土木研究所彙報

第３２号

土木構造物における加速度強震記録(No. 1)

Strong-Motion Acceleration Records from Public Works in Japan (No. 1)

昭和53年3月

建設省土木研究所

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まえがき

建設省の土木施設に対する強震観測は，近畿地方建設局が昭和３３年に猿谷ダムで観測を開始したのに端を発している。以来，土木研究所では，土木構造物の強震観測を一貫して推進してきた。強震観測網により得られた強震記録は，従来，原波形，ディジタル数値および応答スペクトル曲線をそれぞれ別箇に印刷公表してきた。

本彙報は，これらの成果を総合し，土木研究所が管理する全ての記録につき，当初の記録から地震発生年月日の順に，強震記録を再掲する新しいシリーズの第１巻である。このシリーズは，ディジタル記録の再生波形および応答スペクトル曲線等を網羅している。

本報告書が，先に公刊した資料と合わせて，構造物の耐震設計の向上のために活用されれば幸いである。

昭和５３年３月

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Note.

English description for foreign readers is from page 369.

目　　次

1. 概　　要 …… 1
2. 掲載地震動記録 …… 2
3. 地震の諸元 …… 8
4. 強震計の作動状況 …… 11
5. 地震動の加速度記録 …… 49
6. 応答スペクトル …… 149
参 考 文 献 …… 350
付録－1. 強震観測網の現況 …… 351
付録－2. 強震計の特性 …… 357
付録－3. 記録の補正 …… 367
付録－4. 応答スペクトルの計算法 …… 368
付録－5. 英文解説 (English Description) …… 369

1. 概　説

建設省の土木関連施設における強震観測は，昭和３２年度に近畿地方建設局が猿谷ダムにＳＭＡＣ型強震計を設置し観測を開始したことに端を発している。それ以来，土木研究所では土木構造物およびその近傍の地盤の強震観測を推進し，地方建設局，関係公団，地方庁などの諸機関による強震観測とも合わせて，記録の収集，整理にあたり，主要な記録は逐次公刊するとともに，特に重要な記録については数値化を行ない現在までに多数の資料を刊行してきた。現在までに得られた強震記録は各種の調査，研究に広く利用され，土木構造物の耐震性の調査ならびに耐震設計に活用されている。

現在までに刊行された資料の多くは，強震観測体系と検索システムを徐々に整備するとともに，記録の利用法を模索するなかで個々の強震記録の利用を図るという点に力点が置かれていたため，ややもすると統一した利用性を欠くきらいがあった。しかしながら，その後の強震観測体勢の整備および採取された強震記録の解析によってもたらされた地震動と地震の規模あるいは地震動と地盤条件等の因果関係が少しづつ解明されるとともに，耐震設計の中で強震記録の一層の利用を促進するためには，単に個々の地震動の記録のみならず，それが採取された地震の特性，同時に観測された他地点の記録等との関連をつけながら，より総合的に記録の利用を図る必要のあることが指摘されてきた。本資料はこのような強震記録の収集整理を土木研究所が現在推し進めている地震動記録の総合検索システムの一環として位置づけ，装を新たにまとめ直した最初の資料である。本資料には，１９６３年から１９６７年までの２００成分の強震記録が収録されており，これに続く記録および関連する資料も逐次刊行していく予定である。

本資料に収録された地震動記録は，多忙な業務の合間を縫い観測に協力された諸機関の観測担当者の努力の成果である。ここに観測に携わった方々の地道な努力に敬意を表するとともに，本資料が広く利用され，耐震設計の合理化に資することを望むものである。

2. 掲載地震動記録

本資料に収録した地震動記録の一覧をTable 1に示す。Table 1 には記録が採取された地震および強震計の設置位置が併記されており，それぞれ後述する表－2（地震の諸元）および表－3（地震計の作動状況）と対応するようになっている。

Table 1の項目を順を追って説明すると以下のようになる。

<table>
<tr><th>Table 1の項目</th><th>説　　明</th></tr>
<tr><td>INDEX NO.</td><td>地震動の記録をディジタル化した整理番号（年代順）</td></tr>
<tr><td>RECORD NO.</td><td>地震動記録の採取された場所の整理番号であり，強震計の設置点の整理番号（ STATION NO. ）を示す数字，強震計の設置箇所（ INSTRUMENT ）を示すアルファベットの記号（GR, PI, AB, DA, A, B, C等）および当該強震計で観測された何番目の記録であるかを示す数字（ SEQUENCE NO. ）より構成されている。
なお，下記の記録は RECORD NO. がついていないが，これはそれぞれ次の機関で観測整理されたものをこれらの機関の御好意により本資料に収録させていただいたものである。
<table>
<tr><th>INDEX NO.</th><th>NAME OF STRUCTURE</th><th>提供機関名</th></tr>
<tr><td>1</td><td>EL CENTRO</td><td>カルフォルニア工科大学</td></tr>
<tr><td>2, 3</td><td>TAFT</td><td>カルフォルニア工科大学</td></tr>
<tr><td>4～8</td><td>TOKYO (TOODAI)</td><td>東京大学地震研究所</td></tr>
<tr><td>11～13</td><td>KUSHIRO</td><td>建設省建築研究所</td></tr>
<tr><td>31～33</td><td>NIIGATA</td><td>建設省建築研究所</td></tr>
<tr><td>39～40</td><td>SHIZUOKA</td><td>日本国有鉄道</td></tr>
</table>
設置箇所（ INSTRUMENT NO. ）を示すアルファベットの記号は以下の通りである。
GR：地盤上の記録（Ground）
PI：橋脚上の記録（Pier）
AB：橋台上の記録（Abutment）
DA：ダム本体の記録（ DAM ）
ES：河口堰の記録（ ESTUARY DAM ）
A, B, C： 松代群発地震の記録を採取するために，落合橋（強震計整理番号９０５）に特別に設けられたもので，それぞれ，橋脚上，橋脚近傍の地盤上および橋脚からおよそ4㎞離れた地盤上の記録を表わす。</td></tr>
<tr><td>NAME OF STRUCTURE</td><td>強震計が設置されている場所で橋，ダム等の名称をとって表示されている場合が多い。
強震計の感振方向は次のように表示されている。
N-S, E-W：南北方向，東西方向
LG., TR.：構造物の主軸方向，主軸に直交する方向
U-D　　：上下方向</td></tr>
</table>

MAXIMUM ACCELERATION (GAL)	地震動記録の最大加速度〔単位はGal〕
TIME (SEC)	最大加速度の生ずる時間〔単位は秒〕
DURATION TIME (SEC)	ディジタル化した地震動記録の継続時間〔単位は秒〕
EARTHQUAKE NO.	地震動記録が採取された地震の整理番号であり，地震の発生した年およびその年の地震発生順にふった番号より構成される。なお，E.Q.NO. が表示されていない記録はそれが採取された地震が整理されていないかもしくは，はっきり識別できないことを示す。
W.P.	地震動記録の波形を掲載している本資料のページ数を示す。
L.P.	地震動記録の応答スペクトル（絶対加速度応答スペクトル）を掲載している本資料のページ数を示す。

Table 1 Index of Earthquake Records (1)

INDEX NO.	STATION RECORD NO.	NAME OF STRUCTURE		MAX.ACCEL. (GAL)	TIME (SEC)	DURATION TIME (SEC)	DATA NUMBER	E.Q.NO.	W.P.	L.P.
1		EL CENTRO	N-S	-313.060	2.01	13.37	231	*****	50	150
2		TAFT	S69E	-165.299	3.85	30.61	569	*****	51	151
3		TAFT	N21E	-173.799	9.10	30.81	503	*****	51	152
4		TOKYO(TOODAI)	N-S	70.250	1.80	9.00	113	*****	53	153
5		TOKYO(TOODAI)	U-D	-30.125	2.64	5.00	82	*****	53	154
6		TOKYO(TOODAI)	E-W	-55.999	1.60	9.00	112	*****	53	155
7		TOKYO(TOODAI)	N-S	66.625	1.53	10.00	128	*****	54	156
8		TOKYO(TOODAI)	E-W	50.126	1.30	10.00	128	*****	54	157
9		YOSHIDA BRIDGE	TR.	19.000	4.82	11.90	596	*****	55	158
10		YOSHIDA BRIDGE	LG.	15.760	3.52	11.90	596	*****	55	159
11		KUSHIRO	N-S	-243.924	17.60	39.01	593	*****	57	160
12		KUSHIRO	U-D	-220.750	17.35	39.01	743	*****	57	161
13		KUSHIRO	E-W	372.750	17.20	39.01	775	*****	57	162
14	1001-GR-1	AJIGAWA BRIDGE	LG.	21.875	3.35	31.01	582	*****	59	163
15	114-GR-1	AMAGASAKI BRIDGE	TR.	27.625	17.60	32.01	413	*****	61	164
16	114-GR-1	AMAGASAKI BRIDGE	U-D	35.501	3.60	32.01	396	*****	61	165
17	114-GR-1	AMAGASAKI BRIDGE	LG.	-13.500	4.10	32.01	406	*****	61	166
18		SHIOYA	N-S	-26.875	1.45	6.00	72	*****	63	167
19		SHIOYA	U-D	-8.313	1.40	6.00	66	*****	63	168
20		SHIOYA	E-W	-24.250	1.14	6.00	77	*****	63	169
21		IWAYA	N-S	22.375	0.90	9.00	101	*****	64	170
22		IWAYA	U-D	11.500	1.90	8.00	83	*****	64	171
23		AKASHI	N-S	79.875	1.80	11.00	136	*****	65	172
24		AKASHI	U-D	-27.062	2.00	11.00	129	*****	65	173
25		AKASHI	E-W	36.126	1.80	11.00	126	*****	65	174
26	901-GR-4	P.W.R.I CHIBA	N-S	-76.750	1.20	8.00	127	*****	66	175
27	901-GR-4	P.W.R.I CHIBA	U-D	-34.624	1.03	8.00	130	*****	66	176
28	901-GR-4	P.W.R.I CHIBA	E-W	-71.000	1.30	8.00	127	*****	66	177
29		FUMINOMAKI B.	LG.	-35.999	4.40	29.65	1483	*****	67	178
30		FUMINOMAKI B.	TR.	38.051	7.82	29.65	1474	*****	67	179
31		NIIGATA	N-S	-134.750	9.50	34.01	455	*****	69	180
32		NIIGATA	U-D	42.376	2.30	29.01	353	*****	69	181
33		NIIGATA	E-W	156.375	8.90	33.91	421	*****	69	182
34		SANNOOKAI DAM	RRS	54.641	6.26	18.01	1800	*****	71	183
35		SANNOOKAI DAM	RLS	-52.429	7.14	18.01	1801	*****	71	184
36	904-GR-1	SHINTENRYUGAWA B	TR.	-41.499	2.55	20.01	267	*****	72	185
37	904-GR-1	SHINTENRYUGAWA B	U-D	-21.099	3.30	15.00	196	*****	72	186
38	904-GR-1	SHINTENRYUGAWA B	LG.	-100.399	2.70	20.01	246	*****	72	187
39		SHIZUOKA	N-S	108.300	1.68	10.00	142	*****	73	188
40		SHIZUOKA	E-W	67.000	1.56	10.00	142	*****	73	189
41	902-GR-14	NISHIARAI B.	TR.	-16.900	8.30	20.01	264	*****	74	190
42	902-GR-14	NISHIARAI B.	LG.	-21.299	10.56	20.01	231	*****	74	191
43	905-A-8	OCHIAI BRIDGE	LG.	-41.374	1.85	15.00	219	66001	75	192
44	905-A-8	OCHIAI BRIDGE	TR.	25.875	3.20	15.00	213	66001	75	193
45	905-B-1	OCHIAI BRIDGE	LG.	-27.875	2.29	10.00	222	66001	76	194
46	905-B-1	OCHIAI BRIDGE	TR.	38.501	1.45	10.00	184	66001	76	195
47	905-A-10	OCHIAI BRIDGE	LG.	-31.375	1.60	15.00	210	*****	77	196
48	905-A-10	OCHIAI BRIDGE	TR.	-30.875	1.48	15.00	197	*****	77	197
49	905-B-2	OCHIAI BRIDGE	LG.	38.501	1.71	10.00	188	*****	78	198
50	905-B-2	OCHIAI BRIDGE	TR.	-53.374	1.65	10.00	175	*****	78	199

Table 1 Index of Earthquake Records (2)

INDEX NO.	RECORD NO.	STATION NAME OF STRUCTURE		MAX.ACCEL. (GAL)	TIME (SEC)	DURATION TIME (SEC)	DATA NUMBER	E.Q.NO.	W.P.	L.P.
51	905-A-11	OCHIAI BRIDGE	LG.	61.376	0.53	10.00	167	*****	79	200
52	905-A-11	OCHIAI BRIDGE	TR.	39.001	0.51	10.00	163	*****	79	201
53	905-B-3	OCHIAI BRIDGE	LG.	-33.749	0.48	8.00	119	*****	80	202
54	905-B-3	OCHIAI BRIDGE	TR.	32.501	0.25	8.00	110	*****	80	203
55	905-C-1	OCHIAI BRIDGE	E-W	-19.375	0.16	10.00	132	*****	81	204
56	905-C-1	OCHIAI BRIDGE	N-S	-15.125	1.40	10.00	122	*****	81	205
57	905-A-13	OCHIAI BRIDGE	LG.	-53.999	1.64	30.01	380	66005	83	206
58	905-A-13	OCHIAI BRIDGE	TR.	-20.503	3.60	30.01	360	66005	83	207
59	905-B-4	OCHIAI BRIDEG	LG.	51.251	1.10	15.00	242	66005	85	208
60	905-B-4	OCHIAI BRIDGE	TR.	-24.250	1.10	15.00	209	66005	85	209
61	905-C-2	OCHIAI BRIDGE	E-W	19.125	15.48	30.01	493	66005	87	210
62	905-C-2	OCHIAI BRIDGE	N-S	-15.503	15.25	30.01	396	66005	87	211
63	905-A-15	OCHIAI BRIDGE	LG.	-45.999	1.36	15.00	211	*****	89	212
64	905-A-15	OCHIAI BRIDGE	TR.	24.000	0.80	15.00	206	*****	89	213
65	905-B-5	OCHIAI BRIDGE	LG.	-35.249	1.35	10.00	170	*****	90	214
66	905-B-5	OCHIAI BRIDGE	TR.	-31.625	1.10	10.00	167	*****	90	215
67	905-A-16	OCHIAI BRIDGE	LG.	25.375	1.64	10.00	164	*****	91	216
68	905-A-16	OCHIAI BRIDGE	TR.	11.000	1.50	10.00	215	*****	91	217
69	905-B-6	OCHIAI BRIDGE	LG.	14.500	0.88	10.00	212	*****	92	218
70	905-B-6	OCHIAI BRIDGE	TR.	15.625	1.42	10.00	173	*****	92	219
71	905-B-7	OCHIAI BRIDGE	LG.	73.250	0.78	8.00	140	*****	93	220
72	905-B-7	OCHIAI BRIDGE	TR.	-41.374	0.54	8.00	169	*****	93	221
73	905-A-17	OCHIAI BRIDGE	LG.	39.376	0.74	8.00	148	*****	94	222
74	905-A-17	OCHIAI BRIDGE	TR.	26.125	0.56	8.00	167	*****	94	223
75	905-B-10	OCHIAI BRIDGE	LG.	-94.250	0.99	10.00	208	*****	95	224
76	905-B-10	OCHIAI BRIDGE	TR.	57.876	1.39	10.50	175	*****	95	225
77	905-A-43	OCHIAI BRIDGE	LG.	53.001	2.12	10.50	159	*****	96	226
78	905-A-43	OCHIAI BRIDGE	TR.	33.501	1.40	10.45	167	*****	96	227
79	905-B-11	OCHIAI BRIDGE	LG.	230.500	0.15	12.00	249	*****	97	228
80	905-B-11	OCHIAI BRIDGE	U-D	-28.000	0.34	12.00	202	*****	97	229
81	905-B-11	OCHIAI BRIDGE	TR.	44.501	0.	12.00	238	*****	97	230
82	905-C-4	OCHIAI BRIDGE	E-W	-72.500	1.52	18.01	324	*****	98	231
83	905-C-4	OCHIAI BRIDGE	U-D	26.375	1.68	18.01	310	*****	98	232
84	905-C-4	OCHIAI BRIDGE	N-S	-91.125	1.62	18.01	329	*****	98	233
85	905-B-18	OCHIAI BRIDGE	LG.	206.125	0.69	20.01	392	66010	99	234
86	905-B-18	OCHIAI BRIDGE	U-D	44.001	0.98	20.01	385	66010	99	235
87	905-B-18	OCHIAI BRIDGE	TR.	186.875	1.48	20.01	350	66010	99	236
88	905-B-19	OCHIAI BRIDGE	LG.	-28.875	0.90	6.00	170	*****	100	237
89	905-B-19	OCHIAI BRIDGE	TR.	20.000	0.64	8.00	143	*****	100	238
90	905-A-56	OCHIAI BRIDGE	LG.	189.000	1.14	20.01	346	66010	101	239
91	905-A-56	OCHIAI BRIDGE	U-D	-42.249	0.76	20.01	324	66010	101	240
92	905-A-56	OCHIAI BRIDGE	TR.	-146.750	1.75	20.01	405	66010	101	241
93	905-A-57	OCHIAI BRIDGE	LG.	-51.749	1.96	10.00	183	*****	102	242
94	905-A-57	OCHIAI BRIDGE	TR.	-20.000	3.54	10.00	186	*****	102	243
95	905-C-7	OCHIAI BRIDGE	E-W	139.375	2.58	25.51	412	66010	103	244
96	905-C-7	OCHIAI BRIDGE	U-D	-31.000	2.02	25.51	454	66010	103	245
97	905-C-7	OCHIAI BRIDGE	N-S	-230.375	2.00	25.51	396	66010	103	246
98	905-C-8	OCHIAI BRIDGE	E-W	-10.375	2.90	6.00	147	*****	105	247
99	905-C-8	OCHIAI BRIDGE	N-S	-25.375	1.30	6.00	134	*****	105	248
100	905-B-33	OCHIAI BRIDGE	LG.	310.750	0.35	15.00	319	66013	106	249

Table 1 Index of Earthquake Records (3)

INDEX NO.	RECORD NO.	STATION NAME OF STRUCTURE		MAX.ACCEL. (GAL)	TIME (SEC)	DURATION TIME (SEC)	DATA NUMBER	E.Q.NO.	W.P.	L.P.
101	905-B-33	OCHIAI BRIDGE	TR.	-44.374	0.58	15.00	317	66013	106	250
102	905-C-13	OCHIAI BRIDGE	E-W	-59.374	1.20	16.01	283	66013	107	251
103	905-C-13	OCHIAI BRIDGE	N-S	-126.500	1.24	18.01	270	66013	107	252
104	905-B-40	OCHIAI BRIDGE	LG.	-88.125	1.90	10.00	223	*****	108	253
105	905-B-40	OCHIAI BRIDGE	U-D	21.000	1.08	10.00	216	*****	108	254
106	905-B-40	OCHIAI BRIDGE	TR.	50.001	1.78	10.00	222	*****	108	255
107	905-C-23	OCHIAI BRIDGE	E-W	-39.749	2.00	17.91	275	*****	109	256
108	905-C-23	OCHIAI BRIDGE	N-S	-46.499	2.26	15.00	246	*****	109	257
109	905-C-30	OCHIAI BRIDGE	E-W	-34.874	4.64	20.01	280	66016	110	258
110	905-C-30	OCHIAI BRIDGE	U-D	10.250	0.60	20.01	246	66016	110	259
111	905-C-30	OCHIAI BRIDGE	N-S	40.001	2.70	20.01	239	66016	110	260
112	905-B-49	OCHIAI BRIDGE	LG.	-73.500	2.70	10.00	177	66016	111	261
113	905-B-49	OCHIAI BRIDGE	U-D	31.875	1.28	10.00	179	66016	111	262
114	905-B-49	OCHIAI BRIDGE	TR.	-70.375	2.54	10.00	172	66016	111	263
115	905-A-123	OCHIAI BRIDGE	LG.	-99.250	2.90	15.00	263	66016	112	264
116	905-A-123	OCHIAI BRIDGE	U-D	28.125	0.96	15.00	247	66016	112	265
117	905-A-123	OCHIAI BRIDGE	TR.	-48.874	2.43	15.00	293	66016	112	266
118		OOYANOSHIMA	N-S	7.759	2.28	6.89	690	*****	113	267
119		OOYANOSHIMA	E-W	-7.125	2.71	6.89	690	*****	113	268
120	905-B-63	OCHIAI BRIDGE	LG.	294.125	0.92	15.00	324	*****	114	269
121	905-B-63	OCHIAI BRIDGE	TR.	79.375	0.96	15.00	293	*****	114	270
122	905-C-37	OCHIAI BRIDGE	E-W	-97.750	1.96	20.51	376	*****	115	271
123	905-C-37	OCHIAI BRIDGE	N-S	-95.000	2.60	20.51	349	*****	115	272
124		OOYANOSHIMA	N-S	-5.841	2.47	5.59	560	*****	116	273
125		OOYANOSHIMA	E-W	-7.873	2.46	5.59	560	*****	116	274
126	605-GR-2	SUSOBANA DAM	N-S	-52.749	0.82	10.00	141	66019	117	275
127	605-GR-2	SUSOBANA DAM	E-W	45.861	0.74	10.00	143	66019	117	276
128	905-A-169	OCHIAI BRIDGE	LG.	99.875	1.60	20.01	350	66019	118	277
129	905-B-74	OCHIAI BRIDGE	LG.	-95.750	0.86	20.01	395	66019	118	278
130	905-A-190	OCHIAI BRIDGE	LG.	70.401	0.76	15.00	326	*****	118	279
131	905-A-190	OCHIAI BRIDGE	U-D	-19.319	0.68	14.90	231	*****	119	280
132	905-A-190	OCHIAI BRIDGE	TR.	-15.336	0.60	14.97	344	*****	119	281
133	905-B-80	OCHIAI BRIDGE	LG.	142.017	0.64	14.99	462	*****	120	282
134	905-B-80	OCHIAI BRIDGE	U-D	-10.941	0.16	14.99	305	*****	120	283
135	905-B-80	OCHIAI BRIDGE	TR.	24.212	1.96	14.97	460	*****	120	284
136	302-GR-1	KAIHOKU BRIDGE	TR.	13.300	0.96	7.00	112	66025	121	285
137	302-GR-1	KAIHOKU BRIDGE	LG.	15.500	0.83	7.00	127	66025	121	286
138	905-B-107	OCHIAI BRIDGE	LG.	178.750	0.86	6.00	137	66029	121	287
139	905-A-236	OCHIAI BRIDGE	LG.	-73.545	1.78	13.97	412	66040	122	288
140	905-A-236	OCHIAI BRIDGE	U-D	18.661	0.05	14.00	359	66040	122	289
141	905-A-236	OCHIAI BRIDGE	TR.	58.725	2.04	13.99	527	66040	122	290
142	905-B-120	OCHIAI BRIDGE	LG.	54.407	2.04	14.92	417	66040	123	291
143	905-B-120	OCHIAI BRIDGE	U-D	-15.849	0.57	14.90	305	66040	123	292
144	905-B-120	OCHIAI BRIDGE	TR.	-56.852	2.50	14.97	483	66040	123	293
145	905-A-240	OCHIAI BRIDGE	LG.	-82.870	0.91	15.90	360	*****	124	294
146	905-A-240	OCHIAI BRIDGE	U-D	42.030	0.74	15.93	248	*****	124	295
147	905-A-240	OCHIAI BRIDGE	TR.	35.428	0.72	15.98	393	*****	124	296
148	905-B-122	OCHIAI BRIDGE	LG.	-213.552	1.05	15.86	468	*****	125	297
149	905-B-122	OCHIAI BRIDGE	U-D	-37.230	0.50	15.99	399	*****	125	298
150	905-B-122	OCHIAI BRIDGE	TR.	56.858	0.97	15.96	496	*****	125	299

Table 1 Index of Earthquake Records (4)

INDEX NO.	STATION RECORD NO.	NAME OF STRUCTURE		MAX.ACCEL. (GAL)	TIME (SEC)	DURATION TIME (SEC)	DATA NUMBER	E.Q.NO.	W.P.	L.P.
151	605-GR-26	SUSOBANA DAM	N-S	130.380	1.66	10.00	130	*****	126	300
152	605-GR-26	SUSOBANA DAM	E-W	152.130	1.50	10.00	148	*****	126	301
153	905-B-162	OCHIAI BRIDGE	LG.	-111.652	0.94	16.00	457	*****	127	302
154	905-B-162	OCHIAI BRIDGE	U-D	-54.196	0.06	15.96	366	*****	127	303
155	905-B-162	OCHIAI BRIDGE	TR.	52.306	1.59	15.91	313	*****	127	304
156	905-A-277	OCHIAI BRIDGE	LG.	66.969	0.84	14.00	340	*****	128	305
157	905-A-277	OCHIAI BRIDGE	U-D	-22.855	0.69	13.95	232	*****	128	306
158	905-A-277	OCHIAI BRIDGE	TR.	47.878	0.61	13.95	385	*****	128	307
159	202-GR-11	UONUMA BRIDGE	TR.	45.001	1.17	10.00	188	66041	129	308
160	202-GR-11	UONUMA BRIDGE	U-D	-15.900	2.70	10.00	136	66041	129	309
161	905-B-175	OCHIAI BRIDGE	LG.	-113.625	1.45	15.00	620	*****	130	310
162	905-B-175	OCHIAI BRIDGE	U-D	17.131	1.00	14.88	532	*****	130	311
163	905-B-175	OCHIAI BRIDGE	TR.	-32.097	1.79	14.99	536	*****	130	312
164	905-A-284	OCHIAI BRIDGE	LG.	-71.340	2.10	15.97	474	*****	131	313
165	905-A-284	OCHIAI BRIDGE	U-D	23.184	1.89	15.99	351	*****	131	314
166	905-A-284	OCHIAI BRIDGE	TR.	-22.803	1.91	15.96	546	*****	131	315
167	901-GR-17	P.W.R.I CHIBA	E-W	89.400	2.20	15.00	229	66044	132	316
168	901-GR-17	P.W.R.I CHIBA	U-D	-19.299	4.33	10.00	175	66044	132	317
169	901-GR-17	P.W.R.I CHIBA	N-S	45.501	2.40	15.00	218	66044	132	318
170	905-B-182	OCHIAI BRIDGE	LG.	-161.065	1.80	15.92	460	*****	133	319
171	905-B-182	OCHIAI BRIDGE	U-D	11.486	0.11	15.93	338	*****	133	320
172	905-B-182	OCHIAI BRIDGE	TR.	26.583	2.28	15.92	410	*****	133	321
173	905-A-298	OCHIAI BRIDGE	LG.	96.995	2.33	34.97	712	*****	135	322
174	905-A-298	OCHIAI BRIDGE	U-D	27.129	2.00	34.87	383	*****	135	323
175	905-A-298	OCHIAI BRIDGE	TR.	-17.878	2.05	34.99	664	*****	135	324
176	905-A-301	OCHIAI BRIDGE	LG.	-90.010	1.77	16.92	442	66045	137	325
177	905-A-301	OCHIAI BRIDGE	U-D	20.655	1.54	16.96	335	66045	137	326
178	905-A-301	OCHIAI BRIDGE	TR.	-25.206	1.95	16.97	535	66045	137	327
179	905-B-183	OCHIAI BRIDGE	LG.	118.197	1.61	15.98	491	66045	138	328
180	905-B-183	OCHIAI BRIDGE	U-D	9.058	2.89	15.87	352	66045	138	329
181	905-B-183	OCHIAI BRIDGE	TR.	-26.849	1.57	15.93	465	66045	138	330
182	905-A-304	OCHIAI BRIDGE	LG.	56.059	1.41	30.99	959	66047	139	331
183	905-A-304	OCHIAI BRIDGE	U-D	21.135	1.40	30.94	453	66047	139	332
184	905-A-304	OCHIAI BRIDGE	TR.	-31.803	2.20	30.94	1022	66047	139	333
185	905-B-186	OCHIAI BRIDGE	LG.	61.518	1.85	28.95	685	66047	141	334
186	905-B-186	OCHIAI BRIDGE	U-D	-28.151	0.10	28.99	516	66047	141	335
187	905-B-186	OCHIAI BRIDGE	TR.	53.439	1.63	29.00	617	66047	141	336
188	801-GR-1	ARIAKE SEA	N40E	-117.600	1.70	20.21	266	66051	143	337
189	801-GR-1	ARIAKE SEA	U-D	-22.400	8.92	20.11	289	66051	143	338
190	801-GR-1	ARIAKE SEA	N50W	-86.500	2.02	20.01	309	66051	143	339
191	905-B-216	OCHIAI BRIDGE	LG.	-38.499	1.42	8.00	142	*****	144	340
192	302-GR-3	KAIHOKJ BRIDGE	TR.	-21.900	6.50	10.00	176	67004	144	341
193	302-GR-3	KAIHOKJ BRIDGE	LG.	-17.299	2.55	10.00	209	67004	144	342
194	304-GR-6	DATE BRIDGE	TR.	19.100	5.61	20.01	360	67004	145	343
195	304-GR-6	DATE BRIDGE	LG.	34.101	17.20	20.01	338	67004	145	344
196	906-GR-4	P.W.R.I KASHIMA	N-S	-42.999	1.43	5.00	94	67024	146	345
197	906-GR-4	P.W.R.I KASHIMA	E-W	-46.249	1.40	5.00	82	67024	146	346
198	1302-GR-3	CHIYODA BRIDGE	TR.	27.631	2.30	10.00	164	67033	147	347
199	1302-GR-3	CHIYODA BRIDGE	LG.	35.881	2.45	10.00	175	67033	147	348
200	1302-GR-4	CHIYODA BRIDGE	TR.	-27.380	3.00	15.00	267	67042	148	349

3. 地震の諸元

Table 2はTable 1に示した地震動記録が採取された地震の諸元（震源，発生年月日，マグニチュード）を示すものでありTable 1に示した "EQ. NO." に対応する。なお，1965年以前の地震および松代群発地震に対しては整理されていない。Table 2の項目を順を追って説明すると以下の通りである。

Table 2 の項目	説　　明
EARTHQUAKE NO.	Table 1参照
EPICENTAL REGION	震央の位置
EARTHQUAKE TIME AND DAY	地震発生の年．月．日．時．分
LONGITUDE	震央の経度（単位は度，分）
LATITUDE	震央の緯度（単位は度，分）
DEPTH (KM)	震源の深さ（単位はkm）
MAGNITUDE	地震の規模（単位はリヒタースケールで表わしたマグニチュード）

Table 2 Index of Earthquakes

EQ. NO.	EPICENTAL REGION	EARTHQUAKE TIME AND DAY	LONGITUDE	+-	LATITUDE	+-	DEPTH(KM)	MAGNITUDE
66001	NEAR MATSUSHIRO	1966.01.03,03.59	138 12	1	36 31	1	0.	4.7
66005	NEAR MATSUSHIRO	1966.01.23,20.15	138 13	1	36 31	1	0.	5.1
66010	NEAR MATSUSHIRO	1966.04.05,17.51	138 19	1	36 35	1	0.	5.4
66013	NEAR MATSUSHIRO	1966.04.17,10.21	138 14	1	36 32	1	0.	4.7
66016	NEAR MATSUSHIRO	1966.05.06,19.08	138 15	1	36 31	1	0.	5.0
66019	NEAR MATSUSHIRO	1966.05.28,14.21	138 13	1	36 34	1	0.	5.3
66025	E OFF MIYAGI PREF	1966.06.24,06.52	141 46	2	38 1	1	60.0	5.1
66029	NEAR MATSUSHIRO	1966.07.10,15.43	138 12	1	36 32	1	0.	4.7
66040	NEAR MATSUSHIRO	1966.08.30,06.06	138 9	1	36 27	1	20.0	4.3
66041	NIIGATA PREF	1966.09.08,01.20	138 37	2	37 11	1	0.	4.8
66044	E COAST OF CHIBA PREF	1966.10.08,21.02	140 26	2	35 27	1	0.	4.9
66045	NEAR MATSUSHIRO	1966.10.23,11.14	138 10	1	36 30	1	0.	4.7
66047	NEAR MATSUSHIRO	1966.10.26,03.04	138 22	1	36 33	1	0.	5.3
66051	ARIAKE SEA	1966.11.12,21.01	130 12	0	33 6	0	20.0	5.5
67004	OFF KINKAZAN	1967.01.17,20.59	142 5	4	38 15	2	30.0	6.3
67024	NEAR CHOSHI	1967.04.30,10.09	141 3	3	35 48	1	30.0	4.9
67033	MIDDLE PART OF HOKKAIDO	1967.07.05,08.42	142 36	2	43 4	1	170.0	6.3
67042	E OFF HOKKAIDO	1967.09.19,19.56	145 33	2	42 46	1	90.0	6.4

4. 強震計の作動状況

Table 3はTable 2に示した地震によってどの強震計が作動し，どのような記録が採取されたかを示すものである。表中の上段はTable 2に示した地震の諸元を，中段は上段に示した地震により採取された地震動記録の最大加速度を，下段は中段に示した地震動を記録した強震計の位置および震央距離をそれぞれ示したものである。ここでTable 3に示す"EQ. NO."はTable 2に示した"EQ.NO."と対応している。

Table 3の項目は次の通りである。

Table 3 の項目	説　　明
STATION NO.	強震計の整理番号（Table 1参照）
INSTRUMENTS	強震計の設置箇所（Table 1参照）
SEQUENCE NO.	当該強震計により，得られた地震動記録の整理番号（Table 1参照）
HORIZONTAL A VERTICAL HORIZONTAL B	水平方向A，上下方向，水平方向Bの地震動の記録の最大加速度をGalで示した値である。これらの値は記録された波形の振幅の最大値をスケールにより読み取った値であるため，ディジタル化して中心軸の補正を施した後の最大加速度値とは，多少の差がある場合がある。
NAME OF STRUCTURE	強震計が設置されている構造物の名称（Table 1参照）
LONGITUDE	強震計設置点の経度（単位は，度．分．秒）
LATITUDE	強震計設置点の緯度（単位は，度．分．秒）
Y.M. INSTALLED	強震計を設置した年（西歴年），月，日をそれぞれ2桁の数字で記号化したものである。
TYPE	強震計の型式
MACHINE NO.	強震計の機械番号
EPICENTRAL DISTANCE (KM)	震央から強震計までの地表面距離である。地表面距離の算定は，理科年表に掲載されている方法に従っている。

Figure 1～8は，Table 3に示した内容を，地図上にプロットしたものである。図中の＊印は震央を，⊙印はそれぞれこの地震により作動した強震計の設置点をその整理番号とともに表わしている。

Table 3-1 Index of Accelerometer Worked during Earthquake Number 66001

LIST OF EARTHQUAKE ORIGINS

EQ. NO.	EPICENTAL REGION	EARTEQUAKE TIME AND DAY	LONGITUDE +-	LATITUDE +-	DEPTH(KM)	MAGNITUDE
66001	NEAR MATSUSHIRO	1966.01.03.03.59	138 12 1	36 31 1	0.	4.7

STATION NO.	INSTRUMENTS	SEQUE. NO.	HORI.A	VERTICAL	HORI.B (GAL)
203	GR-1	3	0.	0.	0.
203	PI-1	3	0.	0.	0.
905	GR-1	1	18.8	16.3	18.8
905	PI-1	8	75.0	25.0	80.0

STATION NO.	NAME OF STRUCTURE	INSTRUMENTS	LONGITUDE	LATITUDE	Y.M INSTALLED	TYPE	MACHINE NO.	DS.(KM)
203	YOKOKURASAWA BRIDGE	GR-1	138 33 54	36 58 46	651002	SMAC-B2	38546	60.8
203	YOKOKURASAWA BRIDGE	PI-1	138 33 54	36 58 42	651002	SMAC-B2	38545	60.7
905	OCHIAI BRIDGE	GR-1	138 13 25	36 38 38	651210	SMAC-B2	37896	14.3
905	OCHIAI BRIDGE	GR-2	138 14 27	36 37 8	651210	SMAC-B2	38587	11.9
905	OCHIAI BRIDGE	PI-1	138 14 27	36 37 5	651210	SMAC-B2	38583	11.8

66001　　NEAR MATSUSHIRO

STATION NAME OF STRUCTURE	RECORD NUMBER			MAX. AMPLITUDE (GALS) HORI.A	VERTICAL	HORI.B
YOKOKURASAWA BRIDGE	203	GR-1	3	0.0	0.0	0.0
YOKOKURASAWA BRIDGE	203	PI-1	3	0.0	0.0	0.0
OCHIAI BRIDGE	905	GR-1	1	18.8	16.3	18.8
OCHIAI BRIDGE	905	PI-1	8	75.0	25.0	80.0

EARTHQUAKE TIME AND DATE
1966.01.03.03.59

LOCATION OF EPICENTER
LO=138 12
LA= 36 31

DEPTH, MAGNITUDE
0.0 KM, M= 4.7

(* E.Q. CENTER)

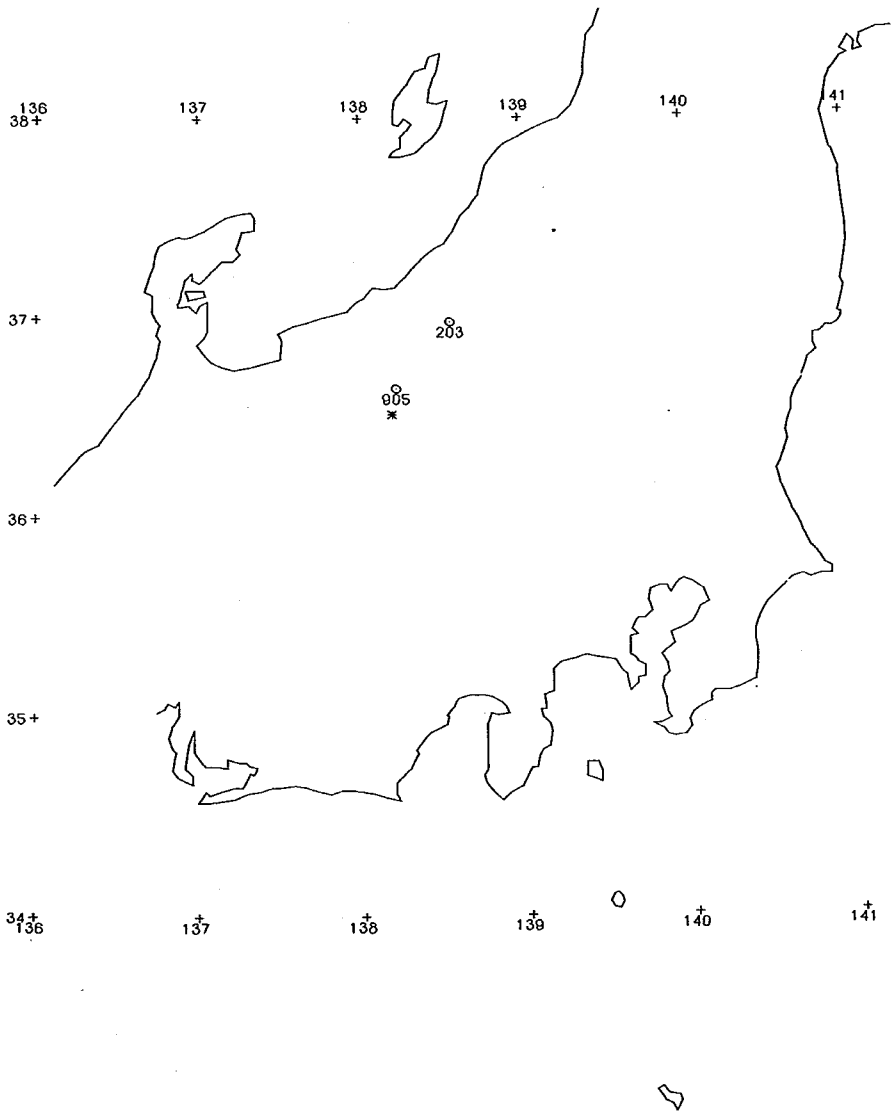


Figure 1　Accelerometers Worked during Earthquake Number 66001

Table 3-2 Index of Accelerometer Worked during Earthquake Number 66005

LIST OF EARTHQUAKE ORIGINS

EQ. NO.	EPICENTAL REGION	EARTEQUAKE TIME AND DAY	LONGITUDE +-	LATITUDE +-	DEPTH(KM)	MAGNITUDE
66005	NEAR MATSUSHIRO	1966.01.23,20.15	138 13 1	36 31 1	0.	5.1

STATION NO.	INSTRUMENTS	SEQUE. NO.	HORI.A	VERTICAL	HORI.B (GAL)
202	GR-1	3	0.	0.	0.
905	GR-1	4	37.5	16.5	25.0
905	GR-2	2	18.8	16.3	16.3
905	PI-1	13	50.0	16.3	25.0

STATION NO.	NAME OF STRUCTURE	INSTRUMENTS	LONGITUDE	LATITUDE	Y.M INSTALLED	TYPE	MACHINE NO.	DS.(KM)
202	UONUMA BRIDGE	GR-1	138 48 30	37 14 36	651200	SMAC-B2	38578	96.3
202	UONUMA BRIDGE	PI-1	138 48 23	37 14 32	651200	SMAC-B2	38577	96.1
905	OCHIAI BRIDGE	GR-1	138 13 25	36 38 38	651210	SMAC-B2	37896	14.1
905	OCHIAI BRIDGE	GR-2	138 14 27	36 37 8	651210	SMAC-B2	38587	11.5
905	OCHIAI BRIDGE	PI-1	138 14 27	36 37 5	651210	SMAC-B2	38583	11.4

66005　NEAR MATSUSHIRO

STATION NAME OF STRUCTURE	RECORD NUMBER	MAX. AMPLITUDE (GALS) HORI.A	VERTICAL	HORI.B
UONUMA BRIDGE	202 GR-1 3	0.0	0.0	0.0
OCHIAI BRIDGE	905 GR-1 4	37.5	16.5	25.0
OCHIAI BRIDGE	905 GR-2 2	18.8	16.3	16.3
OCHIA' BRIDGE	905 PI-1 13	50.0	16.3	25.0

EARTHQUAKE TIME AND DATE
1966.01.23.20.15

LOCATION OF EPICENTER
LO=138 13
LA= 36 31

DEPTH. MAGNITUDE
0.0 KM. M= 5.1

(* E.Q. CENTER)

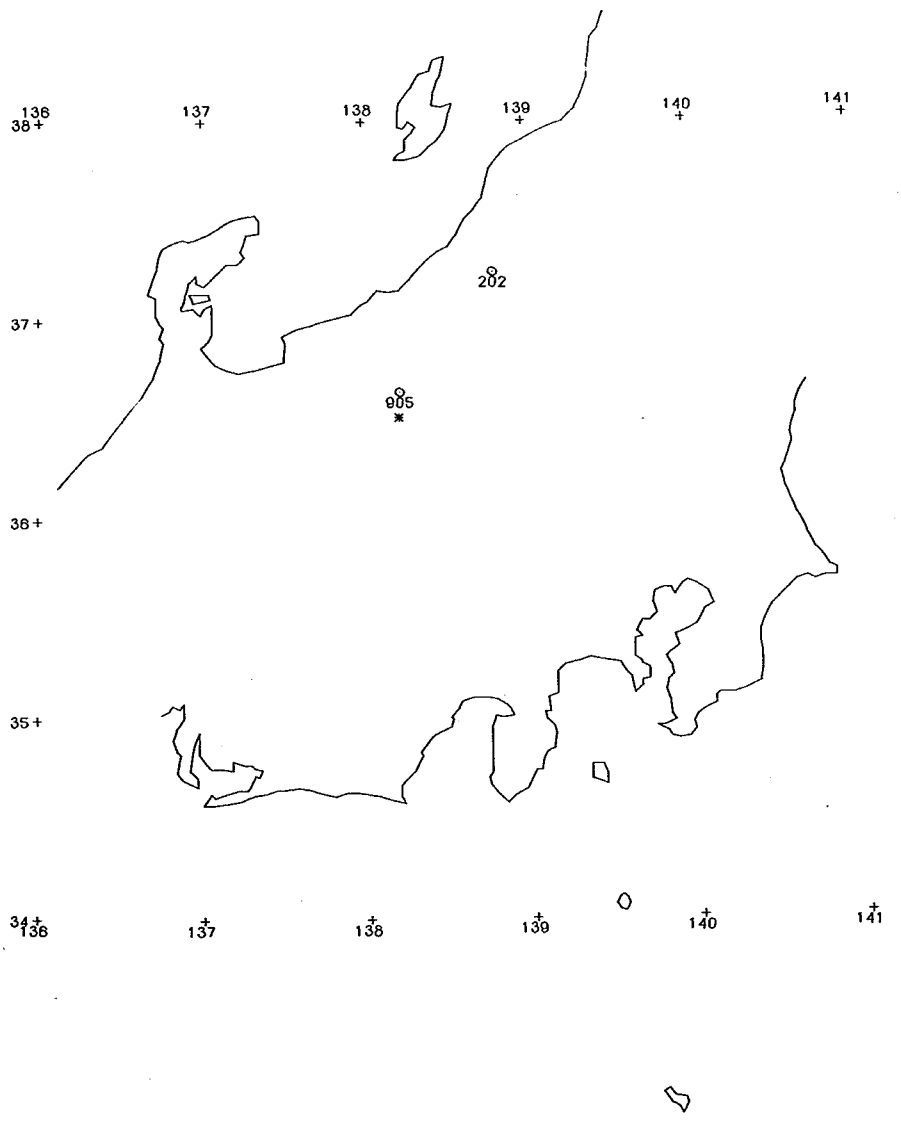


Figure 2　Accelerometers Worked during Earthquake Number 66005

Table 3-3 Index of Accelerometer Worked during Earthquake Number 66010

LIST OF EARTHQUAKE ORIGINS

EQ. NO.	EPICENTAL REGION	EARTEQUAKE TIME AND DAY	LONGITUDE +-	LATITUDE +-	DEPTH(KM)	MAGNITUDE
66010	NEAR MATSUSHIRO	1966.04.05,17.51	138 19 1	36 35 1	0.	5.4

STATION NO.	INSTRUMENTS	SEQUE. NO.	HORI.A	VERTICAL	HORI.B (GAL)
102	GR-1	1	0.	0.	0.
202	GR-1	4	0.	0.	0.
202	PI-1	2	0.	0.	0.
203	GR-1	5	5.0	0.	5.0
905	GR-1	18	187.5	37.5	162.5
905	GR-2	7	125.0	25.0	250.0
905	RI-1	56	187.5	37.5	150.0

STATION NO.	NAME OF STRUCTURE	INSTRUMENTS	LONGITUDE	LATITUDE	Y.M INSTALLED	TYPE	MACHINE NO.	DS.(KM)
102	YONEYAMA BRIDGE	GR-1	138 29 24	37 20 32	660300	SMAC-B2	38560	85.6
102	YONEYAMA BRIDGE	PI-1	138 29 27	37 20 32	660500	SMAC-B2	70150	85.6
102	YONEYAMA BRIDGE	PI-2	138 29 27	37 20 32	660700	SMAC-B2	70149	85.6
202	UONUMA BRIDGE	GR-1	138 48 30	37 14 36	651200	SMAC-B2	38578	85.3
202	UONUMA BRIDGE	PI-1	138 48 23	37 14 32	651200	SMAC-B2	38577	85.1
203	YOKOKURASAWA BRIDGE	GR-1	138 33 54	36 58 46	651002	SMAC-B2	38546	49.2
203	YOKOKURASAWA BRIDGE	PI-1	138 33 54	36 58 42	651002	SMAC-B2	38545	49.1
905	OCHIAI BRIDGE	GR-1	138 13 25	36 38 38	651210	SMAC-B2	37896	10.7
905	OCHIAI BRIDGE	GR-2	138 14 27	36 37 8	651210	SMAC-B2	38587	7.8
905	OCHIAI BRIDGE	PI-1	138 14 27	36 37 5	651210	SMAC-B2	38583	7.8

66010　NEAR MATSUSHIRO

STATION NAME OF STRUCTURE	RECORD NUMBER			MAX. AMPLITUDE (GALS) HORI.A	VERTICAL	HORI.B
YONEYAMA BRIDGE	102	GR-1	1	0.0	0.0	0.0
UONUMA BRIDGE	202	GR-1	4	0.0	0.0	0.0
UONUMA BRIDGE	202	PI-1	2	0.0	0.0	0.0
YOKOKURASAWA BRIDGE	203	GR-1	5	5.0	0.0	5.0
OCHIAI BRIDGE	905	GR-1	18	187.5	37.5	162.5
OCHIAI BRIDGE	905	GR-2	7	125.0	25.0	250.0
NANASUEN	905	RI-1	56	187.5	37.5	150.0

EARTHQUAKE TIME AND DATE
1966.04.05.17.51
LOCATION OF EPICENTER
LO=138 19
LA= 36 35
DEPTH. MAGNITUDE
0.0 KM. M= 5.4
(* E.Q. CENTER)

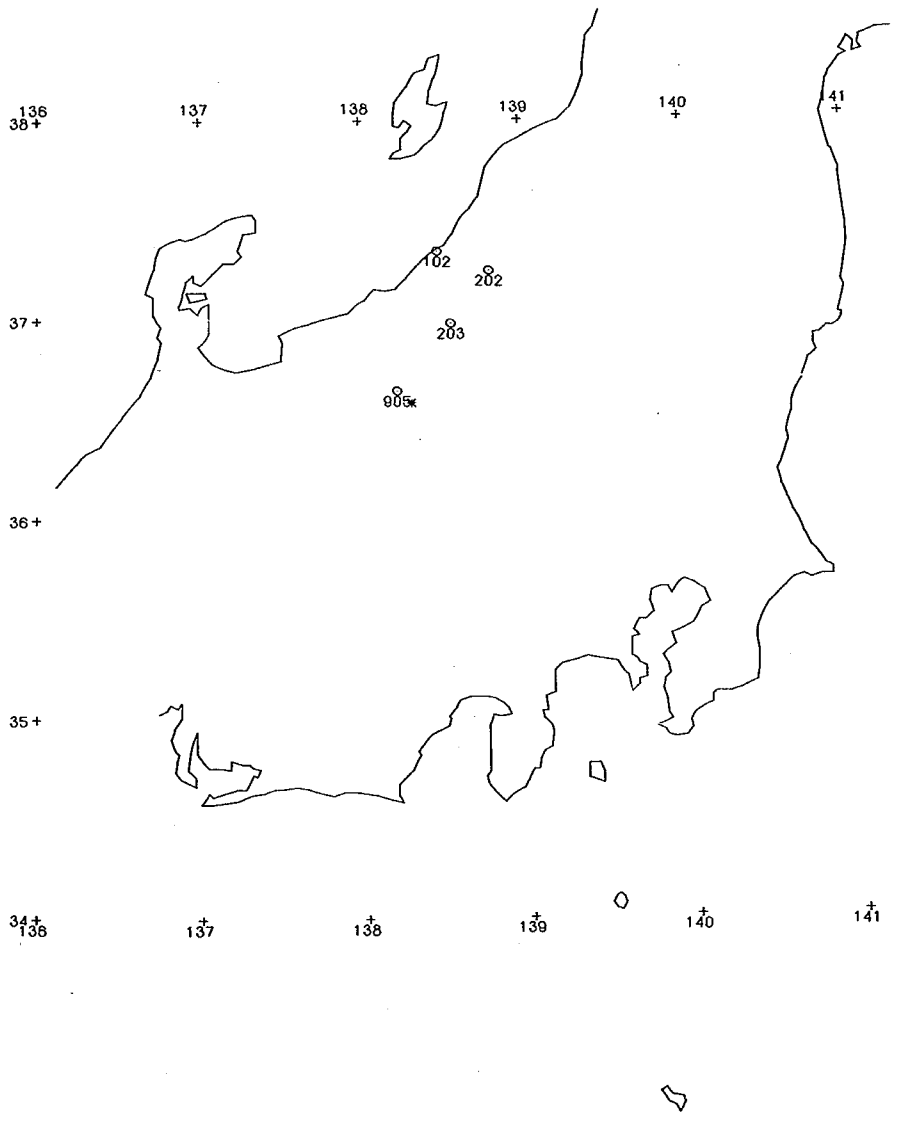


Figure 3　Accelerometers Worked during Earthquake Number 66010

Table 3-4 Index of Accelerometer Worked during Earthquake Number 66013

LIST OF EARTHQUAKE ORIGINS

EQ. NO.	EPICENTAL REGION	EARTEQUAKE TIME AND DAY	LONGITUDE +-	LATITUDE +-	DEPTH(KM)	MAGNITUDE
66013	NEAR MATSUSHIRO	1966.04.17.10.21	138 14 1	36 32 1	0.	4.7

STATION NO.	INSTRUMENTS	SEQUE. NO.	HORI.A	VERTICAL	HORI.B (GAL)
203	GR-1	7	0.	0.	0.
905	GR-1	53	312.5	37.5	50.0
905	GR-2	13	62.5	25.0	125.0

STATION NO.	NAME OF STRUCTURE	INSTRUMENTS	LONGITUDE	LATITUDE	Y.M INSTALLED	TYPE	MACHINE NO.	DS.(KM)
203	YOKOKURASAWA BRIDGE	GR-1	138 33 54	36 58 46	651002	SMAC-B2	38546	57.7
203	YOKOKURASAWA BRIDGE	PI-1	138 33 54	36 58 42	651002	SMAC-B2	38545	57.5
905	OCHIAI BRIDGE	GR-1	138 13 25	36 38 38	651210	SMAC-B2	37896	12.3
905	OCHIAI BRIDGE	GR-2	138 14 27	36 37 8	651210	SMAC-B2	38587	9.5
905	OCHIAI BRIDGE	PI-1	138 14 27	36 37 5	651210	SMAC-B2	38583	9.4

66013　NEAR MATSUSHIRO

STATION NAME OF STRUCTURE	RECORD NUMBER	MAX. AMPLITUDE (GALS) HORI.A	VERTICAL	HORI.B
YOKOKURASAWA BRIDGE	203 GR-1 7	0.0	0.0	0.0
OCHIAI BRIDGE	905 GR-1 33	312.5	37.5	50.0
OCHIAI BRIDGE	905 GR-2 13	82.5	25.0	125.0

EARTHQUAKE TIME AND DATE
1966.04.17.10.21

LOCATION OF EPICENTER
LO=138 14
LA= 36 32

DEPTH. MAGNITUDE
0.0 KM. M= 4.7

(* E.Q. CENTER)

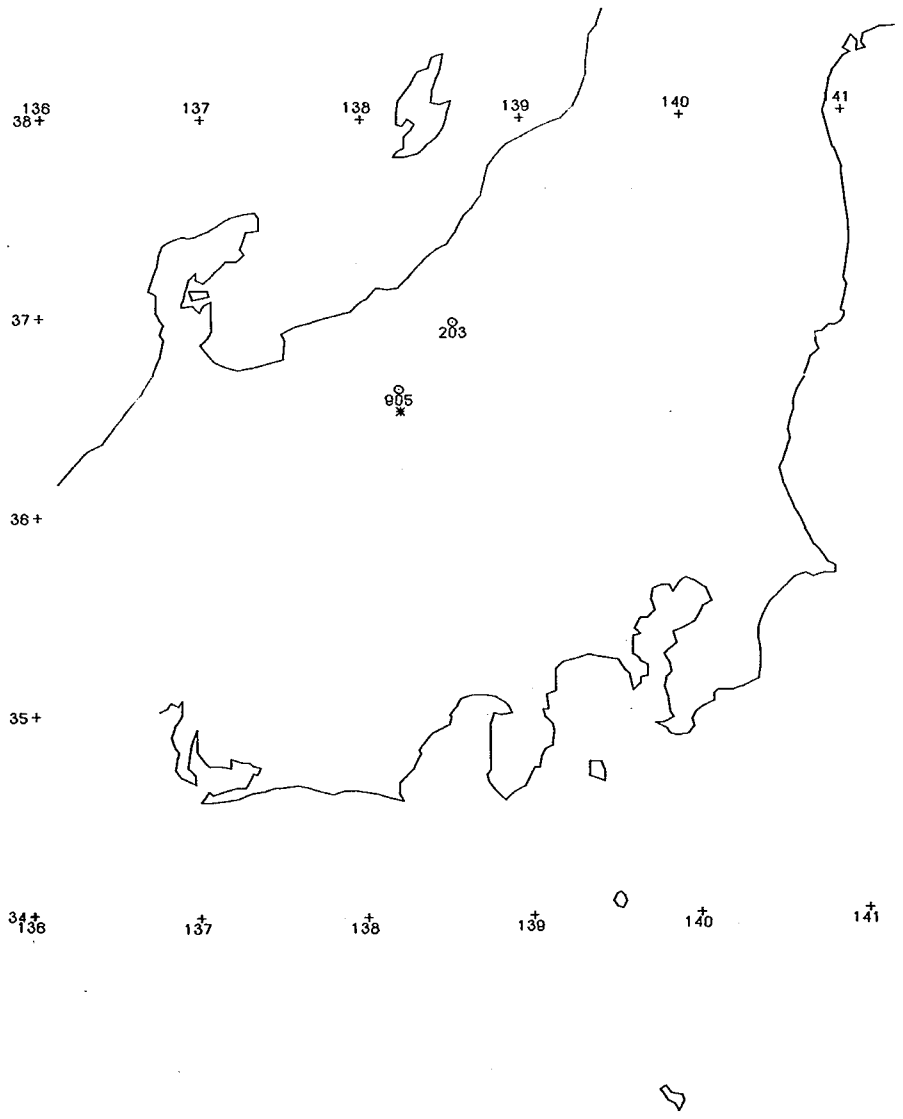


Figure 4　Accelerometers Worked during Earthquake Number 66013

Table 3-5 Index of Accelerometer Worked during Earthquake Number 66016

LIST OF EARTHQUAKE ORIGINS

EQ. NO.	EPICENTAL REGION	EARTEQUAKE TIME AND DAY	LONGITUDE +-	LATITUDE +-	DEPTH(KM)	MAGNITUDE
66016	NEAR MATSUSHIRO	1966.05.06/19.08	138 15 1	36 31 1	0.	5.0

STATION NO.	INSTRUMENTS	SEQUE. NO.	HORI.A	VERTICAL	HORI.B (GAL)
102	GR-1	2	0.	0.	0.
202	GR-1	5	0.	0.	5.0
202	PI-1	3	15.0	0.	49.0
203	GR-1	8	0.	0.	0.
905	GR-1	49	75.0	25.0	62.5
905	GR-2	30	37.5	16.3	37.5
905	PI-1	123	100.0	25.0	62.5

STATION NO.	NAME OF STRUCTURE	INSTRUMENTS	LONGITUDE	LATITUDE	Y.M INSTALLED	TYPE	MACHINE NO.	DS.(KM)
102	YONEYAMA BRIDGE	GR-1	136 29 24	37 20 32	660300	SMAC-B2	38560	94.0
102	YONEYAMA BRIDGE	PI-1	138 29 27	37 20 32	660500	SMAC-B2	70150	94.0
102	YONEYAMA BRIDGE	PI-2	138 29 27	37 20 32	660700	SMAC-B2	70149	94.0
202	UONUMA BRIDGE	GR-1	138 48 30	37 14 36	651200	SMAC-B2	38578	94.7
202	UONUMA BRIDGE	PI-1	138 48 23	37 14 32	651200	SMAC-B2	38577	94.5
203	YOKOKURASAWA BRIDGE	GR-1	138 33 54	36 58 46	651002	SMAC-B2	38546	58.5
203	YOKOKURASAWA BRIDGE	PI-1	138 33 54	36 58 42	651002	SMAC-B2	38545	58.4
905	OCHIAI BRIDGE	GR-1	138 13 25	36 38 38	651210	SMAC-B2	37896	14.3
905	OCHIAI BRIDGE	GR-2	138 14 27	36 37 8	651210	SMAC-B2	38587	11.4
905	OCHIAI BRIDGE	PI-1	138 14 27	36 37 5	651210	SMAC-B2	38583	11.3

66016　　NEAR MATSUSHIRO

STATION NAME OF STRUCTURE	RECORD NUMBER	MAX. AMPLITUDE (GALS) HORI.A	VERTICAL	HORI.B	EARTHQUAKE TIME AND DATE
YONEYAMA BRIDGE	102 GR-1 2	0.0	0.0	0.0	1966.05.06.19.08
UONUMA BRIDGE	202 GR-1 5	0.0	0.0	5.0	
UONUMA BRIDGE	202 PI-1 3	15.0	0.0	48.0	LOCATION OF EPICENTER
YOKOKURASAWA BRIDGE	203 GR-1 8	0.0	0.0	0.0	
OCHIAI BRIDGE	905 GR-1 49	75.0	25.0	62.5	LO=138 15
OCHIAI BRIDGE	905 GR-2 30	37.5	16.3	37.5	LA= 36 31
OCHIAI BRIDGE	905 PI-1123	100.0	25.0	62.5	DEPTH. MAGNITUDE 0.0 KM, M= 5.0

(* E.Q. CENTER)

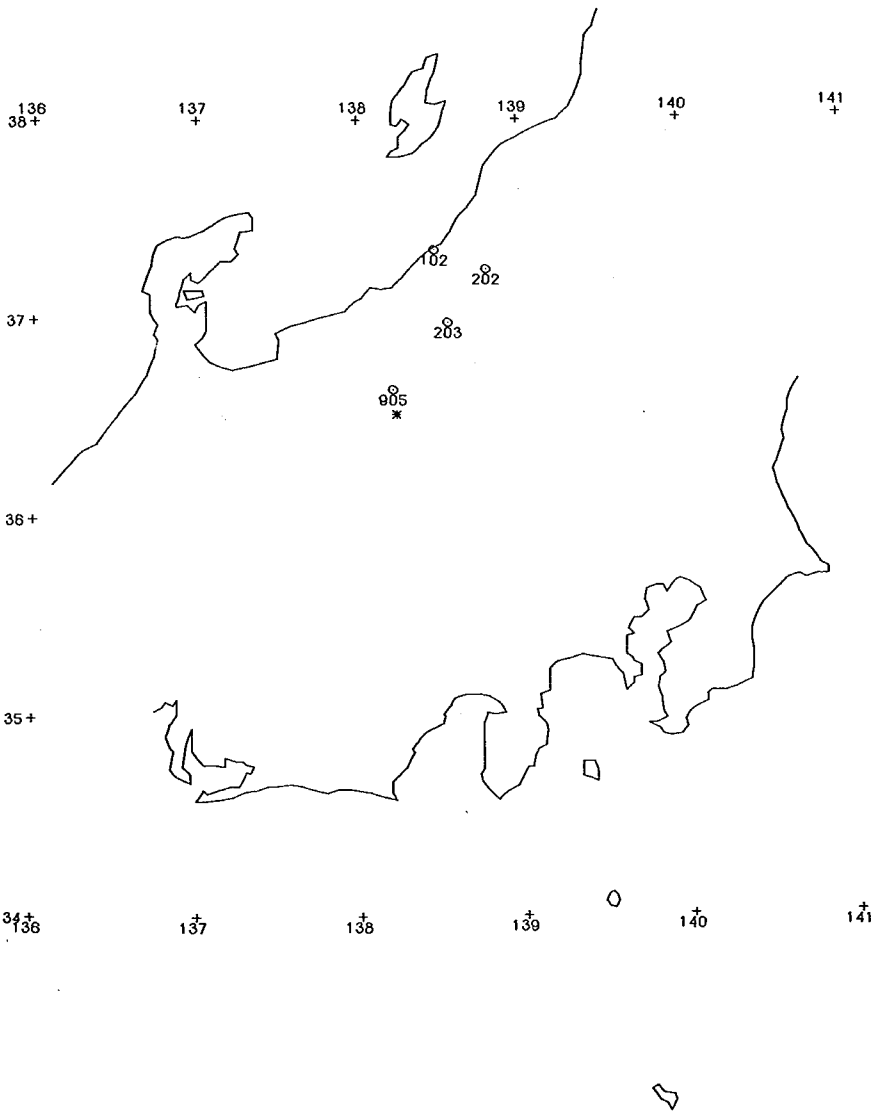


Figure 5　Accelerometers Worked during Earthquake Number 66016

Table 3-6 Index of Accelerometer Worked during Earthquake Number 66019

LIST OF EARTHQUAKE ORIGINS

EQ. NO.	EPICENTAL REGION	EARTEQUAKE TIME AND DAY	LONGITUDE +-	LATITUDE +-	DEPTH(KM)	MAGNITUDE
66019	NEAR MATSUSHIRO	1966.05.28,14.21	138 13 1	36 34 1	0.	5.3

STATION NO.	INSTRUMENTS	SEQUE. NO.	HORI.A	VERTICAL	HORI.B (GAL)
203	GR-1	9	0.	0.	0.
605	DA-1	2	50.0	25.0	50.0
905	GR-1	74	100.0	25.0	50.0
905	PI-1	169	75.0	25.0	25.0

STATION NO.	NAME OF STRUCTURE	INSTRUMENTS	LONGITUDE	LATITUDE	Y.M INSTALLED	TYPE	MACHINE NO.	DS.(KM)
203	YOKOKURASAWA BRIDGE	GR-1	138 33 54	36 58 46	651002	SMAC-B2	38546	55.3
203	YOKOKURASAWA BRIDGE	PI-1	138 33 54	36 58 42	651002	SMAC-B2	38545	55.2
605	SUSOBANA DAM	DA-1	138 7 36	36 39 47	691200	SMAC-B2	70122	13.4
605	SUSOBANA DAM	GR-1	138 7 36	36 39 47	660523	SMAC-D	61726	13.4
905	OCHIAI BRIDGE	GR-1	138 13 25	36 38 38	651210	SMAC-B2	37896	8.6
905	OCHIAI BRIDGE	GR-2	138 14 27	36 37 8	651210	SMAC-B2	38587	6.2
905	OCHIAI BRIDGE	PI-1	138 14 27	36 37 5	651210	SMAC-B2	38583	6.1

66019　NEAR MATSUSHIRO

STATION NAME OF STRUCTURE	RECORD NUMBER	MAX. AMPLITUDE (GALS) HORI.A	VERTICAL	HORI.B
YOKOKURASAWA BRIDGE	203 GR-1 9	0.0	0.0	0.0
SUSOBANA DAM	605 DA-1 2	50.0	25.0	50.0
OCHIAI BRIDGE	905 GR-1 74	100.0	25.0	50.0
OCHIAI BRIDGE	905 PI-1169	75.0	25.0	25.0

EARTHQUAKE TIME AND DATE
1966.05.28.14.21

LOCATION OF EPICENTER
LO=138 13
LA= 36 34

DEPTH. MAGNITUDE
0.0 KM. M= 5.3

(* E.Q. CENTER)

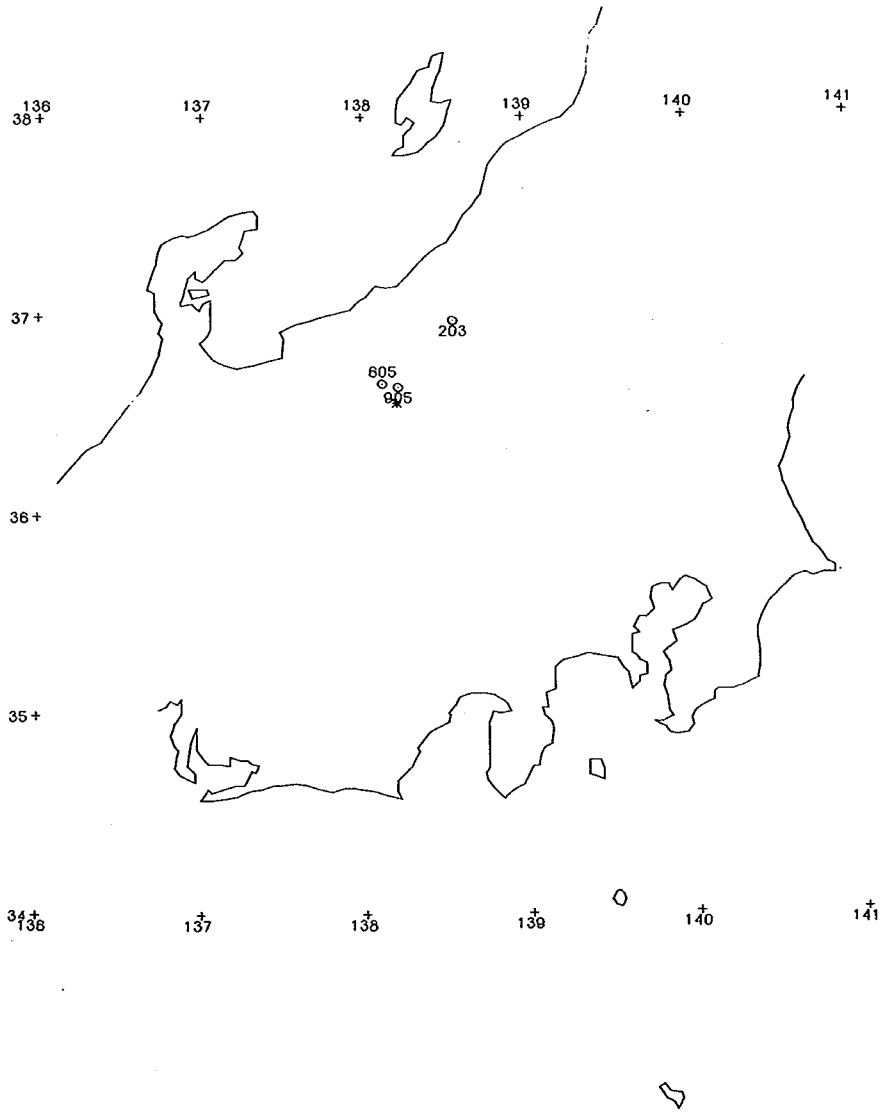


Figure 6　Accelerometers Worked during Earthquake Number 66019

Table 3-7 Index of Accelerometer Worked during Earthquake Number 66025

LIST OF EARTHQUAKE ORIGINS

EQ. NO.	EPICENTAL REGION	EARTEQUAKE TIME AND DAY	LONGITUDE	LATITUDE	DEPTH(KM)	MAGNITUDE
66025	E OFF MIYAGI PREF	1966.06.24.06.52	141 46 +- 2	38 1 +- 1	60.0	5.1

STATION NO.	INSTRUMENTS	SEQUE. NO.	HORI.A	VERTICAL	HORI.B (GAL)
302	GR-1	1	16.0	0.	13.0
302	PI-1	1	60.0	0.	34.0

STATION NO.	NAME OF STRUCTURE	INSTRUMENTS	LONGITUDE	LATITUDE	Y.M INSTALLED	TYPE	MACHINE NO.	DS.(KM)
302	KAIHOKU BRIDGE	GR-1	141 18 32	38 26 43	660506	SMAC-B2	38576	62.7
302	KAIHOKU BRIDGE	PI-1	141 18 32	38 26 41	660506	SMAC-B2	38575	62.6

66025　　E OFF MIYAGI PREF

STATION NAME OF STRUCTURE	RECORD NUMBER			MAX. AMPLITUDE (GALS) HORI.A	VERTICAL	HORI.B	EARTHQUAKE TIME AND DATE
KAIHOKU BRIDGE	302	GR-1	1	16.0	0.0	13.0	1966.06.24.06.52
KAIHOKU BRIDGE	302	PI-1	1	60.0	0.0	34.0	

LOCATION OF EPICENTER
LO=141 46
LA= 38 1
DEPTH. MAGNITUDE
60.0 KM. M= 5.1
(* E.Q. CENTER)

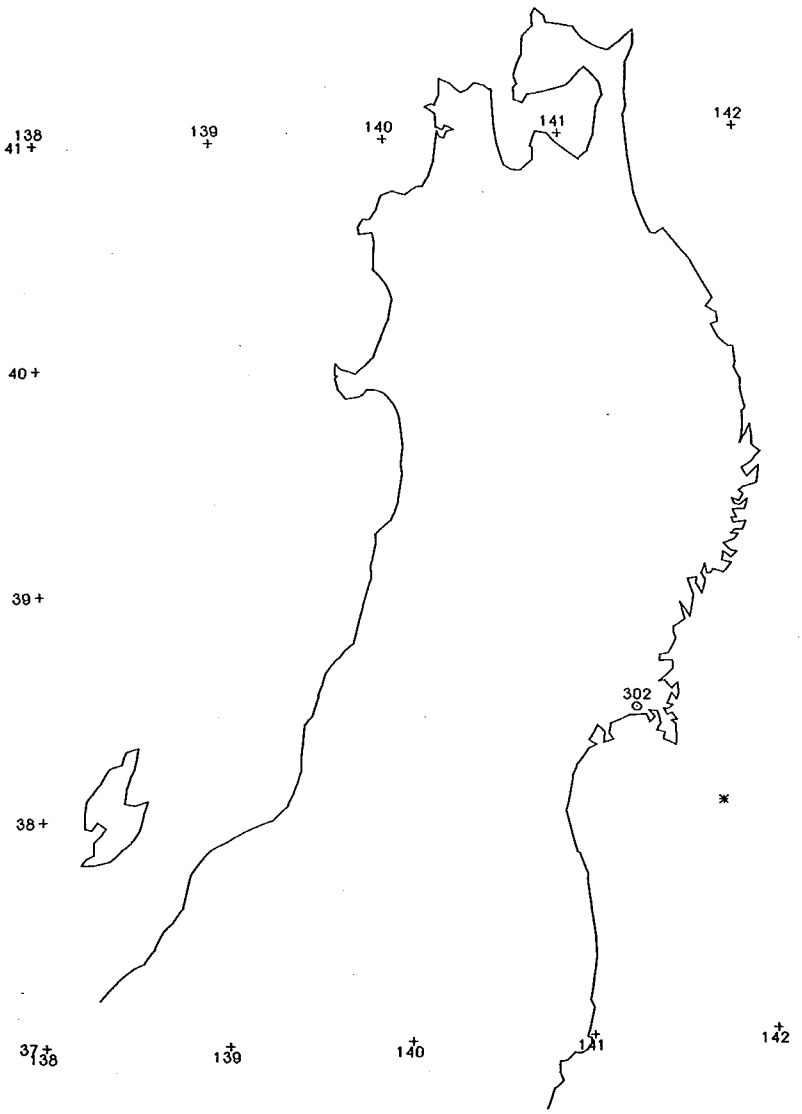


Figure 7　Accelerometers Worked during Earthquake Number 66025

Table 3-8 Index of Accelerometer Worked during Earthquake Number 66029

LIST OF EARTHQUAKE ORIGINS

EQ. NO.	EPICENTAL REGION	EARTEQUAKE TIME AND DAY	LONGITUDE +-	LATITUDE +-	DEPTH(KM)	MAGNITUDE
66029	NEAR MATSUSHIRO	1966.07.10.15.43	138 12 1	36 32 1	0.	4.7

STATION NO.	INSTRUMENTS	SEQUE. NO.	HORI.A	VERTICAL	HORI.B (GAL)
203	GR-1	17	0.	0.	0.
905	GR-1	107	150.0	37.5	112.5

STATION NO.	NAME OF STRUCTURE	INSTRUMENTS	LONGITUDE	LATITUDE	Y.M INSTALLED	TYPE	MACHINE NO.	DS.(KM)
203	YOKOKURASAWA BRIDGE	GR-1	138 33 54	36 58 46	651002	SMAC-B2	38546	59.2
203	YOKOKURASAWA BRIDGE	PI-1	138 33 54	36 58 42	651002	SMAC-B2	38545	59.1
905	OCHIAI BRIDGE	GR-1	138 13 25	36 38 38	651210	SMAC-B2	37896	12.4
905	OCHIAI BRIDGE	GR-2	138 14 27	36 37 8	651210	SMAC-B2	38587	10.2
905	OCHIAI BRIDGE	PI-1	138 14 27	36 37 5	651210	SMAC-B2	38583	10.1

66029　NEAR MATSUSHIRO

STATION NAME OF STRUCTURE	RECORD NUMBER	MAX. AMPLITUDE (GALS) HORI.A	VERTICAL	HORI.B
YOKOKURASAWA BRIDGE	203 GR-1 17	0.0	0.0	0.0
OCHIAI BRIDGE	905 GR-1107	150.0	37.5	112.5

EARTHQUAKE TIME AND DATE
1966.07.10.15.43

LOCATION OF EPICENTER
LO=138 12
LA= 36 32

DEPTH, MAGNITUDE
0.0 KM, M= 4.7

(* E.Q. CENTER)

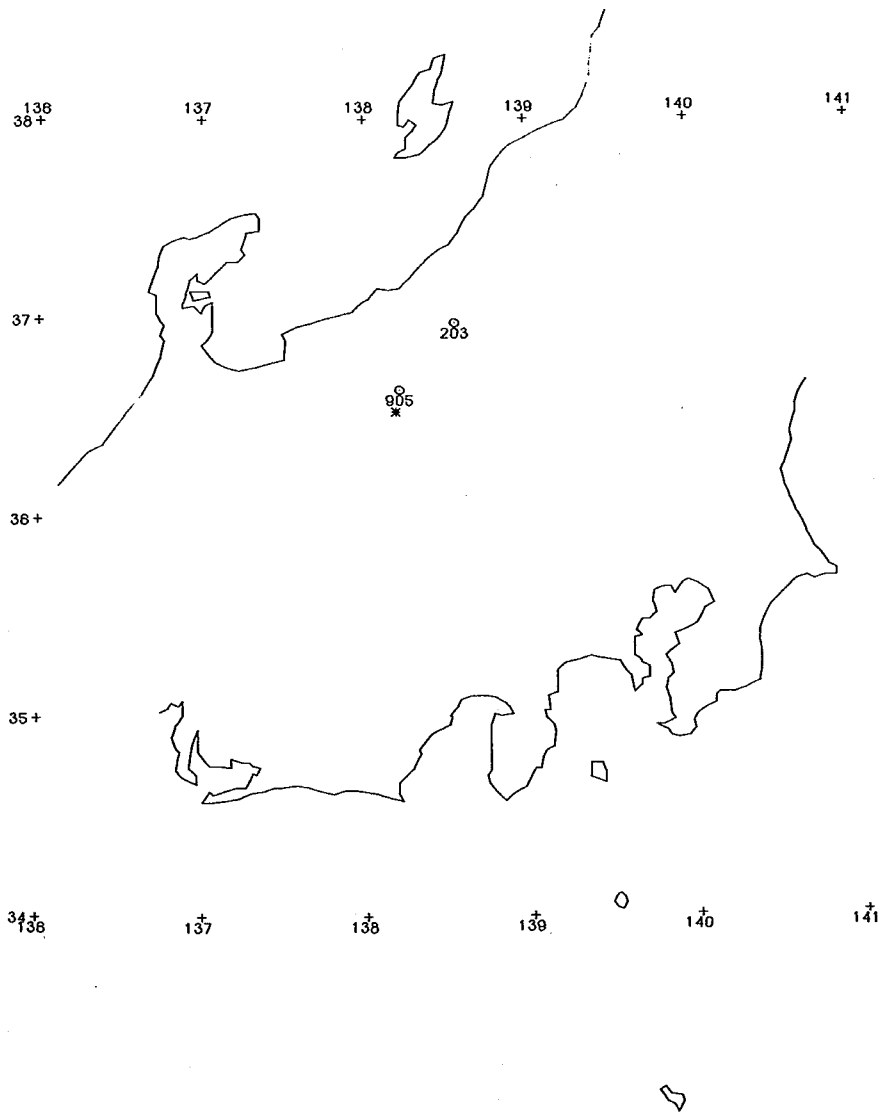


Figure 8　Accelerometers Worked during Earthquake Number 66029

Table 3-9 Index of Accelerometer Worked during Earthquake Number 66040

LIST OF EARTHQUAKE ORIGINS

EQ. NO.	EPICENTAL REGION	EARTEQUAKE TIME AND DAY	LONGITUDE +-	LATITUDE +-	DEPTH(KM)	MAGNITUDE
66040	NEAR MATSUSHIRO	1966.08.30.06.06	138 9 1	36 27 1	20.0	4.3

STATION NO.	INSTRUMENTS	SEQUE. NO.	HORI.A	VERTICAL	HORI.B (GAL)
202	GR-1	10	0.	0.	0.
905	GR-1	120	50.0	16.3	62.5
905	PI-1	236	62.5	25.0	37.5

STATION NO.	NAME OF STRUCTURE	INSTRUMENTS	LONGITUDE	LATITUDE	Y.M INSTALLED	TYPE	MACHINE NO.	DS.(KM)
202	UONUMA BRIDGE	GR-1	138 48 30	37 14 36	651200	SMAC-B2	38578	105.8
202	UONUMA BRIDGE	PI-1	138 48 23	37 14 32	651200	SMAC-B2	38577	105.6
905	OCHIAI BRIDGE	GR-1	138 13 25	36 38 38	651210	SMAC-B2	37896	22.5
905	OCHIAI BRIDGE	GR-2	138 14 27	36 37 8	651210	SMAC-B2	38587	20.4
905	OCHIAI BRIDGE	PI-1	138 14 27	36 37 5	651210	SMAC-B2	38583	20.3

66040　NEAR MATSUSHIRO

STATION NAME OF STRUCTURE	RECORD NUMBER		MAX.AMPLITUDE(GALS) HORI.A	VERTICAL	HORI.B	EARTHQUAKE TIME AND DATE
UONUMA BRIDGE	202	GR-1 10	0.0	0.0	0.0	1966.08.30.06.06
OCHIAI BRIDGE	905	GR-1120	50.0	16.3	62.5	
OCHIAI BRIDGE	905	PI-1236	62.5	25.0	37.0	

LOCATION OF EPICENTER
LO=138 8
LA= 36 27
DEPTH. MAGNITUDE
20.0 KM. M= 4.3
(* E.Q. CENTER)

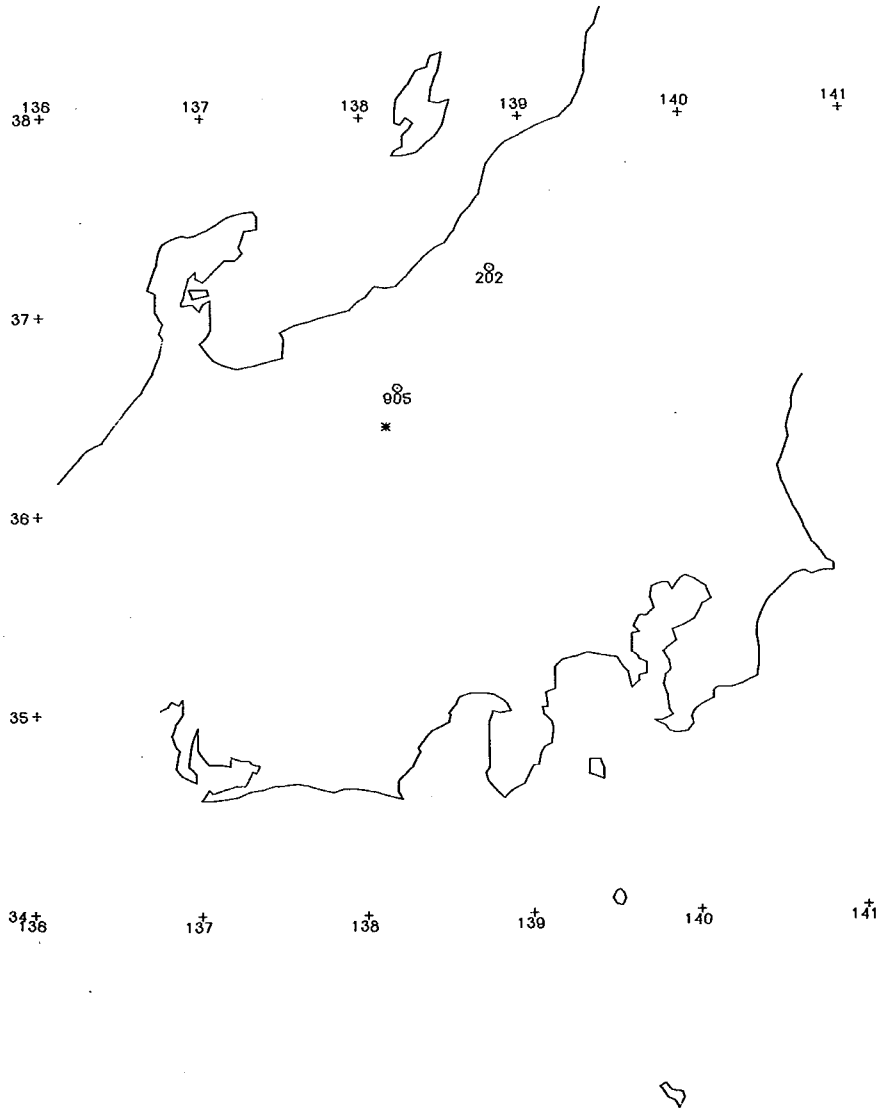


Figure 9　Accelerometers Worked during Earthquake Number 66040

Table 3-10 Index of Accelerometer Worked during Earthquake Number 66041

LIST OF EARTHQUAKE ORIGINS

EQ. NO.	EPICENTAL REGION	EARTEQUAKE TIME AND DAY	LONGITUDE +-	LATITUDE +-	DEPTH(KM)	MAGNITUDE
66041	NIIGATA PREF	1966.09.08,01.20	138 37 2	37 11 1	0.	4.8

STATION NO.	INSTRUMENTS	SEQUE. NO.	HORI.A	VERTICAL	HORI.B (GAL)
102	GR-1	7	5.0	0.	6.0
202	GR-1	11	44.0	14.0	50.0
202	PI-1	6	63.0	13.0	63.0
903	GR-1	3	0.	0.	4.0
903	PI-1	4	25.0	0.	31.0

STATION NO.	NAME OF STRUCTURE	INSTRUMENTS	LONGITUDE	LATITUDE	Y.M INSTALLED	TYPE	MACHINE NO.	DS.(KM)
102	YONEYAMA BRIDGE	GR-1	138 29 24	37 20 32	660300	SMAC-B2	38560	20.9
102	YONEYAMA BRIDGE	PI-1	138 29 27	37 20 32	660500	SMAC-B2	70150	20.9
102	YONEYAMA BRIDGE	PI-2	138 29 27	37 20 32	660700	SMAC-B2	70149	20.9
202	UONUMA BRIDGE	GR-1	138 48 30	37 14 36	651200	SMAC-B2	38578	18.4
202	UONUMA BRIDGE	PI-1	138 48 23	37 14 32	651200	SMAC-B2	38577	18.2
903	SHOWA BRIDGE	GR-1	139 2 47	37 54 38	650100	SMAC-B2	38524	89.3
903	SHOWA BRIDGE	PI-1	139 2 47	37 54 34	650100	SMAC-B2	38525	89.2

66041　　NIIGATA PREF

STATION NAME OF STRUCTURE	RECORD NUMBER			MAX.AMPLITUDE(GALS) HORI.A	VERTICAL	HORI.B
YONEYAMA BRIDGE	102	GR-1	7	5.0	0.0	6.0
UONUMA BRIDGE	202	GR-1	11	44.0	14.0	50.0
UONUMA BRIDGE	202	PI-1	6	63.0	13.0	63.0
SHOWA BRIDGE	903	GR-1	3	0.0	0.0	4.0
SHOWA BRIDGE	903	PI-1	4	25.0	0.0	31.0

EARTHQUAKE TIME AND DATE
1966.09.08.01.20

LOCATION OF EPICENTER
LO=138 37
LA= 37 11

DEPTH, MAGNITUDE
0.0 KM, M= 4.8

(* E.Q. CENTER)

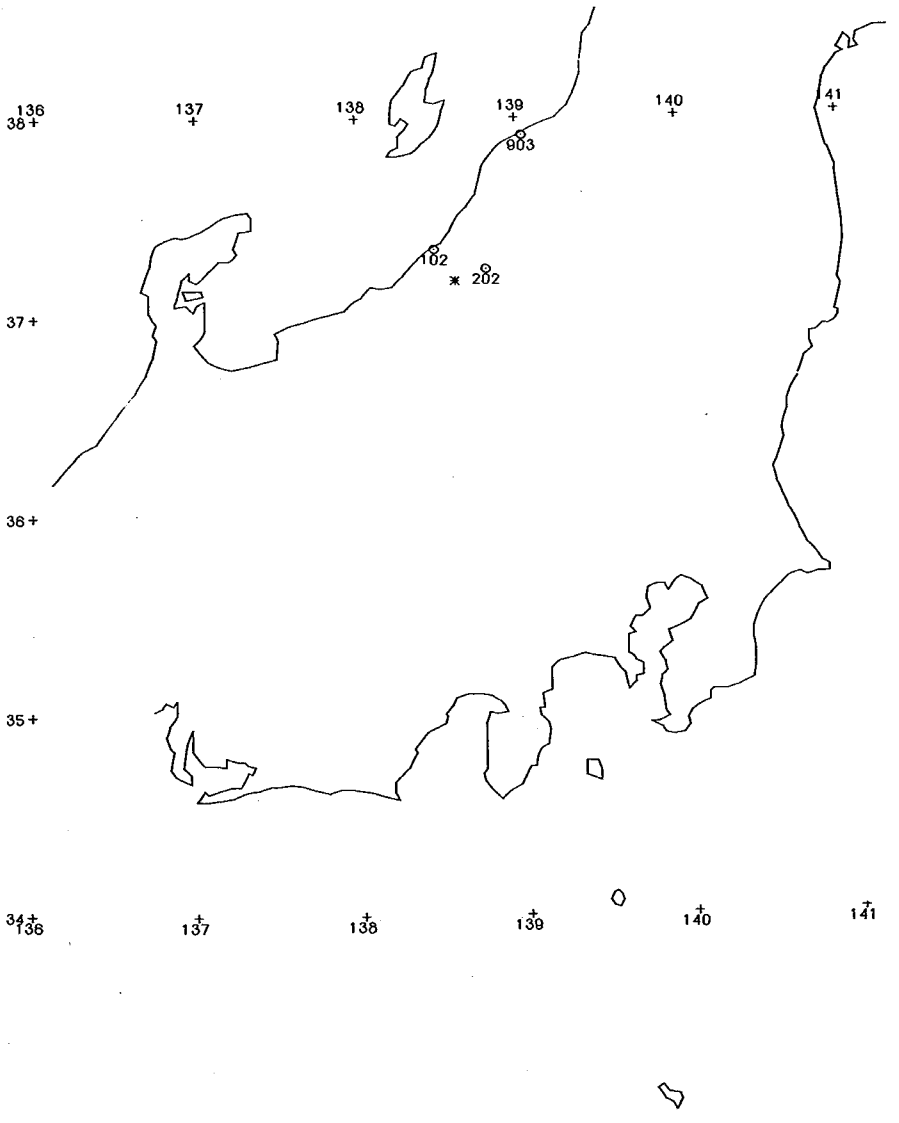


Figure 10　Accelerometers Worked during Earthquake Number 66041

Table 3-11 Index of Accelerometer Worked during Earthquake Number 66044

LIST OF EARTHQUAKE ORIGINS

EQ. NO.	EPICENTAL REGION	EARTEQUAKE TIME AND DAY	LONGITUDE +-	LATITUDE +-	DEPTH(KM)	MAGNITUDE
66044	E COAST OF CHIBA PREF	1966.10.08,21.02	140 26 2	35 27 1	0.	4.9

STATION NO.	INSTRUMENTS	SEQUE. NO.	HORI.A	VERTICAL	HORI.B (GAL)
310	GR-1	1	11.3	0.	11.3
501	GR-1	9	0.	0.	0.
901	GR-1	17	48.0	19.0	89.0

STATION NO.	NAME OF STRUCTURE	INSTRUMENTS	LONGITUDE	LATITUDE	Y.M INSTALLED	TYPE	MACHINE NO.	DS.(KM)
310	HIRAI BRIDGE	GR-1	139 51 52	36 43 13	660304	SMAC-B2	70151	149.7
310	HIRAI BRIDGE	PI-1	139 51 8	36 42 30	660304	SMAC-B2	70126	148.9
310	HIRAI BRIDGE	PI-2	139 51 2	36 42 36	660304	SMAC-B2	70125	149.1
501	TOKYO BAY(FUTTU CAPE)	GR-1	139 48 18	35 18 32	651201	SMAC-B2	38558	58.2
901	P.W.R.I. CHIBA BRANCH	GR-1	140 8 36	35 37 57	670300	SMAC-B2	70153	32.9
901	P.W.R.I. CHIBA BRANCH	GR-2	140 8 36	35 37 57	730300	SMAC-Q	10002	32.9
901	P.W.R.I. CHIBA BRANCH	GR-3	140 8 36	35 37 57	730300	SMAC-B2	38561	32.9

66044　　E COAST OF CHIBA PREF

STATION NAME OF STRUCTURE	RECORD NUMBER	MAX. AMPLITUDE (GALS) HORI.A	VERTICAL	HORI.B
HIRAI BRIDGE	310 GR-1 1	11.3	0.0	11.3
TOKYO BAY(FUTTU CAPE)	501 GR-1 9	0.0	0.0	0.0
P.W.R.I. CHIBA BRANCH	901 GR-1 17	48.0	19.0	89.0

EARTHQUAKE TIME AND DATE
1966.10.08.21.02

LOCATION OF EPICENTER
LO=140 26
LA= 35 27

DEPTH, MAGNITUDE
0.0 KM, M= 4.9

(* E.Q. CENTER)

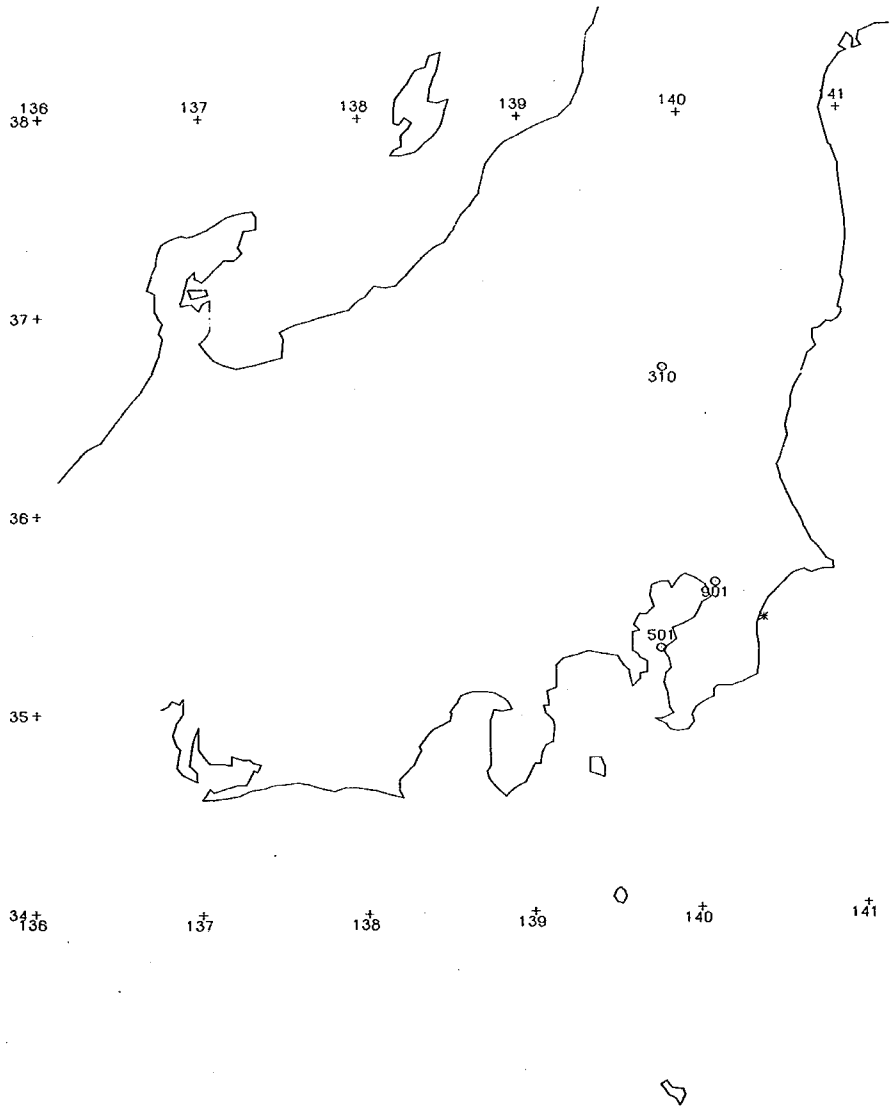


Figure 11　Accelerometers Worked during Earthquake Number 66044

Table 3-12 Index of Accelerometer Worked during Earthquake Number 66045

LIST OF EARTHQUAKE ORIGINS

EQ. NO.	EPICENTAL REGION	EARTEQUAKE TIME AND DAY	LONGITUDE +−	LATITUDE +−	DEPTH(KM)	MAGNITUDE
66045	NEAR MATSUSHIRO	1966.10.23.11.14	138 10 1	36 30 1	0.	4.7

STATION NO.	INSTRUMENTS	SEQUE. NO.	HORI.A	VERTICAL	HORI.B (GAL)
202	GR-1	14	0.	0.	0.
905	GR-1	183	125.0	16.3	37.5
905	PI-1	301	75.0	16.3	37.5

STATION NO.	NAME OF STRUCTURE	INSTRUMENTS	LONGITUDE	LATITUDE	Y.M INSTALLED	TYPE	MACHINE NO.	DS.(KM)
202	UONUMA BRIDGE	GR-1	138 48 30	37 14 36	651200	SMAC-B2	38578	100.4
202	UONUMA BRIDGE	PI-1	138 48 23	37 14 32	651200	SMAC-B2	38577	100.2
905	OCHIAI BRIDGE	GR-1	138 13 25	36 38 38	651210	SMAC-B2	37896	16.7
905	OCHIAI BRIDGE	GR-2	138 14 27	36 37 8	651210	SMAC-B2	38587	14.8
905	OCHIAI BRIDGE	PI-1	138 14 27	36 37 5	651210	SMAC-B2	38583	14.7

66045　　NEAR MATSUSHIRO

STATION NAME OF STRUCTURE	RECORD NUMBER		MAX. AMPLITUDE (GALS) HORI.A	VERTICAL	HORI.B
UONUMA BRIDGE	202	GR-1 14	0.0	0.0	0.0
OCHIAI BRIDGE	905	GR-1183	125.0	16.3	37.5
OCHIAI BRIDGE	905	PI-1301	75.0	16.3	37.5

EARTHQUAKE TIME AND DATE
1966.10.23.11.14

LOCATION OF EPICENTER
LO=138 10
LA= 36 30

DEPTH. MAGNITUDE
0.0 KM. M= 4.7

(* E.Q. CENTER)

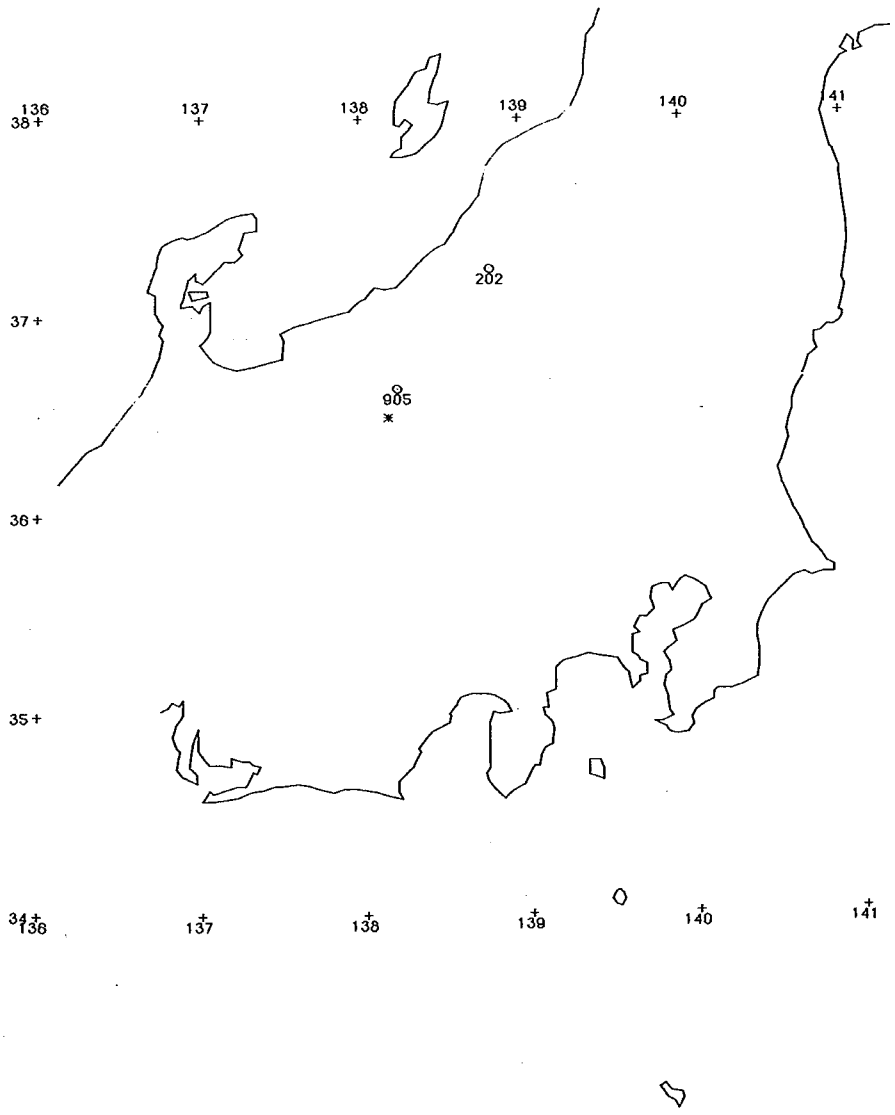


Figure 12　Accelerometers Worked during Earthquake Number 66045

Table 3-13 Index of Accelerometer Worked during Earthquake Number 66047

LIST OF EARTHQUAKE ORIGINS

EQ. NO.	EPICENTAL REGION	EARTEQUAKE TIME AND DAY	LONGITUDE +-	LATITUDE +-	DEPTH(KM)	MAGNITUDE
66047	NEAR MATSUSHIRO	1966.10.26,03.04	138 22 1	36 33 1	0.	5.3

STATION NO.	INSTRUMENTS	SEQUE. NO.	HORI.A	VERTICAL	HORI.B (GAL)
203	GR-1	21	0.	0.	0.
905	GR-1	186	62.5	37.5	50.0
905	PI-1	304	62.5	16.3	37.5

STATION NO.	NAME OF STRUCTURE	INSTRUMENTS	LONGITUDE	LATITUDE	Y.M INSTALLED	TYPE	MACHINE NO.	DS.(KM)
203	YOKOKURASAWA BRIDGE	GR-1	138 33 54	36 58 46	651002	SMAC-B2	38546	50.8
203	YOKOKURASAWA BRIDGE	PI-1	138 33 54	36 58 42	651002	SMAC-B2	38545	50.7
905	OCHIAI BRIDGE	GR-1	138 13 25	36 38 38	651210	SMAC-B2	37896	16.5
905	OCHIAI BRIDGE	GR-2	138 14 27	36 37 8	651210	SMAC-B2	38587	13.6
905	OCHIAI BRIDGE	PI-1	138 14 27	36 37 5	651210	SMAC-B2	38583	13.5

66047　NEAR MATSUSHIRO

STATION NAME OF STRUCTURE	RECORD NUMBER		MAX. AMPLITUDE (GALS) HORI.A	VERTICAL	HORI.B
YOKOKURASAWA BRIDGE	203	GR-1 21	0.0	0.0	0.0
OCHIAI BRIDGE	905	GR-1186	62.5	37.5	50.0
OCHIAI BRIDGE	905	PI-1304	62.5	16.3	37.5

EARTHQUAKE TIME AND DATE
1966.10.26.03.04
LOCATION OF EPICENTER
LO=138 22
LA= 36 33
DEPTH. MAGNITUDE
0.0 KM. M= 5.3
(* E.Q. CENTER)

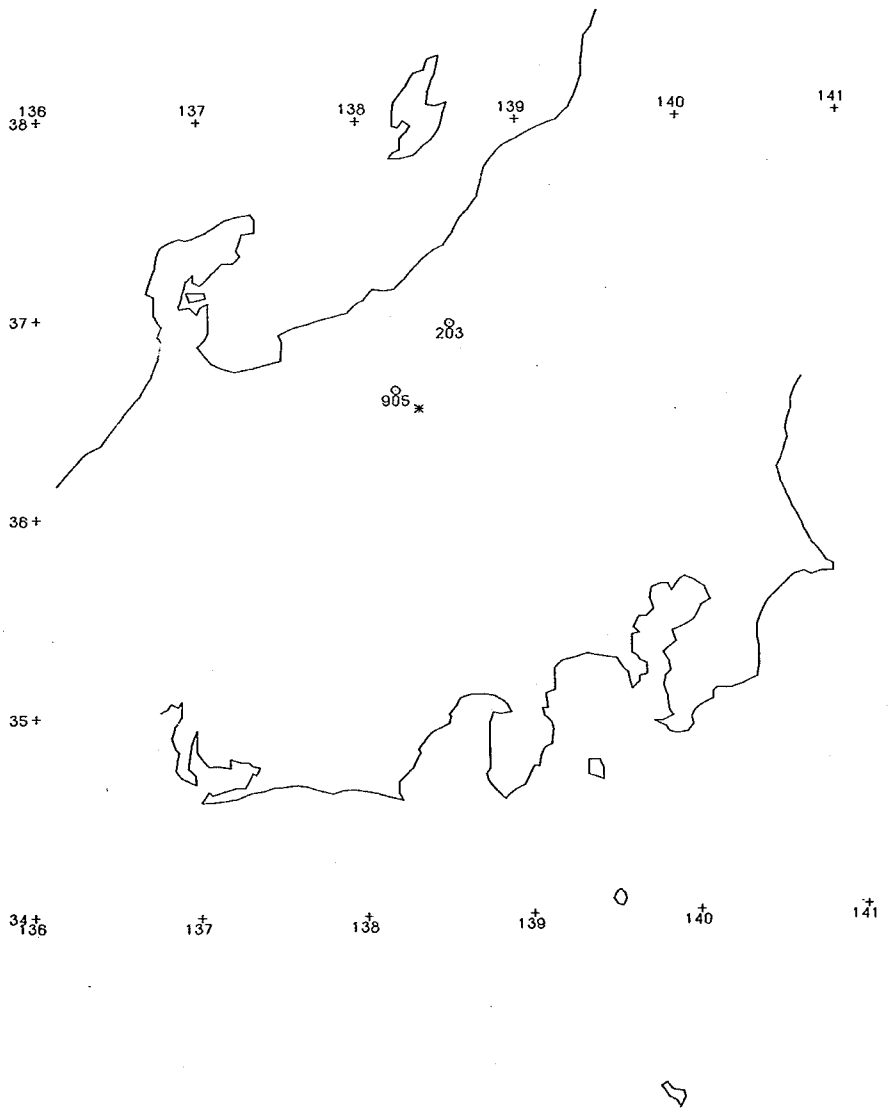


Figure 13　Accelerometers Worked during Earthquake Number 66047

Table 3-14 Index of Accelerometer Worked during Earthquake Number 66051

LIST OF EARTHQUAKE ORIGINS

EQ. NO.	EPICENTAL REGION	EARTEQUAKE TIME AND DAY	LONGITUDE +-	LATITUDE +-	DEPTH(KM)	MAGNITUDE
66051	ARIAKE SEA	1966.11.12,21.01	130 12 0	33 6 0	20.0	5.5

STATION NO.	INSTRUMENTS	SEQUE. NO.	HORI.A	VERTICAL	HORI.B (GAL)
801	GR-1	1	118.0	13.0	83.0

STATION NO.	NAME OF STRUCTURE	INSTRUMENTS	LONGITUDE	LATITUDE	Y.M INSTALLED	TYPE	MACHINE NO.	DS.(KM)
801	ARIAKE-SEA EMBANKMENT	GR-1	130 16 23	33 10 57	650824	SMAC-B2	38549	11.2

66051　ARIAKE SEA

STATION NAME OF STRUCTURE	RECORD NUMBER	MAX. AMPLITUDE (GALS) HORI.A	VERTICAL	HORI.B	EARTHQUAKE TIME AND DATE
ARIAKE-SEA EMBANKMENT	801 GR-1 1	118.0	13.0	83.0	1966.11.12.21.01

LOCATION OF EPICENTER
LO=130 12
LA= 33 6
DEPTH. MAGNITUDE
20.0 KM. M= 5.5
(* E.Q. CENTER)

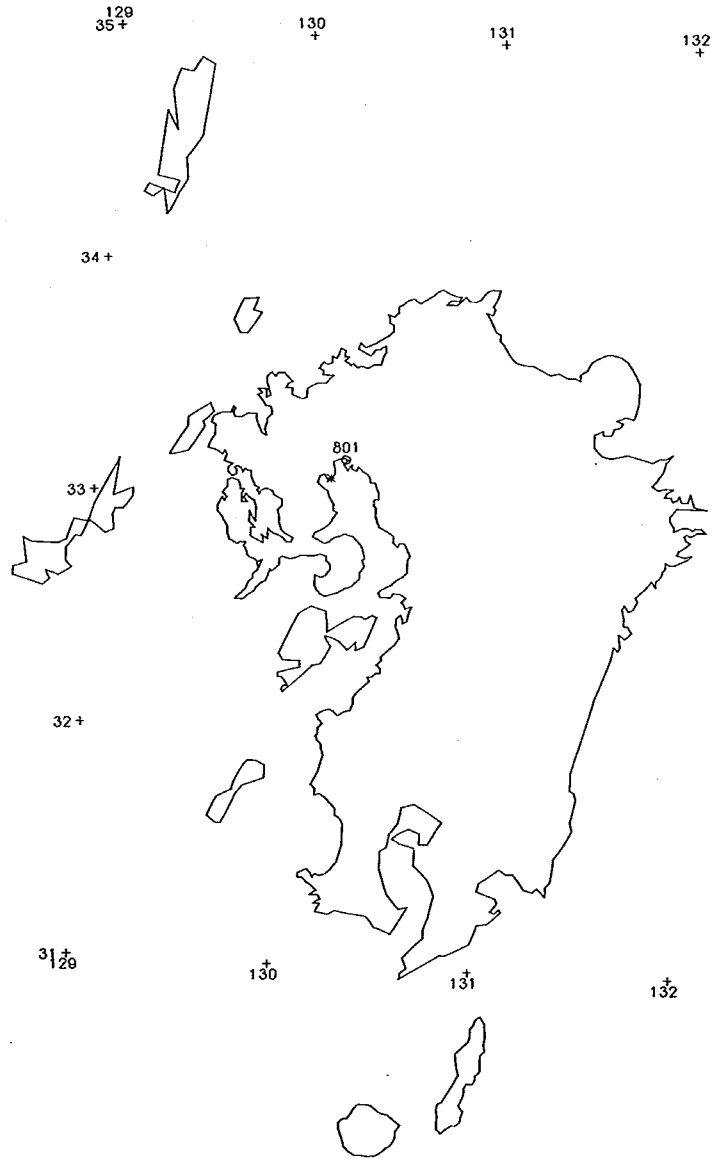


Figure 14　Accelerometers Worked during Earthquake Number 66051

Table 3-15 Index of Accelerometer Worked during Earthquake Number 67004

LIST OF EARTHQUAKE ORIGINS

EQ. NO.	EPICENTAL REGION	EARTEQUAKE TIME AND DAY	LONGITUDE +-	LATITUDE +-	DEPTH(KM)	MAGNITUDE
67004	OFF KINKAZAN	1967.01.17.20.59	142 5 4	38 15 2	30.0	6.3

STATION NO.	INSTRUMENTS	SEQUE. NO.	HORI.A	VERTICAL	HORI.B (GAL)
302	GR-1	3	20.2	12.5	20.0
302	PI-1	3	58.8	10.0	28.8
303	GR-1	6	6.5	0.	6.3
304	GR-1	6	22.1	0.	19.1
304	PI-1	6	43.8	8.8	28.8
903	PI-1	6	0.	0.	0.

STATION NO.	NAME OF STRUCTURE	INSTRUMENTS	LONGITUDE	LATITUDE	Y.M INSTALLED	TYPE	MACHINE NO.	DS.(KM)
302	KAIHOKU BRIDGE	GR-1	141 18 32	38 26 43	660506	SMAC-B2	38576	72.5
302	KAIHOKU BRIDGE	PI-1	141 18 32	38 26 41	660506	SMAC-B2	38575	72.4
303	KAHOKU BRIDGE	GR-1	140 9 58	38 26 17	650414	SMAC-B2	38530	172.4
303	KAHOKU BRIDGE	PI-1	140 9 58	38 26 8	650414	SMAC-B2	38529	172.4
304	DATE BRIDGE	GR-1	140 36 0	37 49 2	651010	SMAC-B2	38562	140.9
304	DATE BRIDGE	PI-1	140 37 0	37 48 54	651010	SMAC-B2	38561	139.5
903	SHOWA BRIDGE	GR-1	139 2 47	37 54 38	650100	SMAC-B2	38524	273.7
903	SHOWA BRIDGE	PI-1	139 2 47	37 54 34	650100	SMAC-B2	38525	273.8

67004　　OFF KINKAZAN

STATION NAME OF STRUCTURE	RECORD NUMBER			MAX. AMPLITUDE (GALS) HORI.A	VERTICAL	HORI.B
KAIHOKU BRIDGE	302	GR-1	3	20.2	12.5	20.0
KAIHOKU BRIDGE	302	PI-1	3	58.8	10.0	28.8
KAHOKU BRIDGE	303	GR-1	6	6.5	0.0	6.3
DATE BRIDGE	304	GR-1	6	22.1	0.0	19.1
DATE BRIDGE	304	PI-1	6	43.8	8.8	28.8
SHOWA BRIDGE	903	PI-1	6	0.0	0.0	0.0

EARTHQUAKE TIME AND DATE
1967.01.17.20.59

LOCATION OF EPICENTER
LO=142 5
LA= 38 15

DEPTH, MAGNITUDE
30.0 KM, M= 6.3

(* E.Q. CENTER)

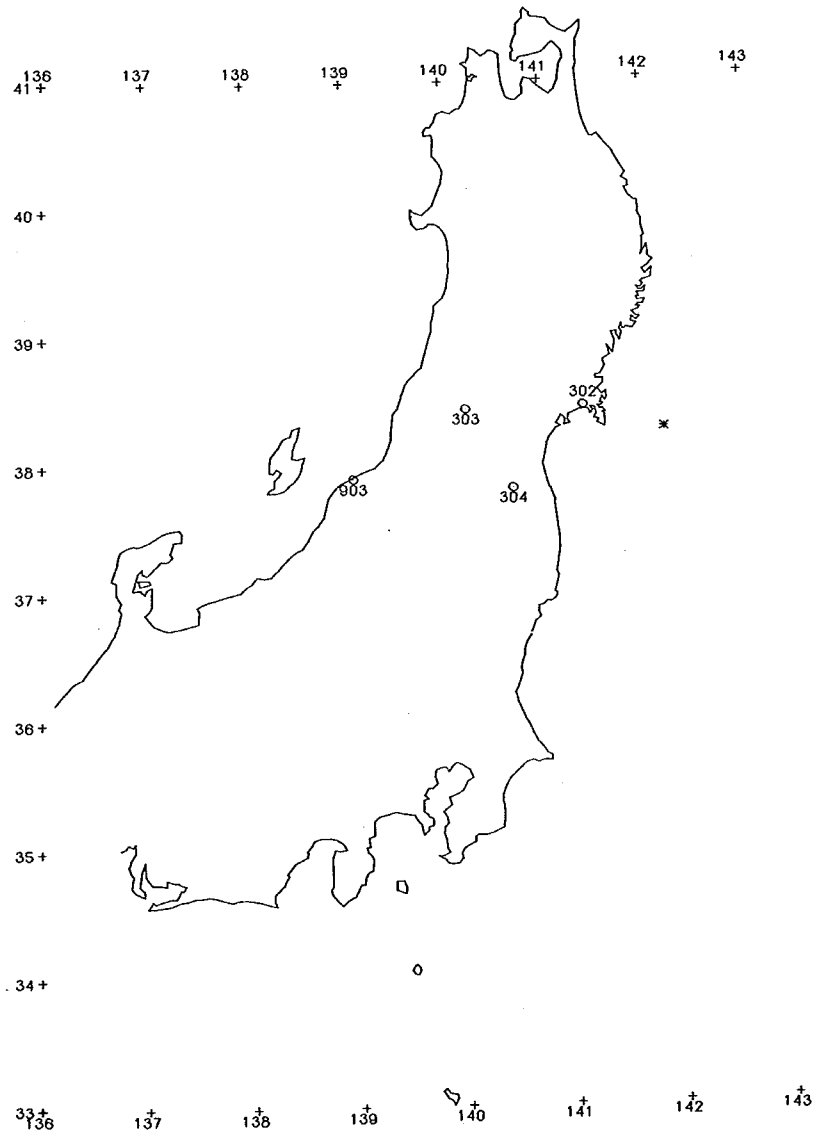


Figure 15　Accelerometers Worked during Earthquake Number 67004

Table 3-16 Index of Accelerometer Worked during Earthquake Number 67024

LIST OF EARTHQUAKE ORIGINS

EQ. NO.	EPICENTAL REGION	EARTEQUAKE TIME AND DAY	LONGITUDE	LATITUDE	DEPTH(KM)	MAGNITUDE
67024	NEAR CHOSHI	1967.04.30,10.09	141 3 +- 3	35 48 +- 1	30.0	4.9

STATION NO.	INSTRUMENTS	SEQUE. NO.	HORI.A	VERTICAL	HORI.B (GAL)
906	GR-1	4	48.8	8.8	45.0

STATION NO.	NAME OF STRUCTURE	INSTRUMENTS	LONGITUDE	LATITUDE	Y.M INSTALLED	TYPE	MACHINE NO.	DS.(KM)
906	P.W.R.I.KASHIMA E.L.	GR-1	140 39 18	35 53 31	670300	SMAC-B2	140185	36.7

67024　　NEAR CHOSHI

STATION NAME OF STRUCTURE	RECORD NUMBER	MAX. AMPLITUDE (GALS) HORI.A	VERTICAL	HORI.B	EARTHQUAKE TIME AND DATE
P.W.R.I.KASHIMA E.L.	906 GR-1 4	48.8	8.8	45.0	1967.04.30.10.09

LOCATION OF EPICENTER
LO=141 3
LA= 35 48
DEPTH. MAGNITUDE
30.0 KM. M= 4.9
(* E.Q. CENTER)

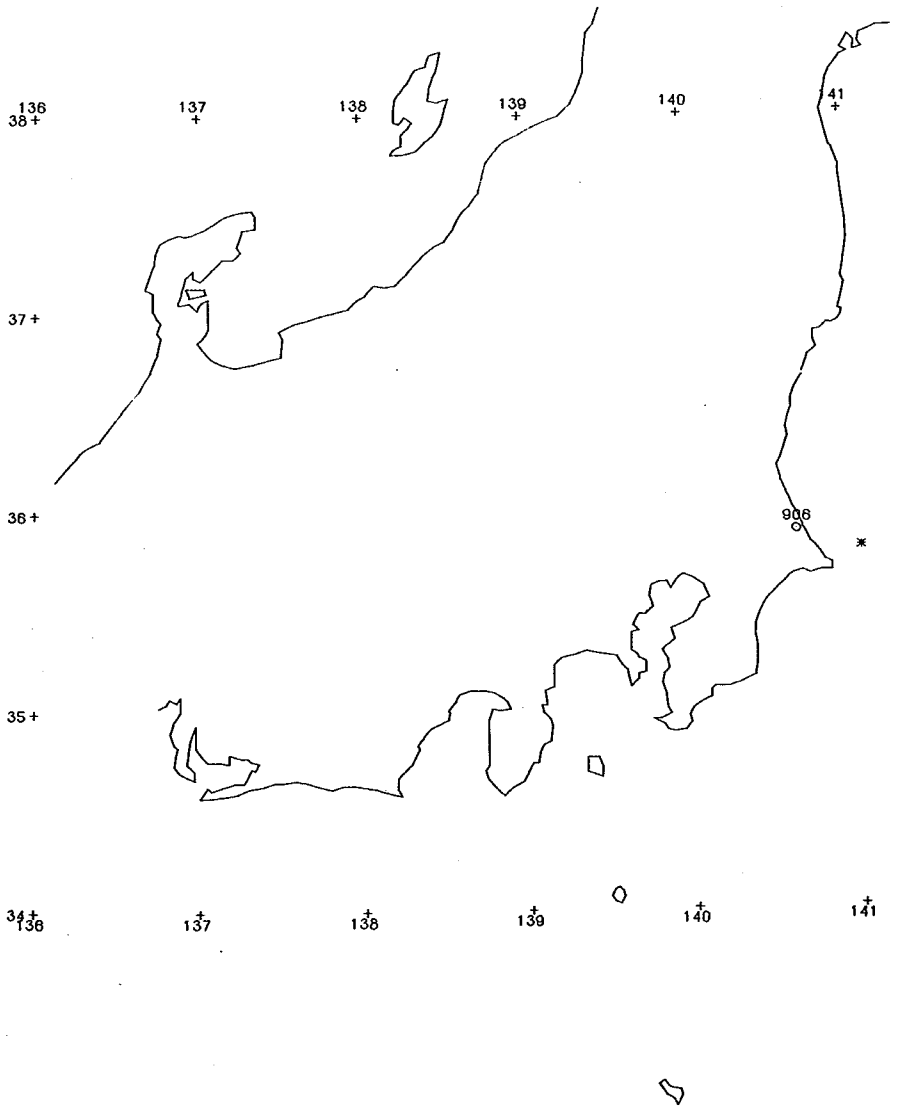


Figure 16　Accelerometers Worked during Earthquake Number 67024

Table 3-17 Index of Accelerometer Worked during Earthquake Number 67033

LIST OF EARTHQUAKE ORIGINS

EQ. NO.	EPICENTAL REGION	EARTEQUAKE TIME AND DAY	LONGITUDE +-	LATITUDE +-	DEPTH(KM)	MAGNITUDE
67033	MIDDLE PART OF HOKKAIDO	1967.07.05,08.42	142 36 2	43 4 1	170.0	6.3

STATION NO.	INSTRUMENTS	SEQUE. NO.	HORI.A	VERTICAL	HORI.B (GAL)
1302	GR-1	3	28.8	5.3	33.8
1302	PI-1	3	27.5	13.8	58.8
1302	PI-2	3	25.0	15.0	42.5

STATION NO.	NAME OF STRUCTURE	INSTRUMENTS	LONGITUDE	LATITUDE	Y.M INSTALLED	TYPE	MACHINE NO.	DS.(KM)
1302	CHIYODA BRIDGE	GR-1	143 23 21	42 55 11	661100	SMAC-B2	140182	72.3
1302	CHIYODA BRIDGE	PI-1	143 23 21	42 55 11	661100	SMAC-B2	140181	72.3
1302	CHIYODA BRIDGE	PI-2	143 23 21	42 55 11	661100	SMAC-B2	140183	72.3

67033 MIDDLE PART OF HOKKAIDO

STATION NAME OF STRUCTURE	RECORD NUMBER			MAX. AMPLITUDE (GALS) HORI.A	VERTICAL	HORI.B	EARTHQUAKE TIME AND DATE
CHIYODA BRIDGE	1302	GR-1	3	28.8	5.3	33.8	1967.07.05.08.42
CHIYODA BRIDGE	1302	PI-1	3	27.5	13.8	58.8	
CHIYODA BRIDGE	1302	PI-2	3	25.0	15.0	42.5	

LOCATION OF EPICENTER
LO=142 36
LA= 43 4
DEPTH. MAGNITUDE
170.0 KM. M= 6.3
(* E.Q. CENTER)

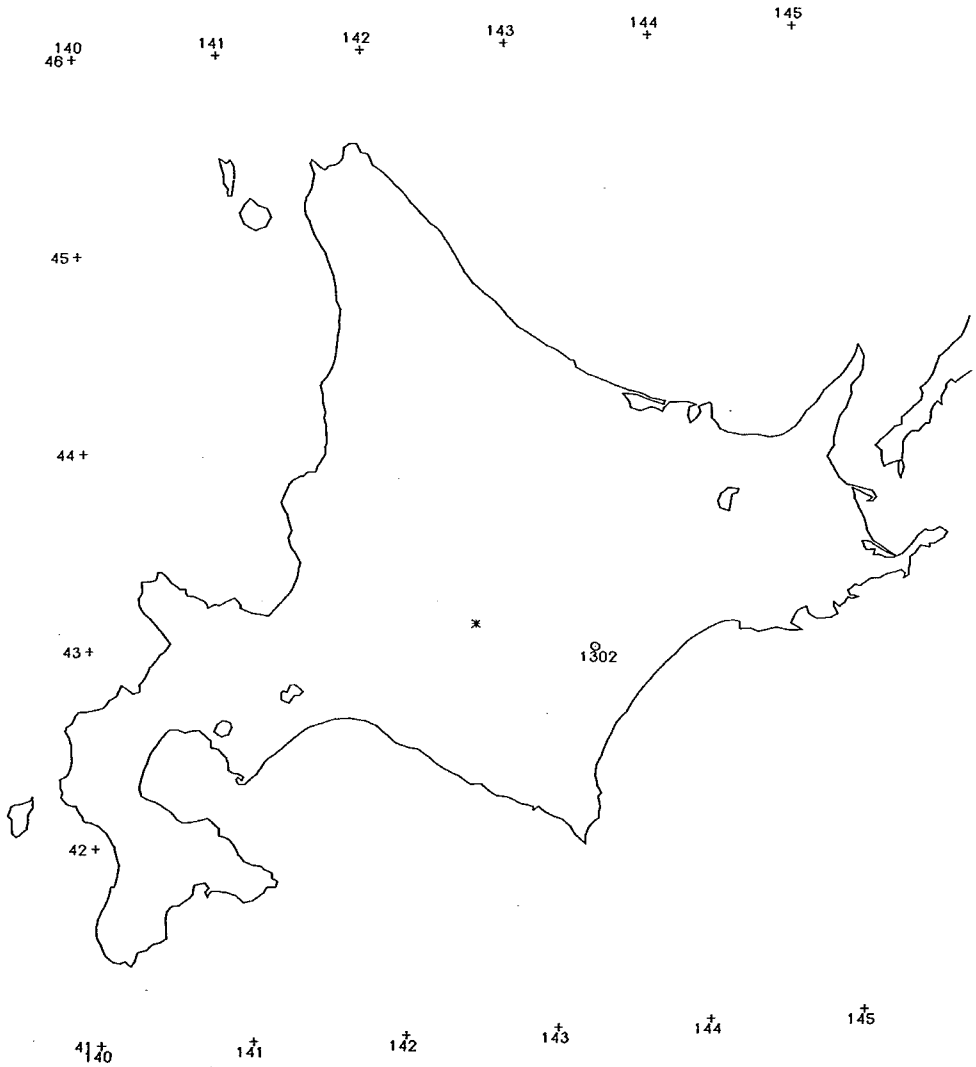


Figure 17 Accelerometers Worked during Earthquake Number 67033

Table 3-18 Index of Accelerometer Worked during Earthquake Number 67042

LIST OF EARTHQUAKE ORIGINS

EQ. NO.	EPICENTAL REGION	EARTEQUAKE TIME AND DAY	LONGITUDE +-	LATITUDE +-	DEPTH(KM)	MAGNITUDE
67042	E OFF HOKKAIDO	1967.09.19,19.56	145 33 2	42 46 1	90.0	6.4

STATION NO.	INSTRUMENTS	SEQUE. NO.	HORI.A	VERTICAL	HORI.B (GAL)
1302	GR-1	4	26.3	5.3	23.8
1302	PI-1	4	33.8	6.3	36.5
1302	PI-2	4	27.5	6.3	20.0

STATION NO.	NAME OF STRUCTURE	INSTRUMENTS	LONGITUDE	LATITUDE	Y.M INSTALLED	TYPE	MACHINE NO.	DS.(KM)
1302	CHIYODA BRIDGE	GR-1	143 23 21	42 55 11	661100	SMAC-B2	140182	193.7
1302	CHIYODA BRIDGE	PI-1	143 23 21	42 55 11	661100	SMAC-B2	140181	193.7
1302	CHIYODA BRIDGE	PI-2	143 23 21	42 55 11	661100	SMAC-B2	140183	193.7

67042　　E OFF HOKKAIDO

STATION NAME OF STRUCTURE	RECORD NUMBER			MAX. AMPLITUDE (GALS) HORI.A	VERTICAL	HORI.B
CHIYODA BRIDGE	1302	GR-1	4	26.3	5.3	23.8
CHIYODA BRIDGE	1302	PI-1	4	33.8	6.3	36.5
CHIYODA BRIDGE	1302	PI-2	4	27.5	6.3	20.0

EARTHQUAKE TIME AND DATE
1967.09.19.19.56

LOCATION OF EPICENTER
LO=145 33
LA= 42 46

DEPTH, MAGNITUDE
90.0 KM, M= 6.4

(* E.Q. CENTER)

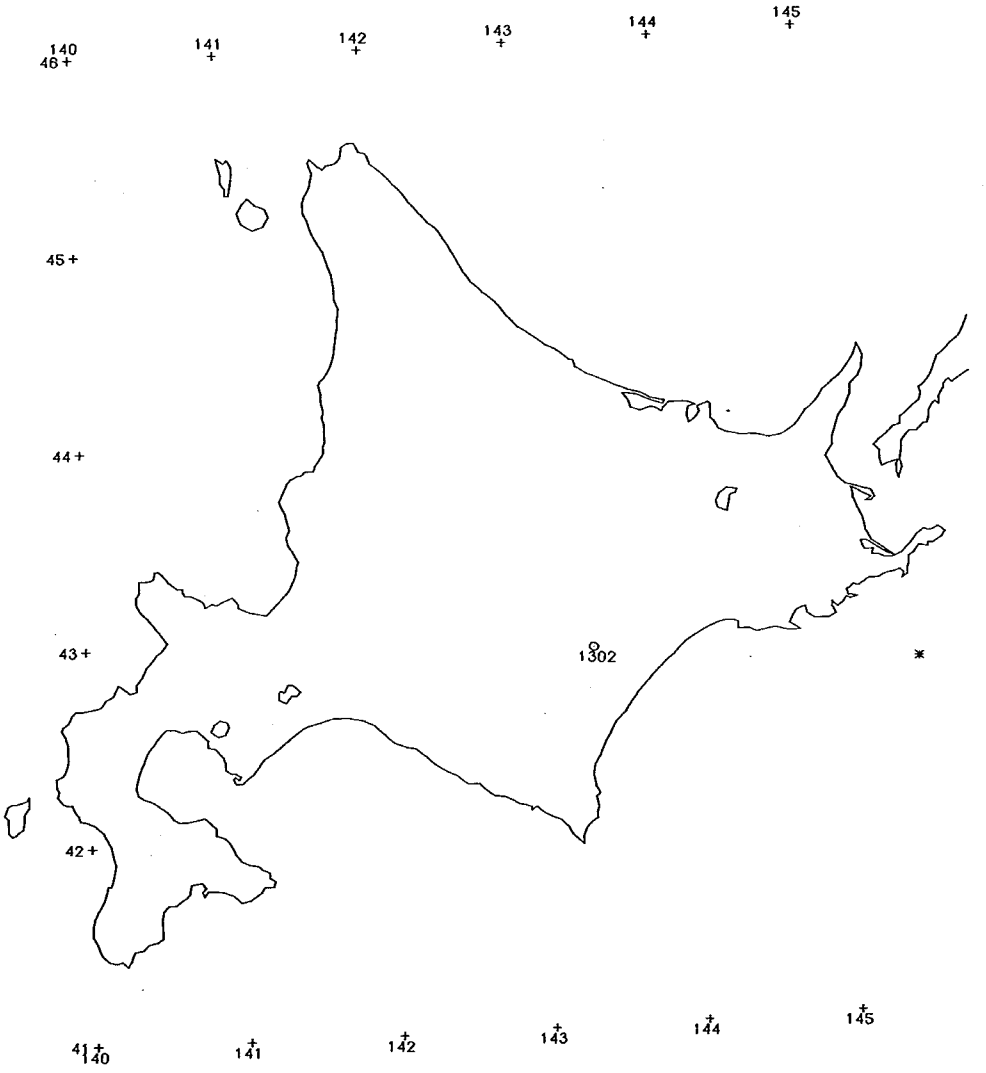


Figure 18　Accelerometers Worked during Earthquake Number 67042

5. 地震動の加速度記録

INDEX NO. の順に従い地震動加速度の波形を Figure ID−1 ～Figure ID−83 に示す。図中では縦軸は加速度（Gal），横軸は時間（Sec）であり，すべての図を通して同縮尺で示されている。原則として，水平2成分および鉛直1成分を同一ページに掲載してあるが，水平成分もしくは鉛直成分のいずれかがディジタル化されていない場合はディジタル化されている成分だけを示している。

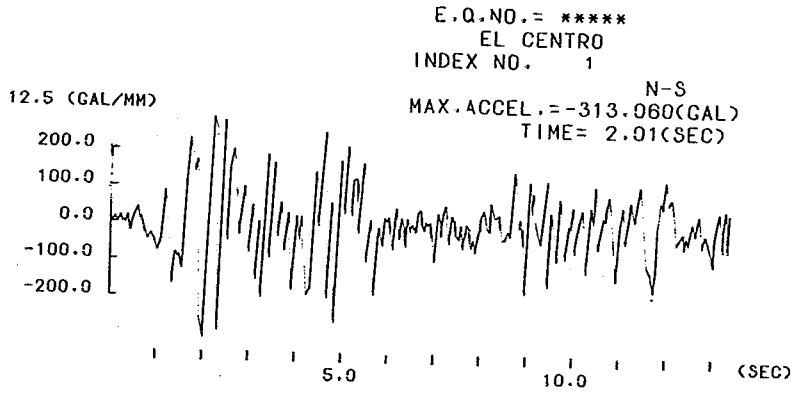
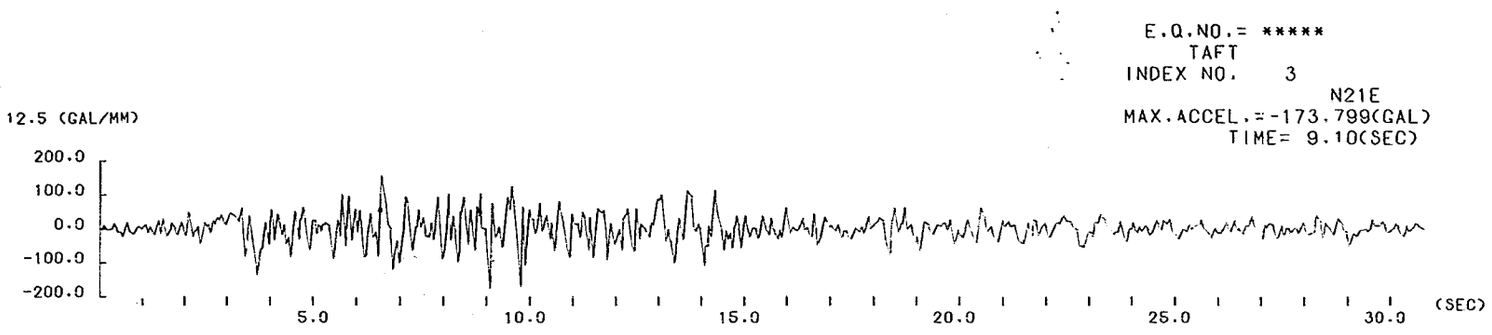


Figure ID-1 Earthquake Motion (Index No. 1)



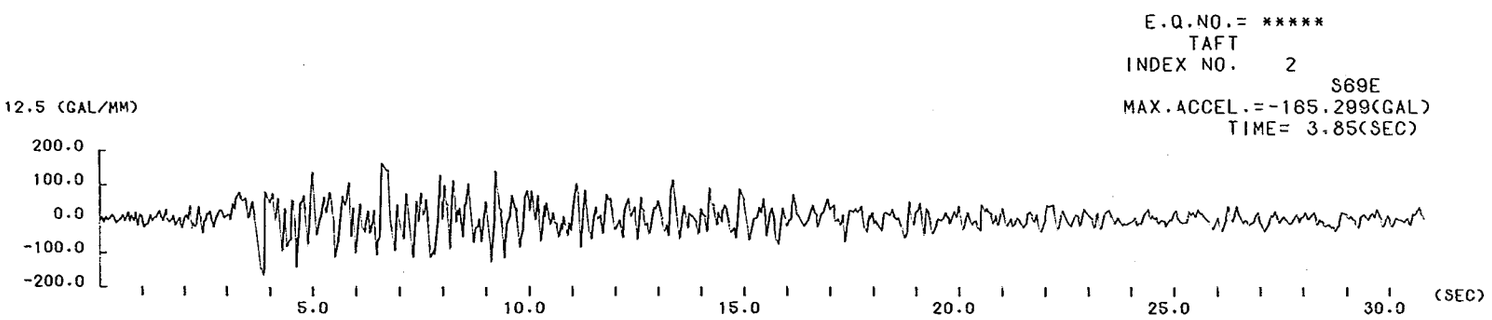
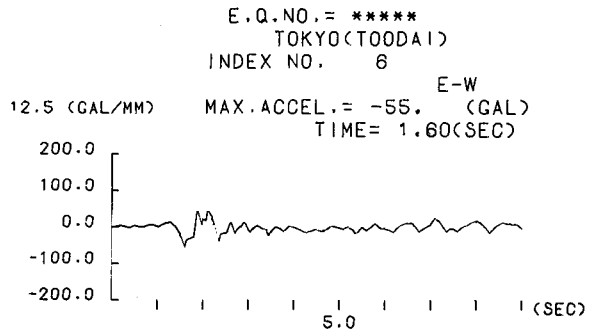
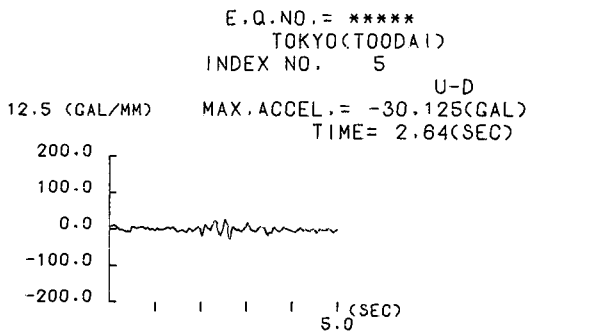


Figure ID-2 Earthquake Motion (Index No. 2 and 3)





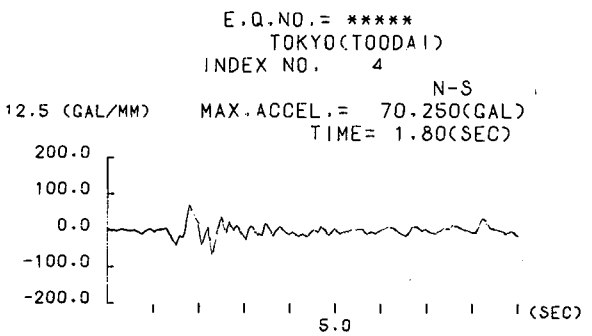


Figure ID-3 Earthquake Motion (Index No. 4, 5 and 6)

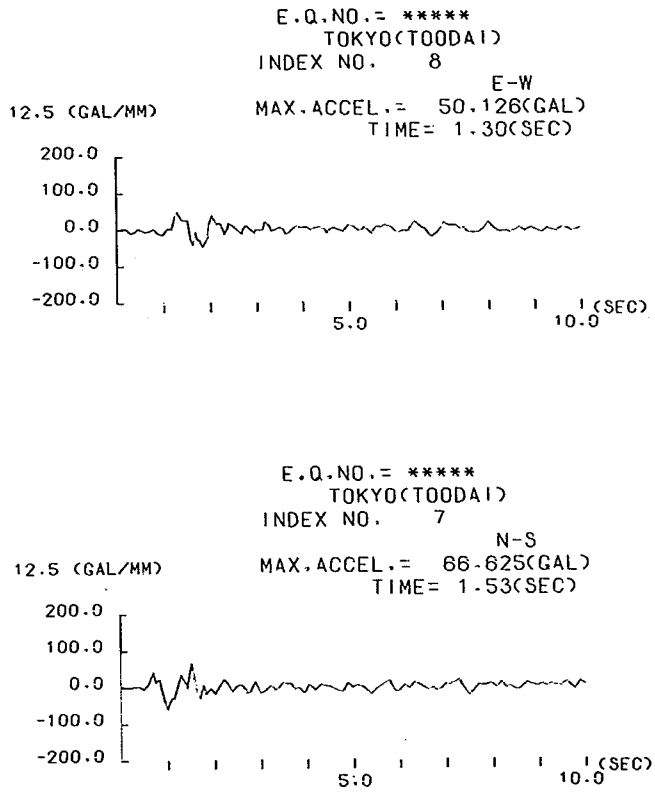


Figure ID-4 Earthquake Motion (Index No. 7 and 8)

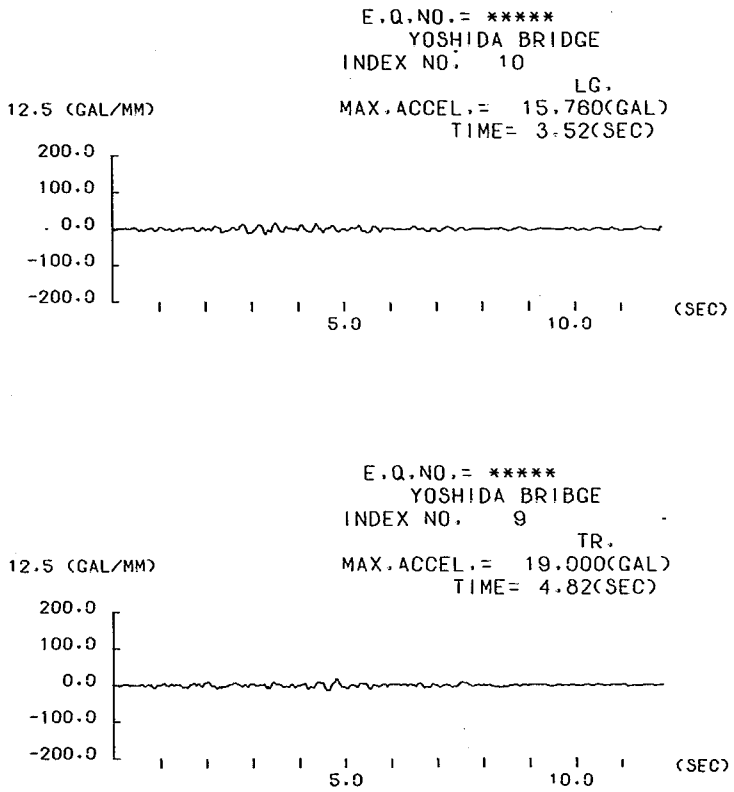


Figure ID-5 Earthquake Motion (Index No. 9 and 10)

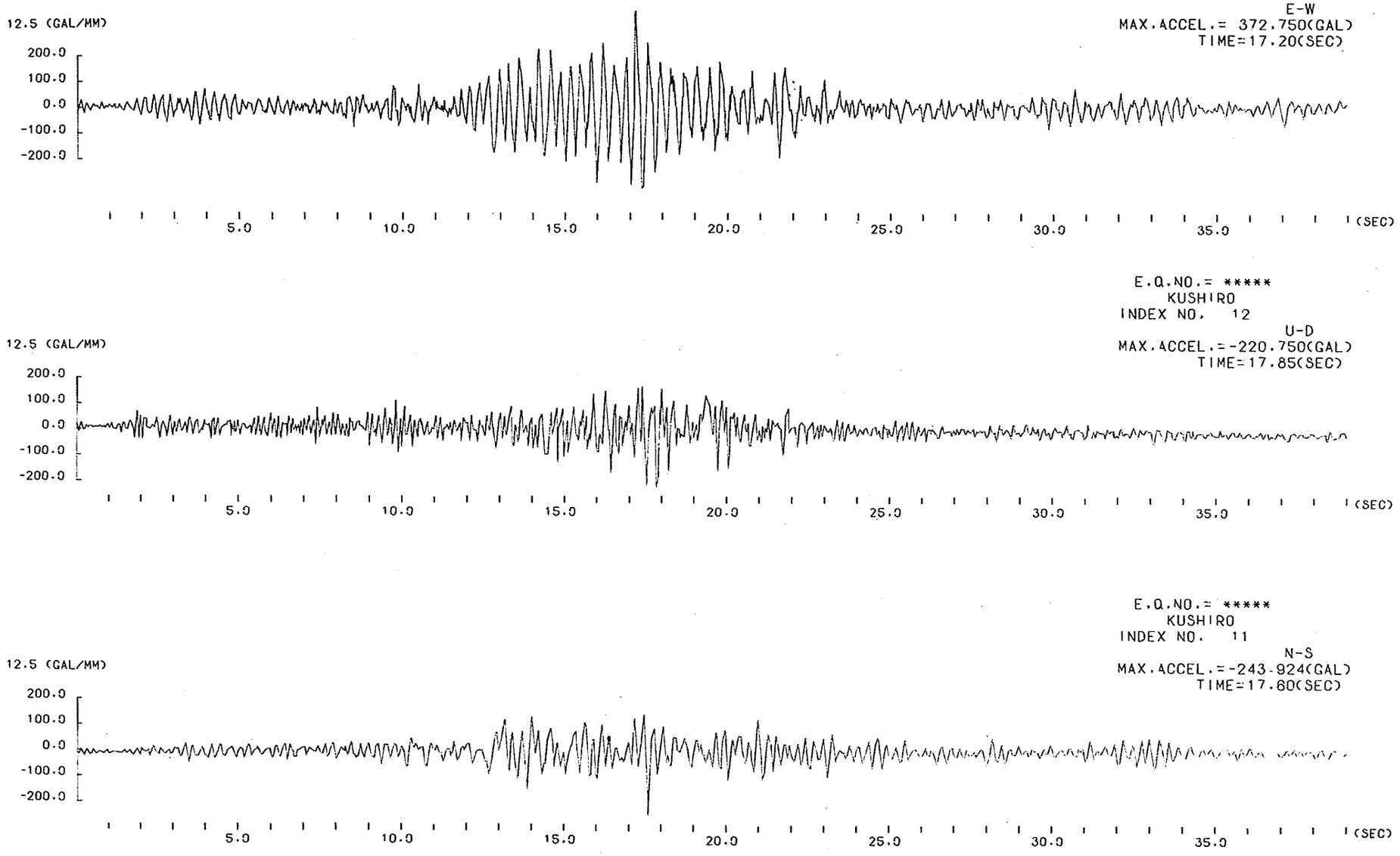


Figure ID-6 Earthquake Motion (Index No. 11, 12 and 13)

