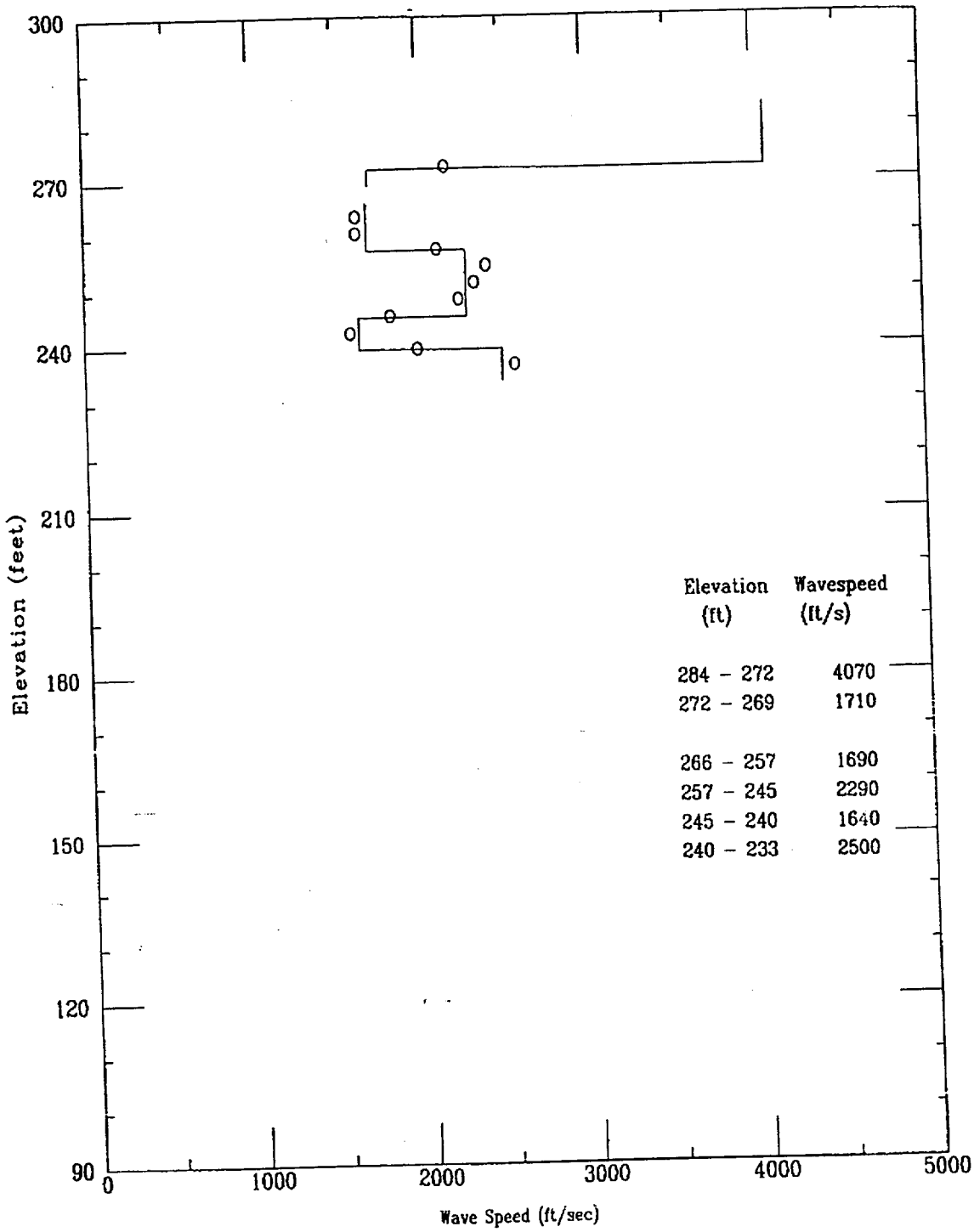
CPT-159 APPLIED RESEARCH ASSOCIATES, INC. 02/17/98

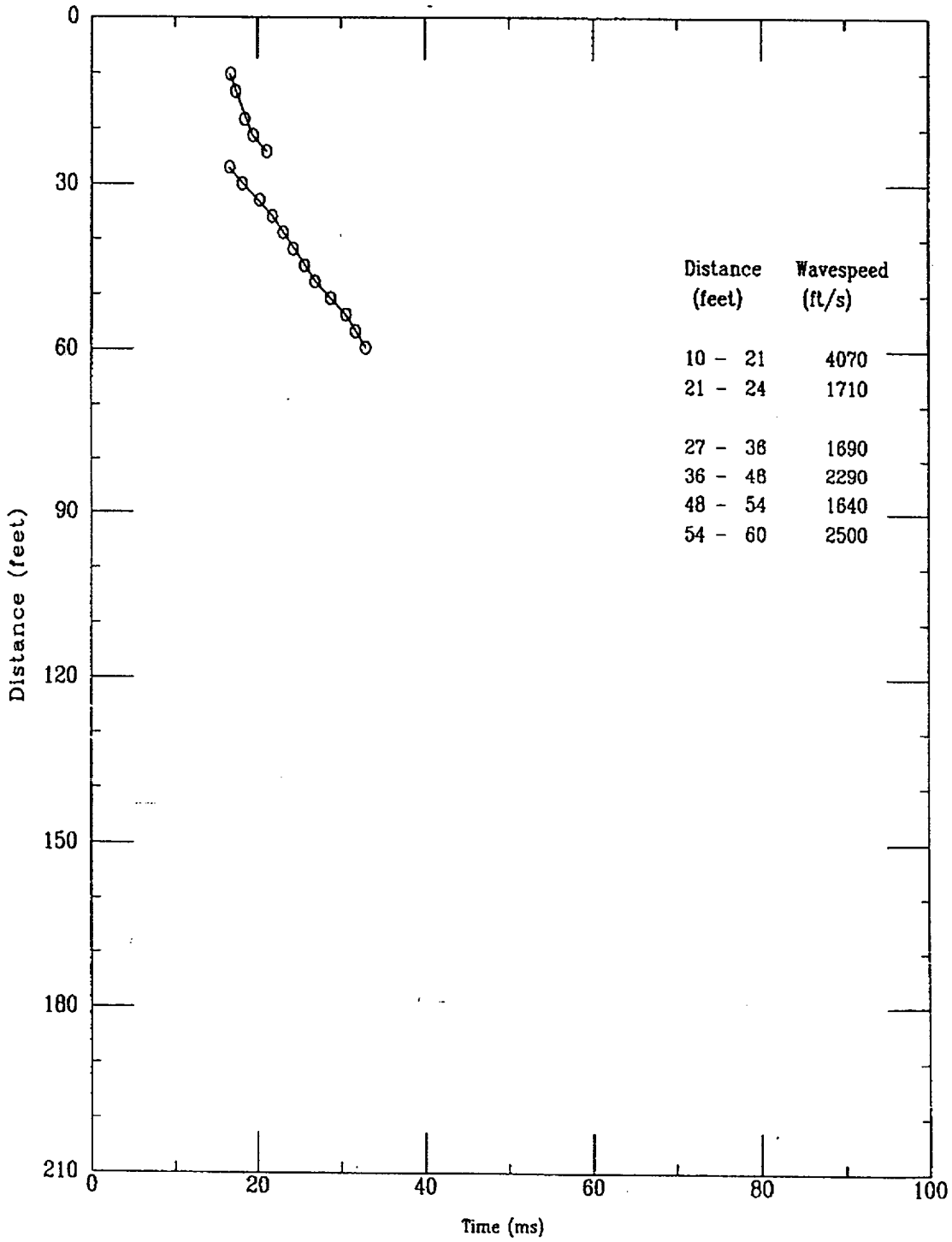
Compression Wave Speeds



File 417f801S

CPT-159 APPLIED RESEARCH ASSOCIATES, INC. 02/17/98

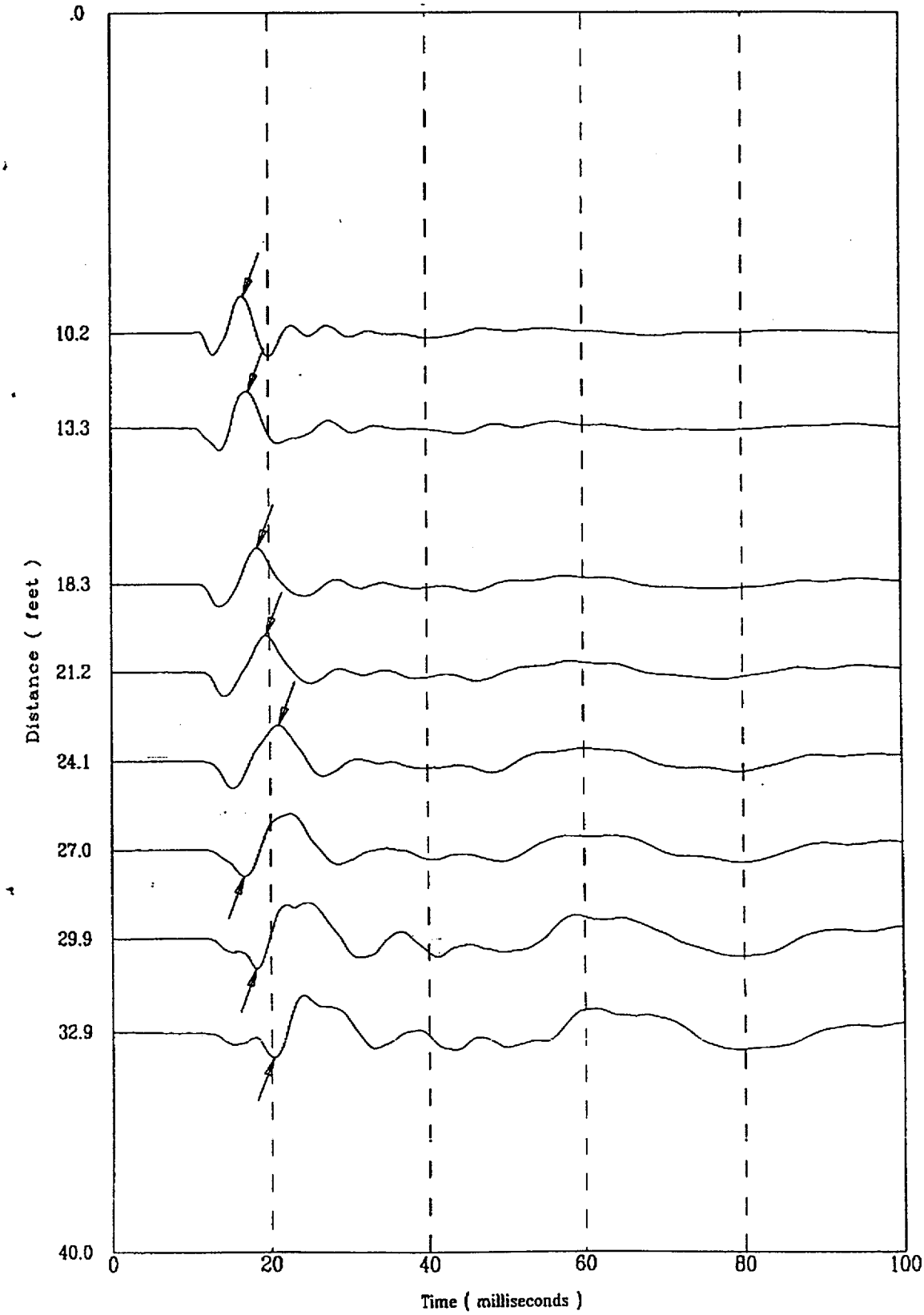
Compression Wave Time of Peak



File 417f801S

Applied Research Associates, Inc.
CPT-159

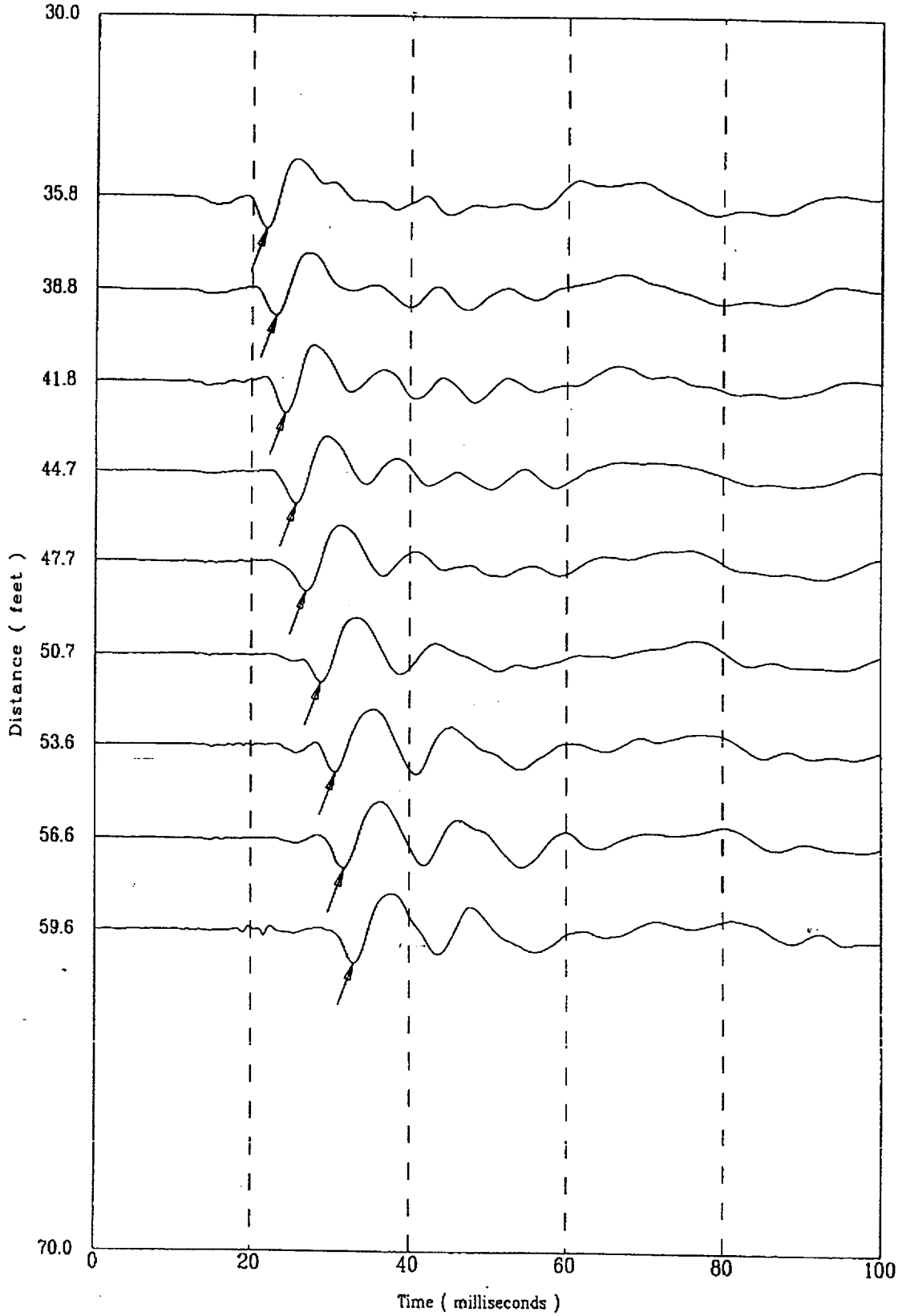
P Wave
02/17/98



17f801S

Applied Research Associates, Inc.
CPT-159

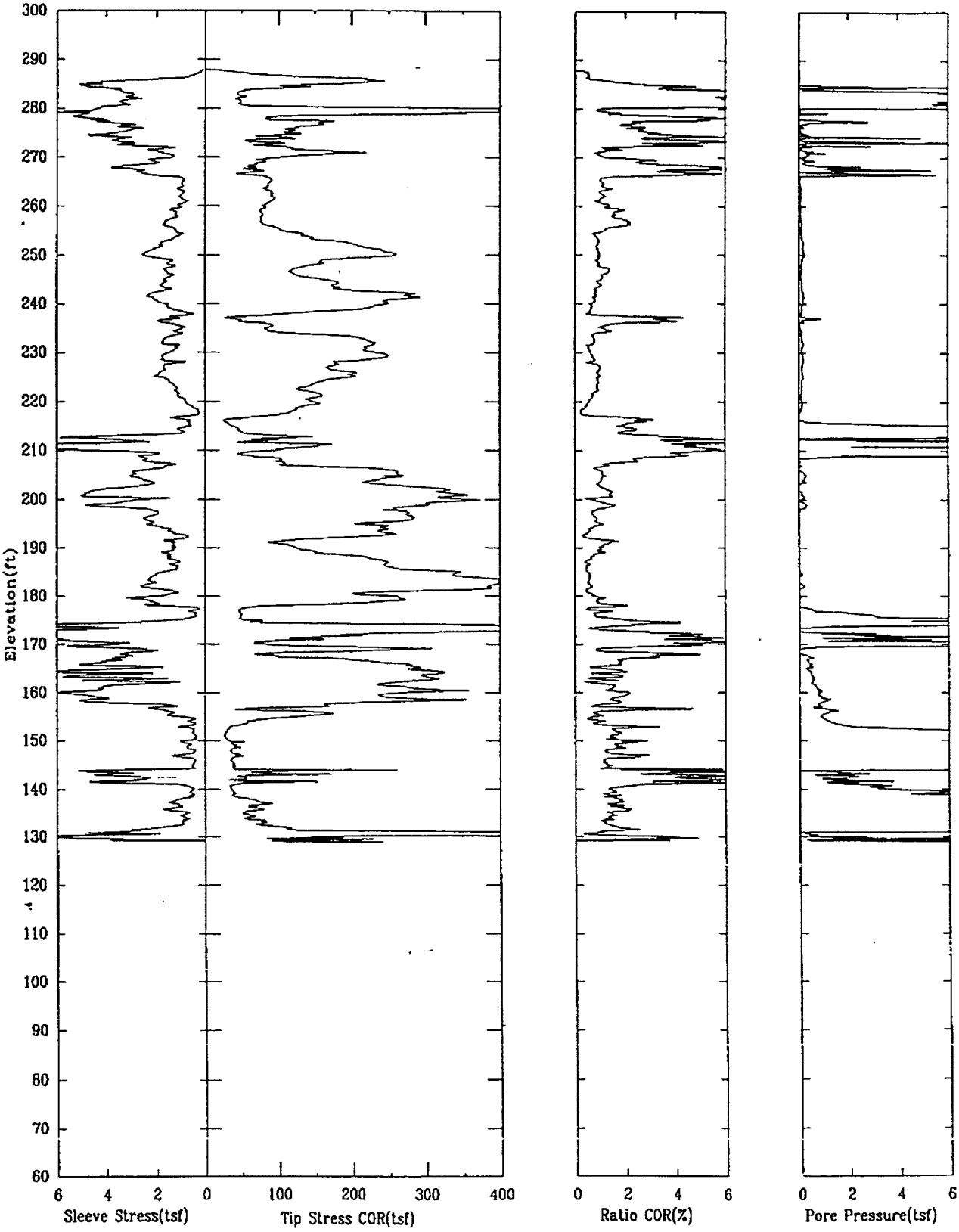
P Wave
02/17/98



File 417t801S

CPT-163 APPLIED RESEARCH ASSOCIATES, INC. 02/25/98

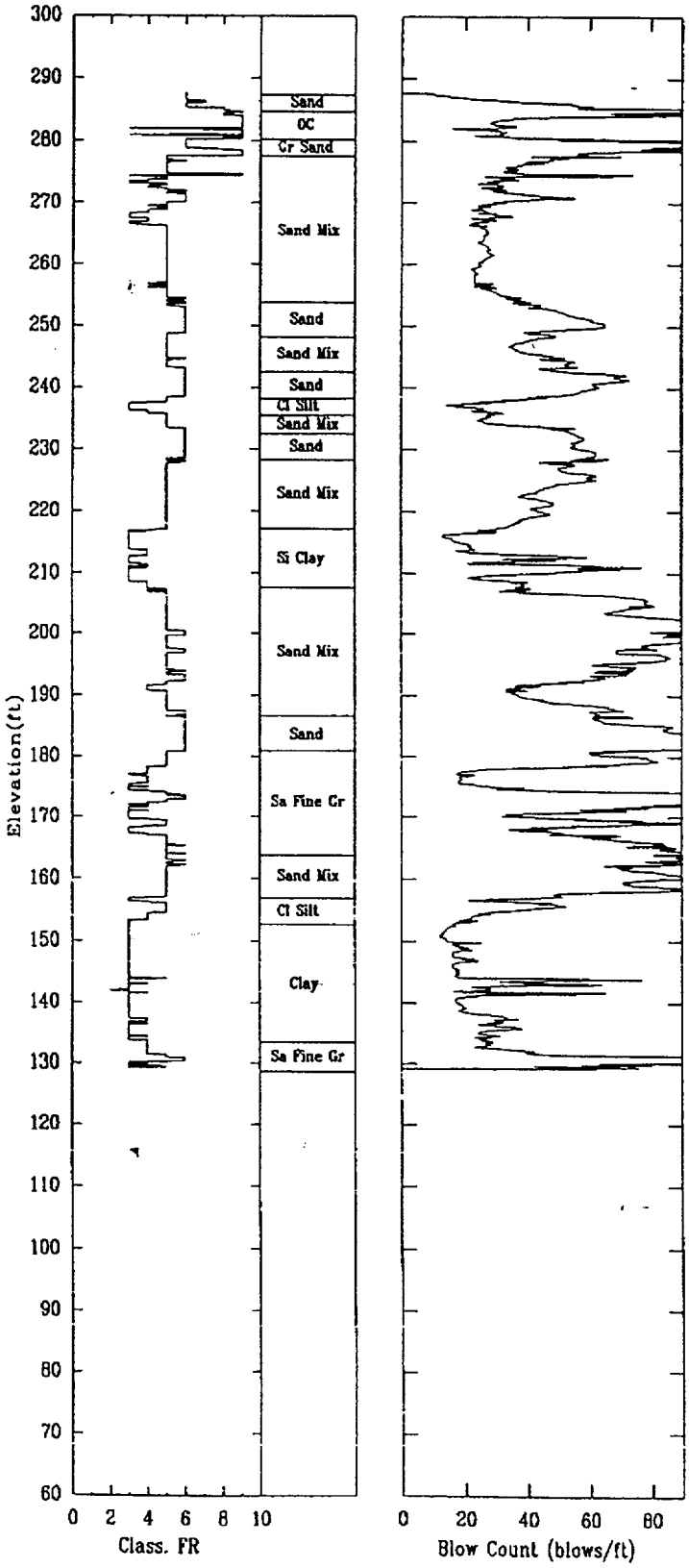
North 79095.1 East 55261 Elevation 293.9



File 525F801.ECP

CPT-163 APPLIED RESEARCH ASSOCIATES, INC. 02/25/98

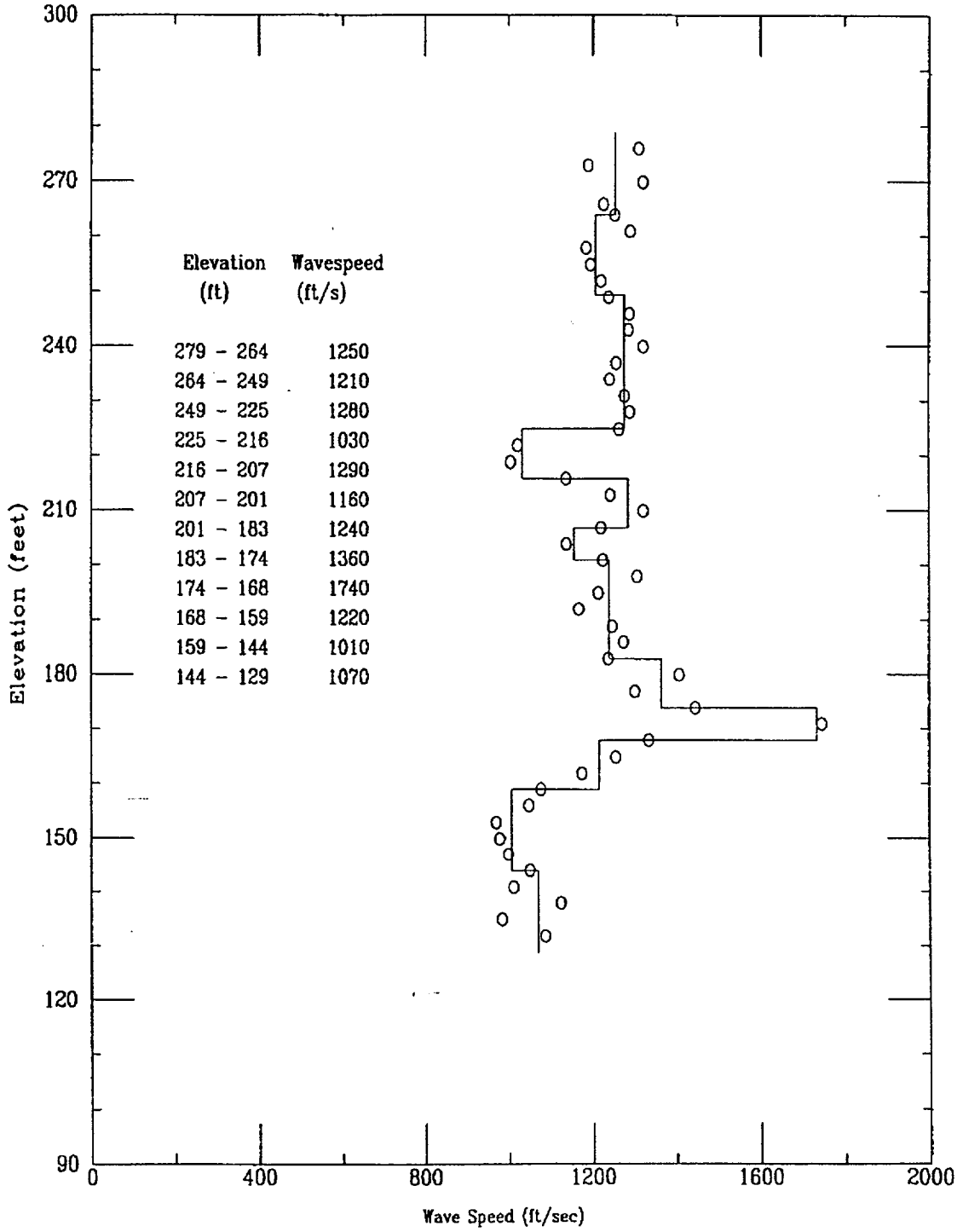
North 79095.1 East 55261 Elevation 293.9



File 525F801.ECP

CPT-163 APPLIED RESEARCH ASSOCIATES, INC. 02/25/98

Shear Wave Speeds



Elevation (ft)	Wavespeed (ft/s)
279 - 264	1250
264 - 249	1210
249 - 225	1280
225 - 216	1030
216 - 207	1290
207 - 201	1160
201 - 183	1240
183 - 174	1360
174 - 168	1740
168 - 159	1220
159 - 144	1010
144 - 129	1070

File 525f801S

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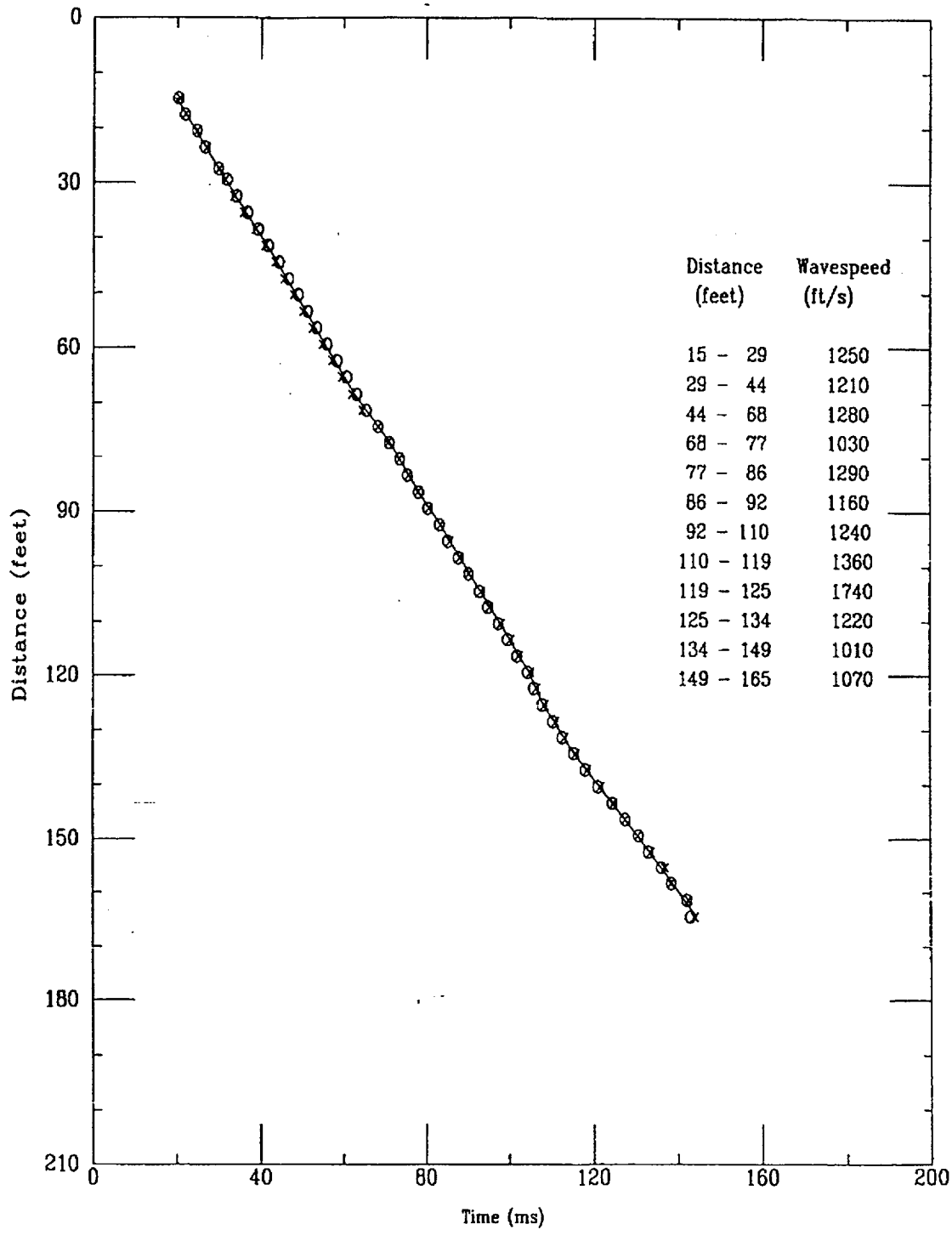
Missing

CPT-163 APPLIED RESEARCH ASSOCIATES, INC. 02/25/98

Shear Wave Time of Peak

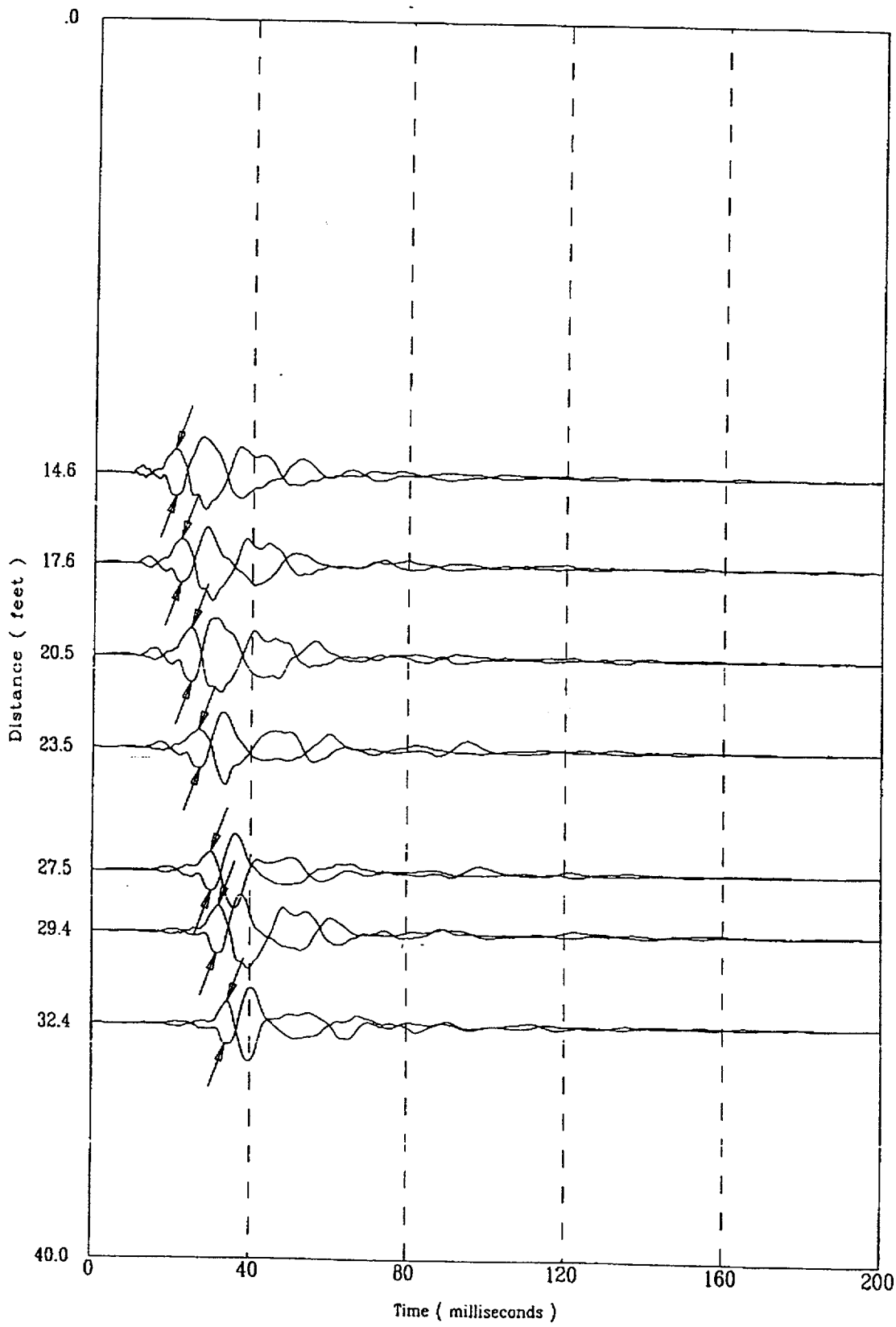


Distance (feet)	Wavespeed (ft/s)
15 - 29	1250
29 - 44	1210
44 - 68	1280
68 - 77	1030
77 - 86	1290
86 - 92	1160
92 - 110	1240
110 - 119	1360
119 - 125	1740
125 - 134	1220
134 - 149	1010
149 - 165	1070

File 5251801S

Applied Research Associates
CPT-163

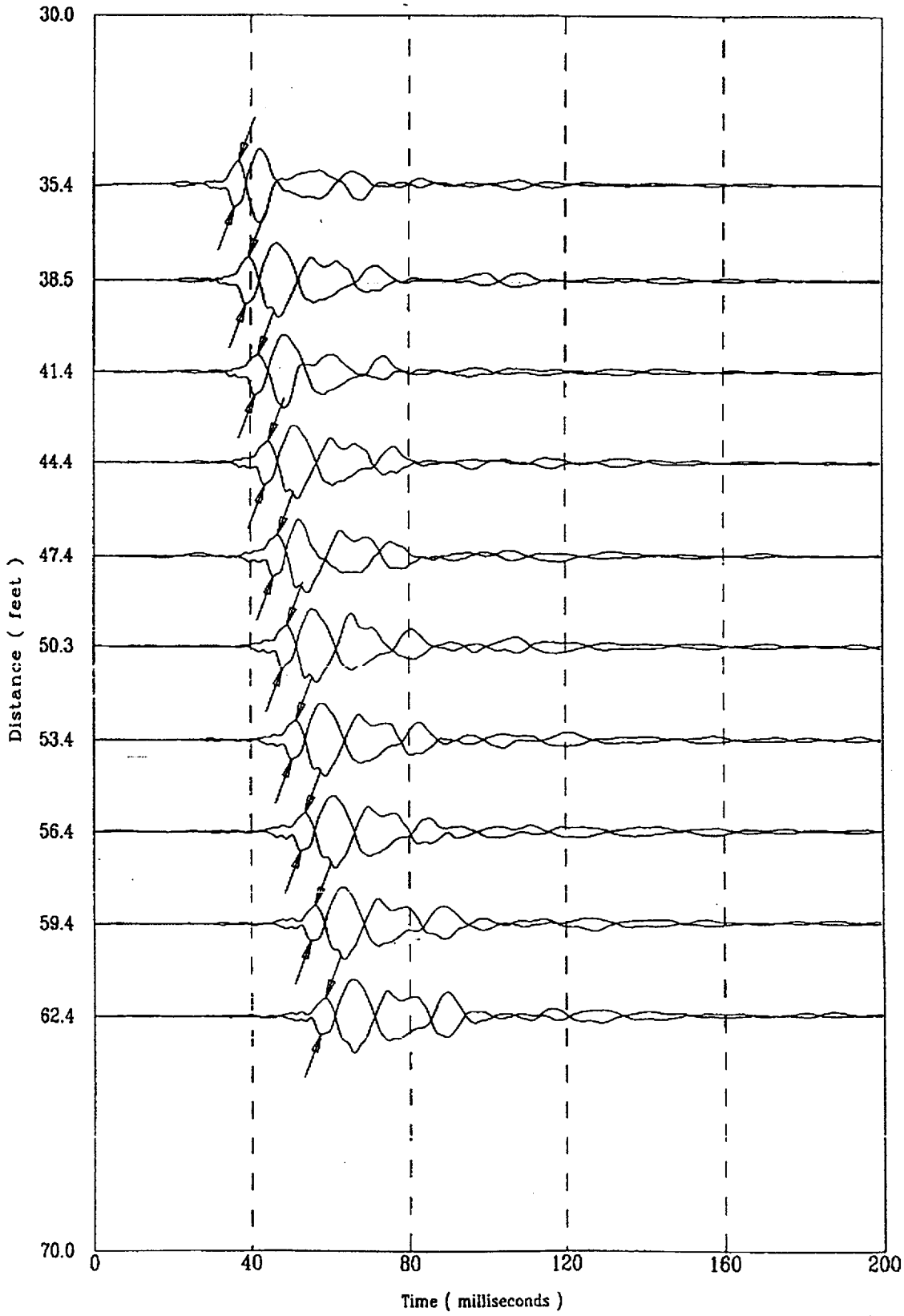
S Wave
02/25/98



File 525f801S

Applied Research Associates
CPT-163

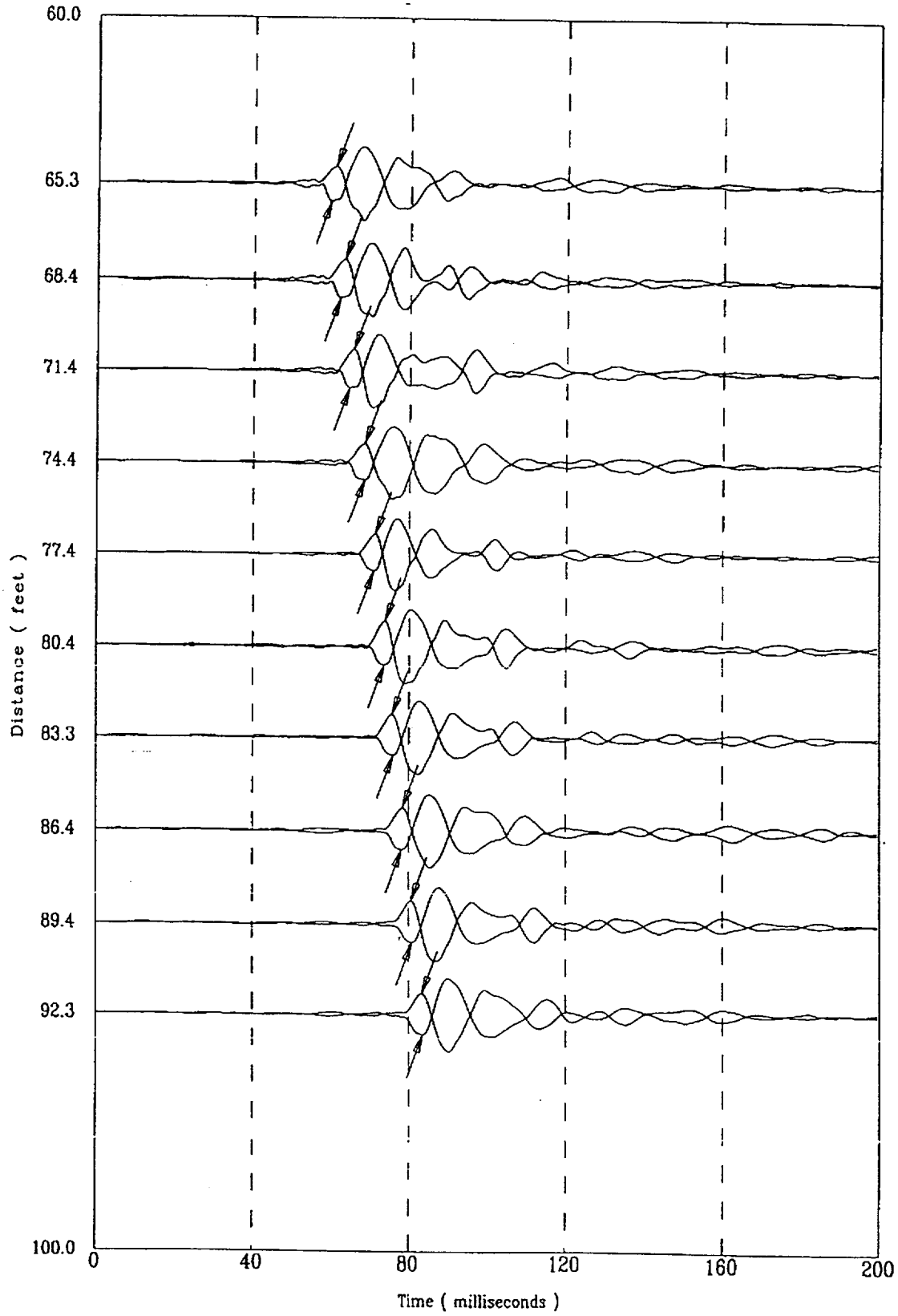
S Wave
02/25/98



25f801S

Applied Research Associates
CPT-163

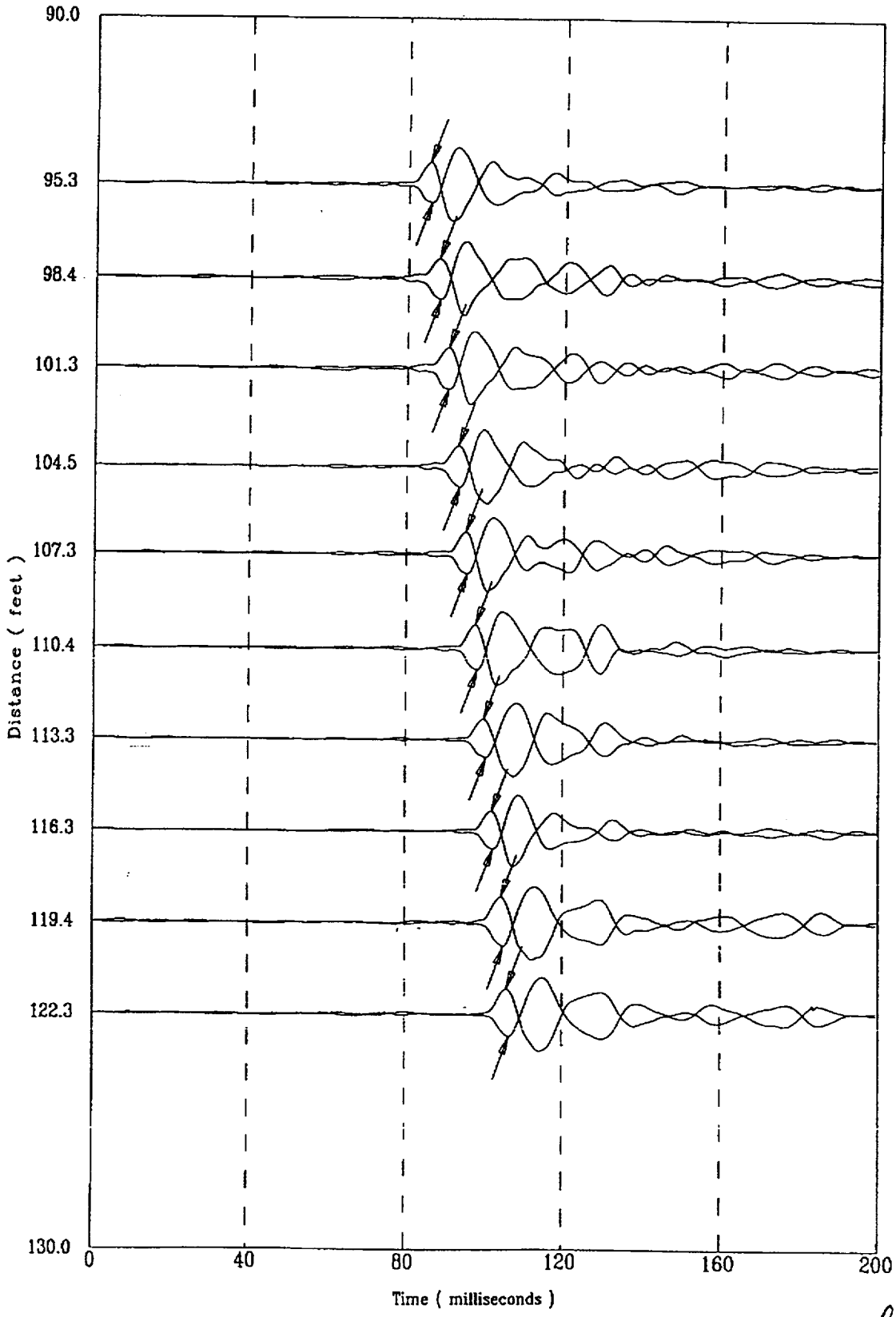
S Wave
02/25/98



File 525f801S

Applied Research Associates
CPT-163

S Wave
02/25/98



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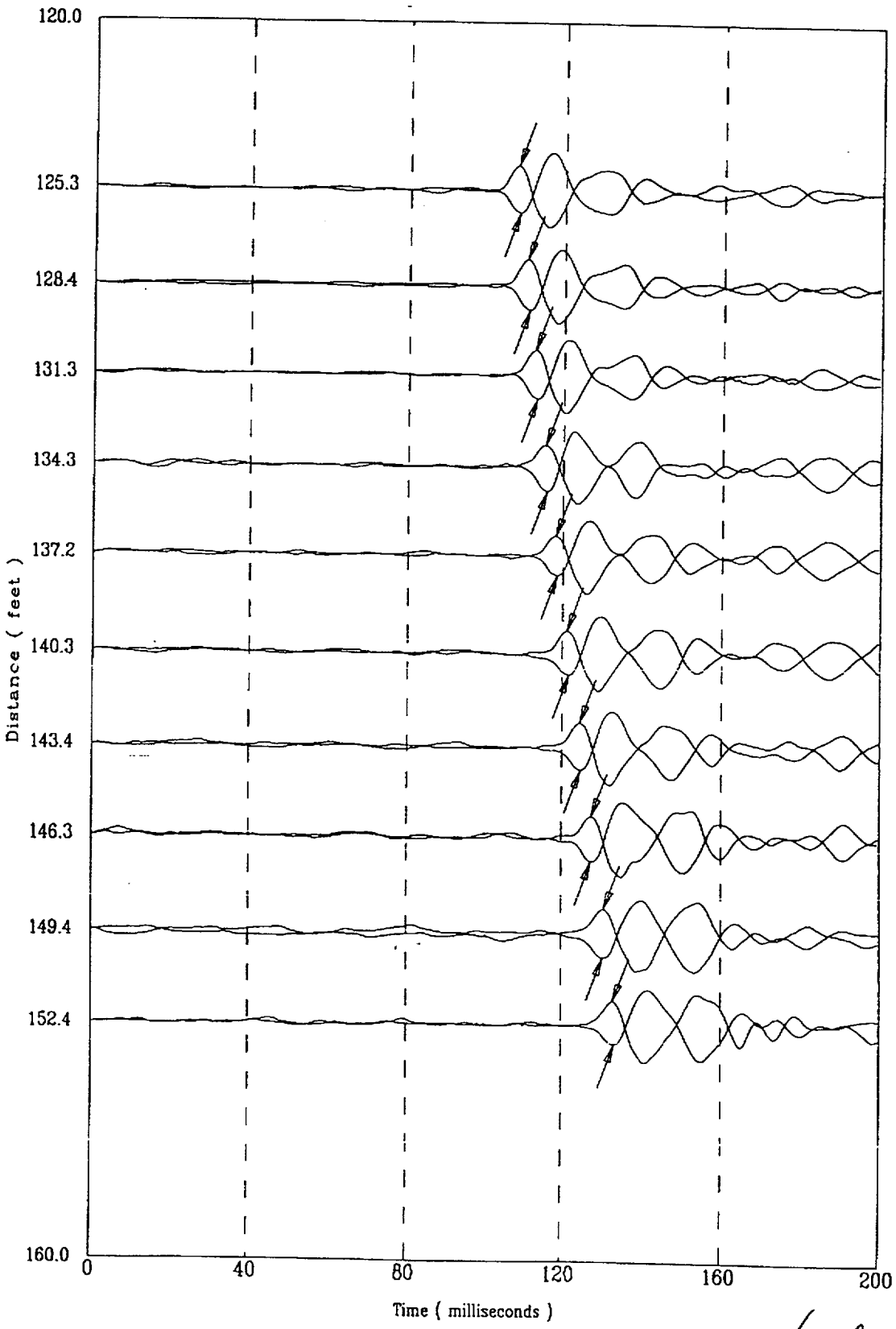
Applied Research Associates
CPT-163

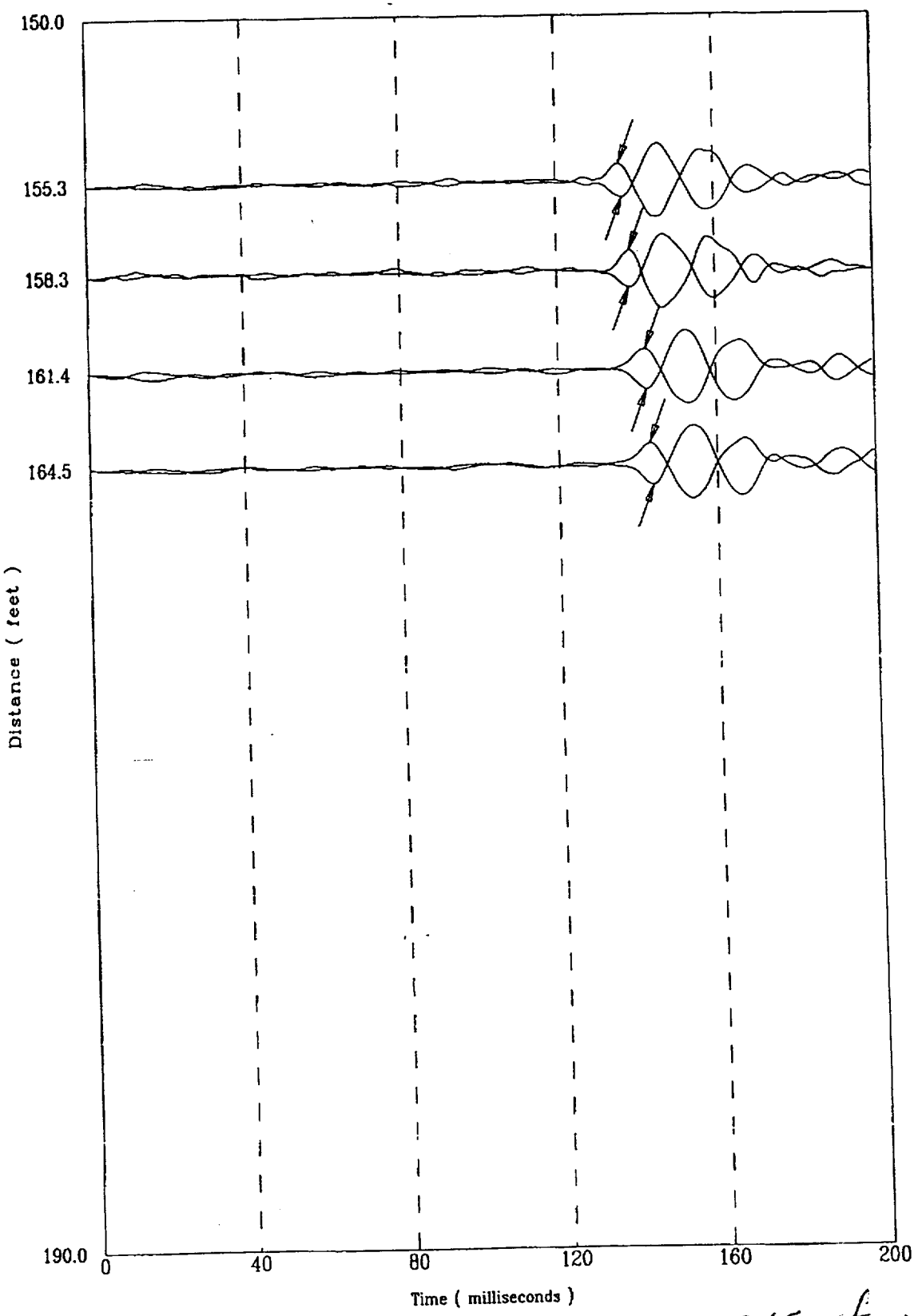
S Wave
02/25/98



File 525f801S

Applied Research Associates
CPT-163

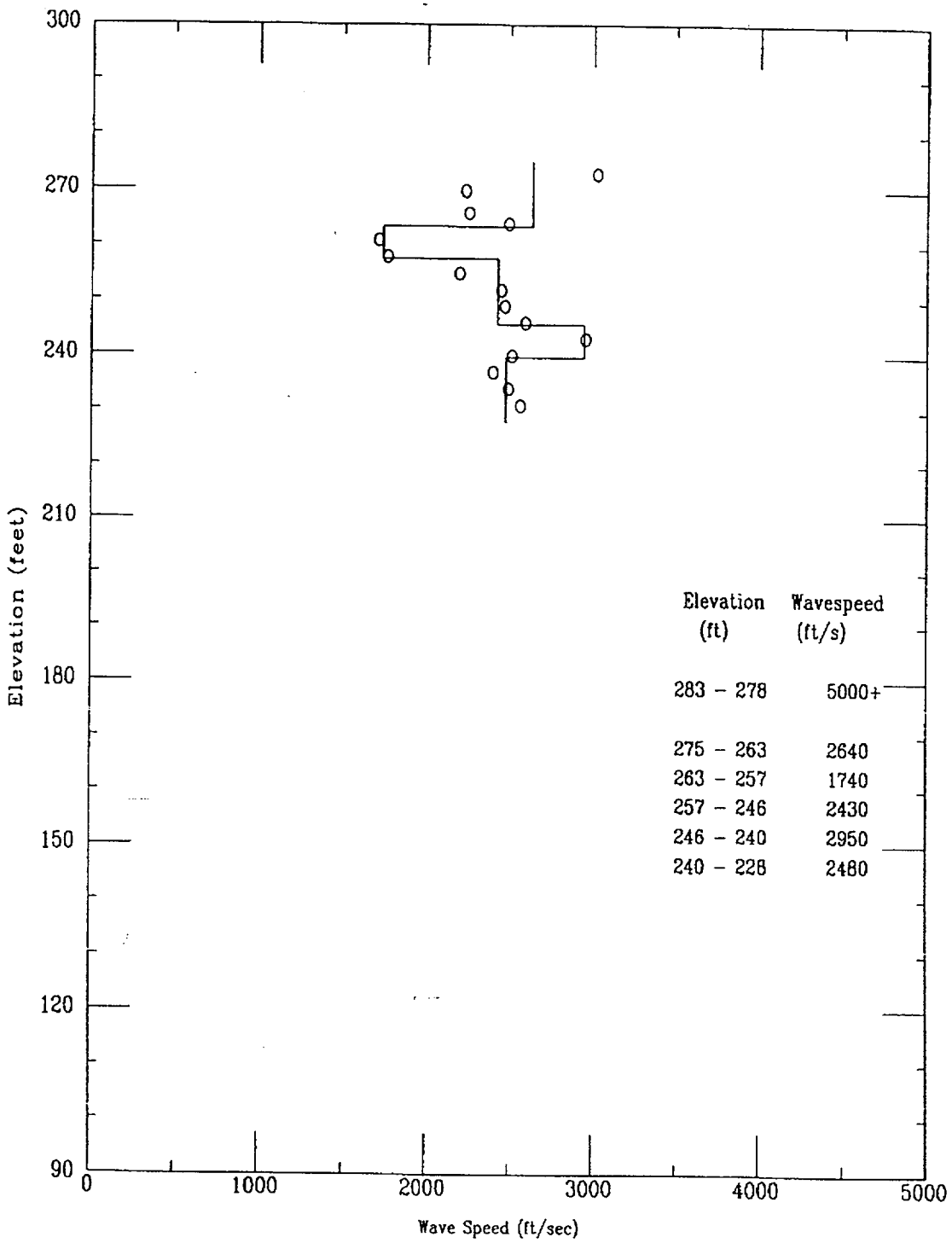
S Wave
02/25/98



5f801S

CPT-163 APPLIED RESEARCH ASSOCIATES, INC. 02/25/98

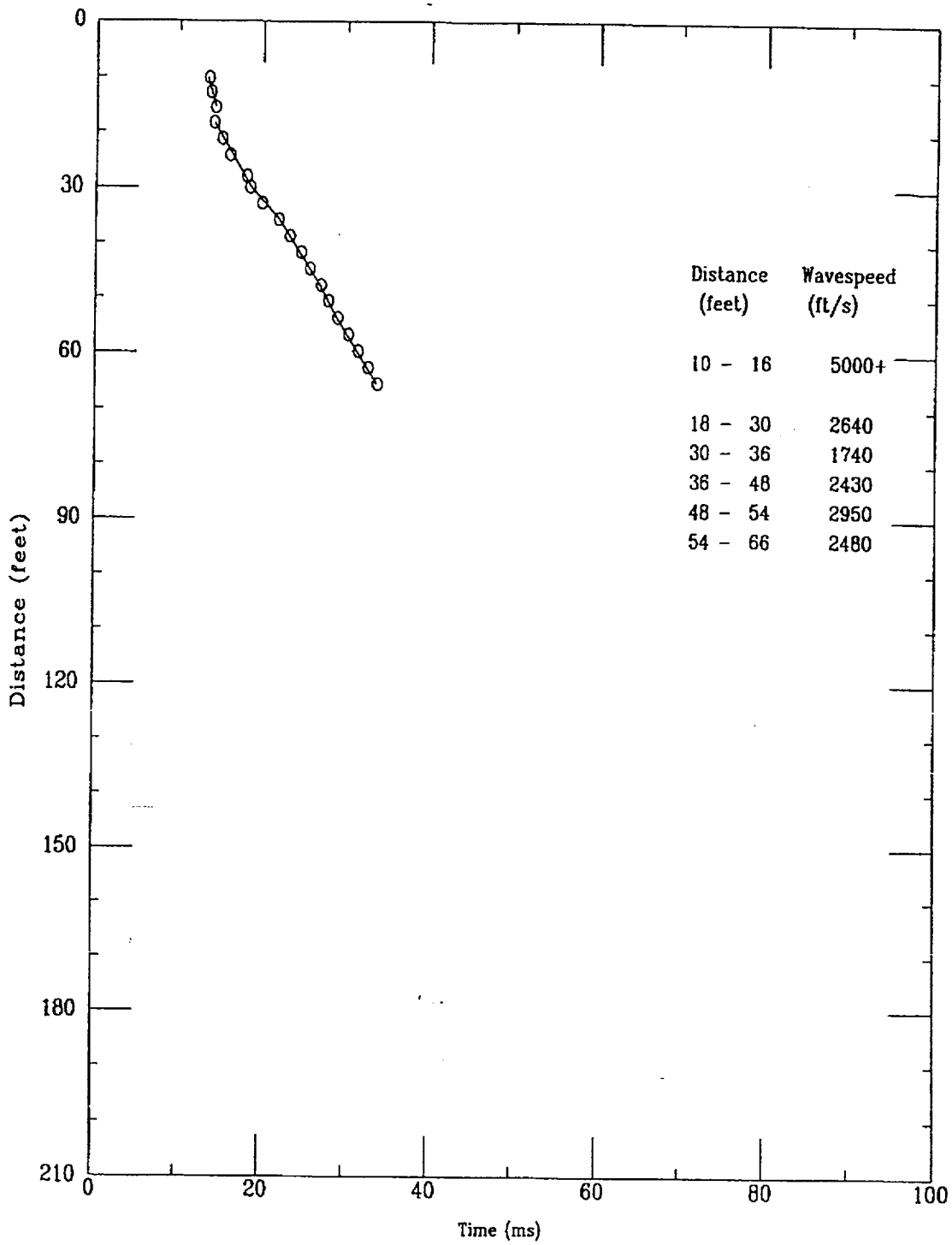
Compression Wave Speeds



File 525f801S

CPT-163 APPLIED RESEARCH ASSOCIATES, INC. 02/25/98

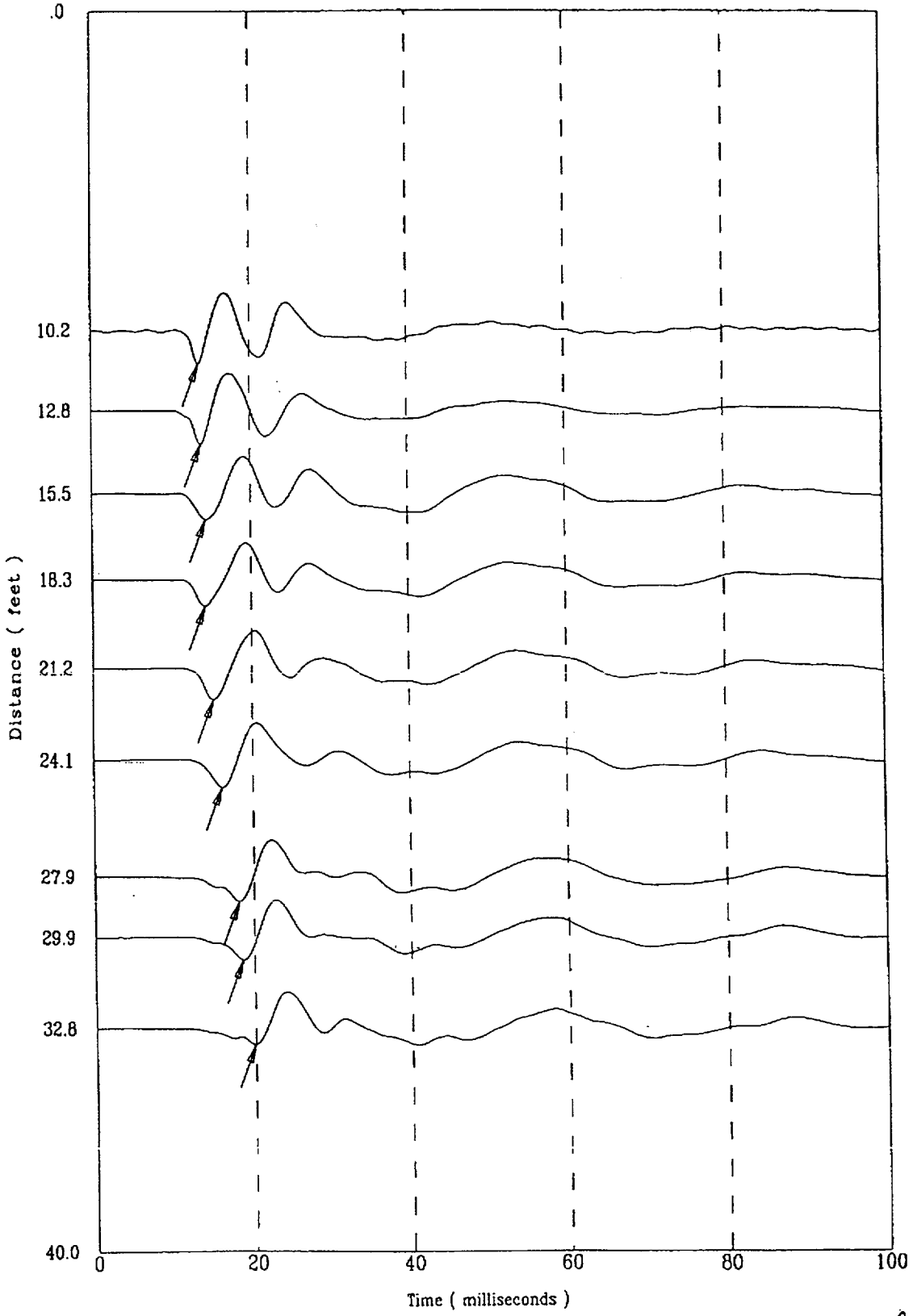
Compression Wave Time of Peak



File 525f801S

Applied Research Associates
CPT-163

P Wave
02/25/98



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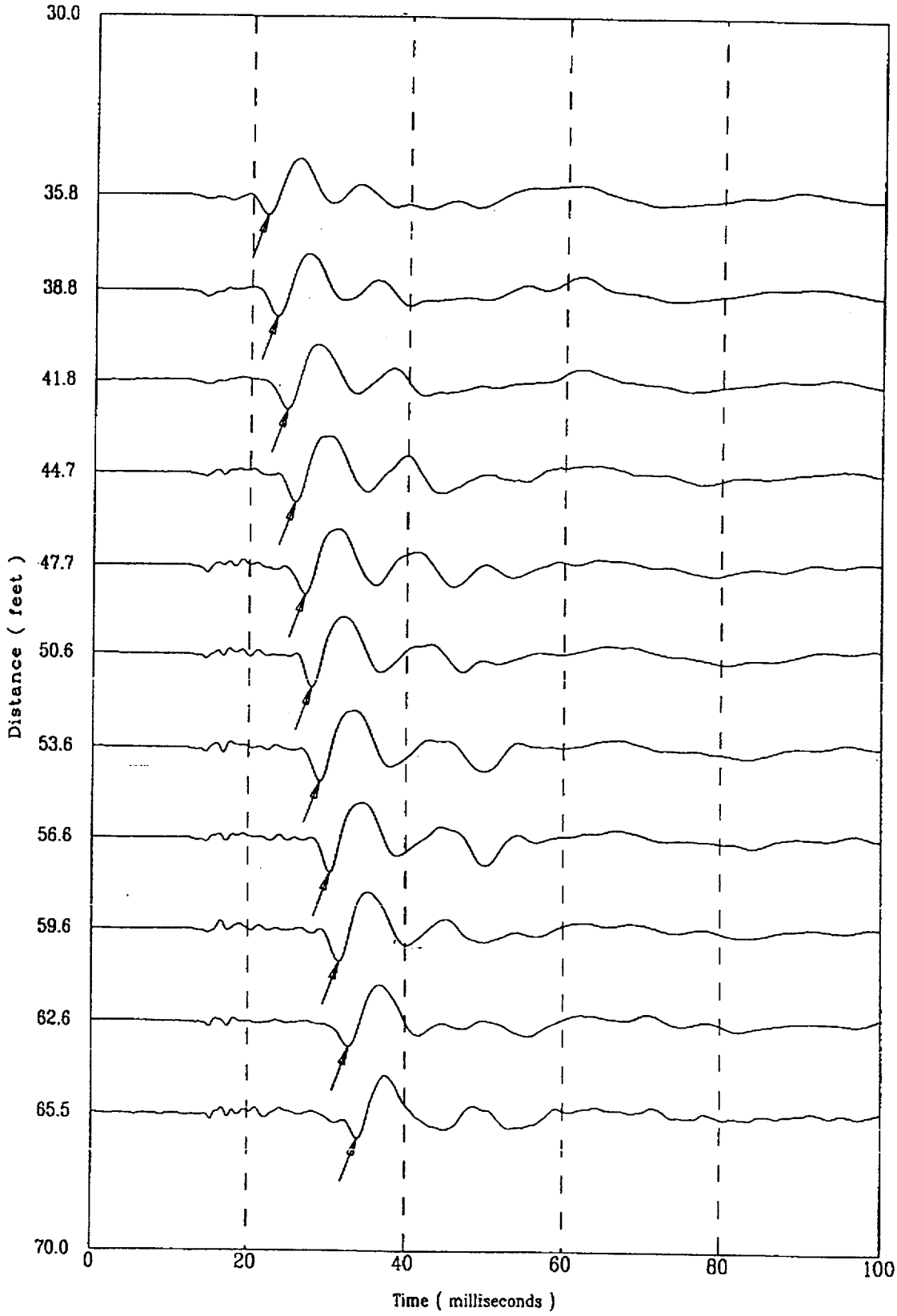
Applied Research Associates
CPT-163

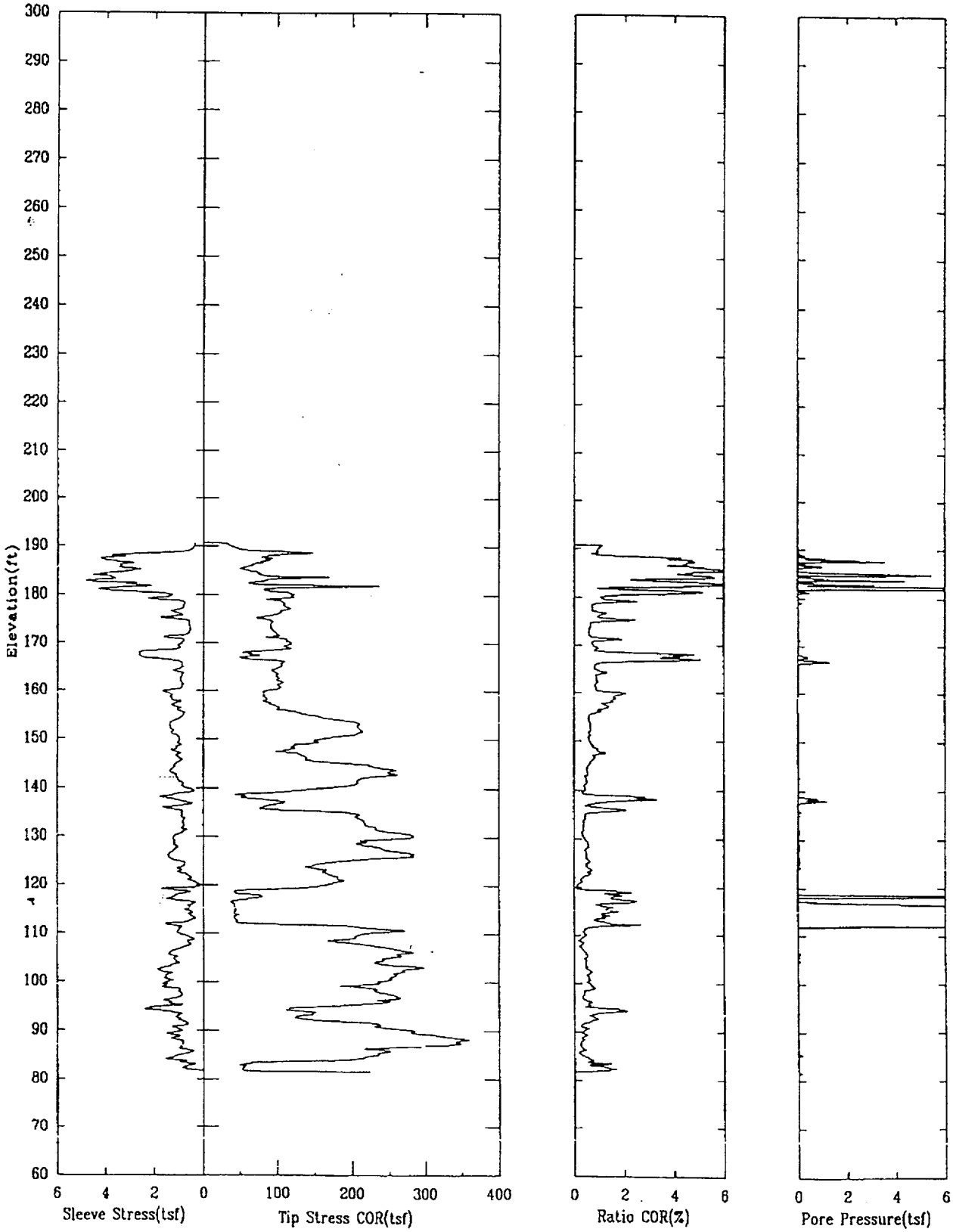
P Wave
02/25/98



5/8/01S

CPT-167 APPLIED RESEARCH ASSOCIATES, INC. 03/11/98

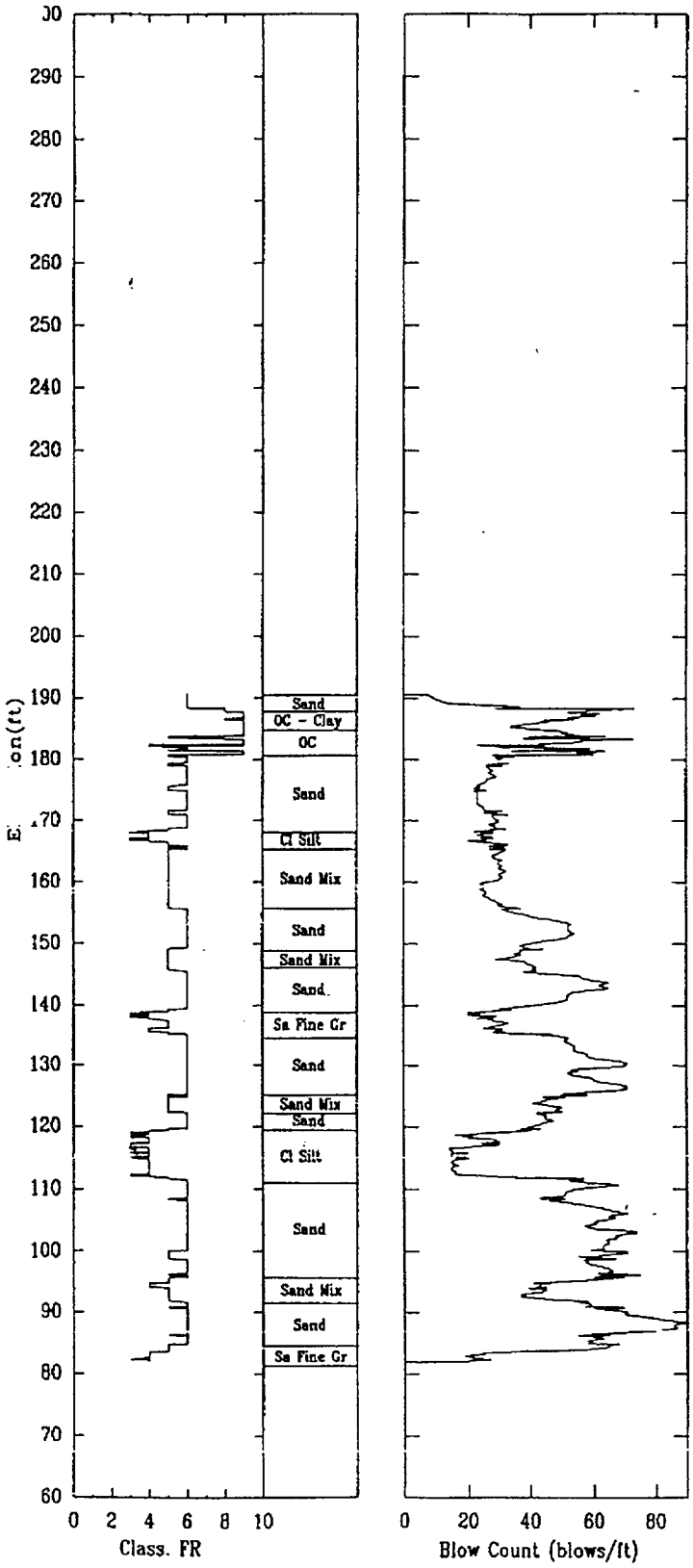
North 79029.91 East 55330.05 Elevation 196.7



File 411M801b.ECP

CPT-167 APPLIED RESEARCH ASSOCIATES, INC. 03/11/98

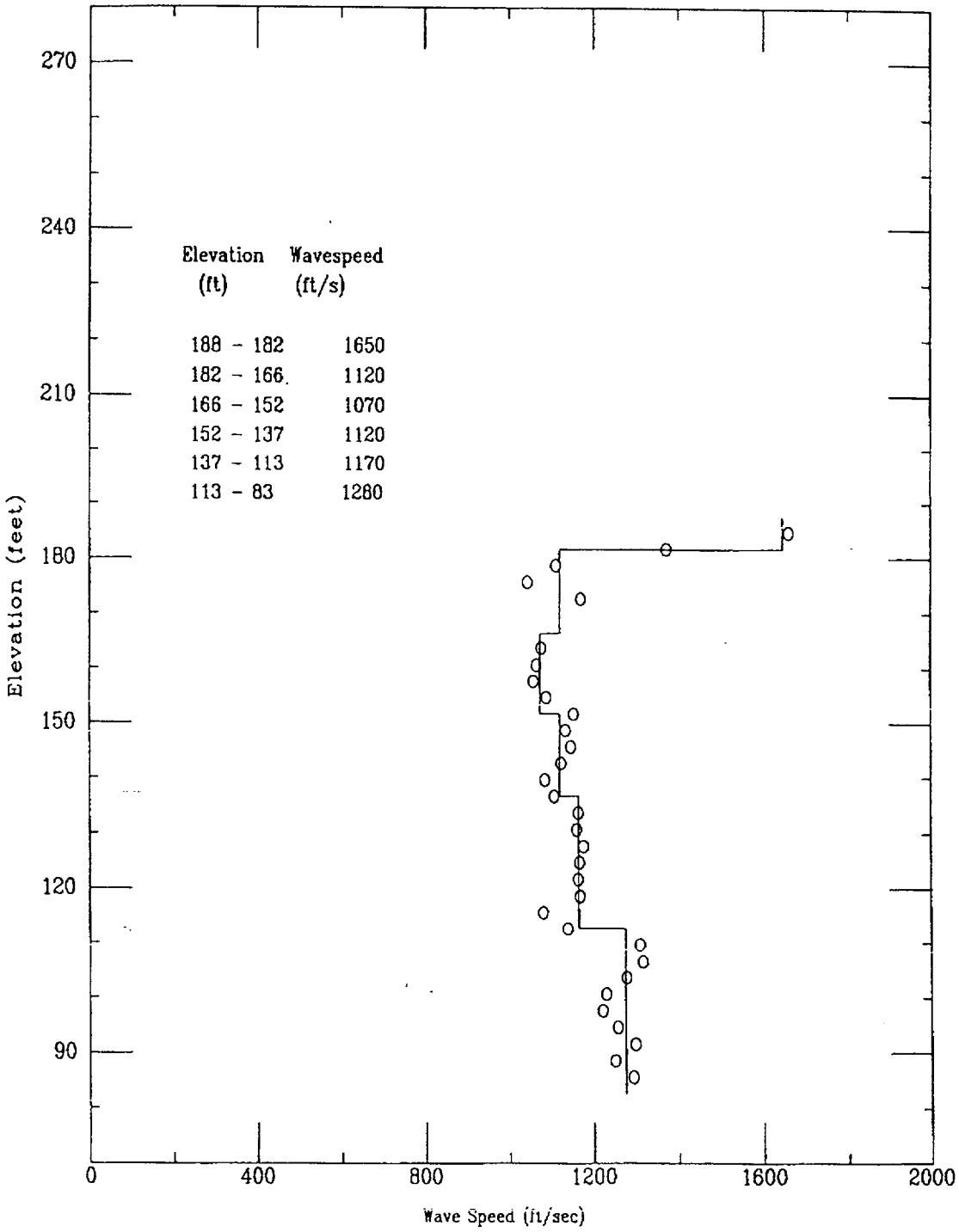
North 79029.91 East 55330.05 Elevation 196.7



File 411M801b.ECP

CPT-167 APPLIED RESEARCH ASSOCIATES, INC. 03/11/98

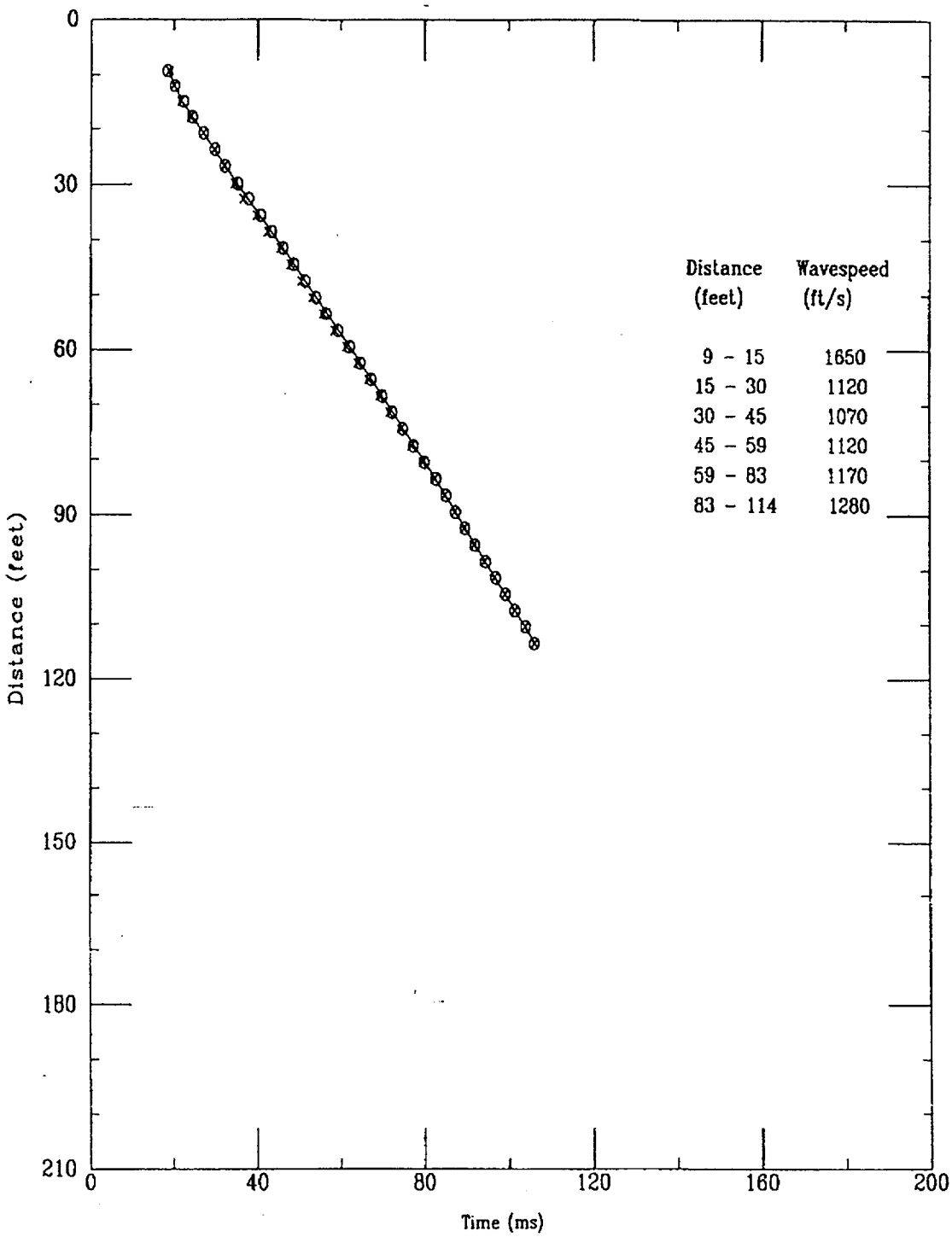
Shear Wave Speeds



File 411M801S

CPT-167 APPLIED RESEARCH ASSOCIATES, INC. 03/11/98

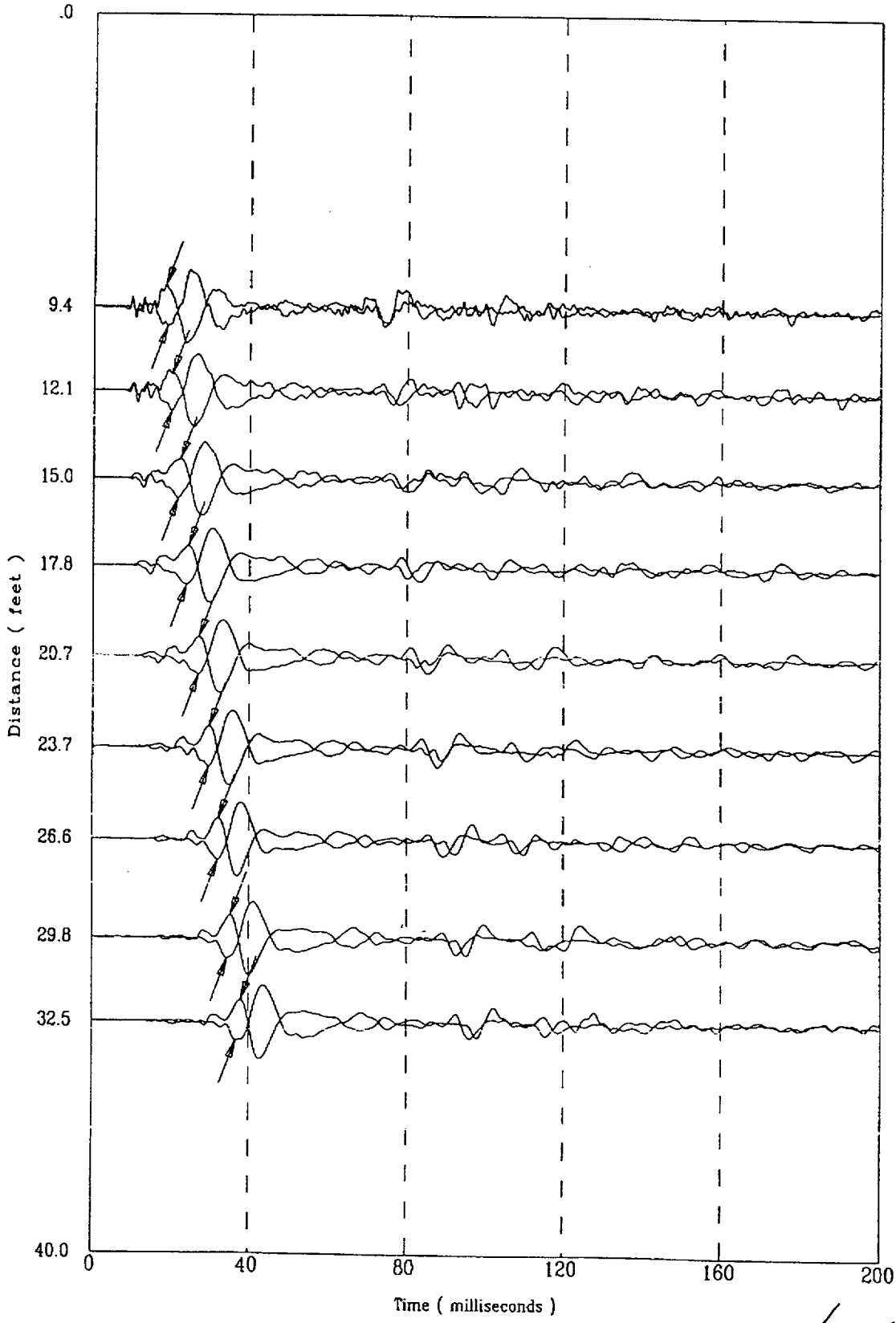
Shear Wave Time of Peak



File 411M801S

Applied Research Associates, Inc.
CPT-167

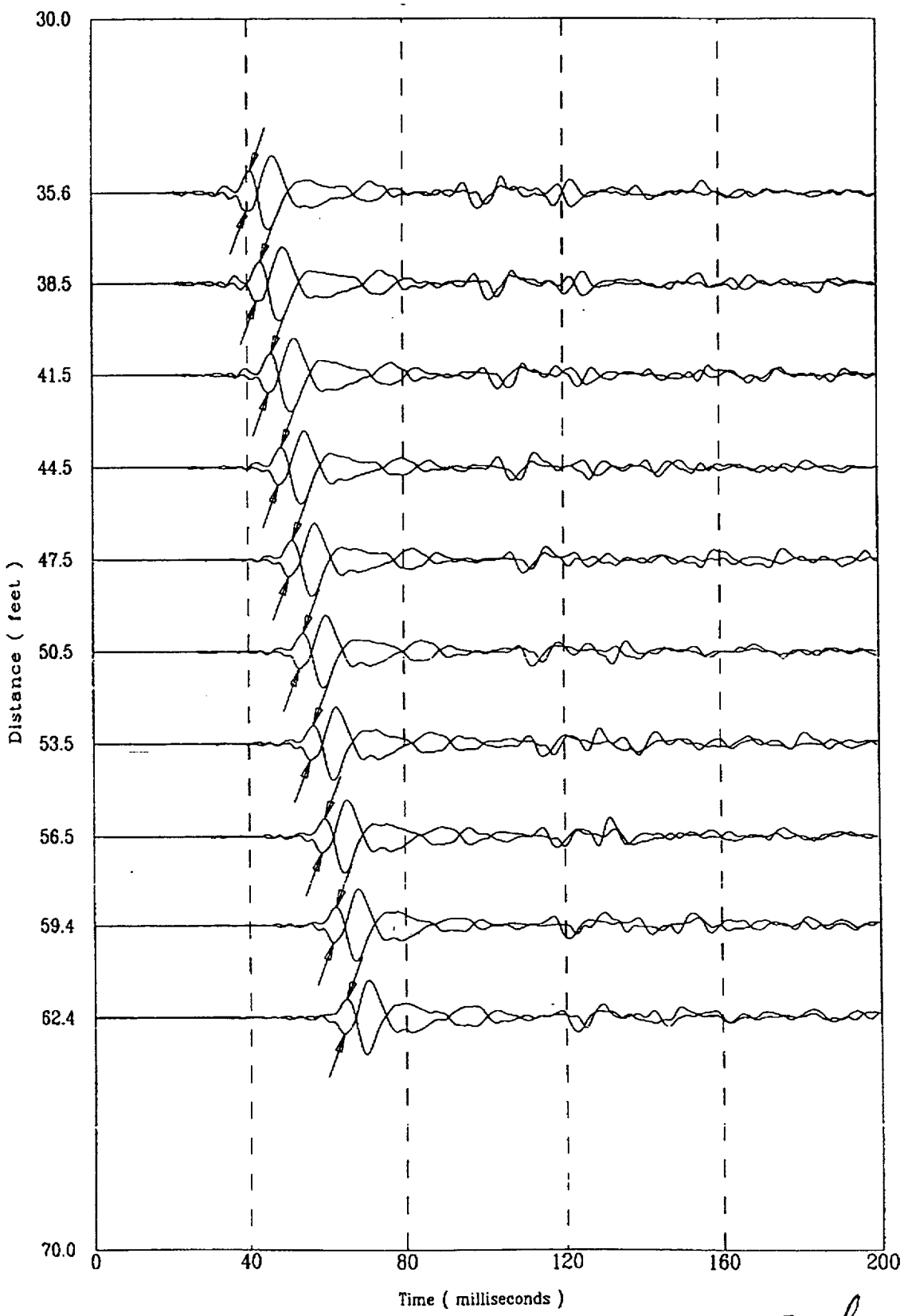
S Wave
03/11/98



File 411M801S

Applied Research Associates, Inc.
CPT-167

S Wave
03/11/98



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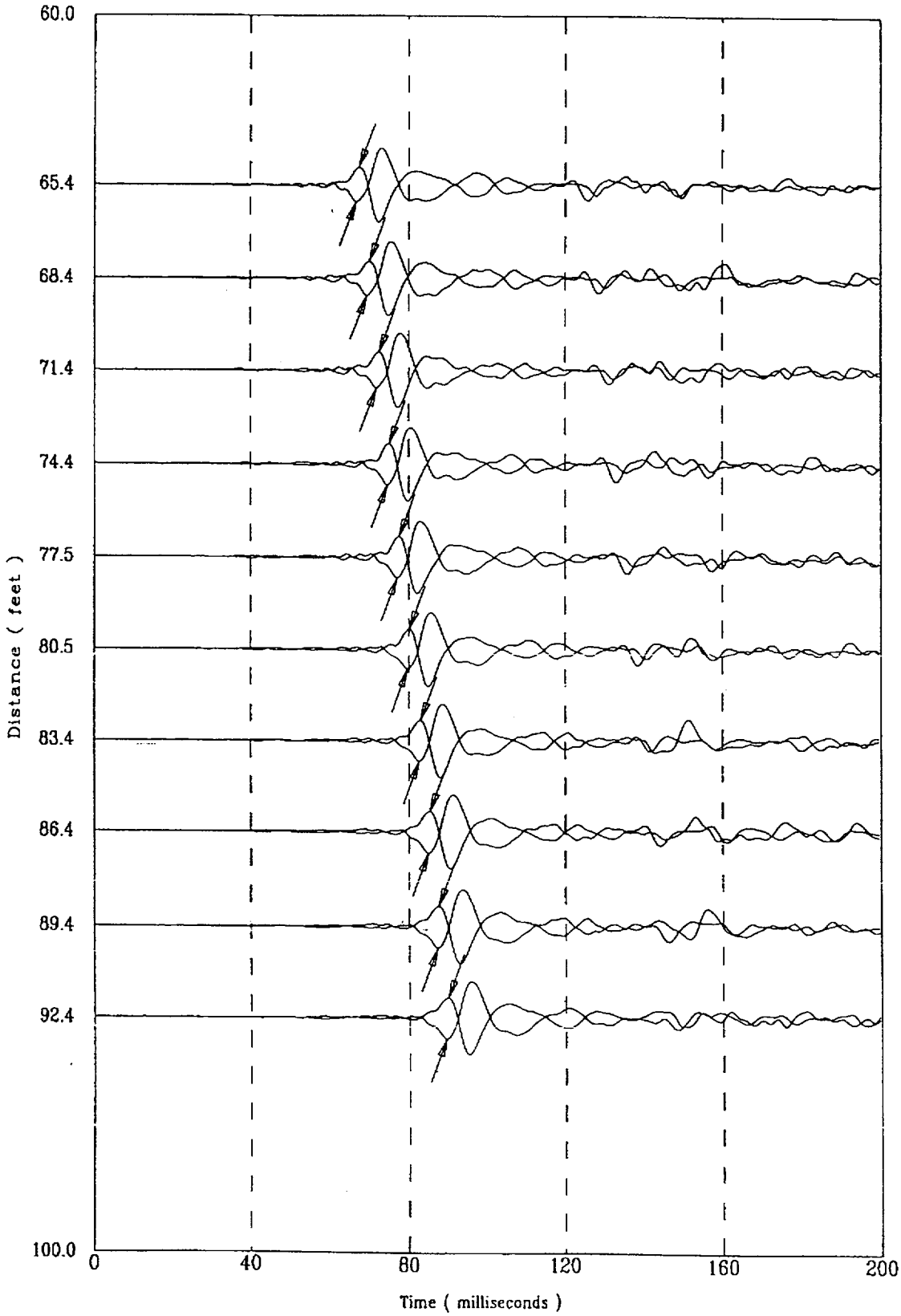
Applied Research Associates, Inc.
CPT-167

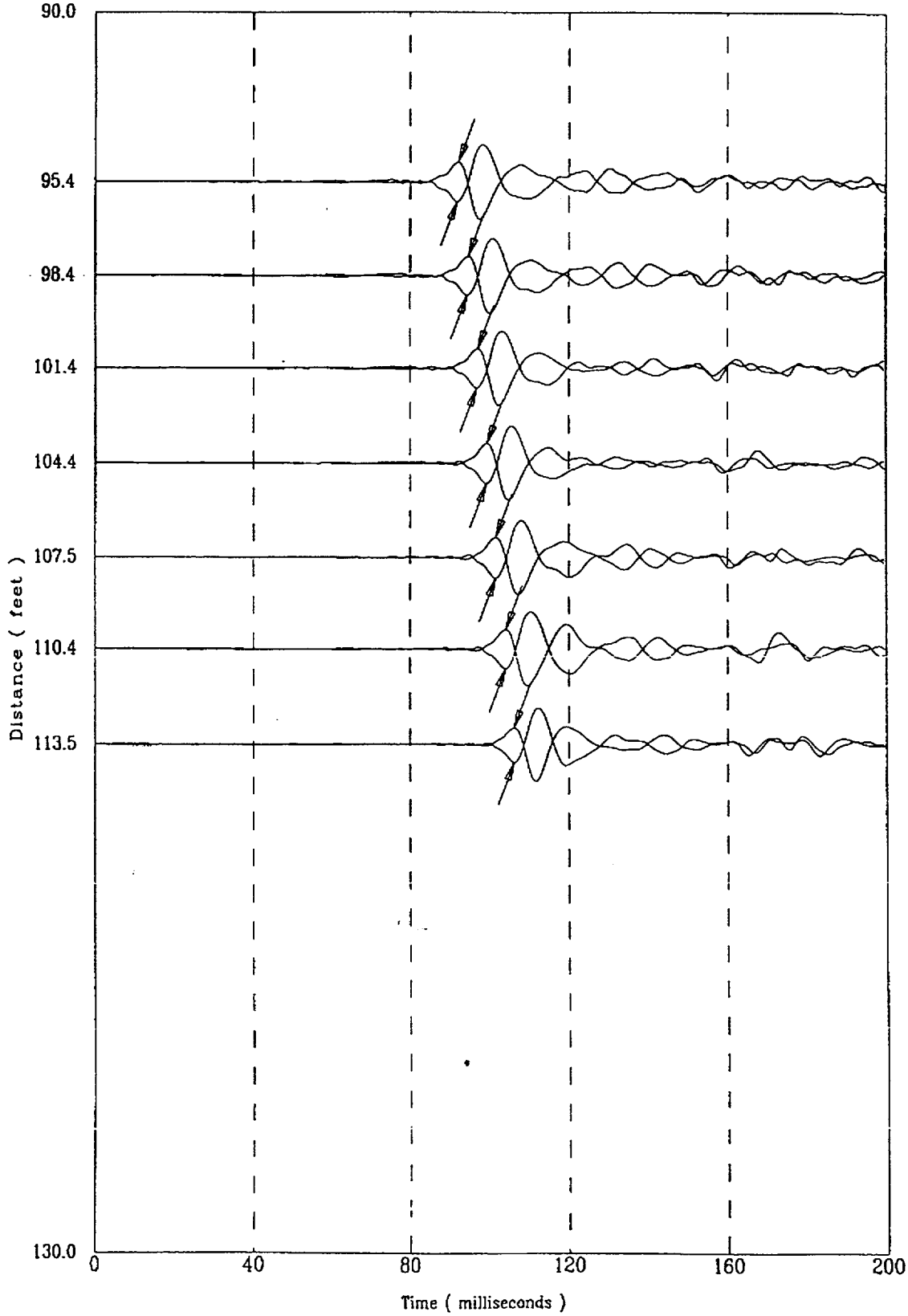
S Wave
03/11/98



File 411m801S

Applied Research Associates, Inc.
CPT-167

S Wave
03/11/98



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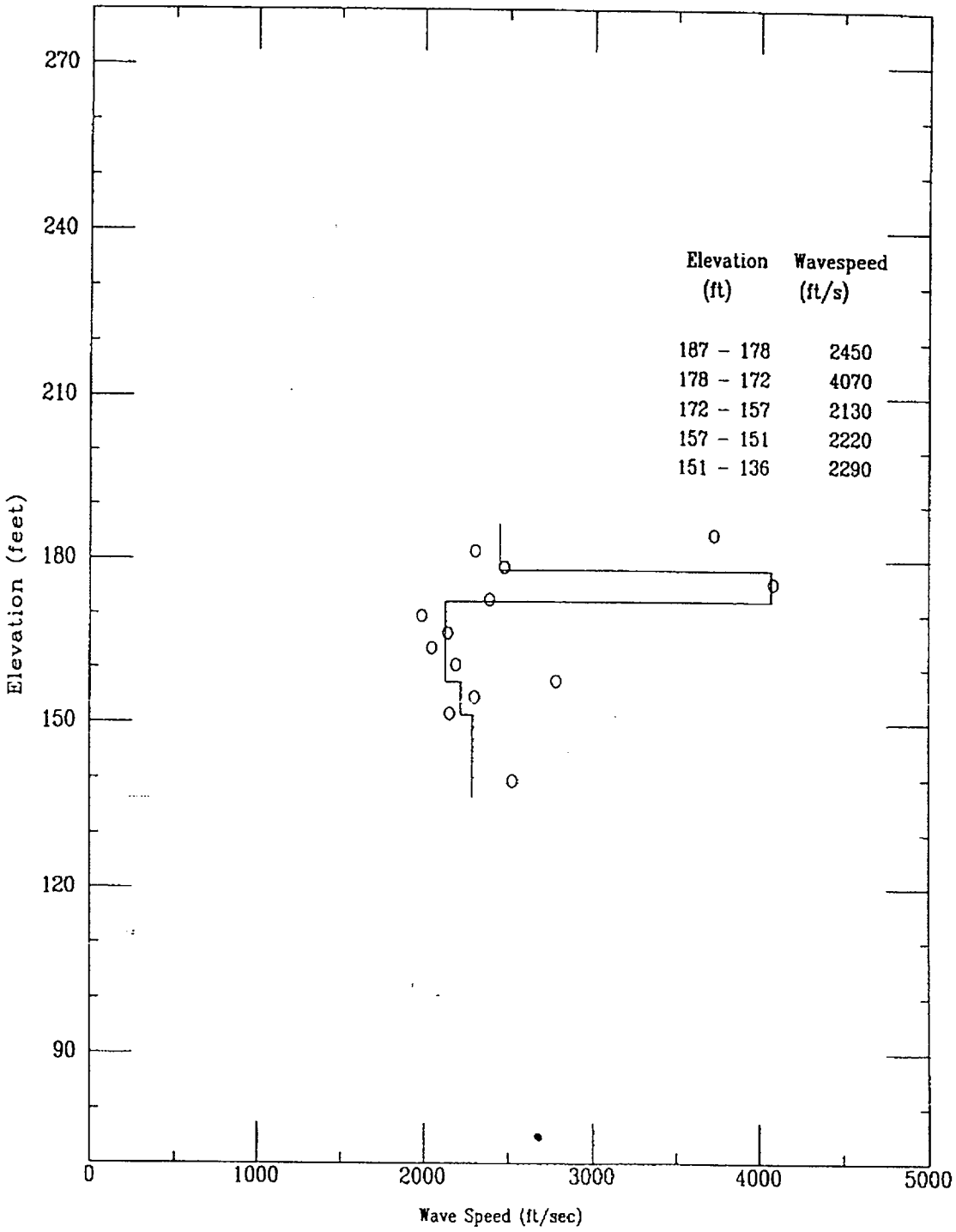
CPT-167 APPLIED RESEARCH ASSOCIATES, INC. 03/11/98

Compression Wave Speeds



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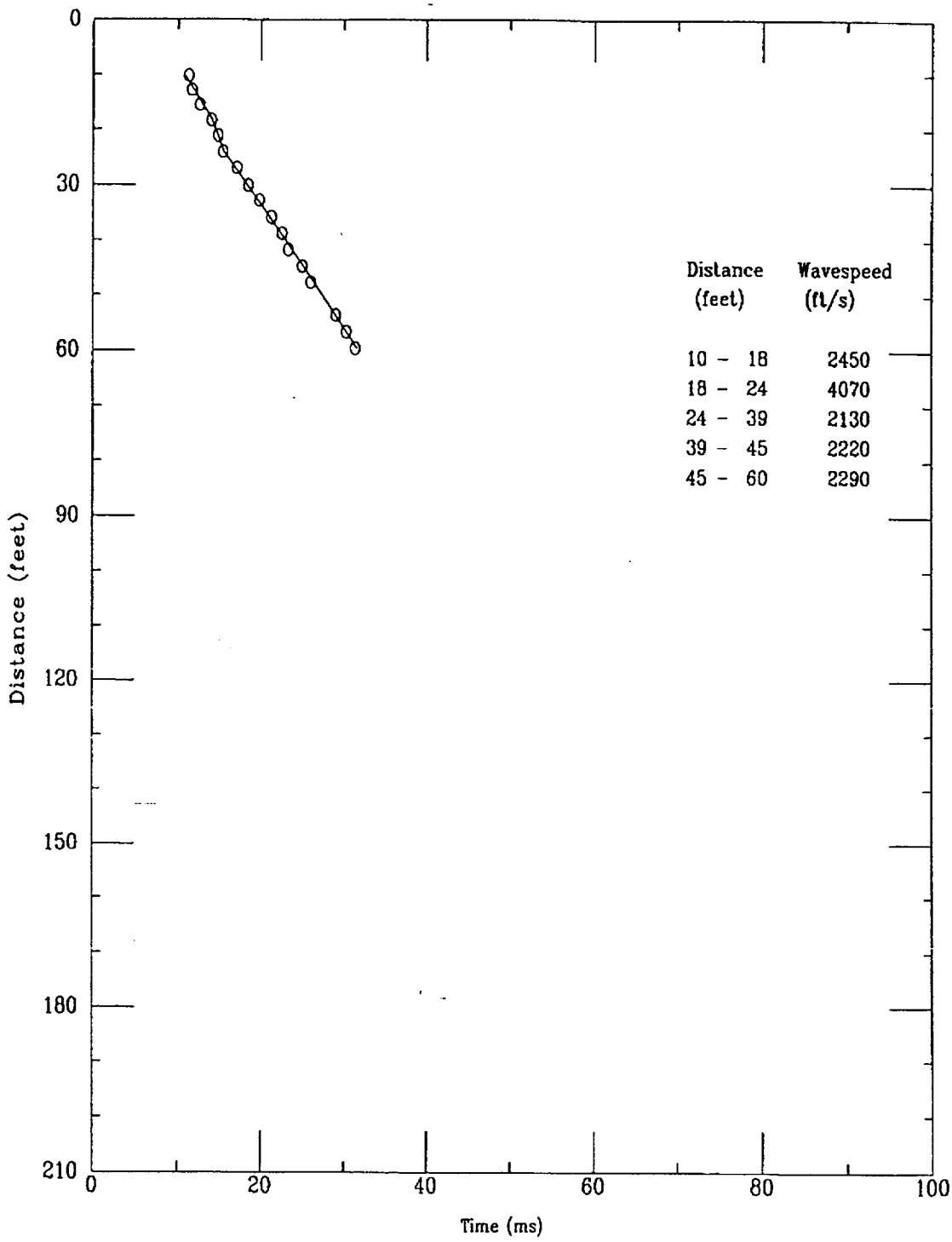
CPT-167 APPLIED RESEARCH ASSOCIATES, INC. 03/11/98

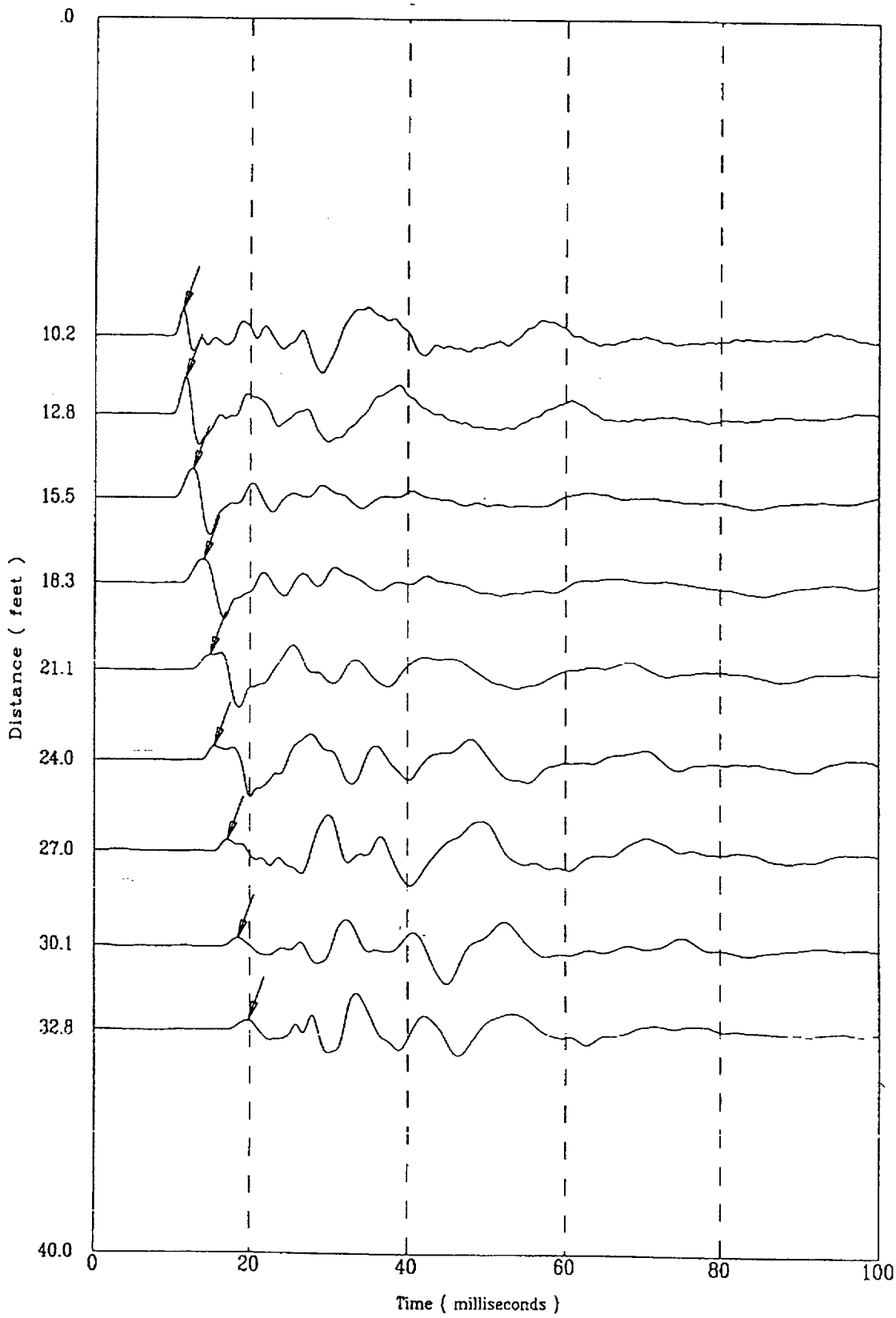
Compression Wave Time of Peak



File 411M801S

Applied Research Associates, Inc.
CPT-167

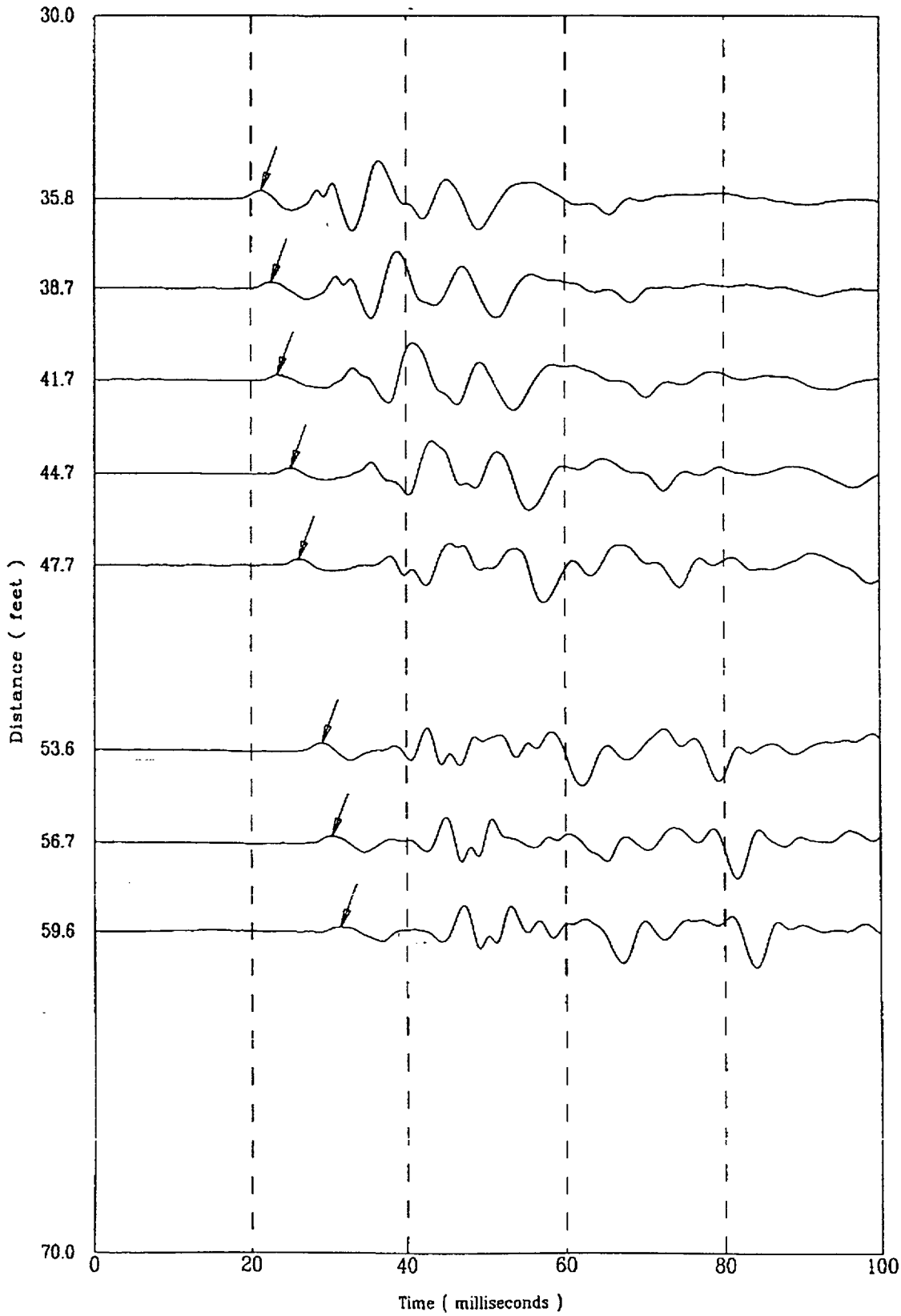
P Wave
03/11/98



File 411W801S

Applied Research Associates, Inc.
CPT-167

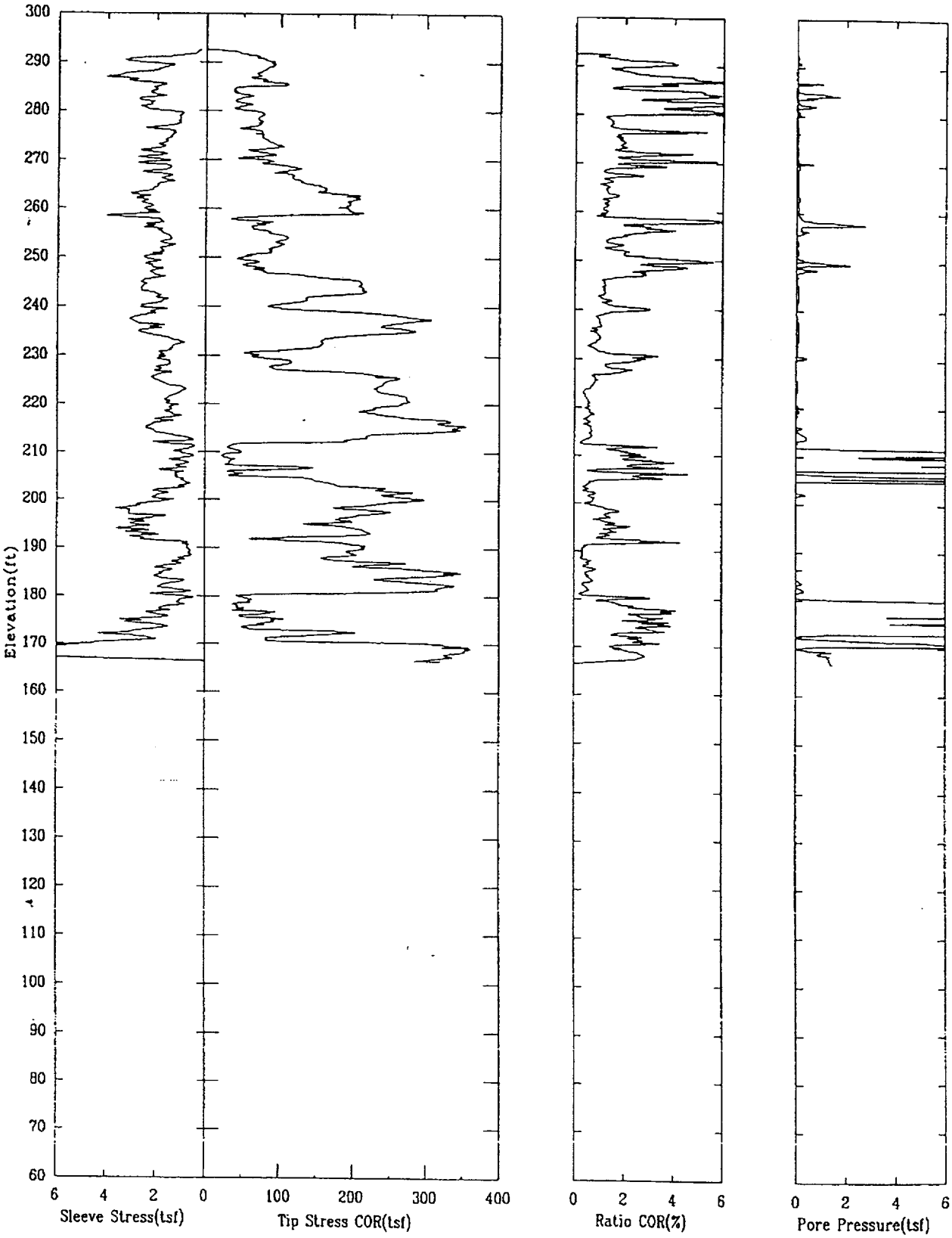
P Wave
03/11/98



41M801S

CPT-171 APPLIED RESEARCH ASSOCIATES, INC. 03/19/98

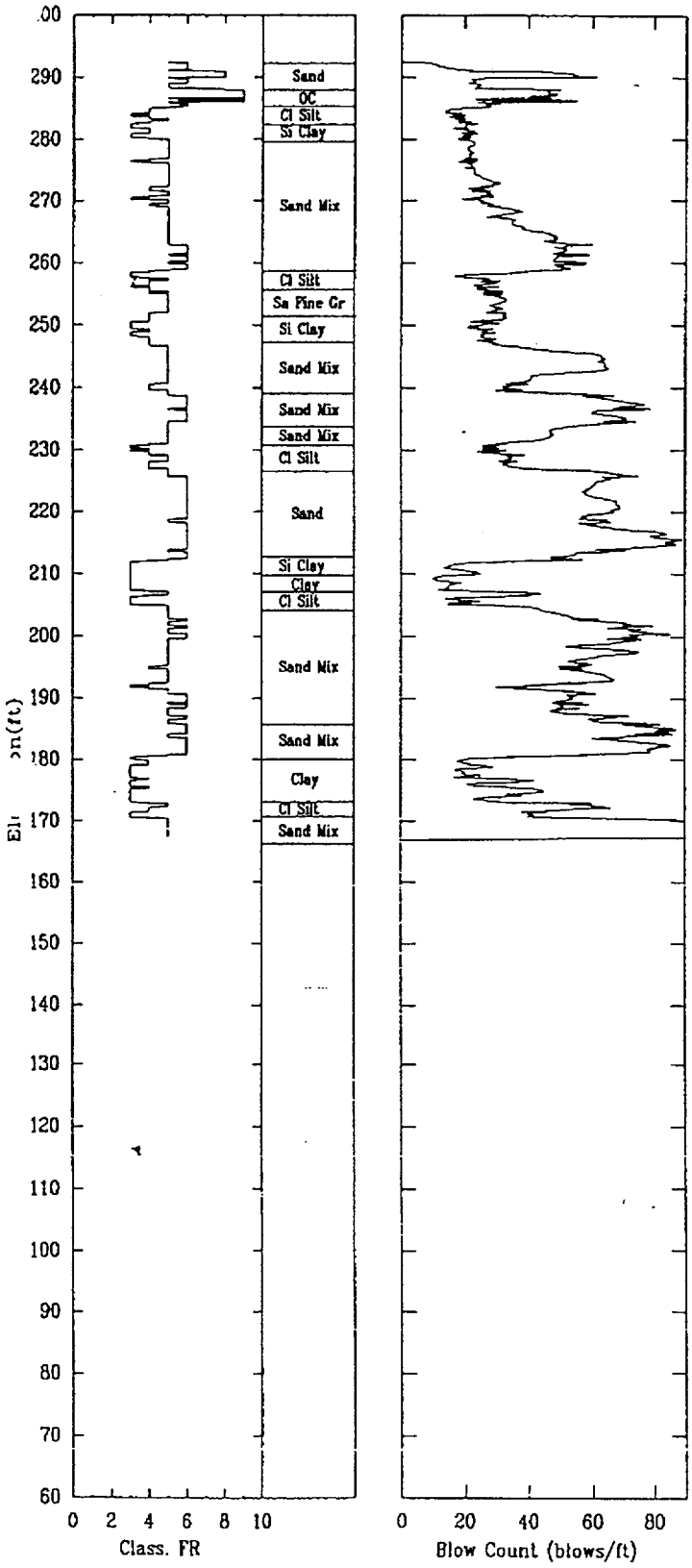
North 78900 East 55385 Elevation 298.5



File 419M804.ECP

CPT-171 APPLIED RESEARCH ASSOCIATES, INC. 03/19/98

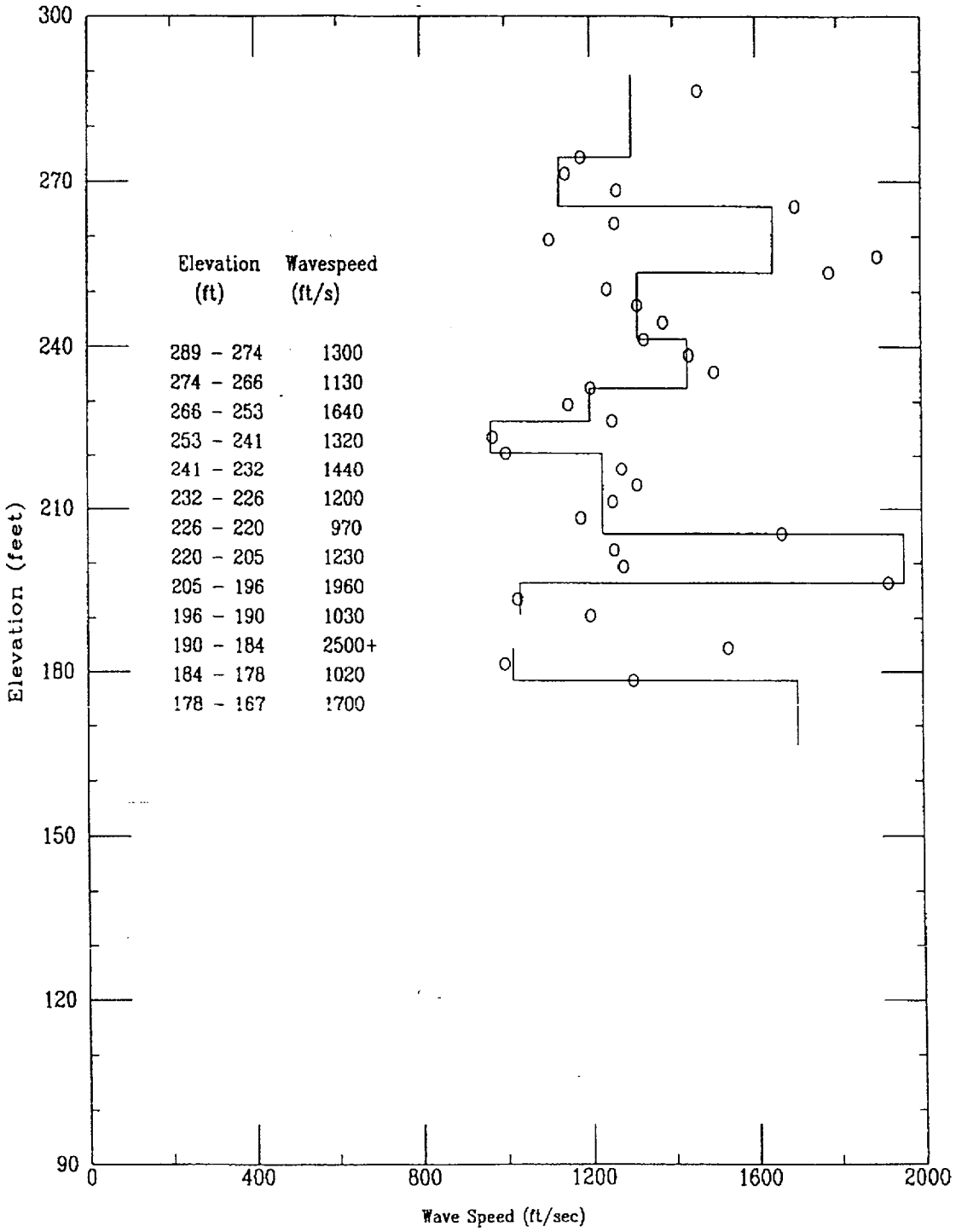
North 78900 East 55385 Elevation 298.5



File 419M804.ECP

CPT-171 APPLIED RESEARCH ASSOCIATES, INC. 03/19/98

Shear Wave Speeds

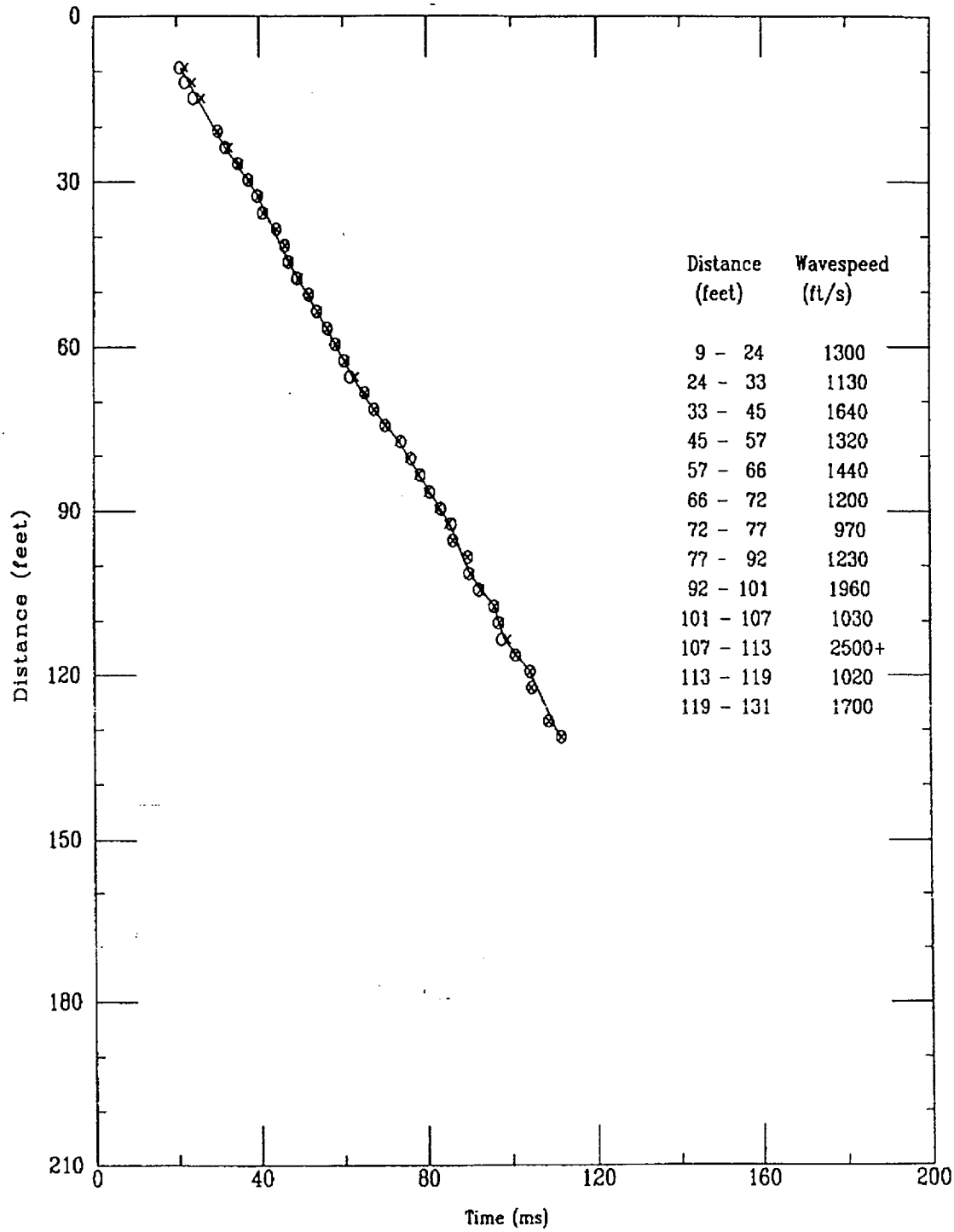


Elevation (ft)	Wavespeed (ft/s)
289 - 274	1300
274 - 266	1130
266 - 253	1640
253 - 241	1320
241 - 232	1440
232 - 226	1200
226 - 220	970
220 - 205	1230
205 - 196	1960
196 - 190	1030
190 - 184	2500+
184 - 178	1020
178 - 167	1700

