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DIVISION OF MINES AND GEOLOGY
 STRONG MOTION INSTRUMENTATION PROGRAM
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Selected Strong-Motion Records For Analysis of Base-Isolated Buildings

by

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Report No. OSMS 95-11
 California Strong Motion Instrumentation Program (CSMIP)

Nine strong-motion records selected for input ground motion in performing dynamic analysis of base-isolated buildings are presented in this report. These records are:

	<u>Station Name</u>	<u>Earthquake</u>	<u>Faulting Type</u>	<u>Source</u>
1)	El Centro Array #6	1979 Imperial Valley	Strike-slip	USGS
2)	El Centro Array #7			USGS
3)	Lexington Dam Left Abut.	1989 Loma Prieta	Strike-slip	CSMIP
4)	Hollister - S St. & Pine			CSMIP
5)	Lucerne Valley SCE Sta.	1992 Landers	Strike-slip	SCE
6)	Yermo - Fire Station			CSMIP
7)	Petrolia - Fire Station	1992 Petrolia	Thrust	CSMIP
8)	Sylmar - County Hosp. Lot	1994 Northridge	Thrust	CSMIP
9)	Newhall - LA County Fire Sta.			CSMIP

For each record, the processed-data plots are presented in the following order:

- Phase 2 (Vol. 2) data: Instrument and baseline-corrected acceleration, velocity and displacement. The data for first 40 seconds are plotted with equal scaling for all three components. The Usable Data Bandwidth used in the processing is indicated on the plots (see Definition of Usable Data Bandwidth).
- Phase 3 (Vol. 3) data: Response spectra. The pseudo-velocity spectra (PSV), the pseudo-acceleration (PSA) and the displacement spectra (SD) are presented on a tripartite logarithmic plot for each channel for 0%, 2%, 5%, 10% and 20% damping. The spectra are plotted for periods within the Usable Data Bandwidth (see Usable Data Bandwidth). The absolute acceleration spectra (Sa) are plotted against period with linear-linear scaling from 0 to 6 seconds. Three channels are plotted on a single page.

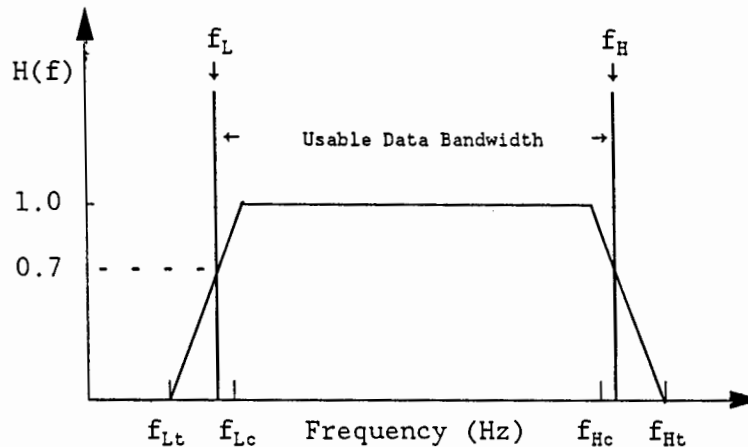
For ease of comparison, the data are plotted with equal scaling for all records.

Lucerne Record An important special record is the Lucerne record from the Landers earthquake. This record is unusual in that the instrument SMA-2, owned by Southern California Edison (SCE), is quite nonstandard and its calibration at long periods can be a problem. CSMIP has processed the raw data provided by SCE (decoded from the original instrument voltages by Kinematics) to include periods up to 5 seconds. This period was chosen because the instrument tests done by Prof. Hudson at Caltech several years ago showed the instrument had good calibration up to at least this period.

September 1995

DEFINITION OF USABLE DATA BANDWIDTH

The filter bands for each record are indicated on the plots for the Phase 2 and Phase 3 data. In standard processing, the digitized data are processed and filtered using Ormsby filters. The data are first low-pass filtered using a high-frequency filter with a corner frequency of 23 Hz and a roll-off termination frequency of 25 Hz. Then the data are high-pass filtered using a low-frequency filter with a corner frequency of 0.07 Hz and a roll-off termination of 0.05 Hz. Therefore, the Phase 2 data is the result of the digitized data being filtered by the bandpass filter $H(f)$ with ramps as shown in the figure:

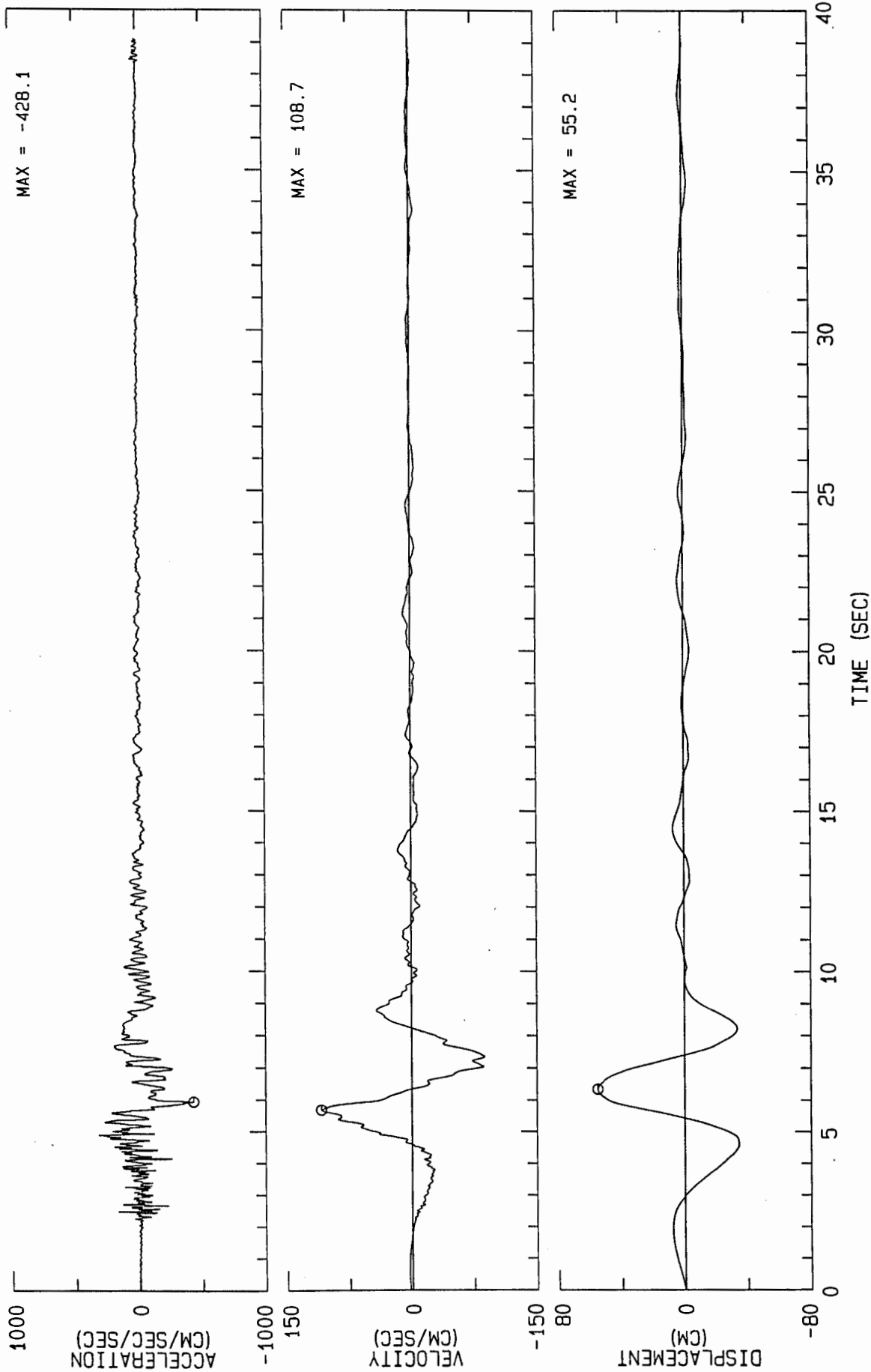


The Usable Data Bandwidth is defined as the band between frequencies f_H and f_L , where f_H and f_L are the -3 dB points on the high-frequency and low-frequency ramps, respectively. The value of $H(f)$ is approximately equal to 0.7 for -3 dB (see Notes). The user should only use these data for analyses within this bandwidth.

Notes:

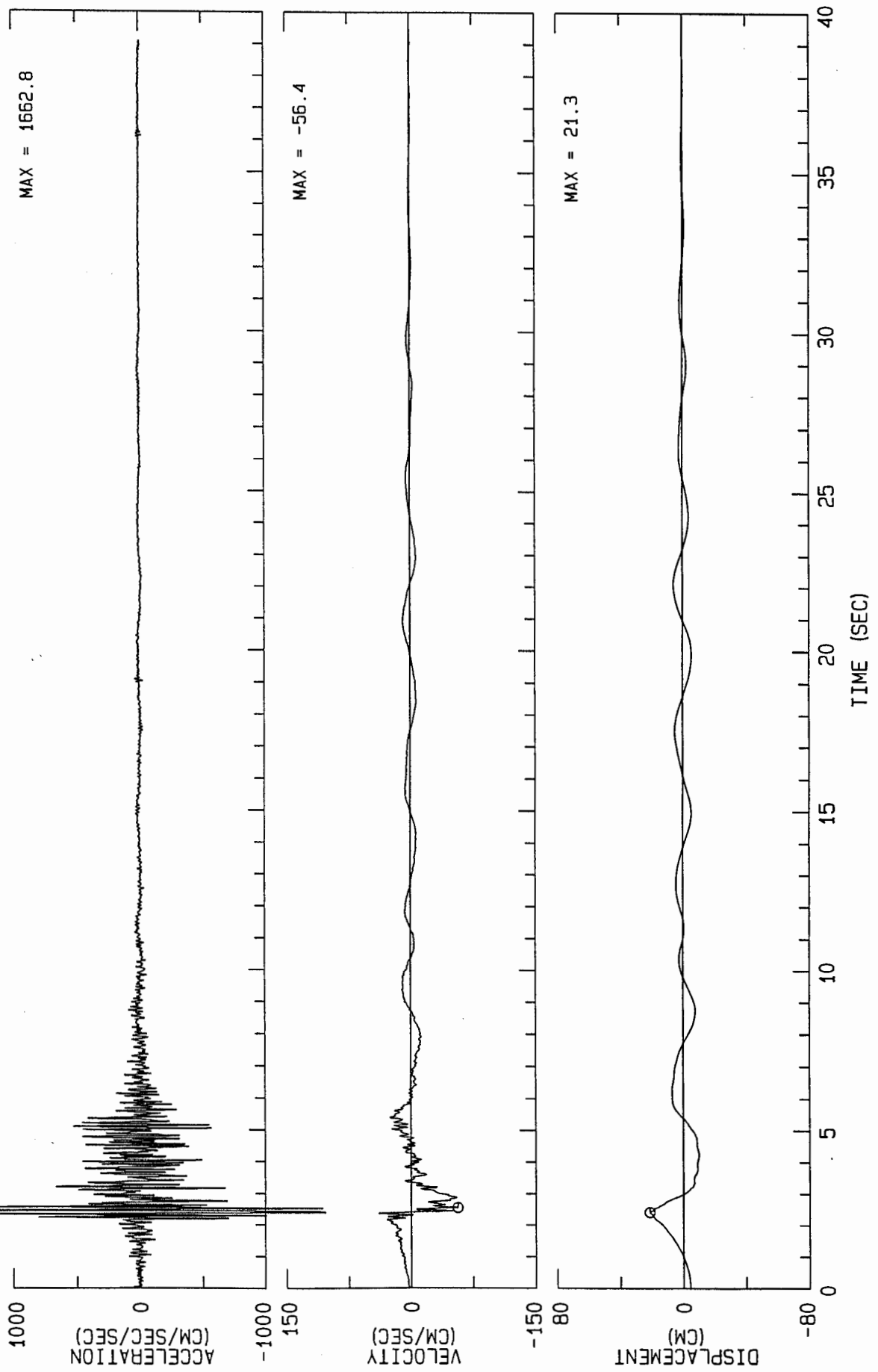
- 1) The values of f_H and f_L can be calculated from the corner frequencies (f_{Hc} , f_{Lc}) and the roll-off termination frequencies (f_{Ht} , f_{Lt}) used in the processing by using the formulas $f_H = f_{Hc} + 0.3 * (f_{Ht} - f_{Hc})$ and $f_L = f_{Lc} - 0.3 * (f_{Lc} - f_{Lt})$. For example, the Usable Data Bandwidth for data bandpass-filtered with ramps at 0.30 to 0.60 Hz and 23.0 to 25.0 Hz is 0.51 Hz to 23.6 Hz (0.042 to 2.0 seconds period).
- 2) It is common in signal processing to plot $20 \log_{10}[H(f)]$ versus frequency, and express the ordinate value in decibels (abbreviated dB). Accordingly, 0 dB corresponds to a value of $H(f)$ equal to 1; 20 dB is equivalent to $H(f) = 10$, and -20 dB corresponds to $H(f) = 0.1$. Thus, at the -3 dB frequency point, the amplitude of the transfer function, $H(f)$ is reduced to 0.7, while the power transmitted by the filter, $H^2(f)$, is reduced to 0.5.

IMPERIAL VALLEY EARTHQUAKE OF OCTOBER 15, 1979
EL CENTRO, ARRAY 6, HUSTON RD. CHN 1: 230 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .03-.17 TO 23.0-25.0 HZ. U0942-S0000-00000.00 083095.1623-ELCENT06

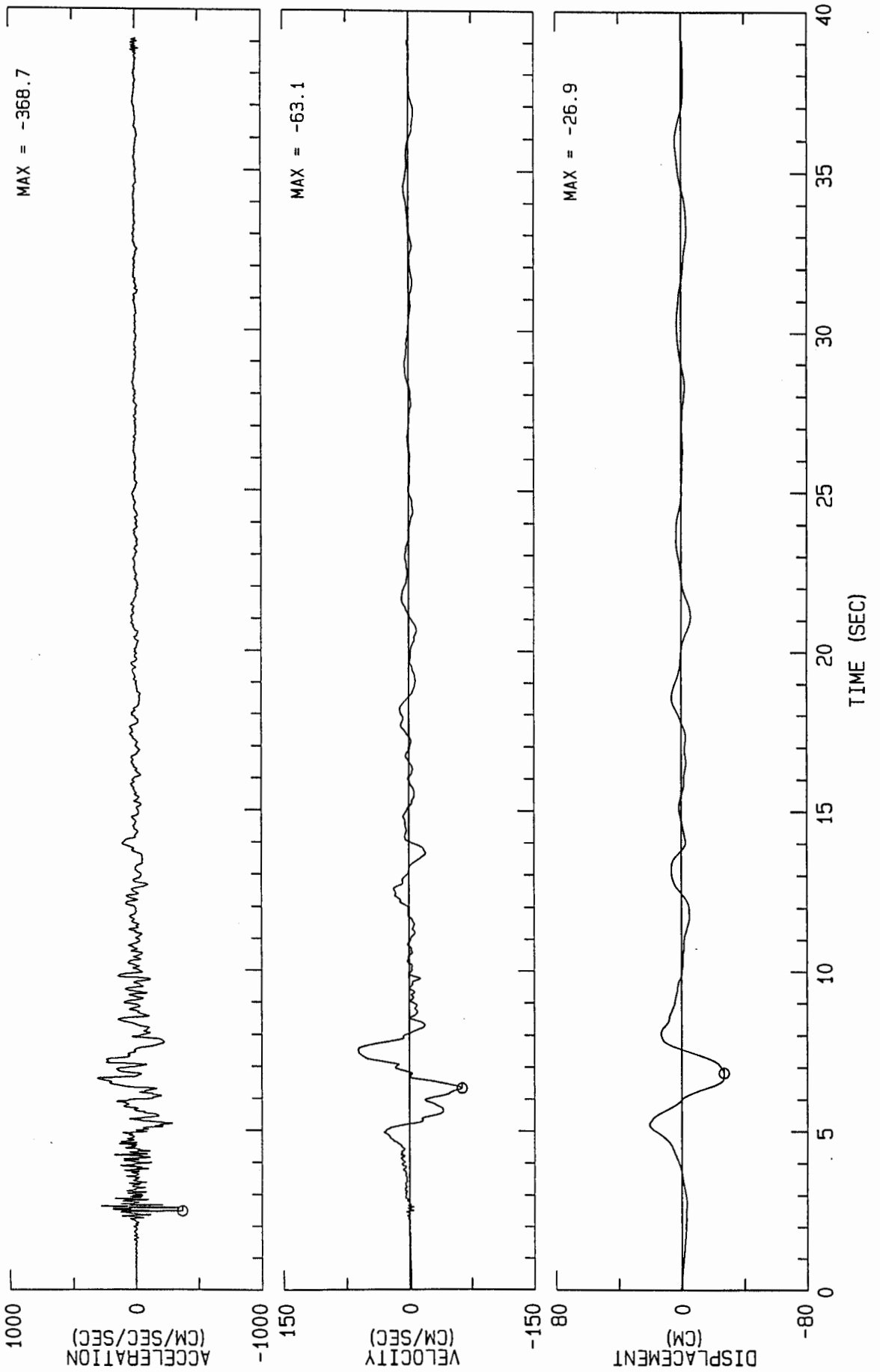


IMPERIAL VALLEY EARTHQUAKE OF OCTOBER 15, 1979

EL CENTRO, ARRAY 6, HUSTON RD. CHN 2: UP
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .03-.17 TO 23.0-25.0 HZ. U0942-S0000-00000.00 083095.1623-ELCENT06



IMPERIAL VALLEY EARTHQUAKE OF OCTOBER 15, 1979
EL CENTRO, ARRAY 6, HUSTON RD. CHN 3: 140 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .03-.17 TO 23.0-25.0 HZ. U0942-S0000-00000.00 083095.1623-ELCENT06



EL CENTRO, ARRAY 6, HUSTON RD.: CSMIP S/N 942

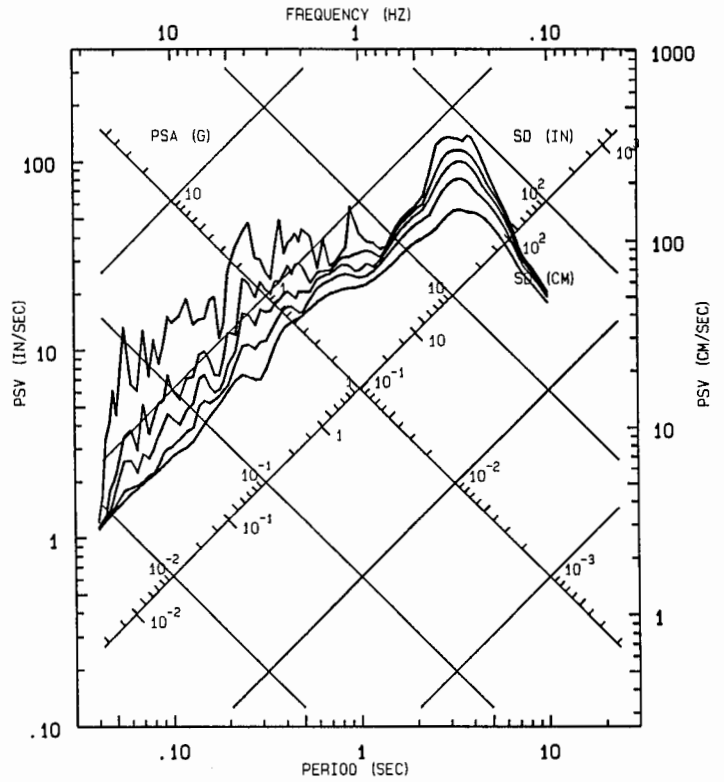
IMPERIAL VALLEY EARTHQUAKE
OCTOBER 15, 1979

PHASE 3 DATA: RESPONSE SPECTRA
USABLE DATA BANDWIDTH: 0.13 TO 23.6 HZ
(0.04 TO 7.81 SEC)

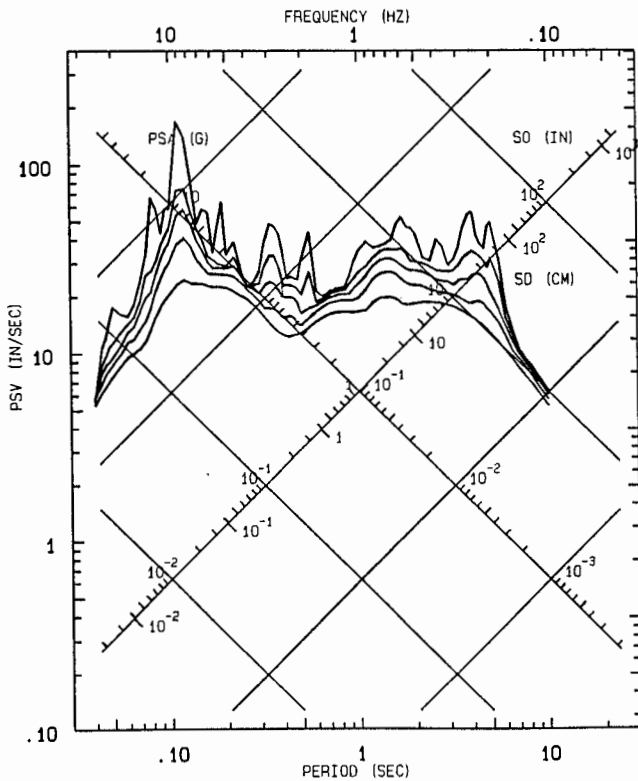
RECORD ID: U0942-S0000-00000.00

— RESPONSE SPECTRA: PSV, PSA & SD
DAMPING VALUES: 0, 2, 5, 10, 20%

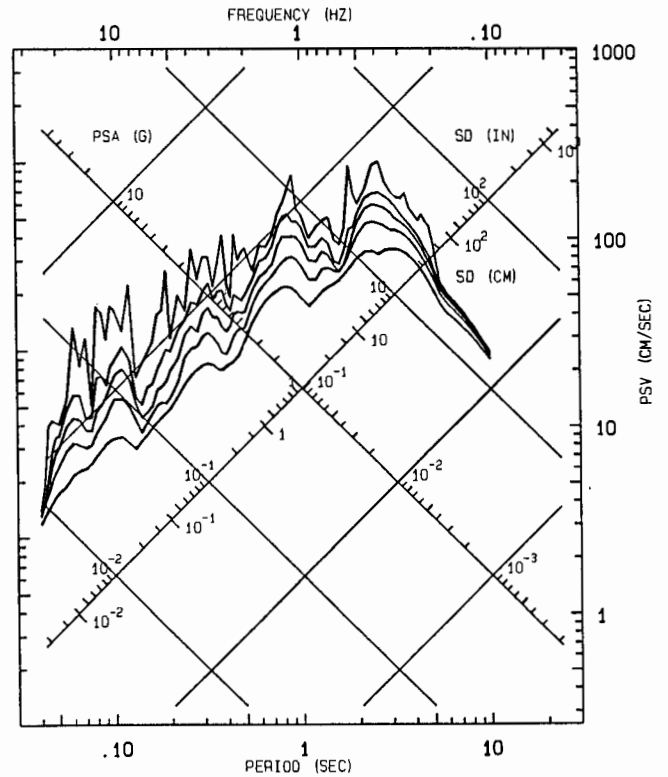
CHN 1: 230 DEG



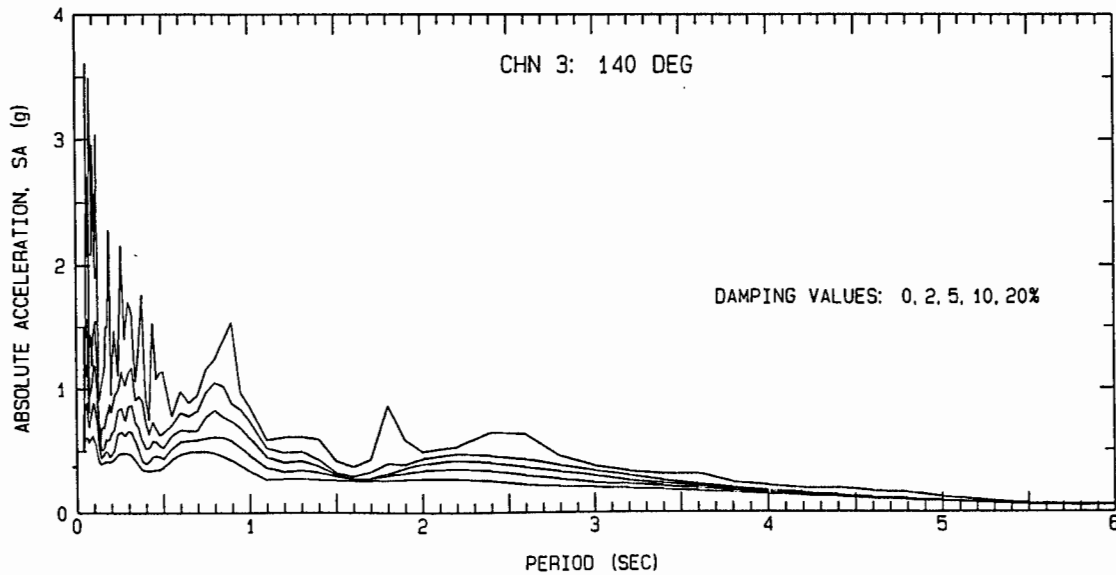
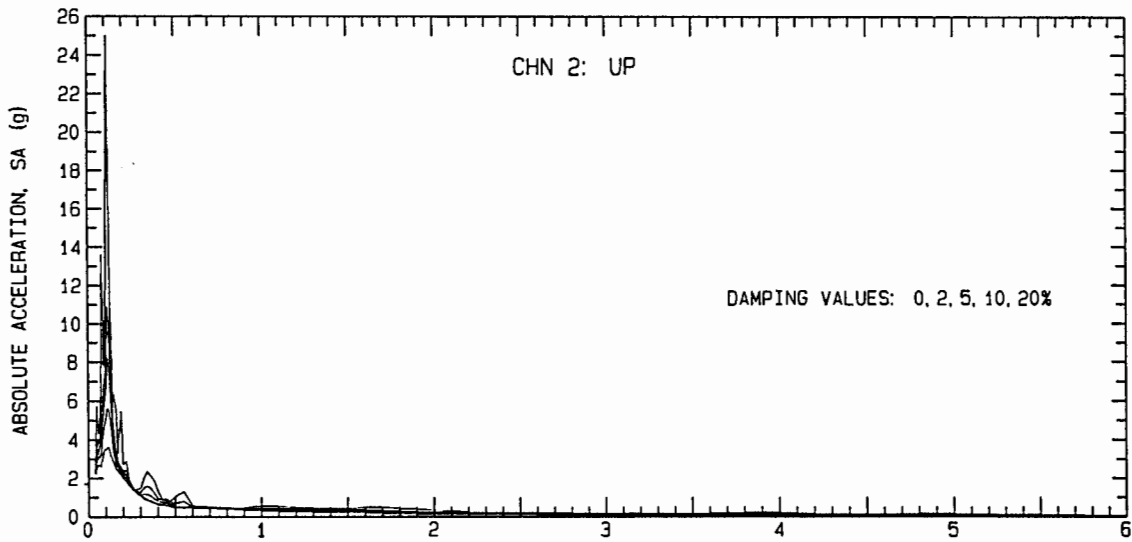
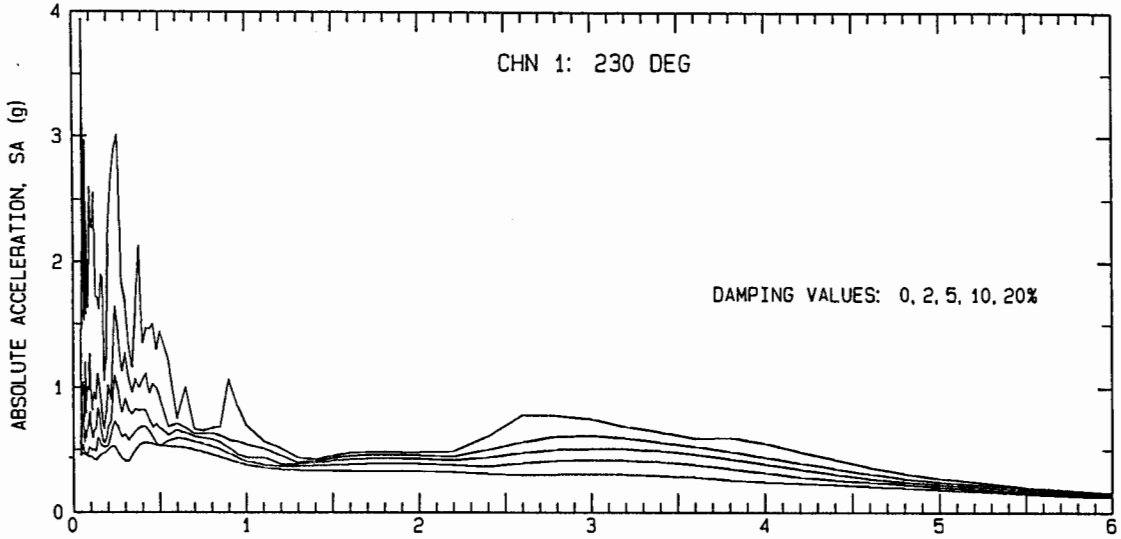
CHN 2: UP