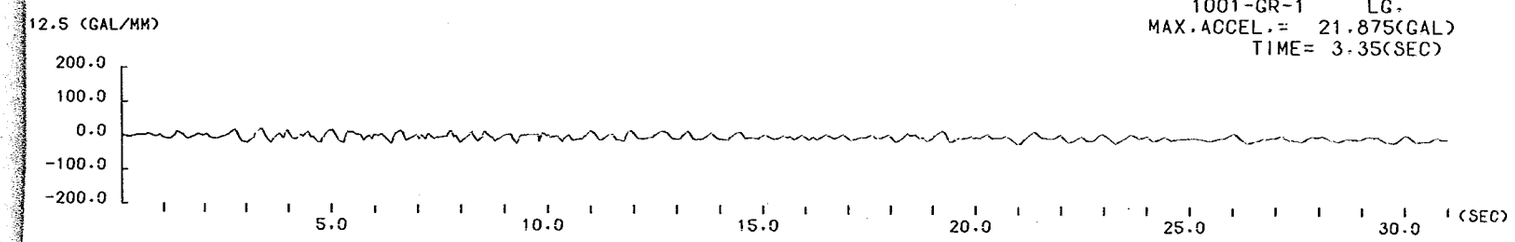
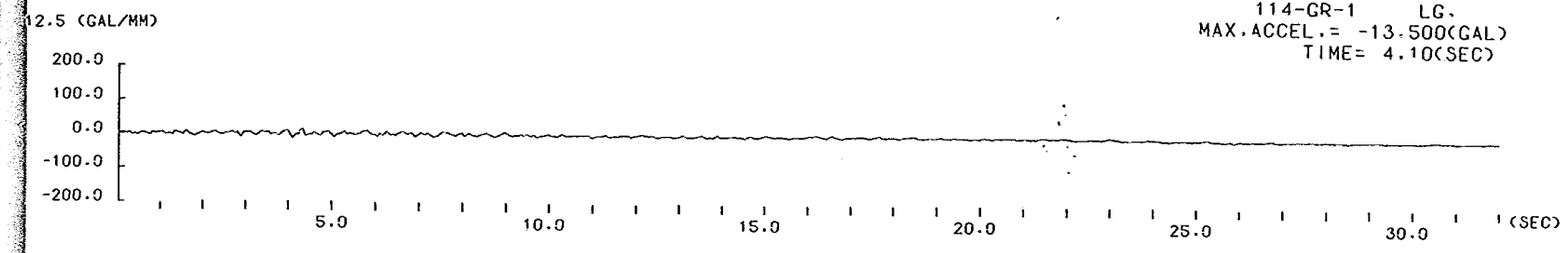
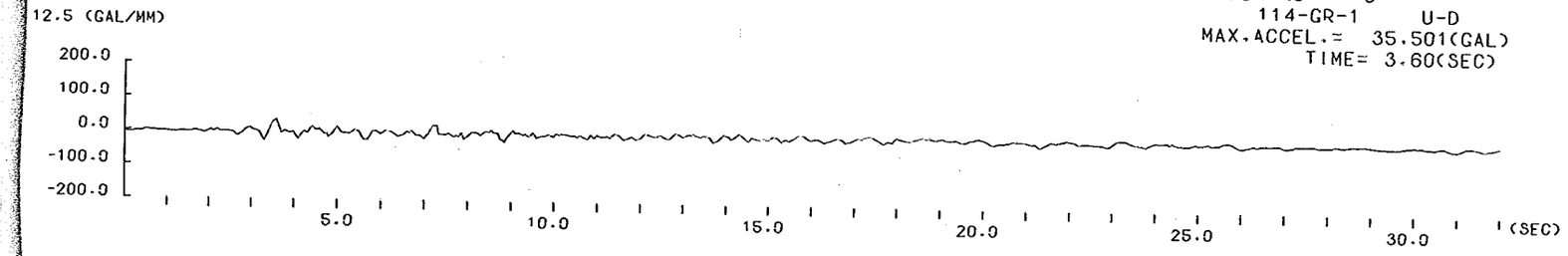


Figure ID-7 Earthquake Motion (Index No. 14)





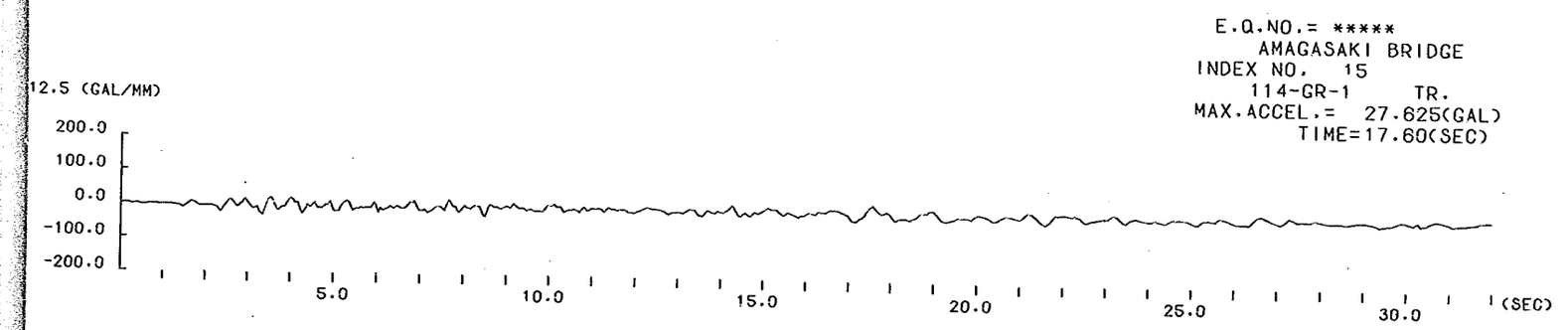
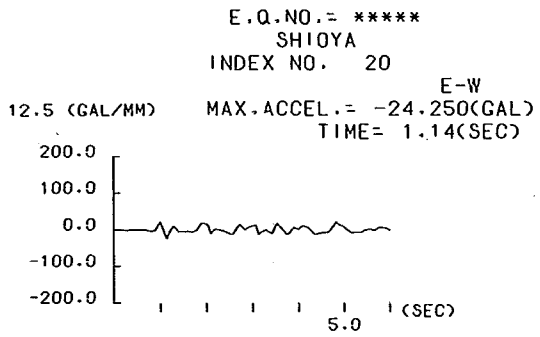
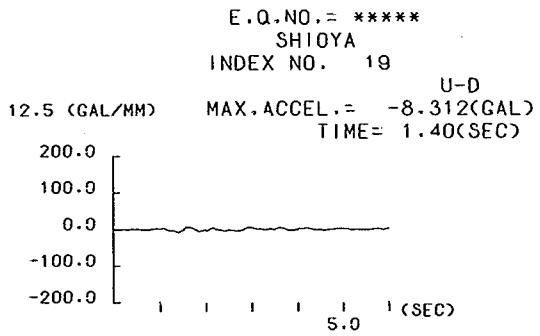


Figure ID-8 Earthquake Motion (Index No. 15, 16 and 17)





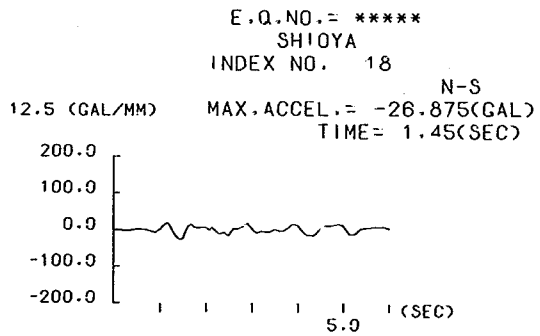
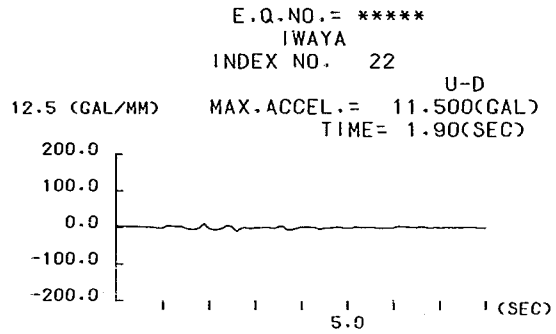


Figure ID-9 Earthquake Motion (Index No. 18, 19 and 20)



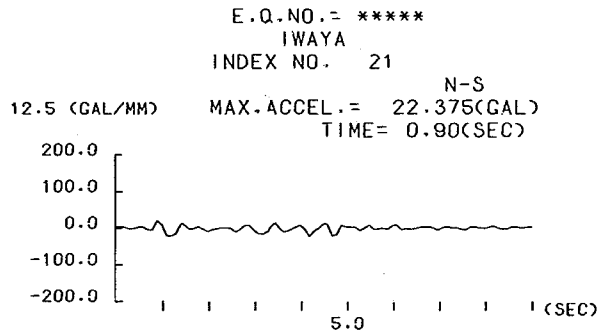


Figure ID-10 Earthquake Motion (Index No. 21 and 22)

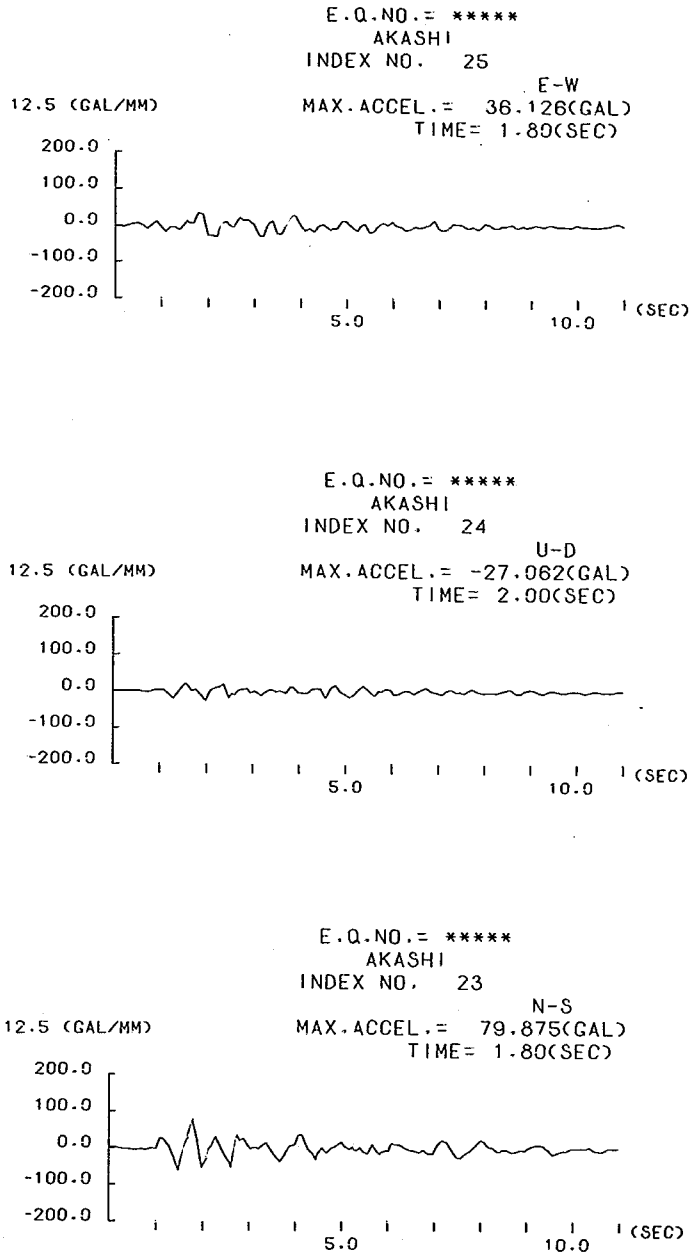
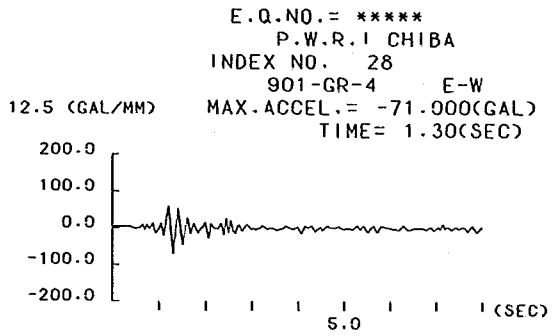
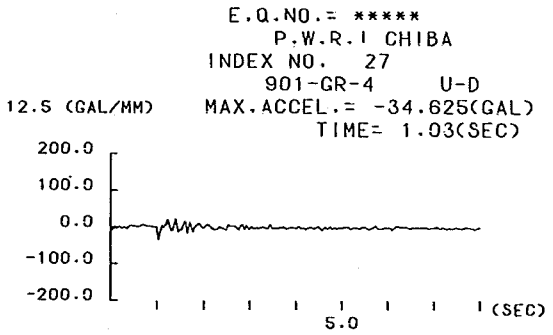


Figure ID-11 Earthquake Motion (Index No. 23, 24 and 25)





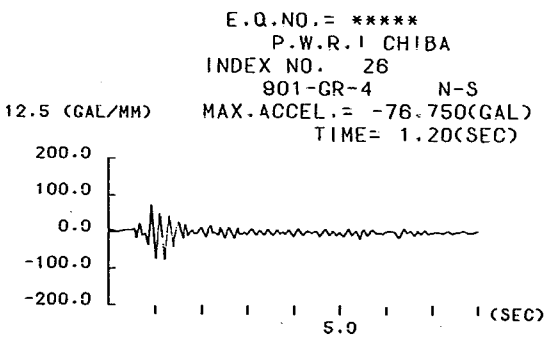
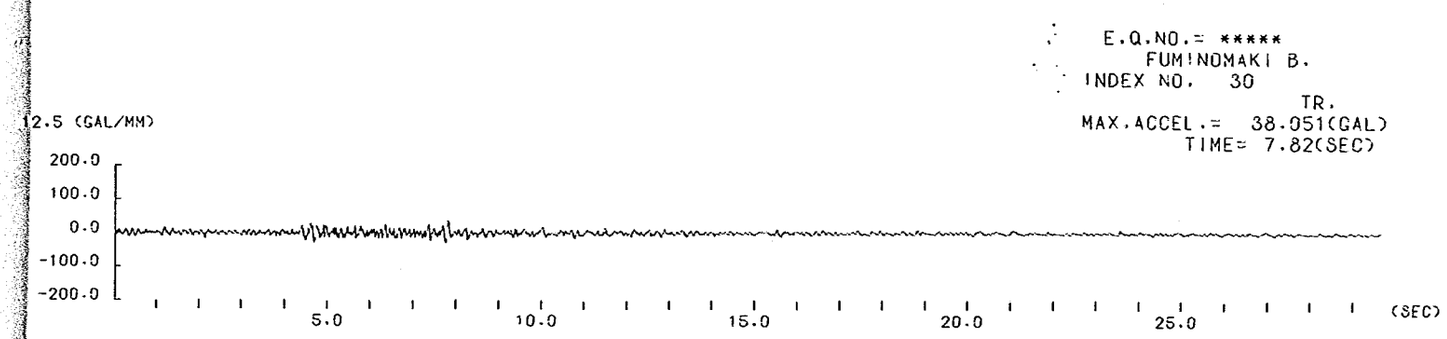


Figure ID-12 Earthquake Motion (Index No. 26, 27 and 28)



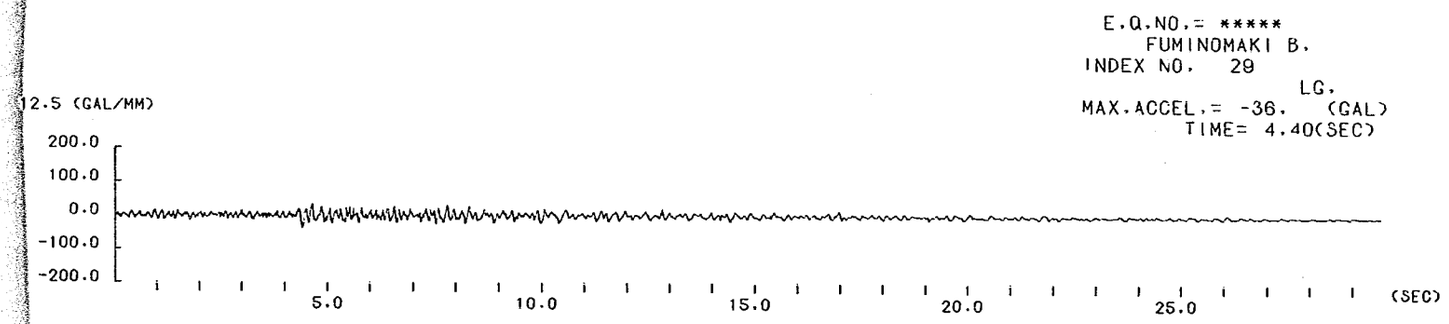


Figure ID-13 Earthquake Motion (Index No. 29 and 30)

26, 27 and 28)

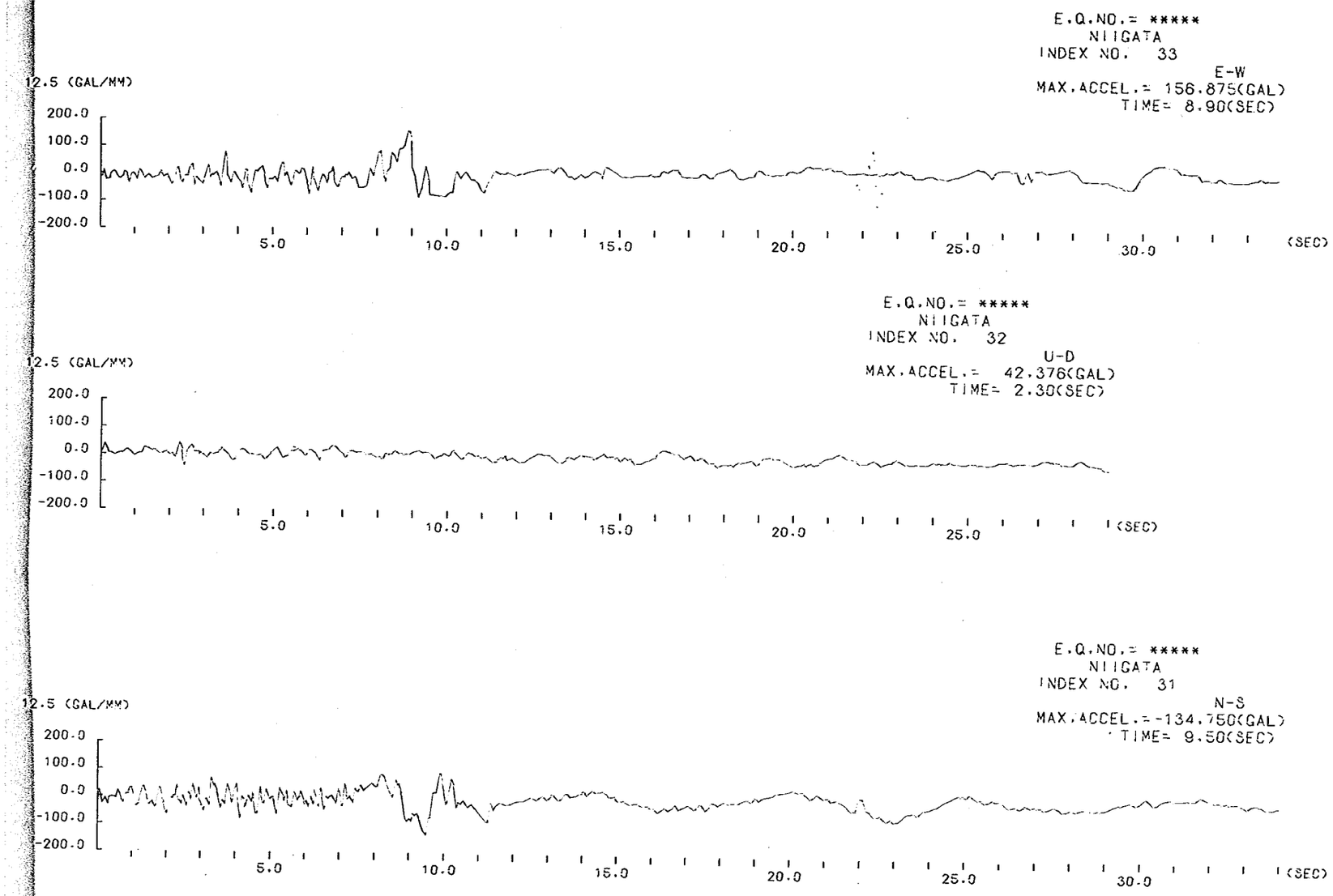


Figure ID-14 Earthquake Motion (Index No. 31, 32 and 33)

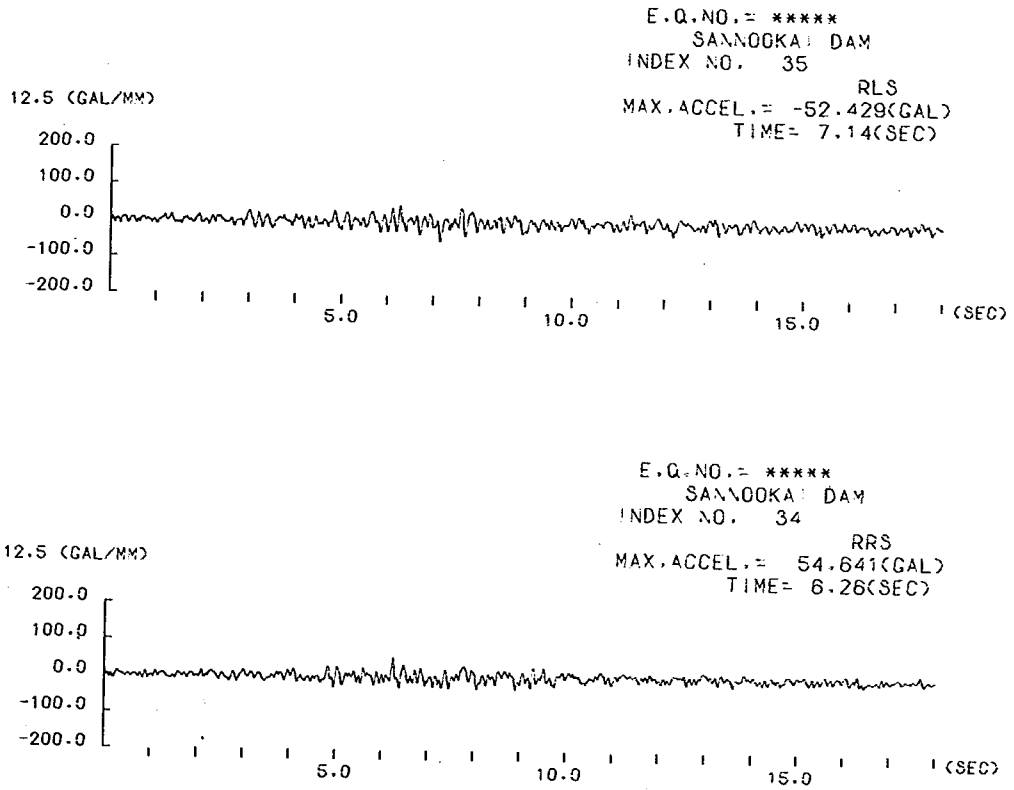


Figure ID-15 Earthquake Motion (Index No. 34 and 35)

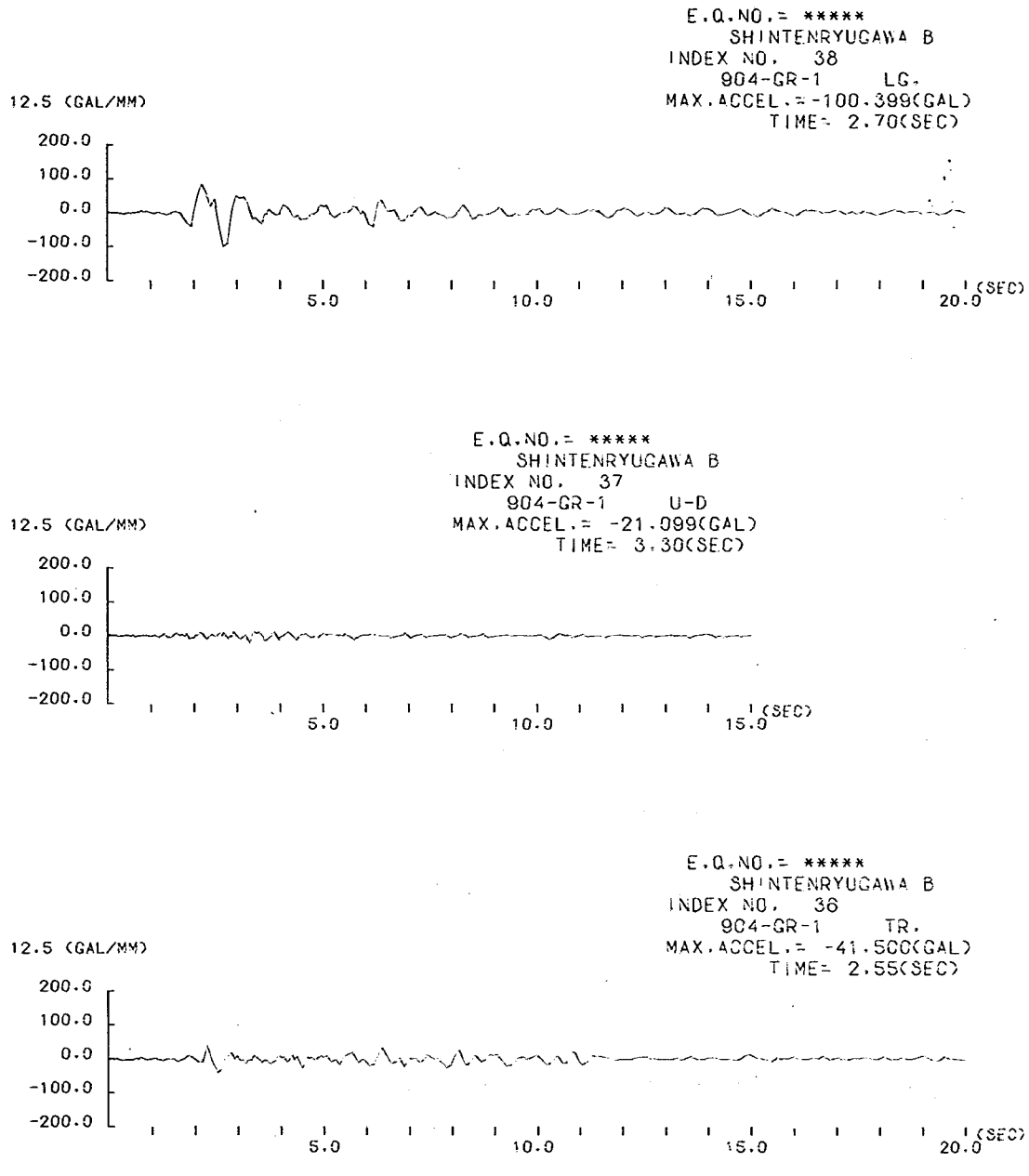


Figure ID-16 Earthquake Motion (Index No. 36, 37 and 38)

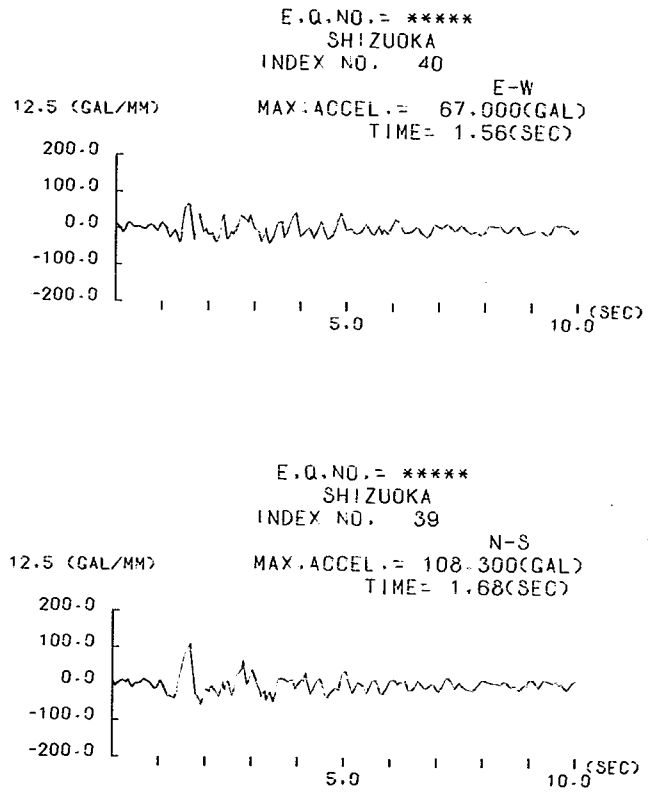


Figure ID-17 Earthquake Motion (Index No. 39 and 40)

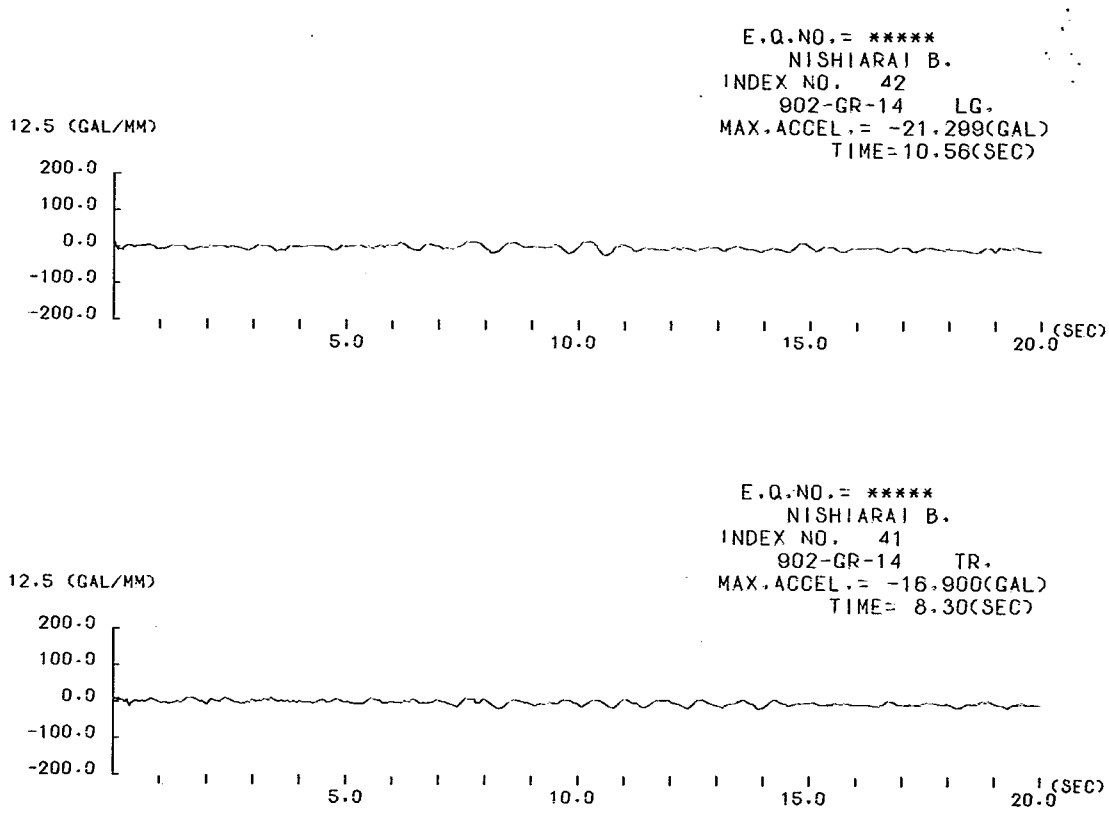


Figure ID-18 Earthquake Motion (Index No. 41 and 42)

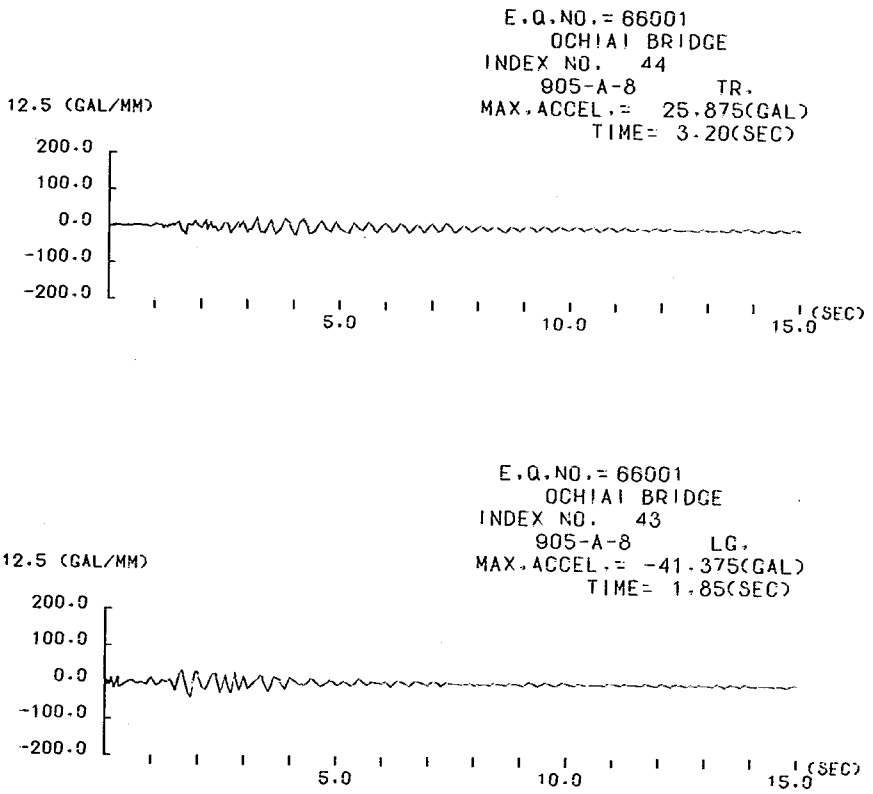
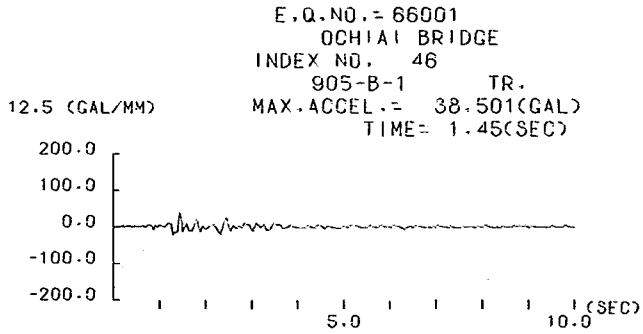


Figure ID-19 Earthquake Motion (Index No. 43 and 44)



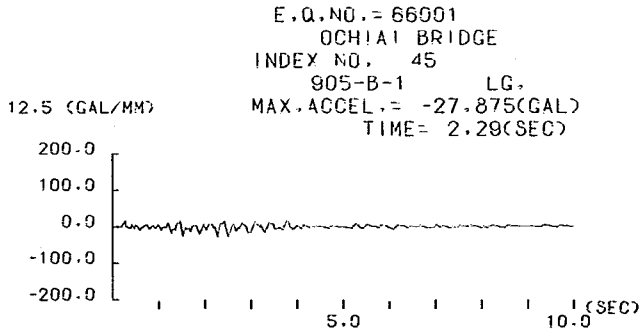


Figure ID-20 Earthquake Motion (Index No. 45 and 46)

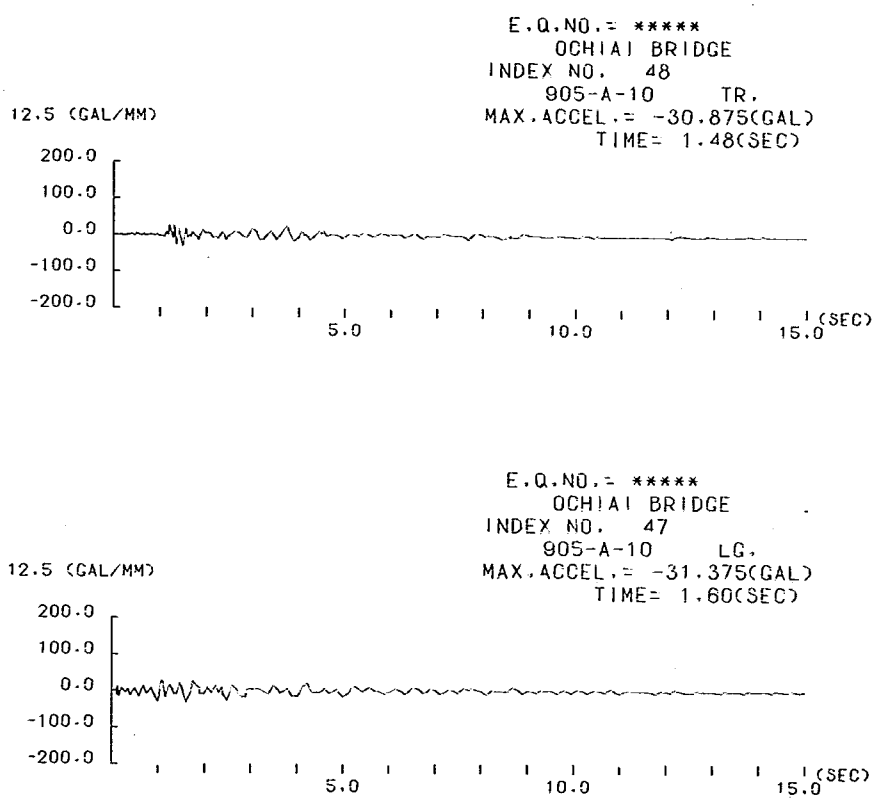


Figure ID-21 Earthquake Motion (Index No. 47 and 48)

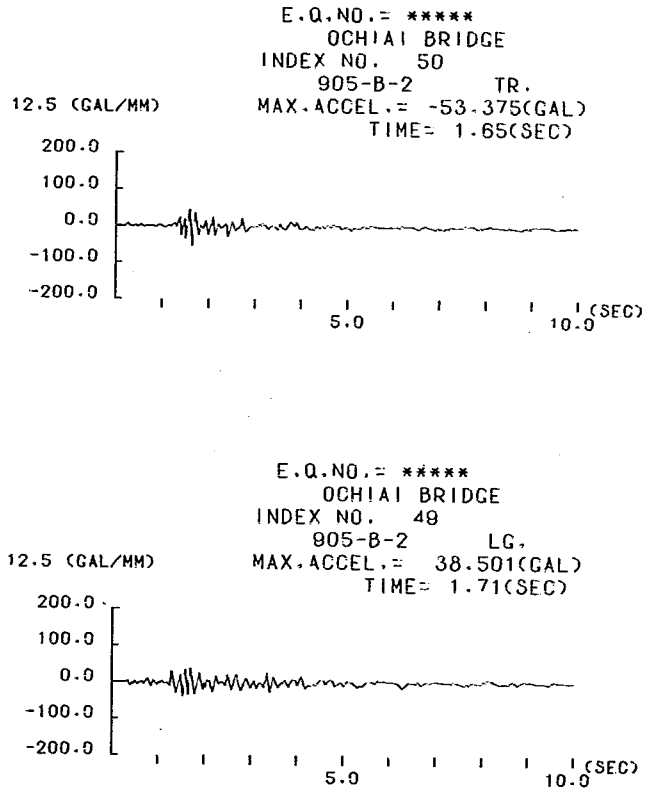


Figure ID-22 Earthquake Motion (Index 49 and 50)

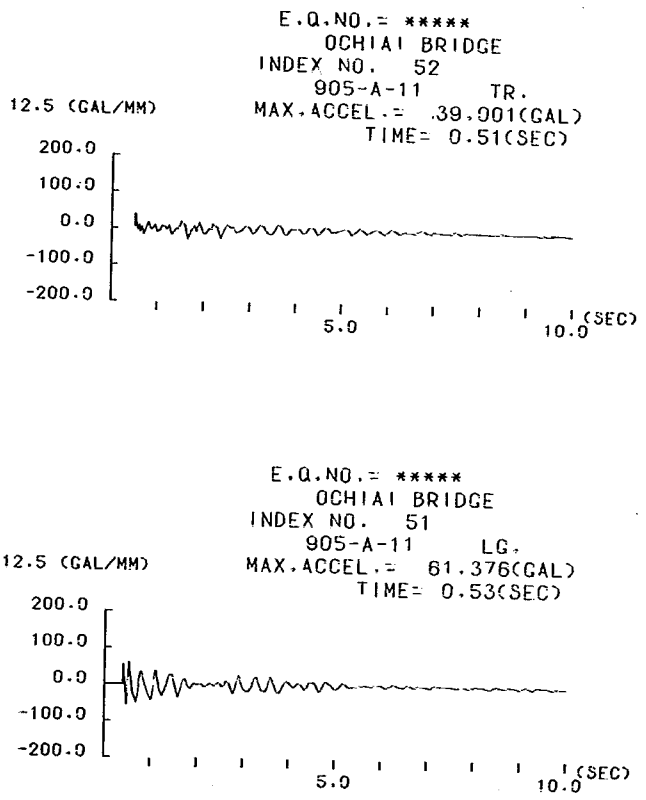
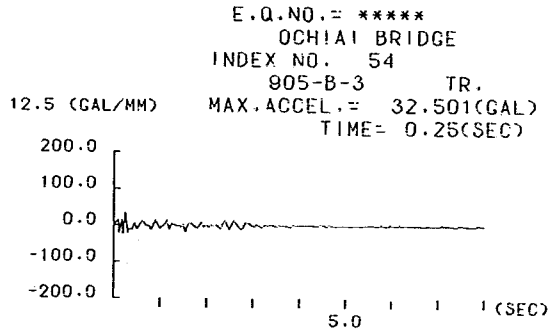


Figure ID-23 Earthquake Motion (Index 51 and 52)



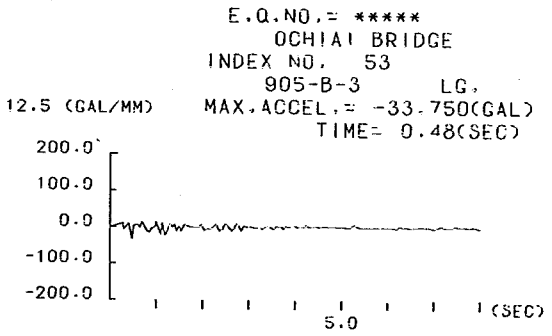


Figure ID-24 Earthquake Motion (Index 53 and 54)

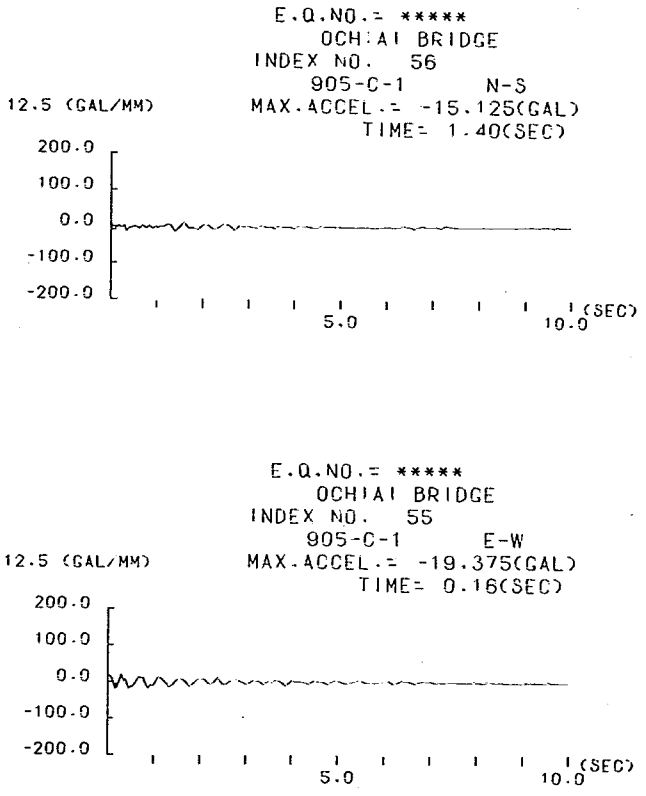


Figure ID-25 Earthquake Motion (Index 55 and 56)

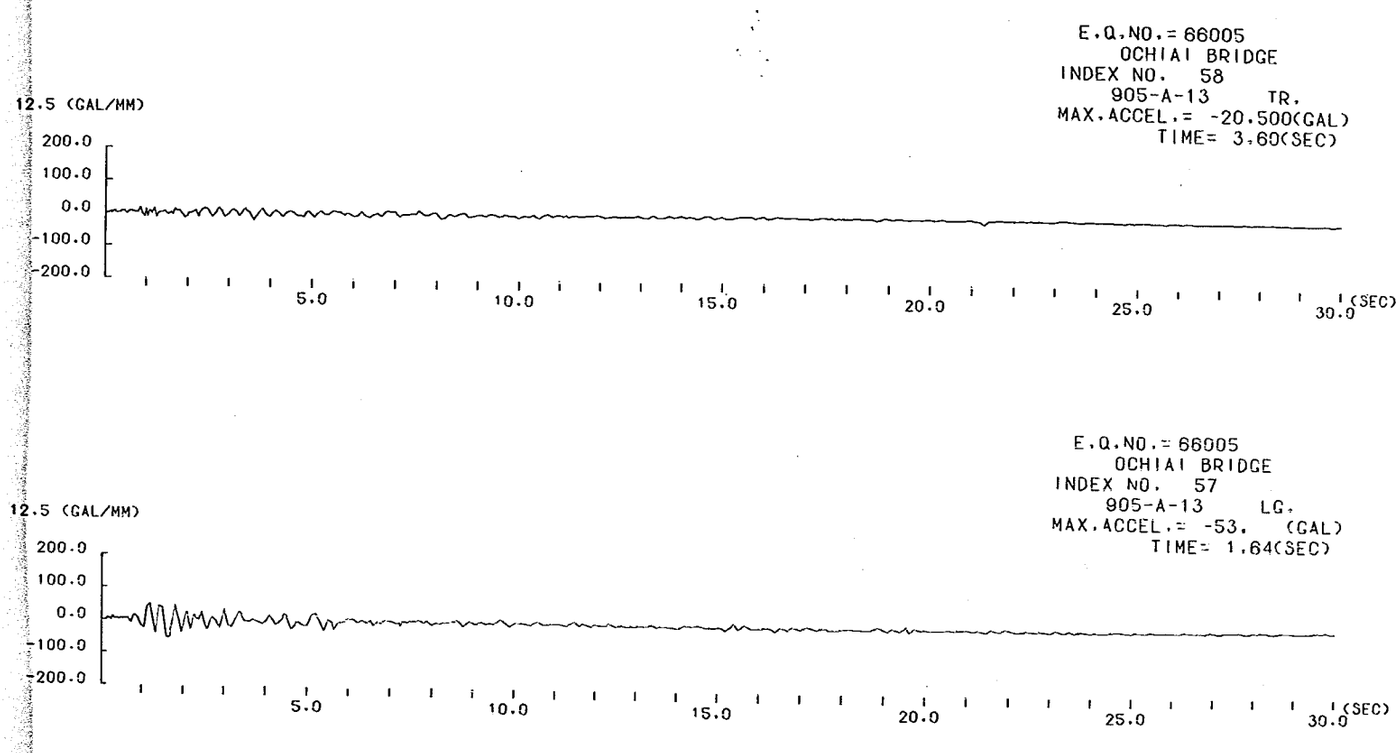


Figure ID-26 Earthquake Motion (Index No. 57 and 58)

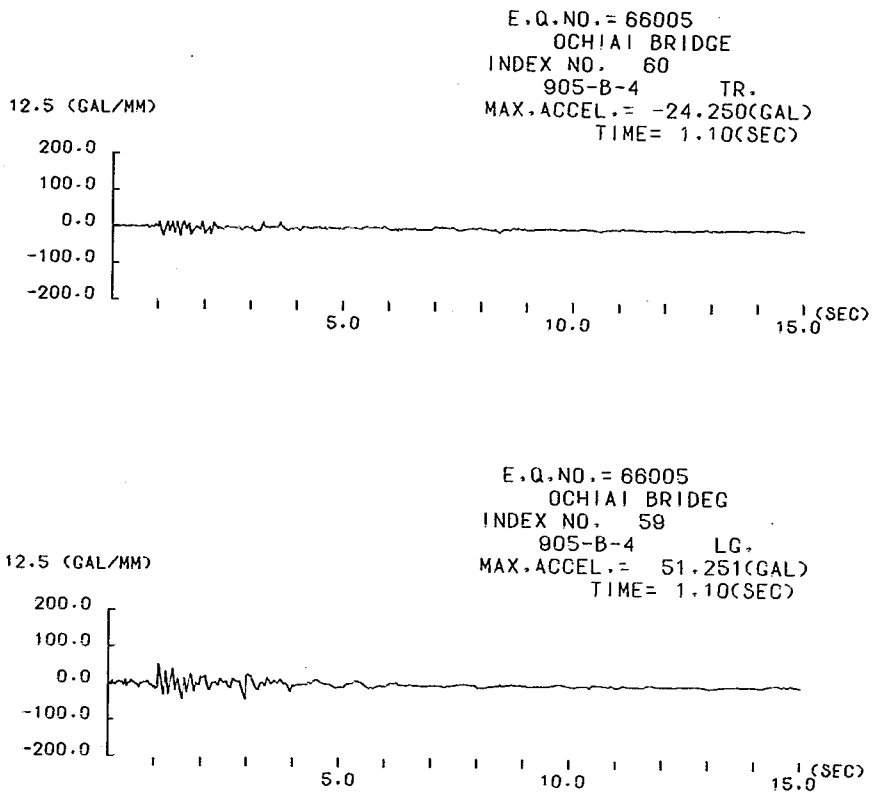


Figure ID-27 Earthquake Motion (Index No. 59 and 60)

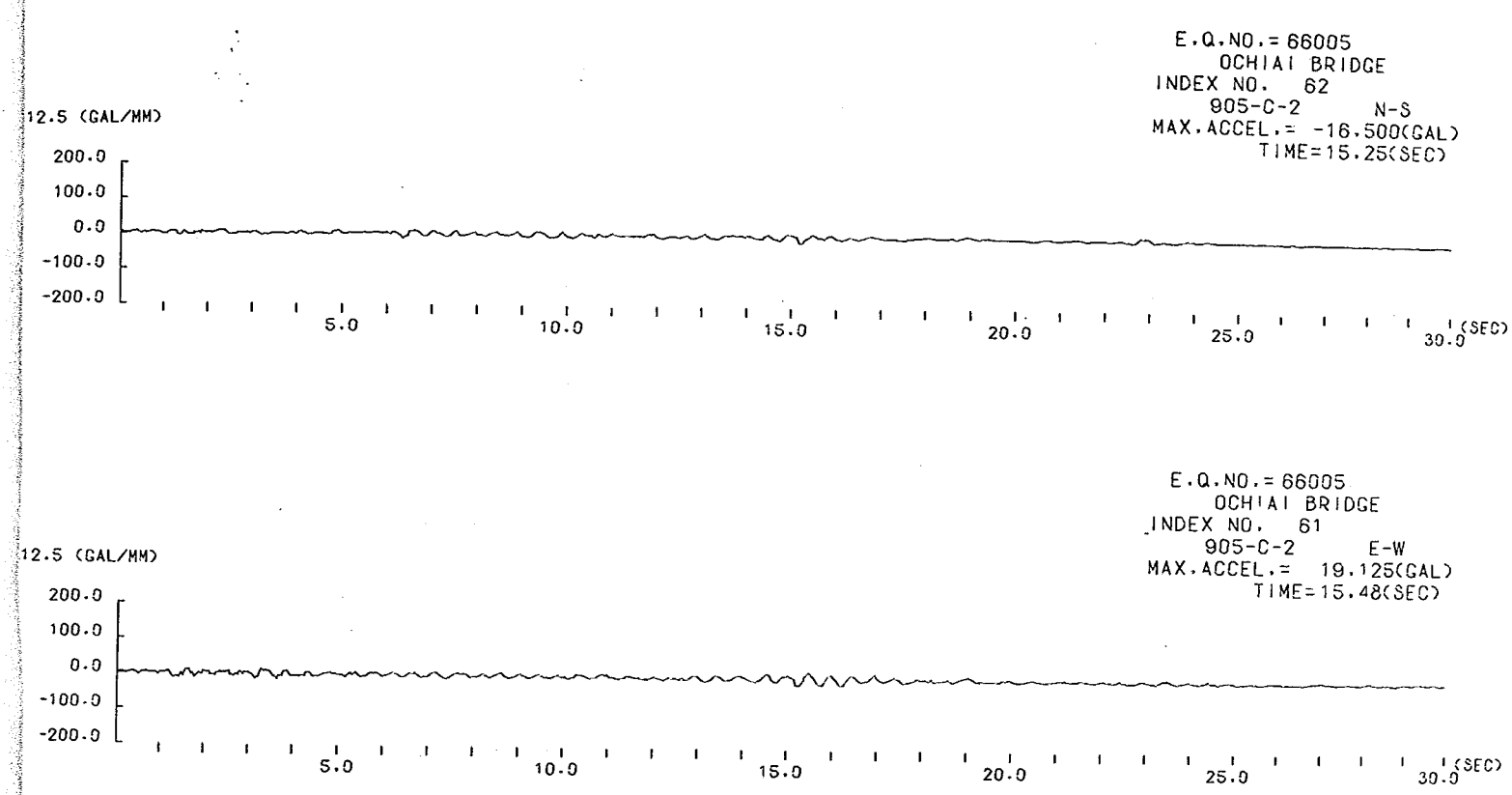


Figure ID-28 Earthquake Motion (Index No. 61 and 62)

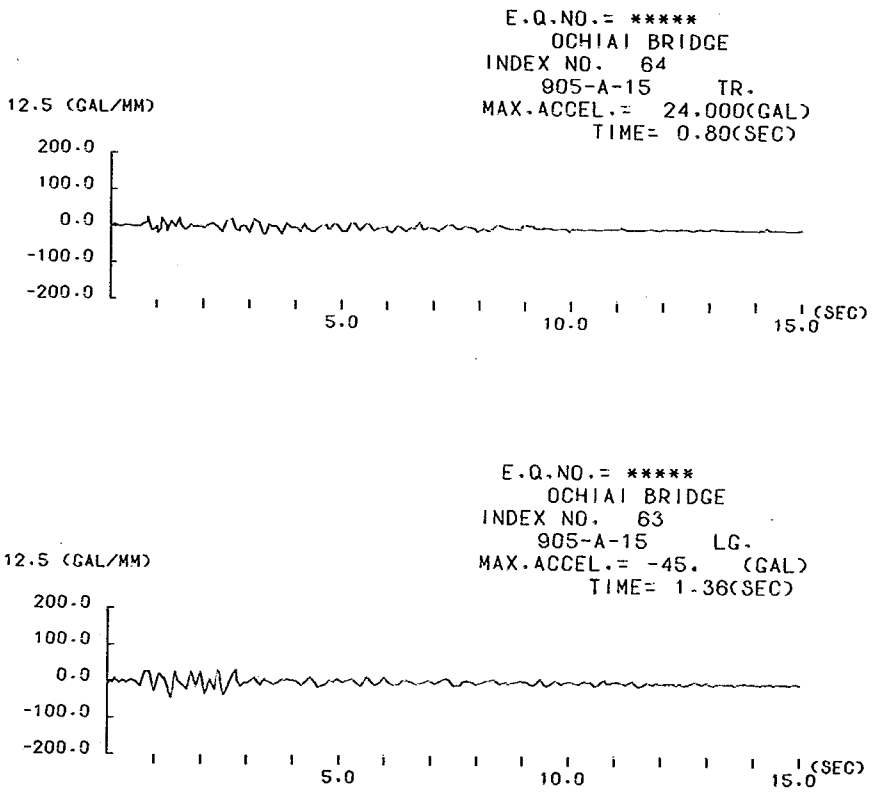


Figure ID-29 Earthquake Motion (Index No. 63 and 64)

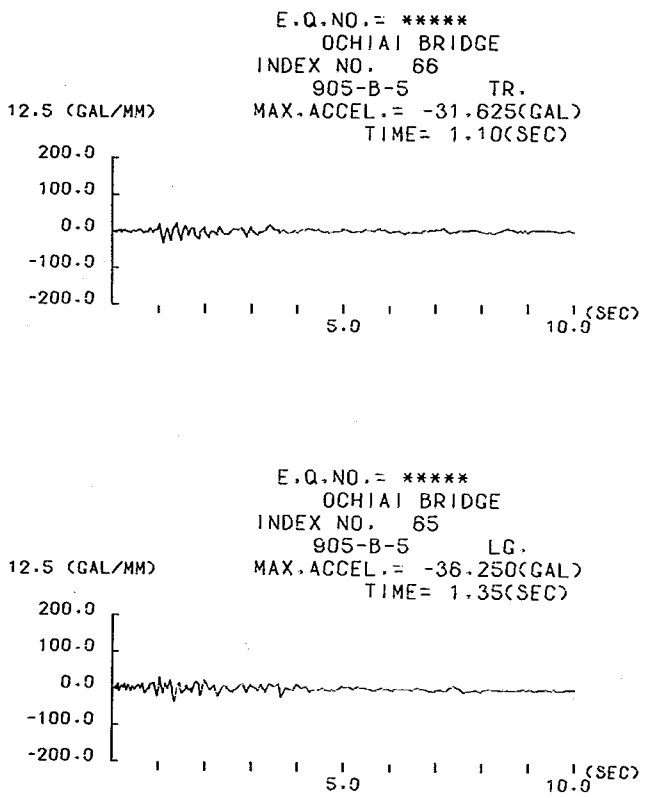


Figure ID-30 Earthquake Motion (Index No. 65 and 66)

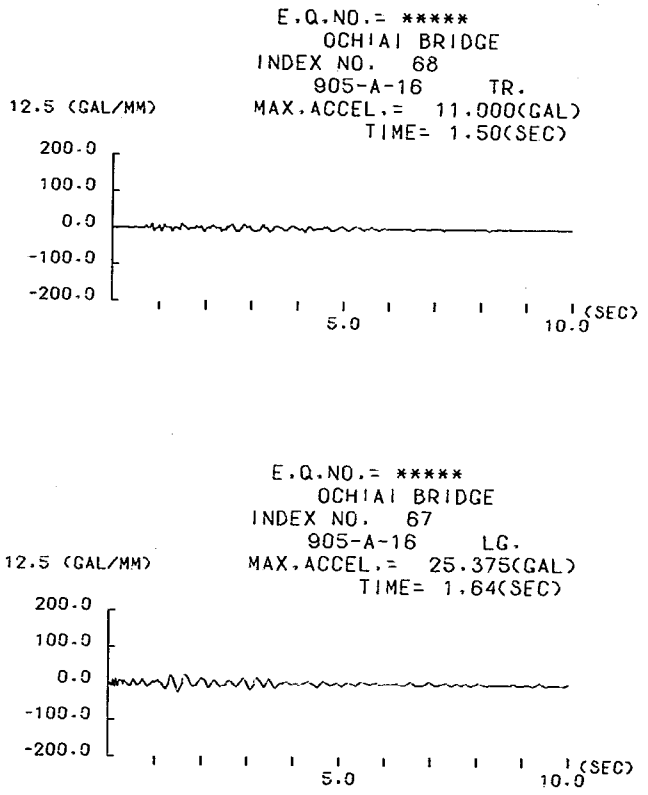


Figure ID-31 Earthquake Motion (Index No. 67 and 68)

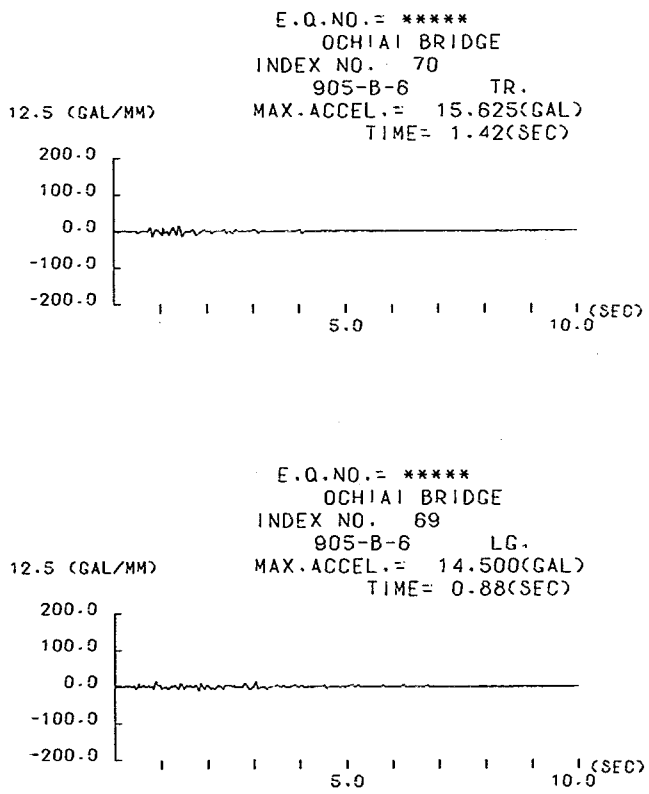


Figure ID-32 Earthquake Motion (Index No. 69 and 70)

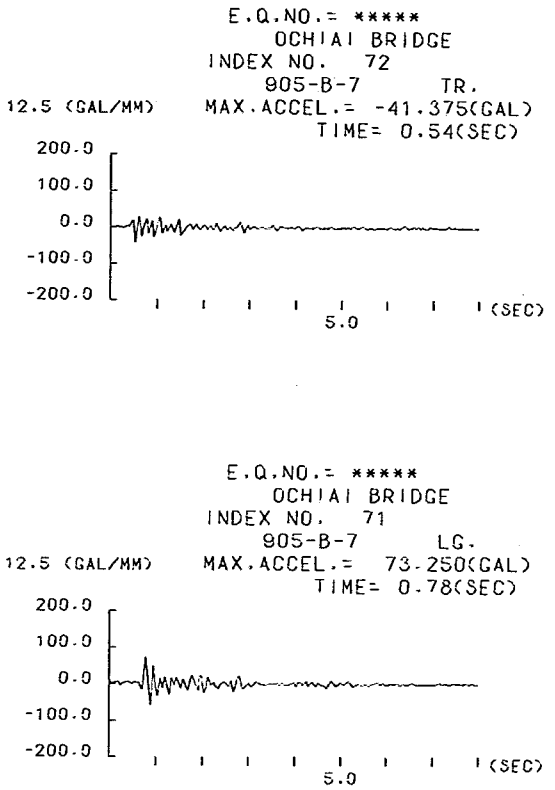
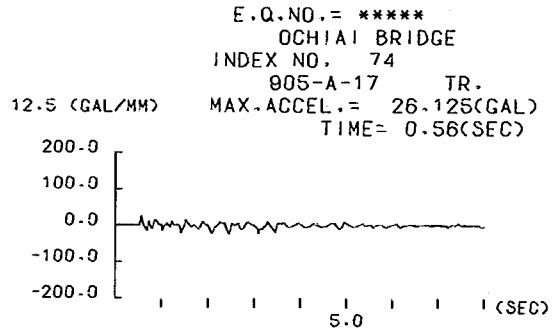


Figure ID-33 Earthquake Motion (Index No. 71 and 72)



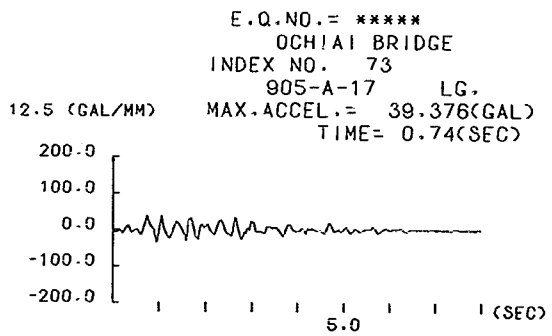


Figure ID-34 Earthquake Motion (Index No. 73 and 74)

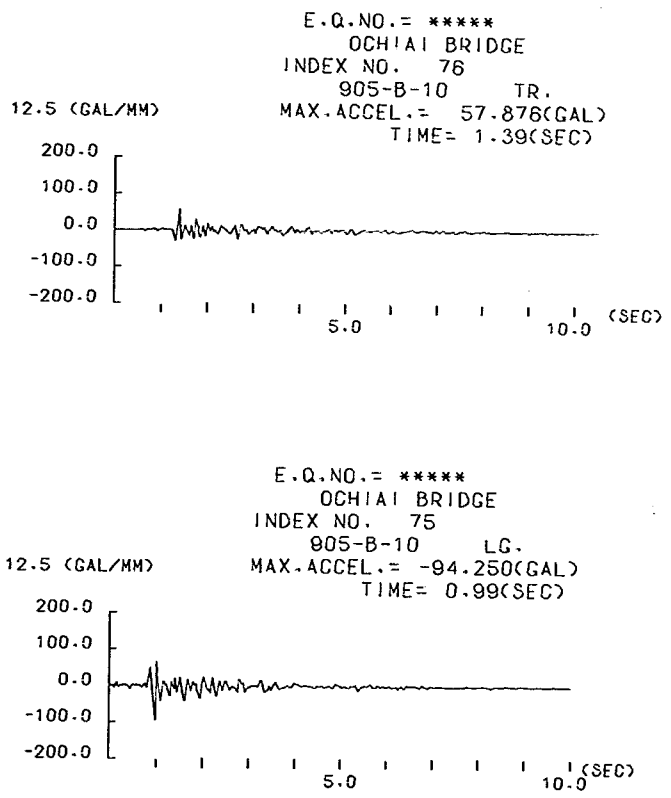


Figure ID-35 Earthquake Motion (Index No. 75 and 76)

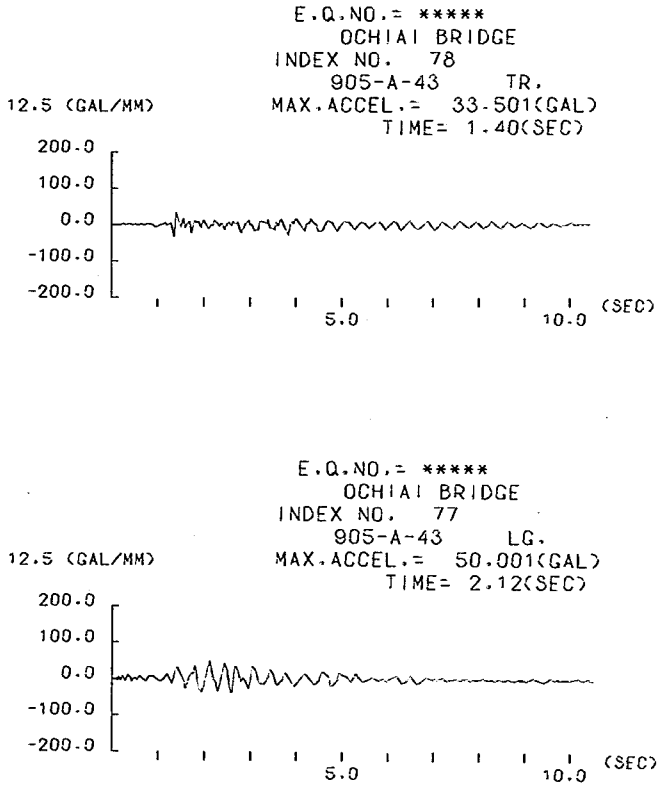


Figure ID-36 Earthquake Motion (Index No. 77 and 78)

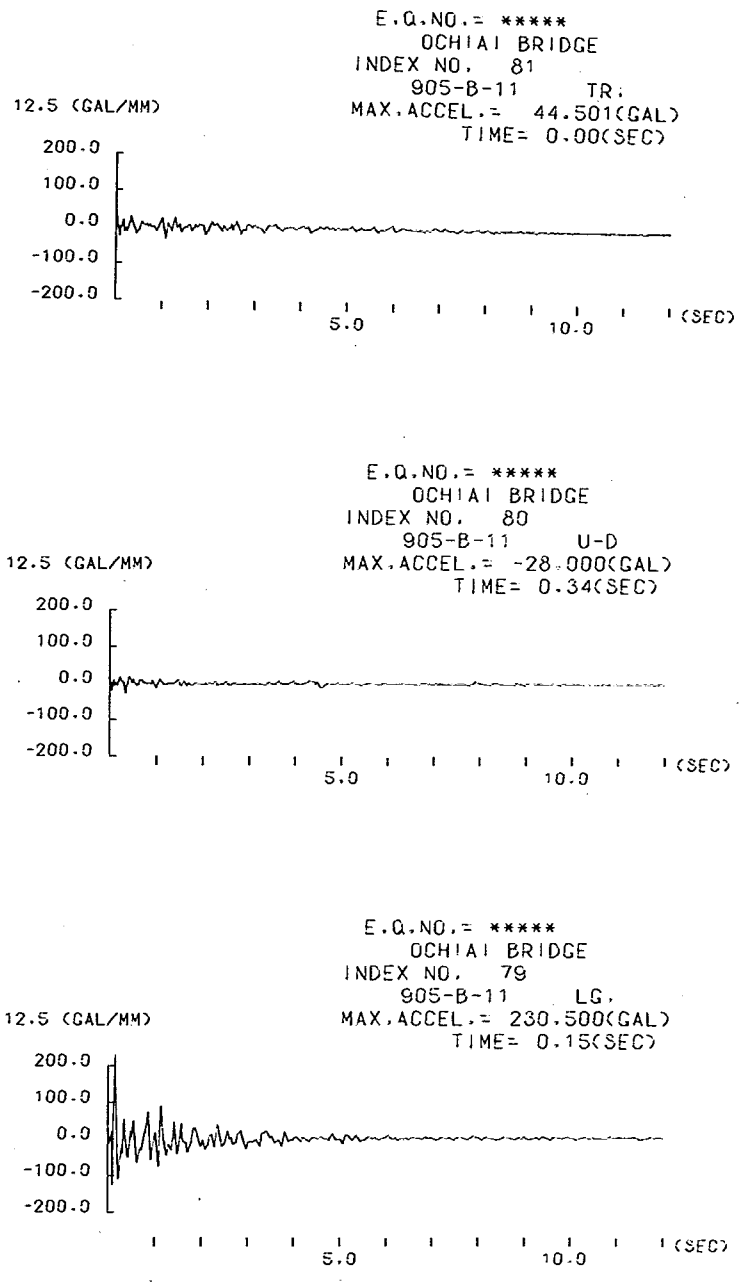
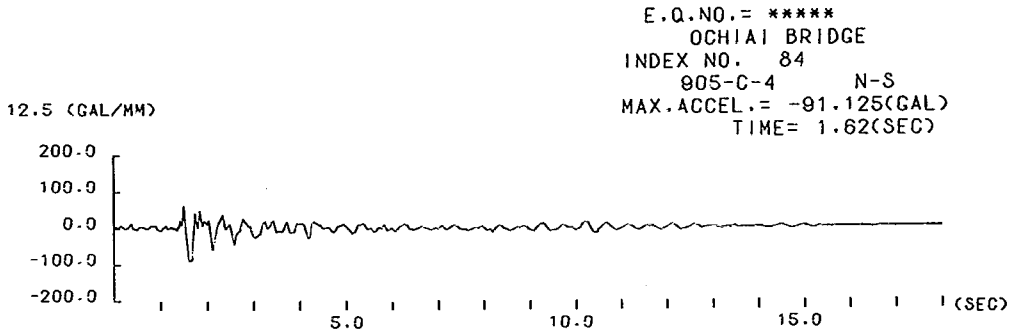
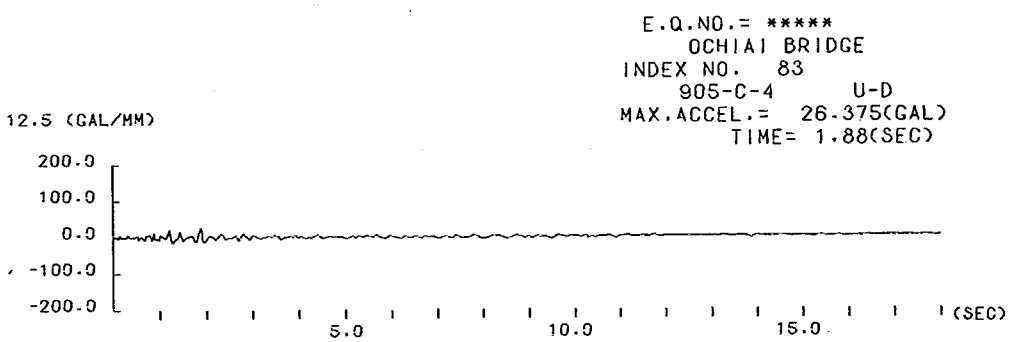


Figure ID-37 Earthquake Motion (Index No. 79, 80 and 81)





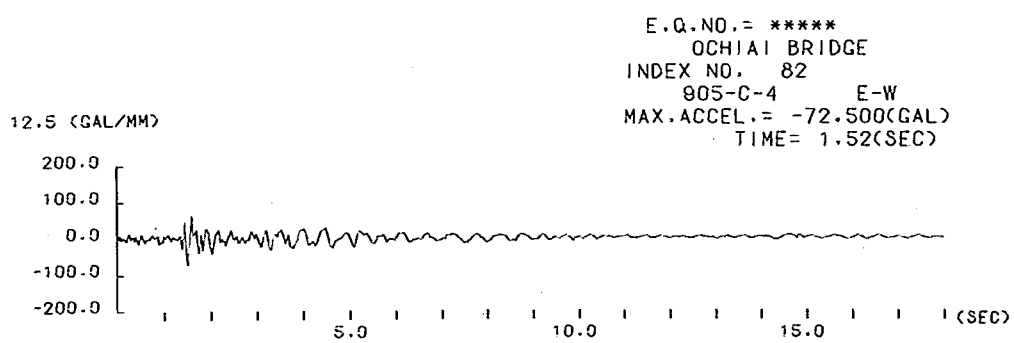


Figure ID-38 Earthquake Motion (Index No. 82, 83 and 84)

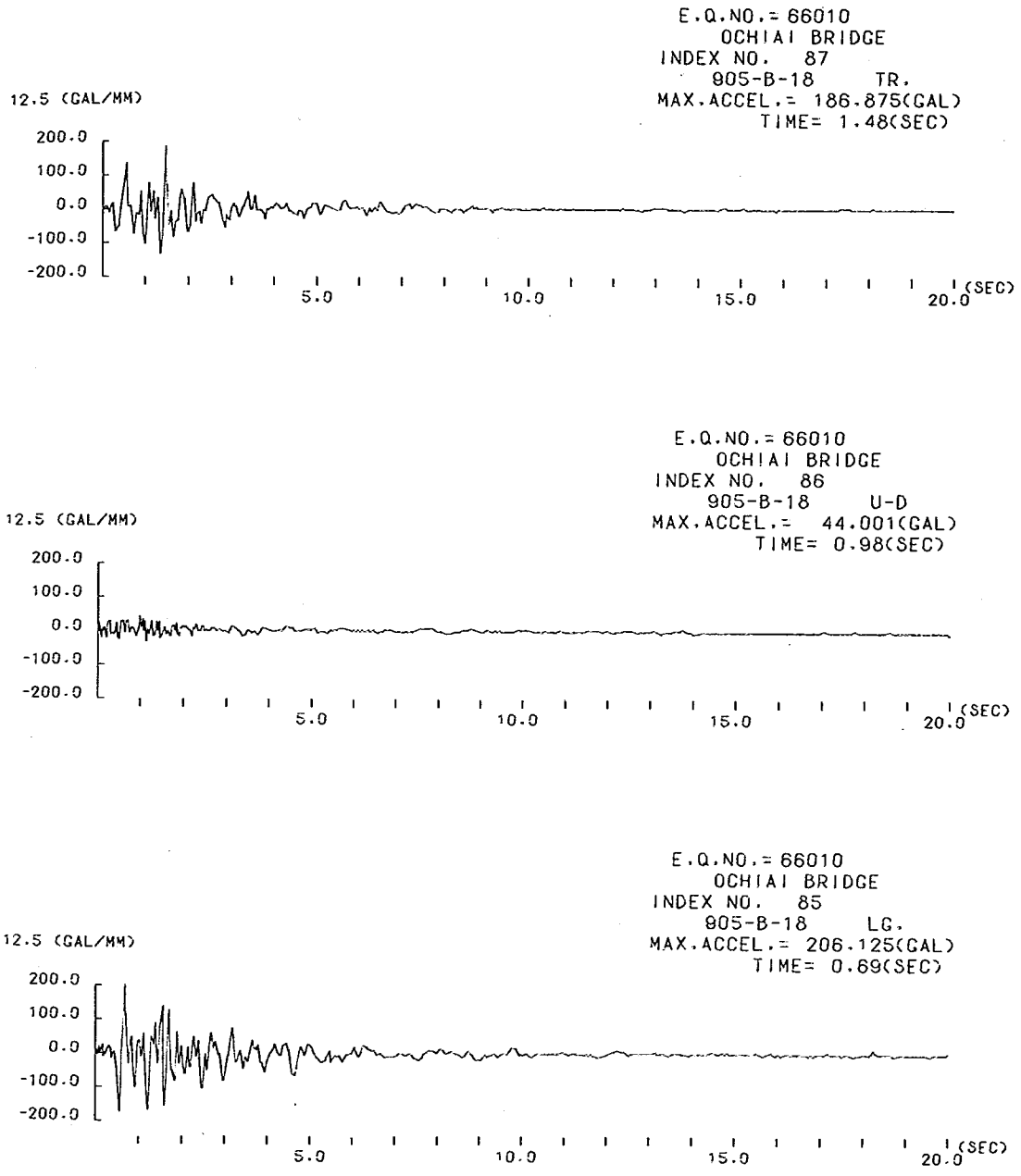
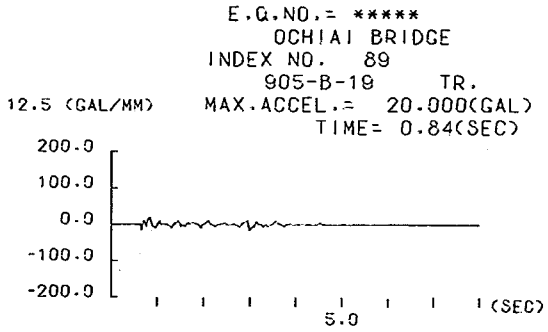


Figure ID-38 Earthquake Motion (Index No. 85, 86 and 87)



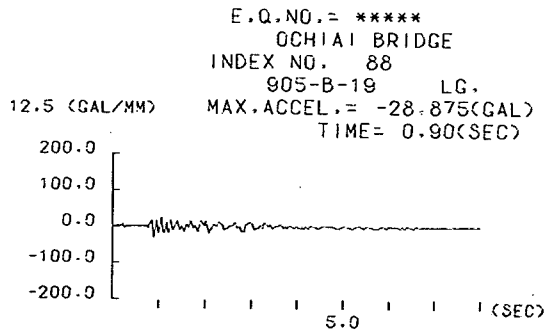


Figure ID-40 Earthquake Motion (Index 88 and 89)

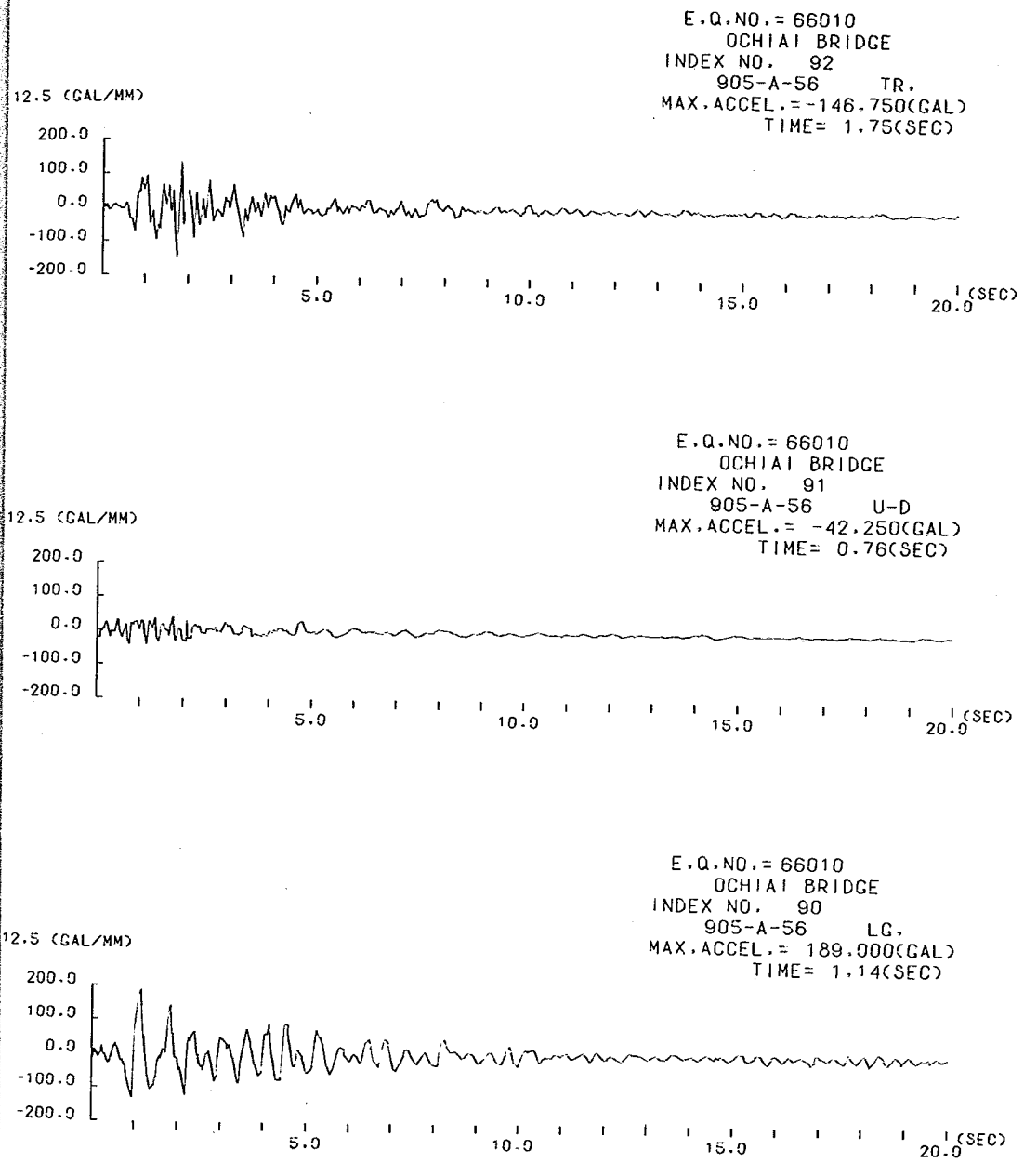


Figure ID-41 Earthquake Motion (Index No. 90, 91 and 92)

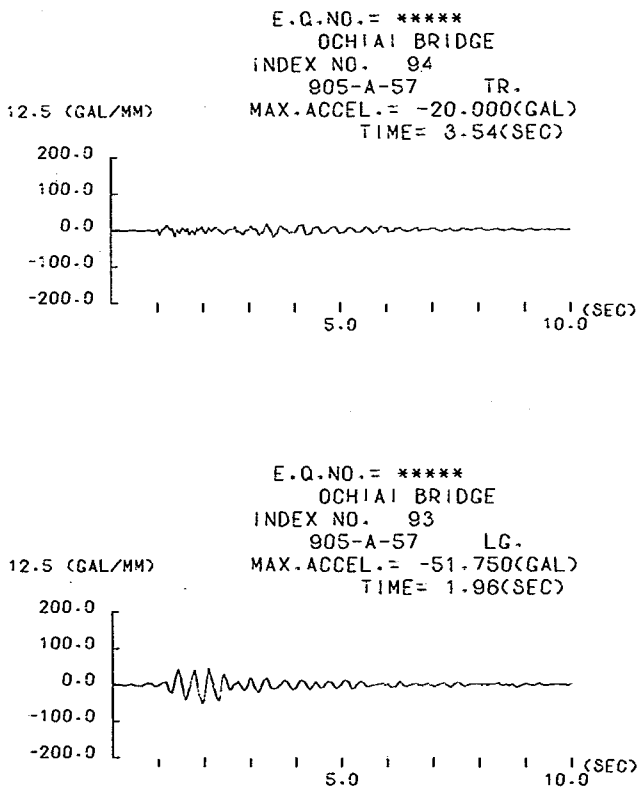


Figure ID-42 Earthquake Motion (Index No. 93 and 94)

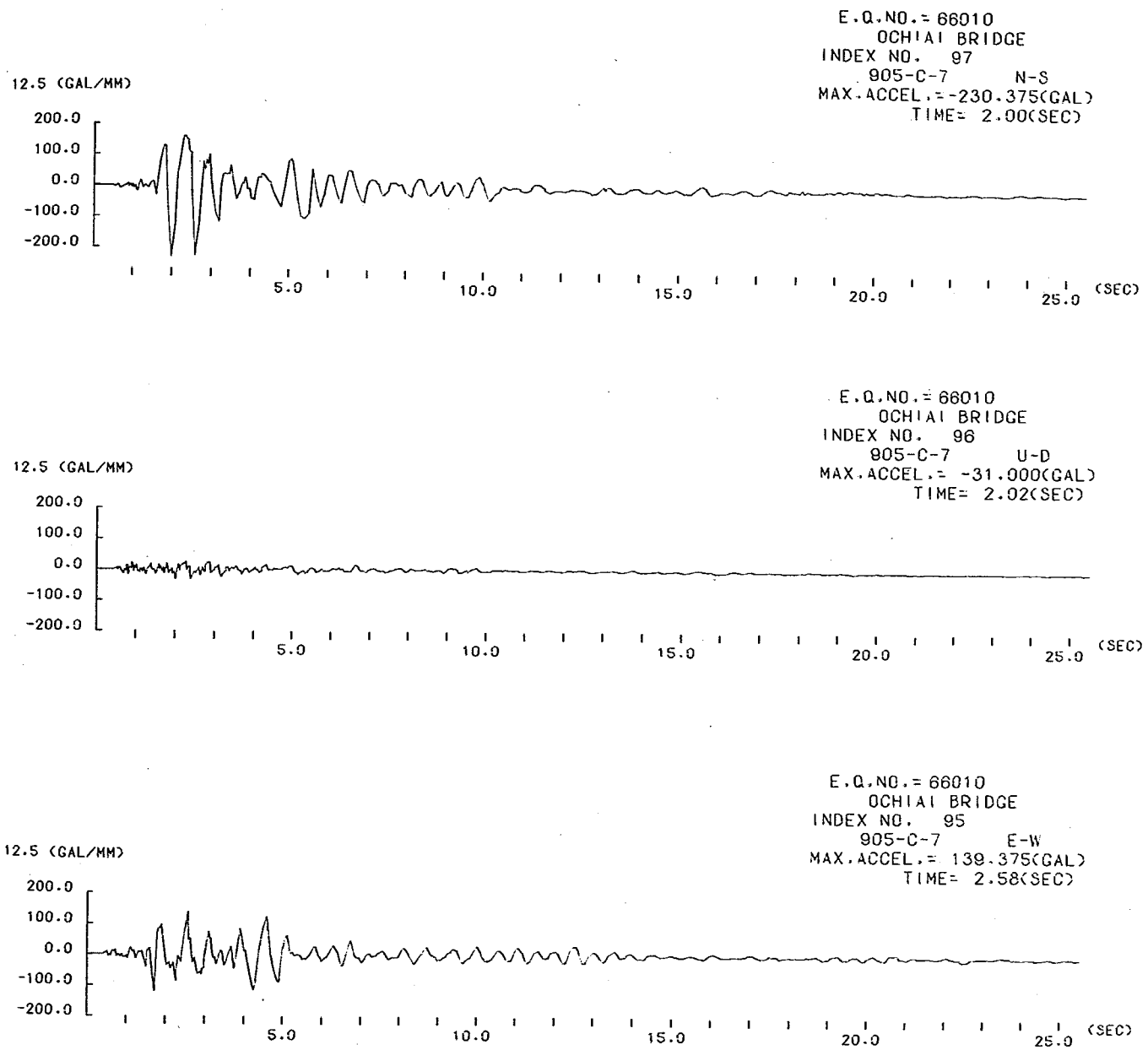


Figure ID-43 Earthquake Motion (Index No. 95, 96 and 97)

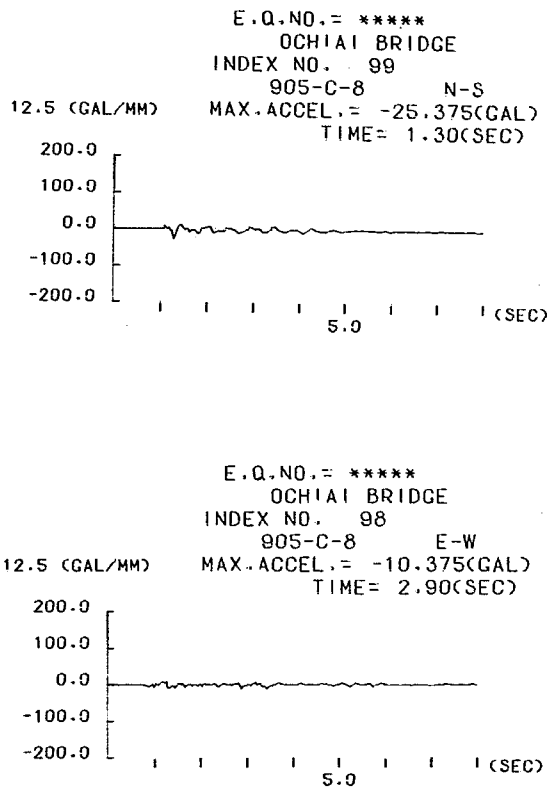


Figure ID-44 Earthquake Motion (Index No. 98 and 99)

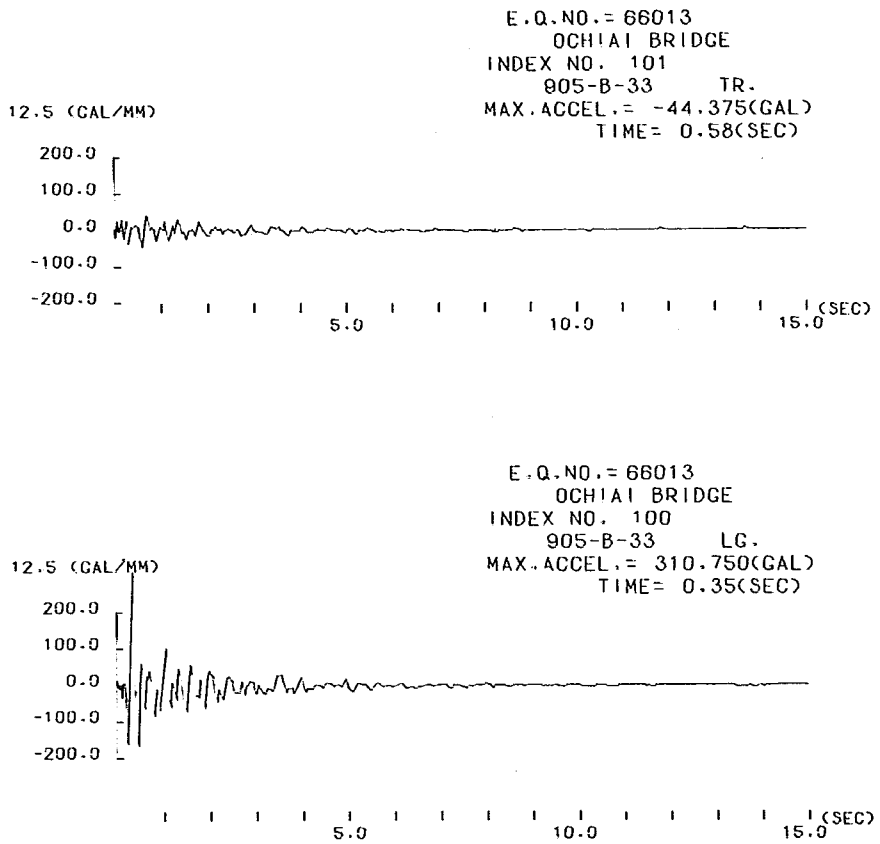


Figure ID-45 Earthquake Motion (Index No. 100 and 101)

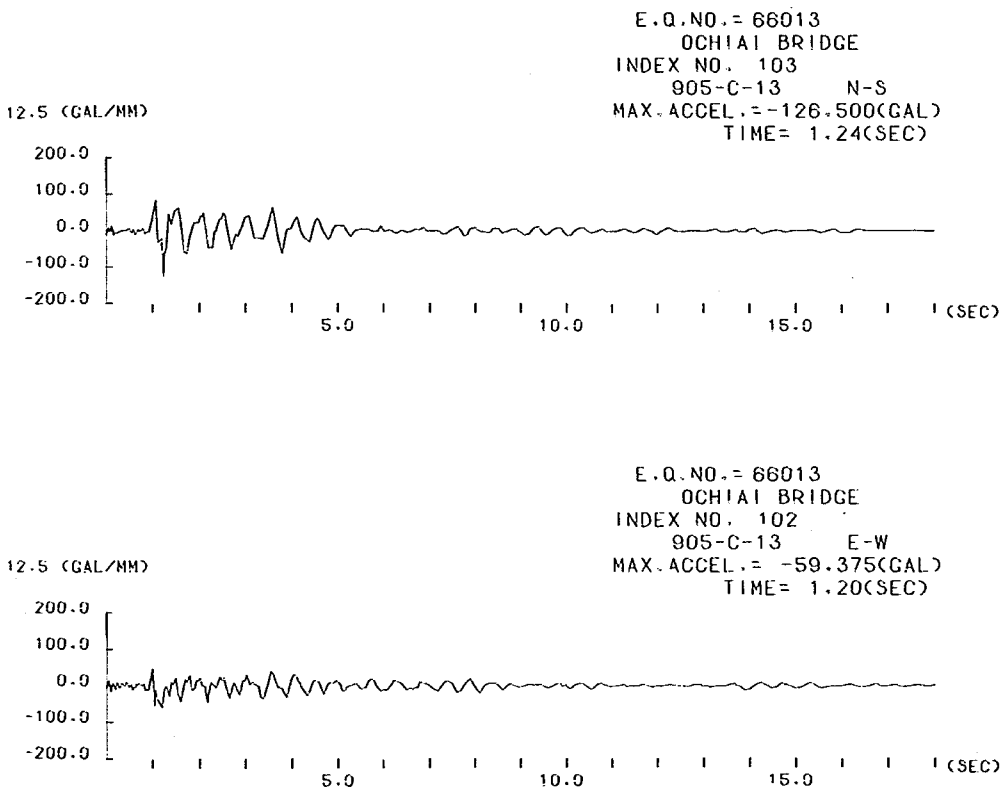


Figure ID-46 Earthquake Motion (Index No. 102 and 103)

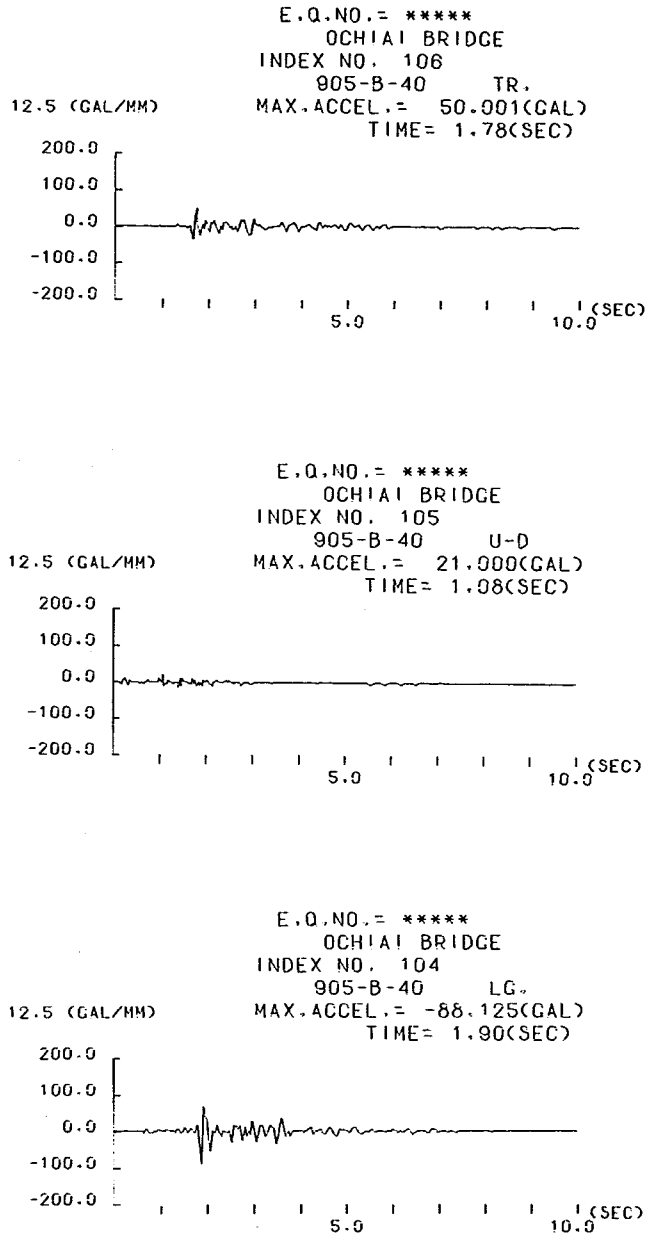


Figure ID-47 Earthquake Motion (Index No. 104, 105 and 106)

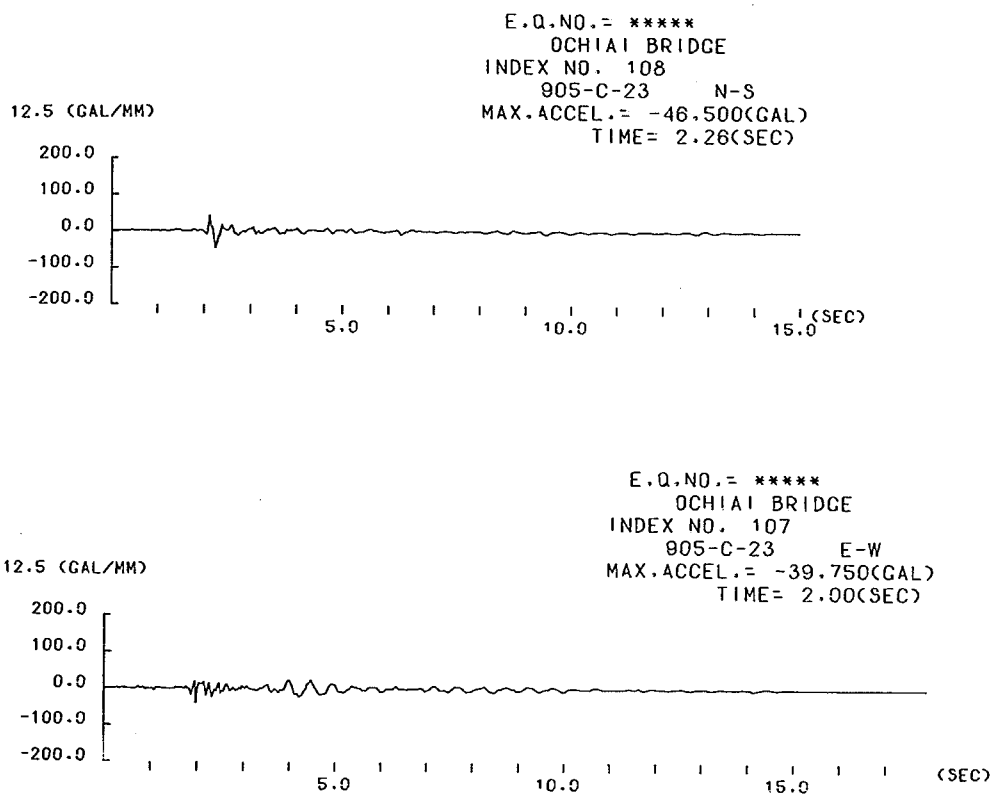


Figure ID-48 Earthquake Motion (Index No. 107 and 108)

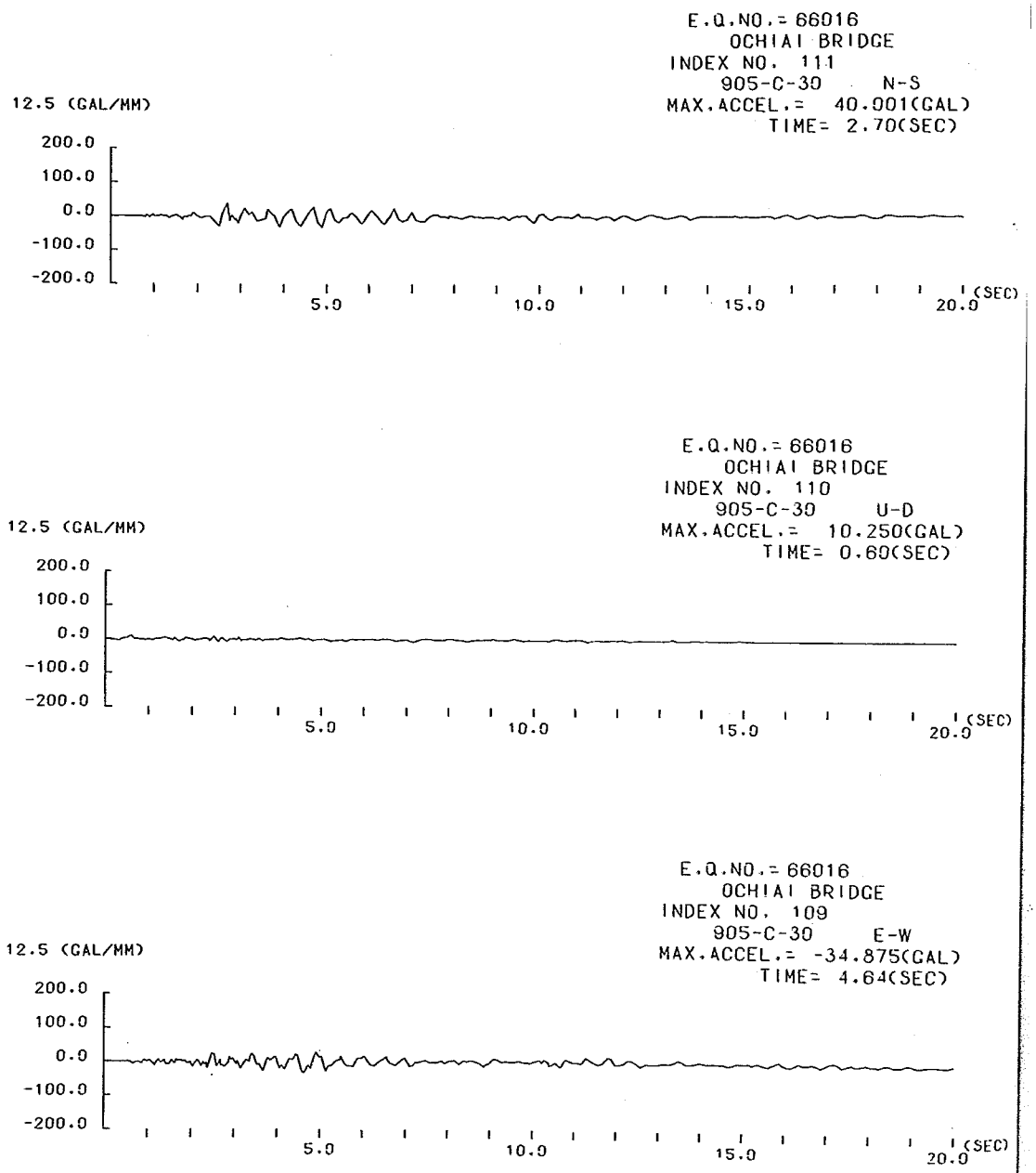
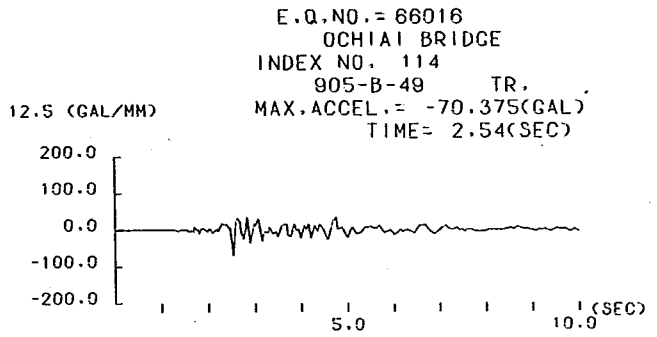
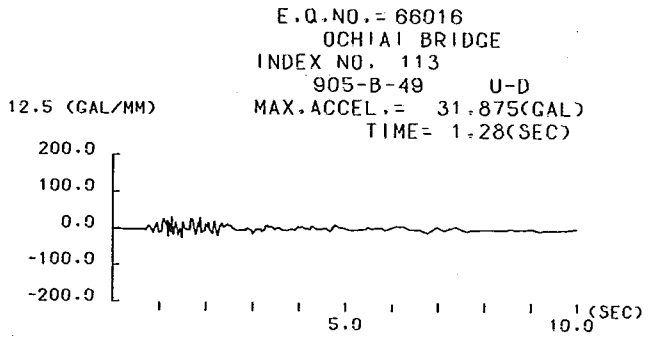


Figure ID-49 Earthquake Motion (Index No. 109, 110 and 111)





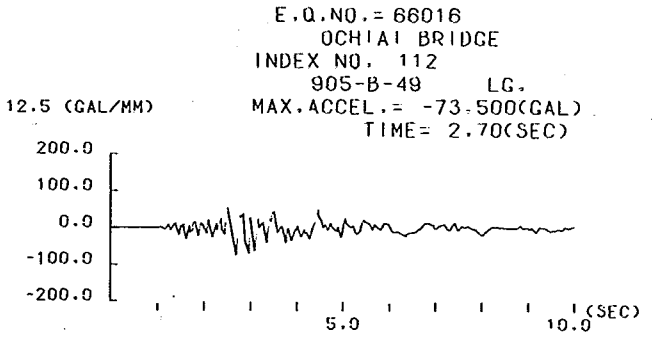


Figure ID-50 Earthquake Motion (Index No. 112, 113 and 114)

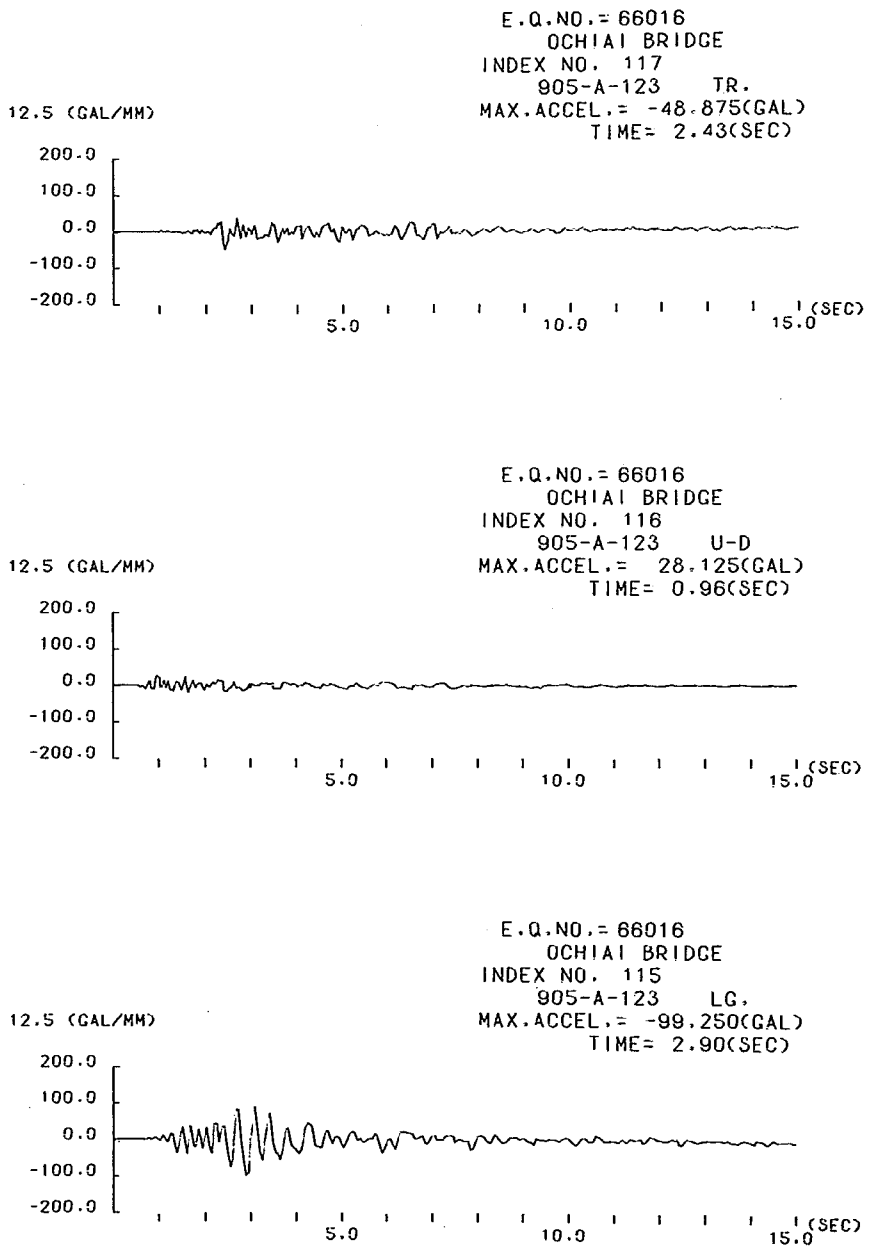


Figure ID-51 Earthquake Motion (Index No. 115, 116 and 117)

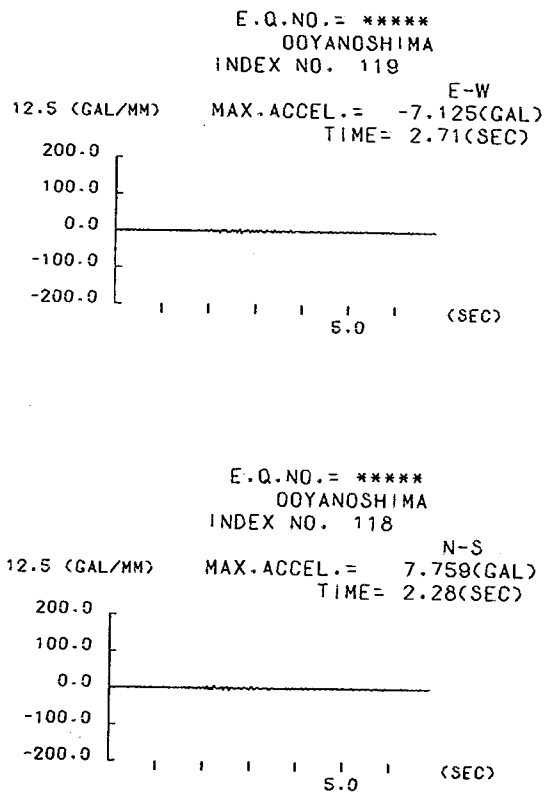


Figure ID-52 Earthquake Motion (Index No. 118 and 119)

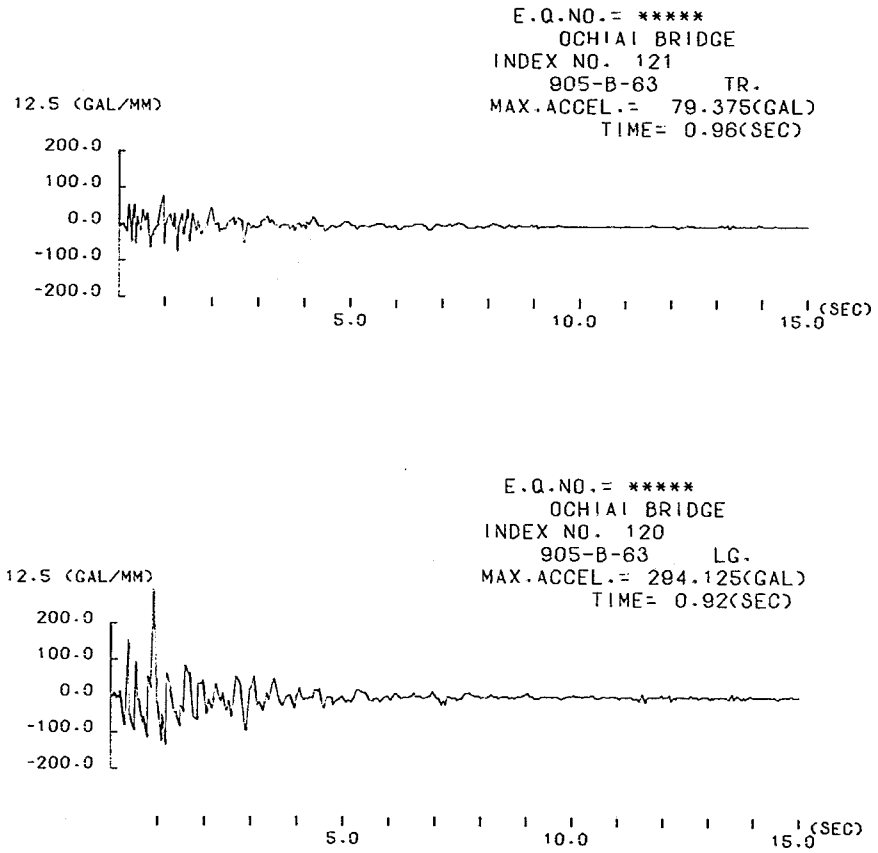


Figure ID-53 Earthquake Motion (Index No. 120 and 121)

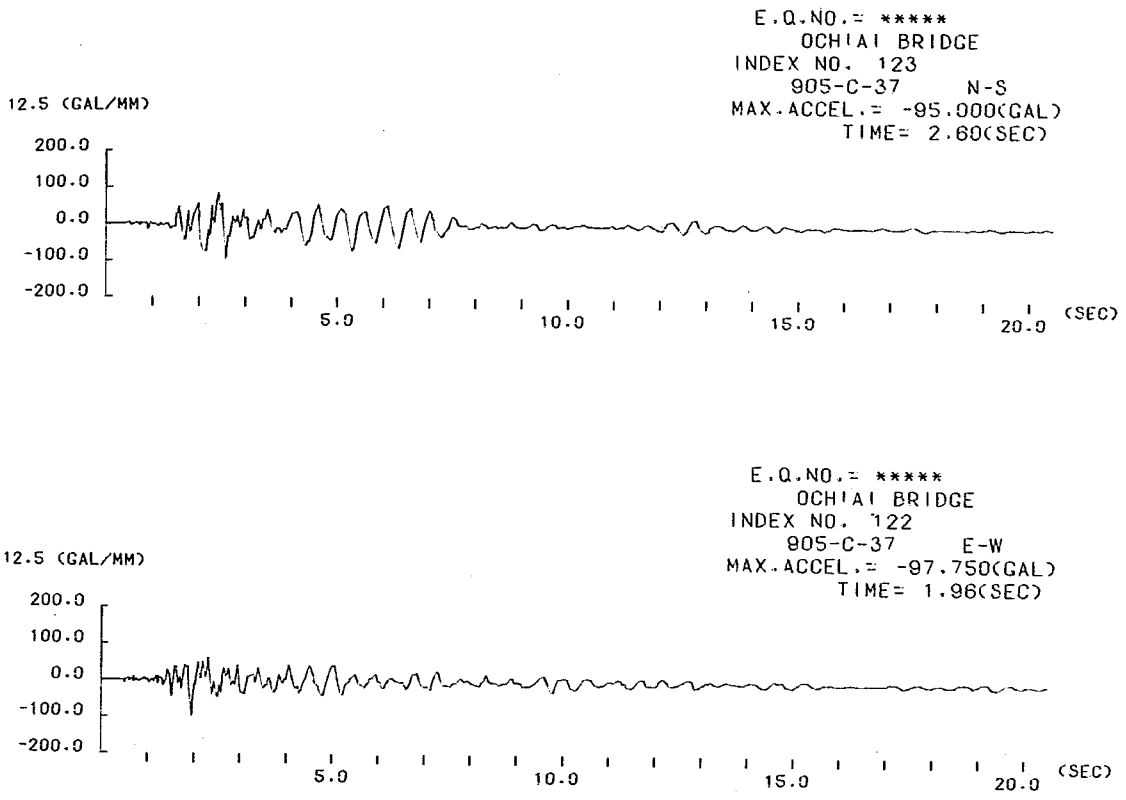


Figure ID-54 Earthquake Motion (Index No. 122 and 123)

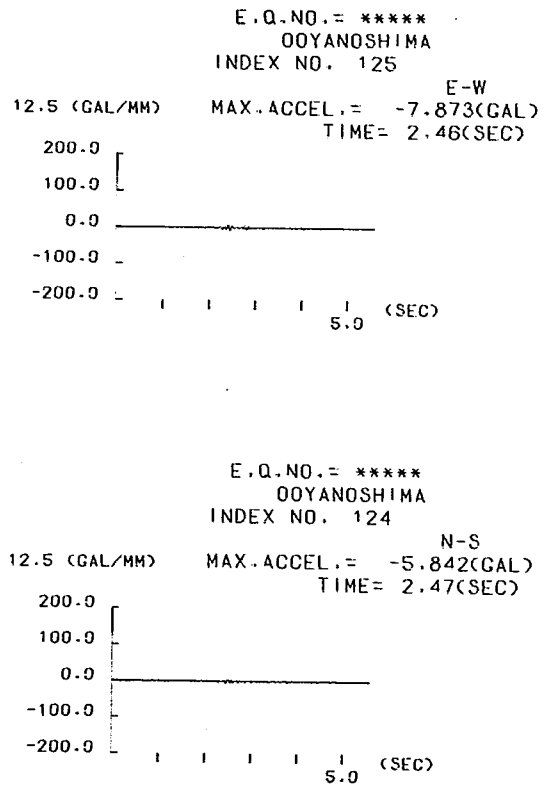


Figure ID-55 Earthquake Motion (Index No. 124 and 125)

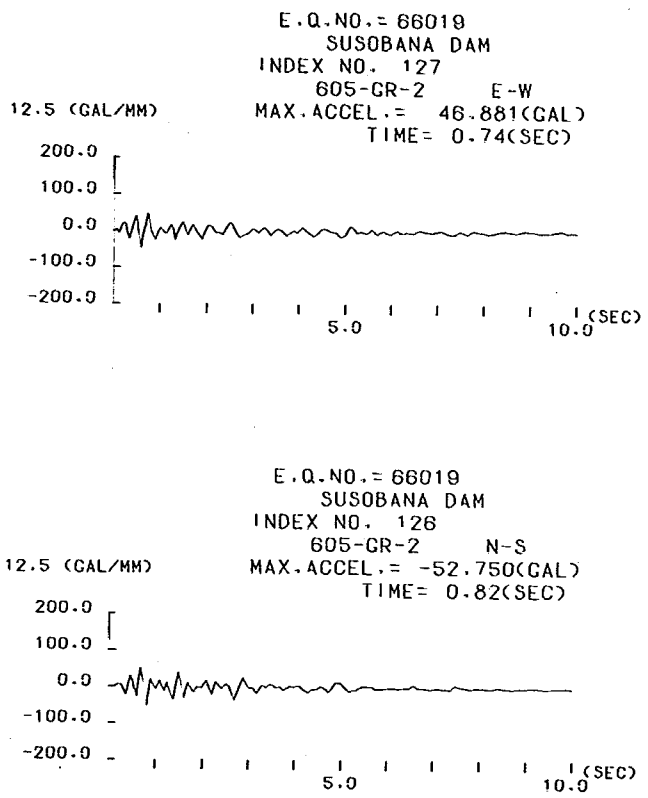


Figure ID-56 Earthquake Motion (Index No. 126 and 127)

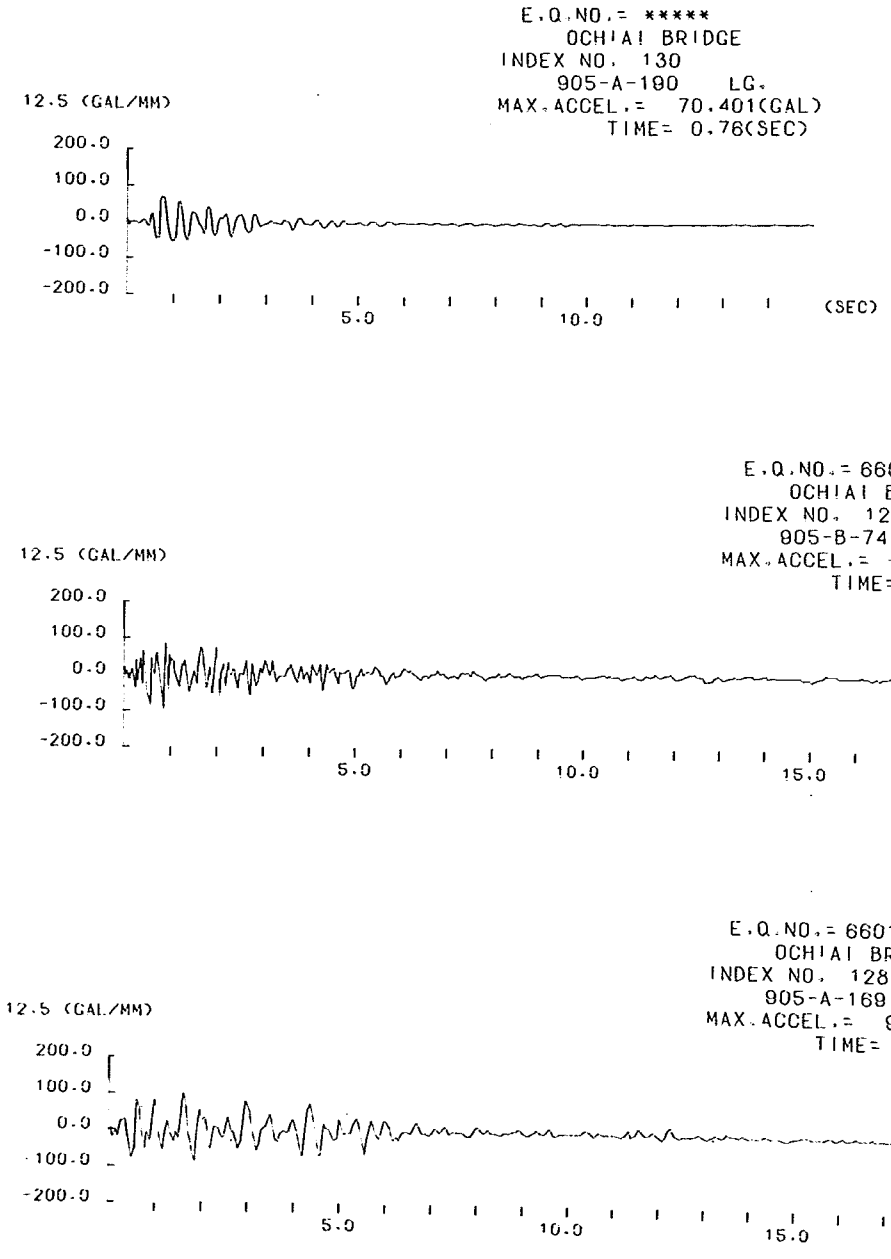


Figure ID-57 Earthquake Motion (Index No. 128, 129 and 130)

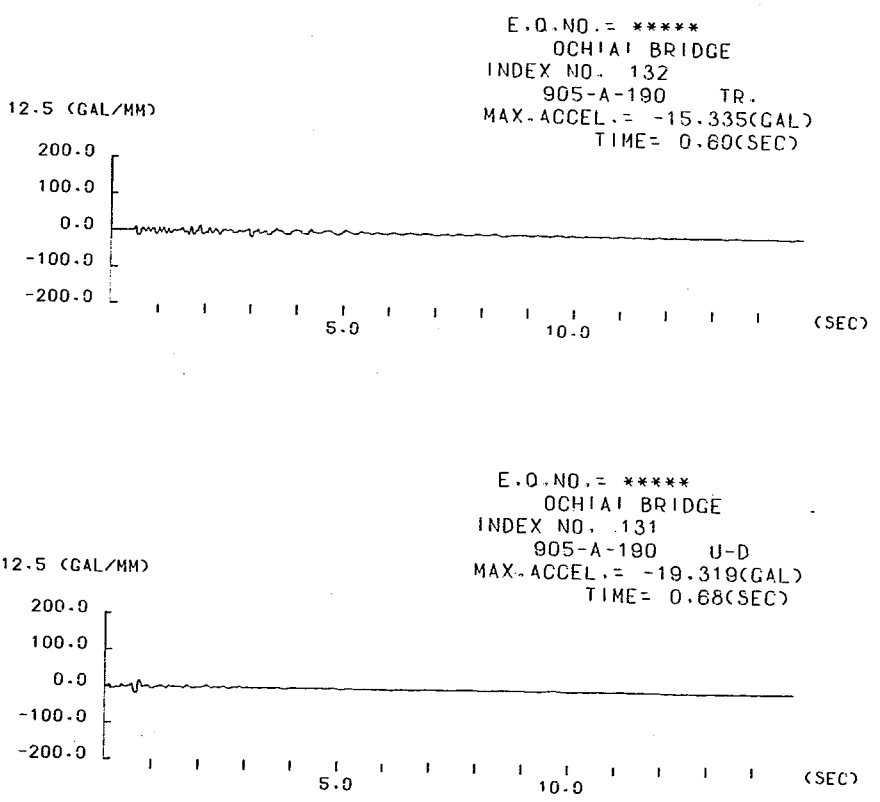


Figure ID-58 Earthquake Motion (Index No. 131 and 132)

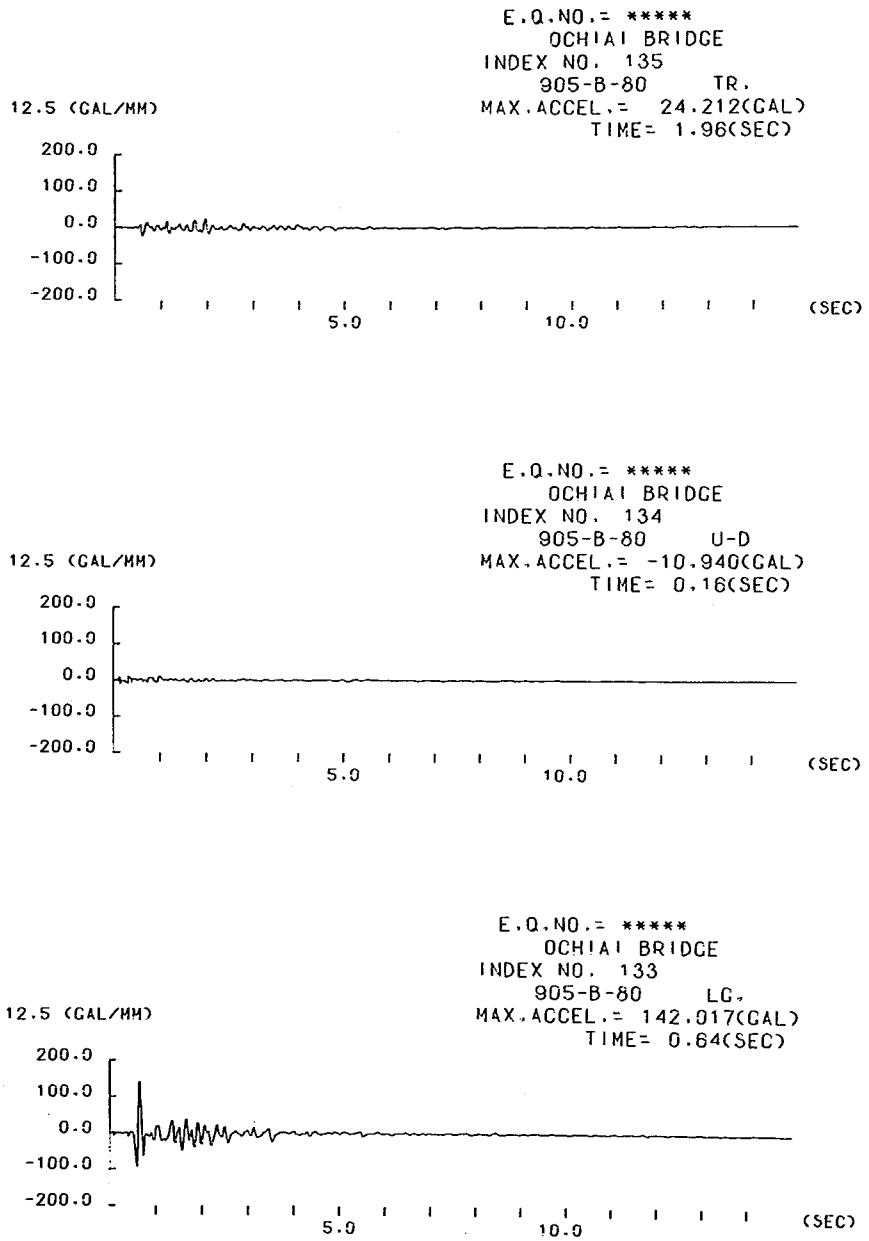
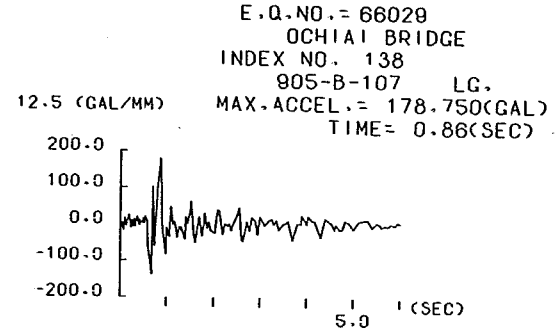
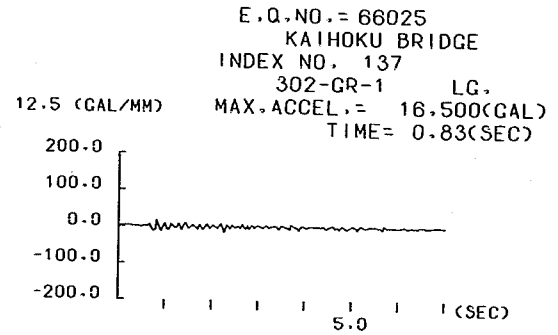


Figure ID-59 Earthquake Motion (Index No. 133, 134 and 135)





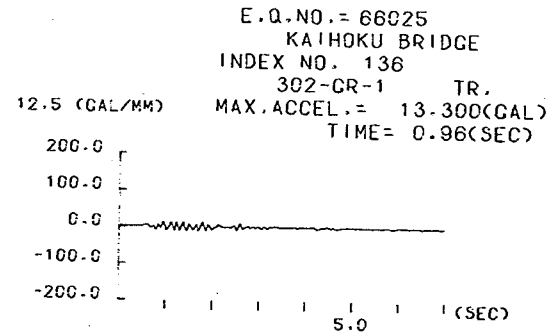


Figure ID-60 Earthquake Motion (Index No. 136, 137 and 138)

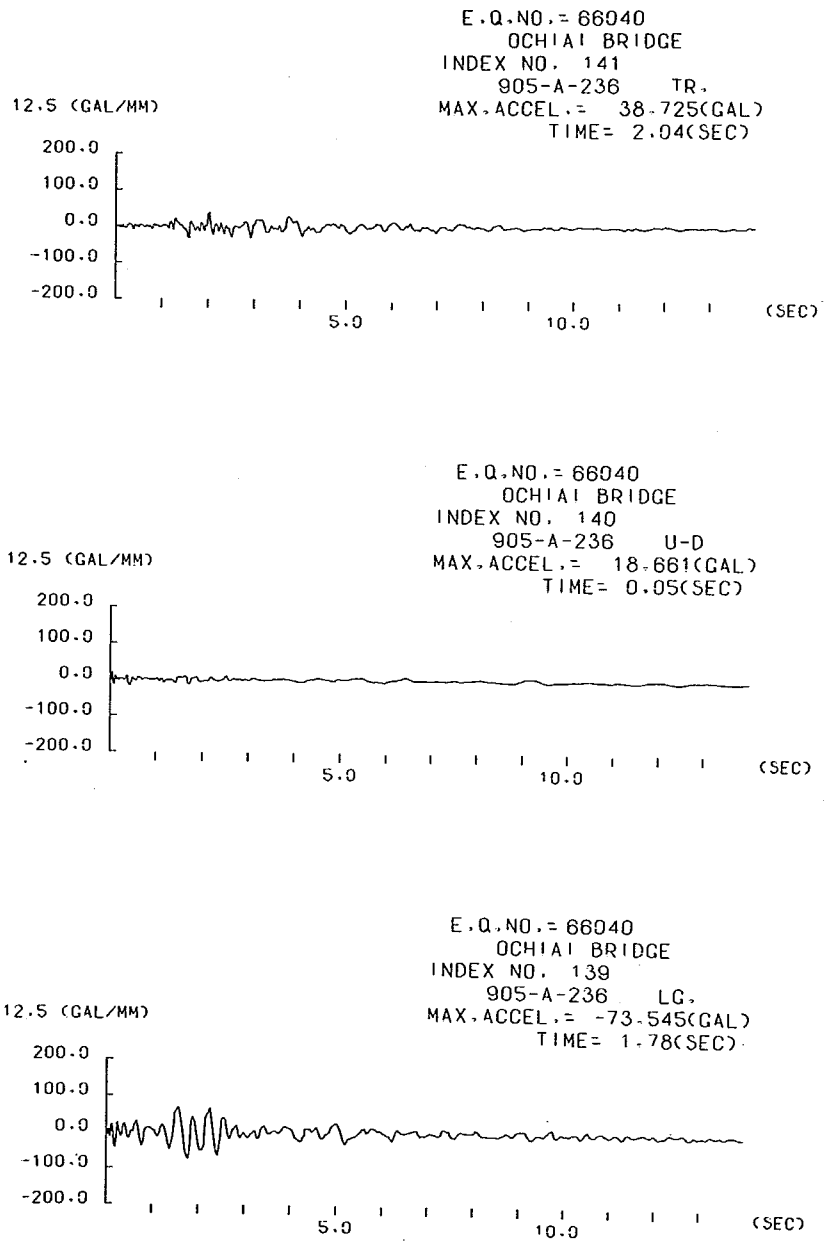


Figure ID-61 Earthquake Motion (Index No. 139, 140 and 141)

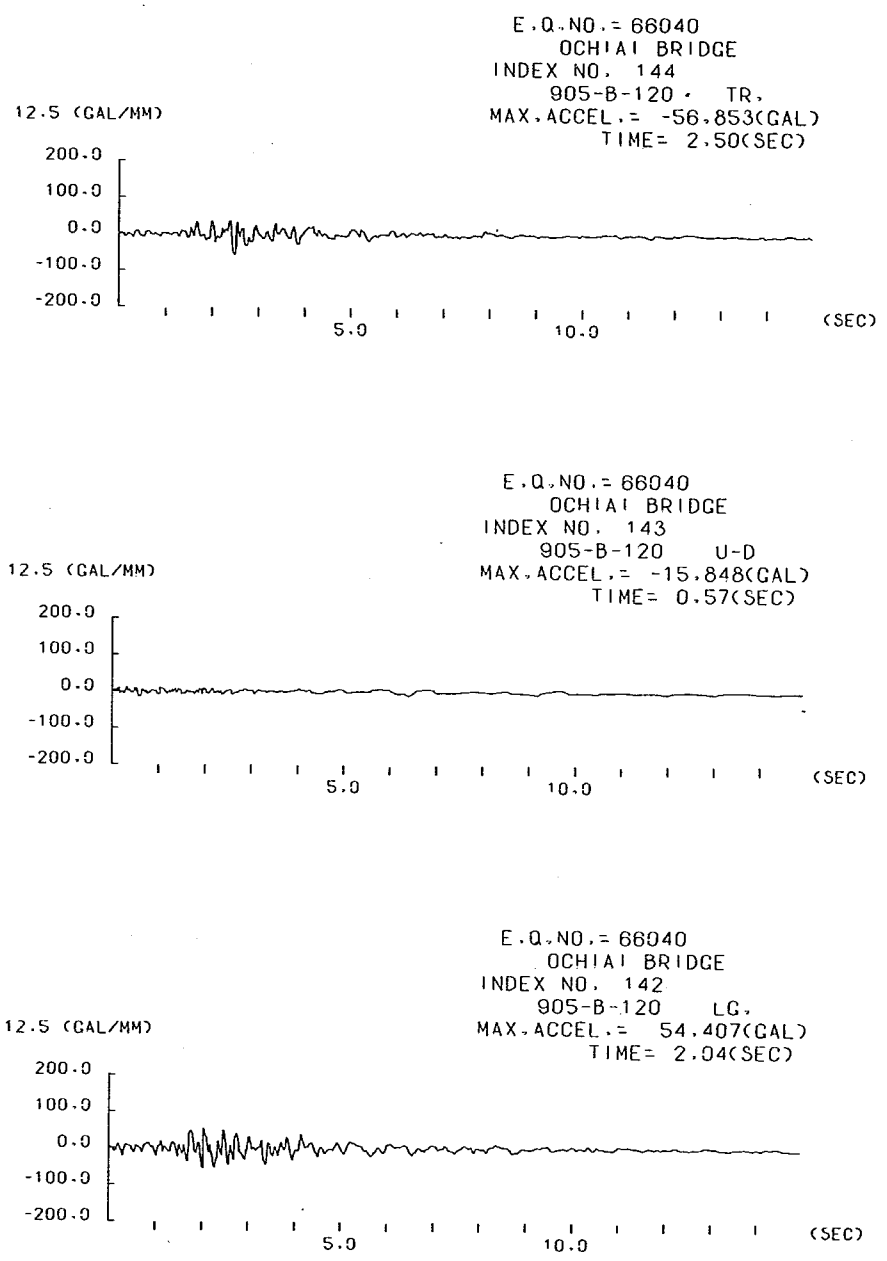


Figure ID-62 Earthquake Motion (Index No. 142, 143 and 144)

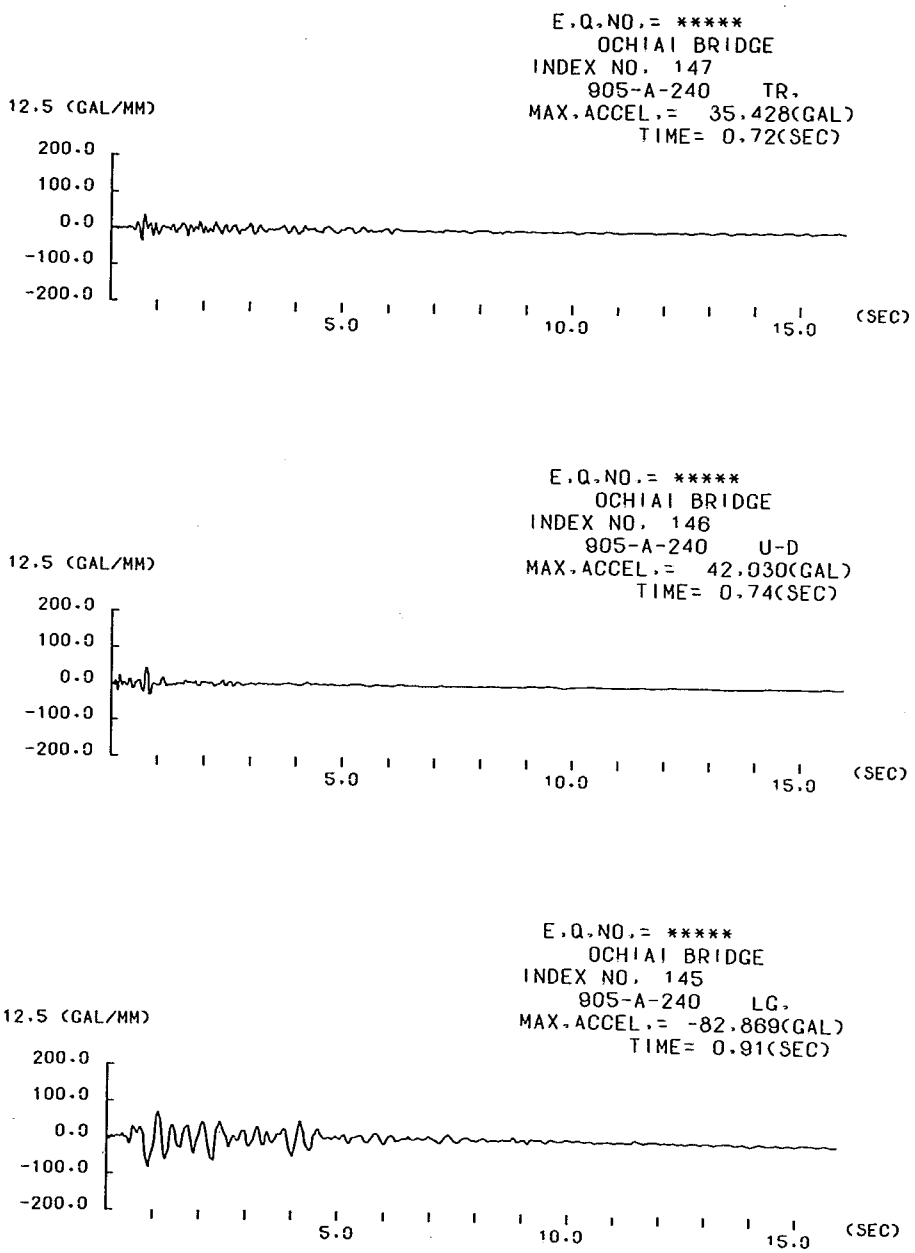


Figure ID-63 Earthquake Motion (Index No. 145, 146 and 147)

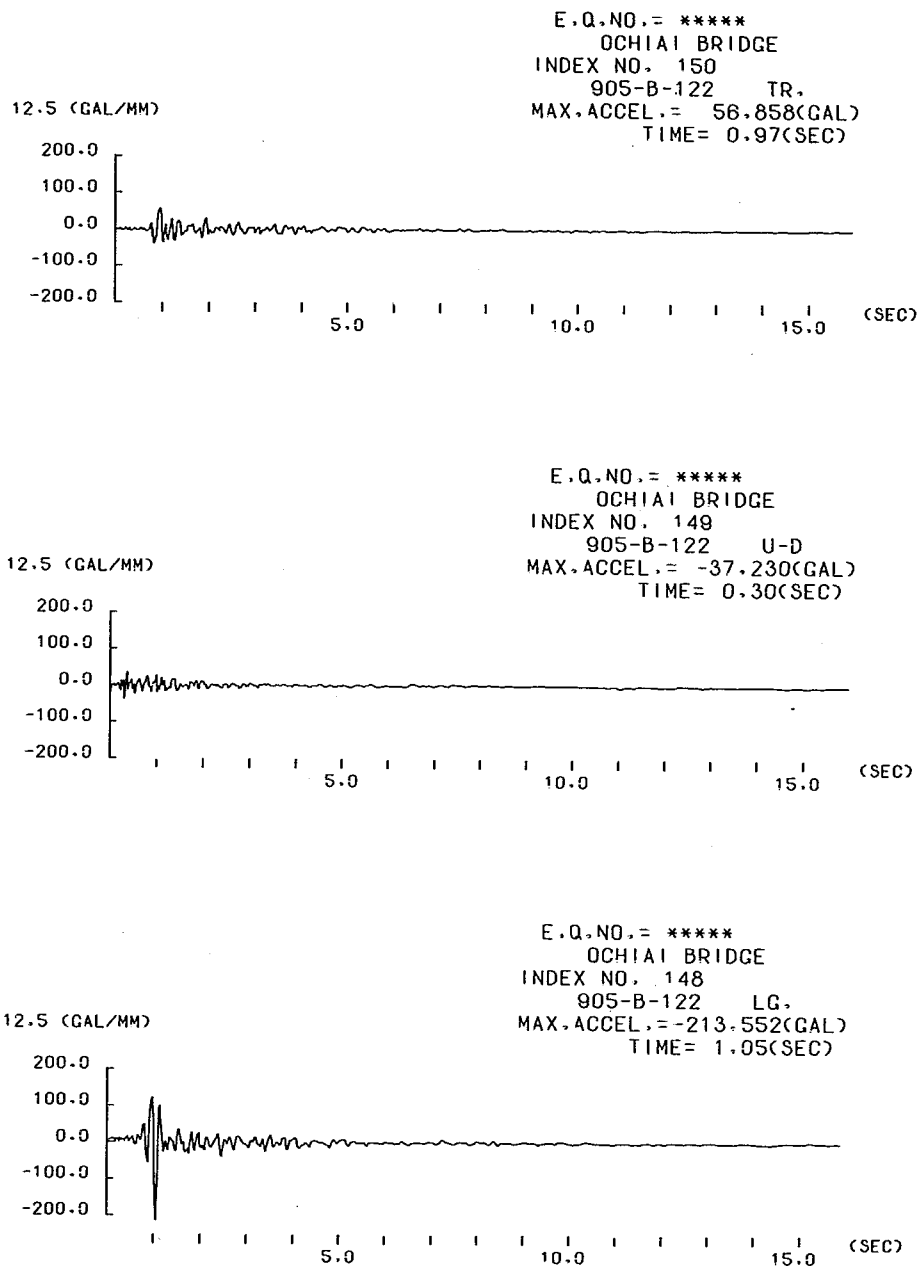


Figure ID-64 Earthquake Motion (Index No. 148, 149 and 150)

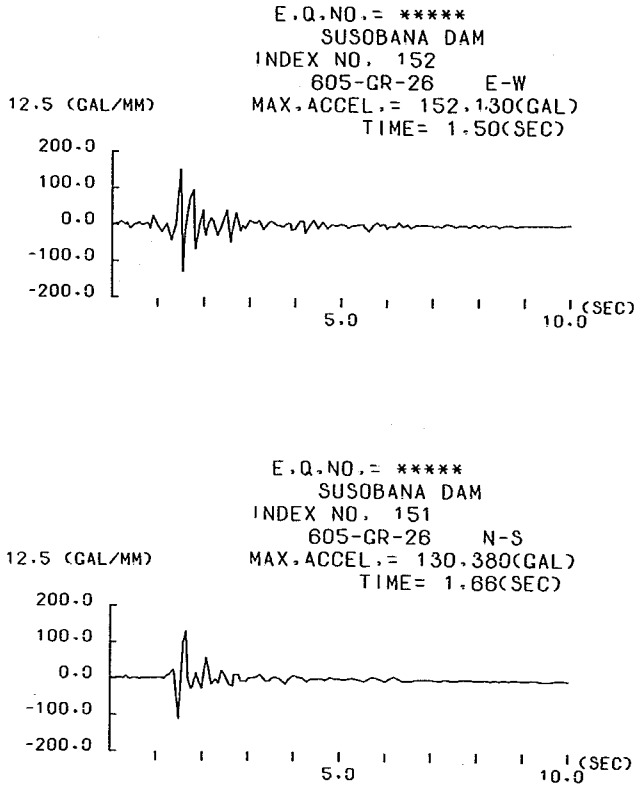


Figure ID-65 Earthquake Motion (Index No. 151 and 152)

