U.S. DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STRONG-MOTION ACCELEROGRAPH RECORDS FROM THE M = 7.5 LANDERS, CALIFORNIA EARTHQUAKE OF JUNE 28, 1992

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PREFACE

The National Strong-Motion Program (NSMP) in cooperation with federal, state, and local agencies and advisory engineering committees, designs, develops, and operates a nation-wide earthquake instrumentation network to record potentially damaging ground motion and to monitor the structural response of buildings, bridges and dams in seismically prone regions. The present network consists of approximately 1,000 recording units installed at 620 ground sites, 33 buildings, 5 bridges, 56 dams, and 2 pumping plants. The operation of this program is made possible by the integration of NSMP instrumentation with that of numerous other organizations.

The excellent set of recordings from the Landers earthquake, presented in the following pages, was made possible by the dedicated work of the NSMP field staff, including A. Acosta, E. Anjal, L. Foote, D. Johnson, W. Jungblut, T. Noce, and M. Salsman. The report was reviewed by A. Acosta and A.G. Brady. P. Mork assisted in preparation of the data table.

Records from the GEOS instrumentation were provided by S. Hough of USGS, Pasadena.

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U.S. GEOLOGICAL SURVEY STRONG-MOTION DATA RECORDED DURING THE M=7.5 LANDERS, CALIFORNIA EARTHQUAKE OF JUNE 28, 1992

INTRODUCTION.

This report contains acceleration data recorded during the Landers main shock of June 28, 1992, 11:57:34.1 G.m.t. The M=7.5 event epicenter was located at 34.201 N. lat. and 116.436 W. long., approximately 50 km north of Palm Springs, California at a depth of 5 km *(Preliminary Determination of Epicenters, U. S. Geol. Survey)*. The data were recovered from accelerograph stations operated by the U. S. Geological Survey's National Strong-Motion Program (NSMP). These stations include cooperative installations operated by the NSMP for the U. S. Army Corps of Engineers, the Metropolitan Water District of Southern California, the U. S. Dept. of Veterans Affairs, and for numerous private building owners in compliance with the City of Los Angeles building code. More than 550 data channels were recovered from 155 stations located at epicentral distances between 21 and 337 km. These stations include the following types of installations:

- o Ground site/small building (48)
- o Large/multi-story building (35)
- o Dam/reservoir facility (15)
- o Pump plant/filter plant (6)
- o Base-isolated bridge (1)
- o Base-isolated building (1)
- o Downhole array (1)
- o GEOS site (4)

The four GEOS sites (General Earthquake Observation System: see Borcherdt and others *Bull. Seism. Soc. Am.*, 75, 6, 1985) were established as part of an aftershock deployment following the M=6.1 Joshua Tree earthquake of April 23, 1992 and were still in place at the time of the Landers main shock.

Peak horizontal ground motions in the range 0.10 - 0.20 g were recorded at ten stations within a 50-km epicentral distance. However, the maximum ground acceleration was recorded at Indio at a distance of 56 km; the anomalously high 0.29 g peak occurs on the east-west component about 32 seconds after triggering. This long-period (approx 0.75 s), high-amplitude pulse is notably similar to motion recorded at this same site during the M=6.1 Joshua Tree earthquake of April 23, 1992 (report in preparation). During that event the accelerograph at Indio, at an epicentral distance of 24 km, recorded a prominent long-period, high-amplitude pulse (0.75 s, 0.41 g) about 8 seconds after triggering. That motion was also recorded on the east-west component.

Selected records will be digitized and computer processed for corrected acceleration, velocity and displacement curves and Fourier and response spectra.

REFERENCE

Borcherdt, R.D., J.B. Fletcher, E.G. Jensen, G.L. Maxwell, J.R. VanSchaack, R.E. Warrick, E. Cranswick, M.J.S. Johnston, and R. McClearn (1985). A general earthquake-observation system (GEOS), *Bull. Seism. Soc. Am.* 75, 6, 1783-1825.

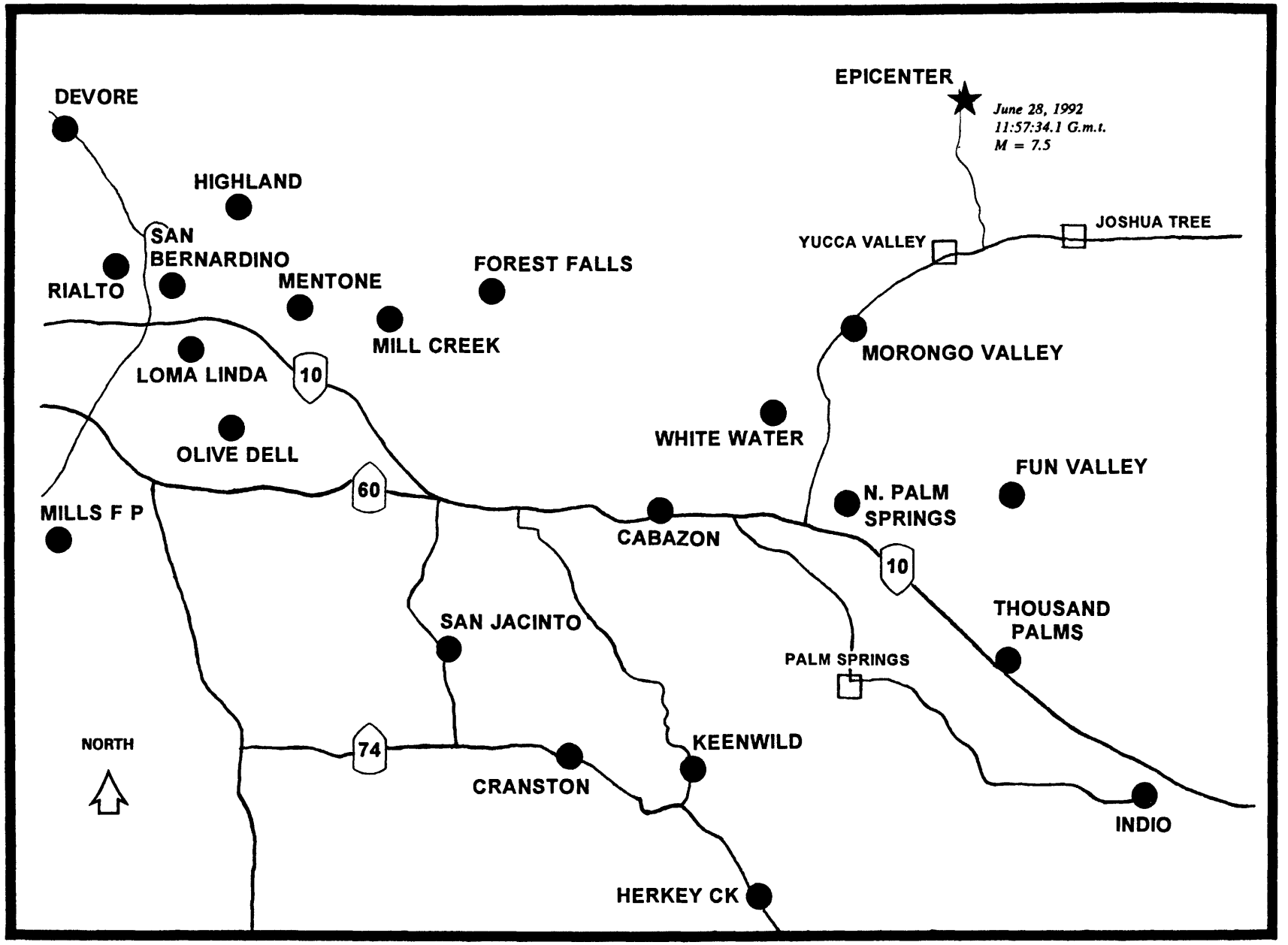


Figure 1. Strong-motion accelerograph station map.

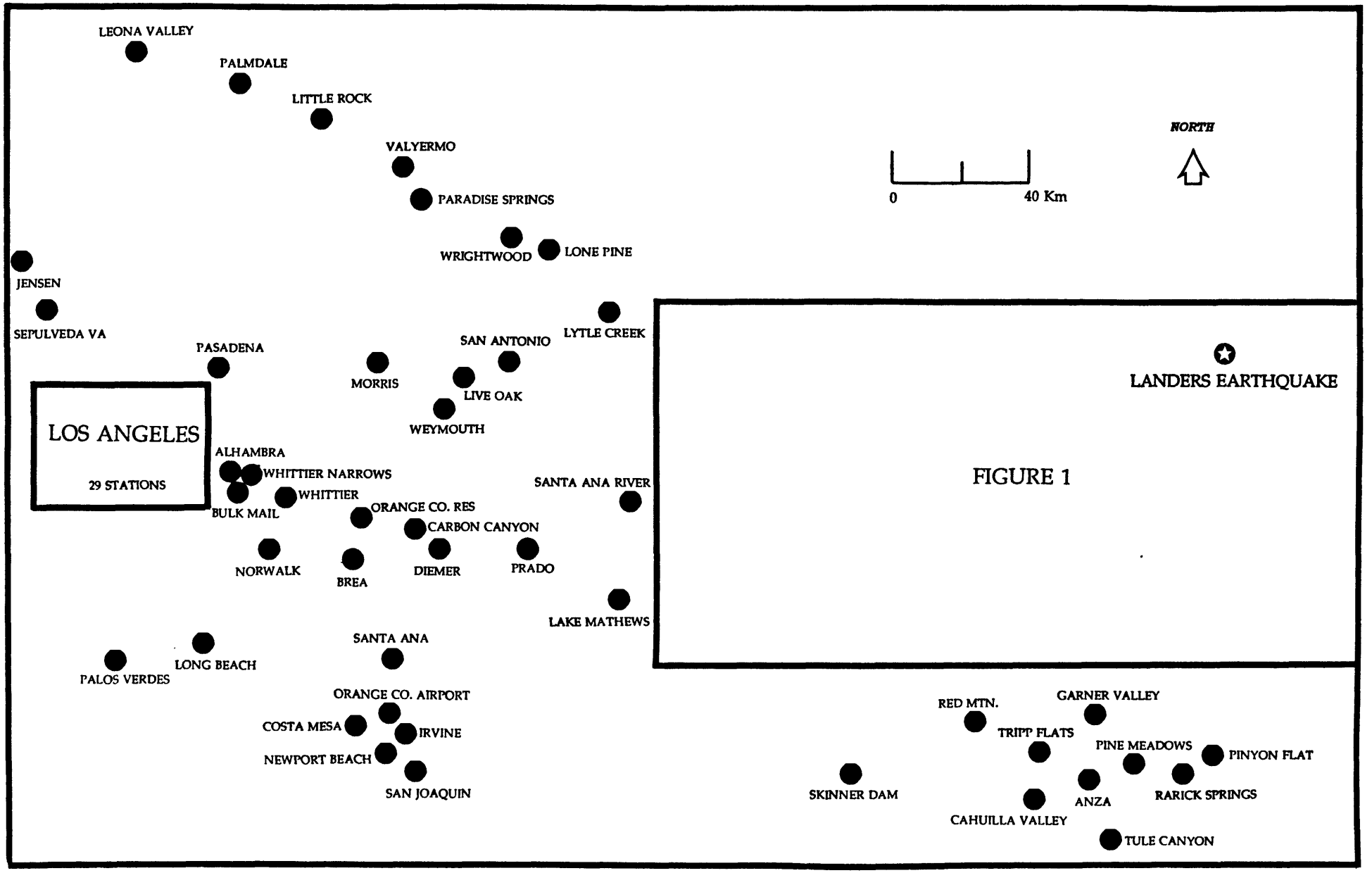


Figure 2. Selected strong-motion stations outside Figure 1.

TABLE 1. USGS STRONG-MOTION DATA FROM THE M=7.5 LANDERS EARTHQUAKE OF JUNE 28, 1992

EPICENTRAL DISTANCE (km)	STATION LOCATION [OWNER]	ACCELERATION COMPONENT DIRECTION	ACCELERATION MAXIMUM (g)	RECORD PAGE NO.
21	Morongo Valley	Up	0.16	20
	Hall (Geos #58)	360°	0.18	
	[TEMP]	090°	0.14	
21	Morongo Valley	135°	0.16	22
	Fire Station	Up	0.18	
	[USGS]	045°	0.22	
22	Morongo Valley	Up	0.20	23
	Ballpark (Geos #62)	360°	0.18	
	[TEMP]	090°	0.20	
31	Whitewater Trout Farm	270°	0.12	25
	[USGS]	Up	0.12	
		180°	0.12	
31	Fun Valley	135°	0.22	26
	Reservoir 361	Up	0.10	
	[USGS]	045°	0.22	
32	North Palm Springs	180°	0.14	27
	Fire Station	Up	0.11	
	[USGS]	090°	0.14	
32	North Palm Springs	Up	0.11	28
	(Geos #80)	360°	0.13	
	[TEMP]	090°	0.13	
35	Mission Creek Fault	Up	0.08	30
	Geos #57	360°	0.12	
	[TEMP]	090°	0.13	
43	Thousand Palms	135°	0.12	32
	Post Office	Up	0.09	
	[USGS]	045°	0.10	
46	Forest Falls	300°	0.10	33
	Post Office	Up	0.09	
	[USGS]	210°	0.12	
54	Indio	180°	0.13	34
	Jackson Road	Up	0.08	
	[USGS]	090°	0.29	
61	Anza Array	360°	0.03	35
	Keenwild Forest Station	Up	0.05	
	[USGS]	270°	0.03	

TABLE 1. USGS STRONG-MOTION DATA FROM THE M=7.5 LANDERS EARTHQUAKE OF JUNE 28, 1992 *(Continued)*

EPICENTRAL DISTANCE (km)	STATION LOCATION [OWNER]	ACCELERATION COMPONENT DIRECTION	ACCELERATION MAXIMUM (g)	RECORD PAGE NO.
63	Anza Array Herkey Creek Park [USGS]	135° Up 045°	0.04 0.03 0.06	36
63	Anza Array Cranston Forest Station [USGS]	315° Up 225°	0.05 0.08 0.07	37
64	San Bernardino Array Mill Creek Ranger Station [USGS]	360° Up 270°	0.13 0.10 0.14	38
64	Mentone Fire Station [USGS]	315° Up 225°	0.08 0.09 0.08	39
65	Anza Array San Jacinto Tunnel,West Portal [USGS]	360° Up 270°	0.07 0.06 0.05	40
66	Anza Array Pinyon Flat Observatory [USGS]	360° Up 270°	0.04 0.04 0.05	41
67	San Bernardino Array E. Highlands Plant #108 [USGS]	360° Up 270	0.06 0.03 0.06	42
67	Anza Array Garner Valley Fire Station [USGS]	360° Up 270°	0.08 0.09 0.09	43
71	Anza Array Rarick Springs [USGS]	360° Up 270°	0.04 0.03 0.05	44
71	Anza Array Pine Meadow Ranch [USGS]	360° Up 270°	0.05 0.05 0.05	45
72	San Bernardino Array Highland Fire Station [USGS]	315° Up 225°	0.08 0.07 0.09	46
72	Anza Array Tripp Flats [USGS] (Analog)	360° Up 270°	0.05 0.04 0.04	47
72	Anza Array Tripp Flats [USGS] (Digital)	360° Up 090°	0.04 0.04 0.05	48

TABLE 1. USGS STRONG-MOTION DATA FROM THE M=7.5 LANDERS EARTHQUAKE OF JUNE 28, 1992 *(Continued)*

EPICENTRAL DISTANCE (km)	STATION LOCATION [OWNER]	ACCELERATION COMPONENT DIRECTION	ACCELERATION MAXIMUM (g)	RECORD PAGE NO.
74	Anza Array	360°	0.06	50
	Red Mountain	Up	0.03	
	[USGS]	270°	0.08	
75	Anza Array	360°	0.03	51
	Anza Fire Station	Up	0.02	
	[USGS]	270°	0.02	
76	Reche Canyon	330°	0.04	52
	Olive Dell Ranch	Up	0.03	
	[USGS]	240°	0.05	
77	Loma Linda VA Hospital	360°	0.08	53
	North Ground Site	Up	0.10	
	[VA]	270°	0.09	
77	Loma Linda VA Hospital	360°	0.08	54
	South Ground Site	Up	0.05	
	[VA]	270°	0.08	
77	Loma Linda VA Hospital			
	[VA]			
	Structural Array			56
	Ch. 1 - Ground floor center	Down	0.04	
	2 - Ground floor center	180°	0.08	
	3 - Ground floor center	270°	0.08	
	4 - 4th floor center	270°	0.22	
	5 - Ground floor north	270°	0.10	
	6 - 4th floor center	180°	0.15	
	7 - 4th floor north	270°	0.27	
	8 - Ground floor south	180°	0.07	
	9 - 4th floor south	270°	0.23	
77	Mecca	270°	0.09	59
	Fire Station	Up	0.03	
	[USGS]	180°	0.07	
78	Loma Linda University	360°	0.10	60
	Medical Center	Up	0.05	
	[USGS]	270°	0.09	
79	San Bernardino Array	360°	0.12	61
	North "F" Street	Up	0.09	
	[USGS]	270°	0.12	
79	San Bernardino	090°	0.06	63
	County Government Center	Up	0.07	
	[USGS] Basement, SW	360°	0.09	

TABLE 1. USGS STRONG-MOTION DATA FROM THE M=7.5 LANDERS EARTHQUAKE OF JUNE 28, 1992 *(Continued)*

EPICENTRAL DISTANCE (km)	STATION LOCATION [OWNER]	ACCELERATION COMPONENT DIRECTION	ACCELERATION MAXIMUM (g)	RECORD PAGE NO.
79	San Bernardino			
	County Government Center			
	[USGS]			
	Structural Array			64
	Ch. 1 - 2nd floor NW	360°	0.13	
	2 - 2nd floor NE	090°	0.10	
	3 - 2nd floor NE	360°	0.14	
	4 - 2nd floor SW	090°	0.09	
	5 - 4th floor SW	090°	0.21	
	6 - 4th floor NW	360°	0.17	
	7 - Roof (6th) NE	090°	0.28	
	8 - Roof (6th) NW	360°	0.34	
	9 - Roof (6th) SW	090°	0.26	
	10 - Roof (6th) NE	360°	0.36	
	11 - 4th floor NE	090°	0.17	
	12 - 4th floor NE	360°	0.26	
79	San Bernardino	360°	0.06	67
	County Government Center	Up	0.05	
	[USGS] Ground Site	270°	0.07	
81	San Bernardino Array	360°	0.10	68
	San Bernardino Valley College	Up	0.08	
	[USGS]	270°	0.11	
83	Anza Array	360°	0.05	69
	Tule Canyon	Up	0.03	
	[USGS]	270°	0.03	
84	Anza Array	360°	0.05	70
	Cahuilla Valley	Up	0.04	
	[USGS]	270°	0.08	
86	San Bernardino Array	360°	0.06	71
	Rialto Fire Station	Up	0.05	
	[USGS]	270°	0.06	
87	Mills Filter Plant	360°	0.04	72
	[MWD]	Up	0.03	
		270°	0.05	
89	San Bernardino Array	360°	0.06	73
	Devore Water Department	Up	0.07	
	[USGS]	270°	0.06	
90	Skinner Dam	178°	0.04	75
	Left Abutment	Up	0.03	
	[MWD]	088°	0.05	

TABLE 1. USGS STRONG-MOTION DATA FROM THE M=7.5 LANDERS EARTHQUAKE OF JUNE 28, 1992 *(Continued)*

EPICENTRAL DISTANCE (km)	STATION LOCATION [OWNER]	ACCELERATION COMPONENT DIRECTION	ACCELERATION MAXIMUM (g)	RECORD PAGE NO.
90	Skinner Dam - Toe			
	[MWD]			
	Structural Array			76
	Ch. 1 - Center crest	180°	0.16	
	2 - Center crest	Up	0.04	
	3 - Center crest	270°	0.11	
	4 - Left crest	180°	0.09	
	5 - Left crest	270°	0.12	
	6 - Left slope	270°	0.08	
	7 - Center slope	180°	0.04	
	8 - Center slope	Up	0.03	
	9 - Center slope	270°	0.06	
	10 - Center toe	180°	0.08	
	11 - Center toe	Up	0.03	
	12 - Center toe	270°	0.06	
92	Hinds Pumping Plant	270°	0.05	79
	[MWD]	Up	0.04	
		180°	0.04	
94	Anza Array	360°	0.03	80
	Chihuahua Valley	Up	0.02	
	[USGS]	270°	0.03	
95	Anza Array	360°	0.07	81
	Rancho de Anza	Up	0.03	
	[USGS]	270°	0.05	
97	Riverside	166°	0.05	83
	Santa Ana River Bridge	Up	0.04	
	[USGS/MWD] N. Abutment	076°	0.03	
97	Riverside			
	Santa Ana River Bridge			
	[USGS/MWD]			
	Structural Array			84
	Ch. 1 - North abutment	346°	0.06	
	2 - North abutment	Down	0.02	
	3 - North abutment	076°	0.02	
	4 - Pier 7-8, mid-span	346°	0.12	
	5 - Pier 7-8, mid-span	Down	0.11	
	6 - Pier 7-8, mid-span	076°	0.10	
	7 - Pier 8, below bearing	346°	0.11	
	8 - Pier 8, below bearing	Down	0.02	
	9 - Pier 8, below bearing	076°	0.02	
	10 - Pier 8 above bearing	346°	0.12	
	11 - Pier 8 above bearing	Down	0.02	
	12 - Pier 8 above bearing	076°	0.02	

TABLE 1. USGS STRONG-MOTION DATA FROM THE M=7.5 LANDERS EARTHQUAKE OF JUNE 28, 1992 *(Continued)*

EPICENTRAL DISTANCE (km)	STATION LOCATION [OWNER]	ACCELERATION COMPONENT DIRECTION	ACCELERATION MAXIMUM (g)	RECORD PAGE NO.
97	Lytle Creek	360°	0.08	87
	Mt. Lakes Resort	Up	0.04	
	[USGS]	270°	0.08	
101	Lake Mathews Dam	252°	0.05	88
	Dike Toe	Up	0.04	
	[MWD]	162°	0.08	
111	Borrego Springs	315°	0.04	89
	Scripps Clinic	Up	0.03	
	[USGS]	225°	0.03	
114	San Antonio Dam	090°	0.07	90
	Crest	Up	0.04	
	[ACOE]	360°	0.14	
114	San Antonio Dam	090°	0.04	91
	Downstream	Up	0.02	
	[ACOE]	360°	0.05	
116	Prado Dam	090°	0.06	92
	Crest	Up	0.03	
	[ACOE]	360°	0.08	
116	Prado Dam	090°	0.09	93
	Downstream	Up	0.05	
	[ACOE]	360°	0.08	
116	Prado Dam	090°	0.04	94
	Left Abutment	Up	0.04	
	[ACOE]	360°	0.05	
121	Iron Mountain	010°	0.02	95
	Pumping Plant	Up	0.02	
	[MWD]	280°	0.03	
121	Live Oak Reservoir	180°	0.03	96
	Abutment	Up	0.02	
	[MWD]	090°	0.02	
124	Weymouth Filter Plant	017°	0.07	97
	Ground Site	Up	0.03	
	[MWD]	287°	0.05	
124	Weymouth Filter Plant	017°	0.16	98
	Tank Top	Up	0.15	
	[MWD]	287°	0.18	

TABLE 1. USGS STRONG-MOTION DATA FROM THE M=7.5 LANDERS EARTHQUAKE OF JUNE 28, 1992 *(Continued)*

EPICENTRAL DISTANCE (km)	STATION LOCATION [OWNER]	ACCELERATION COMPONENT DIRECTION	ACCELERATION MAXIMUM (g)	RECORD PAGE NO.
127	Paradise Springs Camp	120°	0.03	99
	[USGS]	Up	0.03	
		030°	0.03	
131	Diemer Filter Plant	281°	0.04	100
	Administration Building	Up	0.03	
	[MWD]	191°	0.04	
131	Diemer Filter Plant	281°	0.07	101
	Reservoir Roof	Up	0.04	
	[MWD]	191°	0.06	
133	Valyermo Forest Station	300°	0.08	102
	[USGS]	Up	0.05	
		210°	0.08	
133	Carbon Canyon Dam	131°	0.07	103
	Crest	Up	0.03	
	[ACOE]	041°	0.05	
133	Carbon Canyon Dam	131°	0.03	104
	Left Abutment	Up	0.02	
	[ACOE]	041°	0.04	
133	Carbon Canyon Dam	131°	0.05	105
	Right Abutment	Up	0.03	
	[ACOE]	041°	0.05	
136	Orange County Reservoir	090°	0.03	106
	Ground Level	Up	0.03	
	[MWD]	360°	0.04	
141	Santa Ana, 400 Civic Center Dr.	360°	0.05	107
	Orange County Engineering Bldg.	Up	0.03	
	[USGS]	270°	0.04	
142	Brea Dam	132°	0.06	108
	Crest	Up	0.04	
	[ACOE]	042°	0.07	
142	Brea Dam	132°	0.05	109
	Left Abutment	Up	0.03	
	[ACOE]	042°	0.07	
142	Brea Dam	132°	0.05	110
	Downstream	Up	0.03	
	[ACOE]	042°	0.03	

TABLE 1. USGS STRONG-MOTION DATA FROM THE M=7.5 LANDERS EARTHQUAKE OF JUNE 28, 1992 *(Continued)*

EPICENTRAL DISTANCE (km)	STATION LOCATION [OWNER]	ACCELERATION COMPONENT DIRECTION	ACCELERATION MAXIMUM (g)	RECORD PAGE NO.
144	Costa Mesa	360°	0.06	111
	John Wayne Airport	Up	0.02	
	[USGS]	270°	0.05	
145	Irvine	060°	0.04	113
	19900 MacArthur Blvd.	Up	0.02	
	[USGS]	330°	0.04	
145	Irvine			
	19900 MacArthur Blvd.			
	[USGS]			
	Structural Array			114
	Ch. 1 - Roof NE corner	060°	0.18	
	2 - Roof SW corner	060°	0.15	
	3 - 7th Floor NE	060°	0.11	
	4 - 7th Floor SW	060°	0.10	
	5 - 1st Floor South side	060°	0.05	
	6 - Roof, SW corner	330°	0.16	
	7 - 7th Floor, SW	330°	0.10	
	8 - 1st Floor West side	330°	0.05	
	9 - 1st Floor South side	330°	0.04	
	10 - 7th Floor SW corner	Down	0.08	
	11 - 1st Floor West side	Down	0.04	
	12 - 1st Floor South side	Down	0.03	
145	San Joaquin Reservoir	087°	0.06	117
	Crest	Up	0.06	
	[MWD]	357°	0.10	
145	San Joaquin Reservoir	087°	0.02	118
	Left Abutment	Up	0.02	
	[MWD]	357°	0.02	
146	Chantry Flat	290°	0.07	119
	Forest Station, Site 1	Up	0.06	
	[USGS]	020°	0.04	
146	Chantry Flat	020°	0.06	121
	Forest Station, Site 2	Up	0.02	
	[USGS]	290°	0.07	
146	Chantry Flat	290°	0.09	123
	Forest Station, Site 3	Up	0.04	
	[USGS]	020°	0.07	
147	Littlerock	300°	0.06	125
	Post Office	Up	0.05	
	[USGS]	210°	0.08	

TABLE 1. USGS STRONG-MOTION DATA FROM THE M=7.5 LANDERS EARTHQUAKE OF JUNE 28, 1992 *(Continued)*

EPICENTRAL DISTANCE (km)	STATION LOCATION [OWNER]	ACCELERATION COMPONENT DIRECTION	ACCELERATION MAXIMUM (g)	RECORD PAGE NO.
148	Newport Beach	360°	0.07	126
	800 Marguerite	Up	0.02	
	[USGS]	270°	0.06	
148	Newport Beach			
	800-840 Newport Center Drive			
	[USGS]			
	Structural Array			128
	Ch. 1 - Tower 2 Level 1 Center	360°	0.04	
	2 - Tower 2 Level 1 Center	Up	0.02	
	3 - Tower 2 Level 1 Center	090°	0.05	
	4 - Tower 2 Level 2 West	360°	----	
	5 - Middle Building Level 2	360°	0.04	
	6 - Middle Building Level 2	090°	0.08	
	7 - Tower 2, Level 9 South	090°	0.15	
	8-12	Inoperative		
149	Whittier	180°	0.03	131
	7215 Bright Ave., Basement	Up	0.02	
	[CODE/USGS]	090°	0.03	
149	Whittier	180°	0.06	132
	7215 Bright Ave., 5th Floor	Up	0.03	
	[CODE/USGS]	090°	0.07	
149	Whittier	180°	0.08	133
	7215 Bright Ave., 10th Floor	Up	0.03	
	[CODE/USGS]	090°	0.10	
150	Whittier Narrows Dam	118°	0.06	134
	Crest	Up	0.03	
	[ACOE]	028°	0.05	
150	Whittier Narrows Dam	118°	0.05	135
	Upstream (Baseyard)	Up	0.02	
	[ACOE]	028°	0.05	
151	Costa Mesa Fire Station #4	360°	0.06	136
	2300 Placentia Ave.	Up	0.03	
	[USGS]	270°	0.03	
153	Norwalk	090°	0.05	138
	12440 Imperial Highway	Up	0.03	
	[USGS] Basement	360°	0.04	

TABLE 1. USGS STRONG-MOTION DATA FROM THE M=7.5 LANDERS EARTHQUAKE OF JUNE 28, 1992 *(Continued)*

EPICENTRAL DISTANCE (km)	STATION LOCATION [OWNER]	ACCELERATION COMPONENT DIRECTION	ACCELERATION MAXIMUM (g)	RECORD PAGE NO.
153	Norwalk 12440 Imperial Highway [USGS]			
	Structural Array			139
	Ch. 1 - 9th Level(Roof) Center	090°	0.12	
	2 - 6th Level Center	090°	0.08	
	3 - 3rd Level Center	090°	0.04	
	4 - 2nd Level Center	090°	0.06	
	5 - 1st Level(Bsmt) East end	180°	0.06	
	6 - 6th Level West-center	180°	0.22	
	7 - 1st Level(Bsmt) Center	Up	0.02	
	8 - 1st Level(Bsmt) Center	090°	----	
	9 - 1st Level(Bsmt) Center	180°	0.06	
	10 - Downhole (30') Center	Up	0.02	
	11 - Downhole (30') Center	090°	0.05	
	12 - Downhole (30') Center	180°	0.04	
153	Norwalk 12440 Imperial Highway [USGS]			
	Structural Array			142
	Ch. 13 - 9th Level Roof East end	180°	0.22	
	14 - 6th Level East end	180°	0.16	
	15 - 3rd Level East end	180°	0.10	
	16 - 2nd Level East end	180°	0.07	
	17 - 9th Level Roof Bldg ctr	180°	0.24	
	18 - 6th Level Bldg Ctr	180°	0.21	
	19 - 3rd Level Bldg Ctr	180°	0.12	
	20 - 2nd Level Bldg Ctr	180°	0.06	
	21 - 9th Level Roof West end	180°	0.20	
	22 - 6th Level West end	180°	0.14	
	23 - 3rd Level West end	180°	0.08	
	24 - 2nd Level West end	180°	0.06	
153	Norwalk 12440 Imperial Highway [USGS] North Ground Site	090° Up 360°	0.07 0.08 0.07	145
153	Norwalk 12400 Imperial Highway [USGS] South Ground Site	090° Up 360°	0.06 0.05 0.05	146
155	Garvey Reservoir Crest [MWD]	114° Up 024°	0.04 0.02 0.05	147
155	Garvey Reservoir Abutment Building [MWD]	114° Up 024°	0.03 0.02 0.03	148

TABLE 1. USGS STRONG-MOTION DATA FROM THE M=7.5 LANDERS EARTHQUAKE OF JUNE 28, 1992 *(Continued)*

EPICENTRAL DISTANCE (km)	STATION LOCATION [OWNER]	ACCELERATION COMPONENT DIRECTION	ACCELERATION MAXIMUM (g)	RECORD PAGE NO.
158	Alhambra			
	900 South Fremont Ave.			
	[USGS]			
	Structural Array			150
	Ch. 1 - 12th Floor Center	360°	0.09	
	2 - 12th Floor Center	090°	0.13	
	3 - 12th Floor North end	090°	0.12	
	4 - 6th Floor center	090°	0.07	
	5 - 6th Floor center	360°	0.06	
	6 - 6th Floor North end	090°	0.06	
	7 - 2nd Floor Center	090°	0.05	
	8 - 2nd Floor Center	360°	0.07	
	9 - 2nd Floor North end	090°	0.03	
	10 - Basement Center	360°	0.03	
	11 - Basement Center	Up	0.03	
	12 - Basement Center	090°	0.04	
159	Palmdale	120°	0.07	153
	Fire Station	Up	0.03	
	[USGS]	030°	0.06	
160	Pasadena	360°	0.04	154
	535 S. Wilson Ave.	Up	0.02	
	[USGS] (Analog)	270°	0.03	
160	Pasadena	360°	0.04	155
	535 S. Wilson Ave.	Up	0.02	
	[USGS] (Digital)	270°	Inop.	
160	Los Angeles	360°	0.06	156
	Bulk Mail Facility (Bell)	Up	0.02	
	[USGS]	270°	0.05	
162	Long Beach VA Hospital	360°	0.03	157
	Basement	Up	0.02	
	[VA]	270°	0.03	
162	Long Beach VA Hospital	360°	0.08	158
	6th Floor	Up	0.02	
	[VA]	270°	0.07	
162	Long Beach VA Hospital	360°	0.12	159
	11th Floor	Up	0.03	
	[VA]	270°	0.12	
162	Long Beach VA Hospital	360°	0.03	160
	Ground Site	Up	0.02	
	[VA]	270°	0.03	

TABLE 1. USGS STRONG-MOTION DATA FROM THE M=7.5 LANDERS EARTHQUAKE OF JUNE 28, 1992 *(Continued)*

EPICENTRAL DISTANCE (km)	STATION LOCATION [OWNER]	ACCELERATION COMPONENT DIRECTION	ACCELERATION MAXIMUM (g)	RECORD PAGE NO.
163	Los Angeles	360°	0.06	161
	981 Montecito Dr.	Up	0.03	
	[USGS]	270°	0.05	
165	San Diego VA Hospital	180°	0.01	163
	Basement	Up	0.02	
	[VA]	090°	0.01	
165	San Diego VA Hospital			
	Building 1			
	[VA]			
	Structural Array			164
	Ch. 1 - 7th Level West end	360°	0.05	
	2 - 7th Level West central	360°	0.05	
	3 - 7th Level Center	360°	0.06	
	4 - 7th Level Center	090°	0.07	
	5 - 7th Level East central	360°	0.06	
	6 - 7th Level East end	090°	0.06	
	7 - 7th Level East end	360°	0.06	
	8 - 3rd Level East end	090°	0.03	
	9 - 3rd Level East end	360°	0.03	
	10 - Basement Center	Up	0.02	
	11 - Basement Center	360°	0.02	
	12 - Basement Center	090°	0.02	
167	Los Angeles	120	0.08	167
	255 E. Temple, 21st level	Up	0.05	
	[CODE]	030	0.10	
167	Los Angeles	348°	0.03	168
	1111 Sunset Blvd., Basement	Up	0.02	
	[MWD]	258°	0.03	
167	Los Angeles	348°	0.04	169
	1111 Sunset Blvd., 4th floor	Up	0.02	
	[MWD]	258°	0.05	
167	Los Angeles	348°	0.09	170
	1111 Sunset Blvd., Roof (8)	Up	0.03	
	[MWD]	258°	0.09	
168	Los Angeles	083°	0.08	171
	333 S. Hope, 55th floor	Up	0.07	
	[CODE]	353°	0.08	
169	Los Angeles	298°	0.03	173
	1100 Wilshire Blvd., Bsmt 3 NE	Up	0.02	
	[JCG/USGS]	208°	0.02	

TABLE 1. USGS STRONG-MOTION DATA FROM THE M=7.5 LANDERS EARTHQUAKE OF JUNE 28, 1992 *(Continued)*

EPICENTRAL DISTANCE (km)	STATION LOCATION [OWNER]	ACCELERATION COMPONENT DIRECTION	ACCELERATION MAXIMUM (g)	RECORD PAGE NO.
169	Los Angeles	298°	0.03	174
	1100 Wilshire Blvd., Bsmt 3 SE	Up	0.02	
	[JCG/USGS]	208°	0.02	
169	Los Angeles	298°	0.04	175
	1100 Wilshire Blvd., Bsmt 4 NW	Up	0.02	
	[JCG/USGS]	208°	0.02	
169	Los Angeles			
	1100 Wilshire Blvd.			
	[JCG/USGS]			
	Structural Array			176
	Ch. 1 - 12th Floor North	298°	0.08	
	2 - 12th Floor North	208°	0.05	
	3 - 12th Floor South	208°	0.05	
	4 - 13th Floor North	298°	0.08	
	5 - 13th Floor North	208°	0.06	
	6 - 13th Floor South	208°	0.05	
	7 - 32nd Floor North	298°	0.08	
	8 - 32nd Floor North	208°	0.14	
	9 - 32nd Floor South	208°	0.06	
	10 - Ground Floor North	298°	0.02	
	11 - Ground Floor North	208°	0.03	
	12 - Ground Floor South	208°	0.02	
171	Los Angeles	028°	0.06	179
	600 S. Commonwealth, 19th floor	Up	0.04	
	[CODE]	298°	0.04	
171	Los Angeles	090°	0.09	180
	1526 N. Edgemont St., Roof (8)	Up	0.03	
	[CODE]	360°	0.13	
171	Los Angeles	360°	0.03	181
	695 S. Vermont, 18th floor	Up	0.03	
	[CODE]	270°	0.03	
171	Los Angeles	090°	0.13	182
	3000 Leeward, Roof, 13th floor	Up	0.02	
	[CODE]	360°	0.10	
172	Los Angeles	360°	0.02	183
	Griffith Park Observatory	Up	0.02	
	[USGS]	270°	0.02	
175	Los Angeles	360°	0.04	184
	2005 N. Highland Ave., Roof (8)	Up	0.01	
	[CODE]	270°	0.03	

TABLE 1. USGS STRONG-MOTION DATA FROM THE M=7.5 LANDERS EARTHQUAKE OF JUNE 28, 1992 *(Continued)*

EPICENTRAL DISTANCE (km)	STATION LOCATION [OWNER]	ACCELERATION COMPONENT DIRECTION	ACCELERATION MAXIMUM (g)	RECORD PAGE NO.
175	Los Angeles 19191 S. Vermont, Roof (11) [CODE]	360° Up 270°	0.10 0.02 0.11	185
176	Los Angeles 4929 Wilshire Blvd., Roof (11) [CODE]	180° Up 090°	0.10 0.05 0.16	186
176	Leona Valley Fire Station [USGS]	120° Up 030°	0.04 0.03 0.06	187
179	Los Angeles 444 S. San Vicente, Roof (12) [CODE]	335° Up 245°	0.09 0.04 0.15	188
180	Palos Verdes Reservoir Abutment [USGS]	210° Up 120°	0.03 0.02 0.03	189
180	Palos Verdes Reservoir Crest [MWD]	210° Up 120°	0.03 0.02 0.03	190
180	Los Angeles 5250 Century Blvd., Roof (8) [CODE]	090° Up 360°	0.10 0.03 0.05	191
182	Los Angeles 6101 Century Blvd., 15th level [CODE]	270° Up 180°	0.07 0.02 0.12	192
182	Los Angeles 2049 Century Park East [CODE] 43rd Floor	320° Up 230°	0.06 0.04 0.09	193
183	Los Angeles 2029 Century Park East [CODE] 43rd Floor	320° Up 230°	0.07 0.04 0.08	194
183	Los Angeles 2121 Ave. of the Stars [CODE] 36th level	300 Up 210	0.09 0.06 0.13	195
184	Los Angeles 10550 Wilshire Blvd. [CODE] Roof (14)	287° Up 197°	0.05 0.02 0.08	196
184	Los Angeles 10601 Wilshire Blvd. [CODE] Roof (21)	250 Up 160	0.08 0.02 0.07	197

TABLE 1. USGS STRONG-MOTION DATA FROM THE M=7.5 LANDERS EARTHQUAKE OF JUNE 28, 1992 *(Continued)*

EPICENTRAL DISTANCE (km)	STATION LOCATION [OWNER]	ACCELERATION COMPONENT DIRECTION	ACCELERATION MAXIMUM (g)	RECORD PAGE NO.
184	Los Angeles	160	0.11	198
	10660 Wilshire Blvd.	Up	0.02	
	[CODE] Roof (19)	070	0.11	
185	Los Angeles	252°	0.09	199
	10751 Wilshire Blvd.	Up	0.02	
	[CODE] Roof (12)	162°	0.09	
186	Los Angeles	235°	0.05	200
	1955 1/2 Purdue Ave.	Up	0.02	
	[USGS] Basement	145°	0.03	
186	Los Angeles	235°	0.05	201
	1955 1/2 Purdue Ave.	Up	0.03	
	[USGS] 1st level	145°	0.04	
186	Los Angeles	235°	0.05	202
	1955 1/2 Purdue Ave.	Up	0.03	
	[USGS] 3rd level	145°	0.07	
188	Los Angeles	226°	0.06	203
	12121 Wilshire Blvd.	Up	0.03	
	[CODE] Roof (15)	136°	0.05	
188	Los Angeles	360°	0.03	204
	Sepulveda VA Hospital	Up	0.02	
	[VA]	270°	0.03	
190	Jensen Filter Plant	022°	0.07	205
	Administration Building	Up	0.02	
	[MWD] Basement	292°	0.09	
190	Jensen Filter Plant	022°	0.05	206
	Generator Building	Up	0.02	
	[MWD]	292°	0.05	
190	Jensen Filter Plant	022°	0.06	207
	Reservoir Roof	Up	0.03	
	[MWD]	292°	0.06	
208	Gene Pumping Plant	351°	0.01	208
	[MWD]	Up	0.01	
		261°	0.01	
245	Isabella Auxiliary Dam	290°	0.06	209
	Right Crest	Up	0.03	
	[ACOE]	200°	0.05	
245	Isabella Auxiliary Dam	290°	0.06	210
	Upper Tower	Up	0.03	
	[ACOE]	200°	0.10	

TABLE 1. USGS STRONG-MOTION DATA FROM THE M=7.5 LANDERS EARTHQUAKE OF JUNE 28, 1992 *(Continued)*

EPICENTRAL DISTANCE (km)	STATION LOCATION [OWNER]	ACCELERATION COMPONENT DIRECTION	ACCELERATION MAXIMUM (g)	RECORD PAGE NO.
245	Isabella Auxiliary Dam	290°	0.05	211
	Left Crest	Up	0.02	
	[ACOE]	200°	0.10	
245	Isabella Auxiliary Dam	290°	0.02	212
	Left Abutment	Up	0.01	
	[ACOE]	200°	0.02	
245	Isabella Auxiliary Dam	290°	0.08	213
	Downstream	Up	0.02	
	[ACOE]	200°	0.05	
245	Isabella Auxiliary Dam	290°	0.03	214
	Right Abutment	Up	0.01	
	[ACOE]	200°	0.03	
306	Lake Success Dam	285°	0.04	215
	Right Crest	Up	0.02	
	[ACOE]	195°	0.04	
338	Terminus Dam	004°	0.03	216
	Main Right Crest	Up	0.02	
	[ACOE]	274°	0.04	

[OWNER CODE]
ACOE - U.S. Army Corps of Engineers
CODE - Building Owner
JCG - JCG Finance Corporation of America
MWD - Metropolitan Water District of So. Calif.
TEMP - Temporary USGS "aftershock" station
USGS - U.S. Geological Survey
VA - U.S. Dept. of Veterans Affairs

 (page 20 follows)

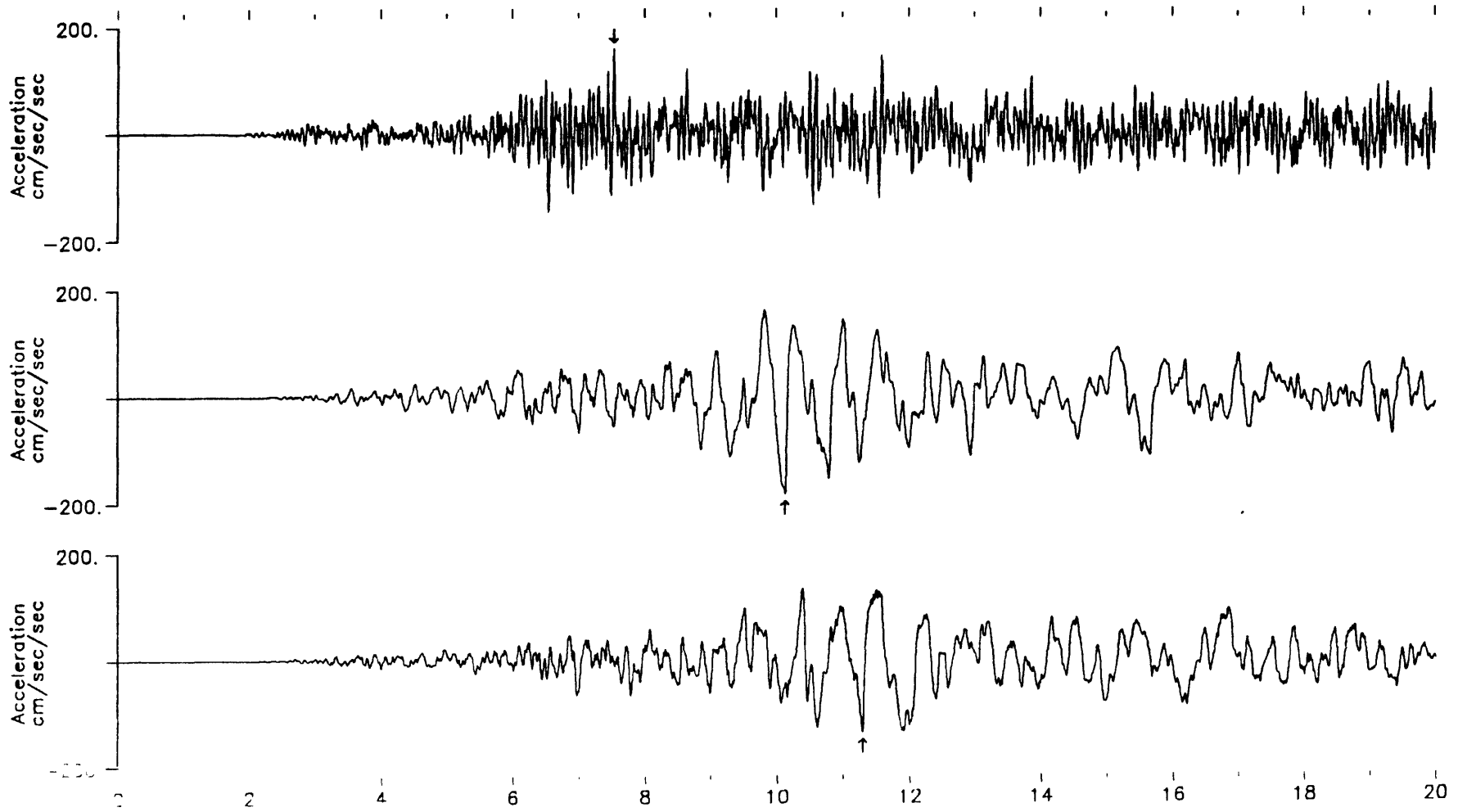
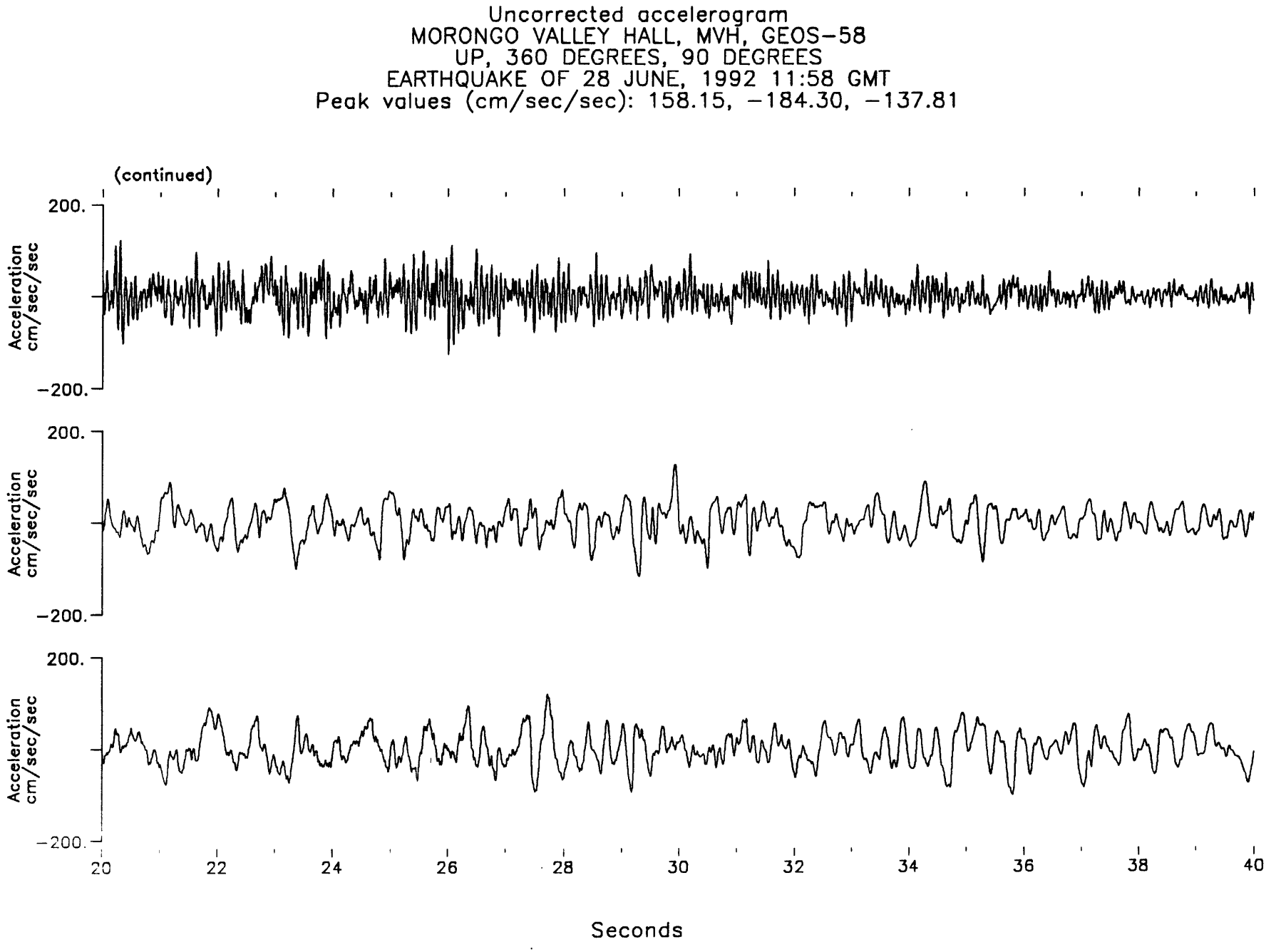
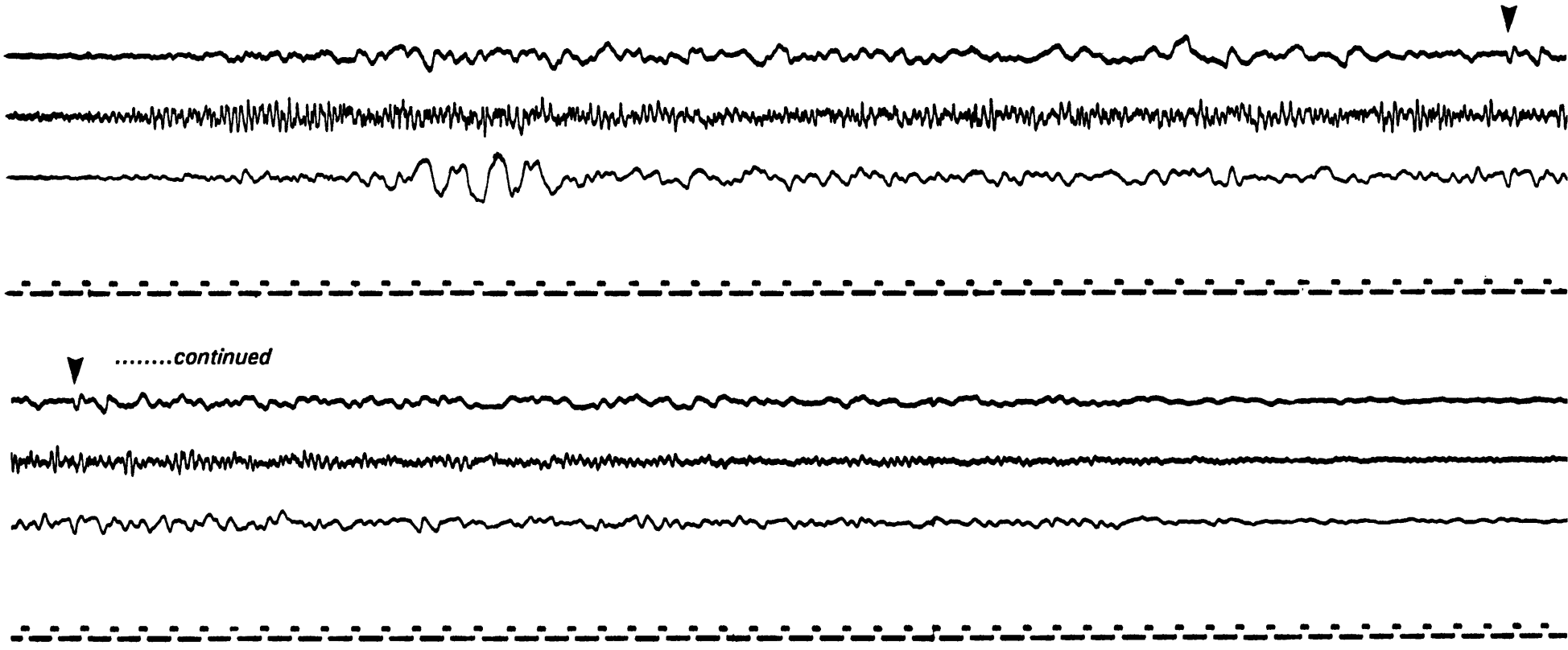


Figure 3. Accelerograms and well instrumented structure drawings.


Uncorrected accelerogram
MORONGO VALLEY HALL, MVH, GEOS-58
UP, 360 DEGREES, 90 DEGREES
EARTHQUAKE OF 28 JUNE, 1992 11:58 GMT
Peak values (cm/sec/sec): 158.15, -184.30, -137.81
(continued)
Acceleration cm/sec/sec
200.
-200.
Seconds
20
22
24
26
28
30
32
34
36
38
40

NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5071 34.048N, 116.577W	135°	Sens. = 1.84 cm/g Freq. = 25.9 Hz	0.16 g
Morongo Valley Fire Station		Damp. = 0.60 crit	
SMA-1T No. 1483 (USGS)	Up	Sens. = 1.87 cm/g Freq. = 25.6 Hz	0.18
Earthquake of		Damp. = 0.60 crit	
28 June 1992 - 1158 G.m.t.	045°	Sens. = 1.79 cm/g Freq. = 26.3 Hz Damp. = 0.60 crit	0.22

Film speed = 1 cm/sec



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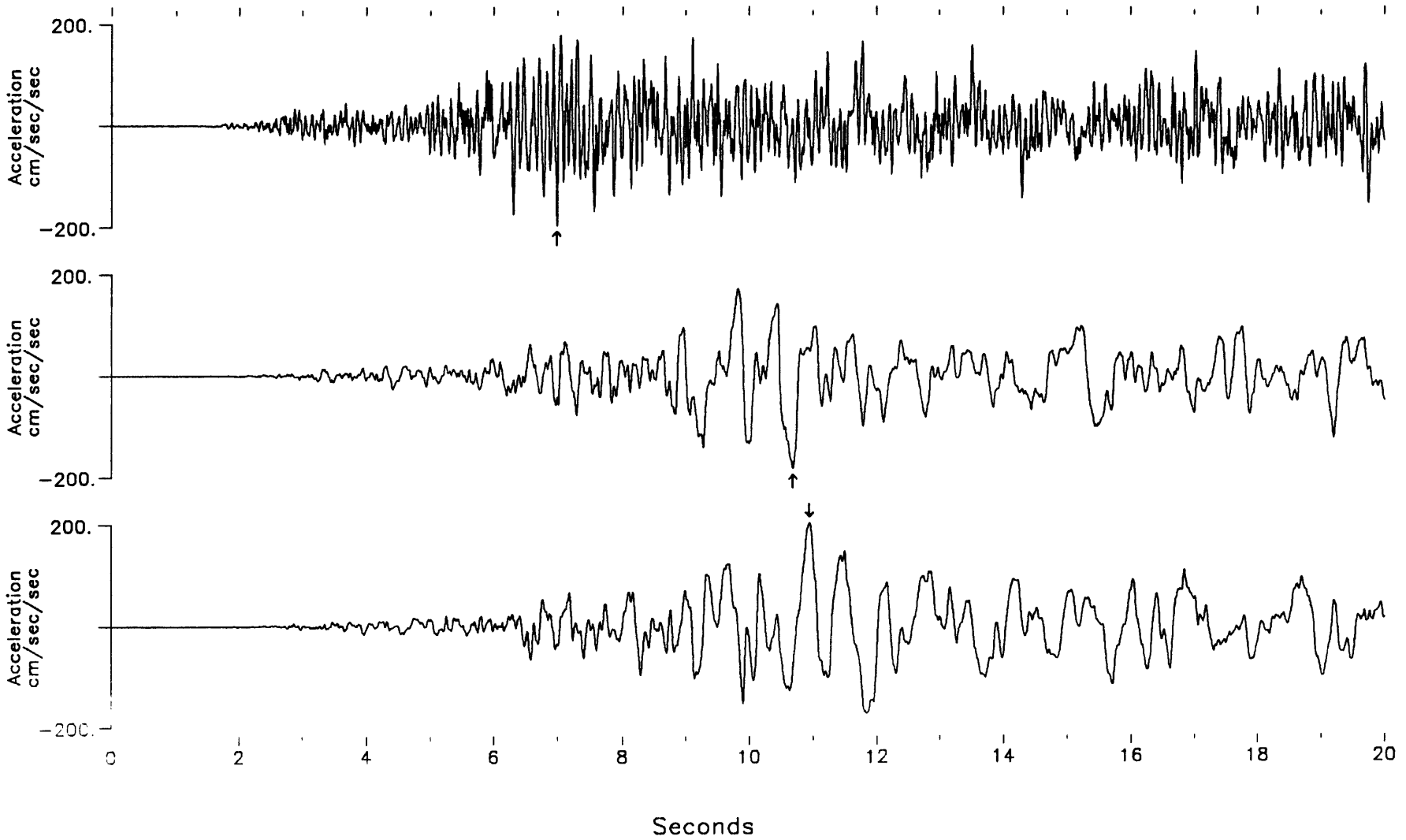
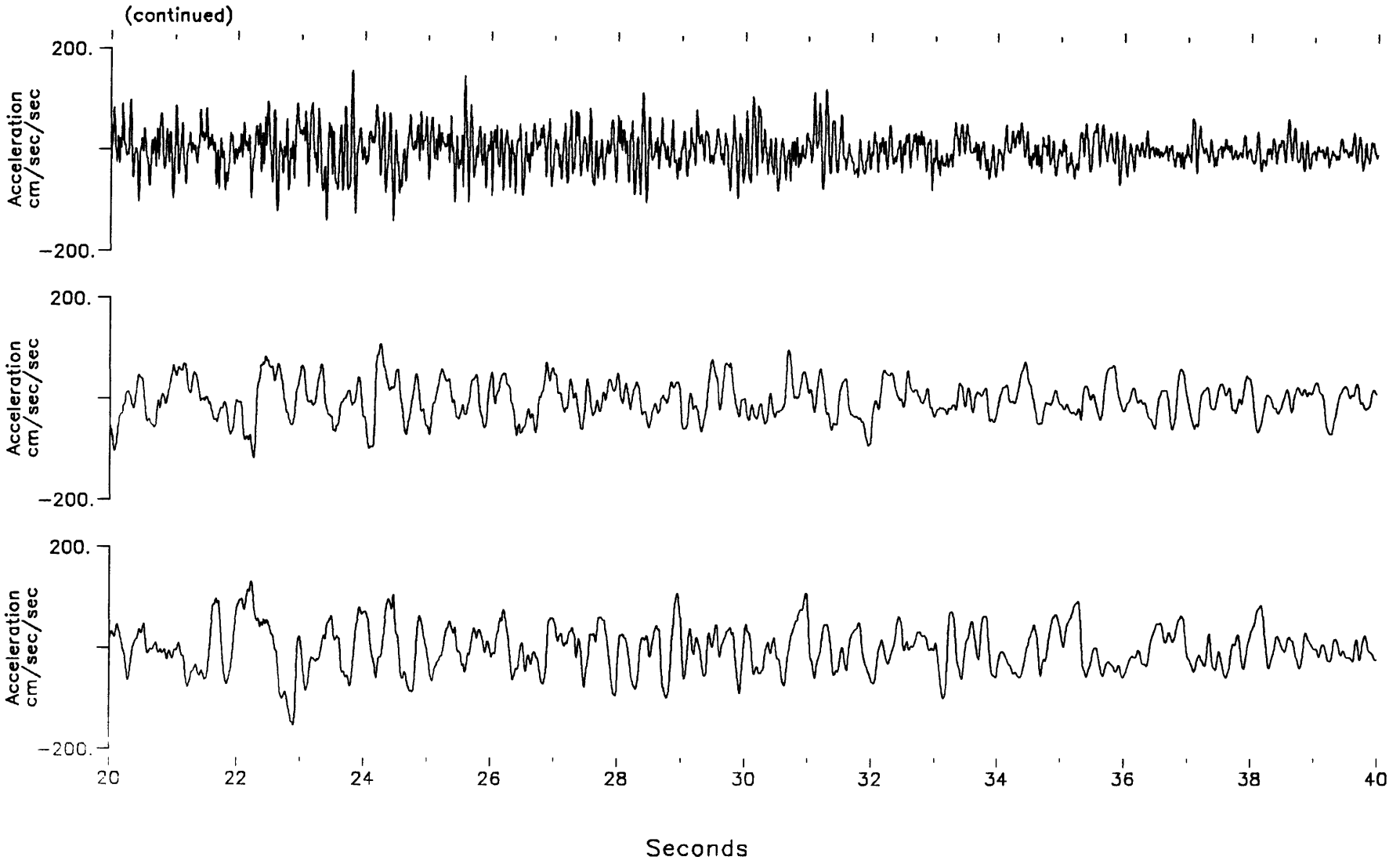
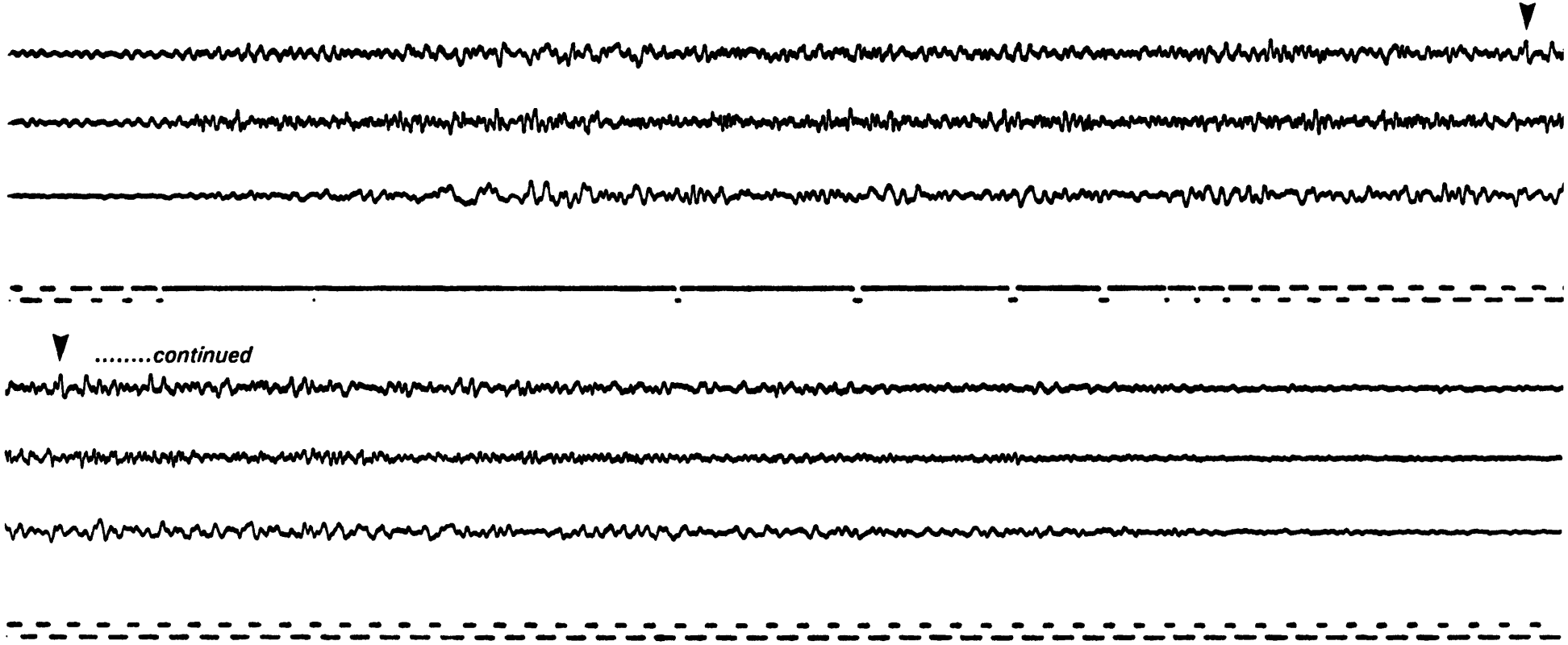

Uncorrected accelerogram
MORONGO VALLEY BALLPARK, MVB, GEOS-62
UP, 360 DEGREES, 90 DEGREES
EARTHQUAKE OF 28 JUNE, 1992 11:58 GMT
Peak values (cm/sec/sec): -196.93, -183.82, 202.79
200.
-200.
Acceleration
cm/sec/sec
0
2
4
6
8
10
12
14
16
18
20
Seconds


Uncorrected accelerogram
MORONGO VALLEY BALLPARK, MVB, GEOS-62
UP, 360 DEGREES, 90 DEGREES
EARTHQUAKE OF 28 JUNE, 1992 11:58 GMT
Peak values (cm/sec/sec): -196.93, -183.82, 202.79
(continued)
Acceleration cm/sec/sec
200.
-200.
Seconds
20
22
24
26
28
30
32
34
36
38
40

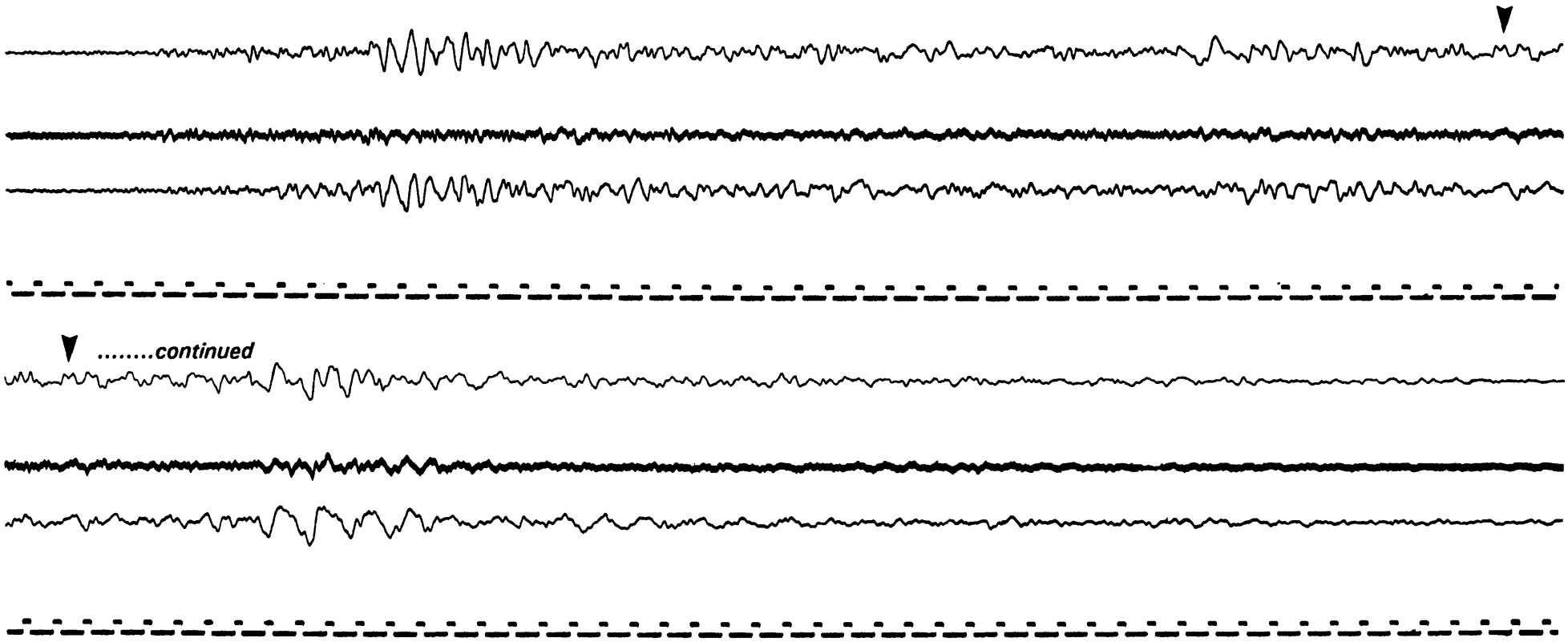
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5072 33.989N, 116.655W	270°	Sens. = 1.85 cm/g Freq. = 25.6 Hz	0.12 g
Whitewater Trout Farm		Damp. = 0.60 crit	
SMA-1T No. 1463 (USGS)	Up	Sens. = 1.85 cm/g Freq. = 26.3 Hz	0.12
Earthquake of		Damp. = 0.60 crit	
28 June 1992 - 1158 G.m.t.	180°	Sens. = 1.81 cm/g Freq. = 26.3 Hz Damp. = 0.60 crit	0.12

Film speed = 1 cm/sec



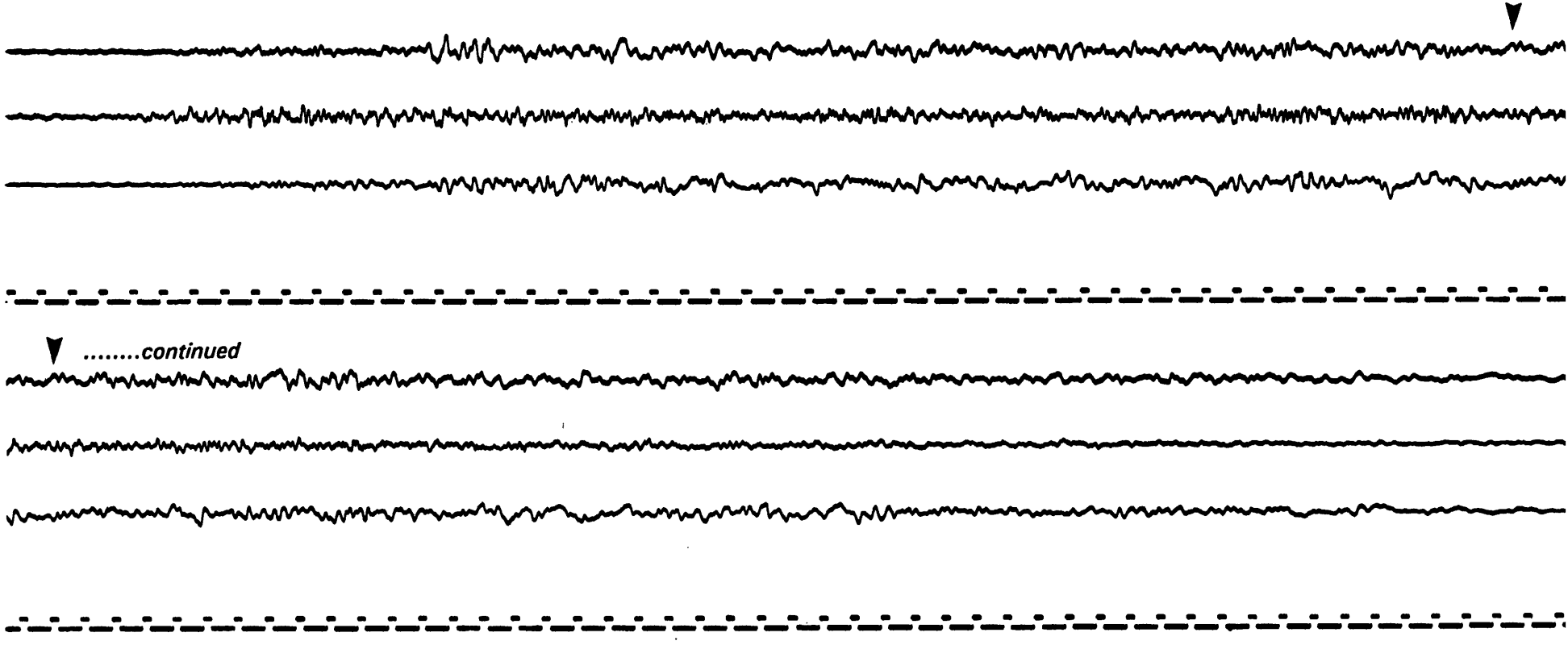
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5069 33.925N, 116.389W	135°	Sens. = 1.80 cm/g Freq. = 26.3 Hz Damp. = 0.60 crit	0.22 g
Fun Valley - Reservoir 361			
SMA-IT No. 1532 (USGS)	Up	Sens. = 1.77 cm/g Freq. = 26.6 Hz Damp. = 0.60 crit	0.10
Earthquake of			
28 June 1992 - 1158 G.m.t.	045°	Sens. = 1.80 cm/g Freq. = 26.7 Hz Damp. = 0.60 crit	0.22

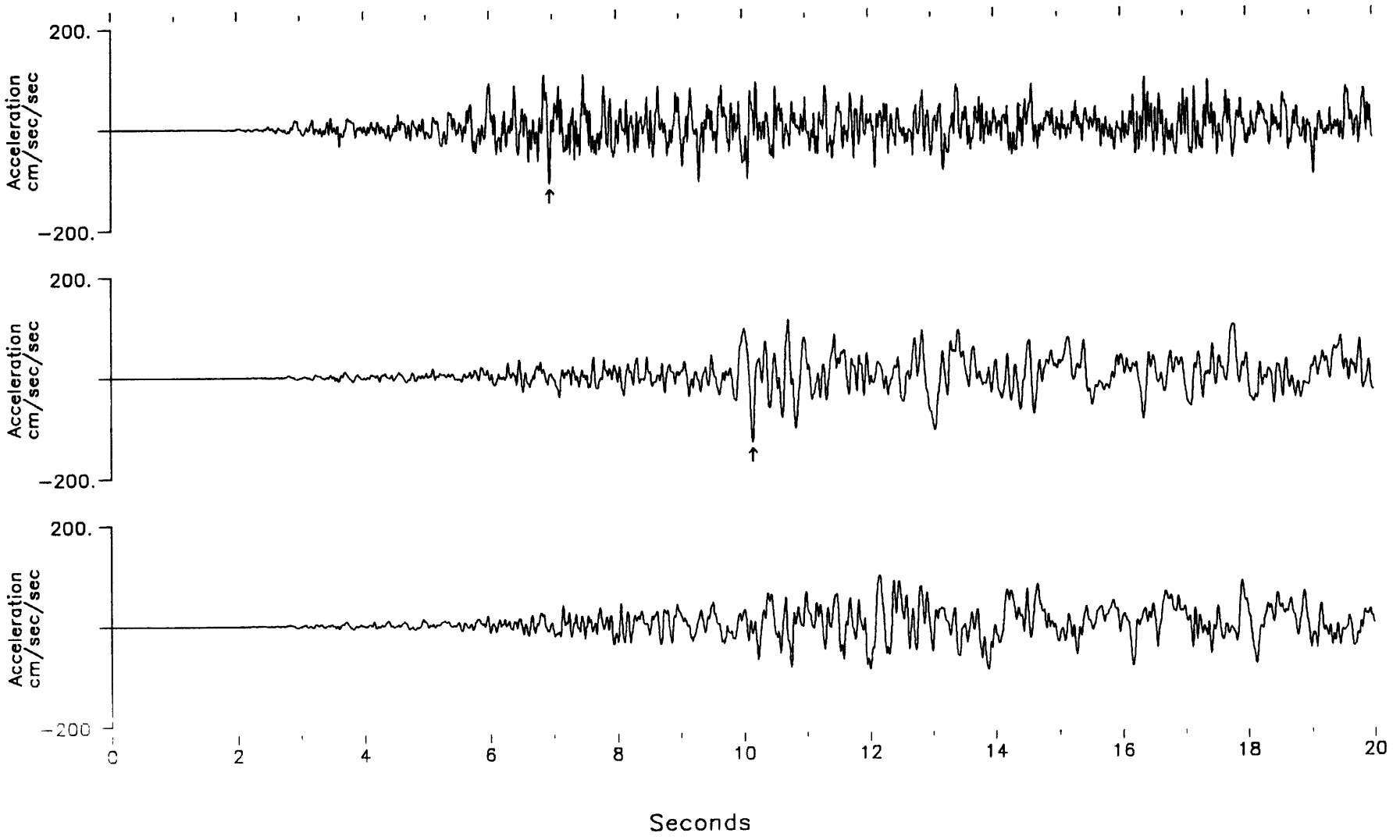
Film speed = 1 cm/sec

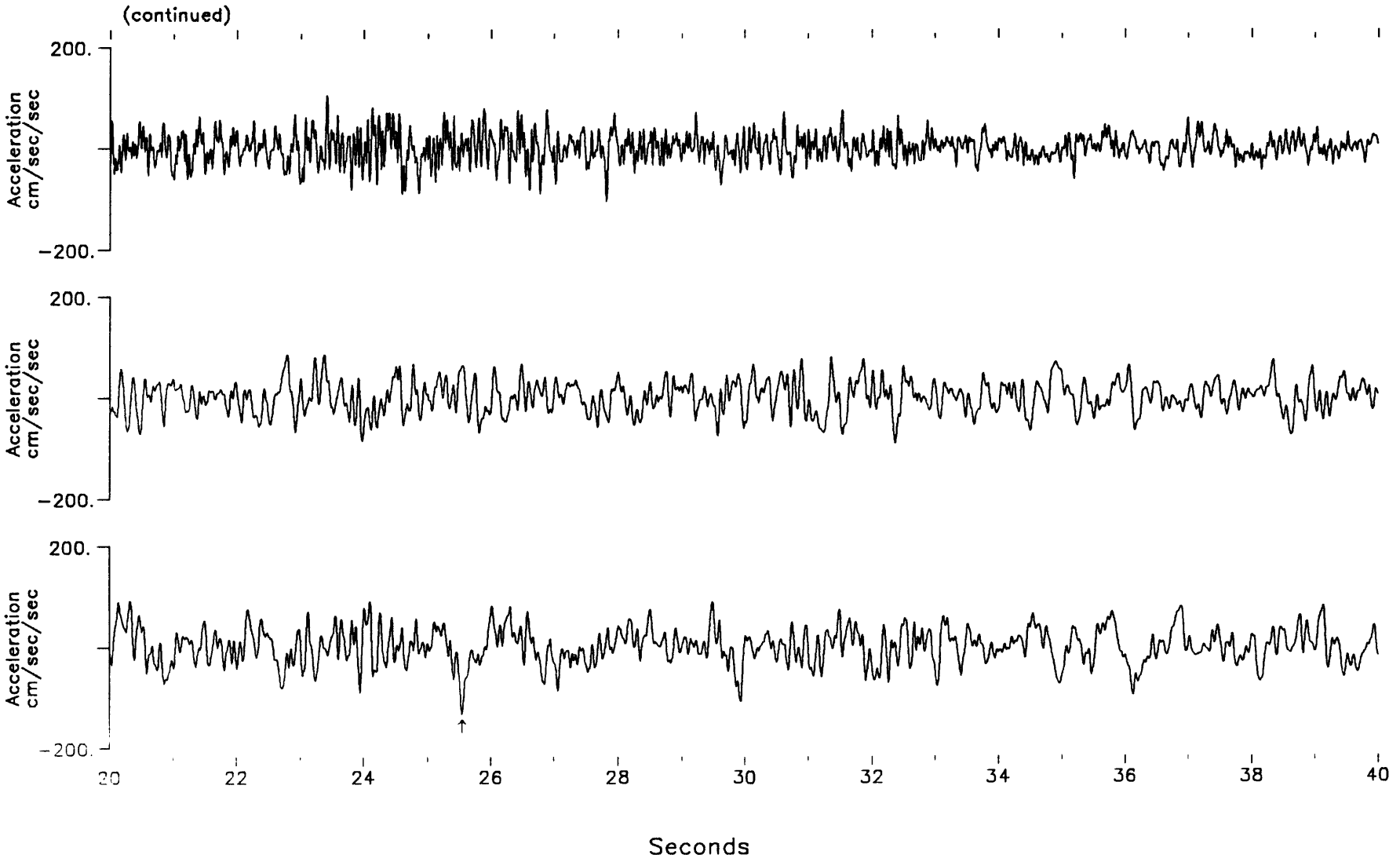


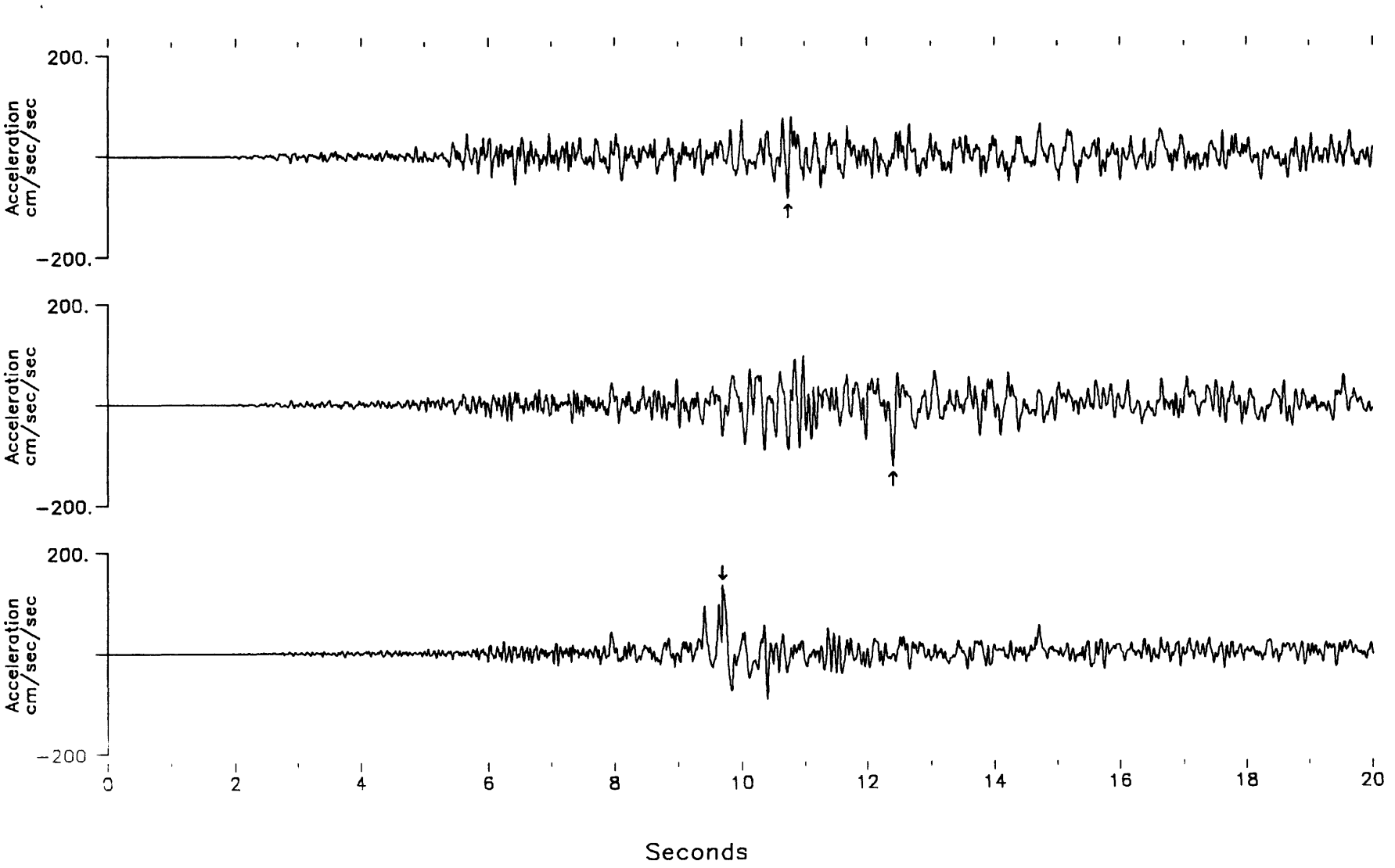
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5295 33.924N, 116.543W	180°	Sens. = 1.85 cm/g Freq. = 25.6 Hz	0.14 g
North Palm Springs - Fire Station		Damp. = 0.60 crit	
SMAT No. 1456 (USGS)	Up	Sens. = 1.80 cm/g Freq. = 25.6 Hz	0.11
Earthquake of		Damp. = 0.60 crit	
28 June 1992 - 1158 G.m.t.	090°	Sens. = 1.79 cm/g Freq. = 25.3 Hz Damp. = 0.60 crit	0.14