File 419m804S

CPT-171 APPLIED RESEARCH ASSOCIATES, INC. 03/19/98

Shear Wave Time of Peak

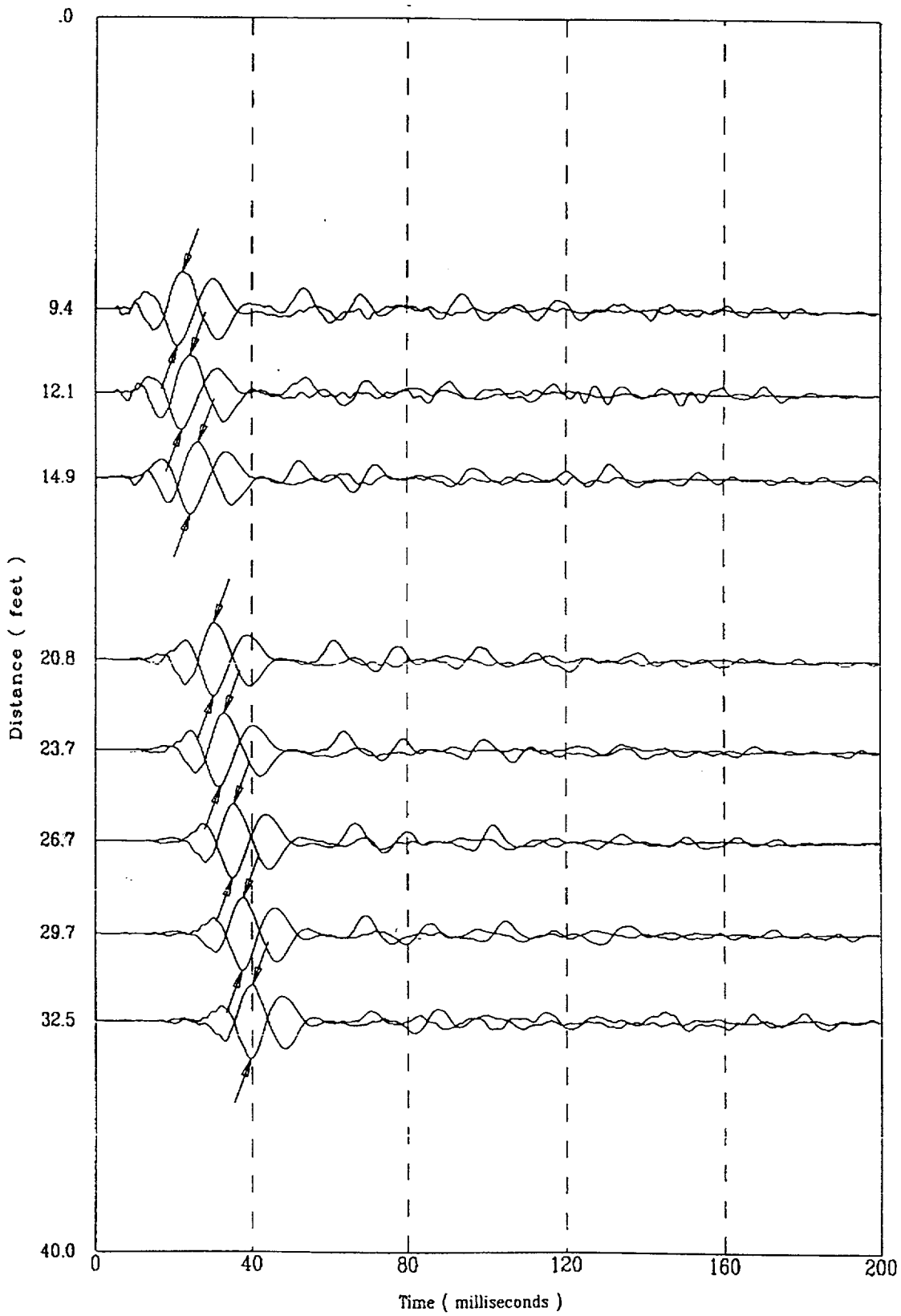


Distance (feet)	Wavespeed (ft/s)
9 - 24	1300
24 - 33	1130
33 - 45	1640
45 - 57	1320
57 - 66	1440
66 - 72	1200
72 - 77	970
77 - 92	1230
92 - 101	1960
101 - 107	1030
107 - 113	2500+
113 - 119	1020
119 - 131	1700

File 419m804S

Applied Research Associates
CPT-171

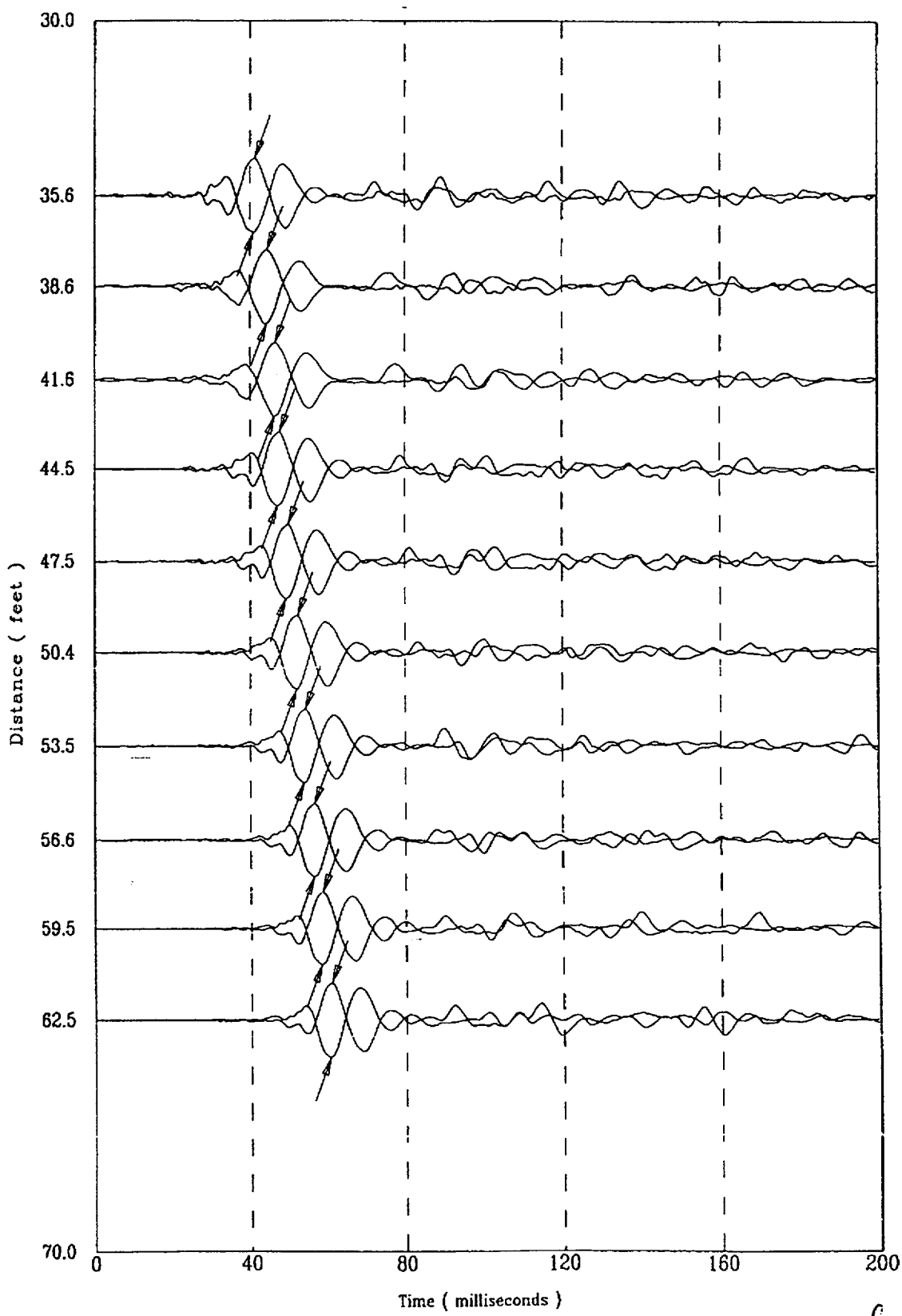
S Wave
03/19/98



File 419m804S

Applied Research Associates
CPT-171

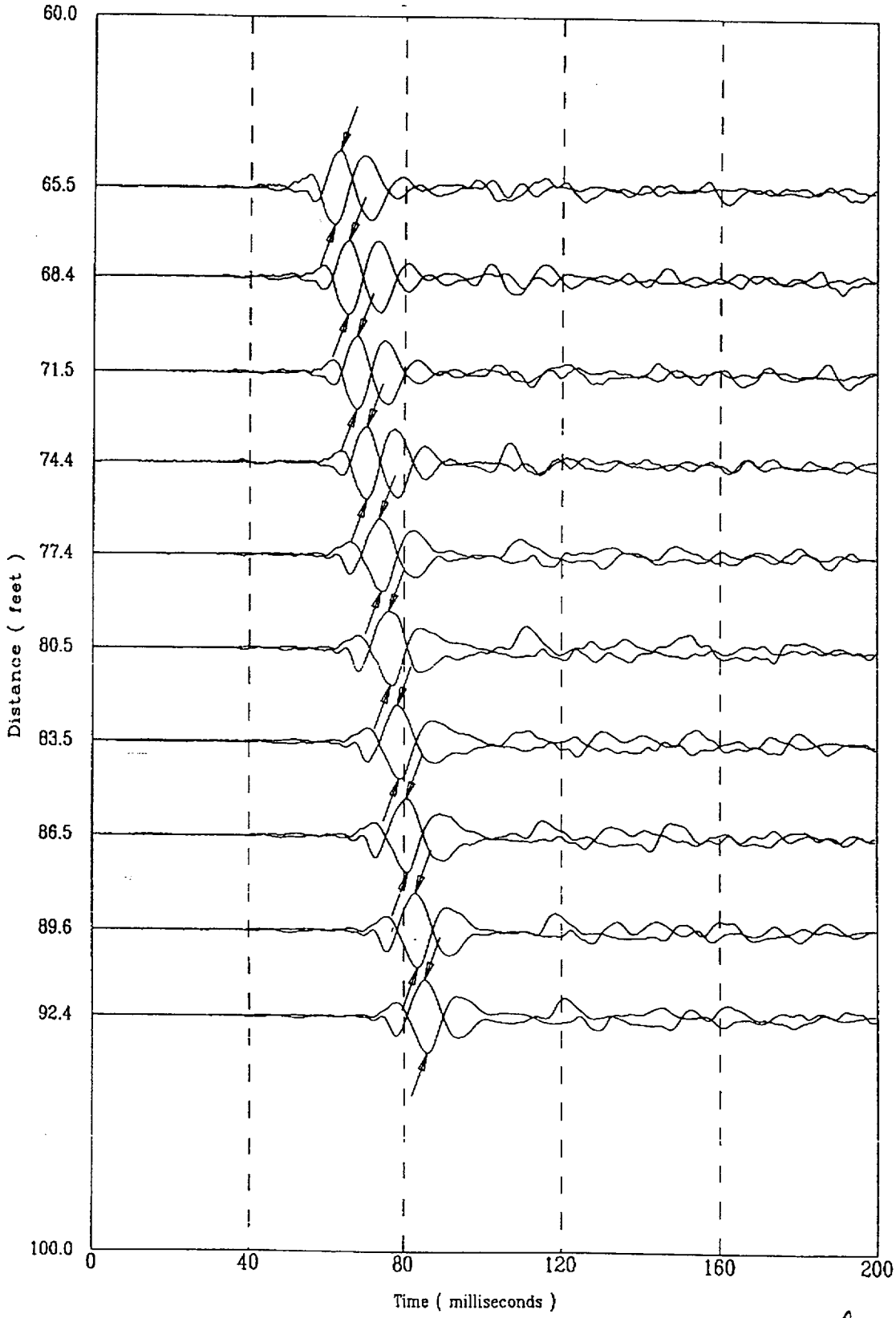
S Wave
03/19/98



419m804S

Applied Research Associates
CPT-171

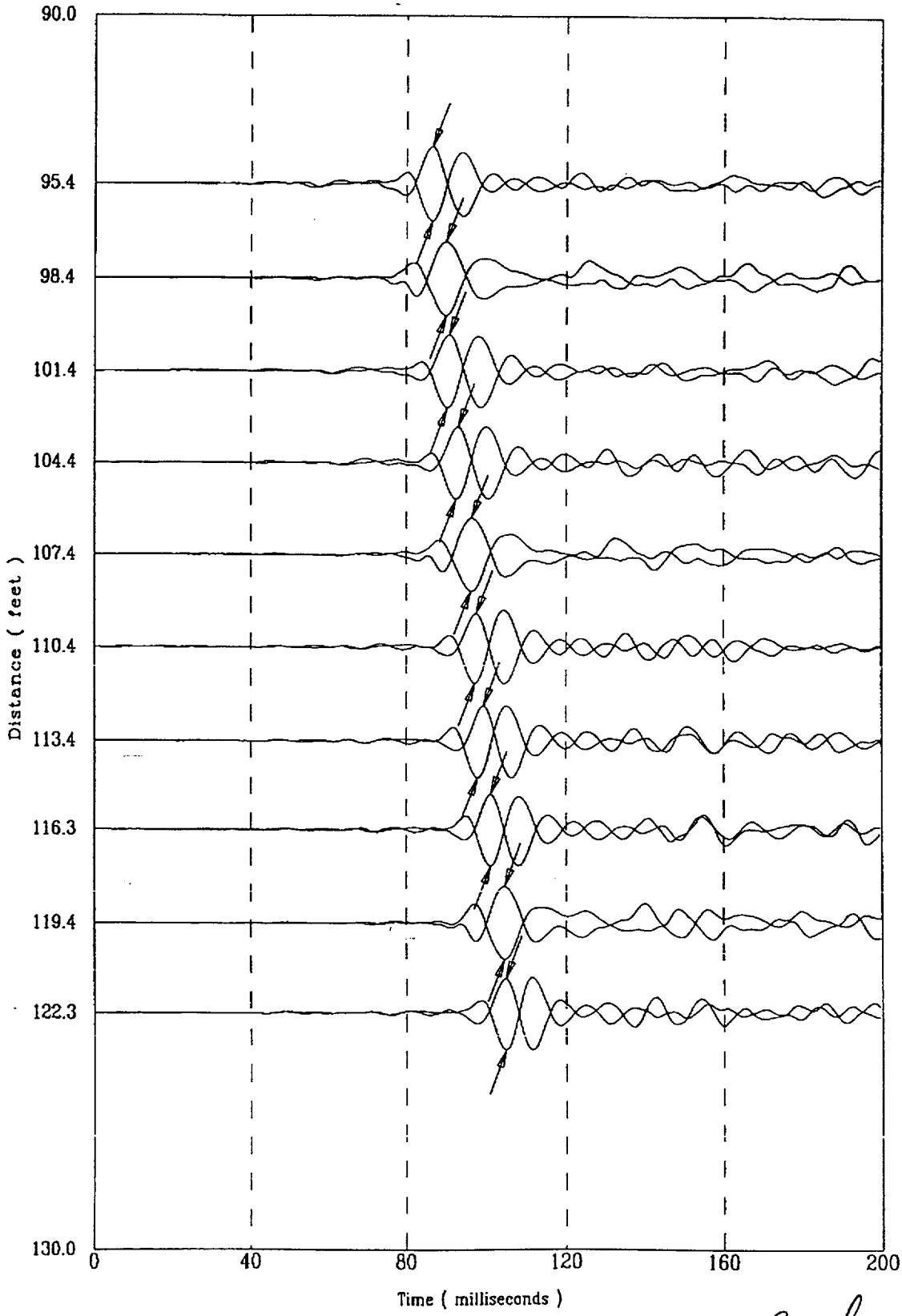
S Wave
03/19/98



File 419m804S

Applied Research Associates
CPT-171

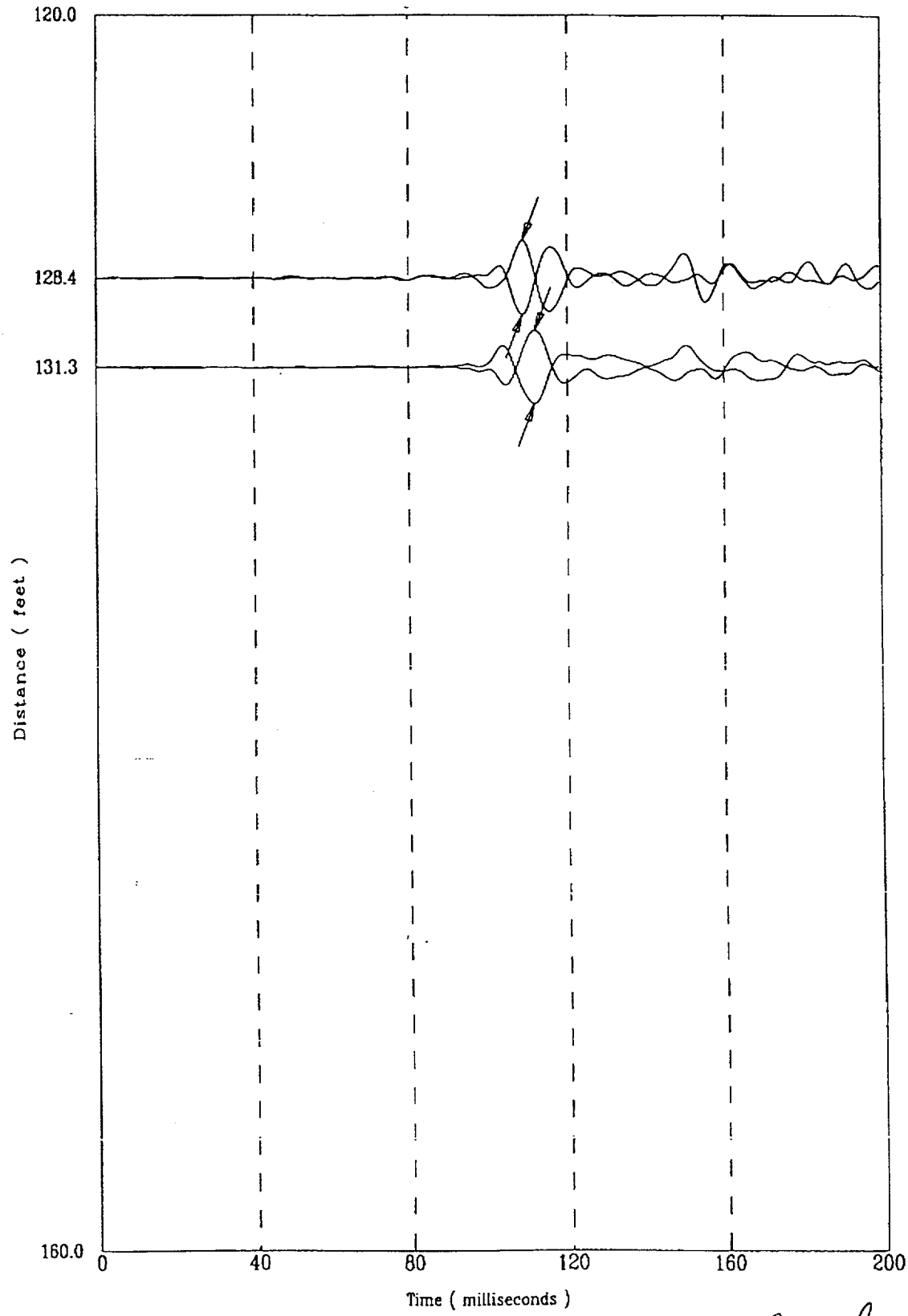
S Wave
03/19/98



419m804S

Applied Research Associates
CPT-171

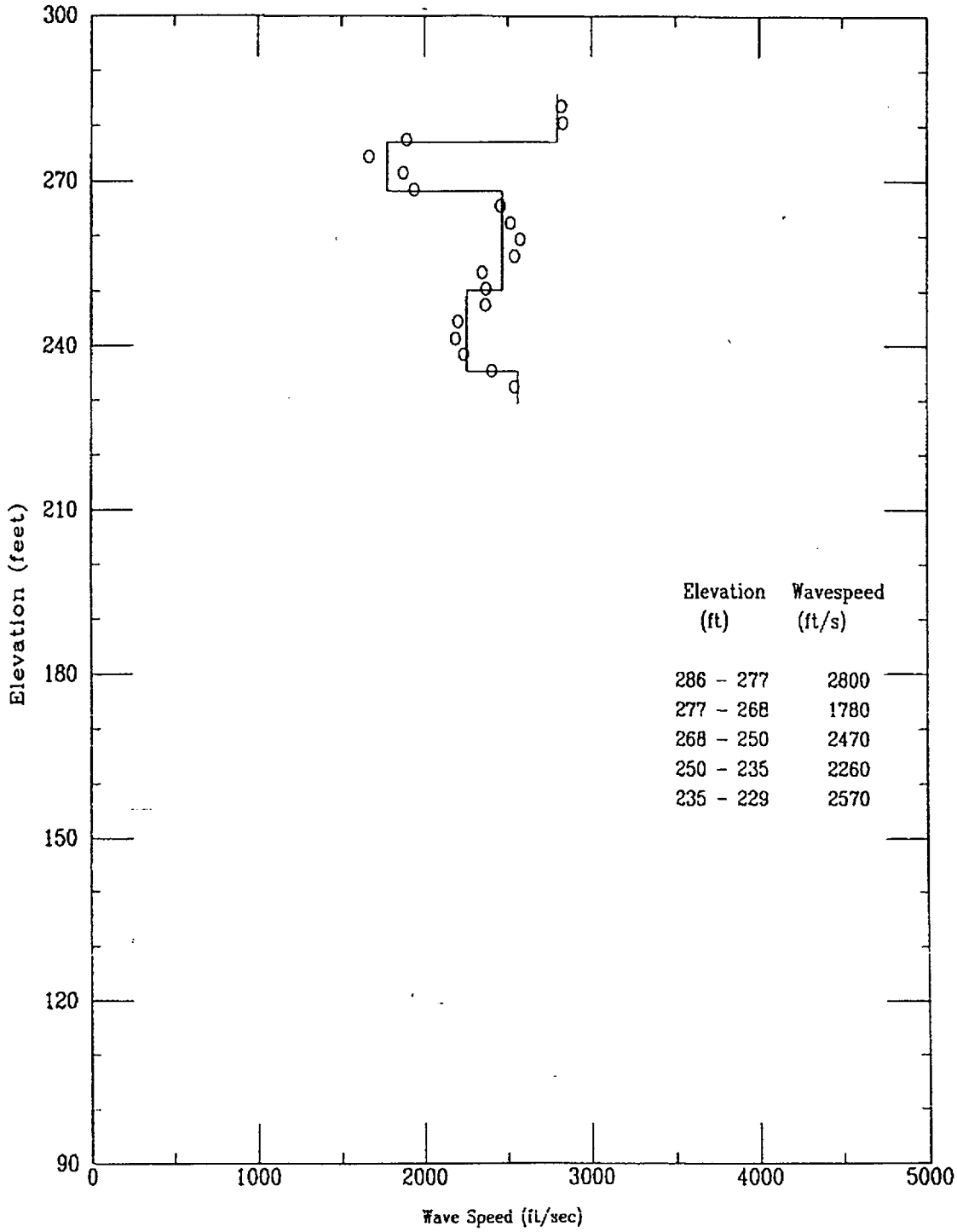
S Wave
03/19/98



File 419m804S

CPT-171 APPLIED RESEARCH ASSOCIATES, INC. 03/19/98

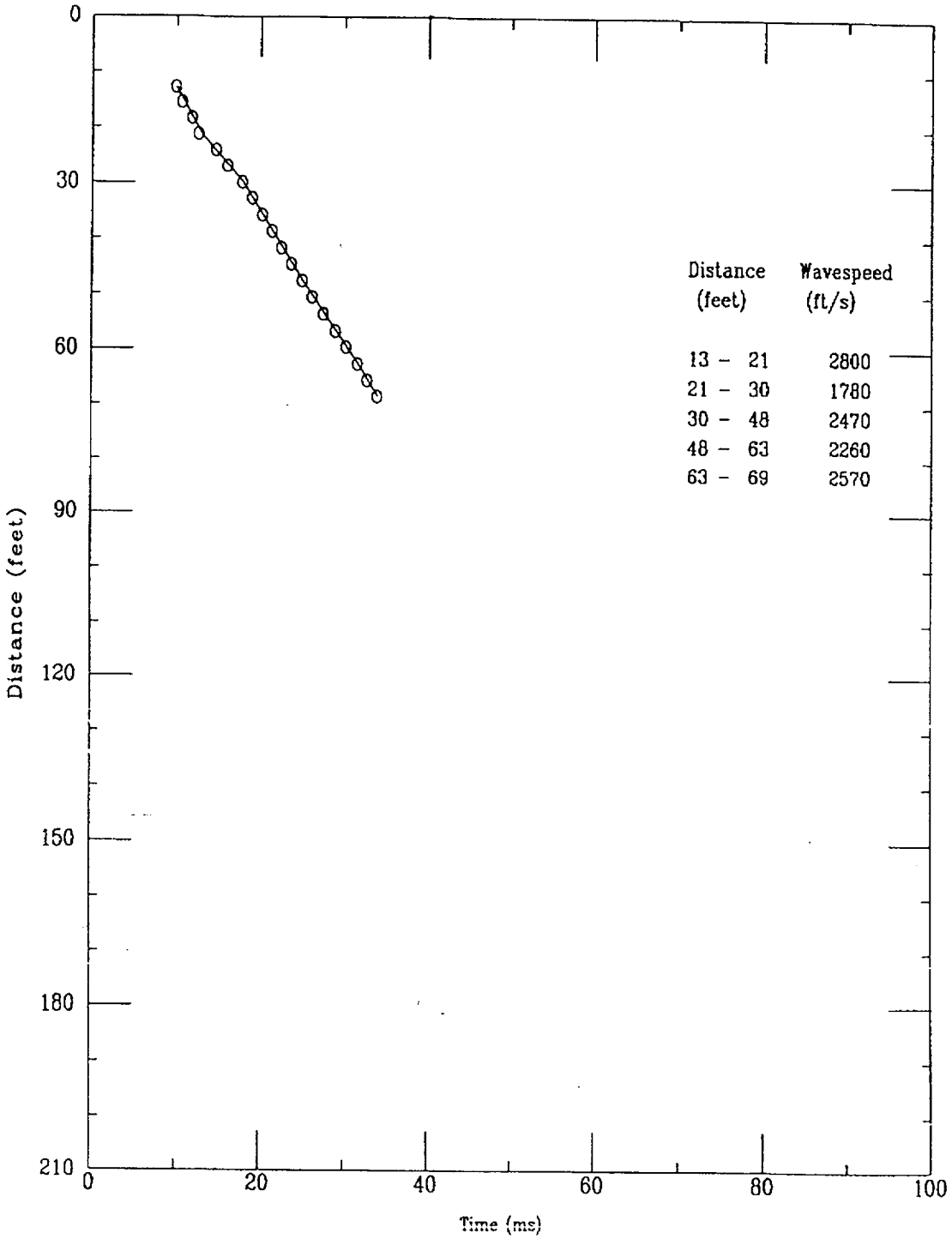
Compression Wave Speeds



File 419m804S

CPT-171 APPLIED RESEARCH ASSOCIATES, INC. 03/19/98

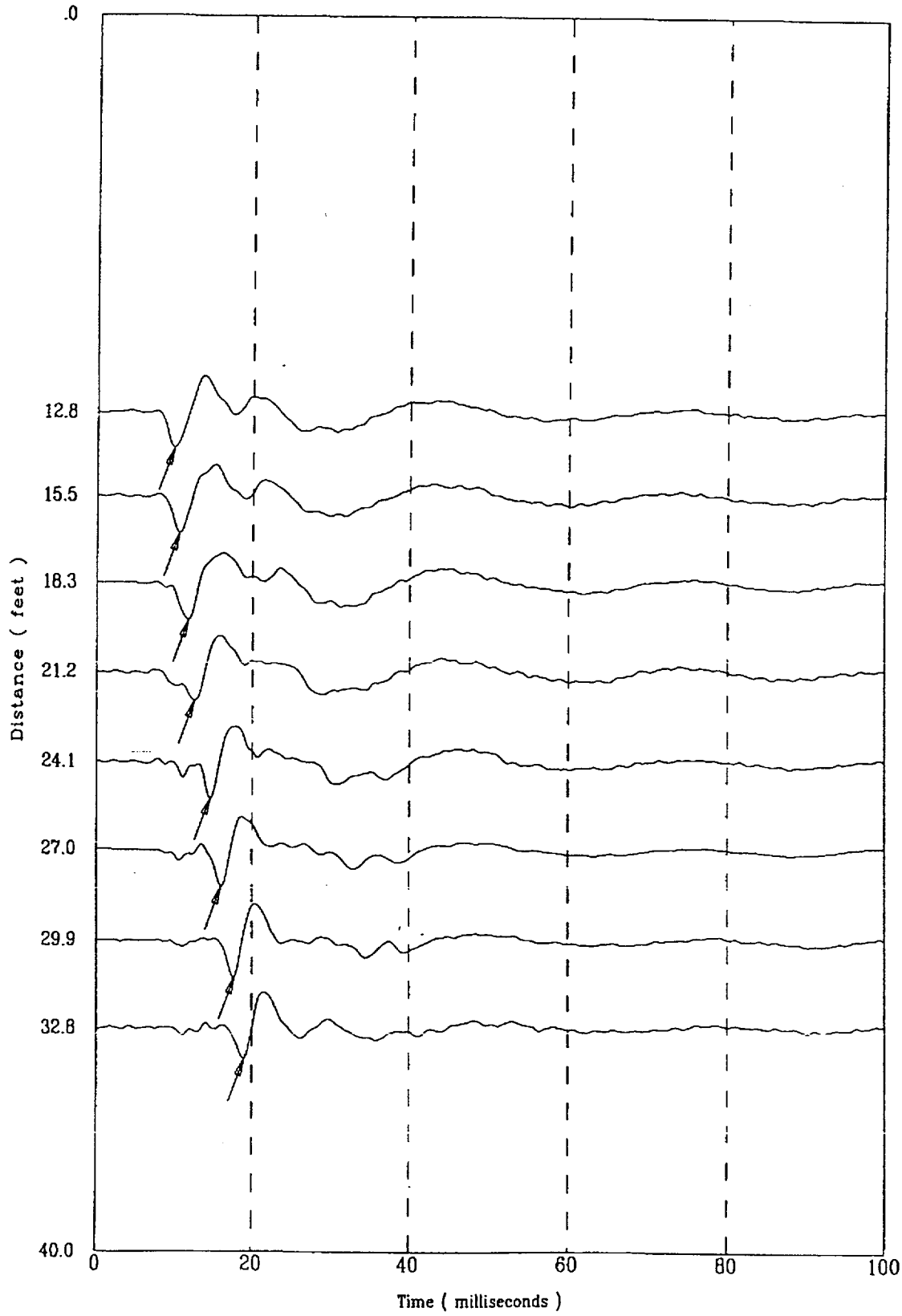
Compression Wave Time of Peak



File 419m804S

Applied Research Associates, Inc.
CPT-171

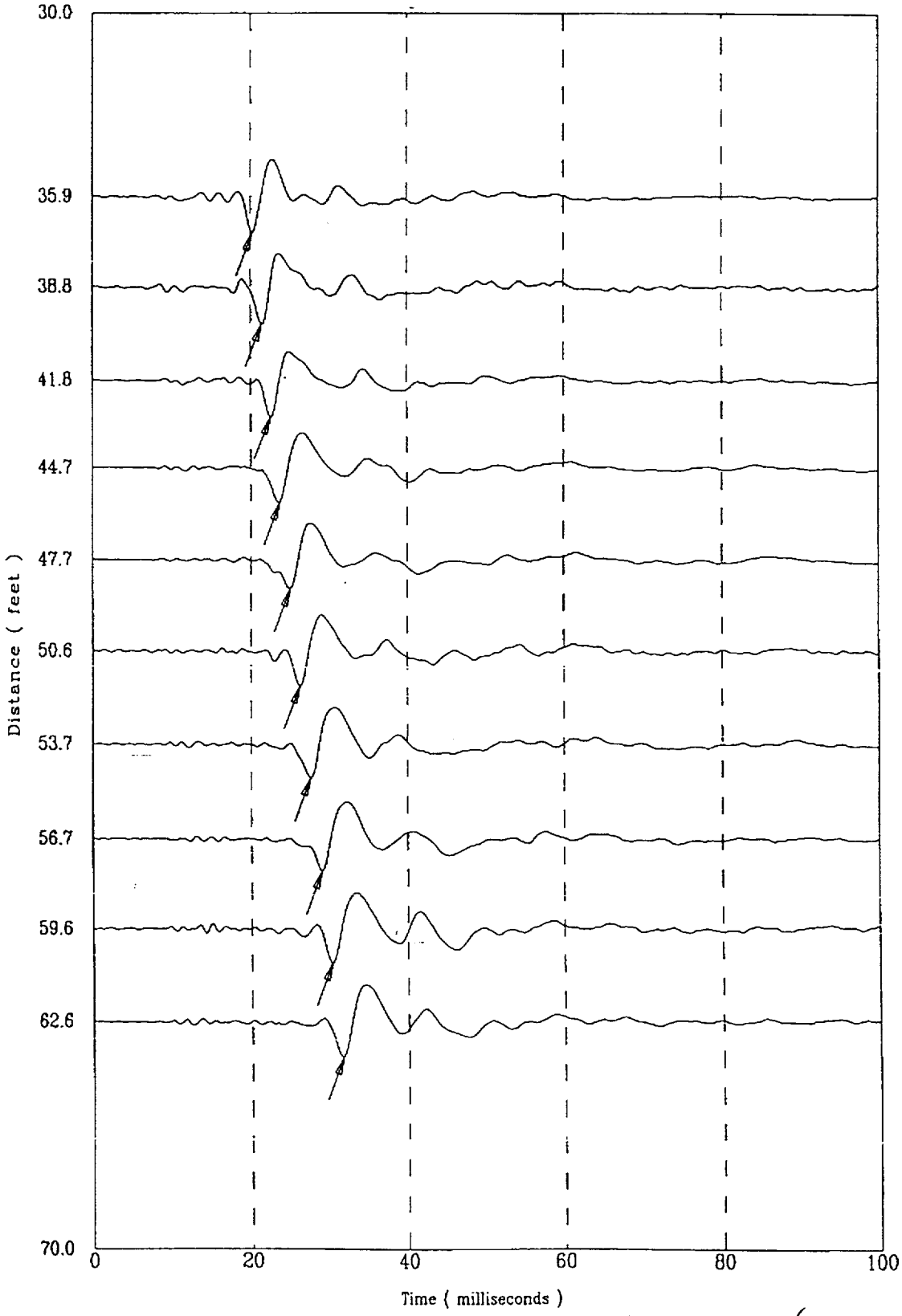
P Wave
03/19/98



19m804S

Applied Research Associates, Inc.
CPT-171

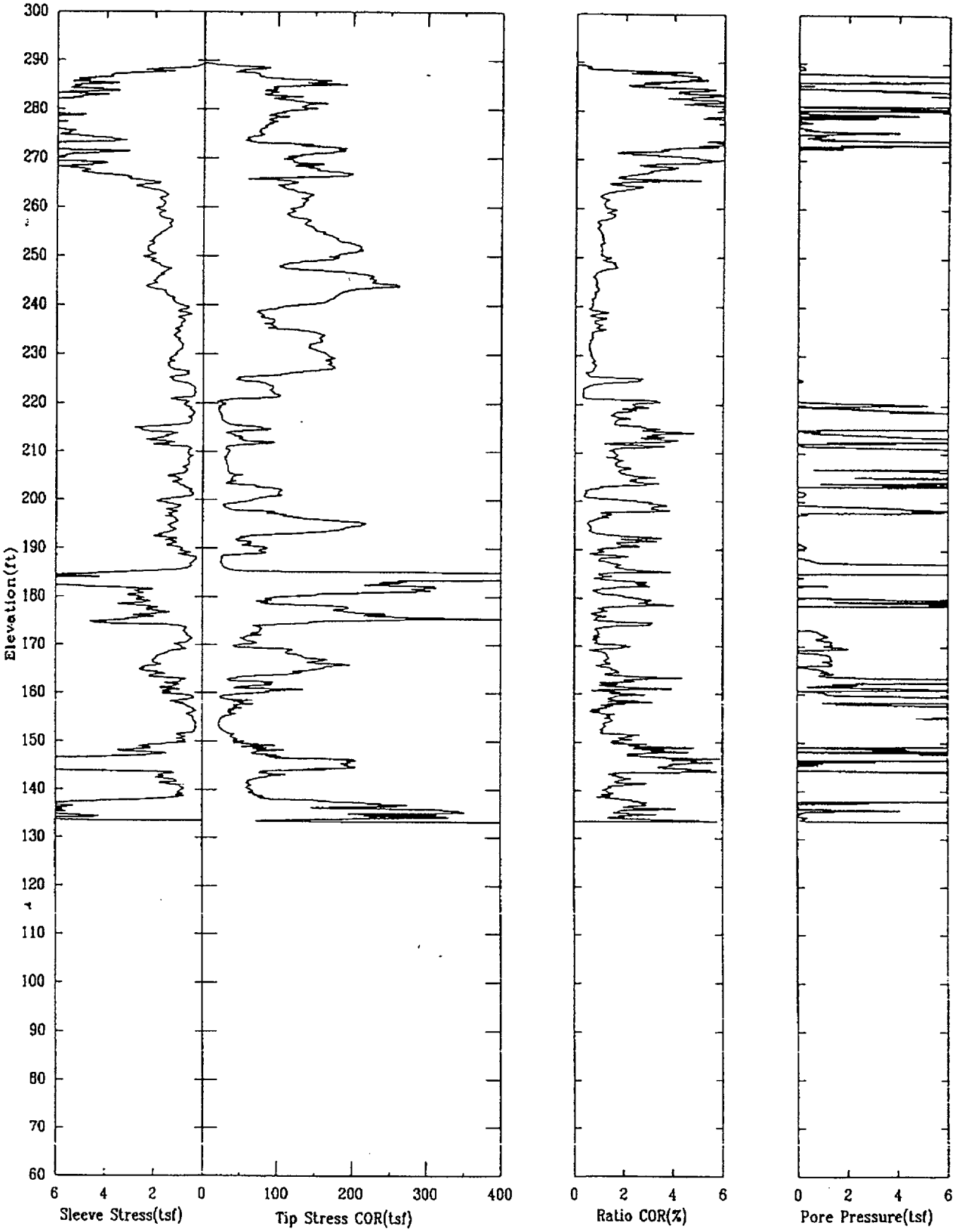
P Wave
03/19/98



File 419m804S

CPT-172 APPLIED RESEARCH ASSOCIATES, INC. 03/25/98

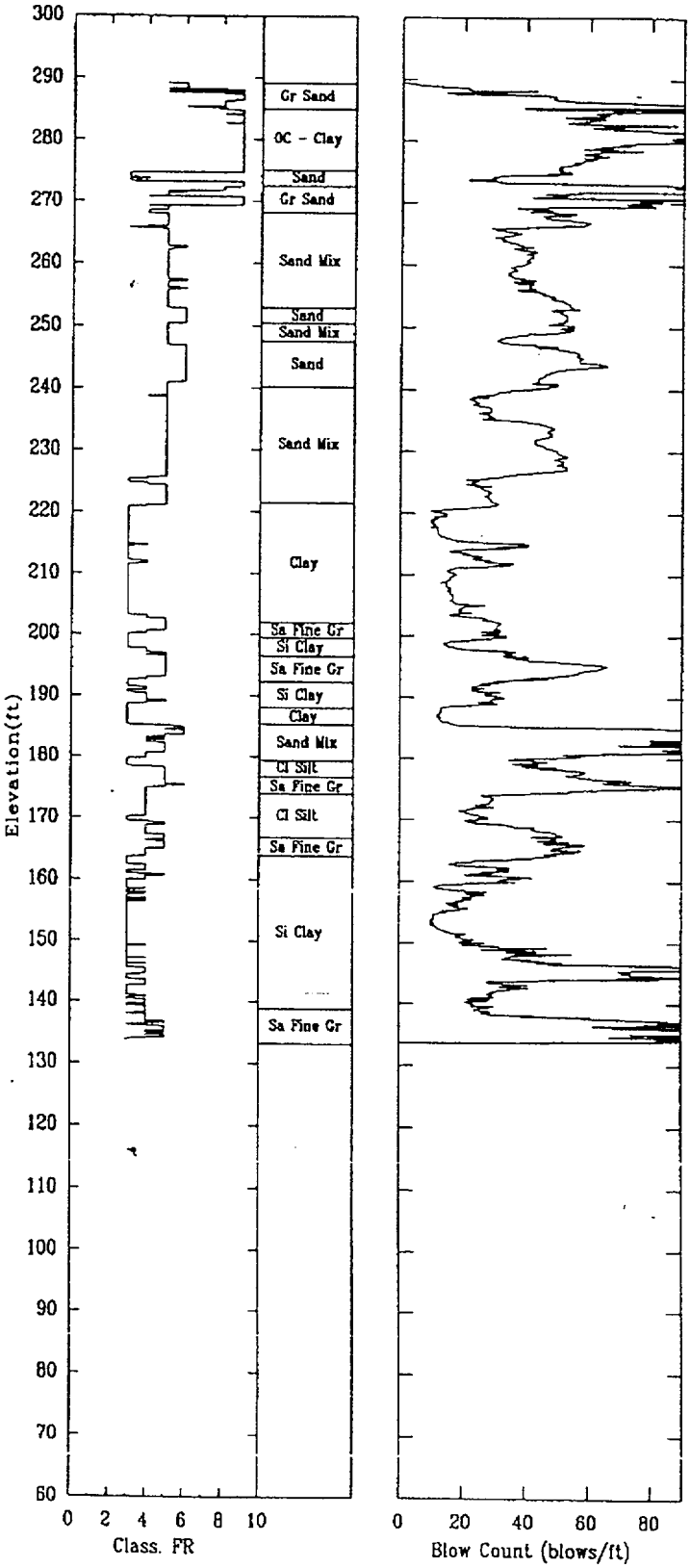
North 78900 East 55518 Elevation 295.4



File 325M801.ECP

CPT-172 APPLIED RESEARCH ASSOCIATES, INC. 03/25/98

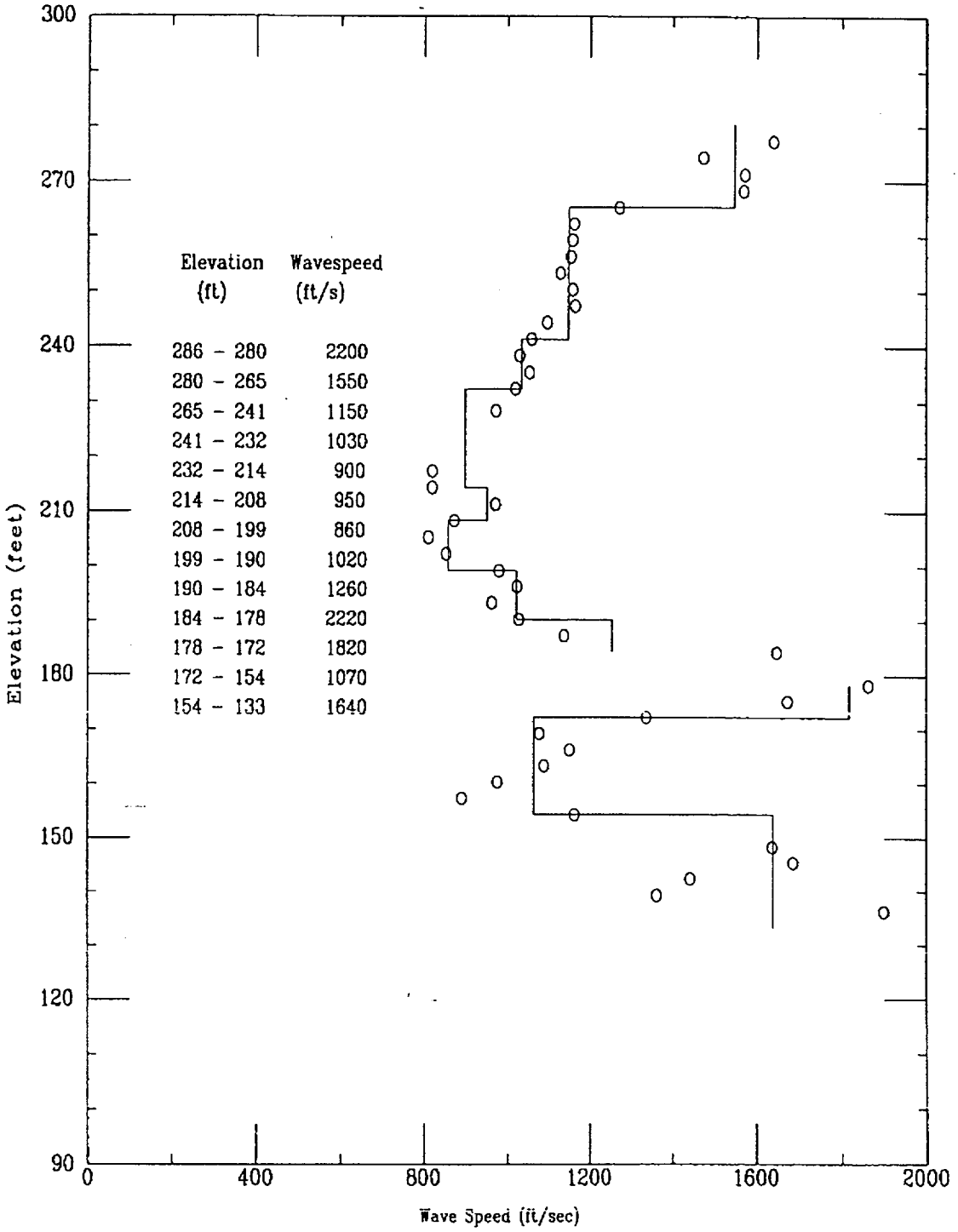
North 78900 East 55518 Elevation 295.4



File 325M801.ECP

CPT-172 APPLIED RESEARCH ASSOCIATES, INC. 03/25/98

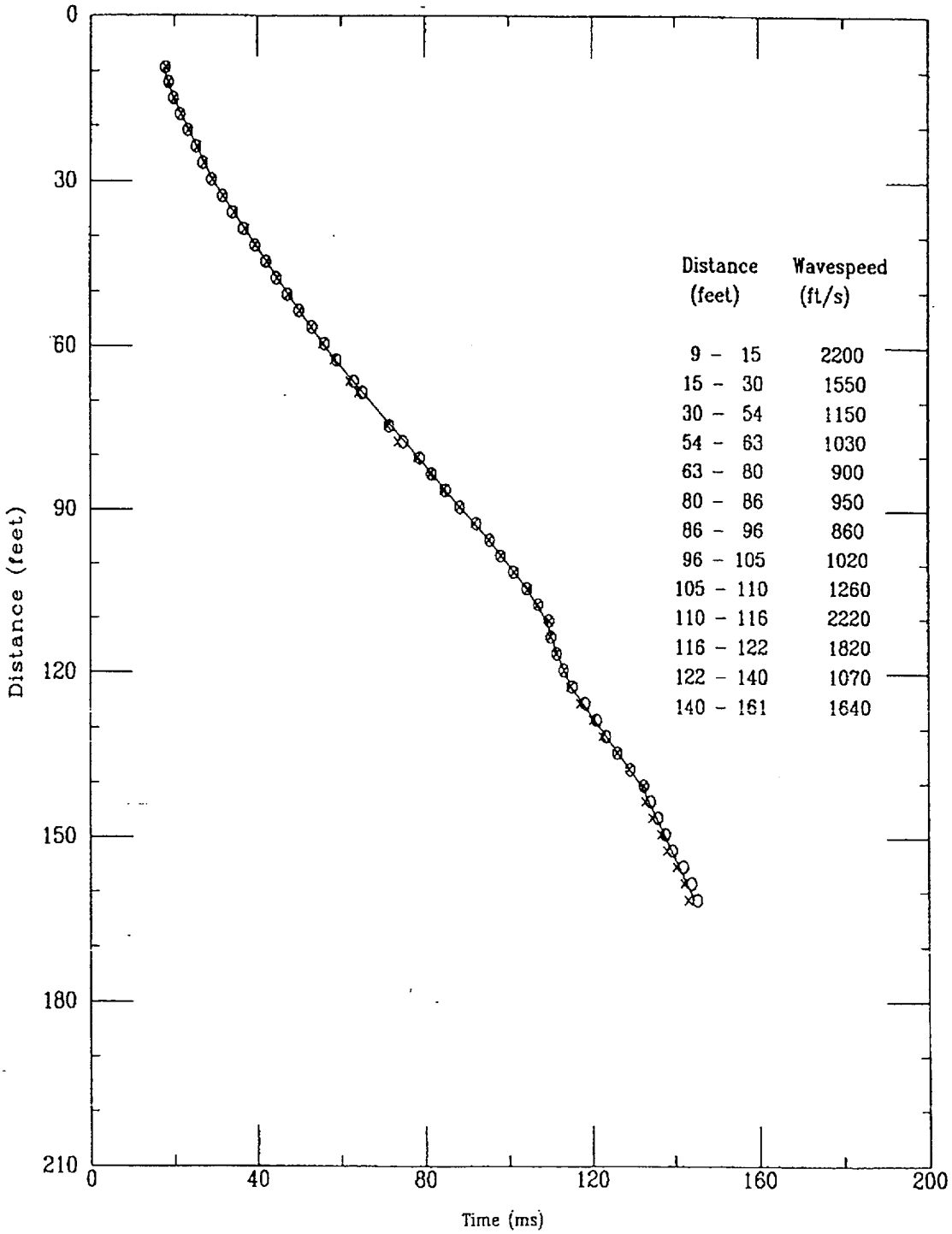
Shear Wave Speeds



File 325m801S

CPT-172 APPLIED RESEARCH ASSOCIATES, INC. 03/25/98

Shear Wave Time of Peak

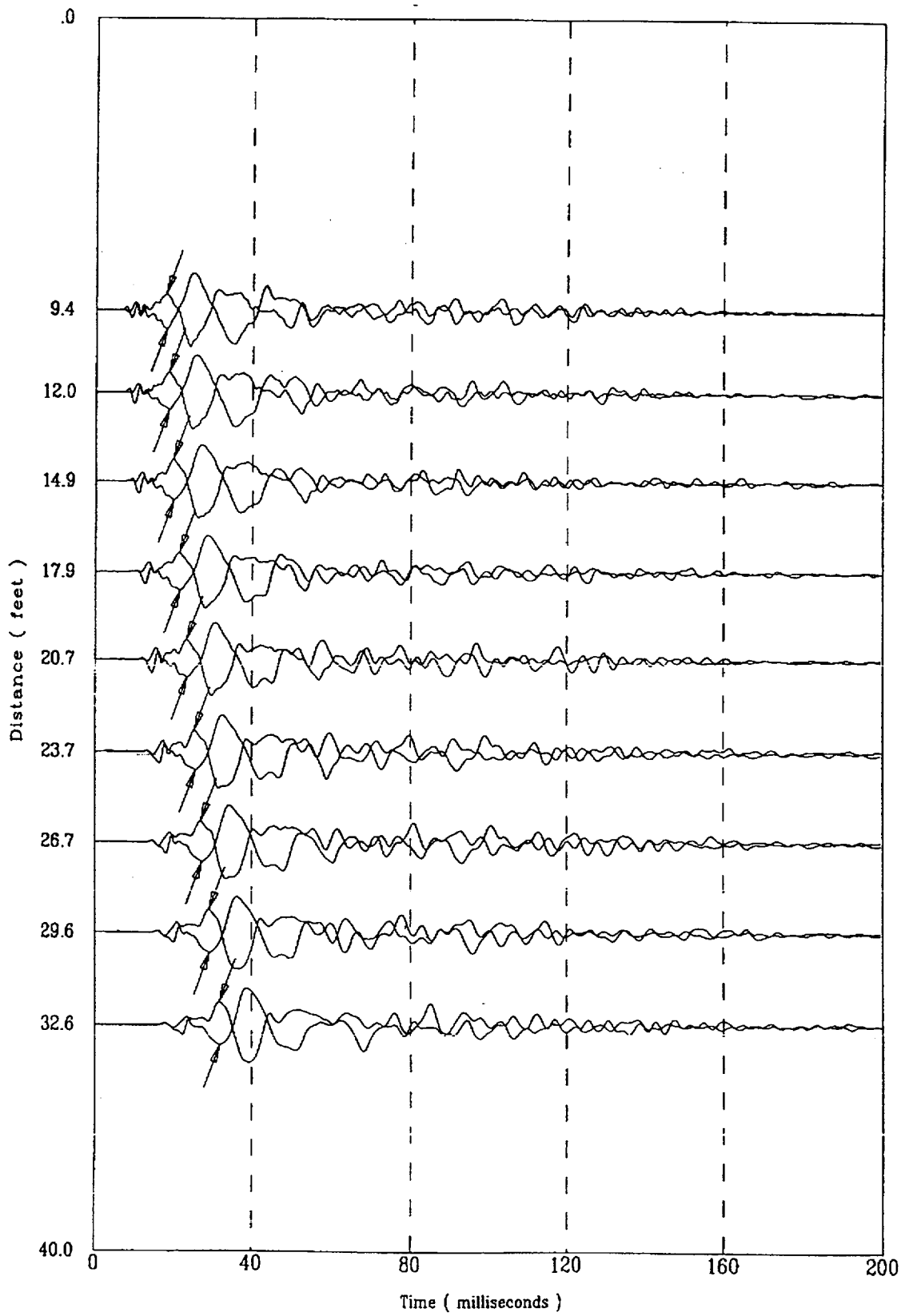


Distance (feet)	Wavespeed (ft/s)
9 - 15	2200
15 - 30	1550
30 - 54	1150
54 - 63	1030
63 - 80	900
80 - 86	950
86 - 96	860
96 - 105	1020
105 - 110	1260
110 - 116	2220
116 - 122	1820
122 - 140	1070
140 - 161	1640

File 325m801S

Applied Research Associates, Inc.
CPT-172

S Wave
03/25/98



Applied Research Associates, Inc.
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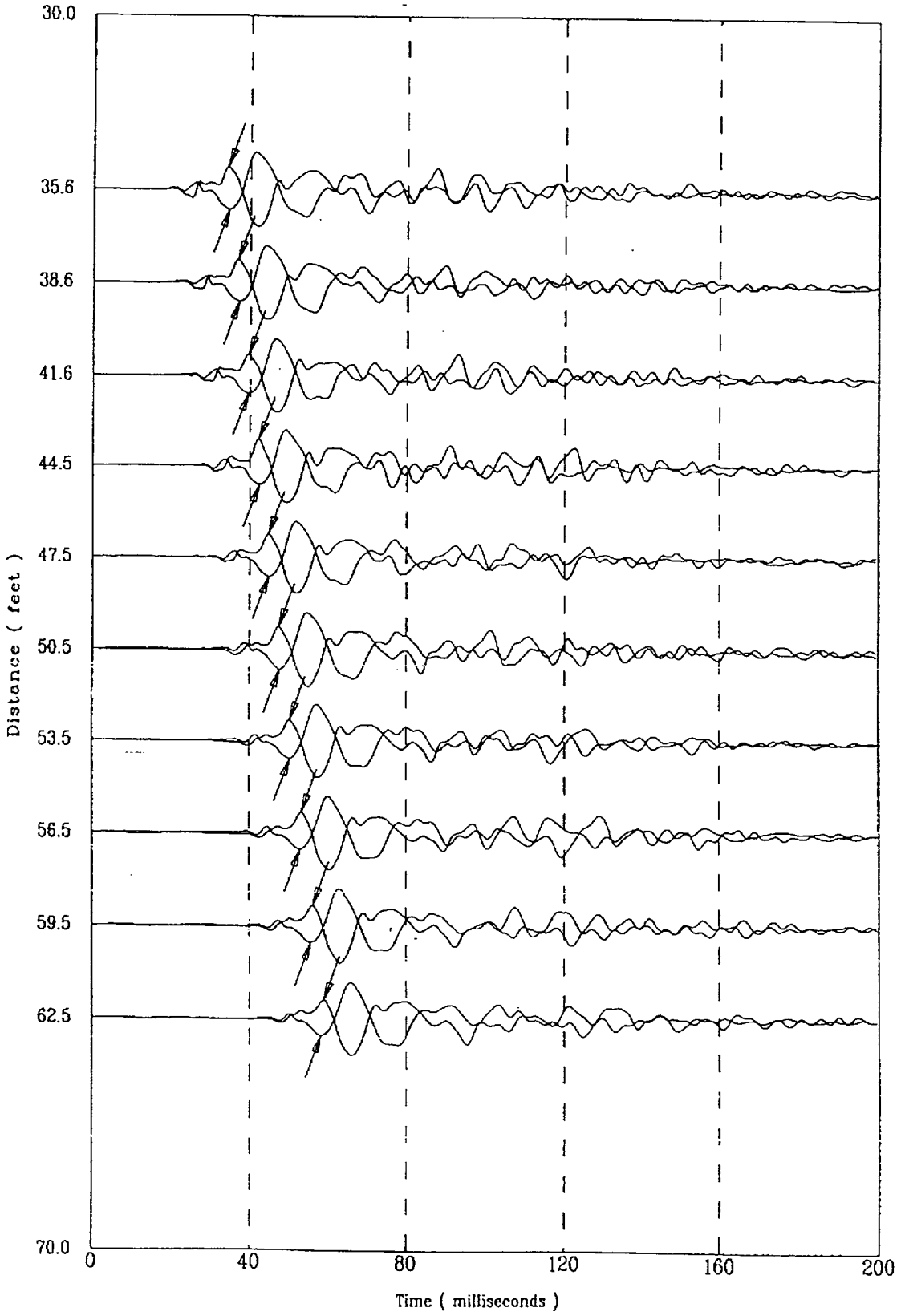
S Wave
03/25/98



File 325m801S

Applied Research Associates, Inc.
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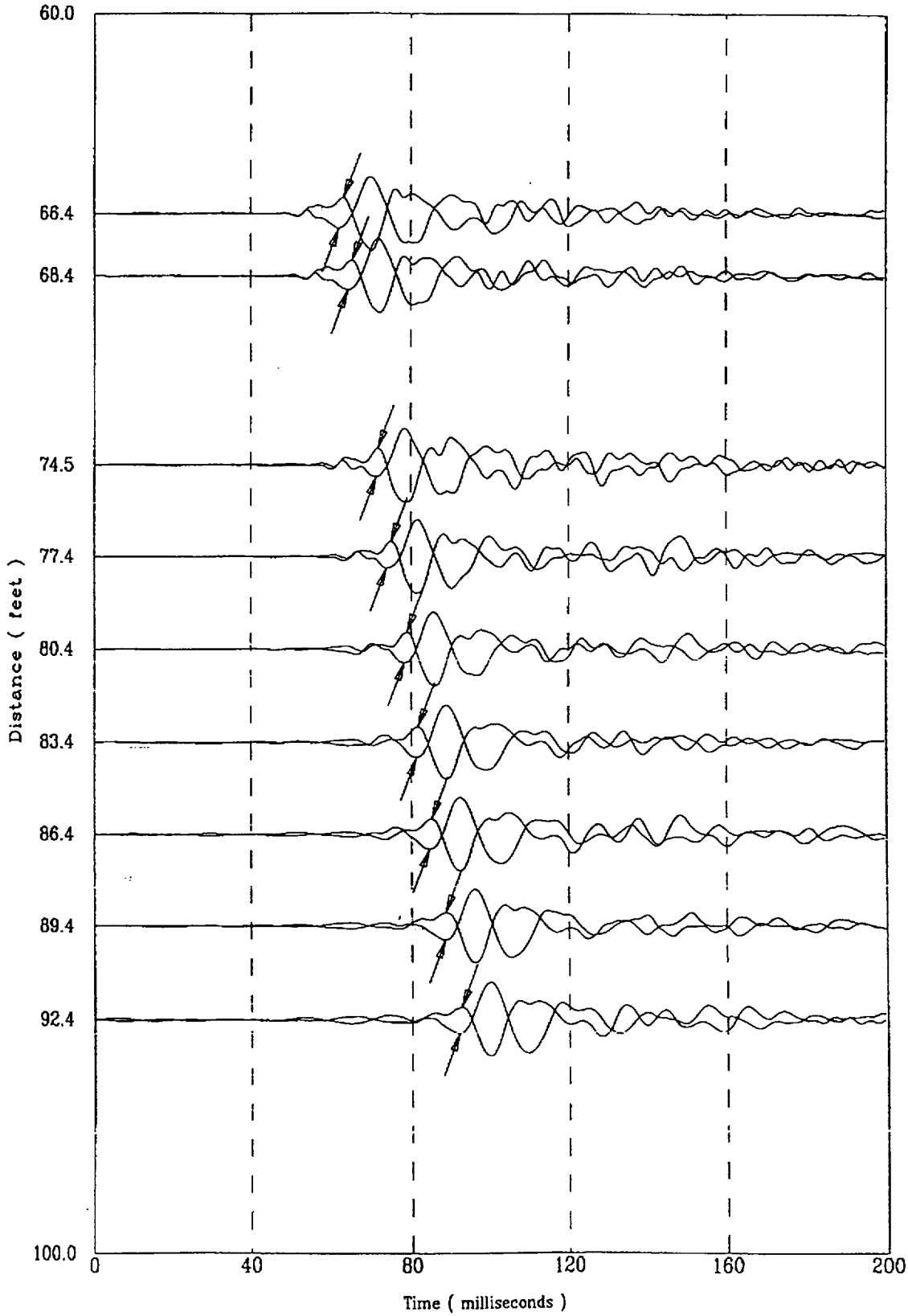
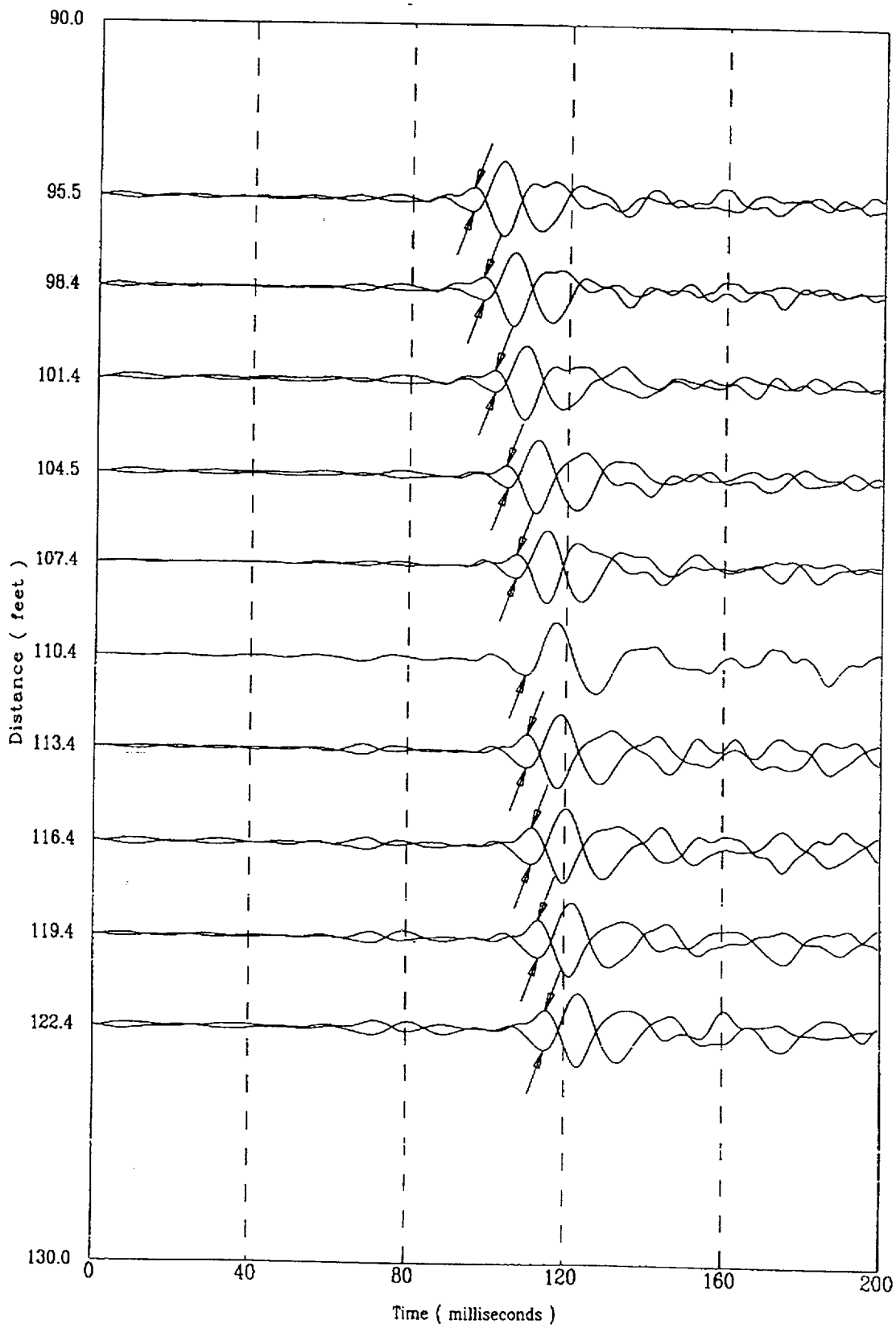
S Wave
03/25/98



File 325m801S

Applied Research Associates, Inc.
CPT-172

S Wave
03/25/98



File 325m801S

Applied Research Associates, Inc.
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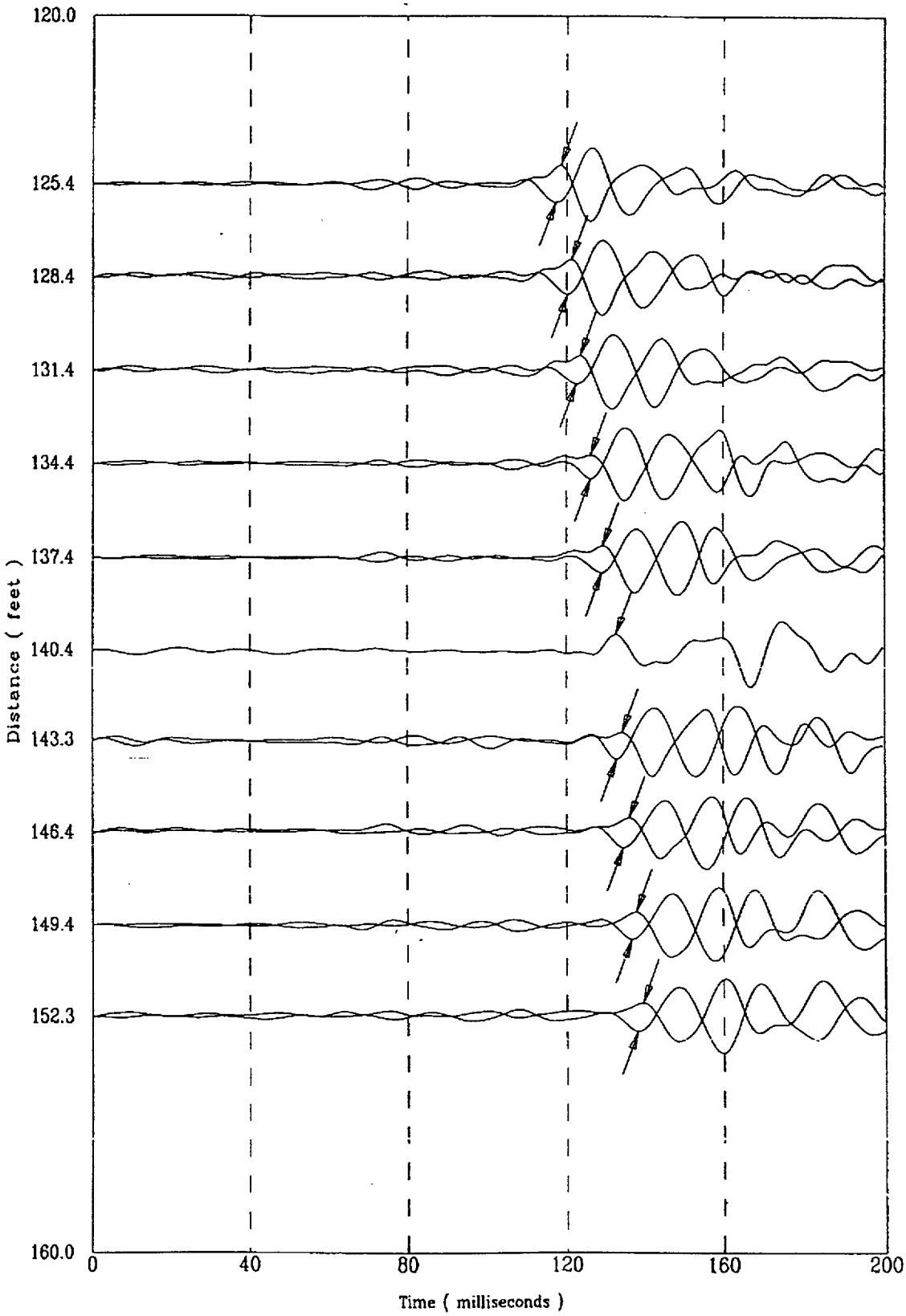
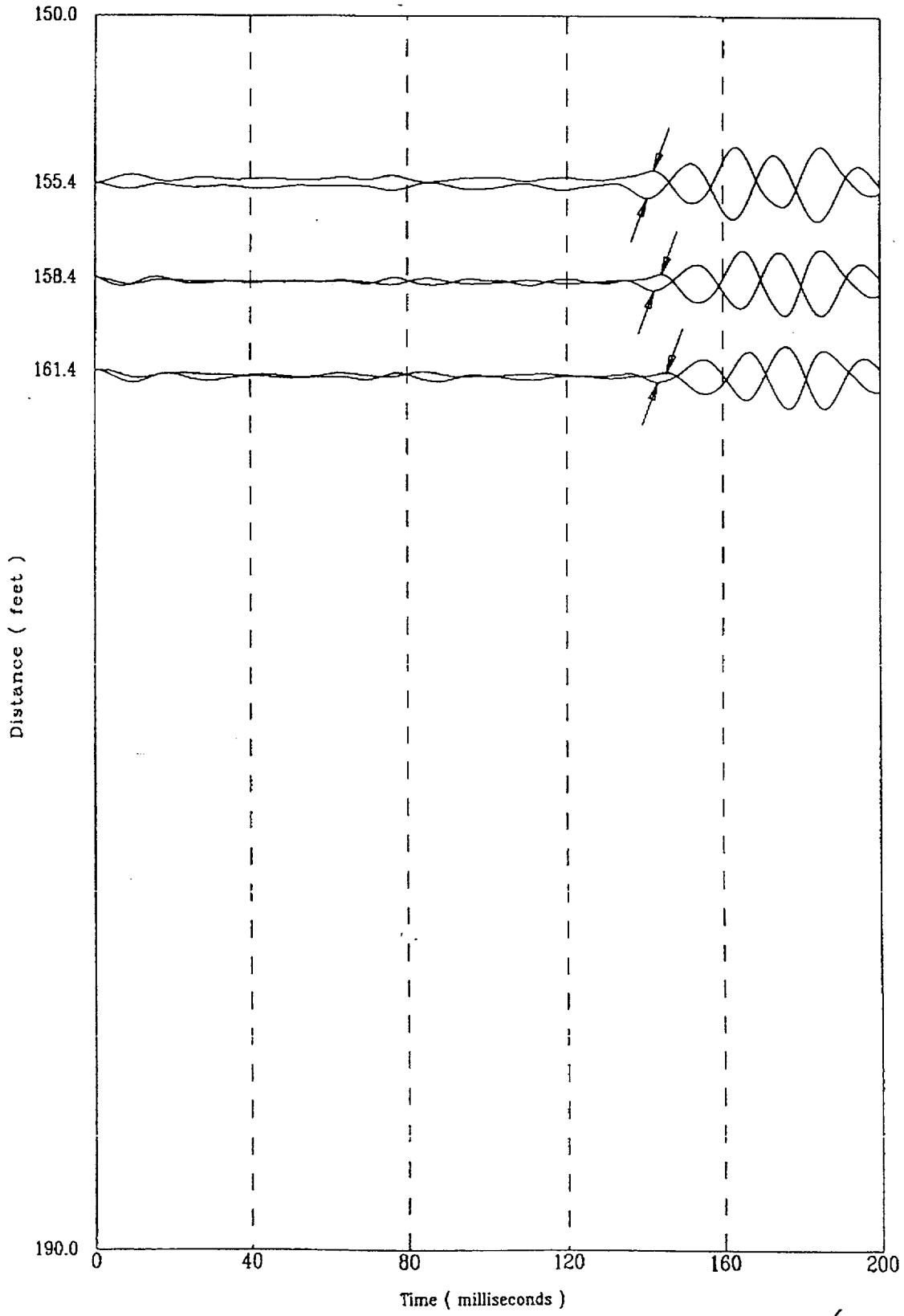
S Wave
03/25/98



25m801S

Applied Research Associates, Inc.
CPT-172

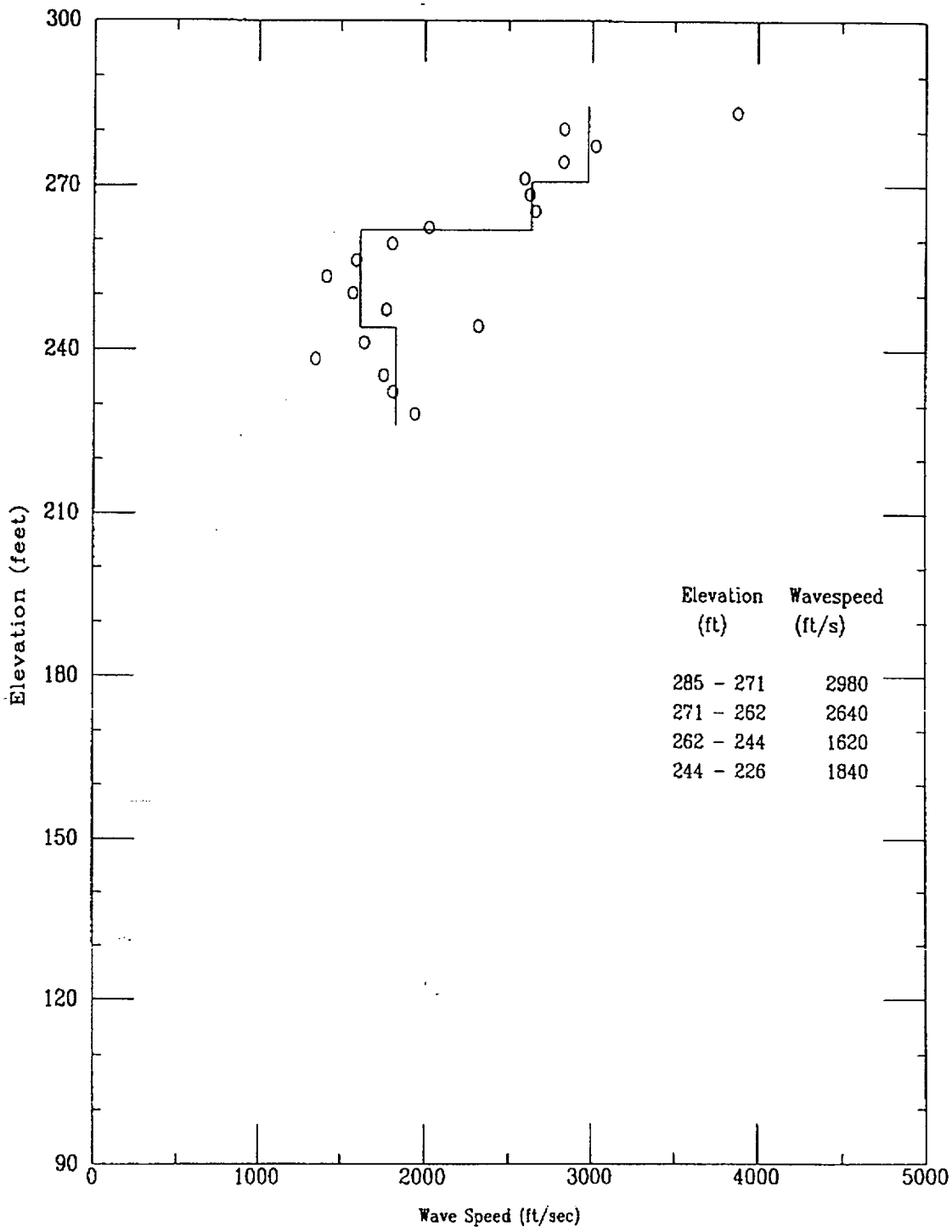
S Wave
03/25/98



File 325m801S

CPT-172 APPLIED RESEARCH ASSOCIATES, INC. 03/25/98

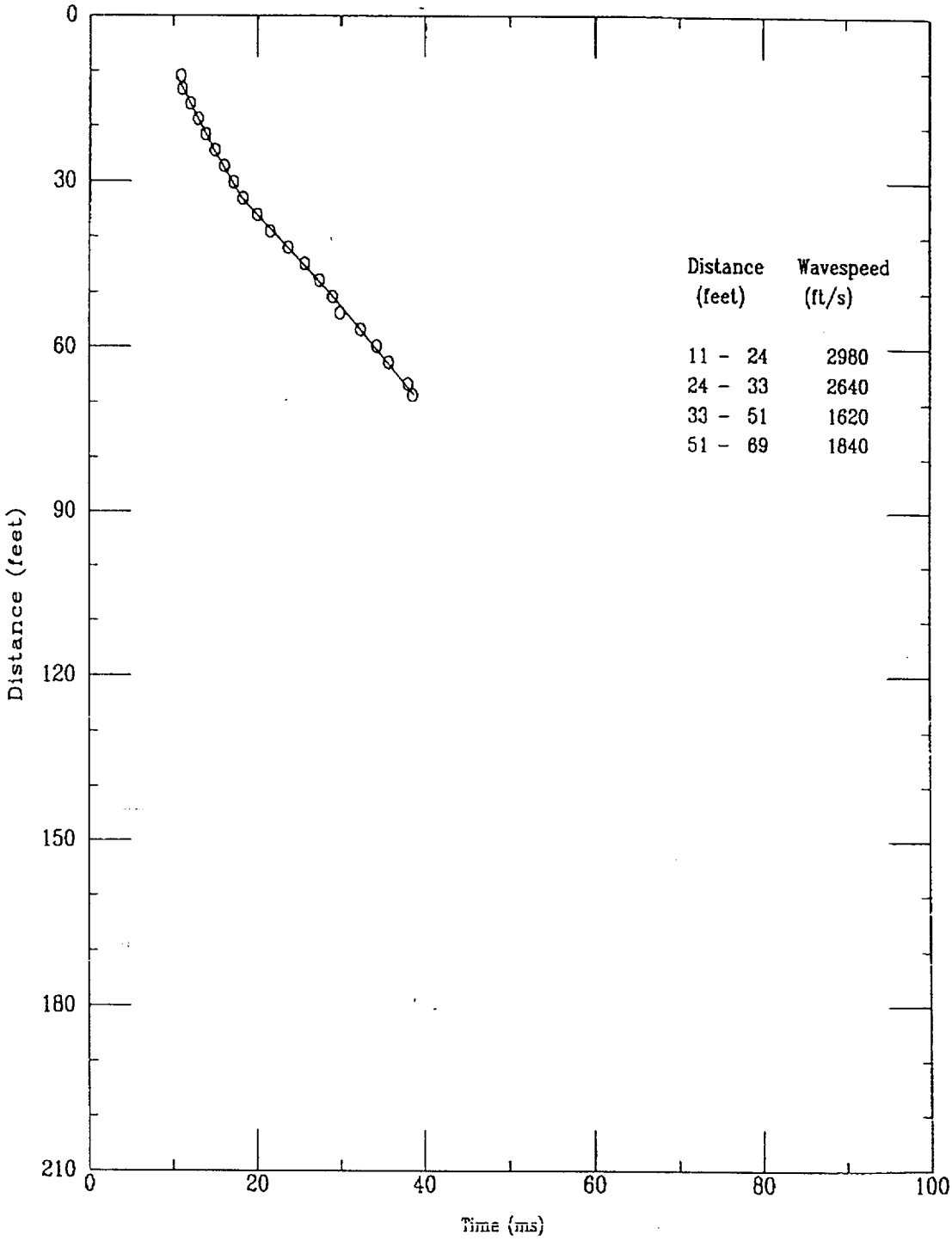
Compression Wave Speeds



File 325m801S

CPT-172 APPLIED RESEARCH ASSOCIATES, INC. 03/25/98

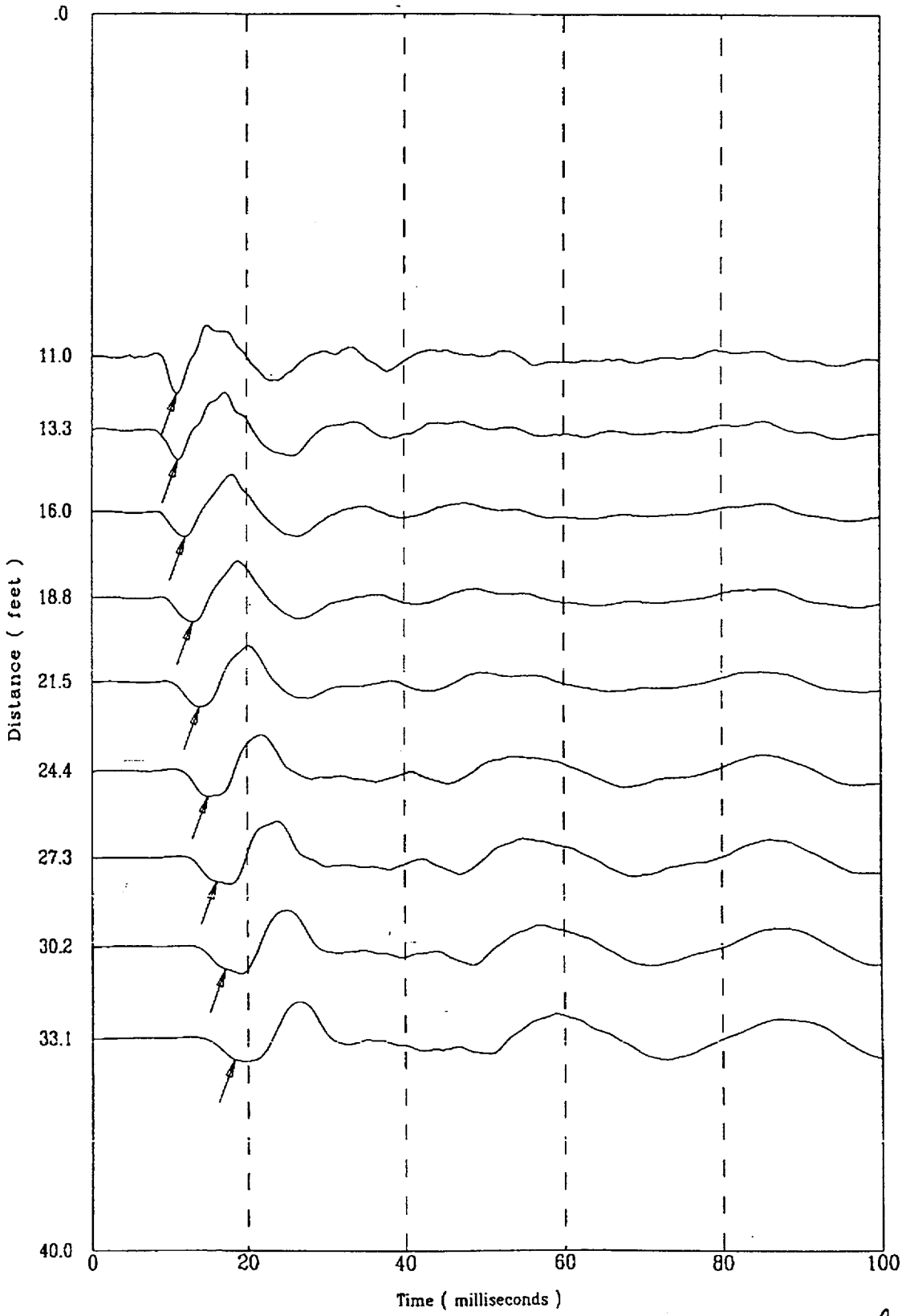
Compression Wave Time of Peak



File 325m801S

Applied Research Associates, Inc.
CPT-172

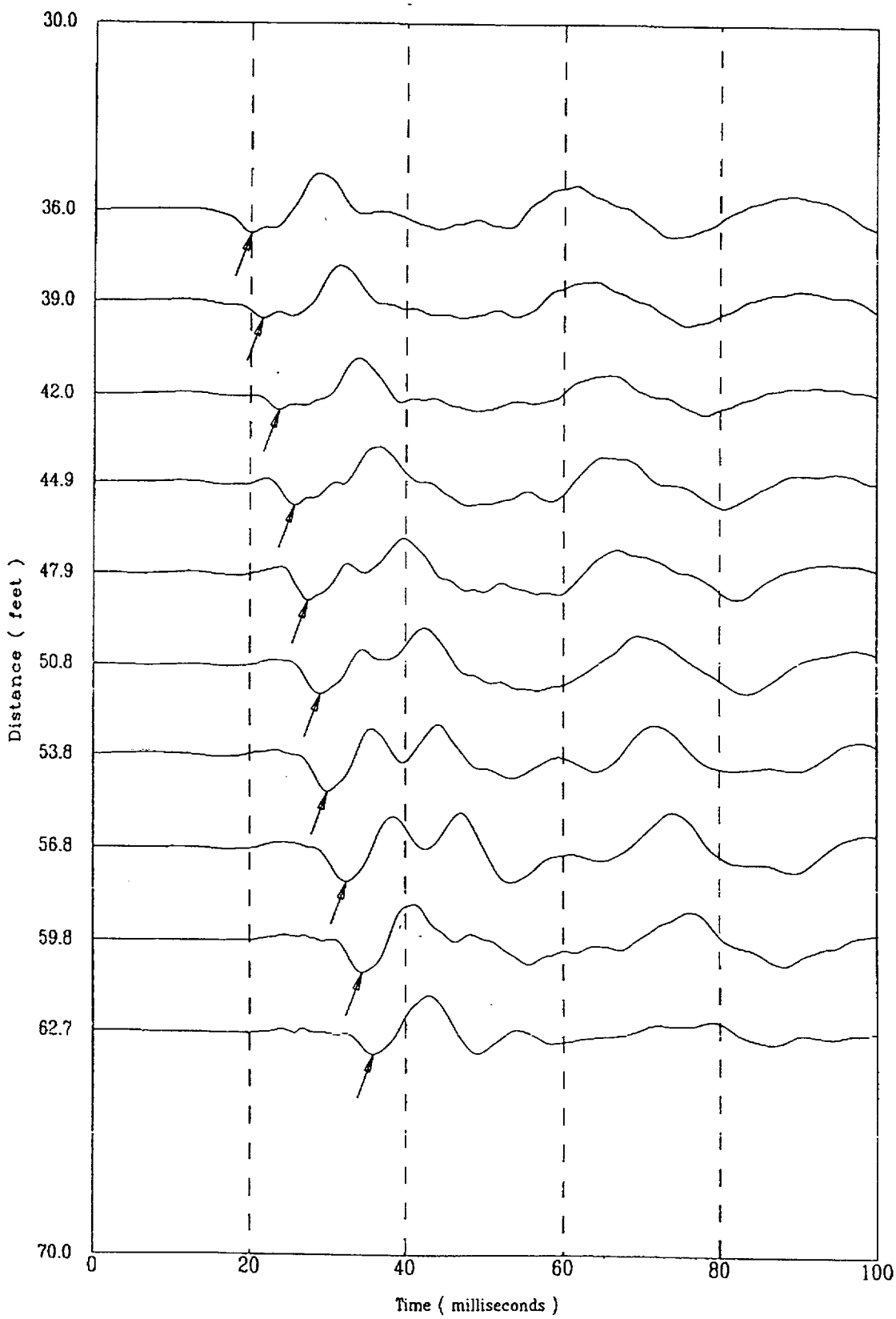
P Wave
03/25/98



J25m801S

Applied Research Associates, Inc.
CPT-172

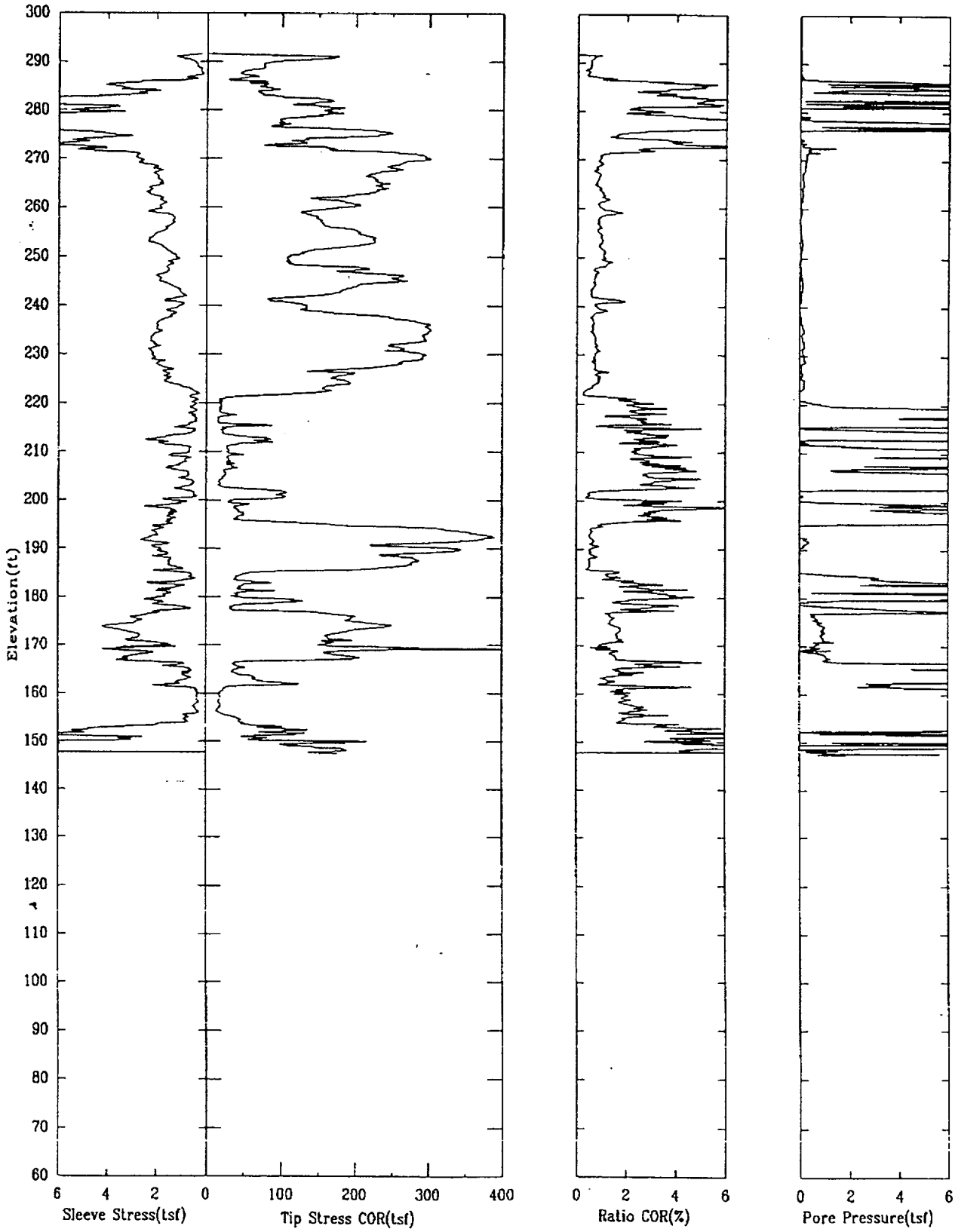
P Wave
03/25/98



File 325m801S

CPT-173 APPLIED RESEARCH ASSOCIATES, INC. 03/27/98

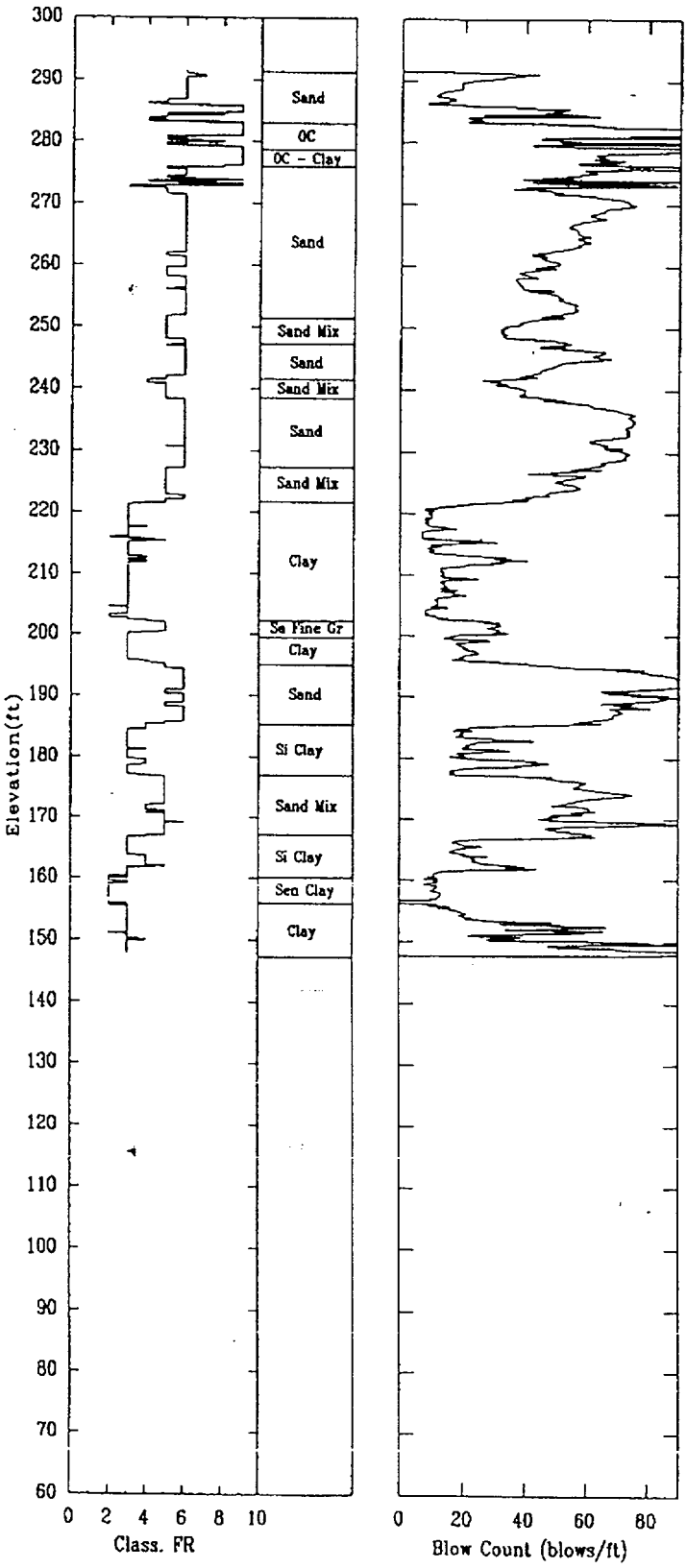
North 78900 East 55650 Elevation 297.6



File 327M804.ECP

CPT-173 APPLIED RESEARCH ASSOCIATES, INC. 03/27/98

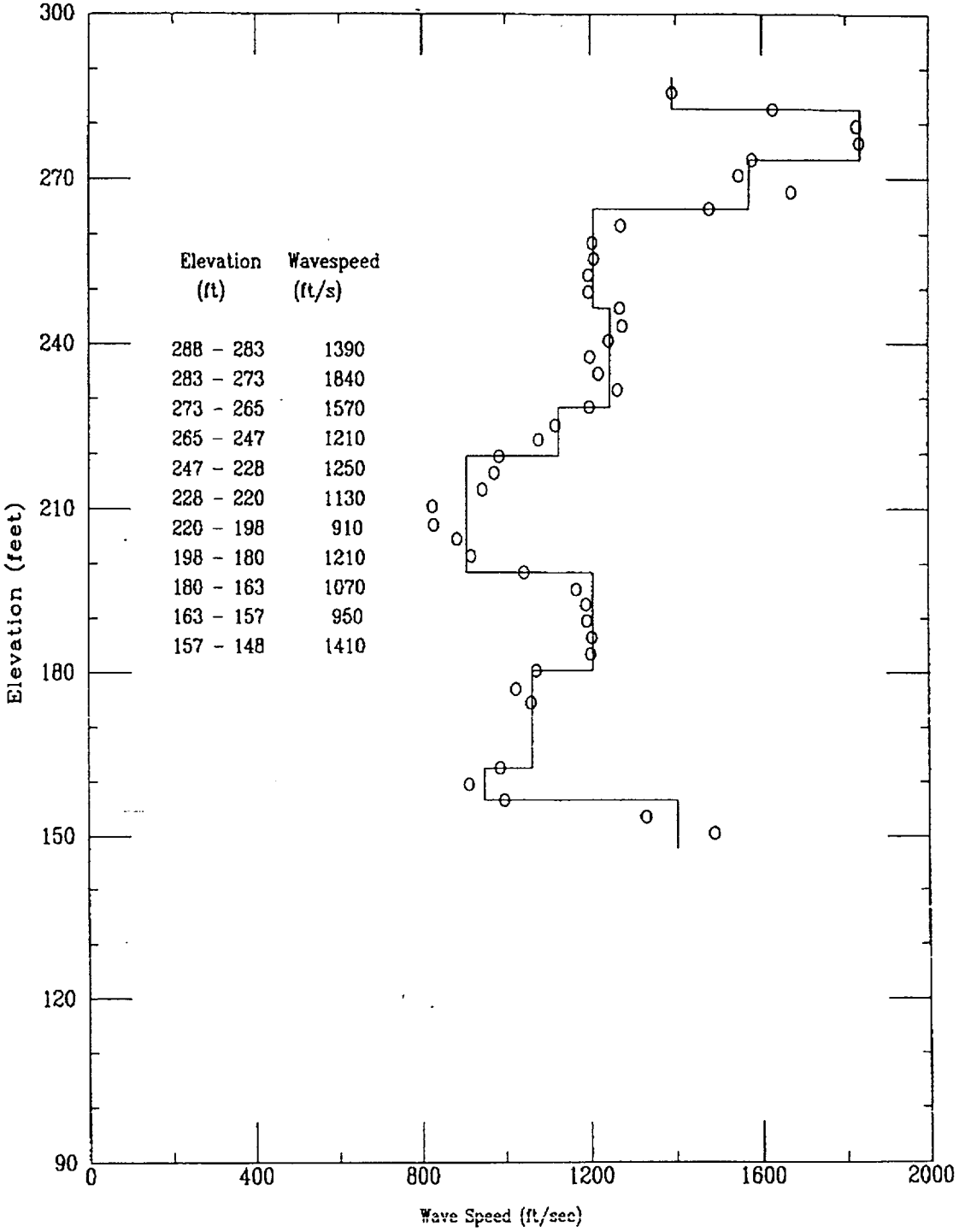
North 78900 East 55650 Elevation 297.6



File 327M804.ECP

CPT-173 APPLIED RESEARCH ASSOCIATES, INC. 03/27/98

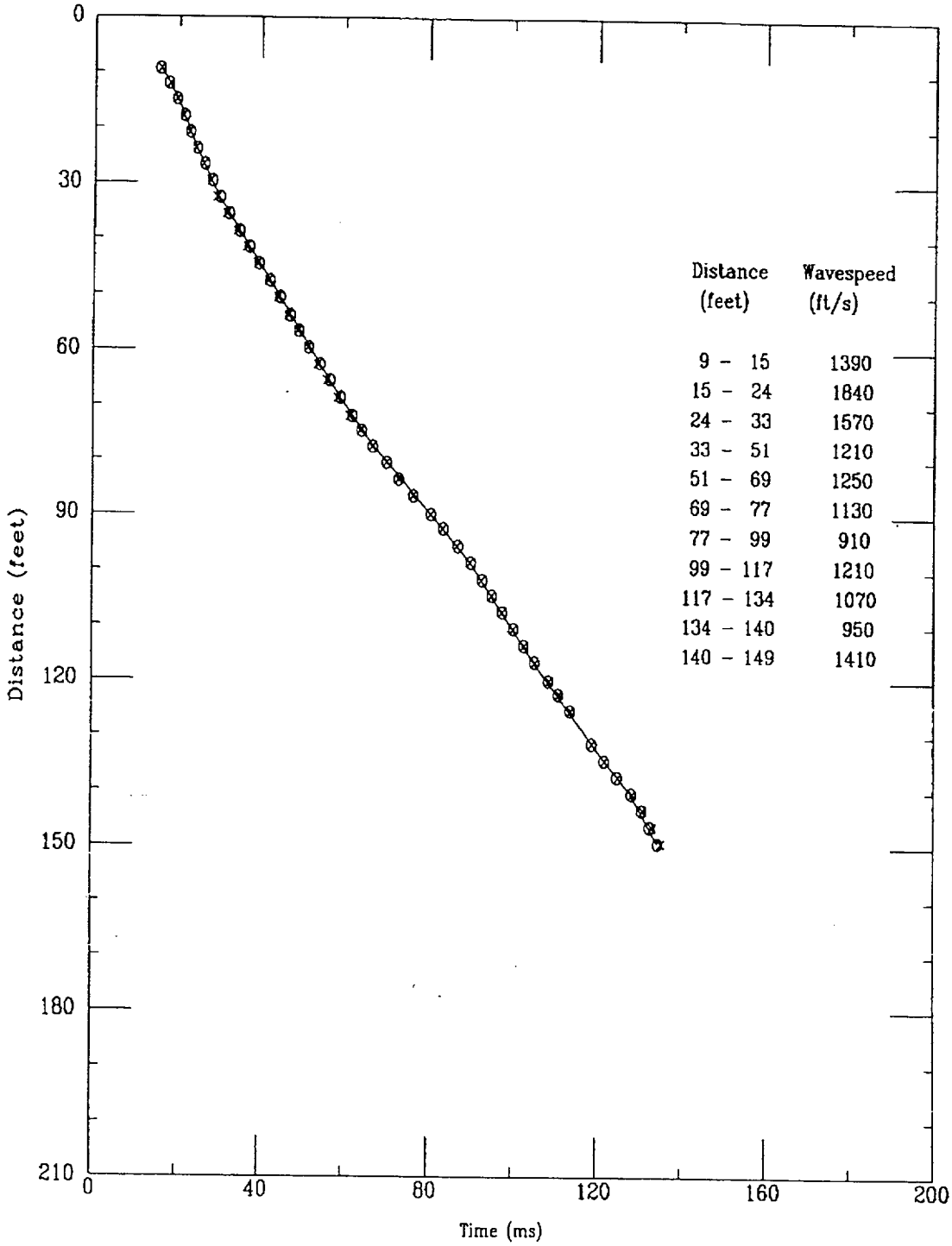
Shear Wave Speeds



File 327m804S

CPT-173 APPLIED RESEARCH ASSOCIATES, INC. 03/27/98

Shear Wave Time of Peak

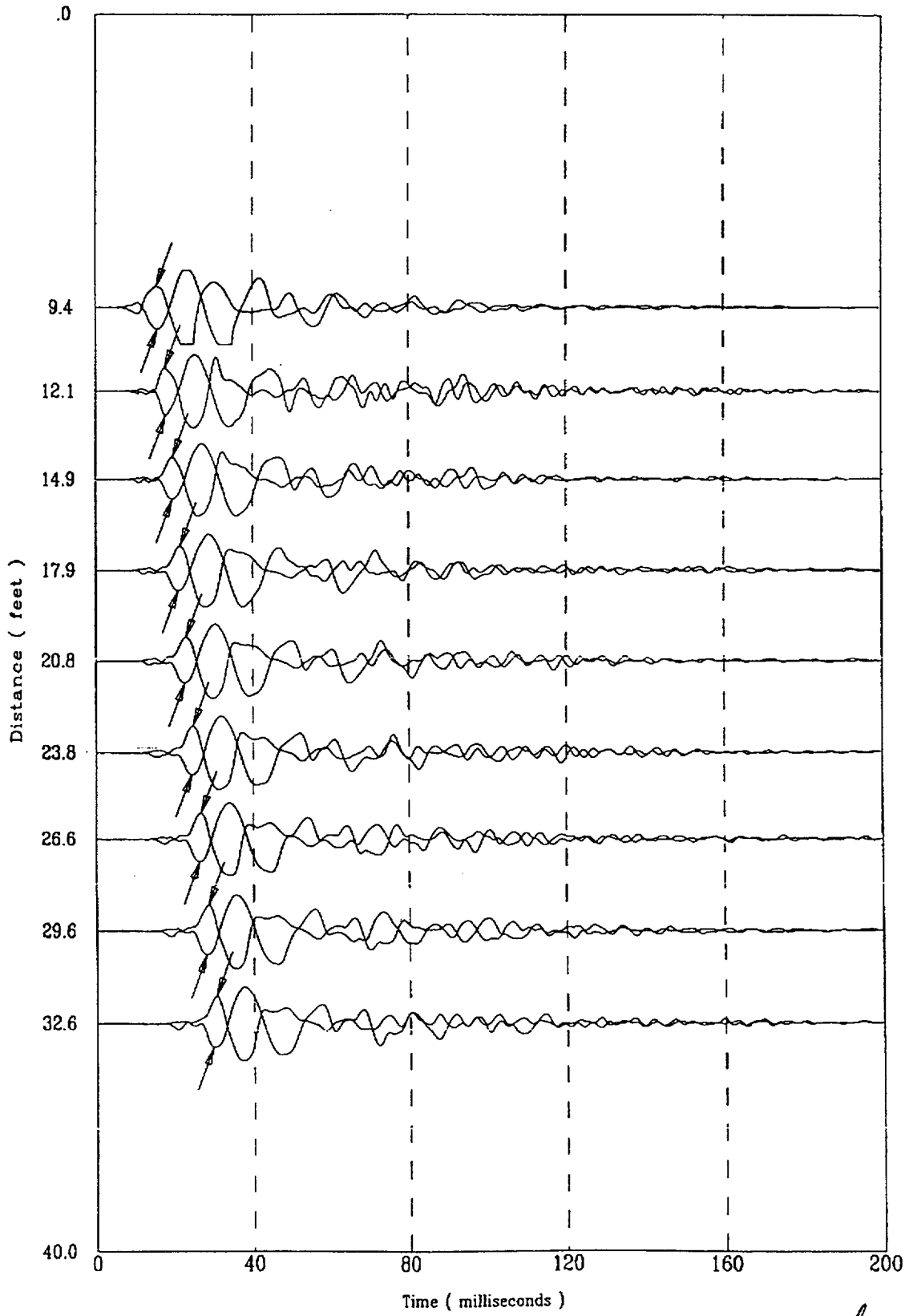


Distance (feet)	Wavespeed (ft/s)
9 - 15	1390
15 - 24	1840
24 - 33	1570
33 - 51	1210
51 - 69	1250
69 - 77	1130
77 - 99	910
99 - 117	1210
117 - 134	1070
134 - 140	950
140 - 149	1410

