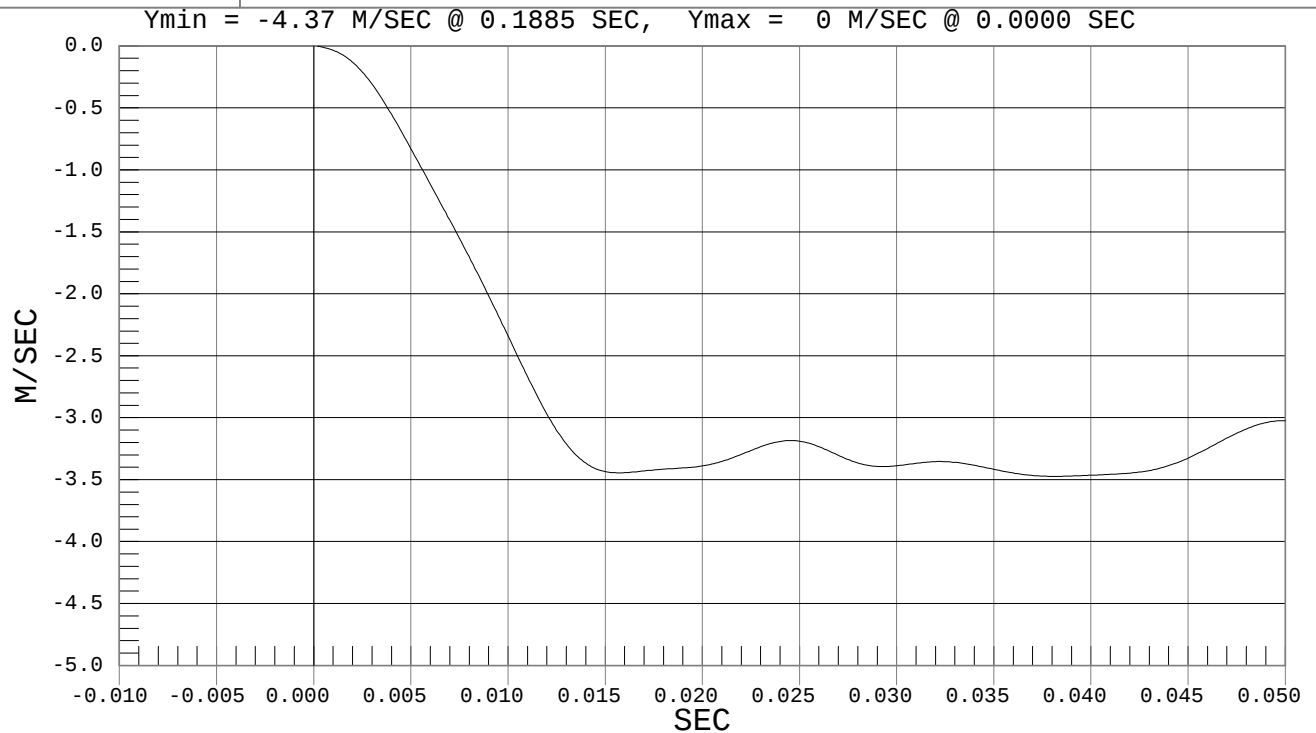
Approved By: _____



PENDULUM DECELERATION

Test Desc.: Neck Bending
Component: Dummy #010

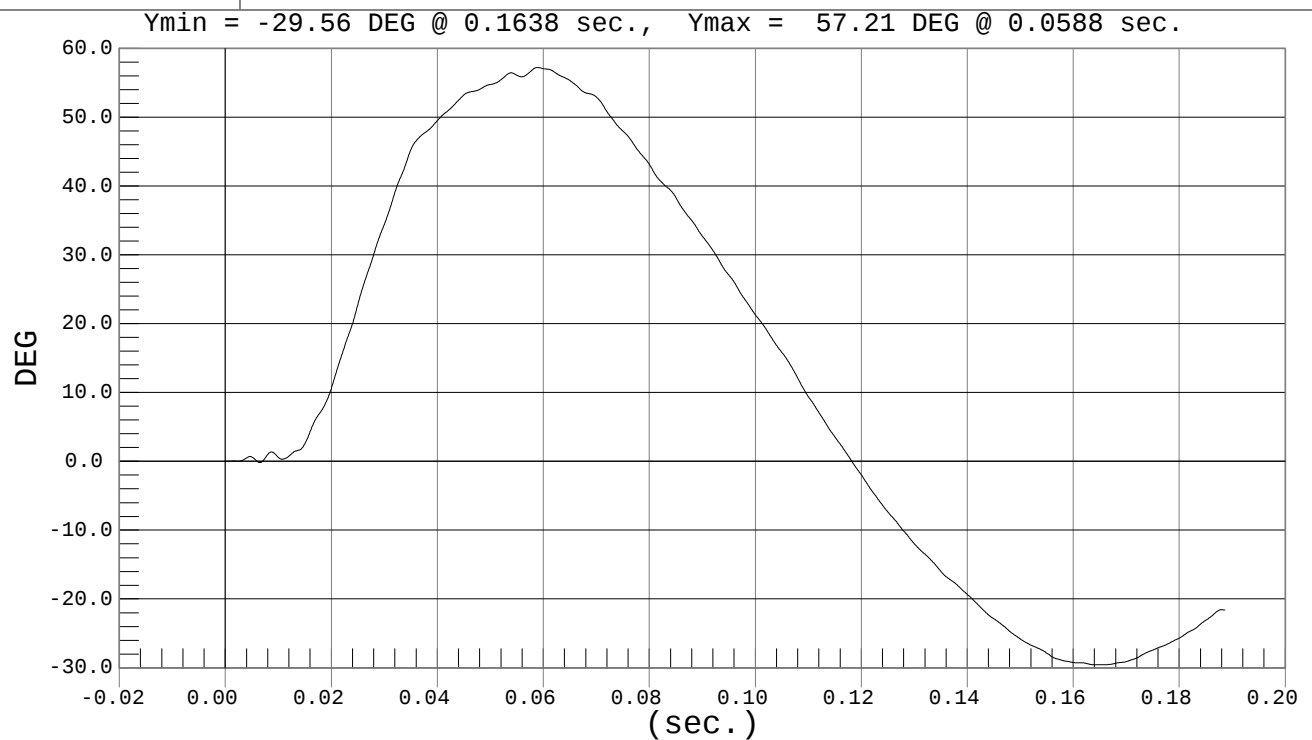
Test Date: 06-18-02
Speed: 11.1 fps, 3.38 M/s



FLEXION ANGLE

Test Desc.: Neck Bending
Component: Dummy #010

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



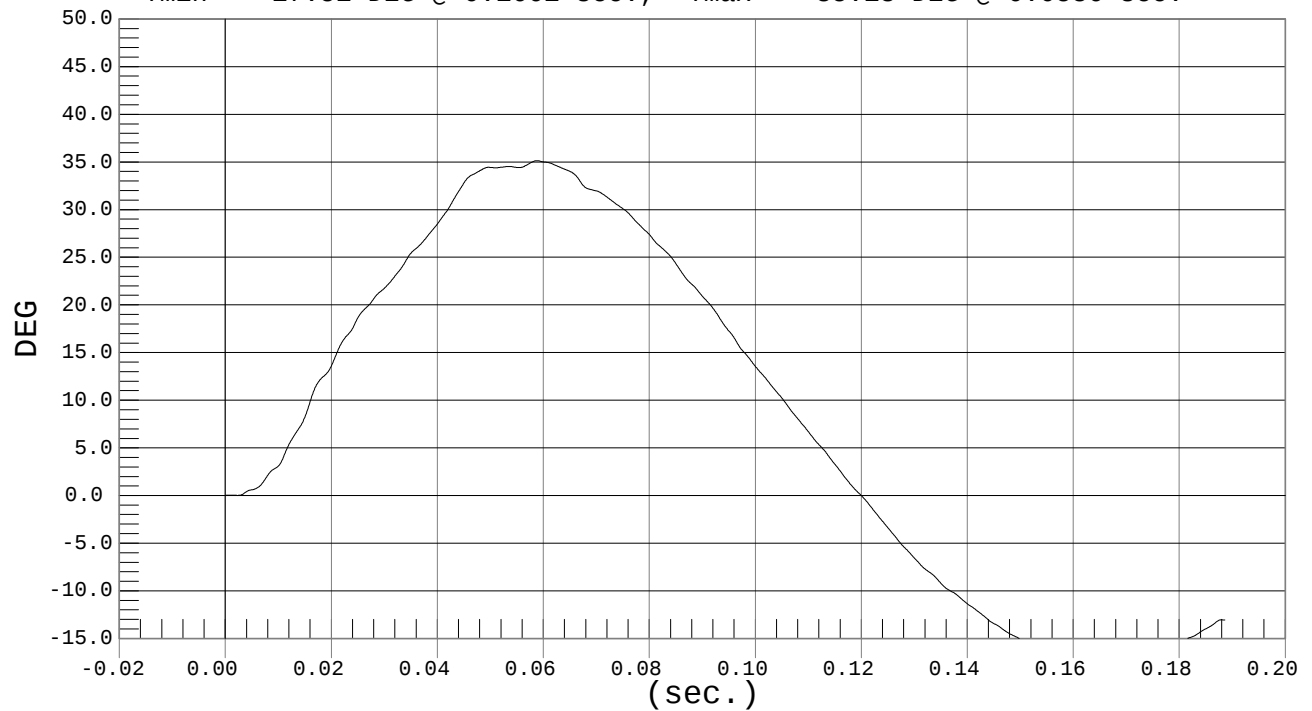


Test Desc.: Neck Bending
Component: Dummy #010

THETA A

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

Ymin = -17.51 DEG @ 0.1661 sec., Ymax = 35.13 DEG @ 0.0586 sec.