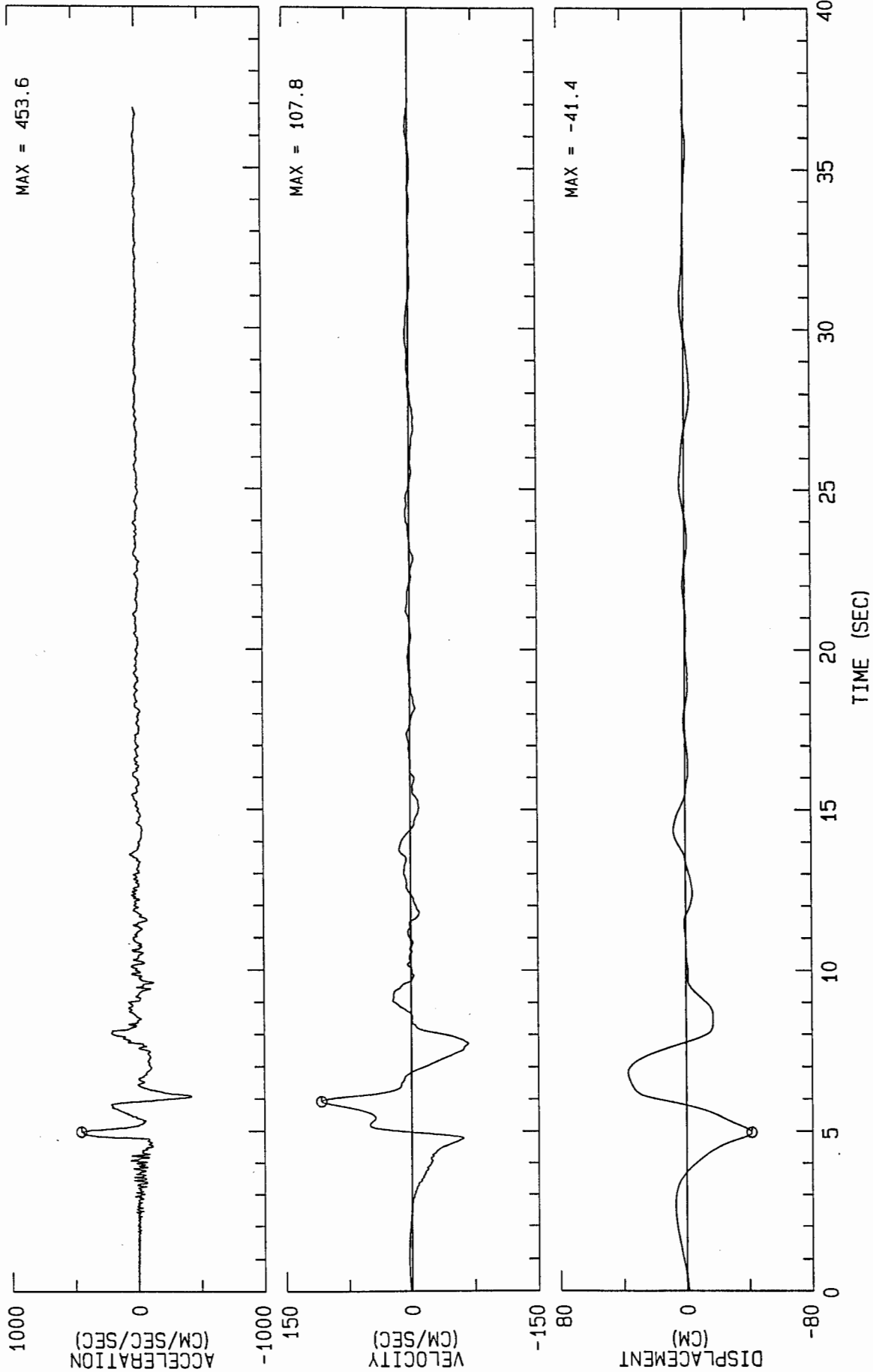
CHN 3: 140 DEG



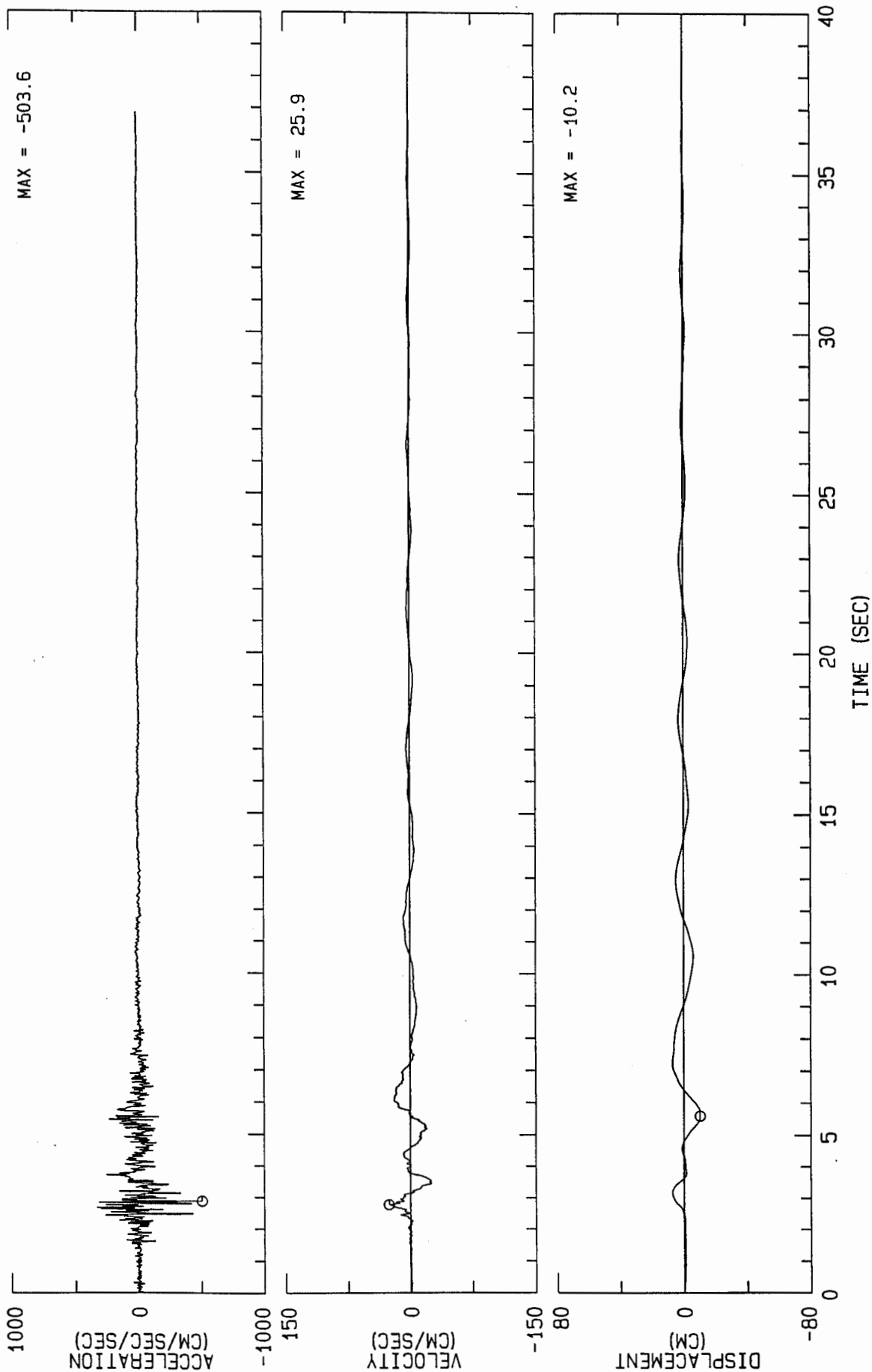
IMPERIAL VALLEY EARTHQUAKE OF OCTOBER 15, 1979
EL CENTRO, ARRAY 6, HUSTON RD.
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .03-.17 TO 23.0-25.0 HZ.
U0942-S0000-00000.00 0B3095.1630-ELCENT06



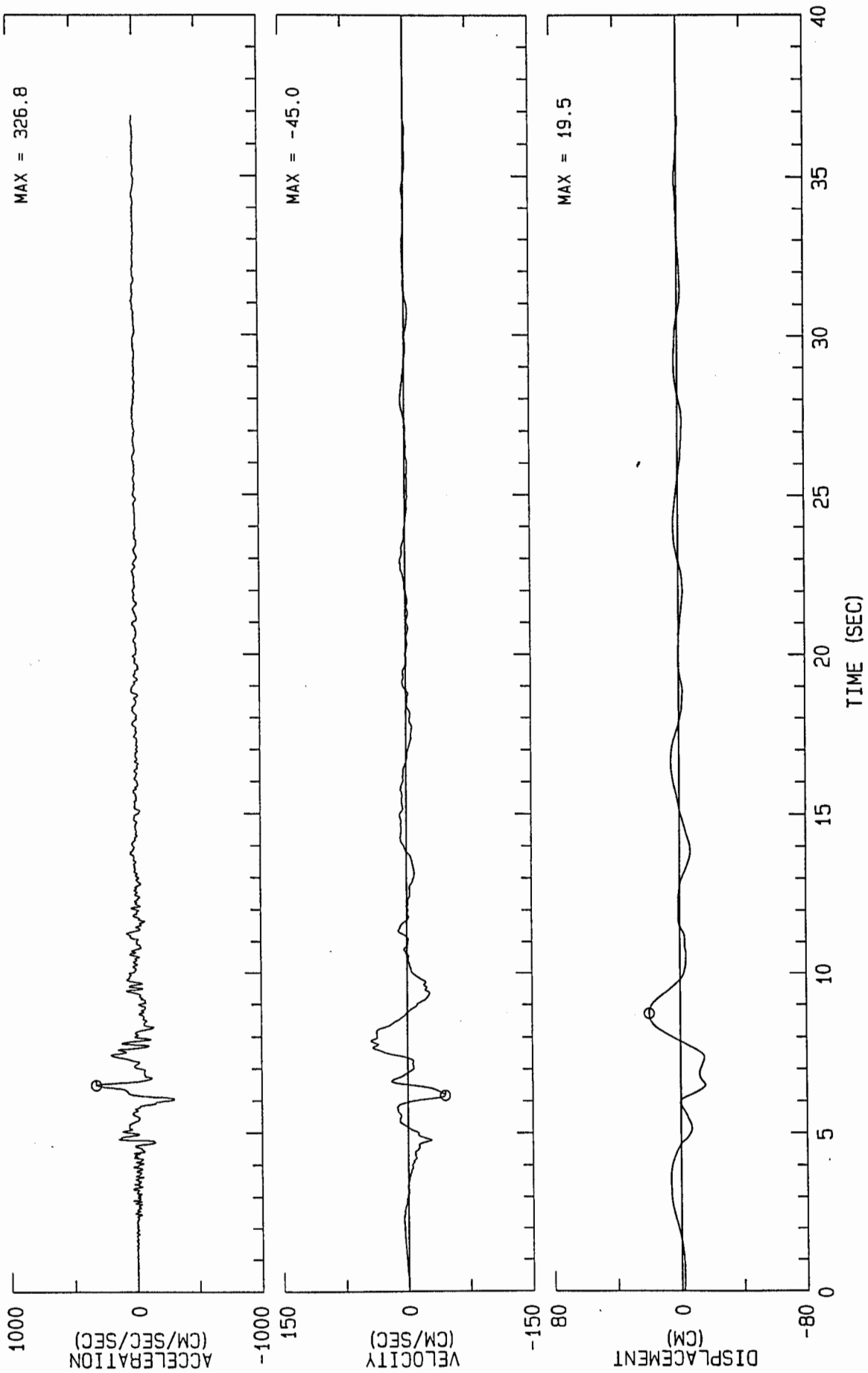
IMPERIAL VALLEY EARTHQUAKE OF OCTOBER 15, 1979
EL CENTRO, ARRAY 7, IMPERIAL VALLEY COLL. CHN 1: 230 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .03-.17 TO 23.0-25.0 HZ. U5028-S0000-00000.00 083095.1548-ELCENT07



IMPERIAL VALLEY EARTHQUAKE OF OCTOBER 15, 1979
EL CENTRO, ARRAY 7, IMPERIAL VALLEY COLL. CHN 2: UP
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .03-.17 TO 23.0-25.0 HZ. U5028-S0000-00000.00 083095.1548-ELCENT07



IMPERIAL VALLEY EARTHQUAKE OF OCTOBER 15, 1979
EL CENTRO, ARRAY 7, IMPERIAL VALLEY COLL. CHN 3: 140 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .03-.17 TO 23.0-25.0 HZ. U5028-S0000-00000.00 083095.1548-ELCENT07



EL CENTRO, ARRAY 7, IMPERIAL VALLEY COLL.: CSMIP S/N 028

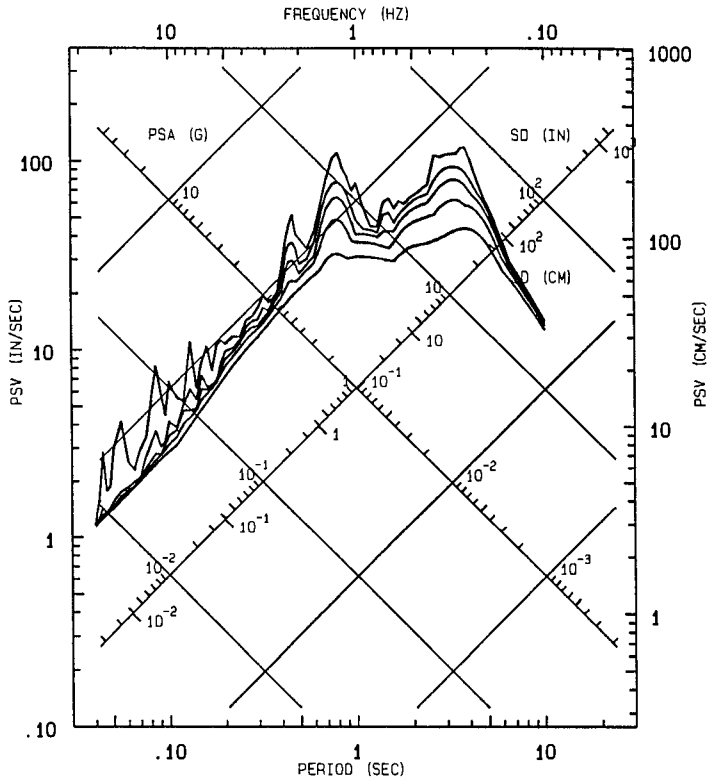
IMPERIAL VALLEY EARTHQUAKE
OCTOBER 15, 1979

PHASE 3 DATA: RESPONSE SPECTRA
USABLE DATA BANDWIDTH: 0.13 TO 23.6 HZ
(0.04 TO 7.81 SEC)

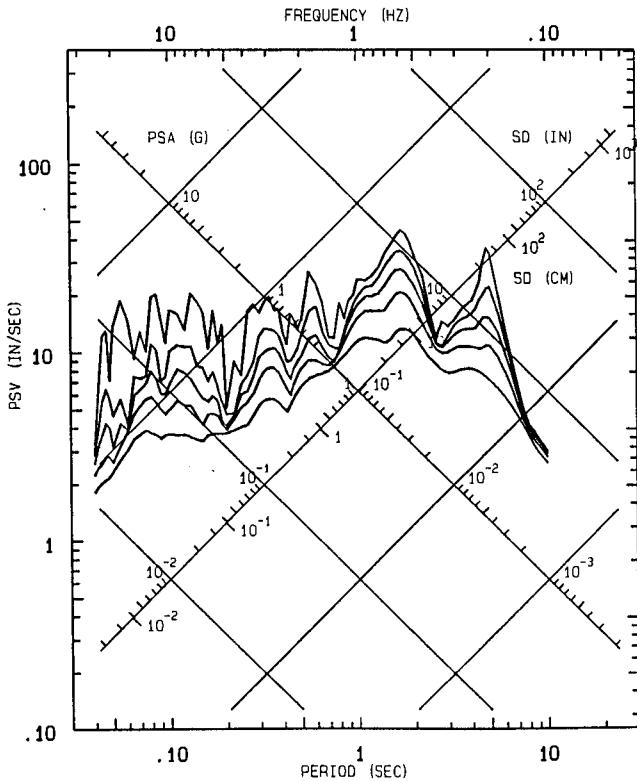
RECORD ID: U5028-S0000-00000.00

— RESPONSE SPECTRA: PSV, PSA & SD
DAMPING VALUES: 0, 2, 5, 10, 20%

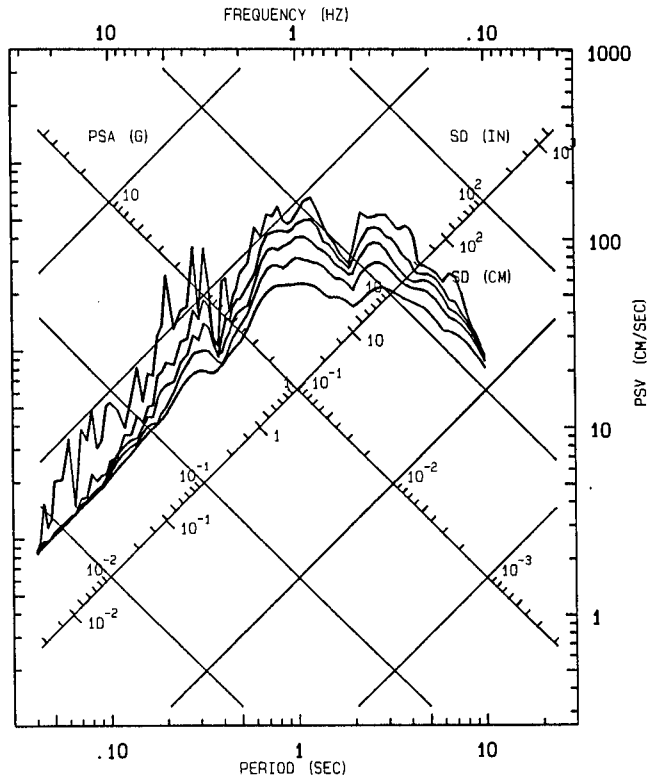
CHN 1: 230 DEG



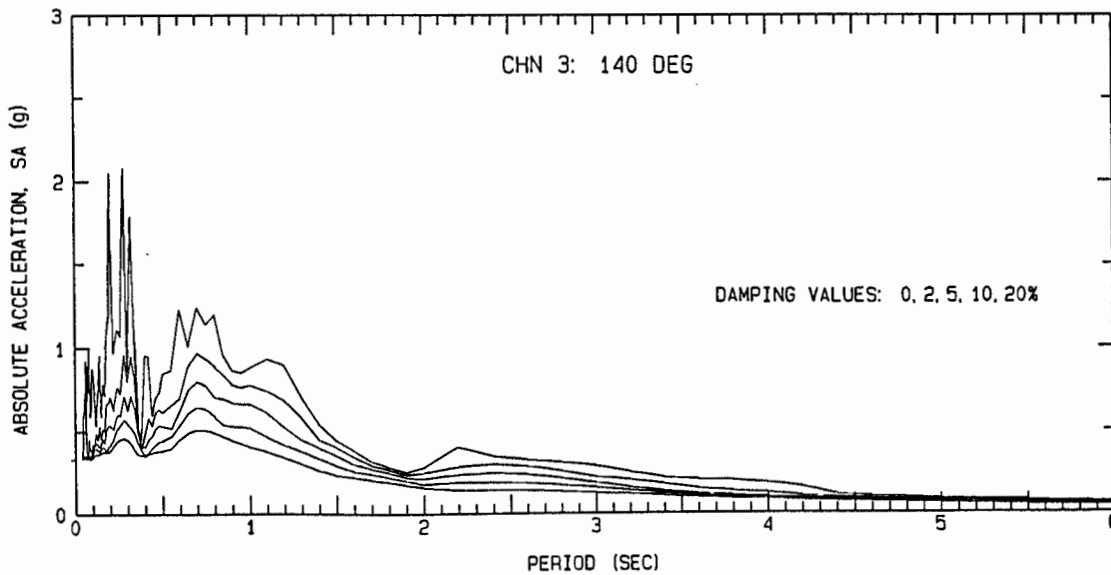
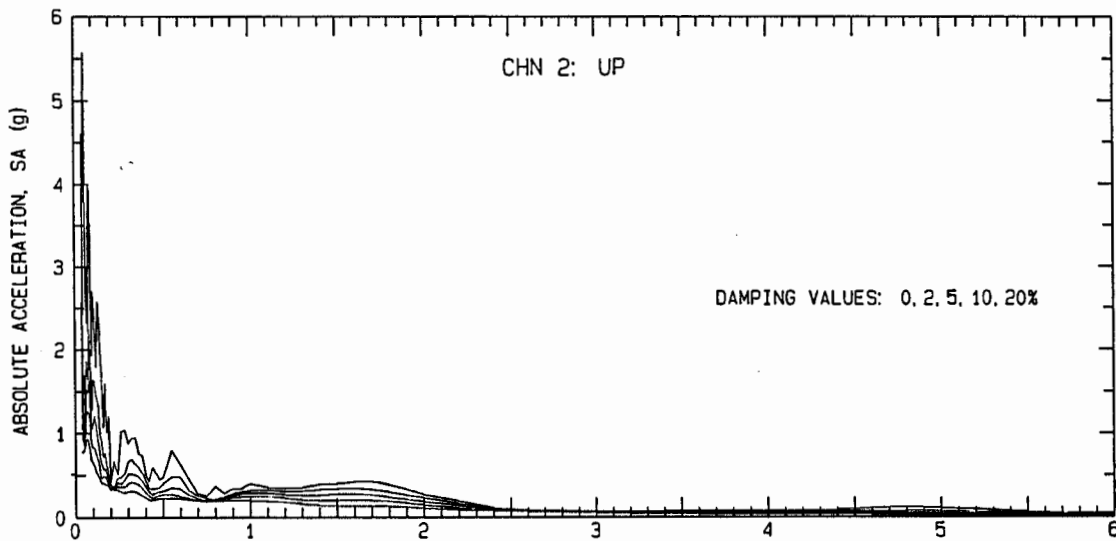
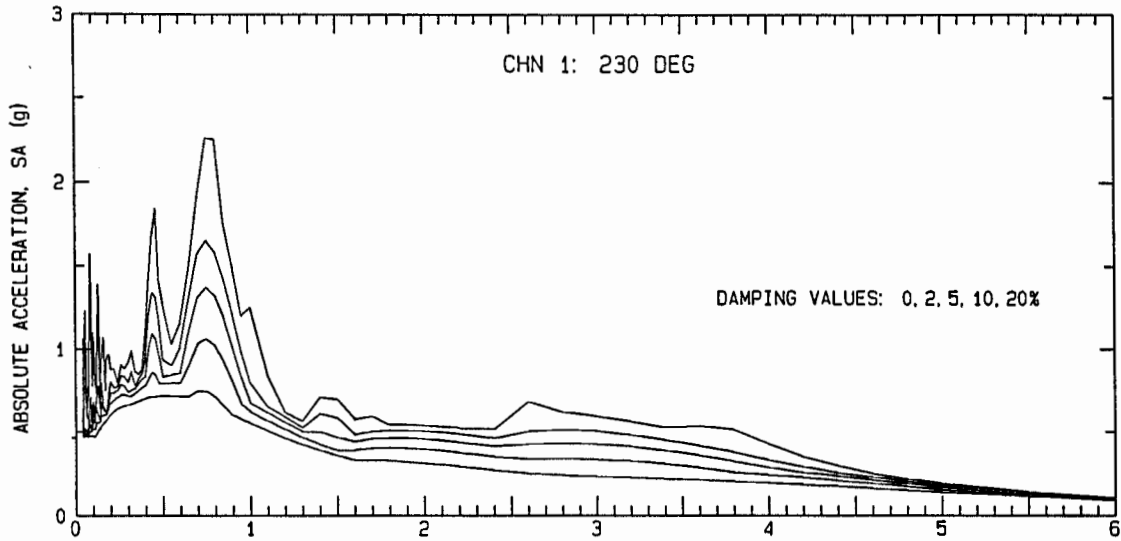
CHN 2: UP