File 327m804S

Applied Research Associates, Inc.
CPT-173

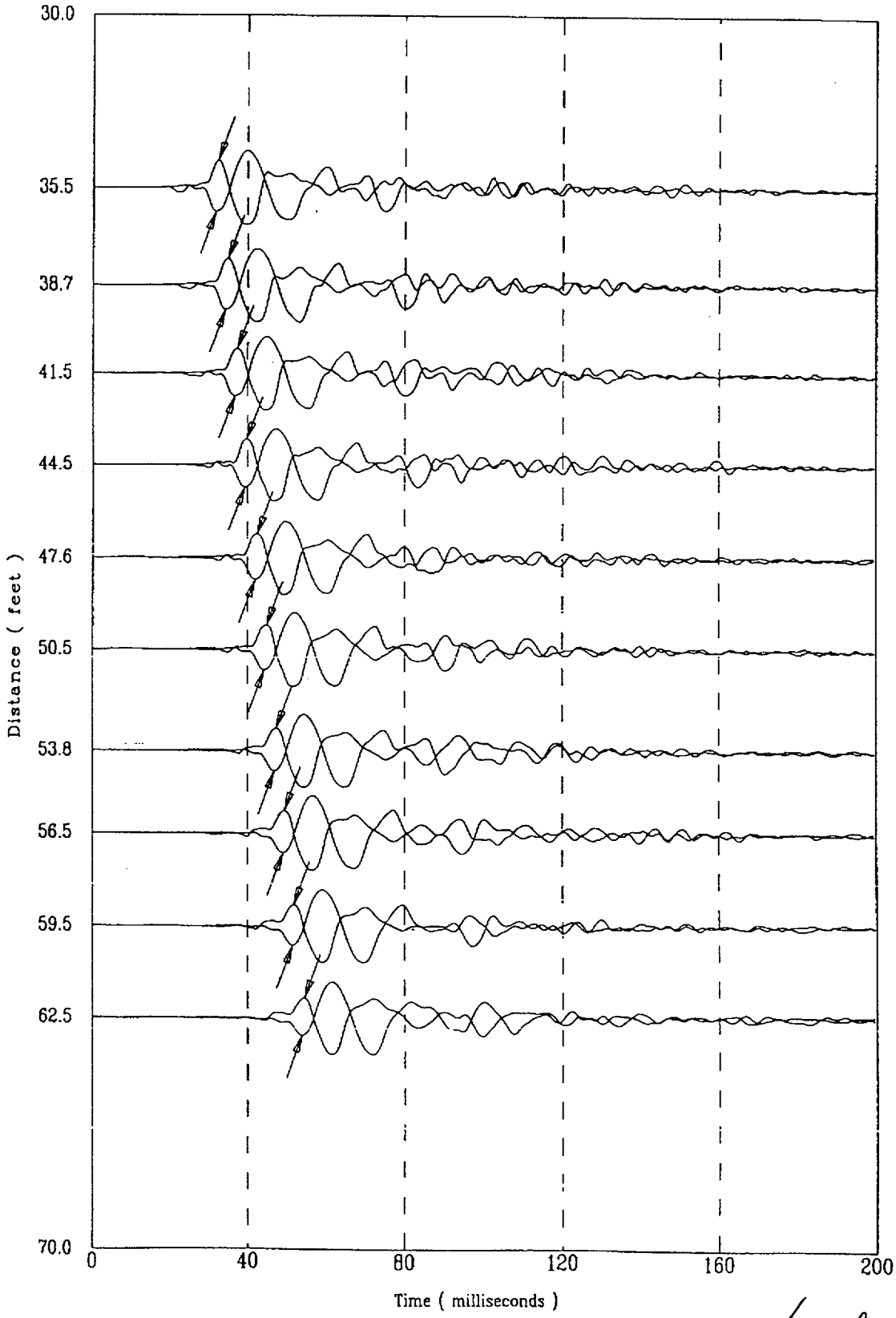
S Wave
03/27/98



File 327m604S

Applied Research Associates, Inc.
CPT-173

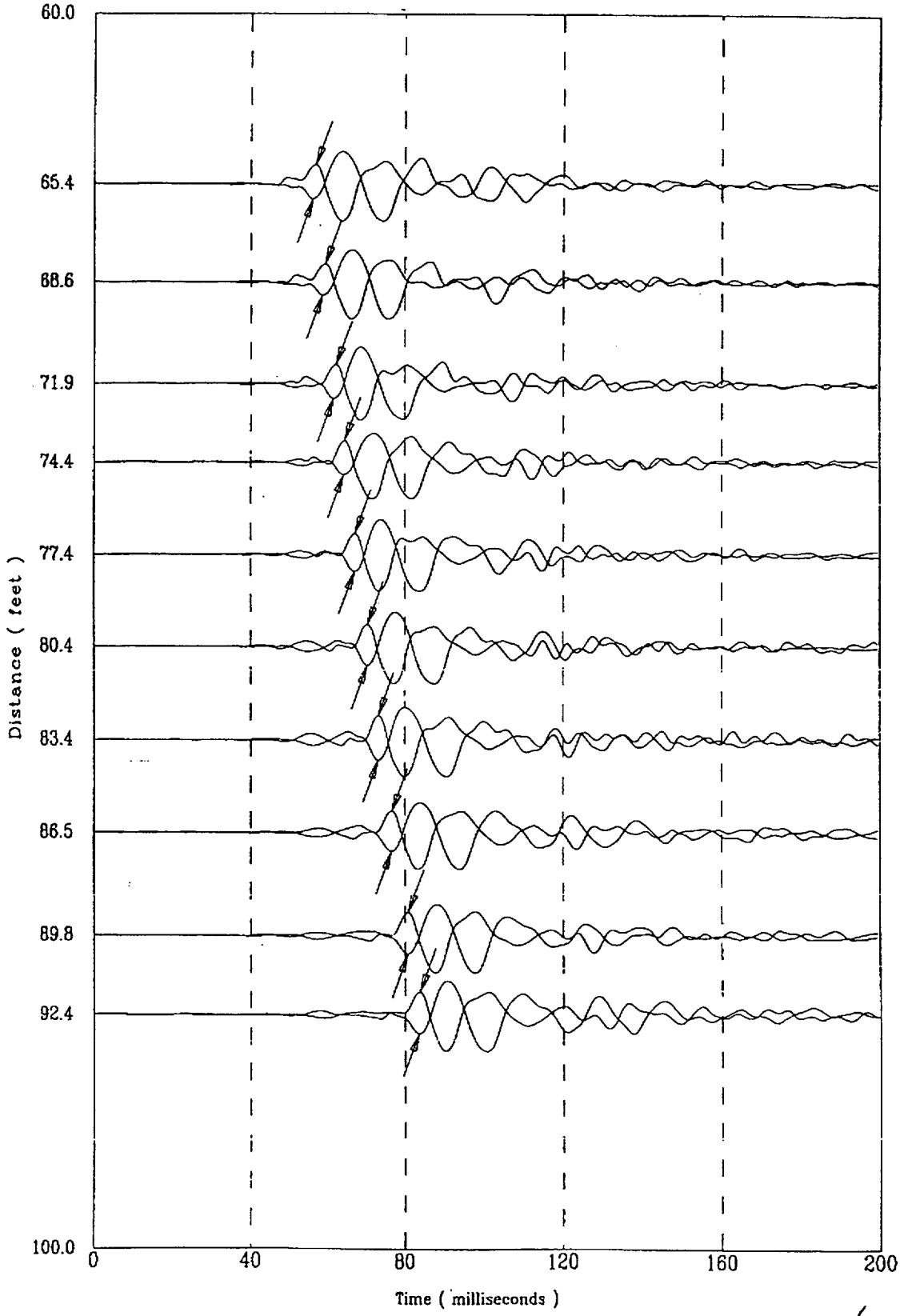
S Wave
03/27/98



File 327m804S

Applied Research Associates, Inc.
CPT-173

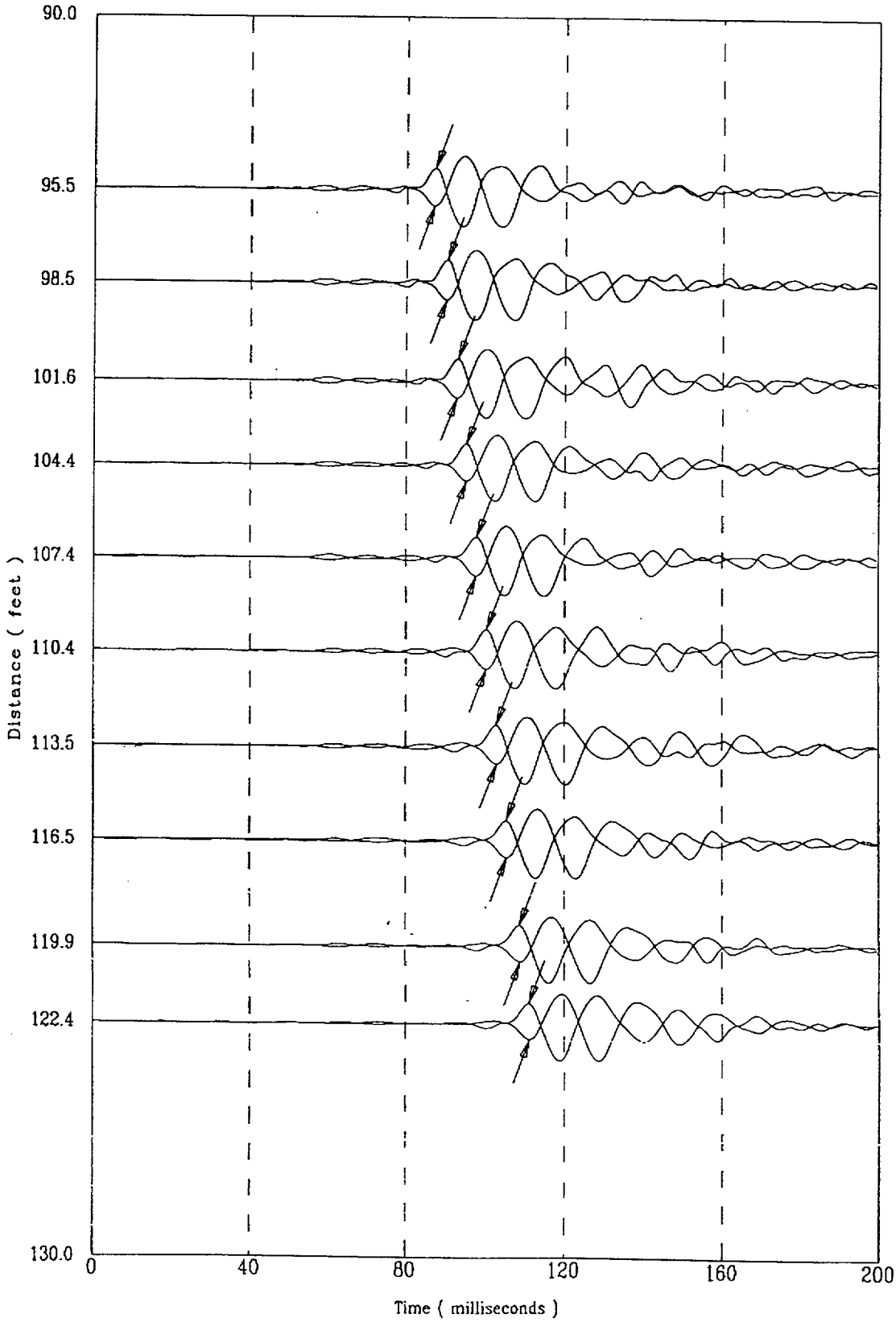
S Wave
03/27/98



27m804S

Applied Research Associates, Inc.
CPT-173

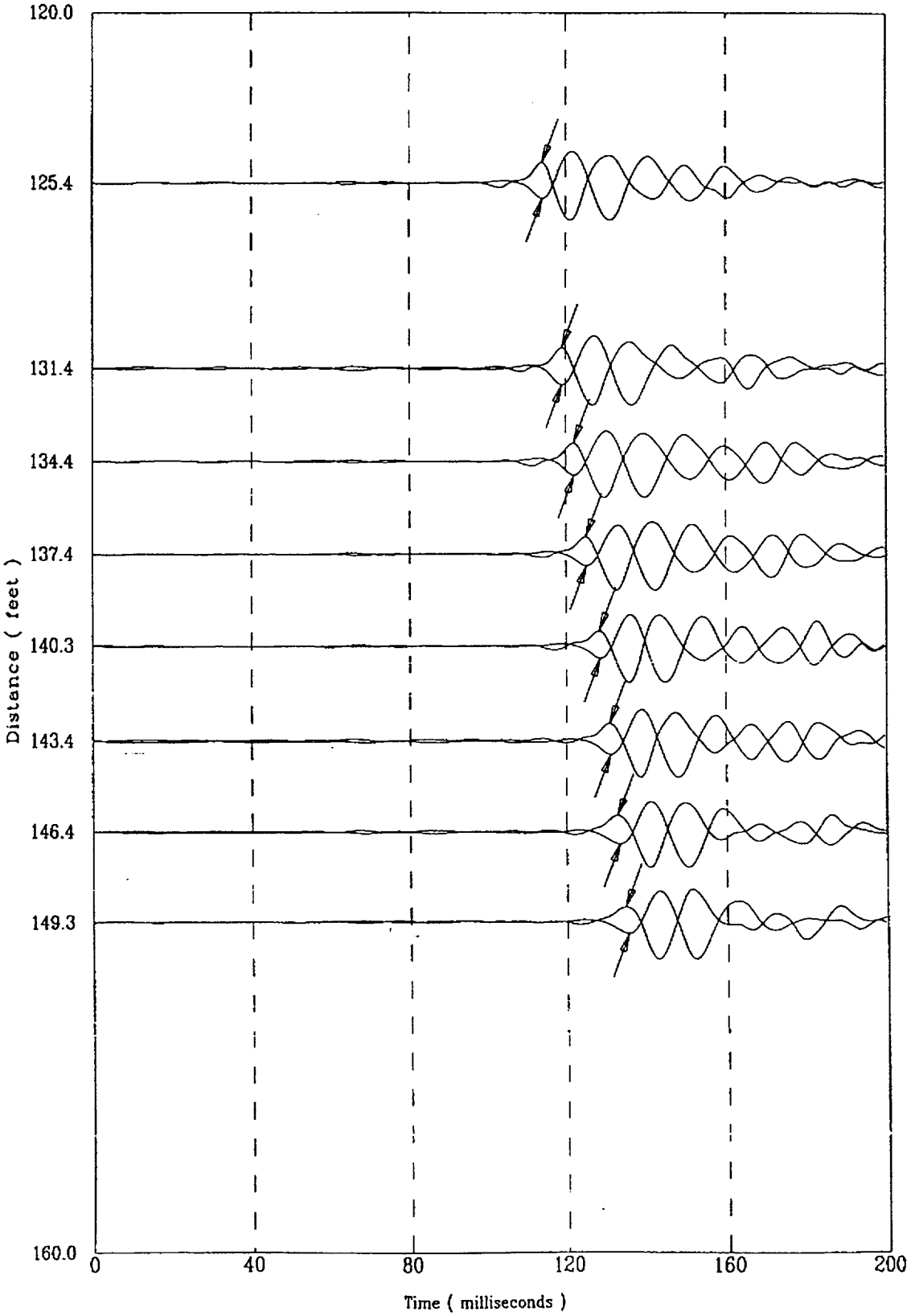
S Wave
03/27/98



File 327m804S

Applied Research Associates, Inc.
CPT-173

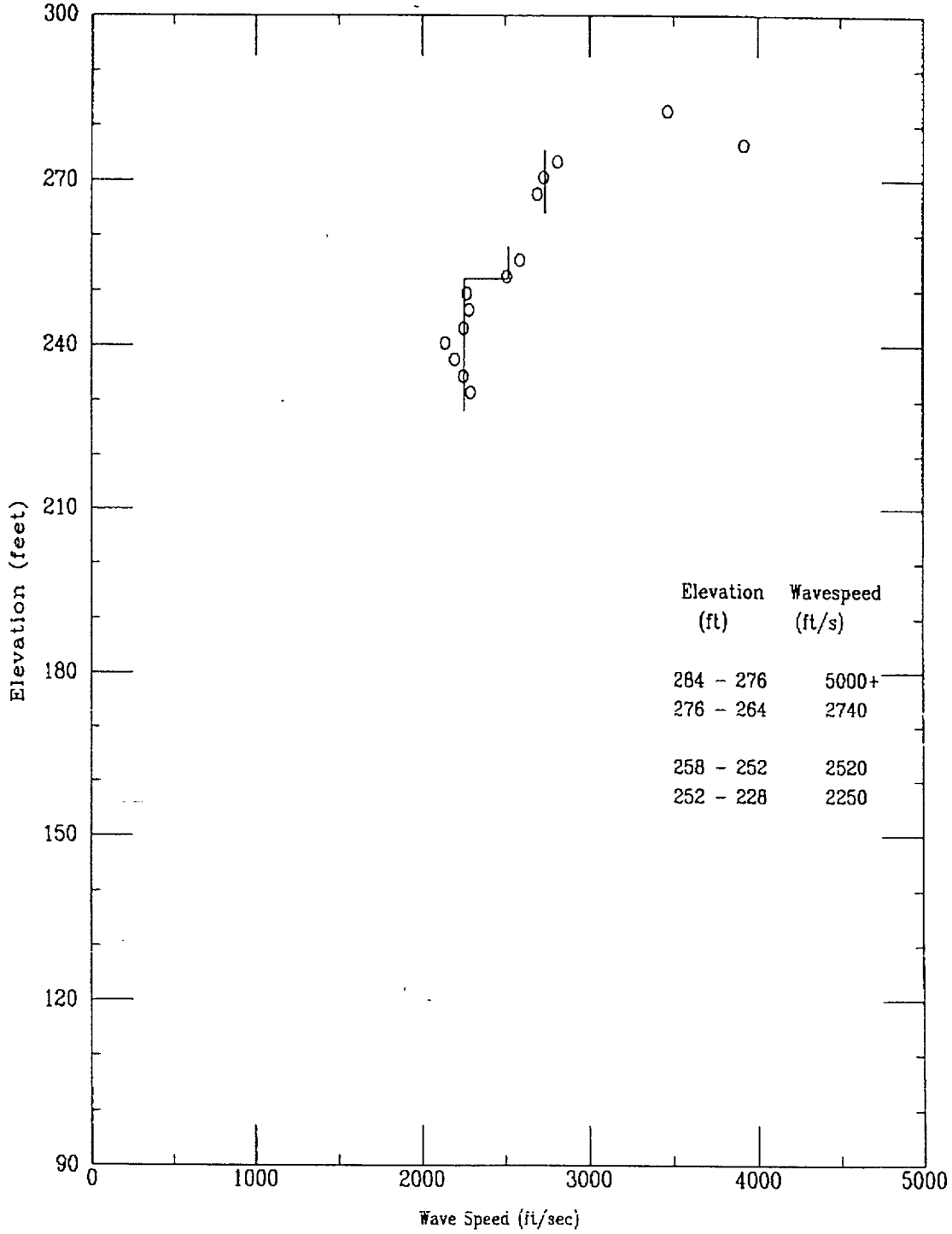
S Wave
03/27/98



327m804S

CPT-173 APPLIED RESEARCH ASSOCIATES, INC. 03/27/98

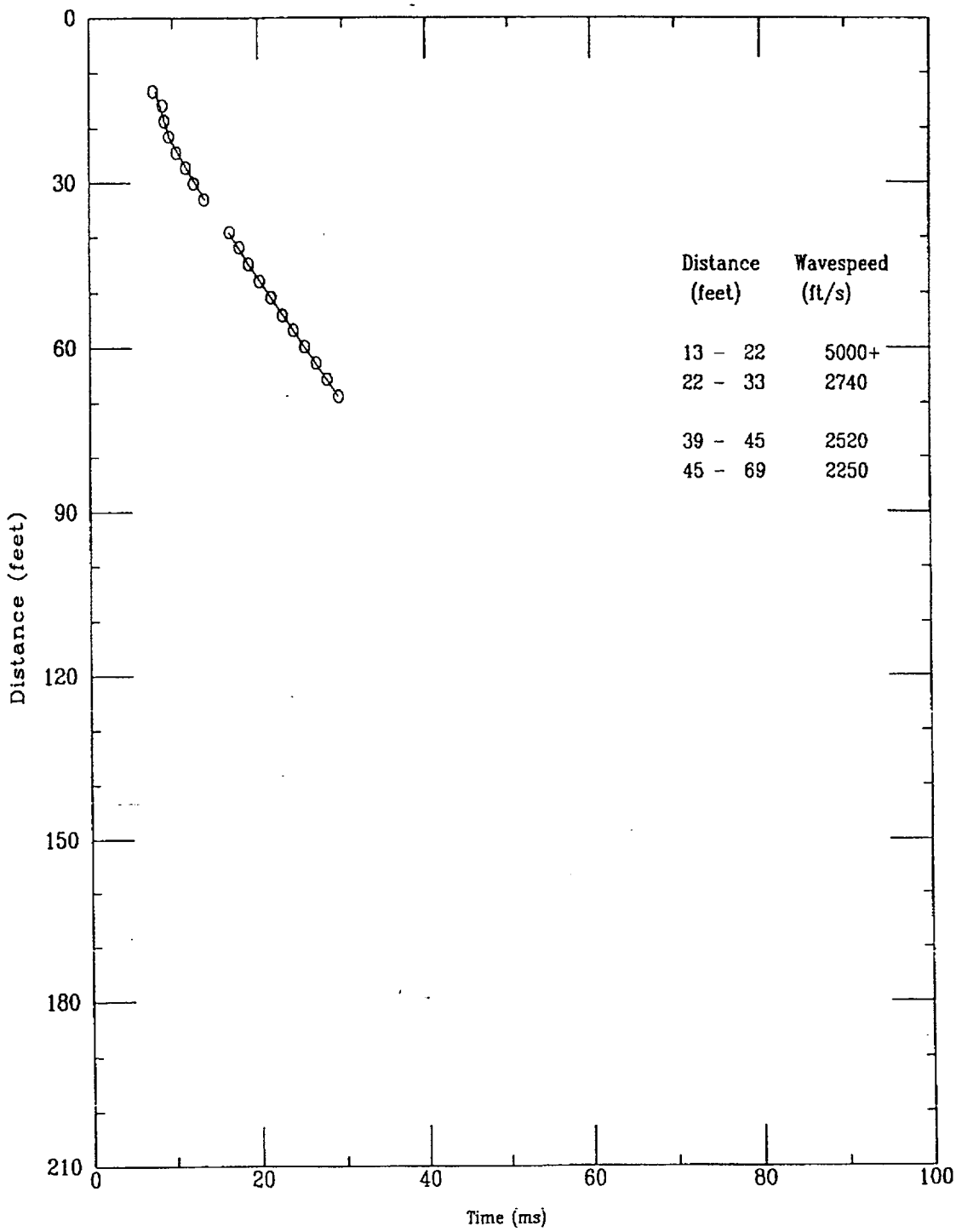
Compression Wave Speeds



File 327m804S

CPT-173 APPLIED RESEARCH ASSOCIATES, INC. 03/27/98

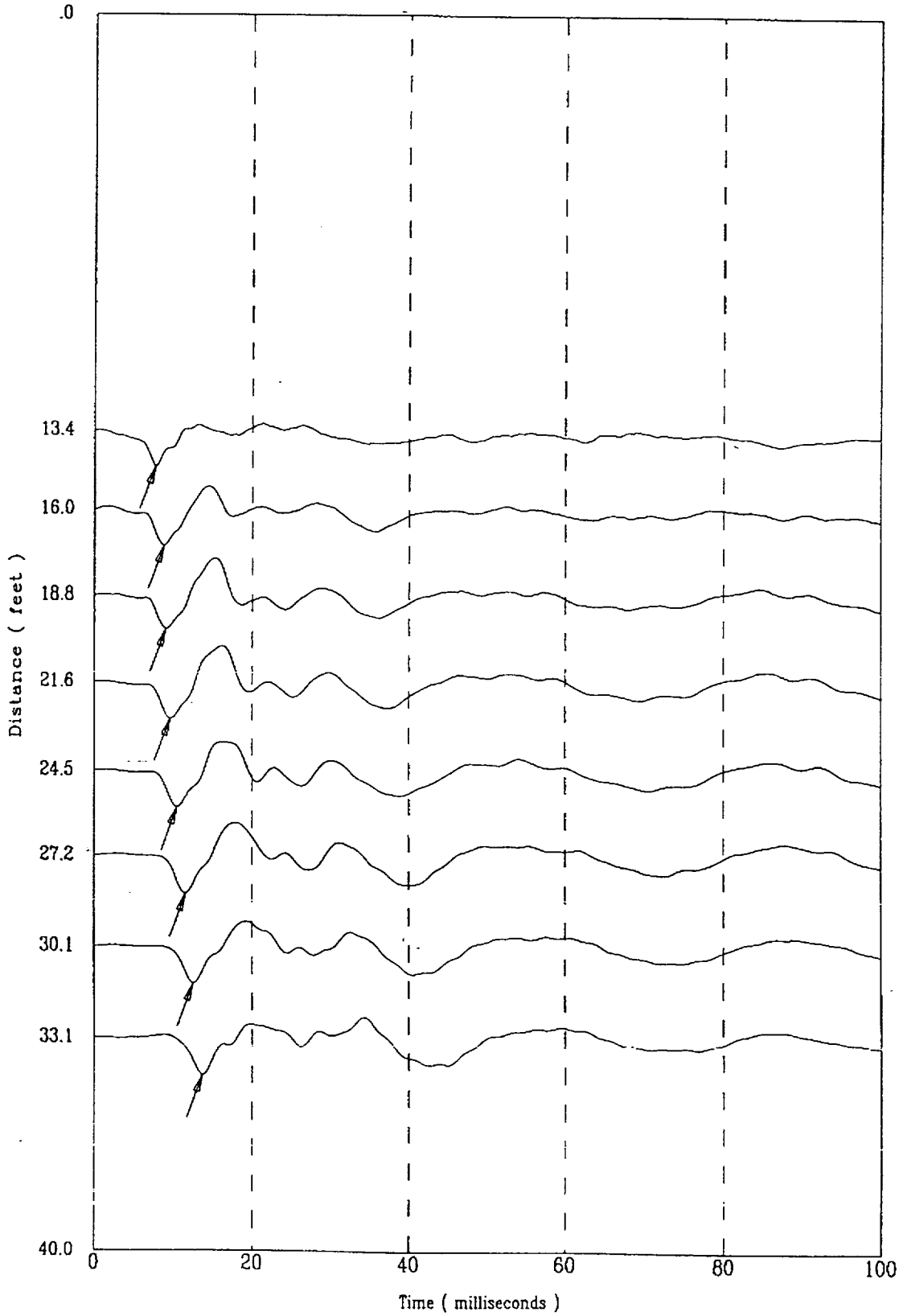
Compression Wave Time of Peak



File 327m804S

Applied Research Associates, Inc.
CPT-173

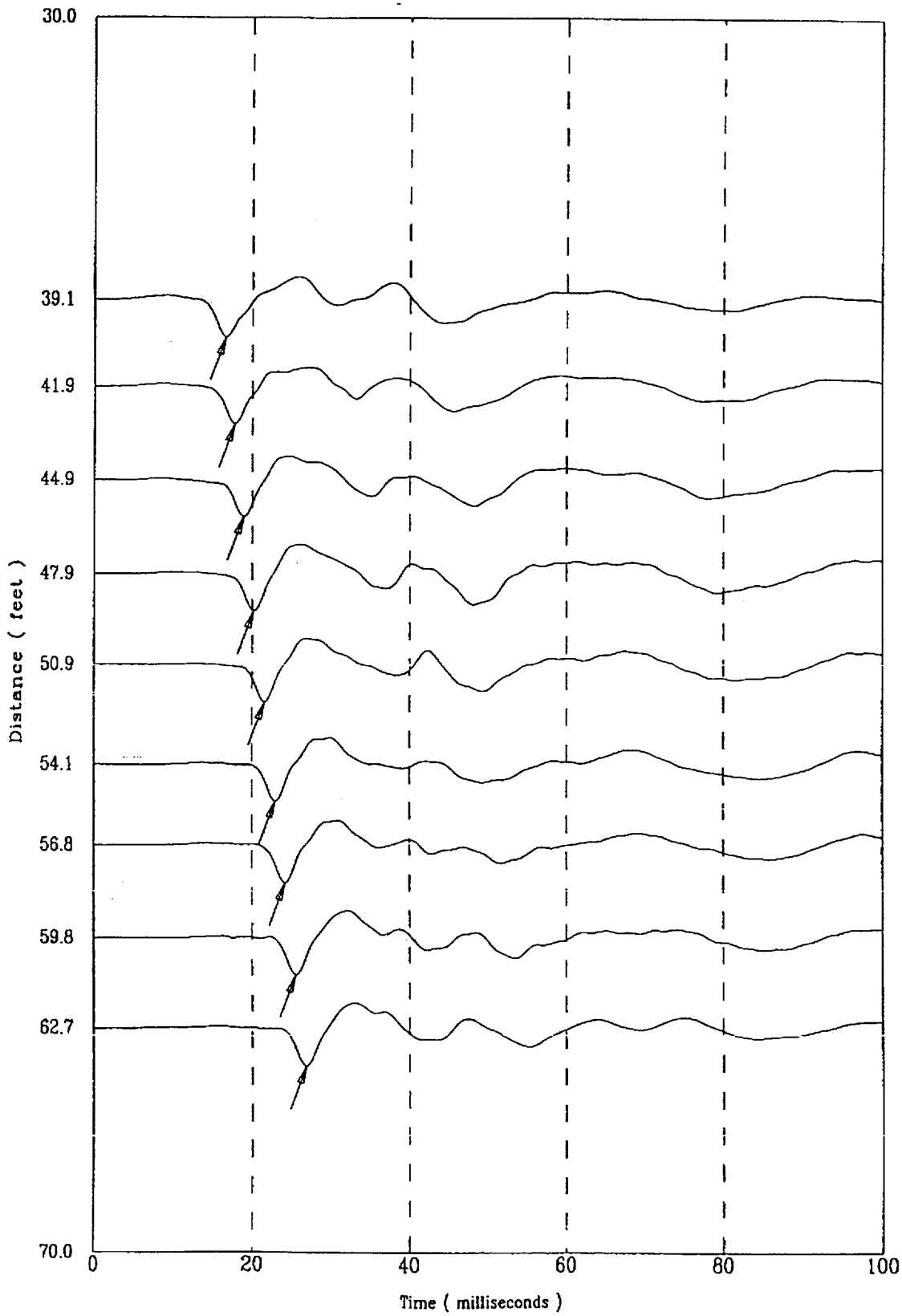
P Wave
03/27/98



File 327m804S

Applied Research Associates, Inc.
CPT-173

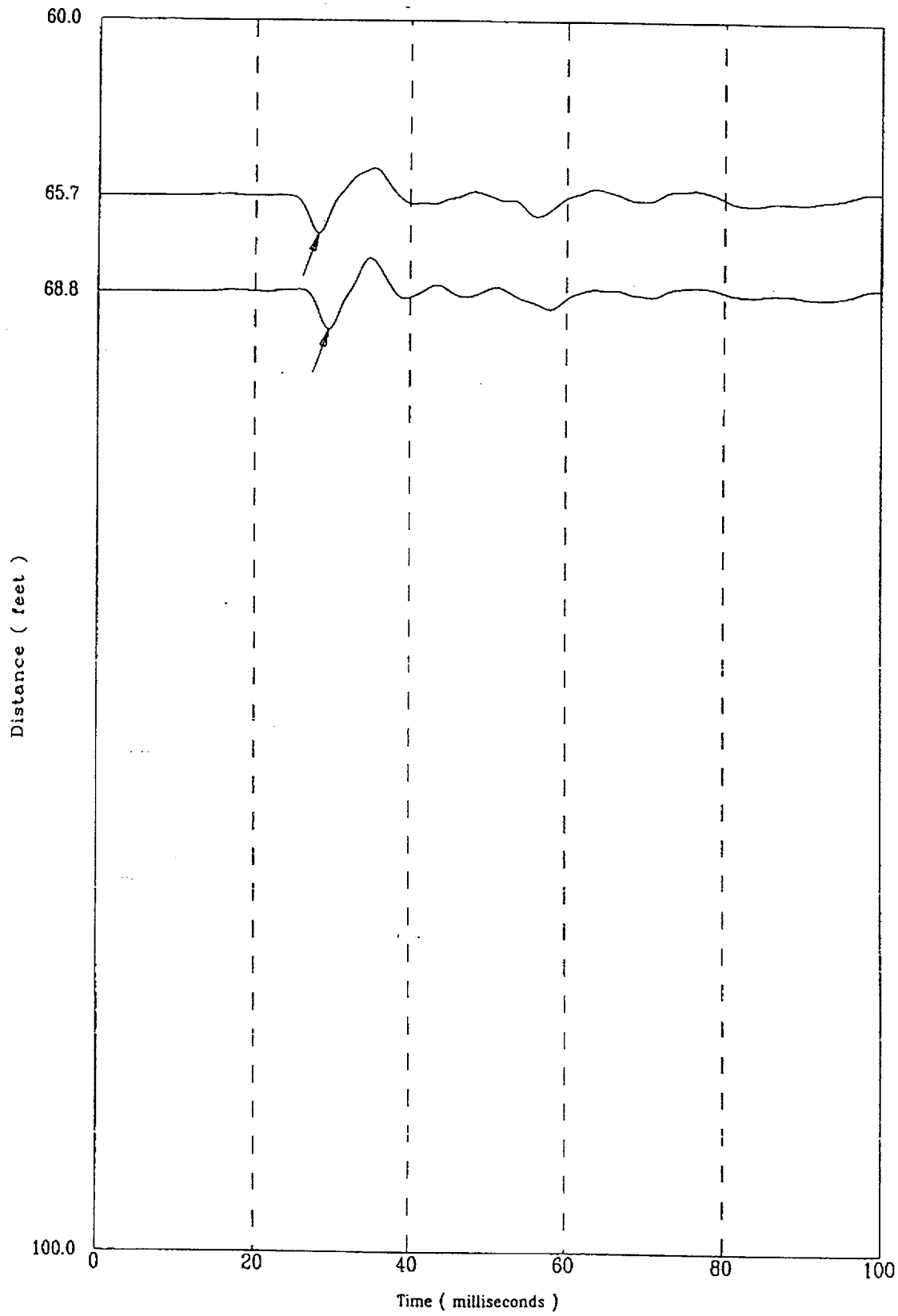
P Wave
03/27/98



327m804S

Applied Research Associates, Inc.
CPT-173

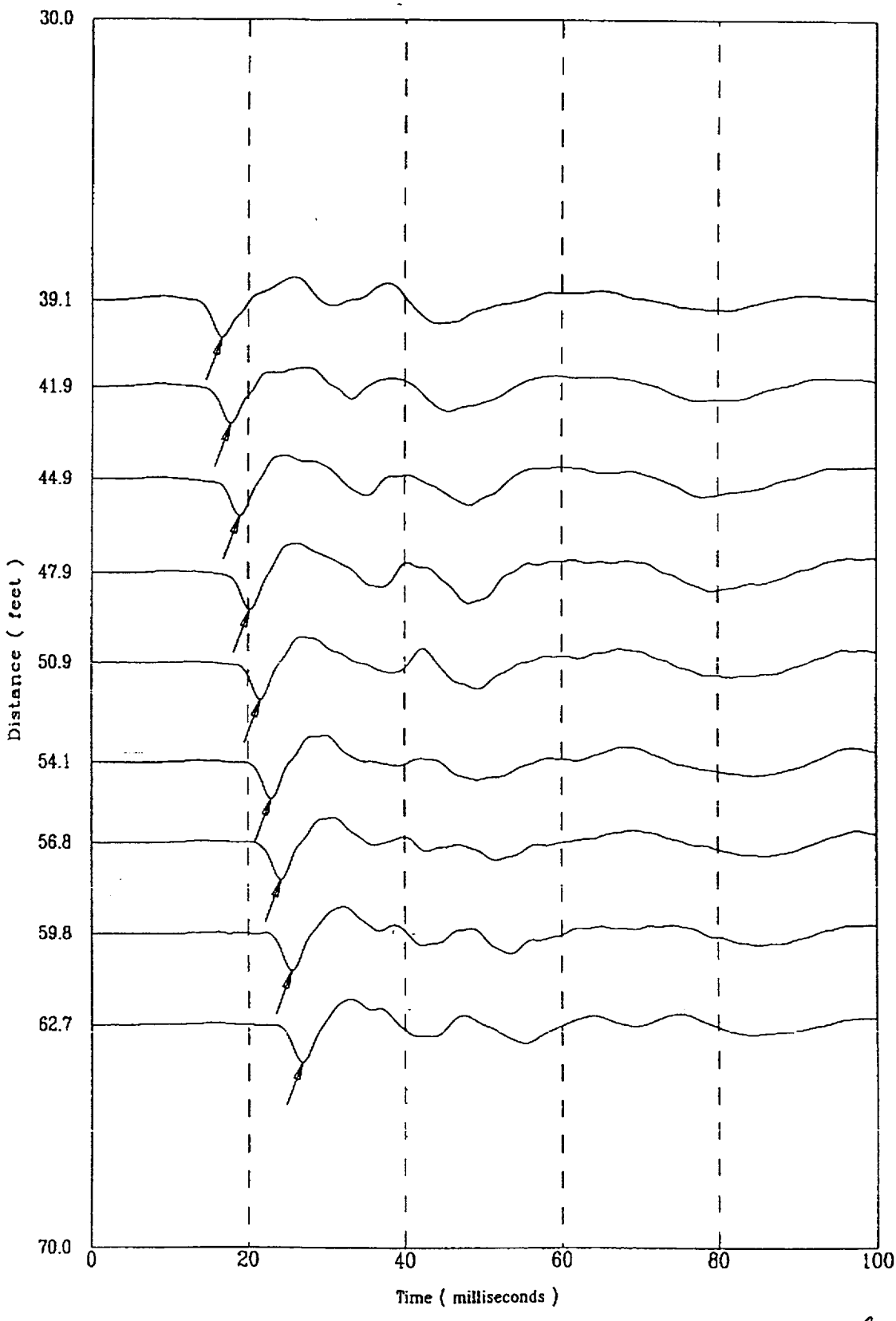
P Wave
03/27/98



File 327m804S

Applied Research Associates, Inc.
CPT-173

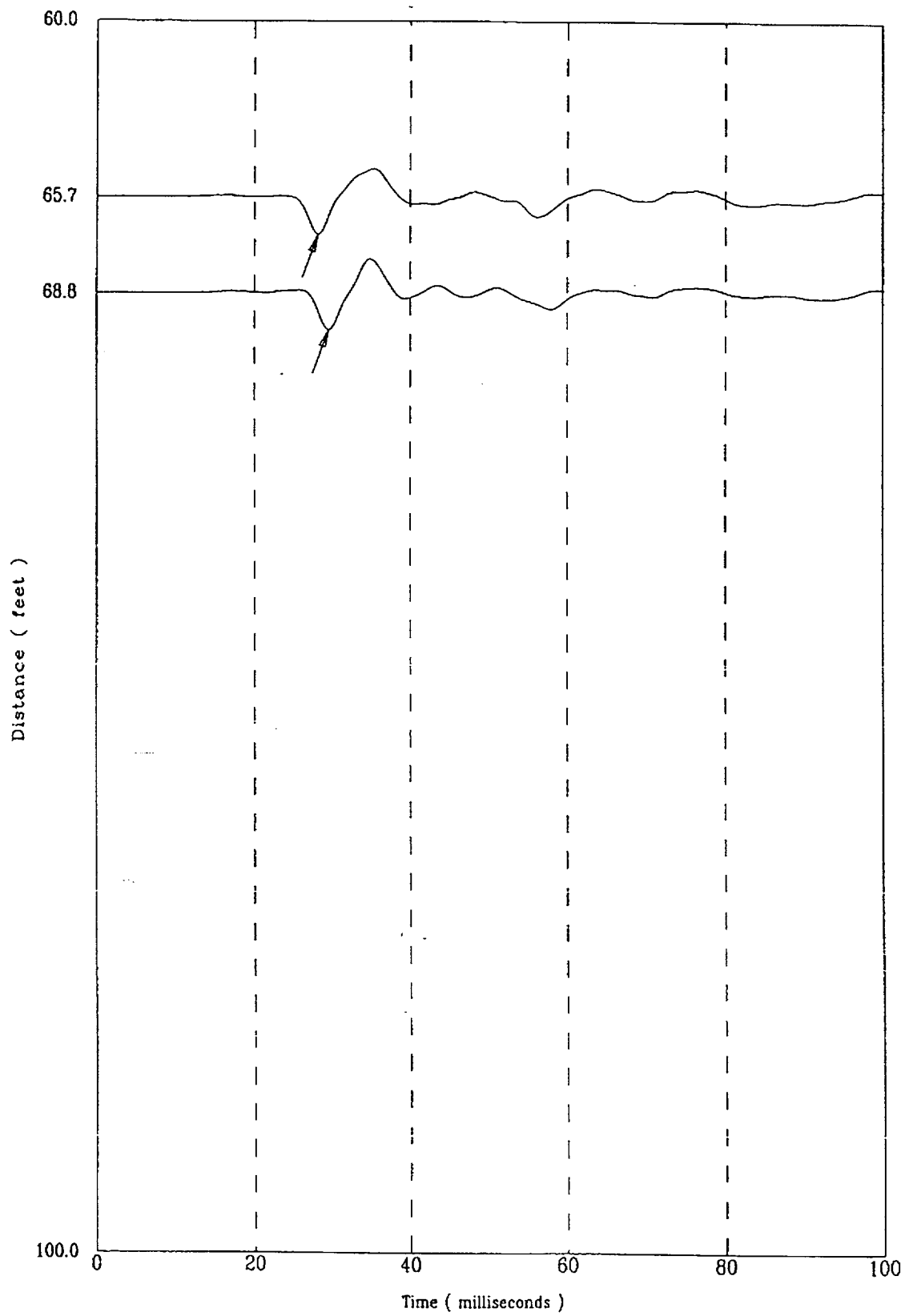
P Wave
03/27/98



J27m804S

Applied Research Associates, Inc.
CPT-173

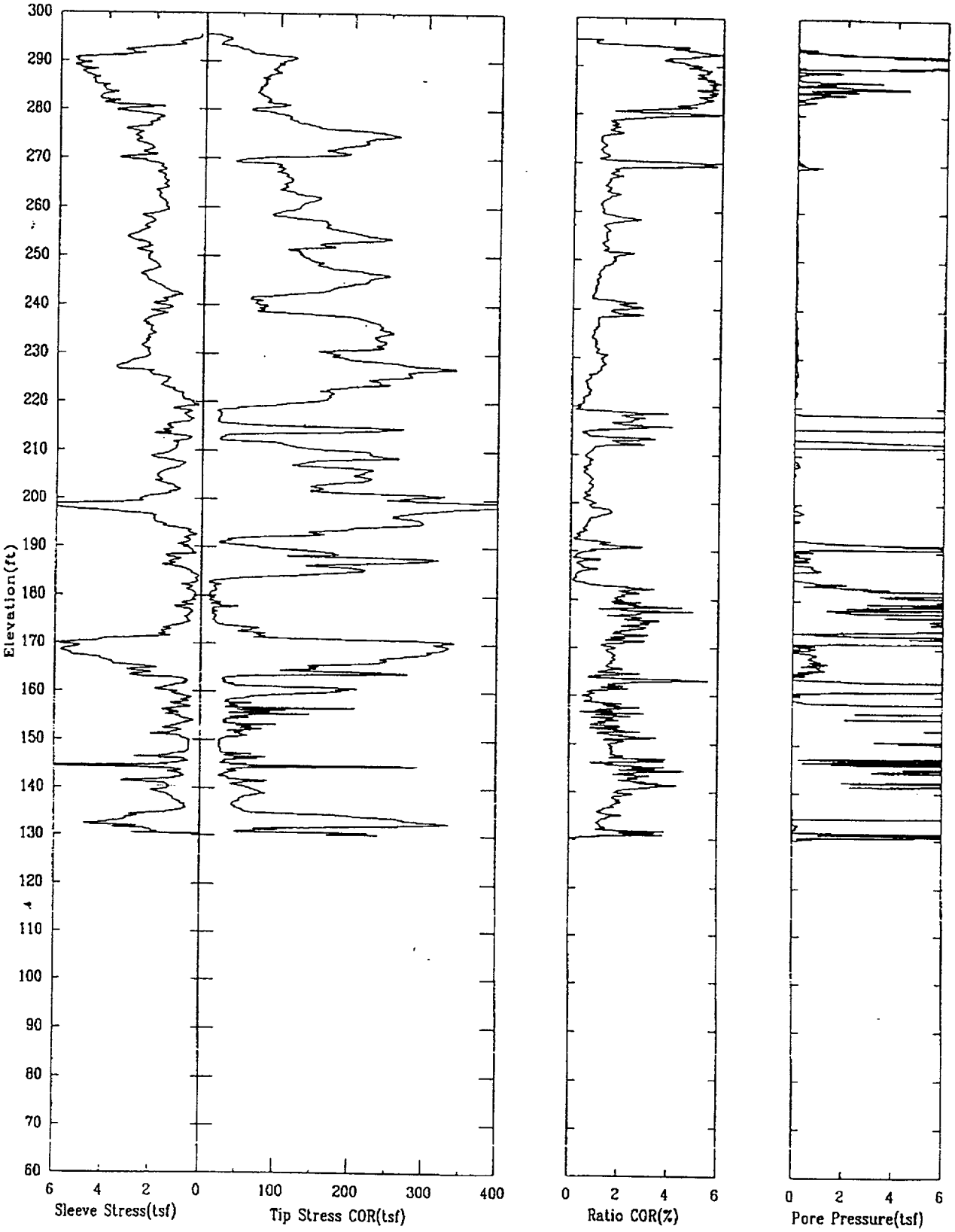
P Wave
03/27/98



File 327m804S

CPT-174 APPLIED RESEARCH ASSOCIATES, INC. 03/10/98

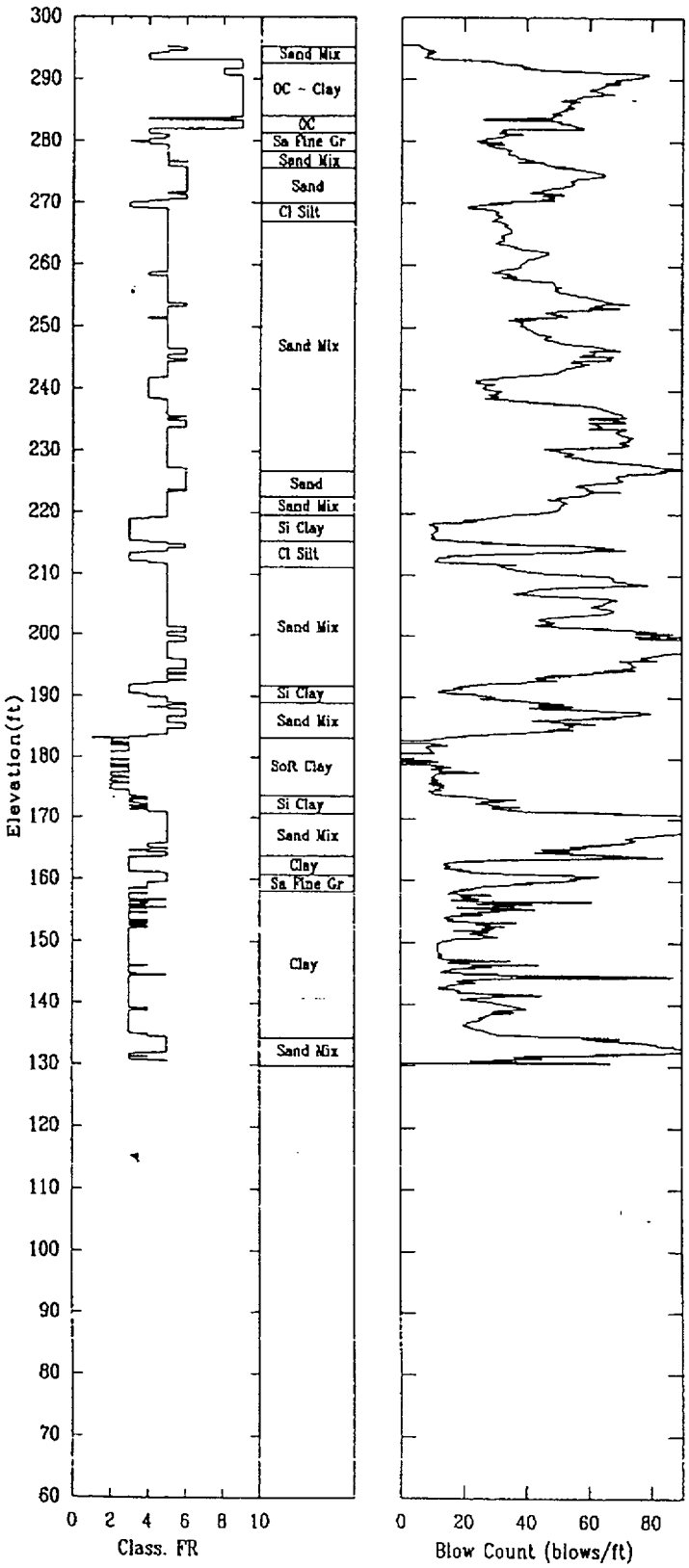
North 78770 East 55330 Elevation 301.5



File 410M804b.ECP

CPT-174 APPLIED RESEARCH ASSOCIATES, INC. 03/10/98

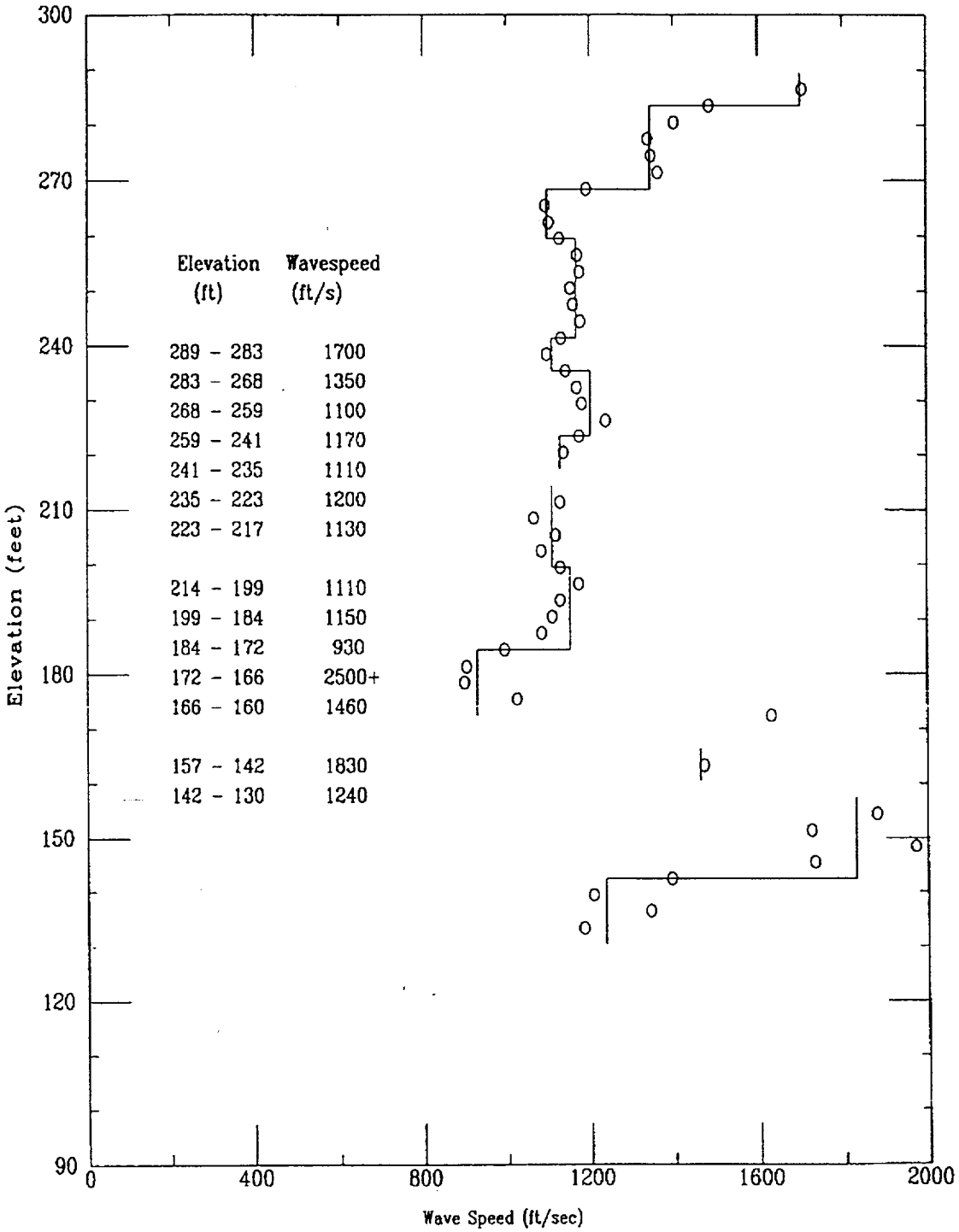
North 78770 East 55330 Elevation 301.5



File 410M804b.ECP

CPT-174 APPLIED RESEARCH ASSOCIATES, INC. 03/10/98

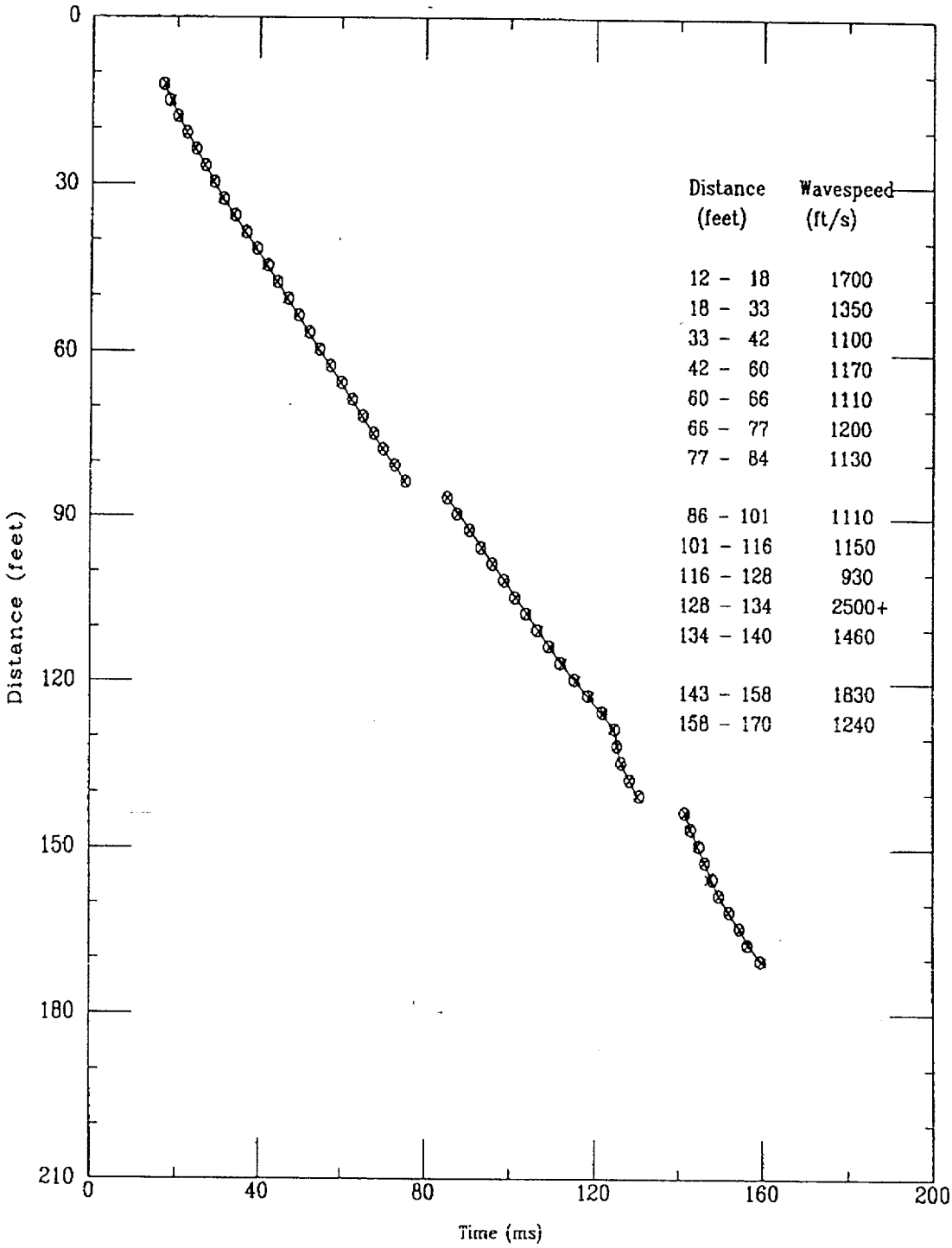
Shear Wave Speeds



File 410m804S

CPT-174 APPLIED RESEARCH ASSOCIATES, INC. 03/10/98

Shear Wave Time of Peak

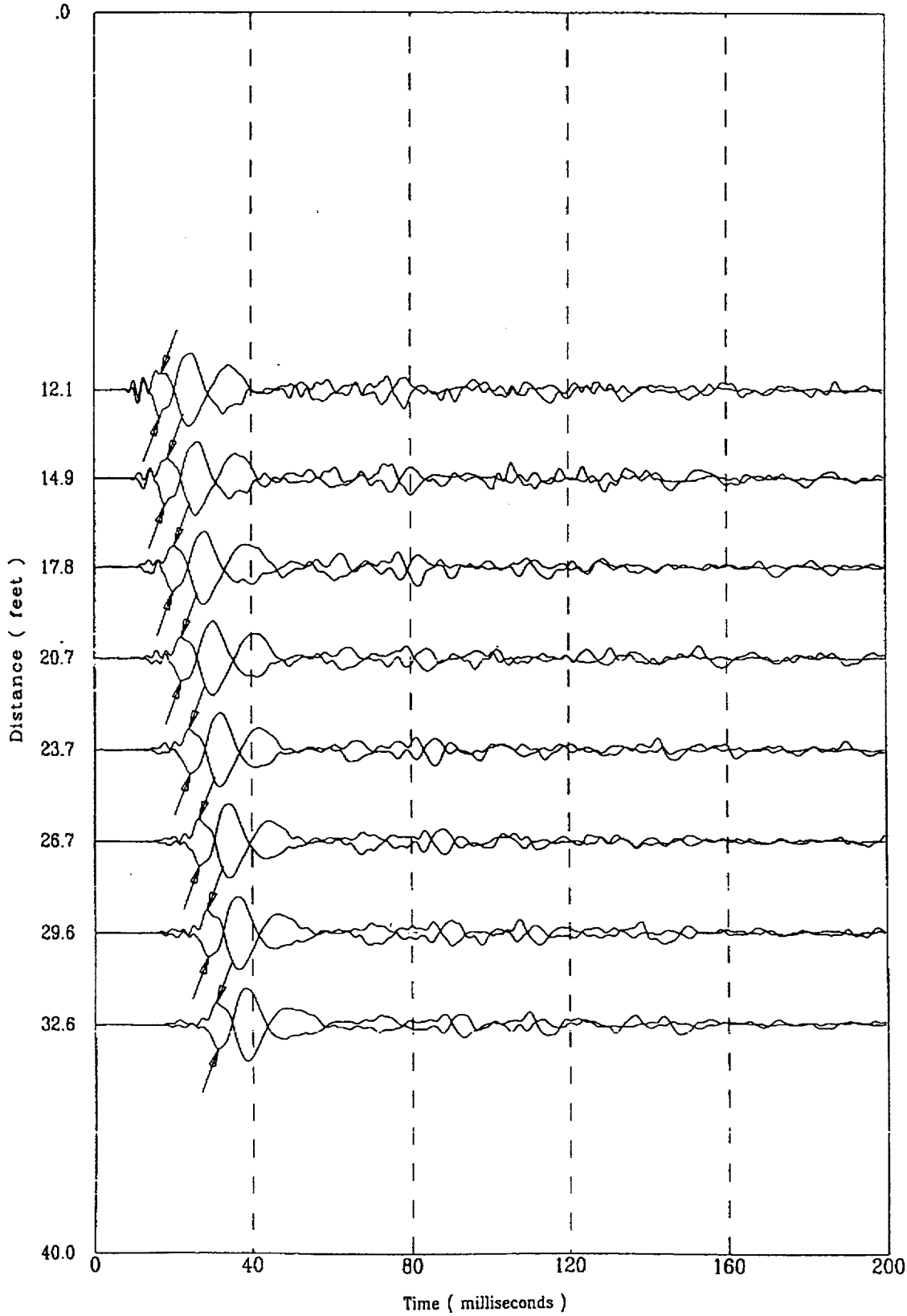


Distance (feet)	Wavespeed (ft/s)
12 - 18	1700
18 - 33	1350
33 - 42	1100
42 - 60	1170
60 - 66	1110
66 - 77	1200
77 - 84	1130
86 - 101	1110
101 - 116	1150
116 - 128	930
128 - 134	2500+
134 - 140	1460
143 - 158	1830
158 - 170	1240

File 410m804S

Applied Research Associates, Inc.
CPT-174

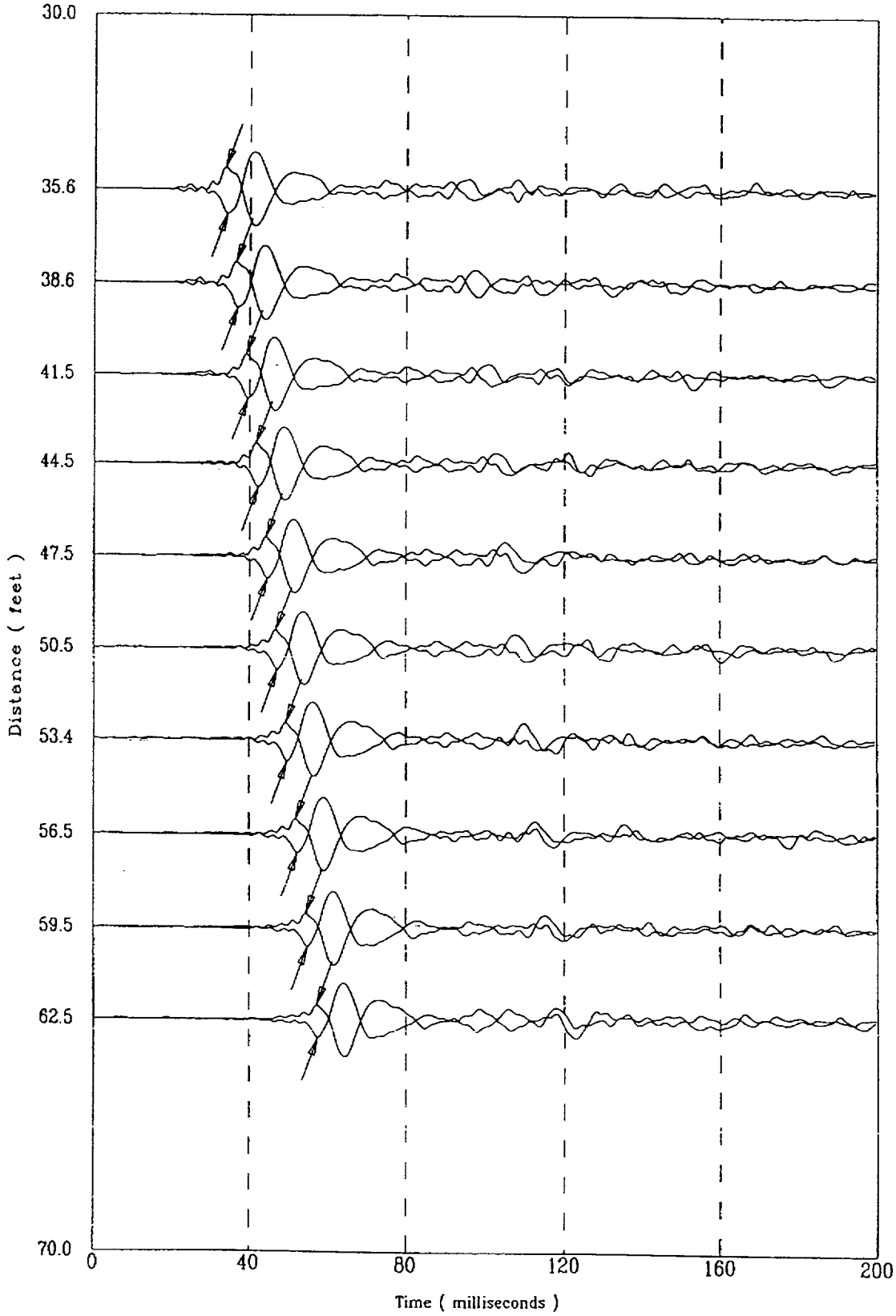
S Wave
03/10/98



410m804S

Applied Research Associates, Inc.
CPT-174

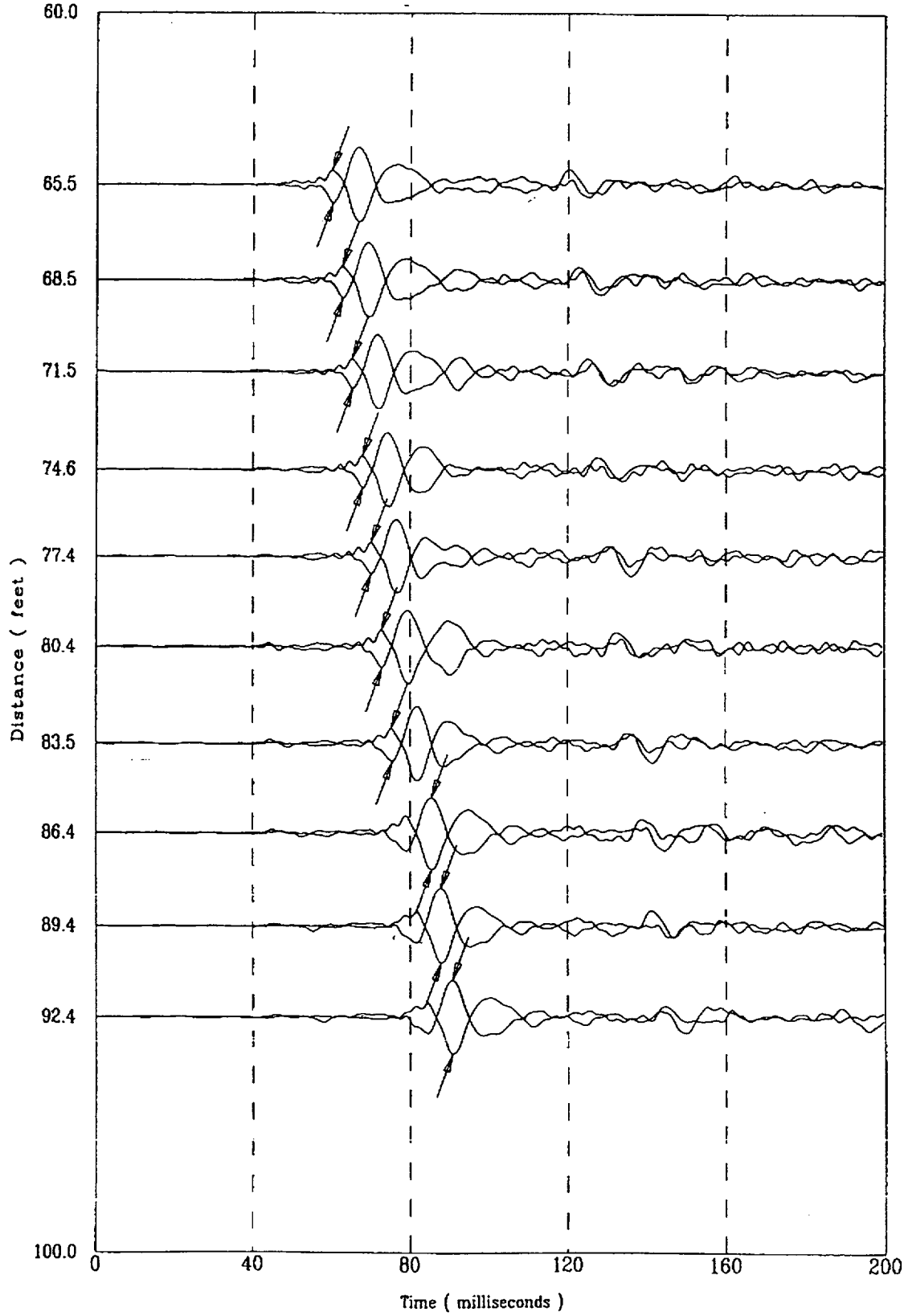
S Wave
03/10/98



File 410m804S

Applied Research Associates, Inc.
CPT-174

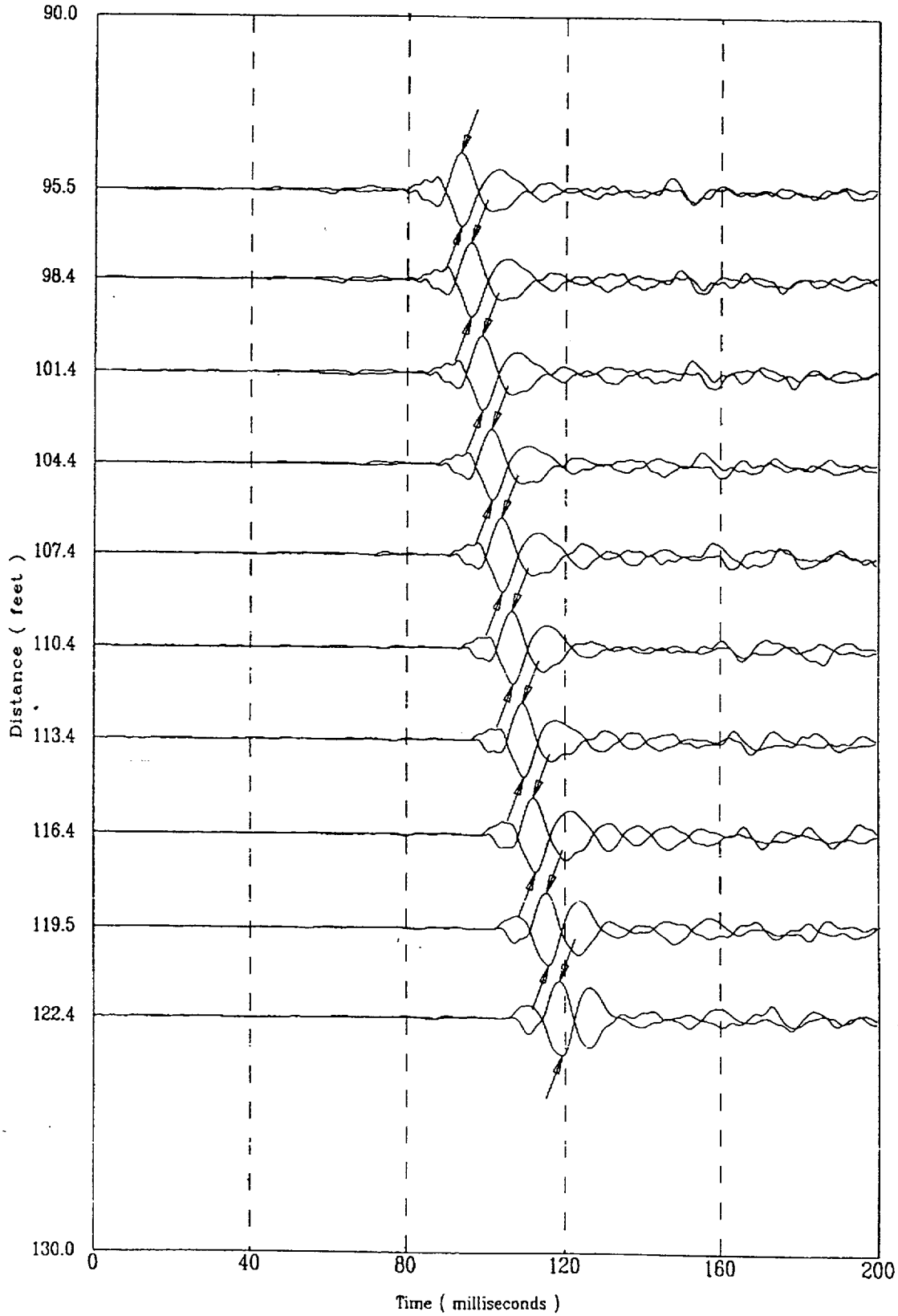
S Wave
03/10/98



,10m804S

Applied Research Associates, Inc.
CPT-174

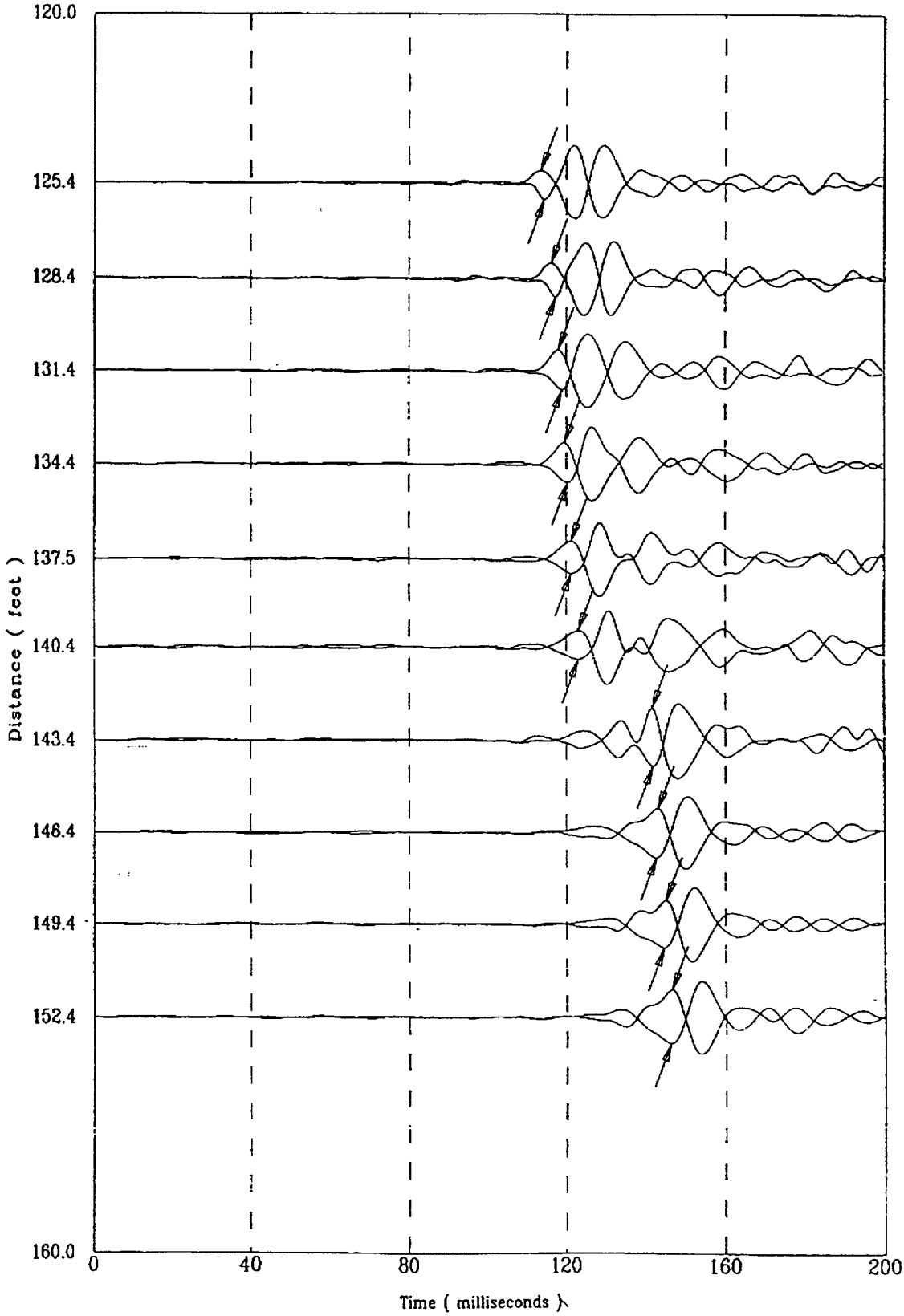
S Wave
03/10/98



File 410m804S

Applied Research Associates, Inc.
CPT-174

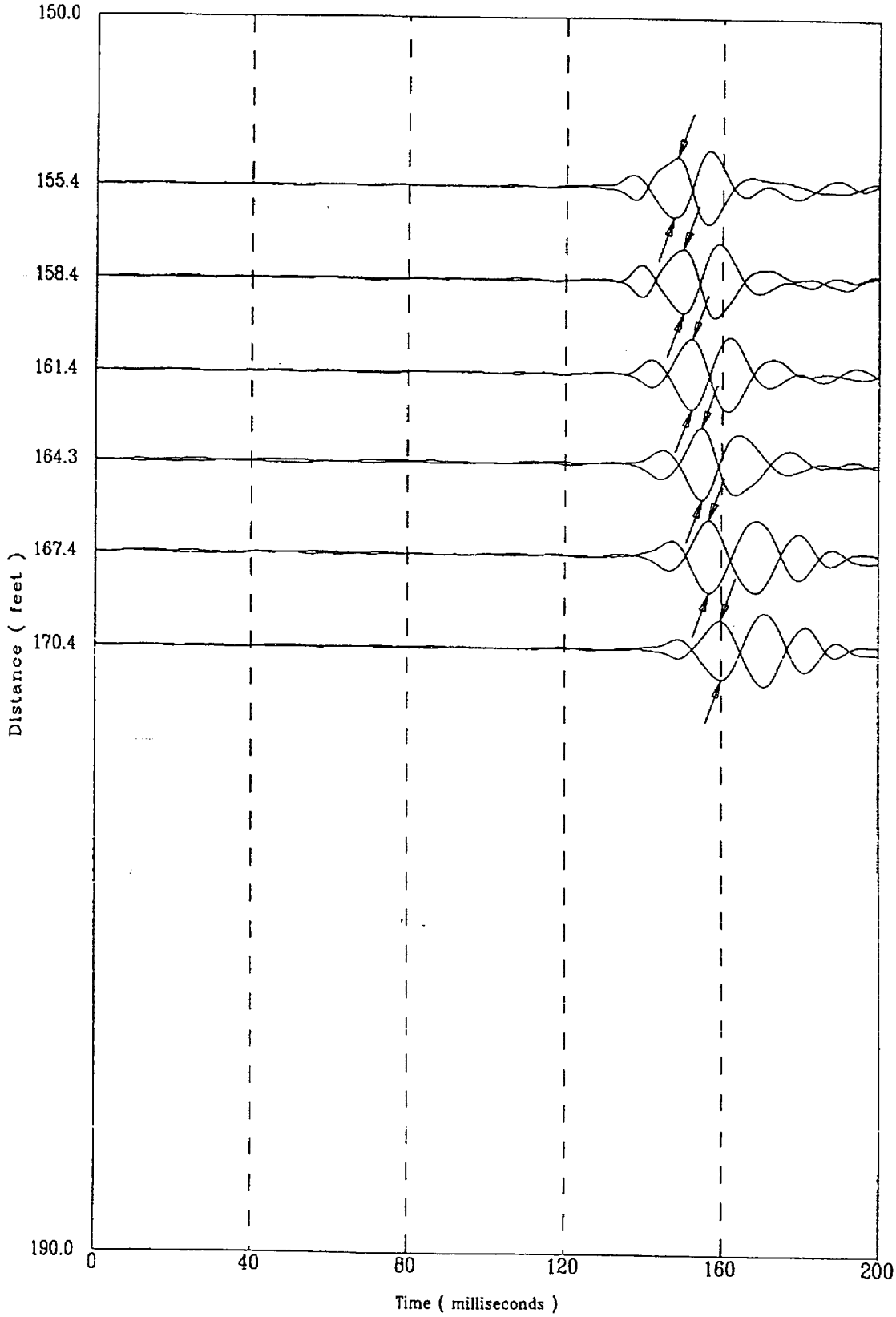
S Wave
03/10/98



rac 410m804S

Applied Research Associates, Inc.
CPT-174

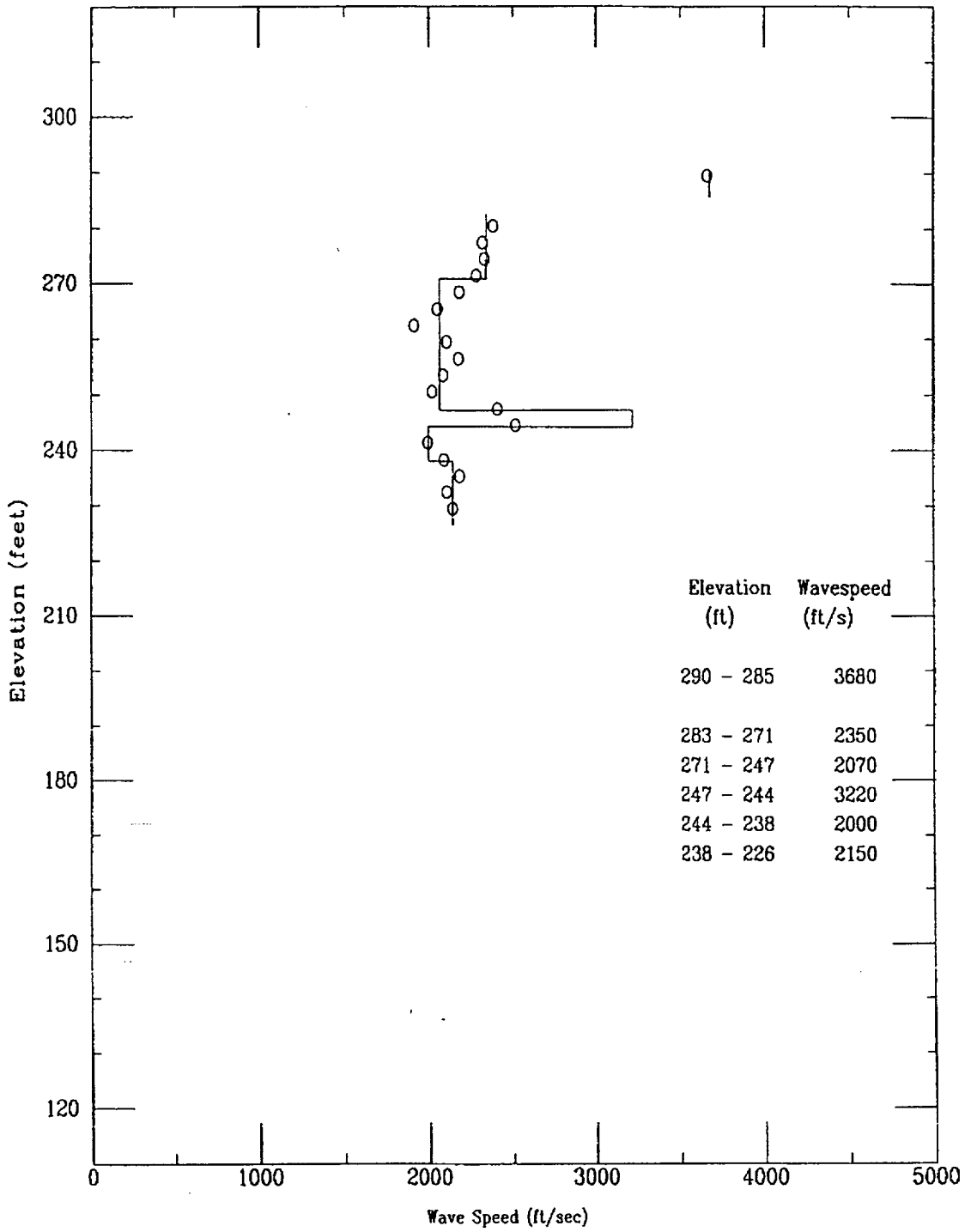
S Wave
03/10/98



File 410m804S

CPT-174 APPLIED RESEARCH ASSOCIATES, INC. 03/30/98

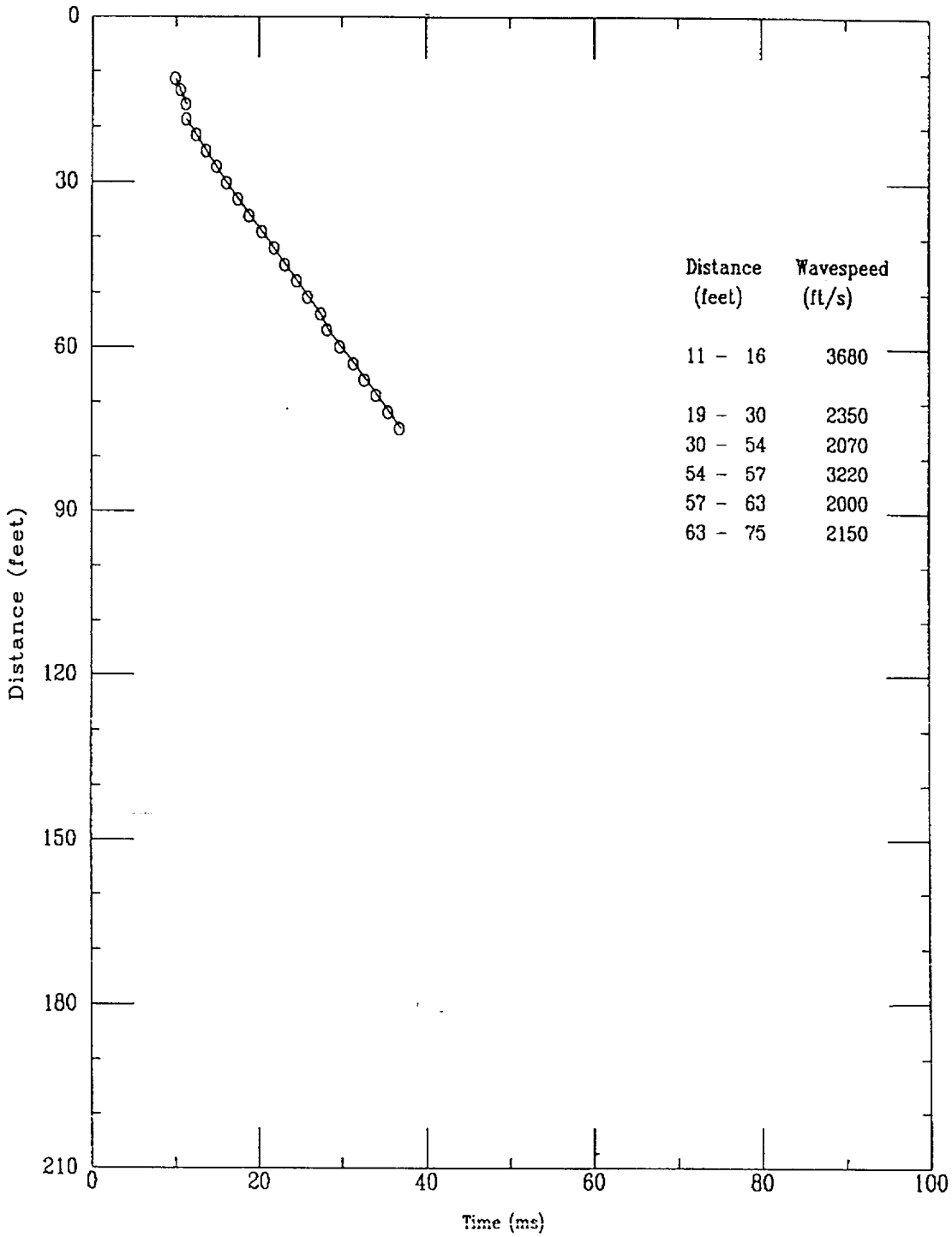
Compression Wave Speeds



File 330m801S

CPT-174 APPLIED RESEARCH ASSOCIATES, INC. 03/30/98

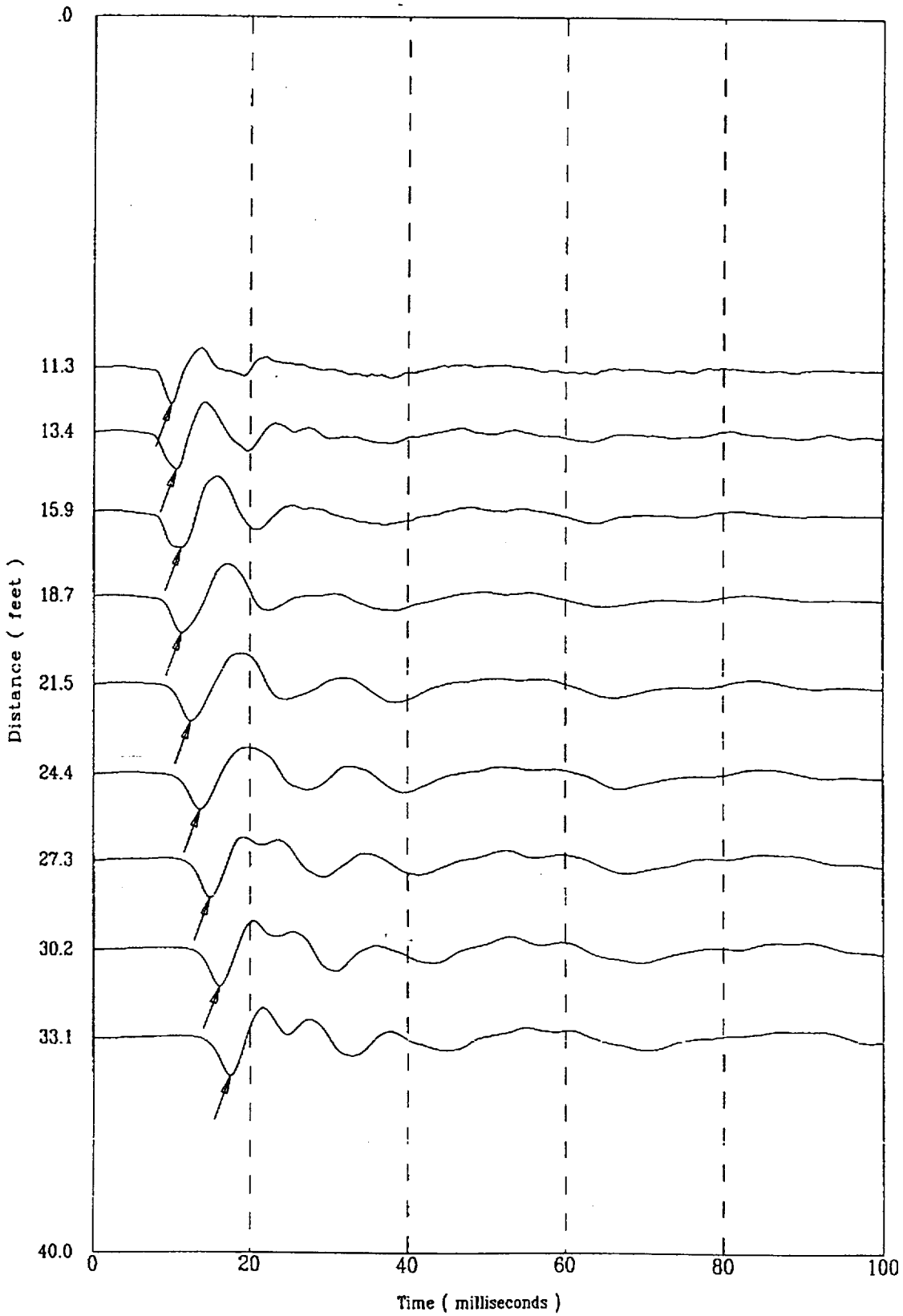
Compression Wave Time of Peak



File 330m801S

Applied Research Associates, Inc.
CPT-174

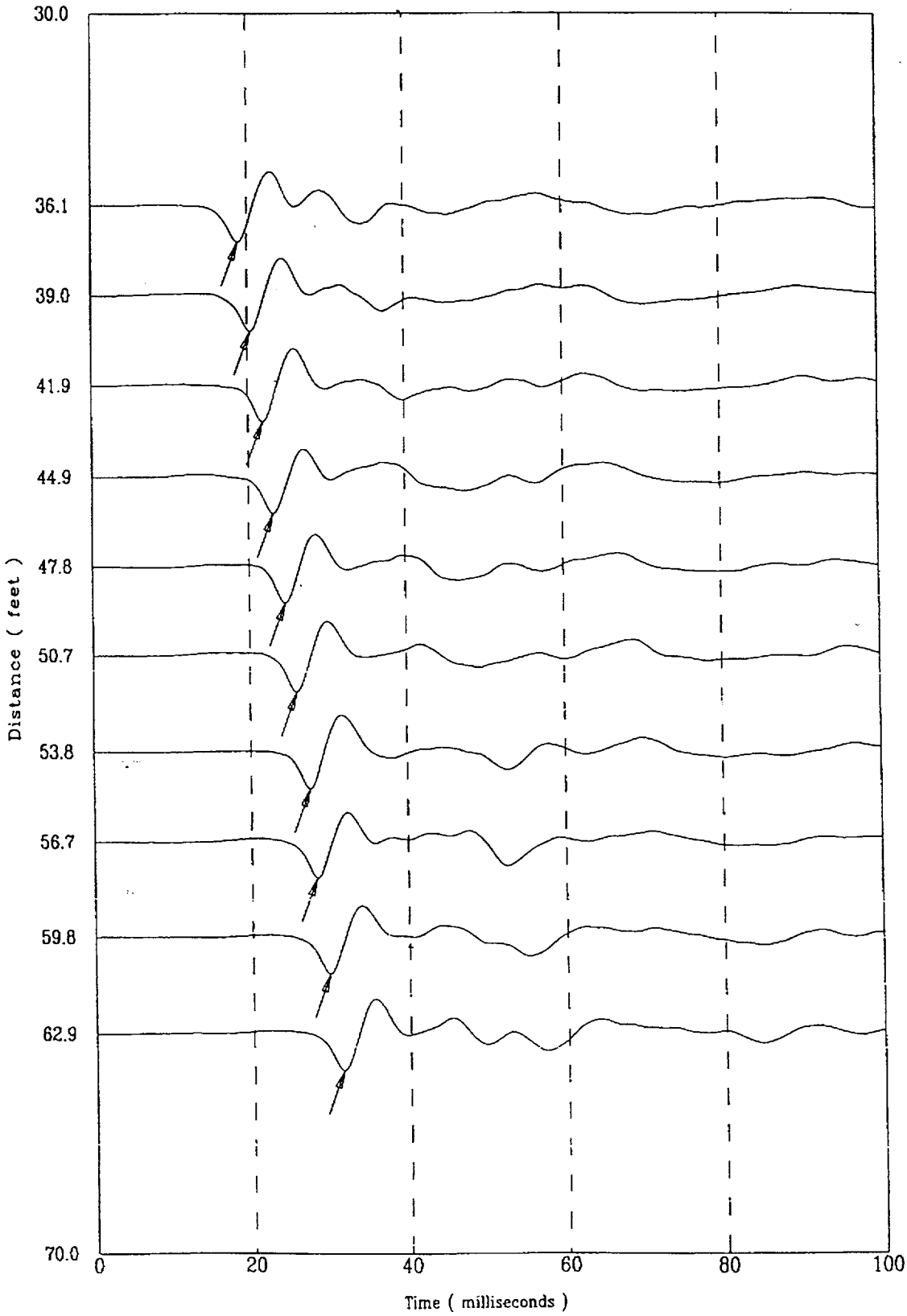
P Wave
03/30/98



330m801S

Applied Research Associates, Inc.
CPT-174

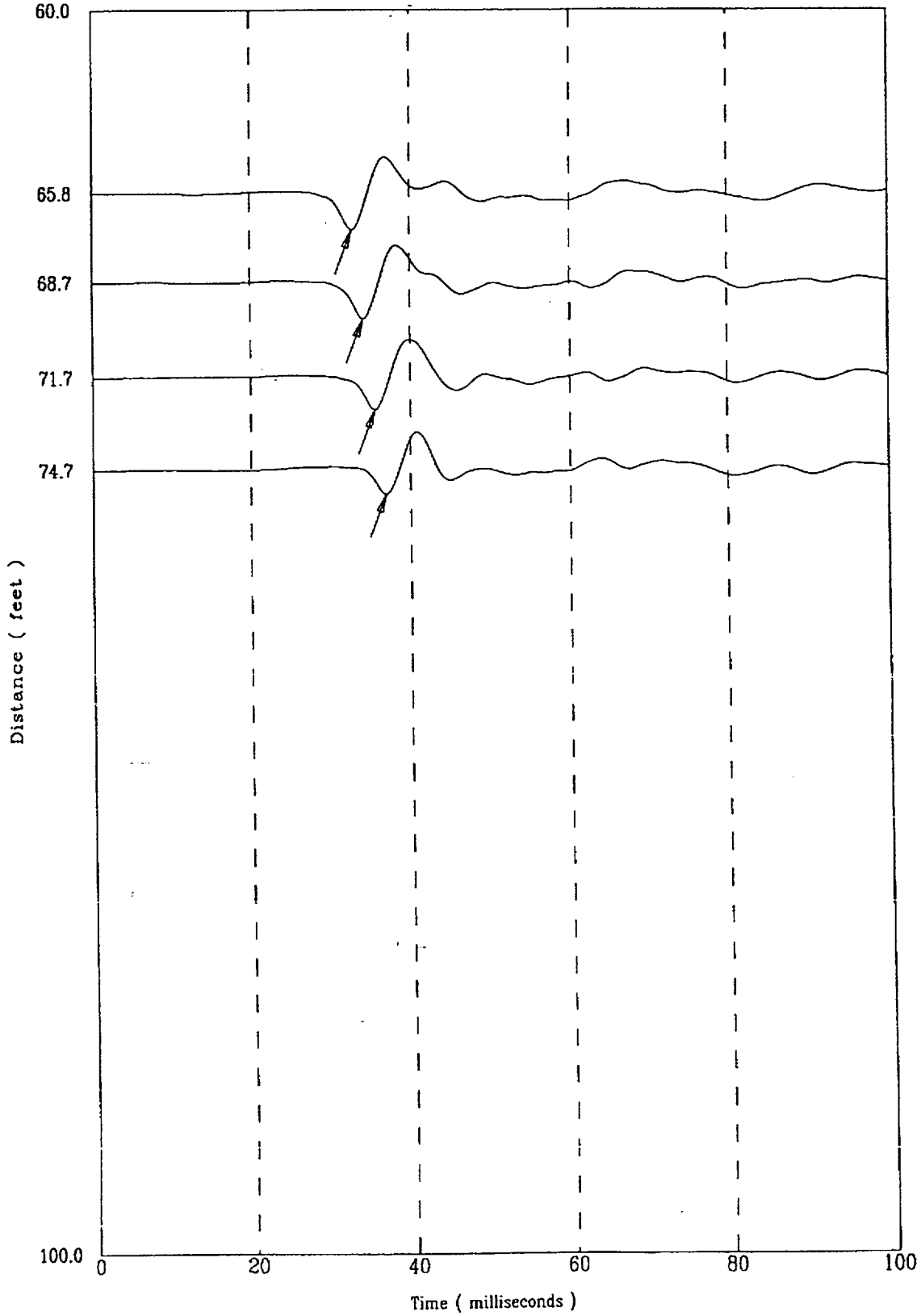
P Wave
03/30/98



File 330m801S

Applied Research Associates, Inc.
CPT-174

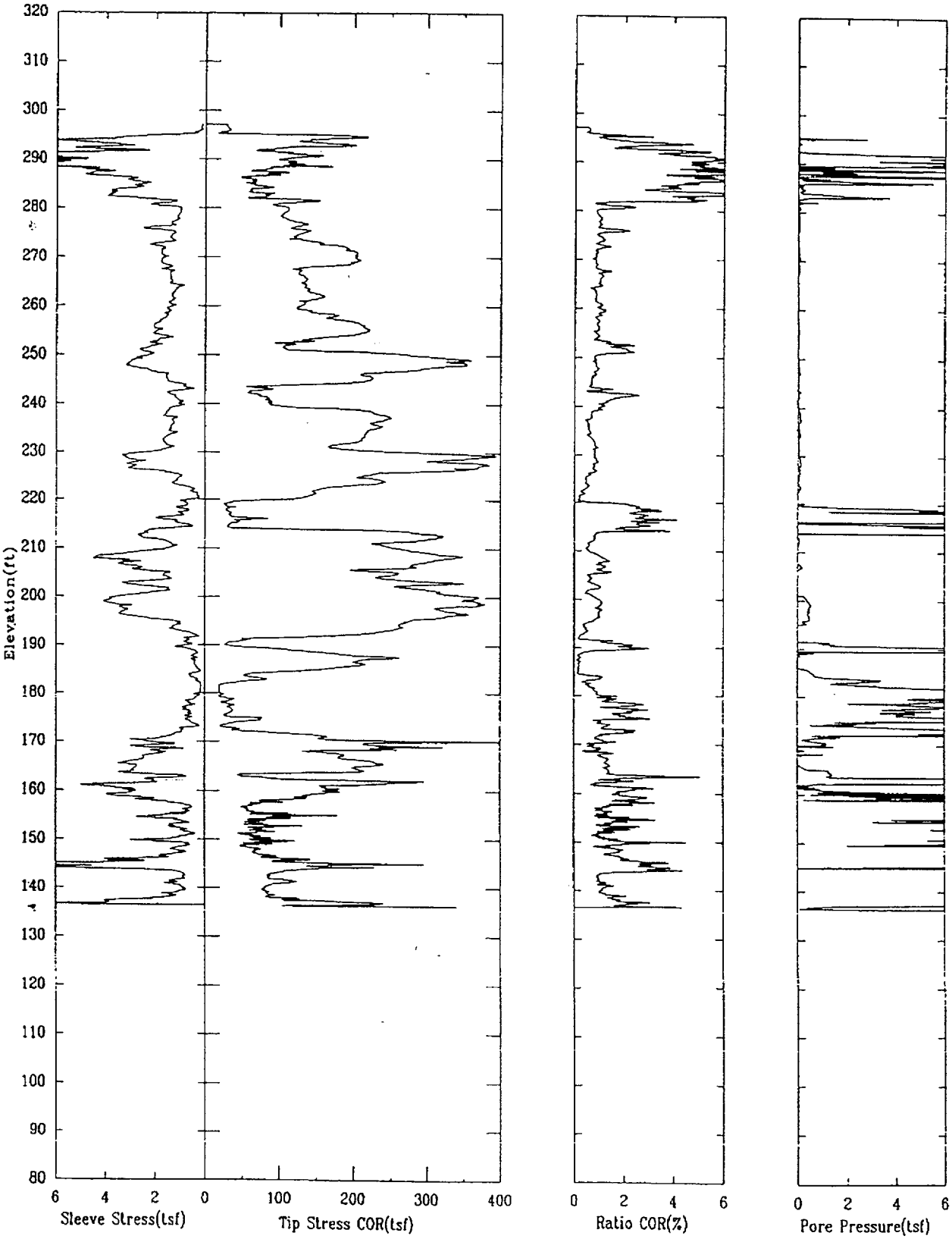
P Wave
03/30/98



330m801S

CPT-175 APPLIED RESEARCH ASSOCIATES, INC. 03/20/98

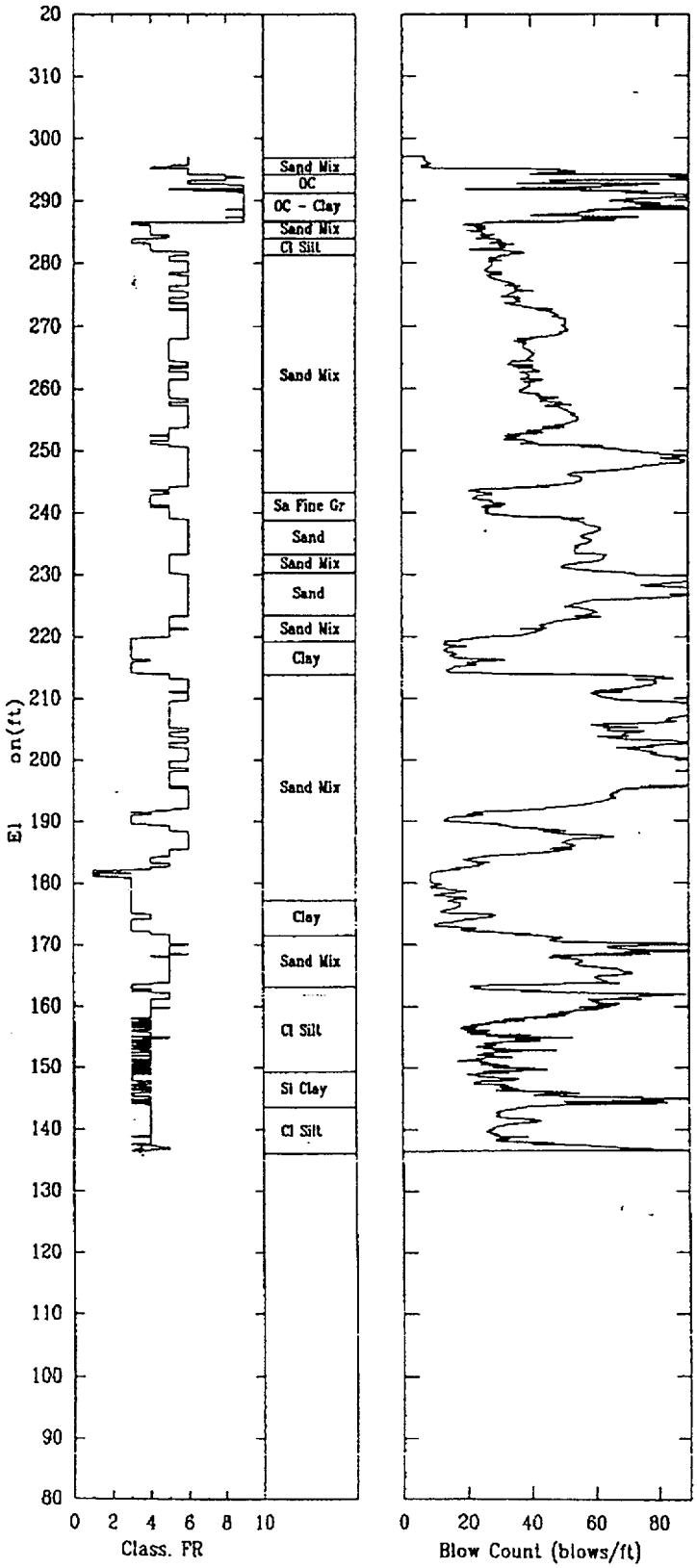
North 78770 East 55451 Elevation 303.1



File 320M801.ECP

CPT-175 APPLIED RESEARCH ASSOCIATES, INC. 03/20/98

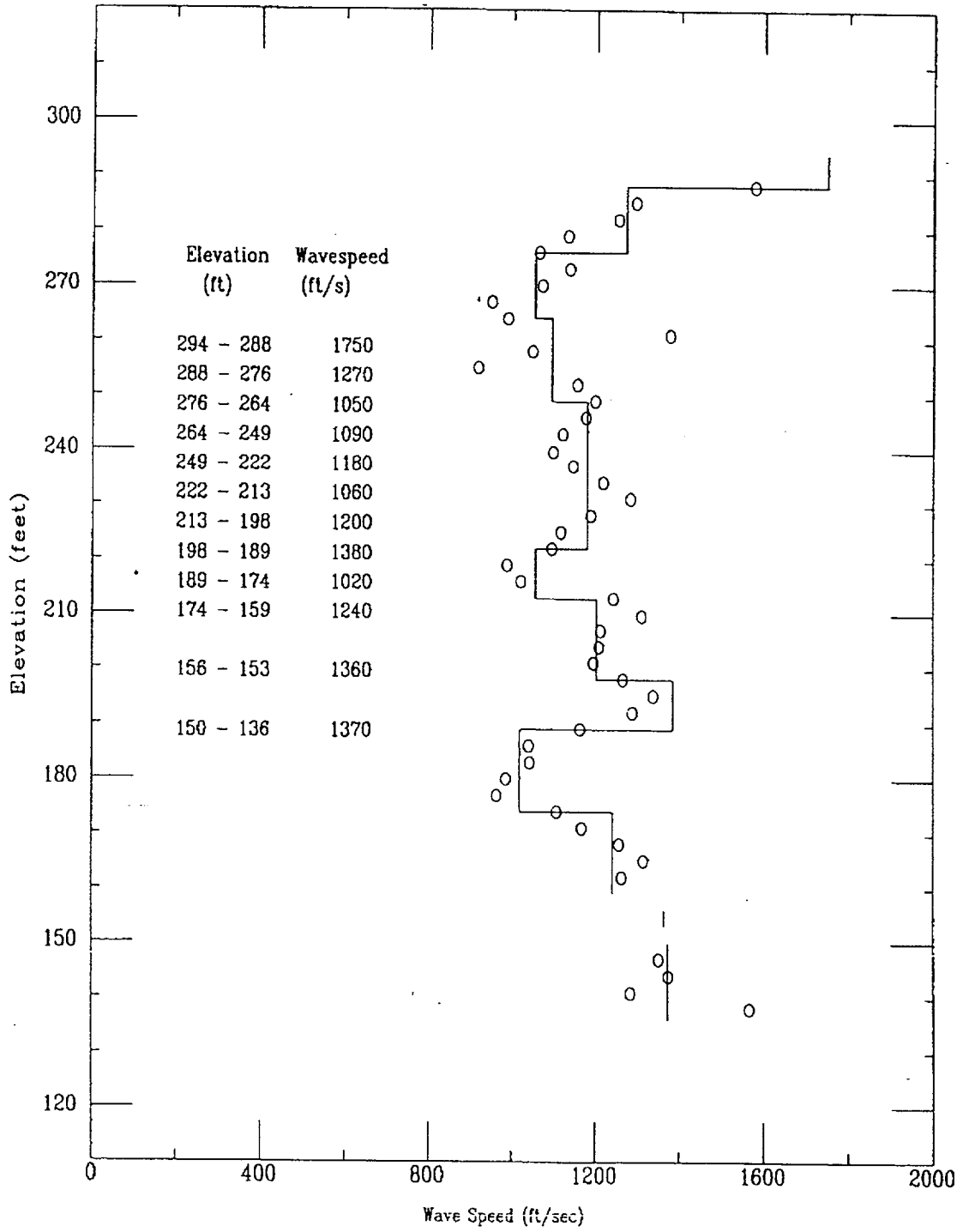
North 78770 East 55451 Elevation 303.1



File 320M801.ECP

CPT-175 APPLIED RESEARCH ASSOCIATES, INC. 03/20/98

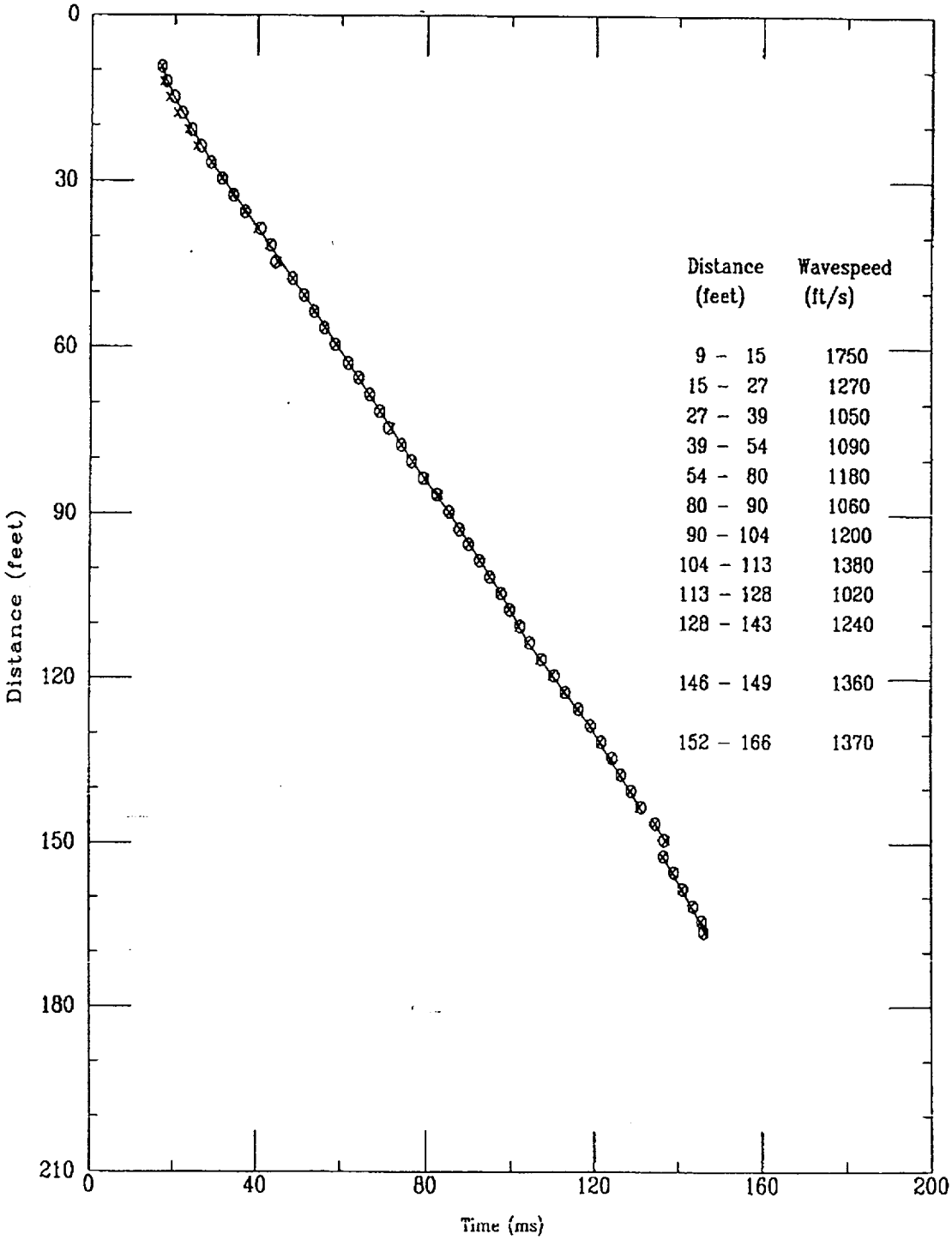
Shear Wave Speeds



File 320m801S

CPT-175 APPLIED RESEARCH ASSOCIATES, INC. 03/20/98

Shear Wave Time of Peak

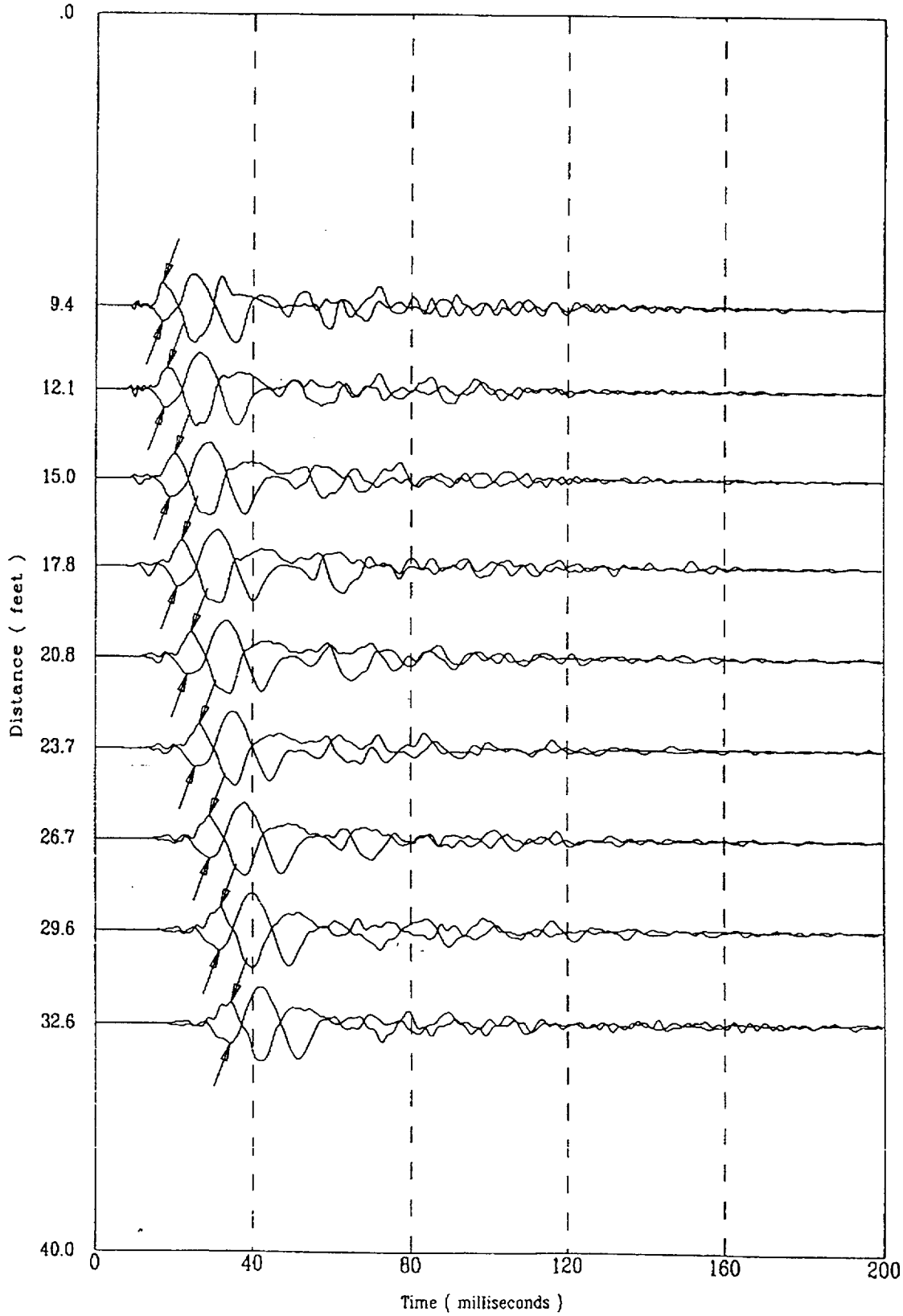


Distance (feet)	Wavespeed (ft/s)
9 - 15	1750
15 - 27	1270
27 - 39	1050
39 - 54	1090
54 - 80	1180
80 - 90	1060
90 - 104	1200
104 - 113	1380
113 - 128	1020
128 - 143	1240
146 - 149	1360
152 - 166	1370