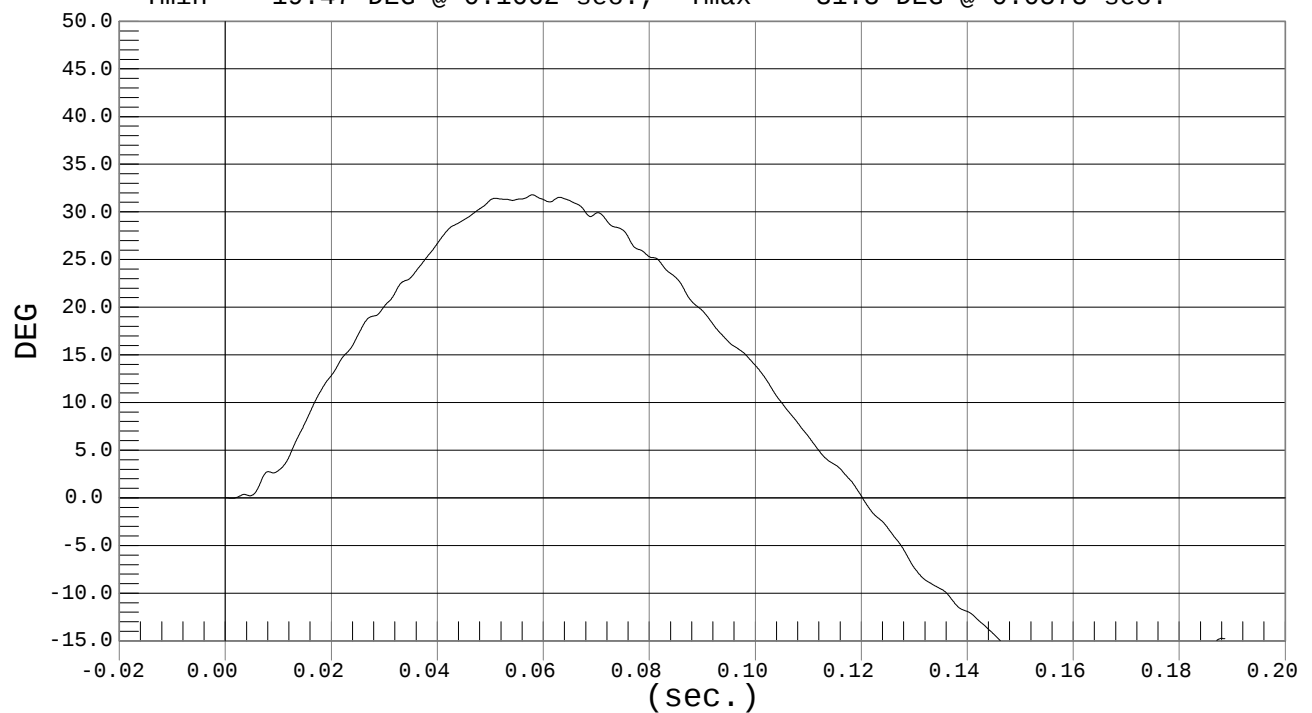


Test Desc.: Neck Bending
Component: Dummy #010

THETA B

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

Ymin = -19.47 DEG @ 0.1662 sec., Ymax = 31.8 DEG @ 0.0578 sec.



MGA RESEARCH CORPORATION
SHOULDER IMPACT TEST
EUROSID 2 DUMMY

Date: 6/13/02

Dummy Serial Number: 010

Test Number: D02793

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.0 – 22.0	21.7
Relative Humidity (%)	10 – 70	50
Pendulum Speed	4.2 – 4.4 m/s	4.3
Max. Resultant Acceleration	7.5 – 10.5 g's	9.5
Time of Max. Pendulum Acceleration	msec	25.1

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____

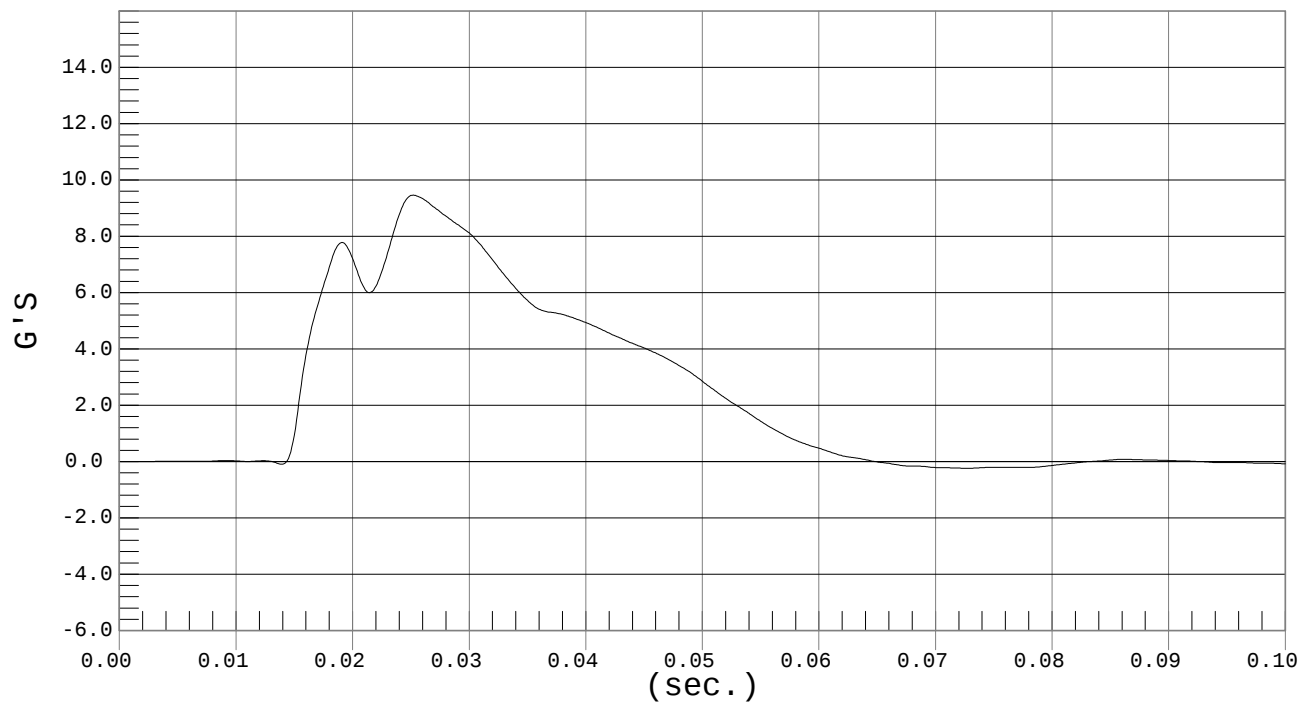


SHOULDER ACCELERATION

Test Desc.: Shoulder Impact
Component: Dummy #010

Test Date: 06-13-02
Speed: 14.1 fps, 4.30 M/s

Ymin = -.31 G'S @ 0.1156 sec., Ymax = 9.46 G'S @ 0.0251 sec.



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

Date: 6/13/02
Dummy Serial Number: 010
Test Number: D02794/5/6

UPPER RIB - TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.9 – 25.5	21.6
Relative Humidity (%)	10 – 70	51
Displacement at 2 m/s	23.5 – 27.5 mm	25.2
Displacement at 3 m/s	36.0 – 40.0 mm	38.1
Displacement at 4 m/s	46.0 – 51.0 mm	48.3

MIDDLE RIB - TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.9 – 25.5	21.6
Relative Humidity (%)	10 – 70	51
Displacement at 2 m/s	23.5 – 27.5 mm	25.3
Displacement at 3 m/s	36.0 – 40.0 mm	37.7
Displacement at 4 m/s	46.0 – 51.0 mm	49.4

LOWER RIB - TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.9 – 25.5	21.6
Relative Humidity (%)	10 – 70	51
Displacement at 2 m/s	23.5 – 27.5 mm	24.3
Displacement at 3 m/s	36.0 – 40.0 mm	37.4
Displacement at 4 m/s	46.0 – 51.0 mm	49.4

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____

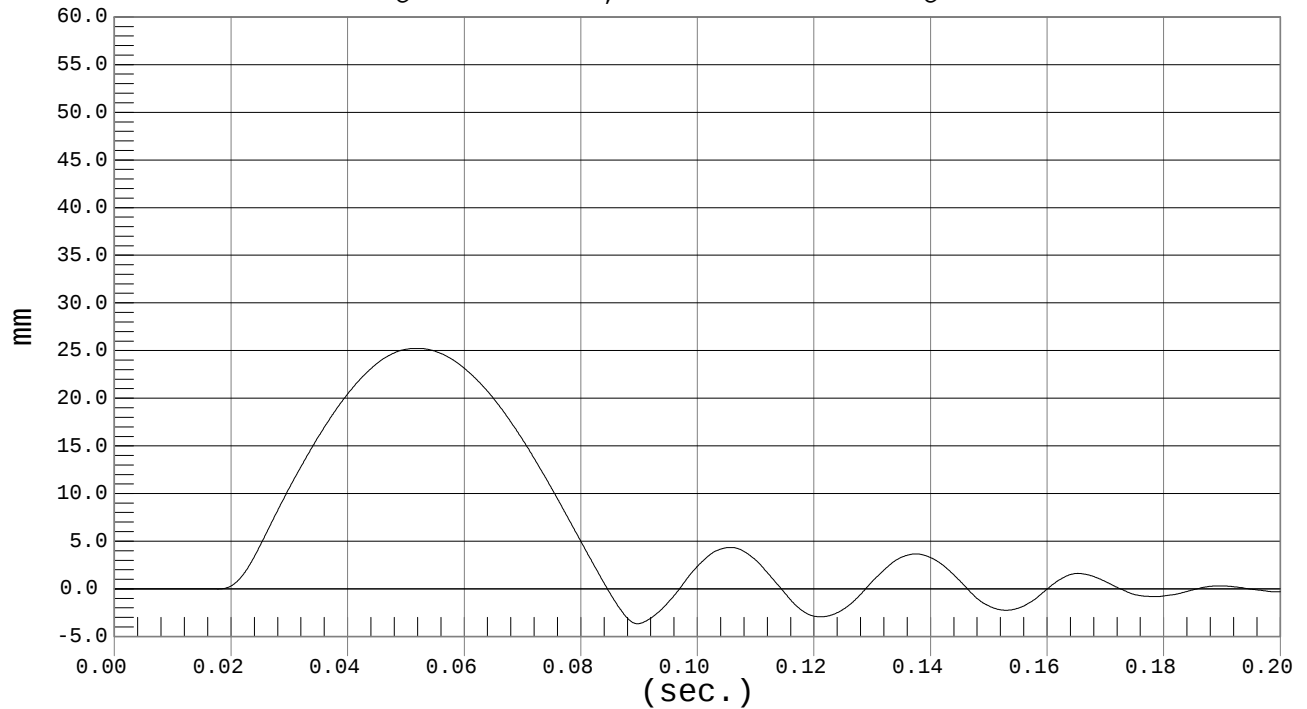


UPPER RIB DISPLACEMENT

Test Desc.: RIB MODULE
Component: Dummy #010

Test Date: 06-13-02
Speed: 0.0 fps, 0.00 M/s

Ymin = -3.66 mm @ 0.0896 sec., Ymax = 25.23 mm @ 0.0519 sec.

