HR Vertilog

Magnetic Flux Leakage Inspection

Advanced Analysis

Company	Southern California Gas Company
Well	Porter 50B
Field	Aliso Canyon
County	Los Angeles
State	California
Location:	

Section 27	Township 3N	Range 16W	

Date	Apr. 16, 2016
Service Order	US106874
Recorded by	B. Deal
Witnessed by	T. McMahon
API Serial No.	04-037-24336

Permanent Datum:	G.L.	Elevation:	1954.000 ft.	Depth	8520.000
Log Measured From:	K.B.	22.500	ft. above Perm. Datum	Btm. Log Interval	6583.340
Drilling Measured From:	K.B.	22.500	ft. above Perm. Datum	Top Log Interval	30.090
				Fluid Type	KCL

Casing Data

Size	Weight	Grade	From	To	Length
9 5/8 inch	47.0 lb/ft	L80 (HR Std)	Surface	7177	7177.0
13 3/8 inch	54.5 lb/ft	K-55	Surface	921	921.0
7 inch	26.0 lb/ft	L-80	6574	7480	906.0
5 inch	15.0 lb/ft	N-80	6620	7493	873.0
5 1/2 inch	15.0 lb/ft	N-80	7493	8494	1001.0
5 inch	15.0 lb/ft	N-80	8494	8500	6.0

Software Version 6.0.0.0

Equipment Data

Run	Trip	Tool Type	Tool Series	Serial Number	Position
1	1	HRVRT MFL	4997	PA10409819	LOWER
1	1	HRVRT MFL	4997	QA10409827	UPPER
1	1	HRVRT TELEM	4993	EA10360726	

Calibration Data

Calibration File Name	4997-9-001-PA10409819-U.CAL
Date of Calibration	05/04/2015 14:03
Calibration Identifier	B067D5B8-C234-468C-82A0-CD1751E099F9
Tool Number	4997-00
Calibrator Number	4997-9-001
Calibrator Size	(9-5/8 In - 238 mm)
Calibration Source File	20150504_072254_MEM.MVL
Calibration Software Rev	Microvision 32-bit 7.3.2.2
Comment	RMA1200

Calibration Data

Calibration File Name	4997-9-001-QA10409827-L.CAL
Date of Calibration	05/04/2015 14:03
Calibration Identifier	B067D5B8-C234-468C-82A0-CD1751E099F9
Tool Number	4997-00
Calibrator Number	4997-9-001
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Calibration Source File	20150504_072254_MEM.MVL
Calibration Software Rev	Microvision 32-bit 7.3.2.2
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In making interpretations of logs our employees will give customer the benefit of their best judgment. But since all interpretations are opinions based on inferences from electrical or other measurements, we cannot, and we do not guarantee the accuracy or correctness of any interpretation. We shall not be liable or responsible for any loss, cost, damages, or expenses whatsoever incurred or sustained by the customer resulting from any interpretation made by any of our employees.

Interpretation

HRVRT analysis was depth correlated to Baker Hughes Processed Caliper, logged 15 Apr 2016. Caliper log was correlated to SLB USIT, logged 14 Apr 20016.

HRVRT analysis shows a small amount of pad eccentricity in this well resulting in variations in some discriminator sensors amplitudes over the circumference of the casing. Discriminator sensor are only used to determine if a feature are internal to the inside casing or external. HRVRT analysis did not observe conflects identifying inside or outside reported features. A repeat log was used to verify discriminator results.

The top joint is a short joint.

31.04 ft	Hardware - External Casing Head Response.
41.67 ft	Hardware - Multiple Centralizers can be seen throughout the logged interval, see the Feature List for a complete centralizer listing.
923.73 ft	Hardware - Bottom of 13 3/8" External Casing.

