

**"RECORD COPY"**Schedule No. 7-7-12Retain Until 2022**FINAL TEST REPORT****CONFIDENTIAL**

**Vehicle Evaluation and Verification
Research and Vehicle Technology**

TO:

B. Frank

Test Order No.

1-B5310

Work Task W.O. No.

J25

Test Dates

4/24/02

Date Reported

8/16/02

Sheet

1 of 4

SUBJECT:Crash Test 12863 (90° Left Side Fixed Pole Impact at 12.9 ± 0.4 mph, 20.8 ± 0.6 km/h) - 2003 Grand Marquis (EN-114) 4-Door Sedan**REQUESTED BY:**

Vehicle Crash Safety Department, Research and Vehicle Technology - B. Frank

OBJECT:

To obtain development data relative to air bag system sensors.

**SUMMARY OF
TEST RESULTS:**

See Section 1 for air bag system sensor data.

S. Bates

Product Test Engineer

Concur: J. Ng

Section Supervisor

Operations Engineering Section

CRTS 0012863

J-B5310

C-12863

Sheet 2

VEHICLE DATA

Make and Model	2003 Grand Marquis (EN-114) 4-Door Sedan (Confirmation Prototype)	
ID Number	2MEFM75W01X626939, 565-H-629, FP330002	
Power Train	4.6L, EFI, Automatic (4R70W) Transmission	
Fuel Tank(s)	Usable Capacity: 19.0 gal. (71.9L) Tank Condition: Empty	
Front Seat(s)	Type: Bucket Cover: Cloth Tracks/Position: Power/Mechanical Mid and Down Seat Backs/Position: Adjustable/24.7° Rear of Vertical Head Restraints/Position: Adjustable/Up	
Restraint System	LP: 3-Point Continuous Loop Active Belt and Seat Back Side Air Bag Seatbelts remain latched during impact.	
Occupants	LP: SID/Hybrid III Instrumented Dummy	
Test Weight	Front: 2494 lb (1131 kg) Rear: 2282 lb (1035 kg) Total: 4776 lb (2166 kg)	
Tires	Front: P225/60R16 Rear: P225/60R16 Spare: Removed	32 psi (221 kPa) 32 psi (221 kPa)
Significant Content or Accessories	Air Conditioning, Power Steering, Power Brakes, Tilt Steering Wheel	

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J-B5310

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Sheet 3

GENERAL TEST COMMENTS:**1. Test Procedure**

The test was performed according to the following regulations, test protocols and the Corporate test procedure's:

- . Non-regulator crash test procedure, CBP-3 dated April 16, 1998.
- . FMVSS 201 Occupant Protection in Interior Impact, dated December 14, 1999.
- . Moving Barrier Side Impact Test - Occupant Protection, CHTP 00.00-L-809-US (ST-15) dated August 27, 2001.

1.1 Deviations

The fuel system did not contain standard.

1.2 Vehicle Alignment

The test vehicle impacted on 10 inch diameter steel pole structure, rigidly attached to the barrier face. The vertical steel pole was aligned so that the point of vehicle impact was near the test dummy's left front head center of gravity.

2. Remarks

Crash movies, pre- and post- crash still images of the test vehicle and copies of this report are available through the Operations Engineering Section, Safety Laboratories Department, VEV. The crash still images are stored and archived on CD ROMs. The file names of the still images are listed under crash number and a three digit sequence number which are 12863001 through 12863040.

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TEST RESULTS:**1. Occupant Protection in Interior Impact****1. E Dummy**

Head Injury Criteria (HIC)	170
Interval t1	73 ms
t2	95 ms

Time histories of the dummy instrumentation are archived on a storage media under the crash number/and or the test authorization number.

Time histories of the dummy dynamic displacements obtained from Film Analysis are archived on a storage media under the crash number/and or the test authorization number.

Time histories of the air bag/sensor(s) are archived on a storage media under the crash number/and or the test authorization number.

Time histories of any requested derived data (i.e. integrations, etc.) were given to the requesting activity and are not included in this report.

2. Vehicle Displacement and Instrumentation Data

Time histories of the vehicle/cart accelerations and other instrumentation are archived on a storage media under the crash number/and or the test authorization number.

Time histories of vehicle dynamic displacements obtained from Film Analysis are archived on a storage media under the crash number/and or the test authorization number.

Static displacements of various body points obtained by Dimensional Analysis are included in this report.

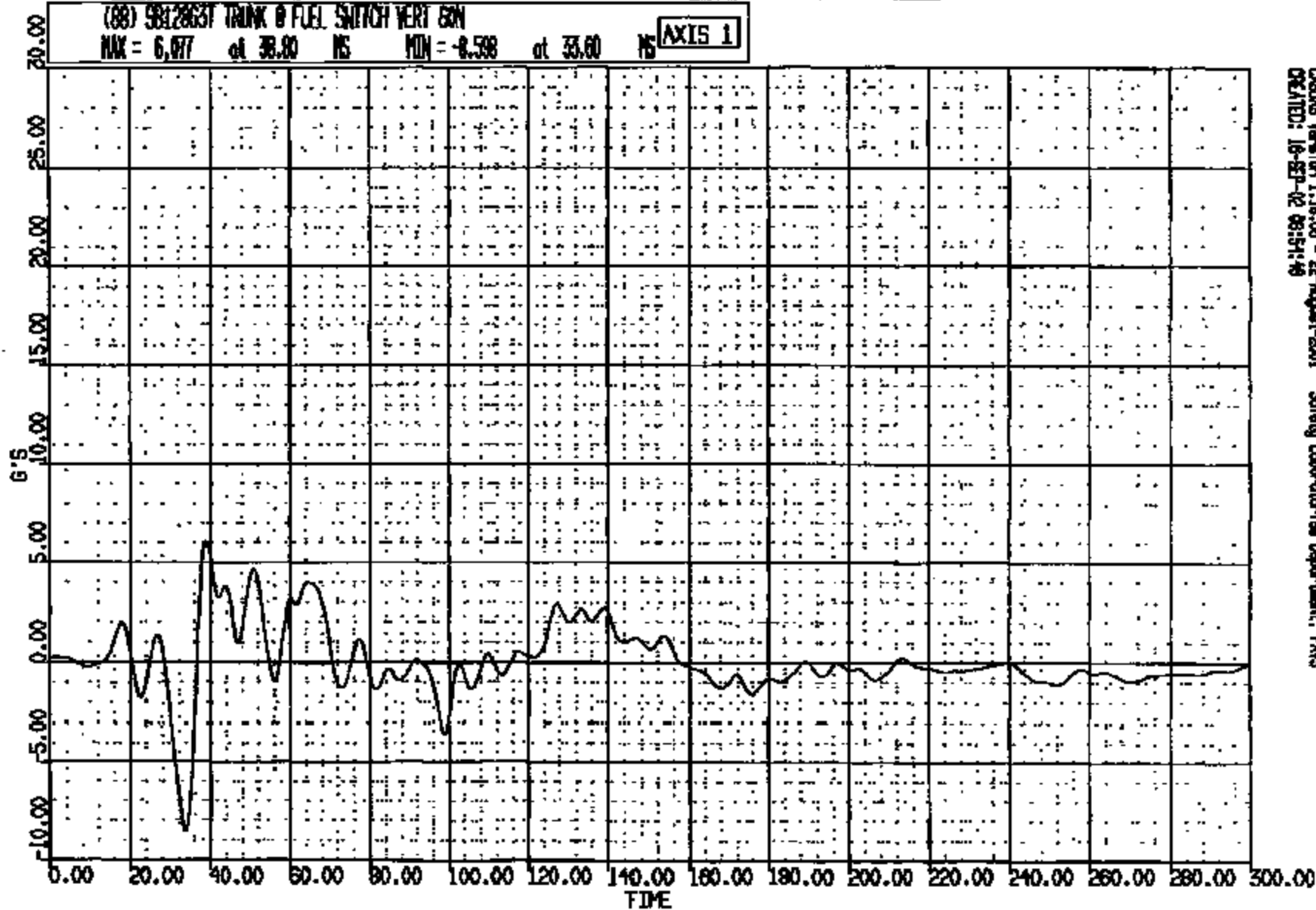
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SB R: 12865 TO: J55810 DATE: 24-APR-2002 09:30:11
2005 EN114

(88) 3812863T TRUNK @ FUEL SWITCH VERT GON

MAX = 6.977 at 38.80 MS MIN = -8.598 at 33.60 MS

AXIS 1



CASAS Version 1.18.08 - 22-August-2001 Safety Laboratory/Inc Department, PMS
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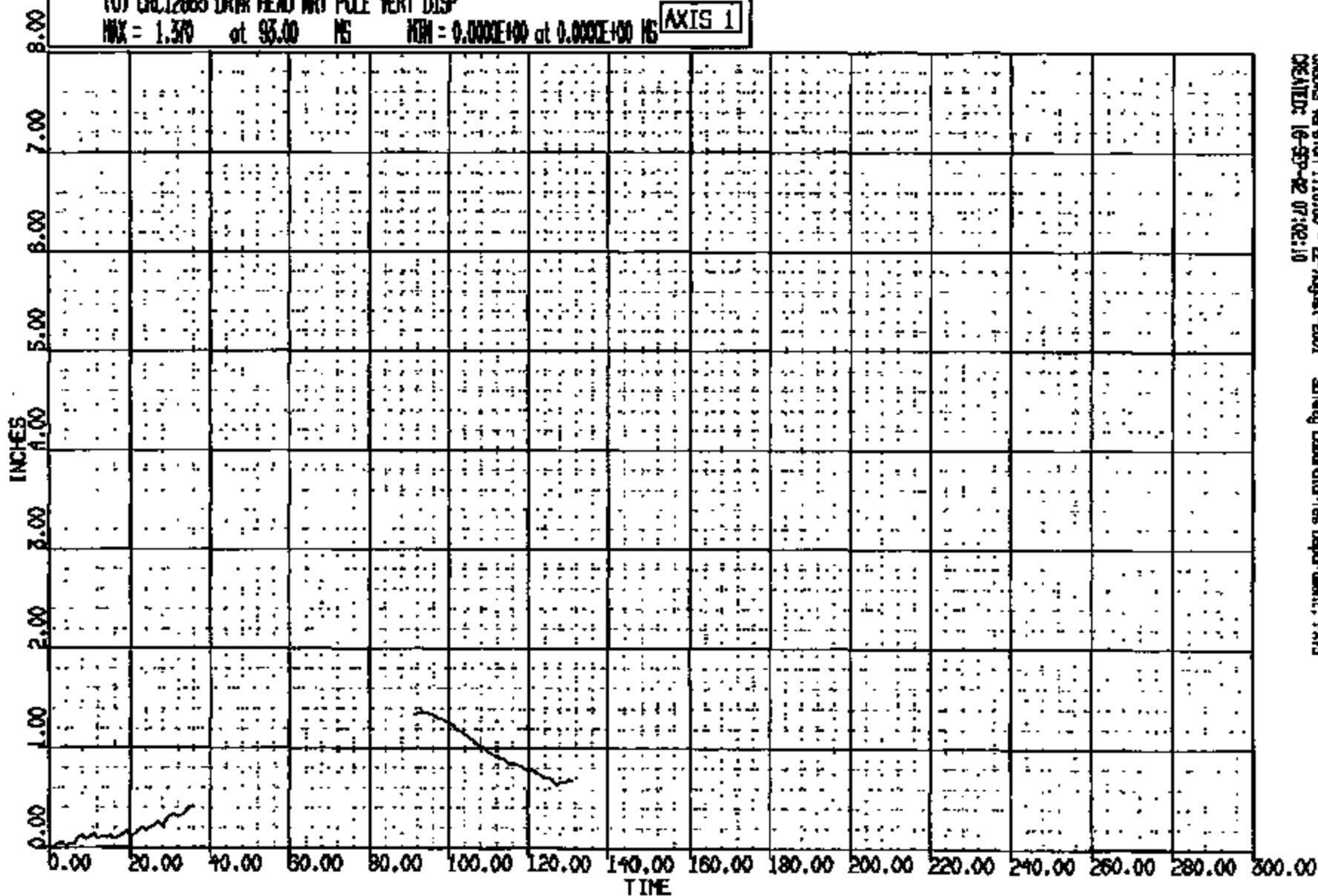
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SS R: 12863 TO: J85310 DATE: 24-APR-2002 09:30:11
2003 EN114

(0) CRI12863 DWR HEAD WRT POLE VERT DISP

MAX = 1.379 at 93.00 MS MIN = 0.000E+00 at 0.000E+00 MS

AXIS 1



CRTS 0012863

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Safety Laboratories Department, PMS

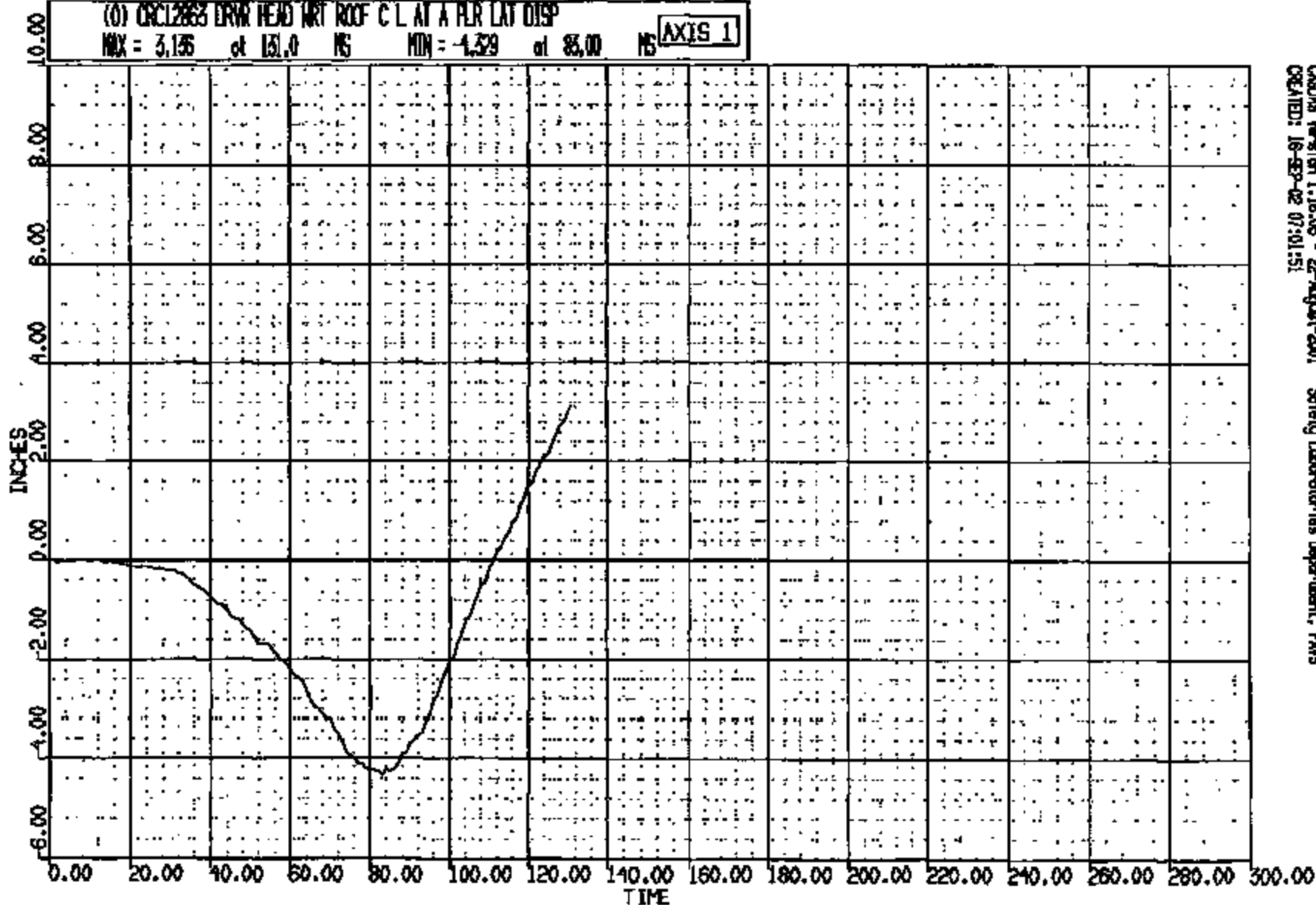
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2002 EN114

(0) CRCL2863 DRVR HEAD WRT ROOF C L AT A FLR LAT DISP

MAX = 3.135 at 131.0 MS MIN = -4.529 at 83.00 MS

AXIS 1



CASDAS Version 1.18.03 - 22-August-2001 Safety Laboratories Department, PHS
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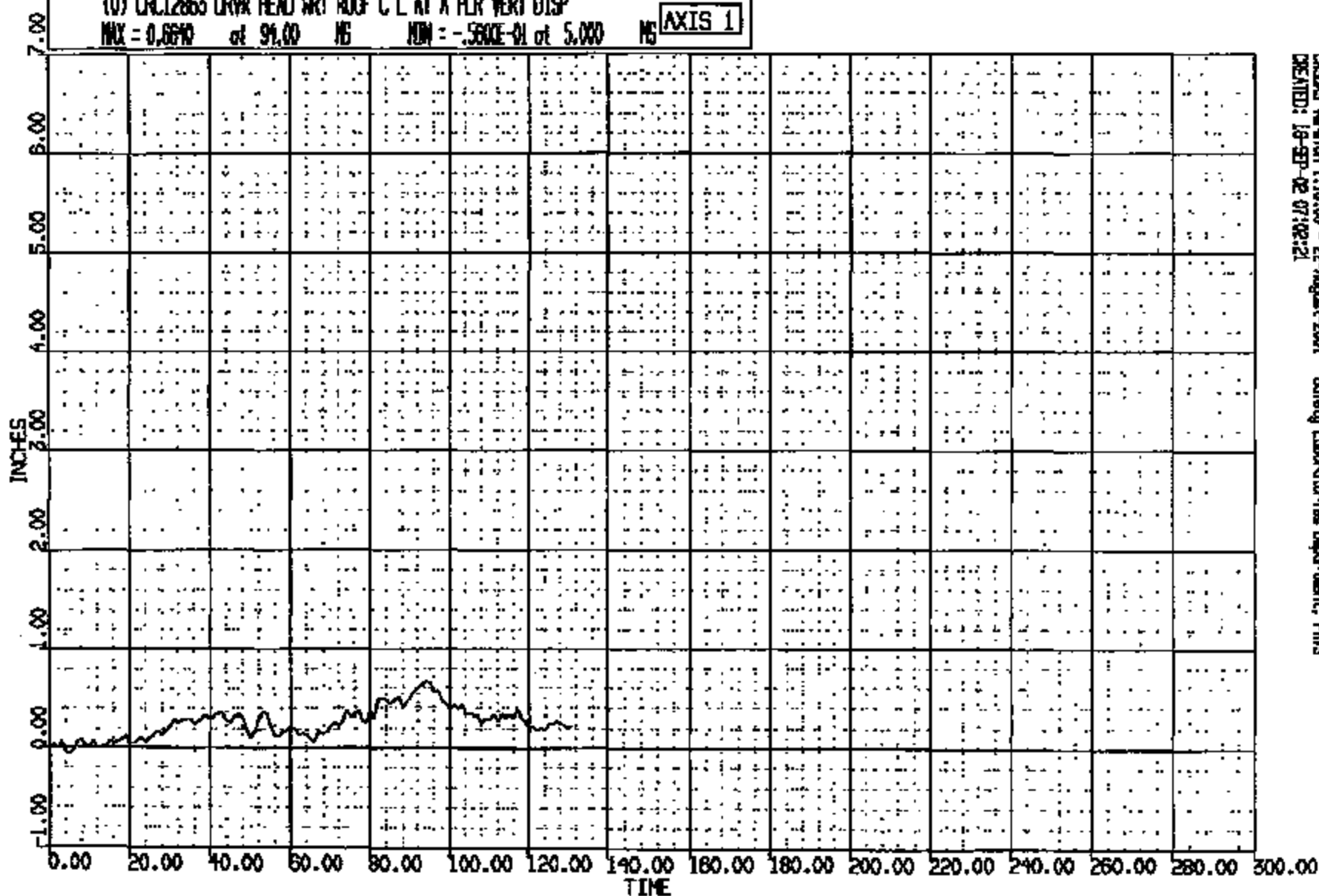
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(0) CRCL2863 DRVR HEAD WRT ROOF C L AT A FLR VERT DISP

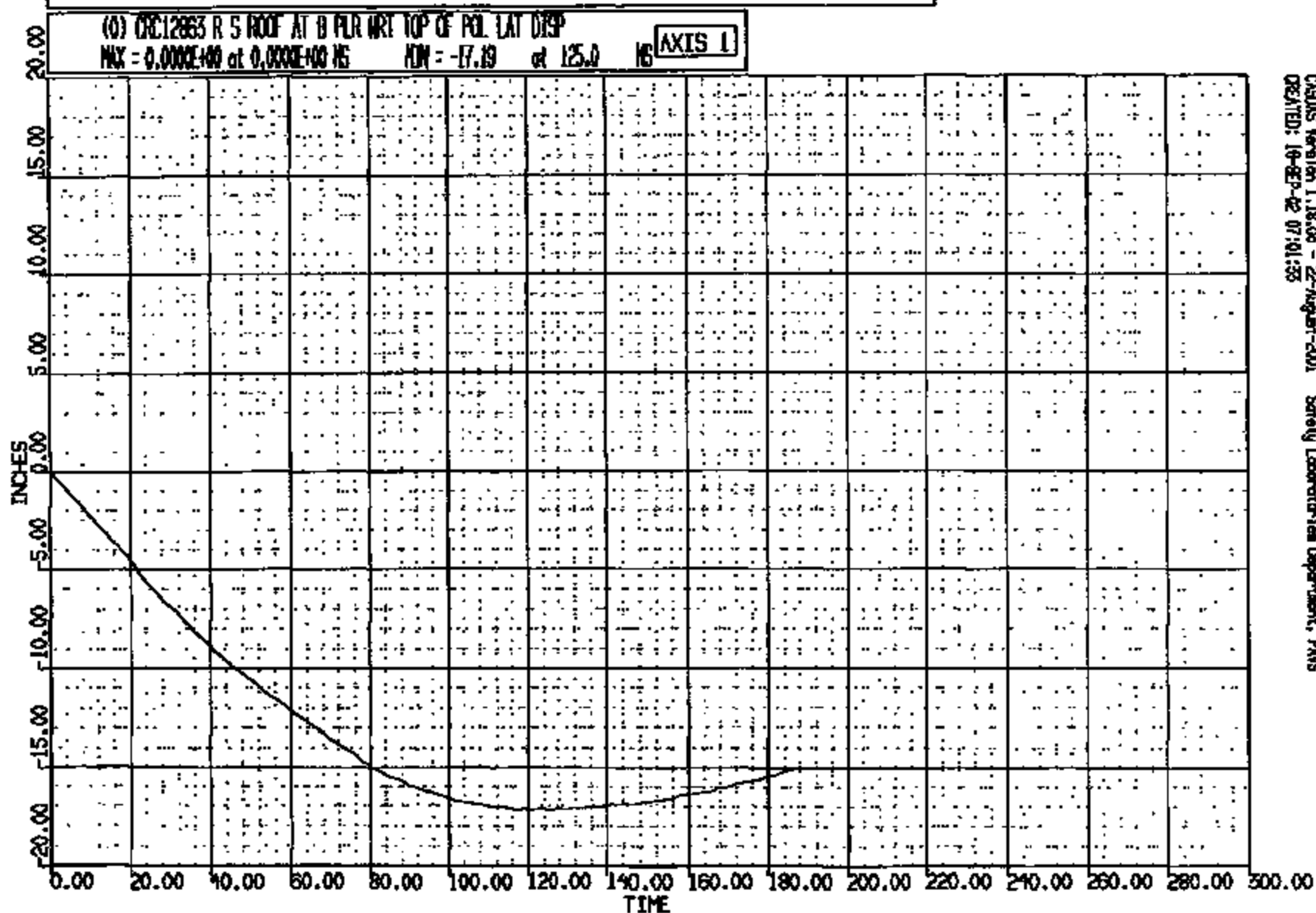
MAX = 0.6640 at 91.00 MS MIN = -.5600E-01 at 5.000 MS

AXIS 1



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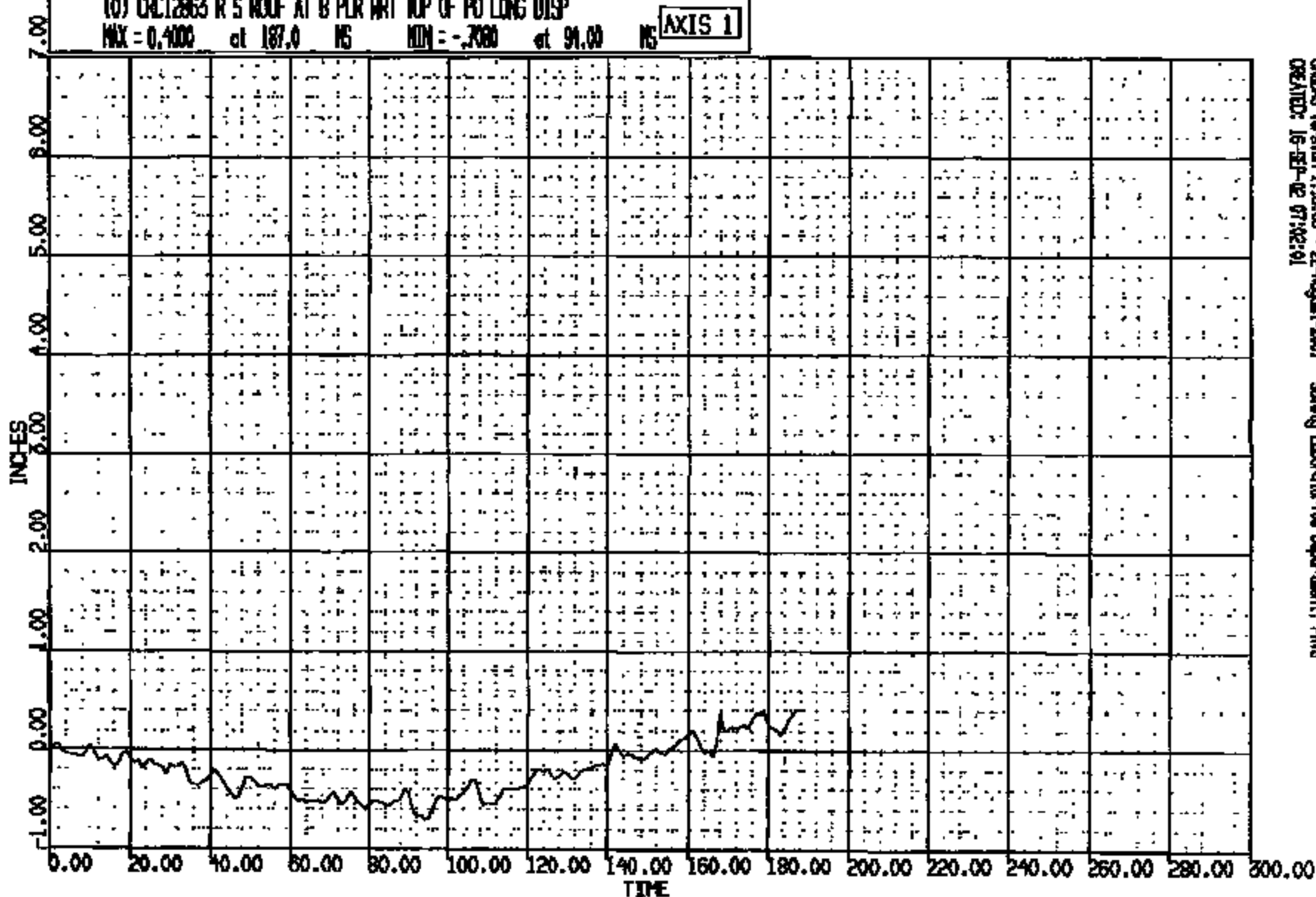
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SE R: 12863 TO: JESSIO DATE: 24-APR-2002 08:50:11
2008 EN114

(0) CHC12863 R 5 ROOF AT 8 PLR WRT TOP OF PO LONG DISP

MAX = 0.4000 at 187.0 NS MIN = -.3000 at 91.0 NS

AXIS 1



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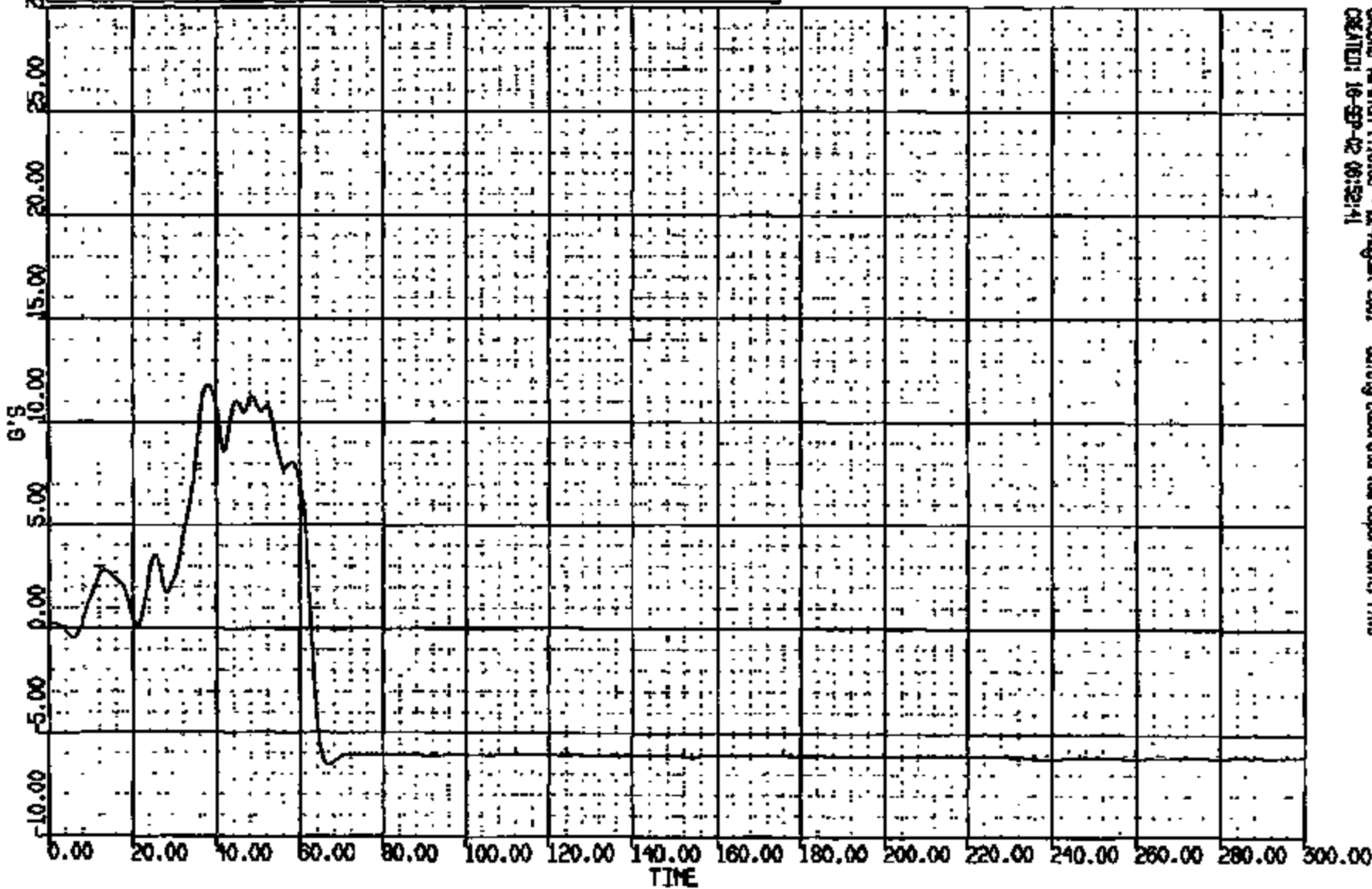
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BB R: 12863 TO: JB5310 DATE: 24-APR-2002 09:30:11
2005 EN114

(74) SB12863T C/L TUNNEL BTM SEATS #10 LAT 60N

MAX = 11.04 at 38.24 NS MIN = -8.564 at 66.56 NS

AXIS 1

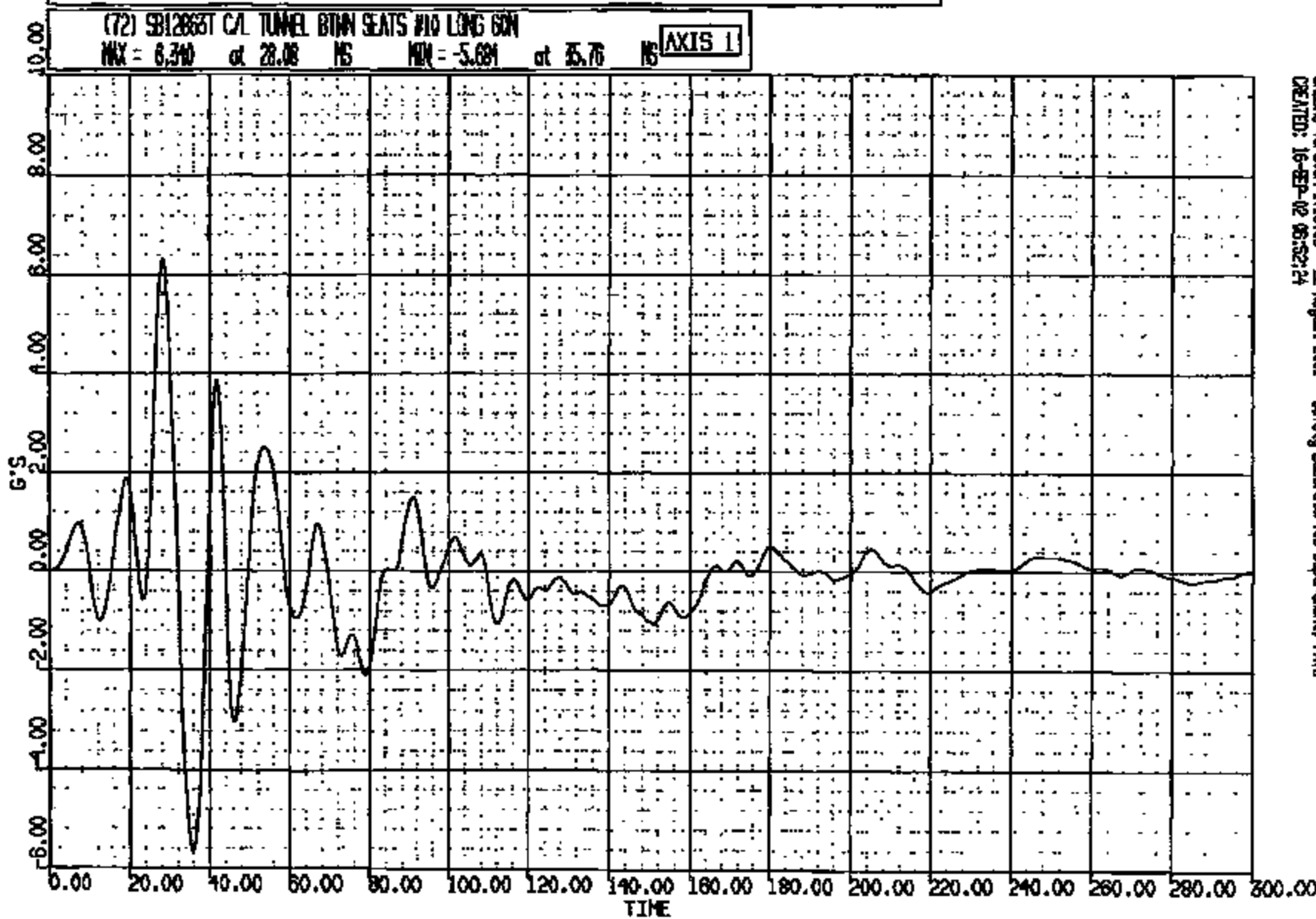


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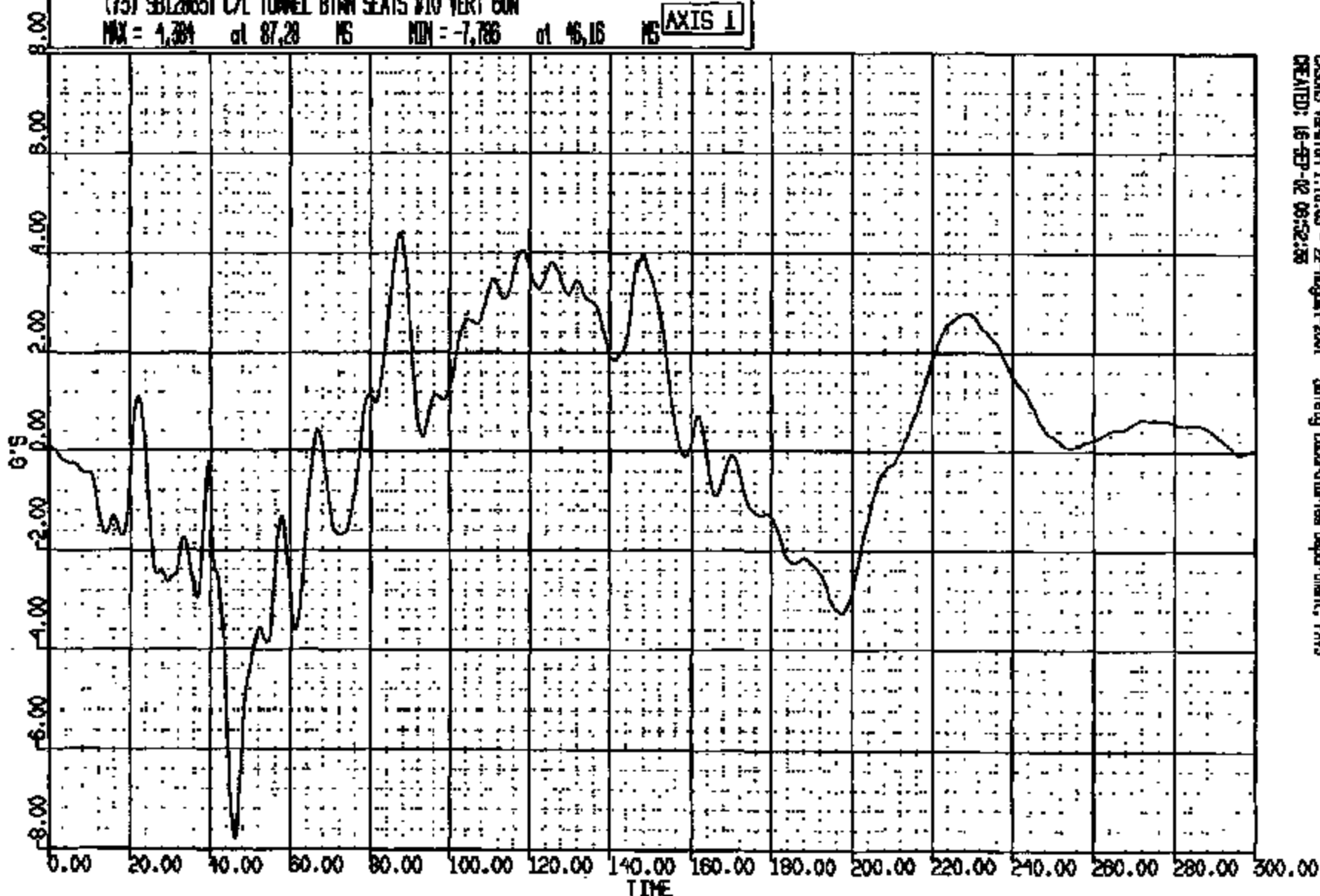
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(73) SB12863T C/L TUNNEL BTM SEATS #10 VERT GON

MAX = 4.384 at 87.28 MS MIN = -7.786 at 46.16 MS

AXIS 1

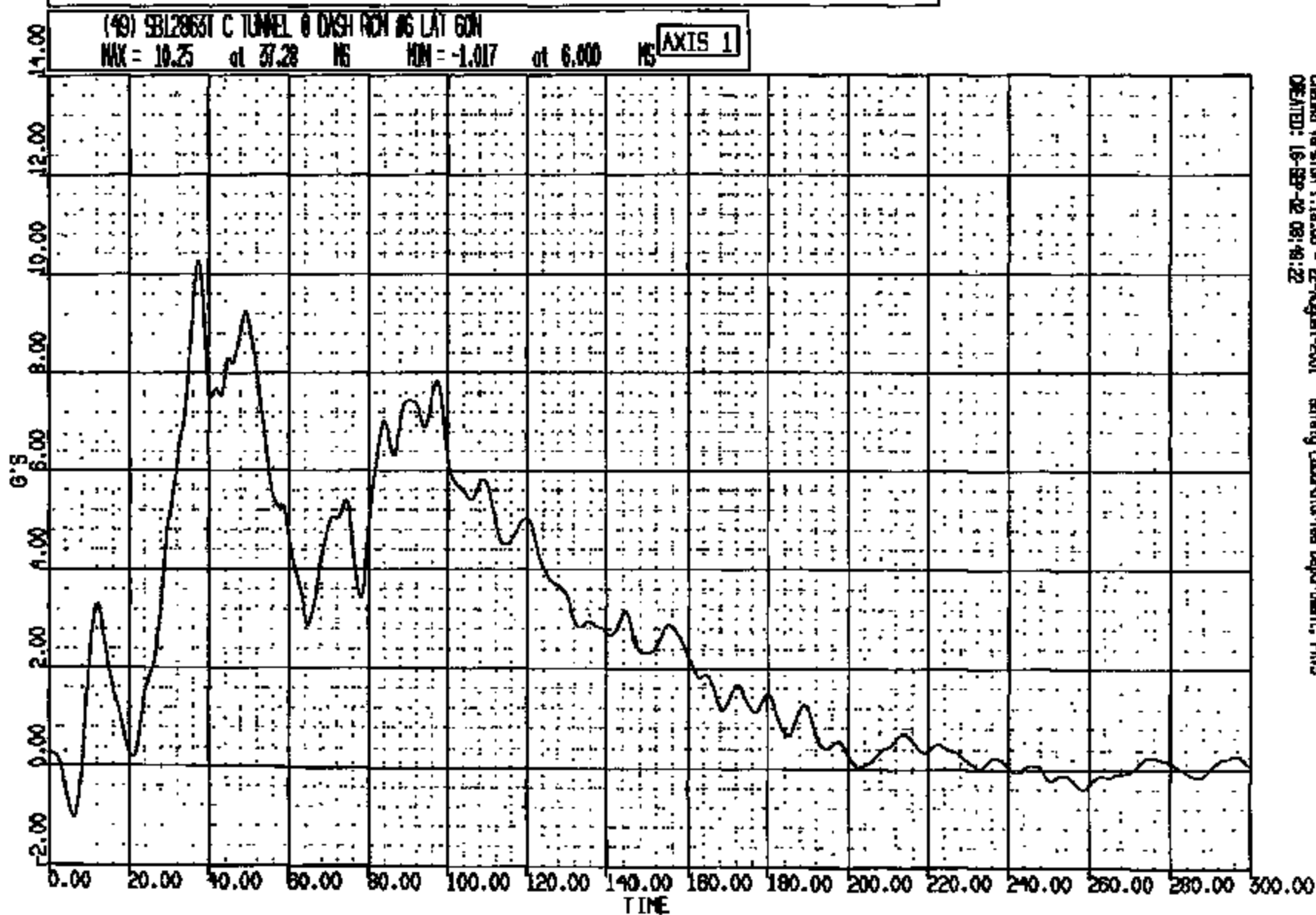


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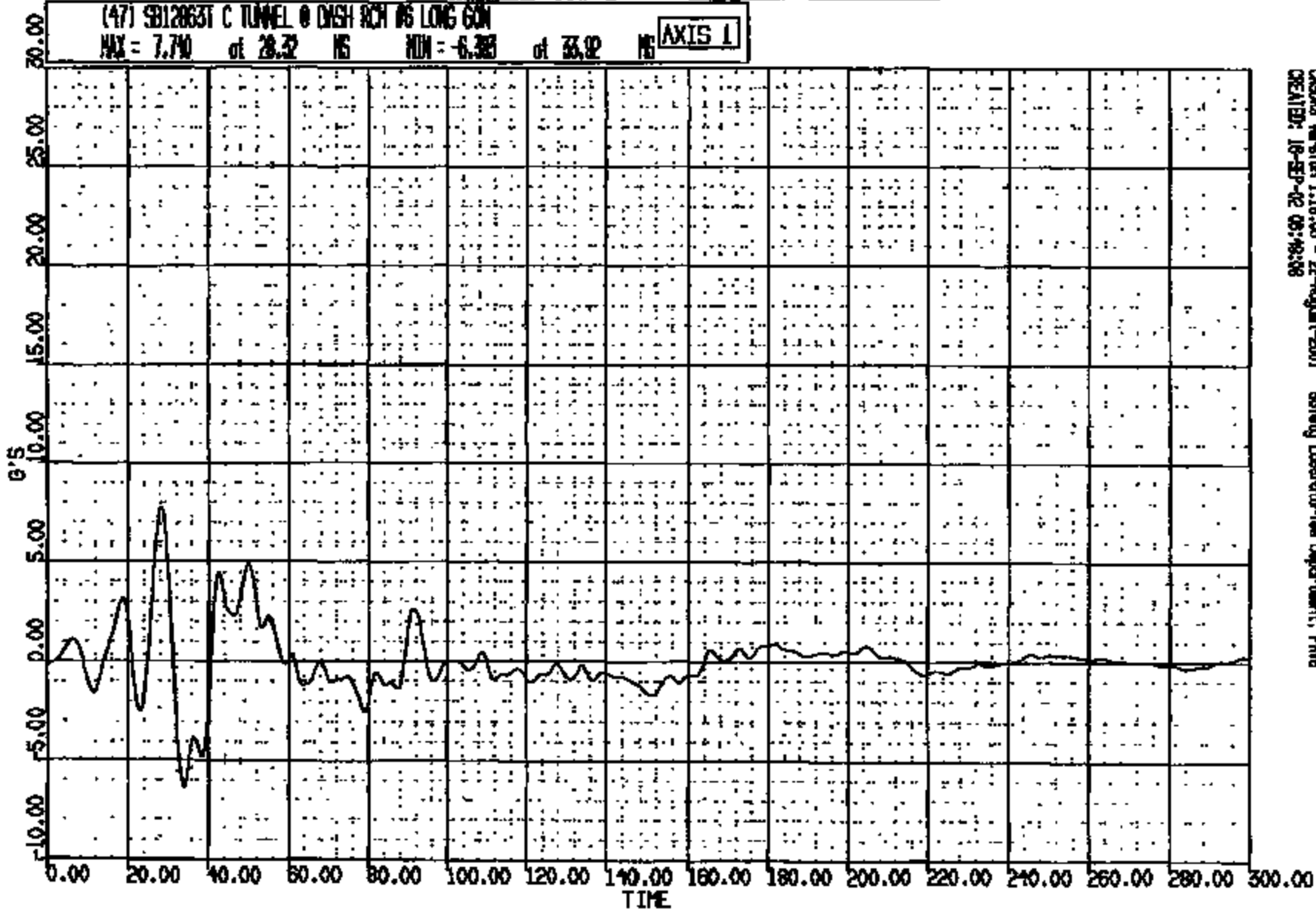
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2003 EN114

(47) SB12863T C TUNNEL @ DASH RCH NS LONG 60M

MAX = 7.740 of 28.32 NS MIN = -6.383 of 33.92 NS

AXIS 1



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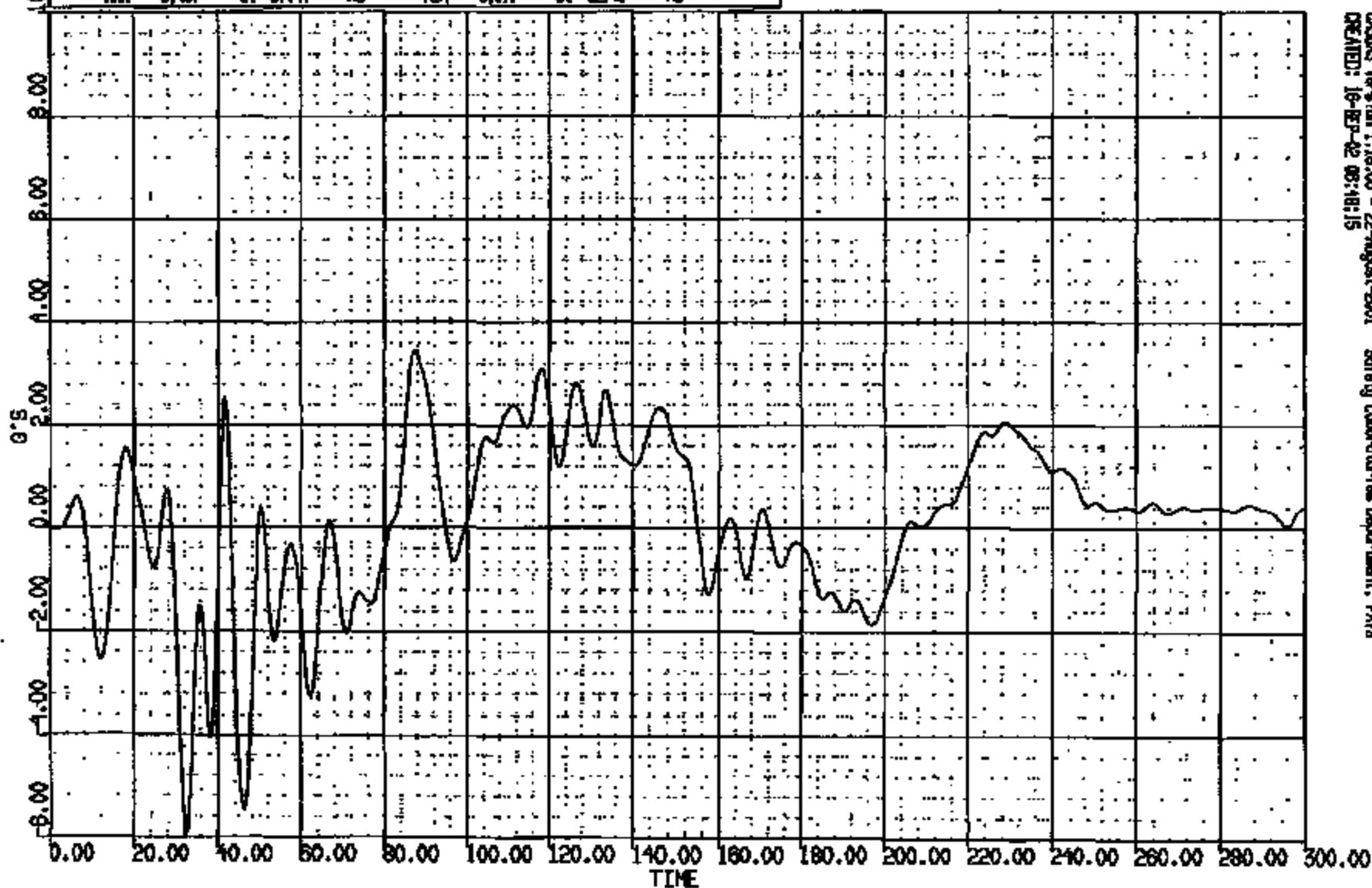
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(46) 9912863 C TUNNEL @ DASH RCH NS VERT GON

MAX = 3.457 at 87.44 NS MIN = -5.977 at 32.40 NS

AXIS 1

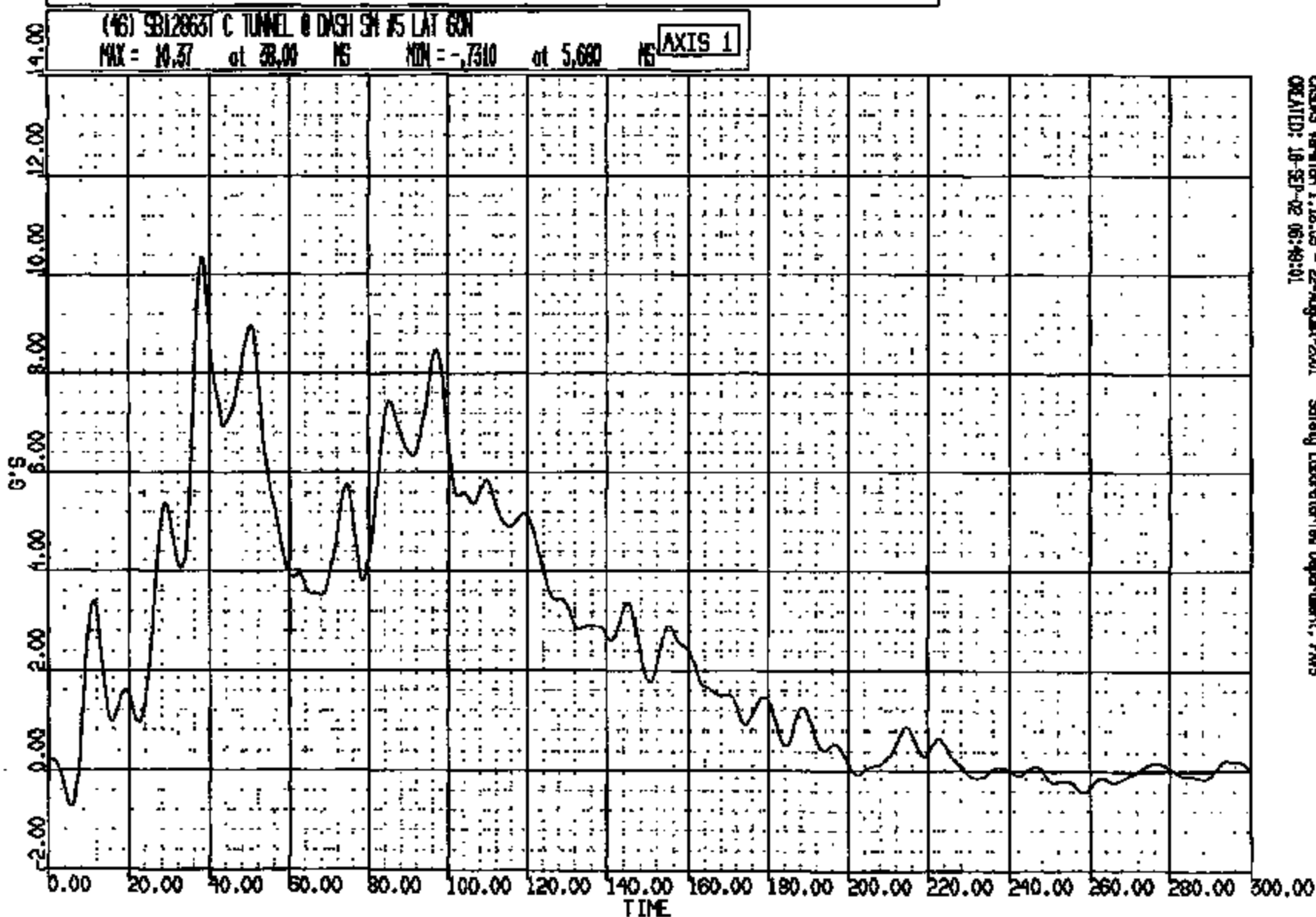


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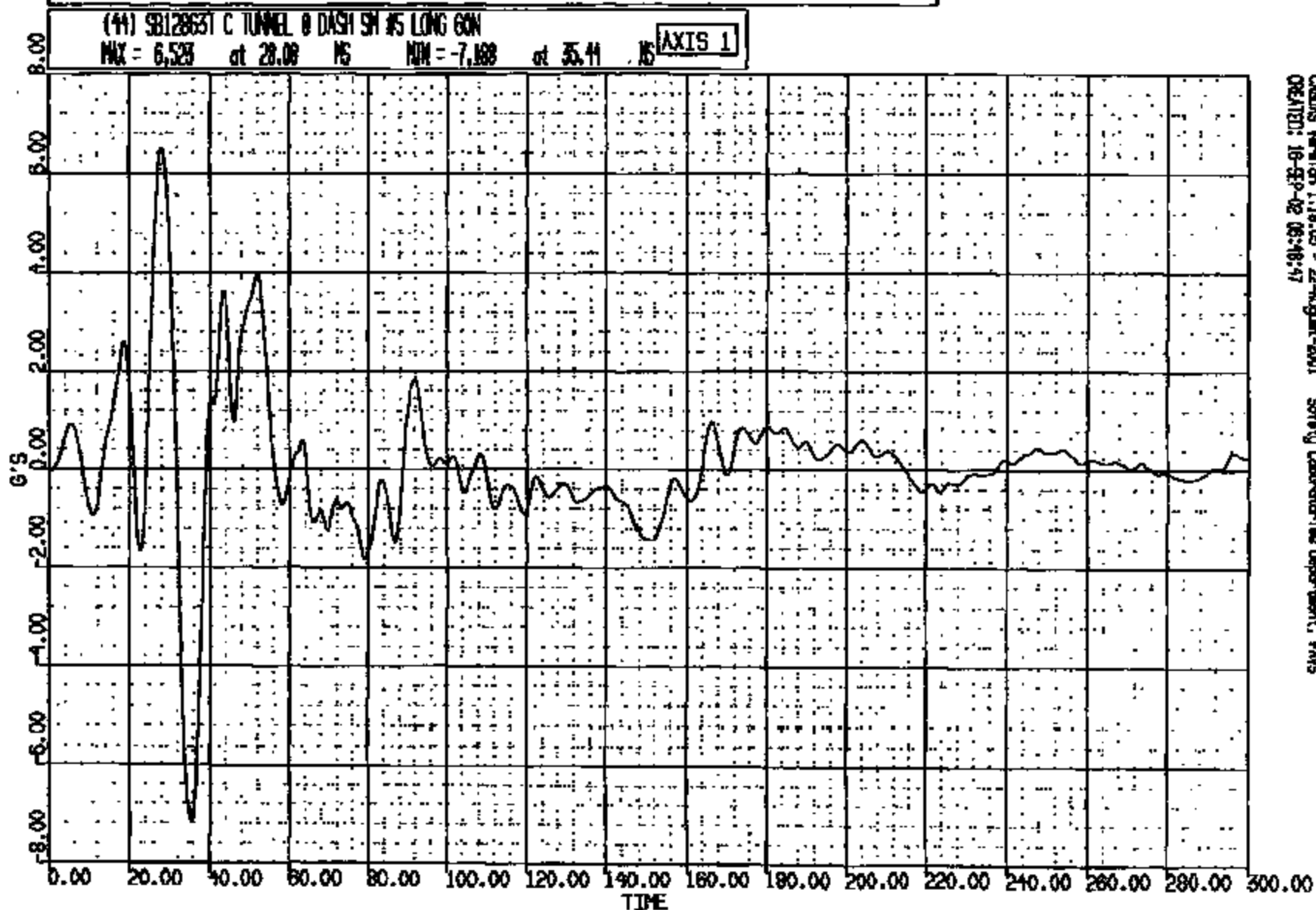


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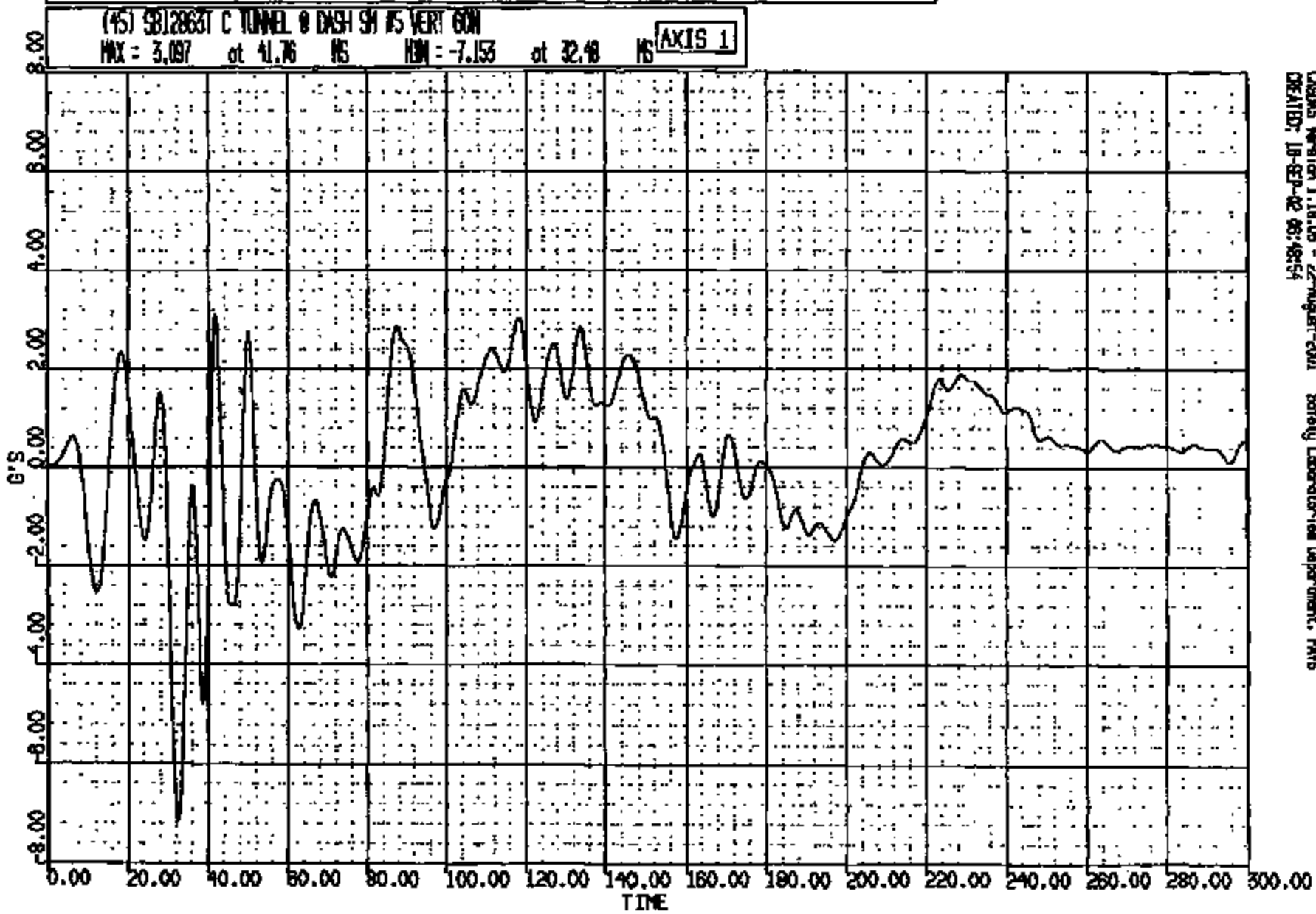