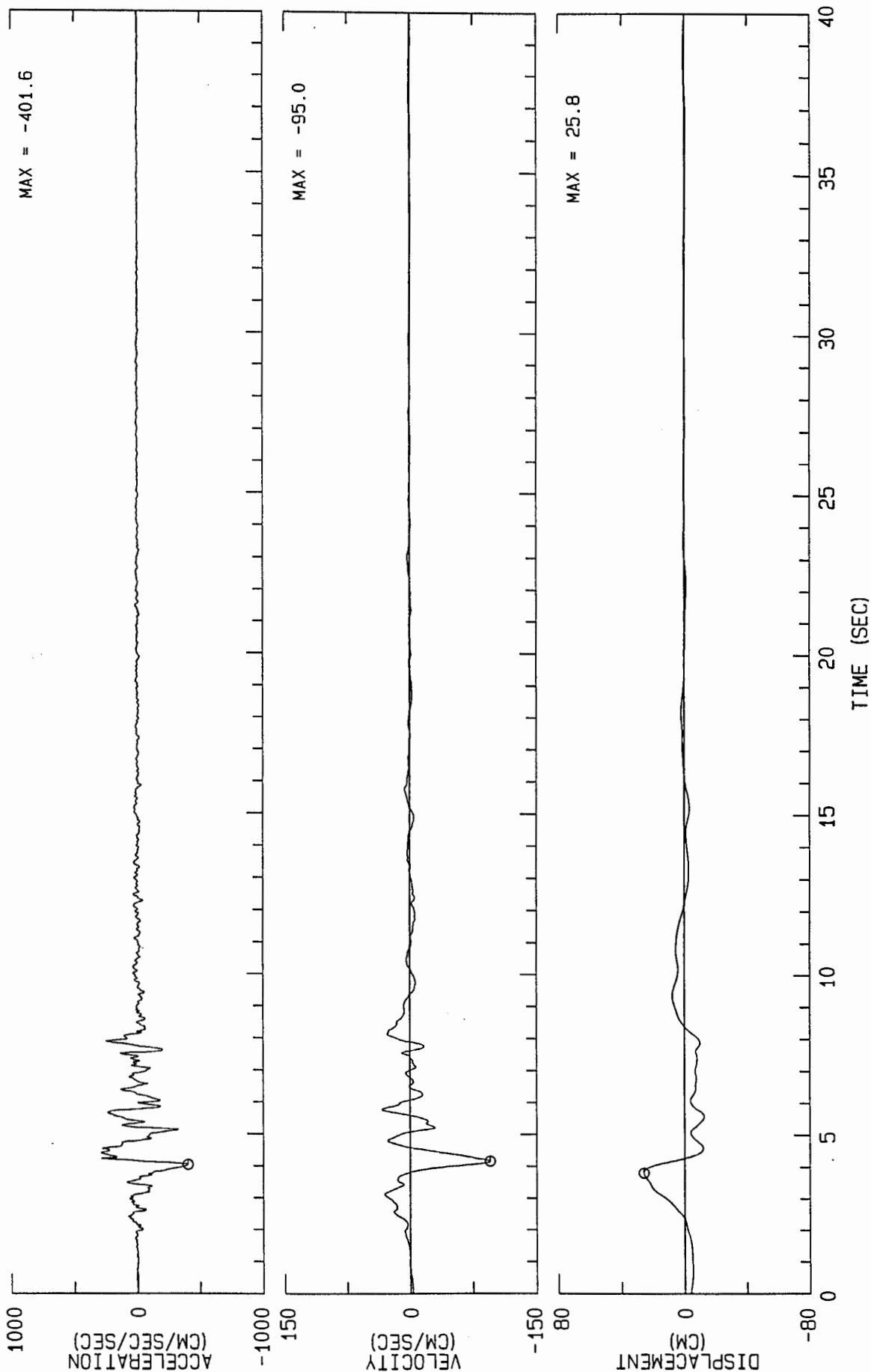
CHN 3: 140 DEG



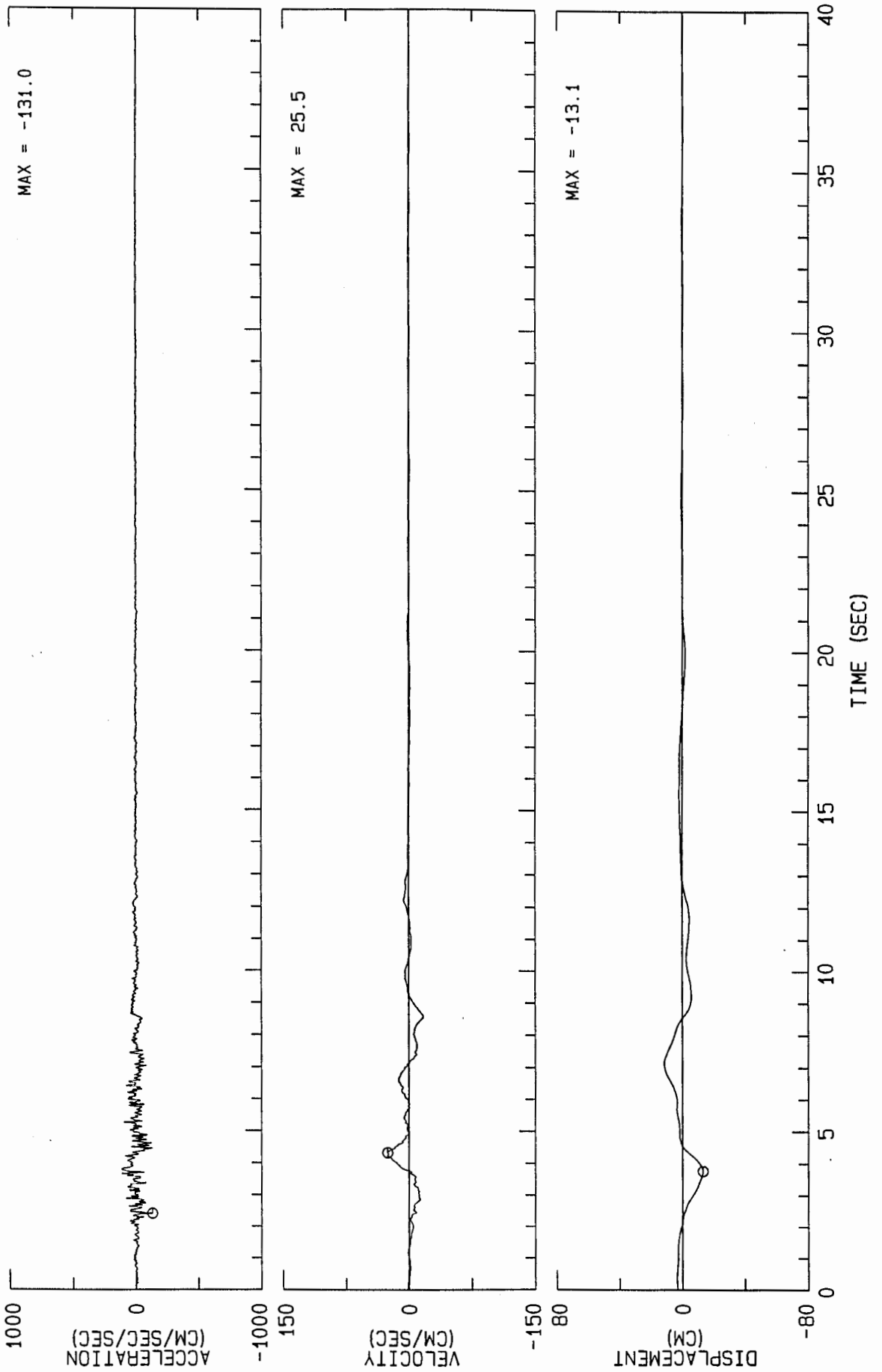
IMPERIAL VALLEY EARTHQUAKE OF OCTOBER 15, 1979
EL CENTRO, ARRAY 7, IMPERIAL VALLEY COLL.
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .03-.17 TO 23.0-25.0 HZ.
U5028-S0000-00000.00 083095.1551-ELCENT07



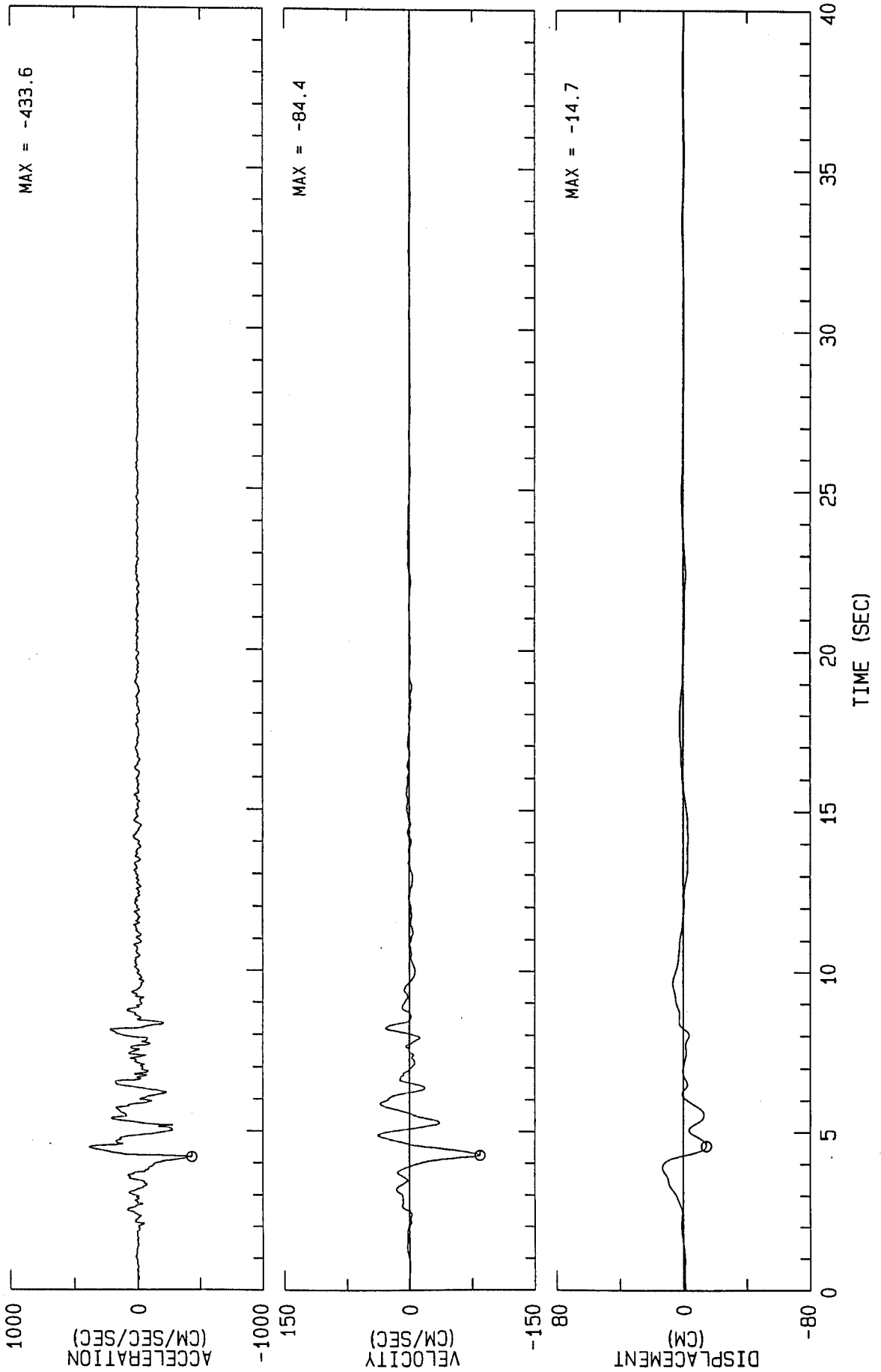
SANTA CRUZ MTS (LOMA PRIETA) EARTHQUAKE OCTOBER 17, 1989 17:04 PDT
LEXINGTON DAM CHN 1: 90 DEG (LEFT ABUTMENT)
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .05-.10 TO 23.0-25.0 HZ. 57180-S2130-89292.02 081895.1412-0SHPD



SANTA CRUZ MTS (LOMA PRIETA) EARTHQUAKE OCTOBER 17, 1989 17:04 PDT
LEXINGTON DAM CHN 2: UP (LEFT ABUTMENT)
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .05-.10 TO 23.0-25.0 HZ. 57180-S2130-89292.02 081895.1412-05HPD



SANTA CRUZ MTNS (LOMA PRIETA) EARTHQUAKE OCTOBER 17, 1989 17:04 PDT
LEXINGTON DAM CHN 3: 0 DEG (LEFT ABUTMENT)
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .05-.10 TO 23.0-25.0 HZ. 57180-S2130-89292.02 081895.1412-0SHPD



LEXINGTON DAM: CSMIP S/N 180

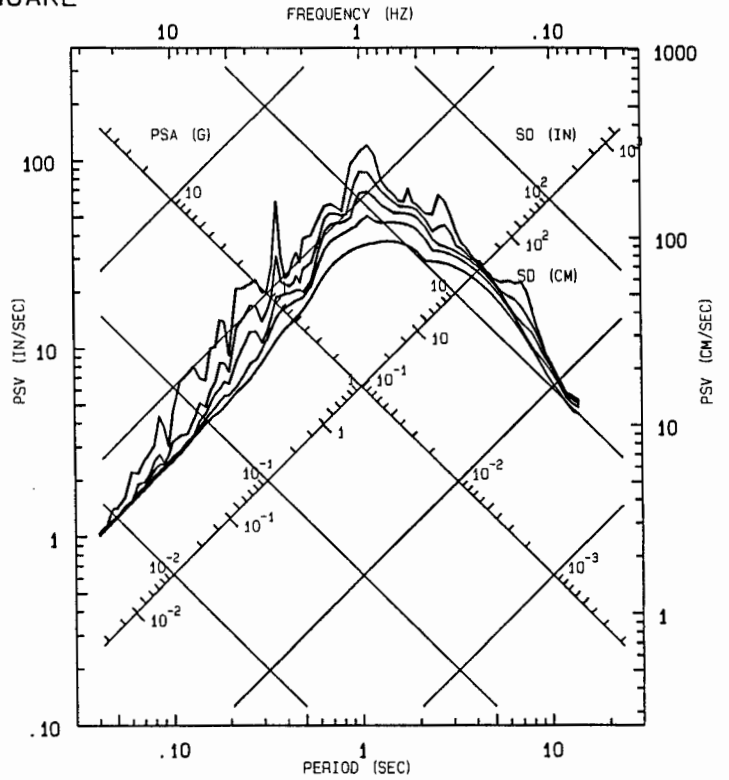
SANTA CRUZ MTNS (LOMA PRIETA) EARTHQUAKE
 OCTOBER 17, 1989 17:04 PDT

PHASE 3 DATA: RESPONSE SPECTRA
 USABLE DATA BANDWIDTH: 0.09 TO 23.6 HZ
 (0.04 TO 11.8 SEC)

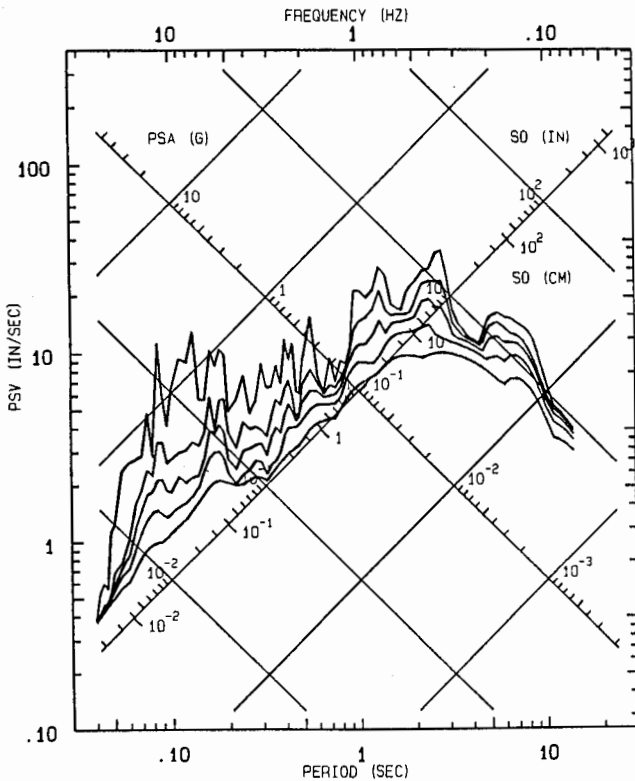
RECORD ID: 57180-S2130-89292.02

— RESPONSE SPECTRA: PSV, PSA & SD
 DAMPING VALUES: 0, 2, 5, 10, 20%

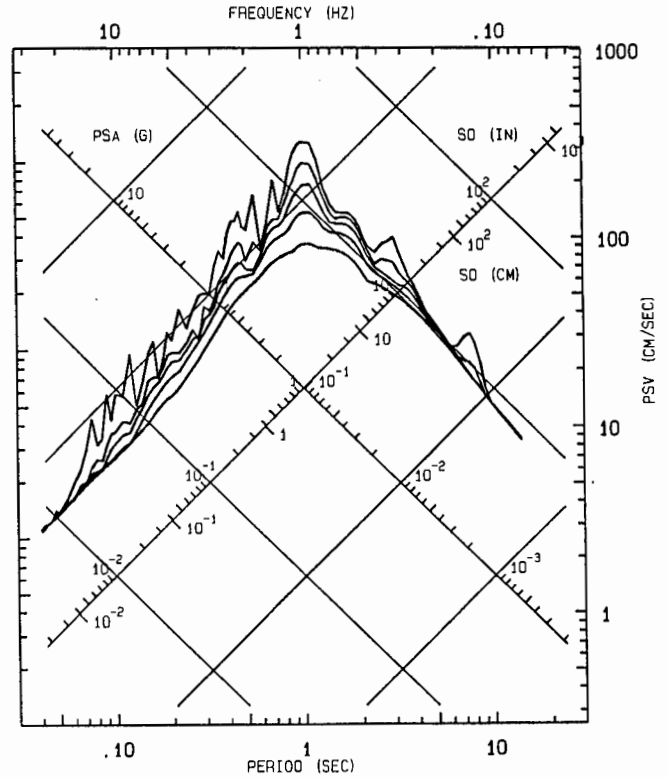
CHN 1: 90 DEG
 LEFT ABUTMENT



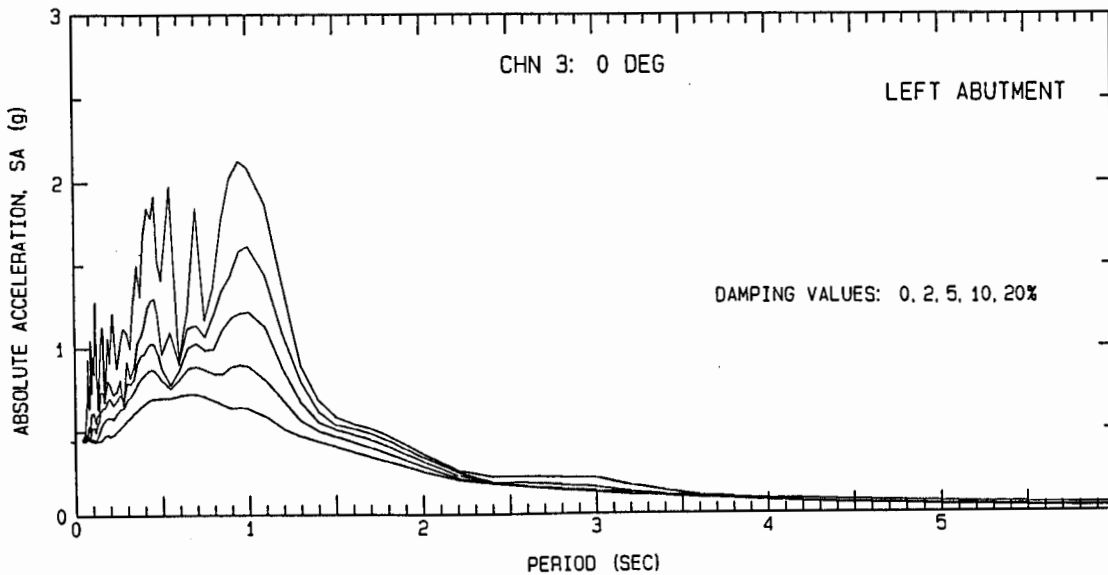
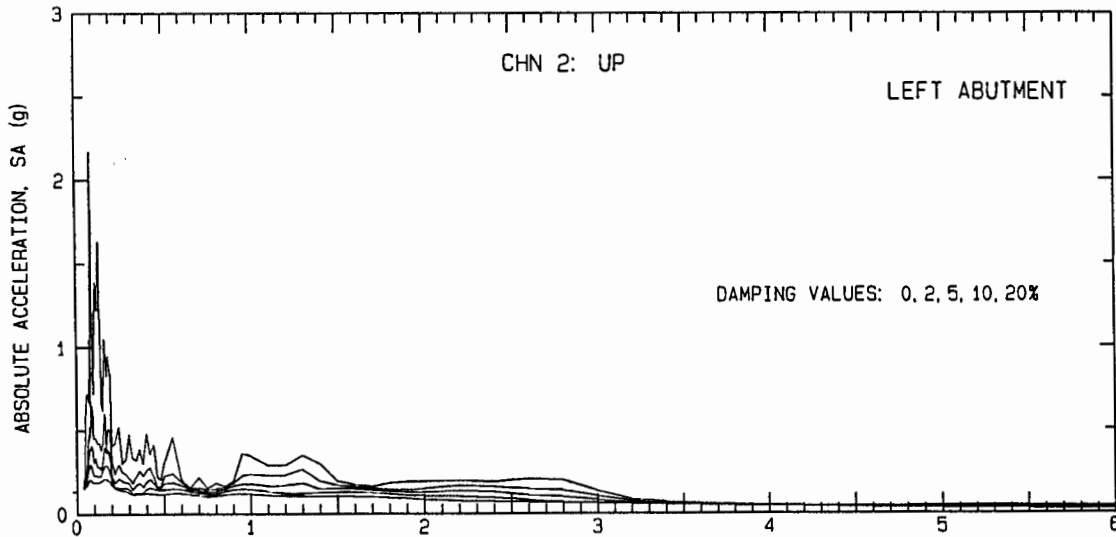
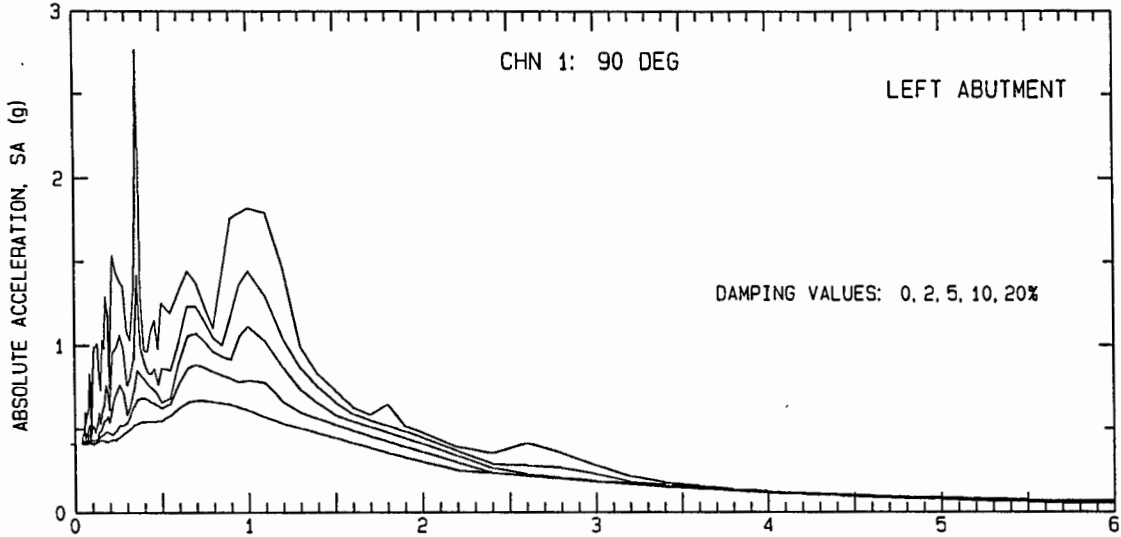
CHN 2: UP
 LEFT ABUTMENT