Joint Interpretation Summary

Joint	From	To	Length	Class	Max Depth	Position	Type	ID/OD

1	30.09	49.12	19.03	Class	1	-	-	-	-
2	49.12	89.05	39.93	Class	1	-	-	-	-
3	89.05	133.62	44.57	Class	1	-	-	-	-
4	133.62	173.65	40.03	Class	1	-	-	-	-
5	173.65	217.83	44.18	Class	2	25.0%	188.64	ISO	ID
6	217.83	257.89	40.06	Class	1	-	-	-	-
7	257.89	296.83	38.94	Class	1	-	-	-	-
8	296.83	336.13	39.30	Class	1	-	-	-	-
9	336.13	374.76	38.63	Class	1	-	-	-	-
10	374.76	414.56	39.80	Class	1	-	-	-	-
11	414.56	454.05	39.49	Class	1	-	-	-	-
12	454.05	498.05	44.00	Class	1	-	-	-	-
13	498.05	543.28	45.23	Class	1	-	-	-	-
14	543.28	584.06	40.78	Class	1	-	-	-	-
15	584.06	625.29	41.23	Class	1	-	-	-	-
16	625.29	669.16	43.87	Class	1	-	-	-	-
17	669.16	713.51	44.35	Class	1	-	-	-	-
18	713.51	754.76	41.25	Class	1	-	-	-	-
19	754.76	793.94	39.18	Class	1	-	-	-	-
20	793.94	836.26	42.32	Class	1	-	-	-	-
21	836.26	880.62	44.36	Class	1	-	-	-	-
22	880.62	924.20	43.58	Class	1	-	-	-	-
23	924.20	962.76	38.56	Class	1	-	-	-	-
24	962.76	1005.40	42.64	Class	1	-	-	-	-
25	1005.40	1050.10	44.70	Class	1	-	-	-	-
26	1050.10	1089.79	39.69	Class	1	-	-	-	-
27	1089.79	1130.28	40.49	Class	1	-	-	-	-
28	1130.28	1169.91	39.63	Class	1	-	-	-	-
29	1169.91	1209.20	39.29	Class	1	-	-	-	-
30	1209.20	1253.28	44.08	Class	1	-	-	-	-
31	1253.28	1295.59	42.31	Class	1	-	-	-	-
32	1295.59	1340.60	45.01	Class	1	16.0%	1332.38	ISO	ID
33	1340.60	1383.82	43.22	Class	1	-	-	-	-
34	1383.82	1428.48	44.66	Class	1	-	-	-	-
35	1428.48	1473.51	45.03	Class	1	-	-	-	-
36	1473.51	1517.95	44.44	Class	1	-	-	-	-
37	1517.95	1561.83	43.88	Class	1	-	-	-	-
38	1561.83	1604.74	42.91	Class	1	-	-	-	-
39	1604.74	1647.18	42.44	Class	1	17.0%	1638.48	ISO	ID
40	1647.18	1692.50	45.32	Class	1	-	-	-	-
41	1692.50	1738.15	45.65	Class	1	18.0%	1730.61	ISO	ID
42	1738.15	1782.98	44.83	Class	1	-	-	-	-
43	1782.98	1828.63	45.65	Class	1	-	-	-	-
44	1828.63	1873.86	45.23	Class	1	19.0%	1853.50	ISO	ID
45	1873.86	1918.66	44.80	Class	1	15.0%	1887.51	ISO	ID
46	1918.66	1962.90	44.24	Class	1	-	-	-	-
47	1962.90	2006.77	43.87	Class	1	-	-	-	-
48	2006.77	2051.07	44.30	Class	1	-	-	-	-
49	2051.07	2095.68	44.61	Class	1	-	-	-	-
50	2095.68	2139.74	44.06	Class	1	-	-	-	-
51	2139.74	2182.58	42.84	Class	1	-	-	-	-
52	2182.58	2227.24	44.66	Class	1	-	-	-	-
53	2227.24	2271.07	43.83	Class	1	-	-	-	-
54	2271.07	2314.23	43.16	Class	1	-	-	-	-
55	2314.23	2356.55	42.32	Class	1	18.0%	2342.10	ISO	ID
56	2356.55	2397.70	41.15	Class	1	-	-	-	-
57	2397.70	2438.78	41.08	Class	1	-	-	-	-
58	2438.78	2480.72	41.94	Class	1	-	-	-	-
59	2480.72	2523.05	42.33	Class	1	-	-	-	-
60	2523.05	2565.22	42.17	Class	1	-	-	-	-
61	2565.22	2607.65	42.43	Class	1	-	-	-	-
62	2607.65	2650.93	43.28	Class	1	17.0%	2629.02	ISO	ID
63	2650.93	2693.30	42.37	Class	1	-	-	-	-
64	2693.30	2735.70	42.40	Class	1	20.0%	2726.56	ISO	ID