File 320m801S

Applied Research Associates, Inc.
CPT-175

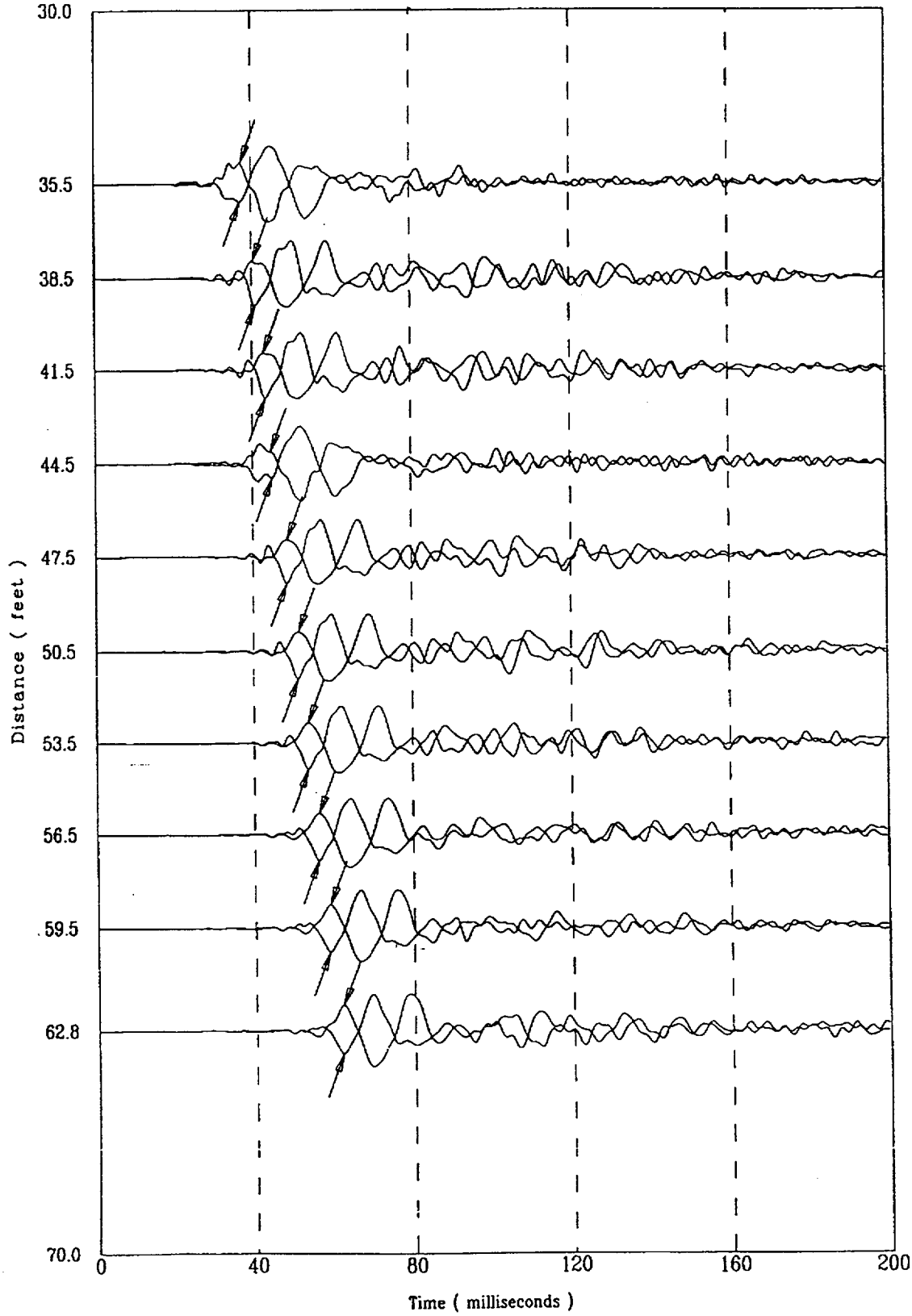
S Wave
03/20/98



File 320m801S

Applied Research Associates, Inc.
CPT-175

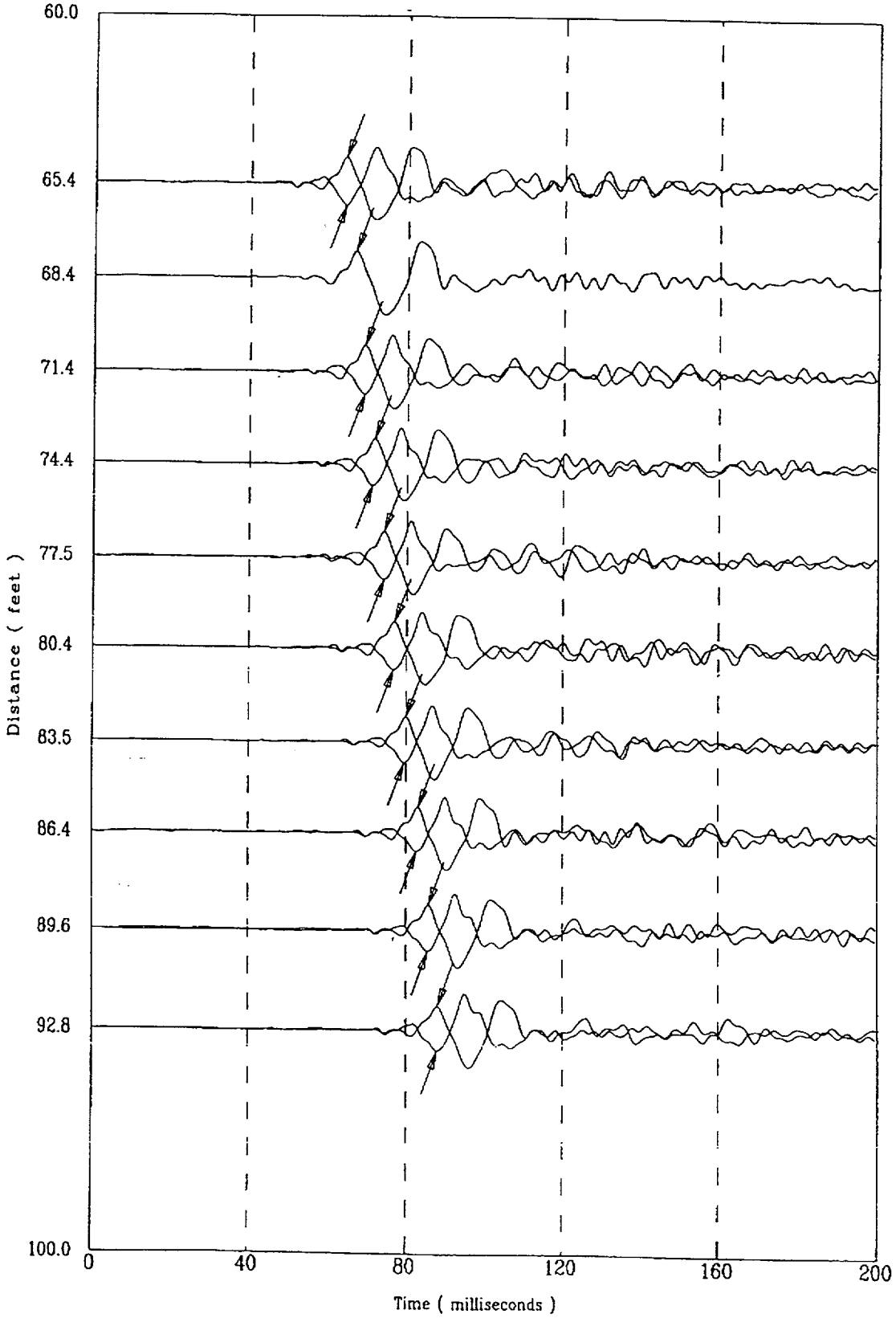
S Wave
03/20/98



J20m801S

Applied Research Associates, Inc.
CPT-175

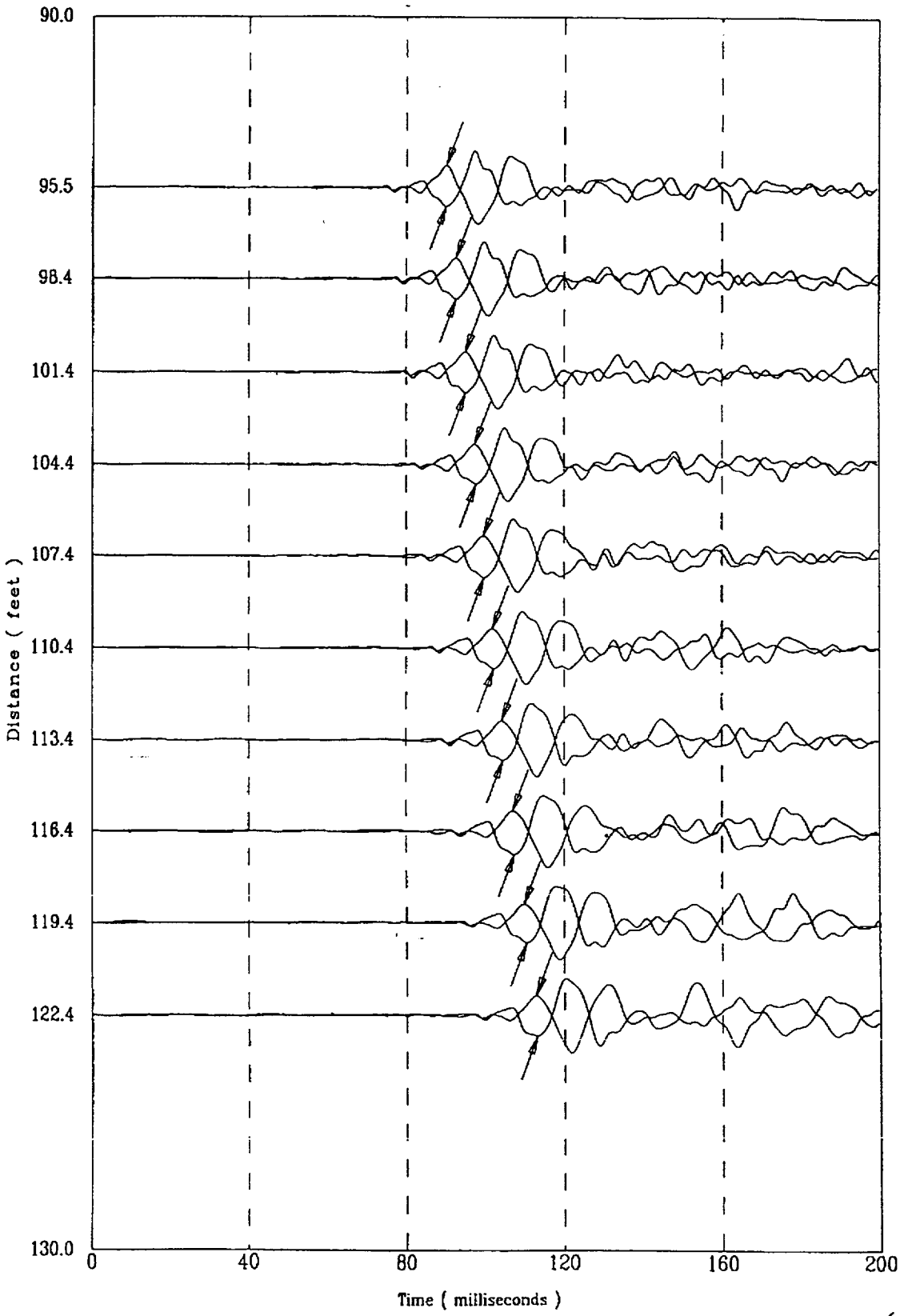
S Wave
03/20/98



File 320m801S

Applied Research Associates, Inc.
CPT-175

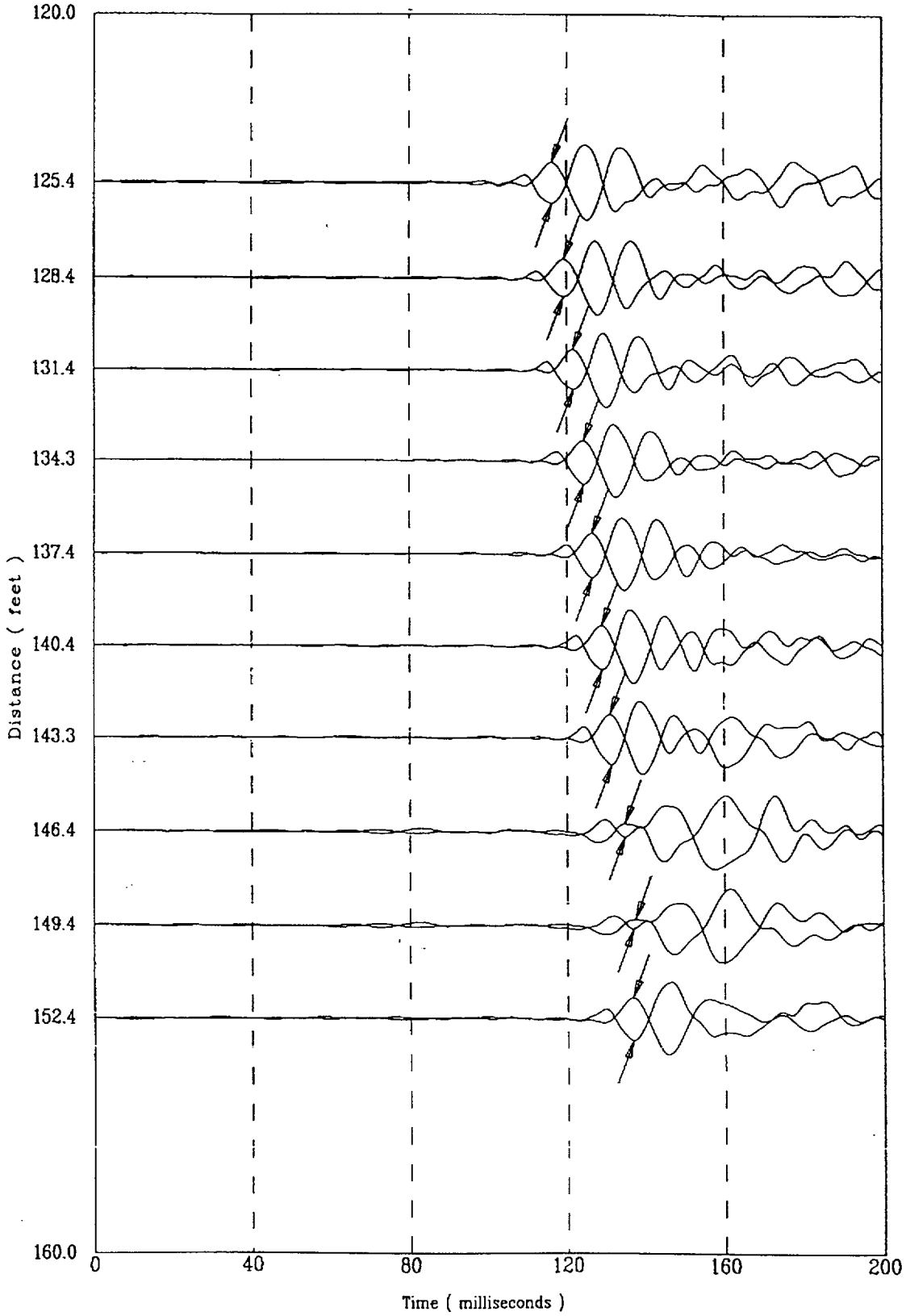
S Wave
03/20/98



20m801S

Applied Research Associates, Inc.
CPT-175

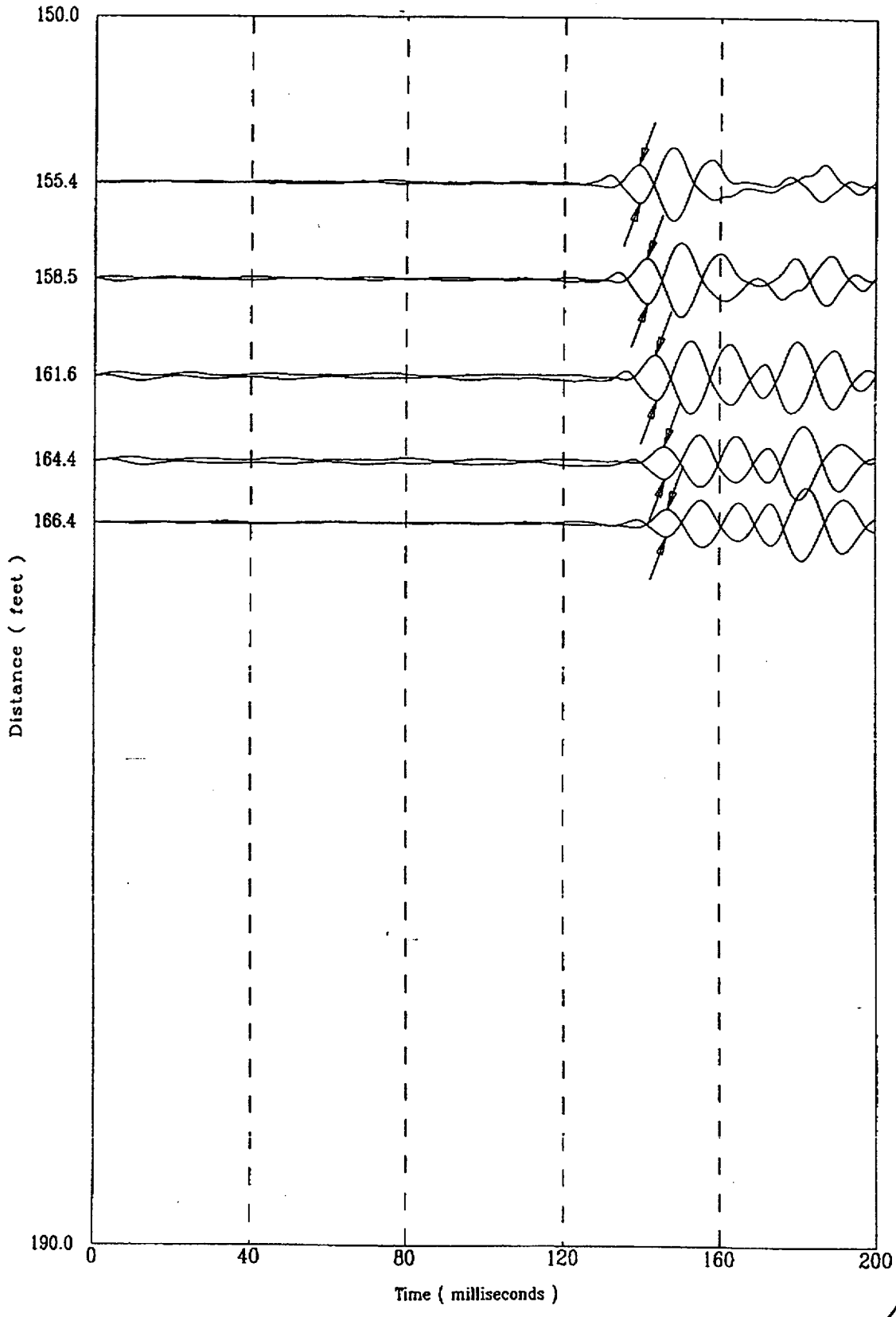
S Wave
03/20/98



File 320m801S

Applied Research Associates, Inc.
CPT-175

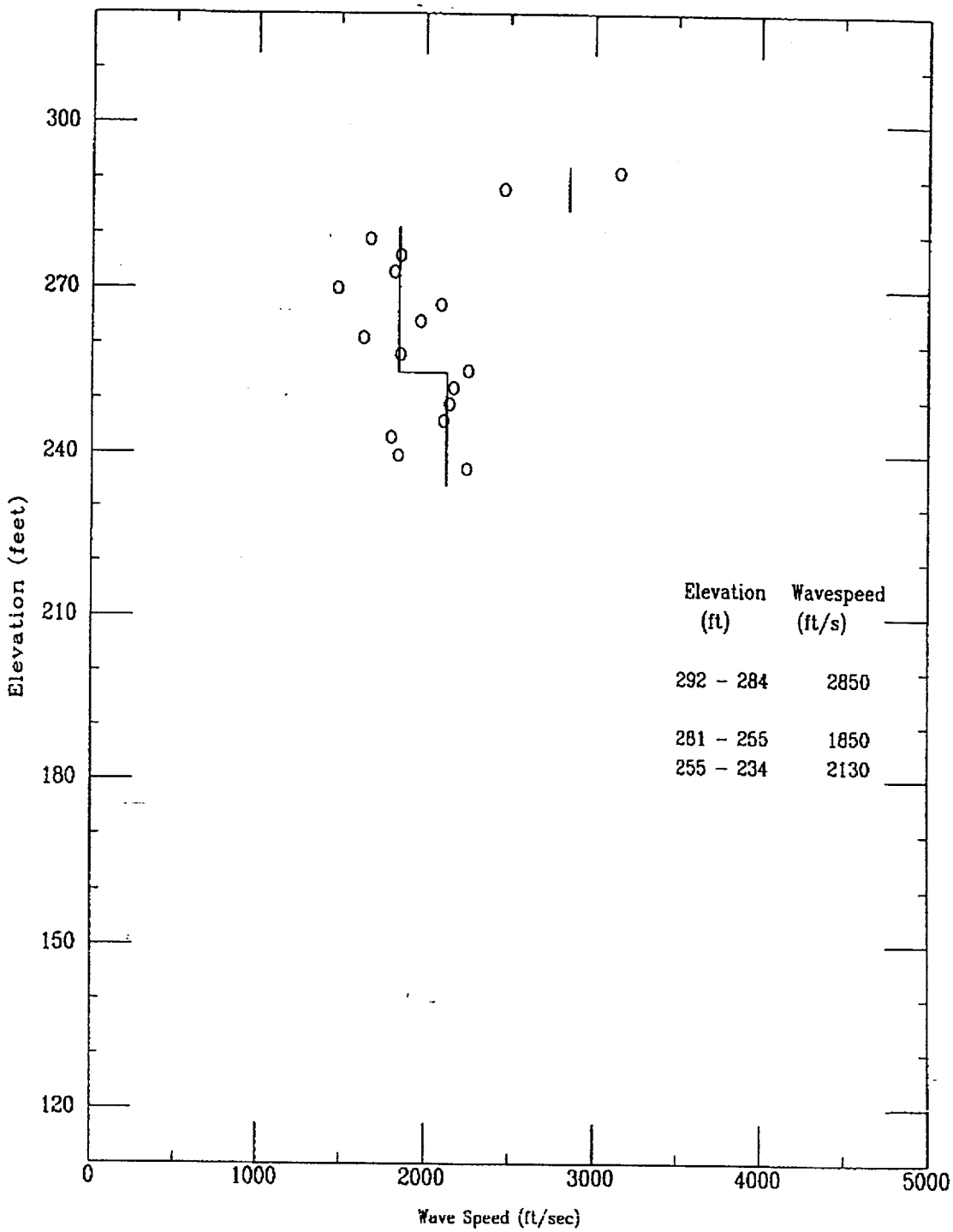
S Wave
03/20/98



20m601S

CPT-175 APPLIED RESEARCH ASSOCIATES, INC. 03/20/98

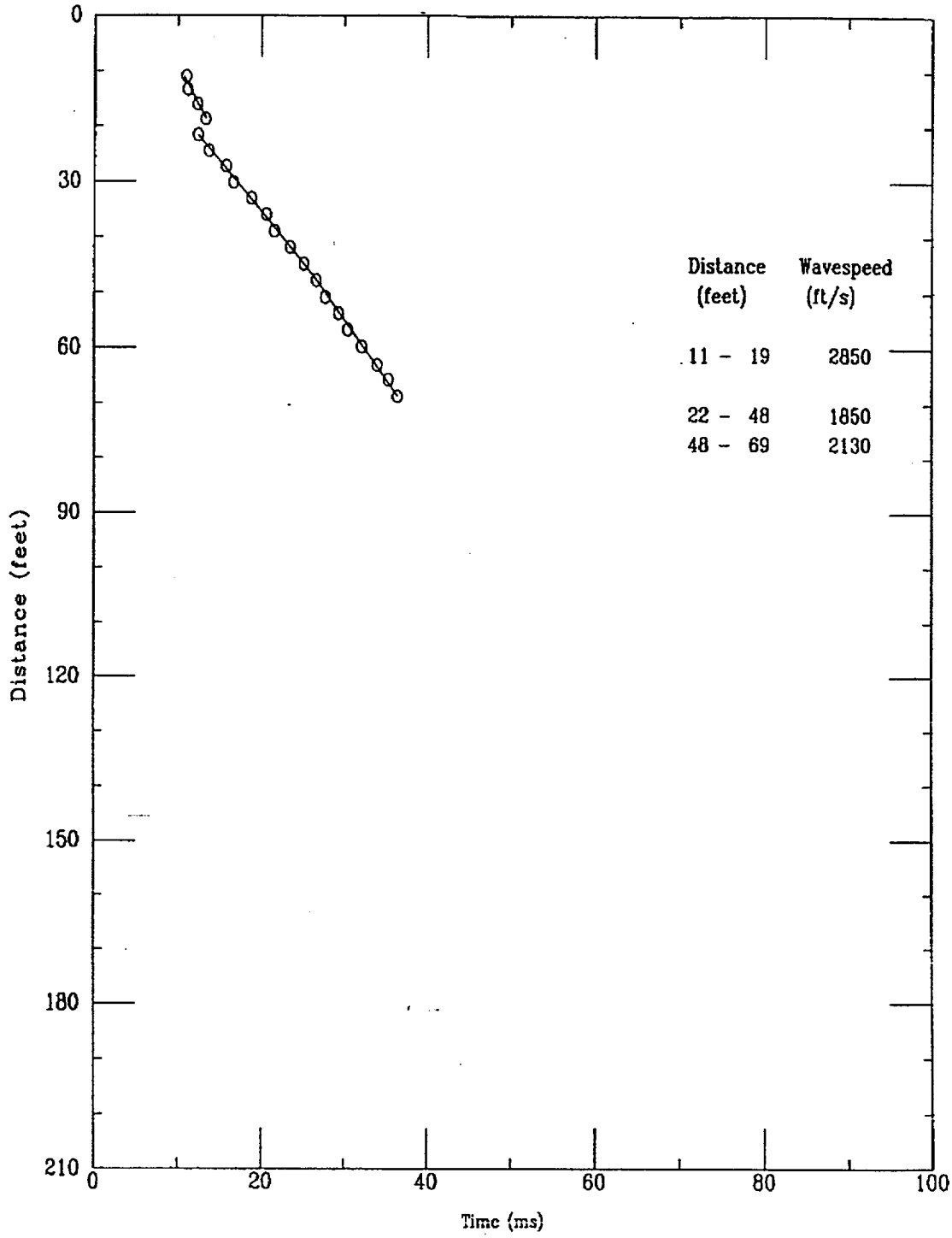
Compression Wave Speeds



File 320m801S

CPT-175 APPLIED RESEARCH ASSOCIATES, INC. 03/20/98

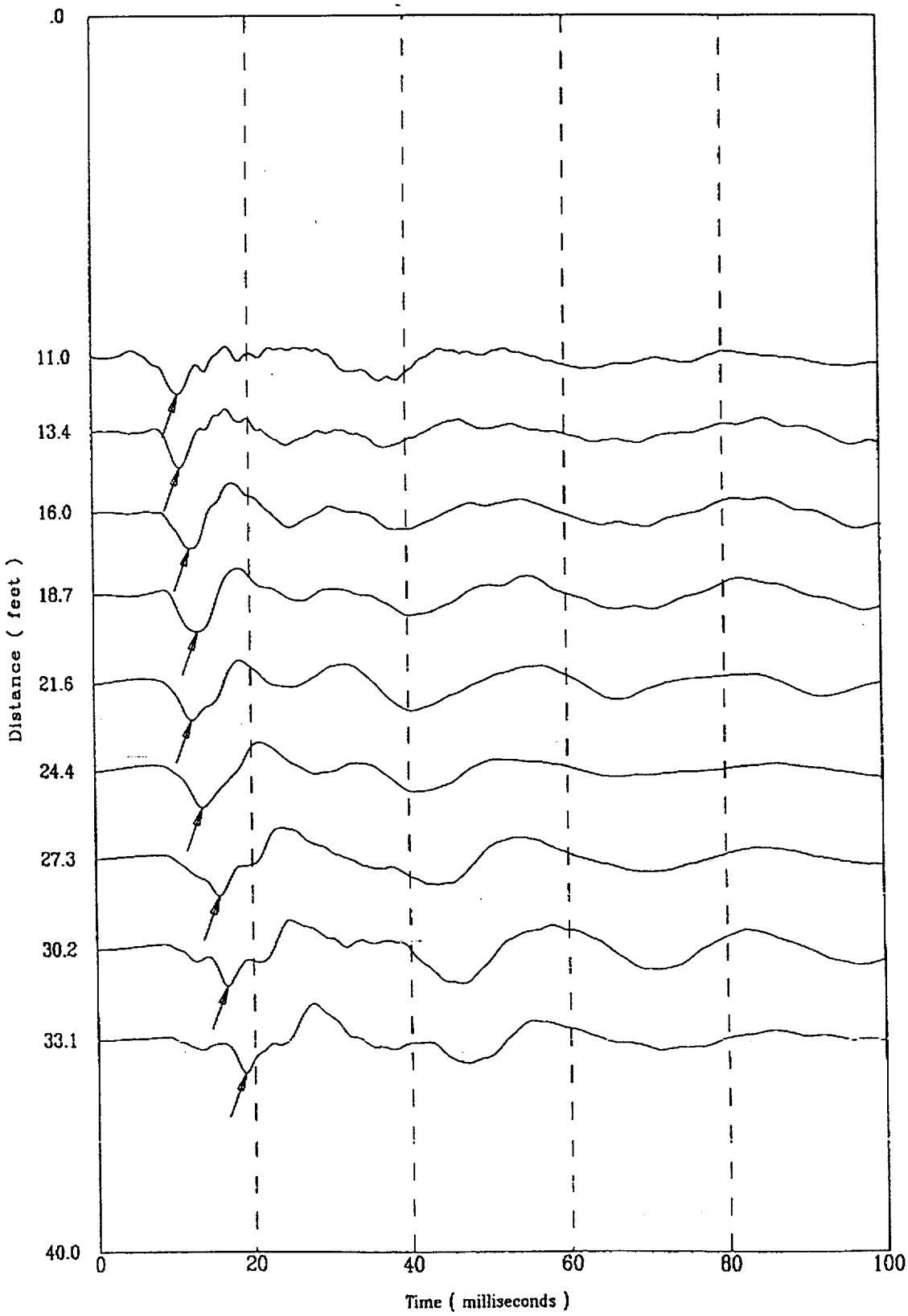
Compression Wave Time of Peak



File 320m801S

Applied Research Associates, Inc.
CPT-175

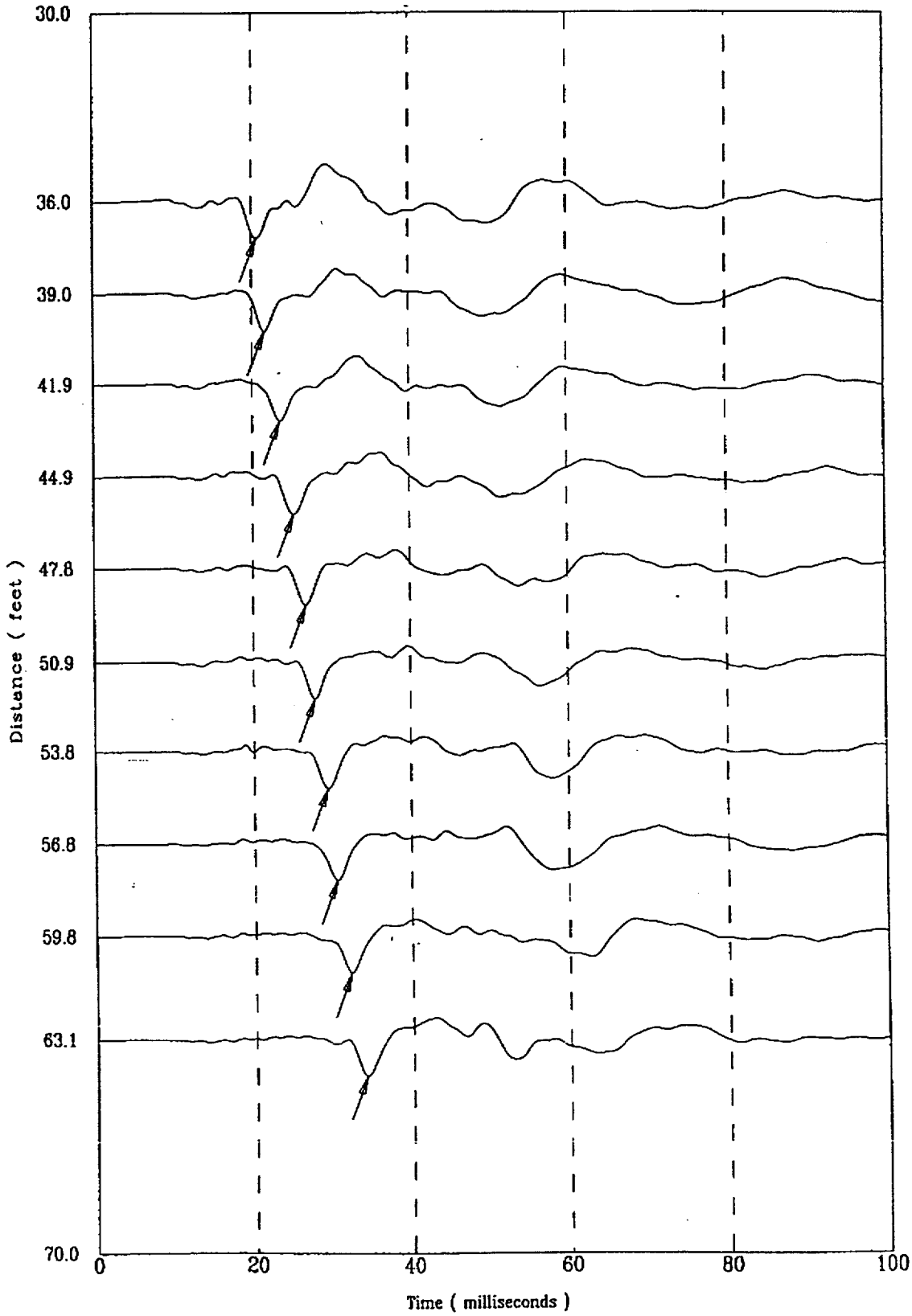
P Wave
03/20/98



File 320m801S

Applied Research Associates, Inc.
CPT-175

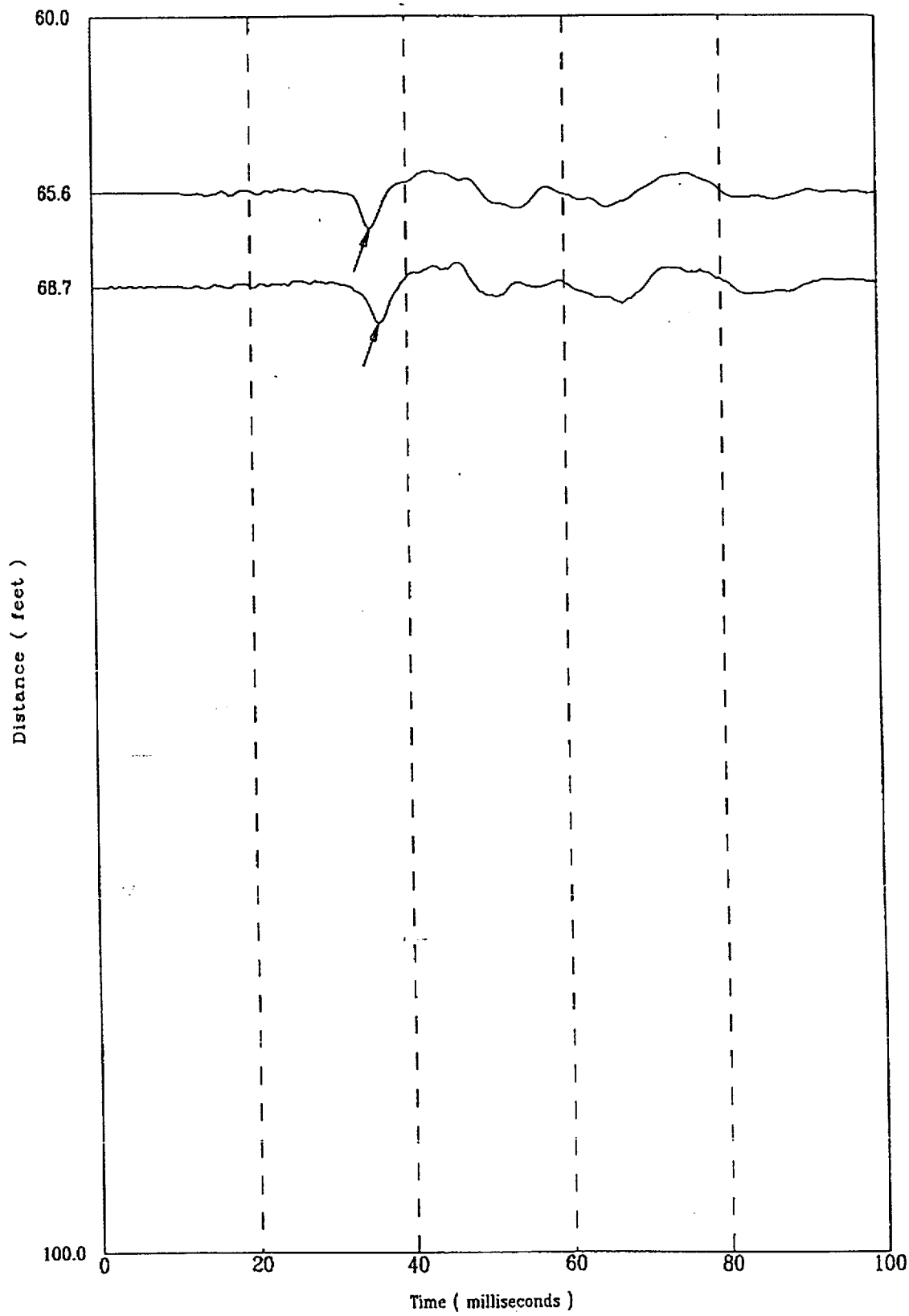
P Wave
03/20/98



320m801S

Applied Research Associates, Inc.
CPT-175

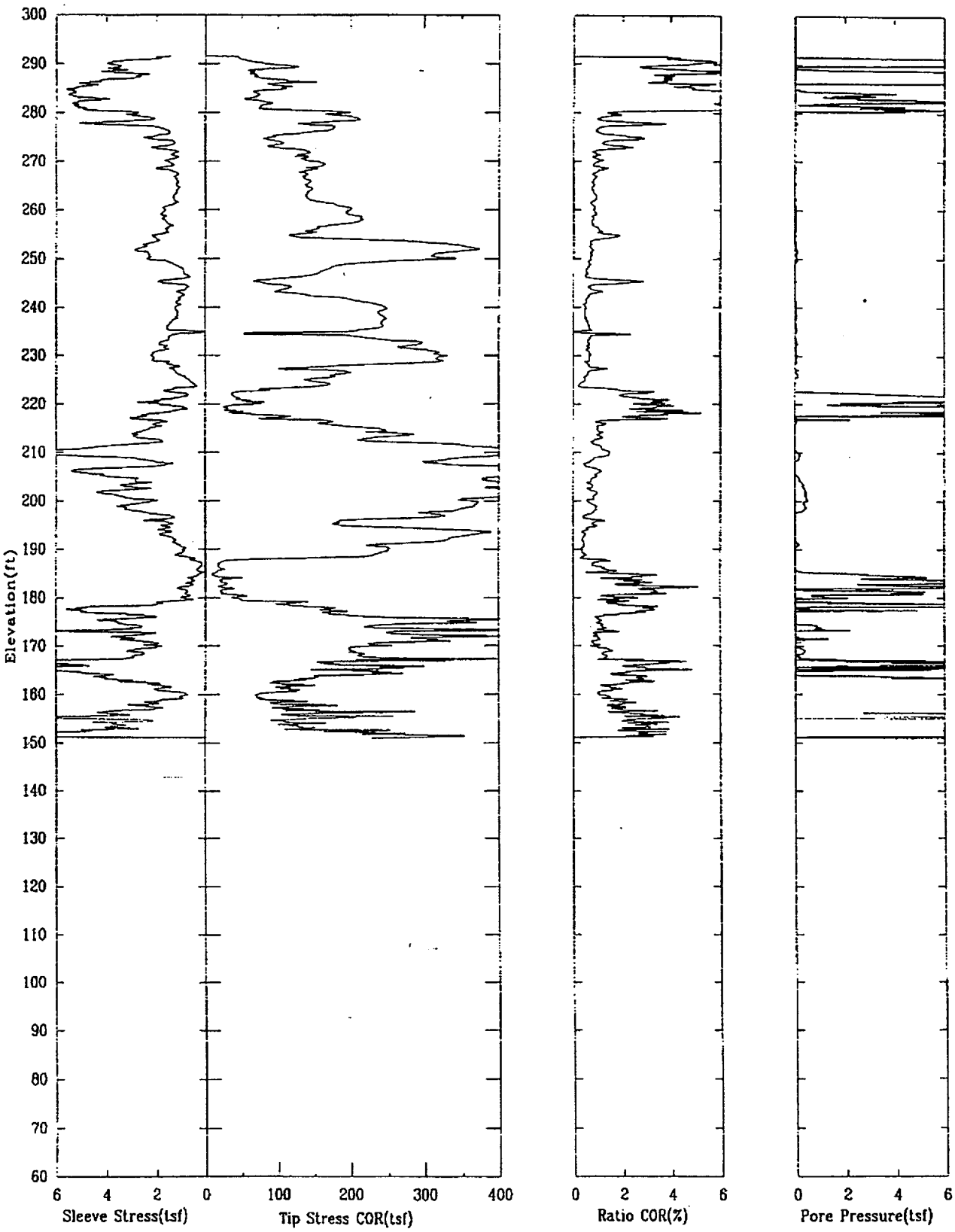
P Wave
03/20/98



File 320m801S

CPT-176 APPLIED RESEARCH ASSOCIATES, INC. 03/26/98

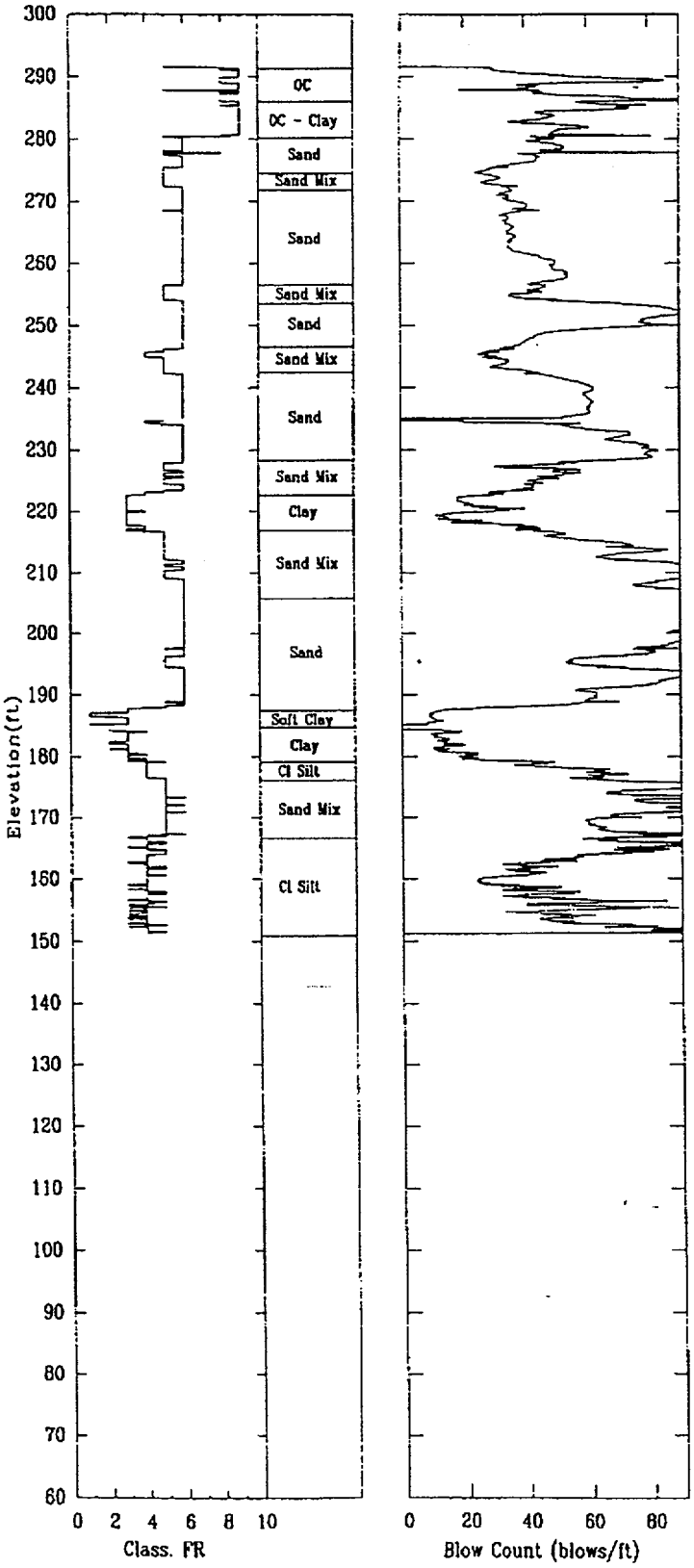
North 78770 East 55583 Elevation 297.6



File 326M805.ECP

CPT-176 APPLIED RESEARCH ASSOCIATES, INC. 03/26/98

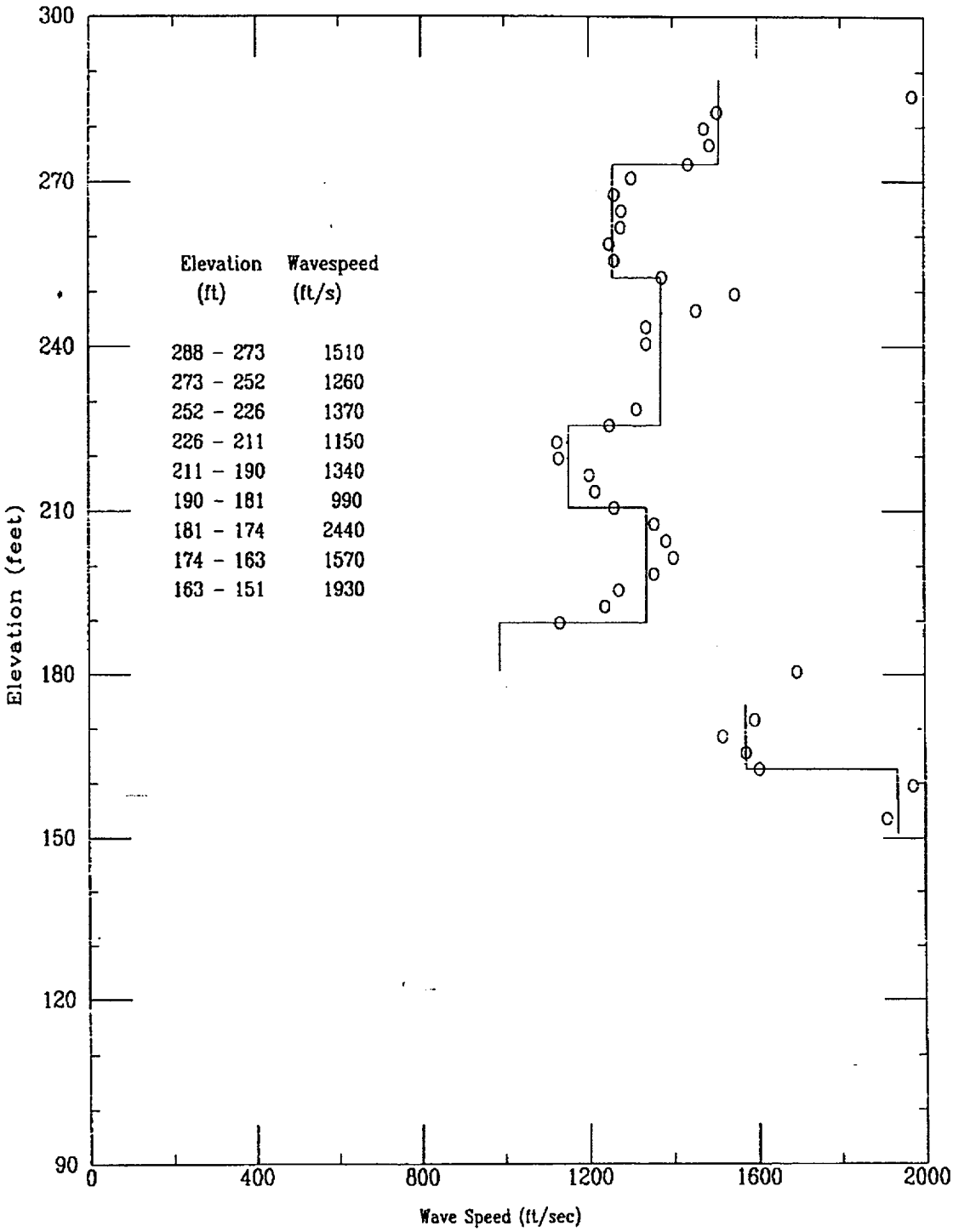
North 78770 East 55583 Elevation 297.6



File 326M805.ECP

CPT-176 APPLIED RESEARCH ASSOCIATES, INC. 03/26/98

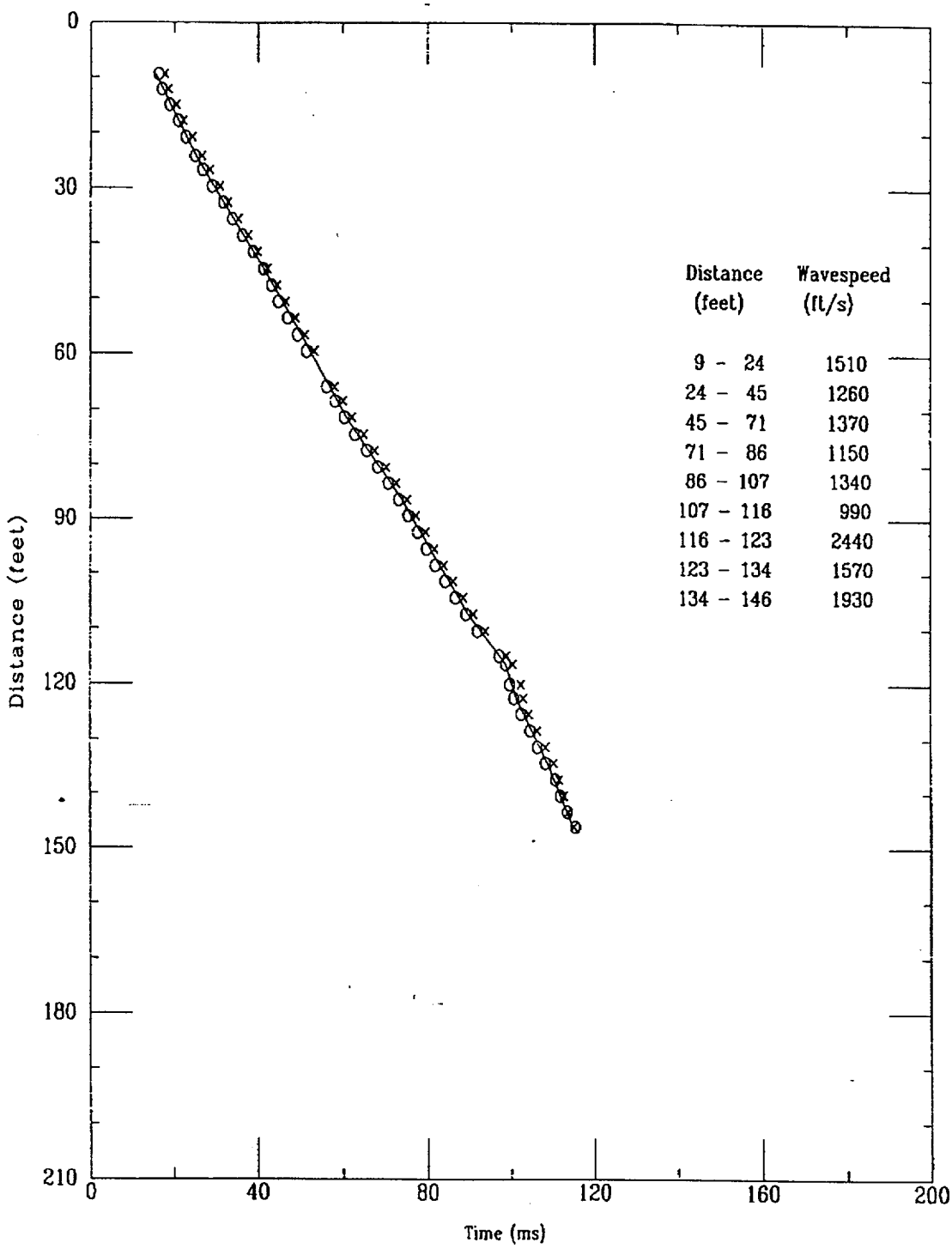
Shear Wave Speeds



File 326m805S

CPT-176 APPLIED RESEARCH ASSOCIATES, INC. 03/26/98

Shear Wave Time of Peak

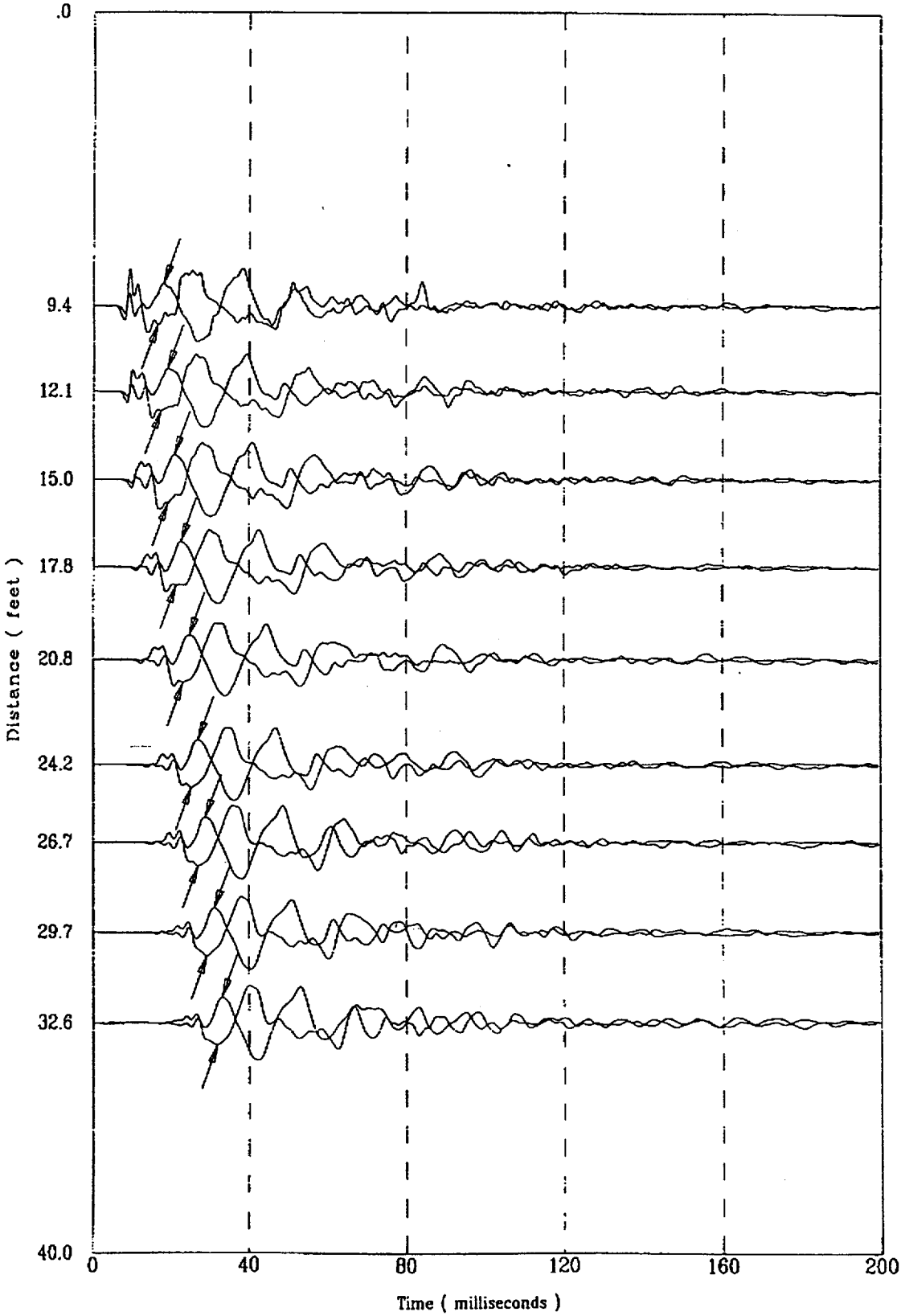


Distance (feet)	Wavespeed (ft/s)
9 - 24	1510
24 - 45	1260
45 - 71	1370
71 - 86	1150
86 - 107	1340
107 - 116	990
116 - 123	2440
123 - 134	1570
134 - 146	1930

File 326m805S

Applied Research Associates, Inc.
CPT-176

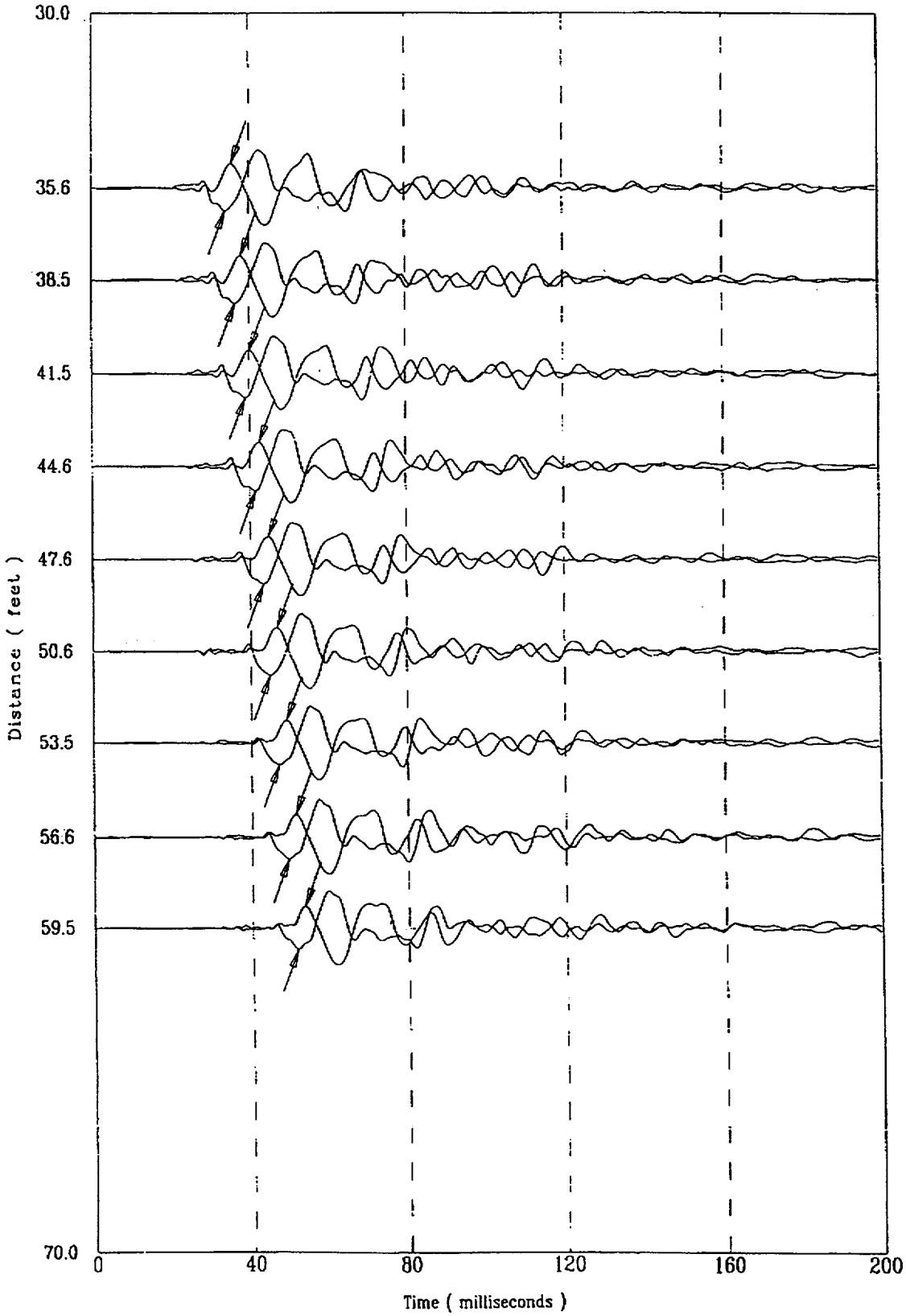
S Wave
03/26/98



r... 326m805S

Applied Research Associates, Inc.
CPT-176

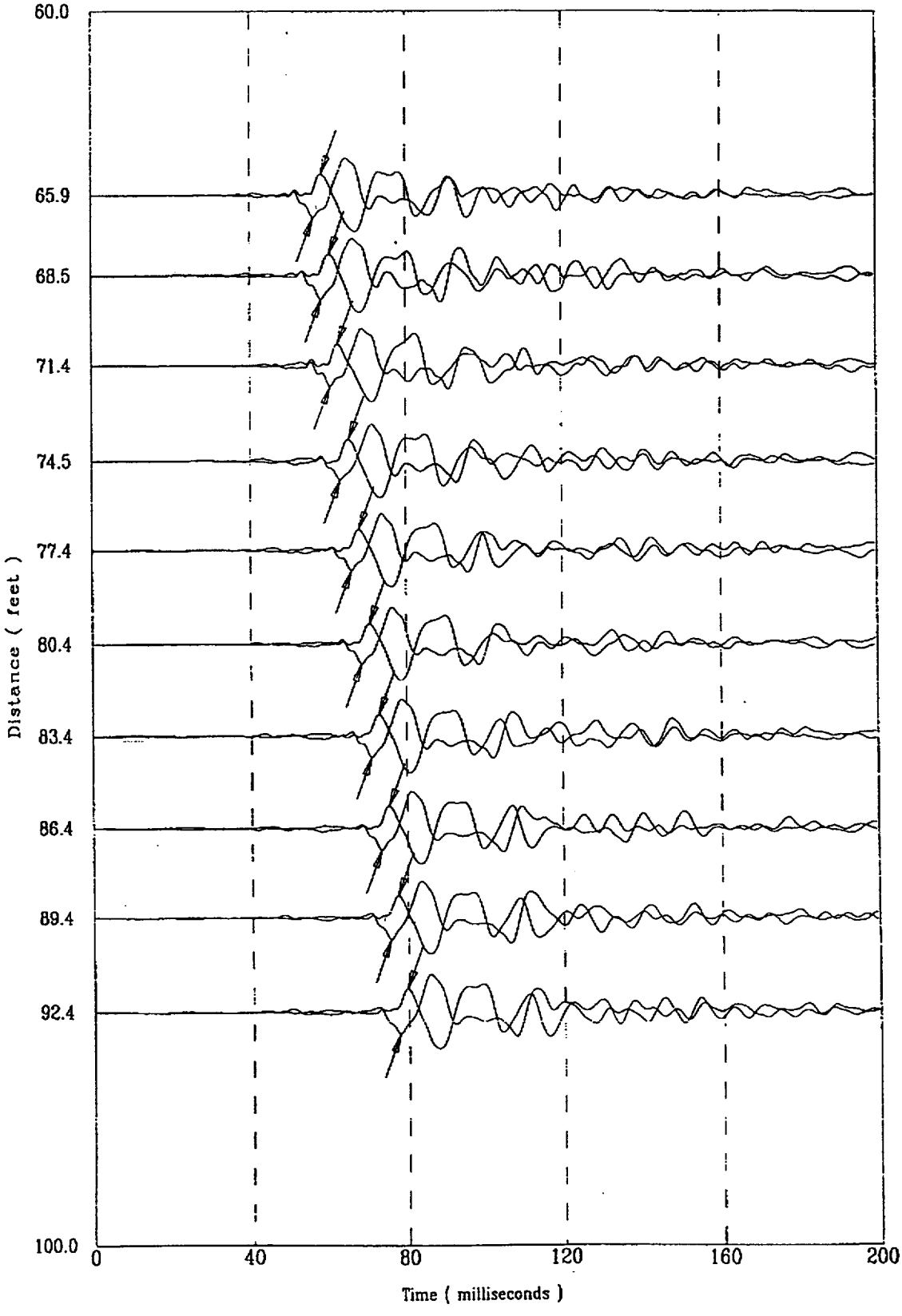
S Wave
03/26/98



File 326m805S

Applied Research Associates, Inc.
CPT-176

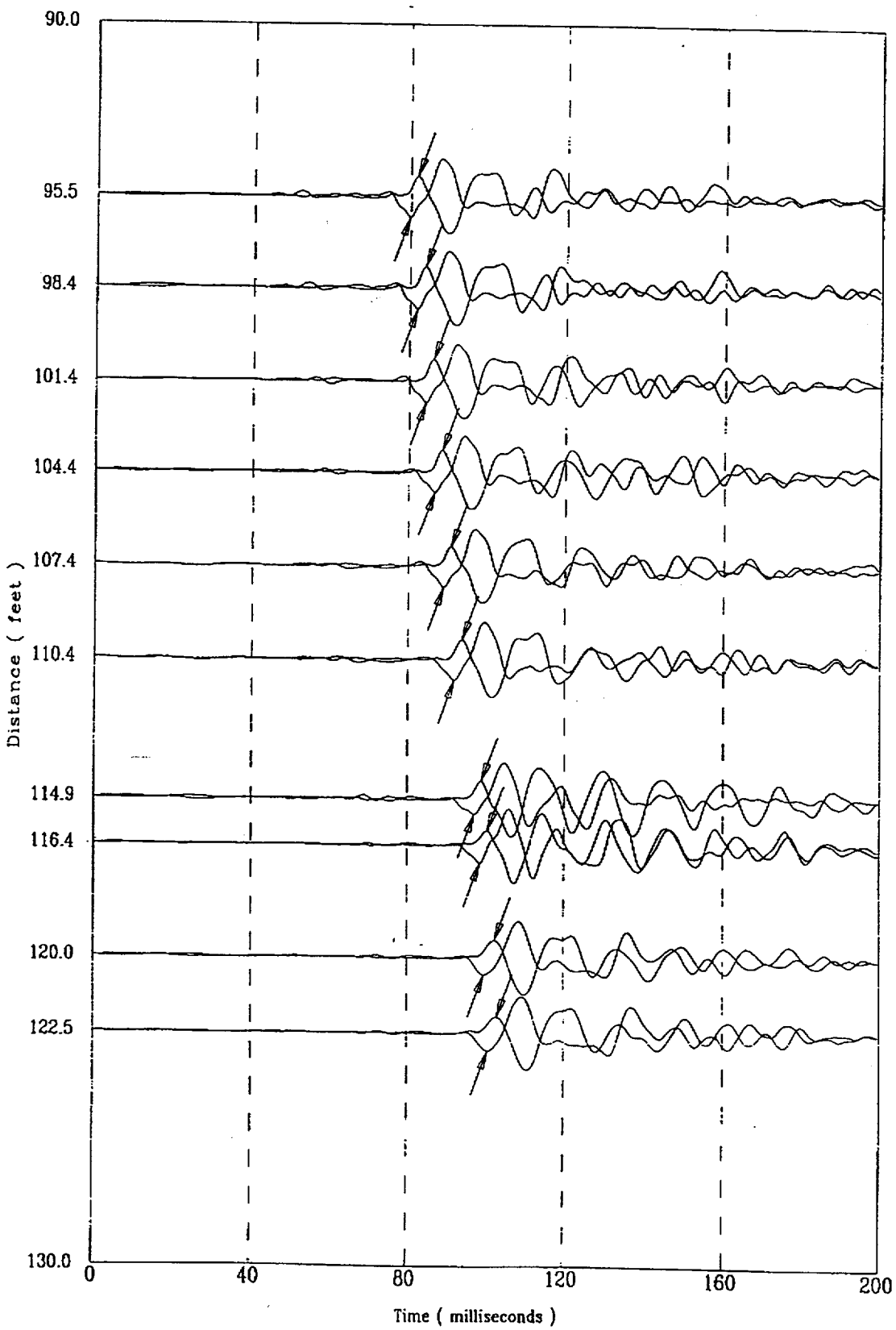
S Wave
03/26/98



326m805S

Applied Research Associates, Inc.
CPT-176

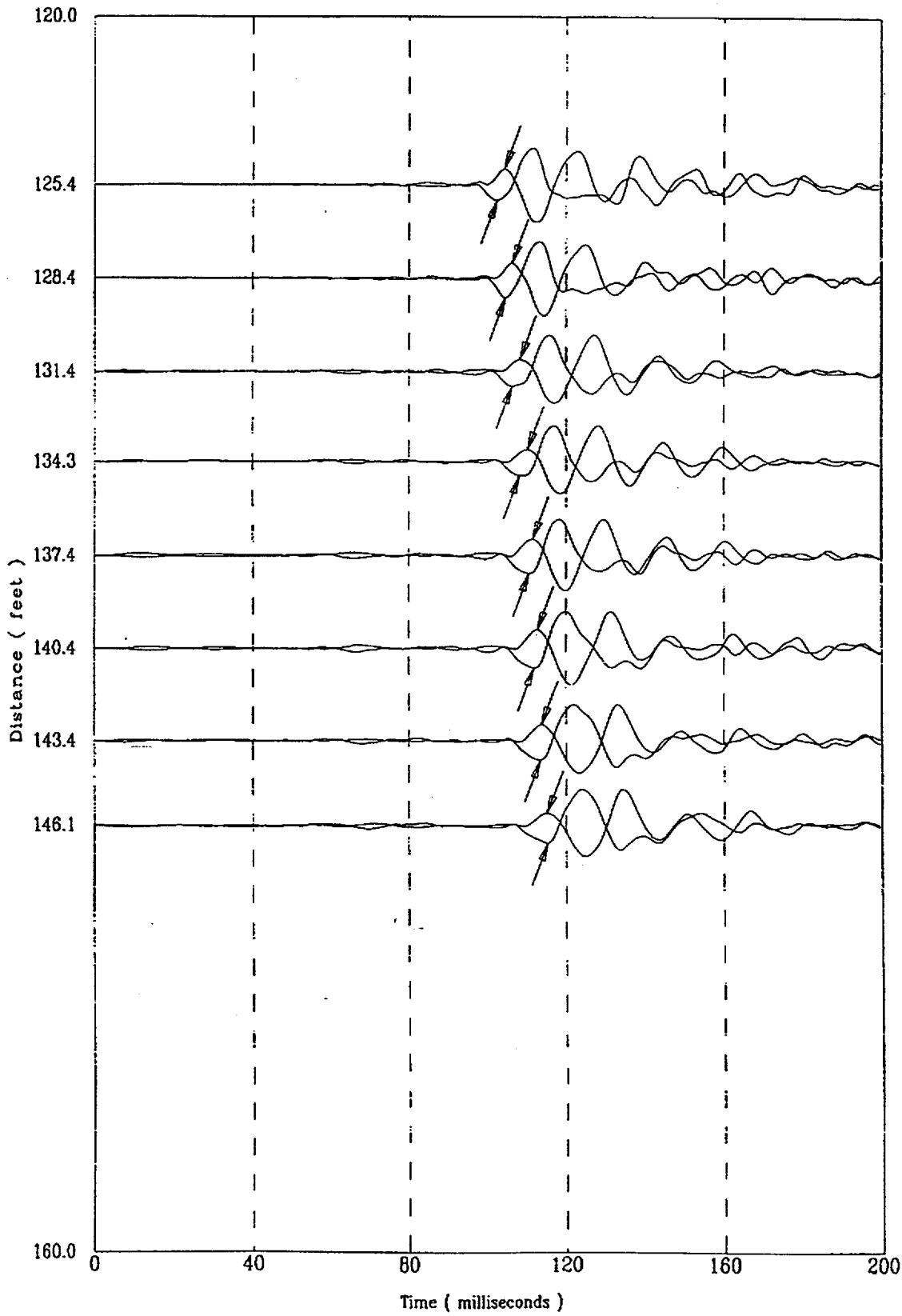
S Wave
03/26/98



File 326m805S

Applied Research Associates, Inc.
CPT-176

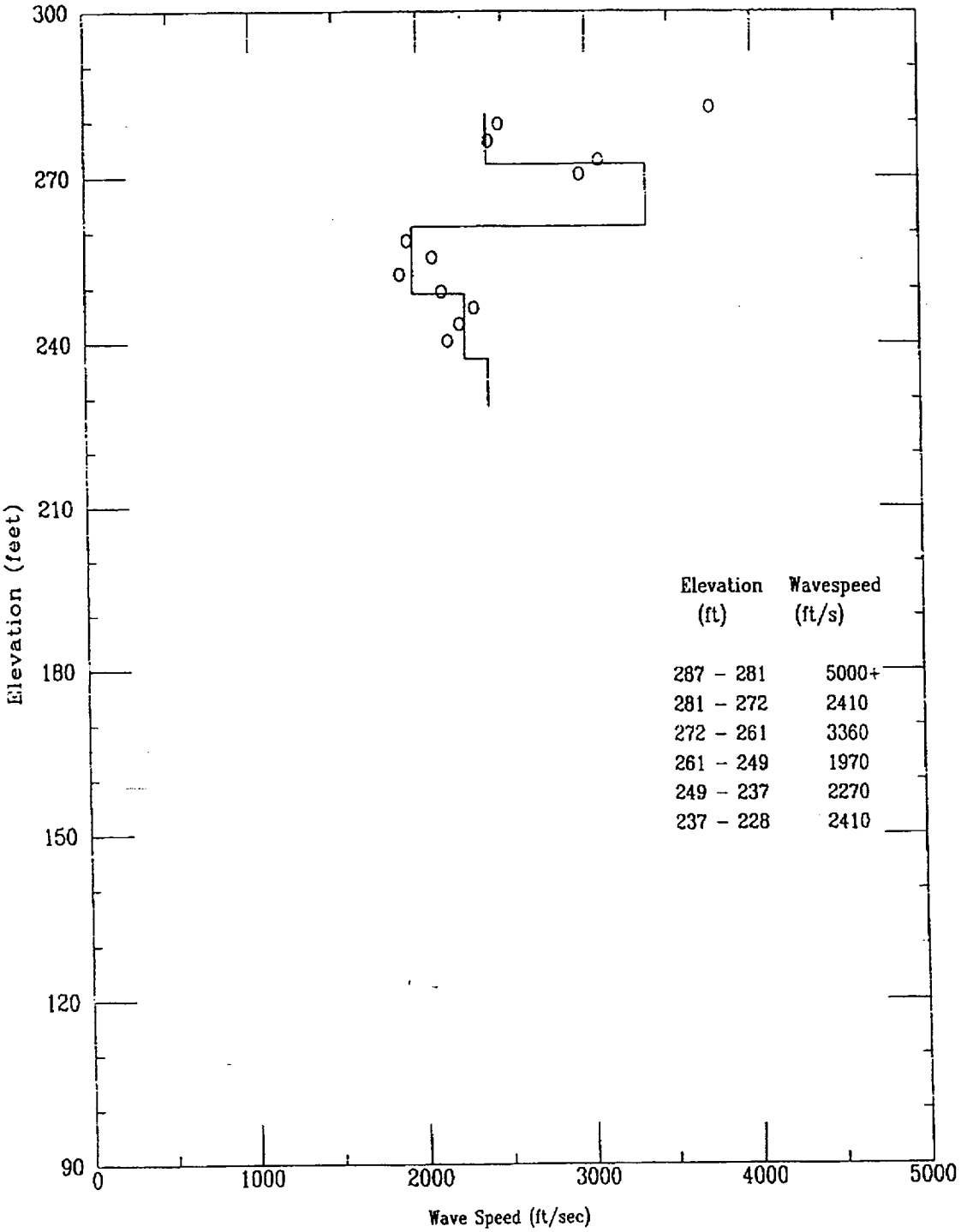
S Wave
03/26/98



File 326m805S

CPT-176 APPLIED RESEARCH ASSOCIATES, INC. 03/26/98

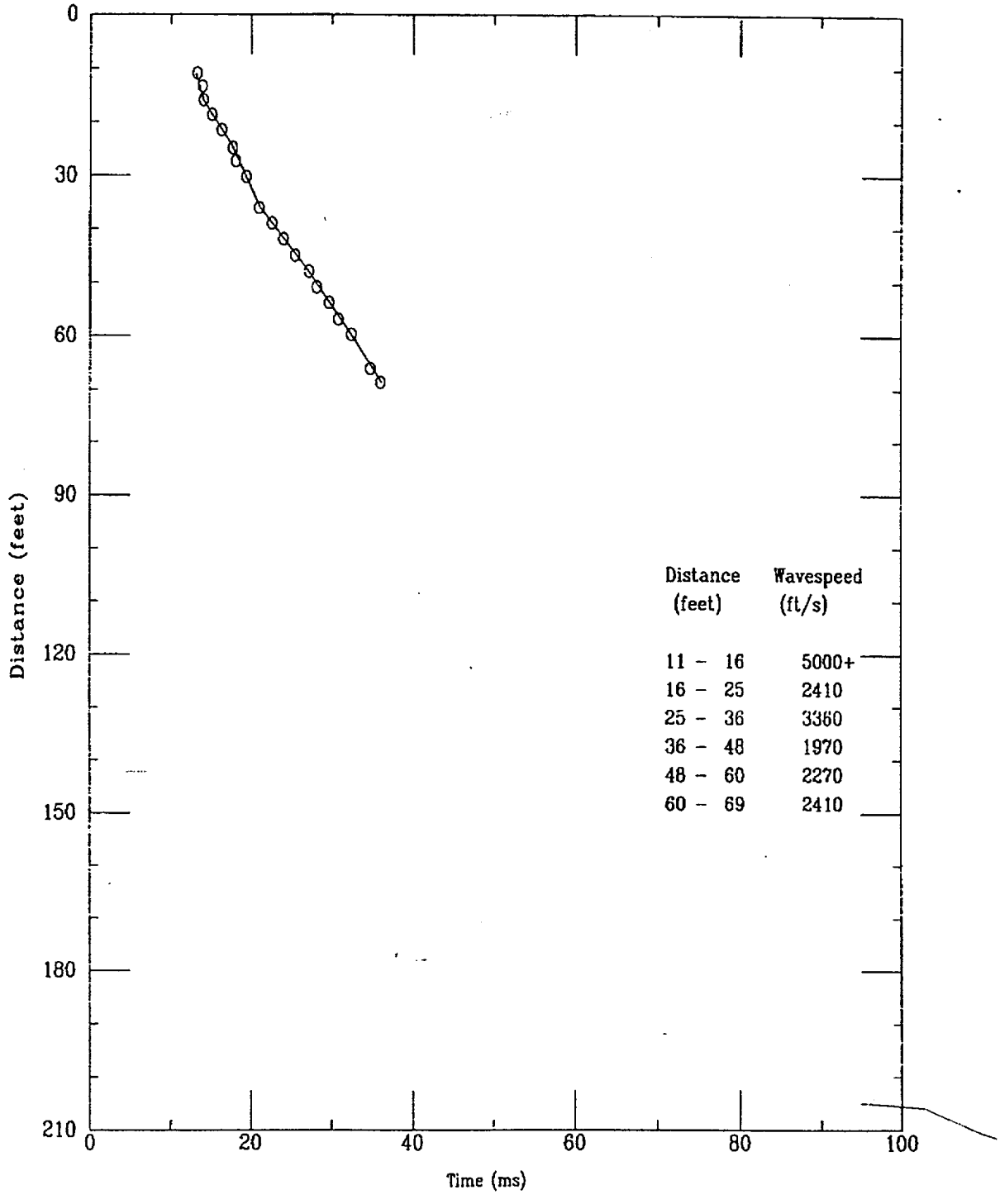
Compression Wave Speeds



File 326m805S

CPT-176 APPLIED RESEARCH ASSOCIATES, INC. 03/26/98

Compression Wave Time of Peak

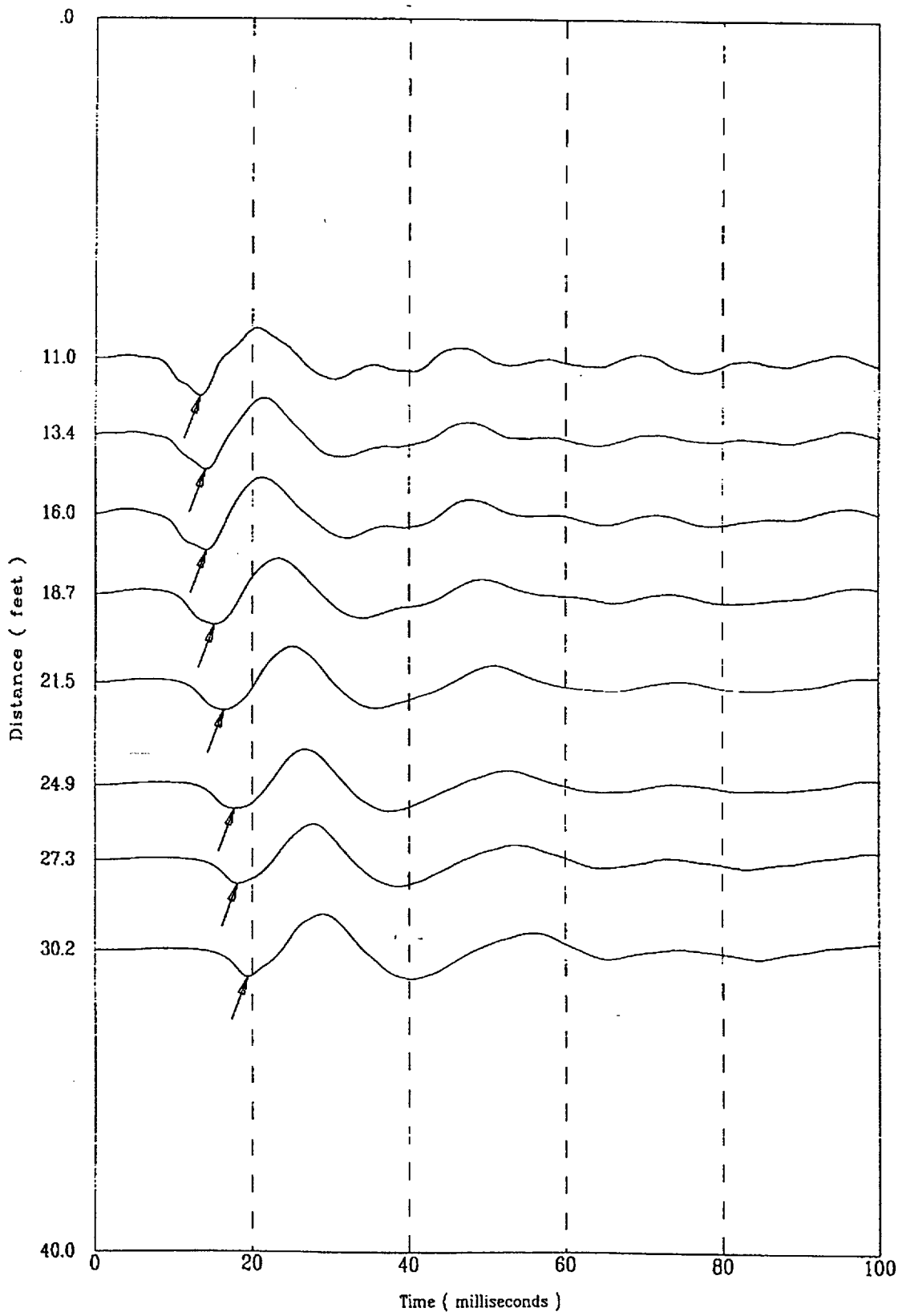


Distance (feet)	Wavespeed (ft/s)
11 - 16	5000+
16 - 25	2410
25 - 36	3360
36 - 48	1970
48 - 60	2270
60 - 69	2410

File 326m805S

Applied Research Associates, Inc.
CPT-176

P Wave
03/26/98

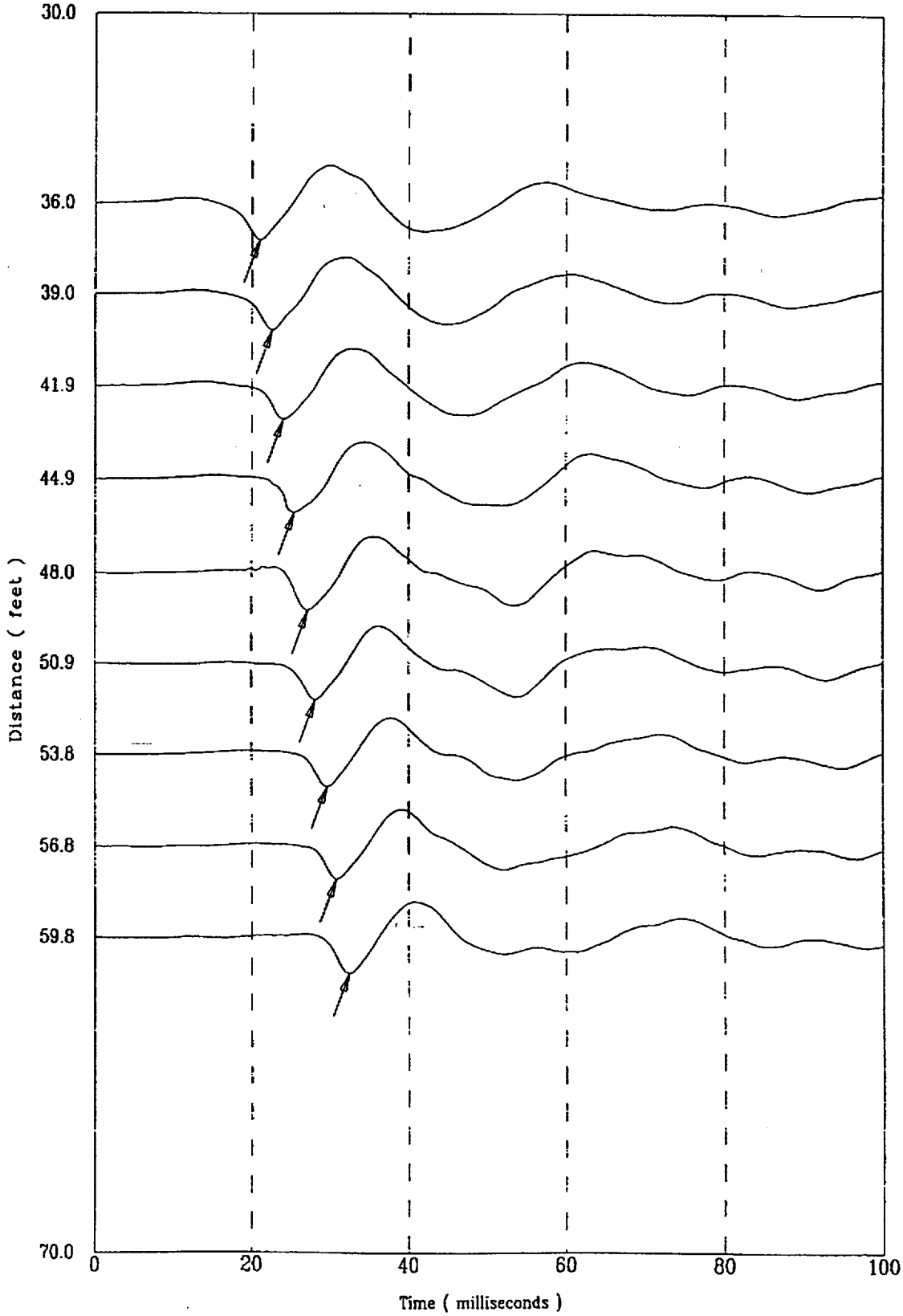


File 326m805S

364 of 522

Applied Research Associates, Inc.
CPT-176

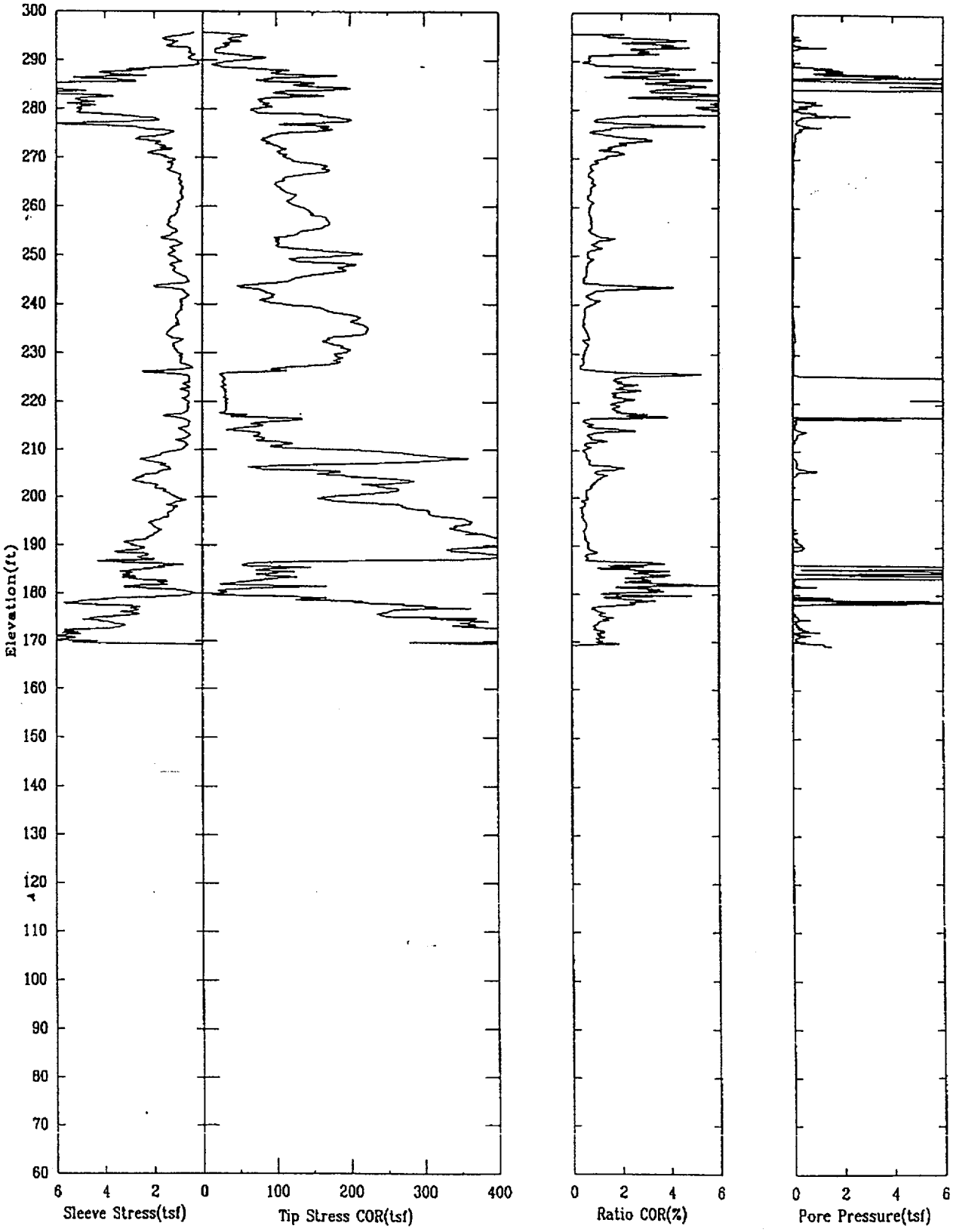
P Wave
03/26/98



Fue 326m805S

CPT-177 APPLIED RESEARCH ASSOCIATES, INC. 03/27/98

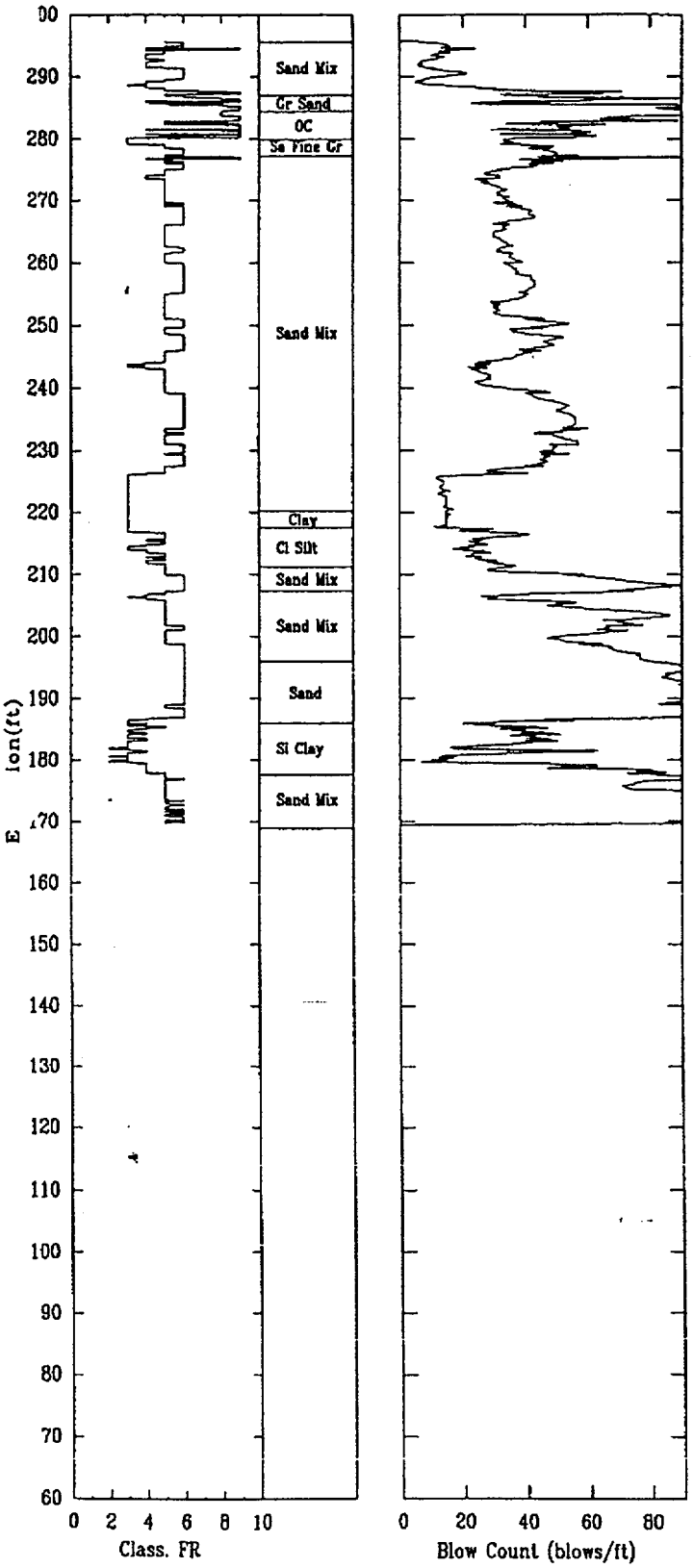
North 78770 East 55715 Elevation 301.7



File 327M801.ECP

CPT-177 APPLIED RESEARCH ASSOCIATES, INC. 03/27/98

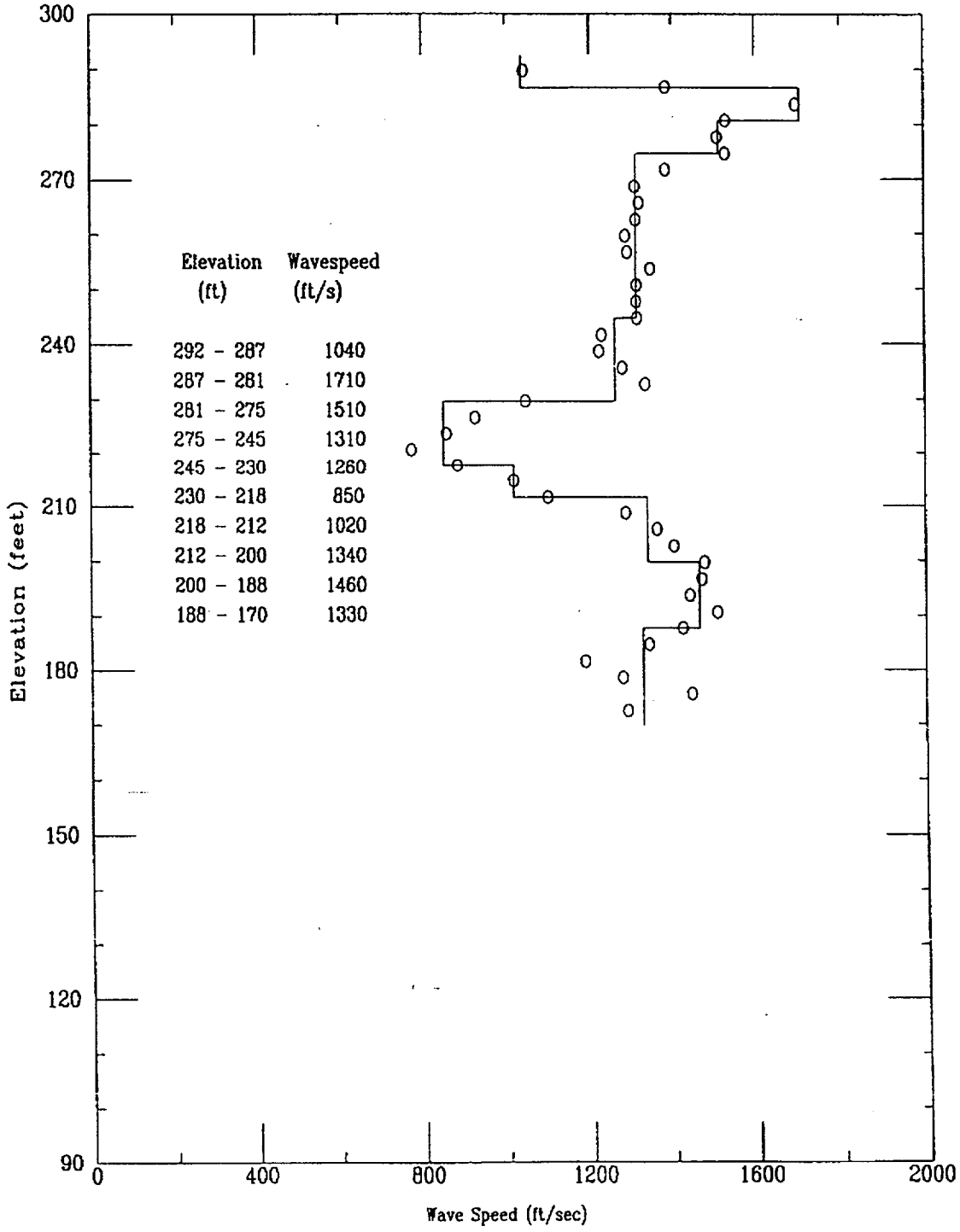
North 78770 East 55715 Elevation 301.7



File 327M801.ECP

CPT-177 APPLIED RESEARCH ASSOCIATES, INC. 03/27/98

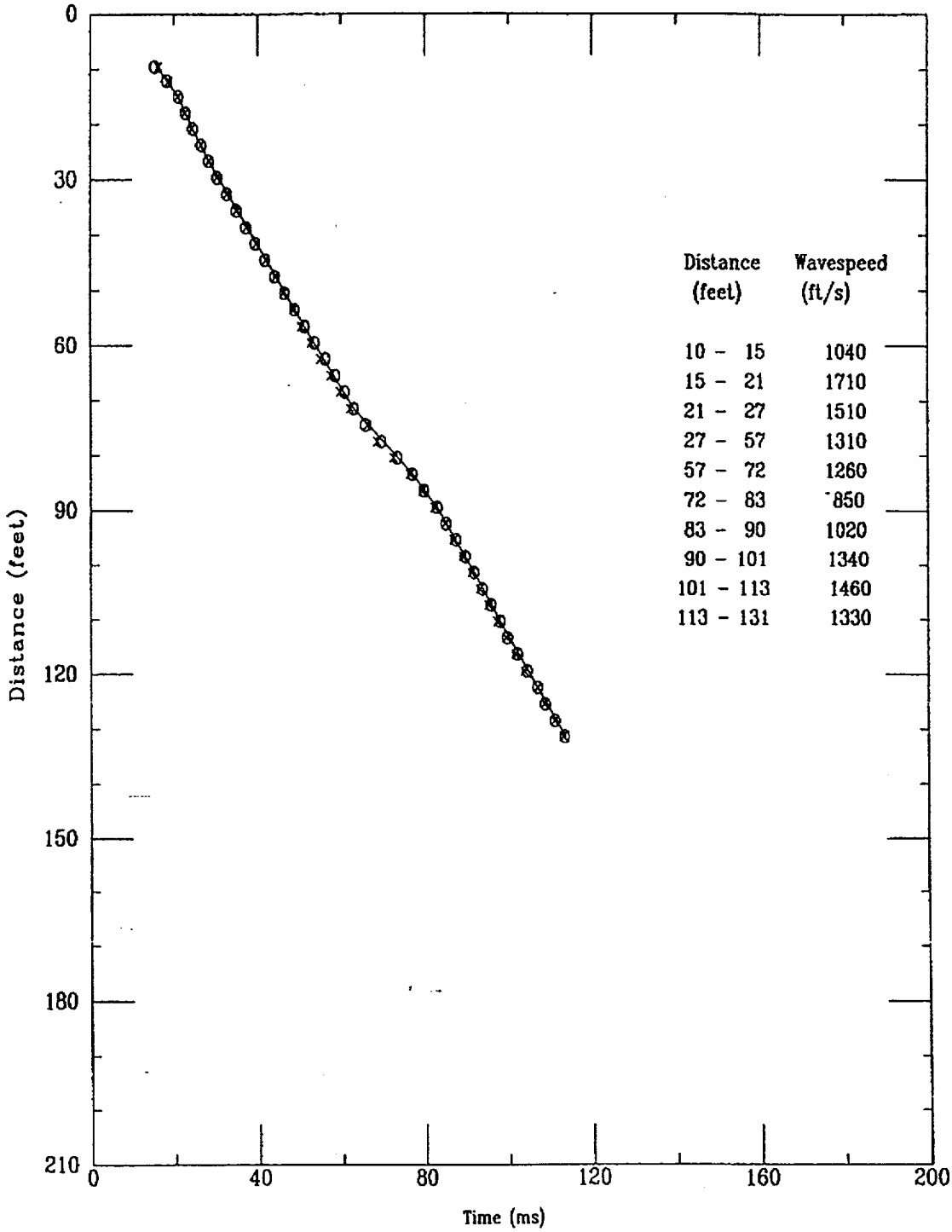
Shear Wave Speeds



File 327m801S

CPT-177 APPLIED RESEARCH ASSOCIATES, INC. 03/27/98

Shear Wave Time of Peak

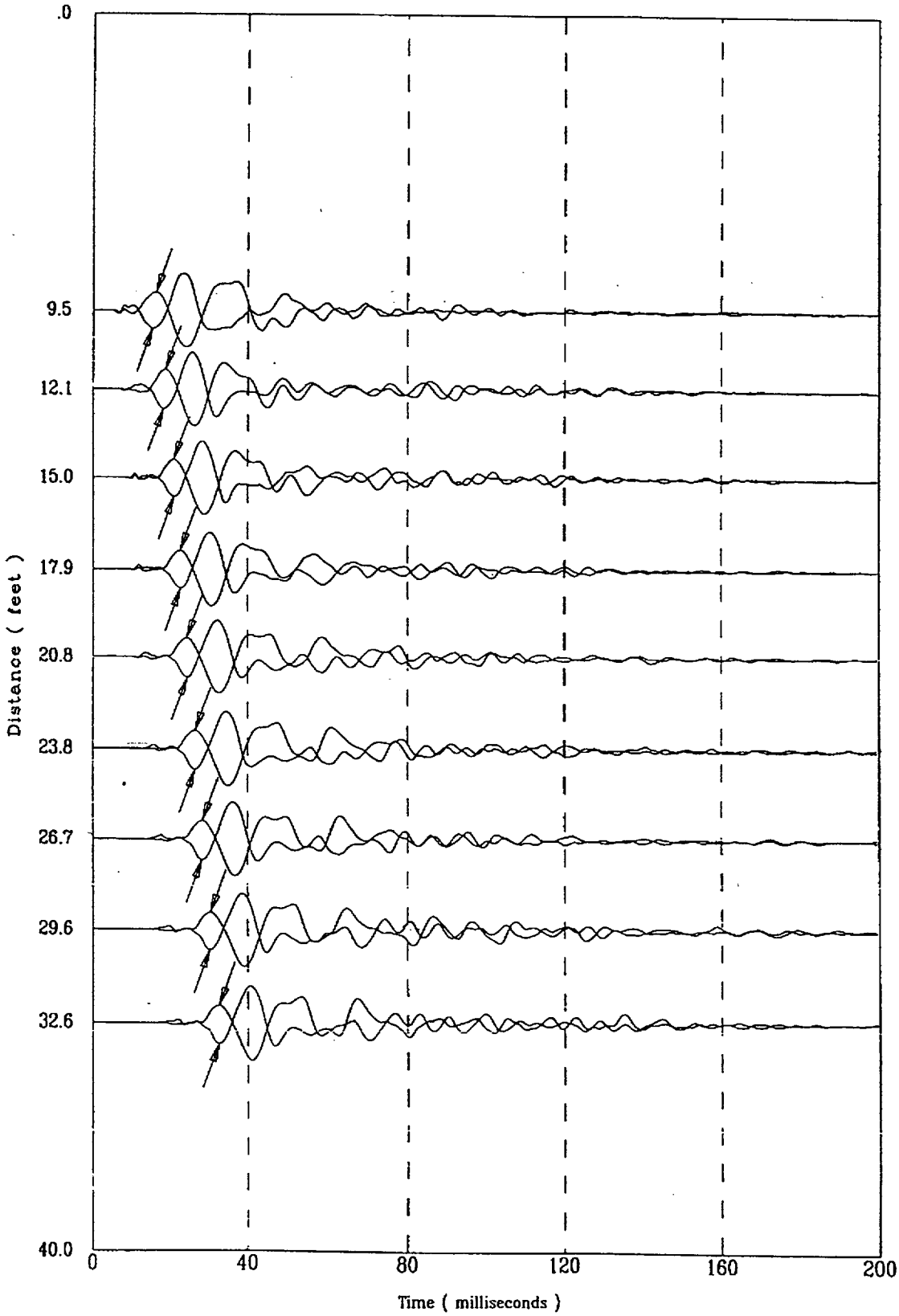


Distance (feet)	Wavespeed (ft/s)
10 - 15	1040
15 - 21	1710
21 - 27	1510
27 - 57	1310
57 - 72	1260
72 - 83	850
83 - 90	1020
90 - 101	1340
101 - 113	1460
113 - 131	1330

File 327m801S

Applied Research Associates, Inc.
CPT-177

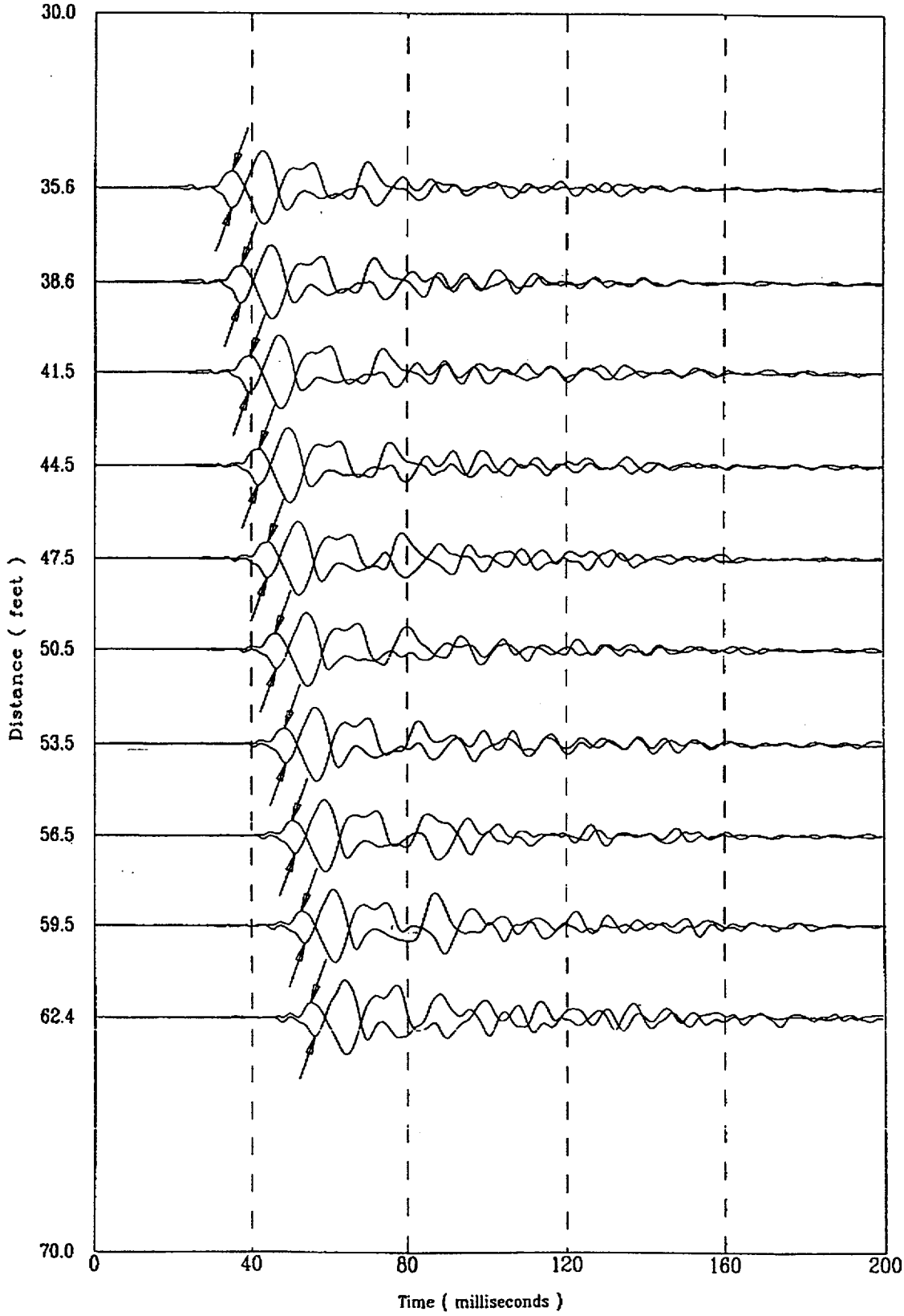
S Wave
03/27/98



File 327m801S

Applied Research Associates, Inc.
CPT-177

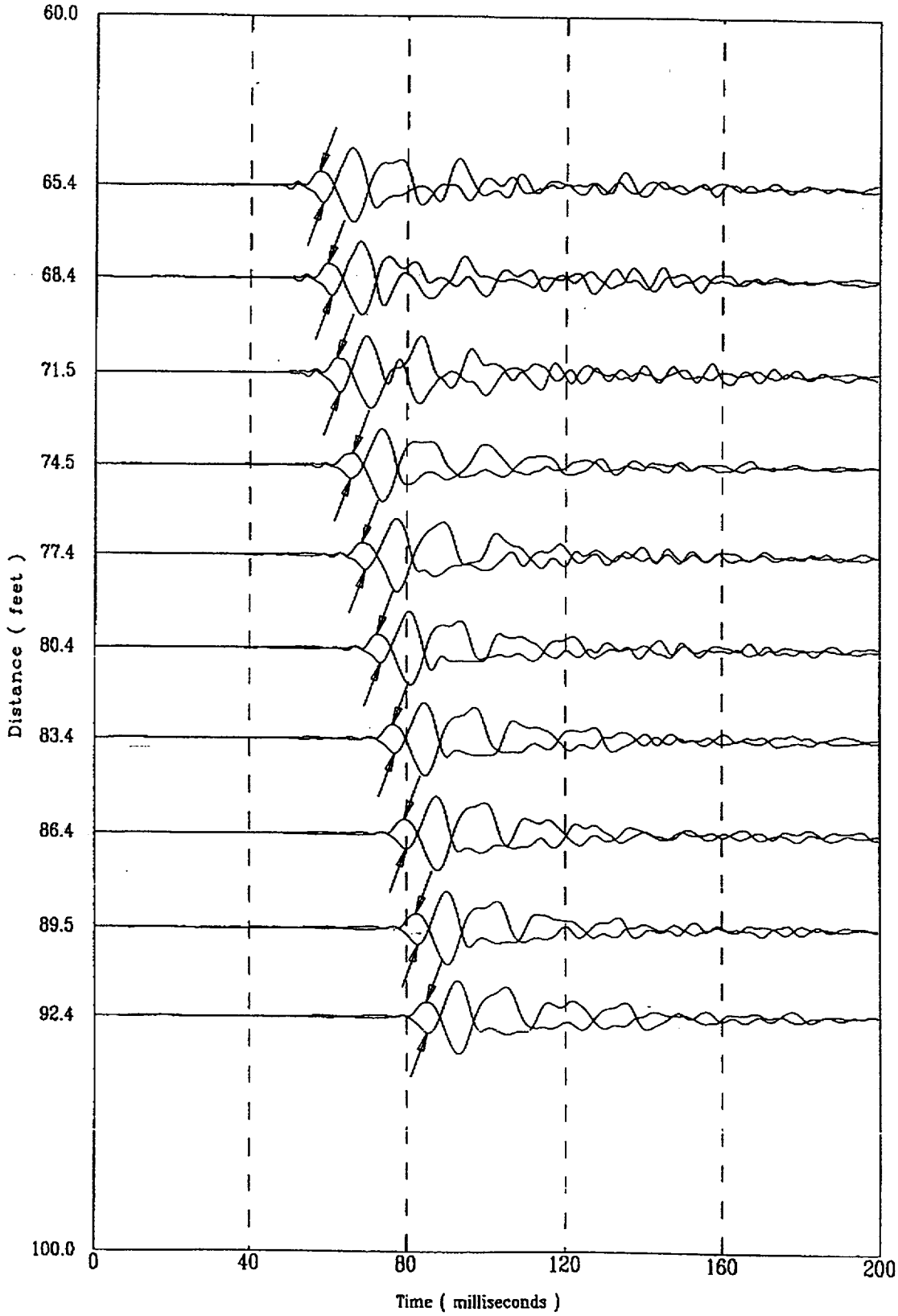
S Wave
03/27/98



327m801S

Applied Research Associates, Inc.
CPT-177

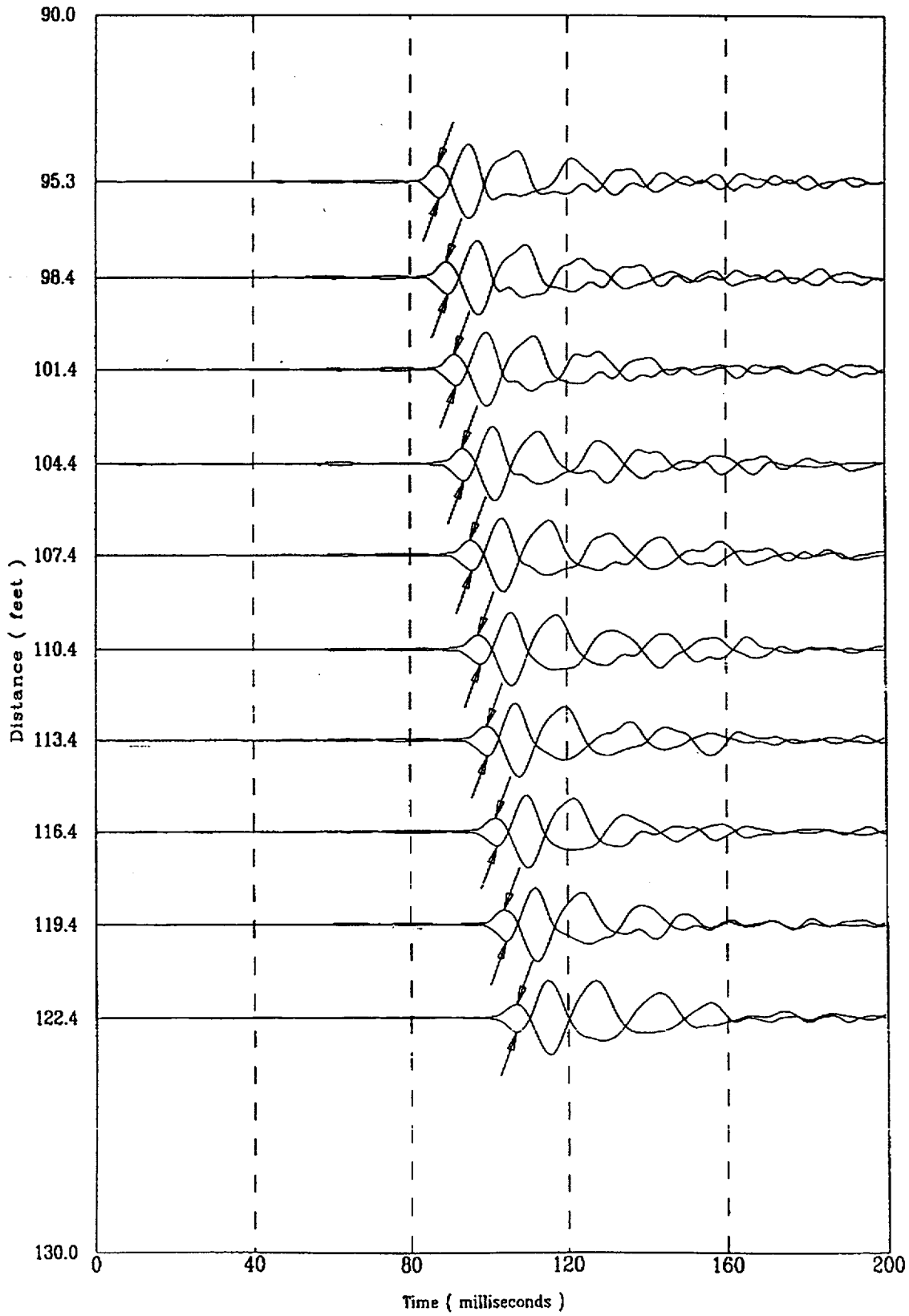
S Wave
03/27/98



File 327m801S

Applied Research Associates, Inc.
CPT-177

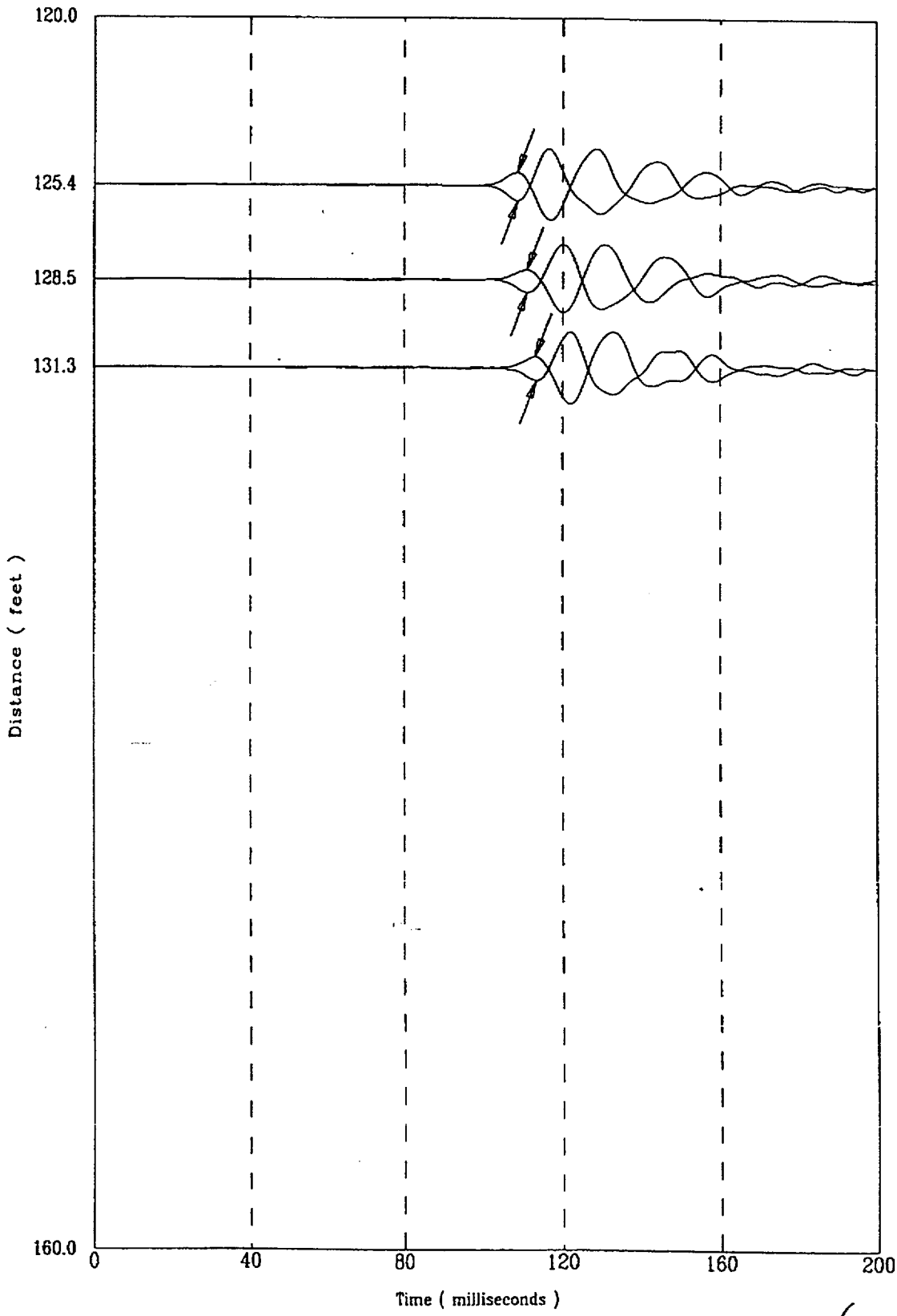
S Wave
03/27/98



rue 327m801S

Applied Research Associates, Inc.
CPT-177

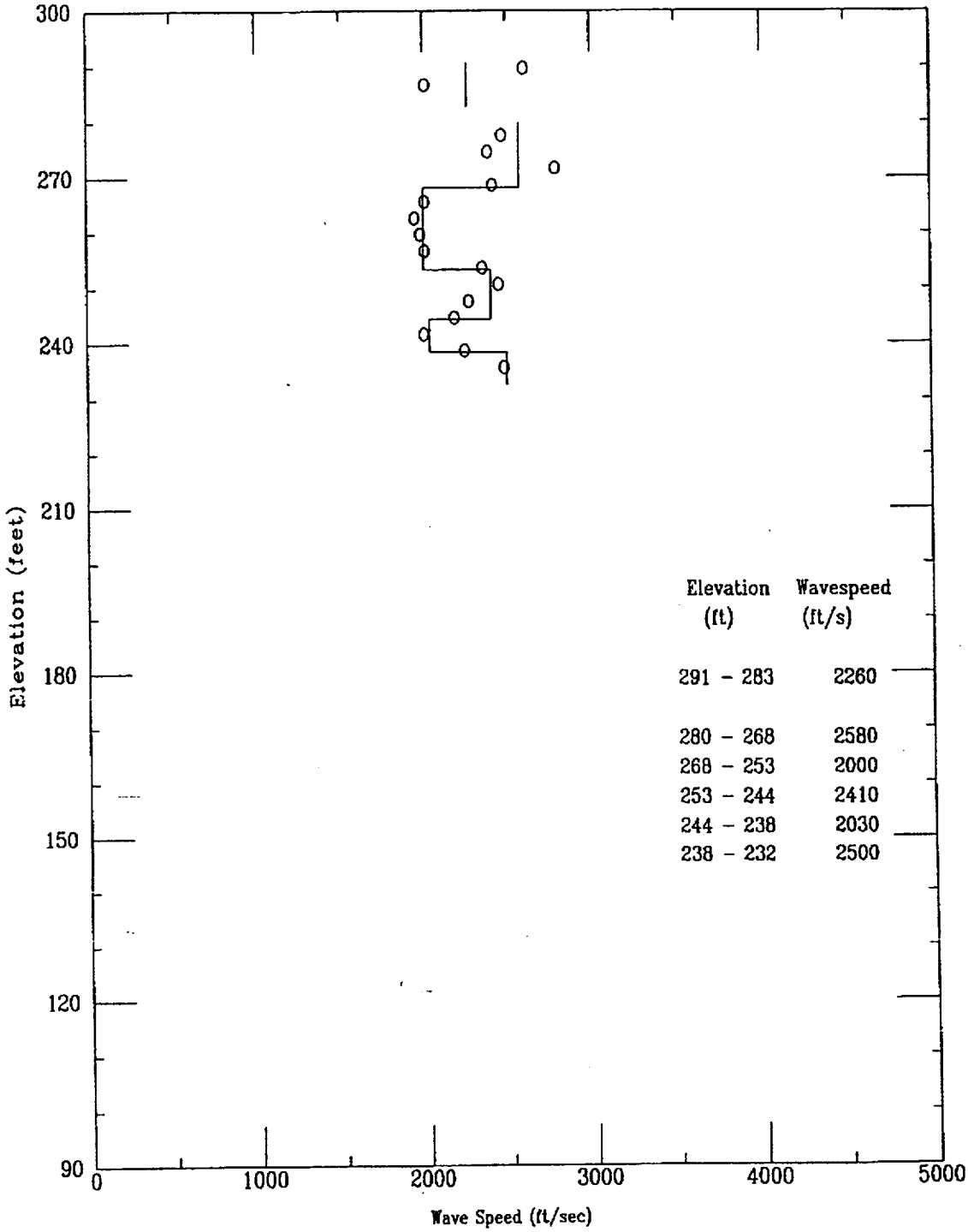
S Wave
03/27/98



File 327m801S

CPT-177 APPLIED RESEARCH ASSOCIATES, INC. 03/27/98

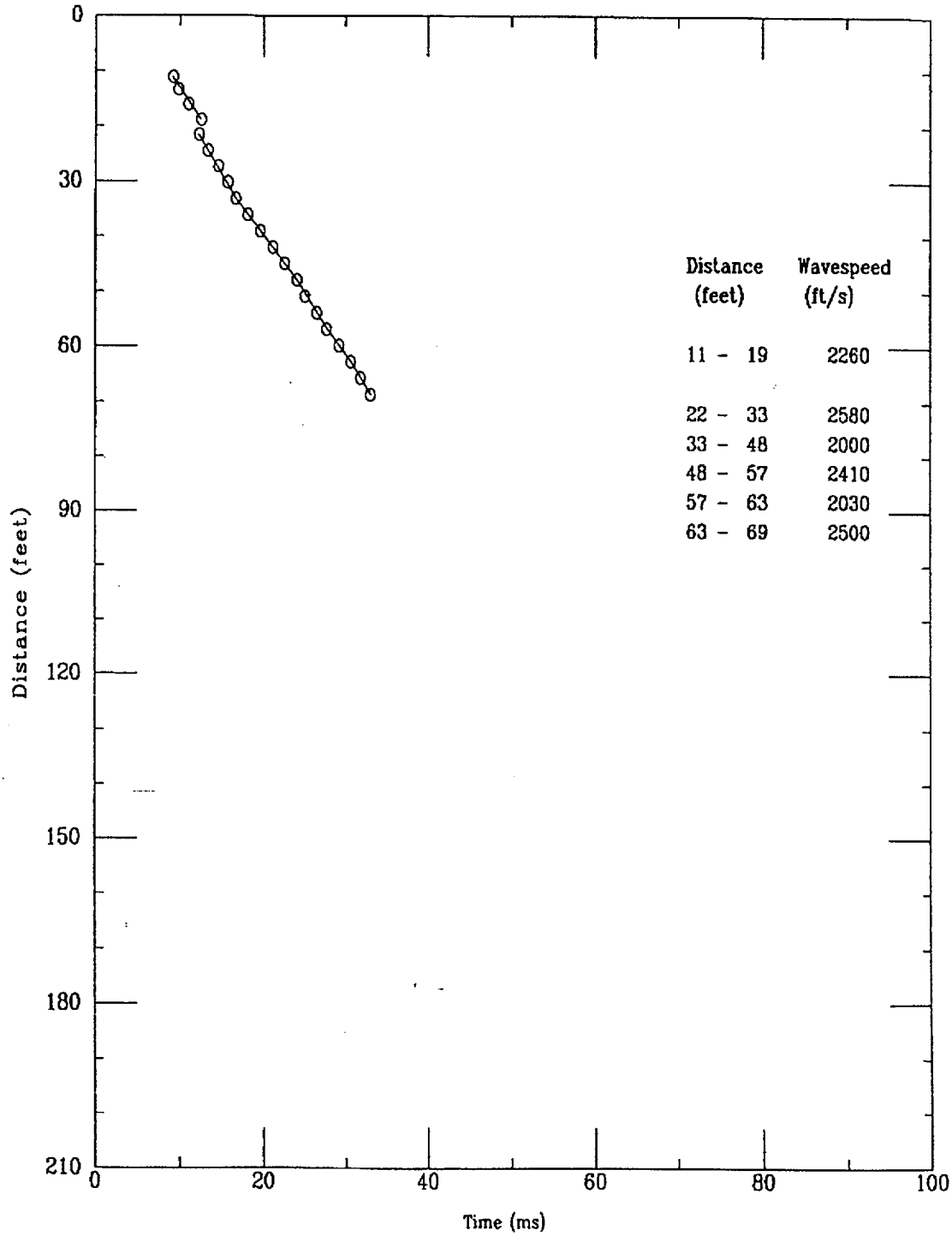
Compression Wave Speeds



File 327m801S

CPT-177 APPLIED RESEARCH ASSOCIATES, INC. 03/27/98

Compression Wave Time of Peak

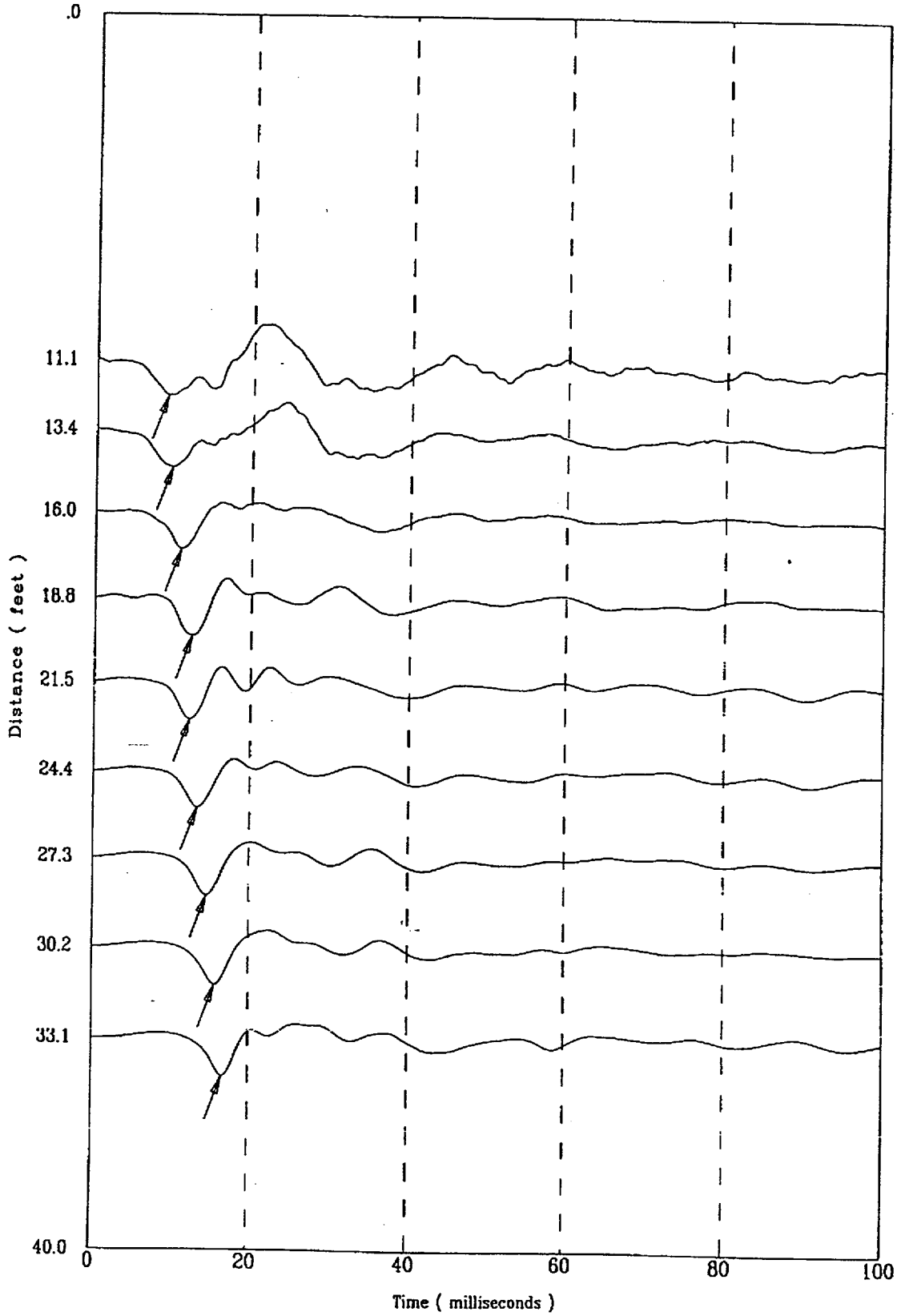


Distance (feet)	Wavespeed (ft/s)
11 - 19	2260
22 - 33	2580
33 - 48	2000
48 - 57	2410
57 - 63	2030
63 - 69	2500