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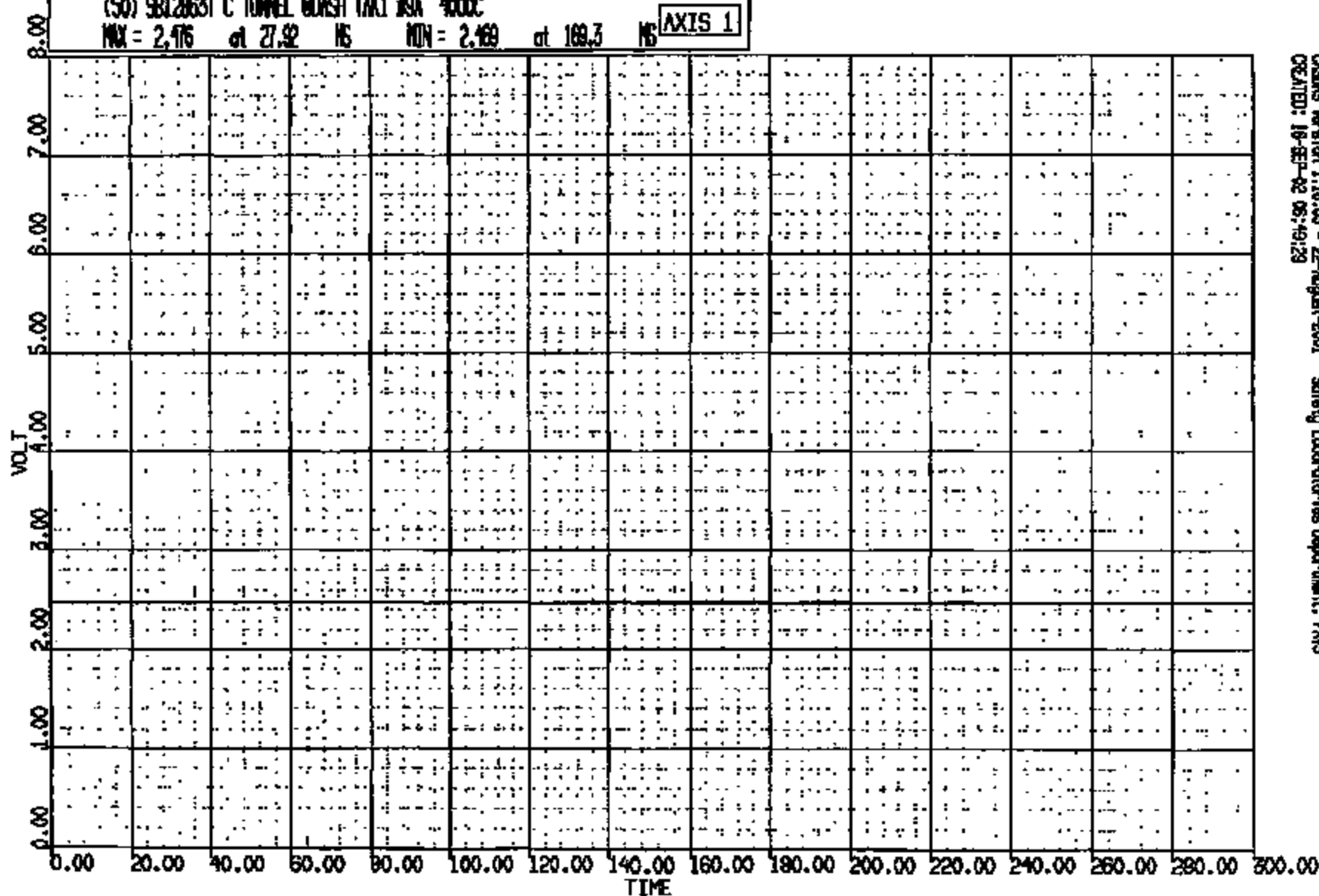
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SP R: 12863 TO: JB5310 DATE: 24-APR-2002 09:30:11
2003 EN114

(50) 9812863T C TUNNEL 60KSH TAXI JSA 4000C

MAX = 2.476 at 27.32 NS MIN = 2.469 at 169.3 NS

AXIS 1



CRIS 0012863

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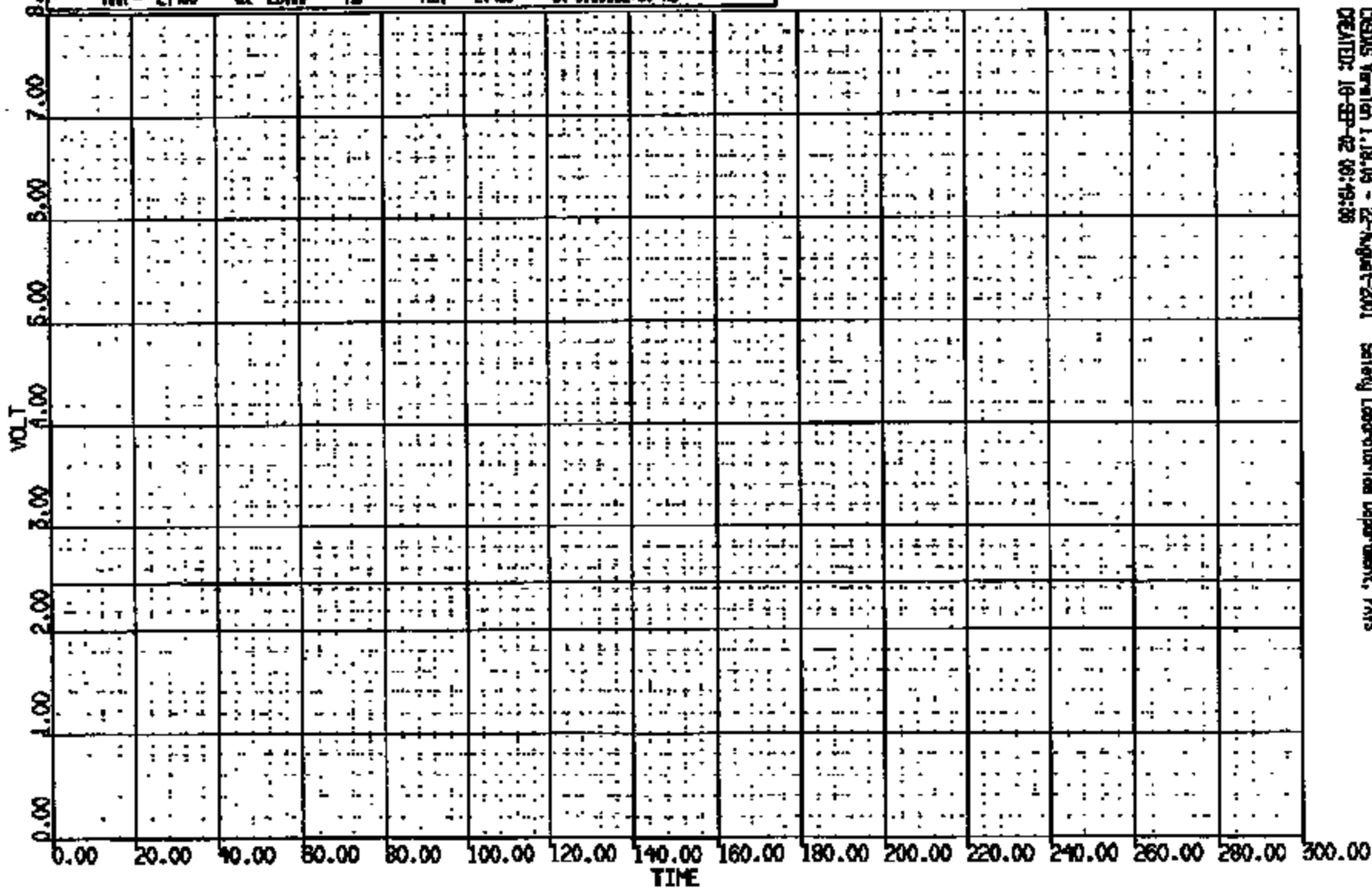
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2003 EN114

(51) SBL2863T C TUNNEL 60KSH TAP2 250 4000

MAX = 2.466 at 28.00 MS MIN = 2.450 at 0.000E+00 MS

AXIS 1



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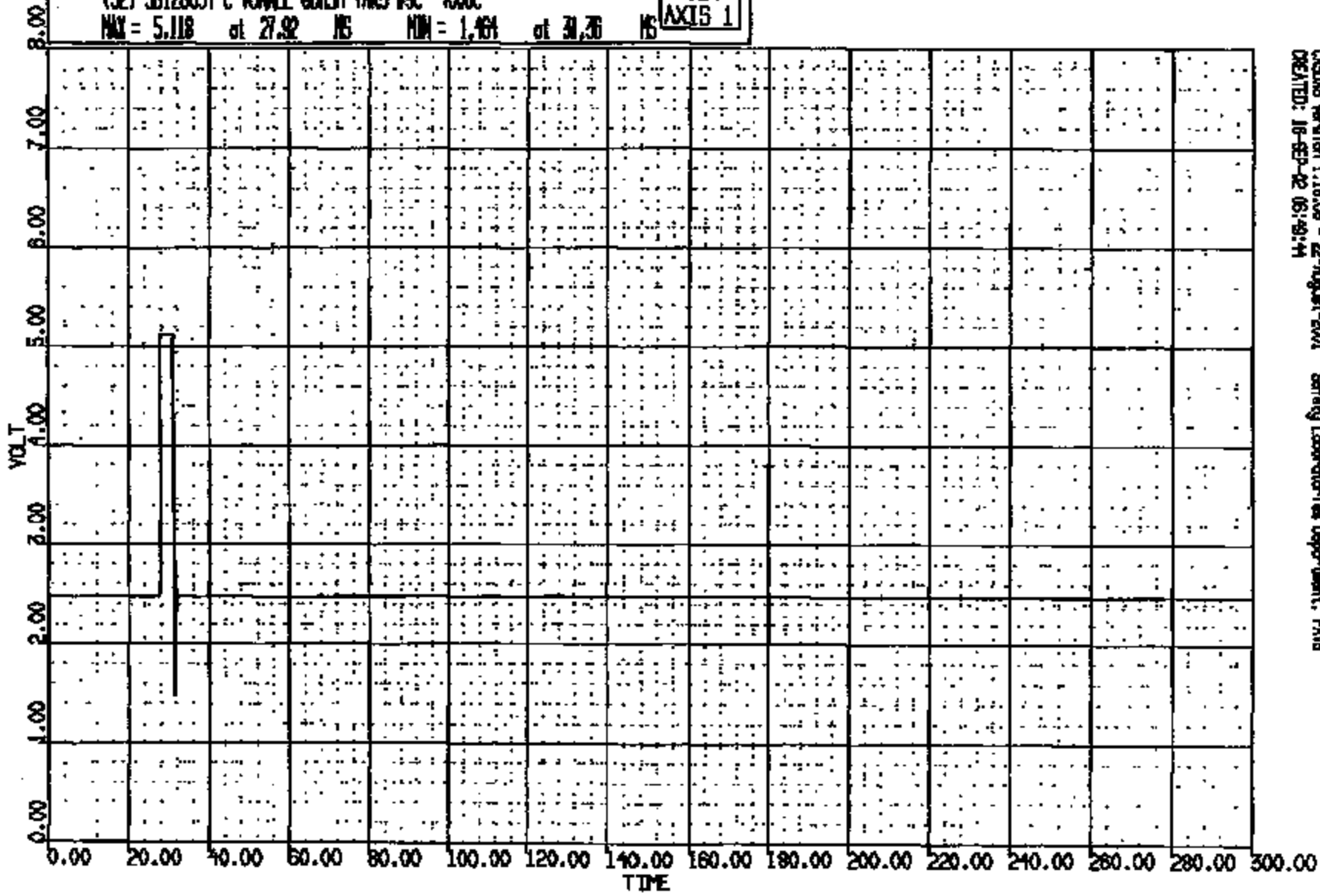
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2002 EN114

(52) SB12863T C TUNNEL BUSH TAK3 ISC 4000

MAX = 5.118 at 27.92 MS MIN = 1.464 at 31.26 MS

AXIS 1



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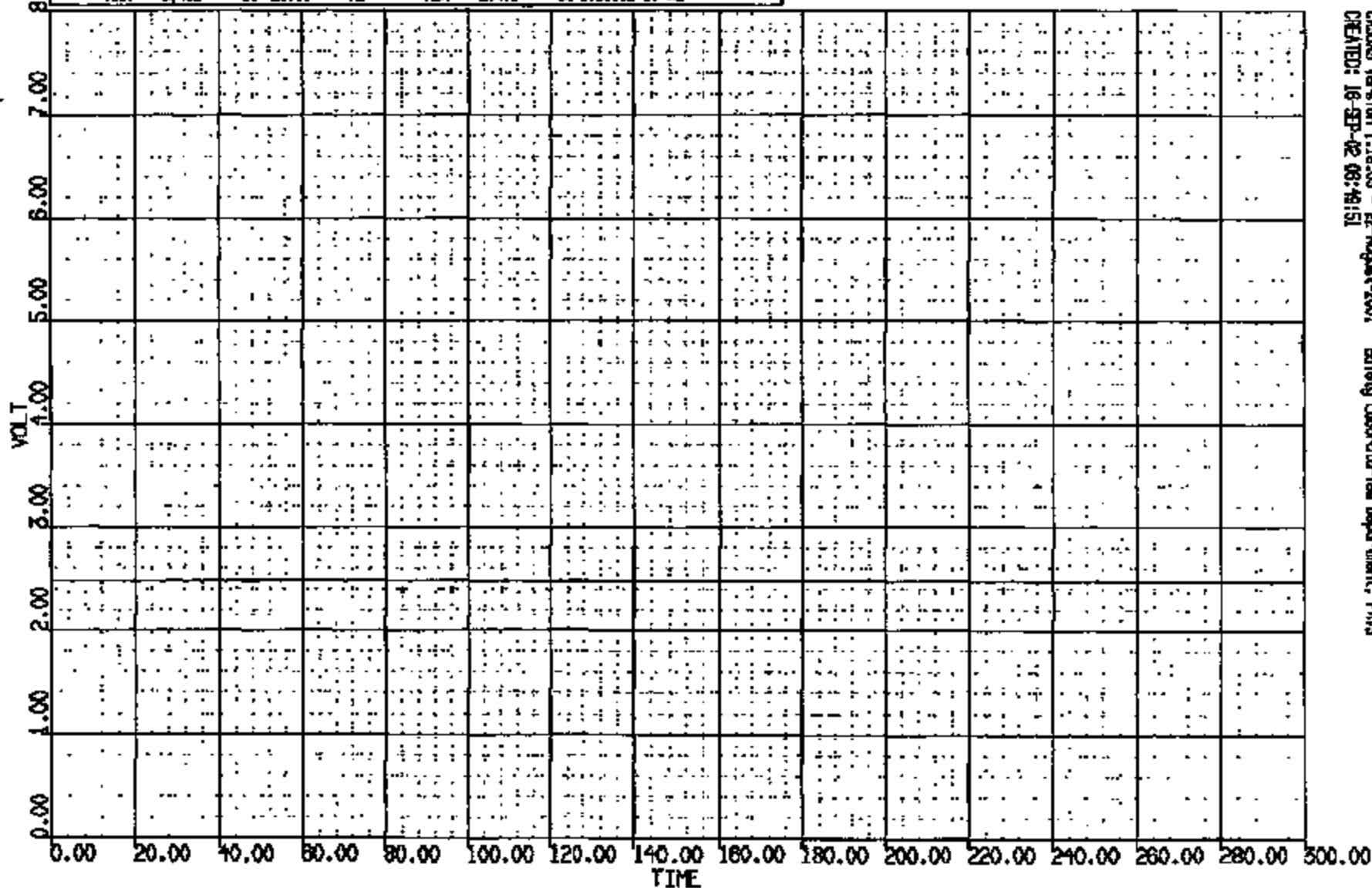
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(53) SB12863T C TUNNEL 00ASH TAK4 #30 4000C

MAX = 2.482 at 28.00 MS MIN = 2.475 at 0.000E+00 MS

AXIS 1



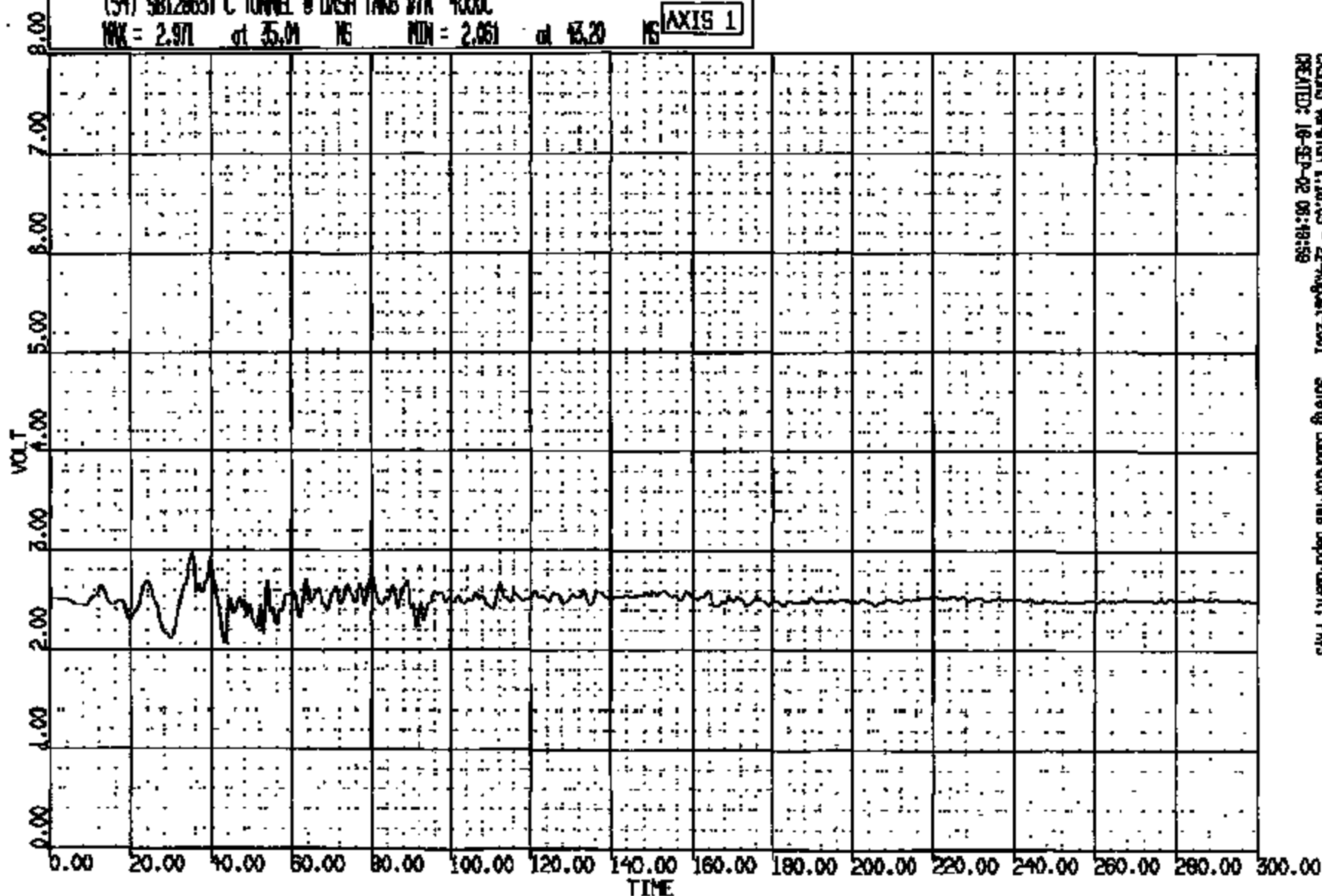
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2003 EN114

(54) 5812863T C TUNNEL @ DASH TAGS #7A 4000C

MAX = 2.971 at 35.04 MS MIN = 2.061 at 43.20 MS

AXIS 1



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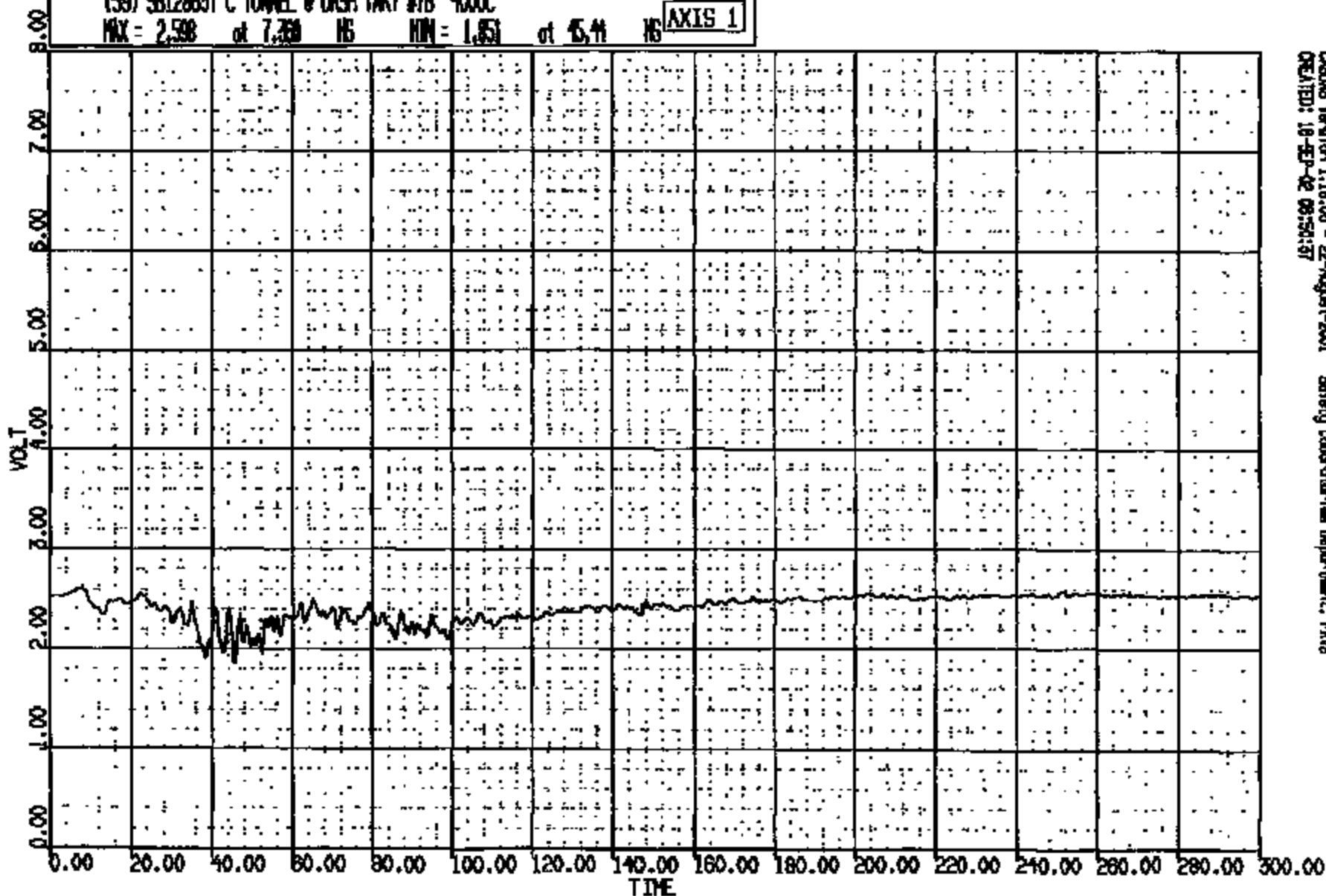
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2002 EN114

(59) SBL28631 C TUNNEL @ DASH TANK #7B 4000C

MAX = 2.598 at 7.360 HS MIN = 1.851 at 45.41 HS

AXIS 1



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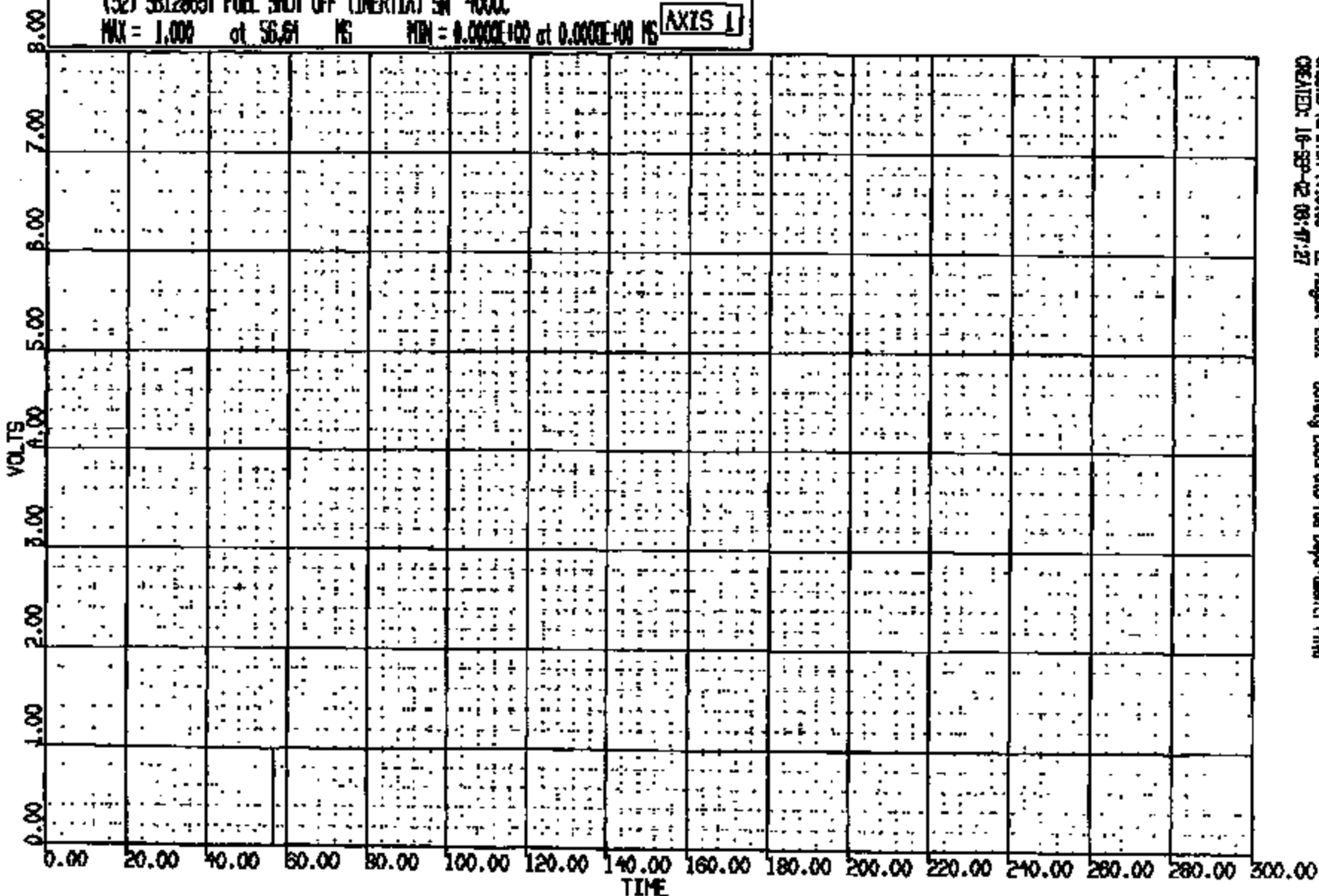
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2005 EN114

(32) 98128631 FUEL SHUT OFF (INERTIA) SN 4000C

MAX = 1.000 at 56.61 MS MIN = 0.000E+00 at 0.000E+00 MS

AXIS 1



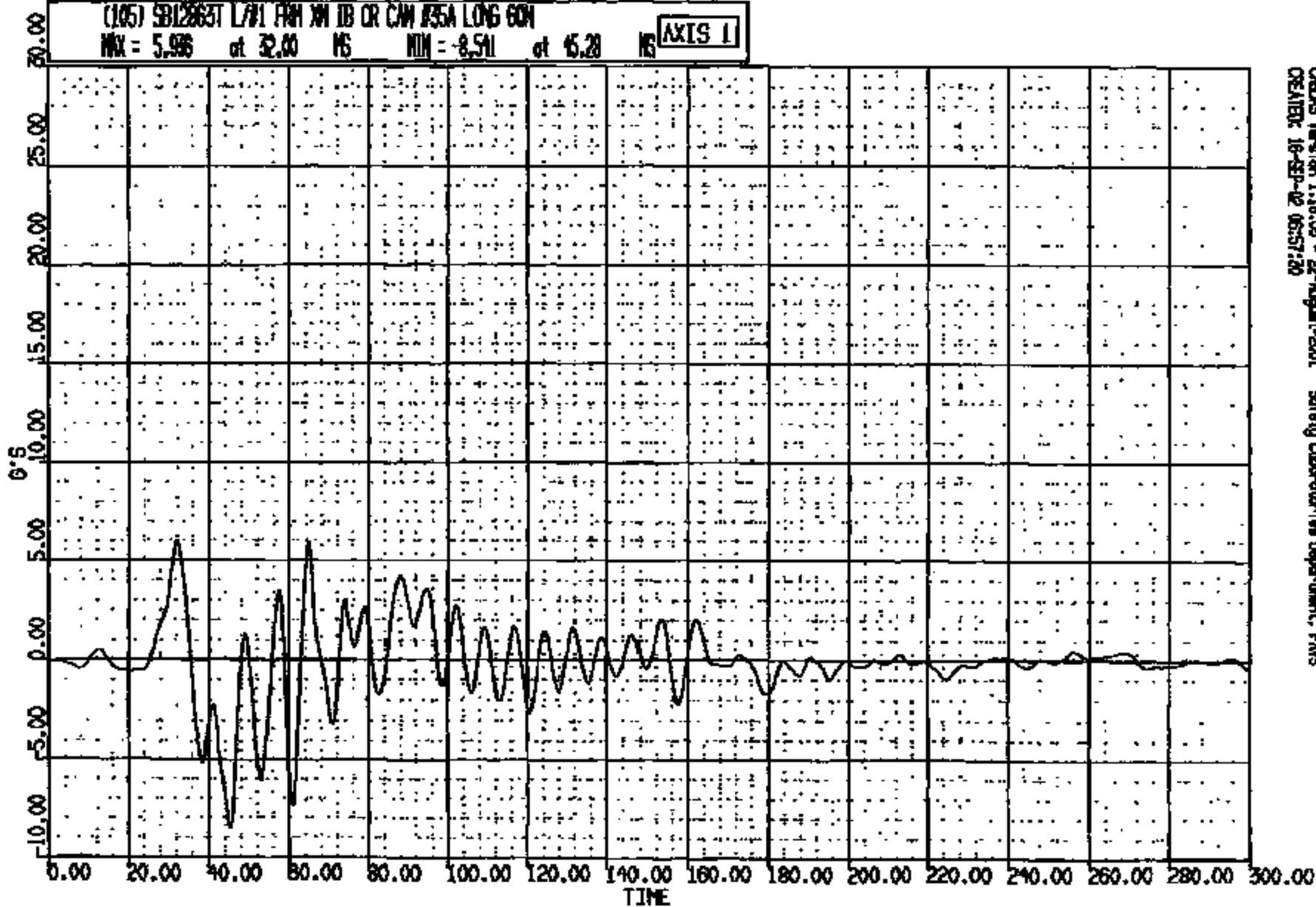
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2008 EN114

(105) SBI2863T L/71 FHM XM IB CR CAN #35A LONG 60N

MAX = 5.986 at 32.00 MS MIN = -8.511 at 45.20 MS

AXIS 1



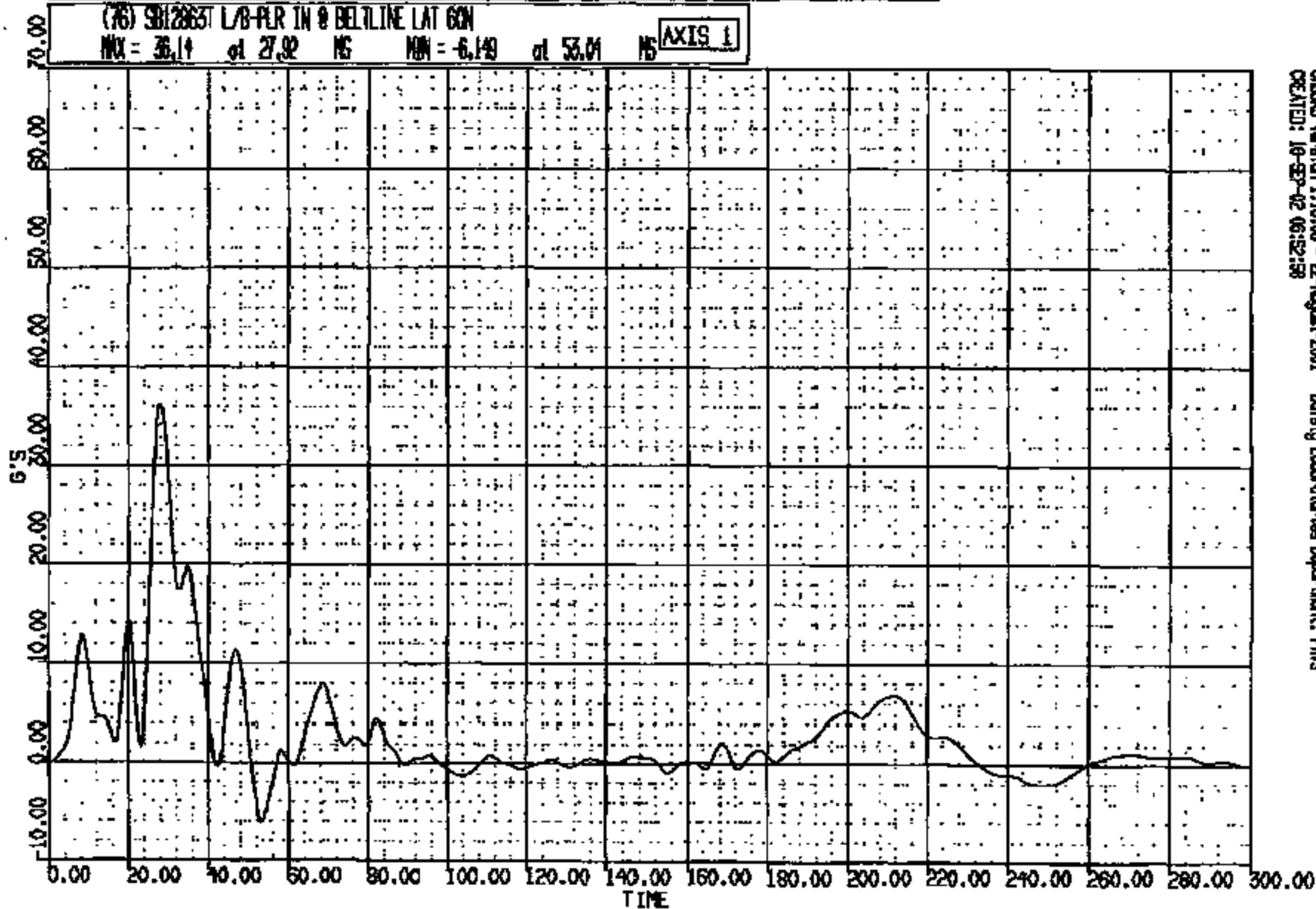
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2005 EN114

(76) S012863T L/B-PLR IN 0 BELTLINE LAT 60N

MAX = 36.14 at 27.92 NS MIN = -6.149 at 53.01 NS

AXIS 1



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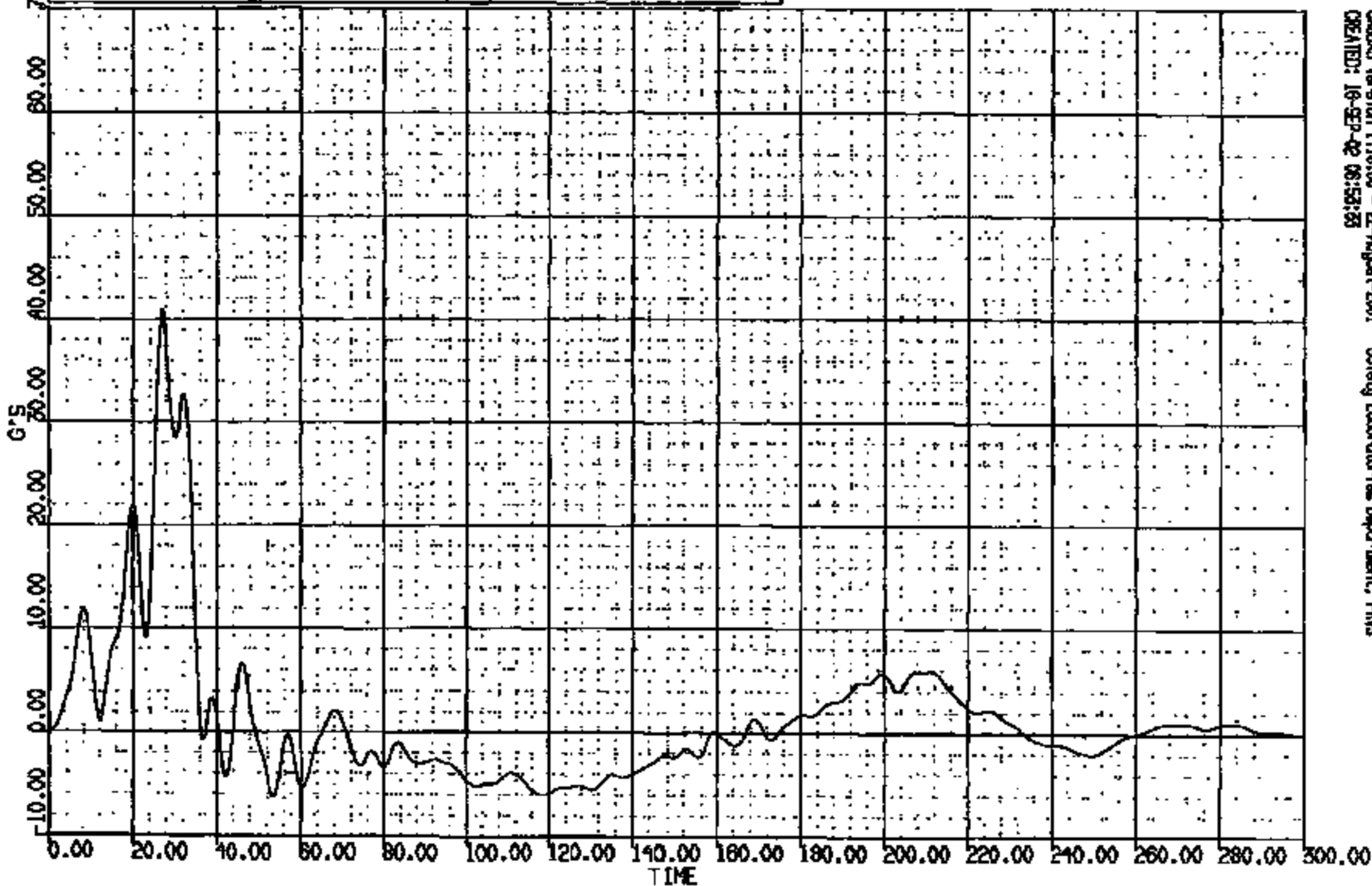
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SB R: 12863 TO: JB5510 DATE: 24-APR-2002 09:30:11
2005 EN114

(80) SB12863T L/B-PLR IN @ MID SCS #28 LAT 60N

MAX = 40.94 at 27.12 MS MIN = -6.331 at 53.44 MS

AXIS 1



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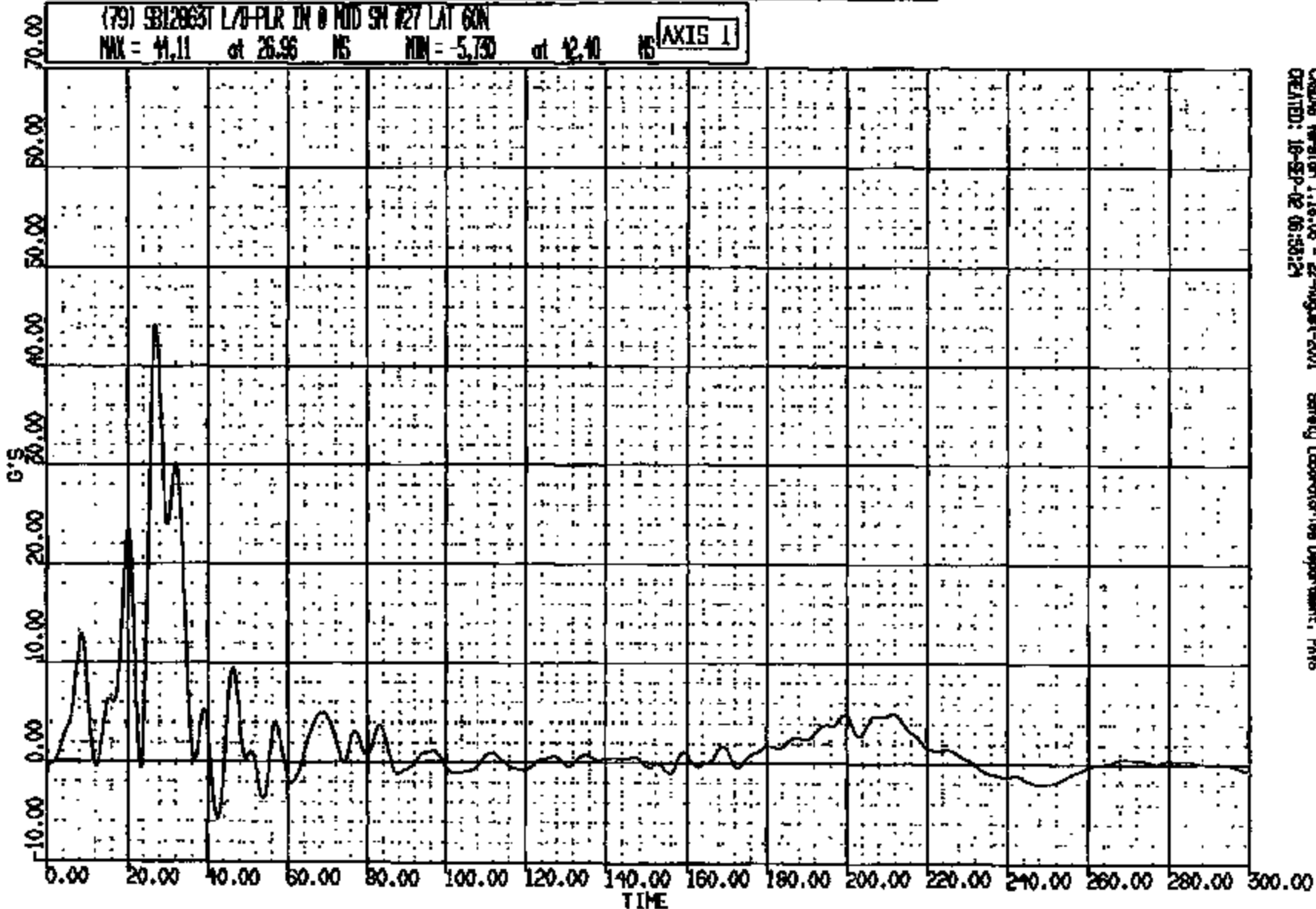
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BB R: 12863 TO: J85510 DATE: 24-APR-2002 08:30:11
2003 EN114

(79) SB12863T L/O-PLR IN 0 MOD SN #27 LAT 60N

MAX = 44.11 at 26.96 NS MIN = -5.730 at 42.40 NS

AXIS 1



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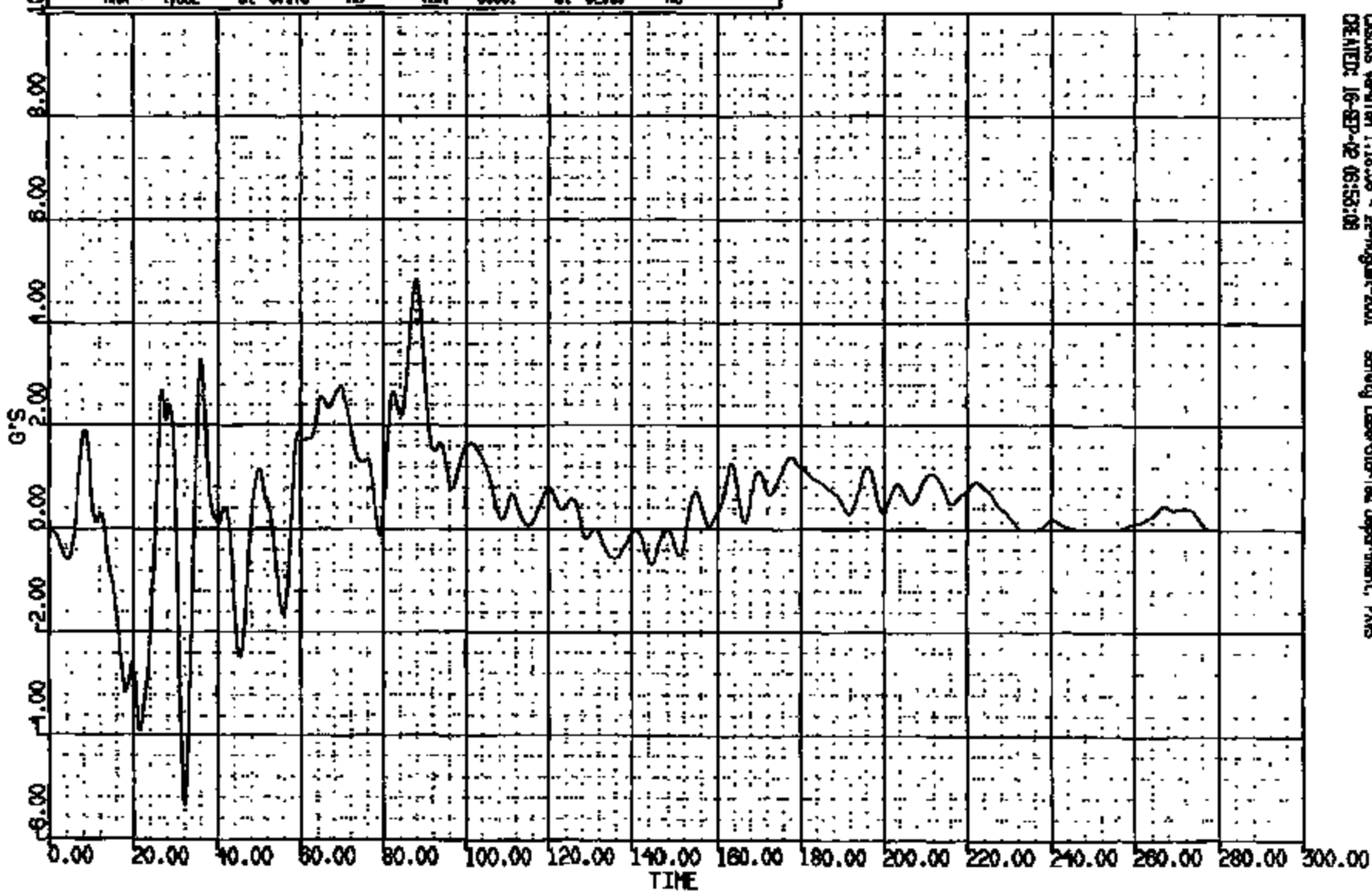
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2005 EN114

(77) SB12863T L/O-PLR IN @ MID SM #27 LONG 60N

MAX = 4.852 at 87.76 MS MIN = -5.331 at 32.00 MS

AXIS 1



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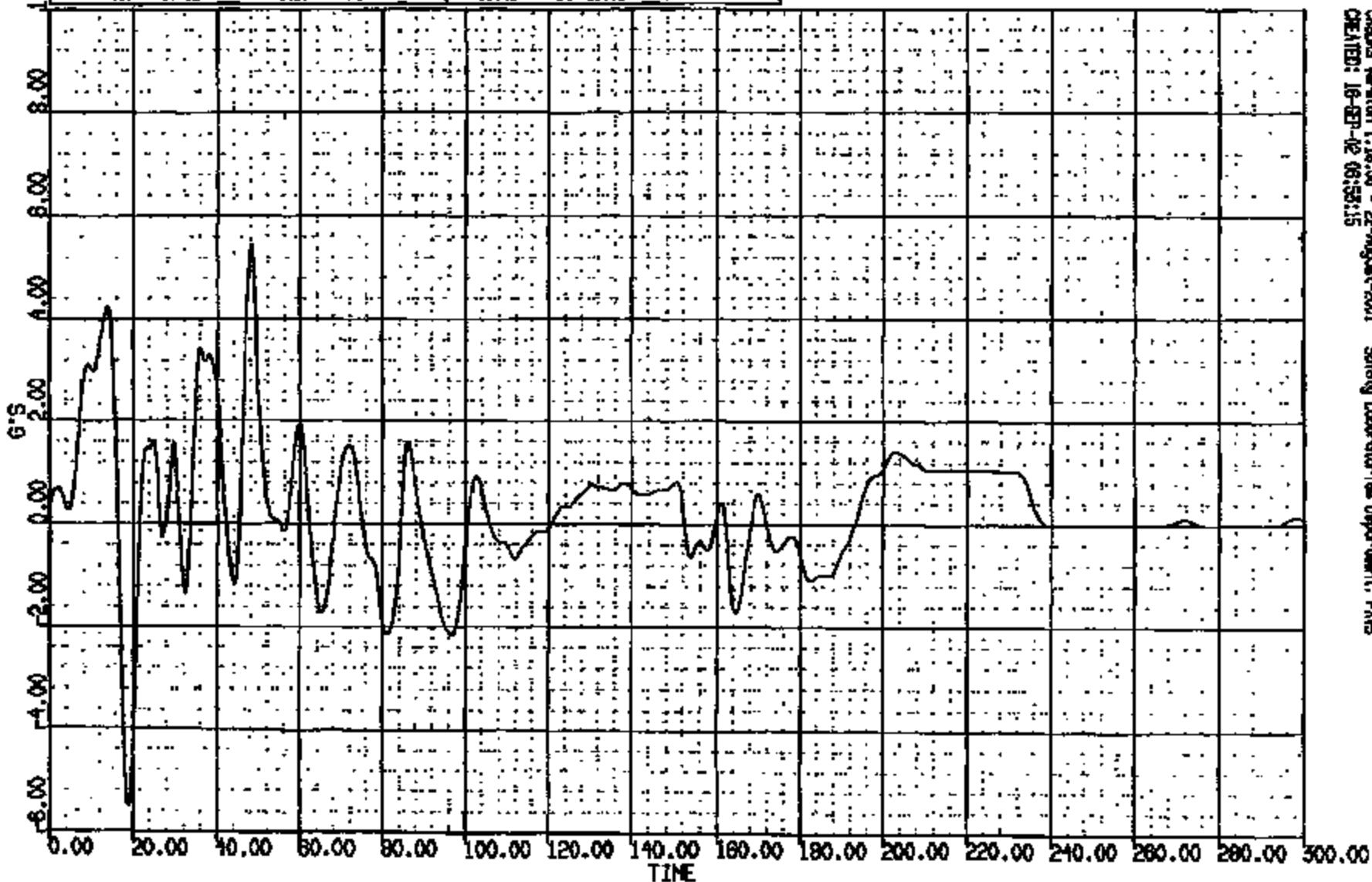
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2005 EN114

(78) SB12863T L/O-PLR IN @ MOD SP #27 VERT GON

MAX = 5.462 at 48.16 NS MIN = -5.543 at 18.80 NS

AXIS 1



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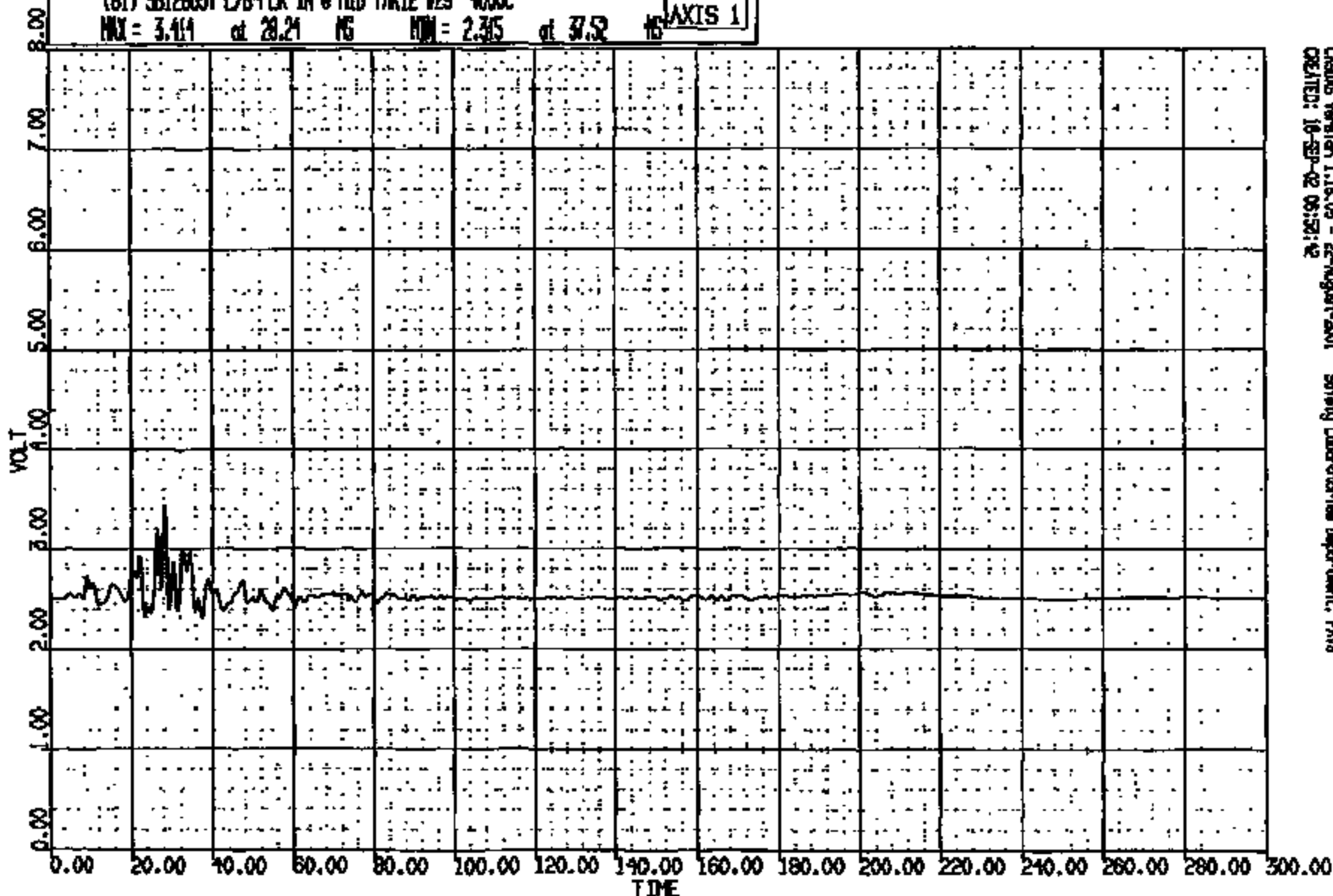
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SB R: 12863 TO: J55510 DATE: 24-APR-2002 09:30:11
2002 EN114

(81) SB128631 L/B-PLR IN @ MID TAK12 #29 4000C

MAX = 3.414 at 28.21 MS MIN = 2.315 at 37.52 MS

AXIS 1



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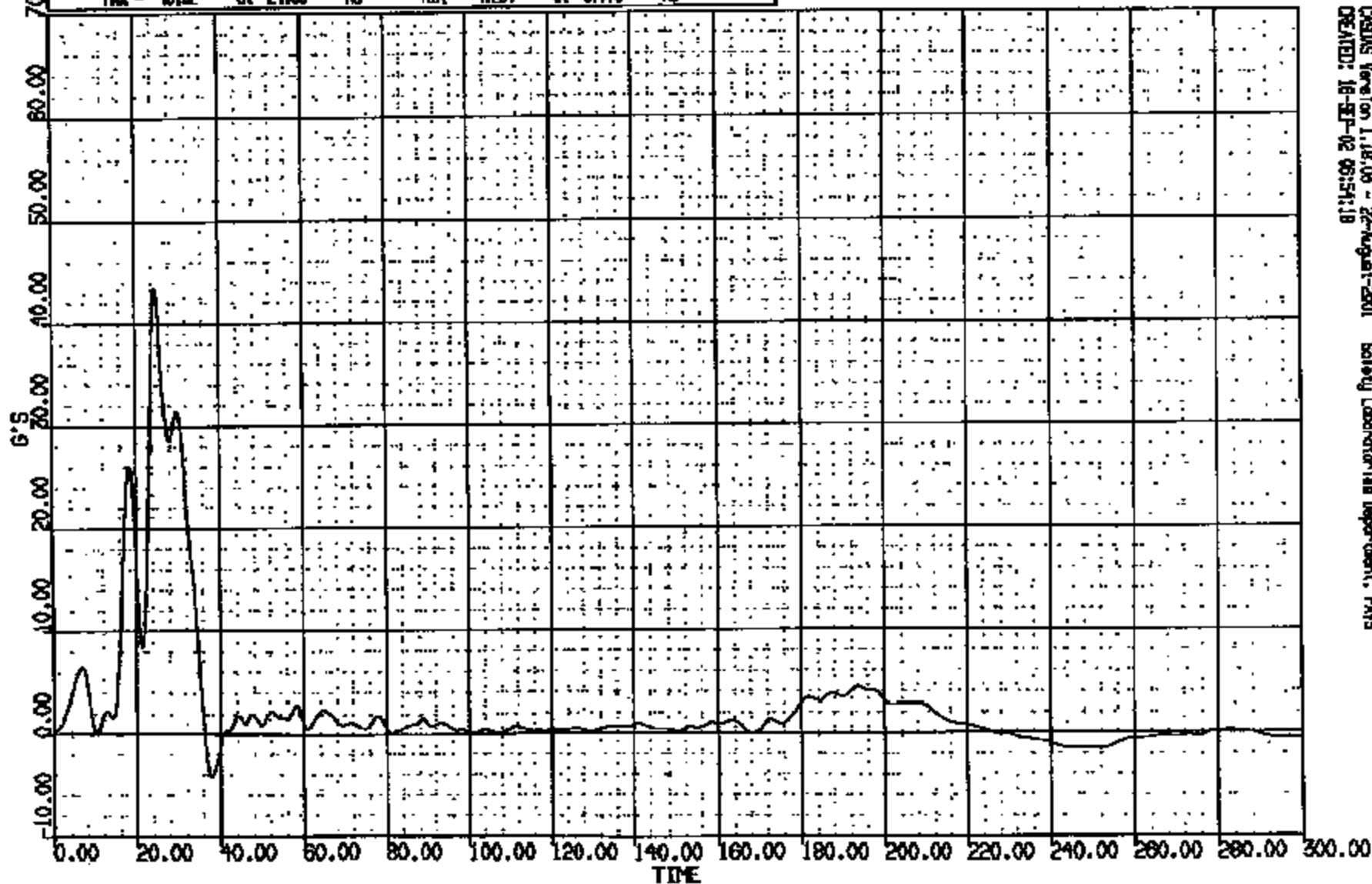
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2003 EN114