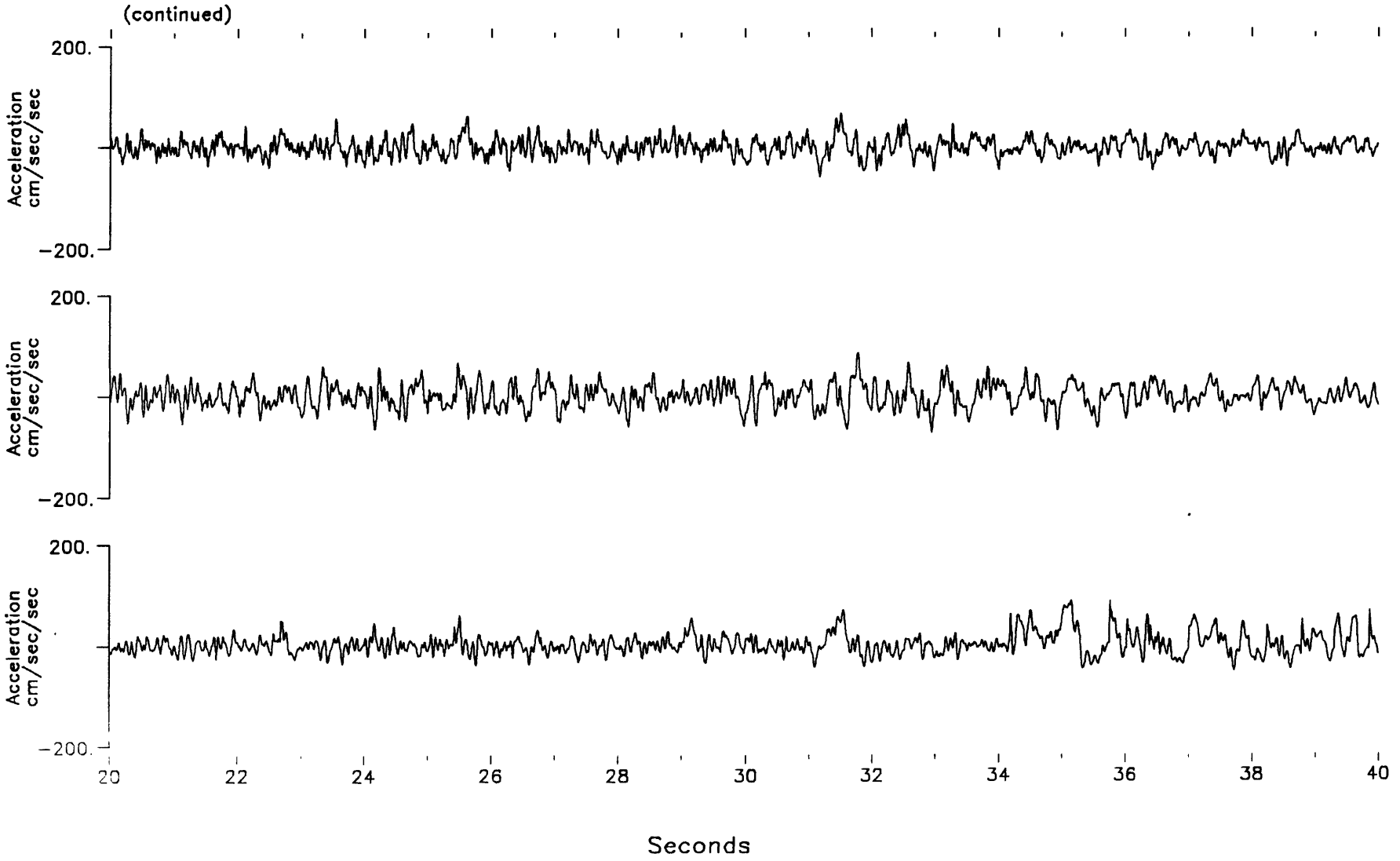
Film speed = 1 cm/sec




Uncorrected accelerogram
NORTH PALM SPRINGS, FHS, GEOS-80
UP, 360 DEGREES, 90 DEGREES
EARTHQUAKE OF 28 JUNE, 1992 11:58 GMT
Peak values (cm/sec/sec): -109.56, -133.14, -131.23
200.
Acceleration cm/sec/sec
-200.
200.
Acceleration cm/sec/sec
-200.
200.
Acceleration cm/sec/sec
-200
0
2
4
6
8
10
12
14
16
18
20
Seconds

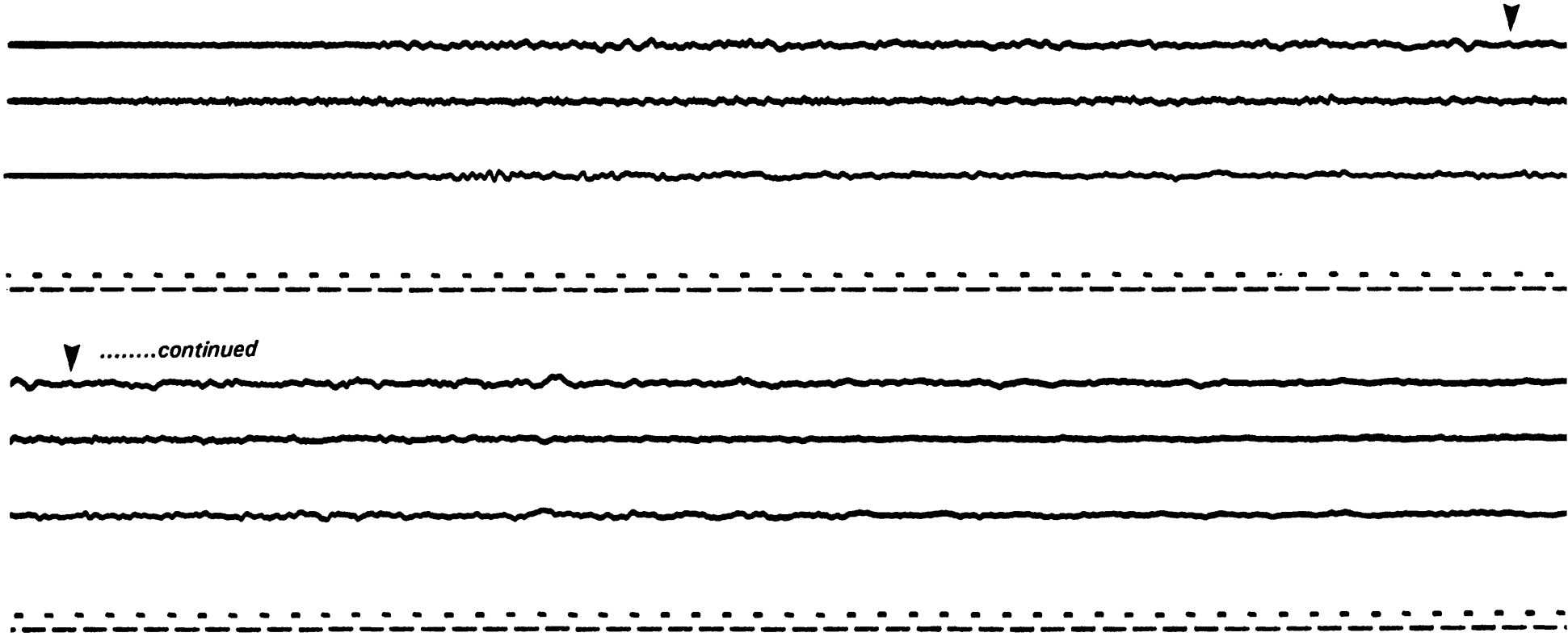

Uncorrected accelerogram
NORTH PALM SPRINGS, FHS, GEOS-80
UP, 360 DEGREES, 90 DEGREES
EARTHQUAKE OF 28 JUNE, 1992 11:58 GMT
Peak values (cm/sec/sec): -109.56, -133.14, -131.23
(continued)
200.
-200.
Acceleration cm/sec/sec
20
22
24
26
28
30
32
34
36
38
40
Seconds


Uncorrected accelerogram
MISSION CREEK FAULT, MCF, GEOS-57
UP, 360 DEGREES, 90 DEGREES
EARTHQUAKE OF 28 JUNE, 1992 11:58 GMT
Peak values (cm/sec/sec): -84.91, -123.99, 133.80
200.
-200.
Acceleration cm/sec/sec
200.
-200.
Acceleration cm/sec/sec
200.
-200
Acceleration cm/sec/sec
0
2
4
6
8
10
12
14
16
18
20
Seconds


Uncorrected accelerogram
MISSION CREEK FAULT, MCF, GEOS-57
UP, 360 DEGREES, 90 DEGREES
EARTHQUAKE OF 28 JUNE, 1992 11:58 GMT
Peak values (cm/sec/sec): -84.91, -123.99, 133.80
(continued)
200.
-200.
Acceleration cm/sec/sec
200.
-200.
Acceleration cm/sec/sec
200.
-200.
Acceleration cm/sec/sec
20
22
24
26
28
30
32
34
36
38
40
Seconds

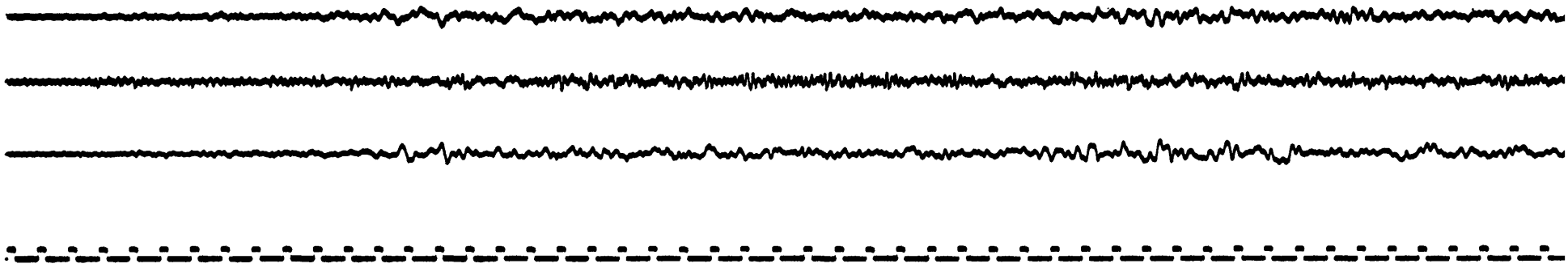
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5068 33.82N, 116.40W	135°	Sens. = .975 cm/g Freq. = 37.6 Hz	0.12 g
Thousand Palms Post Office		Damp. = 0.60 crit	
SMAT (2g) No. 5304 (USGS)	Up	Sens. = .995 cm/g Freq. = 37.5 Hz	0.09
Earthquake of		Damp. = 0.60 crit	
28 June 1992 - 1158 G.m.t.	045°	Sens. = .870 cm/g Freq. = 39.2 Hz Damp. = 0.60 crit	0.10

Film speed = 1 cm/sec



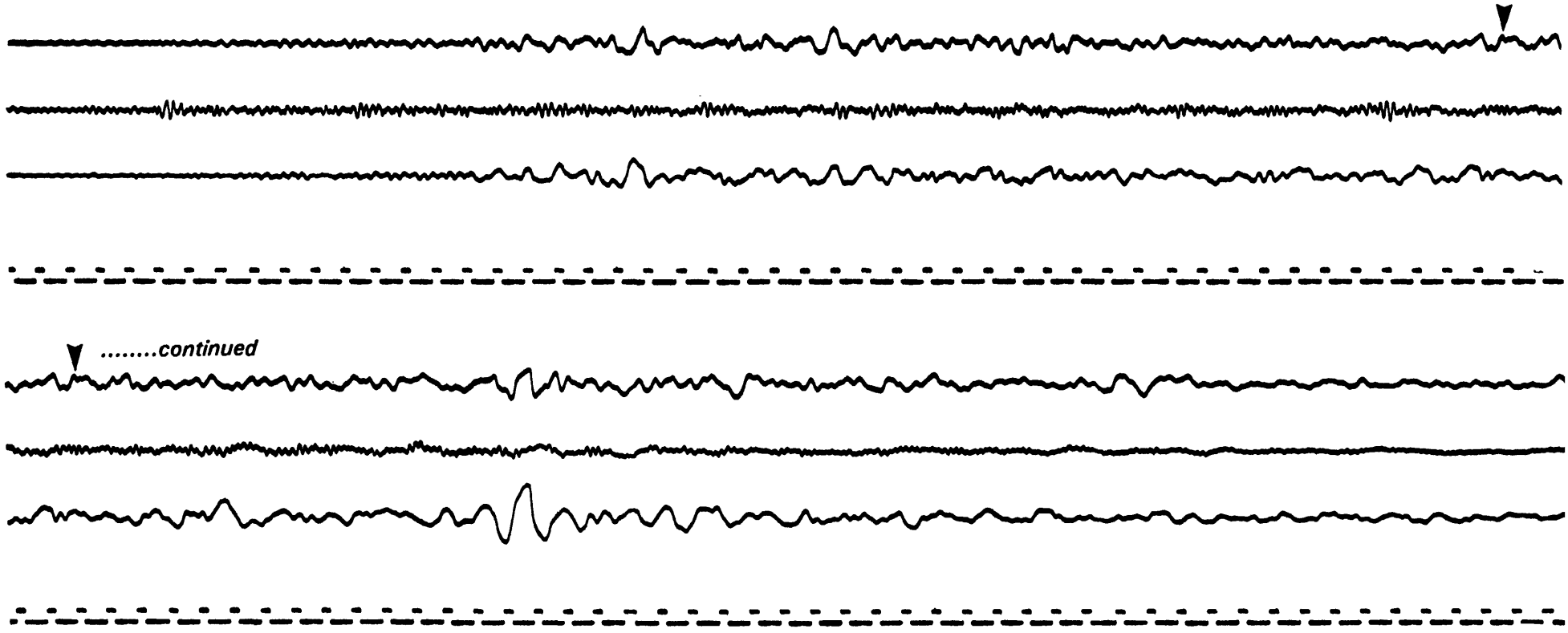
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5075 34.088N, 116.919W	300°	Sens. = 1.78 cm/g Freq. = 26.0 Hz Damp. = 0.60 crit	0.10 g
Forest Falls Post Office			
SMA No. 1510 (USGS)	Up	Sens. = 1.82 cm/g Freq. = 26.1 Hz Damp. = 0.60 crit	0.09
Earthquake of			
28 June 1992 - 1158 G.m.t.	210°	Sens. = 1.81 cm/g Freq. = 25.9 Hz Damp. = 0.60 crit	0.12

Film speed = 1 cm/sec



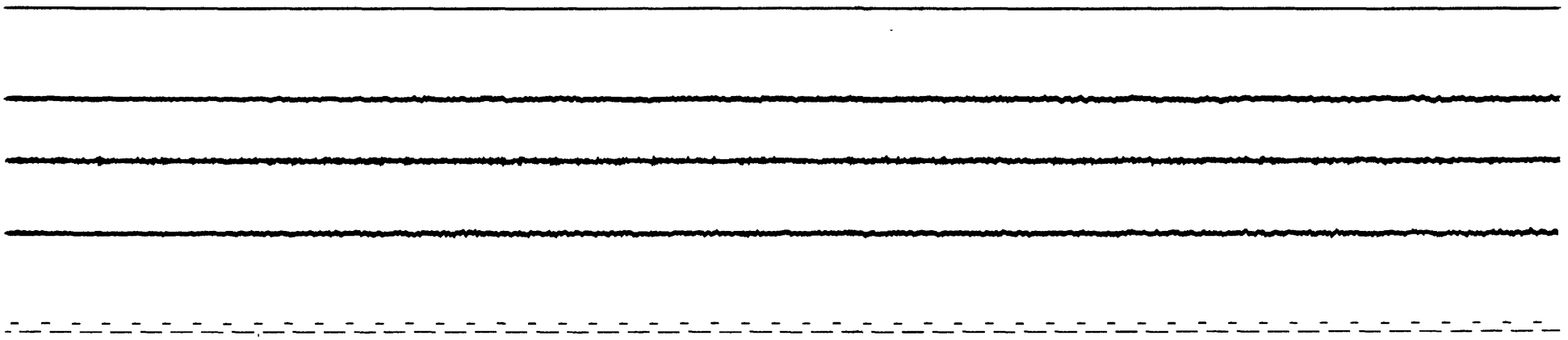
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5294 33.747N, 116.214W	180°	Sens. = 1.91 cm/g Freq. = 26.0 Hz Damp. = 0.60 crit	0.13 g
Indio - Jackson Road			
SMAT No. 1513 (USGS)	Up	Sens. = 1.95 cm/g Freq. = 25.0 Hz Damp. = 0.60 crit	0.08
Earthquake of			
28 June 1992 - 1158 G.m.t.	090°	Sens. = 1.80 cm/g Freq. = 26.1 Hz Damp. = 0.60 crit	0.29

Film speed = 1 cm/sec



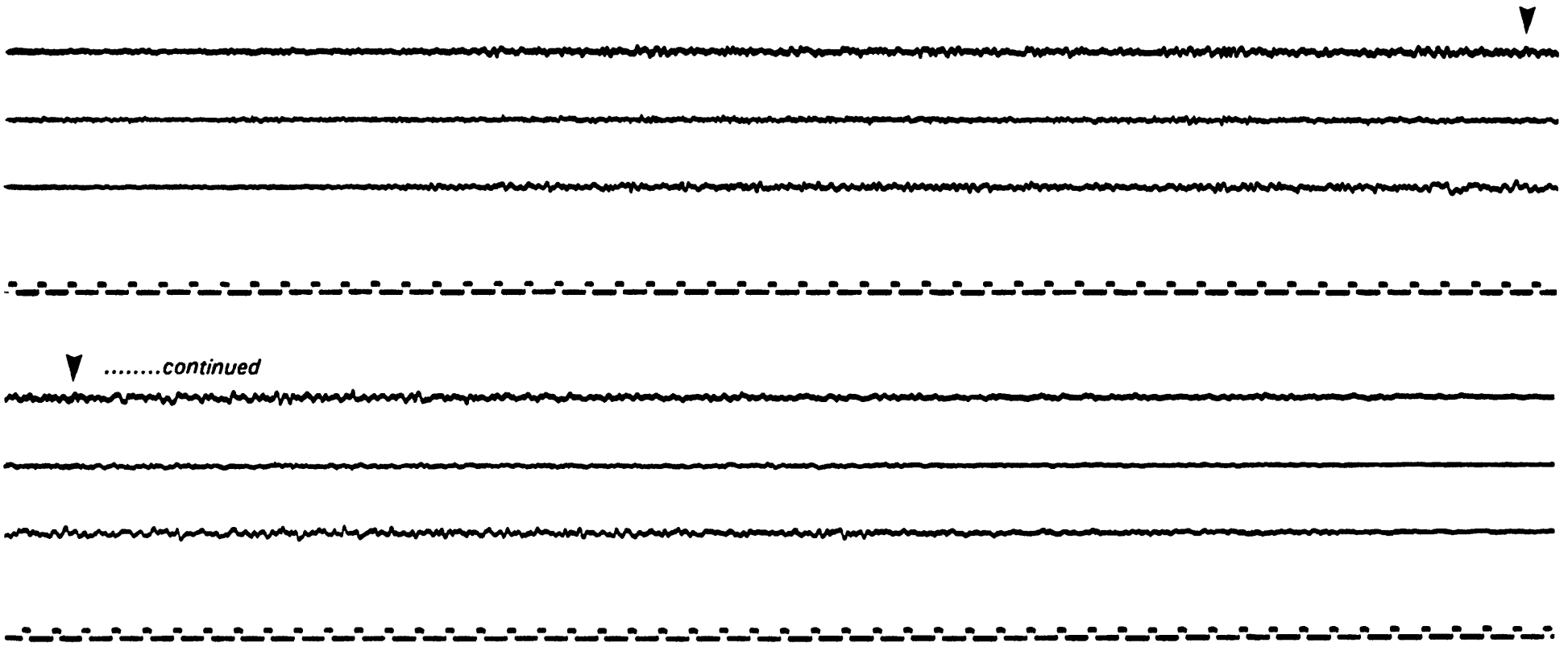
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5232 33.707N, 116.716W	360°	Sens. = 19.2 cm/g Freq. = 24.9 Hz	0.03 g
Anza Array: Keenwild Forest Station		Damp. = 0.6 crit	
SMA No. 4320 (USGS)	Up	Sens. = 1.90 cm/g Freq. = 25.3 Hz	0.05
Earthquake of		Damp. = 0.6 crit	
28 June 1992 - 1158 G.m.t.	270°	Sens. = 2.01 cm/g Freq. = 24.5 Hz Damp. = 0.6 crit	0.03

Film speed = 1 cm/sec



NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5043 33.676N, 116.680W	135°	Sens. = 1.84 cm/g Freq. = 25.7 Hz Damp. = 0.6 crit	0.04 g
Anza Array: Herkey Creek Park			
SMA No. 1474 (USGS)	Up	Sens. = 1.78 cm/g Freq. = 25.9 Hz Damp. = 0.6 crit	0.03
Earthquake of			
28 June 1992 - 1158 G.m.t.	045°	Sens. = 1.86 cm/g Freq. = 25.4 Hz Damp. = 0.6 crit	0.06

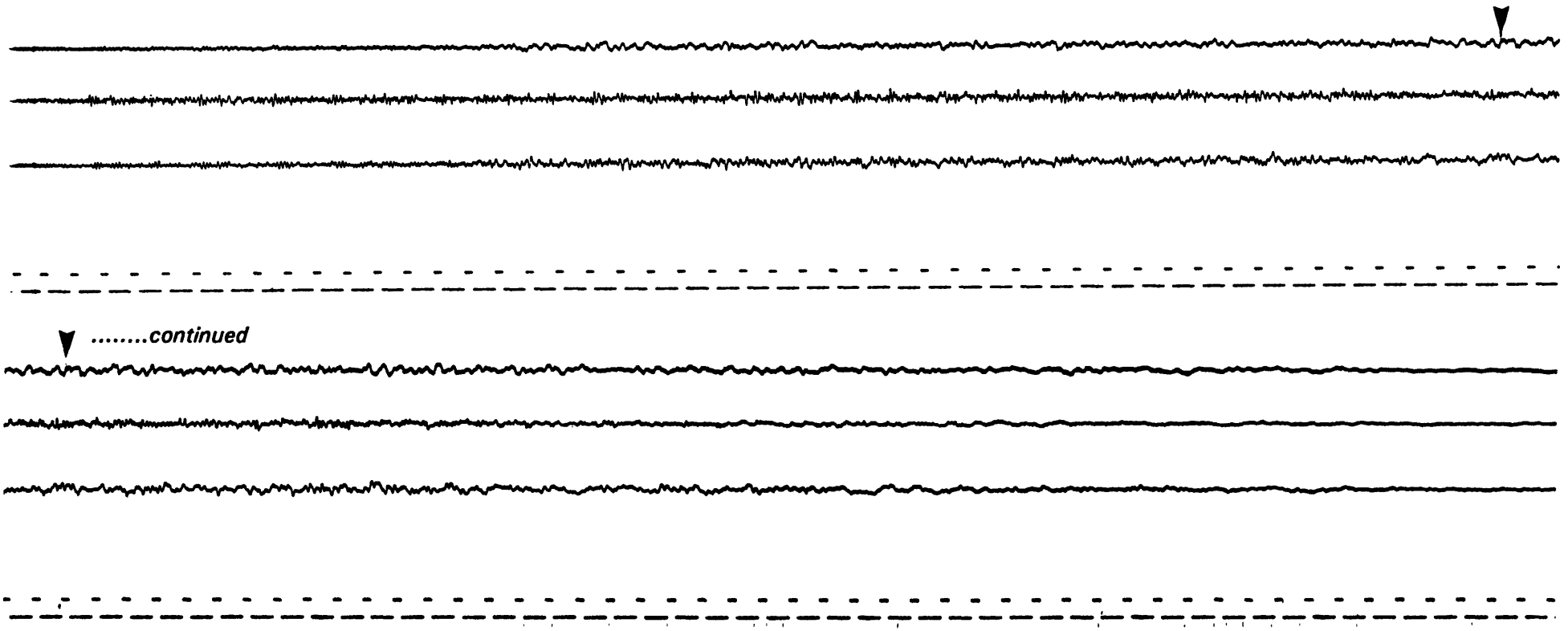
Film speed = 1 cm/sec



.....continued

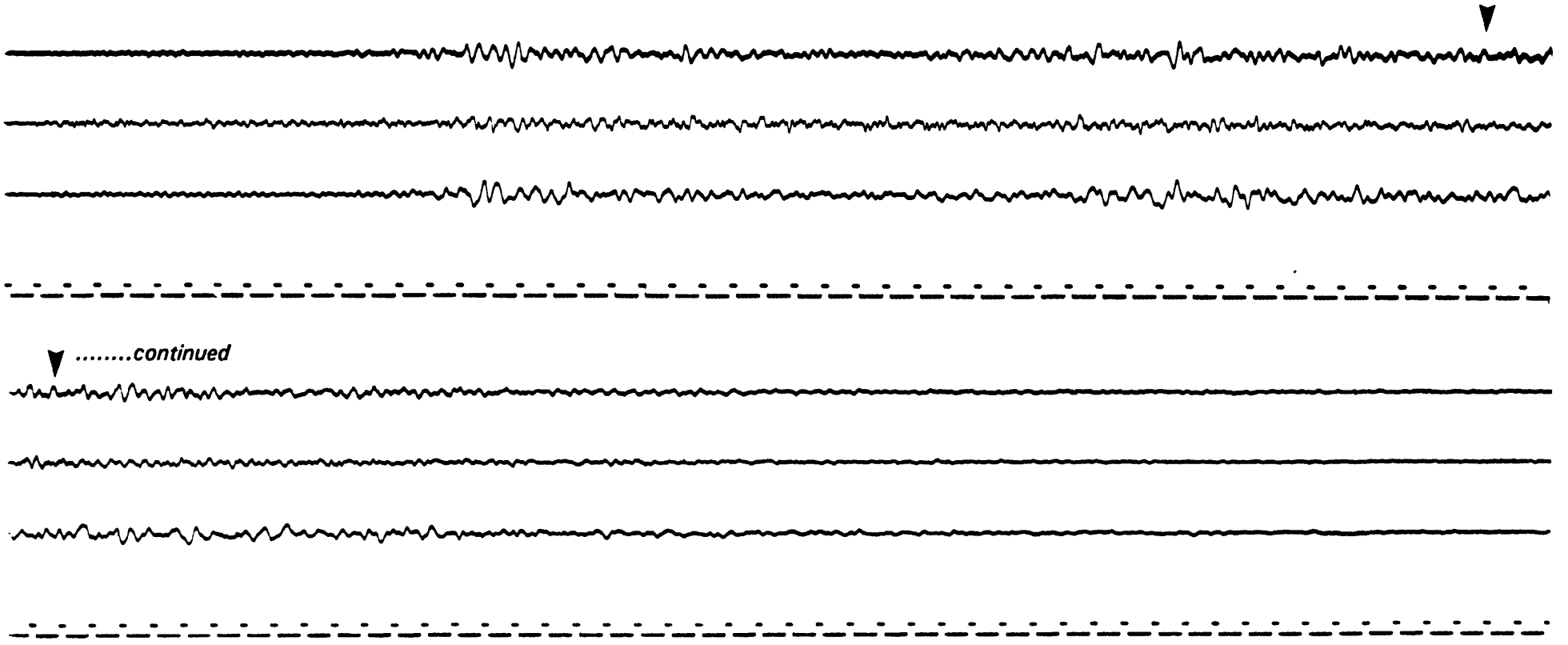
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5157 33.738N, 116.838W	315°	Sens. = 1.81 cm/g Freq. = 26.0 Hz Damp. = 0.60 crit	0.05 g
Anza Array: Cranston Forest Station			
SMA No. 1461 (USGS)	Up	Sens. = 1.83 cm/g Freq. = 25.6 Hz Damp. = 0.60 crit	0.08
Earthquake of			
28 June 1992 - 1158 G.m.t.	225°	Sens. = 1.80 cm/g Freq. = 26.2 Hz Damp. = 0.60 crit	0.07

Film speed = 1 cm/sec



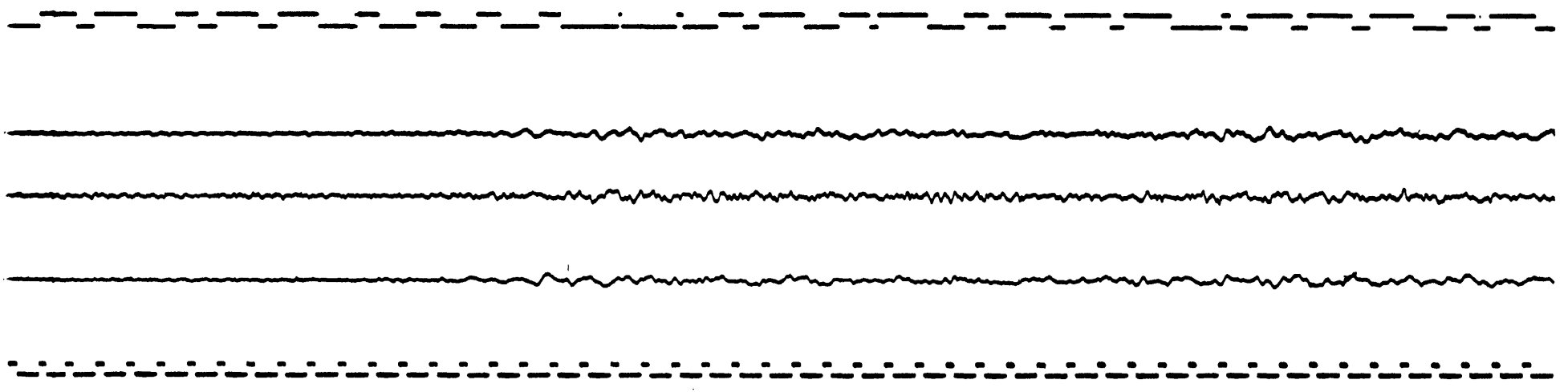
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5076 34.080N, 117.114W	360°	Sens. = 1.85 cm/g Freq. = 26.4 Hz Damp. = 0.6 crit	0.13 g
San Bernardino Array: Mill Creek Ranger Station SMA No. 394 (USGS)	Up	Sens. = 1.75 cm/g Freq. = 26.2 Hz Damp. = 0.6 crit	0.10
Earthquake of 28 June 1992 - 1158 G.m.t.	270°	Sens. = 1.95 cm/g Freq. = 25.2 Hz Damp. = 0.6 crit	0.14

Film speed = 1 cm/sec



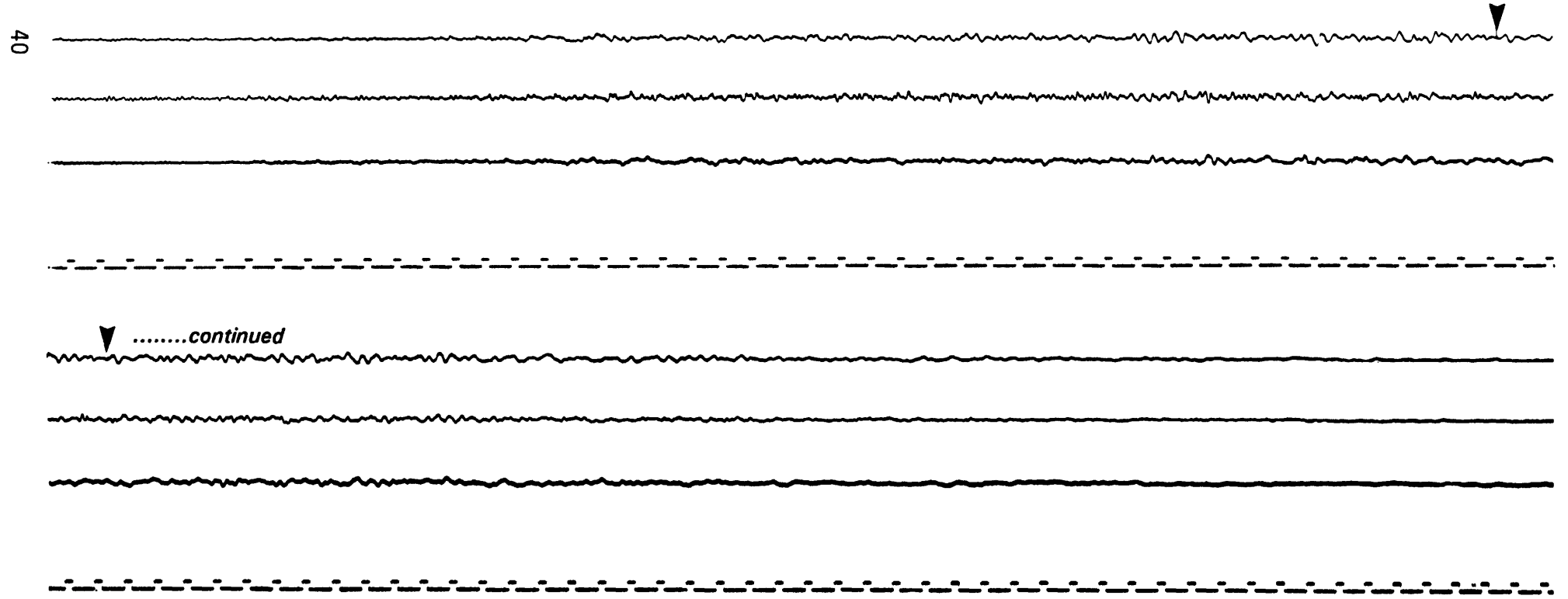
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5162 34.067N, 117.117W	315°	Sens. = 1.93 cm/g Freq. = 24.8 Hz	0.08 g
Mentone, CA - Fire Station		Damp. = 0.60 crit	
SMA-1T No. 1517 (USGS) (Ground)	Up	Sens. = 1.85 cm/g Freq. = 26.2 Hz	0.09
Earthquake of		Damp. = 0.60 crit	
28 June 1992 - 1158 G.m.t.	225°	Sens. = 1.76 cm/g Freq. = 26.4 Hz Damp. = 0.60 crit	0.08

Film speed = 1 cm/sec



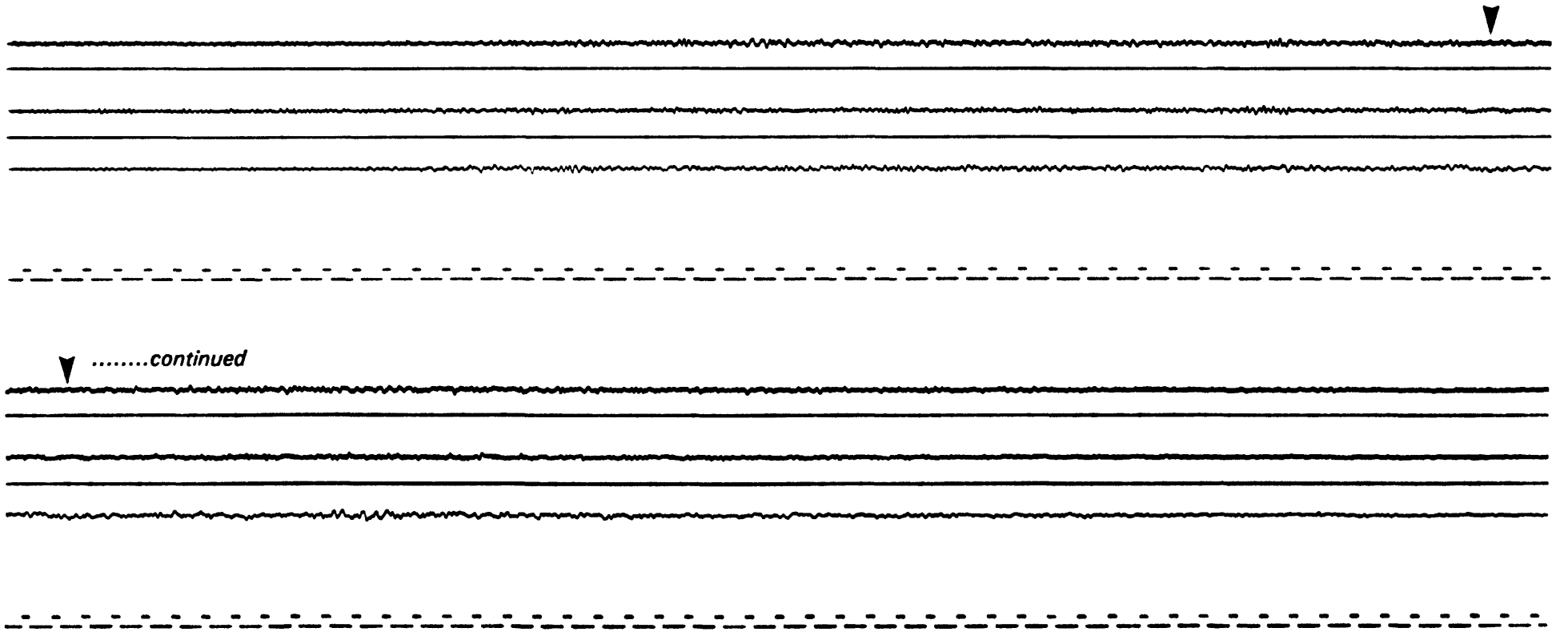
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5289 33.821N 116.967W	360°	Sens. = 1.85 cm/g Freq. = 25.1 Hz Damp. = 0.6 crit	0.07 g
Anza Array: San Jacinto Tunnel West Portal SMA No. 1467 (MWD)	Up	Sens. = 1.79 cm/g Freq. = 25.9 Hz Damp. = 0.6 crit	0.06
EARTHQUAKE OF 28 June 1992 - 1158 G.m.t.	270°	Sens. = 1.89 cm/g Freq. = 25.0 Hz Damp. = 0.6 crit	0.05

Film speed = 1 cm/sec



NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5044 33.607N, 116.453W	360°	Sens. = 1.88 cm/g Freq. = 25.7 Hz Damp. = 0.6 crit	0.04 g
Anza Array: Pinyon Flat Observatory			
SMA No. 1493 (USGS)	Up	Sens. = 1.89 cm/g Freq. = 25.3 Hz Damp. = 0.6 crit	0.04
Earthquake of			
28 June 1992 - 1158 G.m.t.	270°	Sens. = 1.87 cm/g Freq. = 25.2 Hz Damp. = 0.6 crit	0.05

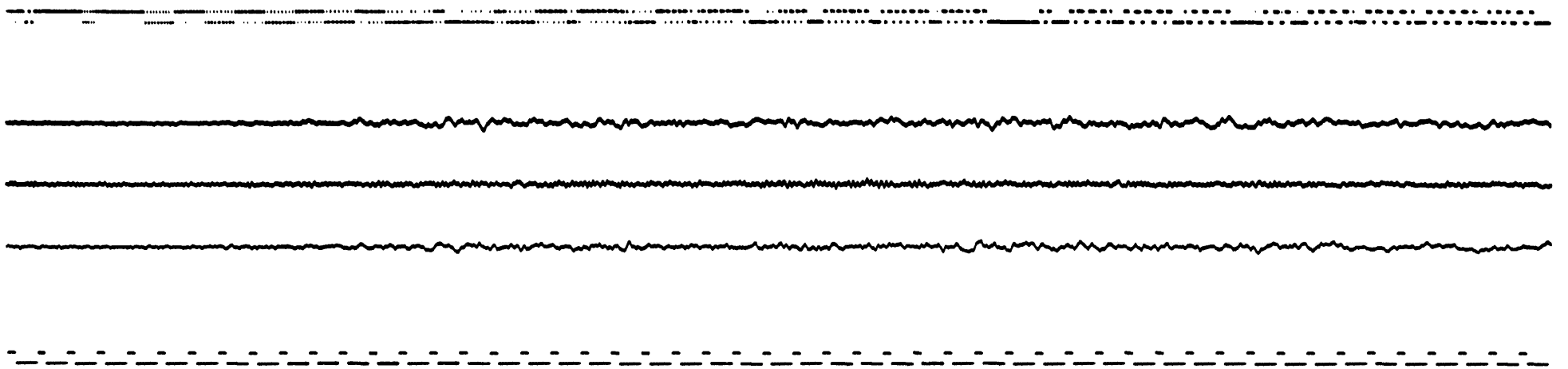
Film speed = 1 cm/sec



.....continued

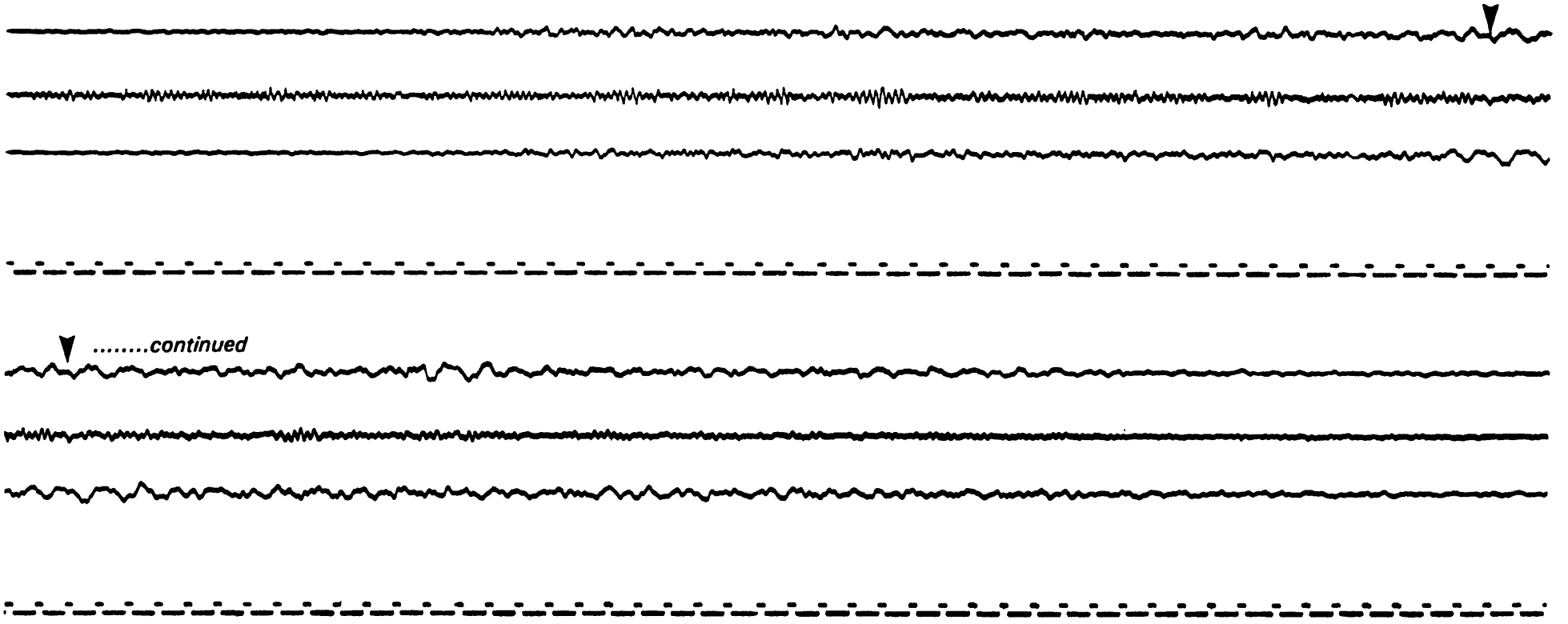
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5266 34.122N, 117.158W	360°	Sens. = 1.89 cm/g Freq. = 25.5 Hz	0.06 g
San Bernardino Array: E. Highlands Plant #108		Damp. = 0.6 crit	
SMA No. 1730 (USGS)	Up	Sens. = 1.77 cm/g Freq. = 25.4 Hz	0.03
Earthquake of		Damp. = 0.6 crit	
28 June 1992 - 1158 G.m.t.	270°	Sens. = 1.77 cm/g Freq. = 26.2 Hz Damp. = 0.6 crit	0.06

Film speed = 1 cm/sec



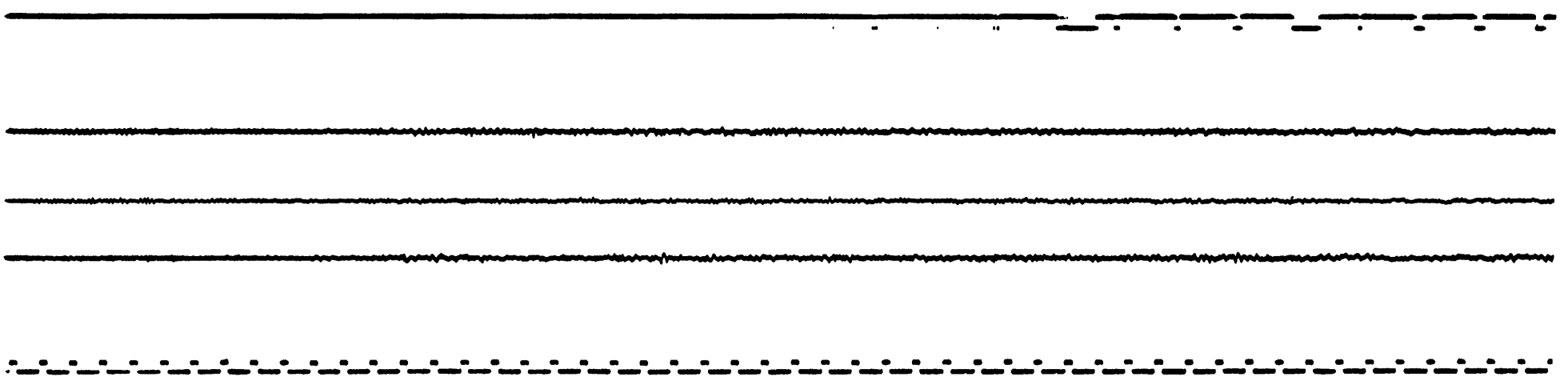
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5242 33.616N, 116.627W	360°	Sens. = 1.88 cm/g Freq. = 25.9 Hz Damp. = 0.6 crit	0.08 g
Anza Array: Garner Valley Fire Station			
SMA No. 1992 (USGS)	Up	Sens. = 1.79 cm/g Freq. = 25.8 Hz Damp. = 0.6 crit	0.09
Earthquake of			
28 June 1992 - 1158 G.m.t.	270°	Sens. = 1.83 cm/g Freq. = 25.9 Hz Damp. = 0.6 crit	0.09

Film speed = 1 cm/sec



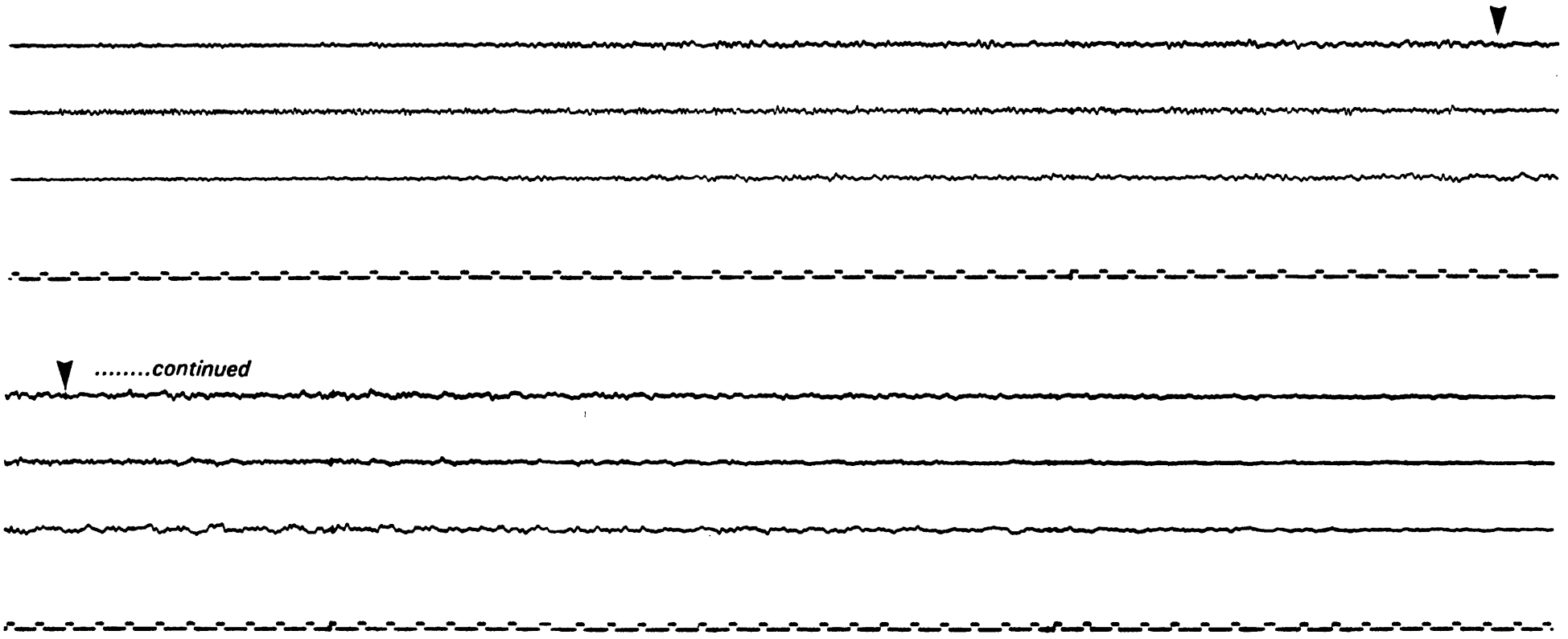
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5230 33.568N, 116.510W	360°	Sens. = 1.70 cm/g Freq. = 26.3 Hz	0.04 g
Anza Array: Rarick Springs		Damp. = 0.59 crit	
SMA-TR No. 1893 (USGS)	Up	Sens. = 1.85 cm/g Freq. = 26.3 Hz	0.03
Earthquake of		Damp. = 0.59 crit	
28 June 1992 - 1158 G.m.t.	270°	Sens. = 1.65 cm/g Freq. = 25.6 Hz Damp. = 0.59 cri	0.05

Film speed = 1 cm/sec



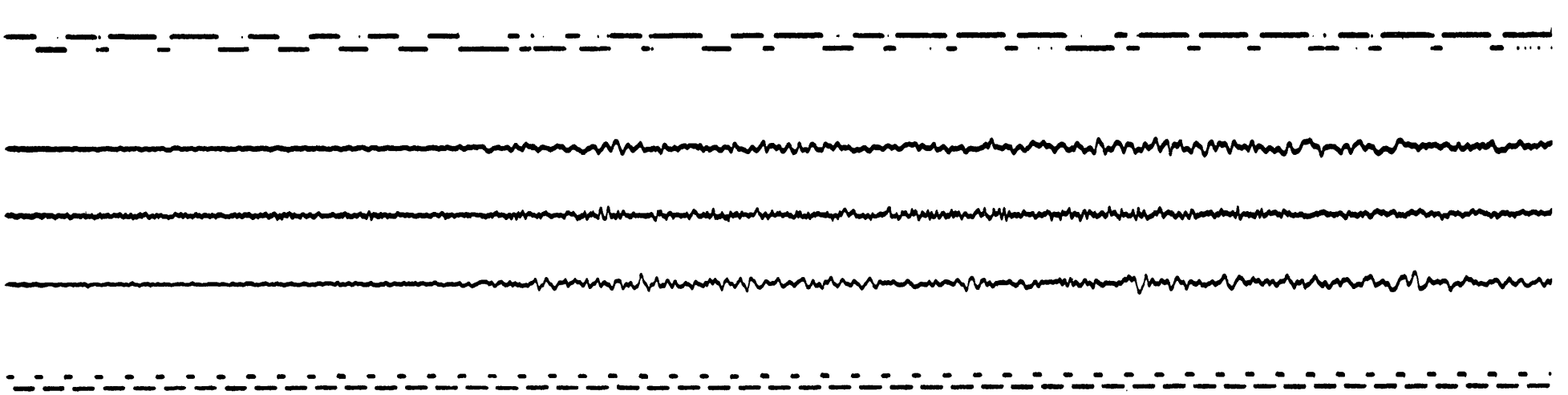
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5223 33.578N, 116.589W	360°	Sens. = 1.87 cm/g Freq. = 25.5 Hz Damp. = 0.60 crit	0.05 g
Anza Array: Pine Meadow Ranch			
SMA-TR No. 1991 (USGS)	Up	Sens. = 1.85 cm/g Freq. = 25.7 Hz Damp. = 0.60 crit	0.05
Earthquake of			
28 June 1992 - 1158 G.m.t.	270°	Sens. = 1.74 cm/g Freq. = 26.7 Hz Damp. = 0.60 crit	0.05

Film speed = 1 cm/sec



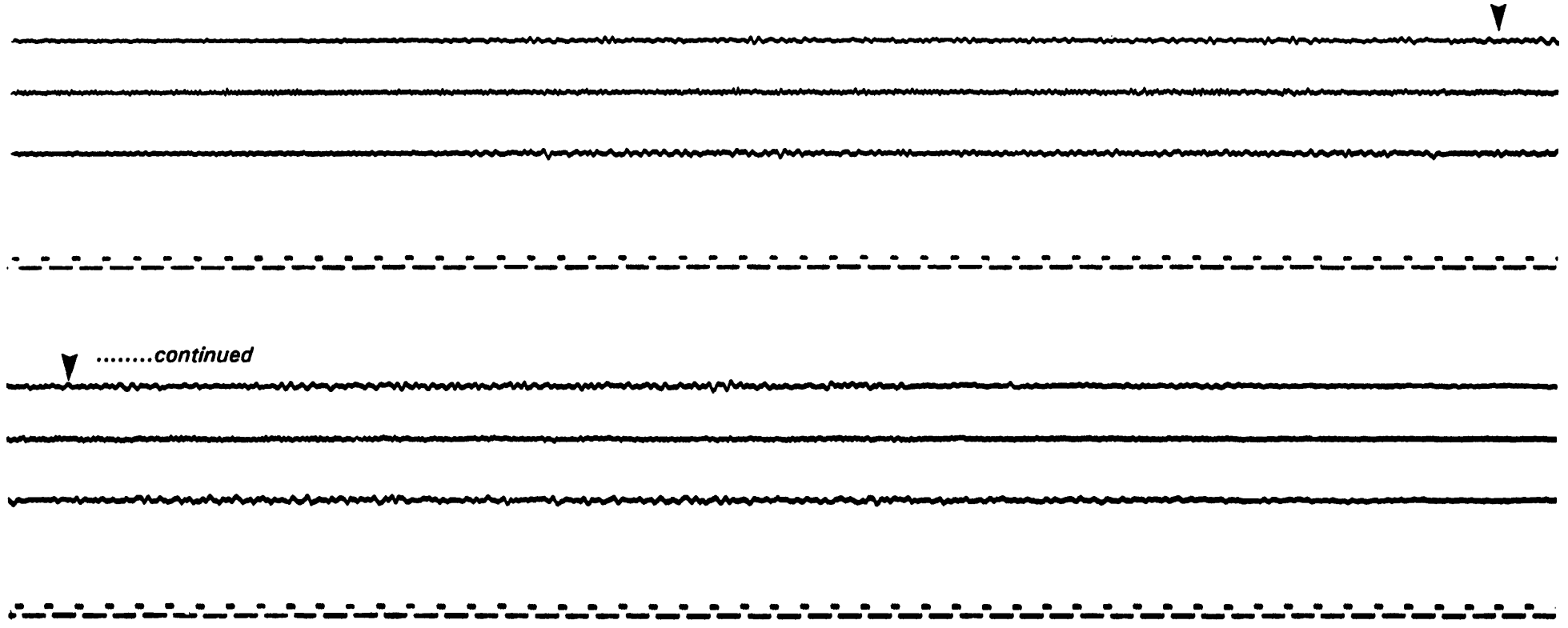
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5161 34.136N, 117.213W	315°	Sens. = 1.83 cm/g Freq. = 25.9 Hz	0.08 g
Highland, CA - Fire Station (SBA)		Damp. = 0.60 crit	
SMA-1T No. 1476 (USGS) (Ground)	Up	Sens. = 1.78 cm/g Freq. = 26.1 Hz	0.07
Earthquake of		Damp. = 0.60 crit	
28 June 1992 - 1158 G.m.t.	225°	Sens. = 1.80 cm/g Freq. = 25.8 Hz Damp. = 0.60 crit	0.09

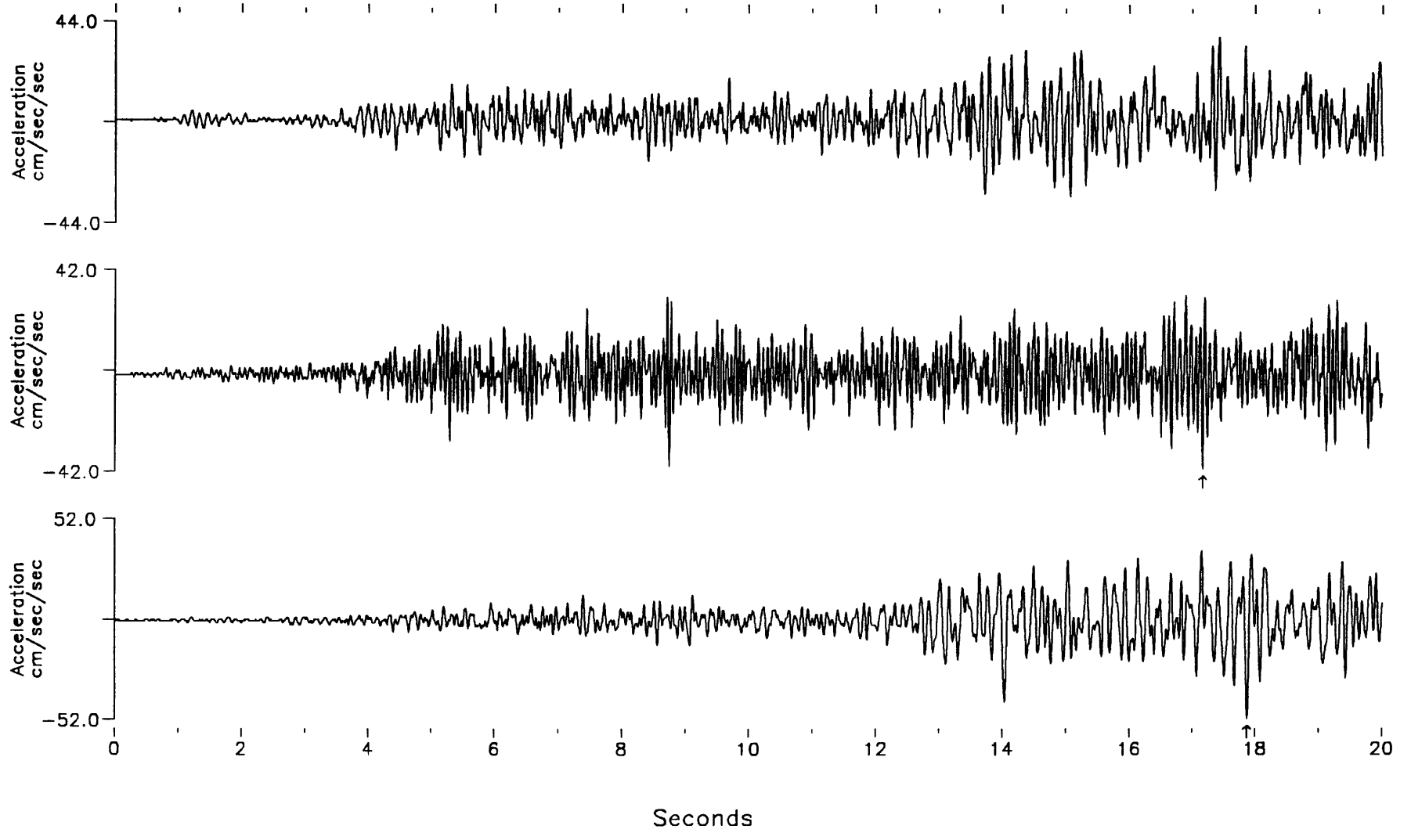
Film speed = 1 cm/sec

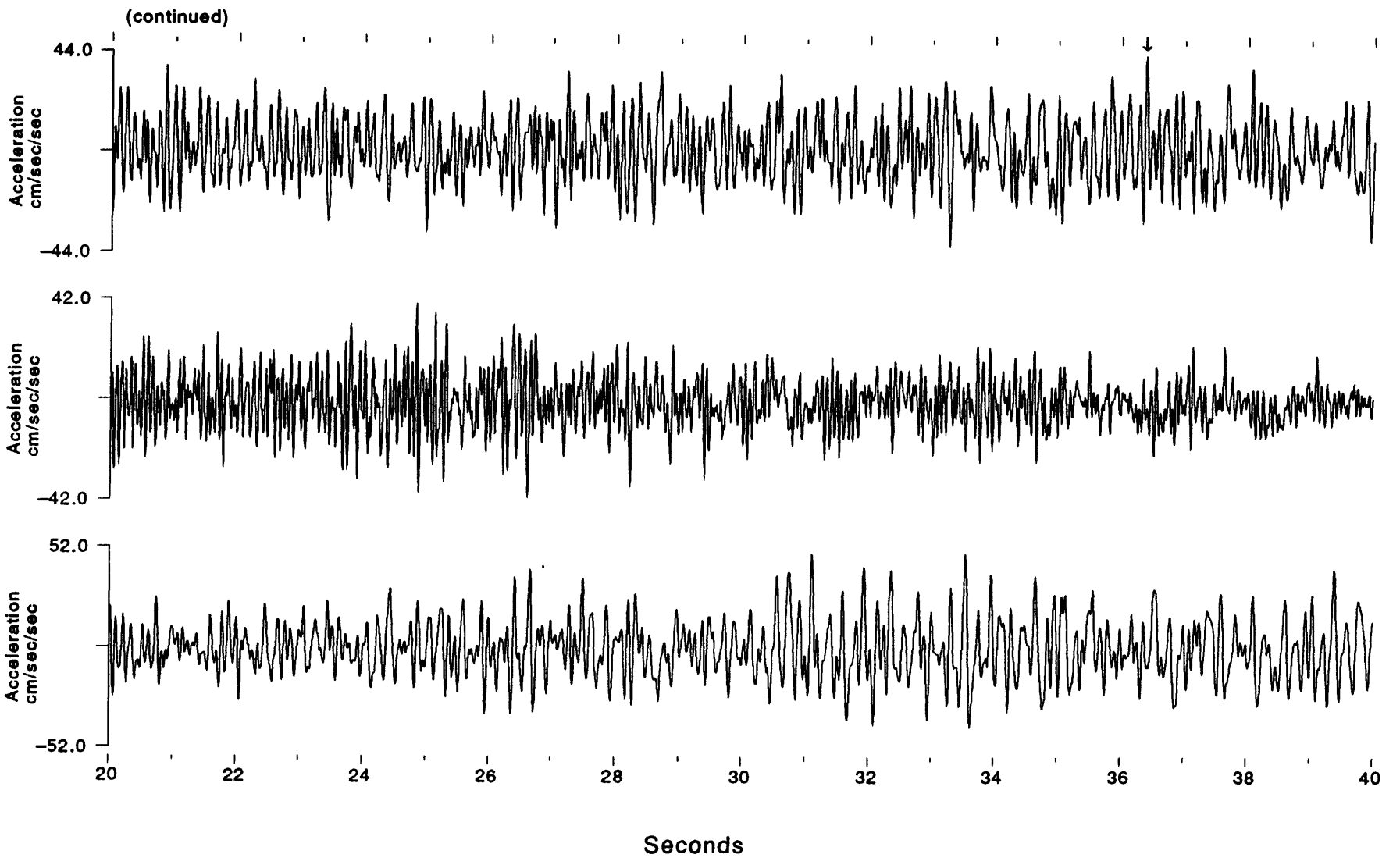


NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5222 33.60N, 116.74W	360°	Sens. = 1.78 cm/g Freq. = 26.1 Hz Damp. = 0.60 crit	0.05g
Anza Array: Tripp Flats			
SMA-TR No. 2031 (USGS)	Up	Sens. = 1.84 cm/g Freq. = 26.1 Hz Damp. = 0.60 crit	0.04
Earthquake of			
28 June 1992 - 1158 G.m.t.	270°	Sens. = 1.80 cm/g Freq. = 25.6 Hz Damp. = 0.60 crit	0.04

Film speed = 1 cm/sec

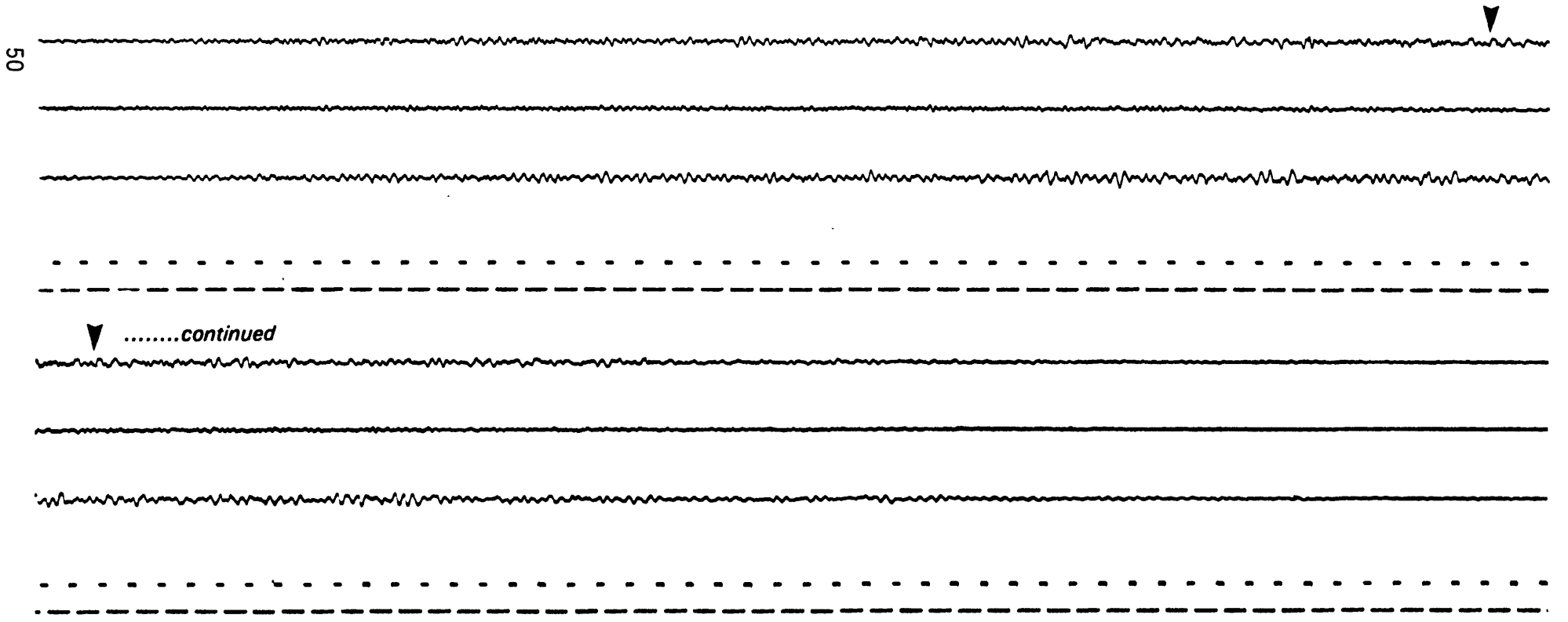



Uncorrected accelerogram
TRIPP FLATS, ANZA ARRAY, SSA-292
360 DEGREES, UP, 090 DEGREES
EARTHQUAKE OF 28 JUNE, 1992 04:58 PDT
Peak values (cm/sec/sec): 43.09, -41.15, -51.68
44.0
-44.0
42.0
-42.0
52.0
-52.0
Acceleration cm/sec/sec
0
2
4
6
8
10
12
14
16
18
20
Seconds


Uncorrected accelerogram
TRIPP FLATS, ANZA ARRAY, SSA-292
360 DEGREES, UP, 090 DEGREES
EARTHQUAKE OF 28 JUNE, 1992 04:58 PDT
Peak values (cm/sec/sec): 43.09, -41.15, -51.68
(continued)
44.0
-44.0
42.0
-42.0
52.0
-52.0
Acceleration cm/sec/sec
20
22
24
26
28
30
32
34
36
38
40
Seconds

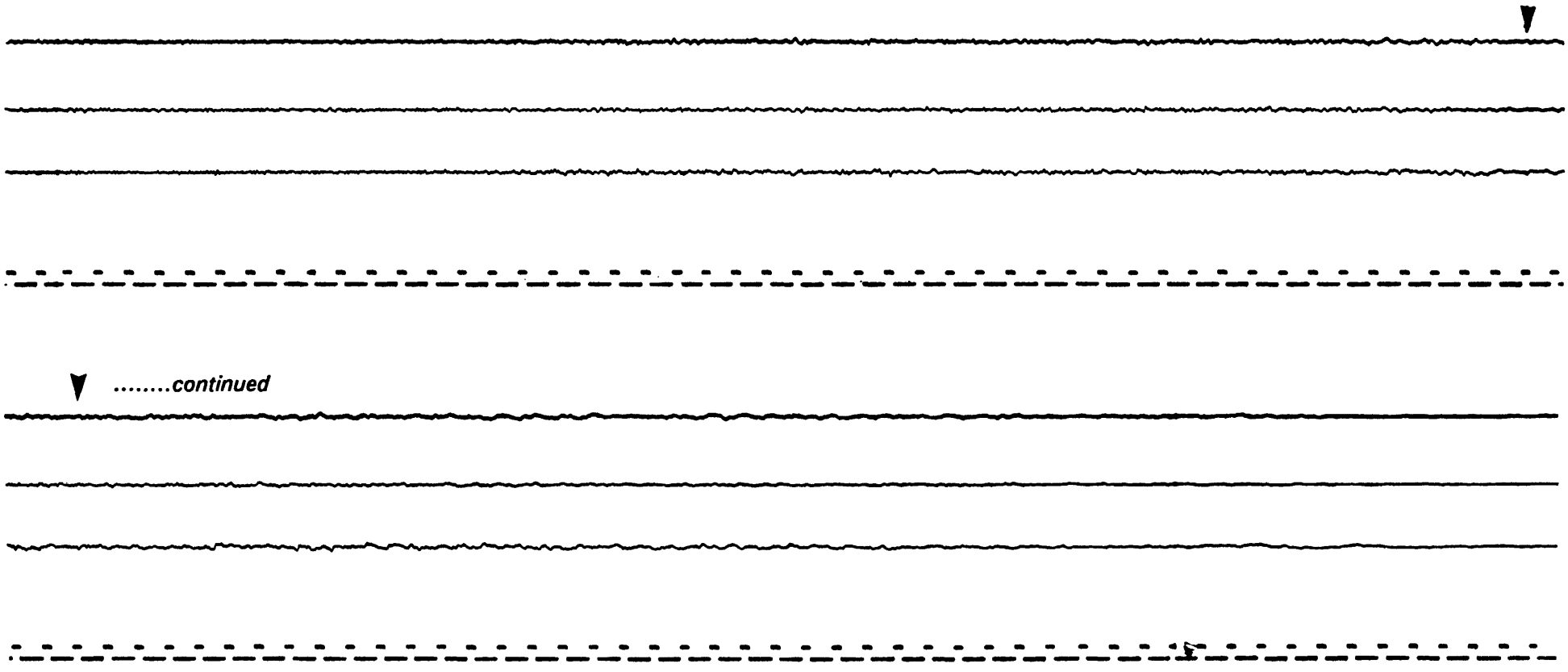
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5224 33.630N, 116.847W	360°	Sens. = 1.99 cm/g Freq. = 25.3 Hz Damp. = 0.6 crit	0.06 g
Anza Array: Red Mountain			
SMA No. 2029 (USGS)	Up	Sens. = 1.76 cm/g Freq. = 26.2 Hz Damp. = 0.6 crit	0.03
Earthquake of			
28 June 1992 - 1158 G.m.t.	270°	Sens. = 1.96 cm/g Freq. = 25.1 Hz Damp. = 0.6 crit	0.08

Film speed = 1 cm/sec



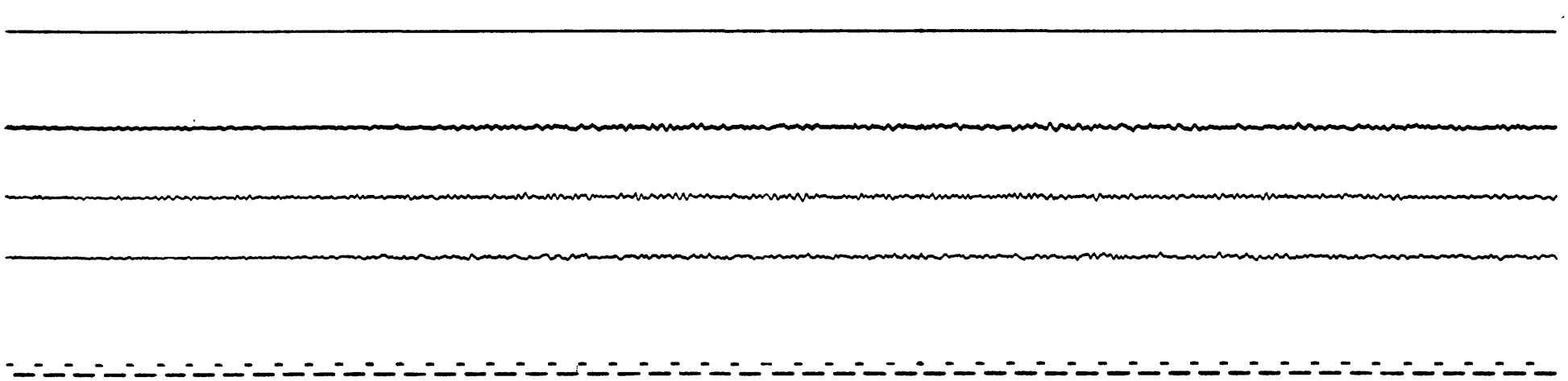
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5160 33.555N, 116.661W	360°	Sens. = 1.92 cm/g Freq. = 24.6 Hz	0.03 g
Anza Array: Anza Fire Station		Damp. = 0.60 crit	
SMA No. 1524 (USGS)	Up	Sens. = 1.97 cm/g Freq. = 25.0 Hz	0.02
Earthquake of		Damp. = 0.60 crit	
28 June 1992 - 1158 G.m.t.	270°	Sens. = 1.93 cm/g Freq. = 25.3 Hz Damp. = 0.60 crit	0.02

Film speed = 1 cm/sec



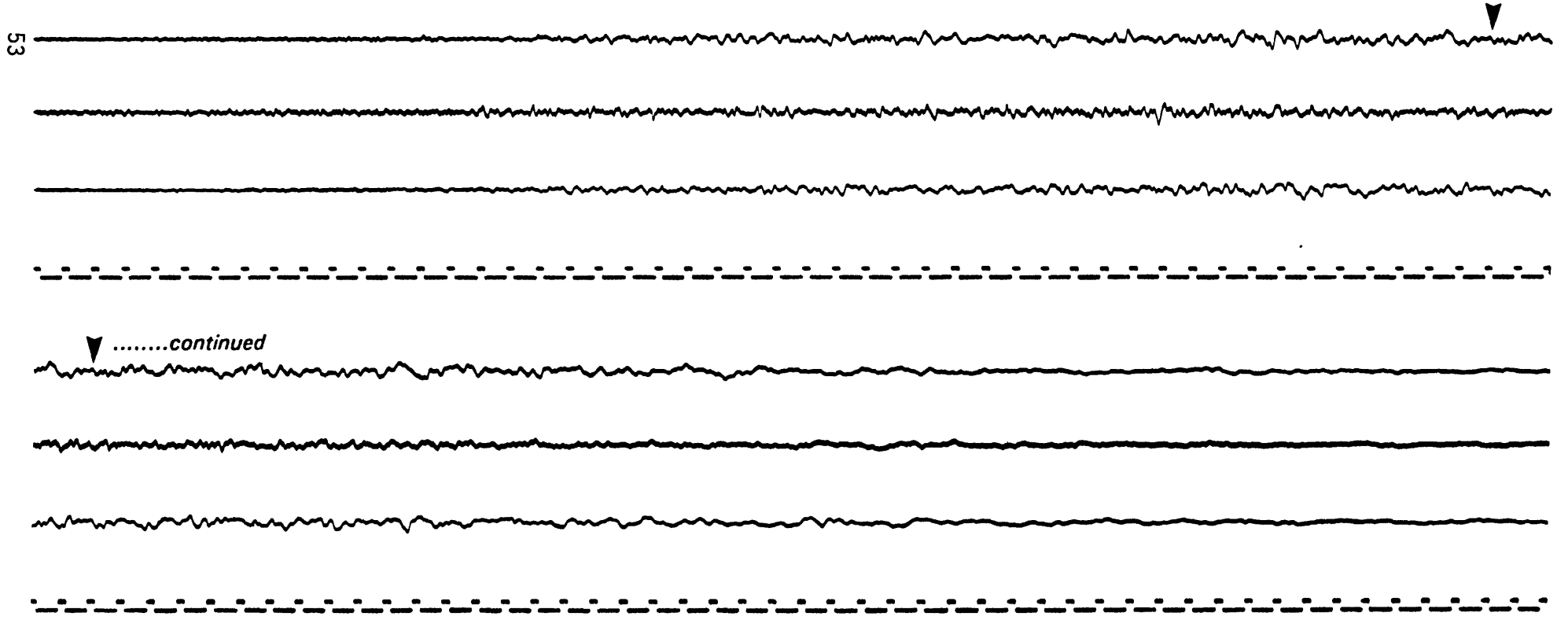
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5037 34.004N, 117.223W	330°	Sens. = 1.78 cm/g Freq. = 25.6 Hz	0.04 g
Reche Canyon - Olive Dell Ranch		Damp. = 0.60 crit	
SMA No. 1514 (USGS) Ground Level	Up	Sens. = 1.80 cm/g Freq. = 25.6 Hz	0.03
Earthquake of		Damp. = 0.60 crit	
28 June 1992 - 1158 G.m.t.	240°	Sens. = 1.82 cm/g Freq. = 25.6 Hz Damp. = 0.60 crit	0.05

Film speed = 1 cm/sec



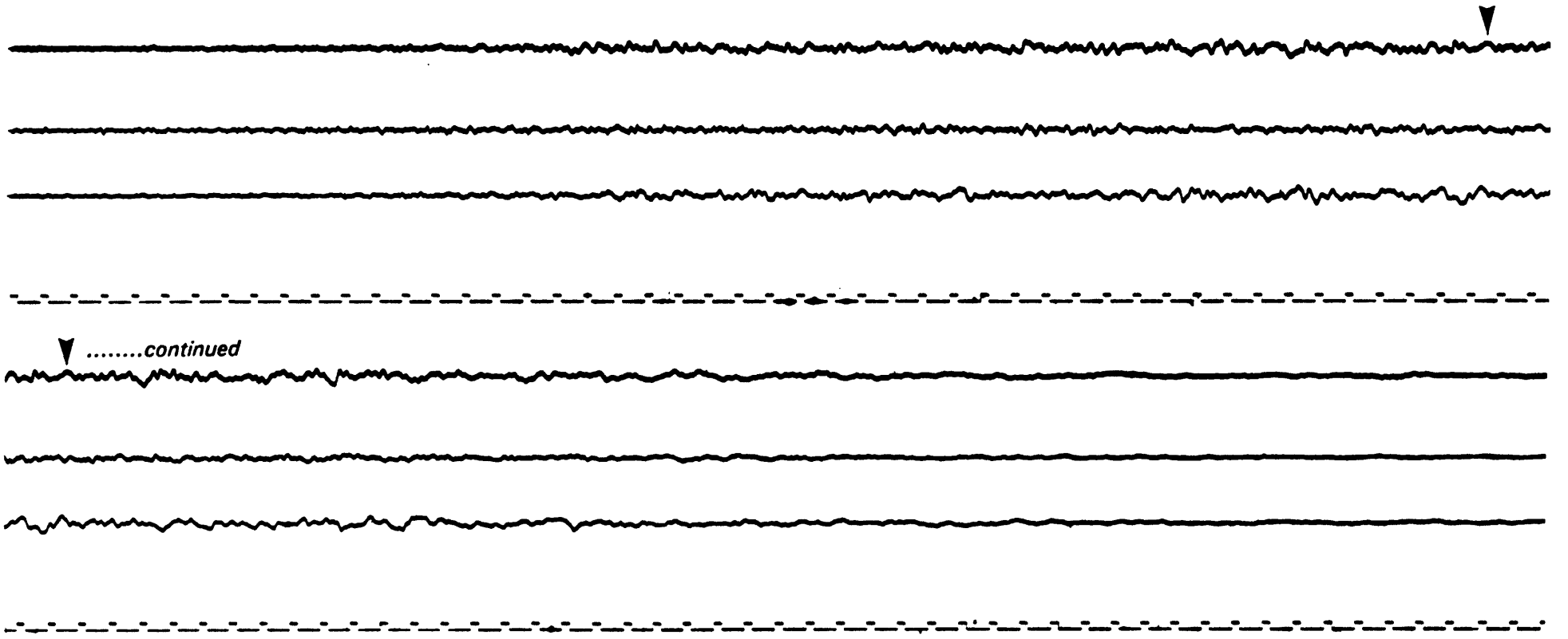
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5229 34.051N, 117.248W	360°	Sens. = 1.92 cm/g Freq. = 25.2 Hzc	0.08 g
Loma Linda VA Hospital - No. Gnd Site		Damp. = 0.6 crit	
SMA-1 No. 4233 (VA)	Up	Sens. = 2.03 cm/g Frea. = 25.0 Hz	0.10
Earthquake of		Damp. = 0.6 crit	
28 June 1992 - 1158 G.m.t.	270°	Sens. = 1.83 cm/g Freq. = 26.2 Hz Damp. = 0.6 crit	0.09