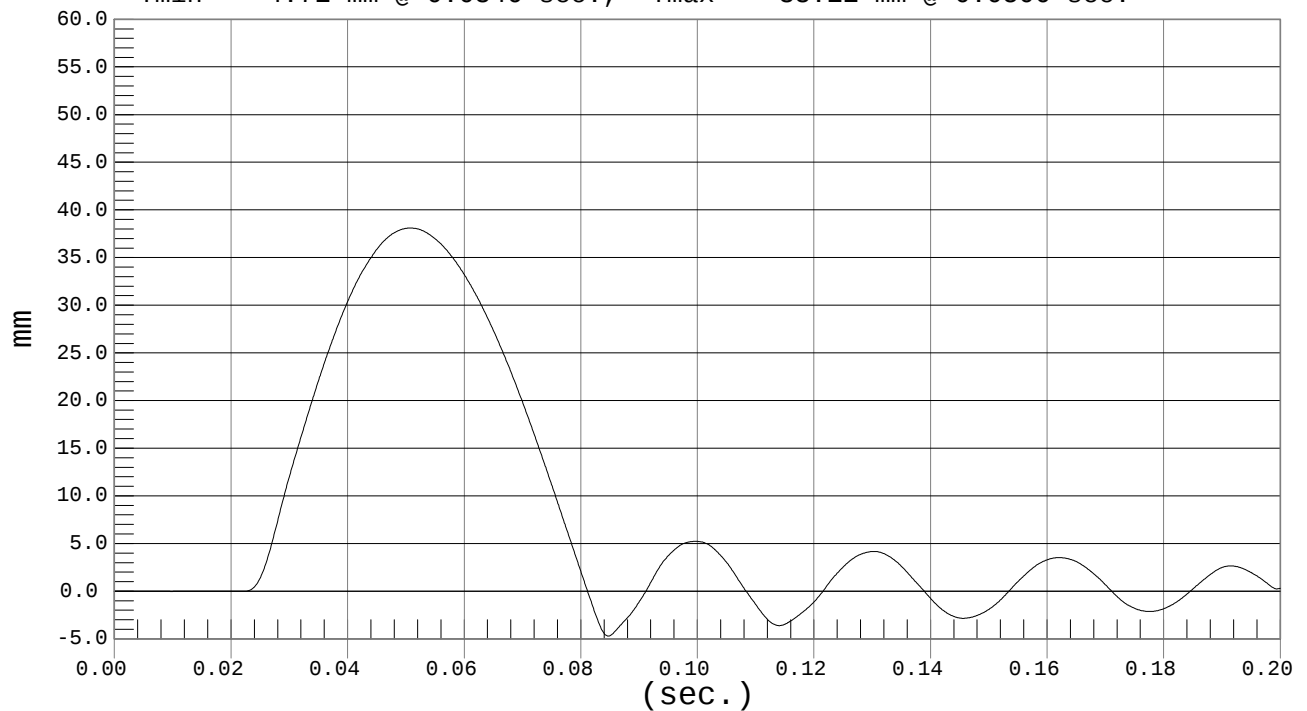


UPPER RIB DISPLACEMENT

Test Desc.: RIB MODULE
Component: Dummy #010

Test Date: 06-13-02
Speed: 9.8 fps, 3.00 M/s

Ymin = -4.71 mm @ 0.0846 sec., Ymax = 38.11 mm @ 0.0506 sec.



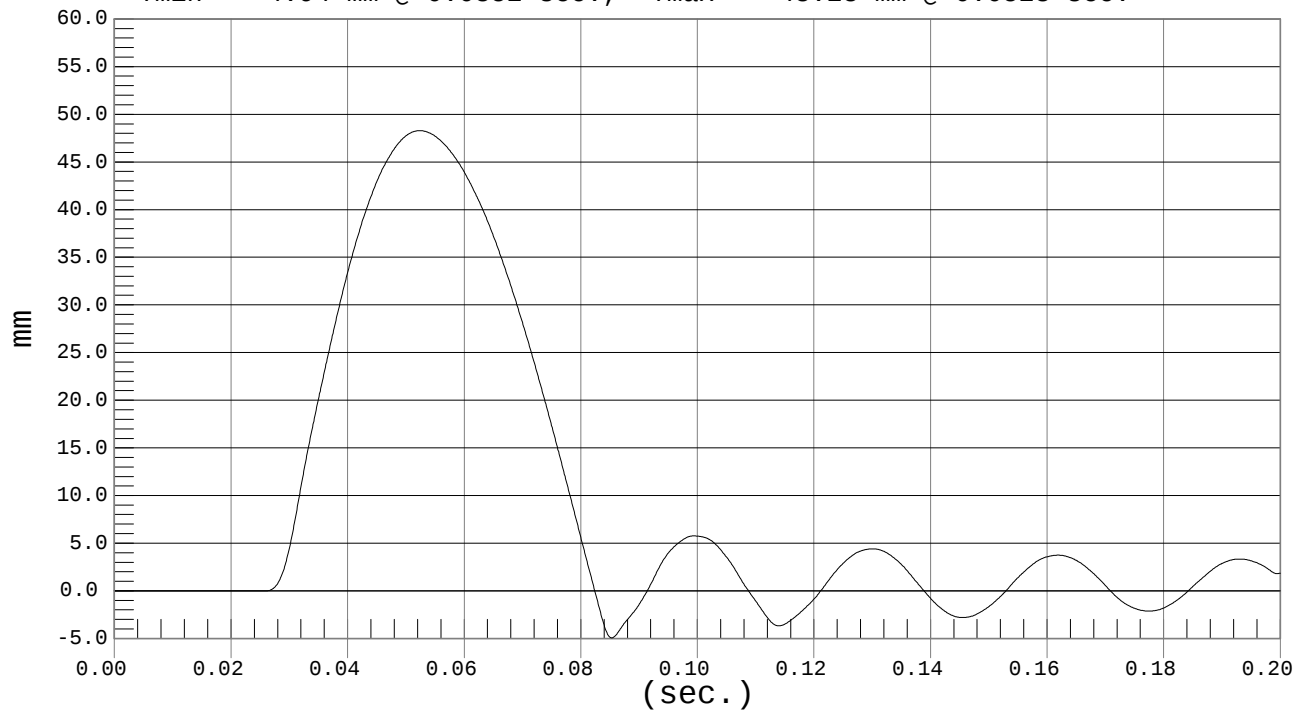


UPPER RIB DISPLACEMENT

Test Desc.: RIB MODULE
Component: Dummy #010

Test Date: 06-13-02
Speed: 13.1 fps, 4.00 M/s

Ymin = -4.94 mm @ 0.0852 sec., Ymax = 48.28 mm @ 0.0523 sec.



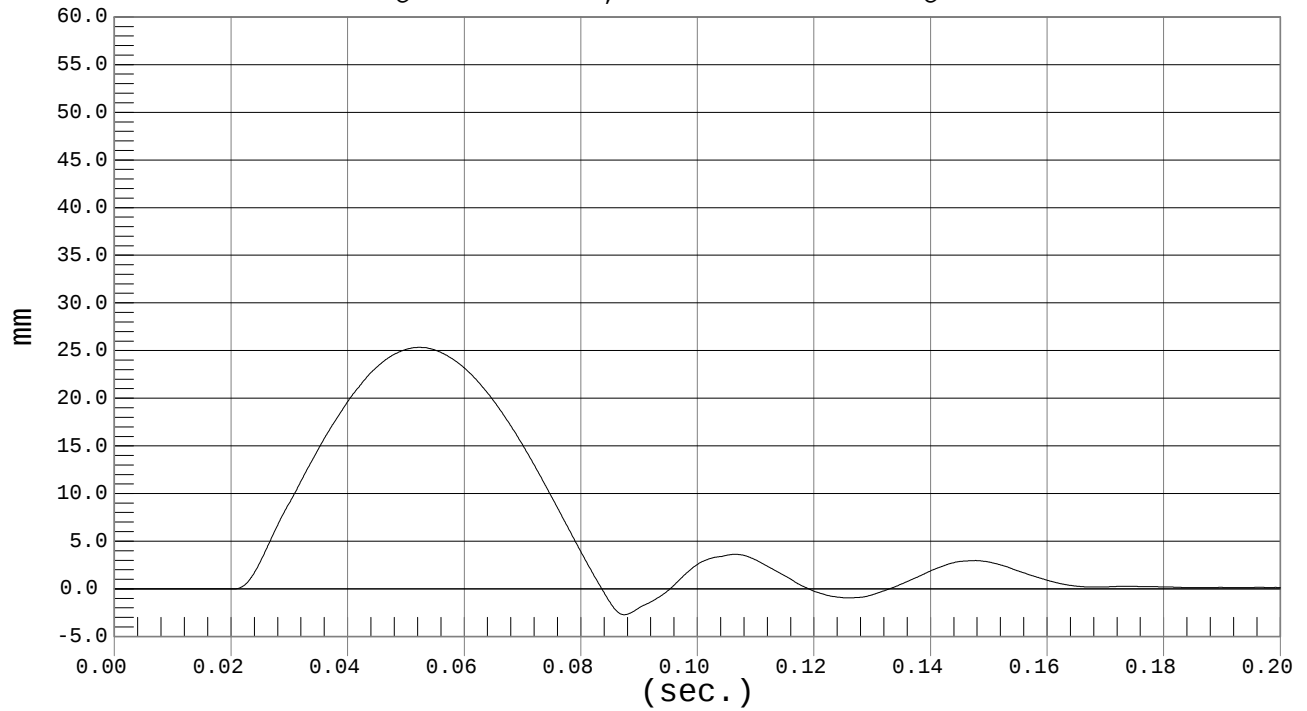


MIDDLE RIB DISPLACEMENT

Test Desc.: RIB MODULE
Component: Dummy #010

Test Date: 06-13-02
Speed: 6.6 fps, 2.00 M/s

Ymin = -2.71 mm @ 0.0874 sec., Ymax = 25.34 mm @ 0.0522 sec.