(05) 9812863T L/O PLR IN @ ROCKER SCS #20 LAT 60N

MAX = 43.52 at 24.80 MS MIN = -4.234 at 37.76 MS

AXIS 1

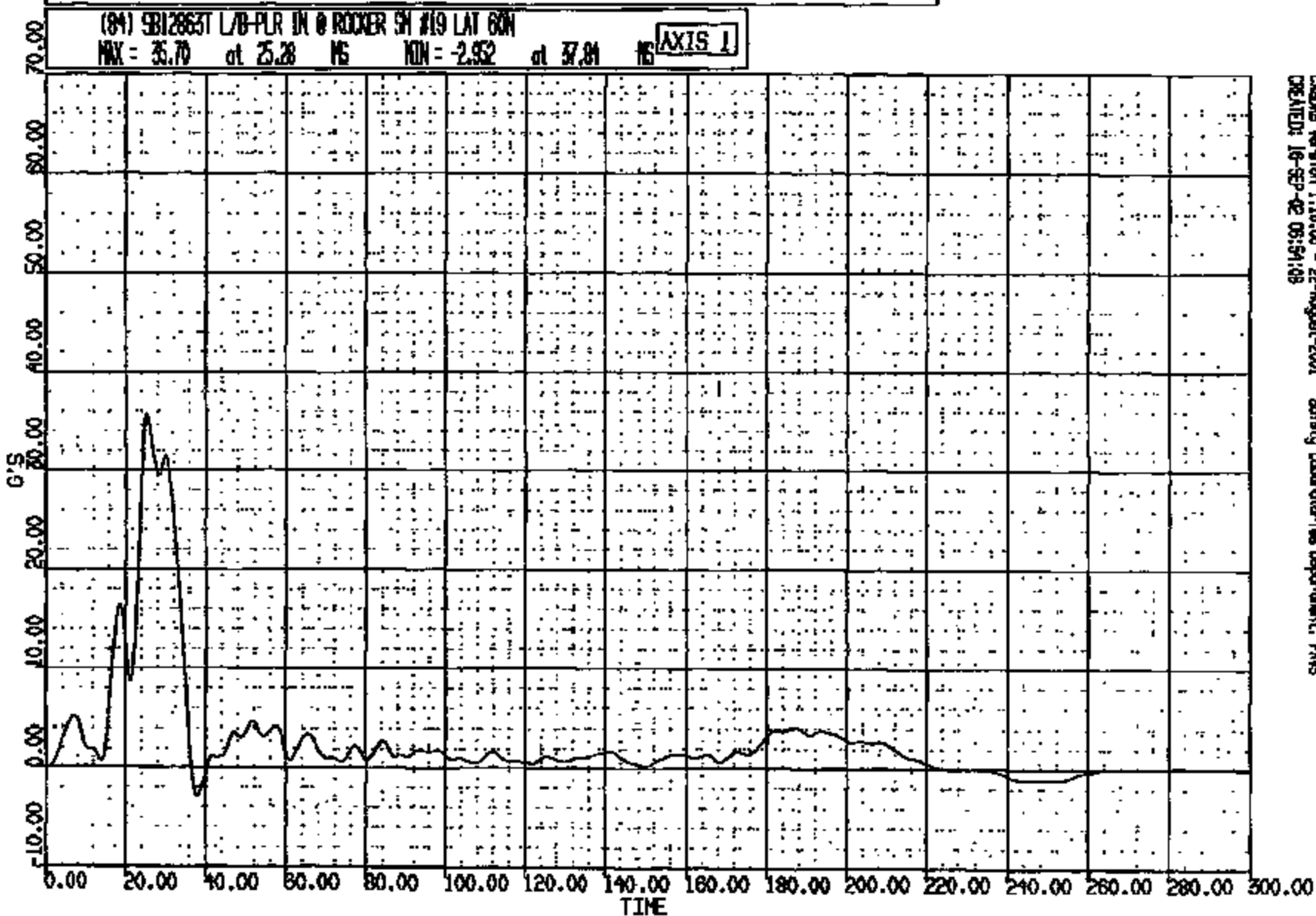


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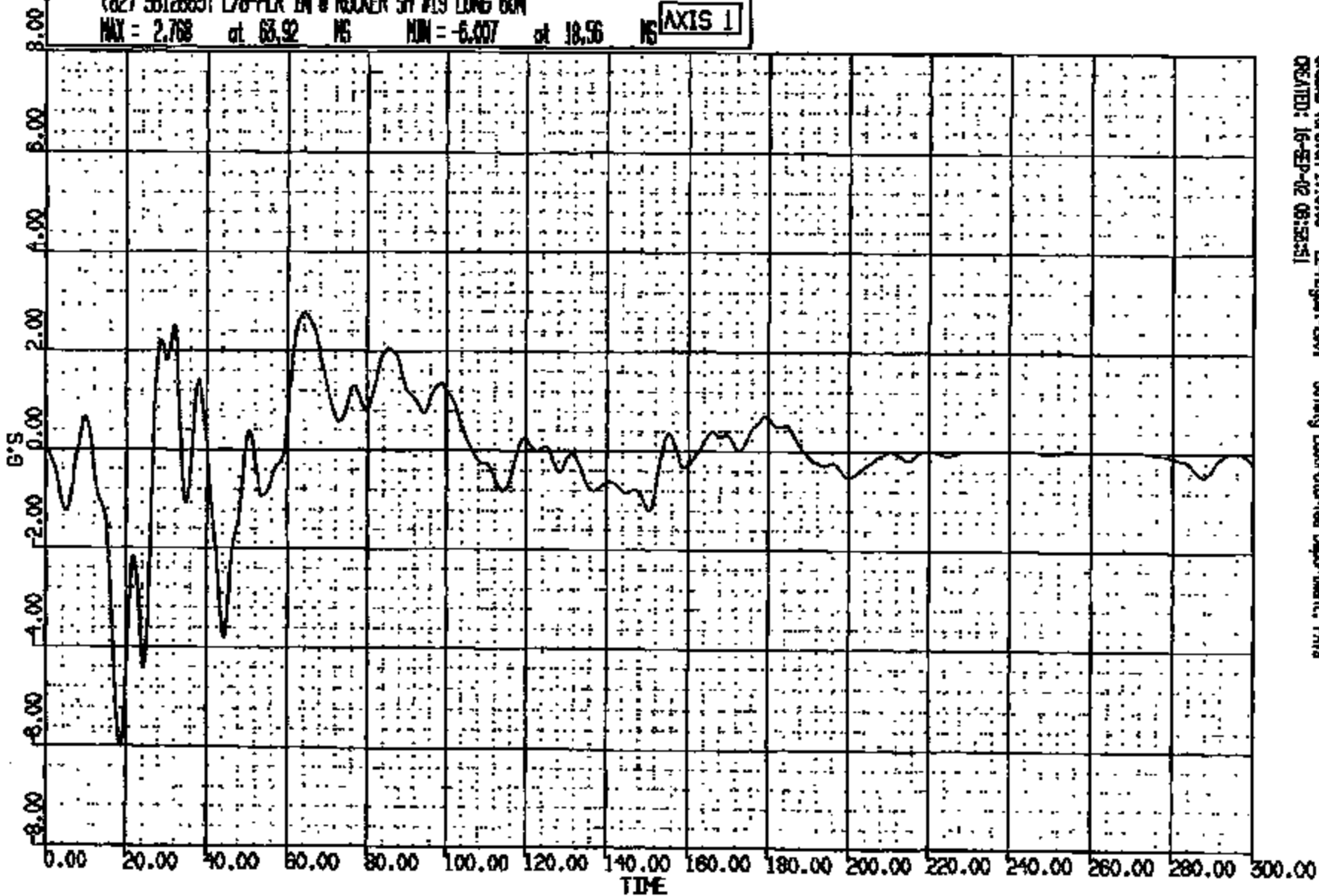
CRJS 0012863

SB R: 12885 TO: J85310 DATE: 24-APR-2002 09:30:11
2008 EN114

(82) SB12883T L78-PLR IN @ ROCKER SH #19 LONG 60N

MAX = 2.768 at 63.92 MS MIN = -6.407 at 18.56 MS

AXIS 1

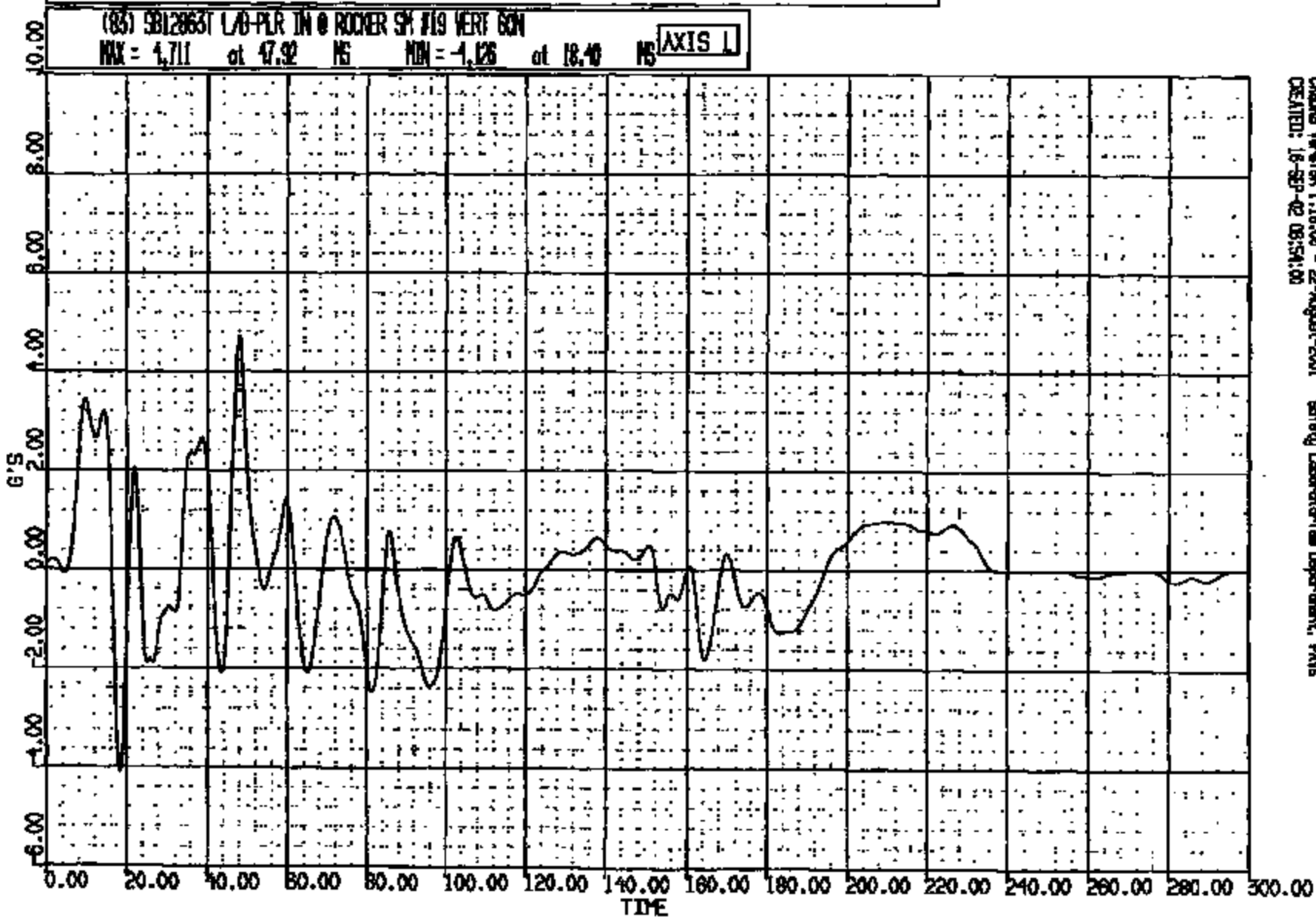


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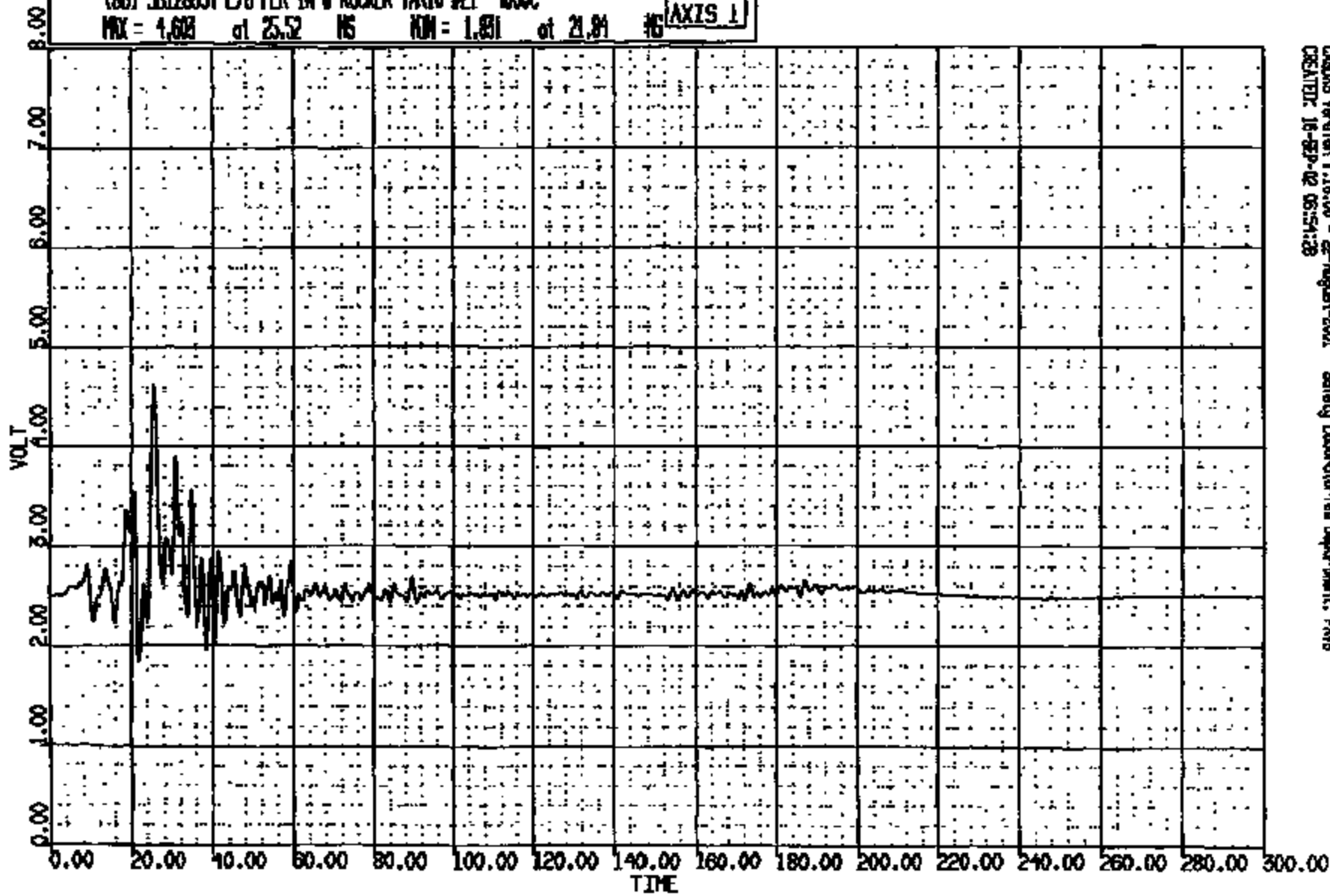
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2008 EN114

(86) SB12863T L/O-PLR IN 0 ROCKER TAKIO #21 4000C

MAX = 4.603 at 25.52 HS MIN = 1.891 at 21.84 #5

AXIS 1

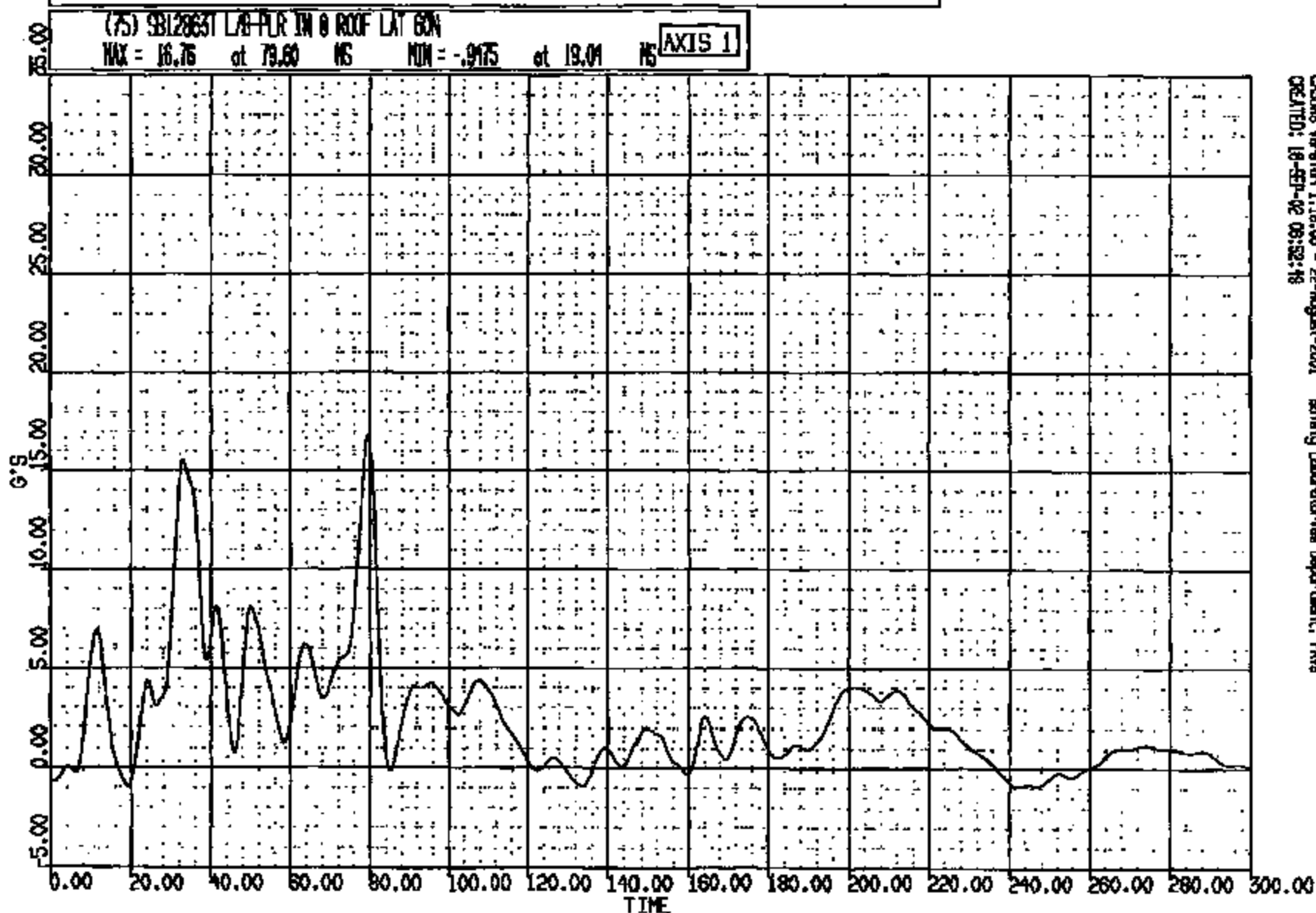


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2002 EN114



CRTS 0012863

CASIMS Version 1.18.06 - 22-August-2001 Serials Laboratory Department, PHS
CREATED: 18-SEP-02 08:32:46

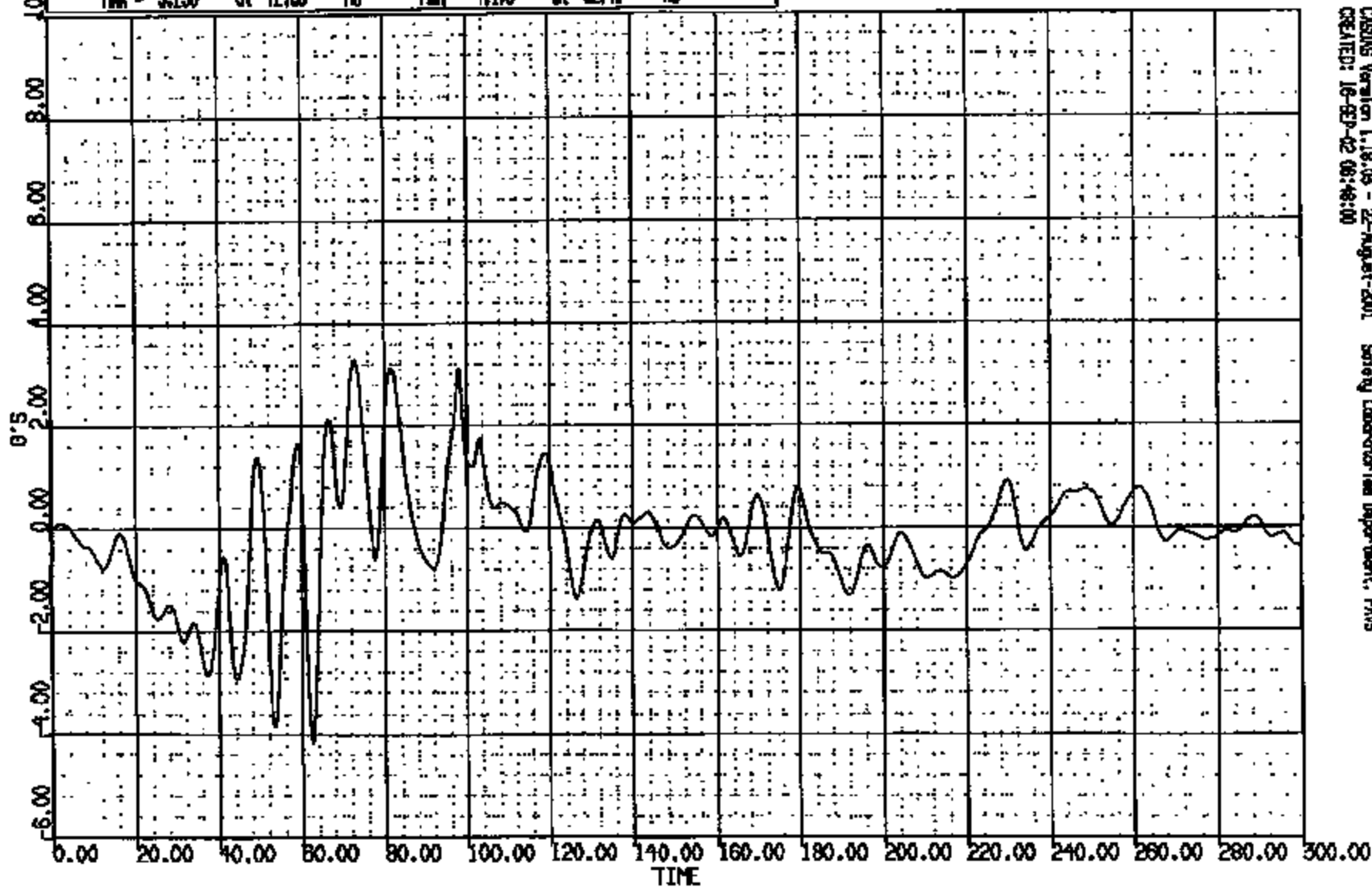
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BB #: 12005 TO: JB5310 DATE: 24-APR-2002 09:30:11
2005 EN114

(37) 9812863 L/C FRT RAD SUPT FCS #2 LONG 60N

MAX = 3.298 at 72.88 HS MIN = -4.176 at 62.40 HS

AXIS 1



CHSNGS Version 1.18.03 - 22-August-2001
 CREATED: 16-SEP-02 08:48:00
 Safety Laboratory/In Department, PANS

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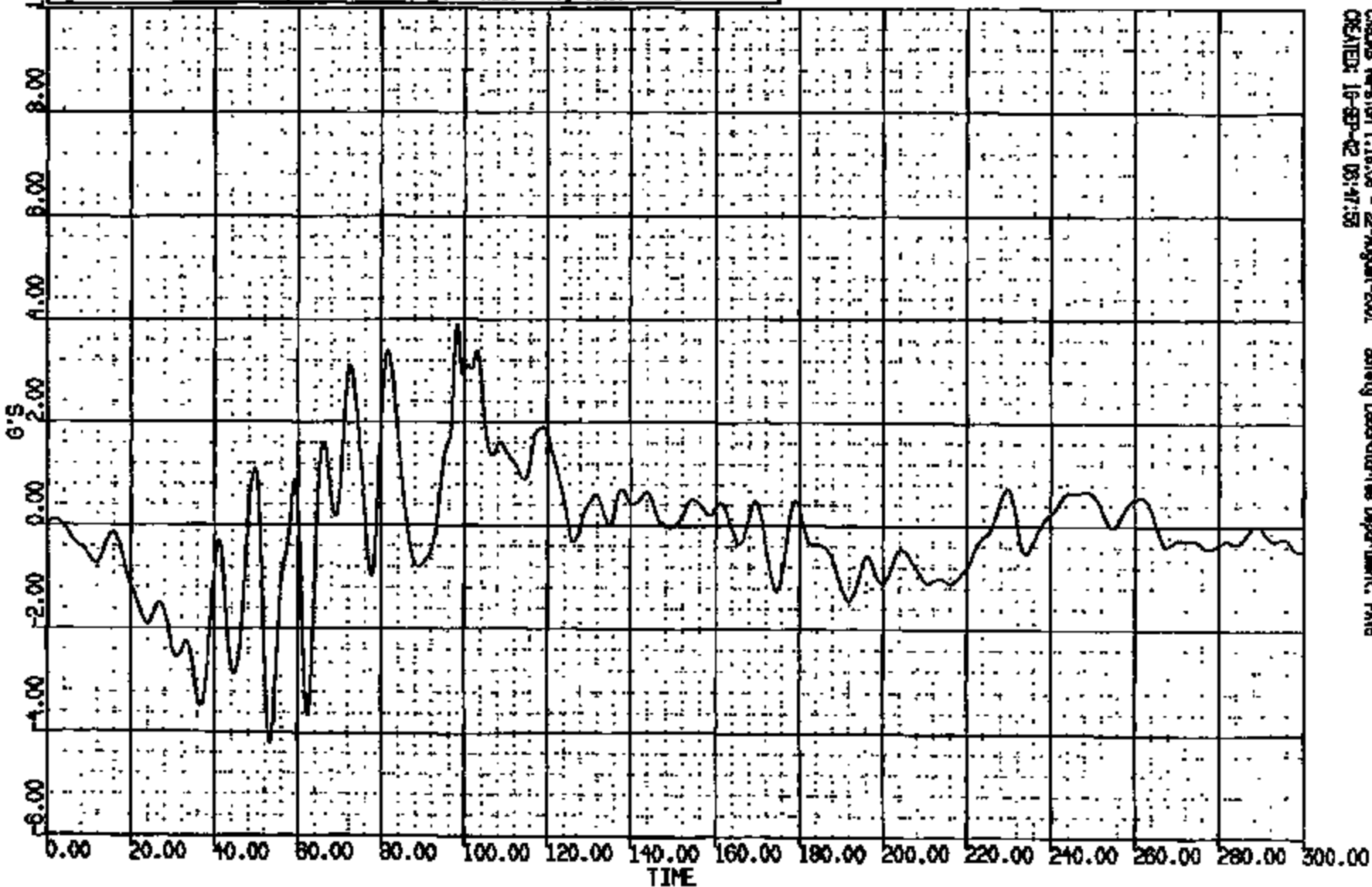
CRTS 0012863

SB R: 12863 TC: J85310 DATE: 24-APR-2002 09:30:11
2003 EN114

(36) SB12863T L/C FRT RD SUPP SH #1 LONG 60N

MAX = 3.911 at 98.00 MS MIN = -1.218 at 53.35 MS

AXIS 1



CRTS 0012863

CASDS Version 1.18.08 - 22-August-2001 Briefly Laboratories Department, PMS
CREATED: 16-SEP-02 08:47:55

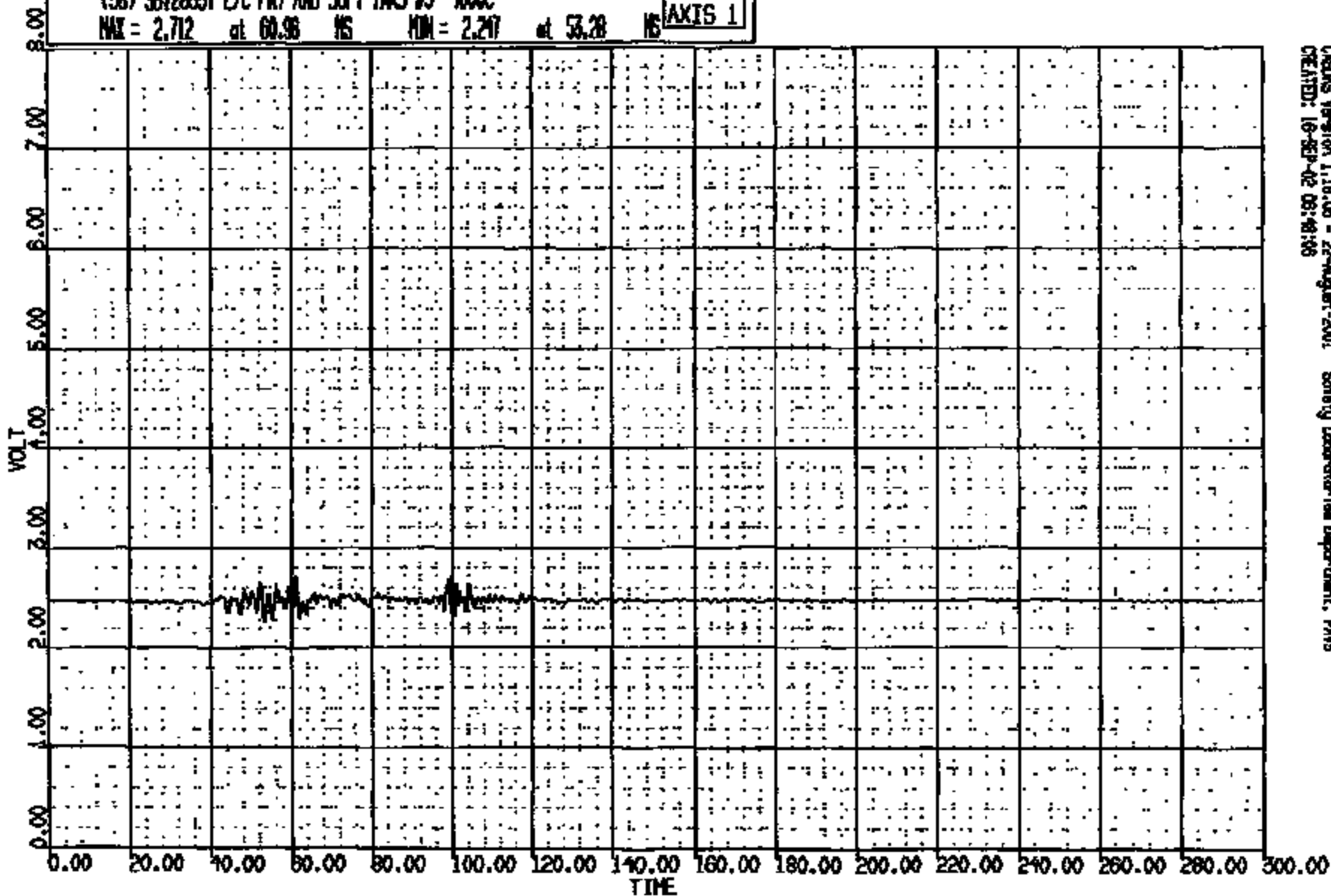
ENTIRE PAGE CONFIDENTIAL

SB R: 12863 TO: JES310 DATE: 24-APR-2002 09:50:11
2002 EN114

(38) SB12863 L/C FRT RAD SUPT TWS #3 400C

MAX = 2.712 at 60.96 MS MIN = 2.217 at 53.28 MS

AXIS 1

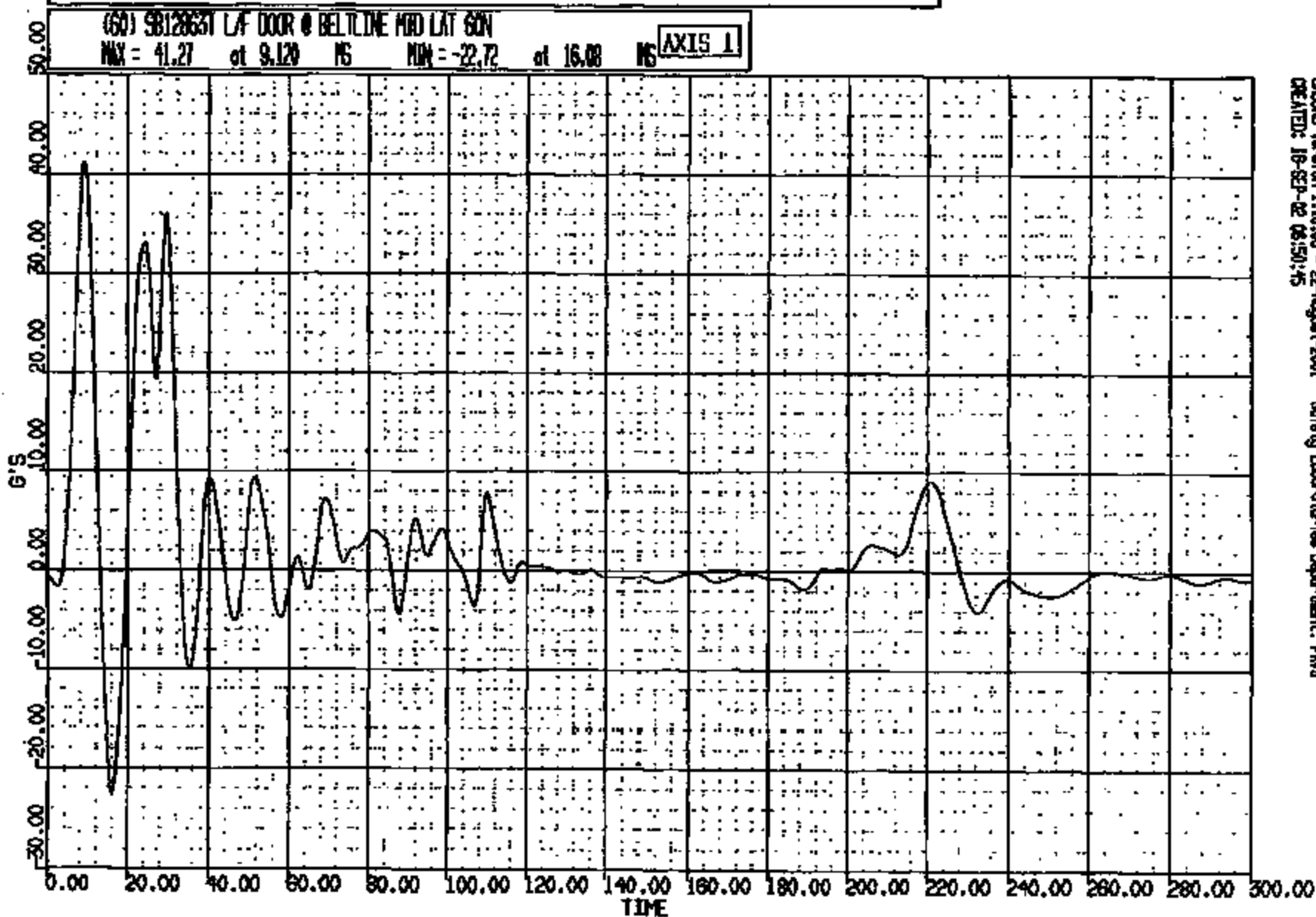


CRSIS Version 1.1B.05 - 22-August-2001 Safety Laboratory/In Department, PMS
CREATED: 16-SEP-02 09:48:06

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CRIS 0012863

BB R: 12863 TO: JB5310 DATE: 24-APR-2002 09:30:11
2005 EN114

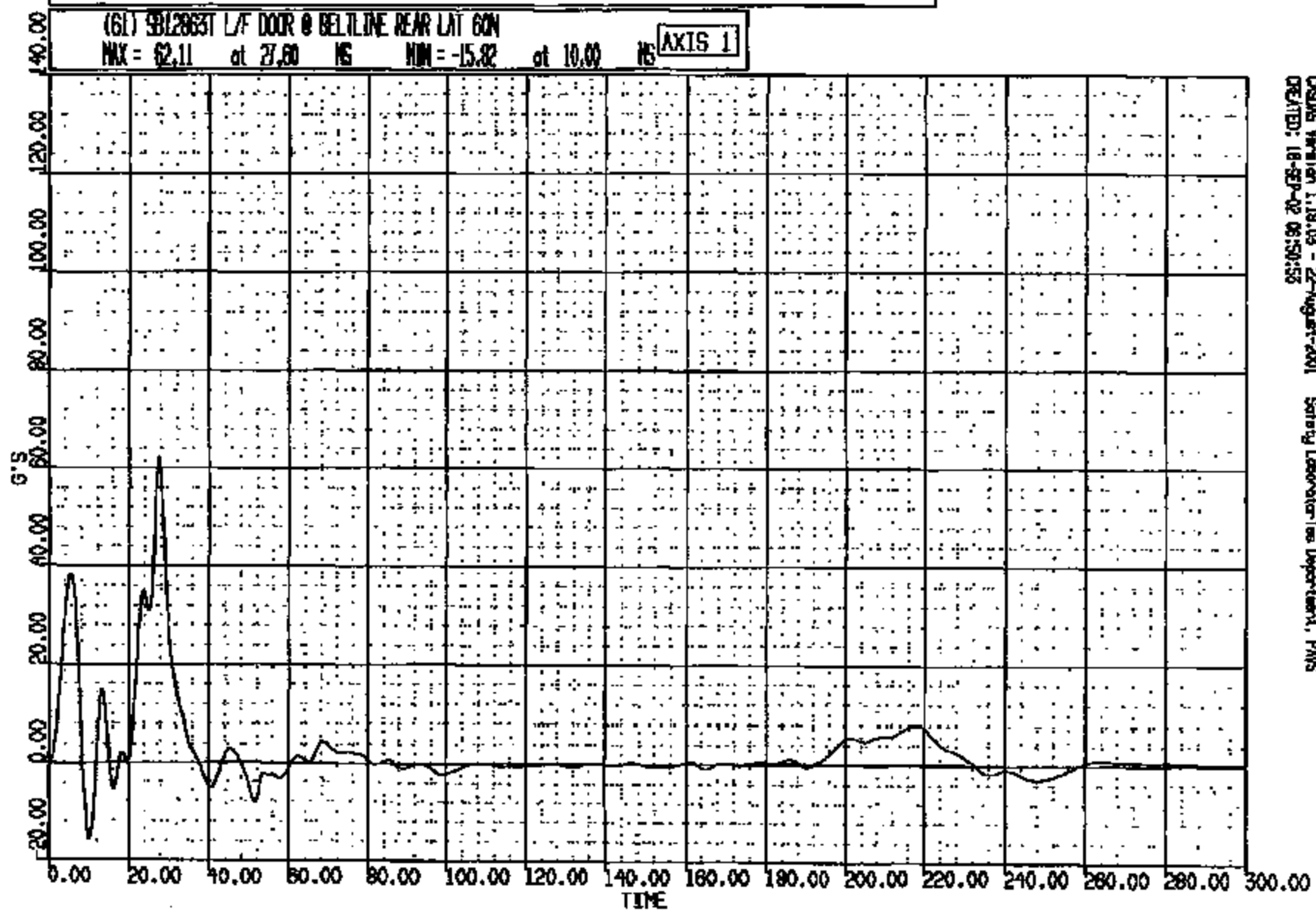


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CREATED: 18-SEP-02 08:50:45

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CRTS 0012863

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2003 EN114

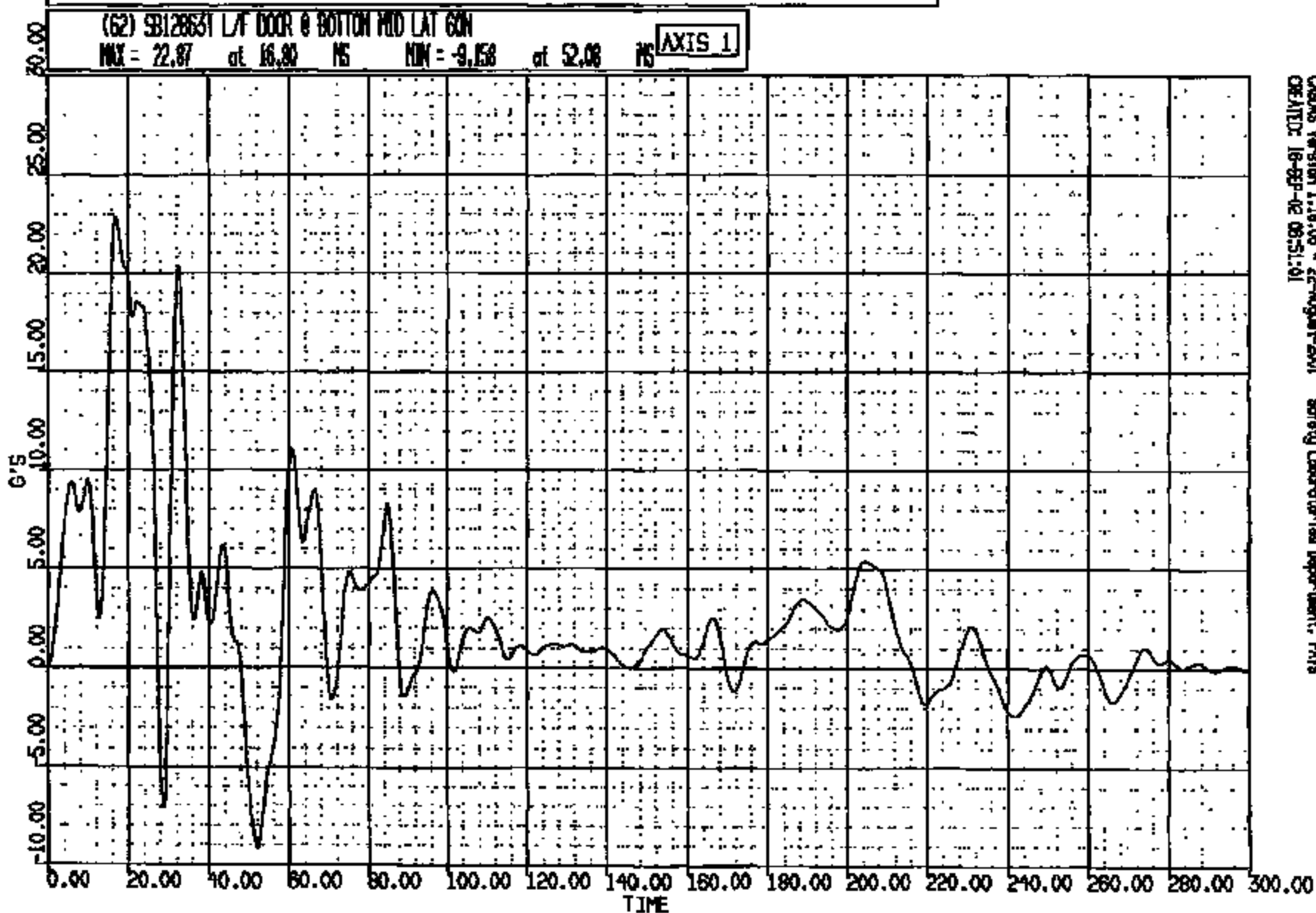


OSDAS Version 1.18.03 - 22-August-2001 Safety Laboratories Department, PMS
CREATED: 18-SEP-02 08:50:55

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2003 EN114

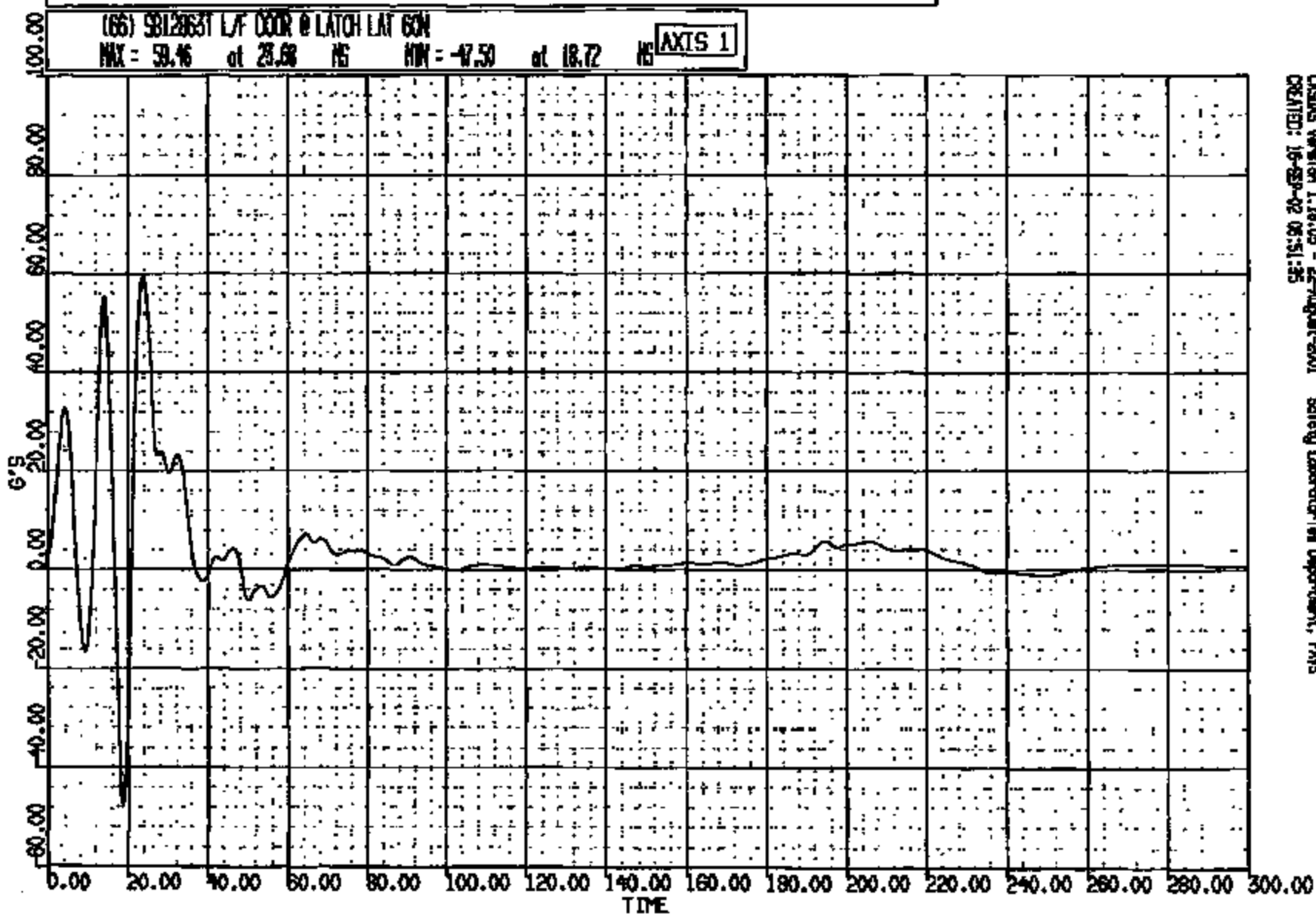


CASINS Version 1.18.08 - 22-August-2001 Safety Laboratories Department, PAVS
CREATED: 18-SEP-02 09:51:01

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CRTS 0012863

SB R: 12863 TO: JB5310 DATE: 24-APR-2002 09:50:11
2005 EN114



CHSDAS Version 1.18.03 - 22-August-2001 Safety Laboratory Department, PWS
CREATED: 16-SEP-02 06:51:35

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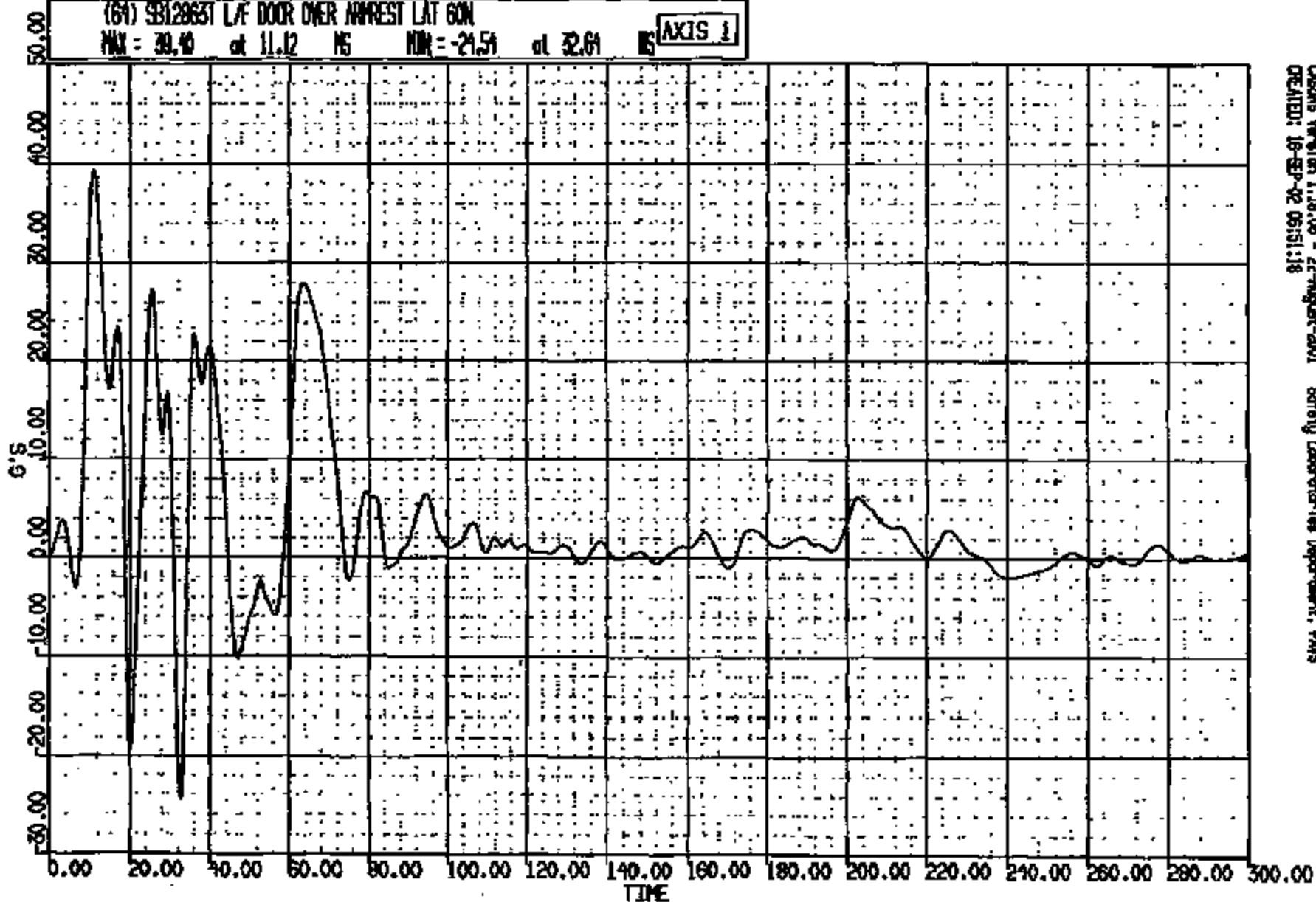
CRIS 0012863

SB R: 12863 TO: J85310 DATE: 24-APR-2002 09:30:11
2005 EN114

(64) 93128631 L/F DOOR OVER AIRREST LAT 60N

MAX = 39.40 at 11.12 MS MIN = -21.51 at 32.61 MS

AXIS 1

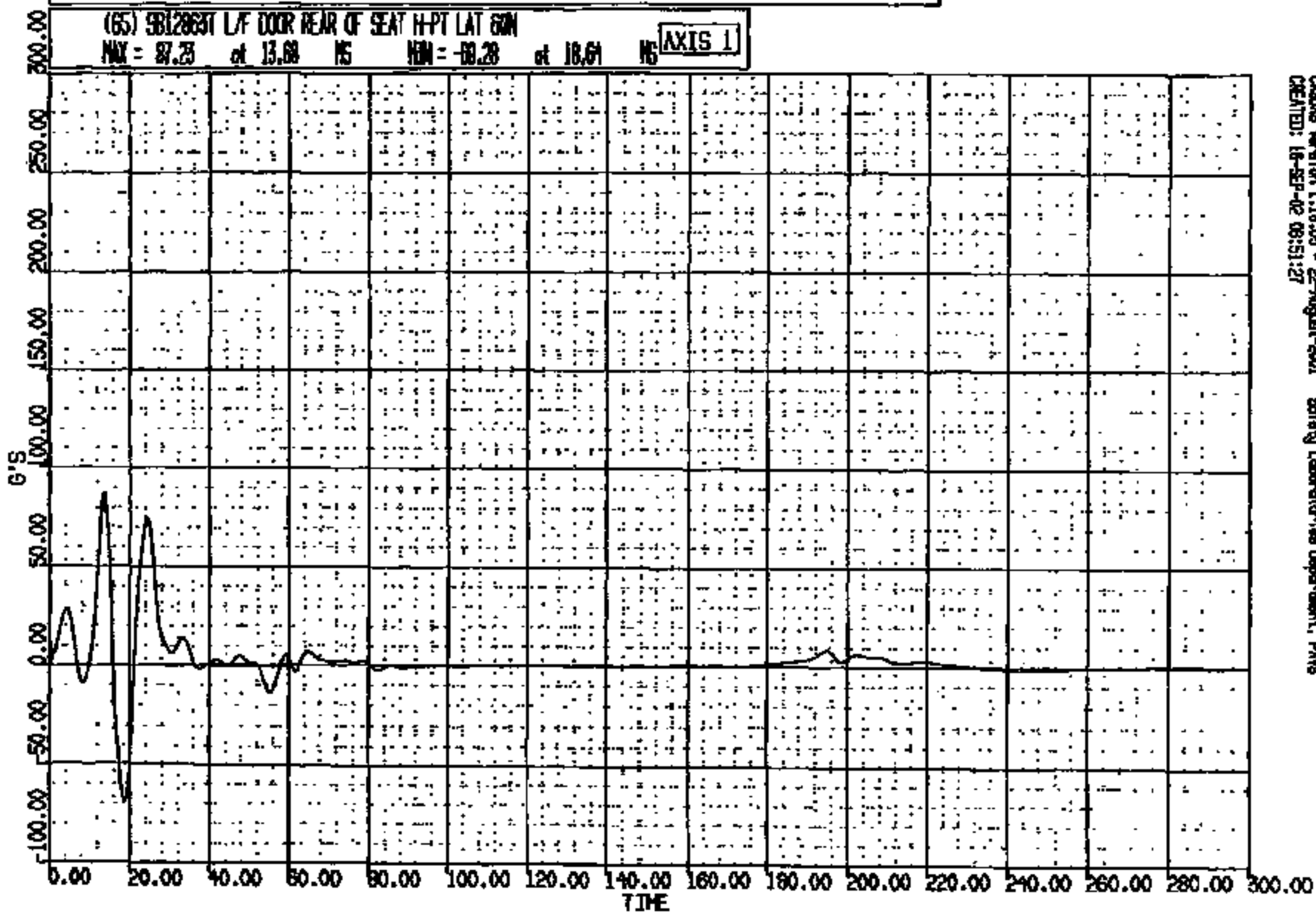


OSDMS Version 1.18.05 - 22-August-2001 Safety Laboratories Department, PWS
CREATED: 18-SEP-02 06:51:18

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CRTS 0012863

SS R: 12863 TO: J85310 DATE: 24-APR-2002 09:50:11
2003 EN114



CASUS Version 1.18-05 - 22-August-2001 Safety Laboratories Department, PMS
CREATED: 18-SEP-02 09:51:27

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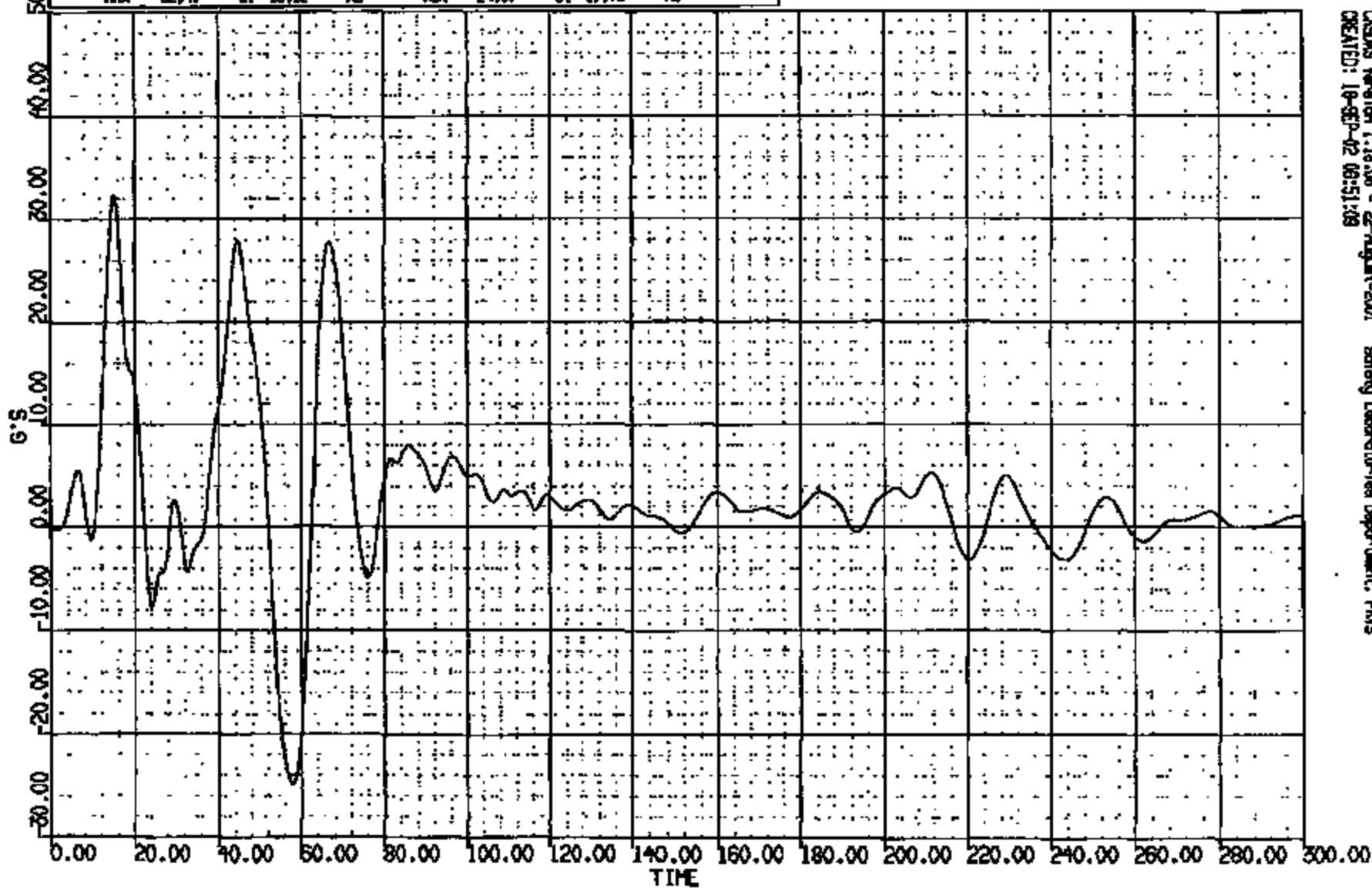
CRIS 0012863

SB R: 12882 TO: JB5210 DATE: 24-APR-2002 09:30:11
2005 EN114

(63) SB12863T L/F DOOR SPEAKER HOLE LAT 60N

MAX = 32.40 at 15.12 MS MIN = -24.87 at 57.76 MS

AXIS 1



CASMS Version 1.18.05 - 22 August 2001 Safety Laboratories Department, PMS
CREATED: 10-SEP-02 09:51:09

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CRTS 0012863

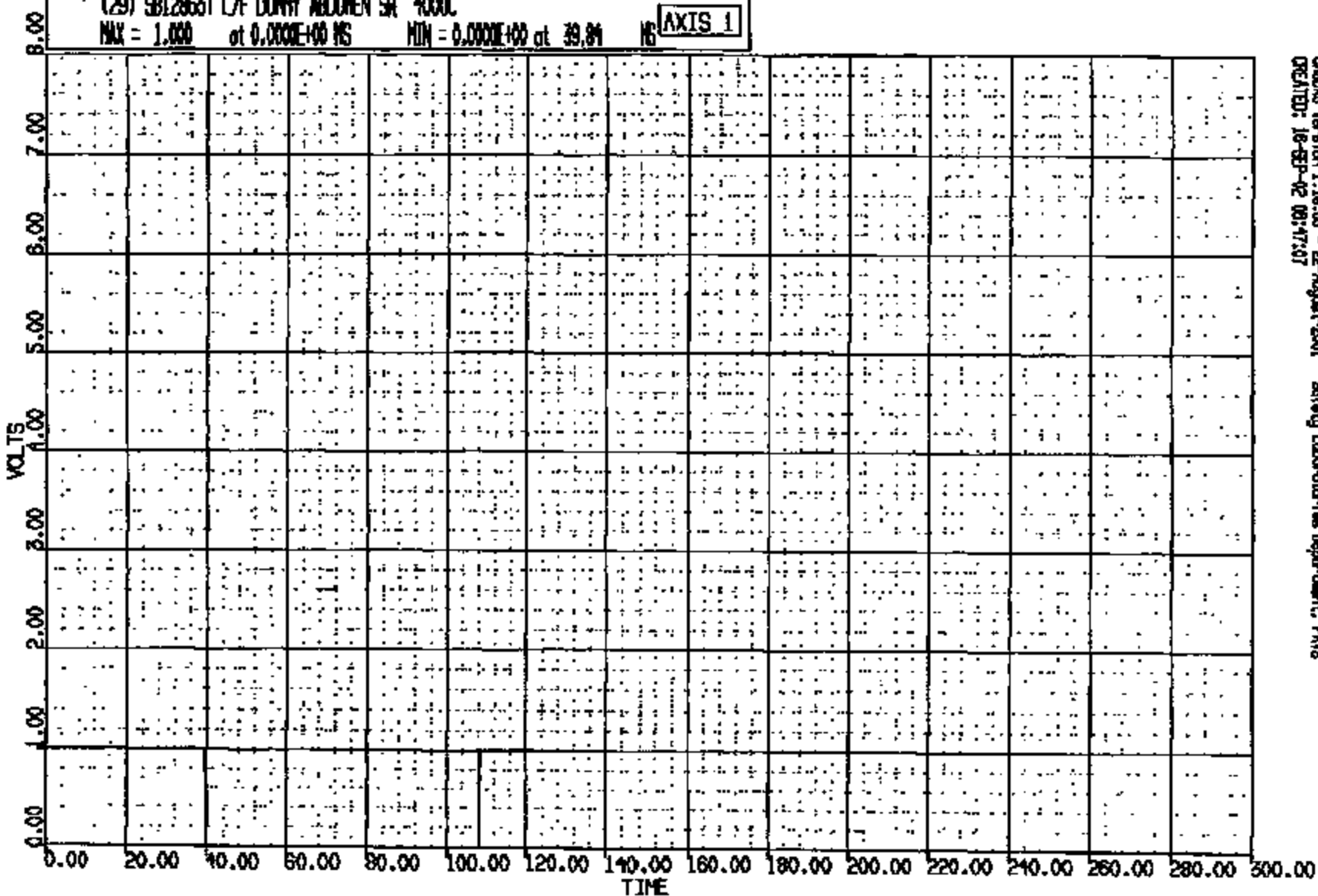
SB R: 12863 TO: JB5310 DATE: 24-APR-2002 09:30:11
2003 EN114