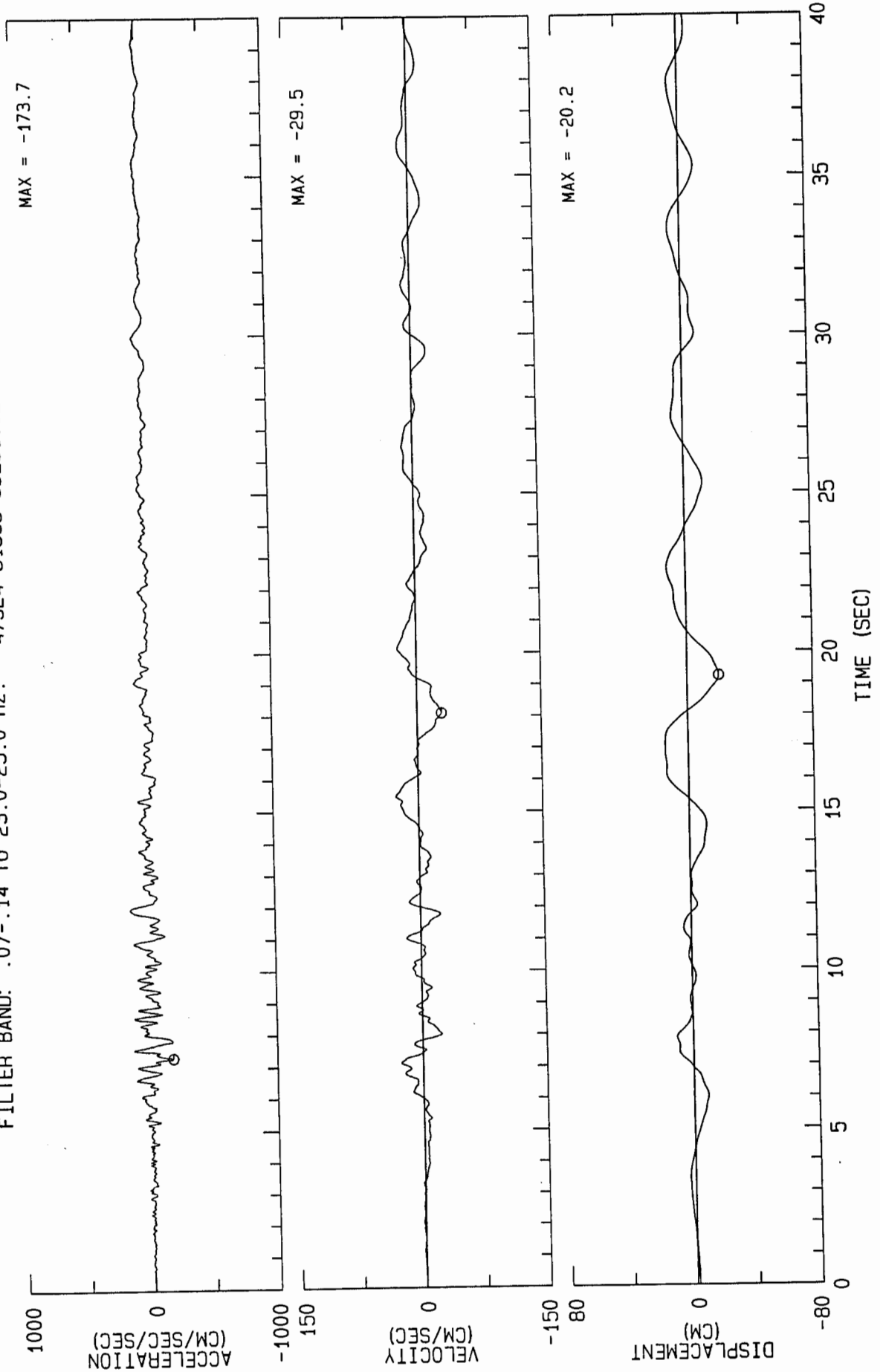
CHN 3: 0 DEG
 LEFT ABUTMENT



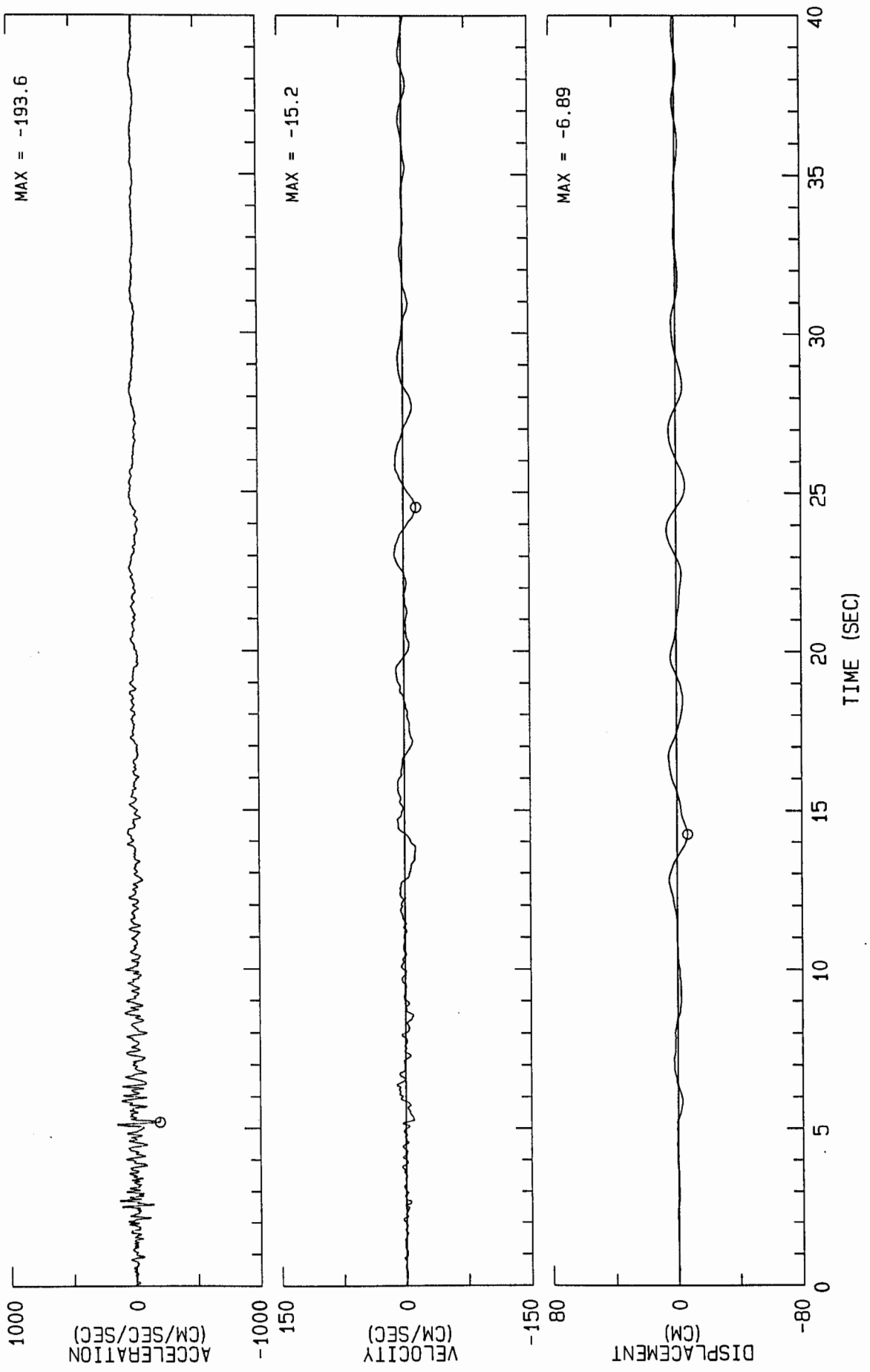
SANTA CRUZ MTNS (LOMA PRIETA) EARTHQUAKE OCTOBER 17, 1989 17:04 PDT.
LEXINGTON DAM
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .05-.10 TO 23.0-25.0 HZ.
57180-S2130-89292.02 082195.0952-0SHPD



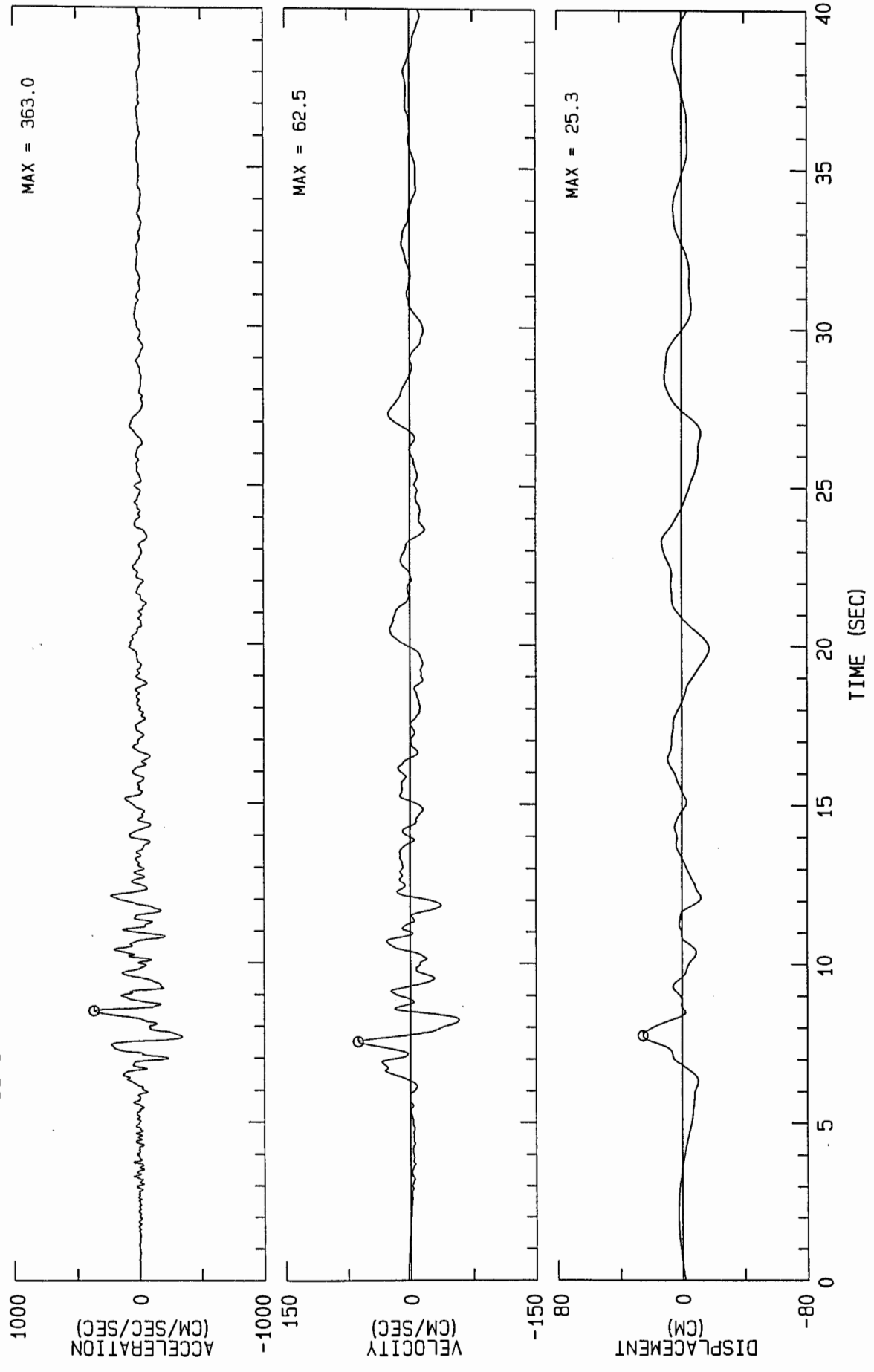
SANTA CRUZ MTNS (LOMA PRIETA) EARTHQUAKE OCTOBER 17, 1989 17:04 PDT
HOLLISTER - SOUTH STREET AND PINE DRIVE CHN 1: 90 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .07-.14 TO 23.0-25.0 HZ. 47524-S1585-89291.02 081895.1401-0SHPD



SANTA CRUZ MTNS (LOMA PRIETA) EARTHQUAKE OCTOBER 17, 1989 17:04 PDT
HOLLISTER - SOUTH STREET AND PINE DRIVE CHN 2: UP
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .07-.14 TO 23.0-25.0 HZ. 47524-S1585-89291.02 081895.1401-0SHPD



SANTA CRUZ MTNS (LOMA PRIETA) EARTHQUAKE OCTOBER 17, 1989 17:04 PDT
HOLLISTER - SOUTH STREET AND PINE DRIVE CHN 3: 0 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .07-.14 TO 23.0-25.0 HZ. 47524-S1585-89291.02 081895.1401-OSHPO



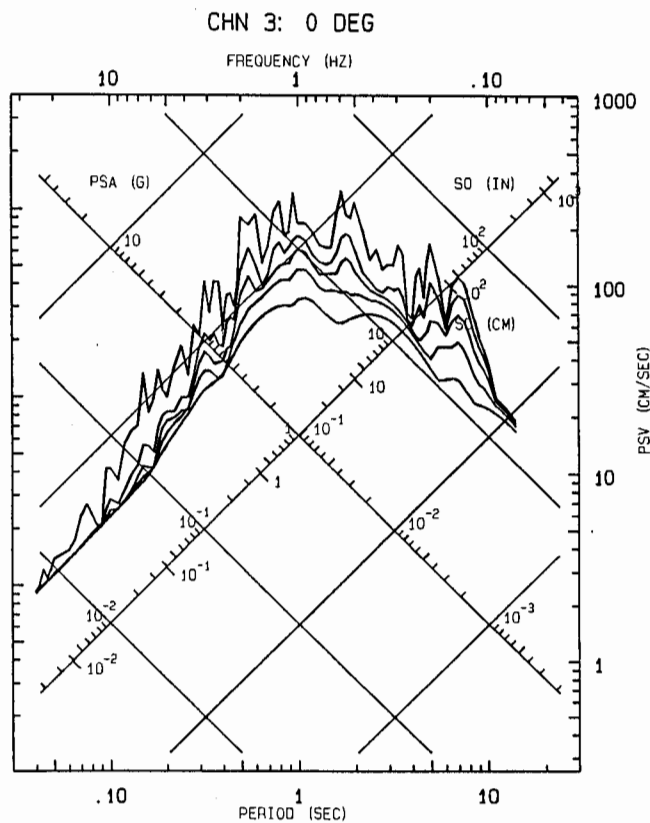
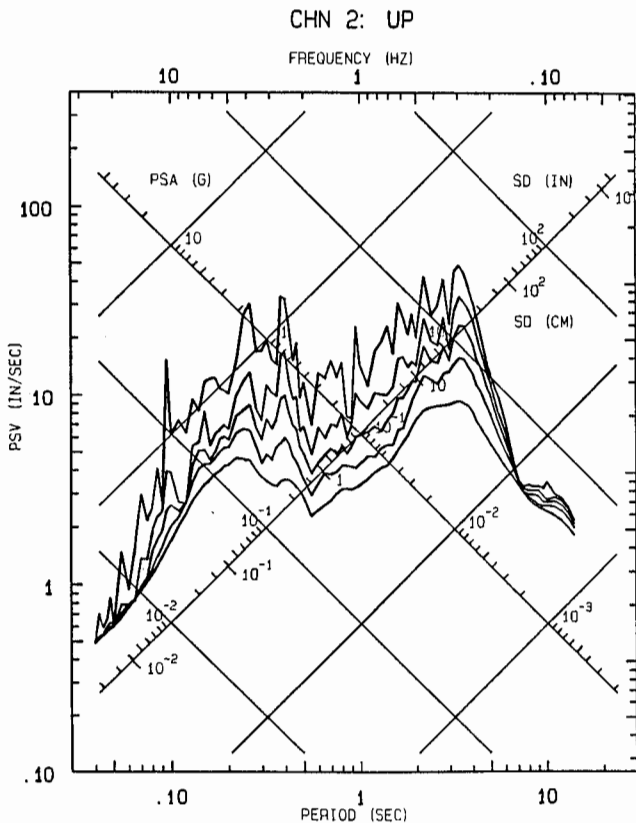
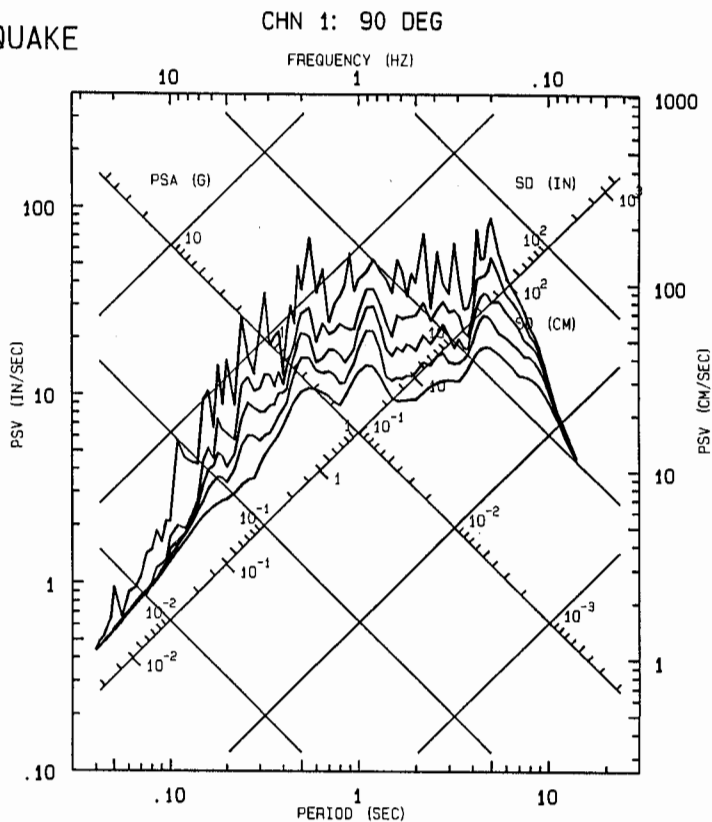
HOLLISTER - SOUTH STREET AND PINE DRIVE: CSMIP S/N 524

SANTA CRUZ MTNS (LOMA PRIETA) EARTHQUAKE
 OCTOBER 17, 1989 17:04 PDT

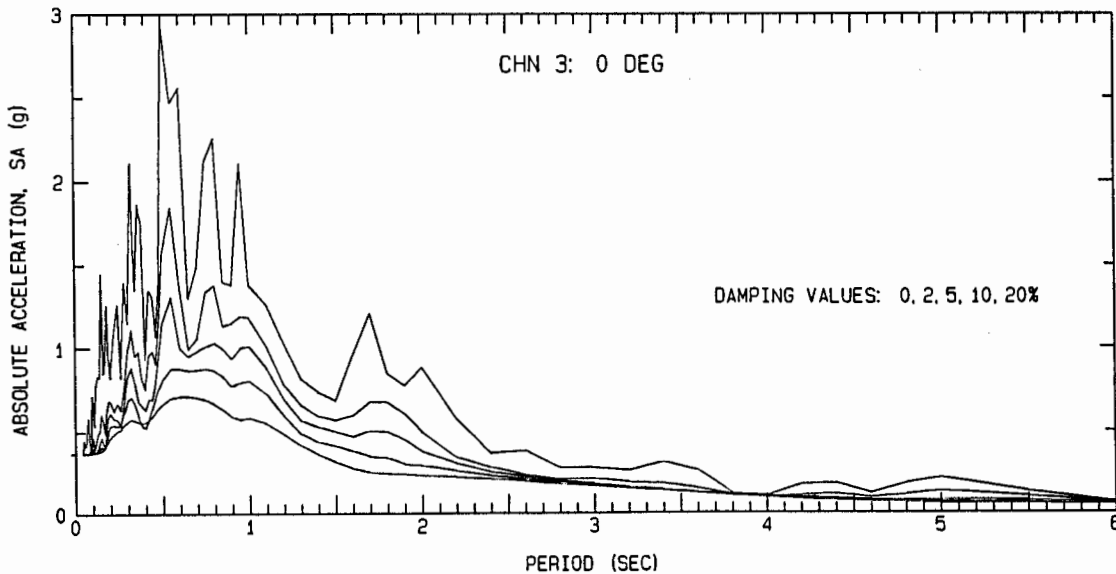
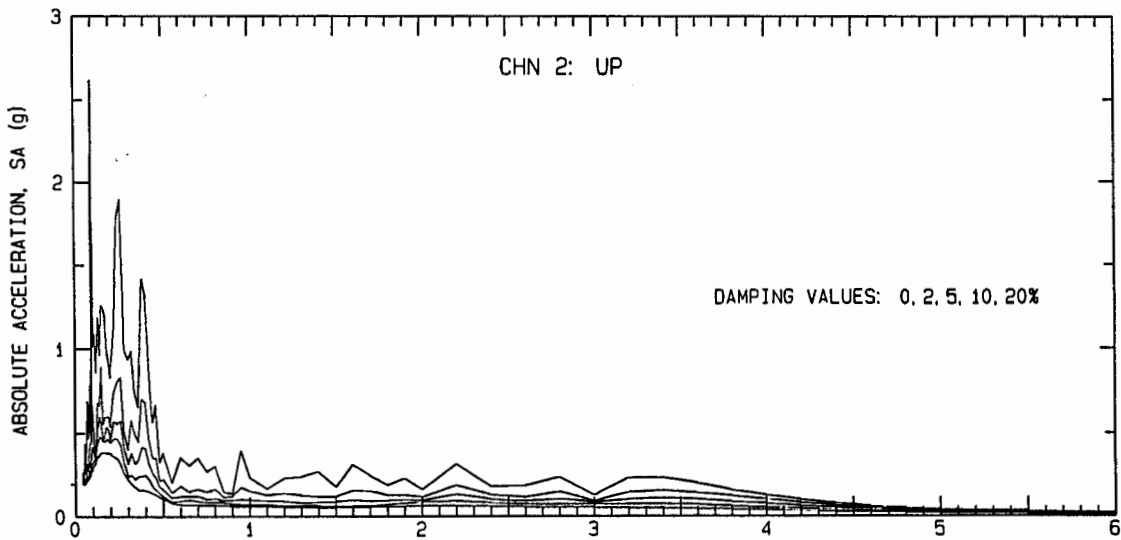
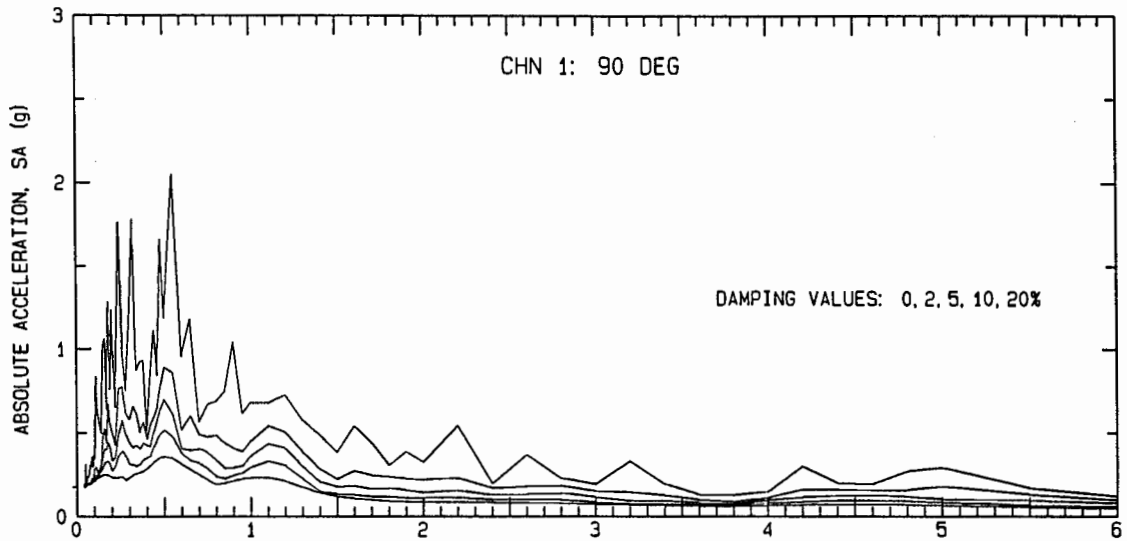
PHASE 3 DATA: RESPONSE SPECTRA
 USABLE DATA BANDWIDTH: 0.09 TO 23.6 HZ
 (0.04 TO 11.8 SEC)

RECORD ID: 47524-S1585-89291.02

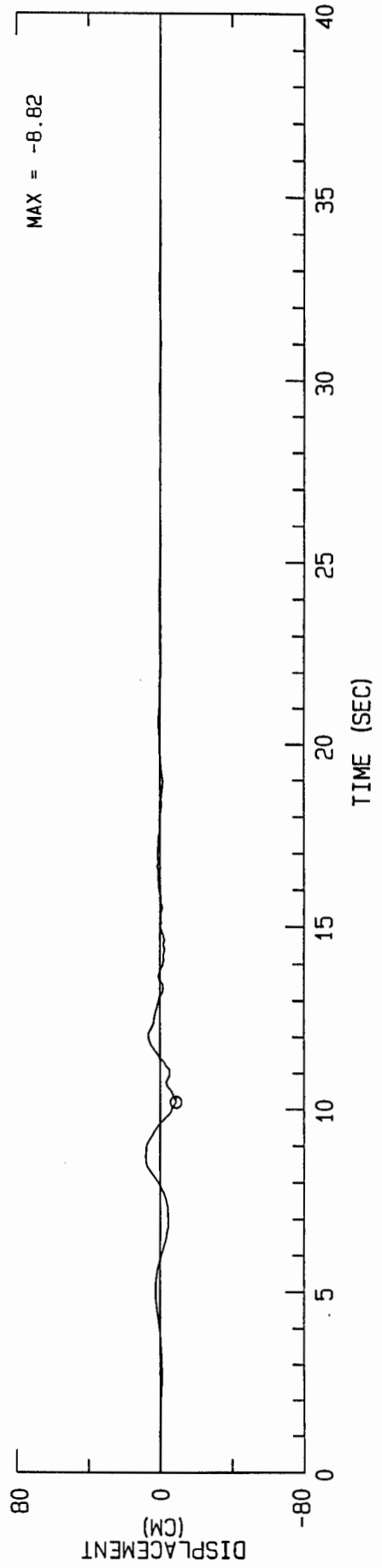
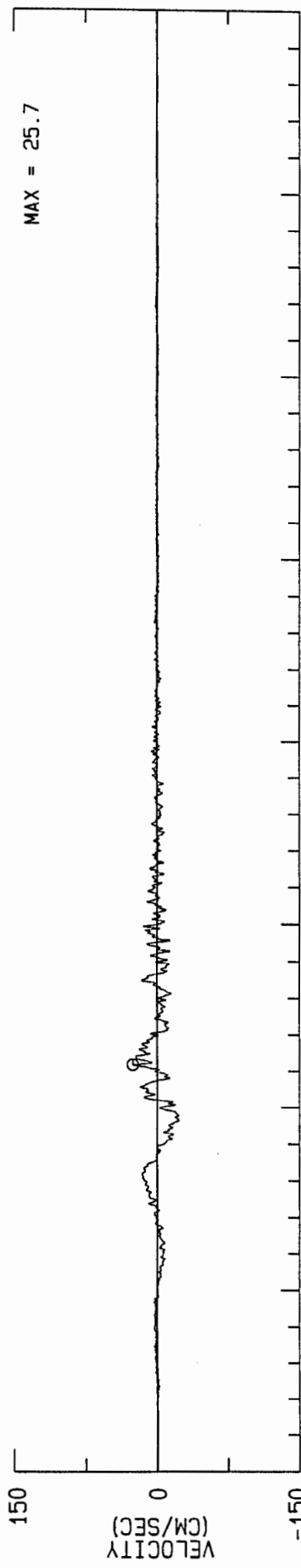
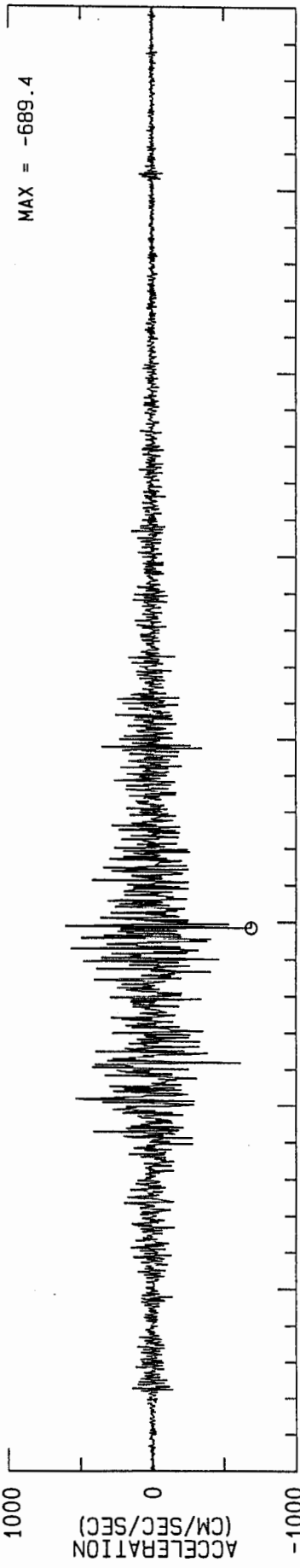
— RESPONSE SPECTRA: PSV, PSA & SD
 DAMPING VALUES: 0, 2, 5, 10, 20%