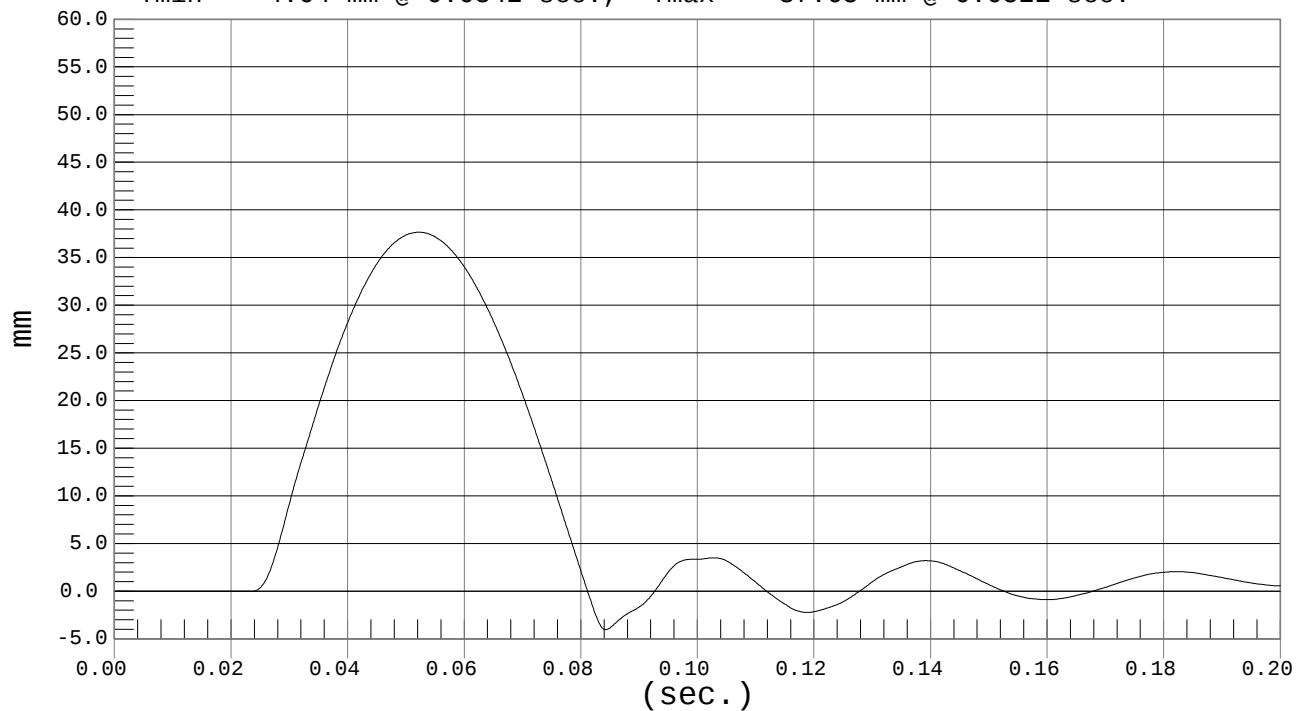


MIDDLE RIB DISPLACEMENT

Test Desc.: RIB MODULE
Component: Dummy #010

Test Date: 06-13-02
Speed: 9.8 fps, 3.00 M/s

Ymin = -4.04 mm @ 0.0842 sec., Ymax = 37.65 mm @ 0.0521 sec.



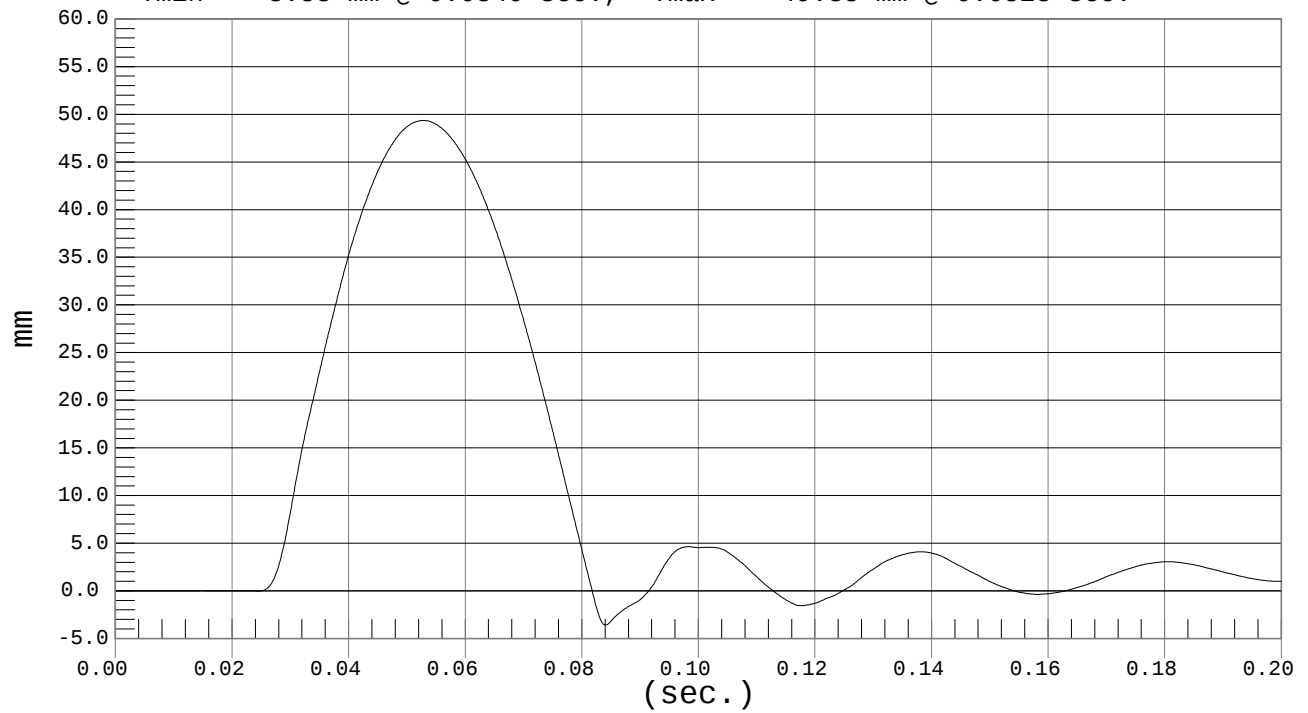


MIDDLE RIB DISPLACEMENT

Test Desc.: RIB MODULE
Component: Dummy #010

Test Date: 06-13-02
Speed: 13.1 fps, 4.00 M/s

Ymin = -3.58 mm @ 0.0840 sec., Ymax = 49.35 mm @ 0.0528 sec.



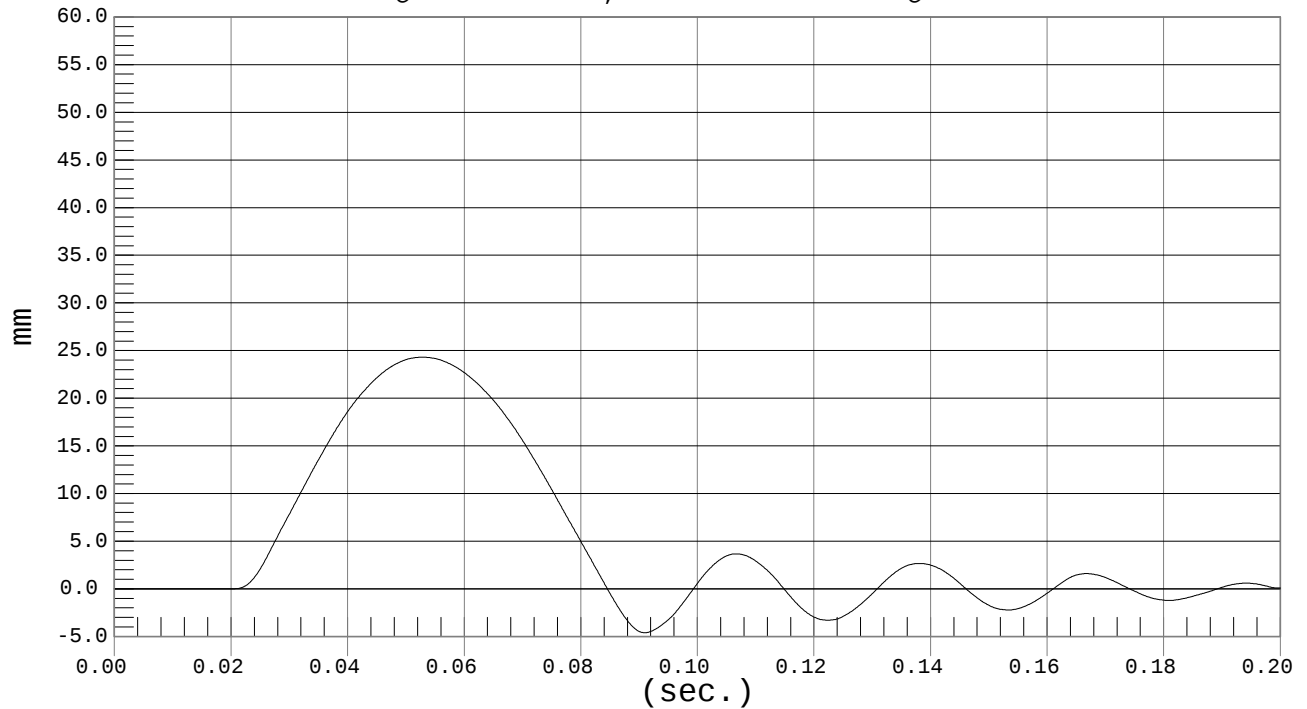


LOWER RIB DISPLACEMENT

Test Desc.: RIB MODULE
Component: Dummy #010

Test Date: 06-13-02
Speed: 6.6 fps, 2.00 M/s

Ymin = -4.61 mm @ 0.0909 sec., Ymax = 24.3 mm @ 0.0528 sec.