(29) SB12863T L/F DUMMY ADDONEN SM 4000C

MAX = 1.000 at 0.000E+00 NS

MIN = 0.000E+00 at 39.84 NS

AXIS 1



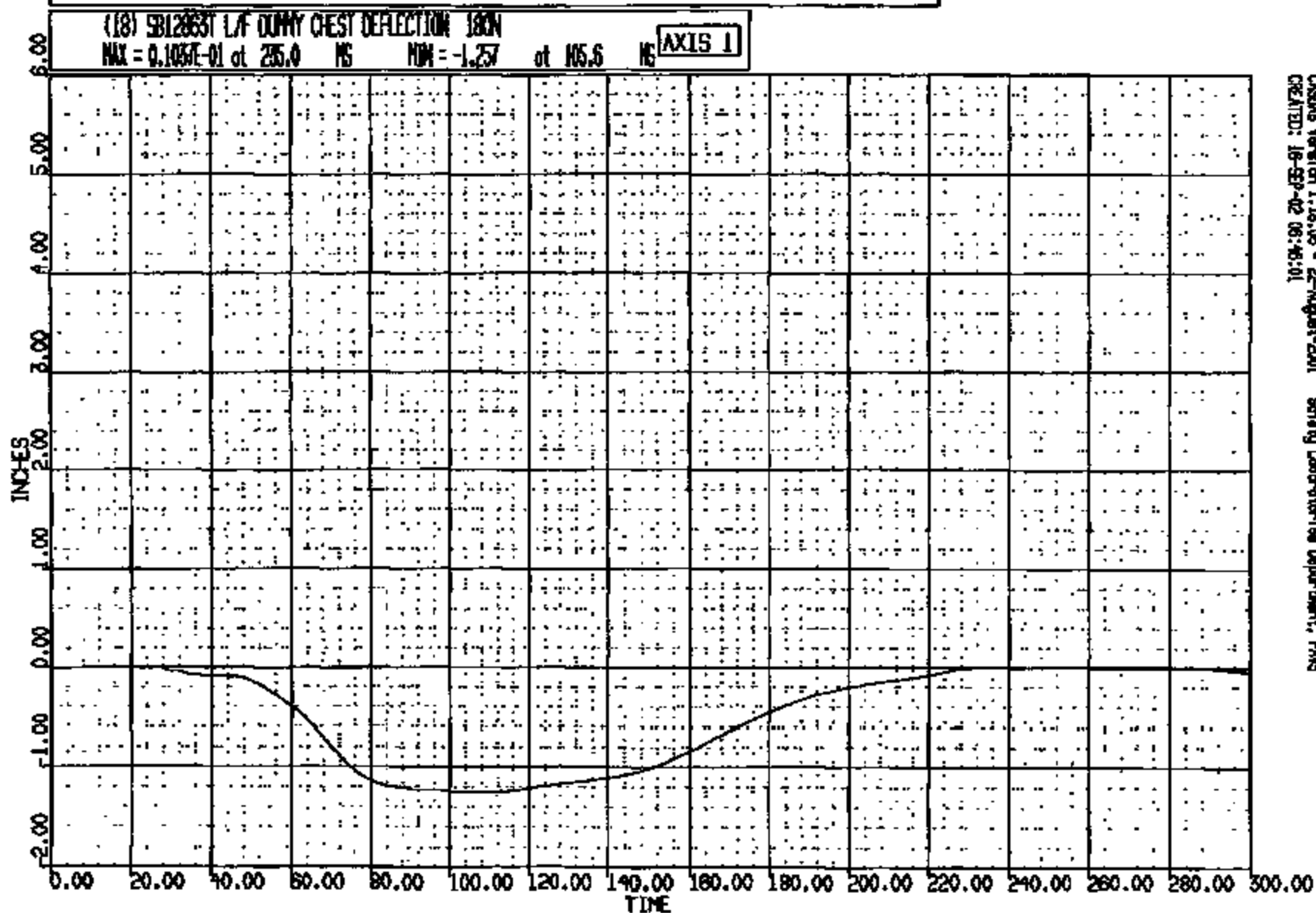
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2003 EN114



CASDAS Version 1.18.05 - 22-August-2001 Safety Laboratories Department, PHS
CREATED: 18-SEP-02 08:45:01

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CRTS 0012863

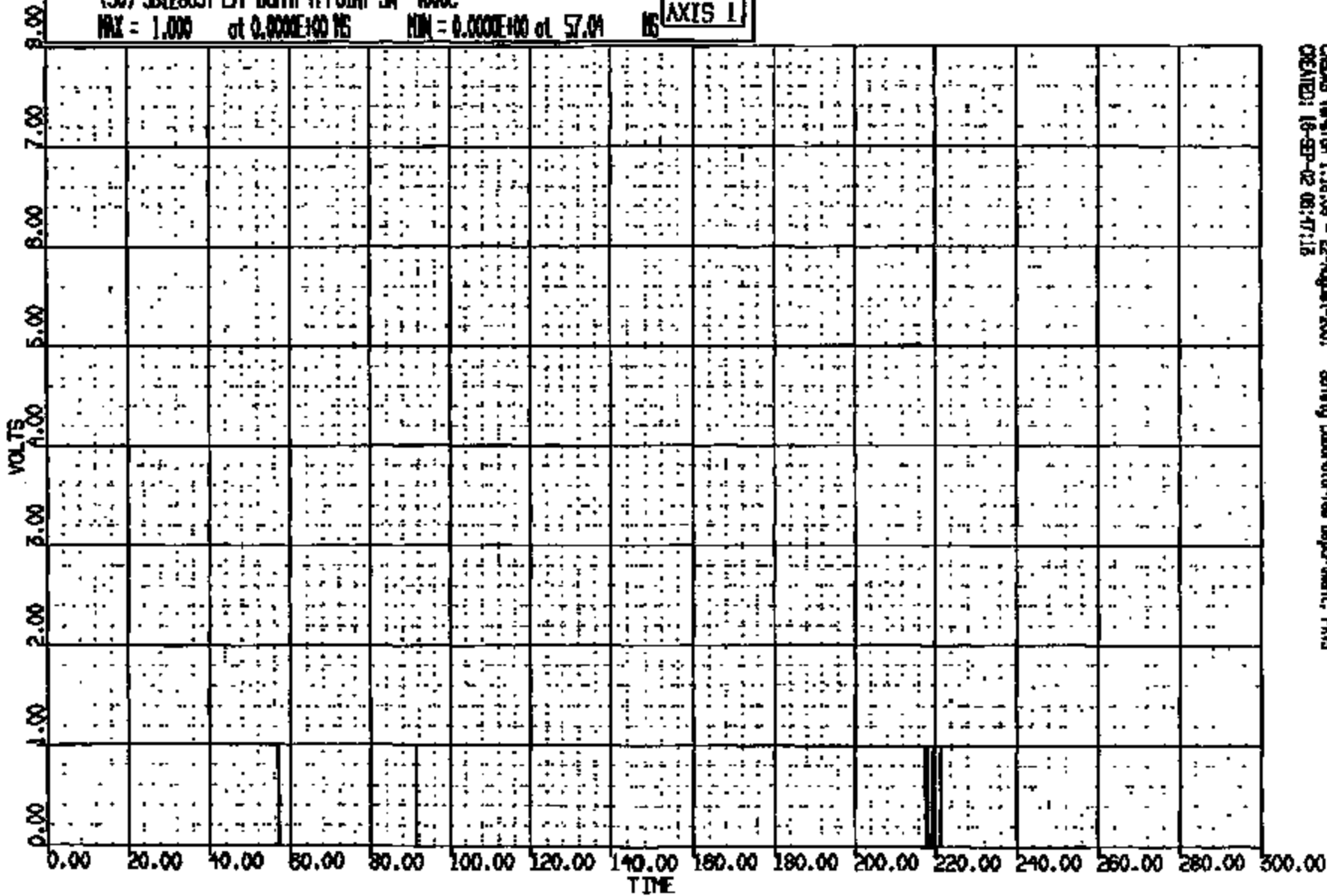
SB R: 12863 TO: J85210 DATE: 24-APR-2002 08:30:11
2008 EN114

(30) SB128631 L/F DUFFY H-POINT SM 4000C

MAX = 1.000 of 0.000E+00 MS

MIN = 0.000E+00 of 57.04

MS AXIS 1



CHS Version 1.18.05 - 22-August-2001
CREATED: 18-SEP-02 08:17:12

Safety Laboratories Department, PMS

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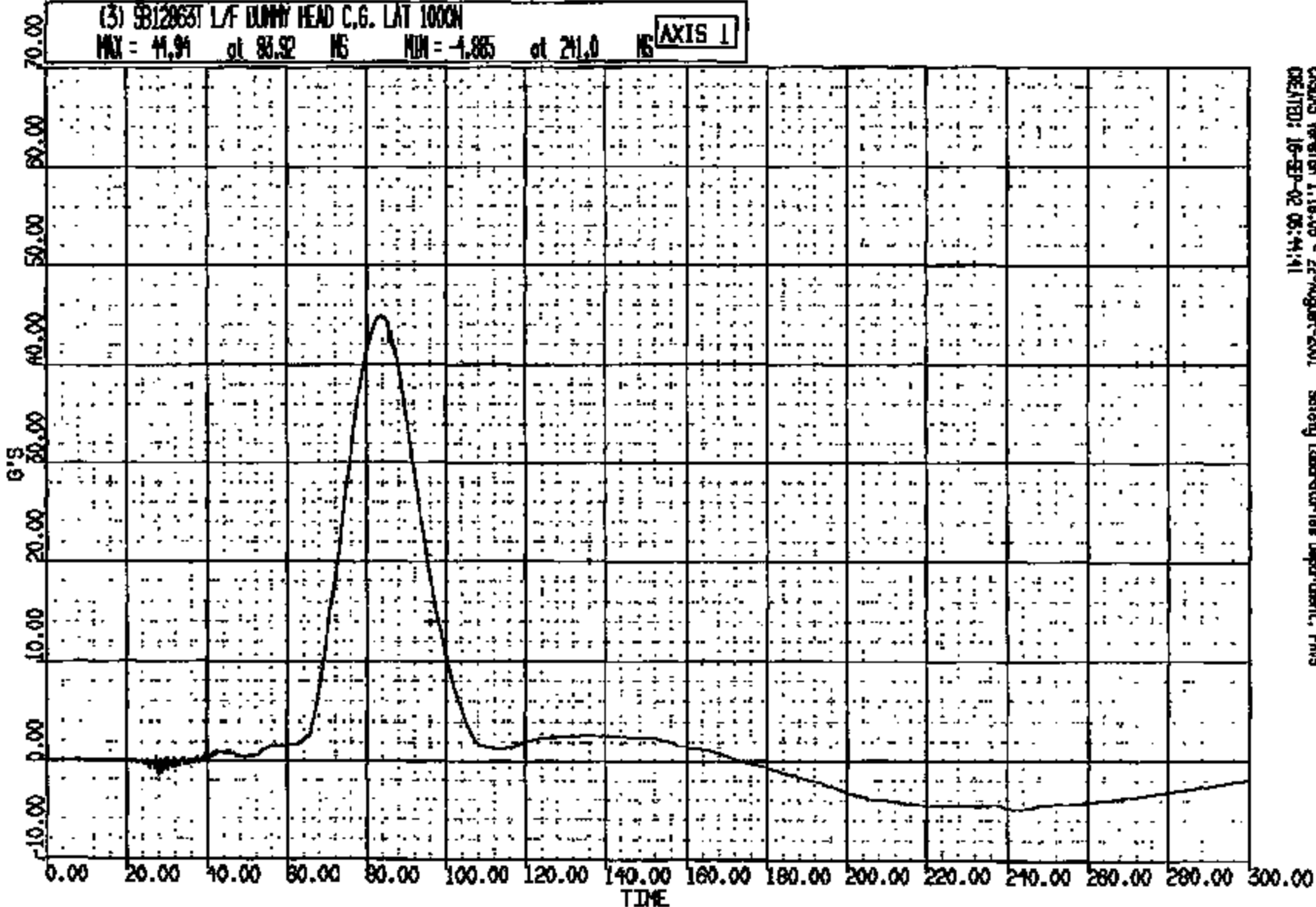
CRIS 0012863

SB R: 12863 TO: JB5310 DATE: 24-APR-2002 09:50:11
2005 EN114

(3) SB12863T L/F DUMMY HEAD C.G. LAT 1000N

MAX = 41.94 at 83.92 NS MIN = -4.885 at 241.0 NS

AXIS 1



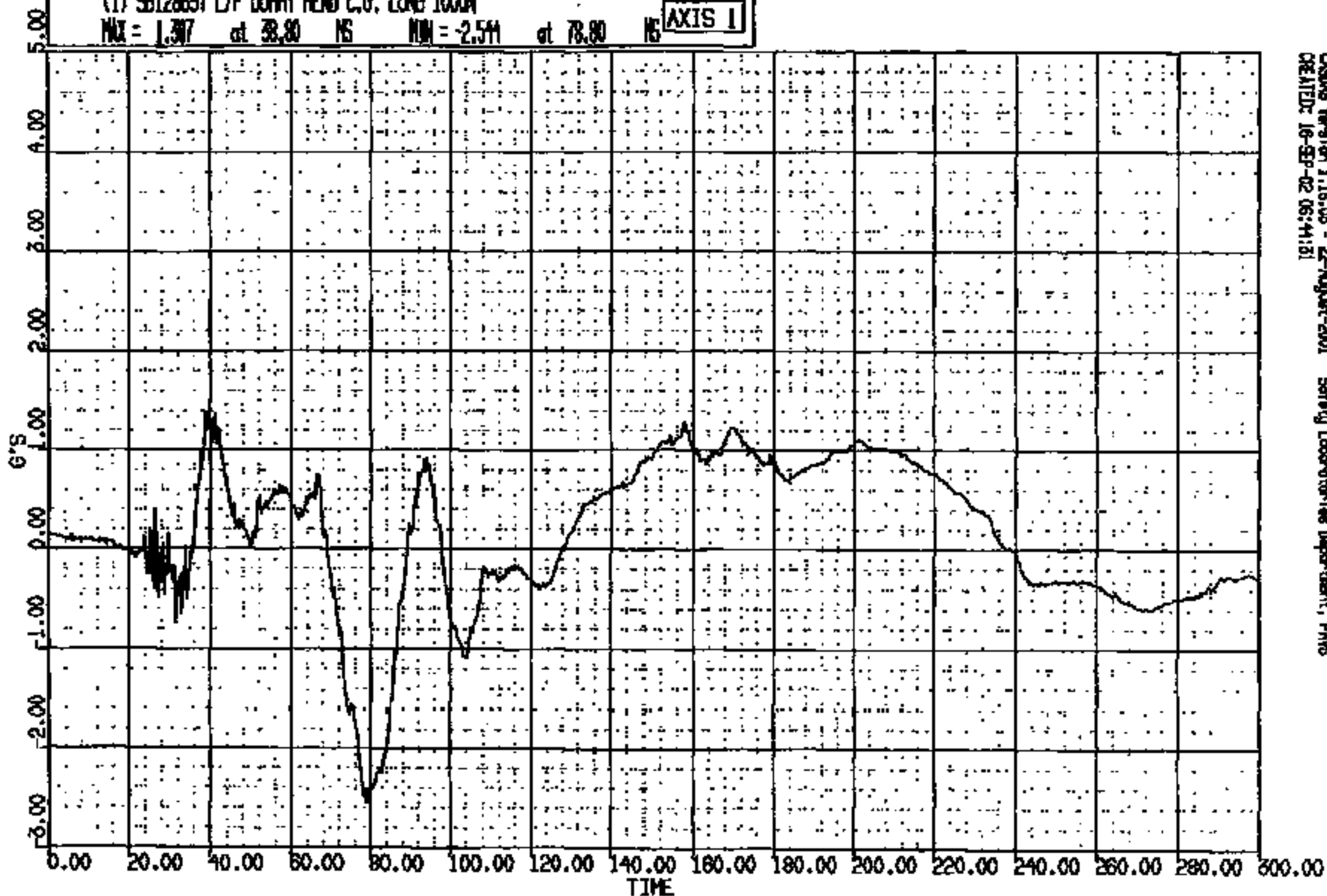
CRIS 0012863

SE R: 12863 TO: JB5310 DATE: 24-APR-2002 08:30:11
2005 EN114

(1) SB128631 L/F DUMMY HEAD C.G. LONG 1000N

MAX = 1.307 at 38.80 NS MIN = -2.541 at 78.80 NS

AXIS 1

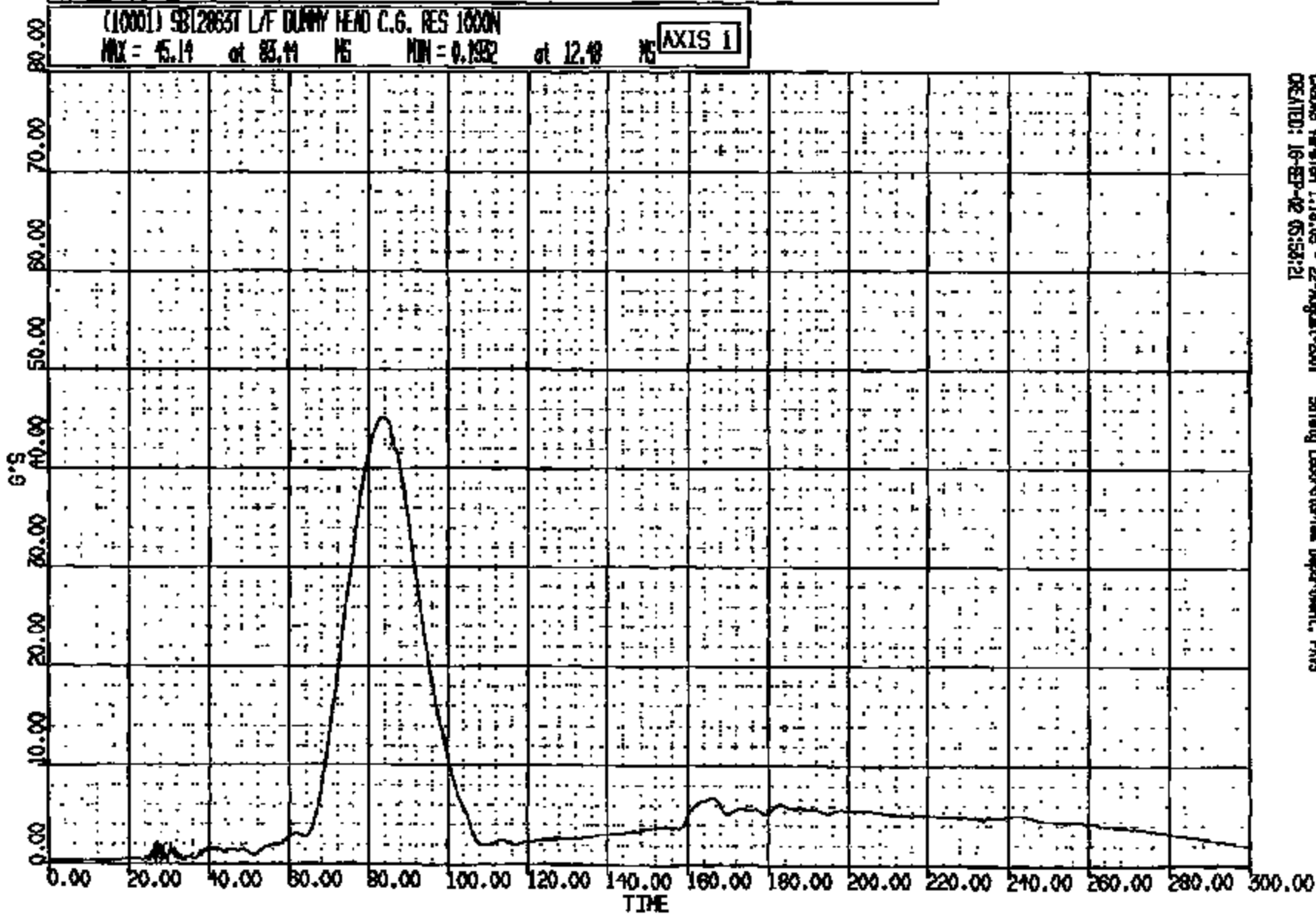


CASAS Version 1.18.05 - 22-August-2001 Safety Laboratories Department, PMS
CREATED: 16-SEP-02 06:44:51

ENTIRE PAGE CONFIDENTIAL

CRIS 0012863

SS R: 12863 TO: J85310 DATE: 24-APR-2002 09:30:11
 EN114
 ITH008: 170. DUR: 240.0 T1/T2: 72.6 // 84.7
 ITH009: 170. DUR: 240.0 T1/T2: 72.6 // 84.7
 ITH010: 154. DUR: 15.0 T1/T2: 76.0 // 81.0



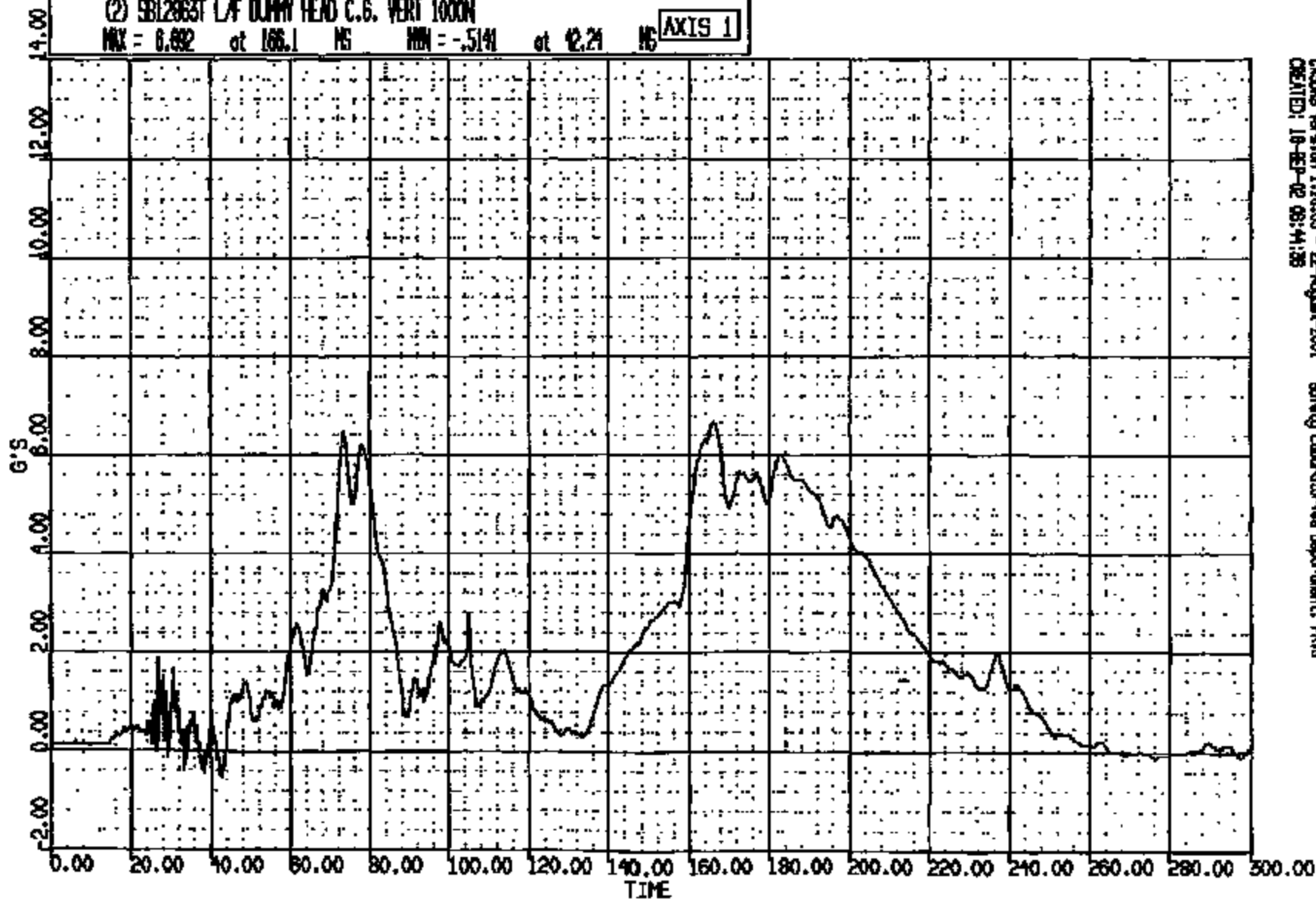
CRTS 0012863

SB R: 12863 TO: J85310 DATE: 24-APR-2002 09:30:11
2002 EN114

(2) SBI2863T L/F DUMMY HEAD C.G. VERT 1000N

MAX = 6.692 at 166.1 MS MIN = -.5141 at 12.21 MS

AXIS 1



CRTS 0012863

CRSAS Version 1.18.05 - 22-August-2001
CREATED: 18-SEP-02 09:41:35

Safety Laboratories Department, PMS

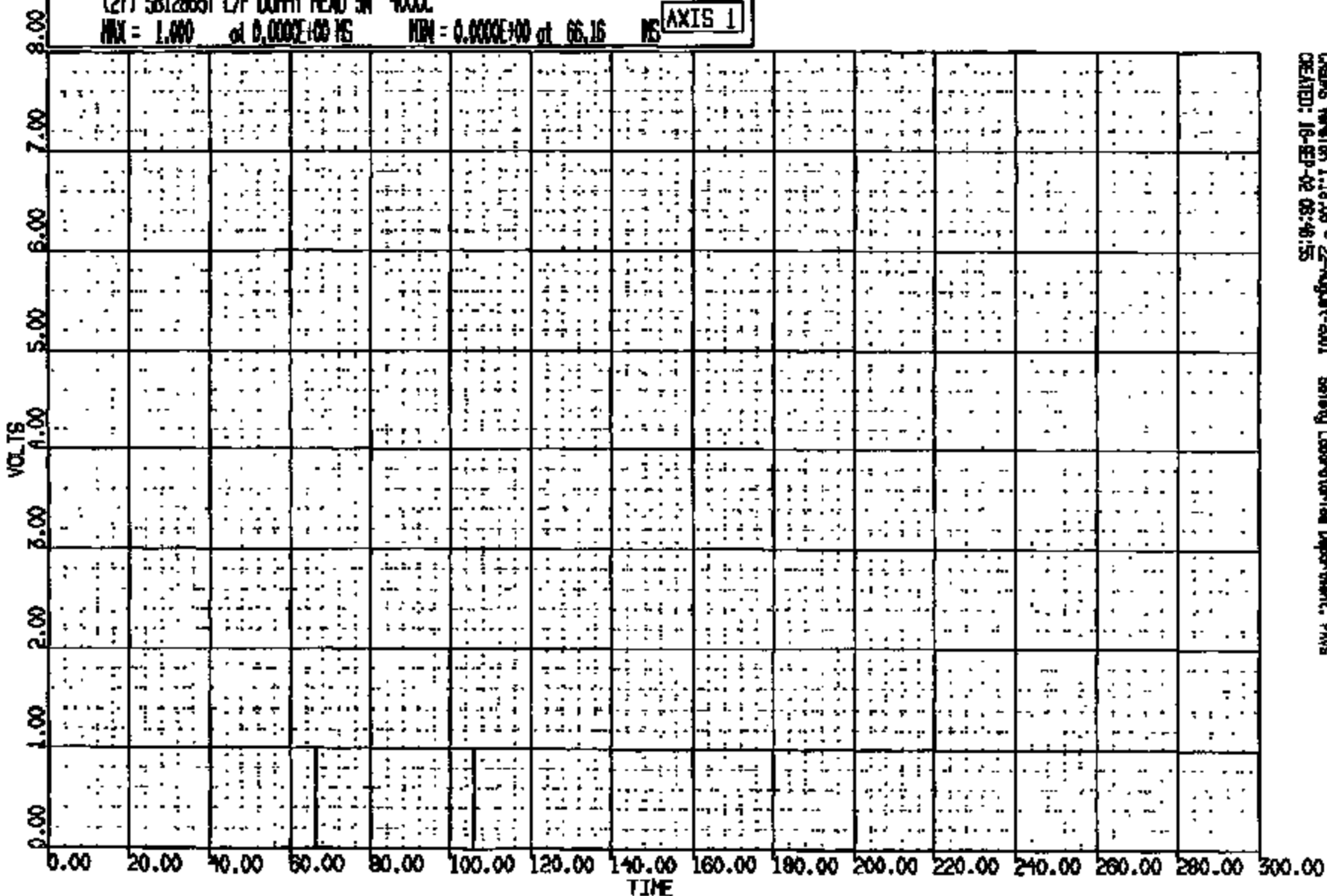
ENTIRE PAGE CONFIDENTIAL

BB R: 12885 TO: JB5510 DATE: 24-APR-2002 08:50:11
2005 EN114

(27) 5812863 L/F DUMPY HEAD SN 4000C

MAX = 1.000 at 0.000E+00 MS MIN = 0.000E+00 at 66.16 MS

AXIS 1



CRTS 0012863

CASMS Version 1.18.08 - 22-August-2001 Safety Laboratory Inc. Department, PMS
CREATED: 16-SEP-02 08:46:55

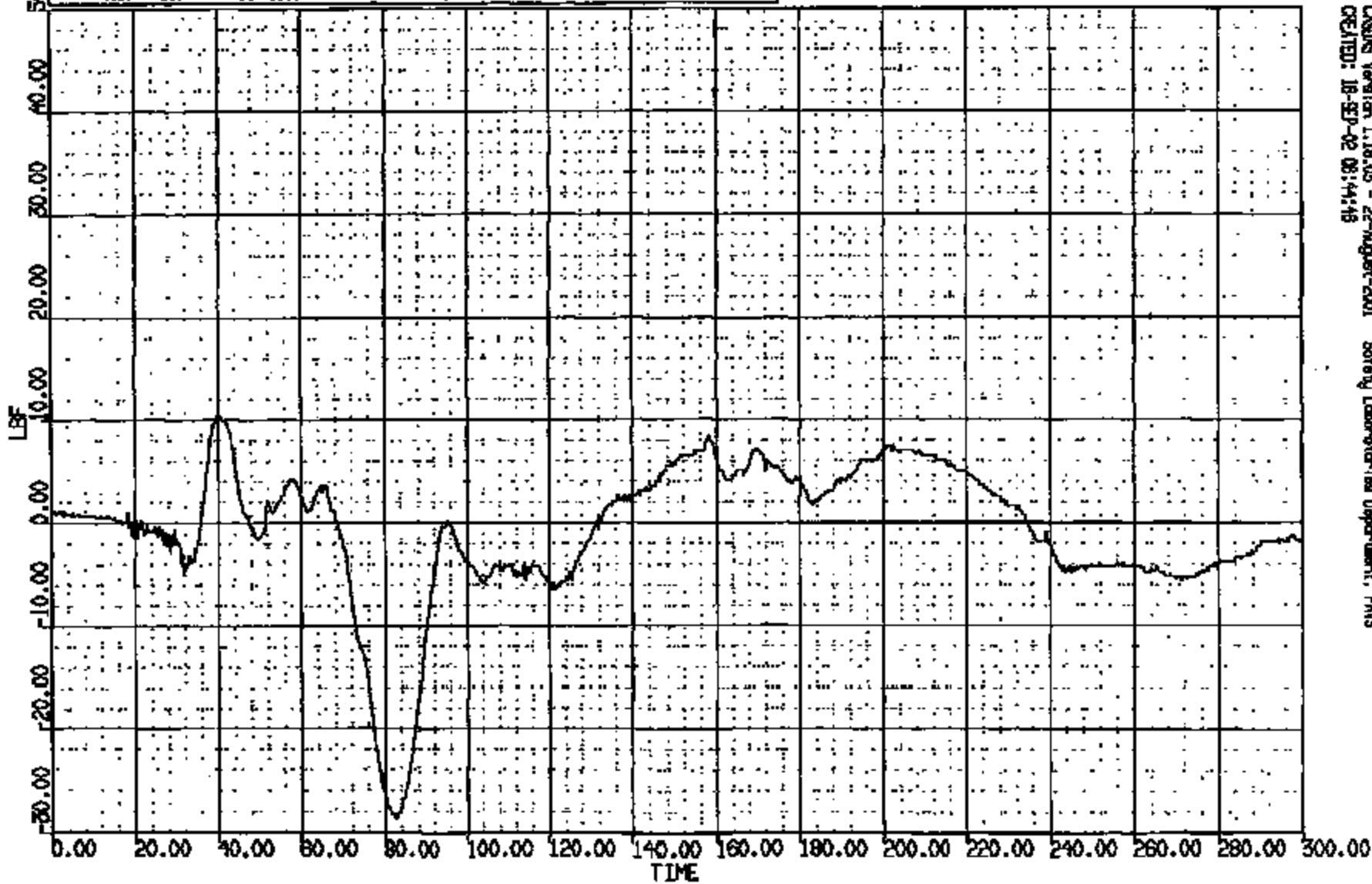
ENTIRE PAGE CONFIDENTIAL

SB R: 12863 TO: J85310 DATE: 24-APR-2002 09:30:11
2003 EN114

(4) SB12863T L/F DUMMY NECK UPPER LOAD FX 1000N

MAX = 10.44 at 39.94 MS MIN = -28.69 at 82.64 MS

AXIS 1



CASUS Version 1.18.03 - 22-August-2001 Safety Laboratories Department, PANS
CREATED: 18-SEP-02 08:44:48

ENTIRE PAGE CONFIDENTIAL

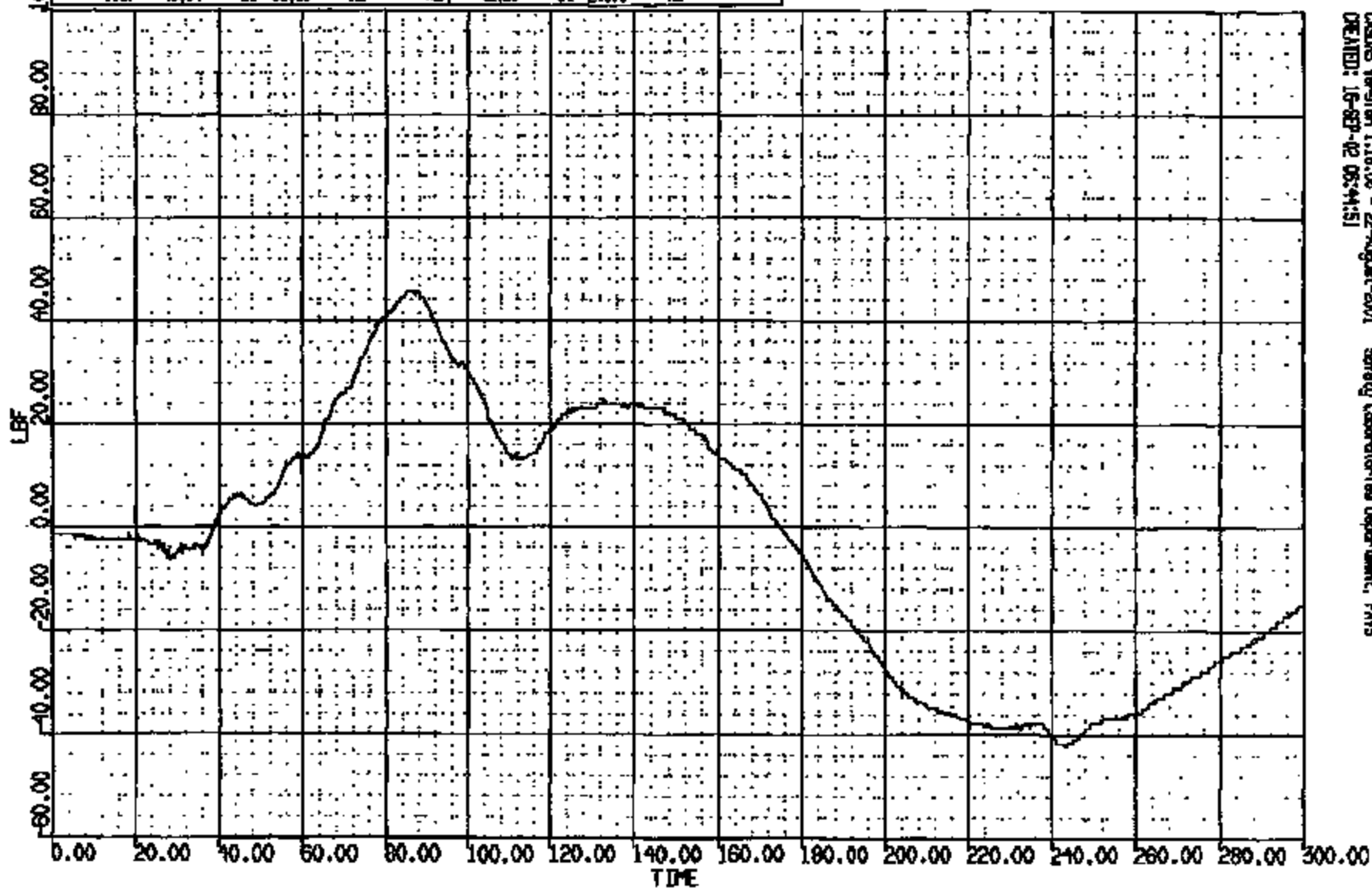
CRTS 0012863

SB R: 12863 TO: JB5510 DATE: 24-APR-2002 08:50:11
2005 EN114

(5) SBL2863T L/F DUMMY NECK UPPER LOAD FY 1000N

MAX = 45.51 at 88.08 HS MIN = -42.23 at 233.3 HS

AXIS 1

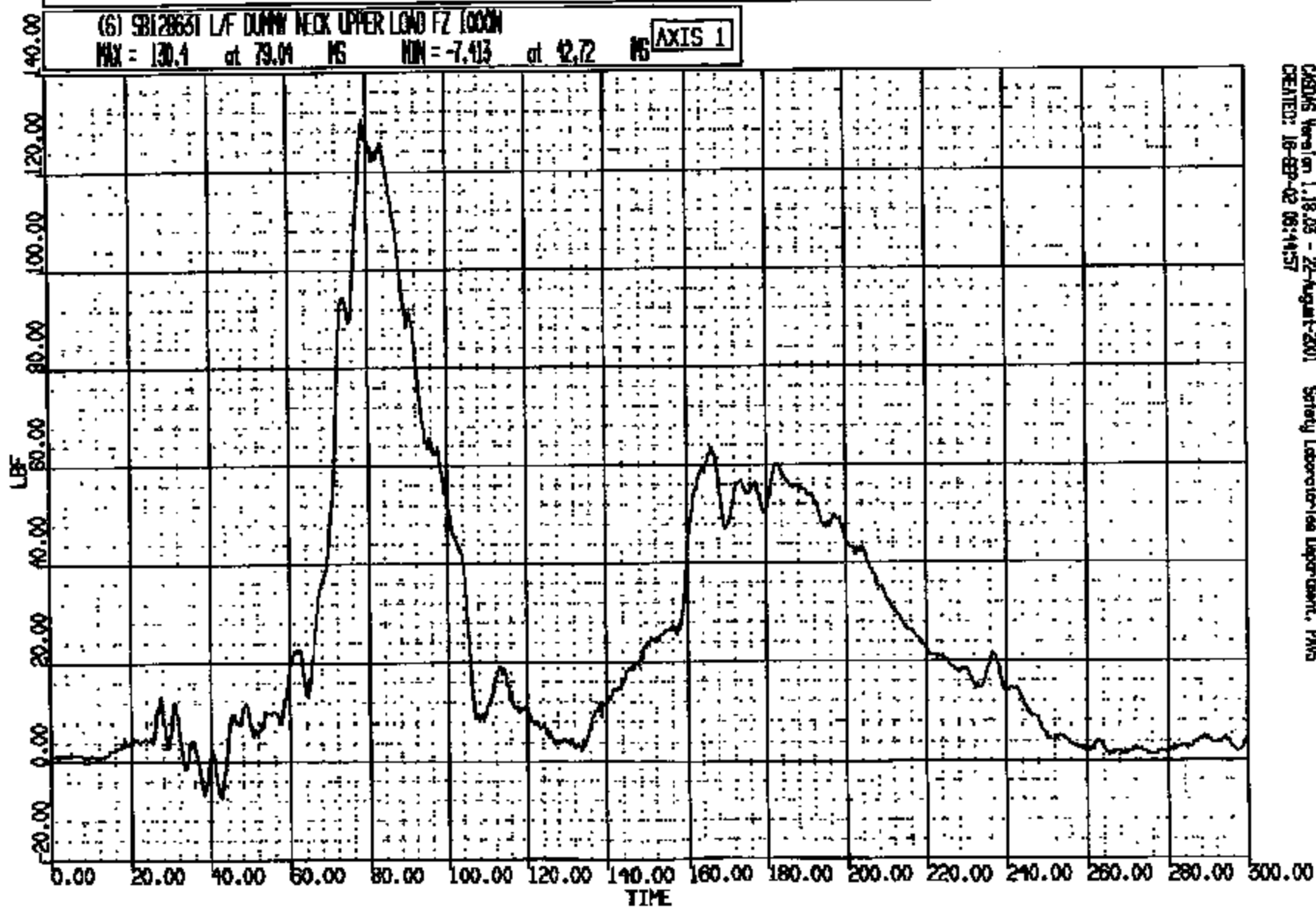


CRTS 0012863

CASUS Version 1.18.08 - 22-August-2001 Surface Laboratories Department, PWS
CREATED: 16-SEP-02 06:44:51

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SB R: 12863 TO: J85310 DATE: 24-APR-2002 09:30:11
2002 EN114

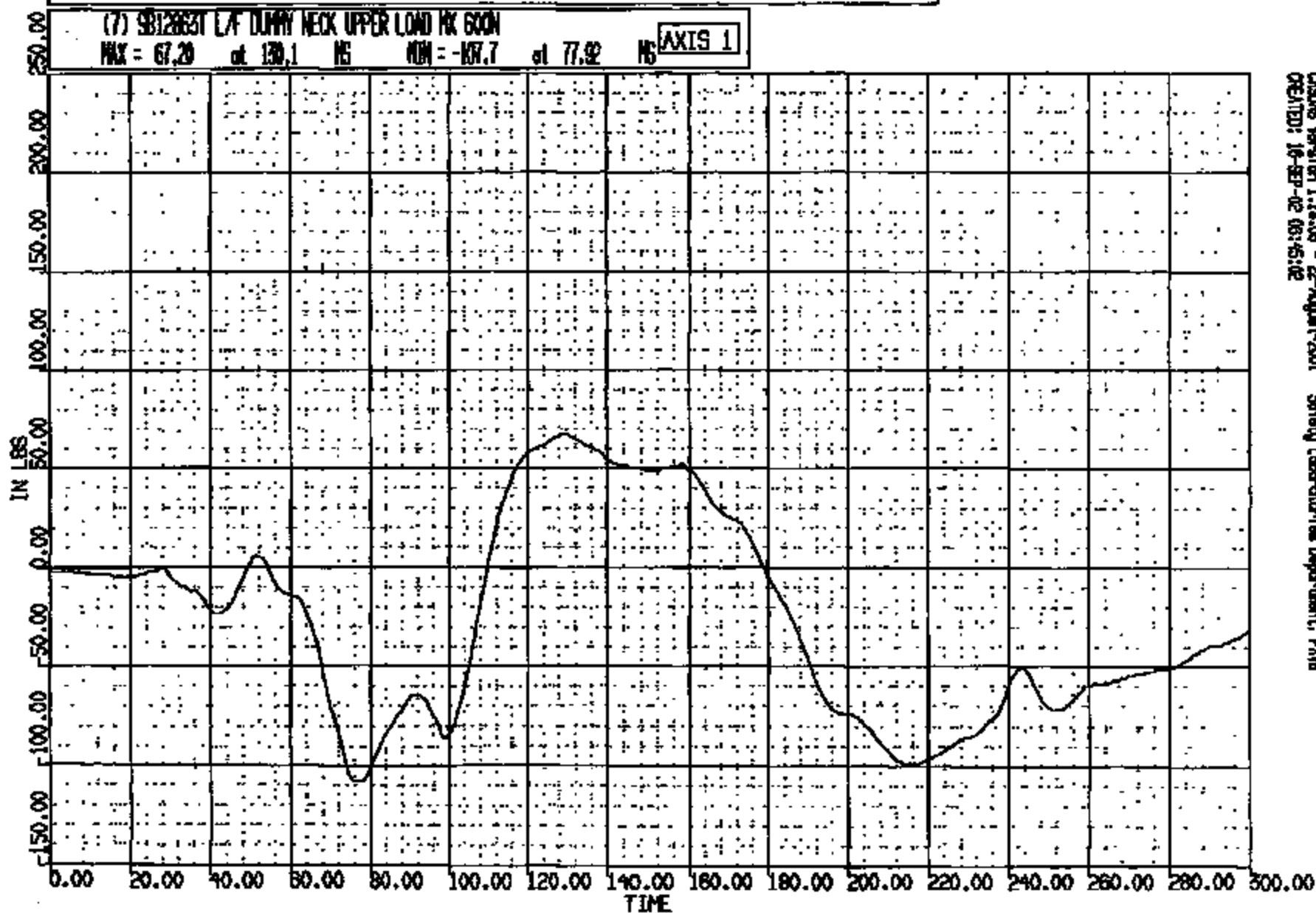


CRTS 0012863

CASAS Version 1.18.05 - 22-August-2001 Safety Laboratories Department, PMS
CREATED: 18-SEP-02 06:14:57

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2002 EN114

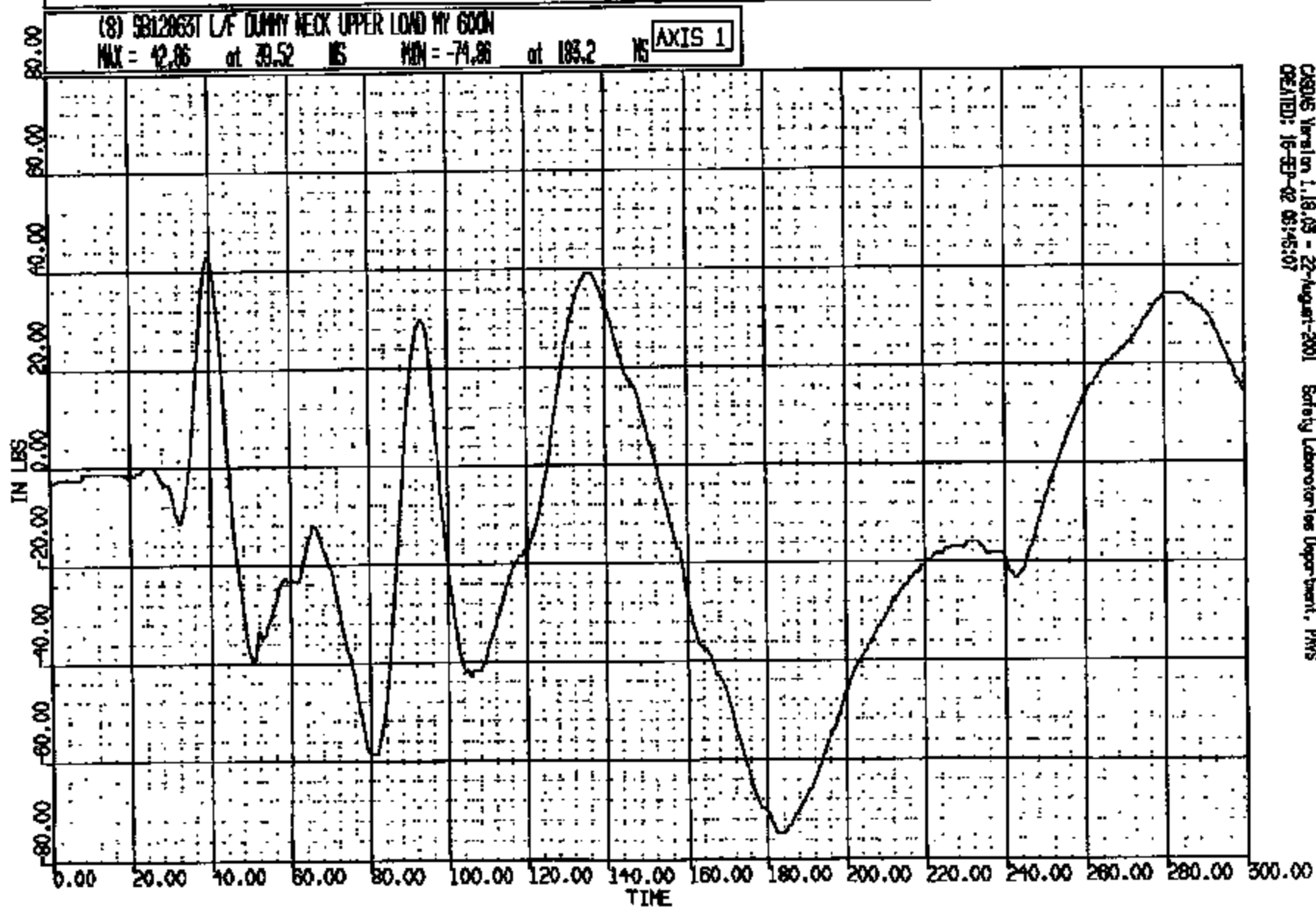


CHS08 Version 1.18.05 - 22-August-2001 Safety Laboratories Department, PHS
CREATED: 16-SEP-02 08:45:02

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CRTS 0012863

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2005 EN114

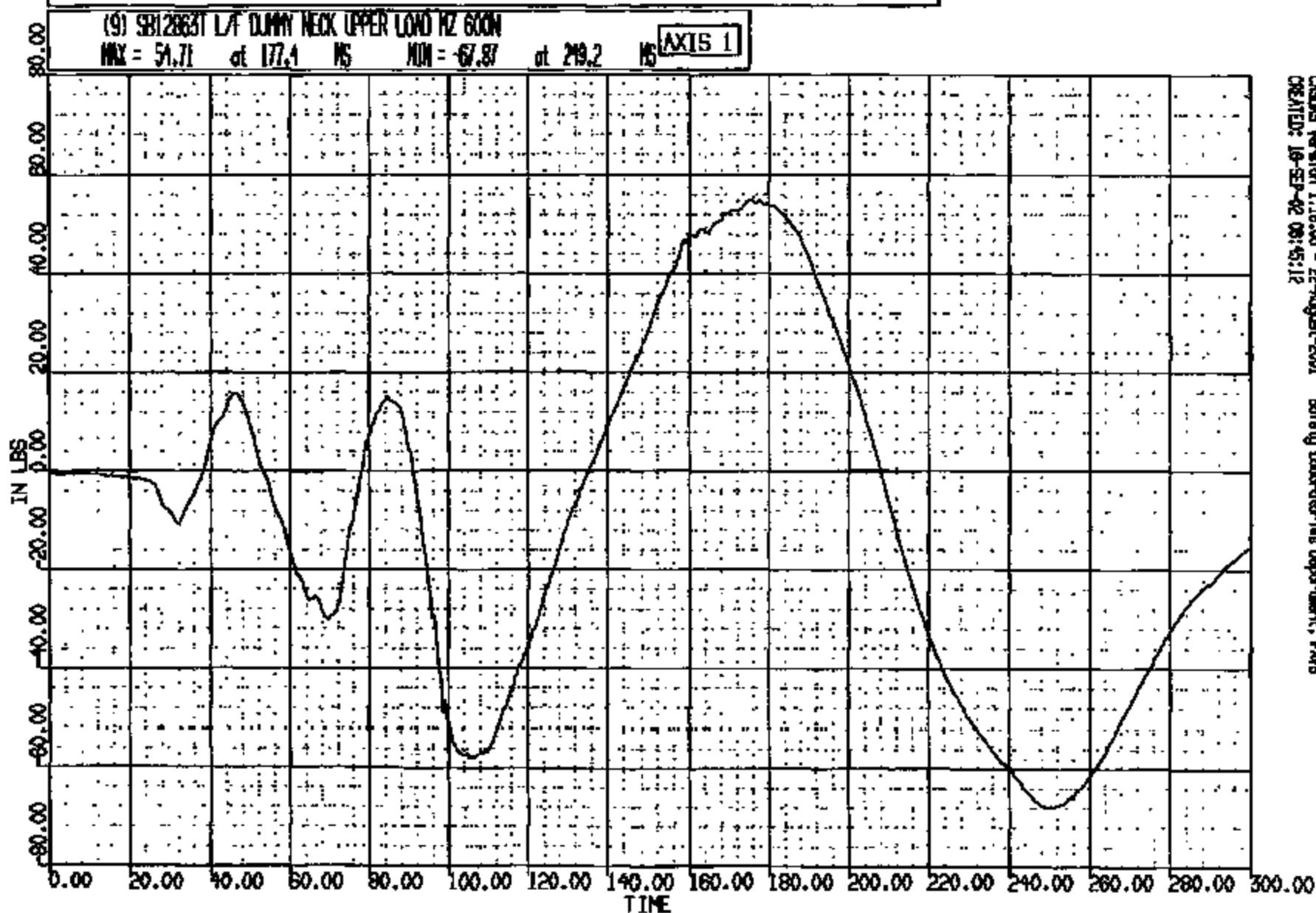


CASUS Version 1.18.05 - 22-August-2001 Safety Laboratories Department, PMS
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CRTS 0012863

BB R: 12863 TO: JB5310 DATE: 24-APR-2002 09:30:11
2005 EN114



CRSIS Version 1.18.08 - 22-August-2001 Safety Laboratories Department, PWS
CREATED: 18-SEP-02 08:45:12

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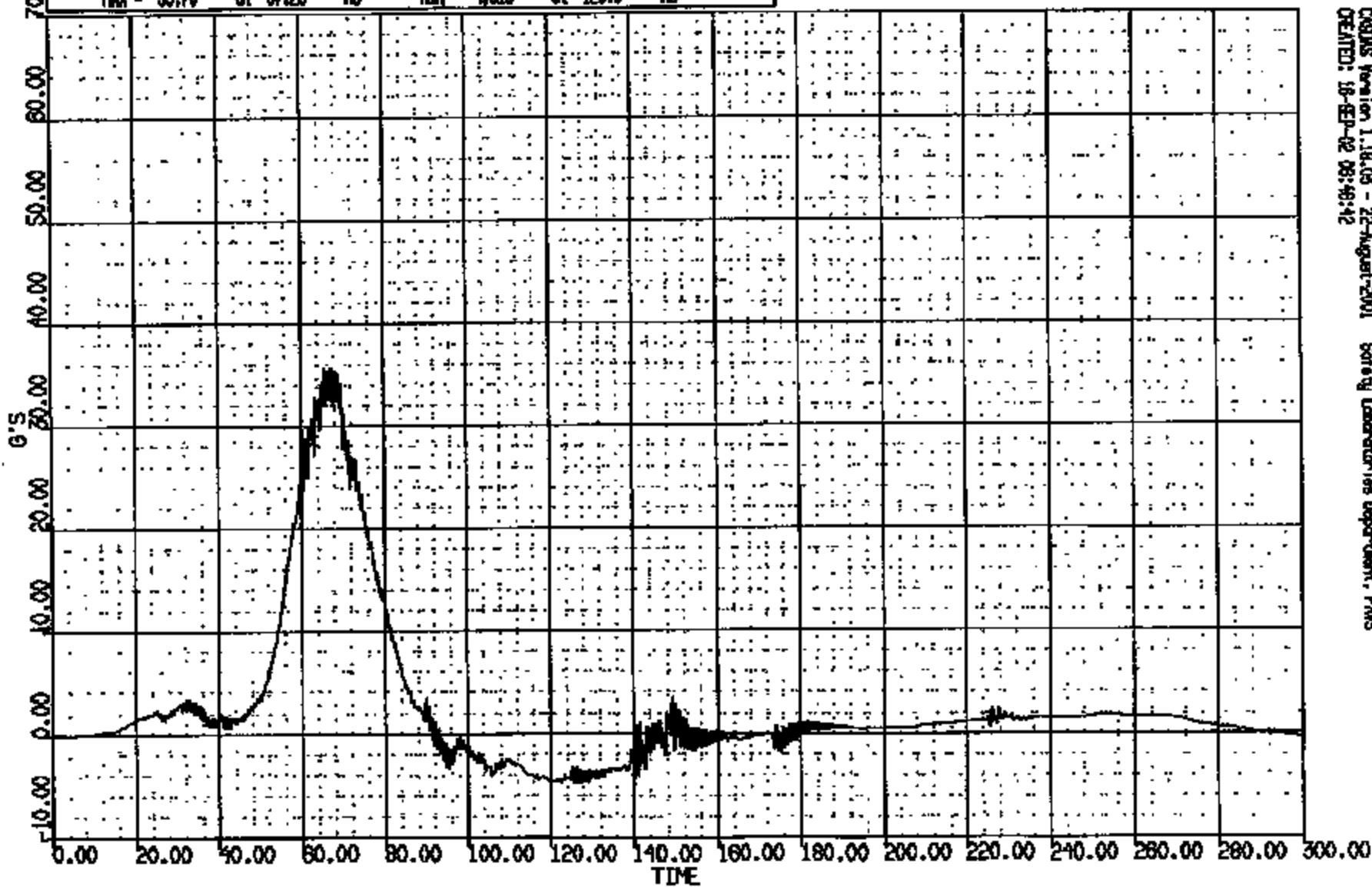
CRIS 0012863

SB R: 12863 TQ: JB5310 DATE: 24-APR-2002 09:30:11
2008 EN114

(25) SB128631 L/F DUMMY PELVIS/LAT 100CM

MAX = 35.70 at 67.28 NS MIN = -1.813 at 126.9 NS

AXIS 1

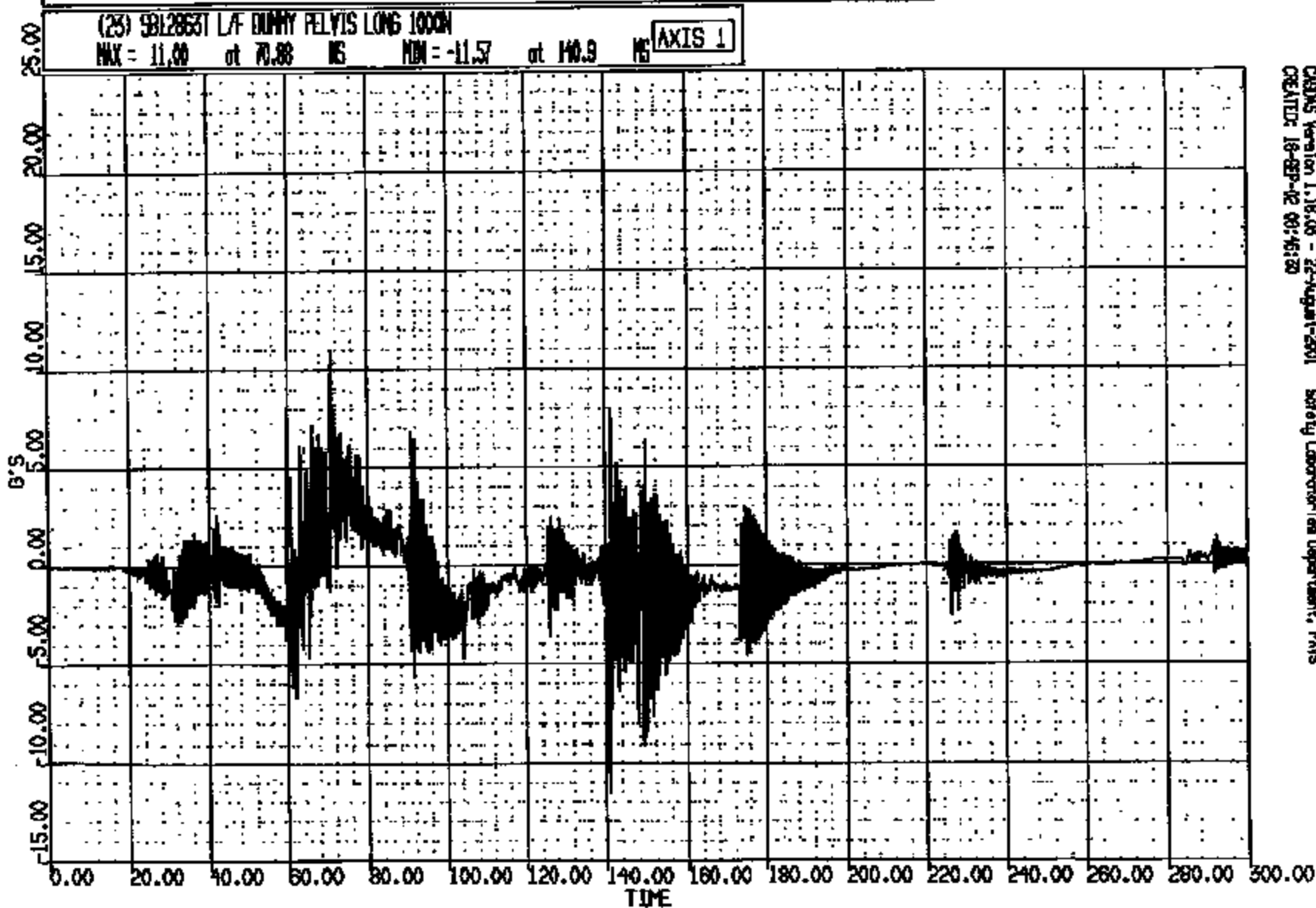


CHODAS Version 1.18.05 - 22-August-2001 Safety Laboratories Department, PMS
CREATED: 18-SEP-02 08:49:42

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CRTS 0012863

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2002 EN114

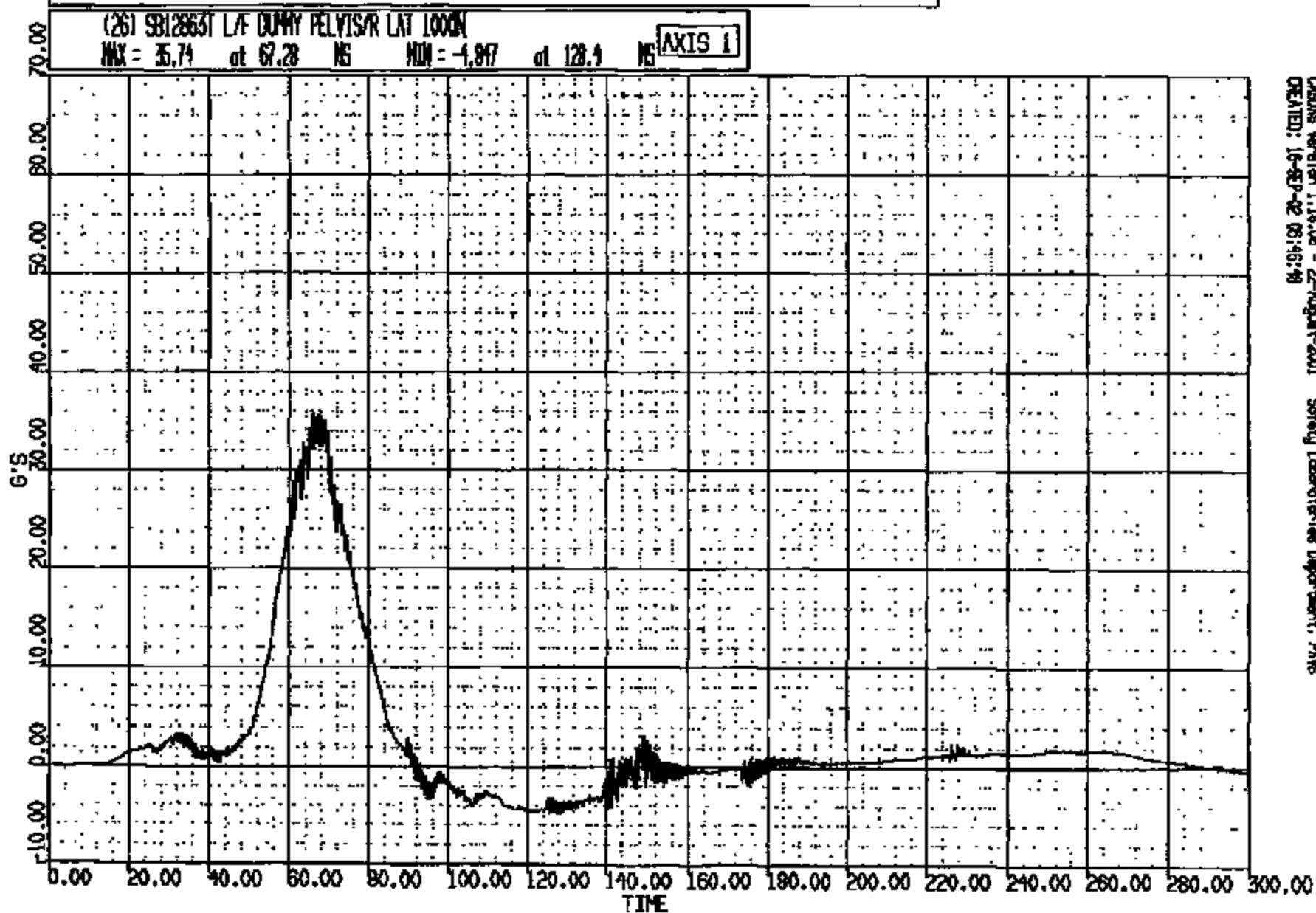


CRS05 Version 1.18.05 - 22-August-2001 Safety Laboratories Department, PHS
CREATED: 18-SEP-02 08:46:30