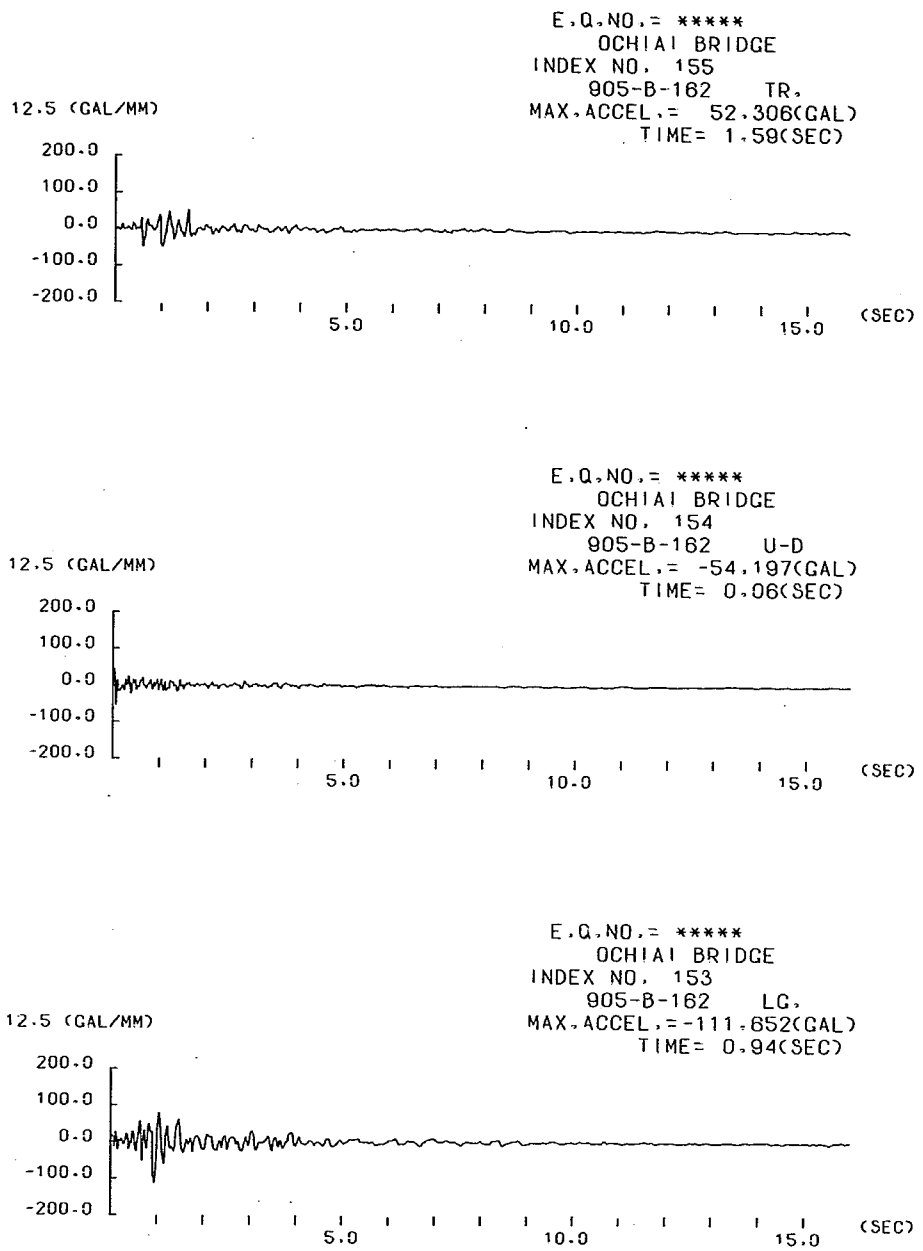


Figure ID-66 Earthquake Motion (Index No. 153, 154 and 155)

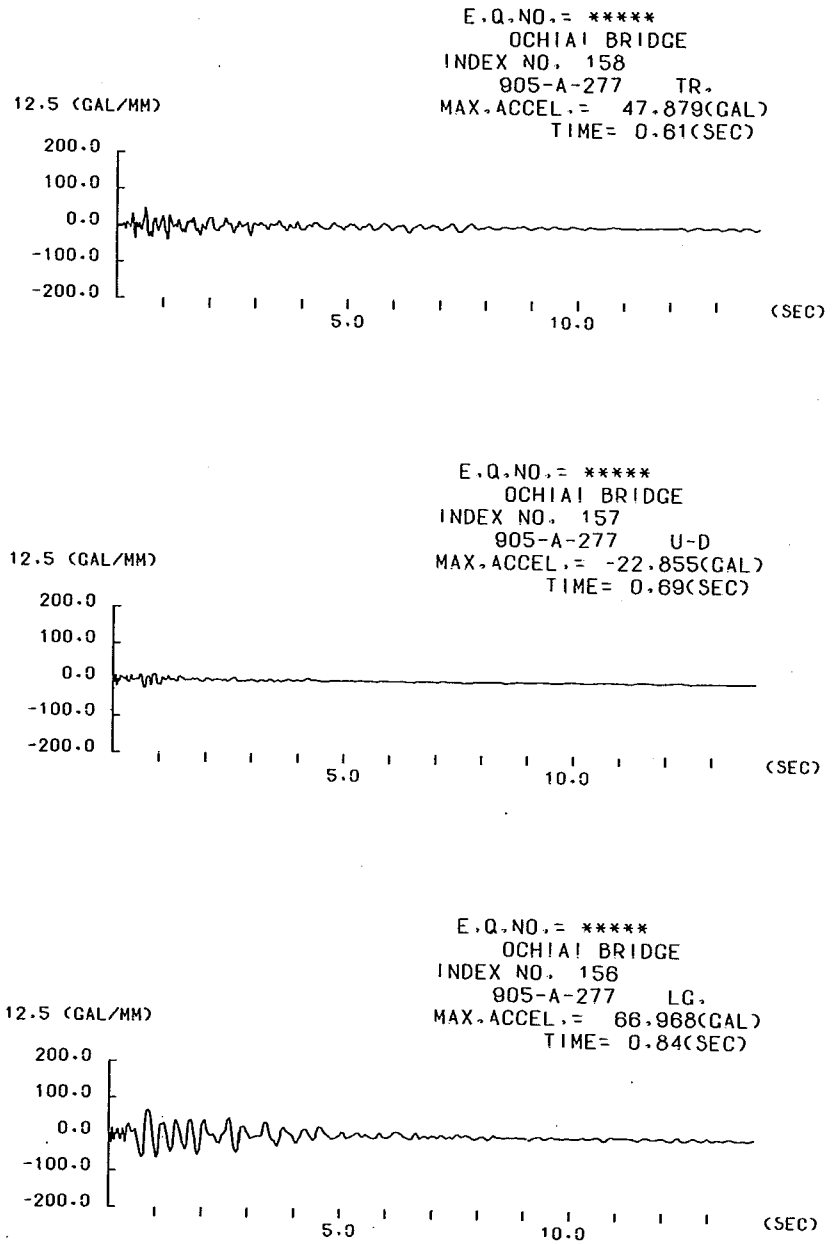


Figure ID-67 Earthquake Motion (Index No. 156, 157 and 158)

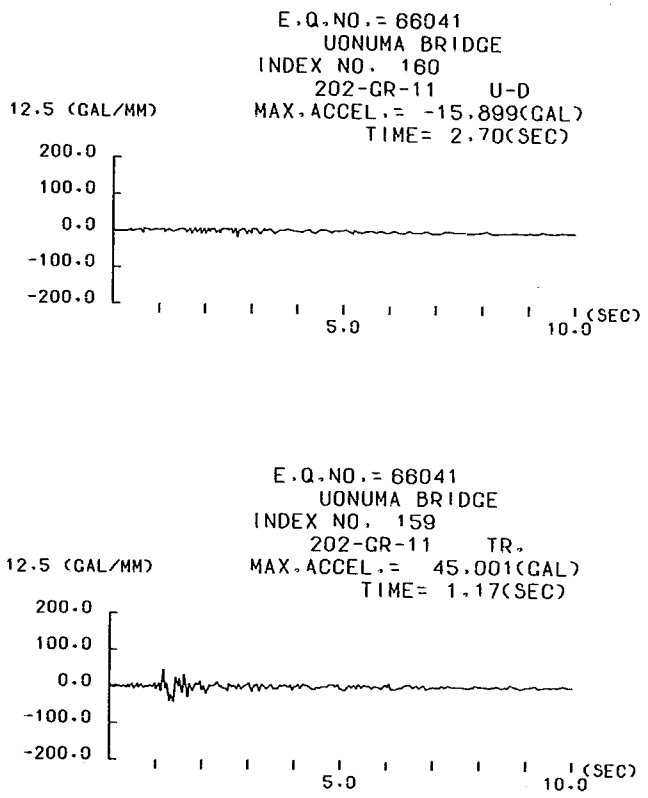


Figure ID-68 Earthquake Motion (Index No. 159 and 160)

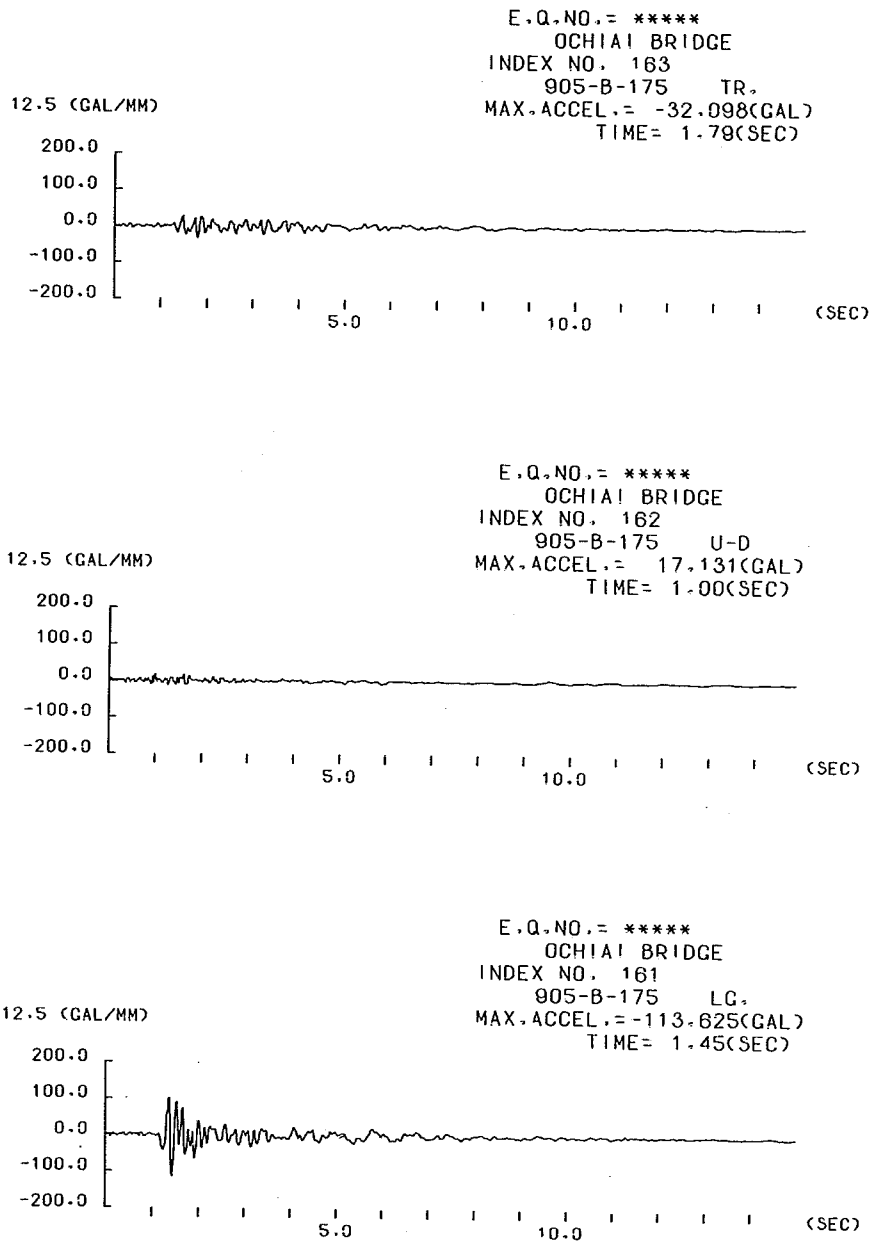


Figure ID-69 Earthquake Motion (Index No. 161, 162 and 163)

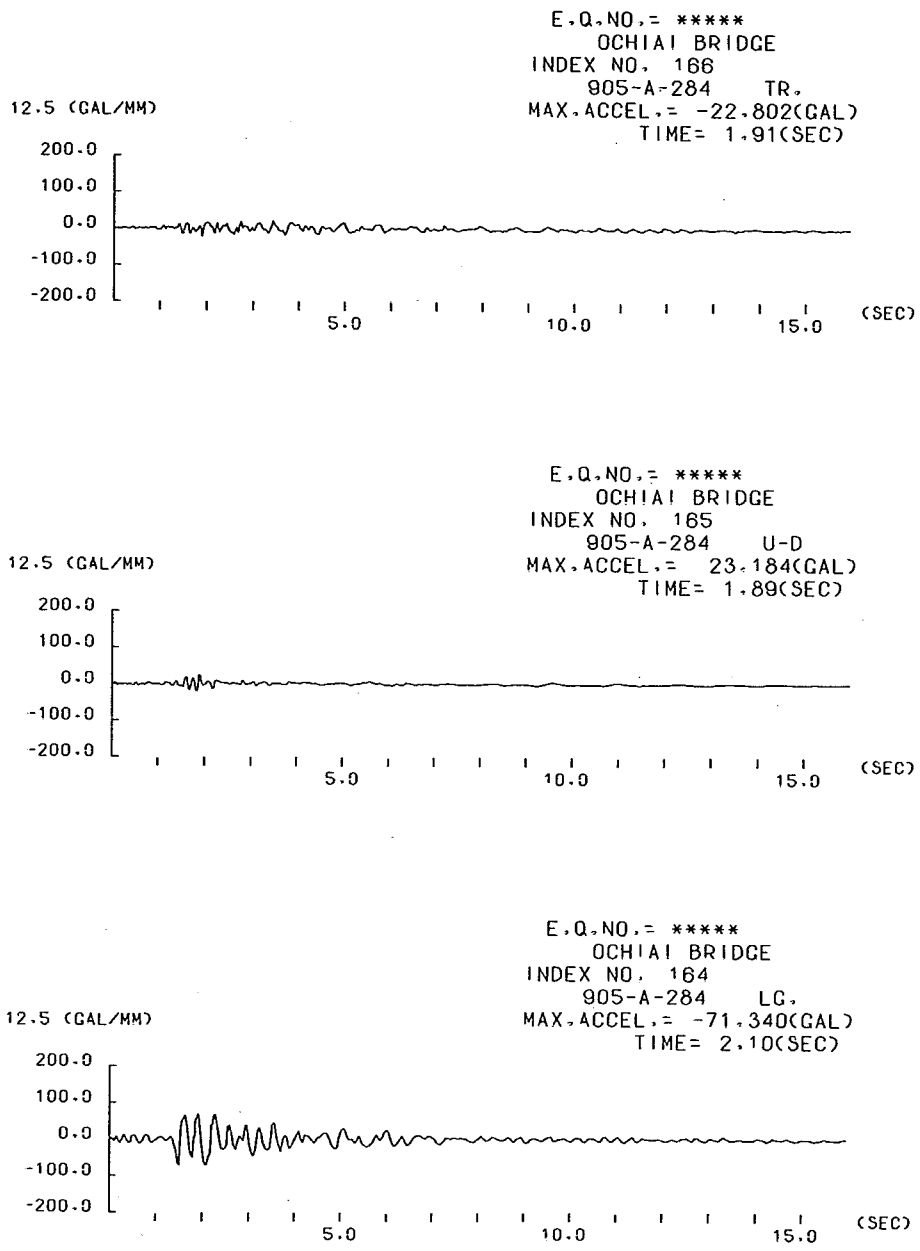


Figure ID-70 Earthquake Motion (Index No. 164, 165 and 166)

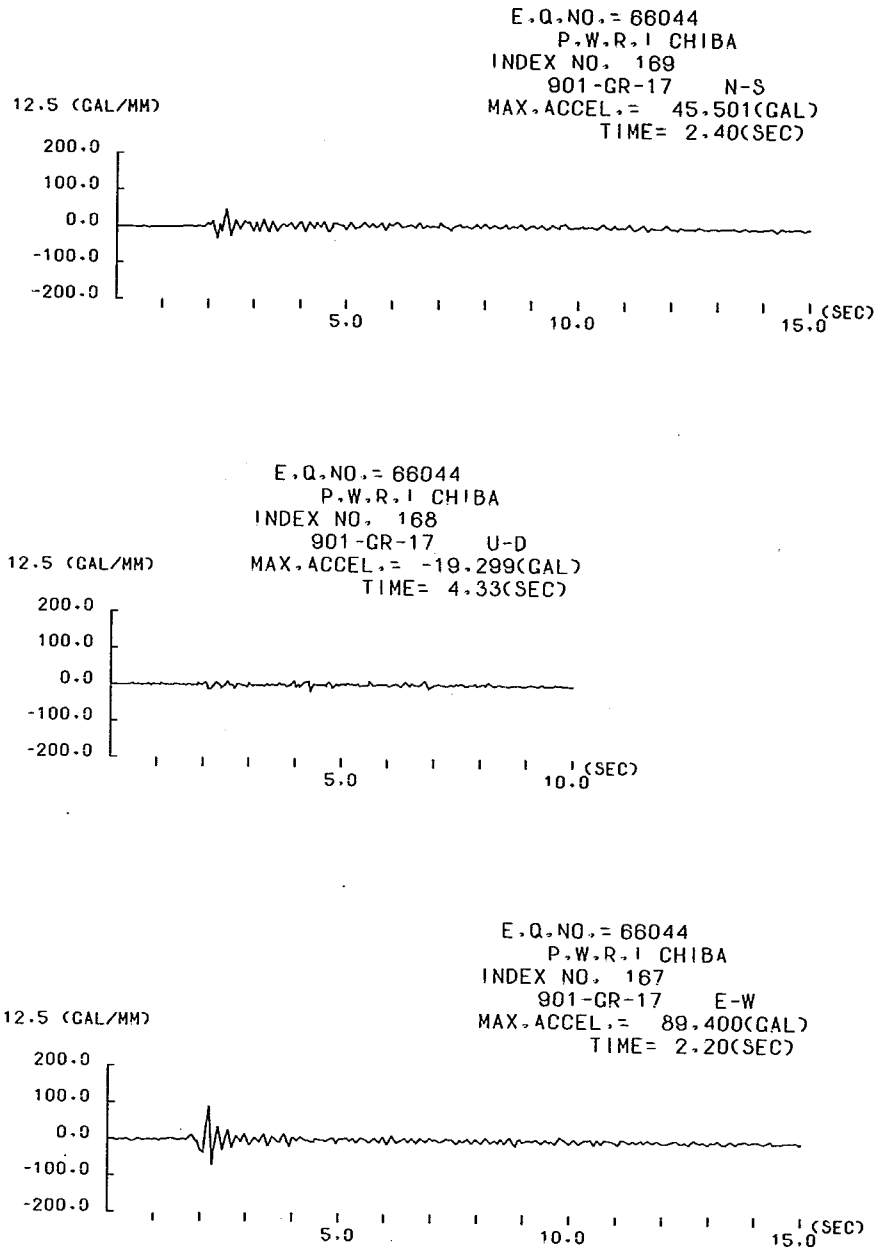


Figure ID-71 Earthquake Motion (Index No. 167, 168 and 169)

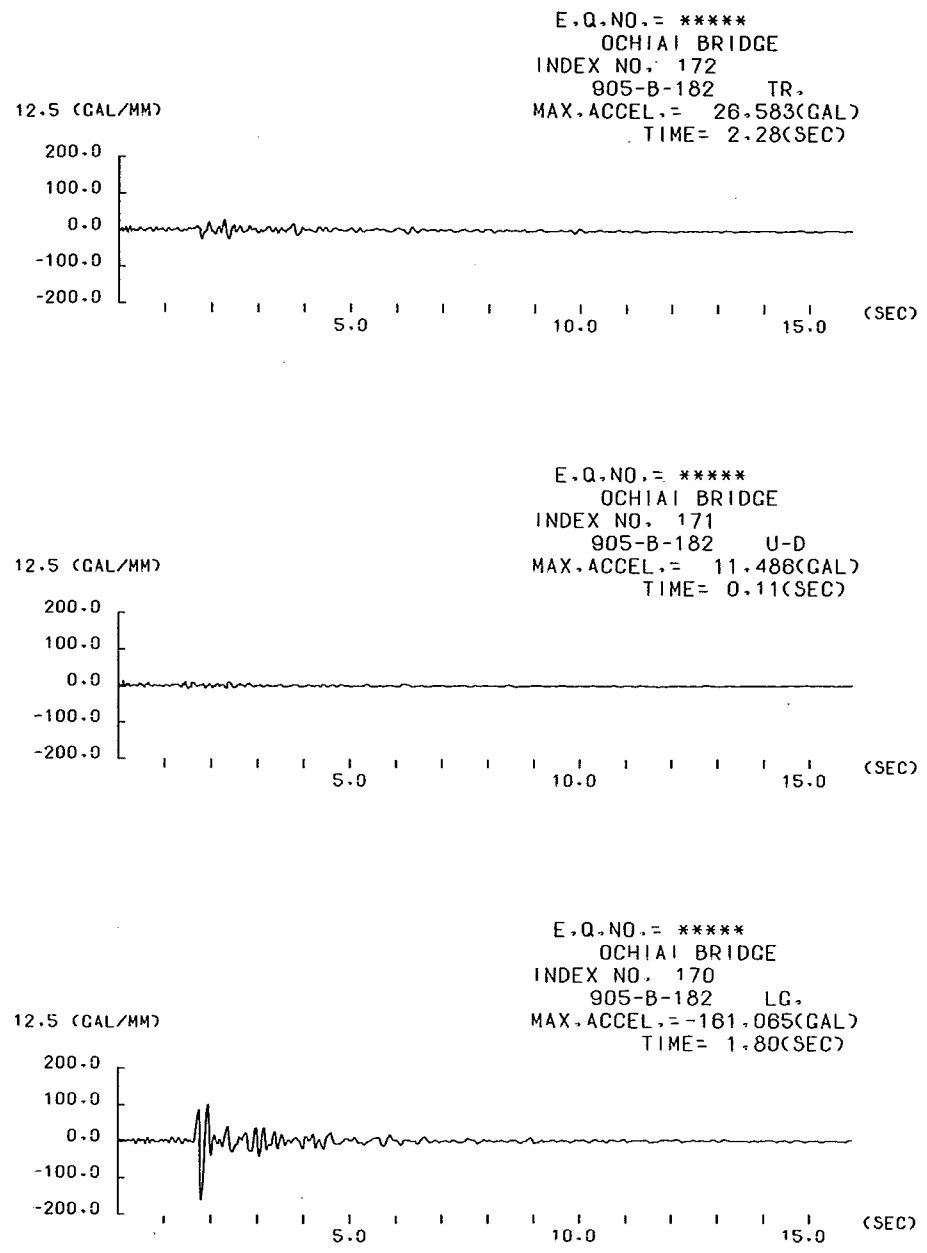


Figure ID-72 Earthquake Motion (Index No. 170, 171 and 172)

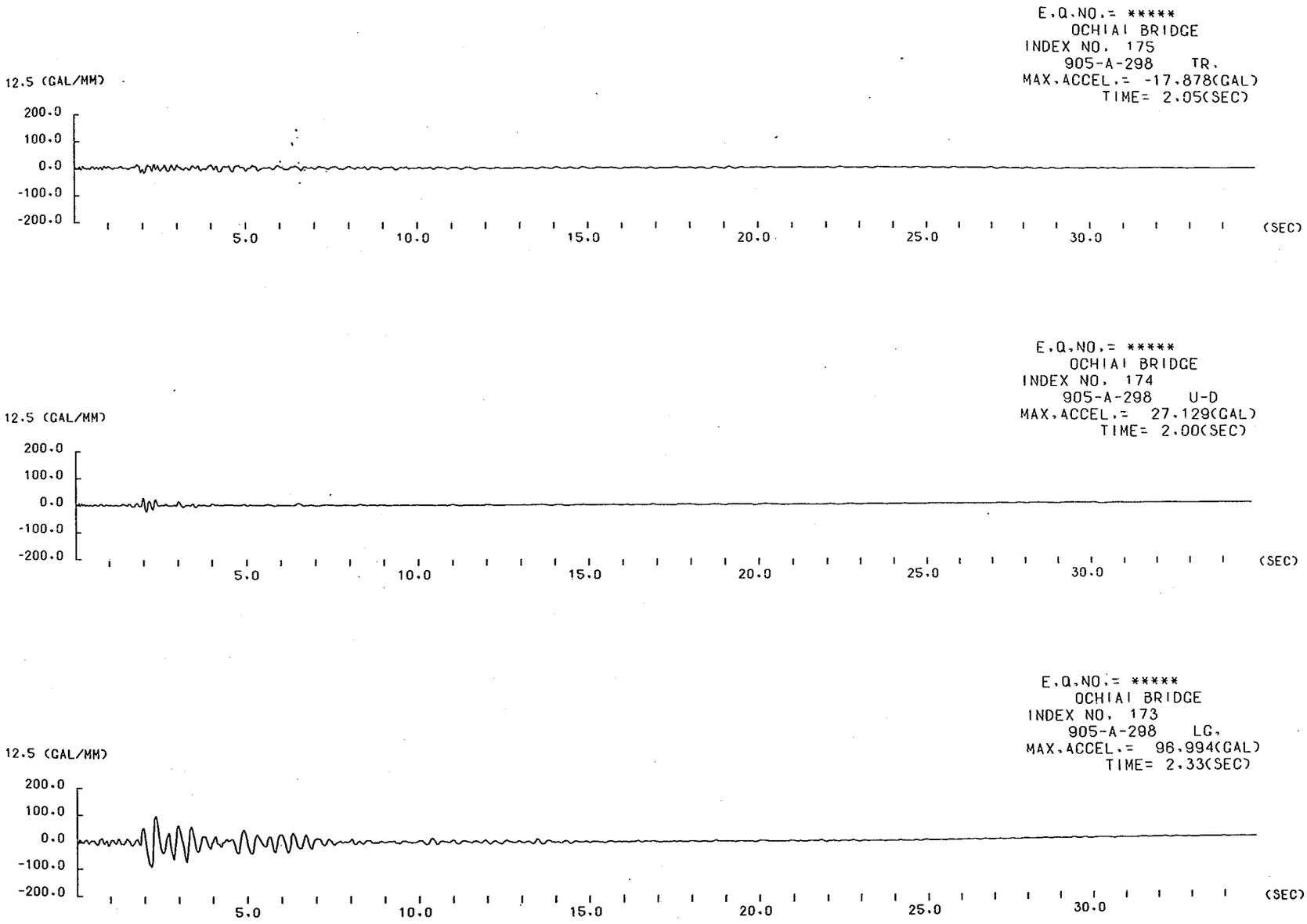


Figure ID-73 Earthquake Motion (Index No. 173, 174 and 175)

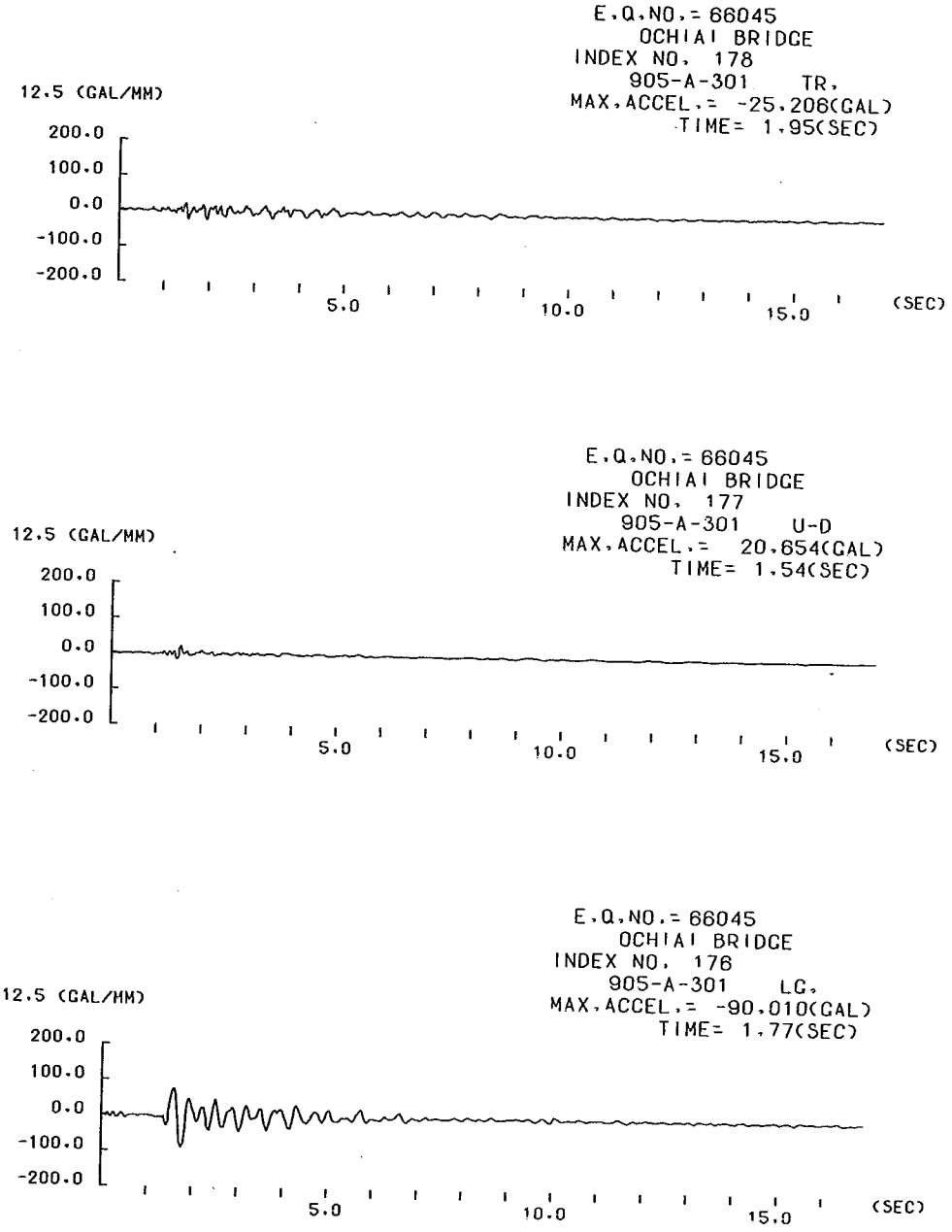


Figure ID-74 Earthquake Motion (Index No. 176, 177 and 178)

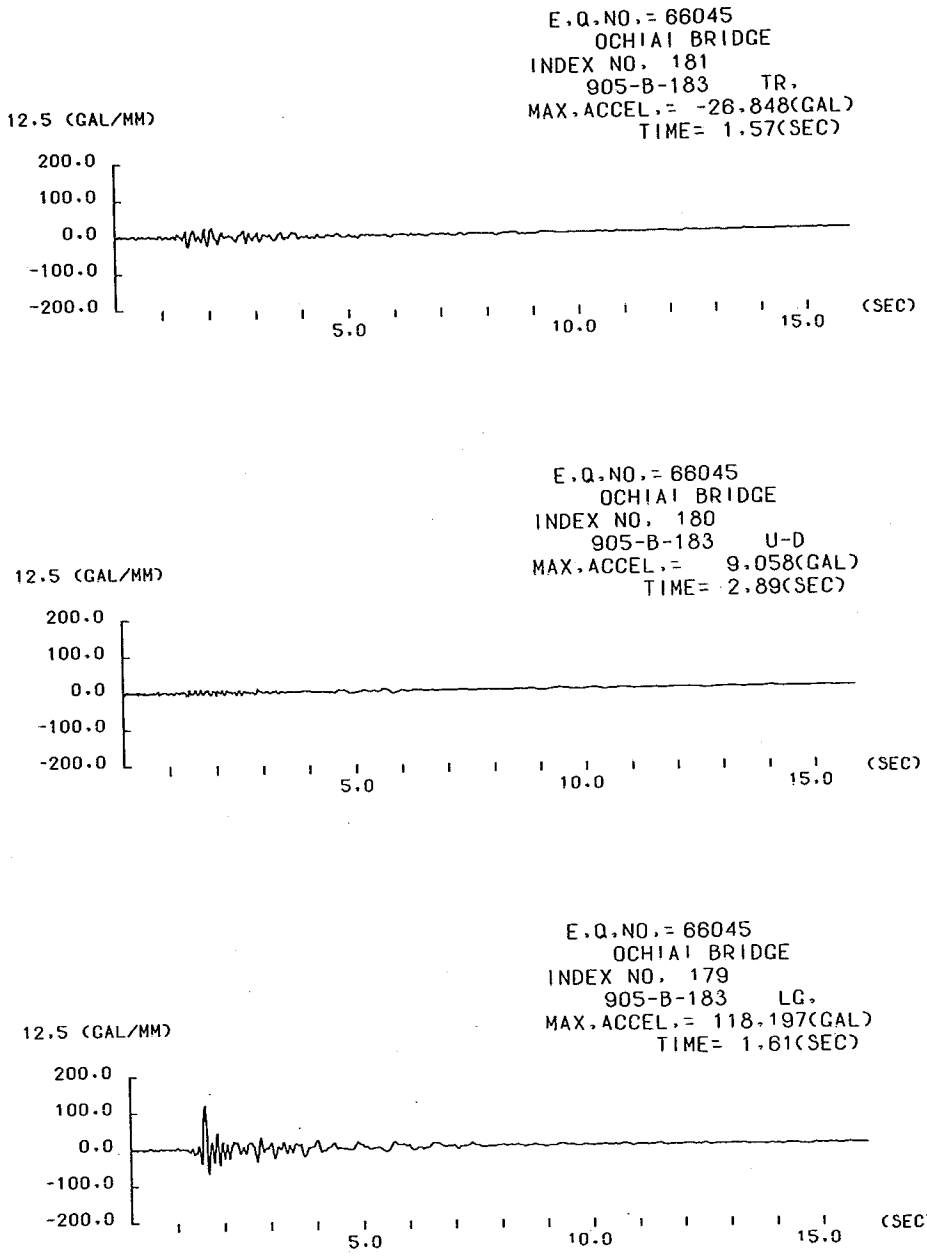


Figure ID-75 Earthquake Motion (Index No. 179, 180 and 181)

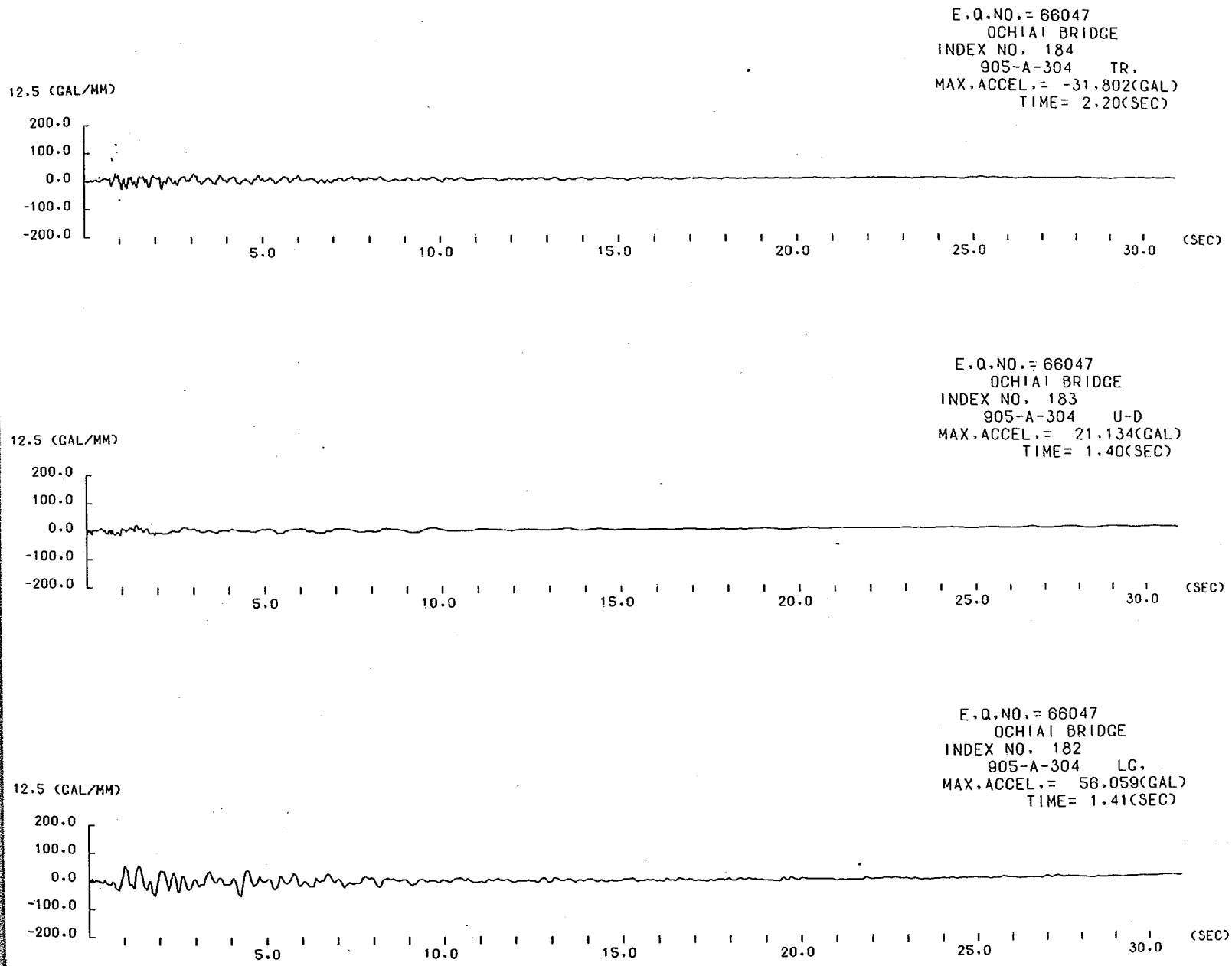


Figure ID-76 Earthquake Motion (Index No. 182, 183 and 184)

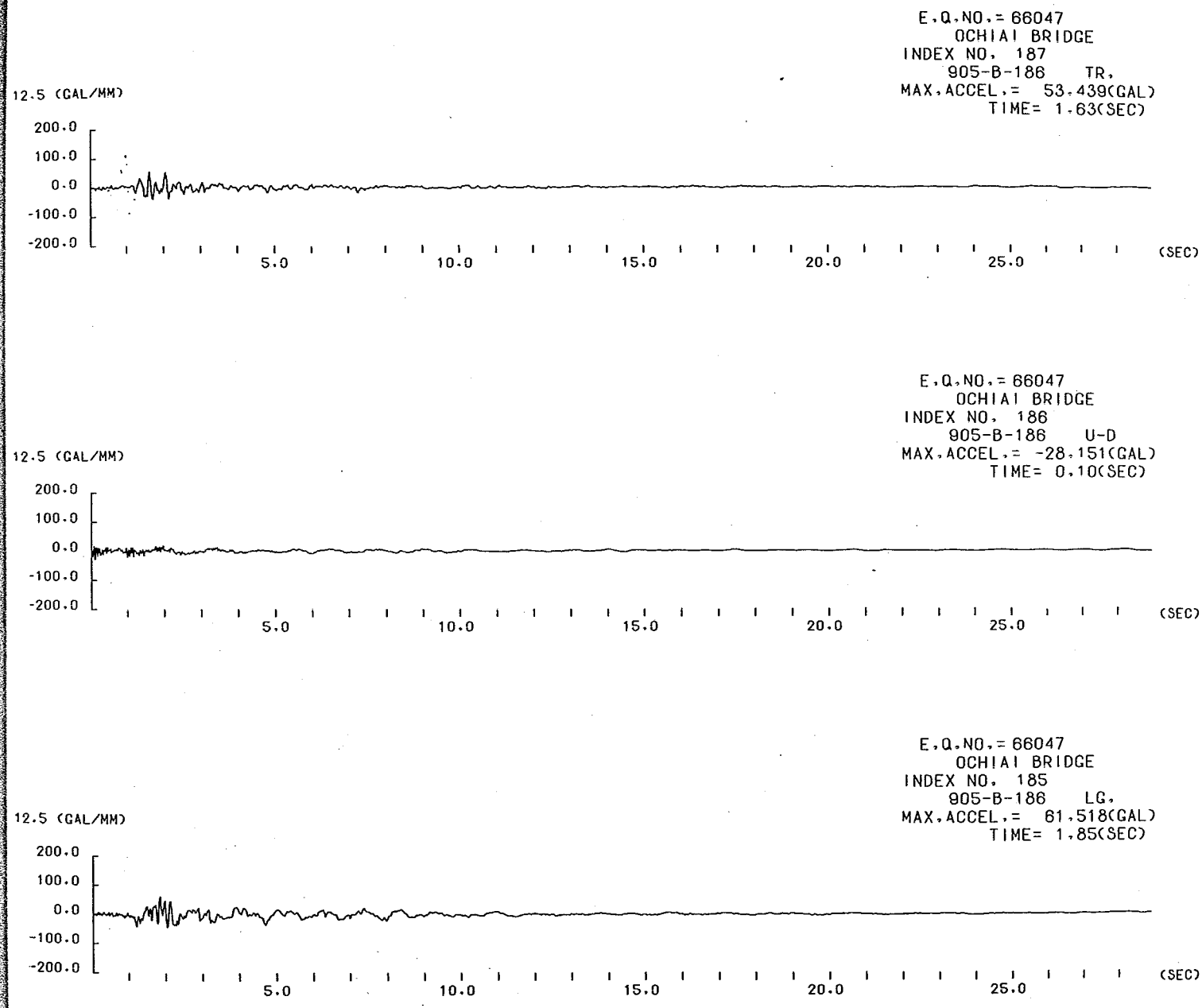


Figure ID-77 Earthquake Motion (Index No. 185, 186 and 187)

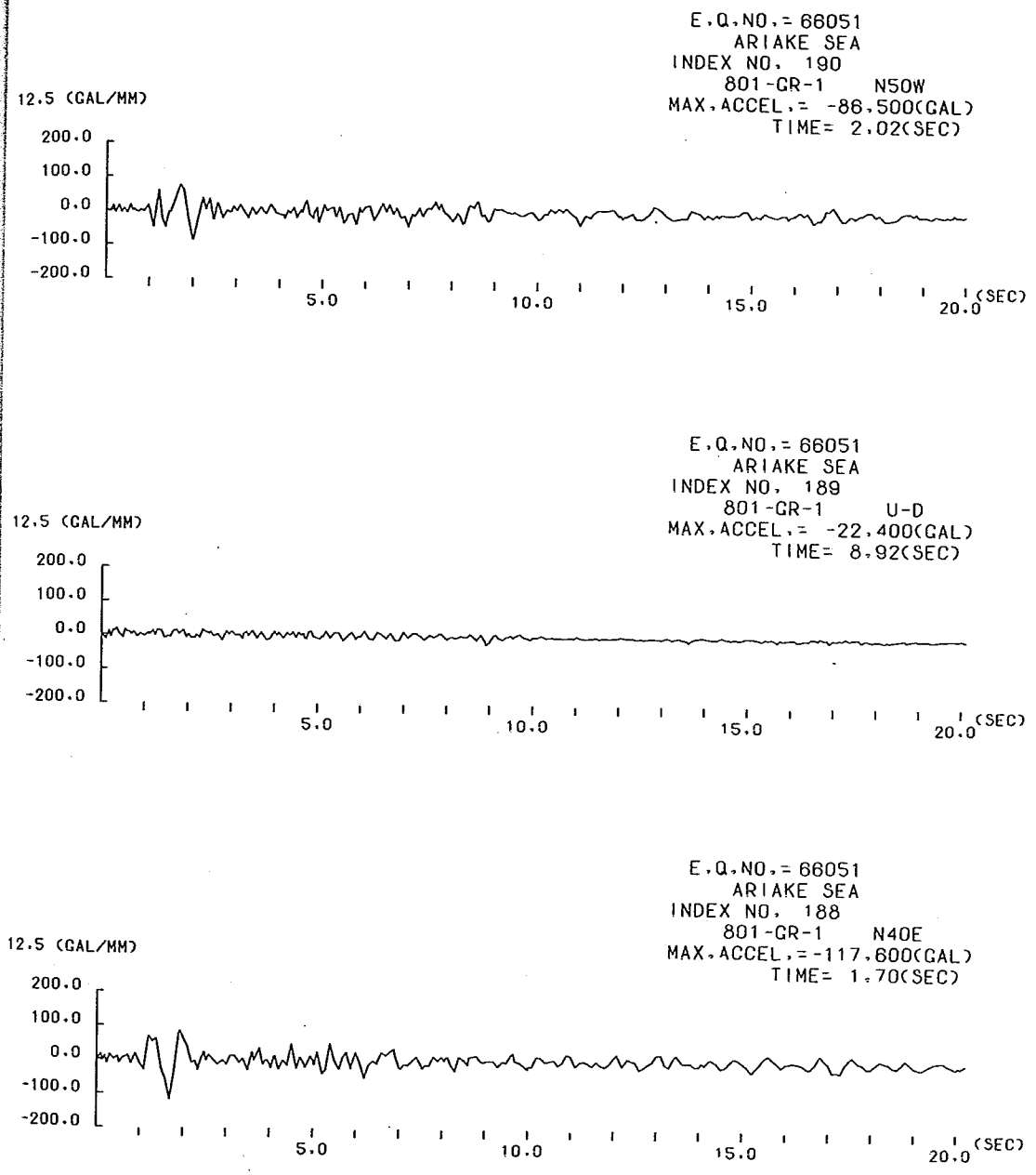


Figure ID-78 Earthquake Motion (Index No. 188, 189 and 190)

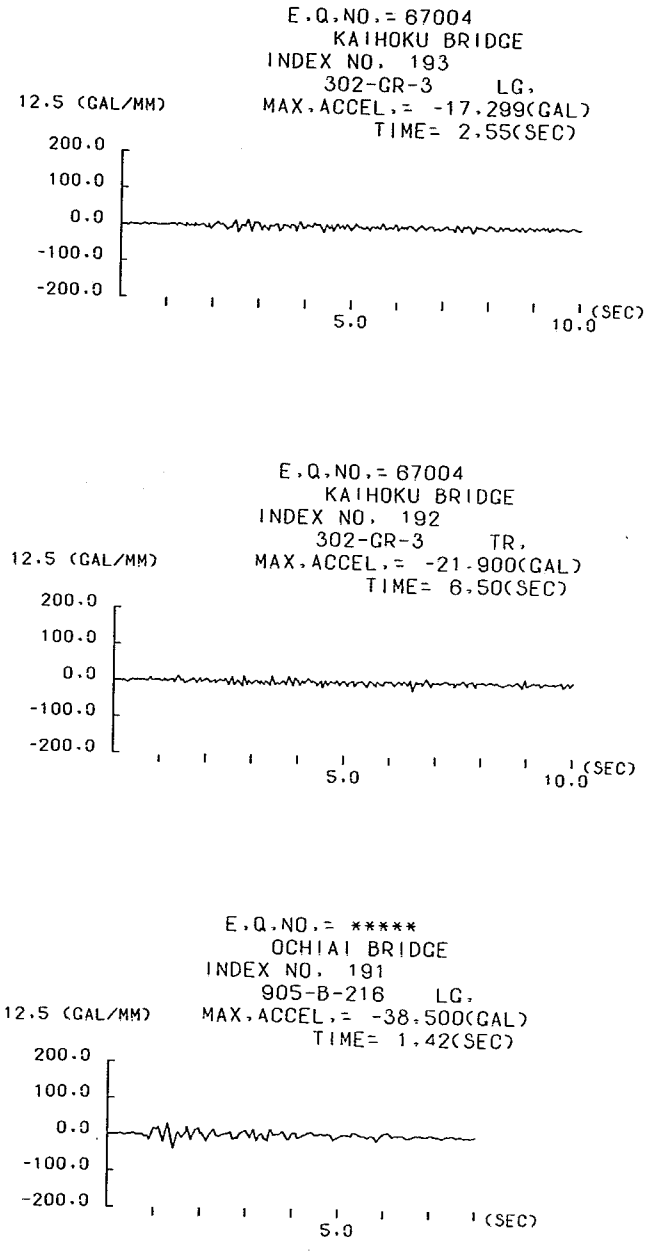


Figure ID-79 Earthquake Motion (Index No. 191, 192 and 193)

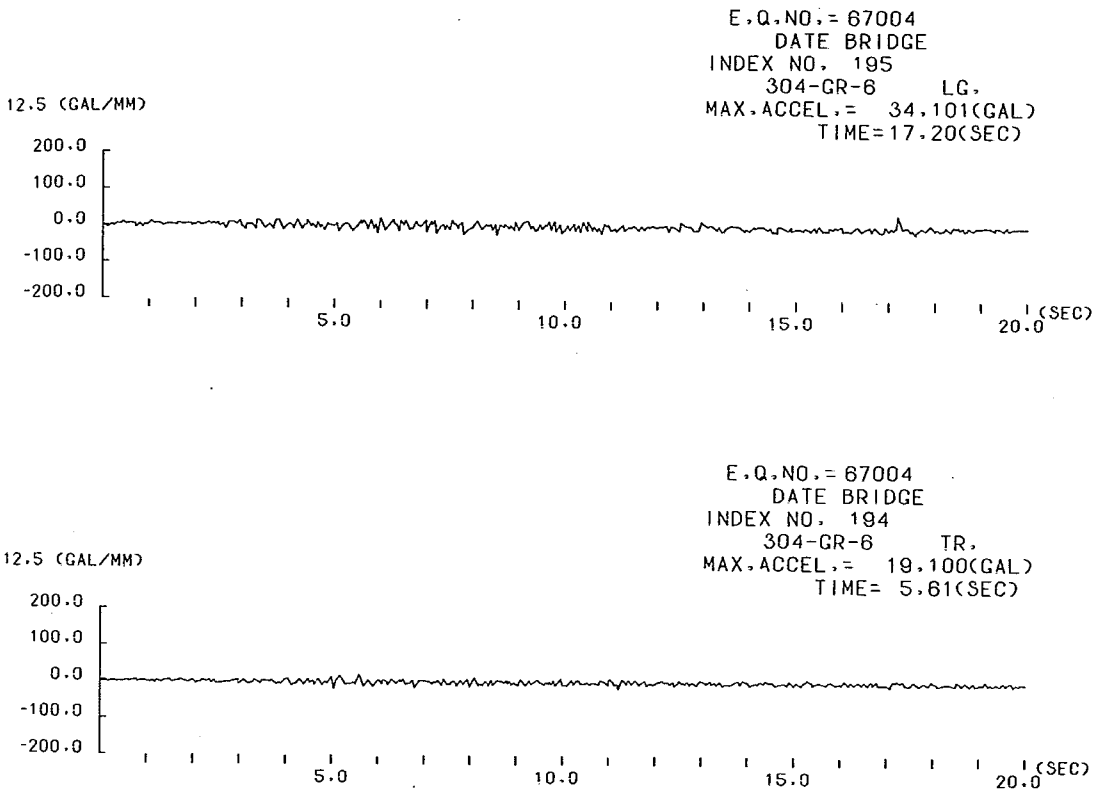


Figure ID-80 Earthquake Motion (Index No. 194 and 195)

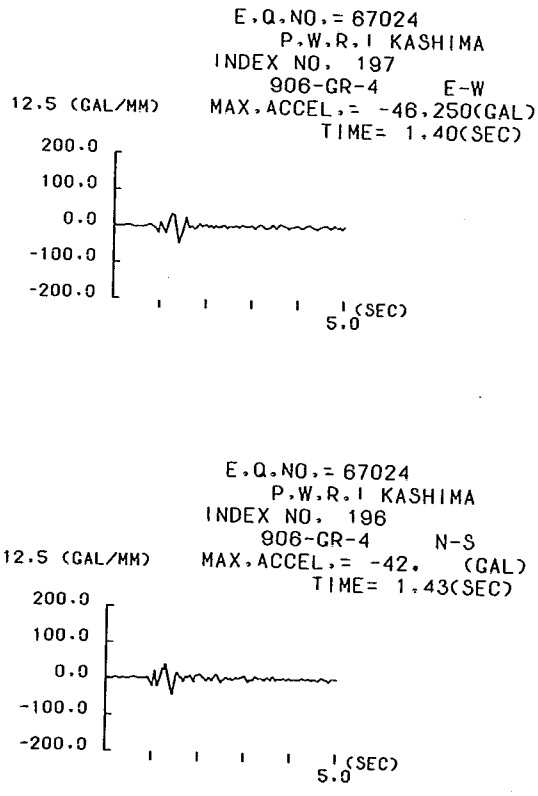


Figure ID-81 Earthquake Motion (Index No. 196 and 197)

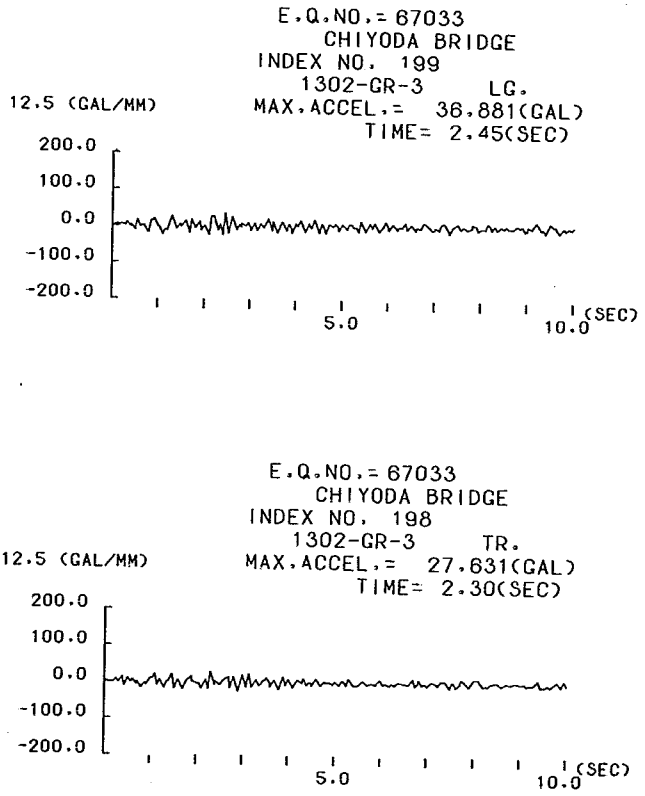


Figure ID-82 Earthquake Motion (Index No. 198 and 199)

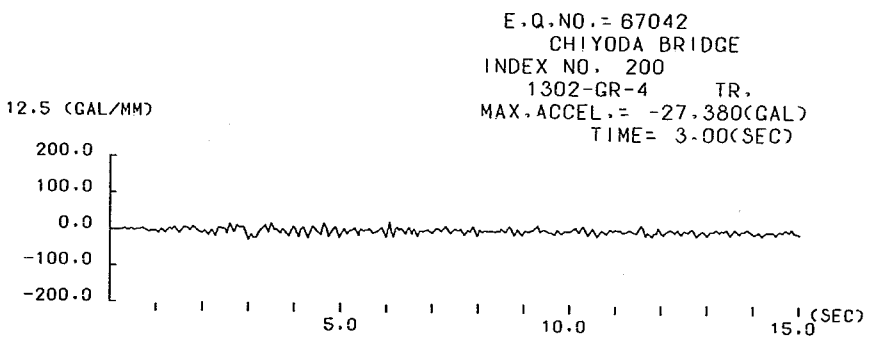


Figure ID-83 Earthquake Motion (Index No. 200)

6. 応答スペクトル

INDEX NO. の順に従いFigure ID−1～Figure ID−83に示した地震動加速度の絶対加速度応答スペクトル比をFigure IS−1～Figure IS−200に示す。ここで絶対加速度応答スペクトル比は，絶対加速度応答スペクトル値を入力の地震動加速度の最大値で除した値として定義されており，詳細は付録4を参照されたい。応答スペクトルは減衰定数を0，0.02，0.05，0.1，0.2，0.4の6種類とした場合に対して計算されており，図中の6本の応答スペクトル曲線のうち応答のレベルの高い方から順に対応している。