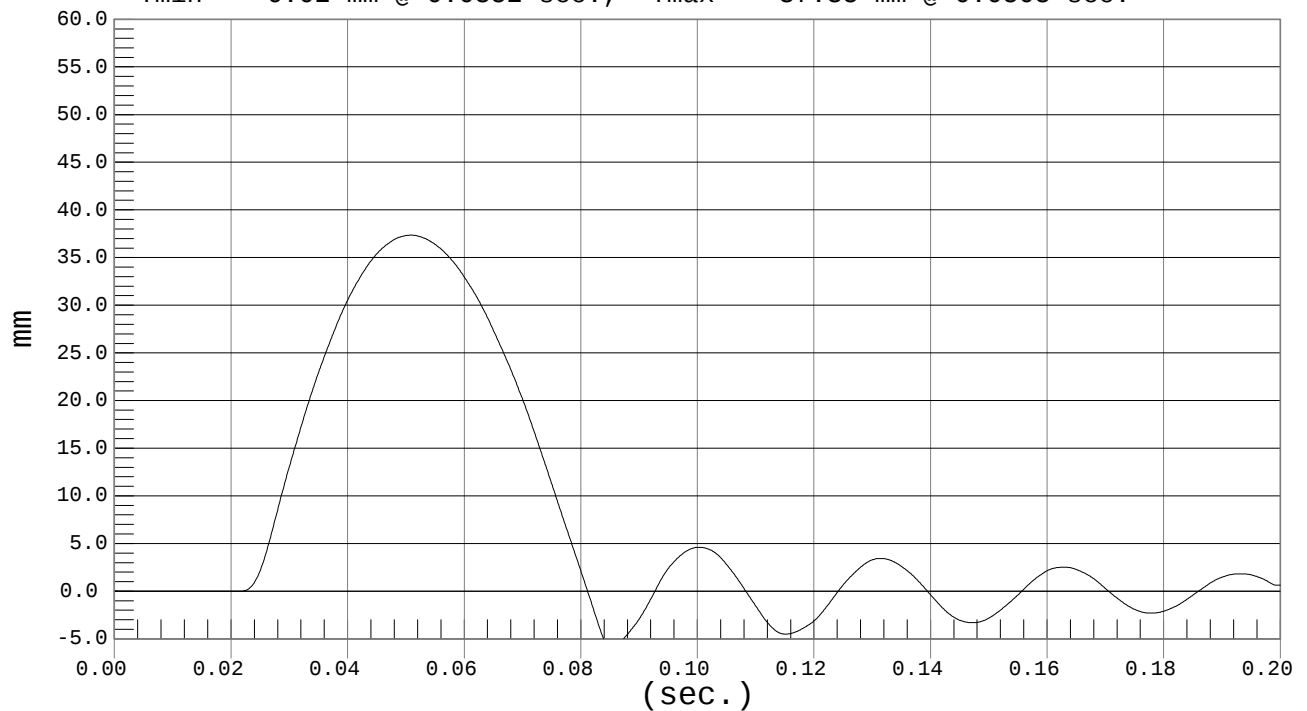


LOWER RIB DISPLACEMENT

Test Desc.: RIB MODULE
Component: Dummy #010

Test Date: 06-13-02
Speed: 9.8 fps, 3.00 M/s

Ymin = -6.02 mm @ 0.0852 sec., Ymax = 37.35 mm @ 0.0508 sec.



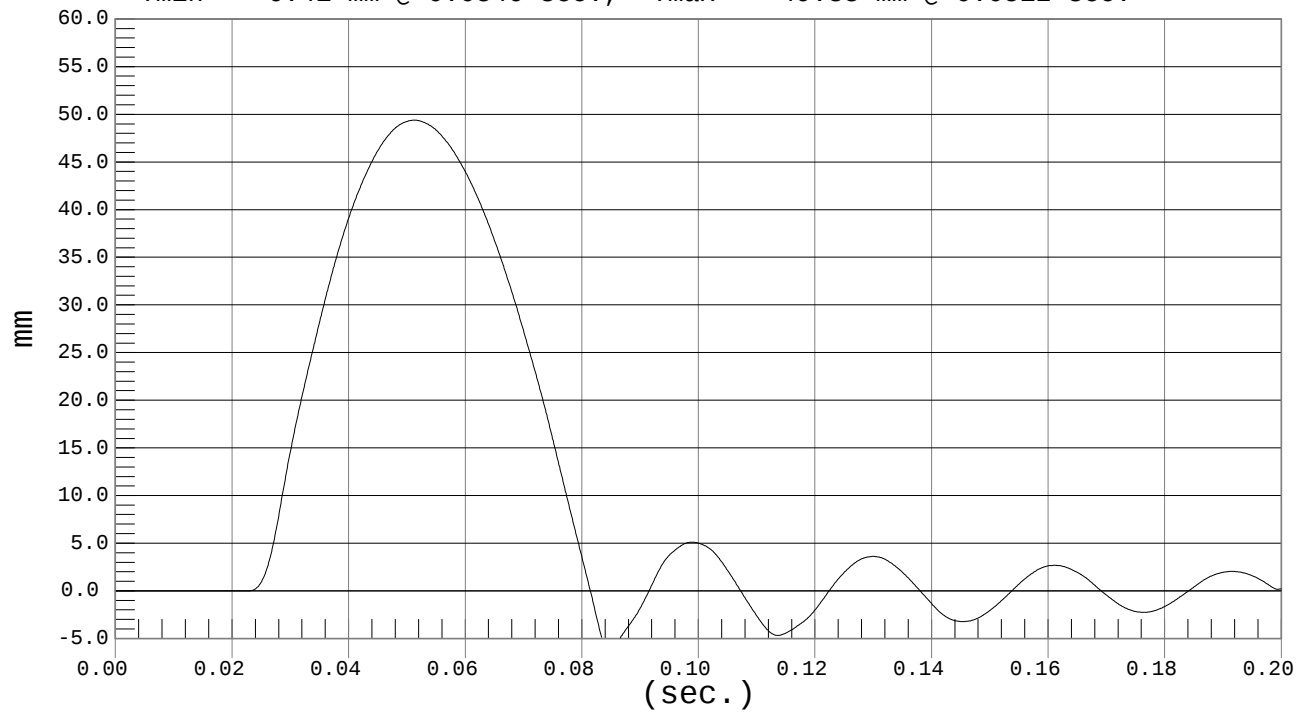


LOWER RIB DISPLACEMENT

Test Desc.: RIB MODULE
Component: Dummy #010

Test Date: 06-13-02
Speed: 13.1 fps, 4.00 M/s

Ymin = -6.41 mm @ 0.0846 sec., Ymax = 49.38 mm @ 0.0512 sec.



MGA RESEARCH CORPORATION
ABDOMEN TEST
EUROSID 2 DUMMY

Date: 6/13/02

Dummy Serial Number: 010

Test Number: D02797

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.0 – 22.0	21.7
Relative Humidity (%)	10 – 70	50
Probe Speed (m/s)	3.90 – 4.10	4.02
Maximum Impact Force	4.00 – 4.80 kN	4.64
Time of Maximum Force	10.60 – 13.00 ms	12.80
Maximum Total Abdomen Force	2.20 – 2.70 kN	2.40
Time of Max. Total Force	10.00 – 12.30 ms	12.10

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____

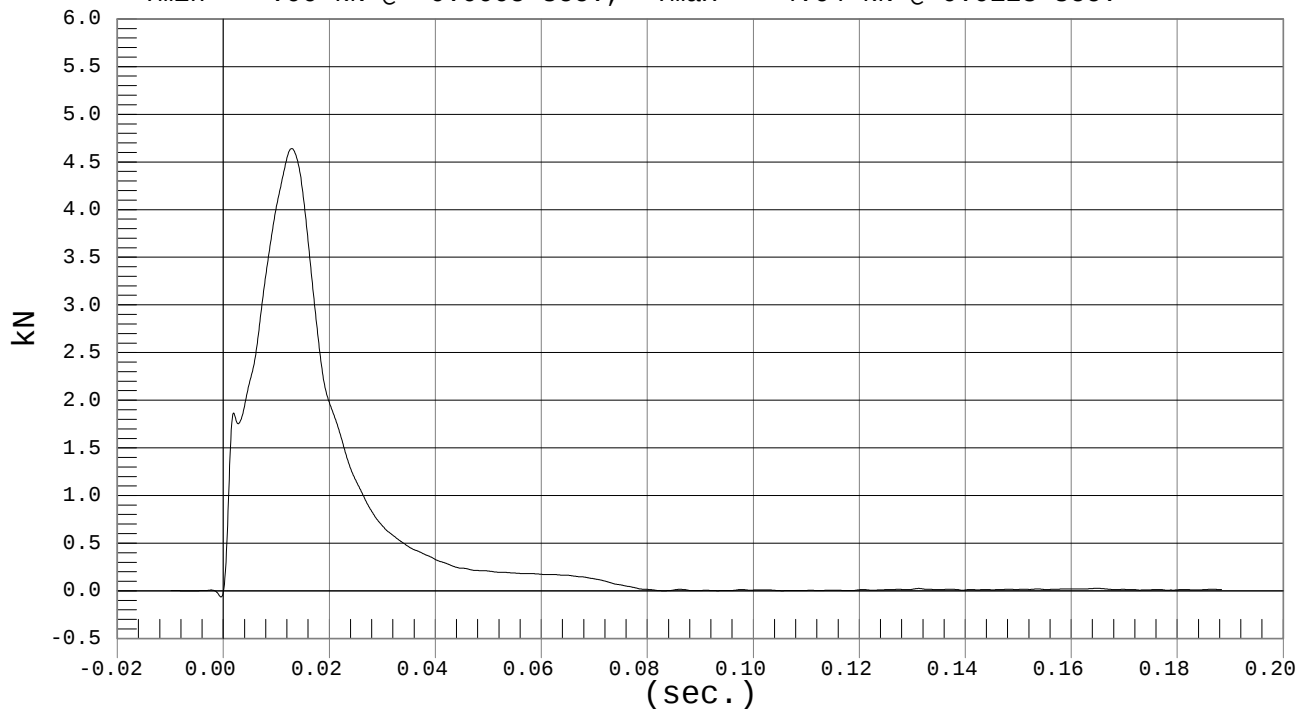


IMPACTOR FORCE

Test Desc.: Abdomen Impact
Component: Dummy #010

Test Date: 06-13-02
Speed: 13.2 fps, 4.02 M/s

Ymin = -.06 kN @ -0.0005 sec., Ymax = 4.64 kN @ 0.0128 sec.