65	2735.70	2775.43	39.73	Class 1	-	-	-	-
66	2775.43	2818.20	42.77	Class 1	-	-	-	-
67	2818.20	2856.16	37.96	Class 1	-	-	-	-
68	2856.16	2901.05	44.89	Class 1	-	-	-	-
69	2901.05	2940.31	39.26	Class 1	-	-	-	-
70	2940.31	2980.52	40.21	Class 1	-	-	-	-
71	2980.52	3025.33	44.81	Class 1	-	-	-	-
72	3025.33	3064.04	38.71	Class 1	-	-	-	-
73	3064.04	3108.61	44.57	Class 1	-	-	-	-
74	3108.61	3152.25	43.64	Class 1	-	-	-	-
75	3152.25	3195.40	43.15	Class 1	-	-	-	-
76	3195.40	3236.40	41.00	Class 1	-	-	-	-
77	3236.40	3280.62	44.22	Class 1	-	-	-	-
78	3280.62	3324.50	43.88	Class 1	-	-	-	-
79	3324.50	3364.89	40.39	Class 1	-	-	-	-
80	3364.89	3408.08	43.19	Class 1	18.0%	3373.60	ISO	ID
81	3408.08	3452.28	44.20	Class 1	-	-	-	-
82	3452.28	3491.90	39.62	Class 1	-	-	-	-
83	3491.90	3534.16	42.26	Class 1	-	-	-	-
84	3534.16	3577.31	43.15	Class 1	-	-	-	-
85	3577.31	3617.70	40.39	Class 1	-	-	-	-
86	3617.70	3660.71	43.01	Class 1	-	-	-	-
87	3660.71	3703.26	42.55	Class 1	18.0%	3702.33	ISO	ID
88	3703.26	3746.33	43.07	Class 1	16.0%	3743.36	ISO	ID
89	3746.33	3789.00	42.67	Class 1	17.0%	3758.98	ISO	ID
90	3789.00	3833.63	44.63	Class 1	-	-	-	-
91	3833.63	3873.25	39.62	Class 1	-	-	-	-
92	3873.25	3912.71	39.46	Class 1	-	-	-	-
93	3912.71	3957.24	44.53	Class 2	25.0%	3922.43	ISO	ID
94	3957.24	3997.88	40.64	Class 1	-	-	-	-
95	3997.88	4040.75	42.87	Class 1	15.0%	4009.89	ISO	ID
96	4040.75	4083.21	42.46	Class 1	-	-	-	-
97	4083.21	4127.58	44.37	Class 1	17.0%	4117.92	ISO	ID
98	4127.58	4172.00	44.42	Class 1	-	-	-	-
99	4172.00	4216.48	44.48	Class 1	-	-	-	-
100	4216.48	4257.11	40.63	Class 1	-	-	-	-
101	4257.11	4297.82	40.71	Class 1	-	-	-	-
102	4297.82	4342.63	44.81	Class 1	-	-	-	-
103	4342.63	4387.09	44.46	Class 1	-	-	-	-
104	4387.09	4431.18	44.09	Class 1	-	-	-	-
105	4431.18	4475.96	44.78	Class 1	-	-	-	-
106	4475.96	4518.28	42.32	Class 1	-	-	-	-
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111	4684.88	4725.76	40.88	Class 1	-	-	-	-
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113	4765.76	4807.65	41.89	Class 1	-	-	-	-
114	4807.65	4848.15	40.50	Class 1	-	-	-	-
115	4848.15	4889.00	40.85	Class 1	-	-	-	-
116	4889.00	4928.75	39.75	Class 1	-	-	-	-
117	4928.75	4968.68	39.93	Class 1	-	-	-	-
118	4968.68	5006.54	37.86	Class 1	-	-	-	-
119	5006.54	5045.90	39.36	Class 1	-	-	-	-
120	5045.90	5085.78	39.88	Class 1	-	-	-	-
121	5085.78	5124.79	39.01	Class 1	-	-	-	-
122	5124.79	5164.10	39.31	Class 1	-	-	-	-
123	5164.10	5203.68	39.58	Class 1	-	-	-	-
124	5203.68	5242.21	38.53	Class 1	-	-	-	-
125	5242.21	5282.90	40.69	Class 1	-	-	-	-
126	5282.90	5322.86	39.96	Class 1	-	-	-	-
127	5322.86	5366.72	43.86	Class 1	-	-	-	-

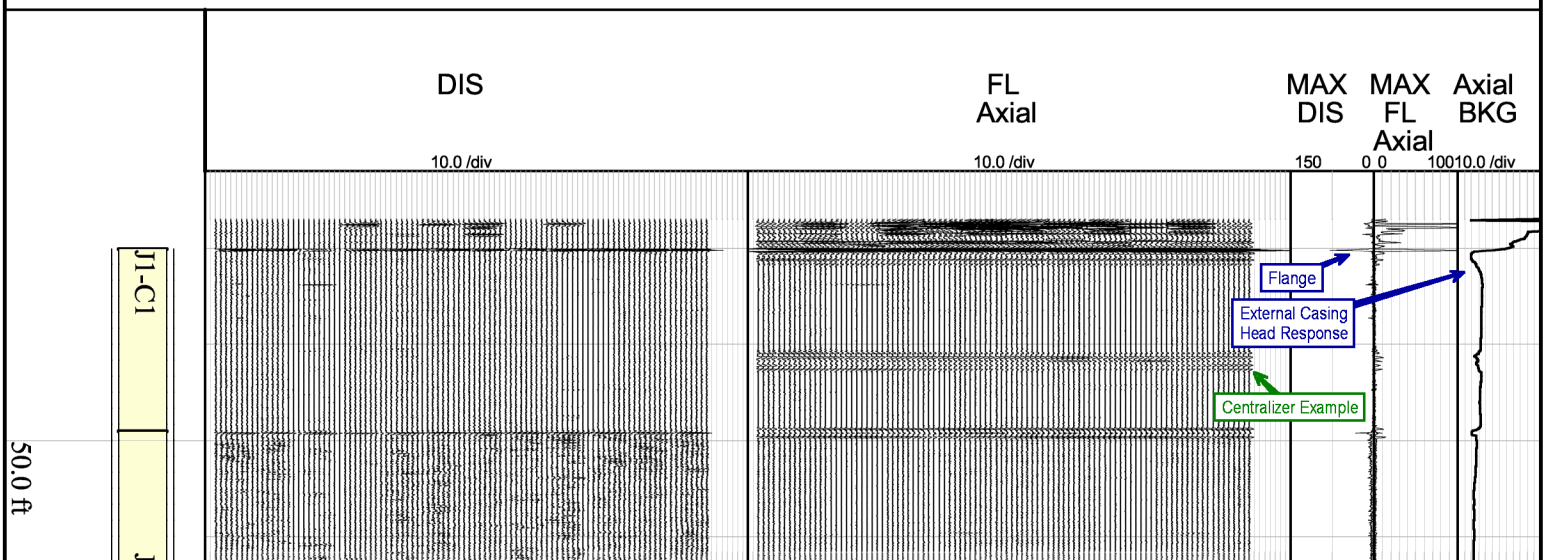
128	5366.72	5411.93	45.21	Class 1	-	-	-	-
129	5411.93	5456.80	44.87	Class 1	-	-	-	-
130	5456.80	5501.35	44.55	Class 1	-	-	-	-
131	5501.35	5544.38	43.03	Class 1	-	-	-	-
132	5544.38	5587.15	42.77	Class 1	-	-	-	-
133	5587.15	5631.44	44.29	Class 1	-	-	-	-
134	5631.44	5675.18	43.74	Class 1	-	-	-	-
135	5675.18	5718.41	43.23	Class 1	-	-	-	-
136	5718.41	5757.68	39.27	Class 1	-	-	-	-
137	5757.68	5801.37	43.69	Class 1	-	-	-	-
138	5801.37	5845.48	44.11	Class 1	-	-	-	-
139	5845.48	5886.95	41.47	Class 1	-	-	-	-
140	5886.95	5931.56	44.61	Class 1	-	-	-	-
141	5931.56	5974.37	42.81	Class 1	-	-	-	-
142	5974.37	6020.93	46.56	Class 1	-	-	-	-
143	6020.93	6060.05	39.12	Class 1	-	-	-	-
144	6060.05	6100.60	40.55	Class 1	-	-	-	-
145	6100.60	6141.44	40.84	Class 1	-	-	-	-
146	6141.44	6184.01	42.57	Class 1	-	-	-	-
147	6184.01	6227.55	43.54	Class 1	-	-	-	-
148	6227.55	6270.22	42.67	Class 1	-	-	-	-
149	6270.22	6313.15	42.93	Class 1	-	-	-	-
150	6313.15	6355.11	41.96	Class 1	-	-	-	-
151	6355.11	6397.85	42.74	Class 1	-	-	-	-
152	6397.85	6435.93	38.08	Class 1	-	-	-	-
153	6435.93	6476.31	40.38	Class 1	-	-	-	-
154	6476.31	6521.11	44.80	Class 1	-	-	-	-
155	6521.11	6561.33	40.22	Class 1	-	-	-	-
156	6561.33	6583.34	22.01	Class 1	-	-	-	-