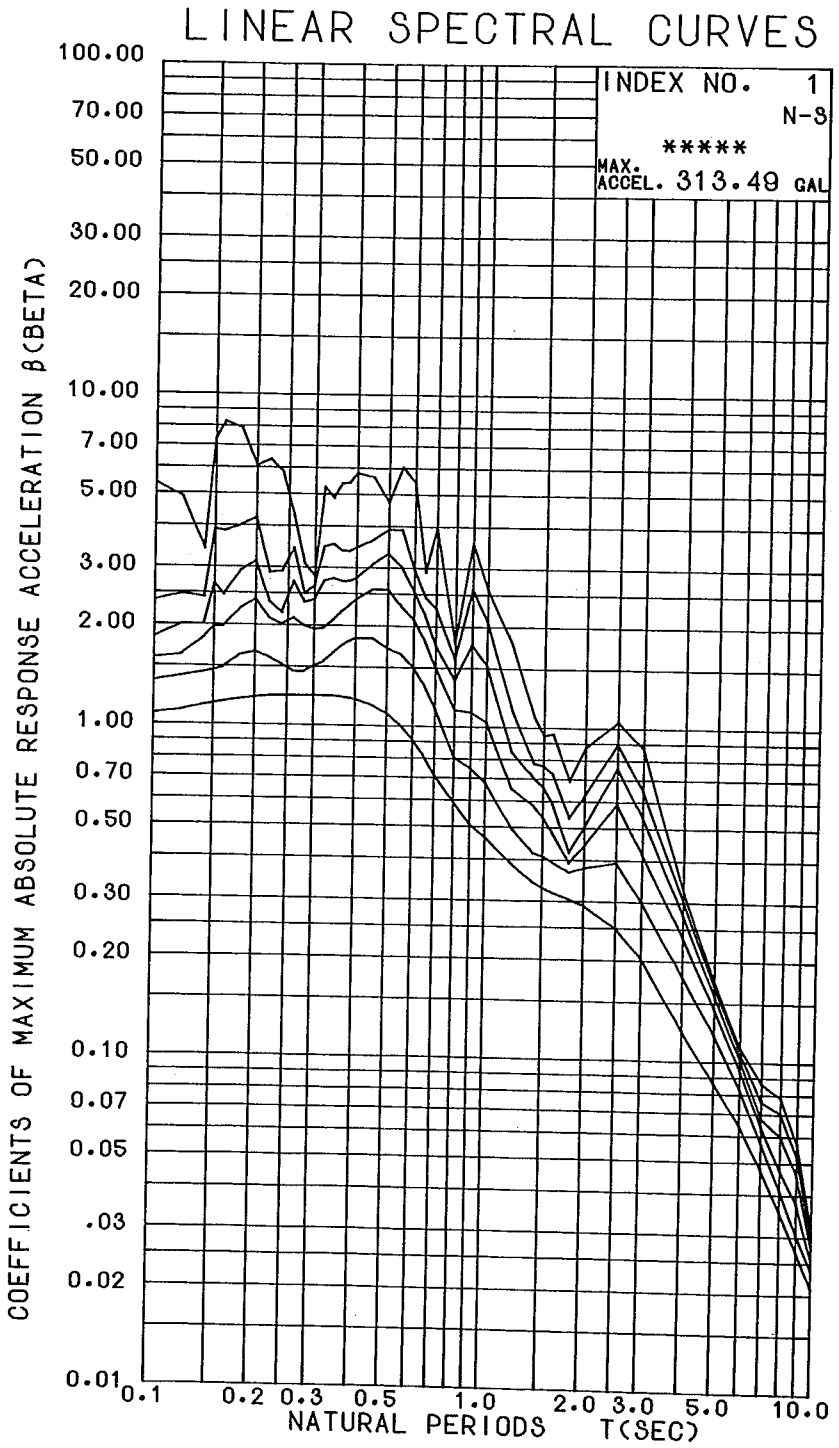


Figure IS-1 Linear Response Spectrum of Earthquake Record with Index Number 1

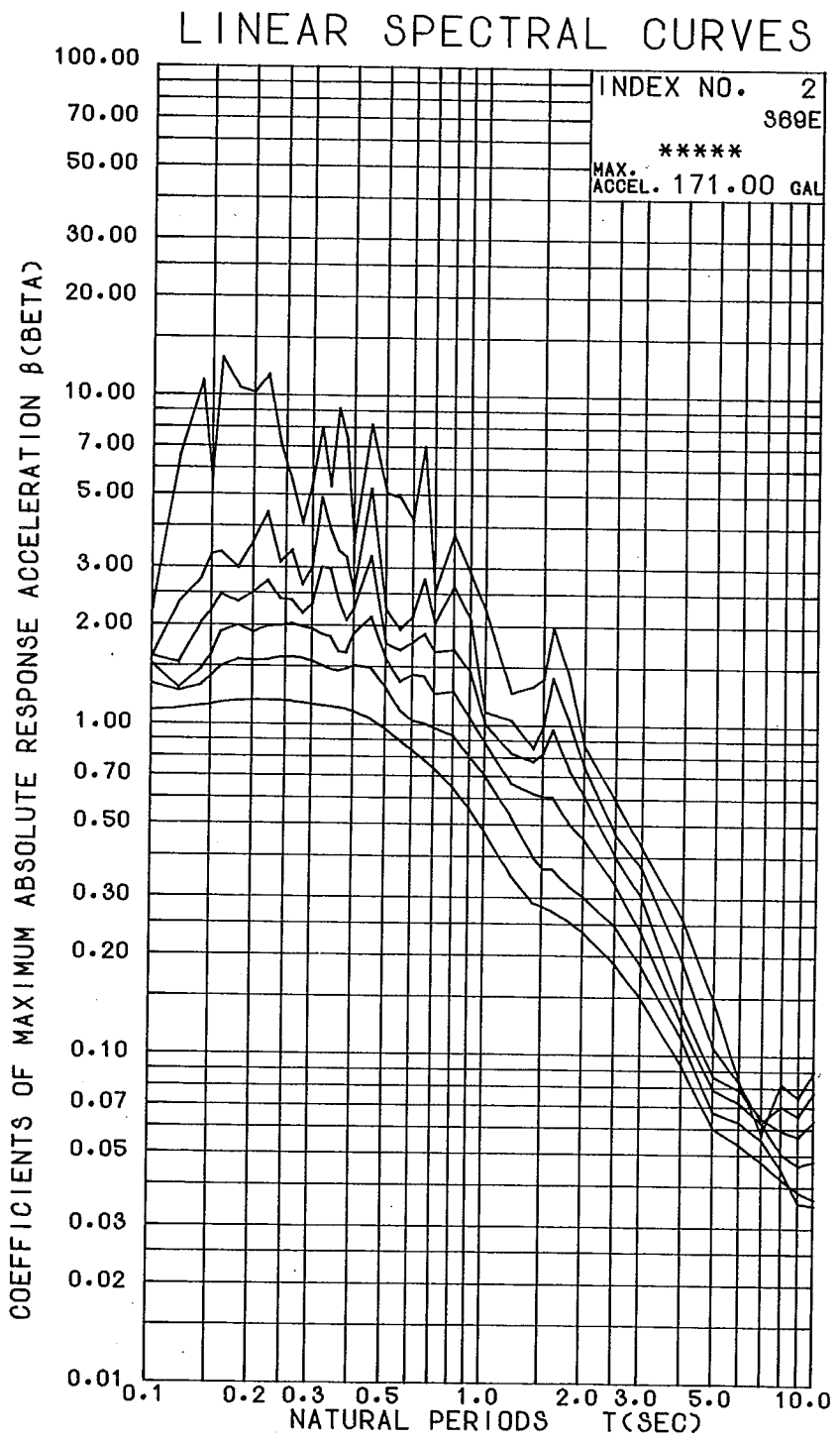


Figure IS-2 Linear Response Spectrum of Earthquake Record with Index Number 2

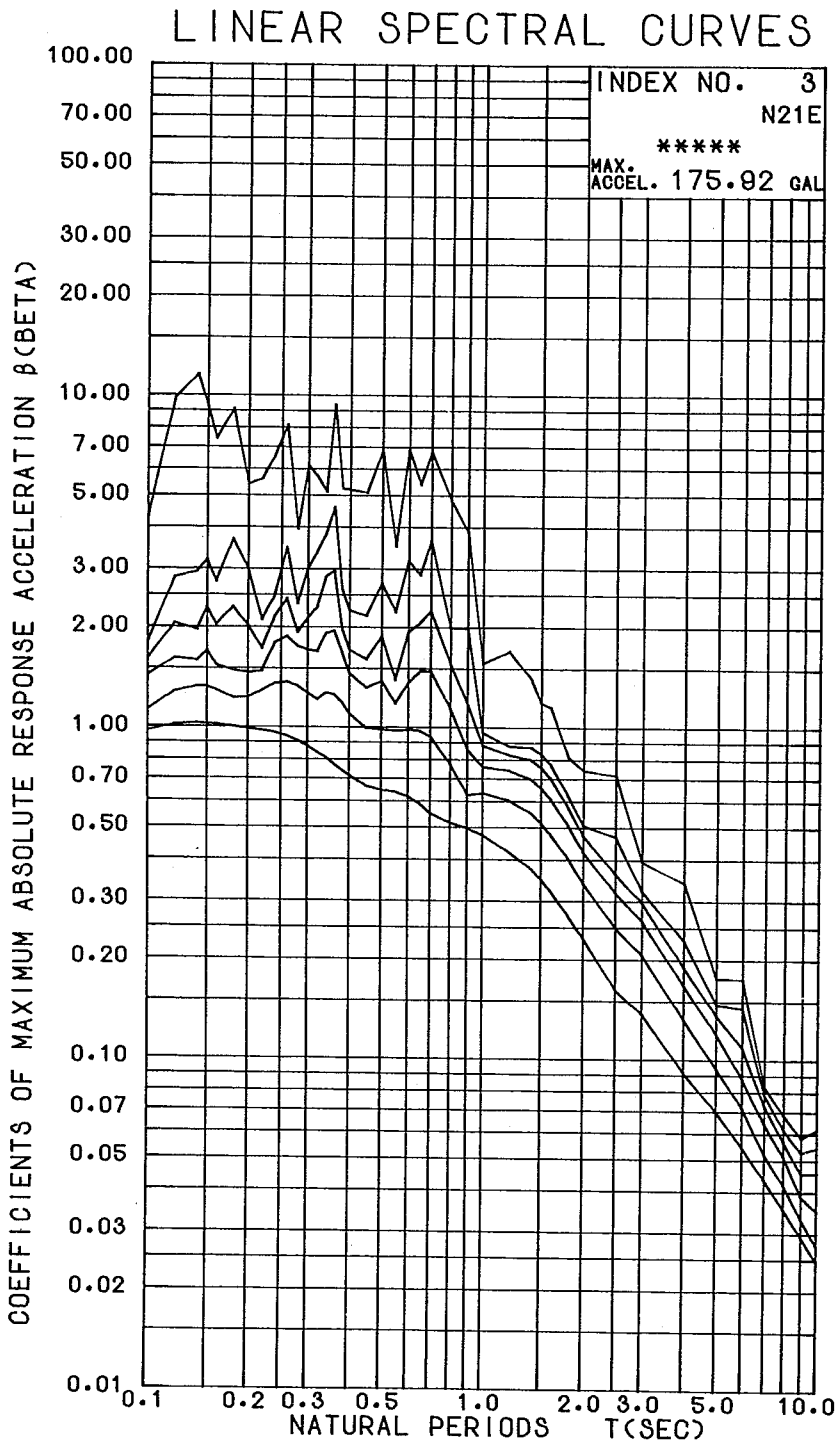


Figure IS-3 Linear Response Spectrum of Earthquake Record with Index Number 3

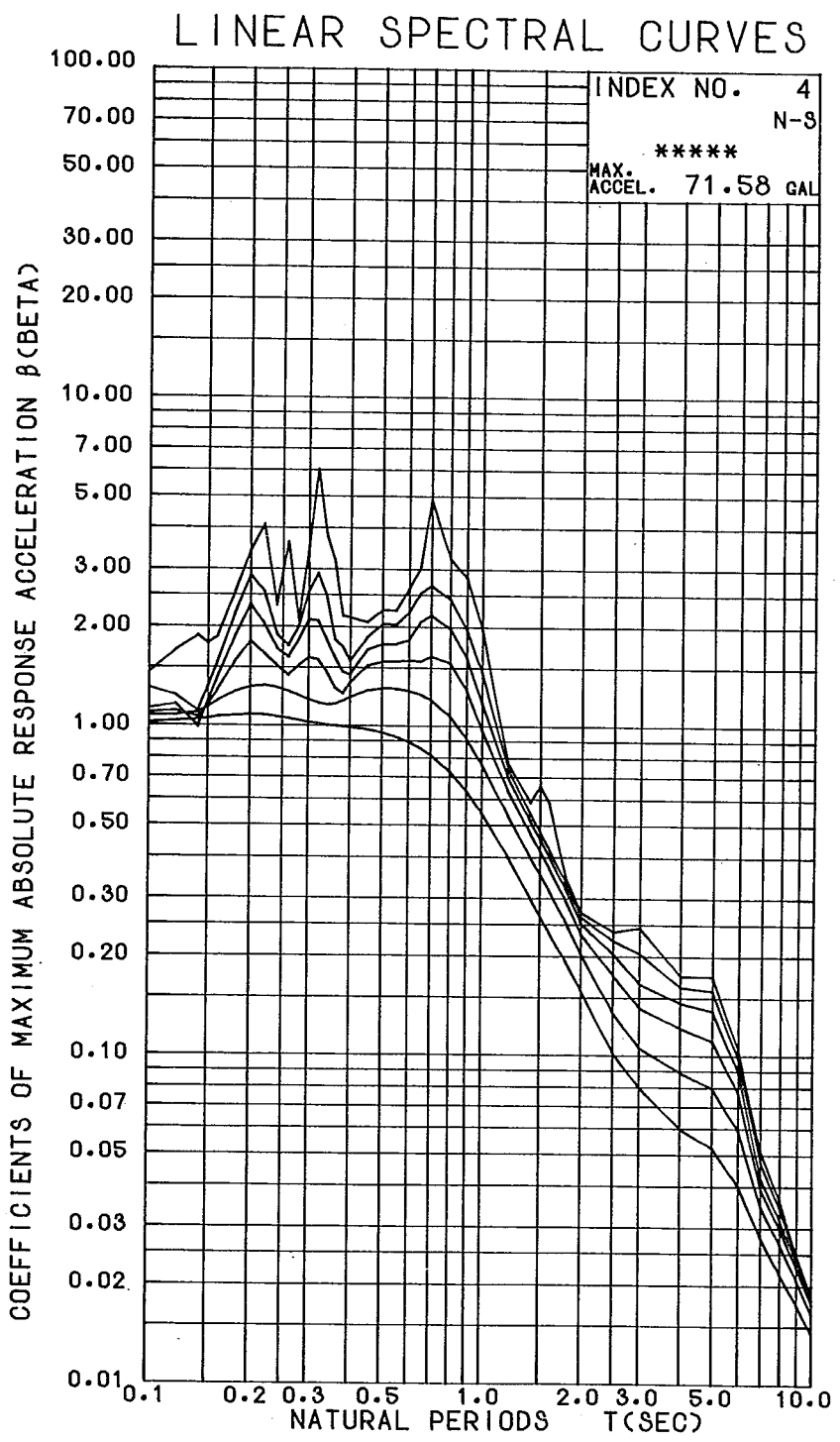


Figure IS-4 Linear Response Spectrum of Earthquake Record with Index Number 4

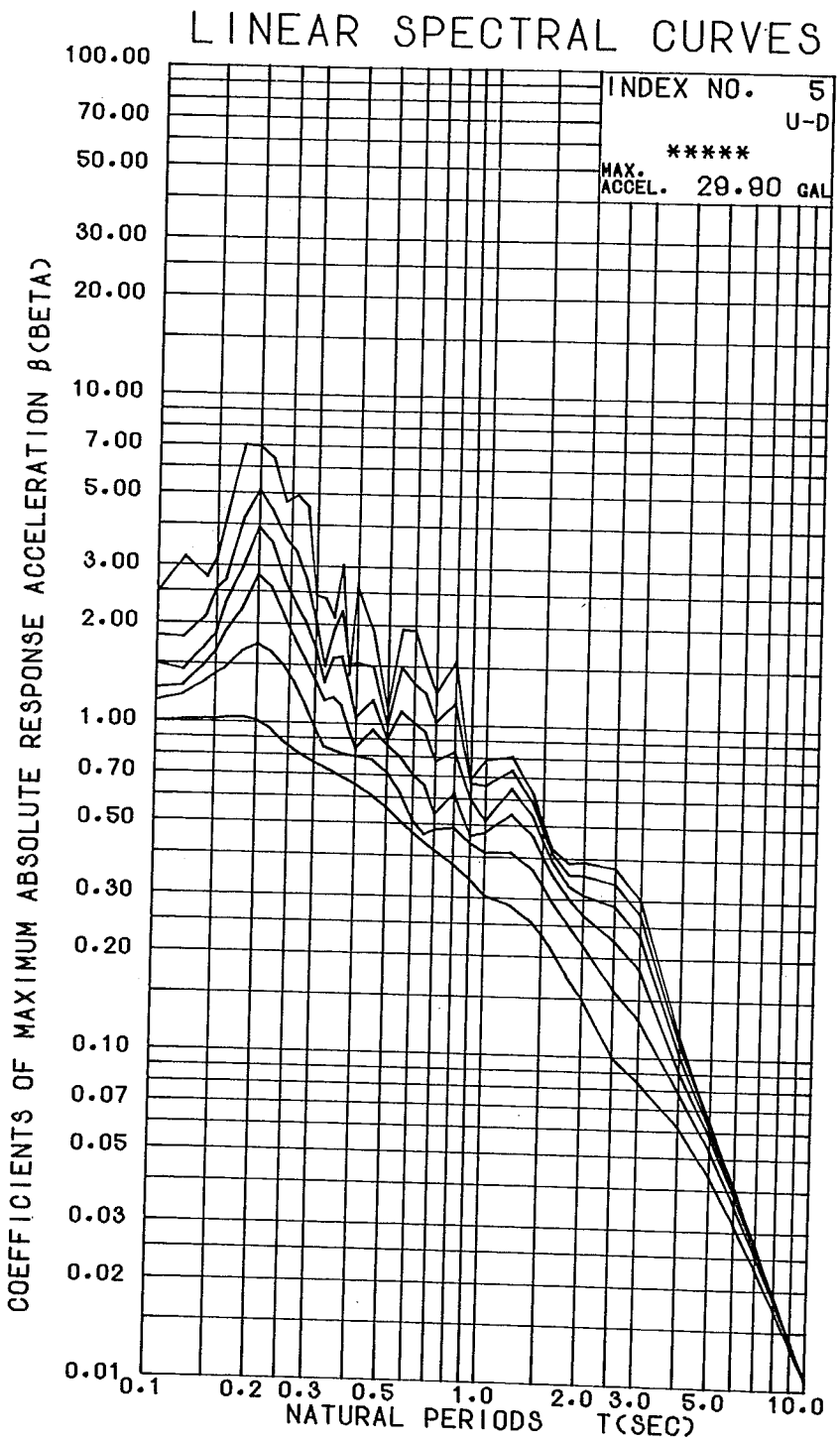


Figure IS-5 Linear Response Spectrum of Earthquake Record with Index Number 5

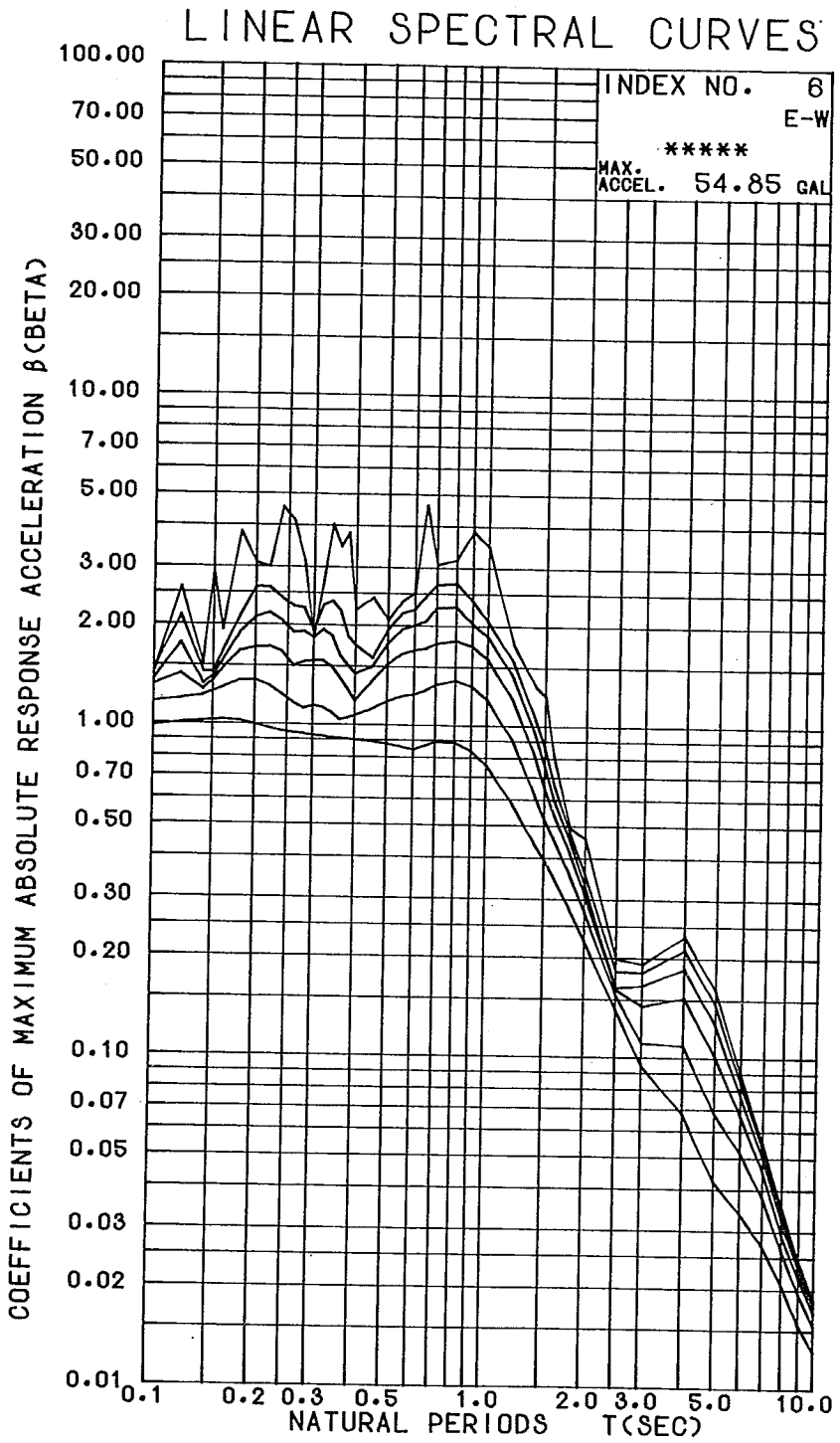


Figure IS-6 Linear Response Spectrum of Earthquake Record with Index Number 6

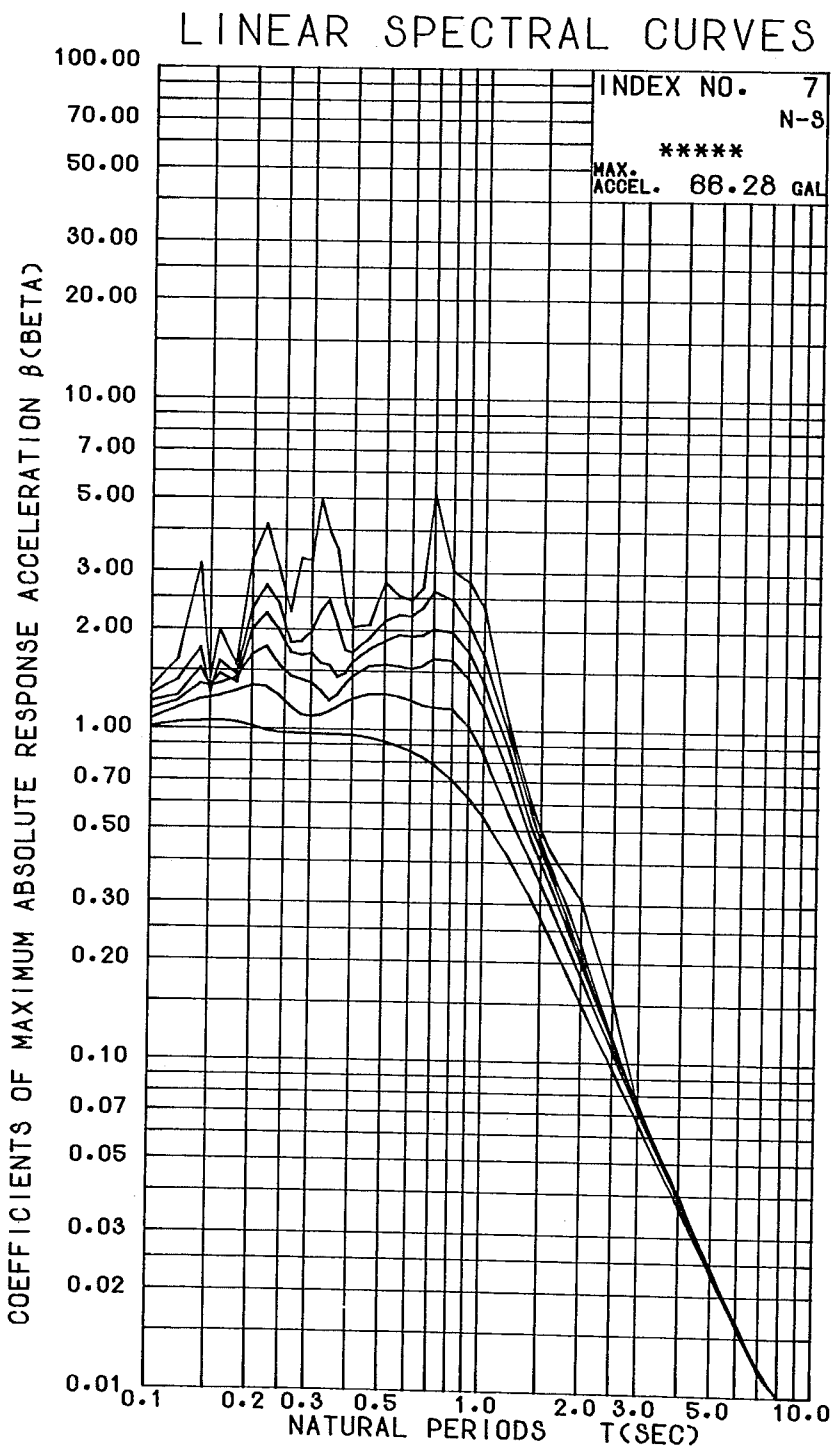


Figure IS-7 Linear Response Spectrum of Earthquake Record with Index Number 7

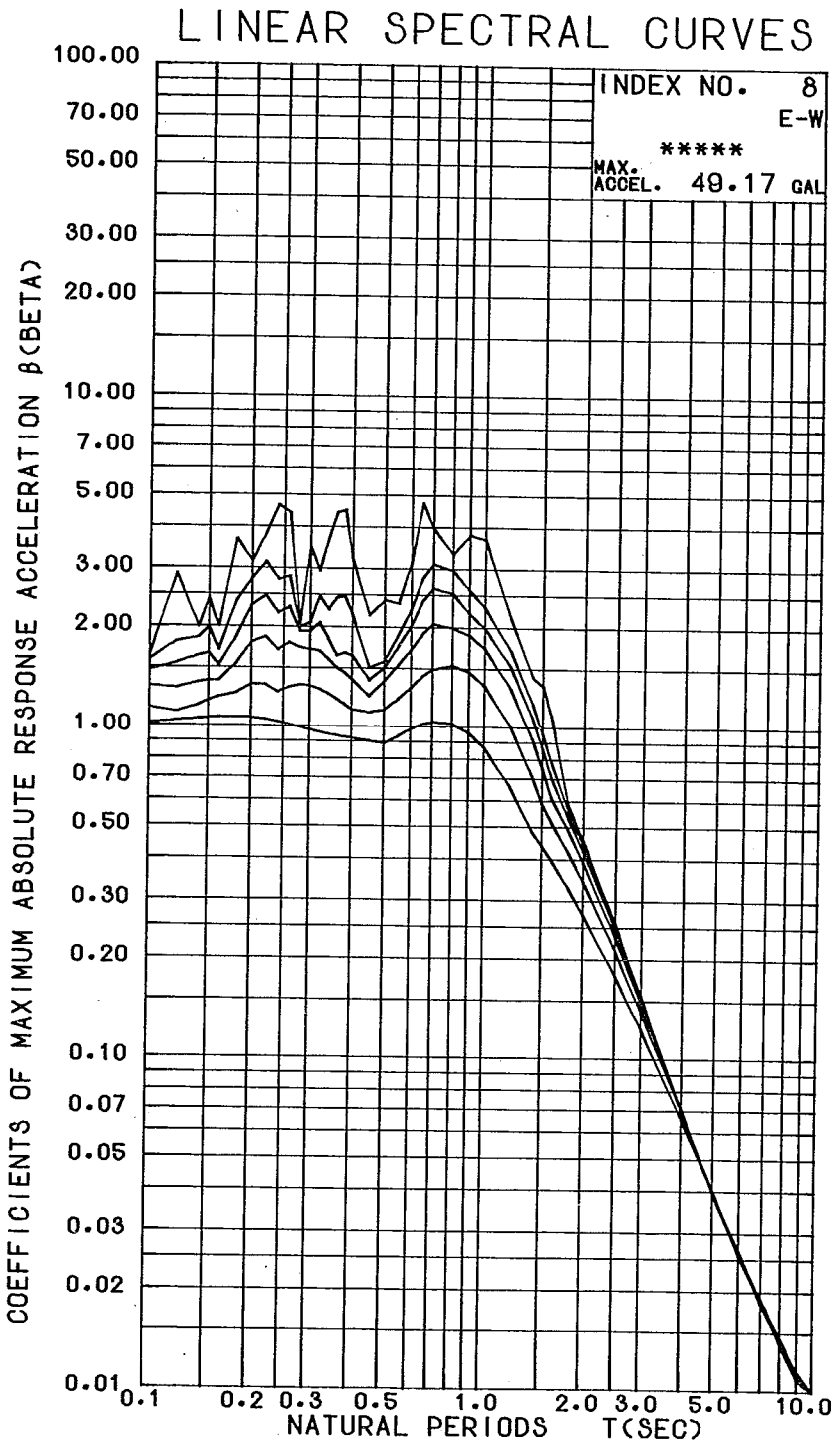


Figure IS-8 Linear Response Spectrum of Earthquake Record with Index Number 8

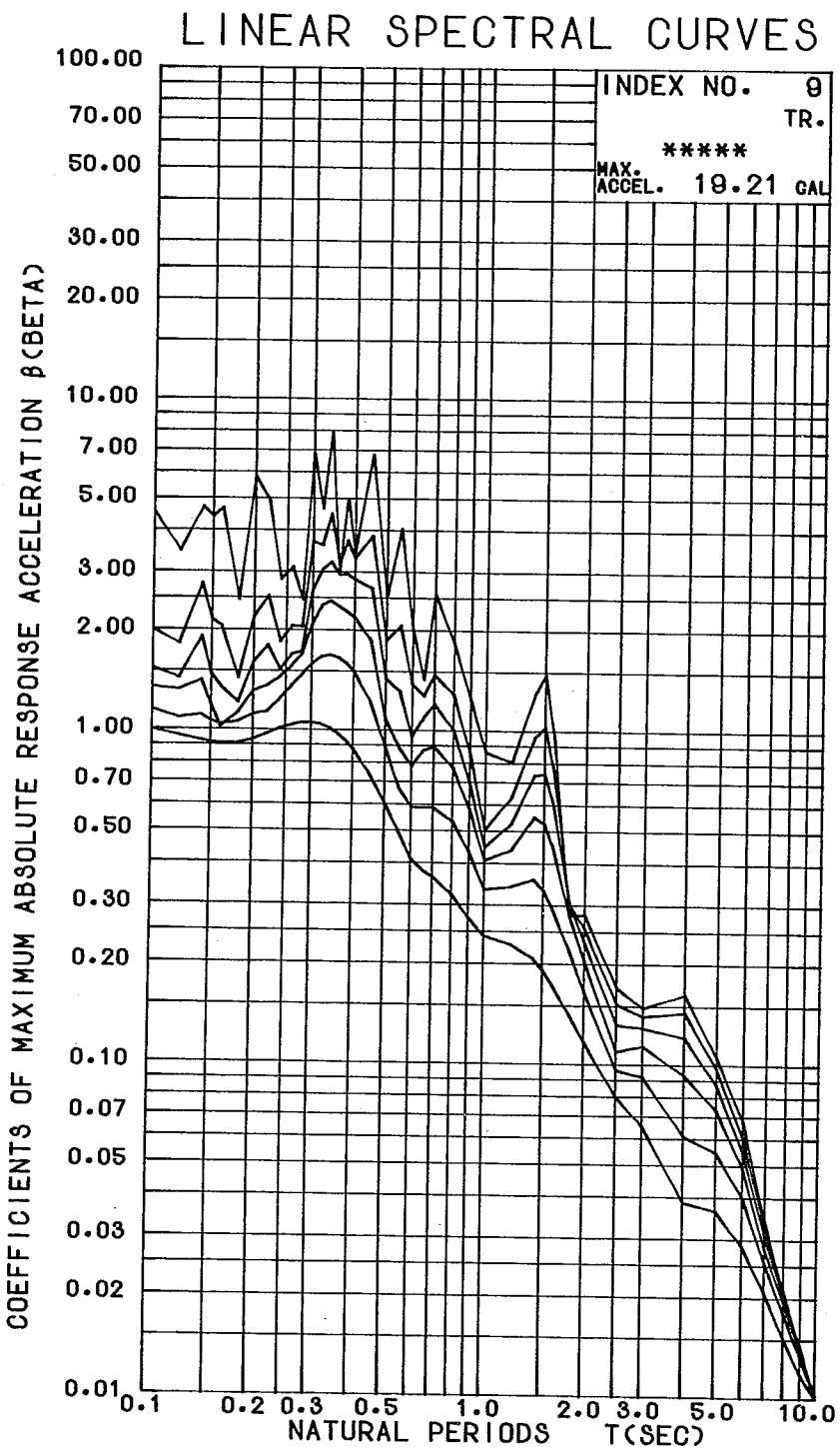


Figure IS-9 Linear Response Spectrum of Earthquake Record with Index Number 9

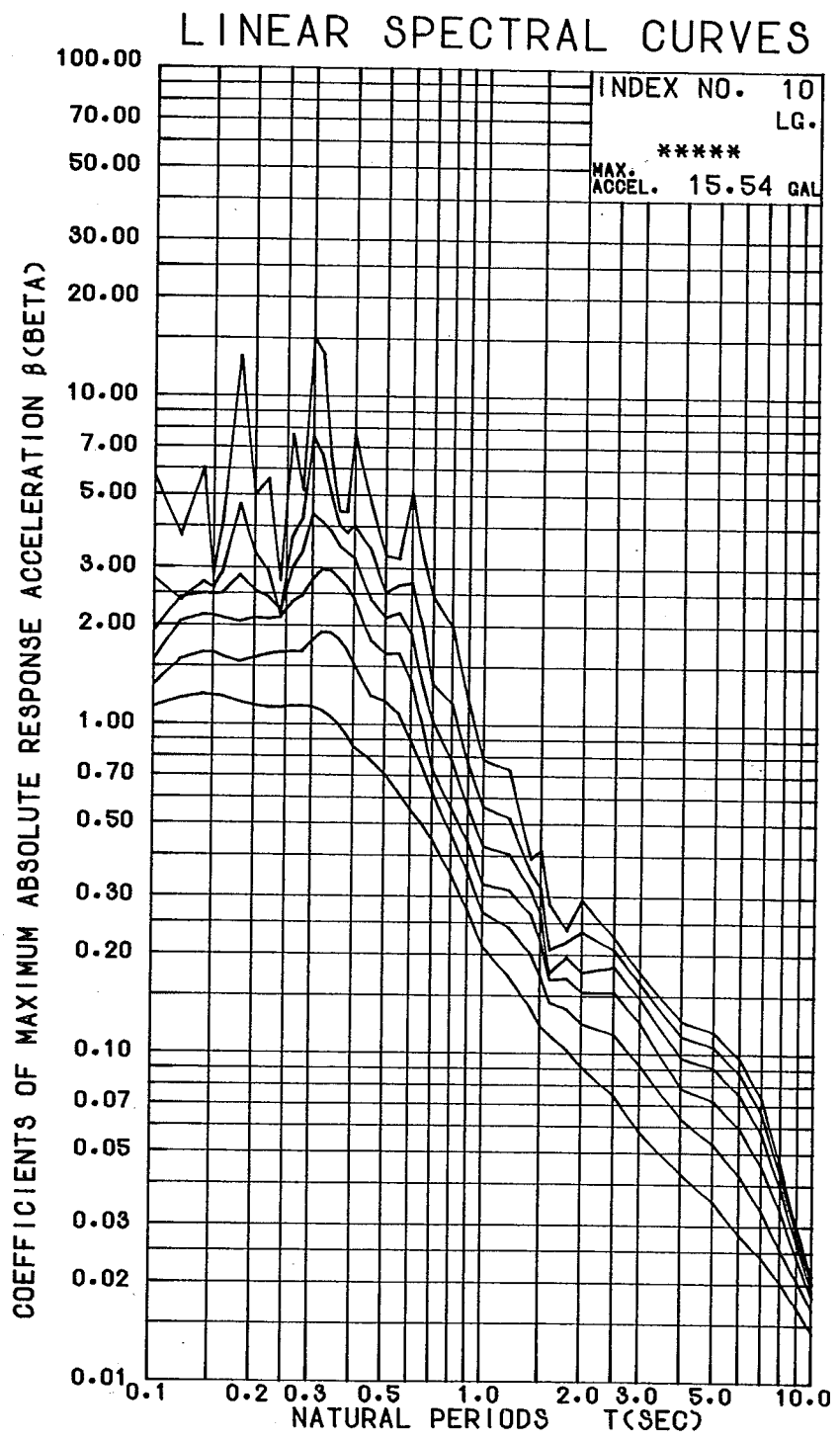


Figure IS-10 Linear Response Spectrum of Earthquake Record with Index Number 10

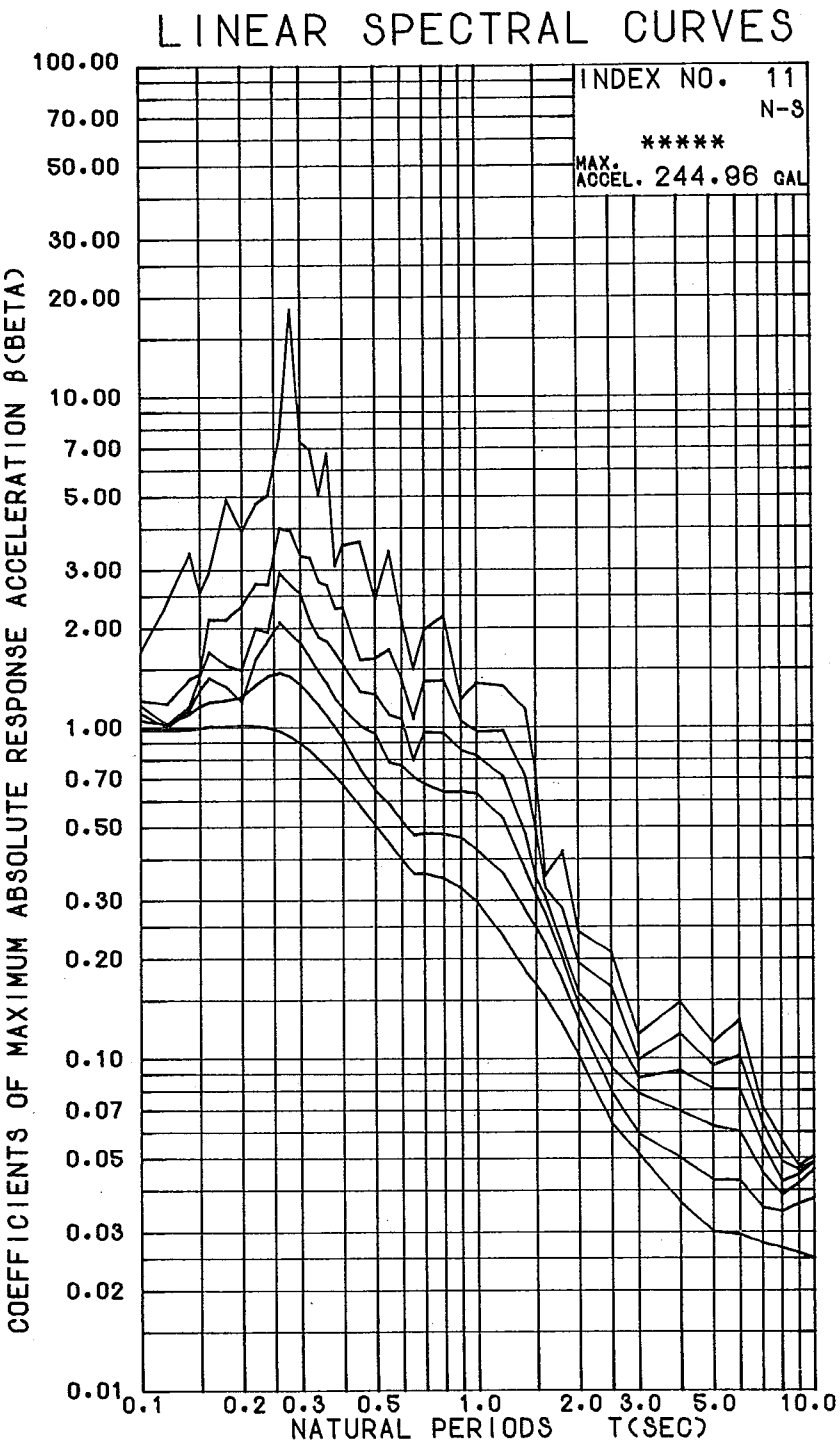


Figure IS-11 Linear Response Spectrum of Earthquake Record with Index Number 11

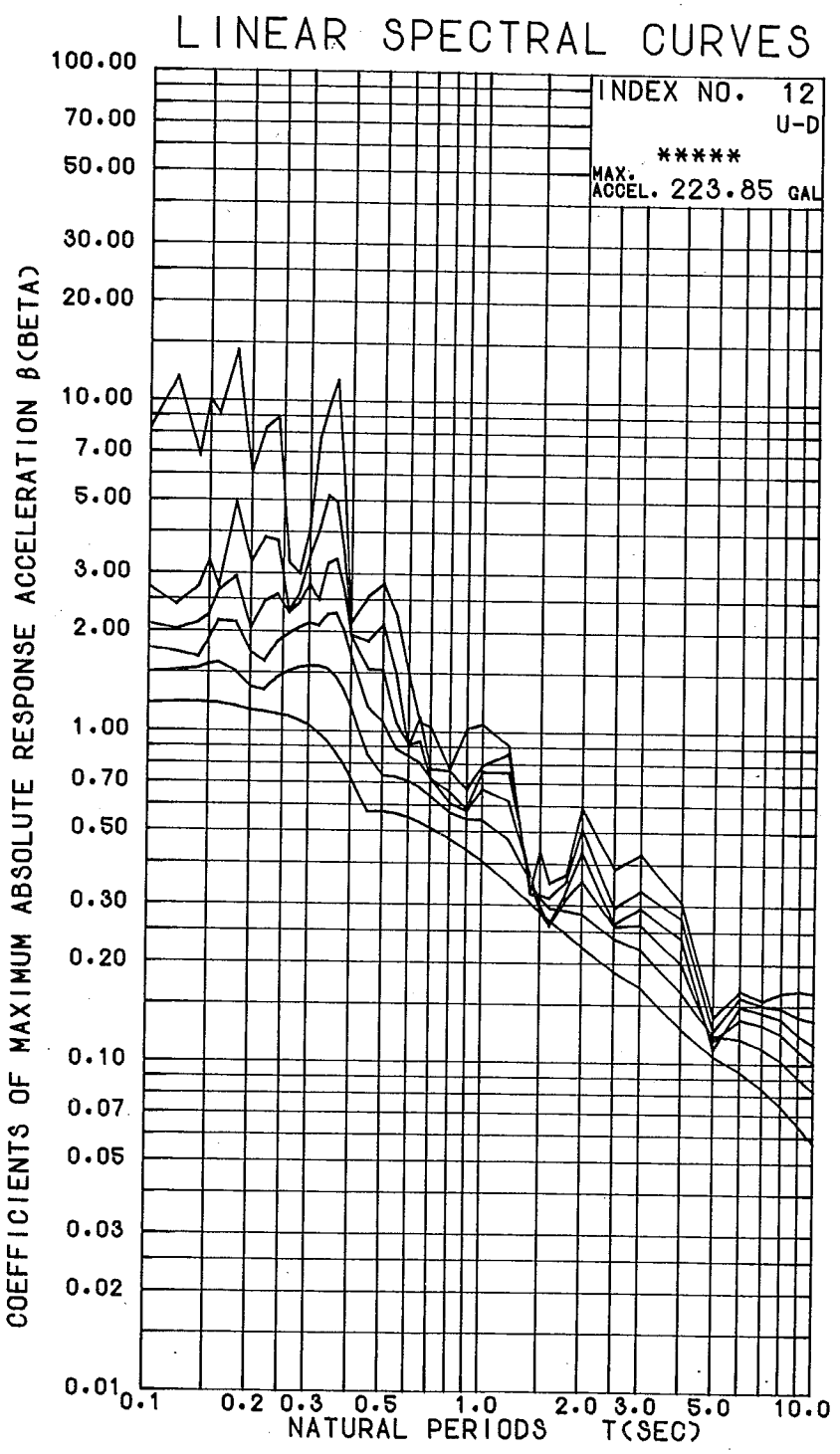


Figure IS-12 Linear Response Spectrum of Earthquake Record with Index Number 12

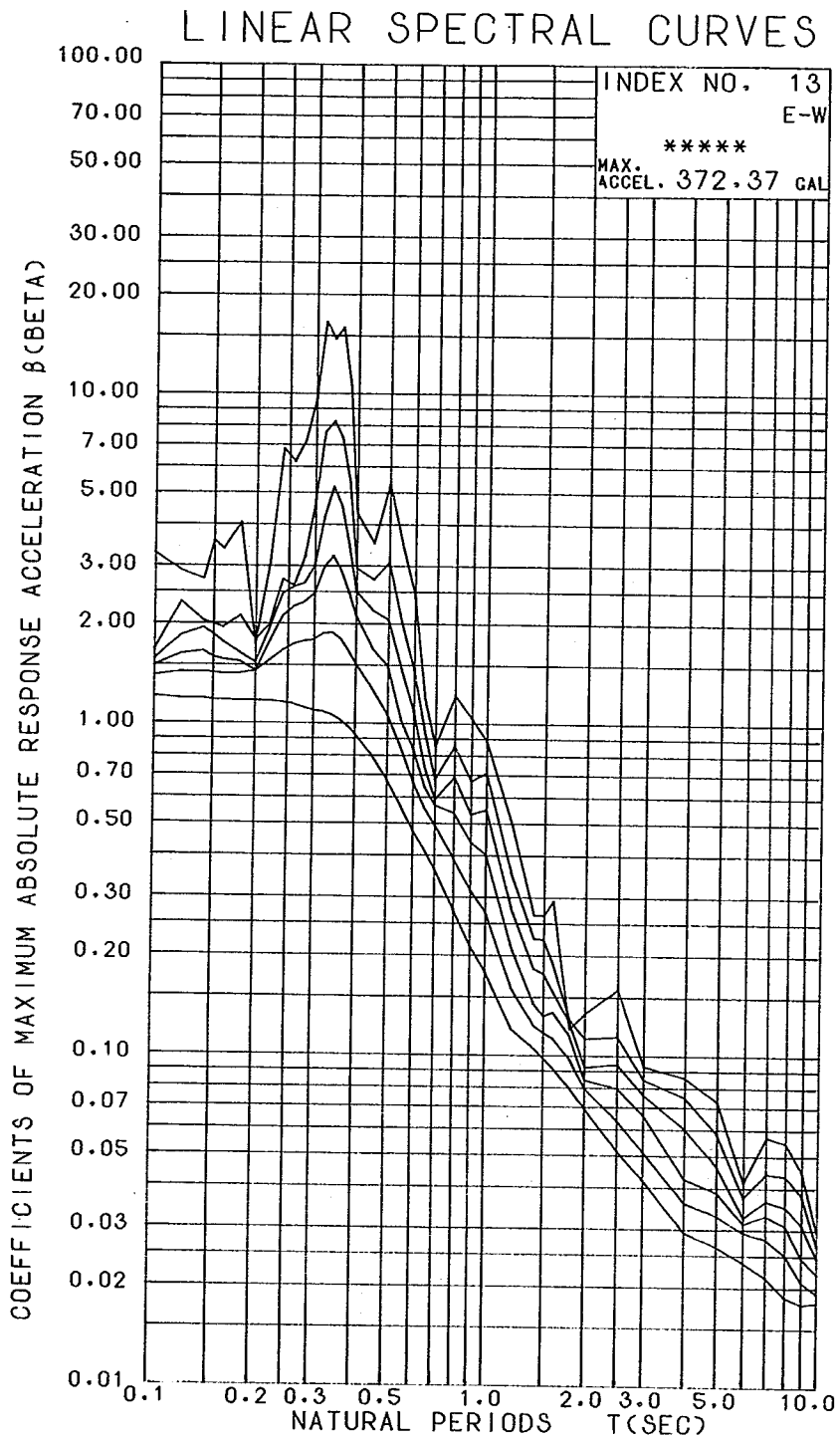


Figure IS-13 Linear Response Spectrum of Earthquake Record with Index Number 13

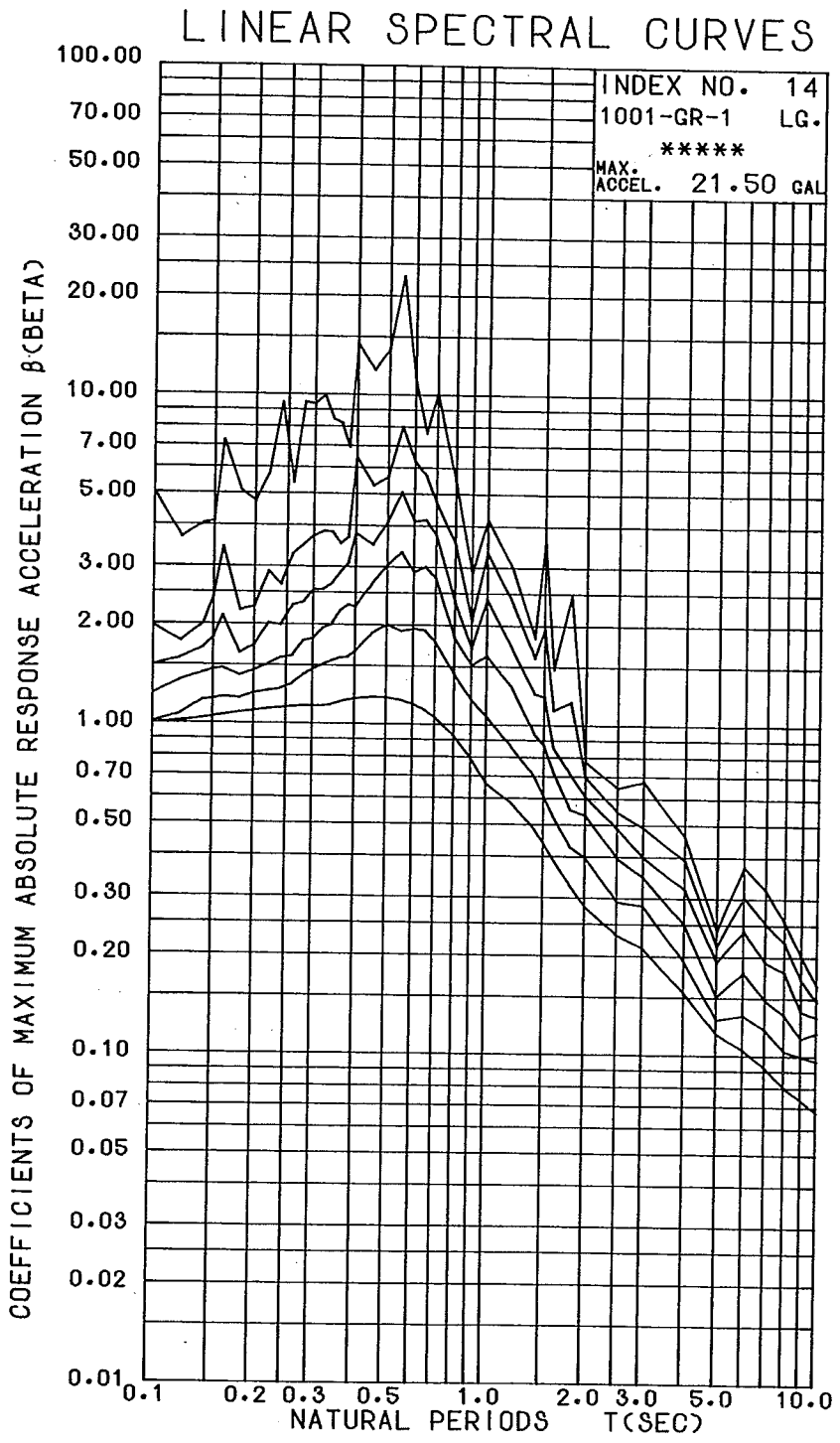


Figure IS-14 Linear Response Spectrum of Earthquake Record with Index Number 14

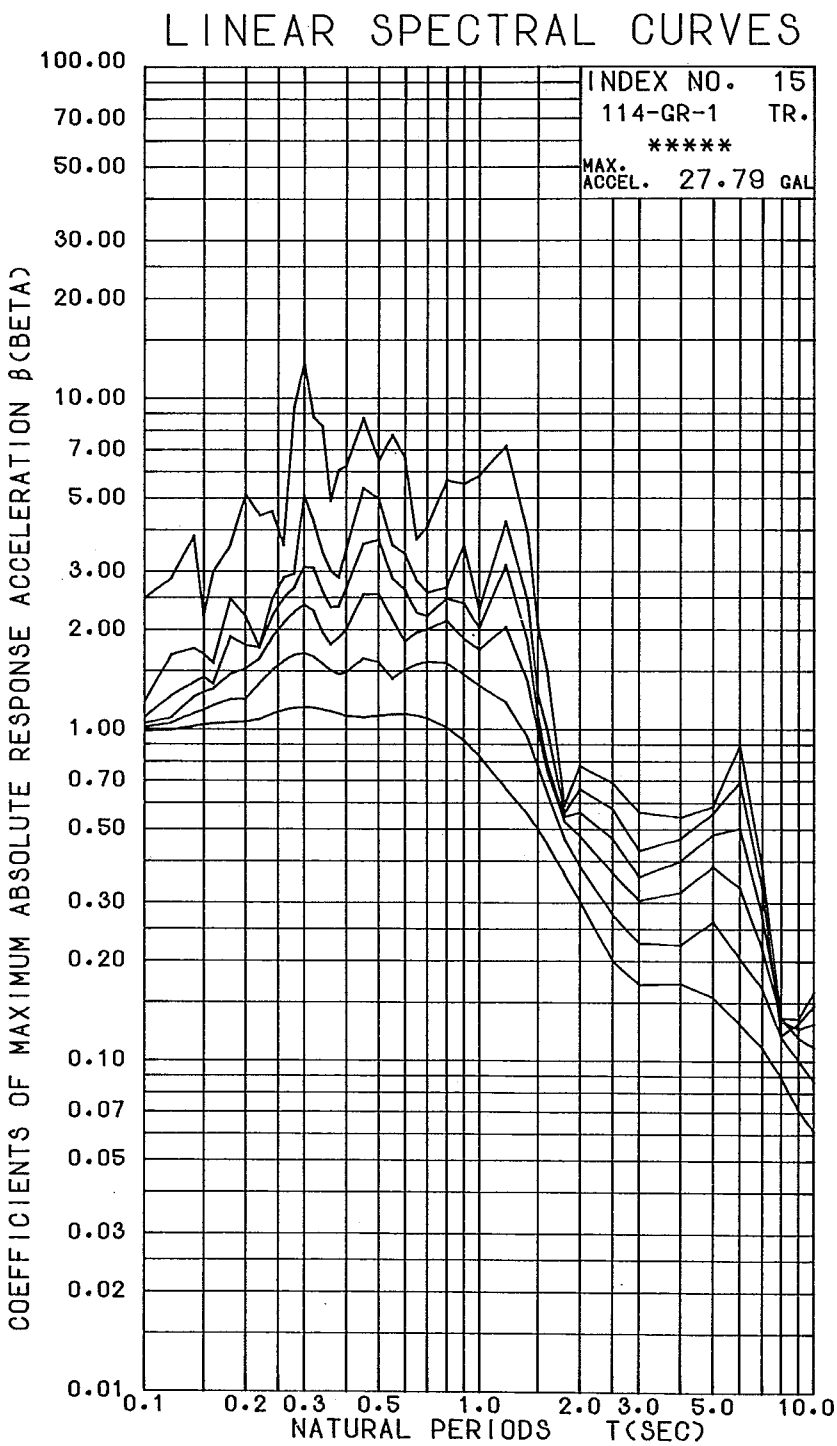


Figure IS-15 Linear Response Spectrum of Earthquake Record with Index Number 15

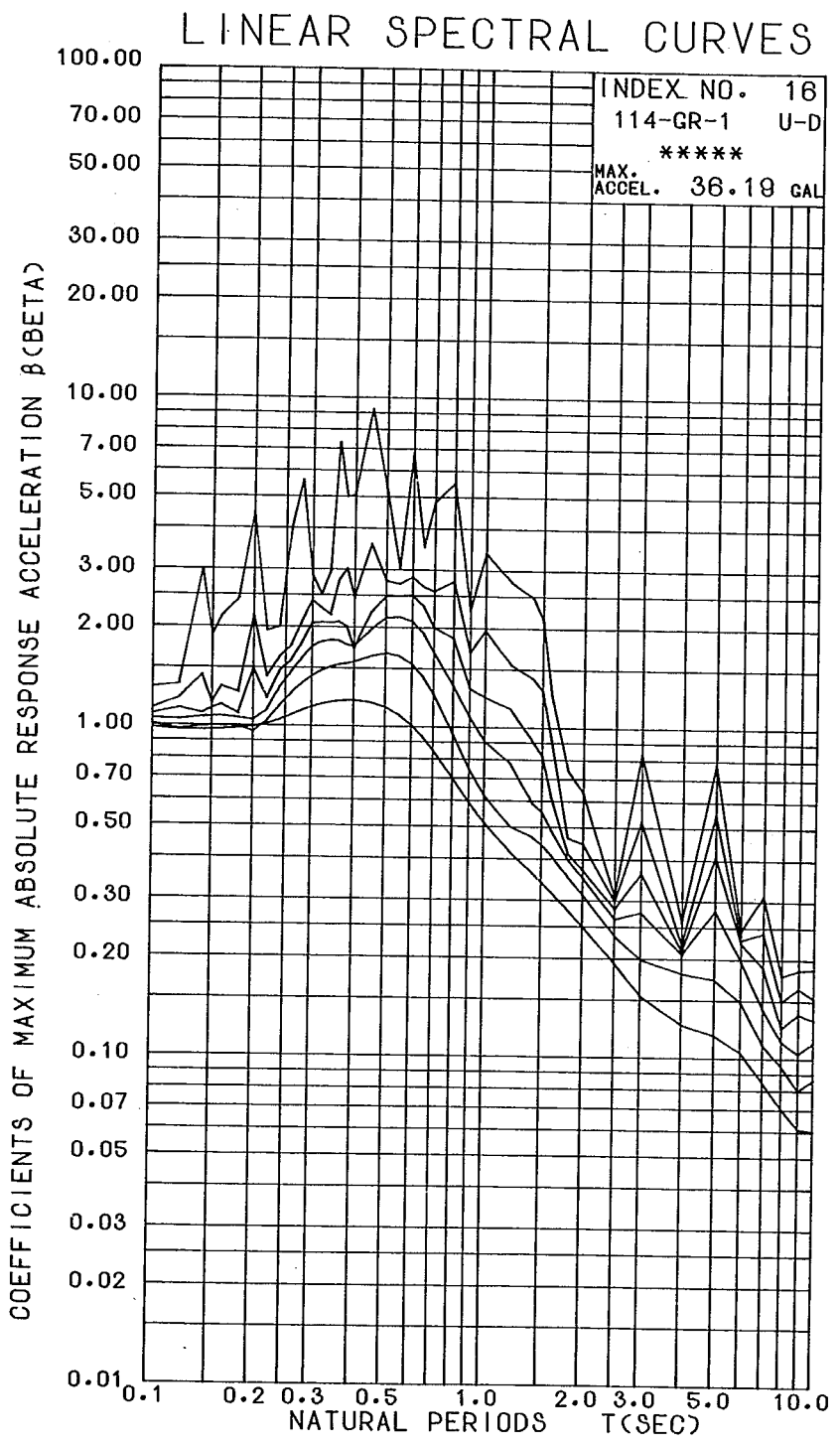


Figure IS-16 Linear Response Spectrum of Earthquake Record with Index Number 16

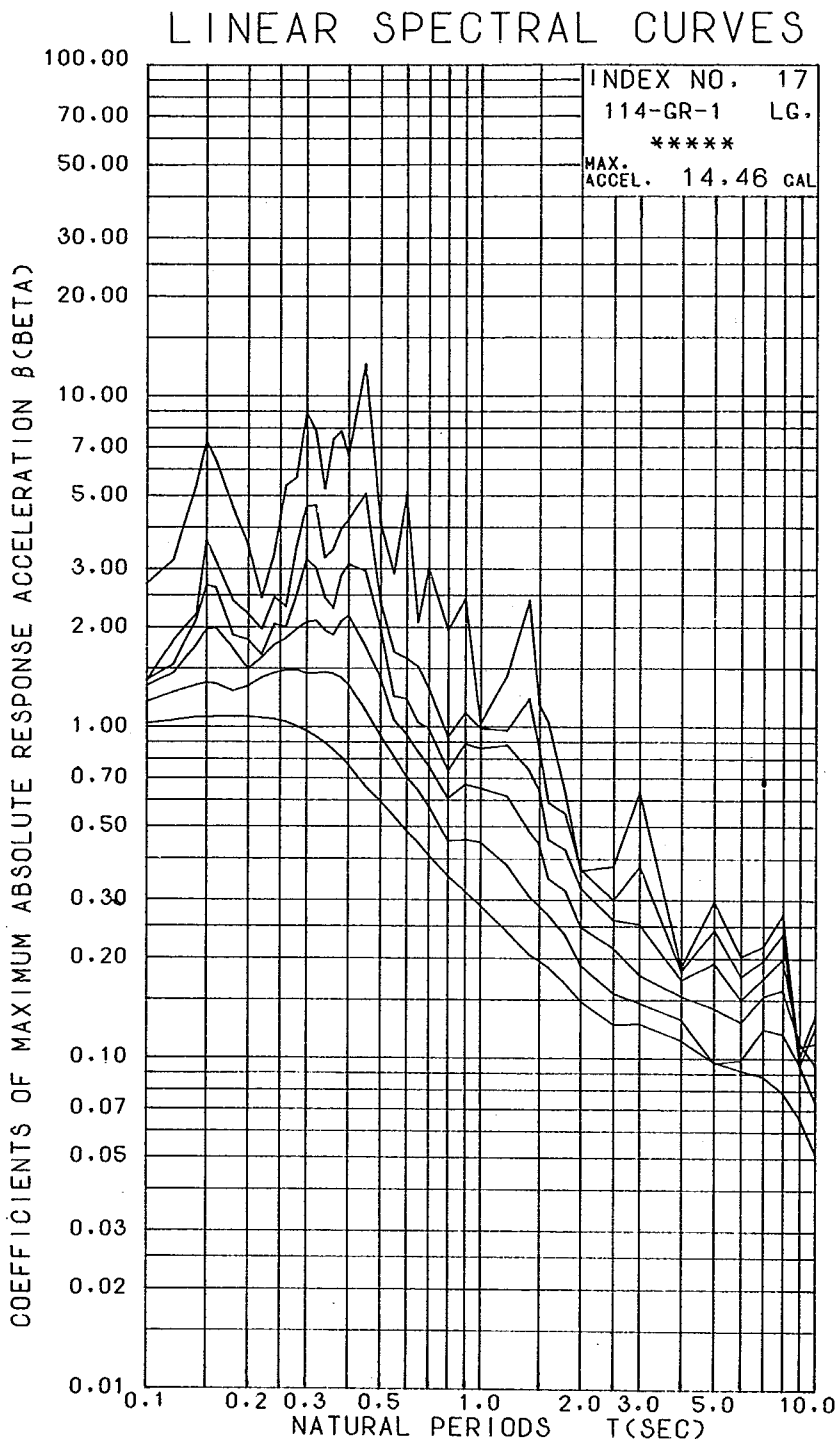


Figure IS-17 Linear Response Spectrum of Earthquake Record with Index Number 17

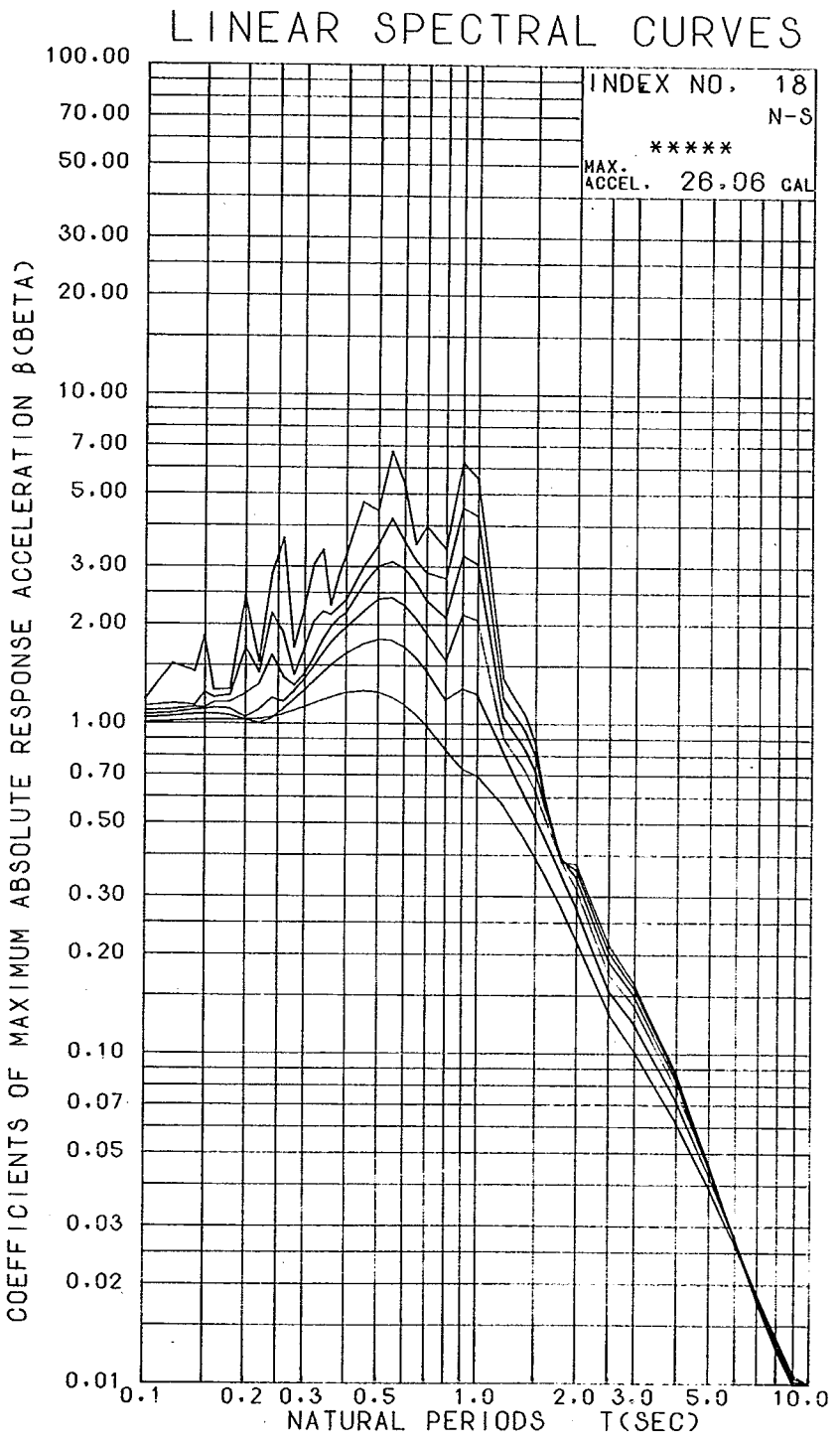


Figure IS-18 Linear Response Spectrum of Earthquake Record with Index Number 18

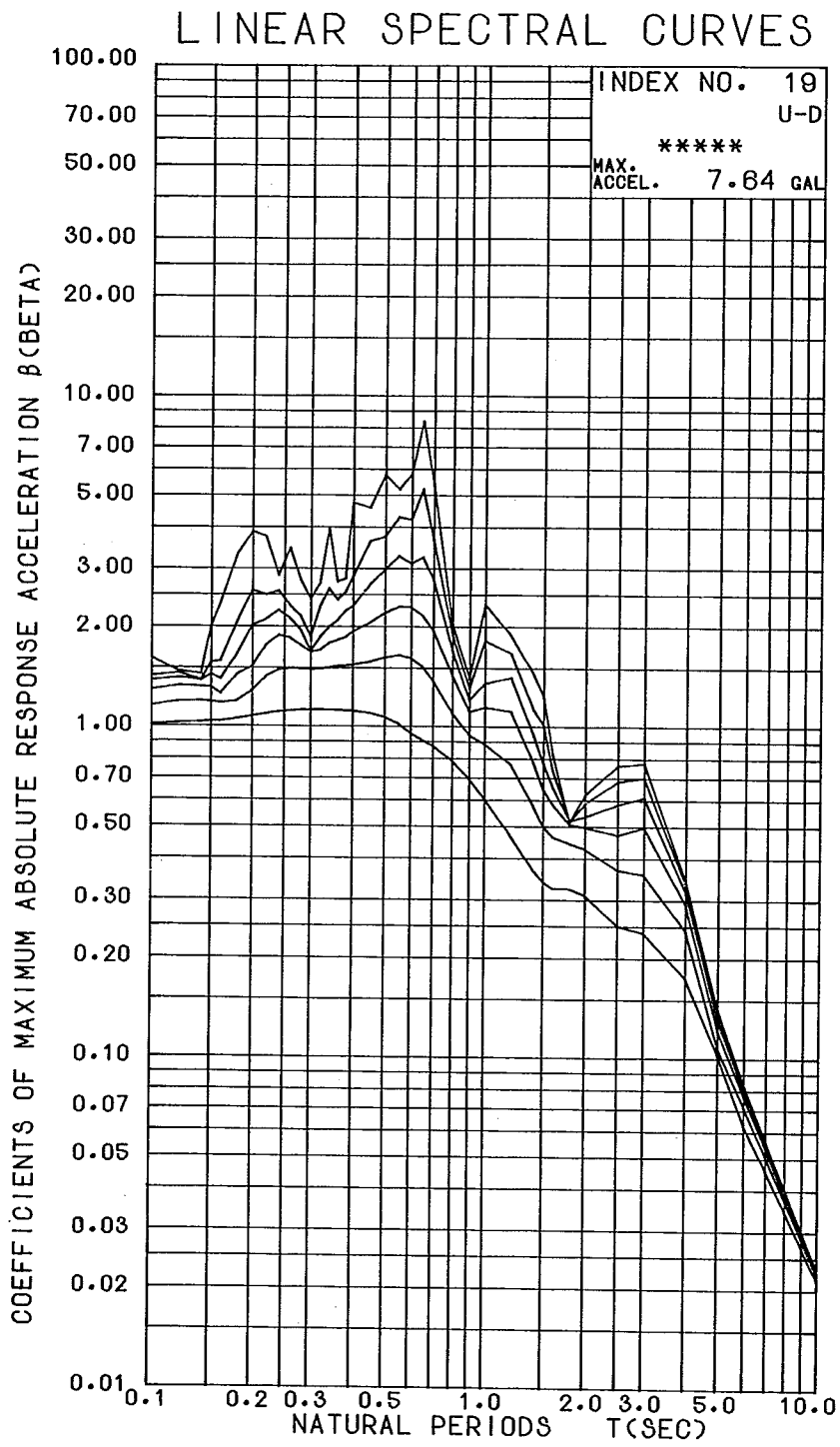


Figure IS-19 Linear Response Spectrum of Earthquake Record with Index Number 19

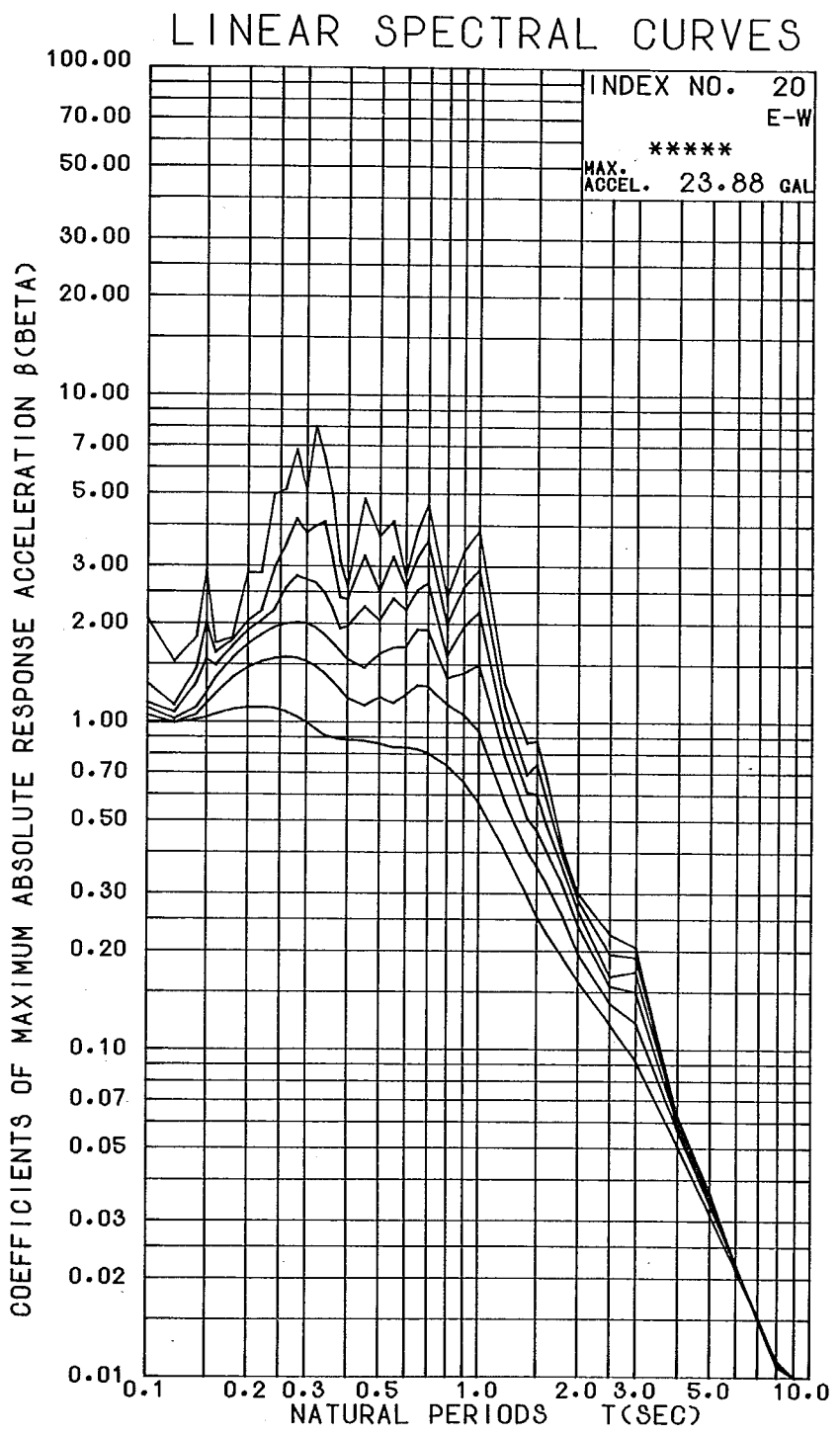


Figure IS-20 Linear Response Spectrum of Earthquake Record with Index Number 20

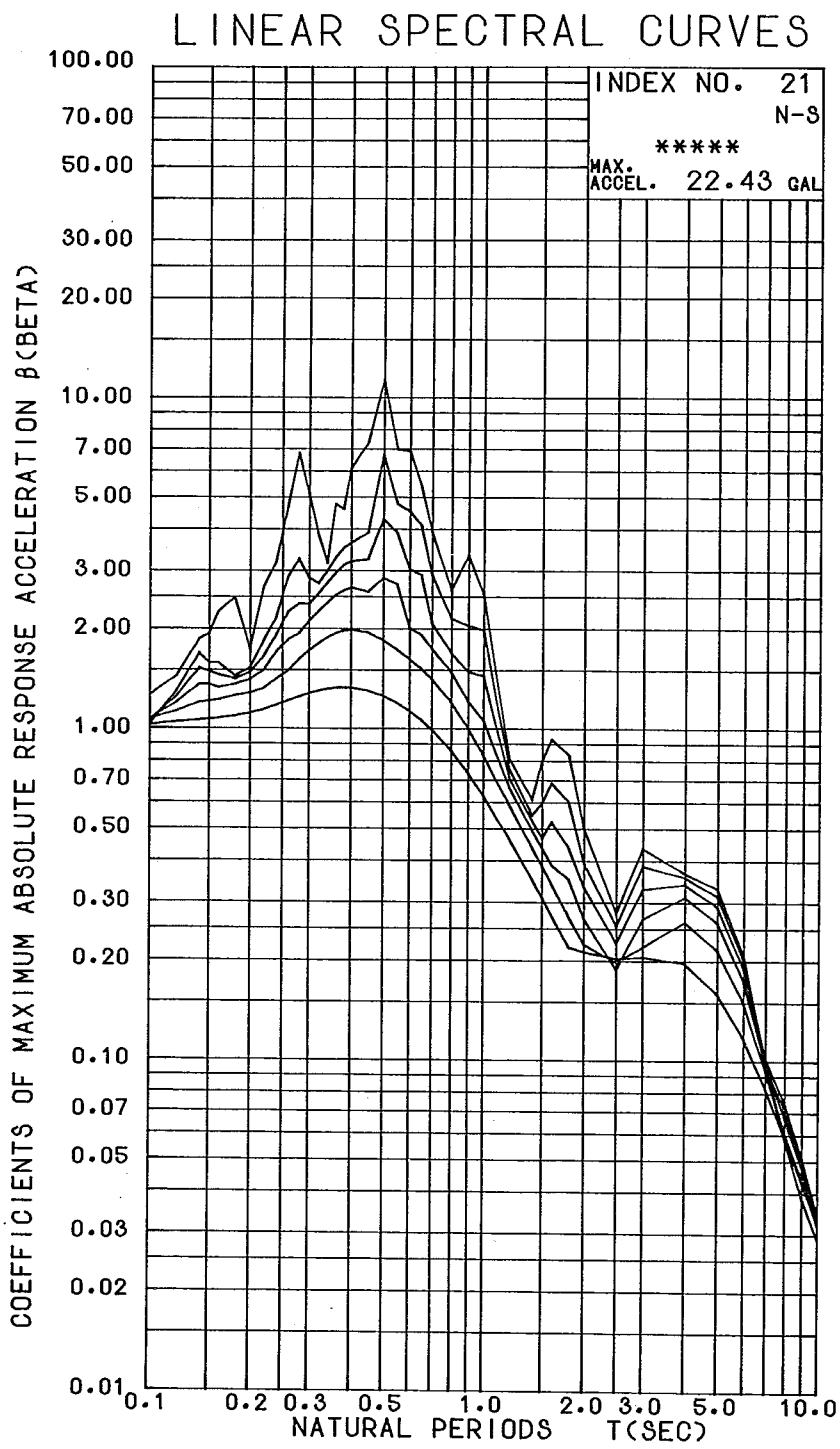


Figure IS-21 Linear Response Spectrum of Earthquake Record with Index Number 21

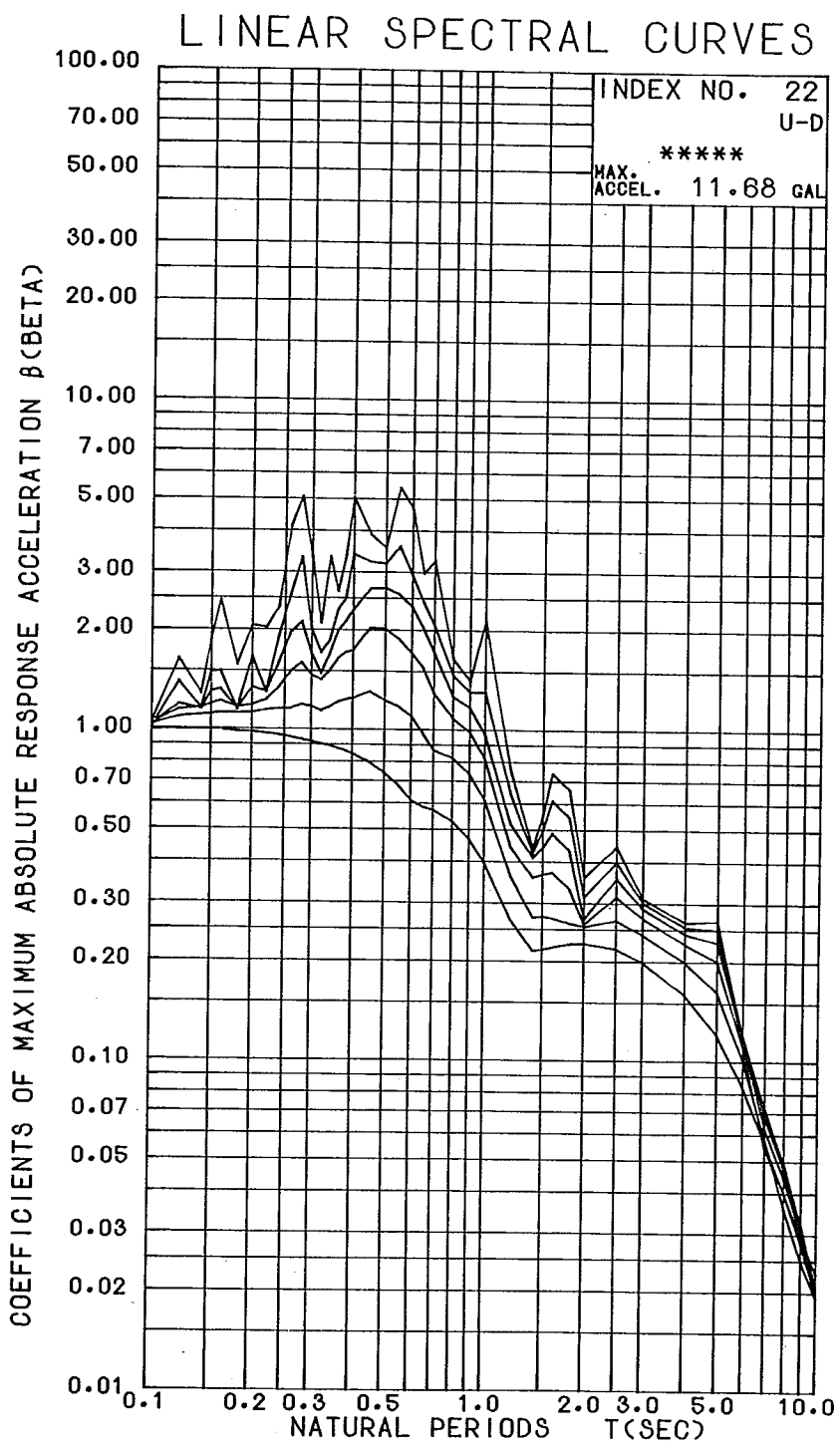


Figure IS-22 Linear Response Spectrum of Earthquake Record with Index Number 22

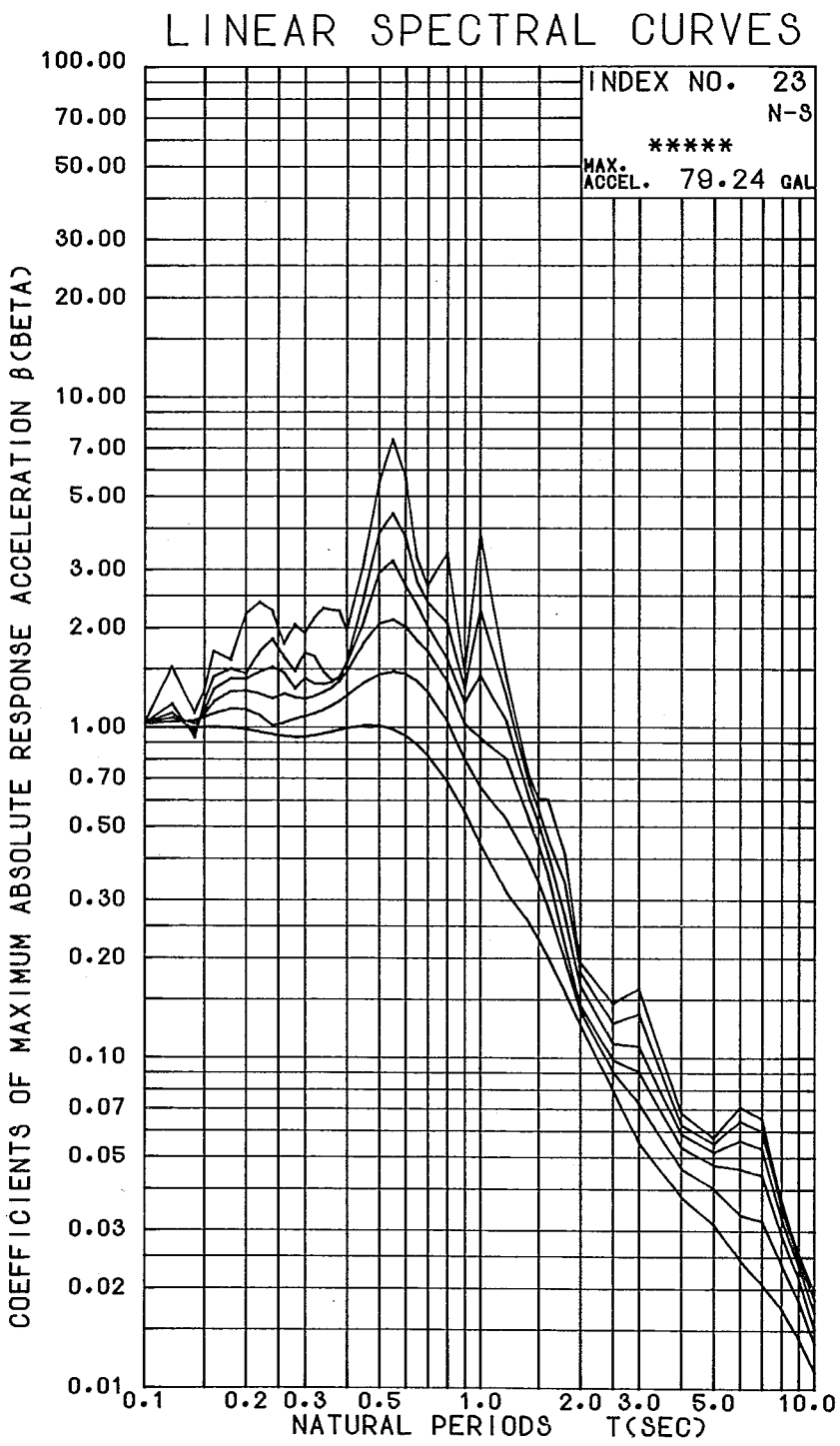


Figure IS-23 Linear Response Spectrum of Earthquake Record with Index Number 23

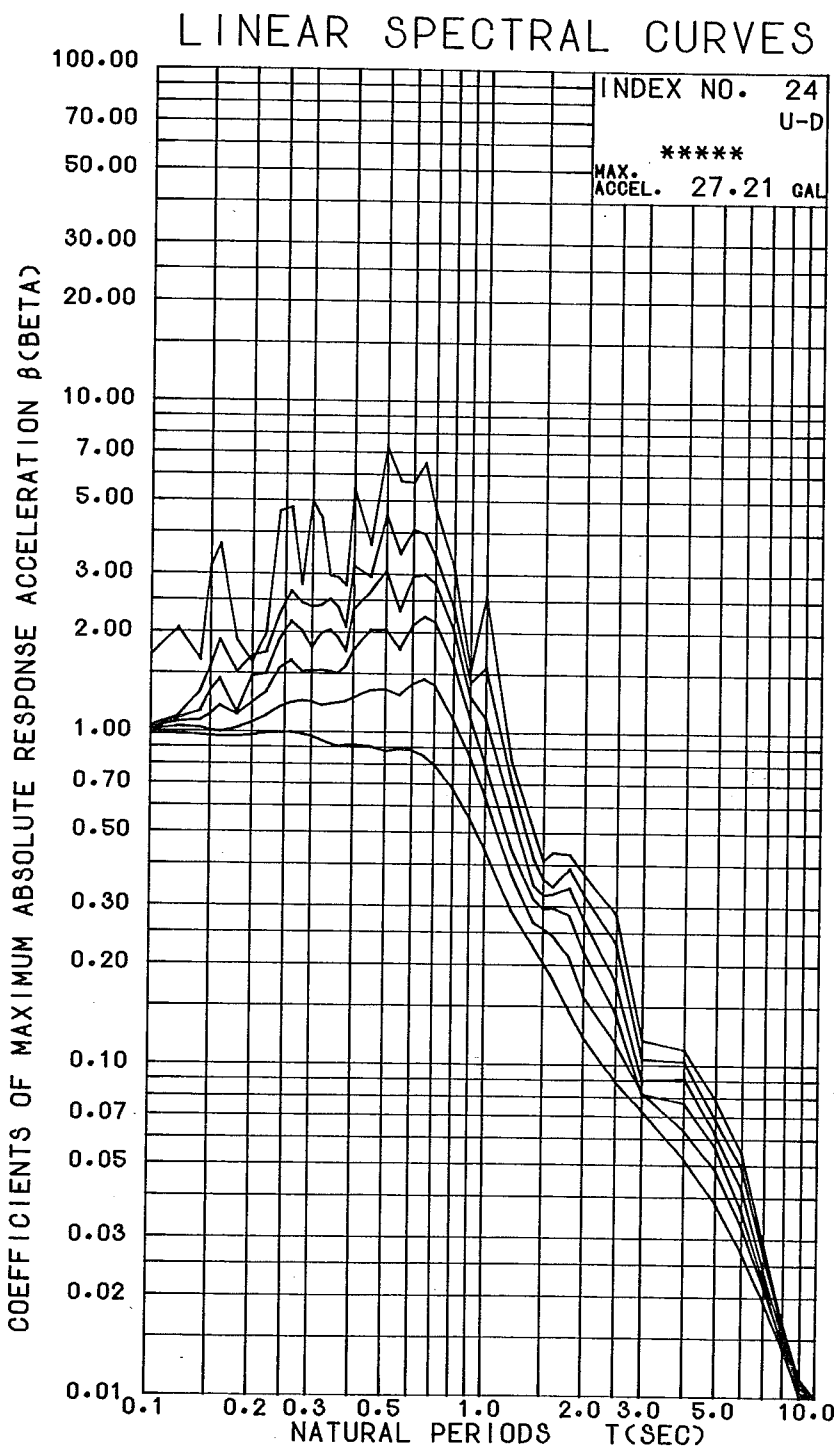


Figure IS-24 Linear Response Spectrum of Earthquake Record with Index Number 24

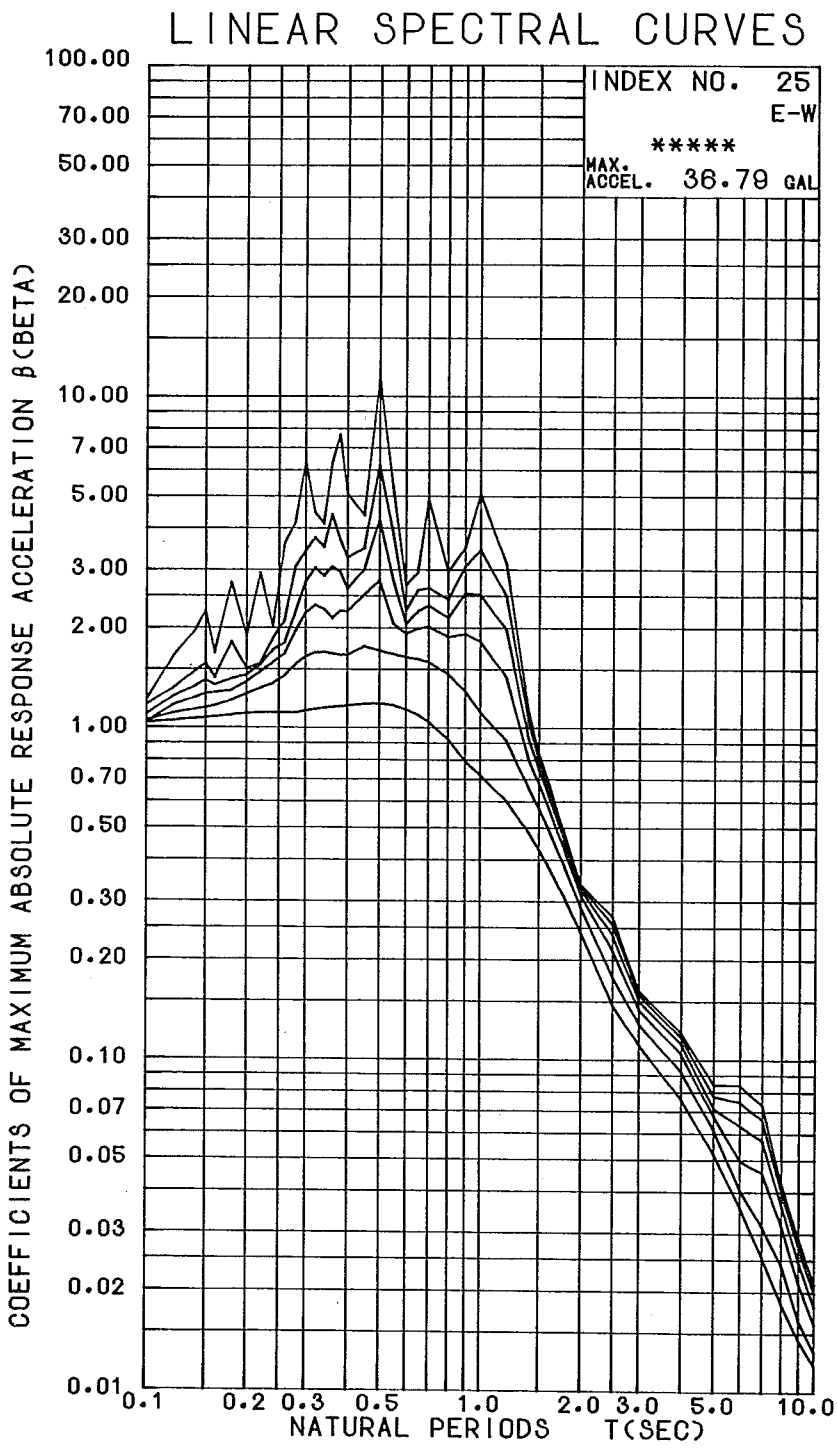


Figure IS-25 Linear Response Spectrum of Earthquake Record with Index Number 25

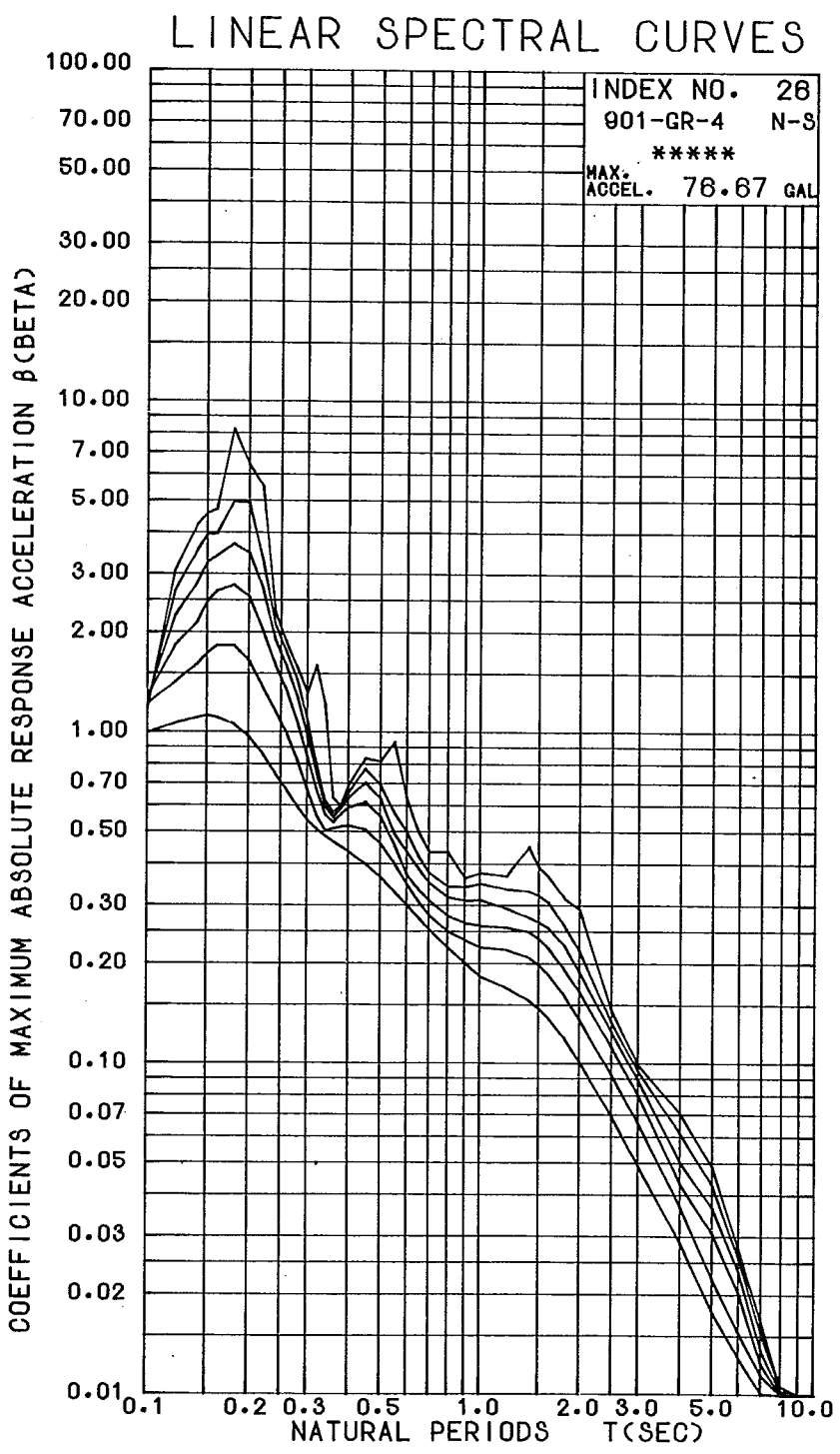


Figure IS-26 Linear Response Spectrum of Earthquake Record with Index Number 26

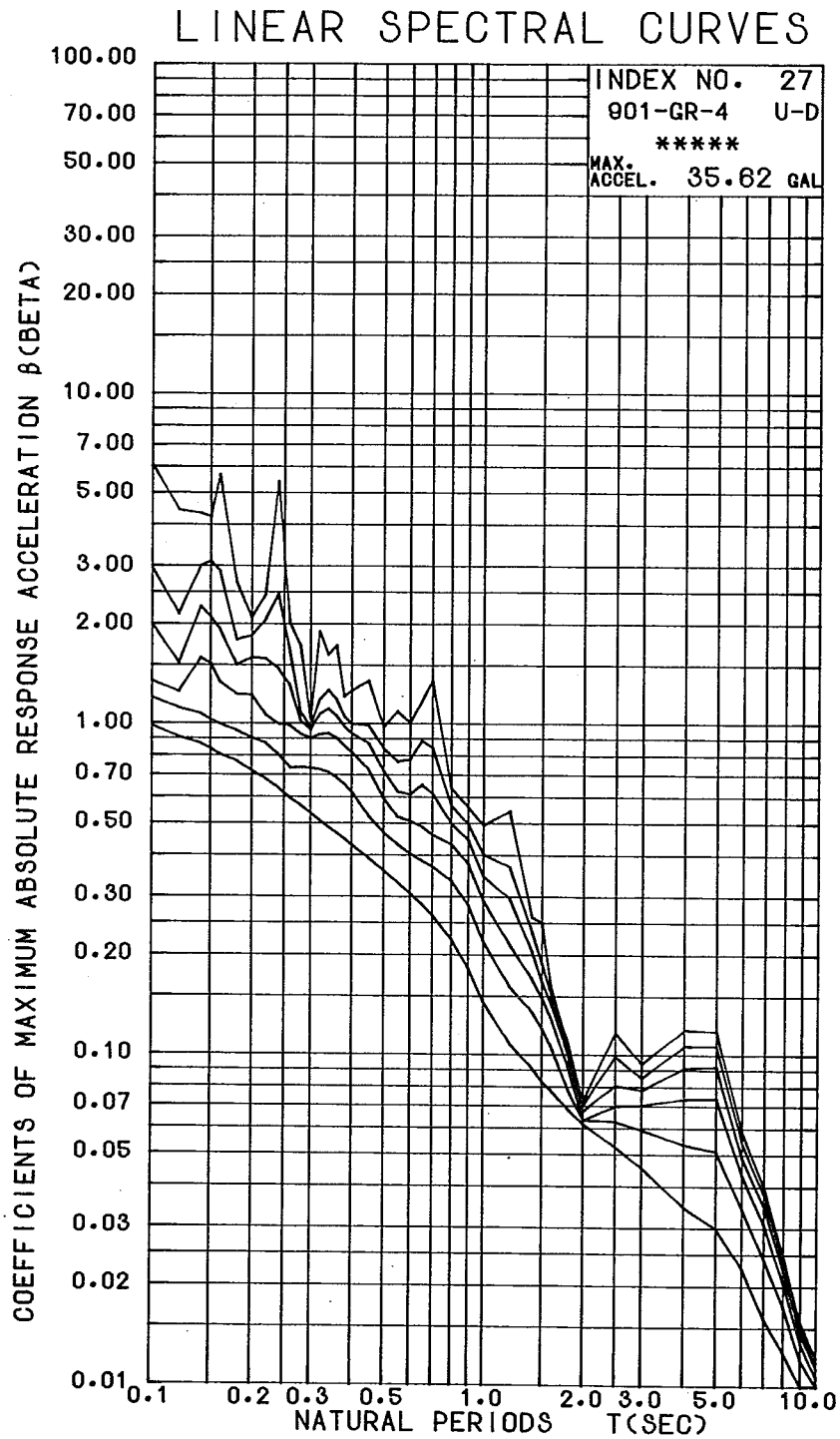


Figure IS-27 Linear Response Spectrum of Earthquake Record with Index Number 27

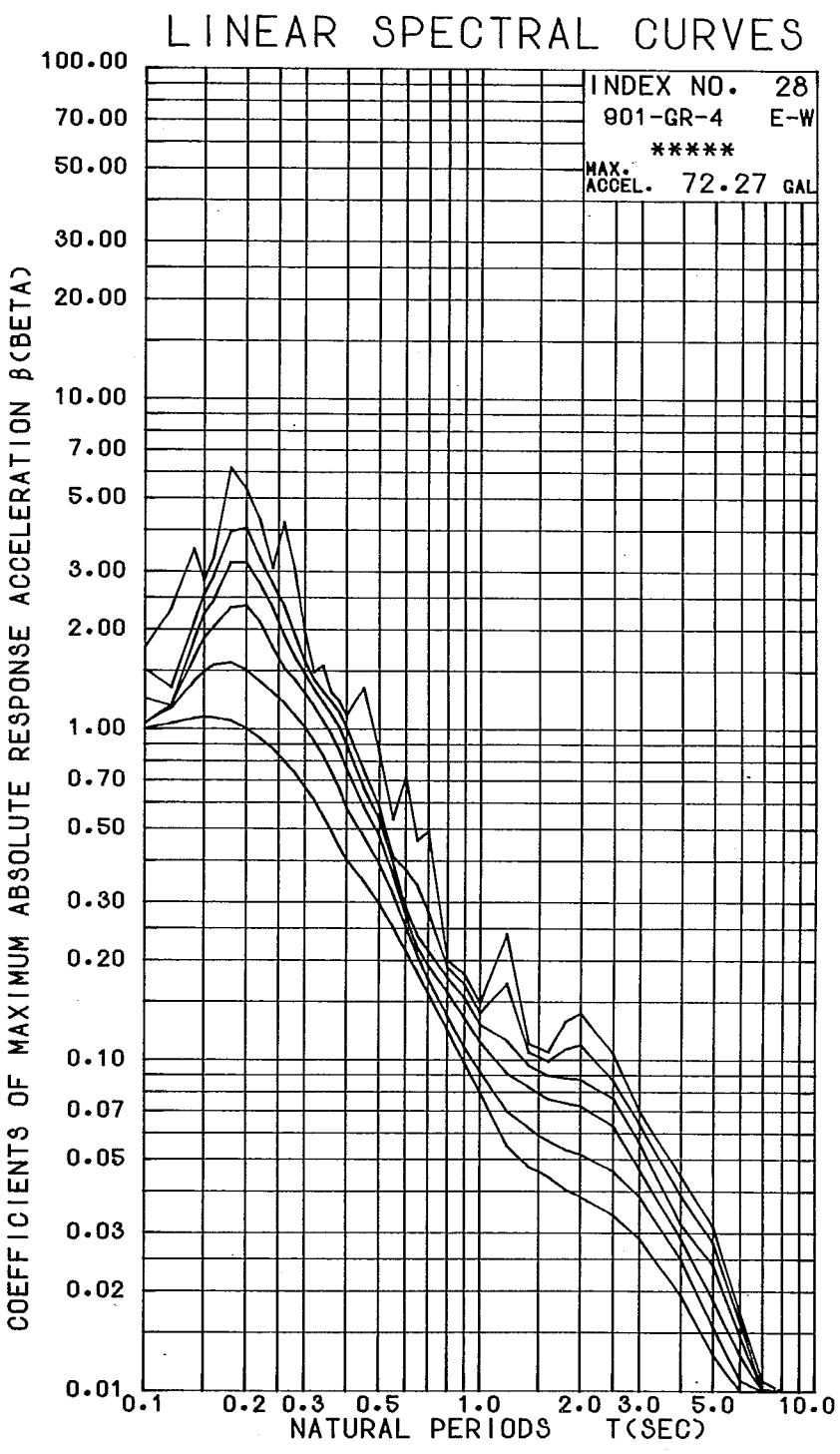


Figure IS-28 Linear Response Spectrum of Earthquake Record with Index Number 28

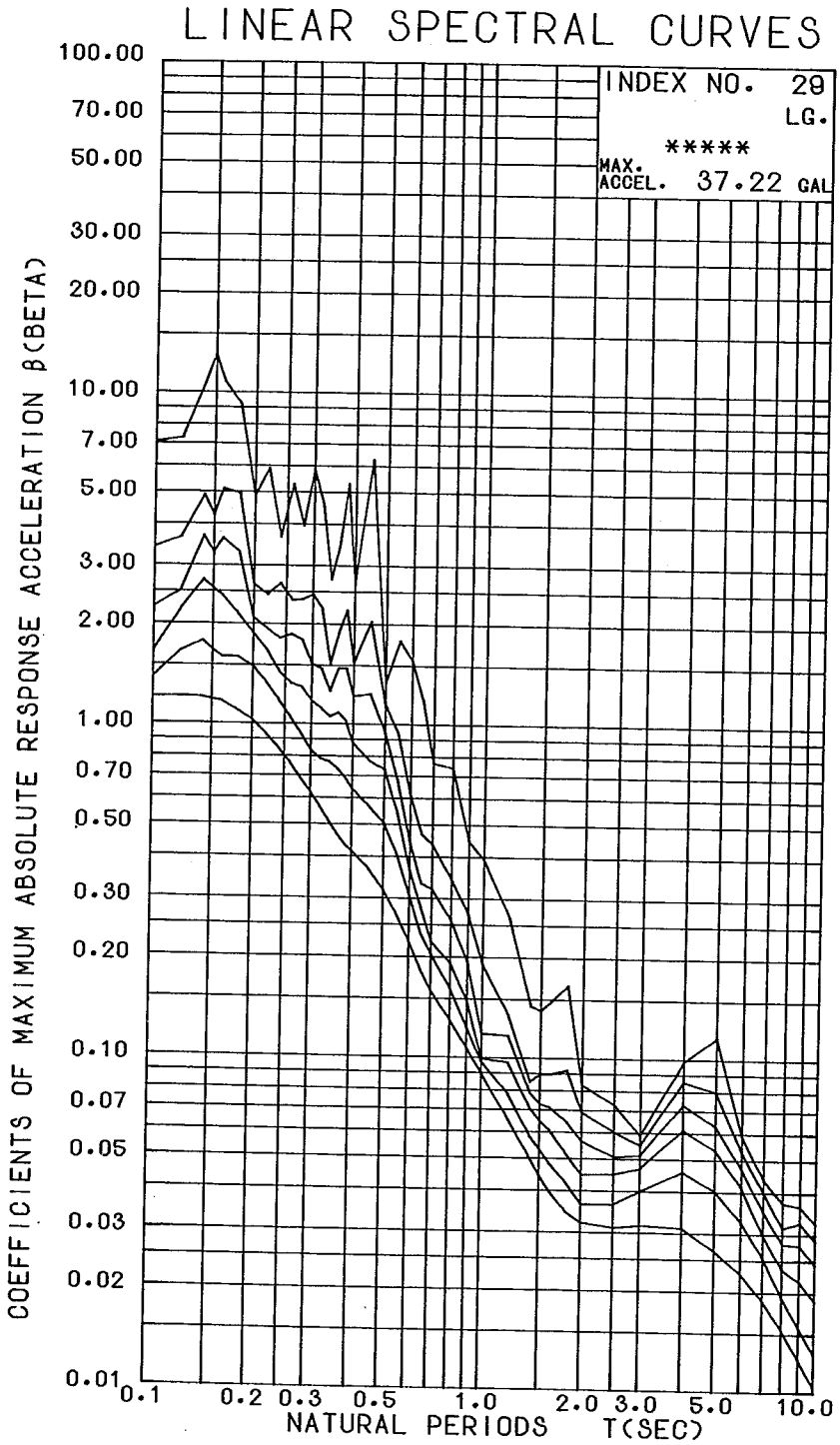


Figure IS-29 Linear Response Spectrum of Earthquake Record with Index Number 29

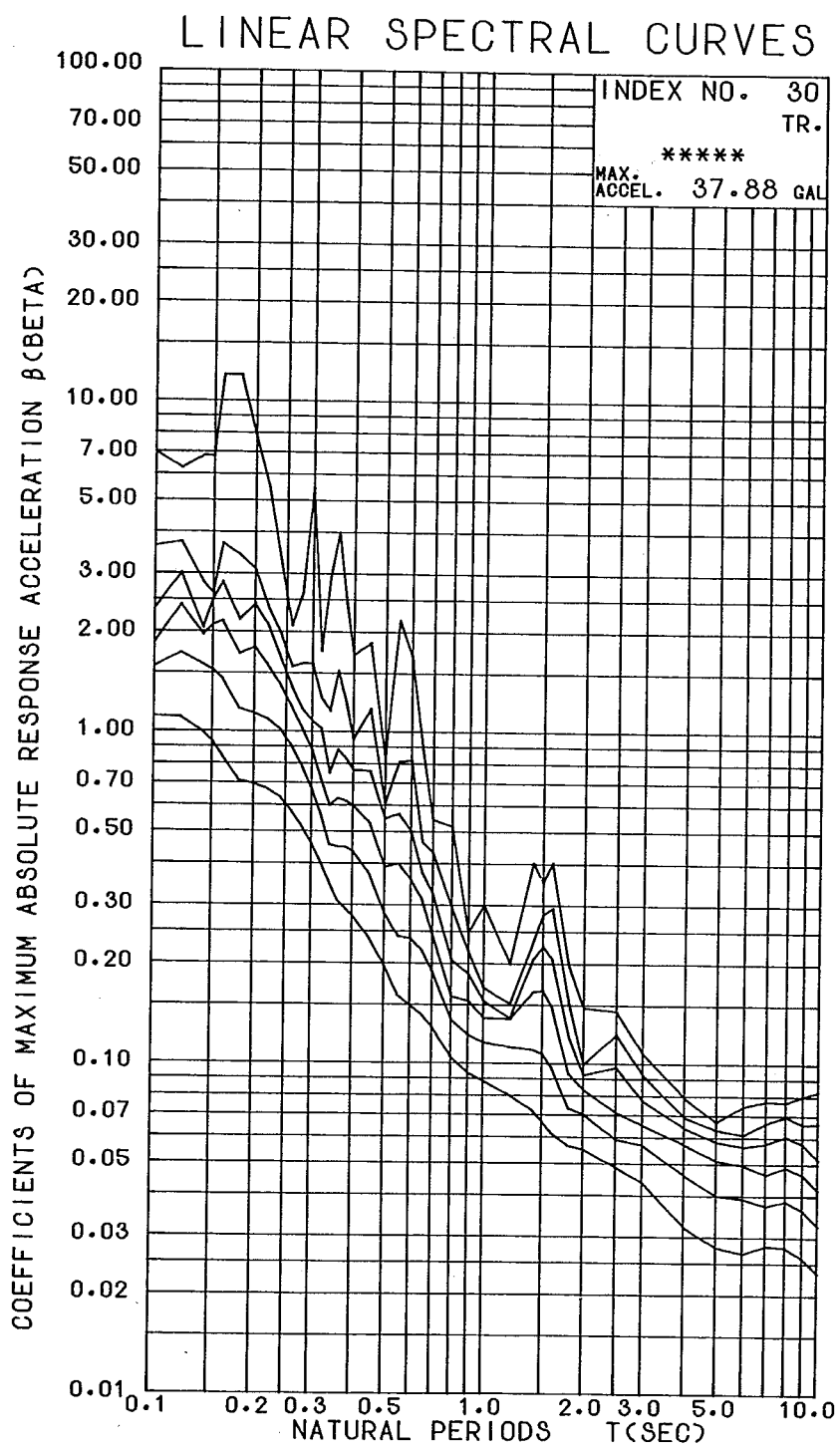


Figure IS-30 Linear Response Spectrum of Earthquake Record with Index Number 30

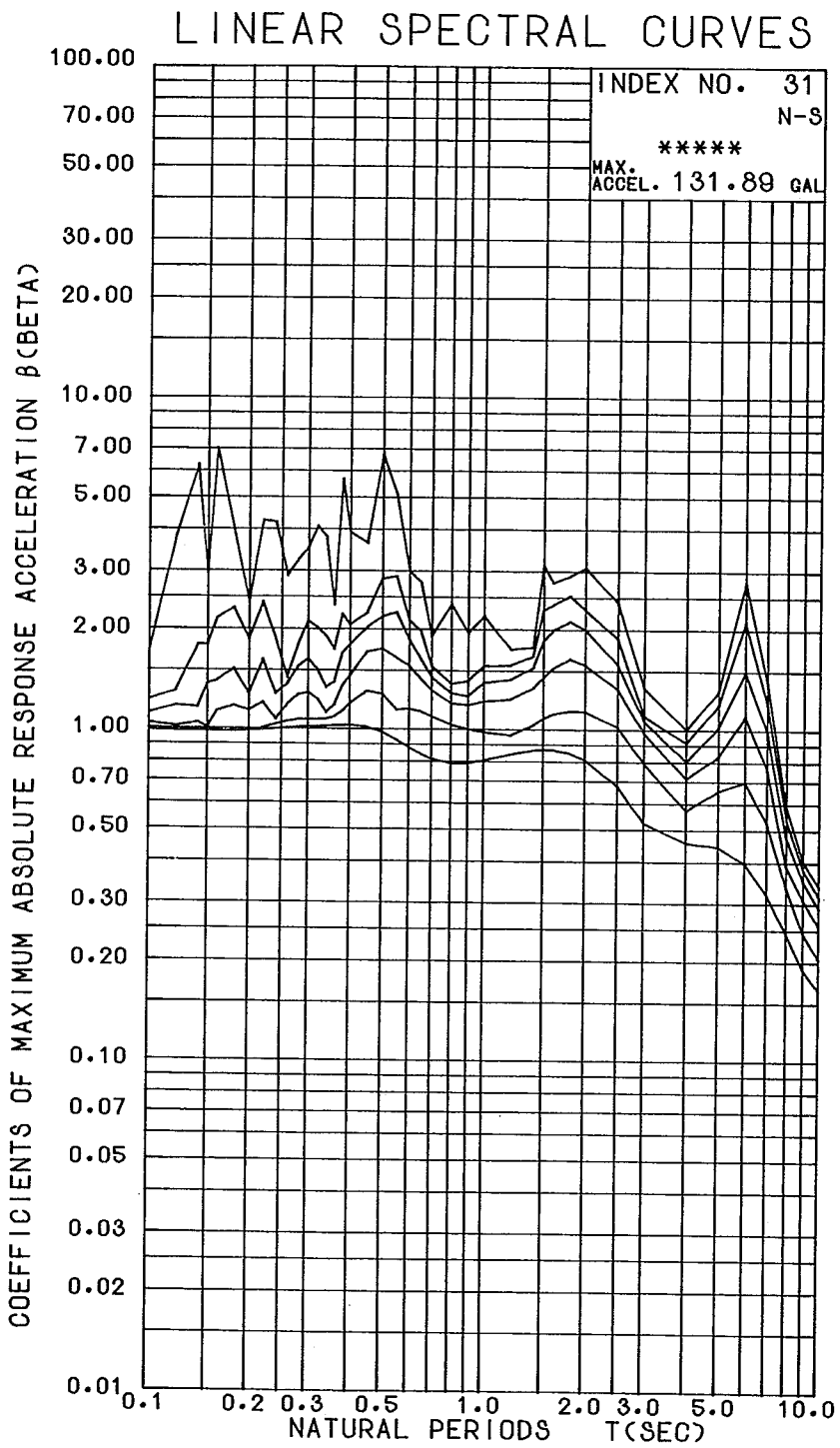


Figure IS-31 Linear Response Spectrum of Earthquake Record with Index Number 31

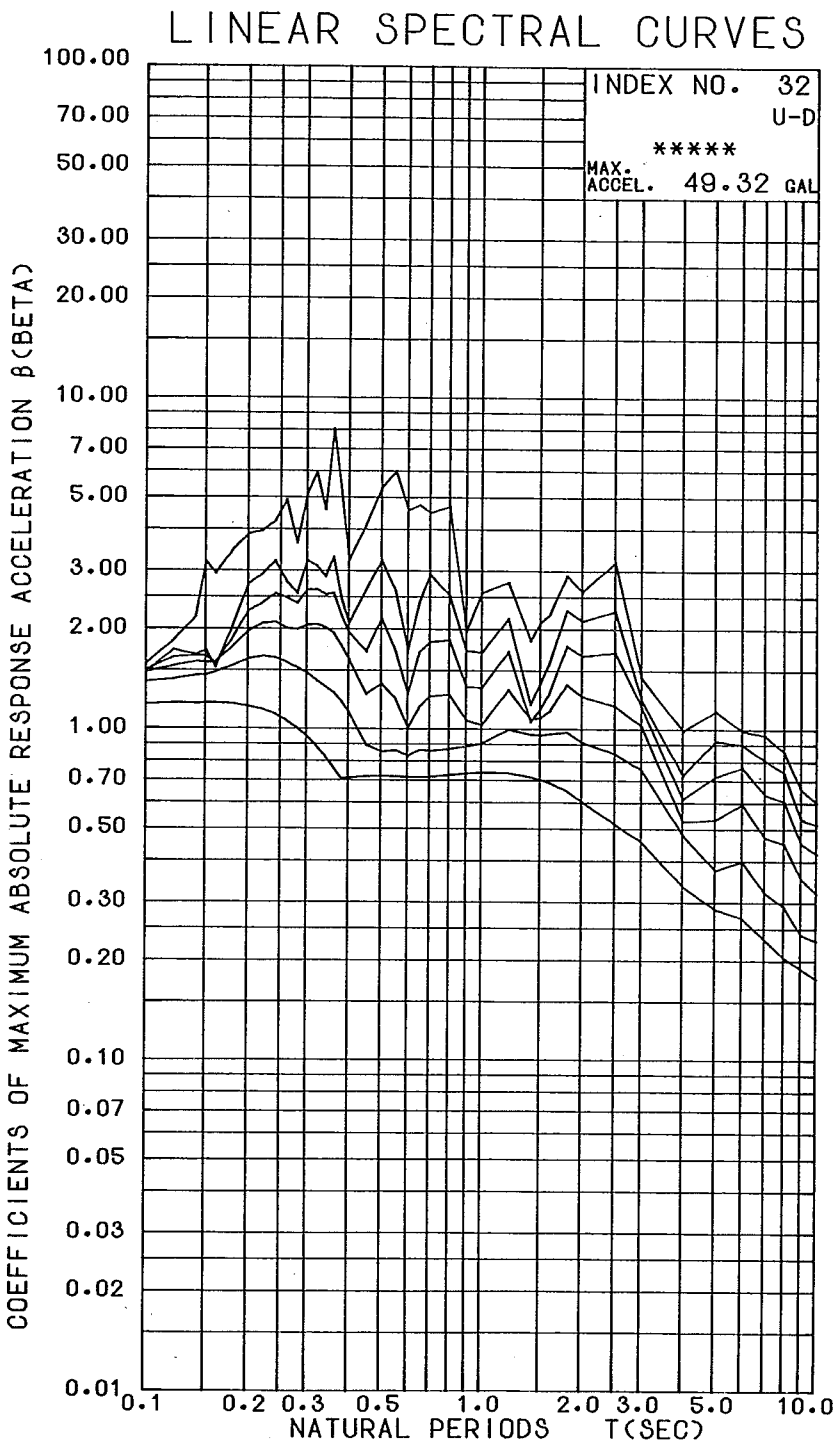


Figure IS-32 Linear Response Spectrum of Earthquake Record with Index Number 32

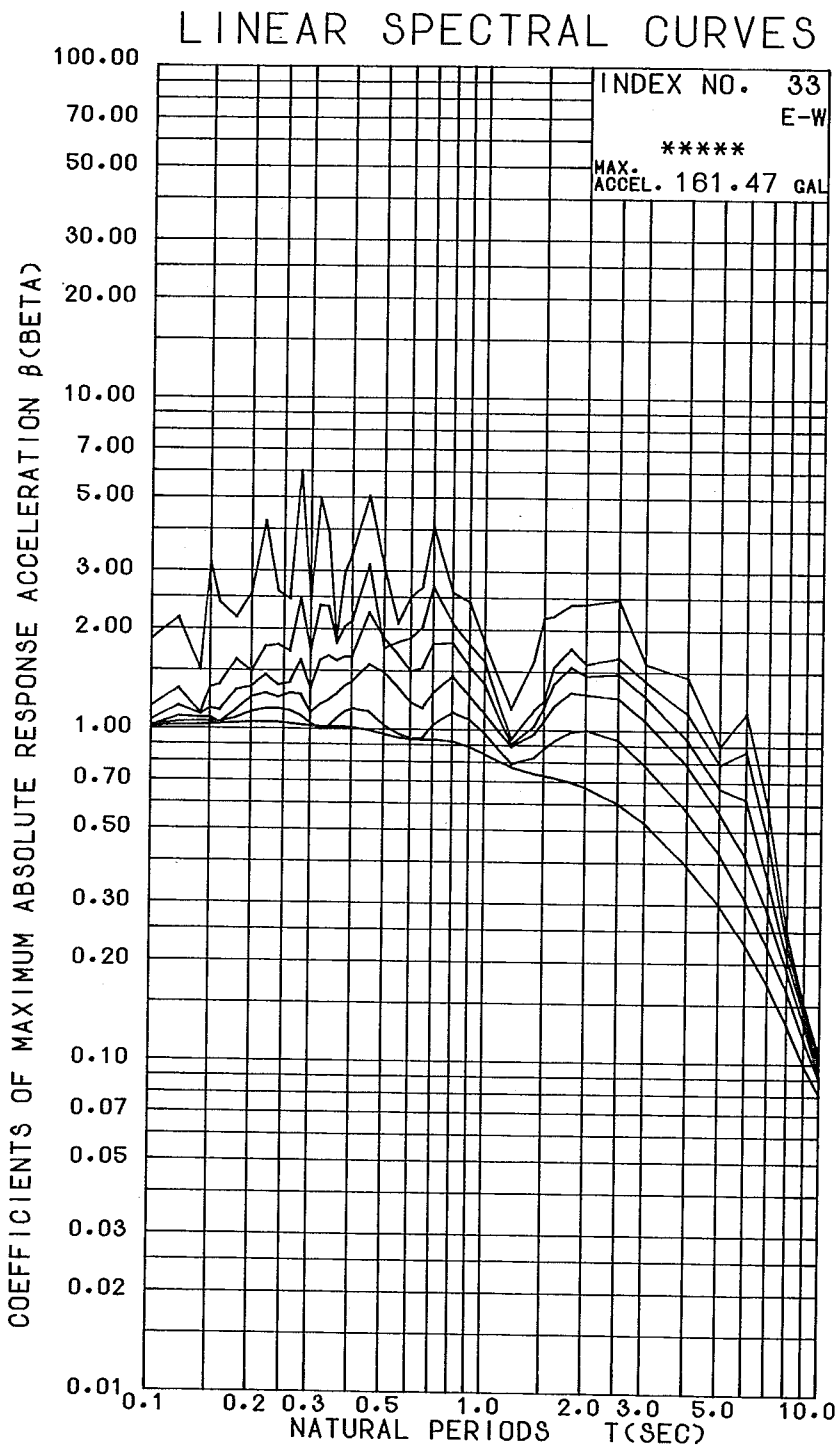


Figure IS-33 Linear Response Spectrum of Earthquake Record with Index Number 33

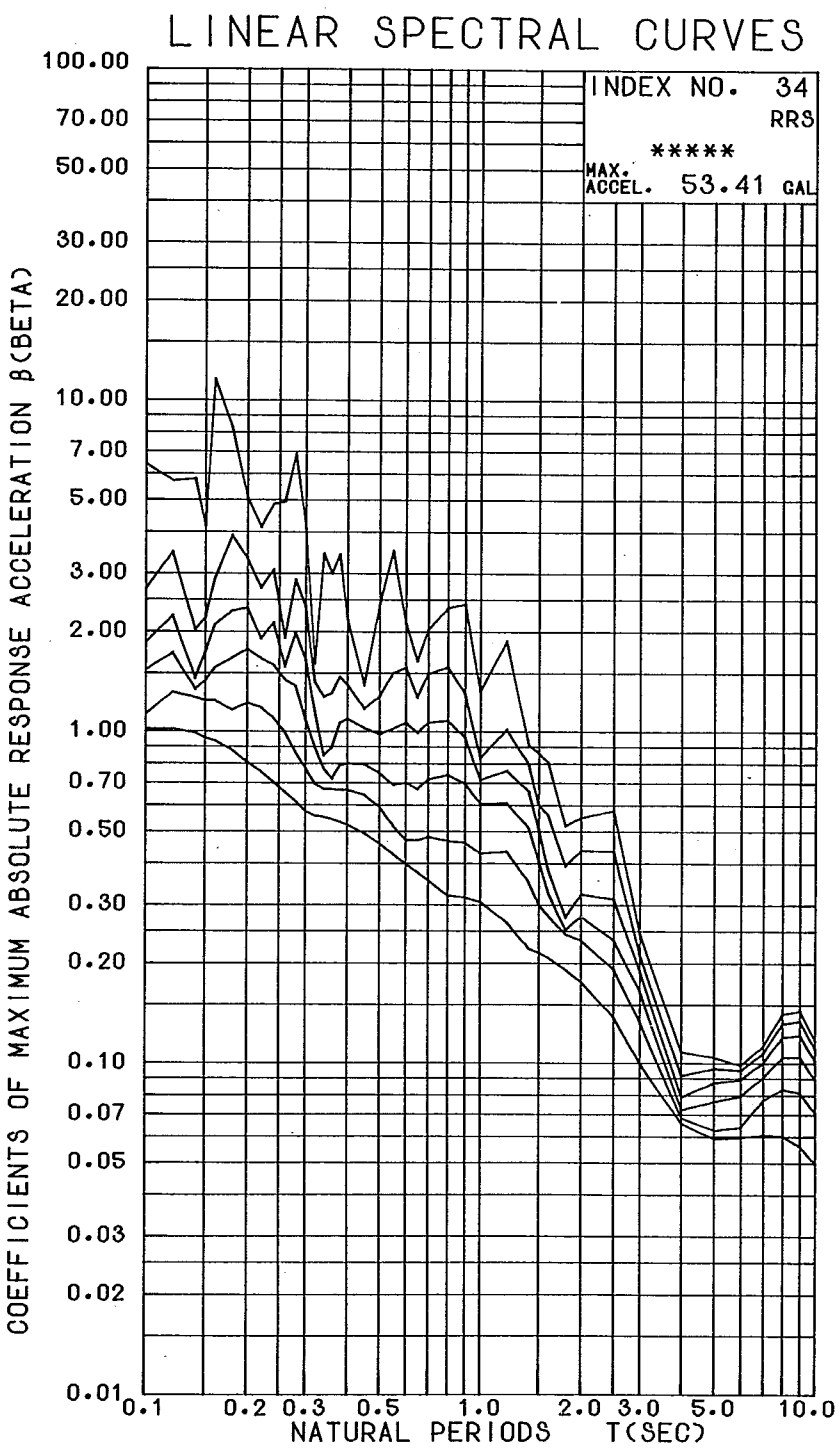


Figure IS-34 Linear Response Spectrum of Earthquake Record with Index Number 34

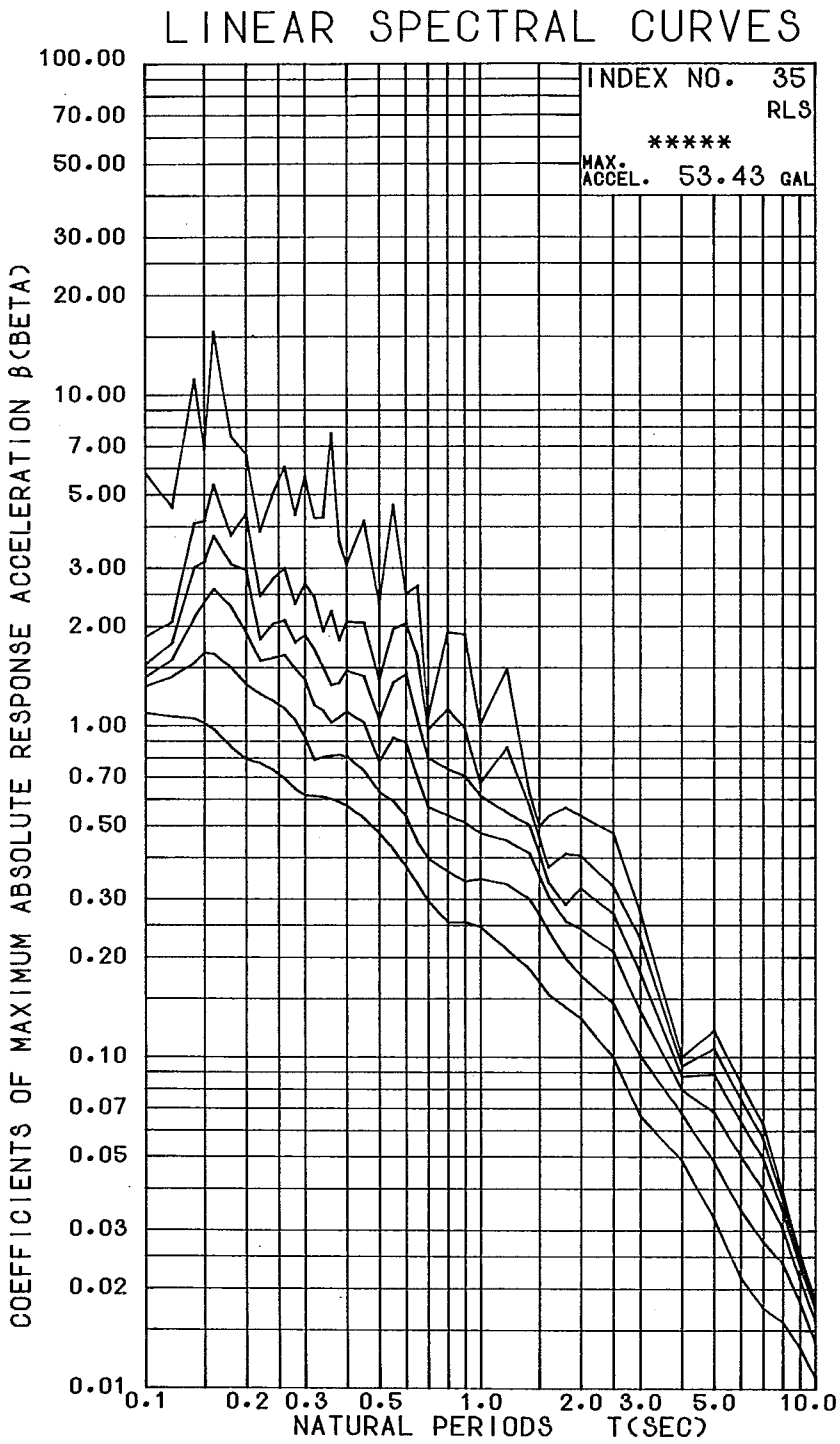


Figure IS-35 Linear Response Spectrum of Earthquake Record with Index Number 35

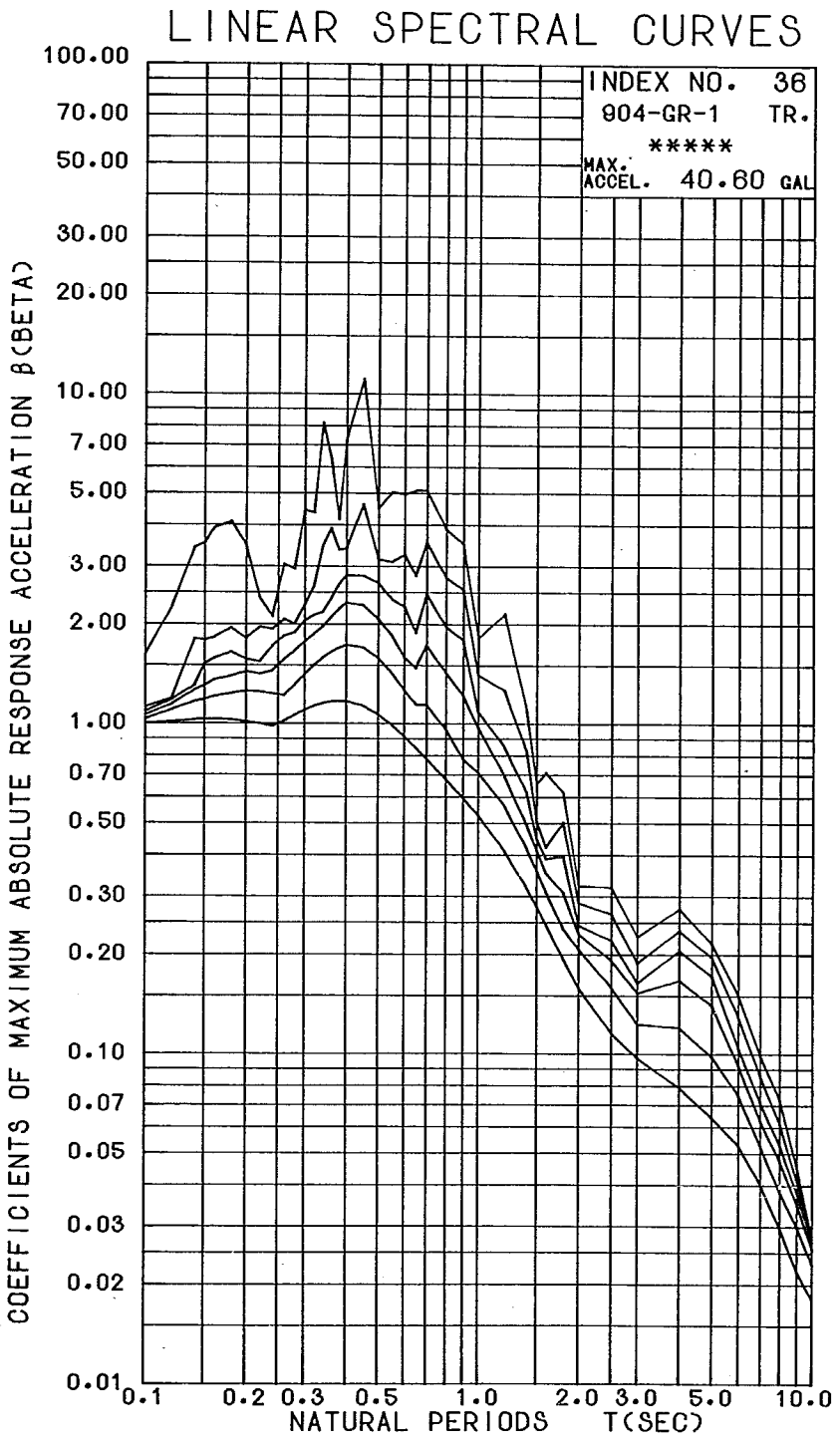


Figure IS-36 Linear Response Spectrum of Earthquake Record with Index Number 36

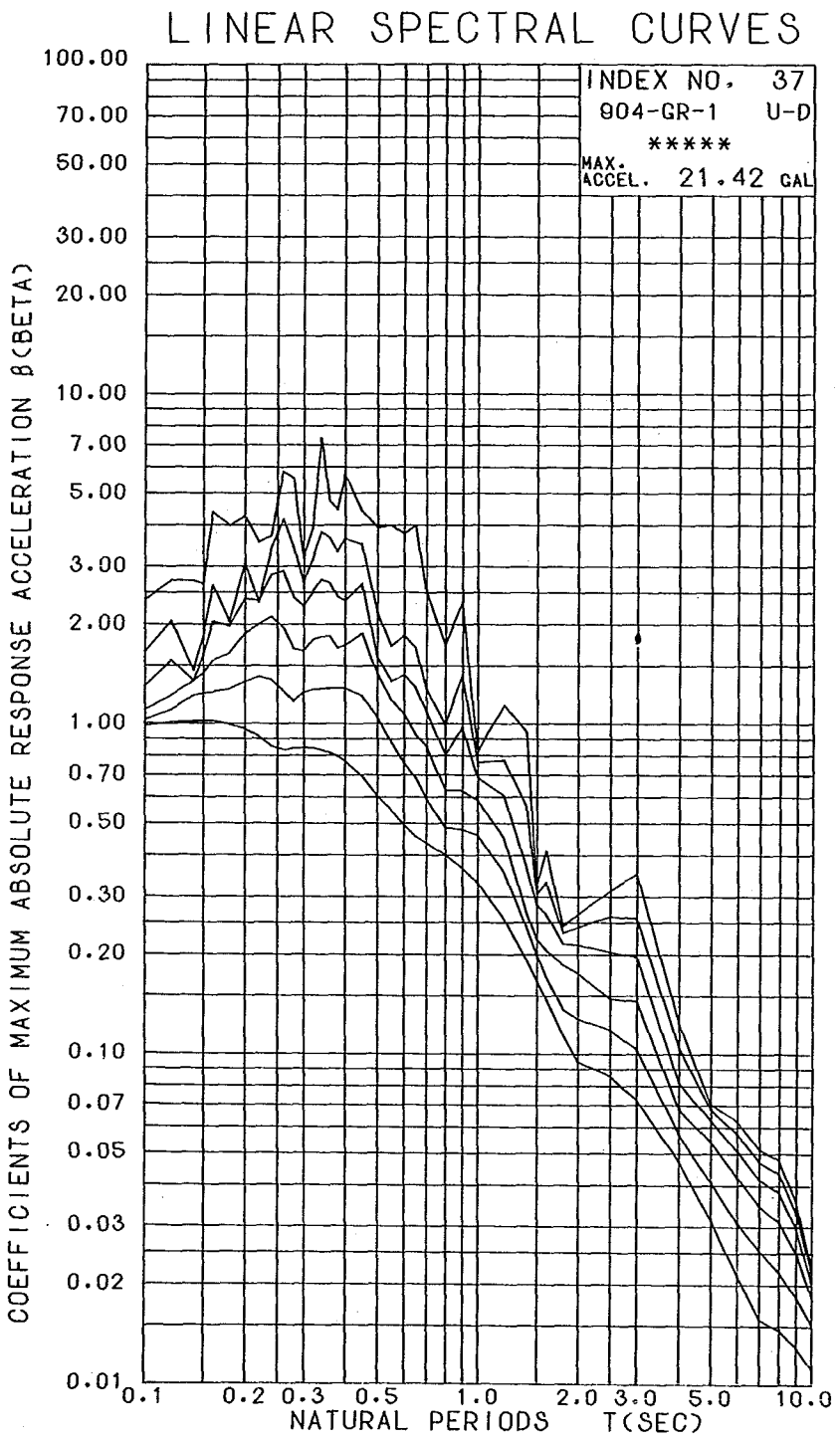


Figure IS-37 Linear Response Spectrum of Earthquake Record with Index Number 37

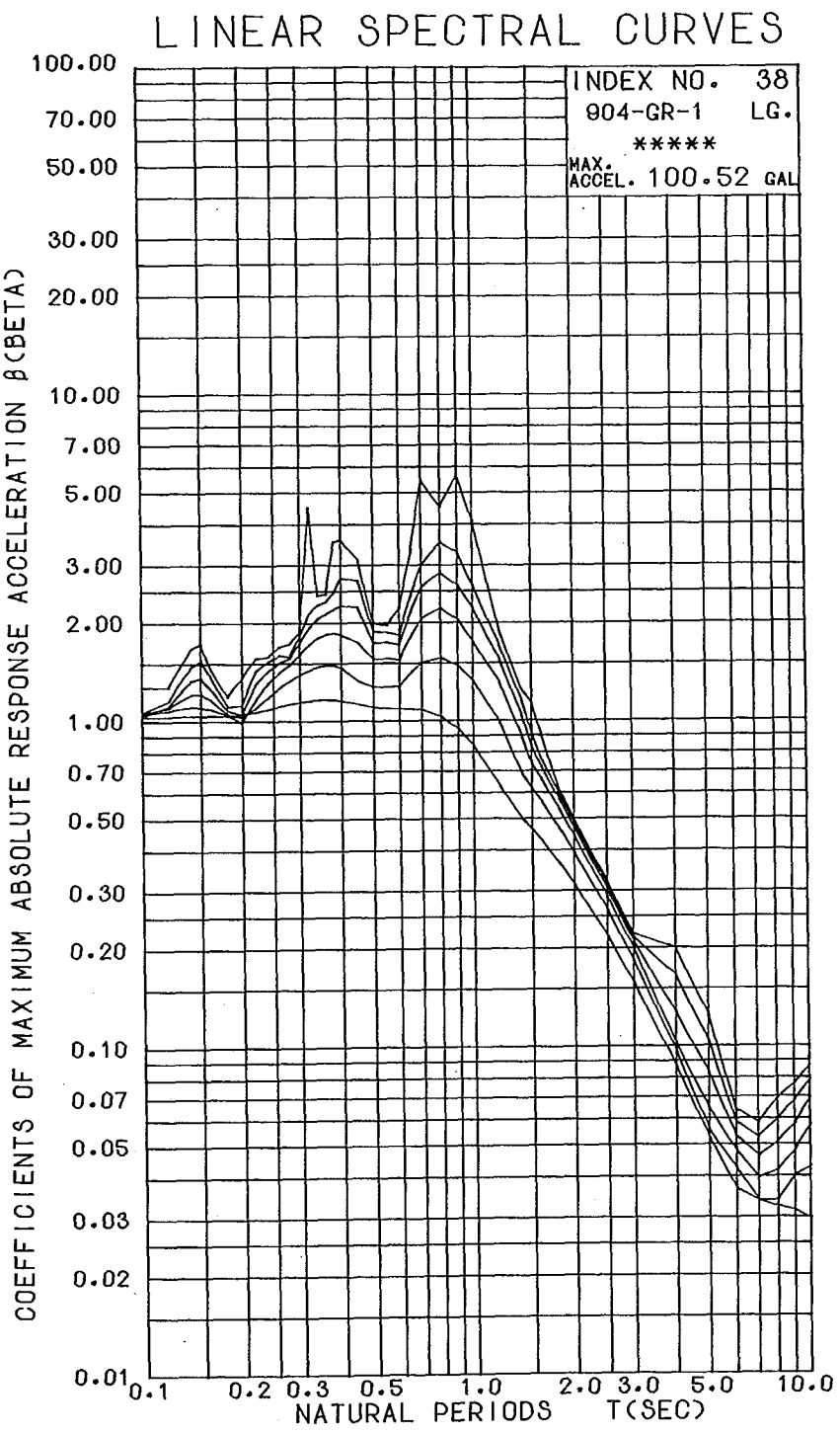


Figure IS-38 Linear Response Spectrum of Earthquake Record with Index Number 38

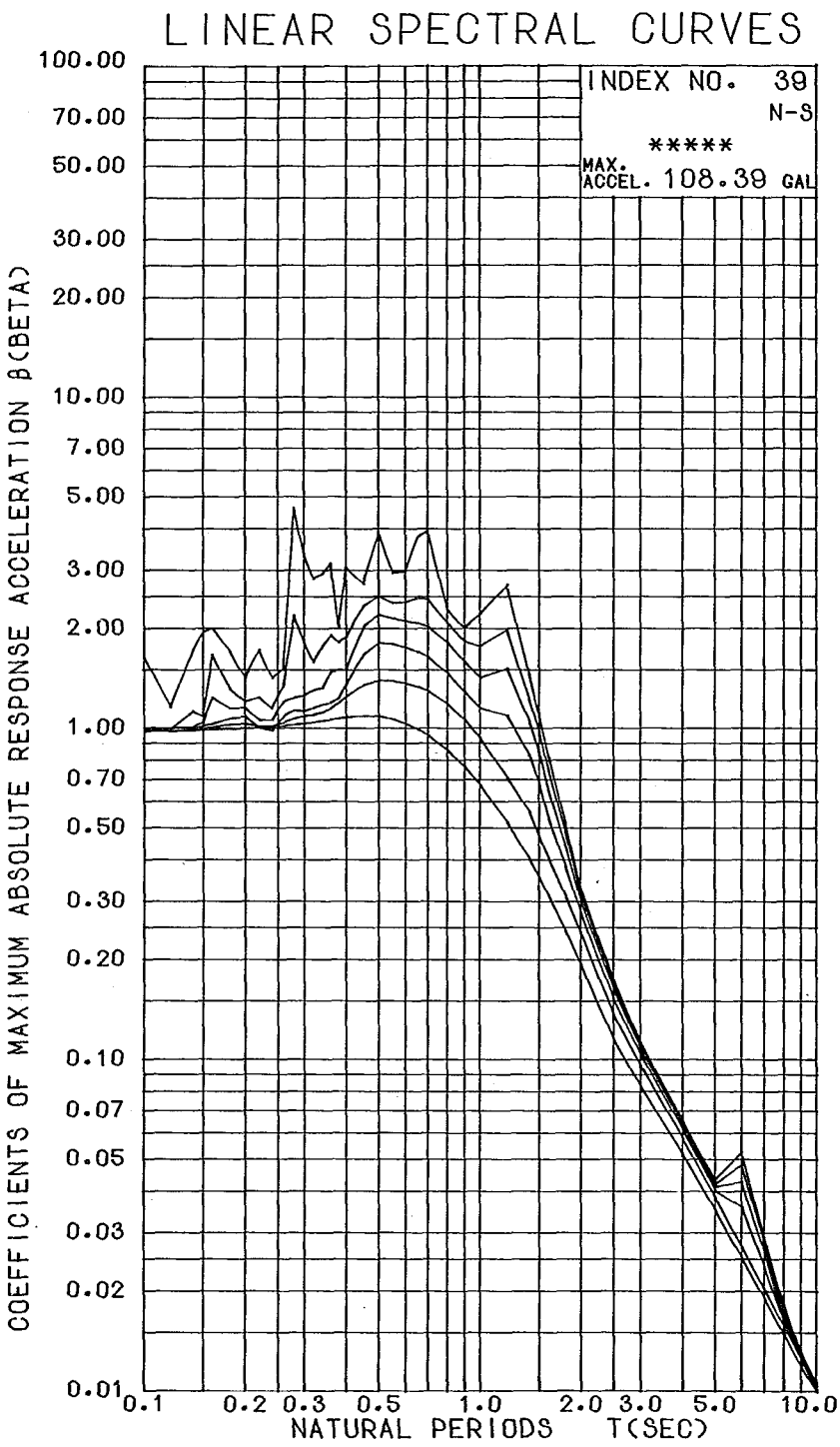


Figure IS-39 Linear Response Spectrum of Earthquake Record with Index Number 39

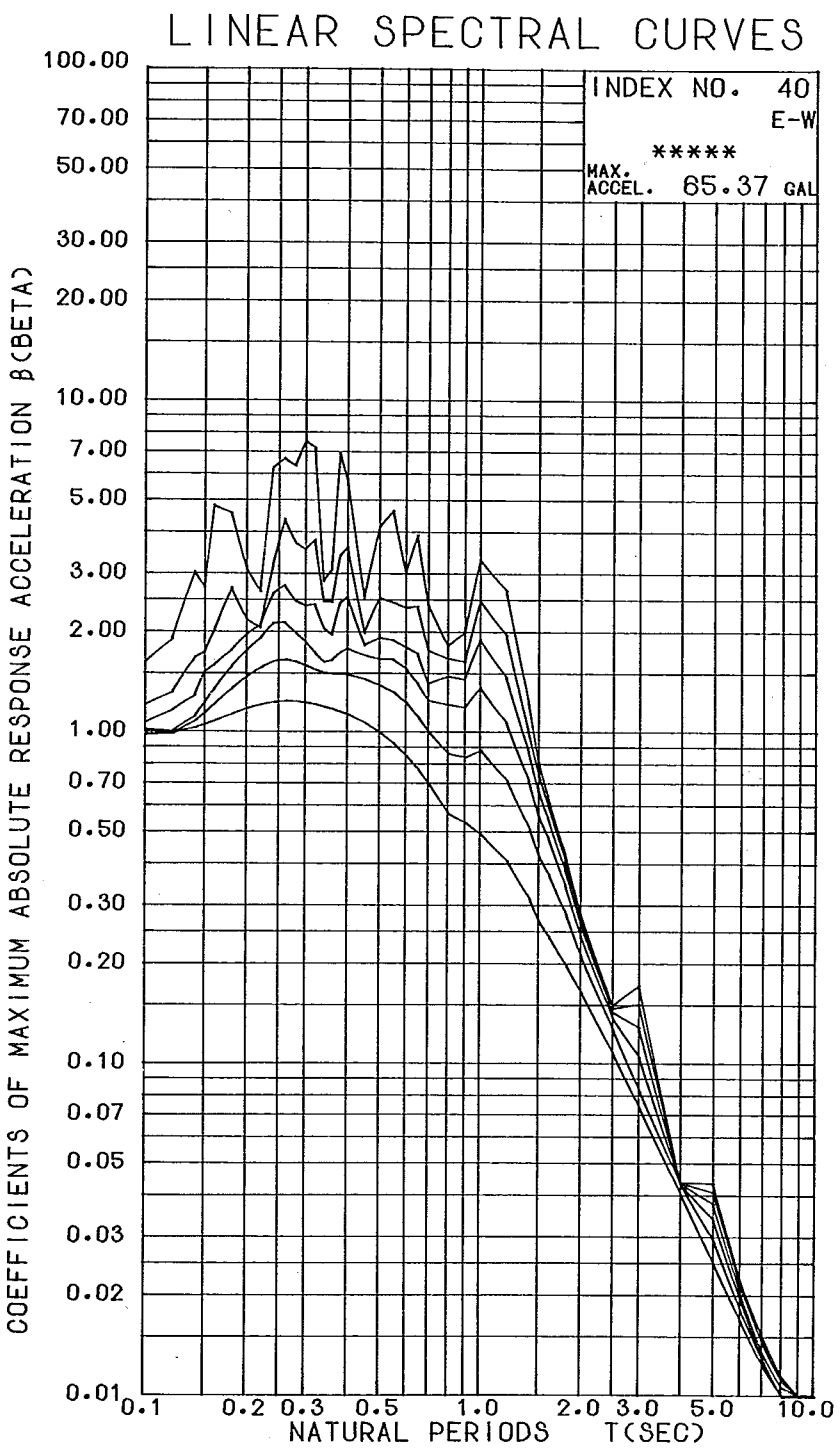


Figure IS-40 Linear Response Spectrum of Earthquake Record with Index Number 40

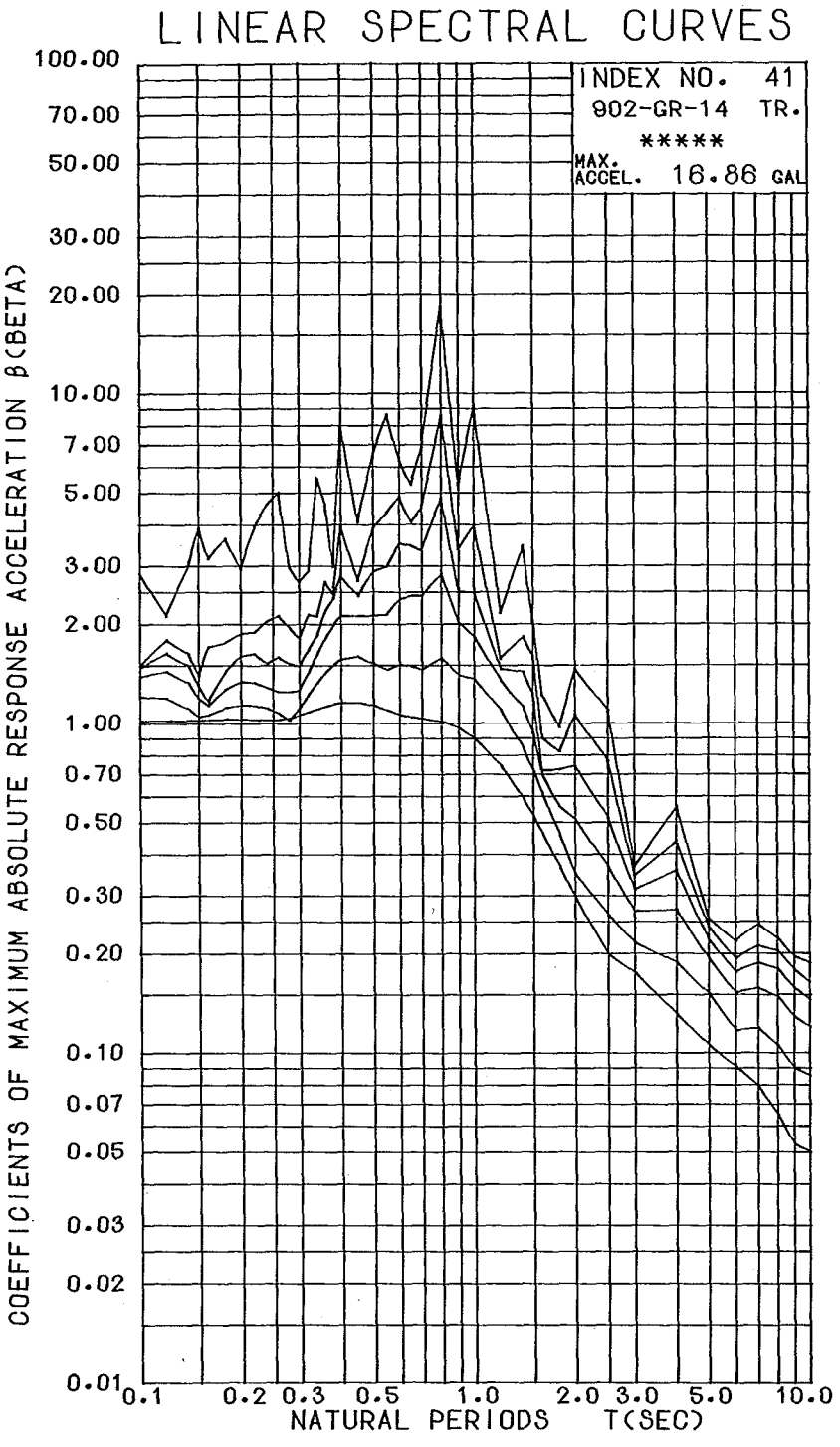


Figure IS-41 Linear Response Spectrum of Earthquake Record with Index Number 41

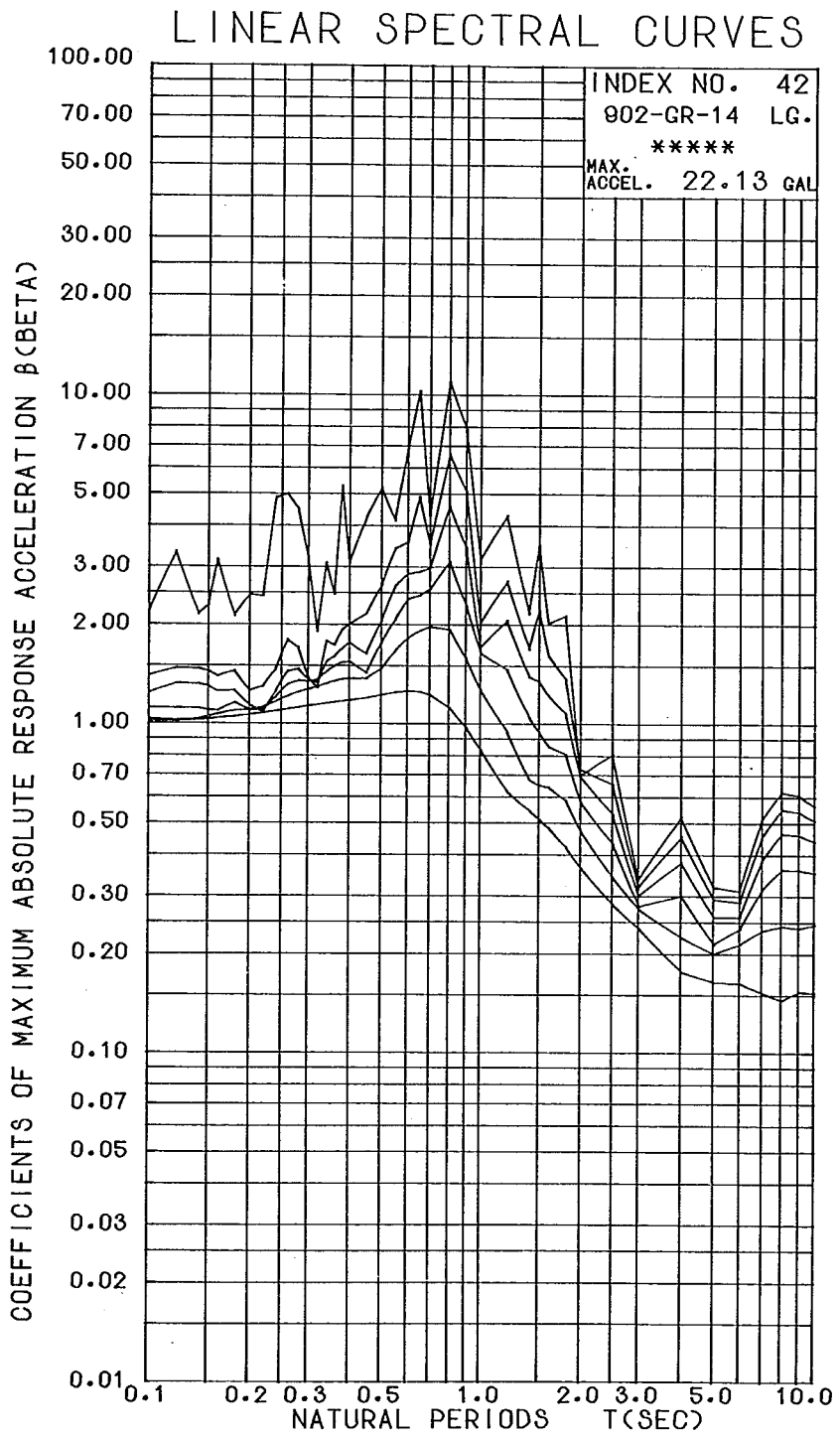


Figure IS-42 Linear Response Spectrum of Earthquake Record with Index Number 42

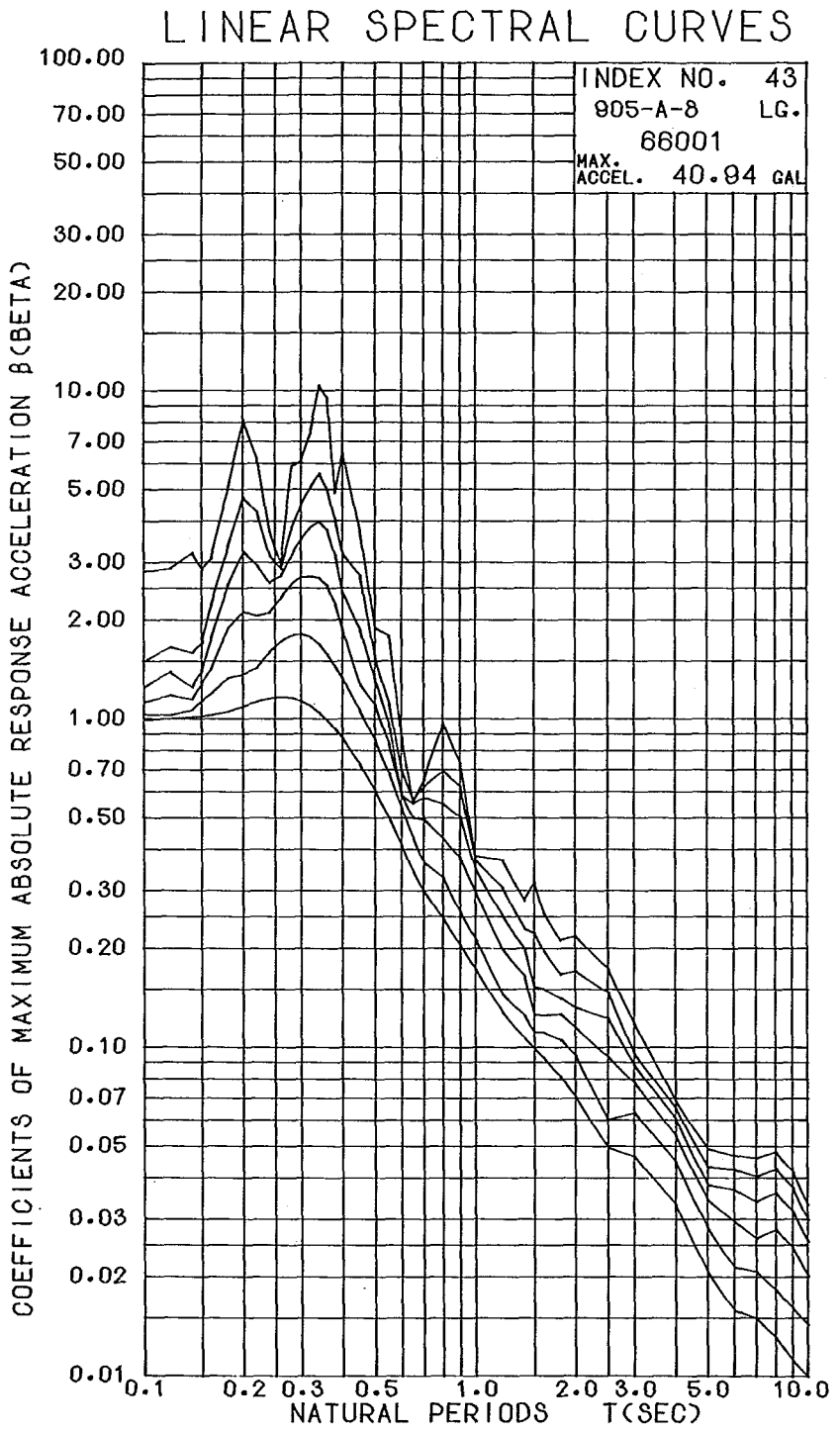


Figure IS-43 Linear Response Spectrum of Earthquake Record with Index Number 43

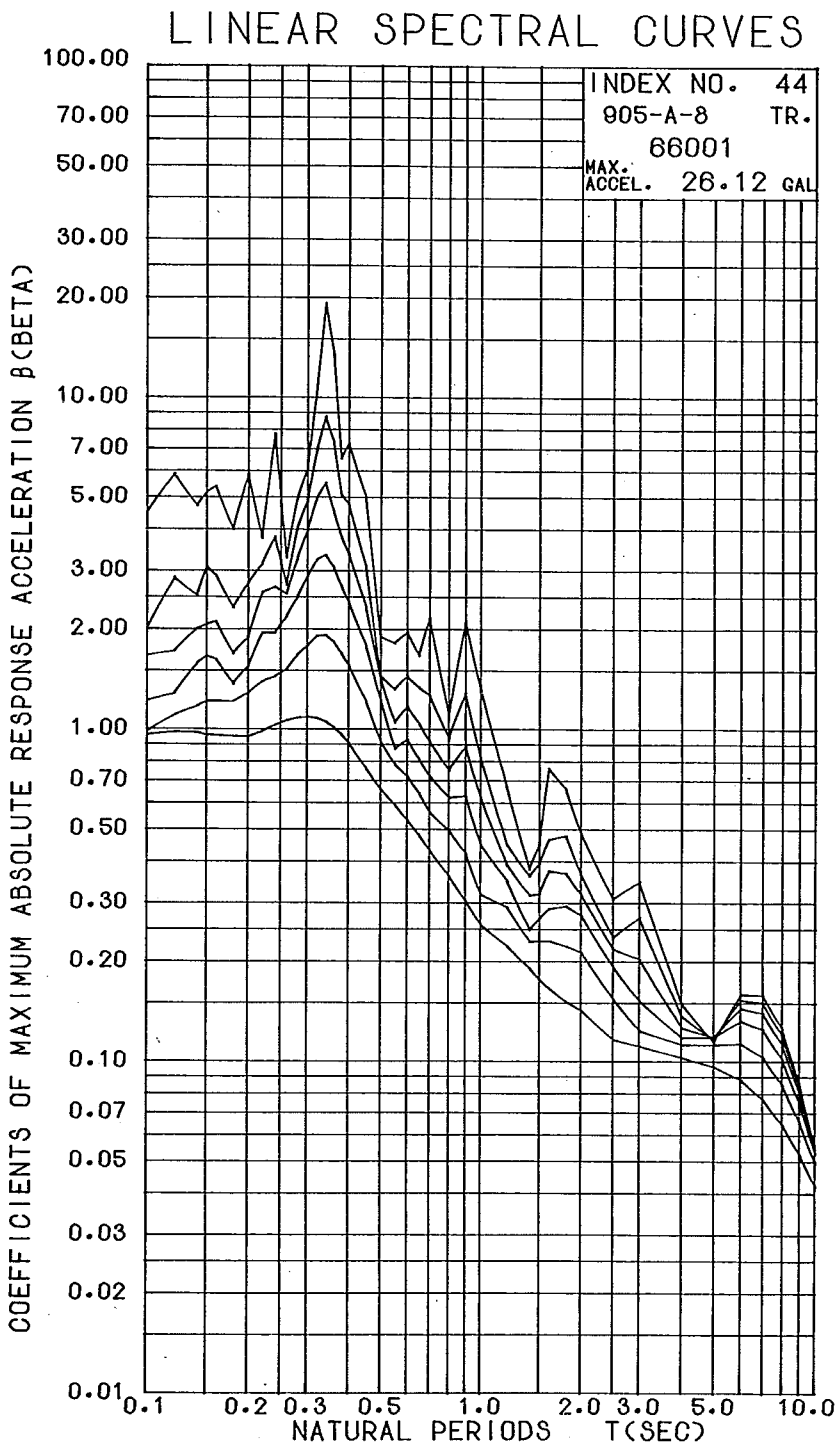


Figure IS-44 Linear Response Spectrum of Earthquake Record with Index Number 44

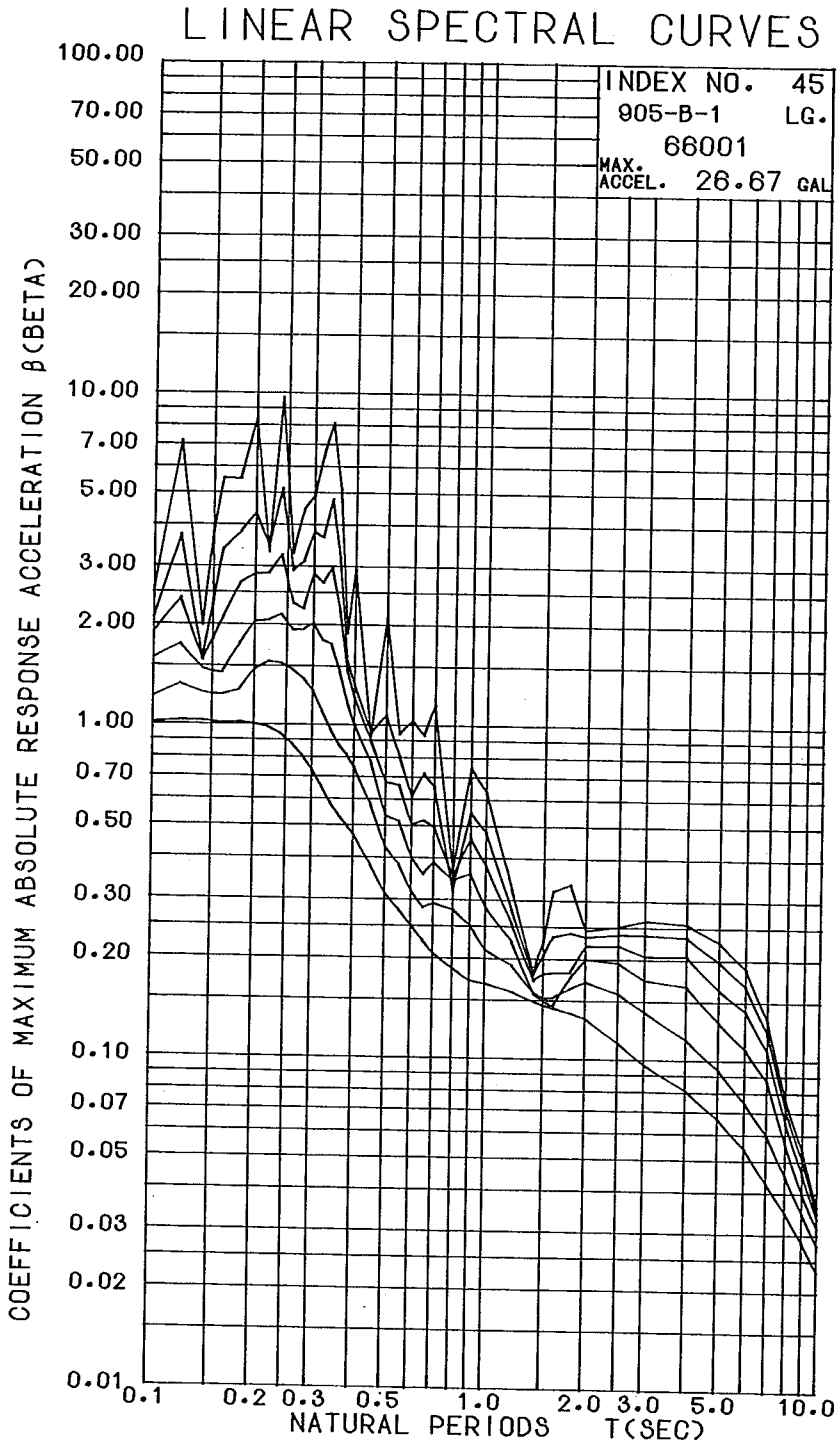


Figure IS-45 Linear Response Spectrum of Earthquake Record with Index Number 45

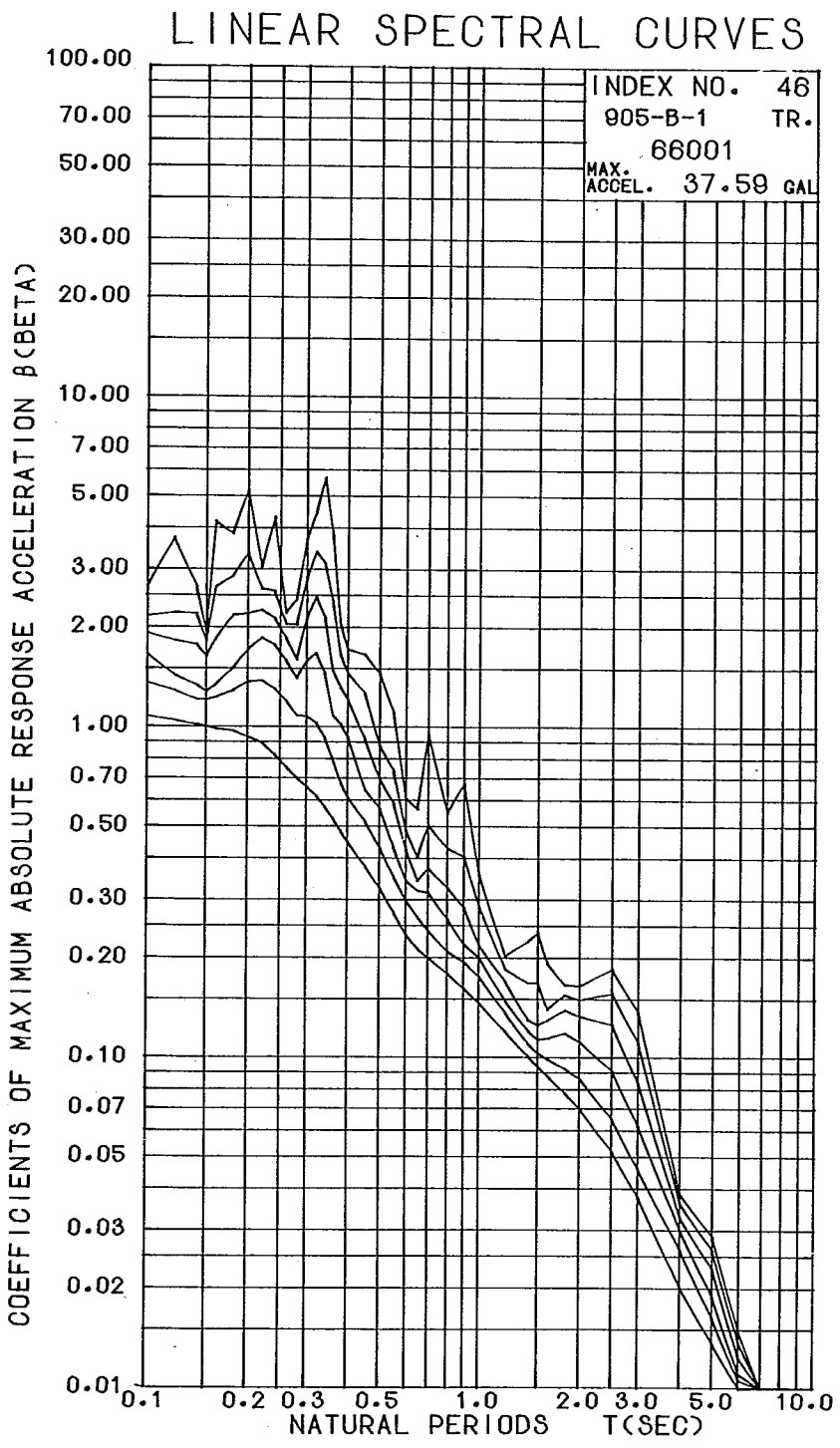


Figure IS-46 Linear Response Spectrum of Earthquake Record with Index Number 46

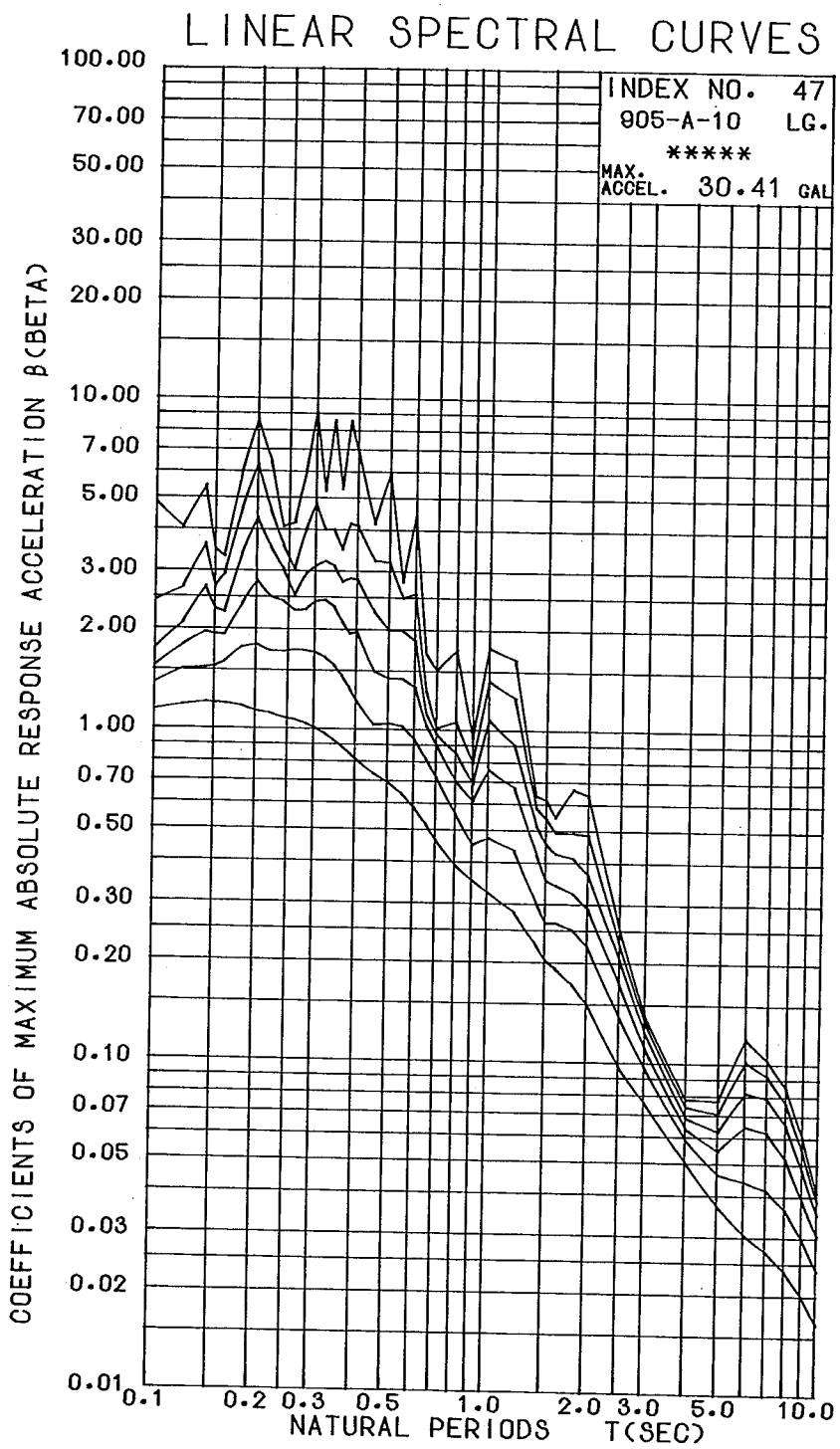


Figure IS-47 Linear Response Spectrum of Earthquake Record with Index Number 47

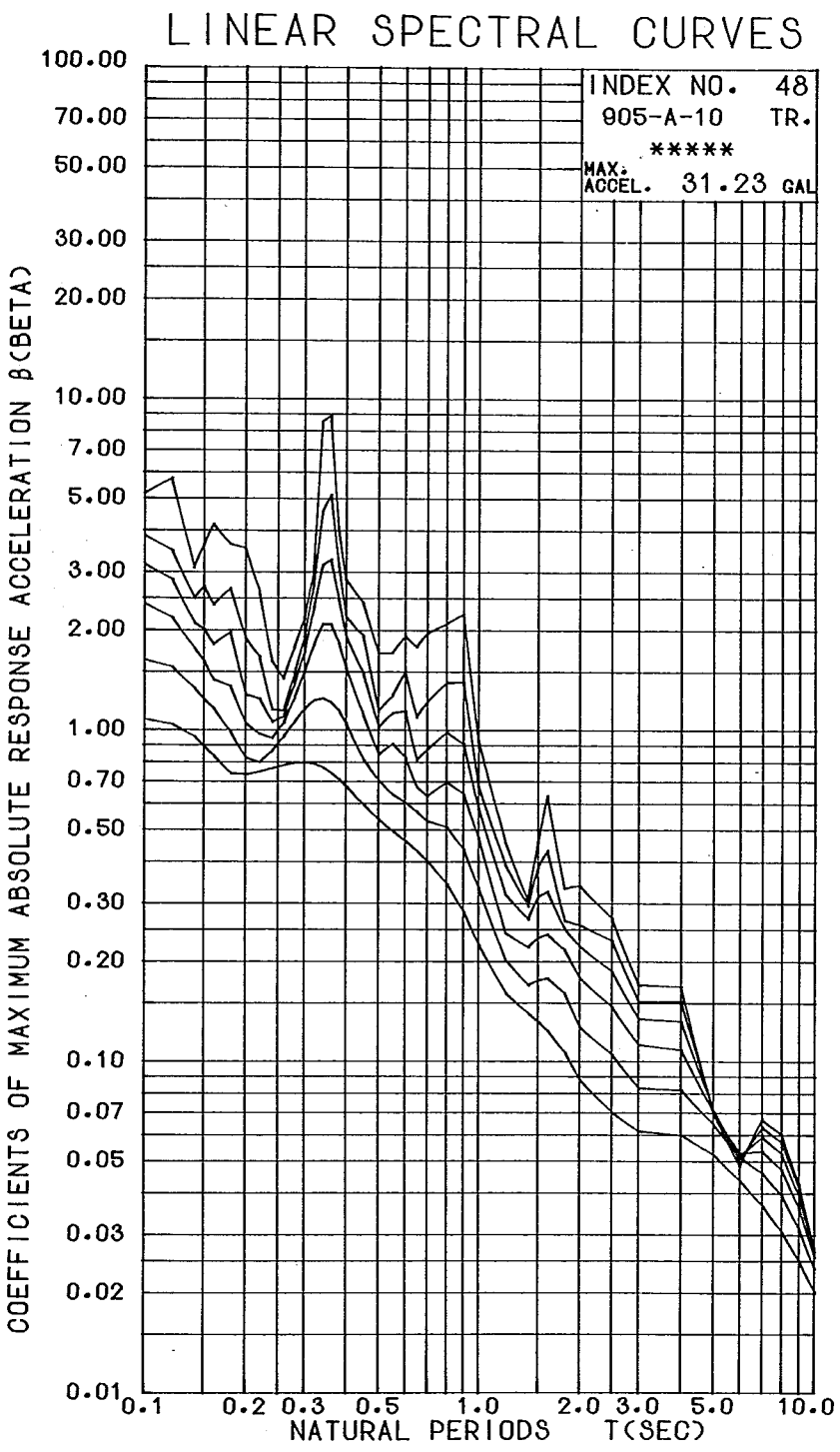


Figure IS-48 Linear Response Spectrum of Earthquake Record with Index Number 48

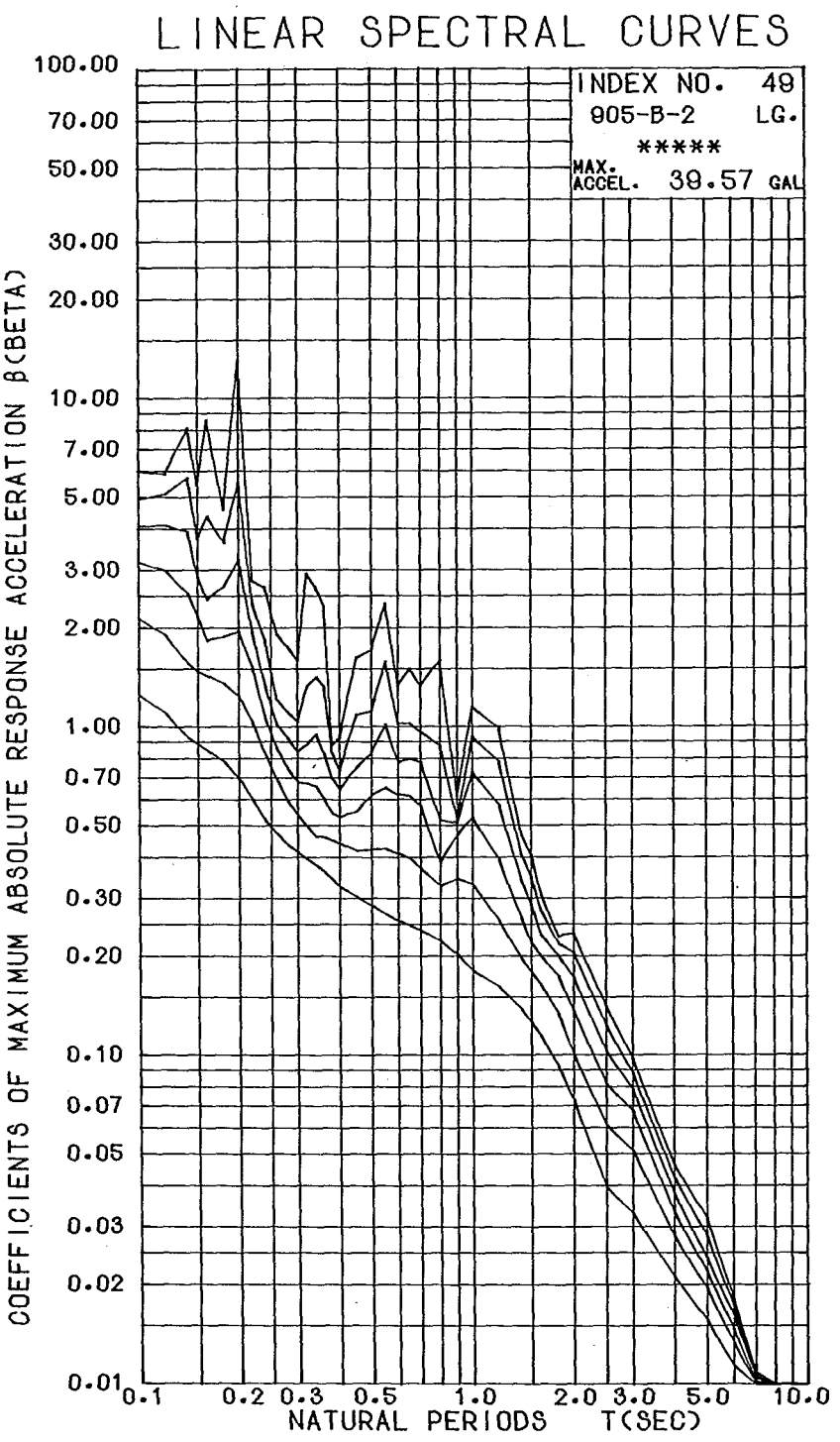


Figure IS-49 Linear Response Spectrum of Earthquake Record with Index Number 49

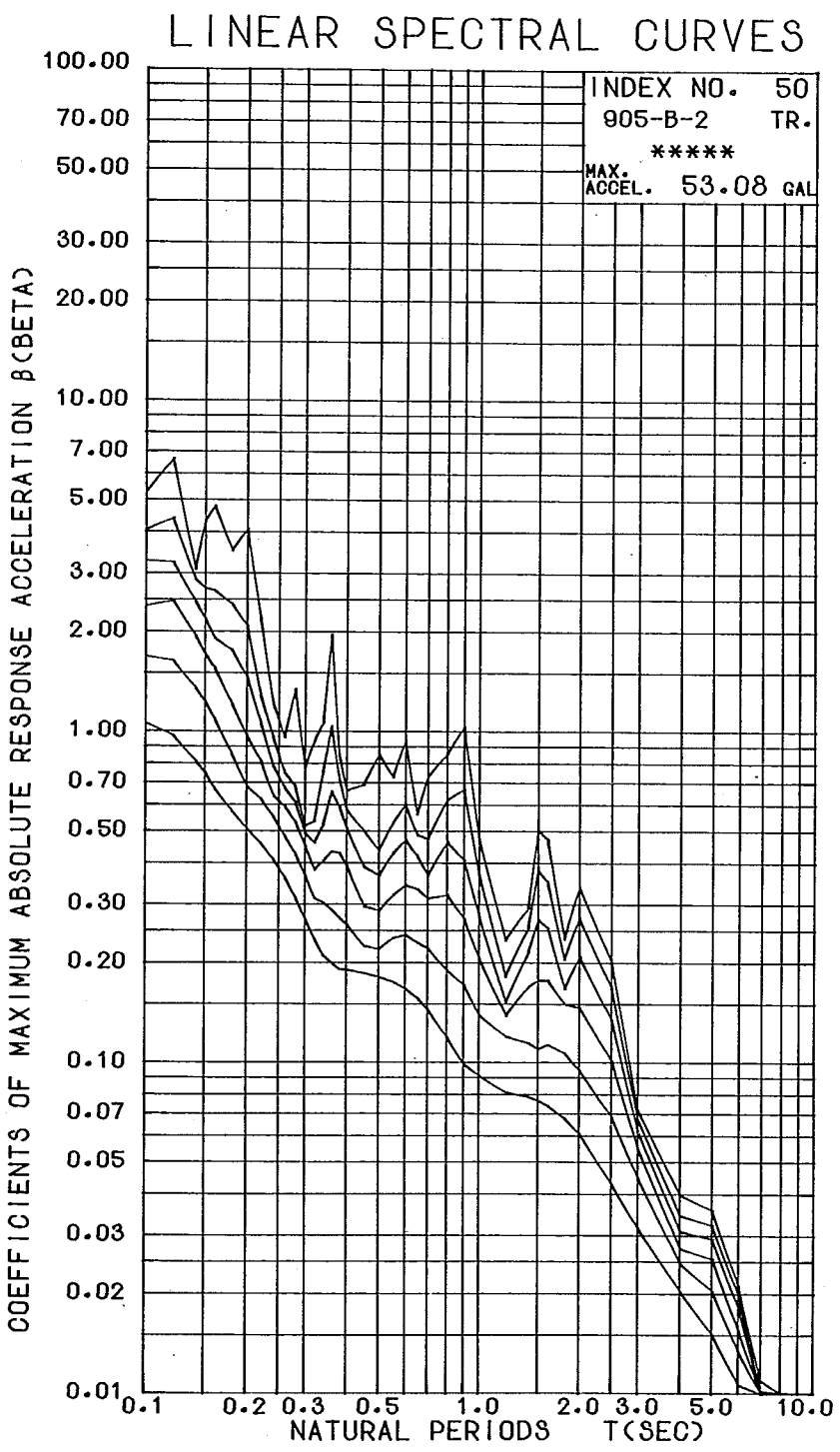


Figure IS-50 Linear Response Spectrum of Earthquake Record with Index Number 50

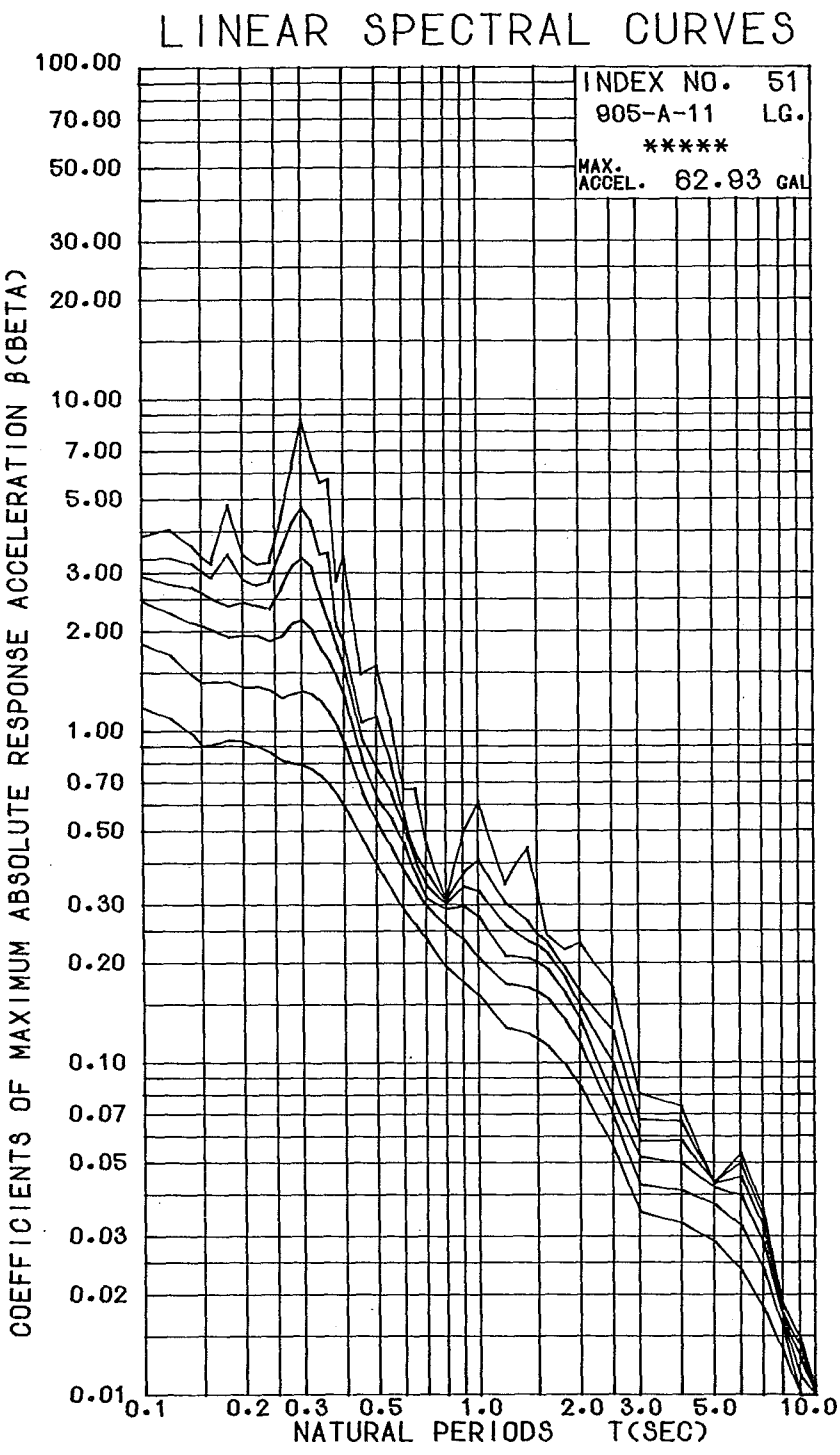