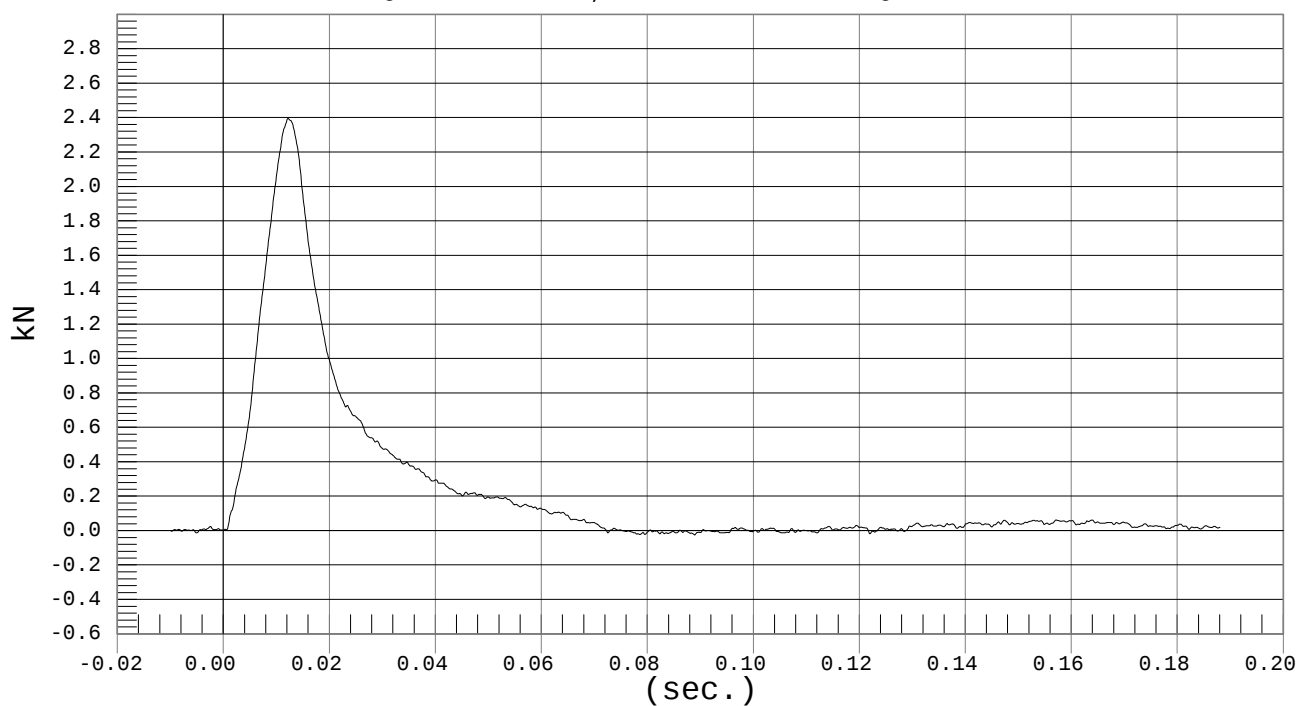


ABDOMEN FORCE

Test Desc.: Abdomen Impact
Component: Dummy #010

Test Date: 06-13-02
Speed: 13.2 fps, 4.02 M/s

Ymin = -.03 kN @ 0.0888 sec., Ymax = 2.4 kN @ 0.0121 sec.



MGA RESEARCH CORPORATION
LUMBAR SPINE TEST
EUROSID 2 DUMMY

Date: 6/18/02

Dummy Serial Number: 010

Test Number: D02798

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature (°C)		18.0 – 22.0	21.6
Relative Humidity (%)		10 – 70	51
Pendulum Speed		5.95 – 6.15	6.03
Pendulum Deceleration	10 msec	$\bar{2}.46 - \bar{1}.59$ m/sec	-1.95
	20 msec	$\bar{5}.25 - \bar{4}.07$ m/sec	-4.33
	25 msec	$\bar{6}.64 - \bar{5}.30$ m/sec	-5.38
	30 msec	≥ -6.5 m/sec	-6.21
Maximum Flexion Angle		45.0 – 55.0 deg	49.5
Time of Max. Flexion Angle		39.0 – 53.0 ms	44.2
Maximum Angle Theta (A)		31.0 – 35.0 deg	31.5
Time of Max. Theta (A)		44.0 – 52.0 ms	44.3
Maximum Angle Theta (B)		27.20– 29.70 deg	28.0
Time of Max. Theta (B)		44.0 – 52.0 ms	46.4

TEST MEETS SPECIFICATIONS

Technician: _____

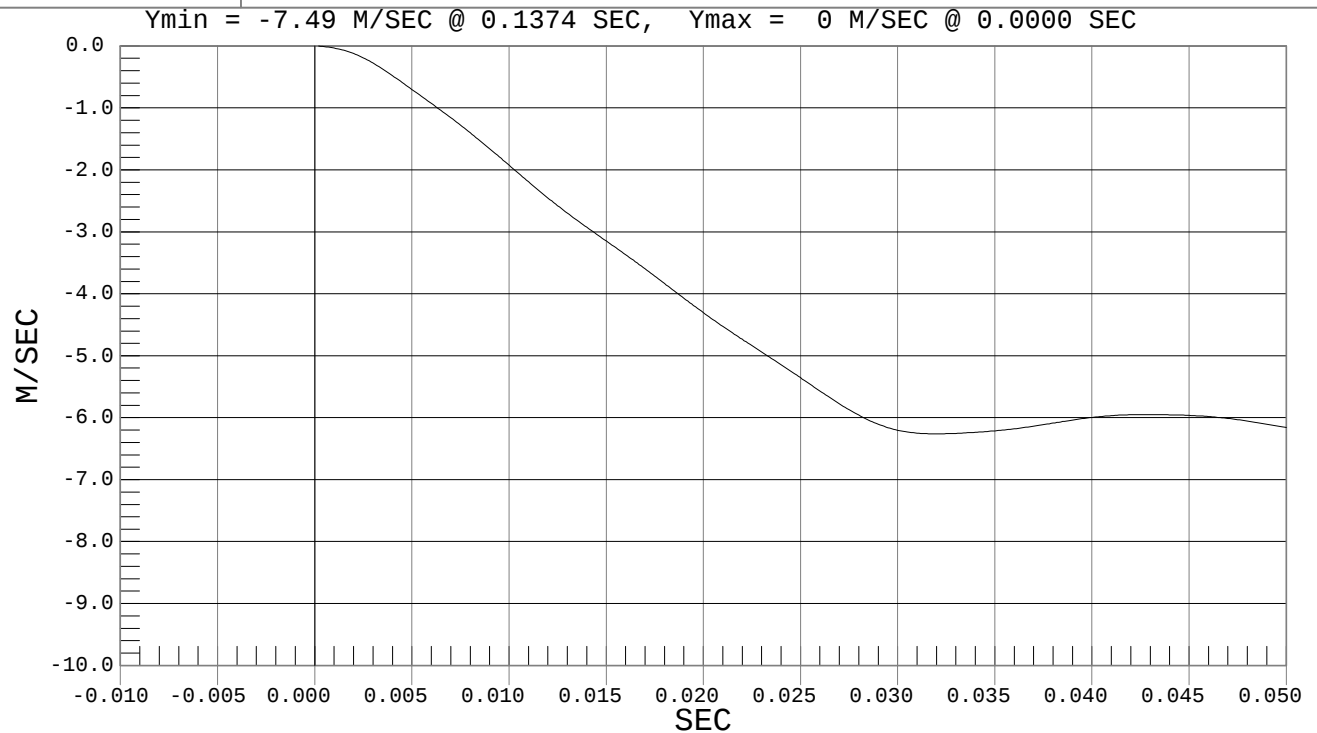
Approved By: _____



PENDULUM DECELERATION

Test Desc.: Lumbar Flexion
Component: Dummy #009

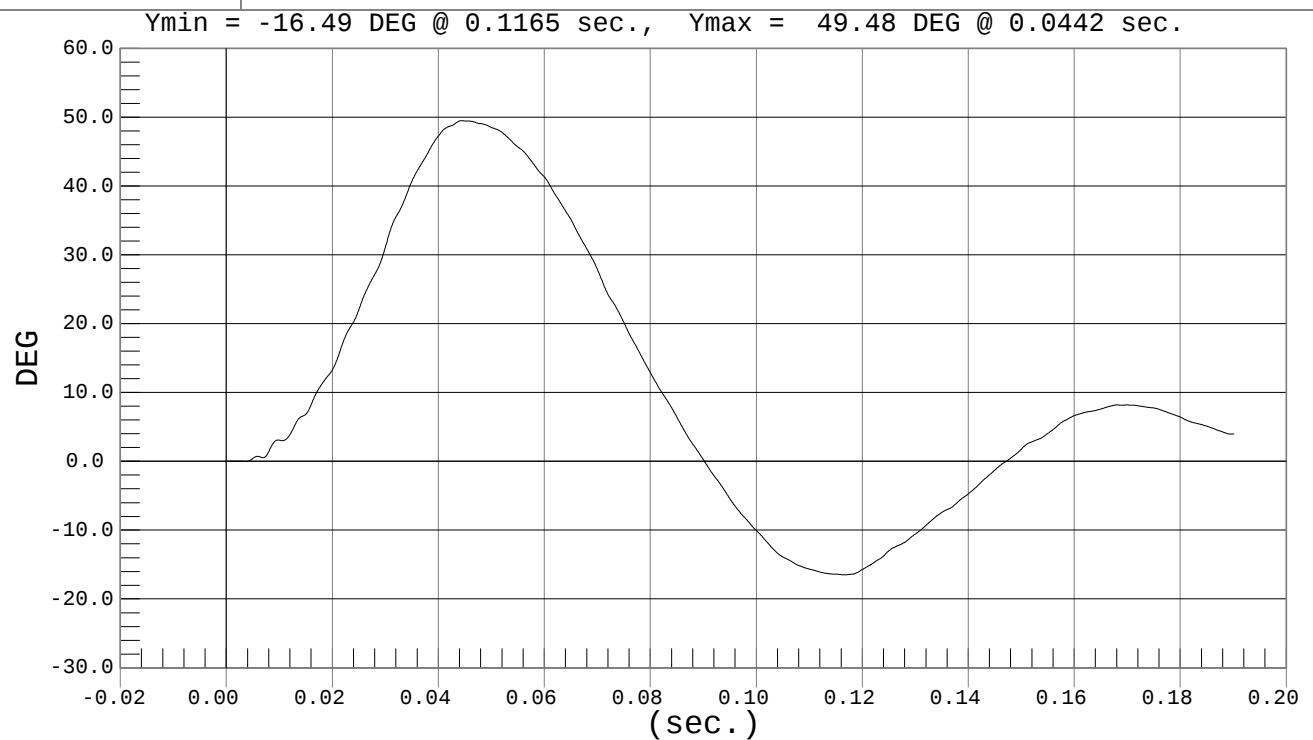
Test Date: 06-18-02
Speed: 19.8 fps, 6.03 M/s