Film speed = 1 cm/sec



NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5229 34.049N, 117.250W	360°	Sens. = 1.81 cm/g Freq. = 26.4 Hz Damp. = 0.6 crit	0.08 g
Loma Linda VA Hospital- So. Gnd Site			
SMA-1 No. 4234 (VA)	Up	Sens. = 1.86 cm/g Freq. = 25.2 Hz Damp. = 0.6 crit	0.05
Earthquake of			
28 June 1992 - 1158 G.m.t.	270°	Sens. = 1.82 cm/g Freq. = 25.5 Hz Damp. = 0.6 crit	0.08

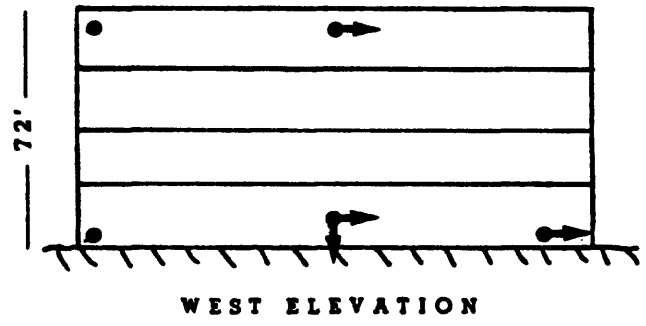
Film speed = 1 cm/sec



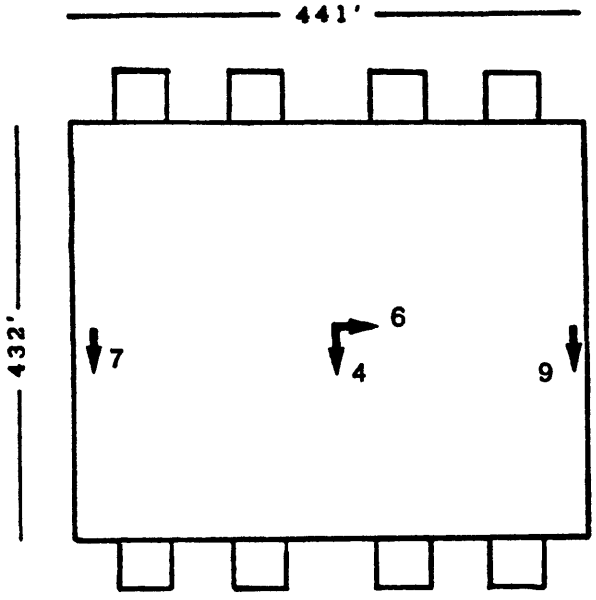
VETERANS ADMINISTRATION HOSPITAL

LOMA LINDA , CALIFORNIA

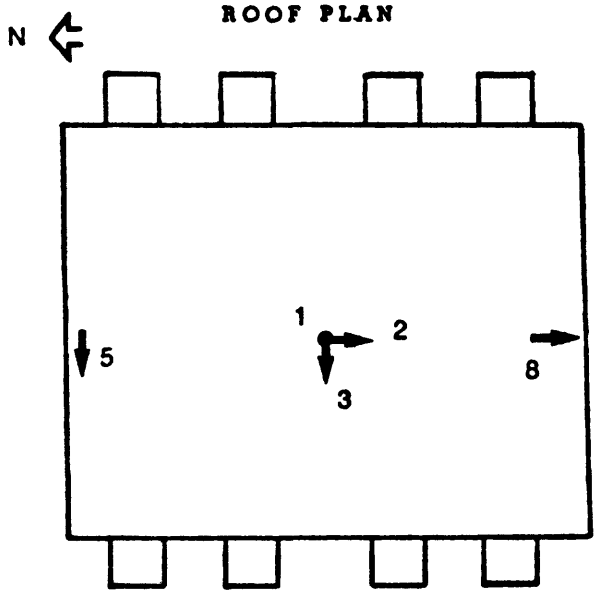
STRONG-MOTION INSTRUMENTATION



WEST ELEVATION



ROOF PLAN



1st FLOOR PLAN

STRUCTURE

Rectangular

Moment resisting steel frame

Concrete shear walls in both directions

ACCELEROMETER DIRECTIONS

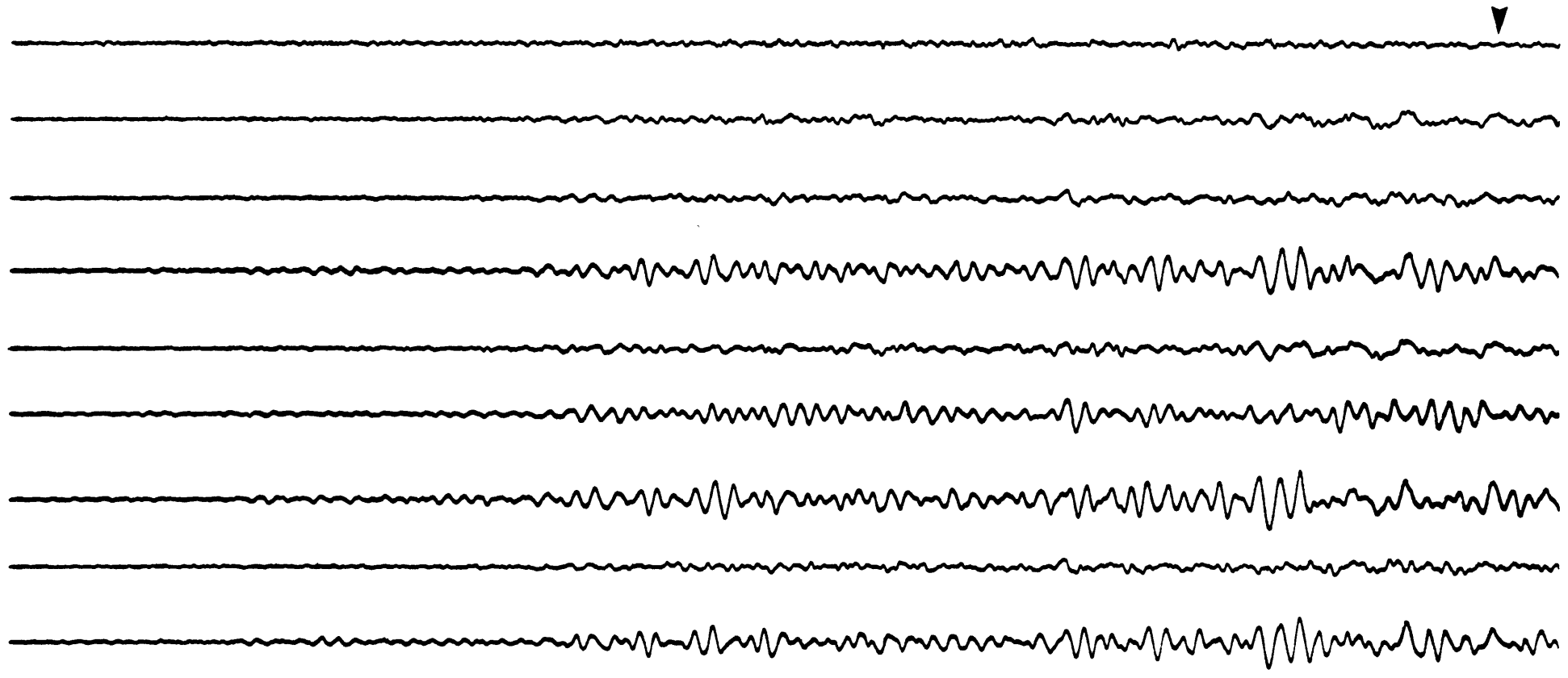
● INTO PLANE OF PLAN/ELEVATION

← AS SHOWN

NATIONAL STRONG-MOTION PROGRAM	CHANNEL	DIRECTION	LOCATION	SENSITIVITY	MAX ACCELERATION
Station No. 5229	1	Down	Ground floor center	1.80 cm/g	0.04 g
34.050N, 117.249W	2	180°	Ground floor center	1.83 cm/g	0.08
Loma Linda VA Hospital (VA)	3	270°	Ground floor center	1.80 cm/g	0.08
Structure Array	4	270°	4th floor center	1.85 cm/g	0.22
CRA-1 No. 230	5	270°	Ground floor north	1.83 cm/g	0.10
Earthquake of	6	180°	4th floor center	1.83 cm/g	0.15
28 June 1992 - 1158 G.m.t.	7	270°	4th floor north	1.85 cm/g	0.27
	8	180°	Ground floor south	1.83 cm/g	0.07
Film speed = 1 cm/sec	9	270°	4th floor south	1.85 cm/g	0.23

(See Accelerogram on next page)

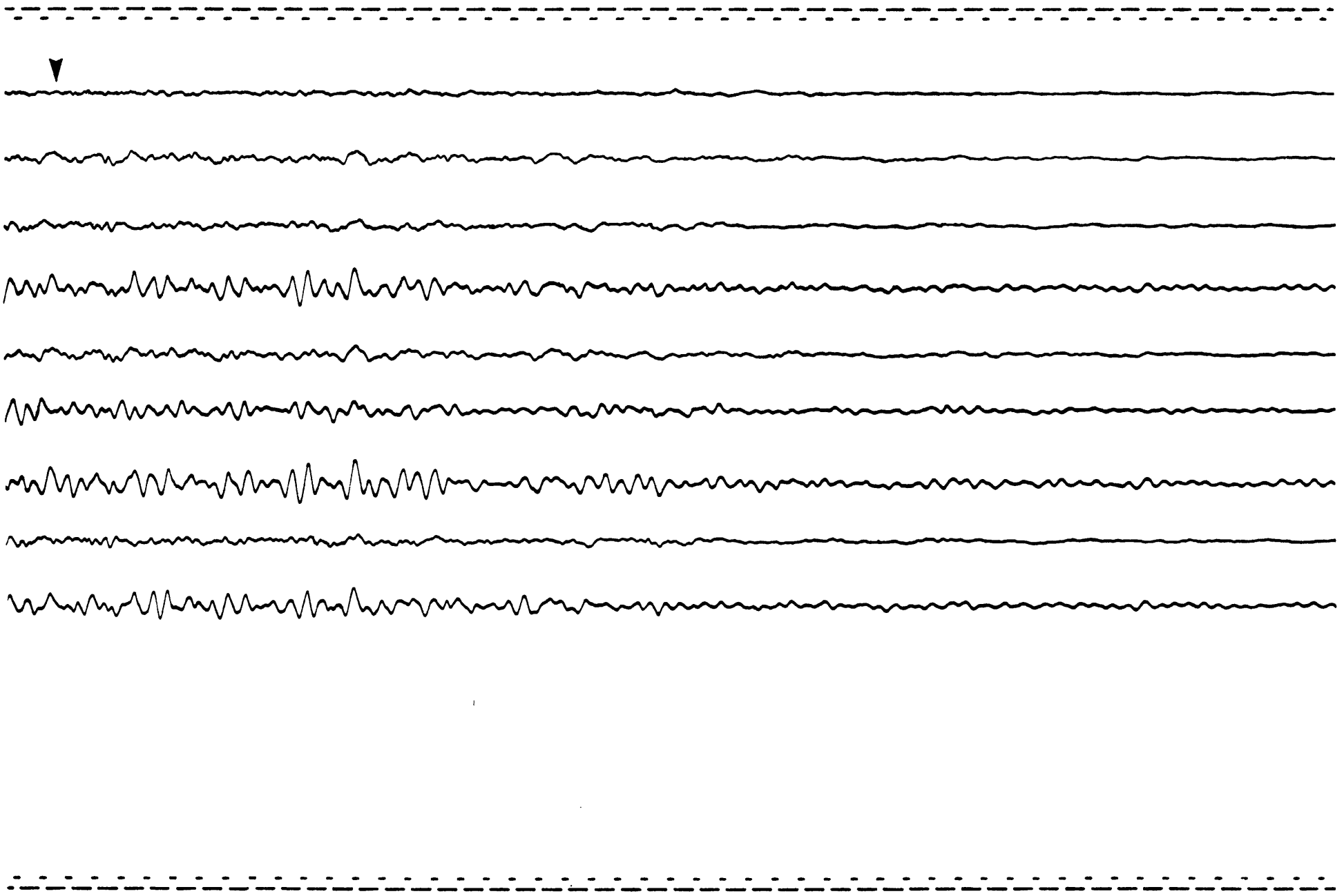
LOMA LINDA VETERANS HOSPITAL
STRUCTURE ARRAY



Film speed = 1 cm/sec

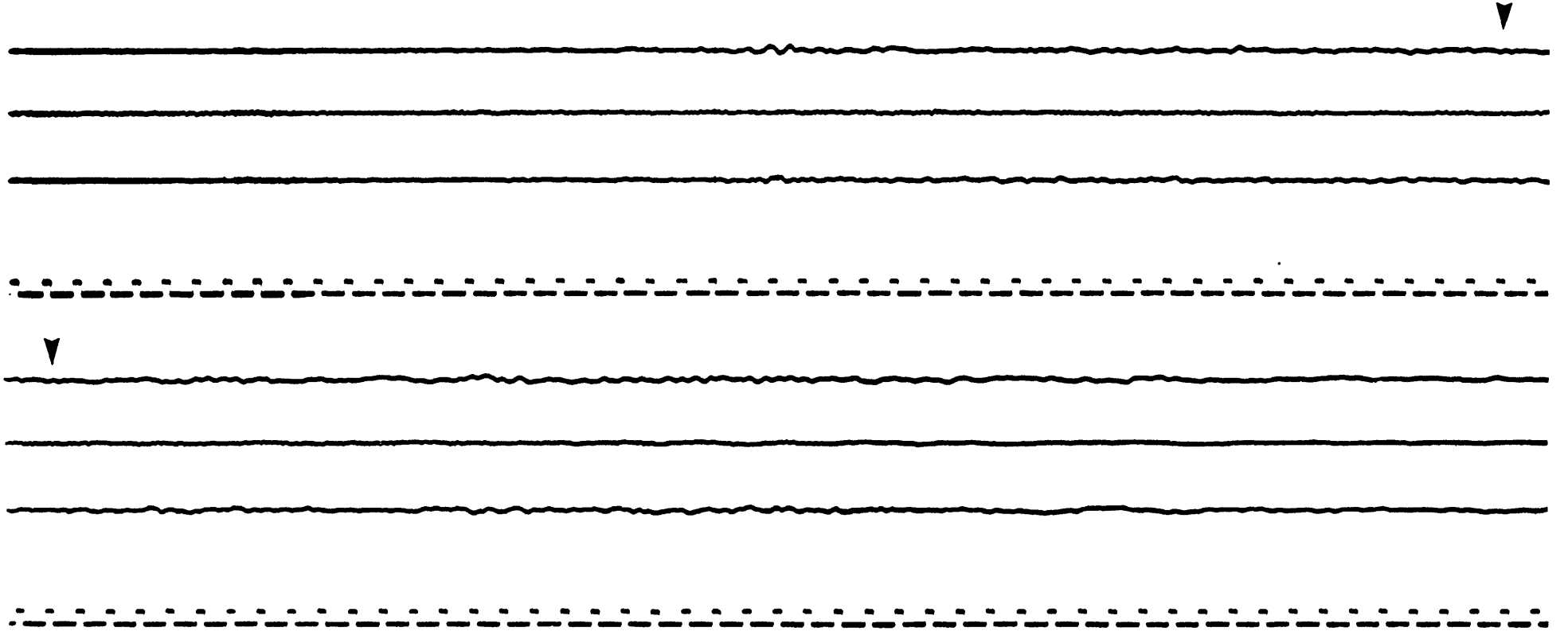
LOMA LINDA VETERANS HOSPITAL - *continued*

STRUCTURE ARRAY



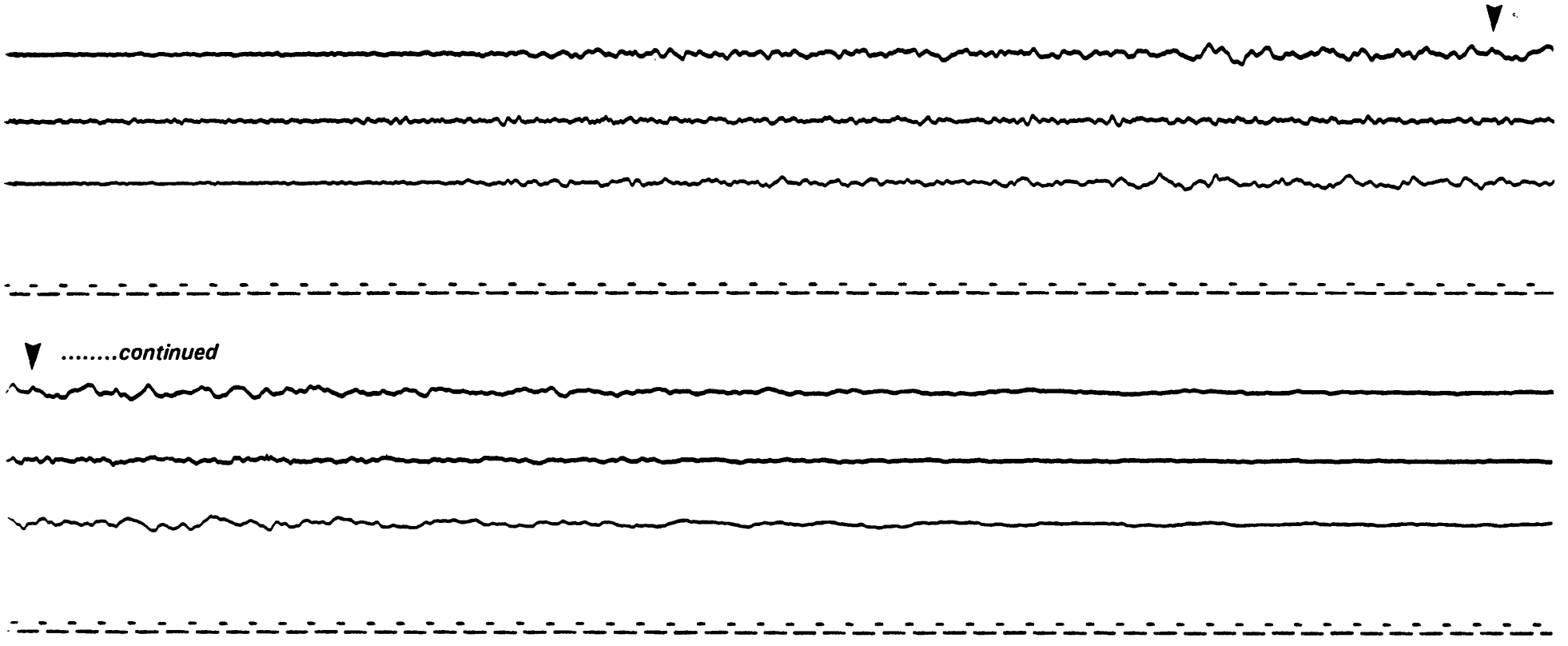
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5270 33.572N, 116.076W	270°	Sens. = 0.91 cm/g Freq. = 39.5 Hz	0.09 g
Mecca Fire Station		Damp. = 0.59 crit	
SMAT No. 5302 (2g) (USGS)	Up	Sens. = 0.96 cm/g Freq. = 38.1 Hz	0.03
EARTHQUAKE OF		Damp. = 0.51 crit	
28 June 1992 - 1158 G.m.t.	180°	Sens. = 0.89 cm/g Freq. = 39.5 Hz Damp. = 0.63 crit	0.07

Film speed = 1 cm/sec



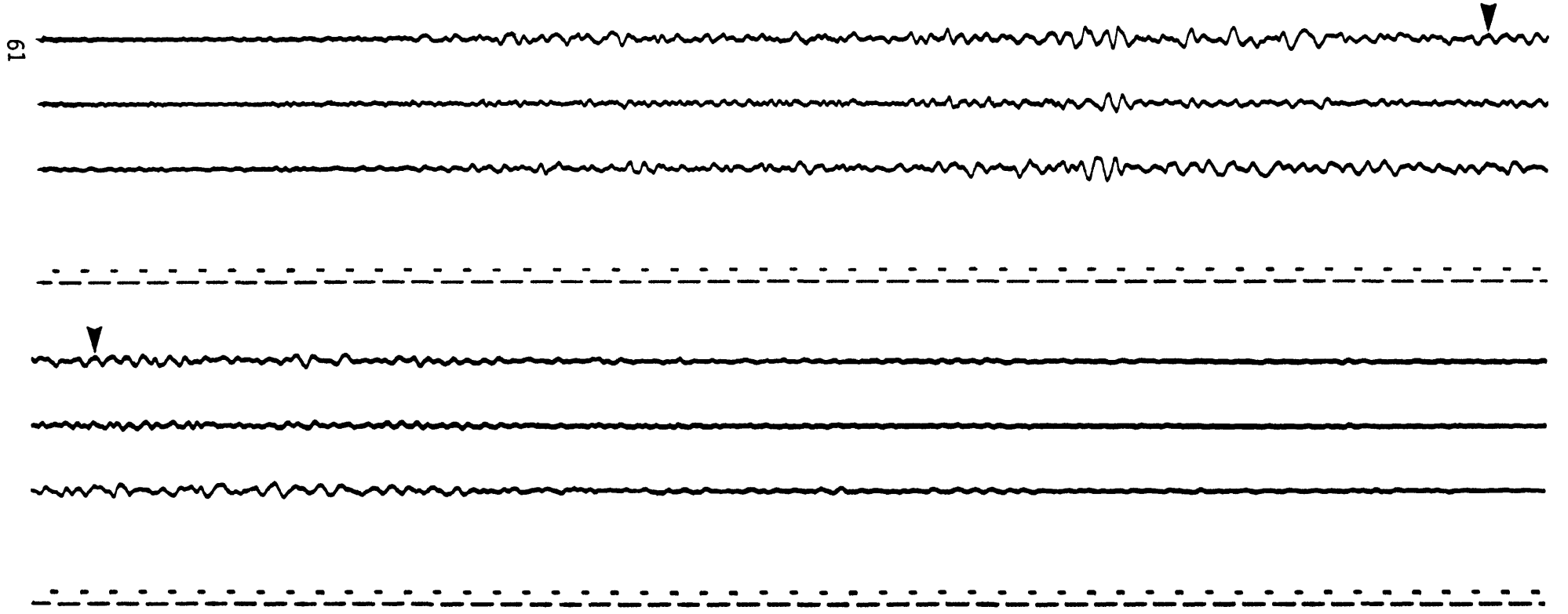
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 129 34.050N, 117.263W	360°	Sens. = 1.85 cm/g Freq. = 25.8 Hz	0.10 g
Loma Linda Univ. - Medical Center		Damp. = 0.6 crit	
SMA-1 No. 813 (USGS)	Up	Sens. = 1.85 cm/g Freq. = 25.8 Hz	0.05
Earthquake of		Damp. = 0.6 crit	
28 June 1992 - 1158 G.m.t.	270°	Sens. = 1.85 cm/g Freq. = 24.9 Hz Damp. = 0.6 crit	0.09

Film speed = 1 cm/sec



NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5267 34.183N, 117.295W	360°	Sens. = 1.67 cm/g Freq. = 27.0 Hz Damp. = 0.6 crit	0.12 g
San Bernardino Array: N. "F" Street			
SMA No. 4905 (USGS) Ground	Up	Sens. = 1.87 cm/g Freq. = 26.2 Hz Damp. = 0.6 crit	0.09
Earthquake of			
28 June 1992 - 1158 G.m.t..	270°	Sens. = 1.71 cm/g Freq. = 26.9 Hz Damp. = 0.6 crit	0.12

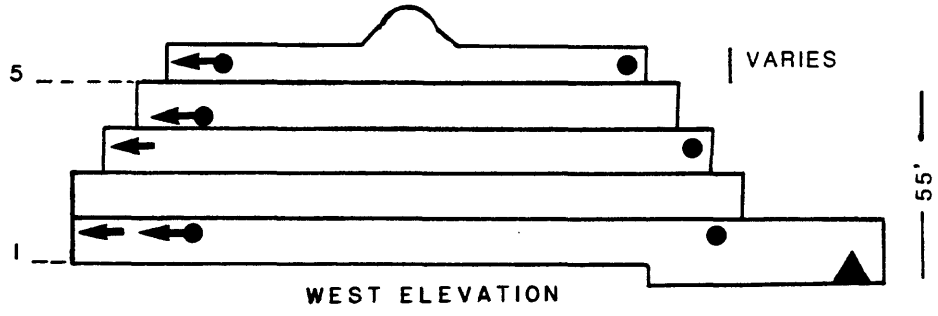
Film speed = 1 cm/sec



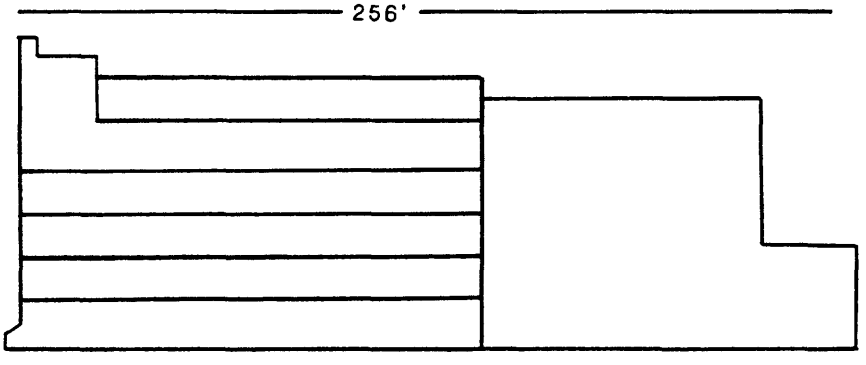
SAN BERNARDINO

COUNTY GOVERNMENT CENTER

STRONG-MOTION INSTRUMENTATION



WEST ELEVATION



SOUTH ELEVATION

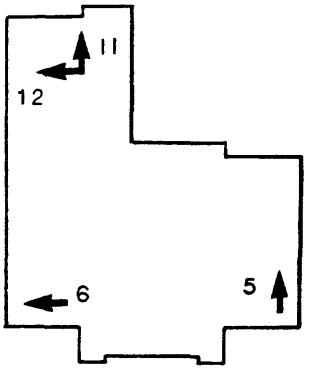
STRUCTURE

Braced steel frame

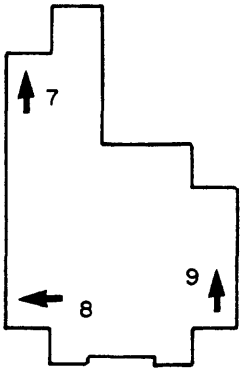
ACCELEROMETER DIRECTION

● INTO PLANE OF PLAN/ELEVATION

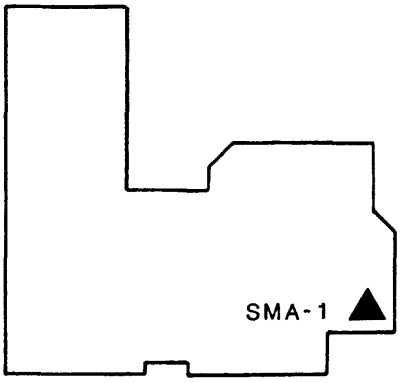
← AS SHOWN



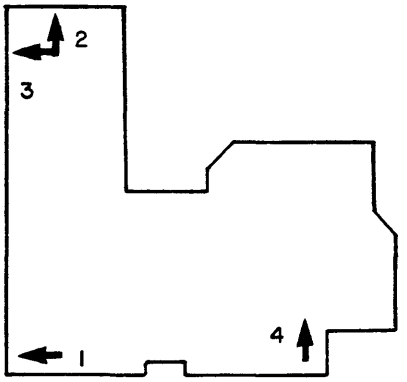
4th FLOOR



5th FLOOR CEILING



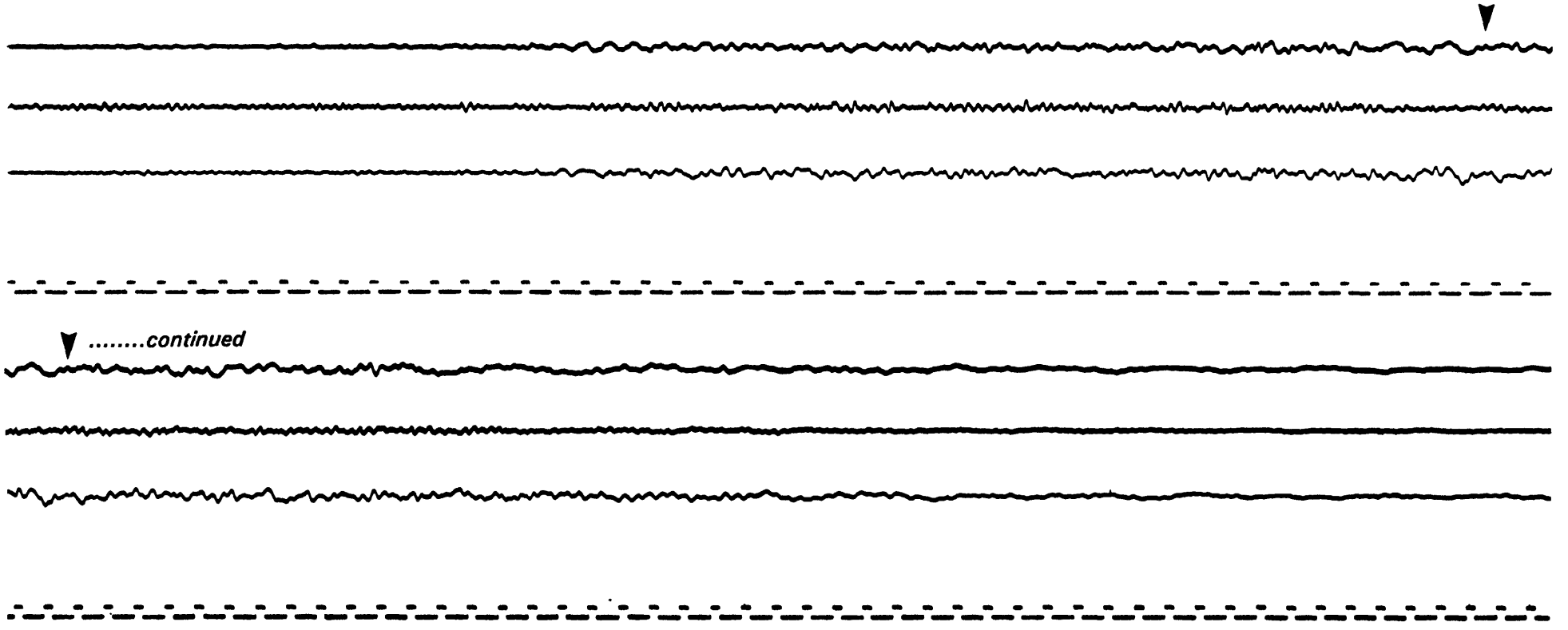
GROUND FLOOR



GROUND FLOOR CEILING

NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5245 34.106N, 117.287W	090°	Sens. = 1.80 cm/g Freq. = 25.5 Hz	0.06 g
San Bernardino County Govt. Center		Damp. = 0.6 crit	
SMA No. 1462 (USGS) Basement, SW	Up	Sens. = 1.96 cm/g Freq. = 24.7 Hz	0.07
Earthquake of		Damp. = 0.6 crit	
28 June 1992 - 1158 G.m.t.	360°	Sens. = 1.76 cm/g Freq. = 26.4 Hz Damp. = 0.6 crit	0.09

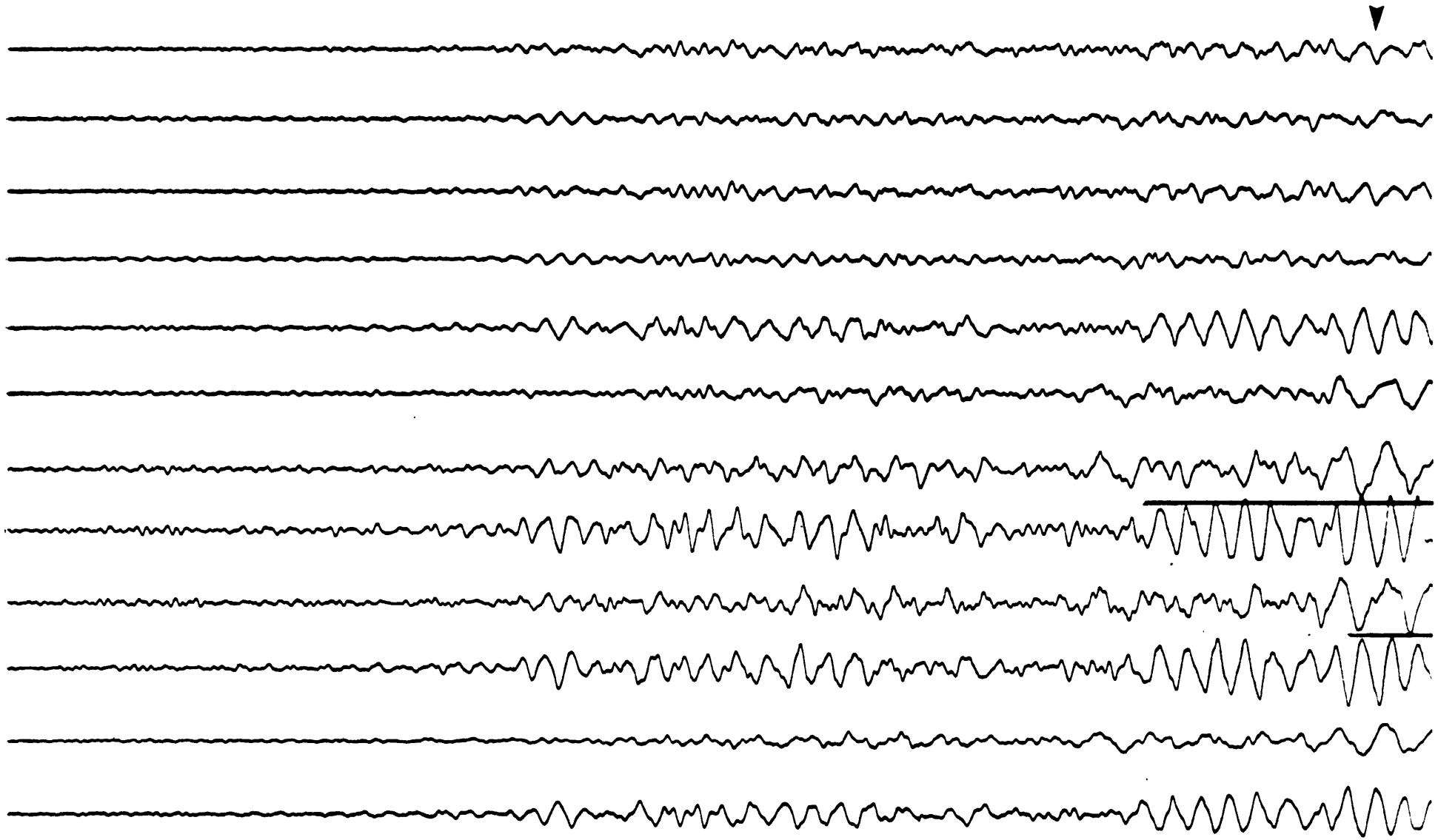
Film speed = 1 cm/sec



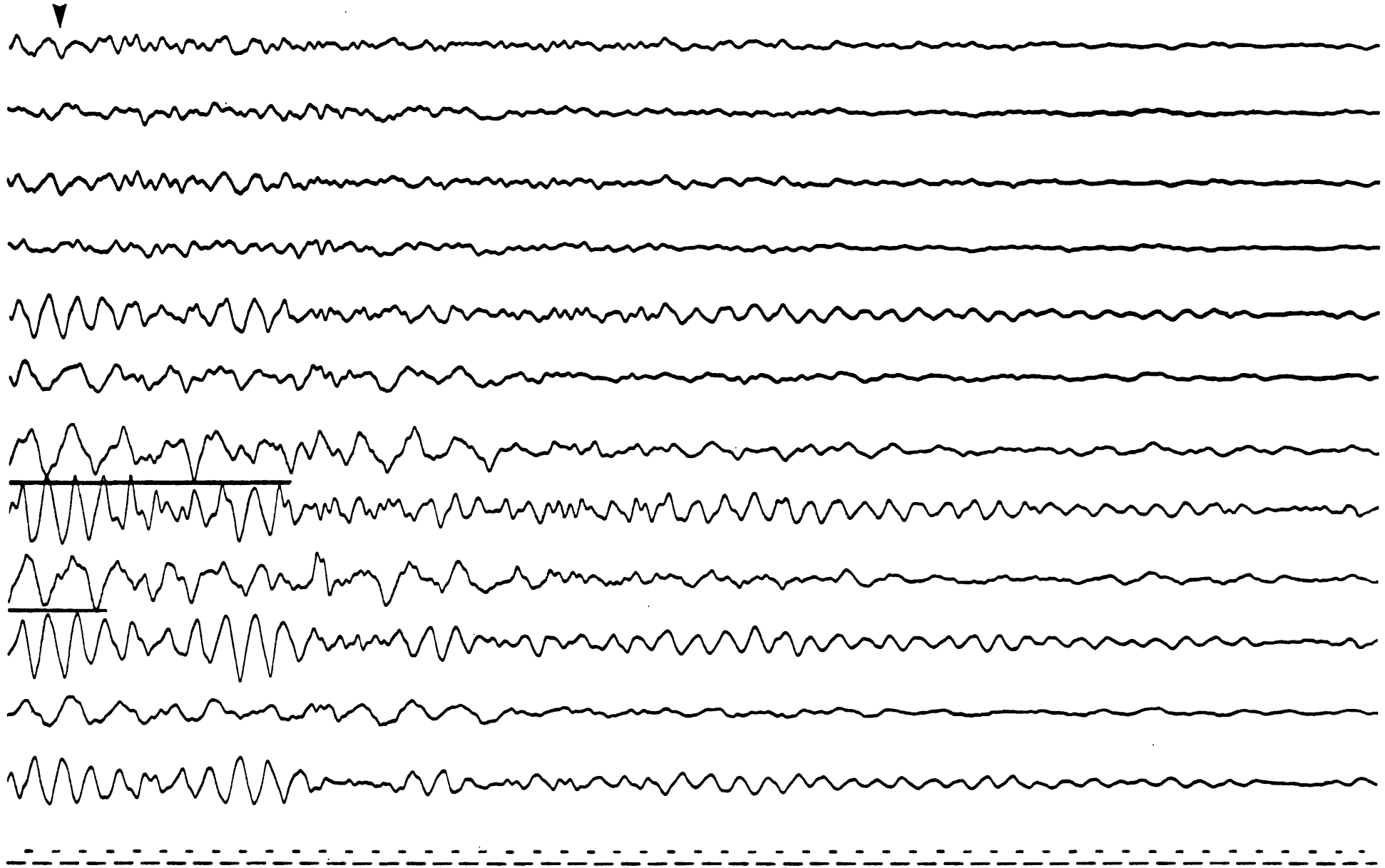
NATIONAL STRONG-MOTION PROGRAM	CHANNEL	DIRECTION	LOCATION	SENSITIVITY	MAX ACCELERATION
Station No. 5245	1	360°	2nd floor, NW	1.82 cm/g	0.13 g
34.106N, 117.287W	2	090°	2nd floor, NE	1.97 cm/g	0.10
San Bernardino County Government Center	3	360°	2nd floor, NE	1.83 cm/g	0.14
CRA-1 No. 302 (USGS)	4	090°	2nd floor, SW	1.89 cm/g	0.09
	5	090°	4th floor, SW	1.88 cm/g	0.21
Earthquake of	6	360°	4th floor, NW	1.80 cm/g	0.17
28 June 1992 - 1158 G.m.t.	7	090°	Roof (6th) NE	1.90 cm/g	0.28
	8	360°	Roof (6th) NW	1.91 cm/g	0.34
	9	090°	Roof (6th) SW	1.90 cm/g	0.26
Film speed = 1 cm/sec	10	360	Roof (6th) NE	1.90 cm/g	0.36
	11	090°	4th floor NE	1.81 cm/g	0.17
	12	360°	4th floor NE	1.94 cm/g	0.26

(See Accelerogram on next page)

SAN BERNARDINO COUNTY GOVERNMENT CENTER
STRUCTURE ARRAY

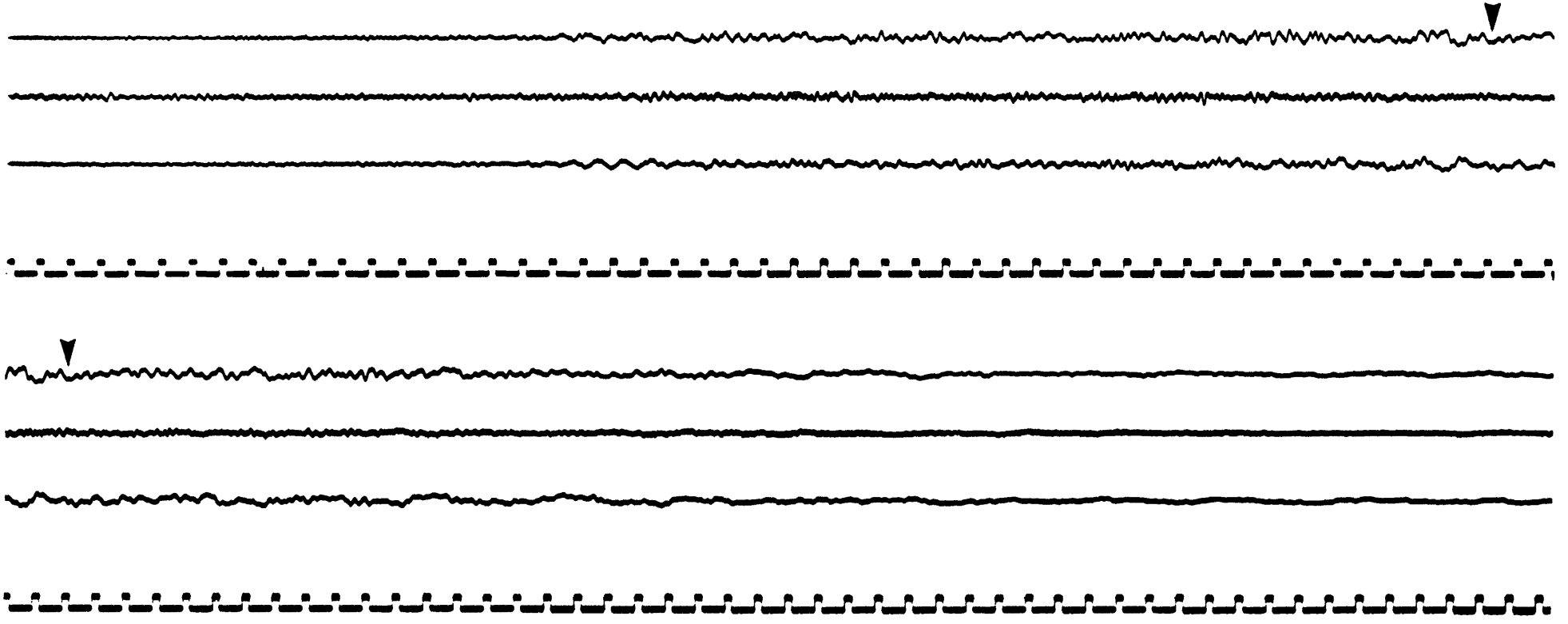


SAN BERNARDINO COUNTY GOVERNMENT CENTER - *continued*
STRUCTURE ARRAY



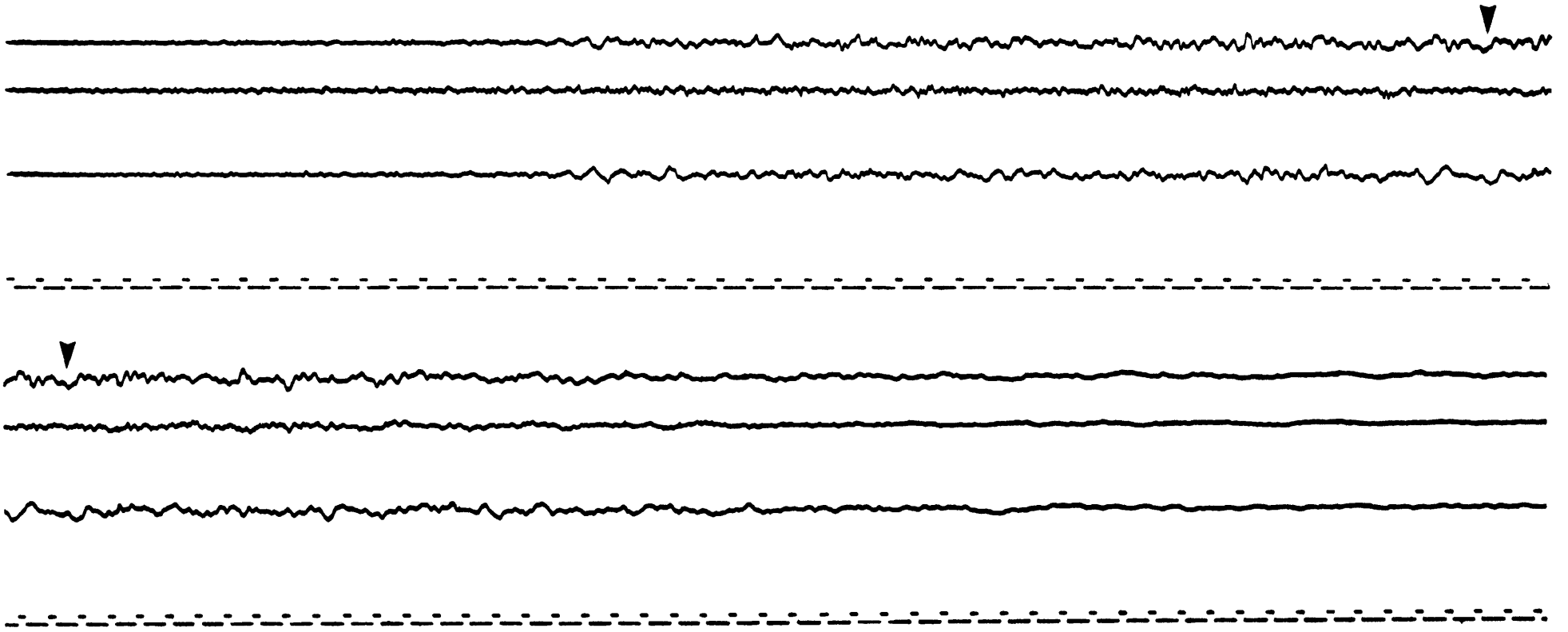
NATIONAL STRONG-MOTION PROGRAM		DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5245	34.106N, 117.287W	360°	Sens. = 1.88 cm/g Freq. = 25.9 Hz Damp. = 0.6 crit	0.06 g
San Bernardino County Govt Center				
SMA-1 No. 4904 (USGS)	Ground Site	Up	Sens. = 1.88 cm/g Freq. = 26.0 Hz Damp. = 0.6 crit	0.05
Earthquake of				
28 June 1992 - 1158 G.m.t.		270°	Sens. = 1.77 cm/g Freq. = 26.3 Hz Damp. = 0.6 crit	0.07

Film speed = 1 cm/sec



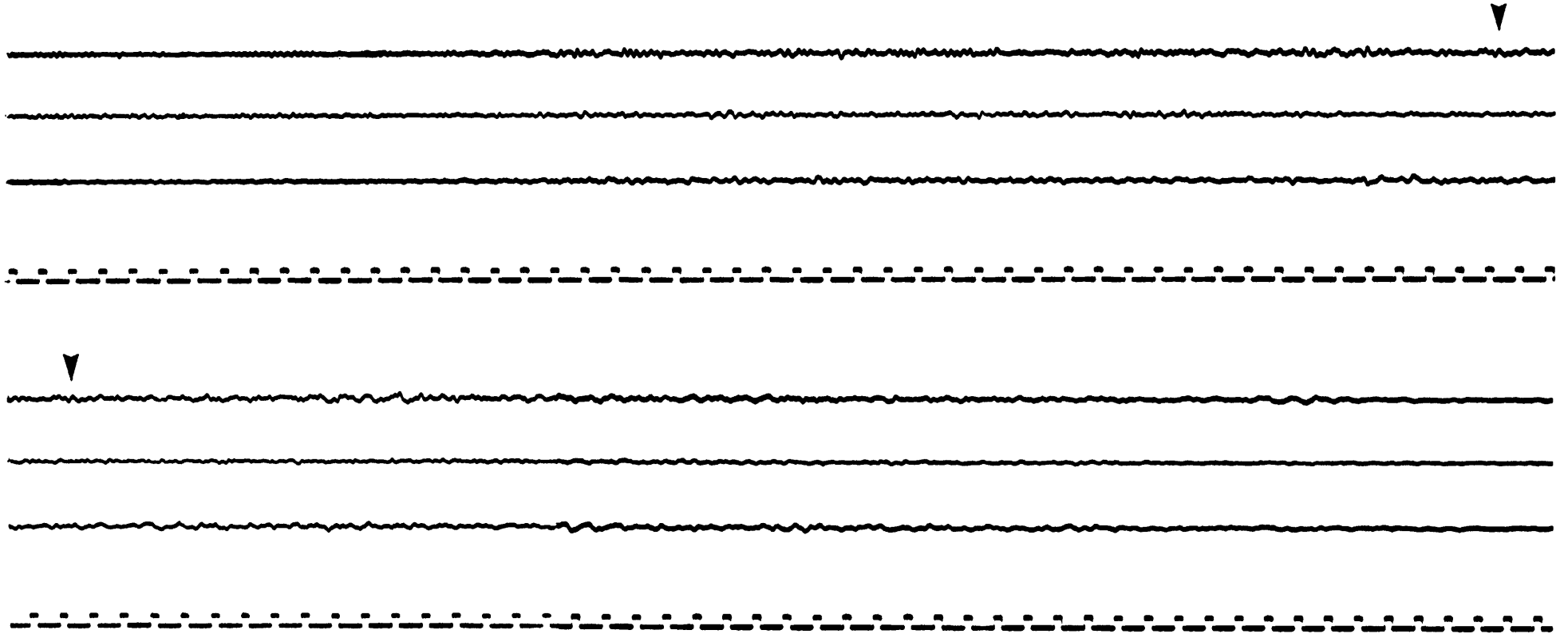
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5269 34.086N, 117.309W	360°	Sens. = 1.84 cm/g Freq. = 25.5 Hz Damp. = 0.6 crit	0.10 g
San Bernardino Array: San Bernardino Valley College SMA-1 No. 1080 (USGS)	Up	Sens. = 1.91 cm/g Freq. = 25.2 Hz Damp. = 0.6 crit	0.08
Earthquake of 28 June 1992 - 1158 G.m.t.	270°	Sens. = 1.77 cm/g Freq. = 25.6 Hz Damp. = 0.6 crit	0.11

Film speed = 1 cm/sec



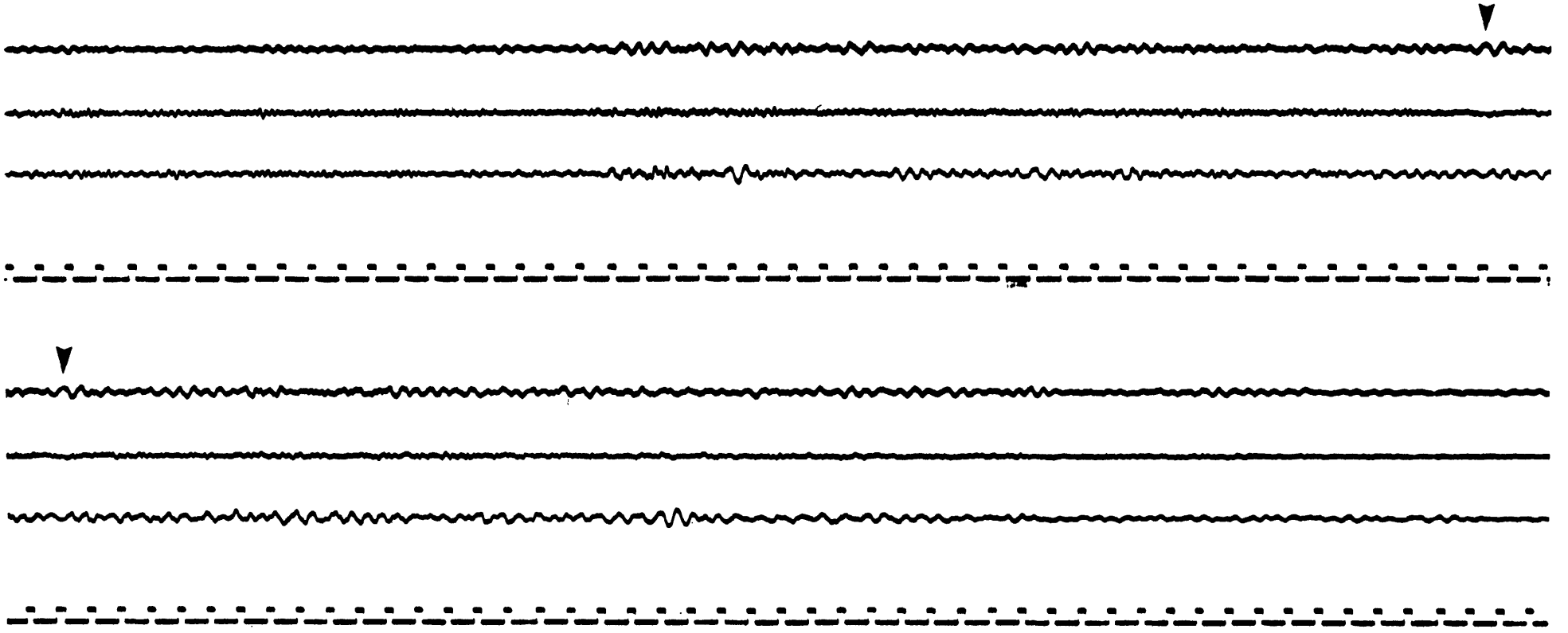
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5231 33.47N, 116.64W	360°	Sens. = 1.82 cm/g Freq. = 25.7 Hz Damp. = 0.6 crit	0.05 g
Anza Array: Tule Canyon			
SMA No. 1895 (USGS)	Up	Sens. = 1.88 cm/g Freq. = 25.8 Hz Damp. = 0.6 crit	0.03
Earthquake of			
28 June 1992 - 1158 G.m.t.	270°	Sens. = 1.86 cm/g Freq. = 26.0 Hz Damp. = 0.6 crit	0.03

Film speed = 1 cm/sec



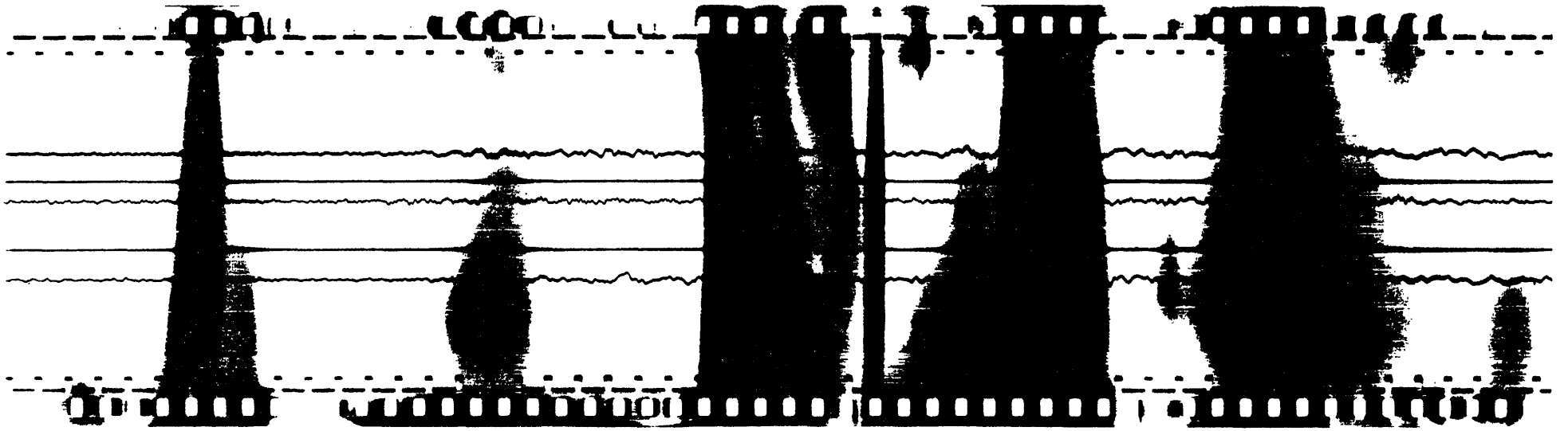
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5241 33.512N, 116.798W	360°	Sens. = 2.00 cm/g Freq. = 24.8 Hz	0.05 g
Anza Array: Cahuilla Valley		Damp. = 0.60 crit	
SMA No. 1642 (USGS)	Up	Sens. = 1.98 cm/g Freq. = 25.5 Hz	0.04
Earthquake of		Damp. = 0.60 crit	
28 June 1992 - 1158 G.m.t.	270°	Sens. = 1.99 cm/g Freq. = 25.1 Hz Damp. = 0.60 crit	0.08

Film speed = 1 cm/sec



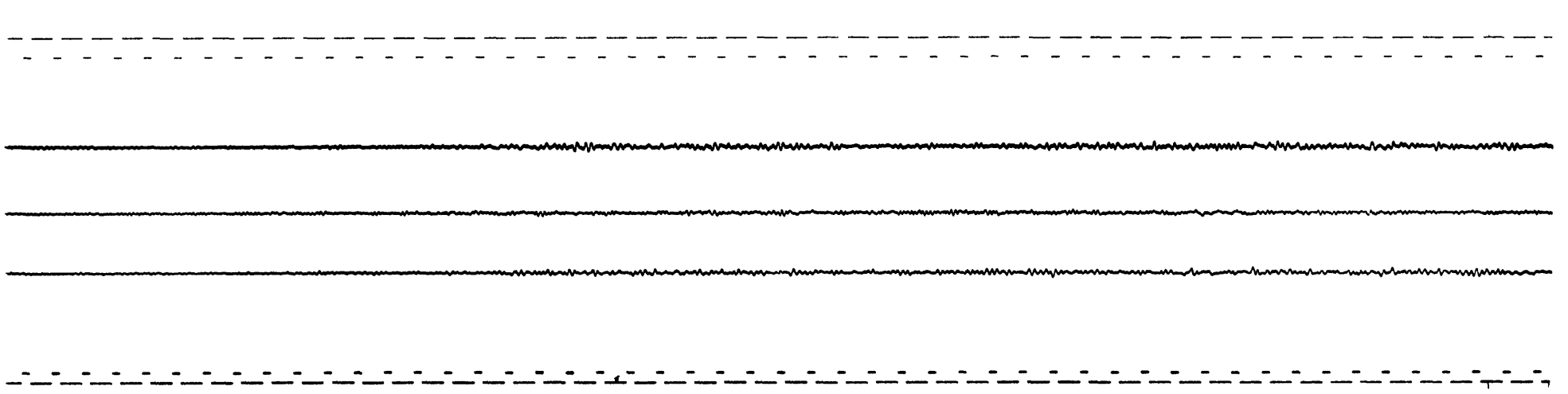
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5268 34.134N, 117.368W	360°	Sens. = 1.82 cm/g Freq. = 25.7 Hz Damp. = 0.6 crit	0.06 g
San Bernardino Array: Rialto Fire Sta			
SMA-1 No. 1082 (USGS) Ground	Up	Sens. = 1.90 cm/g Freq. = 24.8 Hz Damp. = 0.6 crit	0.05
Earthquake of			
28 June 1992 - 1158 G.m.t.	270°	Sens. = 1.97 cm/g Freq. = 25.0 Hz Damp. = 0.6 crit	0.06

Film speed = 1 cm/sec



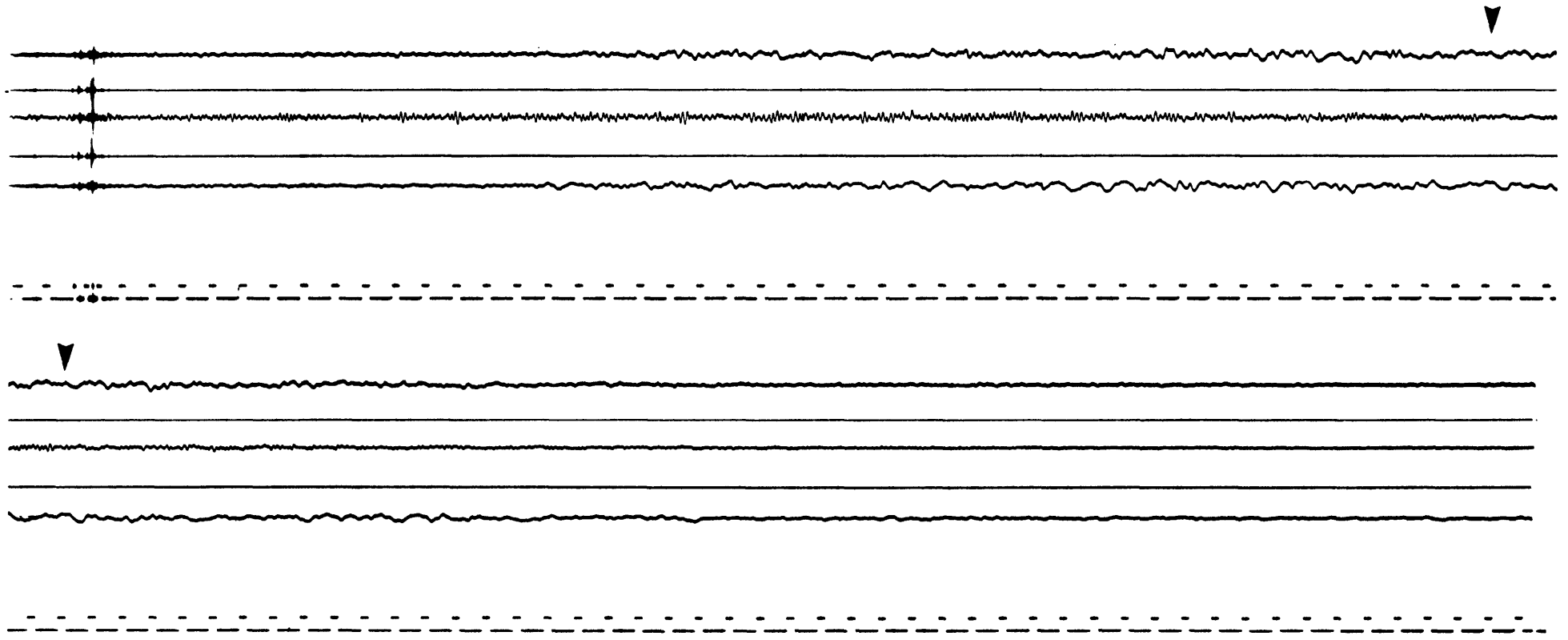
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5275 33.920N, 117.320W	360°	Sens. = 1.93 cm/g Freq. = 25.6 Hz	0.04 g
Mills Filter Plant		Damp. = 0.6 crit	
SMA No. 6695 (MWD) Ground	Up	Sens. = 1.98 cm/g Freq. = 25.0 Hz	0.03
Earthquake of		Damp. = 0.6 crit	
28 June 1992 - 1158 G.m.t.	270°	Sens. = 1.94 cm/g Freq. = 25.5 Hz Damp. = 0.6 crit	0.05

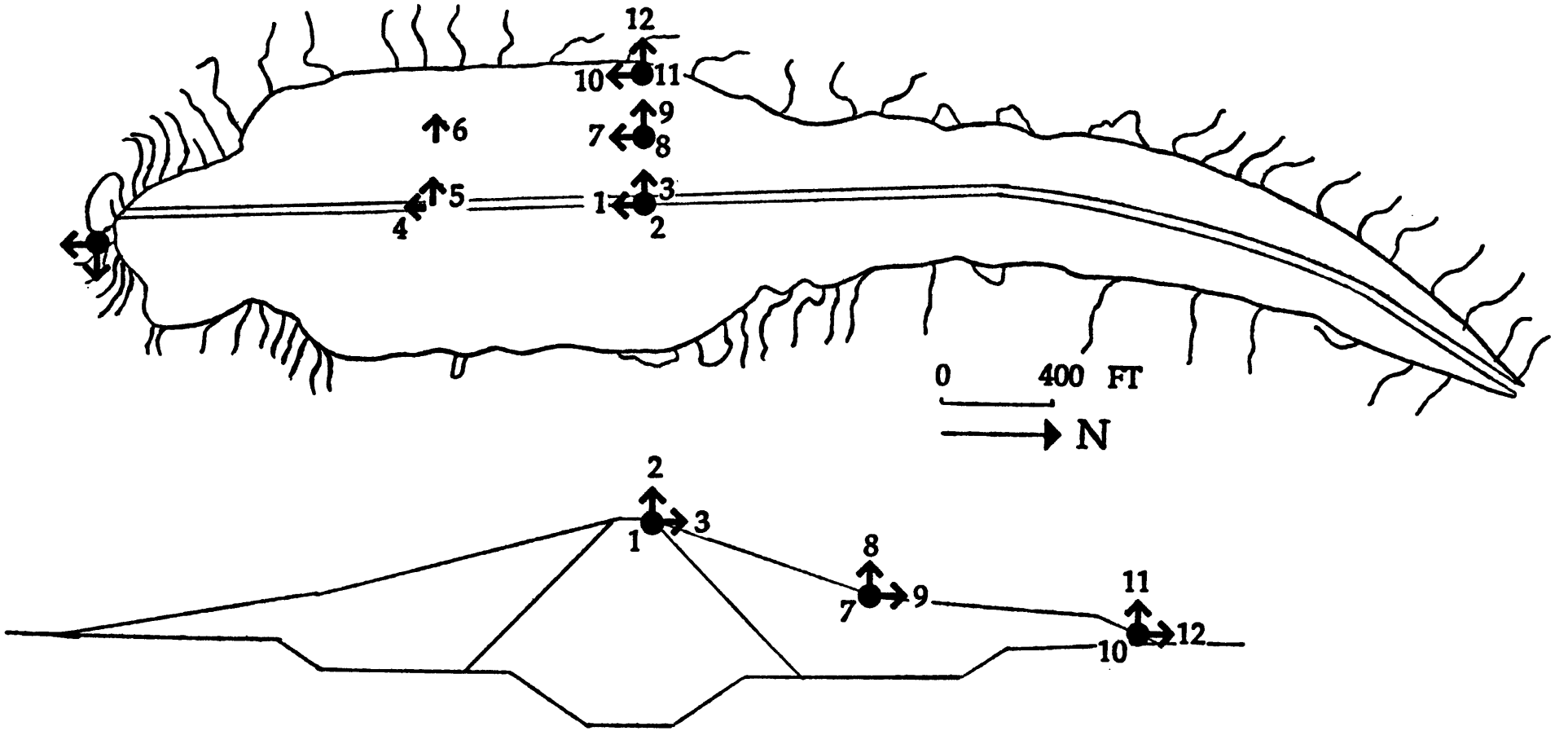
Film speed = 1 cm/sec



NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5265 34.235N, 117.407W	360°	Sens. = 1.74 cm/g Freq. = 26.6 Hz Damp. = 0.6 crit	0.06 g
San Bernardino Array: Devore Water Dept. SMA-1 No. 3560 (USGS) Ground	Up	Sens. = 1.79 cm/g Freq. = 26.4 Hz Damp. = 0.6 crit	0.07
Earthquake of 28 June 1992 - 1158 G.m.t.	270°	Sens. = 1.82 cm/g Freq. = 25.8 Hz Damp. = 0.6 crit	0.06

Film speed = 1 cm/sec



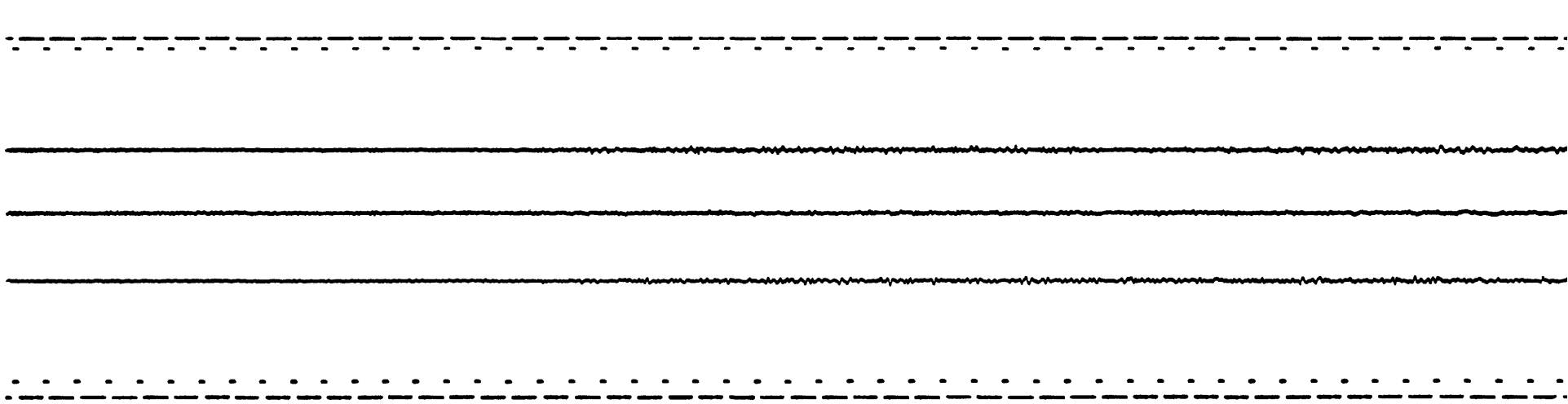


Skinner Dam

0 100 FT

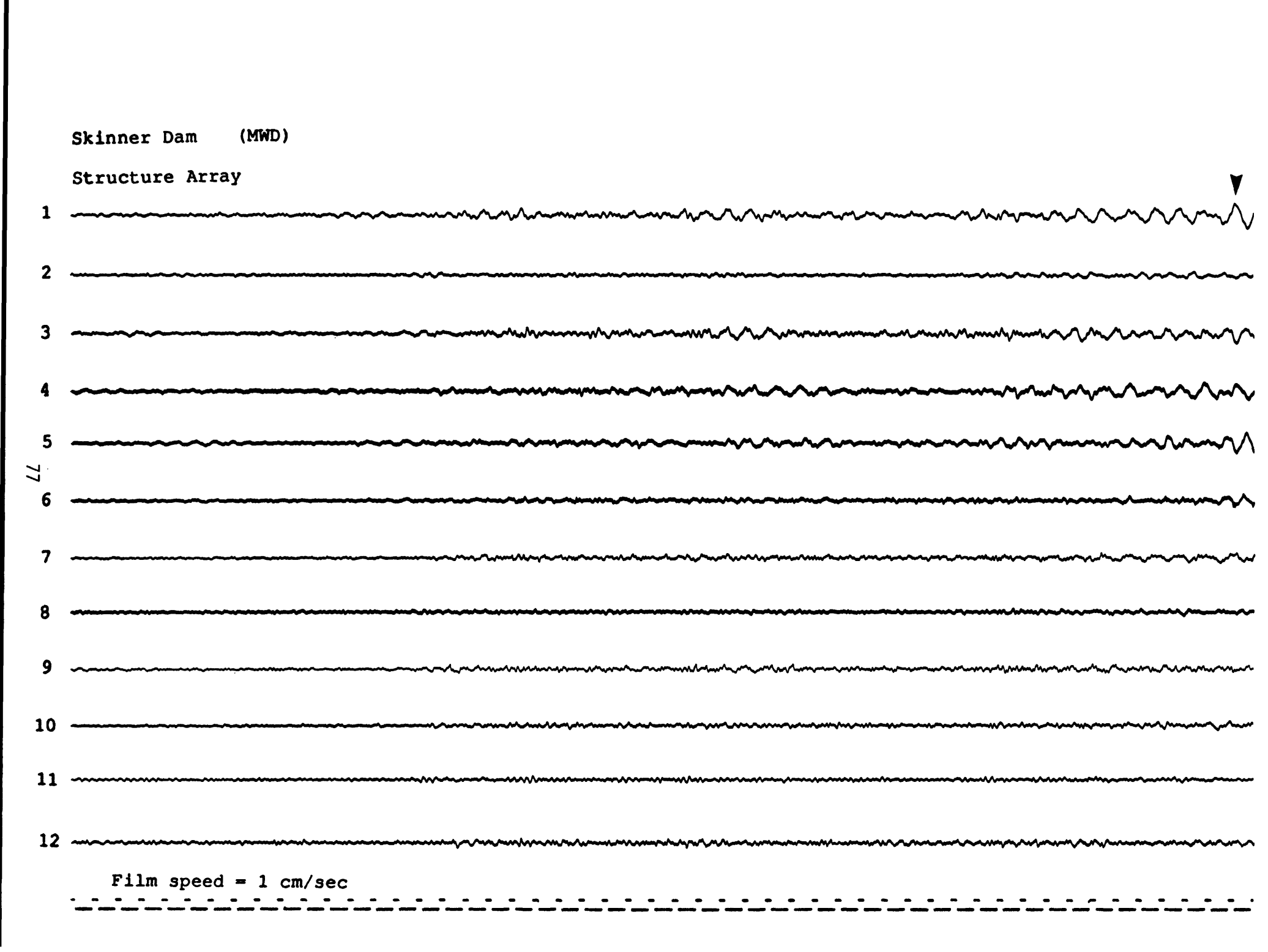
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 720 33.580N, 117.070W	178°	Sens. = 1.93 cm/g Freq. = 25.0 Hz	0.04 g
Skinner Dam - Left Abutment		Damp. = 0.59 crit	
SMA No. 1048 (MWD)	Up	Sens. = 1.87 cm/g Freq. = 25.6 Hz	0.03
Earthquake of		Damp. = 0.61 crit	
28 June 1992 - 1158 G.m.t.	088°	Sens. = 1.80 cm/g Freq. = 25.6 Hz Damp. = 0.57 crit	0.05

Film speed = 1 cm/sec

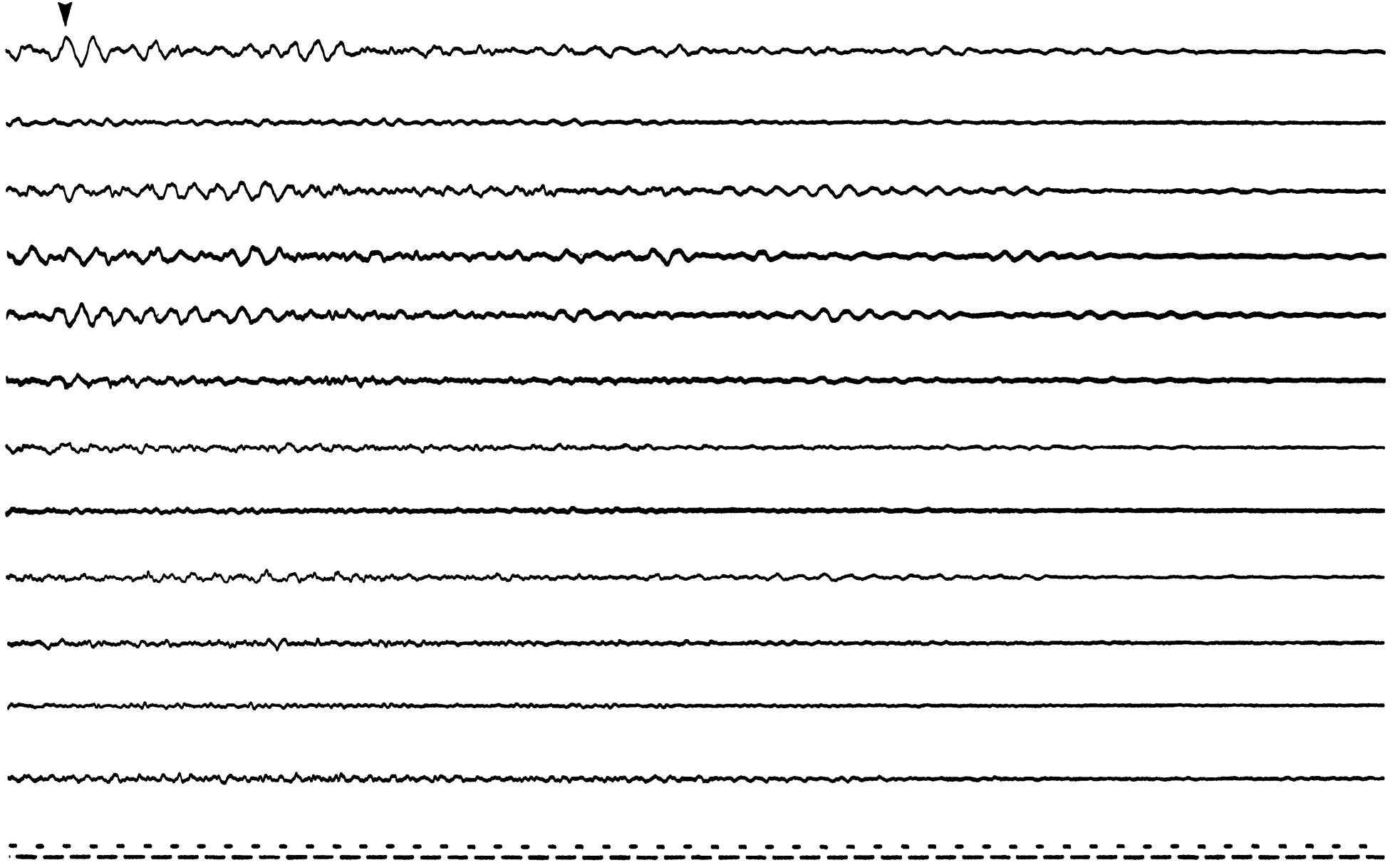


NATIONAL STRONG-MOTION PROGRAM	CHANNEL	DIRECTION	LOCATION	SENSITIVITY	MAX ACCELERATION
Station No. 720	1	180°	Center Crest	1.83 cm/g	0.16 g
33.58N, 117.07W	2	Up	Center Crest	1.88 cm/g	0.04
Skinner Dam (MWD)	3	270°	Center Crest	1.88 cm/g	0.11
Structure Array	4	180°	Left Crest	1.83 cm/g	0.09
CRA-1 No. 232	5	270°	Left Crest	1.85 cm/g	0.12
	6	270°	Left Slope	1.83 cm/g	0.08
Earthquake of	7	180°	Center Slope	1.90 cm/g	0.04
28 June 1992 - 1158 G.m.t.	8	Up	Center Slope	1.85 cm/g	0.03
	9	270°	Center Slope	1.88 cm/g	0.06
	10	180°	Center Toe	1.85 cm/g	0.08
Film speed = 1 cm/sec	11	Up	Center Toe	1.93 cm/g	0.03
	12	270°	Center Toe	1.85 cm/g	0.06

(See Accelerogram on next page)

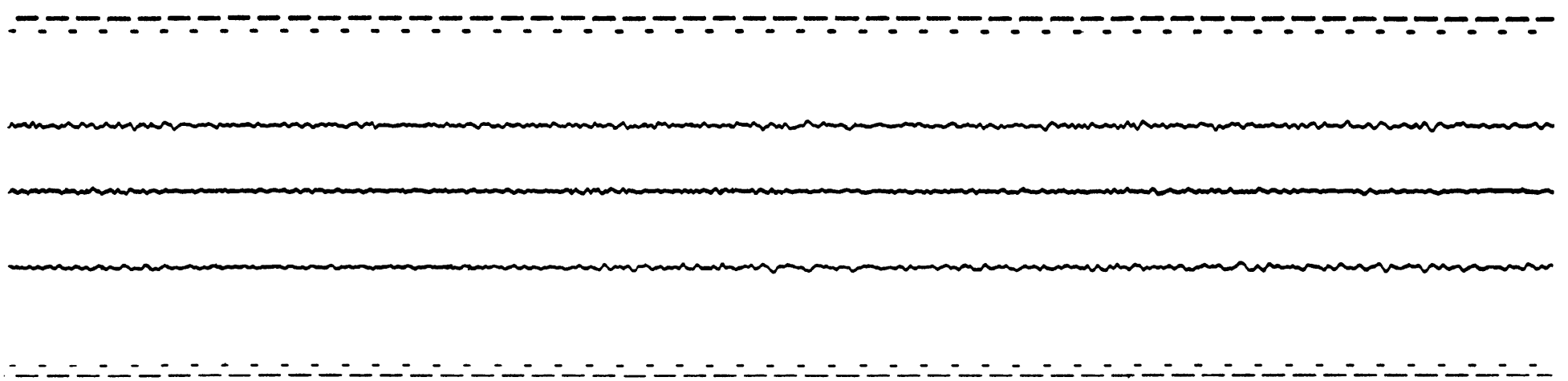

Skinner Dam (MWD)
Structure Array
1
2
3
4
5
6
7
8
9
10
11
12
Film speed = 1 cm/sec

Skinner Dam - *continued*



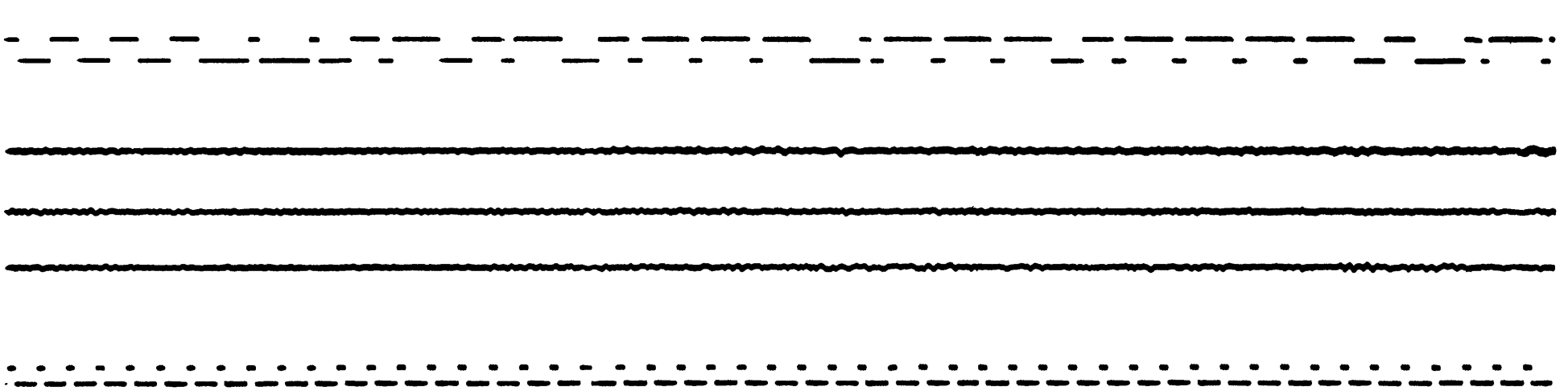
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 817 33.71N, 115.63W	270°	Sens. = 1.89 cm/g Freq. = 25.8 Hz	0.05 g
Hinds Pumping Plant		Damp. = 0.6 crit	
SMA No. 1057 (MWD)	Up	Sens. = 1.90 cm/g Freq. = 26.9 Hz	0.04
Earthquake of		Damp. = 0.6 crit	
28 June 1992 - 1158 G.m.t.	180°	Sens. = 1.80 cm/g Freq. = 26.2 Hz Damp. = 0.6 crit	0.04