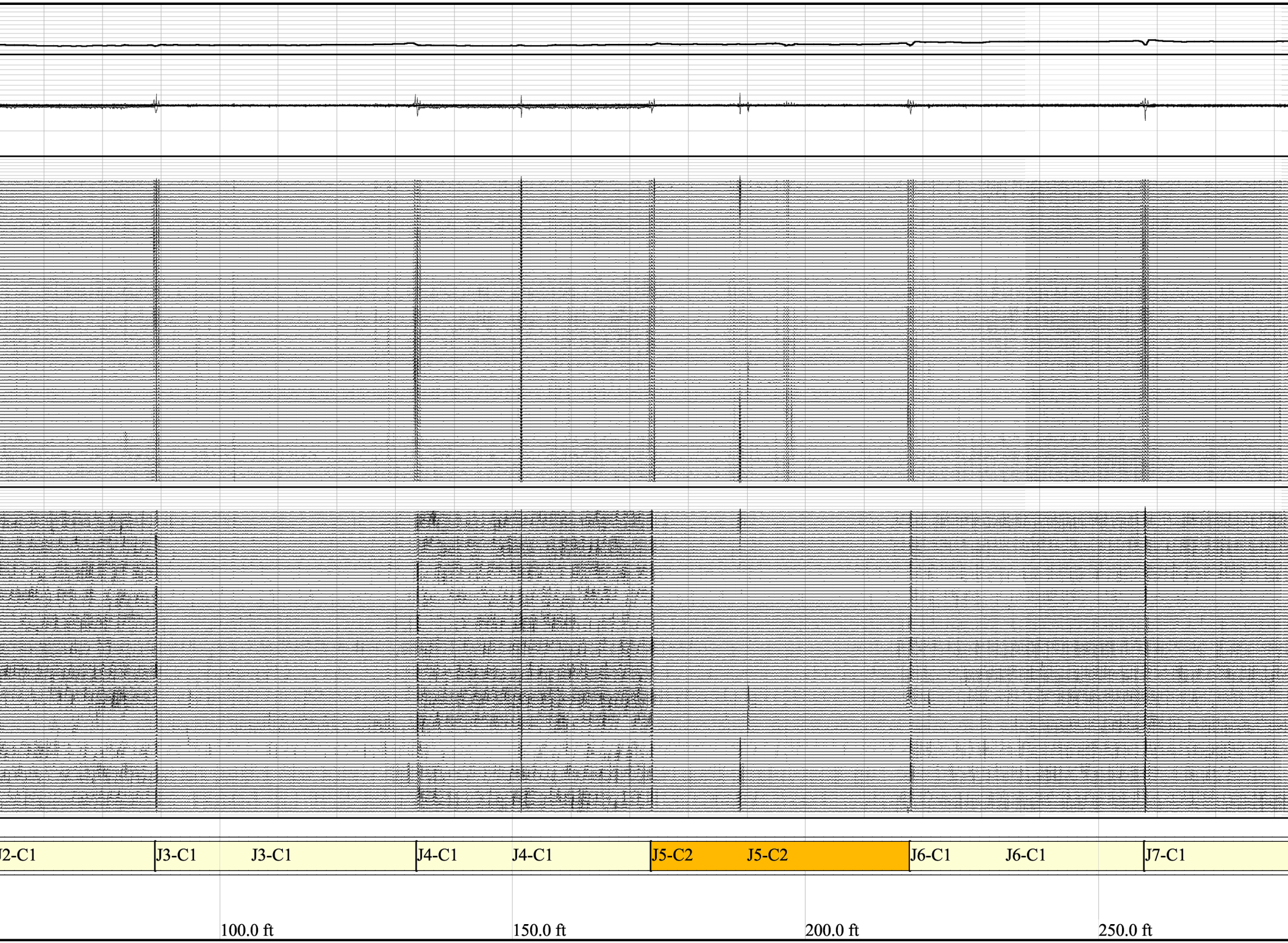
Southern California Gas Company Porter 50B