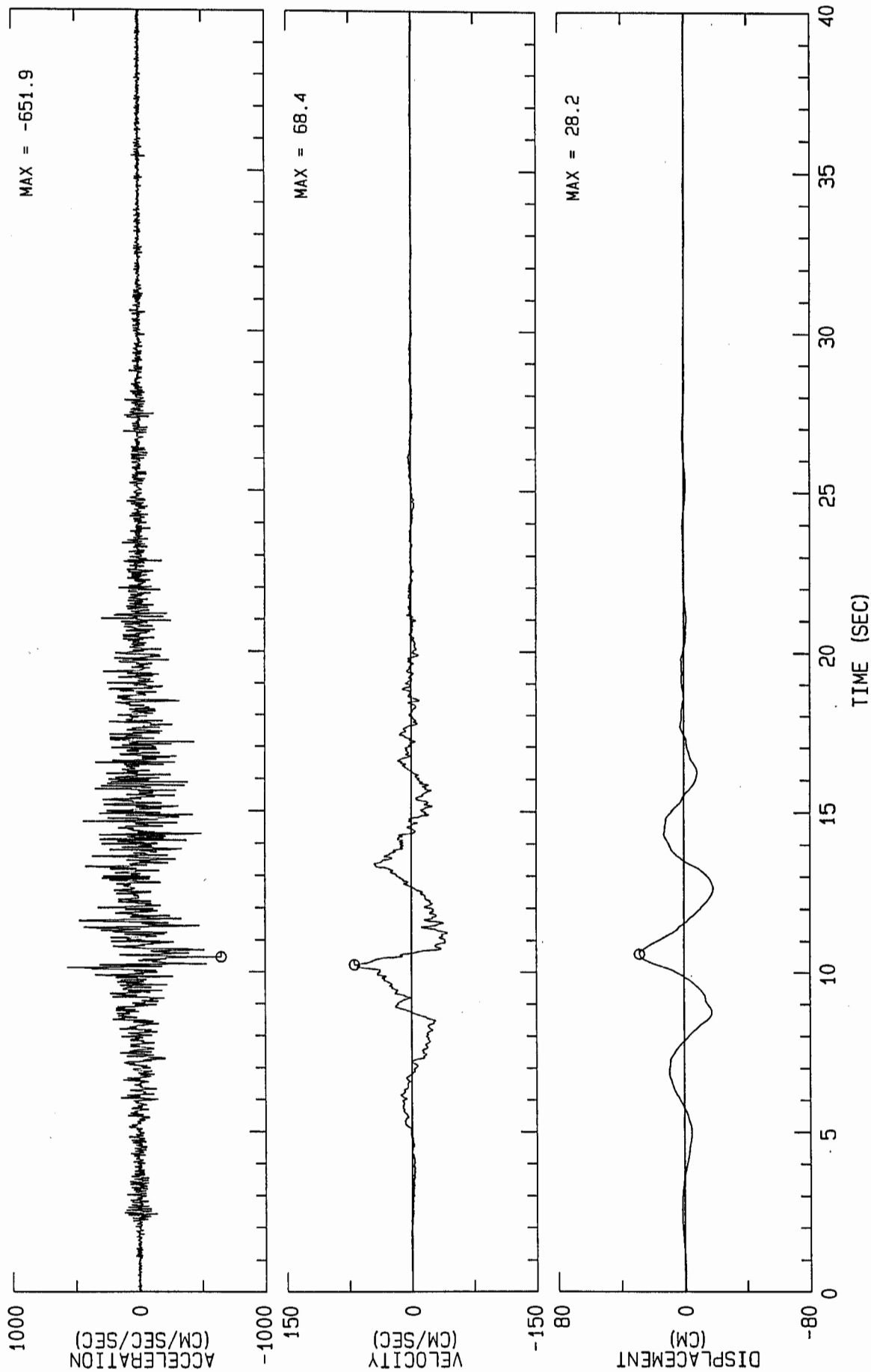
SANTA CRUZ MTNS (LOMA PRIETA) EARTHQUAKE OCTOBER 17, 1989 17:04 PDT
HOLLISTER - SOUTH STREET AND PINE DRIVE
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .05-.10 TO 23.0-25.0 HZ.
47524-S1585-89291.02 121489.1806-0SHPD



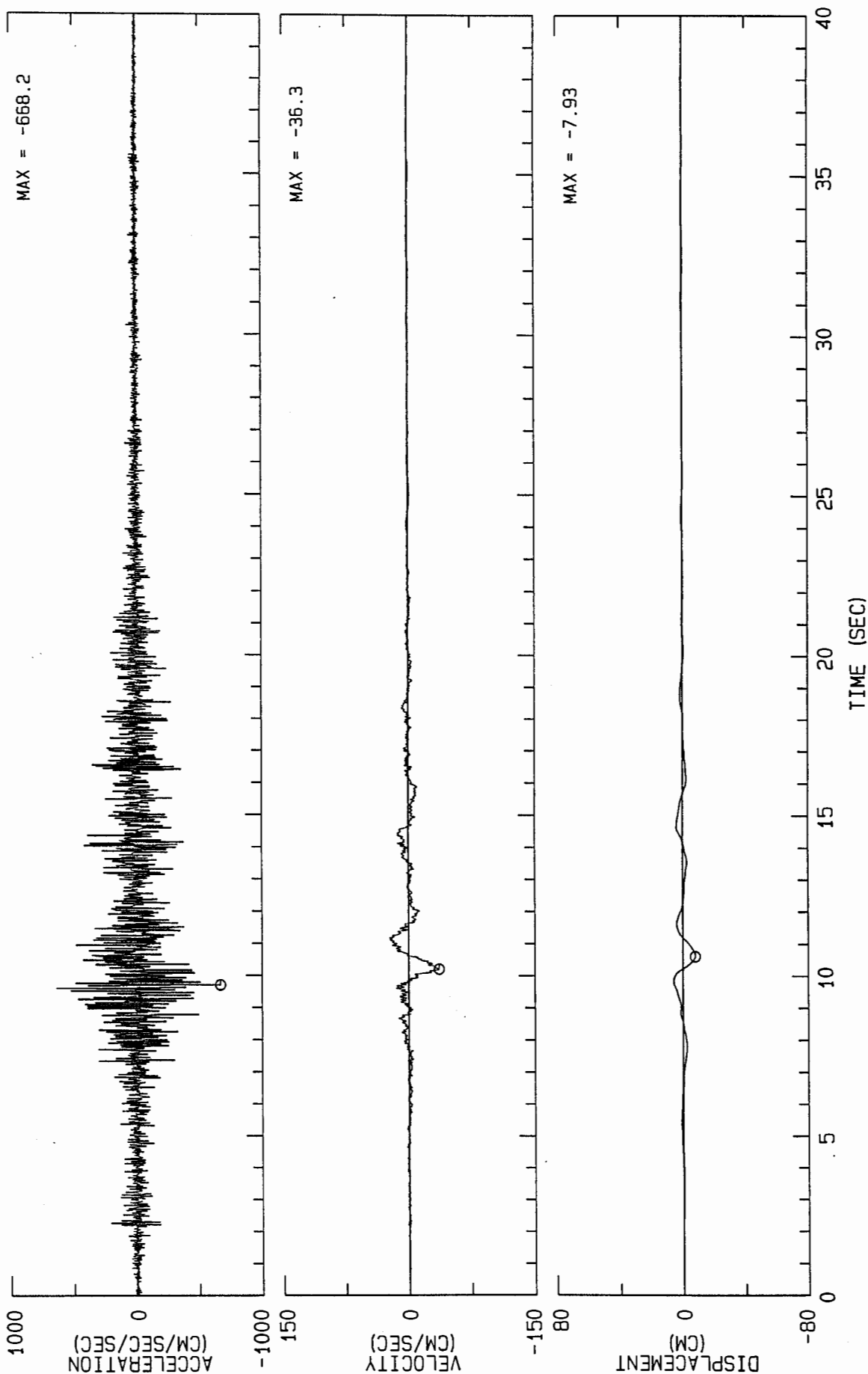
LANDERS EARTHQUAKE OF JUNE 28, 1992
LUCERNE VALLEY CHN 1: L
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .12-.24 TO 23.0-25.0 HZ. 500601-V0000-00000.00 083195.1544-0SHPD



LANDERS EARTHQUAKE OF JUNE 28, 1992
LUCERNE VALLEY CHN 2: T
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .12-.24 TO 23.0-25.0 HZ. S00601-V0000-00000.00 083195.1544-0SHPD



LANDERS EARTHQUAKE OF JUNE 28, 1992
LUCERNE VALLEY CHN 3: V
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .12-.24 TO 23.0-25.0 HZ. S00601-V0000-00000.00 083195.1544-OSHPD



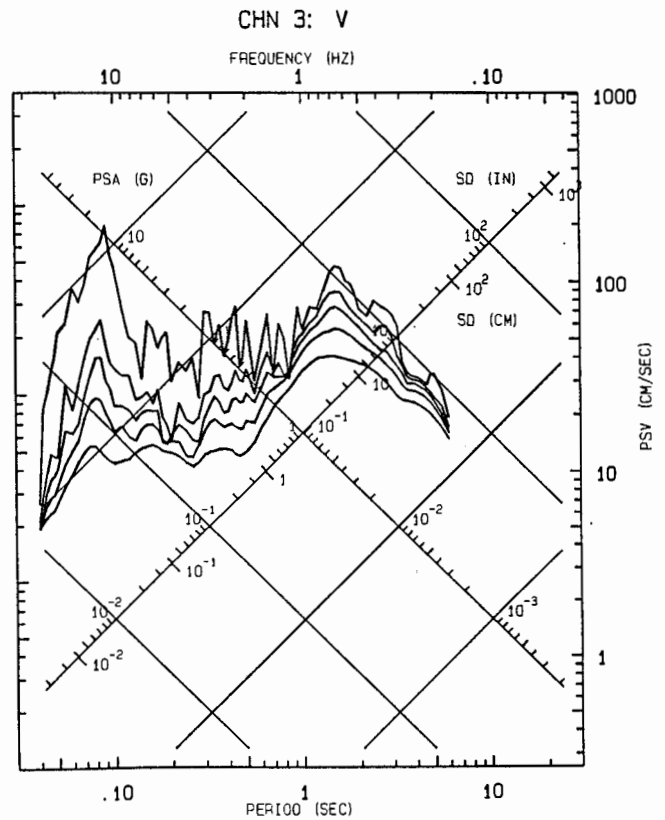
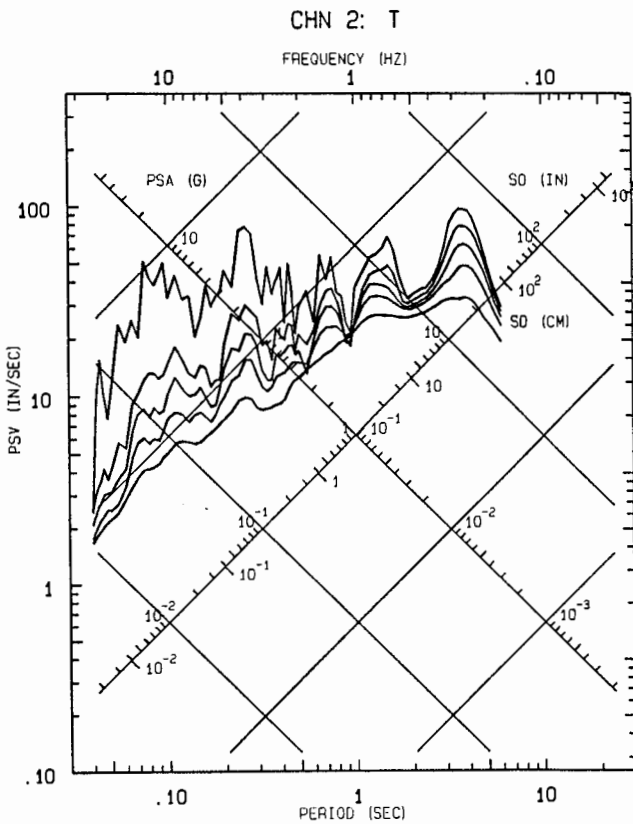
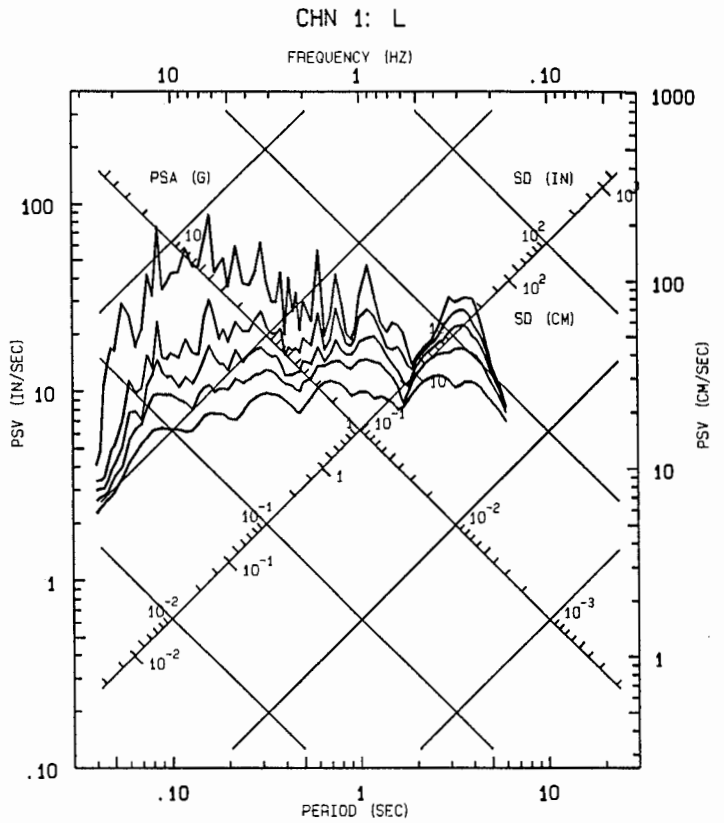
LUCERNE VALLEY: CSMIP S/N 060

LANDERS EARTHQUAKE
JUNE 28, 1992

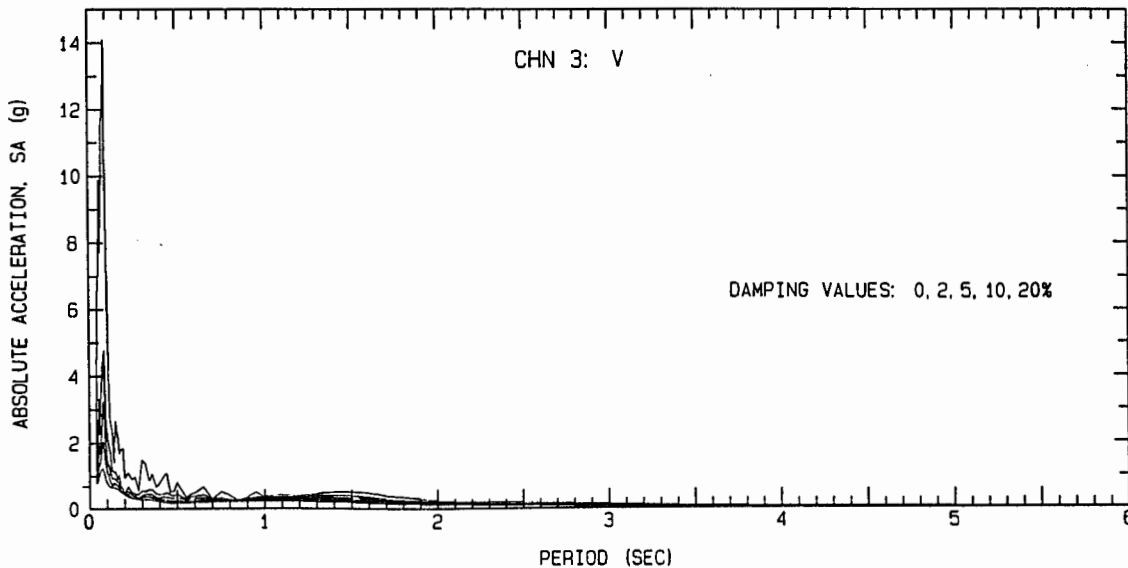
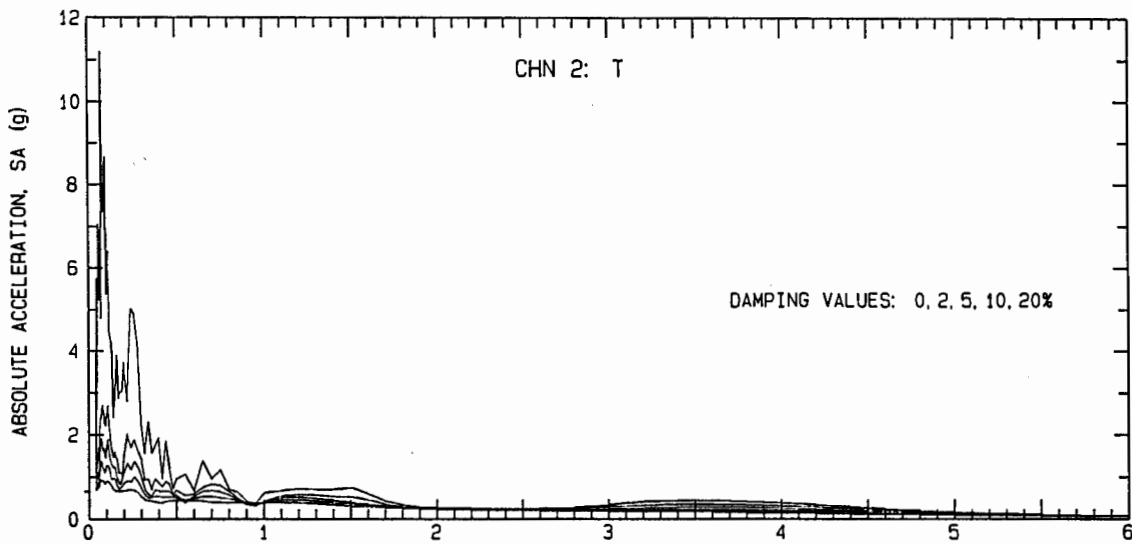
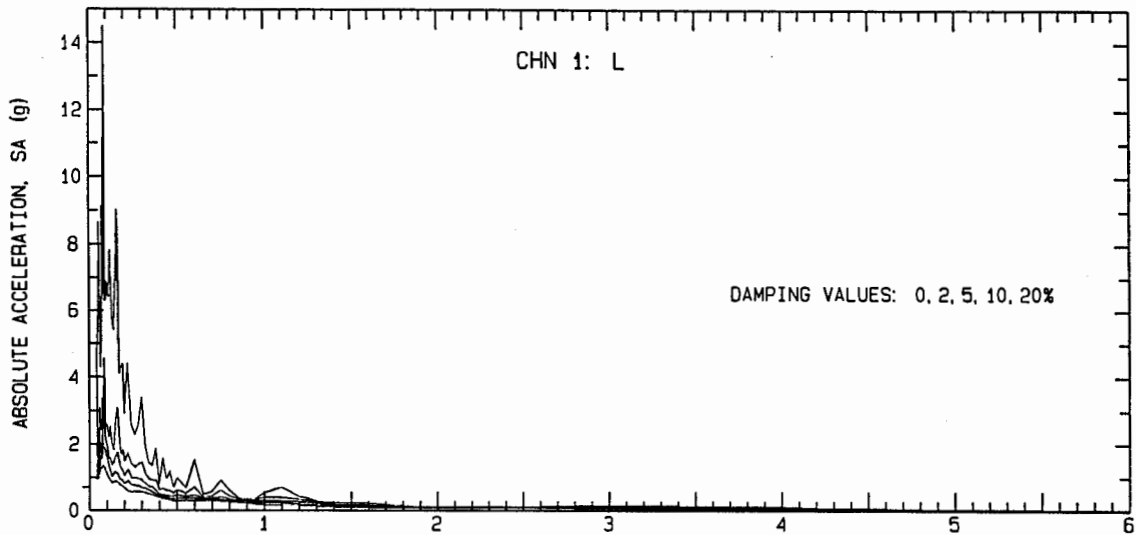
PHASE 3 DATA: RESPONSE SPECTRA
USABLE DATA BANDWIDTH: 0.20 TO 23.6 HZ
(0.04 TO 4.90 SEC)

RECORD ID: S00601-V0000-00000.00

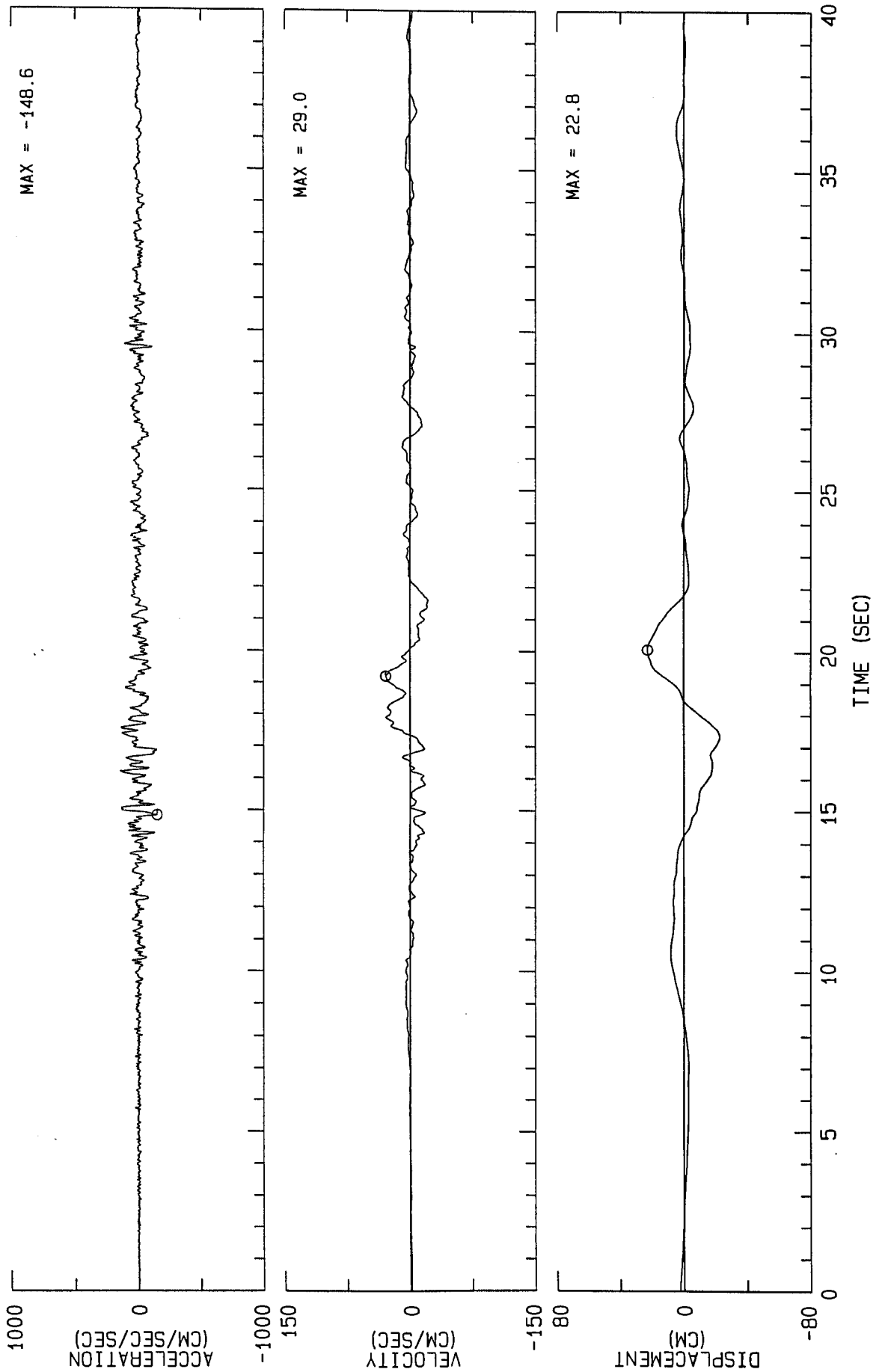
— RESPONSE SPECTRA: PSV, PSA & SD
DAMPING VALUES: 0, 2, 5, 10, 20%



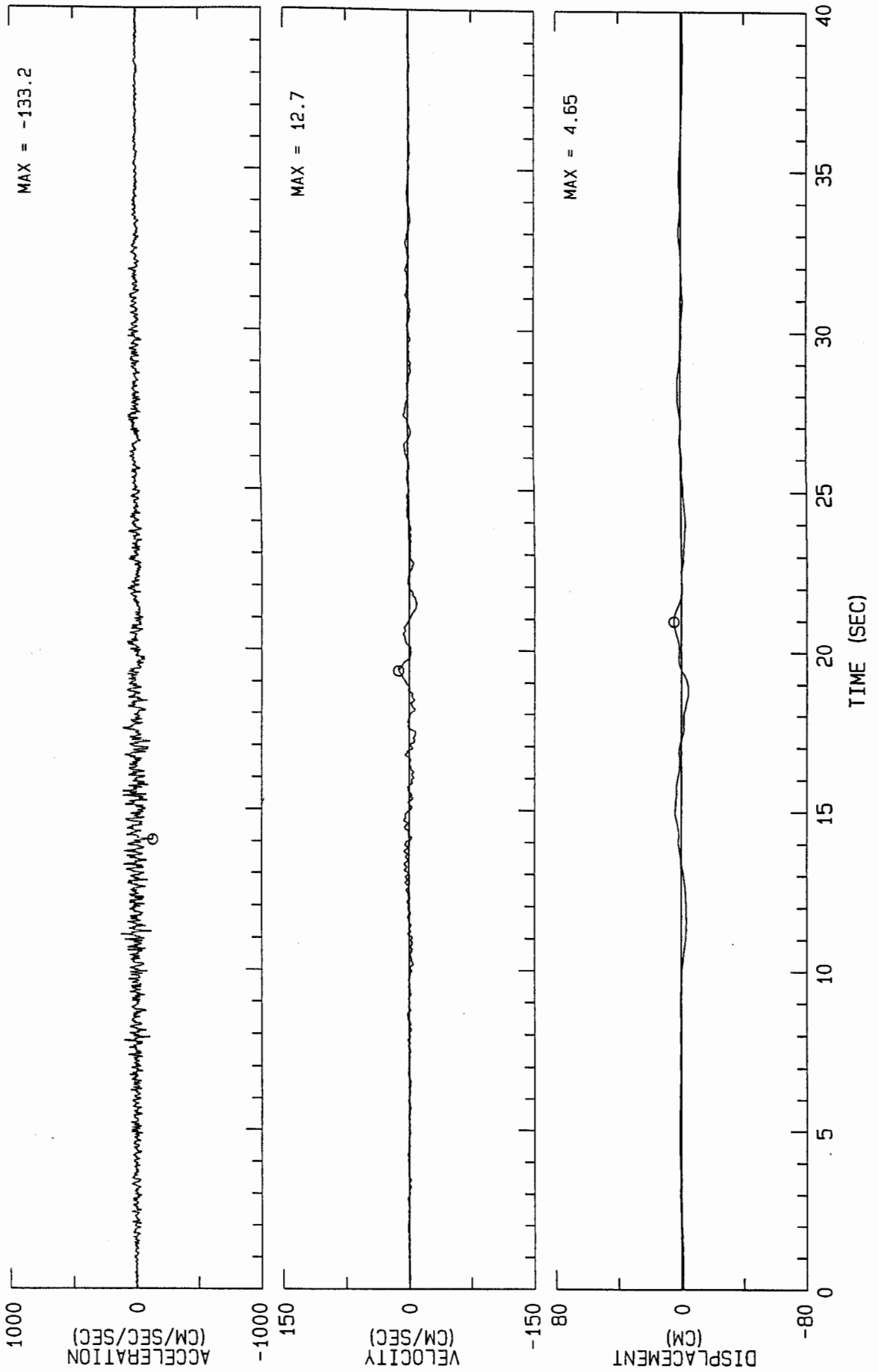
LANDERS EARTHQUAKE OF JUNE 28, 1992
LUCERNE VALLEY
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .12-.24 TO 23.0-25.0 HZ.
S00601-V0000-00000.00 083195.1545-0SHPD