FLEXION ANGLE

Test Desc.: Lumbar Flexion
Component: Dummy #009

Test Date: 06-18-02
Speed: 19.8 fps, 6.03 M/s



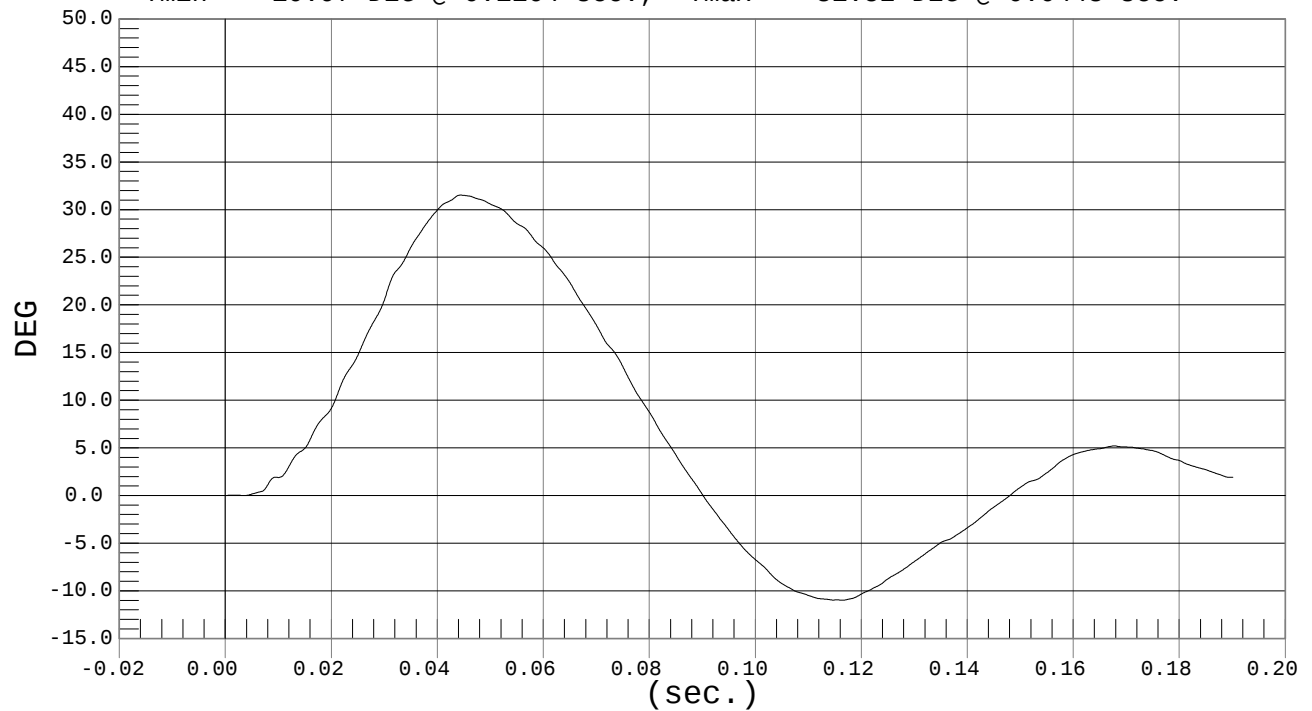


Test Desc.: Lumbar Flexion
Component: Dummy #009

THETA A

Test Date: 06-18-02
Speed: 19.8 fps, 6.03 M/s

Ymin = -10.97 DEG @ 0.1164 sec., Ymax = 31.52 DEG @ 0.0443 sec.

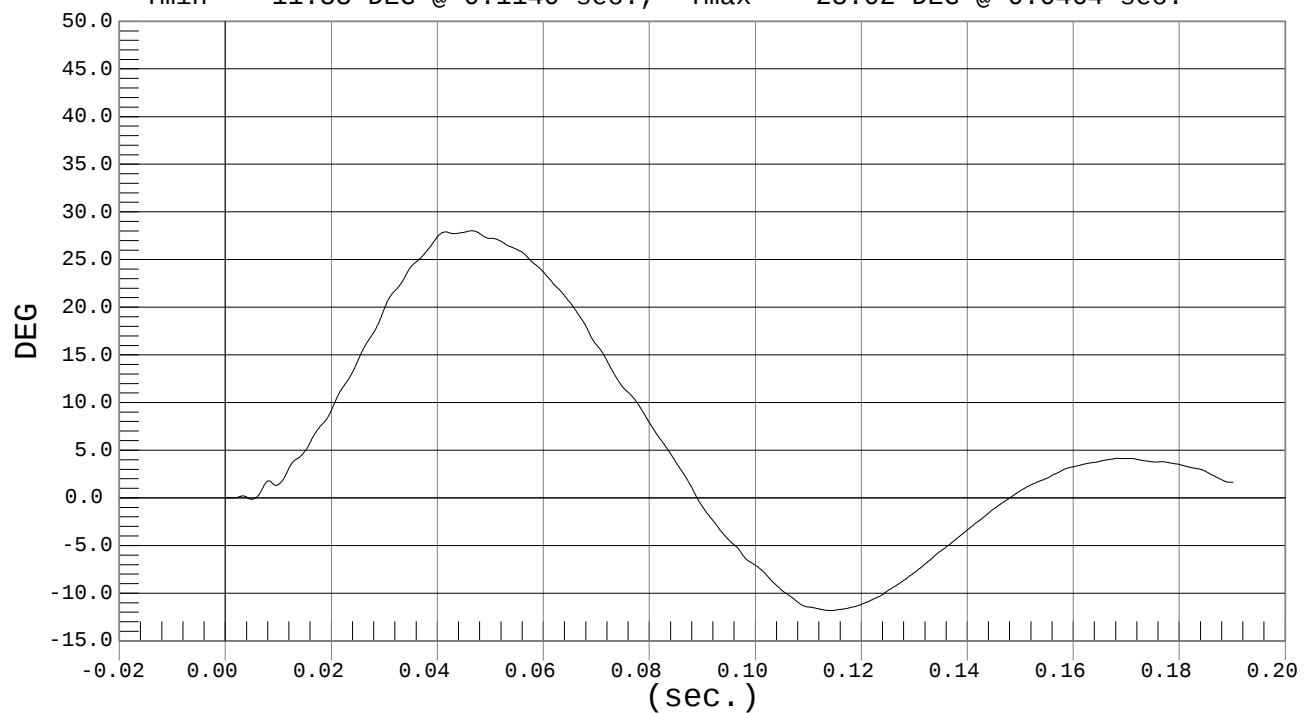


Test Desc.: Lumbar Flexion
Component: Dummy #009

THETA B

Test Date: 06-18-02
Speed: 19.8 fps, 6.03 M/s

Ymin = -11.83 DEG @ 0.1140 sec., Ymax = 28.02 DEG @ 0.0464 sec.



MGA RESEARCH CORPORATION
PELVIS TEST
EUROSID 2 DUMMY

Date: 6/13/02

Dummy Serial Number: 010

Test Number: D02799

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature (°C)	18.0 – 22.0	21.7
Relative Humidity (%)	10 – 70	50
Pendulum Speed	6.20 – 6.30 m/s	6.28
Maximum Impactor Force	9.80 – 12.20 kN	10.38
Time of Max. Impactor Force	9.50 – 12.50 ms	11.80
Maximum Pubic Force	2.65 – 3.35 kN	3.15
Time of Max. Pubic Force	10.00 – 13.00 ms	11.80

TEST MEETS SPECIFICATIONS

Technician: _____

Approved By: _____

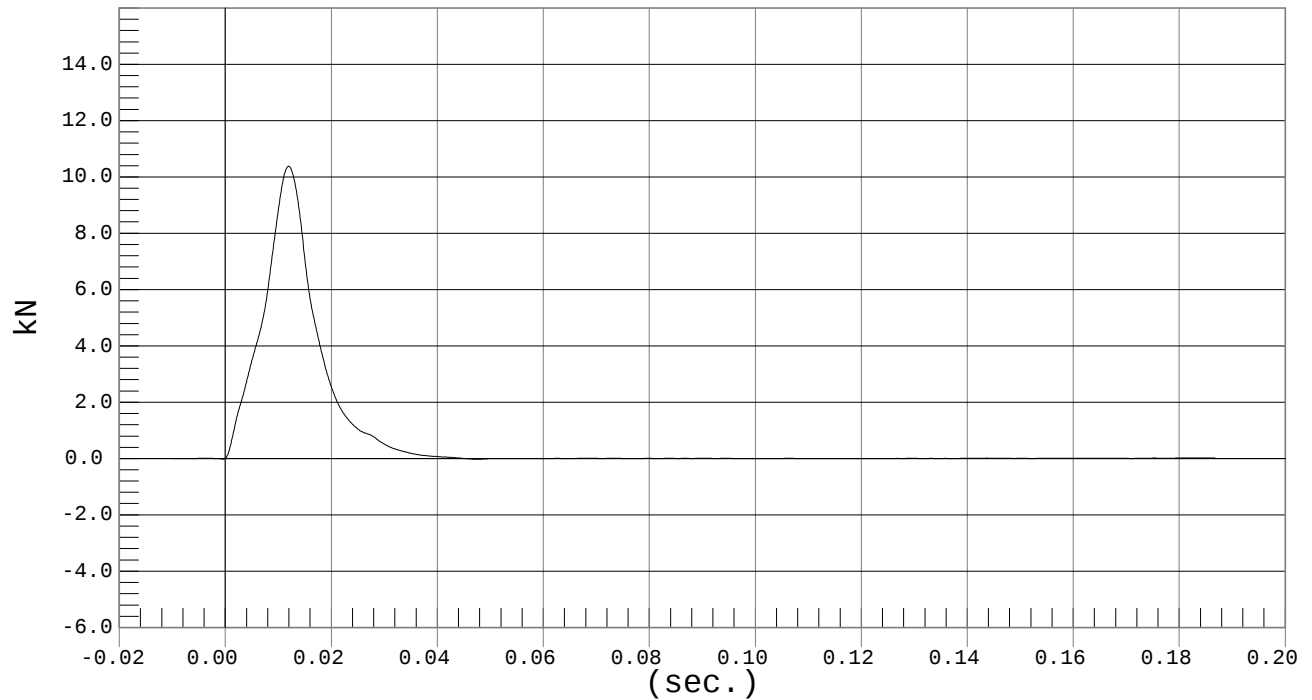


IMPACTOR FORCE

Test Desc.: Pelvis Impact
Component: Dummy #010

Test Date: 06-13-02
Speed: 20.6 fps, 6.28 M/s

Ymin = -.02 kN @ 0.0476 sec., Ymax = 10.38 kN @ 0.0118 sec.