File 327m801S

Applied Research Associates, Inc.
CPT-177

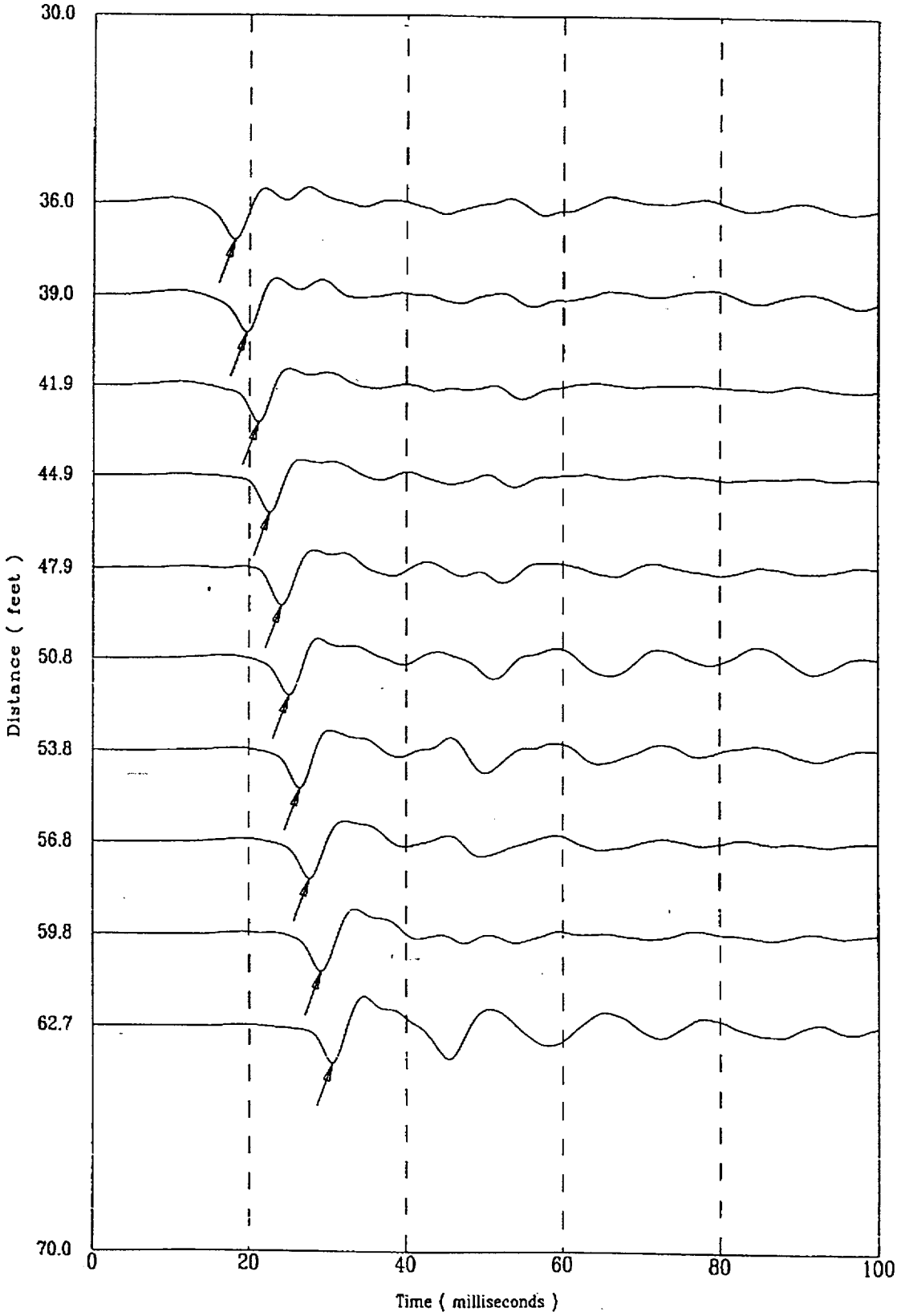
P Wave
03/27/98



File ...7m801S

Applied Research Associates, Inc.
CPT-177

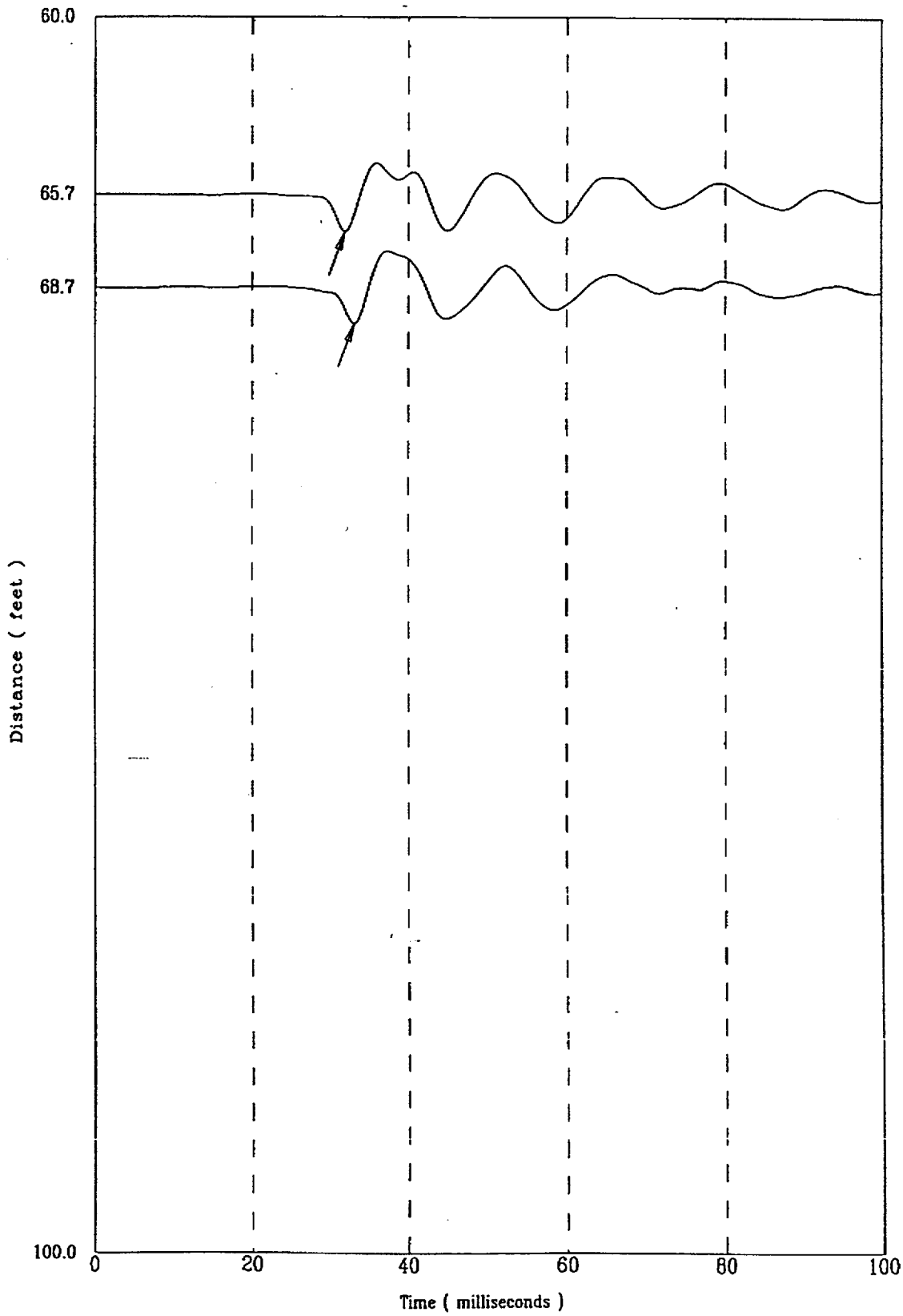
P Wave
03/27/98



File 327m801S

Applied Research Associates, Inc.
CPT-177

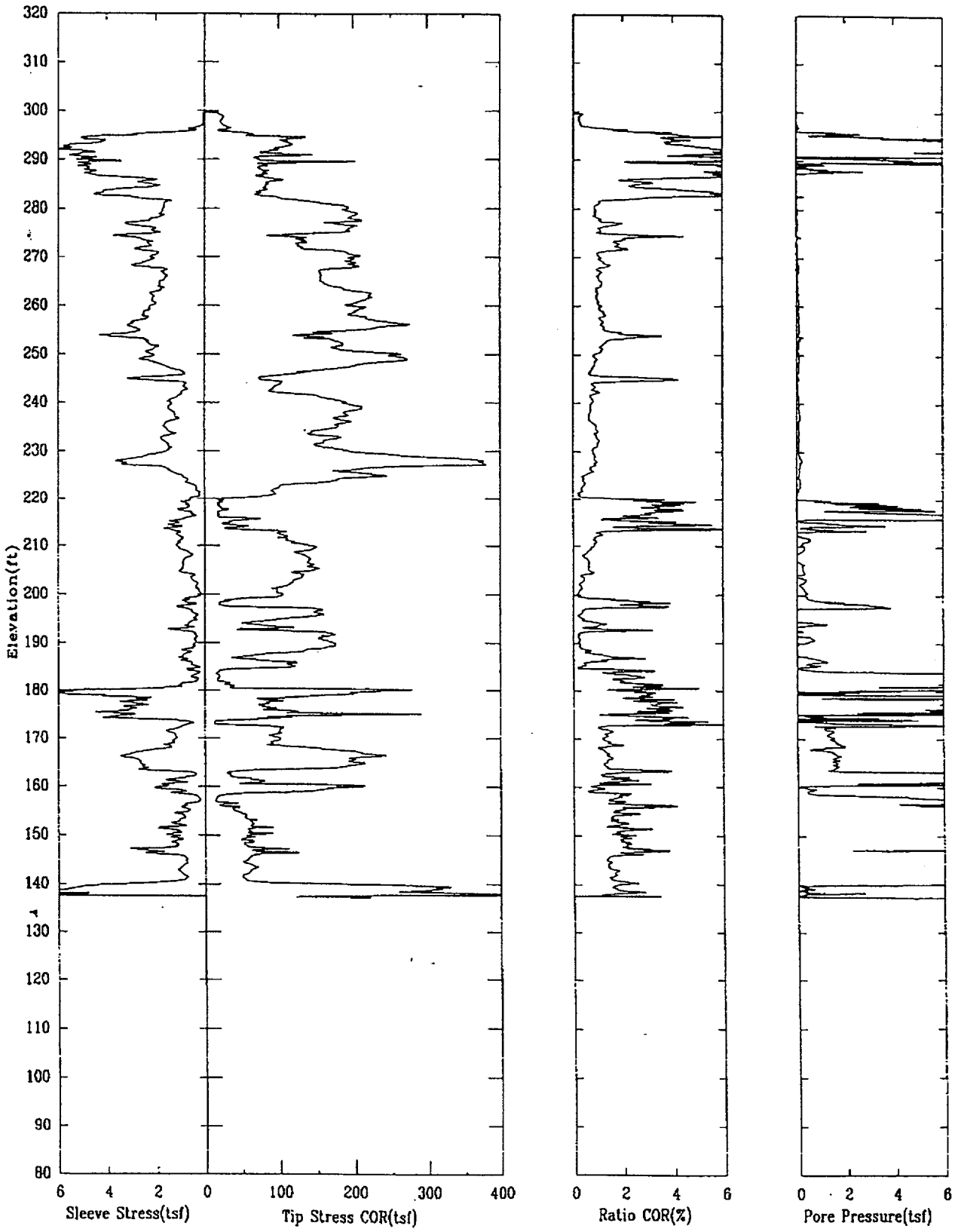
P Wave
03/27/98



J27m801S

CPT-178 APPLIED RESEARCH ASSOCIATES, INC. 03/19/98

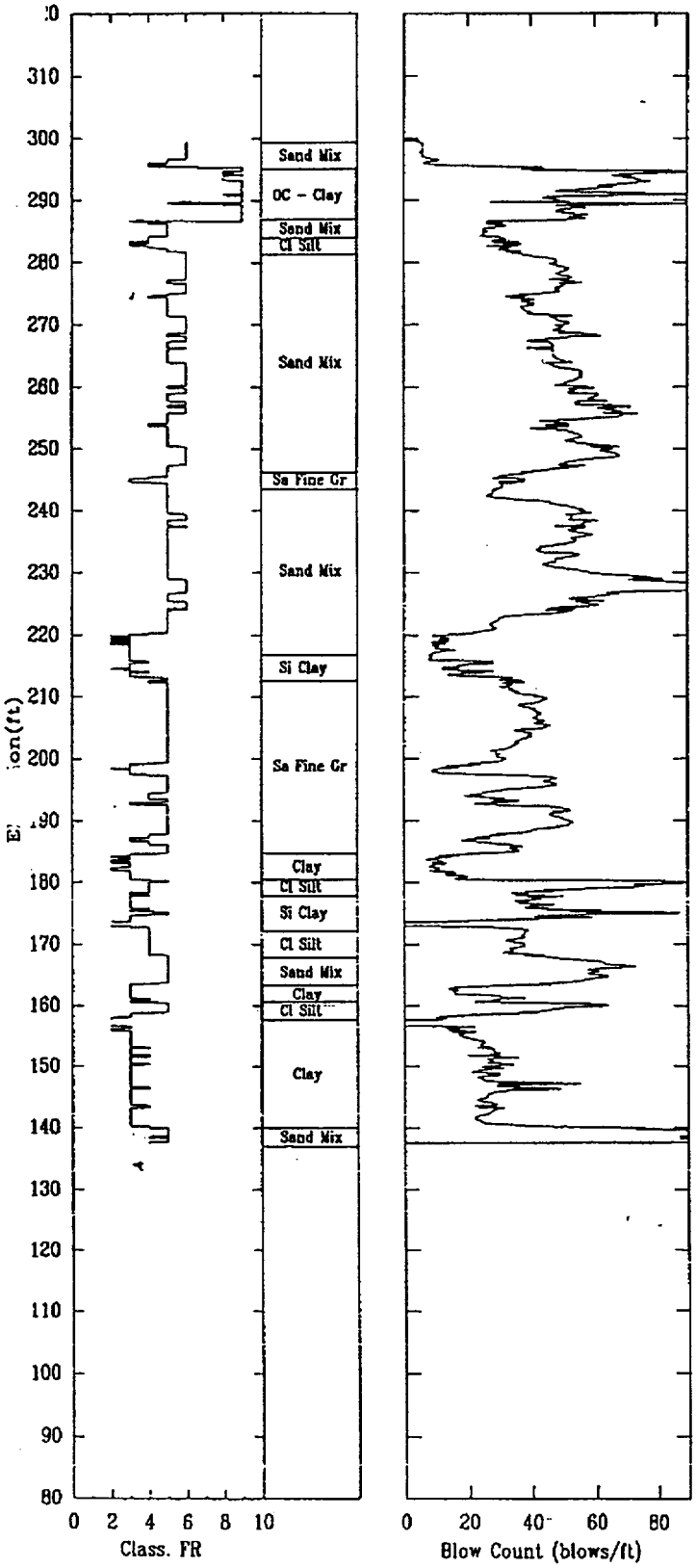
North 78640 East 55385 Elevation 305.6



File 419M801.ECP

CPT-178 APPLIED RESEARCH ASSOCIATES, INC. 03/19/98

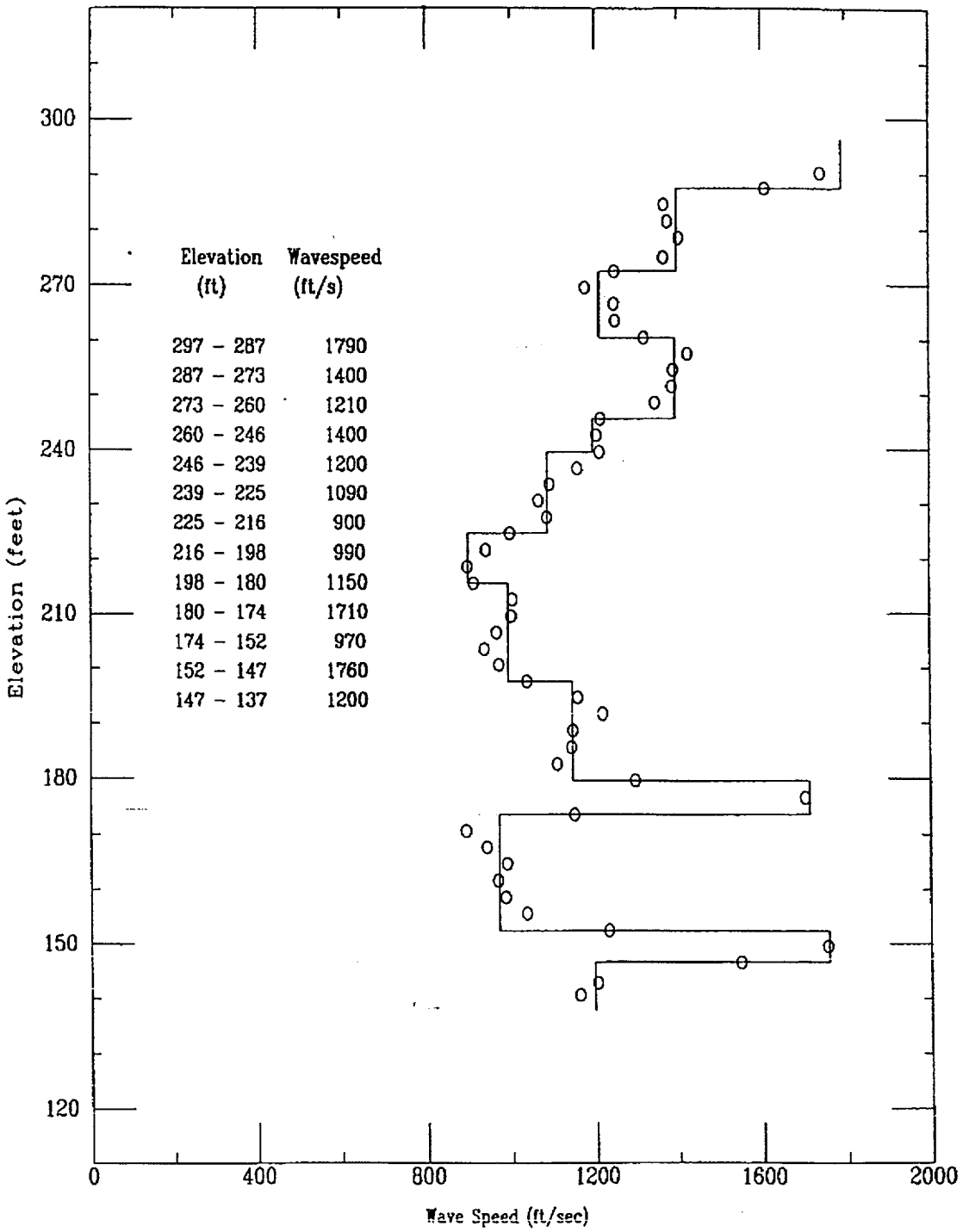
North 78640 East 55385 Elevation 305.6



File 419M801.ECP

CPT-178 APPLIED RESEARCH ASSOCIATES, INC. 03/19/98

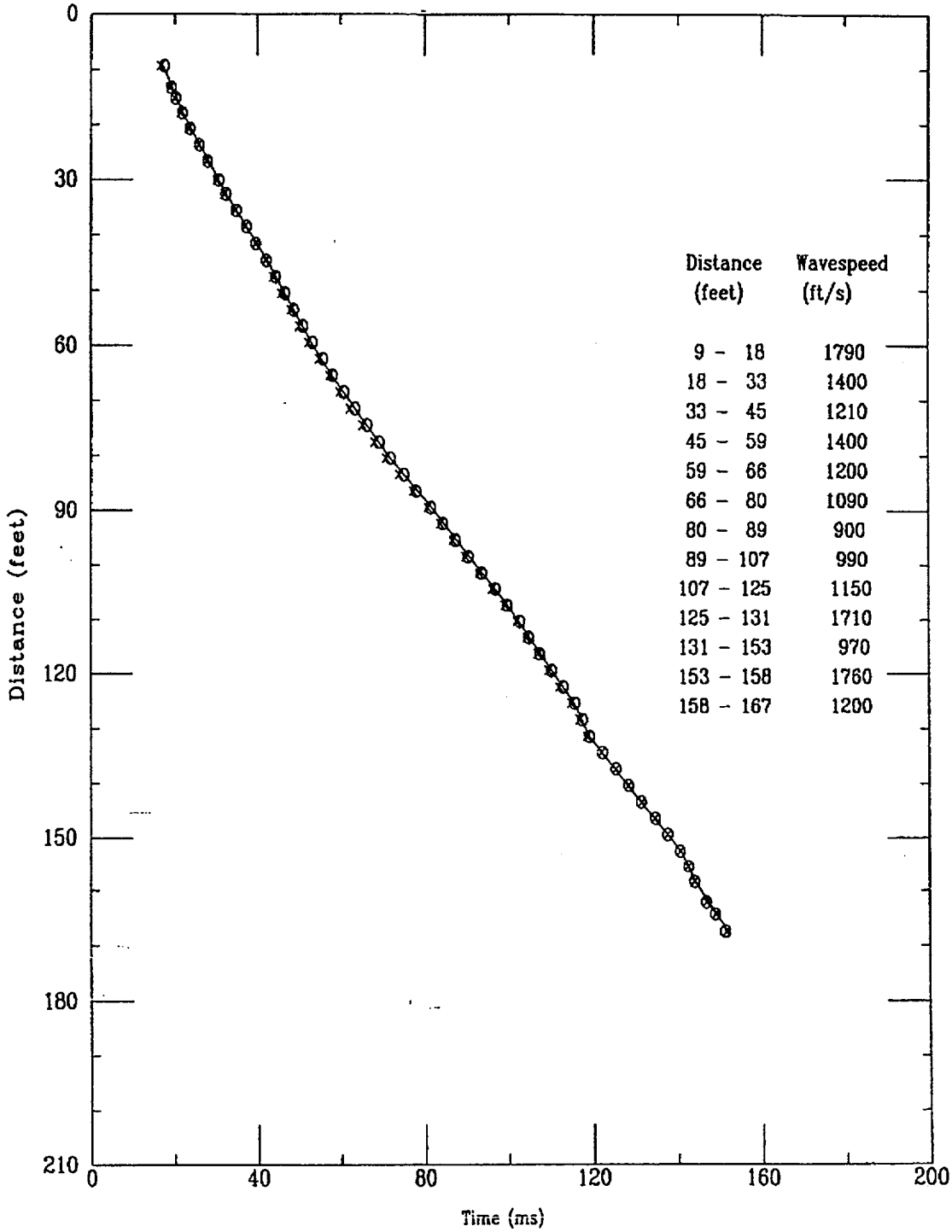
Shear Wave Speeds



File 419m801S

CPT-178 APPLIED RESEARCH ASSOCIATES, INC. 03/19/98

Shear Wave Time of Peak

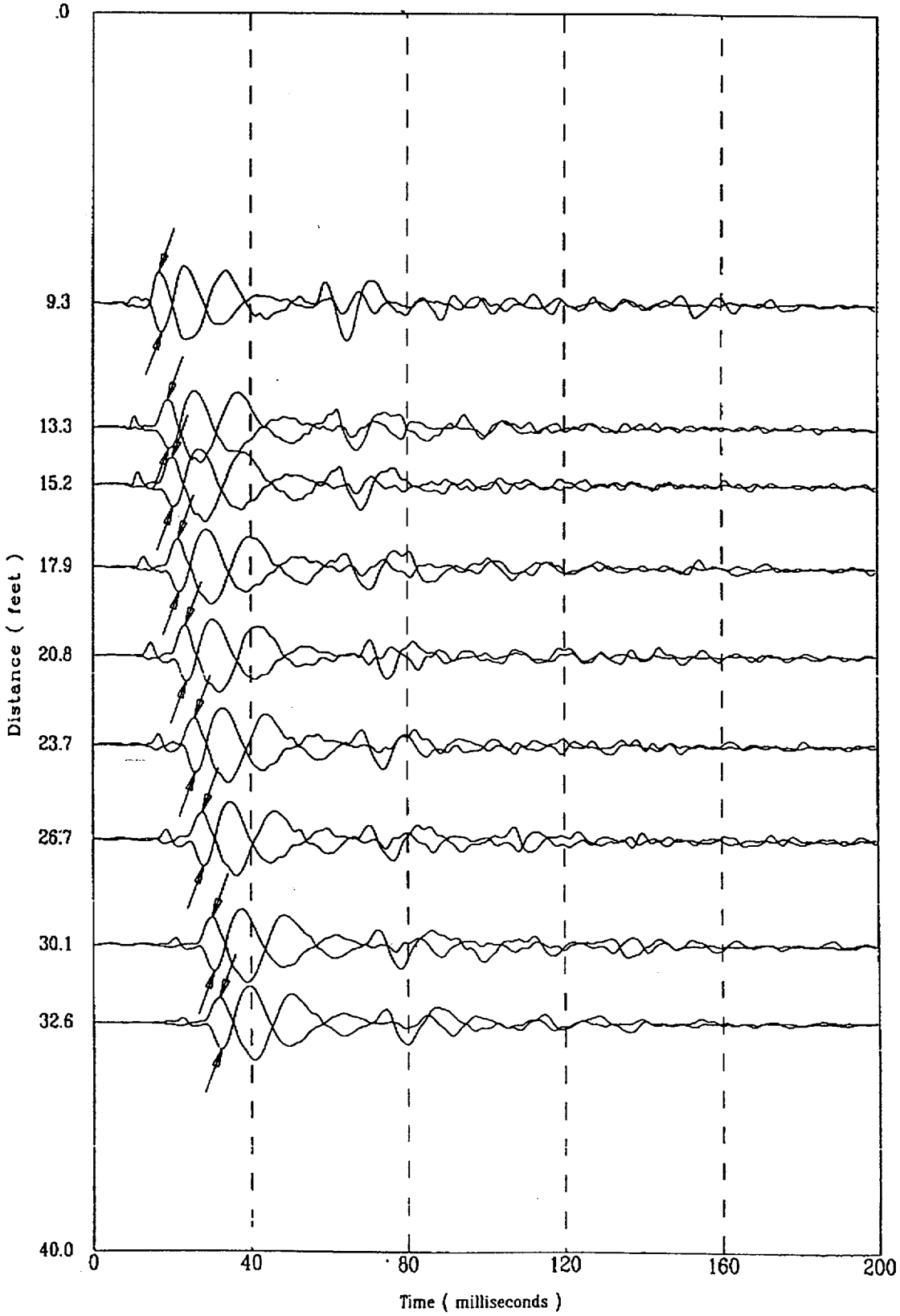


Distance (feet)	Wavespeed (ft/s)
9 - 18	1790
18 - 33	1400
33 - 45	1210
45 - 59	1400
59 - 66	1200
66 - 80	1090
80 - 89	900
89 - 107	990
107 - 125	1150
125 - 131	1710
131 - 153	970
153 - 158	1760
158 - 167	1200

File 419m801S

Applied Research Associates, Inc.
CPT-178

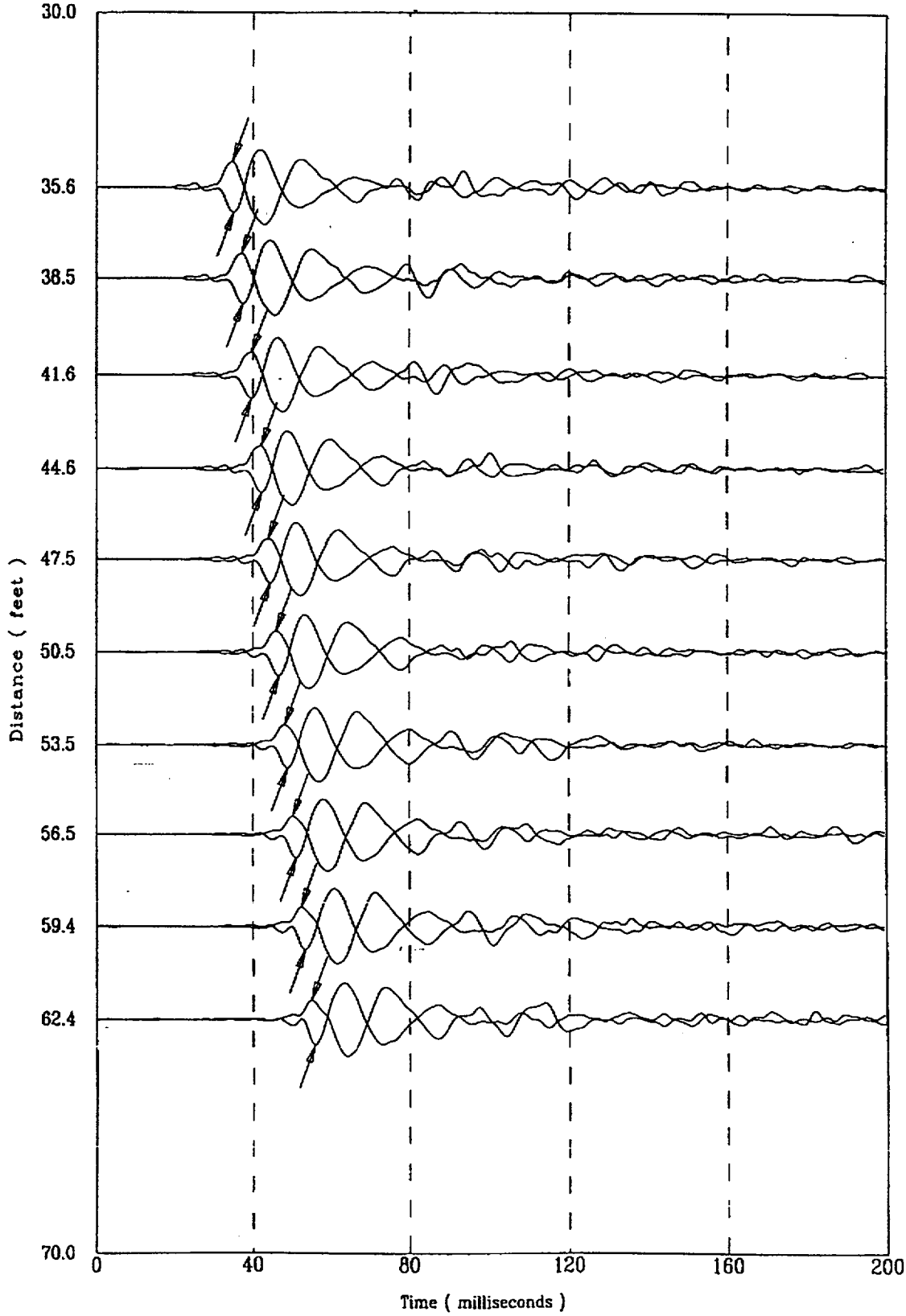
S Wave
03/19/98



File 419m801S

Applied Research Associates, Inc.
CPT-178

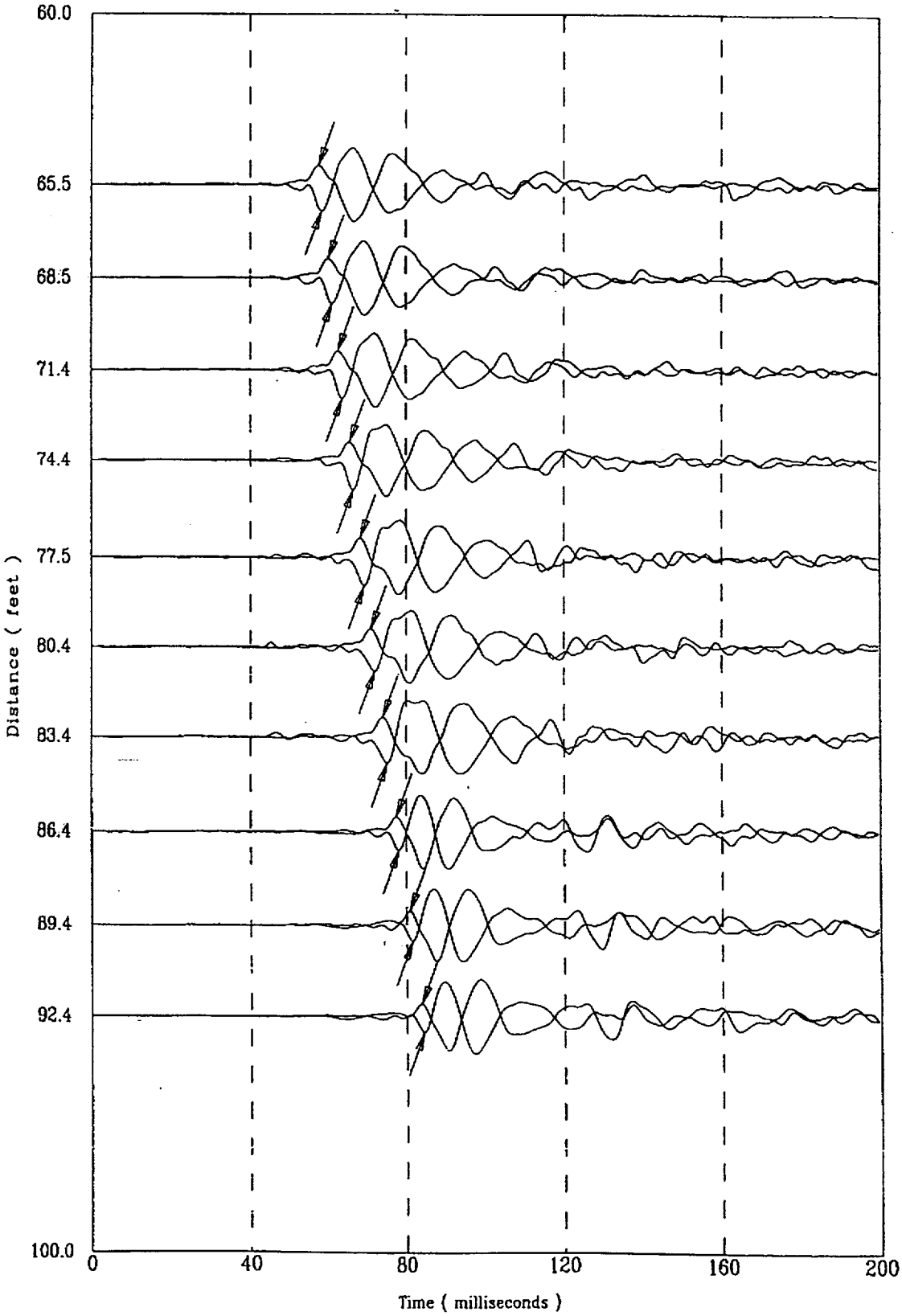
S Wave
03/19/98



9m801S

Applied Research Associates, Inc.
CPT-178

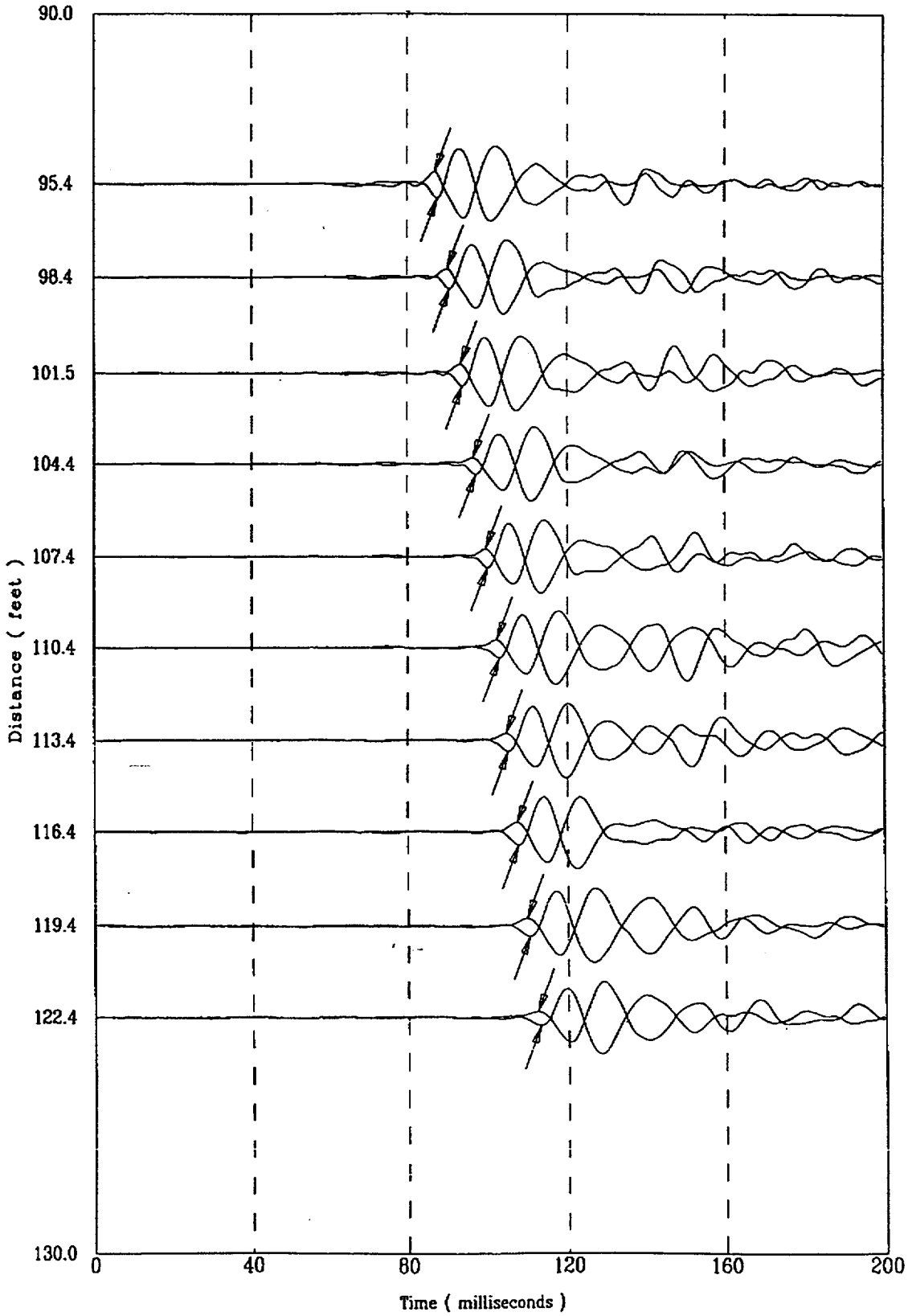
S Wave
03/19/98



File 419m801S

Applied Research Associates, Inc.
CPT-178

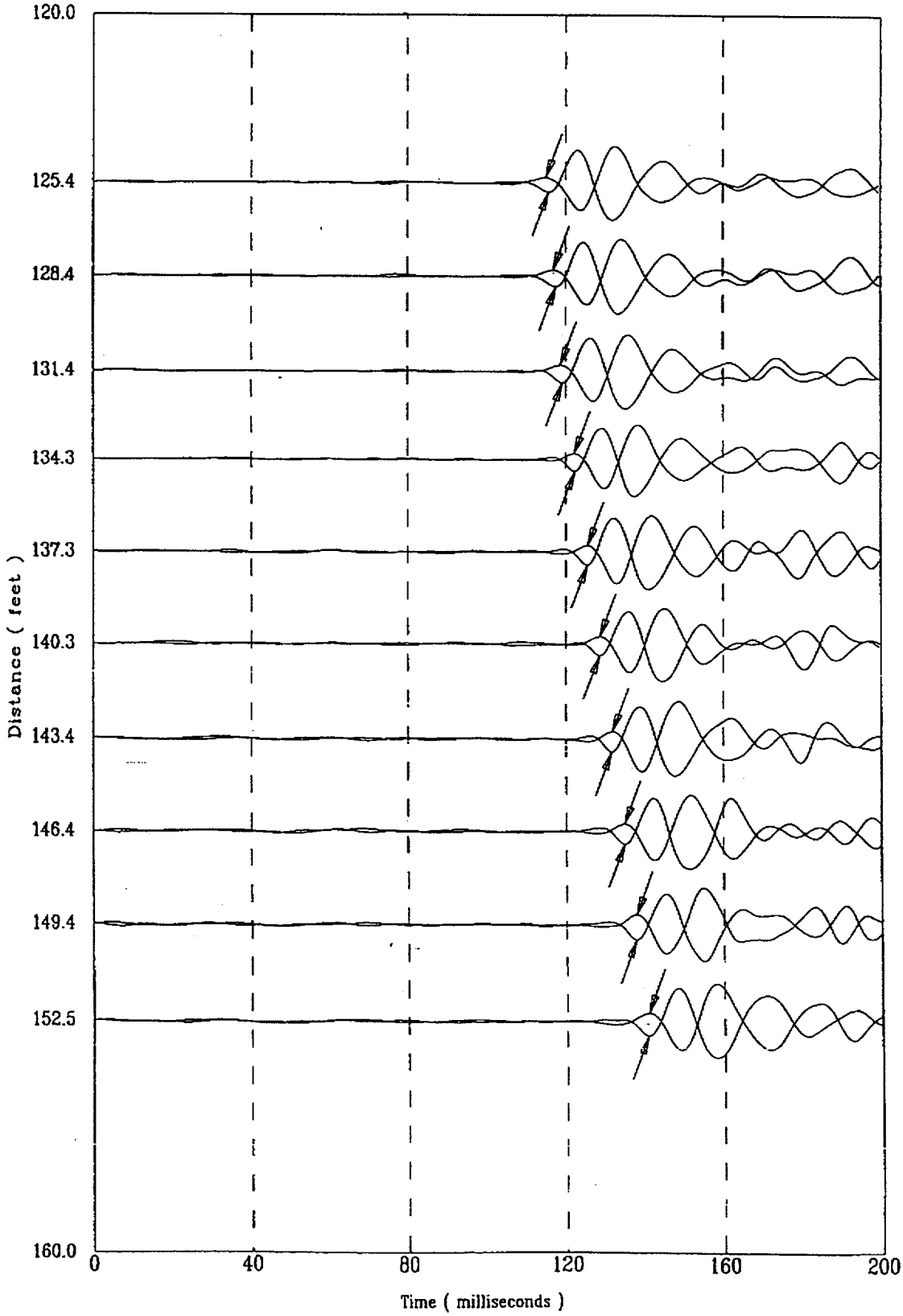
S Wave
03/19/98



19m801S

Applied Research Associates, Inc.
CPT-178

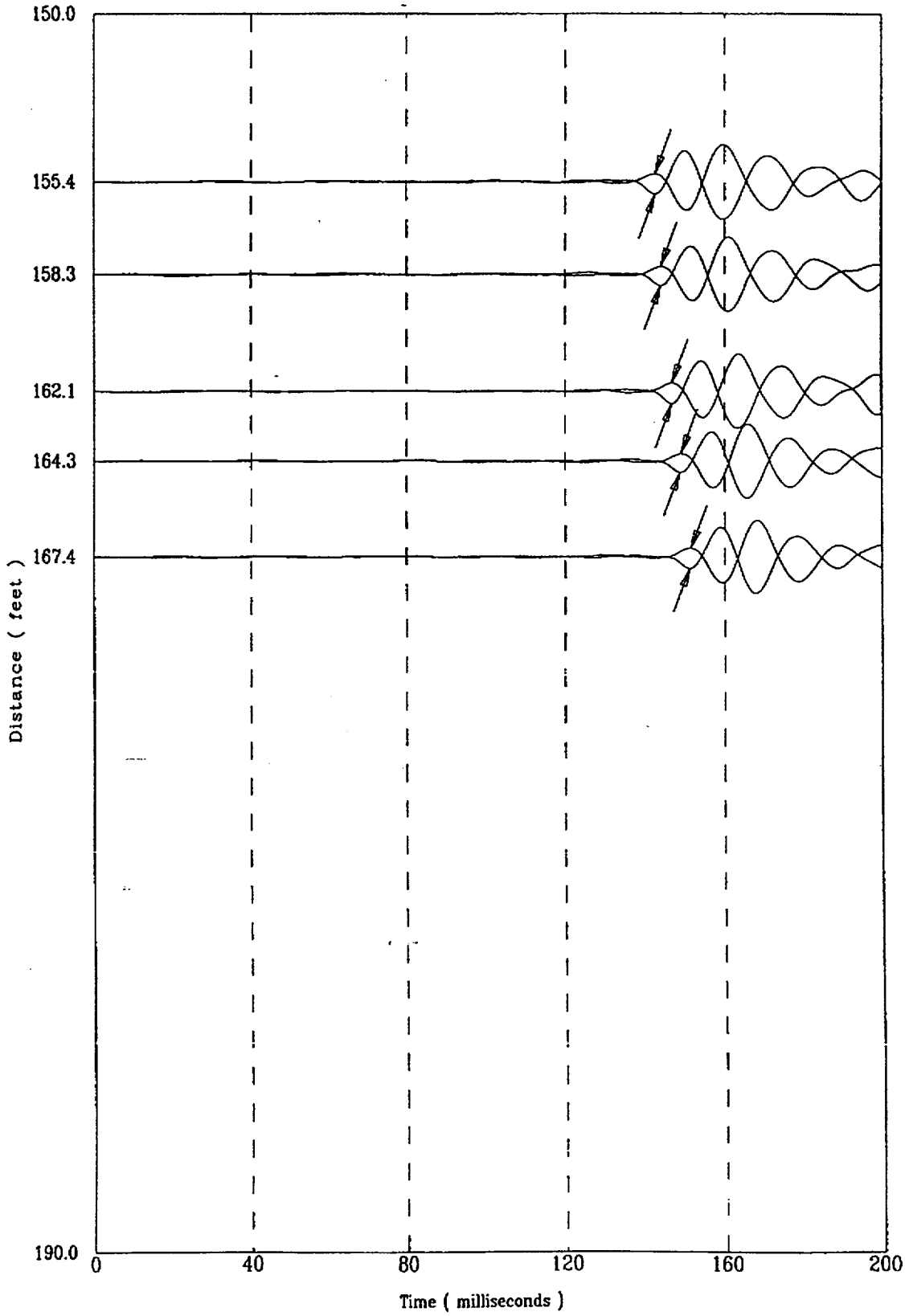
S Wave
03/19/98



File 419m801S

Applied Research Associates, Inc.
CPT-178

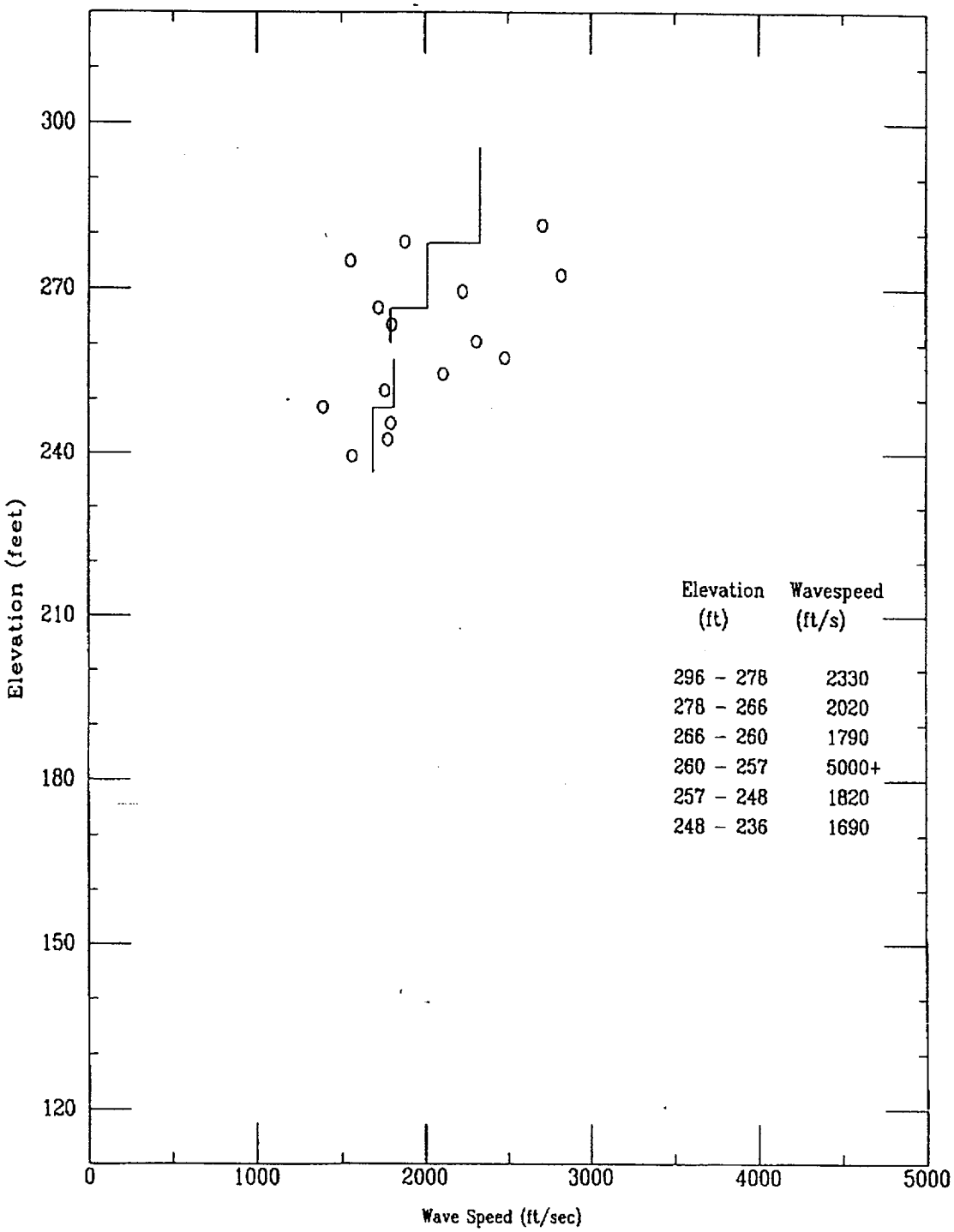
S Wave
03/19/98



419m801S

CPT-178 APPLIED RESEARCH ASSOCIATES, INC. 03/19/98

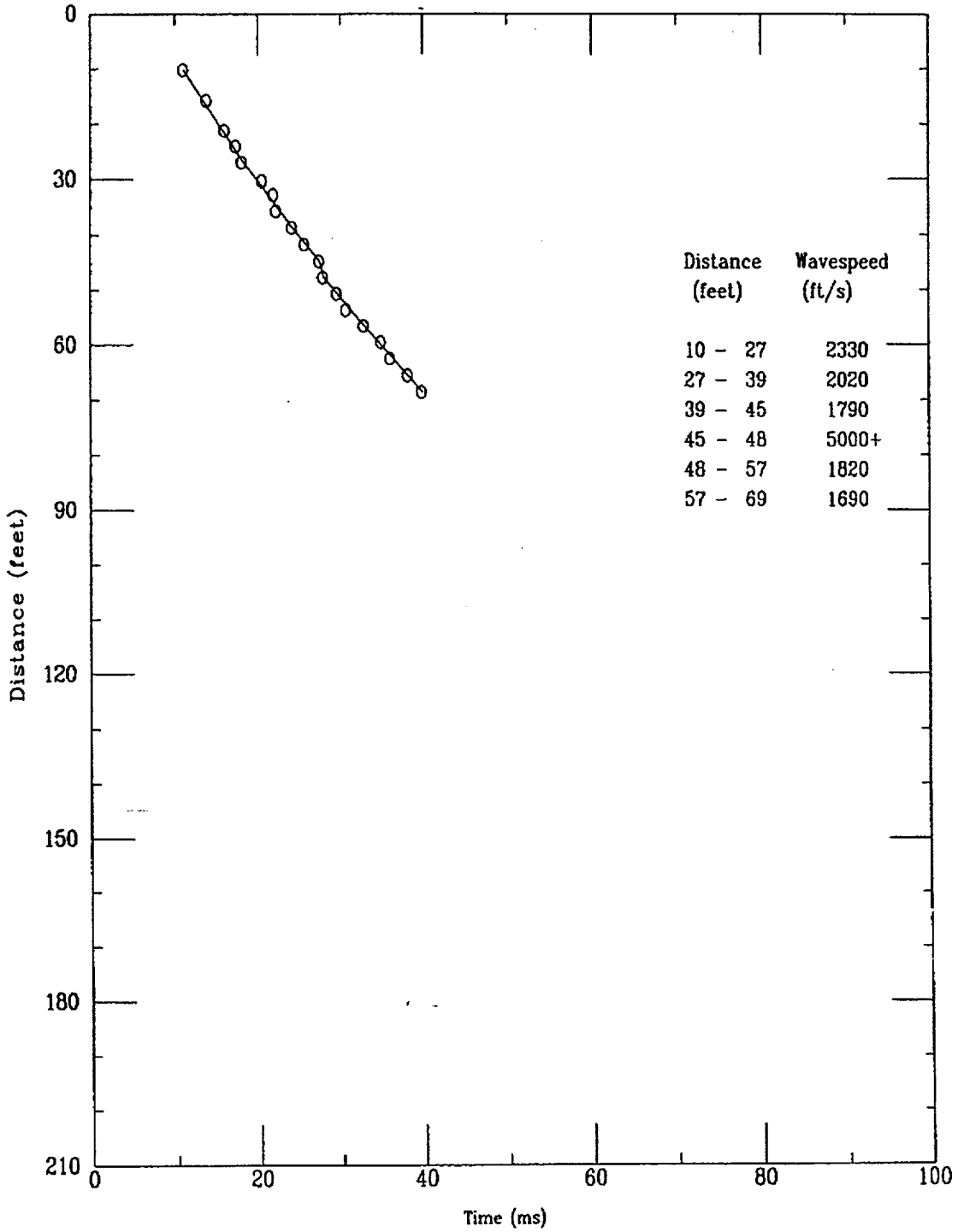
Compression Wave Speeds



File 419m801S

CPT-178 APPLIED RESEARCH ASSOCIATES, INC. 03/19/98

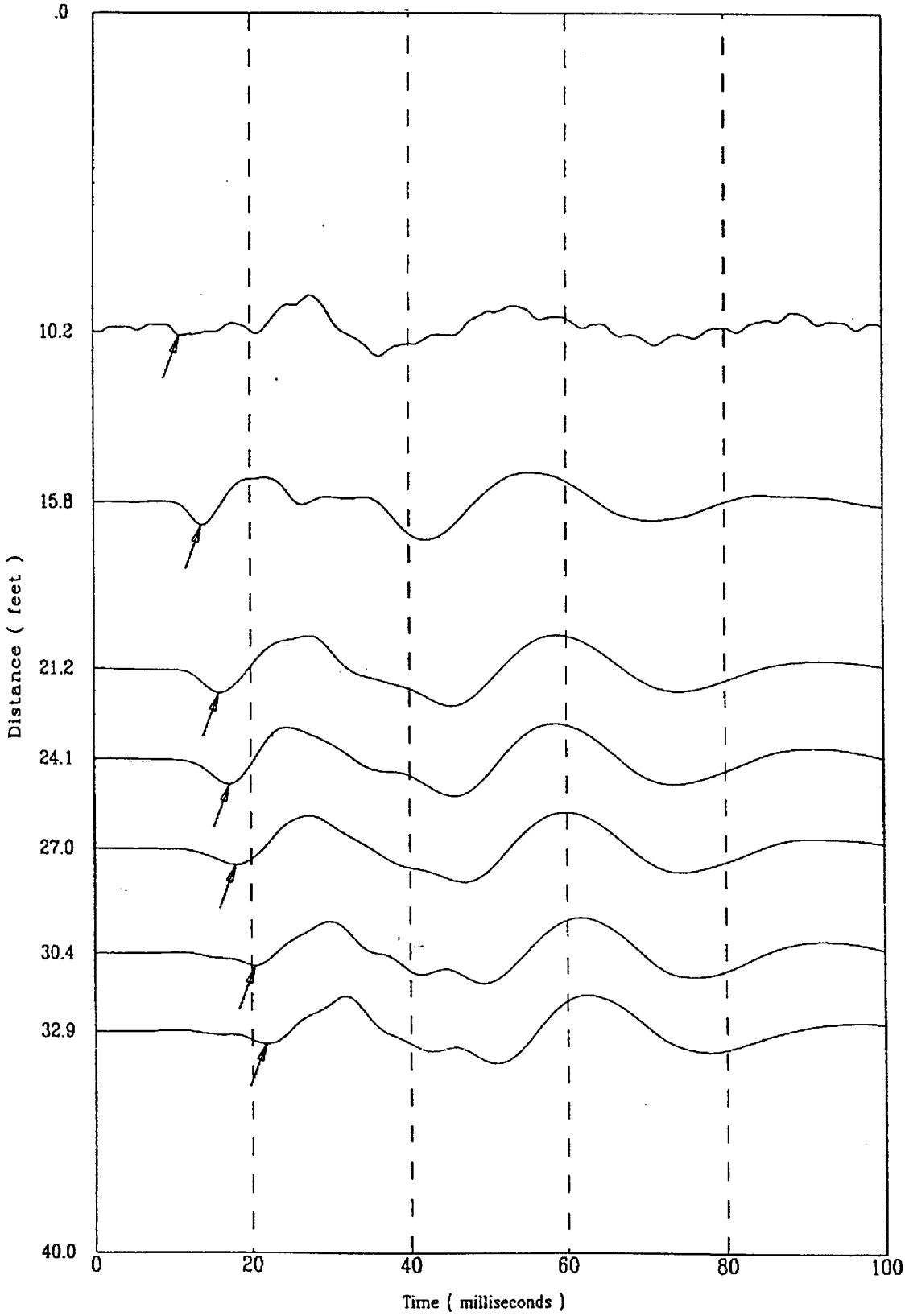
Compression Wave Time of Peak



File 419m801S

Applied Research Associates, Inc.
CPT-178

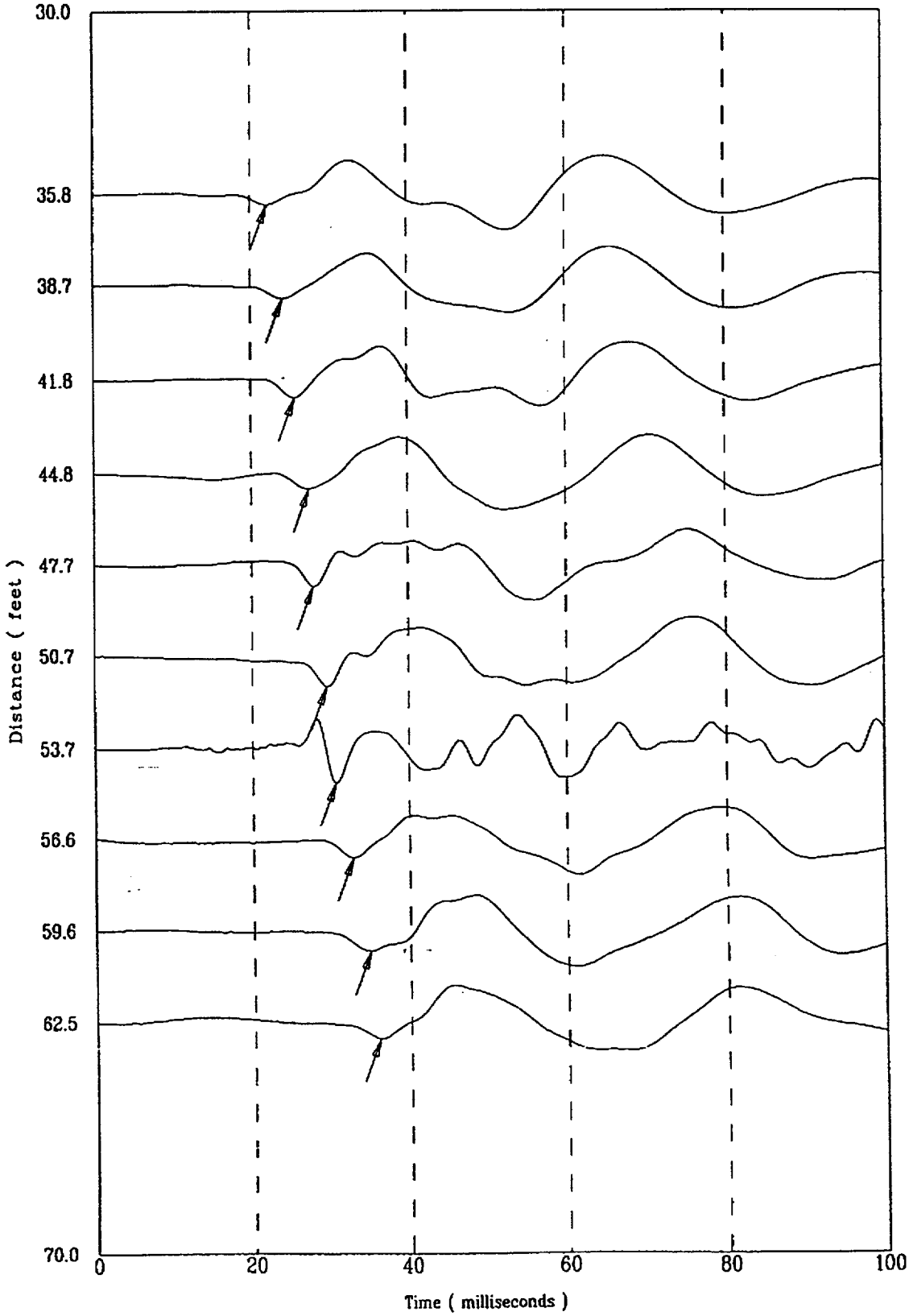
P Wave
03/19/98



File 419m801S

Applied Research Associates, Inc.
CPT-178

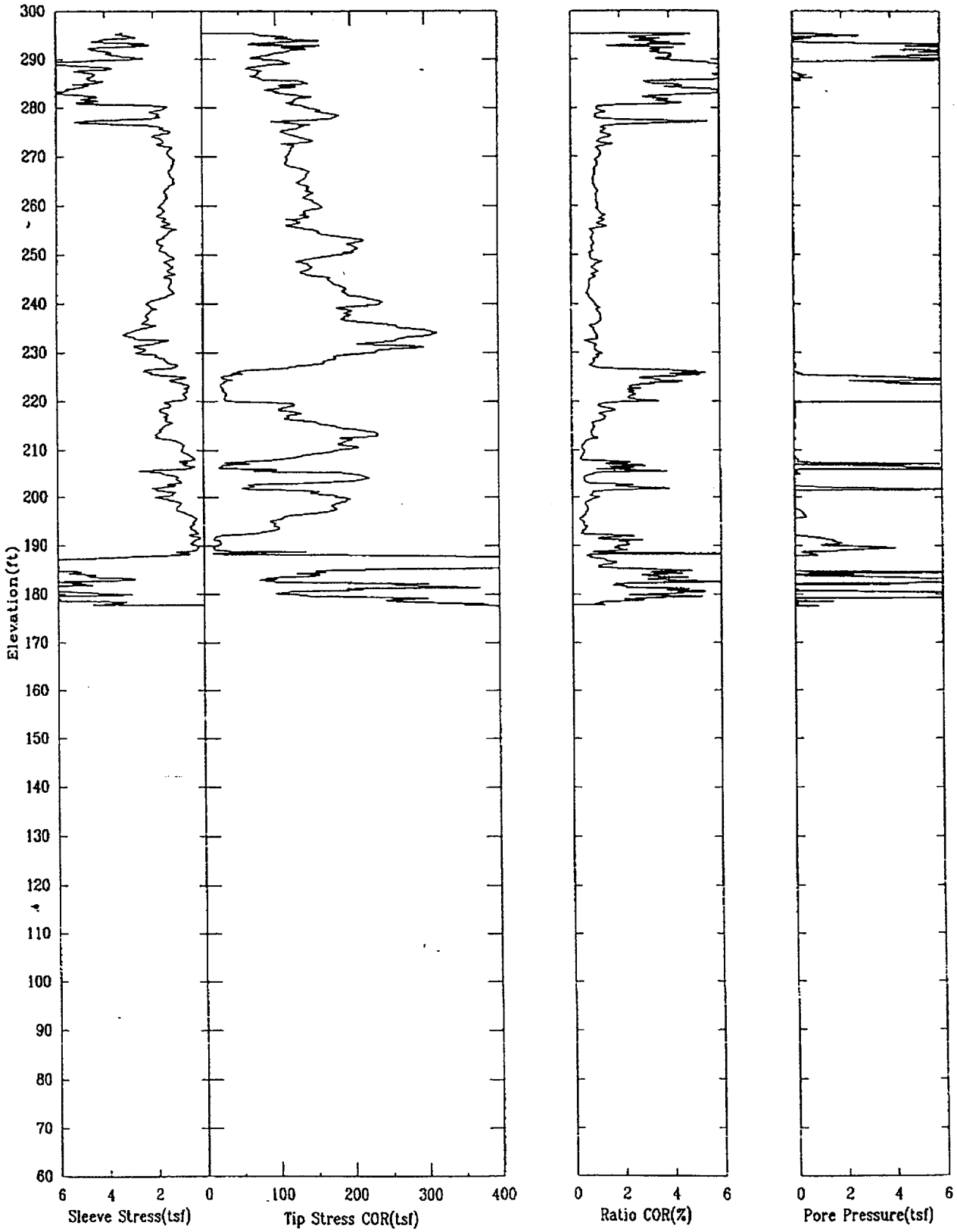
P Wave
03/19/98



i9m801S

CPT-179 APPLIED RESEARCH ASSOCIATES, INC. 03/24/98

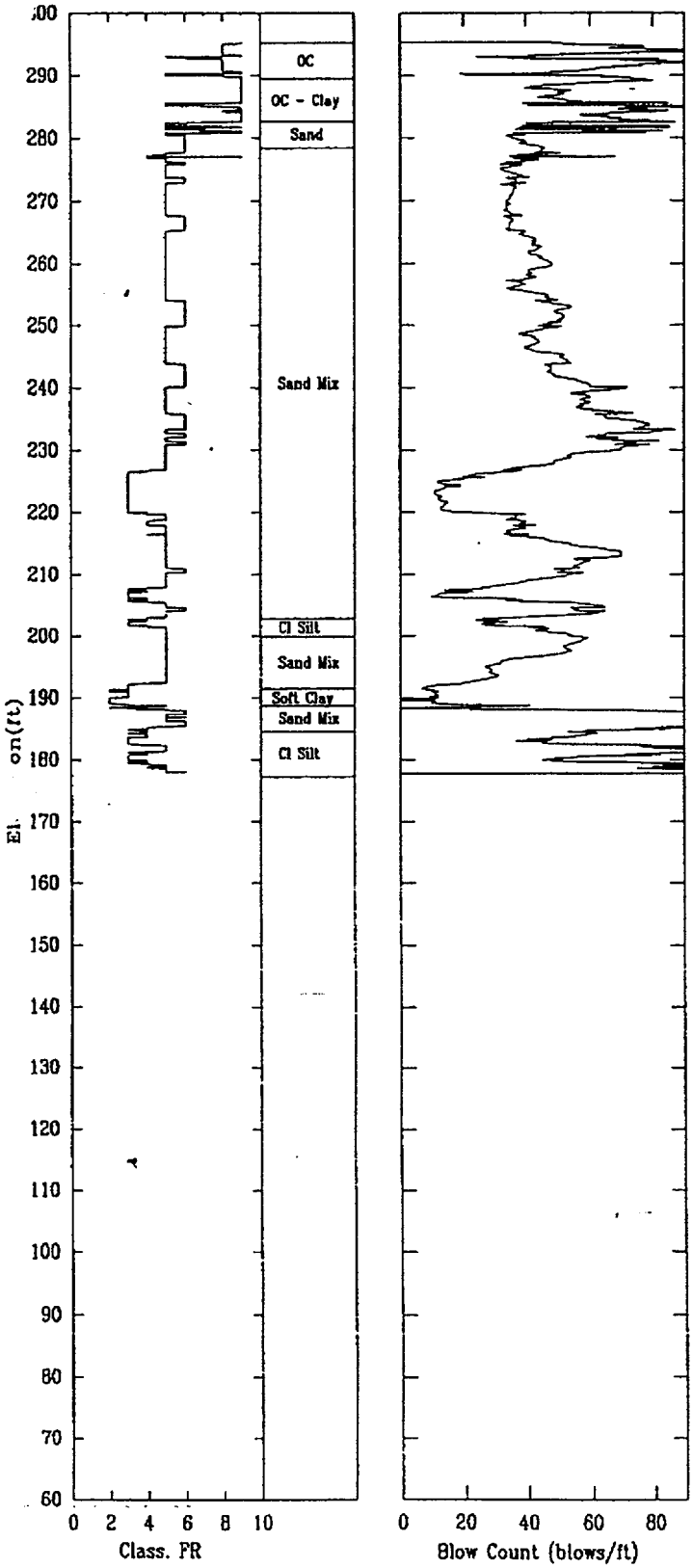
North 78640 East 55518 Elevation 301.4



File 324M604.ECP

CPT-179 APPLIED RESEARCH ASSOCIATES, INC. 03/24/98

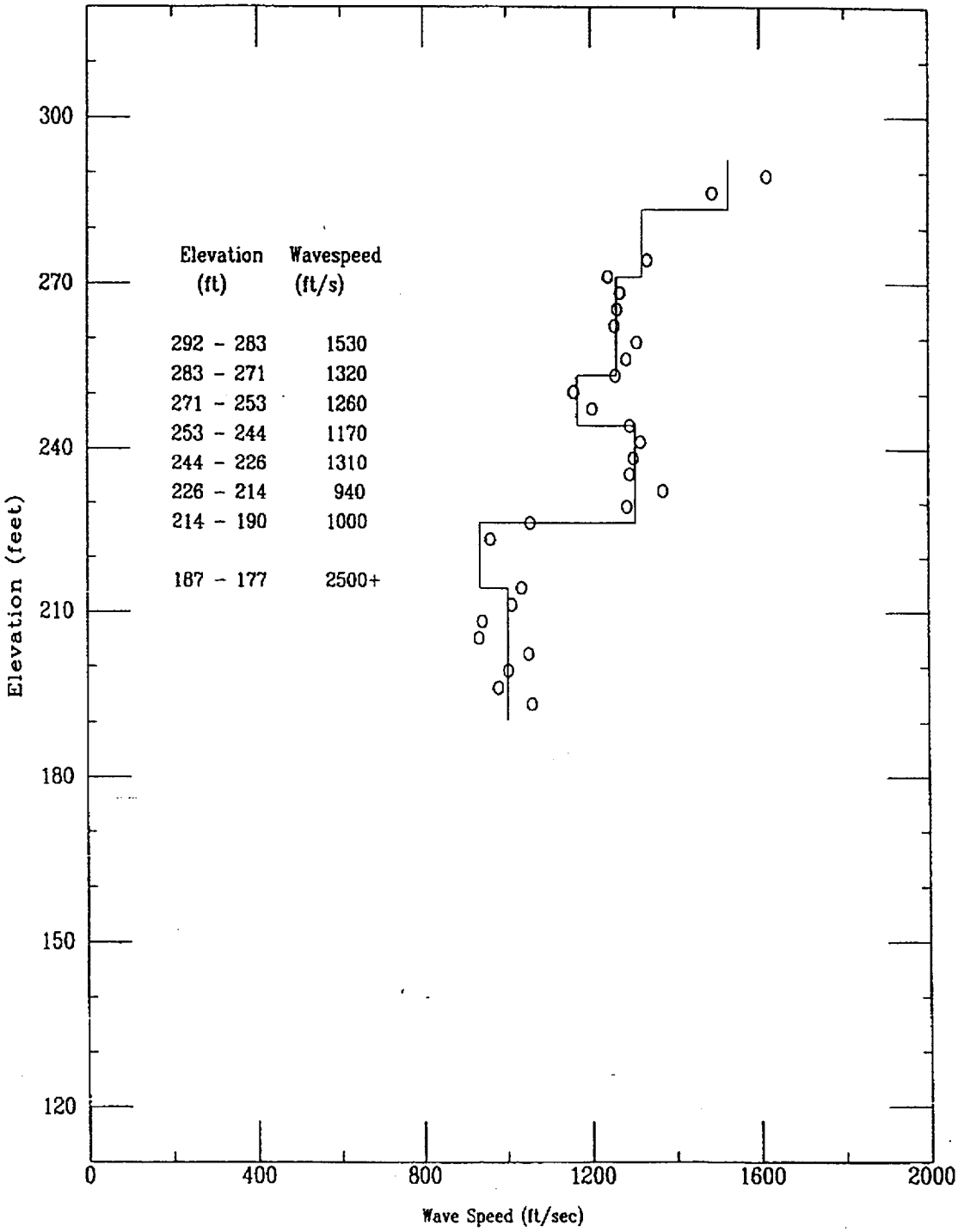
North 78640 East 55518 Elevation 301.4



File 324M804.ECP

CPT-179 APPLIED RESEARCH ASSOCIATES, INC. 03/24/98

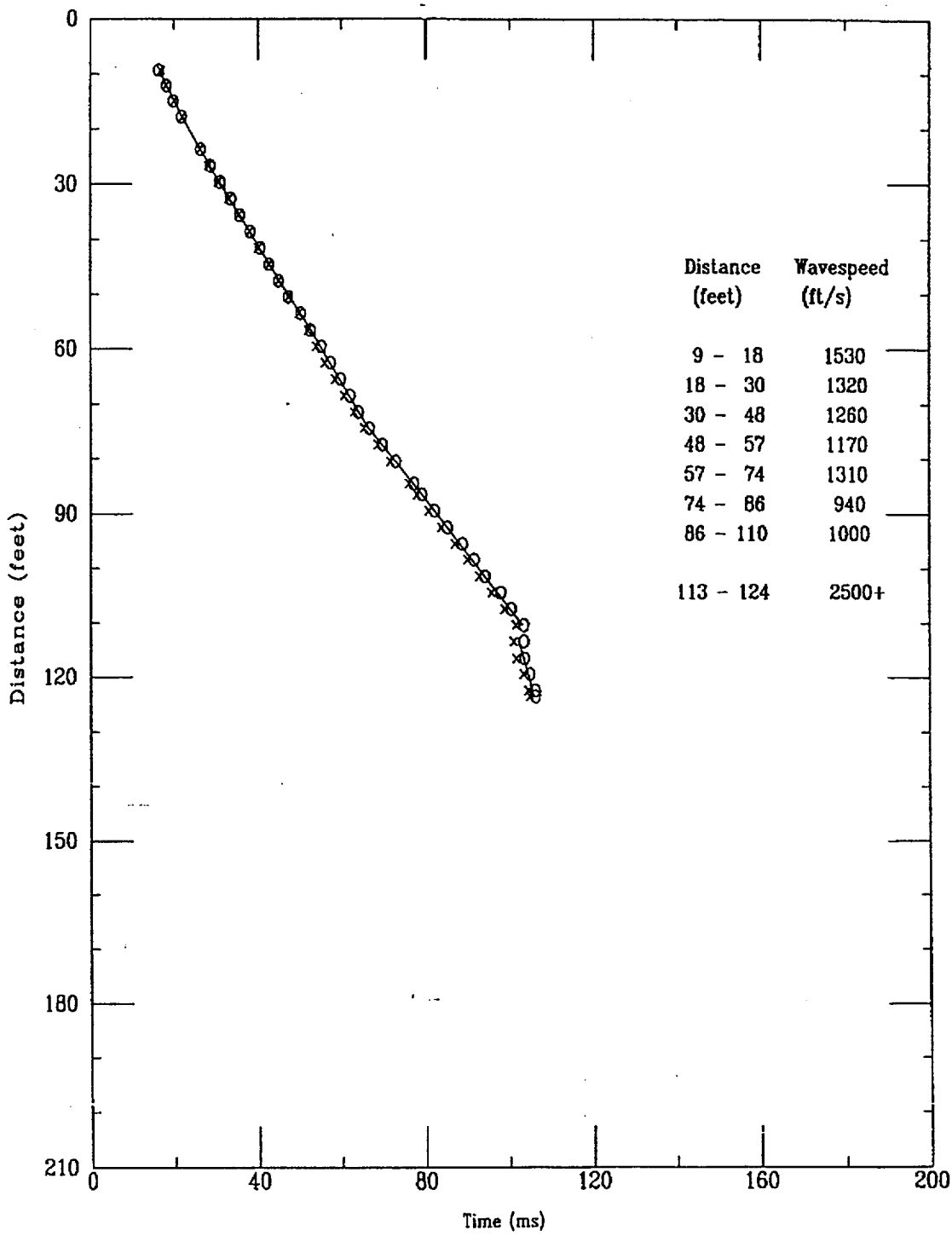
Shear Wave Speeds



File 324m804S

CPT-179 APPLIED RESEARCH ASSOCIATES, INC. 03/24/98

Shear Wave Time of Peak

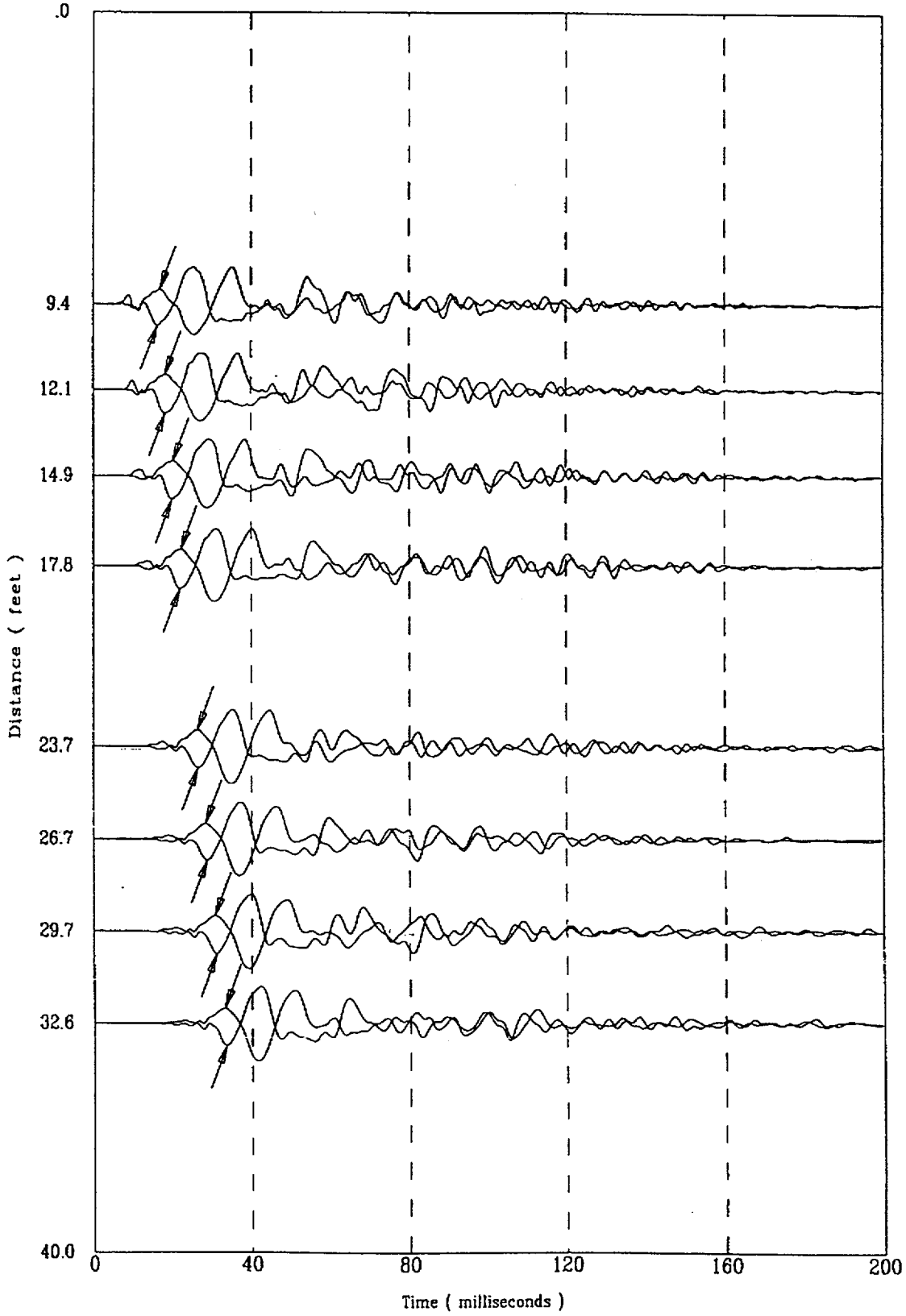


Distance (feet)	Wavespeed (ft/s)
9 - 18	1530
18 - 30	1320
30 - 48	1260
48 - 57	1170
57 - 74	1310
74 - 86	940
86 - 110	1000
113 - 124	2500+

File 324m804S

Applied Research Associates, Inc.
CPT-179

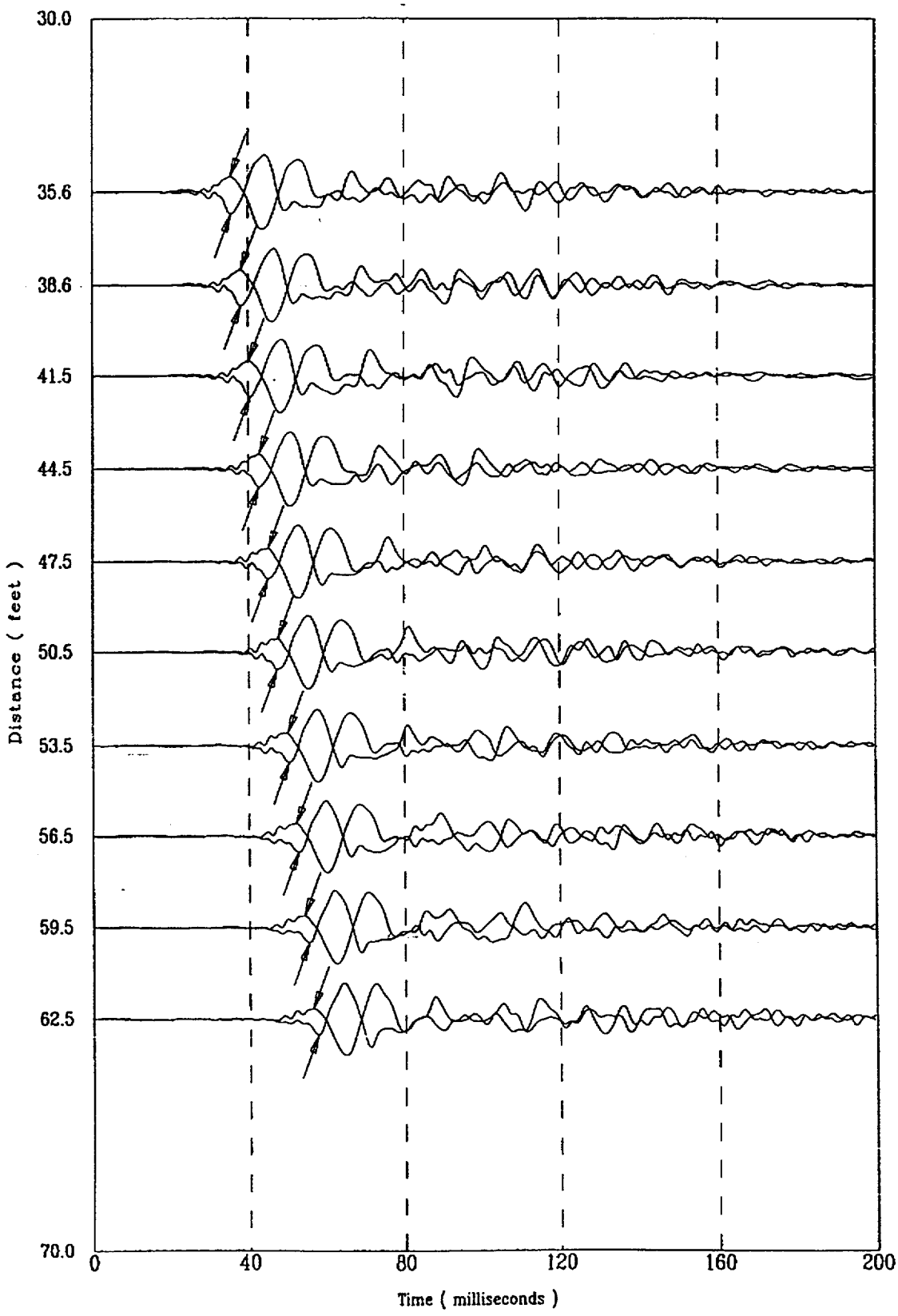
S Wave
03/24/98



File 324m804S

Applied Research Associates, Inc.
CPT-179

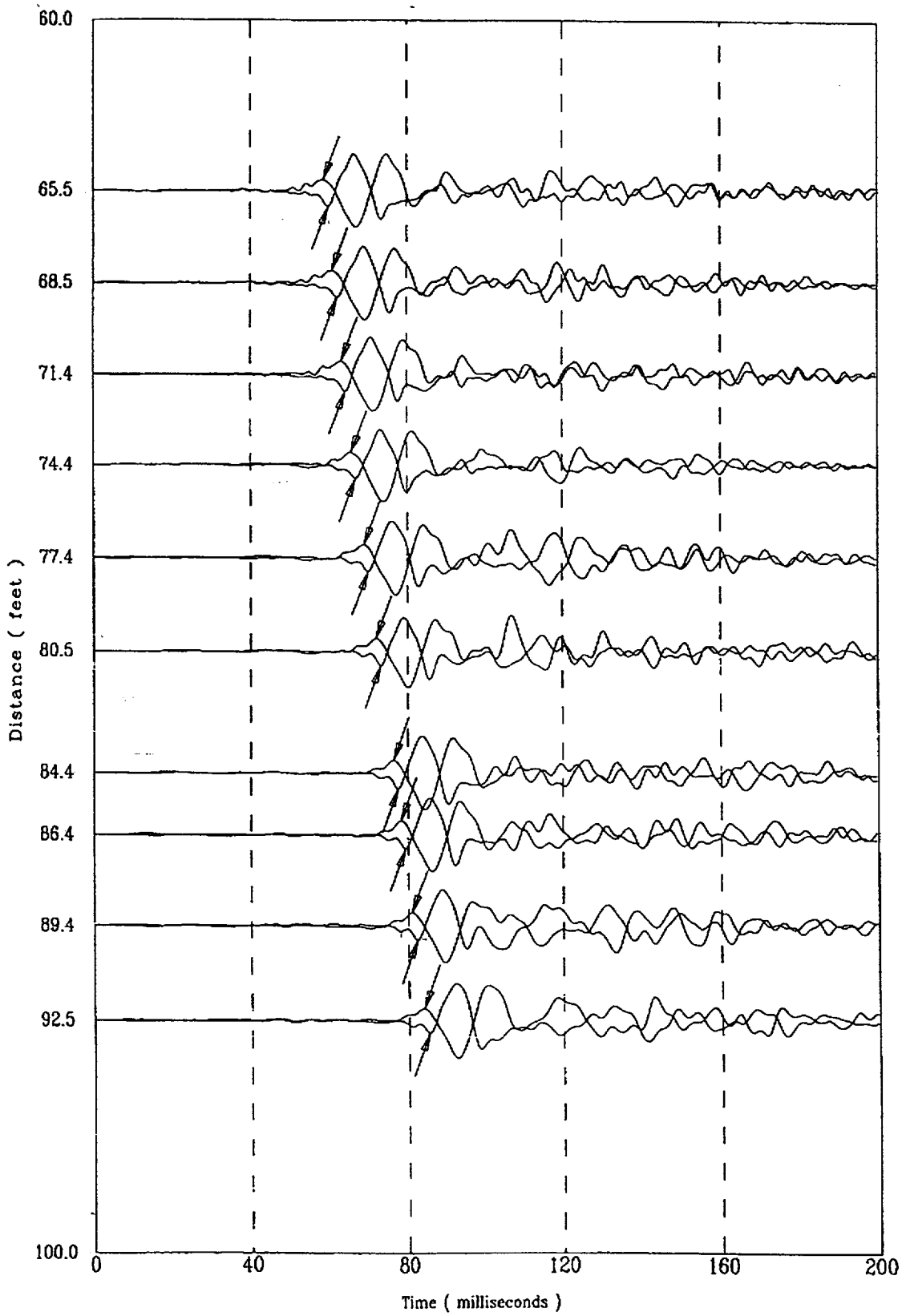
S Wave
03/24/98



324mB04S

Applied Research Associates, Inc.
CPT-179

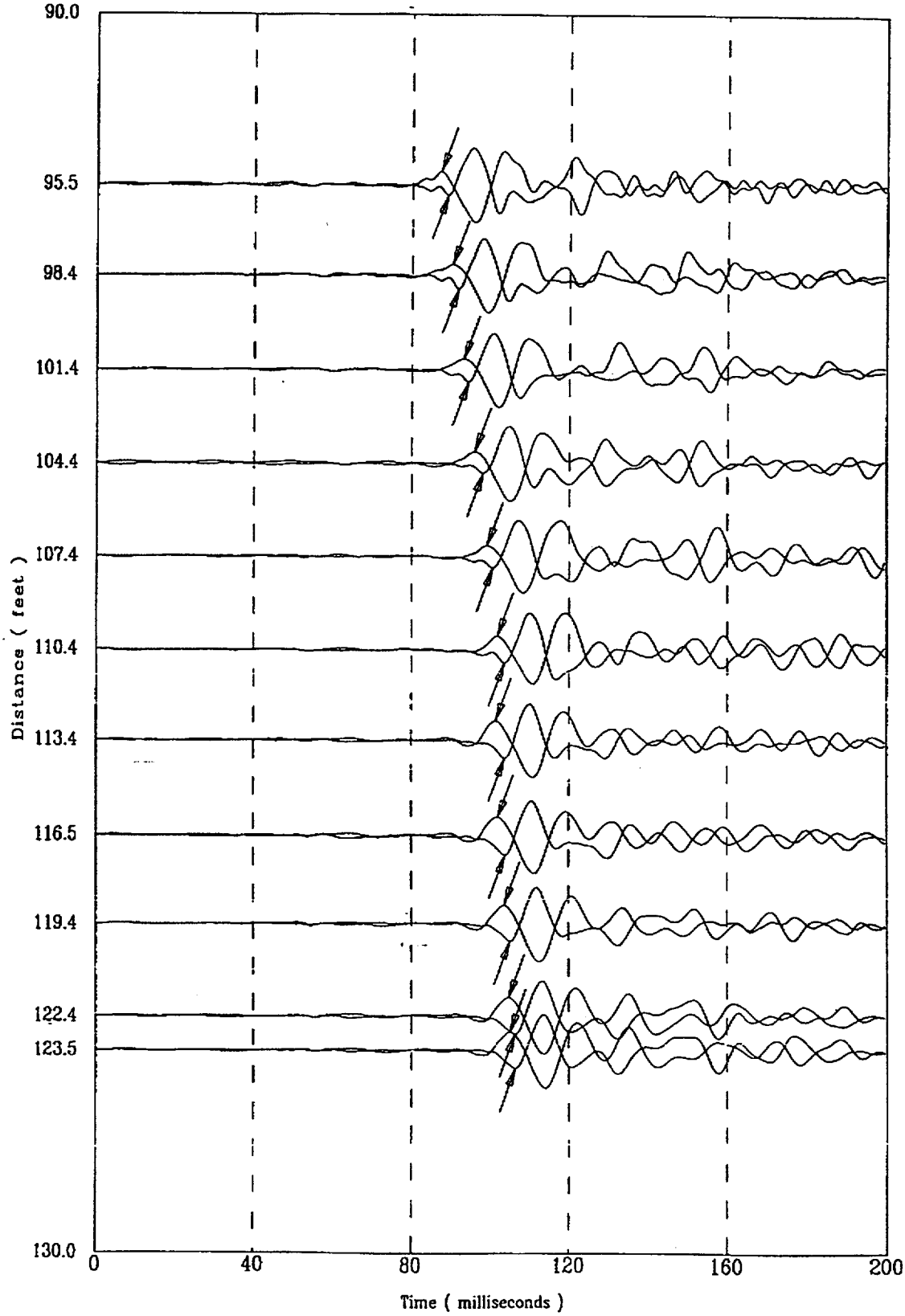
S Wave
03/24/98



File 324m604S

Applied Research Associates, Inc.
CPT-179

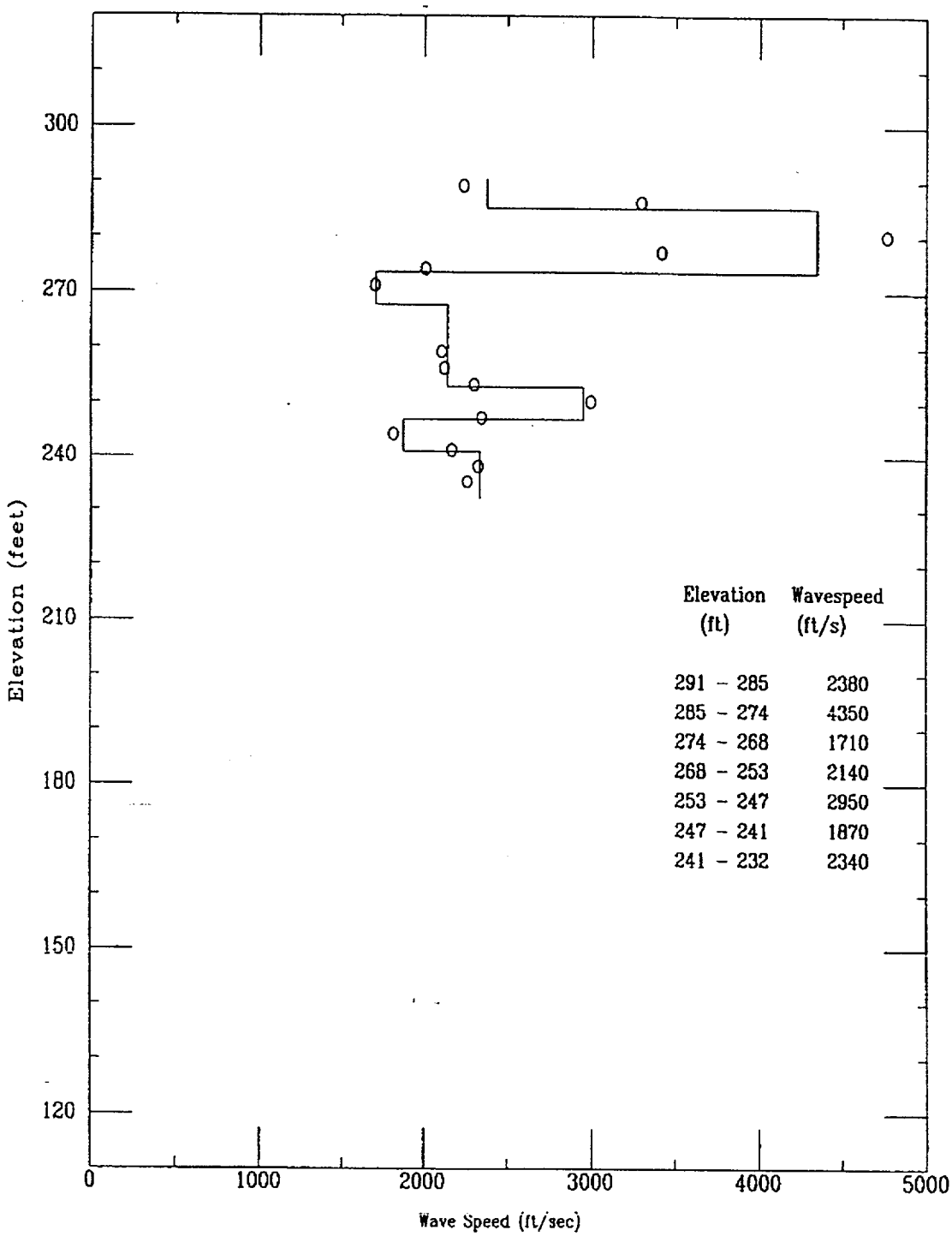
S Wave
03/24/98



4m804S

CPT-179 APPLIED RESEARCH ASSOCIATES, INC. 03/24/98

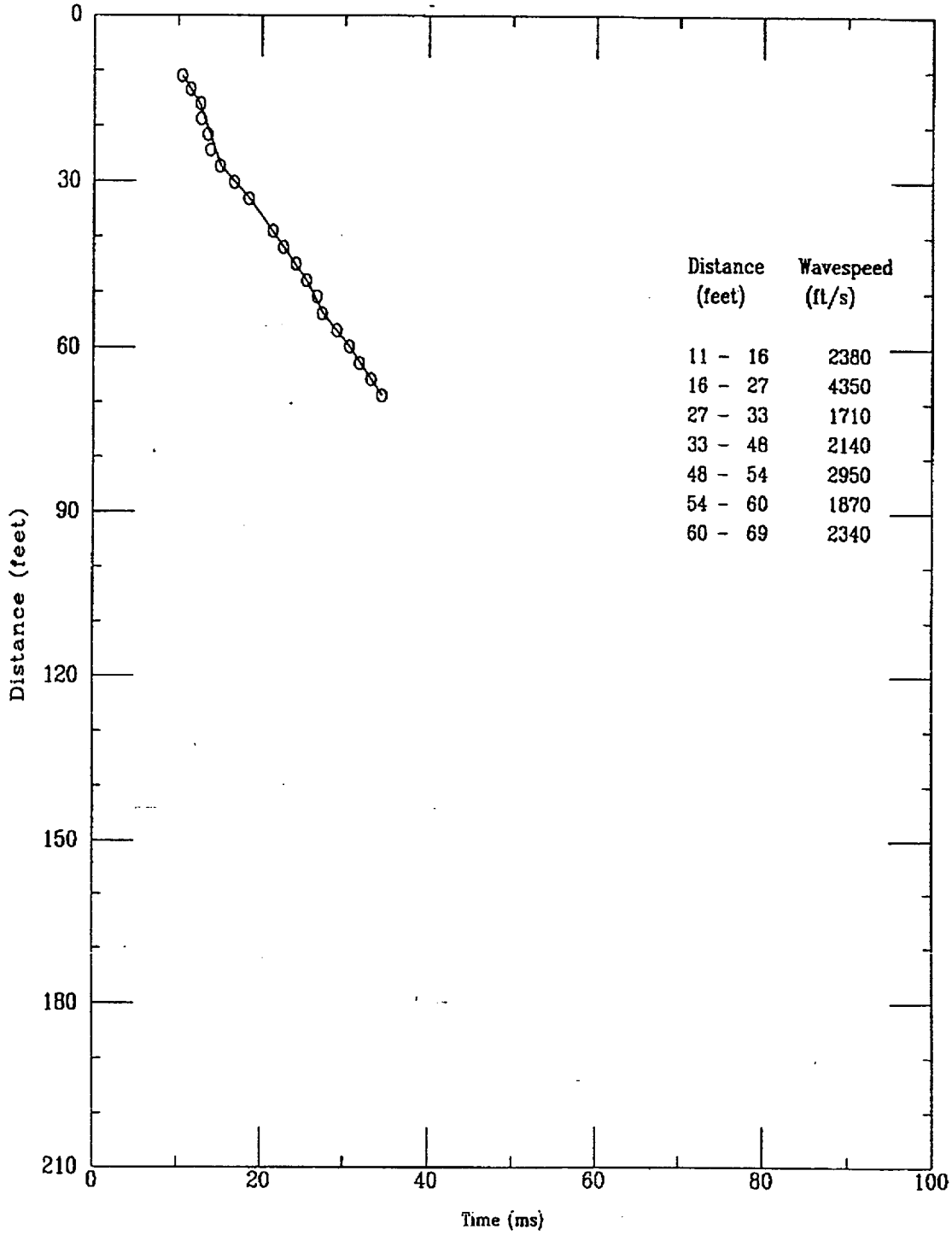
Compression Wave Speeds



File 324m604S

CPT-179 APPLIED RESEARCH ASSOCIATES, INC. 03/24/98

Compression Wave Time of Peak

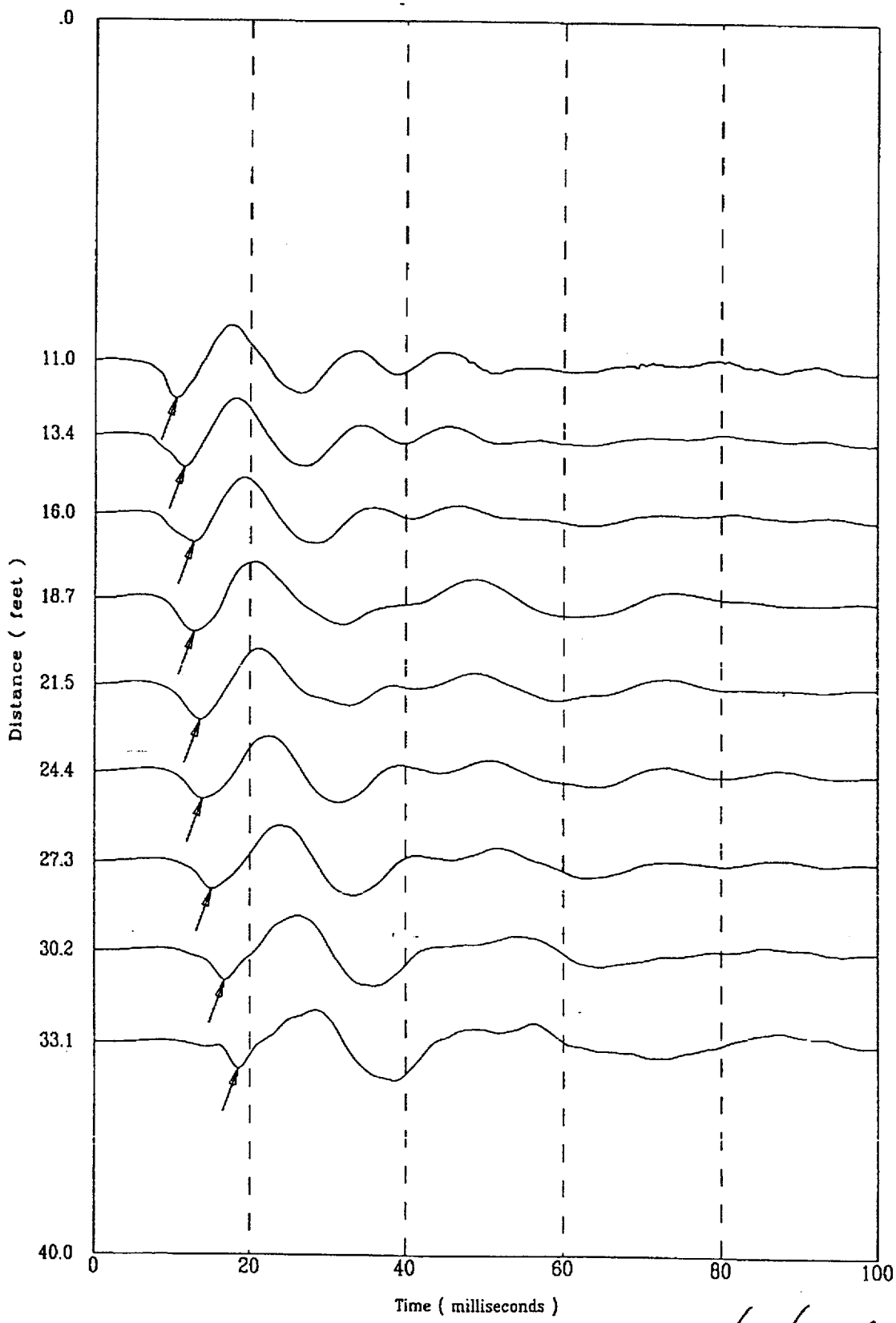


Distance (feet)	Wavespeed (ft/s)
11 - 16	2380
16 - 27	4350
27 - 33	1710
33 - 48	2140
48 - 54	2950
54 - 60	1870
60 - 69	2340