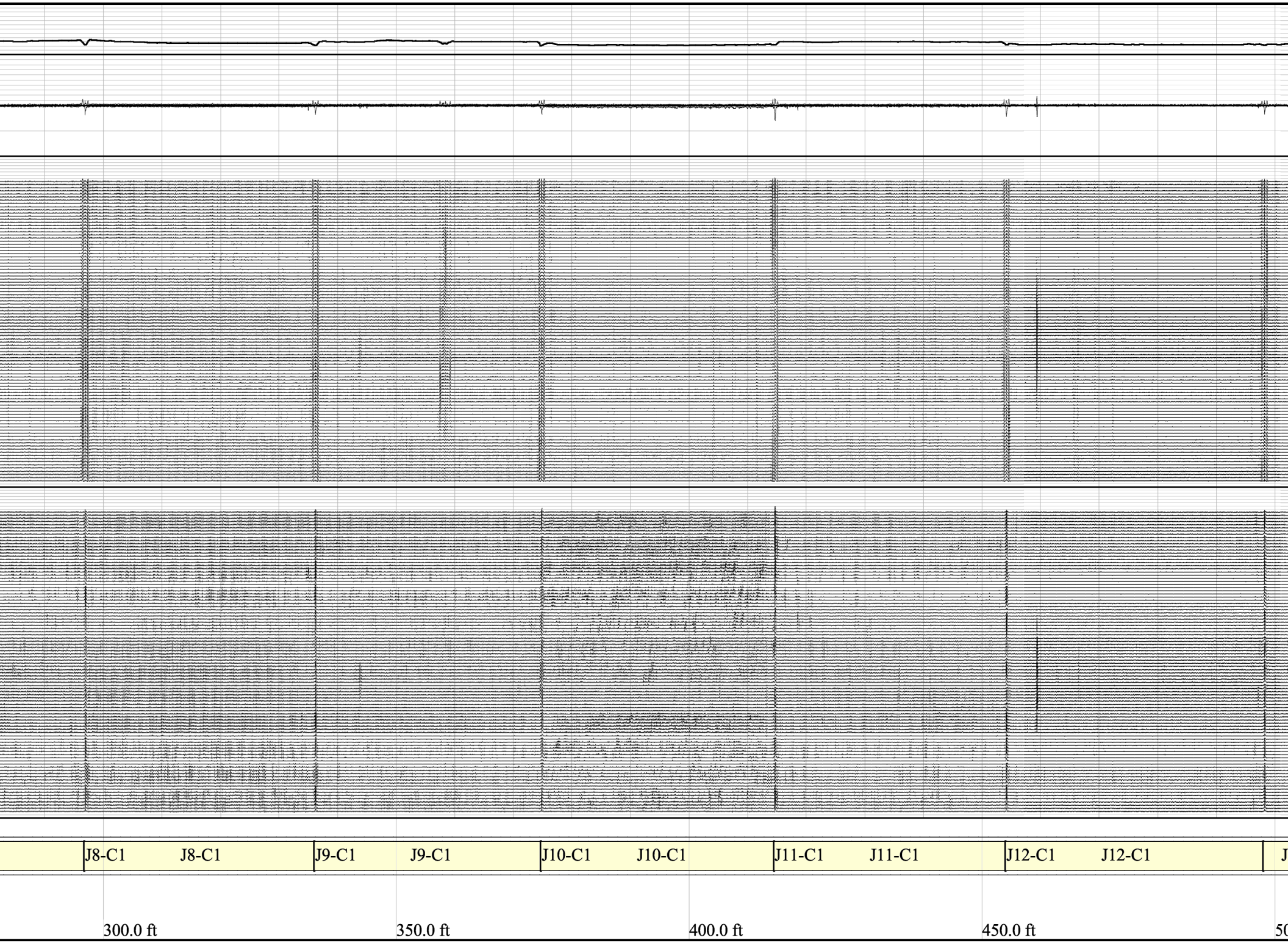
File 20160416_112935_RSP_0_0_0_0_0_0_0.mvl

Main Log
5" / 100'