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CRIS 0012863

BB R: 12863 TO: J25310 DATE: 24-APR-2002 09:30:11
2008 EN114



CASING Version 1.18.05 - 22-August-2001 Safety Laboratories Department, PANS
CREATED: 16-SEP-02 08:46:48

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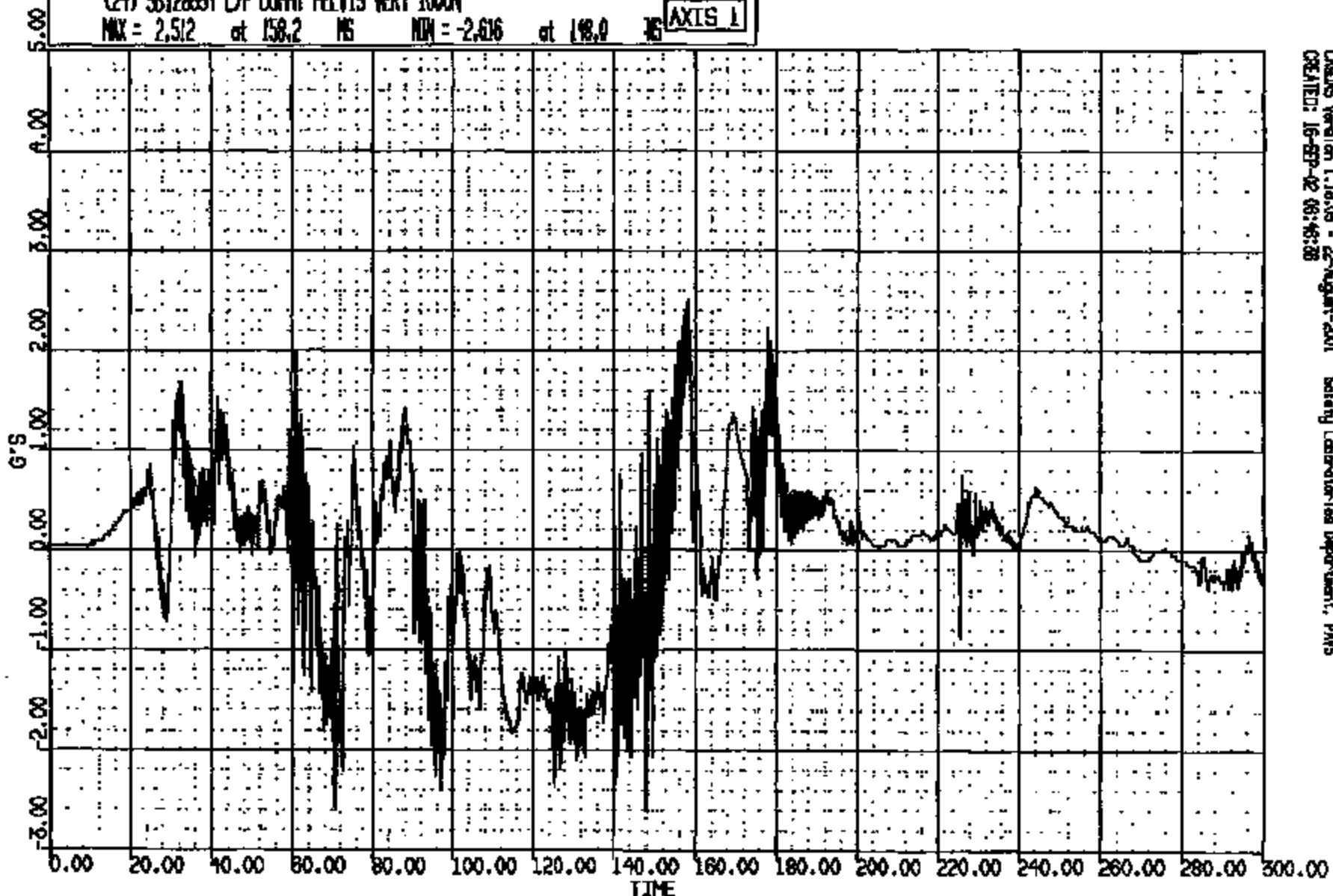
CRIS 0012863

SB R: 12863 TO: JB5310 DATE: 24-APR-2002 09:30:11
2008 EN114

(24) SB12863T L/F DUMMY PELVIS VERT 1000N

MAX = 2.512 at 158.2 MS MIN = -2.616 at 148.0 MS

AXIS 1

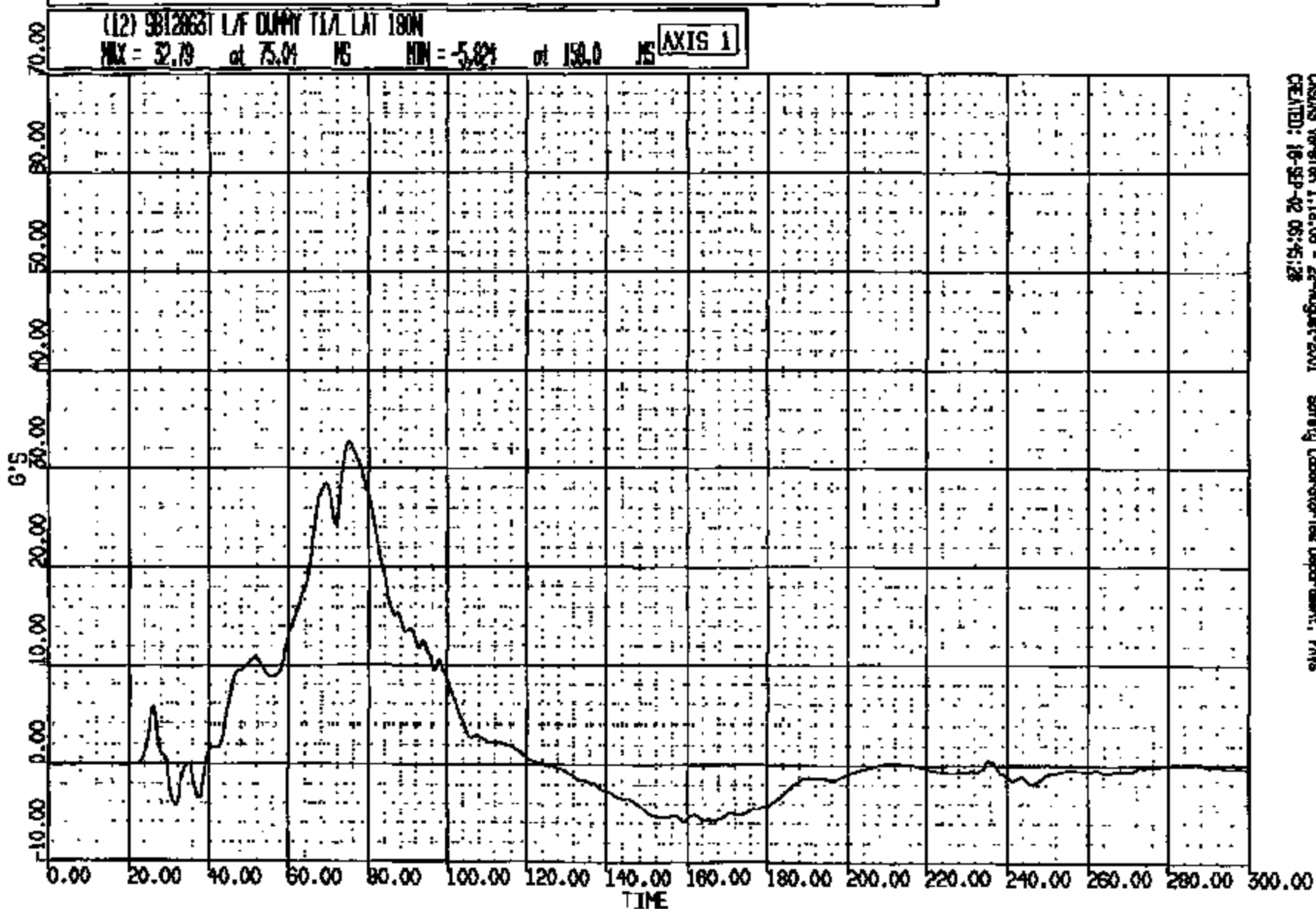


CRS016 Version 1.18.08 - 22-August-2001 Safety Laboratories Department, PWS
CREATED: 16-SEP-02 09:46:28

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CRS016 0012863

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2003 EN114

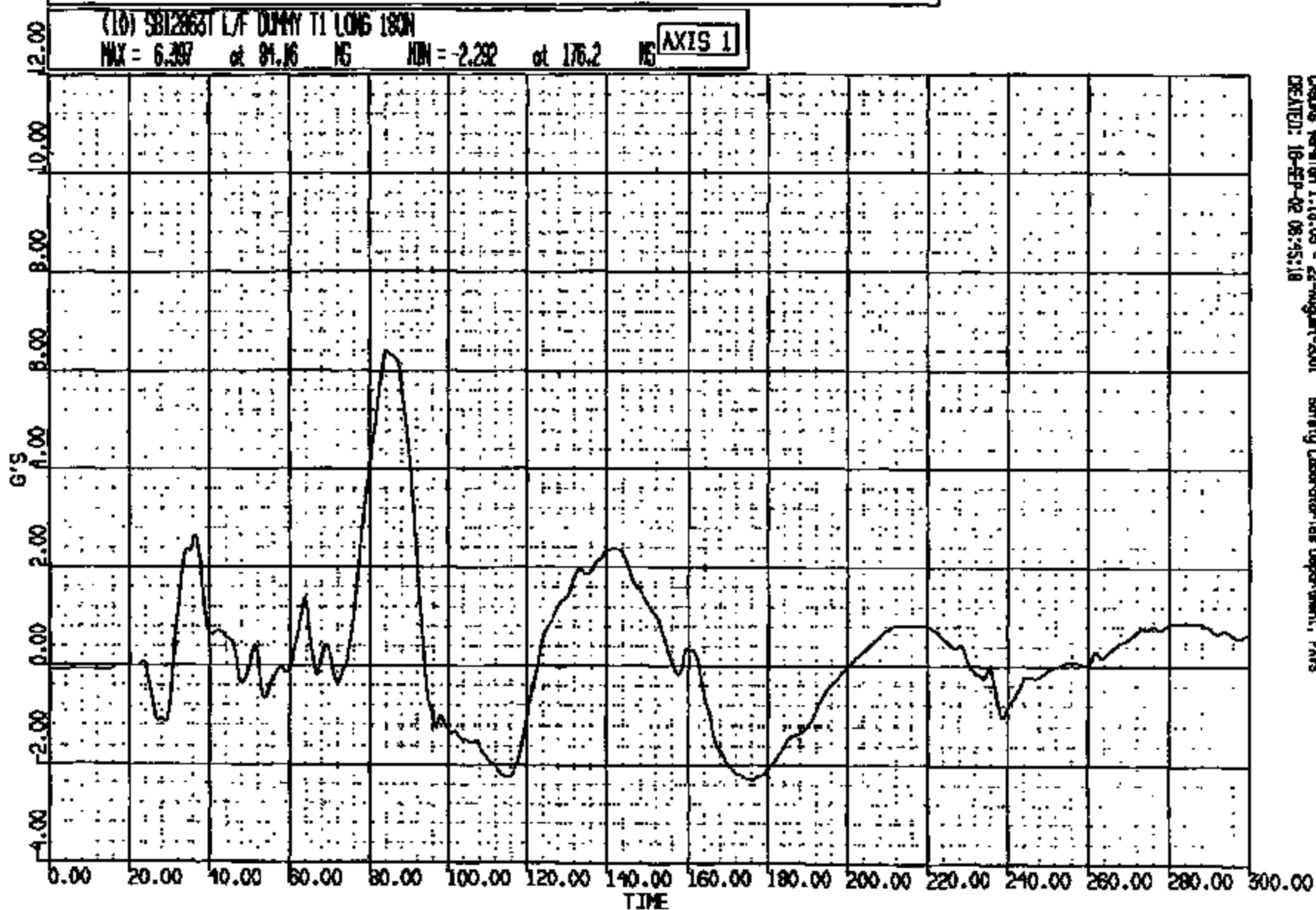


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CREATED: 18-SEP-02 08:45:28

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CRIS 0012863

SR R: 12863 TO: JB5310 DATE: 24-APR-2002 08:30:11
2002 EN114



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CREATED: 16-SEP-02 08:45:18
Sentry Laboratories Department, PMS

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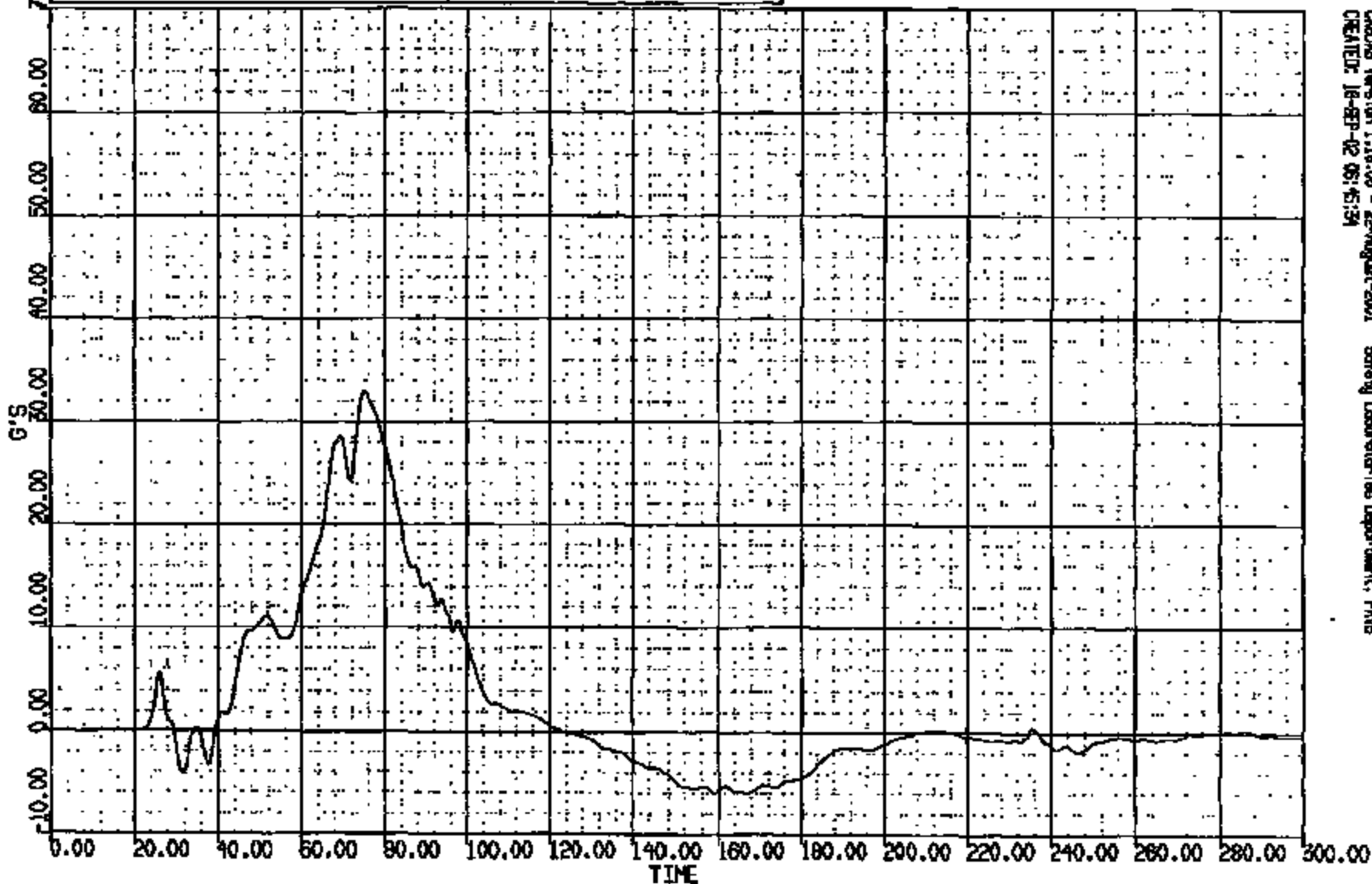
CRTS 0012863

SB R: 12863 TO: J85310 DATE: 24-APR-2002 09:30:11
2003 EN114

(13) SB12863T L/F DUMMY TL/R LAT 180N

MAX = 33.02 at 75.01 MS MIN = -6.029 at 159.0 MS

AXIS 1



CRTS 0012863

CASAS Version 1.18.05 - 22-August-2001 Safety Laboratories Department, PMS
CREATED: 18-SEP-02 06:45:34

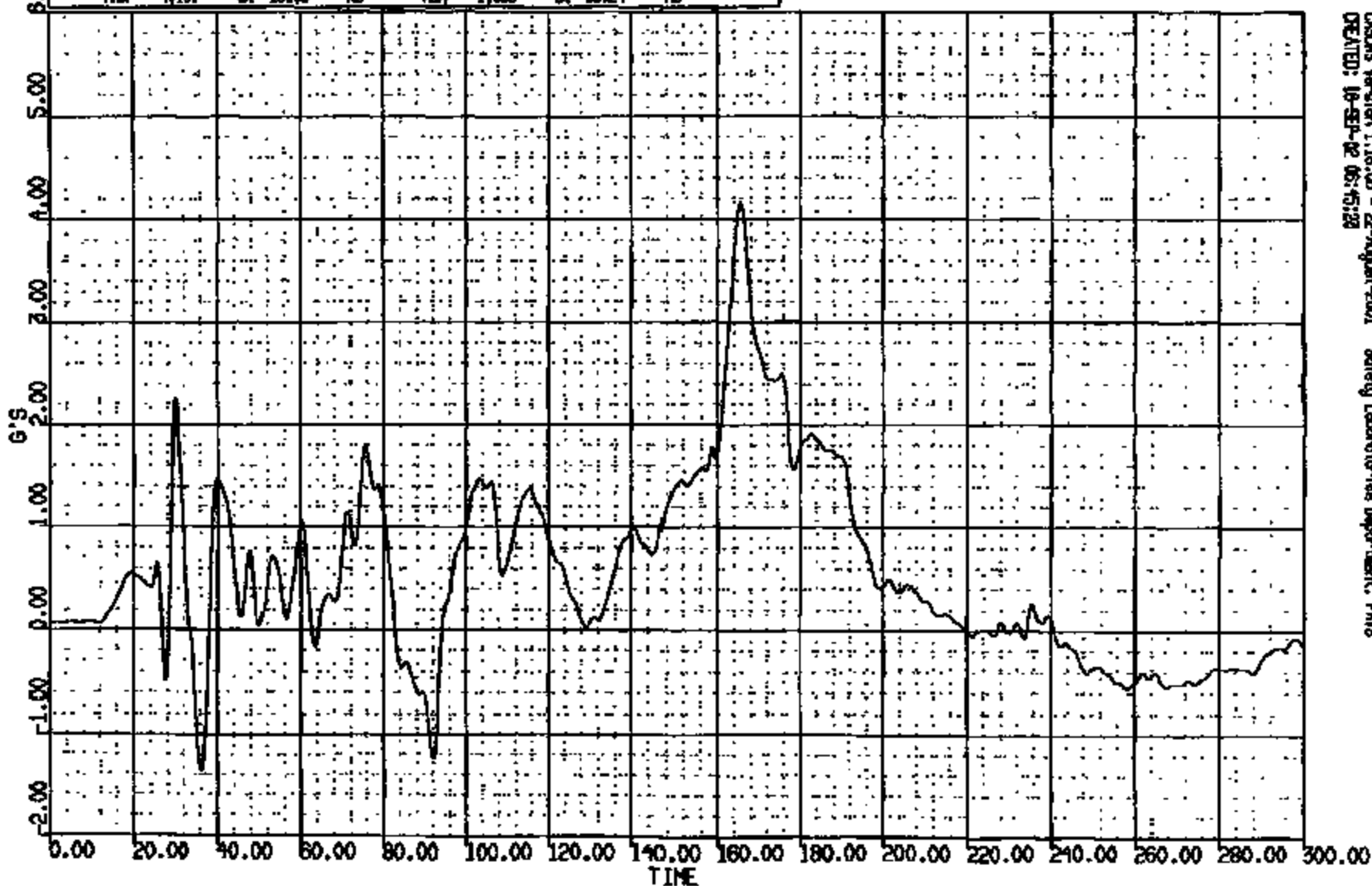
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SE R: 12808 TO: J82210 DATE: 24-APR-2002 09:30:11
2002 EN114

(11) 98128631 L/F DUMP T1 VERT 180N

MAX = 4.167 at 165.6 NS MIN = -1.333 at 36.24 NS

AXIS 1



CRS00128631 Version 1.18.05 - 22-August-2001 Safety Laboratories Department, PHS
CREATED: 18-SEP-92 06:15:28

CRS0012863

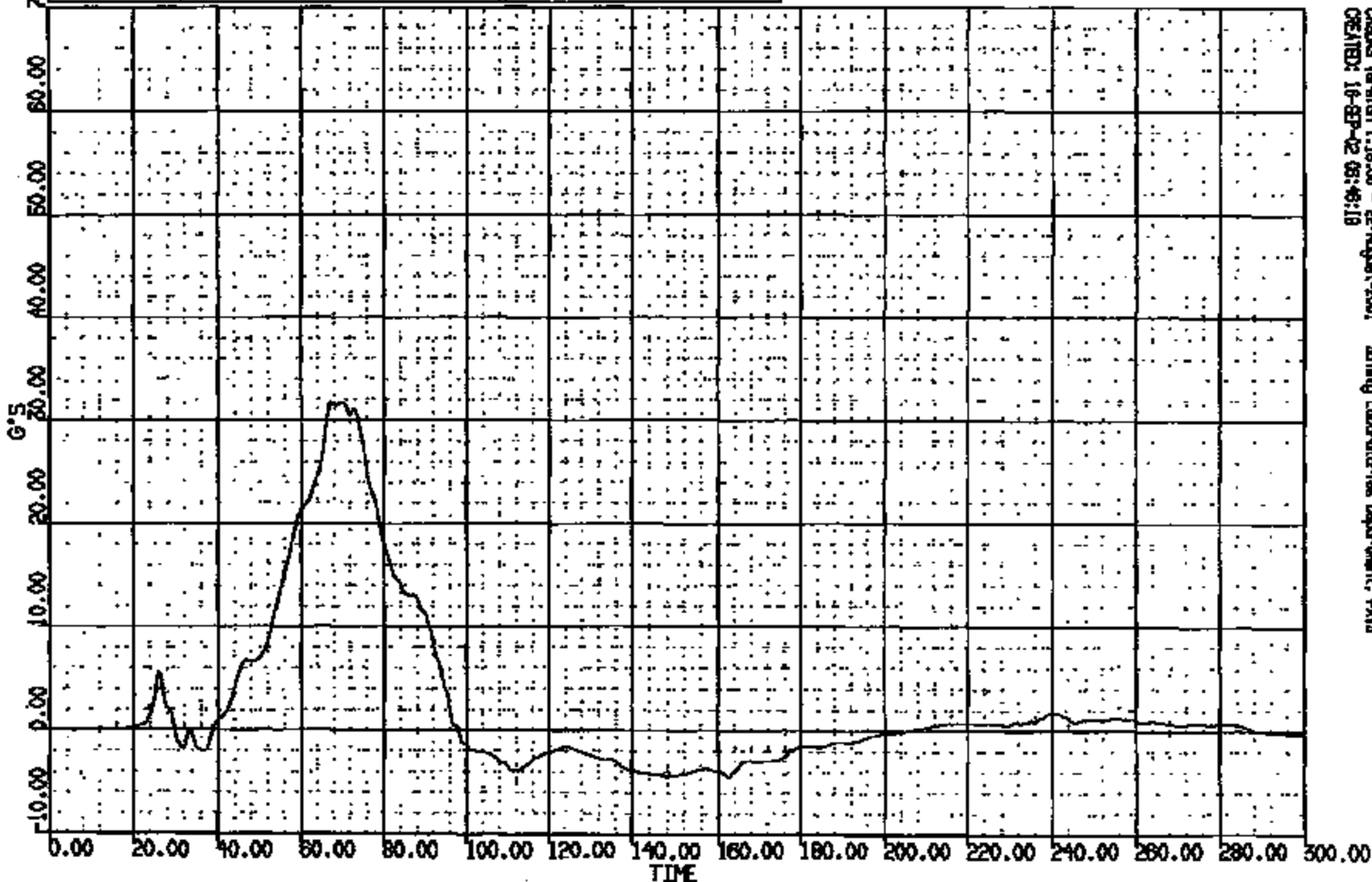
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SB R: 12863 TD: JB5310 DATE: 24-APR-2002 09:30:11
2002 EN114

(21) SB12863T L/F GUNNY T12/FRT LAT 180N

MAX = 31.74 at 67.36 NS MIN = -1.470 at 162.3 NS

AXIS 1

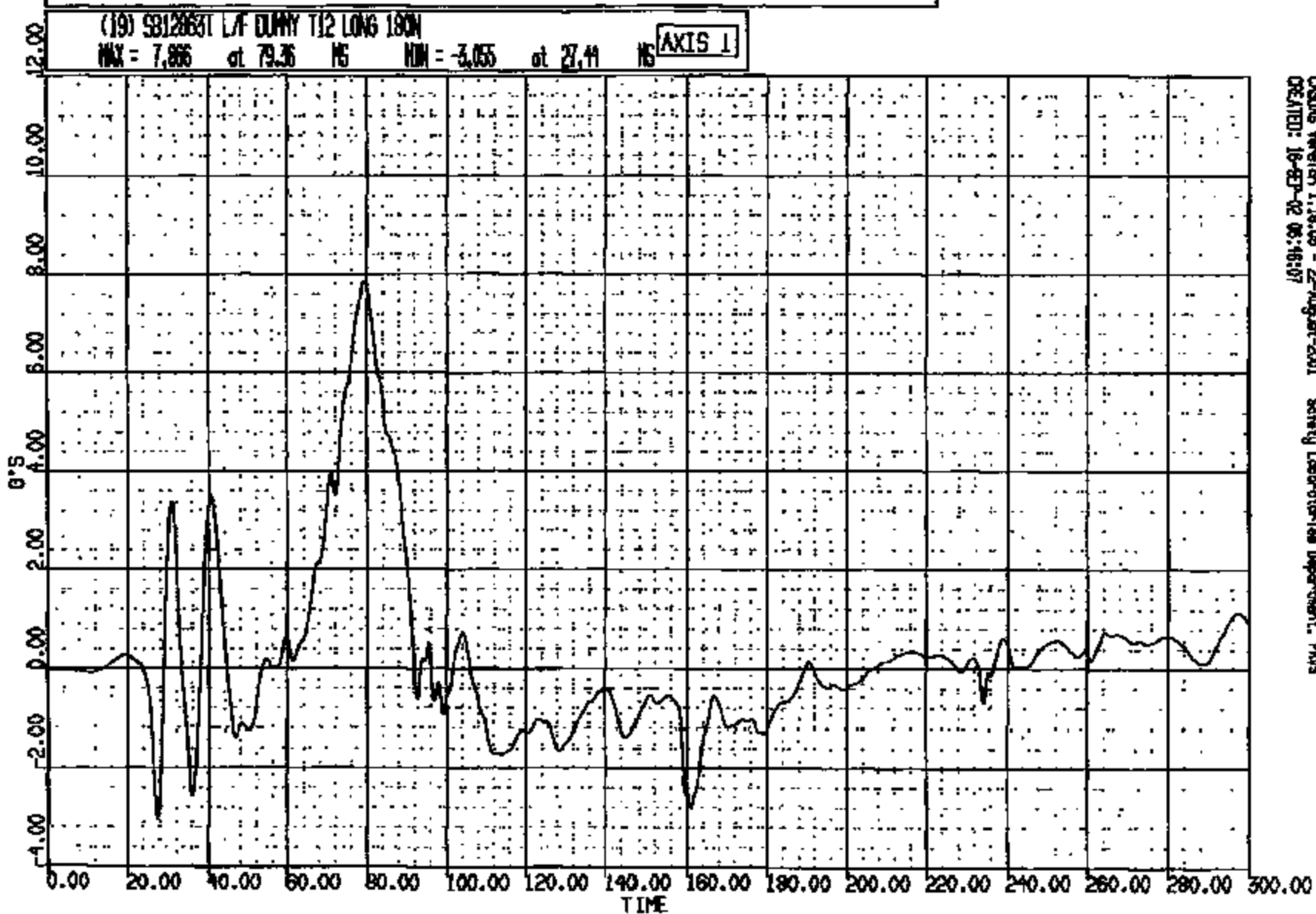


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CREATED: 16-SEP-02 09:46:18

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SR R: 12003 TO: JB5310 DATE: 24-APR-2002 09:30:11
2005 EN114



CASUS Version 1.18.08 - 22-August-2001 Safety Laboratories Department, PHS
CREATED: 18-SEP-02 06:16:07

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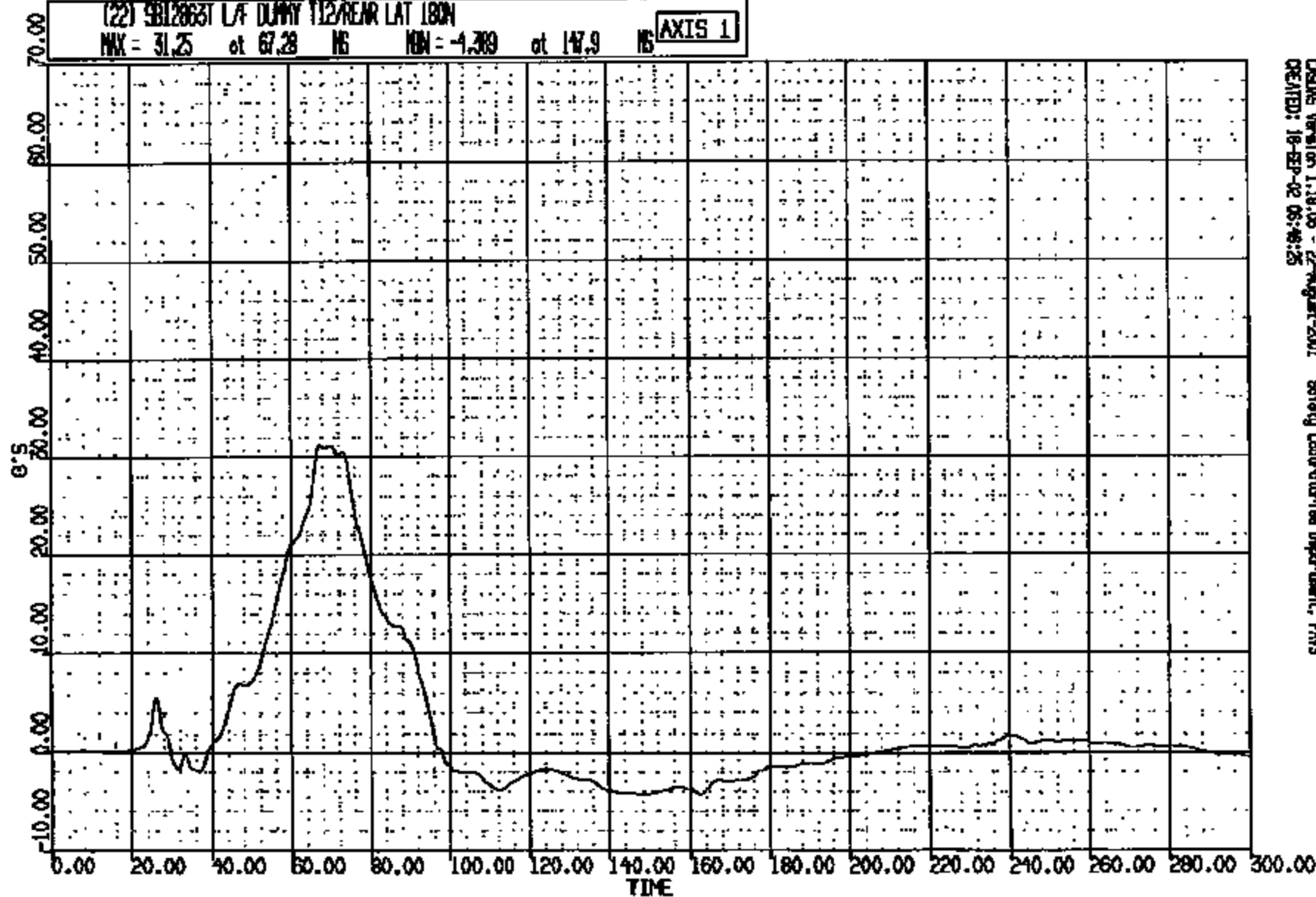
CRIS 0012863

SB R: 12863 TO: JBS310 DATE: 24-APR-2002 08:30:11
2005 EN114

(22) 5812863T L/F DUMMY T12/REAR LAT 180N

MAX = 31.25 at 67.28 NS MIN = -4.309 at 147.9 NS

AXIS 1



CRSIS Version 1.18.03 - 22-August-2001 Safety Laboratories Department, PMS
CREATED: 18-SEP-02 08:46:25

ENTIRE PAGE CONFIDENTIAL

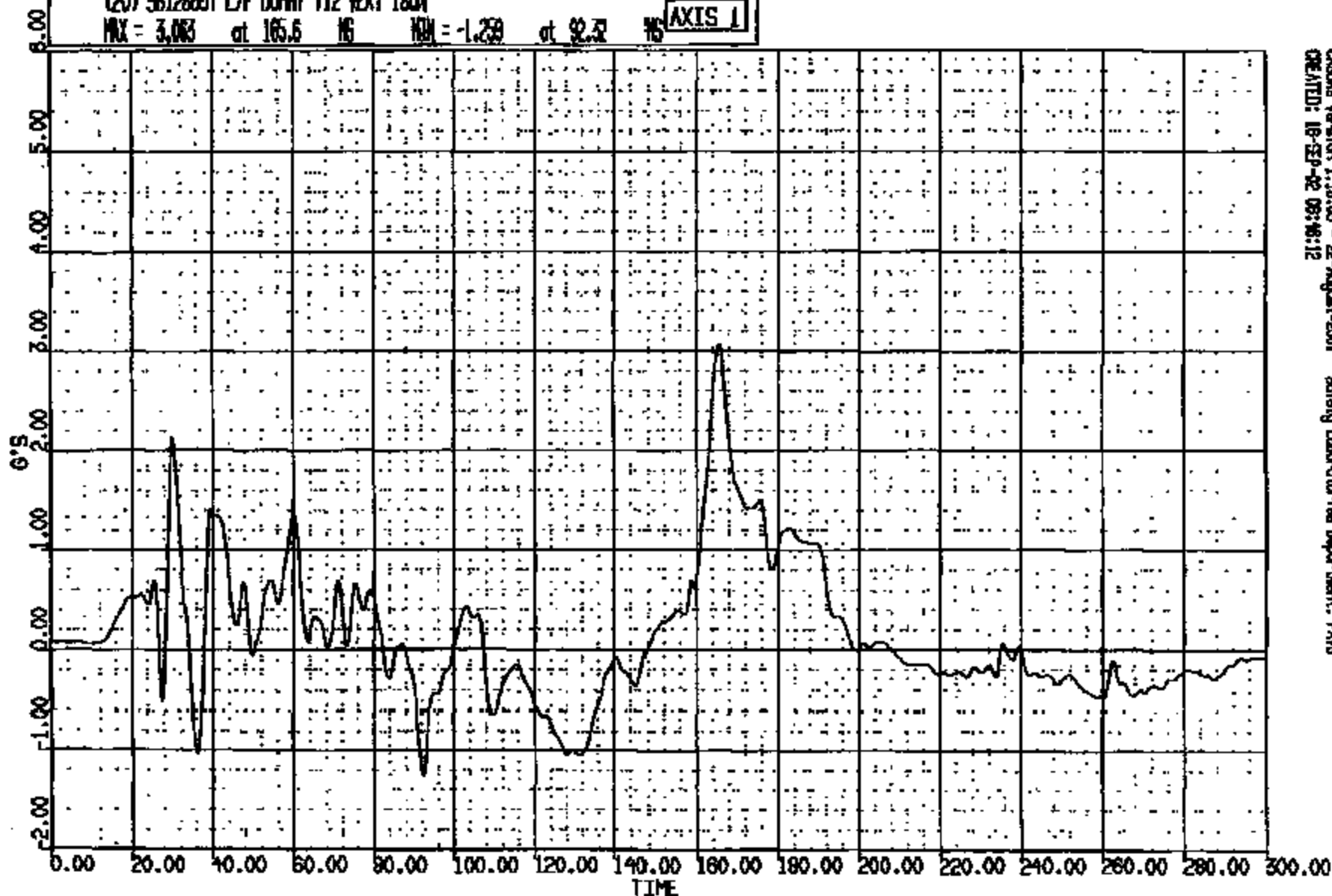
CRSIS 0012863

SB R: 12863 TO: JB5310 DATE: 24-APR-2002 09:30:11
2002 EN114

(20) SB12863T L/F DUMMY T12 VERT 180N

MAX = 3.063 at 165.6 MS MIN = -1.259 at 92.52 MS

AXIS 1

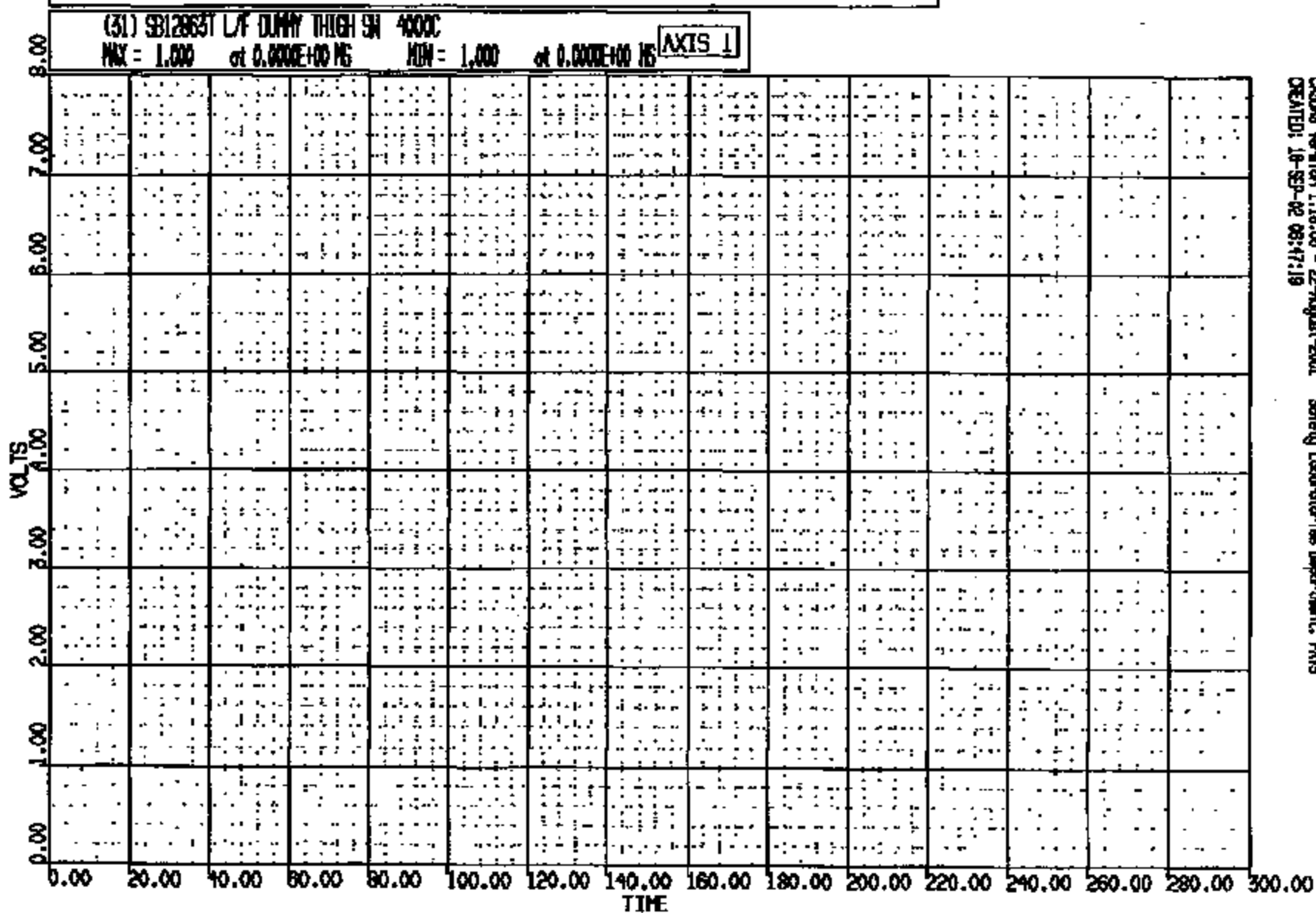


CASAS Version 1.18.05 - 22-August-2001 Safety Laboratories Department, PHS
CREATED: 18-SEP-02 09:46:12

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CRIS 0012863

SR R: 12863 TO: JB5310 DATE: 24-APR-2002 09:30:11
2002 EN114



CRDMS Version 1.18.08 - 22-August-2001 Safety Laboratories Department, PMS
CREATED: 18-SEP-02 08:47:19

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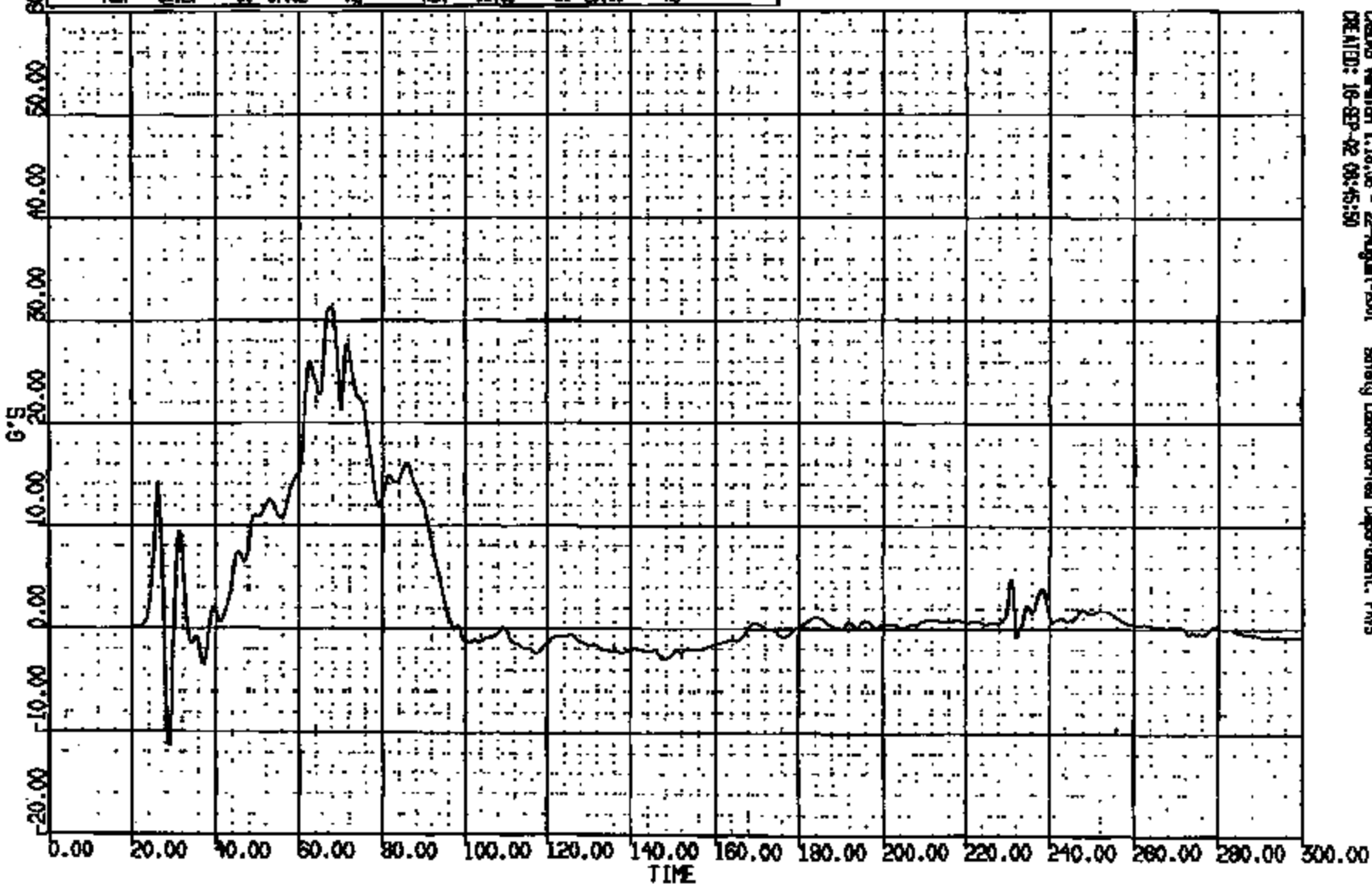
CRIS 0012863

SB R: 12863 TO: JB5510 DATE: 24-APR-2002 08:30:11
2005 EN114

(16) SB12863T L/F DUMMY THORAX/RIB/LO/RT LAT 180N

MAX = 31.27 at 67.52 NS MIN = -11.51 at 28.88 NS

AXIS 1



OSDMS Version 1.18.05 - 22-August-2001 Safety Laboratories Department, PHS
CREATED: 16-SEP-02 08:45:50

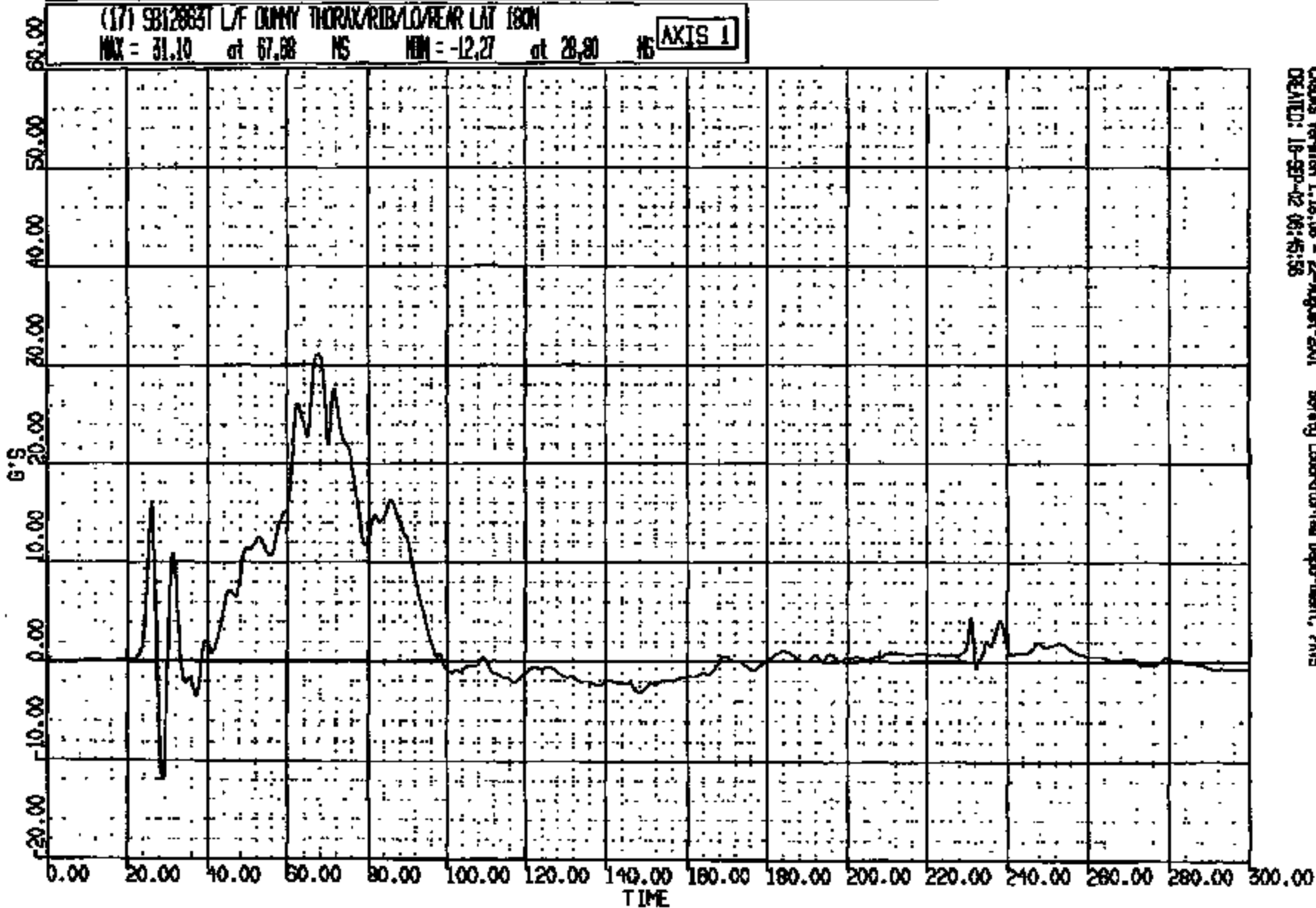
ENTIRE PAGE CONFIDENTIAL

CRTS 0012863

SS R: 12863 TC: J85310 DATE: 24-APR-2002 09:30:11
2003 EN114

(17) SBI2863T L/F DUMMY THORAX/RIB/LOVEAR LAT 180N

MAX = 31.10 at 67.68 NS MIN = -12.27 at 28.80 #5 **AXIS 1**



CRSIS Version 1.18.08 - 22-August-2001 Safety Laboratories Department, PHS
CREATED: 18-SEP-02 09:45:58

ENTIRE PAGE CONFIDENTIAL

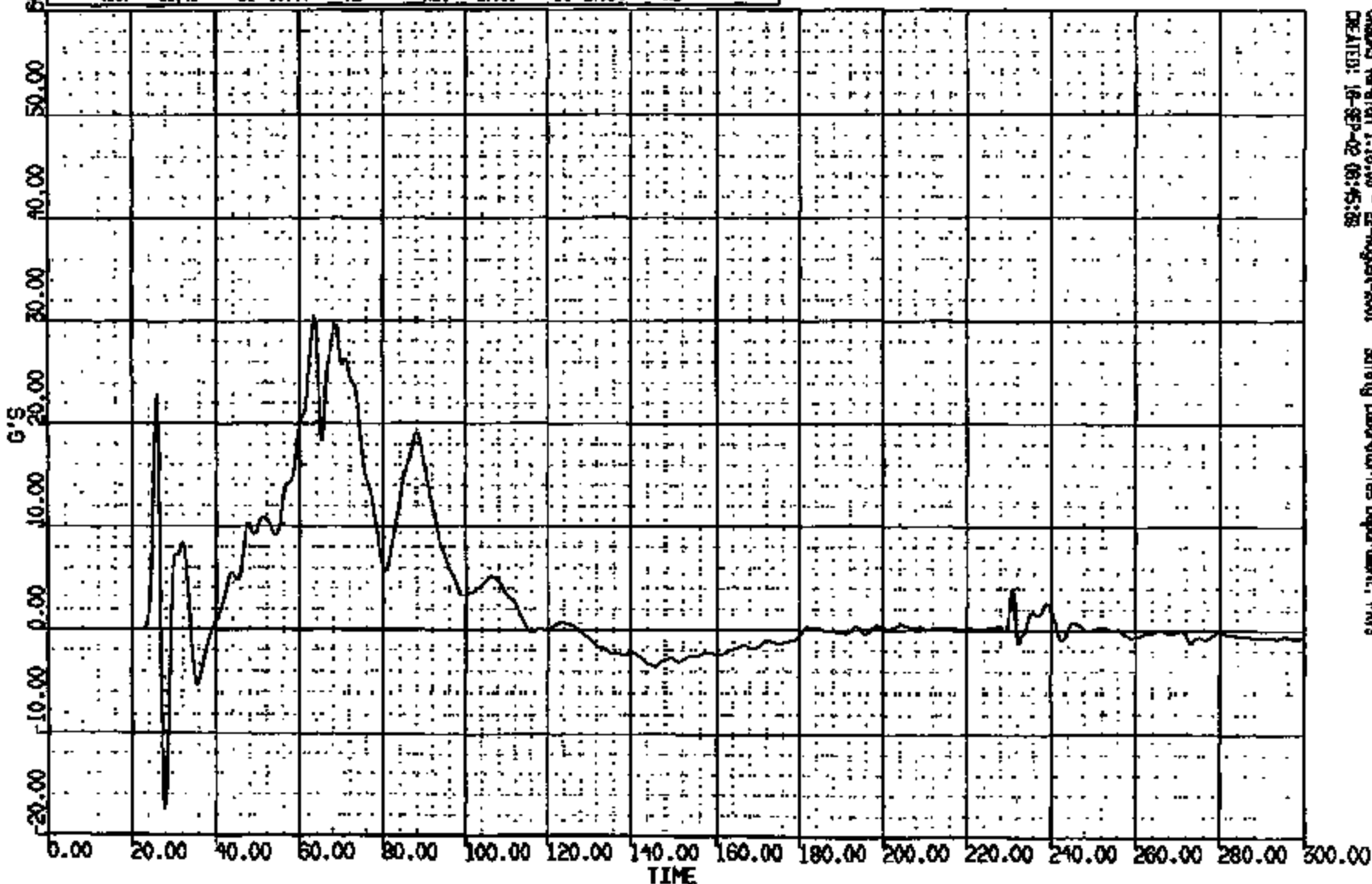
CRTS 0012863

SS R: 12863 TO: JB5810 DATE: 24-APR-2002 08:50:11
2005 EN114

(14) SBI28631 L/F DUMMY THORAX/RIB/APERT LAT 180N

MAX = 30.43 at 63.44 MS MIN = -17.53 at 27.84 MS

AXIS 1

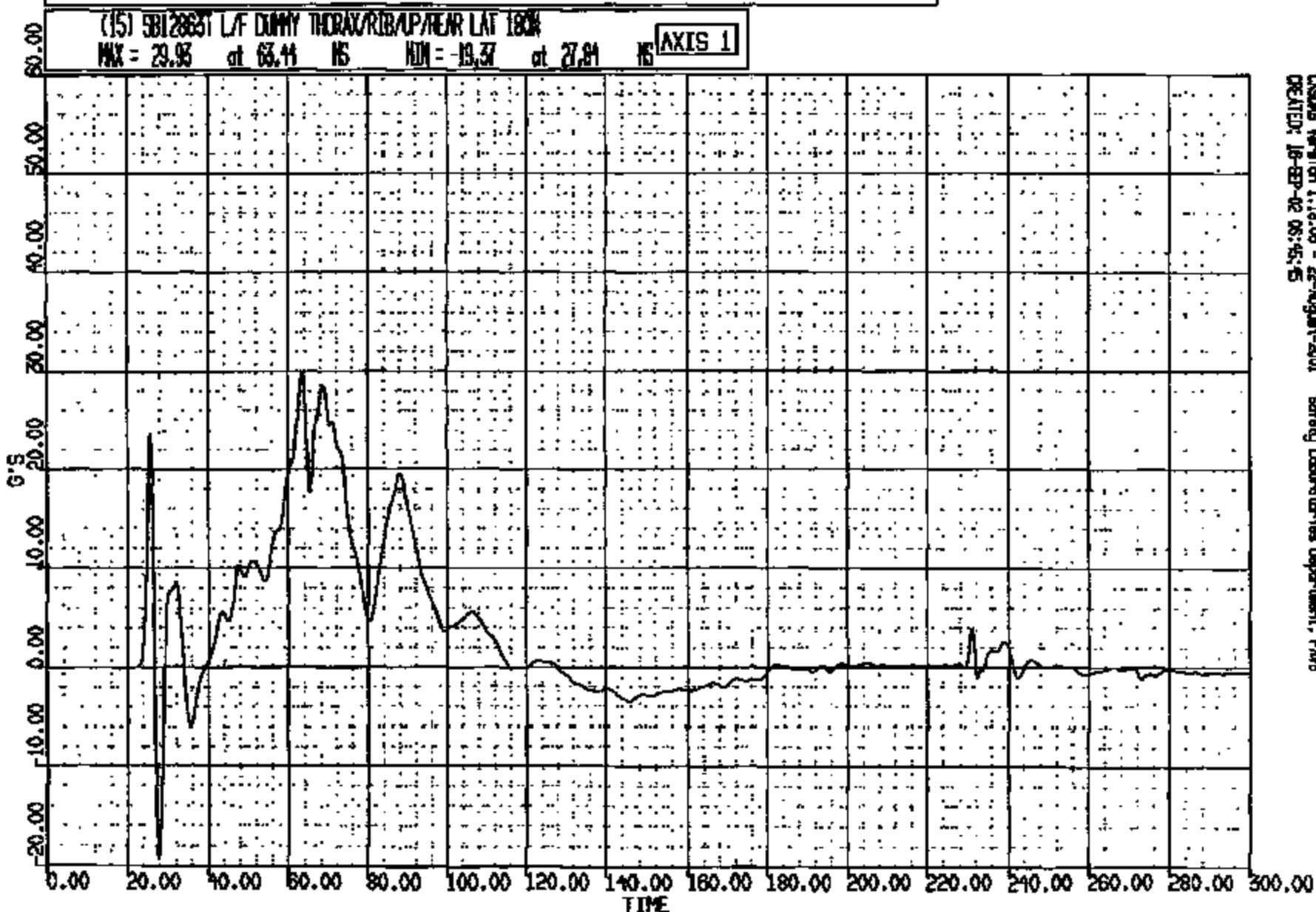


CASIMS Version 1.18.08 - 22-August-2001 Serfely Laboratories Department, PWS
CREATED: 18-SEP-02 08:45:08

ENTIRE PAGE CONFIDENTIAL

CRTS 0012863

SB R: 12663 TO: JB3510 DATE: 24-APR-2002 09:30:11
2003 EN114

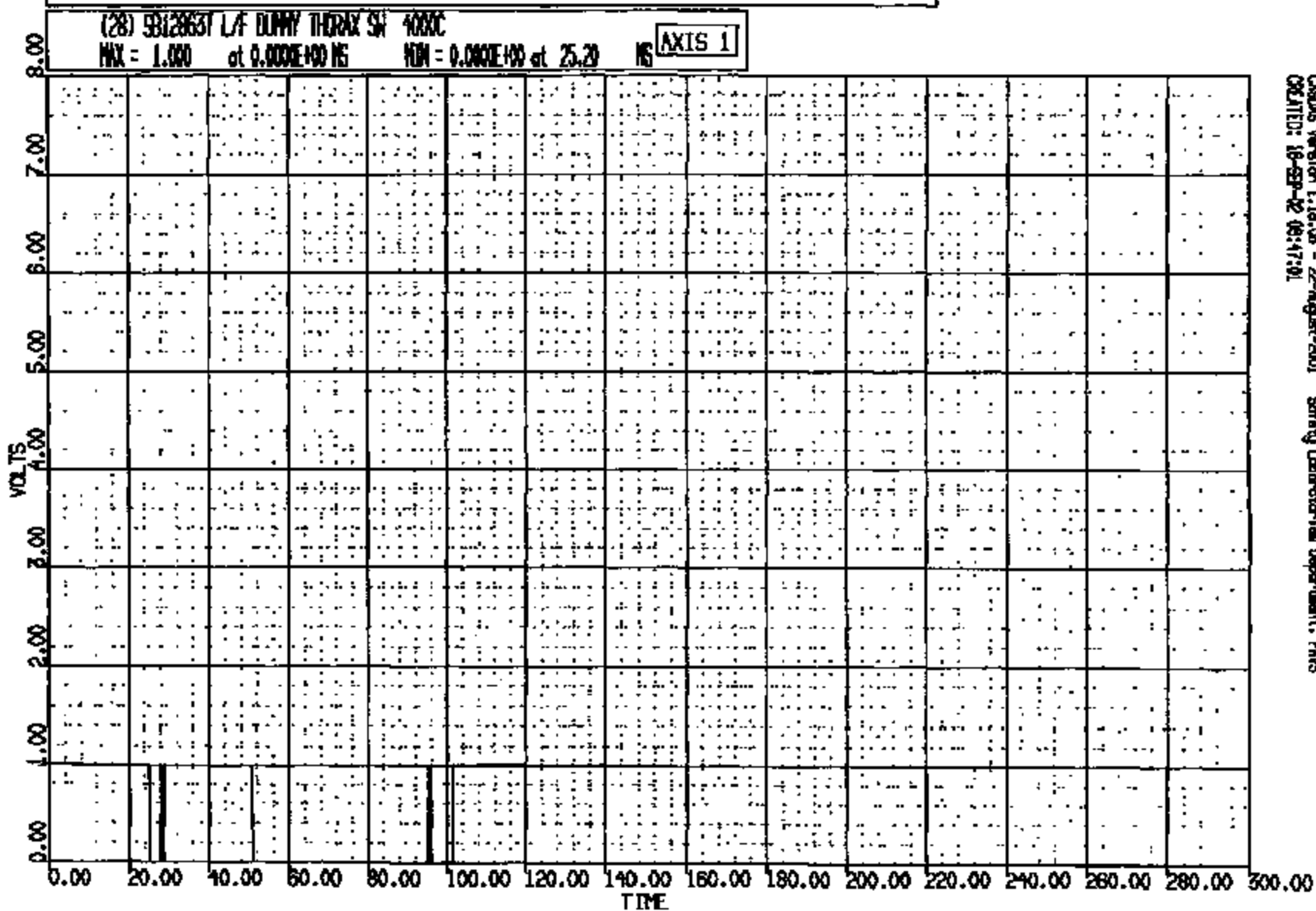


CASDA5 Version 1.18.03 - 22-August-2001 Safety Laboratories Department, PWS
CREATED: 18-SEP-02 08:45:45