File 324m804S

Applied Research Associates, Inc.
CPT-179

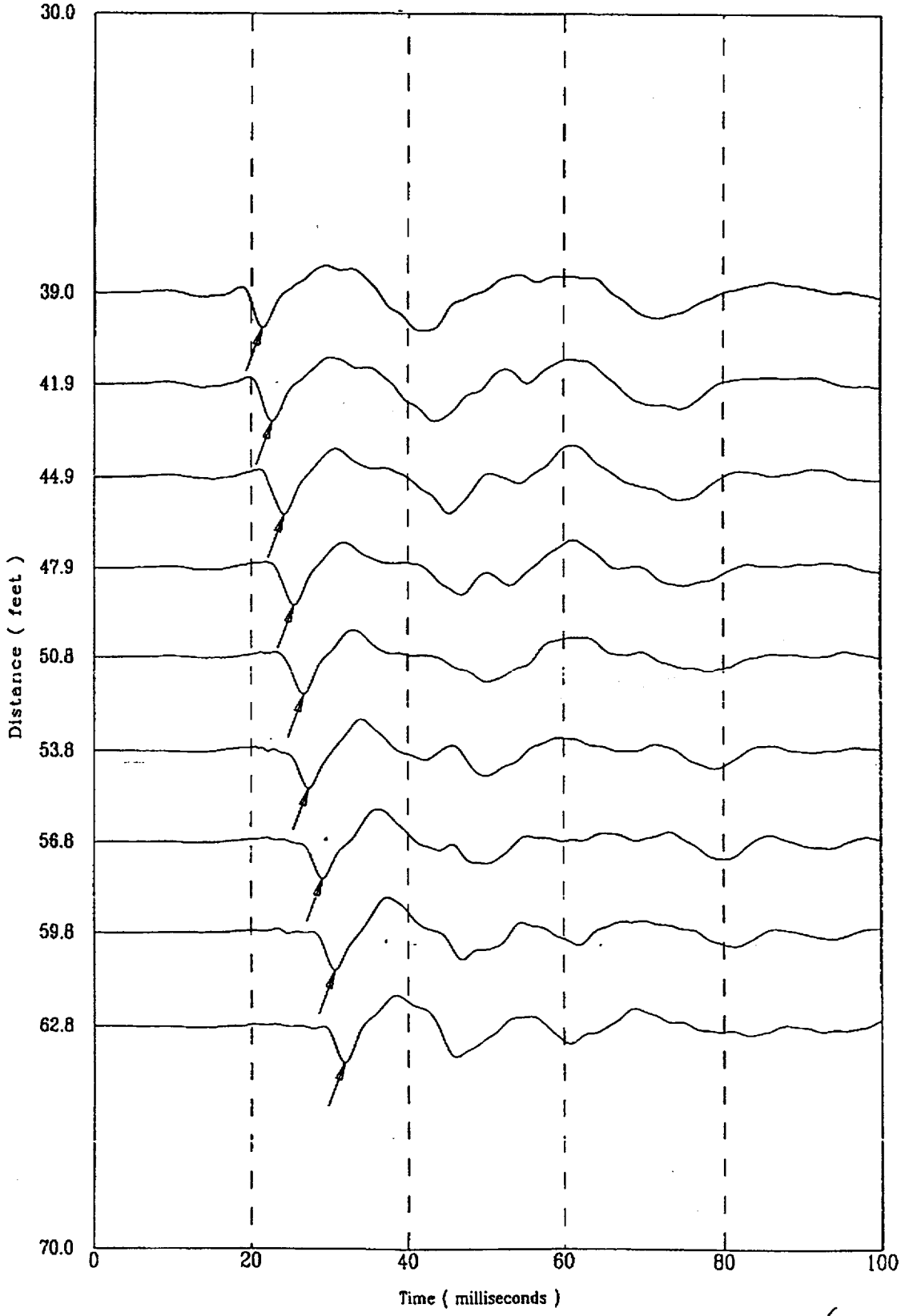
P Wave
03/24/98



File 324m804S

Applied Research Associates, Inc.
CPT-179

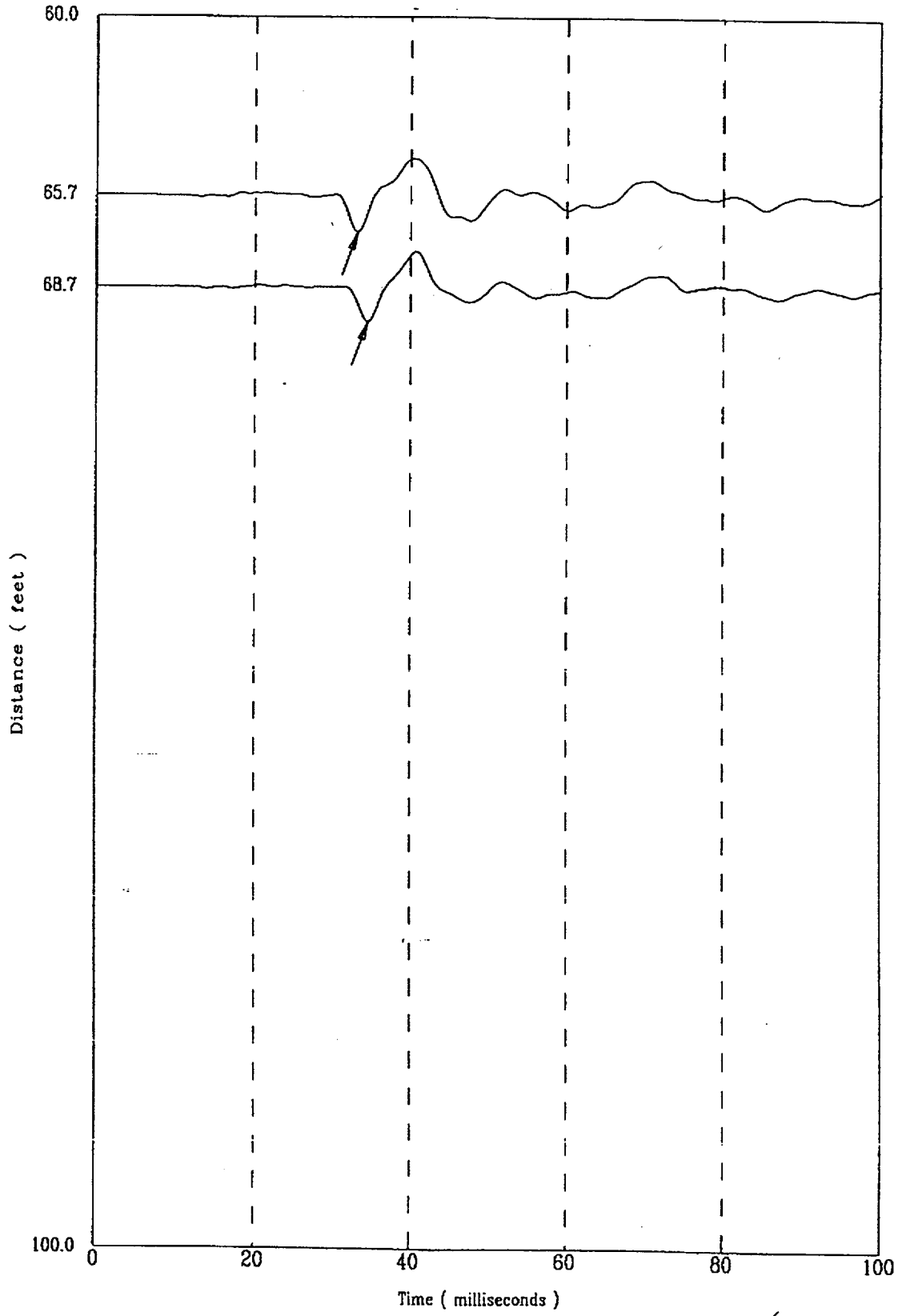
P Wave
03/24/98



J24m804S

Applied Research Associates, Inc.
CPT-179

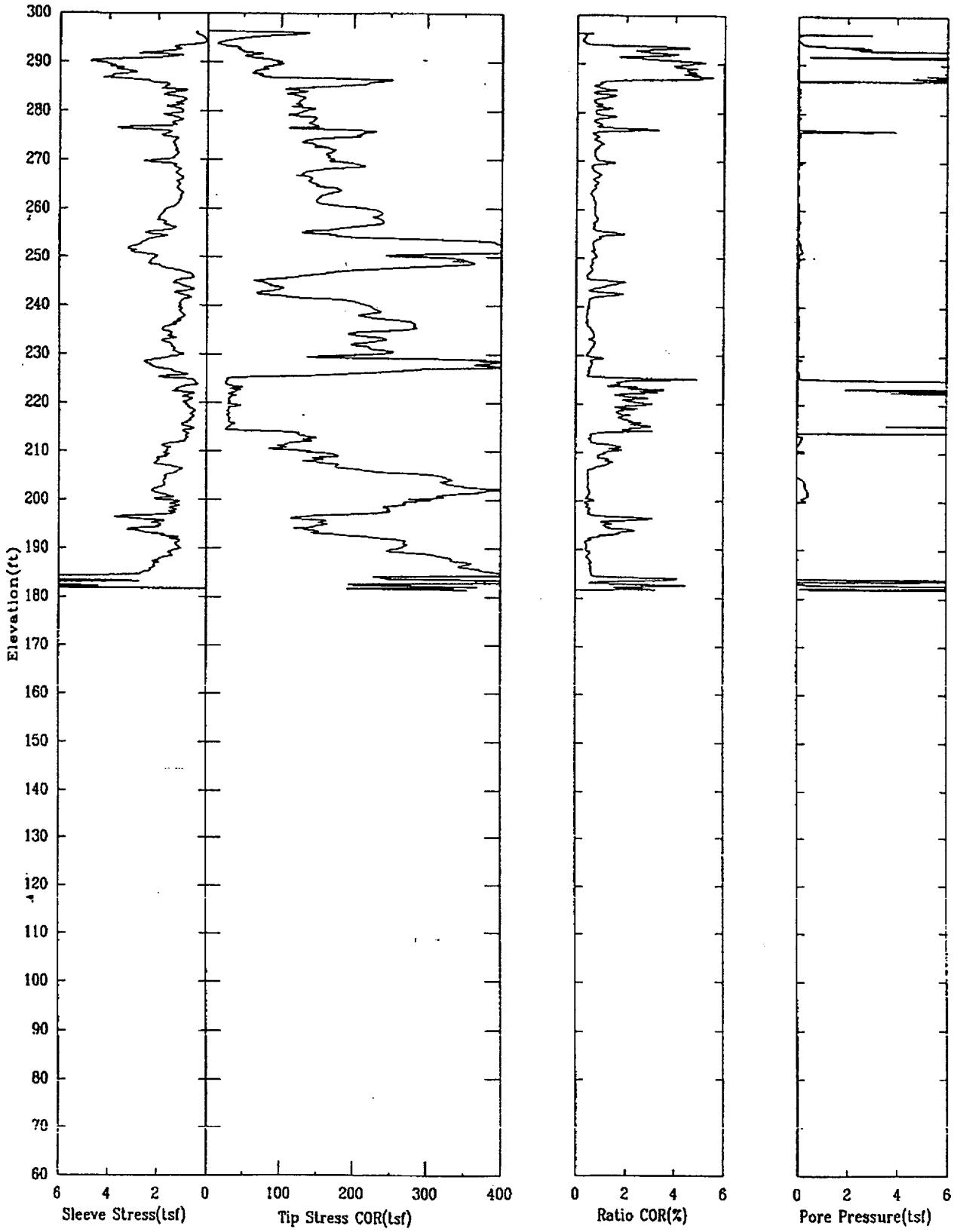
P Wave
03/24/98



File 324m804S

CPT-180 APPLIED RESEARCH ASSOCIATES, INC. 03/26/98

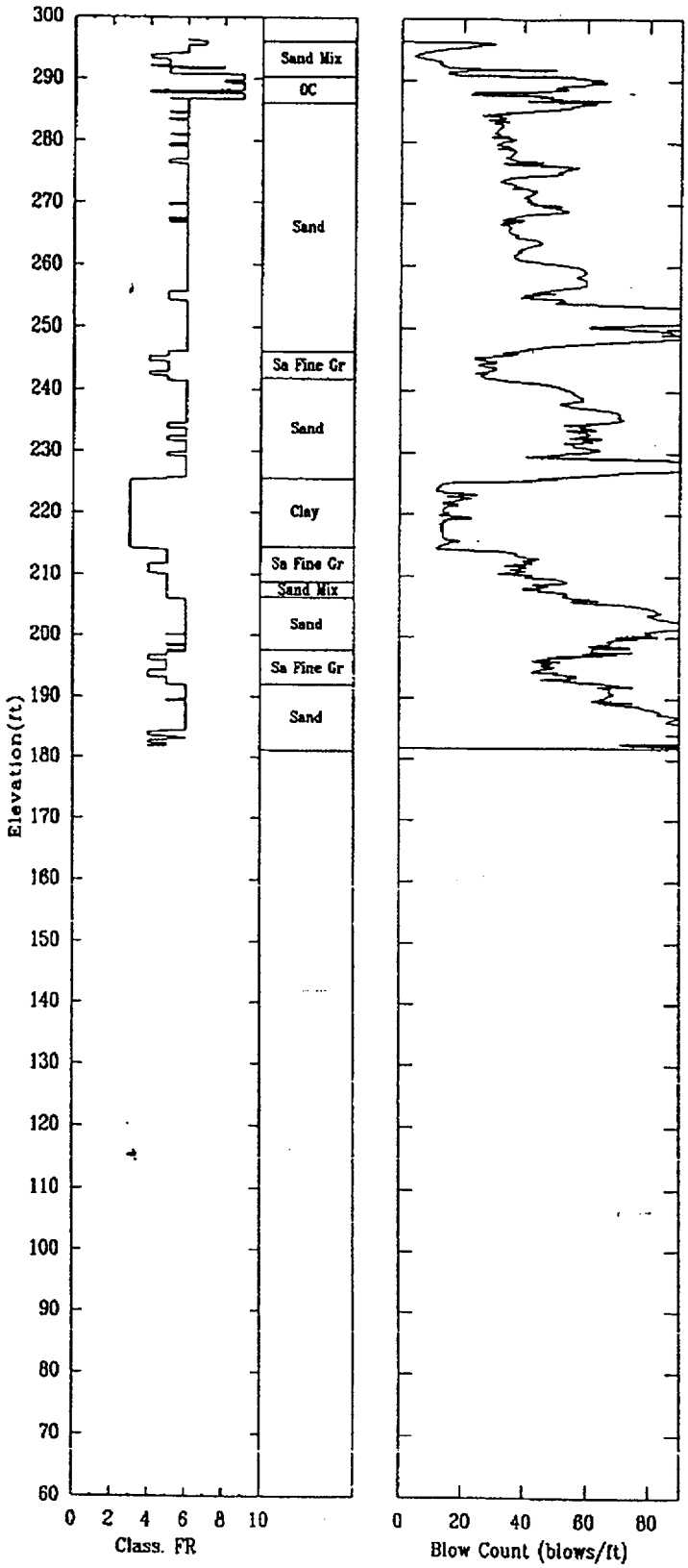
North 78640 East 55650 Elevation 302.3



File 326M802.ECP

CPT-180 APPLIED RESEARCH ASSOCIATES, INC. 03/26/98

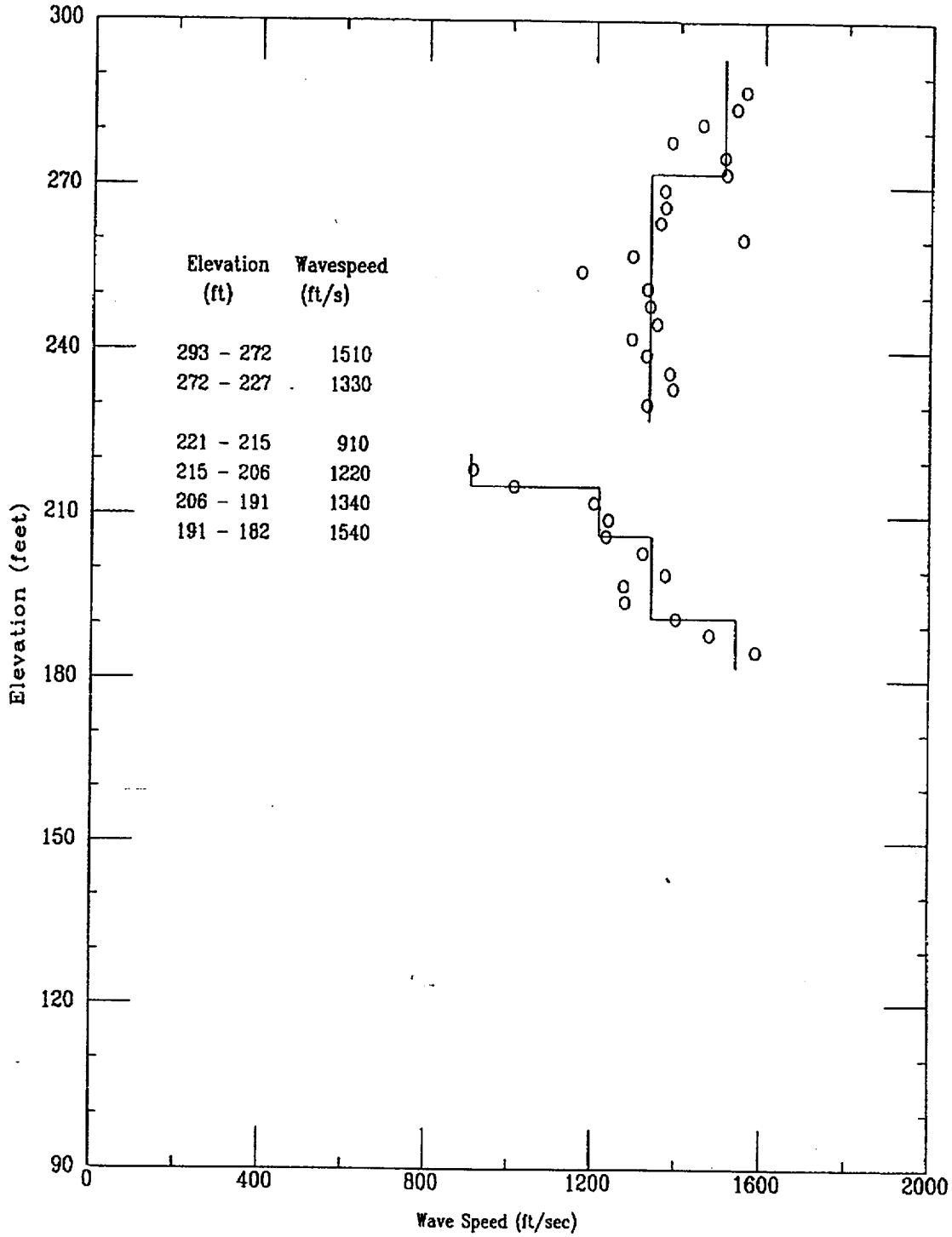
North 78640 East 55650 Elevation 302.3



File 326M802.ECP

CPT-180 APPLIED RESEARCH ASSOCIATES, INC. 03/26/98

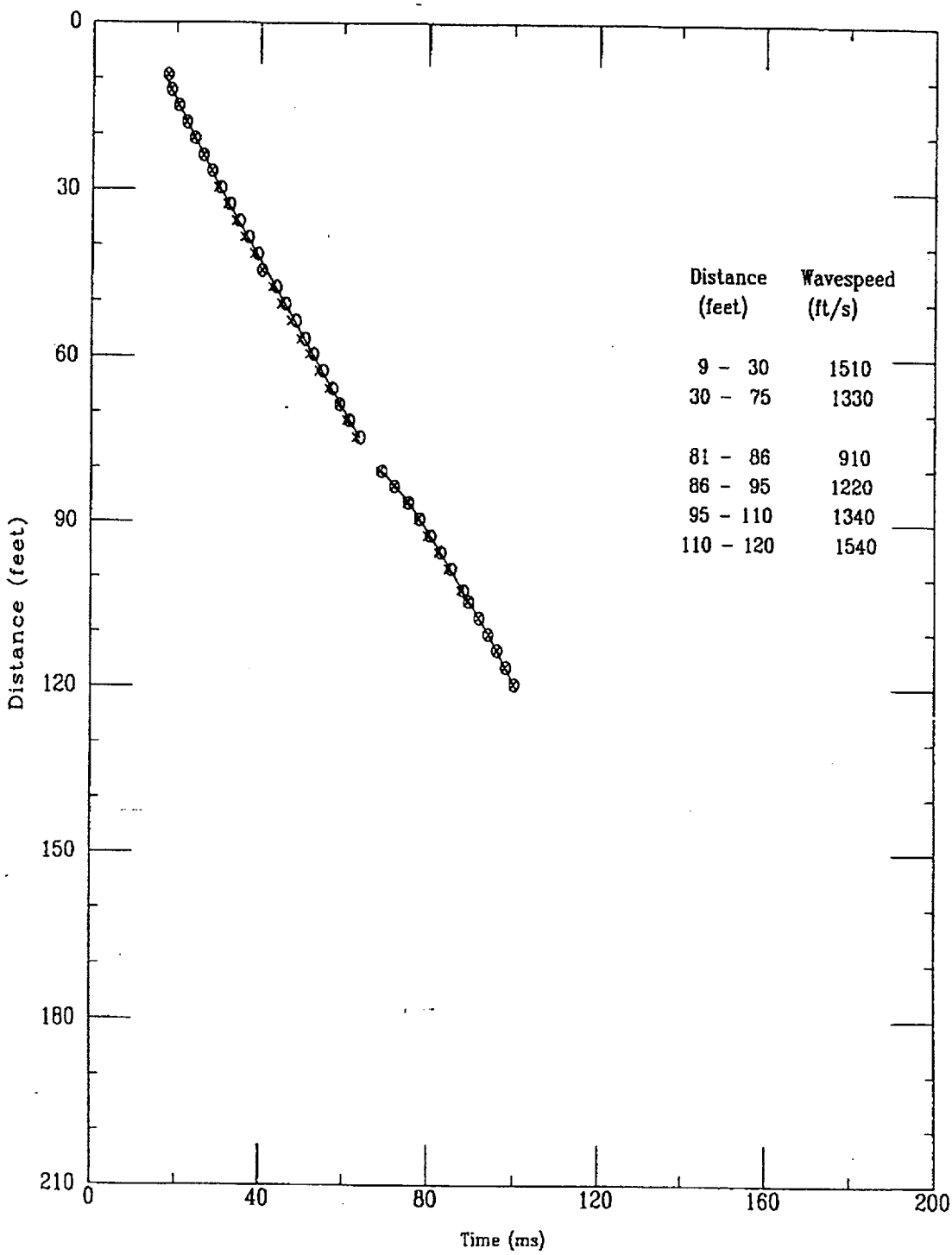
Shear Wave Speeds



File 326m802S

CPT-180 APPLIED RESEARCH ASSOCIATES, INC. 03/26/98

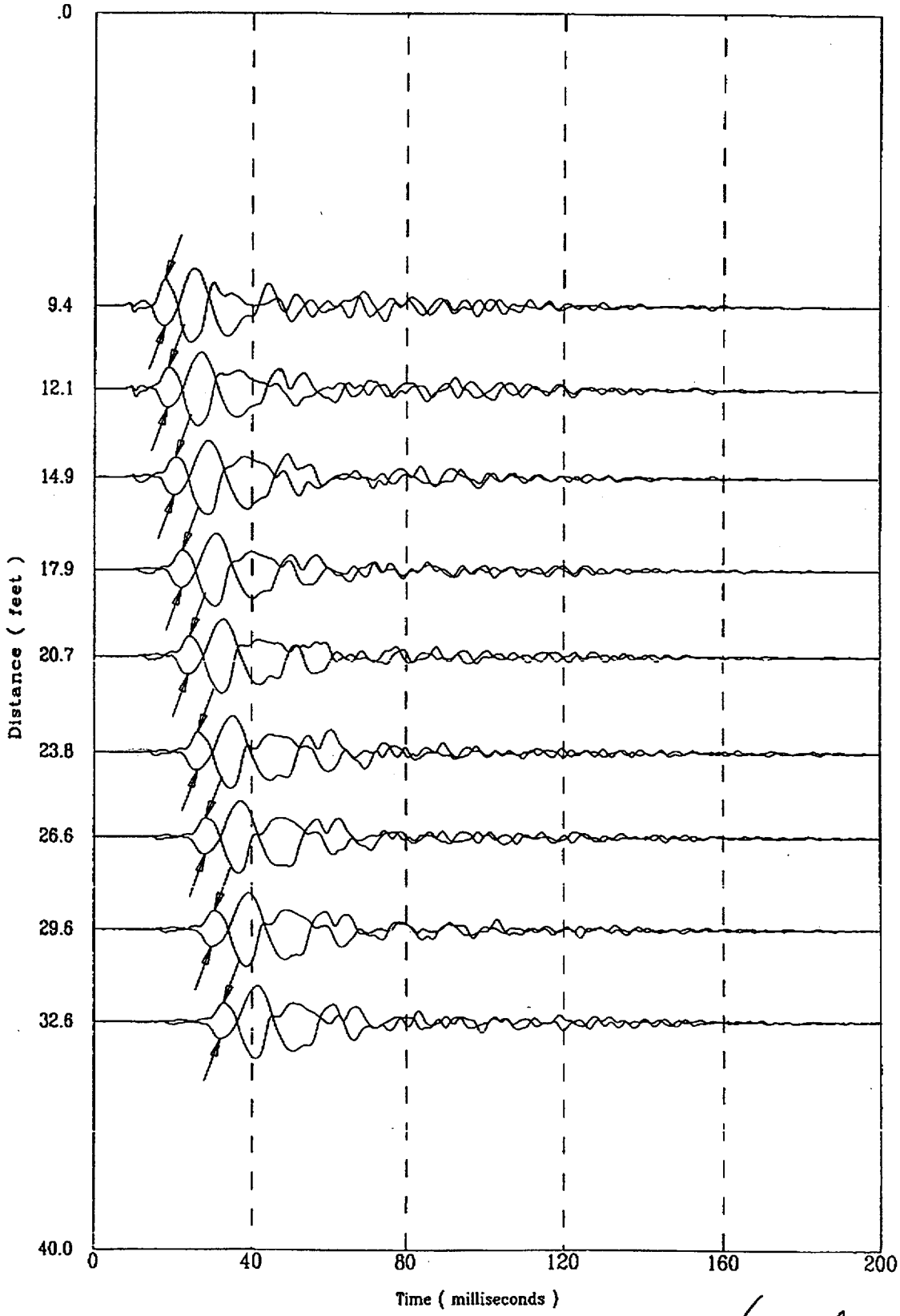
Shear Wave Time of Peak



File 326m802S

Applied Research Associates, Inc.
CPT-180

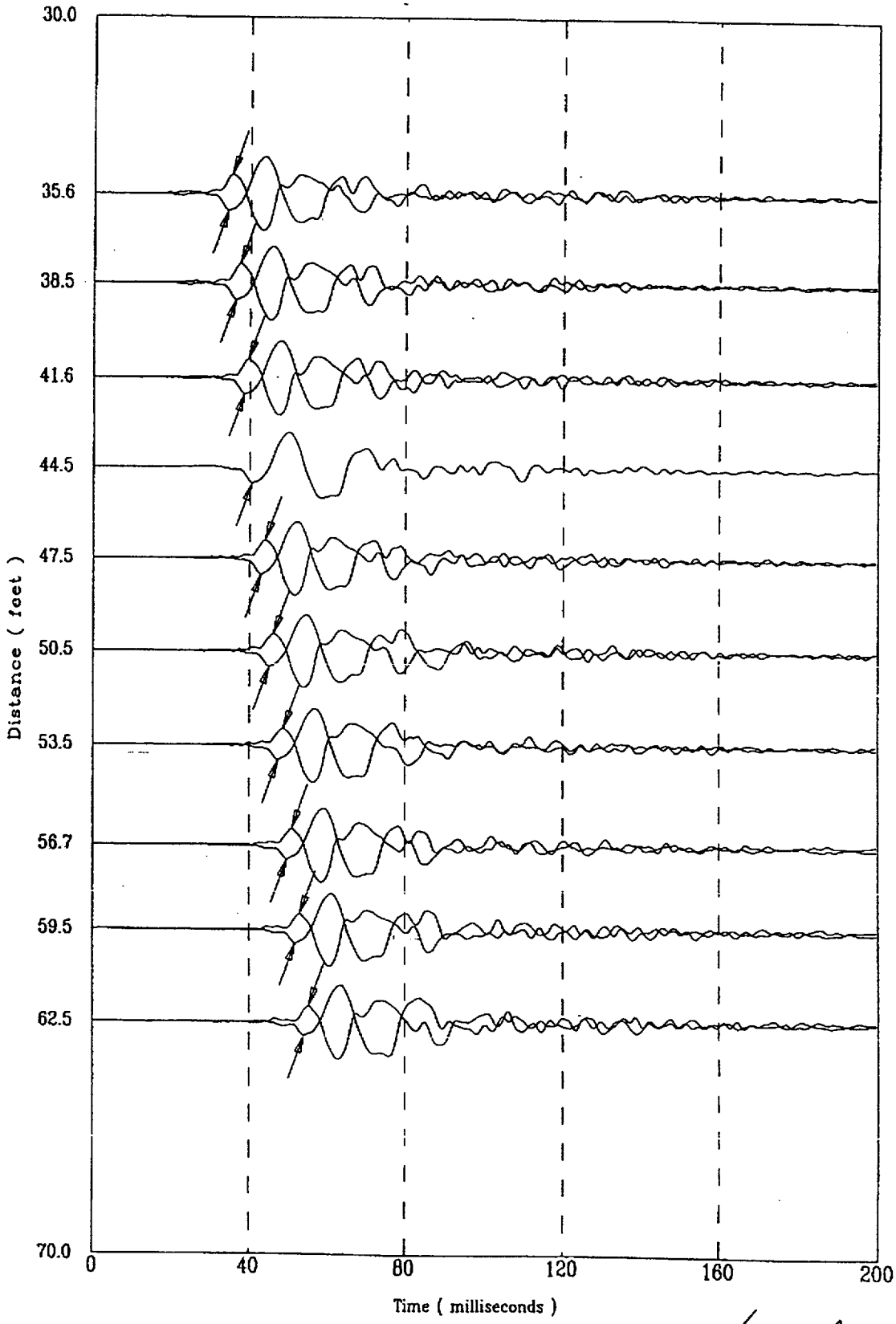
S Wave
03/26/98



326m802S

Applied Research Associates, Inc.
CPT-180

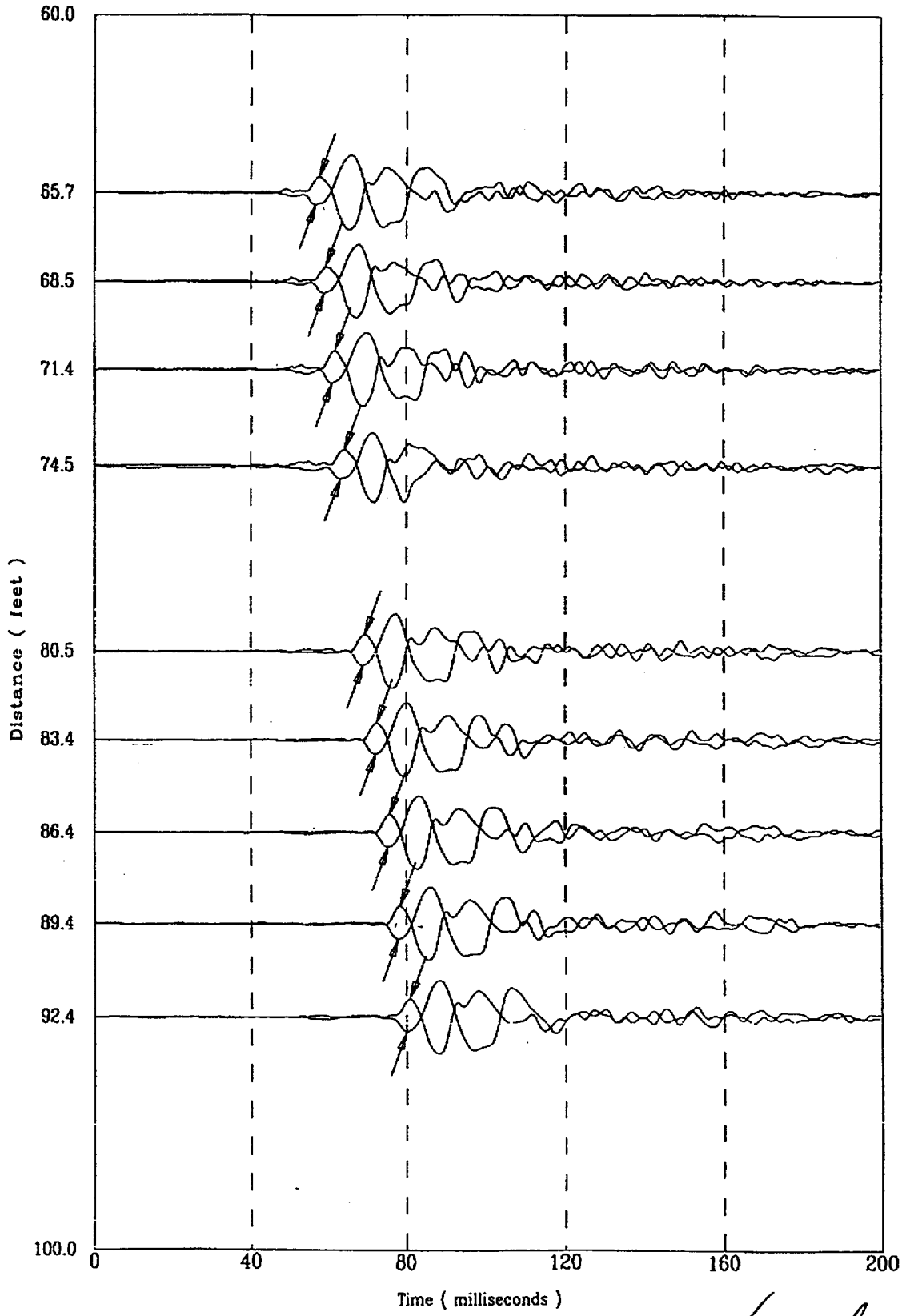
S Wave
03/26/98



File 326m802S

Applied Research Associates, Inc.
CPT-180

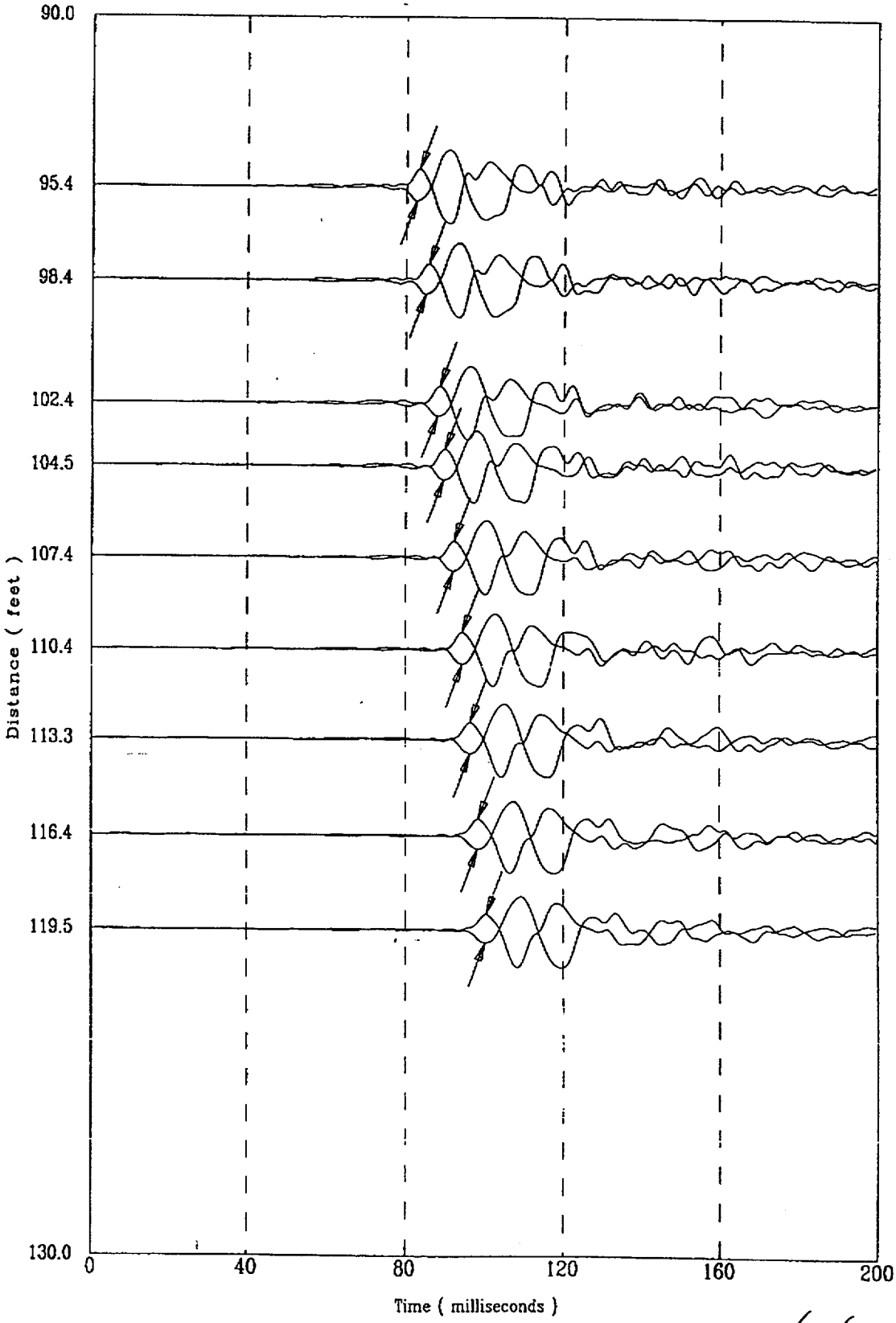
S Wave
03/26/98



File 326m802S

Applied Research Associates, Inc.
CPT-180

S Wave
03/26/98

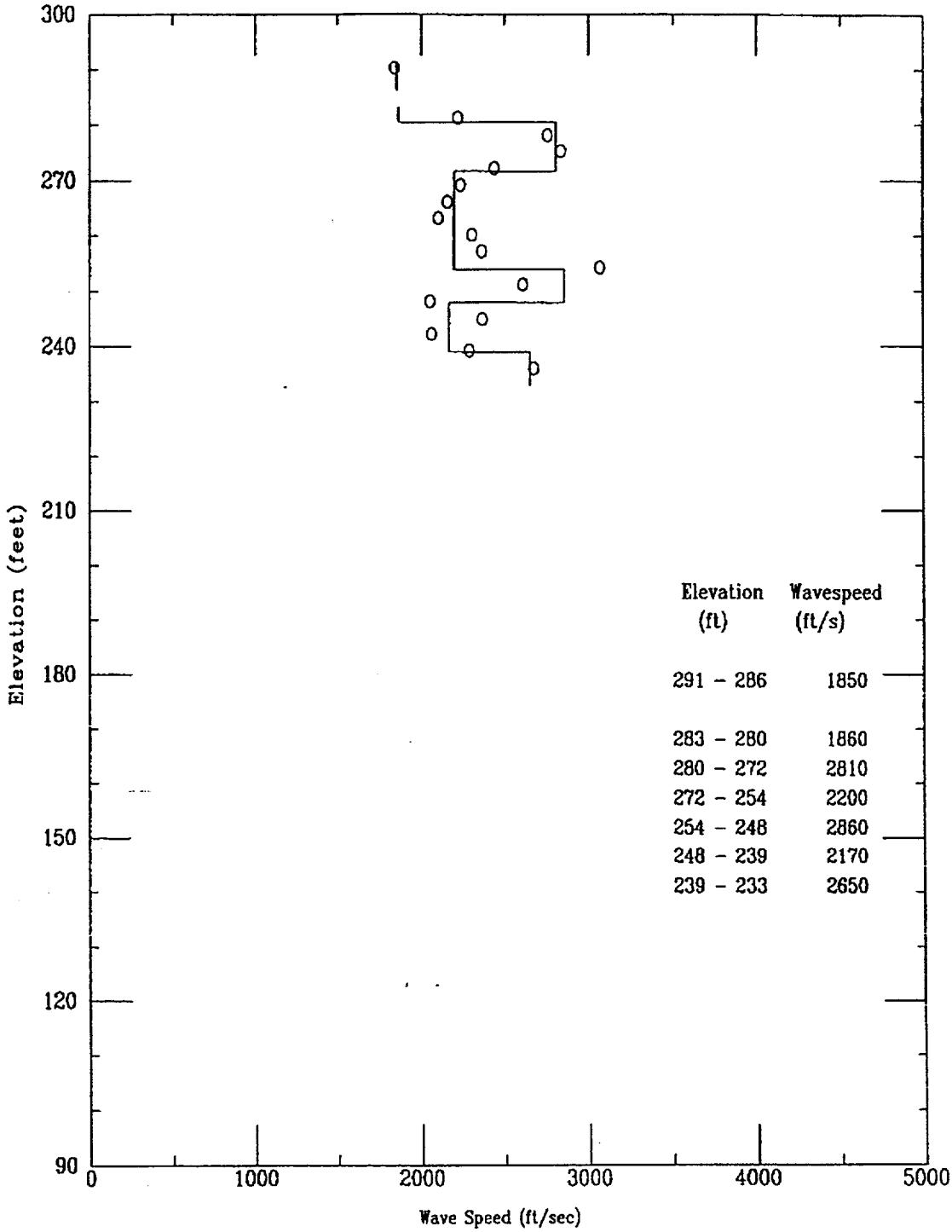


File 326m602S

414 of 522

CPT-180 APPLIED RESEARCH ASSOCIATES, INC. 03/26/98

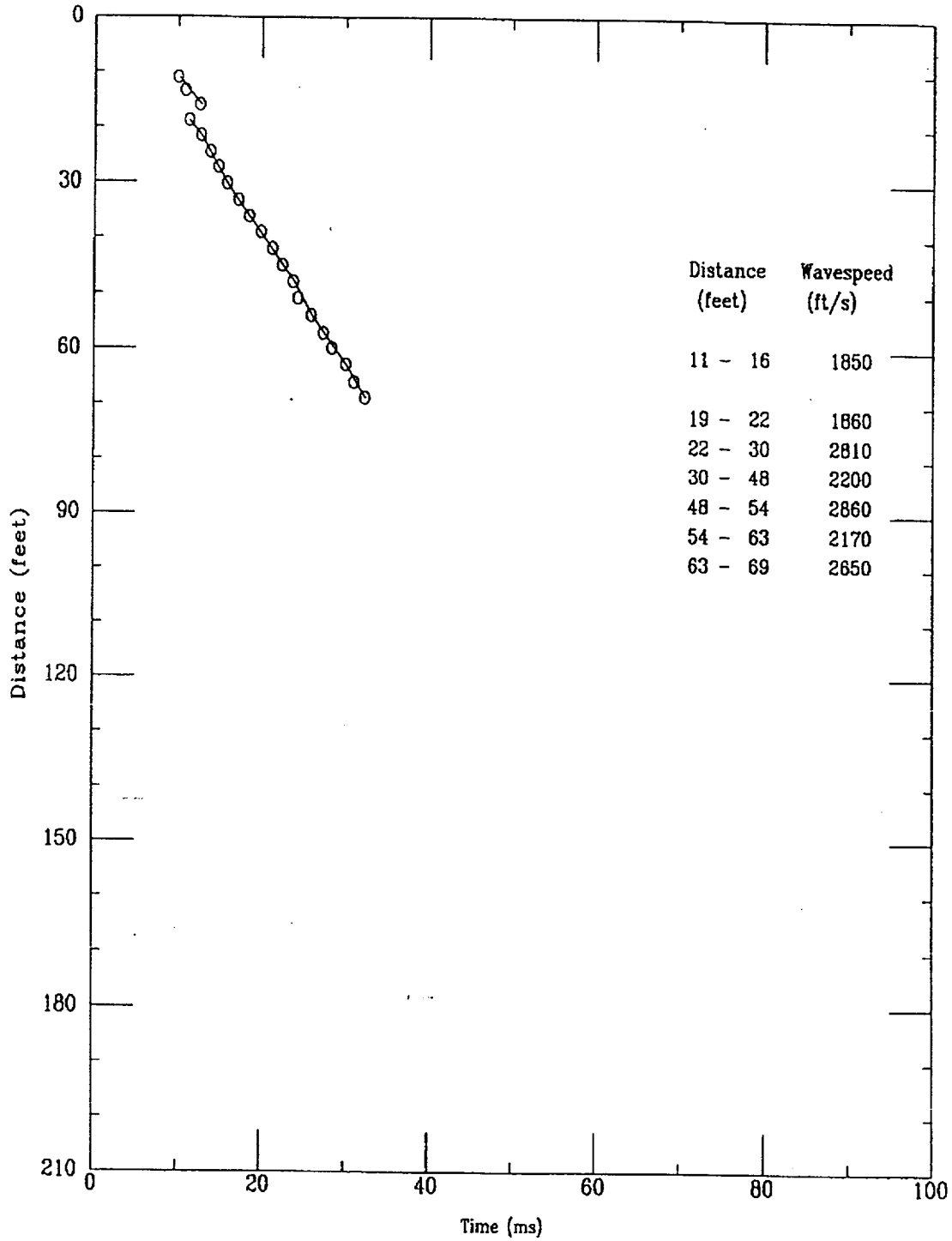
Compression Wave Speeds



File 328m802S

CPT-180 APPLIED RESEARCH ASSOCIATES, INC. 03/26/98

Compression Wave Time of Peak

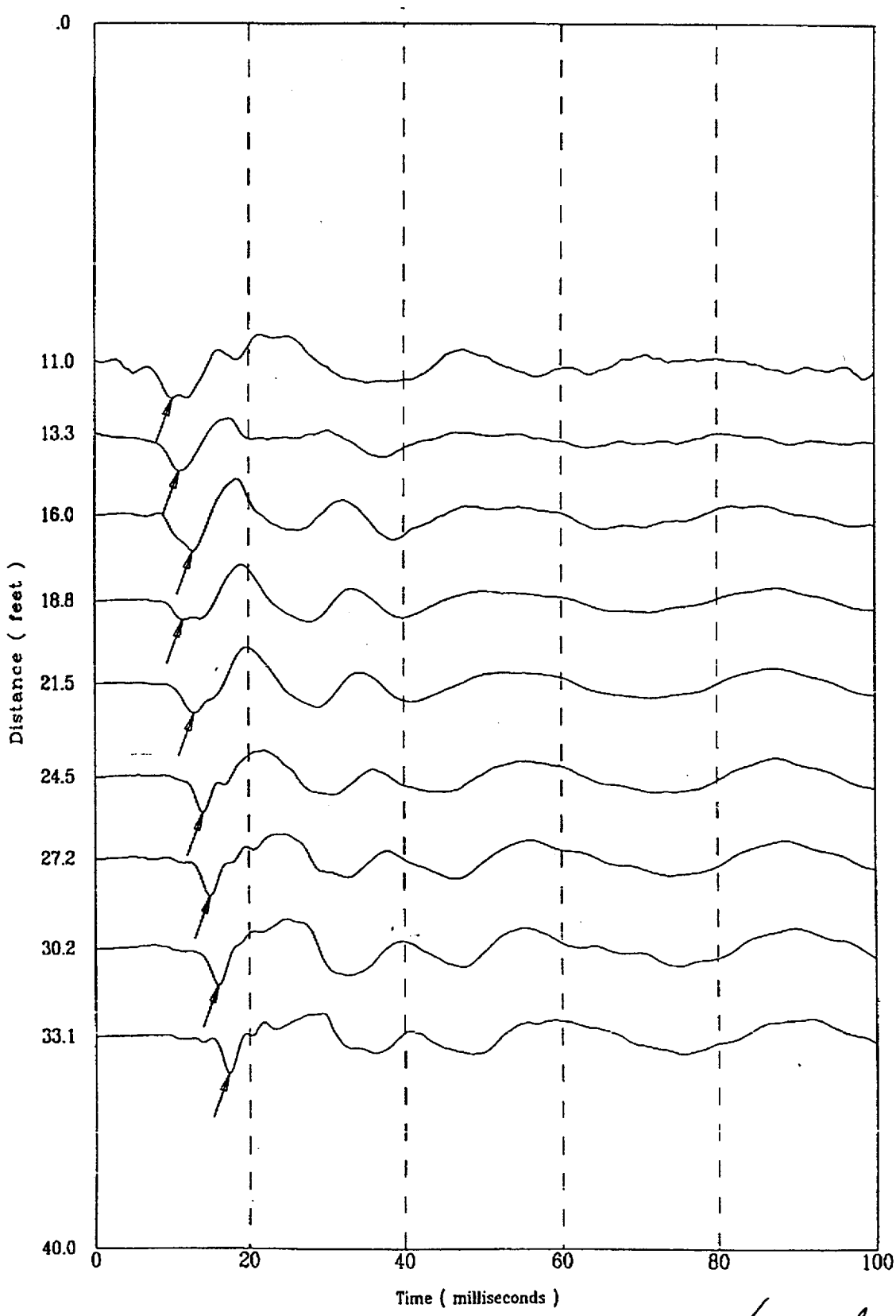


Distance (feet)	Wavespeed (ft/s)
11 - 16	1850
19 - 22	1860
22 - 30	2810
30 - 48	2200
48 - 54	2860
54 - 63	2170
63 - 69	2650

File 326m802S

Applied Research Associates, Inc.
CPT-180

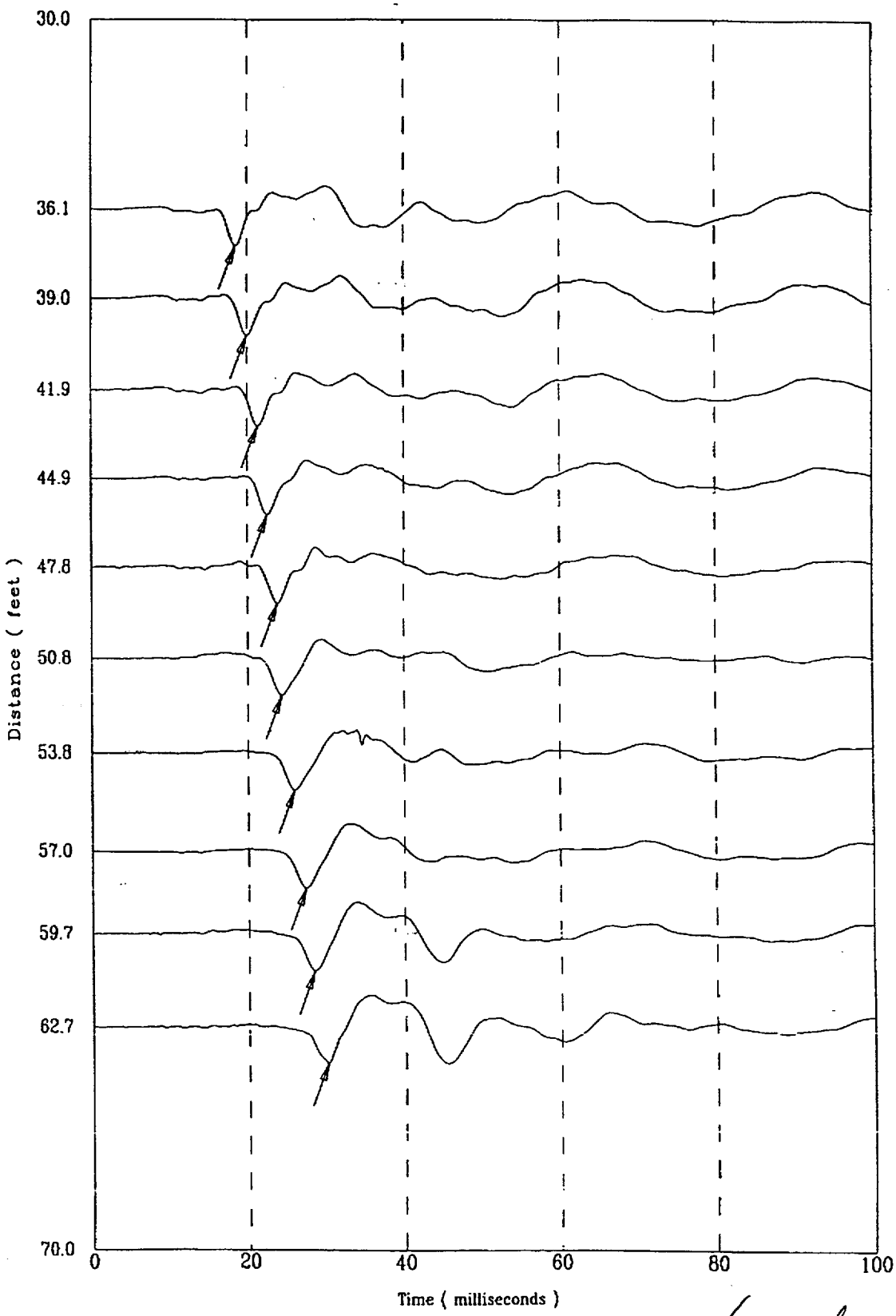
P Wave
03/26/98



326m802S

Applied Research Associates, Inc.
CPT-180

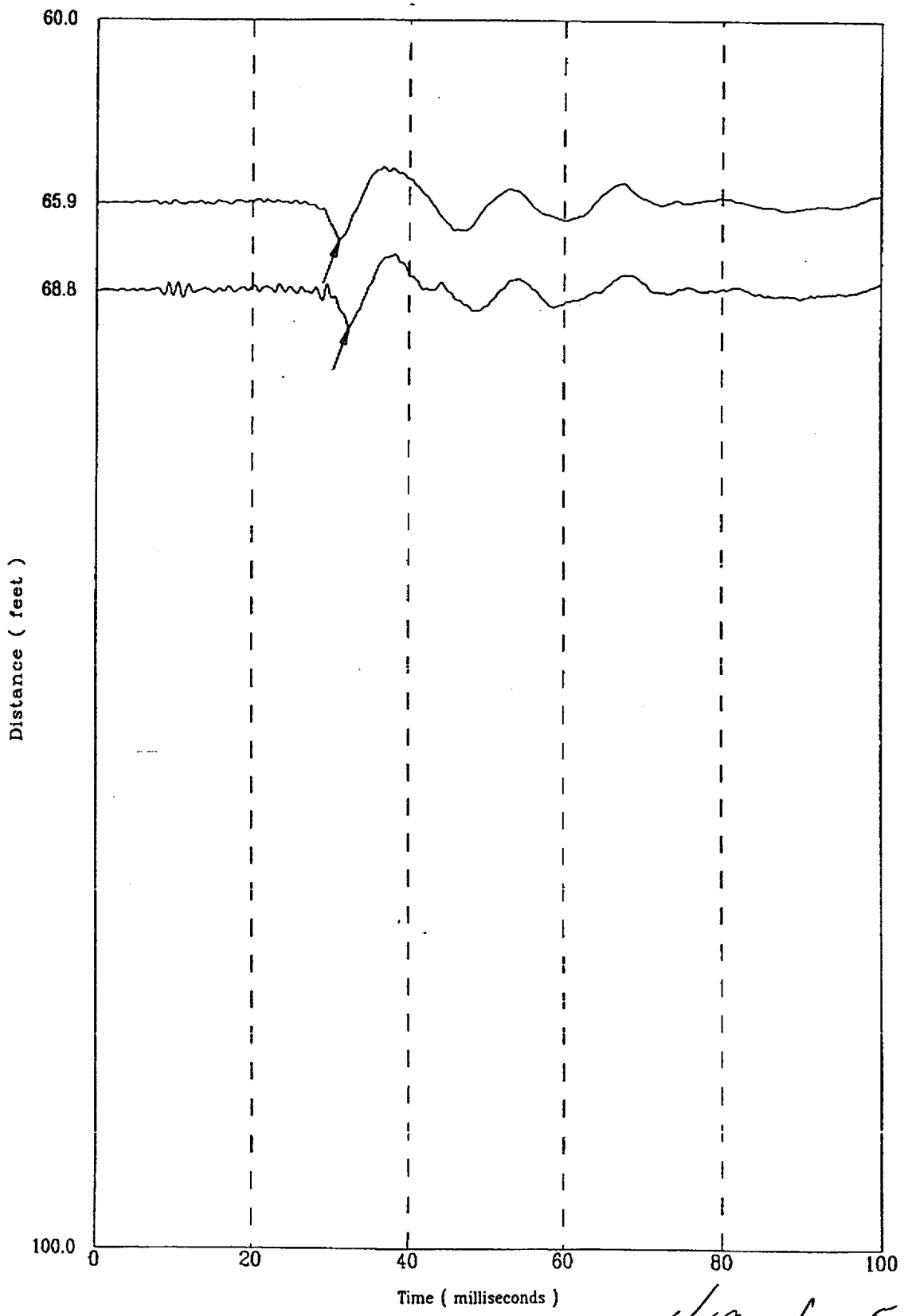
P Wave
03/26/98



File 326m802S

Applied Research Associates, Inc.
CPT-180

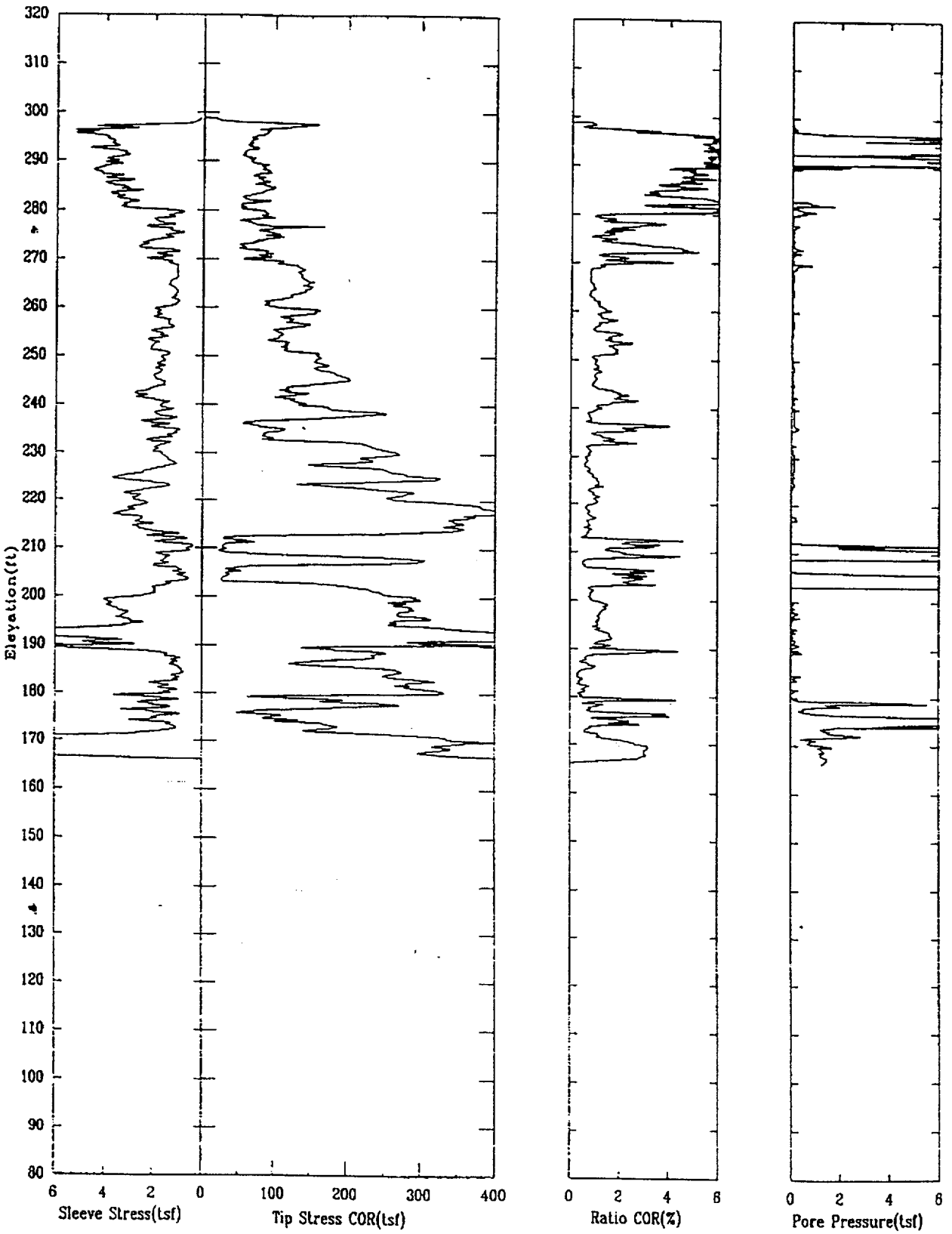
P Wave
03/26/98



F... 026m802S

CPT-181 APPLIED RESEARCH ASSOCIATES, INC. 03/10/98

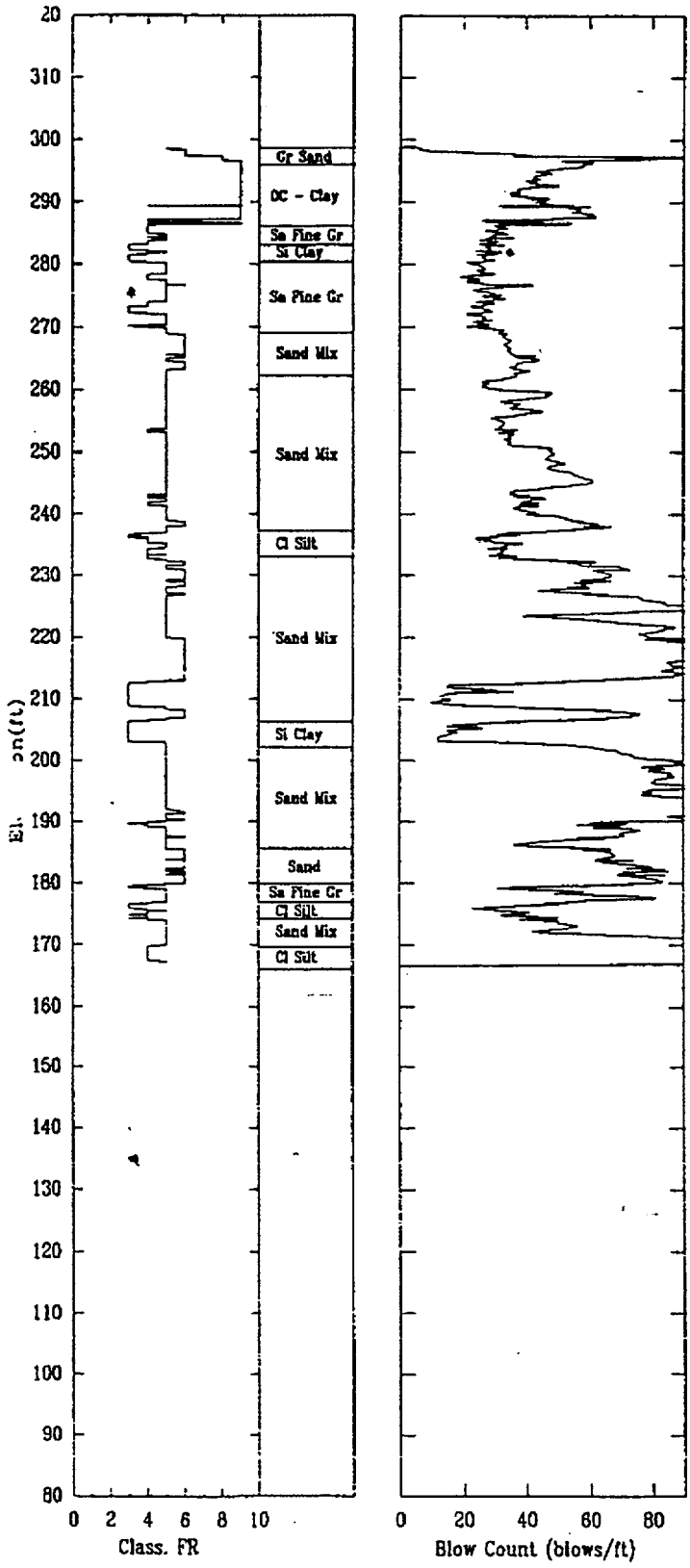
North 78510 East 55330 Elevation 304.9



File 410M801.ECP

CPT-181 APPLIED RESEARCH ASSOCIATES, INC. 03/10/98

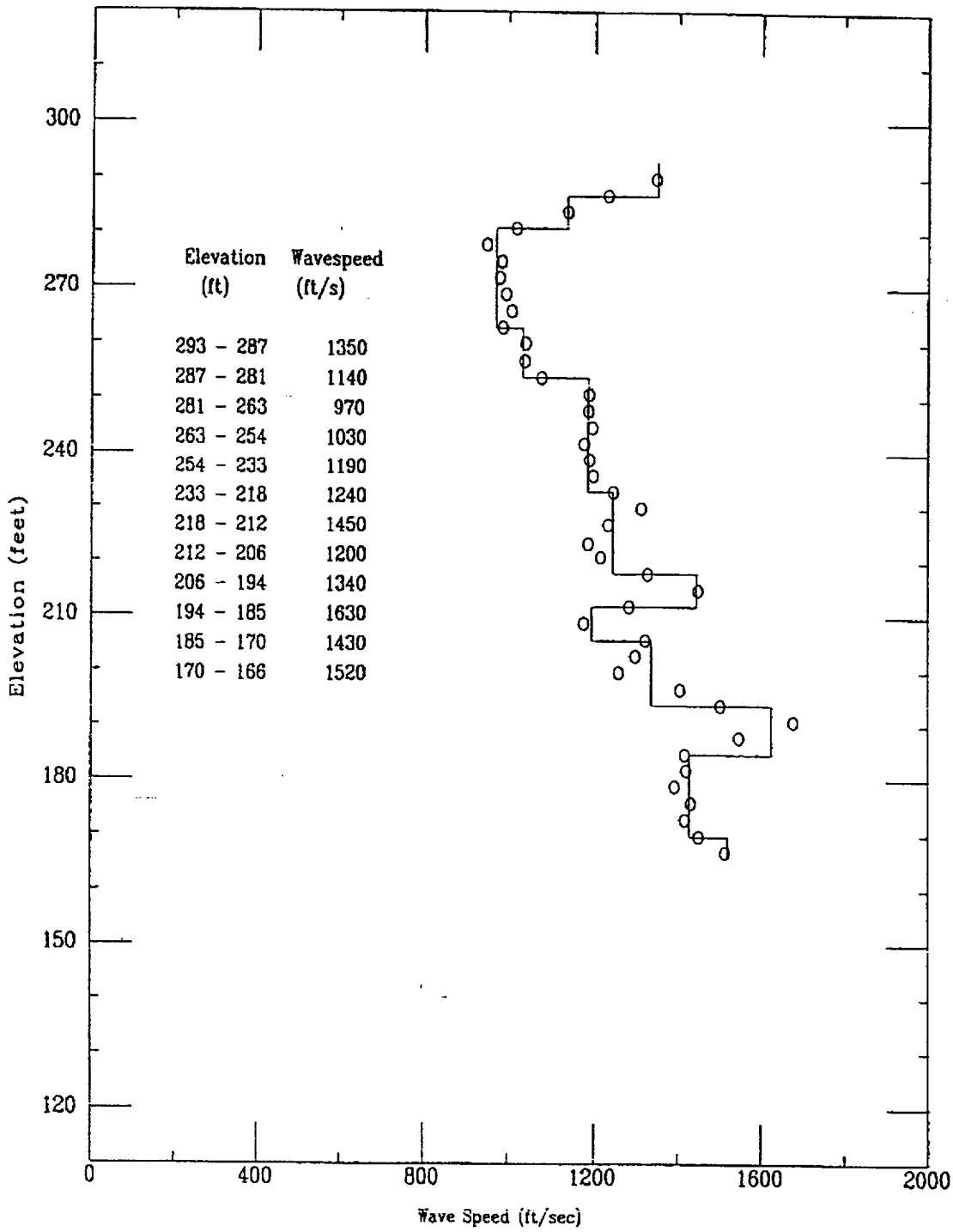
North 78510 East 55330 Elevation 304.9



File 410M801.ECP

CPT-181 APPLIED RESEARCH ASSOCIATES, INC. 03/10/98

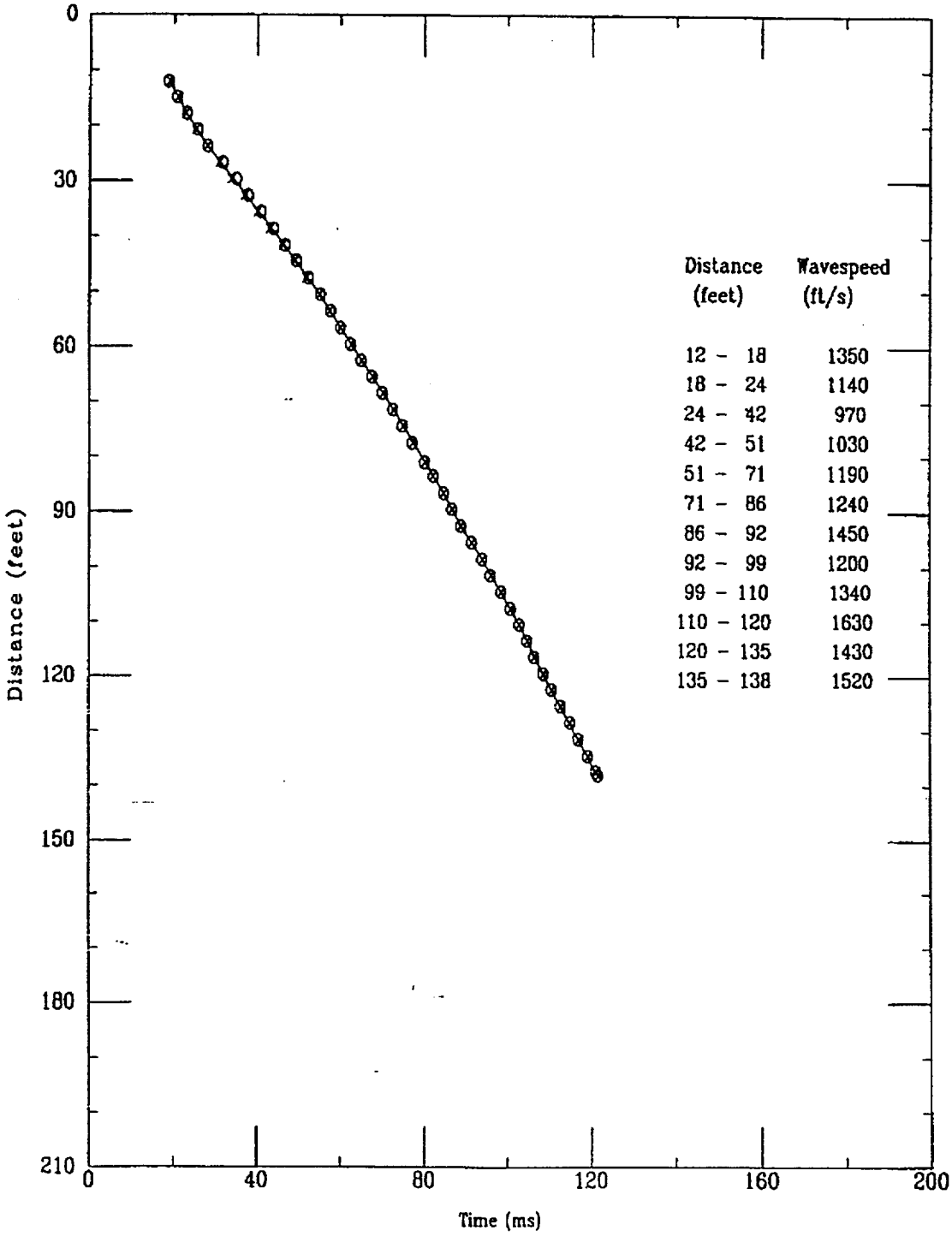
Shear Wave Speeds



File 410m601S

CPT-181 APPLIED RESEARCH ASSOCIATES, INC. 03/10/98

Shear Wave Time of Peak

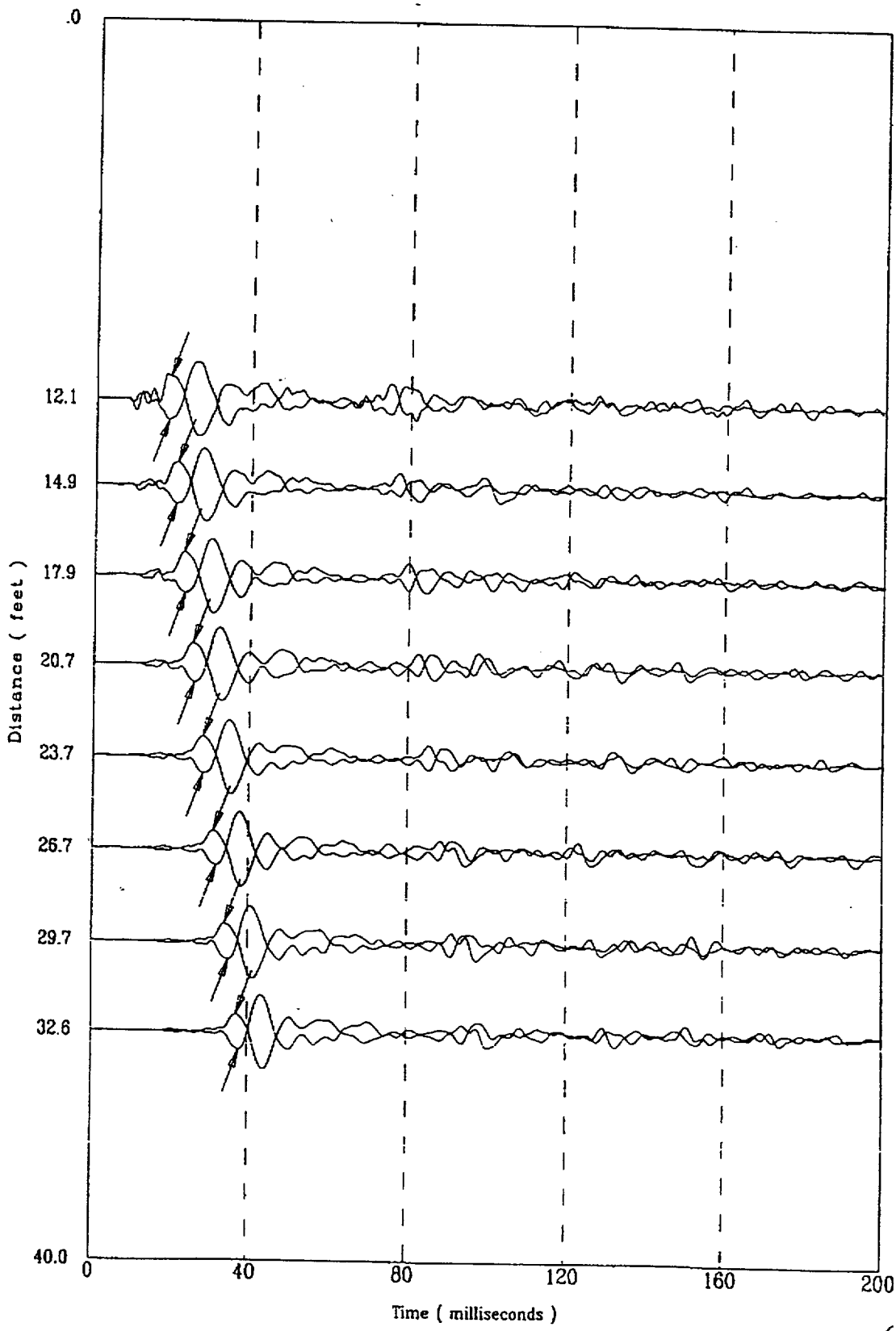


Distance (feet)	Wavespeed (ft/s)
12 - 18	1350
18 - 24	1140
24 - 42	970
42 - 51	1030
51 - 71	1190
71 - 86	1240
86 - 92	1450
92 - 99	1200
99 - 110	1340
110 - 120	1630
120 - 135	1430
135 - 138	1520

File 410m801S

Applied Research Associates, Inc.
CPT-181

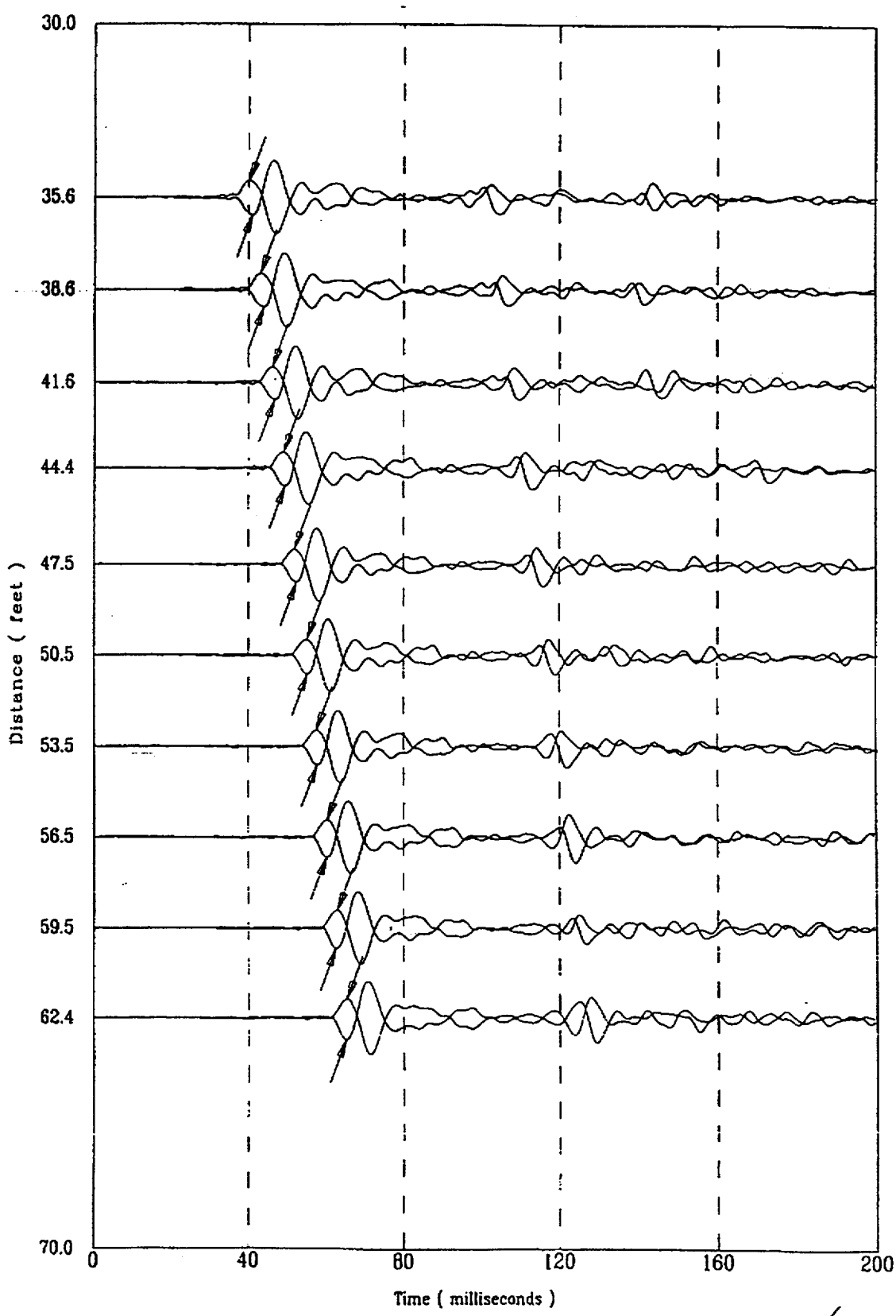
S Wave
03/10/98



File 410m801S

Applied Research Associates, Inc.
CPT-181

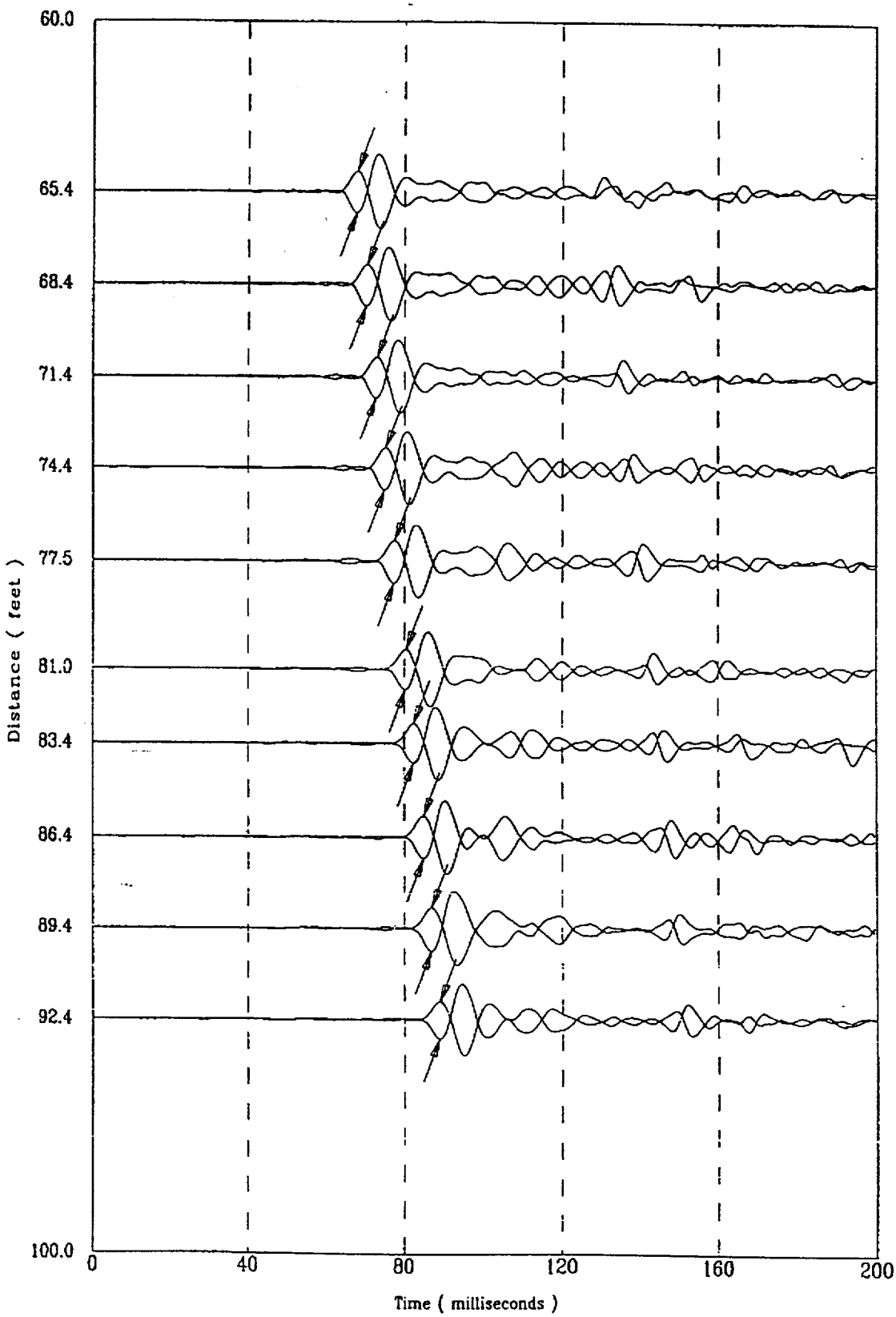
S Wave
03/10/98



.10m801S

Applied Research Associates, Inc.
CPT-181

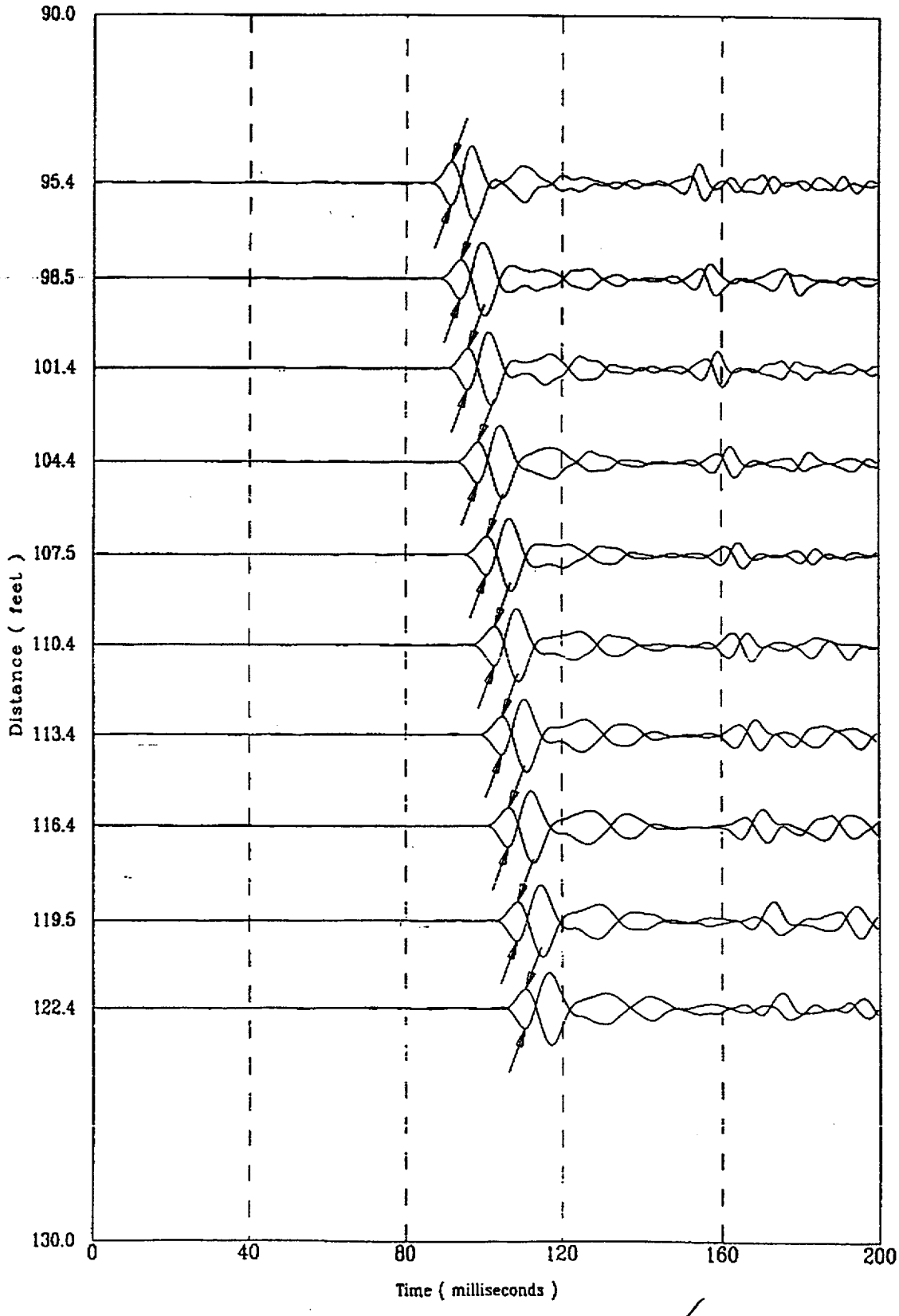
S Wave
03/10/98



File 410m601S

Applied Research Associates, Inc.
CPT-181

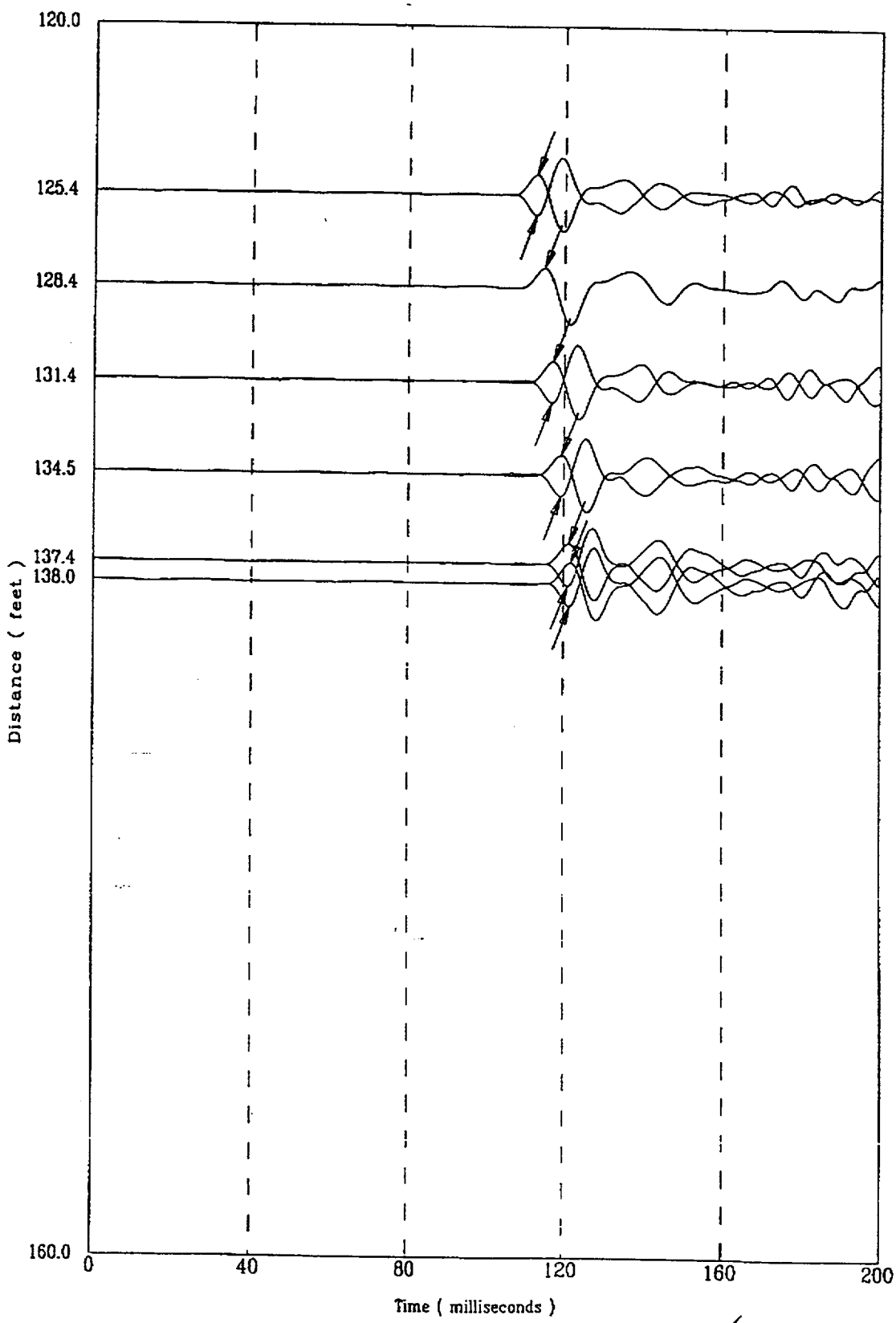
S Wave
03/10/98



10m801S

Applied Research Associates, Inc.
CPT-181

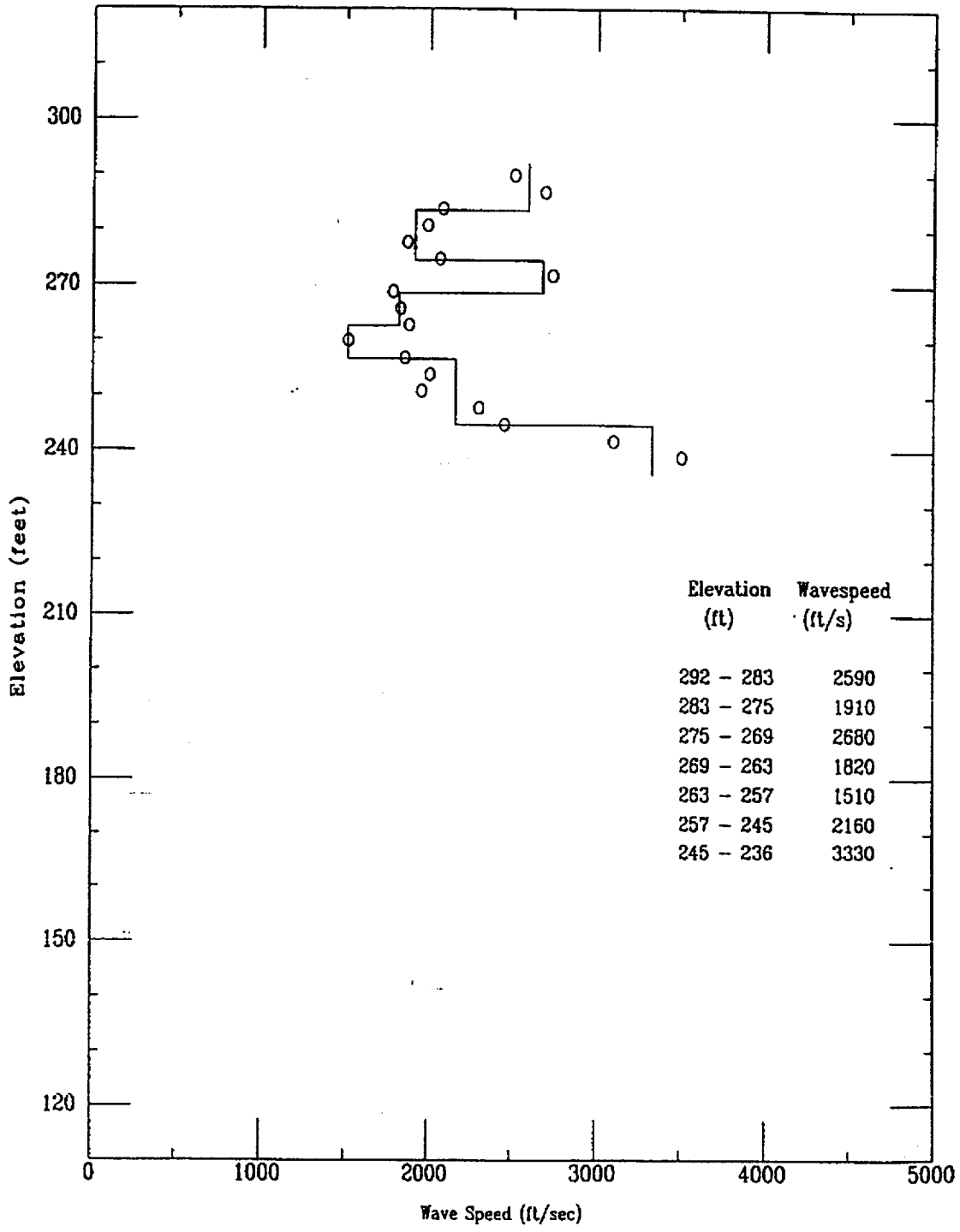
S Wave
03/10/98



File 410m801S

CPT-181 APPLIED RESEARCH ASSOCIATES, INC. 03/10/98

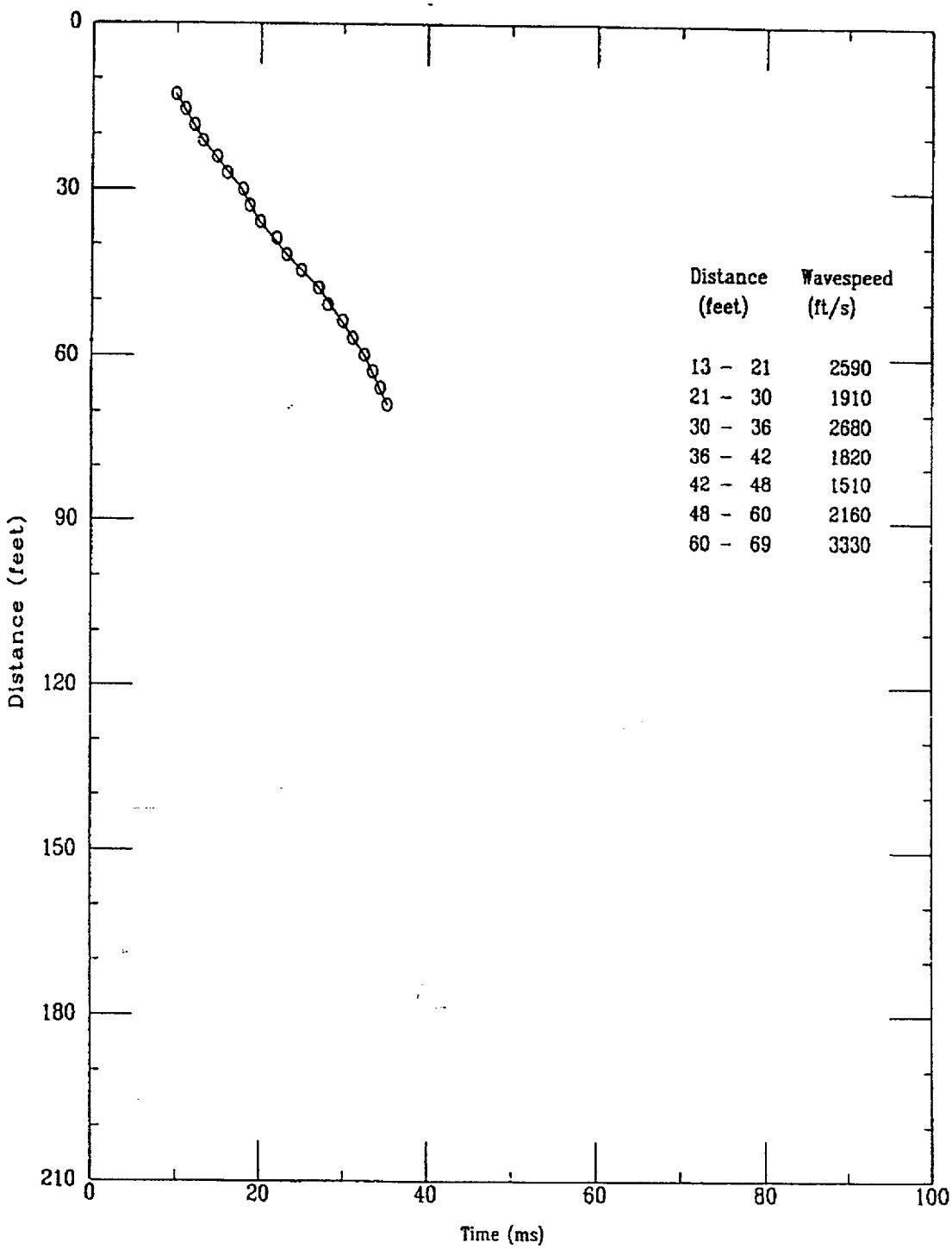
Compression Wave Speeds



File 410m801S

CPT-181 APPLIED RESEARCH ASSOCIATES, INC. 03/10/98

Compression Wave Time of Peak

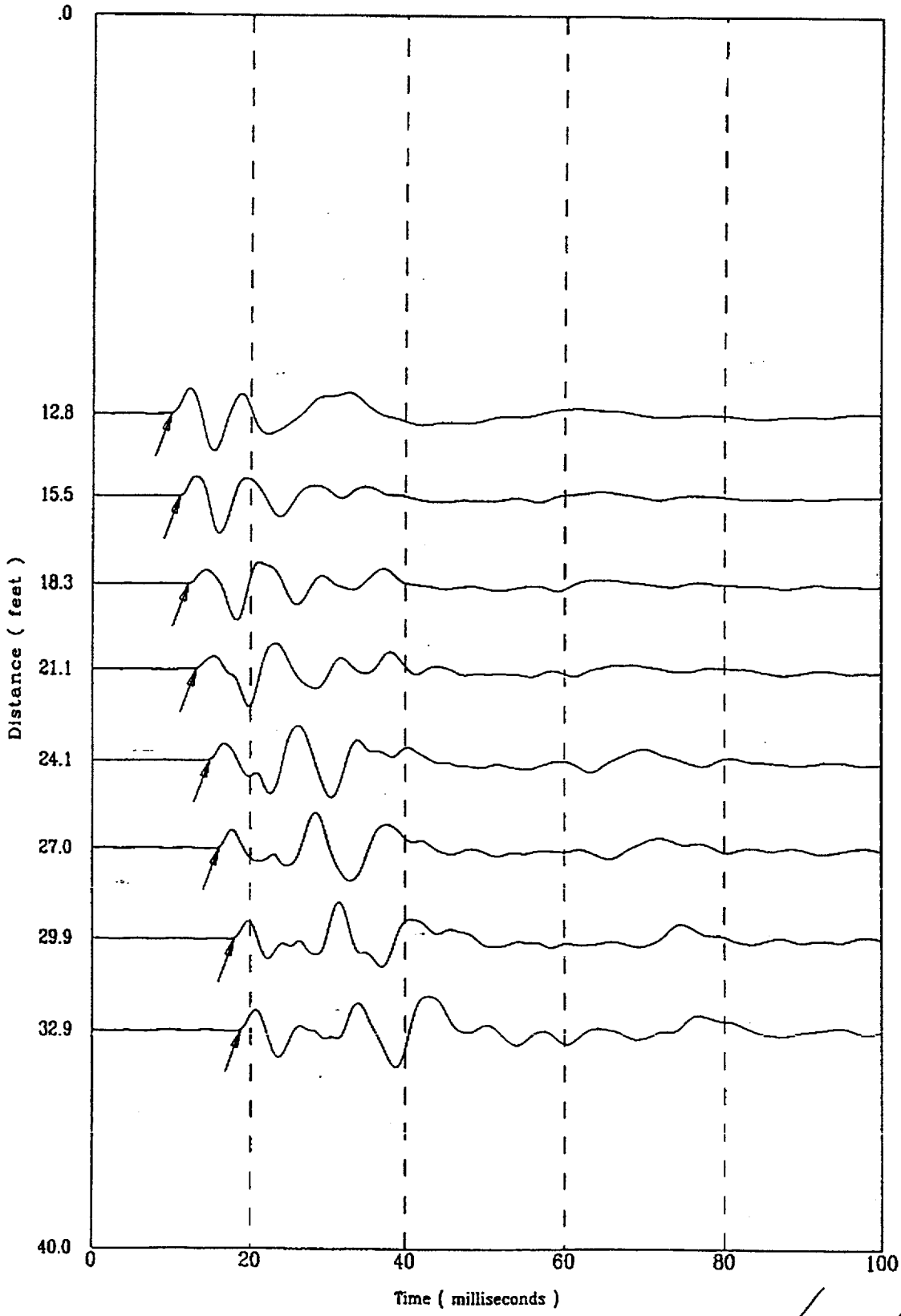


Distance (feet)	Wavespeed (ft/s)
13 - 21	2590
21 - 30	1910
30 - 36	2680
36 - 42	1820
42 - 48	1510
48 - 60	2160
60 - 69	3330