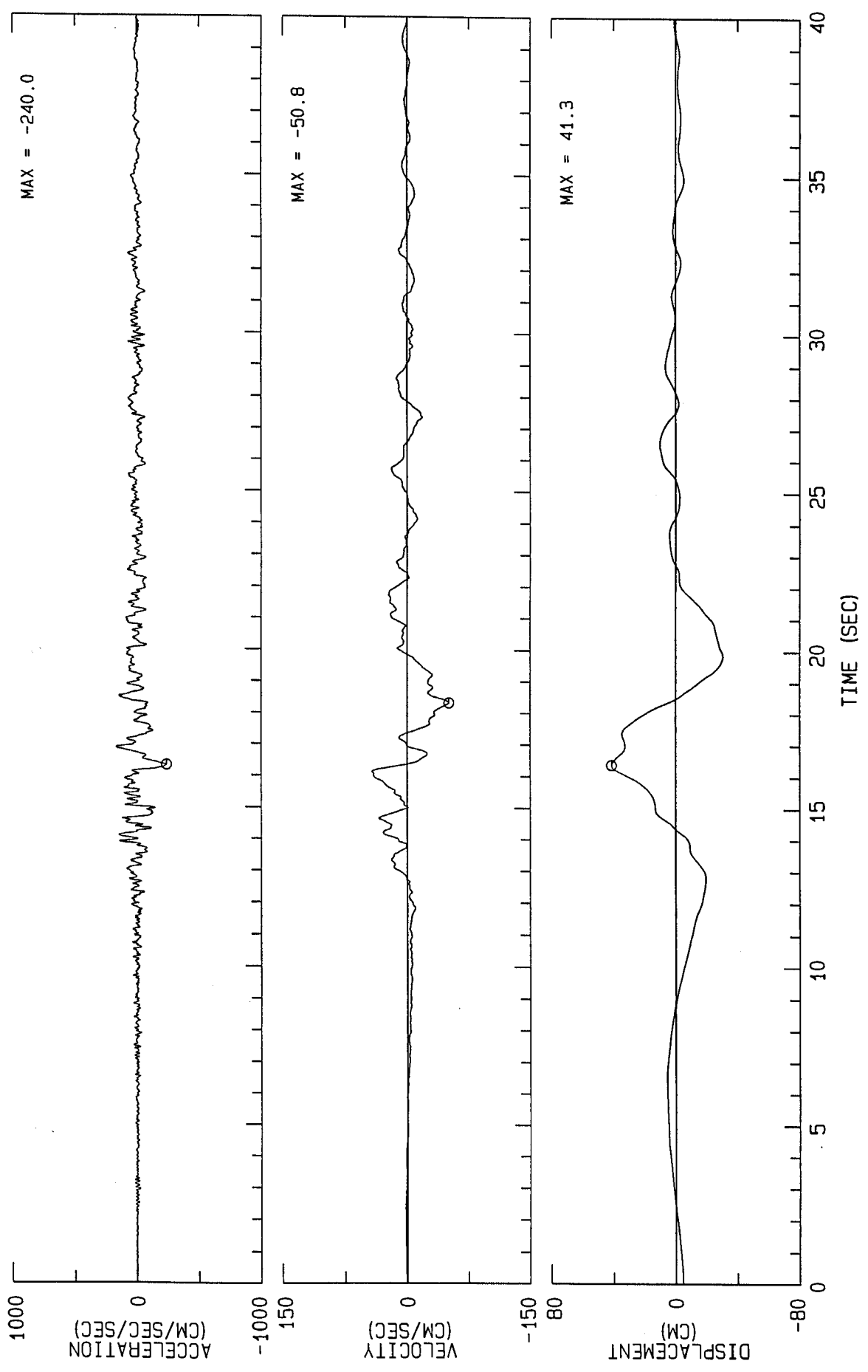
LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
YERMO - FIRE STATION CHN 1: 360 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .05-.07 TO 23.0-25.0 HZ. 22074-S1695-92189.02 101192.0031-0SHPD



LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04: 58 PDT
YERMO - FIRE STATION CHN 2: UP
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .05-.07 TO 23.0-25.0 HZ. 22074-S1695-92189.02 101192.0031-0SHPD



LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
YERMO - FIRE STATION CHN 3: 270 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .05-.07 TO 23.0-25.0 HZ. 22074-S1695-92189.02 101192.0031-0SHPD



YERMO - FIRE STATION: CSMIP S/N 074

LANDERS EARTHQUAKE (PRELIM. PROCESSING)

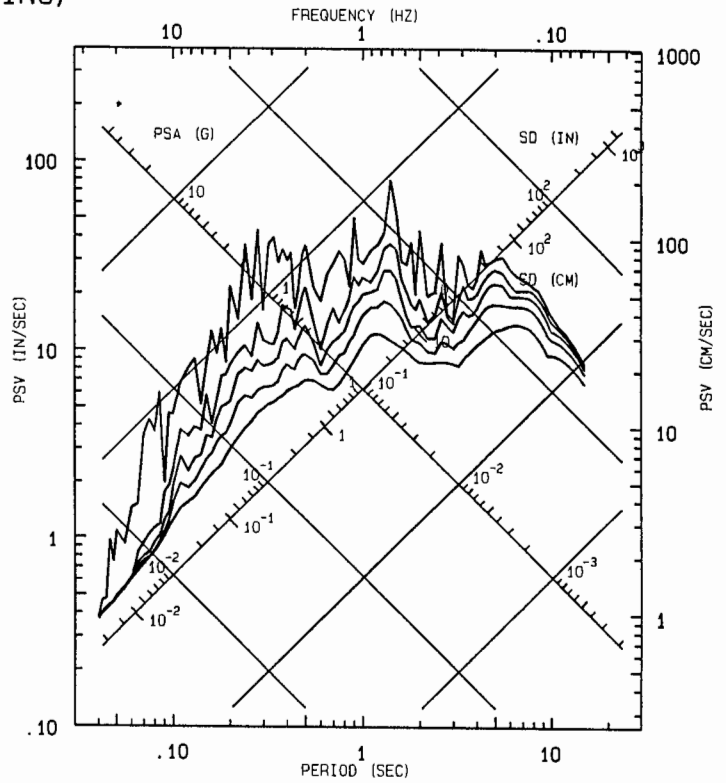
JUNE 28, 1992 04:58 PDT

PHASE 3 DATA: RESPONSE SPECTRA
 USABLE DATA BANDWIDTH: 0.06 TO 23.6 HZ
 (0.04 TO 15.6 SEC)

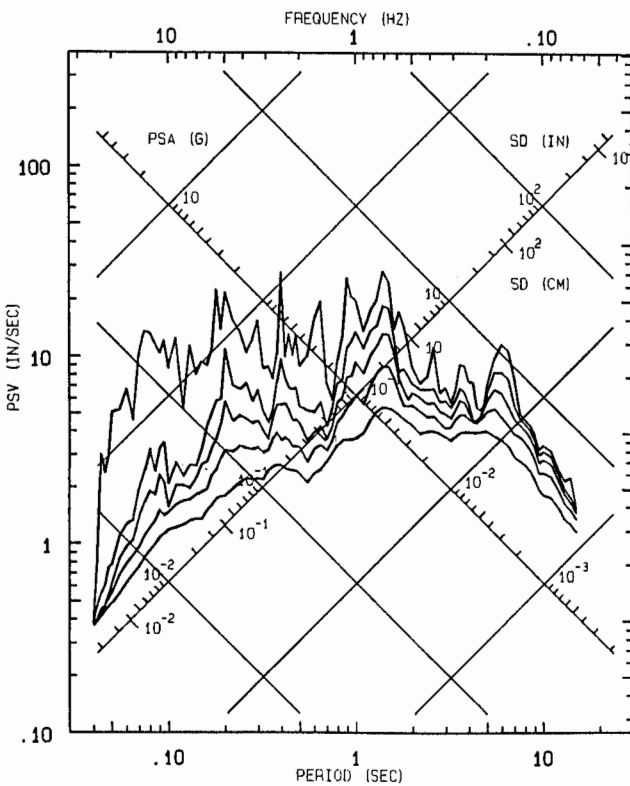
RECORD ID: 22074-S1695-92189.02

— RESPONSE SPECTRA: PSV, PSA & SD
 DAMPING VALUES: 0, 2, 5, 10, 20%

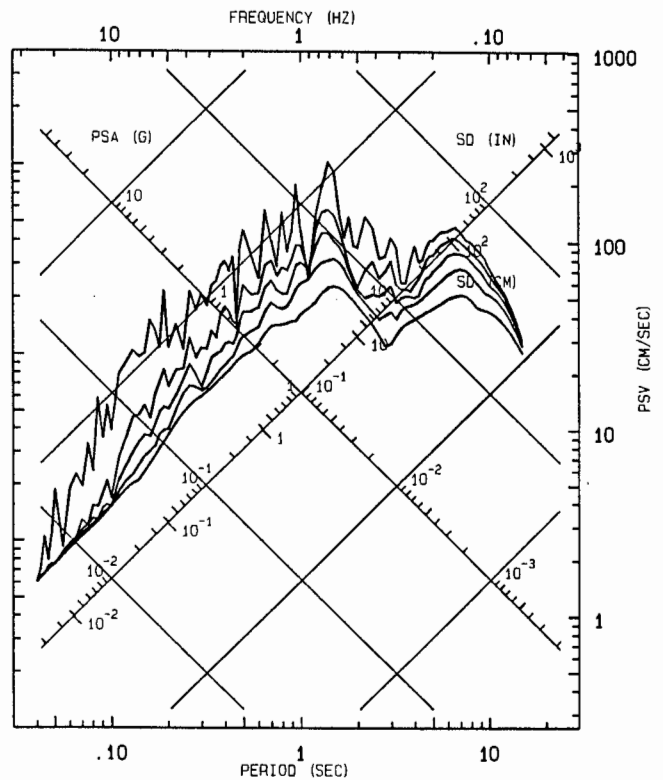
CHN 1: 360 DEG



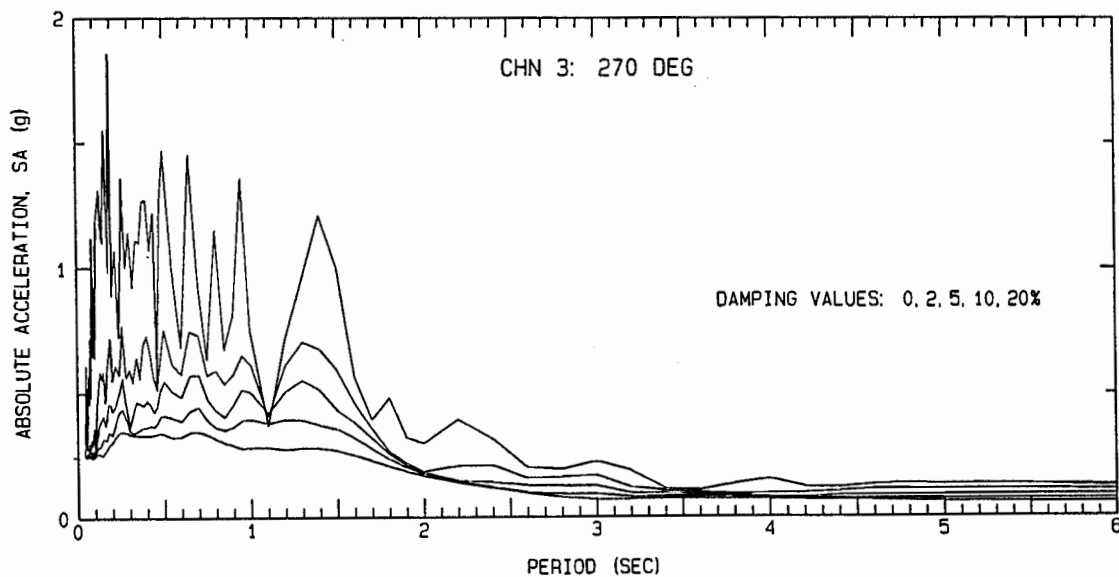
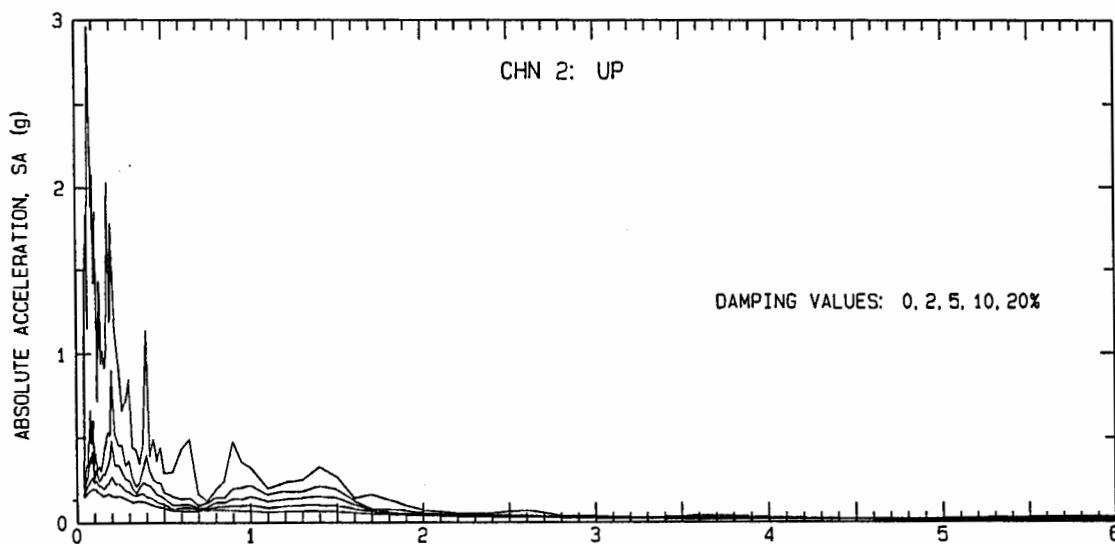
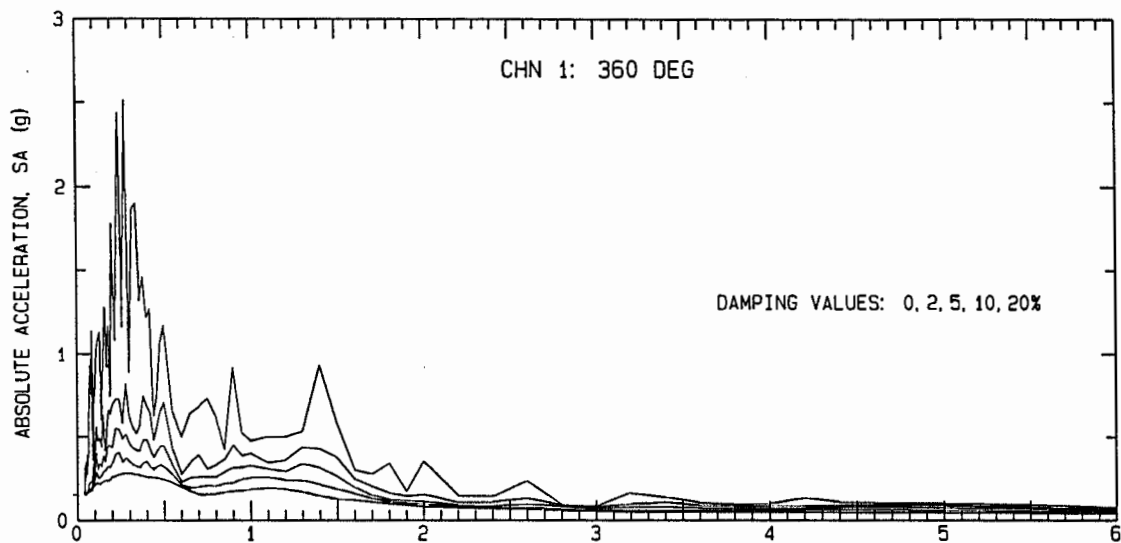
CHN 2: UP



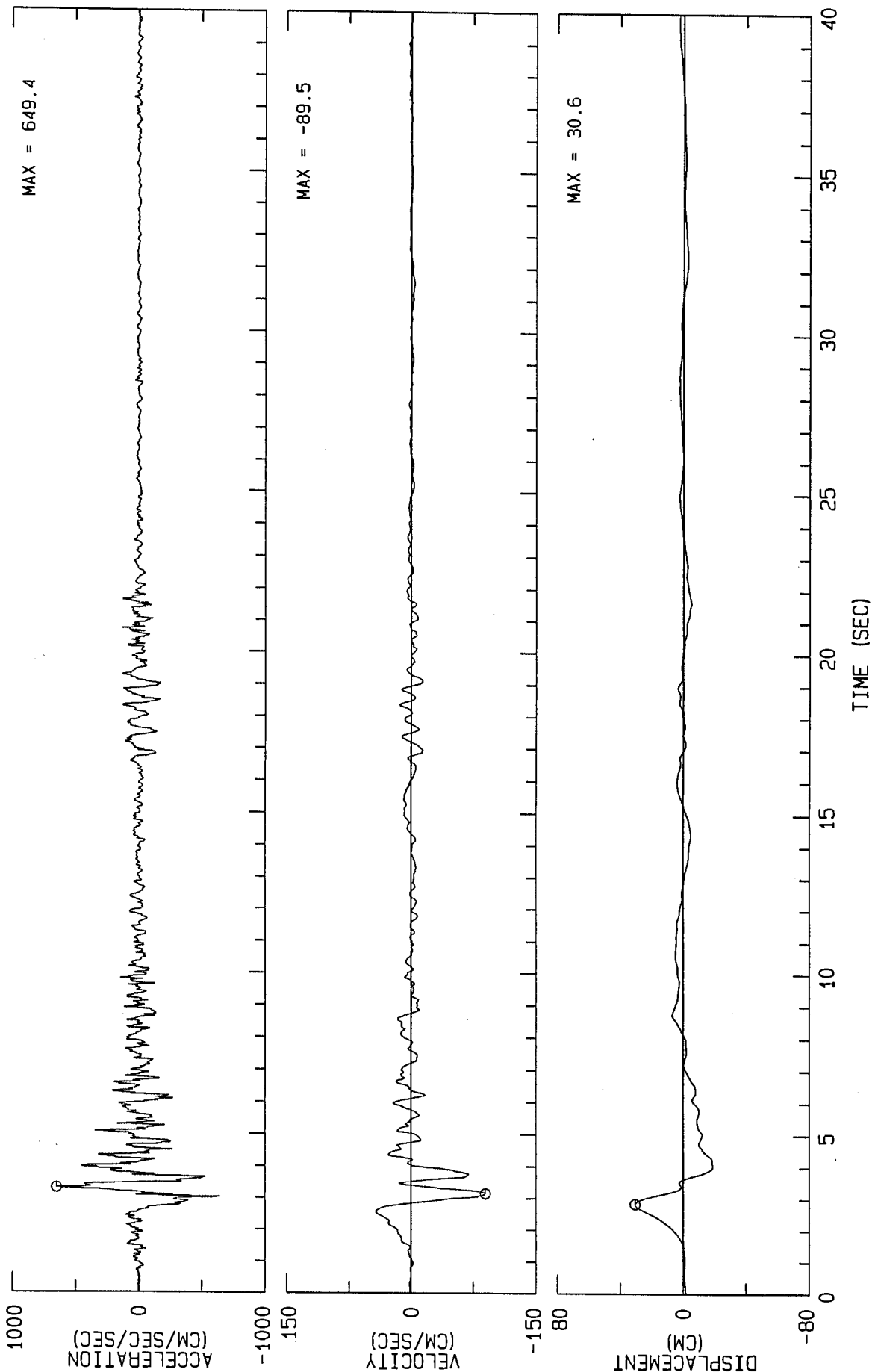
CHN 3: 270 DEG



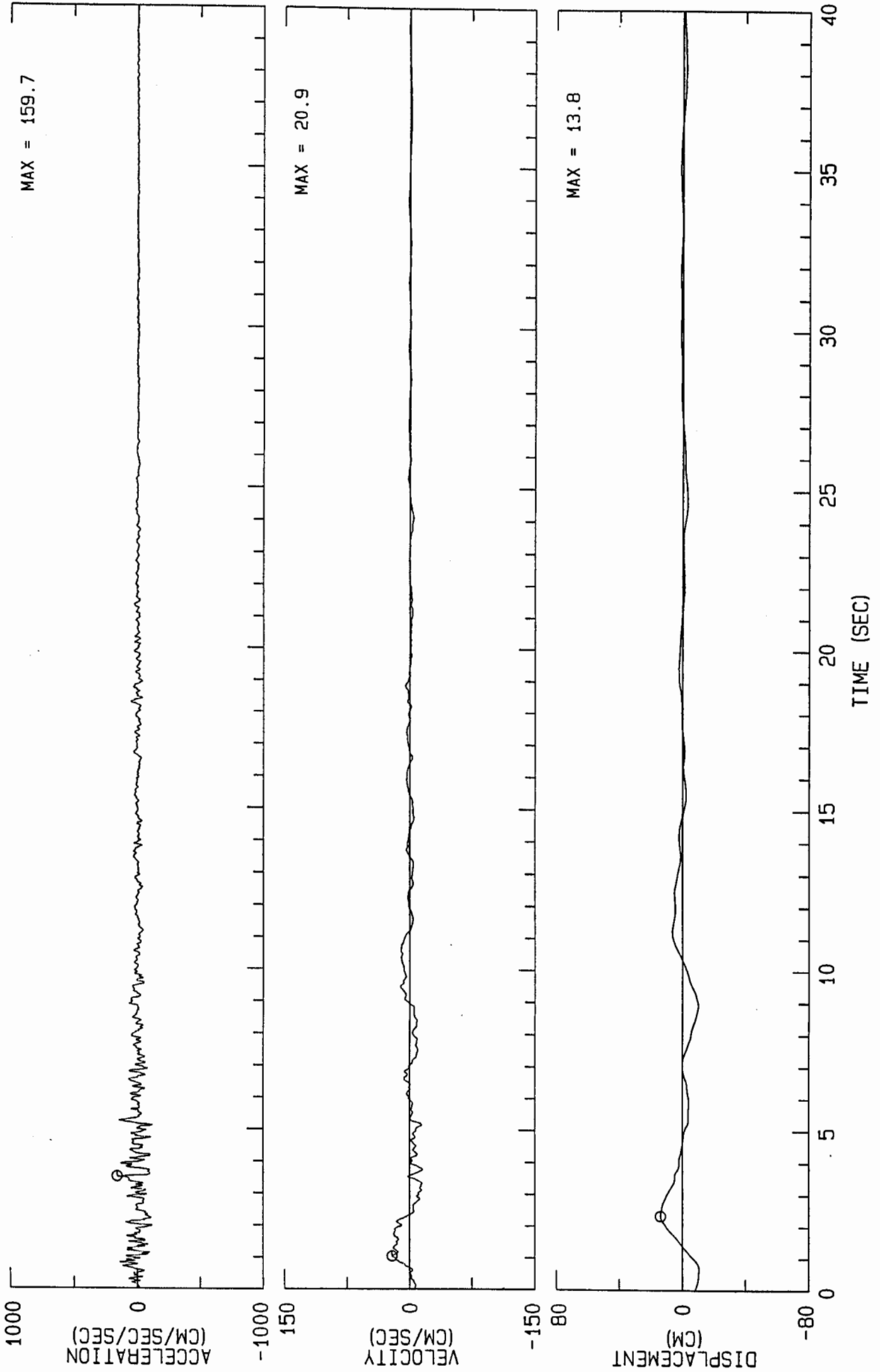
LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
YERMO - FIRE STATION
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .05-.07 TO 23.0-25.0 HZ.
22074-S1695-92189.02 101192.0048-0SHPD



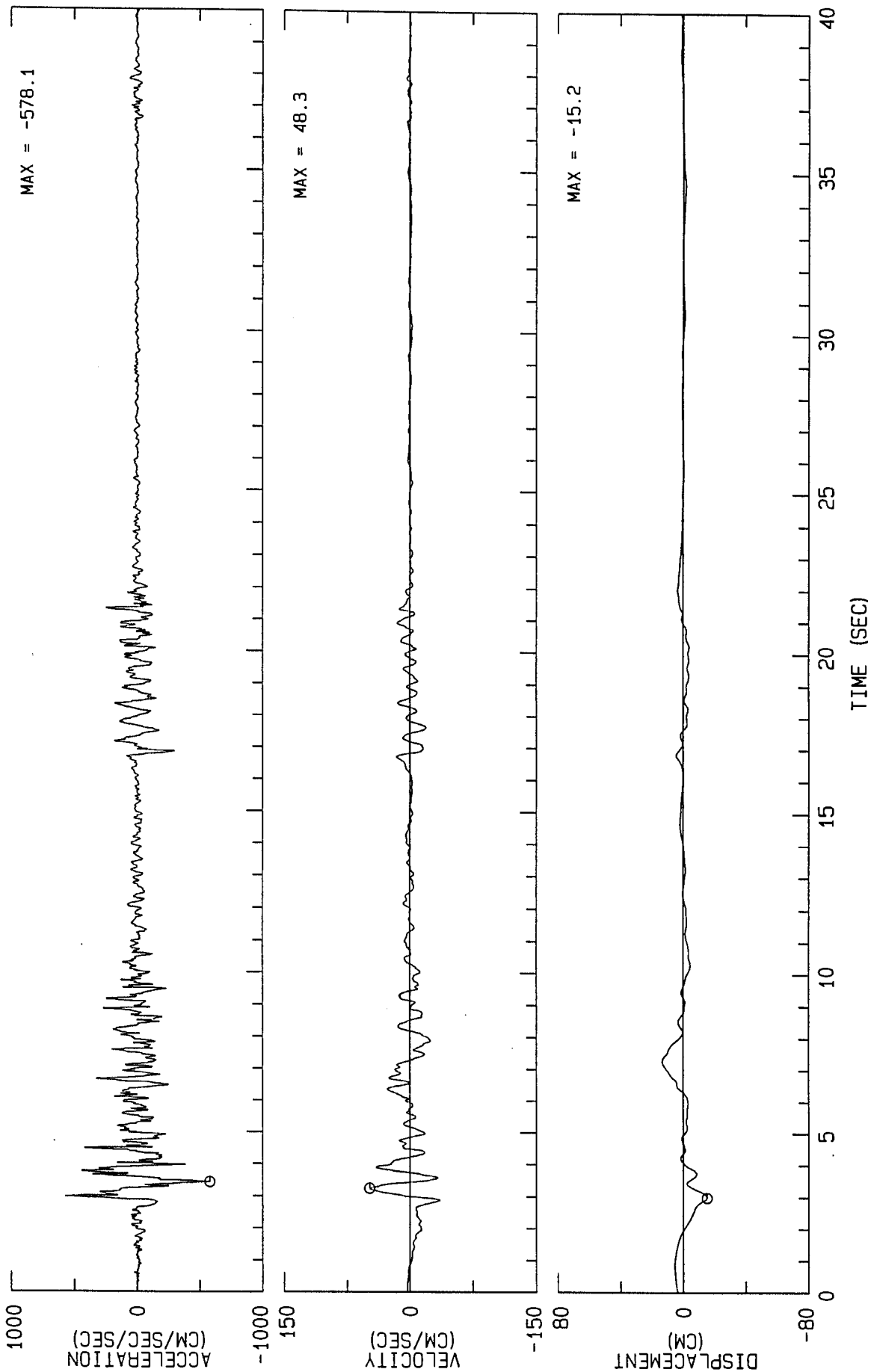
CAPE MENDOCINO EQ. (PRELIM. PROCESS.) APRIL 25, 1992 11:06 PDT
PETROLIA CHN 1: 90 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .05-.07 TO 23.0-25.0 HZ. 89156-S2597-92118.03 112192.1640-0SHPD



CAPE MENDOCINO EQ. (PRELIM. PROCESS.) APRIL 25, 1992 11:06 PDT
PETROLIA CHN 2: UP
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .05-.07 TO 23.0-25.0 HZ. 89156-S2597-92118.03 112192.1640-0SHPD



CAPE MENDOCINO EQ. (PRELIM. PROCESS.) APRIL 25, 1992 11:06 PDT
PETROLIA CHN 3: 0 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .05-.07 TO 23.0-25.0 HZ. 89156-S2597-92118.03 112192.1640-0SHPD



PETROLIA: CSMIP S/N 156

CAPE MENDOCINO EQ. (PRELIM. PROCESS.)