Film speed = 1 cm/sec



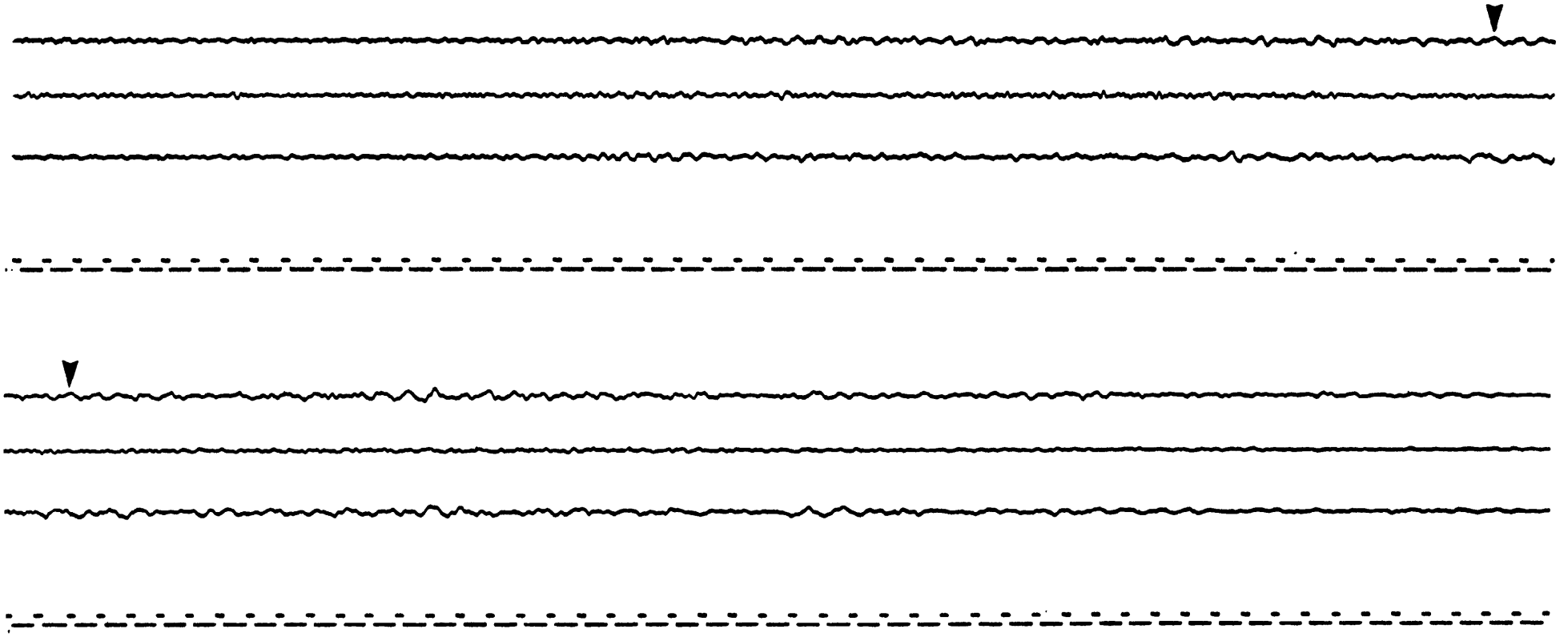
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No.5221 33.38N, 116.68W	360°	Sens. = 1.75 cm/g Freq. = 26.4 Hz Damp. = 0.60 crit	0.03 g
Anza Array: Chihuahua Valley			
SMA No. 2030 (USGS)	Up	Sens. = 1.84 cm/g Freq. = 25.7 Hz Damp. = 0.60 crit	0.02
Earthquake of			
28 June 1992 - 1158 G.m.t.	270°	Sens. = 1.85 cm/g Freq. = 26.2 Hz Damp. = 0.60 crit	0.03

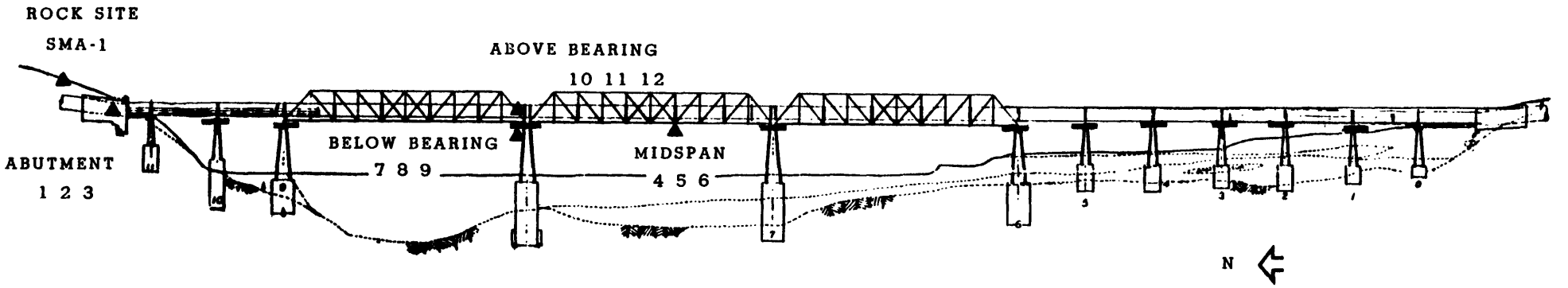
Film speed = 1 cm/sec



NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5047 33.348N, 116.400W	360°	Sens. = 1.84 cm/g Freq. = 25.6 Hz	0.07 g
Anza Array: Rancho de Anza		Damp. = 0.6 crit	
SMA-1 No. 1522 (USGS)	Up	Sens. = 1.87 cm/g Freq. = 26.2 Hz	0.03
Earthquake of		Damp. = 0.6 crit	
28 June 1992 - 1158 G.m.t.	270°	Sens. = 1.79 cm/g Freq. = 25.8 Hz Damp. = 0.6 crit	0.05

Film speed = 1 cm/sec





SANTA ANA RIVER BRIDGE

METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

STRONG-MOTION INSTRUMENTATION

STRUCTURE

Three 180' long steel trusses

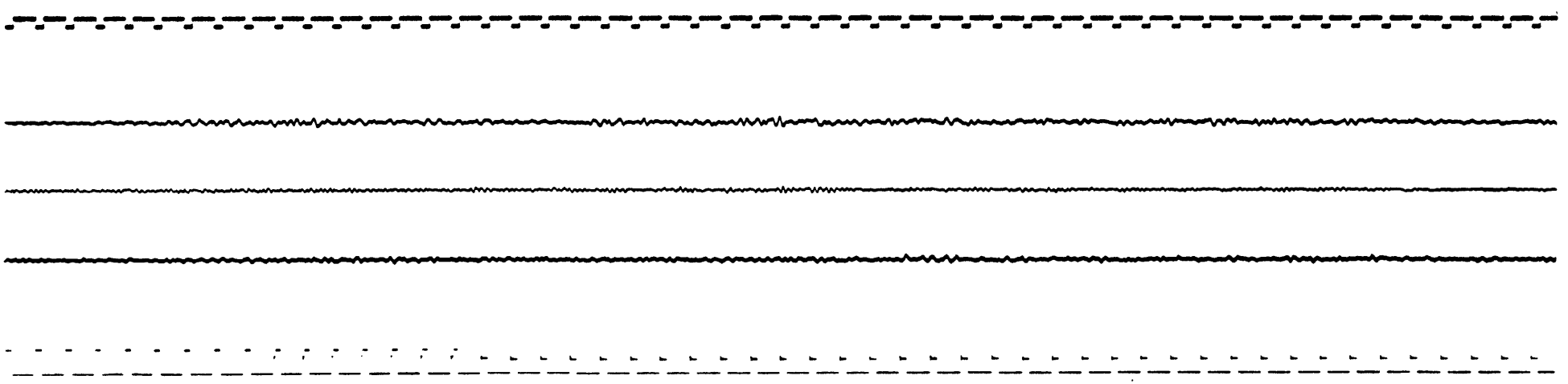
(instrumented section)

▲ TRIAXIAL SENSORS

▬ ELASTOMERIC BEARINGS

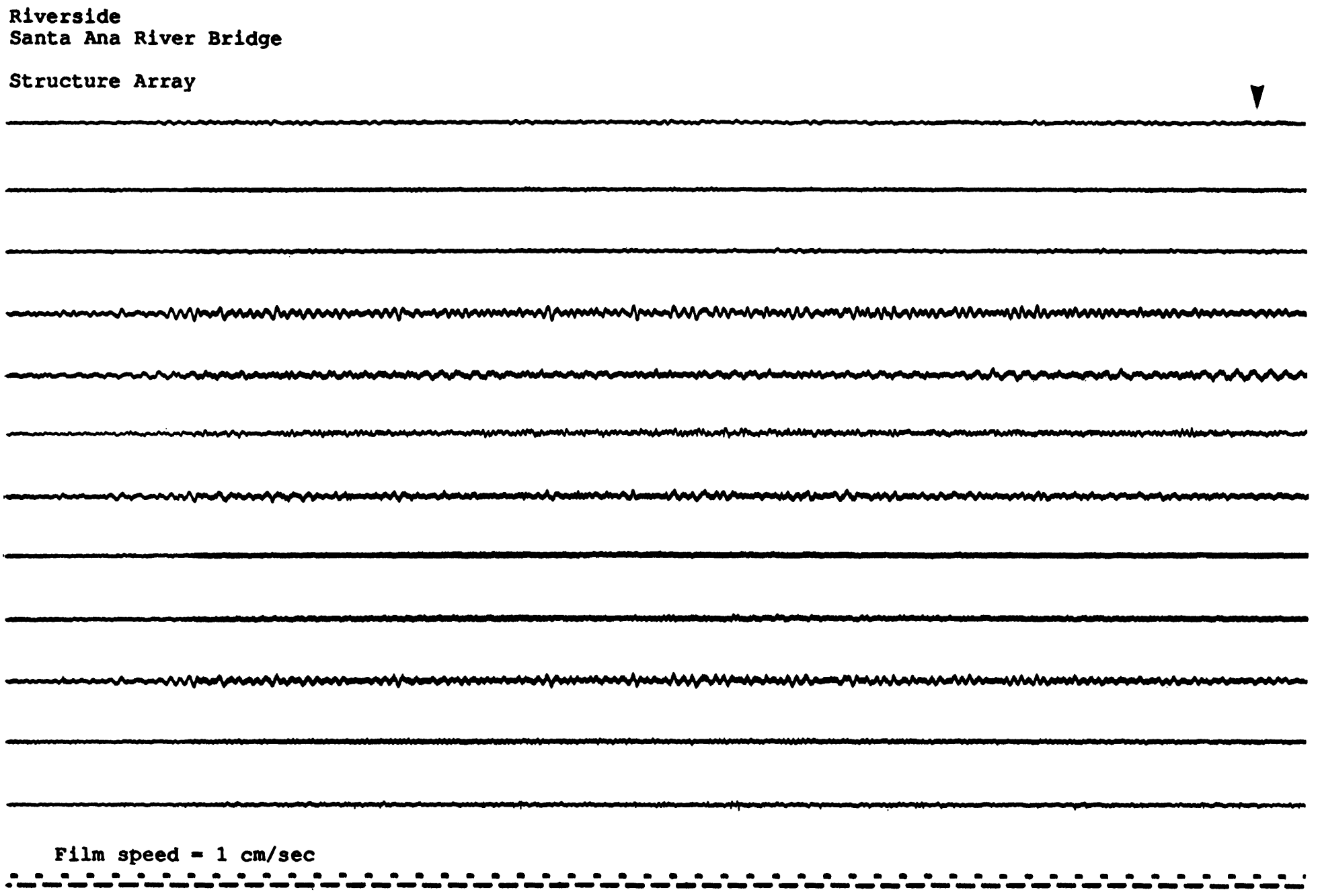
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5235 33.968N, 117.447	166°	Sens. = 1.87 cm/g Freq. = 25.1 Hz Damp. = 0.62 crit	0.05 g
Riverside, Santa Ana River Bridge			
SMA-1 No. 267 (USGS/MWD) N. Abutment	Up	Sens. = 1.73 cm/g Freq. = 26.5 Hz Damp. = 0.59 crit	0.04
Earthquake of			
28 June 1992 - 1158 G.m.t.	076°	Sens. = 1.79 cm/g Freq. = 25.8 Hz Damp. = 0.60 crit	0.03

Film speed = 1 cm/sec



NATIONAL STRONG-MOTION PROGRAM	CHANNEL	DIRECTION	LOCATION	SENSITIVITY	MAX ACCELERATION
Station No. 5235	1	346°	North abutment	0.91 cm/g	0 06g
33.968N, 117.447W	2	Down	North abutment	0.91 cm/g	0.02
Riverside Santa Ana River Bridge	3	076°	North abutment	0.93 cm/g	0.02
Structure Array	4	346°	Pier 7-8, Mid-span	0.93 cm/g	0.12
CRA-1 No. 310 (MWD)	5	Down	Pier 7-8, Mid-span	0.94 cm/g	0.11
	6	076°	Pier 7-8, Mid-span	0.90 cm/g	0.10
	7	346°	Pier 8, Below bearing	0.92 cm/g	0.11
Earthquake of	8	Down	Pier 8, Below bearing	0.91 cm/g	0.02
28 June 1992 - 1158 G.m.t.	9	076°	Pier 8, Below bearing	0.90 cm/g	0.02
Film speed = 1 cm/sec	10	346°	Pier 8, Above bearing	0.89 cm/g	0.12
	11	Down	Pier 8, Above bearing	0.93 cm/g	0.02
	12	076°	Pier 8, Above bearing	0.89 cm/g	0.02

(See Accelerogram on next page)


Riverside
Santa Ana River Bridge
Structure Array
1
2
3
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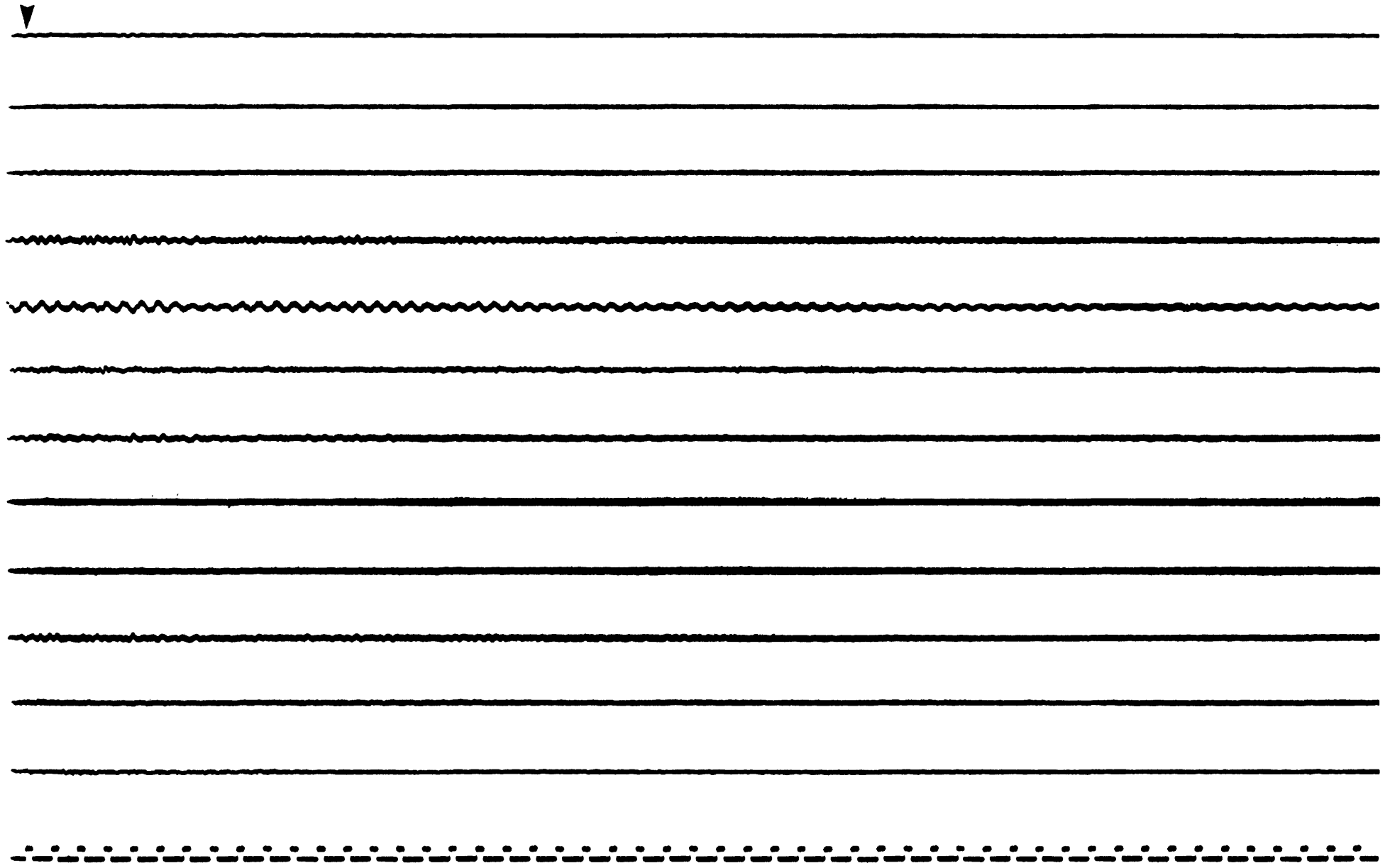
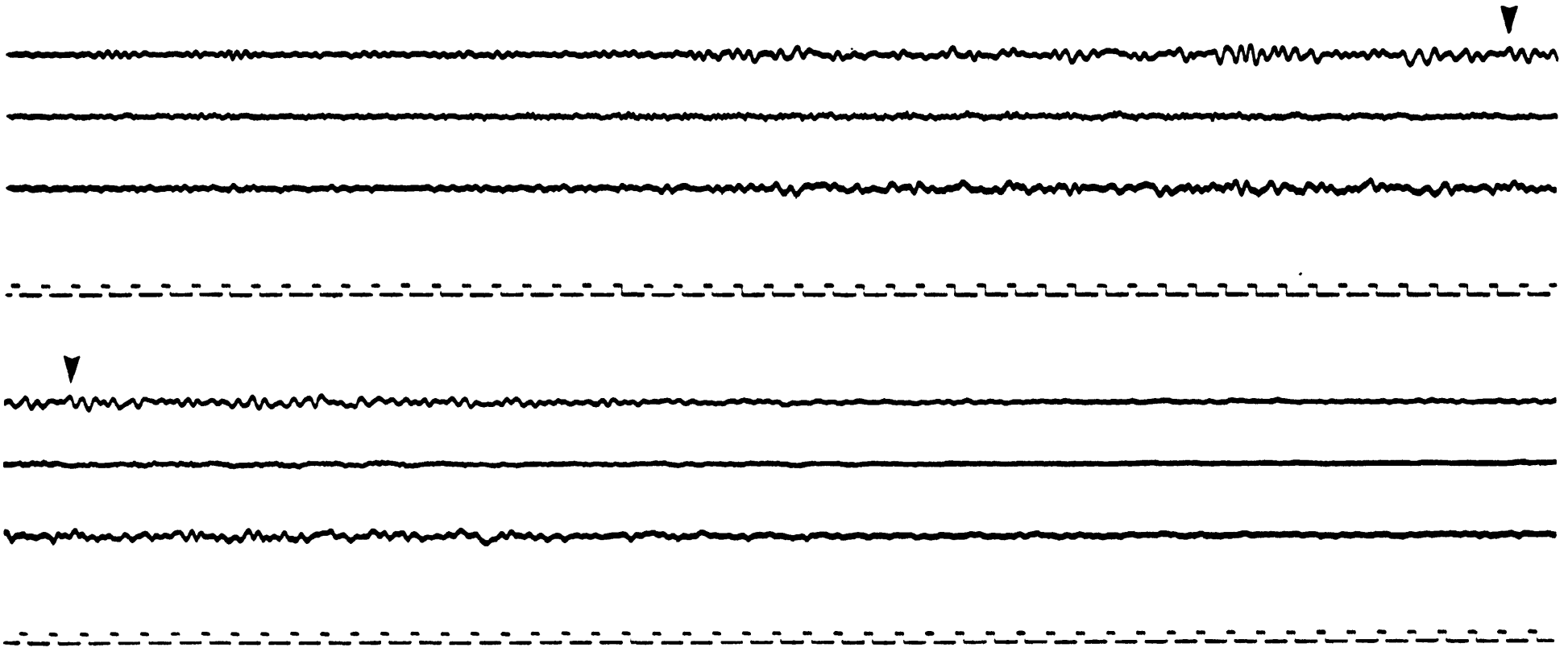
11
12
Film speed = 1 cm/sec

Riverside
Santa Ana River Bridge - *continued*



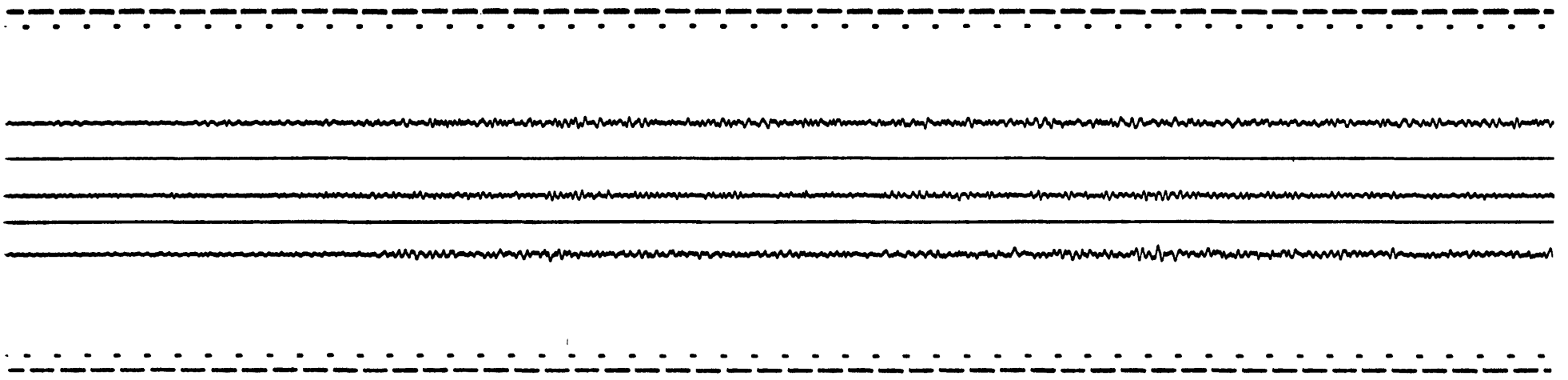
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5283 34.251N, 117.490W	360°	Sens. = 1.90 cm/g Freq. = 25.3 Hz	0.08 g
Lytle Creek - Mt. Lakes Resort		Damp. = 0.6 crit	
SMA 1 No. 1488 (USGS)	Up	Sens. = 1.93 cm/g Freq. = 25.0 Hz	0.04
Earthquake of		Damp. = 0.6 crit	
28 June 1992 - 1158 G.m.t.	270°	Sens. = 1.78 cm/g Freq. = 26.1 Hz Damp. = 0.6 crit	0.08

Film speed = 1 cm/sec



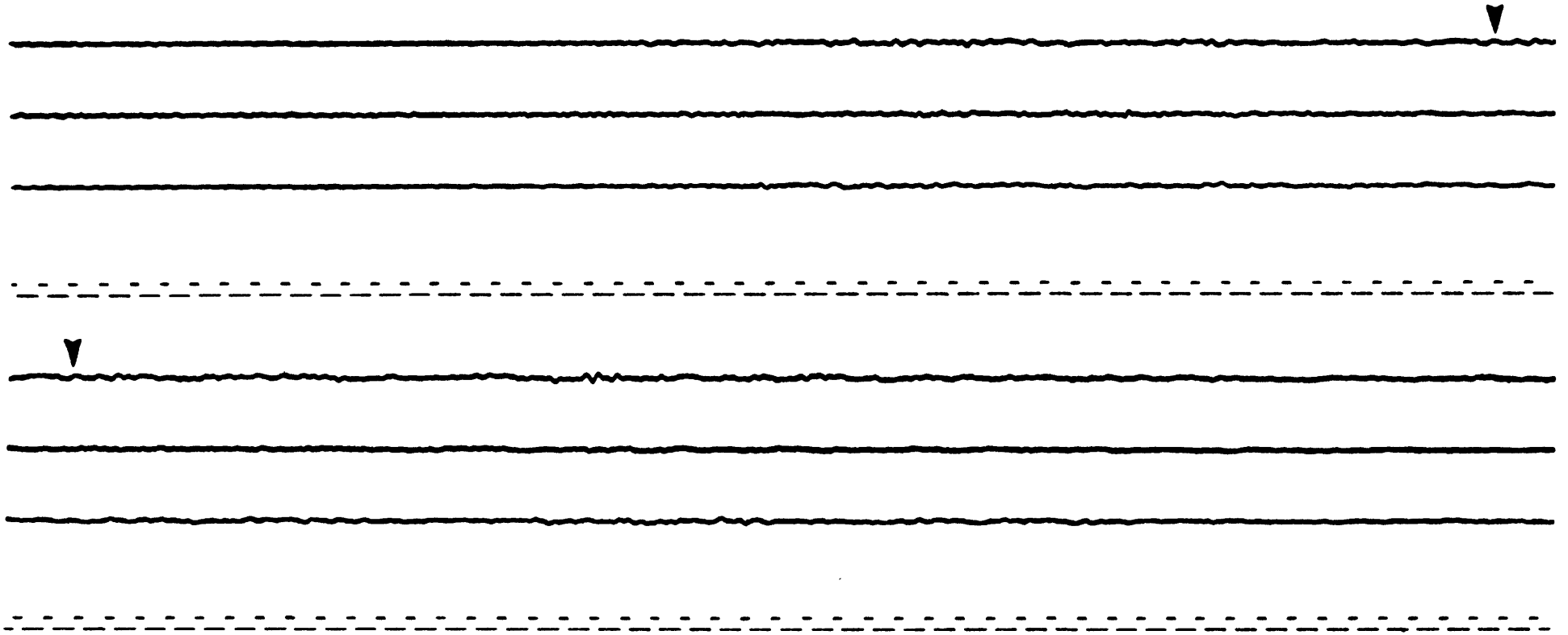
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 707 33.852N, 117.451W	252°	Sens. = 1.95 cm/g Freq. = 24.9 Hz	0.05 g
Lake Mathews Dam - Dike Toe		Damp. = 0.57 crit	
SMA No. 1050 (MWD)	Up	Sens. = 1.90 cm/g Freq. = 25.4 Hz	0.04
Earthquake of		Damp. = 0.57 crit	
28 June 1992 - 1158 G.m.t.	162°	Sens. = 1.82 cm/g Freq. = 26.0 Hz Damp. = 0.61 crit	0.08

Film speed = 1 cm/sec



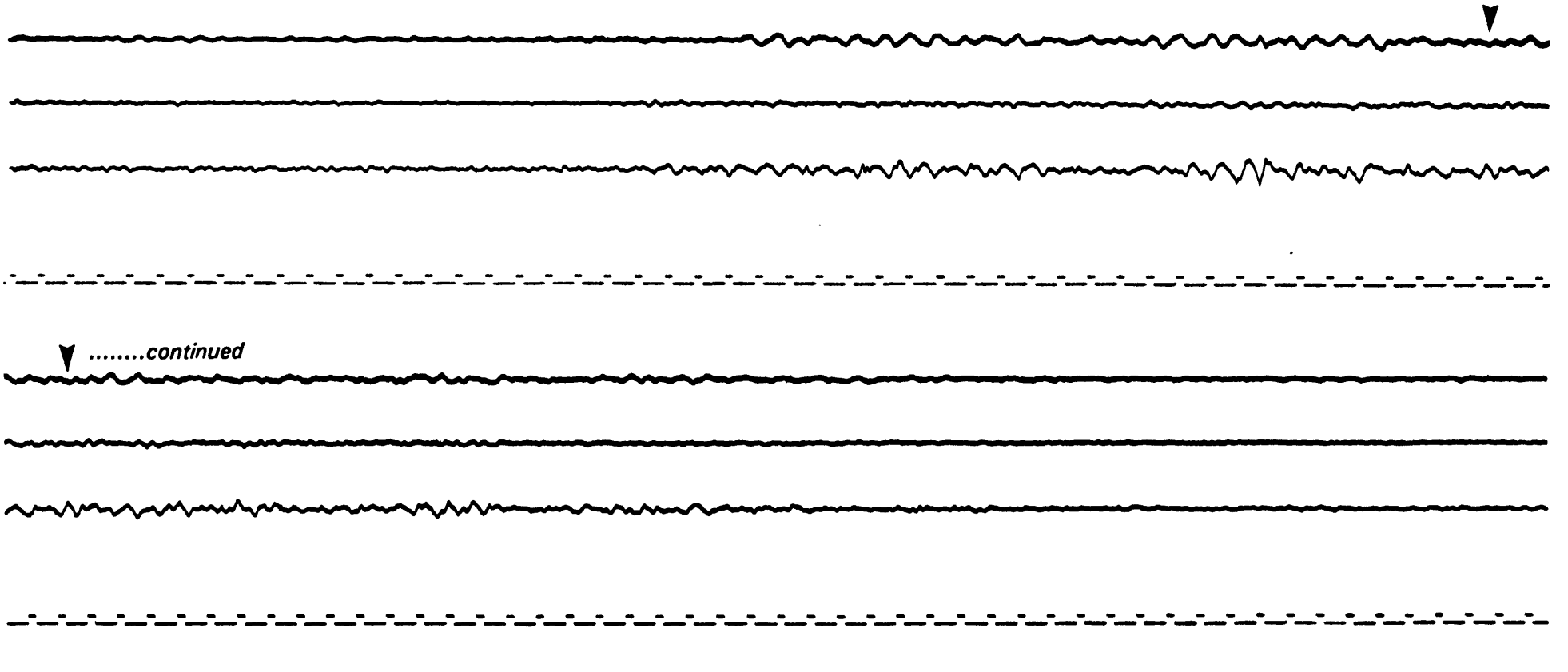
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5220 33.21N, 116.33W	315°	Sens. = 1.88 cm/g Freq. = 25.2 Hz	0.04 g
Borrego Springs, Scripps Clinic		Damp. = 0.6 crit	
SMA-1T No. 1473 (USGS)	Up	Sens. = 1.85 cm/g Freq. = 25.9 Hz	0.03
Earthquake of		Damp. = 0.6 crit	
28 June 1992 - 1158 G.m.t.	225°	Sens. = 1.75 cm/g Freq. = 26.1 Hz Damp. = 0.6 crit	0.03

Film speed = 1 cm/sec



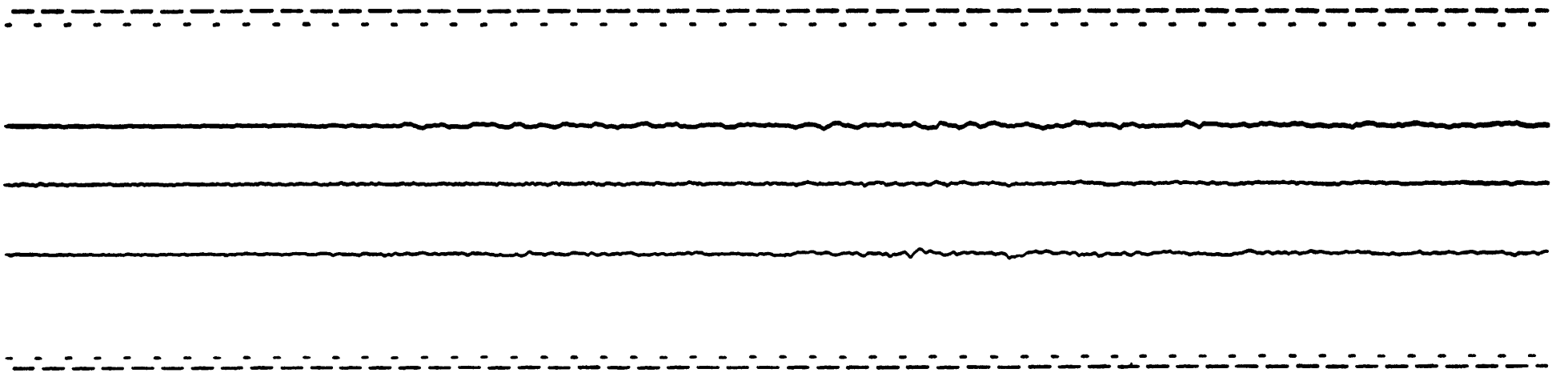
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 287 34.157N, 117.676W	090°	Sens. = 1.80 cm/g Freq. = 25.6 Hz	0.07 g
San Antonio Dam - Crest		Damp. = 0.6 crit	
SMA-1 No. 476 (ACOE)	Up	Sens. = 1.80 cm/g Freq. = 25.5 Hz	0.04
Earthquake of		Damp. = 0.6 crit	
28 June 1992 - 1158 G.m.t.	360°	Sens. = 1.85 cm/g Freq. = 25.3 Hz Damp. = 0.6 crit	0.14

Film speed = 1 cm/sec



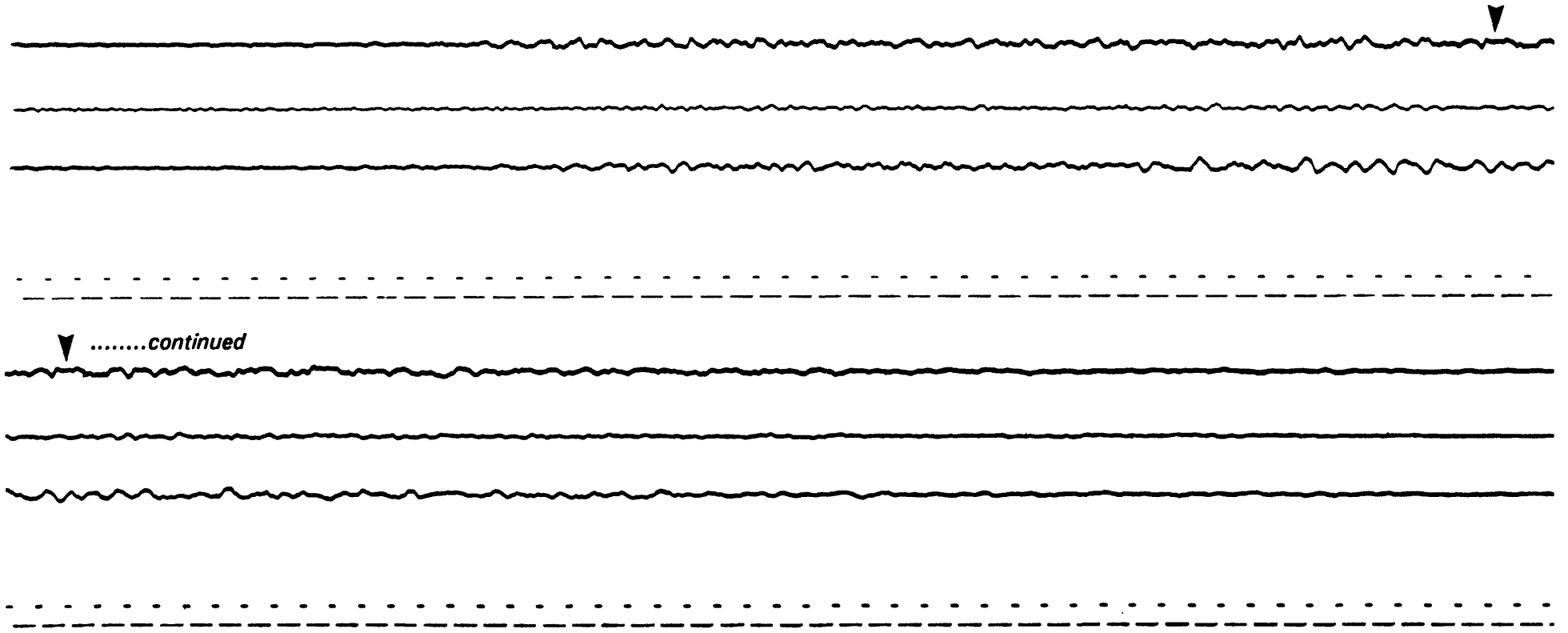
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 287 34.156N, 117.675W	090°	Sens. = 1.90 cm/g Freq. = 25.4 Hz	0.04 g
San Antonio Dam - Downstream		Damp. = 0.6 crit	
SMA No. 475 (ACOE)	Up	Sens. = 1.80 cm/g Freq. = 26.0 Hz	0.02
Earthquake of		Damp. = 0.6 crit	
28 June 1992 - 1158 G.m.t.	360°	Sens. = 1.77 cm/g Freq. = 25.5 Hz Damp. = 0.6 crit	0.05

Film speed = 1 cm/sec



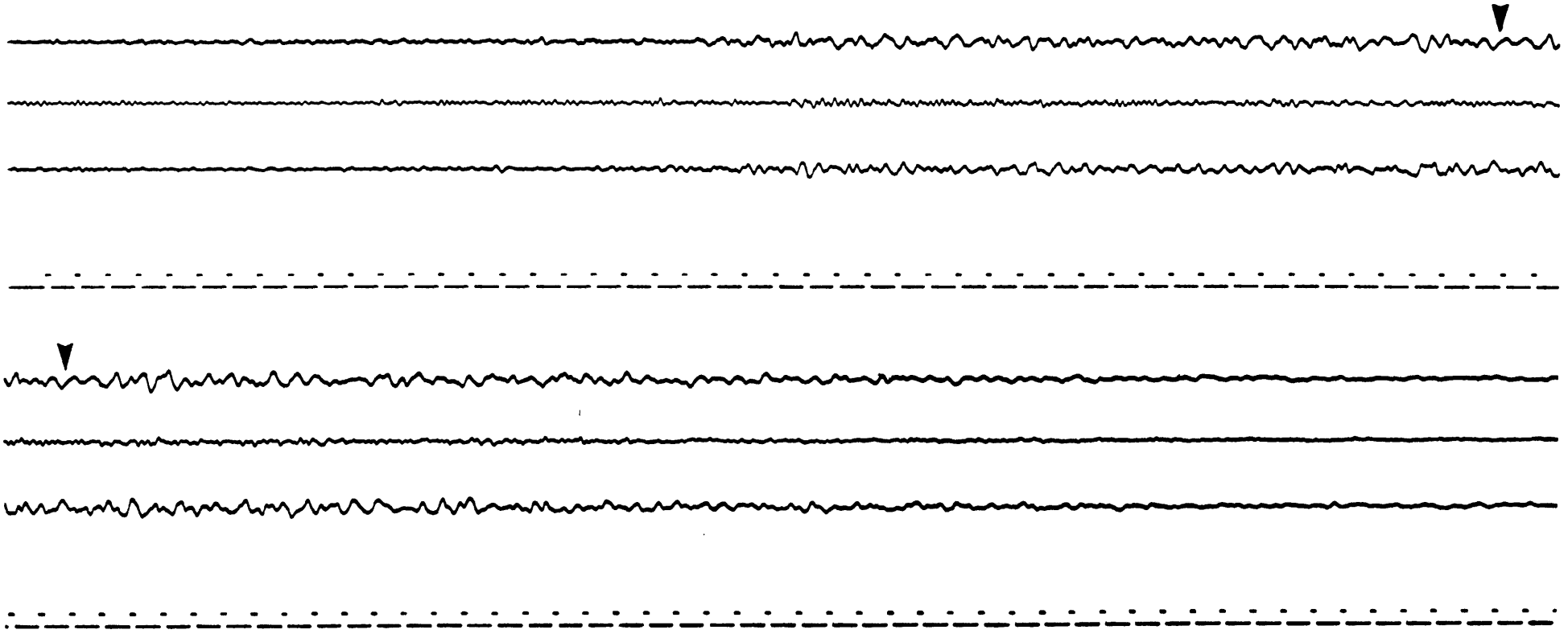
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 969 33.890N, 117.641W	090°	Sens. = 2.00 cm/g Freq. = 25.1 Hz	0.06 g
Prado Dam - Crest		Damp. = 0.60 crit	
SMA-1 No. 389 (ACOE)	Up	Sens. = 1.80 cm/g Freq. = 26.3 Hz	0.03
Earthquake of		Damp. = 0.60 crit	
28 June 1992 - 1158 G.m.t.	360°	Sens. = 1.80 cm/g Freq. = 26.1 Hz Damp. = 0.60 crit	0.08

Film speed = 1 cm/sec



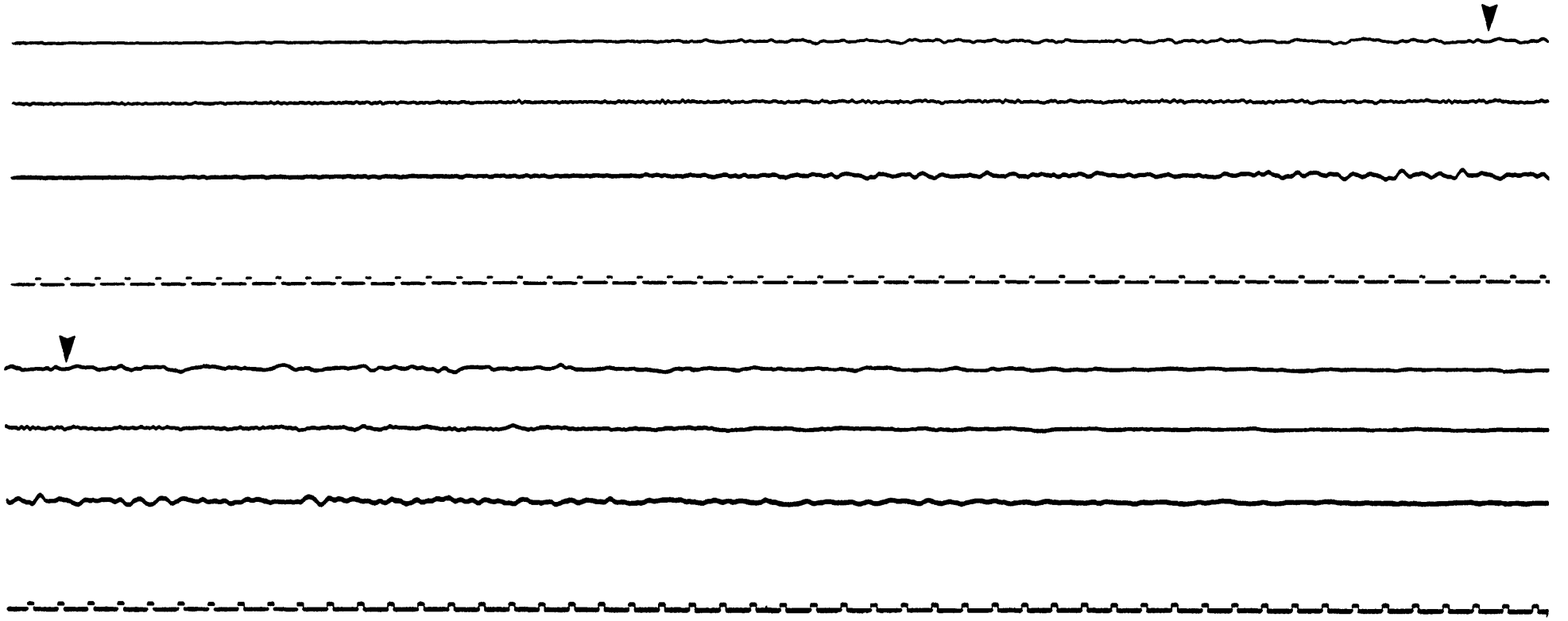
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 969 33.888N, 117.640W	090°	Sens. = 1.90 cm/g Freq. = 26.3 Hz	0.09 g
Prado Dam - Downstream		Damp. = 0.57 crit	
SMA-1 No. 381 (ACOE)	Up	Sens. = 1.80 cm/g Freq. = 25.6 Hz	0.05
Earthquake of		Damp. = 0.59 crit	
28 June 1992 - 1158 G.m.t.	360°	Sens. = 1.85 cm/g Freq. = 25.6 Hz Damp. = 0.53 crit	0.08

Film speed = 1 cm/sec



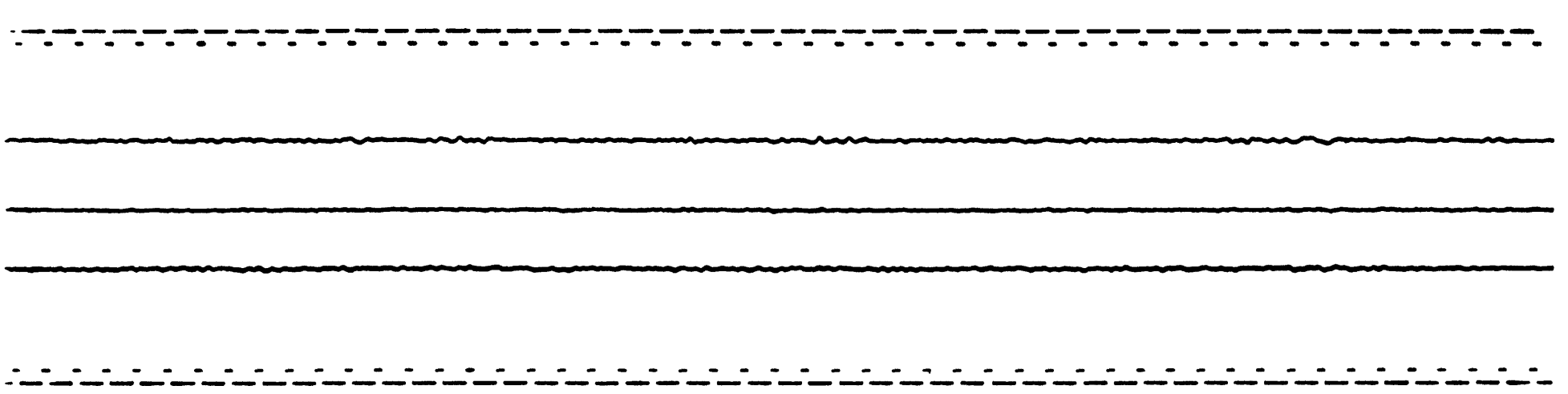
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 969 33.890N, 117.637W	090°	Sens. = 1.80 cm/g Freq. = 26.8 Hz	0.04 g
Prado Dam - Left Abutment		Damp. = 0.60 crit	
SMA-1 No. 388 (ACOE)	Up	Sens. = 1.80 cm/g Freq. = 24.9 Hz	0.04
Earthquake of		Damp. = 0.60 crit	
28 June 1992 - 1158 G.m.t.	360°	Sens. = 1.90 cm/g Freq. = 26.2 Hz Damp. = 0.60 crit	0.05

Film speed = 1 cm/sec



NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 820 34.148N, 115.122W	010°	Sens. = 1.81 cm/g Freq. = 27.6 Hz	0.02 g
Iron Mountain Pumping Plant		Damp. = 0.6 crit	
SMA-1 No. 1058 (MWD)	Up	Sens. = 1.81 cm/g Freq. = 26.7 Hz	0.02
Earthquake of		Damp. = 0.6 crit	
28 June 1992 - 1158 G.m.t.	280°	Sens. = 1.89 cm/g Freq. = 26.4 Hz Damp. = 0.6 crit	0.03

Film speed = 1 cm/sec

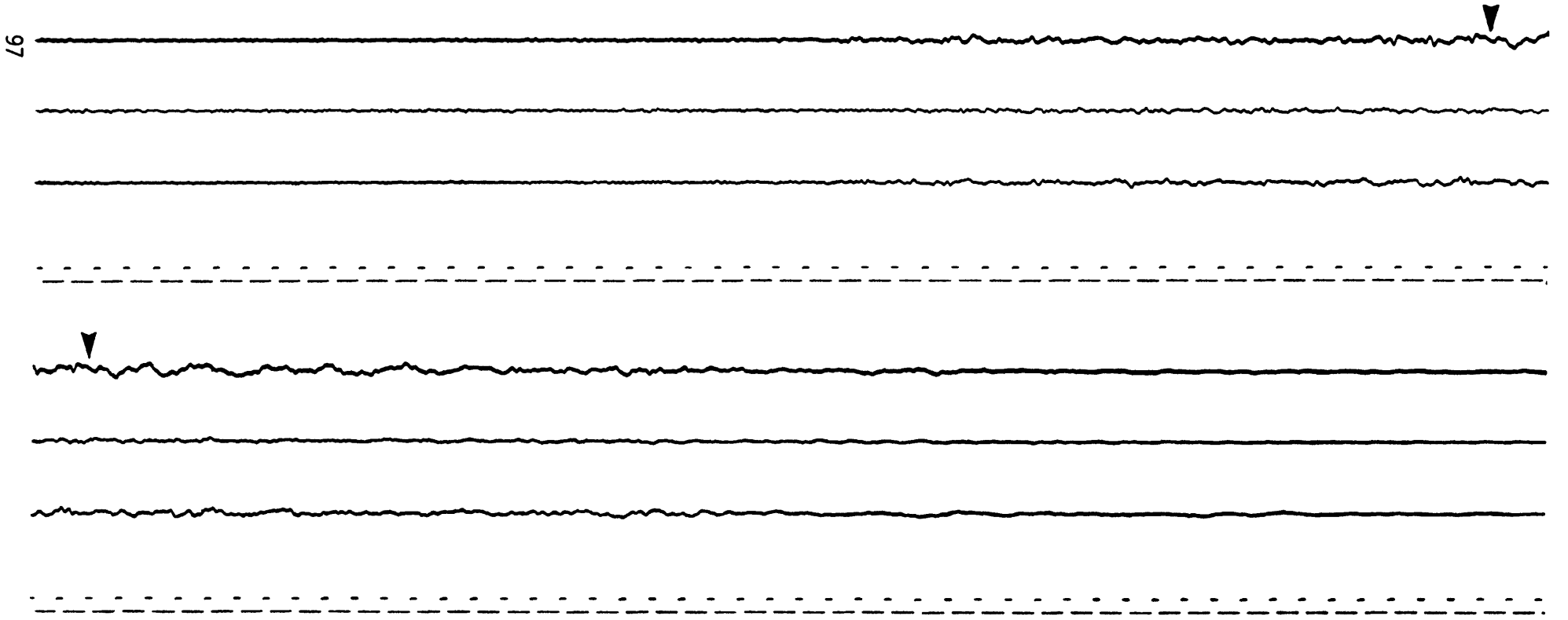


NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 656 34.140N, 117.749W	180°	Sens. = 1.80 cm/g Freq. = 25.8 Hz Damp. = 0.6 crit	0.03 g
Live Oak Reservoir - Abutment			
SMA No. 258 (MWD)	Up	Sens. = 1.95 cm/g Freq. = 26.1 Hz Damp. = 0.6 crit	0.02
Earthquake of			
28 June 1992 - 1158 G.m.t.	090°	Sens. = 1.90 cm/g Freq. = 26.2 Hz Damp. = 0.6 crit	0.02

Film speed = 1 cm/sec

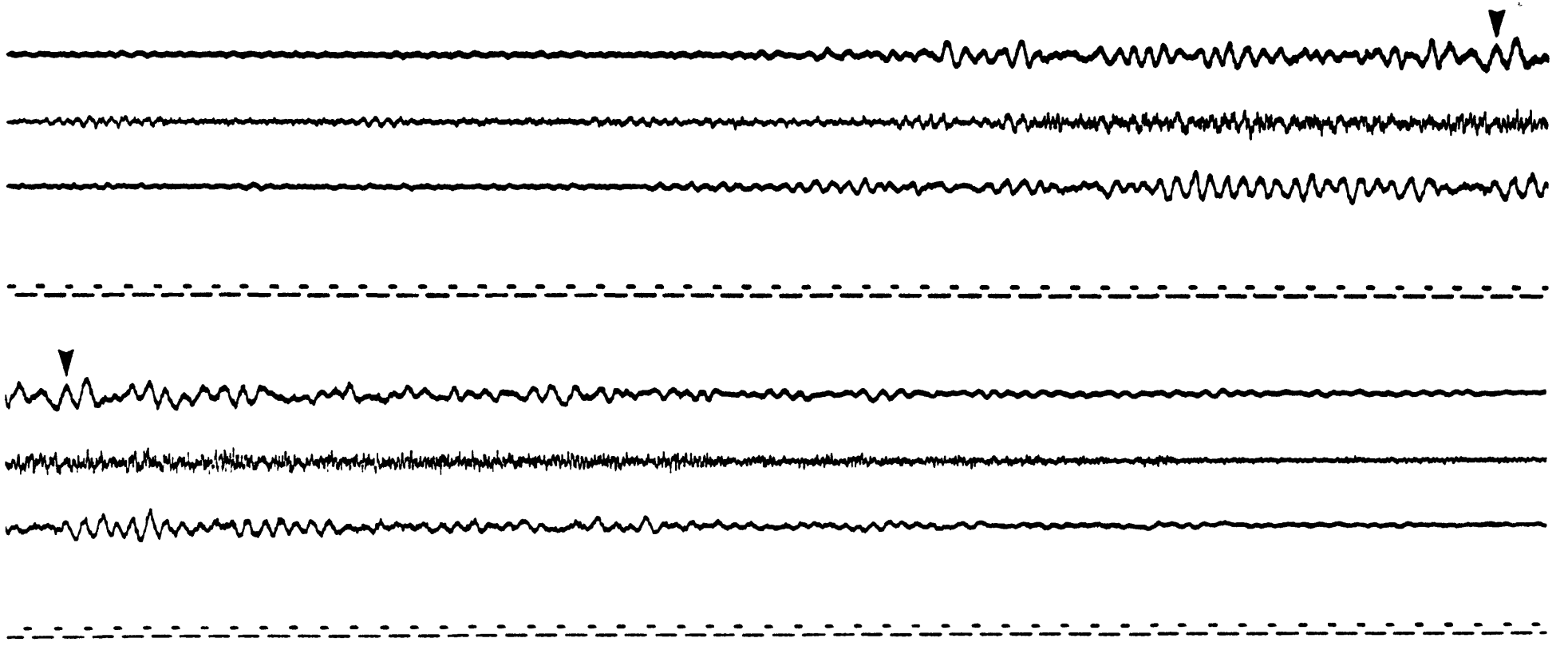
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5164 34.114N, 117.778W	017°	Sens. = 2.00 cm/g Freq. = 24.9 Hz Damp. = 0.6 crit	0.07g
Weymouth Filter Plant - Ground site			
SMA-1 No. 1053 (MWD)	Up	Sens. = 1.83 cm/g Freq. = 25.9 Hz Damp. = 0.6 crit	0.03
Earthquake of			
28 June 1992 - 1158 G.m.t.	287°	Sens. = 1.88 cm/g Freq. = 26.3 Hz Damp. = 0.6 crit	0.05

Film speed = 1 cm/sec



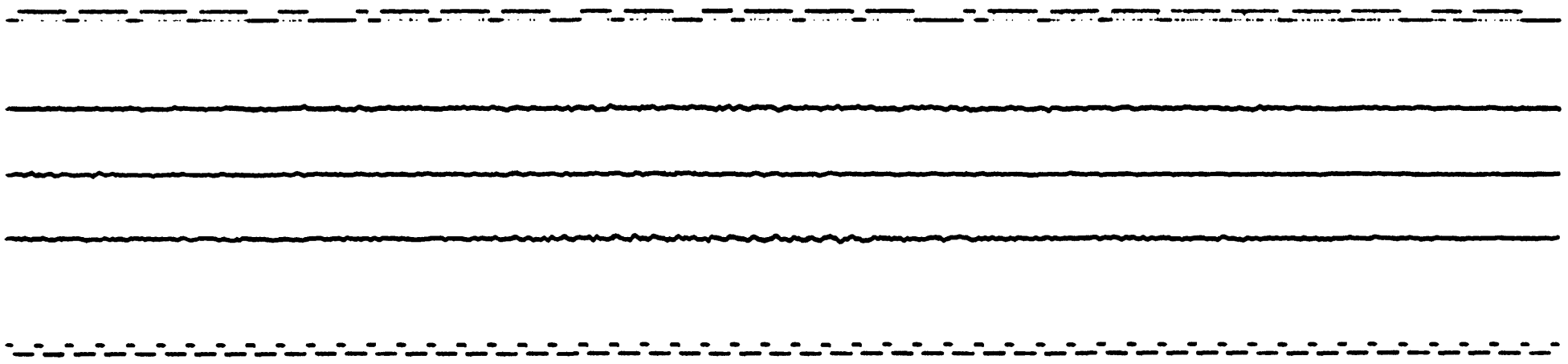
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5164 34.115N, 117.779W	017°	Sens. = 1.86 cm/g Freq. = 25.5 Hz Damp. = 0.6 crit	0.16g
Weymouth Filter Plant - Tank top			
SMA-1 No. 1052 (MWD)	Up	Sens. = 1.85 cm/g Freq. = 25.9 Hz Damp. = 0.6 crit	0.15
Earthquake of			
28 June 1992 - 1158 G.m.t.	287°	Sens. = 1.77 cm/g Freq. = 25.8 Hz Damp. = 0.6 crit	0.18

Film speed = 1 cm/sec



NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5032 34.40N, 117.80W	120°	Sens. = 1.79 cm/g Freq. = 26.3 Hz	0.03 g
Paradise Springs Camp		Damp. = 0.60 crit	
SMAT-1 No. 1469 (USGS)	Up	Sens. = 1.86 cm/g Freq. = 25.6 Hz	0.03
Earthquake of		Damp. = 0.60 crit	
28 June 1992 - 1158 G.m.t.	030°	Sens. = 1.83 cm/g Freq. = 25.0 Hz Damp. = 0.60 crit	0.03

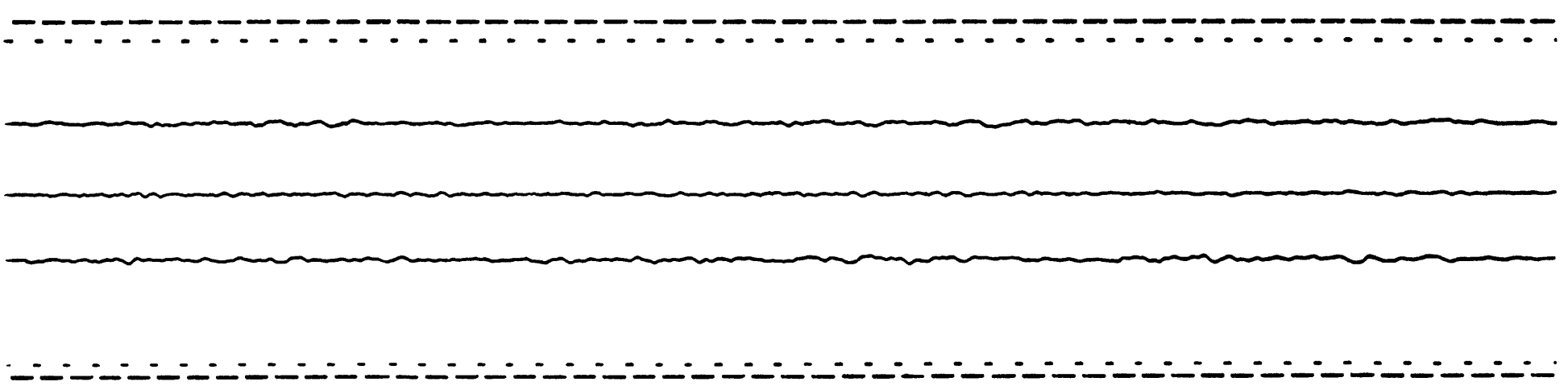
Film speed = 1 cm/sec



NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 698 33.913N, 117.819W	281°	Sens. = 1.75 cm/g Freq. = 26.0 Hz	0.04 g
Diemer Filter Plant - Admin. Bldg.		Damp. = 0.6 cri	
SMA-1 No. 1044 (MWD) Basement	Up	Sens. = 1.93 cm/g Freq. = 25.8 Hz	0.03
Earthquake of		Damp. = 0.6 crit	
28 June 1992 - 1158 G.m.t.	191°	Sens. = 1.85 cm/g Freq. = 25.3 Hz Damp. = 0.6 crit	0.04

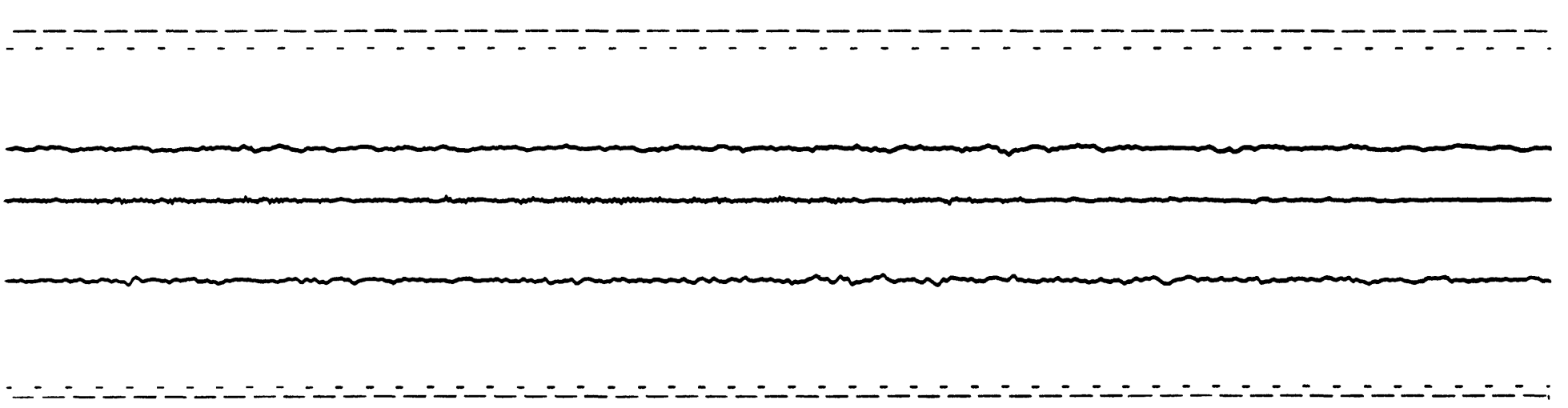
Film speed = 1 cm/sec

100



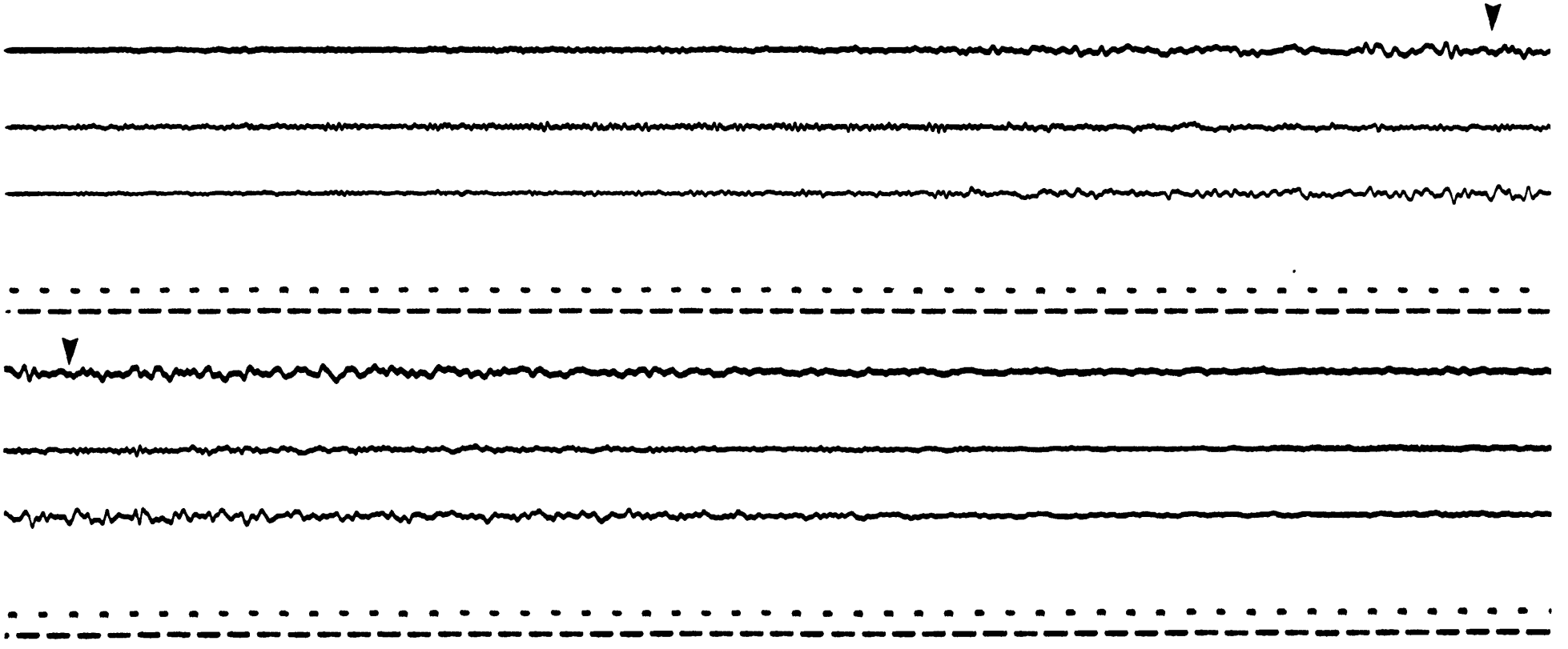
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 698 33.911N, 117.817W	281°	Sens. = 1.85 cm/g Freq. = 26.1 Hz	0.07 g
Diemer Filter Plant - Reservoir Roof		Damp. = 0.6 crit	
SMA-1 No. 1045 (MWD)	Up	Sens. = 1.80 cm/g Freq. = 25.4 Hz	0.04
Earthquake of		Damp. = 0.6 crit	
28 June 1992 - 1158 G.m.t.	191°	Sens. = 1.78 cm/g Freq. = 25.2 Hz Damp. = 0.6 crit	0.06

Film speed = 1 cm/sec



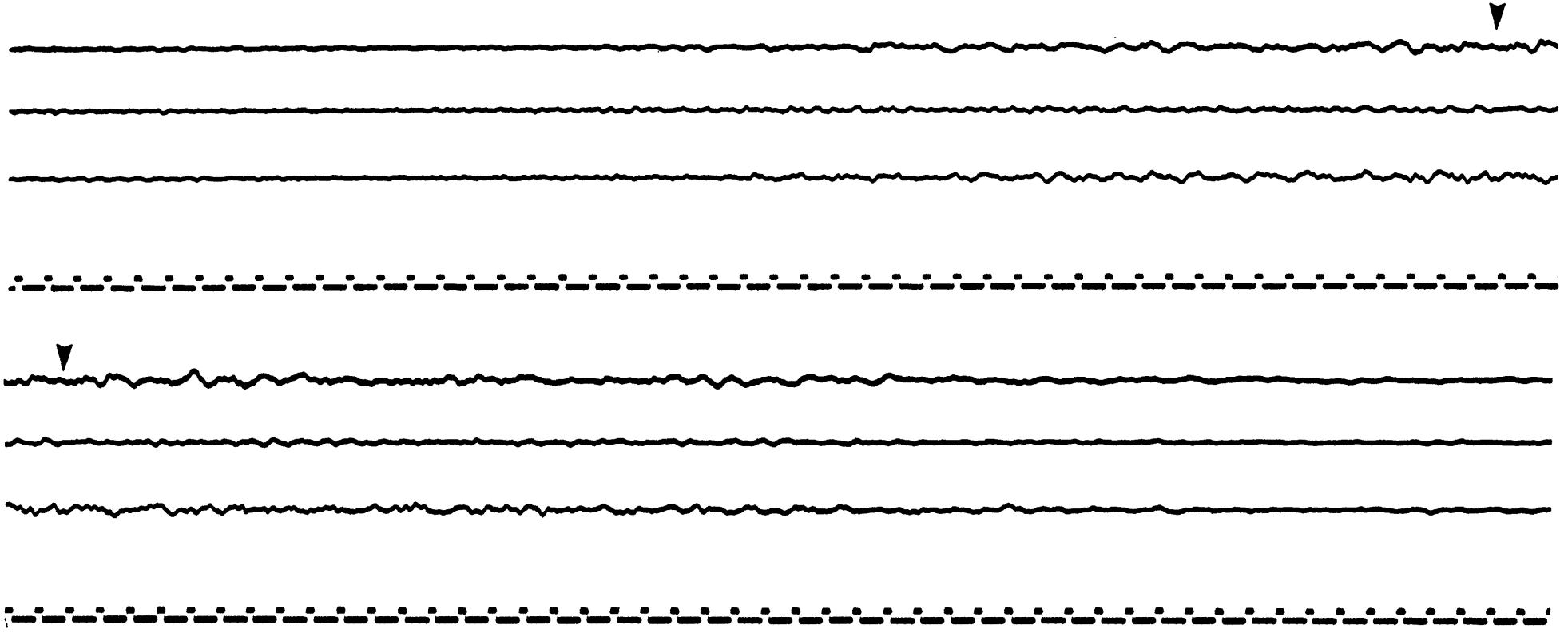
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No.5031 34.44N, 117.85W	300°	Sens. = 1.84 cm/g Freq. = 26.1 Hz Damp. = 0.6 crit	0.08 g
Valyermo Forest Station			
SMA-1 No. 1512 (USGS) Ground	Up	Sens. = 1.85 cm/g Freq. = 25.6 Hz Damp. = 0.6 crit	0.05
Earthquake of			
28 June 1992 - 1158 G.m.t.	210°	Sens. = 1.90 cm/g Freq. = 25.4 Hz Damp. = 0.6 crit	0.08

Film speed = 1 cm/sec



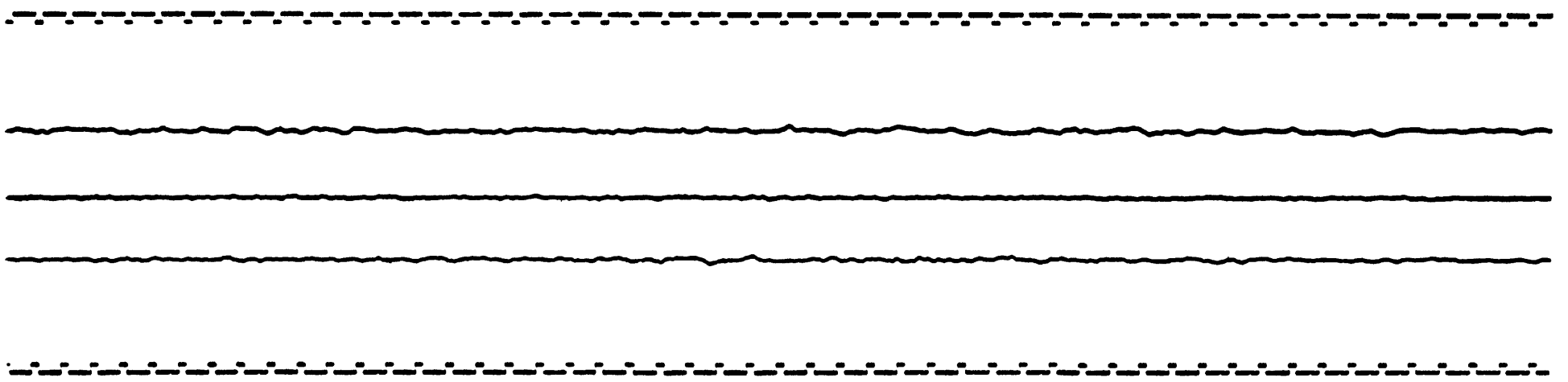
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 108 33.914N, 117.839W	131°	Sens. = 2.00 cm/g Freq. = 25.5 Hz Damp. = 0.60 crit	0.07 g
Carbon Canyon Dam - Crest			
SMA No. 383 (ACOE)	Up	Sens. = 2.00 cm/g Freq. = 25.9 Hz Damp. = 0.60 crit	0.03
Earthquake of			
28 June 1992 - 1158 G.m.t.	041°	Sens. = 2.00 cm/g Freq. = 25.8 Hz Damp. = 0.60 crit	0.05

Film speed = 1 cm/sec



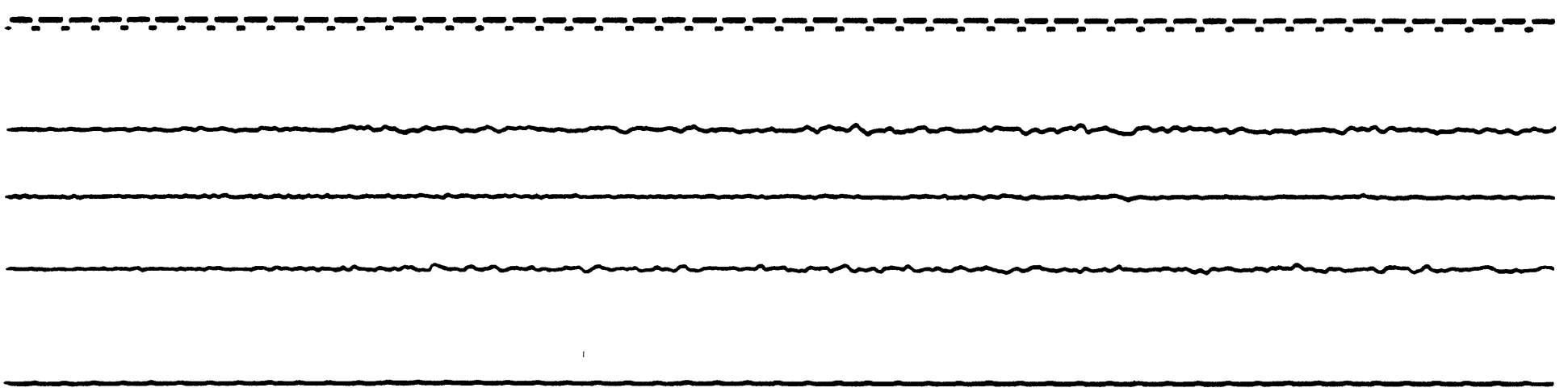
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 108 33.913N, 117.837W	131°	Sens. = 1.95 cm/g Freq. = 26.0 Hz	0.03
Carbon Canyon Dam - L. abutment		Damp. = 0.60 crit	
SMA No. 382 (ACOE)	Up	Sens. = 1.90 cm/g Freq. = 26.2 Hz	0.02
Earthquake of		Damp. = 0.60 crit	
28 June 1992 - 1158 G.m.t.	041°	Sens. = 1.85 cm/g Freq. = 26.4 Hz Damp. = 0.60 crit	0.04

Film speed = 1 cm/sec



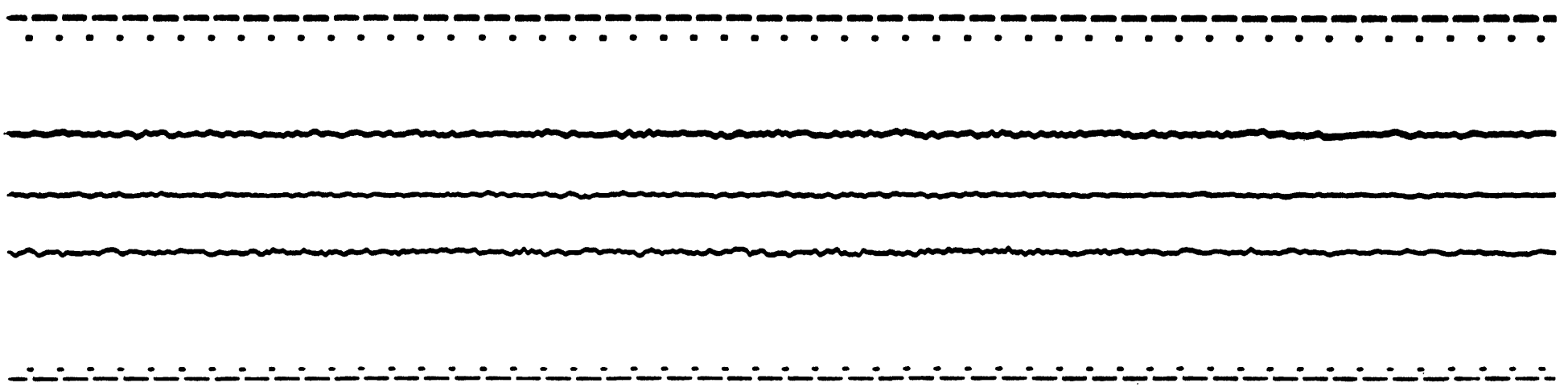
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 108 33.916N, 117.842W	131°	Sens. = 2.00 cm/g Freq. = 25.3 Hz	0.05 g
Carbon Canyon Dam - Right Abutment		Damp. = 0.60 crit	
SMA-1 No. 384 (ACOE)	Up	Sens. = 2.00 cm/g Freq. = 25.4 Hz	0.03
Earthquake of		Damp. = 0.60 crit	
28 June 1992 - 1158 G.m.t.	041°	Sens. = 1.85 cm/g Freq. = 26.0 Hz Damp. = 0.60 crit	0.05

Film speed = 1 cm/sec



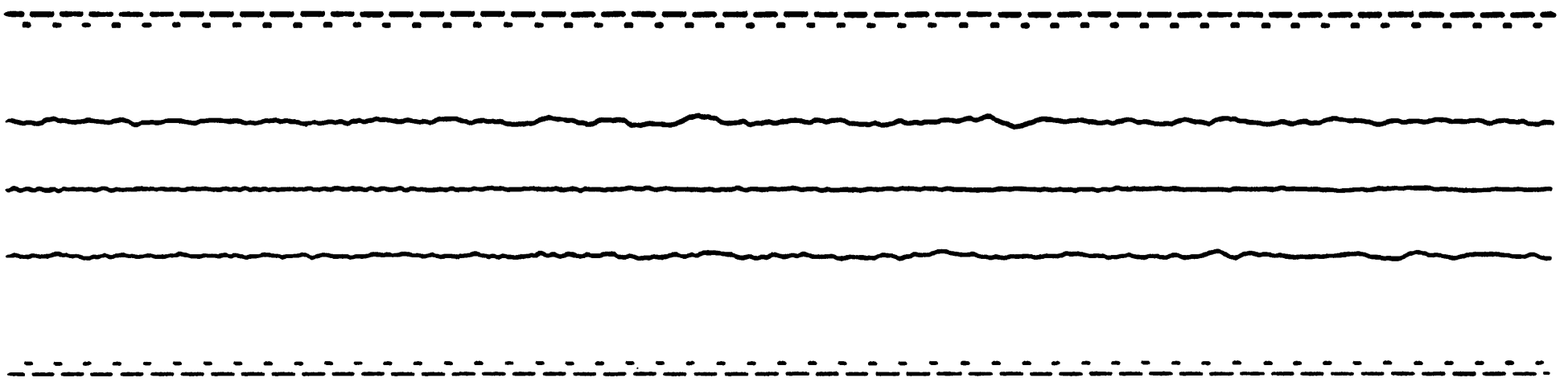
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 697 33.935N, 117.883W	090°	Sens. = 1.89 cm/g Freq. = 25.5 Hz	0.03 g
Orange County Reservoir - Gnd level		Damp. = 0.6 crit	
SMA-1 No. 1046 (MWD)	Up	Sens. = 1.91 cm/g Freq. = 24.9 Hz	0.03
Earthquake of		Damp. = 0.6 crit	
28 June 1992 - 1158 G.m.t.	360°	Sens. = 1.92 cm/g Freq. = 25.2 Hz Damp. = 0.6 crit	0.04

Film speed = 1 cm/sec



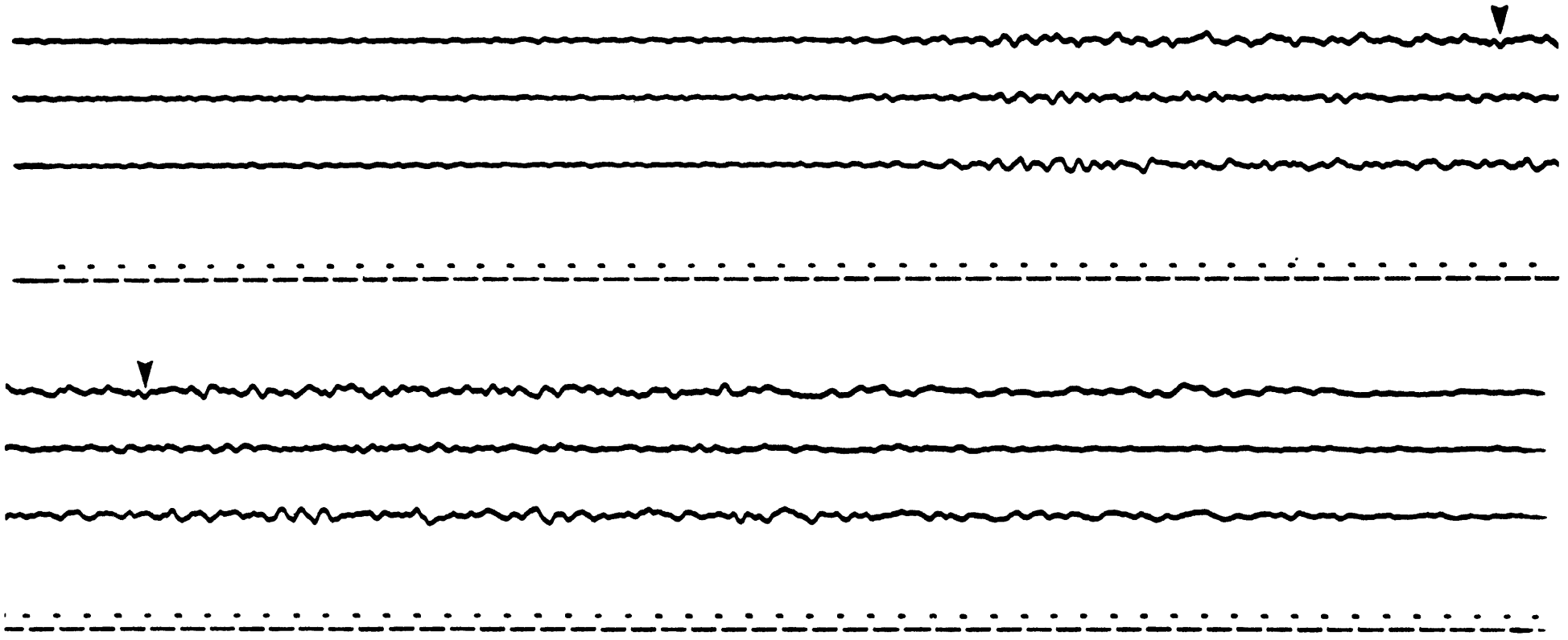
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 281 33.751N, 117.870W	360°	Sens. = 1.84 cm/g Freq. = 26.1 Hz Damp. = 0.6 crit	0.05 g
Santa Ana, 400 Civic Center Drive Orange County Engineering Bldg. SMA No. 3559 (USGS) Basement	Up	Sens. = 1.84 cm/g Freq. = 25.7 Hz Damp. = 0.6 crit	0.03
Earthquake of 28 June 1992 - 1158 G.m.t.	270°	Sens. = 1.70 cm/g Freq. =26.4 Hz Damp. = 0.6 crit	0.04