Class 1	Class 2	Class 3	Class 4
0 - 20%	20 - 40%	40 - 60%	60 - 100%




J2-C1
J3-C1
J3-C1
J4-C1
J4-C1
J5-C2
J5-C2
J6-C1
J6-C1
J7-C1
100.0 ft
150.0 ft
200.0 ft
250.0 ft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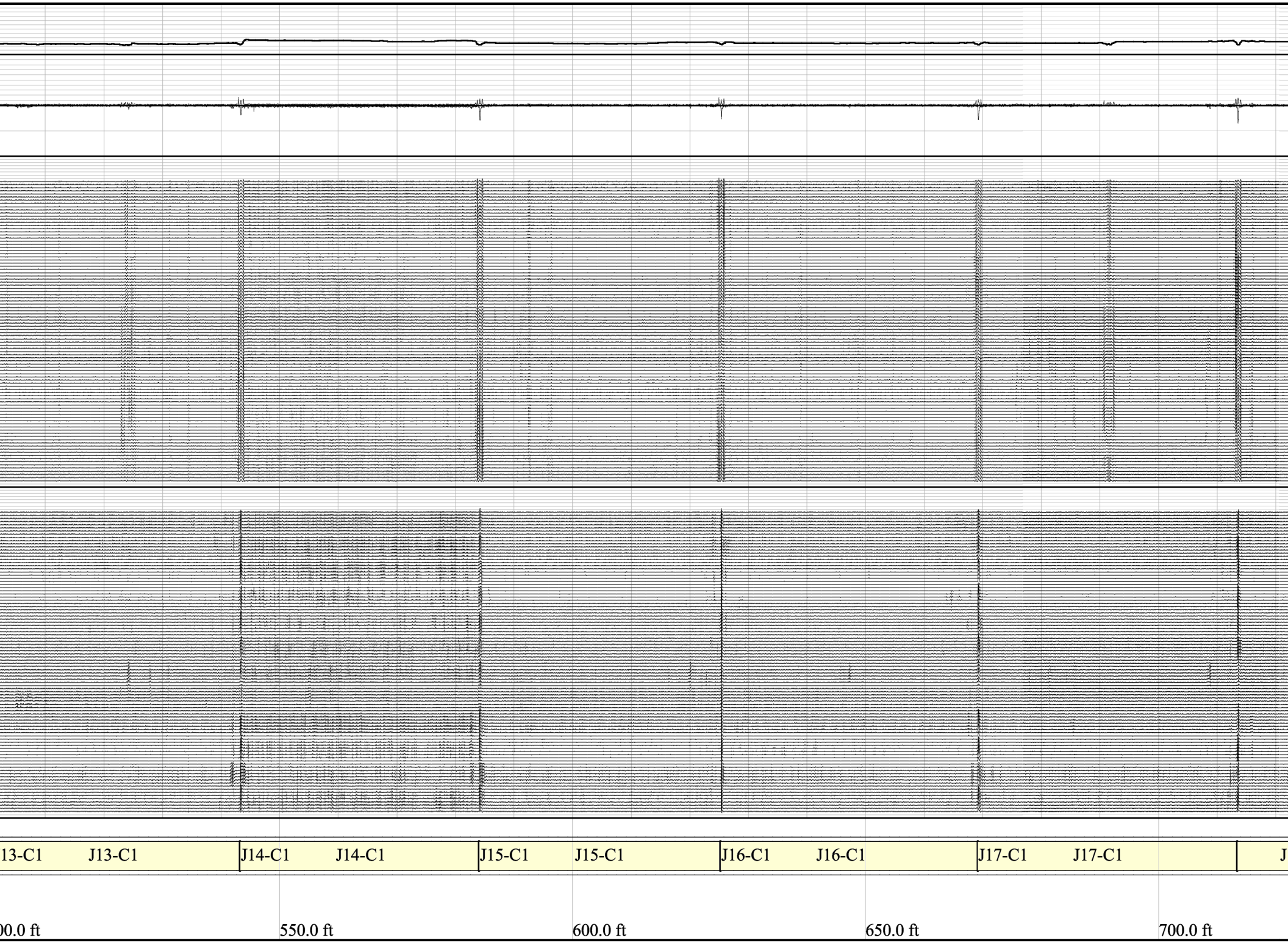
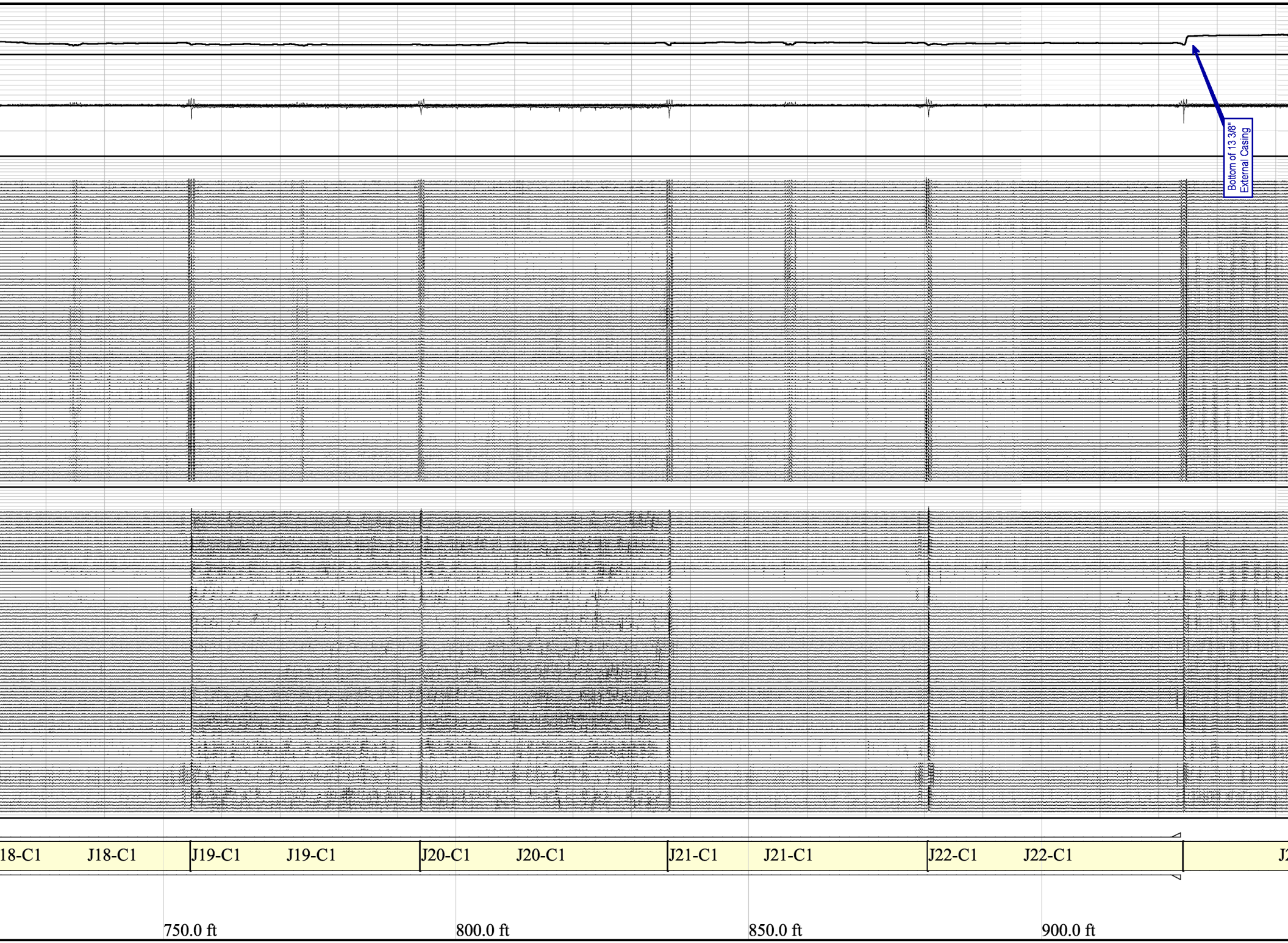
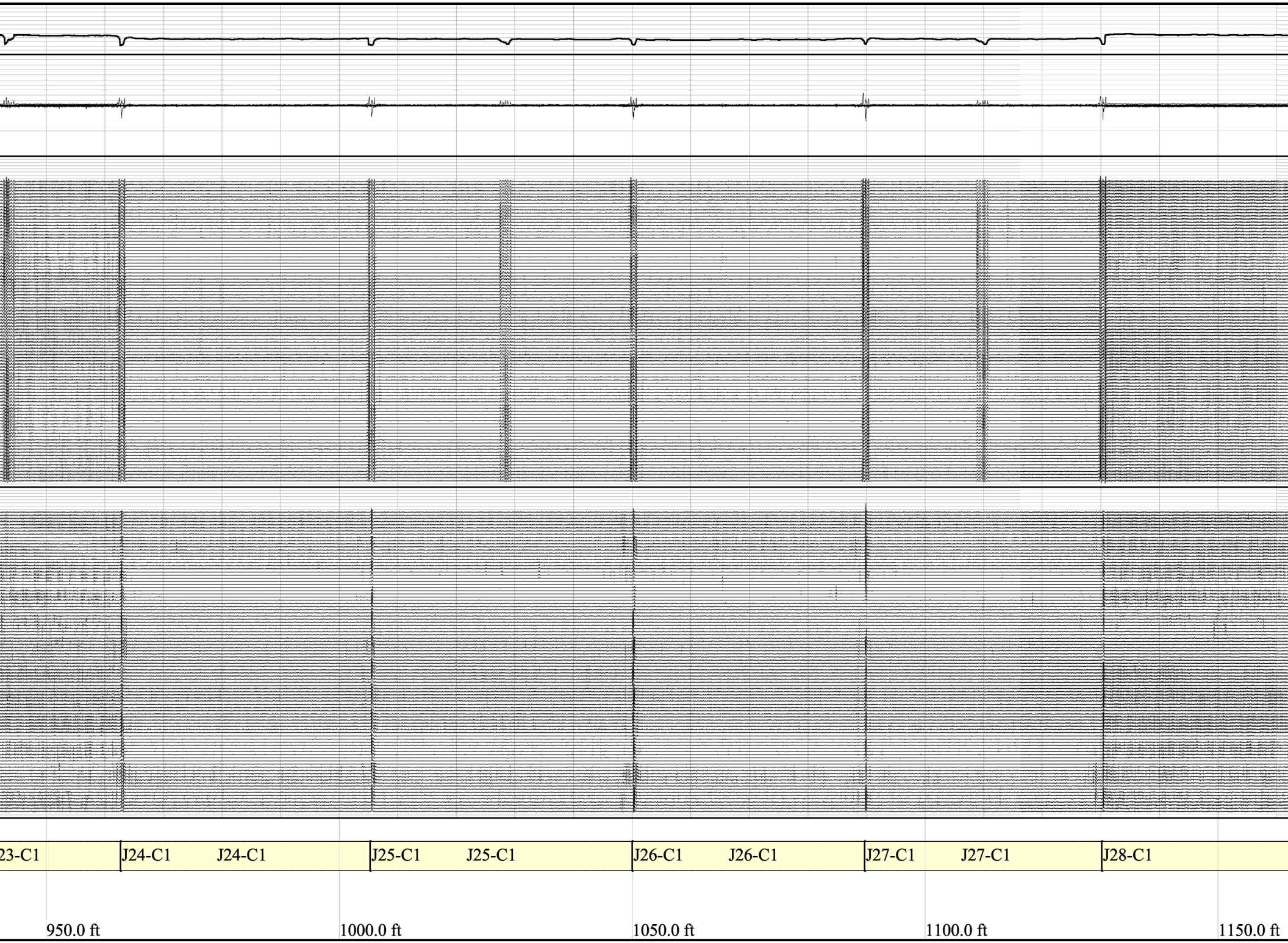
J8-C1
J9-C1
J9-C1
J10-C1
J10-C1
J11-C1
J11-C1
J12-C1
J12-C1
300.0 ft
350.0 ft
400.0 ft
450.0 ft