File 410m801S

Applied Research Associates
CPT-181

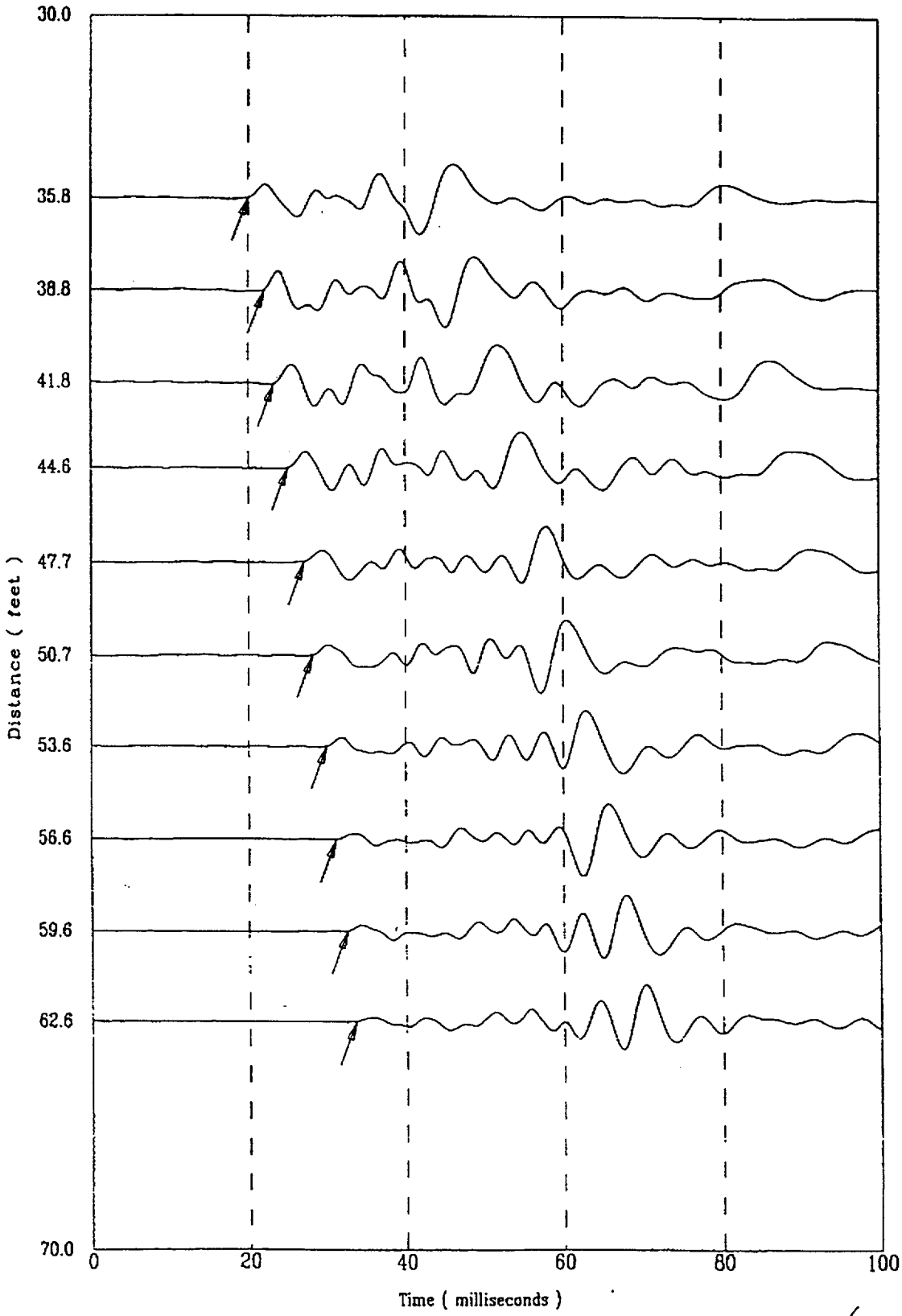
P Wave
03/10/98



.10m801S

Applied Research Associates
CPT-181

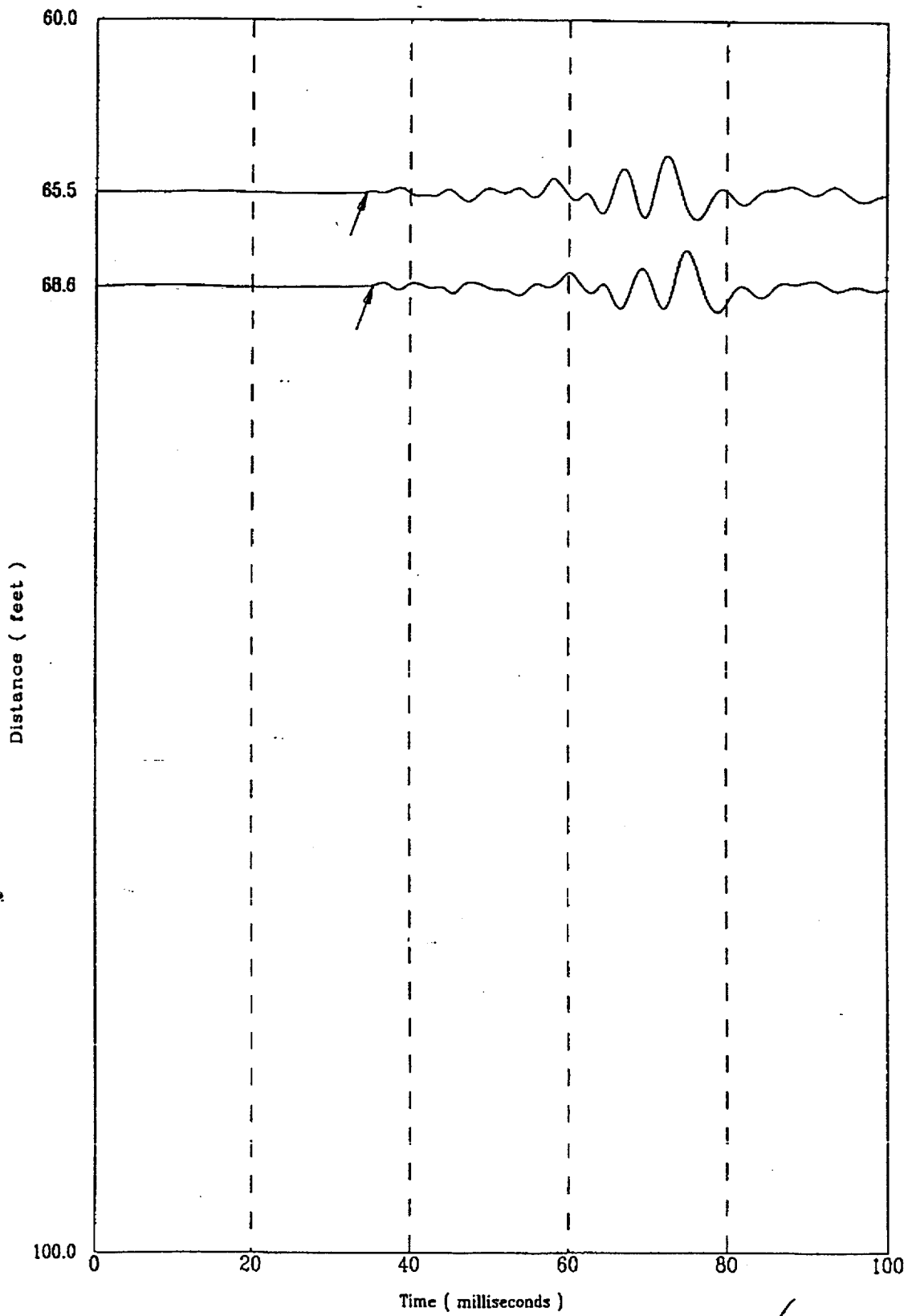
P Wave
03/10/98



File 410m801S

Applied Research Associates
CPT-181

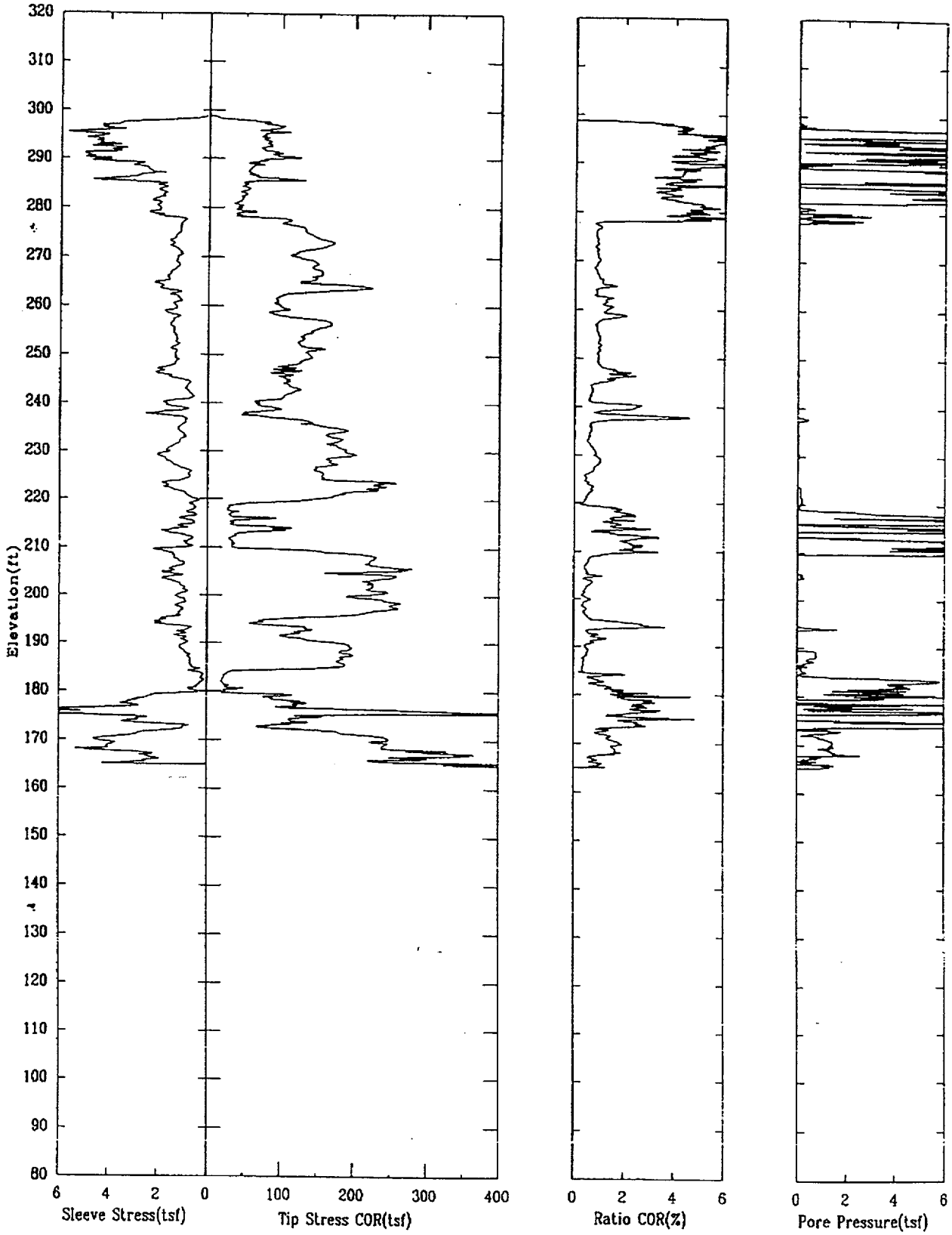
P Wave
03/10/98



/m801S

CPT-182 APPLIED RESEARCH ASSOCIATES, INC. 03/23/98

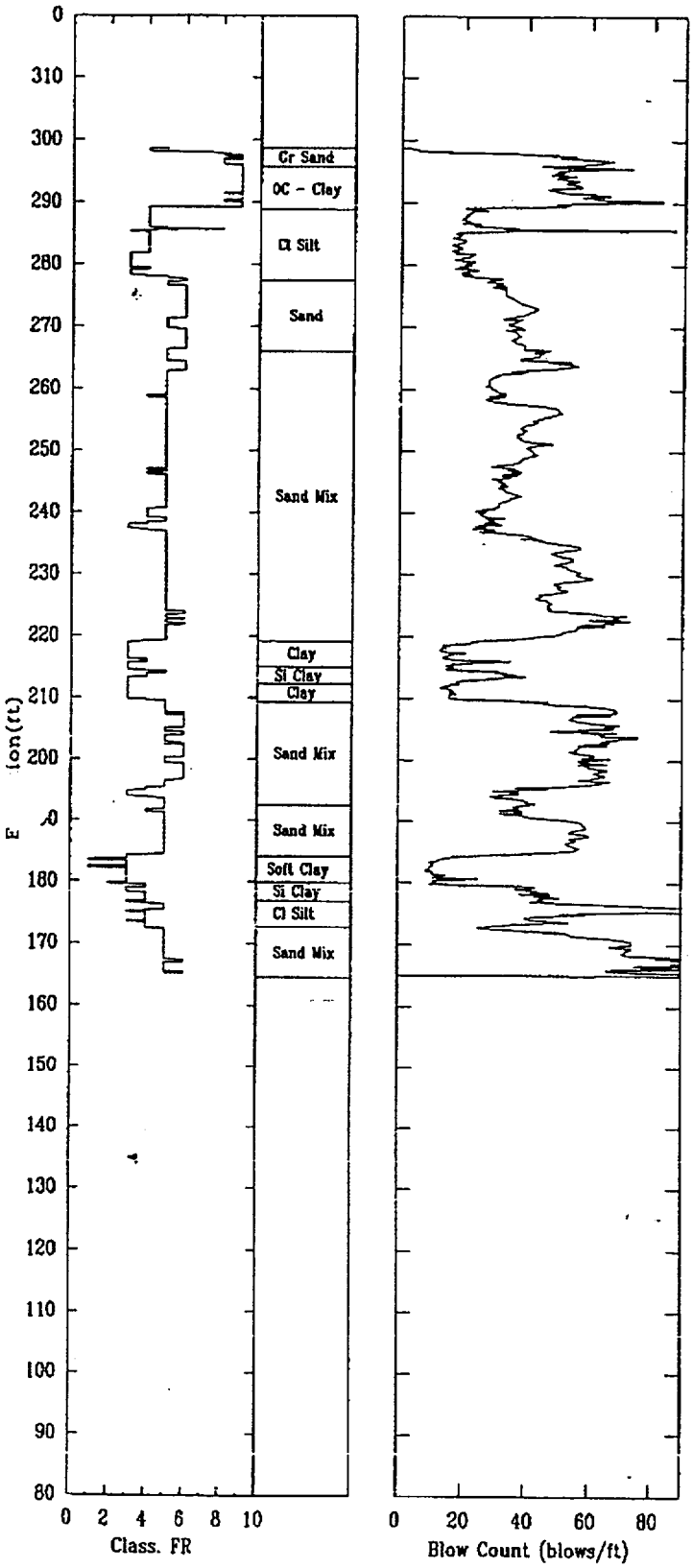
North 78510 East 55451 Elevation 304.8



File 323M801.ECP

CPT-182 APPLIED RESEARCH ASSOCIATES, INC. 03/23/98

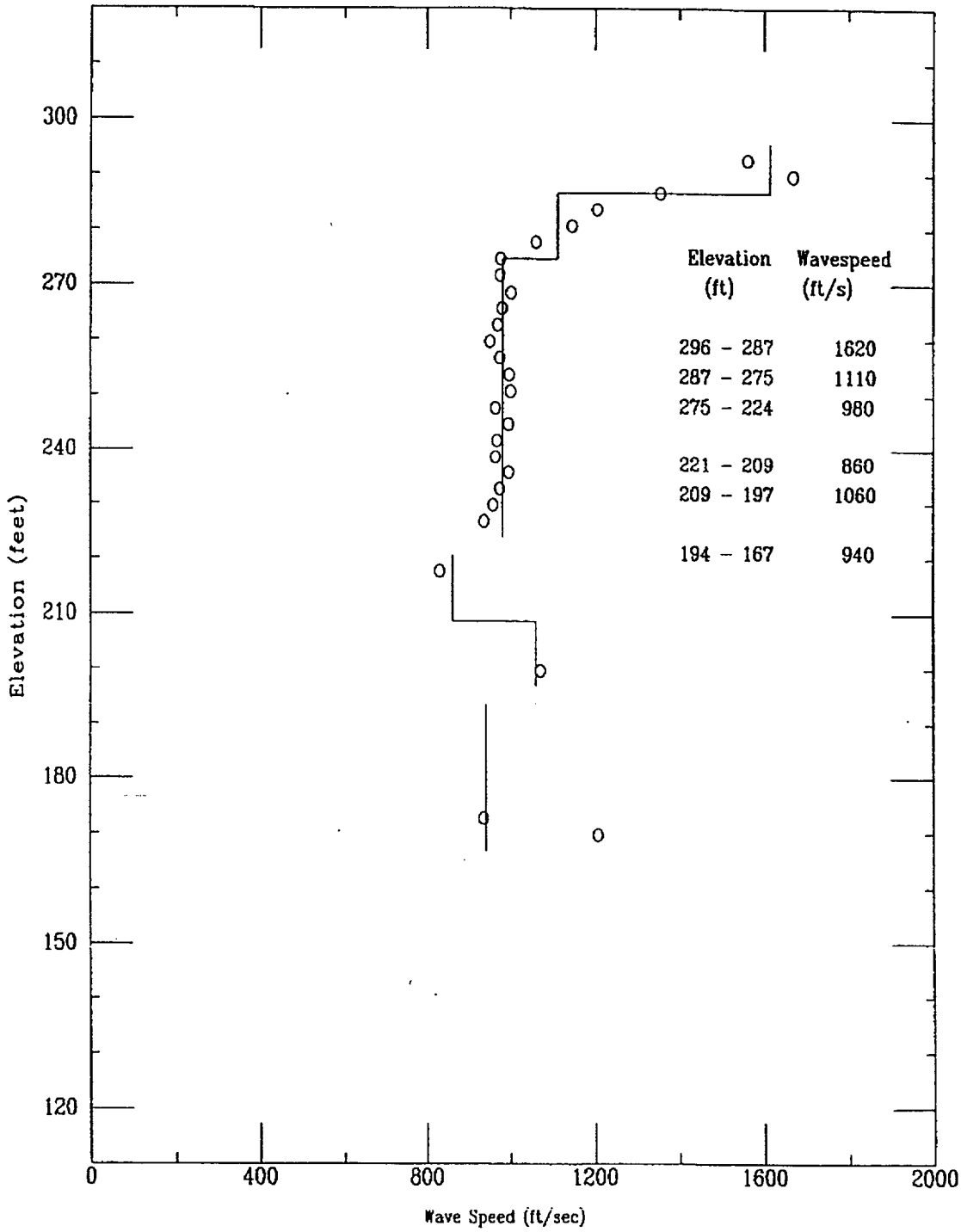
North 78510 East 55451 Elevation 304.8



File 323M801.ECP

CPT-182 APPLIED RESEARCH ASSOCIATES, INC. 03/23/98

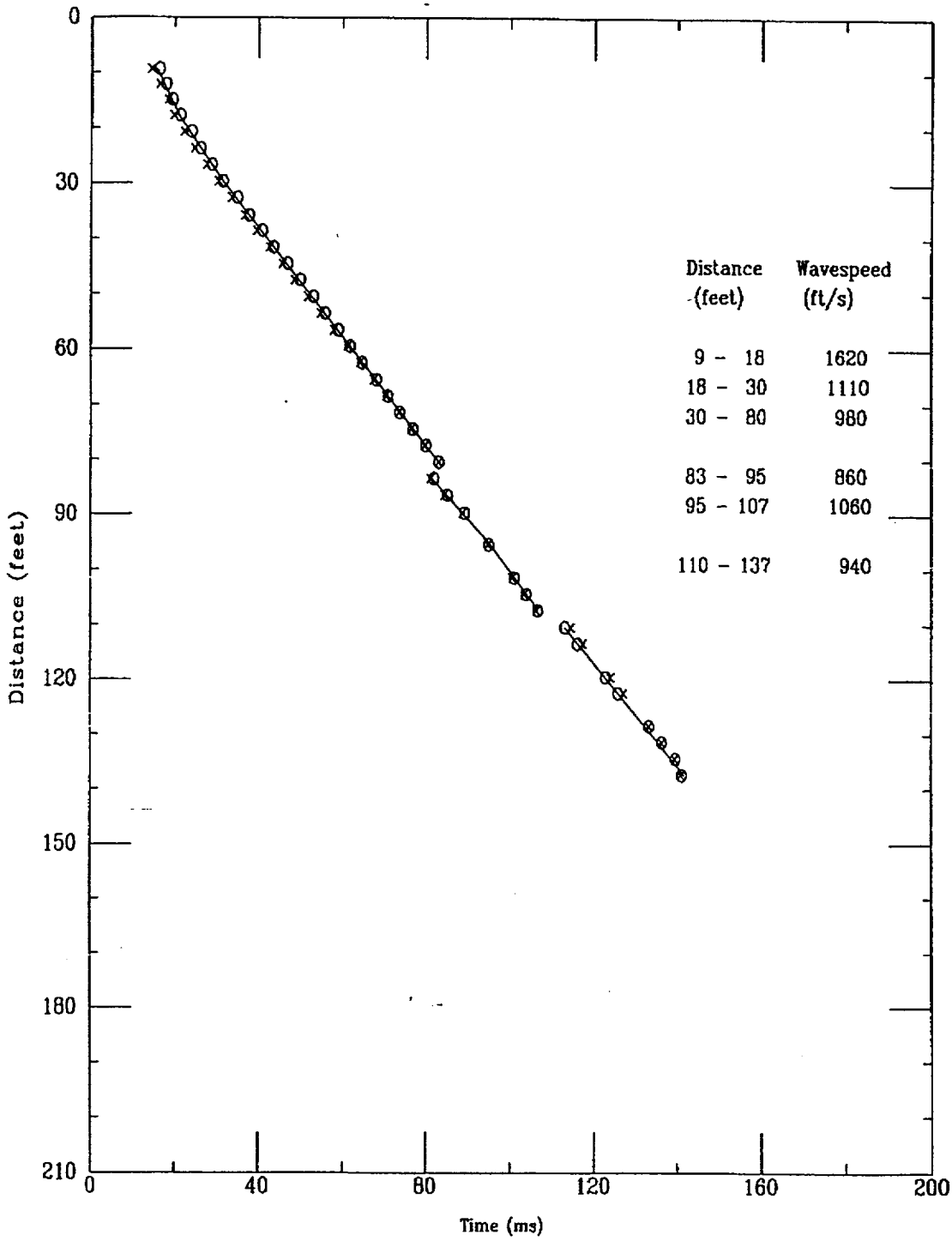
Shear Wave Speeds



File 323m801S

CPT-182 APPLIED RESEARCH ASSOCIATES, INC. 03/23/98

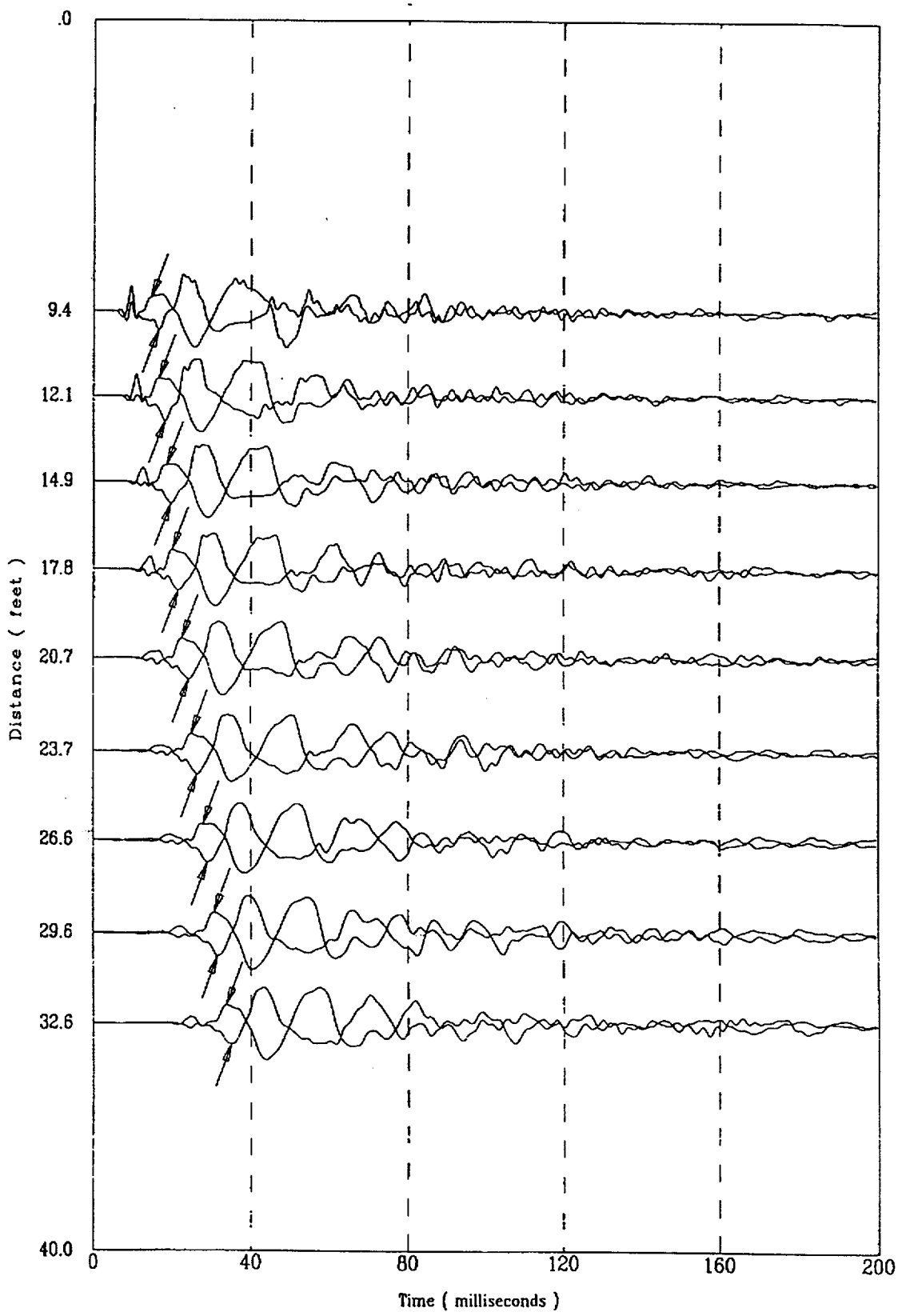
Shear Wave Time of Peak



File 323m801S

Applied Research Associates, Inc.
CPT-182

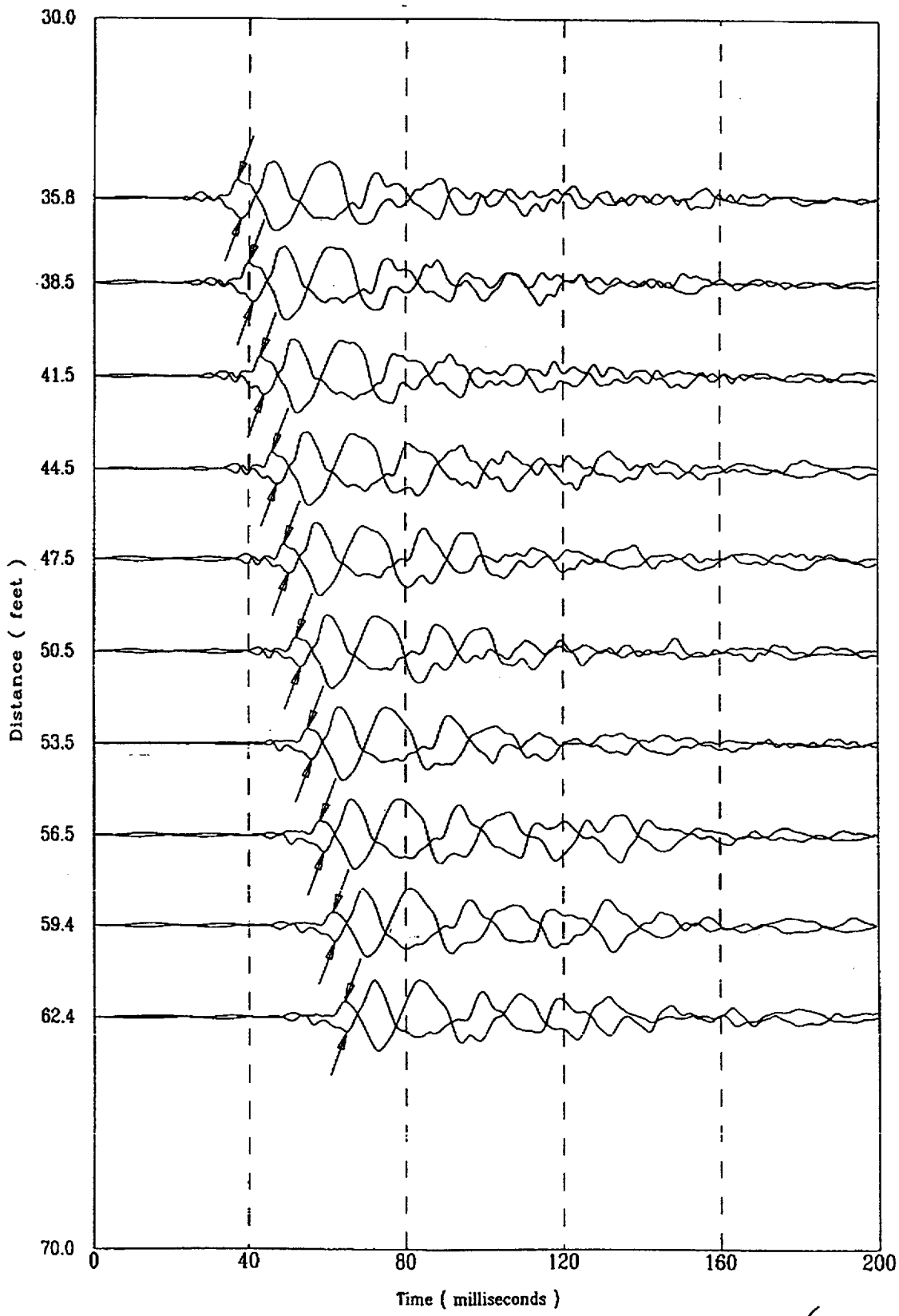
S Wave
03/23/98



File 323m801S

Applied Research Associates, Inc.
CPT-182

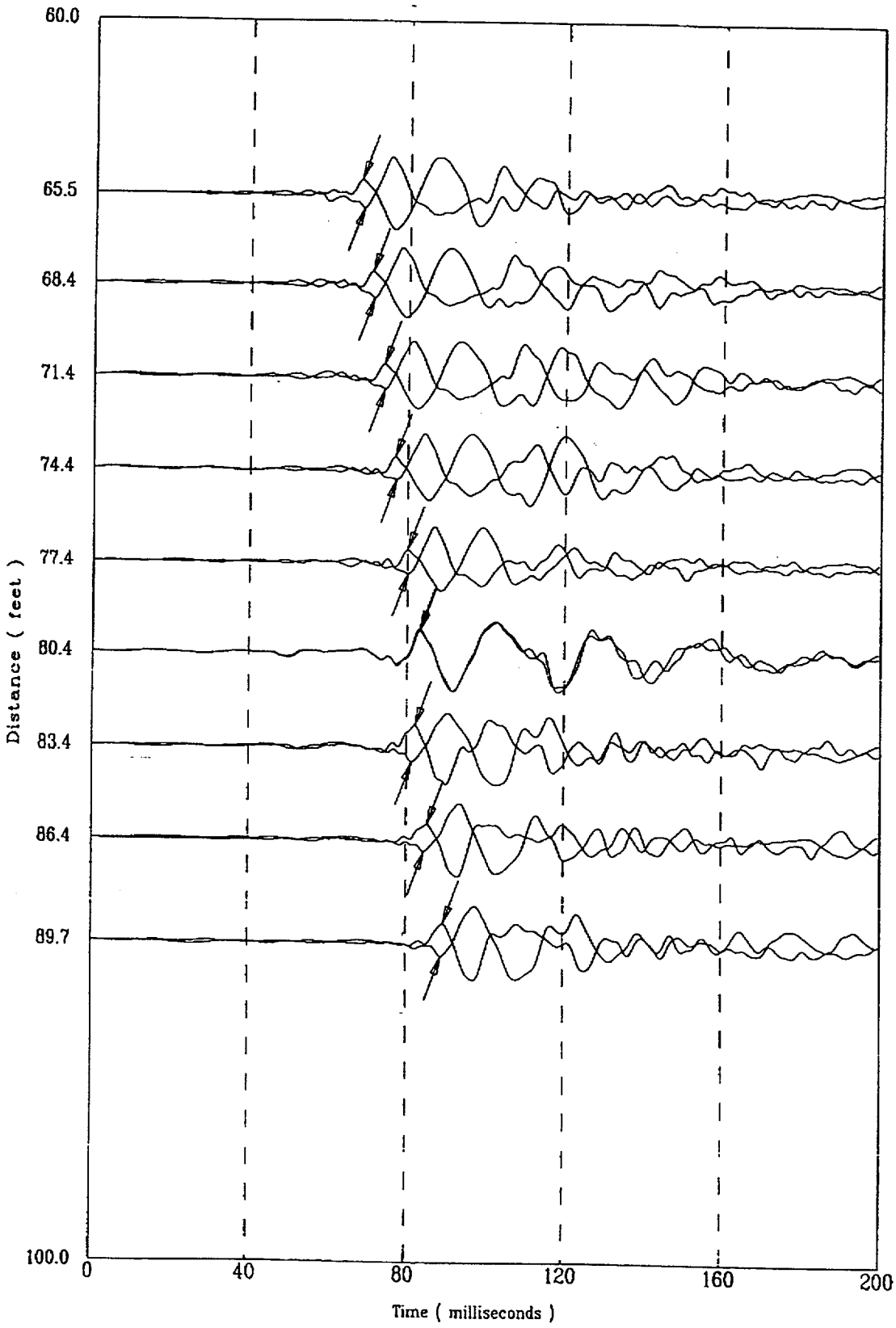
S Wave
03/23/98



J23m801S

Applied Research Associates, Inc.
CPT-182

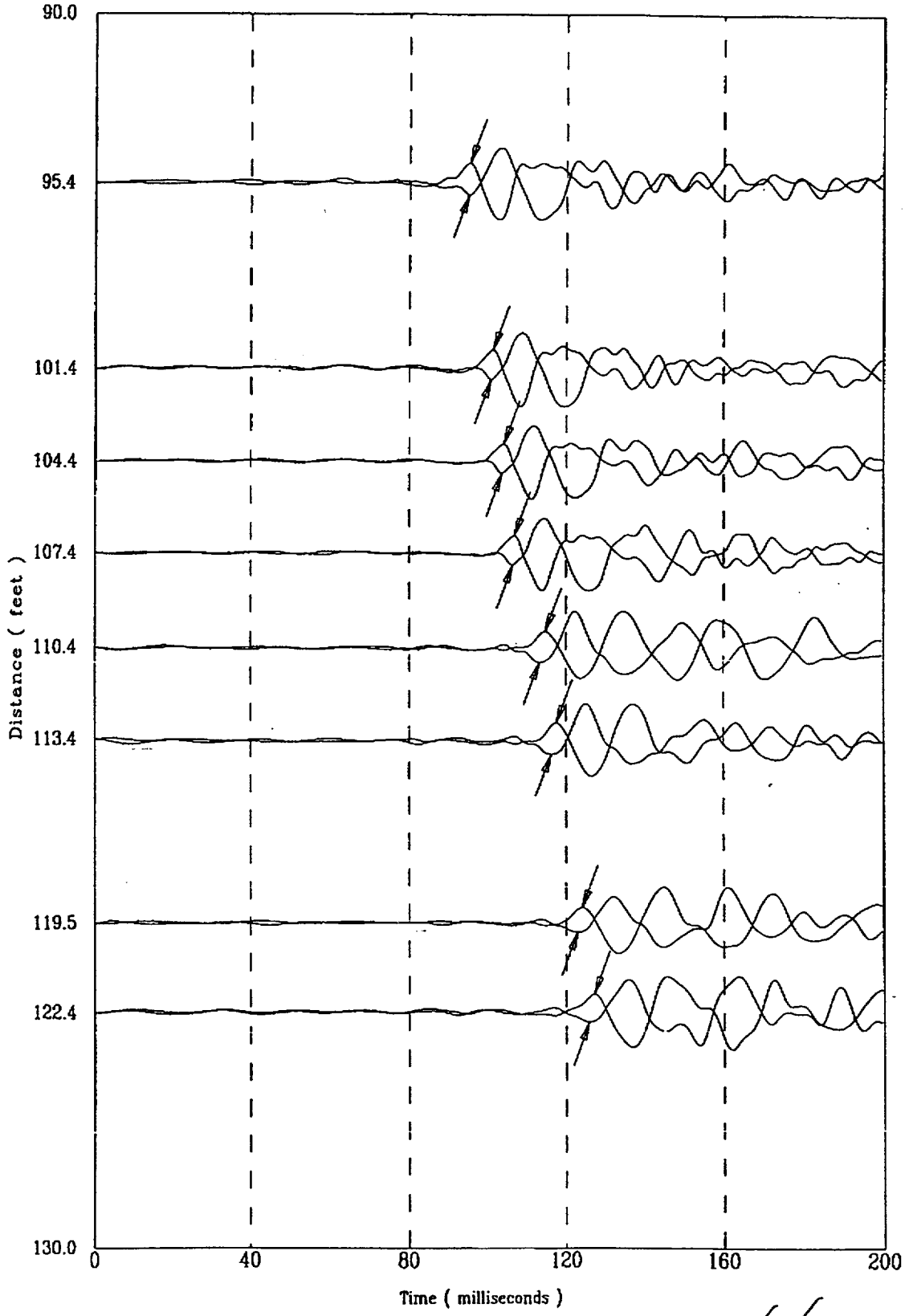
S Wave
03/23/98



File 323m801S

Applied Research Associates, Inc.
CPT-182

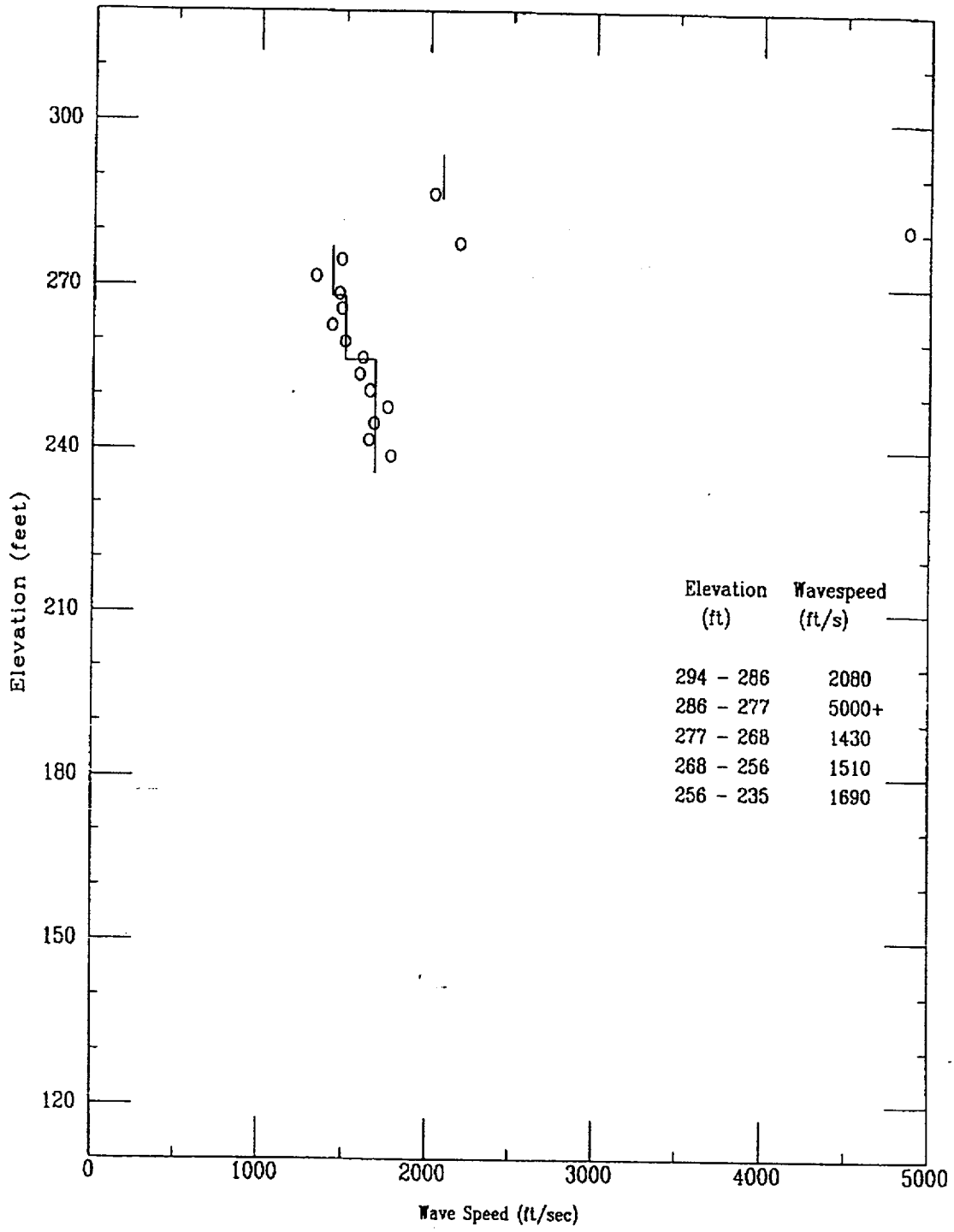
S Wave
03/23/98



J23m801S

CPT-182 APPLIED RESEARCH ASSOCIATES, INC. 03/23/98

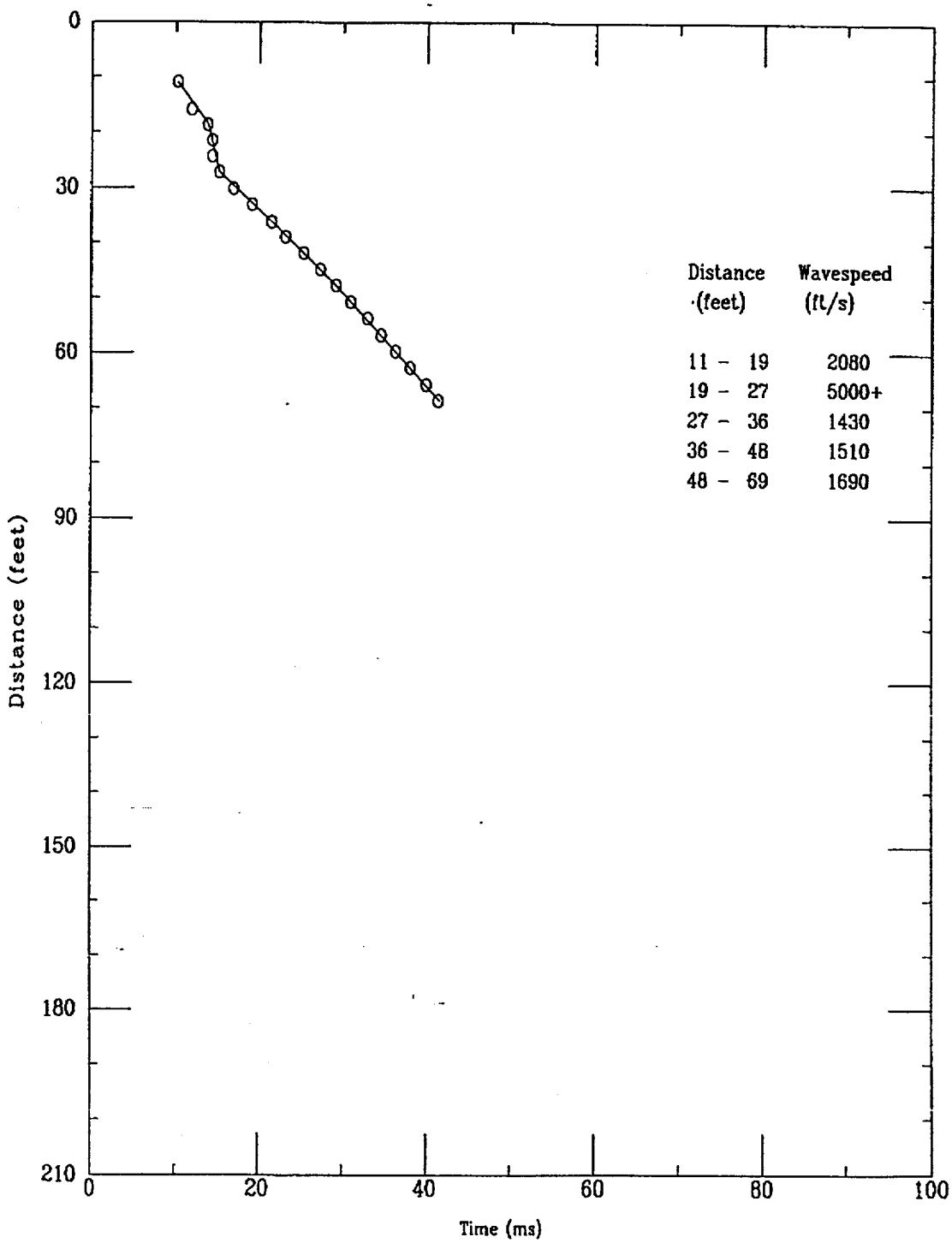
Compression Wave Speeds



File 323m801S

CPT-182 APPLIED RESEARCH ASSOCIATES, INC. 03/23/98

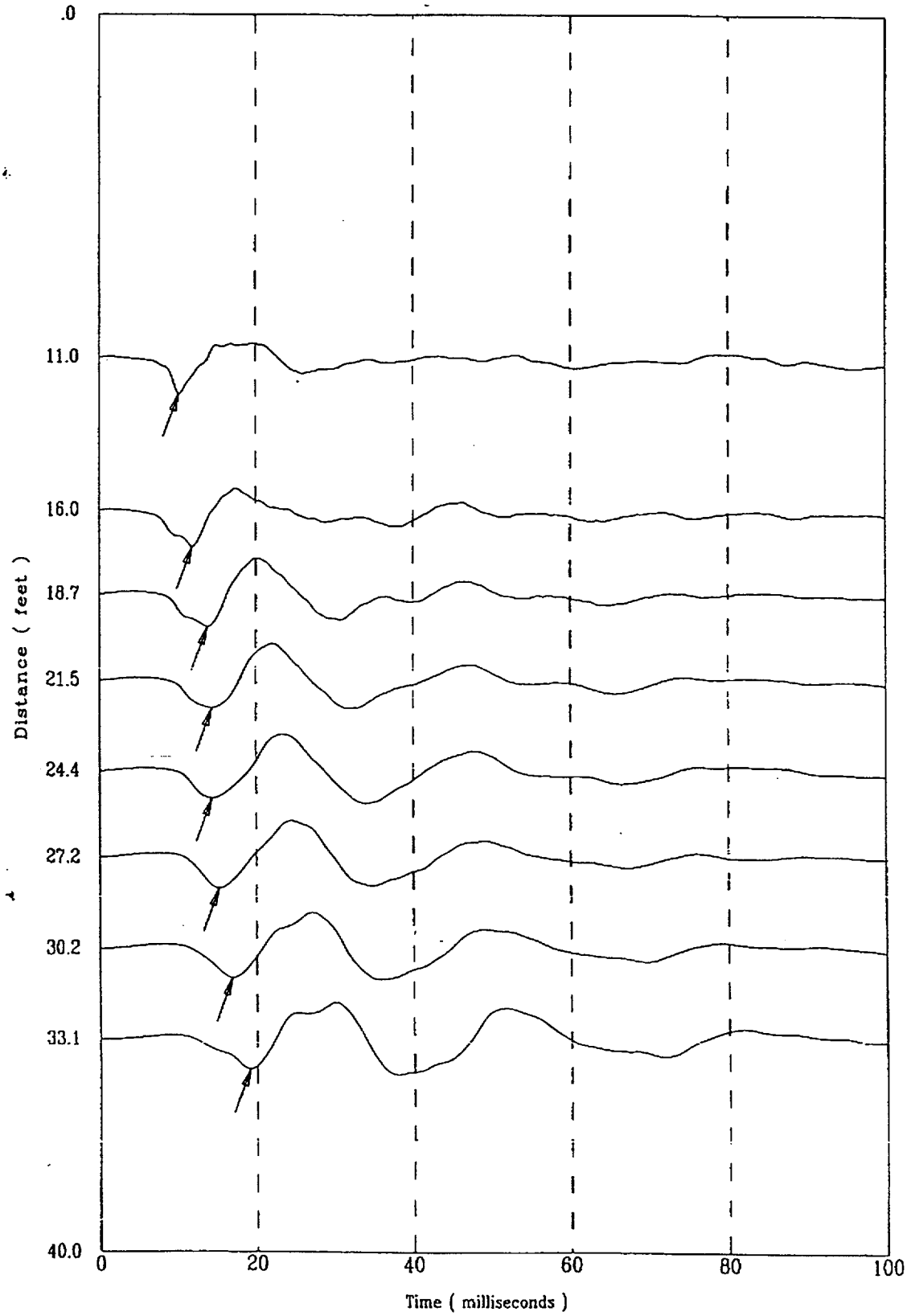
Compression Wave Time of Peak



File 323m801S

Applied Research Associates, Inc.
CPT-182

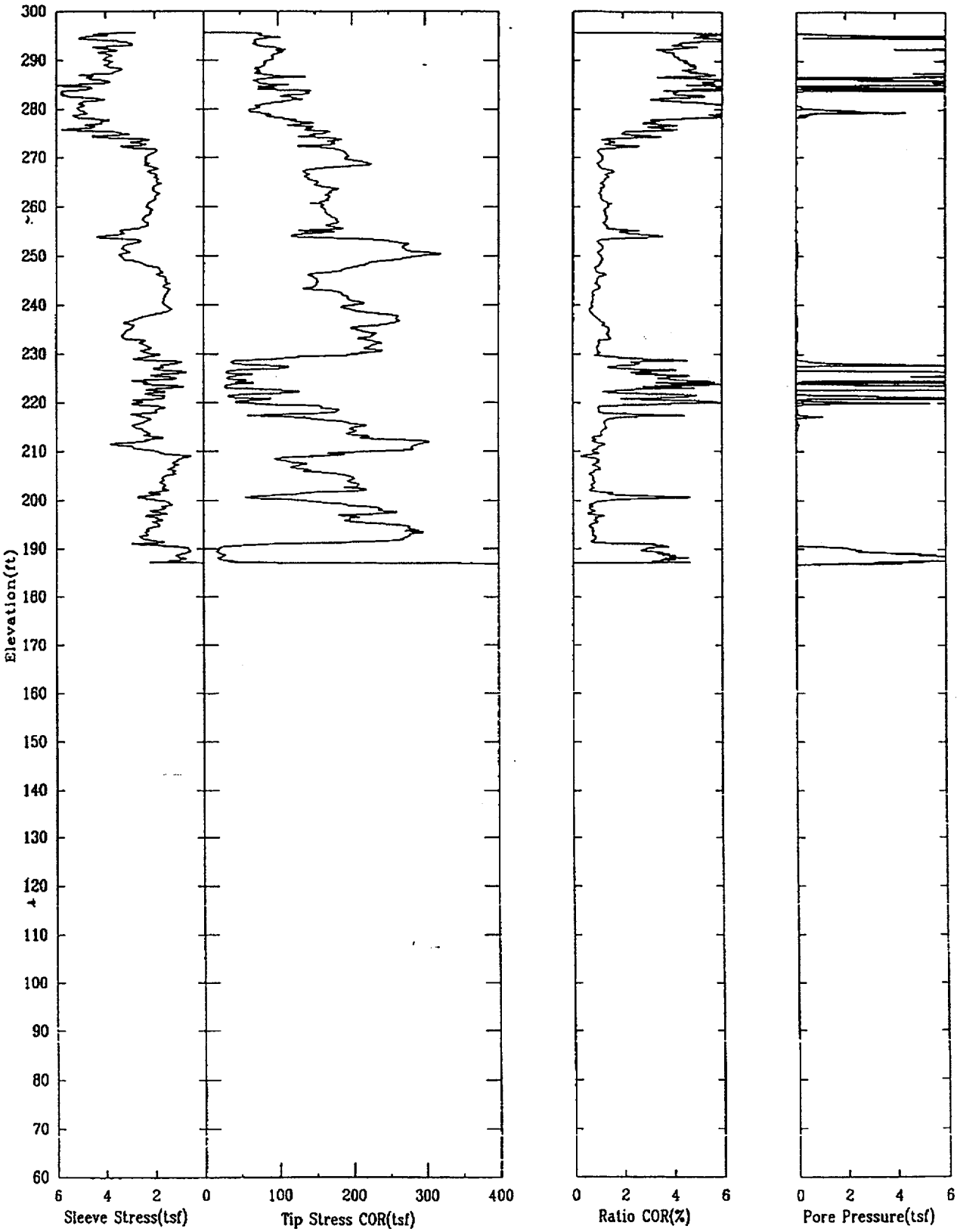
P Wave
03/23/98



File 323m801S

CPT-183 APPLIED RESEARCH ASSOCIATES, INC. 03/25/98

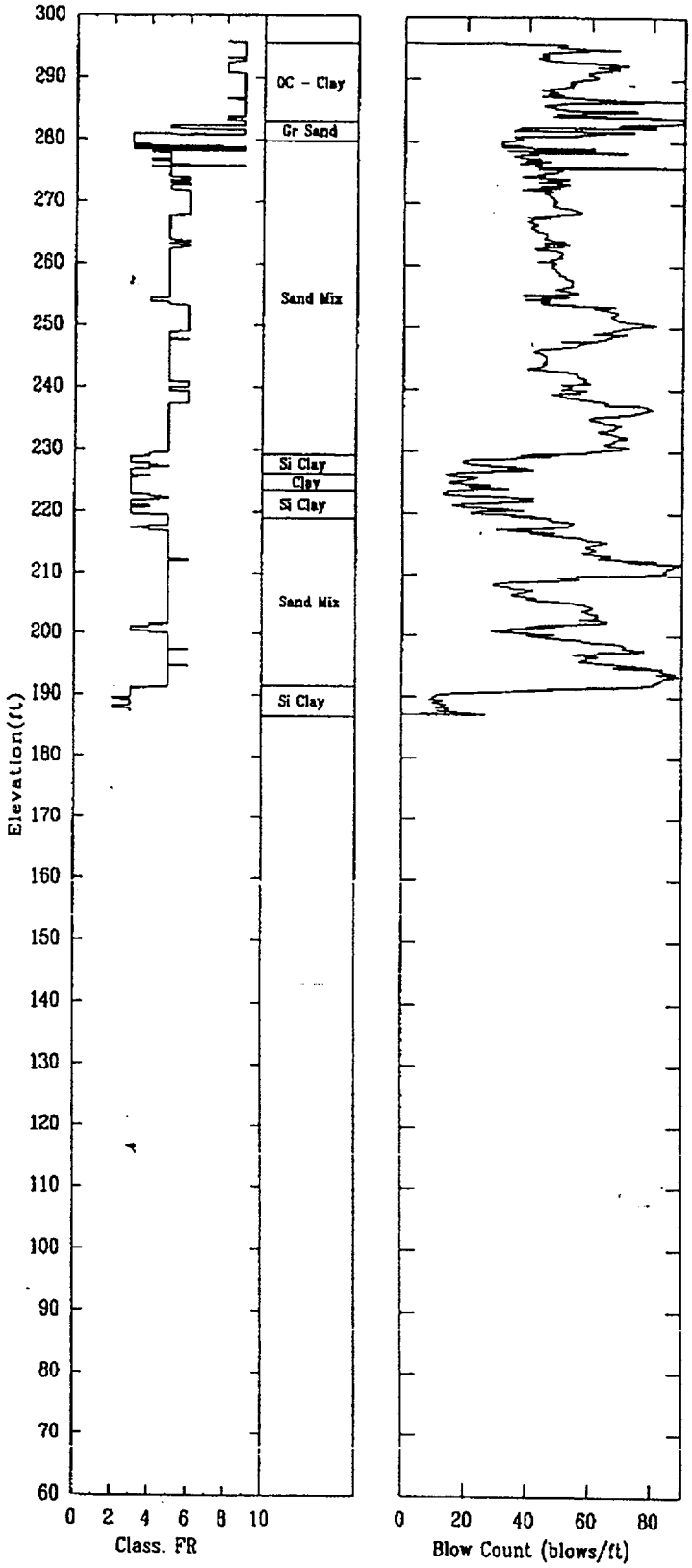
North 78510 East 55583 Elevation 301.7



File 325M804.ECP

CPT-183 APPLIED RESEARCH ASSOCIATES, INC. 03/25/98

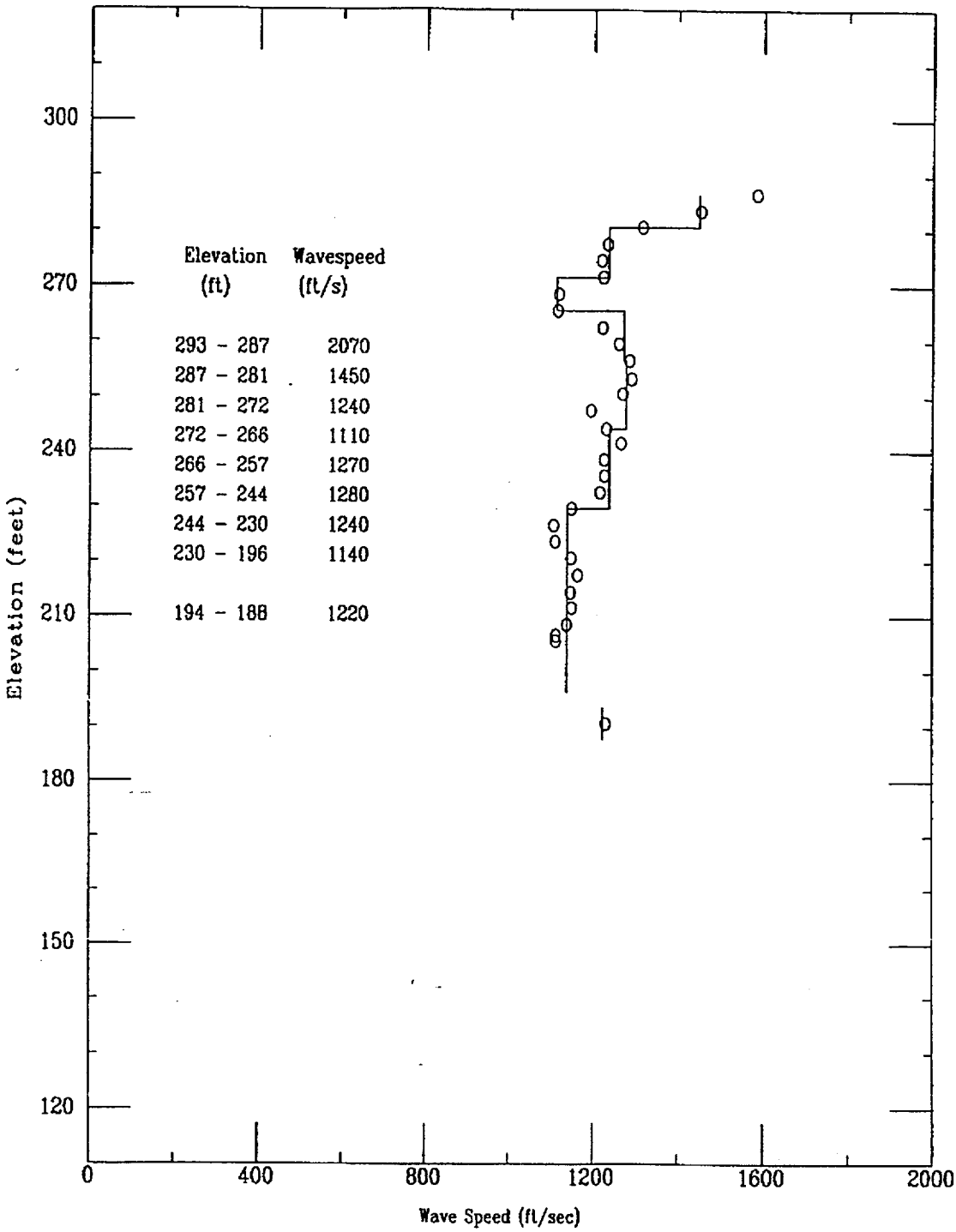
North 78510 East 55583 Elevation 301.7



File 325M804.ECP

CPT-183 APPLIED RESEARCH ASSOCIATES, INC. 03/25/98

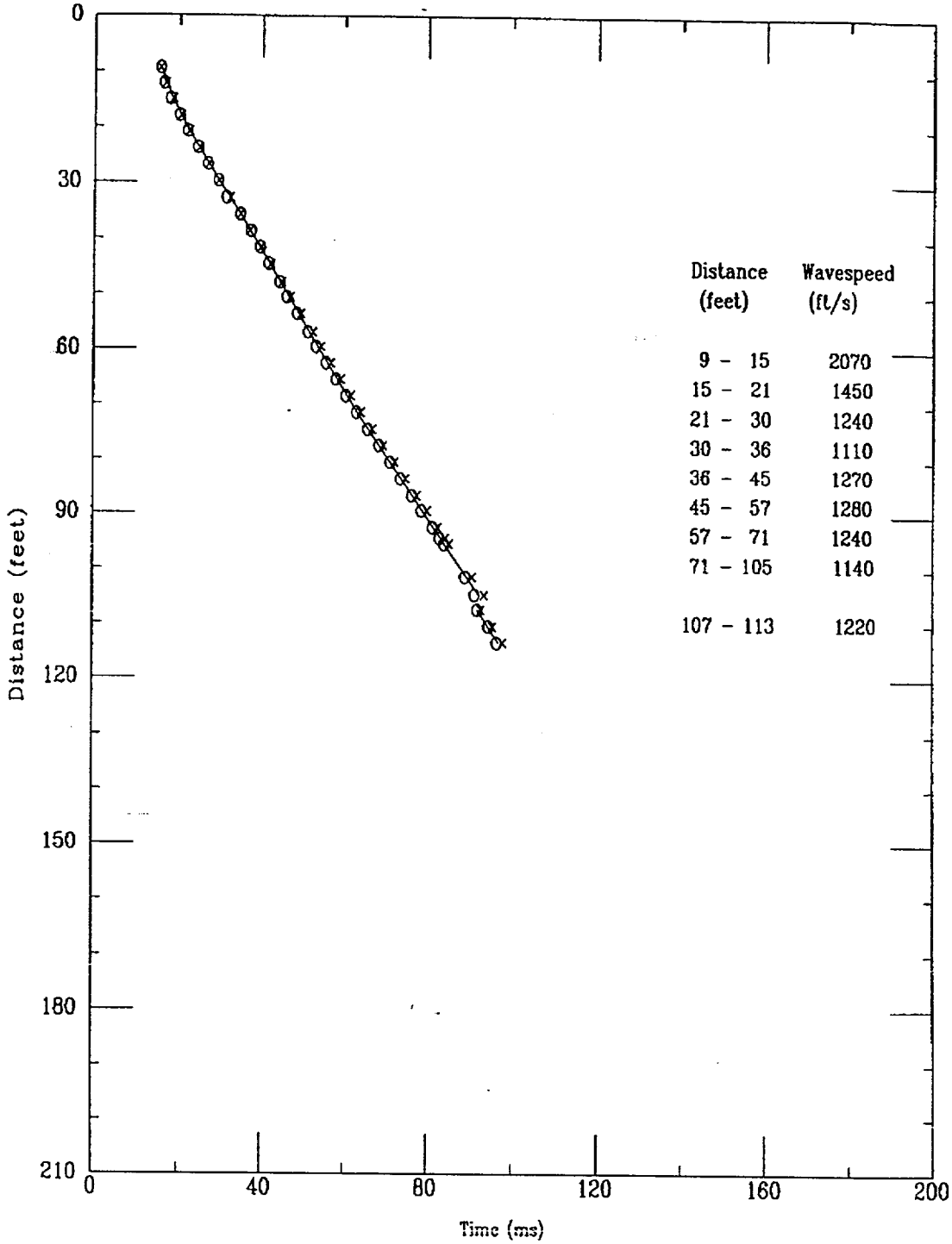
Shear Wave Speeds



File 325m804S

CPT-183 APPLIED RESEARCH ASSOCIATES, INC. 03/25/98

Shear Wave Time of Peak

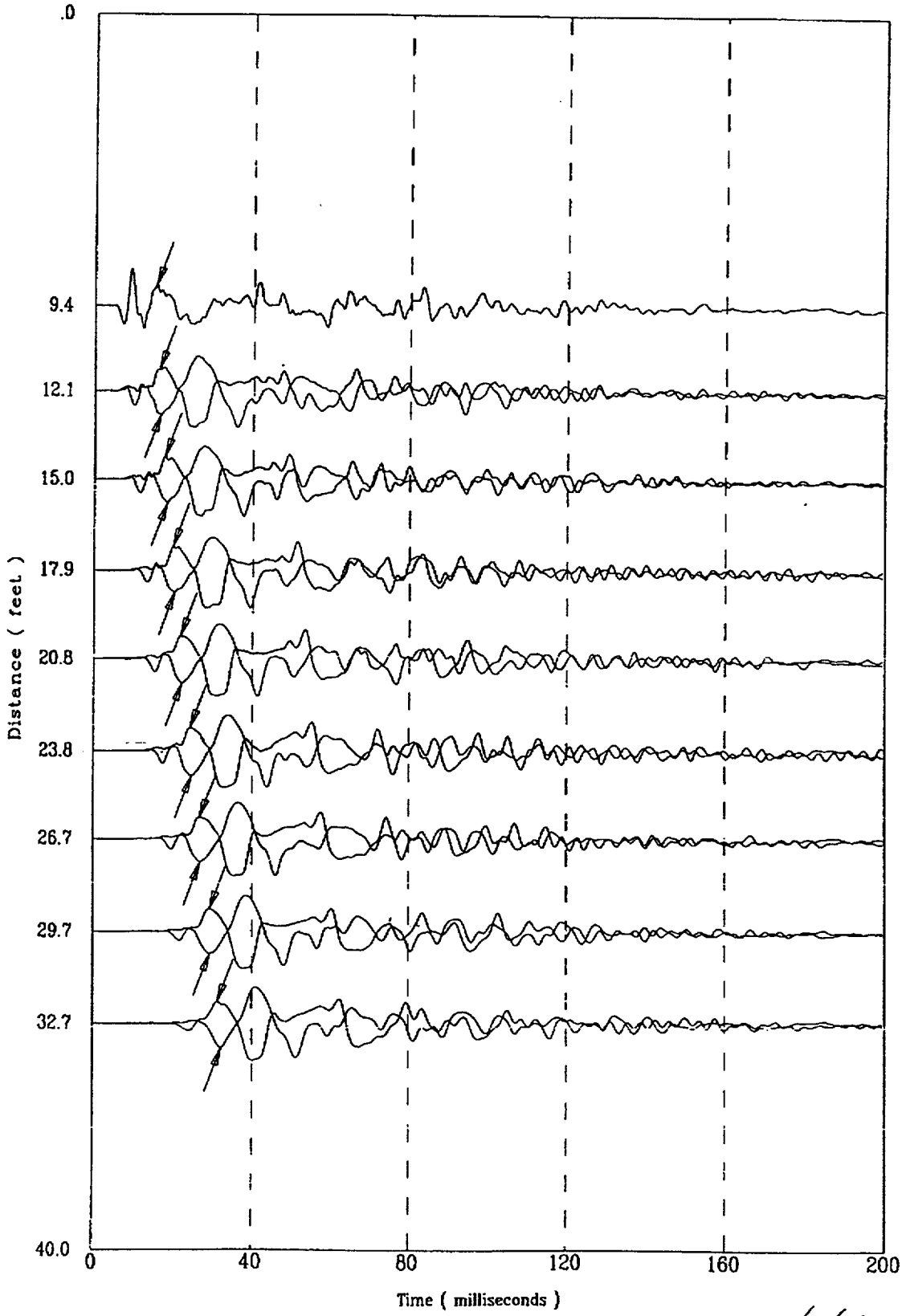


Distance (feet)	Wavespeed (ft/s)
9 - 15	2070
15 - 21	1450
21 - 30	1240
30 - 36	1110
36 - 45	1270
45 - 57	1280
57 - 71	1240
71 - 105	1140
107 - 113	1220

File 325m804S

Applied Research Associates, Inc.
CPT-183

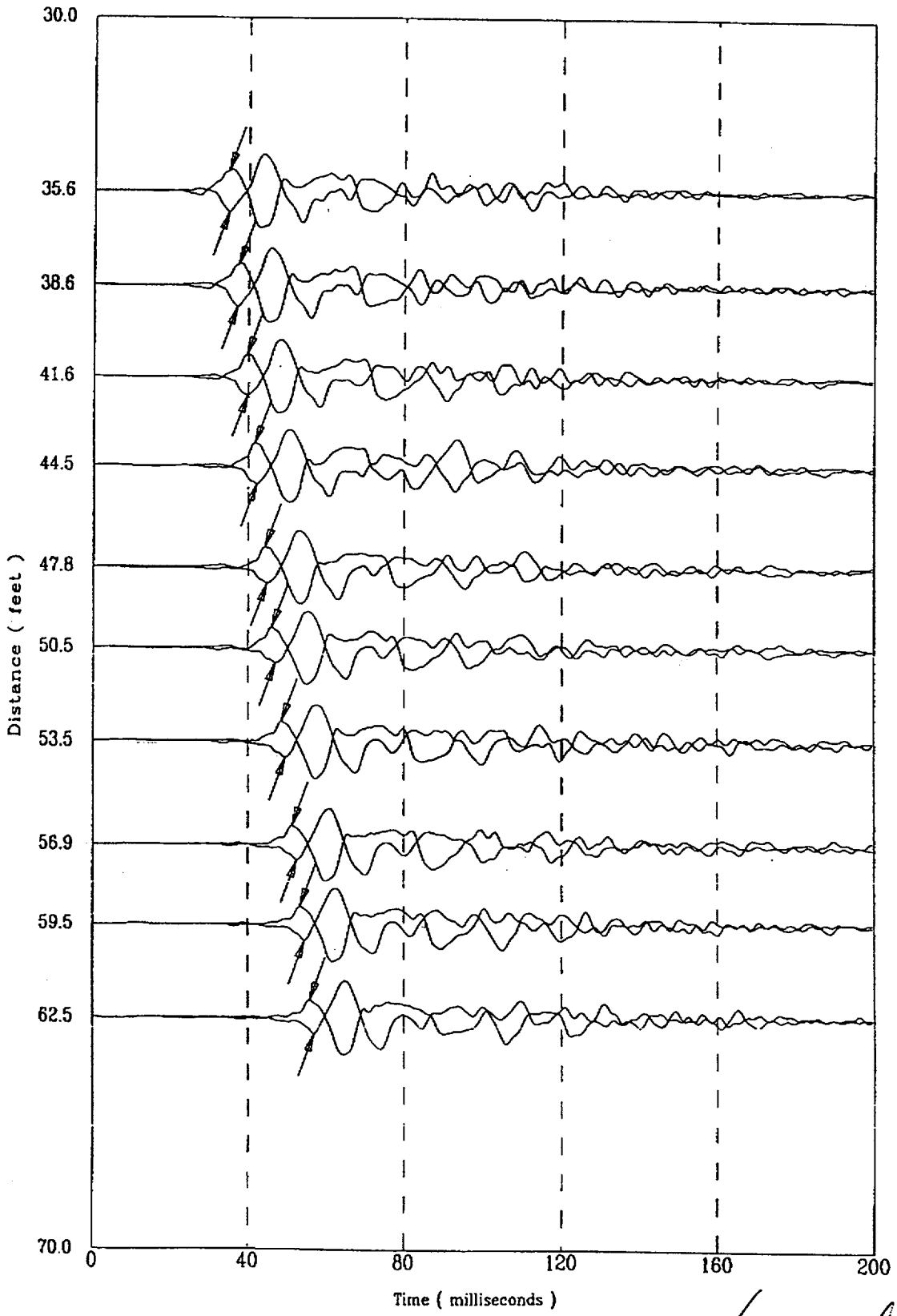
S Wave
03/25/98



file 325m804S

Applied Research Associates, Inc.
CPT-183

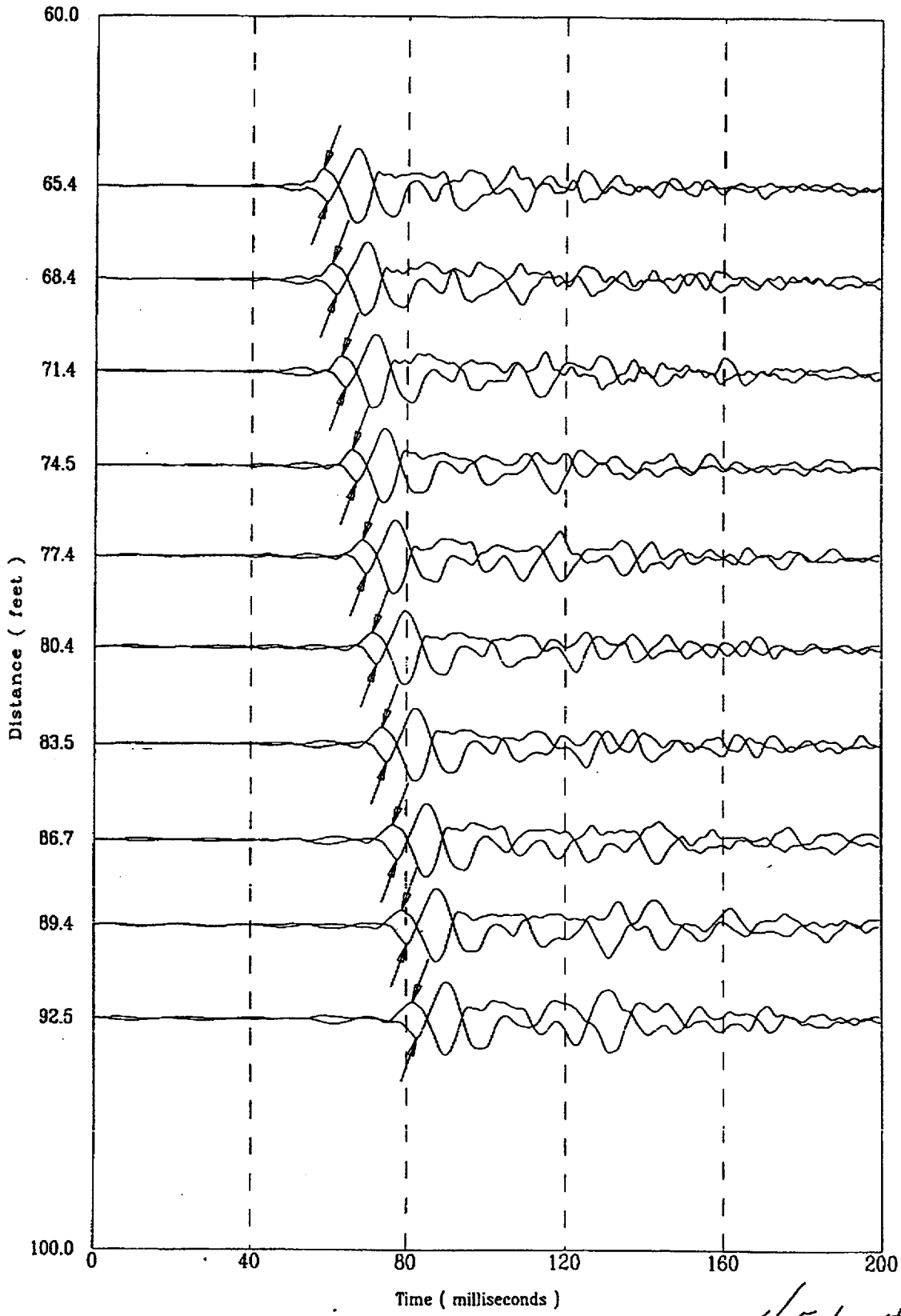
S Wave
03/25/98



File 325m804S

Applied Research Associates, Inc.
CPT-183

S Wave
03/25/98



25m804S

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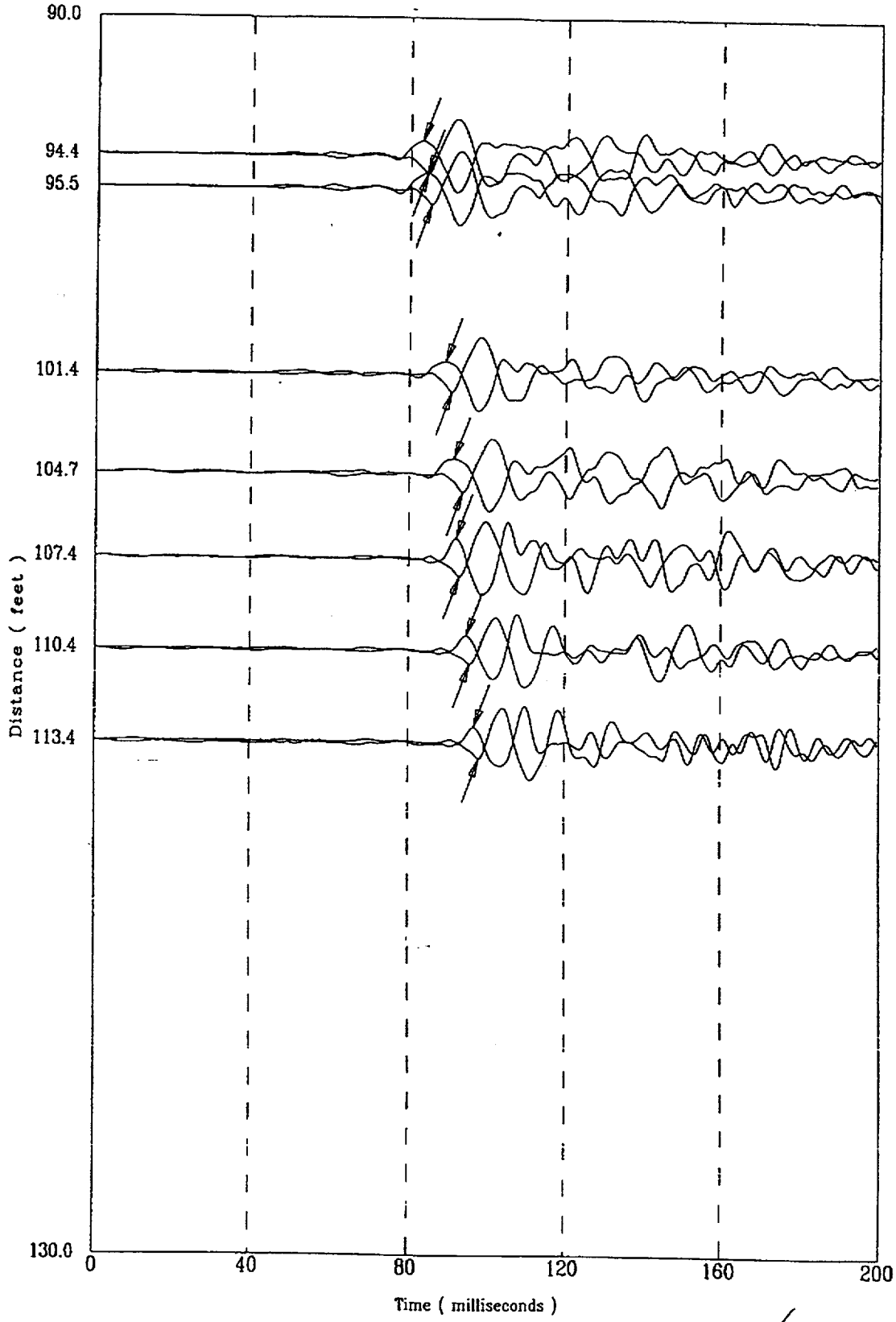
Applied Research Associates, Inc.
CPT-183

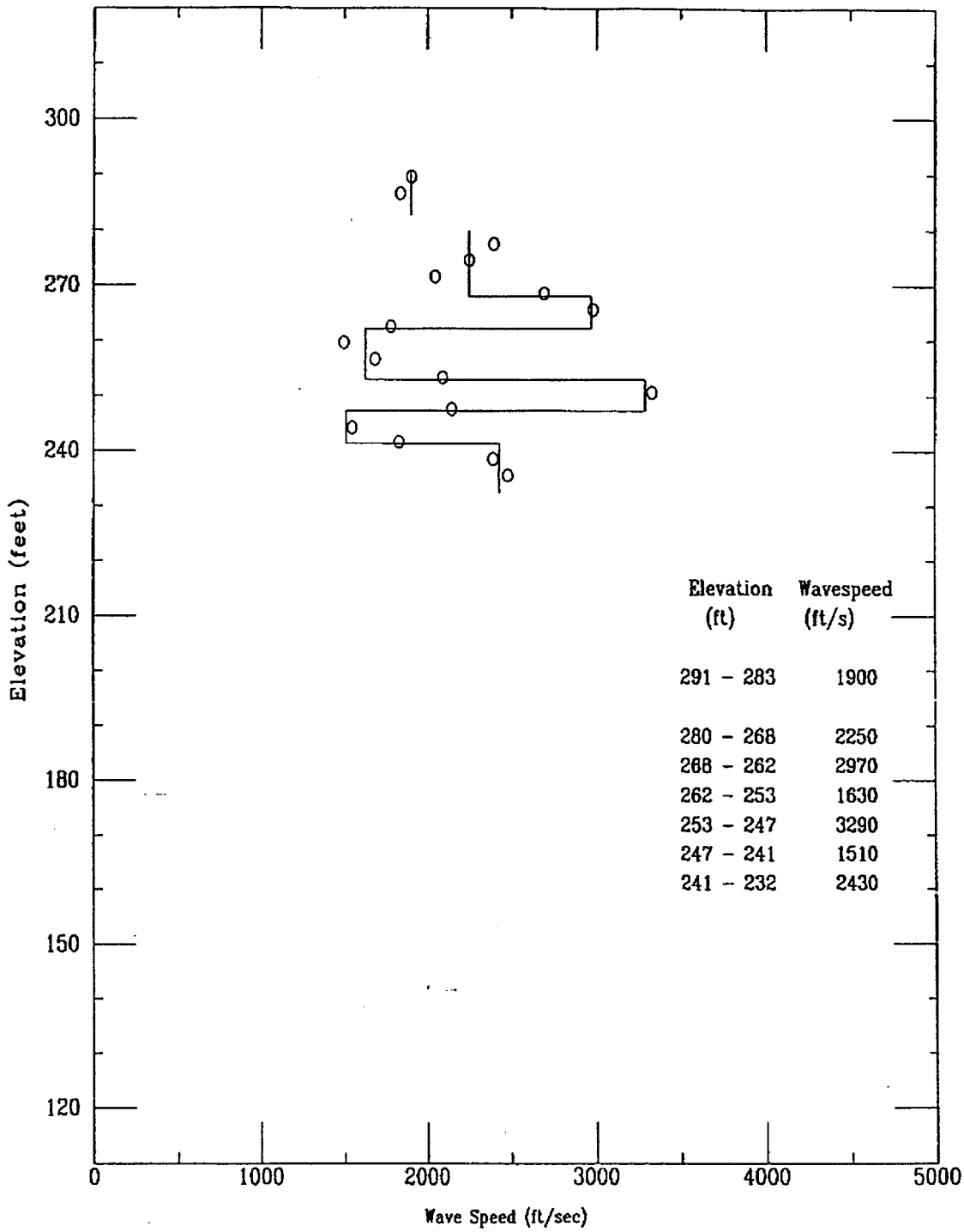
S Wave
03/25/98



File 325m804S

CPT-183 APPLIED RESEARCH ASSOCIATES, INC. 03/25/98

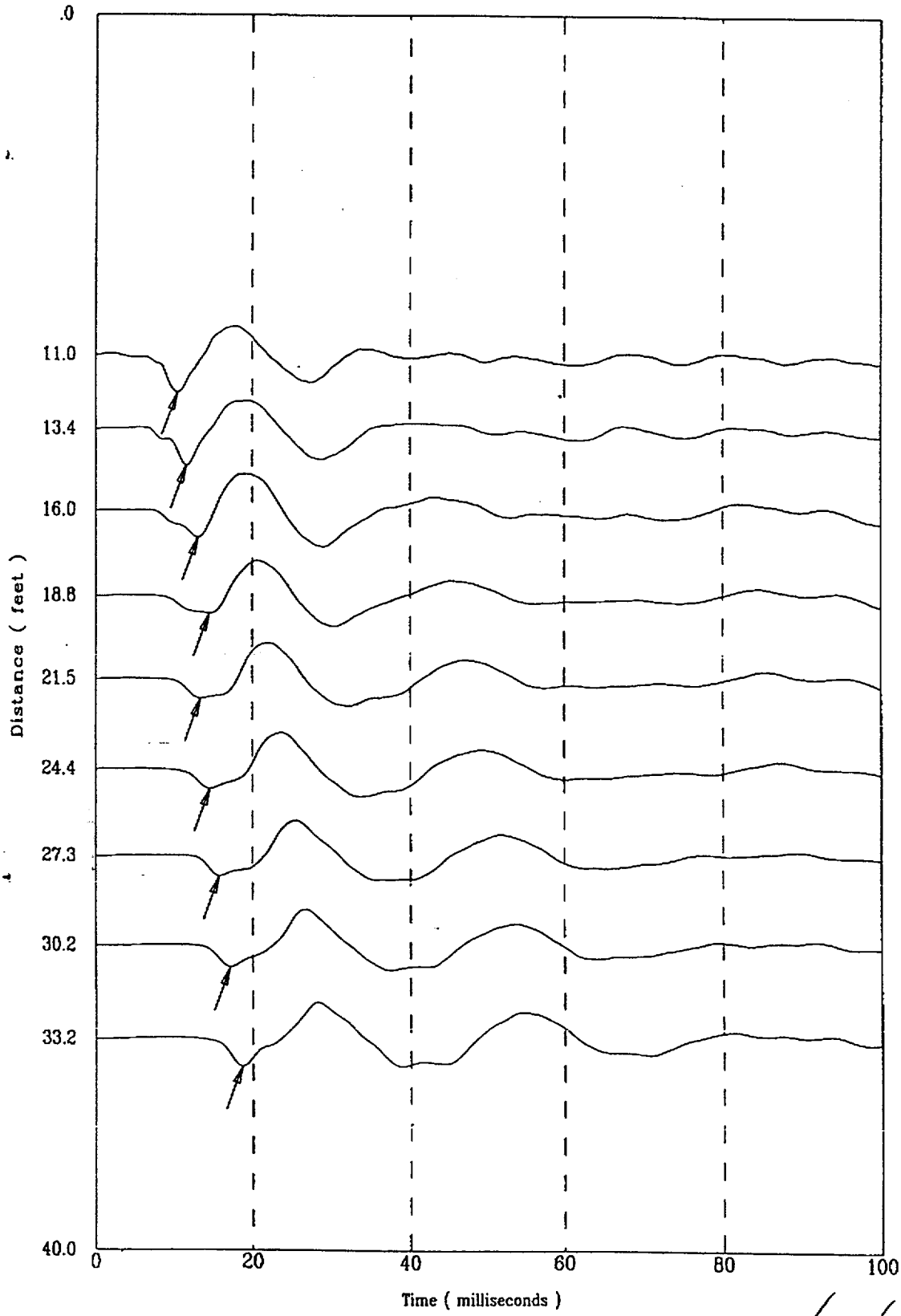
Compression Wave Speeds



File 325m604S

Applied Research Associates, Inc.
CPT-183

P Wave
03/25/98



File 325m804S

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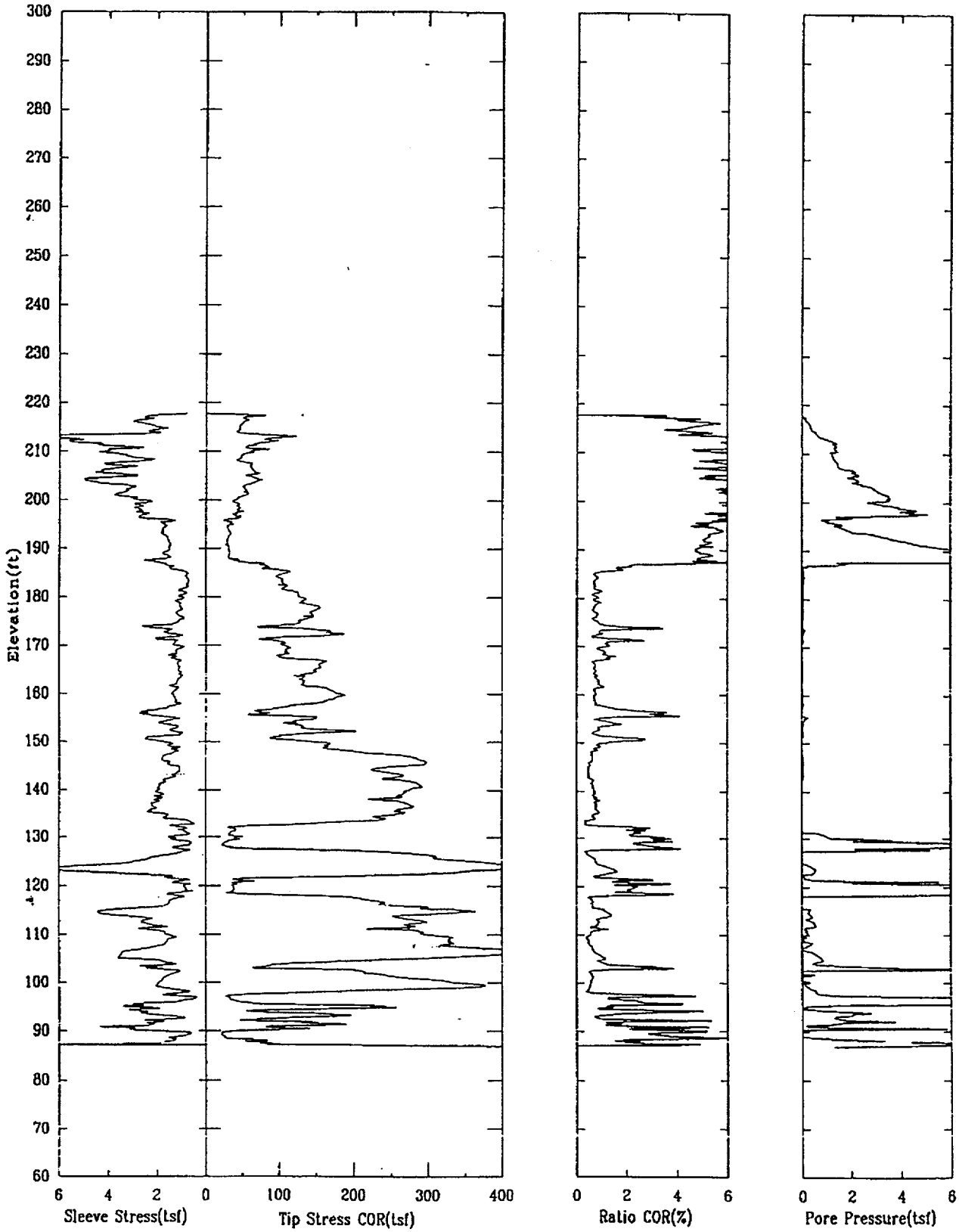
CPT-185 APPLIED RESEARCH ASSOCIATES, INC. 03/18/98

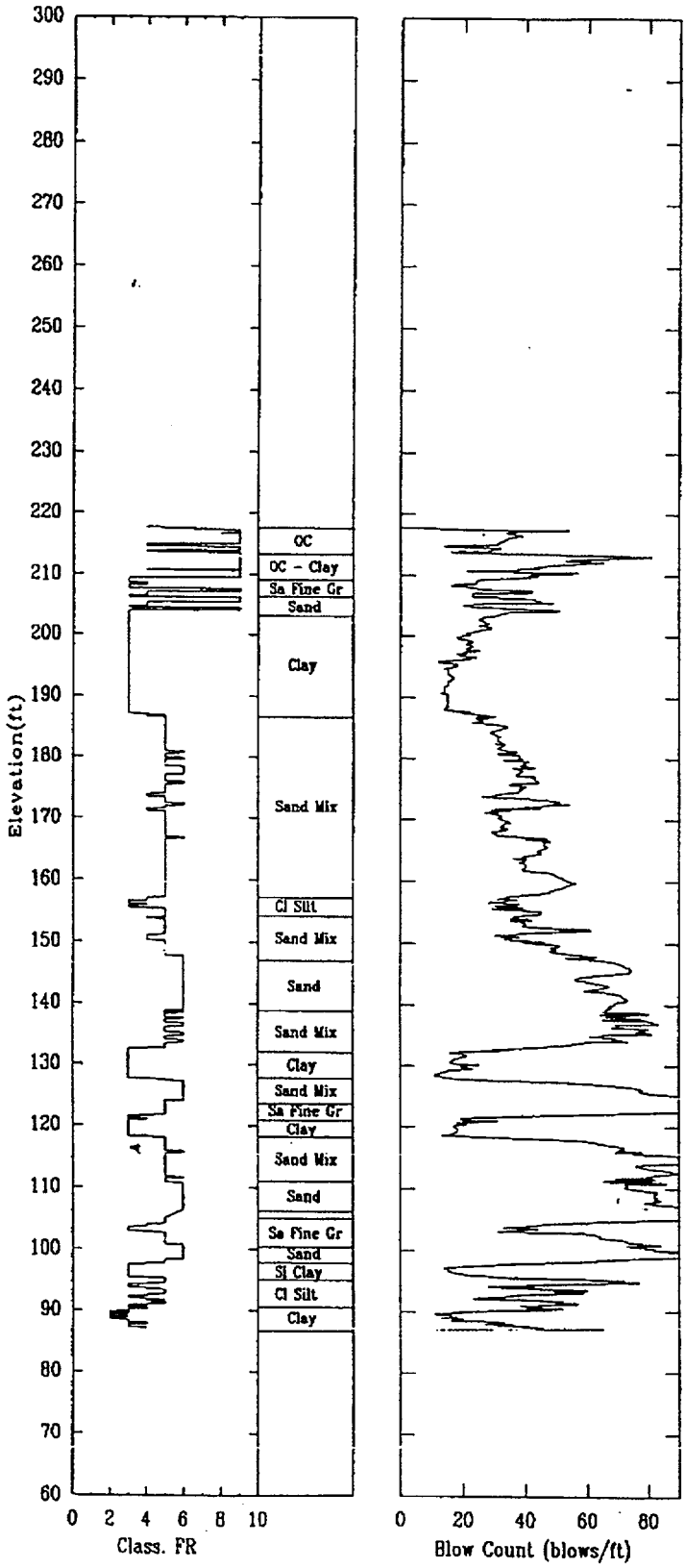
North 78380 East 55385 Elevation 223.7



File 418M807.ECP

CPT-185 APPLIED RESEARCH ASSOCIATES, INC. 03/18/98

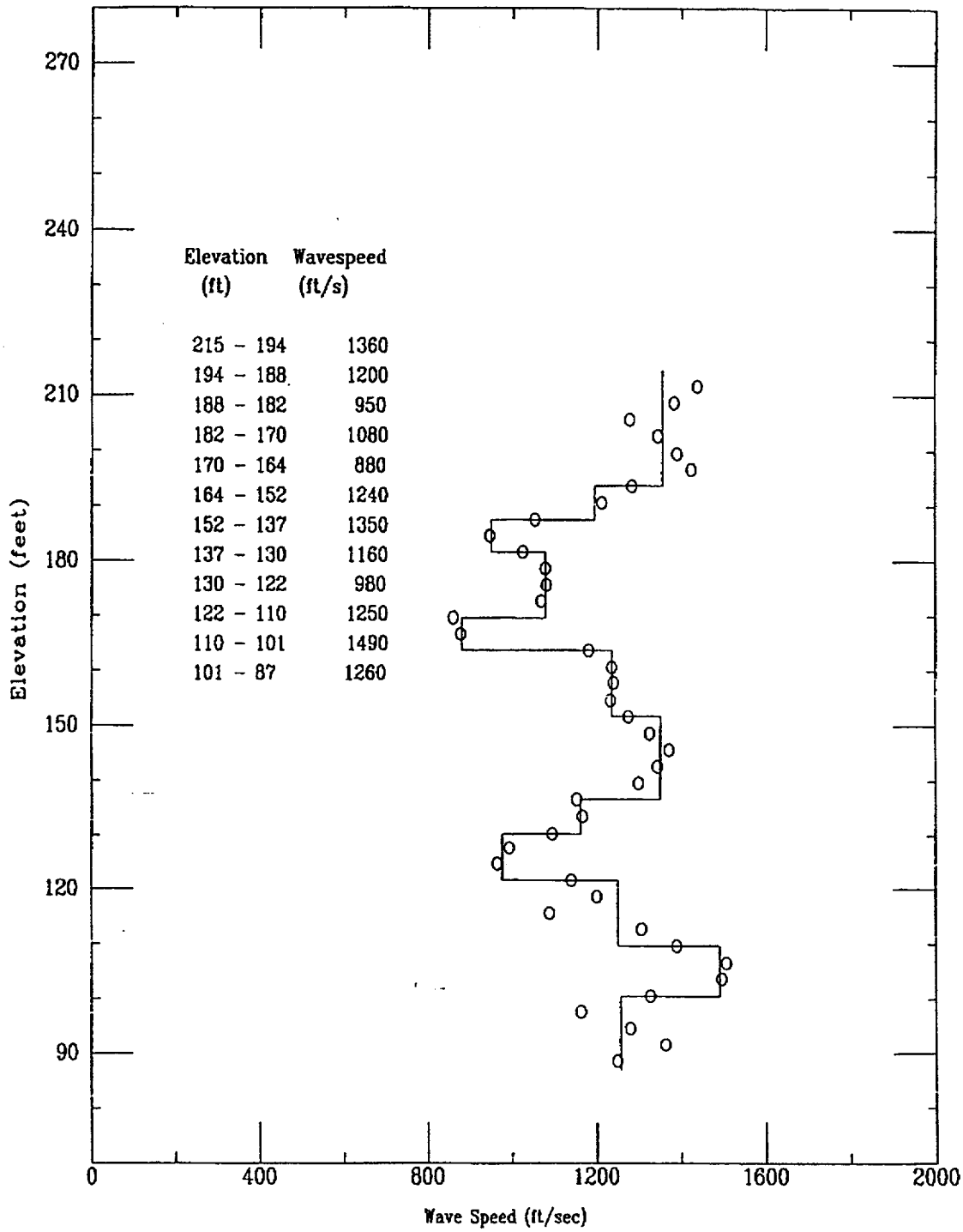
North 78380 East 55385 Elevation 223.7



File 418M807.ECP

CPT-185 APPLIED RESEARCH ASSOCIATES, INC. 03/18/98

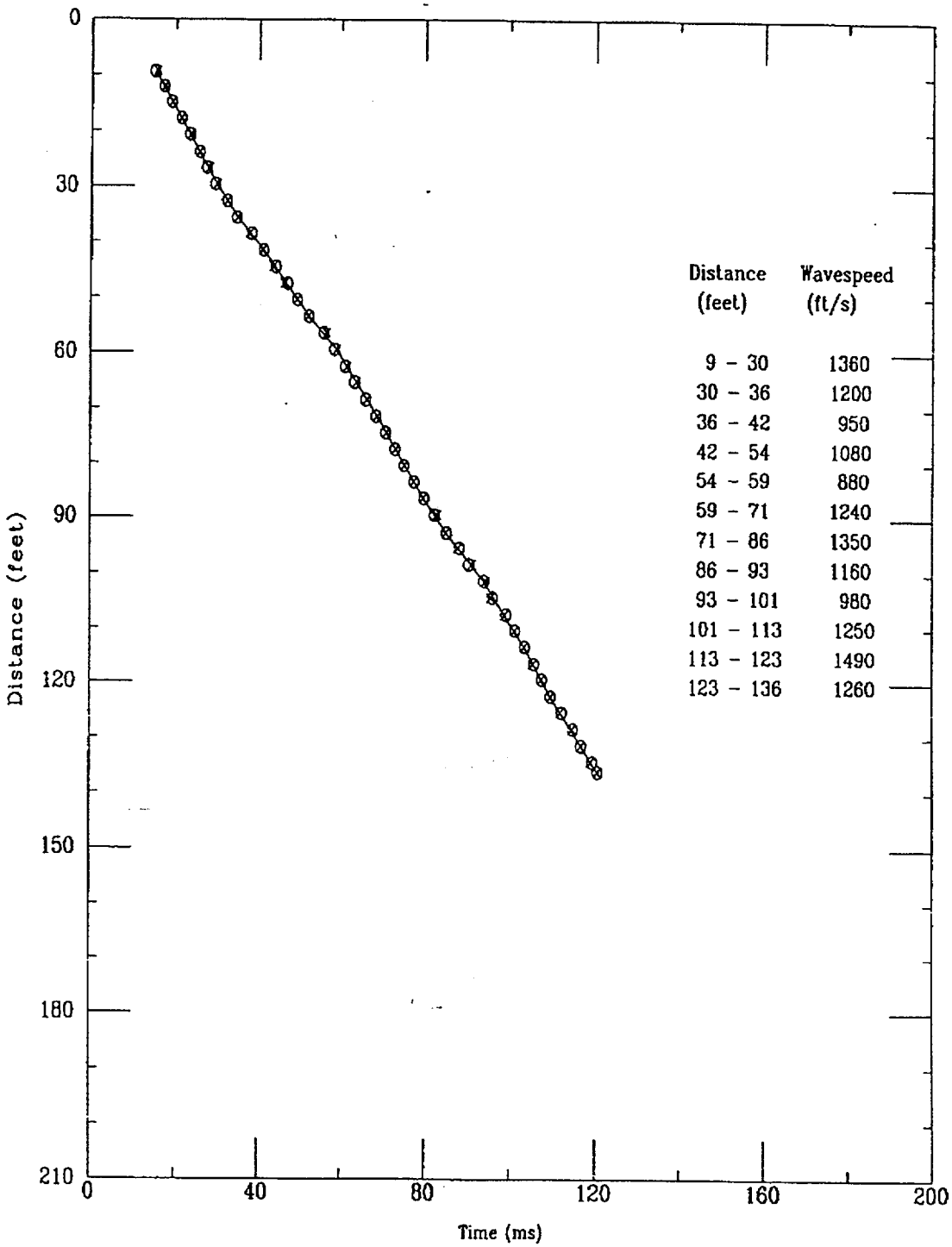
Shear Wave Speeds



File 418m802S

CPT-185 APPLIED RESEARCH ASSOCIATES, INC. 03/18/98

Shear Wave Time of Peak

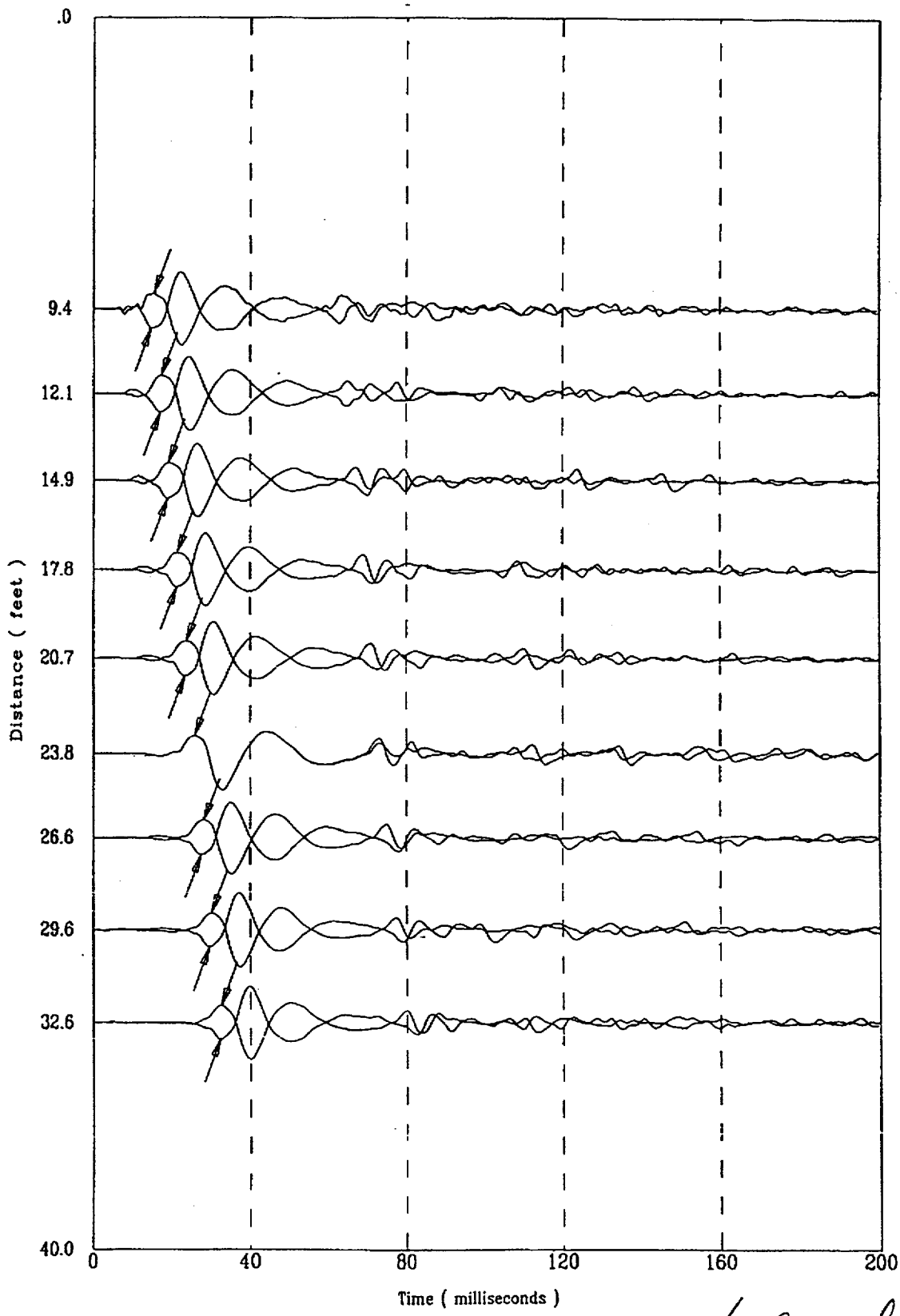


Distance (feet)	Wavespeed (ft/s)
9 - 30	1360
30 - 36	1200
36 - 42	950
42 - 54	1080
54 - 59	880
59 - 71	1240
71 - 86	1350
86 - 93	1160
93 - 101	980
101 - 113	1250
113 - 123	1490
123 - 136	1260

File 418m802S

Applied Research Associates
CPT-185

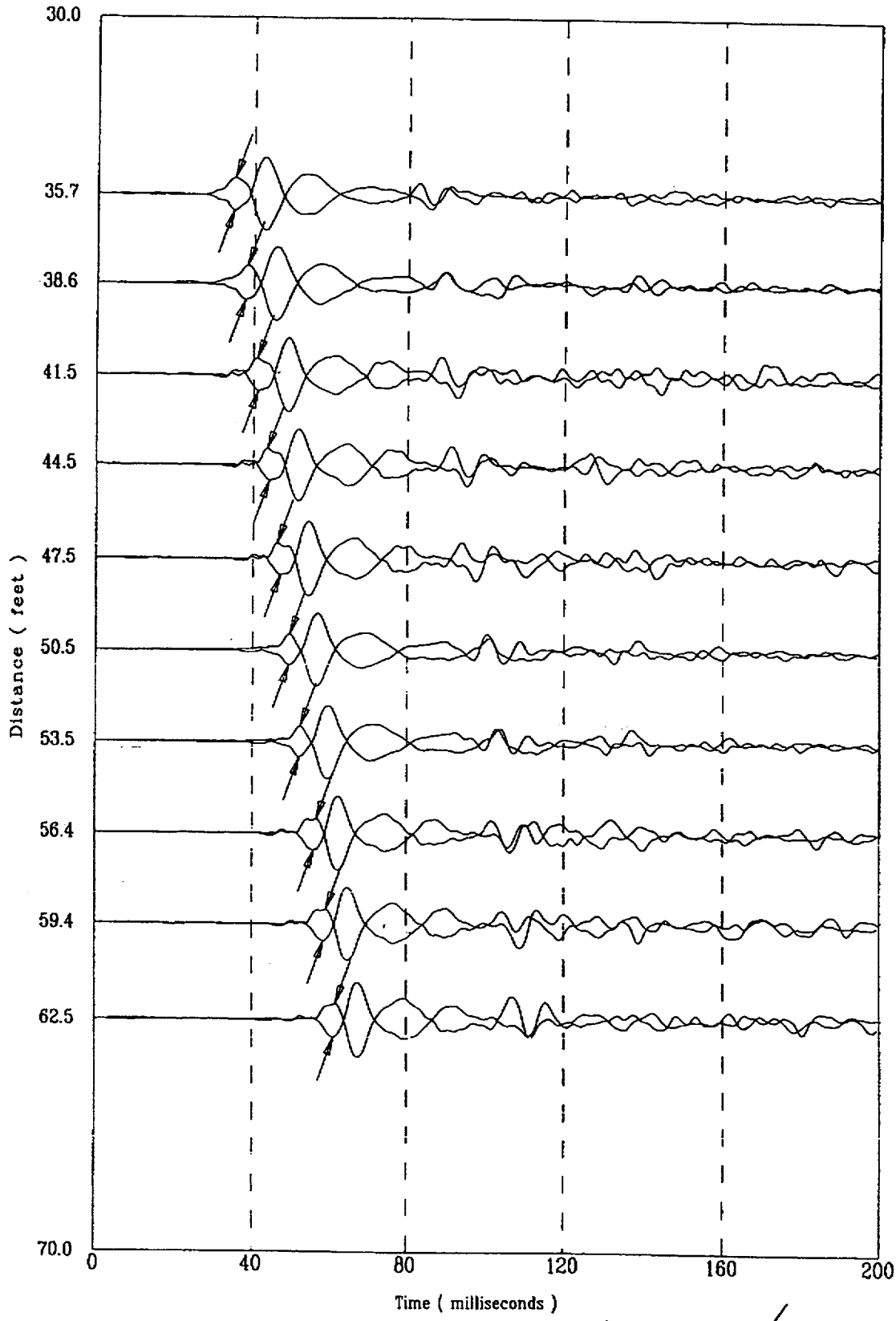
S Wave
03/18/98



18m802S

Applied Research Associates
CPT-185

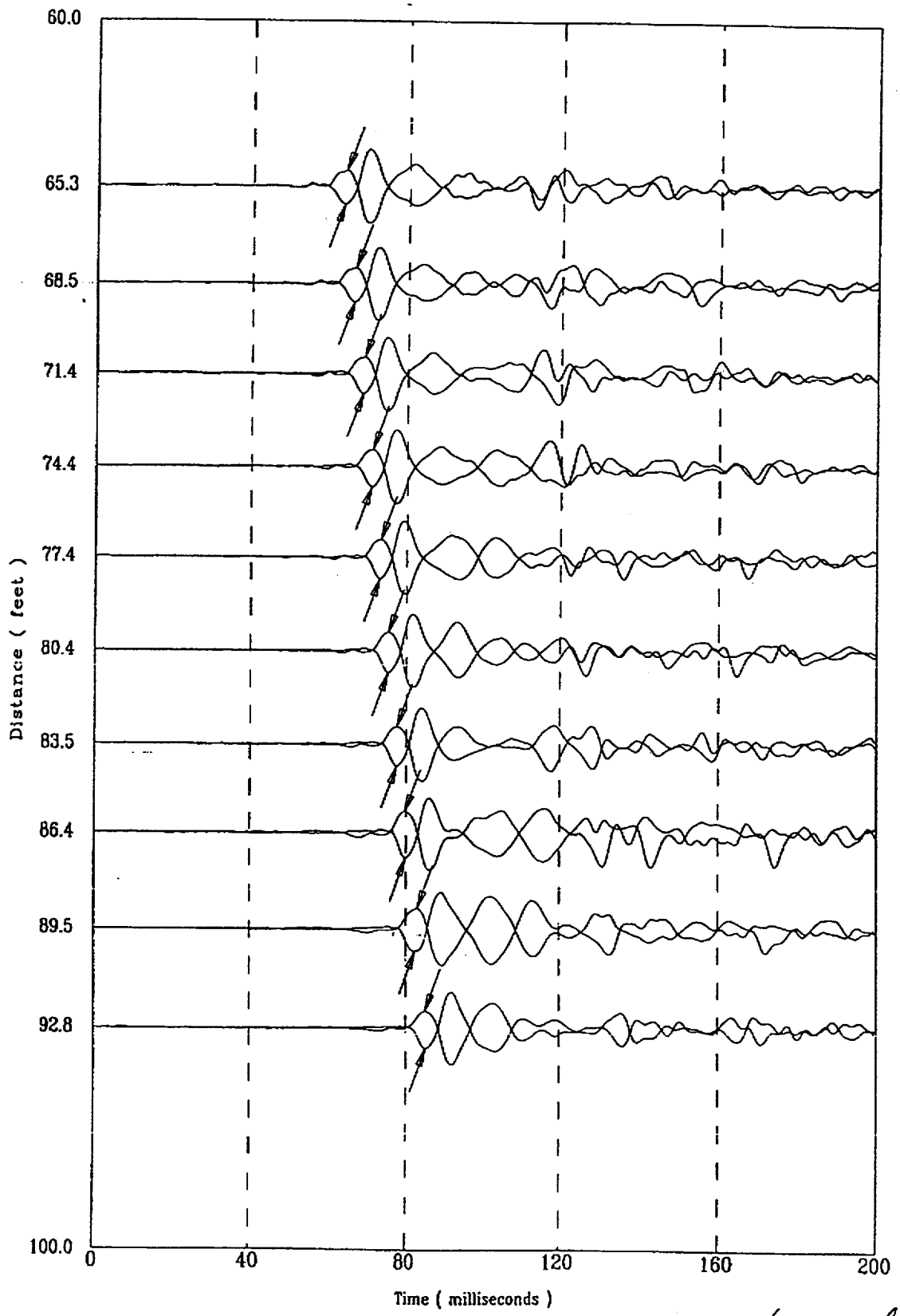
S Wave
03/18/98



File 418m802S

Applied Research Associates
CPT-185

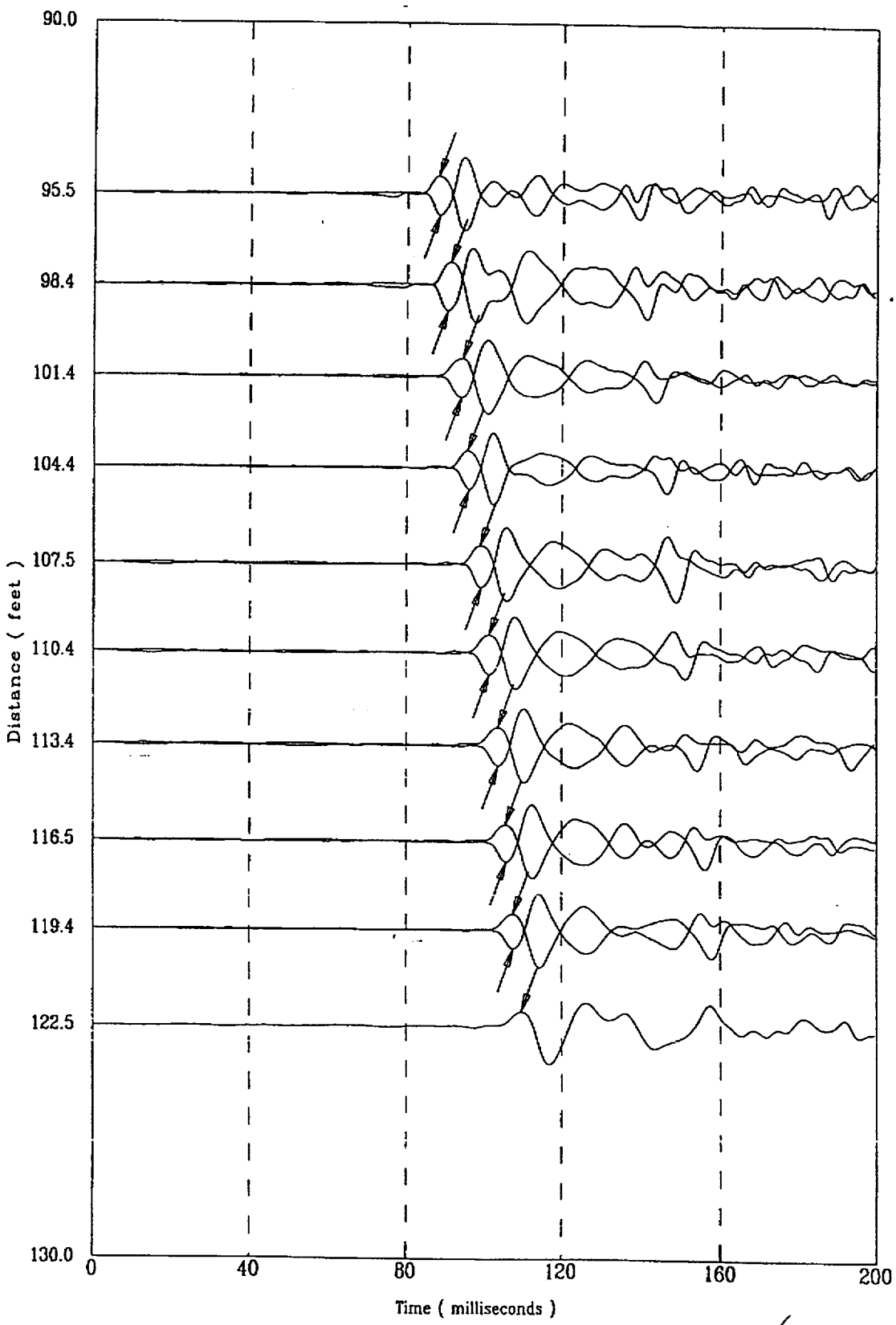
S Wave
03/18/98



.18m802S

Applied Research Associates
CPT-185

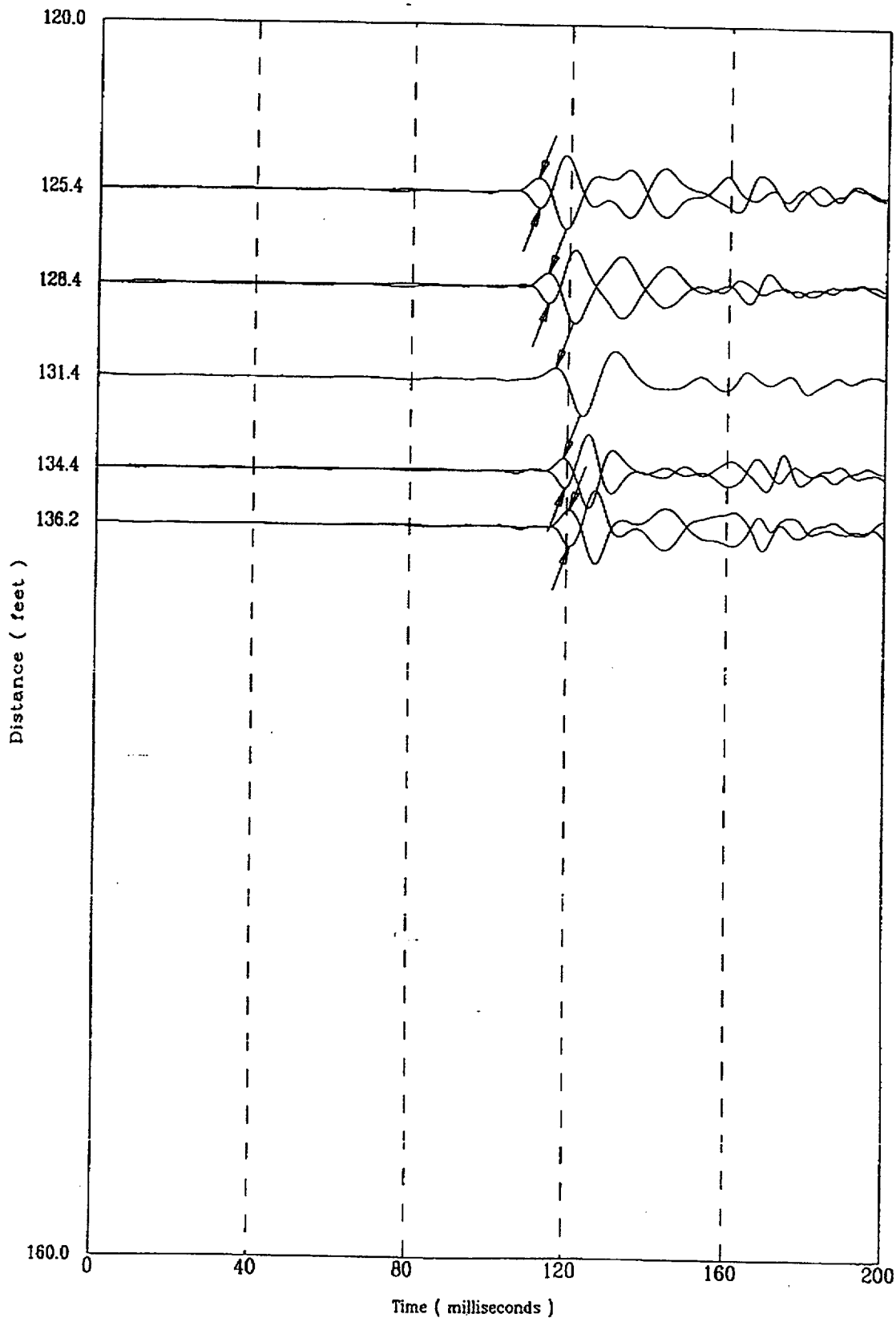
S Wave
03/18/98



File 418m802S

Applied Research Associates
CPT-185

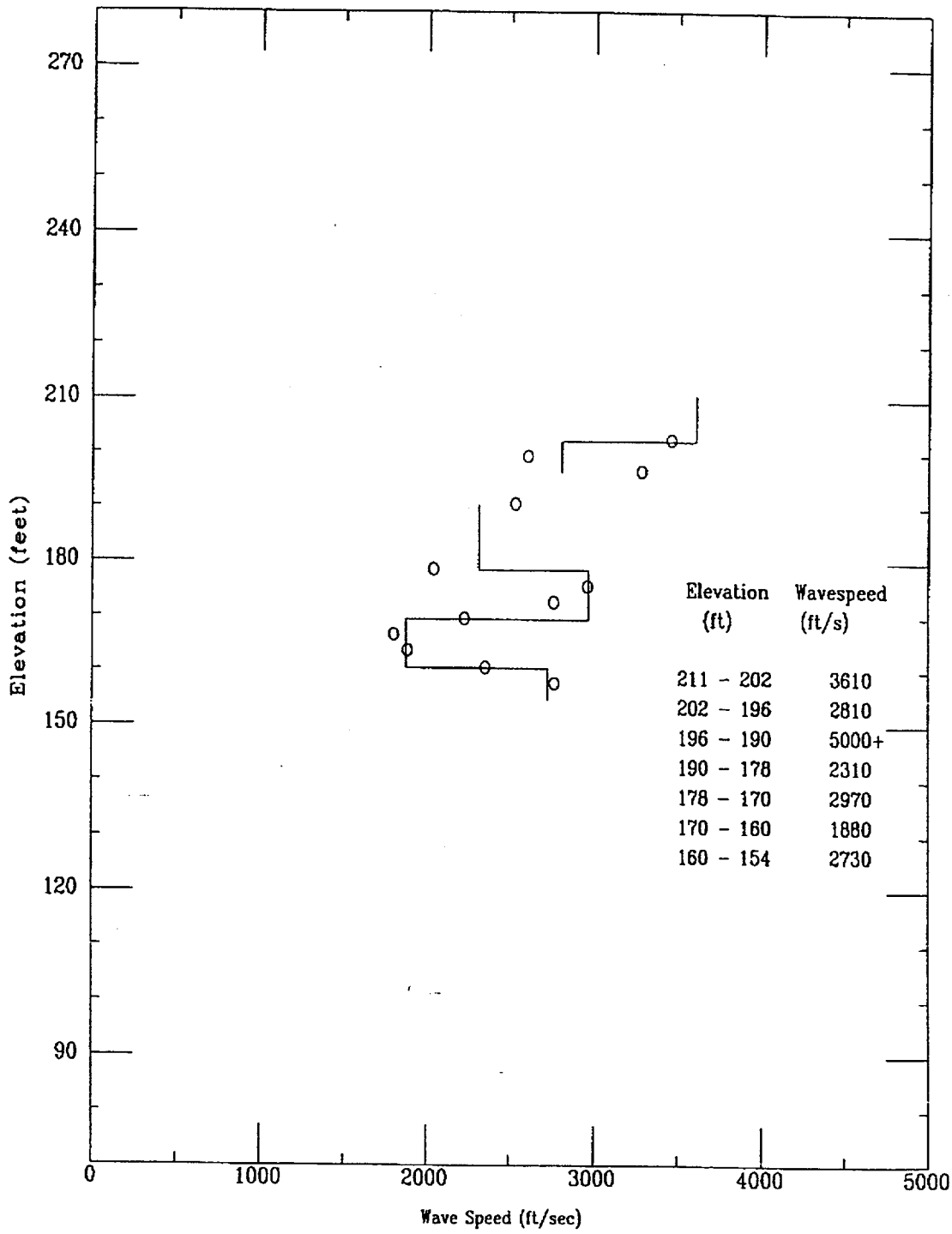
S Wave
03/18/98



18m802S

CPT-185 APPLIED RESEARCH ASSOCIATES, INC. 03/18/98

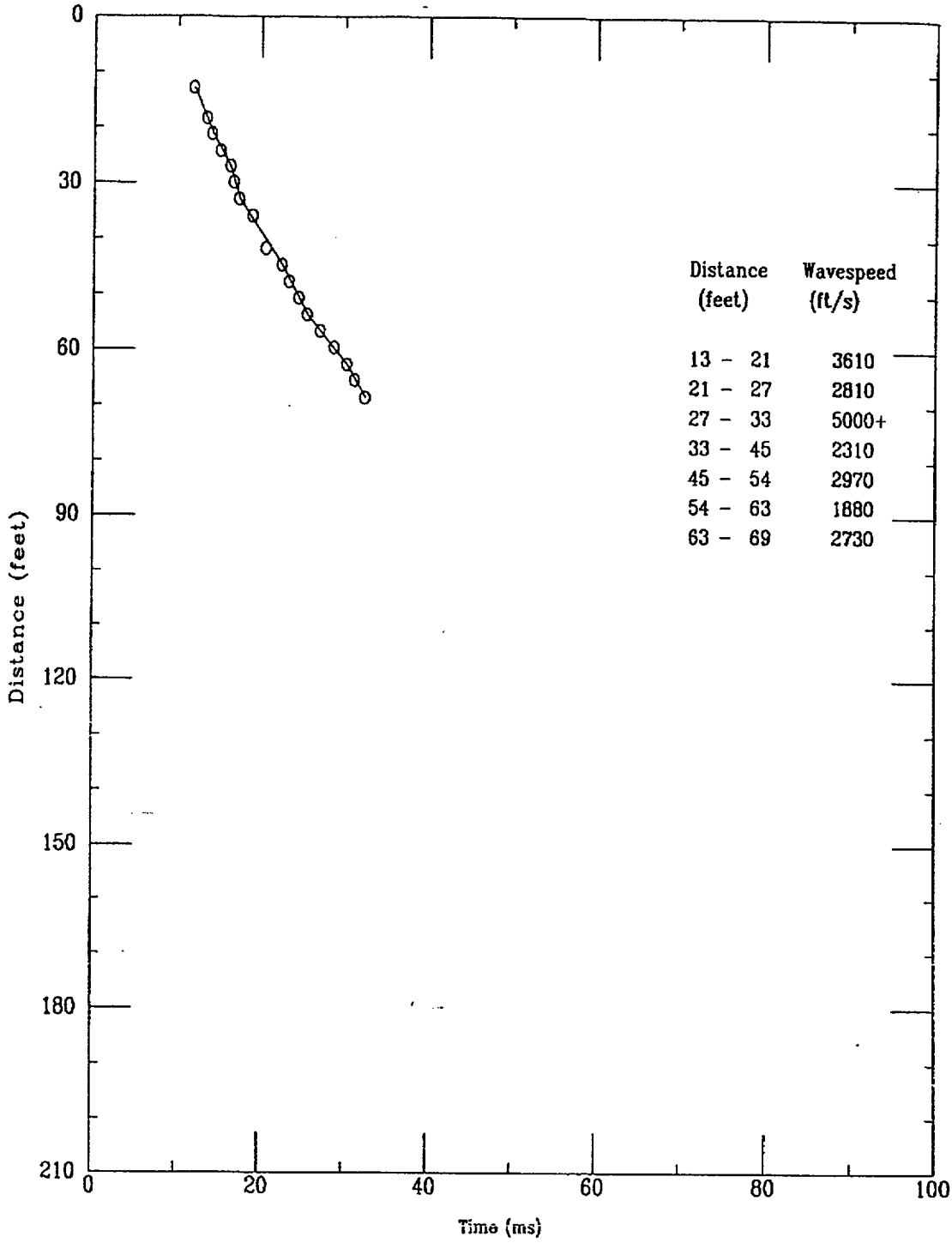
Compression Wave Speeds



File 418m804S

CPT-185 APPLIED RESEARCH ASSOCIATES, INC. 03/18/98

Compression Wave Time of Peak

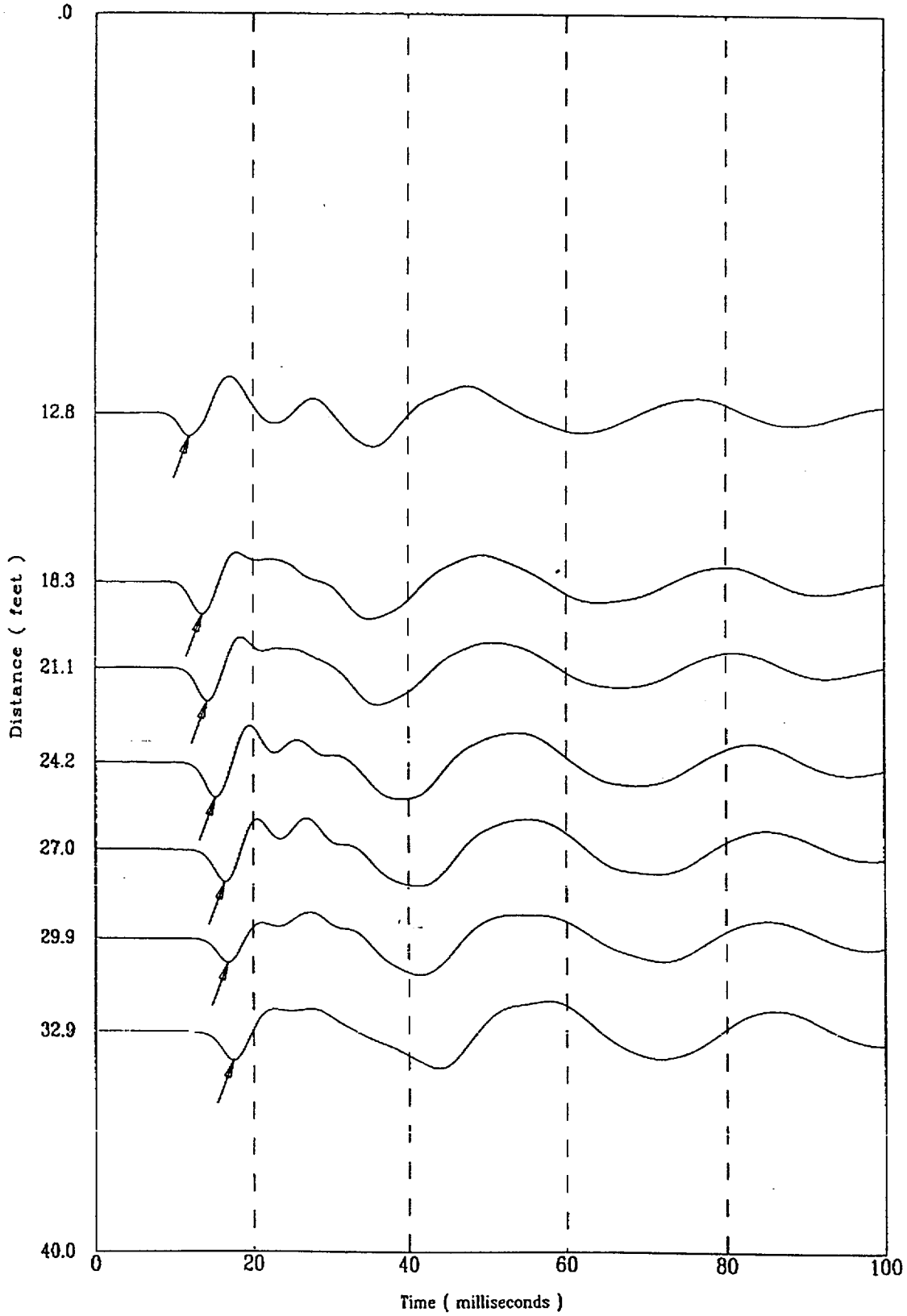


Distance (feet)	Wavespeed (ft/s)
13 - 21	3610
21 - 27	2810
27 - 33	5000+
33 - 45	2310
45 - 54	2970
54 - 63	1880
63 - 69	2730

File 418m804S

Applied Research Associates, Inc.
CPT-185

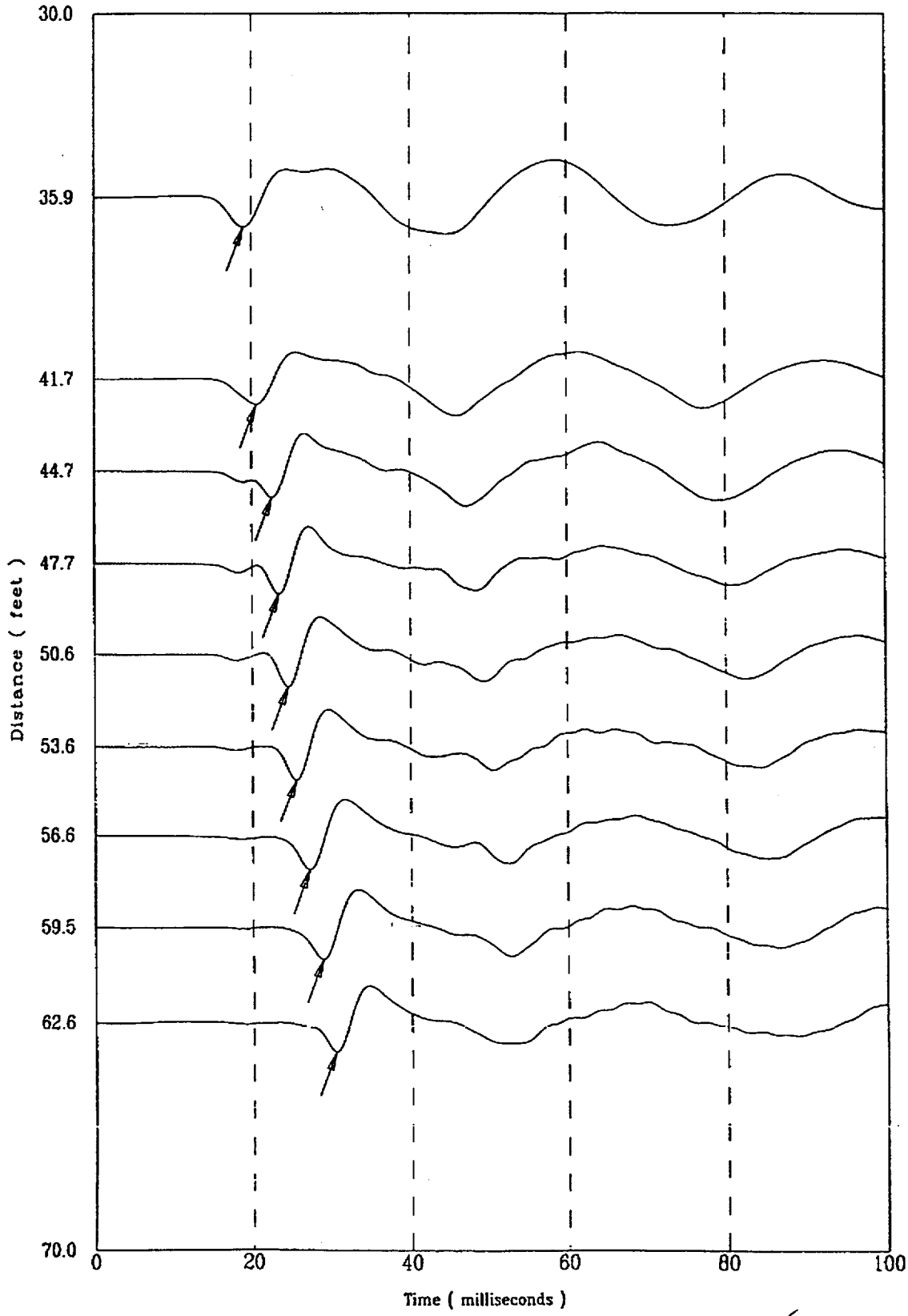
P Wave
03/18/98



File 418m802S

Applied Research Associates, Inc.
CPT-185

P Wave
03/18/98



rue 418m802S

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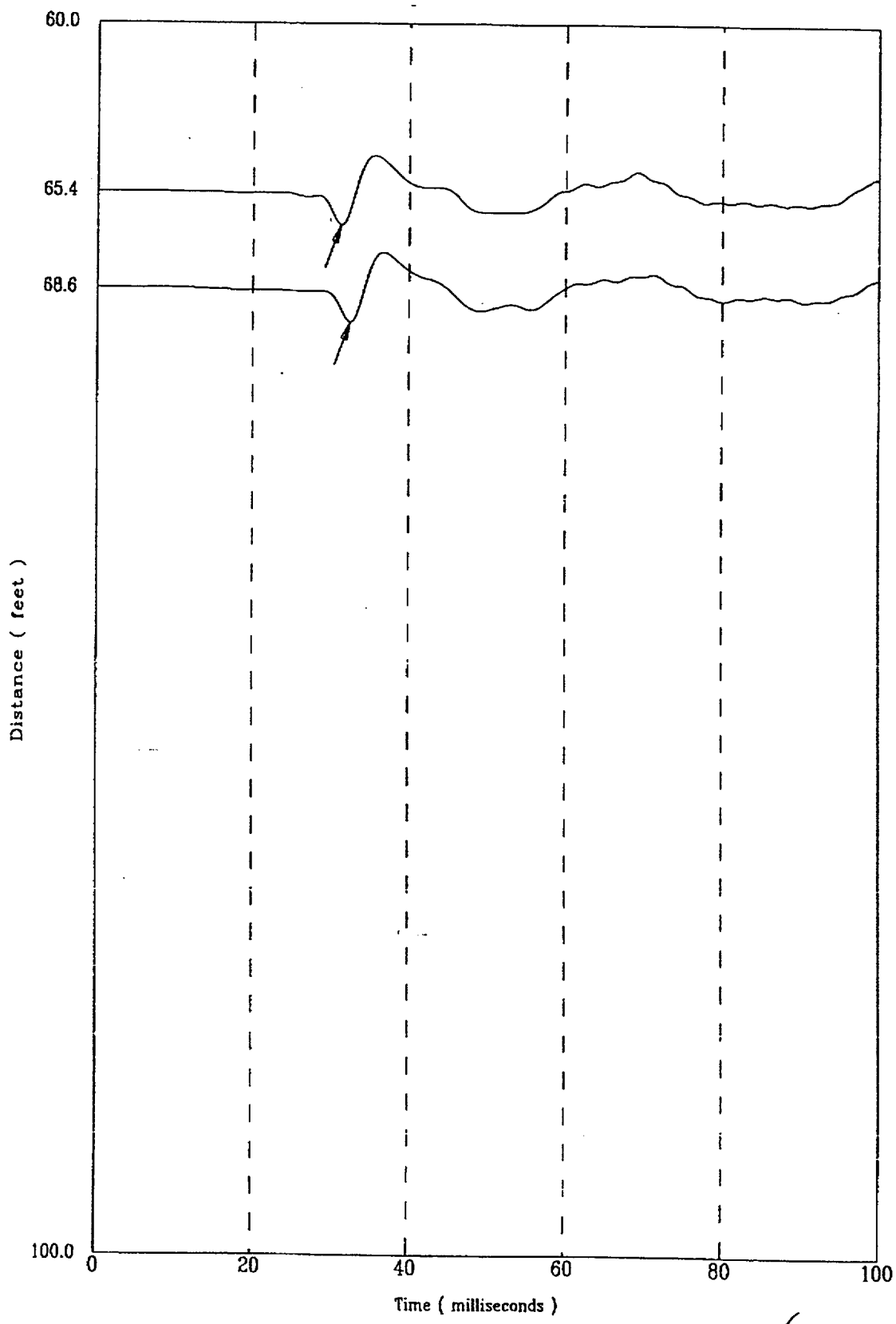
Applied Research Associates, Inc.
CPT-185