Film speed = 1 cm/sec



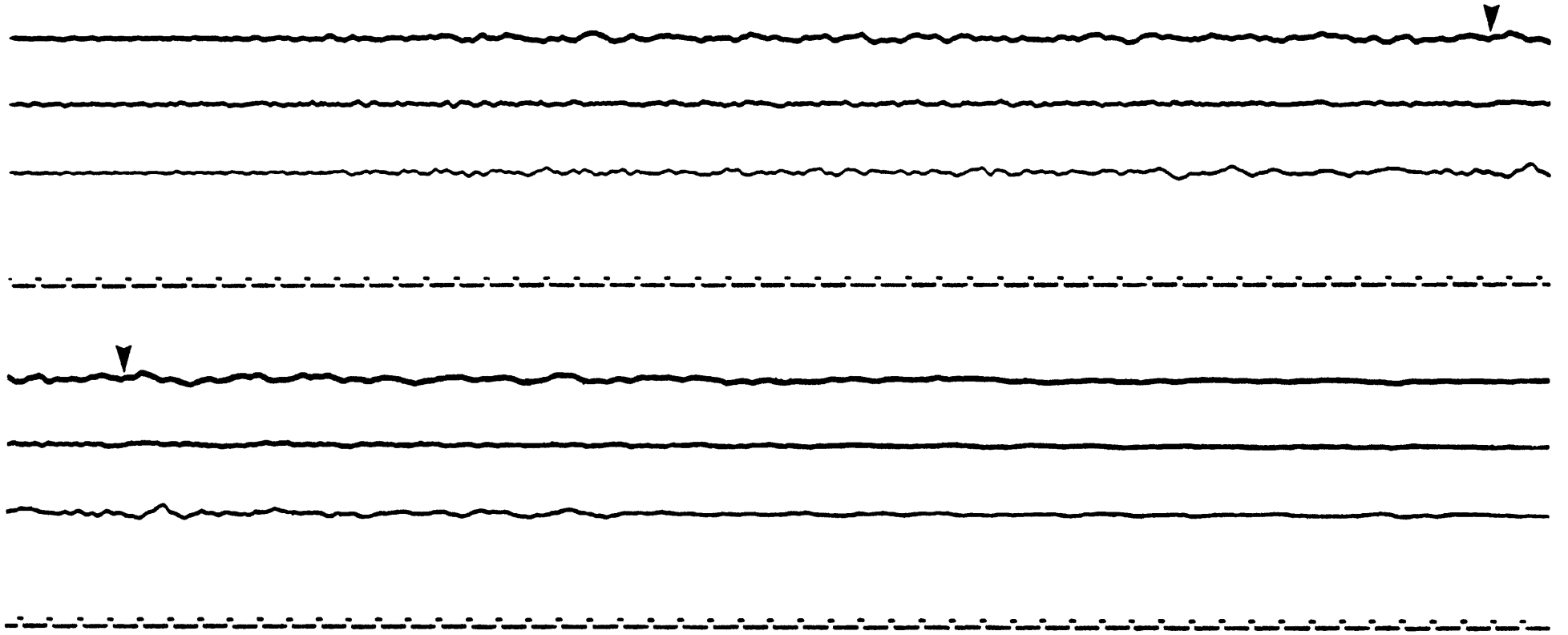
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 951 33.890N, 117.925W	132°	Sens. = 2.00 cm/g Freq. = 25.3 Hz Damp. = 0.6 crit	0.06 g
Brea Dam - Crest			
SMA-1 No. 386 (ACOE)	Up	Sens. = 1.96 cm/g Freq. = 25.8 Hz Damp. = 0.6 crit	0.04
Earthquake of			
28 June 1992 - 1158 G.m.t.	042°	Sens. = 1.90 cm/g Freq. = 25.7 Hz Damp. = 0.6 crit	0.07

Film speed = 1 cm/sec



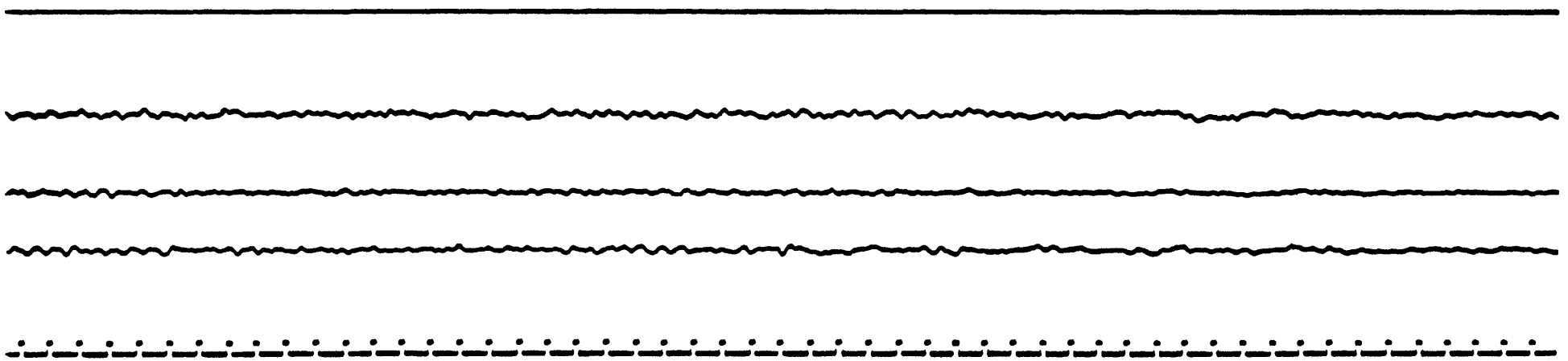
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 951 33.890N, 117.924W	132°	Sens. = 1.90 cm/g Freq. = 25.9 Hz Damp. = 0.6 crit	0.05 g
Brea Dam - Left Abutment			
SMA-1 No. 385 (ACOE)	Up	Sens. = 2.02 cm/g Freq. = 24.8 Hz Damp. = 0.6 crit	0.03
Earthquake of			
28 June 1992 - 1158 G.m.t.	042°	Sens. = 1.95 cm/g Freq. = 25.2 Hz Damp. = 0.6 crit	0.07

Film speed = 1 cm/sec



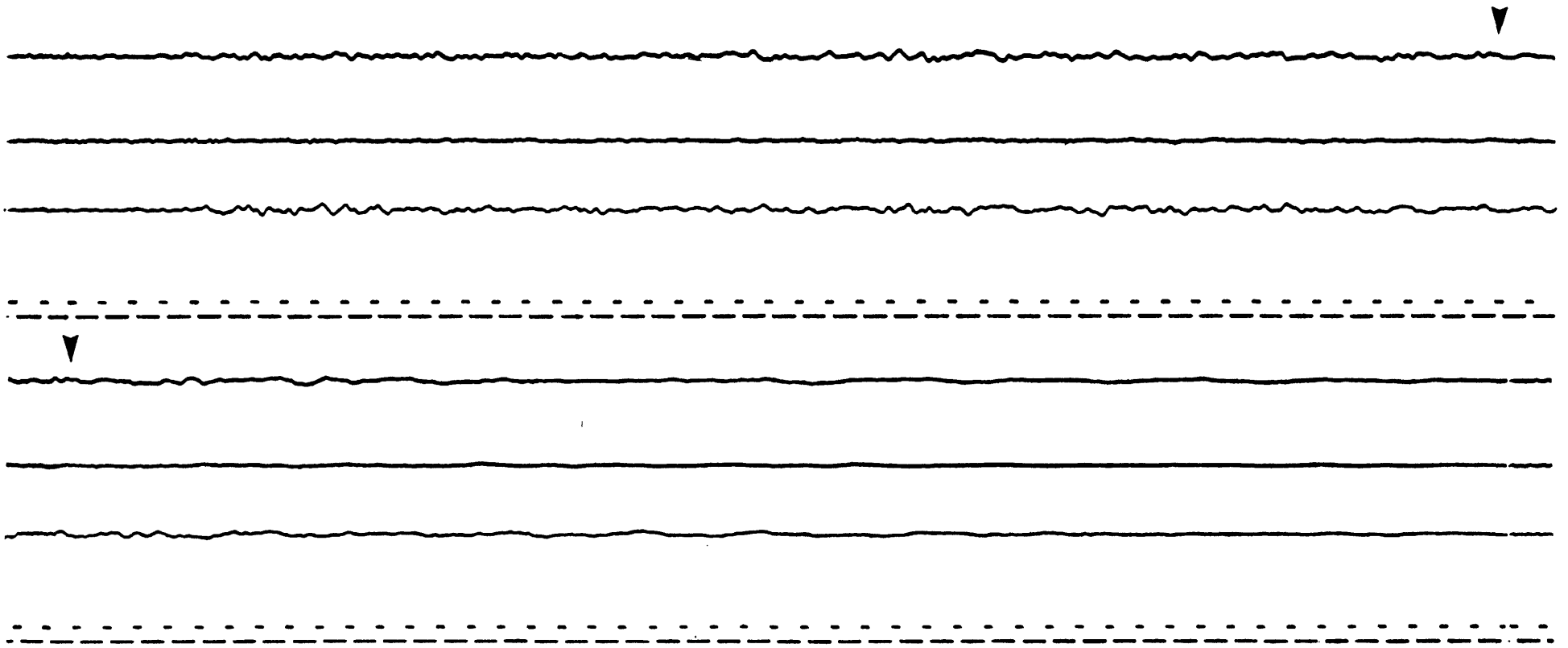
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 951 33.889N, 117.926W	132°	Sens. = 1.95 cm/g Freq. = 26.2 Hz	0.05 g
Brea Dam - Downstream		Damp. = 0.6 crit	
SMA-1 No. 387 (ACOE)	Up	Sens. = 2.00 cm/g Freq. = 25.7 Hz	0.03
Earthquake of		Damp. = 0.6 crit	
28 June 1992 - 1158 G.m.t.	042°	Sens. = 1.85 cm/g Freq. = 26.0 Hz Damp. = 0.6 crit	0.03

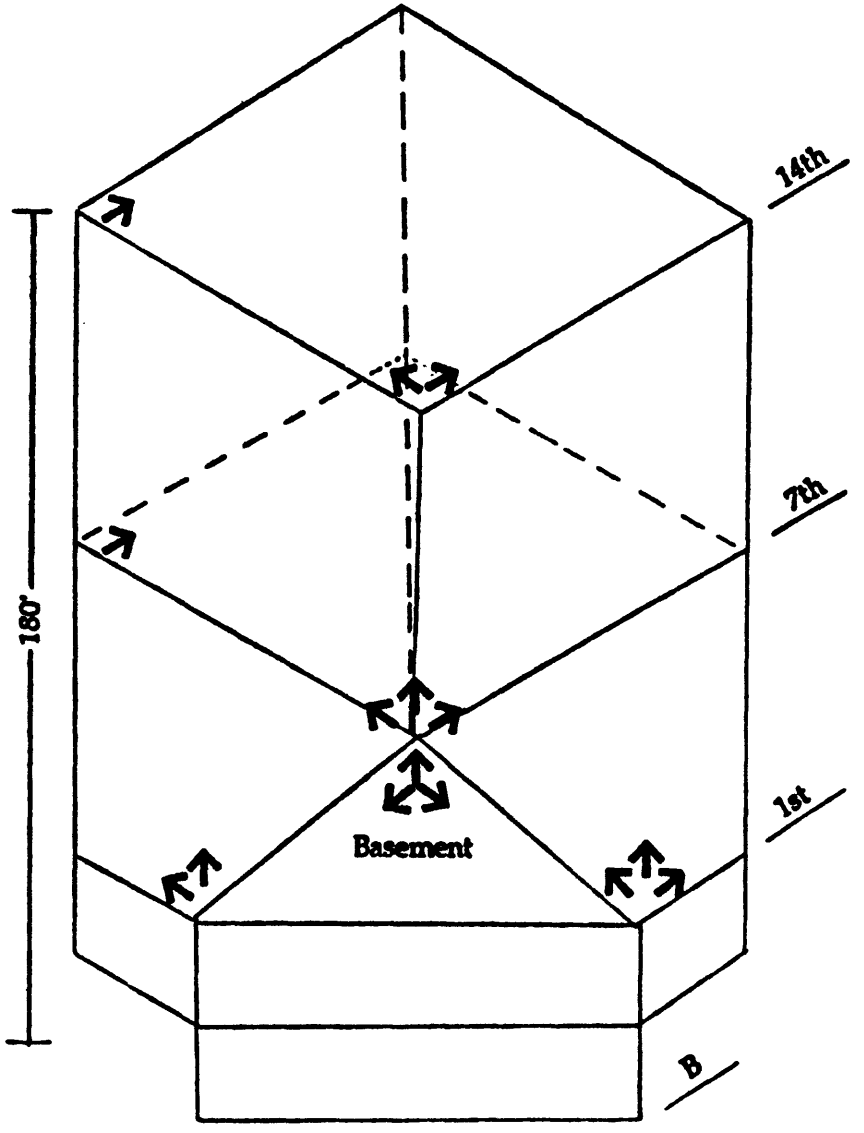
Film speed = 1 cm/sec

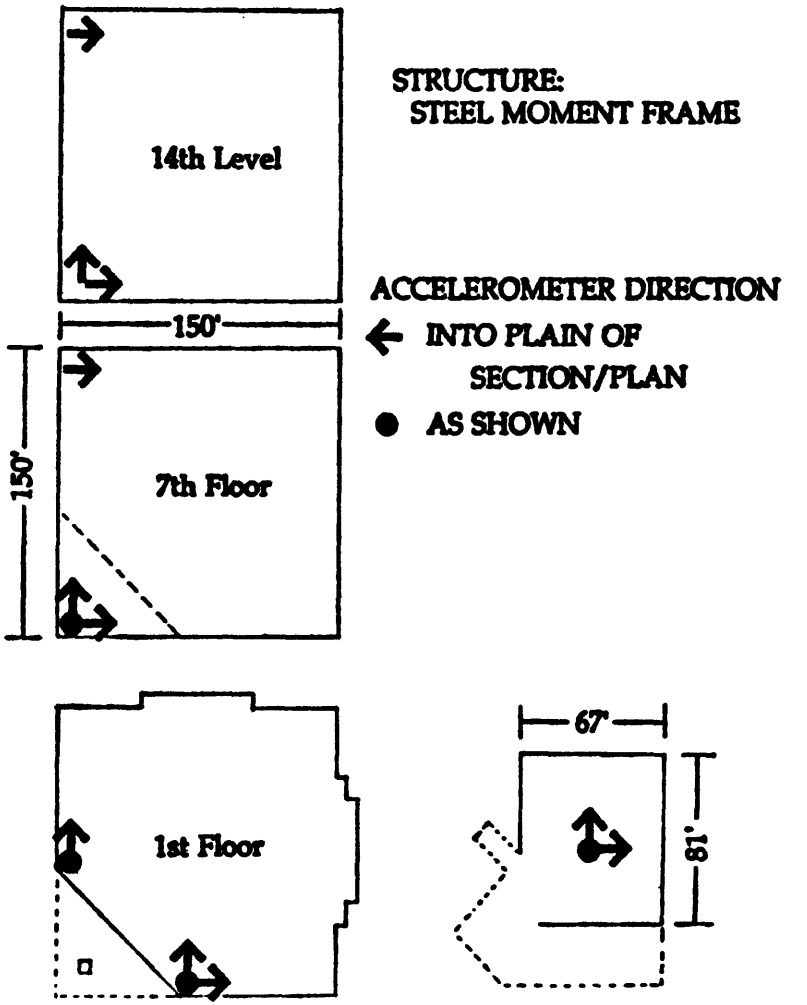


NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5287 33.677N, 117.869W	360°	Sens. = 1.82 cm/g Freq. = 25.3 Hz	0.06 g
Costa Mesa - John Wayne Airport		Damp. = 0.6 crit	
SMA No. 2017 (USGS)	Up	Sens. = 1.69 cm/g Freq. = 27.0 Hz	0.02
Earthquake of		Damp. = 0.6 crit	
28 June 1992 - 1158 G.m.t.	270°	Sens. = 1.91 cm/g Freq. = 25.6 Hz Damp. = 0.6 crit	0.05

Film speed = 1 cm/sec



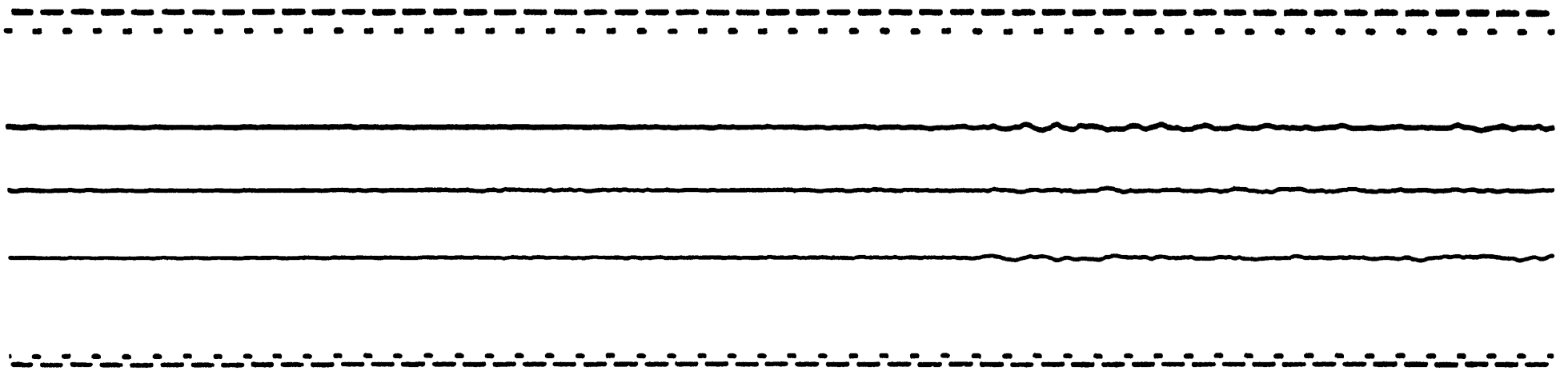

14th
7th
1st
B
180'
Basement


14th Level
150'
150'
7th Floor
1st Floor
67'
81'
STRUCTURE:
STEEL MOMENT FRAME
ACCELEROMETER DIRECTION
INTO PLAIN OF
SECTION/PLAN
AS SHOWN

IRVINE

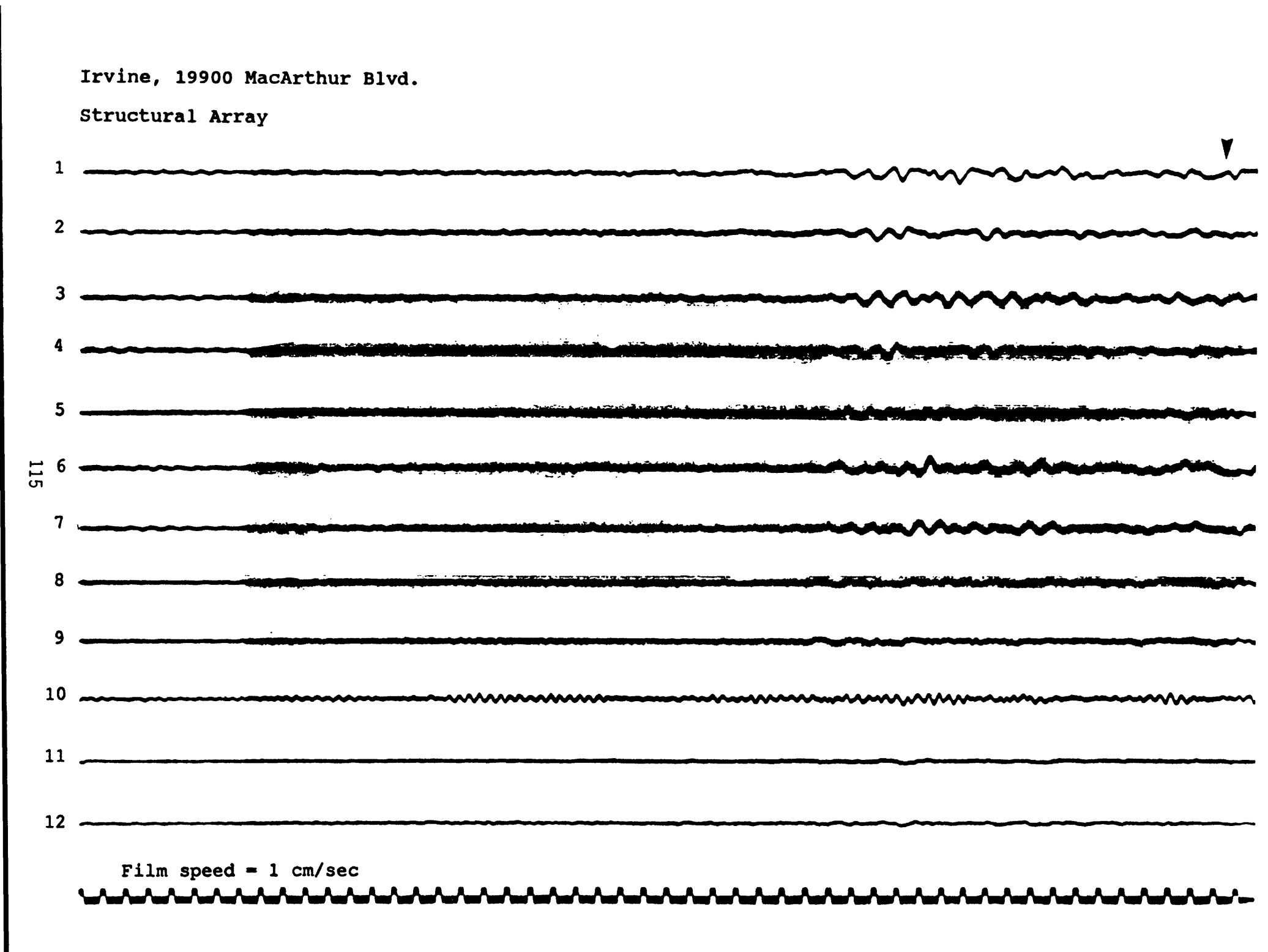
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5281 33.656N, 117.859W	060°	Sens. = 1.93 cm/g Freq. = 24.7 Hz	0.04 g
Irvine, 19900 MacArthur Blvd.		Damp. = 0.6 crit	
SMA-1 No. 4223 (USGS)	Up	Sens. = 1.79 cm/g Freq. = 26.2 Hz	0.02
Earthquake of		Damp. = 0.6 crit	
28 June 1992 - 1158 G.m.t.	330°	Sens. = 1.85 cm/g Freq. = 25.7 Hz Damp. = 0.6 crit	0.04

Film speed = 1 cm/sec

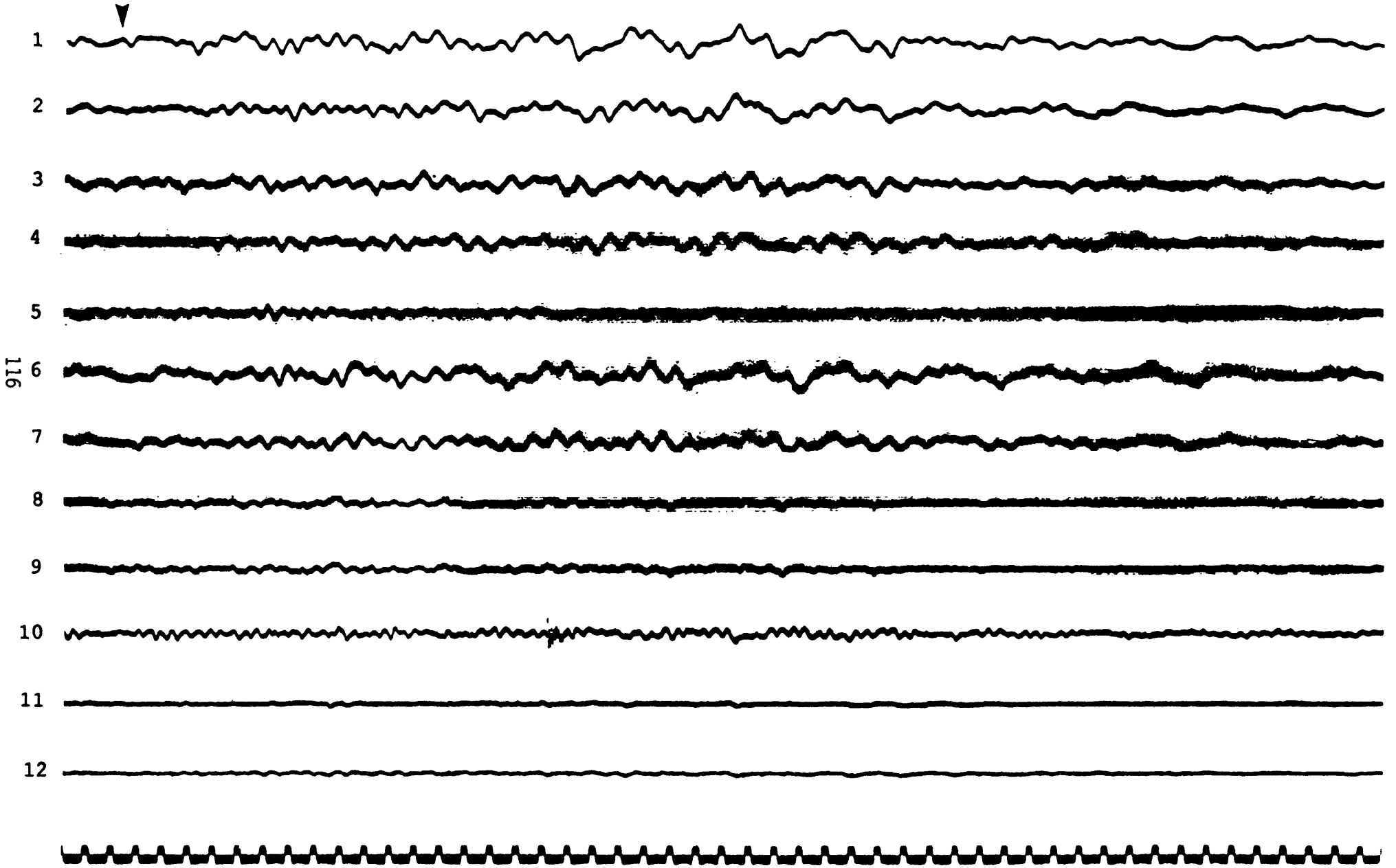


NATIONAL STRONG-MOTION PROGRAM	CHANNEL	DIRECTION	LOCATION	SENSITIVITY	MAX ACCELERATION
Station No. 5281	1	060°	Roof, NE Corner	1.80 cm/g	0.18 g
33.656N, 117.859W	2	060°	Roof, SW Corner	1.81 cm/g	0.15
Irvine, 19900 MacArthur Blvd.	3	060°	7th Floor, NE	1.78 cm/g	0.11
Structure Array	4	060°	7th Floor, SW	1.81 cm/g	0.10
CRA-1 No. 318 (USGS)	5	060°	1st Floor, South Side Base of Cut	1.83 cm/g	0.05
Earthquake of	6	330°	Roof, SW Corner	1.80 cm/g	0.16
28 June 1992 - 1158 G.m.t.	7	330°	7th Floor, SW	1.82 cm/g	0.10
	8	330°	1st Floor West Side Base of Cut	1.88 cm/g	0.05
	9	330°	1st Floor South Side Base of Cut	1.84 cm/g	0.04
	10	Down	7th Floor, SW Corner	1.81 cm/g	0.08
Film speed = 1 cm/sec	11	Down	1st Floor, West Side Base of Cut	1.71 cm/g	0.04
	12	Down	1st Floor, South Side Base of Cut	1.83 cm/g	0.03

(See Accelerogram on next page)

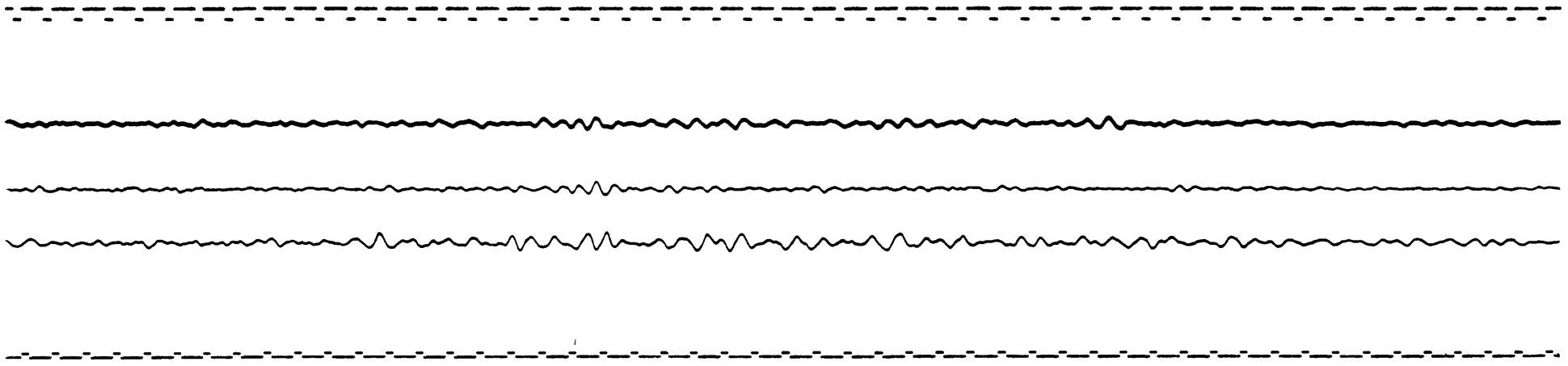

Irvine, 19900 MacArthur Blvd.
Structural Array
1
2
3
4
5
6
7
8
9
10
11
12
Film speed = 1 cm/sec

Irvine, 19900 MacArthur Blvd. - *continued*



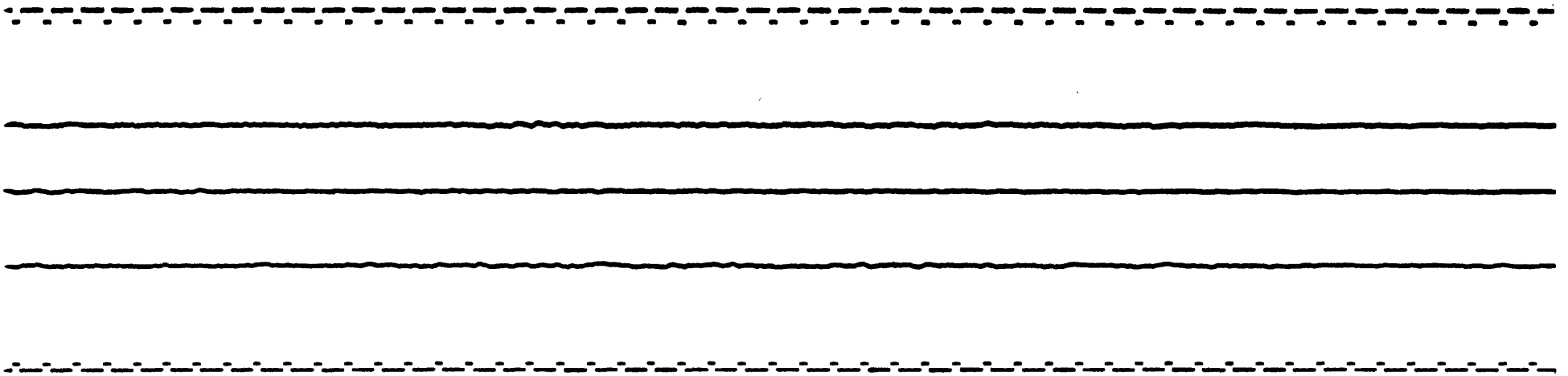
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5257 33.620N, 117.842W	087°	Sens. = 1.82 cm/g Freq. = 26.2 Hz	0.06 g
San Joaquin Reservoir - Crest		Damp. = 0.57 crit	
SMA No. 6697 (MWD)	Up	Sens. = 2.04 cm/g Freq. = 25.2 Hz	0.06
Earthquake of		Damp. = 0.57 crit	
28 June 1992 - 1158 G.m.t.	357°	Sens. = 1.86 cm/g Freq. = 25.7 Hz Damp. = 0.61 crit	0.10

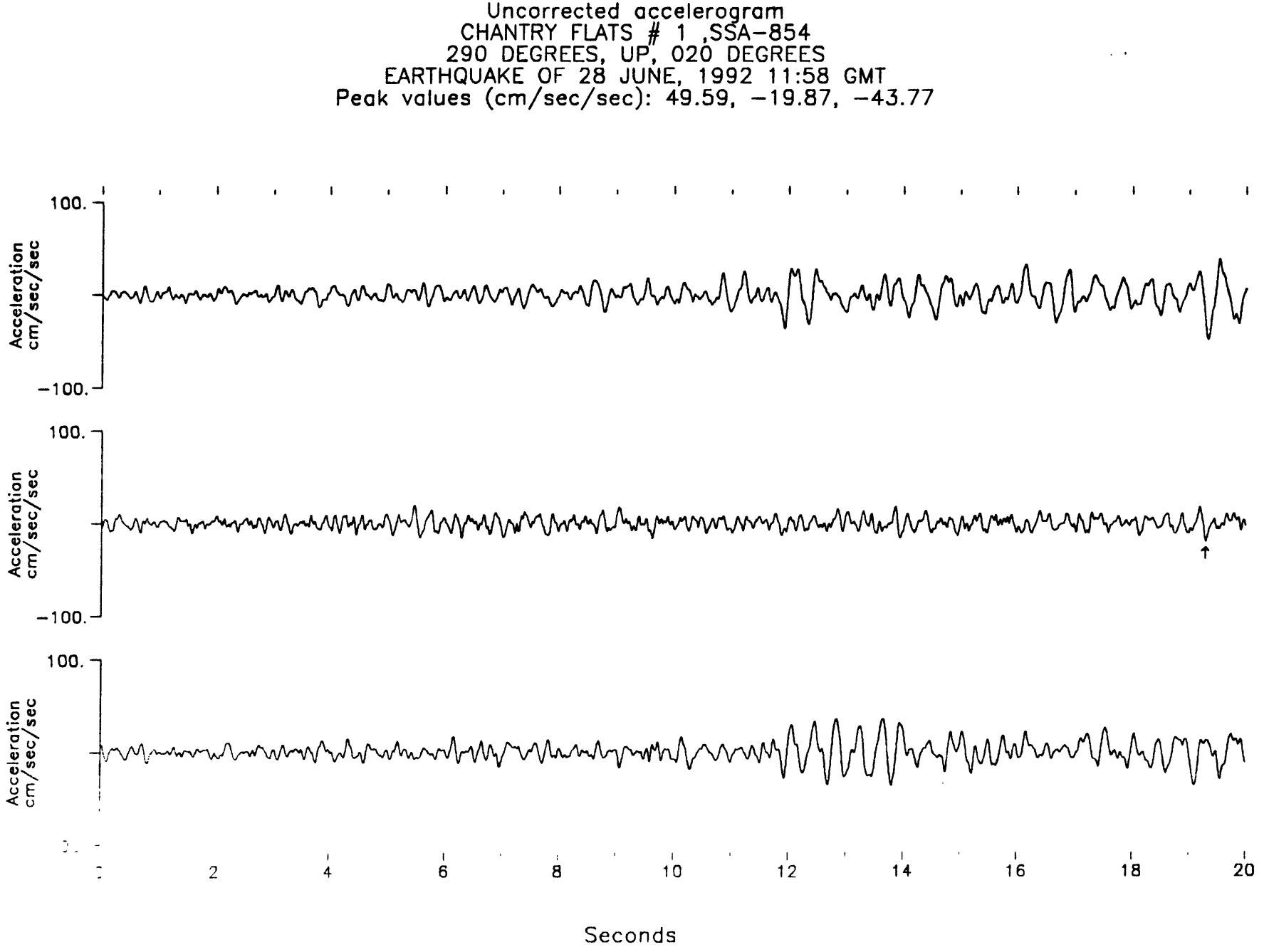
Film speed = 1 cm/sec

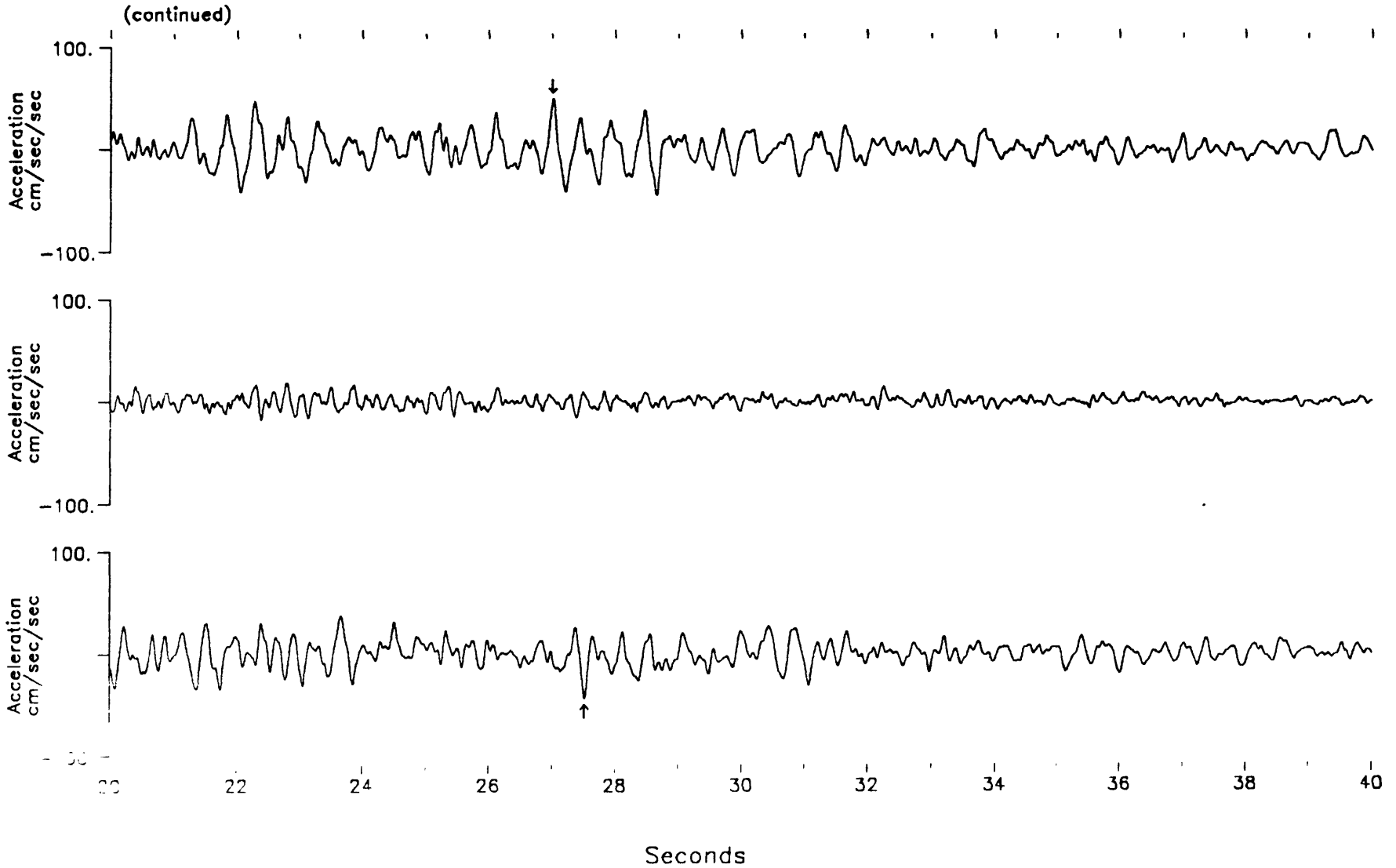


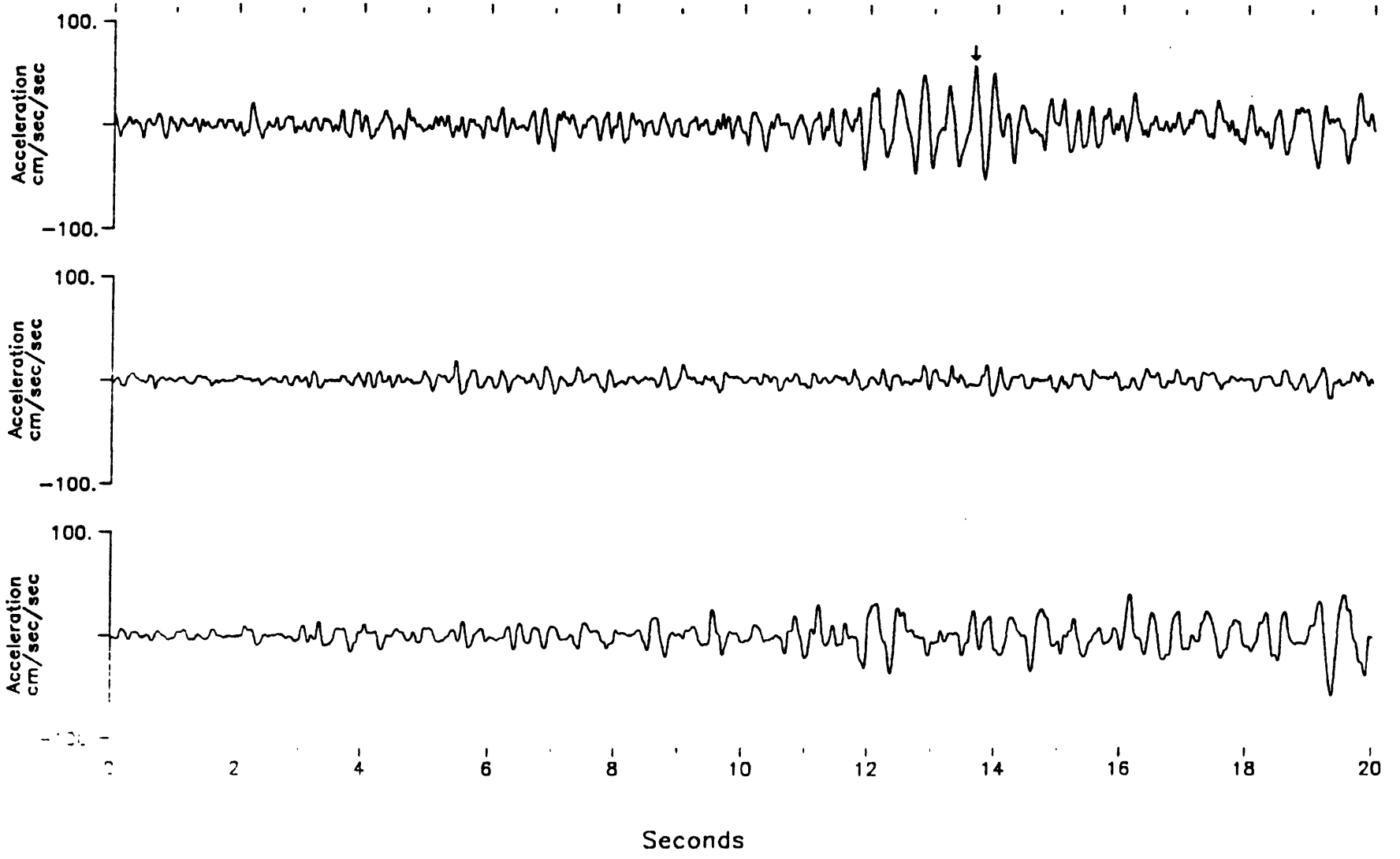
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5257 33.620N, 117.844W	087°	Sens. = 1.82 cm/g Freq. = 25.5 Hz	0.02 g
San Joaquin Reservoir, L. Abutment		Damp. = 0.6 crit	
SMA No. 4222 (MWD)	Up	Sens. = 1.74 cm/g Freq. = 26.0 Hz	0.02
Earthquake of		Damp. = 0.6 crit	
28 June 1992 - 1158 G.m.t.	357°	Sens. = 1.89 cm/g Freq. = 25.5 Hz Damp. = 0.6 crit	0.02

Film speed = 1 cm/sec

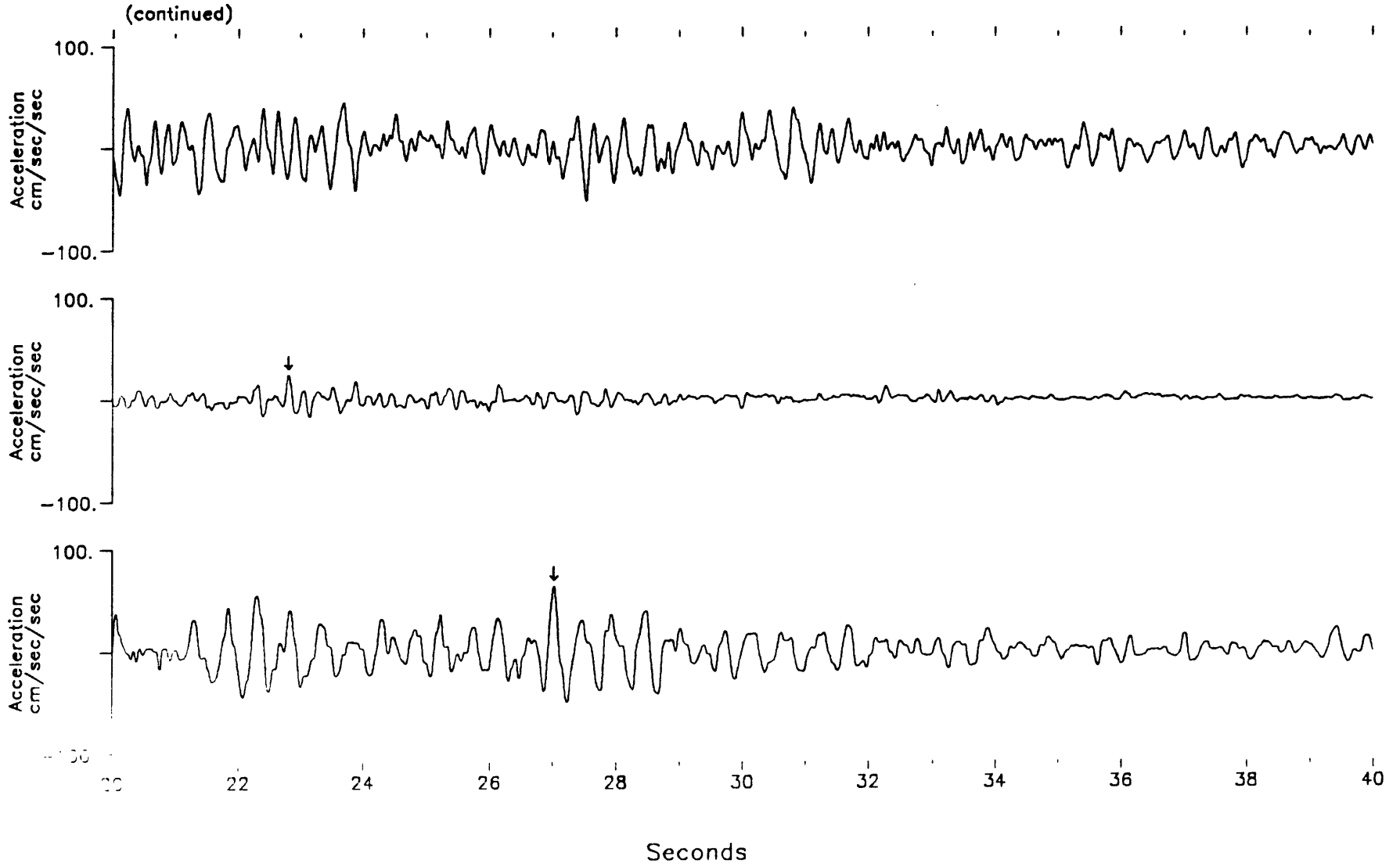


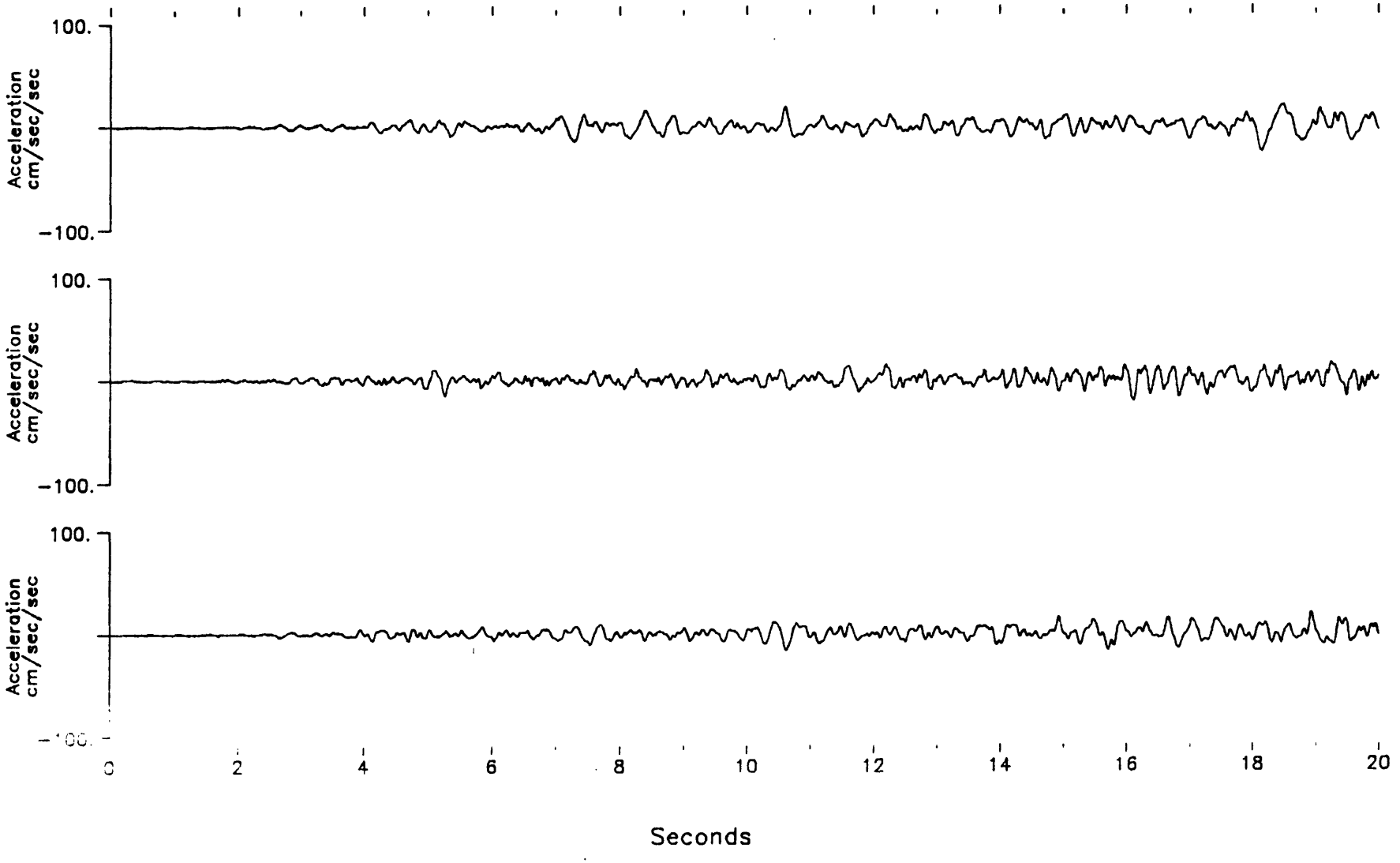

Uncorrected accelerogram
CHANTRY FLATS # 1 ,SSA-854
290 DEGREES, UP, 020 DEGREES
EARTHQUAKE OF 28 JUNE, 1992 11:58 GMT
Peak values (cm/sec/sec): 49.59, -19.87, -43.77
100.
-100.
Acceleration cm/sec/sec
100.
-100.
Acceleration cm/sec/sec
100.
Acceleration cm/sec/sec
2
4
6
8
10
12
14
16
18
20
Seconds


Uncorrected accelerogram
CHANTRY FLATS # 1 ,SSA-854
290 DEGREES, UP, 020 DEGREES
EARTHQUAKE OF 28 JUNE, 1992 11:58 GMT
Peak values (cm/sec/sec): 49.59, -19.87, -43.77
(continued)
100.
-100.
Acceleration cm/sec/sec
100.
-100.
Acceleration cm/sec/sec
100.
Acceleration cm/sec/sec
22
24
26
28
30
32
34
36
38
40
Seconds

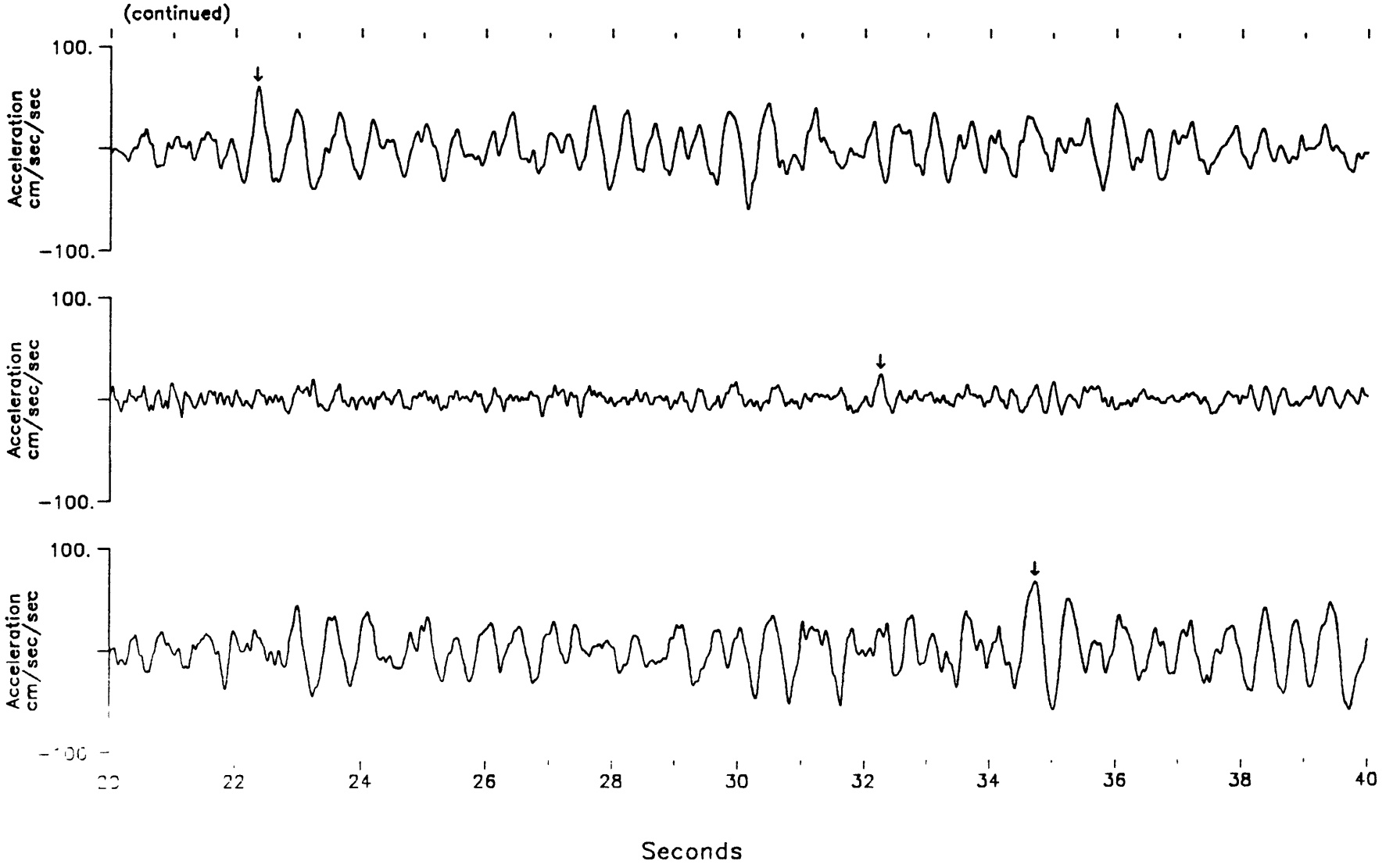

Uncorrected accelerogram
CHANTRY FLATS #2, SSA-840
20 DEGREES, UP, 290 DEGREES
EARTHQUAKE OF 28 JUNE, 1992 11:58 GMT
Peak values (cm/sec/sec): 58.10, 24.34, 63.54
100.
-100.
Acceleration cm/sec/sec
100.
-100.
Acceleration cm/sec/sec
100.
Acceleration cm/sec/sec
0
2
4
6
8
10
12
14
16
18
20
Seconds

Uncorrected accelerogram
CHANTRY FLATS #2, SSA-840
20 DEGREES, UP, 290 DEGREES
EARTHQUAKE OF 28 JUNE, 1992 11:58 GMT
Peak values (cm/sec/sec): 58.10, 24.34, 63.54



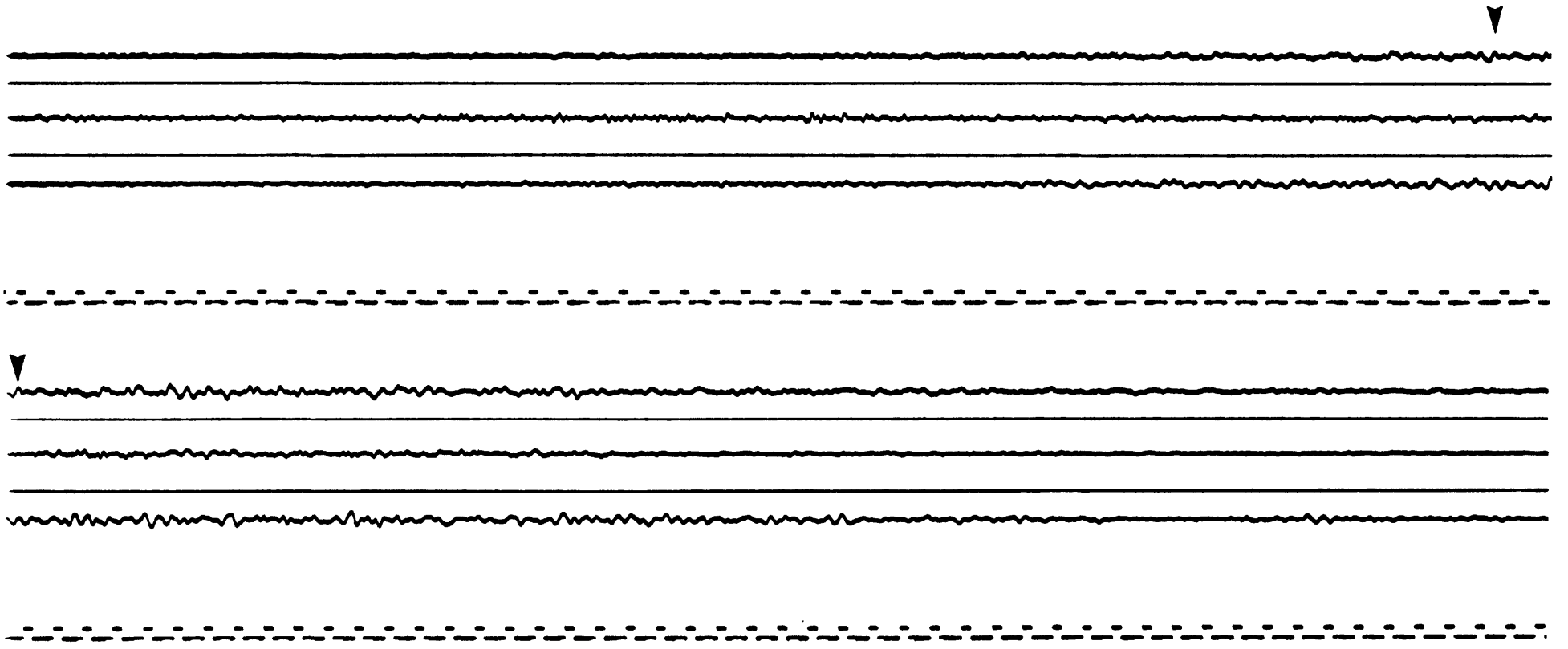

Uncorrected accelerogram
CHANTRY FLATS # 3, FIRE STATION ,SSA-839
290 DEGREES, UP, 020 DEGREES
EARTHQUAKE OF 28 JUNE, 1992 11:58 GMT
Peak values (cm/sec/sec): 60.63, 24.30, 67.02
100.
-100.
Acceleration cm/sec/sec
0
2
4
6
8
10
12
14
16
18
20
Seconds

Uncorrected accelerogram
CHANTRY FLATS # 3, FIRE STATION ,SSA-839
290 DEGREES, UP, 020 DEGREES
EARTHQUAKE OF 28 JUNE, 1992 11:58 GMT
Peak values (cm/sec/sec): 60.63, 24.30, 67.02



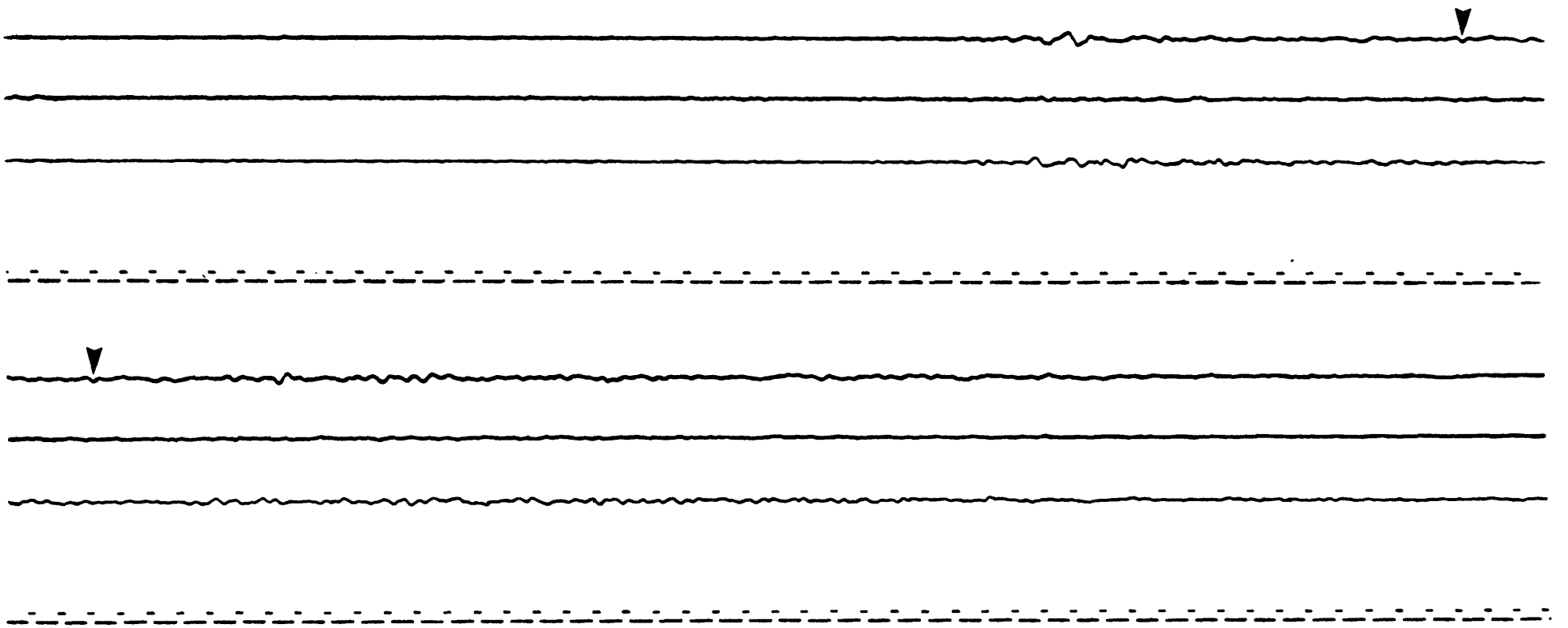
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5030 34.52N, 117.99W	300°	Sens. = 1.86 cm/g Freq. = 25.9 Hz	0.06 g
Littlerock Post Office		Damp. = 0.6 crit	
SMA No. 1464 (USGS)	Up	Sens. = 1.84 cm/g Freq. = 26.0 Hz	0.05
Earthquake of		Damp. = 0.6 crit	
28 June 1992 - 1158 G.m.t.	210°	Sens. = 1.86 cm/g Freq. = 26.2 Hz Damp. = 0.6 crit	0.08

Film speed = 1 cm/sec



NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5285 33.600N 117.866W	360°	Sens. = 1.81 cm/g Freq. = 25.4 Hz Damp. = 0.6 crit	0.07 g
Newport Beach, 800 Marguerite Oasis Senior Center SMA-1 No. 981 (USGS)	Up	Sens. = 1.85 cm/g Freq. = 26.3 Hz Damp. = 0.6 crit	0.02
Earthquake of 28 June 1992 - 1158 G.m.t.	270°	Sens. = 1.96 cm/g Freq. = 25.0 Hz Damp. = 0.6 crit	0.06

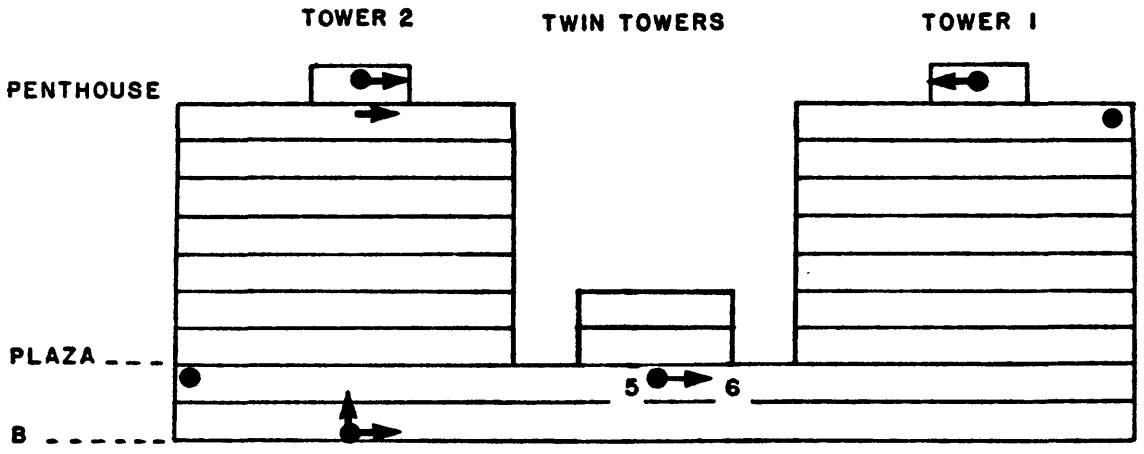
Film speed = 1 cm/sec



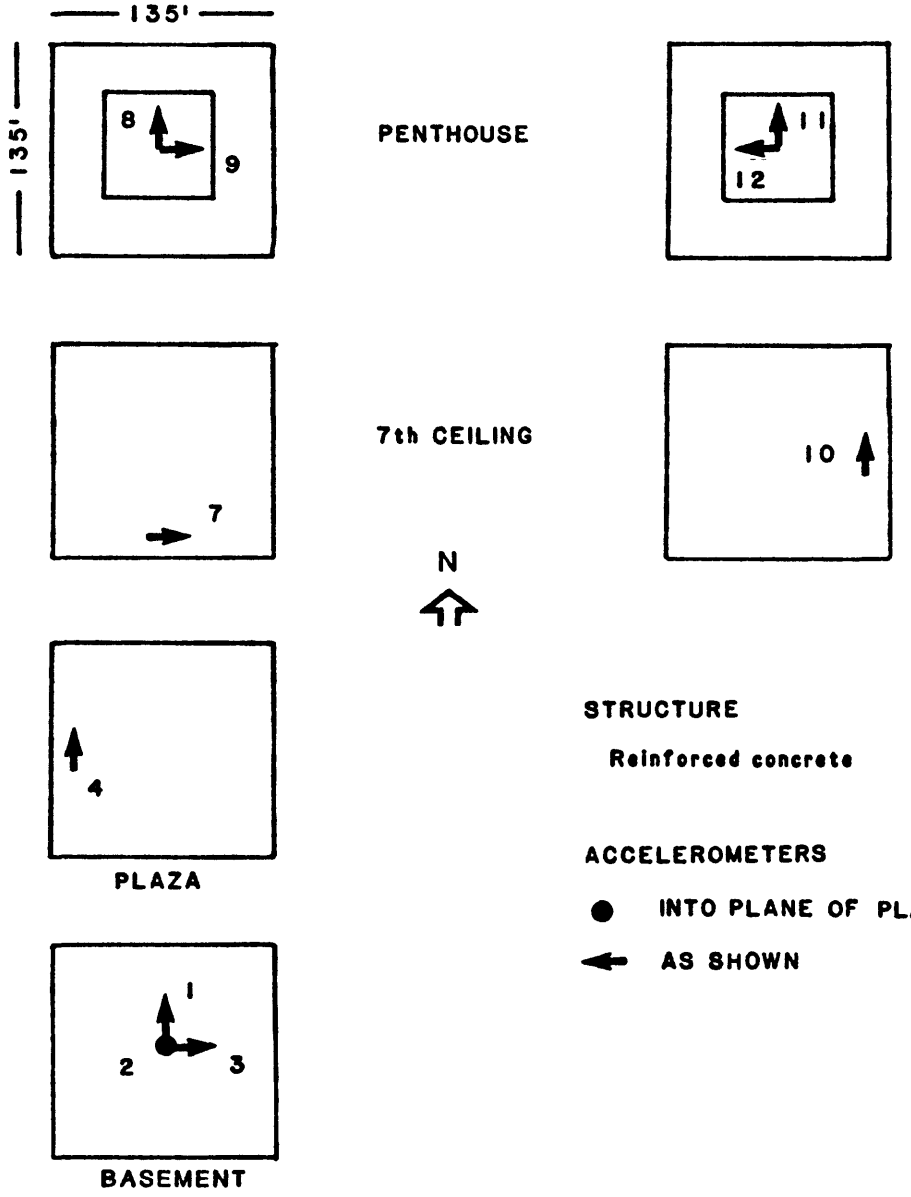
NEWPORT BEACH

800 NEWPORT CENTER DRIVE

STRONG-MOTION INSTRUMENTATION



SOUTH ELEVATION



STRUCTURE

Reinforced concrete

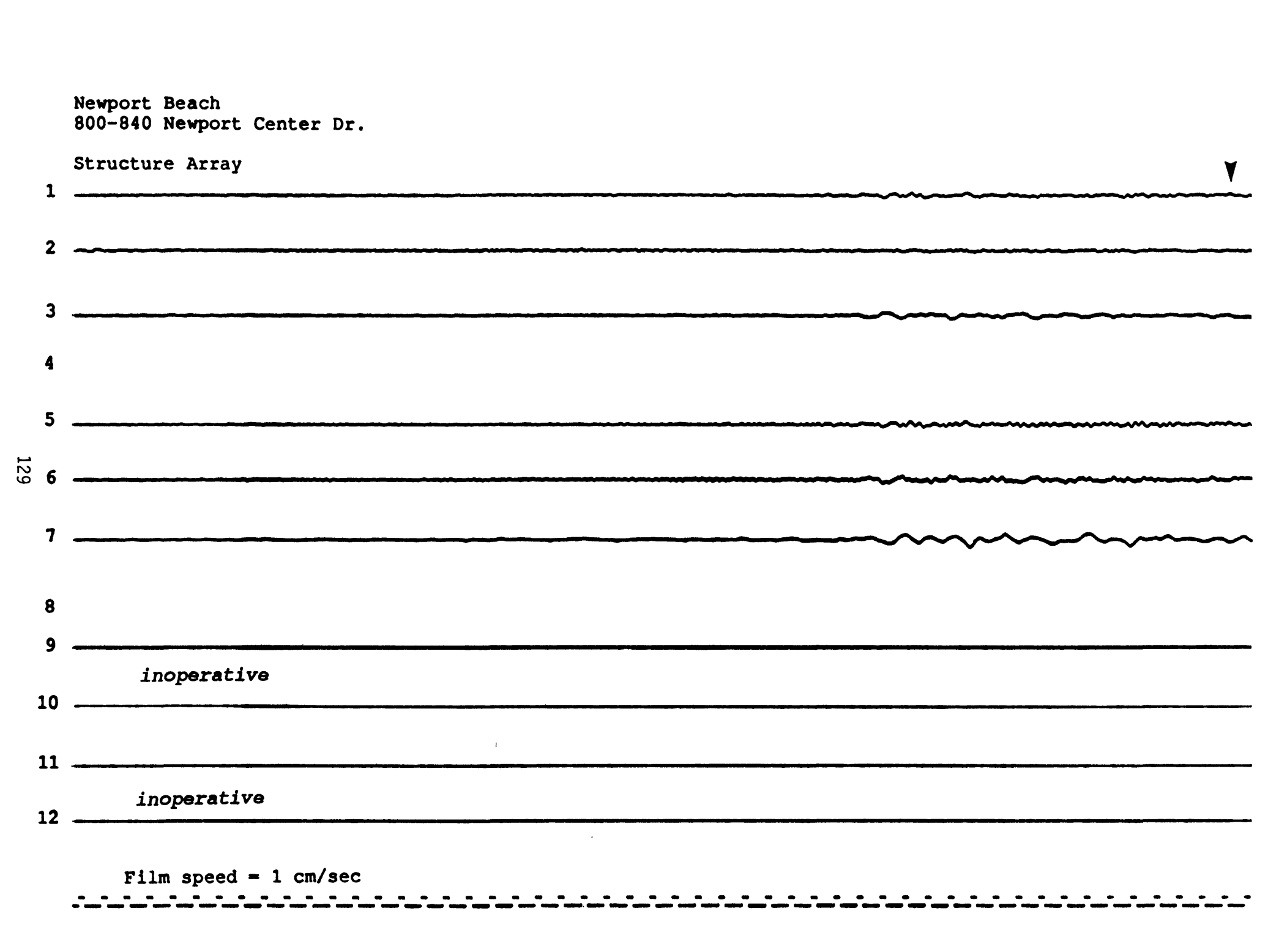
ACCELEROMETERS

● INTO PLANE OF PLAN/ELEVATION

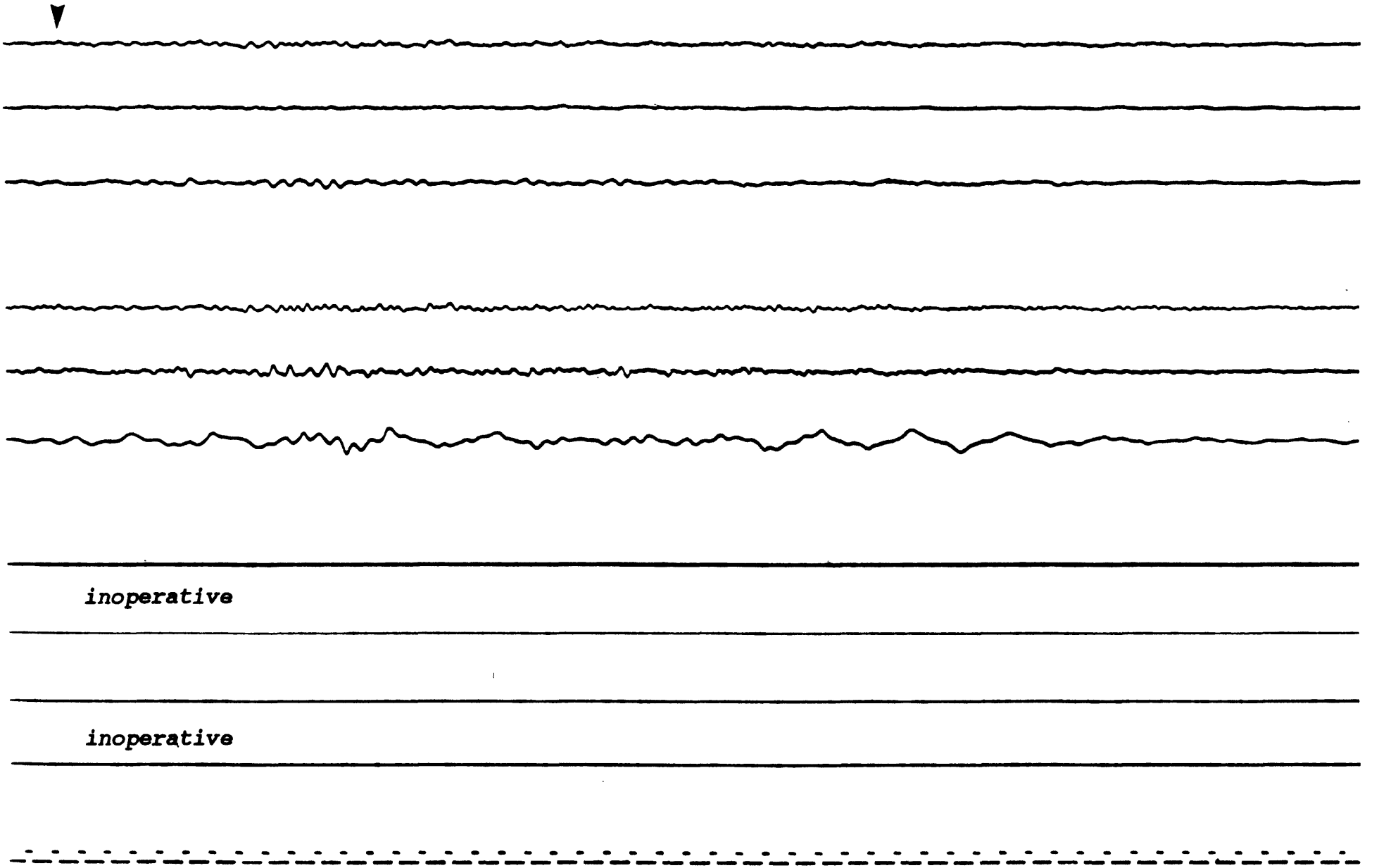
← AS SHOWN

NATIONAL STRONG-MOTION PROGRAM	CHANNEL	DIRECTION	LOCATION	SENSITIVITY	MAX ACCELERATION
Station No. 5246	1	360°	Twr 2, level 1, center	1.71 cm/g	0.04 g
33.618N, 117.878W	2	Up	Tower 2, level 1, center	1.77 cm/g	0.02
Newport Beach 800-840 Newport Center Dr.	3	090°	Tower 2, level 1, center	1.80 cm/g	0.05
Structure Array	4	360°	Tower 2, level 2, west	1.81 cm/g	----
CRA-1 No. 231 (USGS)	5	360°	Middle Building, level 2	1.78 cm/g	0.04
Earthquake of	6	090°	Middle Building, level 2	1.81 cm/g	0.08
28 June 1992 - 1158 G.m.t.	7	090°	Tower 2, level 9, south	1.78 cm/g	0.15
Film speed = 1 cm/sec	8	360°	Tower 2, level 10, center	1.82 cm/g	----
	9	090°	Tower 2, level 10, center	1.84 cm/g	----
	10	360°	Tower 1, level 9, east	1.78 cm/g	----
	11	270°	Tower 1, level 10, center	1.81 cm/g	----
	12	360°	Tower 1, level 10, center	1.80 cm/g	----

(See Accelerogram on next page)

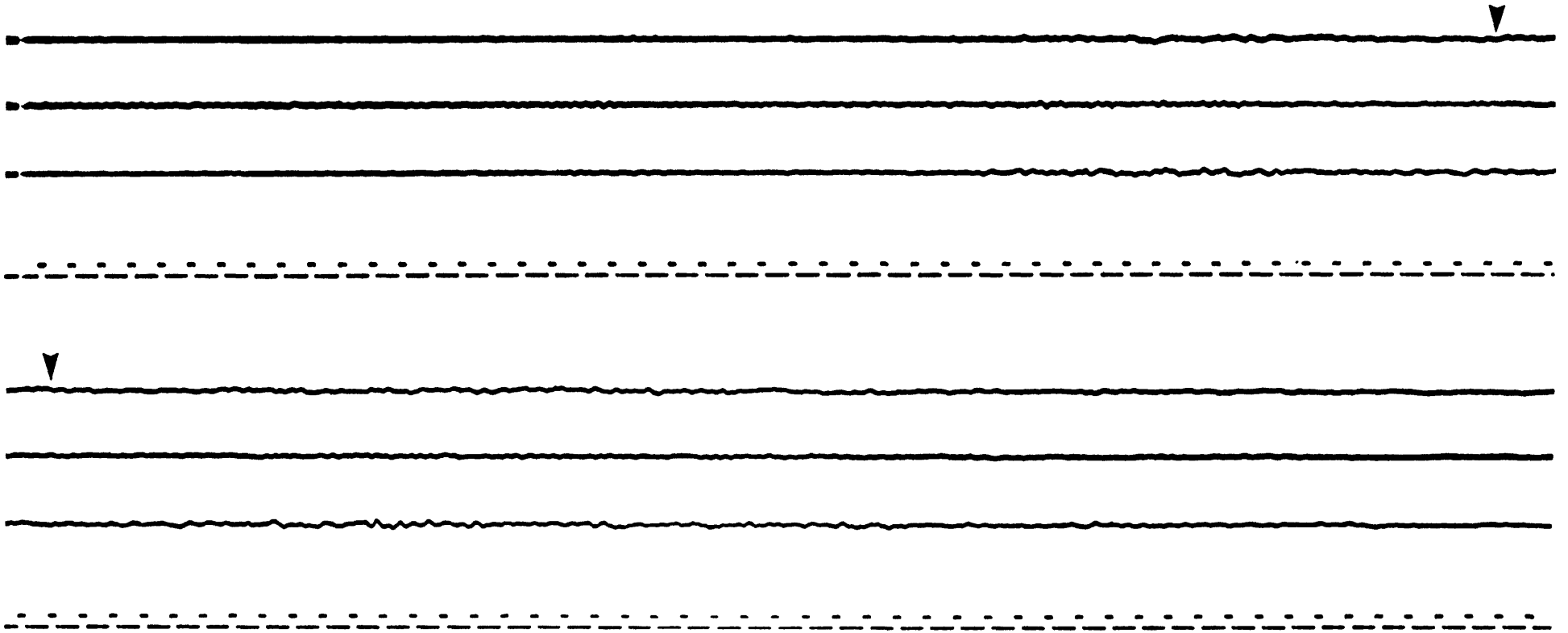

Newport Beach
800-840 Newport Center Dr.
Structure Array
1
2
3
4
5
6
7
8
9
inoperative
10
11
inoperative
12
Film speed = 1 cm/sec