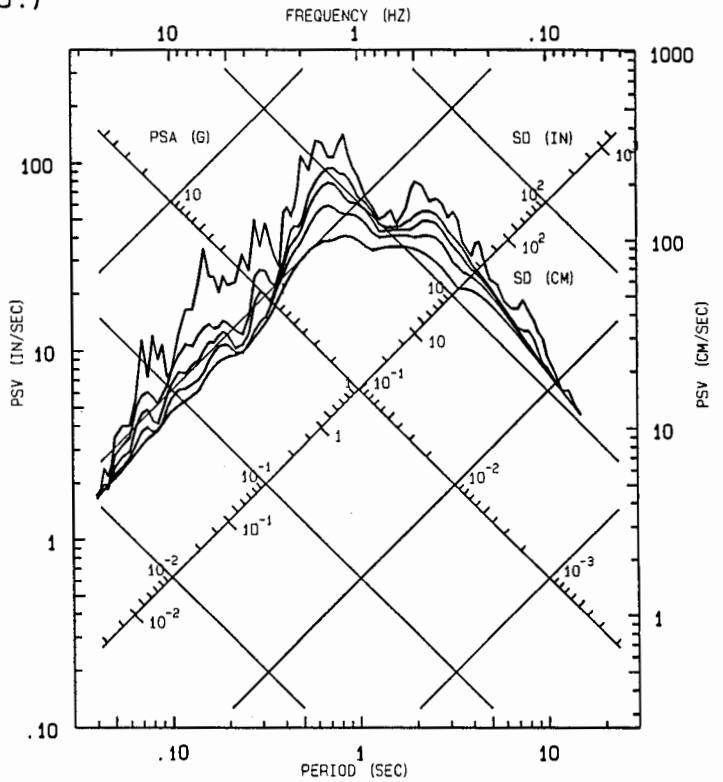
APRIL 25, 1992 11:06 PDT

PHASE 3 DATA: RESPONSE SPECTRA
 USABLE DATA BANDWIDTH: 0.06 TO 23.6 HZ
 (0.04 TO 15.6 SEC)

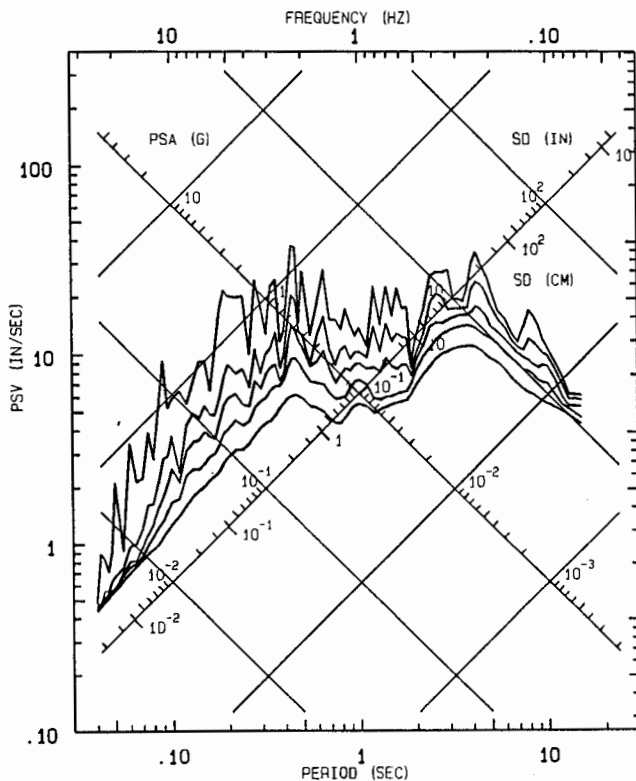
RECORD ID: 89156-S2597-92118.03

— RESPONSE SPECTRA: PSV, PSA & SD
 DAMPING VALUES: 0, 2, 5, 10, 20%

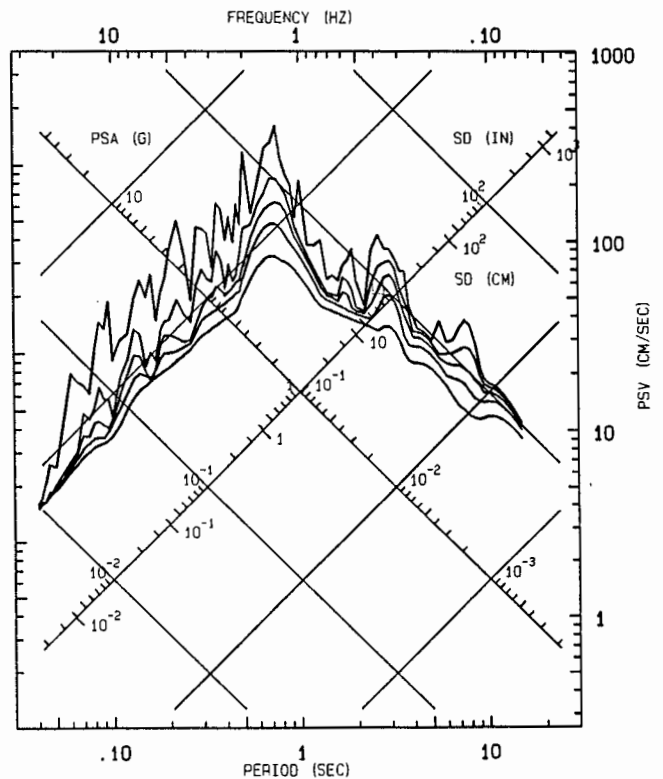
CHN 1: 90 DEG



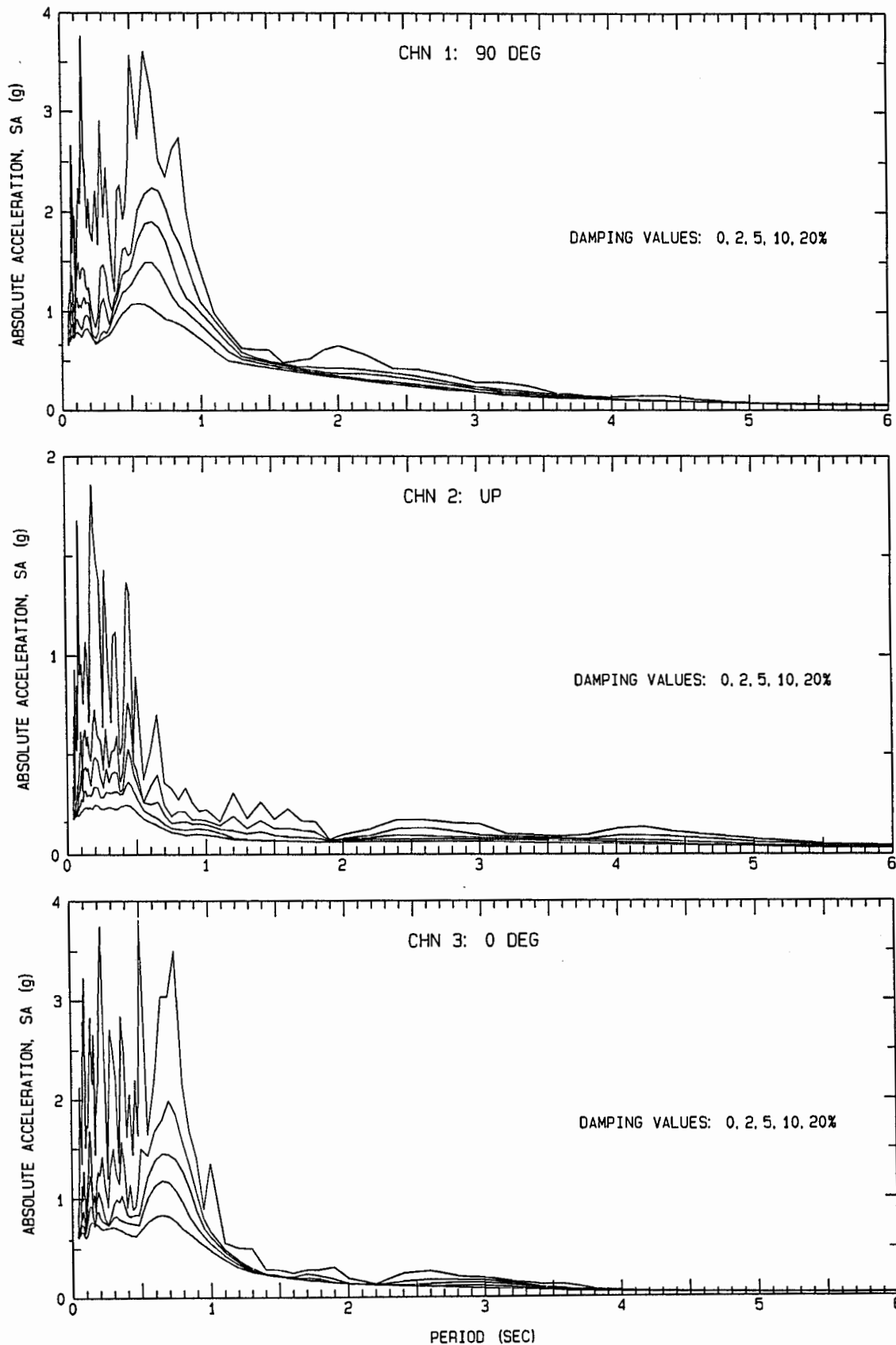
CHN 2: UP



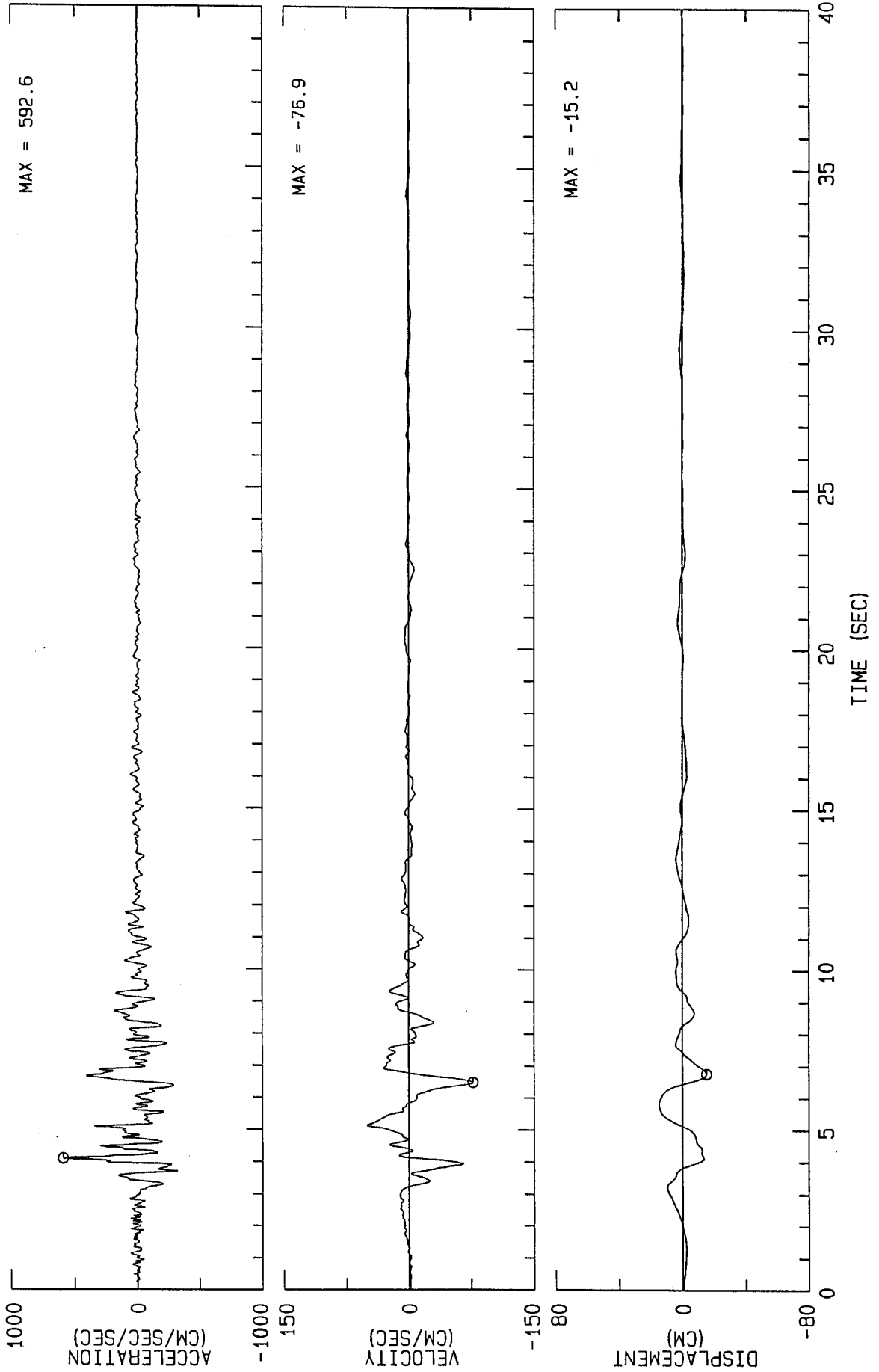
CHN 3: 0 DEG



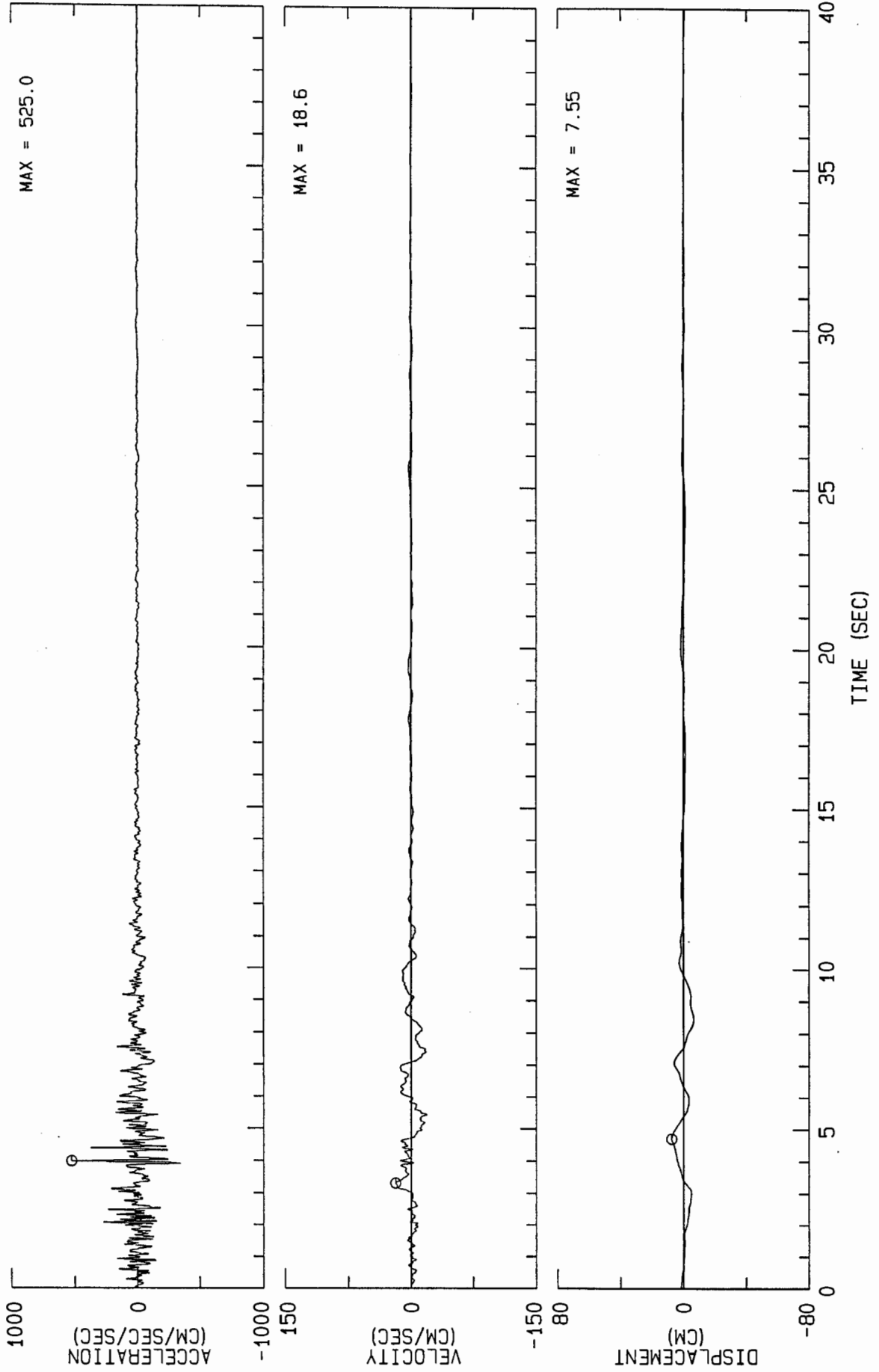
CAPE MENDOCINO EQ. (PRELIM. PROCESS.) APRIL 25, 1992 11:06 PDT
PETROLIA
ACCELEROGRAM BANOPASS-FILTERED WITH RAMPS AT .05-.07 TO 23.0-25.0 HZ.
89156-S2597-92118.03 112192.1640-05HPD



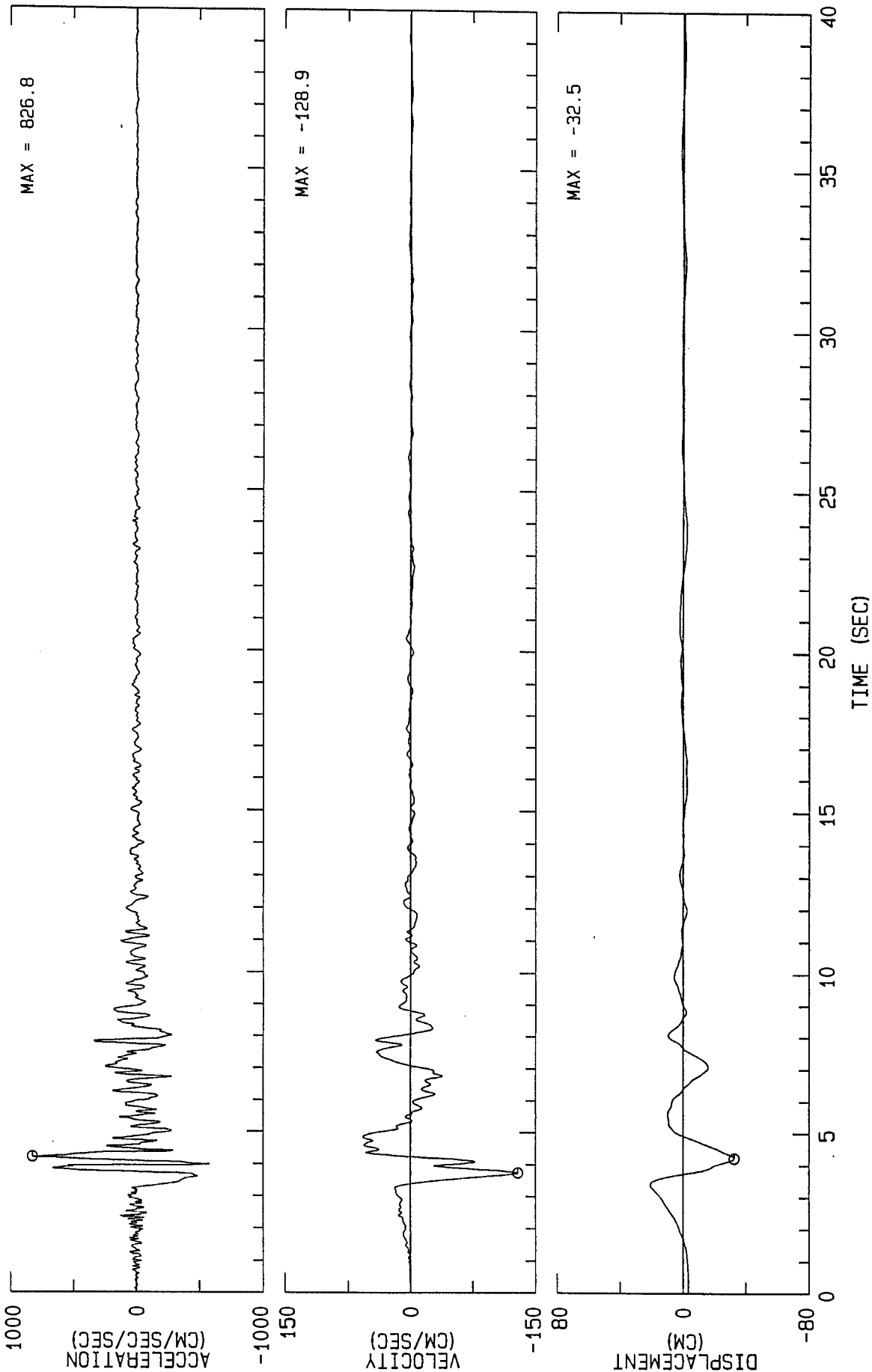
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
SYLMAR - COUNTY HOSP. PARKING LOT CHN 1: 90 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .06-.12 TO 23.0-25.0 HZ. 24514-S5254-94017.03 020394.1803-05HPD



NORTHRIIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
SYLMAR - COUNTY HOSP. PARKING LOT CHN 2: UP
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .06-.12 TO 23.0-25.0 HZ. 24514-S5254-94017.03 020394.1803-0SHPD



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
SYLMAR - COUNTY HOSP. PARKING LOT CHN 3: 360 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .06-.12 TO 23.0-25.0 HZ. 24514-S5254-94017.03 020394.1803-0SHPD



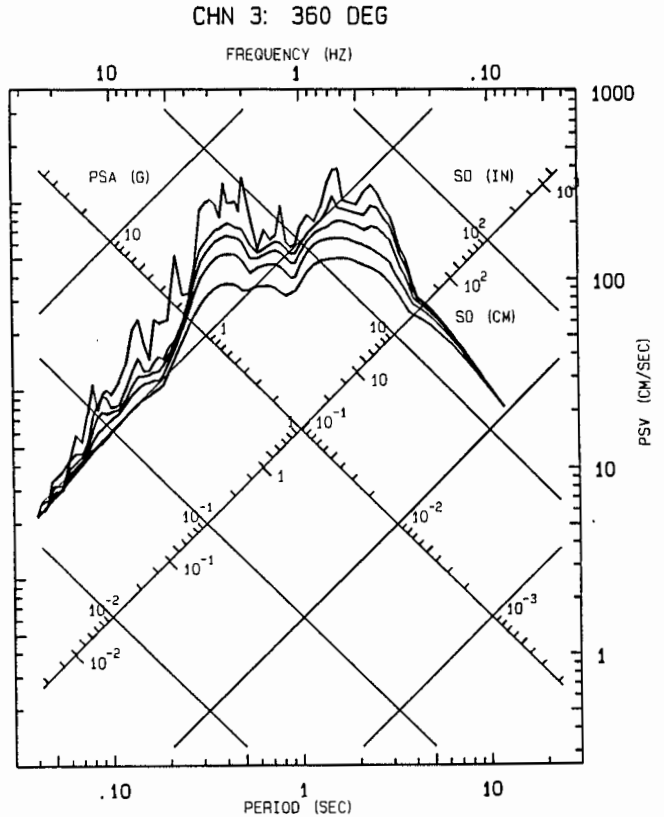
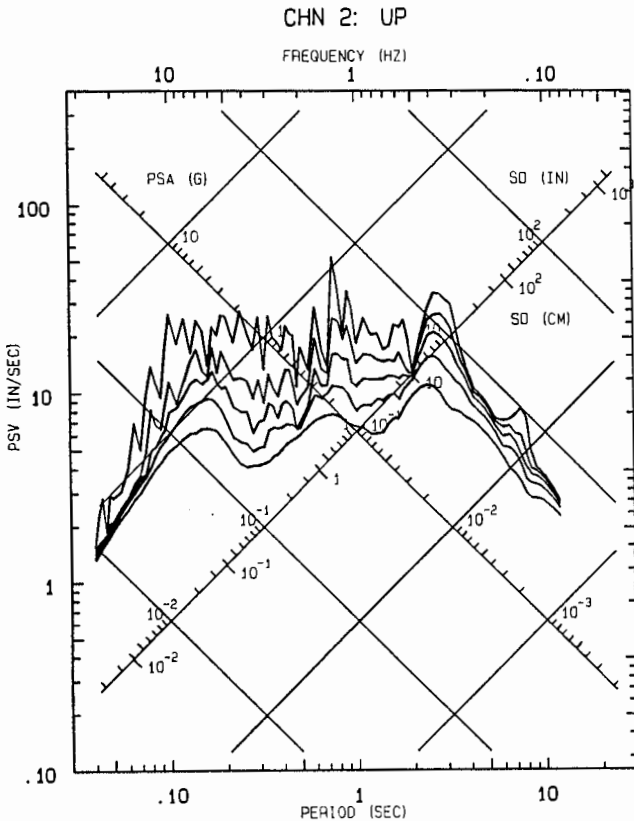
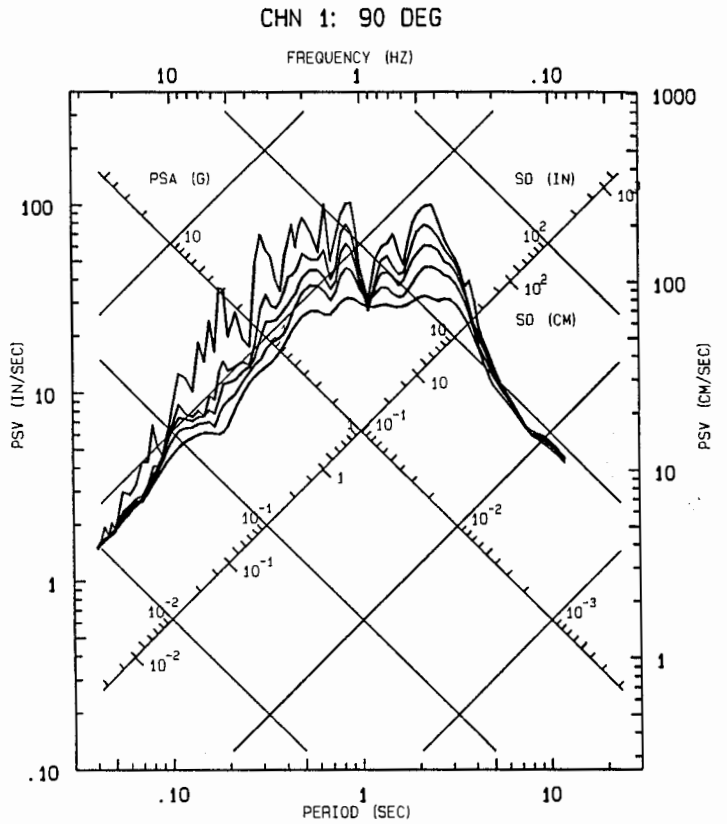
SYLMAR - COUNTY HOSP. PARKING LOT: CSMIP S/N 514