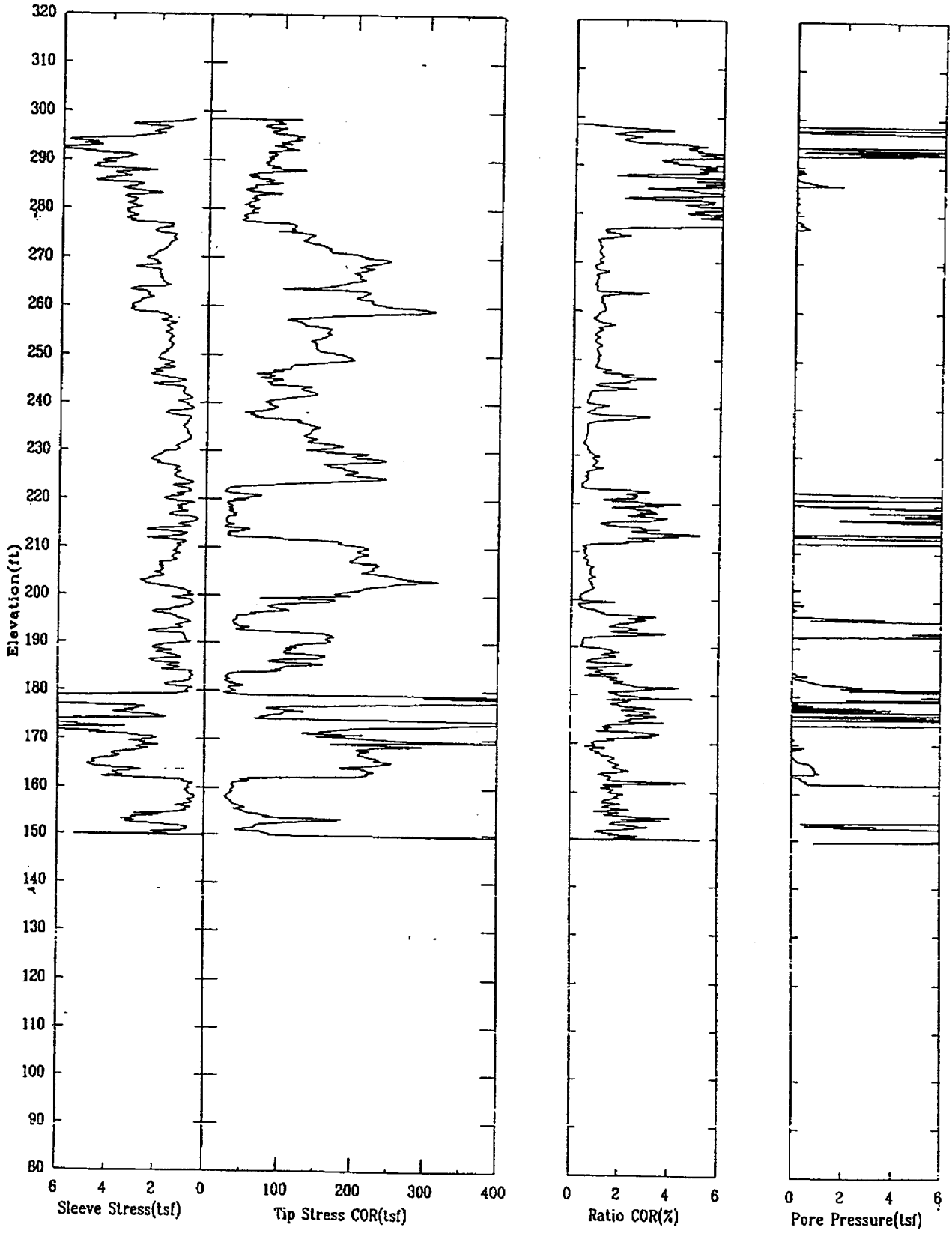
P Wave
03/18/98



File 418m802S

CPT-186 APPLIED RESEARCH ASSOCIATES, INC. 03/24/98

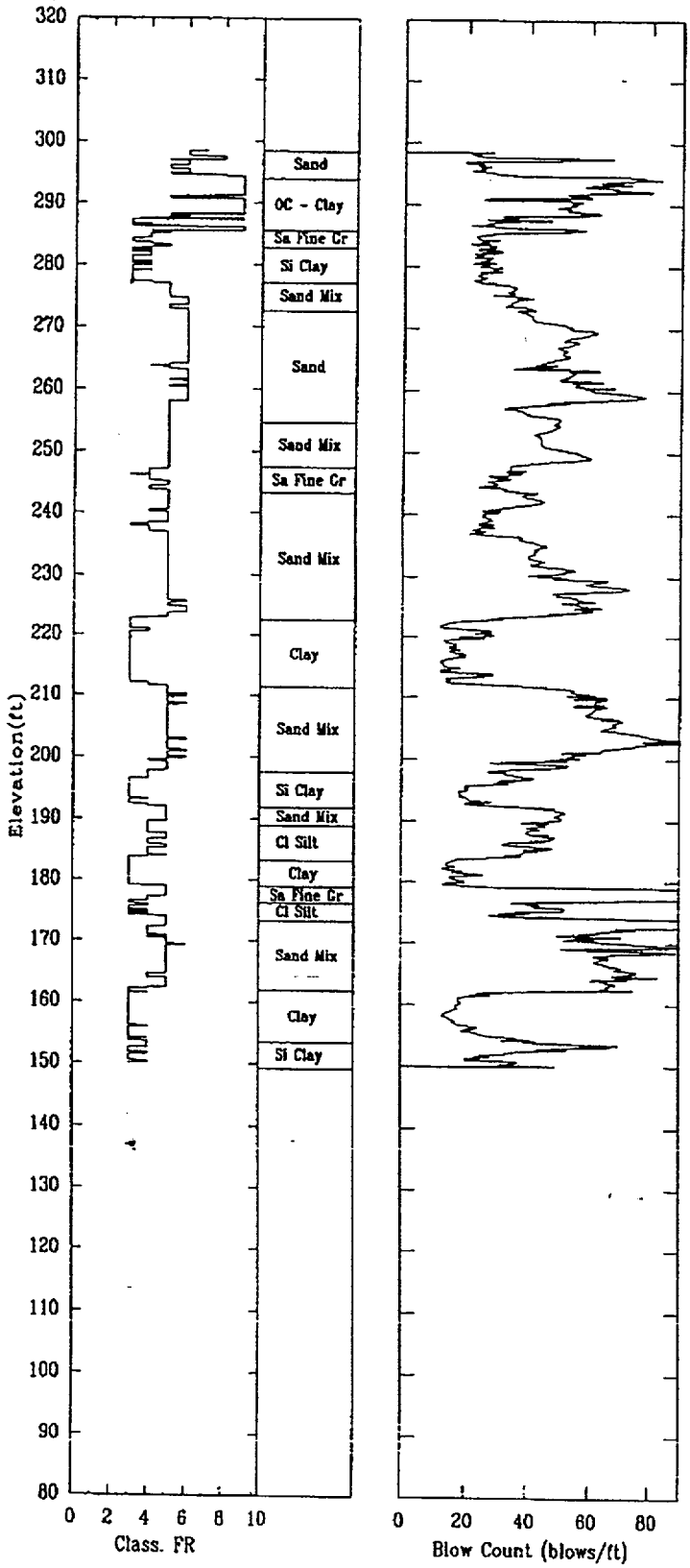
North 78380 East 55518 Elevation 304.5



File 324M801.ECP

CPT-186 APPLIED RESEARCH ASSOCIATES, INC. 03/24/98

North 78380 East 55518 Elevation 304.5



File 324M801.ECP

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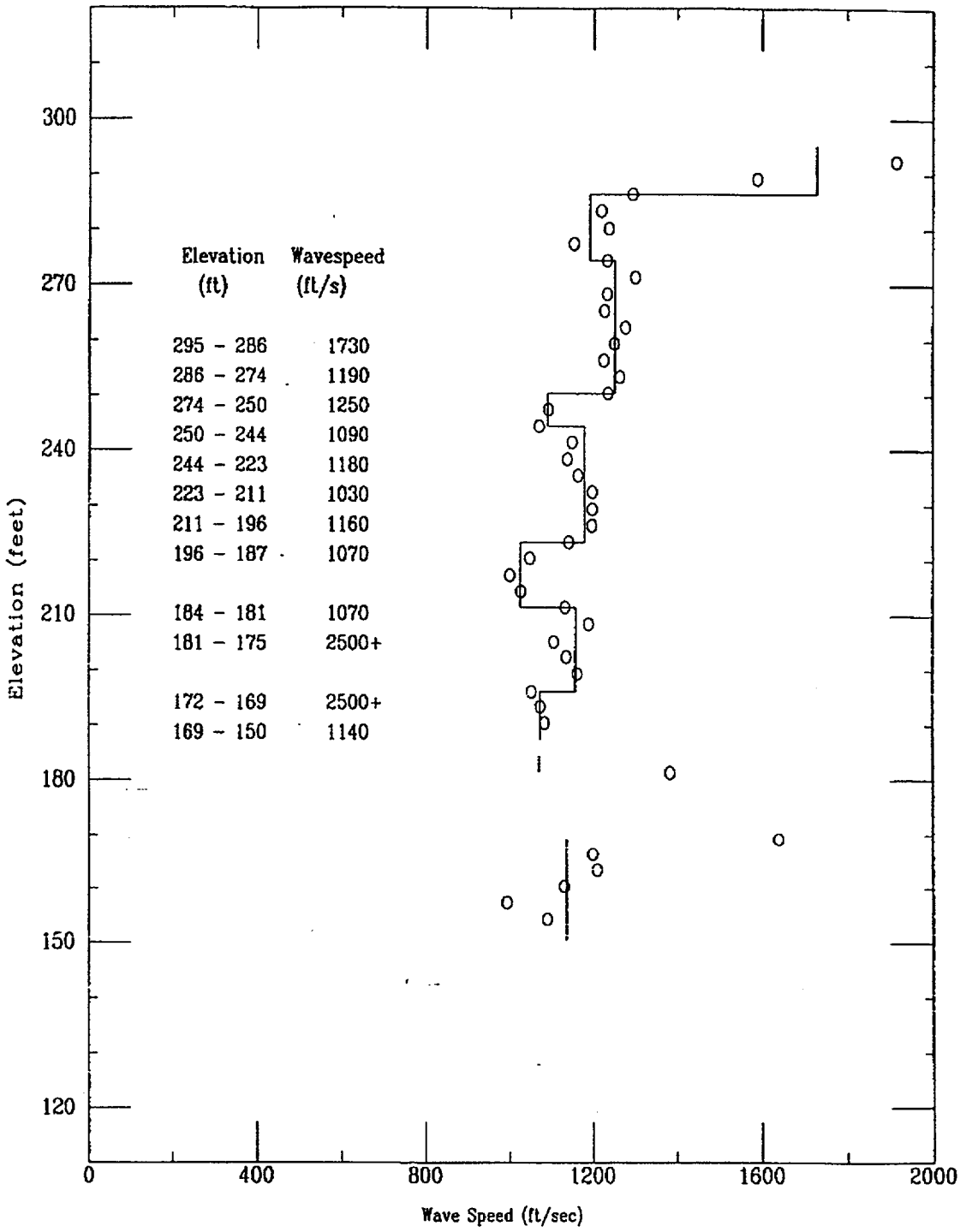
CPT-186 APPLIED RESEARCH ASSOCIATES, INC. 03/24/98

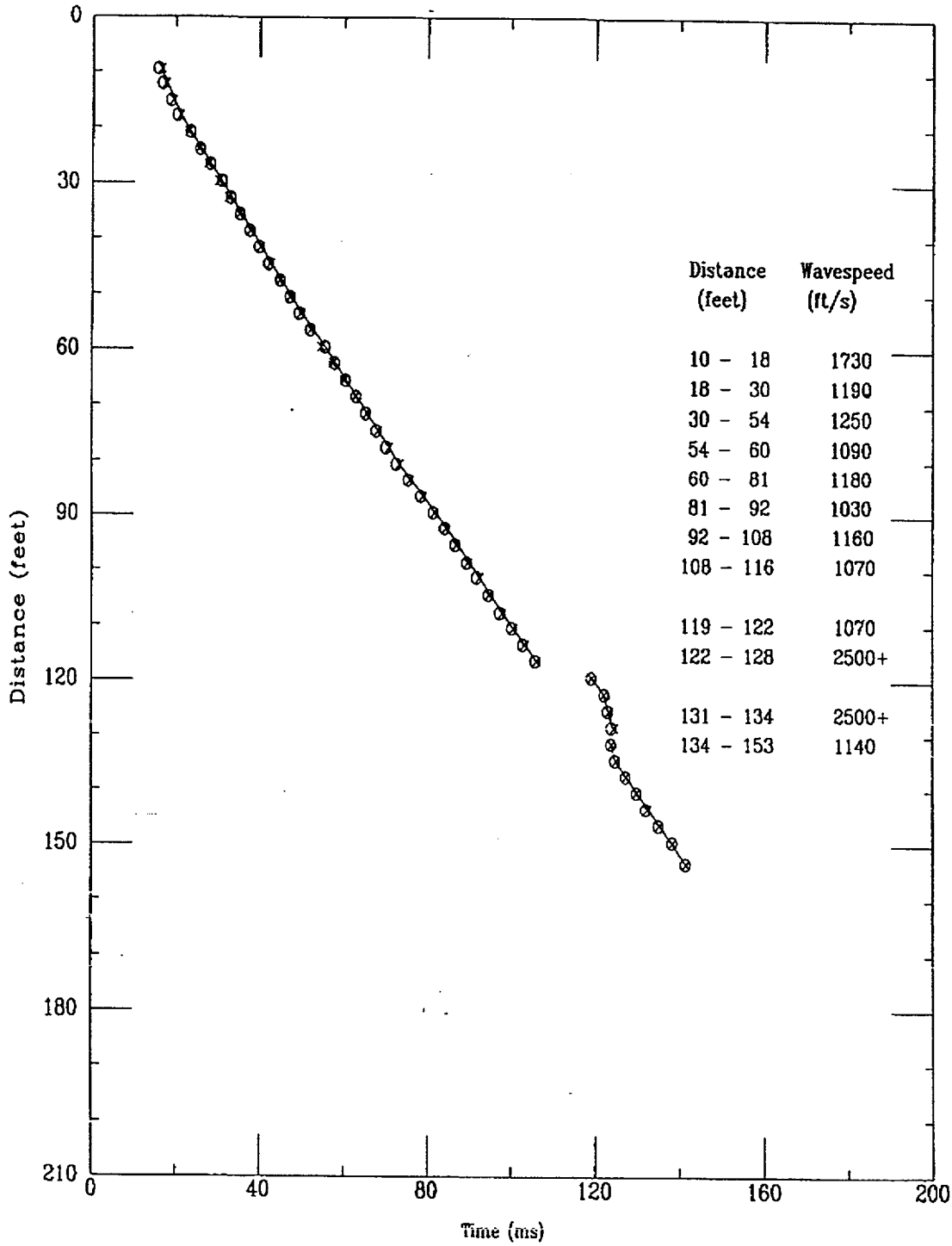
Shear Wave Speeds



File 324m801S

CPT-186 APPLIED RESEARCH ASSOCIATES, INC. 03/24/98

Shear Wave Time of Peak

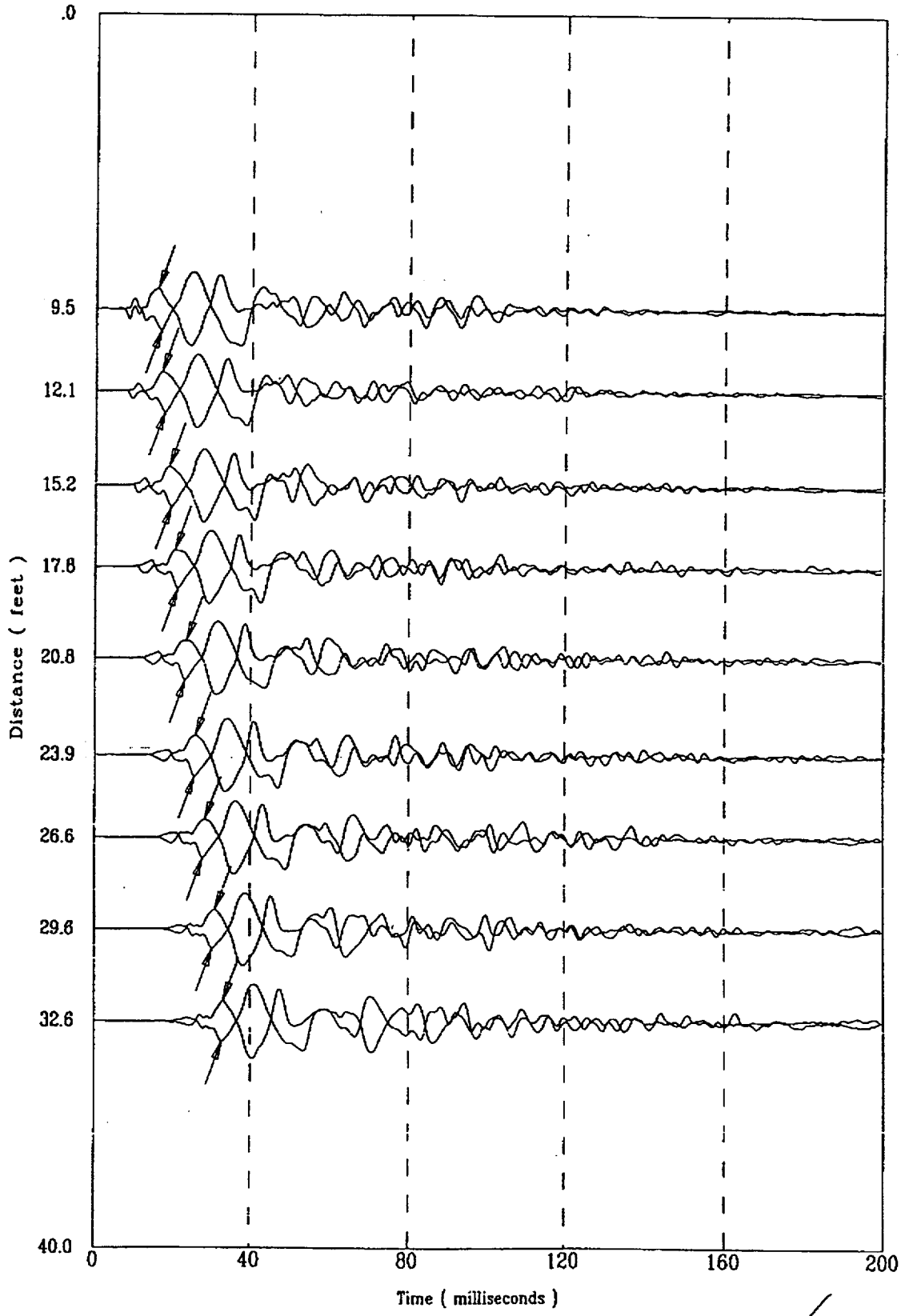


Distance (feet)	Wavespeed (ft/s)
10 - 18	1730
18 - 30	1190
30 - 54	1250
54 - 60	1090
60 - 81	1180
81 - 92	1030
92 - 108	1160
108 - 116	1070
119 - 122	1070
122 - 128	2500+
131 - 134	2500+
134 - 153	1140

File 324m801S

Applied Research Associates, Inc.
CPT-186

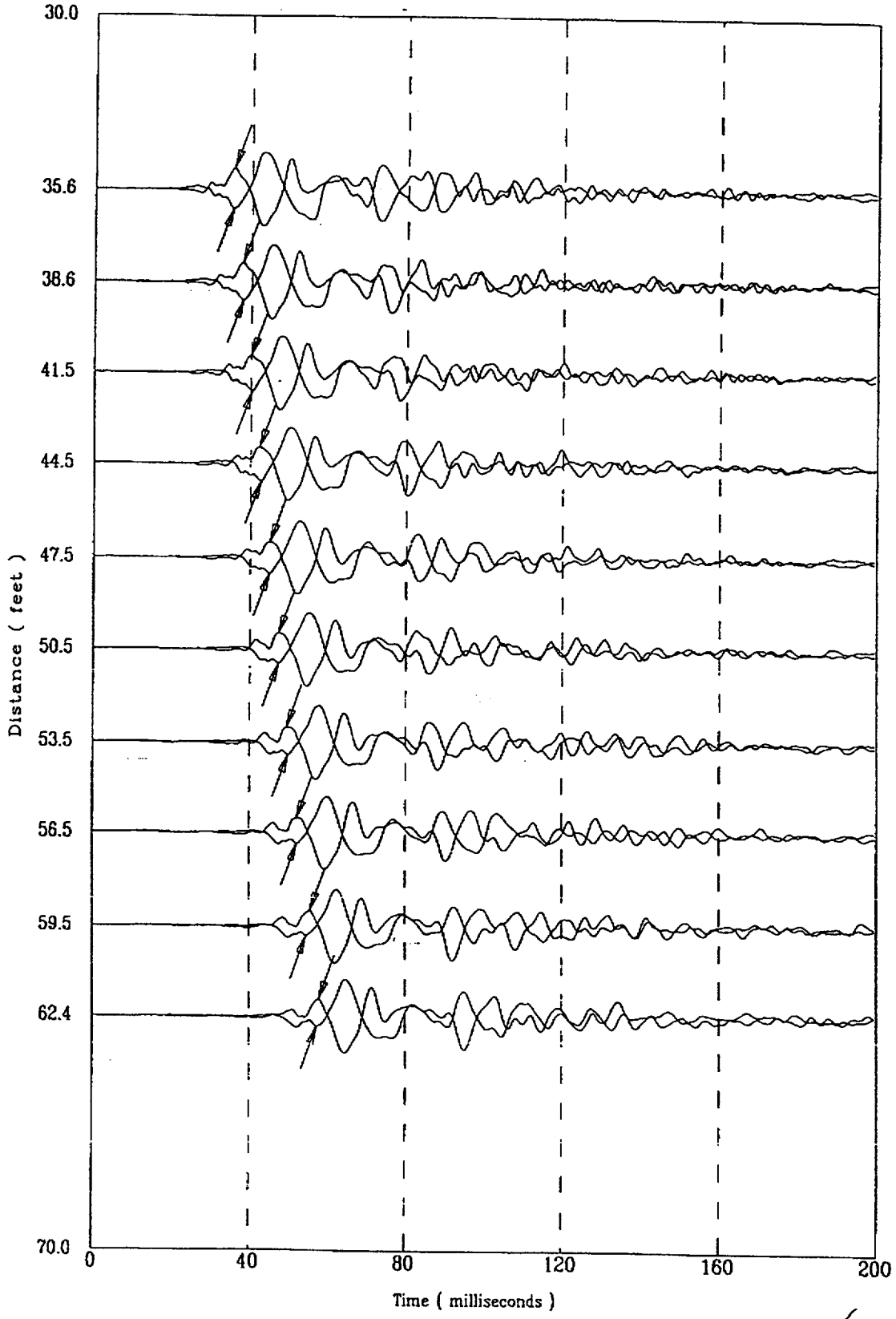
S Wave
03/24/98



J24m801S

Applied Research Associates, Inc.
CPT-186

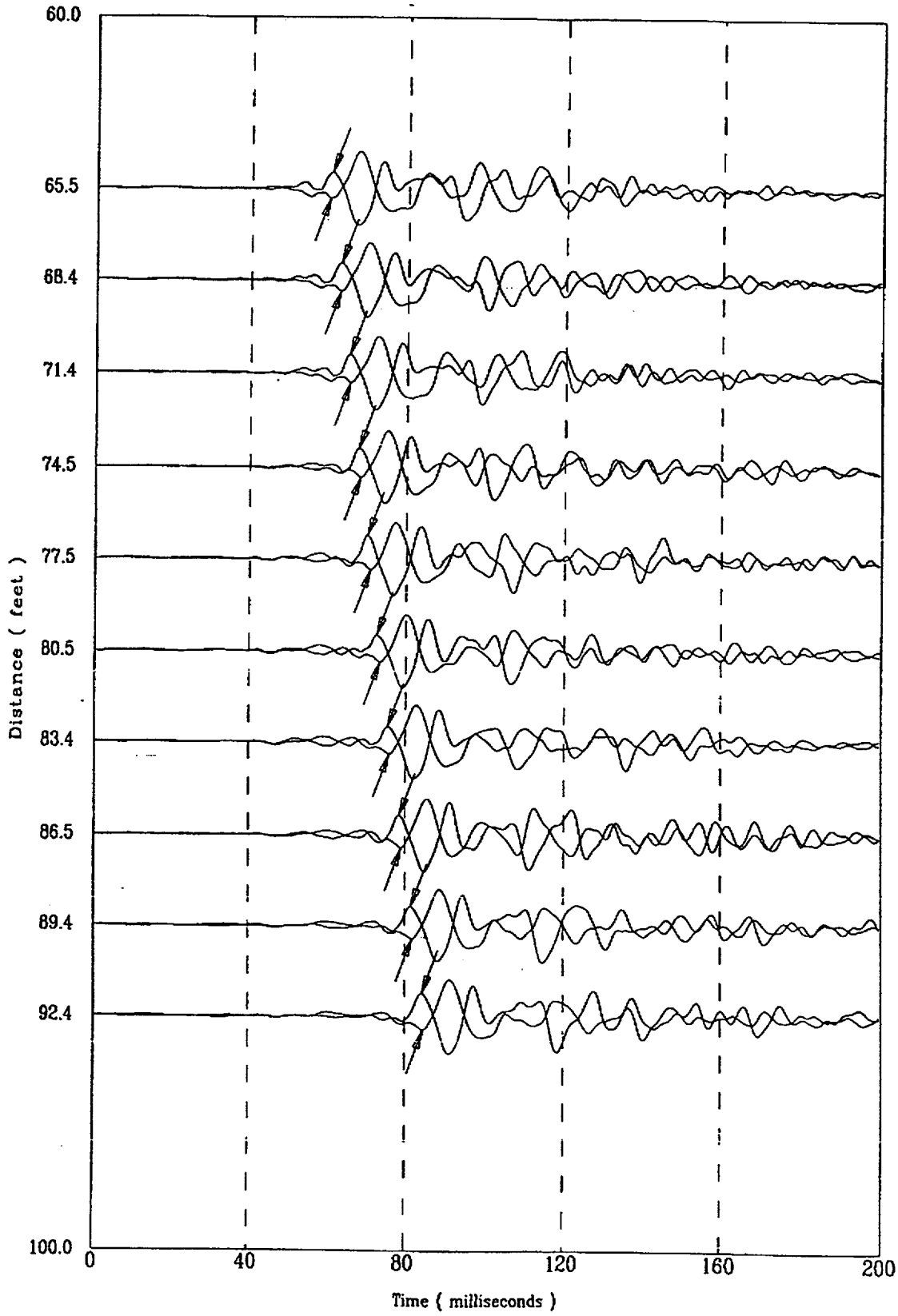
S Wave
03/24/98



File 324m801S

Applied Research Associates, Inc.
CPT-186

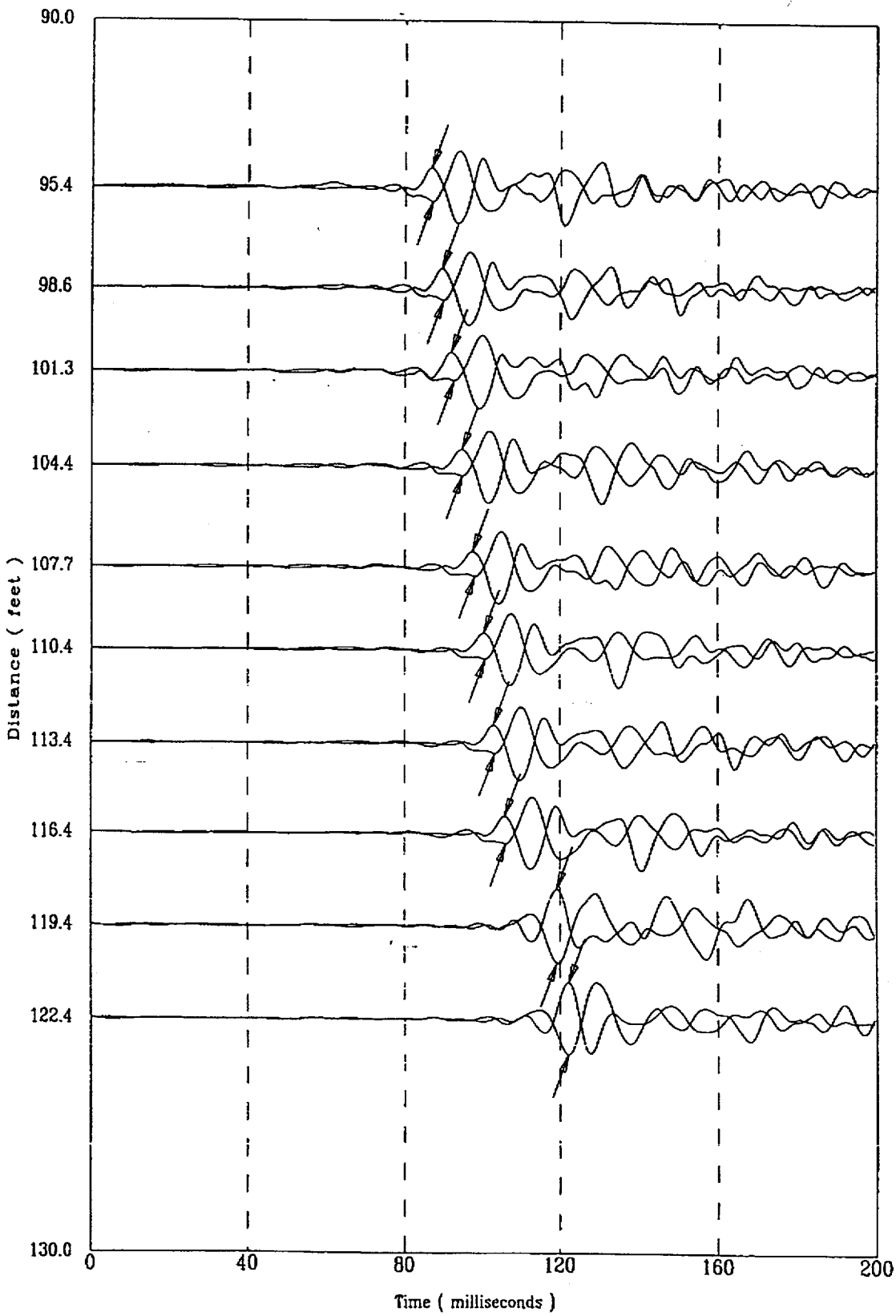
S Wave
03/24/98



4m801S

Applied Research Associates, Inc.
CPT-186

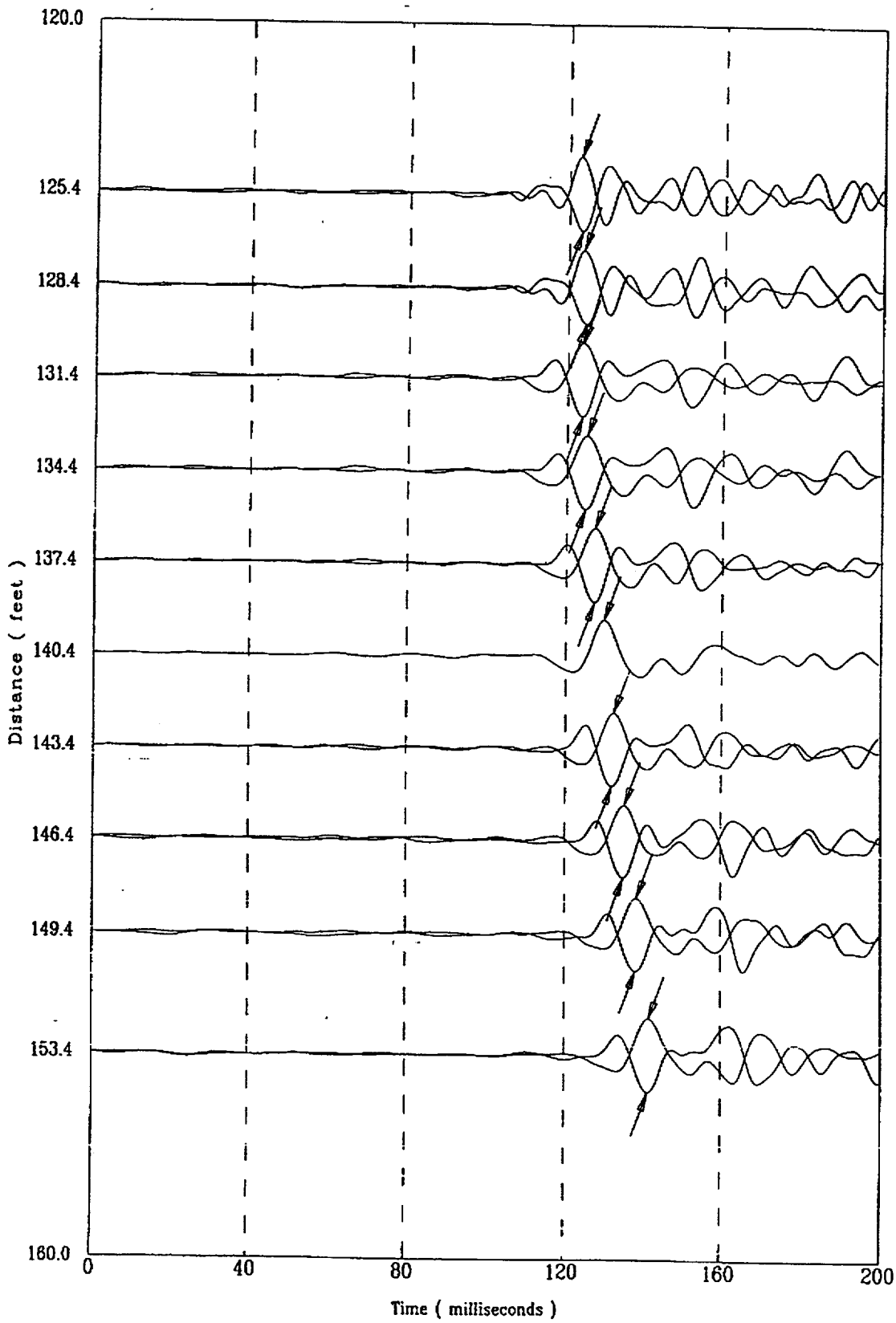
S Wave
03/24/98



File 324m801S

Applied Research Associates, Inc.
CPT-186

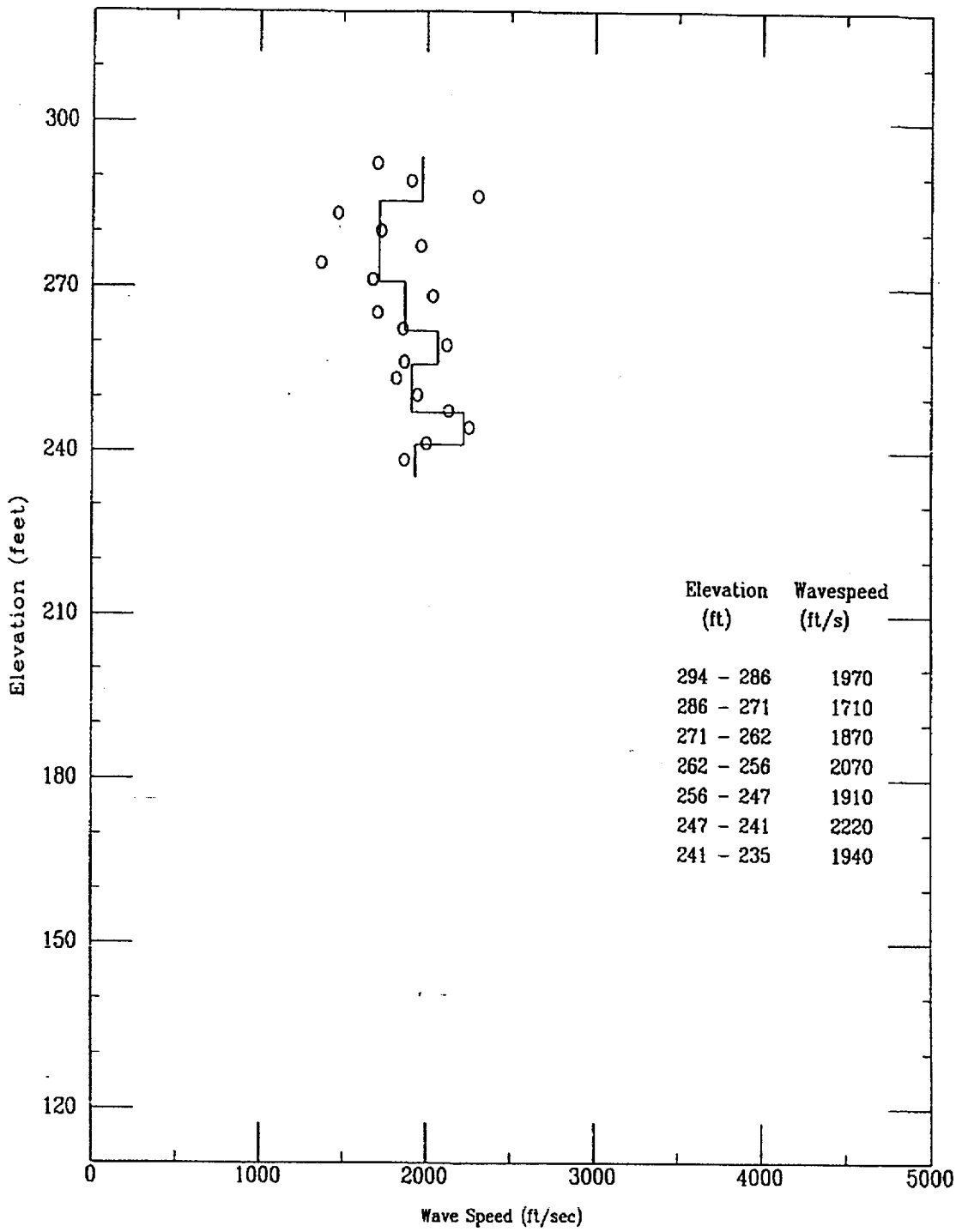
S Wave
03/24/98



24m801S

CPT-186 APPLIED RESEARCH ASSOCIATES, INC. 03/24/98

Compression Wave Speeds

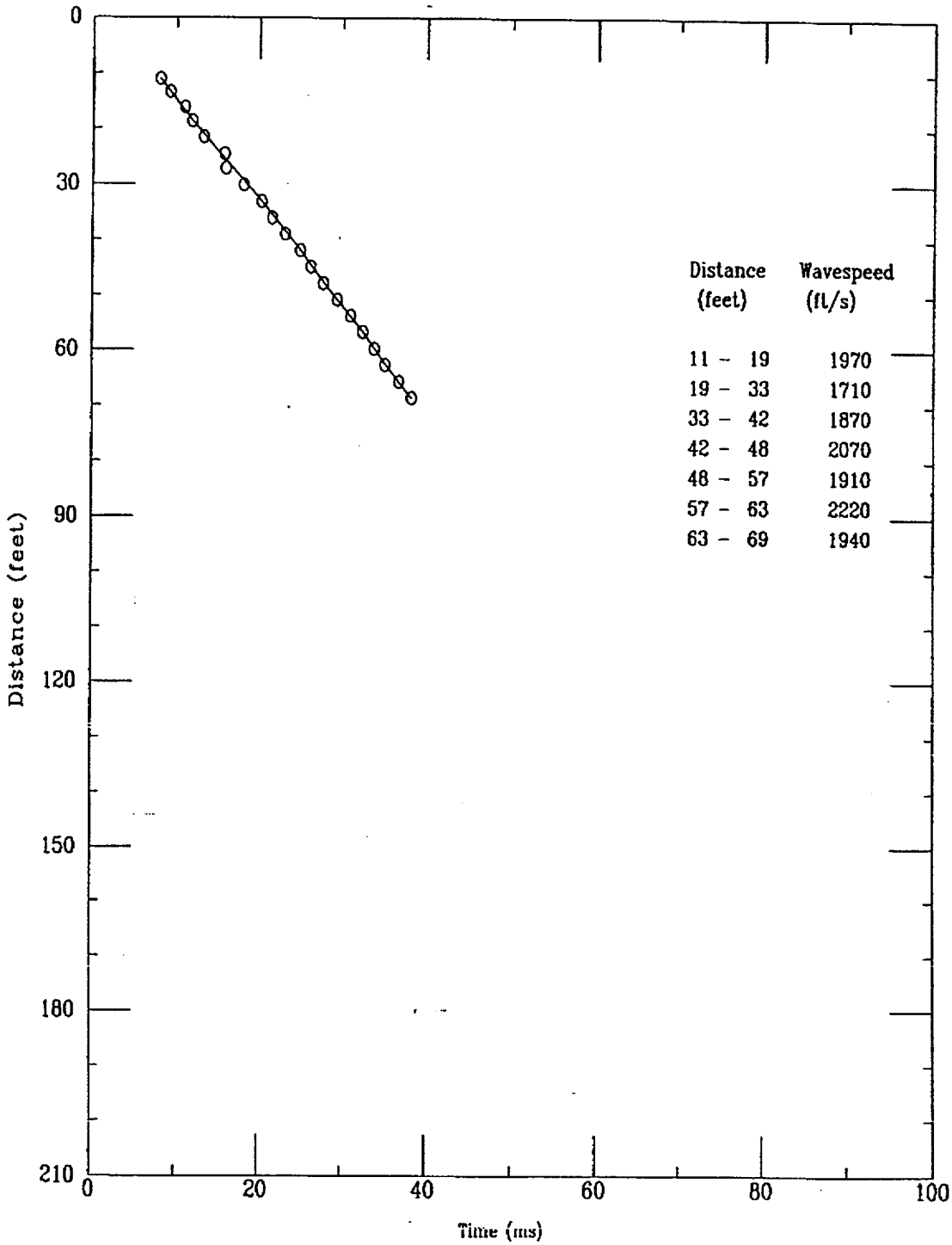


Elevation (ft)	Wavespeed (ft/s)
294 - 286	1970
286 - 271	1710
271 - 262	1870
262 - 256	2070
256 - 247	1910
247 - 241	2220
241 - 235	1940

File 324m801S

CPT-186 APPLIED RESEARCH ASSOCIATES, INC. 03/24/98

Compression Wave Time of Peak

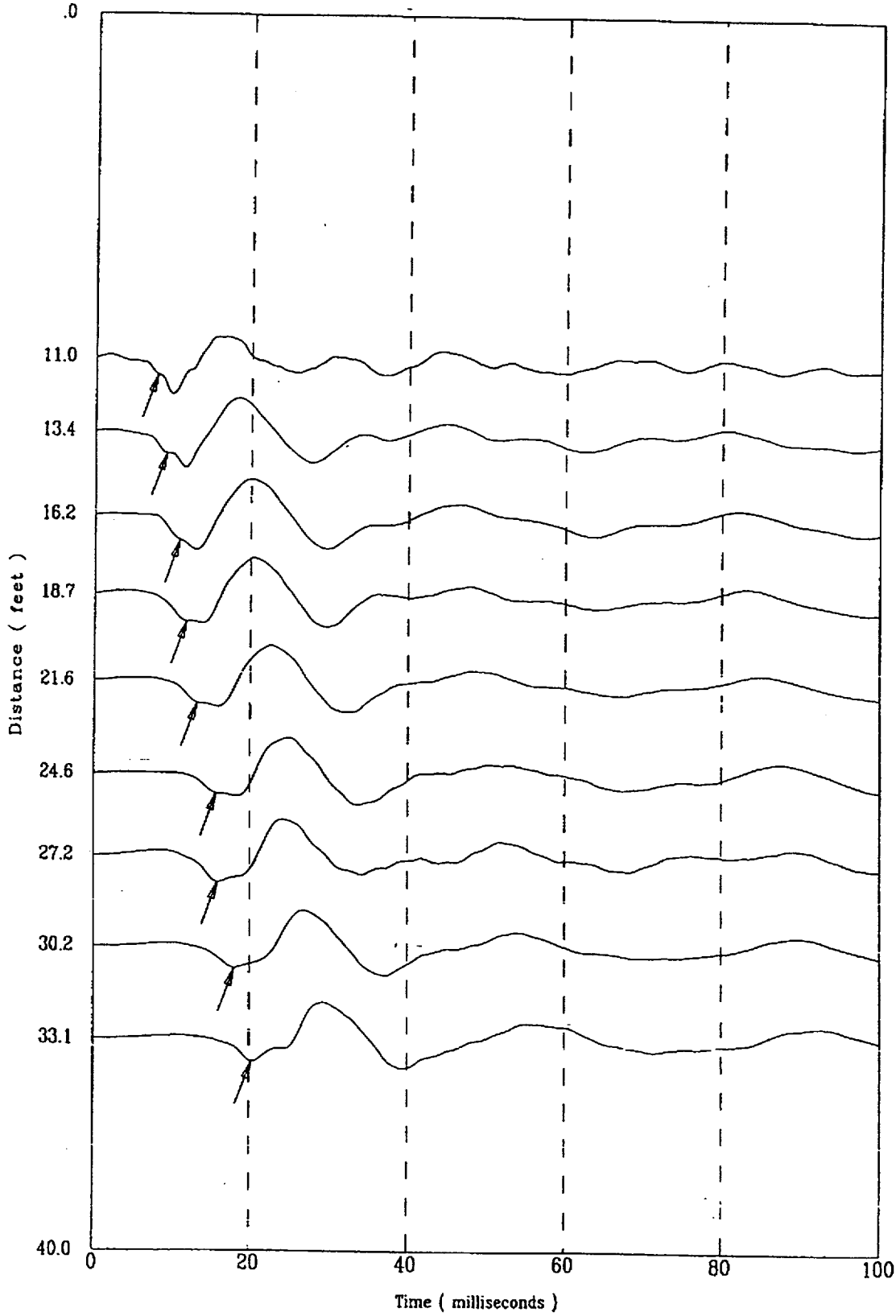


Distance (feet)	Wavespeed (ft/s)
11 - 19	1970
19 - 33	1710
33 - 42	1870
42 - 48	2070
48 - 57	1910
57 - 63	2220
63 - 69	1940

File 324m801S

Applied Research Associates, Inc.
CPT-186

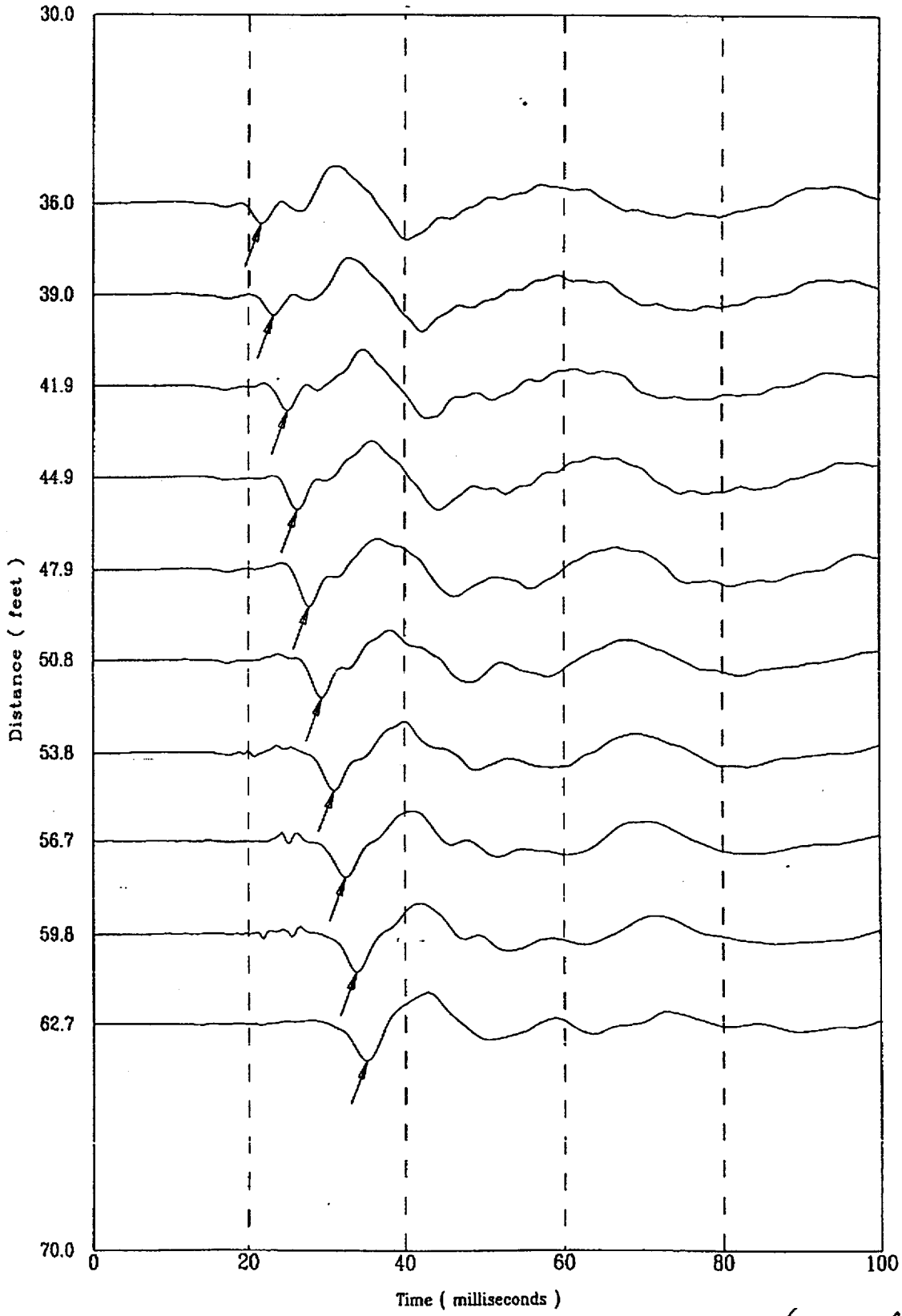
P Wave
03/24/98



File 324m801S

Applied Research Associates, Inc.
CPT-186

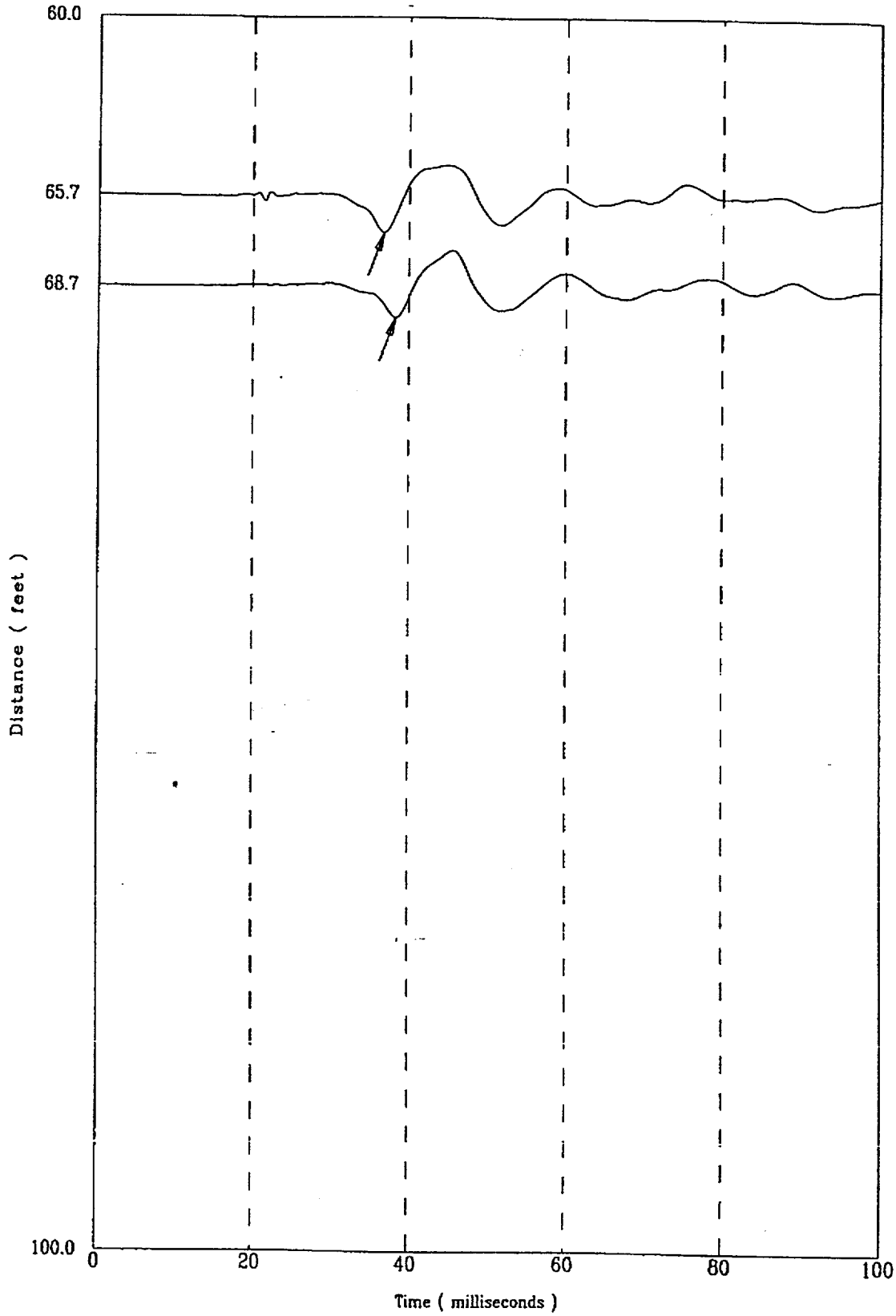
P Wave
03/24/98



24m801S

Applied Research Associates, Inc.
CPT-186

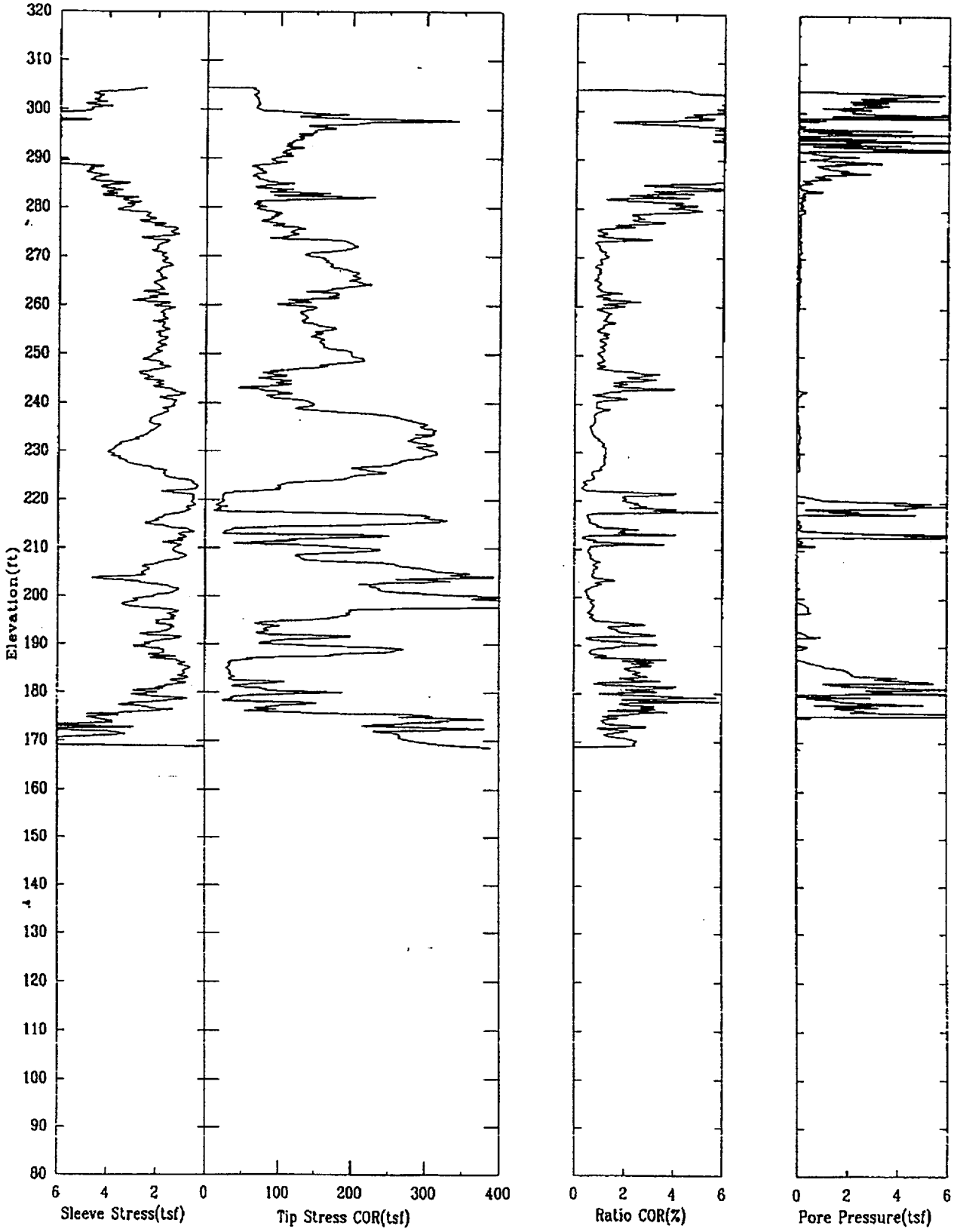
P Wave
03/24/98



File 324m801S

CPT-188 APPLIED RESEARCH ASSOCIATES, INC. 03/09/98

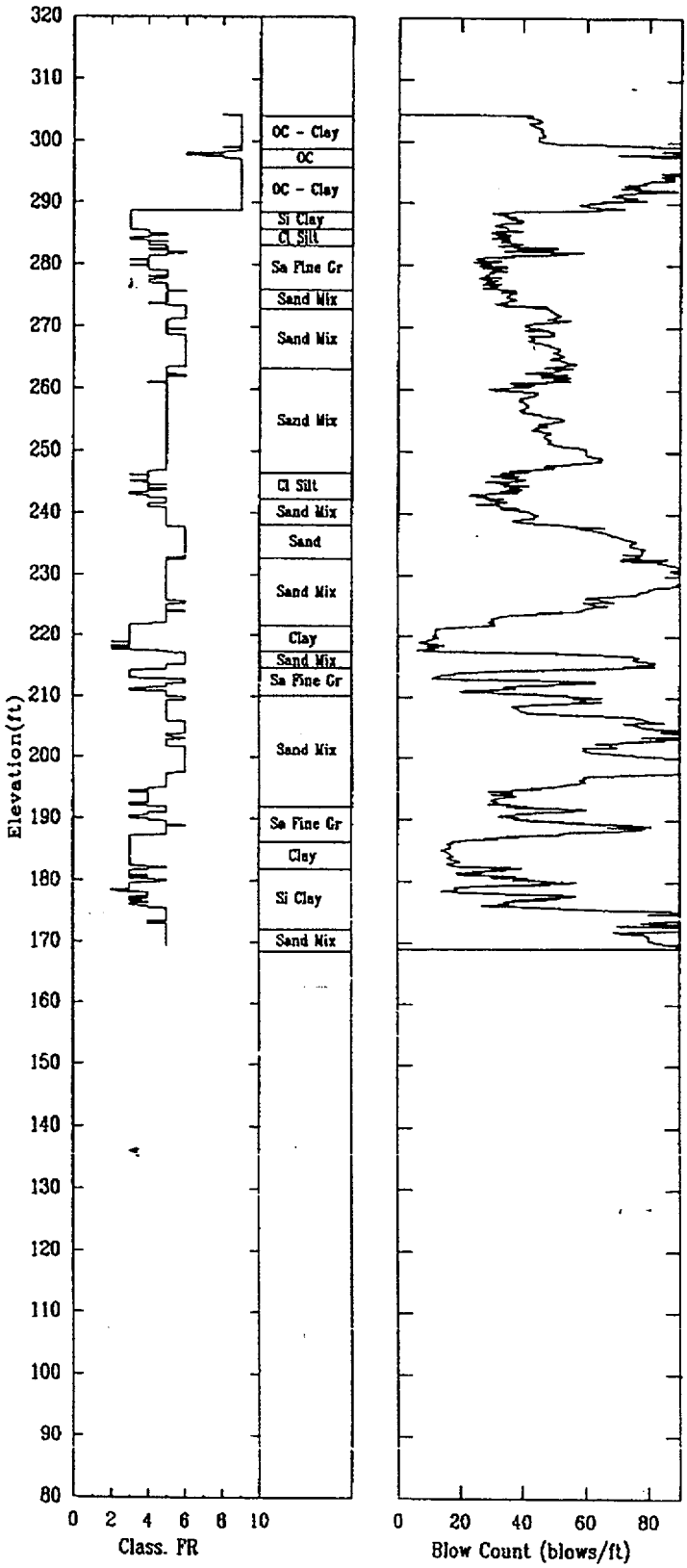
North 78250 East 55330 Elevation 310.4



File 409M801.ECP

CPT-188 APPLIED RESEARCH ASSOCIATES, INC. 03/09/98

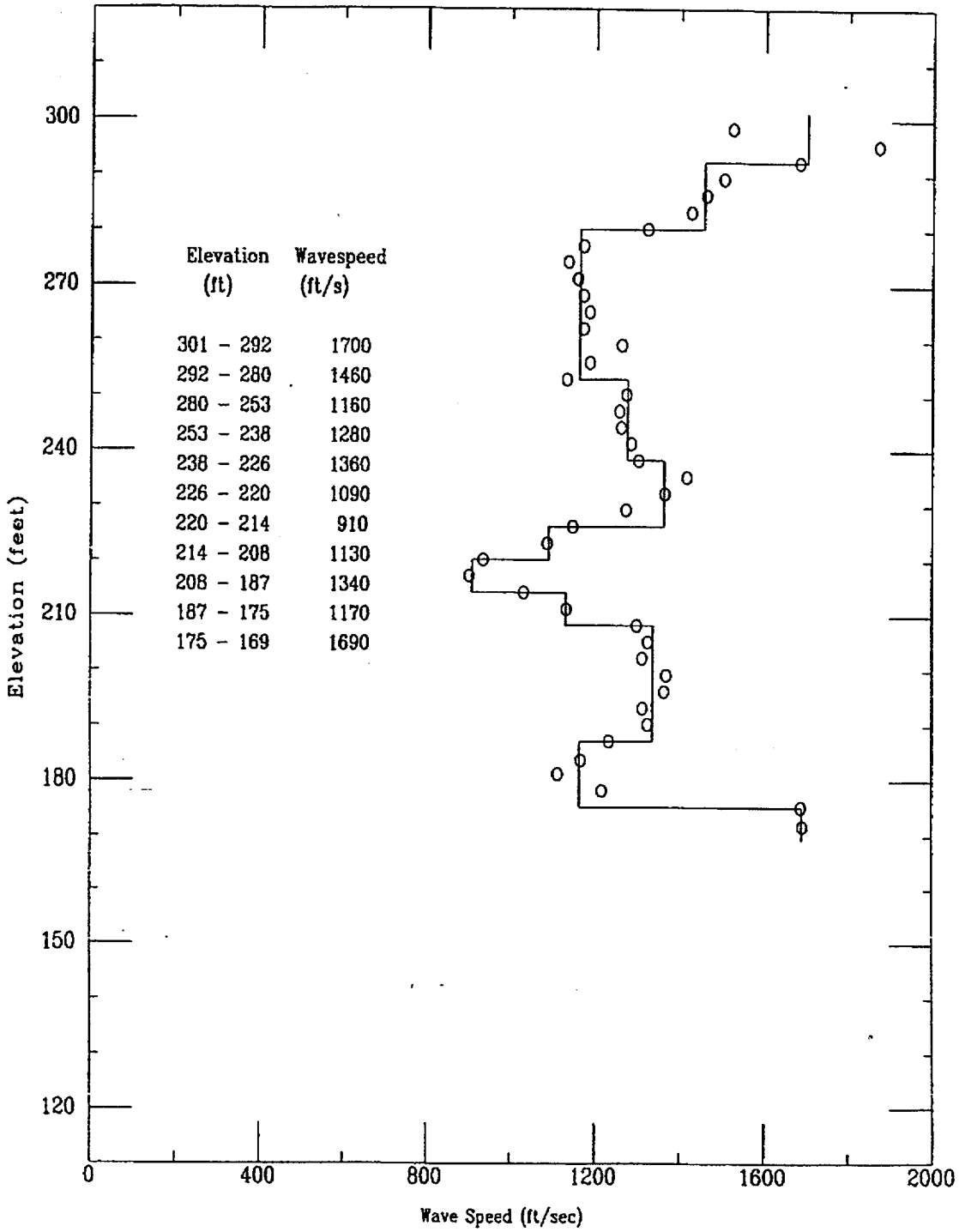
North 78250 East 55330 Elevation 310.4



File 409M801.ECP

CPT-188 APPLIED RESEARCH ASSOCIATES, INC. 03/09/98

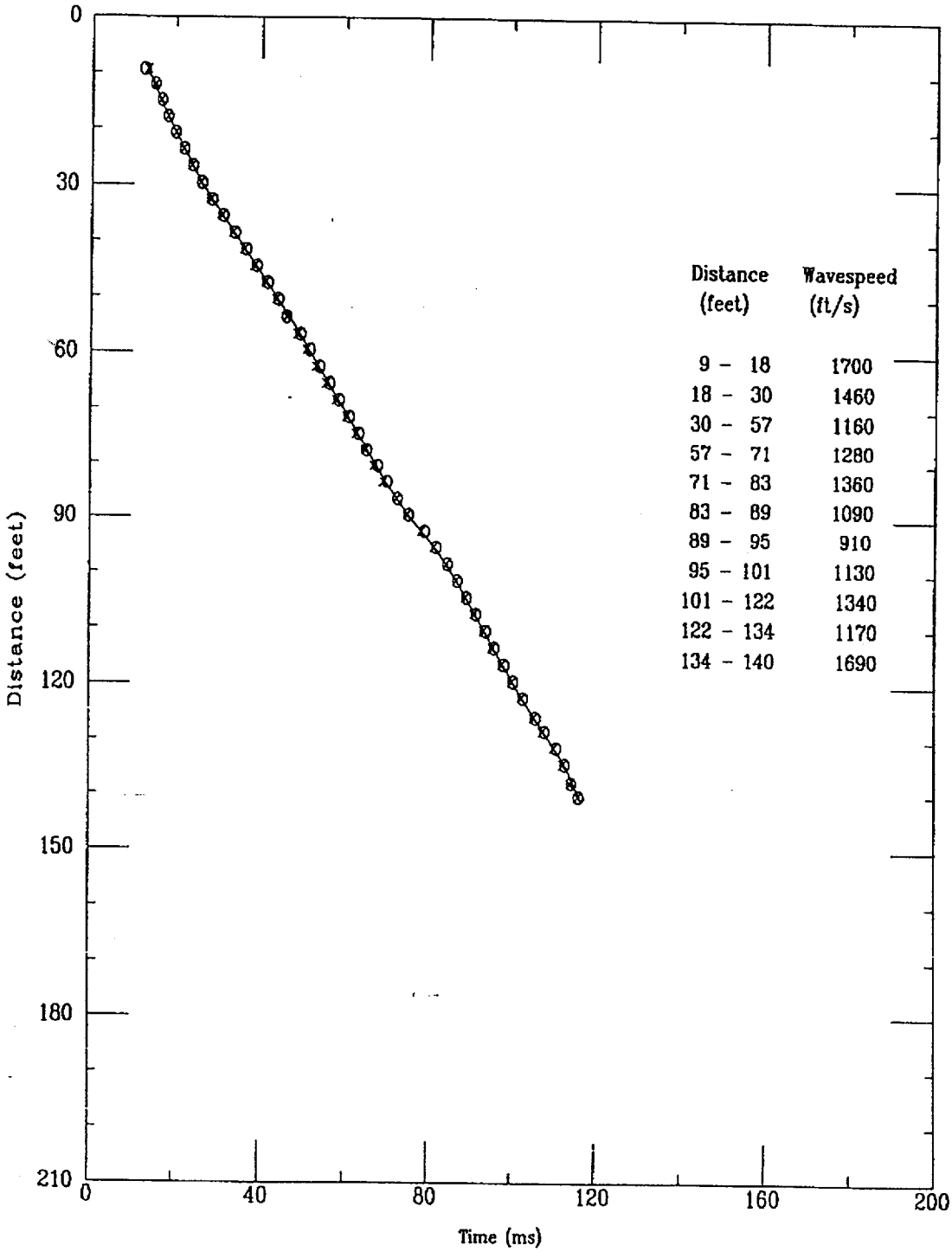
Shear Wave Speeds



File 409m801S

CPT-188 APPLIED RESEARCH ASSOCIATES, INC. 03/09/98

Shear Wave Time of Peak



Distance (feet)	Wavespeed (ft/s)
9 - 18	1700
18 - 30	1460
30 - 57	1160
57 - 71	1280
71 - 83	1360
83 - 89	1090
89 - 95	910
95 - 101	1130
101 - 122	1340
122 - 134	1170
134 - 140	1690

File 409m801S

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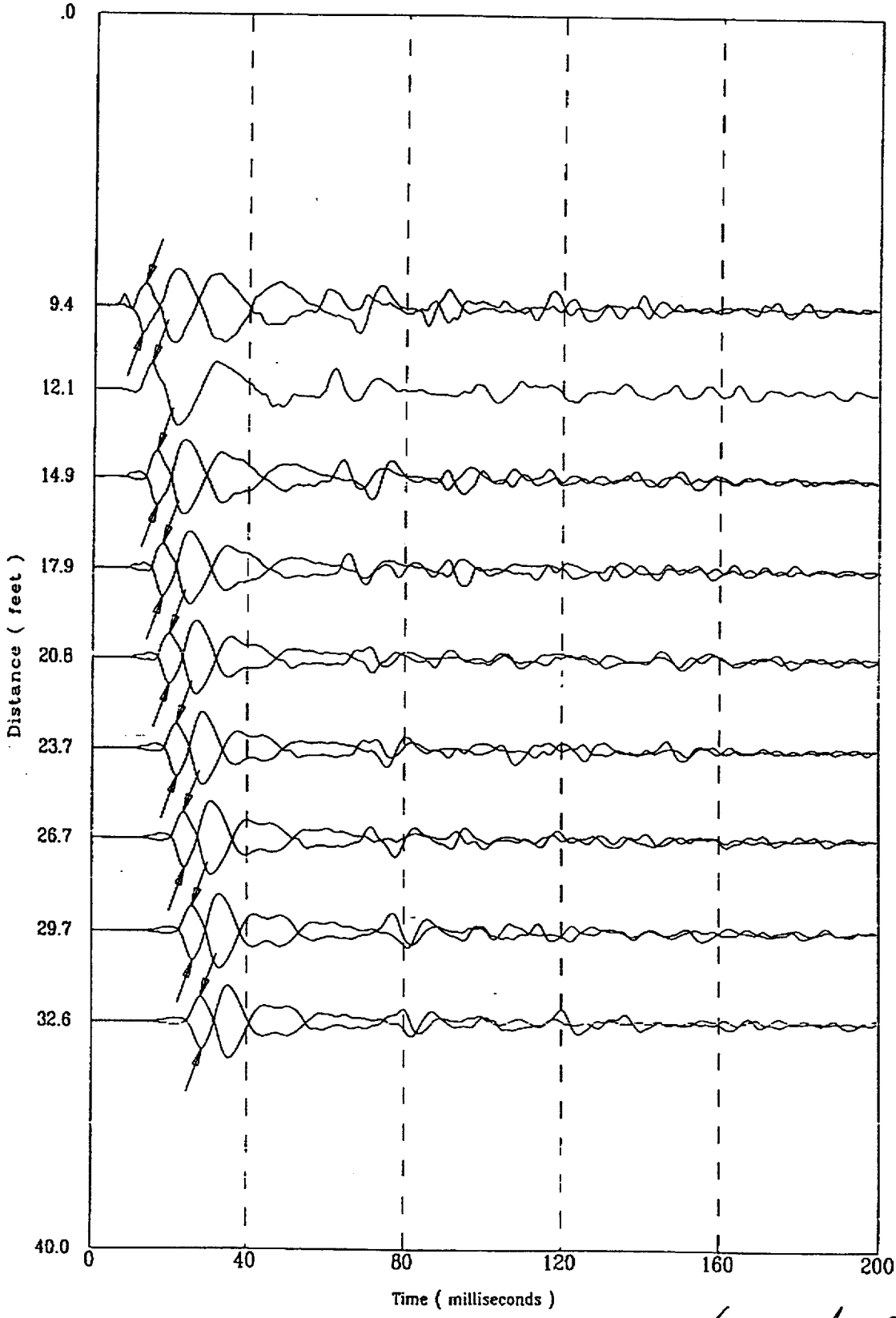
S Wave
03/09/98



File 409m801S

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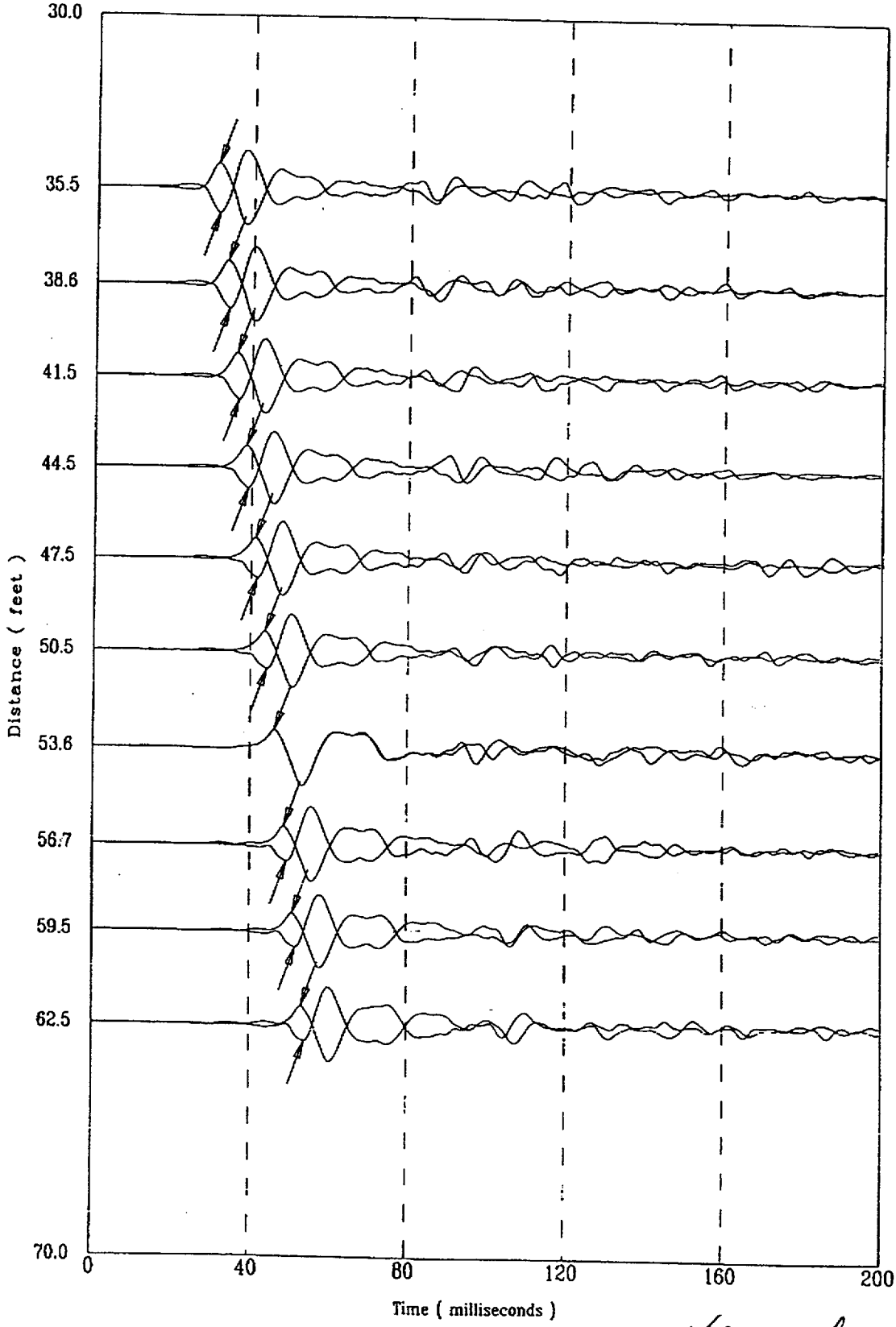
S Wave
03/09/98



File 409m801S

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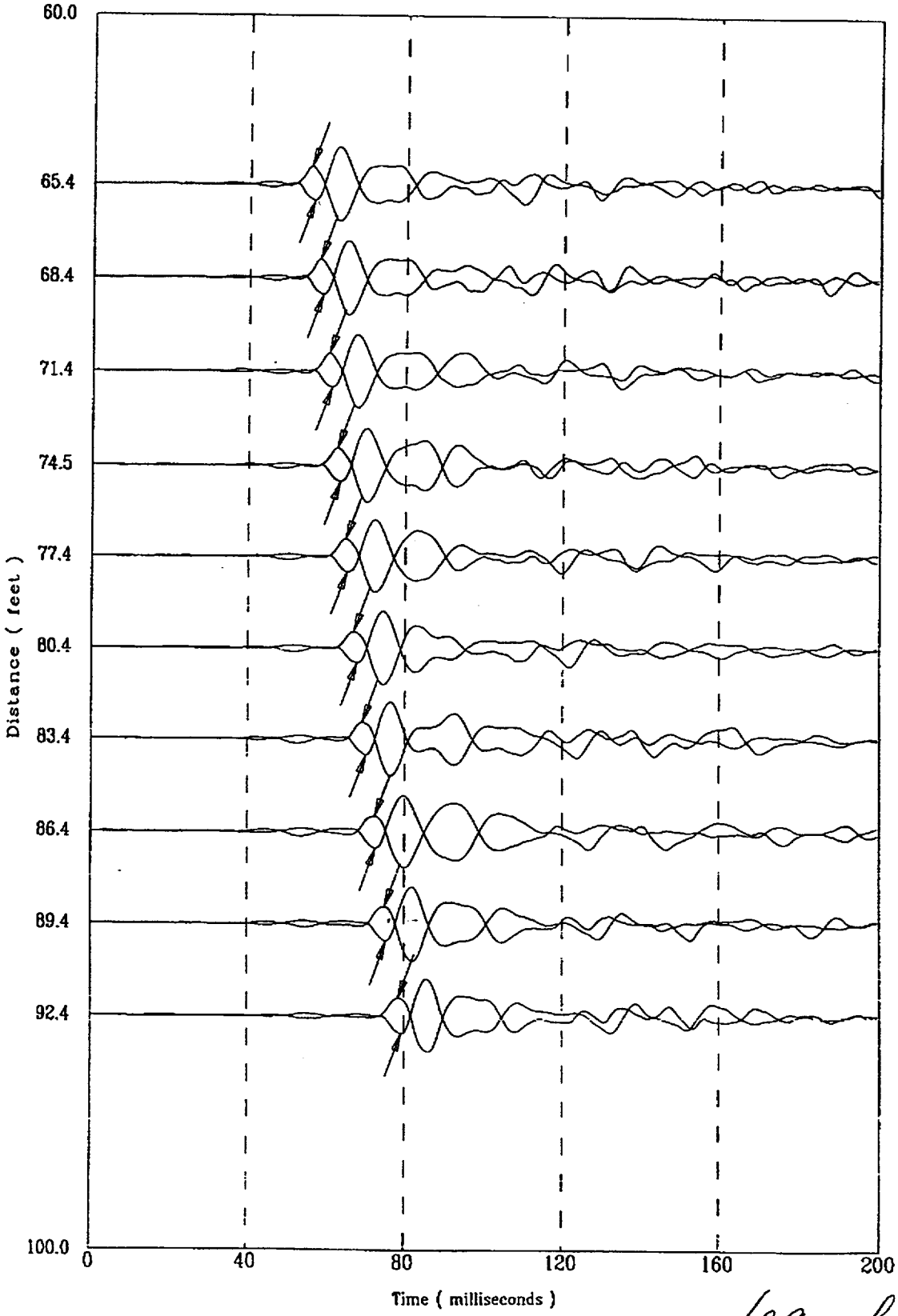
S Wave
03/09/98



file 409m801S

Applied Research Associates, Inc.
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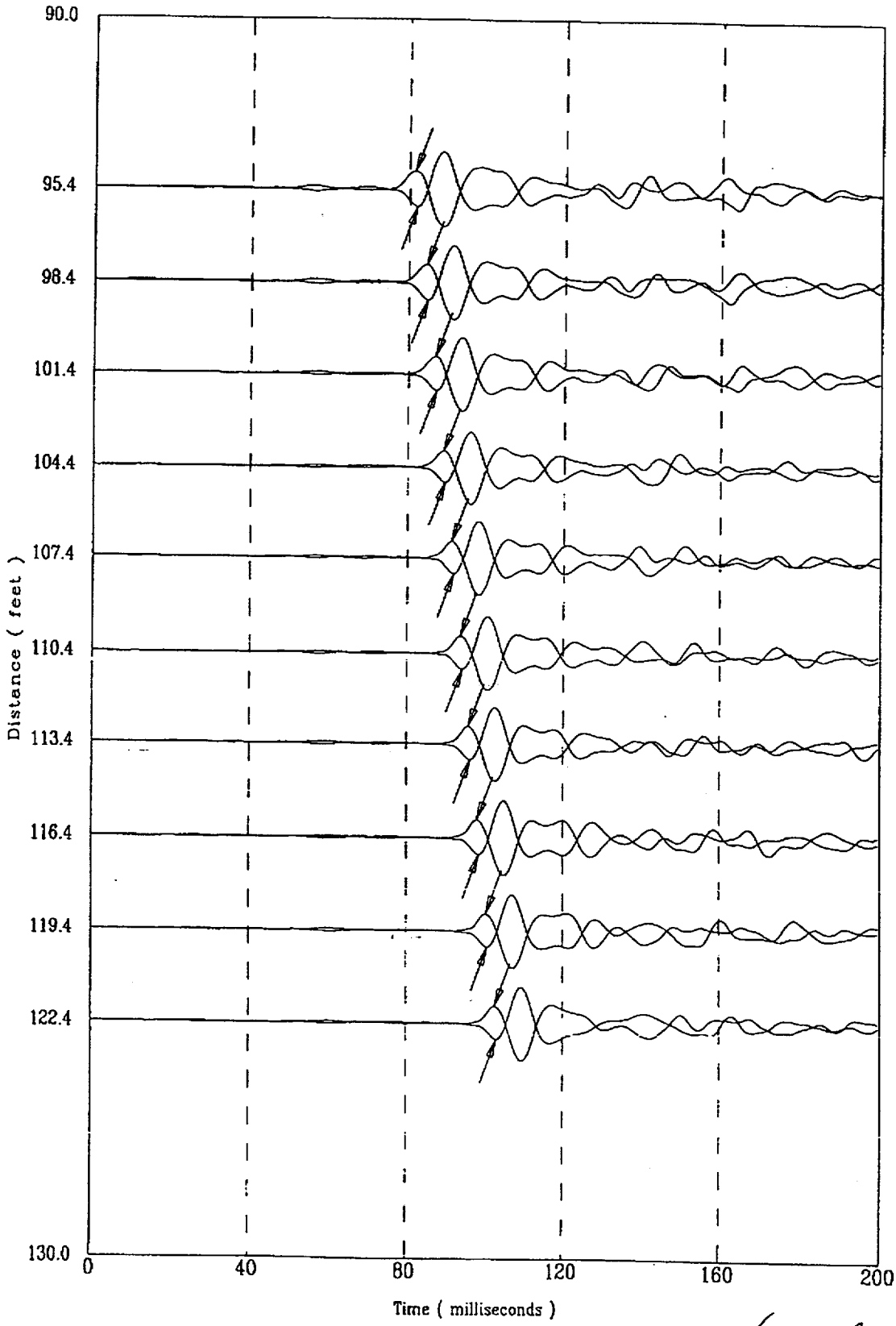
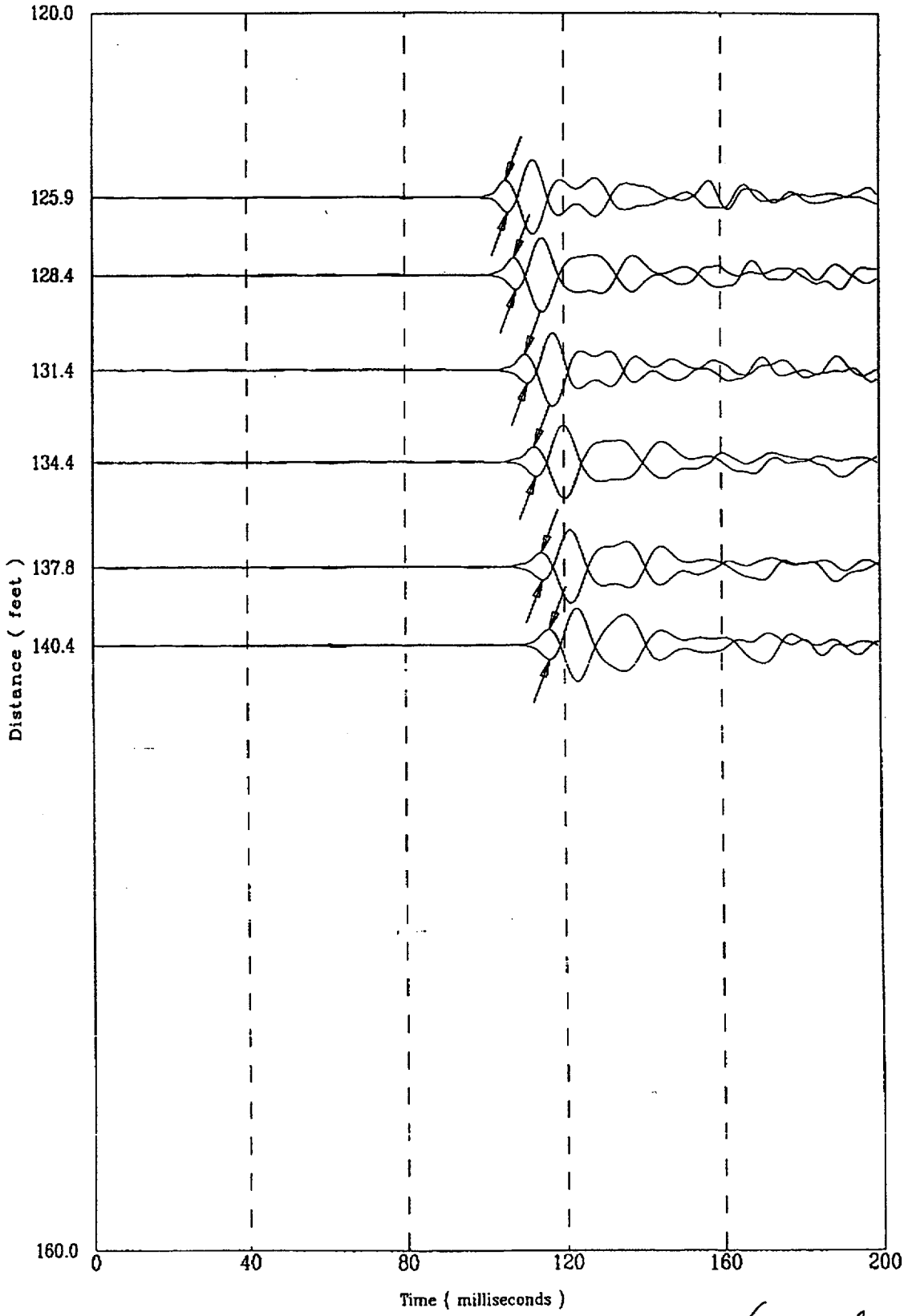
S Wave
03/09/98



File 409m801S

Applied Research Associates, Inc.
CPT-188

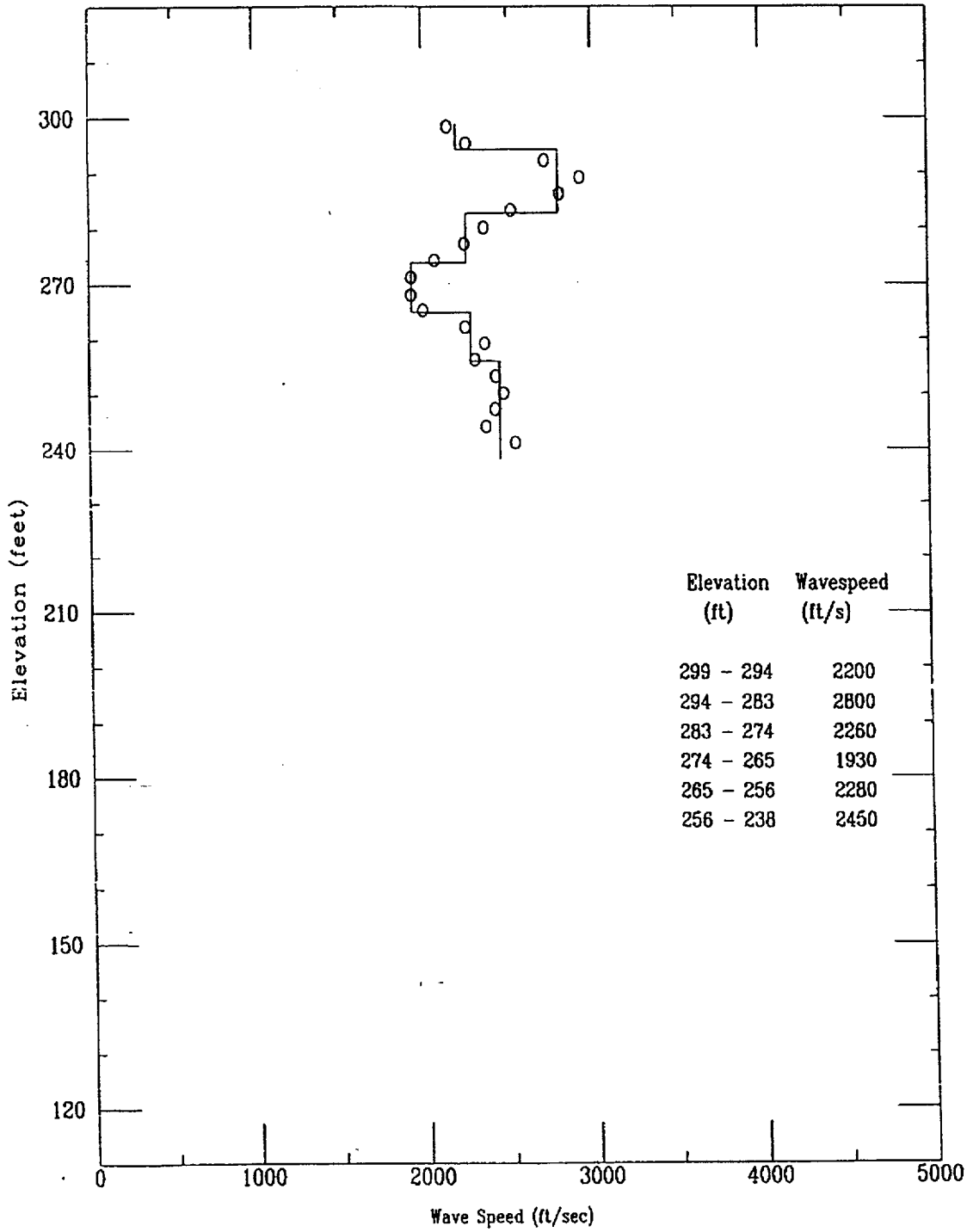
S Wave
03/09/98



File 409m801S

CPT-188 APPLIED RESEARCH ASSOCIATES, INC. 03/26/98

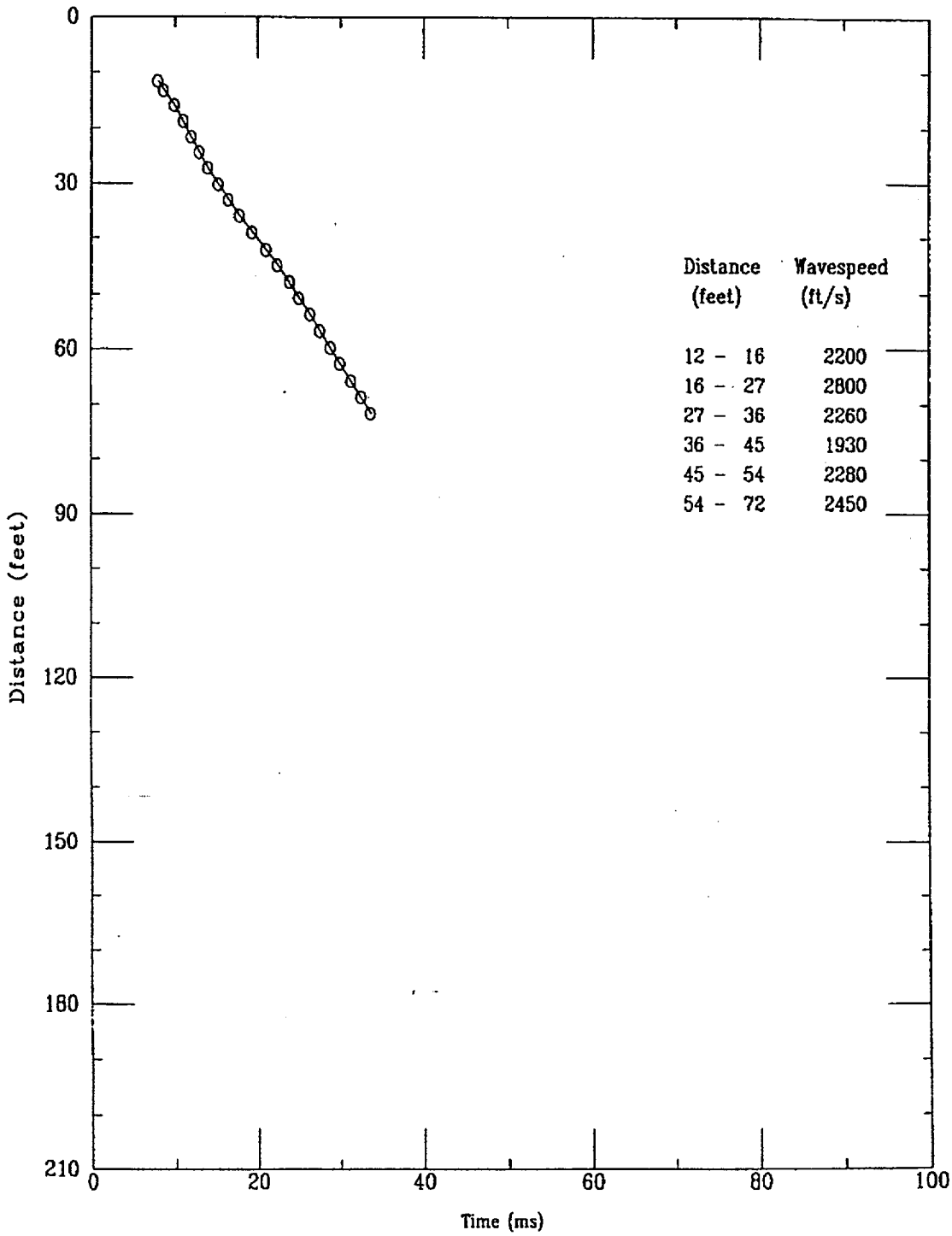
Compression Wave Speeds



File 326m801S

CPT-188 APPLIED RESEARCH ASSOCIATES, INC. 03/26/98

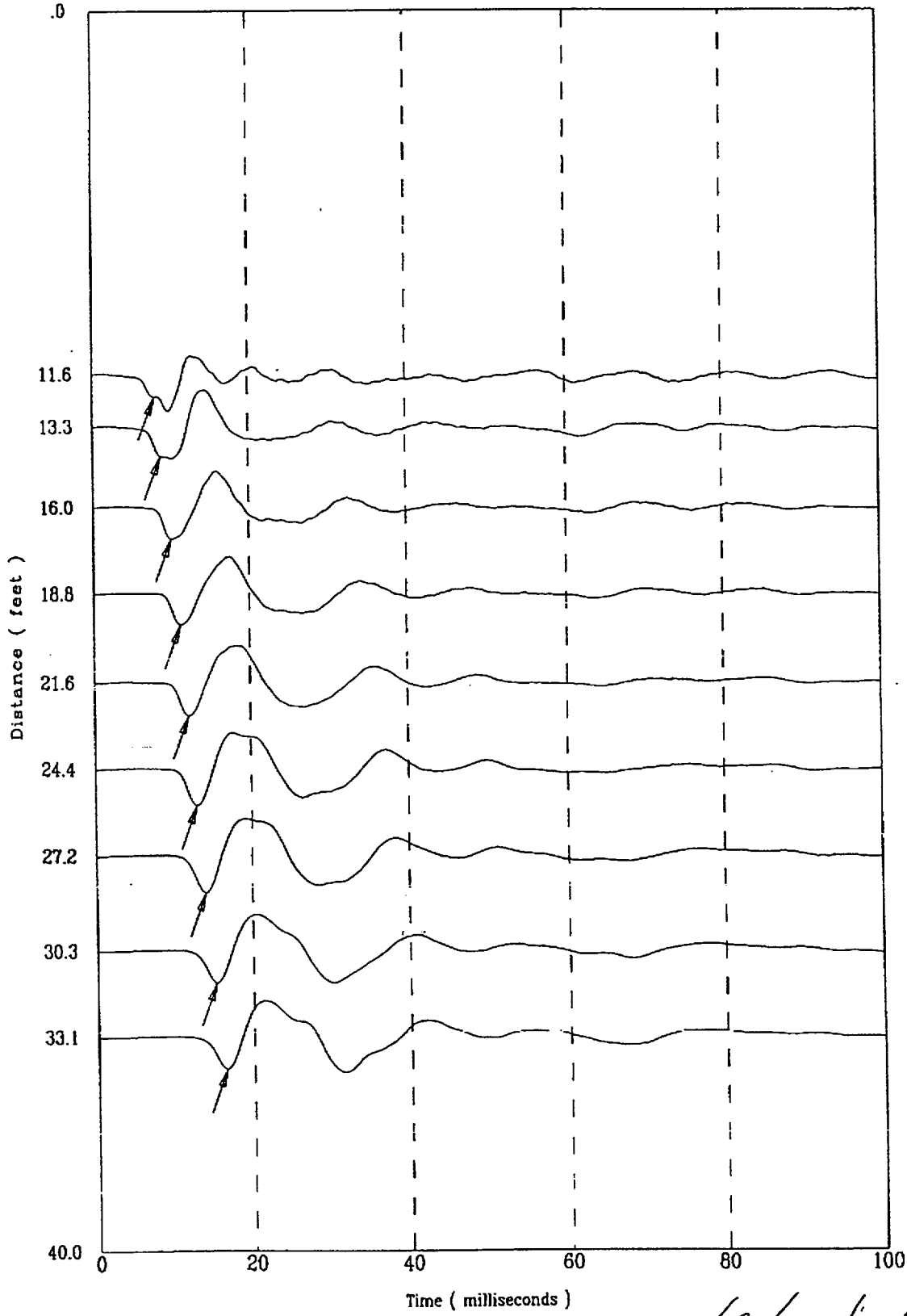
Compression Wave Time of Peak



File 326m801S

Applied Research Associates, Inc.
CPT-188

P Wave
03/26/98



File 326m801S

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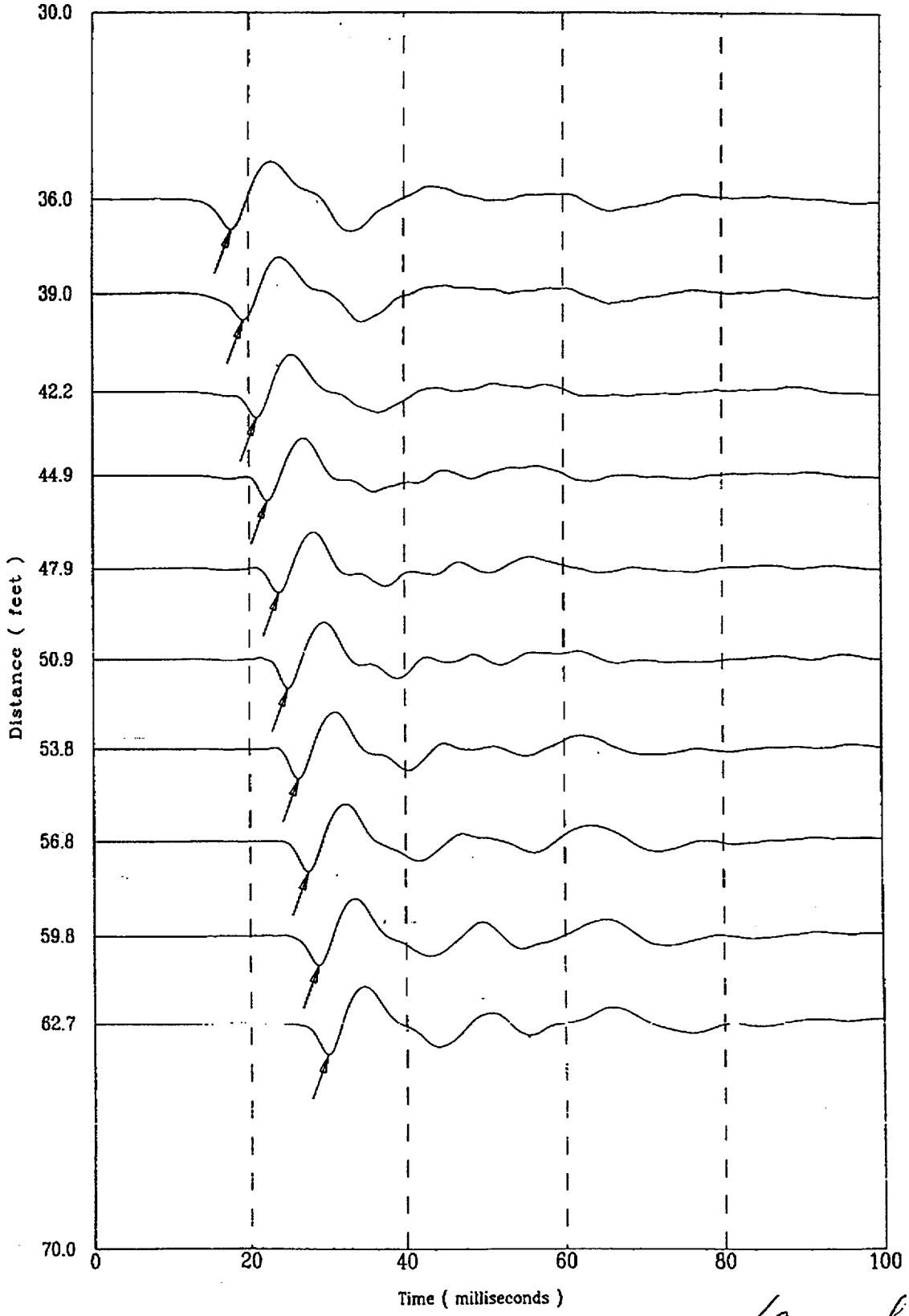
P Wave
03/26/98



File 326m801S

Applied Research Associates, Inc.
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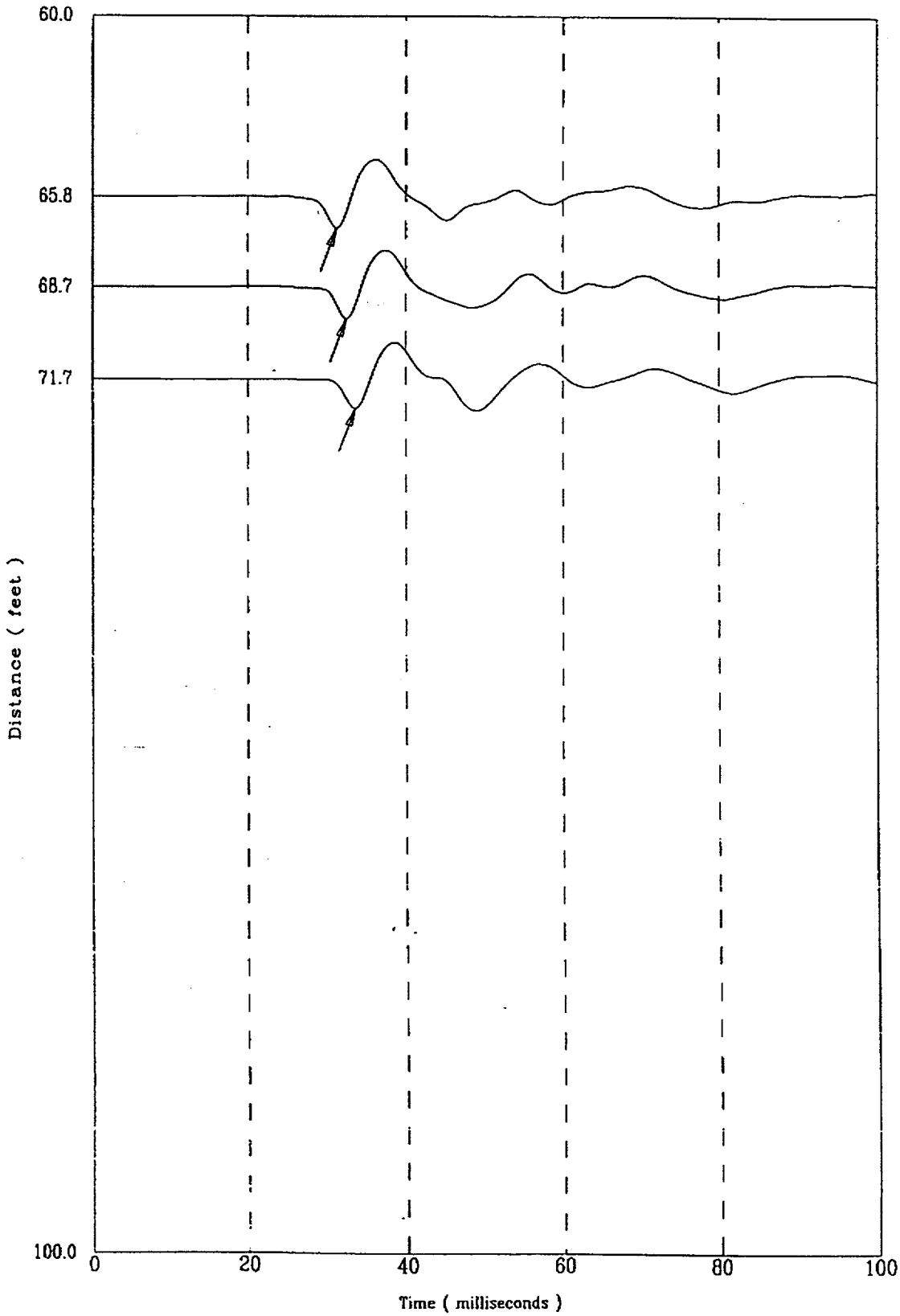
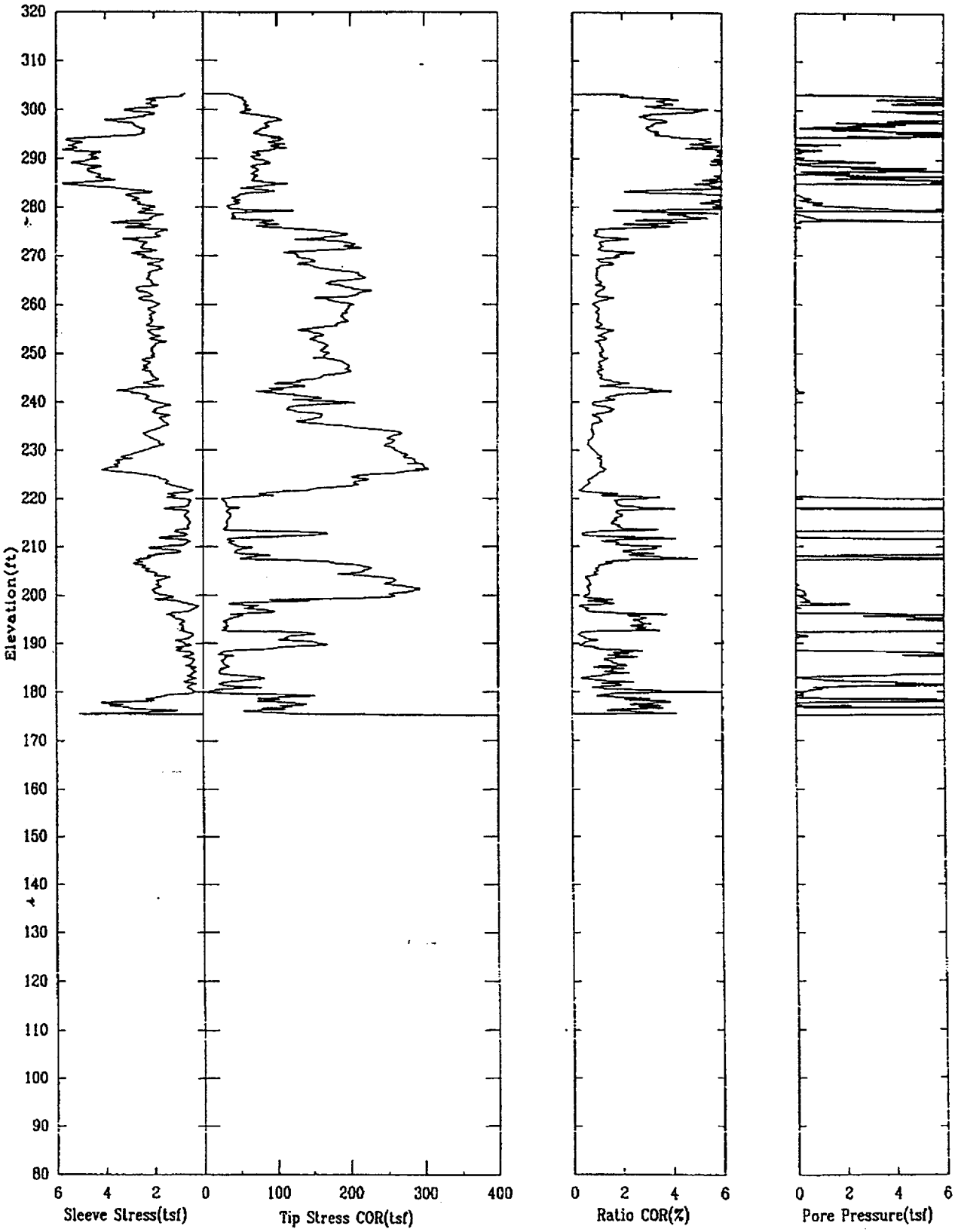
P Wave
03/26/98



File 326m801S

CPT-189 APPLIED RESEARCH ASSOCIATES, INC. 03/23/98

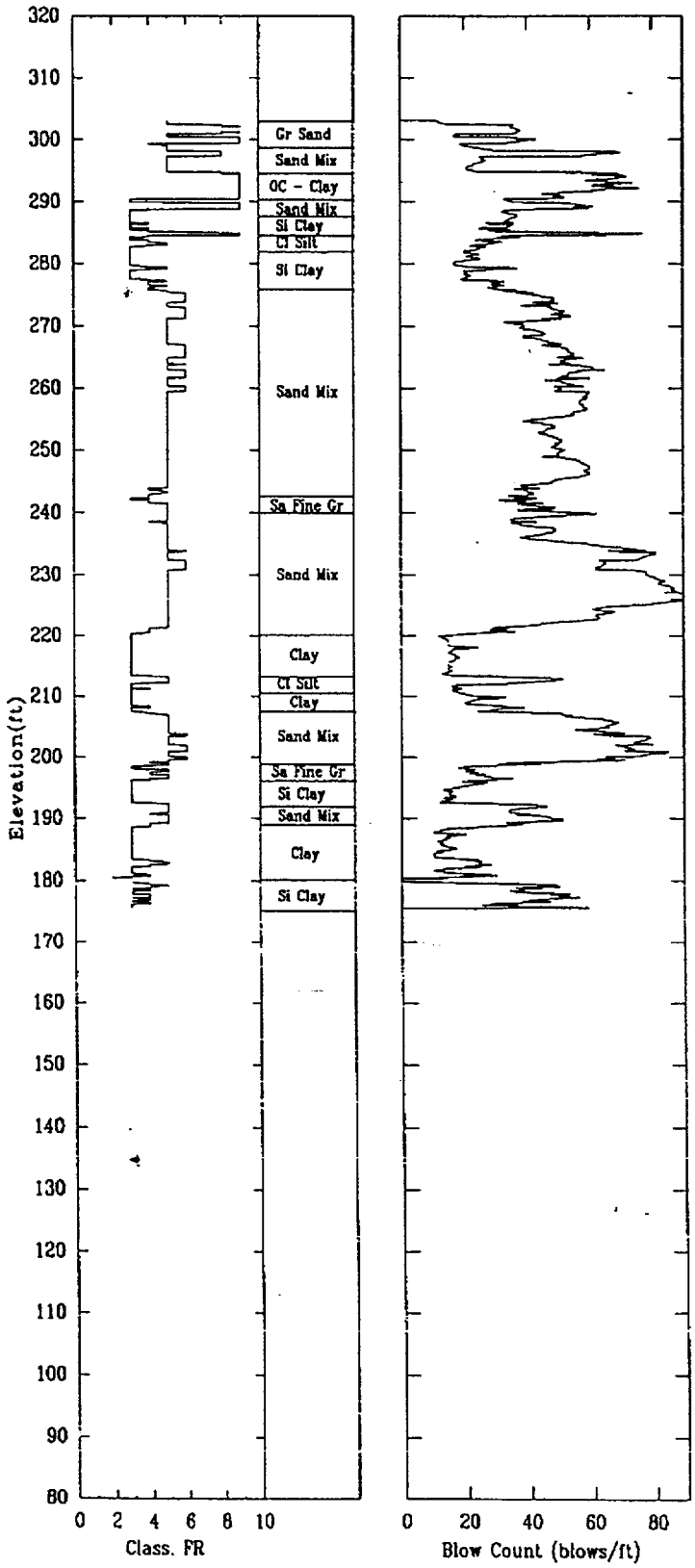
North 78250 East 55451 Elevation 309.2



File 323M804.ECP

CPT-189 APPLIED RESEARCH ASSOCIATES, INC. 03/23/98

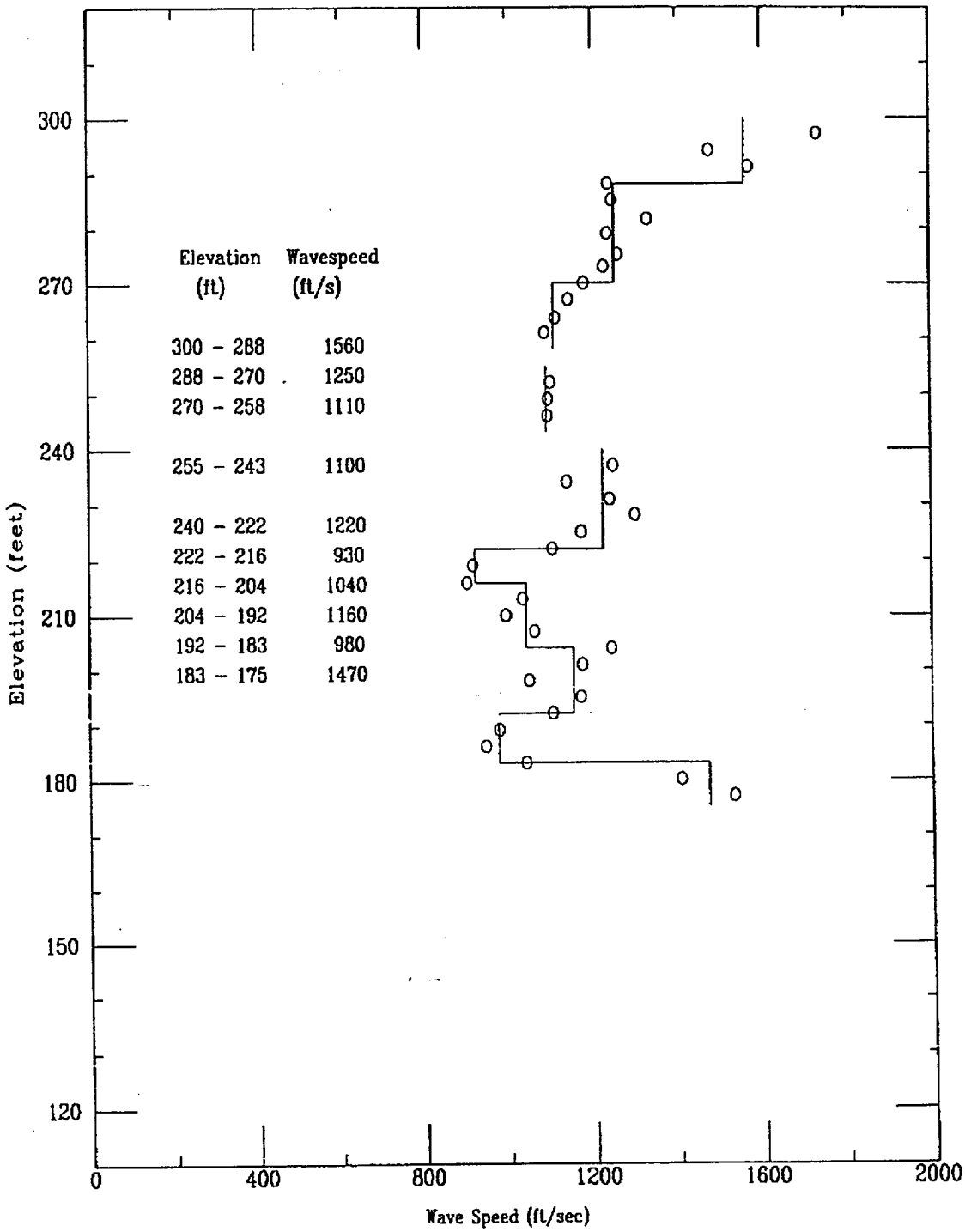
North 78250 East 55451 Elevation 309.2



File 323M804.ECP

CPT-189 APPLIED RESEARCH ASSOCIATES, INC. 03/23/98

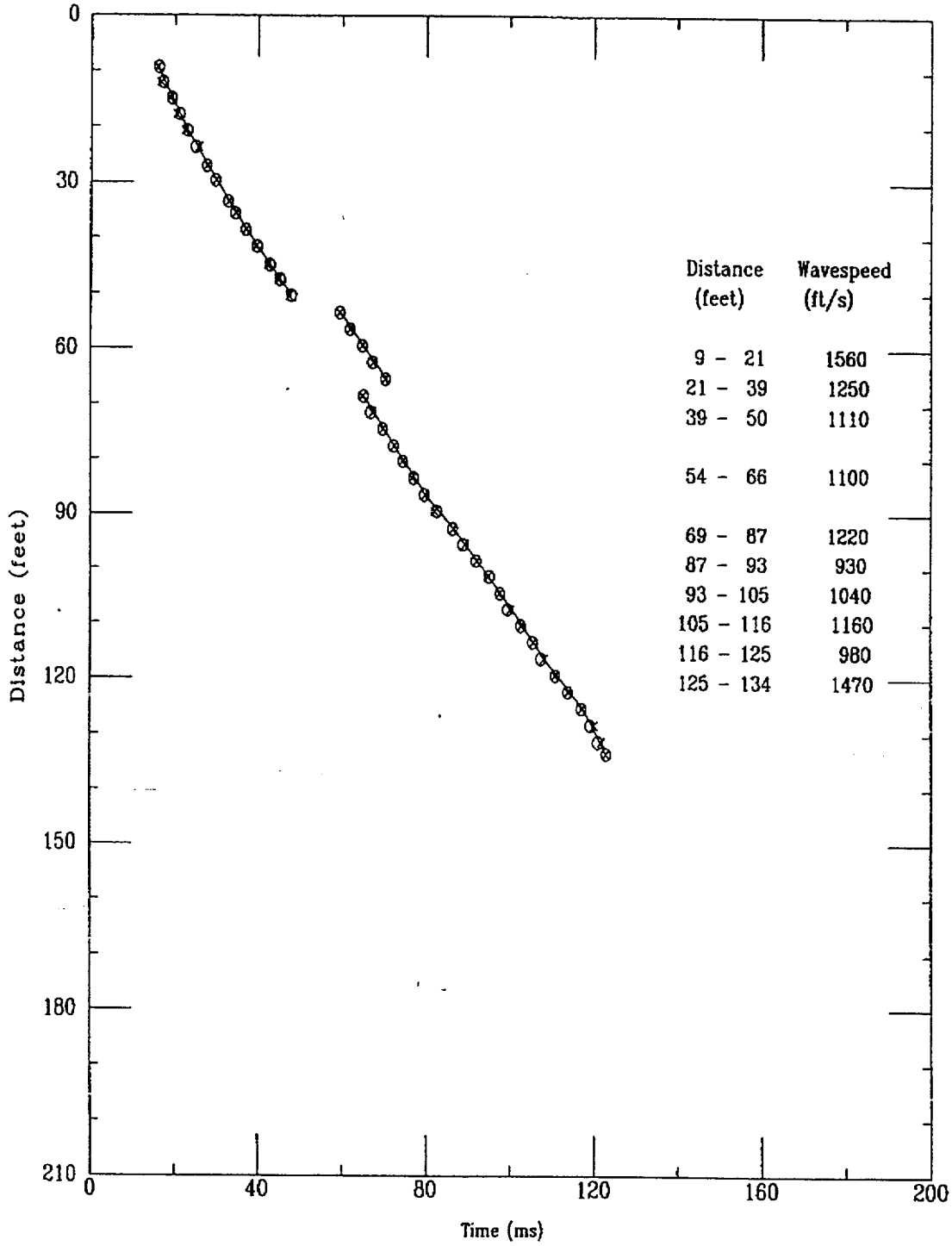
Shear Wave Speeds



File 323m804S

CPT-189 APPLIED RESEARCH ASSOCIATES, INC. 03/23/98

Shear Wave Time of Peak



File 323m604S