Newport Beach
800-840 Newport Center Dr. - *continued*



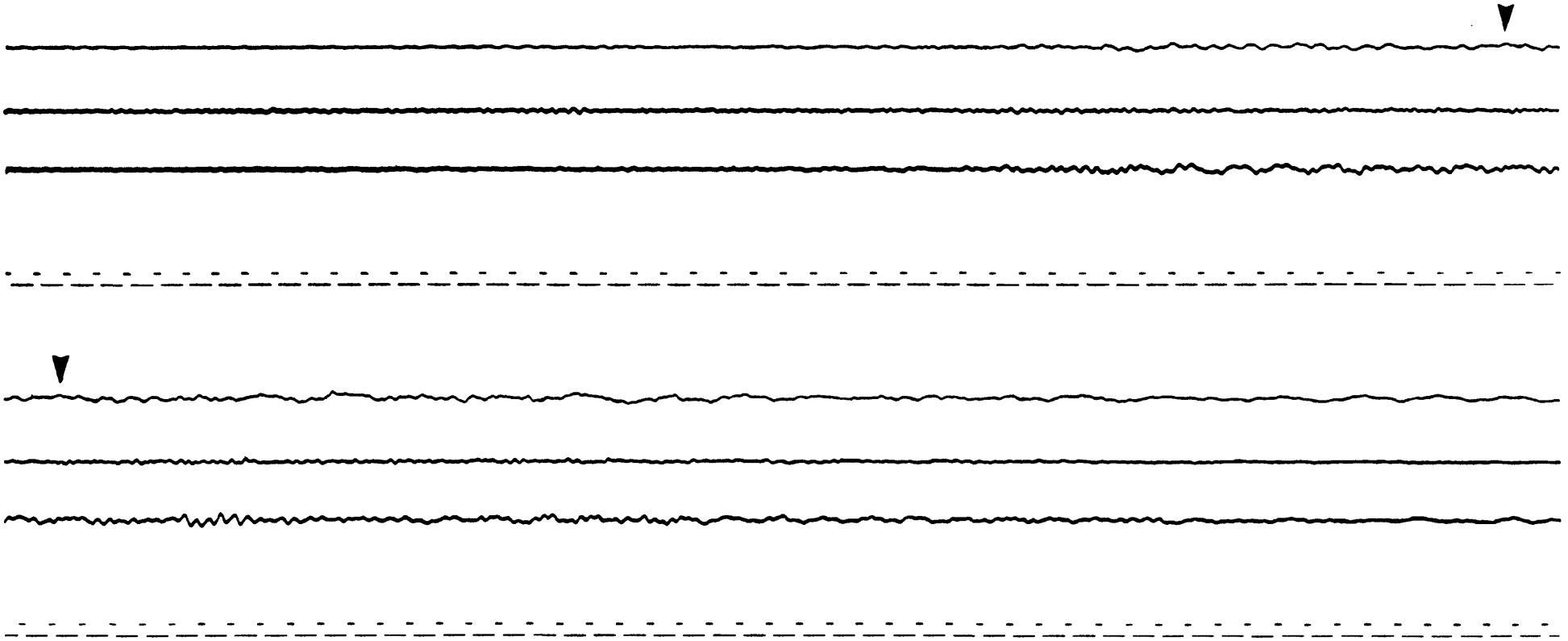
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 804 33.977N, 118.036W	180°	Sens. = 1.78 cm/g Freq. = 25.9 Hz	0.03 g
Whittier, 7215 Bright Ave.-Basement		Damp. = 0.60 crit	
SMA-1 No. 1069 (Code/USGS)	Up	Sens. = 1.89 cm/g Freq. = 25.1 Hz	0.02
Earthquake of		Damp. = 0.60 crit	
28 June 1992 - 1158 G.m.t.	090°	Sens. = 1.90 cm/g Freq. = 25.1 Hz Damp. = 0.60 crit	0.03

Film speed = 1 cm/sec



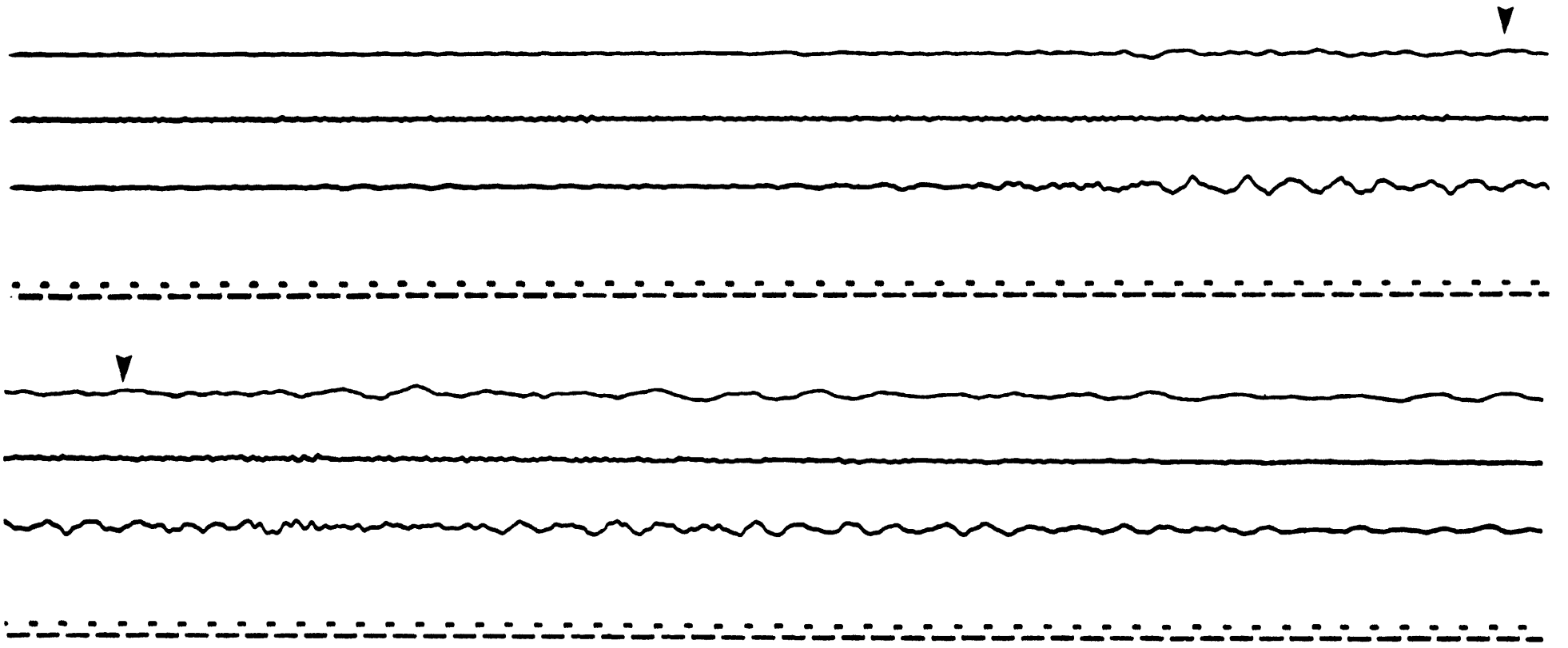
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 804 33.977N, 118.036W	180°	Sens. = 1.92 cm/g Freq. = 25.4 Hz	0.06 g
Whittier, 7215 Bright Ave.-5th floor		Damp. = 0.60 crit	
SMA-1 No. 1070 (Code/USGS)	Up	Sens. = 1.91 cm/g Freq. = 25.4 Hz	0.03
Earthquake of		Damp. = 0.60 crit	
28 June 1992 - 1158 G.m.t.	090°	Sens. = 1.80 cm/g Freq. = 25.6 Hz Damp. = 0.60 crit	0.07

Film speed = 1 cm/sec



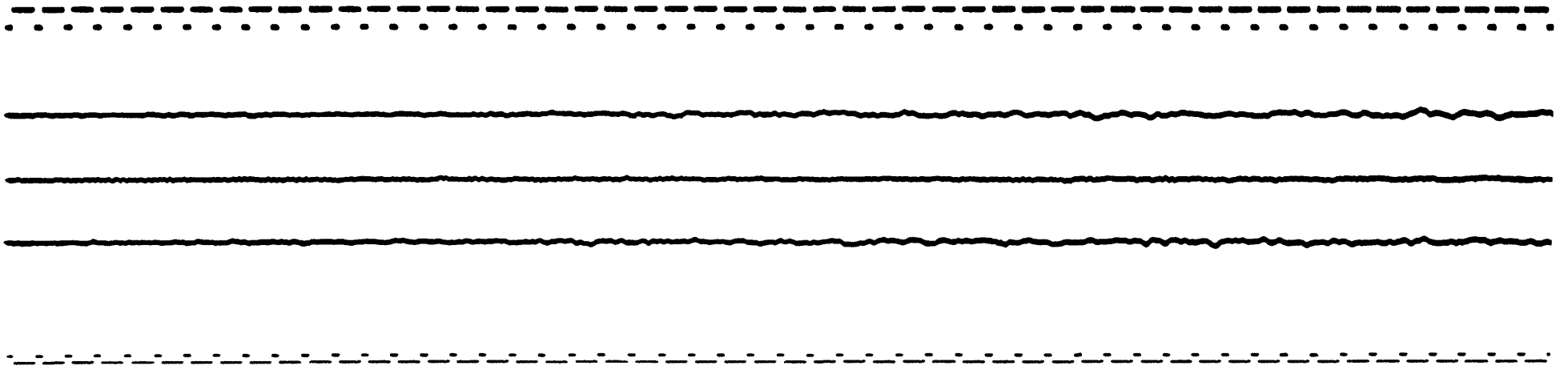
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 804 33.977N, 118.036W	180°	Sens. = 1.84 cm/g Freq. = 26.1 Hz	0.08 g
Whittier, 7215 Bright Ave.-10th fl.		Damp. = 0.60 crit	
SMA-1 No. 1071 (Code/USGS)	Up	Sens. = 1.85 cm/g Freq. = 25.5 Hz	0.03
Earthquake of		Damp. = 0.60 crit	
28 June 1992 - 1158 G.m.t.	090°	Sens. = 1.89 cm/g Freq. = 25.1 Hz Damp. = 0.60 crit	0.10

Film speed = 1 cm/sec



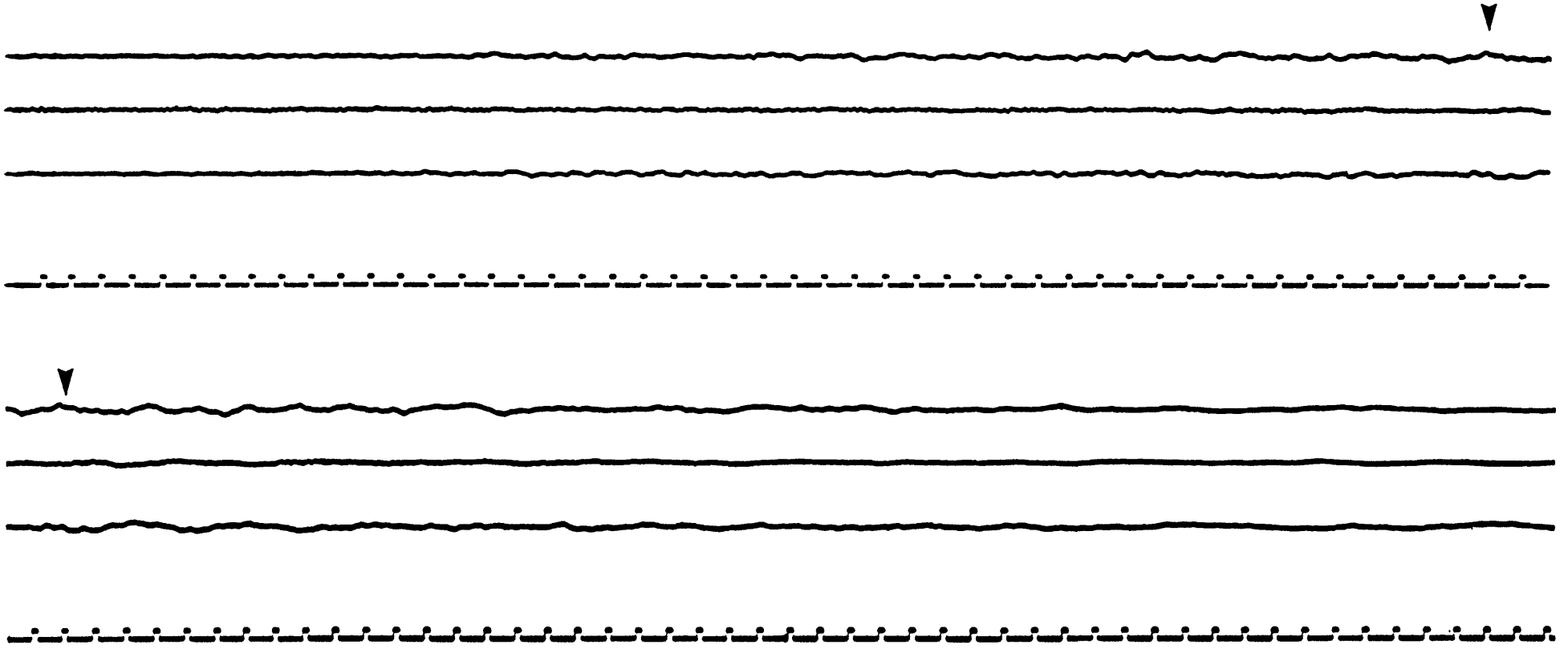
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 289 34.020N, 118.053W	118°	Sens. = 1.80 cm/g Freq. = 26.1 Hz Damp. = 0.61 crit	0.06 g
Whittier Narrows Dam - Crest			
SMA No. 478 (ACOE)	Up	Sens. = 1.79 cm/g Freq. = 25.7 Hz Damp. = 0.57 crit	0.03
Earthquake of			
28 June 1992 - 1158 G.m.t.	028°	Sens. = 1.79 cm/g Freq. = 26.1 Hz Damp. = 0.59 crit	0.05

Film speed = 1 cm/sec



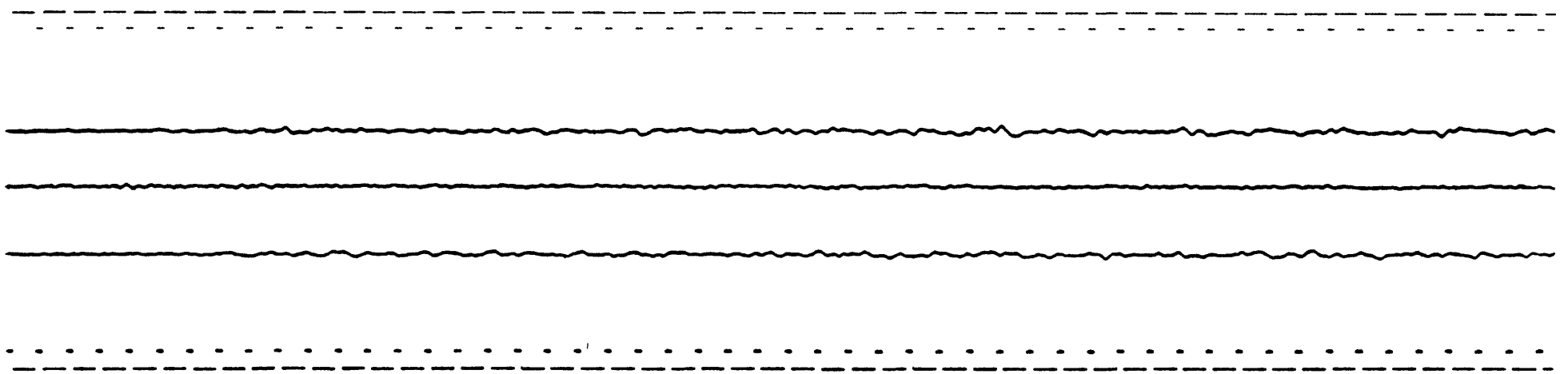
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 289 34.031N, 118.054W	118°	Sens. = 2.00 cm/g Freq. = 25.1 Hz	0.05 g
Whittier Narrows Dam, Upstream		Damp. = 0.59 crit	
SMA No. 376 (ACOE) Baseyard	Up	Sens. = 2.00 cm/g Freq. = 25.4 Hz	0.02
Earthquake of		Damp. = 0.61 crit	
28 June 1992 - 1158 G.m.t.	028°	Sens. = 2.00 cm/g Freq. = 25.2 Hz Damp. = 0.59 crit	0.05

Film speed = 1 cm/sec



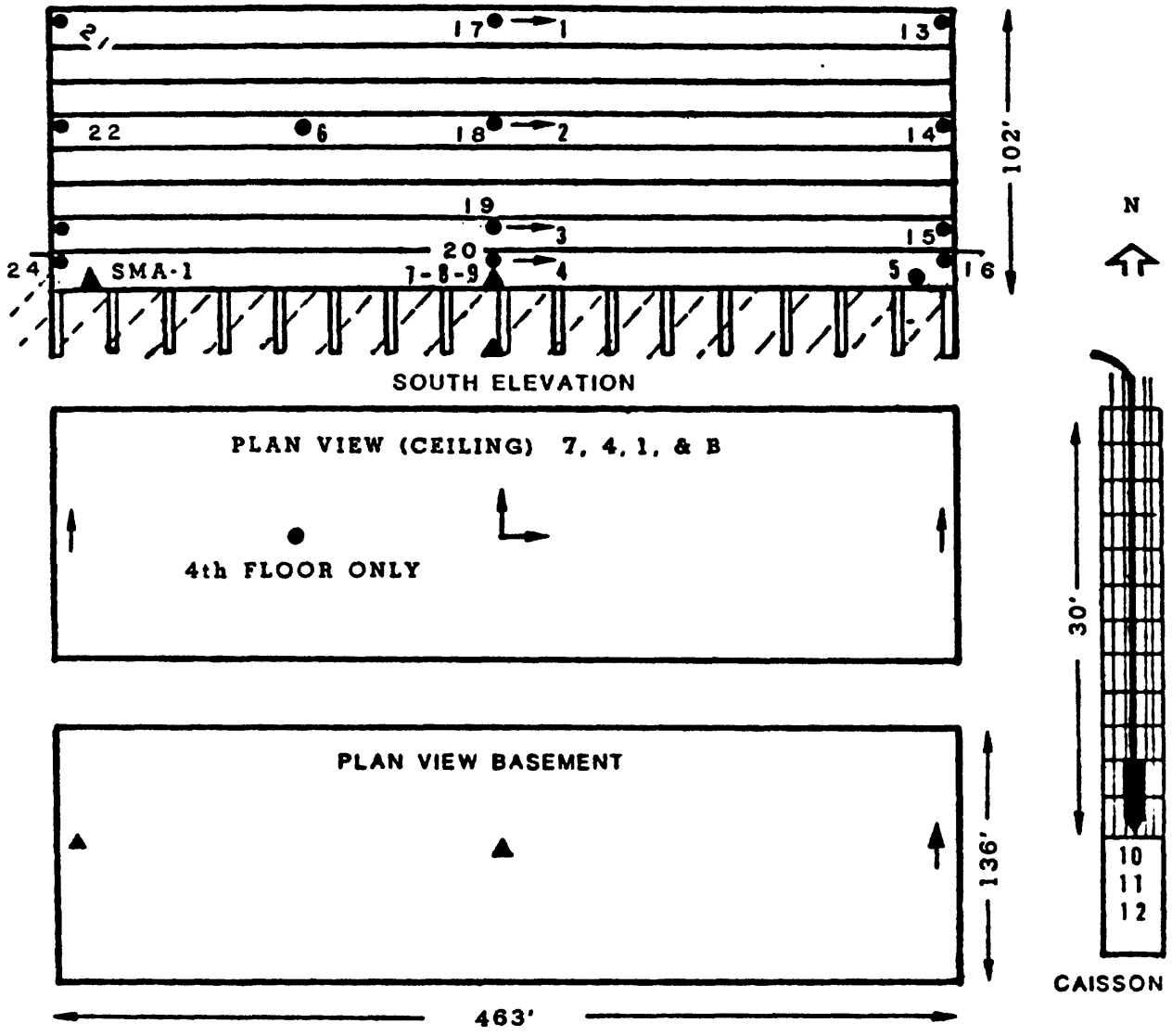
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5286 33.658N, 117.931W	360°	Sens. = 1.95 cm/g Freq. = 25.6 Hz	0.06 g
Costa Mesa Fire Station #4 2300 Placentia Avenue		Damp. = 0.6 crit	
SMA No. 354 (USGS) Ground	Up	Sens. = 1.83 cm/g Freq. = 25.5 Hz	0.03
Earthquake of		Damp. = 0.6 crit	
28 June 1992 - 1158 G.m.t.	270°	Sens. = 1.83 cm/g Freq. = 25.8 Hz Damp. = 0.6 crit	0.03

Film speed = 1 cm/sec



NORWALK

12440 IMPERIAL



STRUCTURE

FRAME, Steel ductile moment resisting

FOUNDATION, Drilled in place 30' caissons

ACCELEROMETER DIRECTIONS

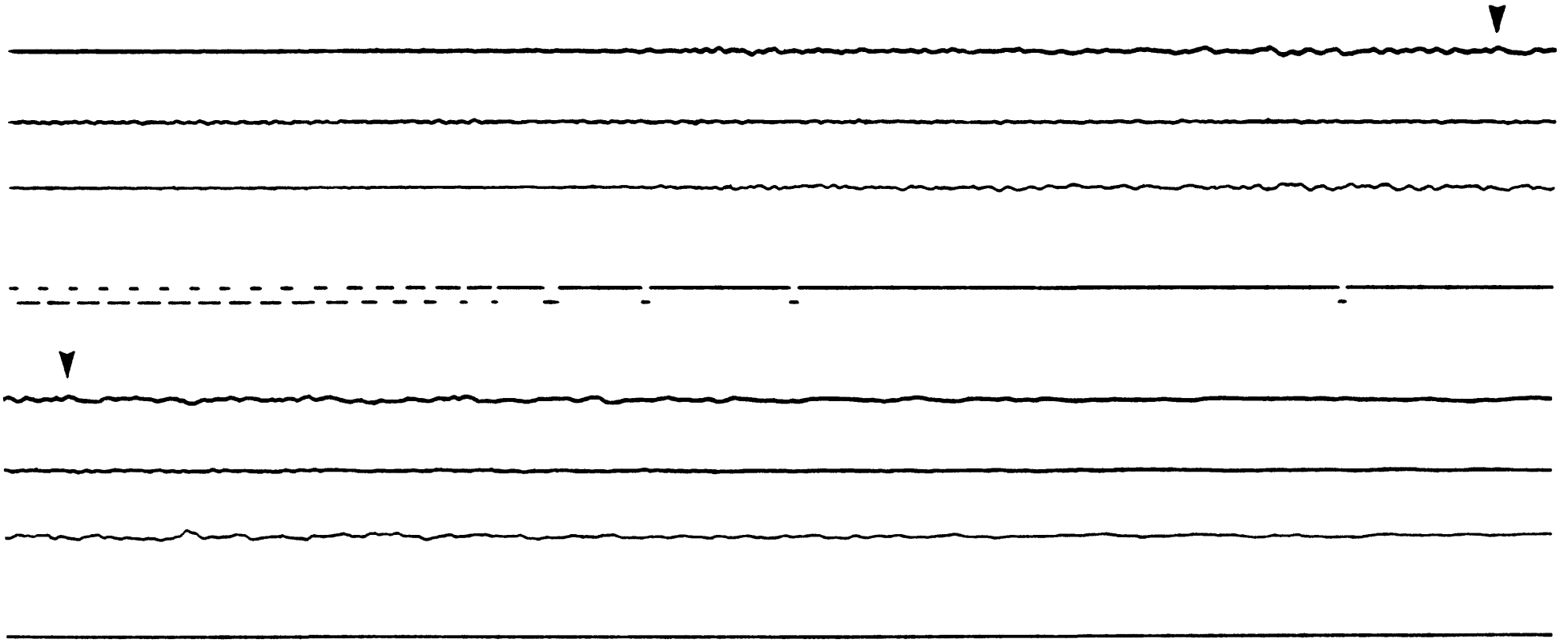
● INTO PLANE OF PLAN/ELEVATION

← AS SHOWN

▲ TRIAXIAL ACCELEROMETER

NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5239 33.917N, 118.066W	090°	Sens. = 1.76 cm/g Freq. = 26.3 Hz	0.05 g
Norwalk - 12440 Imperial Highway		Damp. = 0.63 crit	
SMA-1 No. 2218 (USGS/BECH) Bsmnt	Up	Sens. = 1.88 cm/g Freq. = 25.8 Hz	0.03
Earthquake of		Damp. = 0.62 crit	
28 June 1992 - 1158 G.m.t.	360°	Sens. = 1.71 cm/g Freq. = 26.4 Hz Damp. = 0.60 crit	0.04

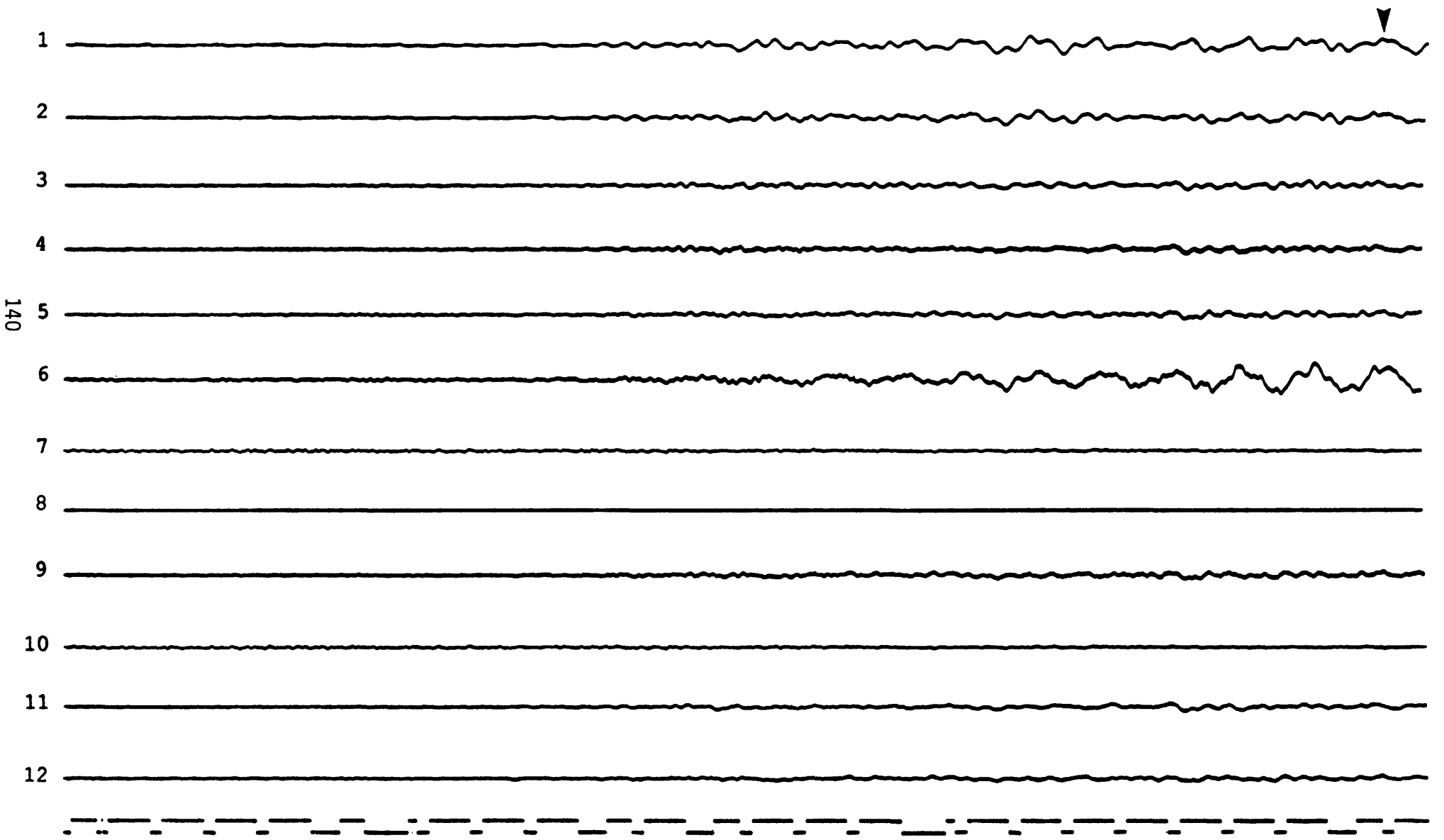
Film speed = 1 cm/sec



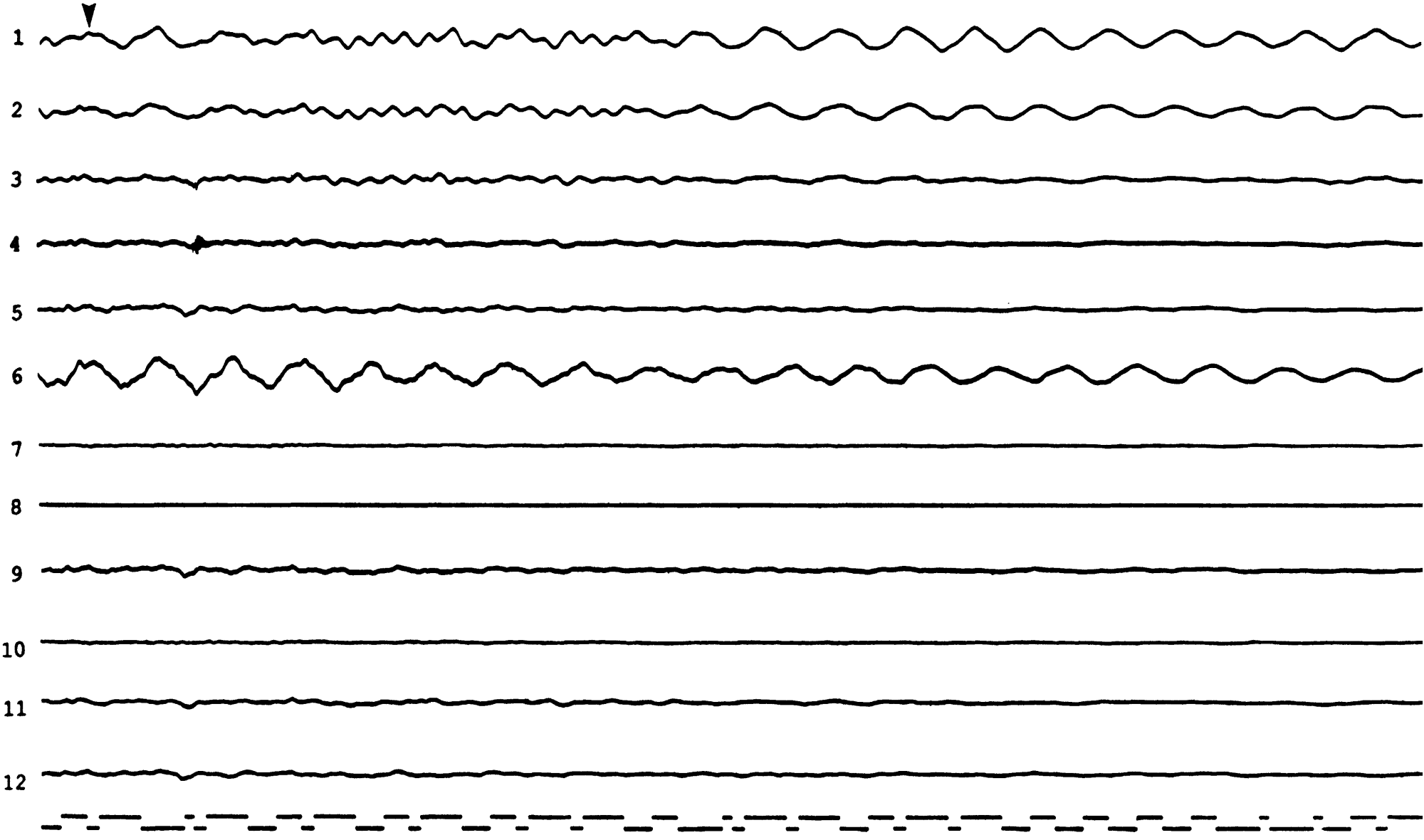
NATIONAL STRONG-MOTION PROGRAM	CHANNEL	DIRECTION	LOCATION	SENSITIVITY	MAX ACCELERATION
Station No. 5239	1	090°	9th Level, (Roof) Bldg. Center	1.75 cm/g	0.12 g
33.917N, 118.066W	2	090°	6th Level, Bldg. Center	1.83 cm/g	0.08
Norwalk - 12440 Imperial Hwy	3	090°	3rd Level, Bldg. Center	1.80 cm/g	0.04
CRA-1 No. 127 Recorder	4	090°	2nd Level, Bldg. Center	1.72 cm/g	0.06
(USGS/BECH)	5	180	1st Level (Bsmt) East End	1.94 cm/g	0.06
EARTHQUAKE OF	6	180°	6th Level, Bldg. West-Center	1.77 cm/g	0.22
28 June 1992 1158 G.m.t.	7	Up	1st Level (Bsmt), Bldg. Center	1.92 cm/g	0.02
Film speed = 1 cm/sec	8	090°	1st Level, (Bsmt), Bldg. Center	1.88 cm/g	----
	9	180°	1st Level, (Bsmt), Bldg. Center	1.93 cm/g	0.06
	10	Up	Downhole (30'), Bldg. Center	1.85 cm/g	0.02
	11	090°	Downhole (30') Bldg. Center	1.91 cm/g	0.05
	12	180°	Downhole (30') Bldg. Center	1.90 cm/g	0.04

(See Accelerogram on next page)

Norwalk - 12440 Imperial Hwy



Norwalk,
12440 Imperial Hwy. - *continued*

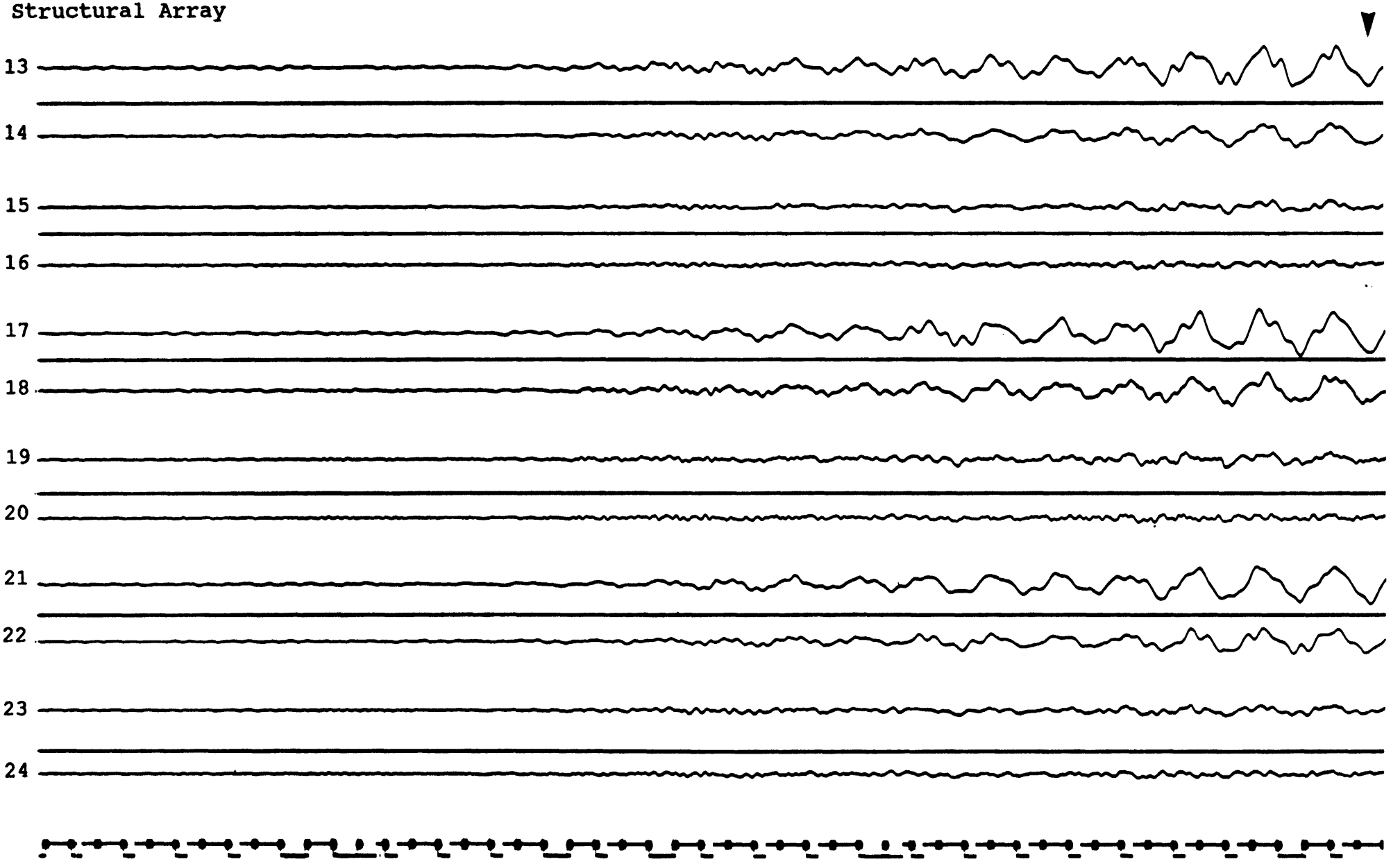


NATIONAL STRONG-MOTION PROGRAM	CHANNEL	DIRECTION	LOCATION	SENSITIVITY	MAX ACCELERATION
Station No. 5239	13	180°	9th Level, roof East end	1.95 cm/g	0.22 g
33.92N, 118.07W	14	180°	6th Level, East end	1.87 cm/g	0.16
Norwalk, 12440 Imperial Hwy	15	180°	3rd Level, East end	1.98 cm/g	0.10
CRA-1 No. 128 Recorder	16	180°	2nd Level, East end	1.87 cm/g	0.07
(USGS/BECH)	17	180°	9th Level, Roof Bldg. Center	1.88 cm/g	0.24
EARTHQUAKE OF	18	180°	6th Level, Bldg. Center	1.92 cm/g	0.21
28 June 1992 1158 G.m.t.	19	180°	3rd Level, Bldg. Center	1.91 cm/g	0.12
Film speed = 1 cm/sec	20	180°	2nd Level, Bldg. Center	1.85 cm/g	0.06
	21	180°	9th Level, Roof West end	1.86 cm/g	0.20
	22	180°	6th Level, West end	1.84 cm/g	0.14
	23	180°	3rd Level, West end	1.91 cm/g	0.08
	24	180°	2nd Level, West end	1.85 cm/g	0.06

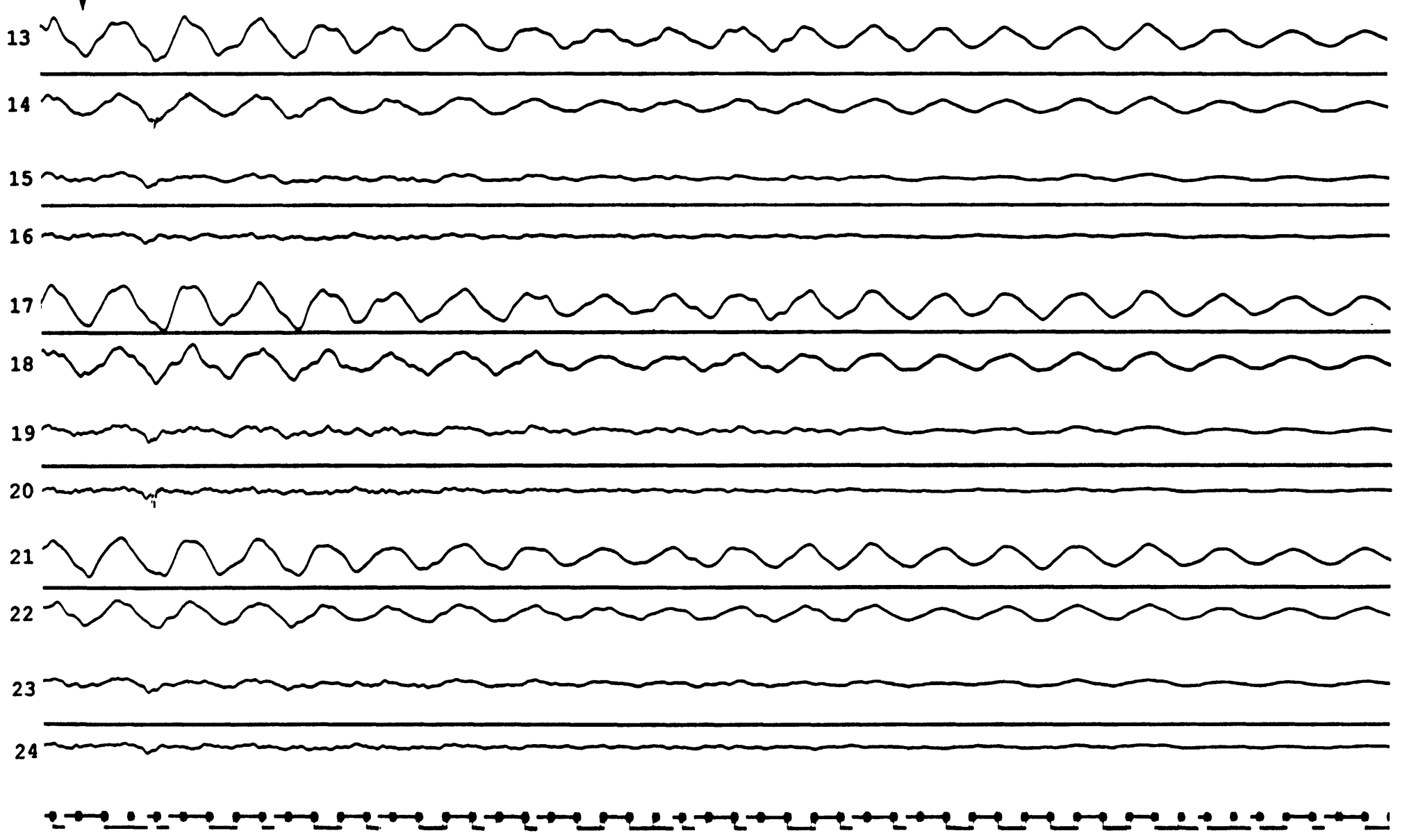
(See Accelerogram on next page)

Norwalk,
12440 Imperial Hwy.

Structural Array

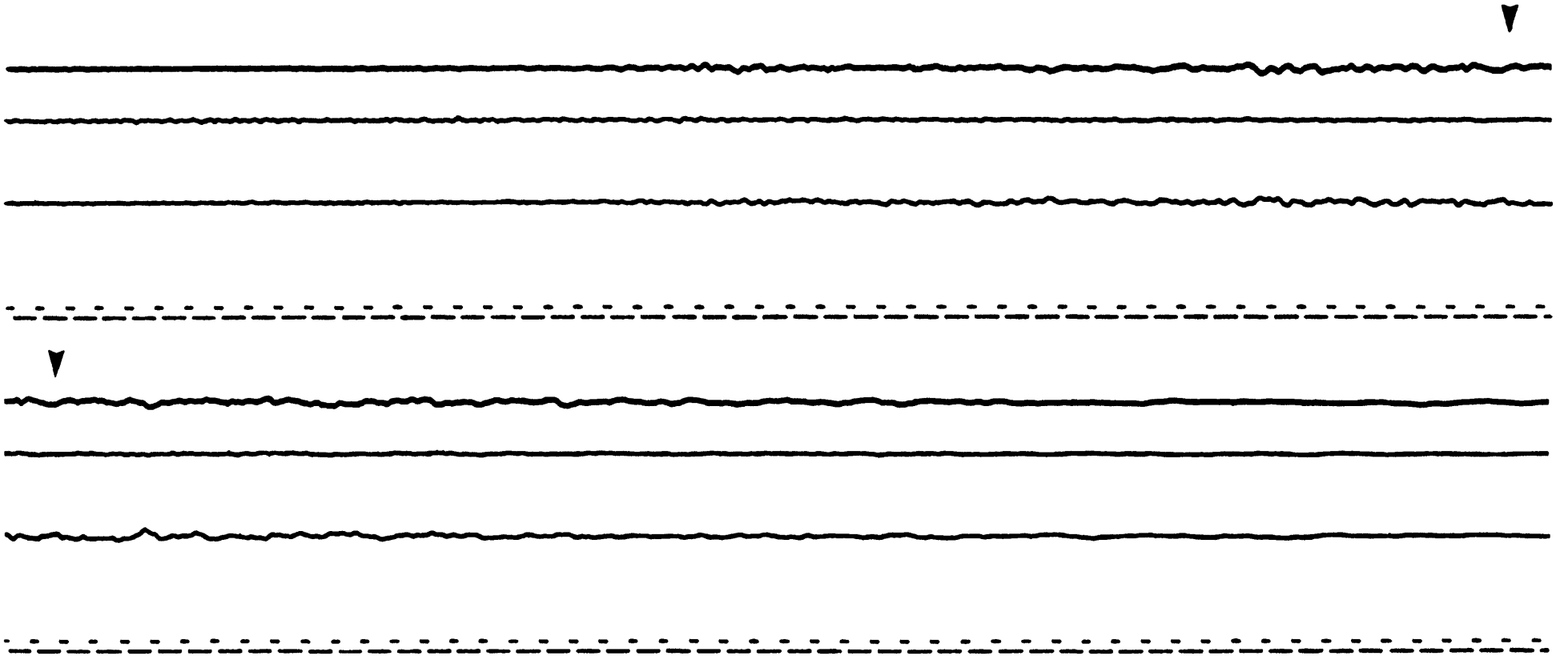


Norwalk,
12440 Imperial Hwy. - *continued*



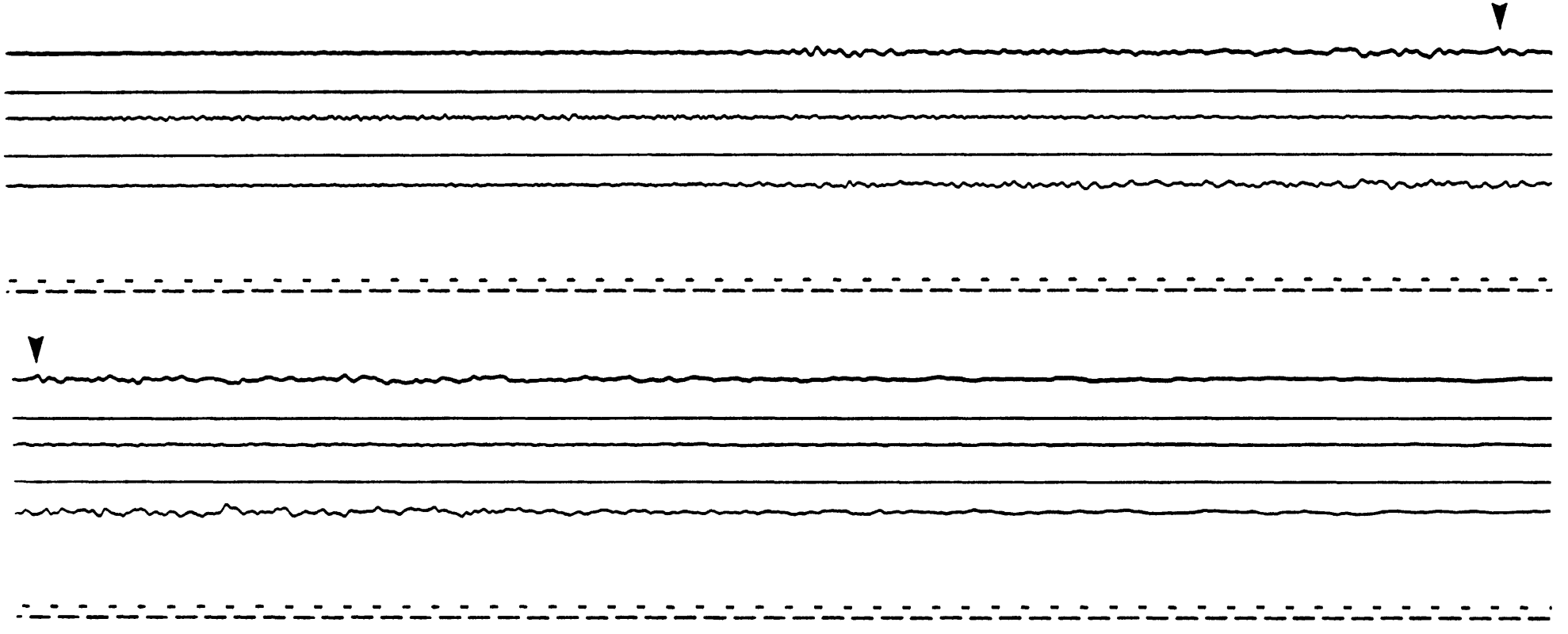
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5239 33.917N, 118.065W	090°	Sens. = 1.80 cm/g Freq. = 26.1 Hz	0.07 g
Norwalk - 12440 Imperial Highway		Damp. = 0.59 crit	
SMA-1 No. 824 (USGS/BECH) N Gnd Site	Up	Sens. = 1.82 cm/g Freq. = 25.4 Hz	0.08
Earthquake of		Damp. = 0.61 crit	
28 June 1992 - 1158 G.m.t.	360°	Sens. = 1.80 cm/g Freq. = 26.0 Hz Damp. = 0.59 crit	0.07

Film speed = 1 cm/sec



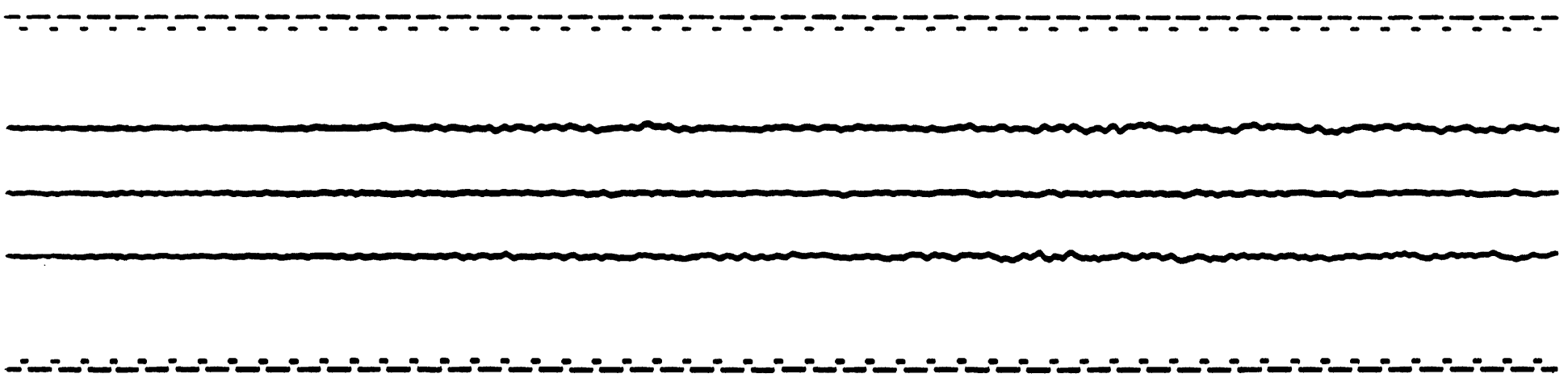
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 634 33.915N, 118.067W	090°	Sens. = 1.83 cm/g Freq. = 26.0 Hz	0.06 g
Norwalk - 12400 Imperial Highway		Damp. = 0.6 crit	
SMA-1 No. 823 (USGS/BECH) S Gnd Site	Up	Sens. = 1.76 cm/g Freq. = 25.9 Hz	0.05
Earthquake of		Damp. = 0.6 crit	
28 June 1992 - 1158 G.m.t.	360°	Sens. = 1.88 cm/g Freq. = 25.9 Hz Damp. = 0.6 crit	0.05

Film speed = 1 cm/sec



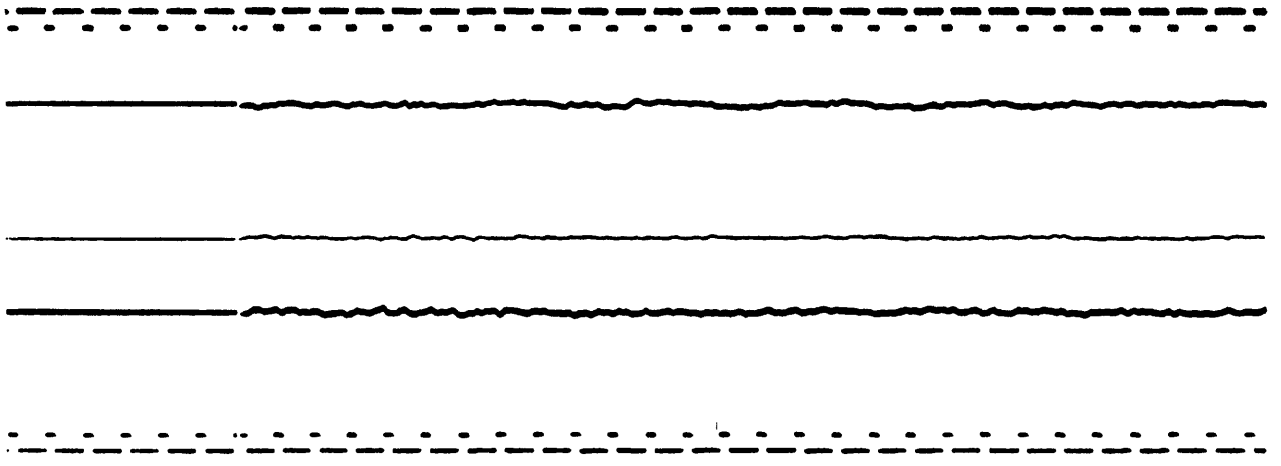
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 709 34.050N, 118.114W	114°	Sens. = 2.00 cm/g Freq. = 25.6 Hz	0.04 g
Garvey Reservoir - Crest		Damp. = 0.62 crit	
SMA No. 6698 (MWD)	Up	Sens. = 2.00 cm/g Freq. = 25.2 Hz	0.02
Earthquake of		Damp. = 0.62 crit	
28 June 1992 - 1158 G.m.t.	024°	Sens. = 1.76 cm/g Freq. = 26.2 Hz Damp. = 0.55 crit	0.05

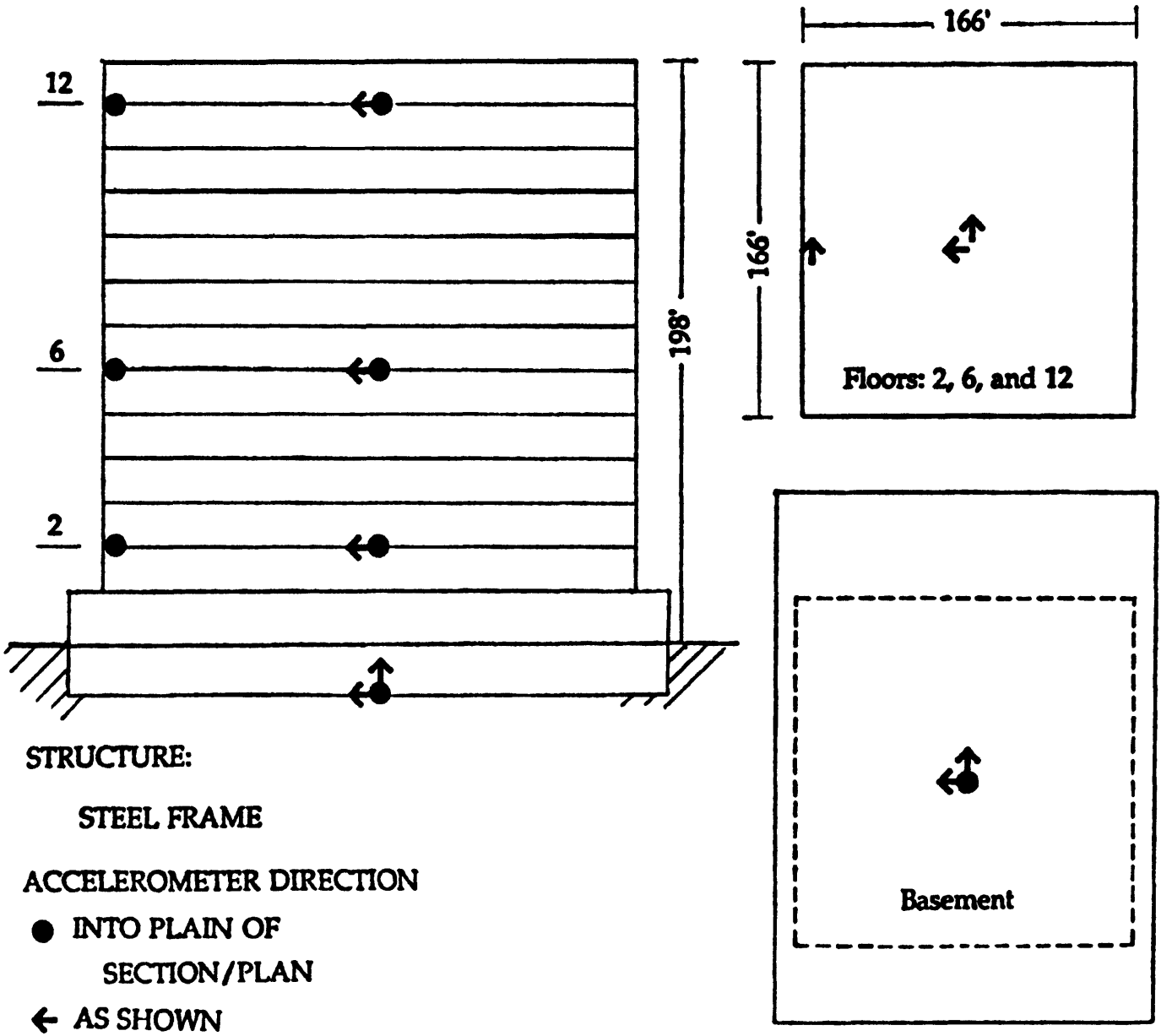
Film speed = 1 cm/sec



NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 709 34.048N, 118.111W	114°	Sens. = 1.84 cm/g Freq. = 25.5 Hz	0.03 g
Garvey Reservoir - Abutment bldg		Damp. = 0.60 crit	
SMA-1 No. 1055 (MWD)	Up	Sens. = 1.90 cm/g Freq. = 25.1 Hz	0.02
Earthquake of		Damp. = 0.60 crit	
28 June 1992 - 1158 G.m.t.	024°	Sens. = 1.90 cm/g Freq. = 25.8 Hz Damp. = 0.57 crit	0.03

Film speed = 1 cm/sec

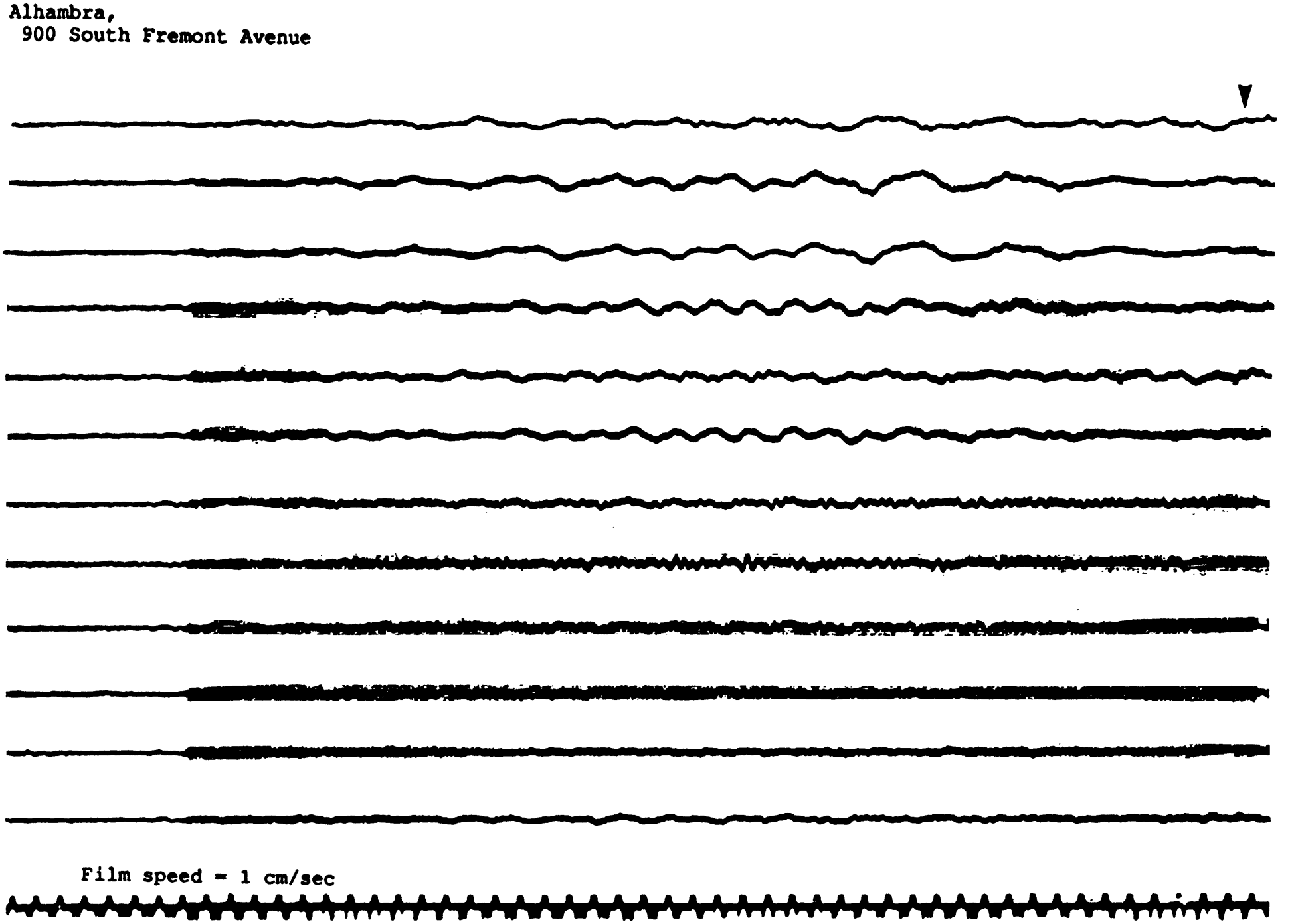



166'
12
6
2
198'
166'
Floors: 2, 6, and 12
Basement
STRUCTURE:
STEEL FRAME
ACCELEROMETER DIRECTION
● INTO PLAIN OF SECTION/PLAN
← AS SHOWN

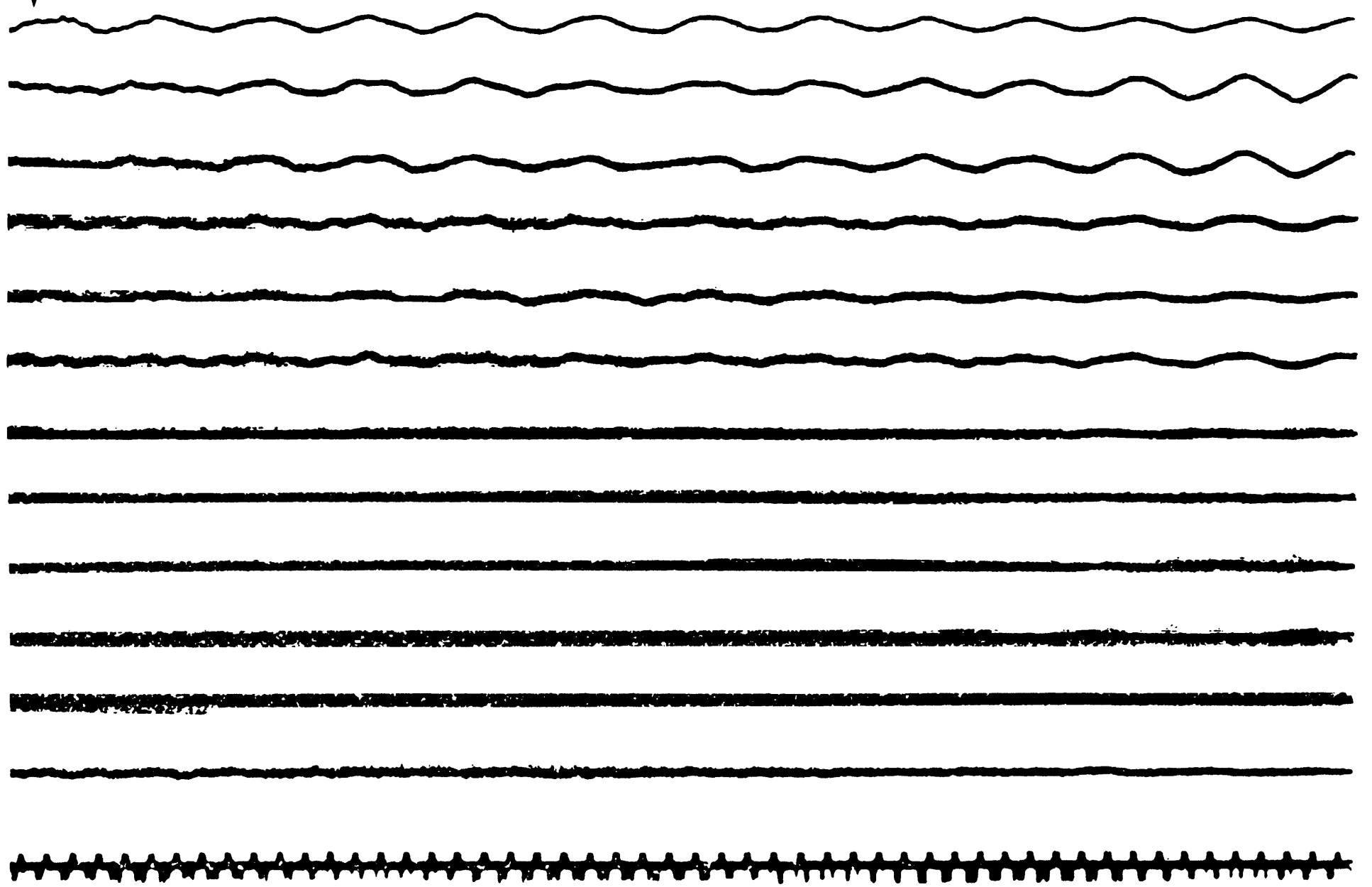
ALHAMBRA

NATIONAL STRONG-MOTION PROGRAM	CHANNEL	DIRECTION	LOCATION	SENSITIVITY	MAX ACCELERATION
Station No. 482	1	360	12th Floor, Center	1.79 cm/g	0.09 g
34.085N, 118.149W	2	090	12th Floor, Center	1.88 cm/g	0.13
Alhambra, 900 South Fremont Avenue	3	090	12th Floor, No. end	1.76 cm/g	0.12
	4	090	6th Floor, Center	1.81 cm/g	0.07
CRA-1 No. 316 (USGS)	5	360	6th Floor, Center	1.72 cm/g	0.06
EARTHQUAKE OF	6	090	6th Floor, No. end	1.84 cm/g	0.06
28 June 1992 1158 G.m.t.	7	090	2nd Floor, Center	1.76 cm/g	0.05
	8	360	2nd Floor, Center	1.77 cm/g	0.07
	9	090	2nd Floor, No. end	1.73 cm/g	0.03
	10	360	Basement, Center	1.83 cm/g	0.03
Film speed = 1 cm/sec	11	Up	Basement, Center	1.84 cm/g	0.03
	12	090	Basement, Center	1.83 cm/g	0.04

(See Accelerogram on next page)

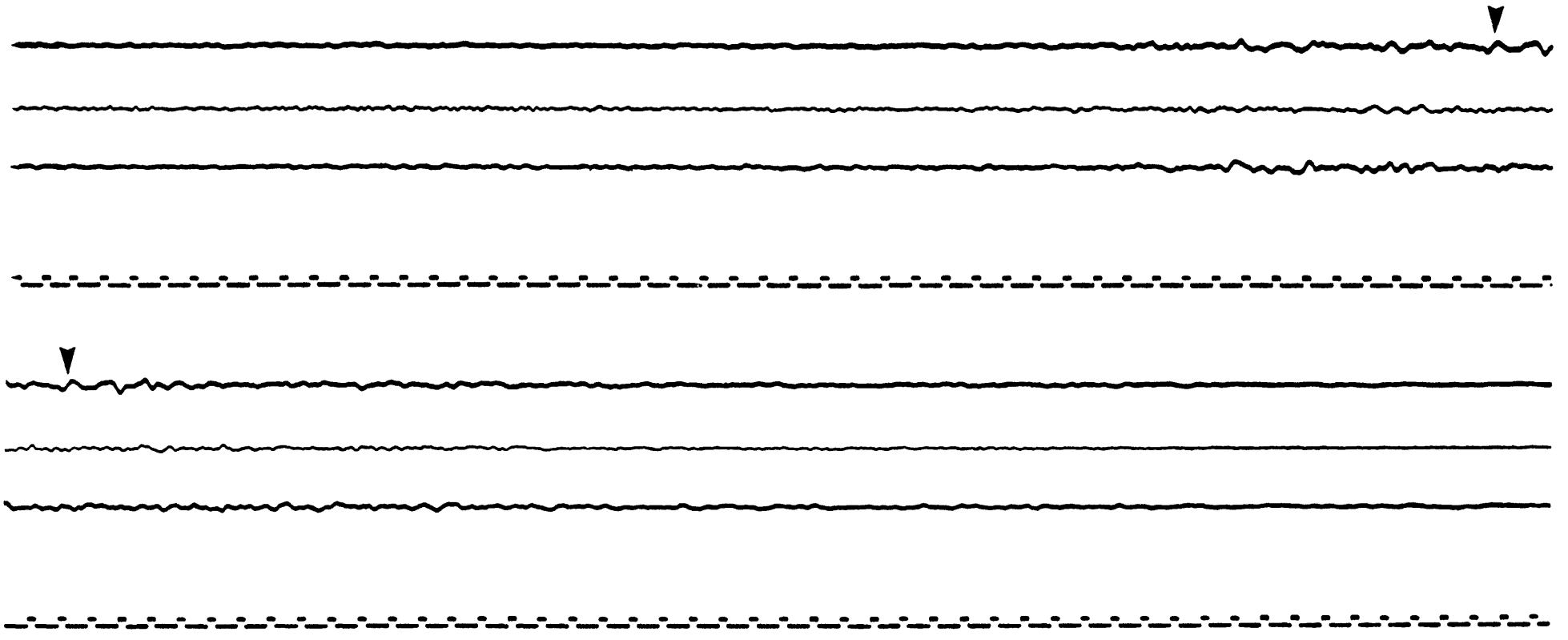

Alhambra,
900 South Fremont Avenue
1
2
3
4
5
6
7
8
9
10
11
12
Film speed = 1 cm/sec

Alhambra,
900 South Fremont Avenue - *continued*



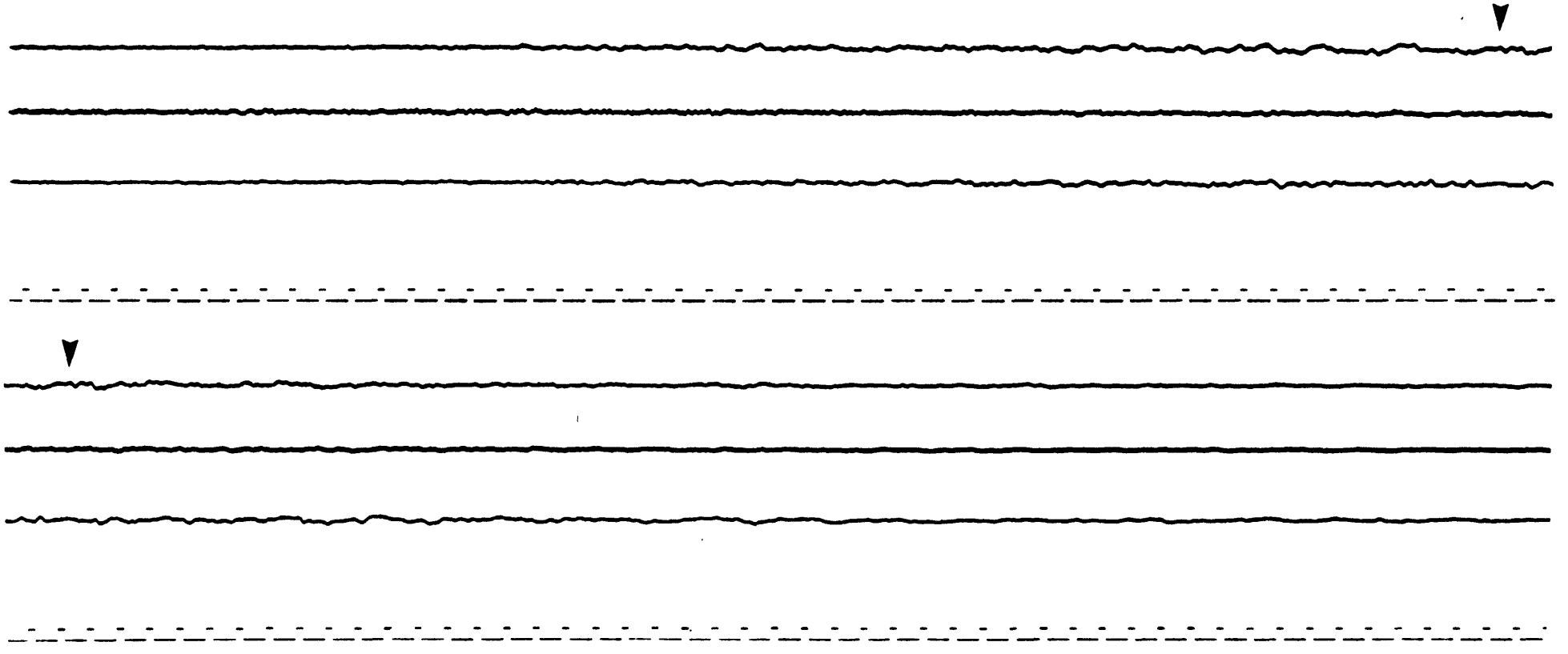
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 262 34.58N, 118.11W	120°	Sens. = 1.76 cm/g Freq. = 26.1 Hz	0.07 g
Palmdale Fire Station		Damp. = 0.60 crit	
SMA No. 1458 (USGS)	Up	Sens. = 1.90 cm/g Freq. = 24.9 Hz	0.03
Earthquake of		Damp. = 0.60 crit	
28 June 1992 - 1158 G.m.t.	030°	Sens. = 1.74 cm/g Freq. = 25.8 Hz Damp. = 0.60 crit	0.06

Film speed = 1 cm/sec



NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5296 34.149N, 118.172W	360°	Sens. = 1.79 cm/g Freq. = 26.6 Hz	0.04 g
Pasadena, 535 S. Wilson Ave.		Damp. = 0.6 crit	
SMA No. 553 (USGS)	Up	Sens. = 1.78 cm/g Freq. = 25.9 Hz	0.02
Earthquake of		Damp. = 0.6 crit	
28 June 1992 - 1158 G.m.t.	270°	Sens. = 1.80 cm/g Freq. = 26.1 Hz Damp. = 0.6 crit	0.03

Film speed = 1 cm/sec



NATIONAL STRONG-MOTION PROGRAM

PASADENA,
525 S. WILSON AVENUE [USGS]
SSA-1 Digital Accelerograph

MAX ACCELERATION

360 0.04 g

UP 0.02 g

270 Inoperative 0.00 g

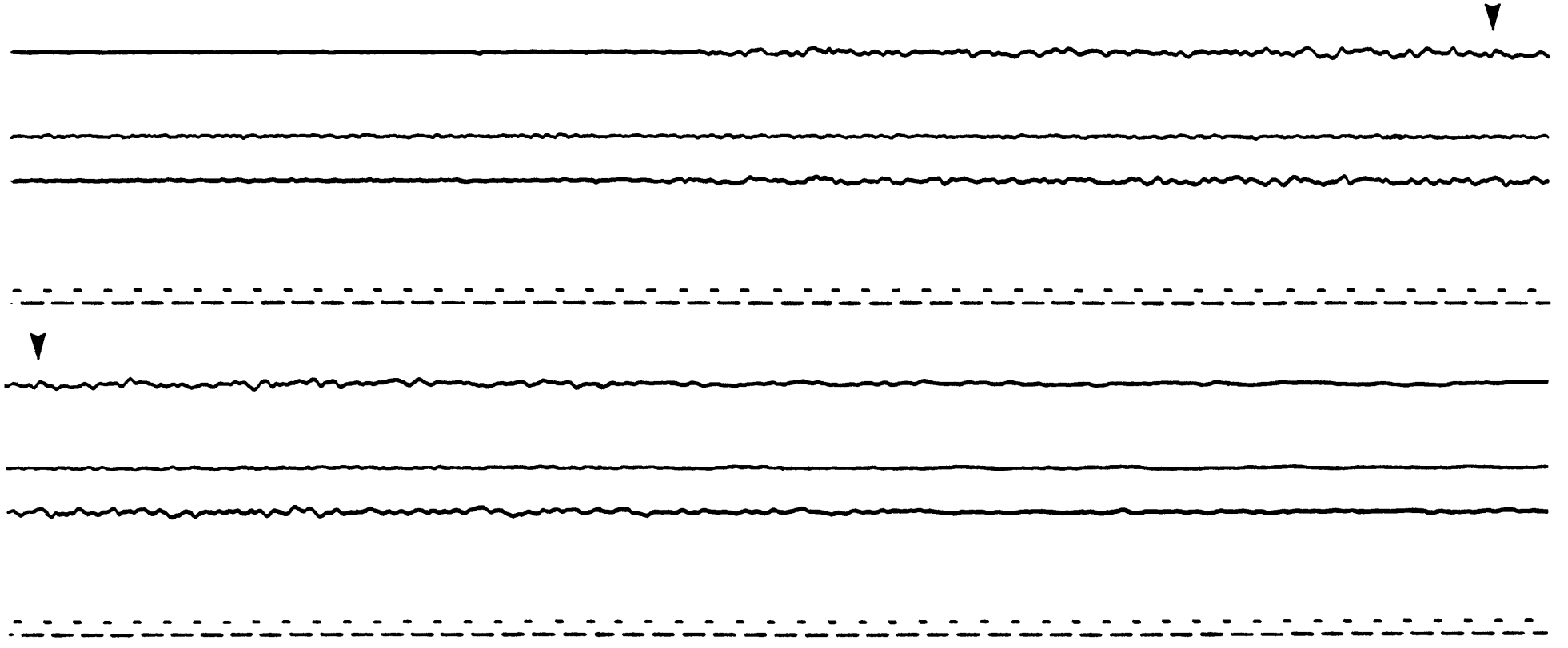
CONTINUED

0 2 4 6 8 10 12 14 16 18 20

Seconds

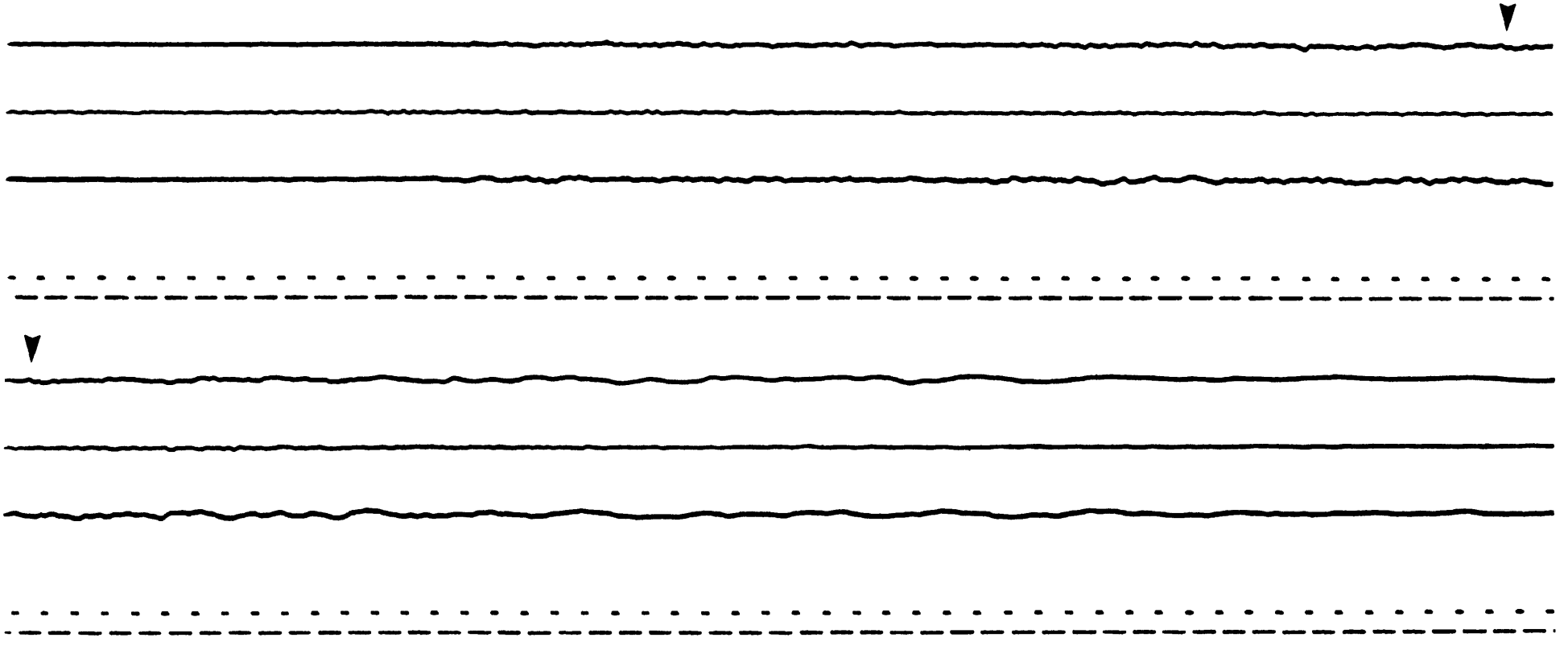
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5129 33.996N, 118.162W	360°	Sens. = 1.80 cm/g Freq. = 25.6 Hz	0.06 g
Bell - Los Angeles Bulk Mail Facility		Damp. = 0.60 crit	
SMA-1 No. 1295 (USGS) Ground level	Up	Sens. = 1.86 cm/g Freq. = 25.6 Hz	0.02
Earthquake of		Damp. = 0.60 crit	
28 June 1992 - 1158 G.m.t.	270°	Sens. = 1.88 cm/g Freq. = 26.3 Hz Damp. = 0.60 crit	0.05