NORTHRIDGE EARTHQUAKE
 JANUARY 17, 1994 04:31 PST

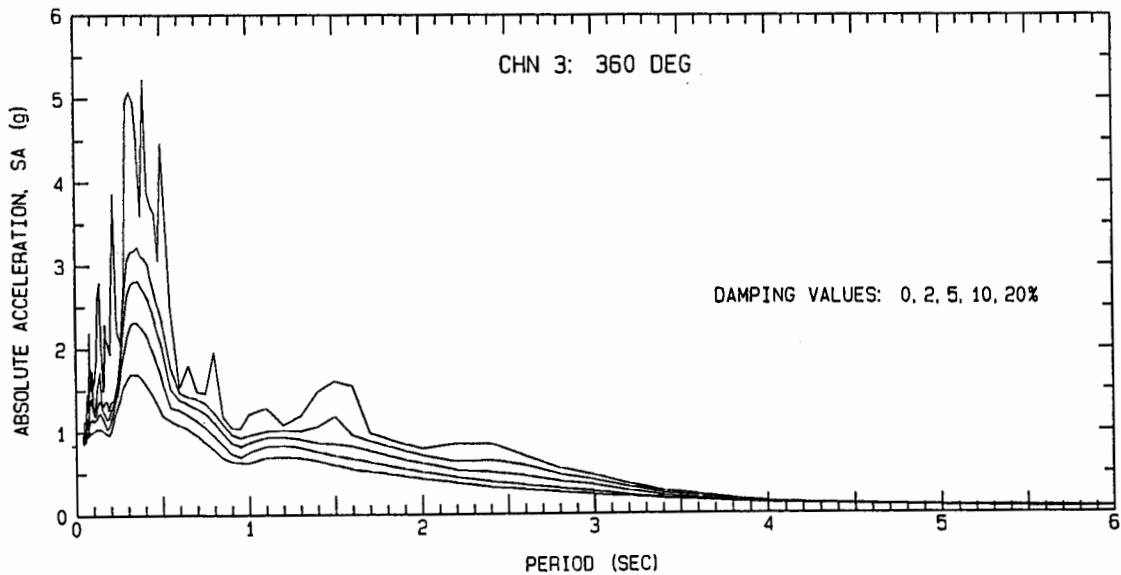
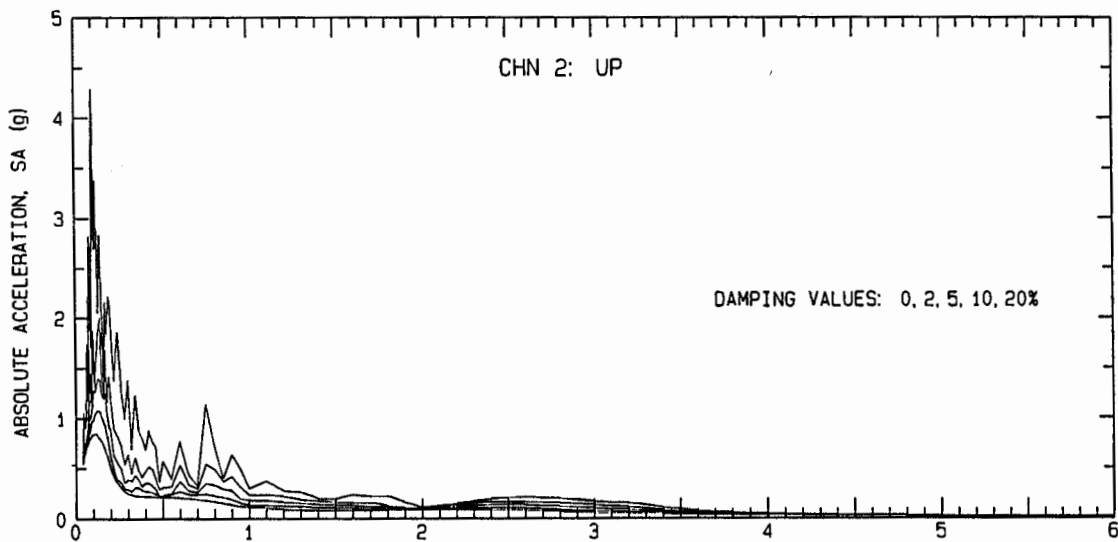
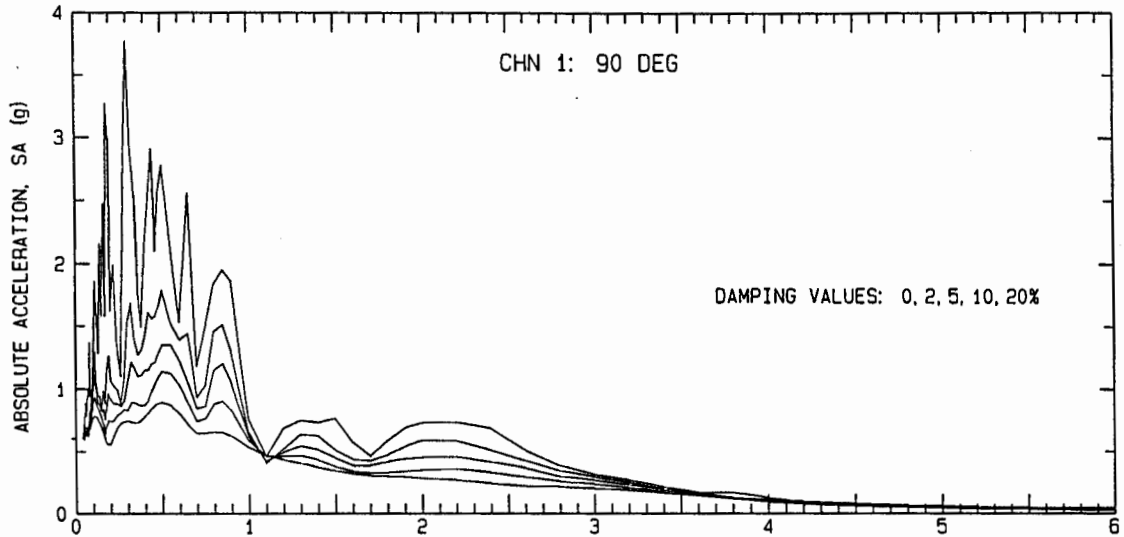
PHASE 3 DATA: RESPONSE SPECTRA
 USABLE DATA BANDWIDTH: 0.10 TO 23.6 HZ
 (0.04 TO 9.80 SEC)

RECORD ID: 24514-S5254-94017.03

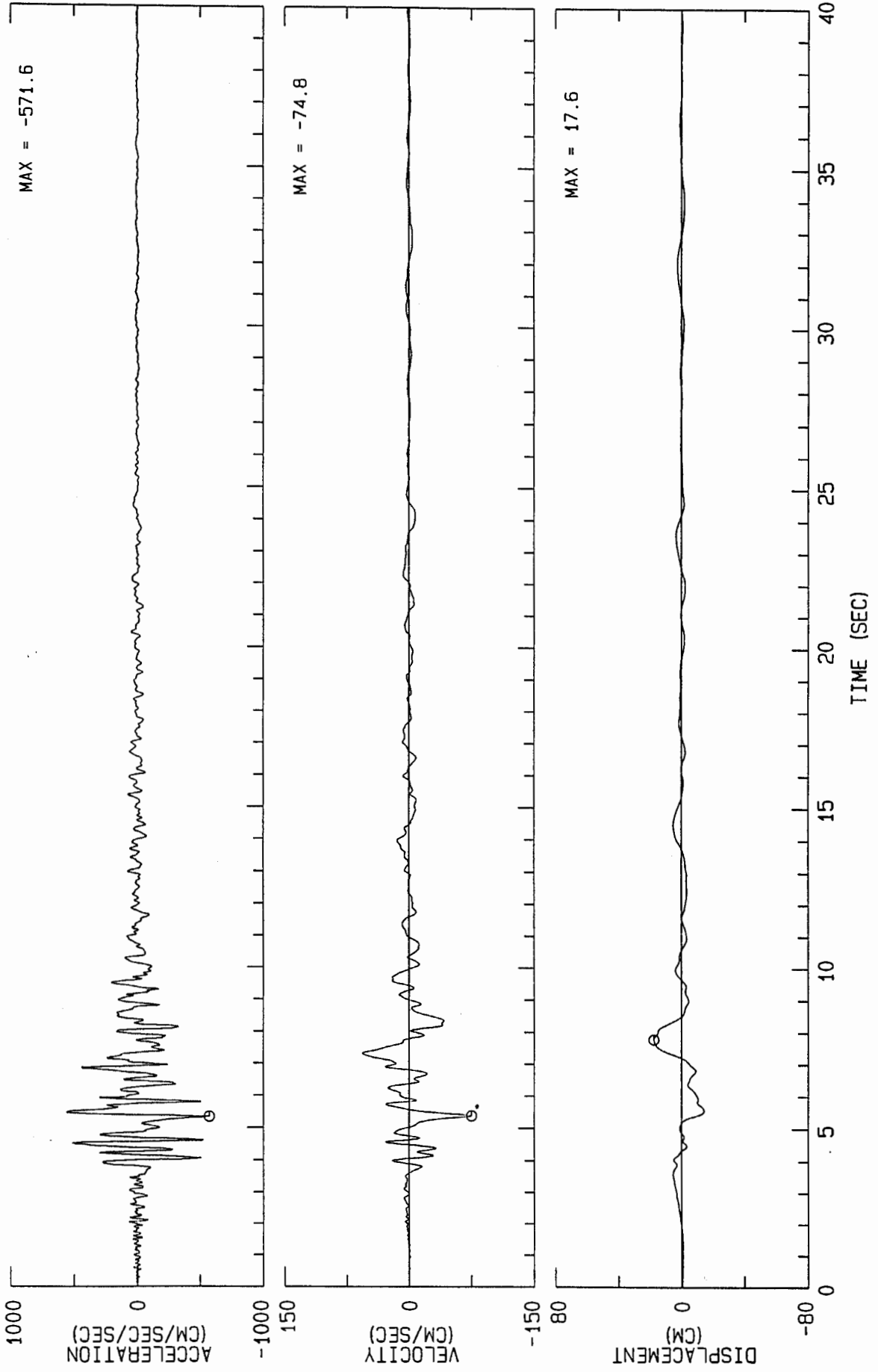
— RESPONSE SPECTRA: PSV, PSA & SD
 DAMPING VALUES: 0.2, 5, 10, 20%



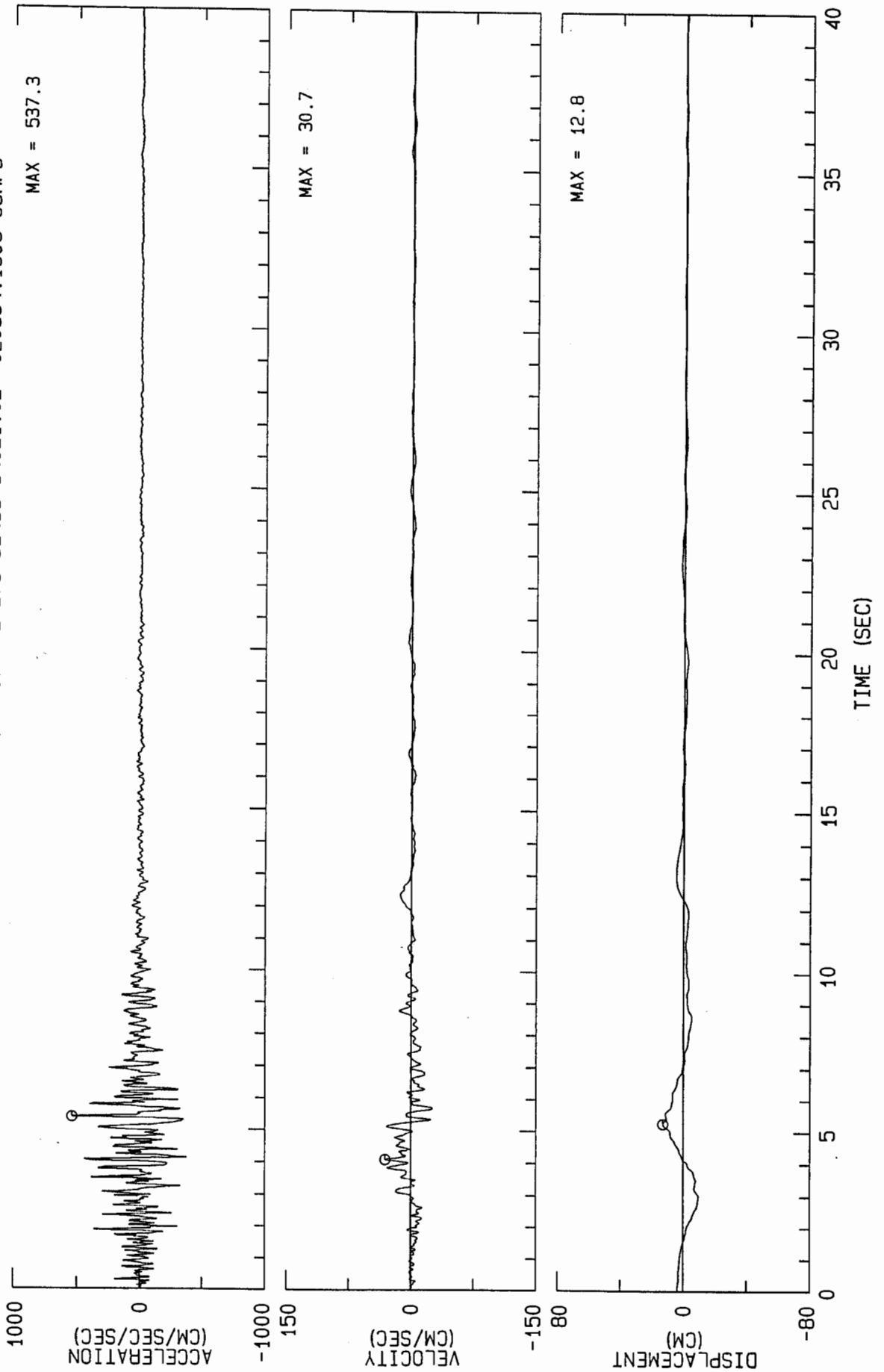
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
SYLMAR - COUNTY HOSP. PARKING LOT
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .06-.12 TO 23.0-25.0 HZ.
24514-S5254-94017.03 020494.0929-0SHPD



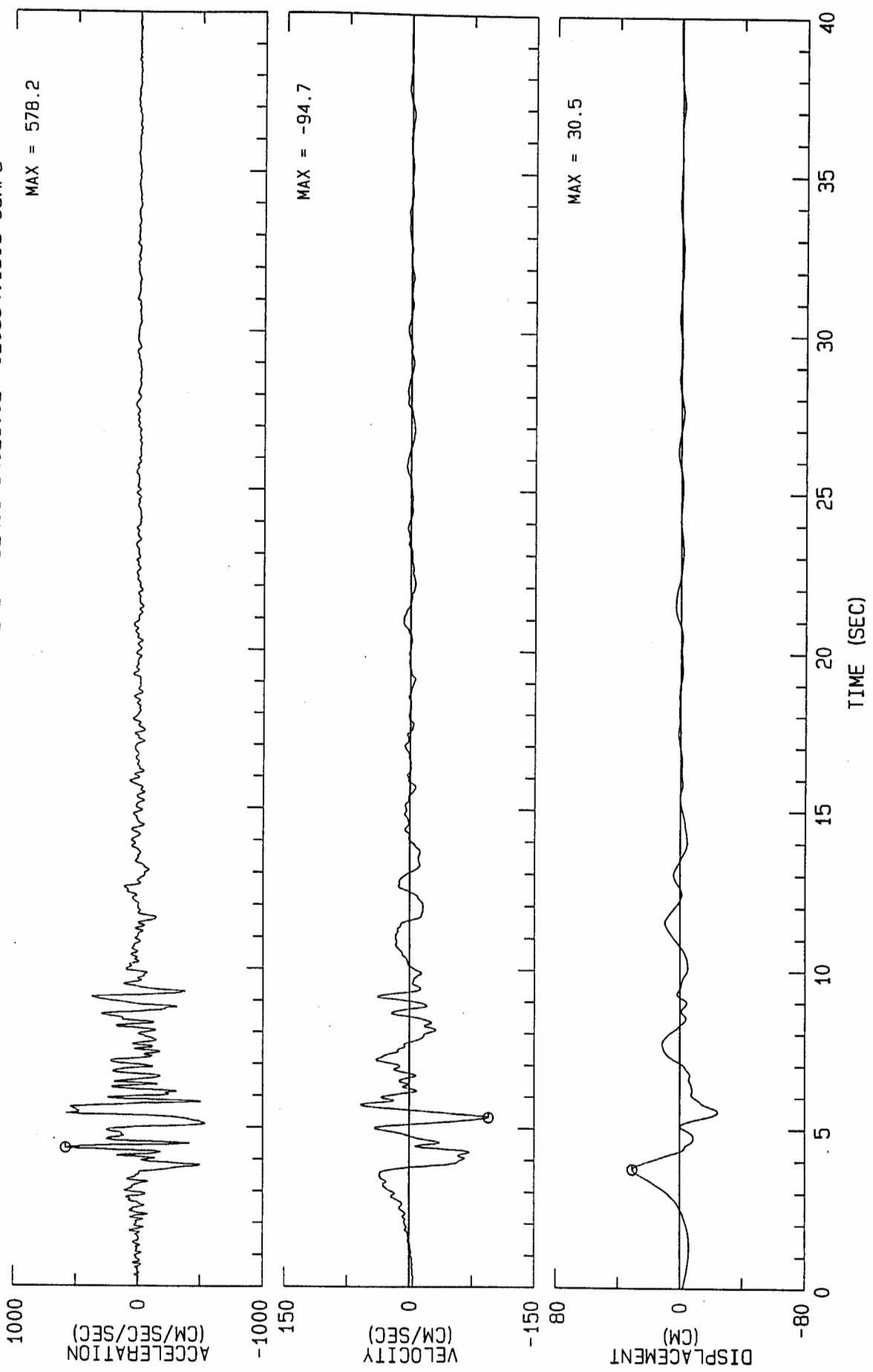
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
NEWHALL - LA COUNTY FIRE STATION CHN 1: 90 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .06-.12 TO 23.0-25.0 HZ. 24279-S2499-94021.02 020394.1908-0SHPD



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
NEWHALL - LA COUNTY FIRE STATION CHN 2: UP
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .06-.12 TO 23.0-25.0 HZ. 24279-S2499-94021.02 020394.1908-0SHPD



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
NEWHALL - LA COUNTY FIRE STATION CHN 3: 360 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .06-.12 TO 23.0-25.0 HZ. 24279-S2499-94021.02 020394.1908-05HPD



NEWHALL - LA COUNTY FIRE STATION: CSMIP S/N 279

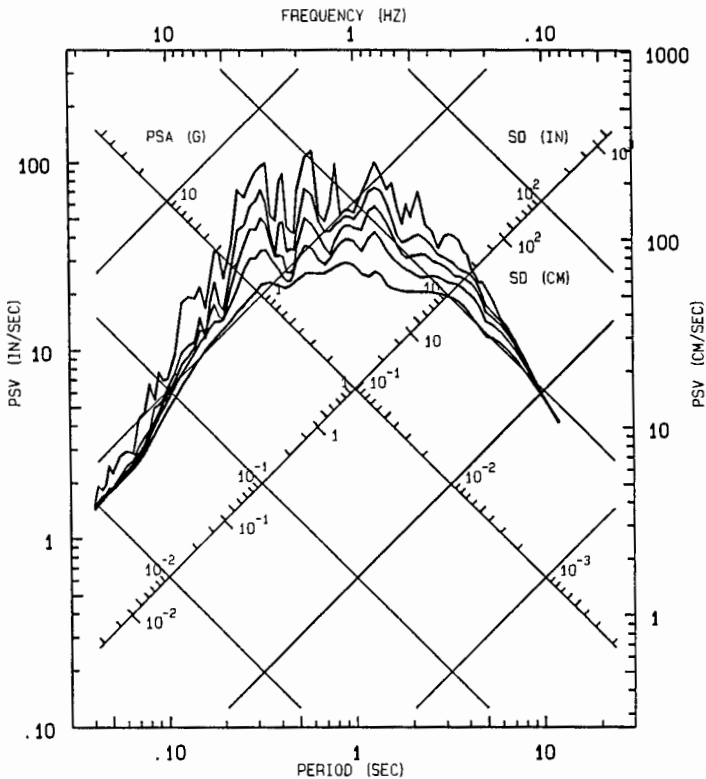
NORTHRIDGE EARTHQUAKE
 JANUARY 17, 1994 04:31 PST

PHASE 3 DATA: RESPONSE SPECTRA
 USABLE DATA BANDWIDTH: 0.10 TO 23.6 HZ
 (0.04 TO 9.80 SEC)

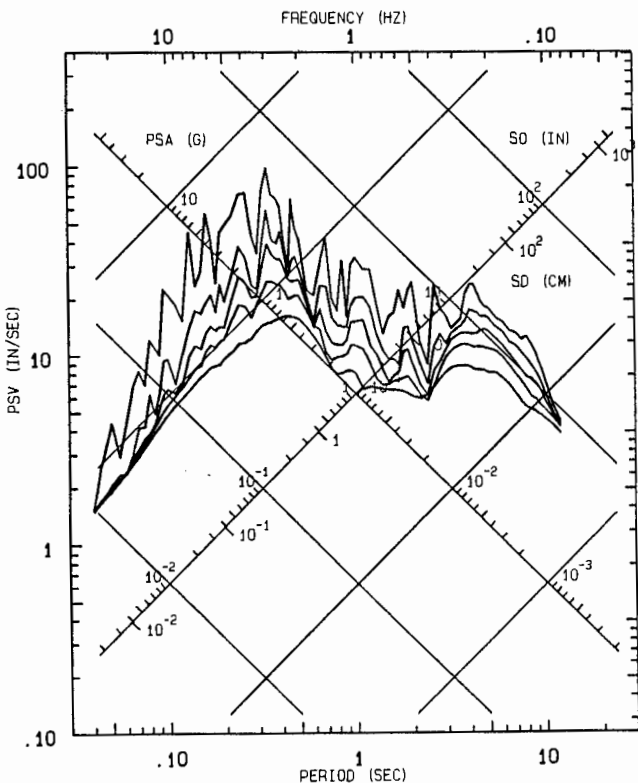
RECORD ID: 24279-S2499-94021.02

— RESPONSE SPECTRA: PSV, PSA & SD
 DAMPING VALUES: 0, 2, 5, 10, 20%

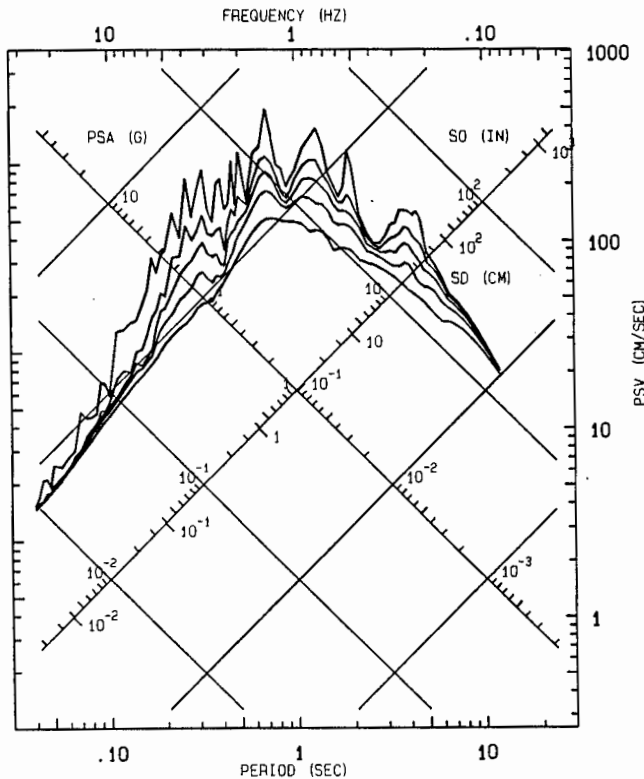
CHN 1: 90 DEG



CHN 2: UP



CHN 3: 360 DEG



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
NEWHALL - LA COUNTY FIRE STATION
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .06-.12 TO 23.0-25.0 HZ.
24279-S2499-94021.02 020494.0947-0SHPD