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CRTS 0012863

SB R: 12863 TO: JB5310 DATE: 24-APR-2002 08:30:11
2005 EN114



CRS045 Version 1.18.05 - 22-August-2001 Safety Laboratories Department, PWS
CREATED: 18-SEP-92 08:47:01

CRIS 0012863

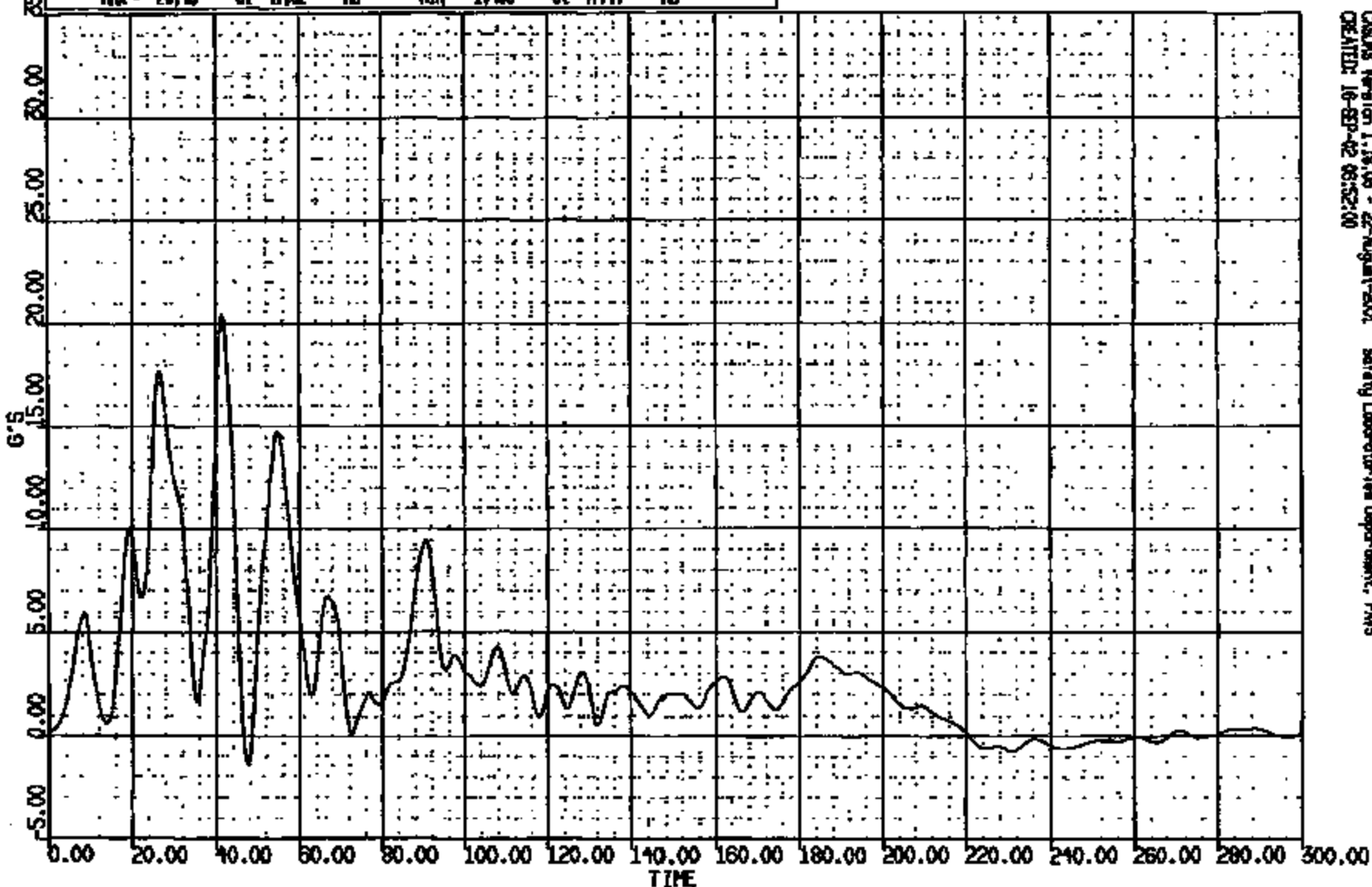
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SB R: 12863 TO: JB5310 DATE: 24-APR-2002 08:30:11
2005 EN114

(89) SB12863T LAF FLR PAN 0 #2 XM CIR #11 LAT 60N

MAX = 20.48 at 41.52 NS MIN = -1.468 at 47.44 NS

AXIS 1



CRTS 0012863

CASOS Version 1.18.05 - 22-August-2001
CREATED: 16-SEP-02 08:52:00
Safety Laboratory Department, PANS

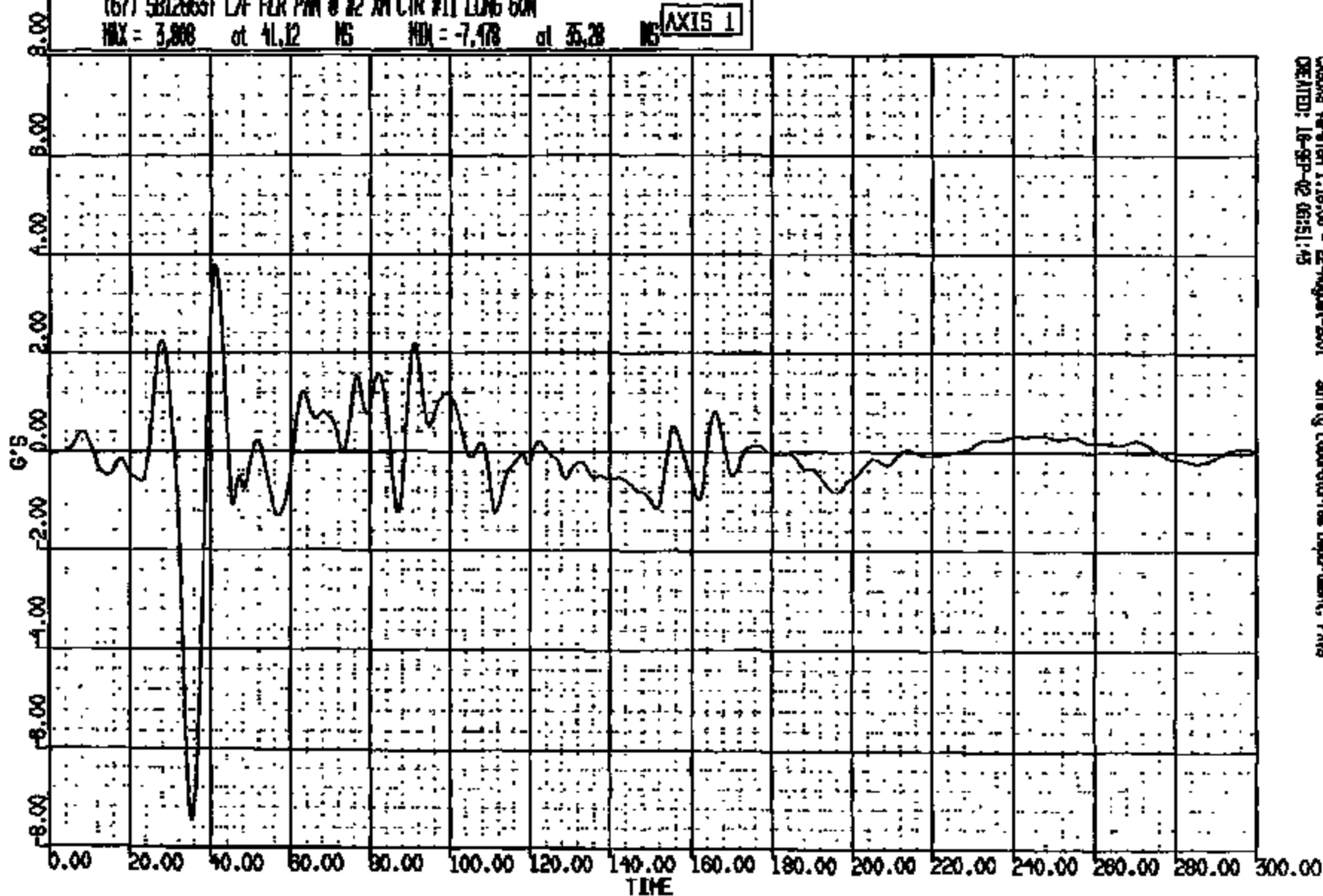
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SB R: 12863 TO: J85310 DATE: 24-APR-2002 09:30:11
2008 EN114

(67) SB128631 LAF FLR PAN 0 #2 XM CTR #11 LONG 60M

MAX = 3.808 at 41.12 MS MIN = -7.478 at 35.28 MS

AXIS 1



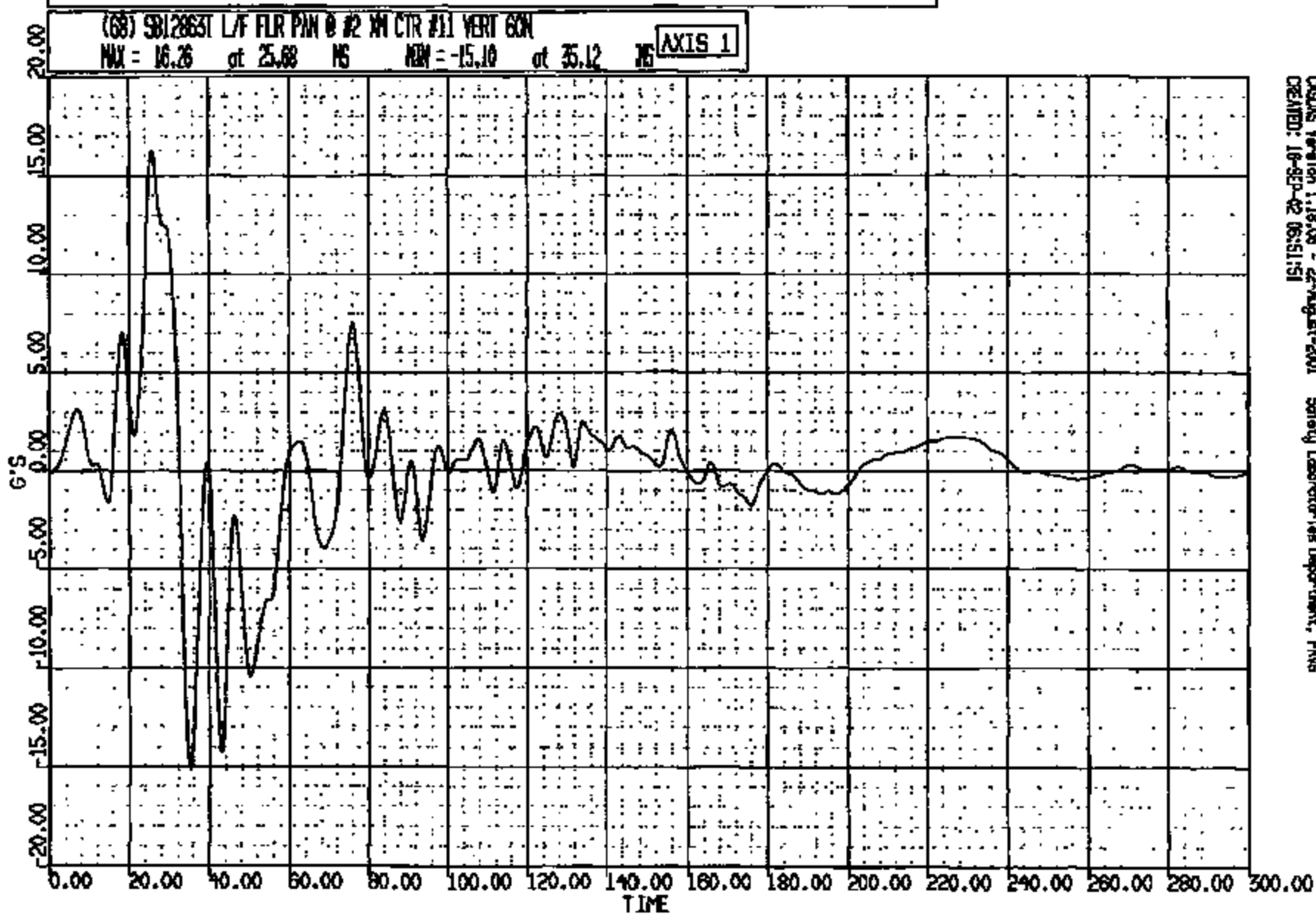
CHSUS Version 1.18-05 - 23-August-2001
CREATED: 18-SEP-02 09:51:45

Safety Laboratories Department, PNG

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CRIS 0012863

08 R: 12883 TO: J85310 DATE: 24-APR-2002 09:30:11
2005 EN114



OSDIS Version 1.19.05 - 22-August-2001 Safety Laboratories Department, PMS
CREATED: 10-SEP-02 06:51:51

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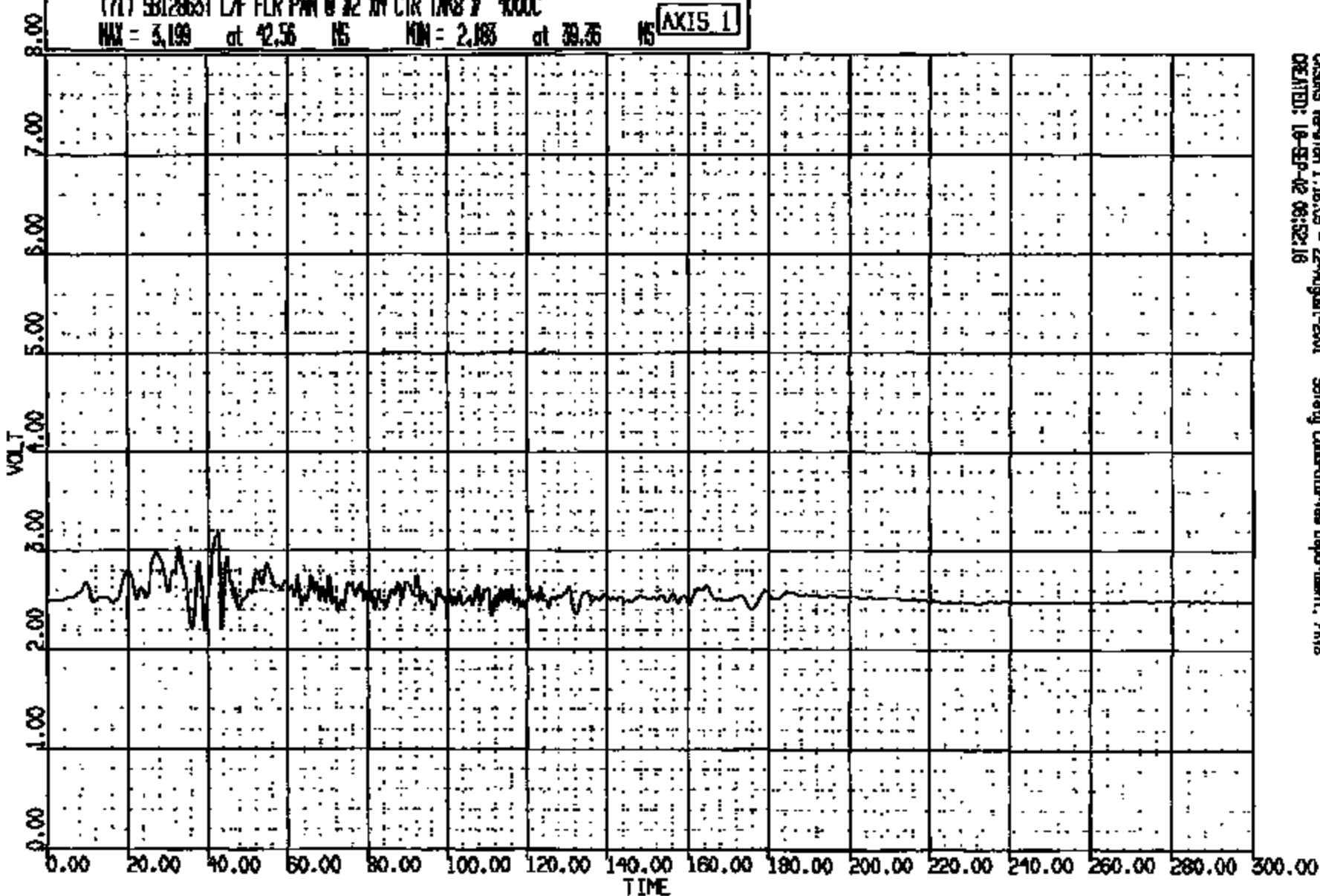
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SS R: 12863 TO: JB5310 DATE: 24-APR-2002 09:30:11
2002 EN114

(71) 9312863T L/F FLR PAN @ #2 XN CTR TAKS # 1000C

MAX = 3.199 at 42.56 NS MIN = 2.183 at 39.35 NS

AXIS 1

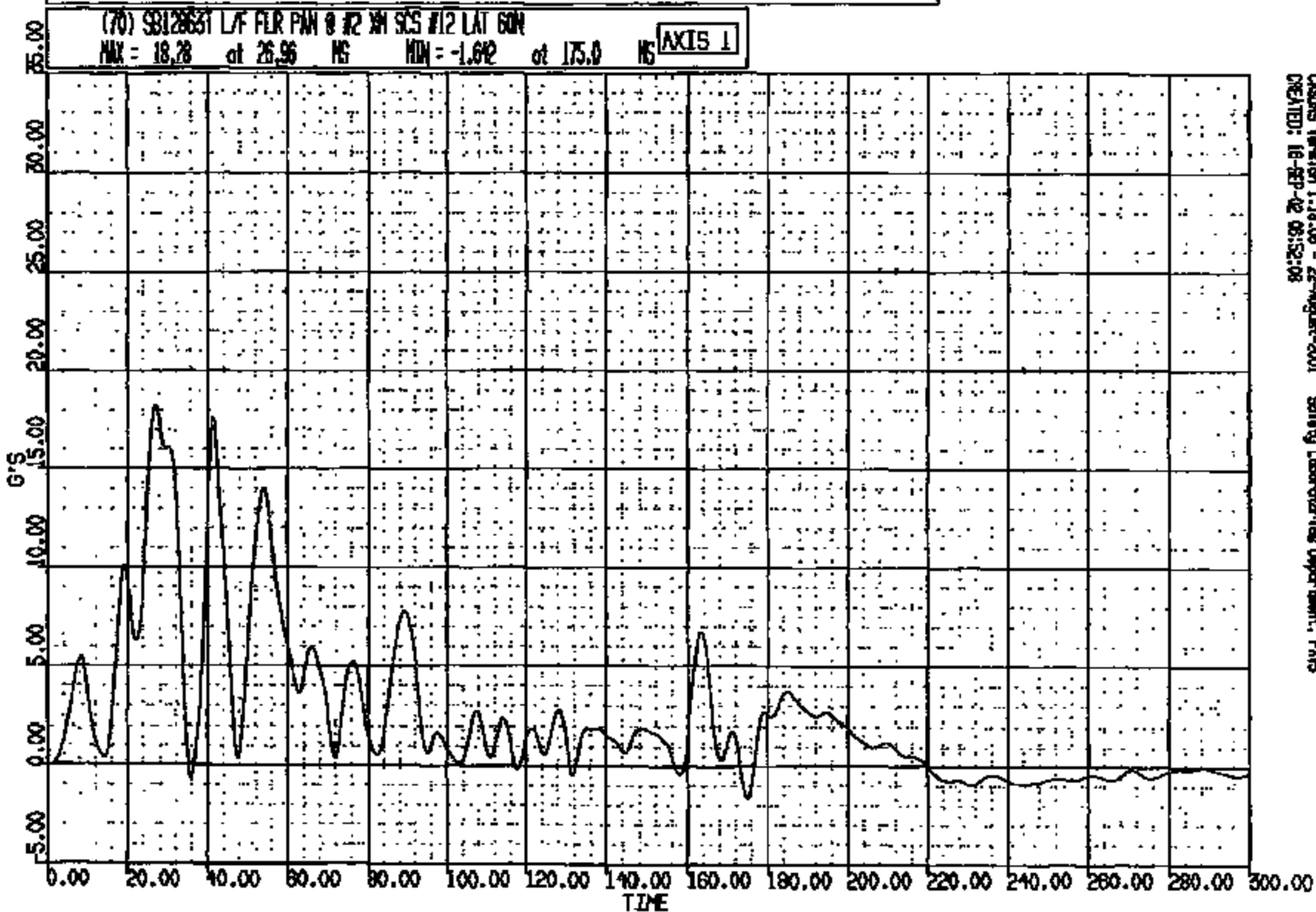


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CREATED: 18-SEP-02 06:52:16

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SE R: 12863 TO: J95510 DATE: 24-APR-2002 08:30:11
2003 EN114



CRTS 0012863

CASMS Version 1.18.05 - 23-August-2001 Safety Laboratories Department, PMS
CREATED: 16-SEP-02 08:52:08

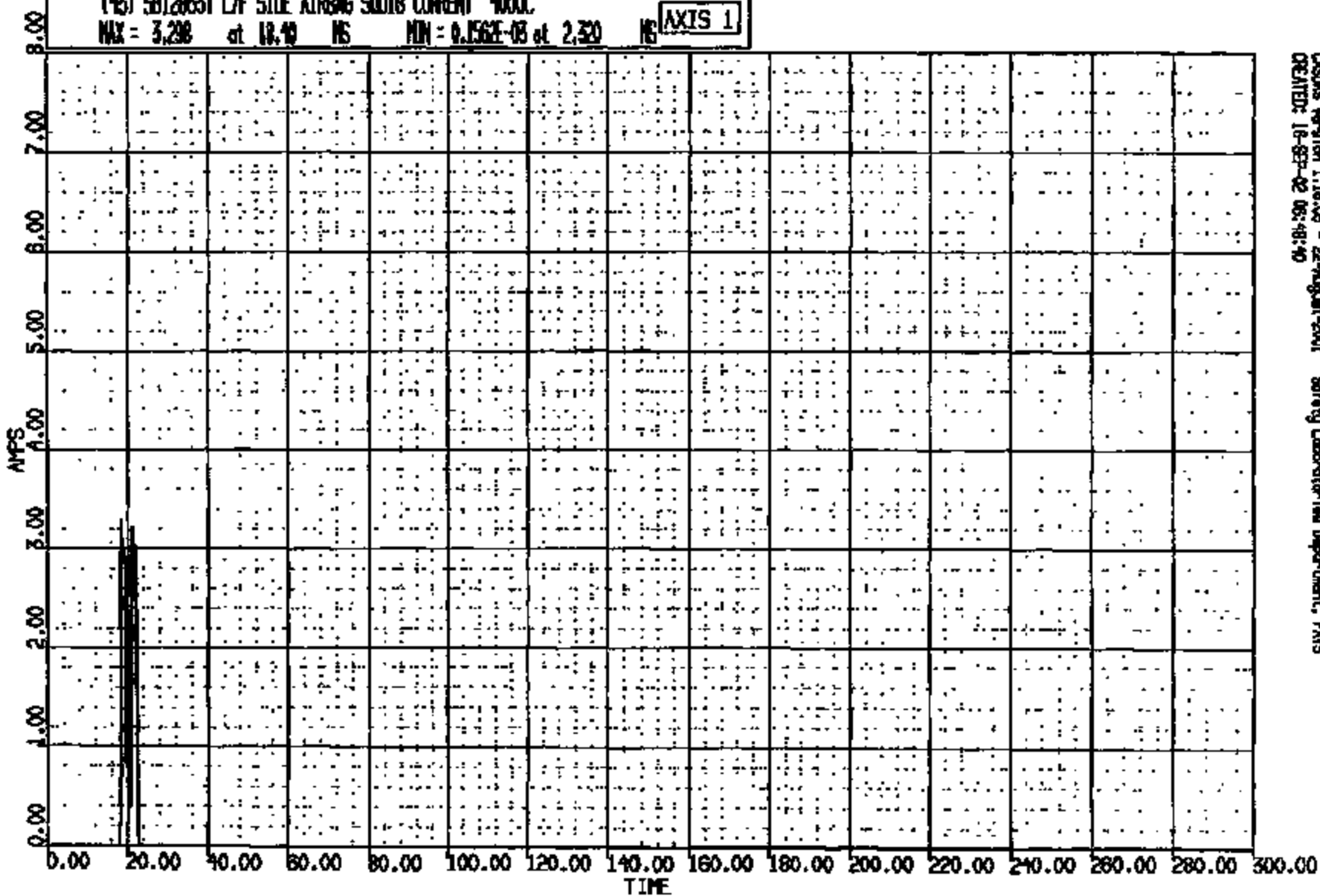
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SB #: 12863 TO: JB6310 DATE: 24-APR-2002 08:30:11
2003 EN114

(43) 58120631 L/F SIDE AIRBAG SOUTB CURRENT 4000C

MAX = 3.298 at 18.40 MS MIN = 0.156E-03 at 2.320 MS

AXIS 1



CRIS 0012863

CRIS Version 1.18.05 - 22-August-2001
CREATED: 18-SEP-02 08:48:40

Safety Laboratory Inc Department, PMS

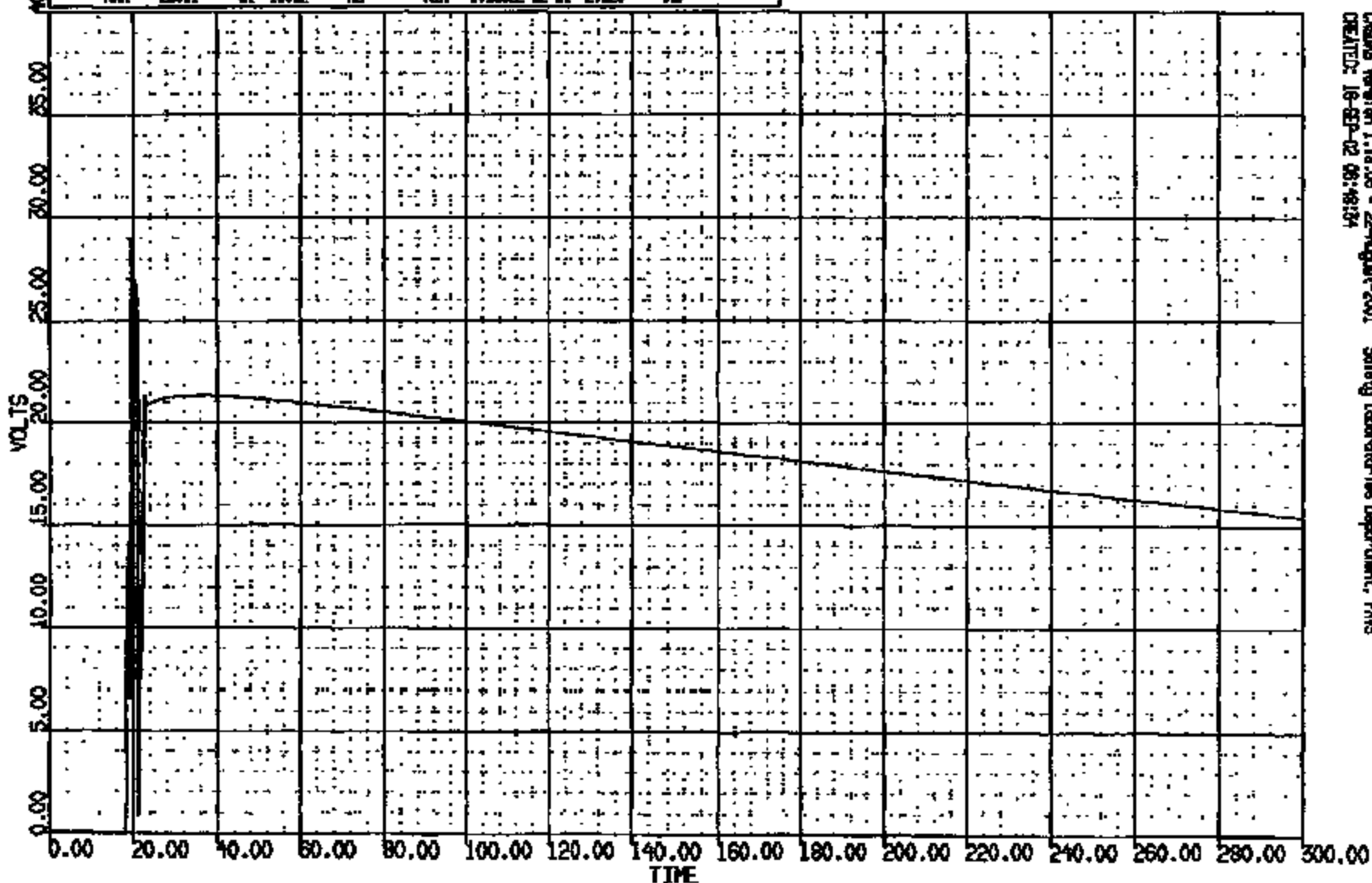
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SR R: 12863 TO: JB3310 DATE: 24-APR-2002 09:50:11
2003 EN114

(42) SB12863T L/F SIDE AIRBAG SQUIB VOLTAGE 400C

MAX = 28.01 at 19.52 MS MIN = 0.156E-02 at 2.320 MS

AXIS 1

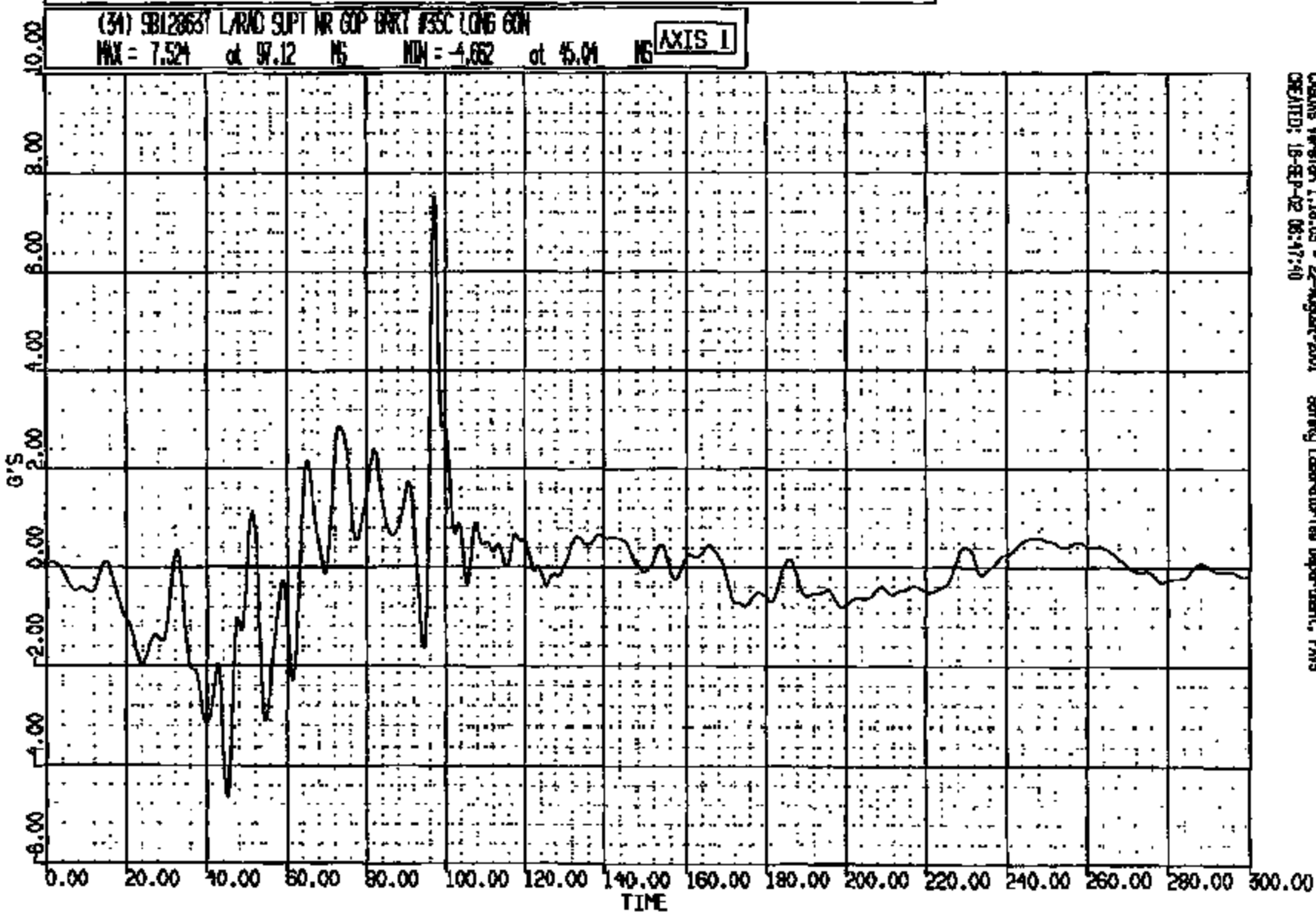


CASUS Version 1.18.05 - 22-August-2001 Safety Laboratories Department, PMS
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CRITS 0012863

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2005 EN114

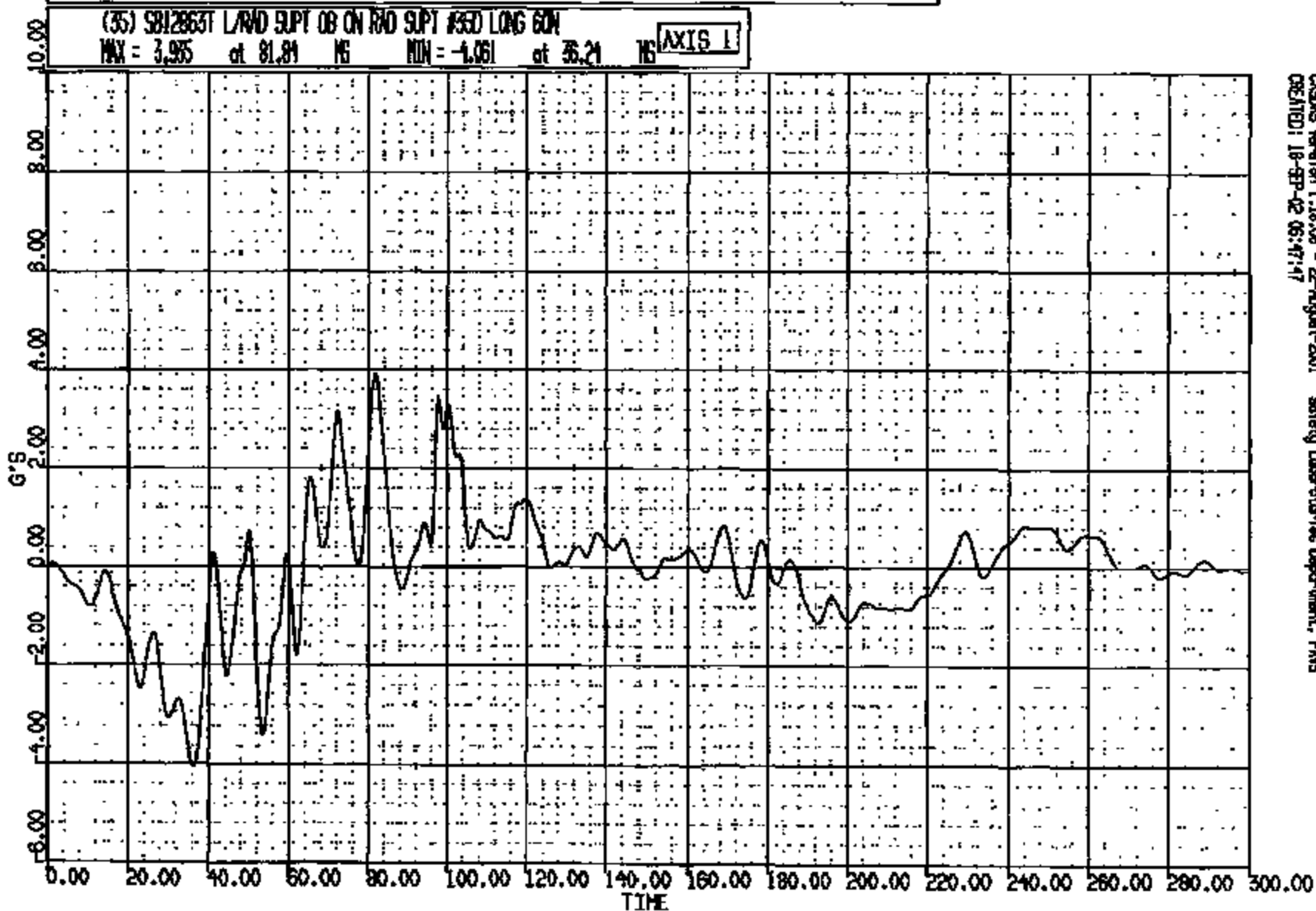


CRSIS Version 1.18.05 - 22-August-2001 Safety Laboratories Department, PHS
CREATED: 18-SEP-02 06:47:40

CRIS 0012863

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BB R: 12903 TO: JB6310 DATE: 24-APR-2002 08:30:11
2005 EN114



CASUS Version 1.18.08 - 22-August-2001 Safety Laboratories Department, PMS
CREATED: 18-SEP-02 06:47:47

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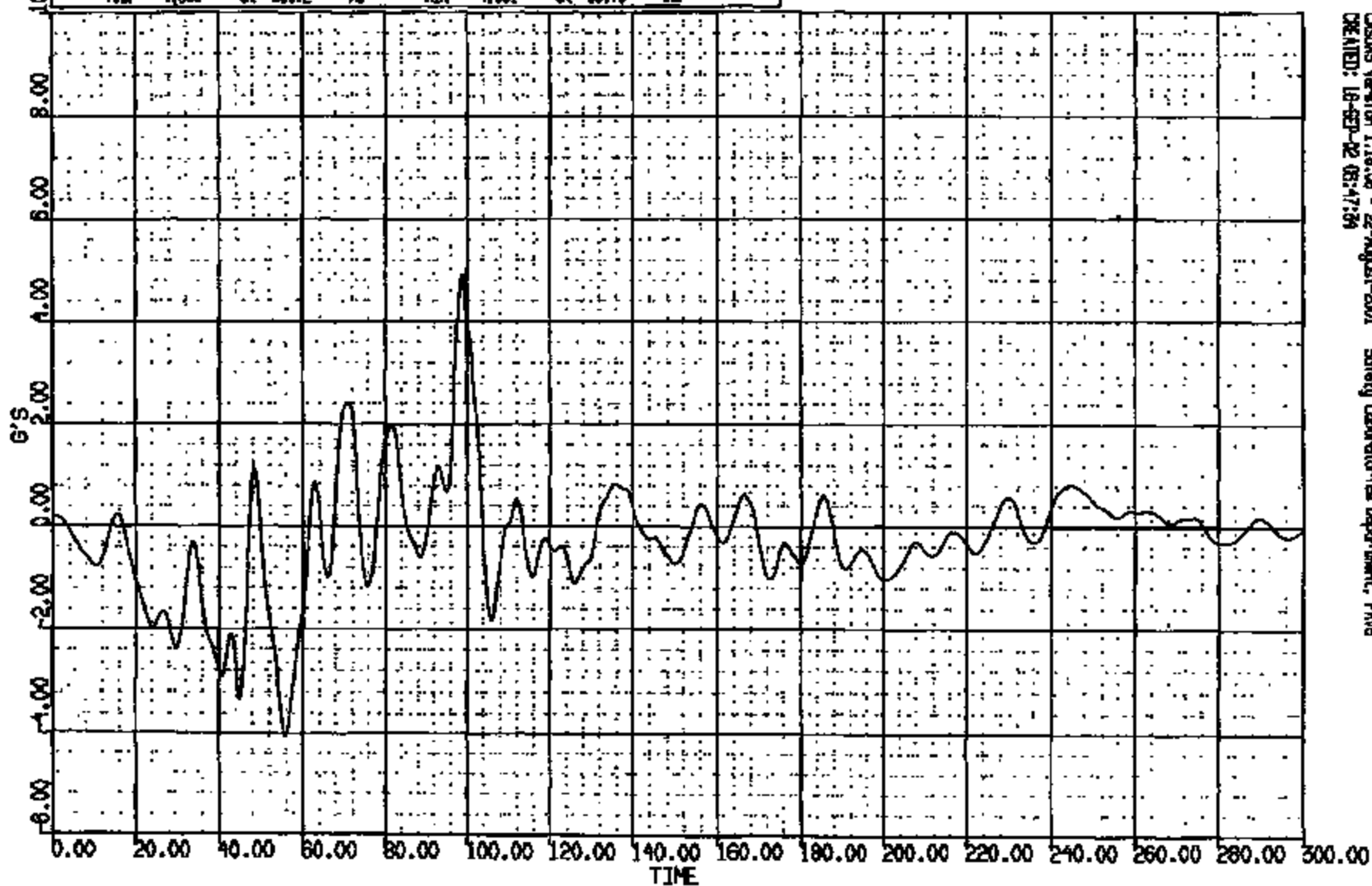
CRTS 0012863

SB R: 12863 TO: JB5310 DATE: 24-APR-2002 08:30:11
2003 EN114

(33) SB12863T L/RAD SUPT ON GCP BRKT #353 LONG 60N

MAX = 4.898 at 98.72 NS MIN = -4.451 at 55.76 NS

AXIS 1



CASUS Version 1.18.02 - 22-August-2001 Safety Laboratories Department, PMS
CREATED: 18-SEP-02 05:47:29

ENTIRE PAGE CONFIDENTIAL

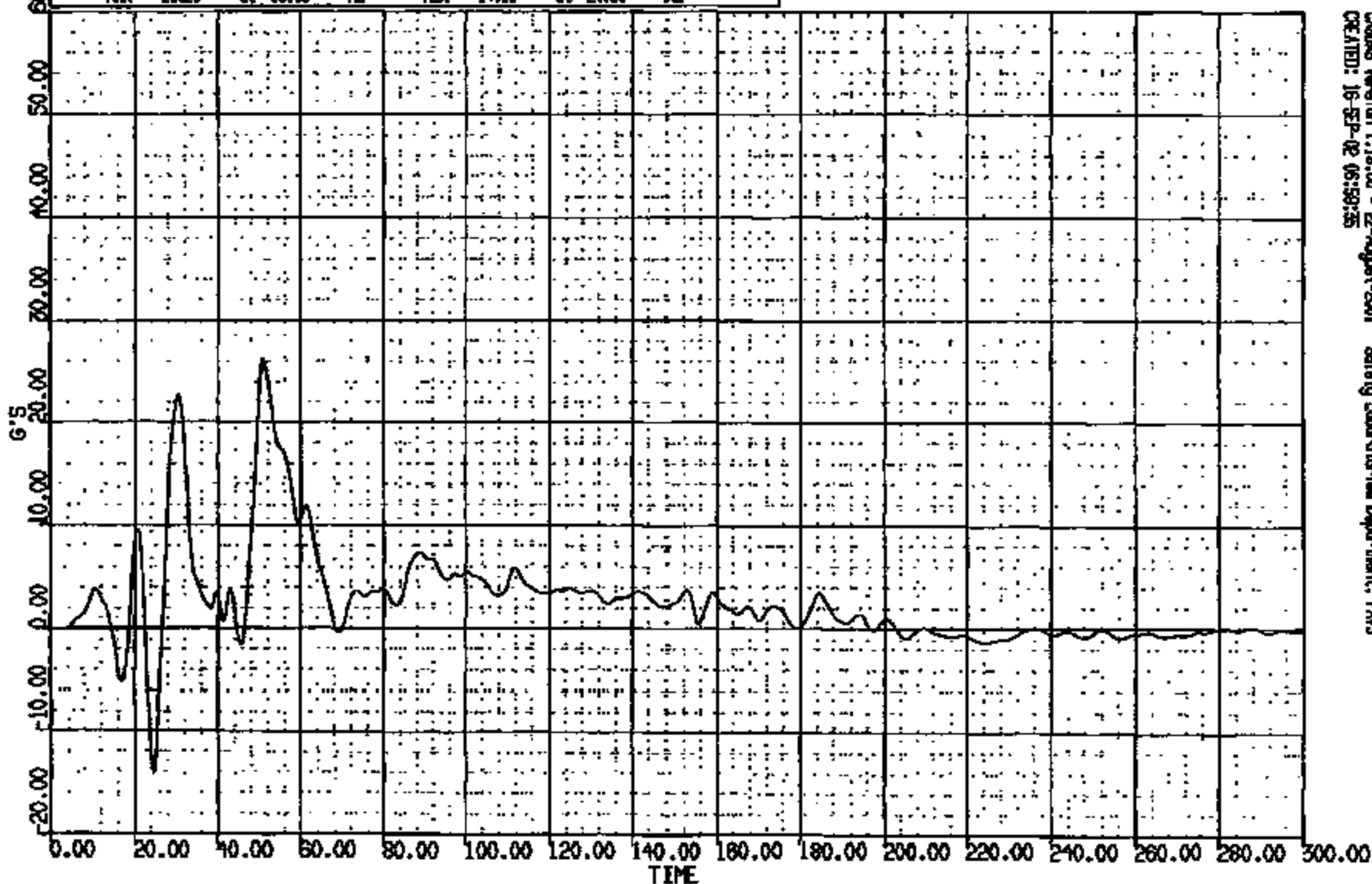
CRIS 0012863

SB R: 12863 TO: J55310 DATE: 24-APR-2002 08:50:11
2003 EN114

(117) SB12863T L/ROCKER @ 2 SEAT MID LAT 60N

MAX = 26.26 at 50.88 NS MIN = -14.19 at 21.56 NS

AXIS 1

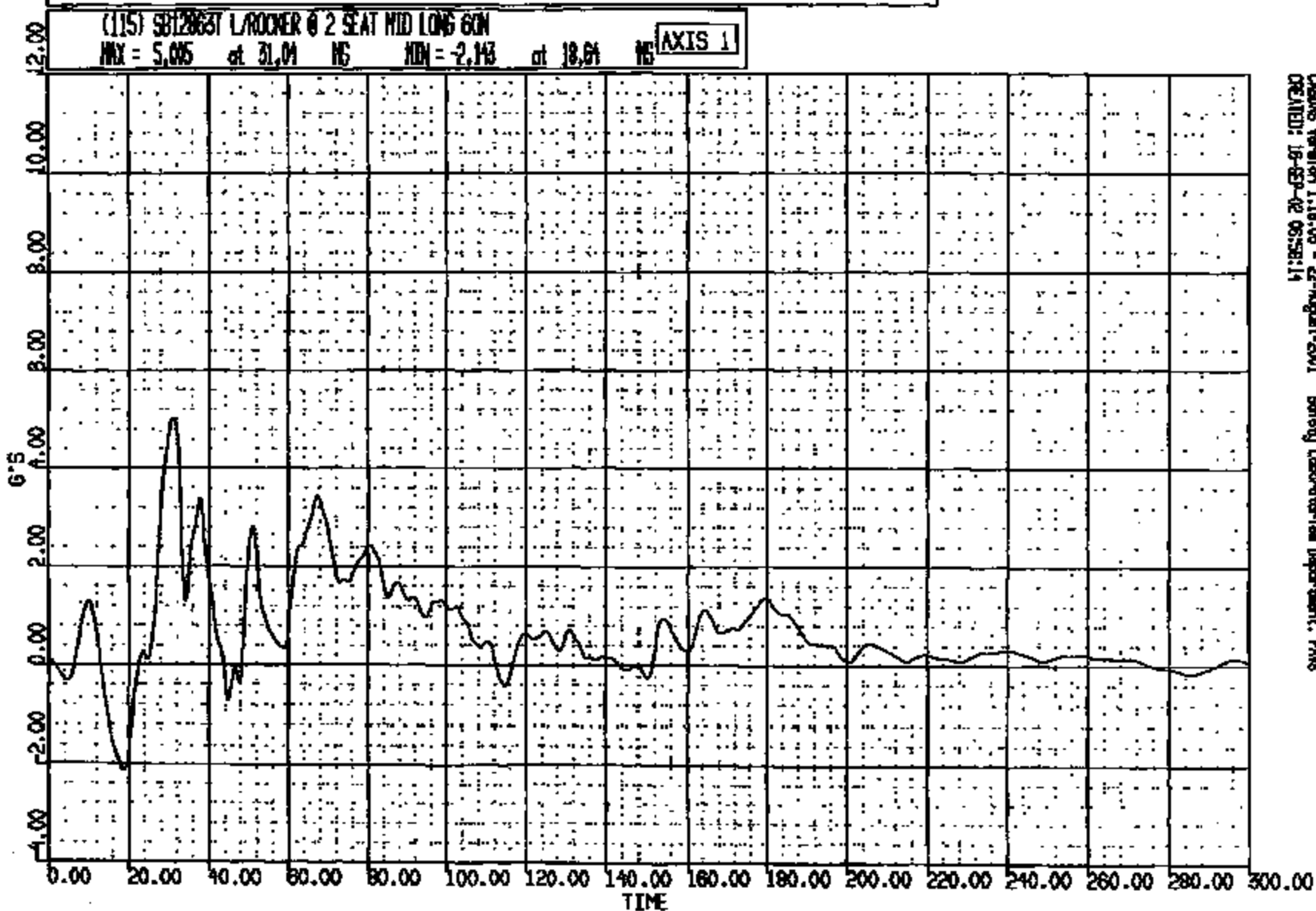


CASAS Version 1.18.02 - 22-August-2001 Safety Laboratory/Sea Department, PMS
CREATED: 16-SEP-02 06:59:25

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2003 EN114

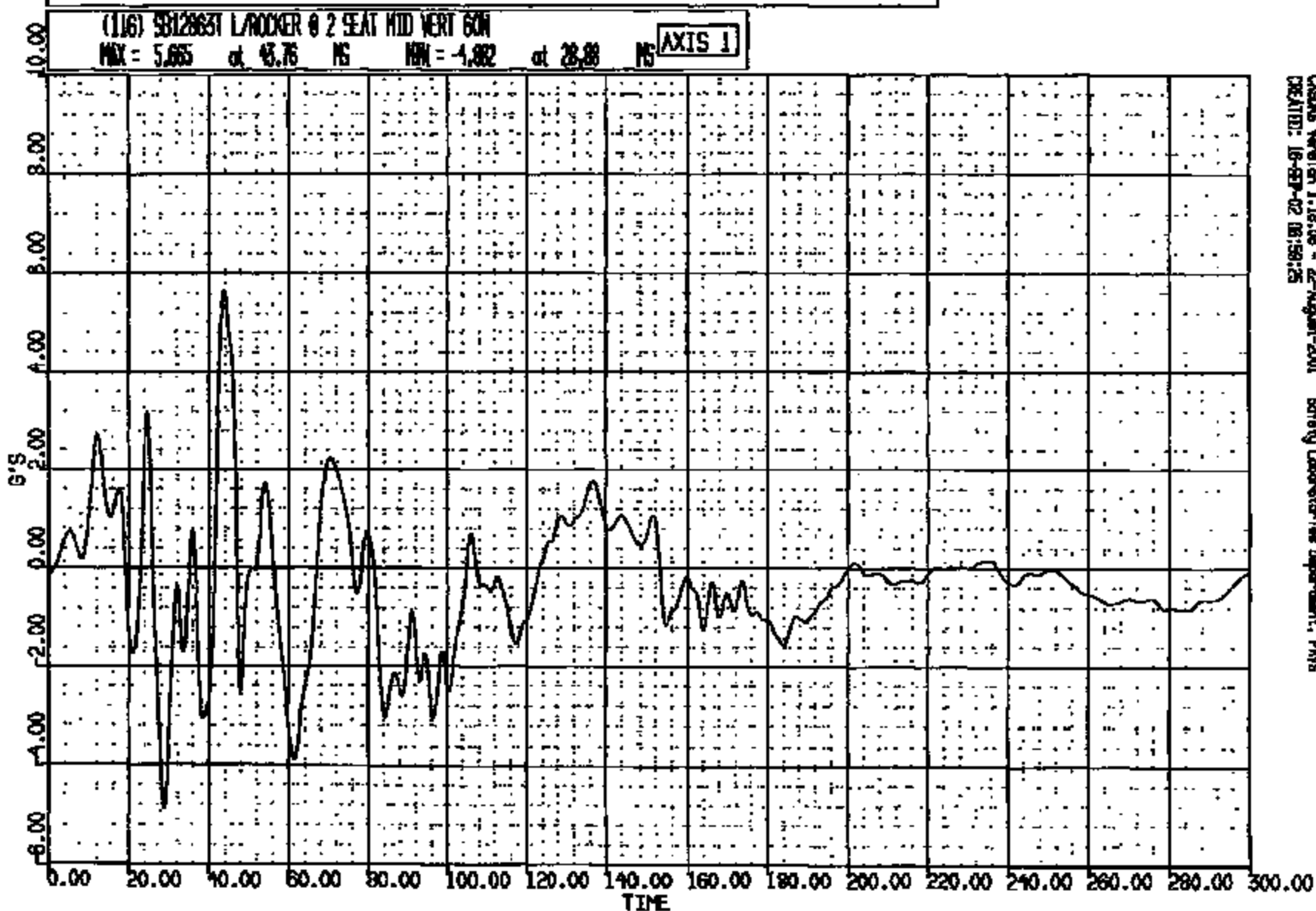


CRTS 0012863

CASUS Version 1.18.05 - 22-August-2001 Safety Laboratories Department, PMS
CREATED: 16-SEP-02 06:58:14

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BB R: 12863 TO: J95310 DATE: 24-APR-2002 09:30:11
2003 EN114



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CREATED: 18-SEP-02 08:58:25

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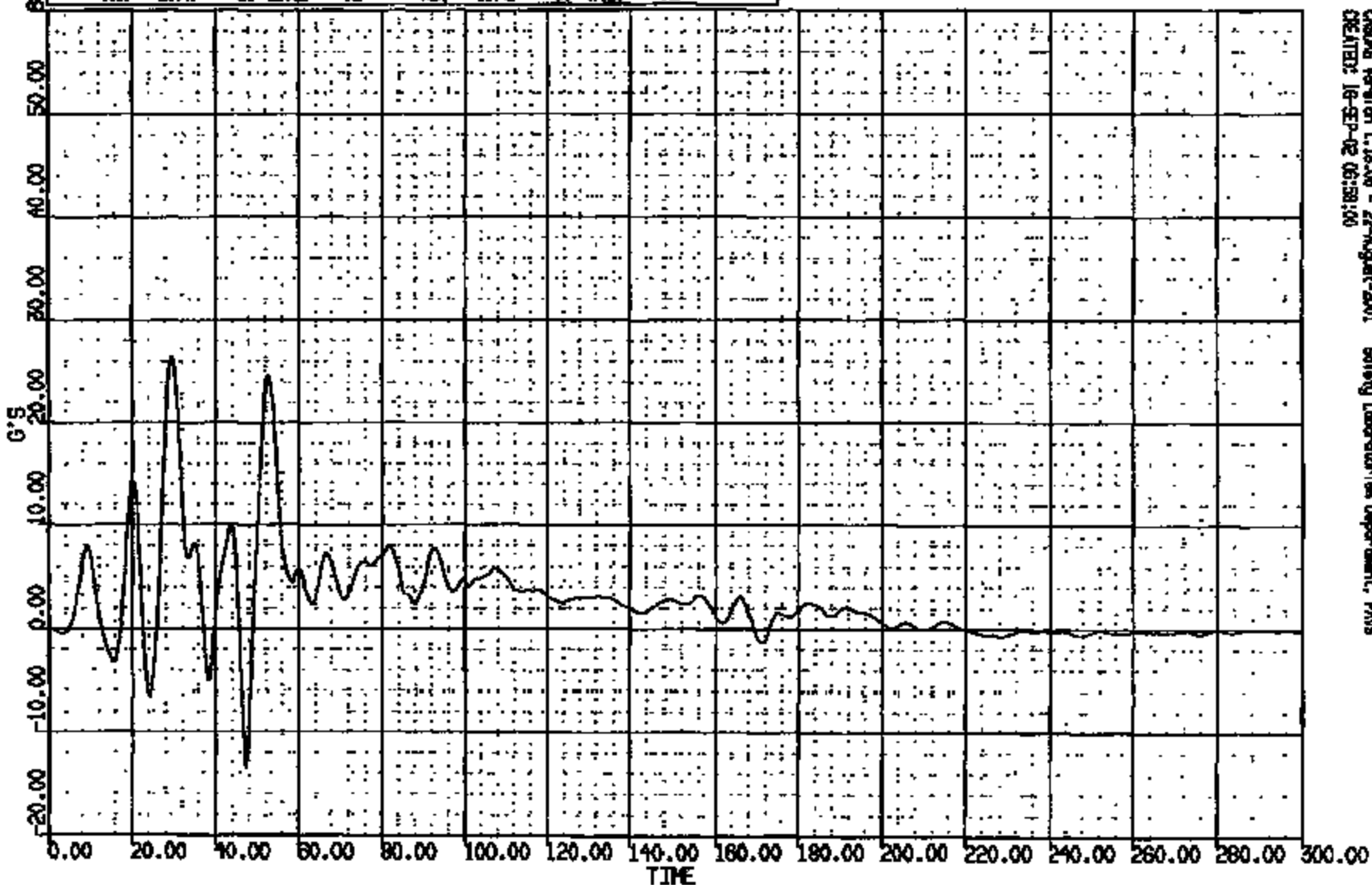
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SS R: 12863 TO: J85310 DATE: 24-APR-2002 08:50:11
2003 EN114

(108) SRI28631 LADDER @ A-PILLAR LAT 60N

MAX = 26.47 at 29.52 NS MIN = -13.42 at 47.28 NS

AXIS 1

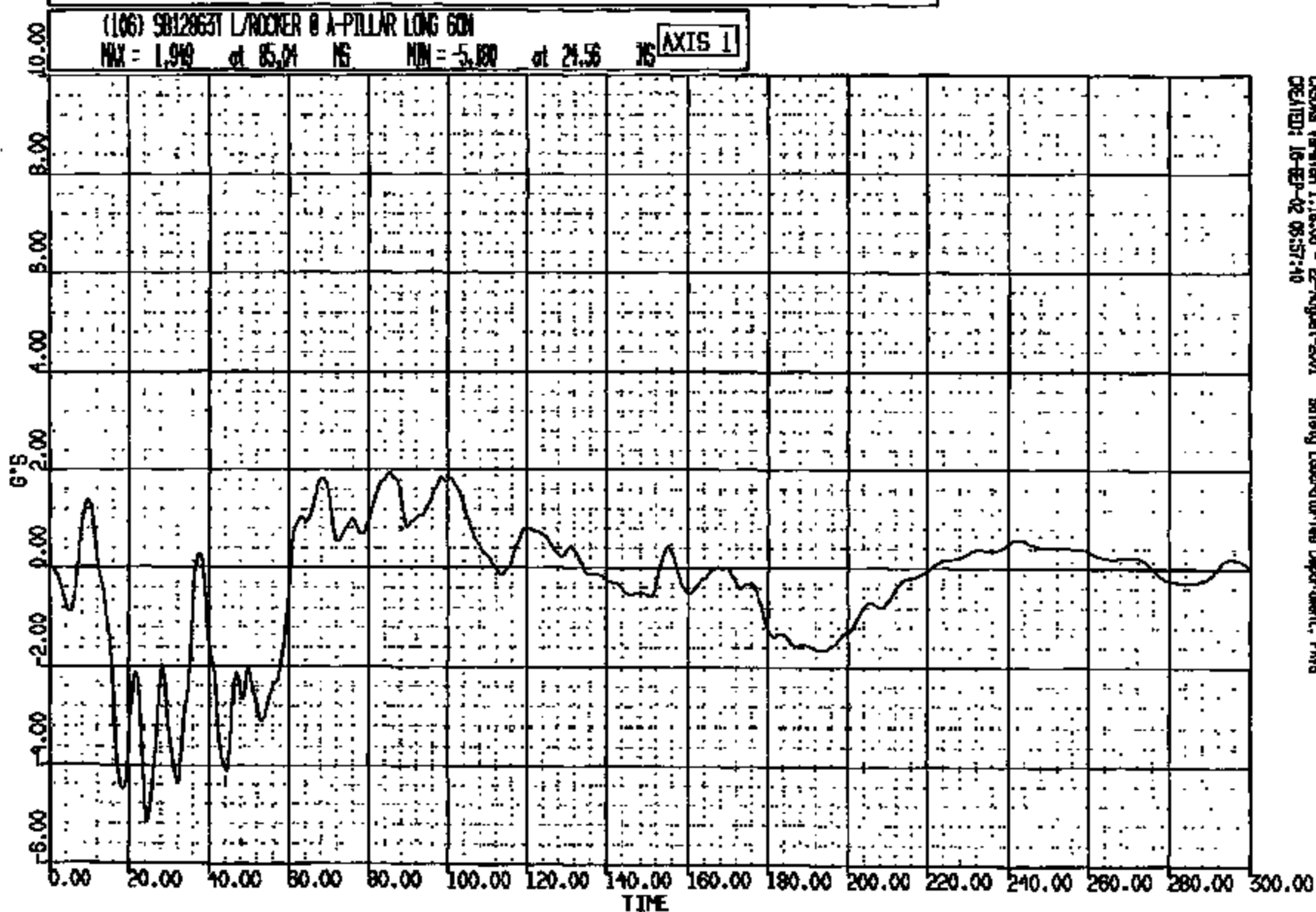


CASDAS Version L18-08 - 22-August-2001 Safety Laboratories Department, PHS
CREATED: 18-SEP-02 08:58:00

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CRTS 0012863

SB R: 12863 TO: J85310 DATE: 24-APR-2002 09:30:11
2005 EN114



CASDAS Version 1.18.03 - 22-August-2001 Safety Laboratories Department, PMS
CREATED: 18-SEP-02 09:57:40