Film speed = 1 cm/sec



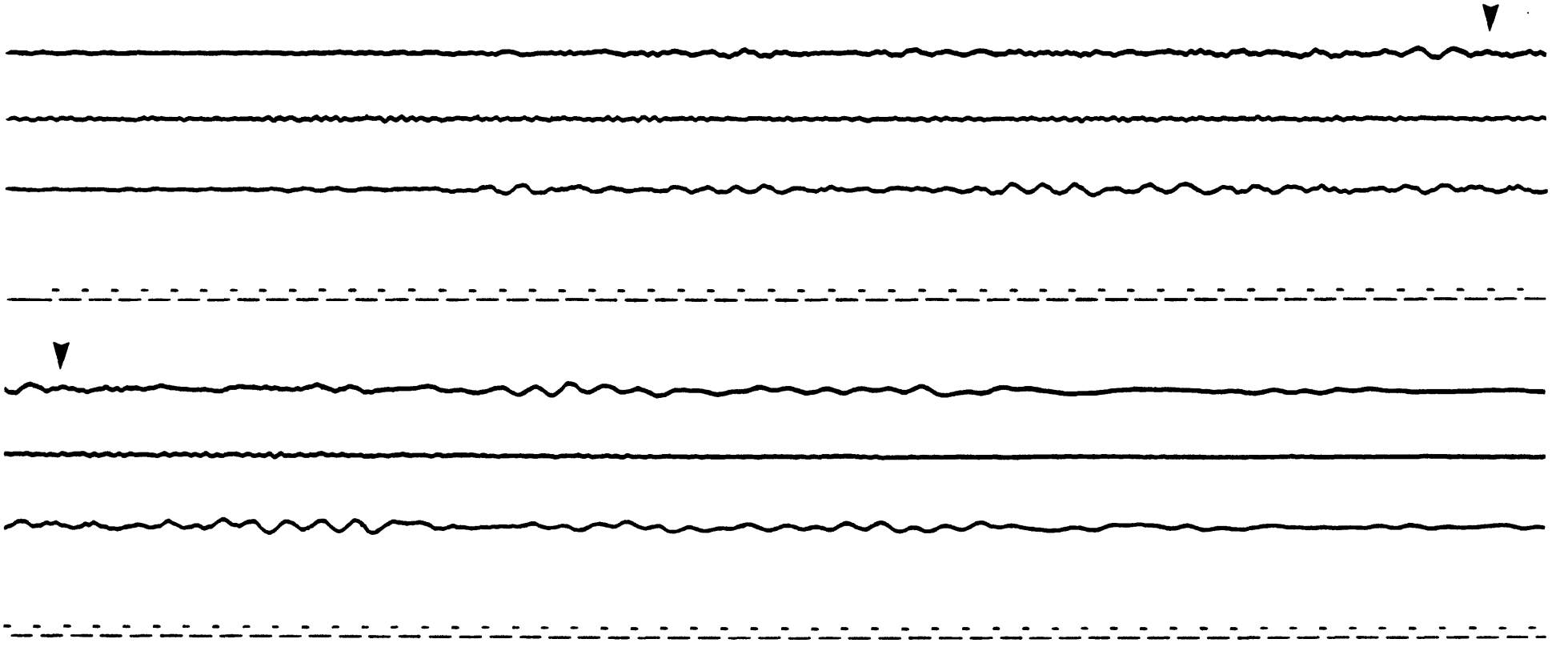
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5106 33.778N, 118.118W	360°	Sens. = 1.83 cm/g Freq. = 25.6 Hz	0.03 g
Long Beach VA Hospital - Basement		Damp. = 0.55 crit	
SMA-1 No. 845 (VA)	Up	Sens. = 1.95 cm/g Freq. = 26.3 Hz	0.02
Earthquake of		Damp. = 0.57 crit	
28 June 1992 - 1158 G.m.t.	270°	Sens. = 2.00 cm/g Freq. = 25.0 Hz Damp. = 0.59 crit	0.03

Film speed = 1 cm/sec



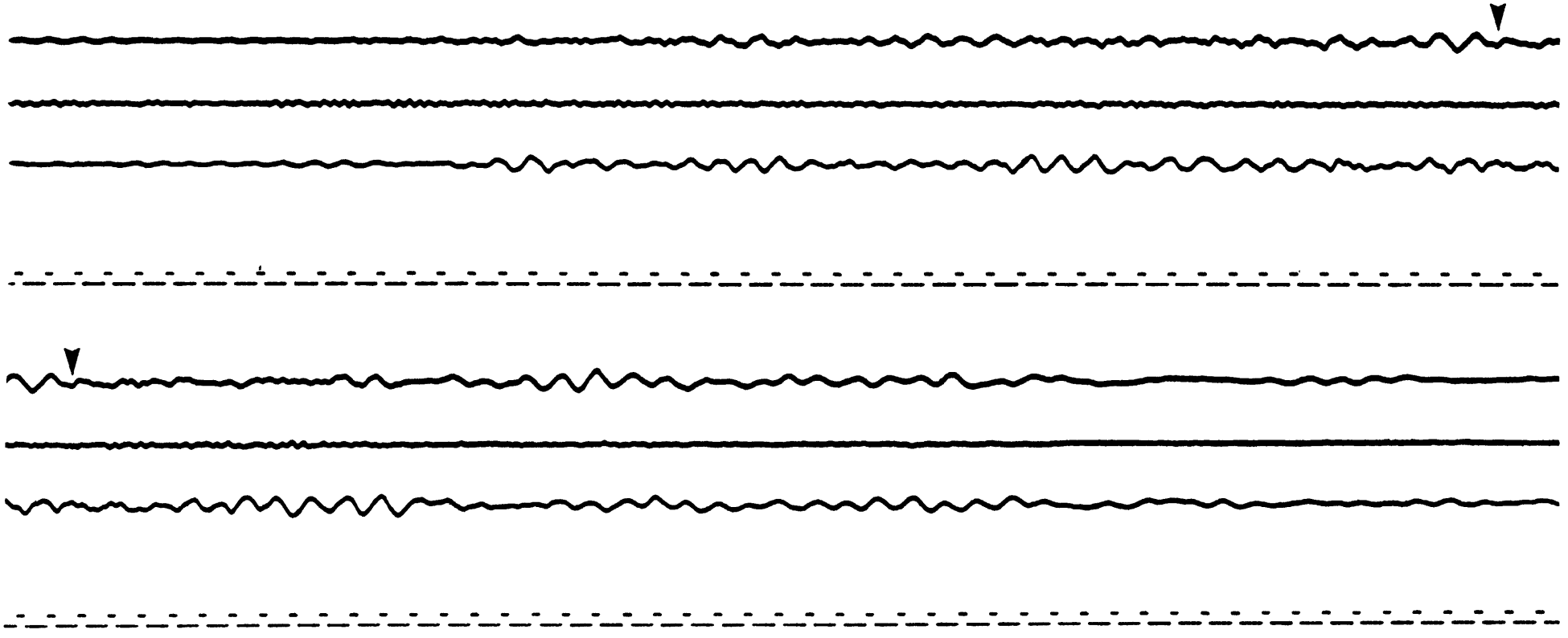
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5106 33.778N, 118.118W	360°	Sens. = 1.78 cm/g Freq. = 26.3 Hz	0.08 g
Long Beach VA Hospital - 6th Floor		Damp. = 0.57 crit	
SMA-1 No. 809 (VA)	Up	Sens. = 1.95 cm/g Freq. = 25.6 Hz	0.02
Earthquake of		Damp. = 0.57 crit	
28 June 1992 - 1158 G.m.t.	270°	Sens. = 1.85 cm/g Freq. = 25.6 Hz Damp. = 0.59 crit	0.07

Film speed = 1 cm/sec



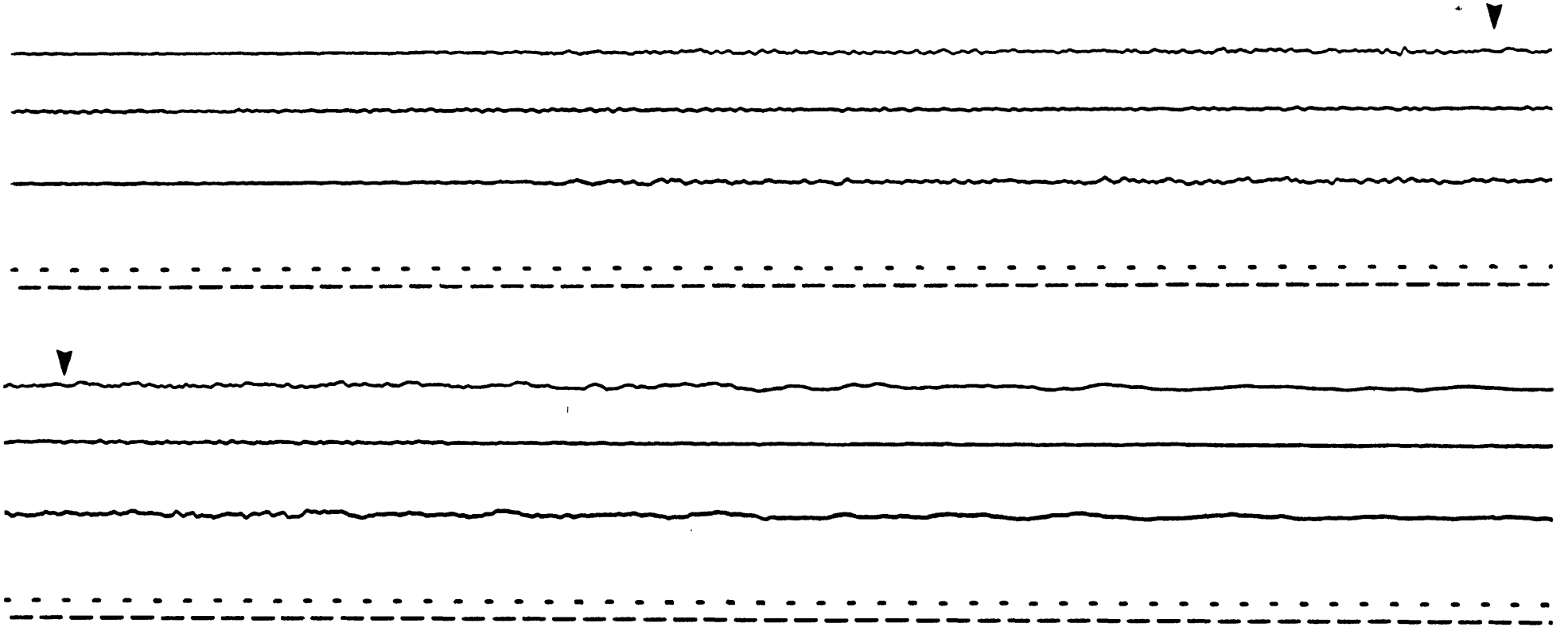
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5106 33.778N, 118.118W	360°	Sens. = 1.88 cm/g Freq. = 25.6 Hz	0.12 g
Long Beach VA Hospital - 11th Floor		Damp. = 0.50 crit	
SMA-1 No. 749 (VA)	Up	Sens. = 1.81 cm/g Freq. = 26.3 Hz	0.03
Earthquake of		Damp. = 0.53 crit	
28 June 1992 - 1158 G.m.t.	270°	Sens. = 1.77 cm/g Freq. = 27.0 Hz Damp. = 0.50 crit	0.12

Film speed = 1 cm/sec



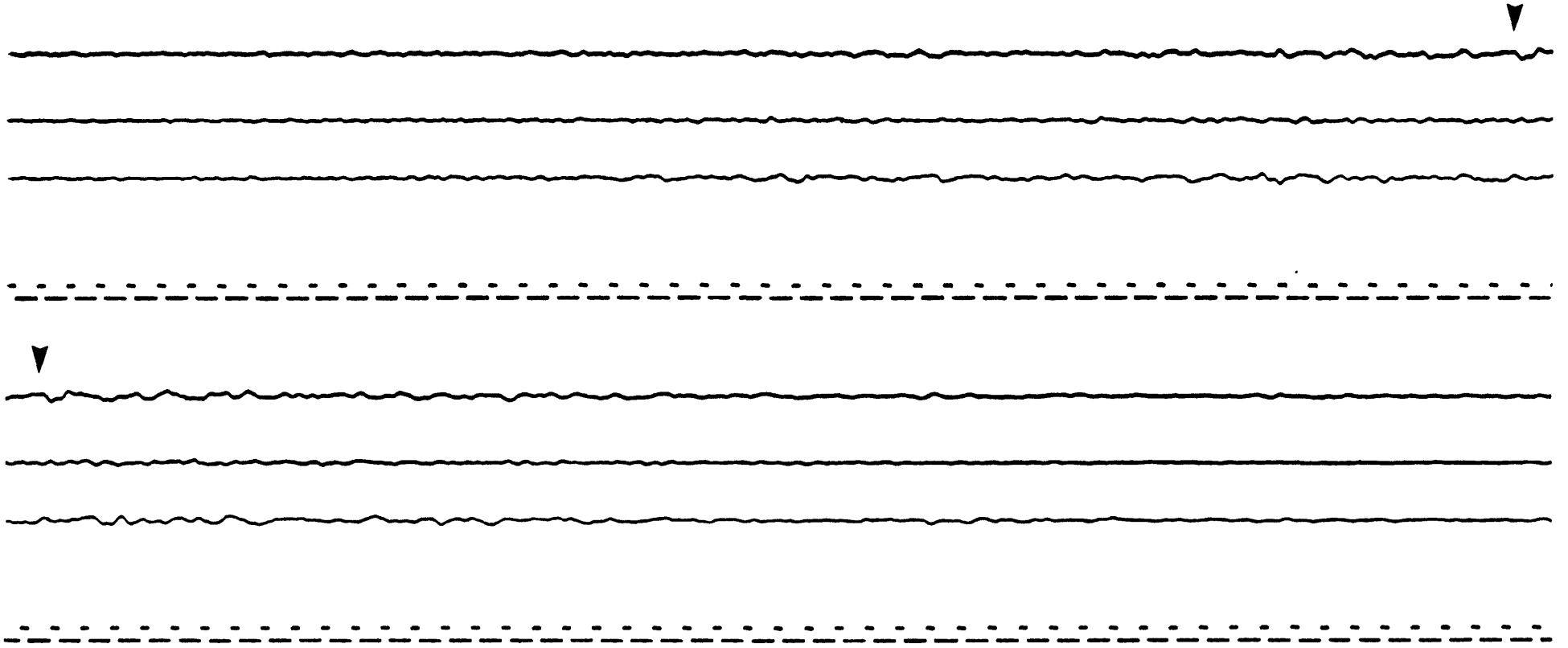
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5106 33.777N, 118.115W	360°	Sens. = 1.90 cm/g Freq. = 25.4 Hz	0.03 g
Long Beach VA Hospital - Ground Site		Damp. = 0.6 crit	
SMA No. 1731 (USGS)	Up	Sens. = 1.77 cm/g Freq. = 25.9 Hz	0.02
Earthquake of		Damp. = 0.6 crit	
28 June 1992 - 1158 G.m.t.	270°	Sens. = 1.76 cm/g Freq. = 26.2 Hz Damp. = 0.6 crit	0.03

Film speed = 1 cm/sec



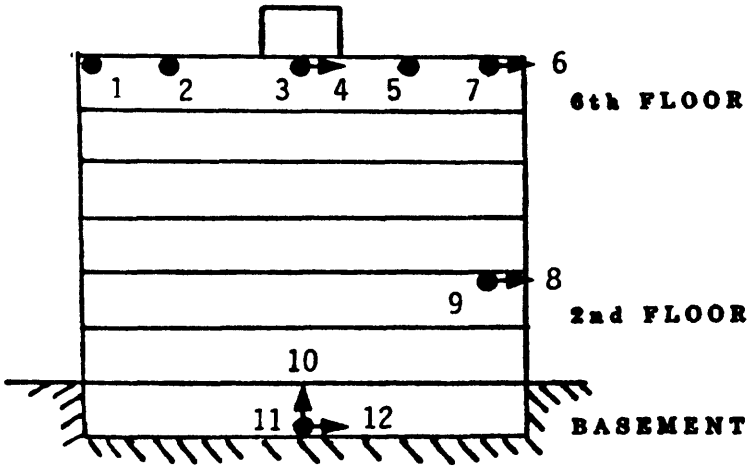
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5291 34.088N, 118.201W	360°	Sens. = 1.78 cm/g Freq. = 25.8 Hz	0.06 g
Los Angeles, 981 Montecito Dr.		Damp. = 0.6 crit	
SMA No. 1418 (USGS)	Up	Sens. = 1.76 cm/g Freq. = 26.0 Hz	0.03
Earthquake of		Damp. = 0.6 crit	
28 June 1992 - 1158 G.m.t.	270°	Sens. = 1.79 cm/g Freq. = 26.2 Hz Damp. = 0.6 crit	0.05

Film speed = 1 cm/sec

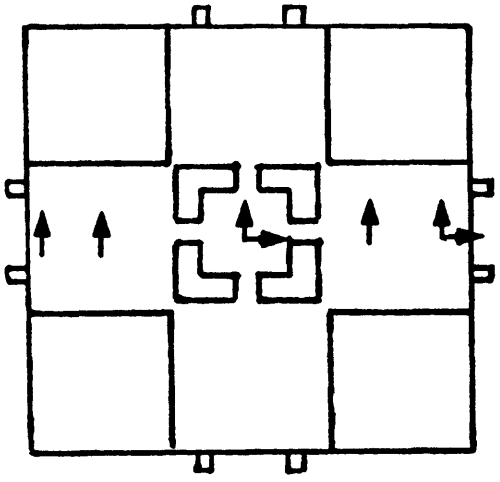


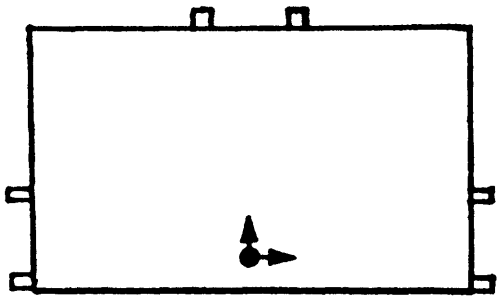
VETERANS ADMINISTRATION HOSPITAL
SAN DIEGO, CALIFORNIA

STRONG-MOTION INSTRUMENTATION



WEST-EAST SECTION


ROOF PLAN


PARTIAL BASEMENT PLAN

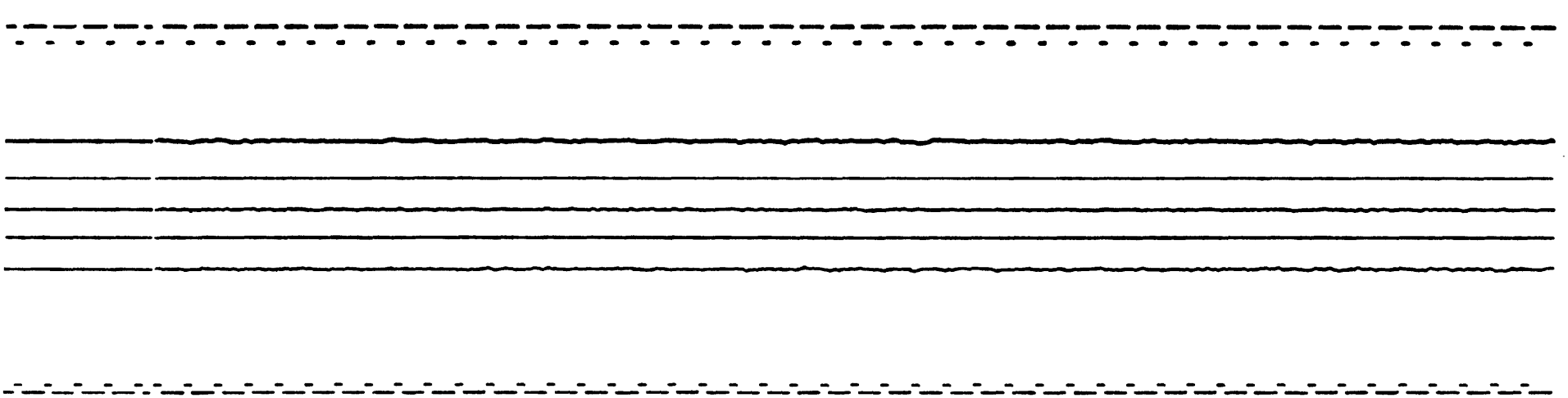
ACCELEROMETER DIRECTIONS

● INTO PLANE OF SECTION/PLAN

→ AS SHOWN

NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5105 32.87N, 117.23W	180°	Sens. = 1.83 cm/g Freq. = 25.4 Hz	0.01 g
San Diego VA Hospital - Basement		Damp. = 0.55 crit	
SMA-1 No. 603 (VA)	Up	Sens. = 1.85 cm/g Freq. = 25.5 Hz	0.02
Earthquake of		Damp. = 0.57 crit	
28 June 1992 - 1158 G.m.t.	090°	Sens. = 1.76 cm/g Freq. = 26.6 Hz Damp. = 0.57 crit	0.01

Film speed = 1 cm/sec

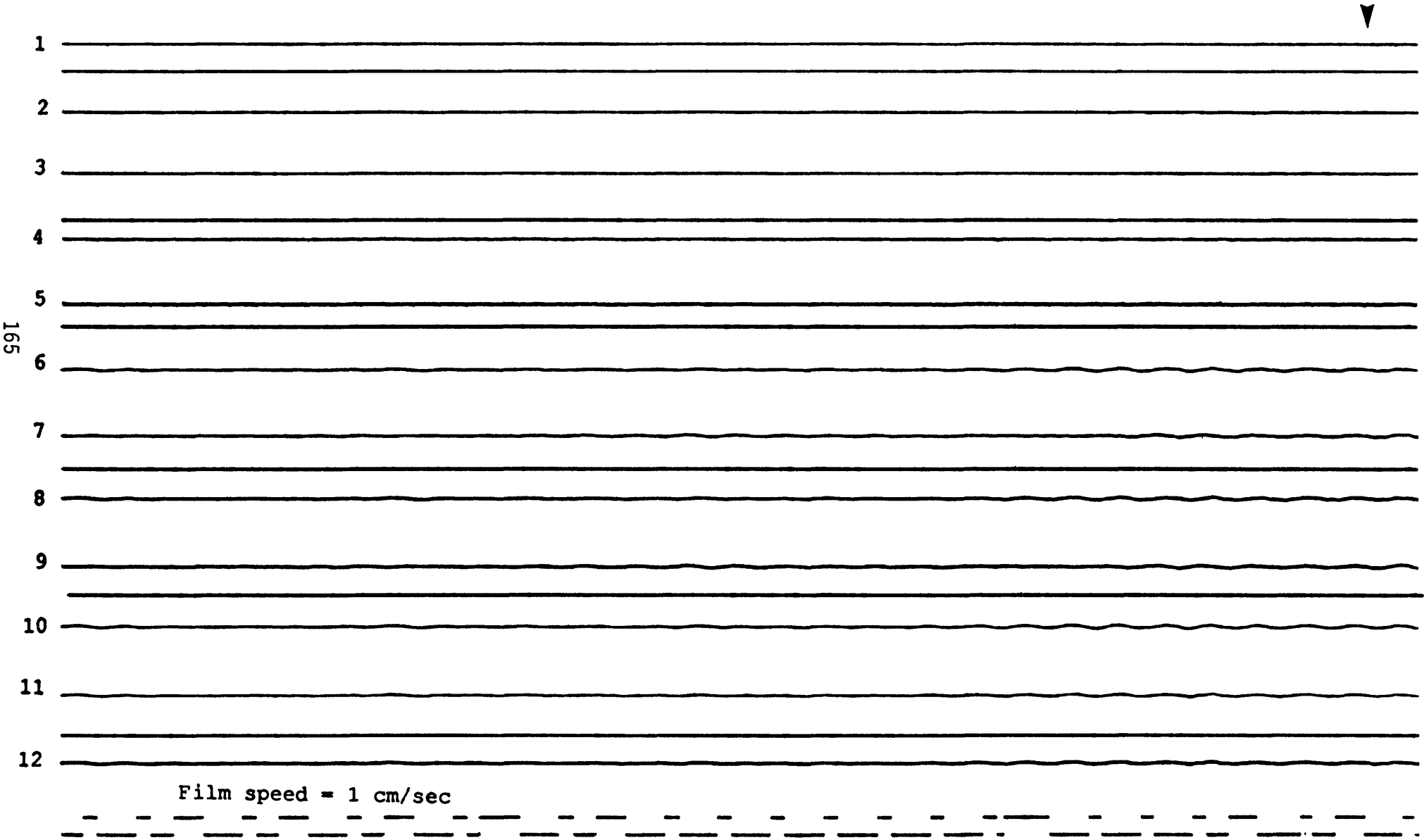


NATIONAL STRONG-MOTION PROGRAM	CHANNEL	DIRECTION	LOCATION	SENSITIVITY	MAX ACCELERATION
Station No. 5105	1	360°	7th Level, West End	1.68 cm/g	0.05 g
32.87N, 117.23W	2	360°	7th Level, West Central	1.81 cm/g	0.05
San Diego VA Hospital, Bldg 1	3	360°	7th Level, Center	1.85 cm/g	0.06
Structure Array	4	090°	7th Level, Center	1.85 cm/g	0.07
CRA-1 No. 305 (VA)	5	360°	7th Level, East Central	1.88 cm/g	0.06
Earthquake of	6	090°	7th Level, East End	1.83 cm/g	0.06
28 June 1992 - 1158 G.m.t.	7	360°	7th Level, East End	1.90 cm/g	0.06
	8	090°	3rd Level, East End	1.83 cm/g	0.03
	9	360°	3rd Level, East End	1.91 cm/g	0.03
	10	Up	Basement, Center	1.78 cm/g	0.02
Film speed = 1 cm/sec	11	360°	Basement, Center	1.87 cm/g	0.02
	12	090°	Basement, Center	1.83 cm/g	0.02

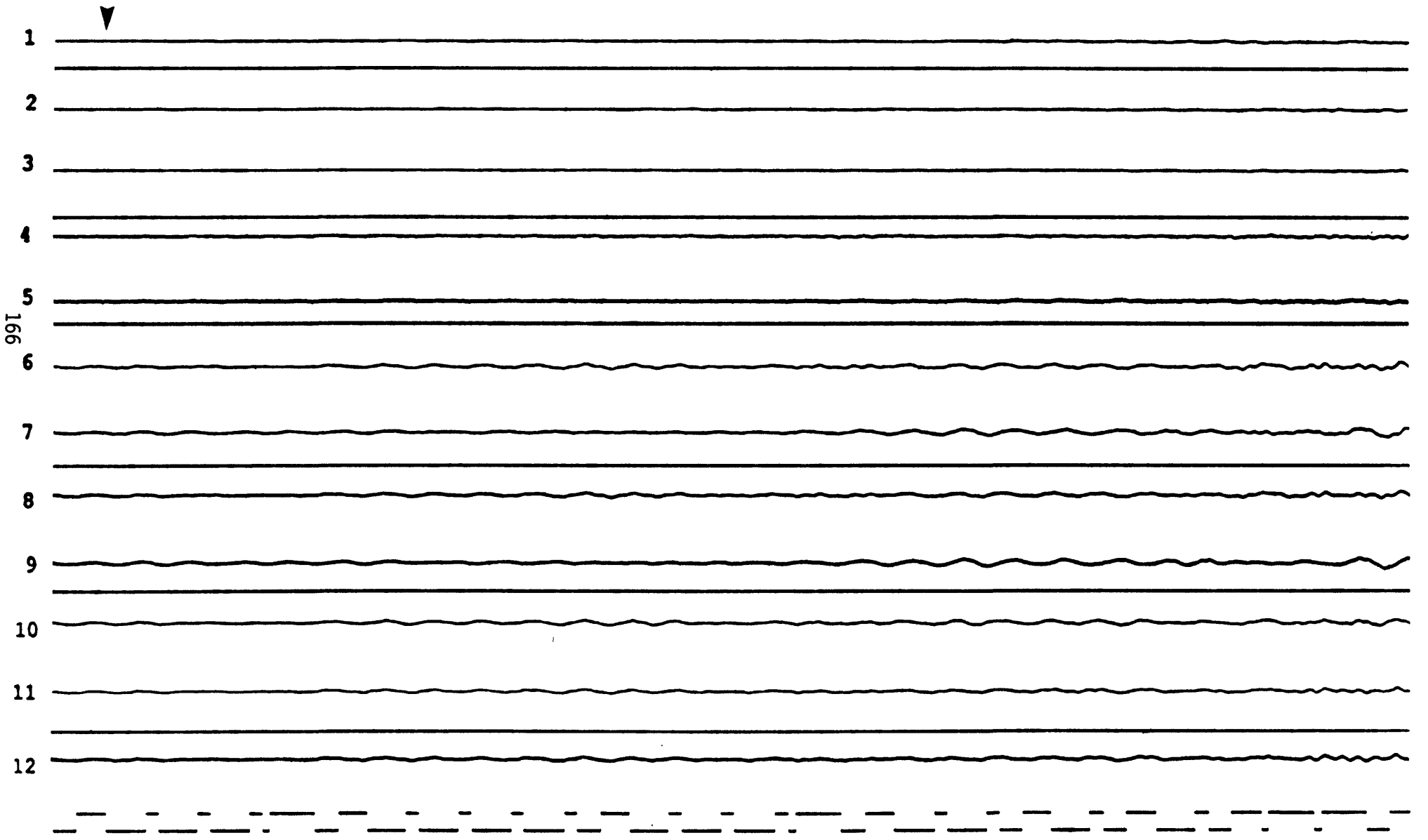
(See Accelerogram on next page)

San Diego VA Hospital, Bldg 1

Structure Array

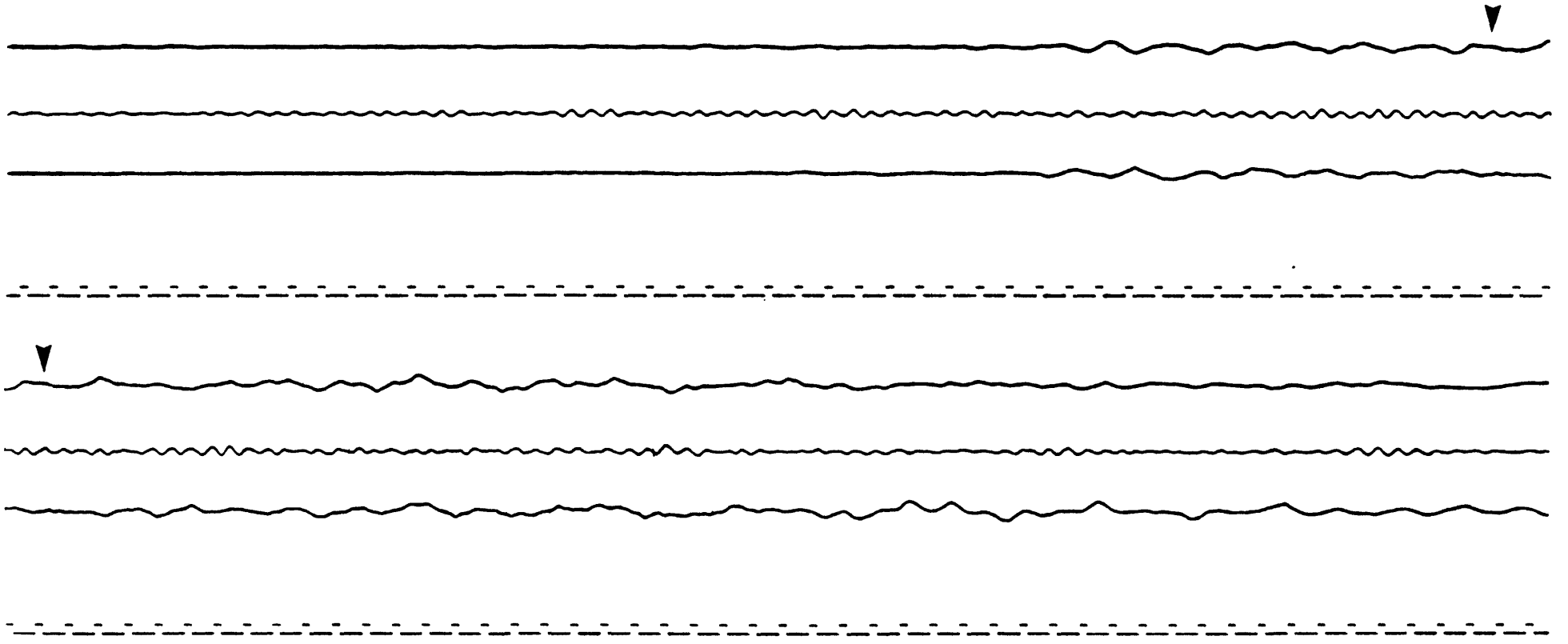


San Diego VA Hospital - *continued*



NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5293 34.052N, 118.237W	120°	Sens. = 1.93 cm/g Freq. = 25.9 Hz	0.08 g
Los Angeles - 255 E. Temple		Damp. = 0.62 crit	
SMA No. 6786 (Code) 21st Level	Up	Sens. = 2.00 cm/g Freq. = 25.3 Hz	0.05
EARTHQUAKE OF		Damp. = 0.56 crit	
28 June 1992 - 1158 G.m.t.	030°	Sens. = 1.80 cm/g Freq. = 26.2 Hz Damp. = 0.67 crit	0.10

Film speed = 1 cm/sec

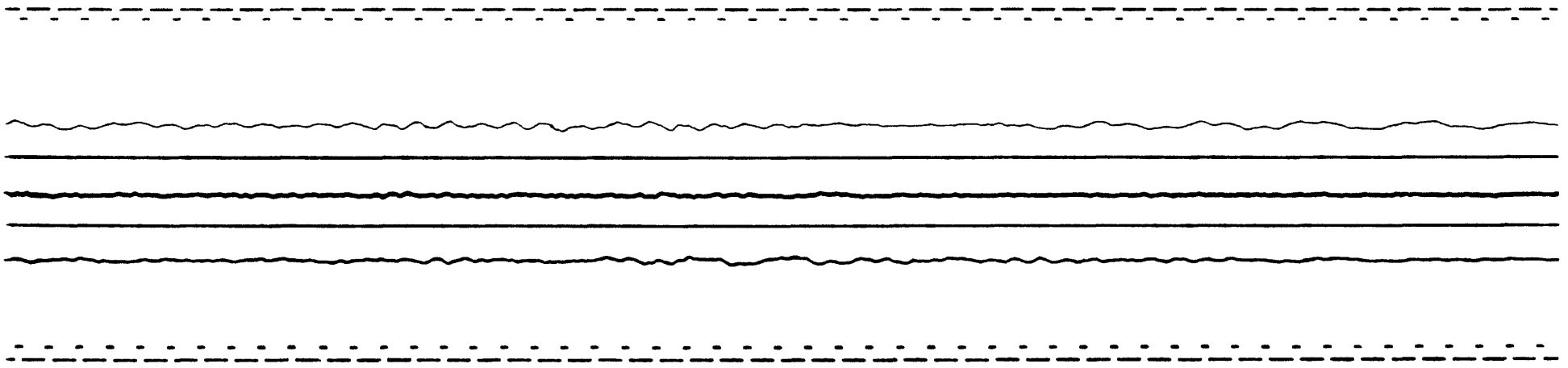


NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 872 34.067N, 118.248W	348°	Sens. = 1.95 cm/g Freq. = 25.5 Hz	0.03 g
Los Angeles - 1111 Sunset Blvd.		Damp. = 0.61 crit	
SMA No. 1074 (MWD) Basement	Up	Sens. = 1.88 cm/g Freq. = 25.5 Hz	0.02
Earthquake of		Damp. = 0.59 crit	
28 June 1992 - 1158 G.m.t.	258°	Sens. = 1.87 cm/g Freq. = 25.5 Hz Damp. = 0.61 crit	0.03

Film speed = 1 cm/sec

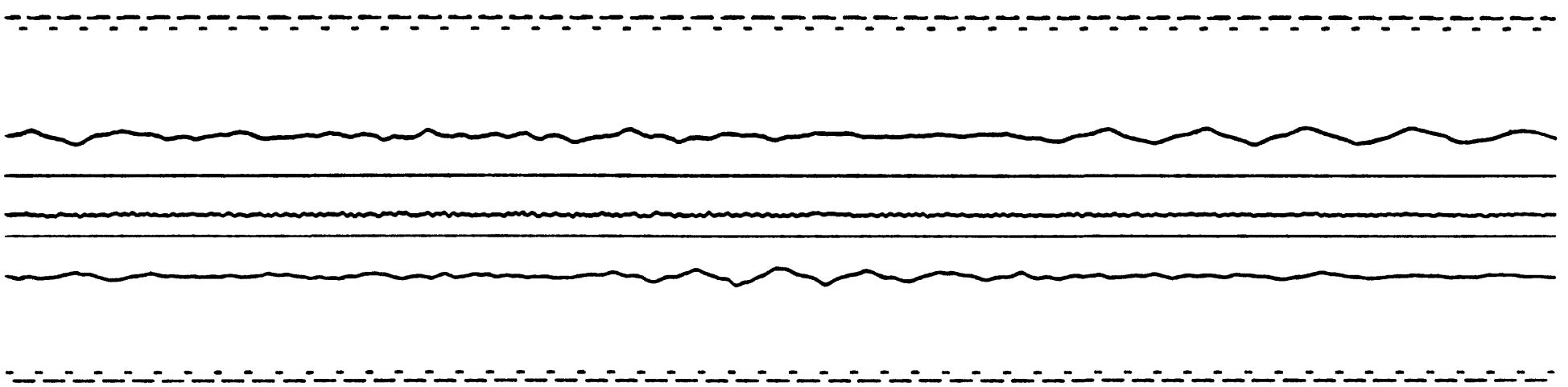
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 872 34.067N, 118.248W	348°	Sens. = 1.80 cm/g Freq. = 25.7 Hz	0.04 g
Los Angeles - 1111 Sunset Blvd.		Damp. = 0.59 crit	
SMA No. 1075 (MWD) 4th floor	Up	Sens. = 1.99 cm/g Freq. = 25.4 Hz	0.02
Earthquake of		Damp. = 0.57 crit	
28 June 1992 - 1158 G.m.t.	258°	Sens. = 1.80 cm/g Freq. = 25.5 Hz Damp. = 0.57 crit	0.05

Film speed = 1 cm/sec



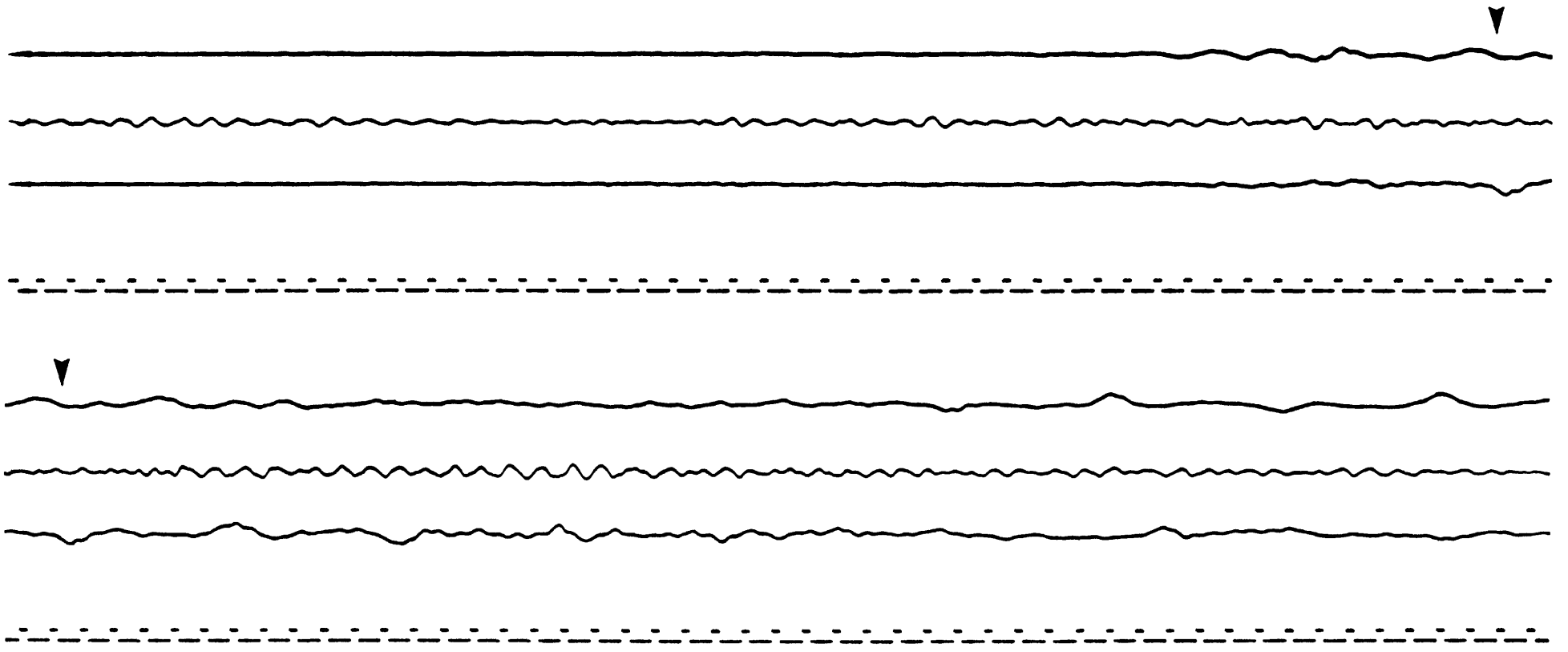
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 872 34.067N, 118.248W	348°	Sens. = 1.90 cm/g Freq. = 25.1 Hz	0.09g
Los Angeles - 1111 Sunset Blvd.		Damp. = 0.59 crit	
SMA No. 1076 (MWD) Roof (8)	Up	Sens. = 1.86 cm/g Freq. = 25.2 Hz	0.03
Earthquake of		Damp. = 0.59 crit	
28 June 1992 - 1158 G.m.t.	258°	Sens. = 1.83 cm/g Freq. = 25.5 Hz Damp. = 0.57 crit	0.09

Film speed = 1 cm/sec



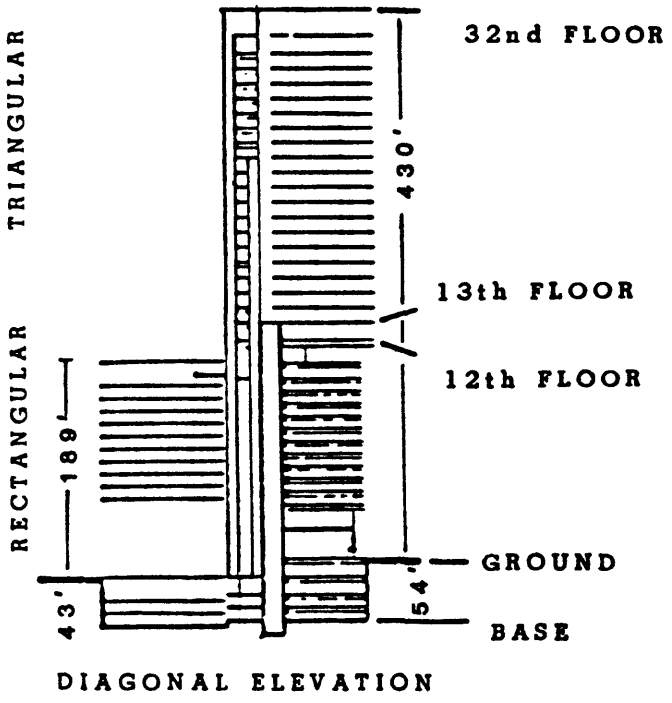
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 892 34.053N, 118.252W	083°	Sens. = 1.79 cm/g Freq. = 26.4 Hz	0.08 g
Los Angeles, 333 S. Hope		Damp. = 0,6 crit	
SMA No. 1631 (CODE) 55th floor	Up	Sens. = 1.70 cm/g Freq. = 26.3 Hz	0.07
EARTHQUAKE OF		Damp. = 0.6 crit	
28 June 1992 - 1158 G.m.t.	353°	Sens. = 1.99 cm/g Freq. = 25.0 Hz Damp. = 0.6 crit	0.08

Film speed = 1 cm/sec



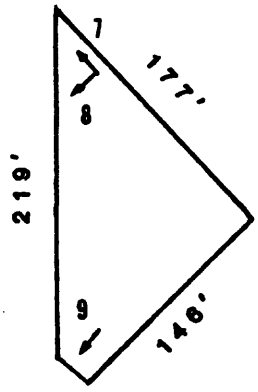
LOS ANGELES

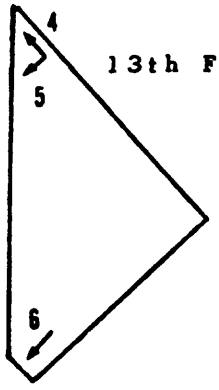
1100 WILSHIRE BLVD

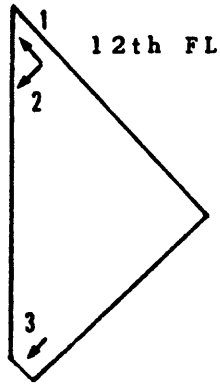


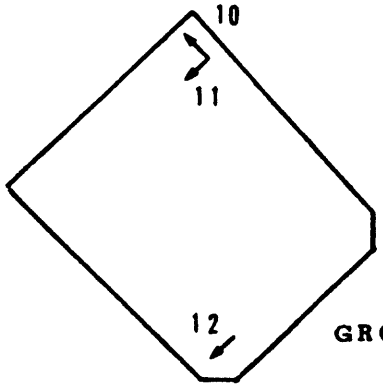
DIAGONAL ELEVATION

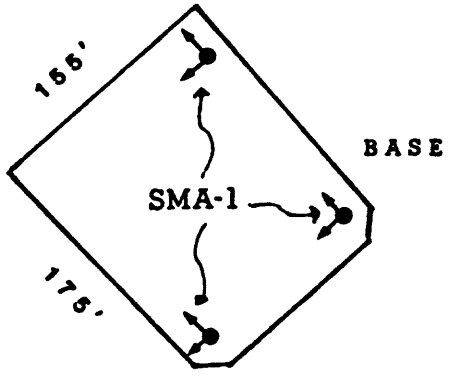
STRONG-MOTION INSTRUMENTATION











STRUCTURE

Rectangular base 12 stories

Triangular tower 21 stories

Steel frame

Coupled shear wall

Post-tensioned slabs

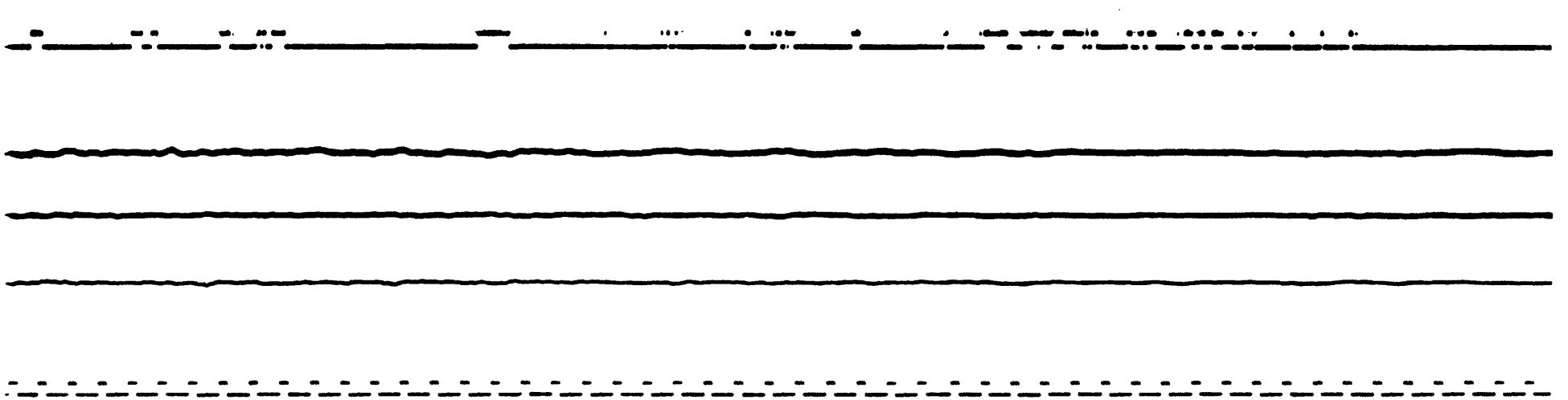
ACCELEROMETER DIRECTIONS

● VERTICAL

← HORIZONTAL

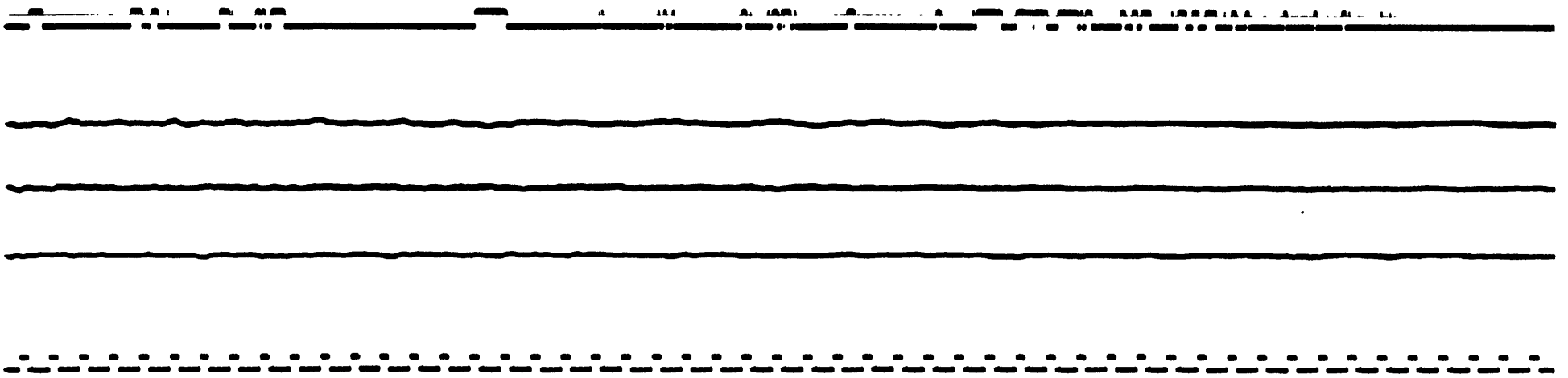
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No.5233 34.052N, 118.263W	298°	Sens. = 1.90 cm/g Freq. = 25.7 Hz Damp. = 0.60 crit	0.03 g
Los Angeles - 1100 Wilshire			
SMA No. 6064 (JCG/USGS) Bsmnt 3 NE	Up	Sens. = 1.90 cm/g Freq. = 25.8 Hz Damp. = 0.60 crit	0.02
Earthquake of			
28 June 1992 - 1158 G.m.t.	208°	Sens. = 1.90 cm/g Freq. = 25.6 Hz Damp. = 0.60 crit	0.02

Film speed = 1 cm/sec



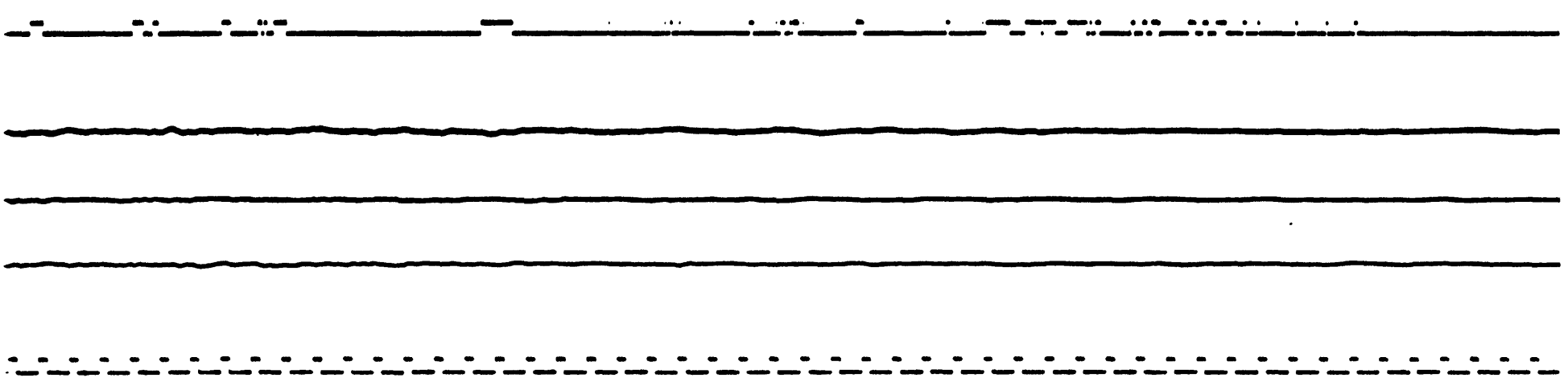
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No.5233 34.052N, 118.263W	298°	Sens. = 1.90 cm/g Freq. = 25.3 Hz Damp. = 0.60 crit	0.03 g
Los Angeles - 1100 Wilshire			
SMA No. 6065 (JCG/USGS) Bsmnt 3 SE	Up	Sens. = 1.94 cm/g Freq. = 25.8 Hz Damp. = 0.60 crit	0.02
Earthquake of			
28 June 1992 - 1158 G.m.t.	208°	Sens. = 1.98 cm/g Freq. = 26.2 Hz Damp. = 0.60 crit	0.02

Film speed = 1 cm/sec



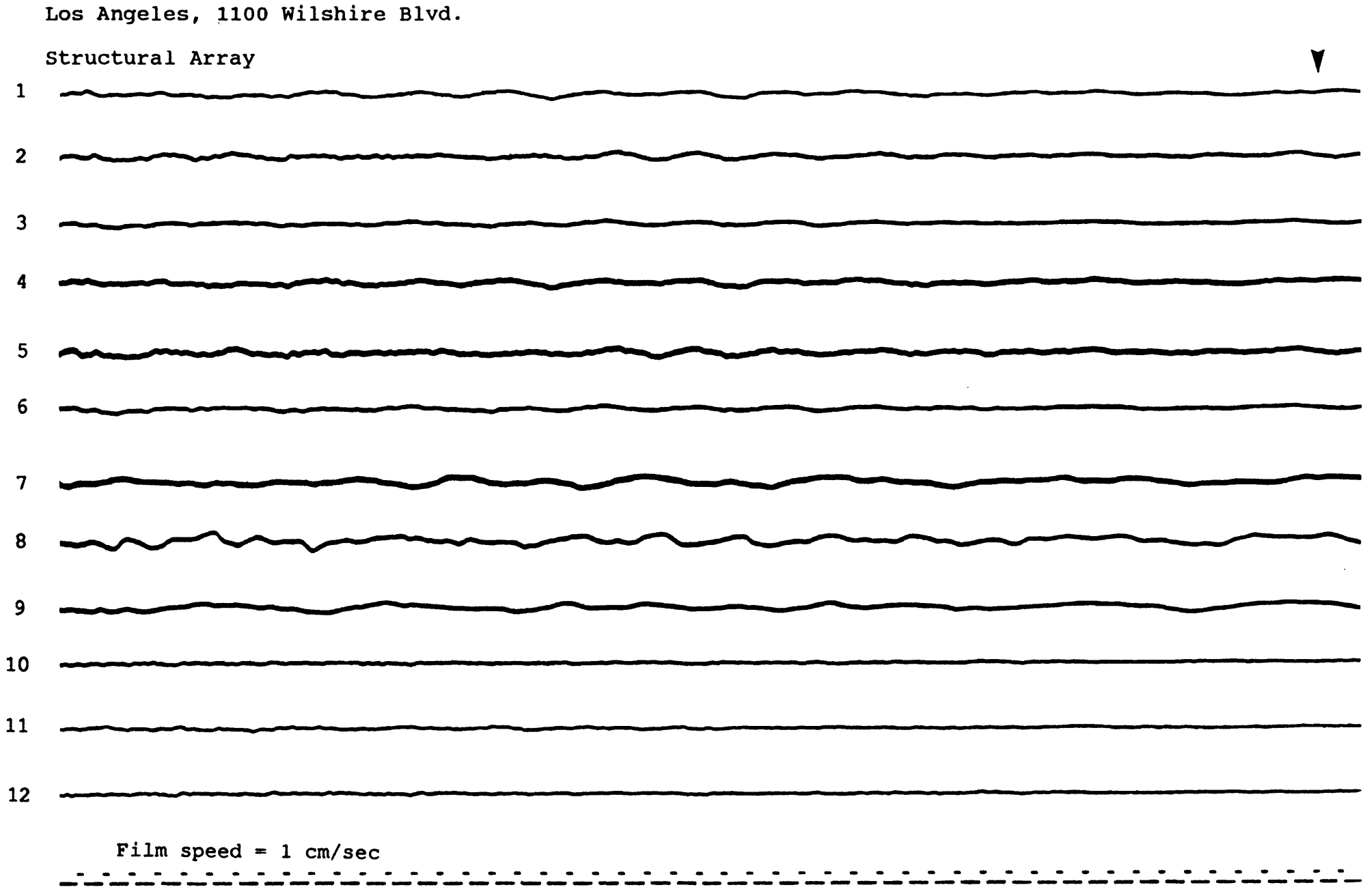
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5233 34.052N, 118.263W	298°	Sens. = 1.88 cm/g Freq. = 25.9 Hz	0.04 g
Los Angeles - 1100 Wilshire Blvd.		Damp. = 0.60 crit	
SMA No. 6063 (JCG/USGS) Bsmnt 4 NW	Up	Sens. = 2.00 cm/g Freq. = 25.4 Hz	0.02
Earthquake of		Damp. = 0.60 crit	
28 June 1992 - 1158 G.m.t.	208°	Sens. = 1.89 cm/g Freq. = 25.2 Hz Damp. = 0.60 crit	0.02

Film speed = 1 cm/sec

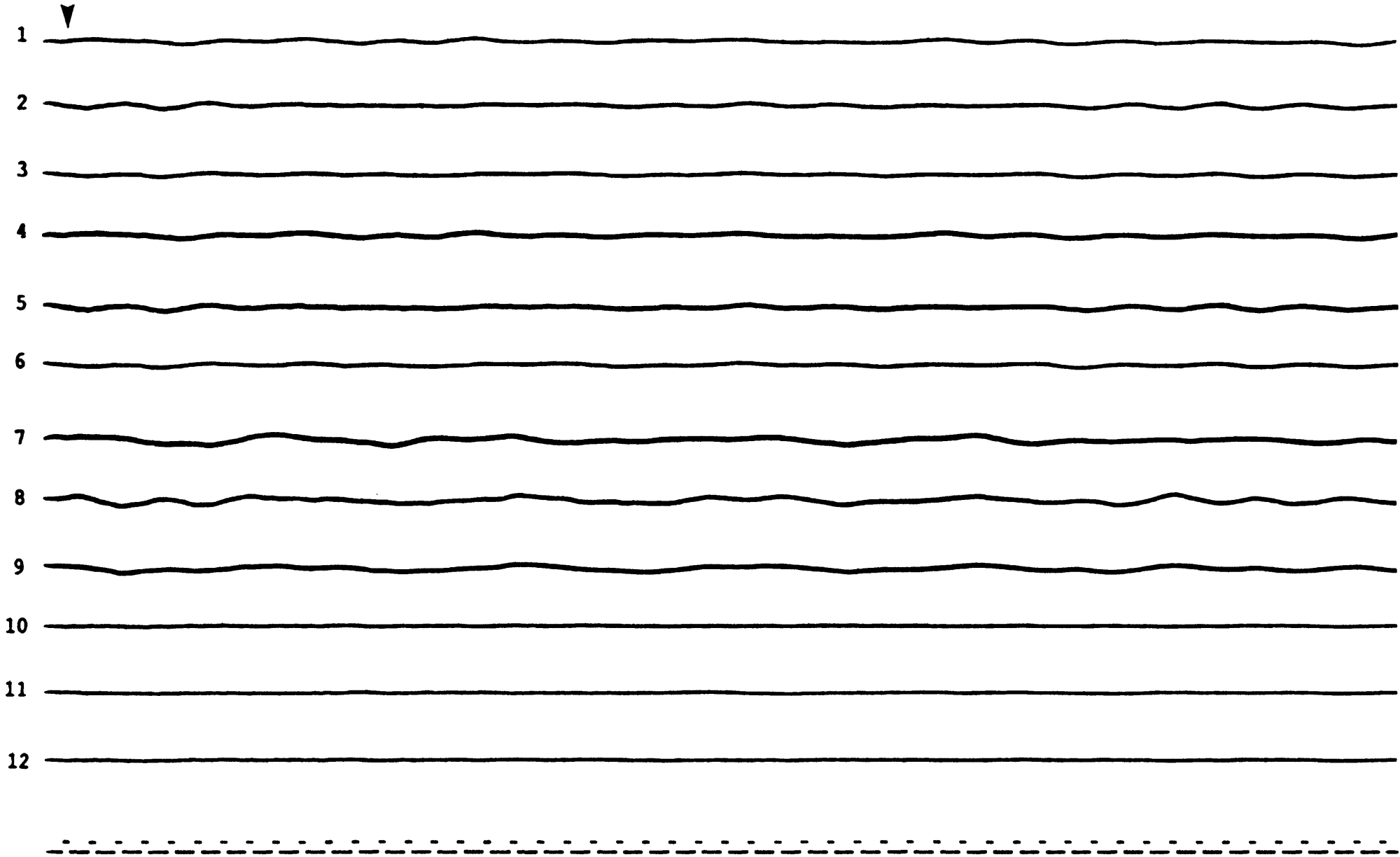


NATIONAL STRONG-MOTION PROGRAM	CHANNEL	DIRECTION	LOCATION	SENSITIVITY	MAX ACCELERATION
Station No. 5233	1	298°	12th floor, North	1.73 cm/g	0.08 g
34.052N, 118.263W	2	208°	12th floor, North	1.70.cm/g	0.05
Los Angeles - 1100 Wilshire	3	208°	12th floor, South	1.66 cm/g	0.05
Kinemetric CRA-1 No. 270 Recorder	4	298°	13th floor, North	1.83 cm/g	0.08
	5	208°	13th floor, North	1.80 cm/g	0.06
(JCG/USGS)	6	208°	13th floor, South	1.78 cm/g	0.05
EARTHQUAKE OF	7	298°	32nd floor, North	1.78 cm/g	0.08
28 June 1992 - 1158 G.m.t.	8	208°	32nd floor, North	1.74 cm/g	0.14
	9	208°	32nd floor, South	1.78 cm/g	0.06
	10	298°	Ground floor, North	1.77 cm/g	0.02
Film speed = 1 cm/sec	11	208°	Ground floor, North	1.74 cm/g	0.03
	12	208°	Ground floor, South	1.78 cm/g	0.02

(See Accelerogram on next page)

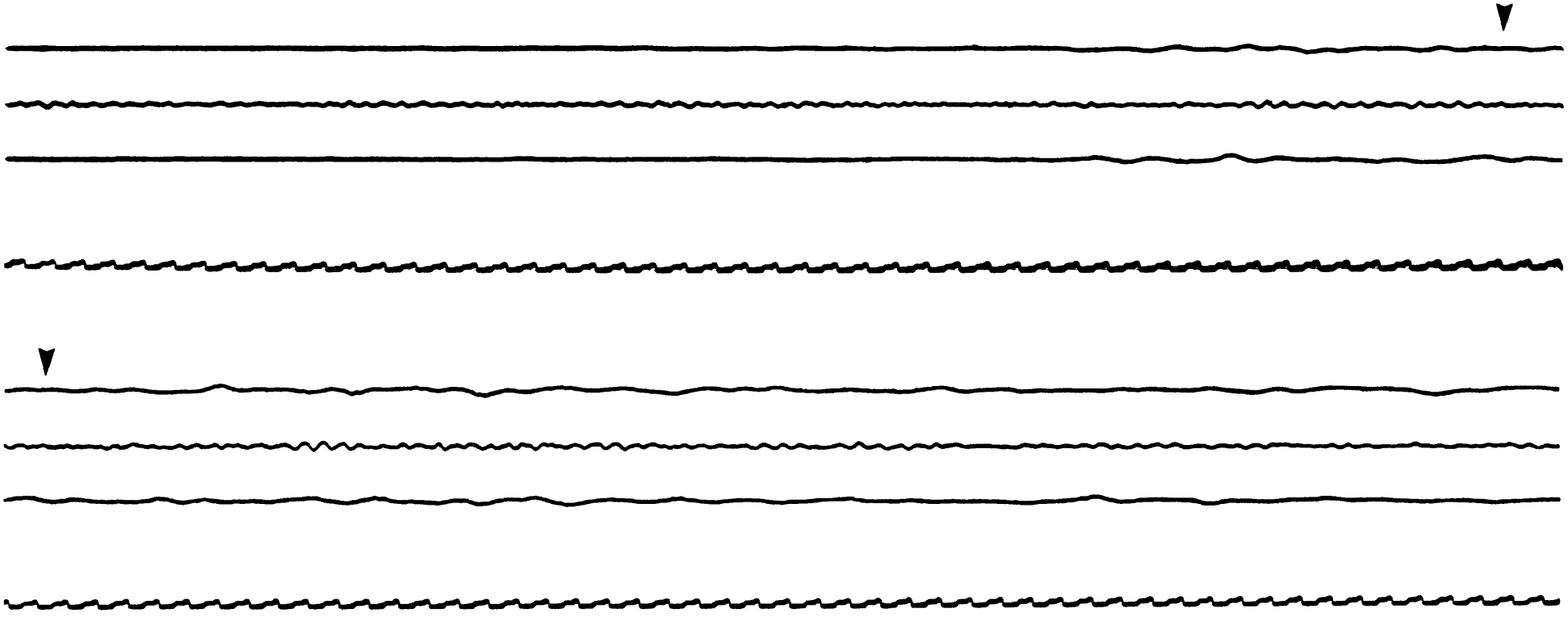

Los Angeles, 1100 Wilshire Blvd.
Structural Array
1
2
3
4
5
6
7
8
9
10
11
12
Film speed = 1 cm/sec

1100 Wilshire Blvd. - *continued*



NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 572 34.063N, 118.284W	028°	Sens. = 1.70 cm/g Freq. = 26.5 Hz	0.06 g
Los Angeles, 600 S. Commonwealth		Damp. = 0.6 crit	
SMA No. 235 (CODE) 19th floor	Up	Sens. = 1.90 cm/g Freq. = 26.3 Hz	0.04
Earthquake of		Damp. = 0.6 crit	
28 June 1992 - 1158 G.m.t.	298°	Sens. = 1.80 cm/g Freq. = 26.2 Hz Damp. = 0.6 crit	0.04

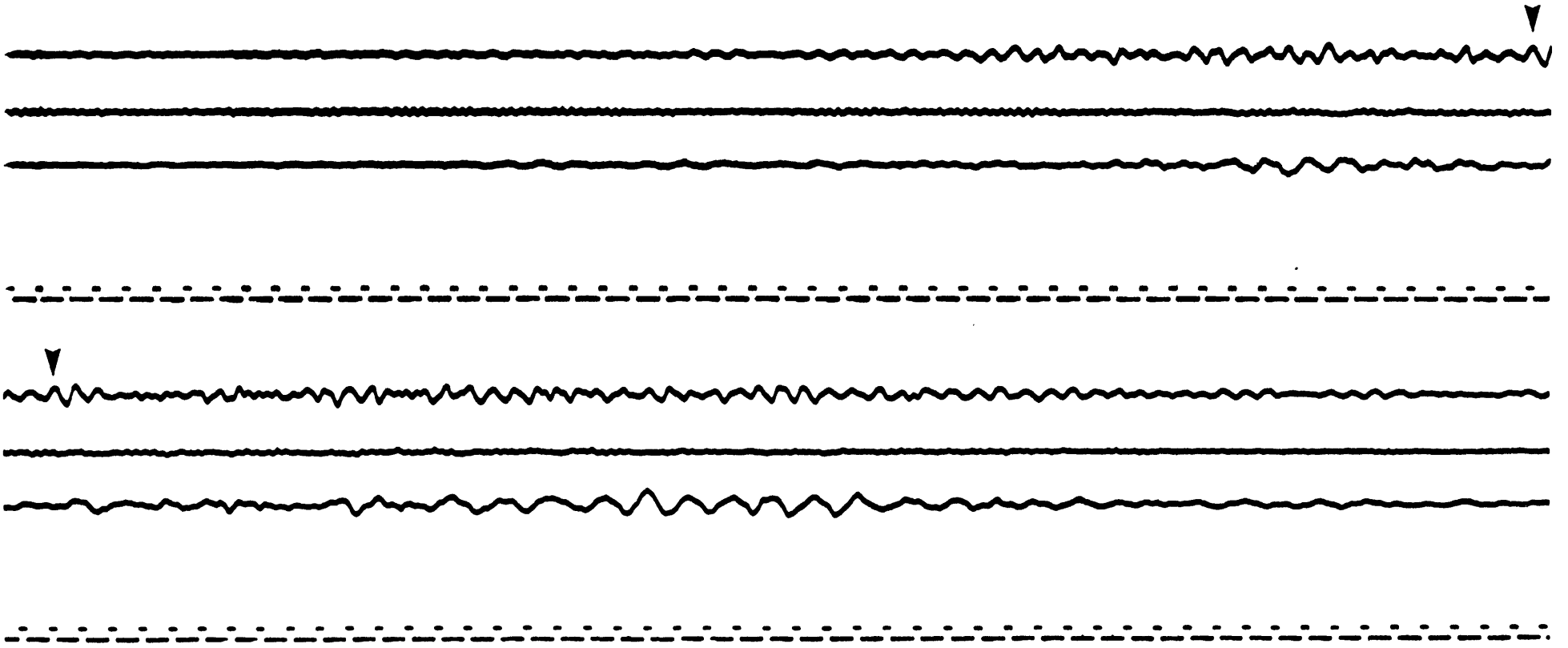
Film speed = 1 cm/sec



NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 742 34.098N, 118.294W	090°	Sens. = 1.91 cm/g Freq. = 24.7 Hz	0.09 g
Los Angeles, 1526 N. Edgemont St.		Damp. = 0.6 crit	
SMA No. 923 (CODE) Roof (8)	Up	Sens. = 1.82 cm/g Freq. = 25.8 Hz	0.03
EARTHQUAKE OF		Damp. = 0.6 crit	
28 June 1992 - 1158 G.m.t.	360°	Sens. = 1.80 cm/g Freq. = 25.5 Hz Damp. = 0.6 crit	0.13

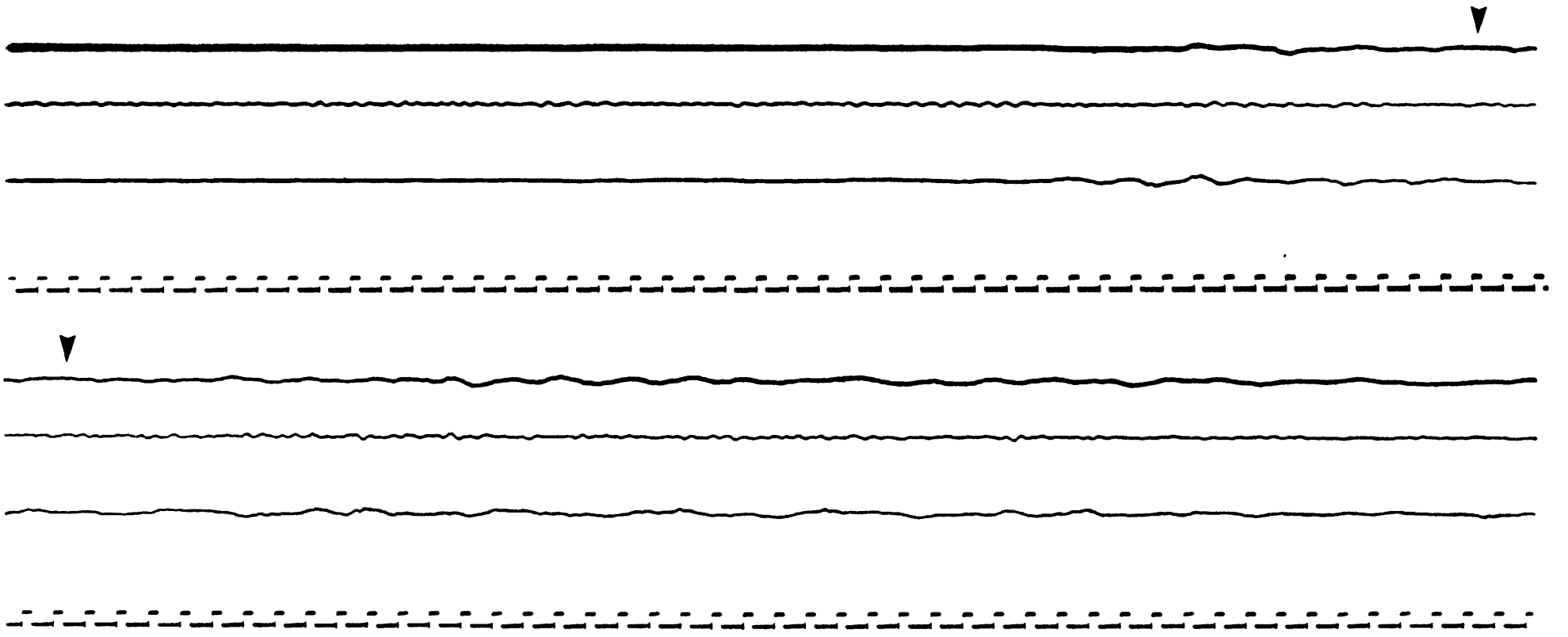
Film speed = 1 cm/sec

180



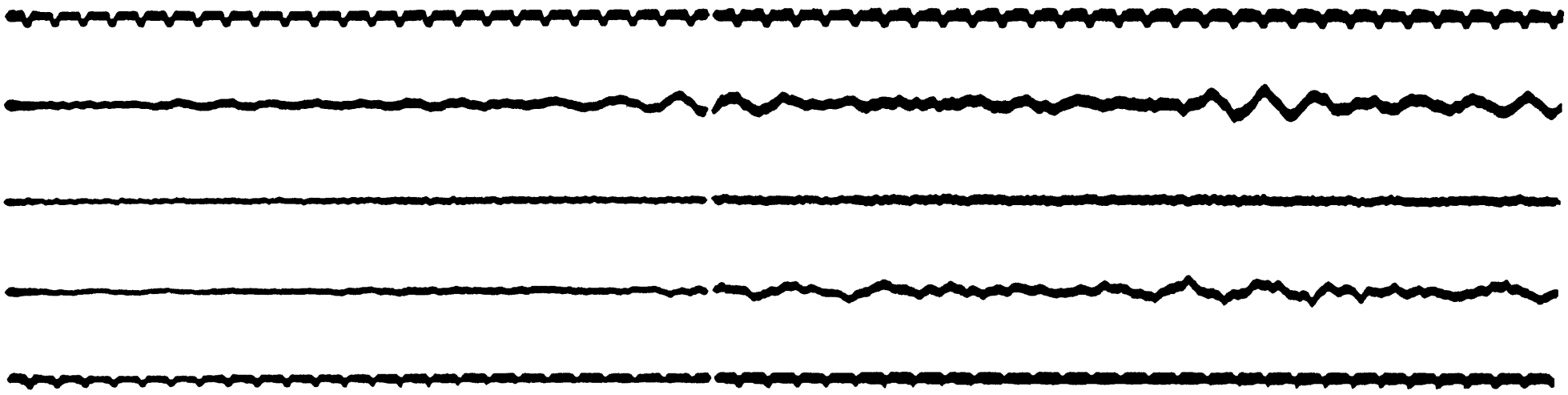
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 530 34.060N, 118.290W	360°	Sens. = 1.85 cm/g Freq. = 26.4 Hz	0.03 g
Los Angeles, 695 So. Vermont (18th)		Damp. = 0.6 crit	
SMA No. 221 (CODE)	Up	Sens. = 1.9 cm/g Freq. = 26.1 Hz	0.03
Earthquake of		Damp. = 0.6 crit	
28 June 1992 - 1158 G.m.t.	270°	Sens. = 1.9 cm/g Freq. = 24.9 Hz Damp. = 0.6 crit	0.03

Film speed = 1 cm/sec



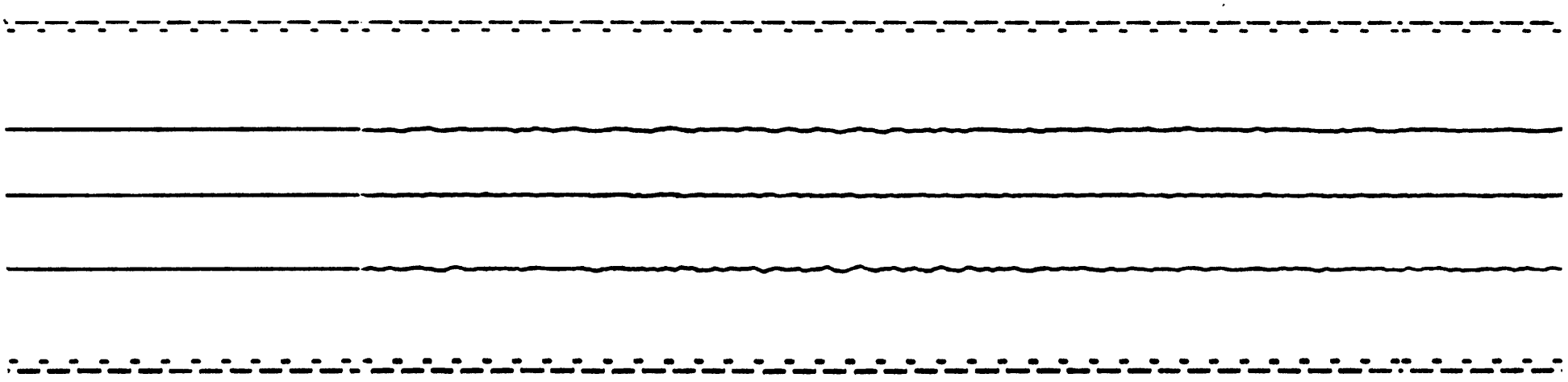
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 691 34.06N 118.29W	090°	Sens. = 1.97 cm/g Freq. = 22.0 Hz	0.13 g
Los Angeles: 3000 Leeward		Damp. = 0.6 crit	
RFT No. 359 (Code) Roof (13)	Up	Sens. = 1.91 cm/g Freq. = 22.0 Hz	0.02
EARTHQUAKE OF		Damp. = 0.6 crit	
28 June 1992 - 1158 G.m.t.	360°	Sens. = 1.93 cm/g Freq. = 21.0 Hz Damp. = 0.6 crit	0.10

Film speed = 1 cm/sec



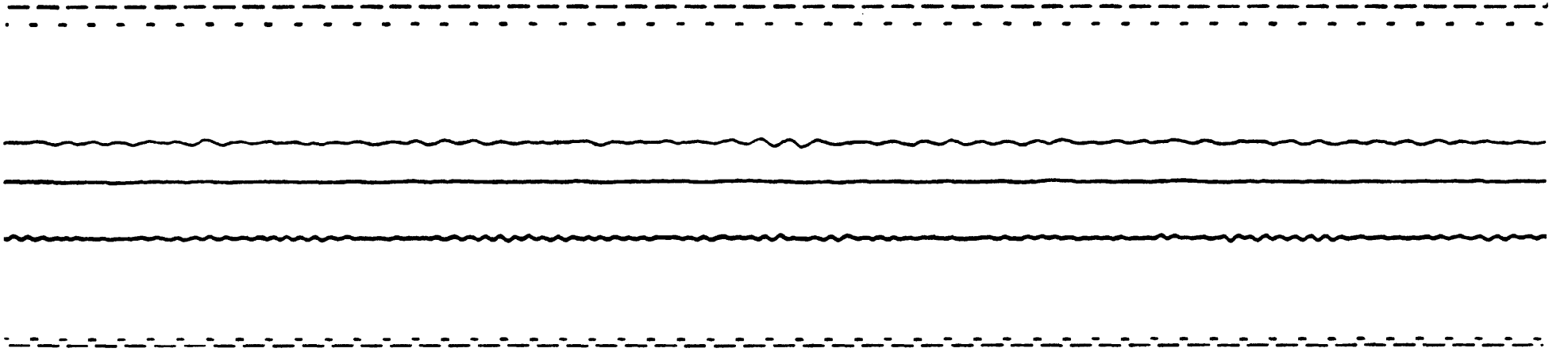
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No.141 34.118N, 118.299W	360°	Sens. = 1.73 cm/g Freq. = 27.0 Hz	0.02 g
Los Angeles-Griffith Pk Observ.		Damp. = 0.6 crit	
SMA No. 3822 (USGS)	Up	Sens. = 1.70 cm/g Freq. = 26.0 Hz	0.02
Earthquake of		Damp. = 0.6 crit	
28 June 1992 - 1158 G.m.t.	270°	Sens. = 1.80 cm/g Freq. = 25.9 Hz Damp. = 0.6 crit	0.02

Film speed = 1 cm/sec



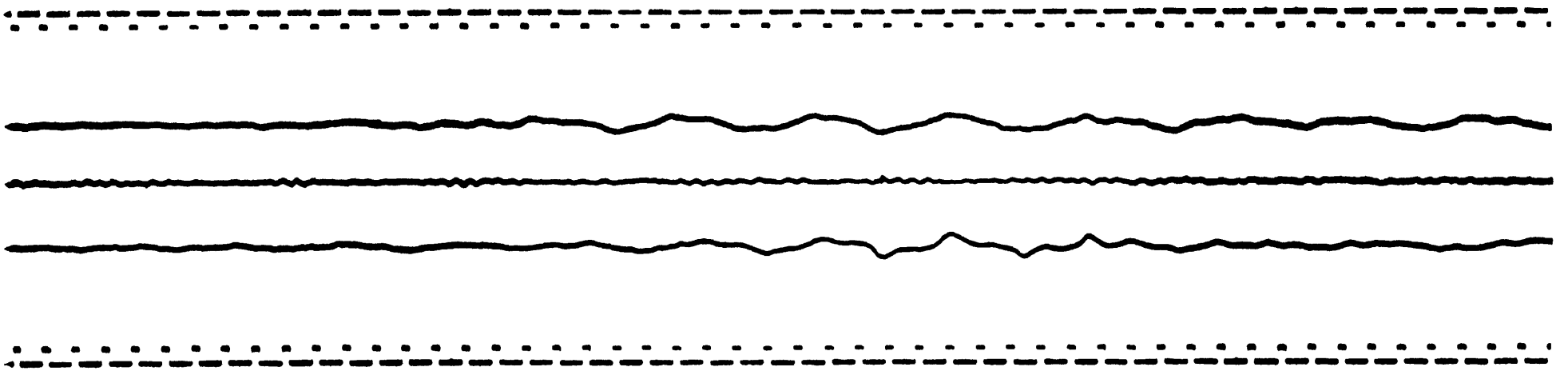
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5259 34.106N, 118.336W	360°	Sens. = 1.69 cm/g Freq. = 26.4 Hz	0.04 g
Los Angeles, 2005 N. Highland Ave.		Damp. = 0.6 crit	
SMA No. 2691 (CODE) Roof (8)	Up	Sens. = 1.79 cm/g Freq. = 25.7 Hz	0.01
EARTHQUAKE OF		Damp. = 0.6 crit	
28 June 1992 - 1158 G.m.t.	270°	Sens. = 1.77 cm/g Freq. = 26.4 Hz Damp. = 0.6 crit	0.03