Figure IS-51 Linear Response Spectrum of Earthquake Record with Index Number 51

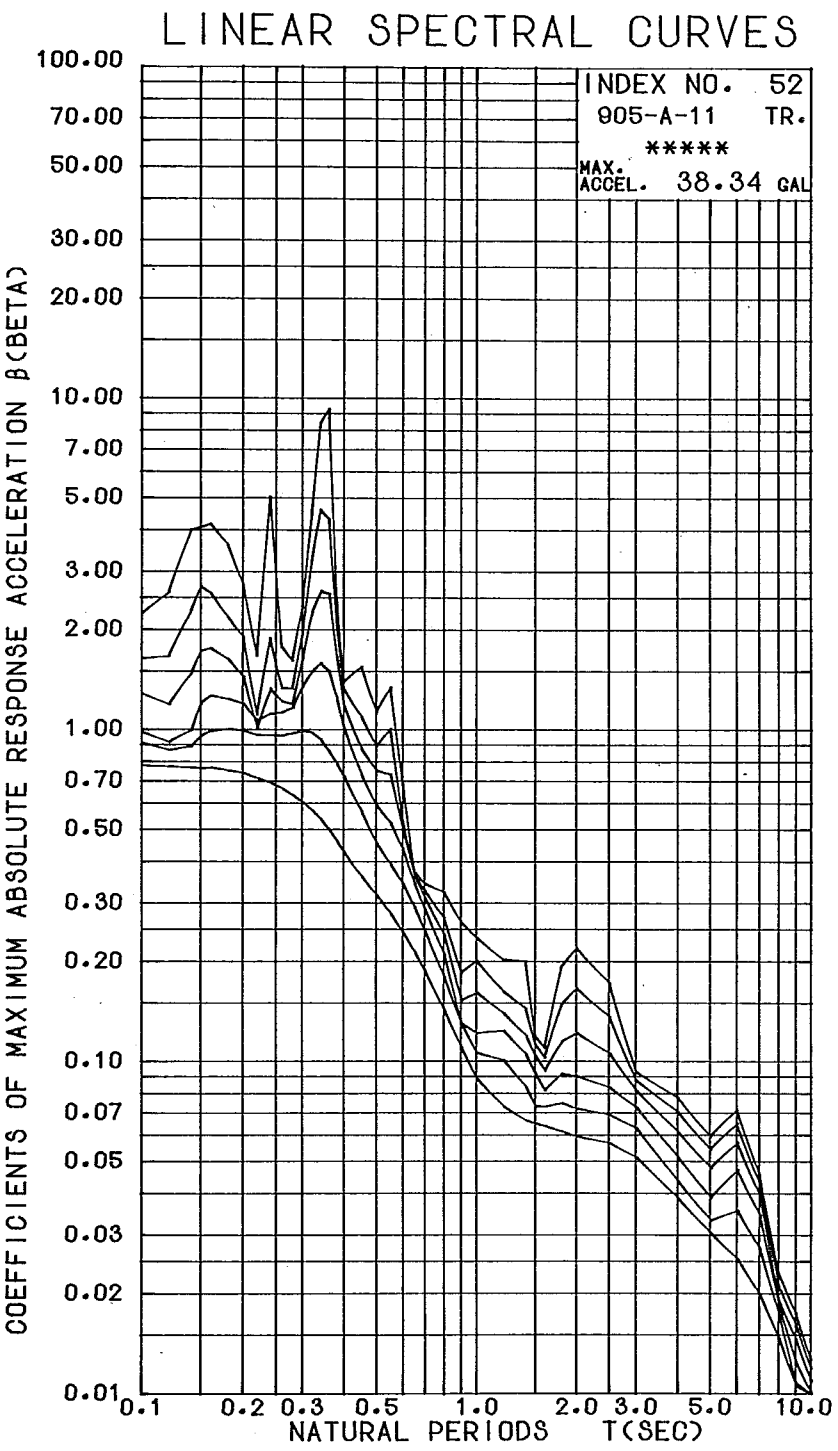


Figure IS-52 Linear Response Spectrum of Earthquake Record with Index Number 52

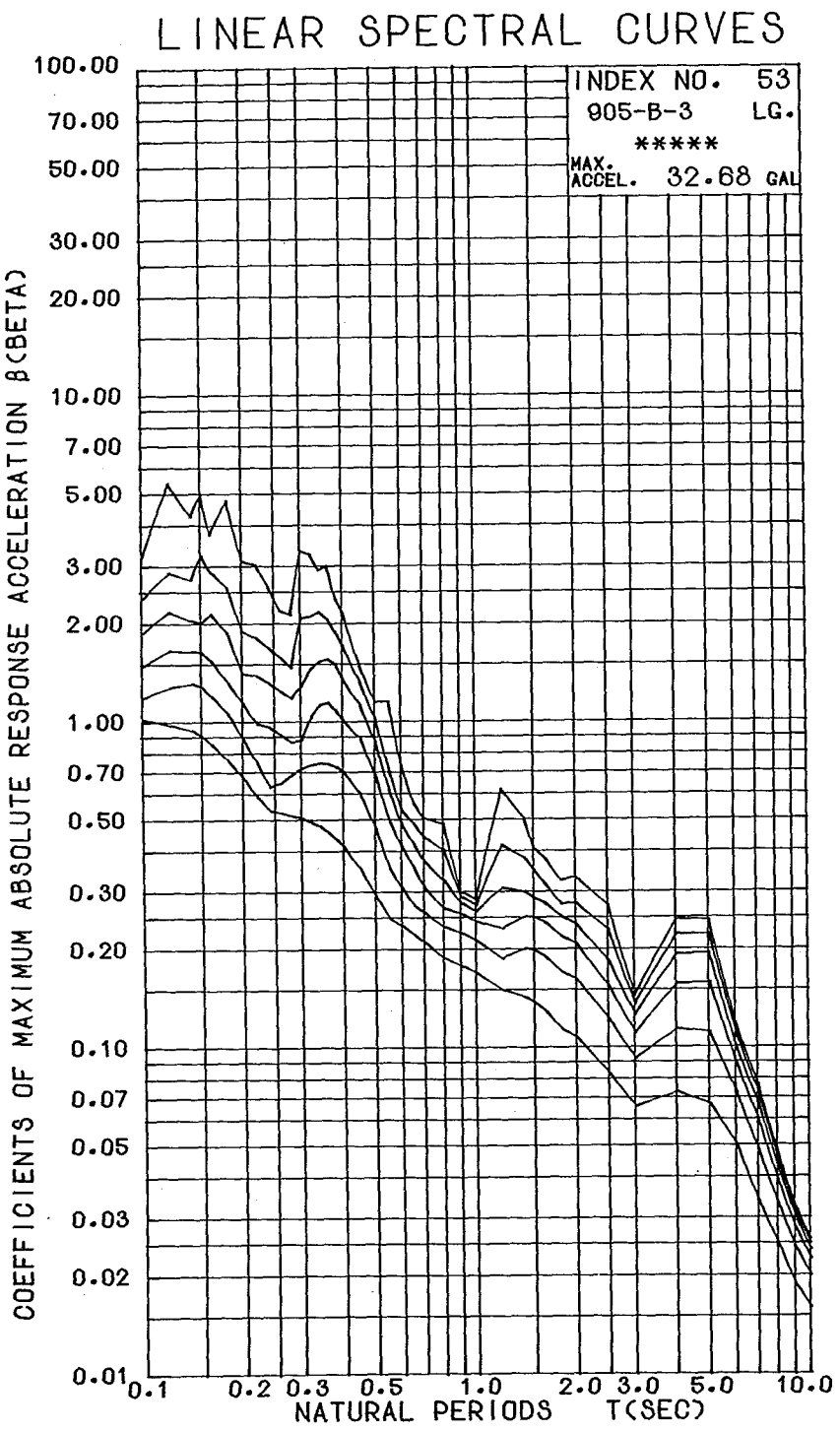


Figure IS-53 Linear Response Spectrum of Earthquake Record with Index Number 53

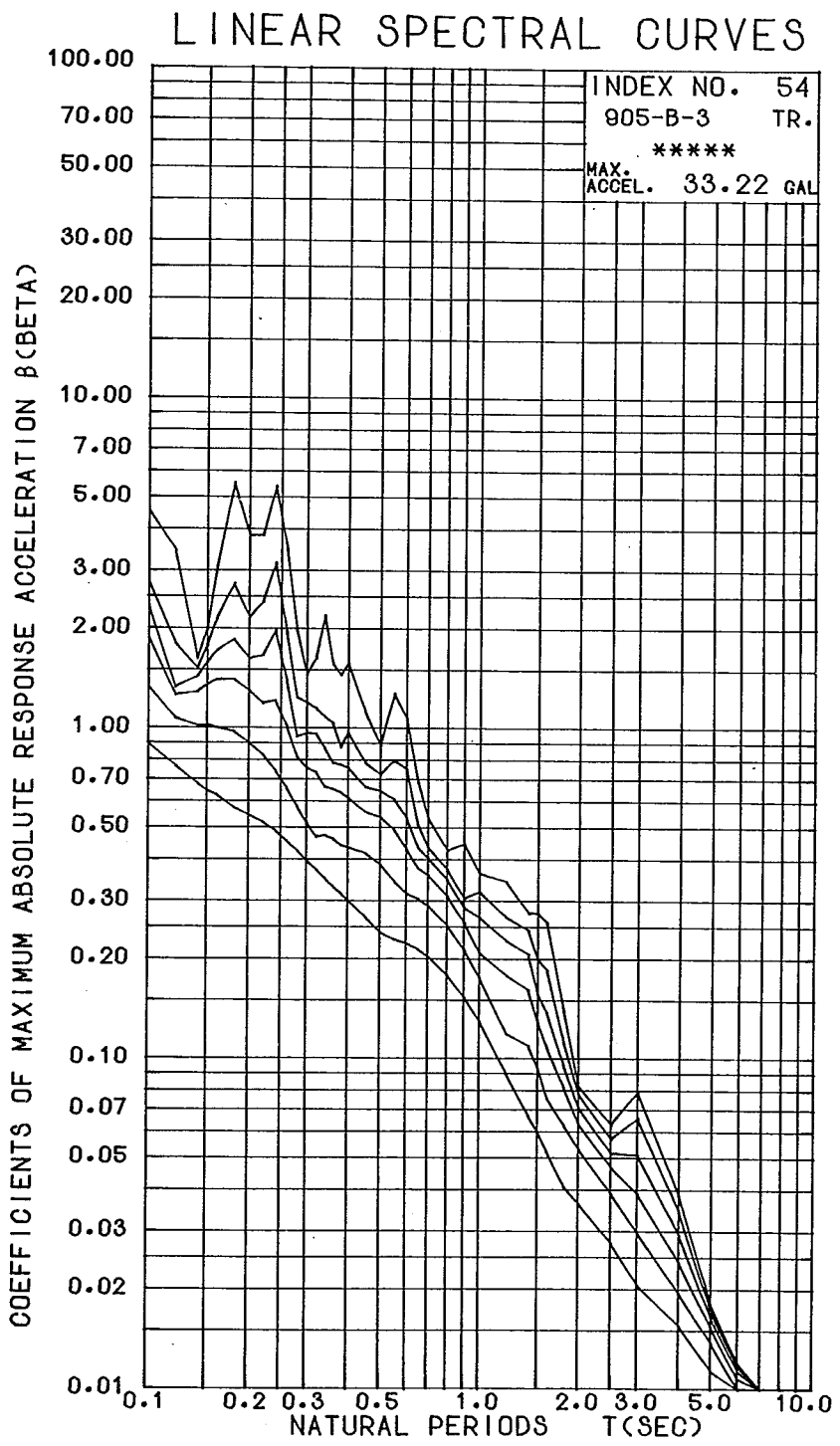


Figure IS-54 Linear Response Spectrum of Earthquake Record with Index Number 54

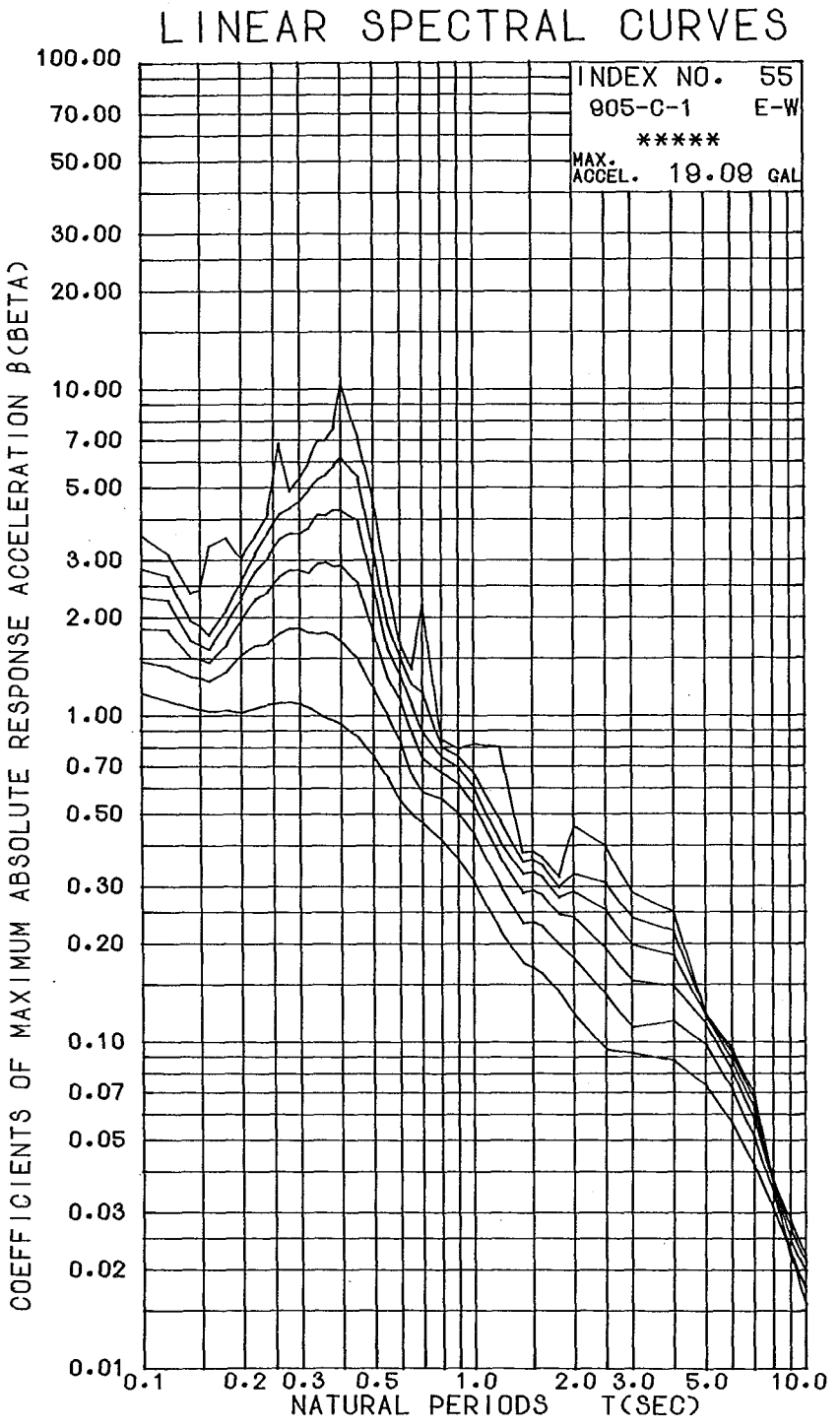


Figure IS-55 Linear Response Spectrum of Earthquake Record with Index Number 55

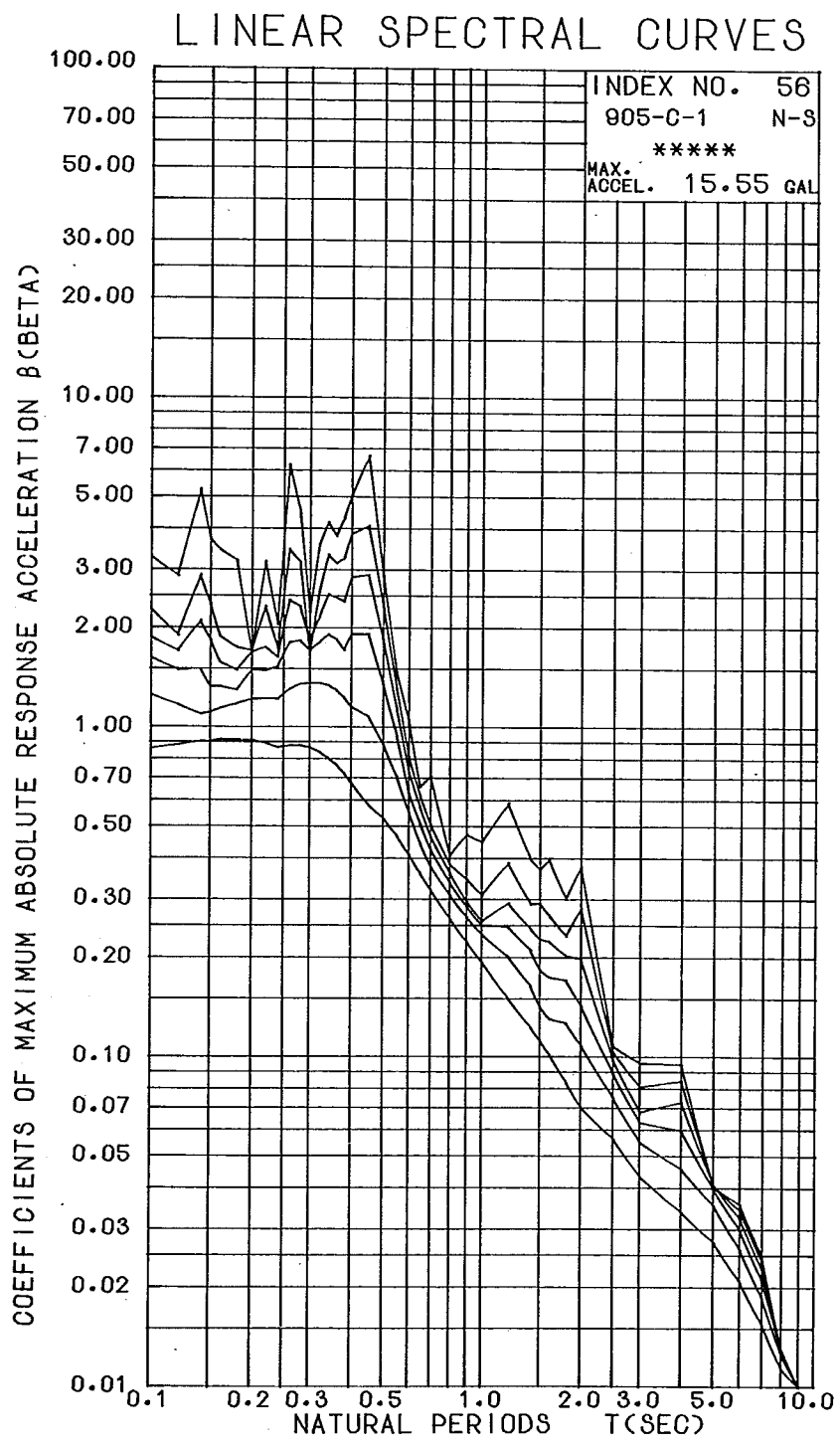


Figure IS-56 Linear Response Spectrum of Earthquake Record with Index Number 56

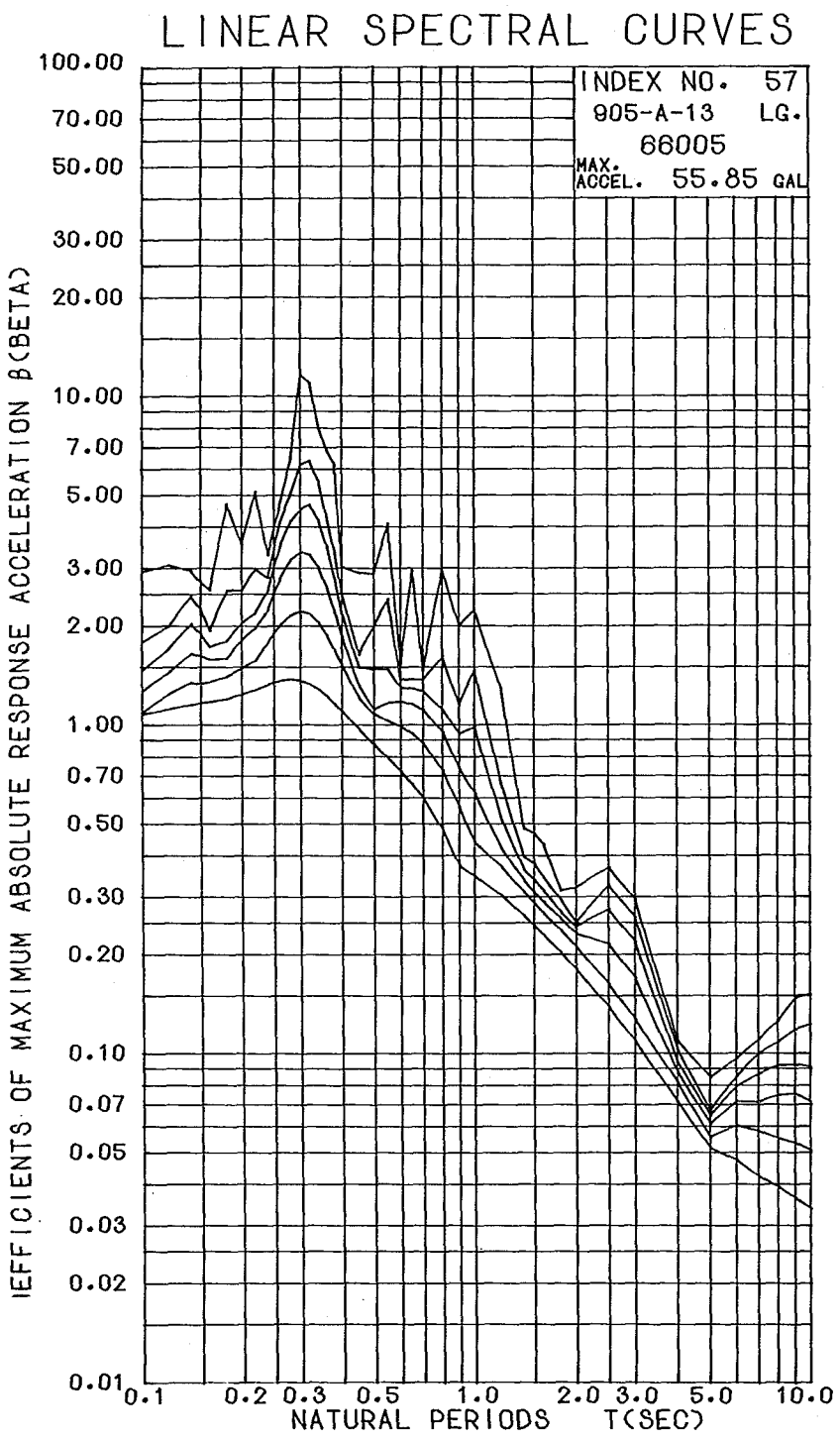


Figure IS-57 Linear Response Spectrum of Earthquake Record with Index Number 57

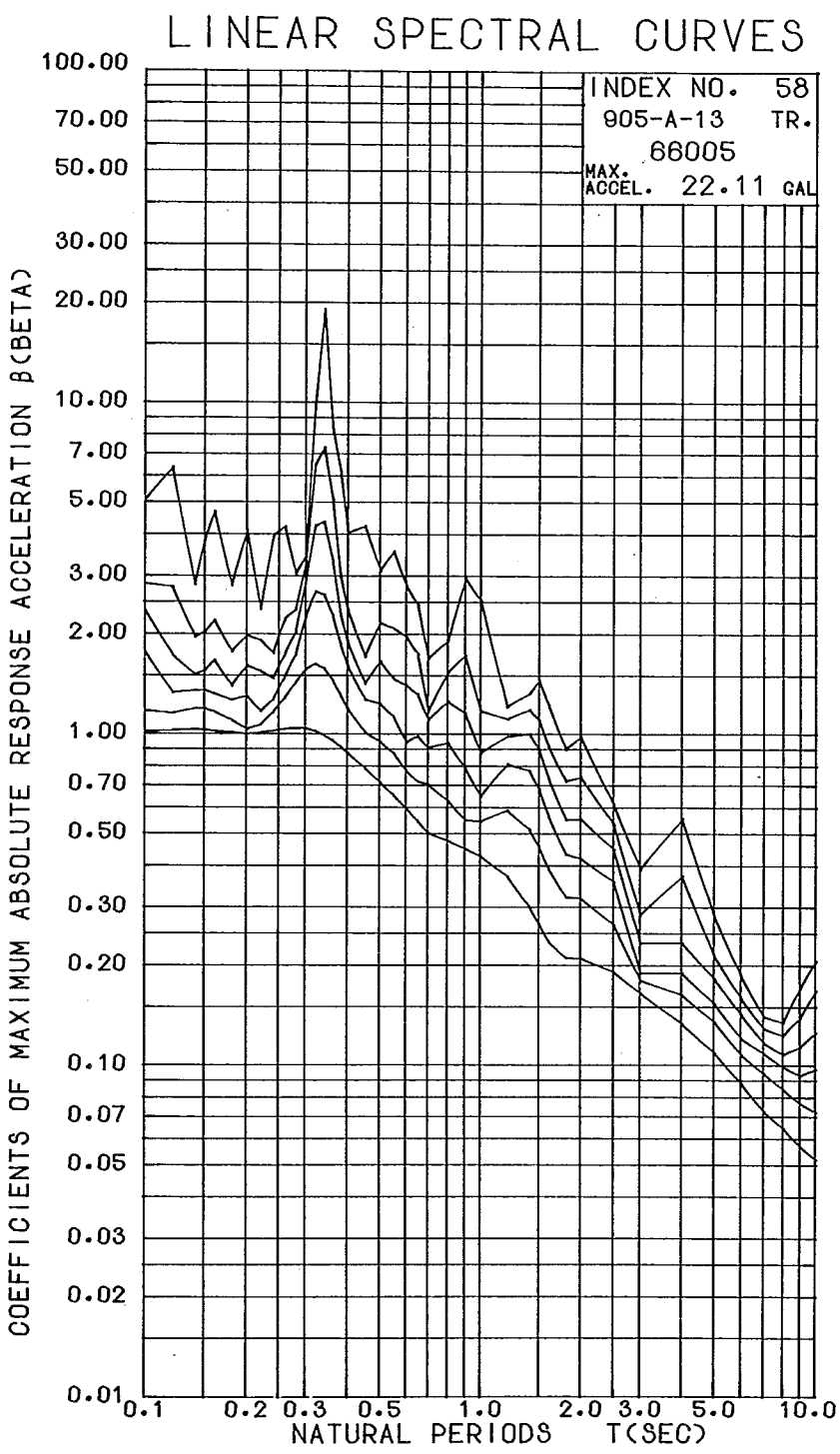


Figure IS-58 Linear Response Spectrum of Earthquake Record with Index Number 58

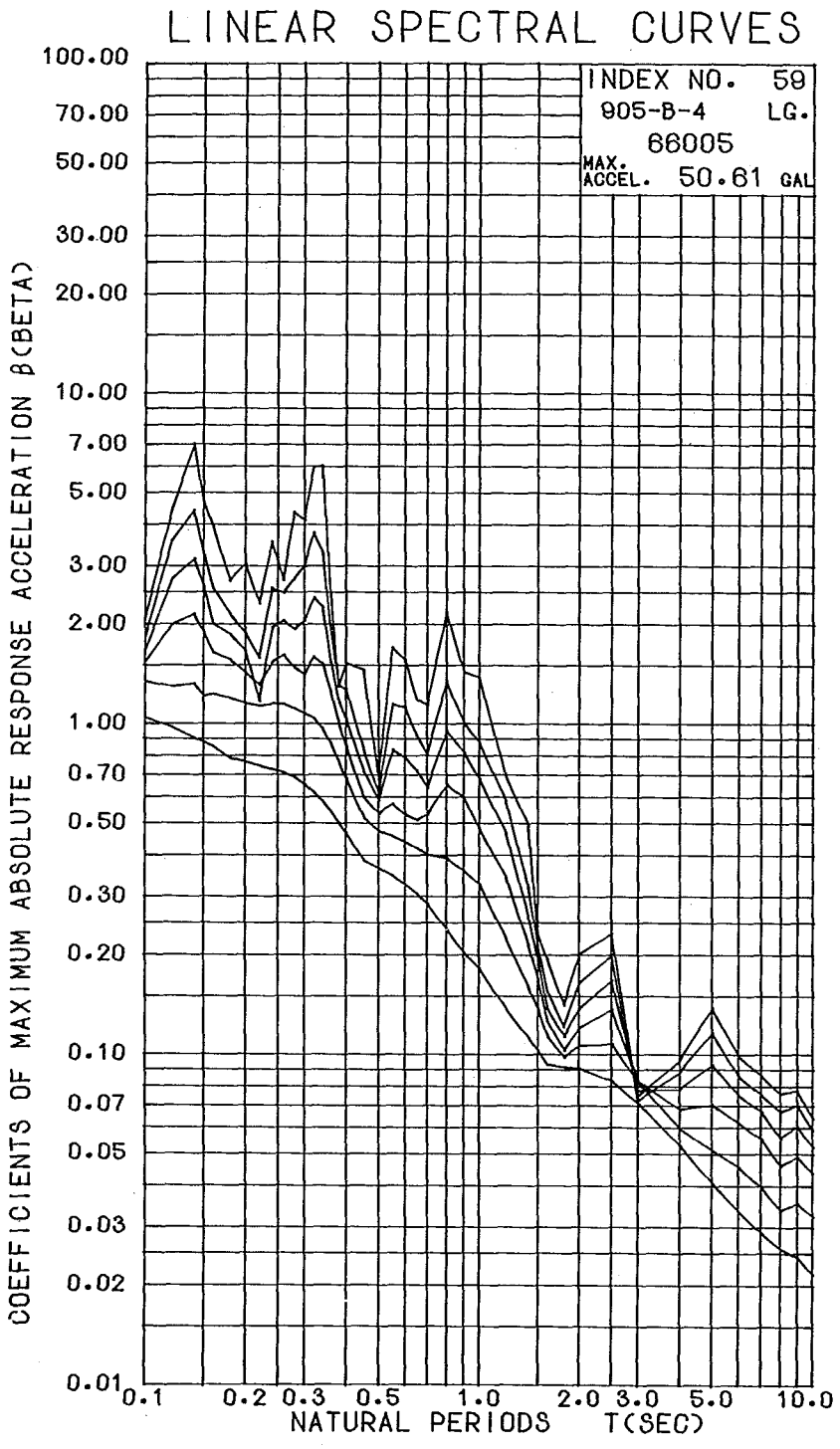


Figure IS-59 Linear Response Spectrum of Earthquake Record with Index Number 59

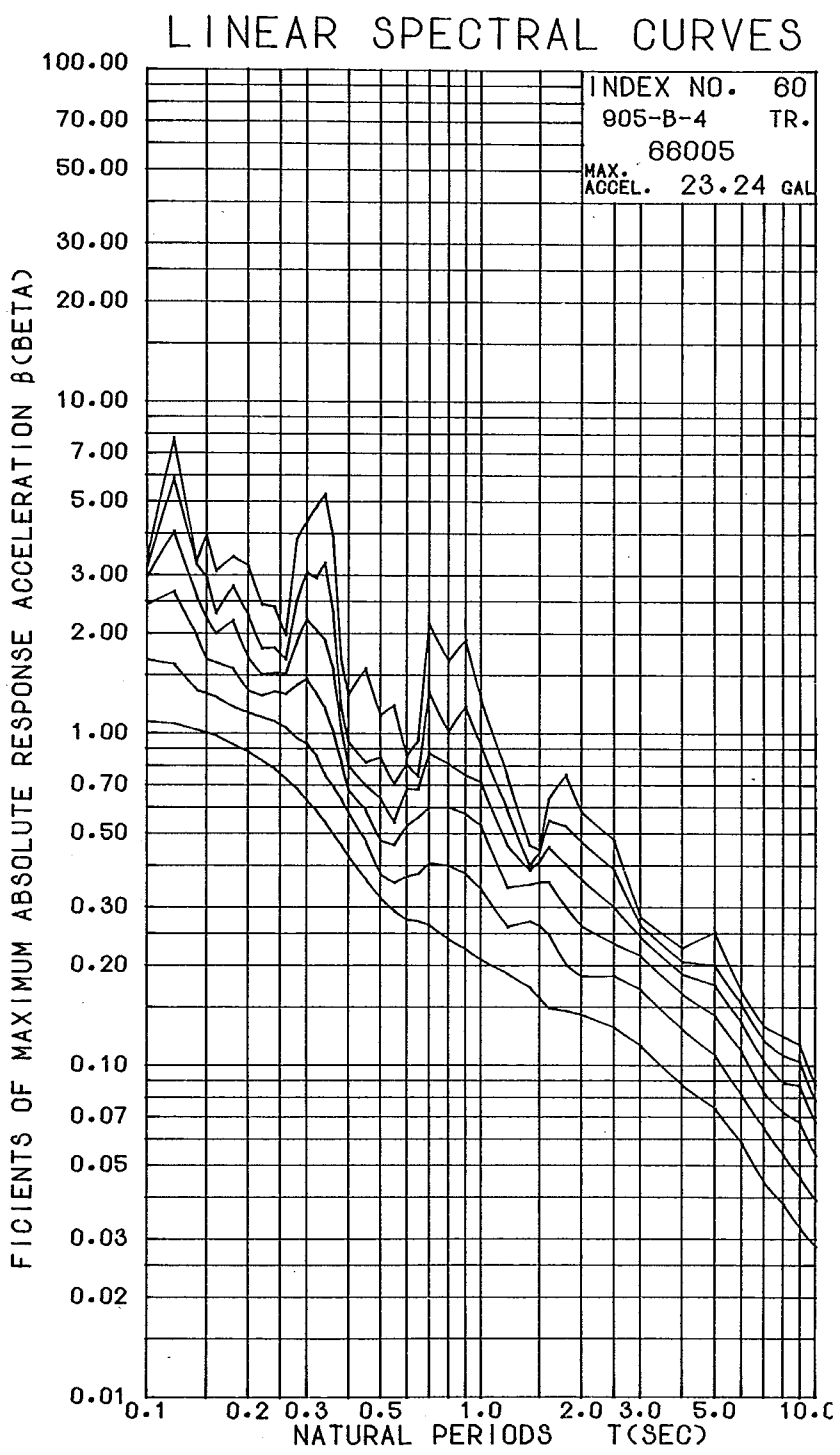


Figure IS-60 Linear Response Spectrum of Earthquake Record with Index Number 60

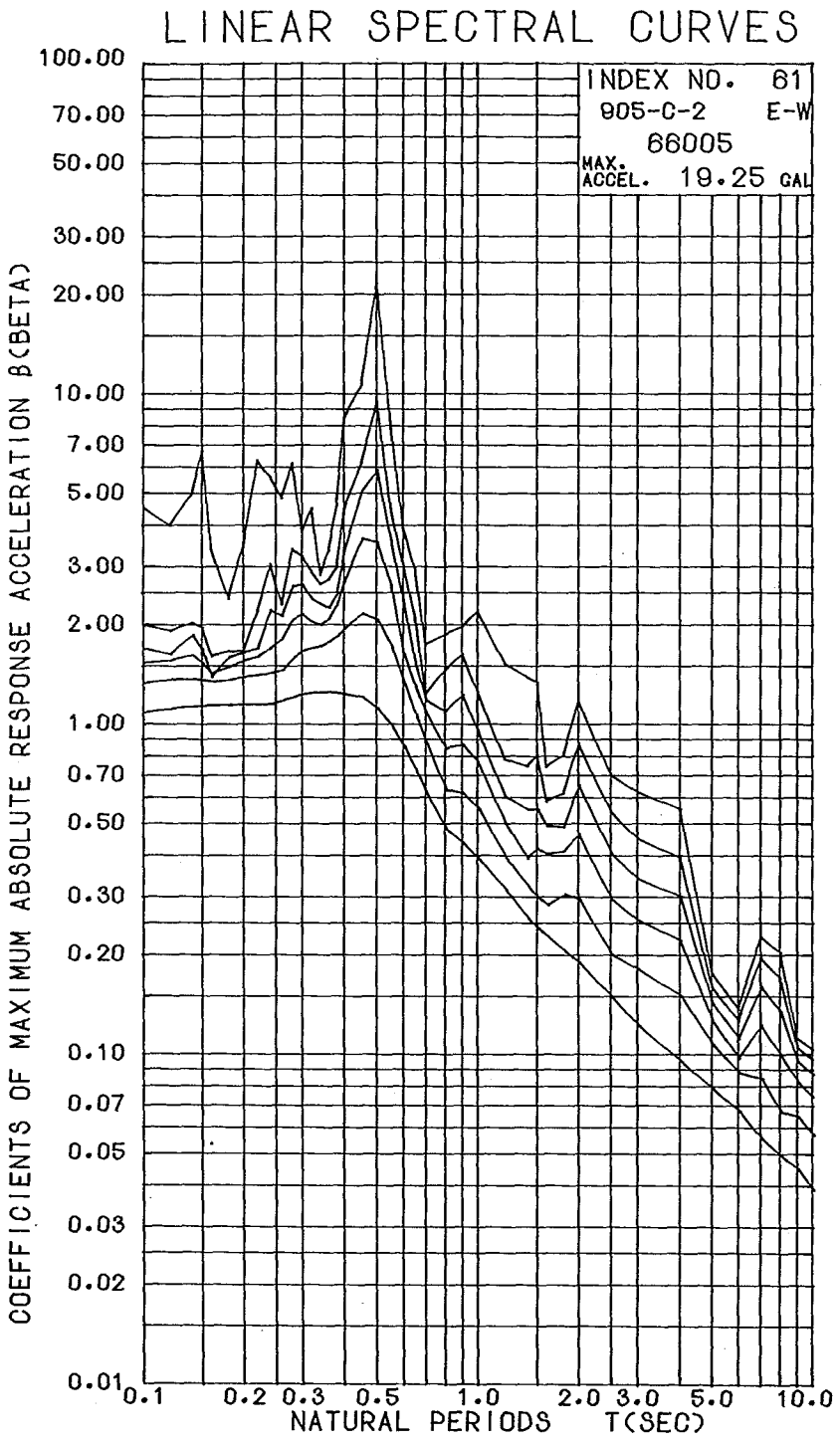


Figure IS-61 Linear Response Spectrum of Earthquake Record with Index Number 61

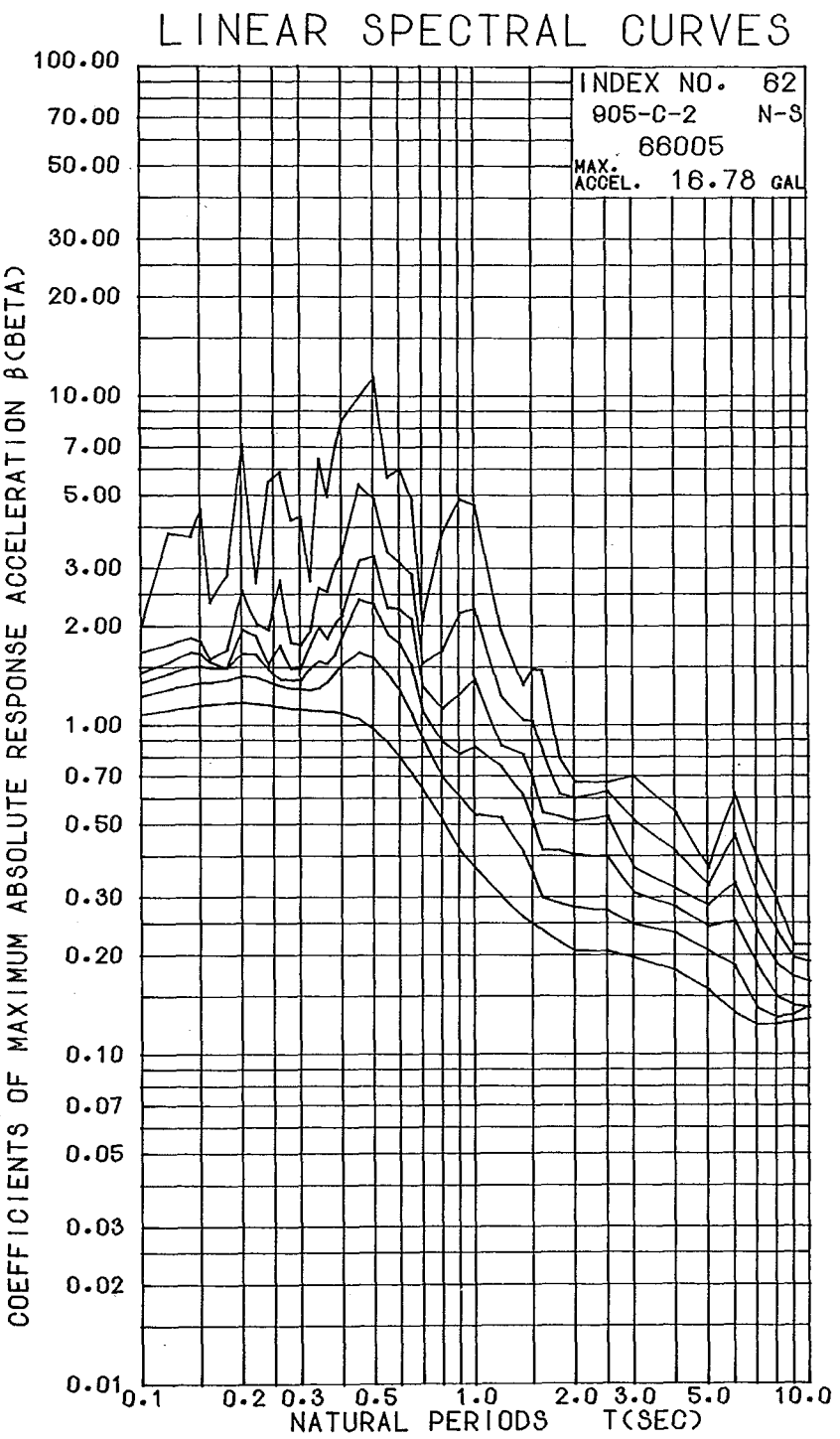


Figure IS-62 Linear Response Spectrum of Earthquake Record with Index Number 62

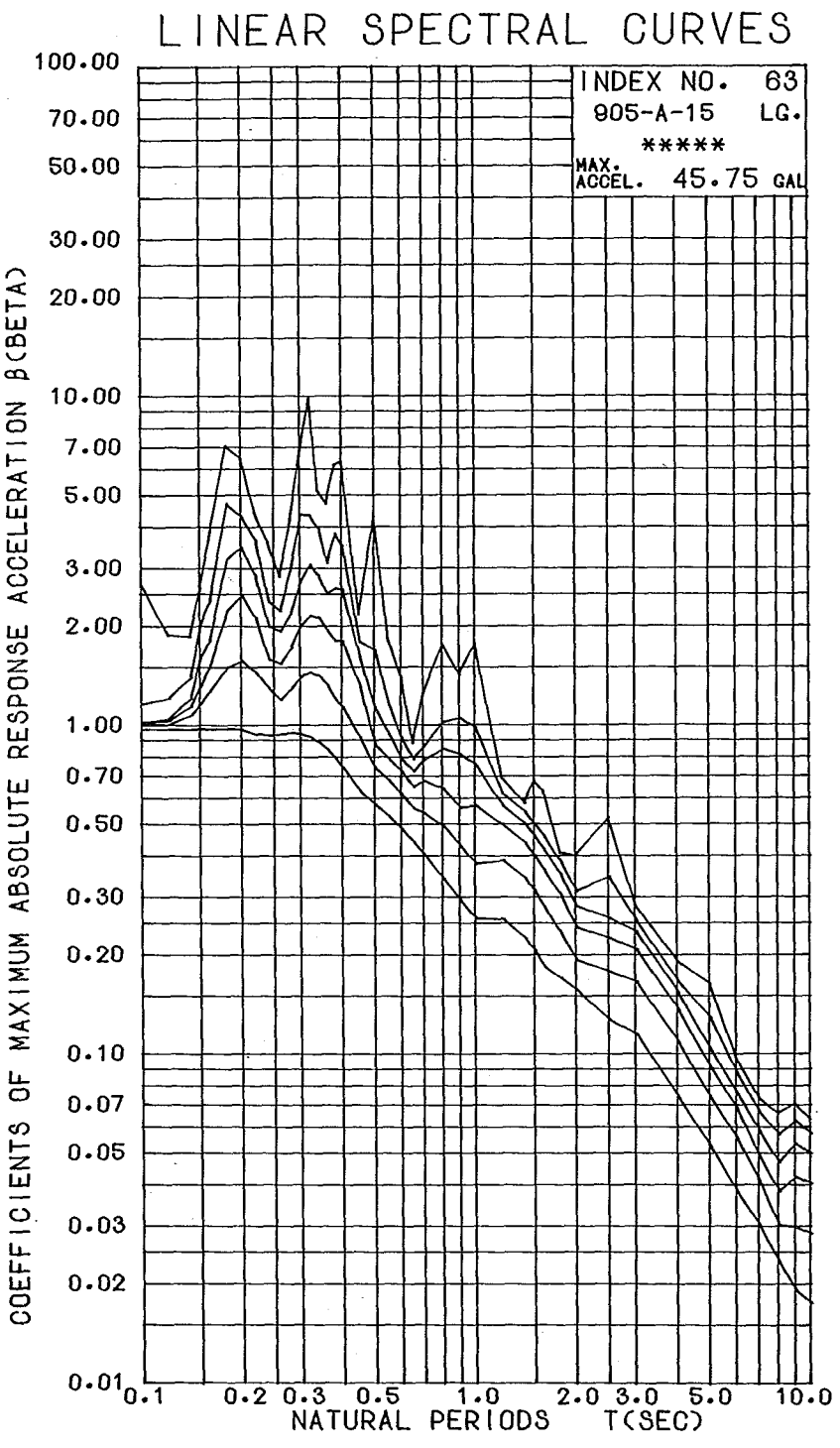


Figure IS-63 Linear Response Spectrum of Earthquake Record with Index Number 63

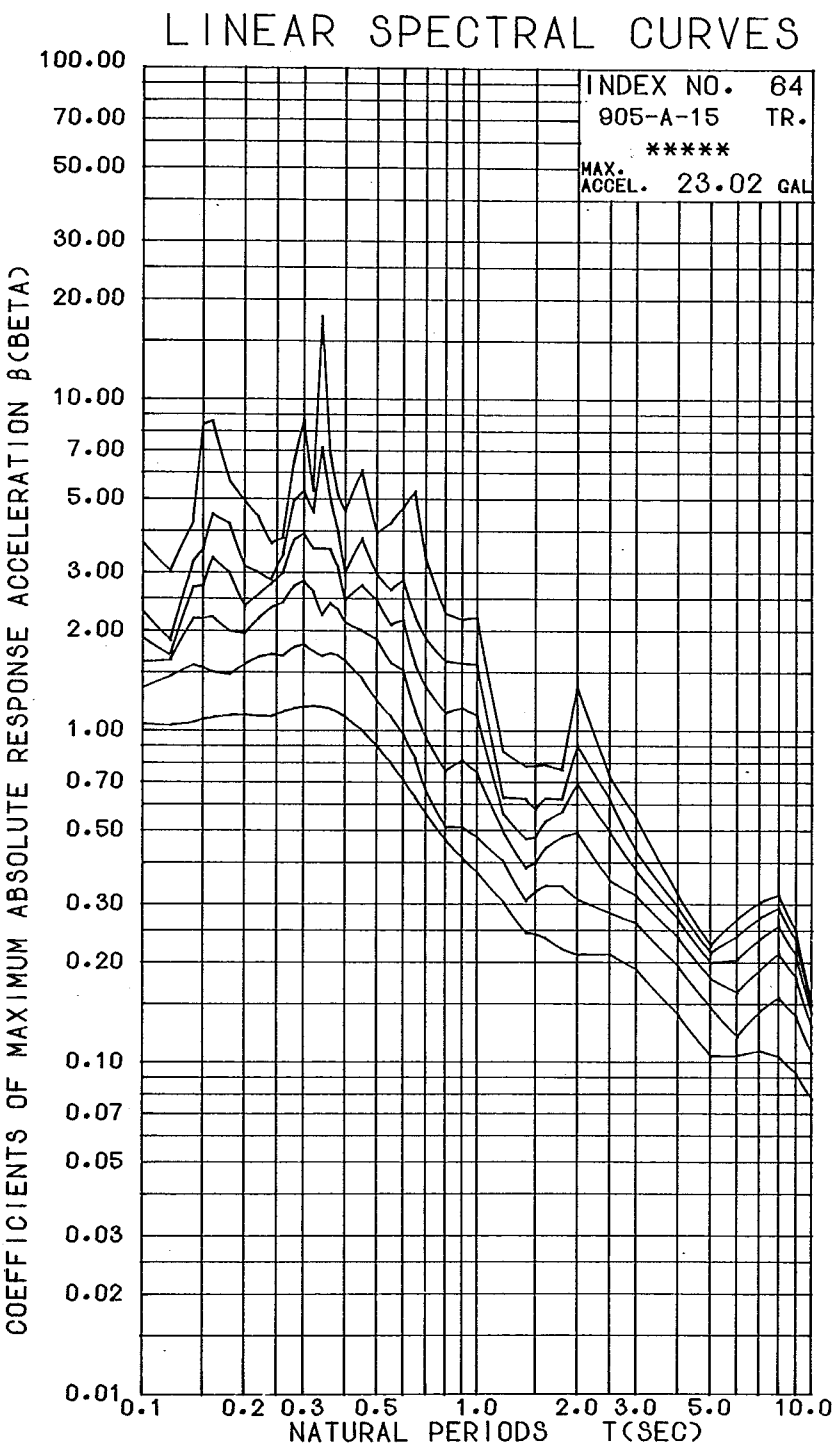


Figure IS-64 Linear Response Spectrum of Earthquake Record with Index Number 64

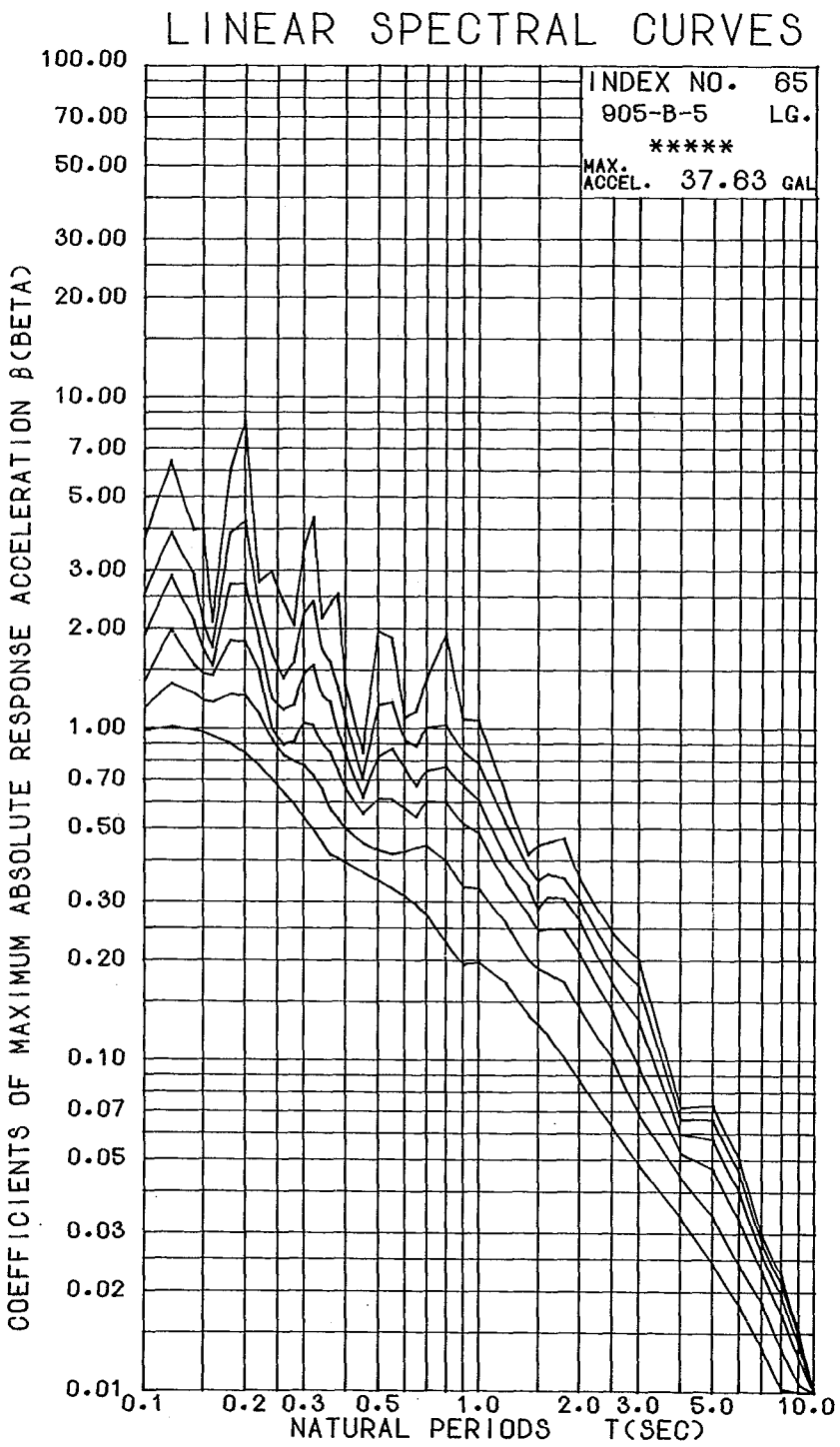


Figure IS-65 Linear Response Spectrum of Earthquake Record with Index Number 65

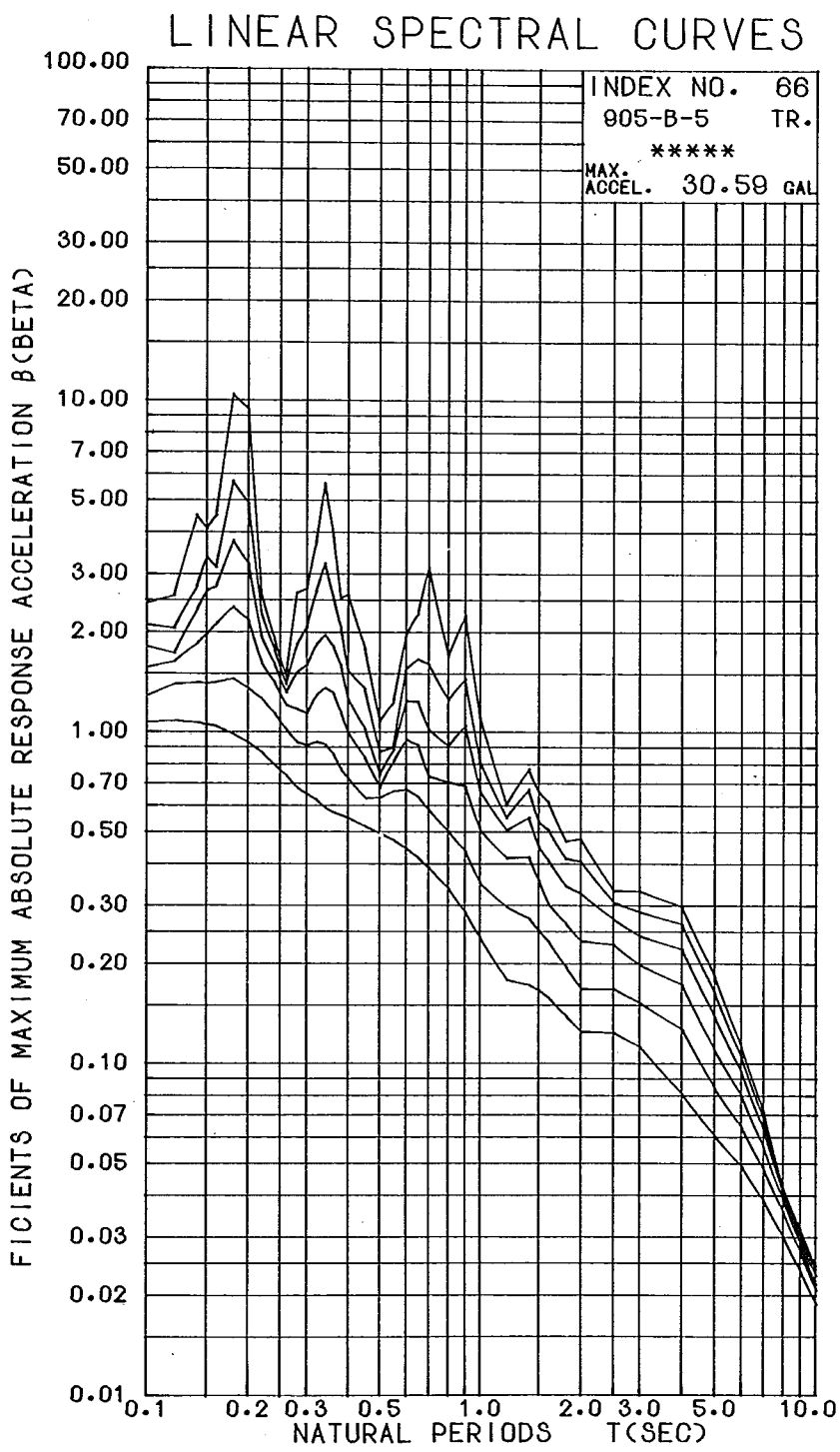


Figure IS-66 Linear Response Spectrum of Earthquake Record with Index Number 66

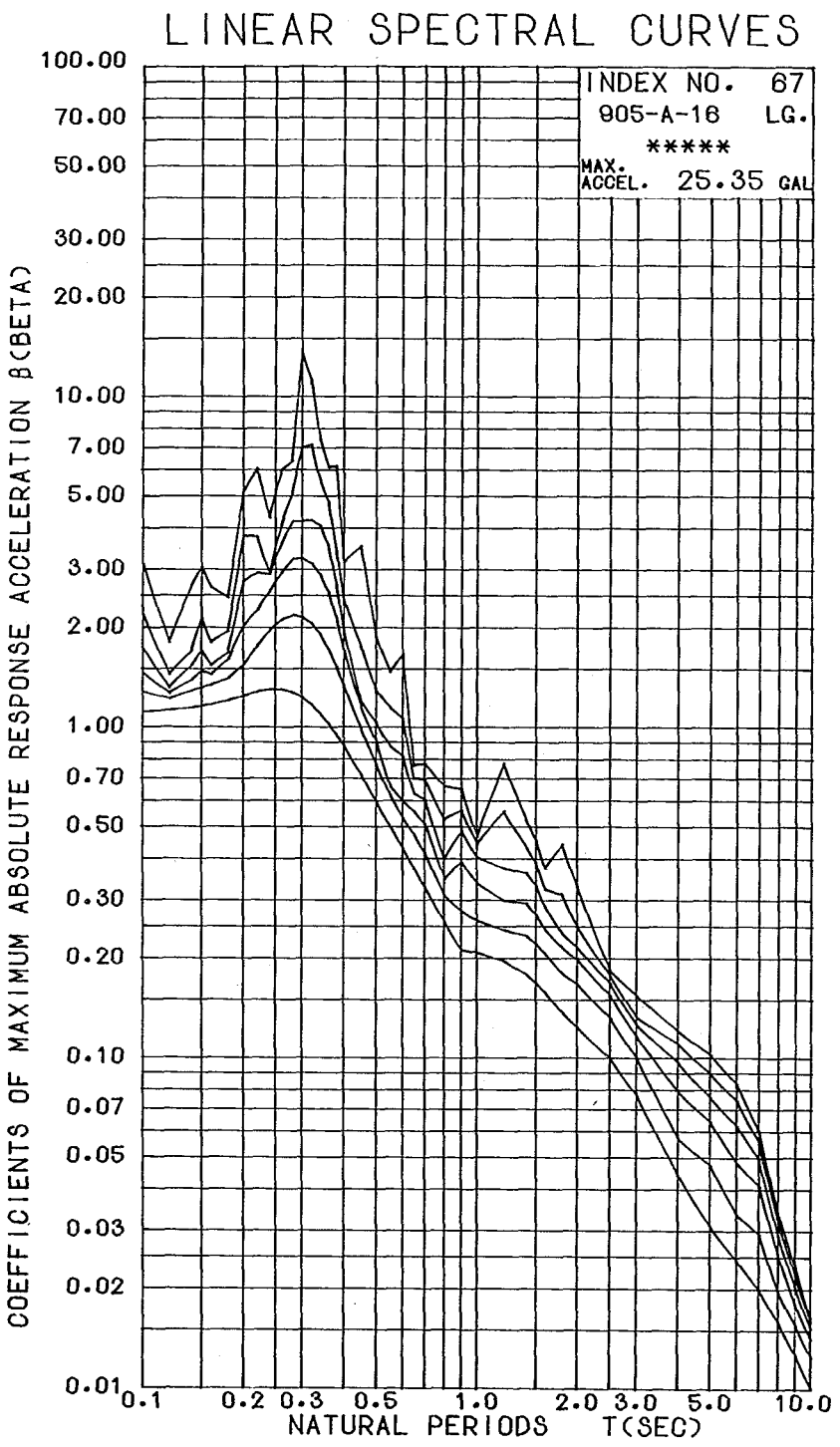


Figure IS-67 Linear Response Spectrum of Earthquake Record with Index Number 67

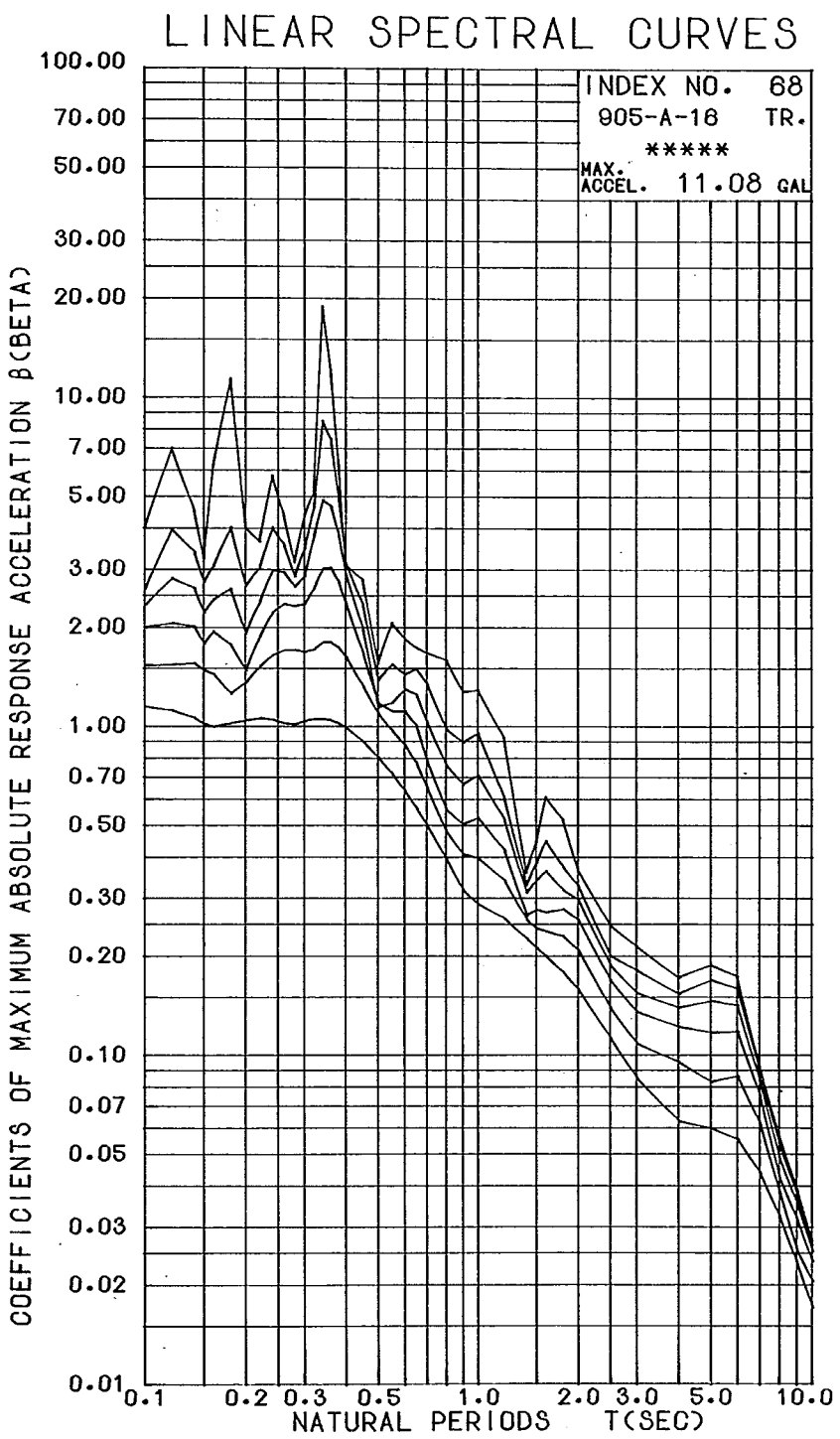


Figure IS-68 Linear Response Spectrum of Earthquake Record with Index Number 68

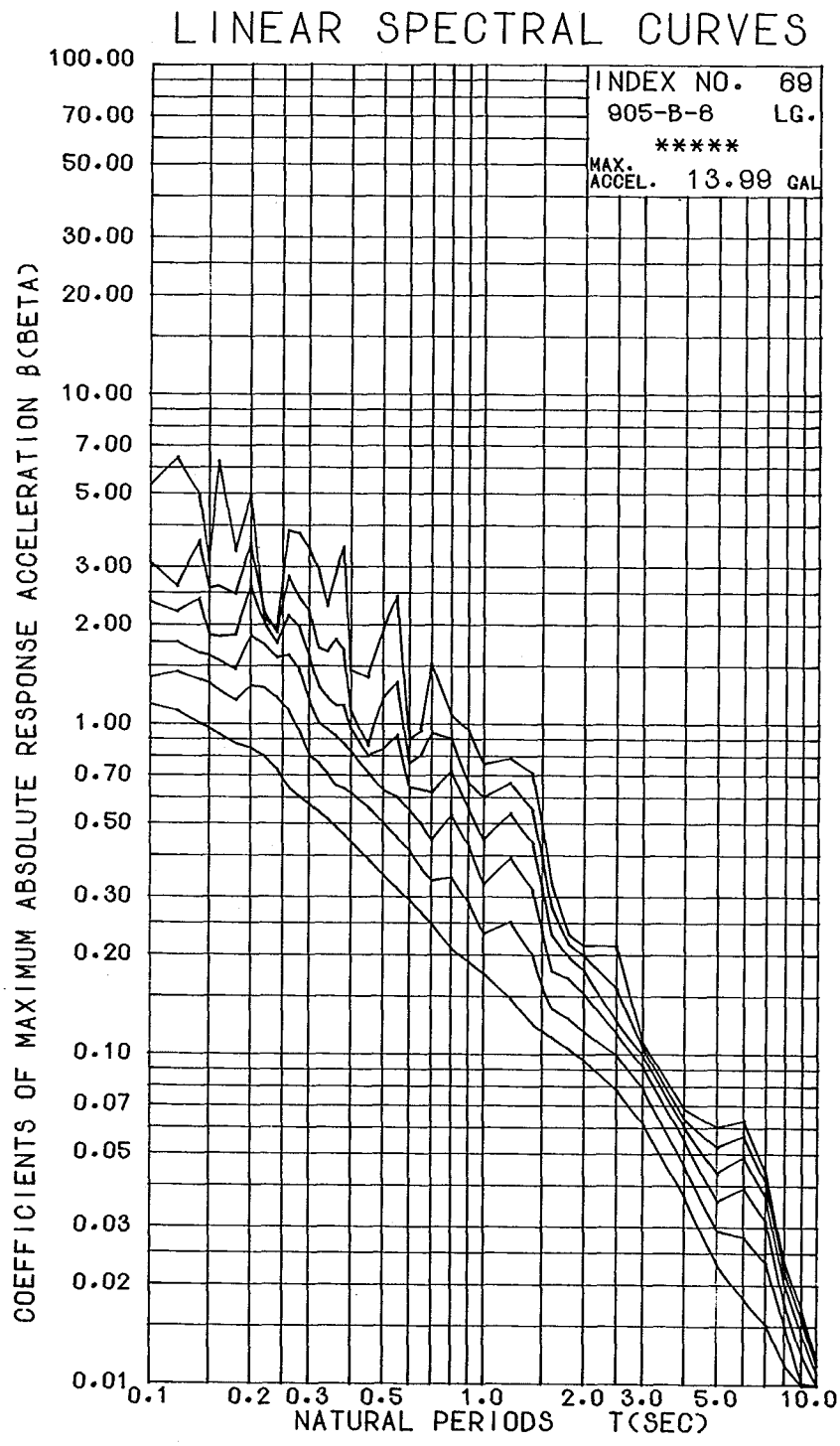


Figure IS-69 Linear Response Spectrum of Earthquake Record with Index Number 69

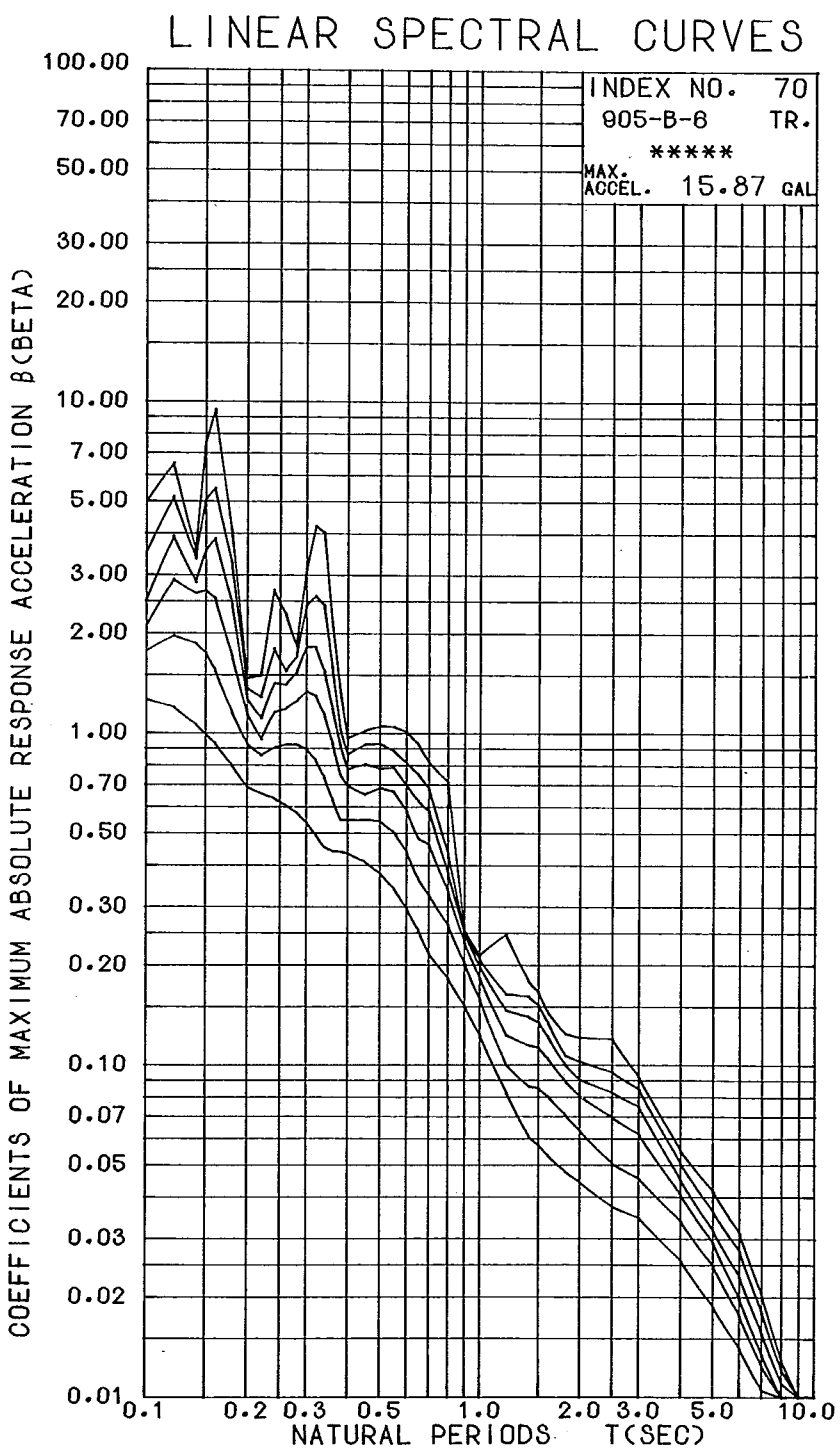


Figure IS-70 Linear Response Spectrum of Earthquake Record with Index Number 70

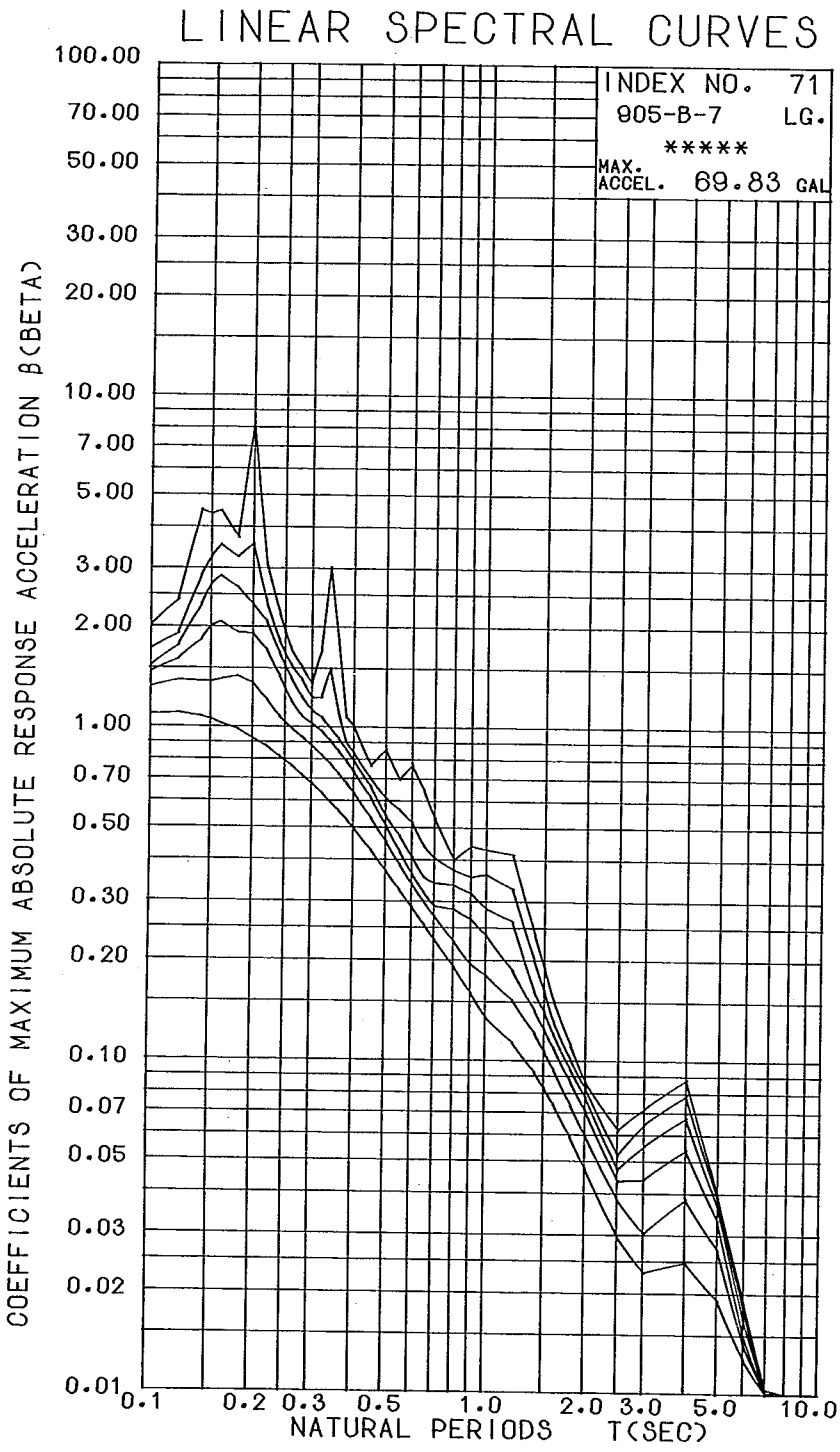


Figure IS-71 Linear Response Spectrum of Earthquake Record with Index Number 71

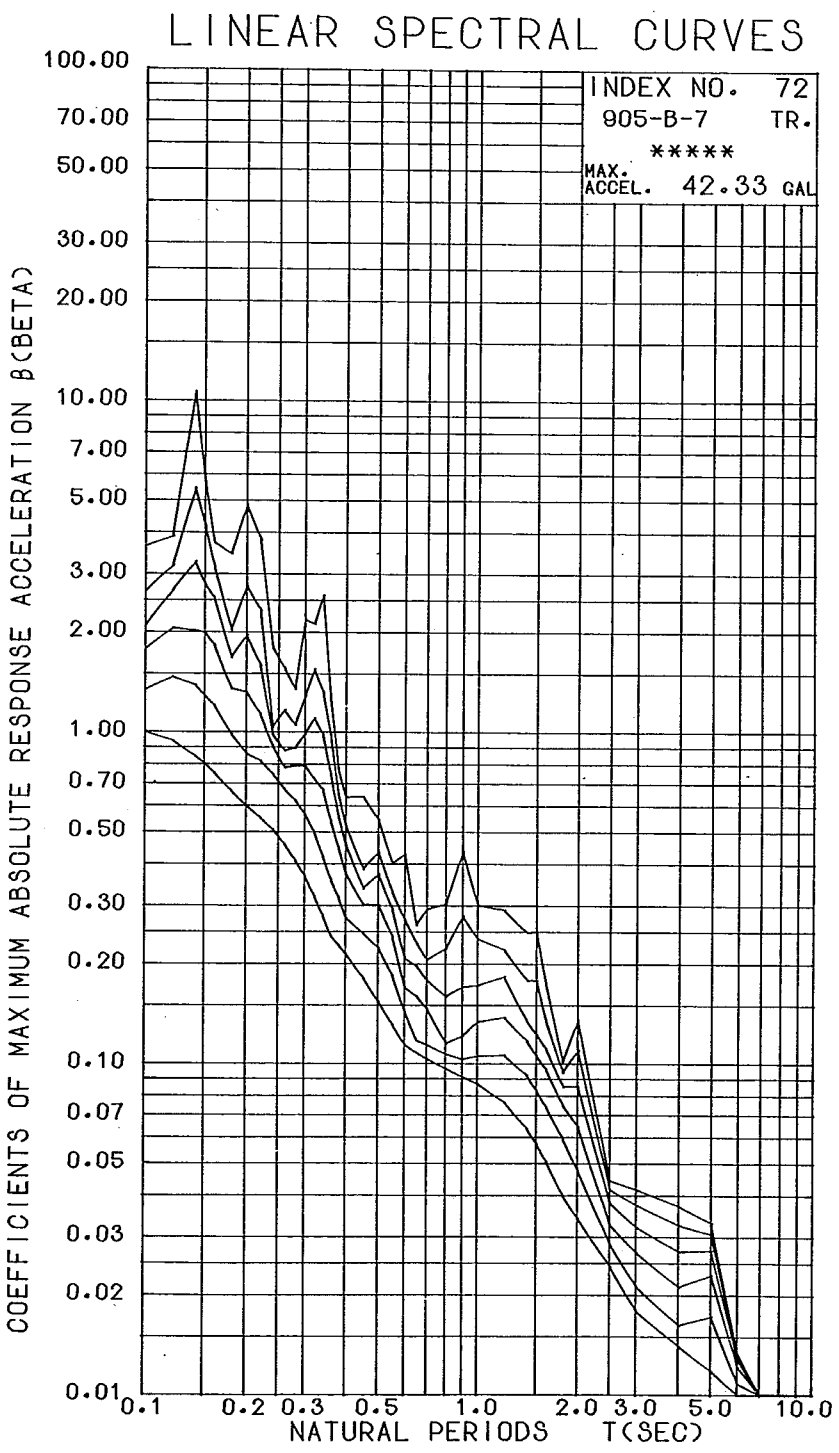


Figure IS-72 Linear Response Spectrum of Earthquake Record with Index Number 72

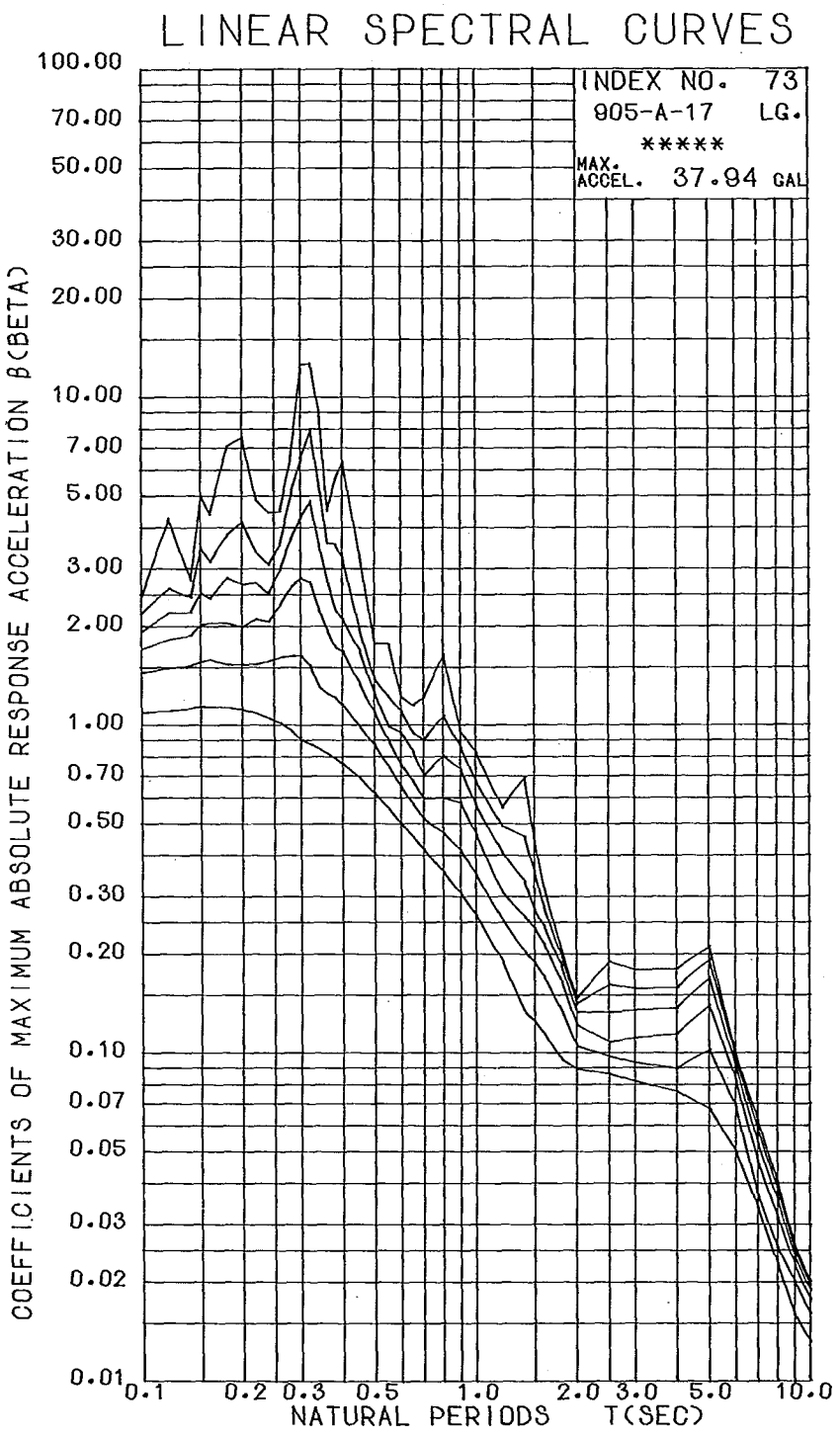


Figure IS-73 Linear Response Spectrum of Earthquake Record with Index Number 73

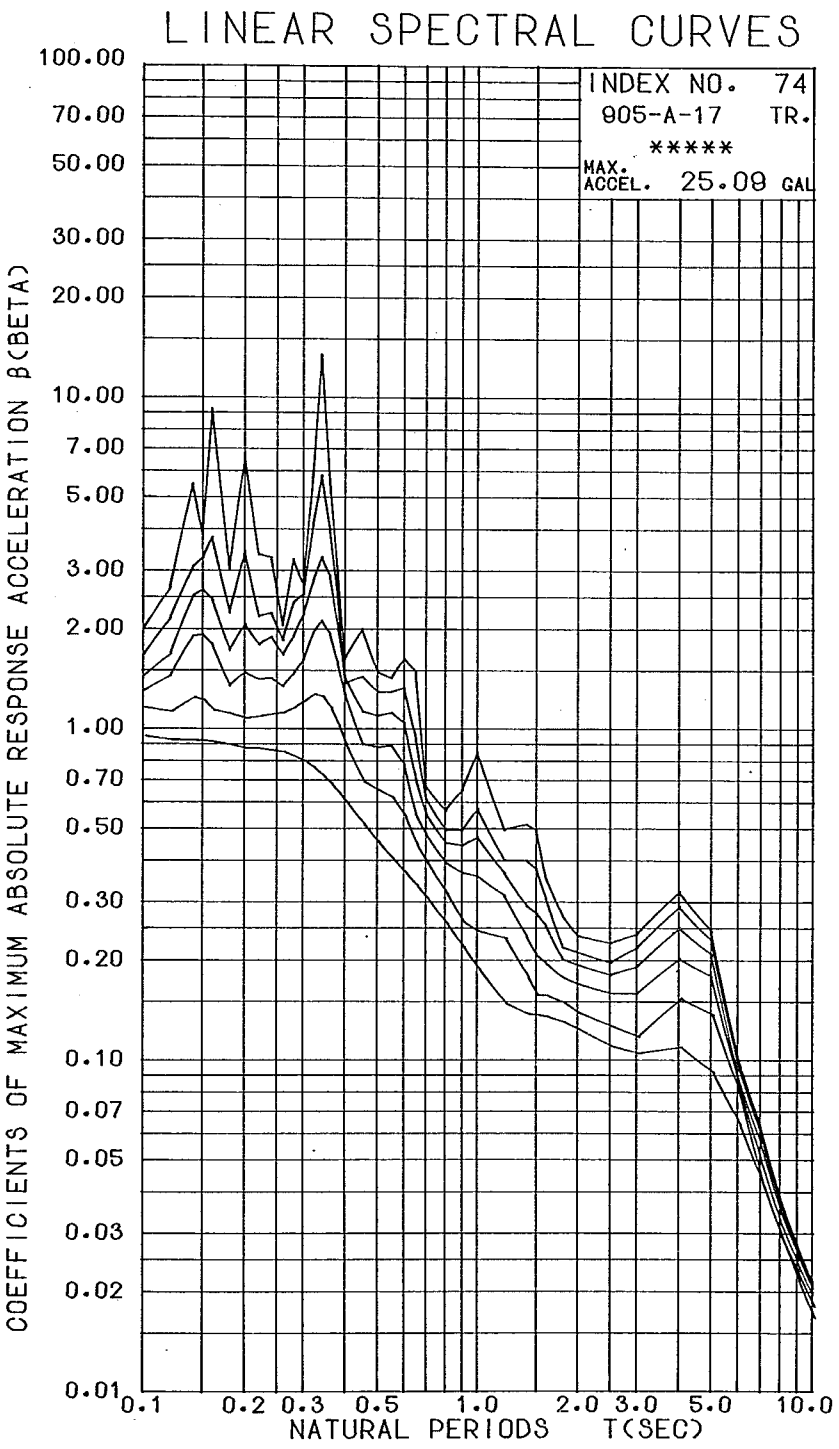


Figure IS-74 Linear Response Spectrum of Earthquake Record with Index Number 74

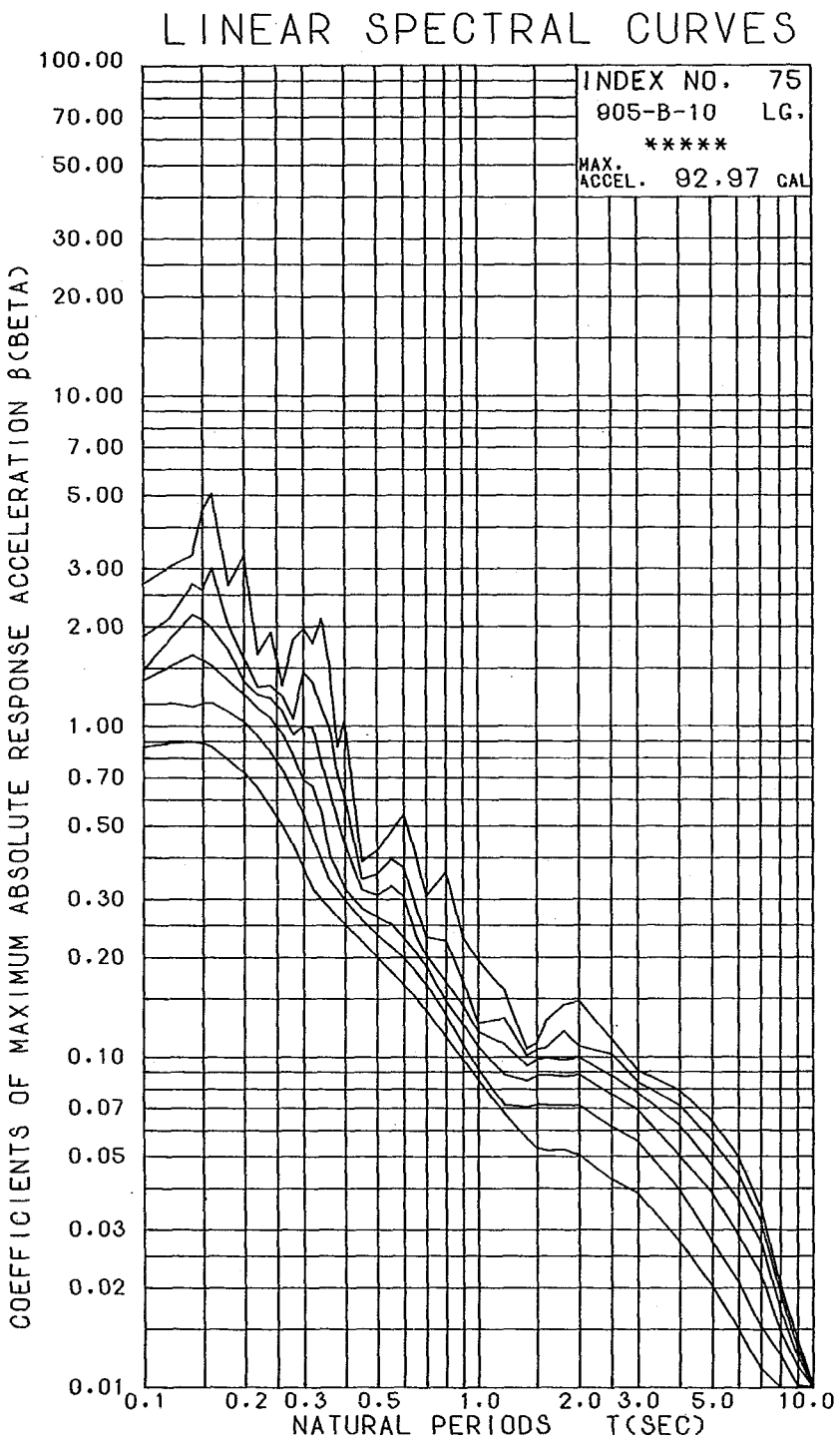


Figure IS-75 Linear Response Spectrum of Earthquake Record with Index Number 75

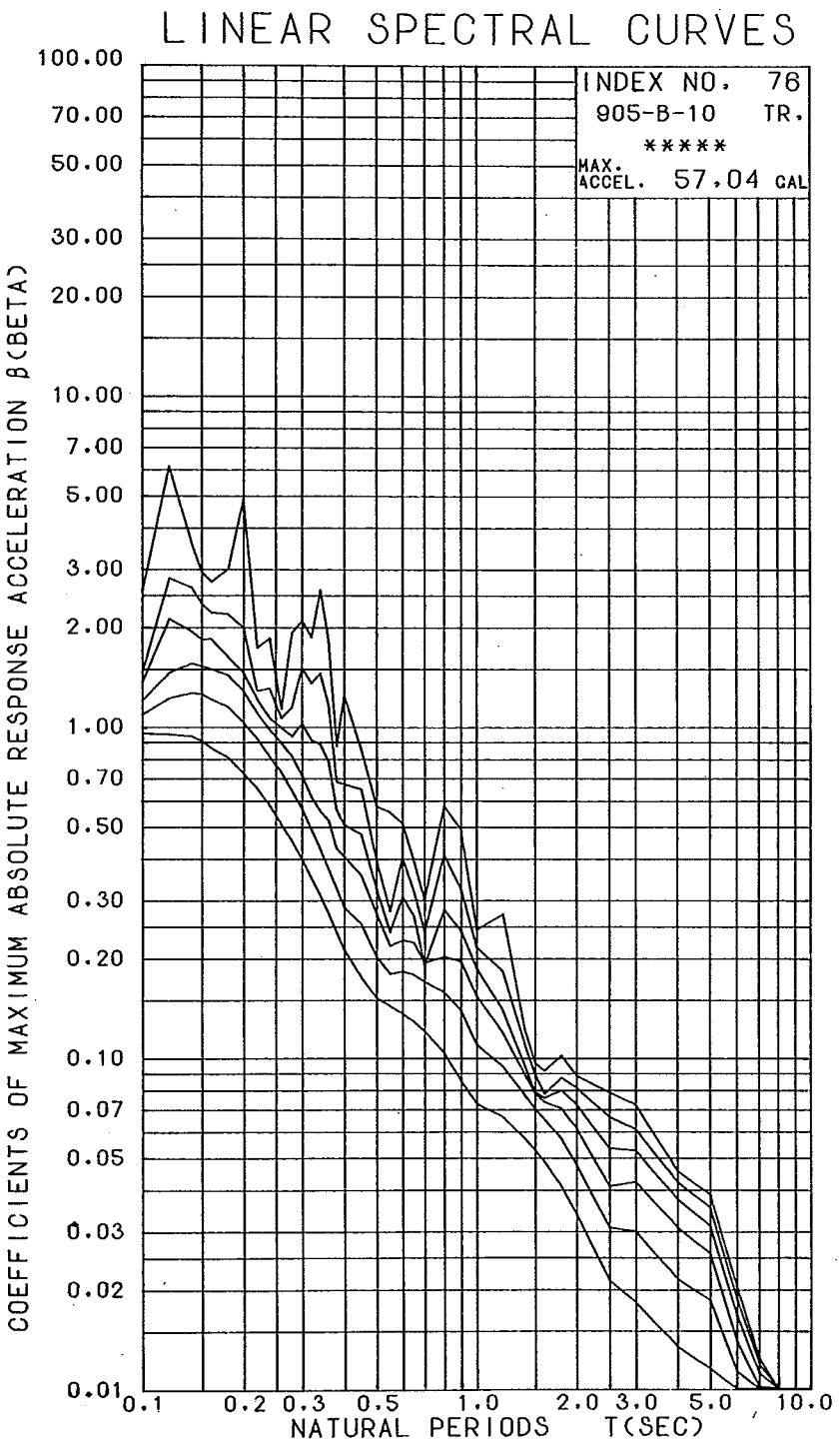


Figure IS-76 Linear Response Spectrum of Earthquake Record with Index Number 76

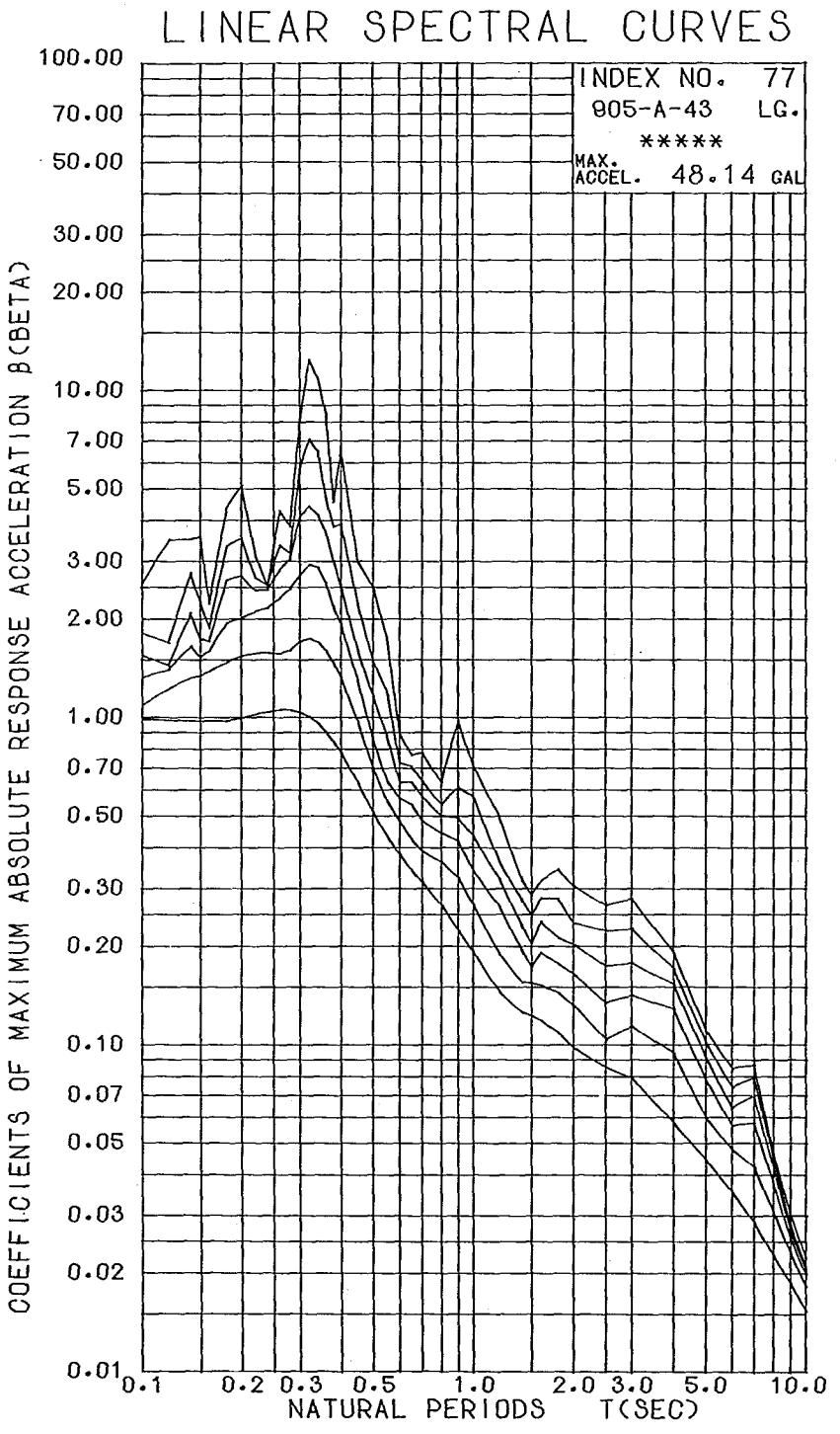


Figure IS-77 Linear Response Spectrum of Earthquake Record with Index Number 77

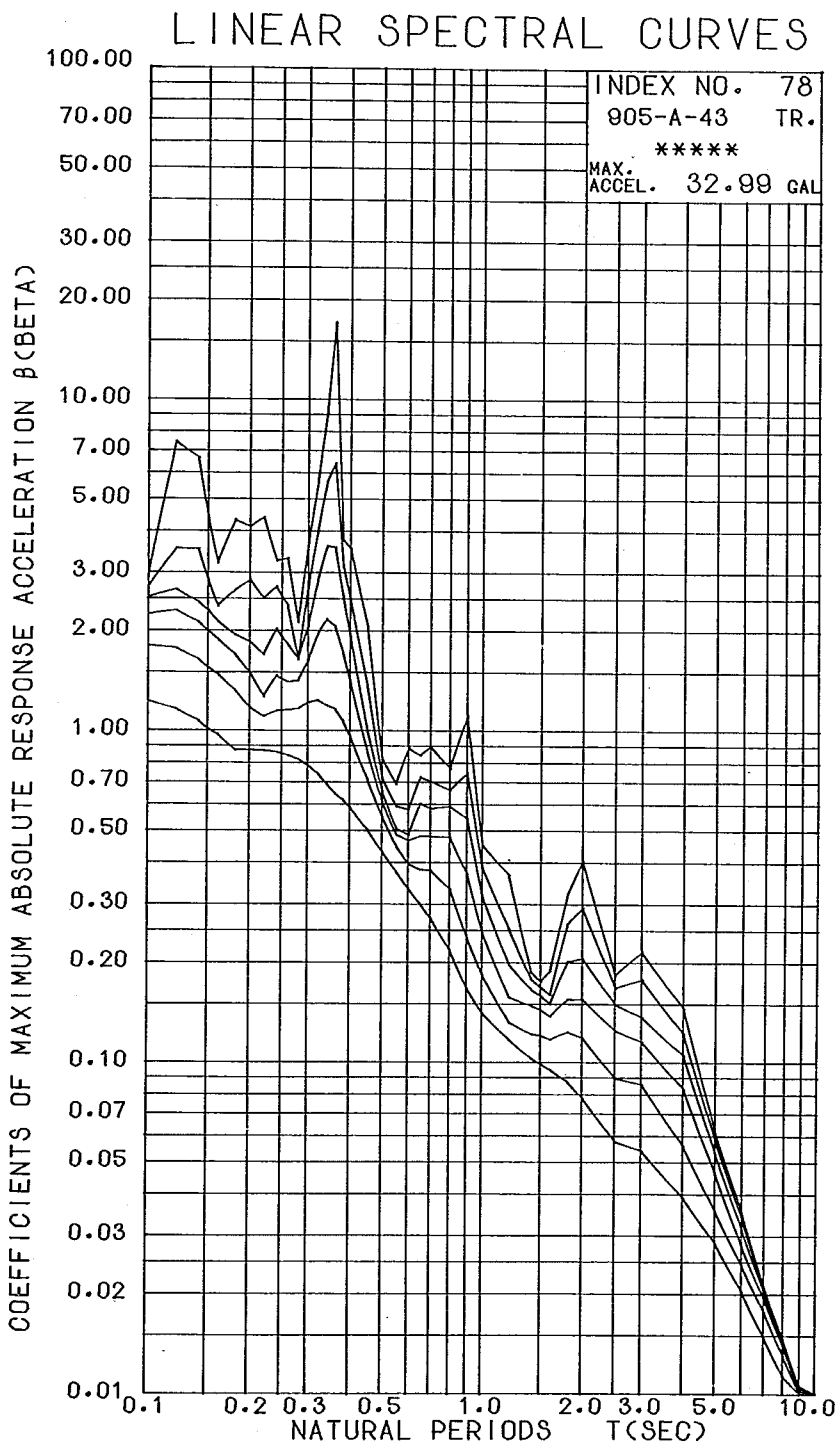


Figure IS-78 Linear Response Spectrum of Earthquake Record with Index Number 78

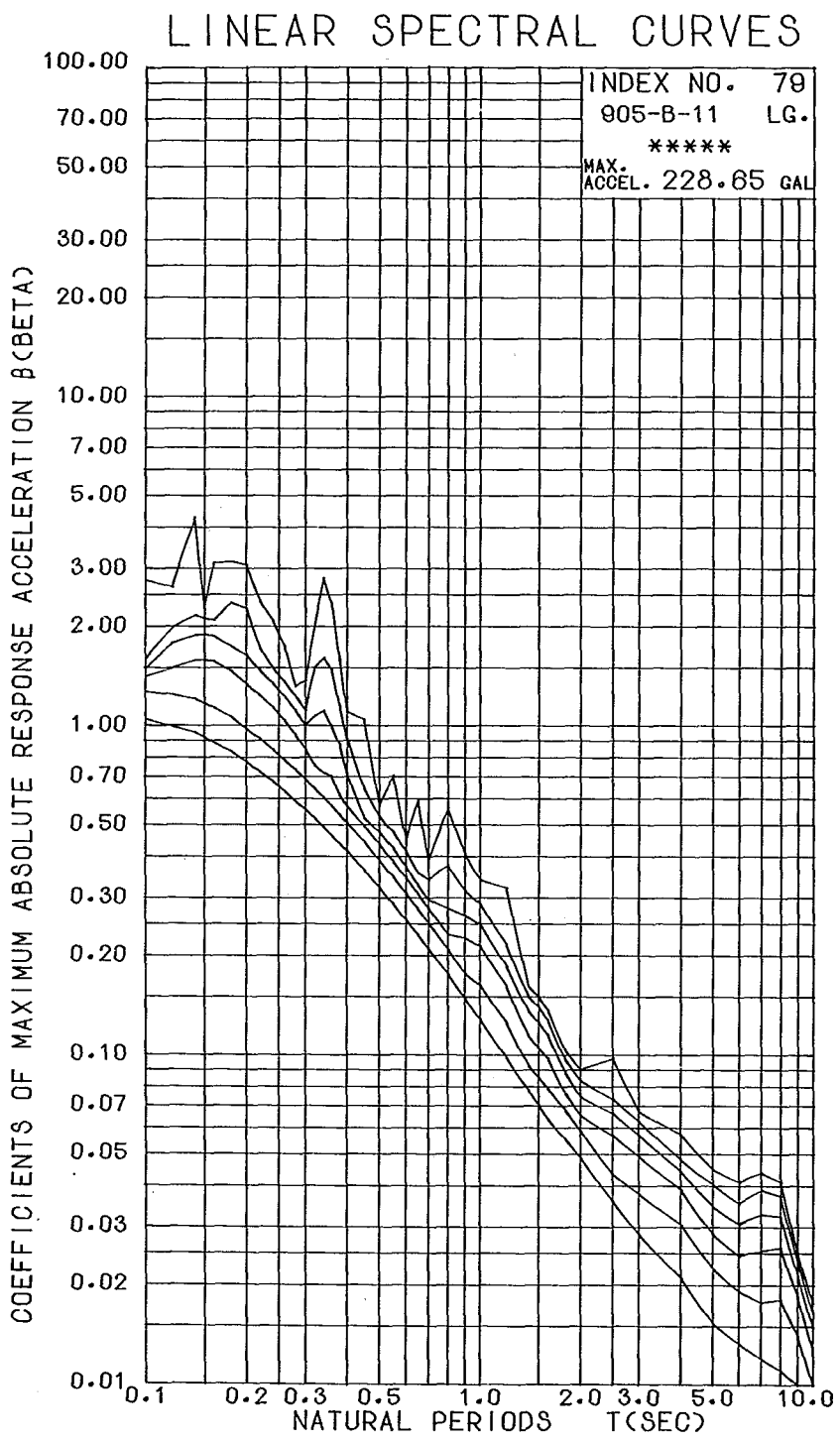


Figure IS-79 Linear Response Spectrum of Earthquake Record with Index Number 79

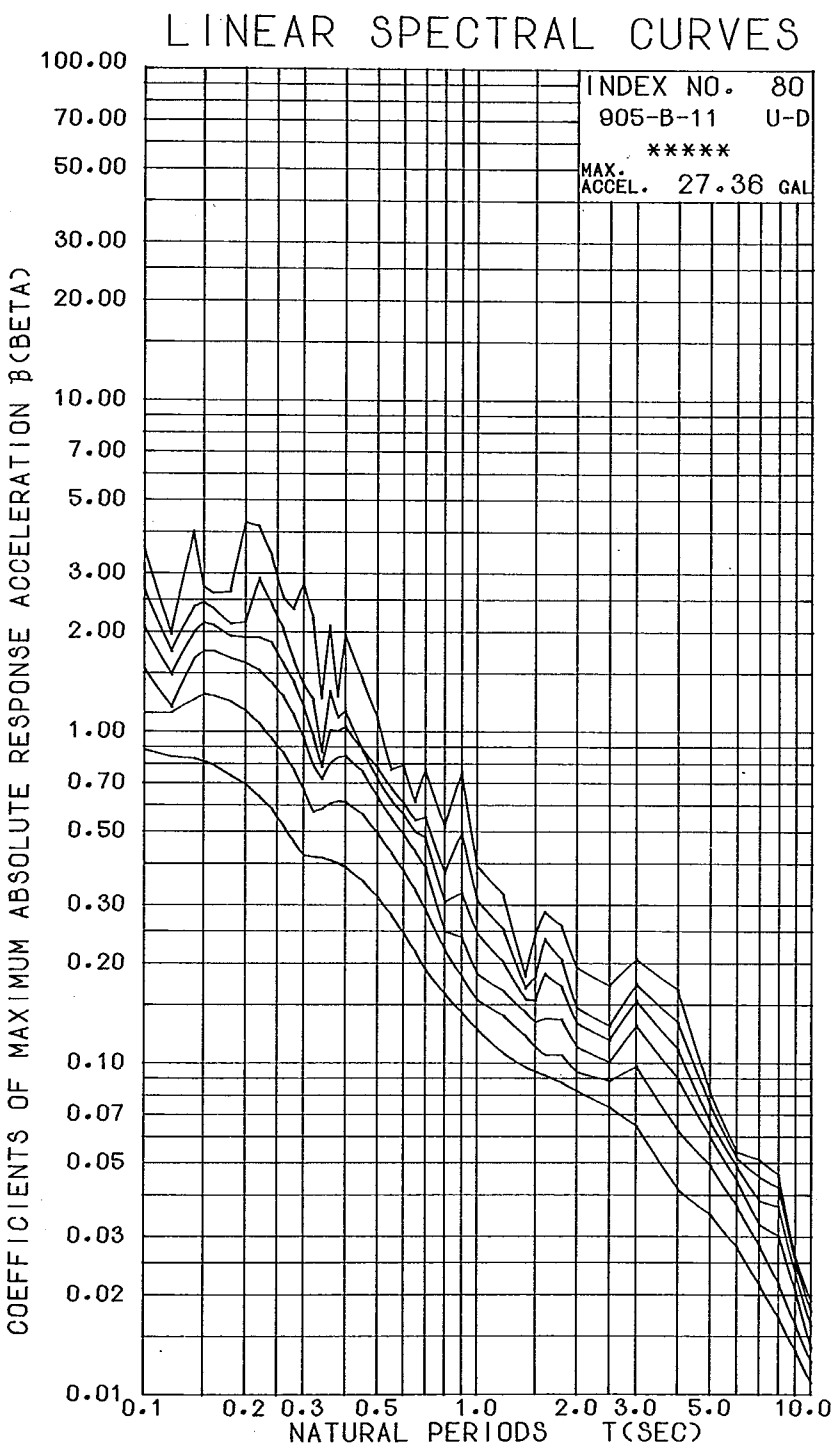


Figure IS-80 Linear Response Spectrum of Earthquake Record with Index Number 80

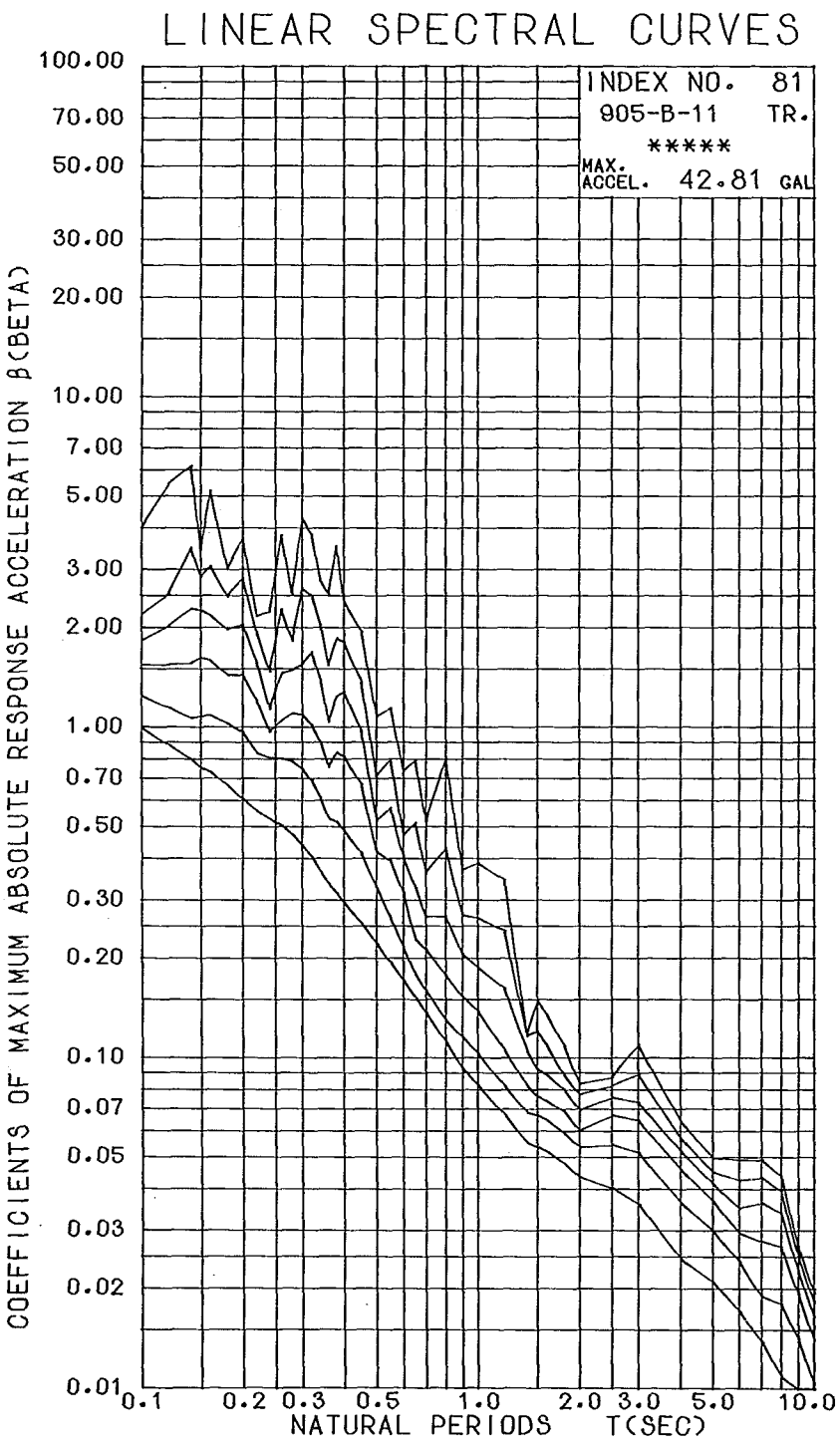


Figure IS-81 Linear Response Spectrum of Earthquake Record with Index Number 81

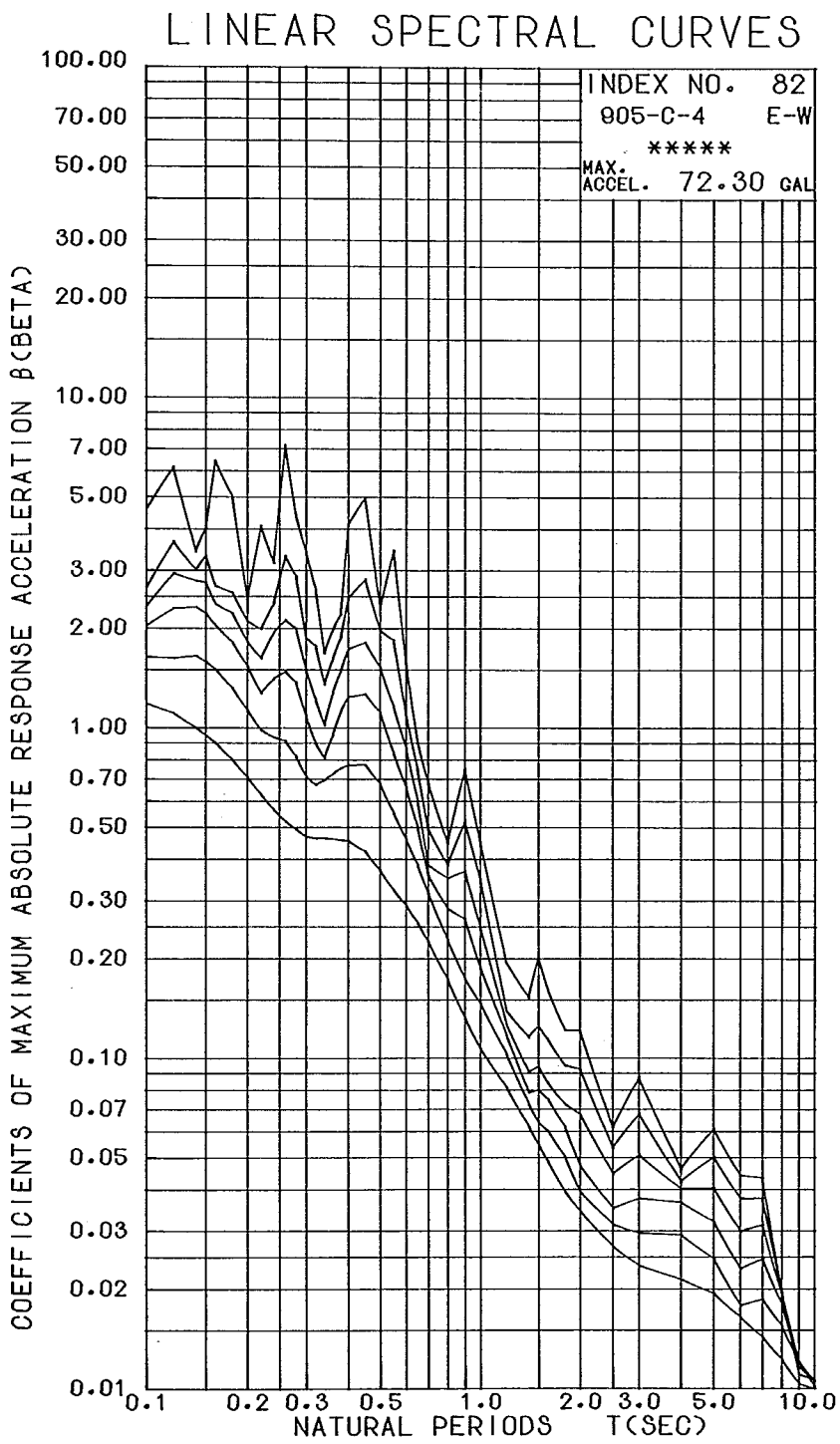


Figure IS-82 Linear Response Spectrum of Earthquake Record with Index Number 82

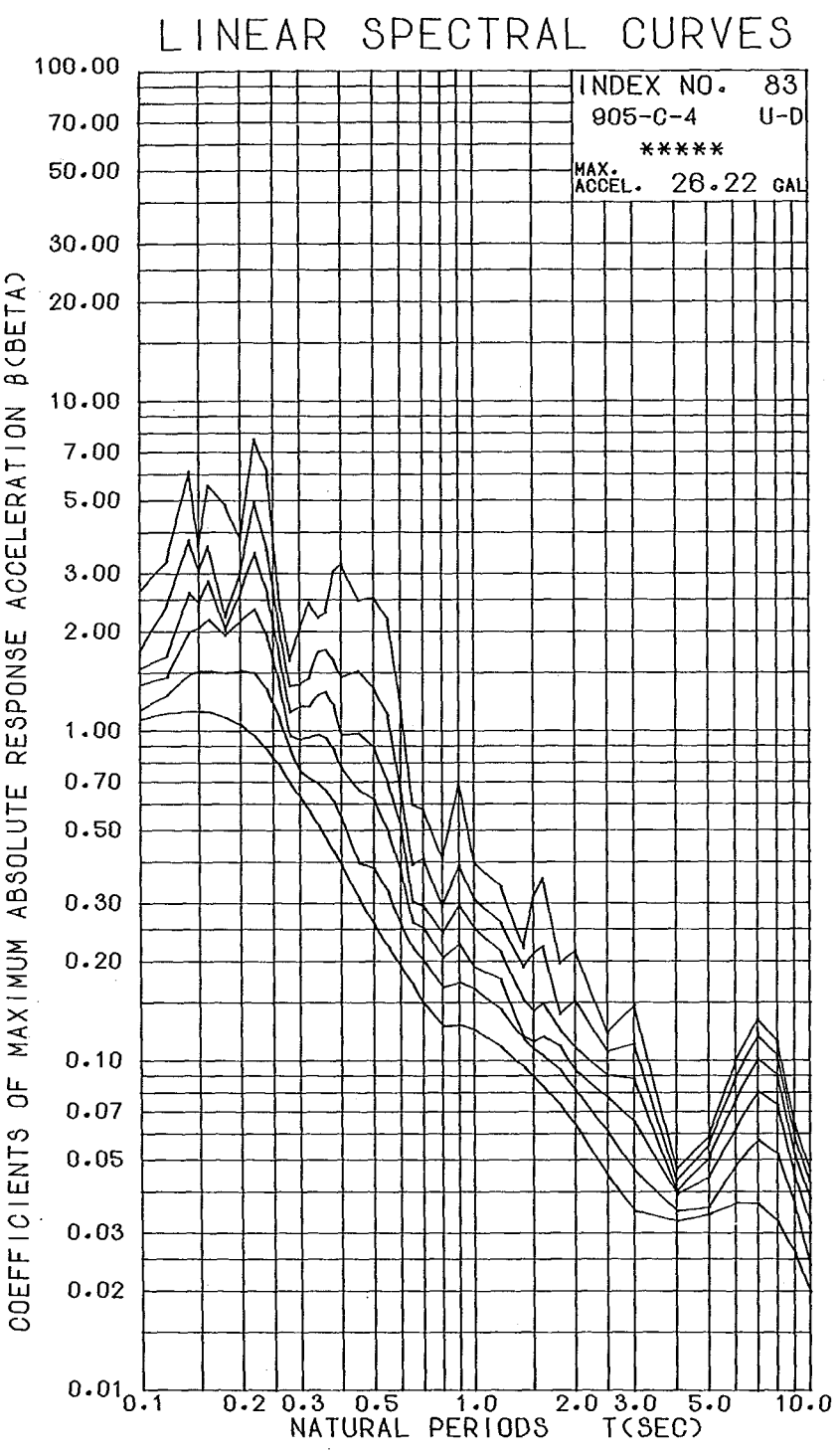


Figure IS-83 Linear Response Spectrum of Earthquake Record with Index Number 83

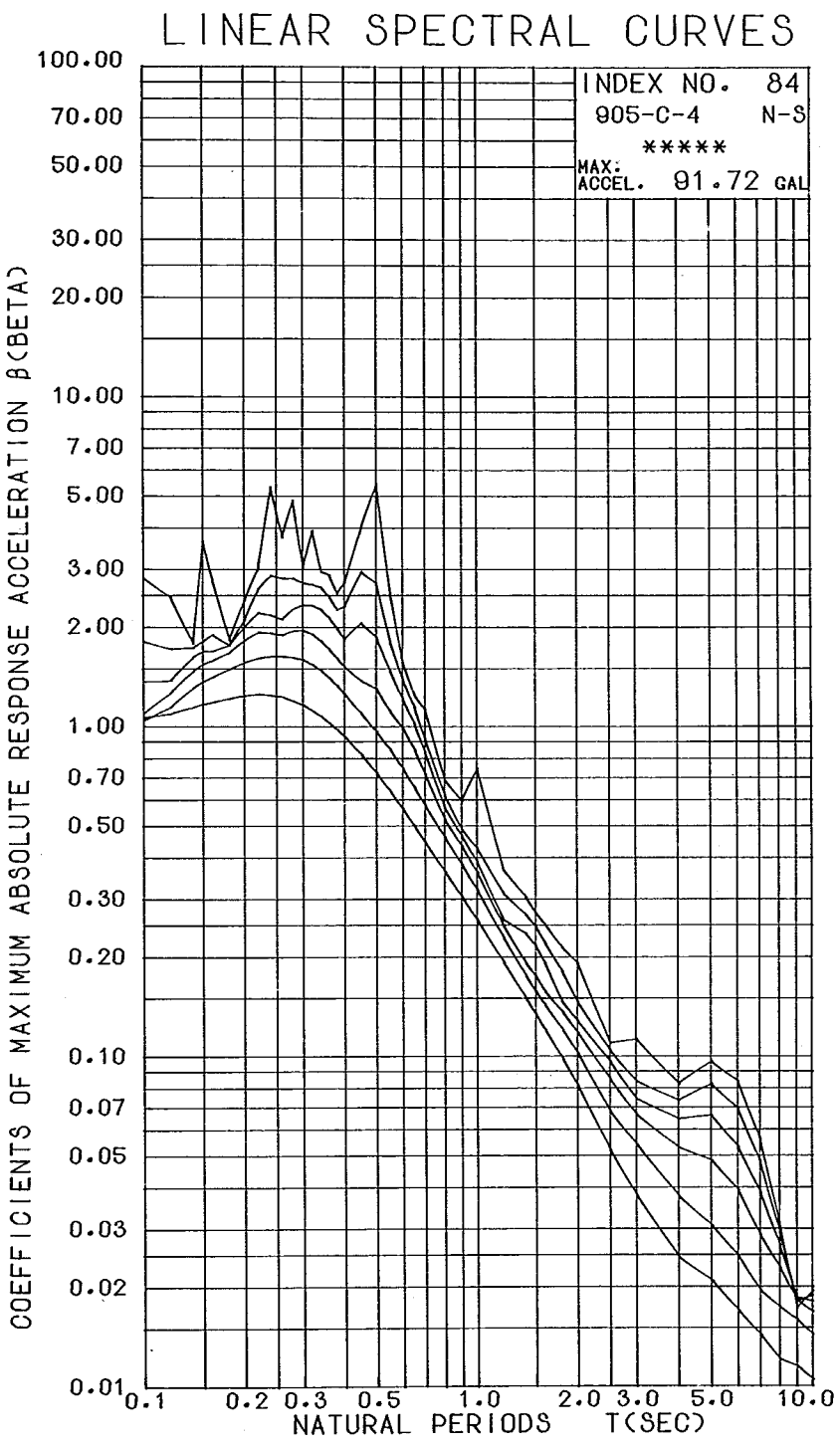


Figure IS-84 Linear Response Spectrum of Earthquake Record with Index Number 84

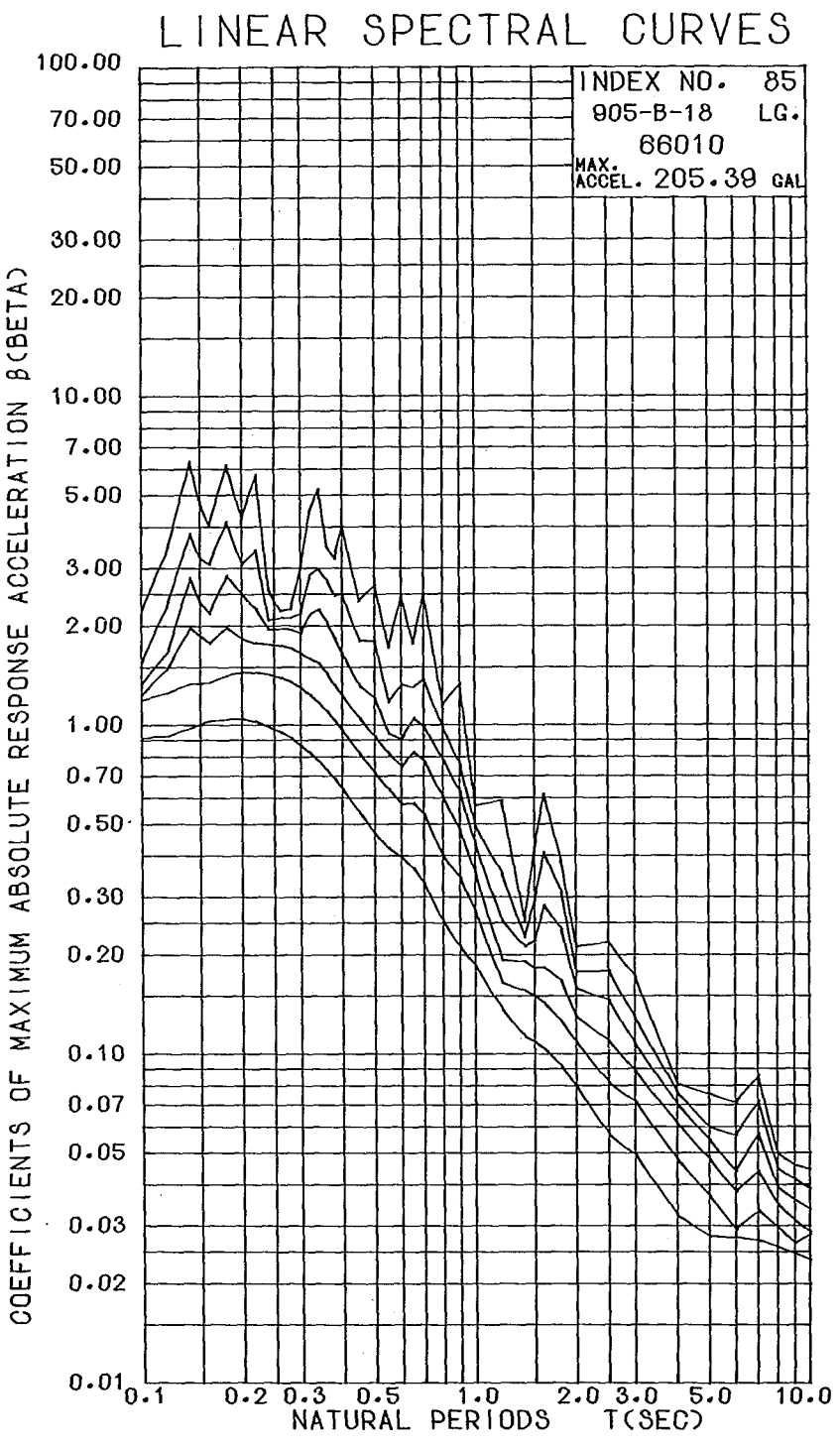


Figure IS-85 Linear Response Spectrum of Earthquake Record with Index Number 85

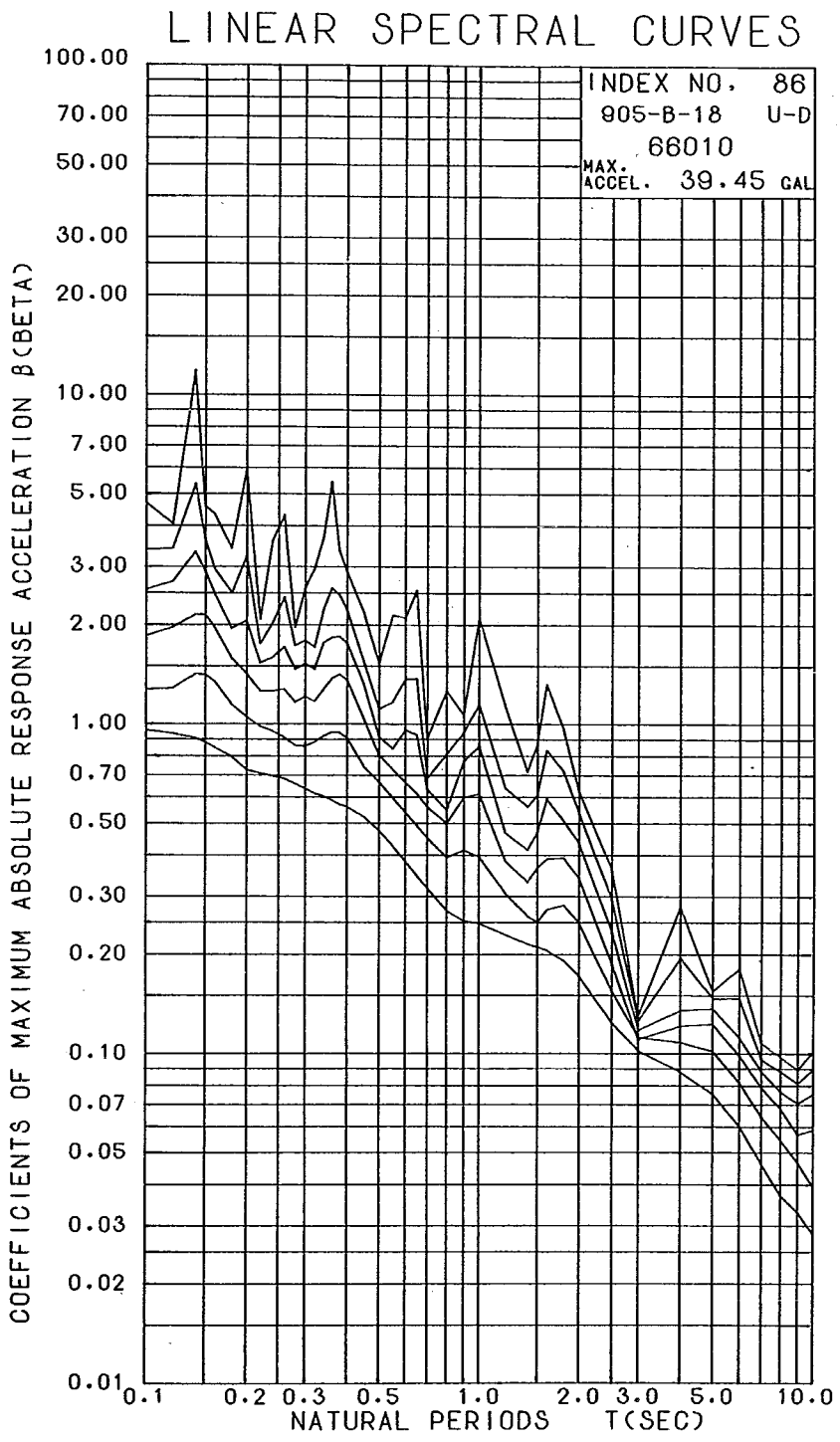


Figure IS-86 Linear Response Spectrum of Earthquake Record with Index Number 86

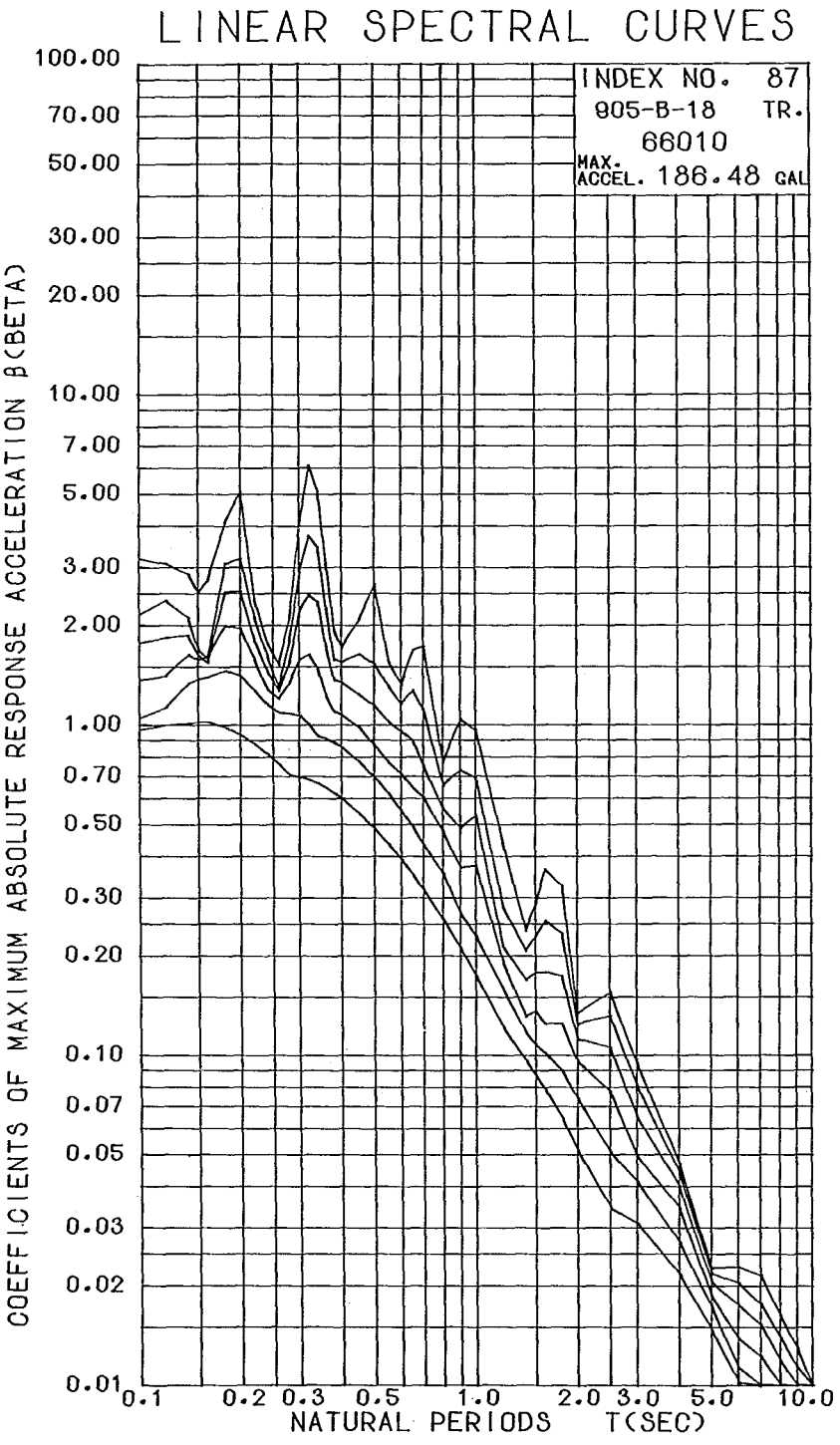


Figure IS-87 Linear Response Spectrum of Earthquake Record with Index Number 87

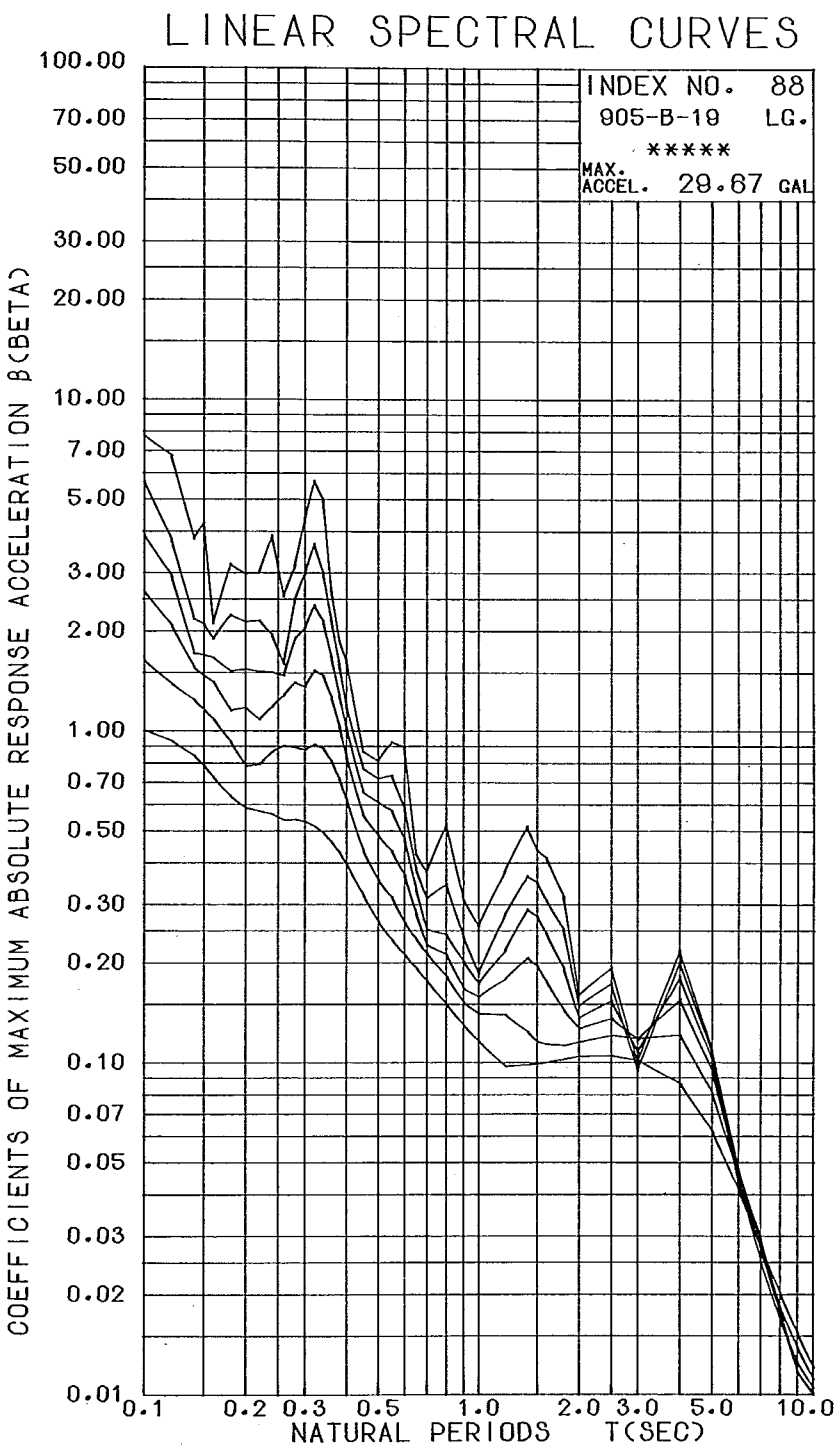


Figure IS-88 Linear Response Spectrum of Earthquake Record with Index Number 88

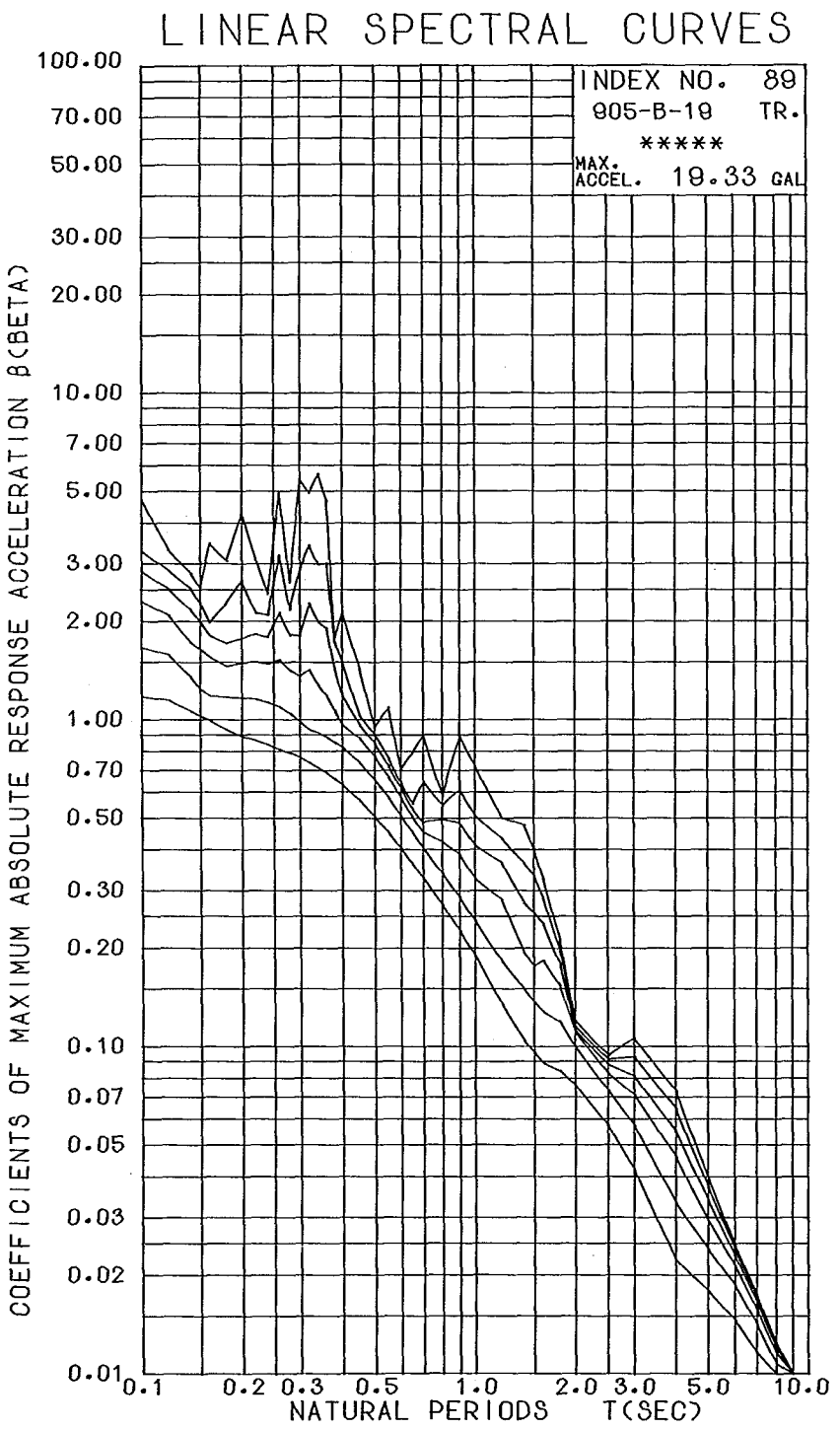


Figure IS-89 Linear Response Spectrum of Earthquake Record with Index Number 89

— 238 —

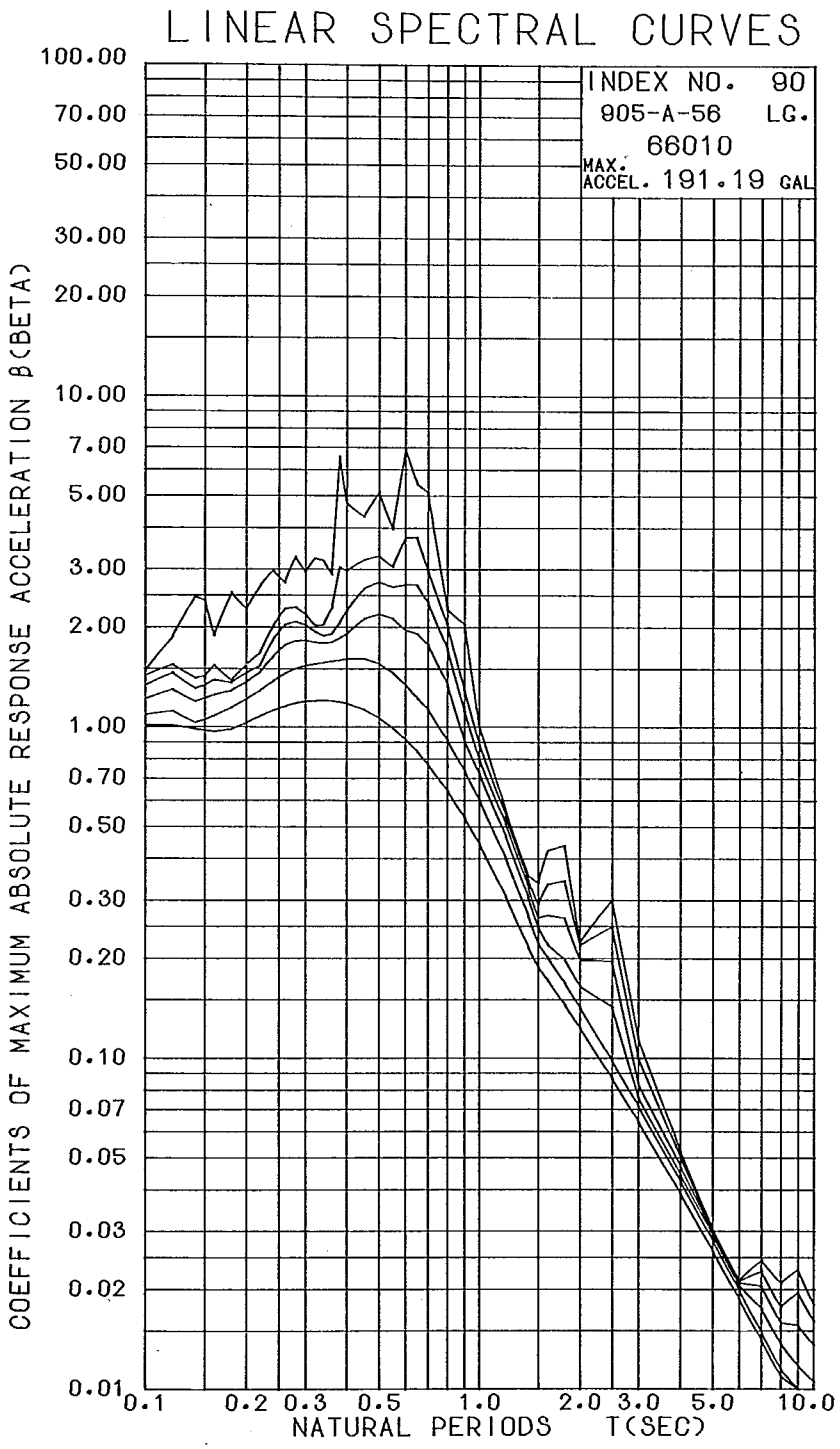


Figure IS-90 Linear Response Spectrum of Earthquake Record with Index Number 90

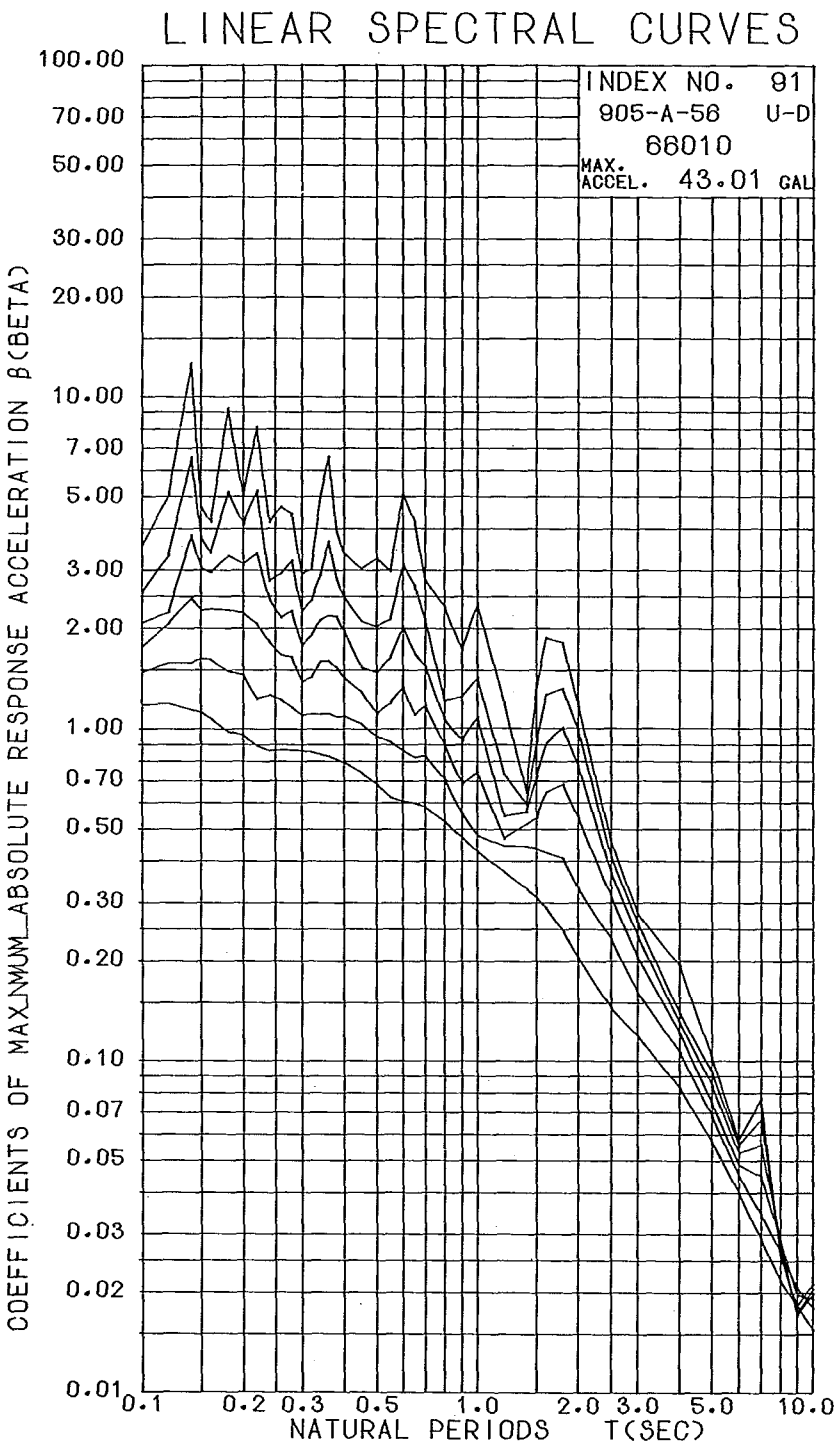


Figure IS-91 Linear Response Spectrum of Earthquake Record with Index Number 91

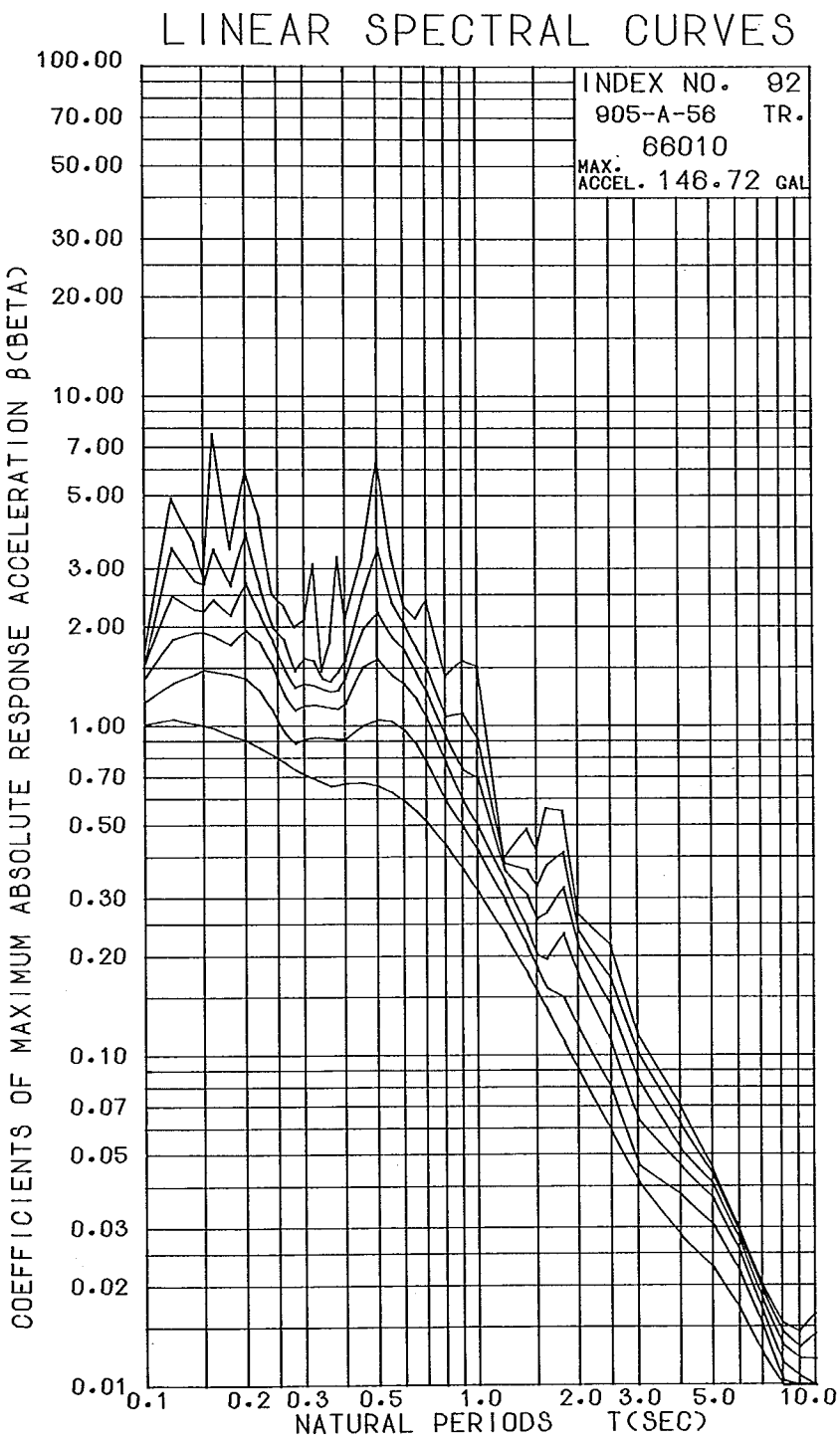


Figure IS-92 Linear Response Spectrum of Earthquake Record with Index Number 92

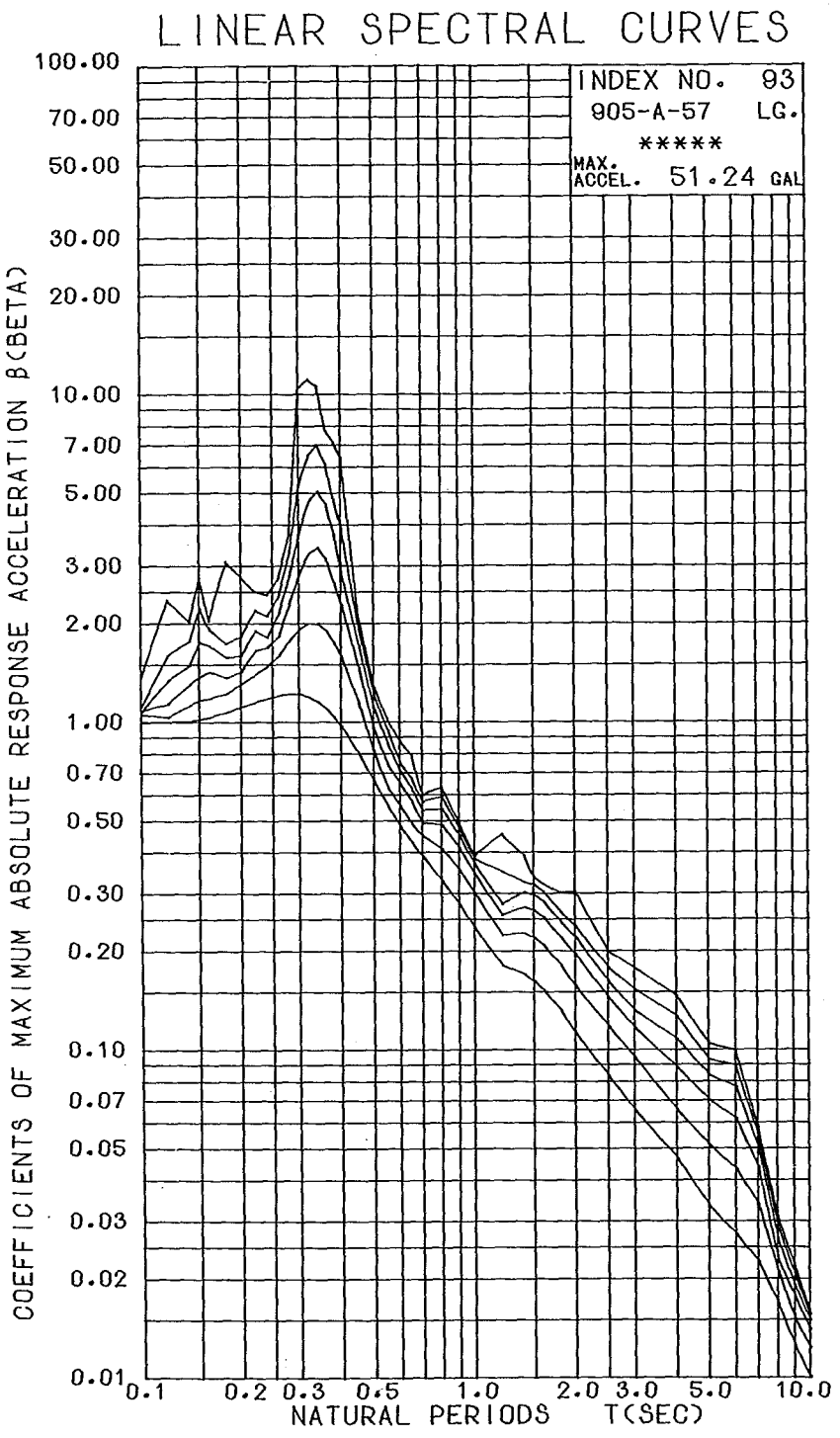


Figure IS-93 Linear Response Spectrum of Earthquake Record with Index Number 93

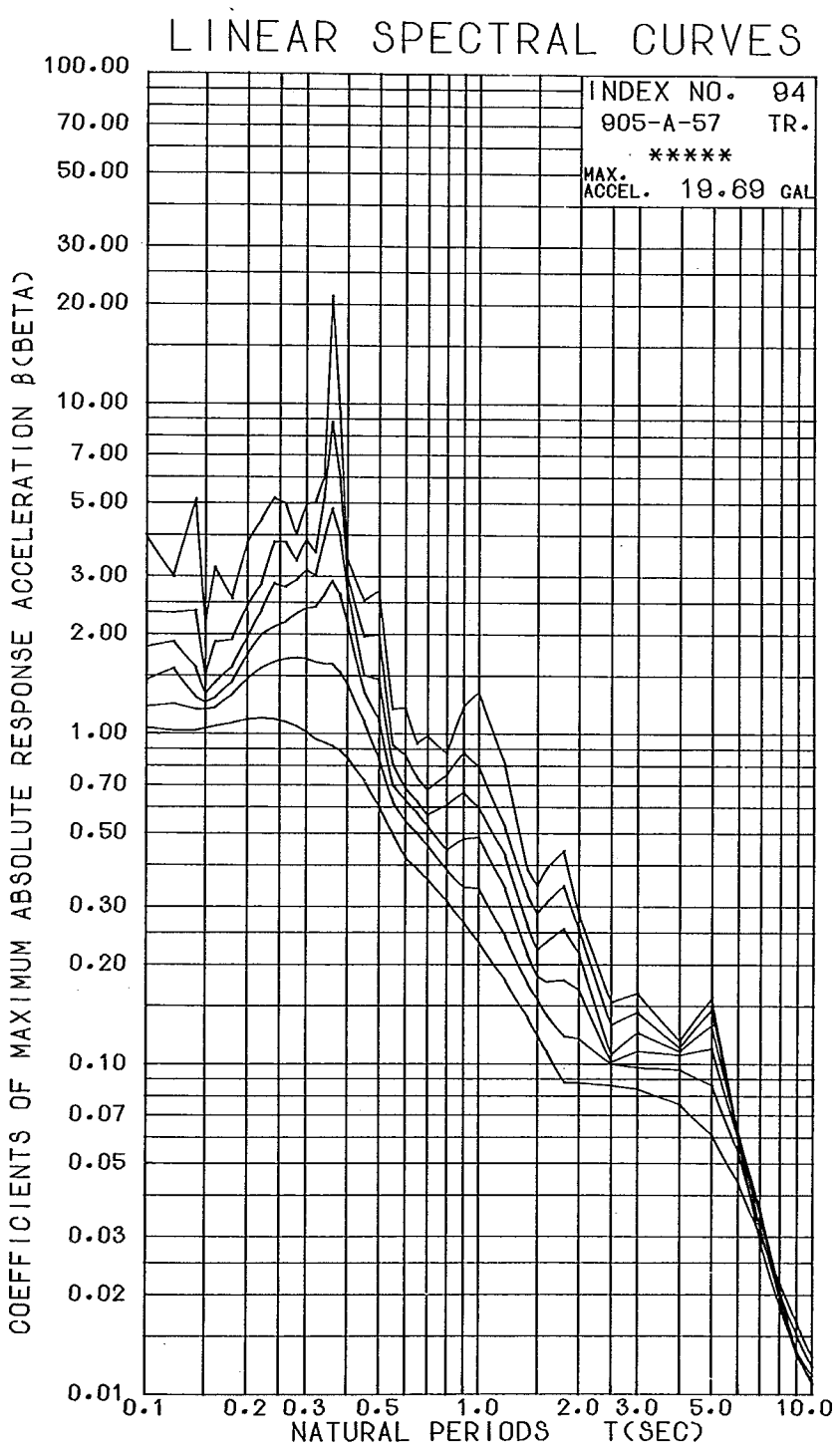


Figure IS-94 Linear Response Spectrum of Earthquake Record with Index Number 94

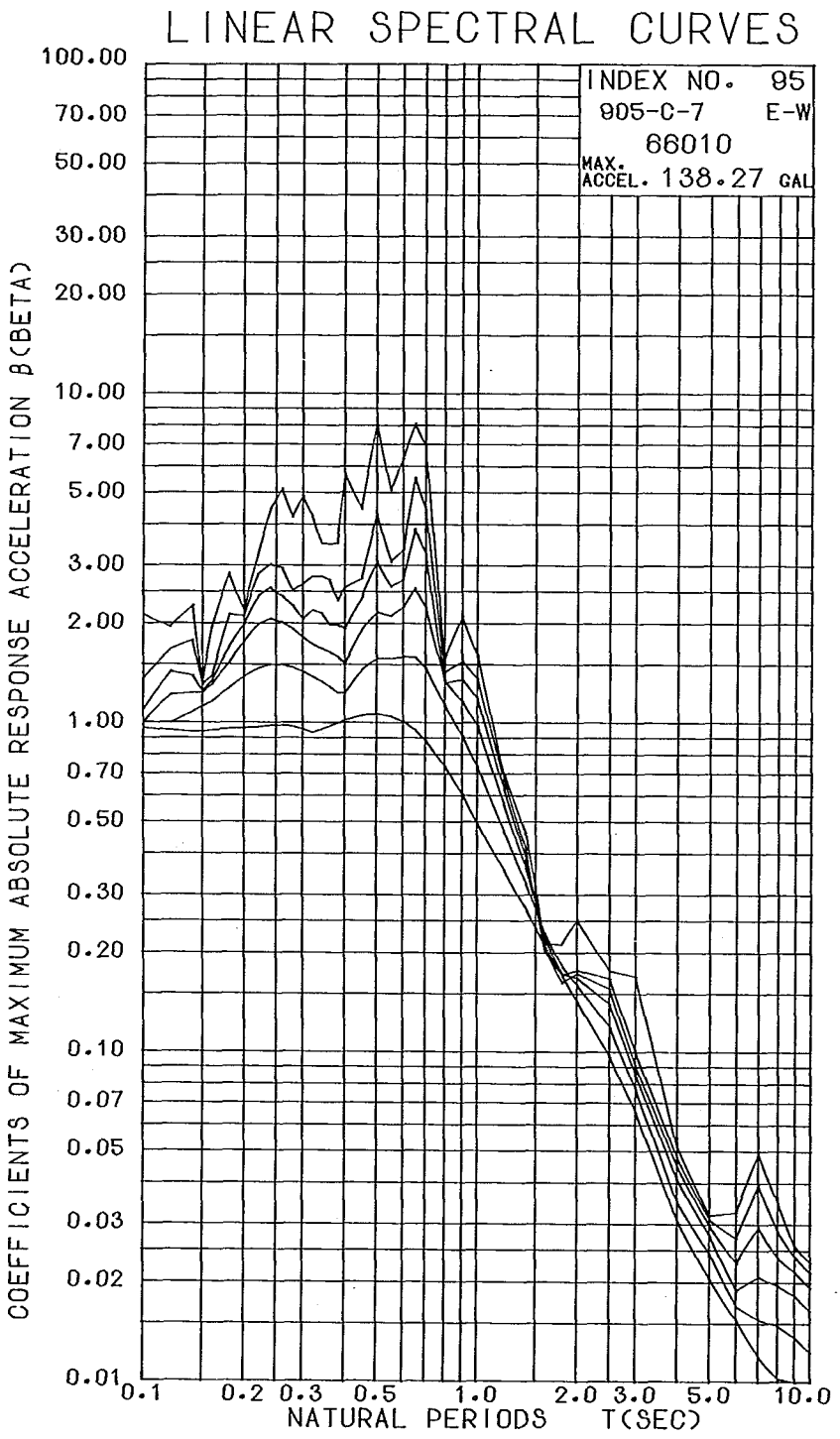


Figure IS-95 Linear Response Spectrum of Earthquake Record with Index Number 95

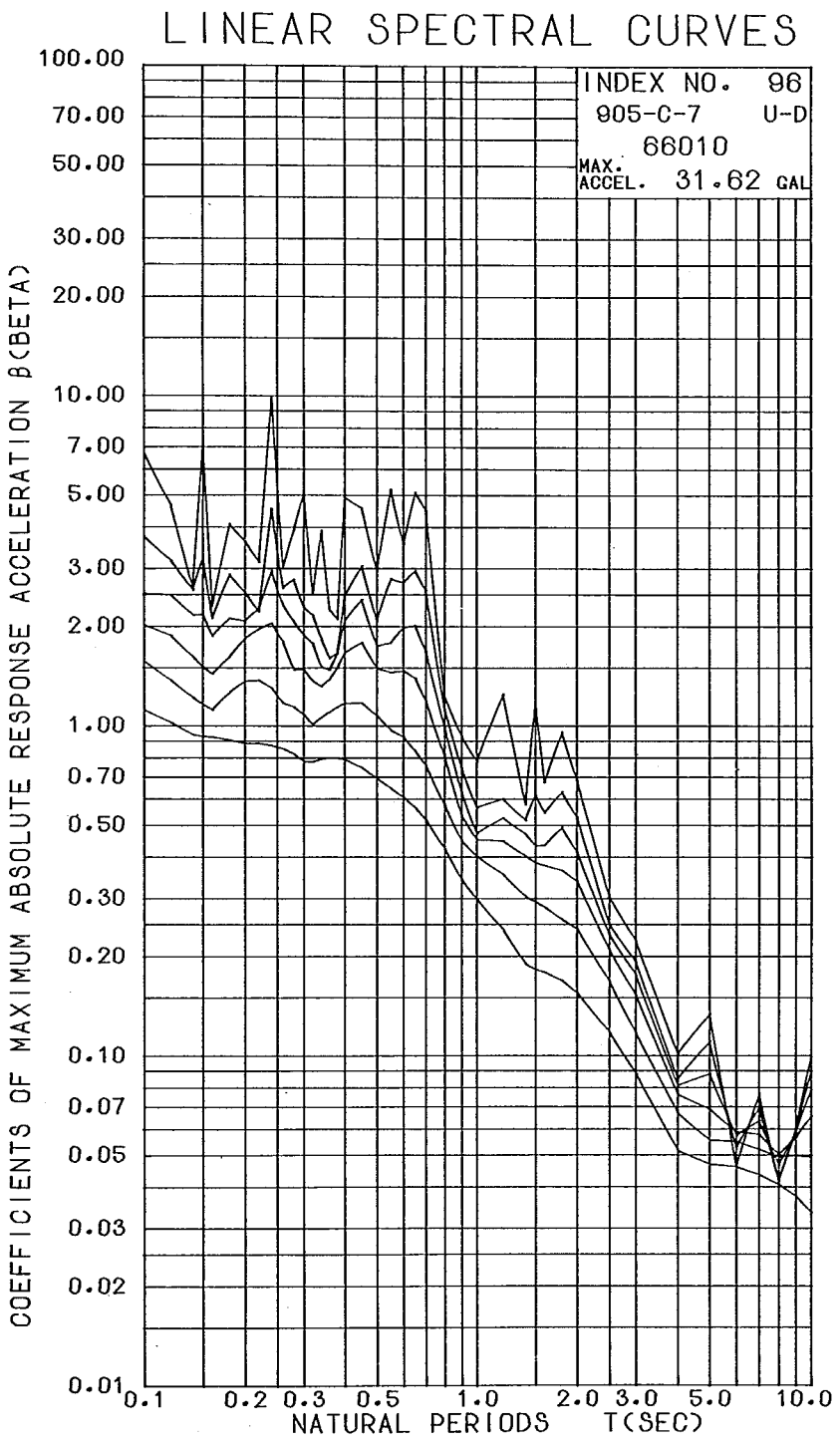


Figure IS-96 Linear Response Spectrum of Earthquake Record with Index Number 96

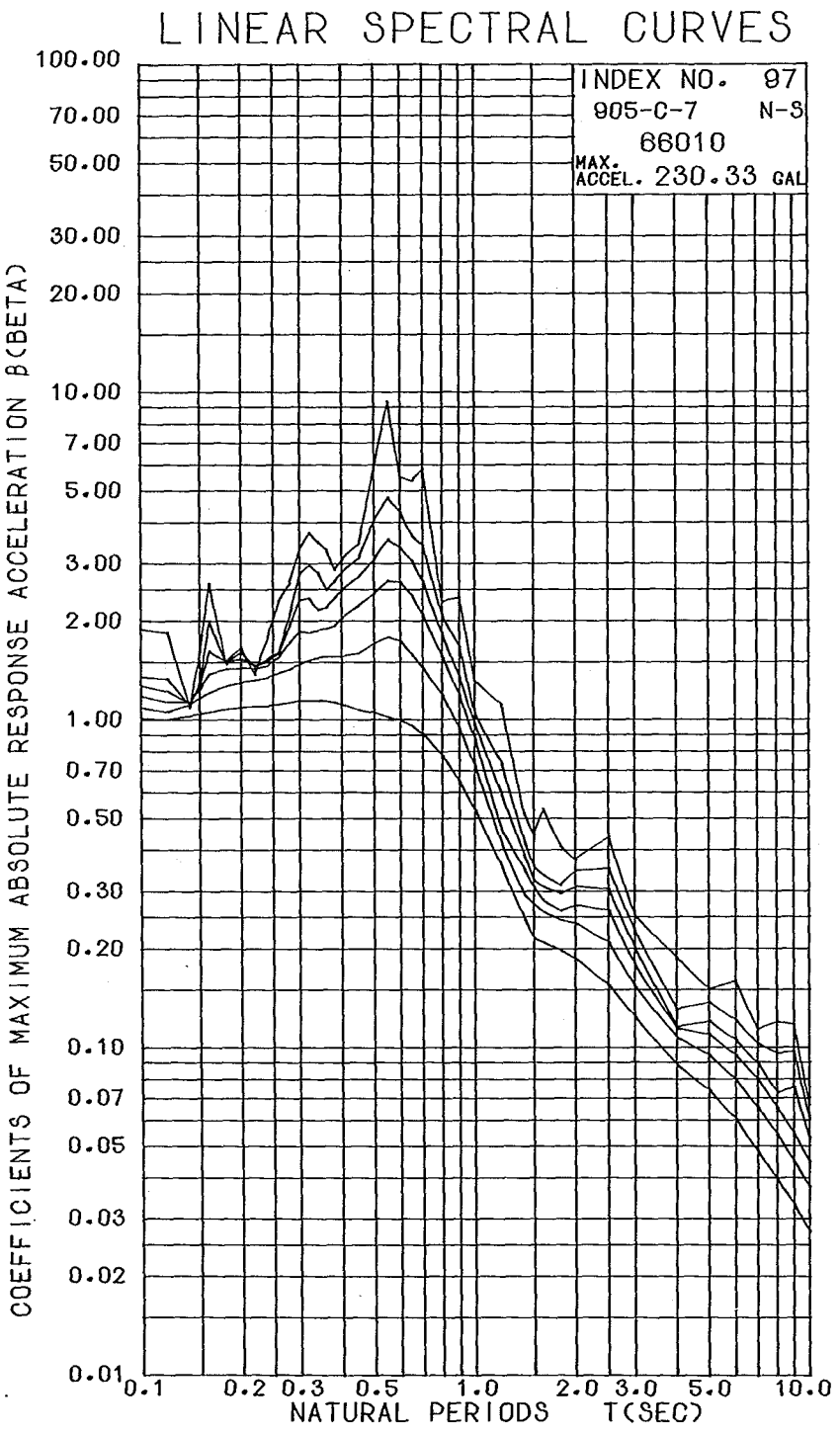


Figure IS-97 Linear Response Spectrum of Earthquake Record with Index Number 97

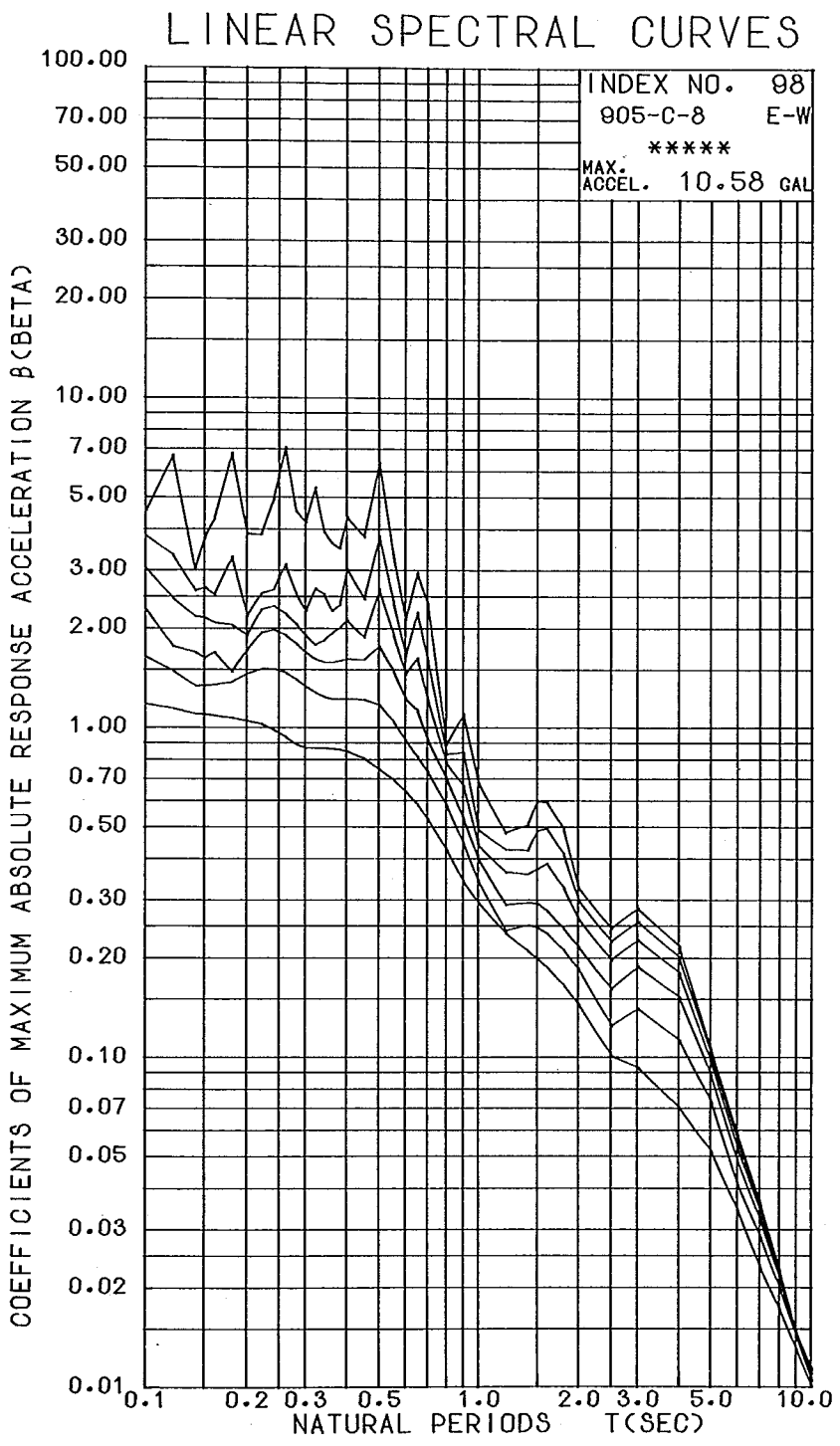


Figure IS-98 Linear Response Spectrum of Earthquake Record with Index Number 98

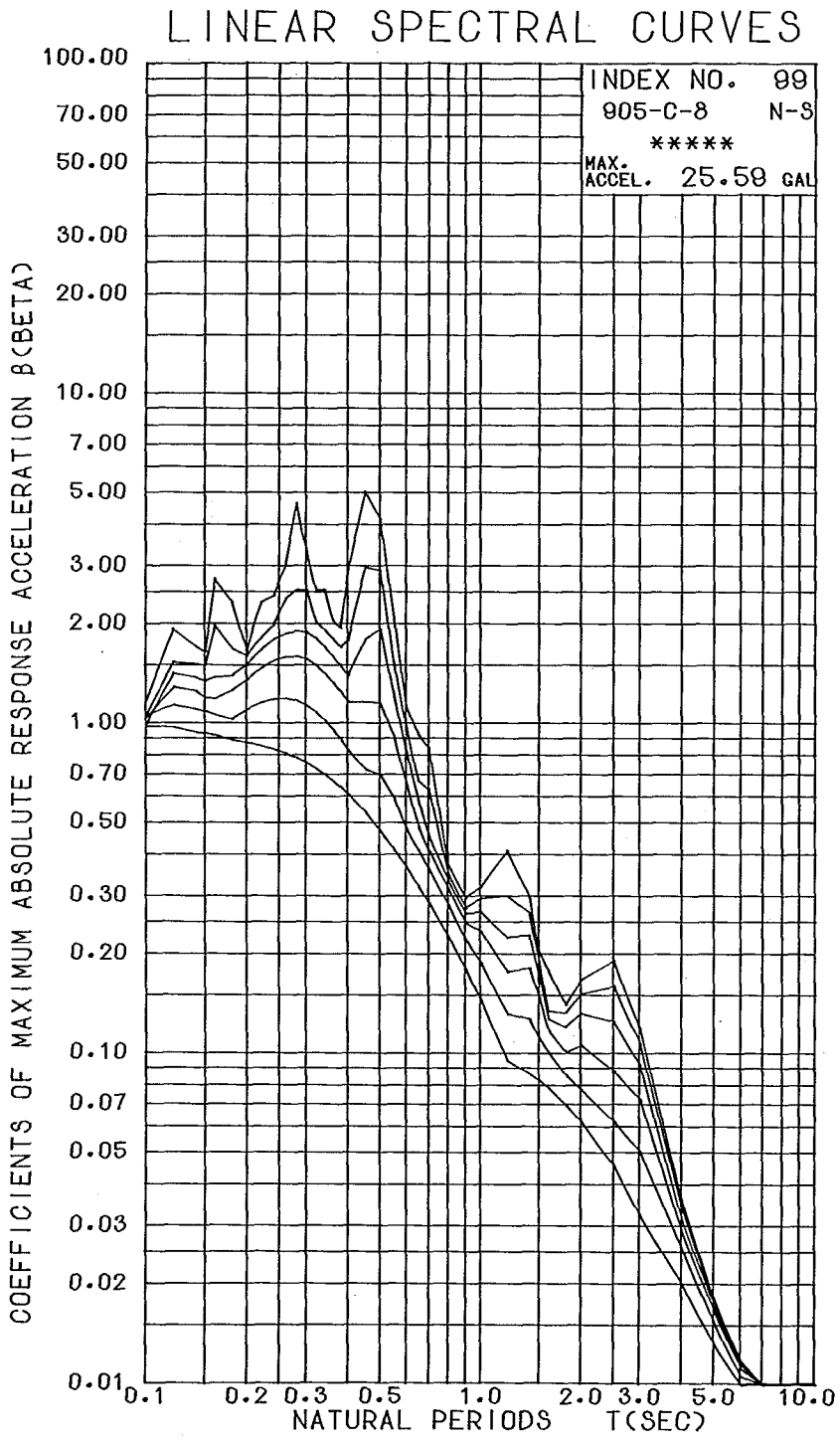


Figure IS-99 Linear Response Spectrum of Earthquake Record with Index Number 99

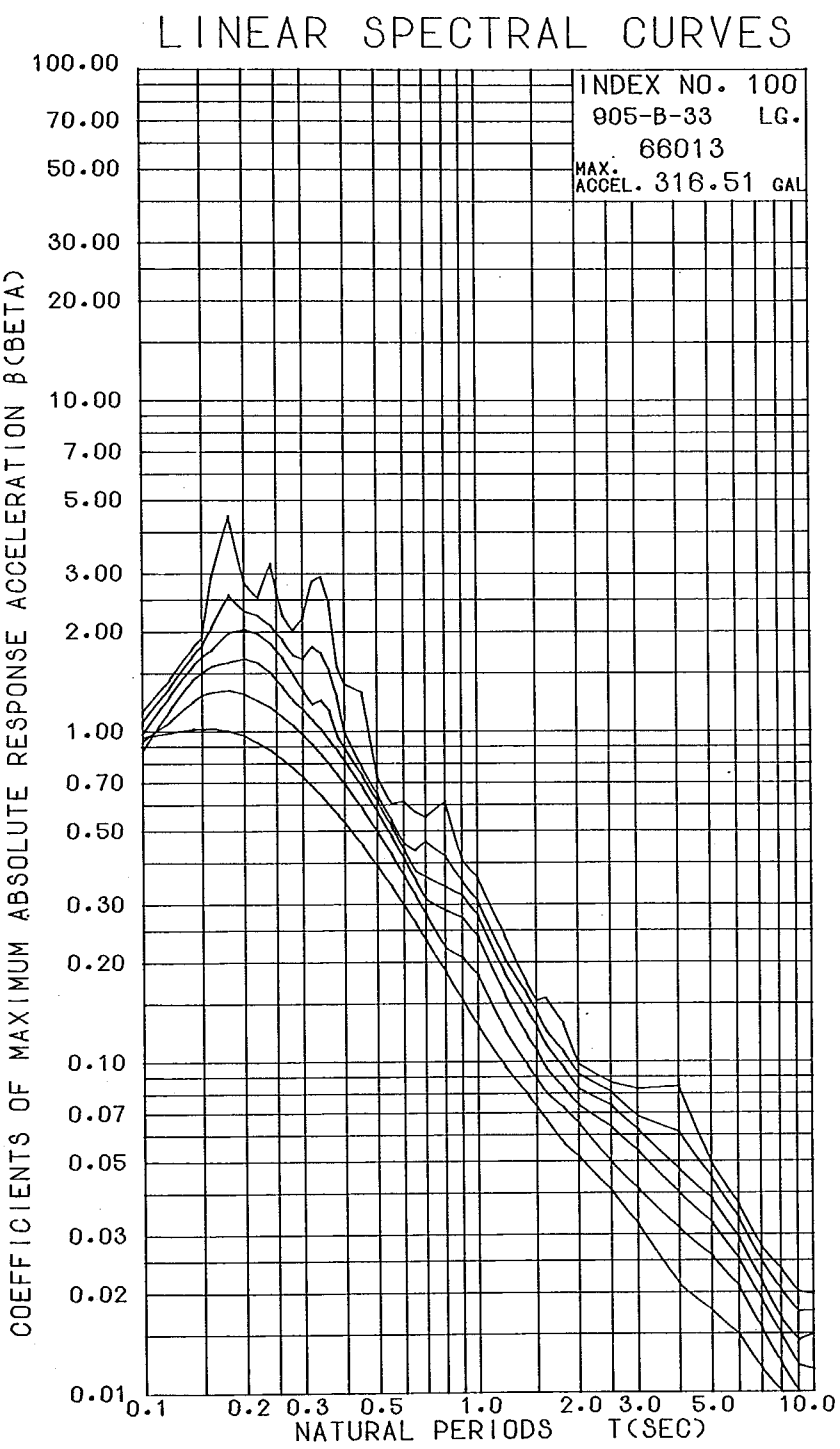


Figure IS-100 Linear Response Spectrum of Earthquake Record with Index Number 100

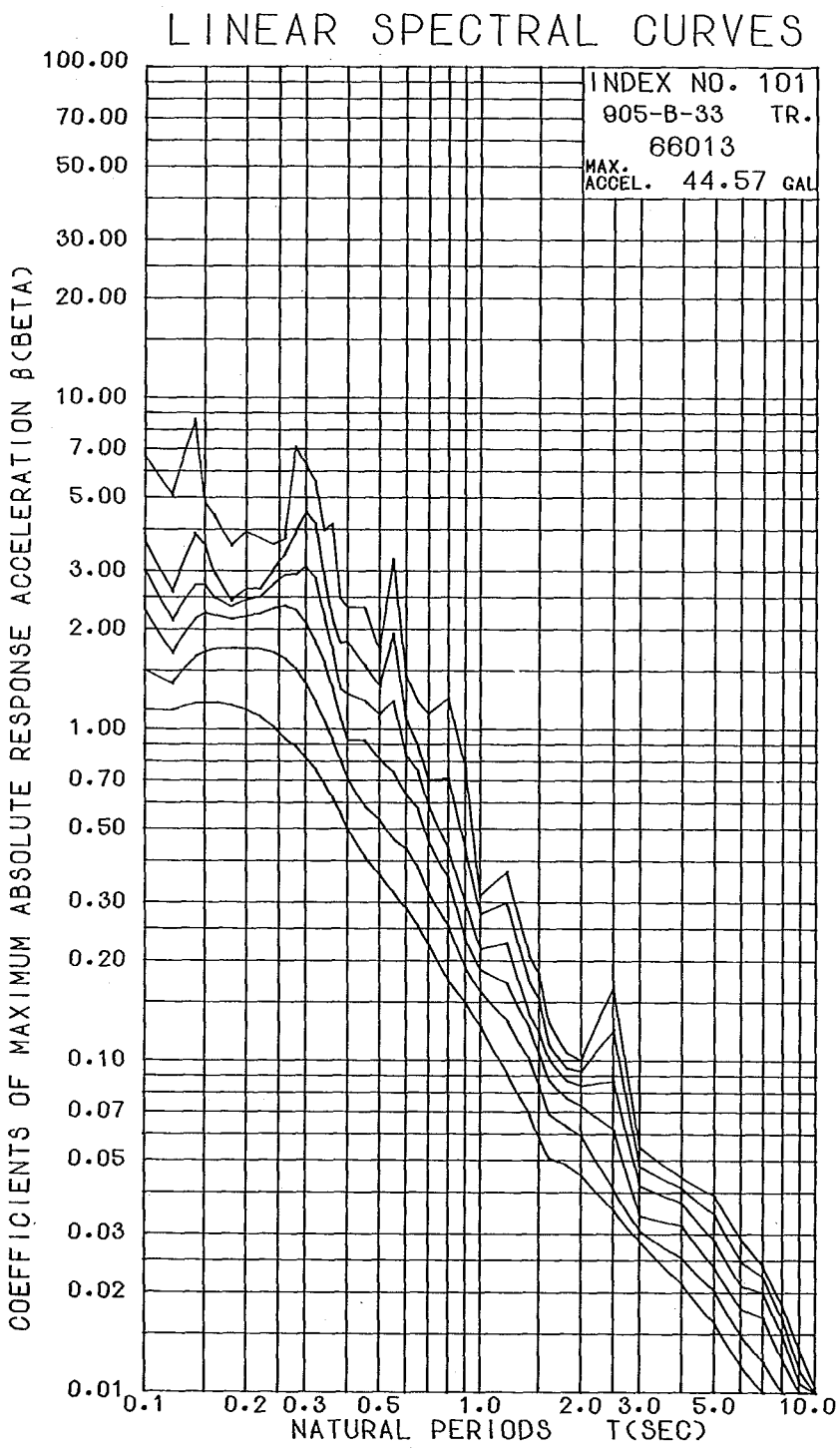


Figure IS-101 Linear Response Spectrum of Earthquake Record with Index Number 101