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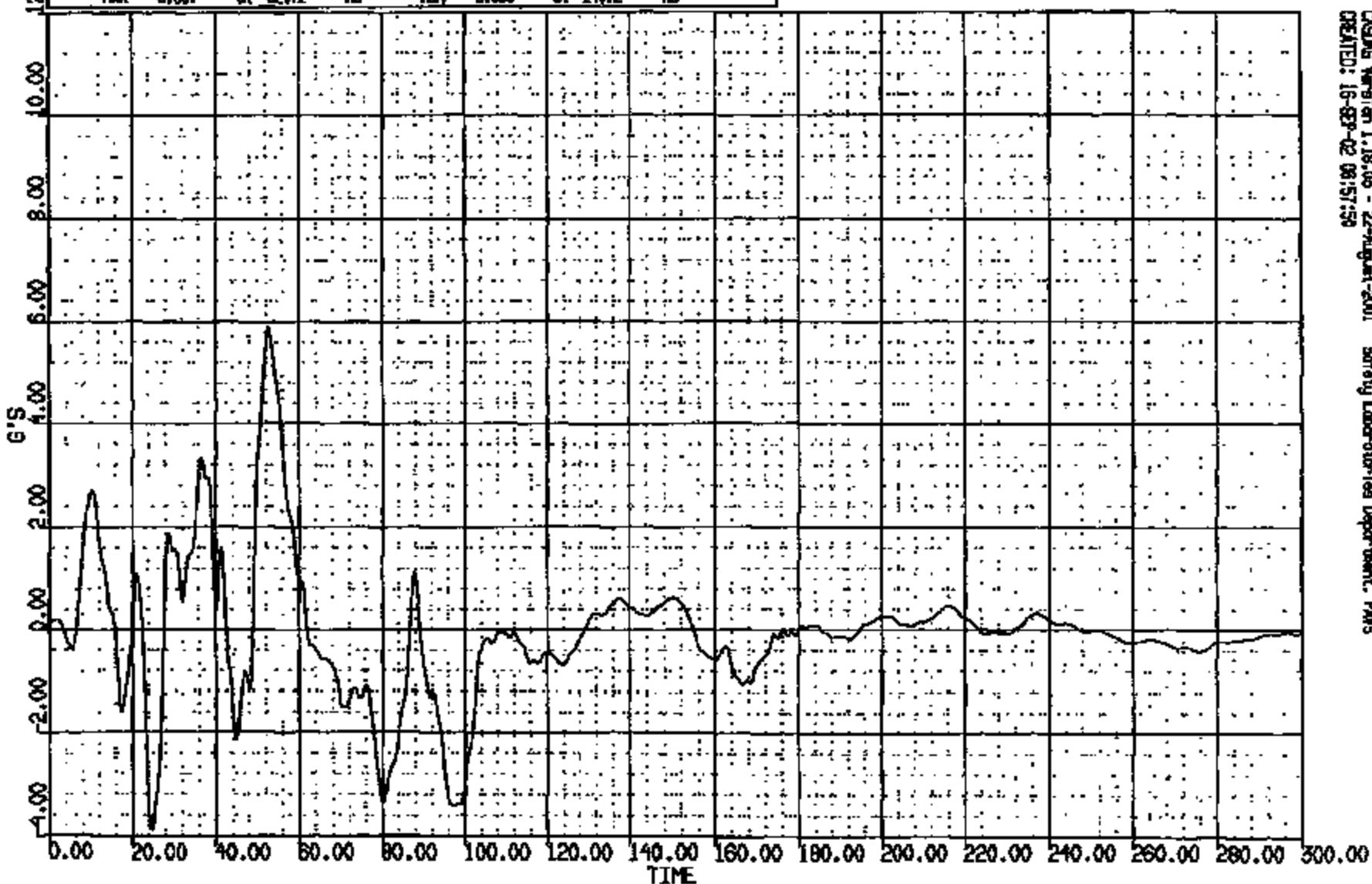
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BB R: 12863 TO: JB5310 DATE: 24-APR-2002 09:30:11
2008 EN114

(107) SB128631 LADDER @ A-PILLAR VERT GON

MAX = 5.887 at 52.72 NS MIN = -3.903 at 24.72 NS

AXIS 1



CSDMS Version 1.18.05 - 22-August-2001
CREATED: 16-SEP-02 08:57:59
Barfley Laboratories Department, PMS

ENTIRE PAGE CONFIDENTIAL

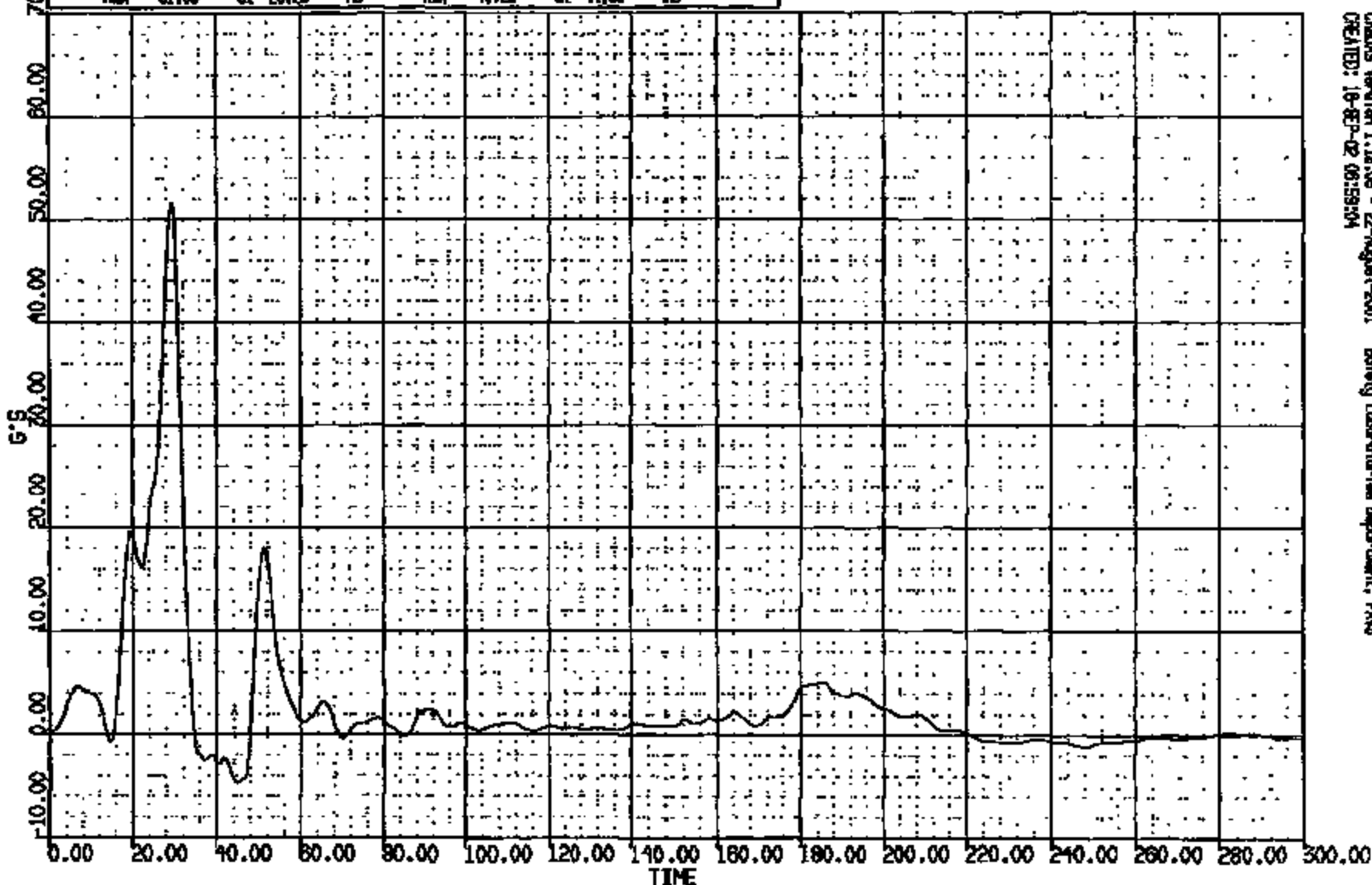
CRTS 0012863

SS R: 12863 TO: JB5310 DATE: 24-APR-2002 09:30:11
2003 EN114

(114) SB12863T LOCKER @ B-PILLAR LAT 60N

MAX = 51.59 at 29.28 NS MIN = -1.75 at 41.88 NS

AXIS 1



CRAS Version 1.18.08 - 22-August-2001 Safety Laboratories Department, PMS
CREATED: 18-SEP-02 09:59:04

ENTIRE PAGE CONFIDENTIAL

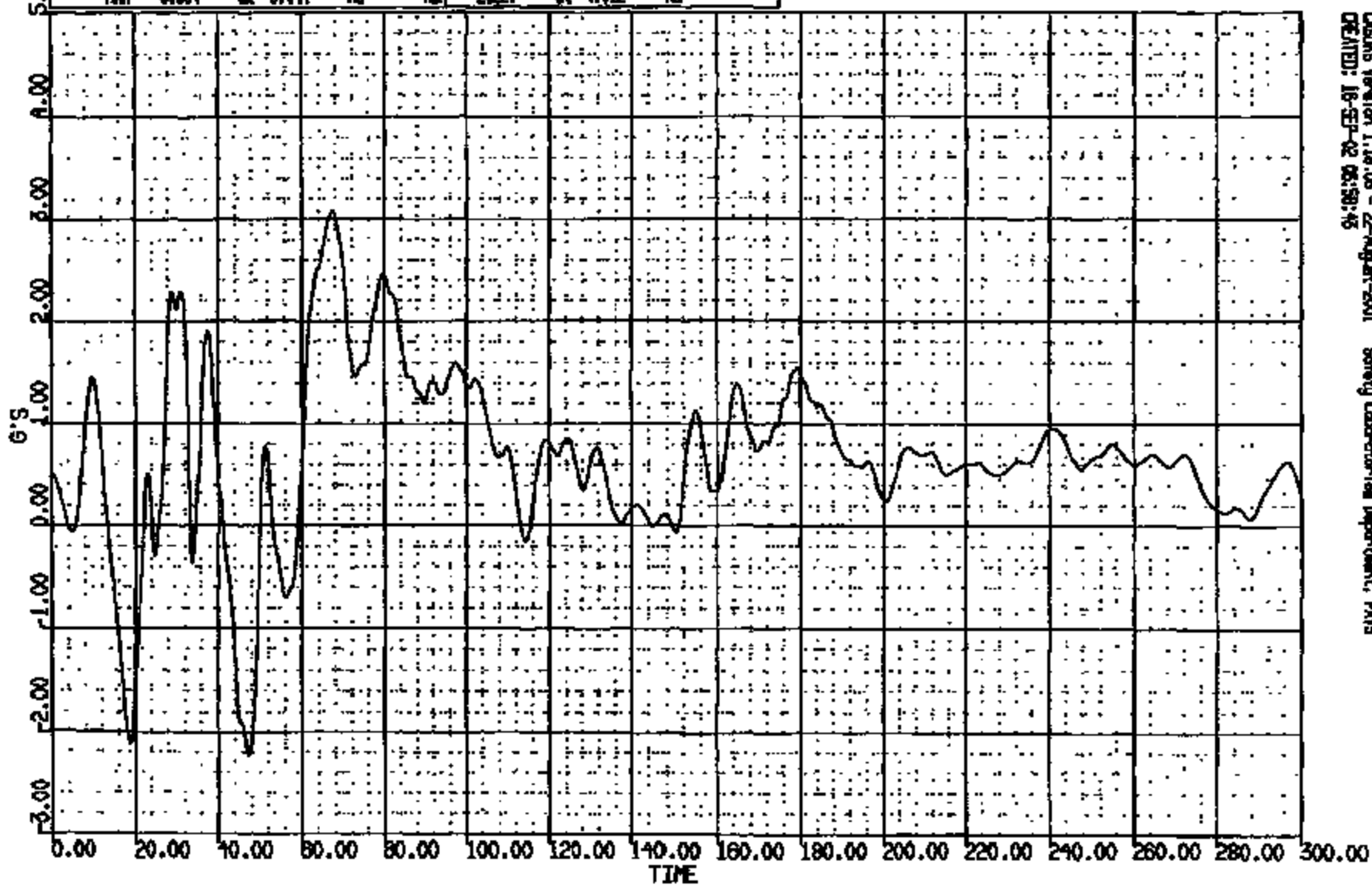
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SD R: 12863 TO: JB6310 DATE: 24-APR-2002 09:30:11
2005 EN114

(112) SB128631 L/ROCKWELL 8 B-PILLAR LONG GON

MAX = 3.084 at 67.44 HS MIN = -2.227 at 47.12 HS

AXIS 1



OSINS Version 1.18.05 - 22-August-2001 Safety Laboratory Inc. Department, PMS
CREATED: 18-SEP-02 06:50:45

ENTIRE PAGE CONFIDENTIAL

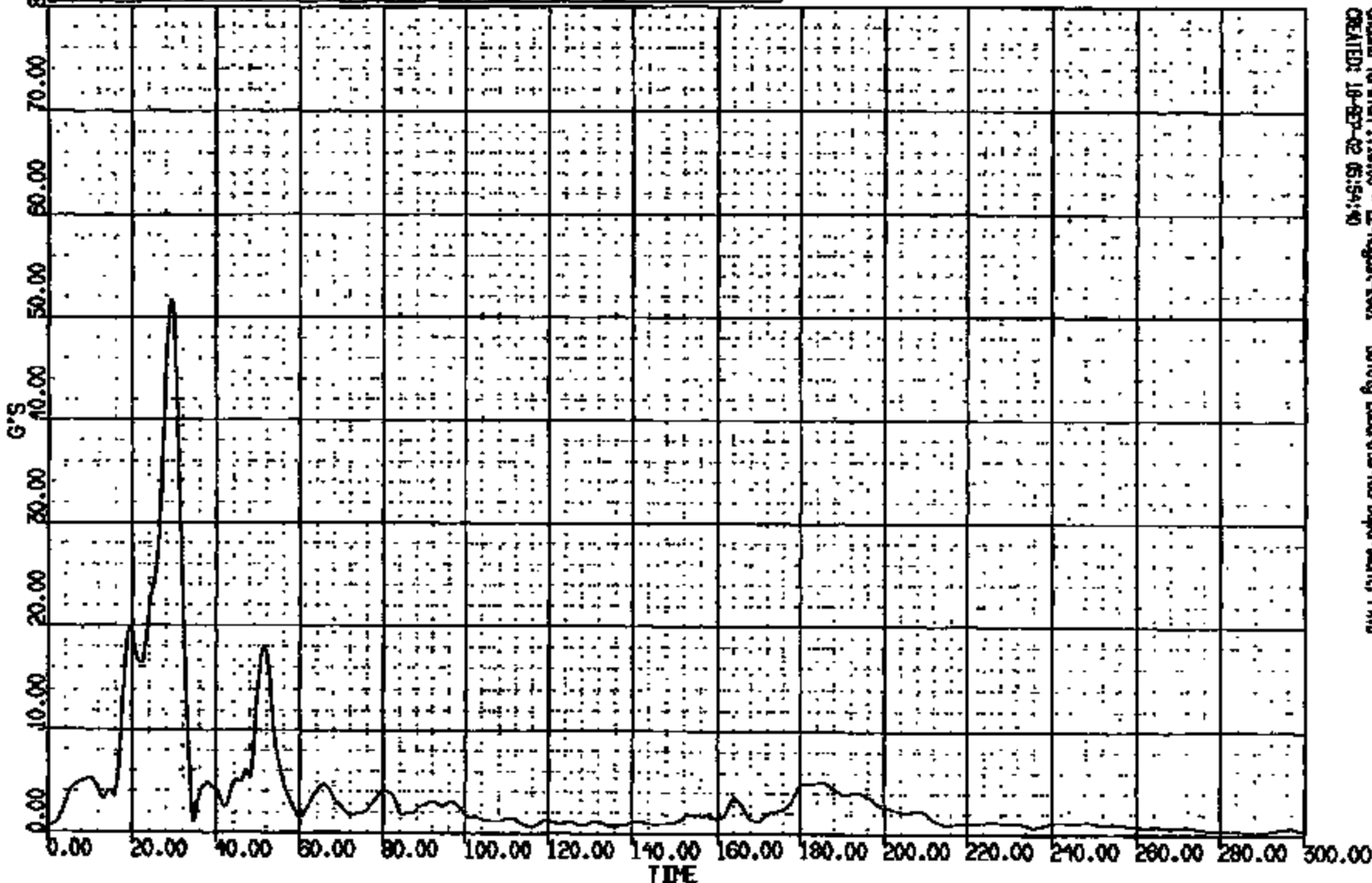
CRIS 0012863

SB R: 12863 TO: JB3310 DATE: 24-APR-2002 09:30:11
2003 EN114

(10005) SB12863T L/ROCKER & B-PILLAR RES 60N

MAX = 54.67 at 29.28 NS MIN = 0.2605 at 288.2 NS

AXIS 1



CASAS Version 1.18.05 - 22-August-2001 Safety Laboratories Department, PMS
CREATED: 19-SEP-02 05:54:40

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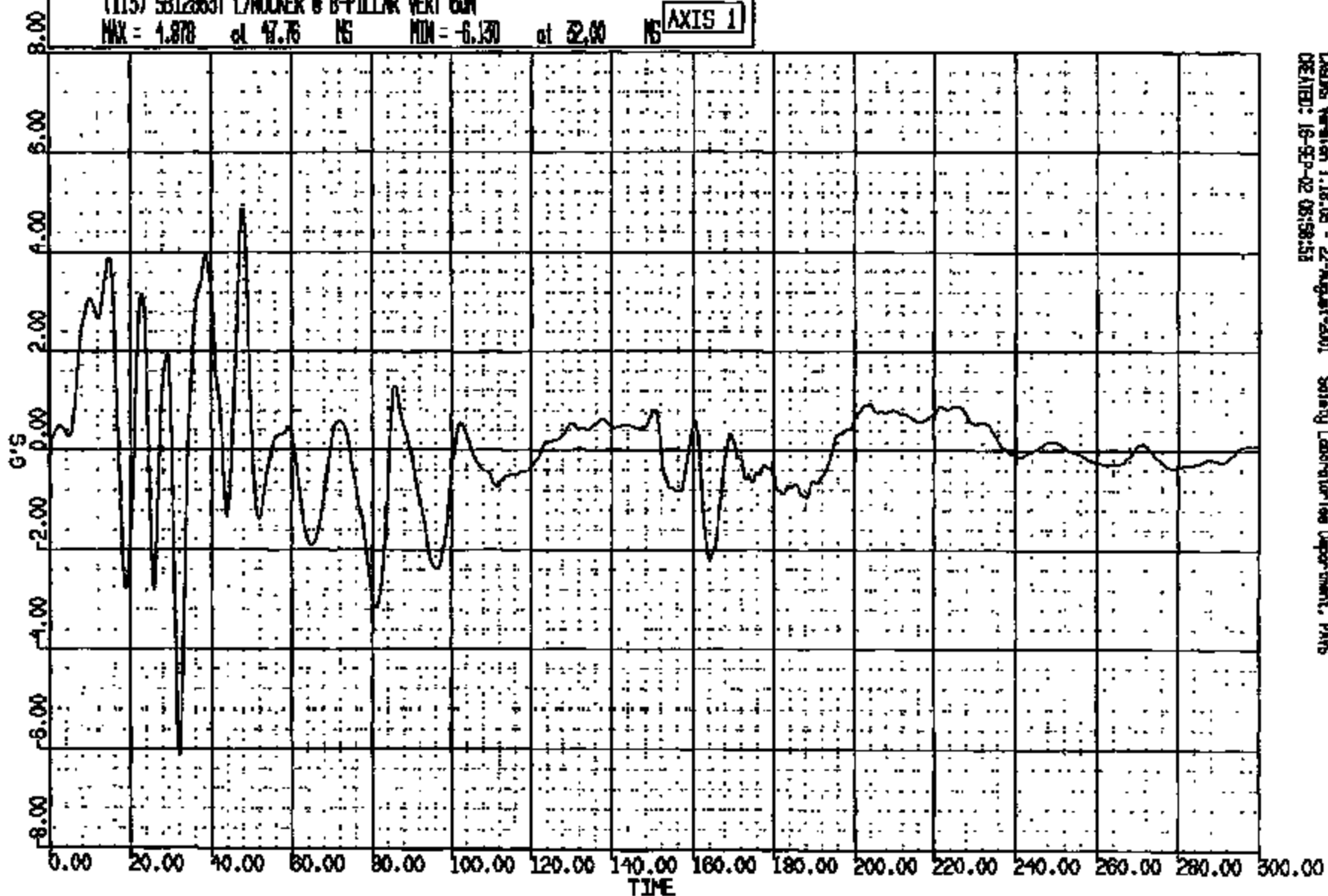
CRTS 0012863

SB R: 12863 TO: J85310 DATE: 24-APR-2002 09:50:11
2005 EN114

(113) SB12863T L/ROCKER @ B-PILLAR VERT GUN

MAX = 4.878 at 47.76 NS MIN = -6.130 at 92.00 NS

AXIS 1

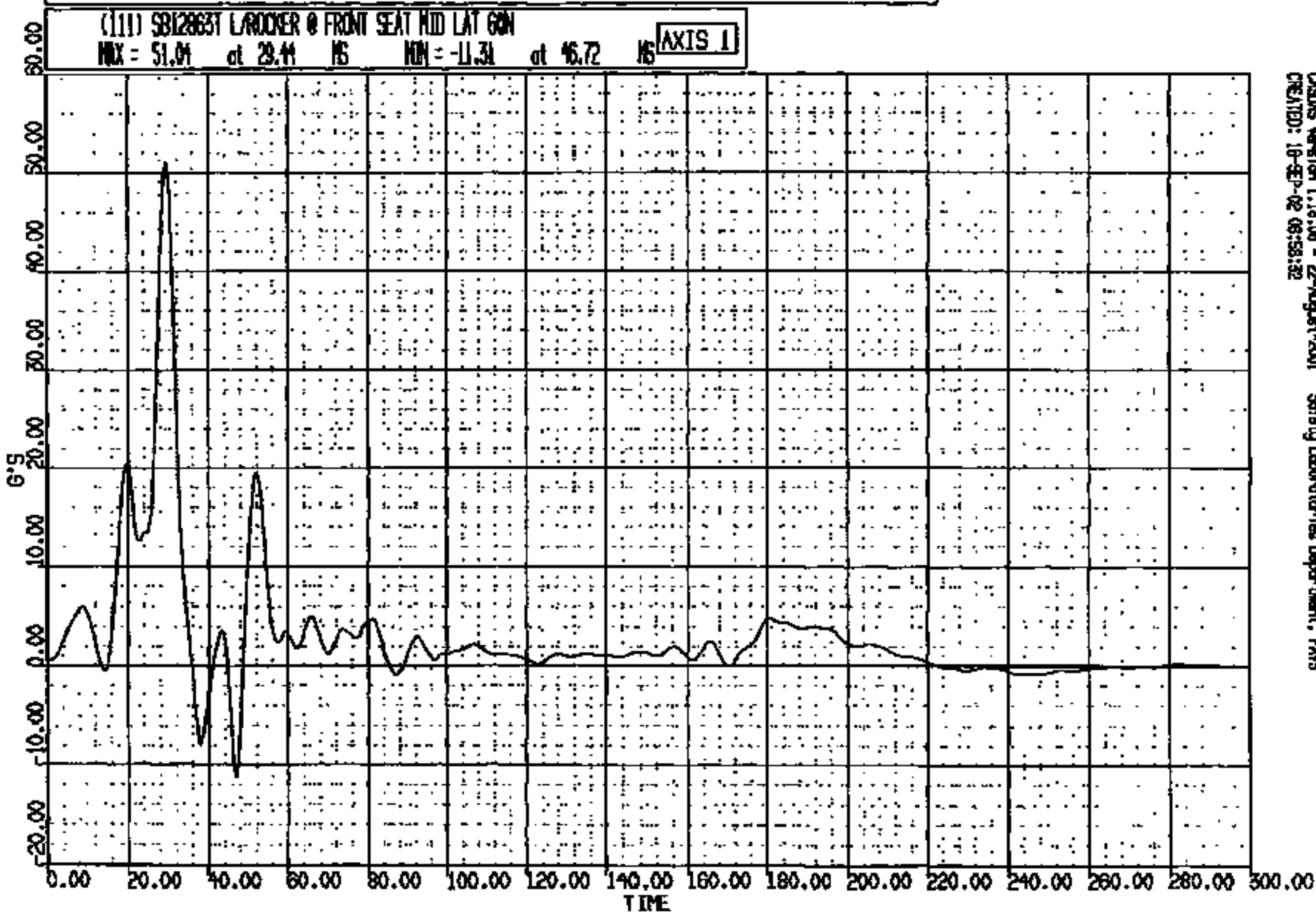


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CREATED: 16-SEP-02 05:58:53

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CRTS 0012863

SB R: 12865 TO: J85310 DATE: 24-APR-2002 09:30:11
2002 EN114



CRTS 0012863

OSDUS Version 1.18.06 - 22-August-2001 Safety Laboratories Department, PANS
CREATED: 18-SEP-02 08:58:32

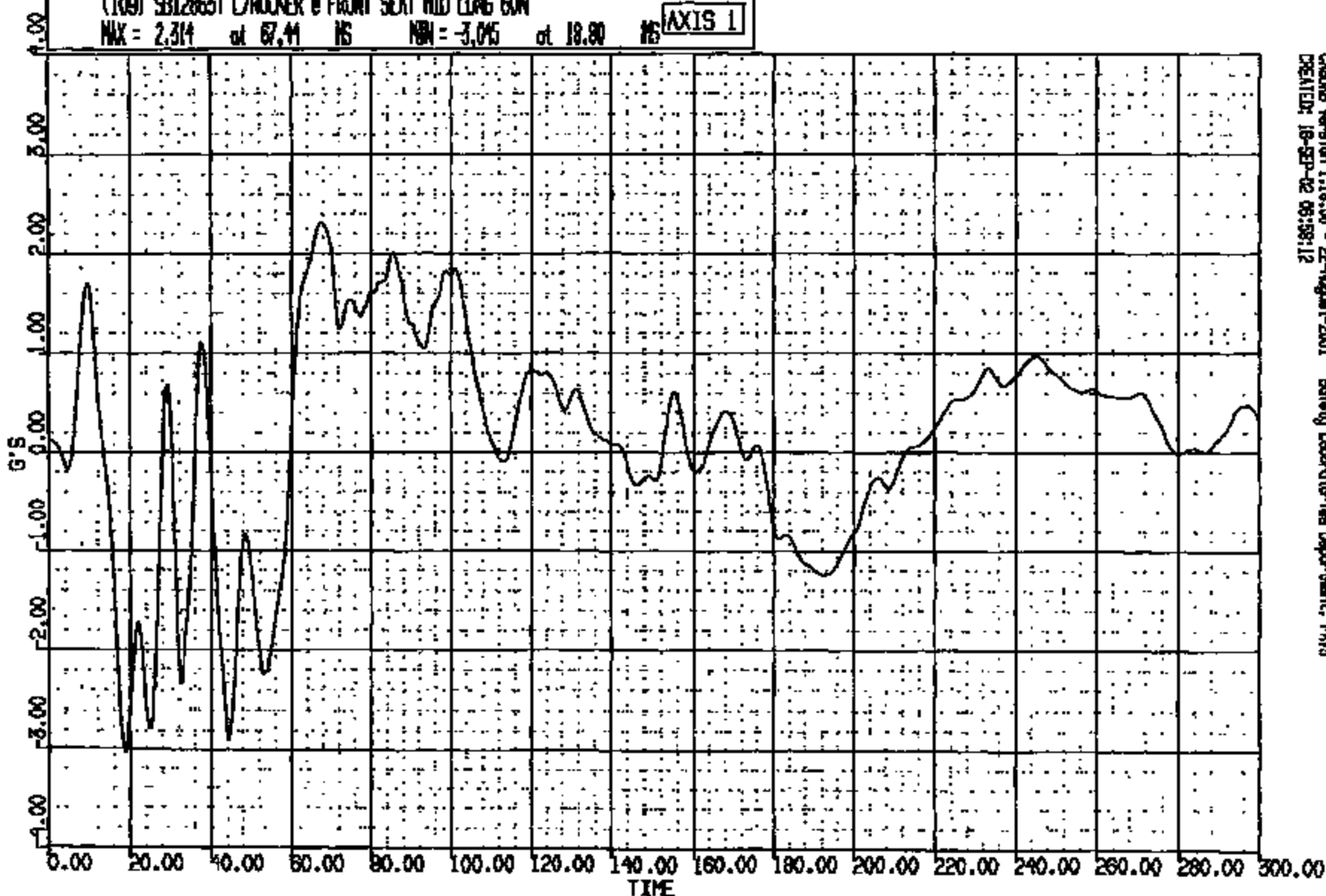
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SB R: 12863 TO: JB5310 DATE: 24-APR-2002 09:30:11
2002 EN114

(109) 9312863T L/ROCKER @ FRONT SEAT MID LONG GON

MAX = 2.314 at 67.44 HS MIN = -3.045 at 18.80 HS

AXIS 1



CADANS Version 1.18.06 - 22-August-2001 Safety Laboratories Department, PMS
CREATED: 18-SEP-02 06:58:12

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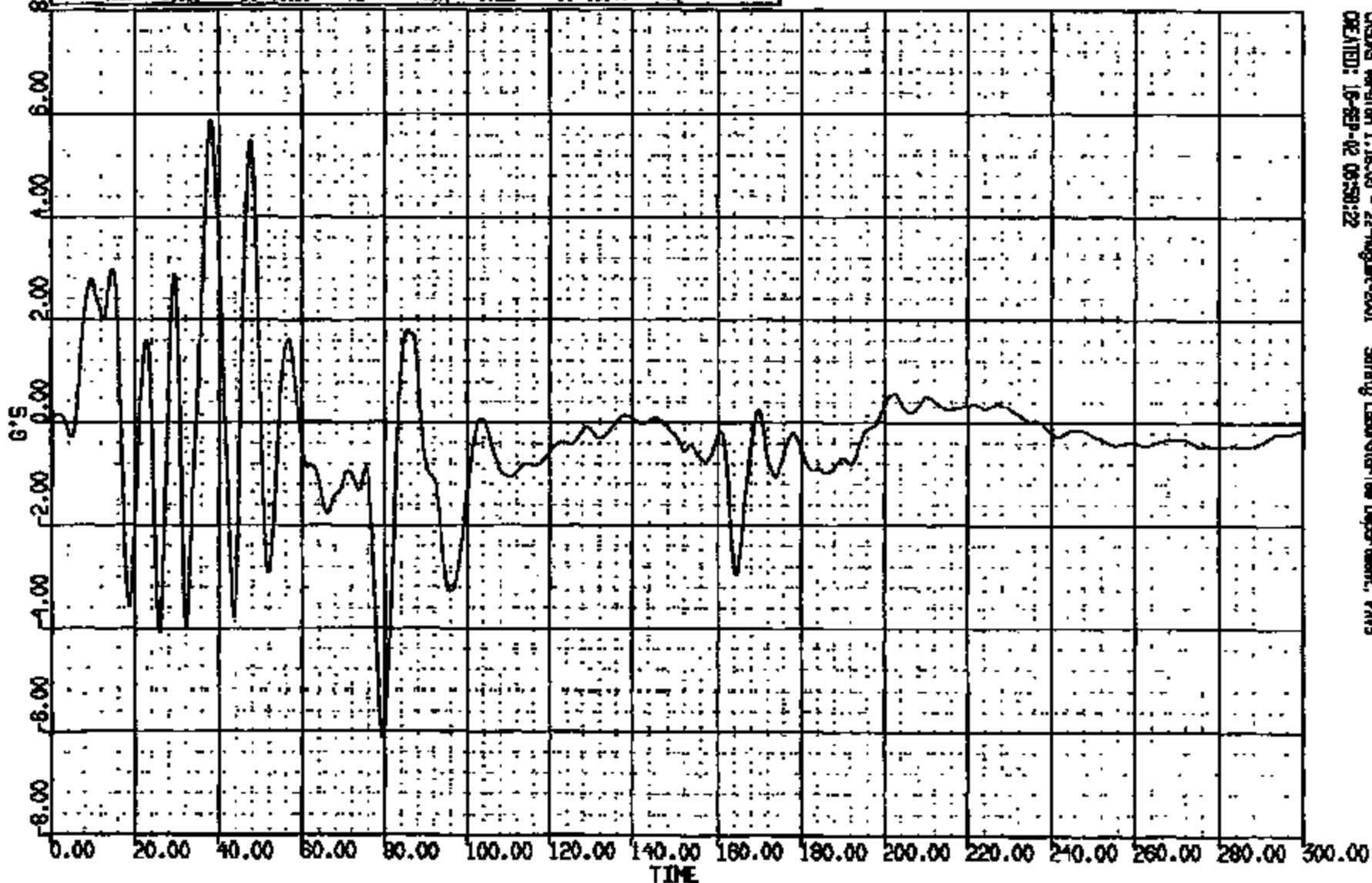
CRTS 0012863

BB R: 12805 TO: JB5310 DATE: 24-APR-2002 09:30:11
2002 EN114

(110) SBI2063T LADDER @ FRONT SEAT MID VERT GCM

MAX = 5.891 of 38.16 MS MIN = -6.126 of 79.44 MS

AXIS 1



CASDIS Version 1.18.03 - 22-August-2001 Safety Laboratories Department, PMS
CREATED: 16-SEP-02 09:59:22

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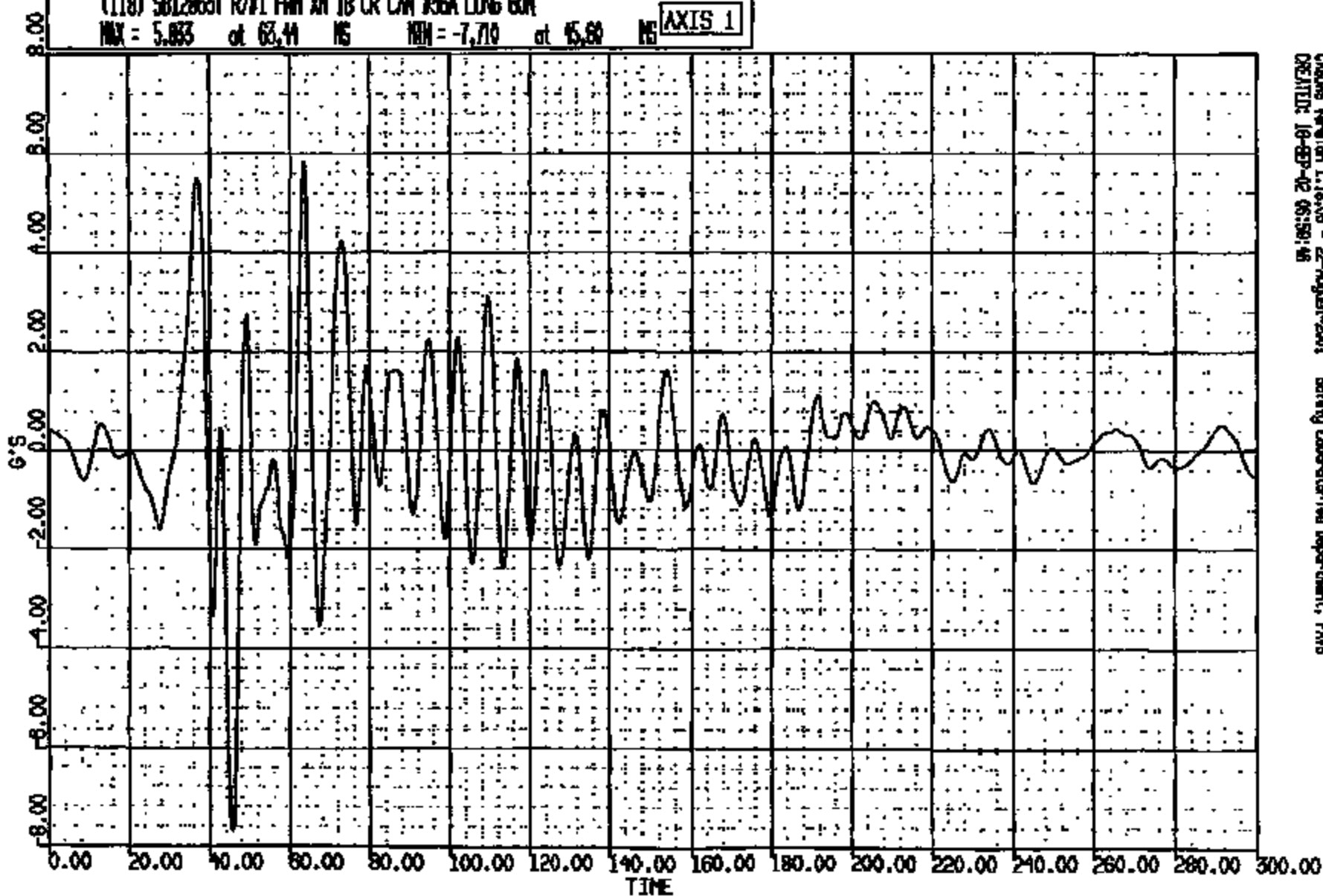
CRTS 0012863

SE R: 12863 TO: JMS310 DATE: 24-APR-2002 09:30:11
2003 EN114

(118) 5812863T R771 FNN XN 1B CR CM J36A LONG 60N

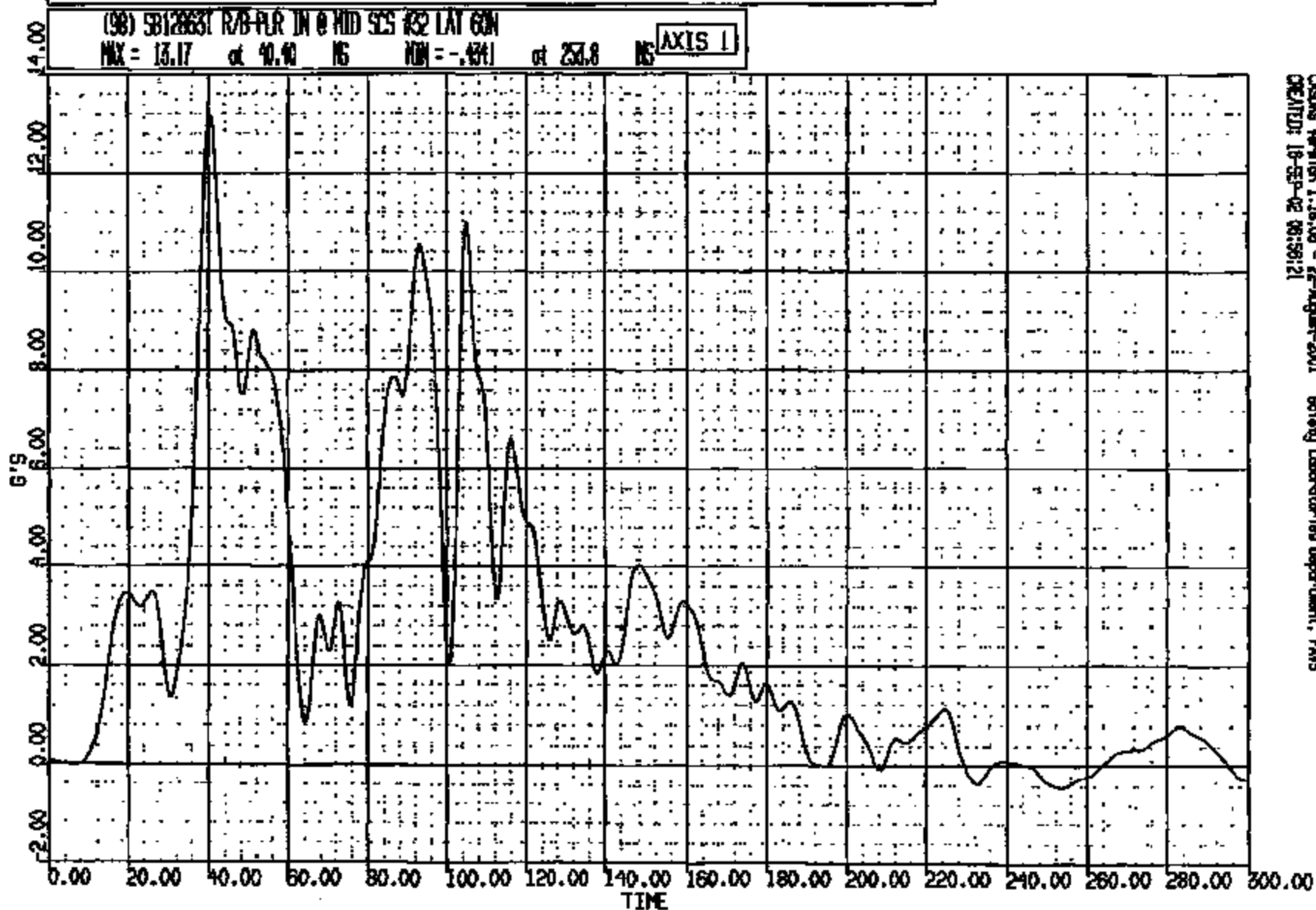
MAX = 5.893 at 63.44 MS MIN = -7.710 at 45.60 MS

AXIS 1



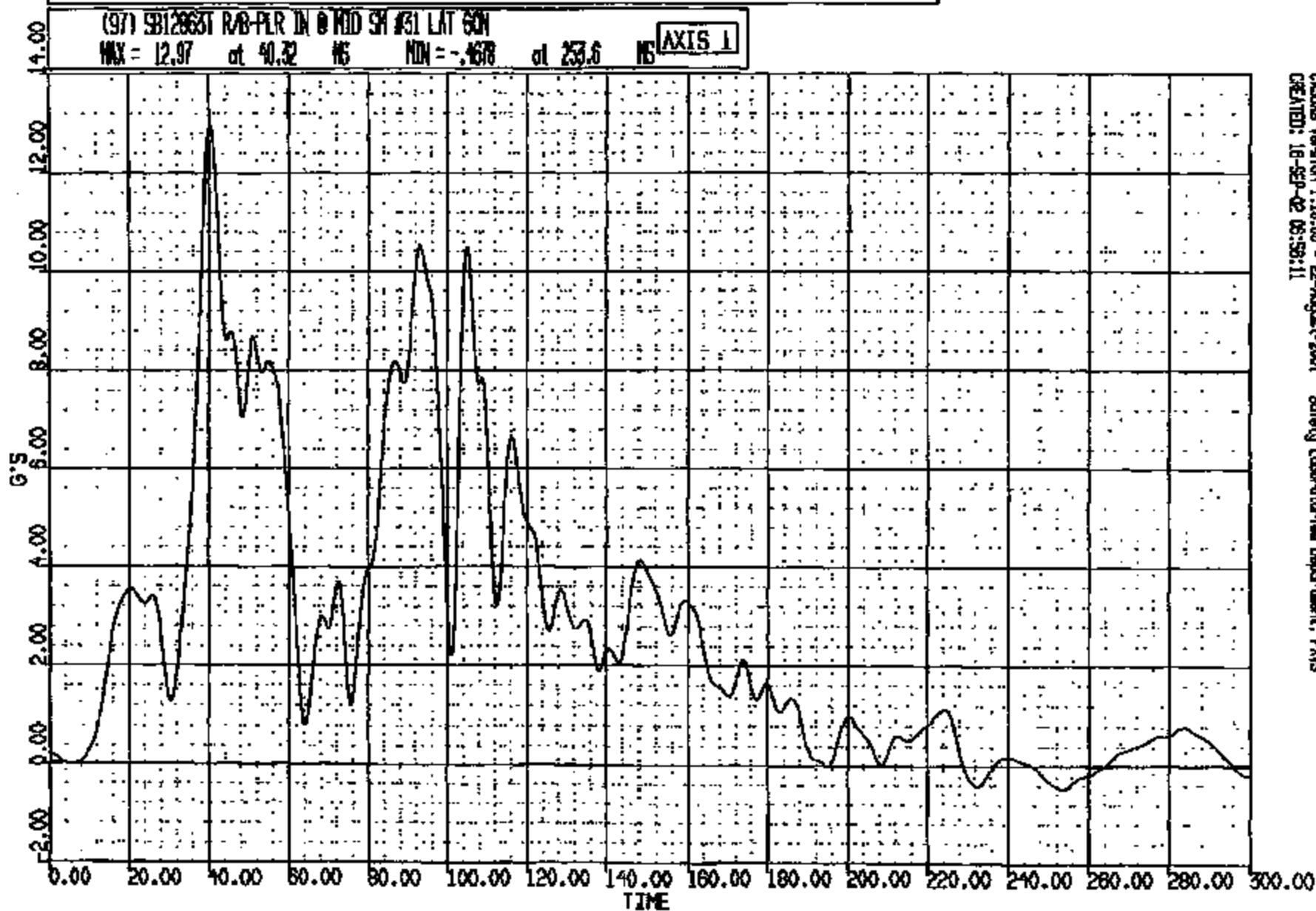
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2003 EN114



CRTS 0012863

SB R: 12863 TO: JB5310 DATE: 24-APR-2002 09:30:11
2003 EN114



CRTS 0012863

CASUS Version 1.18-08 - 29-August-2001 Safety Laboratories Department, PMS
CREATED: 18-SEP-02 06:58:11

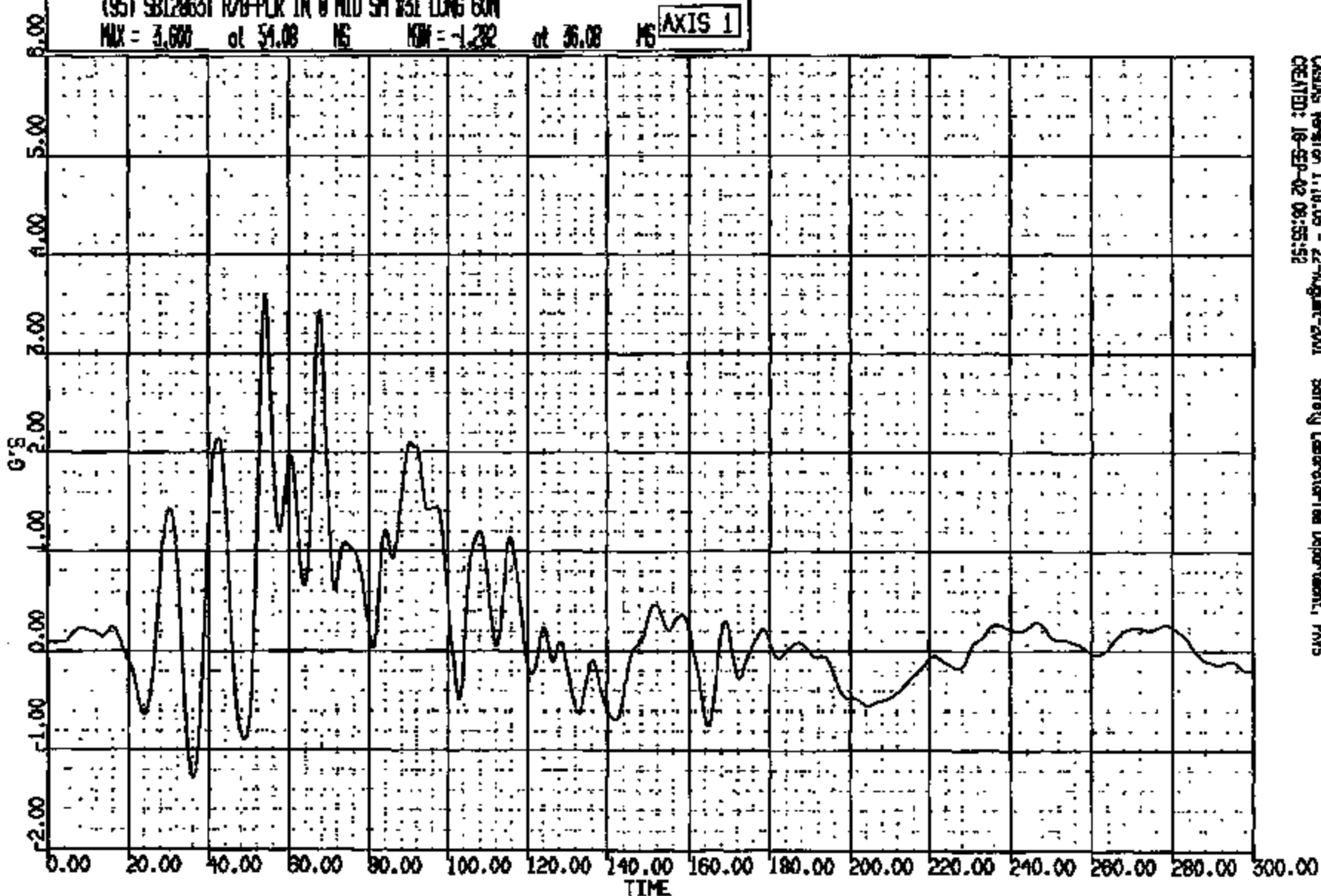
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SB R: 12863 TO: J55210 DATE: 24-APR-2002 08:30:11
2003 EN114

(95) SBL28631 R/O-PLR IN @ MID SH #31 LONG 60N

MAX = 3.600 at 34.08 MS MIN = -1.282 at 36.08 MS

AXIS 1



CRTS 0012863

CASINS Version 1.10.05 - 22-Aug-2001 Safety Laboratories Department, PMS
CREATED: 16-SEP-02 08:55:52

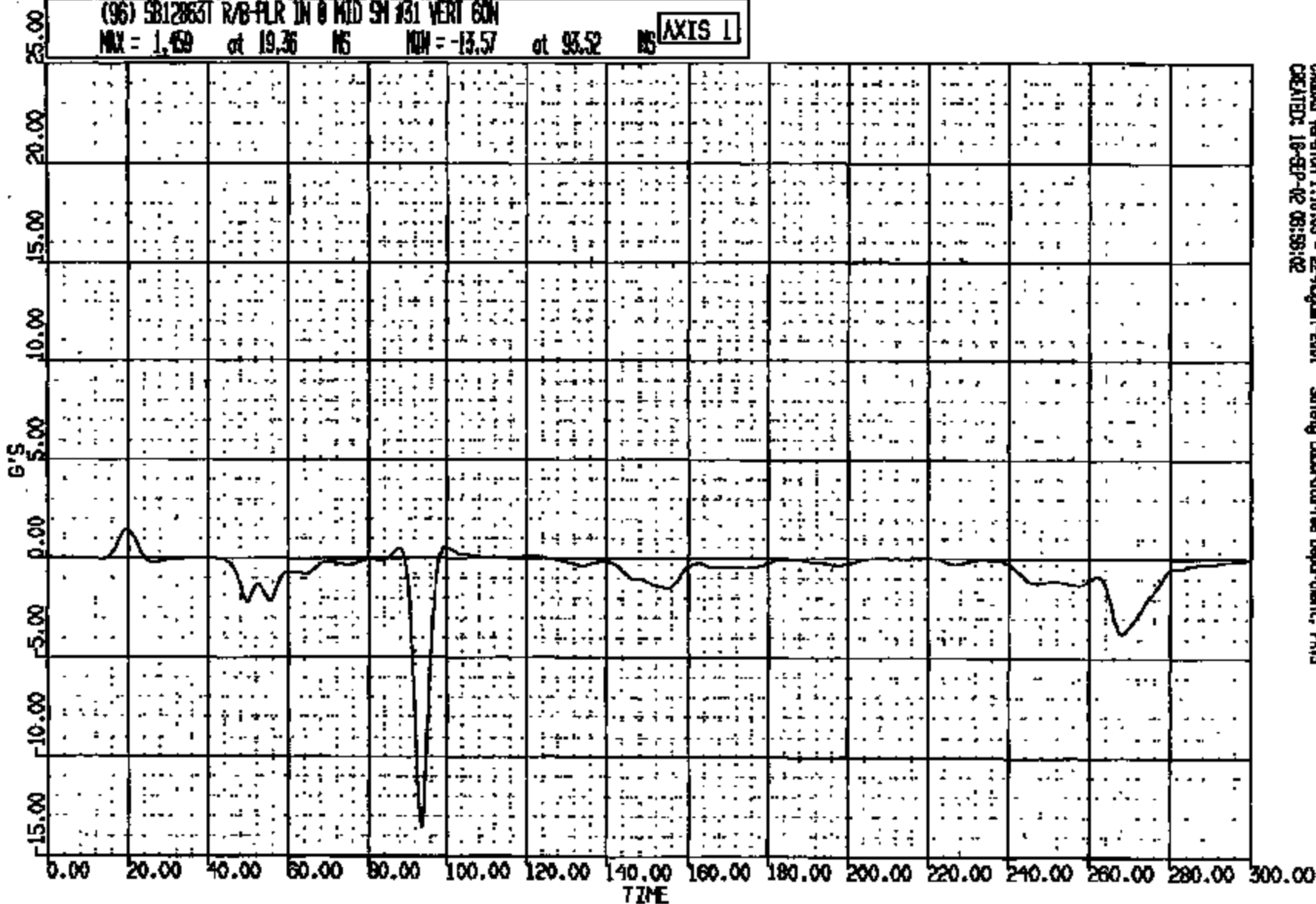
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SB R: 12863 TO: JB5310 DATE: 24-APR-2002 09:50:11
2005 EN114

(96) SB12863T R/B-FLR IN @ MID SH #31 VERT 60N

MAX = 1.49 at 19.36 MS MIN = -13.57 at 93.52 MS

AXIS 1



CHSAS Version 1.16.05 - 22-August-2001 Safety Laboratories Department, PMS
CREATED: 18-SEP-02 08:59:02

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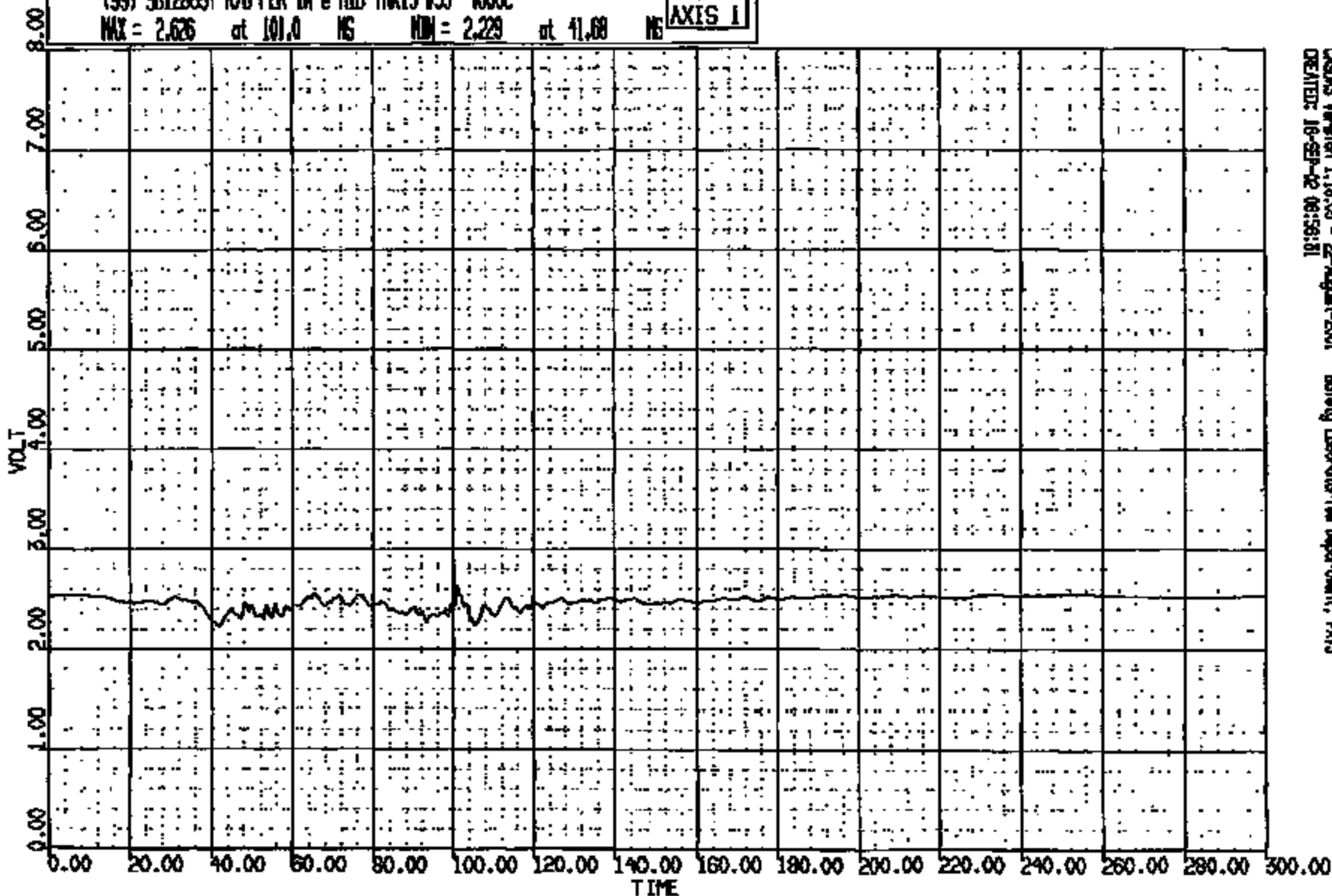
CRTS 0012863

SB R: 12983 TO: JB5510 DATE: 24-APR-2002 08:30:11
2005 EN114

(99) SBI2863T R/D-PLR IN @ MID TANK13 #33 4000C

MAX = 2.626 at 101.0 NS MIN = 2.229 at 41.68 NS

AXIS 1



CASDS Version 1.18.03 - 22-August-2001 Safety Laboratory Inc Department, PWS
CREATED: 18-SEP-02 08:58:01

ENTIRE PAGE CONFIDENTIAL

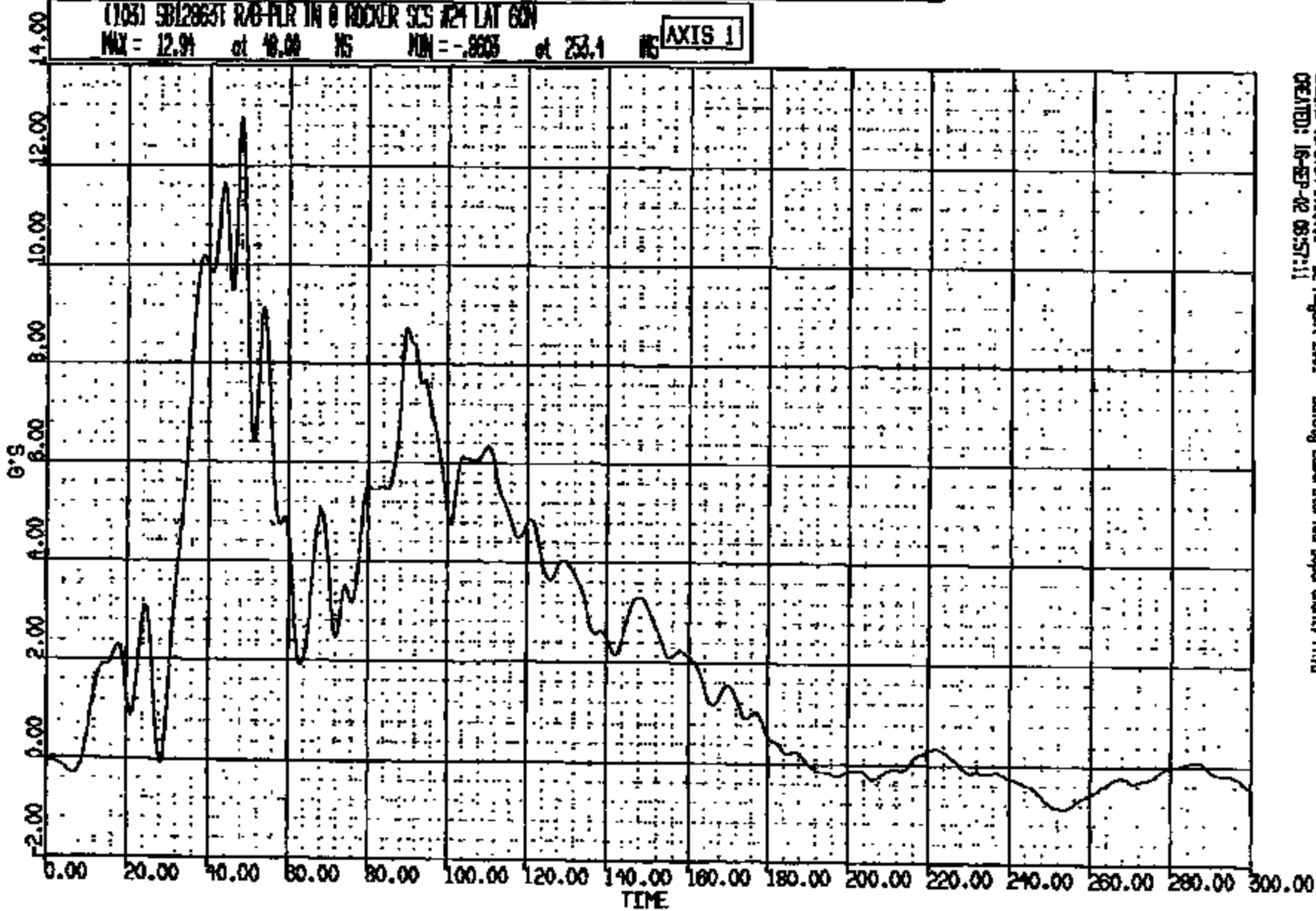
CRTS 0012863

SB R: 12883 TO: JB5310 DATE: 24-APR-2002 09:30:11
2002 EN114

(103) SB12883T R40-PLR IN @ ROCKY SCS #24 LAT 60N

MAX = 12.91 at 40.00 HS MIN = -.8603 at 253.1 HS

AXIS 1



CRTS 0012863

CASOS Version 1.18.03 - 22-August-2001 Safety Laboratories Department, PMS
CREATED: 16-SEP-02 08:57:11