Film speed = 1 cm/sec



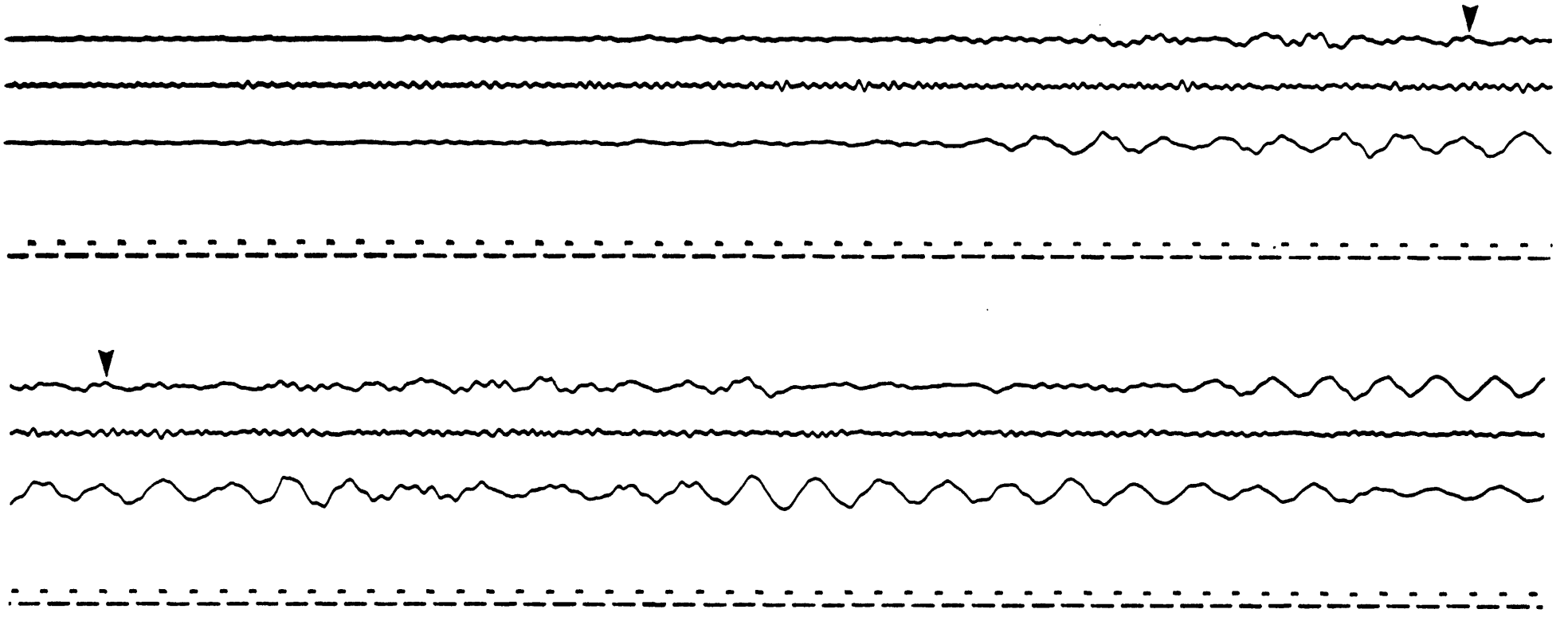
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5264 33.855N, 118.291W	360°	Sens. = 1.73 cm/g Freq. = 26.1 Hz	0.10 g
Los Angeles, 19191 S. Vermont		Damp. = 0.6 crit	
SMA No. 5142 (Code) Roof (11)	Up	Sens. = 1.81 cm/g Freq. = 25.8 Hz	0.02
Earthquake of		Damp. = 0.6 crit	
28 June 1992 - 1158 G.m.t.	270°	Sens. = 1.81 cm/g Freq. = 26.0 Hz Damp. = 0.6 crit	0.11

Film speed = 1 cm/sec



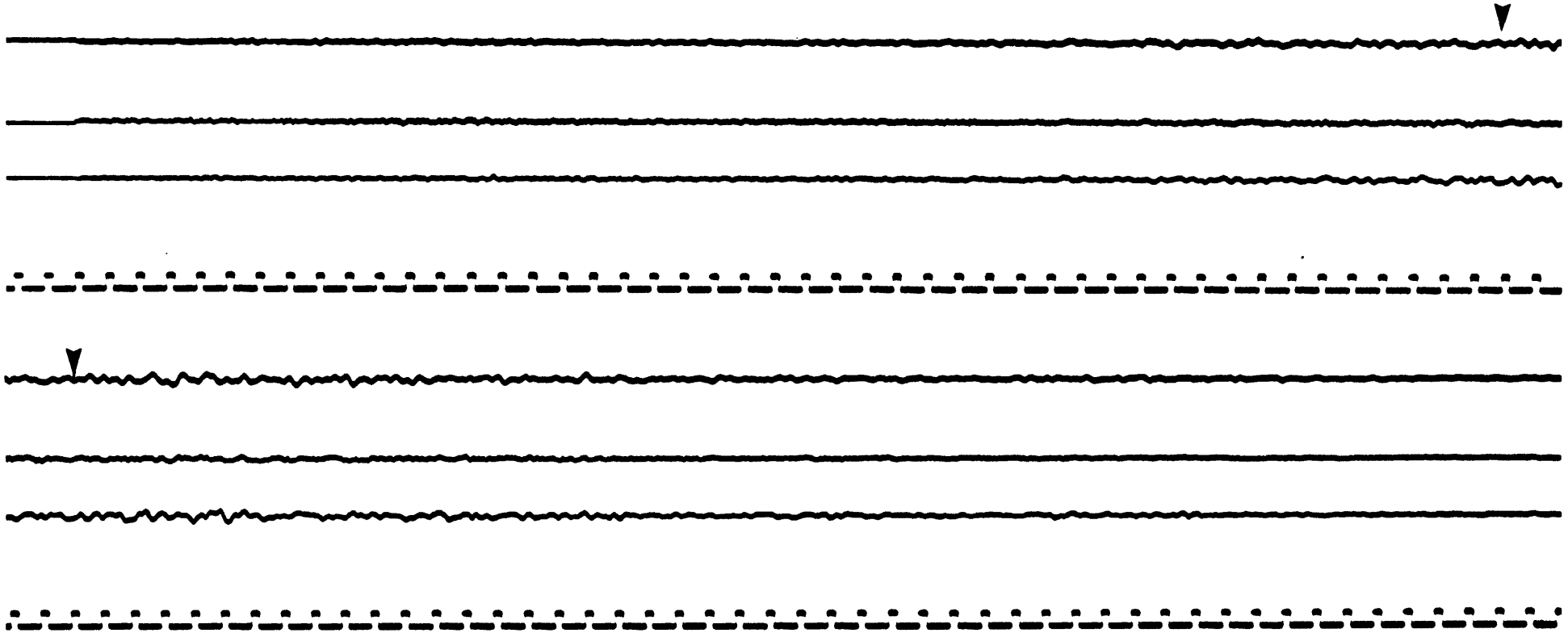
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 793 34.063N, 118.337W	180°	Sens. = 1.97 cm/g Freq. = 25.7 Hz	0.10 g
Los Angeles, 4929 Wilshire Blvd.		Damp. = 0.6 crit	
SMA No. 931 (CODE) Roof (11)	Up	Sens. = 1.84 cm/g Freq. = 25.3 Hz	0.05
EARTHQUAKE OF		Damp. = 0.6 crit	
28 June 1992 - 1158 G.m.t.	090°	Sens. = 1.85 cm/g Freq. = 26.1 Hz Damp. = 0.6 crit	0.16

Film speed = 1 cm/sec



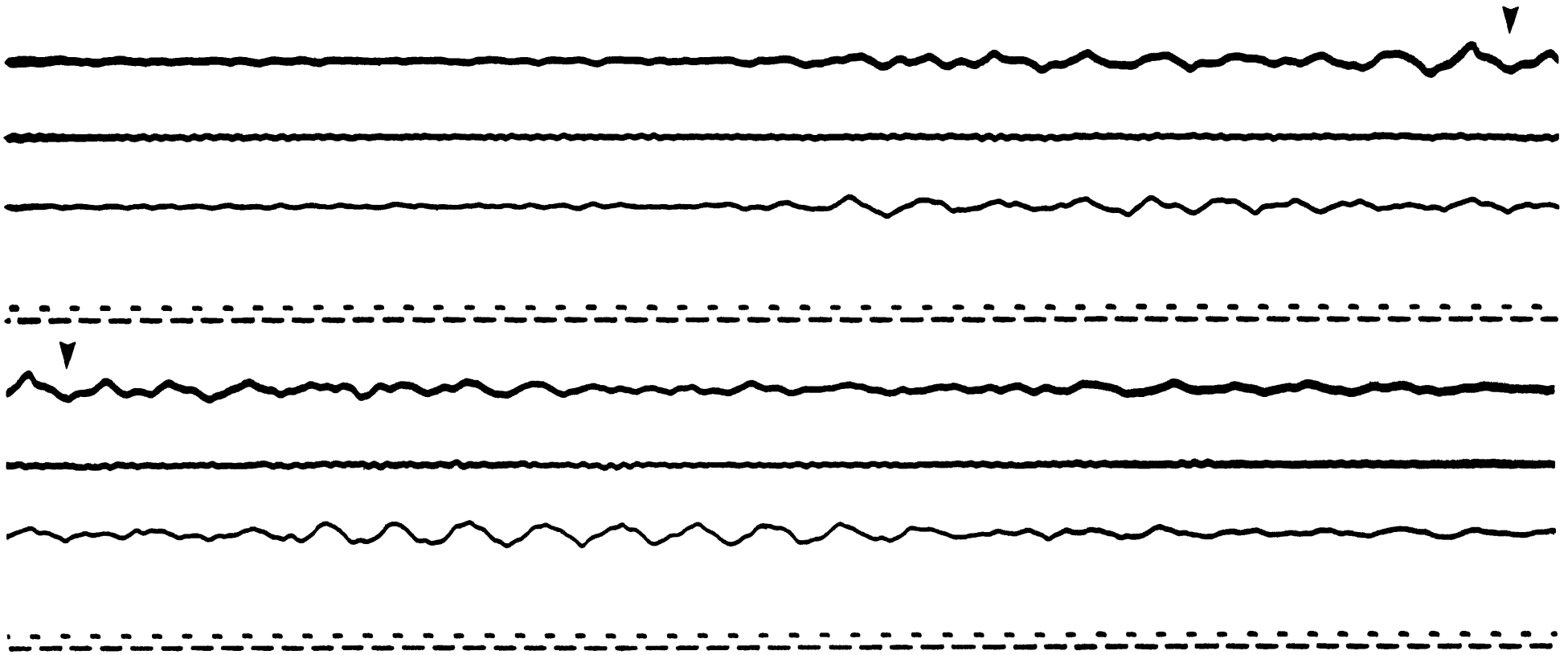
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5029 34.62N, 118.29W	120°	Sens. = 1.88 cm/g Freq. = 25.6 Hz	0.04 g
Leona Valley Fire Station		Damp. = 0.60 crit	
SMAT-1 No. 1499 (USGS)	Up	Sens. = 1.87 cm/g Freq. = 26.3 Hz	0.03
Earthquake of		Damp. = 0.60 crit	
28 June 1992 - 1158 G.m.t.	030°	Sens. = 1.83 cm/g Freq. = 26.3 Hz Damp. = 0.60 crit	0.06

Film speed = 1 cm/sec



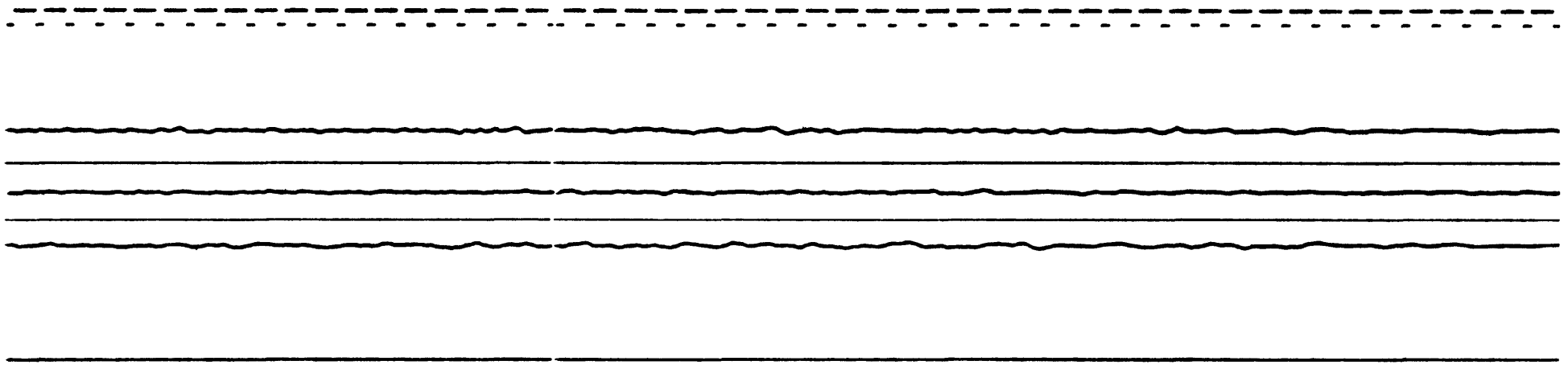
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5260 34.071N, 118.374W	335°	Sens. = 1.91 cm/g Freq. = 25.1 Hz	0.09 g
Los Angeles, 444 S. San Vicente		Damp. = 0.6 crit	
SMA No. 5701 (CODE) Roof (12)	Up	Sens. = 1.89 cm/g Freq. = 25.9 Hz	0.04
Earthquake of		Damp. = 0.6 crit	
28 June 1992 - 1158 G.m.t.	245°	Sens. = 1.78 cm/g Freq. = 26.6 Hz Damp. = 0.6 crit	0.15

Film speed = 1 cm/sec



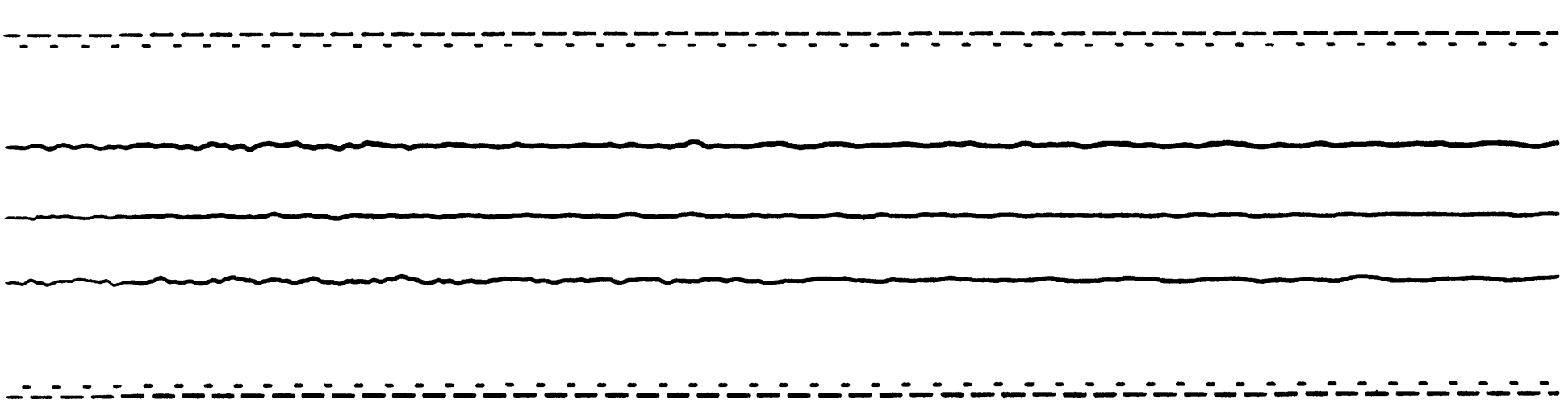
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 710 34.774N, 118.321W	210°	Sens. = 1.89 cm/g Freq. = 26.3 Hz	0.03 g
Palos Verdes Reservoir, Abutment Bldg		Damp. = 0.6 crit	
SMA-1 No. 1528 (MWD)	Up	Sens. = 1.97 cm/g Freq. = 25.6 Hz	0.02
Earthquake of		Damp. = 0.6 crit	
28 June 1992 - 1158 G.m.t.	120°	Sens. = 1.80 cm/g Freq. = 26.3 Hz Damp. = 0.6 crit	0.03

Film speed = 1 cm/sec



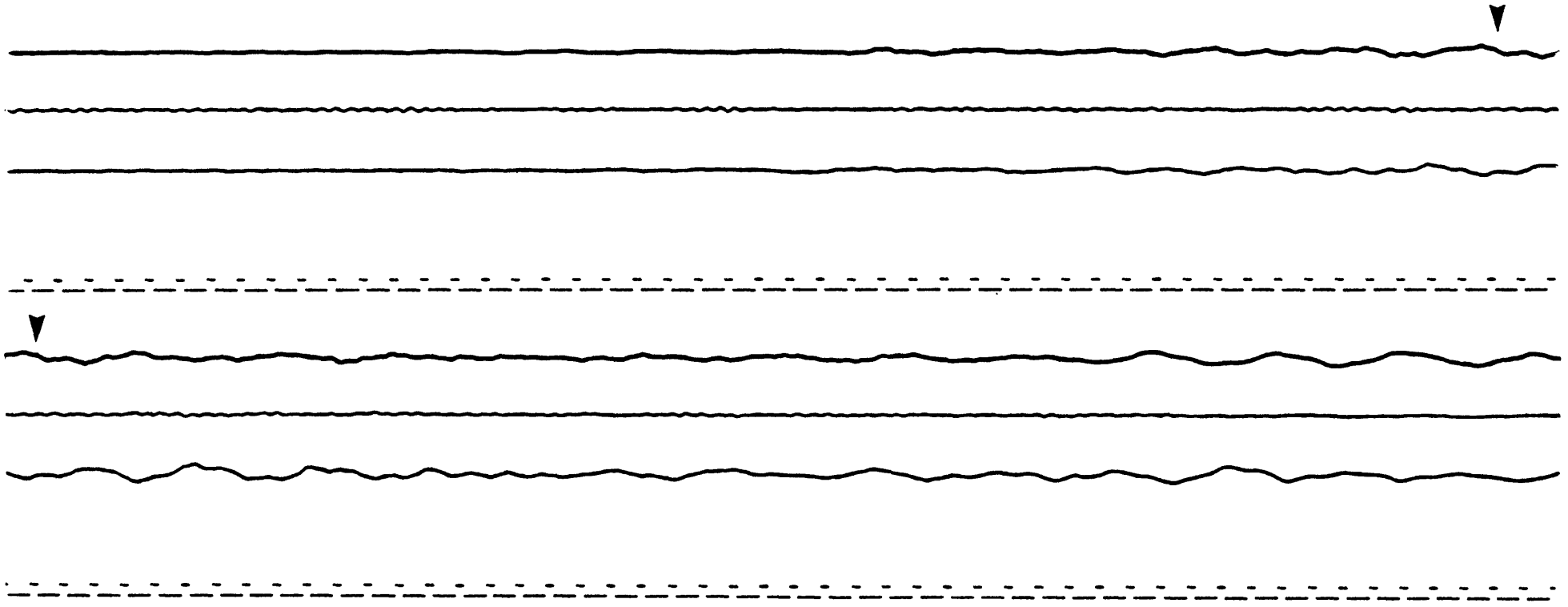
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 710 33.772N, 118.319W	210°	Sens. = 1.97 cm/g Freq. = 25.9 Hz Damp. = 0.59 crit	0.03 g
Palos Verdes Reservoir - Crest			
SMA No. 6699 (MWD)	Up	Sens. = 2.07 cm/g Freq. = 25.5 Hz Damp. = 0.60 crit	0.02
EARTHQUAKE OF			
28 June 1992 - 1158 G.m.t.	120°	Sens. = 1.76 cm/g Freq. = 26.4 Hz Damp. = 0.60 crit	0.03

Film speed = 1 cm/sec



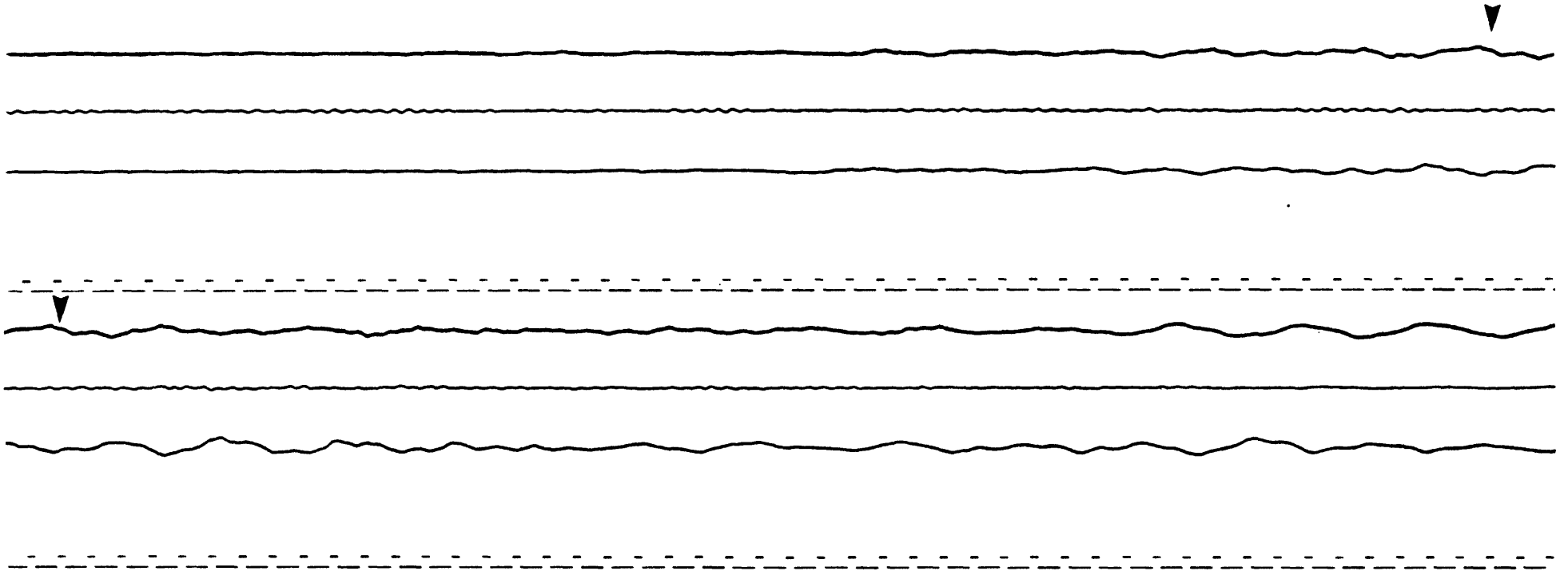
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 229 33.945N, 118.372W	090°	Sens. = 1.74 cm/g Freq. = 26.9 Hz	0.10 g
Los Angeles, 5250 Century Blvd.		Damp. = 0.6 crit	
SMA No. 6586 (Code) Roof (8)	Up	Sens. = 1.93 cm/g Freq. = 25.1 Hz	0.03
Earthquake of		Damp. = 0.6 crit	
28 June 1992 - 1158 G.m.t.	360°	Sens. = 1.92 cm/g Freq. = 25.8 Hz Damp. = 0.6 crit	0.05

Film speed = 1 cm/sec



NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5258 33.946N, 118.391W	270°	Sens. = 1.95 cm/g Freq. = 25.3 Hz	0.07 g
Los Angeles, 6101 Century Blvd.		Damp. = 0.60 crit	
SMA-1 No. 4224 (Code) 15th level	Up	Sens. = 1.85 cm/g Freq. = 25.2 Hz	0.02
Earthquake of		Damp. = 0.60 crit	
28 June 1992 - 1158 G.m.t.	180°	Sens. = 1.97 cm/g Freq. = 25.1 Hz Damp. = 0.60 crit	0.12

Film speed = 1 cm/sec



NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 981 34.058N, 118.412W	320°	Sens. = 1.79 cm/g Freq. = 25.5 Hz	0.06 g
Los Angeles, 2049 Century Park East		Damp. = 0.6 crit	
SMA-1 No. 1733 (Code) 43rd floor	Up	Sens. = 1.82 cm/g Freq. = 25.9 Hz	0.04
Earthquake of		Damp. = 0.6 crit	
28 June 1992 - 1158 G.m.t.	230°	Sens. = 1.95 cm/g Freq. = 24.8 Hz	0.09
		Damp. = 0.6 crit	

Film speed = 1 cm/sec

RECORD DOES NOT MEET REPRODUCTION STANDARDS

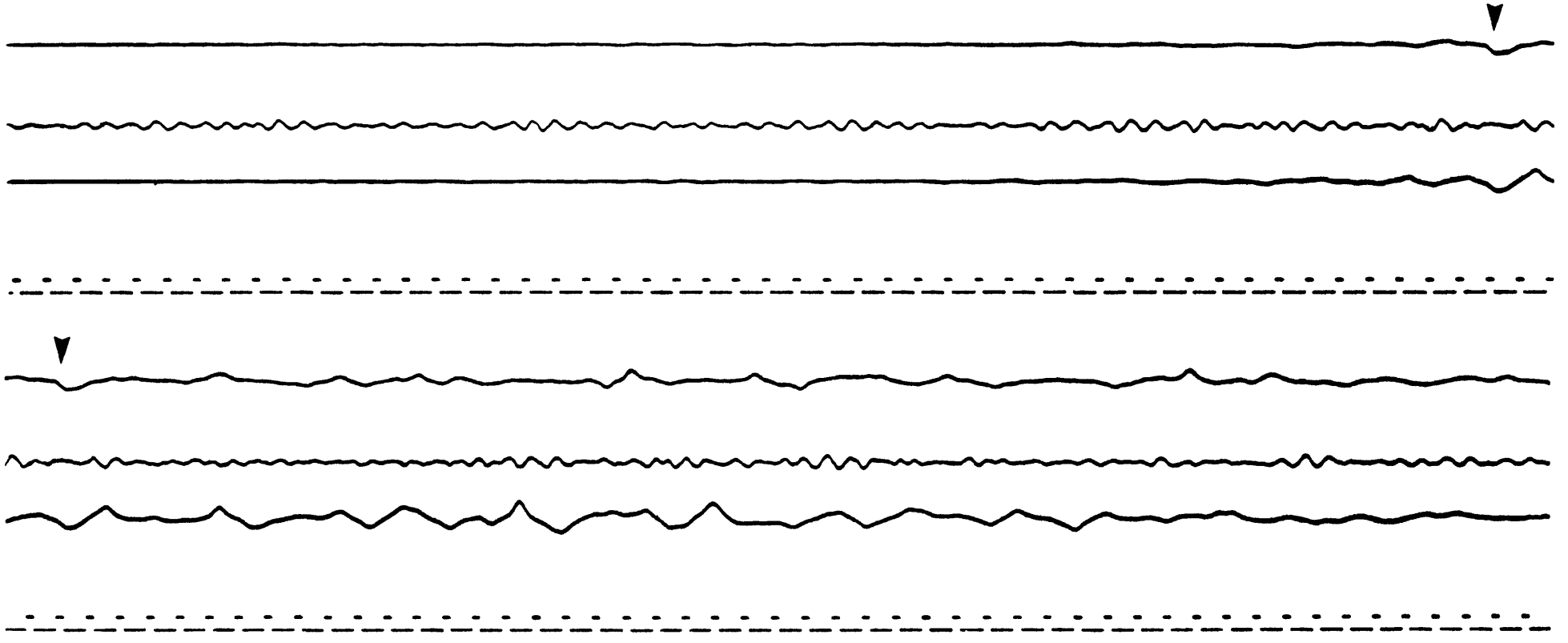
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 982 34.059, 118.413W	320°	Sens. = 1.79 cm/g Freq. = 25 Hz Damp. = 0.6 crit	0.07 g
Los Angeles, 2029 Century Park East			
SMA-1 No. 1732 (Code) 43rd floor	Up	Sens. = 1.81 cm/g Freq. = 25 Hz Damp. = 0.6 crit	0.04
Earthquake of			
28 June 1992 - 1158 G.m.t.	230°	Sens. = 1.85 cm/g Freq. = 25 Hz Damp. = 0.6 crit	0.08

Film speed = 1 cm/sec

RECORD DOES NOT MEET REPRODUCTION STANDARDS

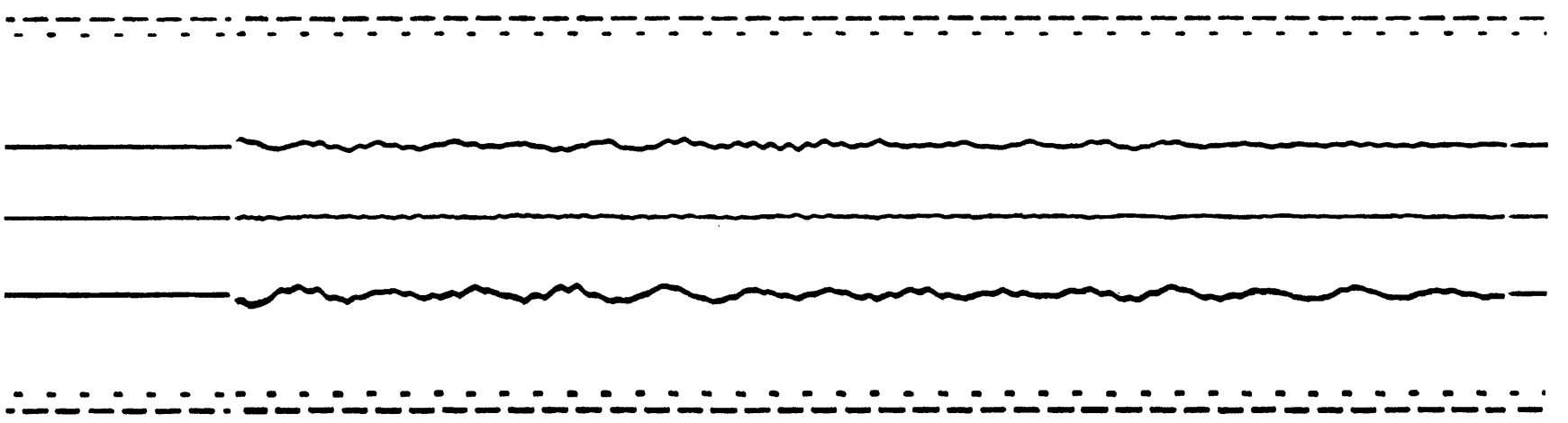
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5292 34.057N, 118.414W	300°	Sens. = 1.86 cm/g Freq. = 25.4 Hz Damp. = 0.6 crit	0.09 g
Los Angeles - 2121 Ave. of the Stars			
SMA No. 6338 (Code) 36th Level	Up	Sens. = 1.90 cm/g Freq. = 26.0 Hz Damp. = 0.6 crit	0.06
EARTHQUAKE OF			
28 June 1992 - 1158 G.m.t.	210°	Sens. = 1.97 cm/g Freq. = 25.2 Hz Damp. = 0.6 crit	0.13

Film speed = 1 cm/sec



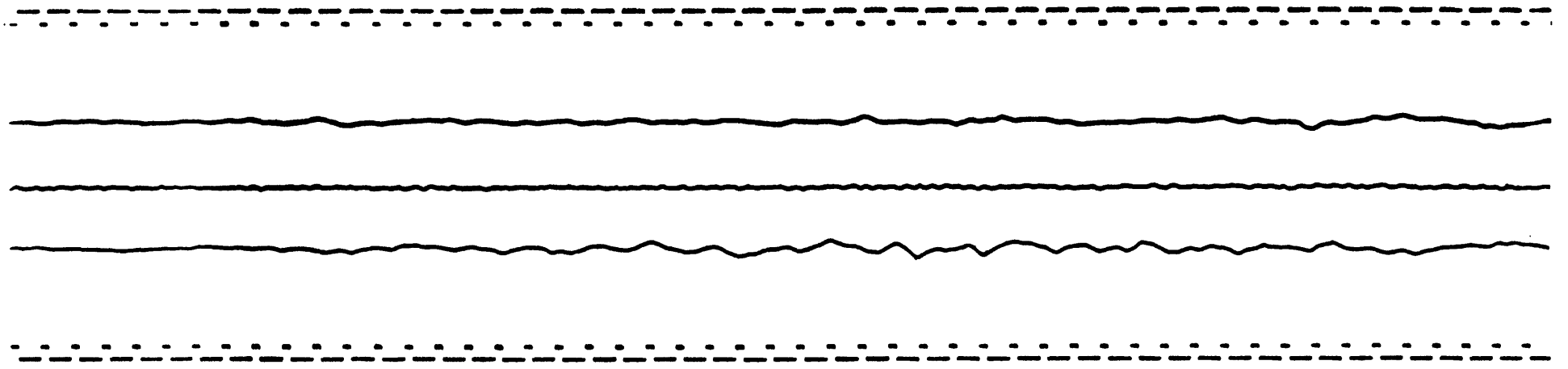
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5261 34.063N, 118.431W	287°	Sens. = 1.95 cm/g Freq. = 25.3 Hz	0.05 g
Los Angeles - 10550 Wilshire Blvd.		Damp. = 0.6 crit	
SMA No. 4978 (Code) Roof (14)	Up	Sens. = 2.02 cm/g Freq. = 25.0 Hz	0.02
Earthquake of		Damp. = 0.6 crit	
28 June 1992 - 1158 G.m.t.	197°	Sens. = 1.82 cm/g Freq. = 25.5 Hz Damp. = 0.6 crit	0.08

Film speed = 1 cm/sec



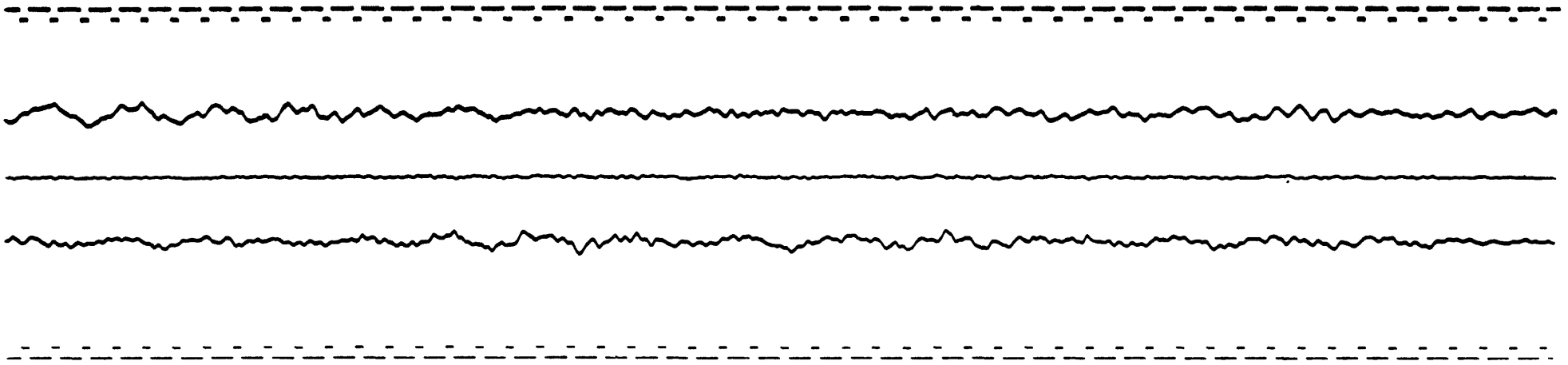
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5262 34.062N, 118.433W	250°	Sens. = 1.88 cm/g Freq. = 25.4 Hz	0.08 g
Los Angeles - 10601 Wilshire Blvd.		Damp. = 0.6 crit	
SMA No. 4782 (Code) Roof (21)	Up	Sens. = 1.85 cm/g Freq. = 25.1 Hz	0.02
EARTHQUAKE OF		Damp. = 0.6 crit	
	160°	Sens. = 1.93 cm/g Freq. = 25.3 Hz	0.07
28 June 1992 - 1158 G.m.t.		Damp. = 0.6 crit	

Film speed = 1 cm/sec



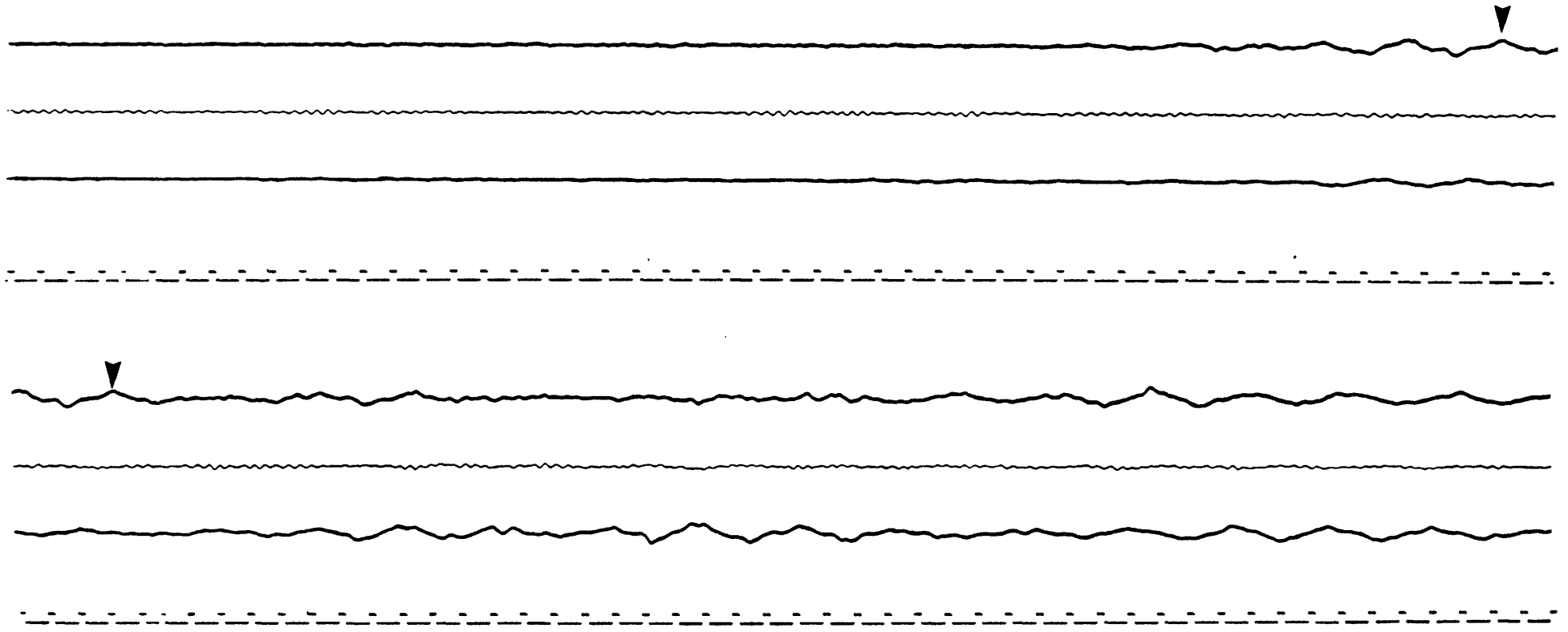
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5263 34.061N, 118.434W	160°	Sens. = 1.85 cm/g Freq. = 25.3 Hz	0.11 g
Los Angeles - 10660 Wilshire Blvd.		Damp. = 0.6 crit	
SMA No. 4235 (Code) Roof (19)	Up	Sens. = 1.75 cm/g Freq. = 26.8 Hz	0.02
EARTHQUAKE OF		Damp. = 0.6 crit	
28 June 1992 - 1158 G.m.t.	070°	Sens. = 1.70 cm/g Freq. = 26.7 Hz Damp. = 0.6 crit	0.11

Film speed = 1 cm/sec



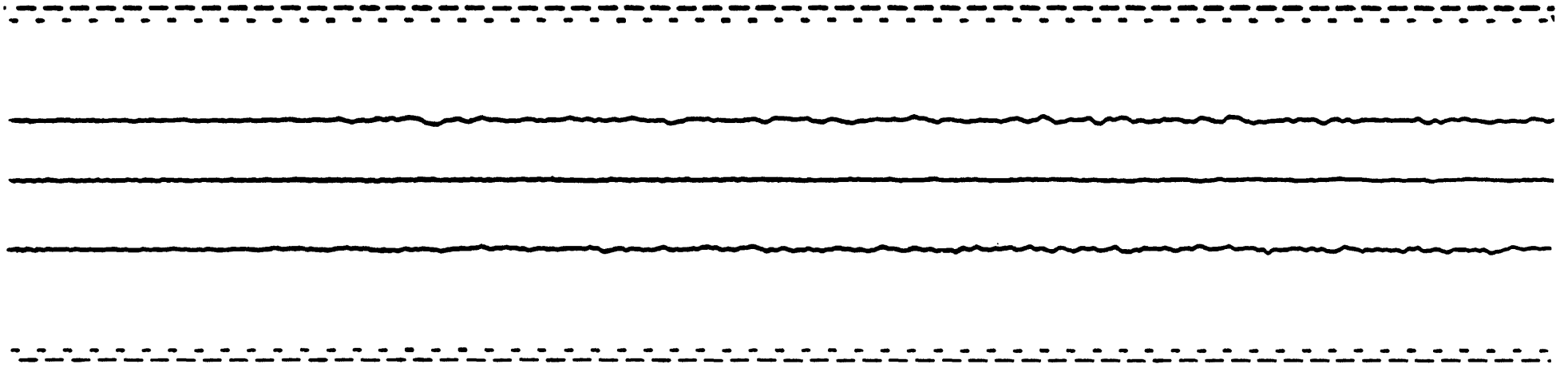
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 663 34.060N, 118.438W	252°	Sens. = 1.85 cm/g Per. = 25.8 Hz	0.09 g
Los Angeles, 10751 Wilshire Blvd.		Damp. = 0.6 crit	
SMA No. 552 (Code) Roof (12)	Up	Sens. = 1.85 cm/g Per. = 26.2 Hz	0.02
Earthquake of		Damp. = 0.6 crit	
28 June 1992 - 1158 G.m.t.	162°	Sens. = 1.85 cm/g Per. = 25.8 Hz Damp. = 0.6 crit	0.09

Film speed = 1 cm/sec



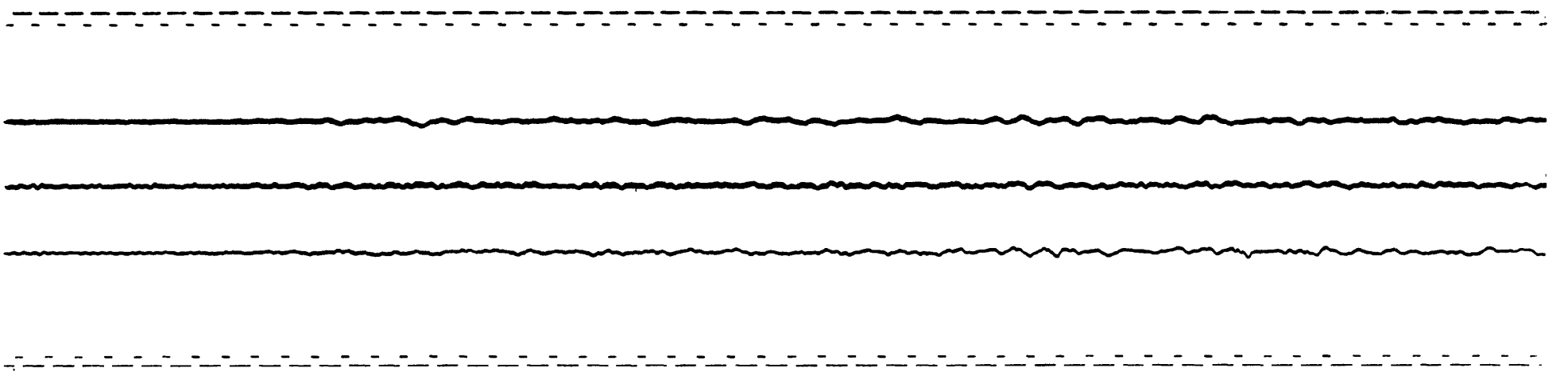
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5284 34.040N, 118.445W	235°	Sens. = 1.75 cm/g Freq. = 26.2 Hz	0.05 g
Los Angeles, 1955 1/2 Purdue Ave.		Damp. = 0.60 crit	
SMA No. 3914 (USGS) Basement	Up	Sens. = 1.72 cm/g Freq. = 26.5 Hz	0.02
Earthquake of		Damp. = 0.60 crit	
28 June 1992 - 1158 G.m.t.	145°	Sens. = 1.88 cm/g Freq. = 26.1 Hz Damp. = 0.60 crit	0.03

Film speed = 1 cm/sec



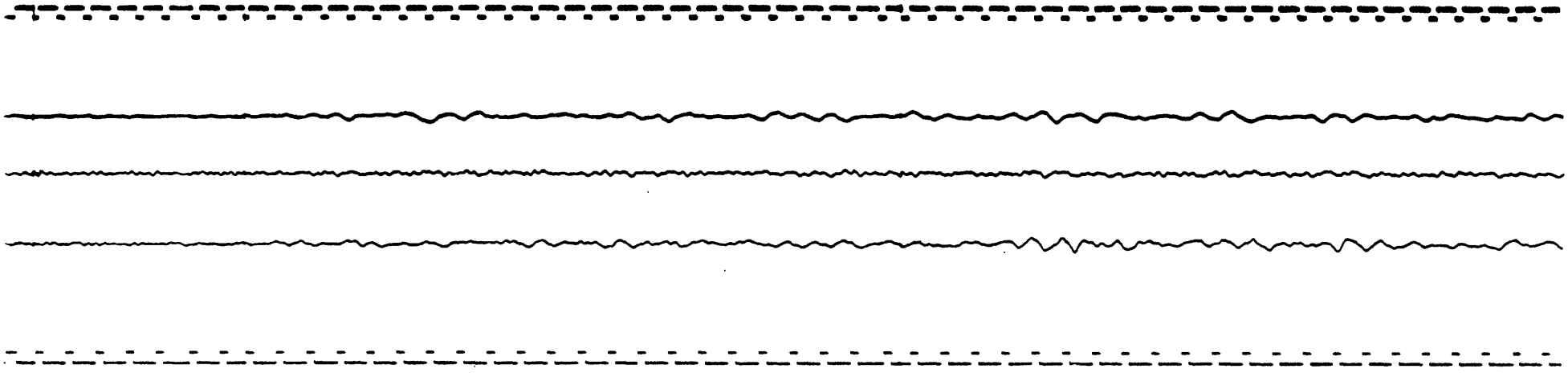
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5284 34.040N, 118.445W	235°	Sens. = 1.84 cm/g Freq. = 25.9 Hz	0.05 g
Los Angeles, 1955 1/2 Purdue Ave.		Damp. = 0.6 crit	
SMA No. 2019 (USGS) 1st level	Up	Sens. = 1.77 cm/g Freq. = 26.7 Hz	0.03
Earthquake of		Damp. = 0.6 crit	
28 June 1992 - 1158 G.m.t.	145°	Sens. = 1.71 cm/g Freq. = 26.7 Hz Damp. = 0.6 crit	0.04

Film speed = 1 cm/sec



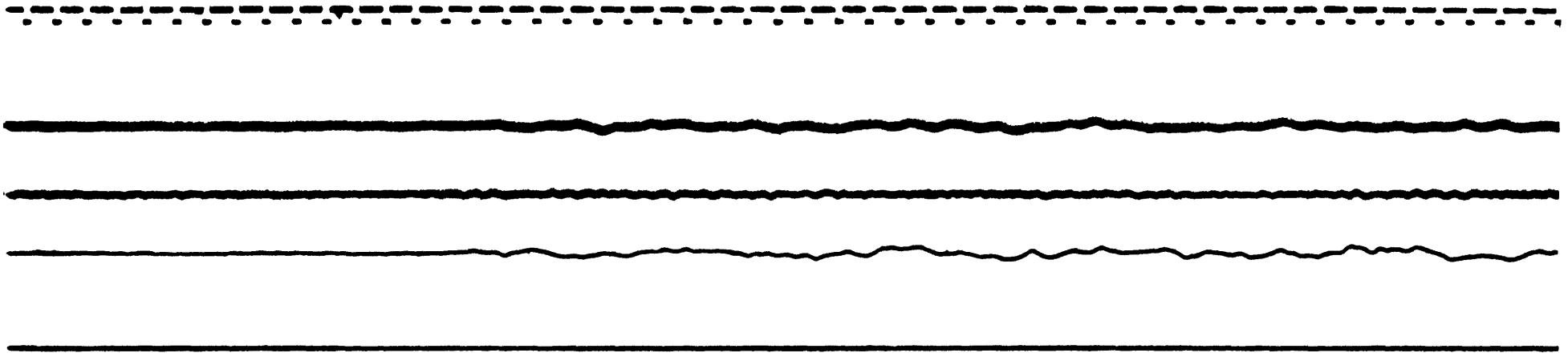
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5284 34.040N, 118.445W	235°	Sens. = 1.79 cm/g Freq. = 25.6 Hz	0.05 g
Los Angeles, 1955 1/2 Purdue Ave.		Damp. = 0.6 crit	
SMA No. 929 (USGS) 3rd level	Up	Sens. = 1.83 cm/g Freq. = 26.1 Hz	0.03
Earthquake of		Damp. = 0.6 crit	
28 June 1992 - 1158 G.m.t.	145°	Sens. = 1.82 cm/g Freq. = 26.0 Hz Damp. = 0.6 crit	0.07

Film speed = 1 cm/sec



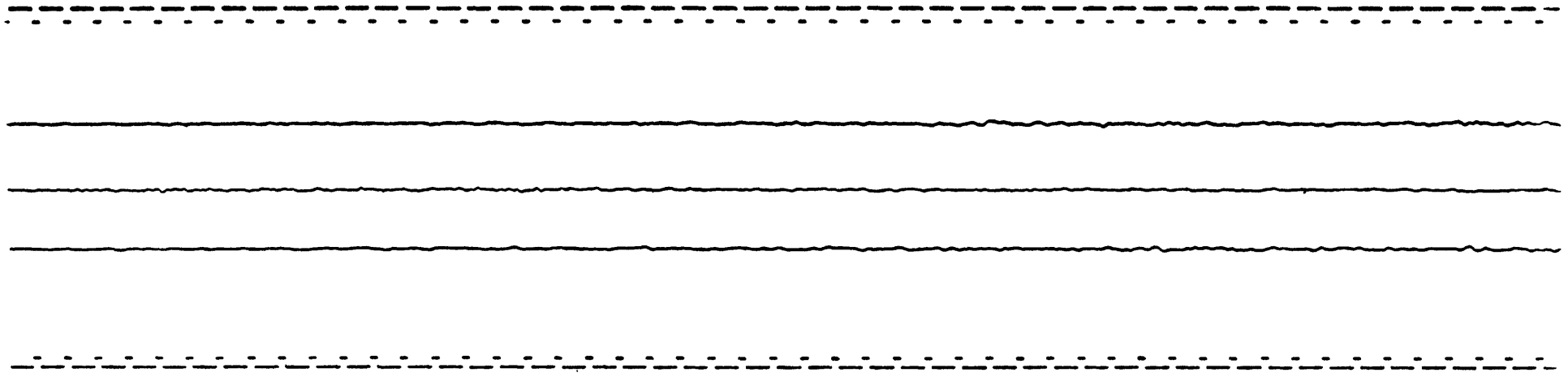
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 5277 34.044N, 118.467W	226°	Sens. = 1.87 cm/g Freq. = 25.3 Hz	0.06 g
Los Angeles, 12121 Wilshire Blvd.		Damp. = 0.6 crit	
SMA No. 5612 (CODE) Roof (15)	Up	Sens. = 1.74 cm/g Freq. = 26.5 Hz	0.03
Earthquake of		Damp. = 0.6 crit	
28 June 1992 - 1158 G.m.t.	136°	Sens. = 1.90 cm/g Freq. = 25.5 Hz Damp. = 0.6 crit	0.05

Film speed = 1 cm/sec



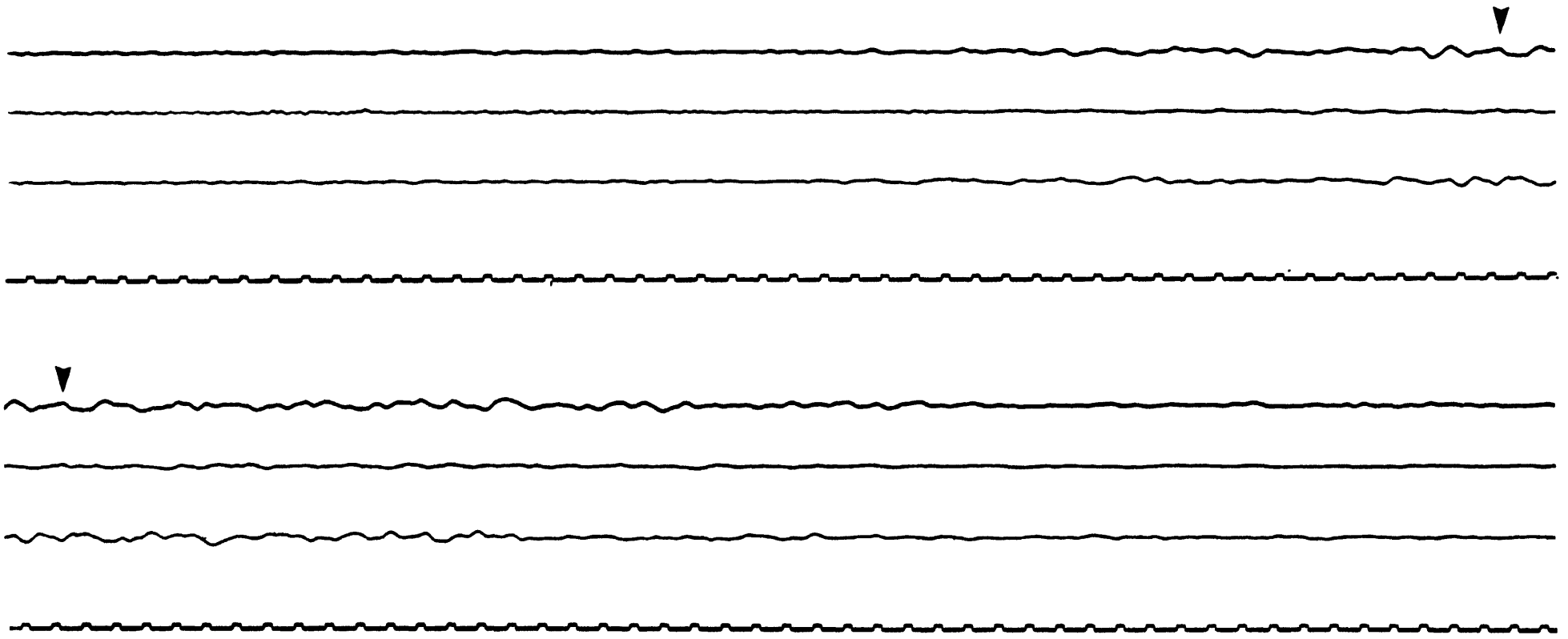
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 637 34.249N, 118.475W	360°	Sens. = 1.84 cm/g Freq. = 26.3 Hz	0.03
Sepulveda VA Hospital - Bldg. #40		Damp. = 0.55 crit	
SMA No. 751 (VA) Ground level	Up	Sens. = 1.81 cm/g Freq. = 25.6 Hz	0.02
Earthquake of		Damp. = 0.55 crit	
28 June 1992 - 1158 G.m.t.	270°	Sens. = 1.80 cm/g Freq. = 25.0 Hz Damp. = 0.55 crit	0.03

Film speed = 1 cm/sec



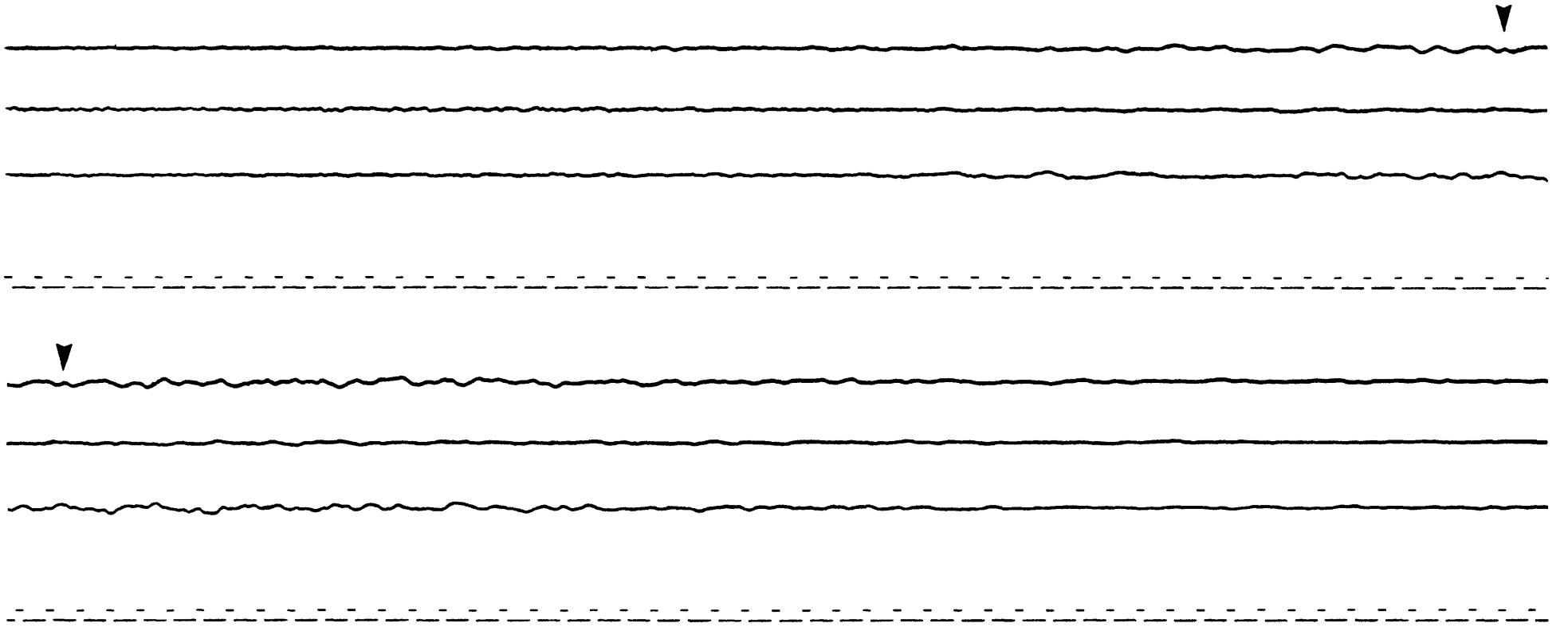
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 655 34.312N, 118.496W	022°	Sens. = 1.78 cm/g Freq. = 26.3 Hz	0.07g
Jensen Filter Plant - (Admin Bldg)		Damp. = 0.57 crit	
SMA-1 No. 259 (MWD) Basement	Up	Sens. = 1.74 cm/g Freq. = 27.0 Hz	0.02
Earthquake of		Damp. = 0.55 crit	
28 June 1992 - 1158 G.m.t.	292°	Sens. = 1.63 cm/g Freq. = 27.7 Hz Damp. = 0.50 crit	0.09

Film speed = 1 cm/sec



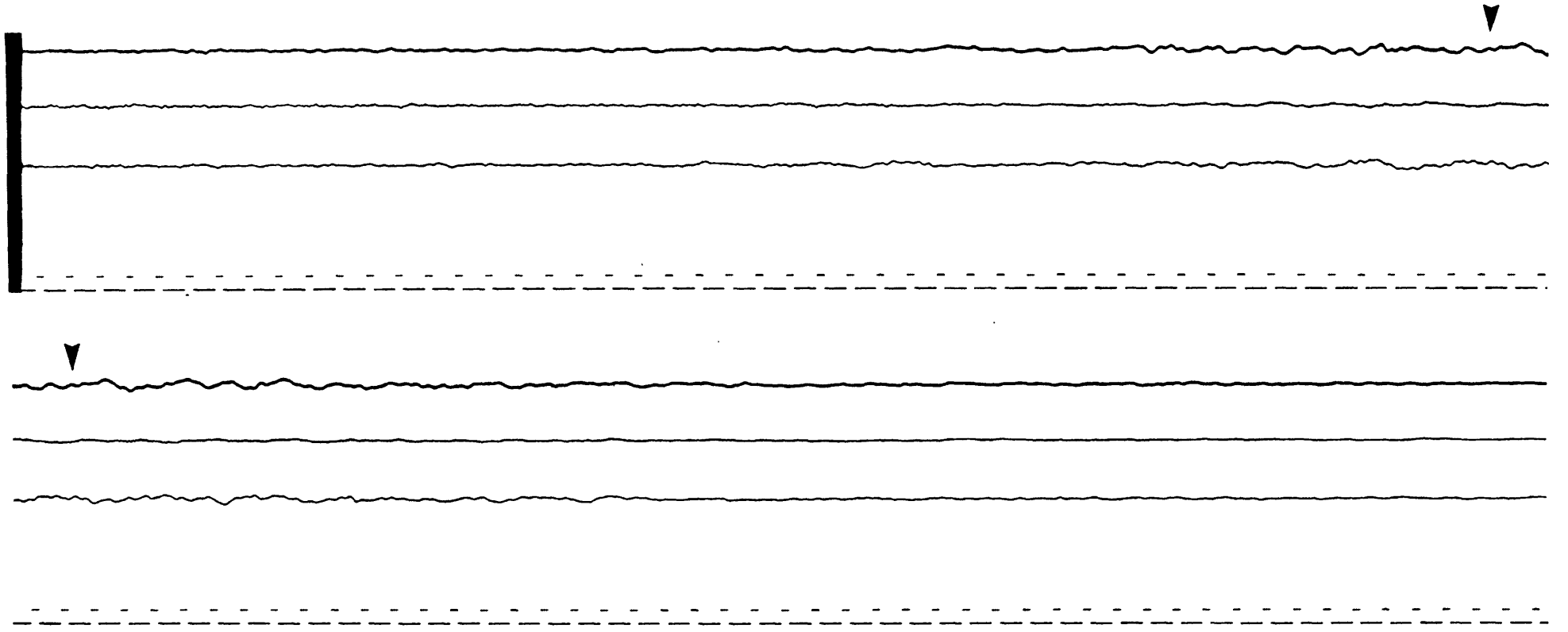
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 655 34.313N, 118.498W	022°	Sens. = 1.96 cm/g Freq. = 25.6 Hz Damp. = 0.63 crit	0.05g
Jensen Filter Plant, Generator bldg			
SMA No. 6757 (MWD) Ground	Up	Sens. = 1.99 cm/g Freq. = 25.5 Hz Damp. = 0.55 crit	0.02
Earthquake of			
28 June 1992 - 1158 G.m.t.	292°	Sens. = 1.90 cm/g Freq. = 25.7 Hz Damp. = 0.63 crit	0.05

Film speed = 1 cm/sec



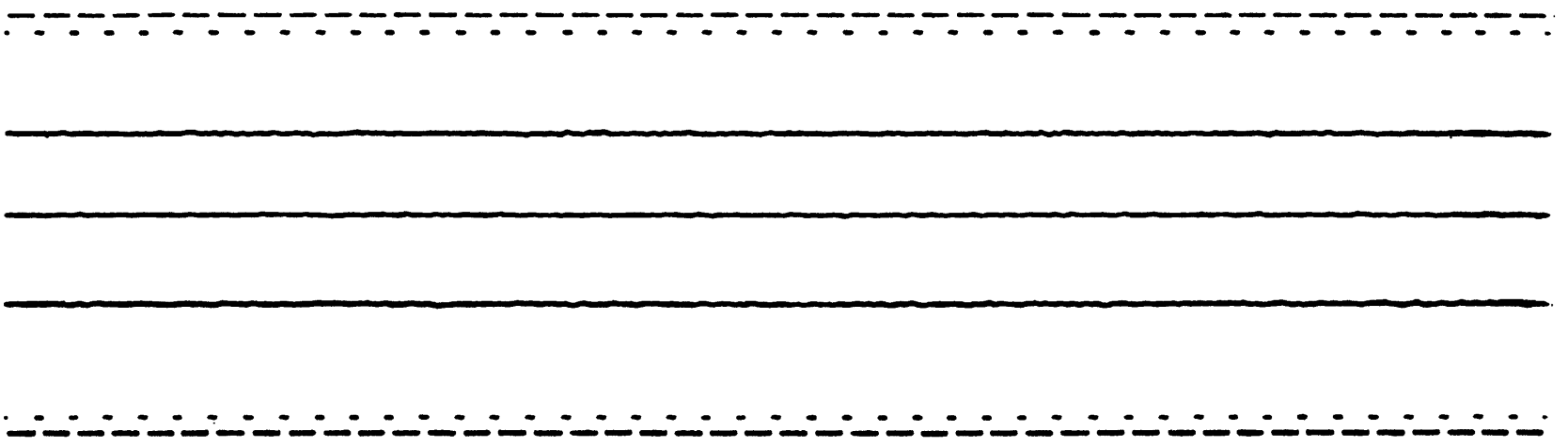
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 655 34.309N, 118.499W	022°	Sens. = 1.77 cm/g Freq. = 26.6 Hz	0.06g
Jensen Filter Plant - Reservoir roof		Damp. = 0.60 crit	
SMA No. 6756 (MWD)	Up	Sens. = 1.97 cm/g Freq. = 25.3 Hz	0.03
Earthquake of		Damp. = 0.63 crit	
28 June 1992 - 1158 G.m.t.	292°	Sens. = 1.82 cm/g Freq. = 26.5 Hz Damp. = 0.63 crit	0.06

Film speed = 1 cm/sec



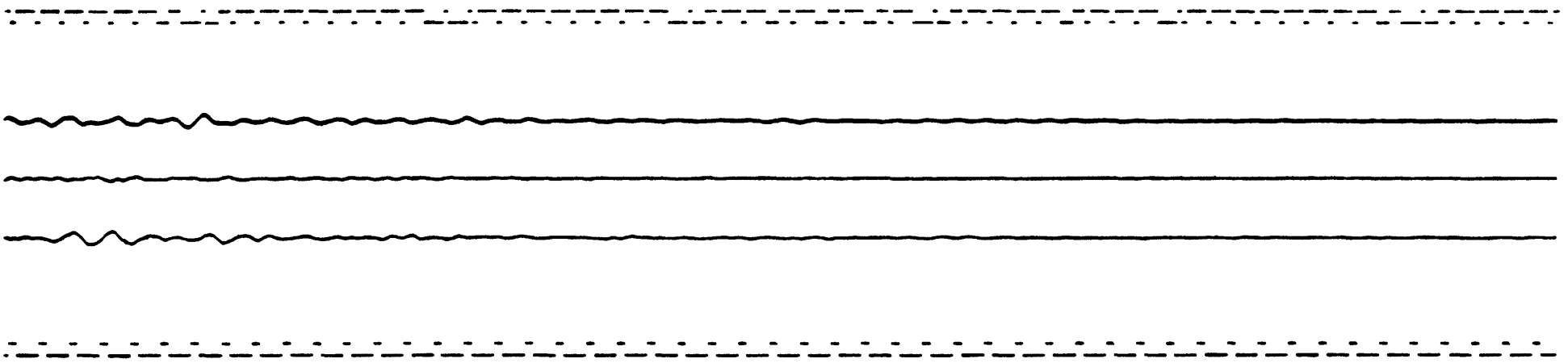
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 818 34.290N, 114.171W	351°	Sens. = 1.87 cm/g Freq. = 25.7 Hz	0.01 g
Gene Pumping Plant		Damp. = 0.6 crit	
SMA-1 No. 1049 (MWD)	Up	Sens. = 1.82 cm/g Freq. = 25.7 Hz	0.01
Earthquake of		Damp. = 0.6 crit	
28 June 1992 - 1158 G.m.t.	261°	Sens. = 1.80 cm/g Freq. = 25.4 Hz Damp. = 0.6 crit	0.01

Film speed = 1 cm/sec



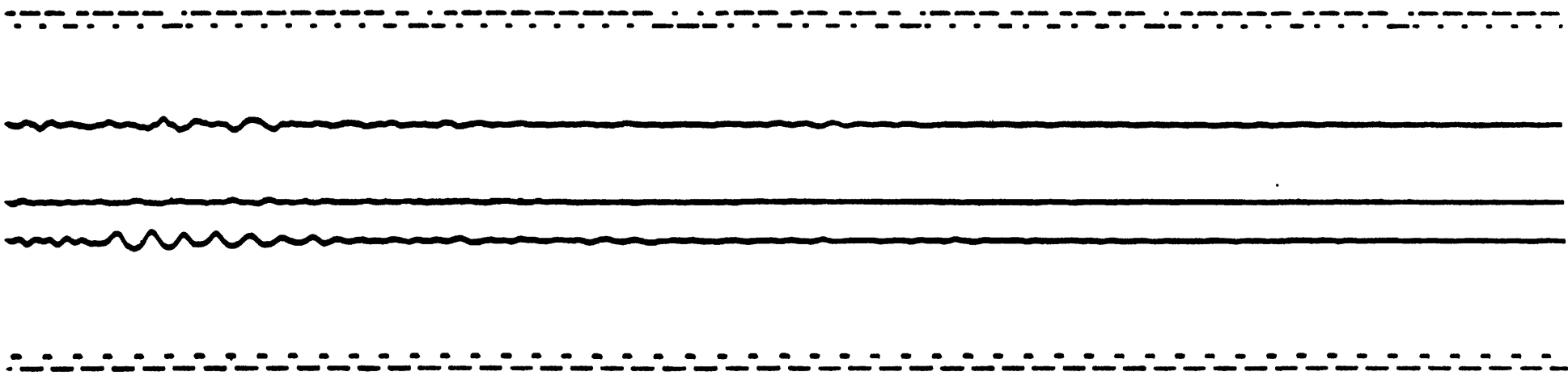
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 1035 35.643N, 118.470W	290°	Sens. = 1.86 cm/g Freq. = 25.4 Hz	0.06 g
Isabella Auxiliary Dam, Right Crest		Damp. = 0.6 crit	
SMA No. 6191 (ACOE)	Up	Sens. = 1.80 cm/g Freq. = 26.1 Hz	0.03
Earthquake of		Damp. = 0.6 crit	
28 June 1992 - 1158 G.m.t.	200°	Sens. = 1.89 cm/g Freq. = 26.9 Hz Damp. = 0.6 crit	0.05

Film speed = 1 cm/sec



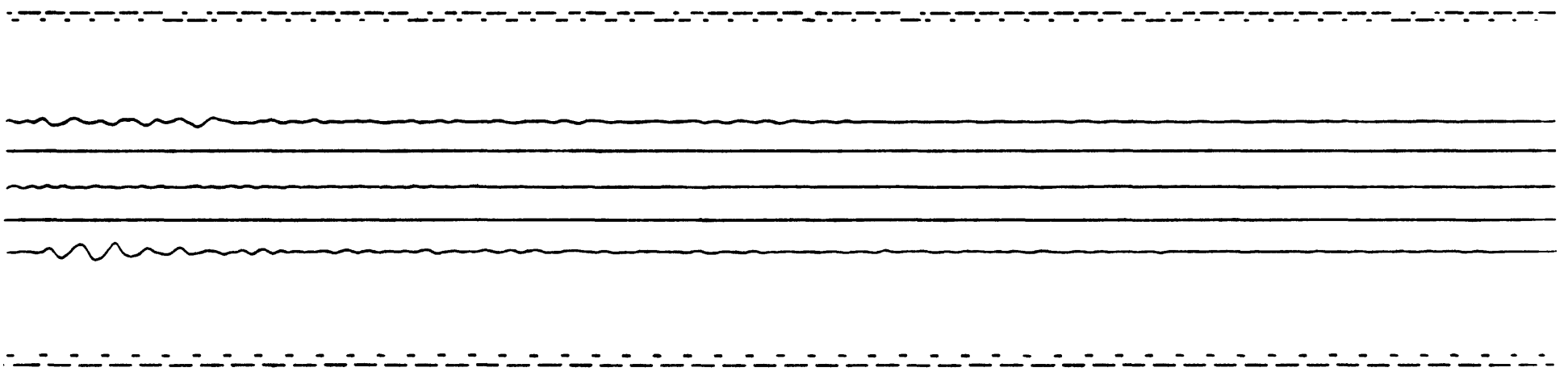
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 1035 35.643N, 118.468W	290°	Sens. = 1.75 cm/g Freq. = 26.9 Hz	0.06 g
Isabella Auxiliary Dam, Upper Tower		Damp. = 0.6 crit	
SMA No. 6190 (ACOE)	Up	Sens. = 1.80 cm/g Freq. = 25.7 Hz	0.03
Earthquake of		Damp. = 0.6 crit	
28 June 1992 - 1158 G.m.t.	200°	Sens. = 1.86 cm/g Freq. = 25.5 Hz Damp. = 0.6 crit	0.10

Film speed = 1 cm/sec



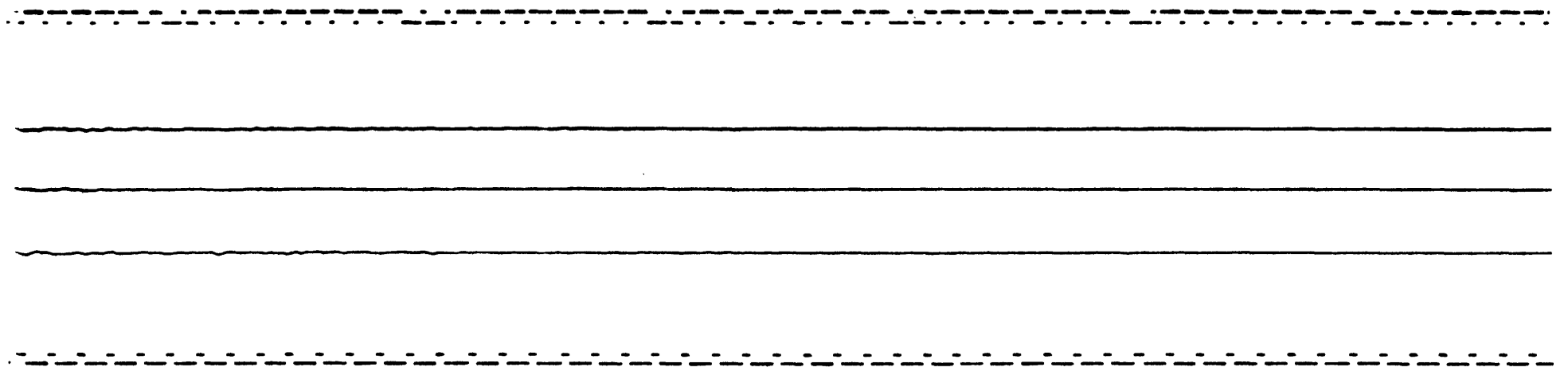
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 1035 35.642N, 118.467W	290°	Sens. = 1.74 cm/g Freq. = 26.3 Hz	0.05 g
Isabella Auxiliary Dam, Left Crest		Damp. = 0.6 crit	
SMA No. 3042 (ACOE)	Up	Sens. = 1.72 cm/g Freq. = 26.3 Hz	0.02
Earthquake of		Damp. = 0.6 crit	
28 June 1992 - 1158 G.m.t.	200°	Sens. = 1.77 cm/g Freq. = 26.3 Hz Damp. = 0.6 crit	0.10

Film speed = 1 cm/sec



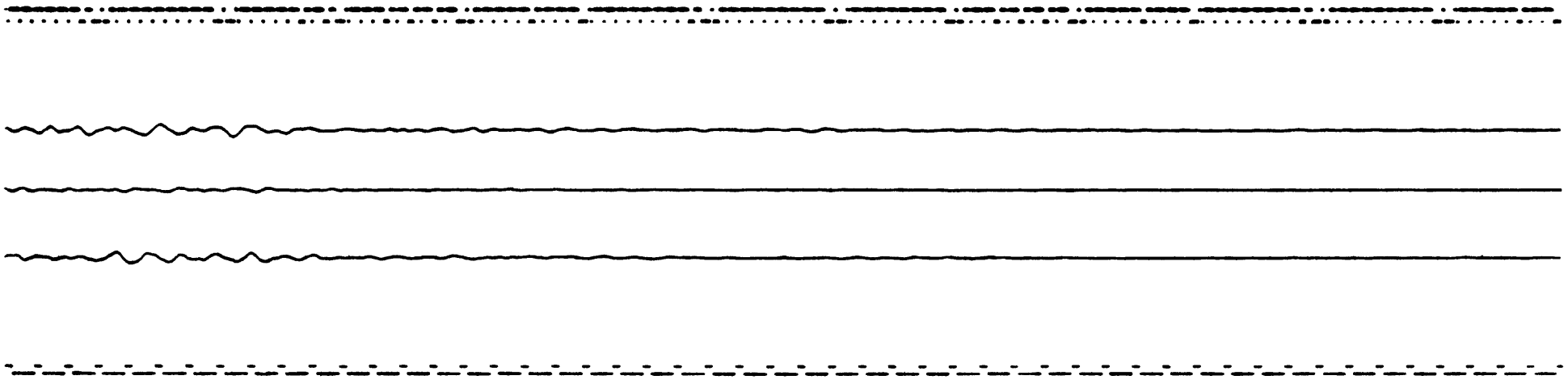
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 1035 35.642N, 118.463W	290°	Sens. = 1.79 cm/g Freq. = 25.6 Hz	0.02 g
Isabella Auxiliary Dam, Left Abutment		Damp. = 0.6 crit	
SMA No. 3041 (ACOE)	Up	Sens. = 1.85 cm/g Freq. = 26.3 Hz	0.01
Earthquake of		Damp. = 0.6 crit	
28 June 1992 - 1158 G.m.t.	200°	Sens. = 1.76 cm/g Freq. = 26.3 Hz Damp. = 0.6 crit	0.02

Film speed = 1 cm/sec



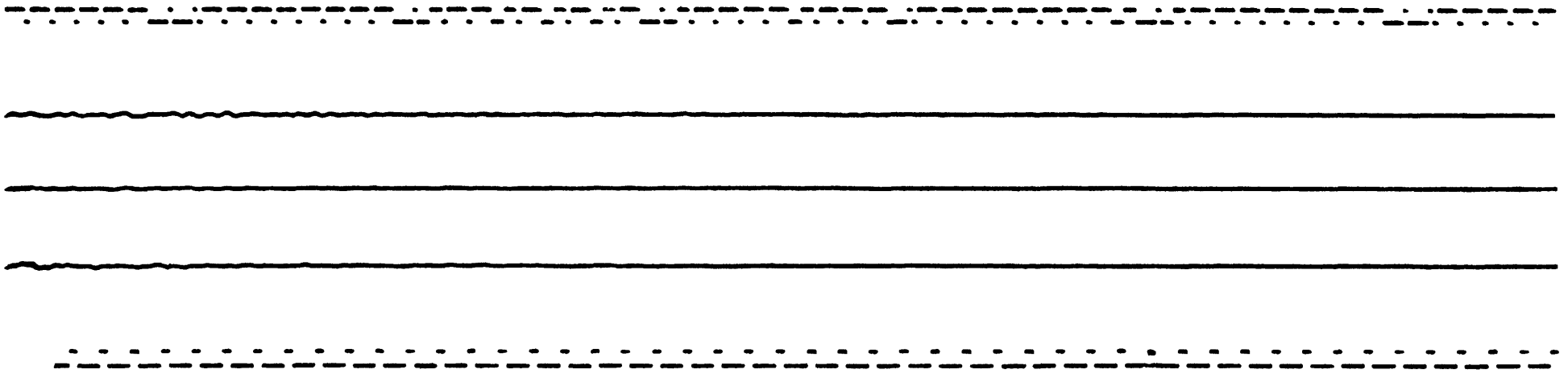
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 1035 35.641N, 118.469W	290°	Sens. = 1.72 cm/g Freq. = 26.3 Hz	0.08 g
Isabella Auxiliary Dam, Downstream		Damp. = 0.6 crit	
SMA No. 3040 (ACOE)	Up	Sens. = 1.82 cm/g Freq. = 26.3 Hz	0.02
Earthquake of		Damp. = 0.6 crit	
28 June 1992 - 1158 G.m.t.	200°	Sens. = 1.84 cm/g Freq. = 26.3 Hz Damp. = 0.6 crit	0.05

Film speed = 1 cm/sec



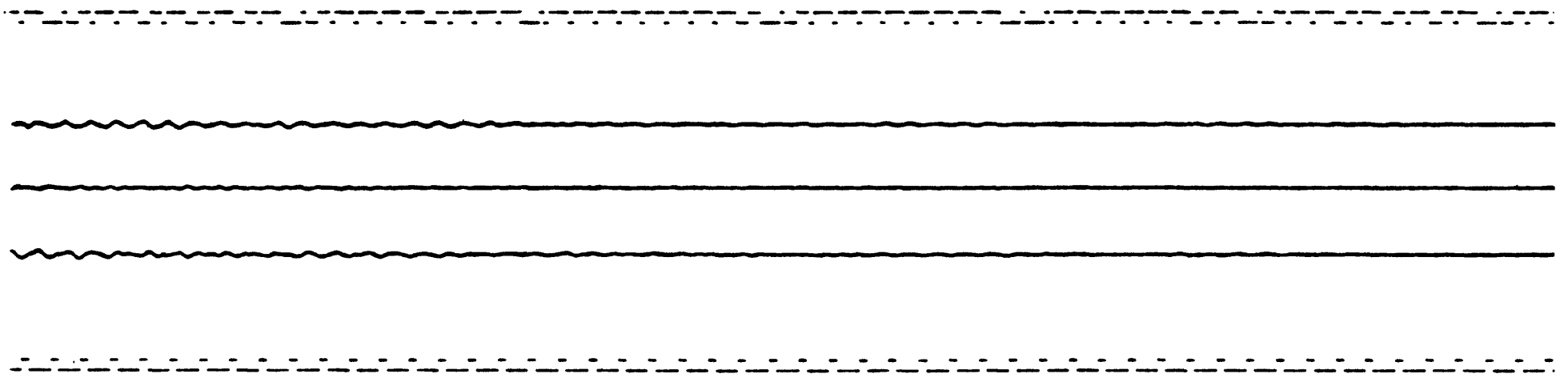
NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 1035 35.643N, 118.470W	290°	Sens. = 1.82 cm/g Freq. = 25.7 Hz	0.03 g
Isabella Auxiliary Dam, Rt Abutment		Damp. = 0.6 crit	
SMA No. 6192 (ACOE)	Up	Sens. = 1.85 cm/g Freq. = 25.5 Hz	0.01
Earthquake of		Damp. = 0.6 crit	
28 June 1992 - 1158 G.m.t.	200°	Sens. = 1.86 cm/g Freq. = 25.2 Hz Damp. = 0.6 crit	0.03

Film speed = 1 cm/sec



NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 1484 36.061N, 118.920W	285°	Sens. = 1.67 cm/g Freq. = 26.2 Hz	0.04 g
Lake Success Dam - Right Crest		Damp. = 0.61 crit	
SMA-1 No. 3076 (ACOE)	Up	Sens. = 1.77 cm/g Freq. = 26.2 Hz	0.02
Earthquake of		Damp. = 0.61 crit	
28 June 1992 - 1158 G.m.t.	195°	Sens. = 1.83 cm/g Freq. = 26.1 Hz Damp. = 0.58 crit	0.04

Film speed = 1 cm/sec



NATIONAL STRONG-MOTION PROGRAM	DIRECTION	CONSTANTS	MAX. ACCELERATION
Station No. 1098 36.420N, 119.000W	004°	Sens. = 1.82 cm/g Freq. = 26.2 Hz	0.03 g
Terminus Dam - Main Right Crest		Damp. = 0.6 crit	
SMA No. 6188 (ACOE)	Up	Sens. = 2.03 cm/g Freq. = 25.3 Hz	0.02
Earthquake of		Damp. = 0.6 crit	
28 June 1992 - 1158 G.m.t.	274°	Sens. = 1.90 cm/g Freq. = 25.8 Hz Damp. = 0.6 crit	0.04

Film speed = 1 cm/sec