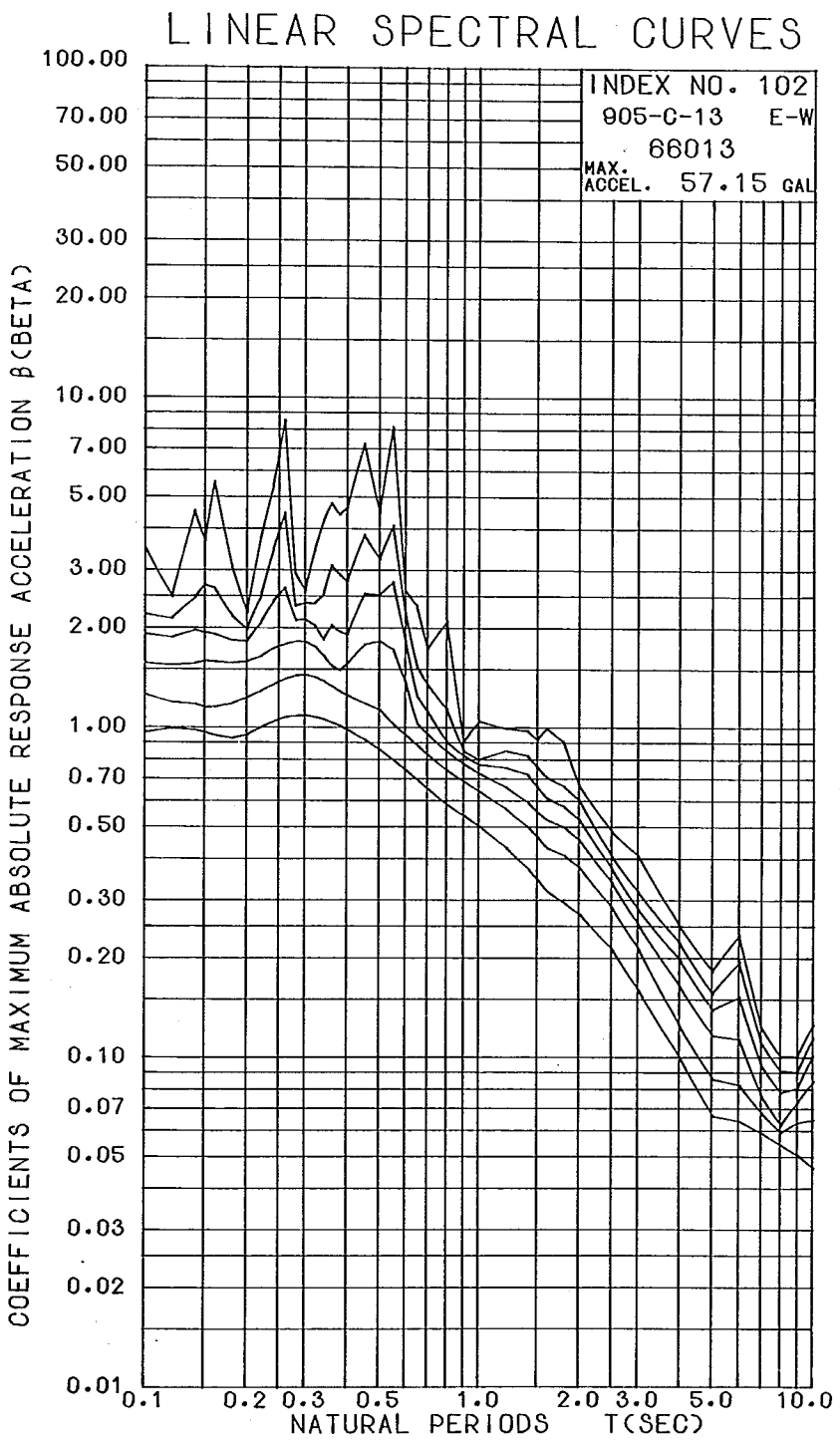


Figure IS-102 Linear Response Spectrum of Earthquake Record with Index Number 102

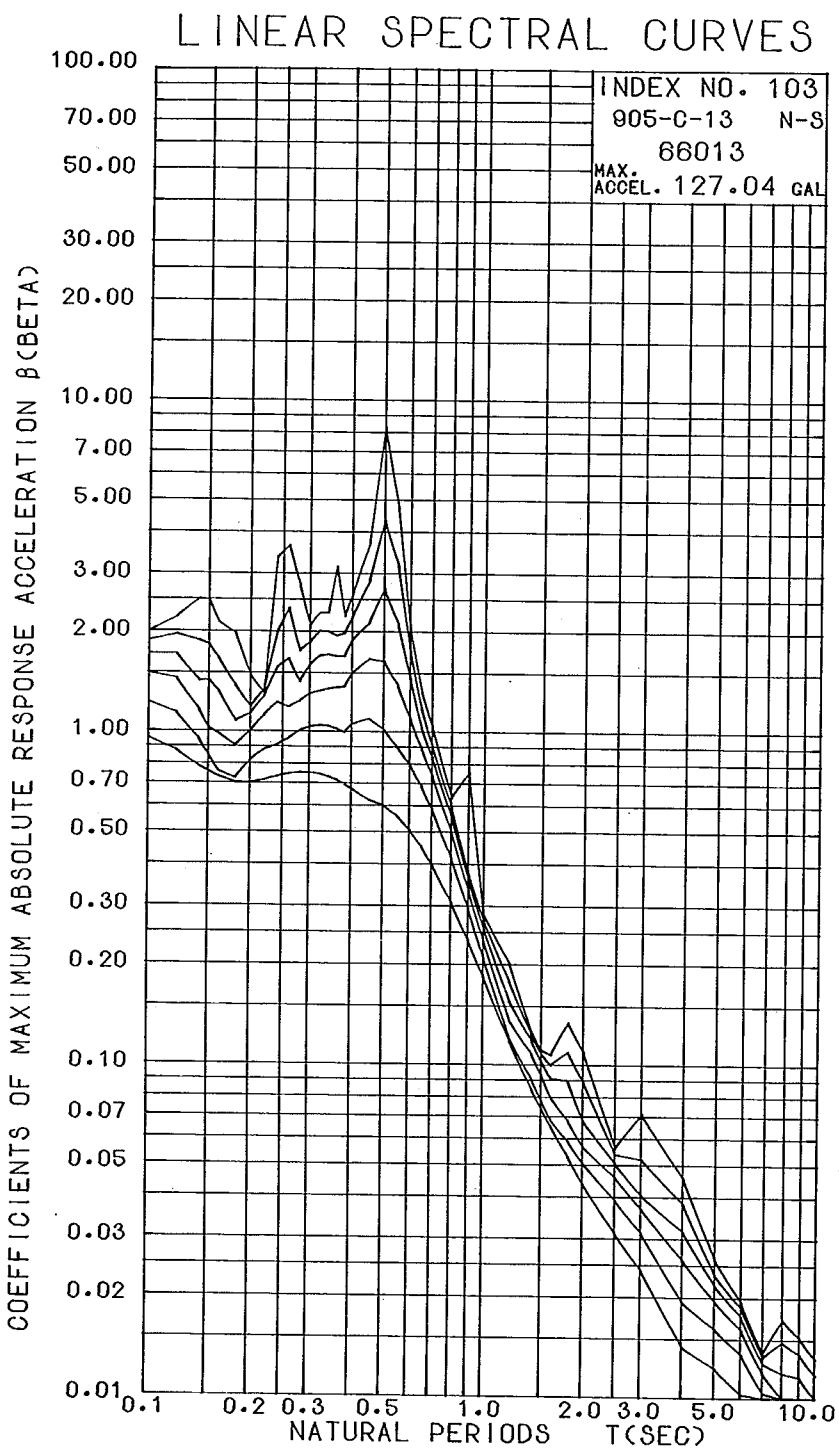


Figure IS-103 Linear Response Spectrum of Earthquake Record with Index Number 103

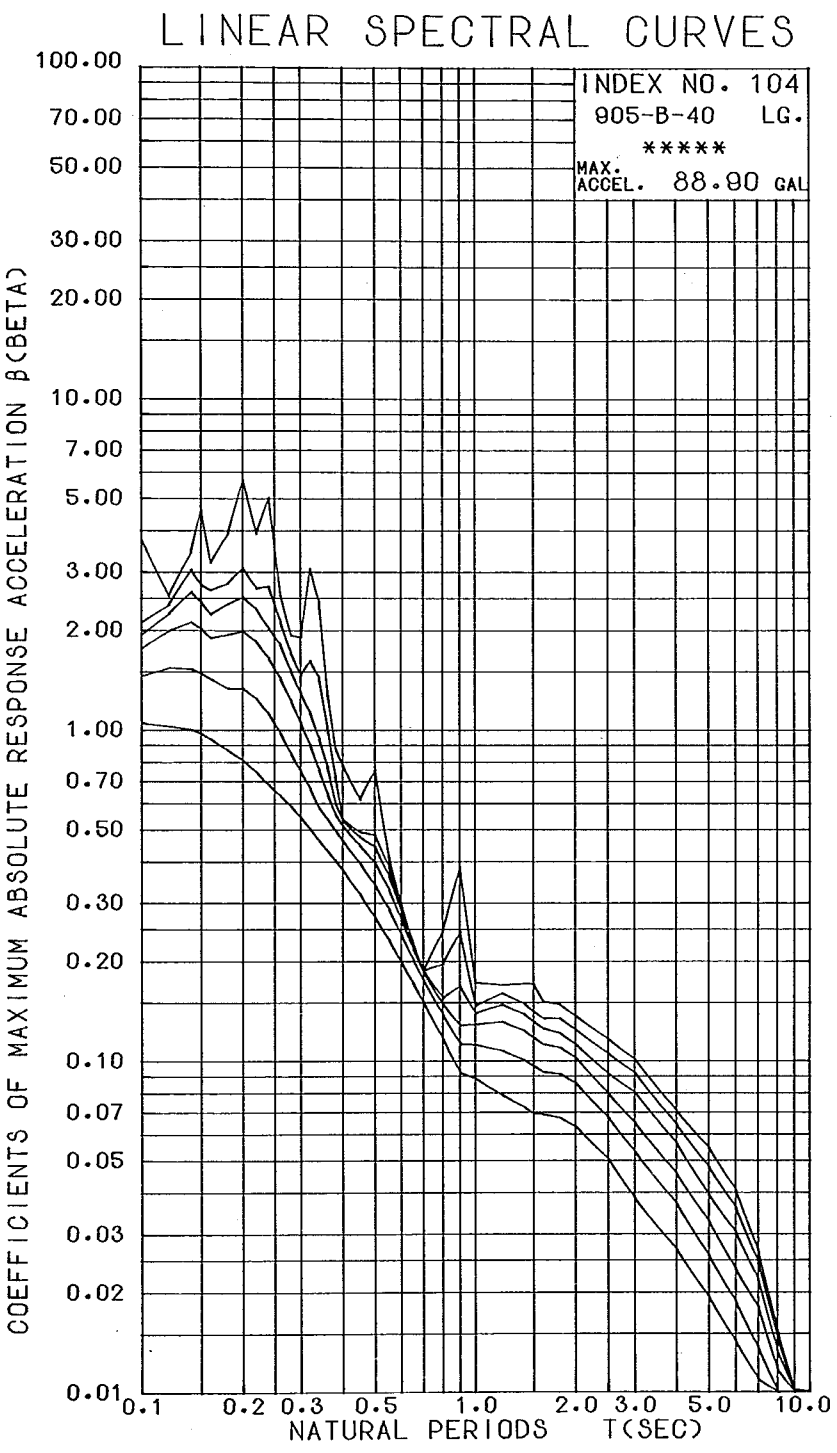


Figure IS-104 Linear Response Spectrum of Earthquake Record with Index Number 104

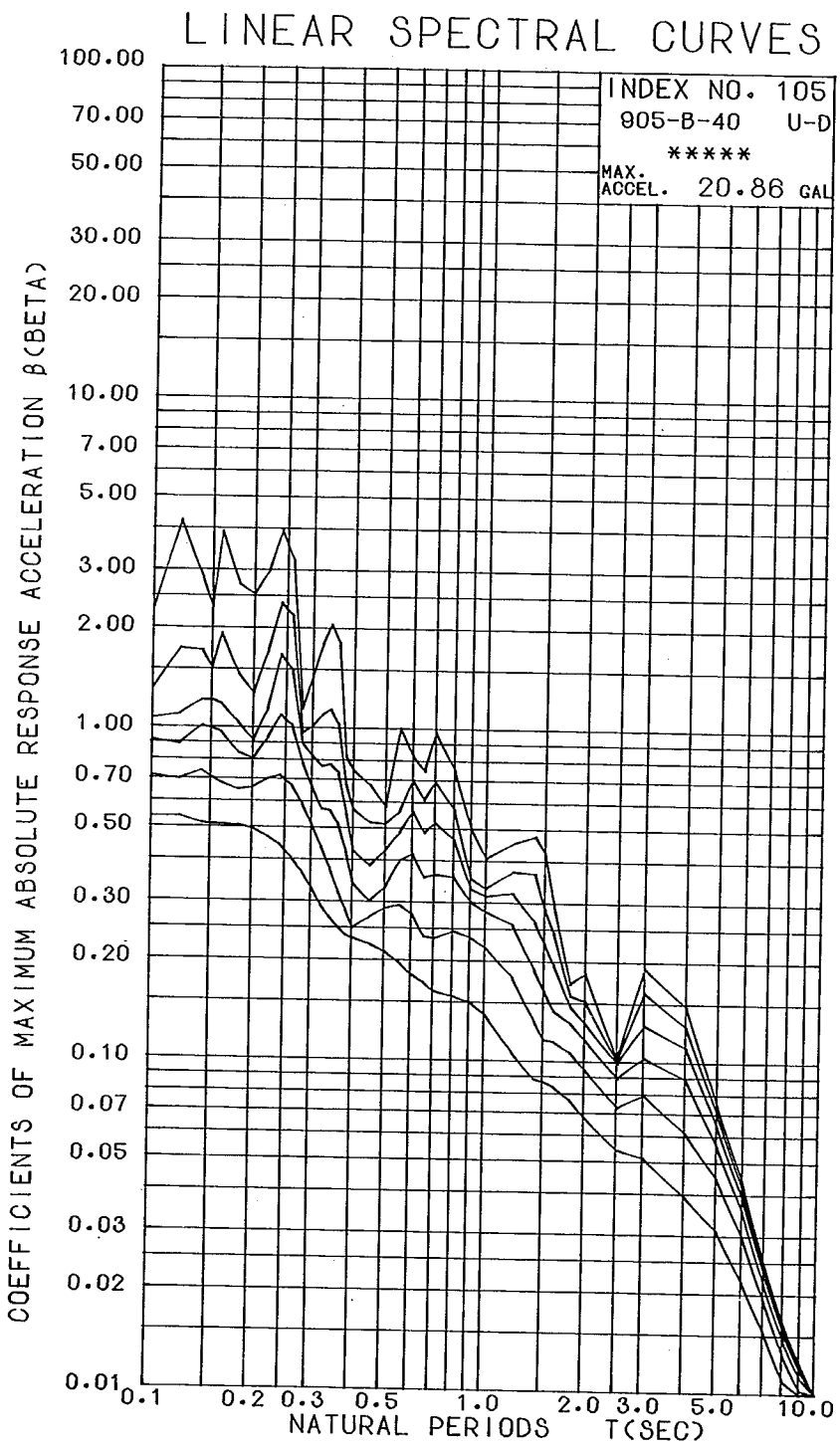


Figure IS-105 Linear Response Spectrum of Earthquake Record with Index Number 105

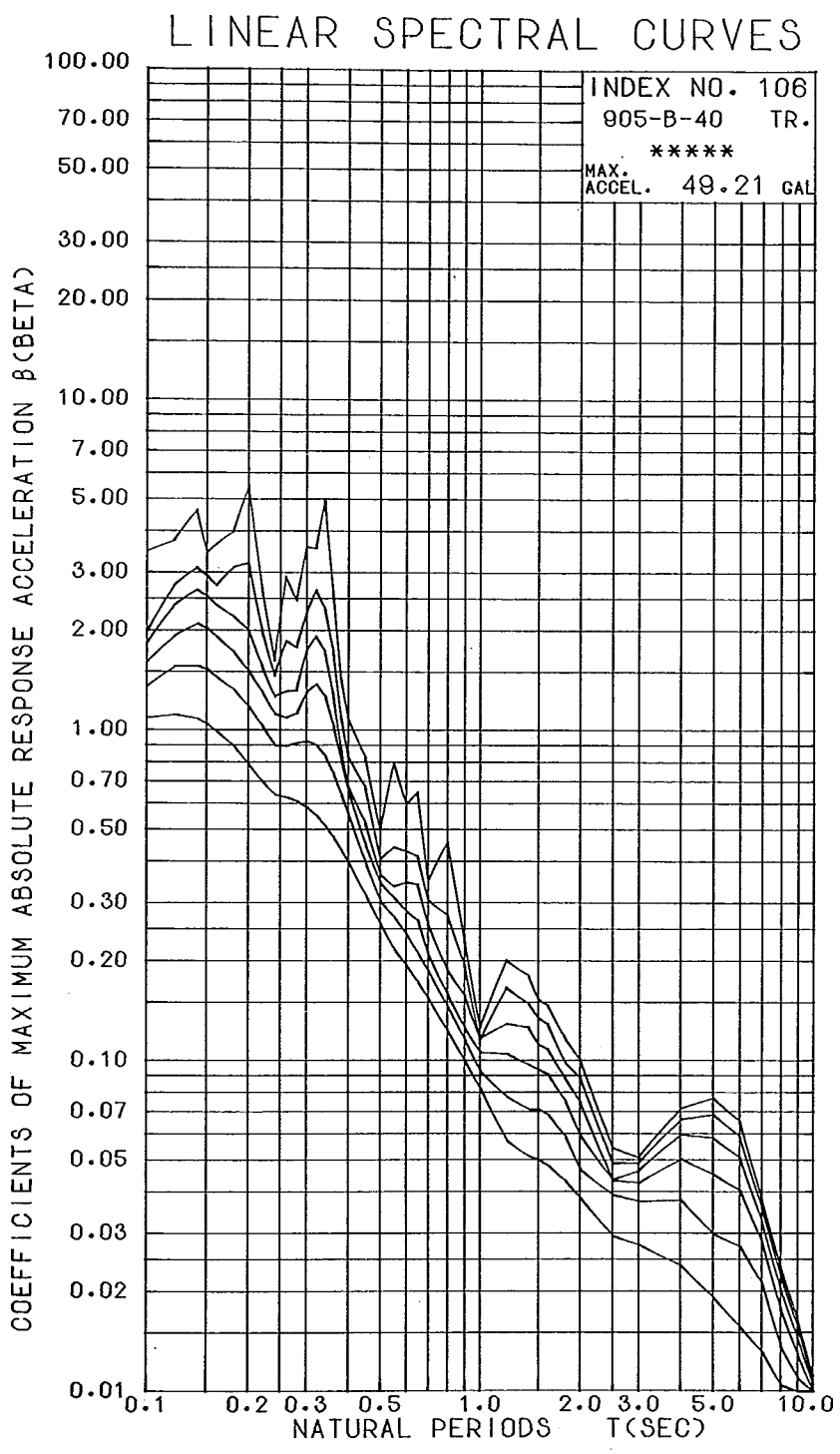


Figure IS-106 Linear Response Spectrum of Earthquake Record with Index Number 106

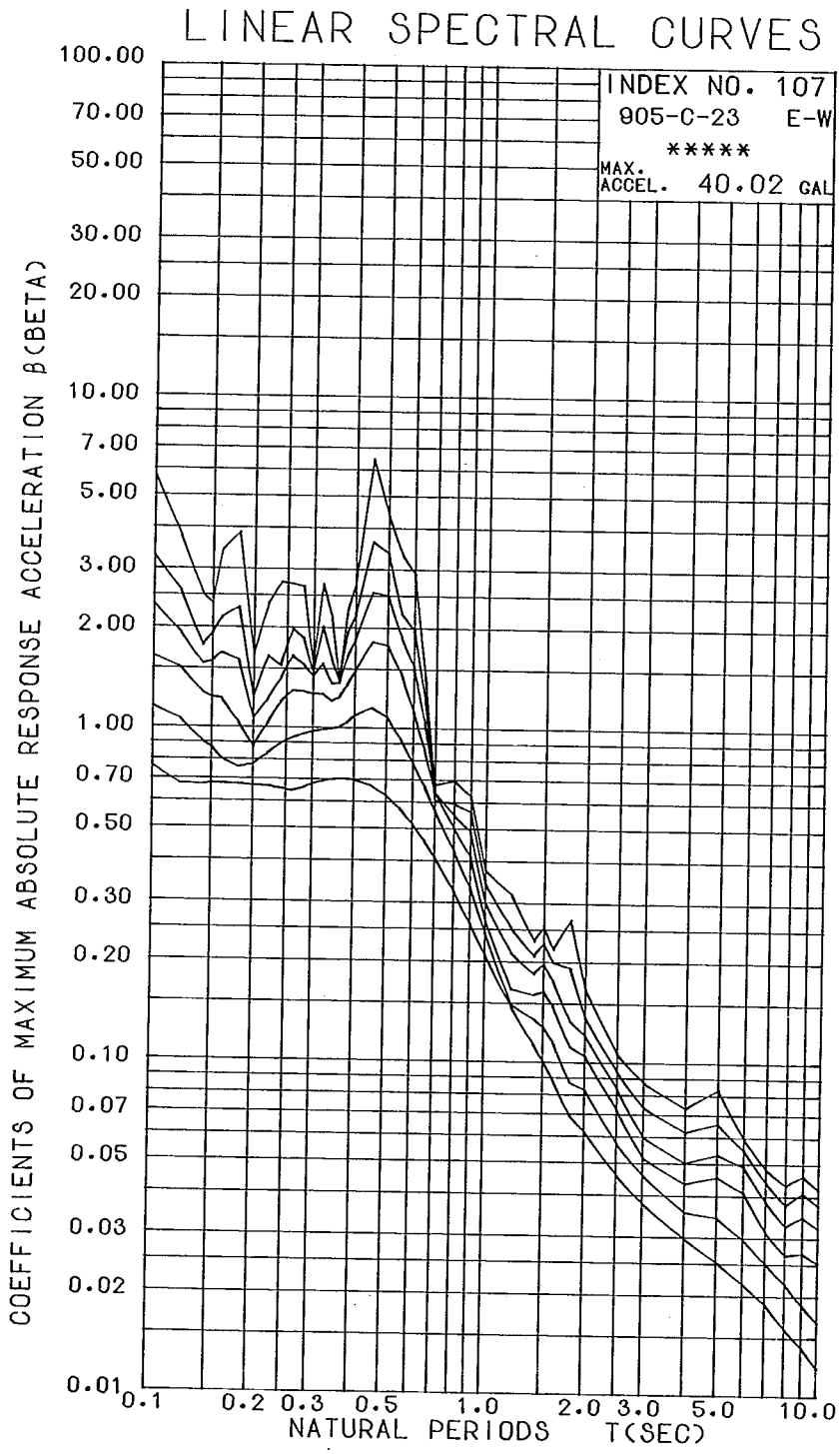


Figure IS-107 Linear Response Spectrum of Earthquake Record with Index Number 107

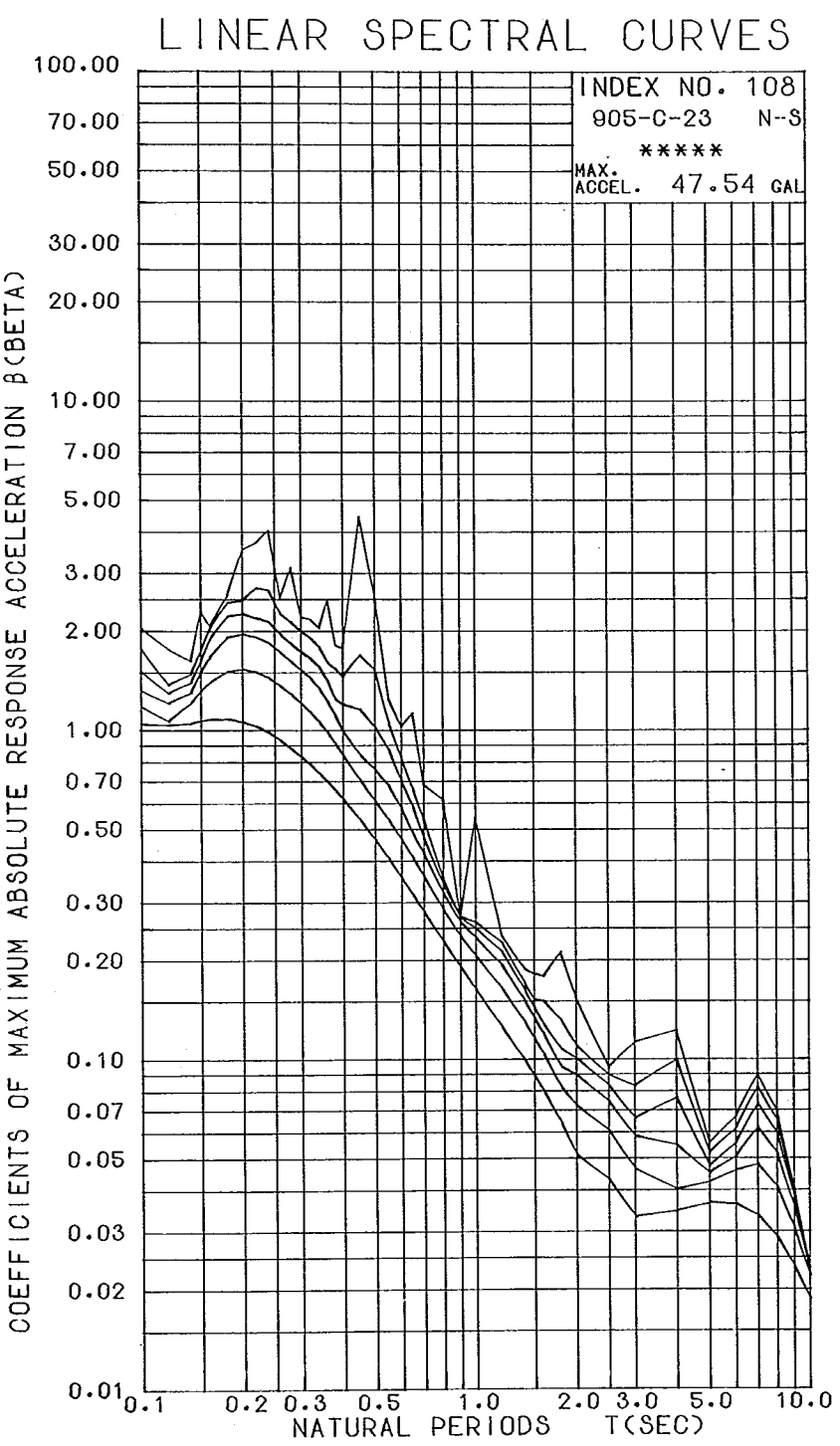


Figure IS-108 Linear Response Spectrum of Earthquake Record with Index Number 108

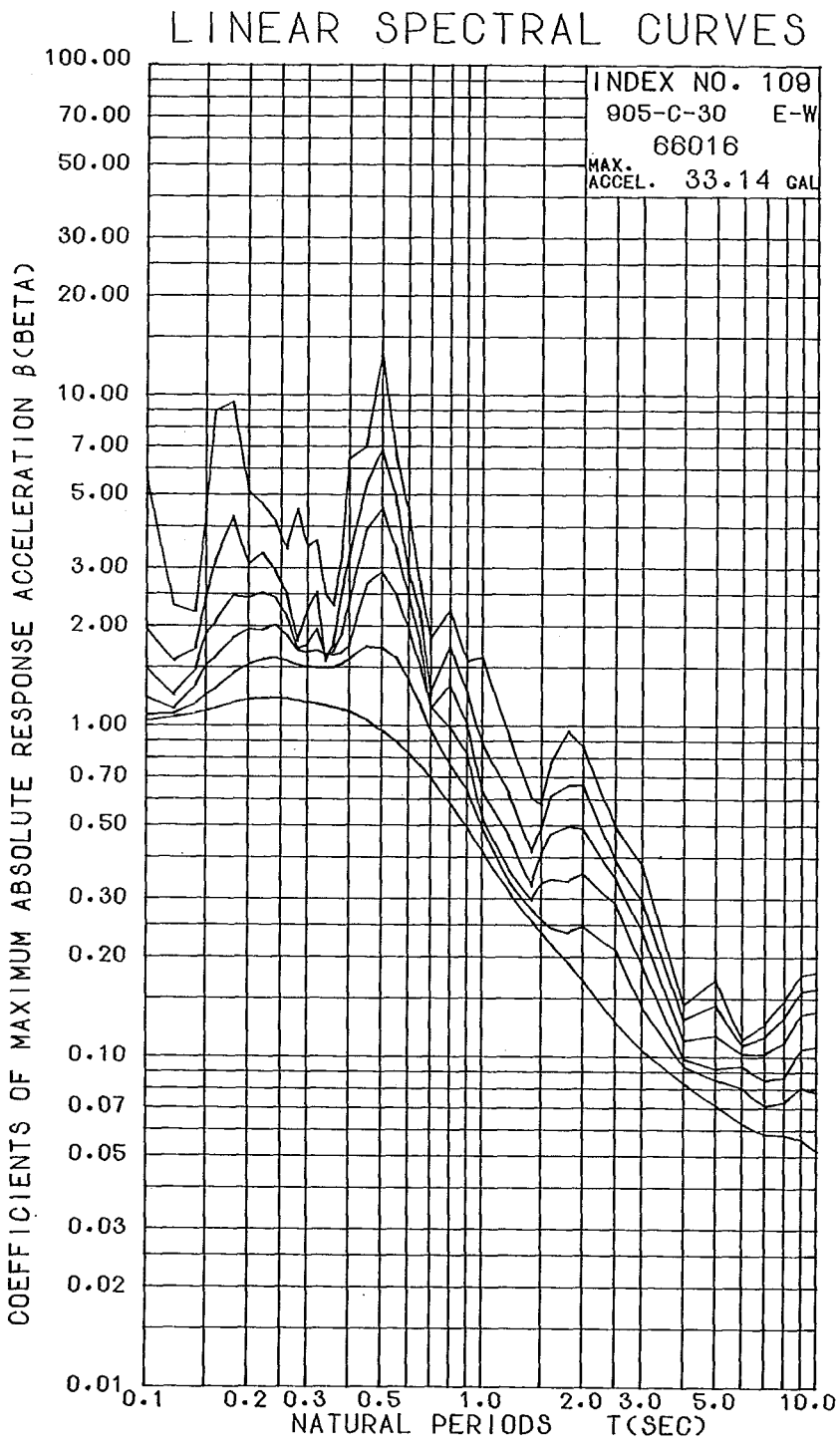


Figure IS-109 Linear Response Spectrum of Earthquake Record with Index Number 109

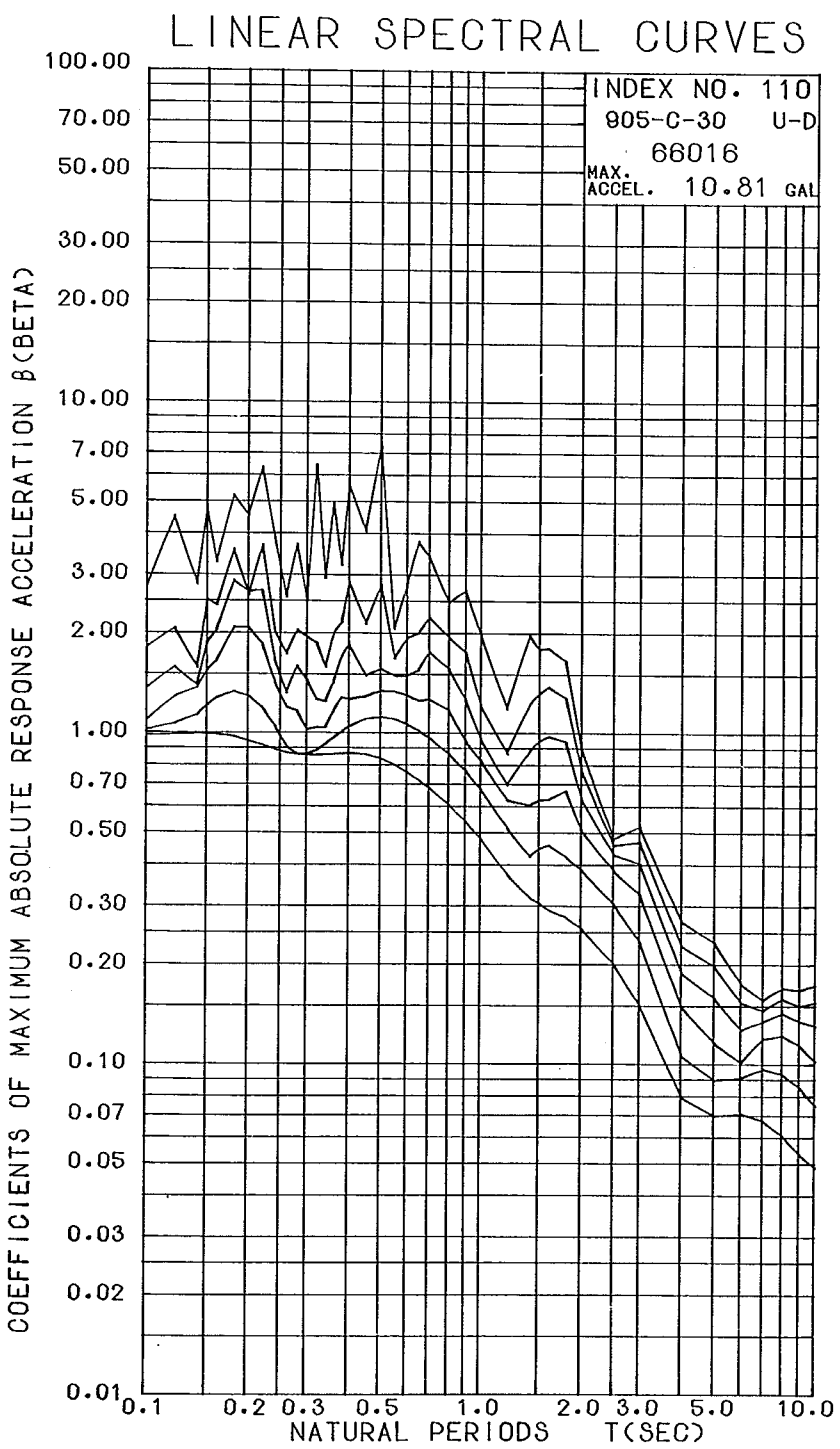


Figure IS-110 Linear Response Spectrum of Earthquake Record with Index Number 110

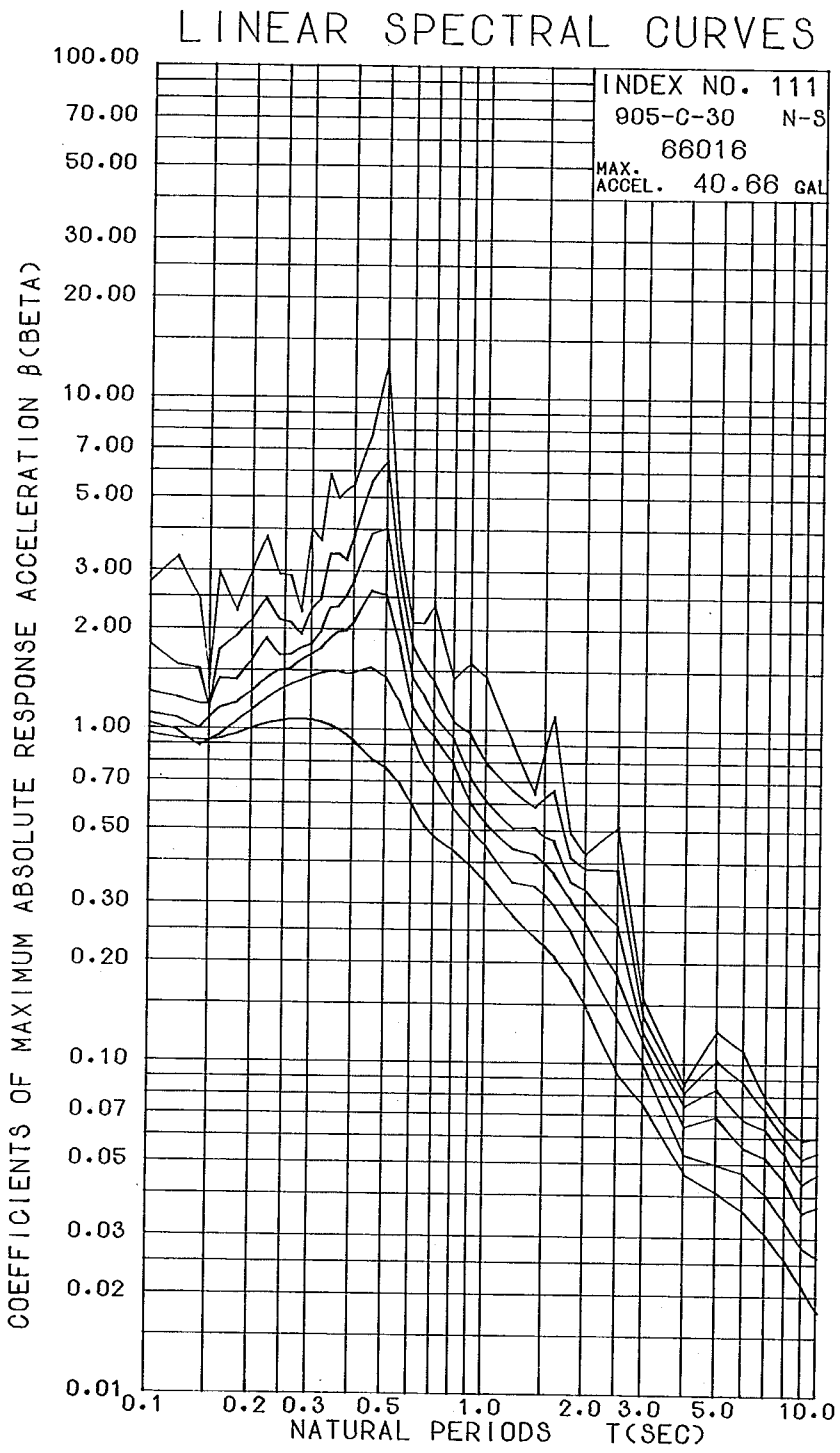


Figure IS-111 Linear Response Spectrum of Earthquake Record with Index Number 111

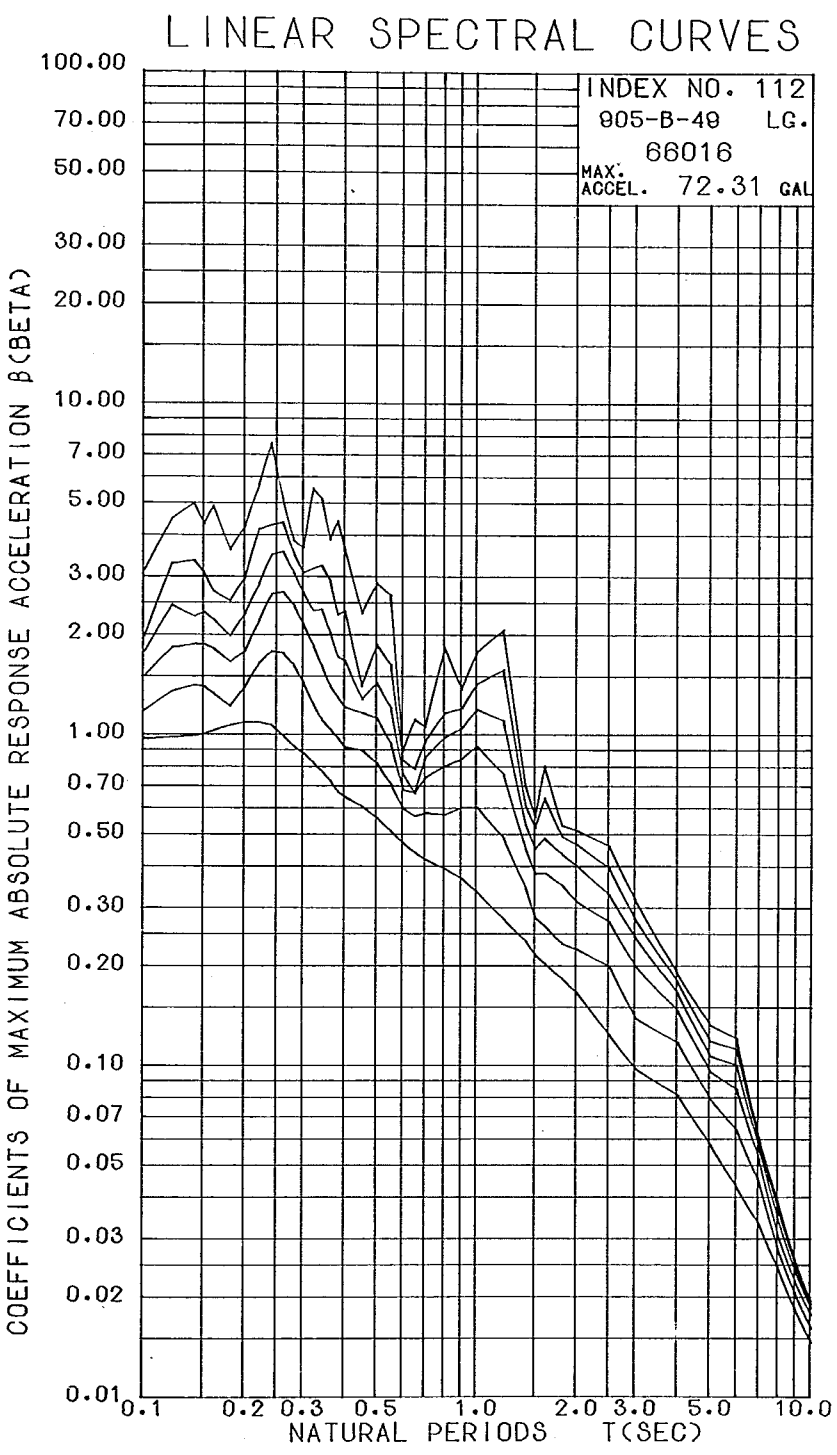


Figure IS-112 Linear Response Spectrum of Earthquake Record with Index Number 112

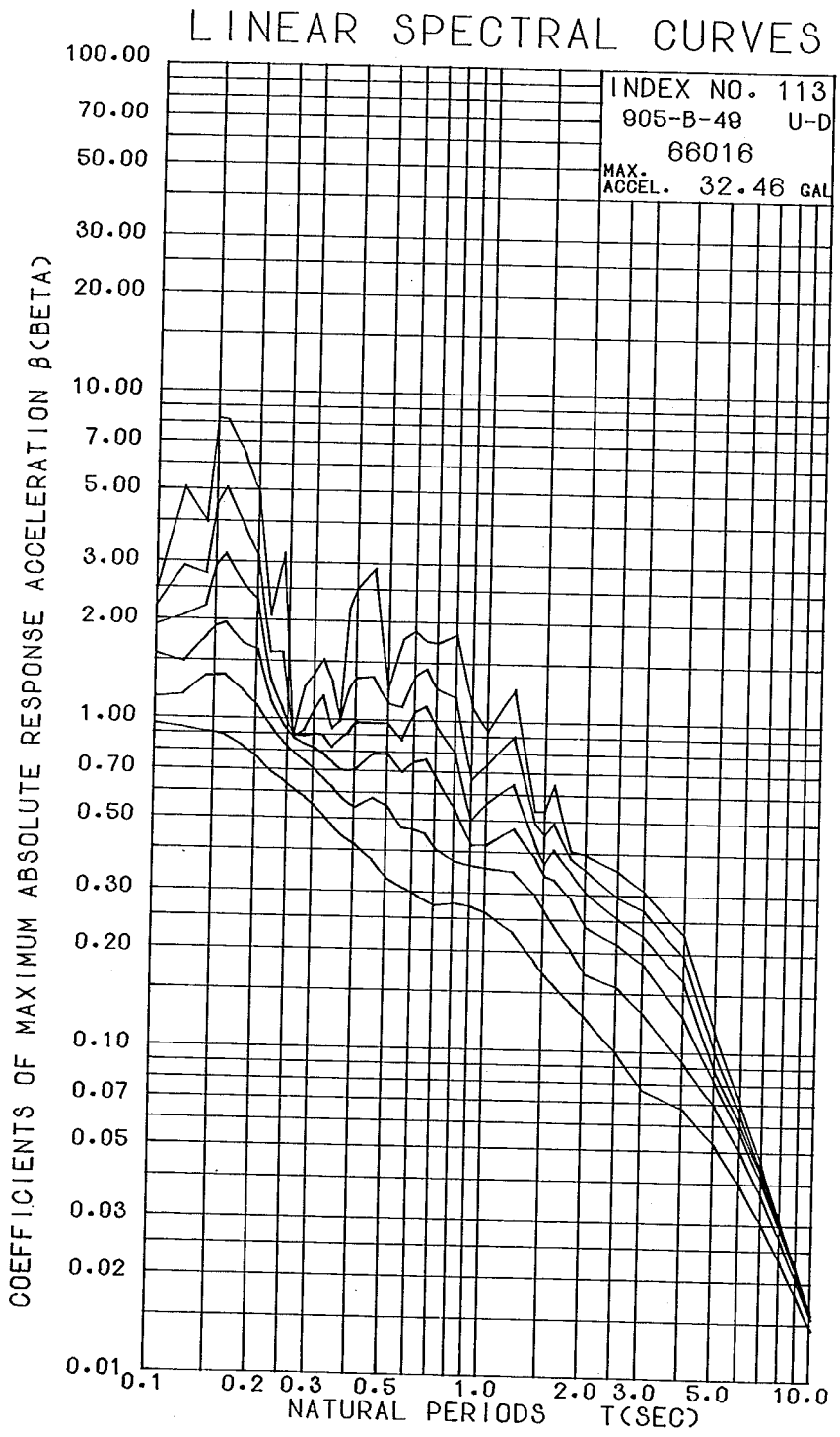


Figure IS-113 Linear Response Spectrum of Earthquake Record with Index Number 113

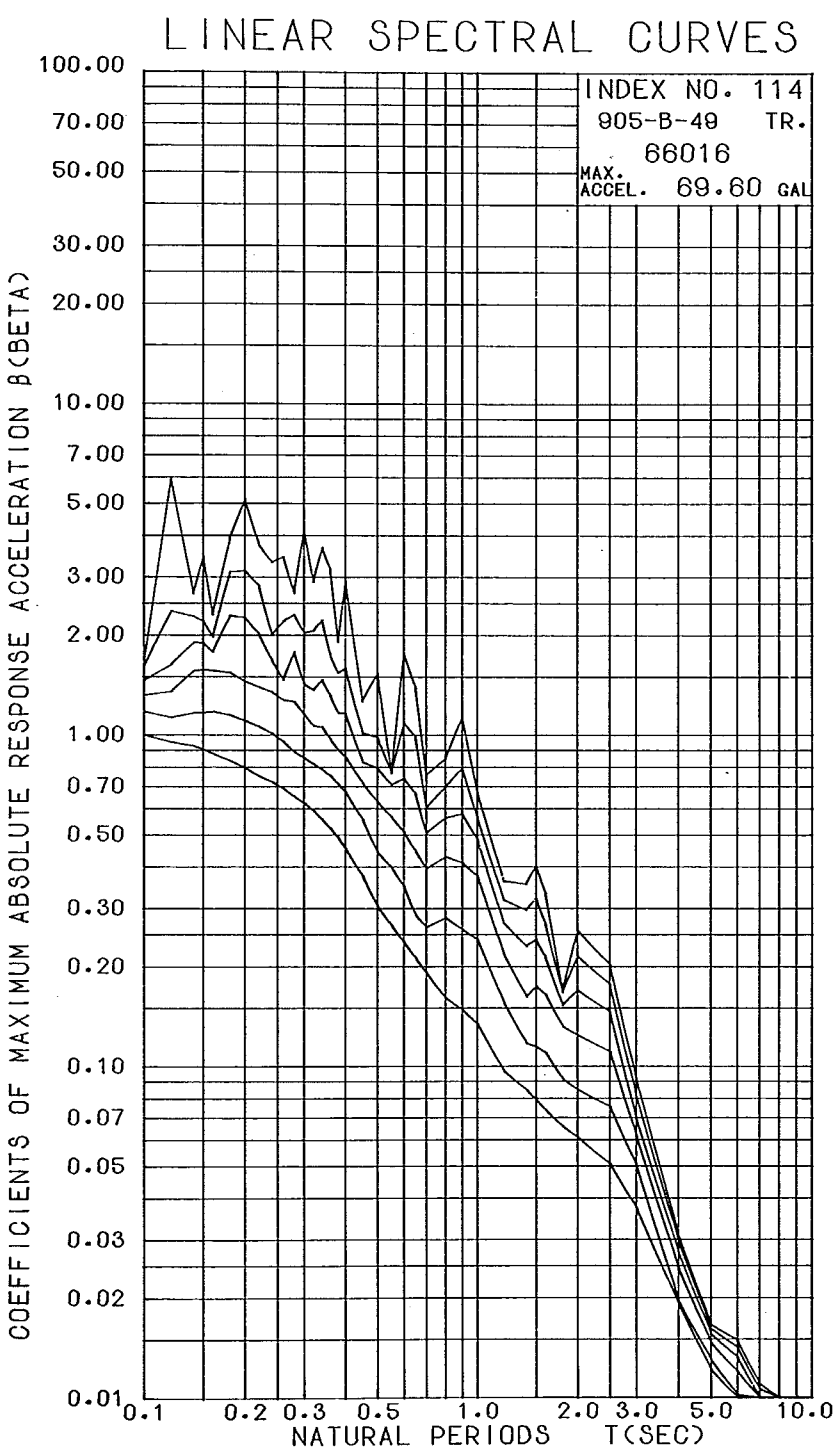


Figure IS-114 Linear Response Spectrum of Earthquake Record with Index Number 114

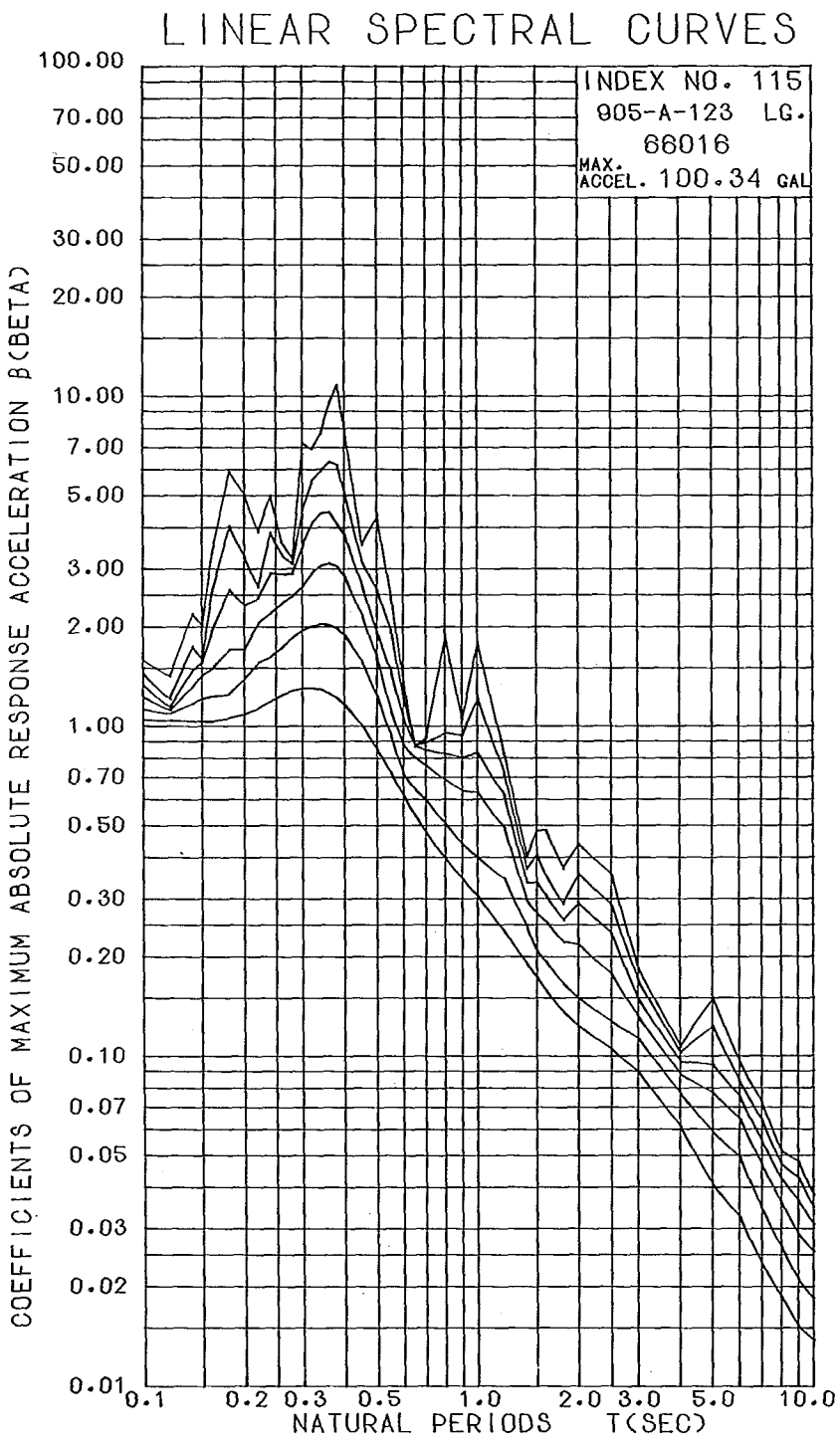


Figure IS-115 Linear Response Spectrum of Earthquake Record with Index Number 115

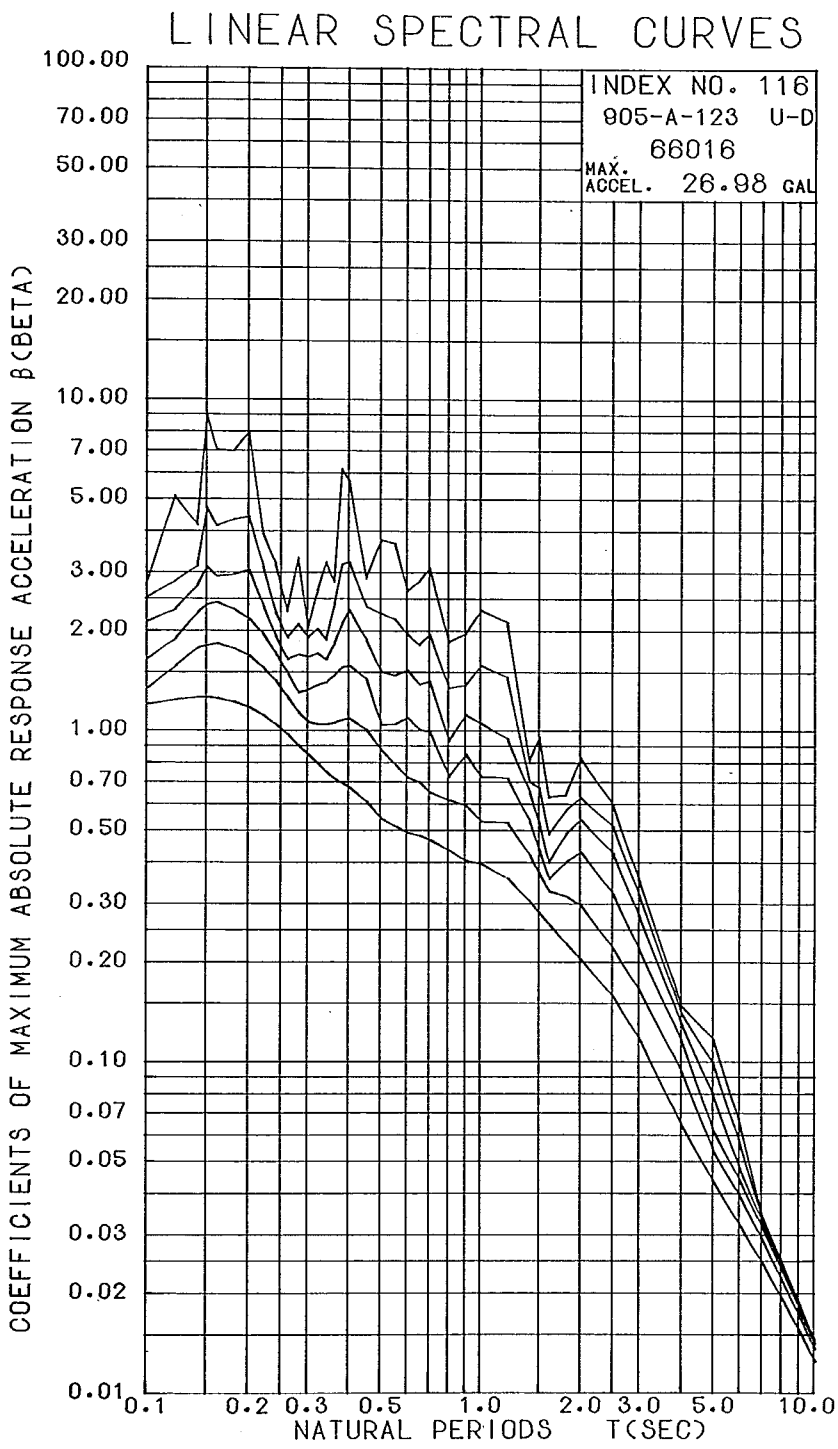


Figure IS-116 Linear Response Spectrum of Earthquake Record with Index Number 116

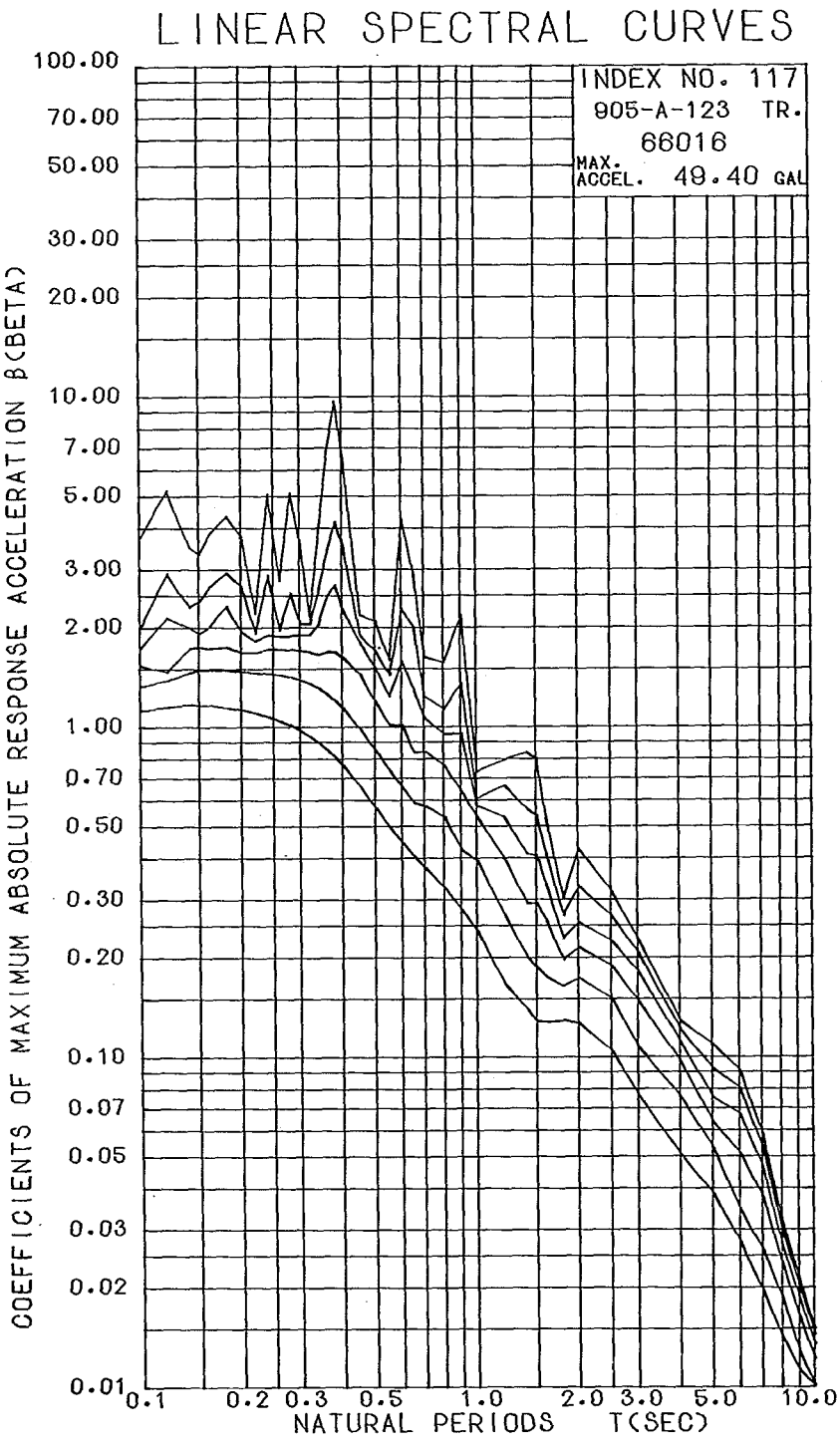


Figure IS-117 Linear Response Spectrum of Earthquake Record with Index Number 117

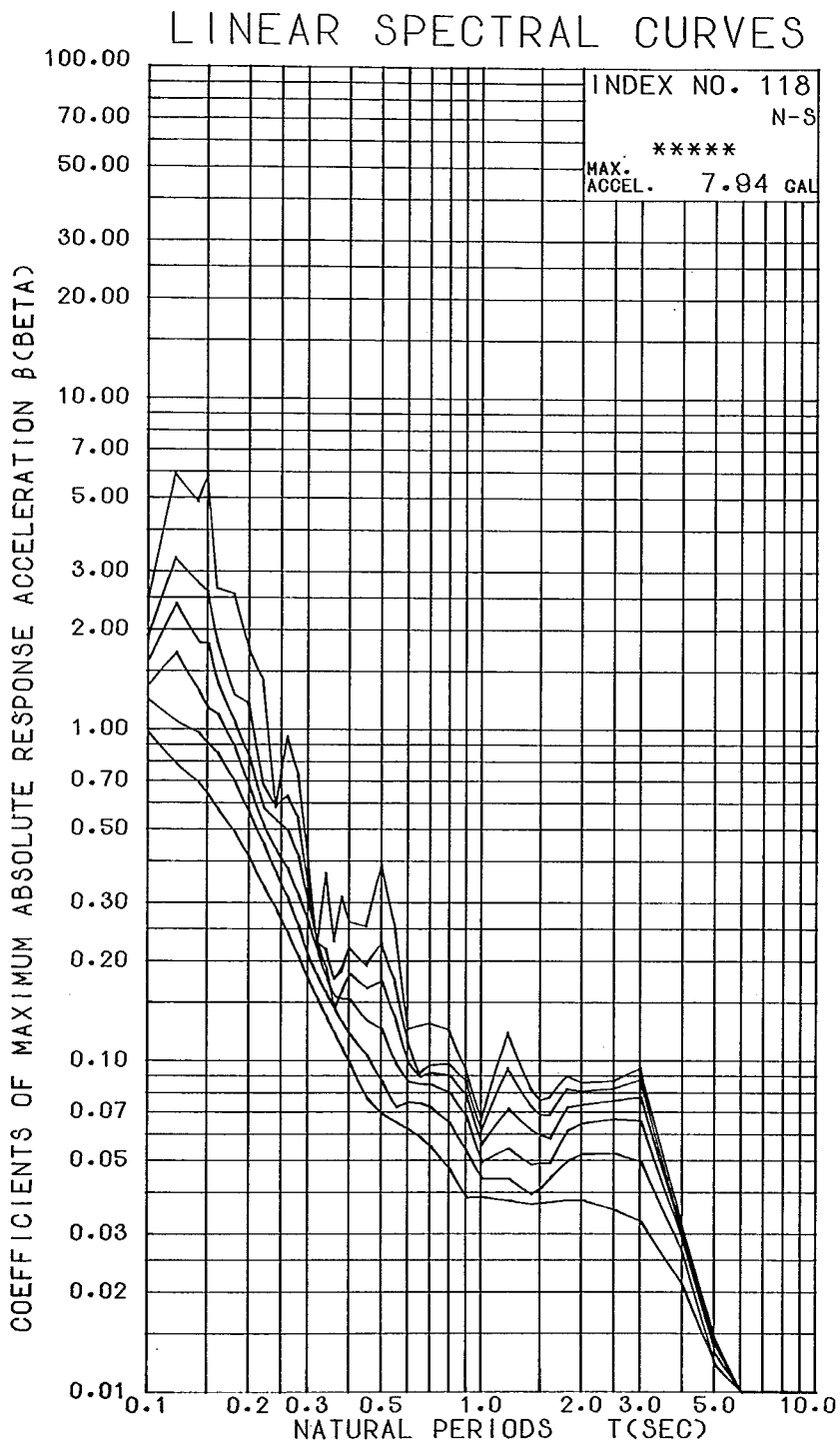


Figure IS-118 Linear Response Spectrum of Earthquake Record with Index Number 118

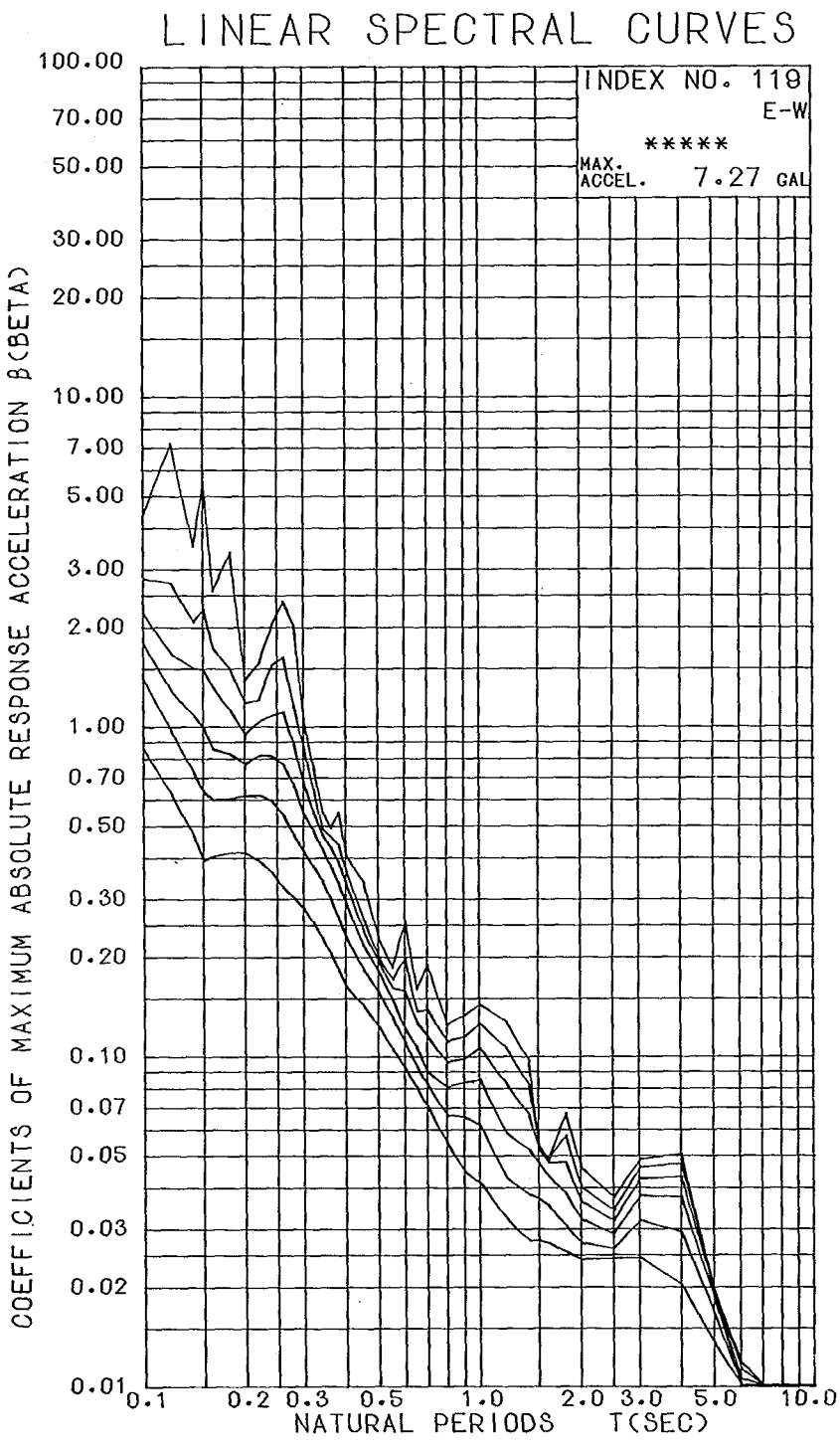


Figure IS-119 Linear Response Spectrum of Earthquake Record with Index Number 119

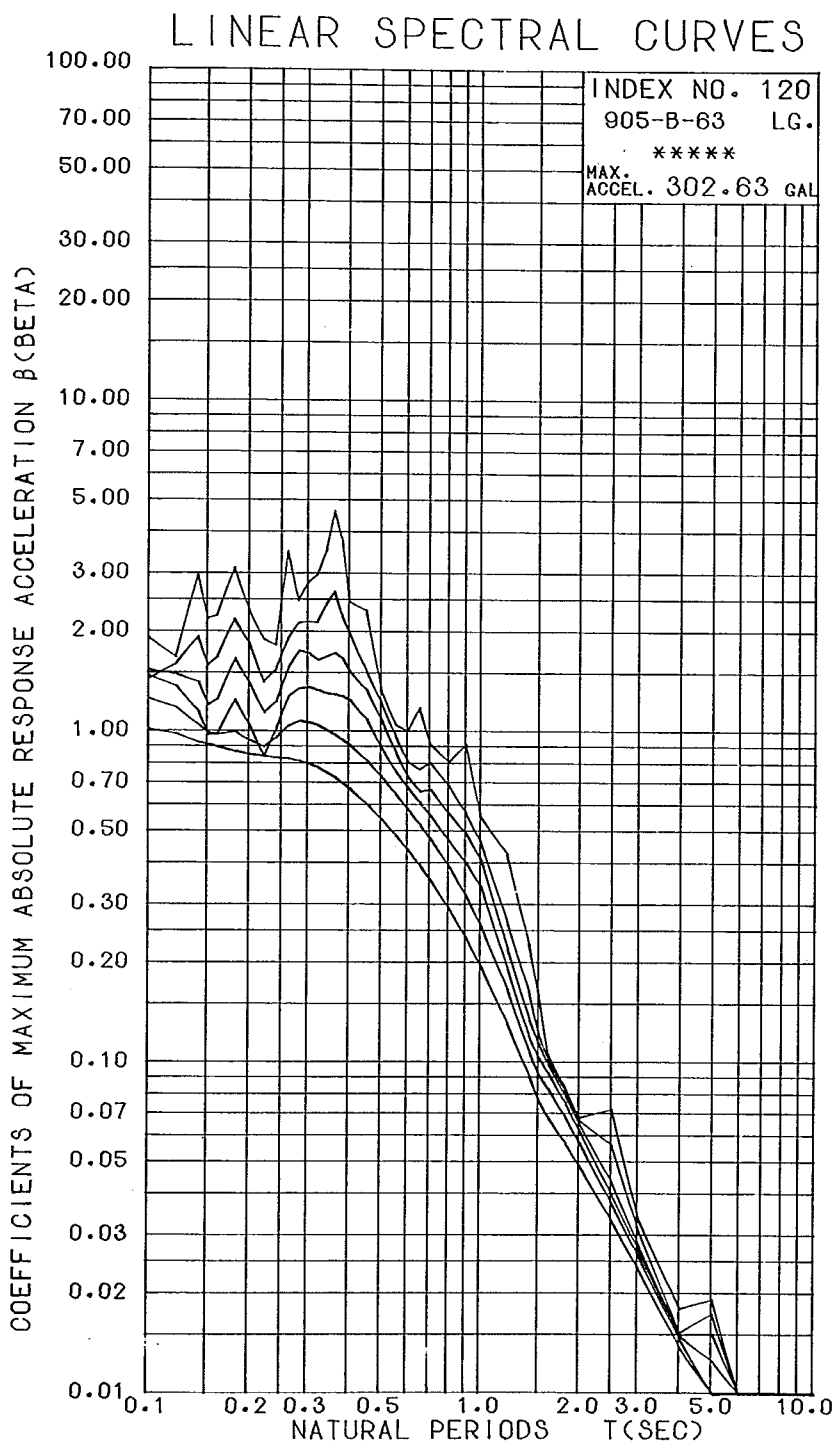


Figure IS-120 Linear Response Spectrum of Earthquake Record with Index Number 120

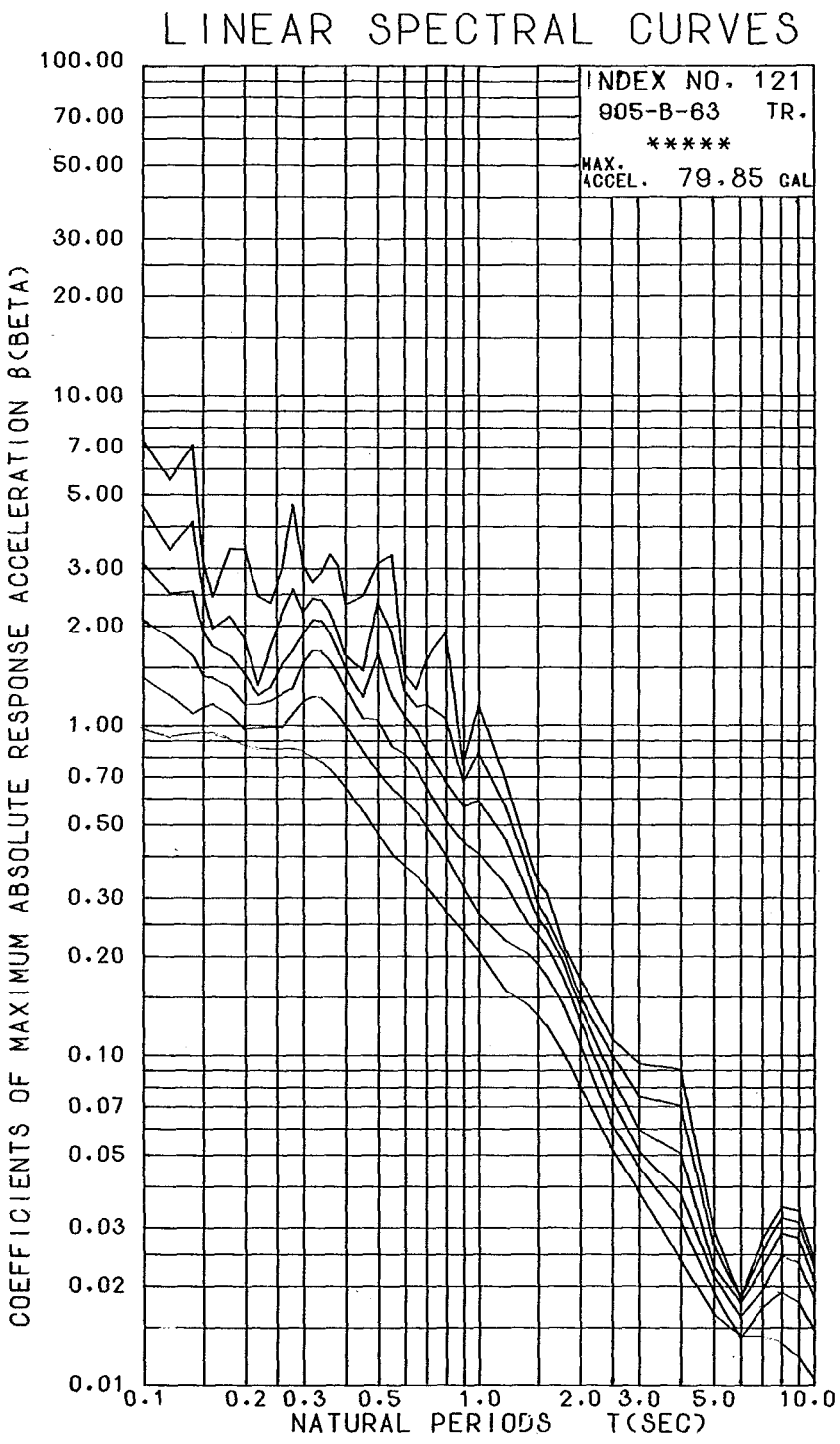


Figure IS-121 Linear Response Spectrum of Earthquake Record with Index Number 121

— 270 —

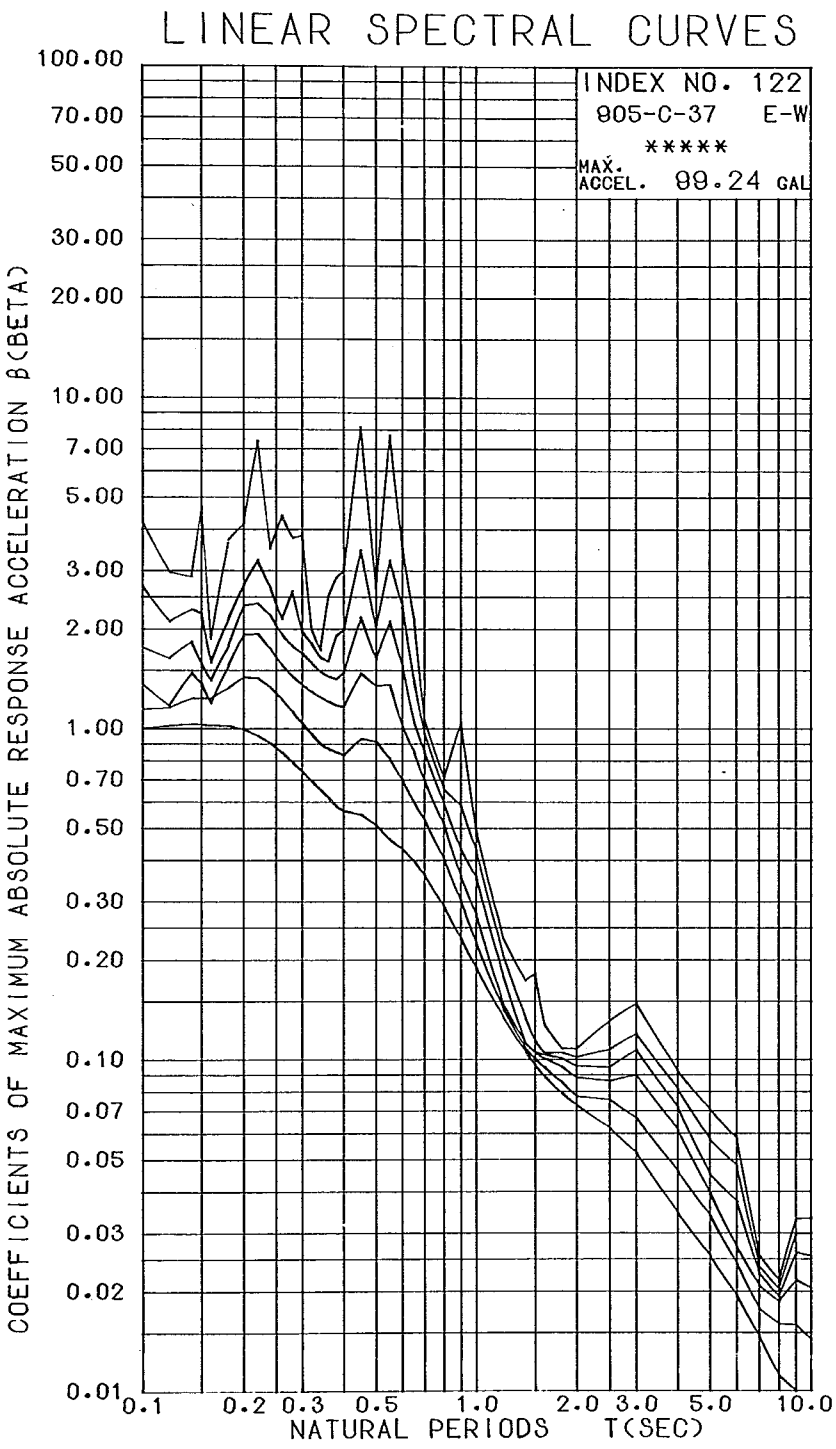


Figure IS-122 Linear Response Spectrum of Earthquake Record with Index Number 122

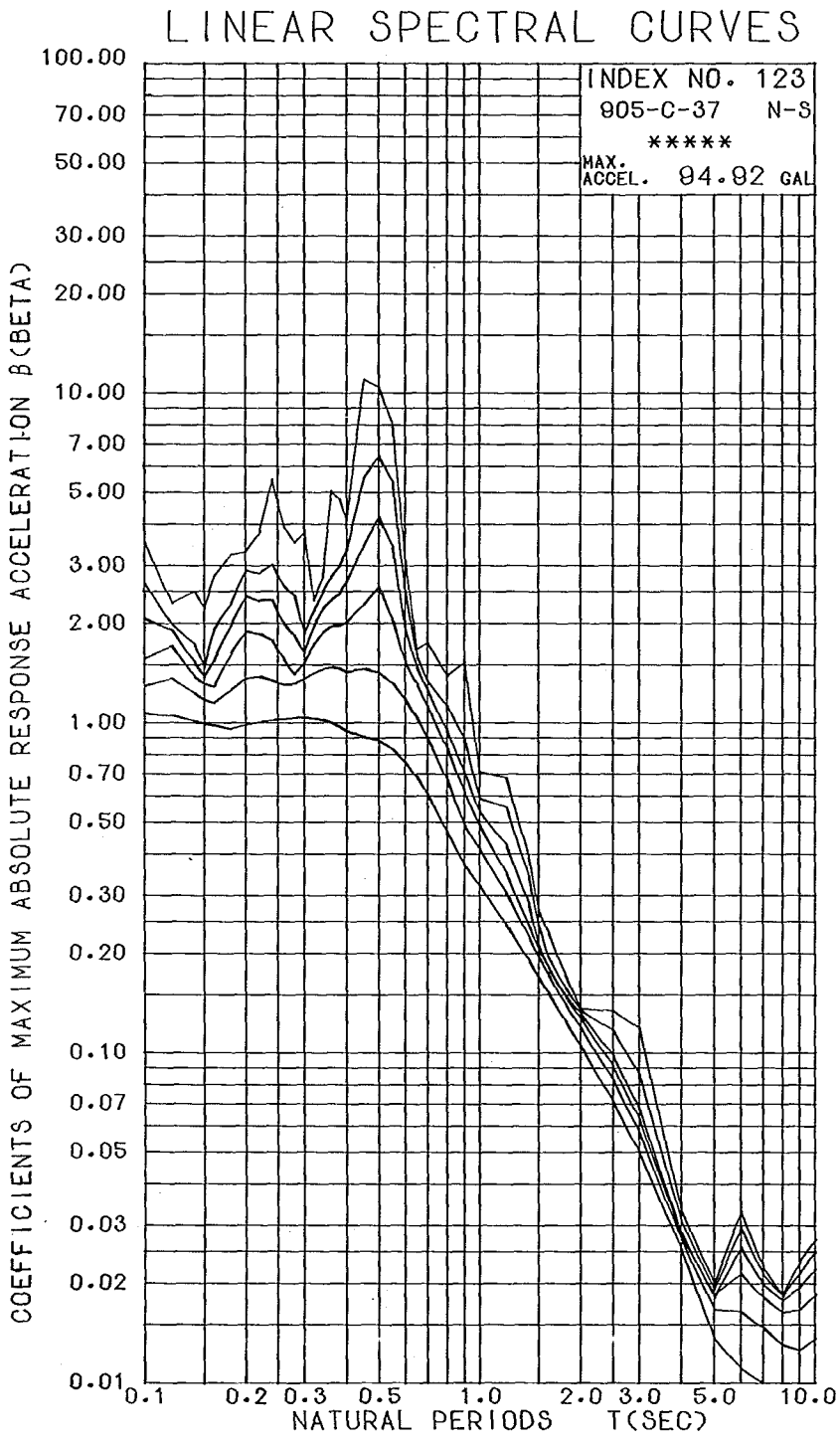


Figure IS-123 Linear Response Spectrum of Earthquake Record with Index Number 123

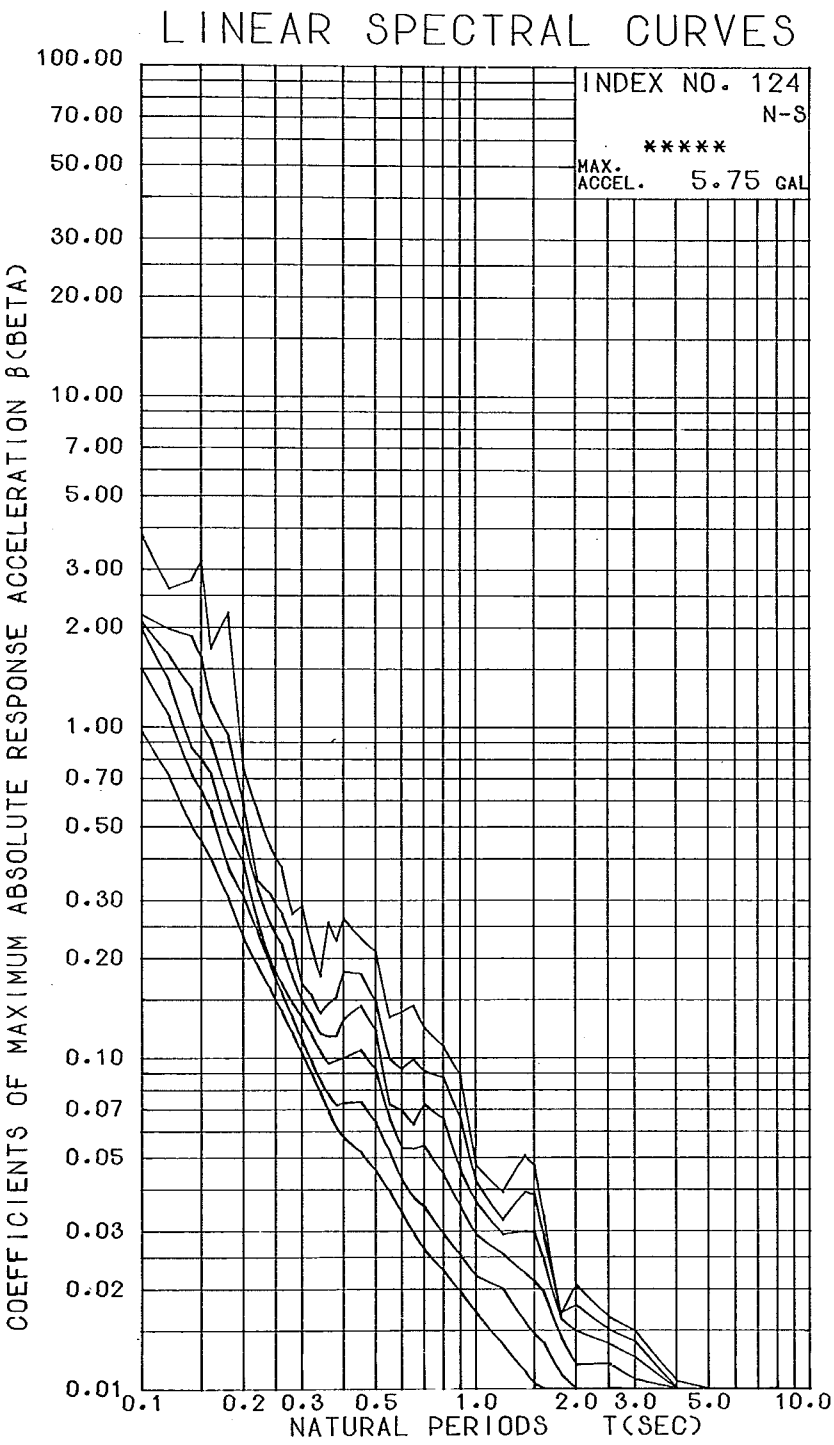


Figure IS-124 Linear Response Spectrum of Earthquake Record with Index Number 124

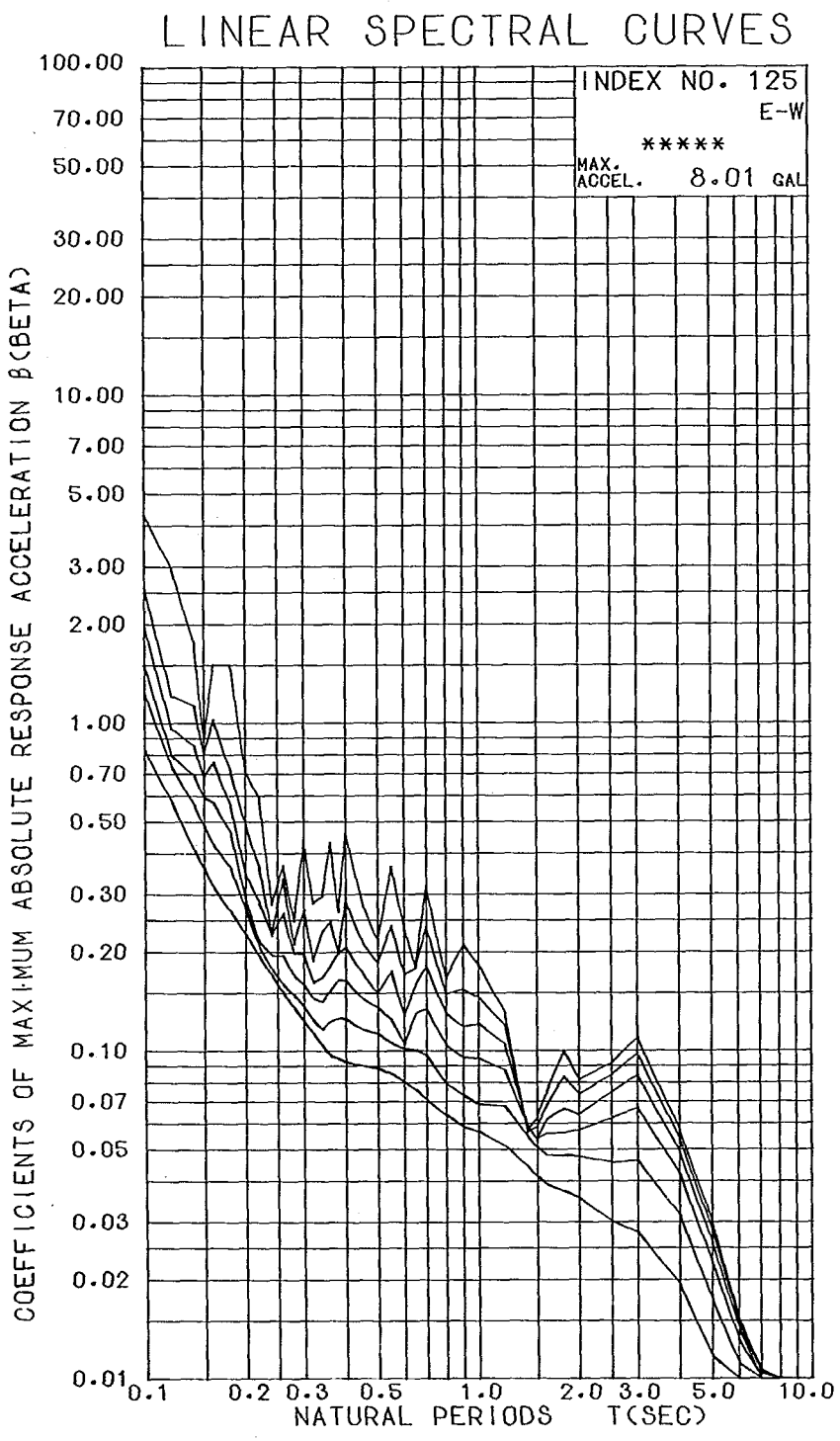


Figure IS-125 Linear Response Spectrum of Earthquake Record with Index Number 125

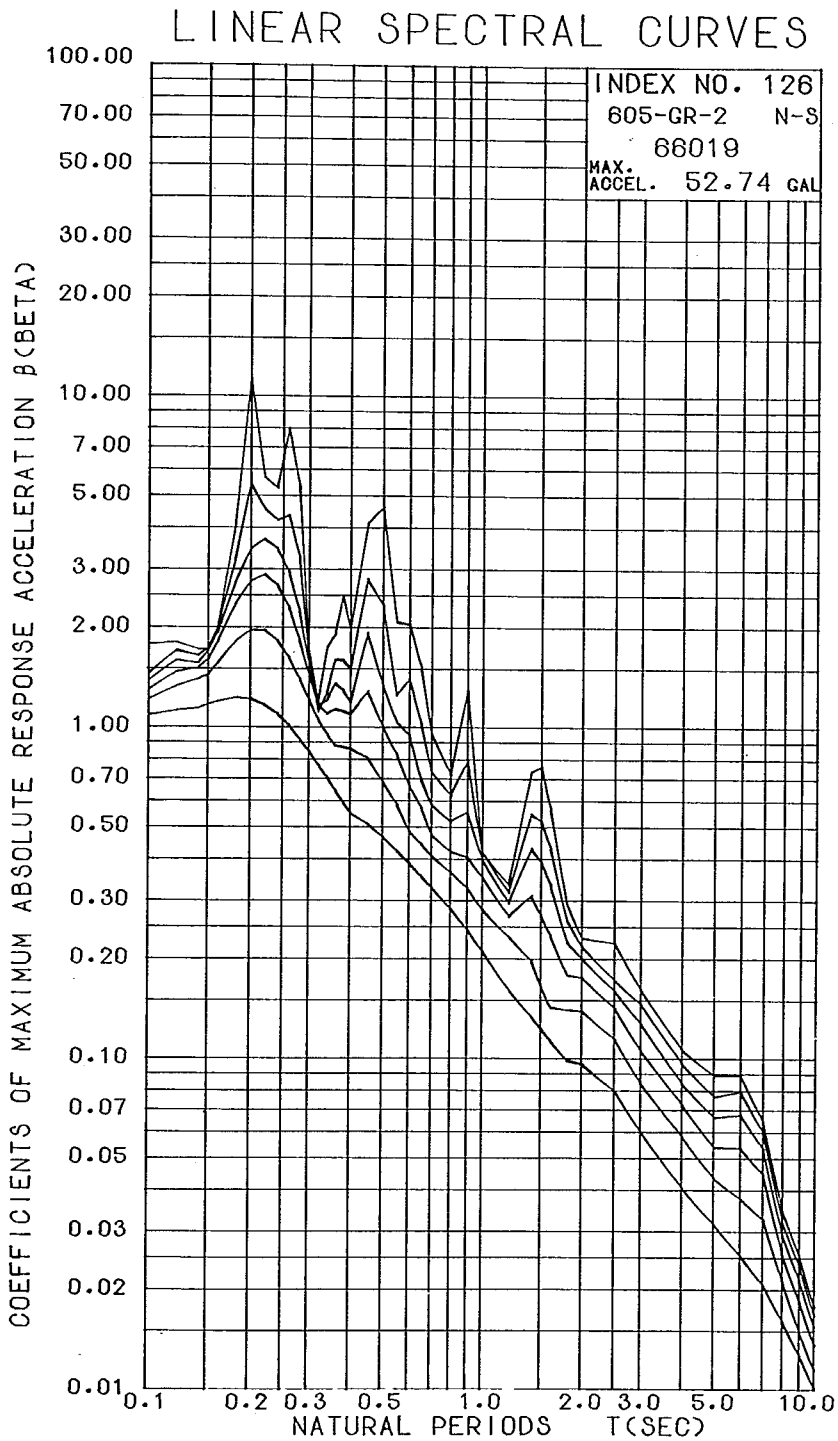


Figure IS-126 Linear Response Spectrum of Earthquake Record with Index Number 126

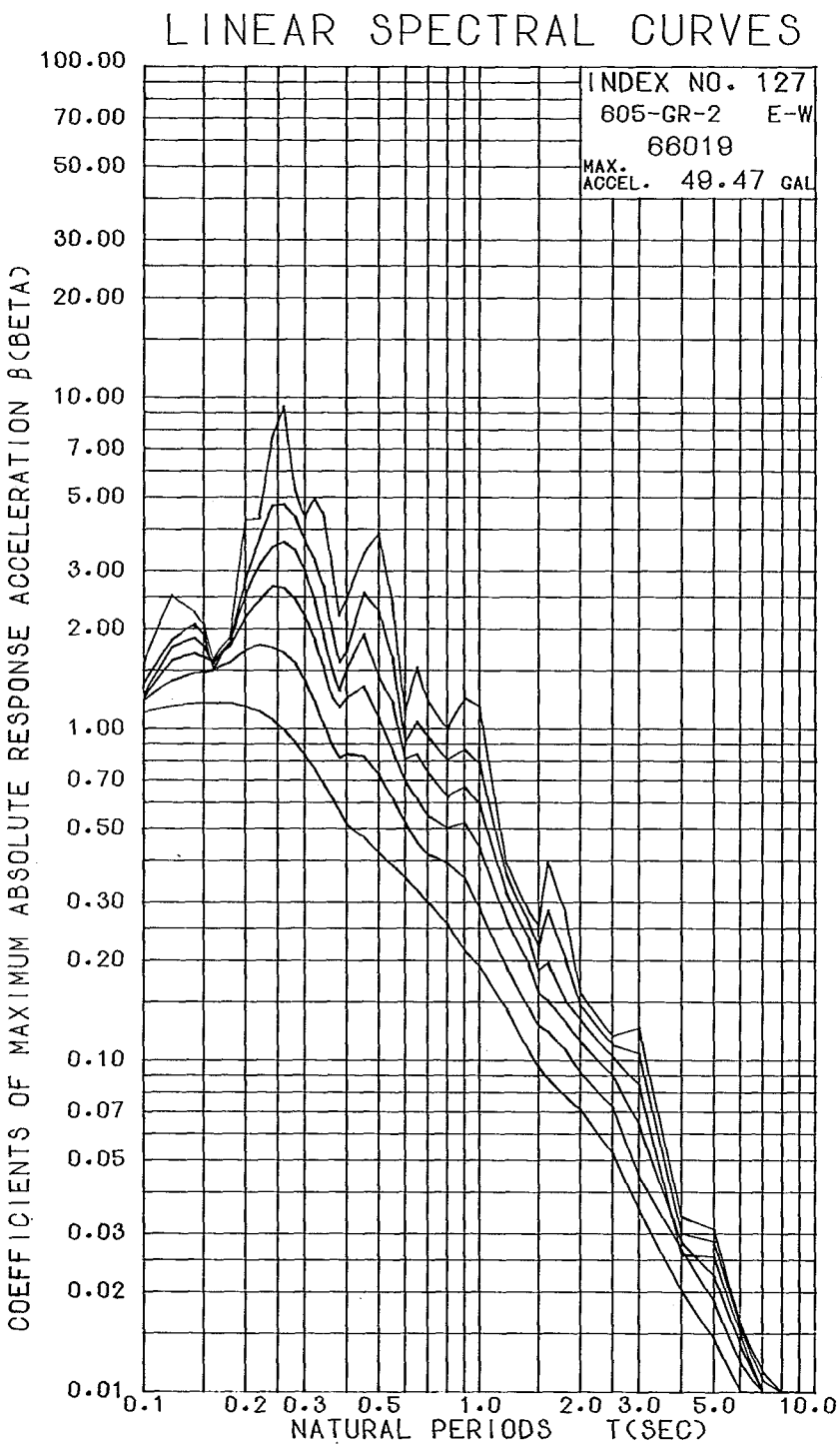


Figure IS-127 Linear Response Spectrum of Earthquake Record with Index Number 127

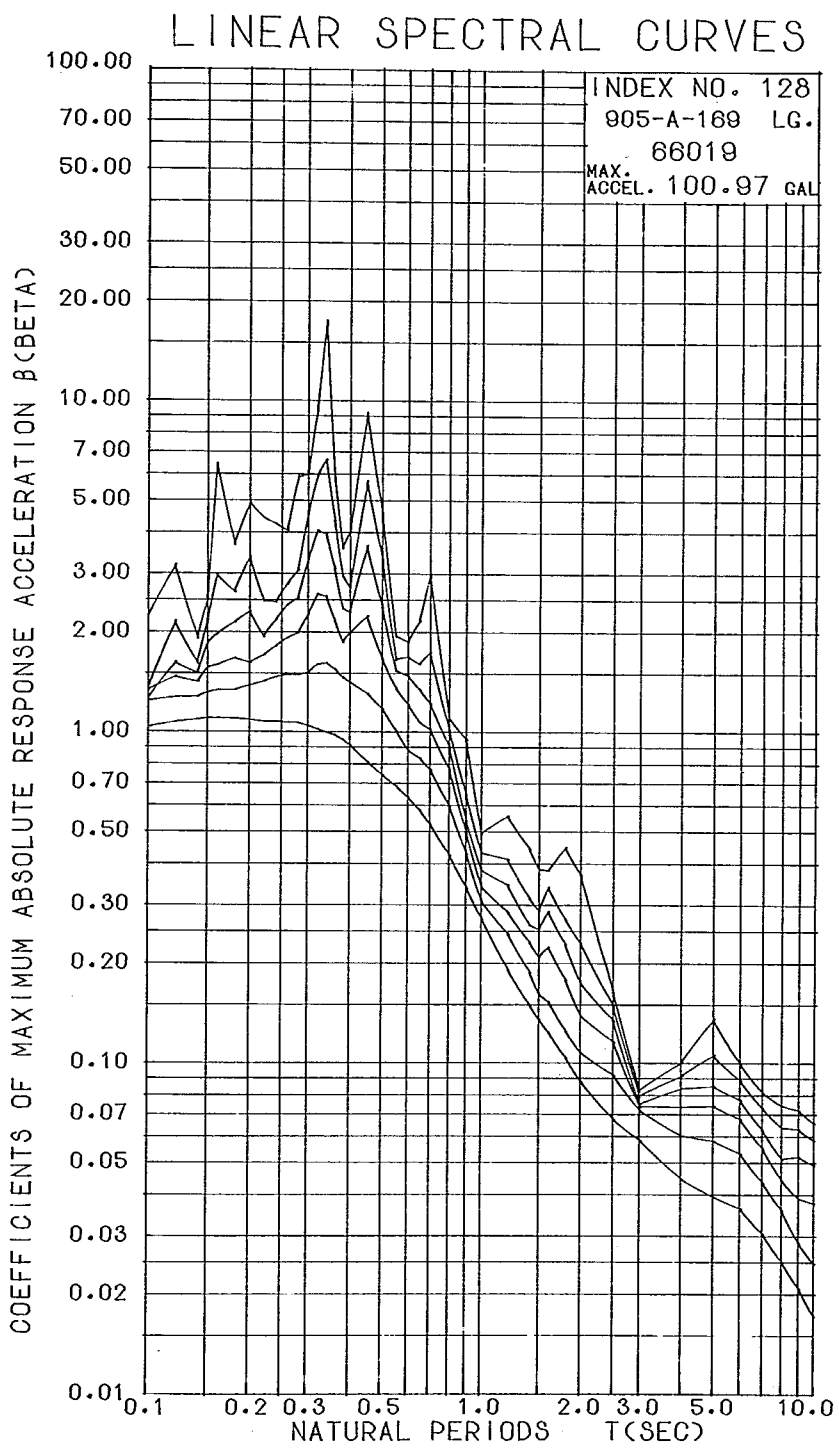


Figure IS-128 Linear Response Spectrum of Earthquake Record with Index Number 128

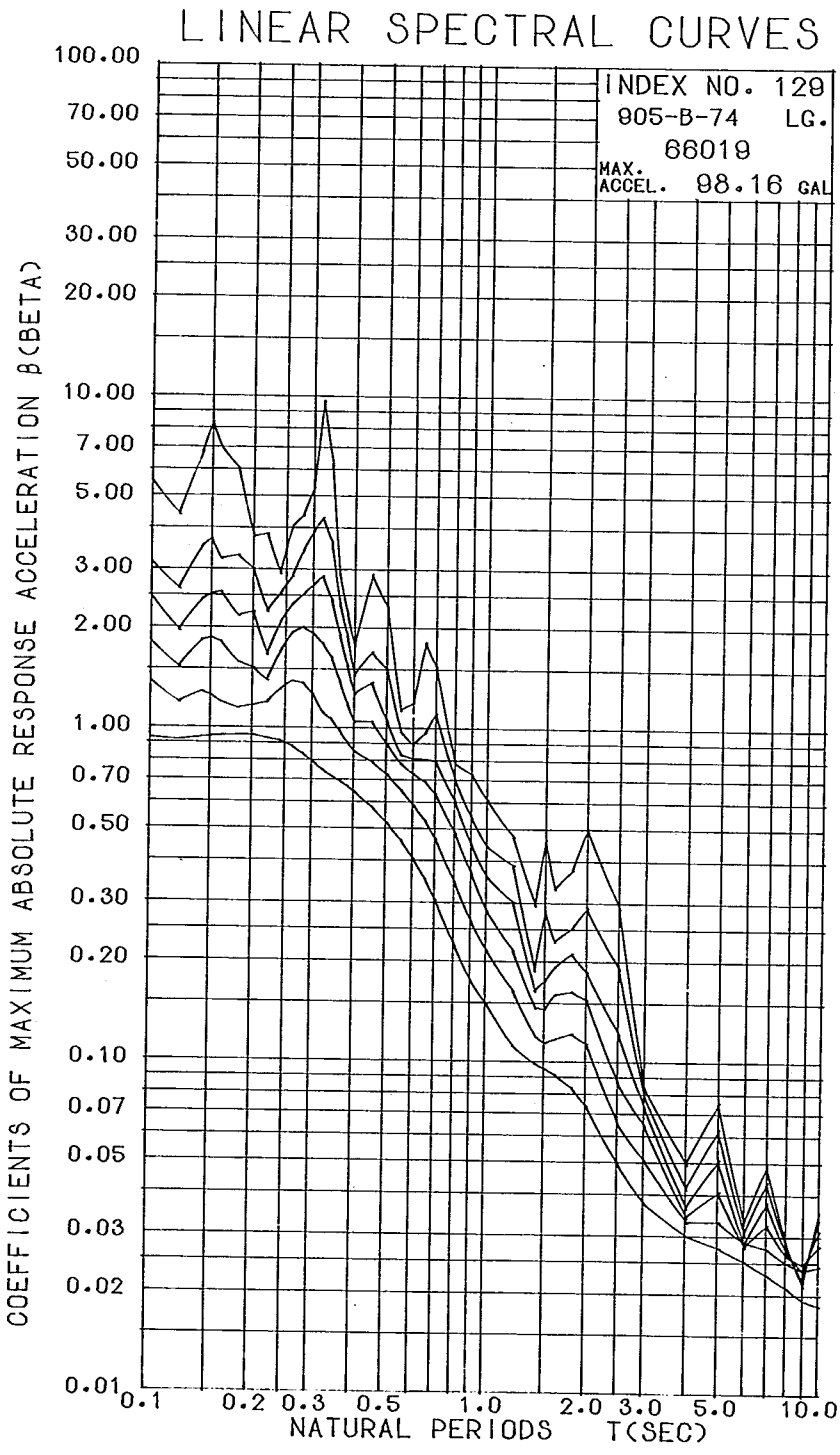


Figure IS-129 Linear Response Spectrum of Earthquake Record with Index Number 129

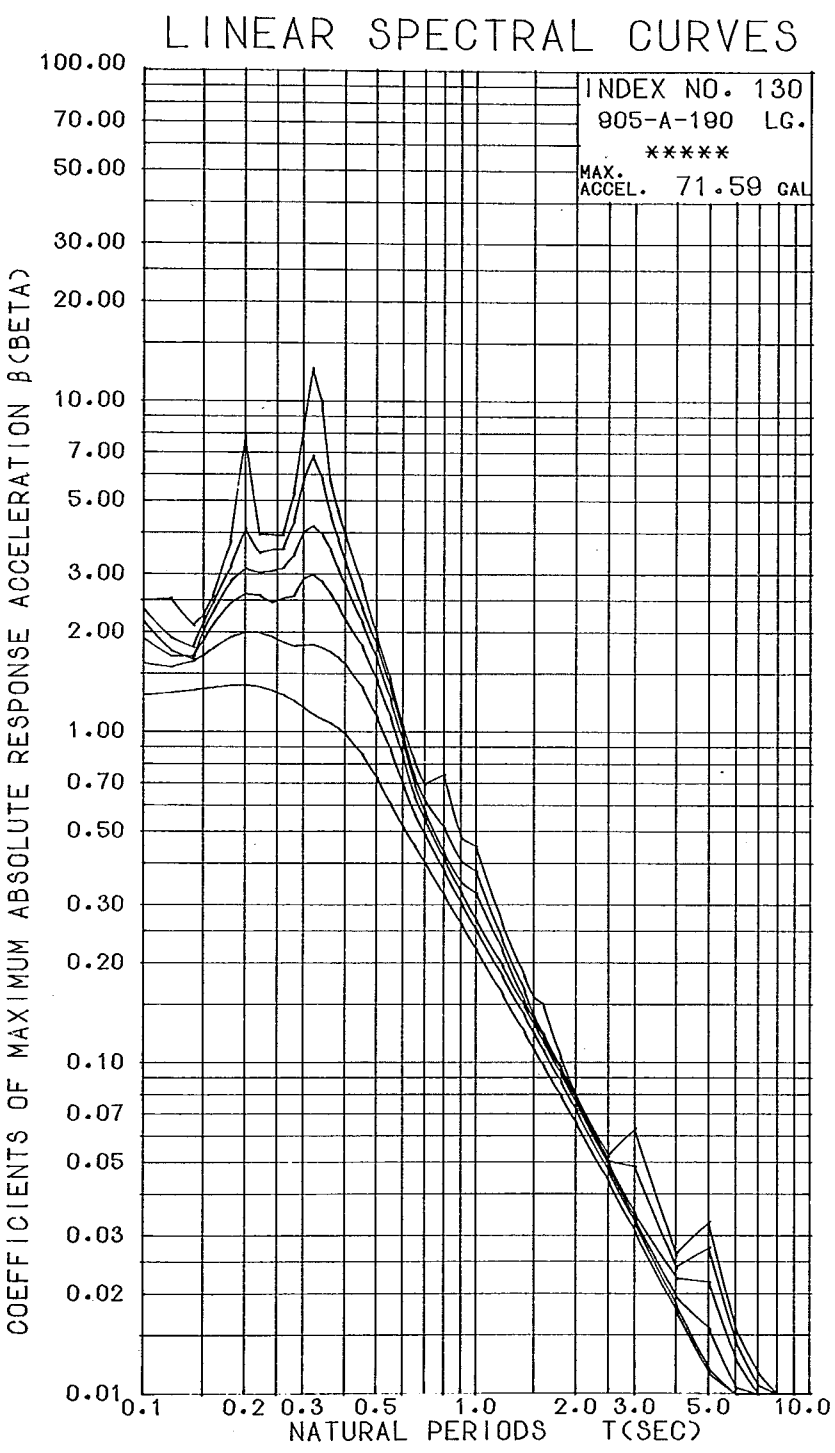


Figure IS-130 Linear Response Spectrum of Earthquake Record with Index Number 130

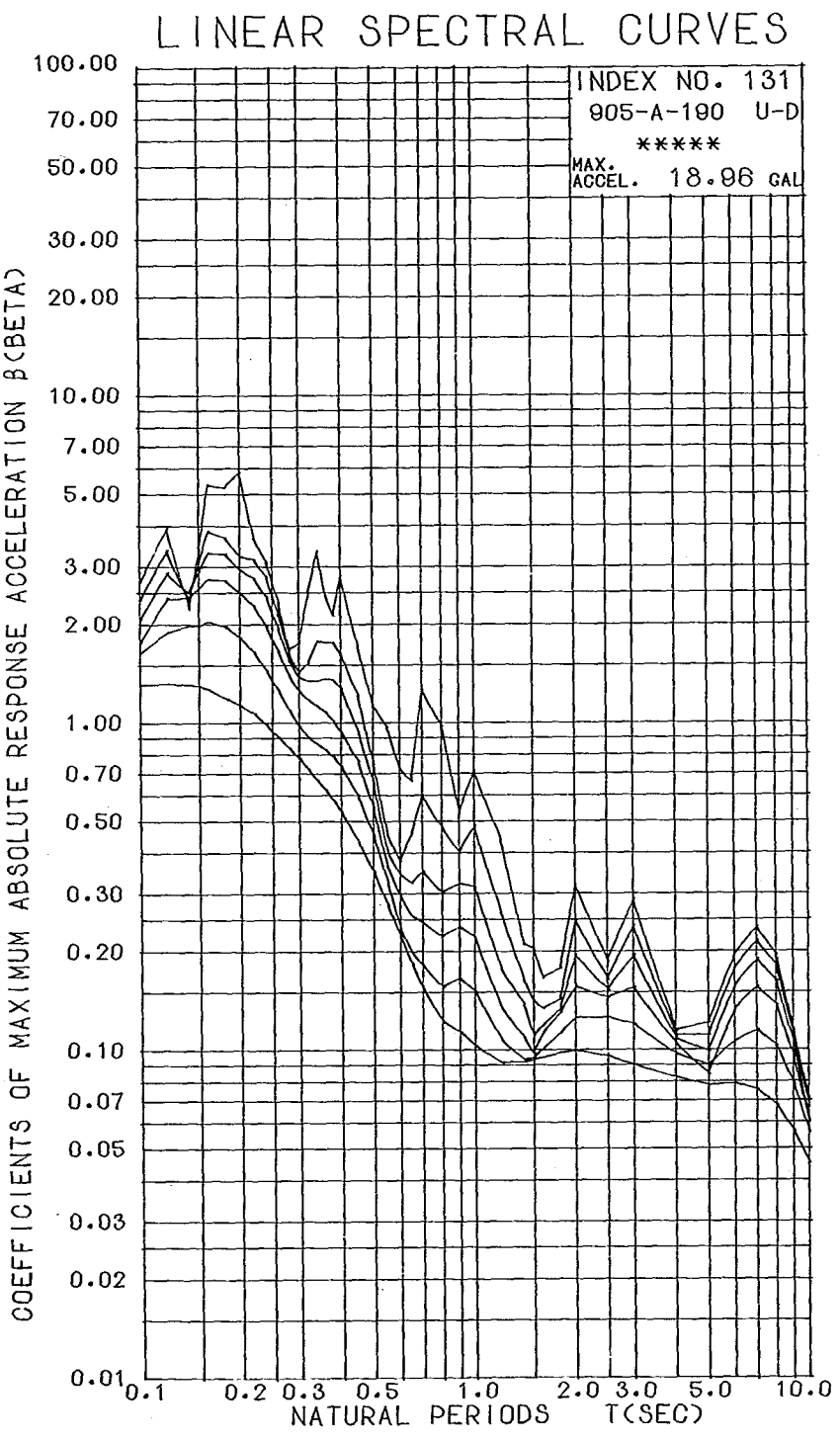


Figure IS-131 Linear Response Spectrum of Earthquake Record with Index Number 131

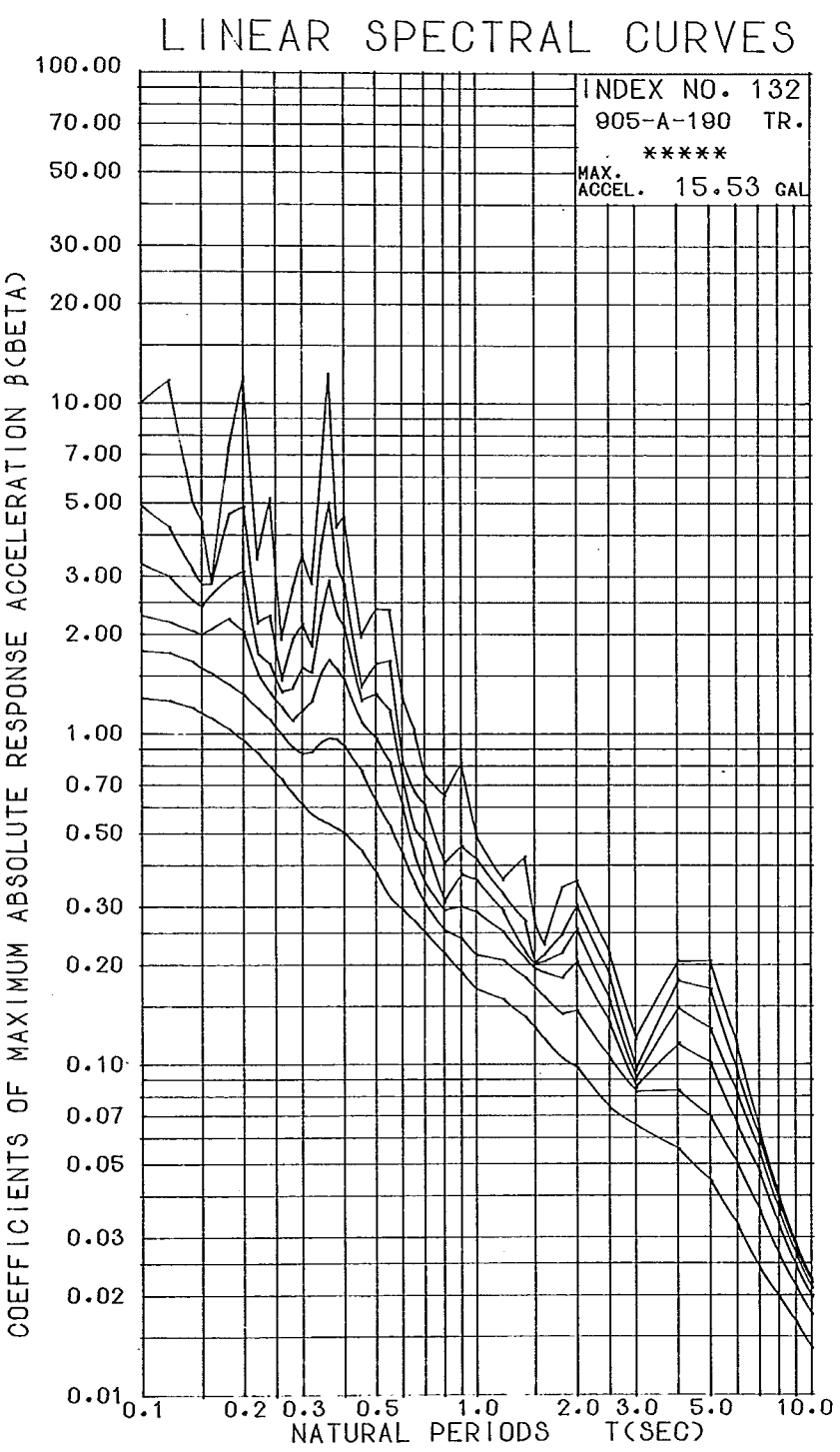


Figure IS-132 Linear Response Spectrum of Earthquake Record with Index Number 132

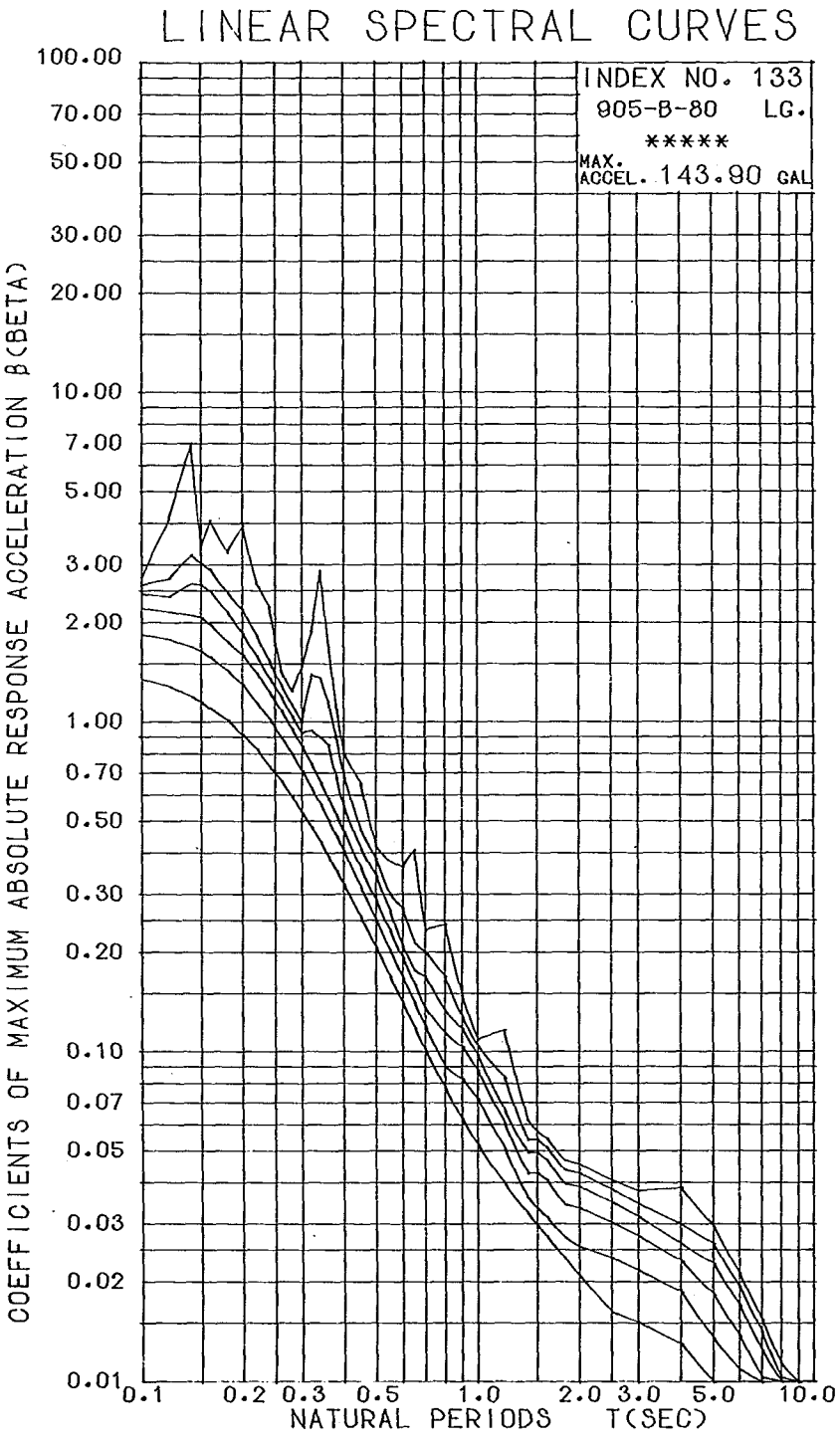


Figure IS-133 Linear Response Spectrum of Earthquake Record with Index Number 133

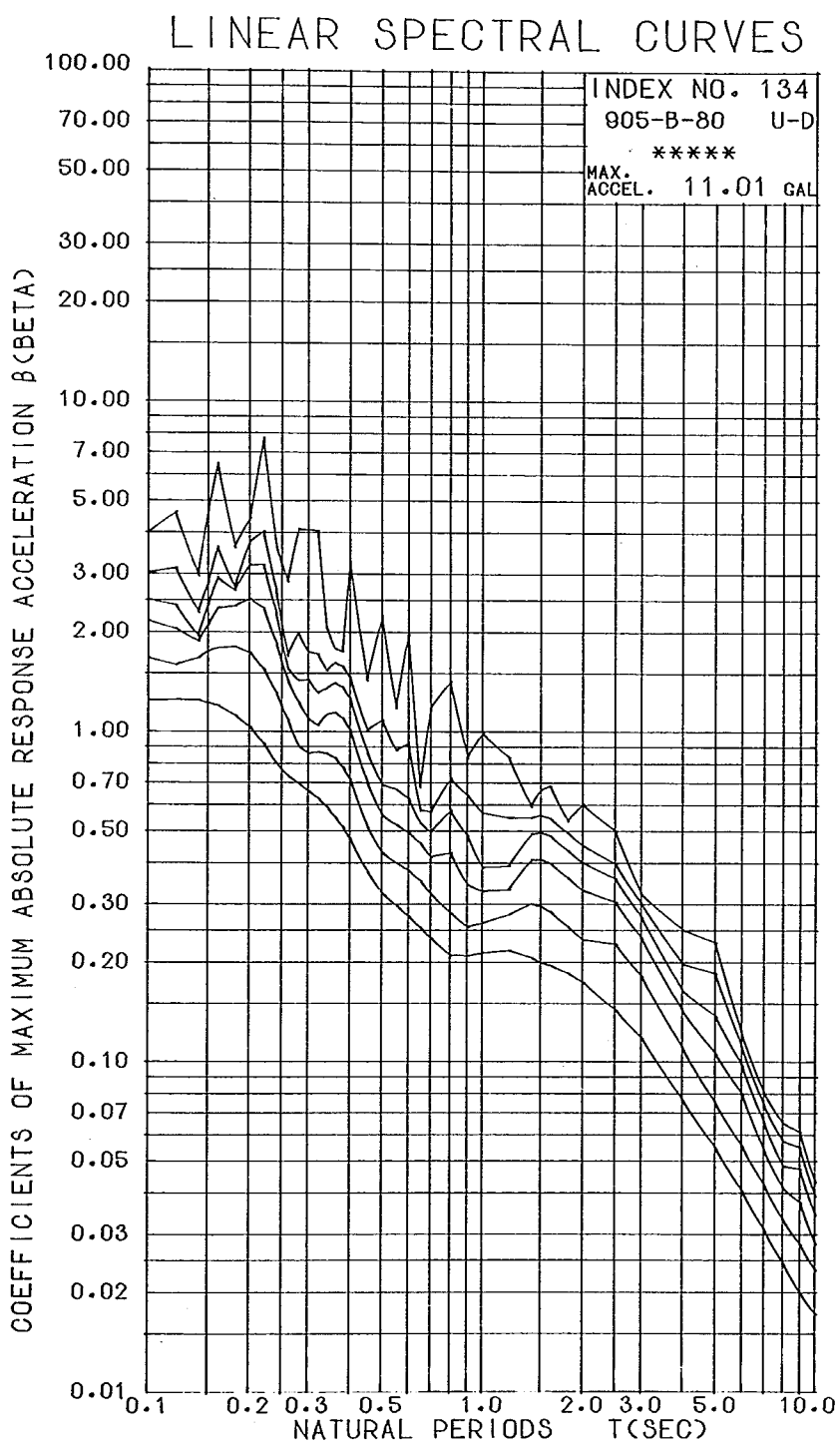


Figure IS-134 Linear Response Spectrum of Earthquake Record with Index Number 134

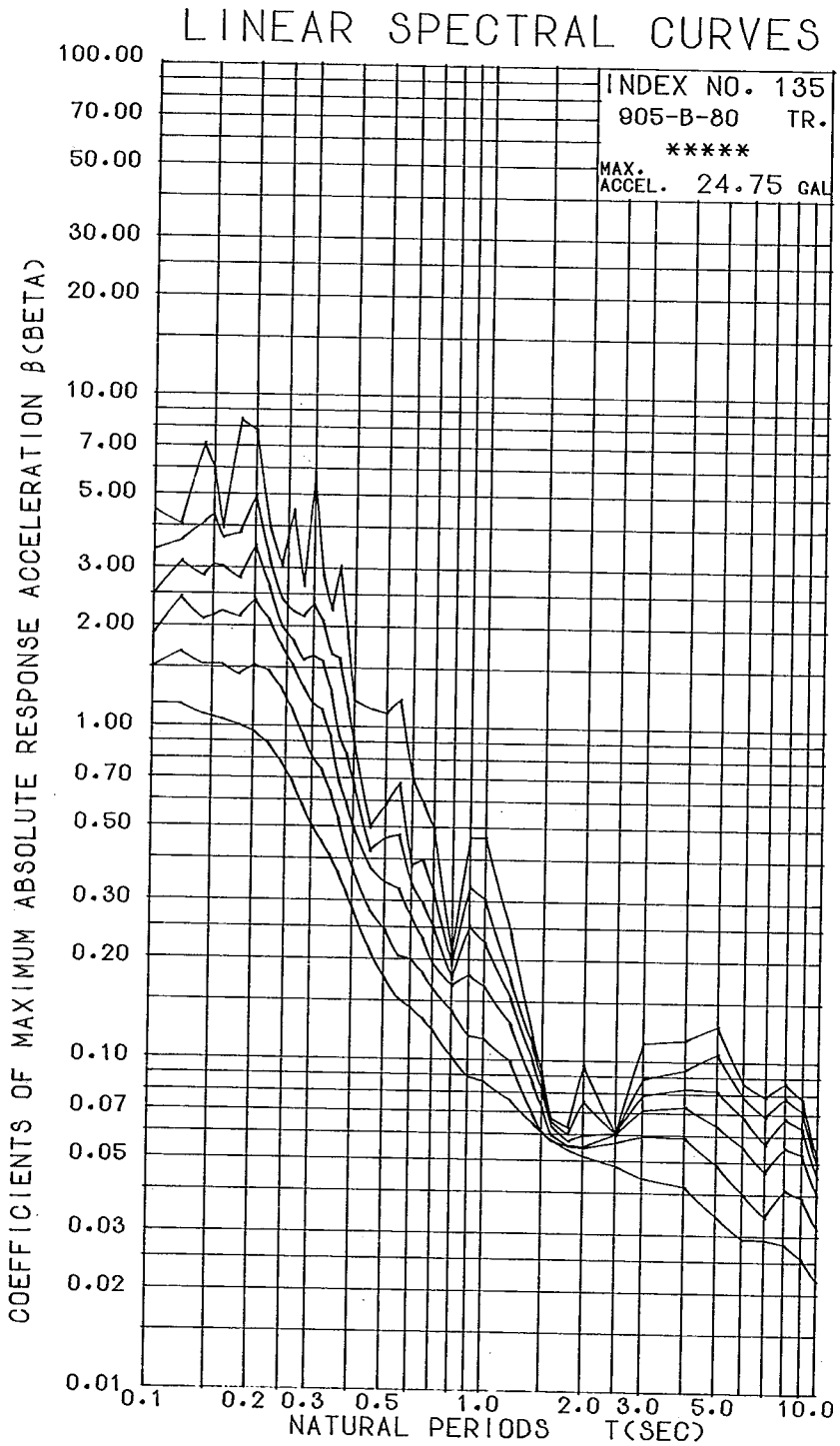


Figure IS-135 Linear Response Spectrum of Earthquake Record with Index Number 135

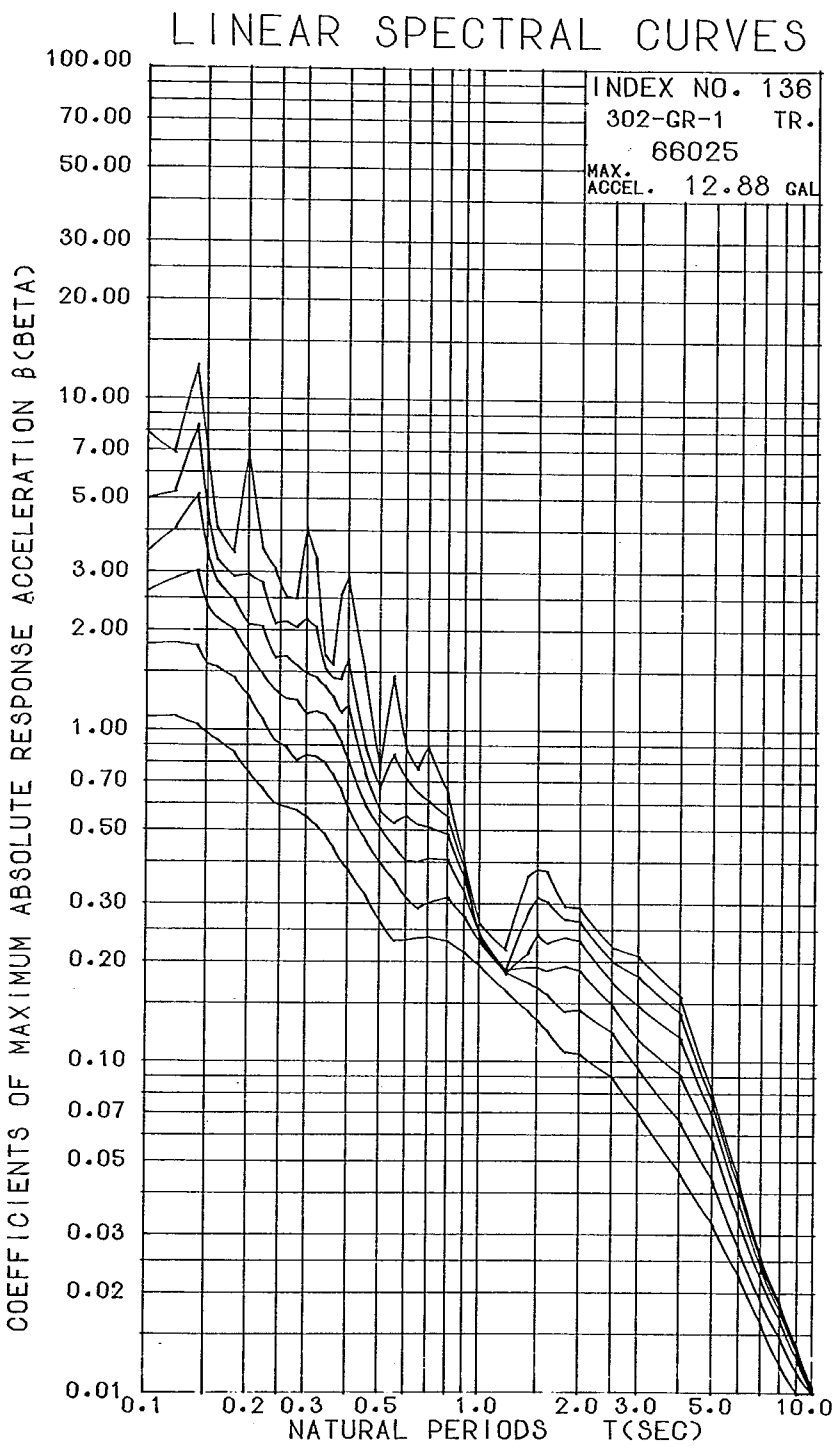


Figure IS-136 Linear Response Spectrum of Earthquake Record with Index Number 136

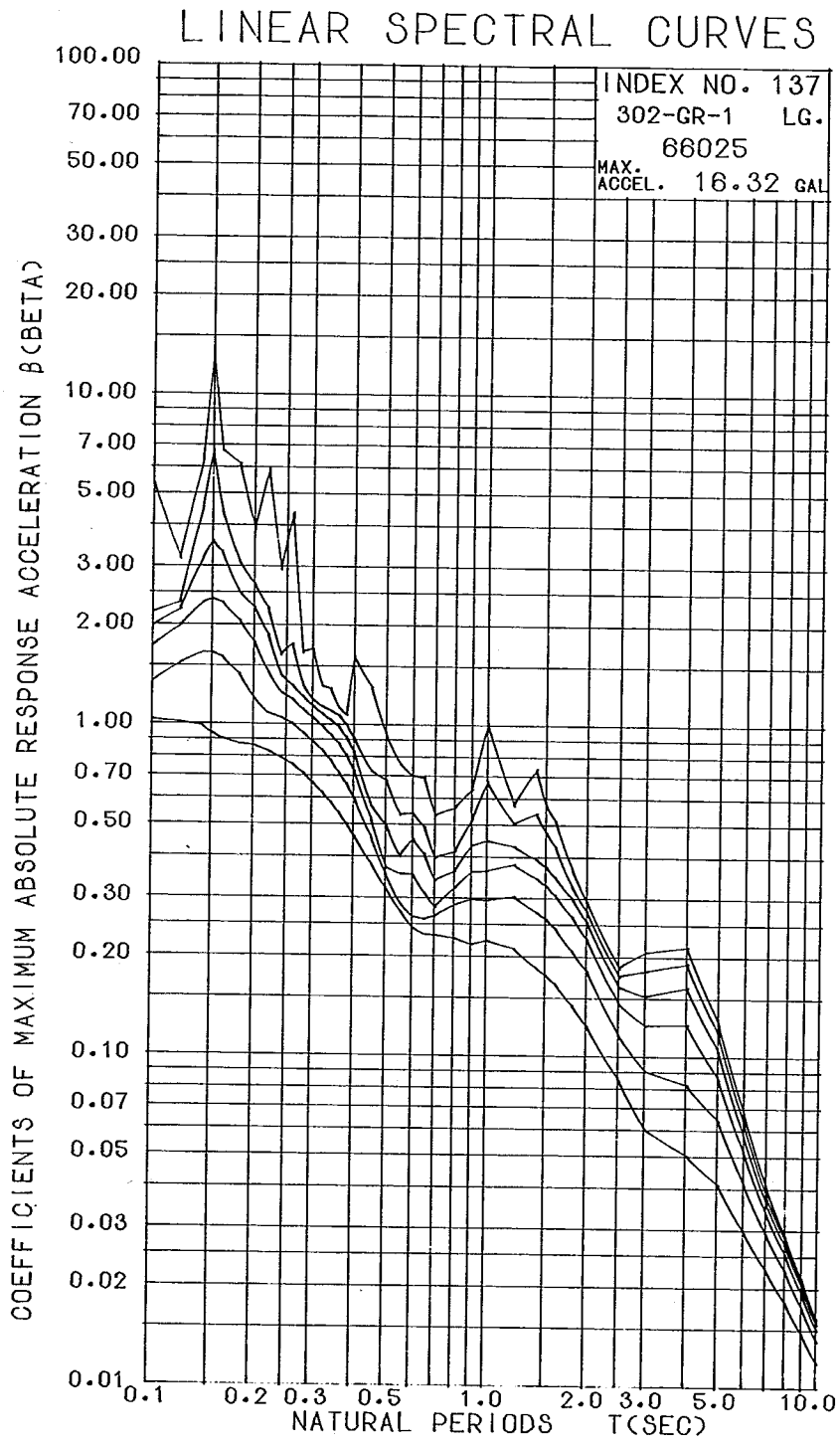


Figure IS-137 Linear Response Spectrum of Earthquake Record with Index Number 137

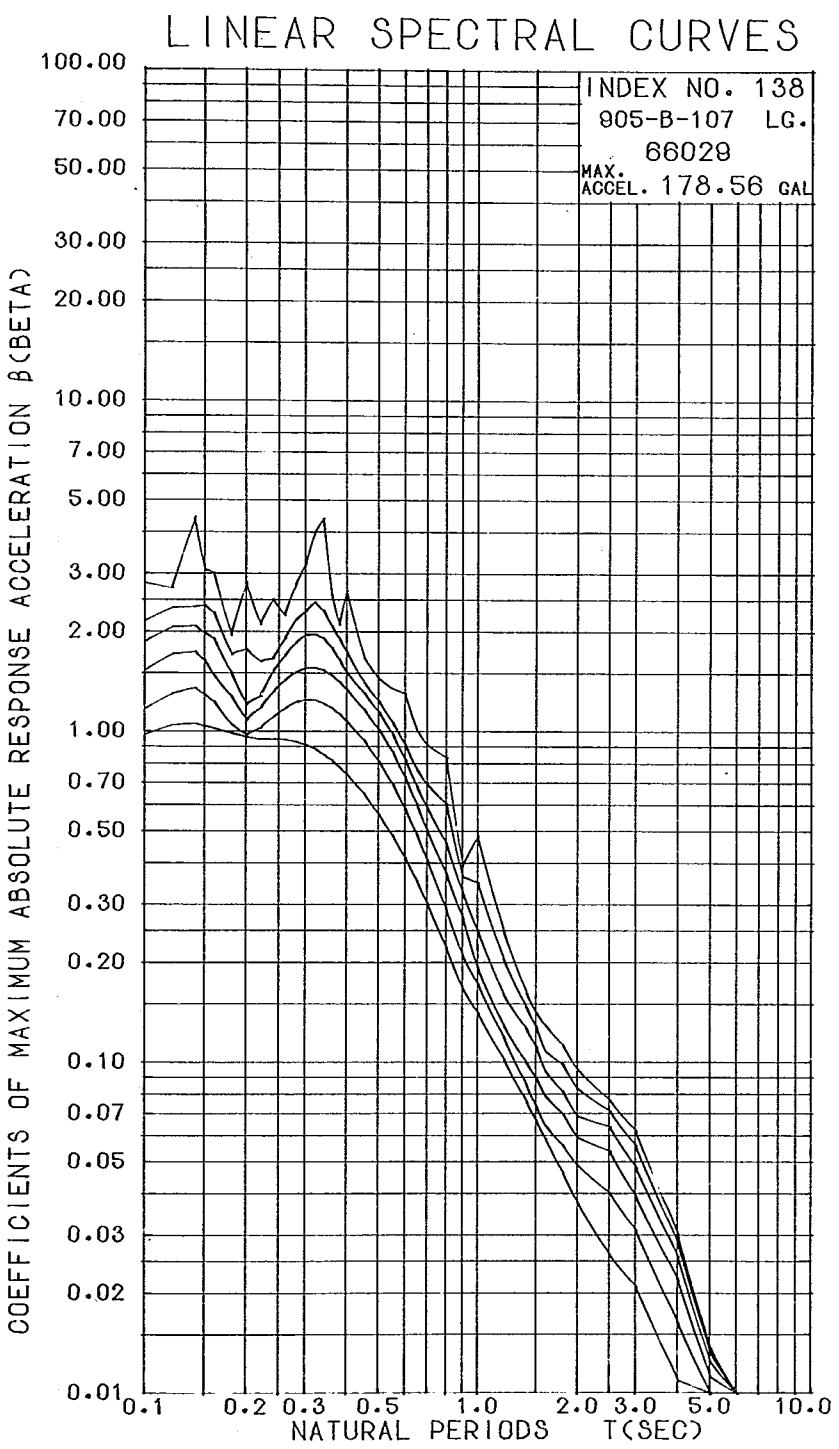


Figure IS-138 Linear Response Spectrum of Earthquake Record with Index Number 138

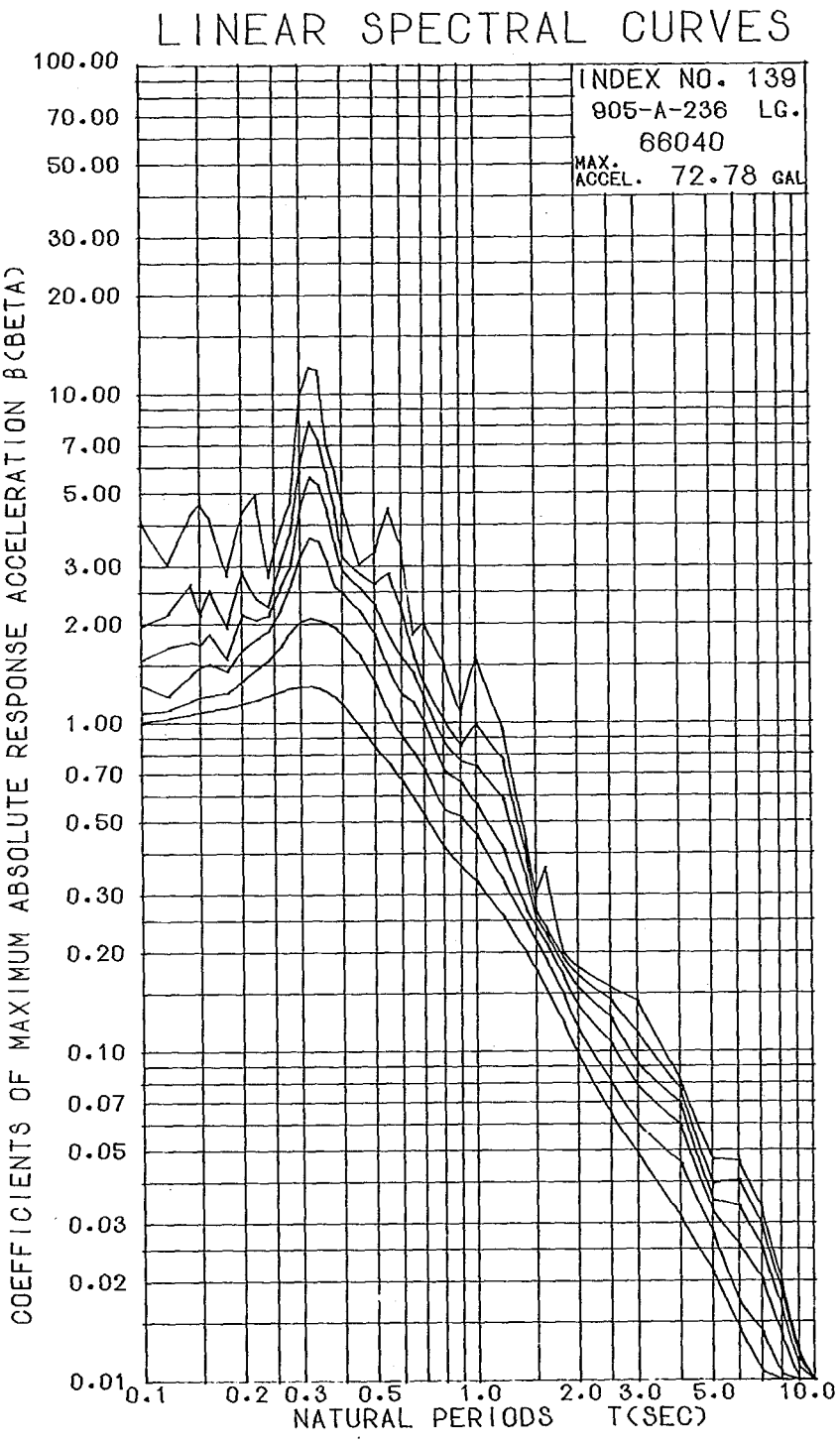


Figure IS-139 Linear Response Spectrum of Earthquake Record with Index Number 139

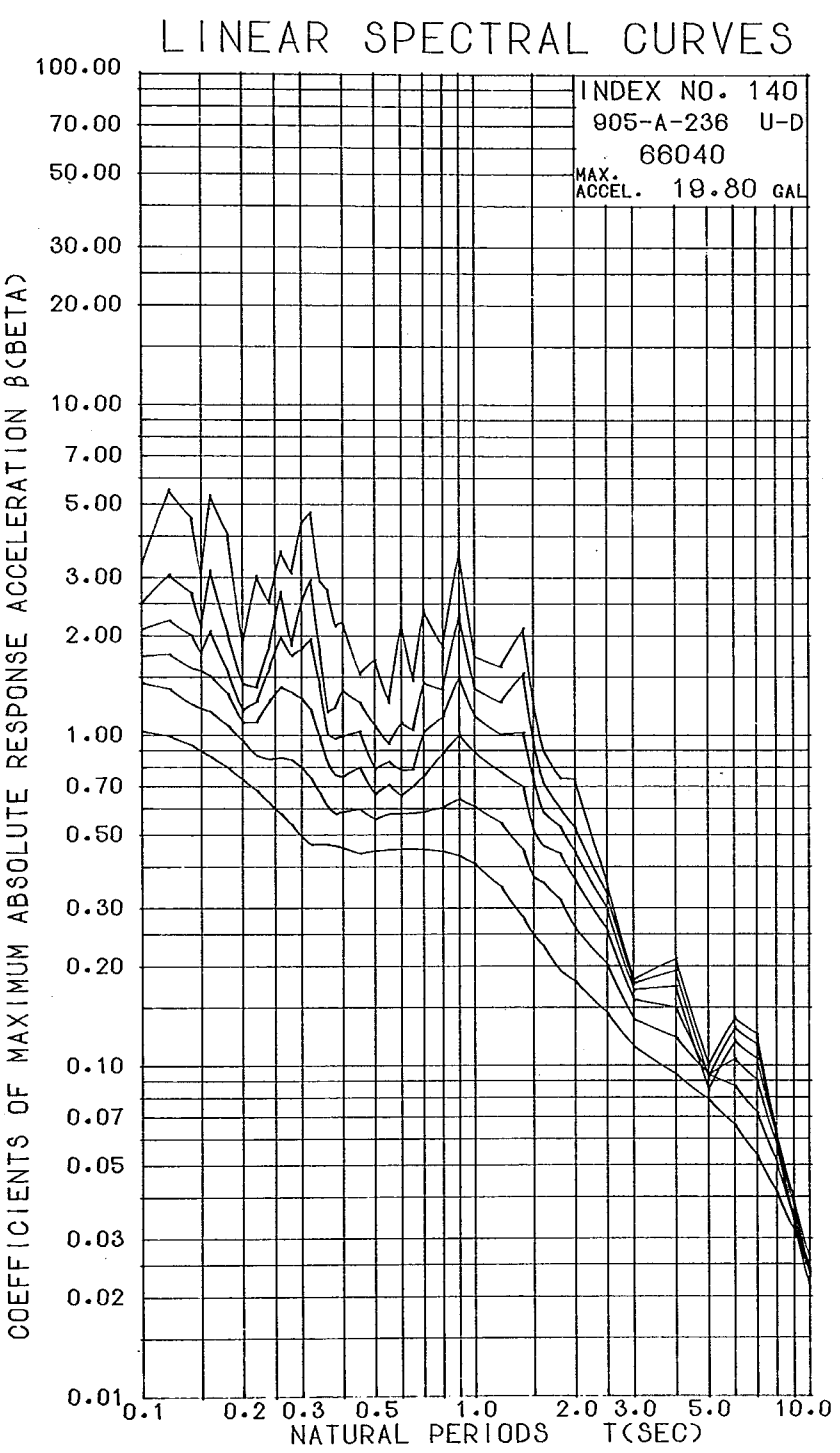


Figure IS-140 Linear Response Spectrum of Earthquake Record with Index Number 140