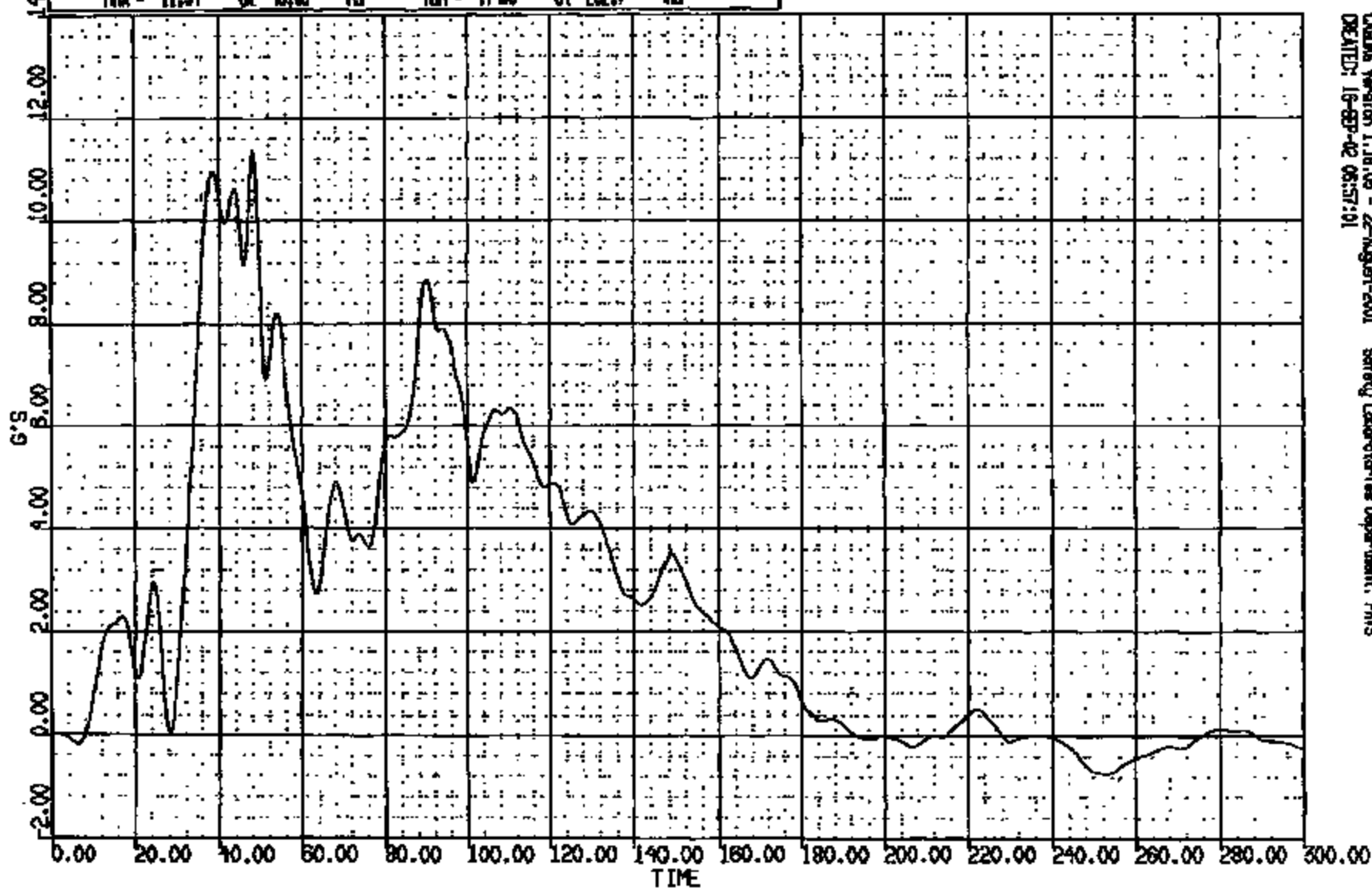
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SB R: 12863 TO: JB5310 DATE: 24-APR-2002 09:30:11
2003 EN114

(102) SB12863T R/O-PLR IN @ ROCKER SH #23 LAT 60N

MAX = 11.34 at 48.00 MS MIN = -.7403 at 252.7 MS

AXIS 1



CASAS Version 1.18.05 - 22-August-2001 Safety Laboratories Department, PMS
CREATED: 18-SEP-02 08:57:01

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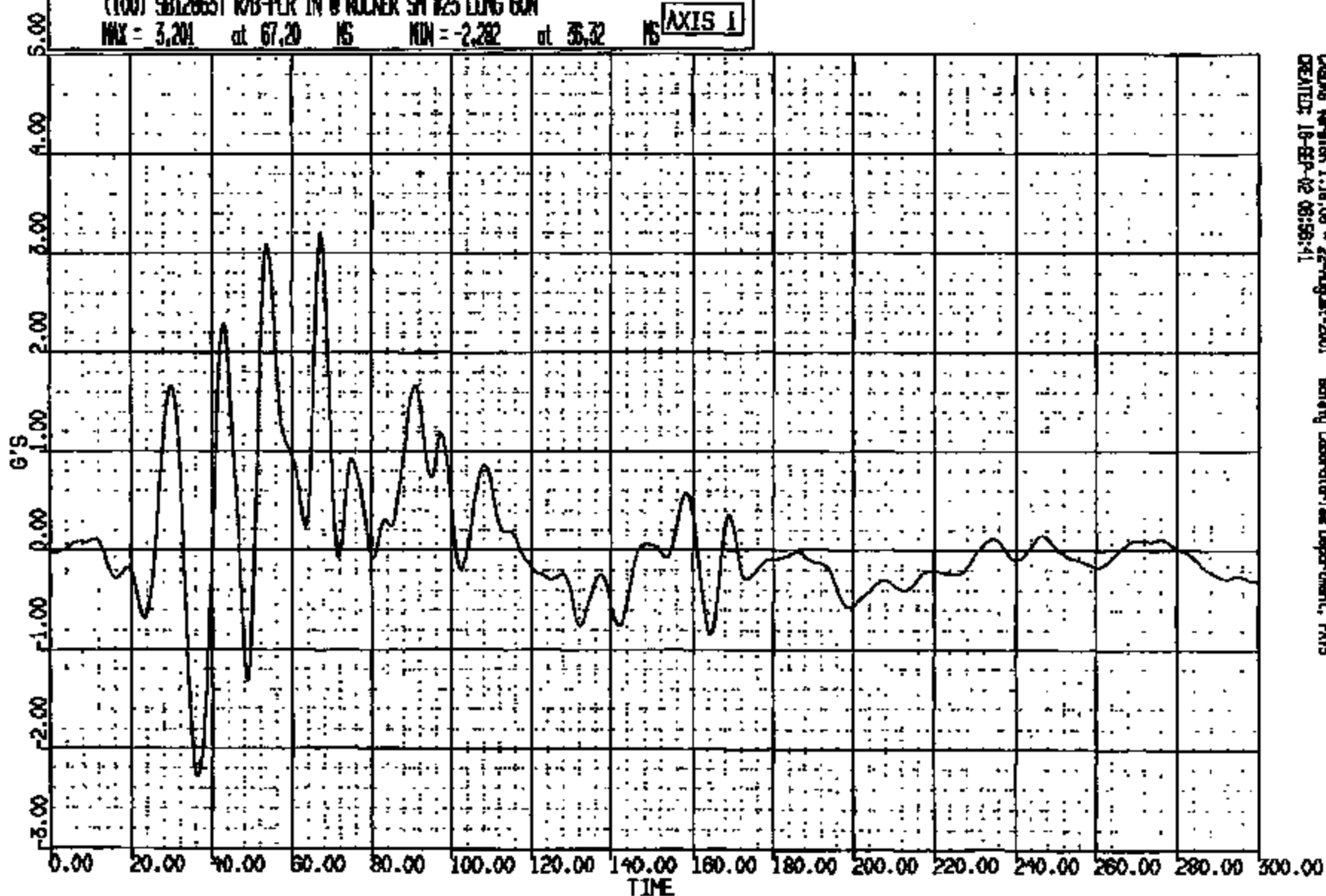
CRIS 0012863

SB R: 12863 TO: JB5310 DATE: 24-APR-2002 08:50:11
2008 EN114

(100) SB12863 R/B-PLR IN @ ROCKER SH #23 LONG 60N

MAX = 3.201 at 67.20 MS MIN = -2.282 at 35.32 MS

AXIS 1



CRS Version 1.18.05 - 22-August-2001 Safety Laboratory/see Department, PMS
CREATED: 18-SEP-02 08:58:41

ENTIRE PAGE CONFIDENTIAL

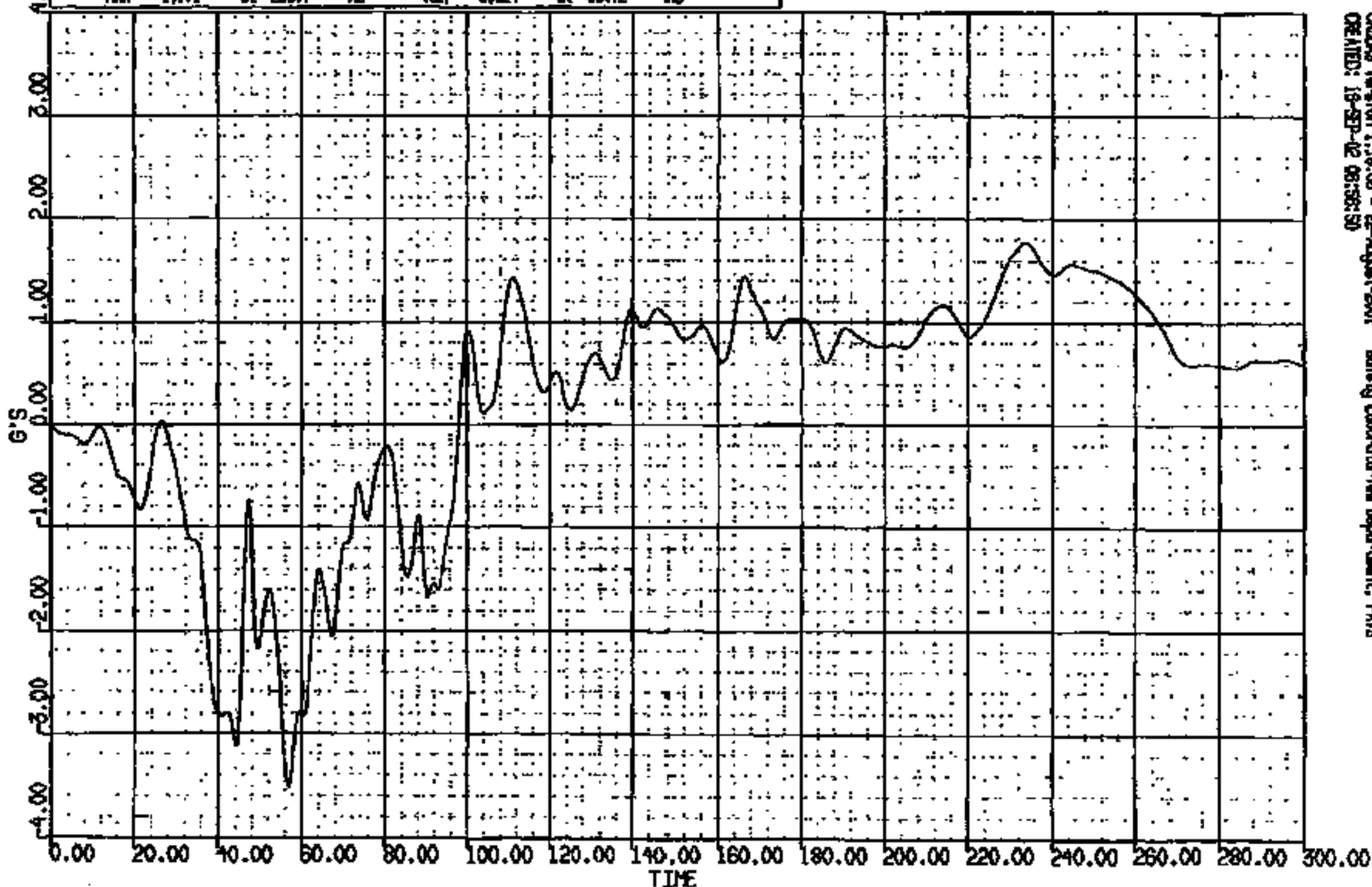
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SS R: 12863 TO: JB5310 DATE: 24-APR-2002 09:30:11
2002 EN114

(101) SBI28631 R/O-PLR IN @ ROCKER SH #23 VERT 60N

MAX = 1.771 at 233.7 MS MIN = -3.521 at 56.72 MS

AXIS 1



CHSAS Version 1.18.05 - 22-August-2001 Safety Laboratory Inc. Department, PMS
CREATED: 18-SEP-02 09:38:50

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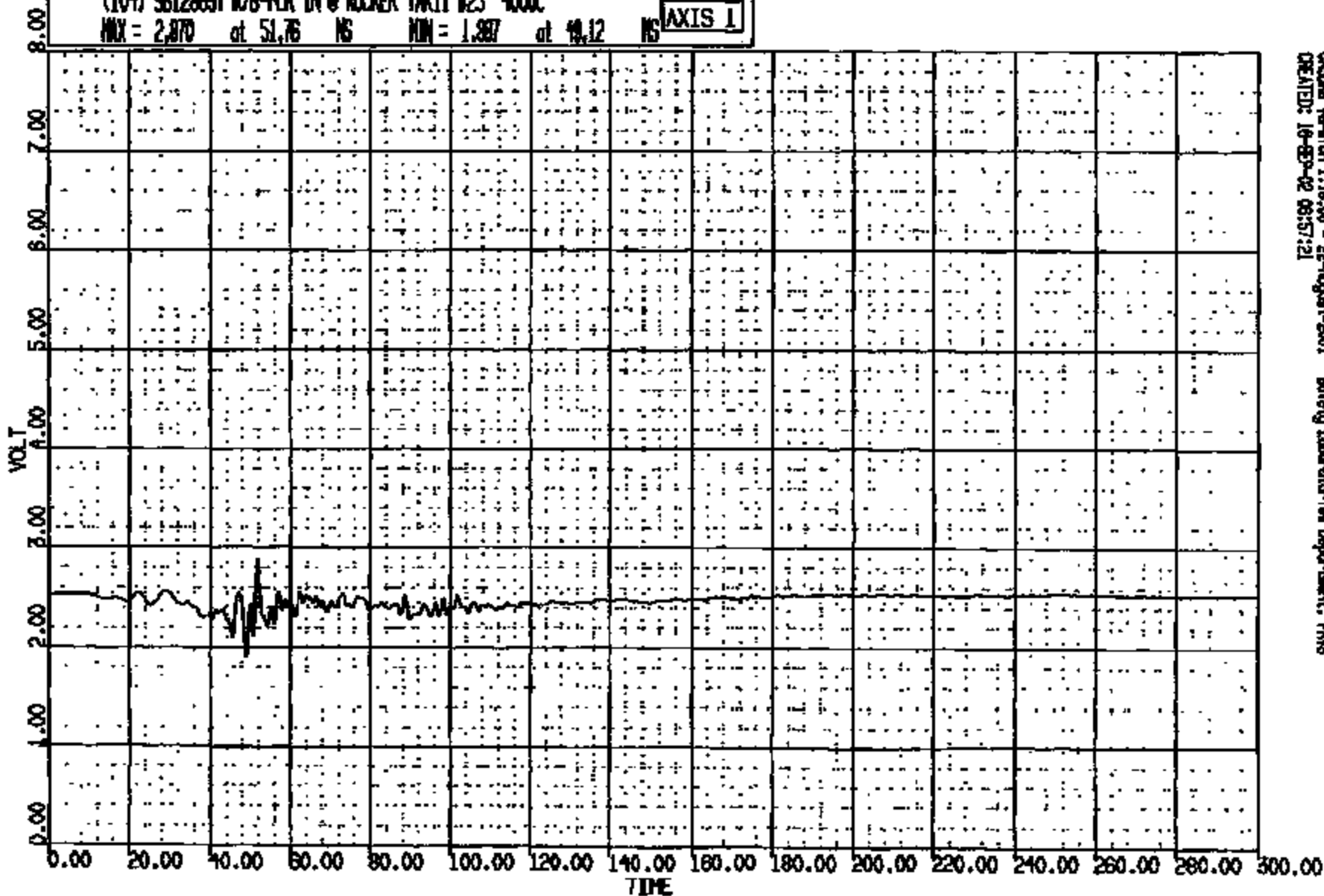
CRTS 0012863

SB R: 12823 TO: J85310 DATE: 24-APR-2002 09:30:11
2003 EN114

(104) SB128631 R/O-PLR IN @ ROCKER TAKII #25 400C

MAX = 2.870 at 51.76 NS MIN = 1.887 at 49.12 NS

AXIS 1



CASAS Version 1.18.05 - 22-August-2001 Safety Laboratory Department, PMS
CREATED: 16-SEP-02 08:57:21

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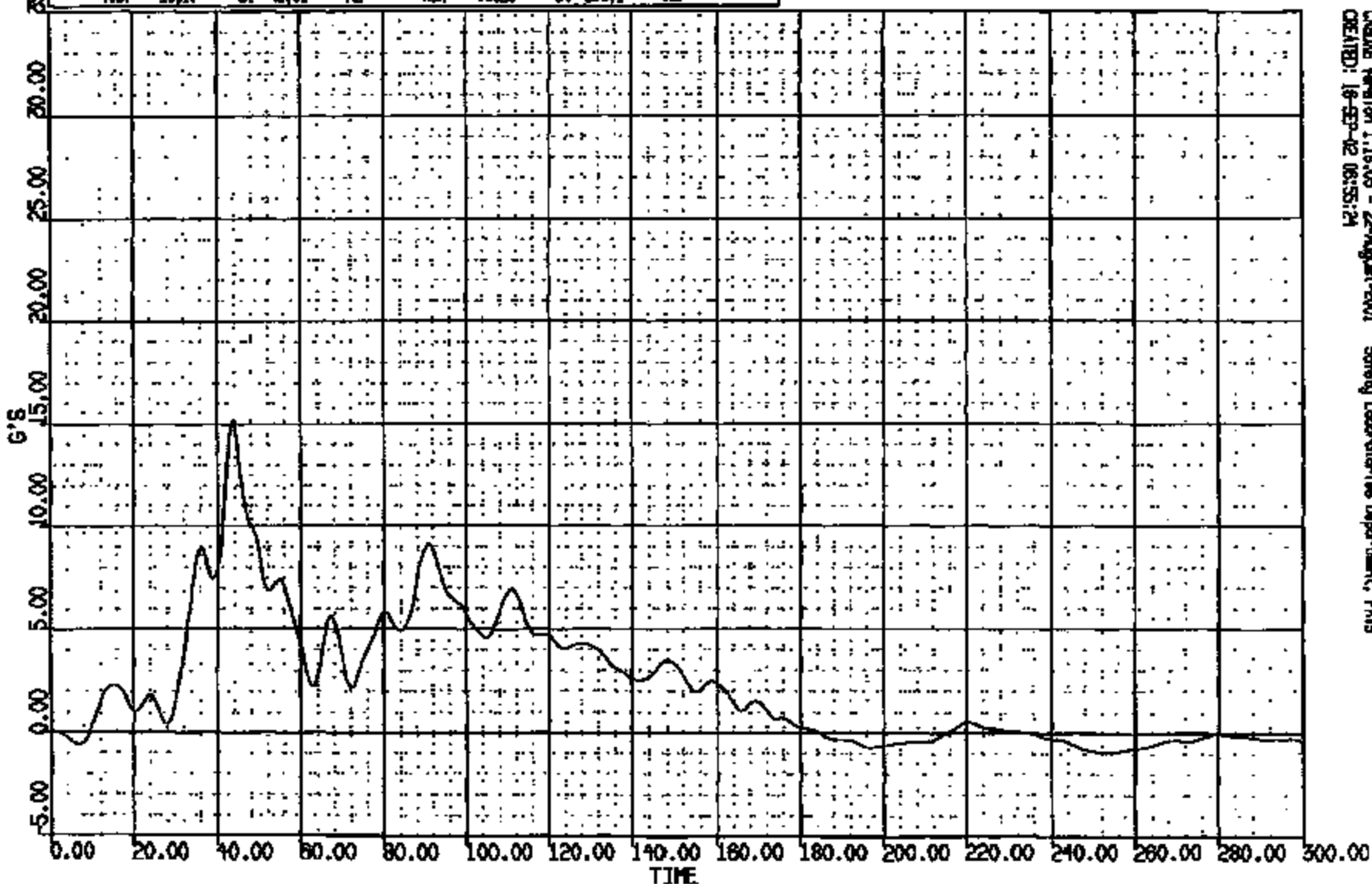
CRTS 0012863

SB R: 12863 TO: JB5310 DATE: 24-APR-2002 08:50:11
2003 EN114

(92) SB12863 R/F FLR PWN @ #2 XM CIR #15 LAT GUN

MAX = 15.17 at 43.00 MS MIN = -.9529 at 253.1 MS

AXIS 1



CRTS 0012863

CASME Version 1.19-05 - 22-August-2001 Safety Laboratories Department, PMS
CREATED: 18-SEP-02 08:55:24

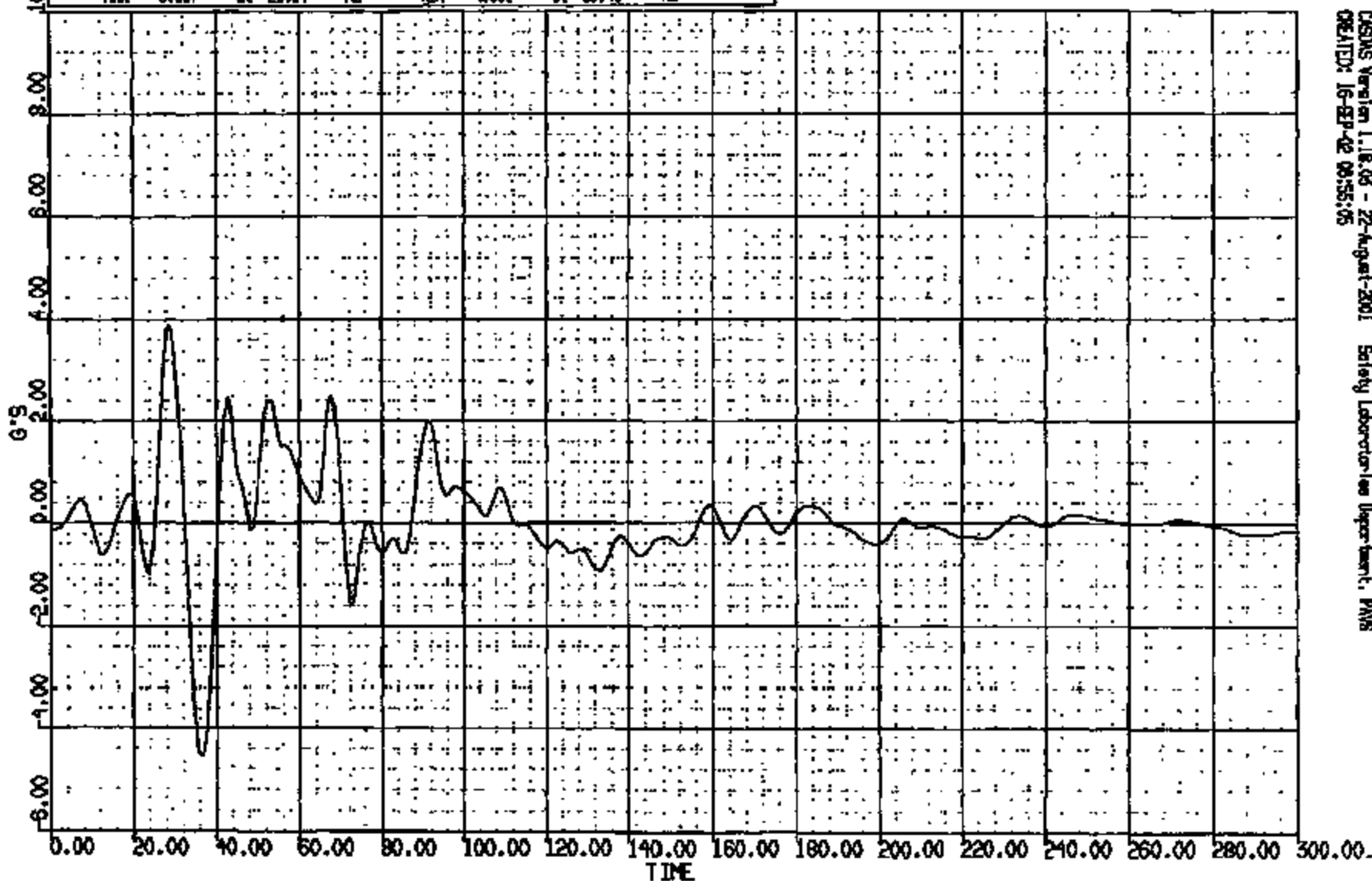
ENTIRE PAGE CONFIDENTIAL

SB R: 12863 TO: J85310 DATE: 24-APR-2002 09:30:11
2003 EN114

(90) SBI28631 R/F FLR PAN 0 #2 XM CTR #15 LONG 60N

MAX = 3.887 at 28.64 MS MIN = -4.551 at 35.42 MS

AXIS 1



CASINS Version 1.18.03 - 22-August-2001 Safety Laboratories Department, PMS
CREATED: 16-SEP-02 09:55:05

ENTIRE PAGE CONFIDENTIAL

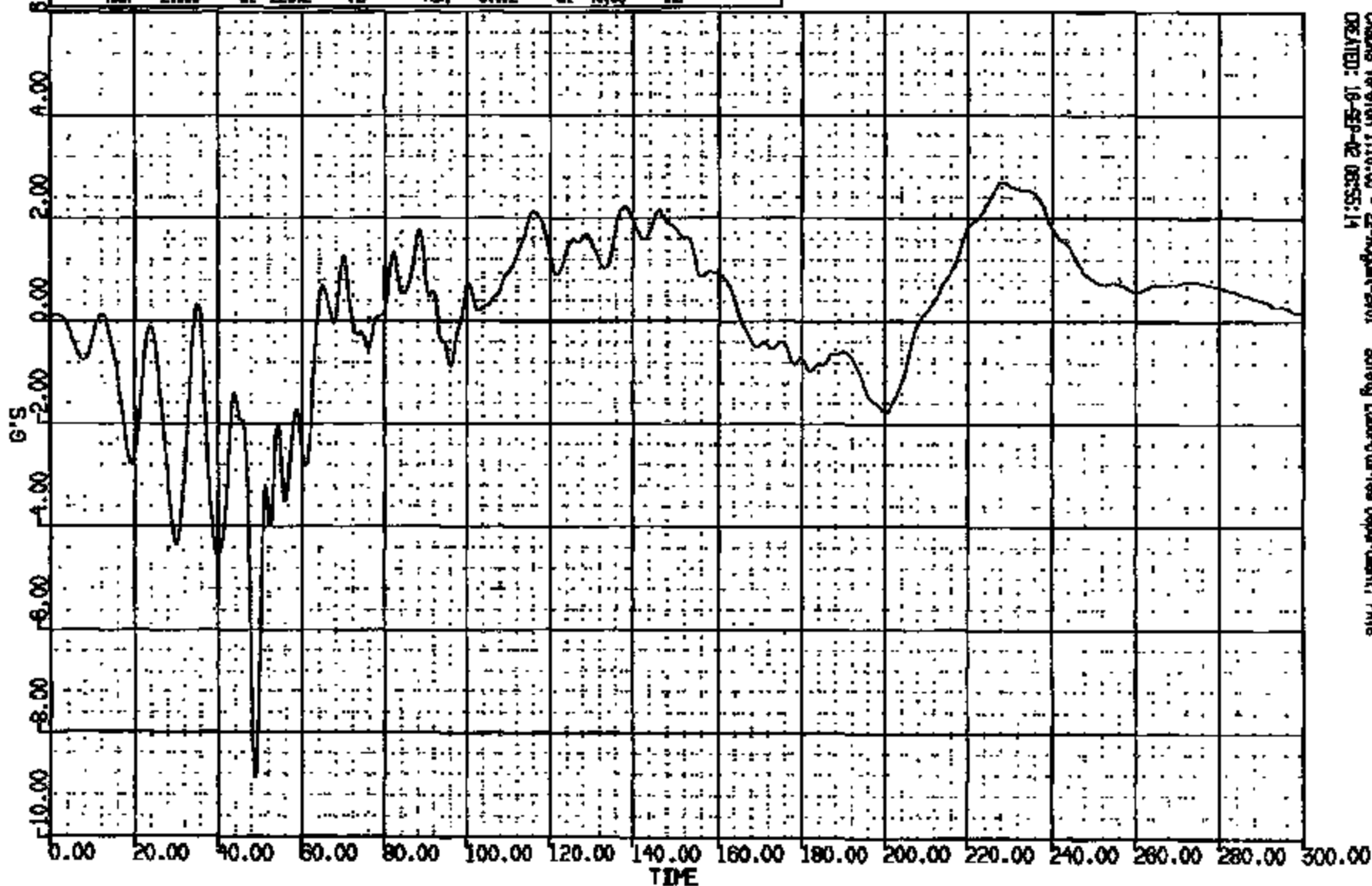
CRIS 0012863

BB R: 12863 TO: JB5310 DATE: 24-APR-2002 09:30:11
2003 EN114

(91) 59128631 R/F FLR PWN 0 #2 XM CIR #15 WERT 60N

MAX = 2.608 at 228.2 MS MIN = -8.882 at 44.00 MS

AXIS 1



CHADS Version 1.18.05 - 22-August-2001 Safety Laboratories Department, PAIS
CREATED: 18-SEP-02 08:55:14

ENTIRE PAGE CONFIDENTIAL

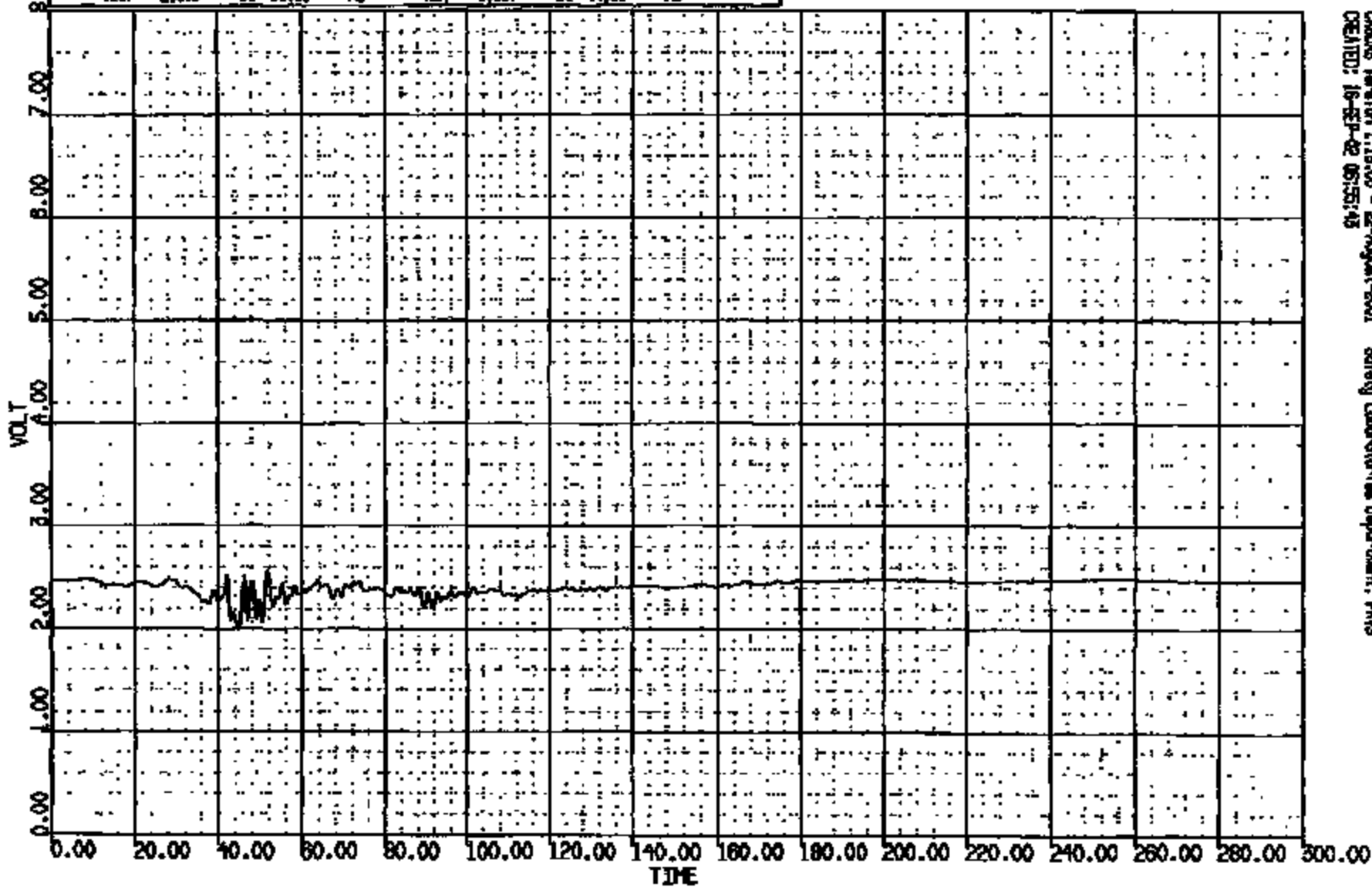
CRTS 0012863

SE R: 12863 TD: J85310 DATE: 24-APR-2002 08:30:11
2002 EN114

(94) SBA2863T R/F FLR PAN # 12 M CUR TAKS # 4000C

MAX = 2.500 at 51.08 MS MIN = 1.987 at 11.80 MS

AXIS 1



CRSUS Version 1.18.05 - 22-August-2001 Safety Laboratories Department, PMS
CREATED: 16-SEP-02 05:55:45

ENTIRE PAGE CONFIDENTIAL

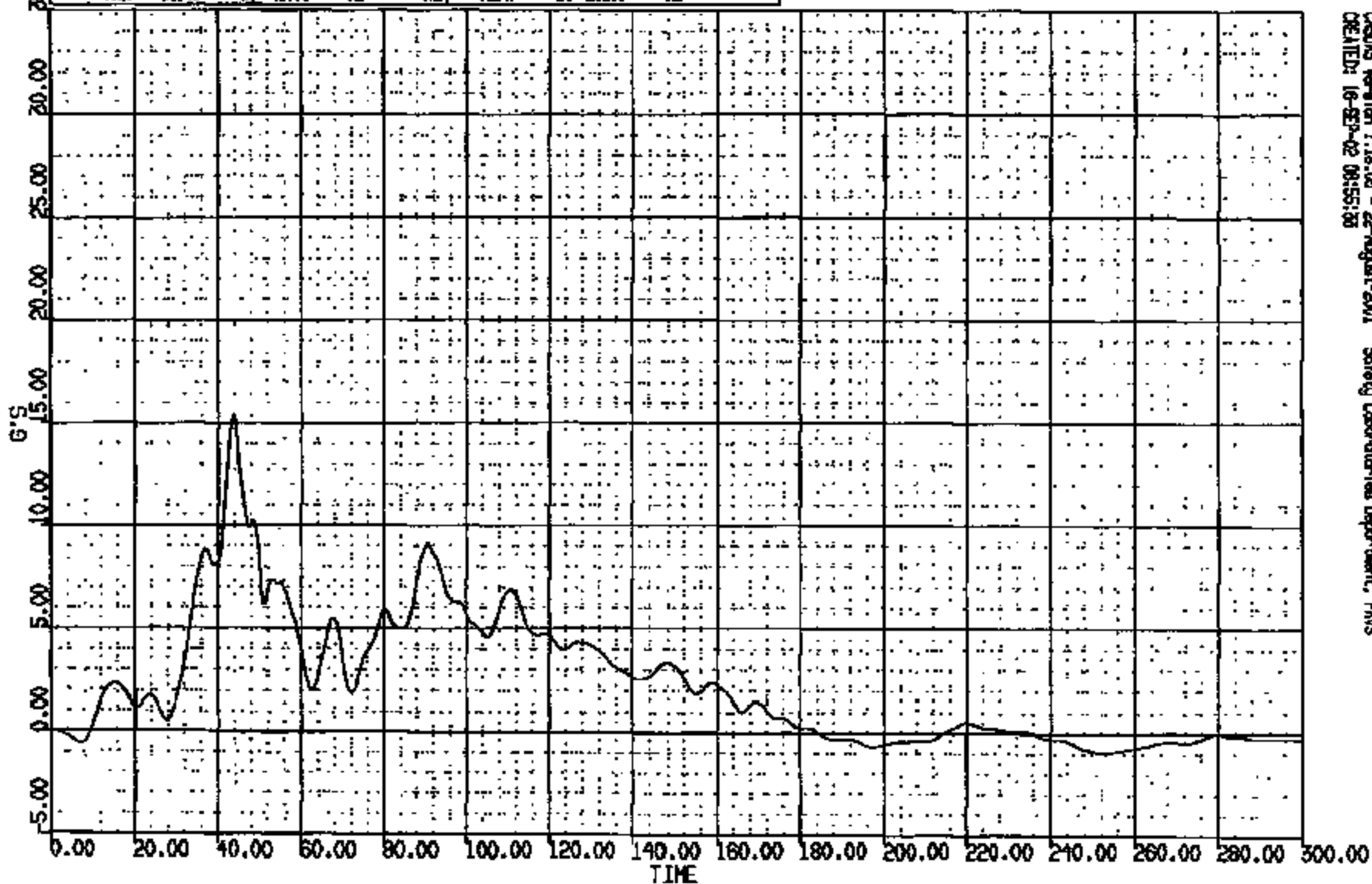
CRIS 0012863

SB R: 12863 TO: J85510 DATE: 24-APR-2002 08:50:11
2002 EN114

(93) SB12863T R/F FLR PAN 8 #2 XM SCS #16 LAT 60N

MAX = 15.40 at 43.76 NS MIN = -.9147 at 252.9 NS

AXIS 1



CRTS 0012863

CASD/S Version 1.18.02 - 22-August-2001 Safety Laboratories Department, PMS
CREATED: 16-SEP-02 08:55:00

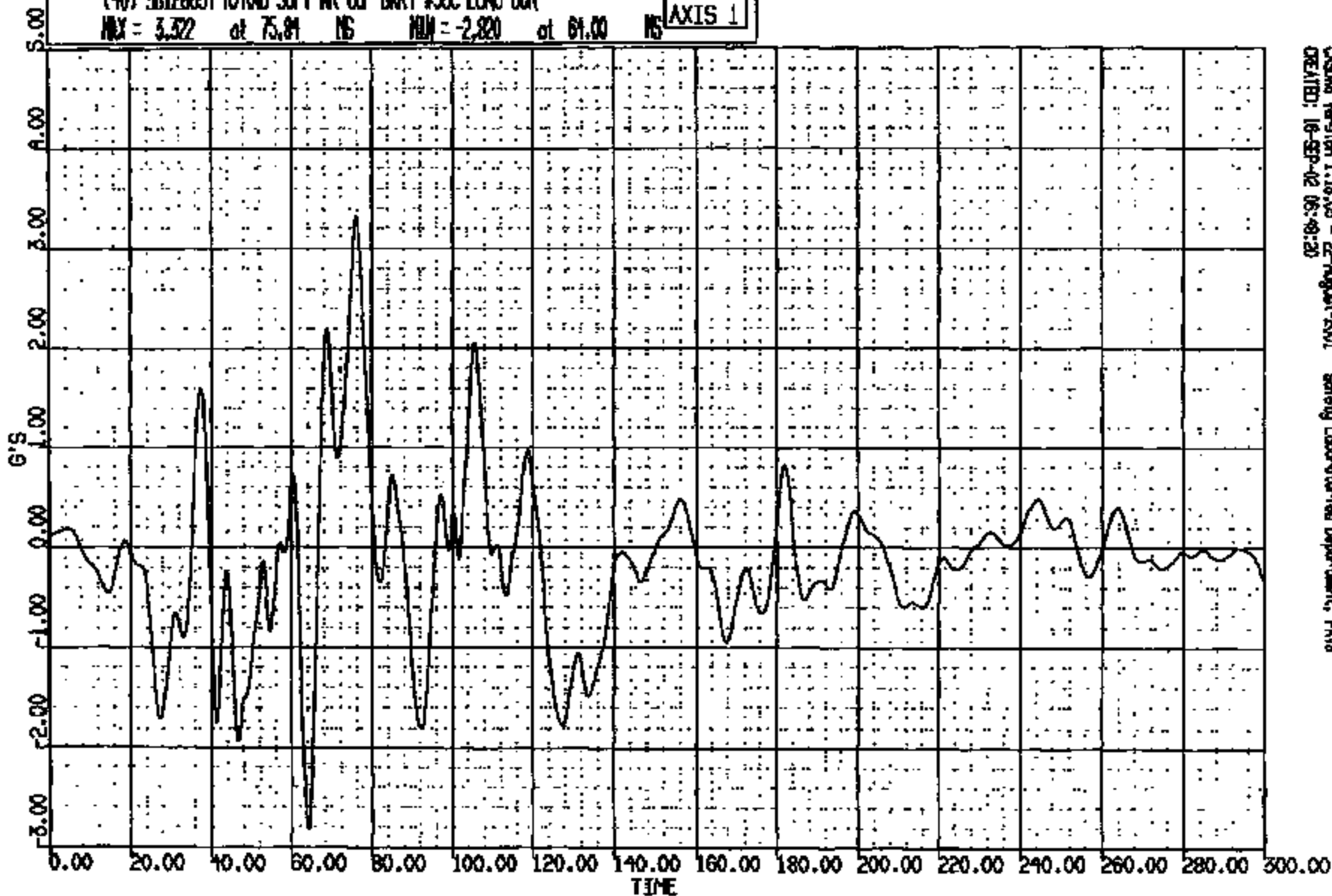
ENTIRE PAGE CONFIDENTIAL

SB R: 12863 TO: J85310 DATE: 24-APR-2002 09:30:11
2005 SN114

(40) SB12863T R/RND SUPT NR 6P BKT #35C LONG 60N

MAX = 3.322 at 75.81 NS MIN = -2.820 at 61.00 NS

AXIS 1



CASME Version 1.18.05 - 22-August-2001 Safety Laboratories Department, PAHS
CREATED: 16-SEP-02 06:40:20

ENTIRE PAGE CONFIDENTIAL

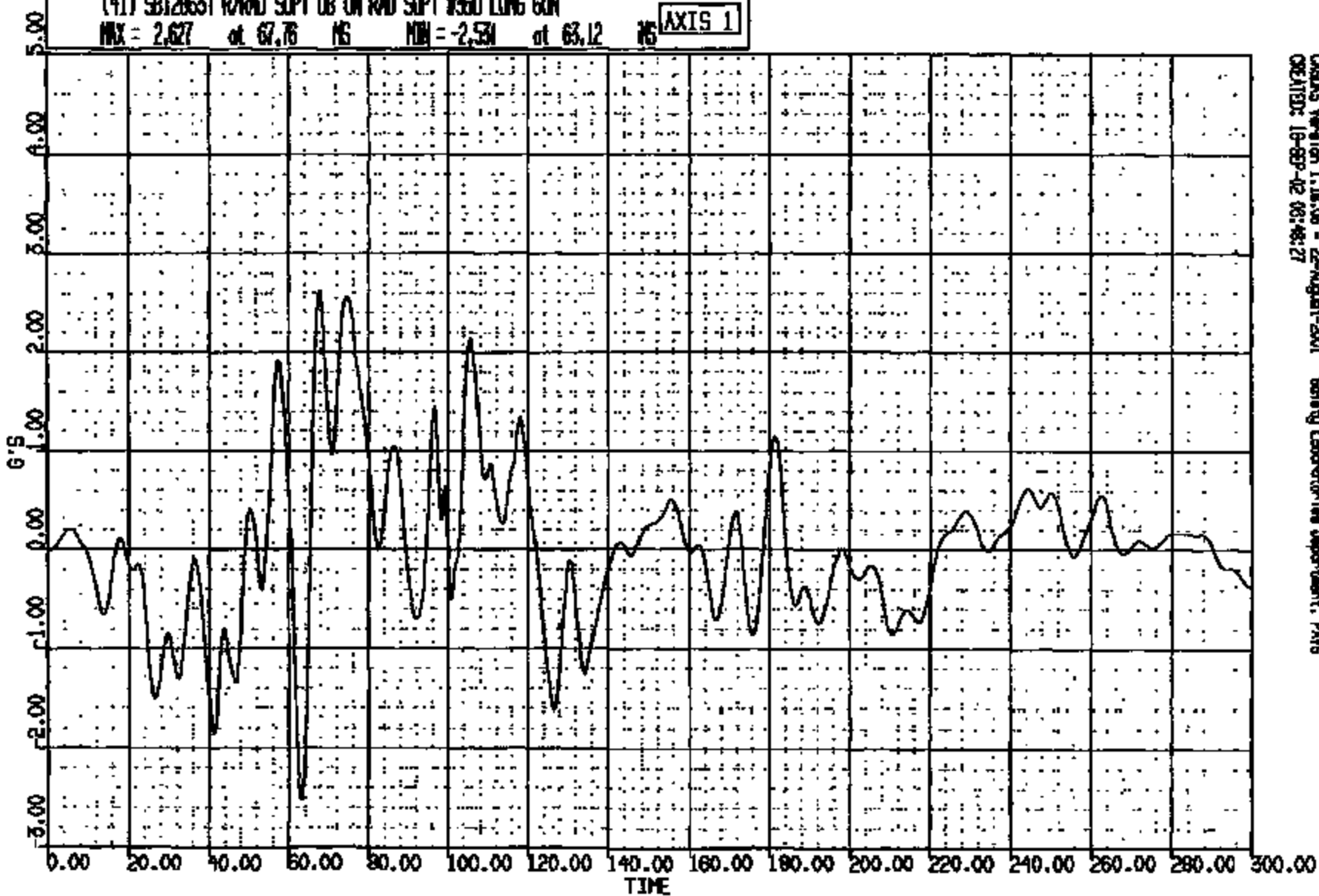
CRIS 0012863

SB R: 12863 TO: JB5310 DATE: 24-APR-2002 08:50:11
2003 EN114

(41) SB128631 R/RAD SUPT DB ON RAD SUPT #360 LONG 60N

MAX = 2.627 at 67.76 MS MIN = -2.534 at 63.12 MS

AXIS 1



CRTS 0012863

CASAS Version 1.18.05 - 23-August-2001 Safety Laboratories Department, PARS
CREATED: 18-SEP-02 08:46:27

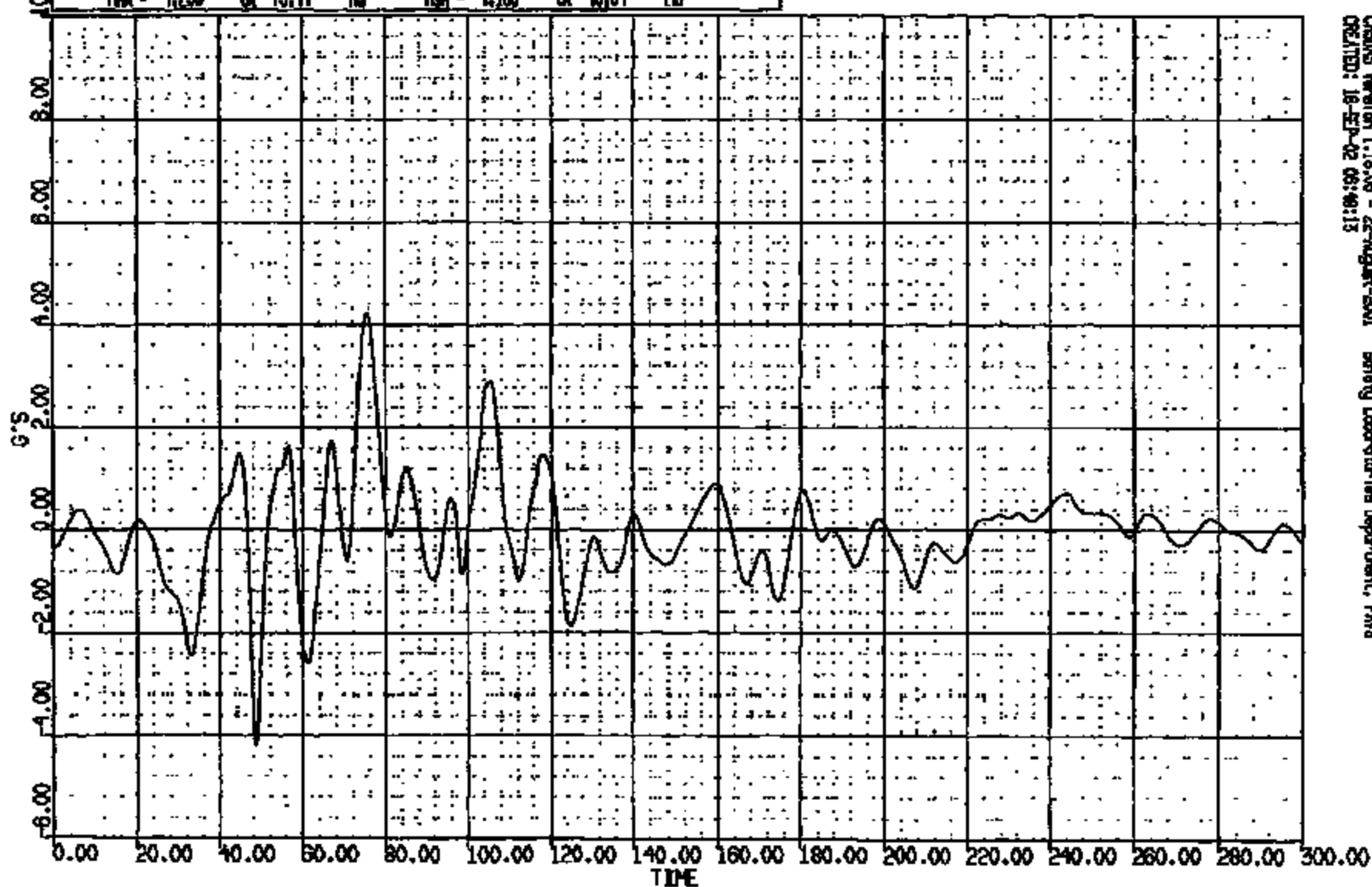
ENTIRE PAGE CONFIDENTIAL

SS R: 12863 TO: J85510 DATE: 24-APR-2002 09:30:11
2003 EN114

(39) S812863T R/WO SUPT ON 60P BAKT J353 LONG CON

MAX = 4.298 at 75.41 MS MIN = -4.188 at 10.61 MS

AXIS 1



CRTS 0012863

CASINS Version 1.18.03 - 22-August-2001 Safety Laboratories Department, PMS
CREATED: 18-SEP-02 09:40:13

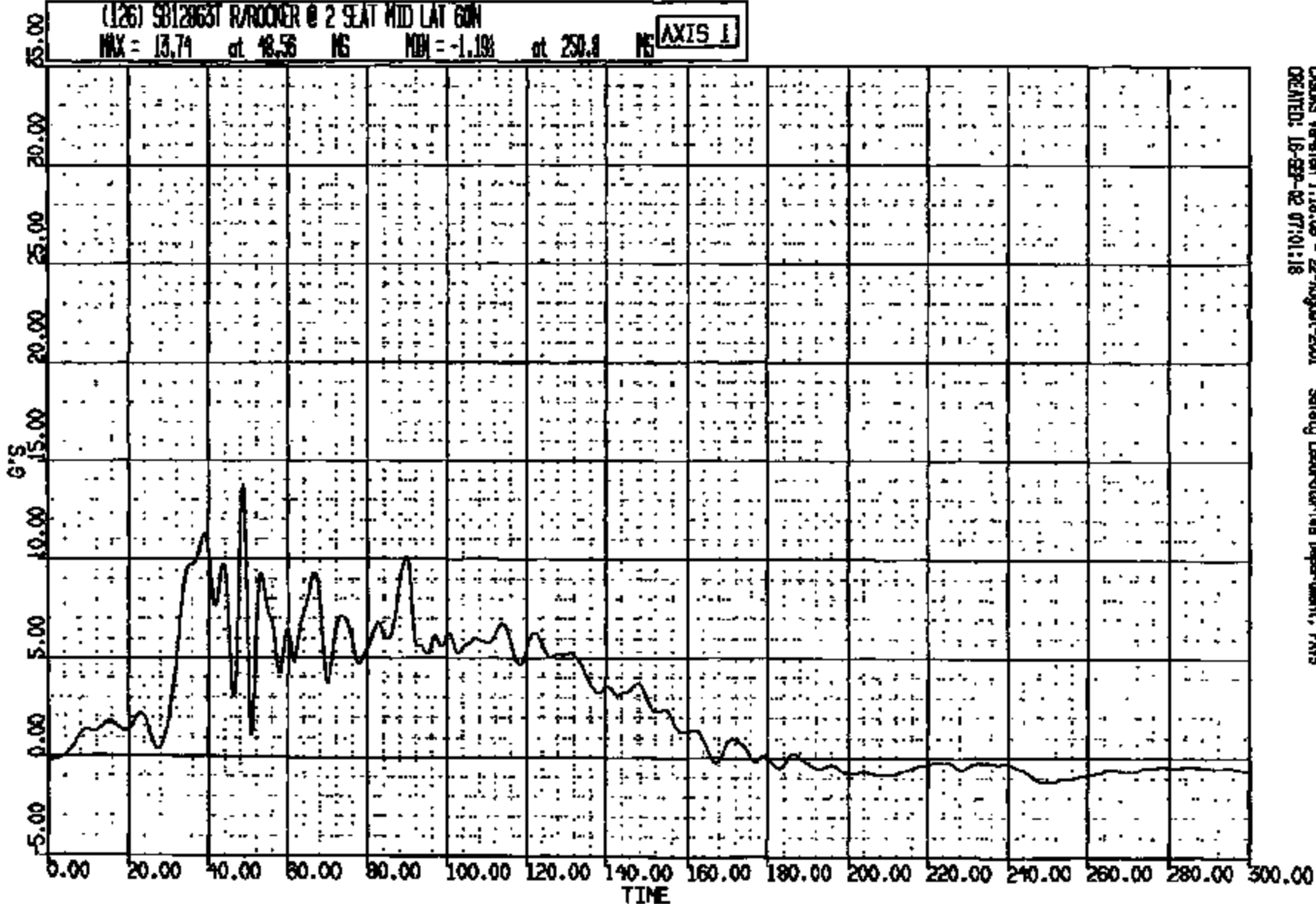
ENTIRE PAGE CONFIDENTIAL

BB #: 12863 TO: JBS310 DATE: 24-APR-2002 09:30:11
2003 EN114

(126) S812863T R/ROCKER @ 2 SEAT MID LAT 60N

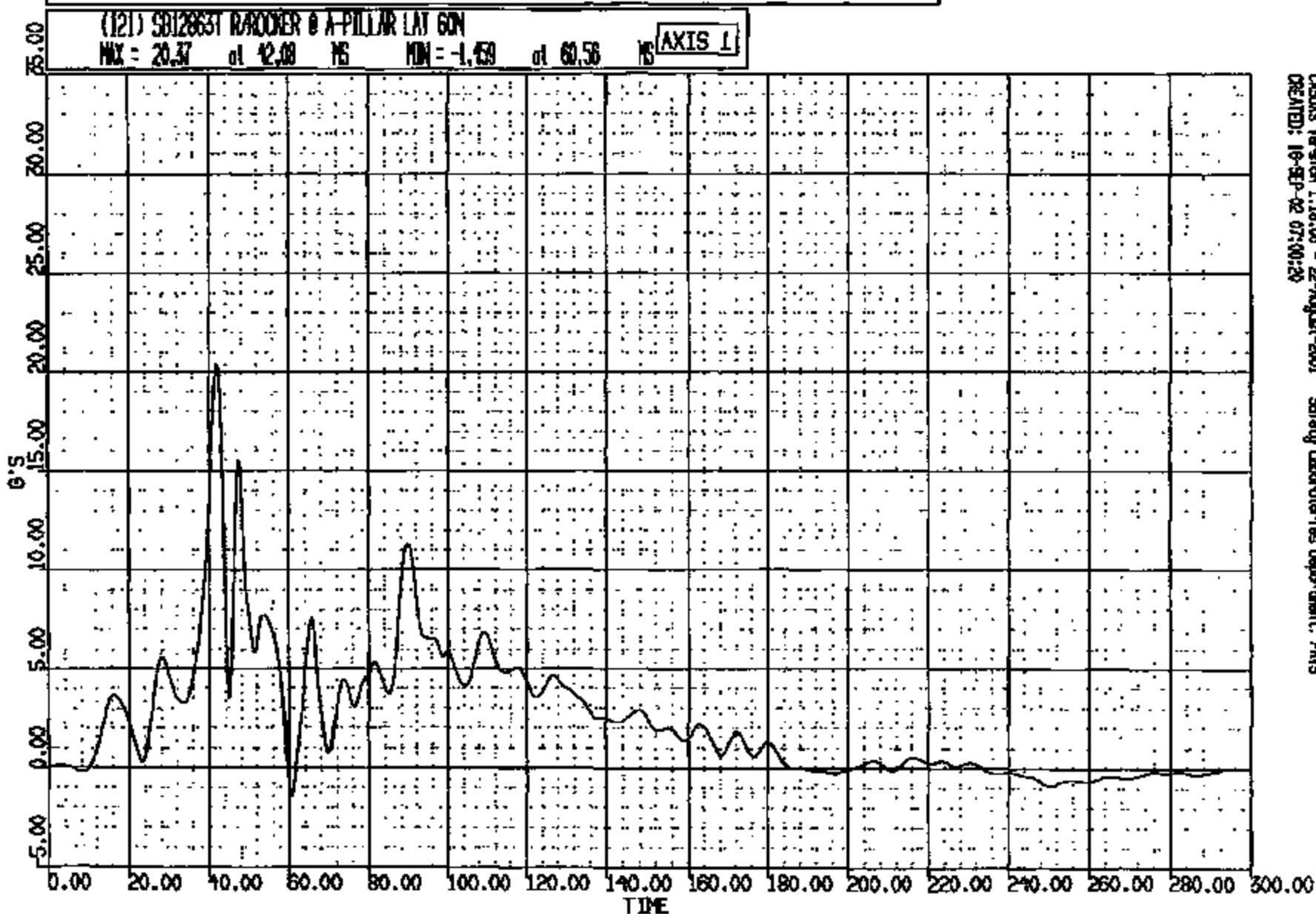
MAX = 13.71 at 48.56 NS MIN = -1.198 at 250.1 NS

AXIS 1



CRTS 0012863

SB R: 12883 TO: JB5310 DATE: 24-APR-2002 08:20:11
2002 EN114



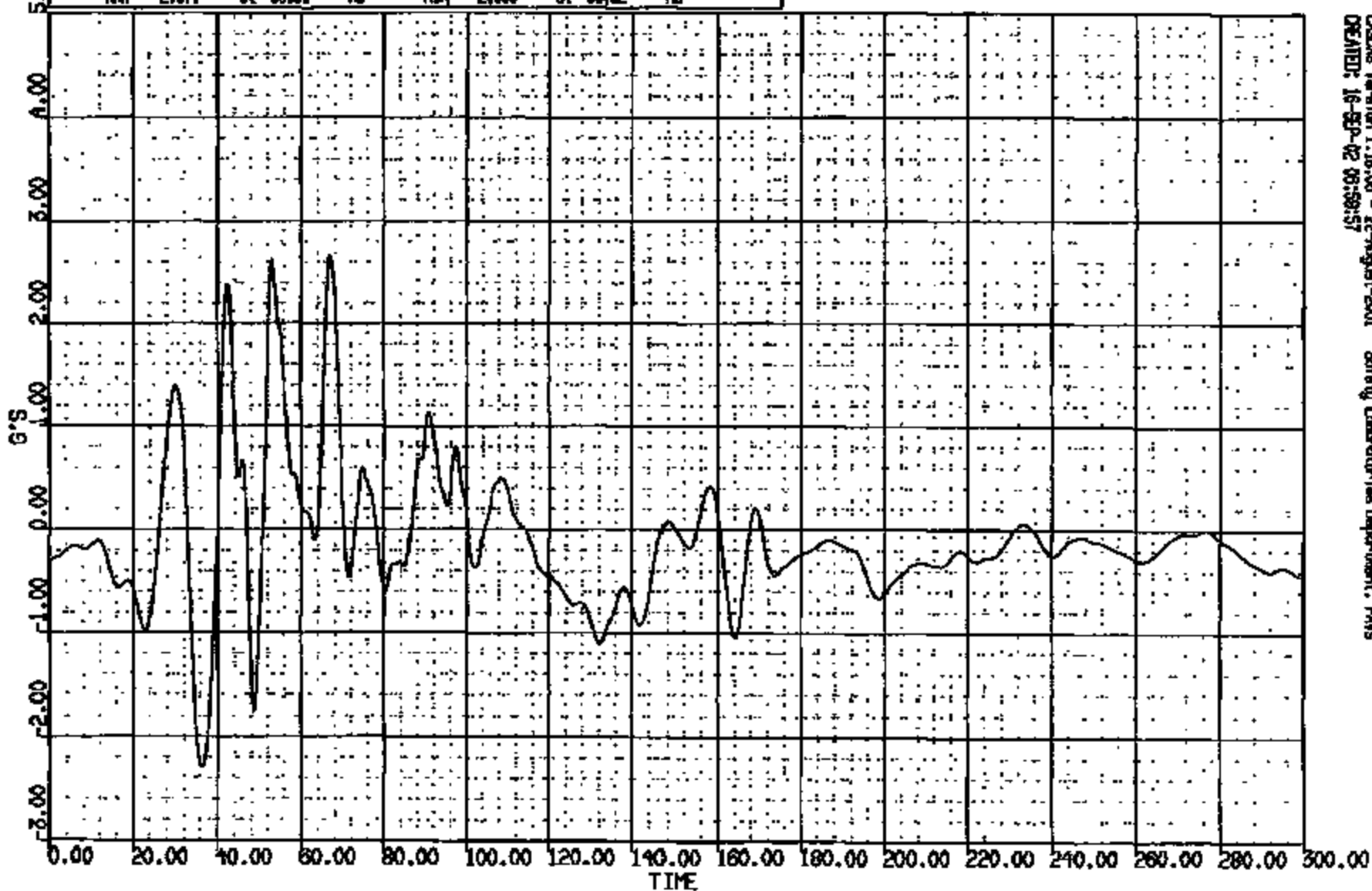
CRTS 0012863

BB R: 12863 TO: J85510 DATE: 24-APR-2002 09:30:11
2002 EN114

(119) SB12863T R/ROCKER @ A-PILLAR LONG RUN

MAX = 2.670 at 68.80 MS MIN = -2.303 at 36.32 MS

AXIS 1



CRS: Version 1.18.05 - 22-August-2001 Safety Laboratories Department, PANS
CREATED: 16-SEP-02 09:58:57

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CRIS 0012863