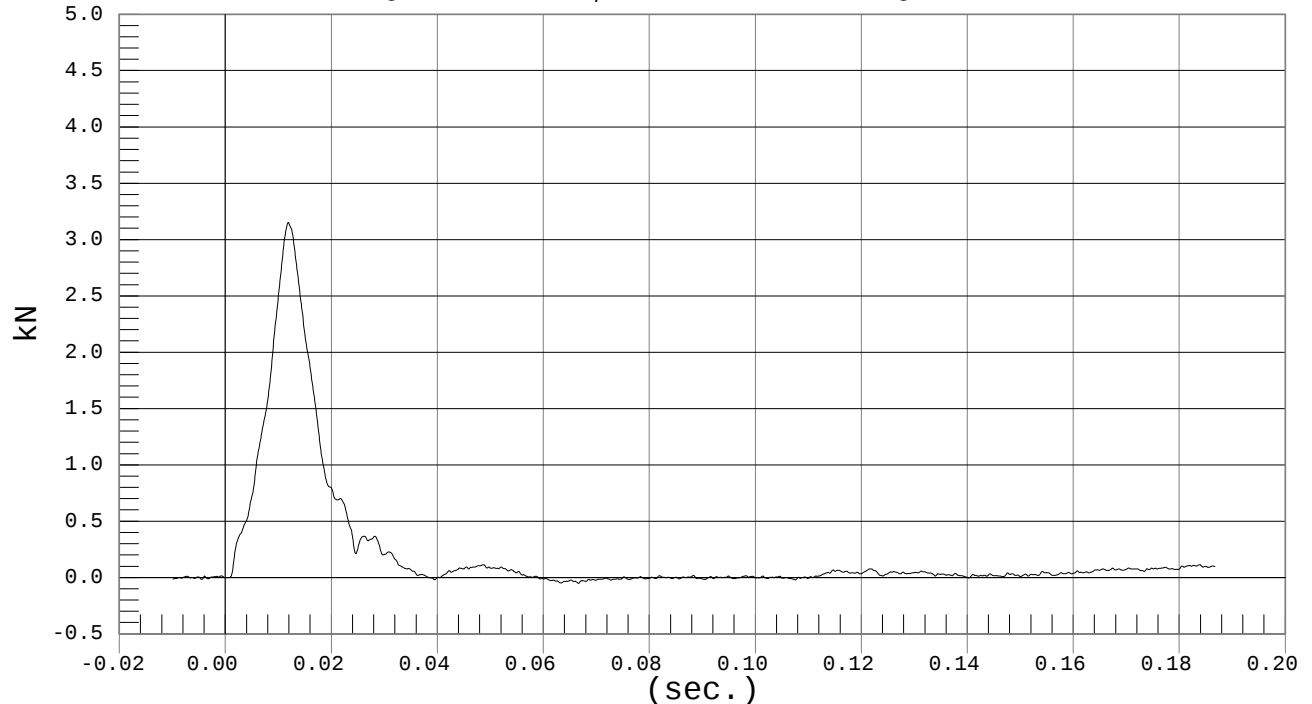


PUBIC FORCE

Test Desc.: Pelvis Impact
Component: Dummy #010

Test Date: 06-13-02
Speed: 20.6 fps, 6.28 M/s

Ymin = -.05 kN @ 0.0665 sec., Ymax = 3.15 kN @ 0.0118 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	J33415	Endevco	4/8/02
Head Y Accelerometer	J33394	Endevco	4/8/02
Head Z Accelerometer	AHYE2	Endevco	4/8/02
Upper Neck Load Cell	106	FTSS	6/5/02
Lower Neck Load Cell	111	FTSS	6/5/02
Shoulder Force Load Cell	120	FTSS	5/31/02
Upper Spine X Accelerometer	AJ9F3	Endevco	3/15/02
Upper Spine Y Accelerometer	AJ9D4	Endevco	3/15/02
Upper Spine Z Accelerometer	J13942	Endevco	3/15/02
Upper Rib Y Accelerometer	J13652	Endevco	4/9/02
Mid Rib Y Accelerometer	J13628	Endevco	4/9/02
Lower Rib Y Accelerometer	J14006	Endevco	4/9/02
Upper Rib Displacement	010U	Honeywell	5/22/01
Mid Rib Displacement	010M	Honeywell	5/22/01
Lower Rib Displacement	010L	Honeywell	5/22/01
Lower Spine X Accelerometer	AGAL2	Endevco	2/12/02
Lower Spine Y Accelerometer	AGAY0	Endevco	2/12/02
Lower Spine Z Accelerometer	AGM35	Endevco	2/12/02
Torso Load Cell	123	FTSS	5/31/02
T-12 Load Cell	102	FTSS	6/5/02
Front Abdomen Load Cell	119	FTSS	6/3/02
Mid Abdomen Load Cell	120	FTSS	6/3/02
Rear Abdomen Load Cell	121	FTSS	6/3/02
Pubic Symphysis Load Cell	113	Denton	5/16/02
Pelvis X Accelerometer	AMTB1	Endevco	2/12/02
Pelvis Y Accelerometer	AC9B7	Endevco	2/12/02
Pelvis Z Accelerometer	AMR94	Endevco	2/12/02
Right Femur Load Cell	137	FTSS	6/3/02
Left Femur Load Cell	138	FTSS	6/3/02
Lumbar Load Cell	105	FTSS	5/31/02

VEHICLE INSTRUMENT CALIBRATION

	VEHICLE ACCELEROMETERS		
	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Left A Post @ Roof Y	99F341	Entran	4/22/02
Left Mid A-Post Y	K21-N22	Entran	1/17/02
Left Lower A-Post Y	99F238	Entran	4/22/02
Left Upper B-Post Y	K21-N19	Entran	1/17/02
Left Mid B-Post Y	99F253	Entran	4/22/02
Left Lower B-Post Y	99F271	Entran	4/22/02
Rear Floorpan Above Axle X	99F349	Entran	4/22/02
Rear Floorpan Above Axle Y	99F216	Entran	4/22/02
Rear Floorpan Above Axle Z	99F254	Entran	4/22/02
Driver Seat Track Y	H14-N10	Entran	5/30/02
Right Side Sill at Front Seat X	A08-A09	Entran	3/6/02
Right Side Sill at Front Seat Y	F04-N10	Entran	1/14/02
Right Side Sill at Front Seat Z	MGA045	Entran	1/15/02
Right Side Sill at Rear Seat X	G03-N11	Entran	3/1/02
Right Side Sill at Rear Seat Y	F07-A14	Entran	3/1/02
Right Side Sill at Rear Seat Z	E03-H24	Entran	3/1/02
Left Side Sill at Front Seat Y	D11-F05	Entran	3/8/02
Left Side Sill at Rear Seat Y	K21-N16	Entran	1/17/02
Vehicle CG X	I25-F07	Entran	1/14/02
Vehicle CG Y	I25-F08	Entran	1/16/02
Vehicle CG Z	F04-N06	Entran	3/1/02
Left Front Door @ Pelvis Y	99F251	Entran	4/22/02
Left Front Door @ End of Arm Y	K21-N24	Entran	1/17/02
Left Front Door @ Knee Y	D11-F06	Entran	3/8/02
Left Front Door @ Rib Y	E03-H09	Entran	3/8/02
Lower Center Radiator Support X	K21-N03	Entran	12/11/01
Lower Center Radiator Support Y	K21-N04	Entran	12/11/01
Lower Center Radiator Support Z	K21-N05	Entran	12/11/01

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 a 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 ± 10 mm 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	
	Class	Axis	Units	Peak	Time
Head	1000	X	G	-150.1	60
	1000	Y	G	578.1	60
	1000	Z	G	265.3	59
	1000	RES	G	625.1	60
Head Injury Criteria (HIC)				5254	
t1				58.9	
t2				59.8	
Upper Neck Force	1000	X	N	472	60
	1000	Y	N	-1391	60
	1000	Z	N	-1286	59
	1000	RES	N	1591	60
Upper Neck Moment	600	X	Nm	-31.3	156
	600	Y	Nm	25.9	97
	600	Z	Nm	15.7	61
	600	RES	Nm	36.4	157
Lower Neck Force	1000	X	N	215	150
	1000	Y	N	-736	63
	1000	Z	N	-1282	62
	1000	RES	N	1475	63
Lower Neck Moment	600	X	Nm	-62.2	172
	600	Y	Nm	-37.7	169
	600	Z	Nm	20.0	67
	600	RES	Nm	72.4	170
Shoulder Force	600	X	N	1314	36
	600	Y	N	-1194	37
	600	Z	N	-891	37

DRIVER PEAK RESPONSE TABLE (CONTINUED)

Location	Peak Values				
				2000 Nissan Maxima 6/12/02	
	Class	Axis	Units	Peak	Time
Upper Spine	180	X	G	14.5	35
	180	Y	G	41.5	62
	180	Z	G	13.0	60
	180	Res	G	42.8	62
Lower Spine	180	X	G	8.9	23
	180	Y	G	45.0	41
	180	Z	G	11.0	61
	180	Res	G	45.1	41
Upper Rib	180	Y	G	104.9	55
Mid Rib	180	Y	G	153.5	50
Lower Rib	180	Y	G	150.0	49
Upper Rib Deflection	180	Y	mm	-34.7	38
Mid Rib Deflection	180	Y	mm	-35.7	39
Lower Rib Deflection	180	Y	mm	-34.0	38
Upper Rib VC	180	Y	m/sec	0.61	33
Mid Rib VC	180	Y	m/sec	0.55	32
Lower Rib VC	180	Y	m/sec	0.52	29
Torso Force	600	X	N	288	114
	600	Y	N	-388	36
Torso Moment	600	Y	Nm	-16.3	60
	600	Z	Nm	-17.3	117

DRIVER PEAK RESPONSE TABLE (CONTINUED)

Location	Peak Values				
				2000 Nissan Maxima 6/12/02	
	Class	Axis	Units	Peak	Time
T12 Force	600	X	N	677	63
	600	Y	N	1959	50
T12 Moment	600	X	Nm	101.8	77
	600	Y	Nm	87.5	63
Pelvis	1000	X	G	16.6	50
	1000	Y	G	61.6	43
	1000	Z	G	12.5	62