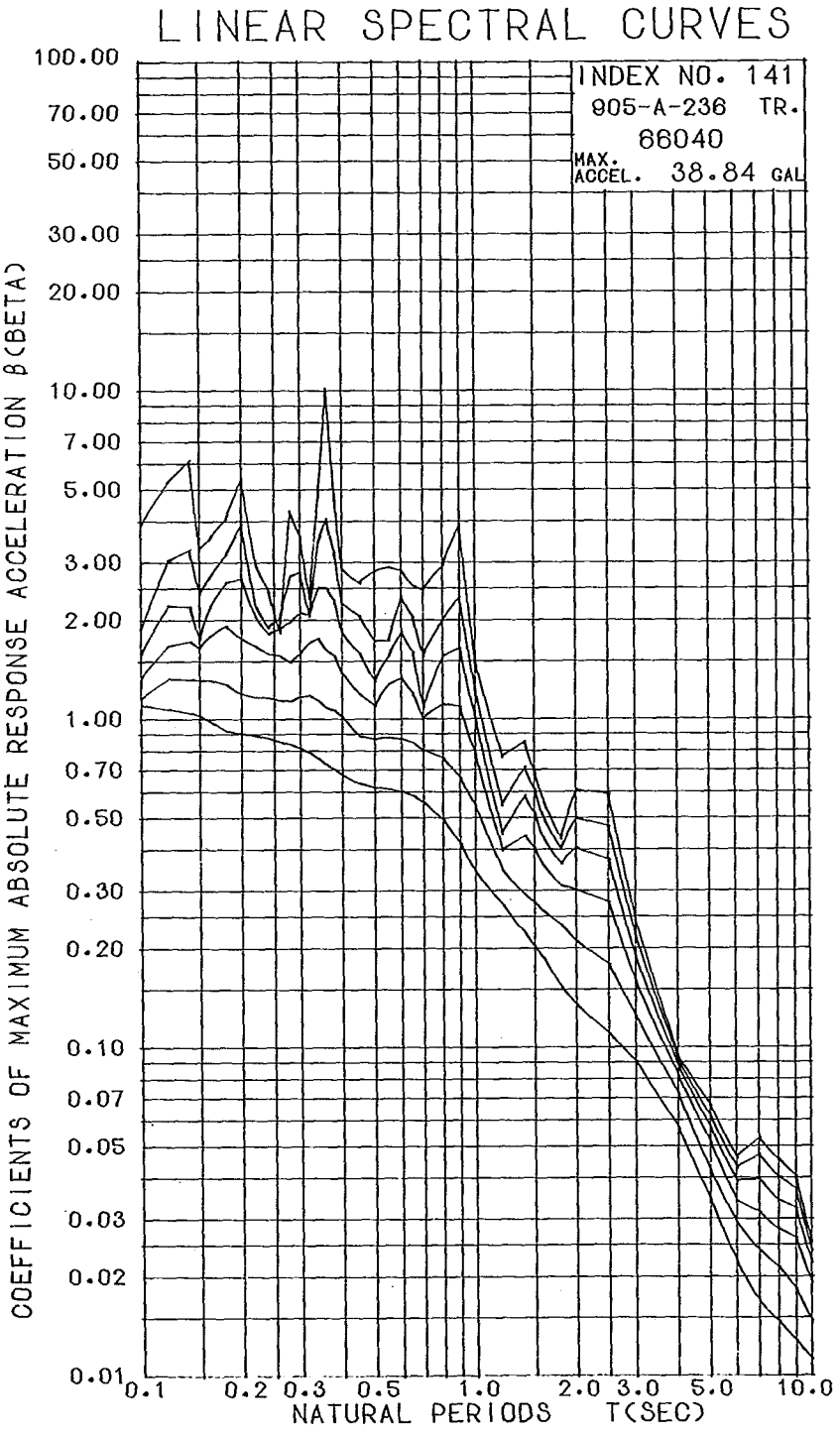


Figure IS-141 Linear Response Spectrum of Earthquake Record with Index Number 141

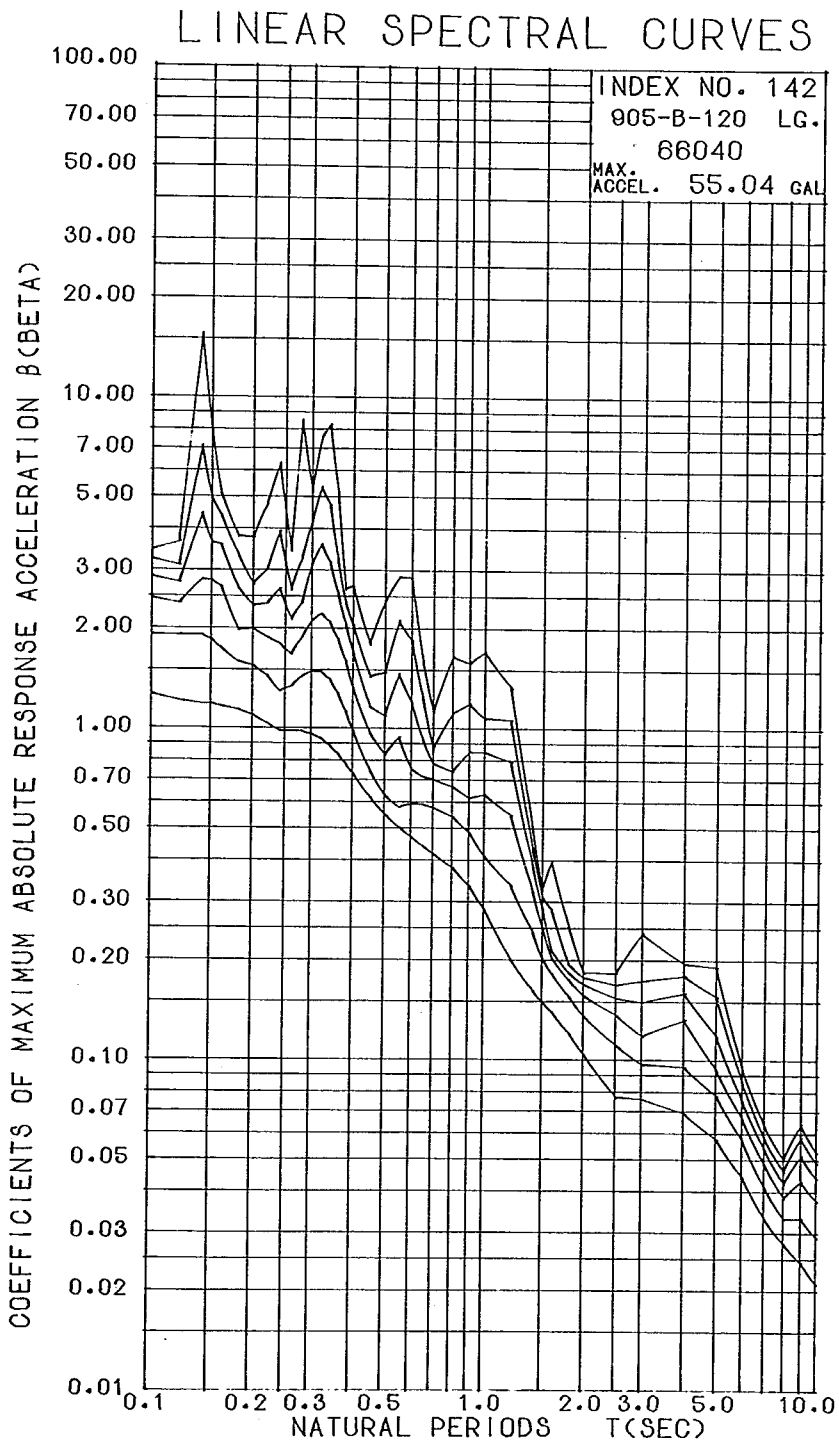


Figure IS-142 Linear Response Spectrum of Earthquake Record with Index Number 142

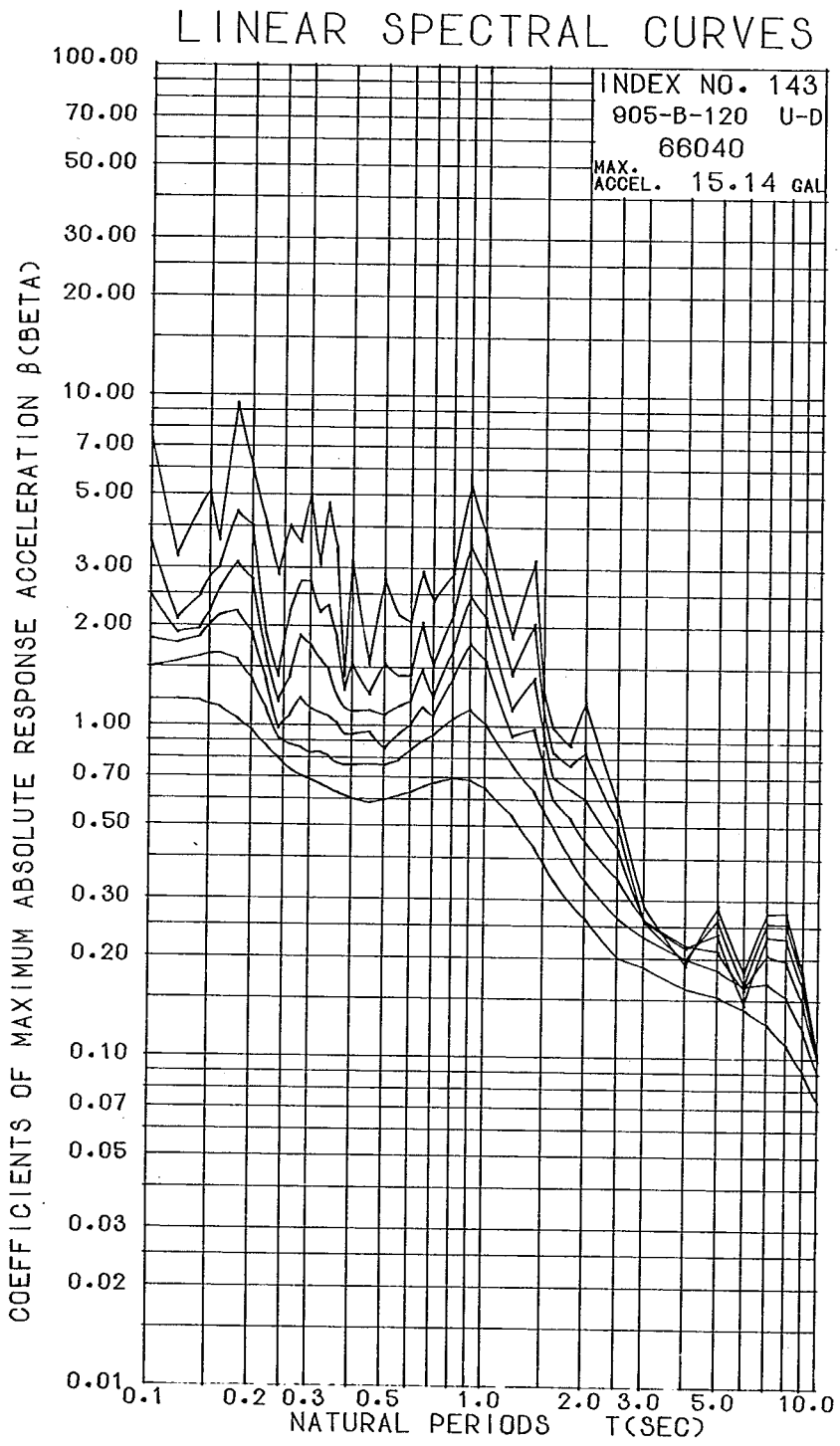


Figure IS-143 Linear Response Spectrum of Earthquake Record with Index Number 143

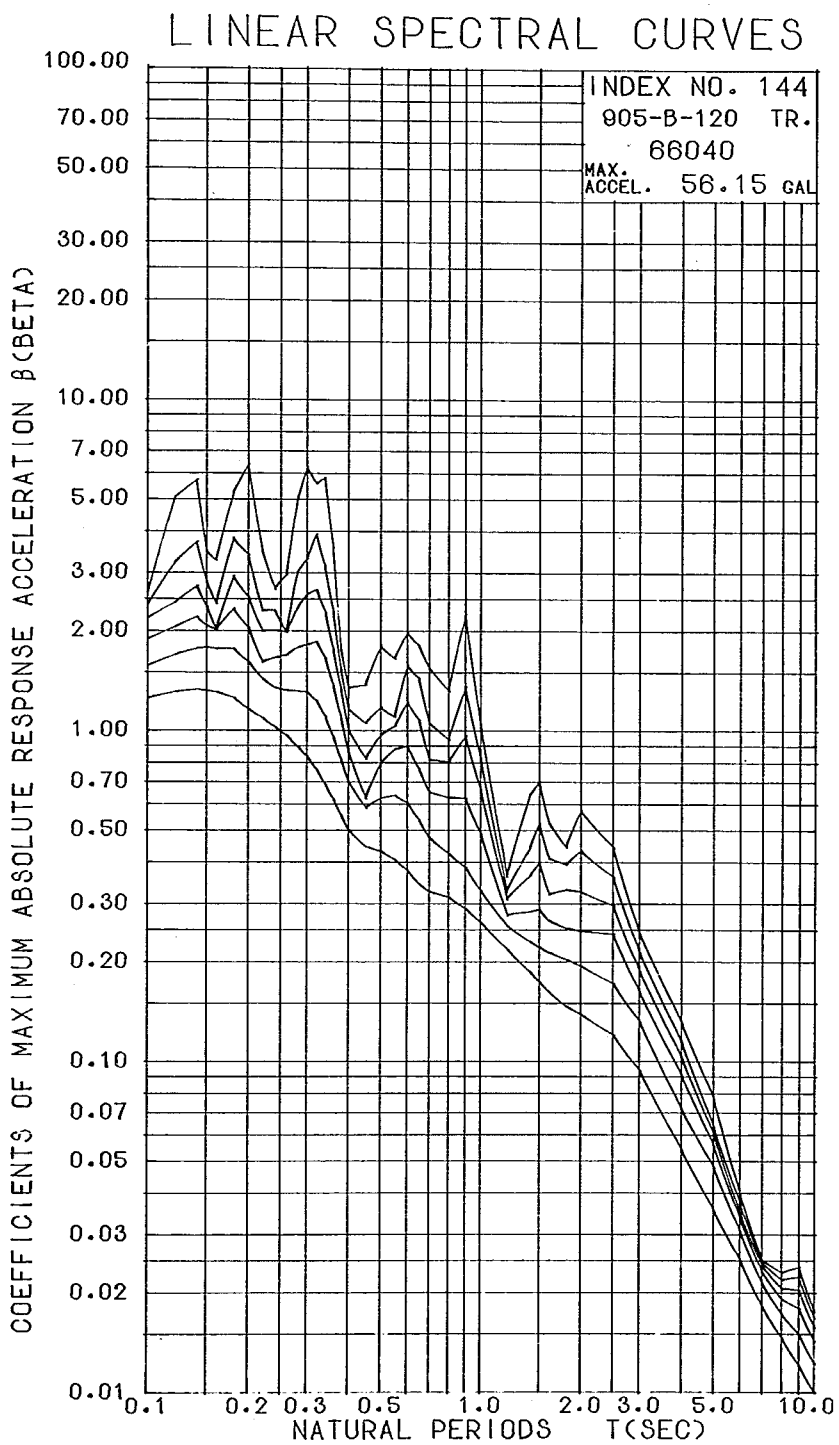


Figure IS-144 Linear Response Spectrum of Earthquake Record with Index Number 144

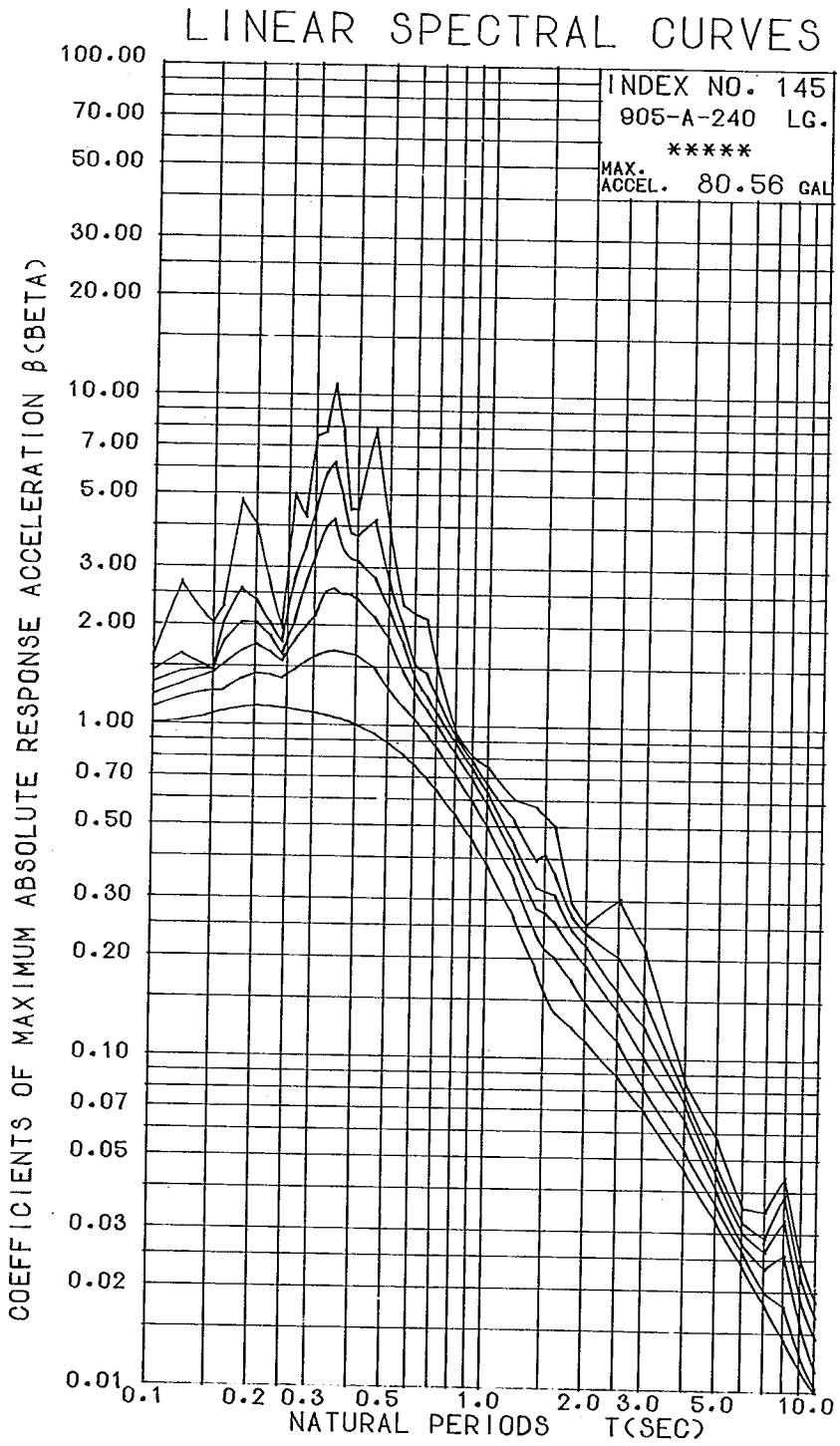


Figure IS-145 Linear Response Spectrum of Earthquake Record with Index Number 145

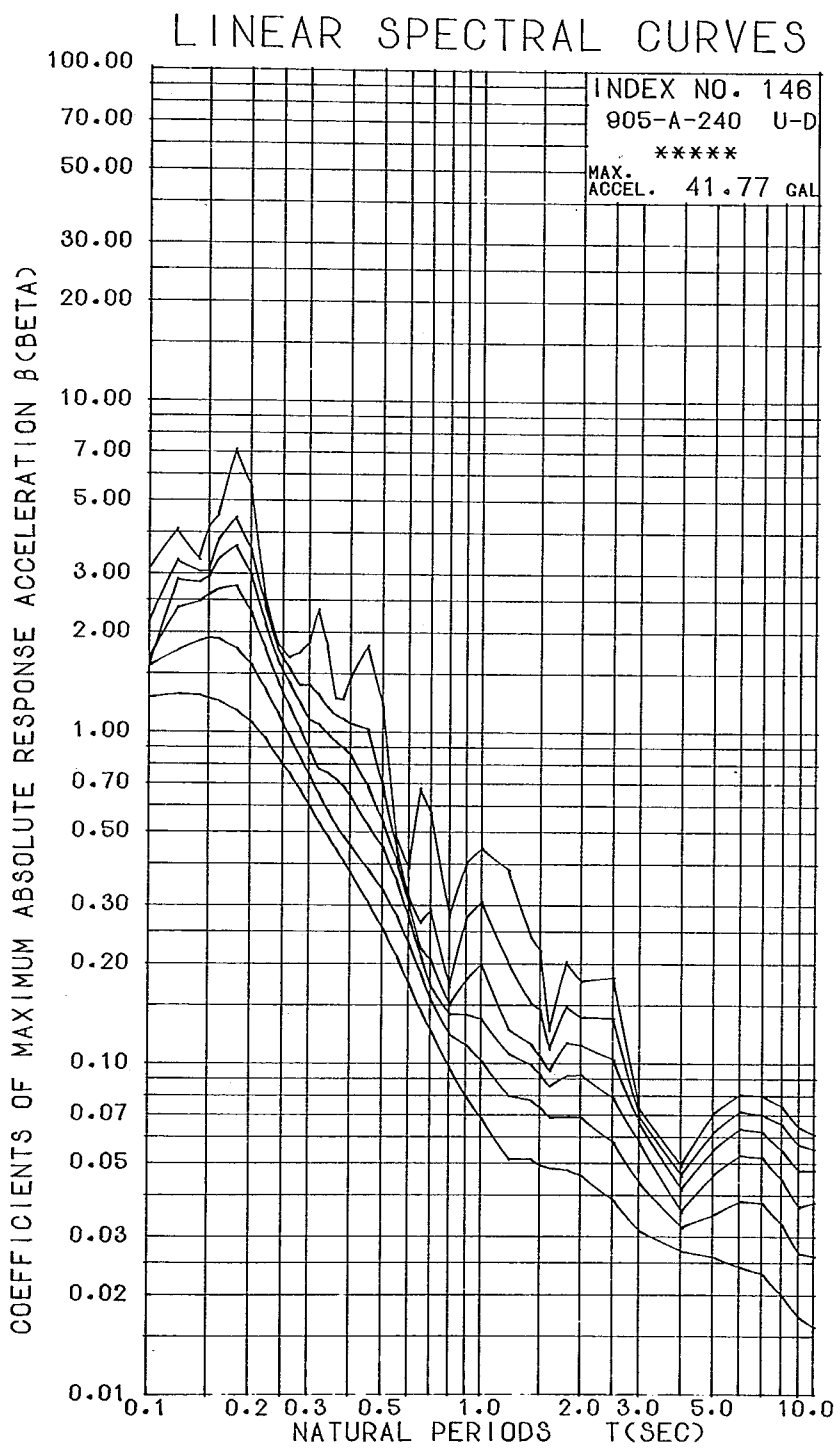


Figure IS-146 Linear Response Spectrum of Earthquake Record with Index Number 146

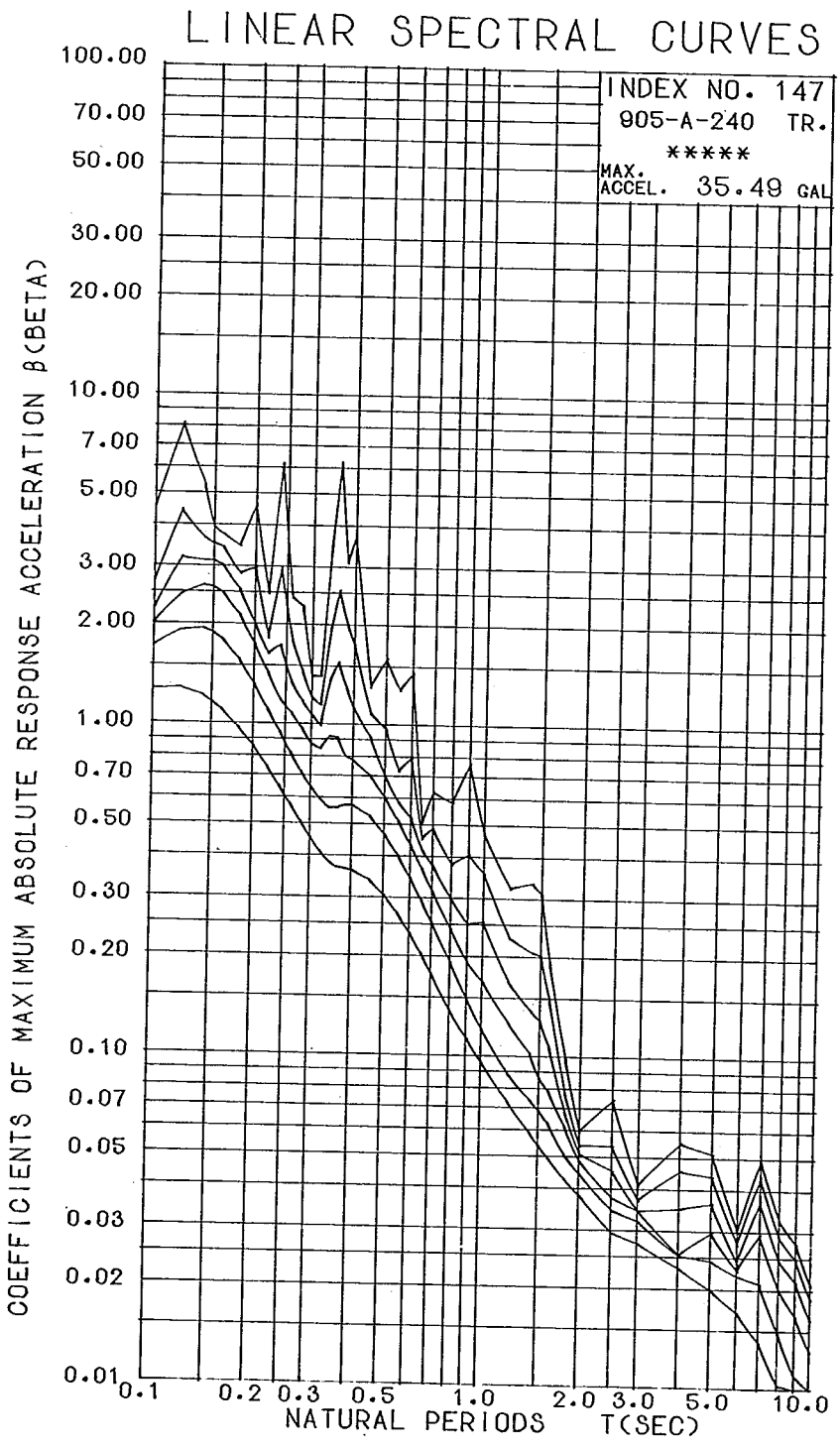


Figure IS-147 Linear Response Spectrum of Earthquake Record with Index Number 147

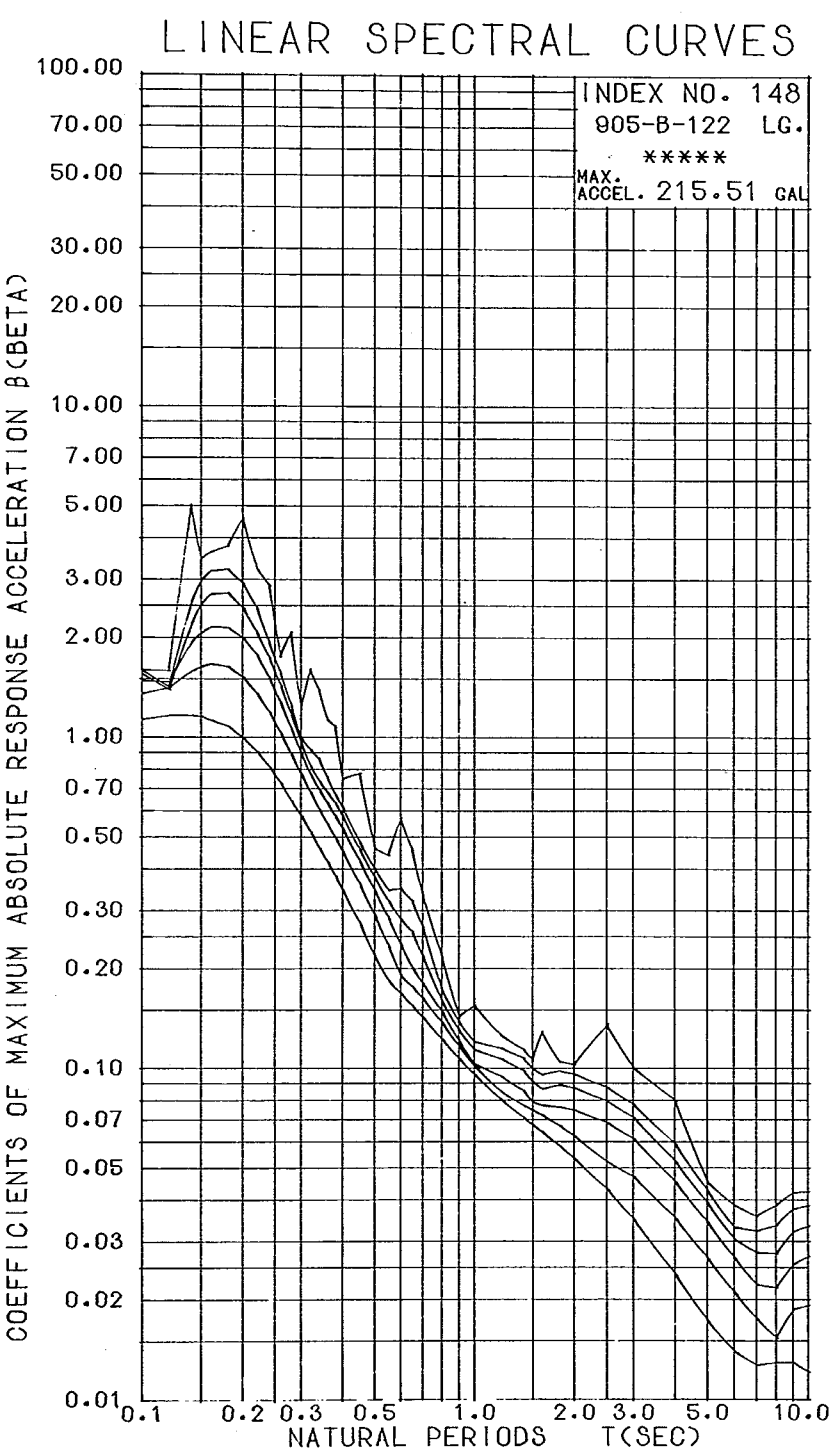


Figure IS-148 Linear Response Spectrum of Earthquake Record with Index Number 148

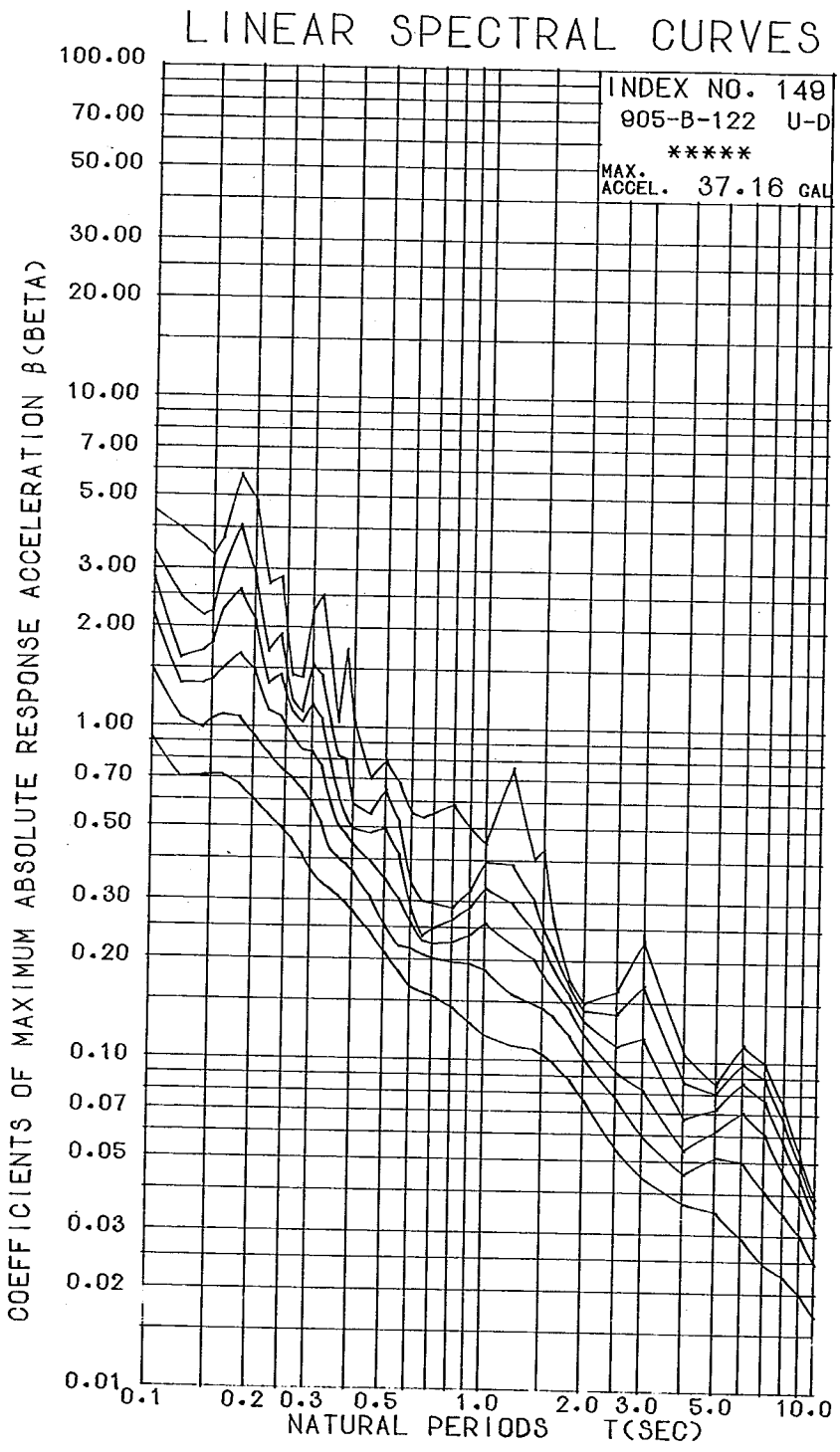


Figure IS-149 Linear Response Spectrum of Earthquake Record with Index Number 149

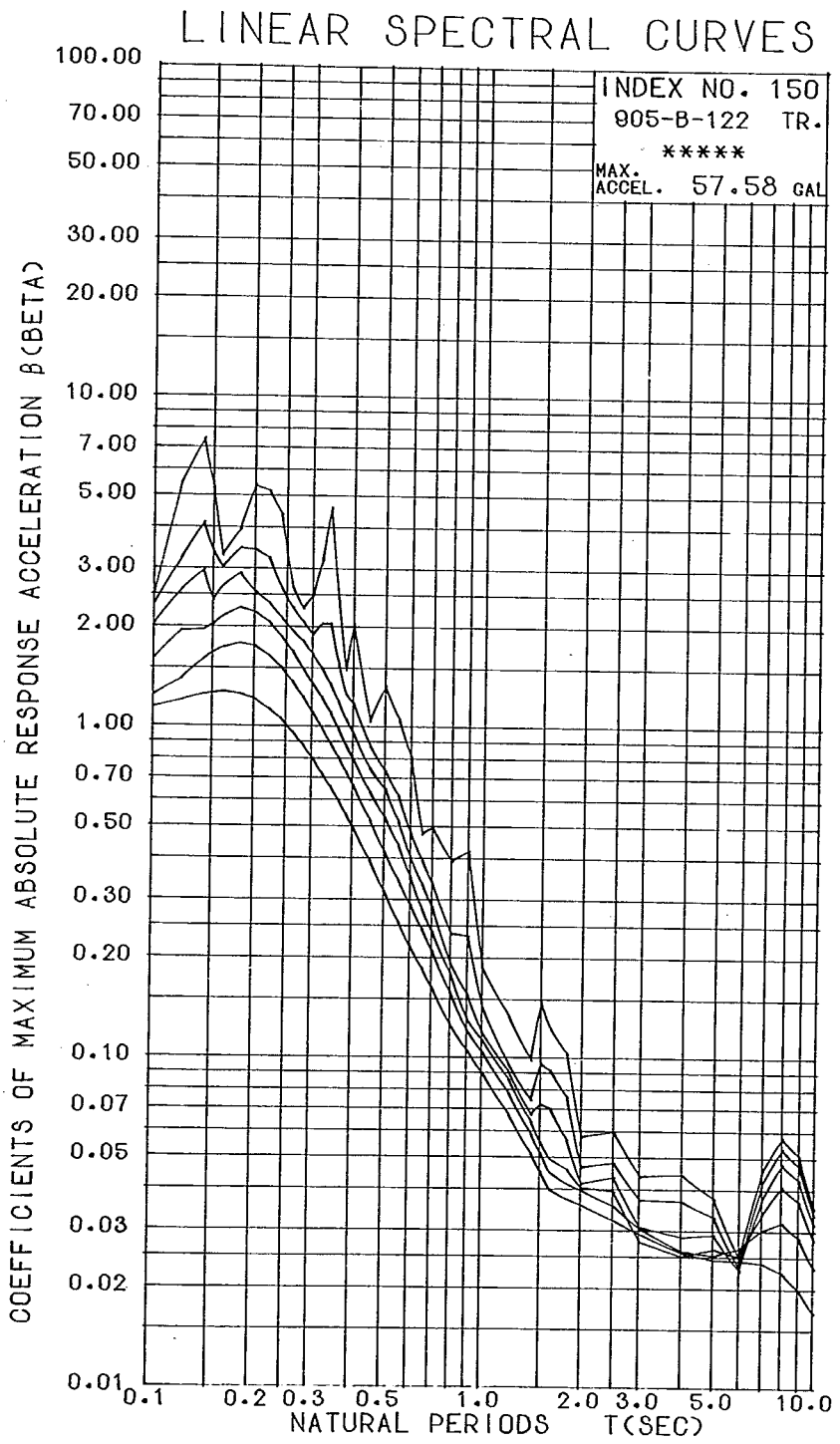


Figure IS-150 Linear Response Spectrum of Earthquake Record with Index Number 150

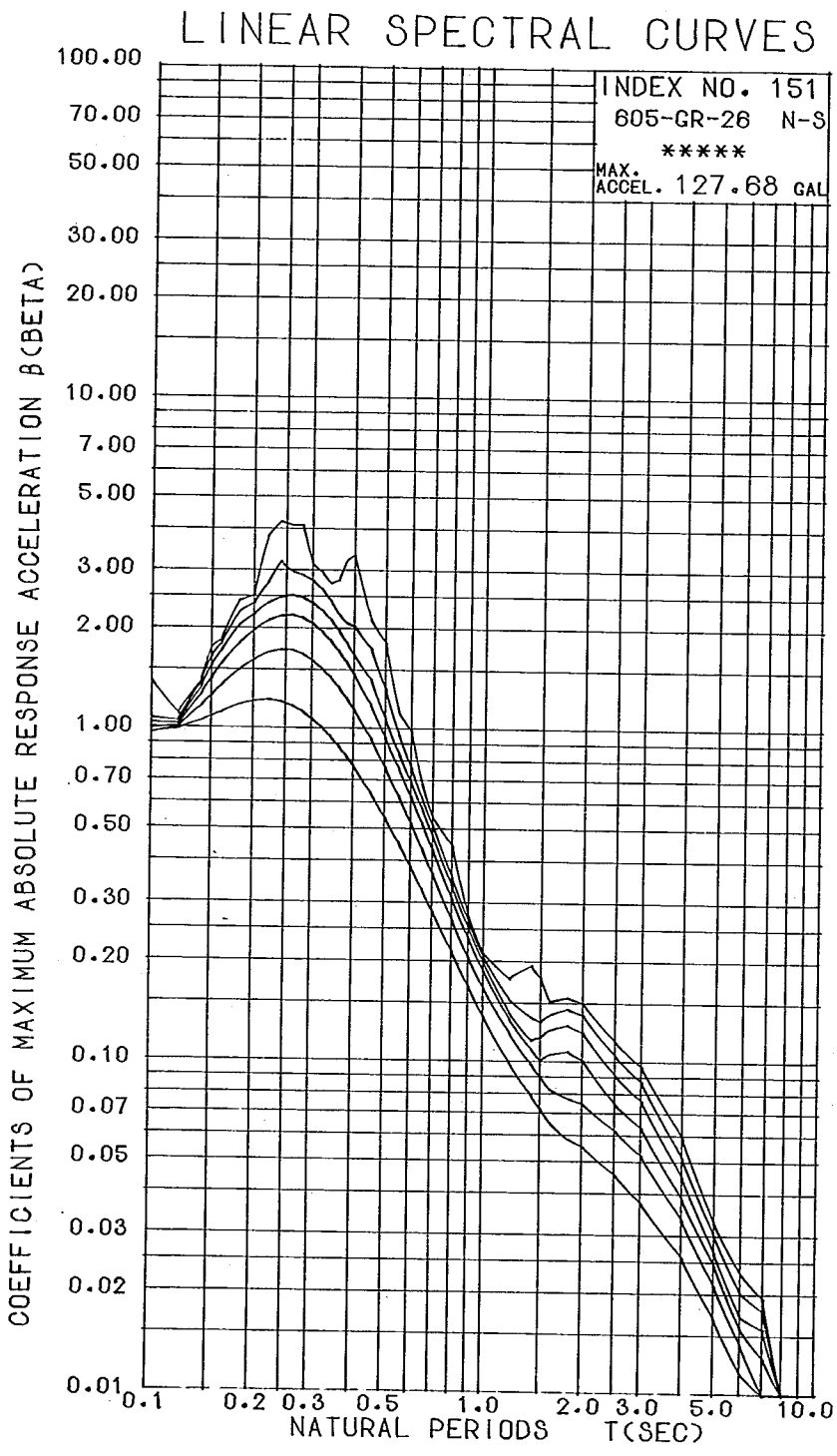


Figure IS-151 Linear Response Spectrum of Earthquake Record with Index Number 151

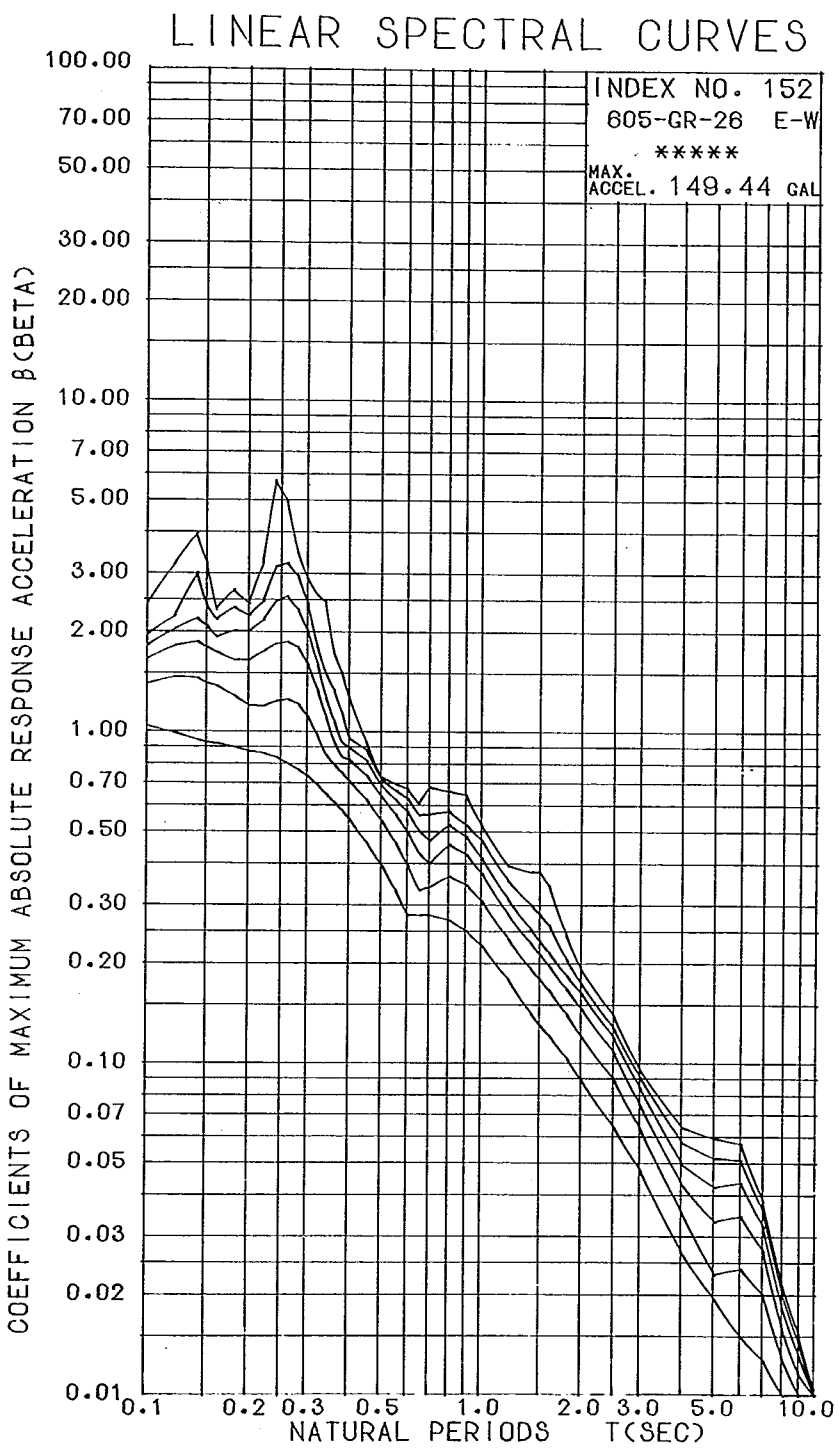


Figure IS-152 Linear Response Spectrum of Earthquake Record with Index Number 152

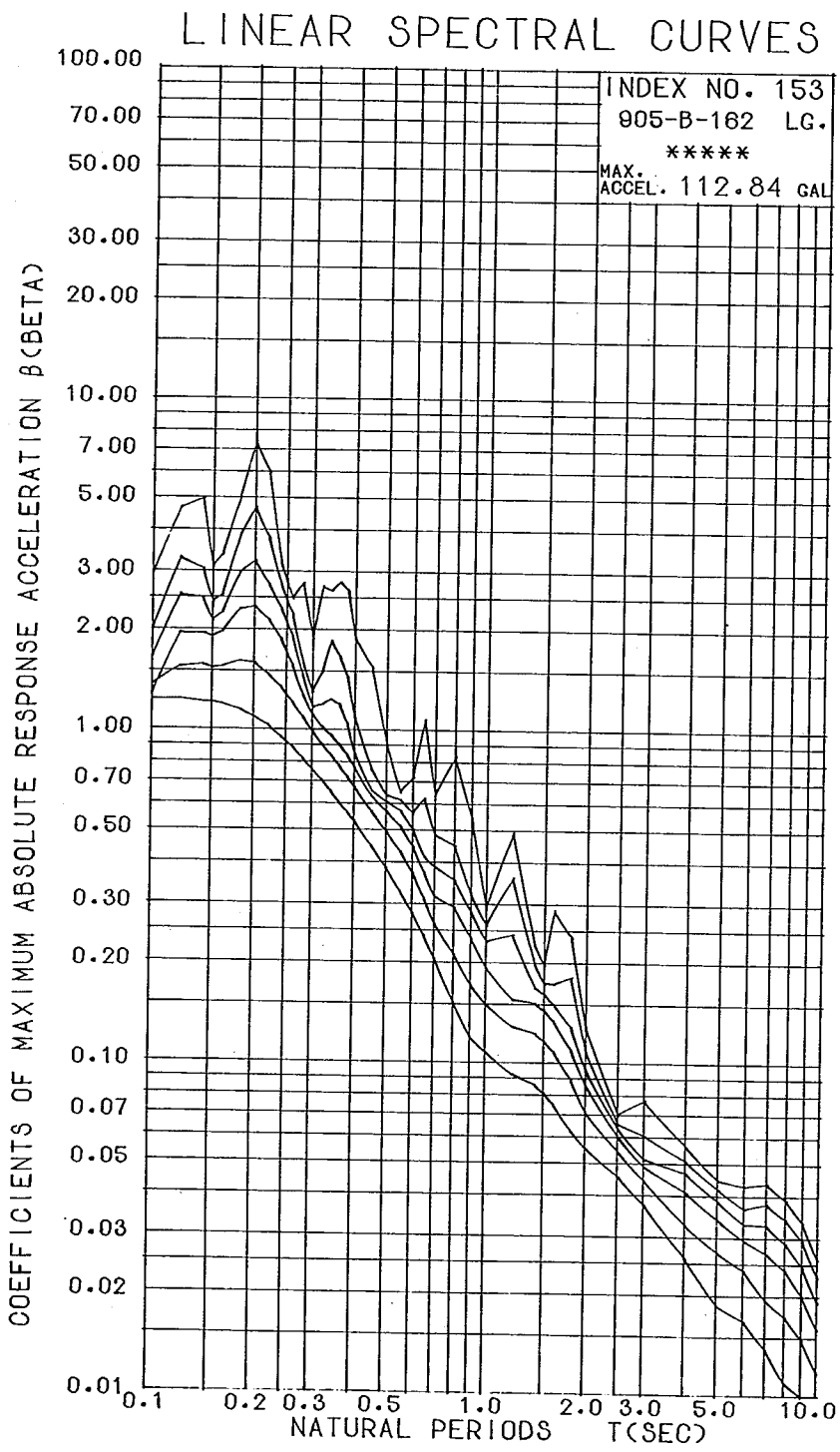


Figure IS-153 Linear Response Spectrum of Earthquake Record with Index Number 153

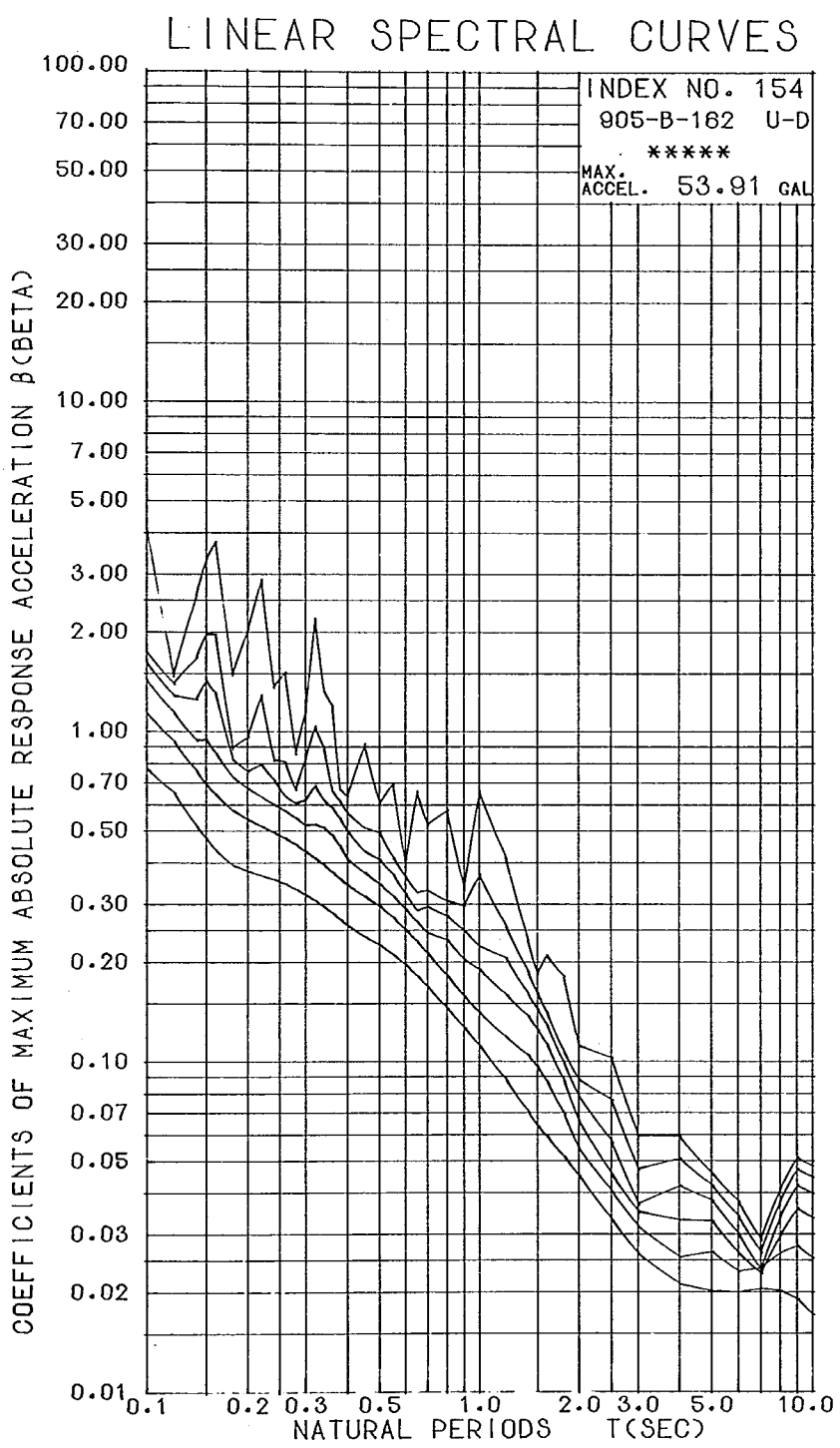


Figure IS-154 Linear Response Spectrum of Earthquake Record with Index Number 154

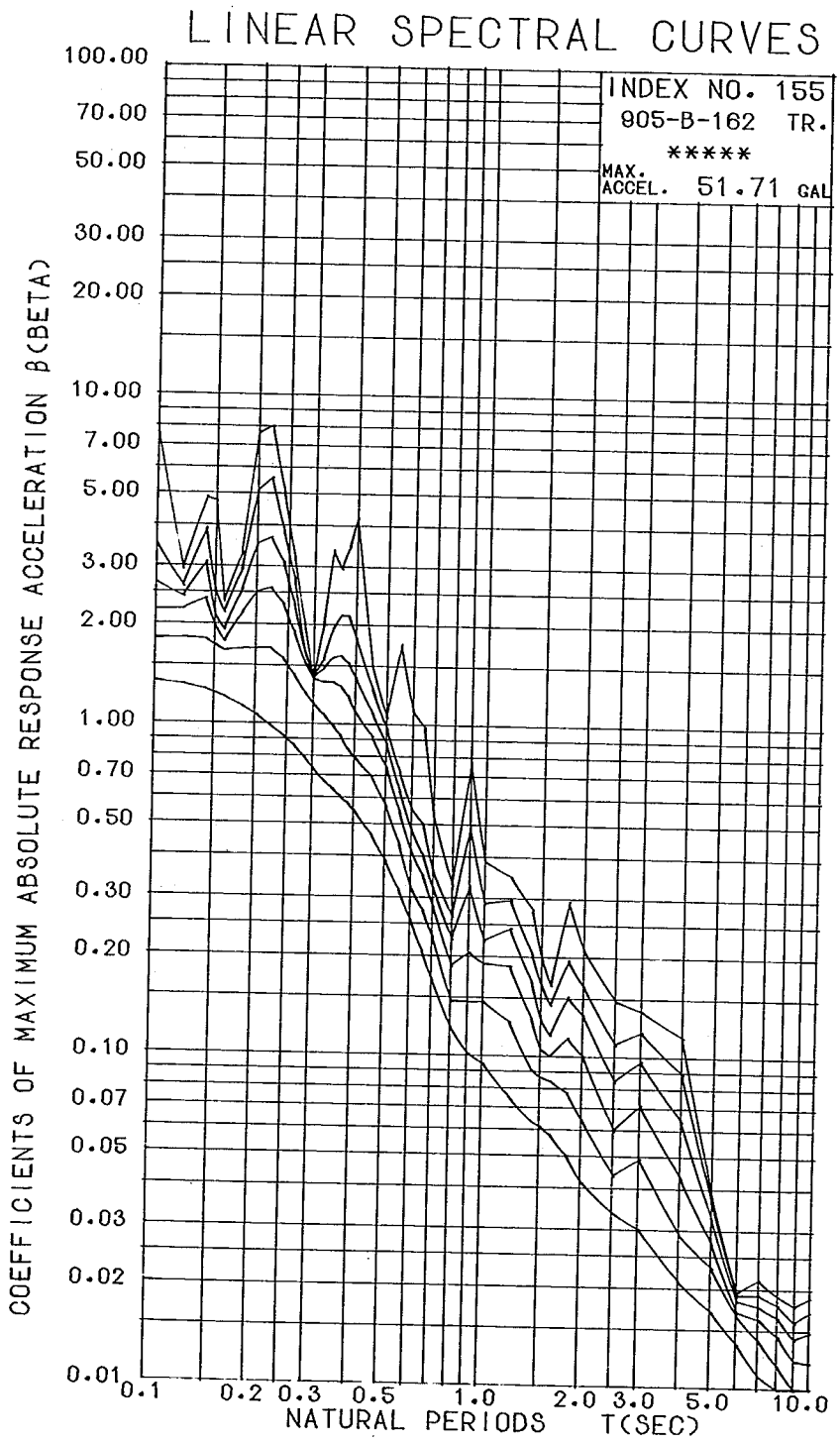


Figure IS-155 Linear Response Spectrum of Earthquake Record with Index Number 155

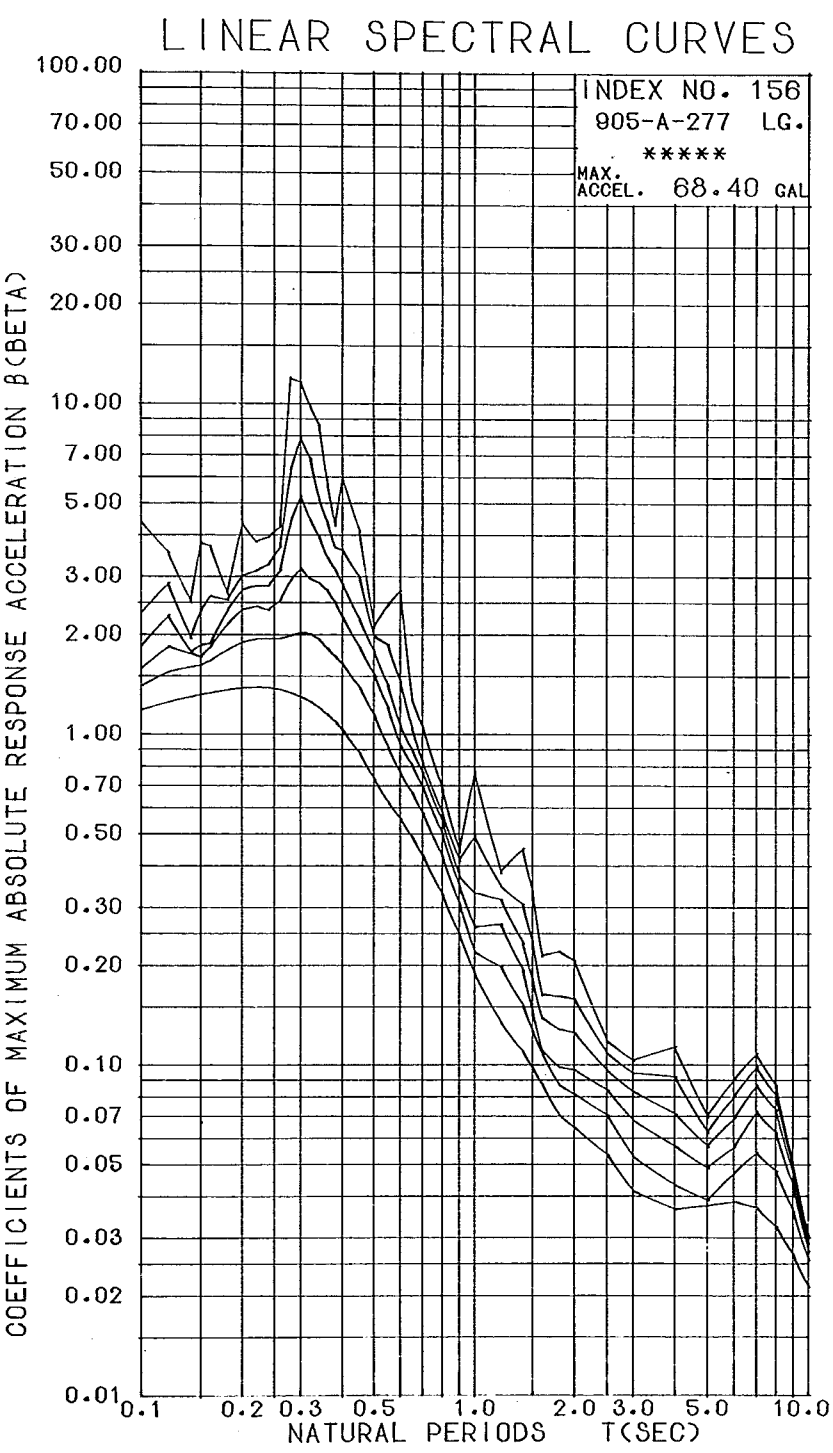


Figure IS-156 Linear Response Spectrum of Earthquake Record with Index Number 156

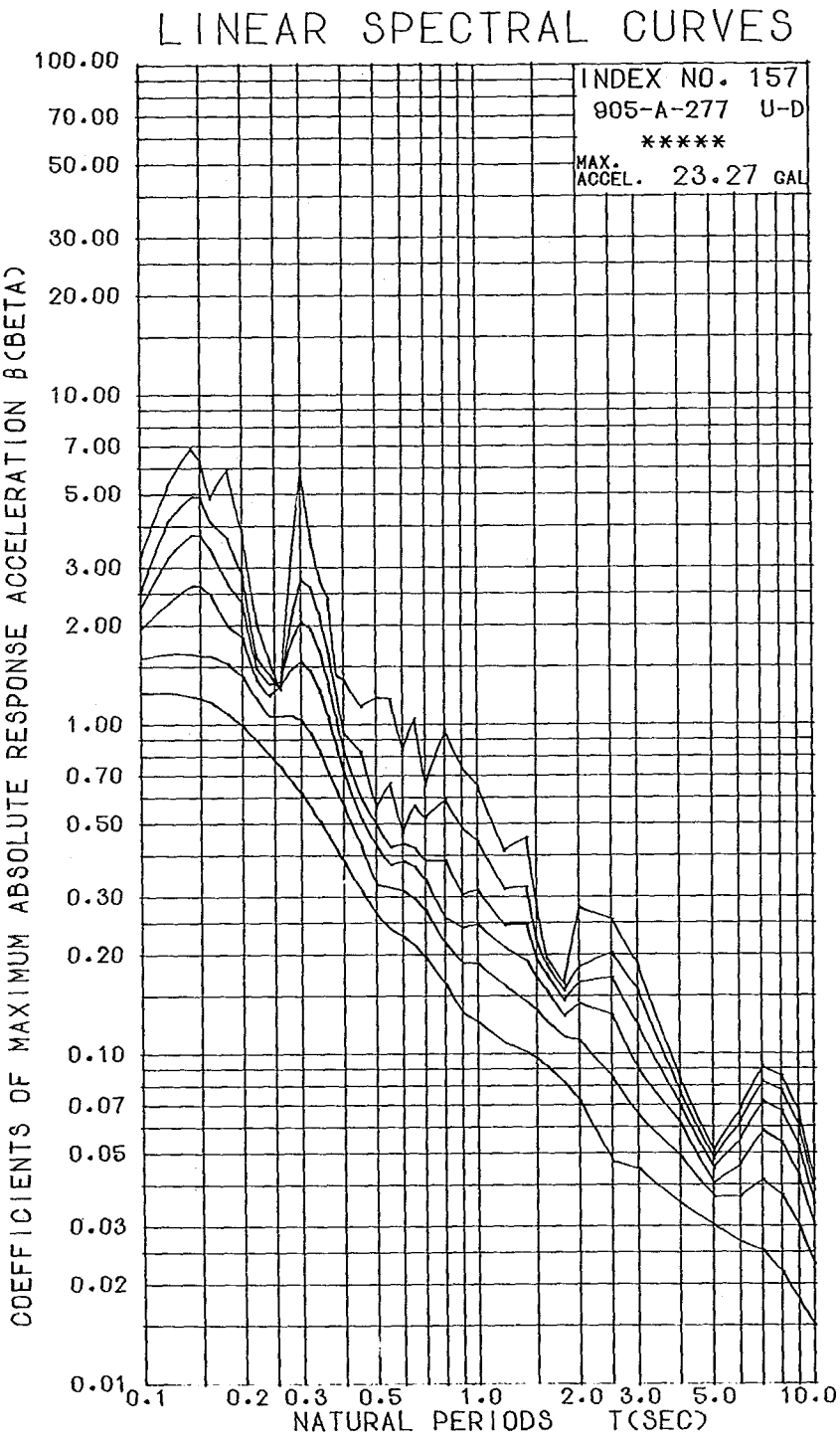


Figure IS-157 Linear Response Spectrum of Earthquake Record with Index Number 157

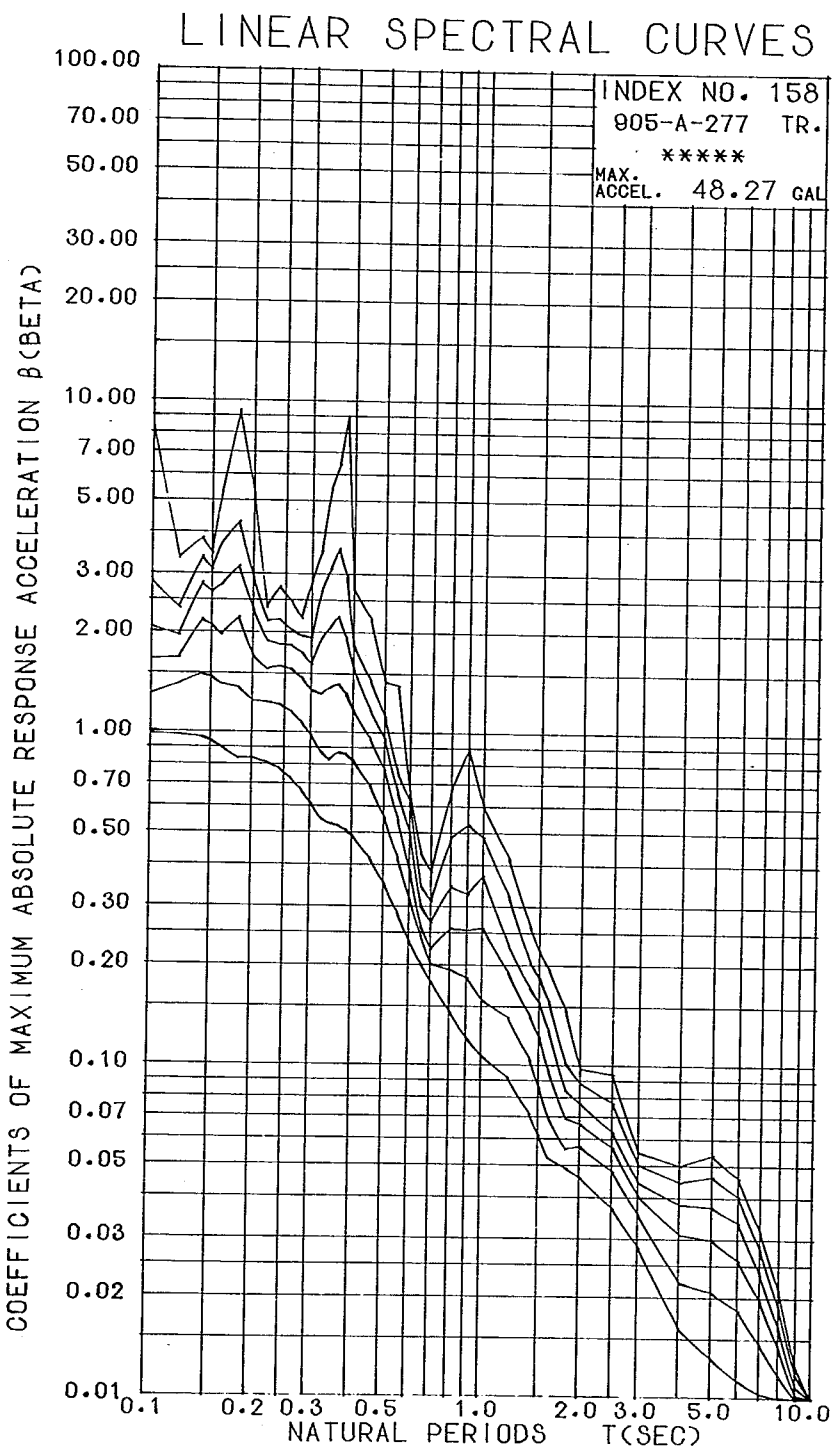


Figure IS-158 Linear Response Spectrum of Earthquake Record with Index Number 158

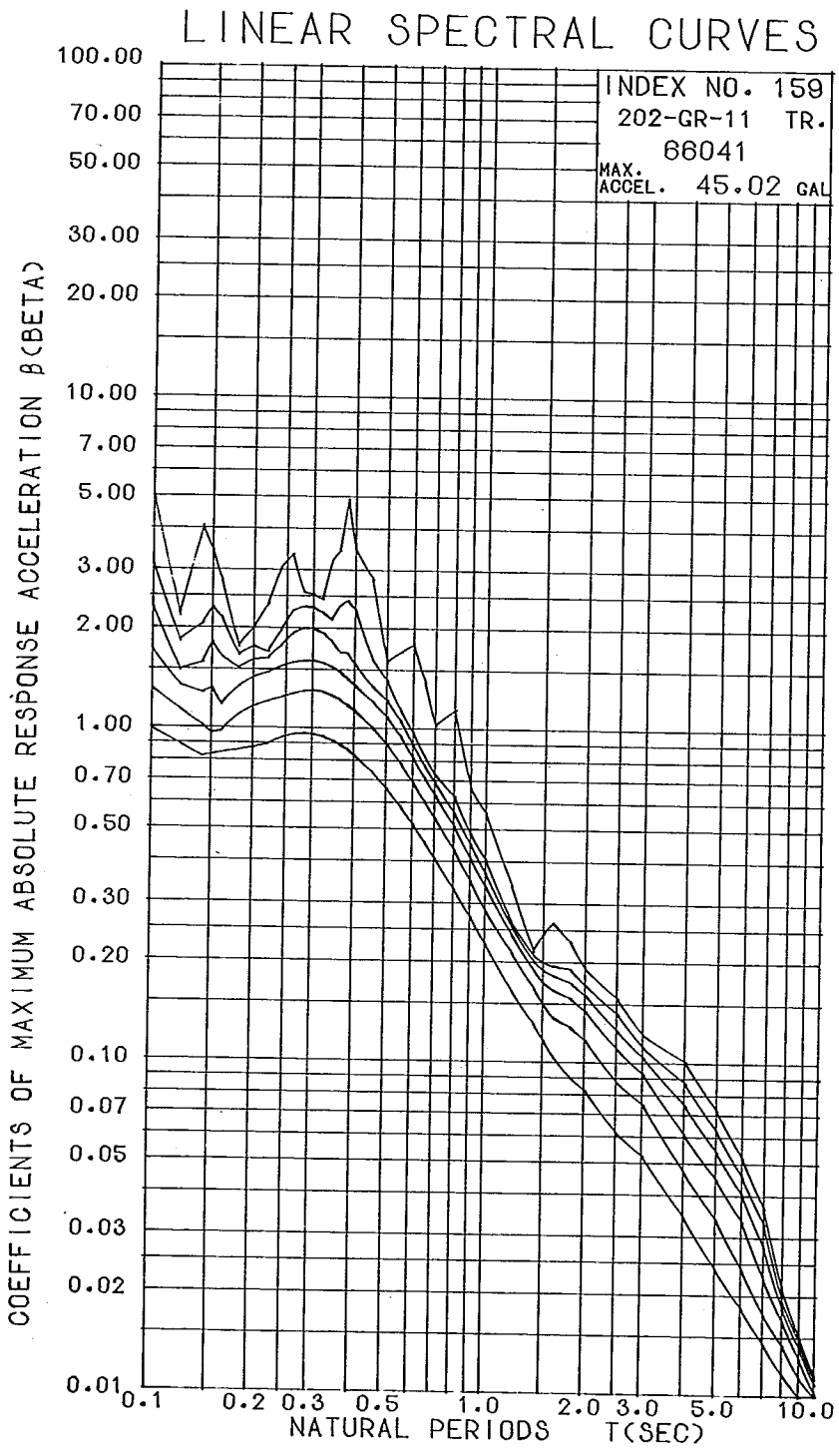


Figure IS-159 Linear Response Spectrum of Earthquake Record with Index Number 159

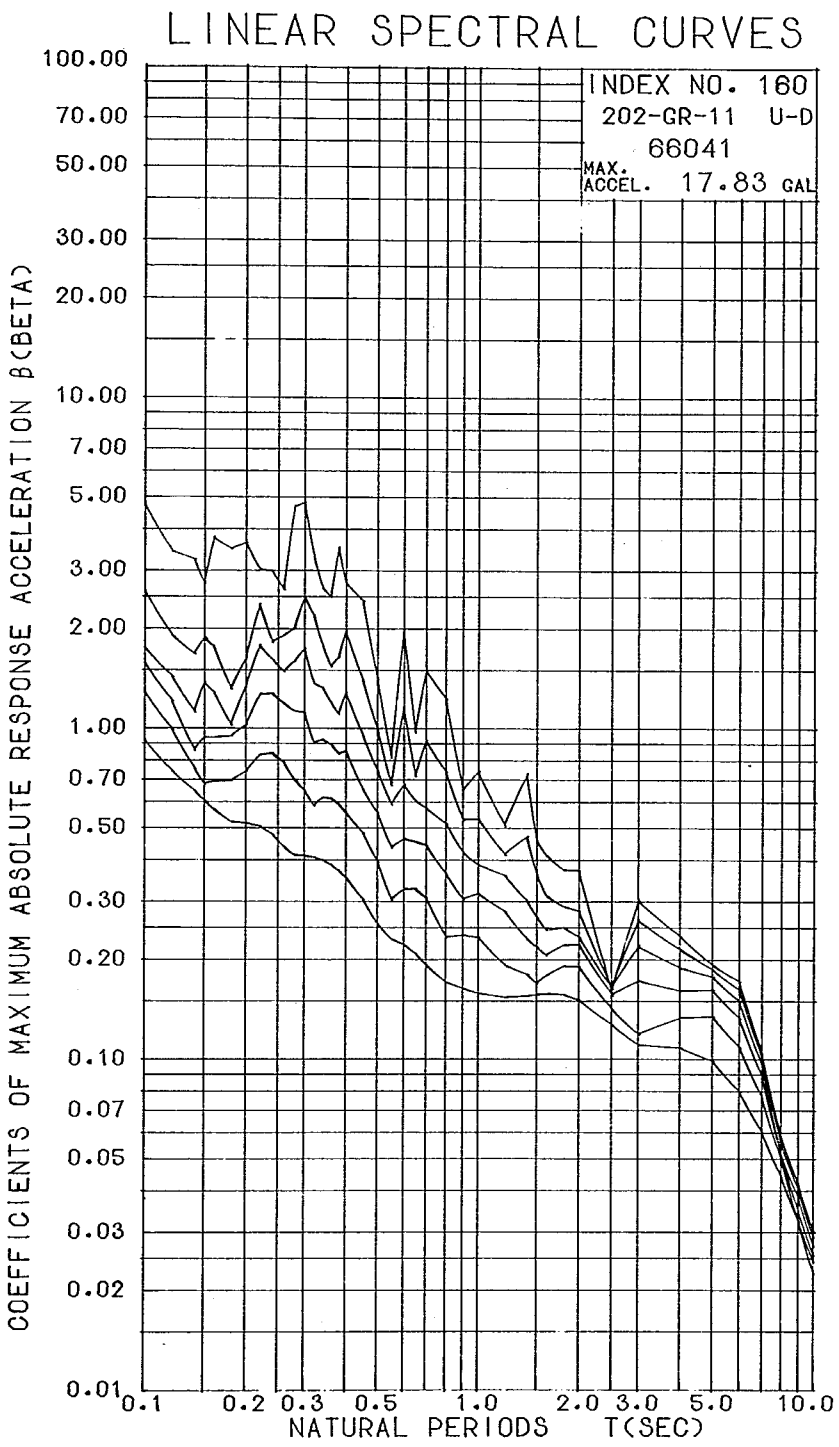


Figure IS-160 Linear Response Spectrum of Earthquake Record with Index Number 160

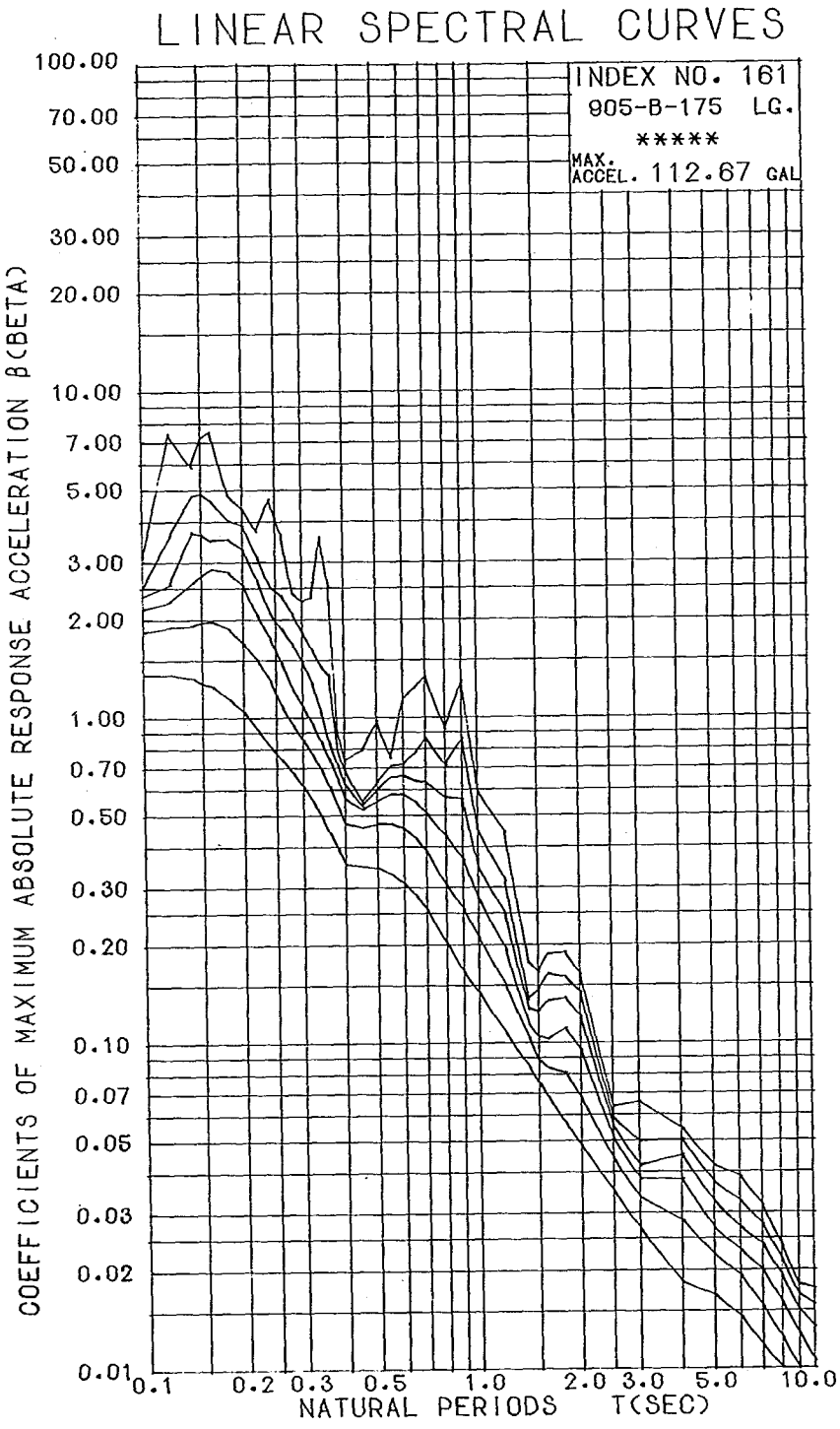


Figure IS-161 Linear Response Spectrum of Earthquake Record with Index Number 161

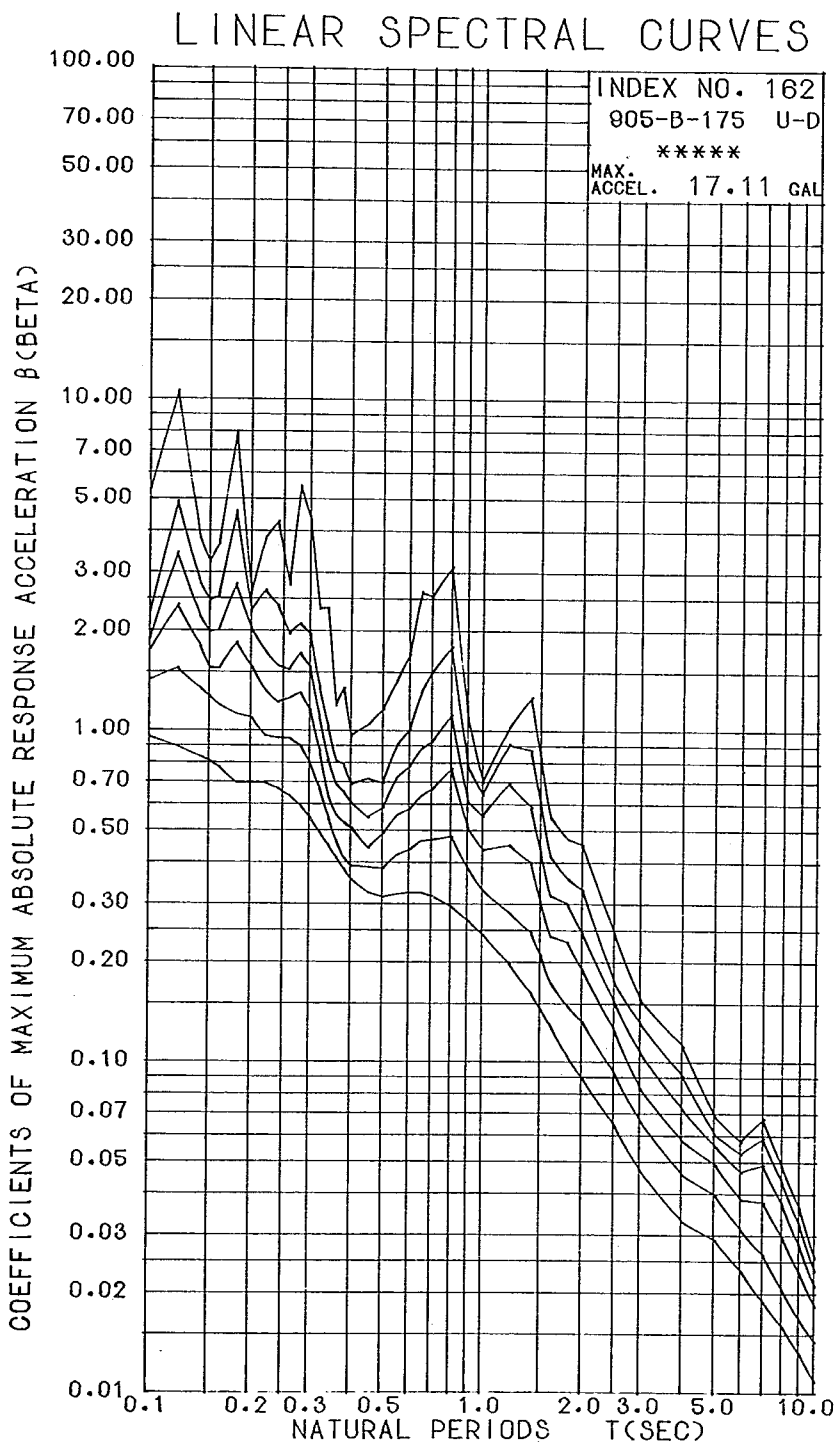


Figure IS-162 Linear Response Spectrum of Earthquake Record with Index Number 162

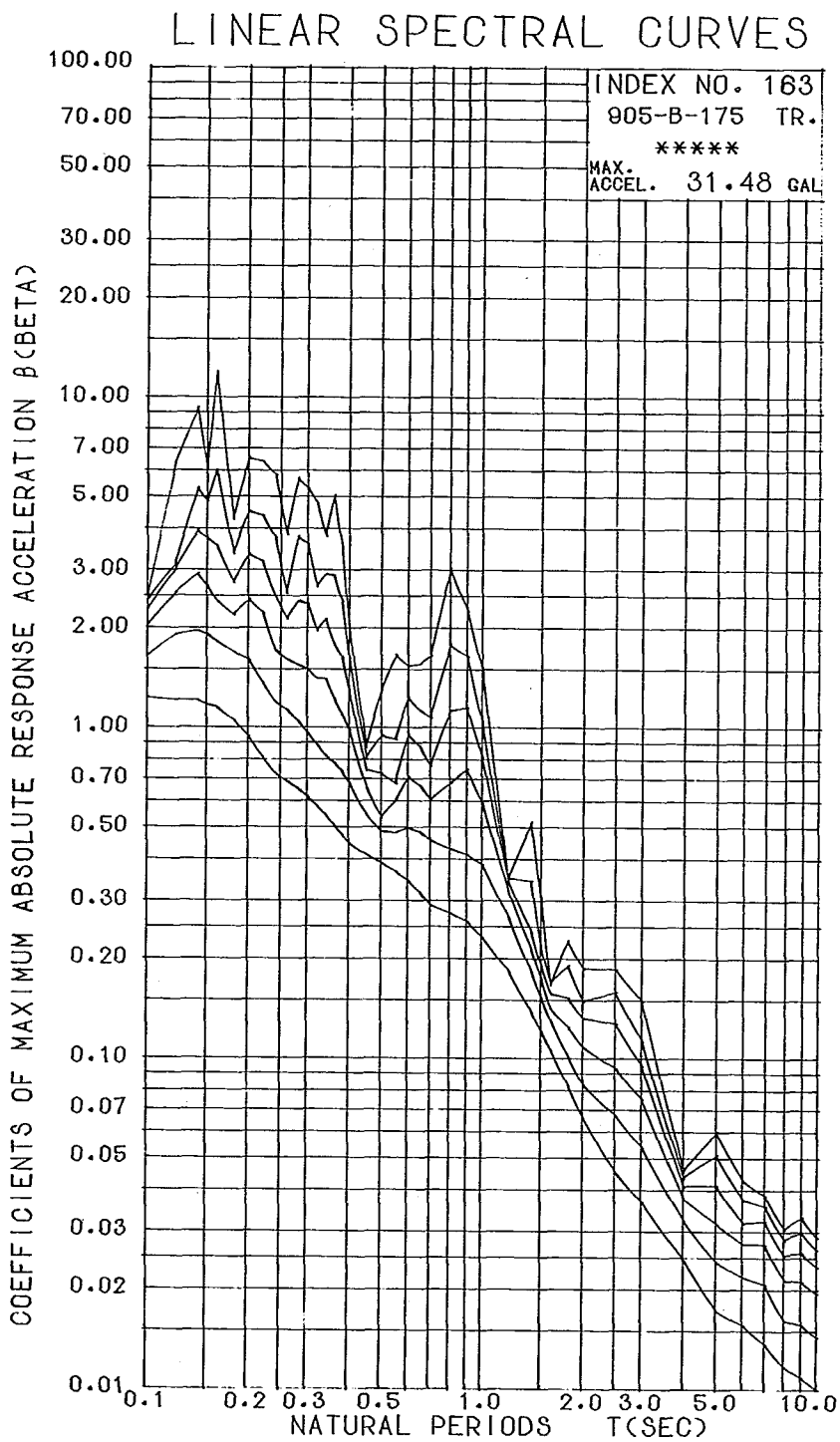


Figure IS-163 Linear Response Spectrum of Earthquake Record with Index Number 163

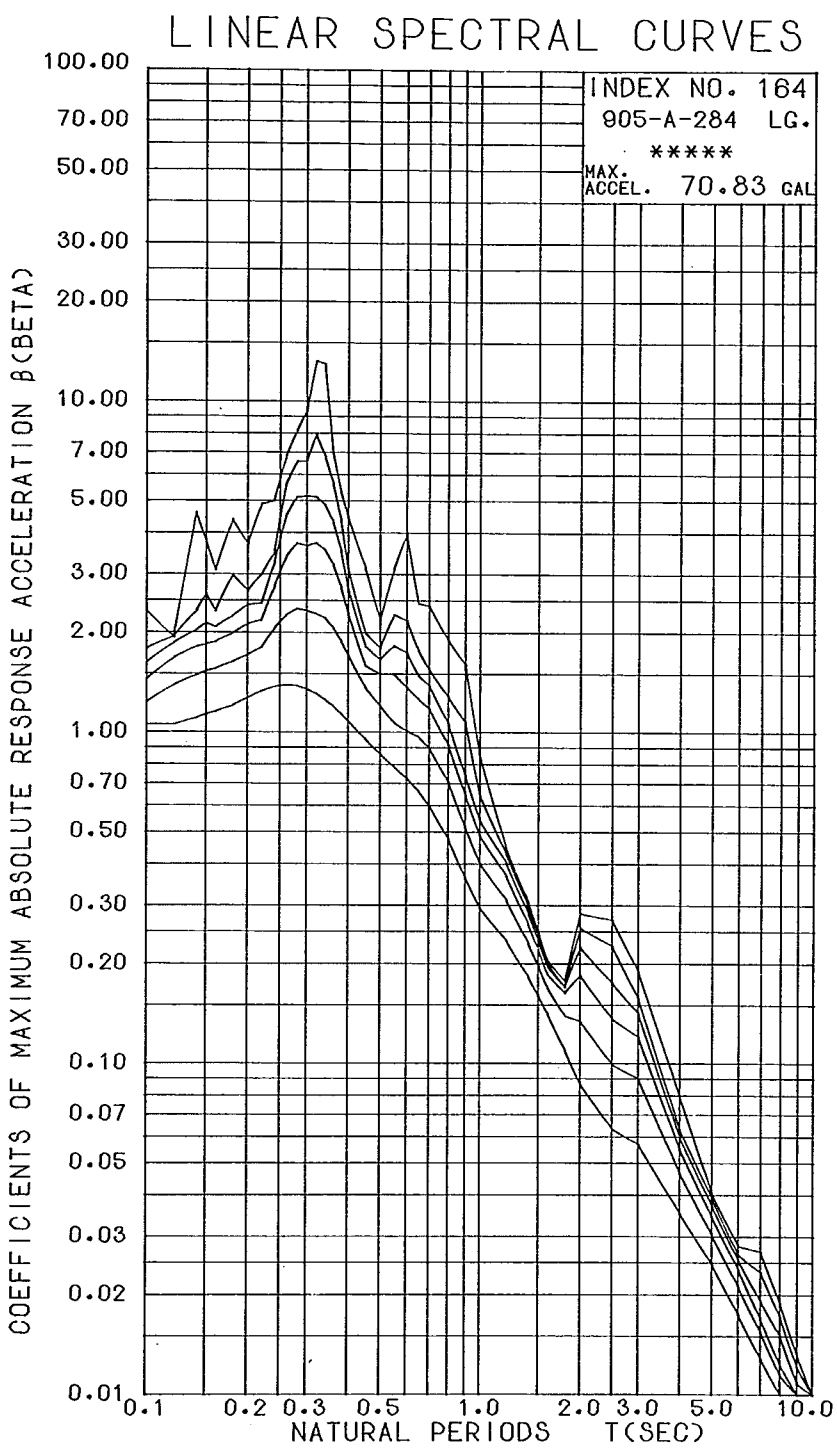


Figure IS-164 Linear Response Spectrum of Earthquake Record with Index Number 164

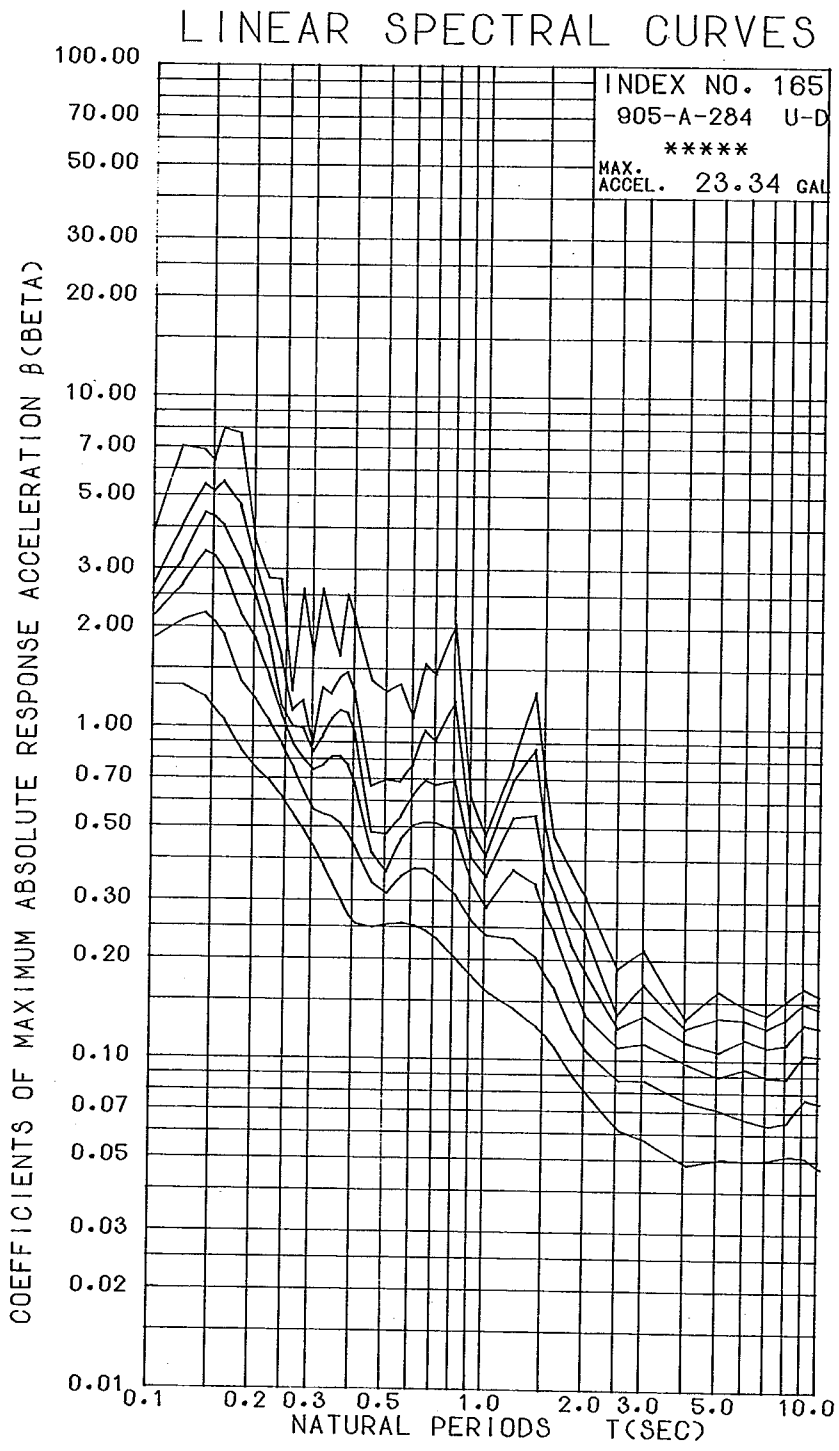


Figure IS-165 Linear Response Spectrum of Earthquake Record with Index Number 165

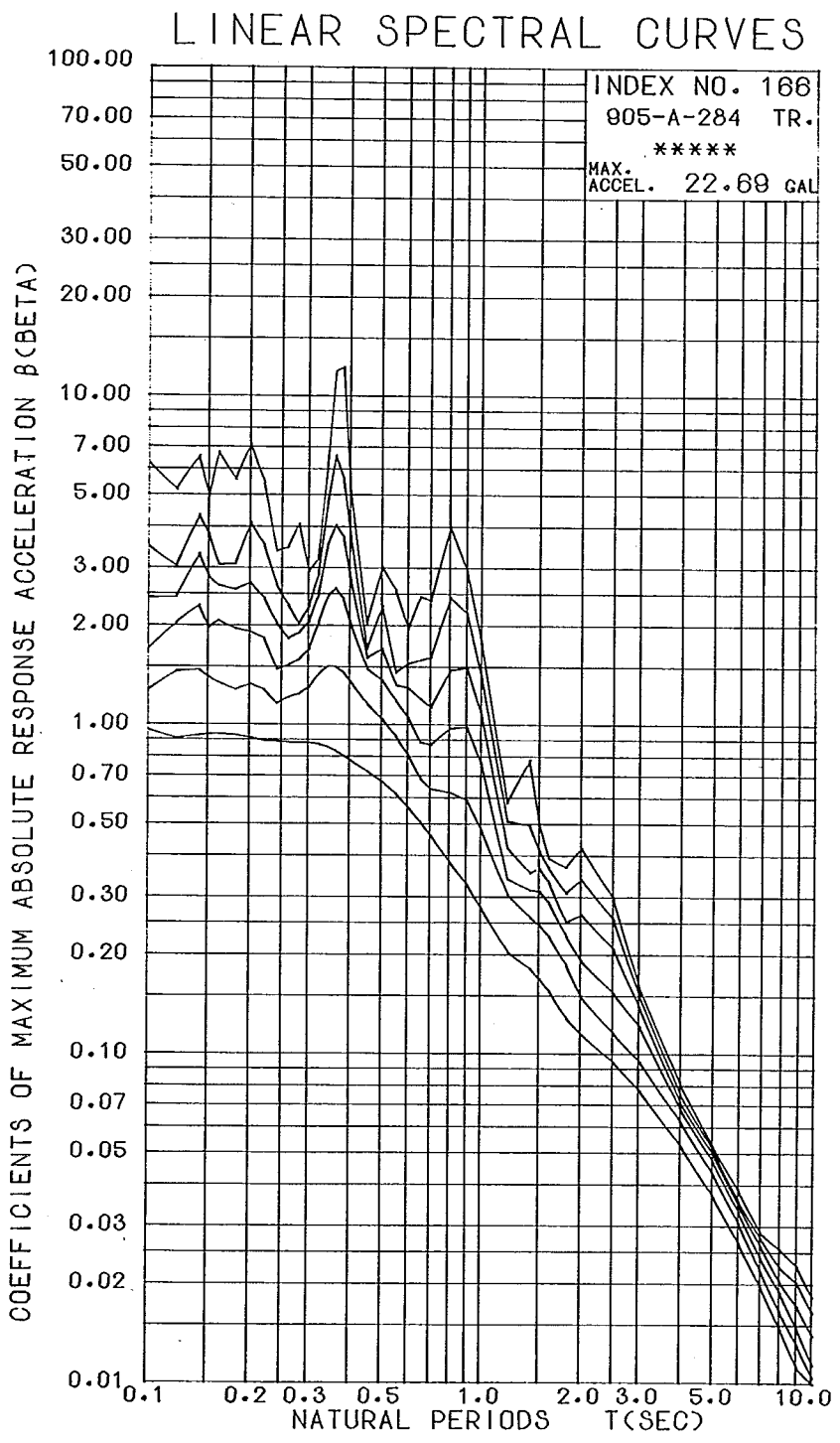


Figure IS-166 Linear Response Spectrum of Earthquake Record with Index Number 166

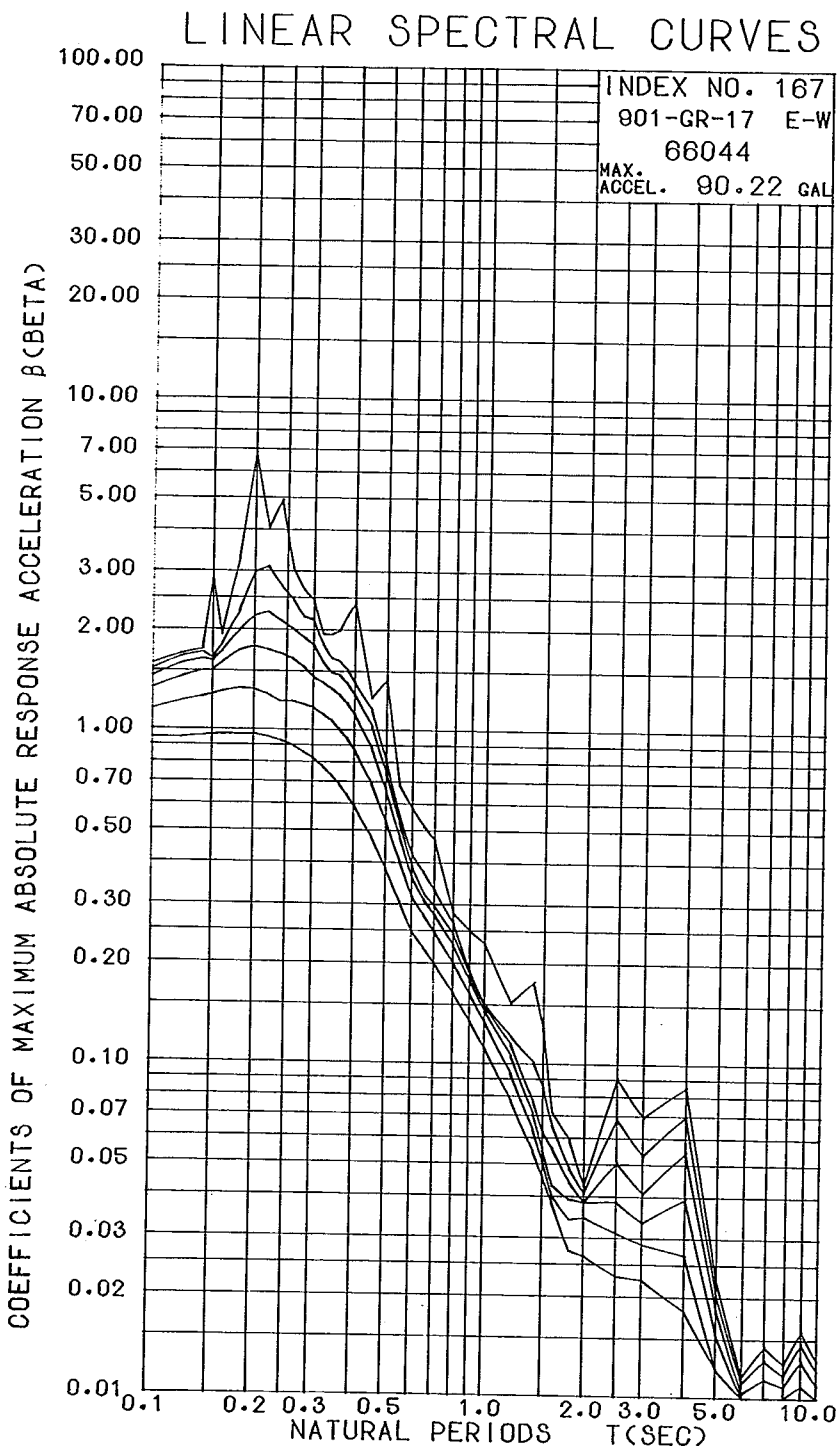


Figure IS-167 Linear Response Spectrum of Earthquake Record with Index Number 167

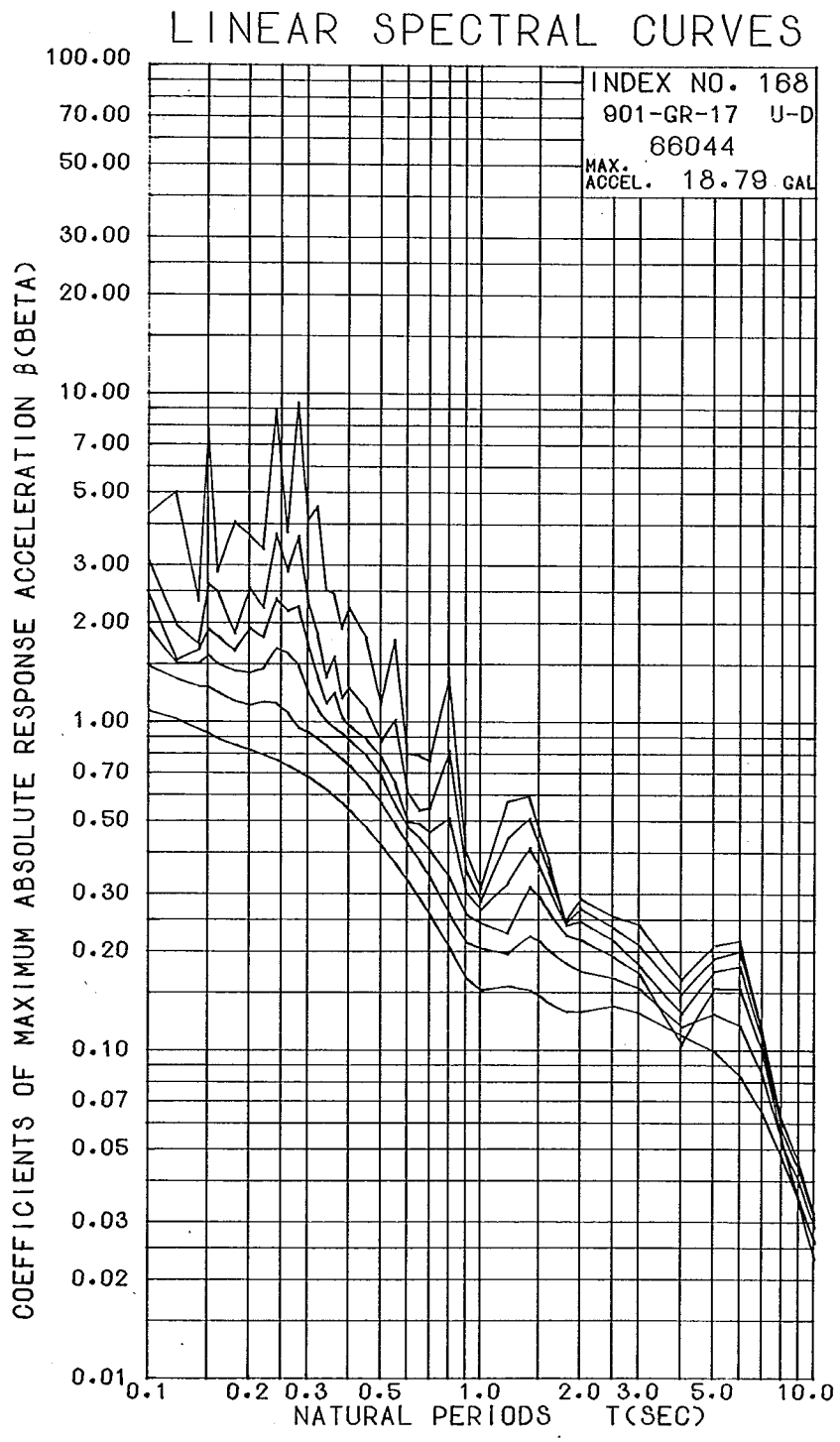


Figure IS-168 Linear Response Spectrum of Earthquake Record with Index Number 168

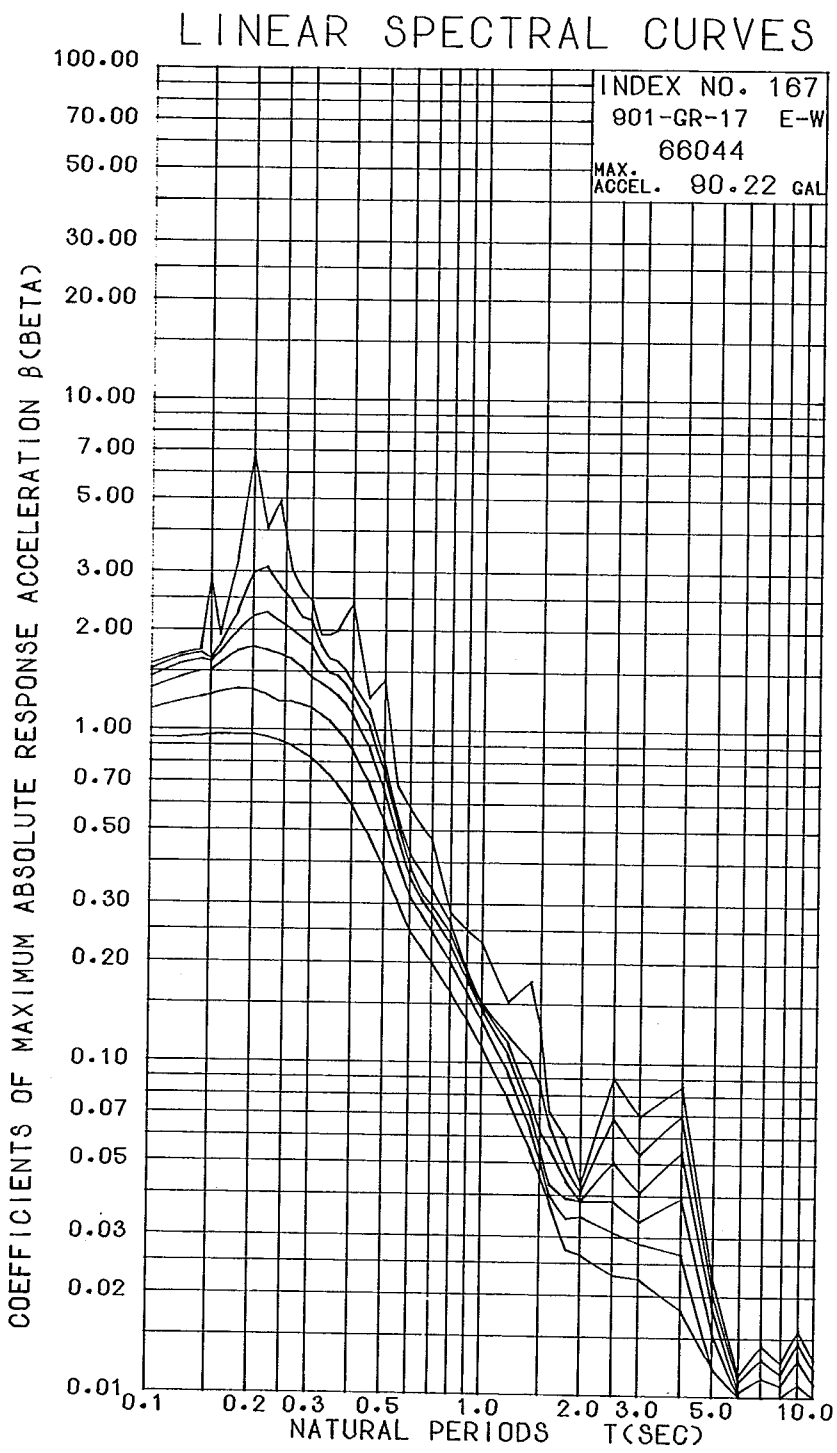


Figure IS-167 Linear Response Spectrum of Earthquake Record with Index Number 167

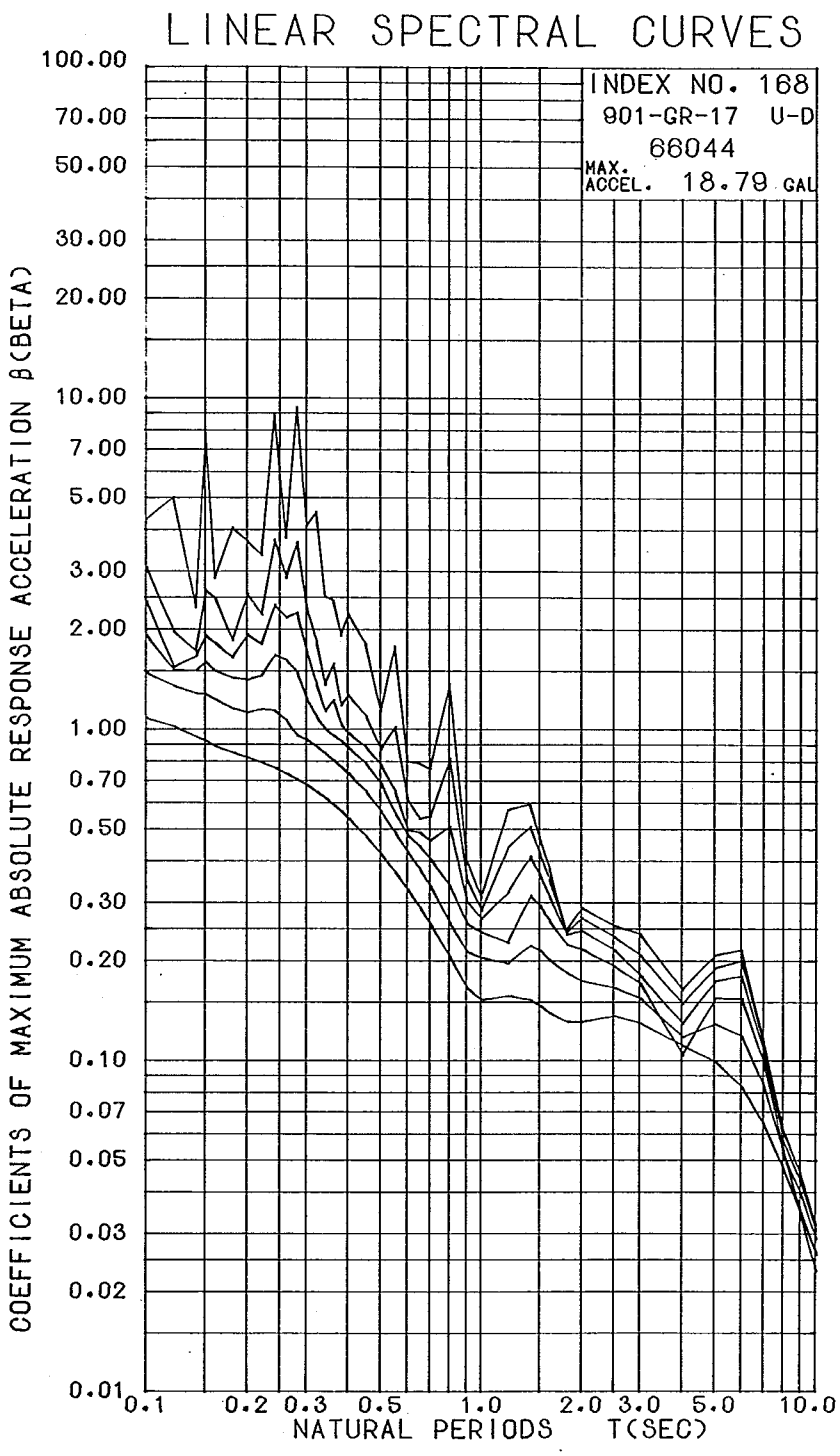


Figure IS-168 Linear Response Spectrum of Earthquake Record with Index Number 168

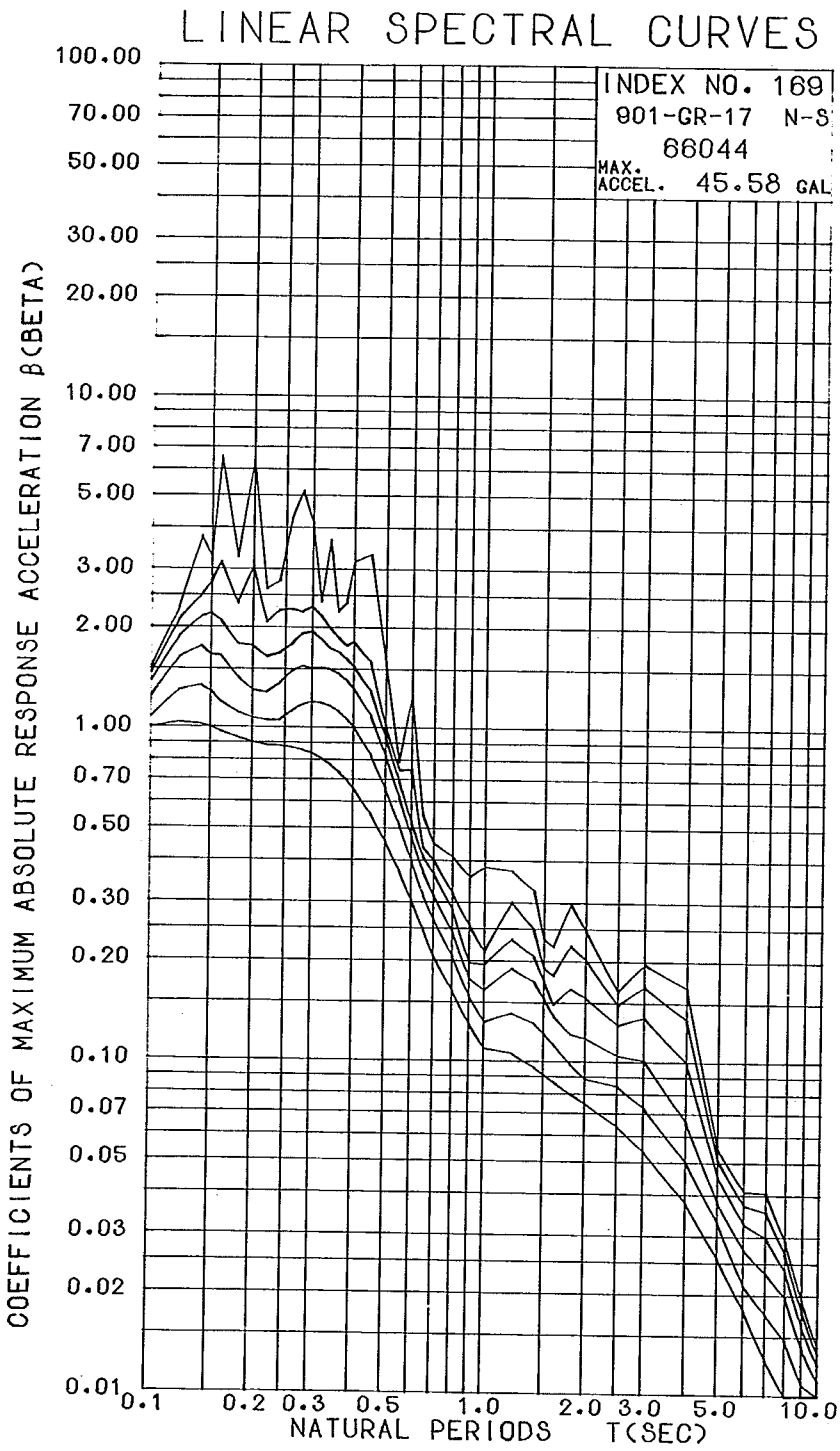


Figure IS-169 Linear Response Spectrum of Earthquake Record with Index Number 169

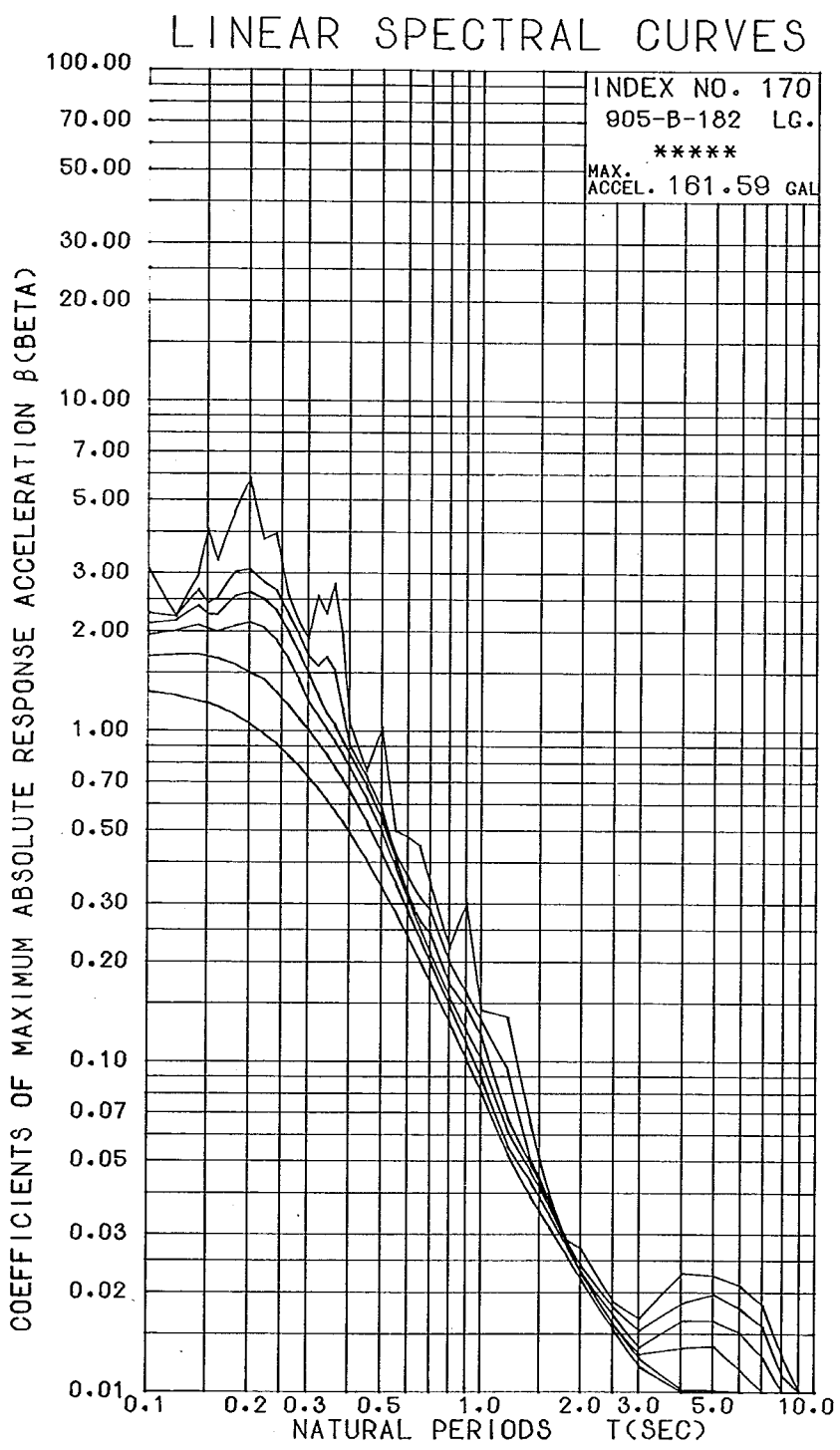


Figure IS-170 Linear Response Spectrum of Earthquake Record with Index Number 170

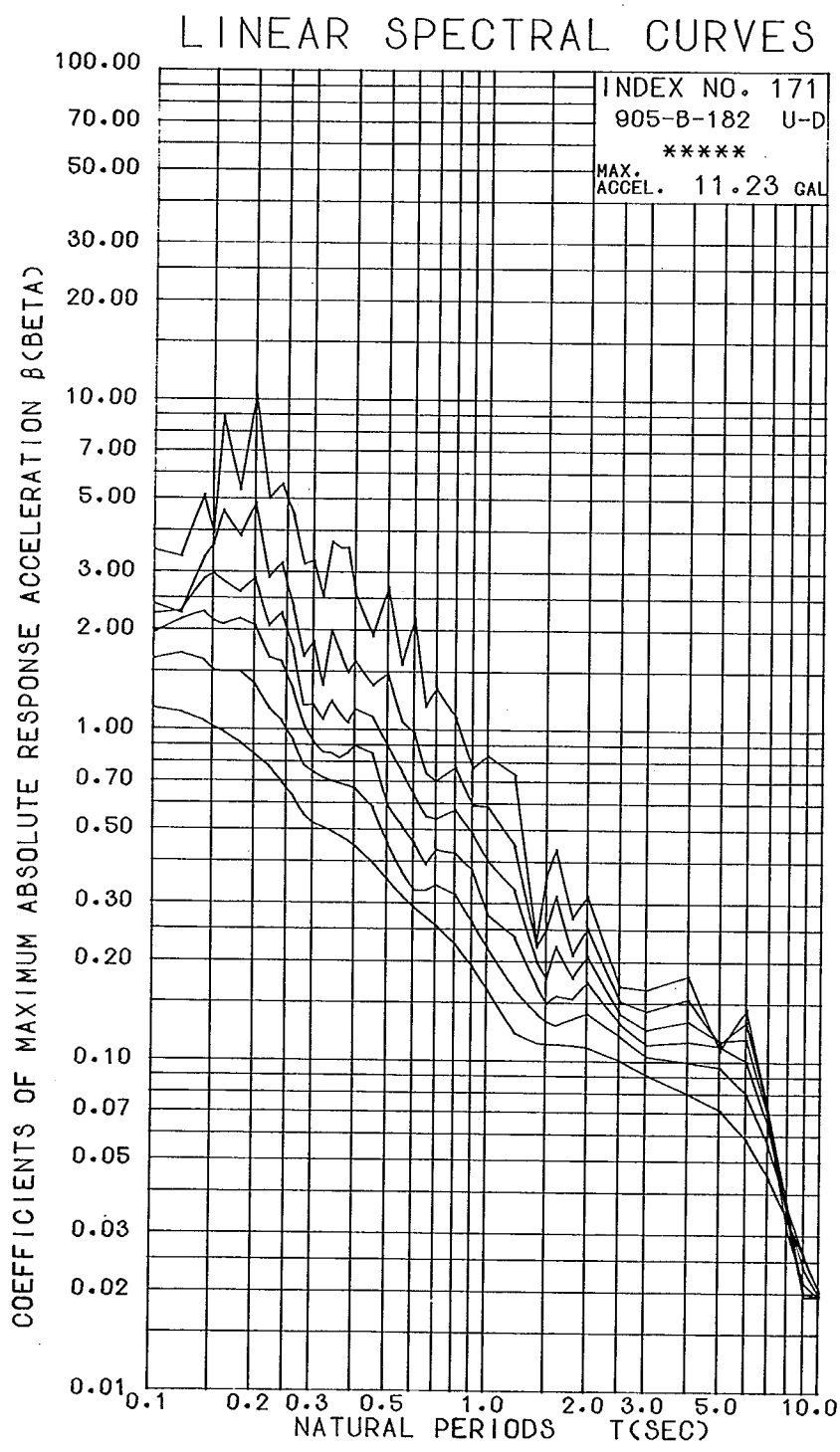


Figure IS-171 Linear Response Spectrum of Earthquake Record with Index Number 171

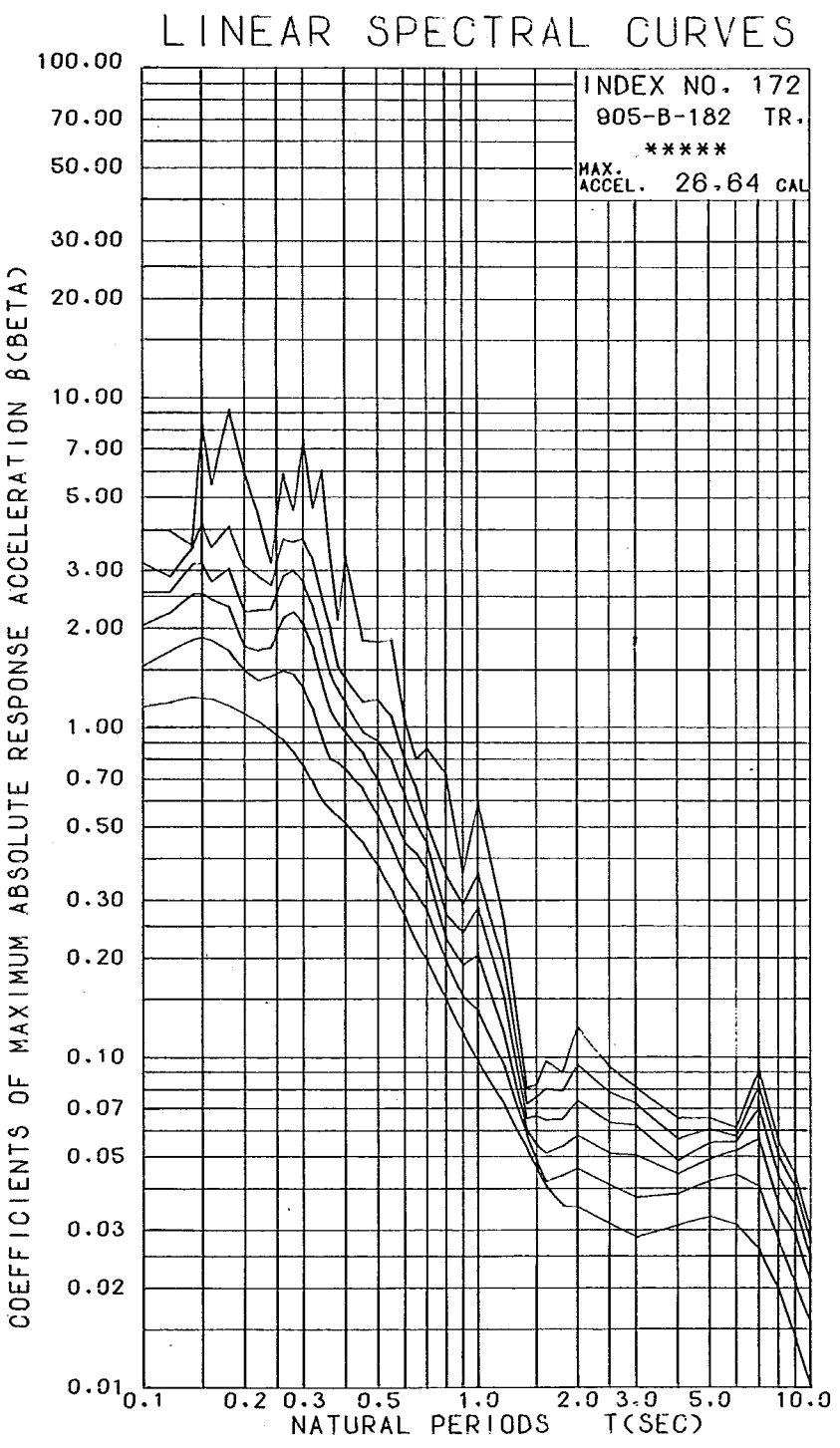


Figure IS-172 Linear Response Spectrum of Earthquake Record with Index Number 172

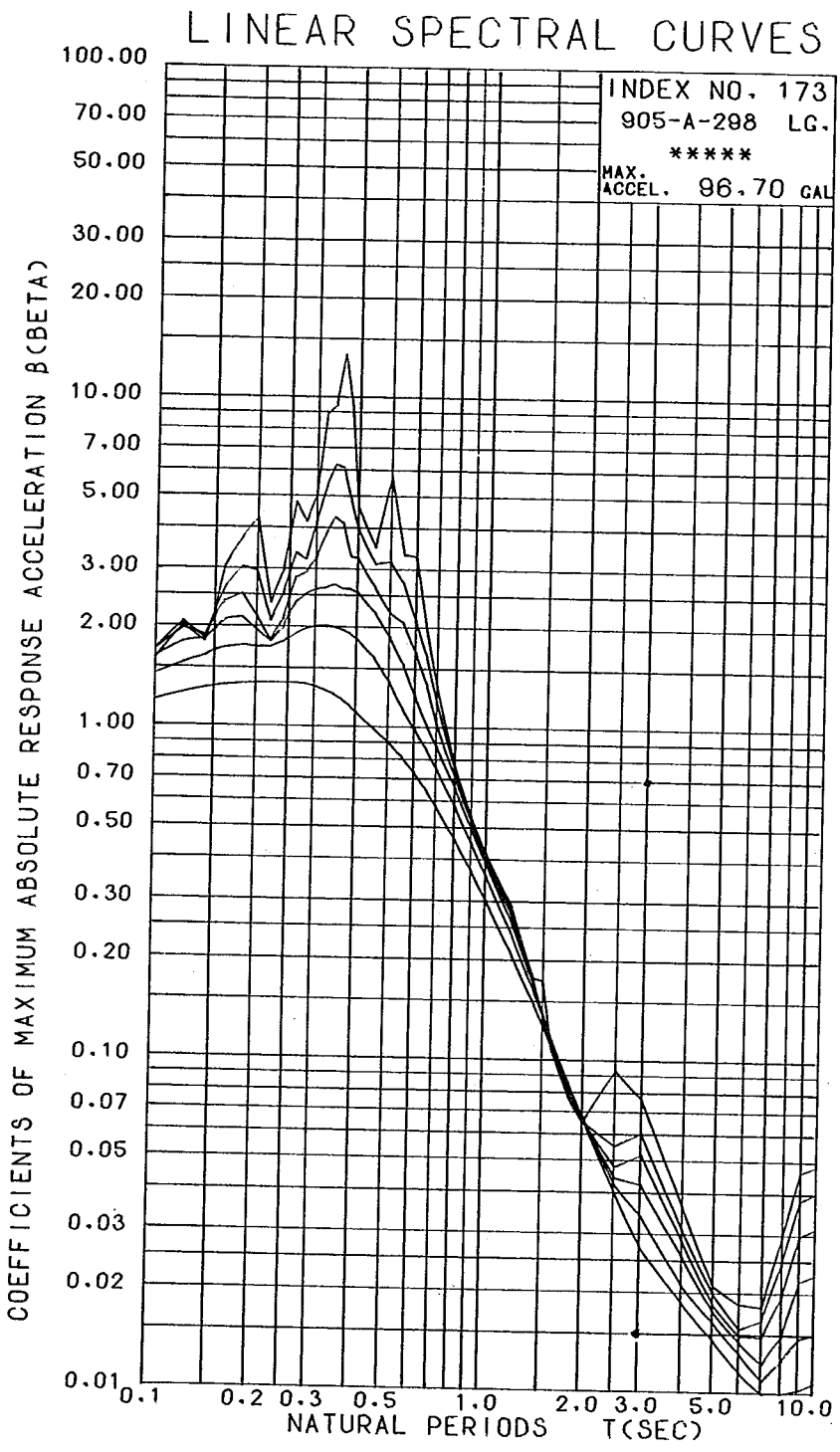


Figure IS-173 Linear Response Spectrum of Earthquake Record with Index Number 173

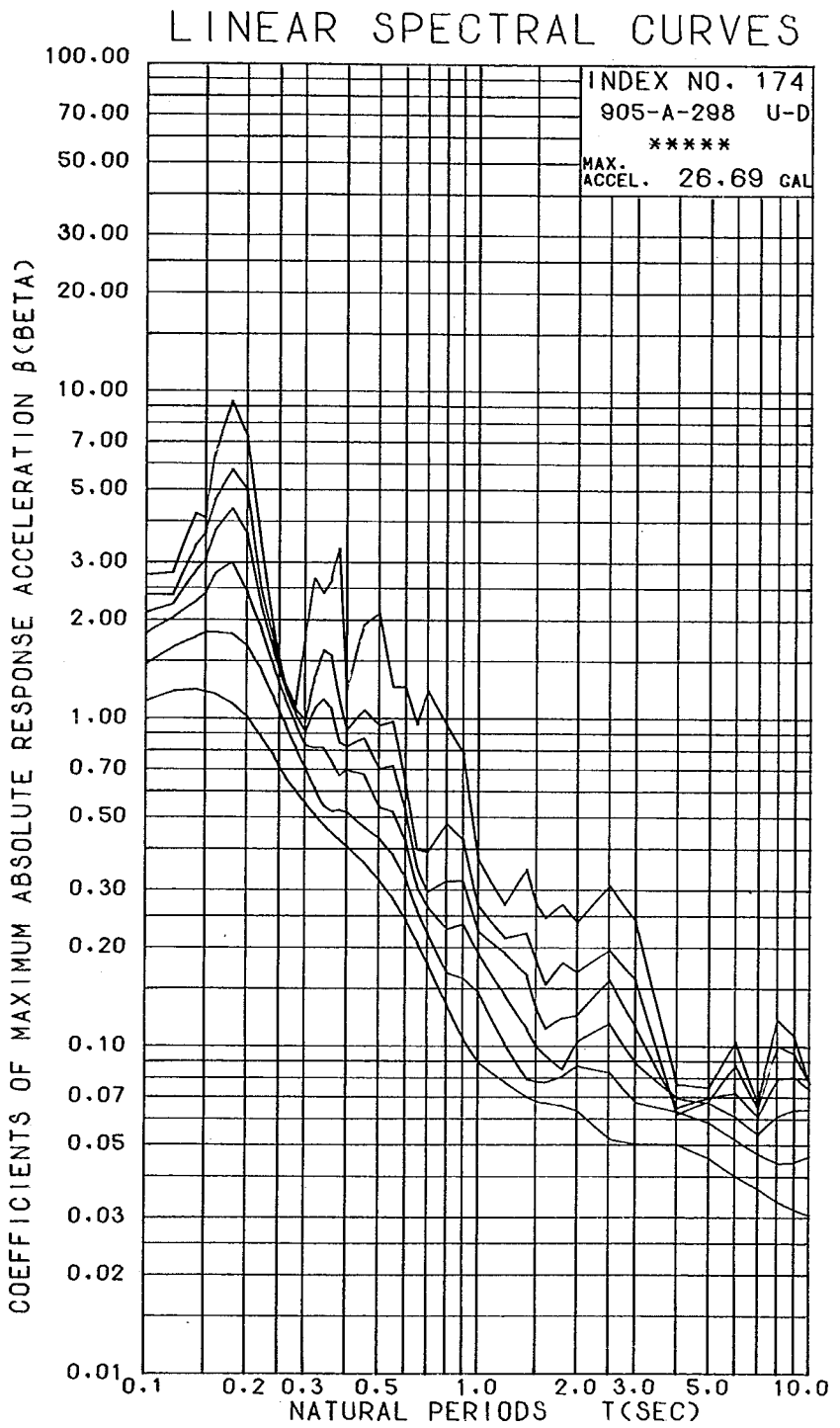


Figure IS-174 Linear Response Spectrum of Earthquake Record with Index Number 174

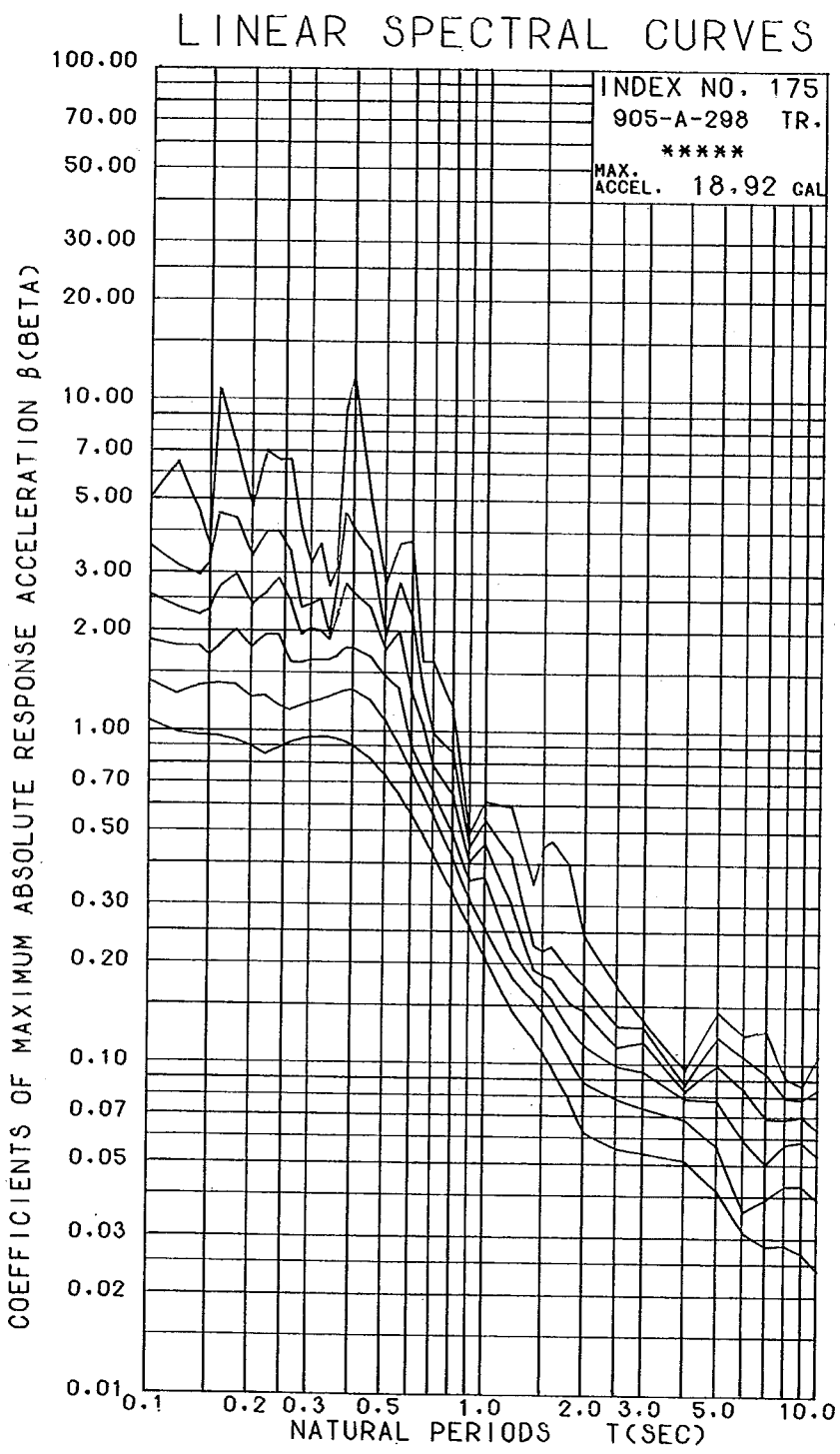


Figure IS-175 Linear Response Spectrum of Earthquake Record with Index Number 175

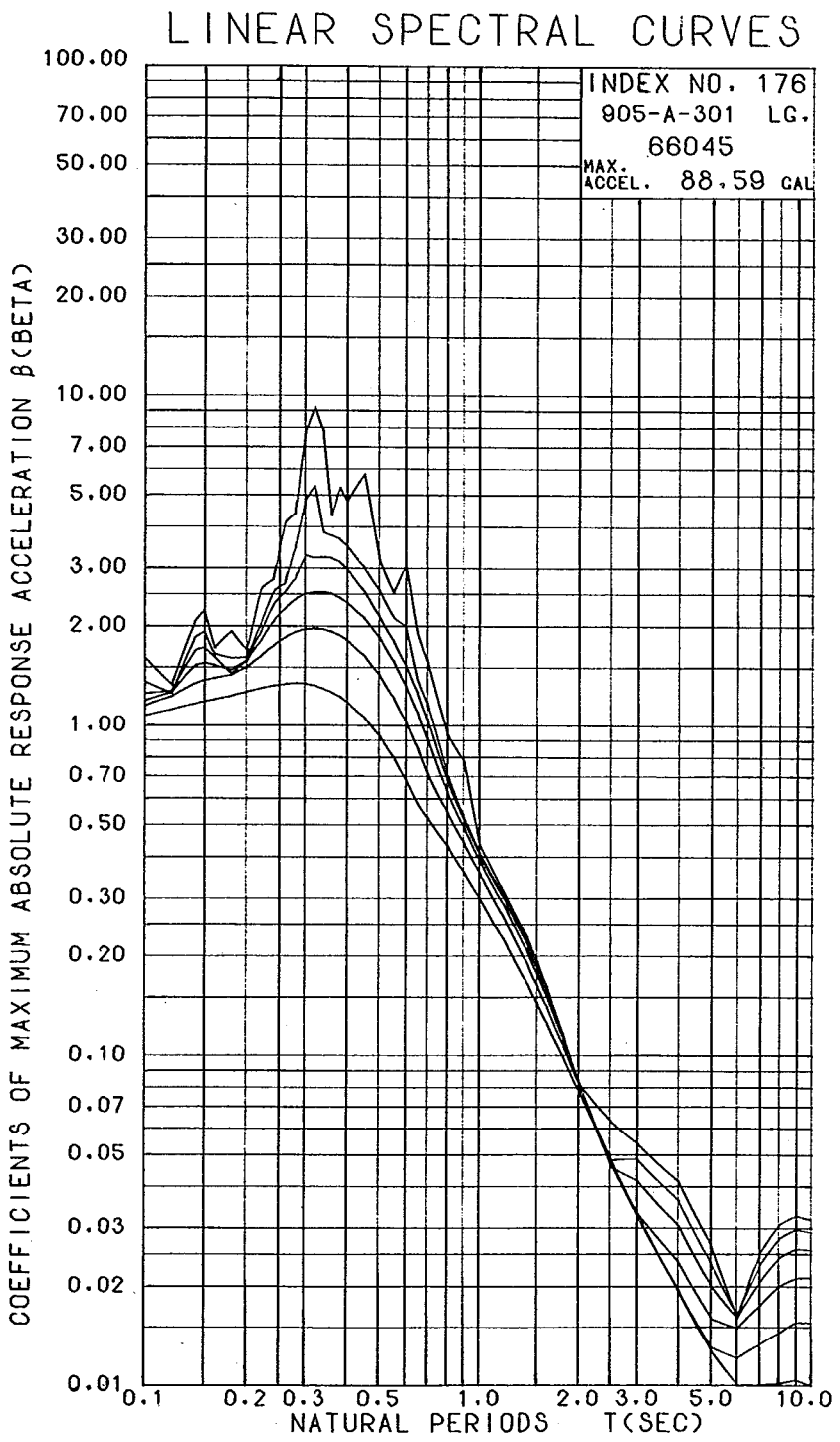


Figure IS-176 Linear Response Spectrum of Earthquake Record with Index Number 176

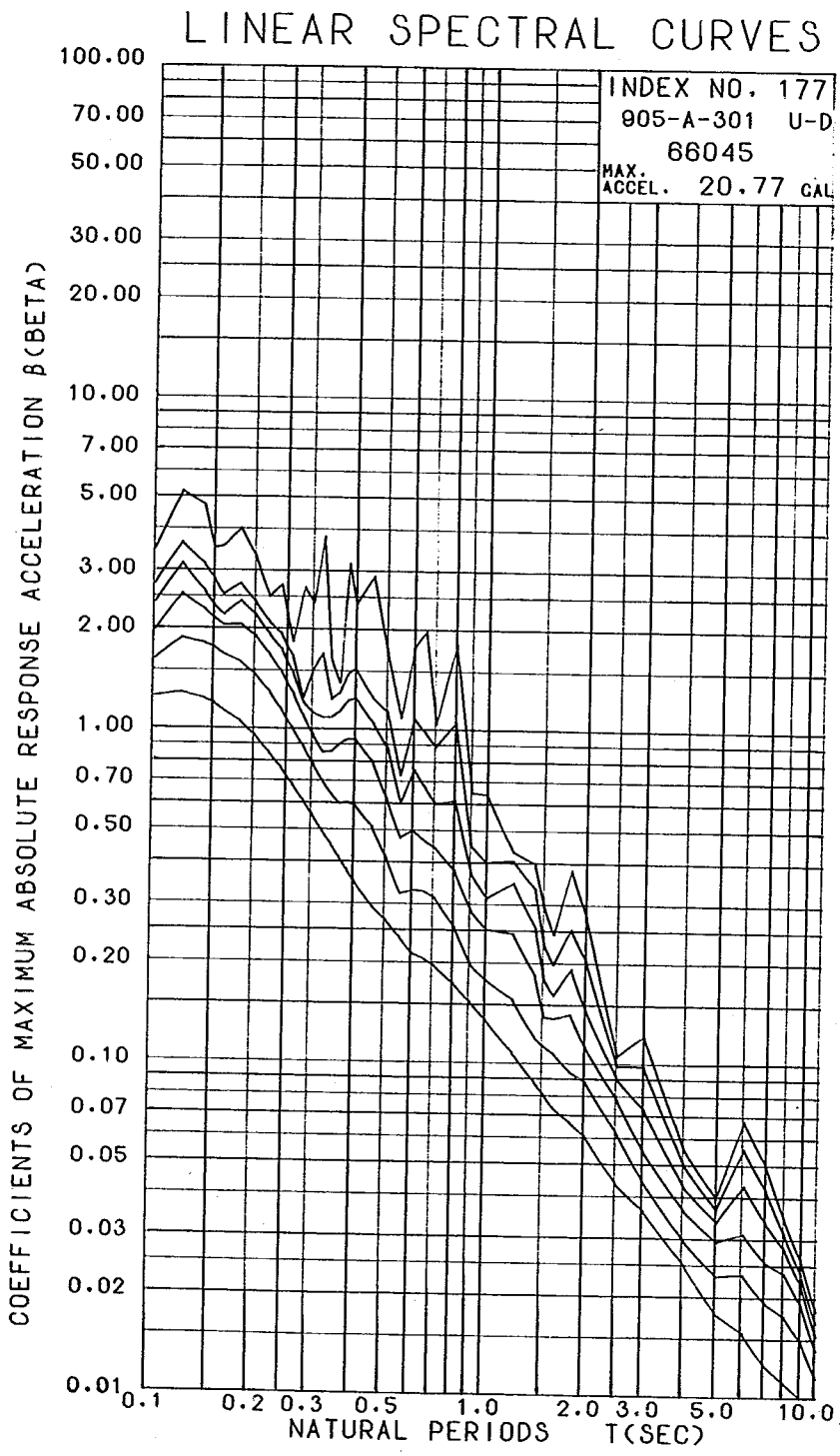


Figure IS-177 Linear Response Spectrum of Earthquake Record with Index Number 177

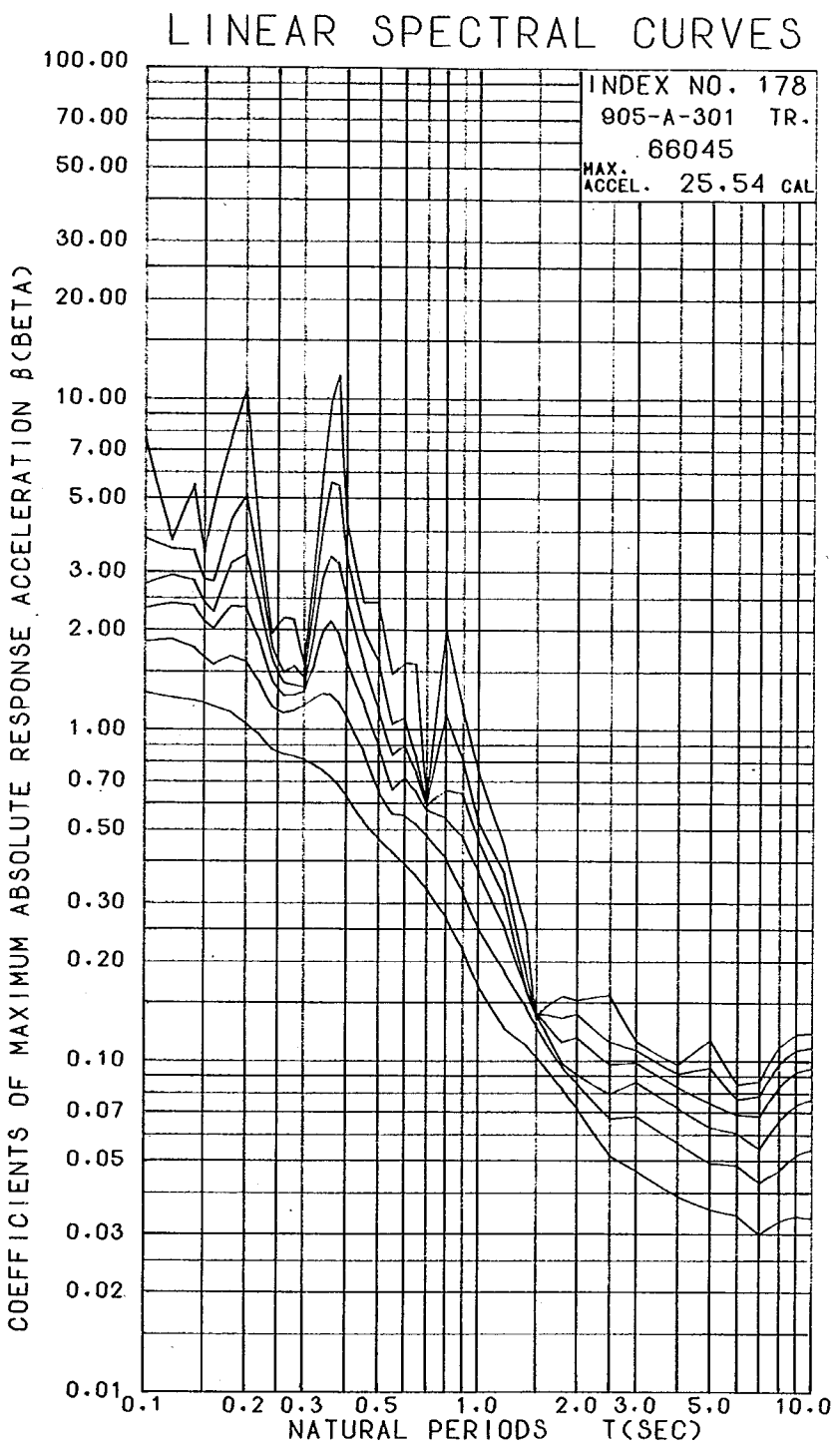


Figure IS-178 Linear Response Spectrum of Earthquake Record with Index Number 178

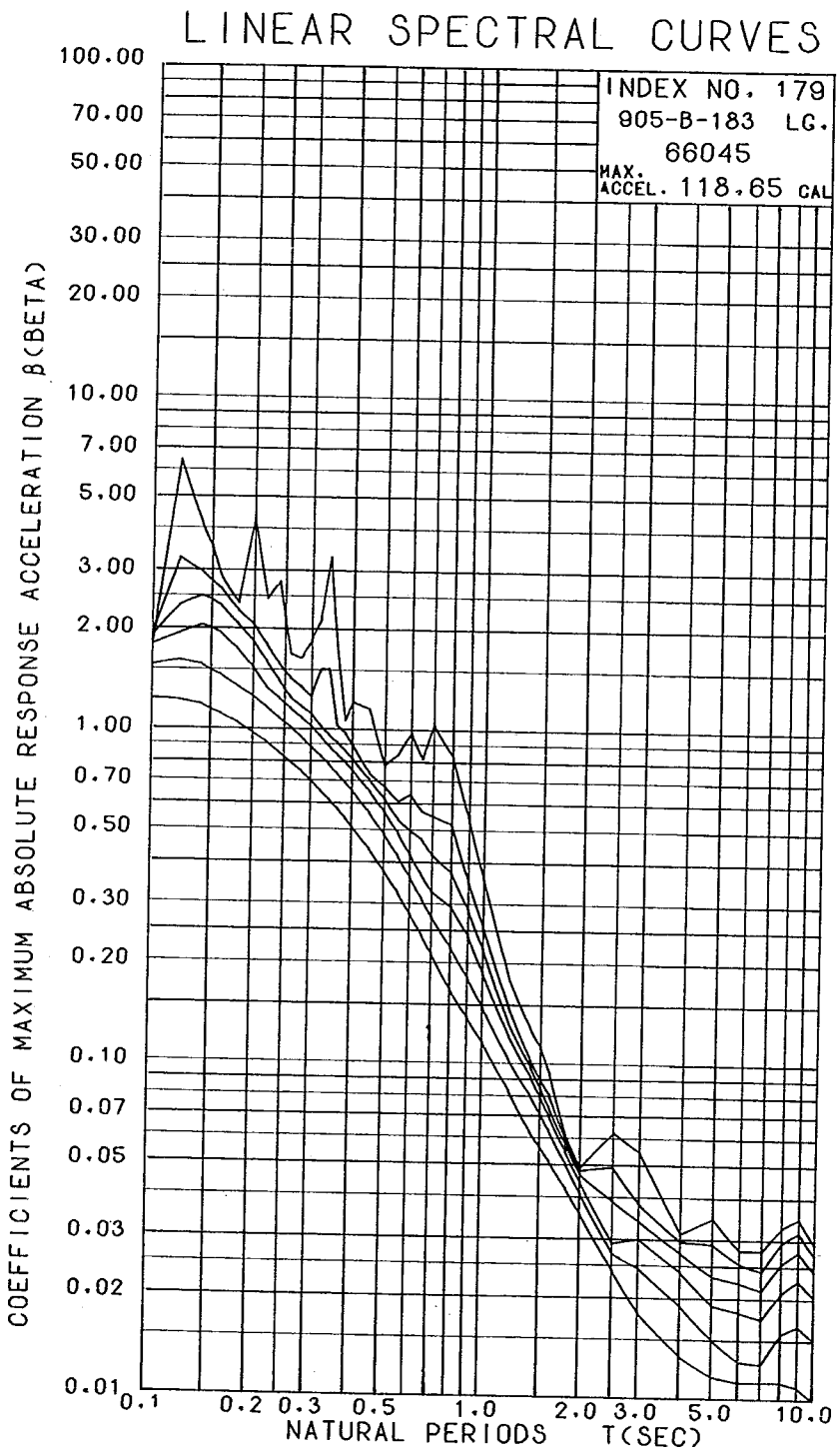


Figure IS-179 Linear Response Spectrum of Earthquake Record with Index Number 179

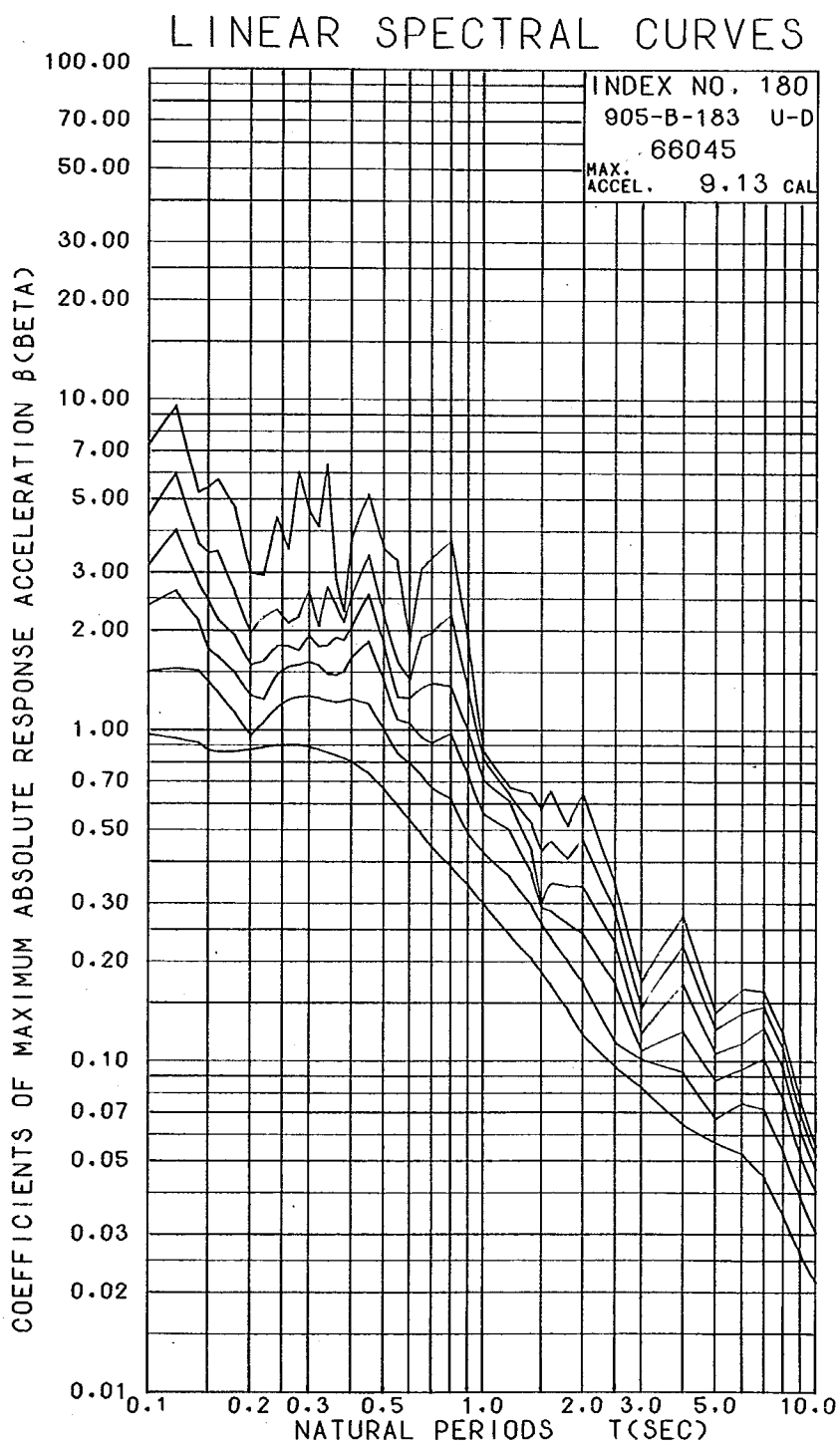


Figure IS-180 Linear Response Spectrum of Earthquake Record with Index Number 180

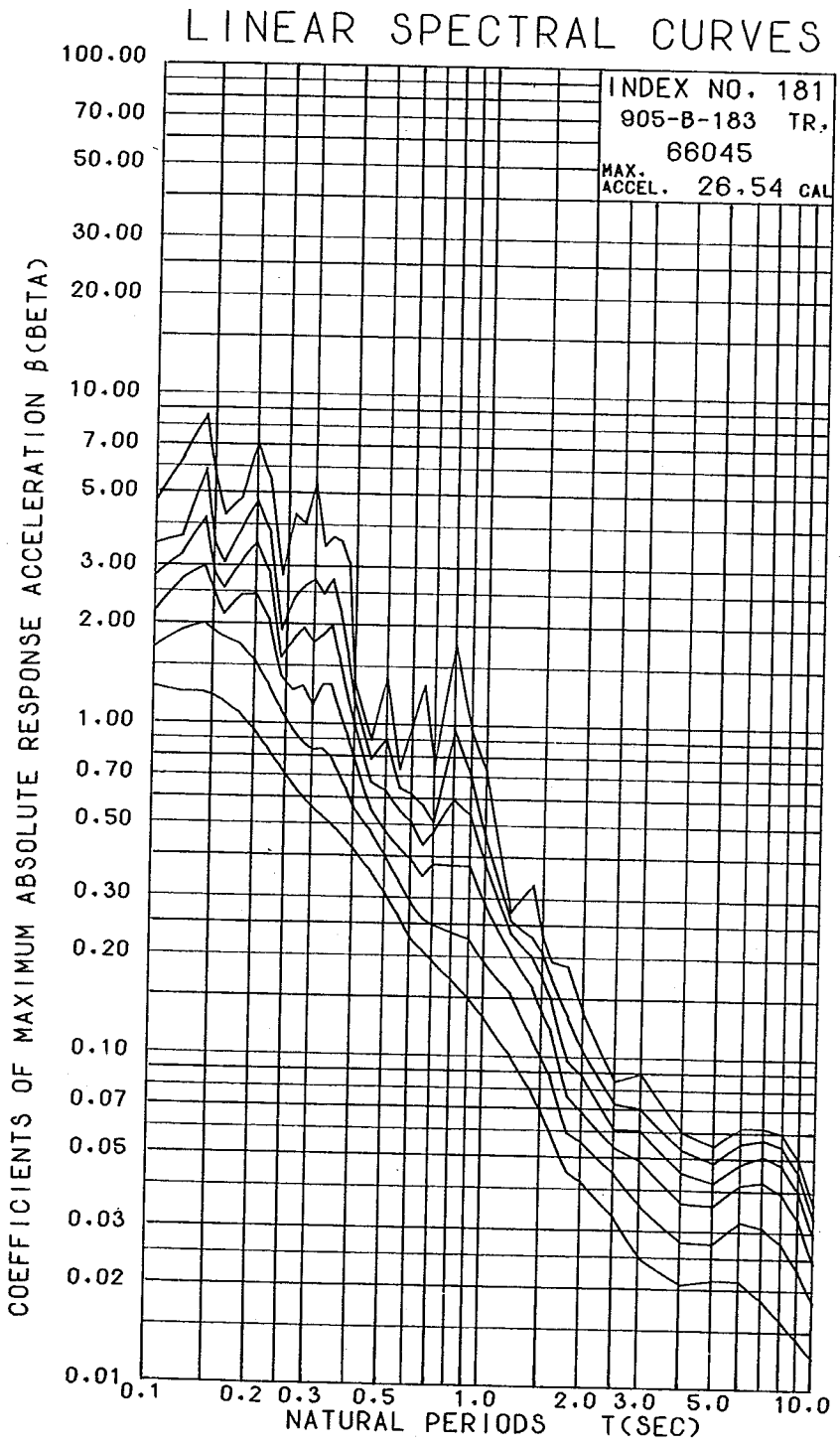


Figure IS-181 Linear Response Spectrum of Earthquake Record with Index Number 181

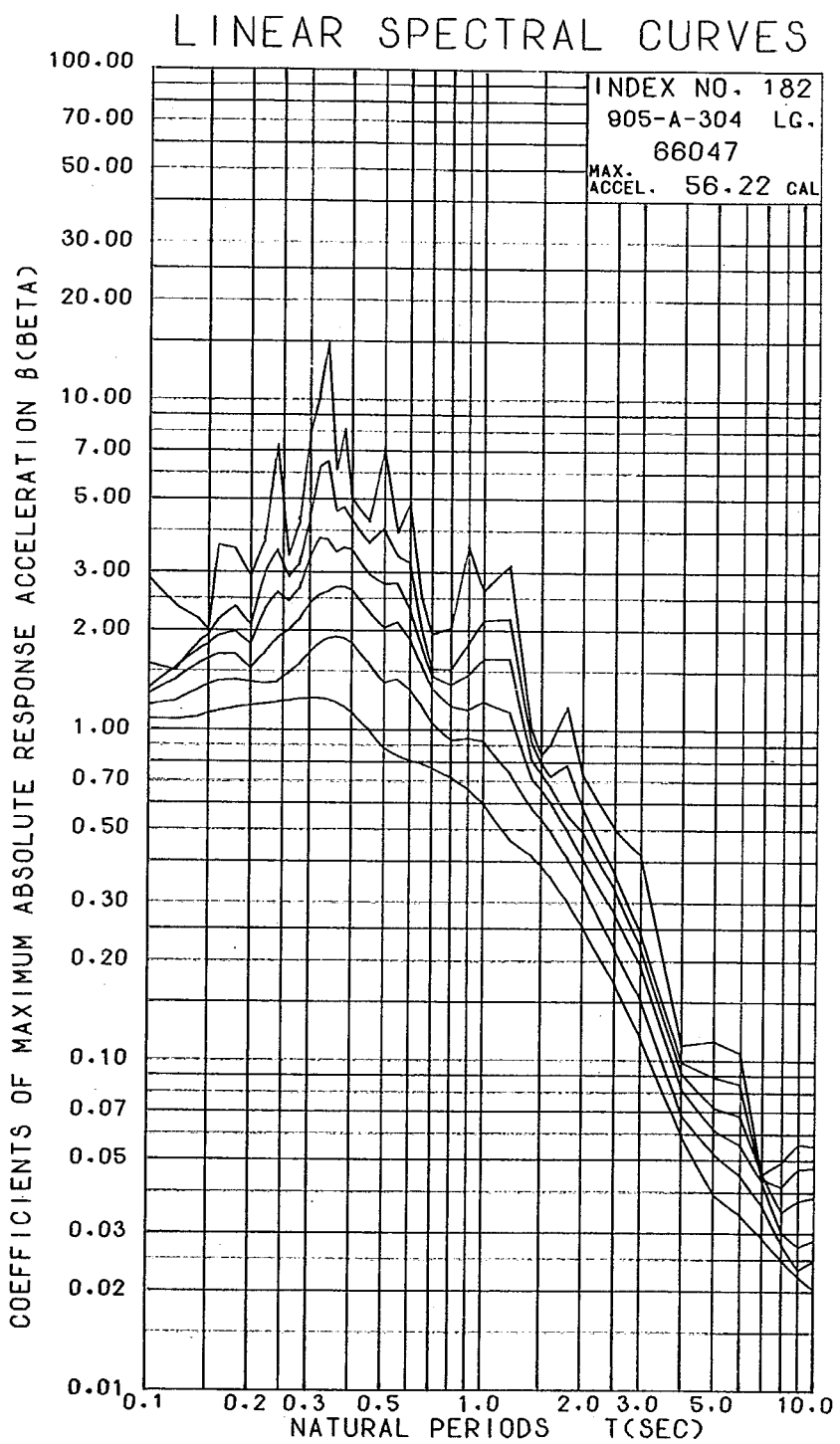


Figure IS-182 Linear Response Spectrum of Earthquake Record with Index Number 182

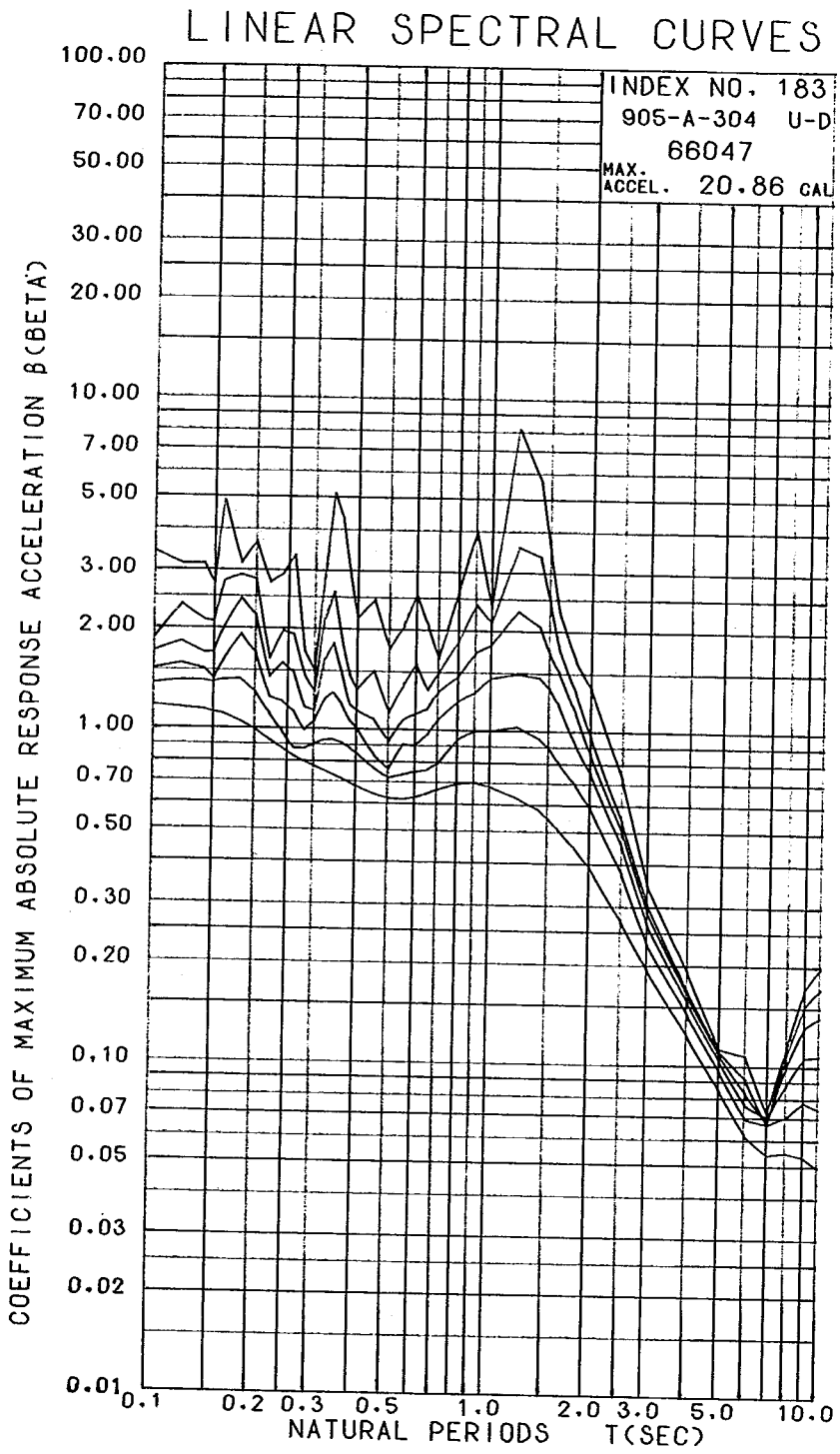


Figure IS-183 Linear Response Spectrum of Earthquake Record with Index Number 183

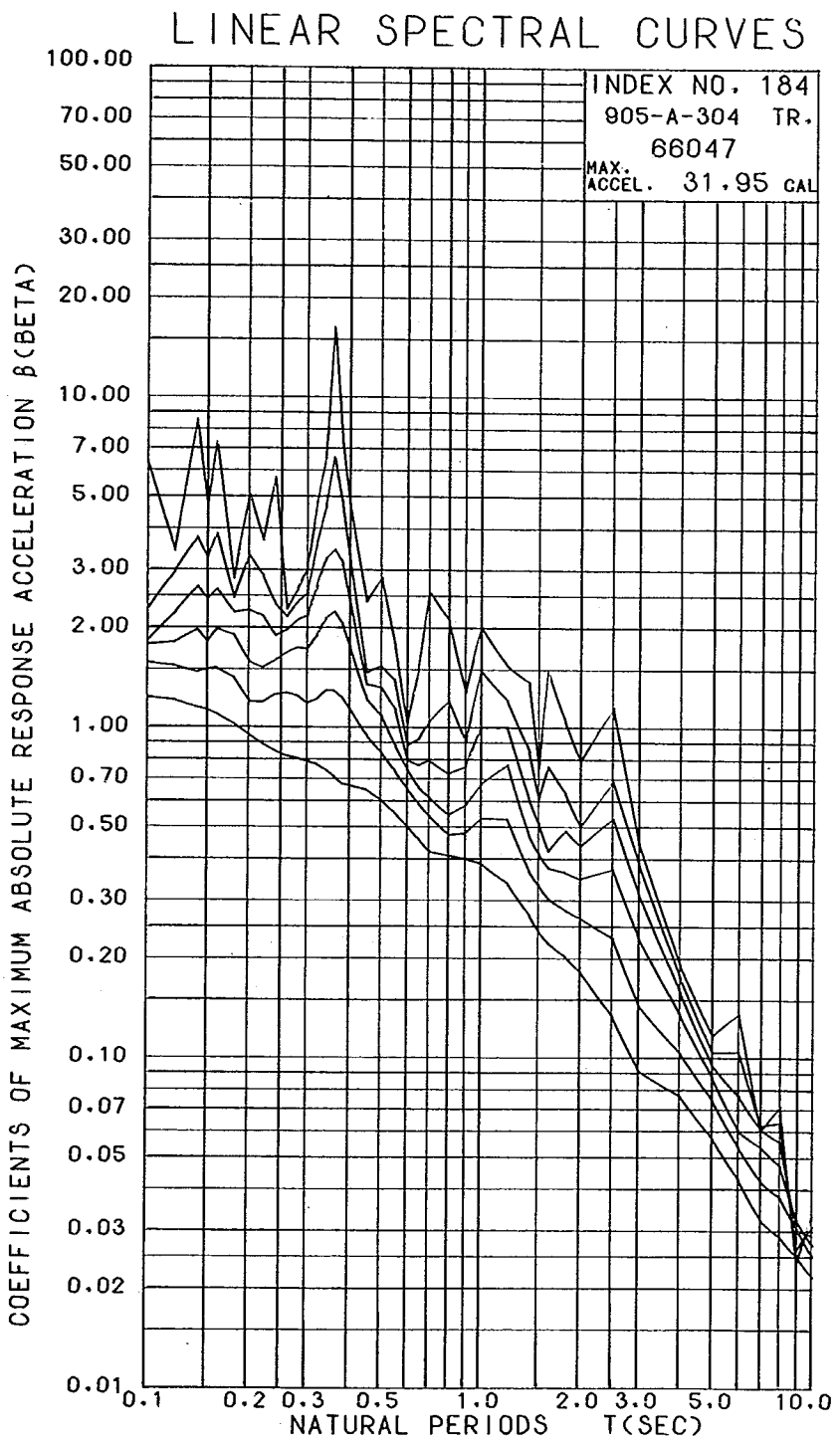


Figure IS-184 Linear Response Spectrum of Earthquake Record with Index Number 184

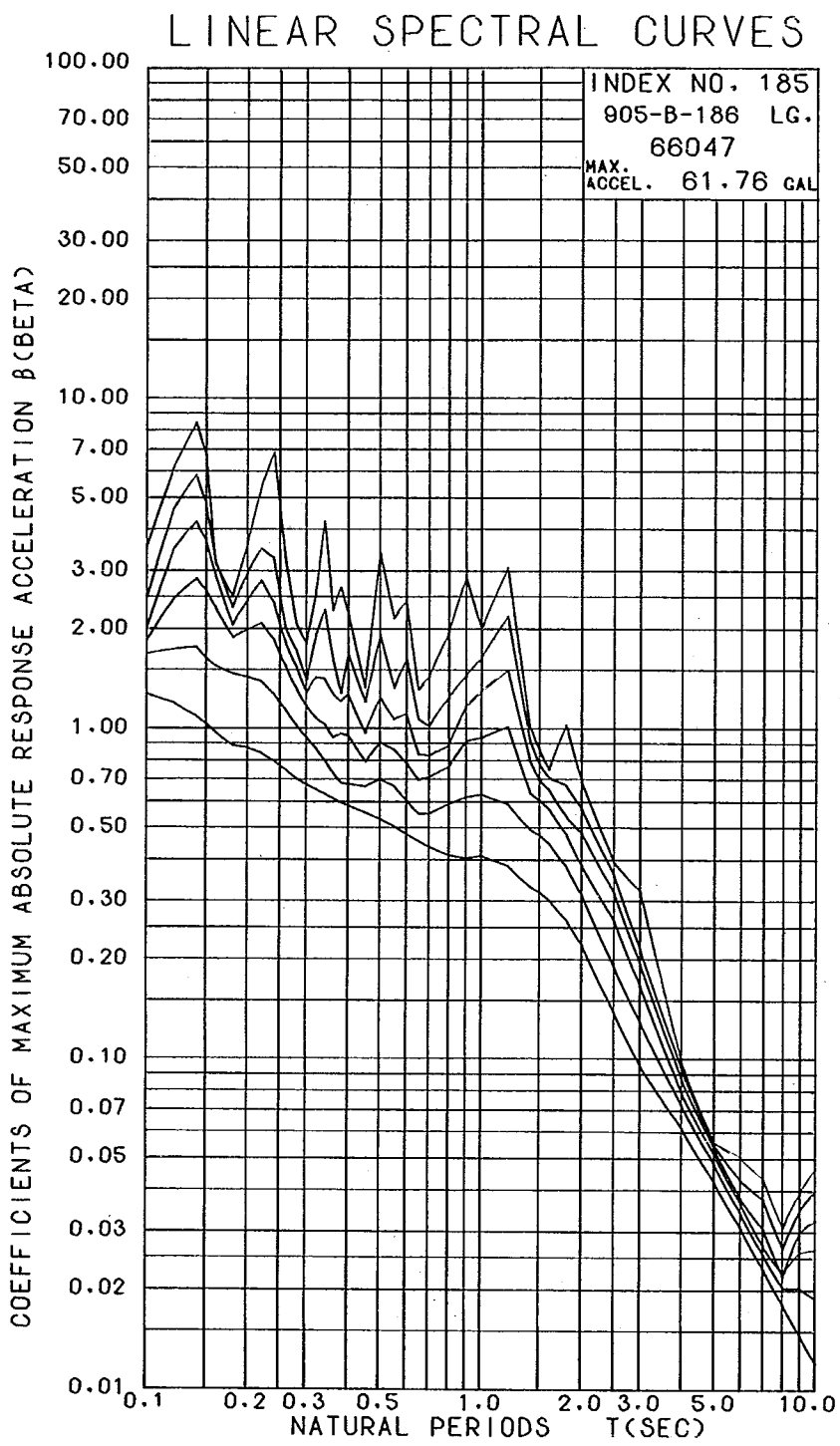


Figure IS-185 Linear Response Spectrum of Earthquake Record with Index Number 185

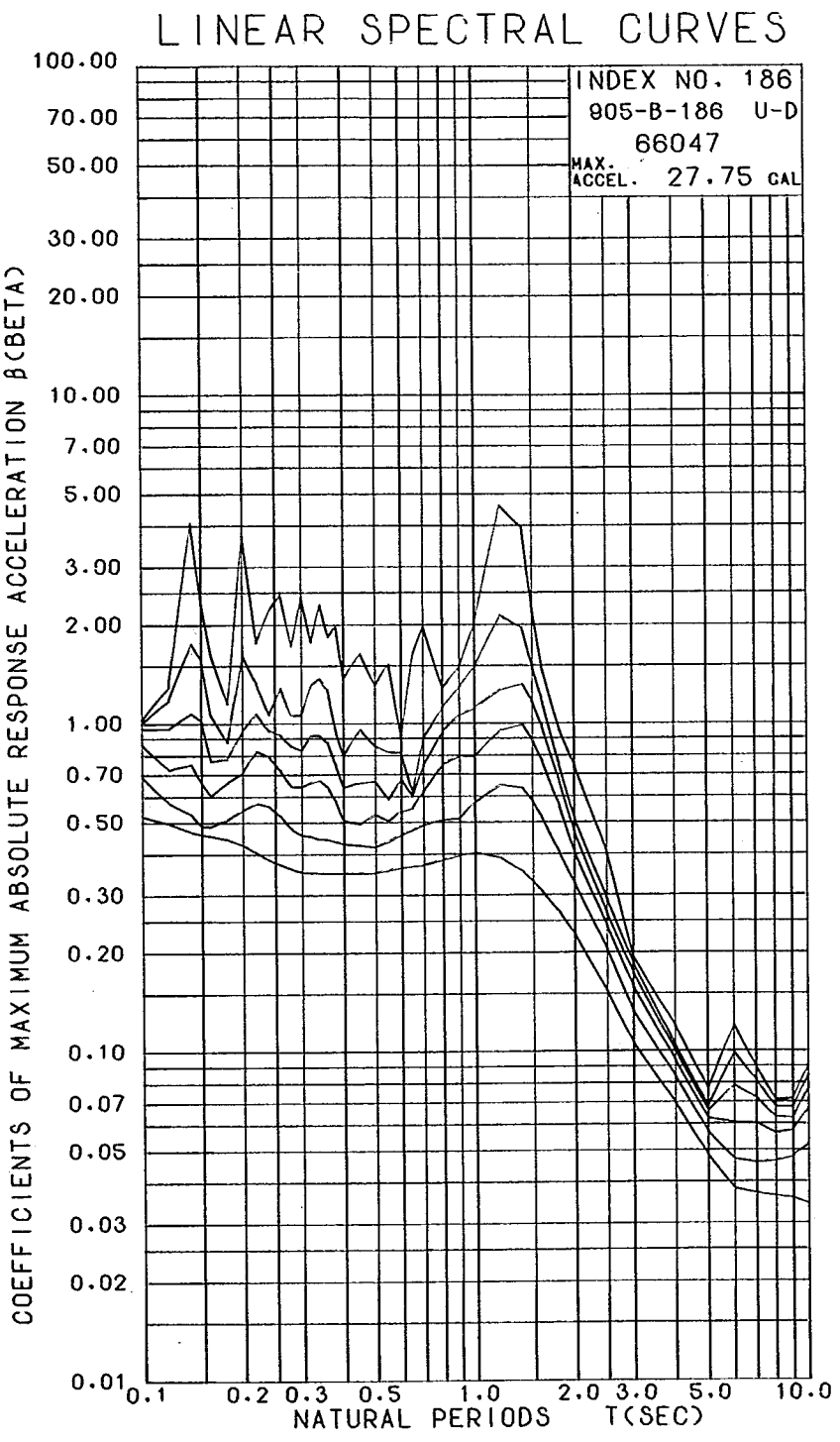


Figure IS-186 Linear Response Spectrum of Earthquake Record with Index Number 186

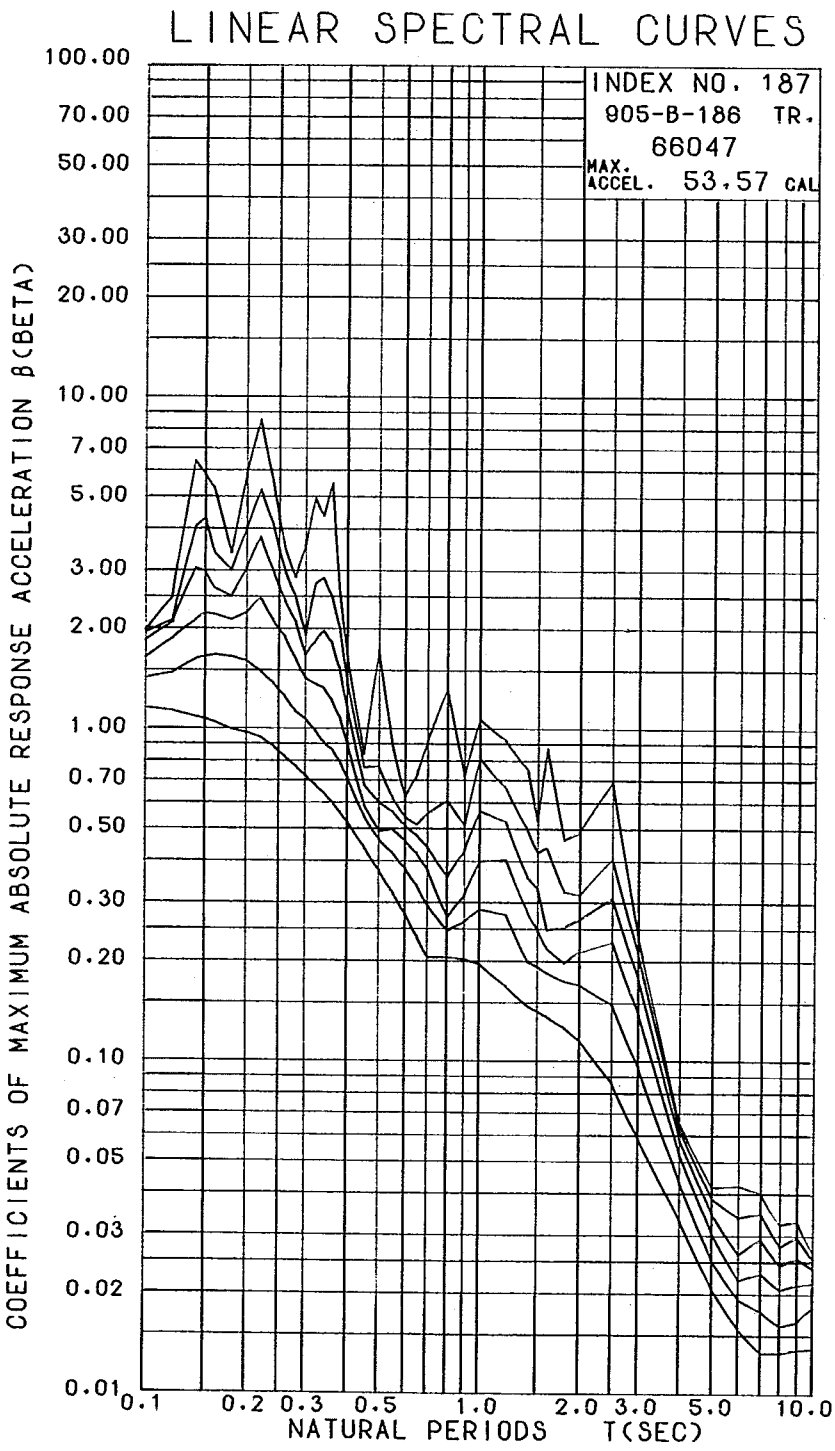


Figure IS-187 Linear Response Spectrum of Earthquake Record with Index Number 187

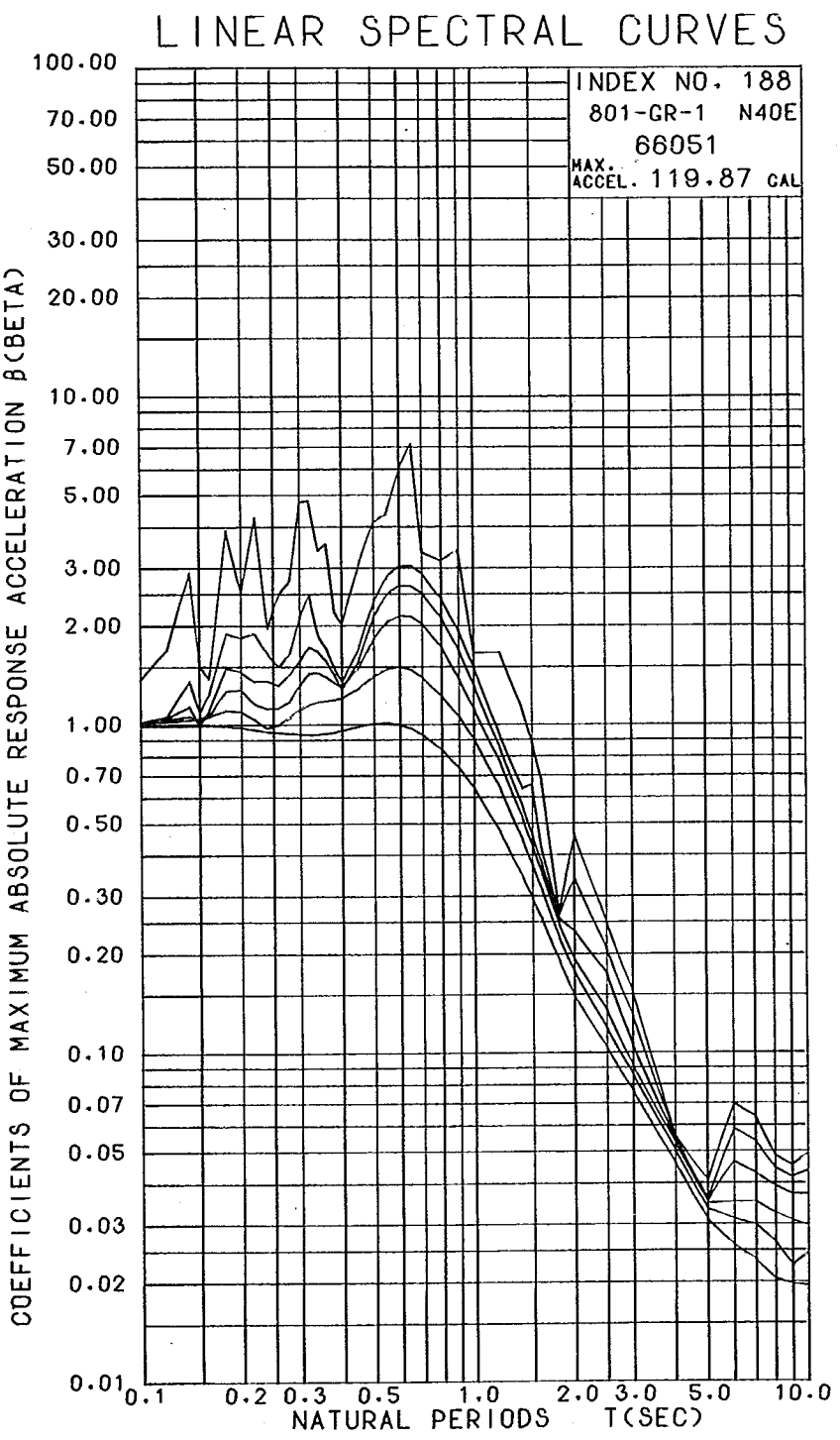


Figure IS-188 Linear Response Spectrum of Earthquake Record with Index Number 188

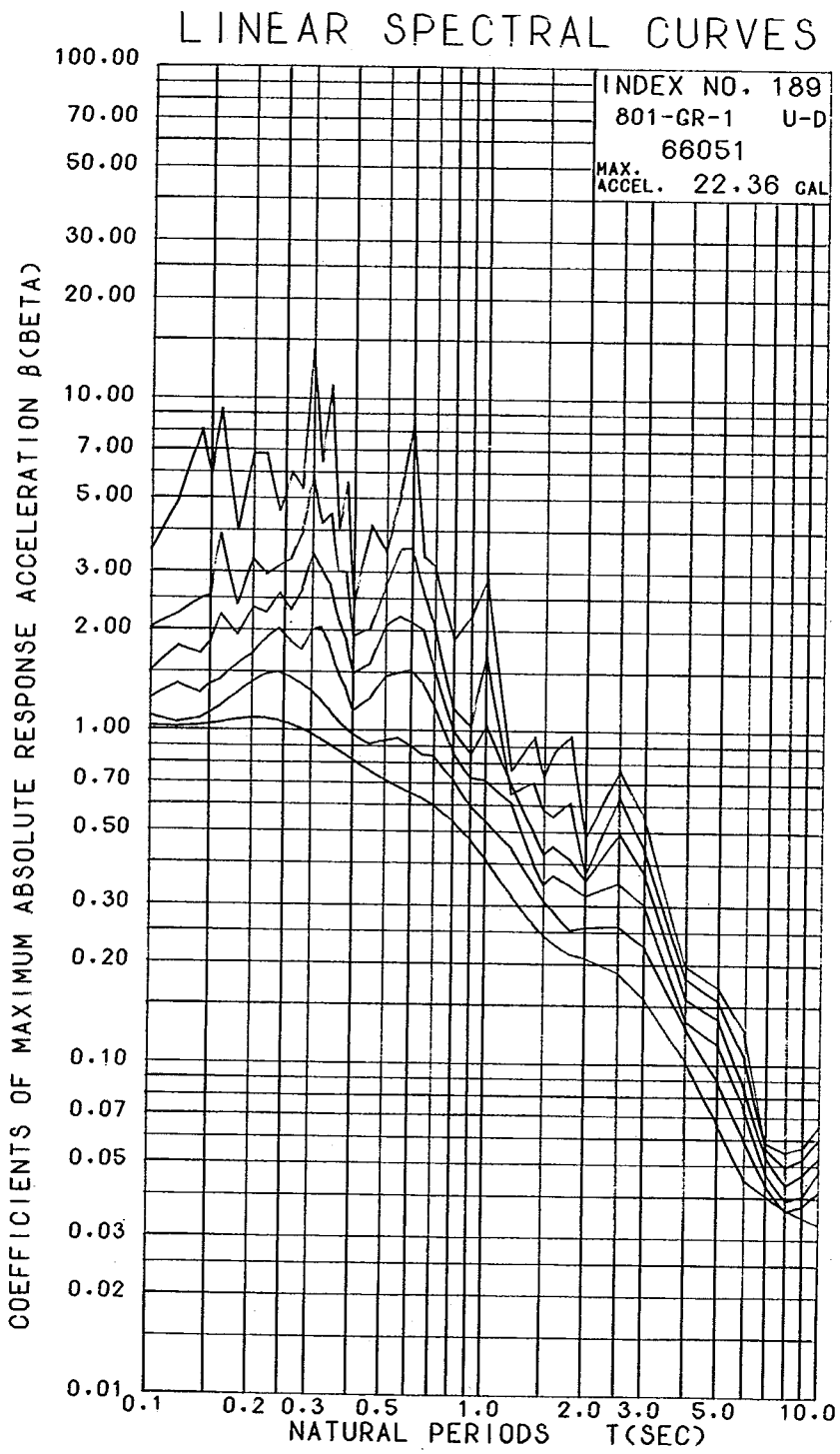


Figure IS-189 Linear Response Spectrum of Earthquake Record with Index Number 189

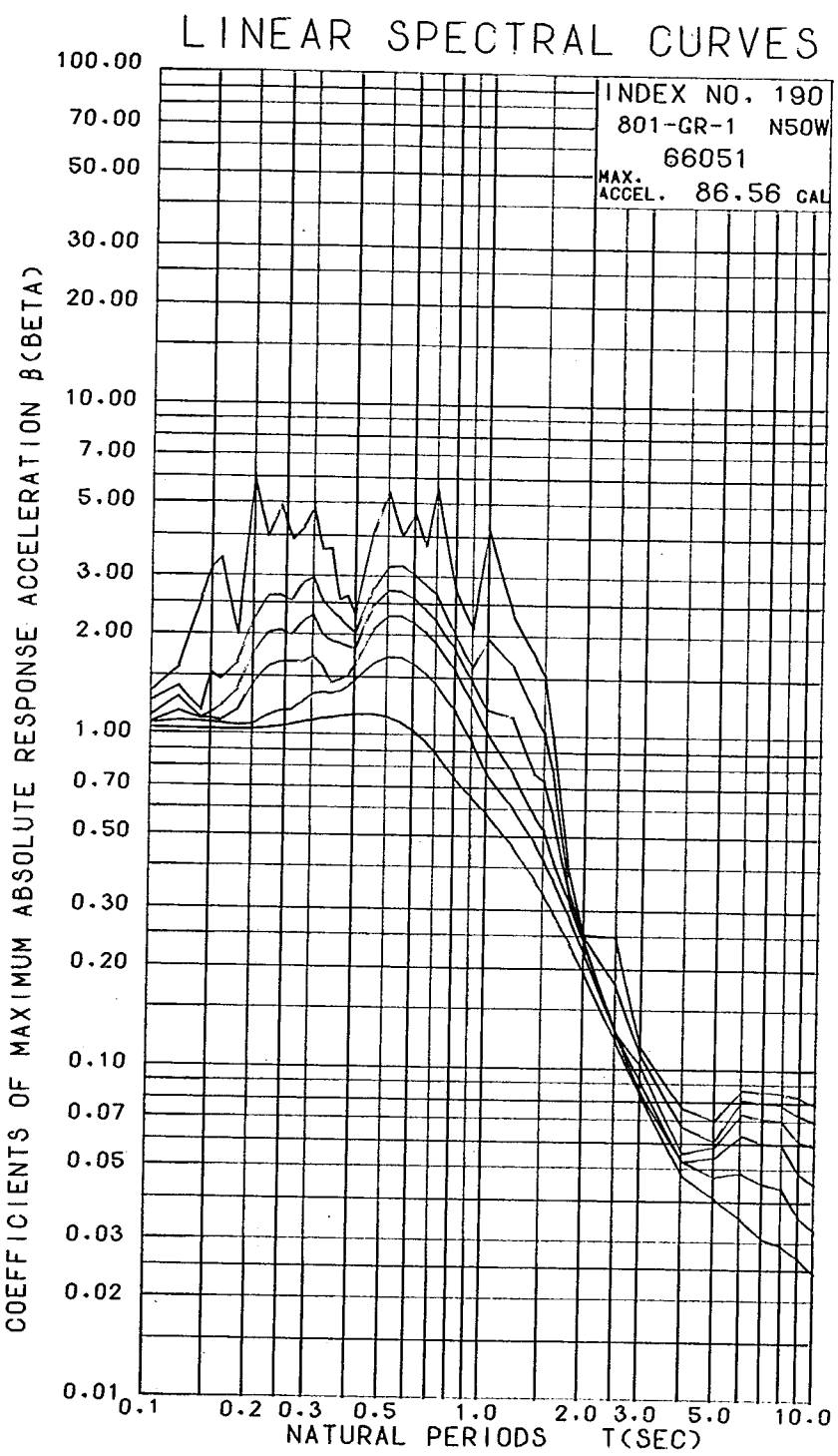


Figure IS-190 Linear Response Spectrum of Earthquake Record with Index Number 190

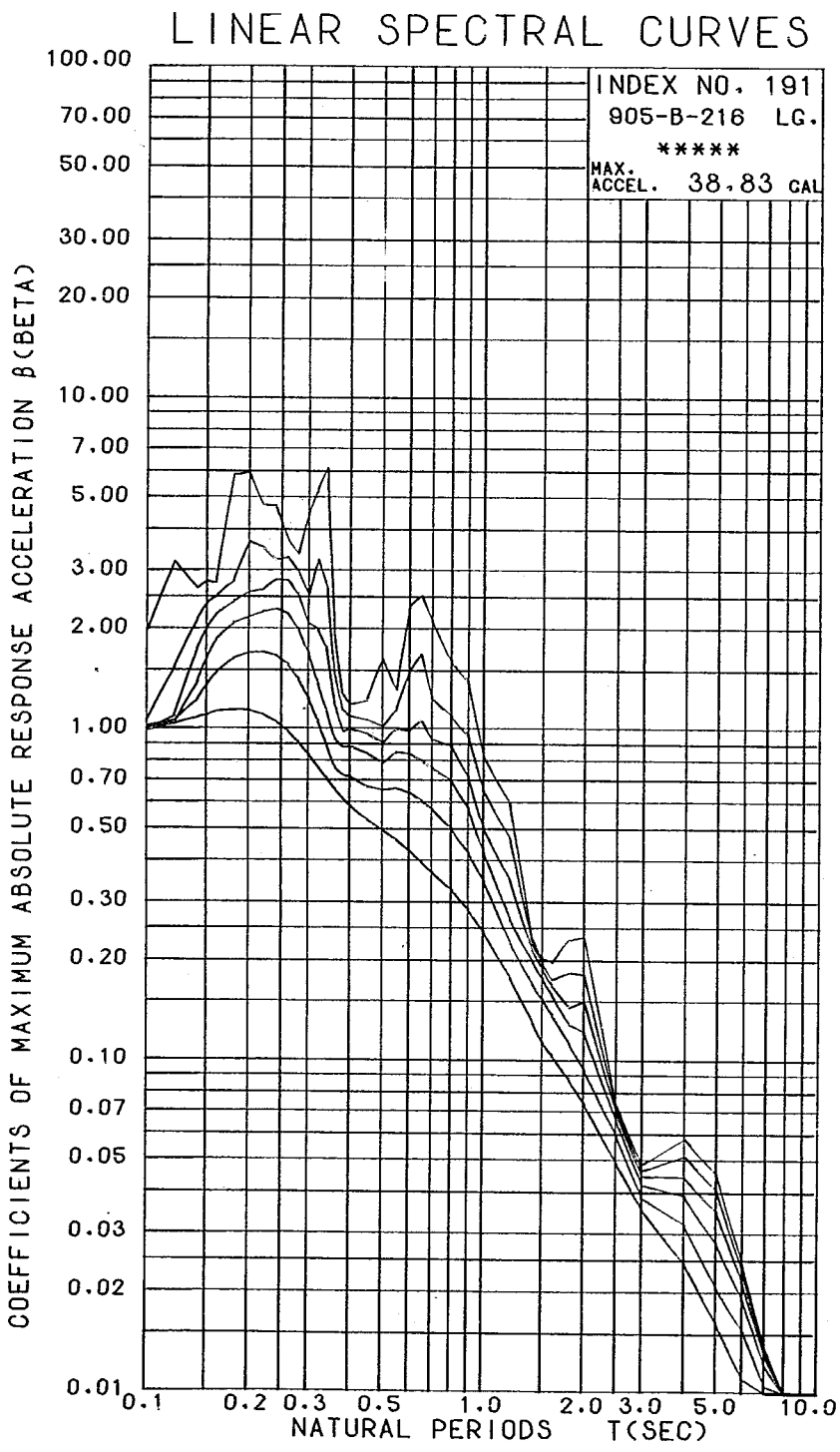


Figure IS-191 Linear Response Spectrum of Earthquake Record with Index Number 191

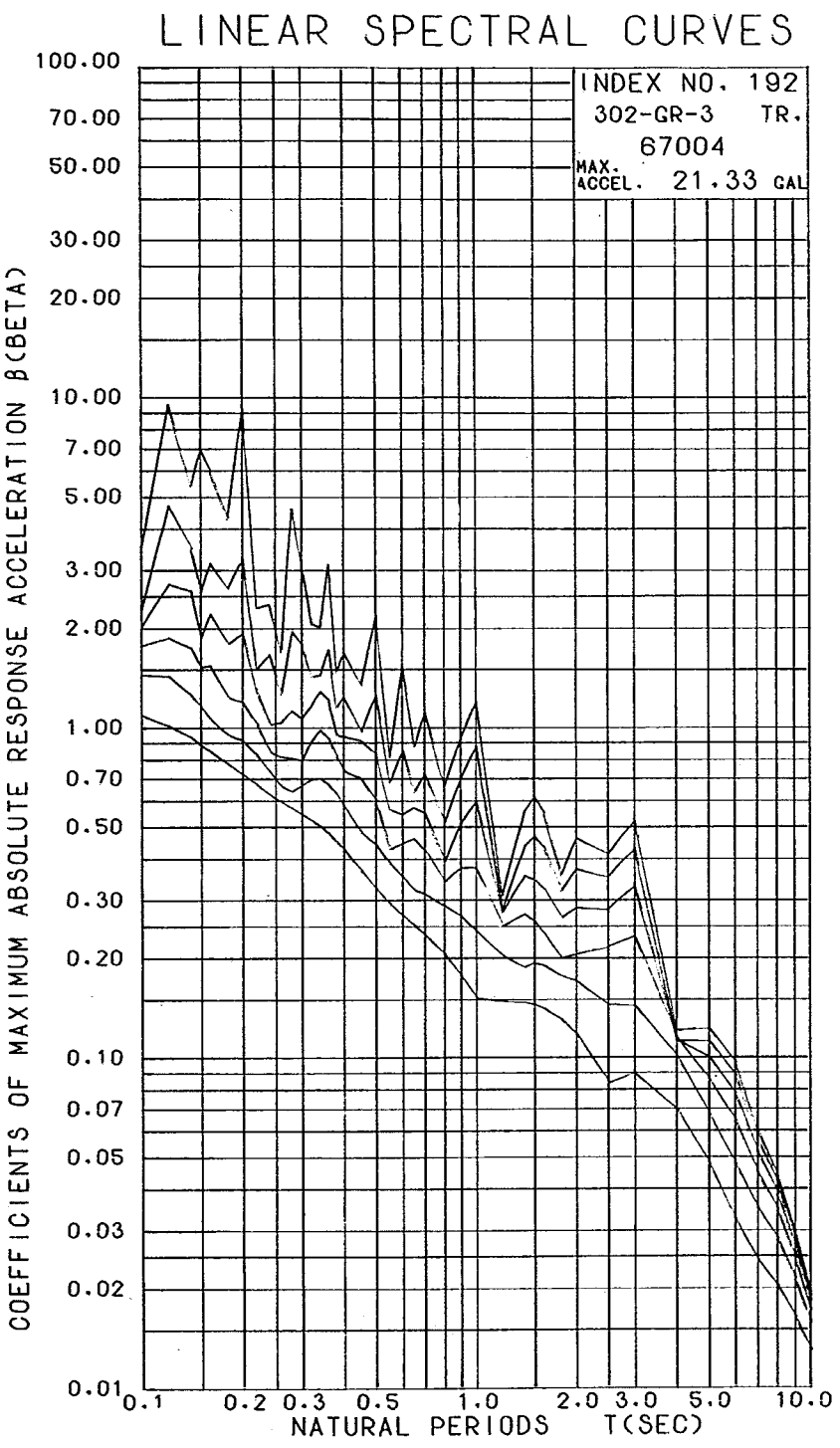


Figure IS-192 Linear Response Spectrum of Earthquake Record with Index Number 192

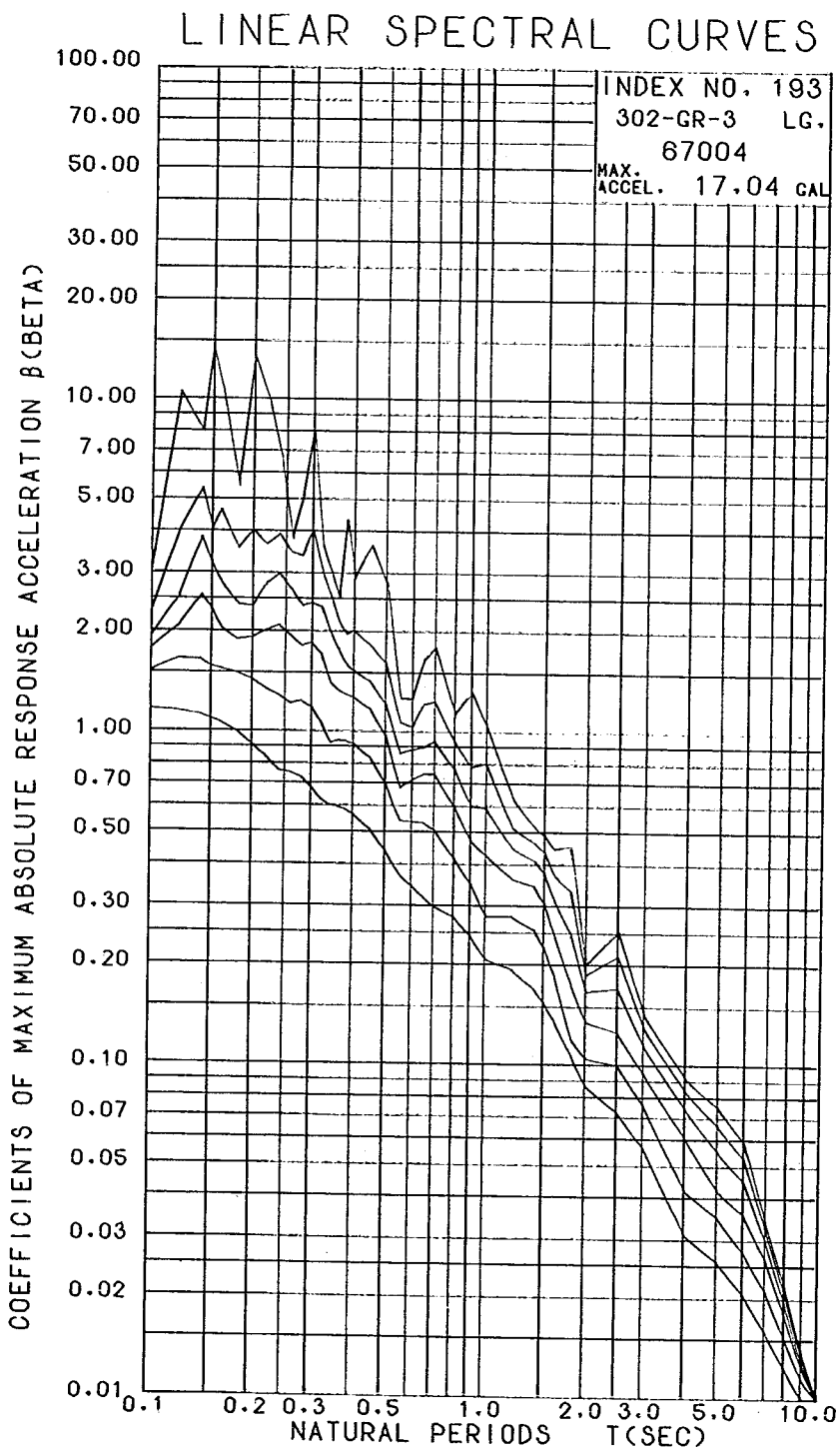


Figure IS-193 Linear Response Spectrum of Earthquake Record with Index Number 193

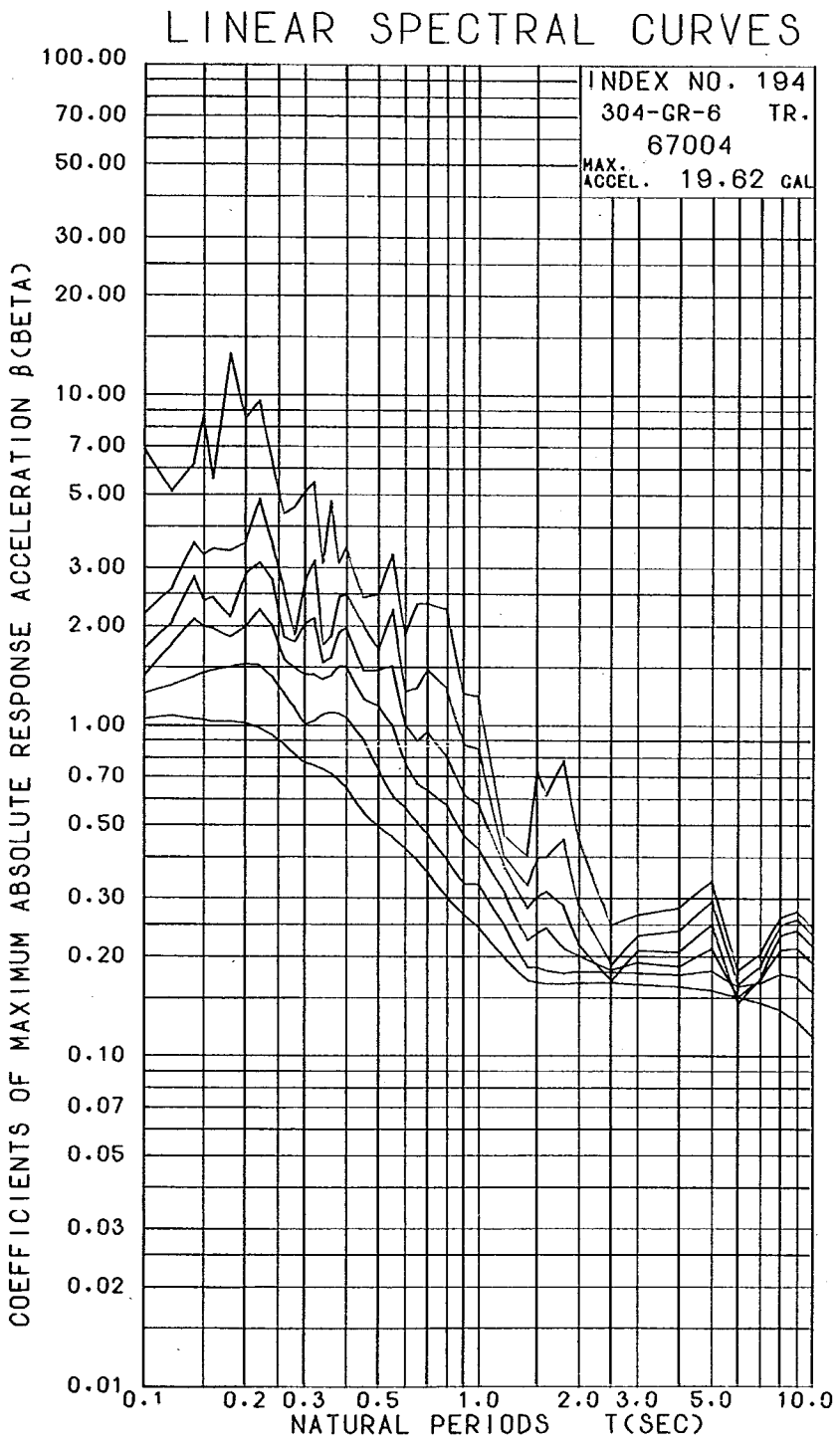


Figure IS-194 Linear Response Spectrum of Earthquake Record with Index Number 194

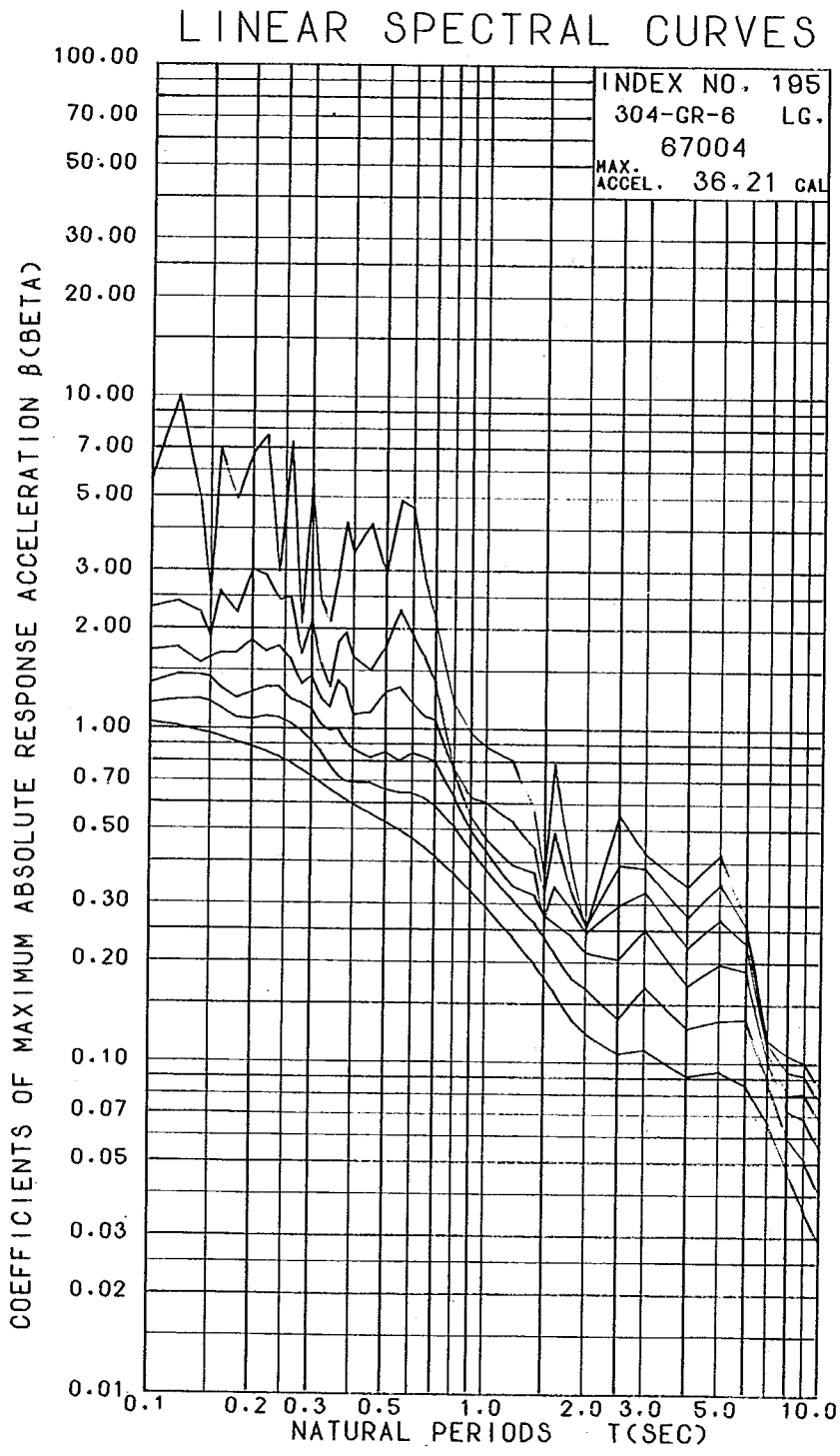


Figure IS-195 Linear Response Spectrum of Earthquake Record with Index Number 195

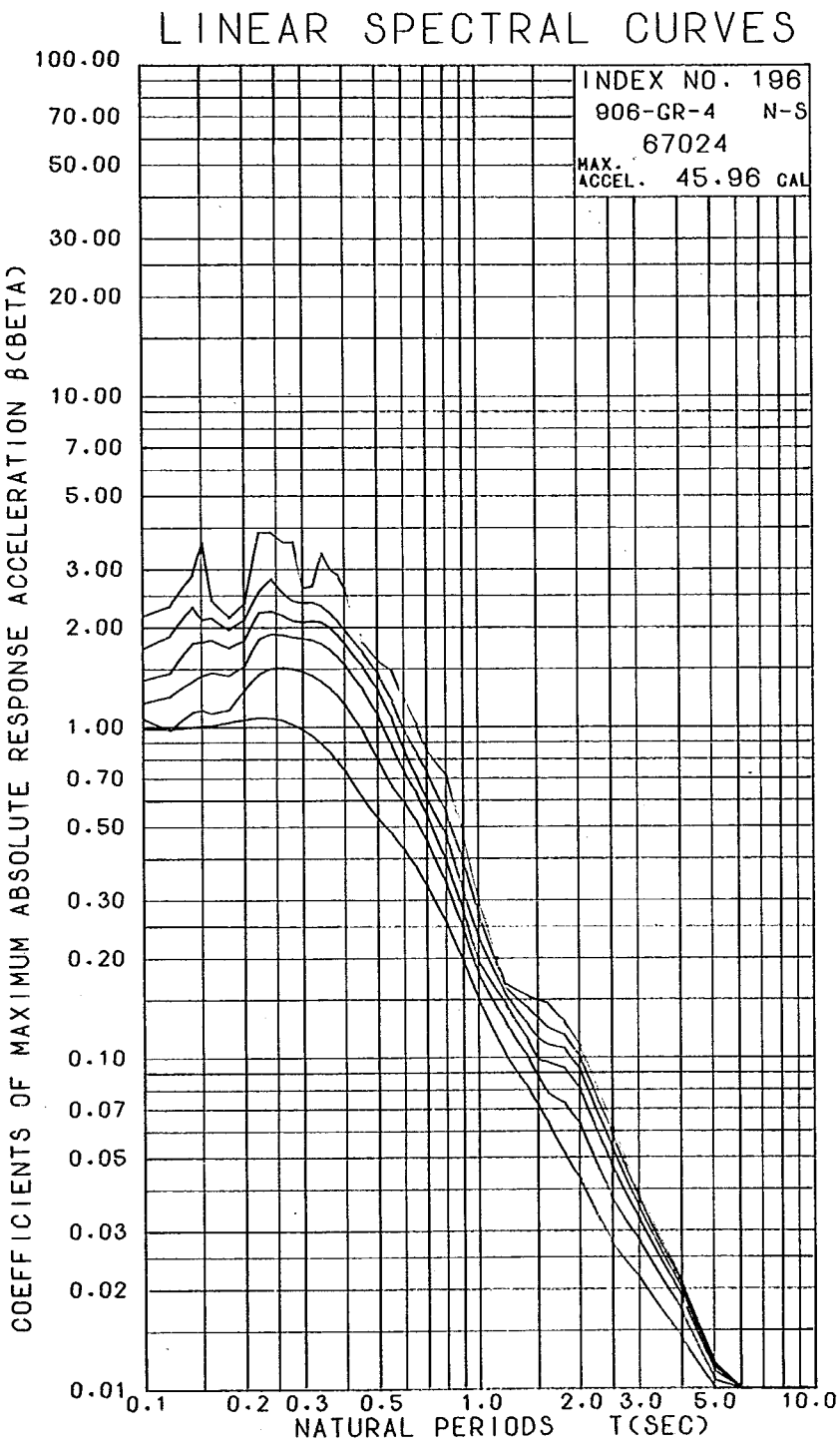


Figure IS-196 Linear Response Spectrum of Earthquake Record with Index Number 196

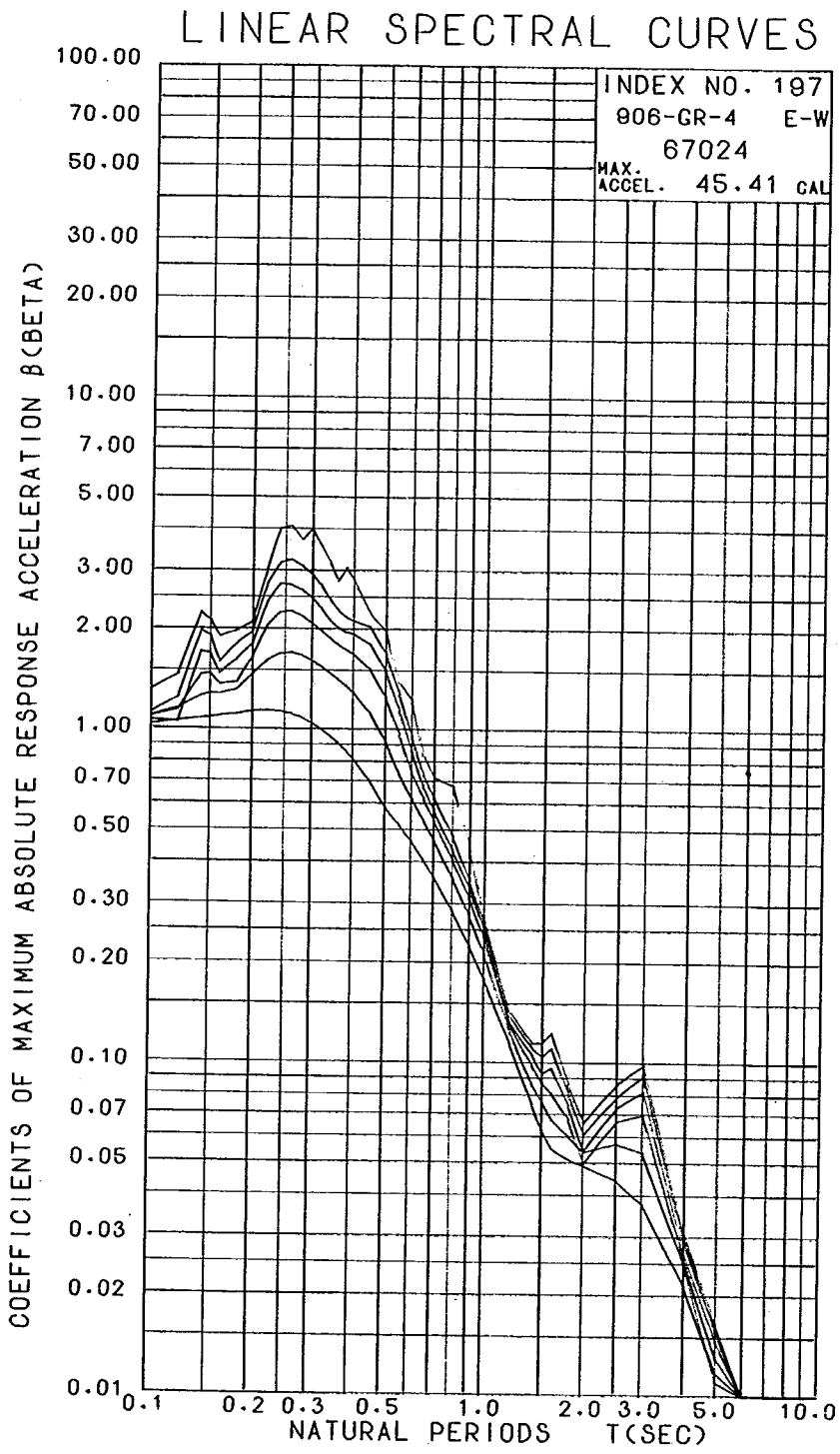


Figure IS-197 Linear Response Spectrum of Earthquake Record with Index Number 197

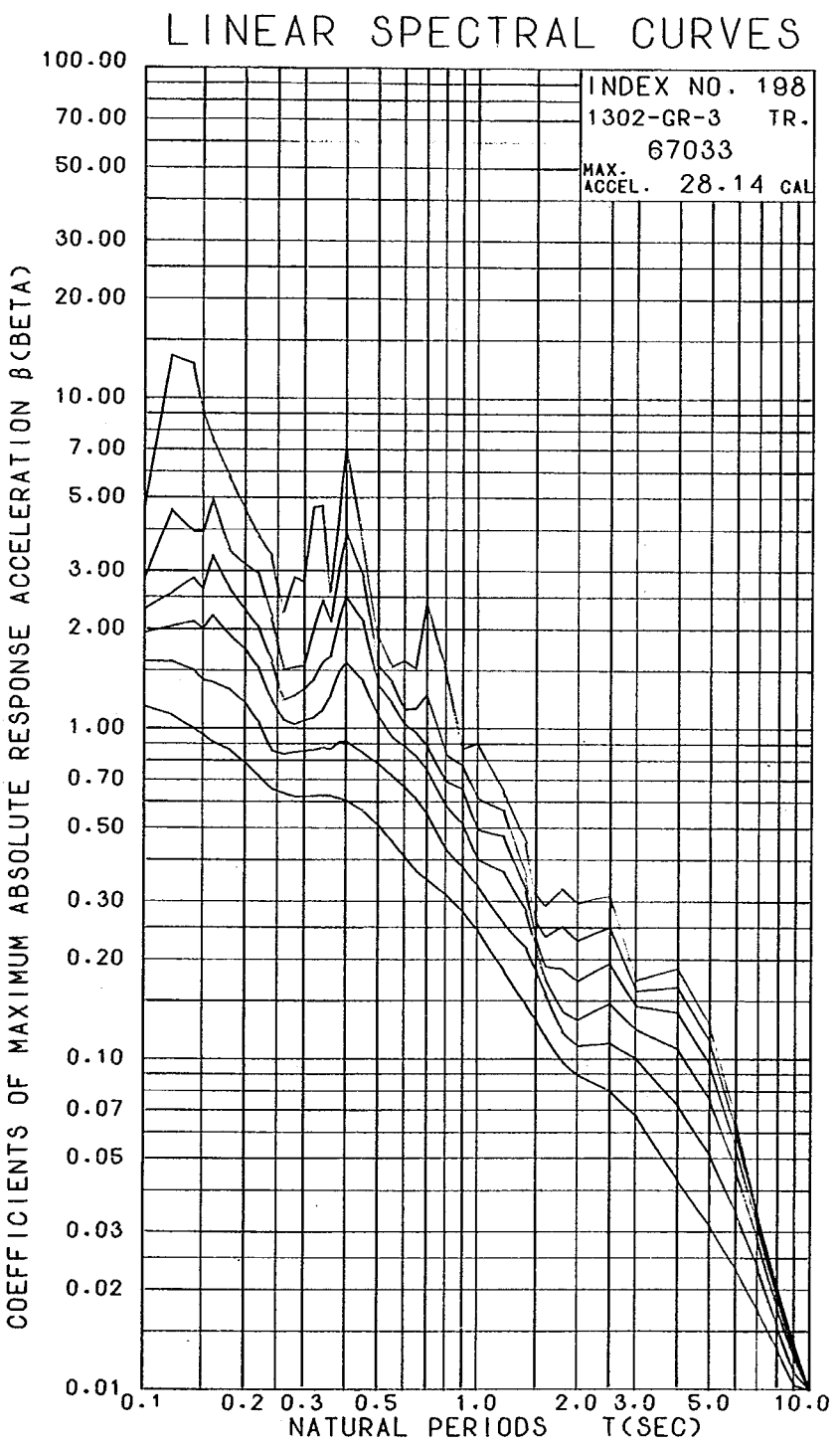


Figure IS-198 Linear Response Spectrum of Earthquake Record with Index Number 198

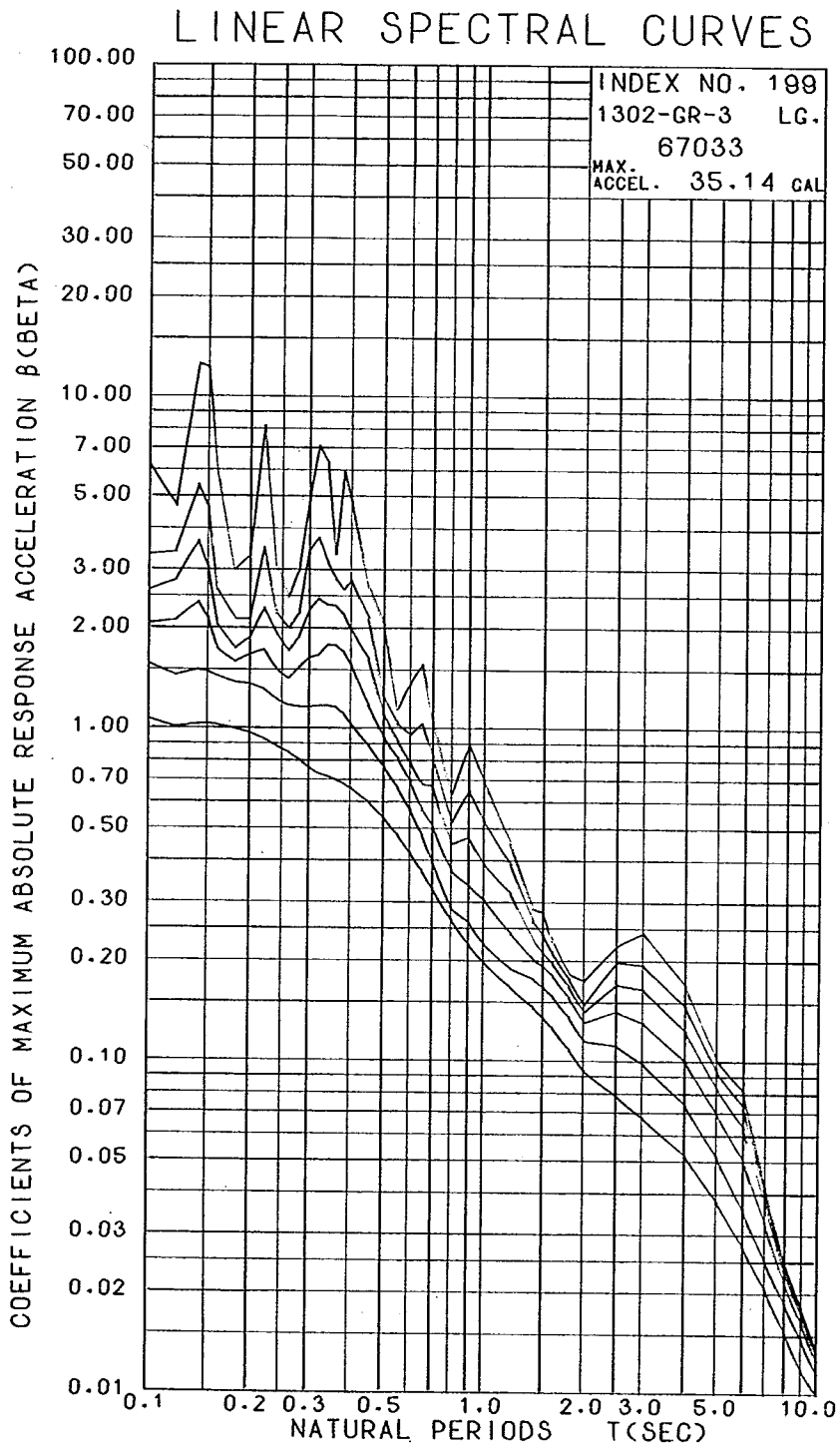


Figure IS-199 Linear Response Spectrum of Earthquake Record with Index Number 199

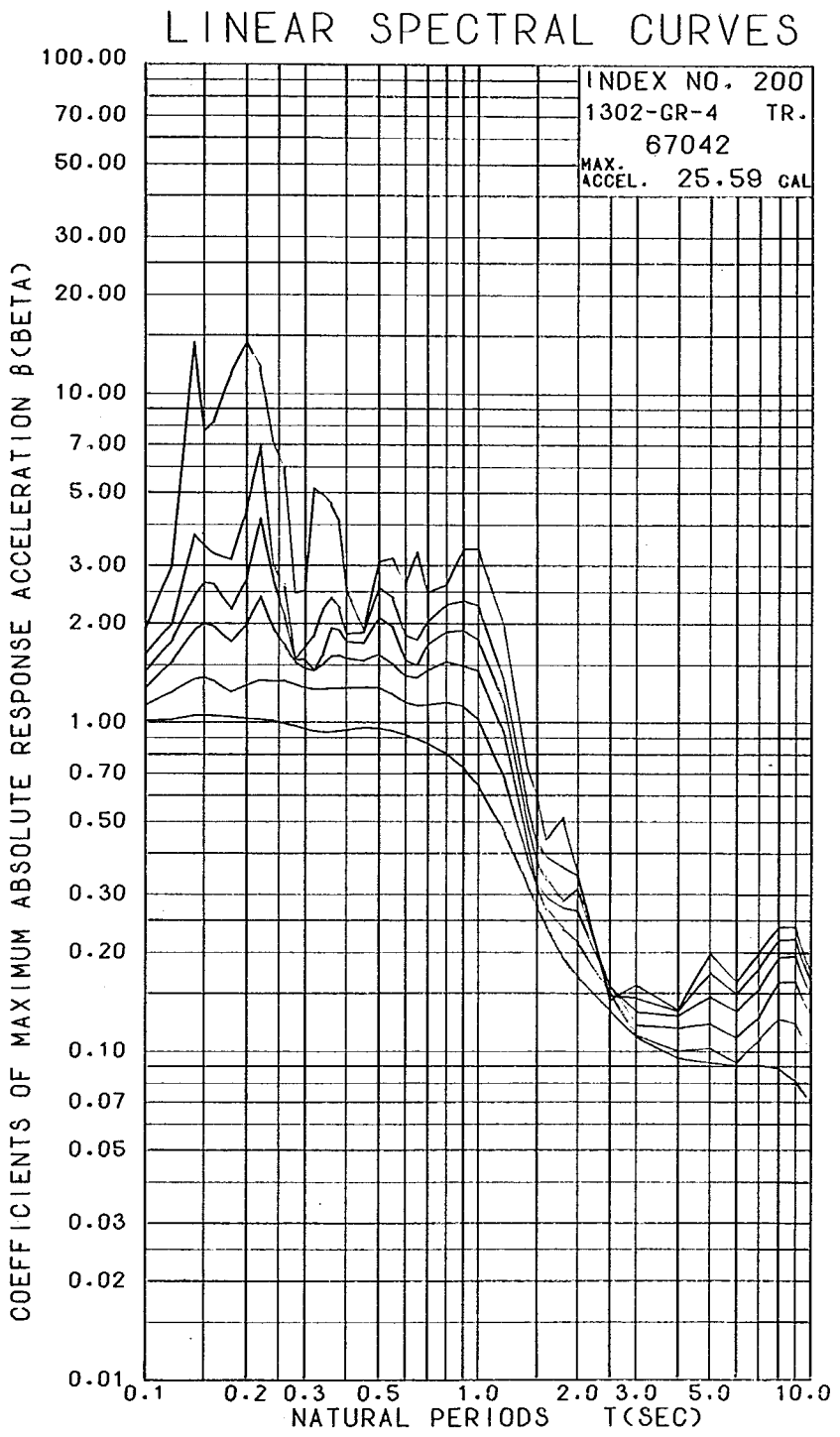


Figure IS-200 Linear Response Spectrum of Earthquake Record with Index Number 200

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2) 振動研究室：地震記録のディジタル数値，№1～3，№4，№5～6，土木研究所資料第876号（昭和48年12月），第877号（昭和48年12月），第1072号（昭和50年12月）

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4) 振動研究室：強震観測の手引き，土木研究所資料第61号，昭和40年6月

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付録－1　強震観測網の現況

強震観測に使用している計器は，大別してＳＭＡＣ型強震計と電磁式強震計とに分類できる。

昭和５２年３月３１日現在の設置状況をＳＭＡＣ型強震計については，Figure　Ⅰ－1－1およびTable Ⅰ－1－1に，また電磁式強震計については，Figure　Ⅰ－1－2およびTable Ⅰ－1－2に示す。

ＳＭＡＣ型強震計の設置箇所数および台数は，それぞれ１２１地点，２４０台となっている。また電磁式強震計は５２地点，４８８成分である。この電磁式強震計は，ＳＭＡＣ型強震計が設置できないような場所に設置される例が多く，特に最近は地表面下の地中部における地震動の観測に使われており，現在５２地点中１７地点（１５８成分）において観測が実施されている。

ＳＭＡＣ型強震計は，１台につき３成分（上下動１成分，水平動２成分）の加速度換振器が備わっている。また電磁式強震計は，設置点毎に成分数は異なっており，大半は加速度換振器であるが一部には土圧計もしくは変位計などが含まれている。

Table Ⅰ－1－3にＳＭＡＣ型強震計および電磁式強震計の観測点数を構造物ごとに分類した結果を示す。

Table I-1-1　SMAC型強震計設置位置一覧表

建設省土木研究所（1977 3.31 現在）

No	観測所名	型式	台数	設置箇所	県名	維持管理	設年	置月
	1. 国道一課							
101	新鳥飼橋	B2	2	地盤・橋脚	千葉	首都国道	41-	3
102	米山大橋	〃	1/2	地盤・基礎・橋脚	新潟	長岡工事	41-	3
103	宮治川大橋	〃	3	地盤・橋脚2	大阪	大阪国道工事	36-	3
104	新利根川橋	〃	2	地盤・橋脚	埼玉	宇都宮国道	42-	2
105	真崎大橋	E2	2	〃	岩手	三陸国道	46-	2
106	草加高架橋	B2	2	地盤・橋脚	埼玉	大宮国道	43-	3
107	宝風橋	Q	3	地盤・橋脚・1F	秋田	秋田工事	51-	3
108	妙高大橋	E2	2	地盤・橋脚	新潟	高田工事	47-	11
109	大平橋	Q	2	〃	愛知	愛知国道	49-	3
100								
111								
112	紀ノ川大橋	B2	2	地盤・橋脚	和歌山	和歌山工事	42-	3
113	平和橋	B2,D	2	〃	岩手	岩手工事事務所	44-	3
114	尾崎高架橋	B2,C	2	〃	兵庫	兵庫国道	38-	3
115								
116								
	2. 国道二課							
201	小谷橋	B2	2	地盤・橋脚	福島	会津若松建設	40-	3
202	魚沼橋	〃	2	〃	新潟	小千谷土木	40-	12
203	横倉沢橋	〃	2	〃	長野	飯山建設	40-	10
204	新八幡橋	〃	2	〃	愛知	平田土木	40-	11
205	石瀬戸橋	〃	2	〃	宮崎	小林土木	40-	3
206	小見川大橋	E2	2	〃	千葉	香取土木	48-	3
207	高津大橋	B2	2	地盤・橋脚	島根	益田土木	42-	3
208								
209	瑞光寺橋	Q	3	地盤2・橋脚	福島	会津若松建設	48-	3
	3. 地方道路課							
301	雄平橋	B2	2	地盤・橋脚	秋田	雄勝土木	41-	12
302	開北橋	〃	2	〃	宮城	石巻土木	41-	3
303	河北橋	〃	2	〃	山形	寒河江建設	40-	3
304	伊達橋	〃	2	〃	福島	保原土木	40-	10
305	港大橋	〃	2	〃	兵庫	豊岡土木	40-	3
306	妙見橋	〃	2	〃	島根	出雲土木	41- 42-	3 3
307	五台山橋	〃	2	〃	高知	高知土木	41-	3
308	板島橋	〃	2	〃	愛媛	宇和島中央土木	41-	3
309	乙女橋	〃	2	〃	熊本	矢部土木	40-	3
310	平井大橋	〃	3	地盤・橋脚2	東京	第5建設	40-	8
311	叠浜大橋	〃	2	地盤・橋脚	三重	伊勢土木	41-	9
312	赤木橋	〃	2	地盤・橋台	和歌山	新宮土木	41-	9
313	石越橋	〃	2	〃	愛媛	丹原土木	42-	3
314	清川橋	〃	2	〃	山形	庄内支庁	43-10 44-	3
315								
316	津軽大橋	D	2	地盤・橋脚	青森	五所川原土木	45-	3
317	瀬詰大橋	B2	2	〃	徳島	川島土木	42-	3
318	新田大橋	E2	2	〃	福岡	御川土木	48-	2
319	四徳大橋	B2	2	地盤・橋脚	長野	伊那建設	41-	12
320	厚岸大橋	E2	2	〃	北海道	北海道庁	46-	11
321	個大橋	〃	3	〃・橋脚2	東京	建設局	50-	3
322	底橋	〃	2	〃・橋脚1	〃	〃	〃	
323	関戸橋	〃	2	〃・〃	〃	〃	〃	
324	尾久橋	〃	2	〃・〃	〃	〃	〃	
325								
326								
	4. 有料道路課							
401	琵琶湖大橋	B2	1	橋脚	滋賀	大津土木	39-	9
402								
403								
	5. 道路企画課							
501	東京湾（富津岬）	B2	1	地盤	千葉	東京湾岸道路	40-10	
502	関門架橋	〃	2	地盤（門司下関）	福岡	北九州国道	40-10	
503	東京湾（観音崎）	〃	1	地盤	神奈川	東京湾岸道路	42-	3
504								
505								
	6. 開発課							
601	室牧ダム	B2	1	堤体	富山	管理所（県）	36-	8
602	橋山ダム	〃	2	地盤・堤体	岐阜	〃（建）	37-	7
603	猿谷ダム	A	1	地盤	奈良	〃（〃）	33-	3
604	大ケ瀬ダム	B2	1	堤体	京都	〃（〃）	39-	8
605	窟花ダム	B2,D	2	地盤・堤体	長野	〃（県）	41- 44-	5 12
606	鶴田ダム	D	2	〃	鹿児島	〃（建）	43-	12
607	椿水ダム	E2	2	堤体（頂，底）	宮城	〃（県）	50-	12
608	大石ダム	E2	1	地盤	新潟	ダム工事（建）	48-	10
609	三保ダム	Q	1	〃	神奈川	〃（県）	49-	5
610	小渋ダム	D	2	地盤・堤体	長野	管理所（建）	43-	12
611	真名川ダム	E2	2	堤（頂，底）	福井	ダム工事（〃）	52-	3
612								
613								
	7. 治水課							
701	淀川堤防	B2	2	地盤・本体	大阪	淀川工事	41-	3
702	大島水門	E2	2	〃・〃	東京	東京都建設局	50-	3
703	新潟大堰	E2	2	地盤・本体	新潟	信濃川下流工事	46-	11
704	小名木排水機場	〃	2	〃・〃	東京	東京都建設局	50-	3
705	中川護岸	〃	2	〃・〃	〃	〃	〃	
706								
707								
708								
709								

No	観測所名	型式	台数	設置箇所	県名	維持管理	設年	置月
	8. 海岸課							
801	有明海	B2	1	地盤	佐賀	筑後川工事	40-	8
802								
803								
804								
805								
806								
	9. 土木研究所							
901	土研千葉支所	B2,Q	2	地盤 2	千葉	土研（千葉）	37- 46-	3 2
902	西新井橋	B2	3	地盤・橋脚2	東京	〃	37-	3
903	昭和大橋	〃	2	地盤・橋脚	新潟	新潟県庁（委）	40-	1
904	新天竜川橋	B2,Q	2	地盤・橋脚	静岡	浜松工事	39-	12
906	斎合橋	B2	3	地盤2・橋脚	長野	長野国道（委）	40-	12
906	土研・鹿島試験所	〃	1	地盤	茨城	鹿島試験所	42-	3
907	平大橋	〃	2	地盤・橋台	福島	磐城国道（委）	43-	1
908	朝比奈川橋	Q	2	〃 〃	静岡	県）西土木（委）	52-	3
909								
910								
911								
912								
913								
	10. 日本道路公団							
1001	浜名大橋	E2	2	橋脚（2）	静岡	浜名バイパス	50-	12
1002	東名・富士川橋	B2	2	地盤・橋脚	静岡	静岡局	42-	3
1003	東名・浜名湖橋	D	2	〃	〃	〃	43- 44-	12 3
1004	境川橋	B2	2	〃	山梨	八王子局	42-	3
1005	笹久保橋	〃	2	〃	東京	〃	42-	3
1006	鶴川橋	〃	2	〃	山梨	〃	42-	3
1007	東名・豊川橋	〃	2	〃	愛知	名古屋局	43-	3
1008	浦戸大橋	E2	3	地盤・橋脚2	高知	大阪支社	46-	5
1009	東名・酒匂川橋	D	2	地盤・橋脚	神奈川		44-	3
1010								
	11. 首都高速道路公団							
1101	目黒区大橋1丁目	E2	2	地盤・橋脚	3号線	工務部	47-	1
1102	杉並区下高井戸5丁目	〃	3	地盤・橋脚2	4号線	〃	47-	1
1103	墨田区堤通り1丁目	〃	2	地盤・橋脚	6号線	〃	47-	1
1104	護国寺管理所	〃	2	1F，9F	5号線	〃	47-	5
1105	江東区塩浜	〃	2	地盤・橋脚	9号線	〃	49-	7
1106	高速線（高川）	〃	3	〃・トンネル・B2F		〃	51-	3
1107	5号線（板橋）	〃	2	地盤・橋脚		〃	52-	3
1108	二ノ橋高架橋	B2	2	地盤・橋脚	2号線	工務部	42-	7
1109	羽田海底トンネル	〃	3	地盤・トンネル2	1号線	〃	43-	2
1110								
1111								
	12. 阪神高速道路公団							
1201	西横堀高架橋	B2	2	地盤・橋脚	1号線	管理部保全課	40-	5
1202								
1203	南津守高架橋	D	2	地盤・橋脚	4号線	管理部保全課	45-	3
1204								
1206								
	13. 北海道開発局							
1301	土木試験所		0		石狩	開発局		
1302	千代田橋	B2	3	地盤・基礎・橋脚	十勝	〃	41-	11
1303	新石狩大橋	〃	2	地盤・橋脚	石狩	〃	42- 43-	8 11
1304	大楽毛橋	〃	2	〃	釧路	〃	42-	10
1305	幌満橋	〃	2	〃	日高	〃	42-	12
1306	旭川大橋	〃	2	〃	石狩	〃	43- 44-	11 3
1307	七蛯橋	〃	2	〃	渡島	〃	43-	12
1308	石狩河口橋	〃	3	地盤・橋脚2	石狩	〃	45-	3
1309	無意根大橋	D	2	地盤・橋脚	〃	〃	44-	10
1310	留里大橋	D-E2	2	〃	網走	〃	45-	3
1311	魏谷橋	D	2	〃	後志	〃	45-	11
1312	海景橋	E2	2	〃	留萌	〃	46- 47-	11 11
1313	庶問橋	B2	2	〃	宗谷	〃	47-	11
1314	志撫子橋	〃	2	〃	網走	〃	47-	12
1315	温根沼橋	Q	3	地盤・橋脚2	根室	〃	50-	11
1316	天塩川河口橋	〃	1	地盤	留萌	〃	50-	12
1317	広尾橋	〃	2	〃・橋台	十勝	〃	52-	3
1318								
	14. 水資源開発公団							
1401	初根川河口堰	D	2	地盤・堤体	千葉	河口堰管理所	44-	3
1402	寺内ダム	E2	2	堤頂・ギャラリー	福岡	ダム管理所	52-	3
1403								
	15. 本州四国連絡橋公団							
1501	岩屋	B	1	地盤	兵庫	本四公団	37-	10
1502	明石	B2	〃	1F	〃	〃	〃	
1503	大三島	B	〃	地盤	愛媛	〃	移	設
1504	鳴門	〃	〃	〃	徳島	〃	38-	3
1505	番ノ洲	〃	〃	〃	香川	〃	移	設
1506	岩松	〃	〃	1F	〃	〃	〃	
1507								
	16. 下水道部							
1601	斎合処理場	E2	2	地盤・構造物	東京	東京都下水道局	51-	2
1602	13号埋立地（江東）	〃	〃	〃	〃	〃	〃	
1603	南砂ポンプ場	〃	〃	地盤（2）	〃	〃	〃	
1604	小菅処理場	〃	〃	地盤・構造物	〃	〃	52-	3
1605	谷遠川幹線	〃	〃	地盤（2）	〃	〃	〃	
1606								

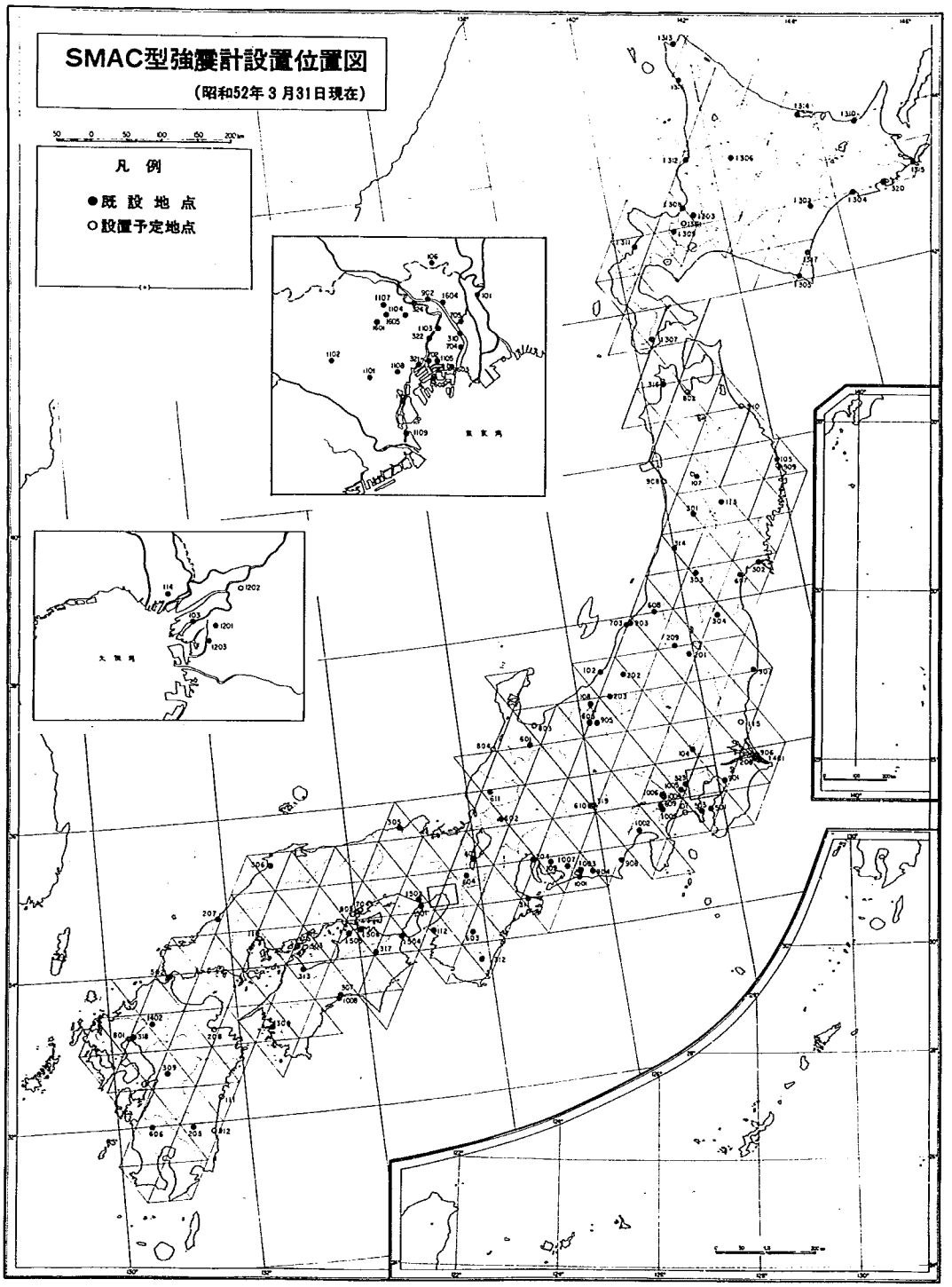


Figure I-1-1　SMAC型強震計設置位置図（昭和52年3月31日現在）

Table I-1-2　電磁型強震計設置位置一覧表

番号	観測所名	成分数	維持管理	設置年	番号	観測所名	成分数	維持管理	設置年
1	湯田ダム	6	東北地建湯田ダム管理所	1965	32	観音崎（地中）	9	関東地建東京湾岸道路調査事務所	1971
2	皆瀬ダム	6	秋田県皆瀬ダム管理事務所	1963	33	別海橋（地中）	6	北海道開発局	1971
3	鳴子ダム	10	東北地建鳴子ダム管理所	1957 1973	34	静内橋（地中）	6	〃	1971
4	川俣ダム	13	関東地建川俣ダム管理所	1964 1974	35	郡ダム（地中）	9	千葉県開発庁	1972 1973
5	室牧ダム	12	富山県室牧ダム管理事務所	1961	36	松原下筌ダム	8	九州地建松原下筌ダム管理所	1971
6	笹生川ダム	10	福井県笹生川ダム管理事務所	1966	37	阿木川ダム	3	水資源開発公団	1972
7	横山ダム	12	中部地建横山ダム管理所	1962	38	新飯野川橋	12	東北地建仙台工事事務所	1972 1973
8	天ケ瀬ダム	12	近畿地建天ケ瀬ダム管理支所	1964	39	境水道大橋	11	日本道路公団	1972
9	猿谷ダム	5	近畿地建猿谷ダム管理所	1957	40	大阪・南港（地中）	12	近畿地建阪神国道工事事務所	1973.3 1974.3
10	△綾北ダム	6	宮崎県綾北ダム管理事務所	1961	41	藤原ダム	3	藤原ダム管理所	1973.3
11	新葛飾橋	6	関東地建首都国道工事事務所	1967	42	本州四国・今治（地中）	12	本州四国連絡橋公団	1973.3
12	吸河大橋	6	中部地建静岡国道工事事務所	1959	43	釧路（釧網跨線橋）	9	北海道開発局	1973.11
13	△吉田大橋	6	中部地建名古屋国道工事事務所	1959	44	関門橋（地中・主塔）	31	日本道路公団	1974.3
14	本州四国・垂水（地中）	16	本州四国連絡橋公団	1972	45	横浜・扇島（地中）	12	関東地建東京湾岸道路調査事務所	1974.3
15	〃　坂出（地中）	12	〃	1973	46	広島大橋	10	日本道路公団	1974.3
16	琵琶湖大橋	6	滋賀県大津土木事務所	1963	47	荒川堤防	9	土木研究所	1973.3
17	若戸大橋	18	日本道路公団	1961	48	大阪・淀川堤防	9	土木研究所	1974.3
18	有明海締切堤（大矢野島）	3	九州地建熊本工事事務所	1963	49	豊平峡ダム	12	北海道開発局	1972.9
19	豊川放水路堤防	8	中部地建豊橋工事事務所	1966	50	大雪ダム	15	〃	1974.11
20	利根川堤防	9	土木研究所	1968	51	高瀬堰	6	大田川工事々務所	1974.9
21	太田川堤防	8	中国地建太田川工事事務所	1965	52	荻形ダム	2	建設省東北地建	1967.2
22	△長野（落合橋付近地中）	9	土木研究所	1966	53	阿蘇（立野）	3	熊本工事々務所	1975.12
23	△平井大橋	8	東京都第五建設事務所	1967	54	金城埠頭（地中）	9	名四国道	1975.11
24	四十四田ダム	12	東北地建四十四田ダム管理所	1967	55	深江（地中）	6	阪神国道工事	1977.3
25	尾道大橋	11	日本道路公団	1968	56	花畑雨水幹線（地中）	3	東京都下水道局	〃
26	犀川ダム	10	石川県犀川ダム管理事務所	1968					
27	矢作ダム	13	中部地建矢作ダム管理所	1970					
28	富津岬（地中）	9	関東地建東京湾岸道路調査事務所	1970					
29	川崎・浮島公園（地中）	12	〃　〃	1970					
30	釜房ダム	6	東北地建釜房ダム管理所	1970					
31	厚岸大橋	10	北海道庁	1971					

△印は観測中止

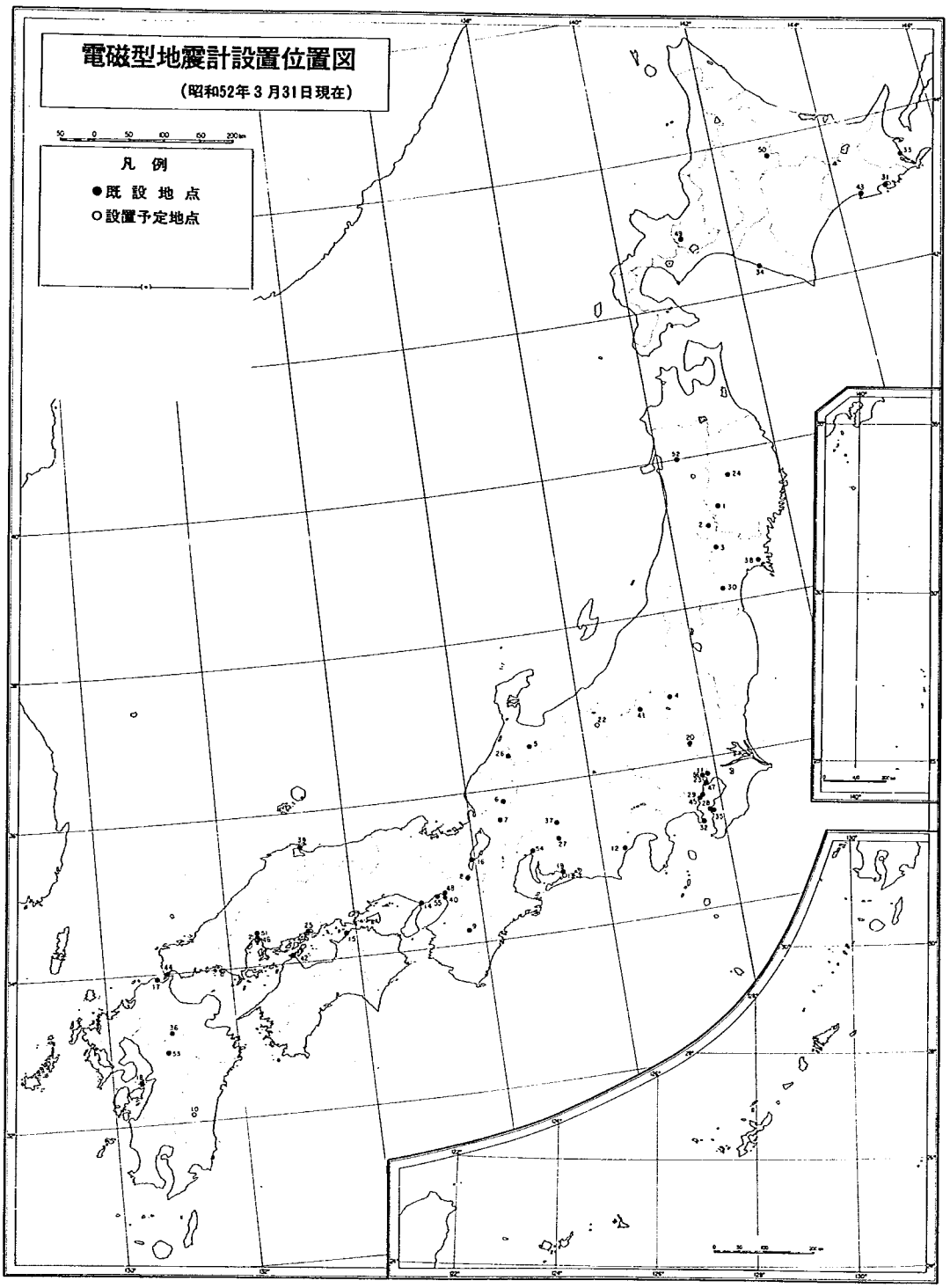


Figure I-1-2　電磁型強震計設置位置図（昭和52年3月31日現在）

Table I-1-3 構造物ごとの強震計観測地点数

構造物の種類		SMAC型強震計			電磁型強震計	
		観測地点	台数		観測地点	成分数
			地盤	構造物		
橋梁		85	85	96	14	151
地下構造物		5	7	3	1	3
トンネル		2	2	4	0	0
ダム	コンクリート	10	6	10	15	134
	フィル	2	1	2	5	45
河川構造物		6	6	6	6	49
海岸 〃		0	0	0	0	0
構造物予定地点		9	7	2	9	100
その他		2	3	0	2	6
合計		121	117	123	52	488

付録－2　強震計の特性

本資料に収録した地震動の加速度記録は，ＳＭＡＣ－Ａ型，ＳＭＡＣ－Ｂ型，ＳＭＡＣ－Ｂ２型，ＳＭＡＣ－Ｄ型，ＳＭＡＣ－Ｅ２型，ＳＭＡＣ－Ｑ型，電磁式強震計のいずれかの型式の地震計により記録されたものである。

これらの地震計の公称の特性および構造の概略をTable　Ⅰ－２－１～Table　Ⅰ－２－４，およびFigure　Ⅰ－２－１～Figure　Ⅰ－２－４に示す。

ここで

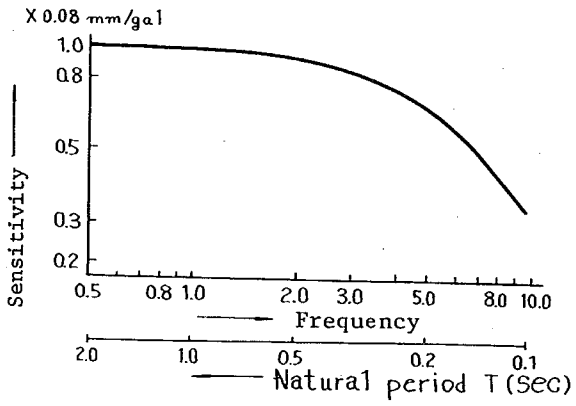
Table　Ⅰ－2－1　　ＳＭＡＣ－Ｂ２型強震計の特性
Figure　Ⅰ－2－1　　ＳＭＡＣ－Ｂ２型強震計の構造

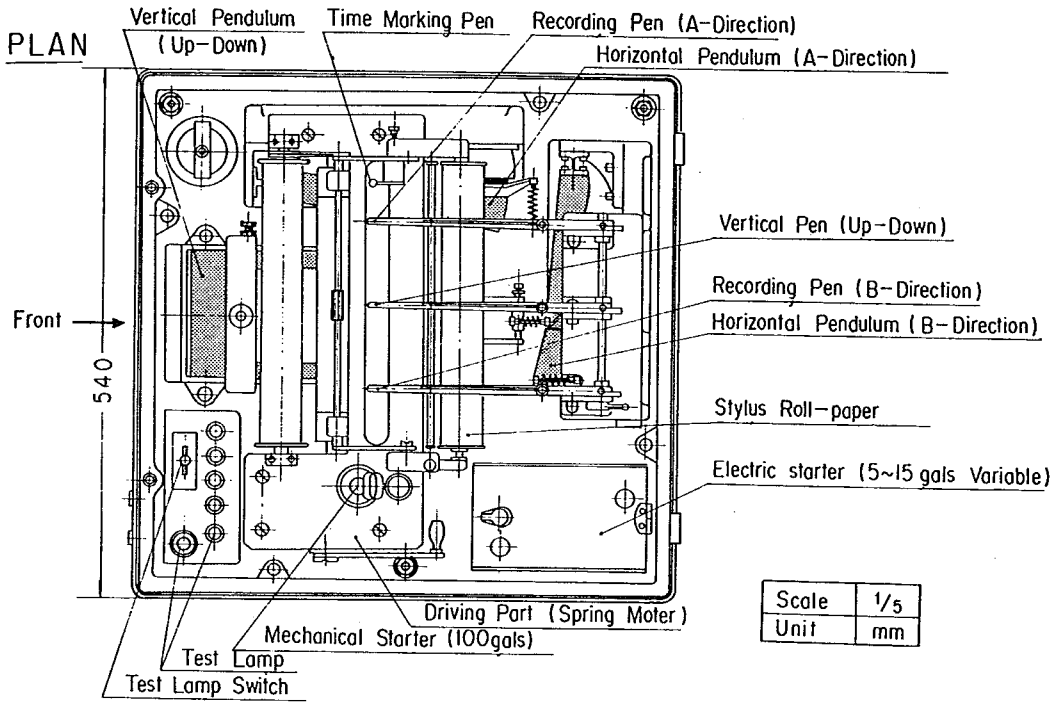
Table　Ⅰ－2－2　　ＳＭＡＣ－Ｄ型　強震計の特性
Figure　Ⅰ－2－2　　ＳＭＡＣ－Ｄ型　強震計の構造

Table　Ⅰ－2－3　　ＳＭＡＣ－Ｑ型　強震計の特性
Figure　Ⅰ－2－3　　ＳＭＡＣ－Ｑ型　強震計の構造

Table　Ⅰ－2－4　　電磁式強震計の特性
Figure　Ⅰ－2－4　　電磁式強震計の構造

Table I-2-1 Strong-Motion Accelerograph, SMAC-B2

Parts	Specifications and Characteristics
Pendulum	3-Component accelerometer
	Natural period : 0.14 sec.
	Sensitivity : 12.5 gals per mm on the paper
	Damping : critical damping (h=1)
	Recording rang : 6 ~ 500 gals
	Magnitication : x 16 (mechanical)
Recording system	Recording paper : scratching stylus roll-paper
	Recording speed : 10 mm per sec.
	Recording pen : sapphire point
Driving part	Spring motor
	Operating for about 3 min.
Electric self-starter	Vertical component accelerometer
	Natural period : 0.3 sec.
	Sensitivity at starting : from 5 to 15 gals
Mechanical self starter	Sensitivity at starting : about 100 gals
Time marking	Interval : 1 sec.
Checking device	Pilot lamp and buzzer
Electric power supply	Dry cell 3V x 4 (JIS No.FM 5)
Console	Aluminum alloy
Dimension	540 (width) x 540 (length) x 370 (height) mm
Net weight	Approximately 100 kg
Frequency Characteristics	



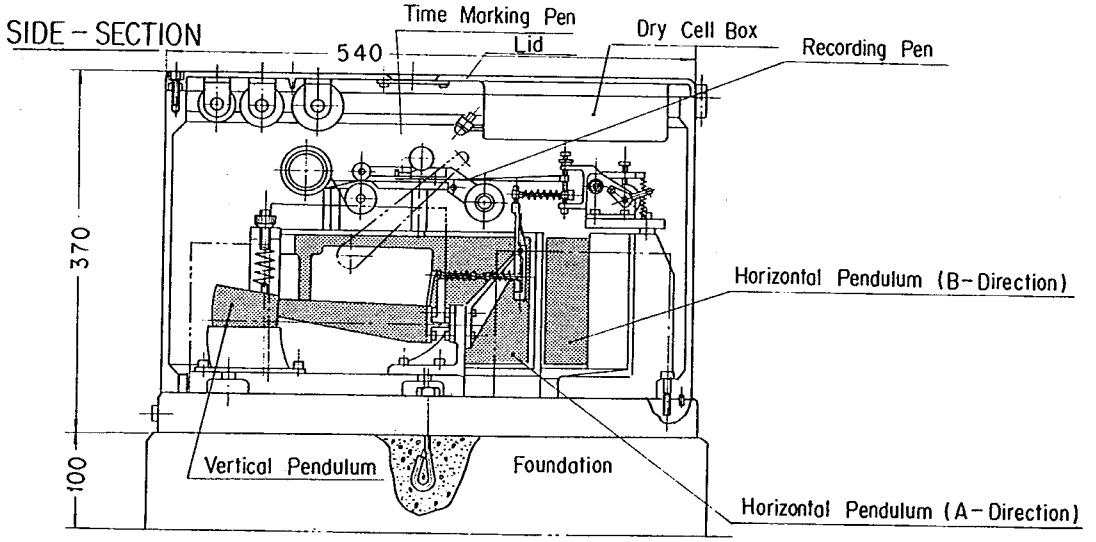
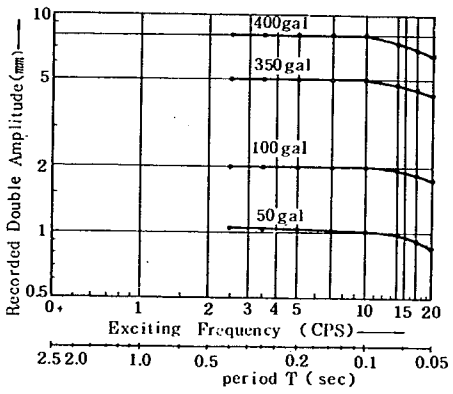


Figure I-2-1
Illustration of Strong-Motion Accelerograph, SMAC-B2

Table I-2-2 Strong-Motion Accelerograph, SMAC-D

Parts	Specifications and Characteristics
Pendulum	3-Component accelerometer
	Natural period : 0.05 sec.(20 cps)
	Sensitivity : 5mm/500gals on scratch-record-film. 40mm/500gals (by multiplying optically the film by 8)
	Damping : air damper h = 0.5 ~ 0.7
	Recording range : 5 ~ 500 gals
	Frequency range : 0 ~ 20 cps
Recording system	Recording paper : scratching stylus scratch-record-film
	Recording speed : 5 mm per sec.
	Recording pen : diamong point
Driving part	Micro-motor (DC. 12 Volts)
	able to start 100 times, operates for about 1 min. 30 sec. after each starting
Electric-self-stater	Vertical component accelerometer
	Natural period : 0.3 sec.
	Sensitivity at starting : 5 gals
Time marking system	5 pulse / sec, Electric timer
Electric power supply	Nickel-Cadmium Battery (DC 12V., 3.5A, with Automatic charger or AC. 100V together)
Dimension	450 (width) x 450 (length) x 350 (height) mm
Net weight	Approximately 70 kg
Frequency Characteristics	

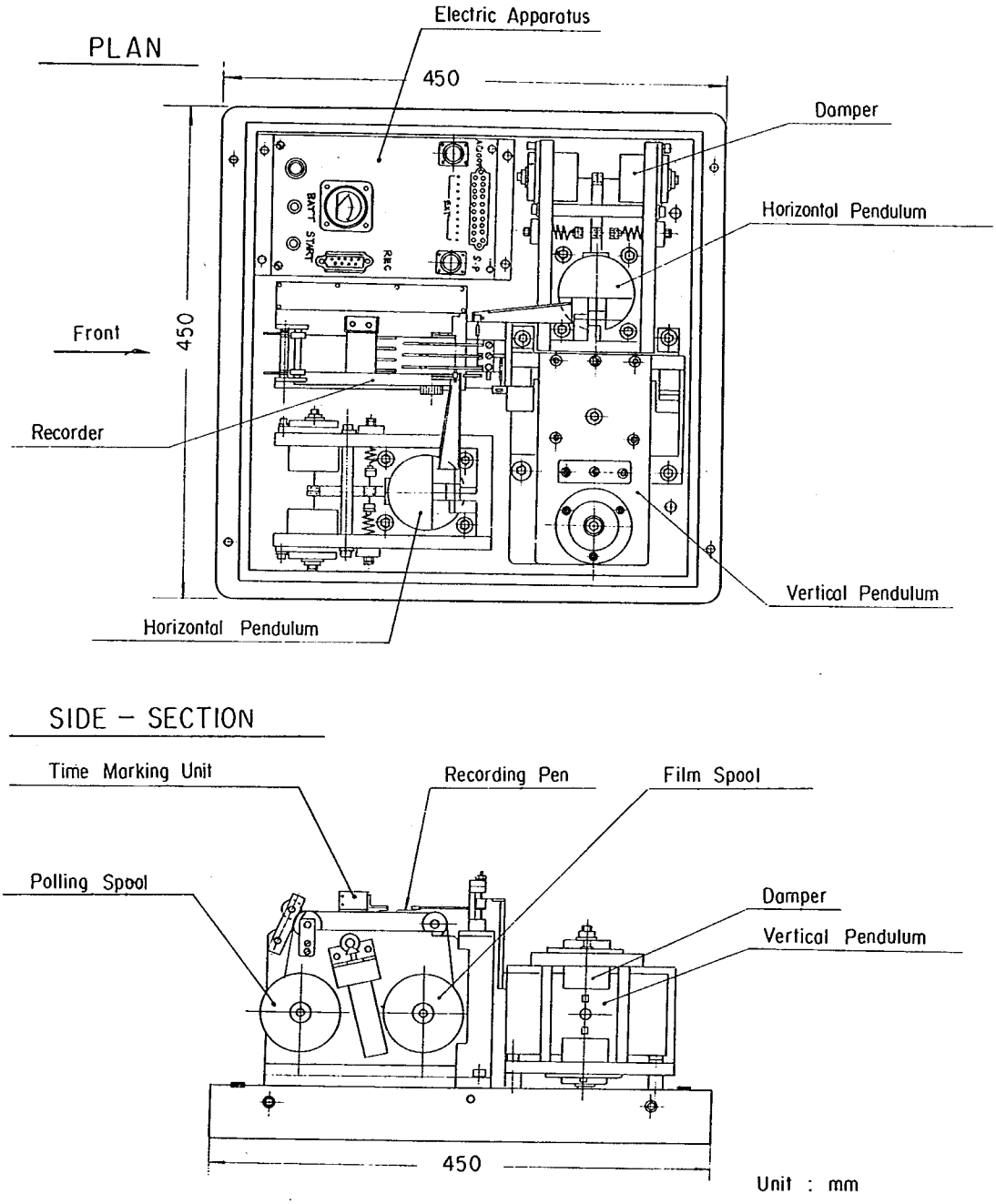
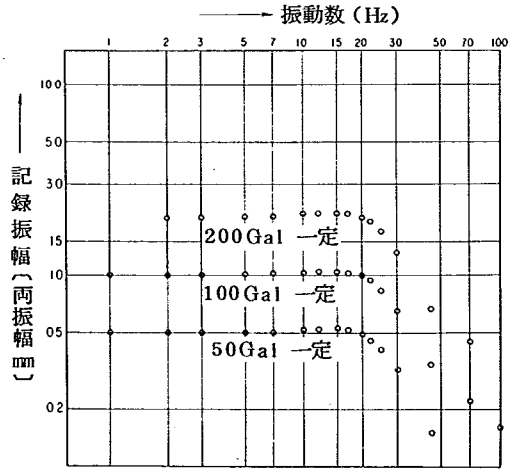
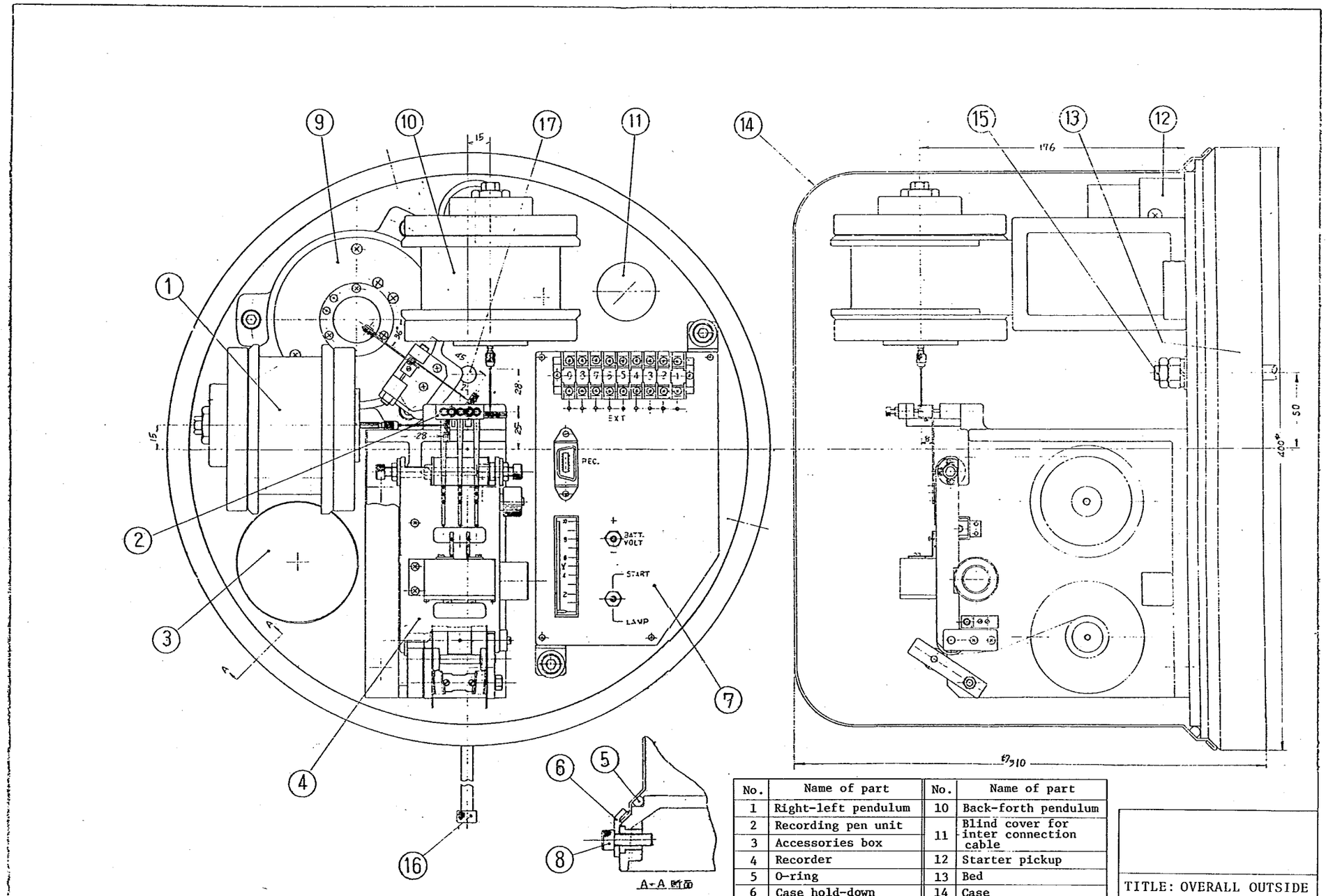


Figure I-2-2
Illustration of Strong-Motion Accelerograph, SMAC-D

Table I-2-3 Strong-Motion Accelerograph, SMAC-Q

Parts	Specifications and Characteristics	
Pendulum	3-Component Accelerometer	
	Natural Period:	0.05 sec. (20 cps)
	Sensitivity:	5 mm/1,000 gals on scratch-record-film. 40 mm/1,000 gals by multiplying optically the film by 8.
	Damping:	Air damper h = 0.6
	Recording Range:	5 ~ 1,000 gals
	Frequency Range:	0 ~ 20 cps
Recording system	Recording Paper:	Scratching Record-Film ϕ 35mm × 45m
	Recording Film:	5mm per sec.
	Number of Recording Pen:	3 for recording, 1 for time marker and 1 for base line
Driving part	Micro-water (±DC 6V)	
	Operates for about 90 seconds for each starting	
Electro-self starter	Vertical Component Accelerometer Natural Period: 0.22 sec. (4.5 cps) Sensitivity at starting: 10 gals	
Time marking system	2 pulse/sec.	
Electric power supply	Dry Battery	
Dimension	ϕ400mm × 320mm (height)	
Net weight	Approximately 35 Kg	
Frequency characteristics		



No.	Name of part	No.	Name of part
1	Right-left pendulum	10	Back-forth pendulum
2	Recording pen unit	11	Blind cover for inter connection cable
3	Accessories box		
4	Recorder	12	Starter pickup
5	O-ring	13	Bed
6	Case hold-down	14	Case
7	Electric device	15	Anchor bolt M10x160
8	Case set screw	16	Carrying bolt M8x100
9	Up-down pendulum	17	Anchor bolt hole 10.5ϕ

TITLE: OVERALL OUTSIDE VIEW

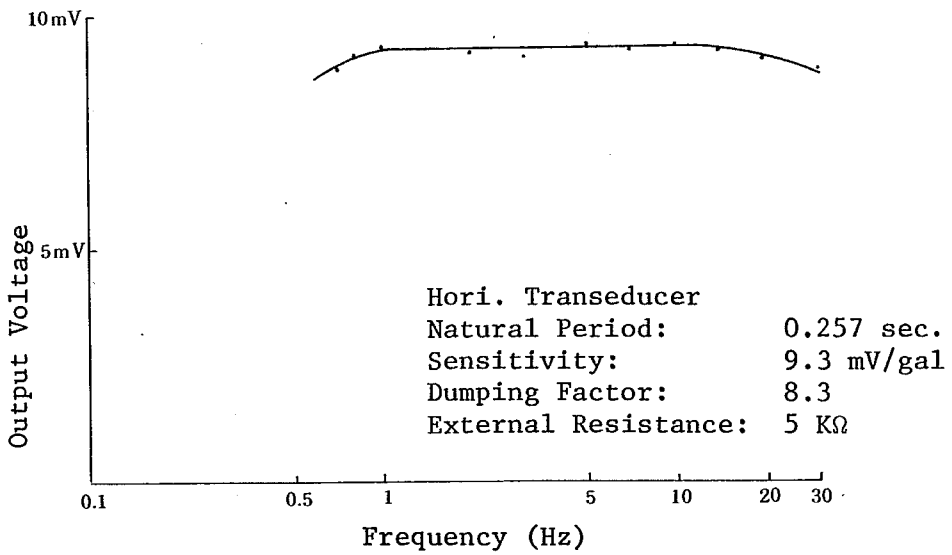
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Figure I-2-3 Strong-Motion Accelerograph, SMAC-Q

Table I-2-4 Bore-hole Seismograph (TYPE-3203)

Parts	Specifications and Characteristics
Transducer	3-Component Accelerometer
	Natural Period: 0.25 sec. (4 cps) Sensitivity: 7mV/gal Damping Factor: h ≃ 10 Recording Range: 400 gals Frequency Range: 0.5 ~ 30 cps
Test Coil	Coil Resistance: 2 KΩ Usage : able to vibrate a pendulum of transeducer with oscilator
Declinometer	Principle : Measuring angles from North with a Optical system and Magnetic Compass Accuracy : ±5 degree
Water-proof	30 Kg/cm^2 (at the joint between cable and case)
Dimension and Net Weight	Total length: 2,230 mm Max. Outside Diameter: 130 mm Length of Declinometer: 790 mm Length of Horizontal Transeducer: 370 mm Length of Vertical Transeducer: 390 mm Net Weight: Approximately 110 Kg



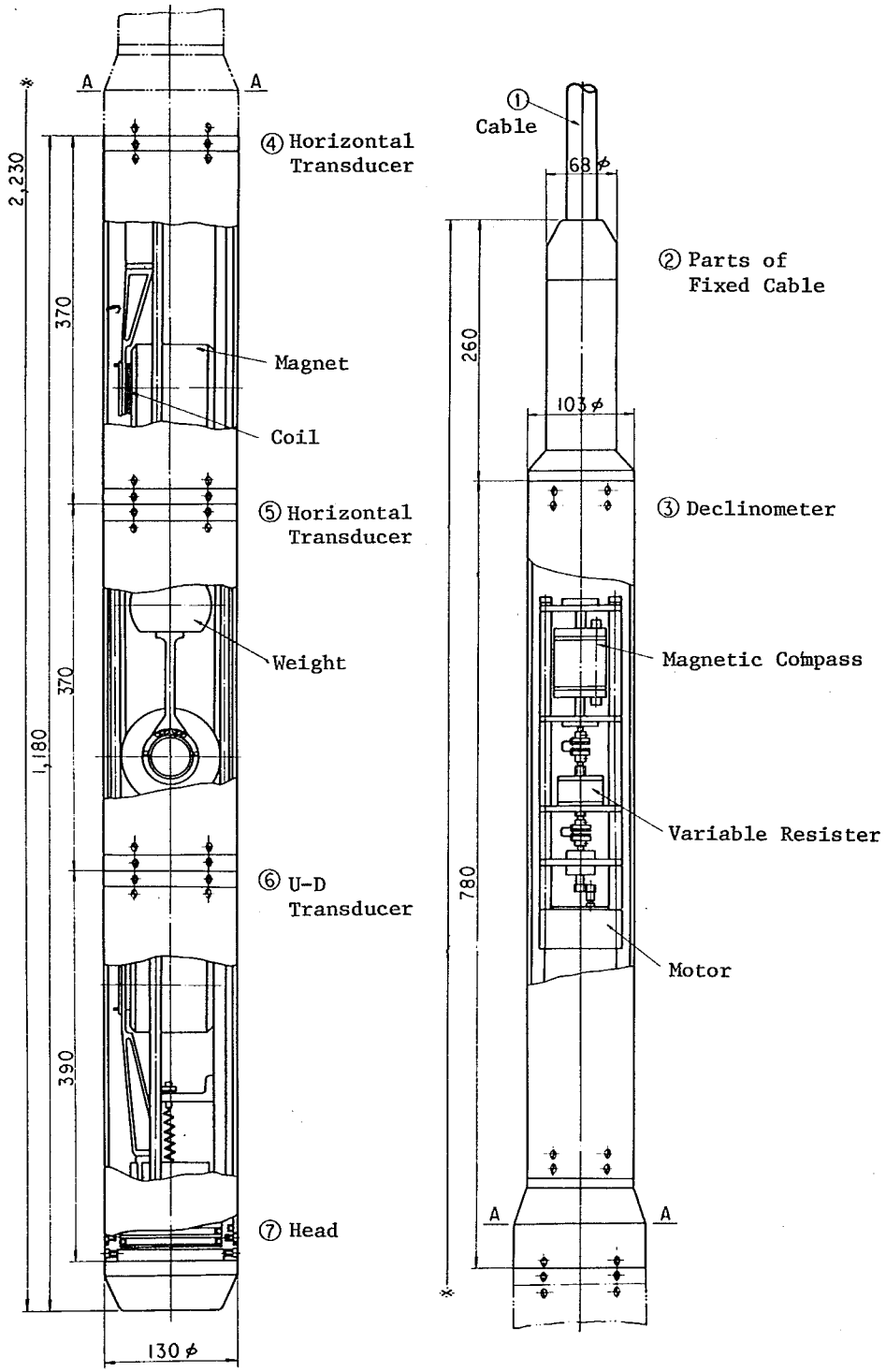


Figure I-2-4 Bore-hole Seismograph (Type-3203)

付録－3　記録の補正

本資料に収録した地震動記録はＳＭＡＣ型強震計もしくは電磁式強震計により記録紙上にアナログ量として収録された波形を自動座標変換機（ディジタイザー）により読み取った後に次の２種類の補正を施したものである。

1）中心軸（基線）の補正

ディジタル化した記録の中心軸を最小二乗法により定めこの中心軸が加速度振幅軸の基線となるよう補正したものである。

2）円弧補正

ＳＭＡＣ型強震計では，記録ペンの構造上，加速度記録はFigure I－3－1に示すように，円弧状の曲線を描く。ディジタル化の際には，見かけの加速度振幅$\overline{A'\ t'}$を読み取ってこれを時刻t'での加速度値としているが，加速度振幅が大きくなるにつれて，真の加速度振幅$\overline{A\ t}$およびこれの生ずる時間ｔとの間の誤差が大きくなる。このような点を正しく補正するために，ＳＭＡＣ型強震計で採取された地震動の記録に対しては，次のような円弧補正を加えている。

Figure I－3－1において，見かけの時刻t'において見かけの加速度振幅a' gal（$\overline{A'\ t'}$）をもつ任意の点A'は，　正しくは時刻tにおける加速度振幅a gal（$\overline{A\ t}$）の点Ａに対応しなければならない。したがって今，紙送り速度vが一定であると仮定すると時間軸の補正値Δtおよび加速度振幅の補正値Δaは次式のようになる。

$$\Delta t \equiv t' - t = R(1-\cos\theta)/v \quad \cdots\cdots (A2-1)$$

$$\Delta a \equiv OA - OA' = R\sin\theta - R\theta \quad \cdots\cdots (A2-2)$$

ここで

t：正しい時刻

t'：見かけの時刻

R：アーム長

v：紙送り速度

θ：　$\sin(\overline{a'/R})$ ……（Ａ２－３）

一般には（Ａ２－３）式で与えられるθは極めて小さいため（Ａ２－２）式で与えられる加速度振幅に対する補正量Δaは，微少な値となるので（Ａ２－１）式で与えられる時間軸の補正(Δt)のみを加えることとしている。

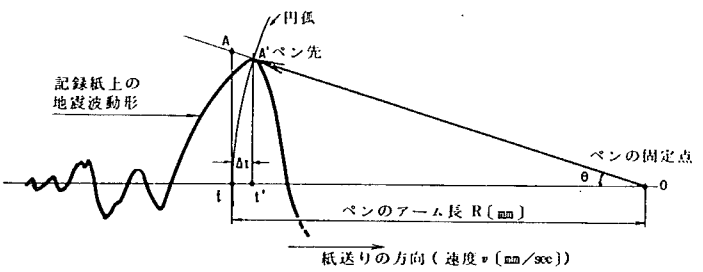


Figure I-3-1　Arc-Correction of Acceleration Measured by SMAC Type Seismograph

付録－4　加速度応答スペクトル

Figure I−3−2に示す質量m，ばね係数k，減衰係数cからなる1自由度の振動系が$\ddot{z}$なる地震動の加速度を受けた場合の運動方程式は，次式で表わされる。

$$m\ddot{y} + c\dot{y} + ky = -m\ddot{z} \quad \cdots\cdots\cdots\

附録－5　英文解説 (Appendix - 5 English Description)

Introductory Remarks

This is the first of a series of reports presenting earthquake acceleration motions measured on structures (excluding building structures) and on grounds near the structures in Japan. This issue contains 200 components of earthquake motions measured between 1963 and 1967, together with linear response spectra of the records.

Description of Figures and Tables

Table-1 shows the earthquake motions contained in this issue of report. Identifications in Table-1 are as follows.

INDEX NO.	Index Number of earthquake motions identified at the Public Works Research Institute
RECORD NO.	Number of record presenting three informations, i.e., STATION No., INSTRUMENT and SEQUENCE NO., where STATION NO. : Number representing the place where accelerometers are installed. INSTRUMENT : Identification representing the point where accelerometers are set. For an instance, GR: ground surface PI: pier top of bridge AB: abutment of bridge DA: dam SEQUENCE NO.: Number representing the sequence of earthquake motion recorded at the particular accelerometer
NAME OF STRUCTURE	Name representing the place or region where accelerometers are installed. Generally the name of bridges or dams on which accelerometers are installed is used. Direction of the accelerometer is expressed as follows NS, EW : North-south, East-west LG, TR : Longitudinal and Transverse axis to the principal axis of structure, respectively UD : Up Down

MAXIMUM ACCELERATION	Unit: gal
TIME	Time when the maximum acceleration is achieved.
DURATION TIME	Unit: seconds
EARTHQUAKE NUMBER	Index number of earthquake identified. Contains two informations, i.e., year and sequence of occurrence of earthquakes. In the case when these informations are uncertain, the earthquake number is left blank.
W.P.	Number of page where earthquake record is presented.
L.P.	Number of page where response spectra of the record is presented.

Table-3 shows informations of earthquake records. Identifications in Table-3 are as follows.

STATION NO.	refer to Table-1
INSTRUMENT	refer to Table-1
SEQUENCE NO.	refer to Table-1
HORIZONTAL-A VERTICAL HORIZONTAL-B	three components of record
NAME OF STRUCTURE	refer to Table-1
LONGITUDE LATITUDE	Longitude and latitude of the point where accelerometers are installed.
Y.M. INSTALLED	Time (Year and month) when the accelerometers were installed
TYPE	Type of accelerometer
MACHINE NO.	Number of products (machine)
EPICENTRAL DISTANCE	Unit: km

Table-2 shows the informations of earthquake whose records are expressed in Table-1. Identifications in Table-2 are as follows.

EARTHQUAKE NO.	Refer to Table-1
EPICENTRAL REGION	———————
EARTHQUAKE TIME AND DAY	The time when earthquake occured. Express in the sequence of year, month, day, hour and minute.
LONGITUDE LATITUDE	Longitude and latitude of epicenter.
DEPTH	Unit: km
MAGNITUDE	Magnitude of earthquake in Richter scale