13-C1
J13-C1
J14-C1
J14-C1
J15-C1
J15-C1
J16-C1
J16-C1
J17-C1
J17-C1
J
00.0 ft
550.0 ft
600.0 ft
650.0 ft
700.0 ft


Bottom of 13 3/8" External Casing
18-C1
J18-C1
J19-C1
J19-C1
J20-C1
J20-C1
J21-C1
J21-C1
J22-C1
J22-C1
750.0 ft
800.0 ft
850.0 ft
900.0 ft


23-C1
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J25-C1
J25-C1
J26-C1
J26-C1
J27-C1
J27-C1
J28-C1
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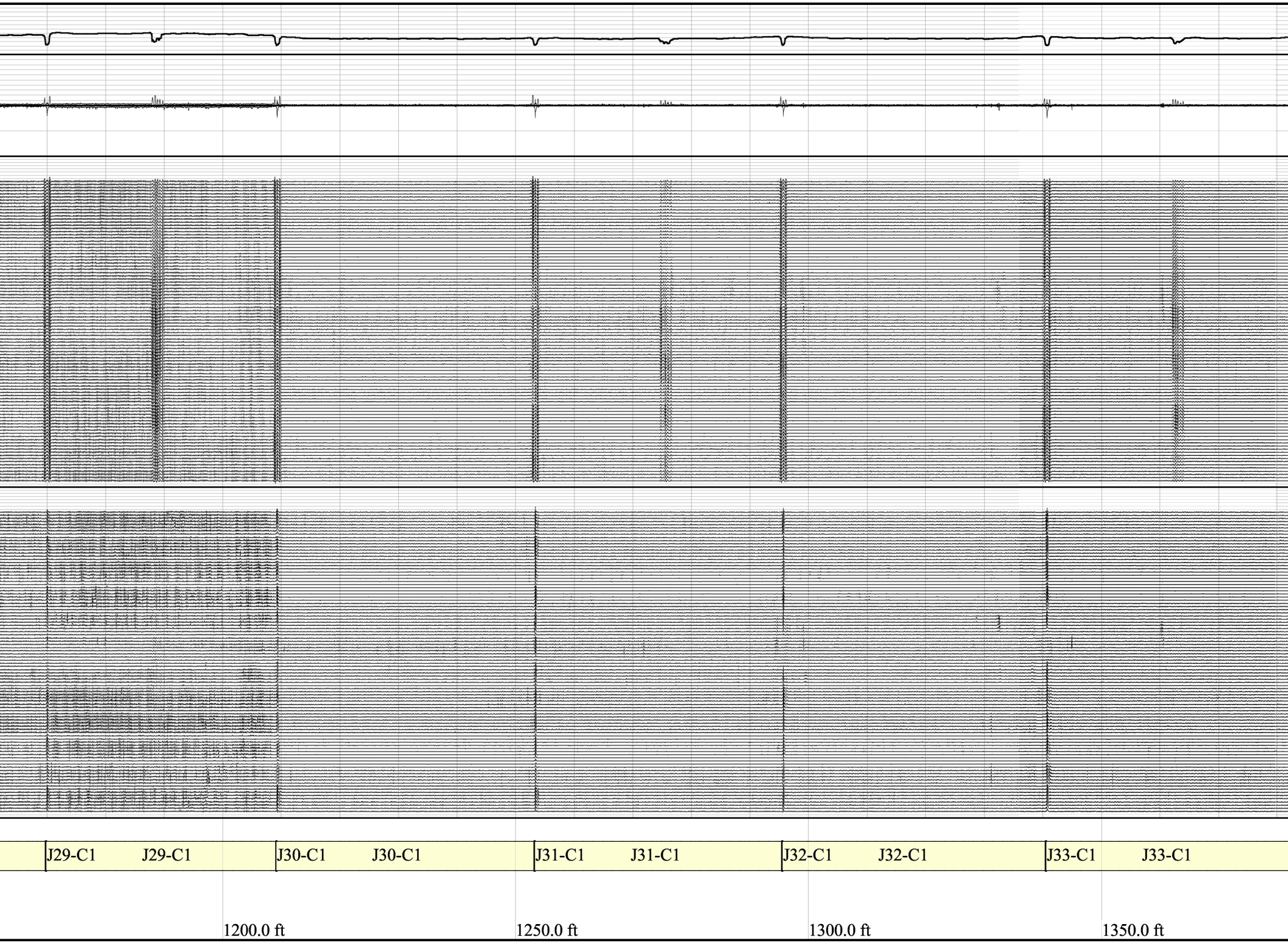
1050.0 ft
1100.0 ft
1150.0 ft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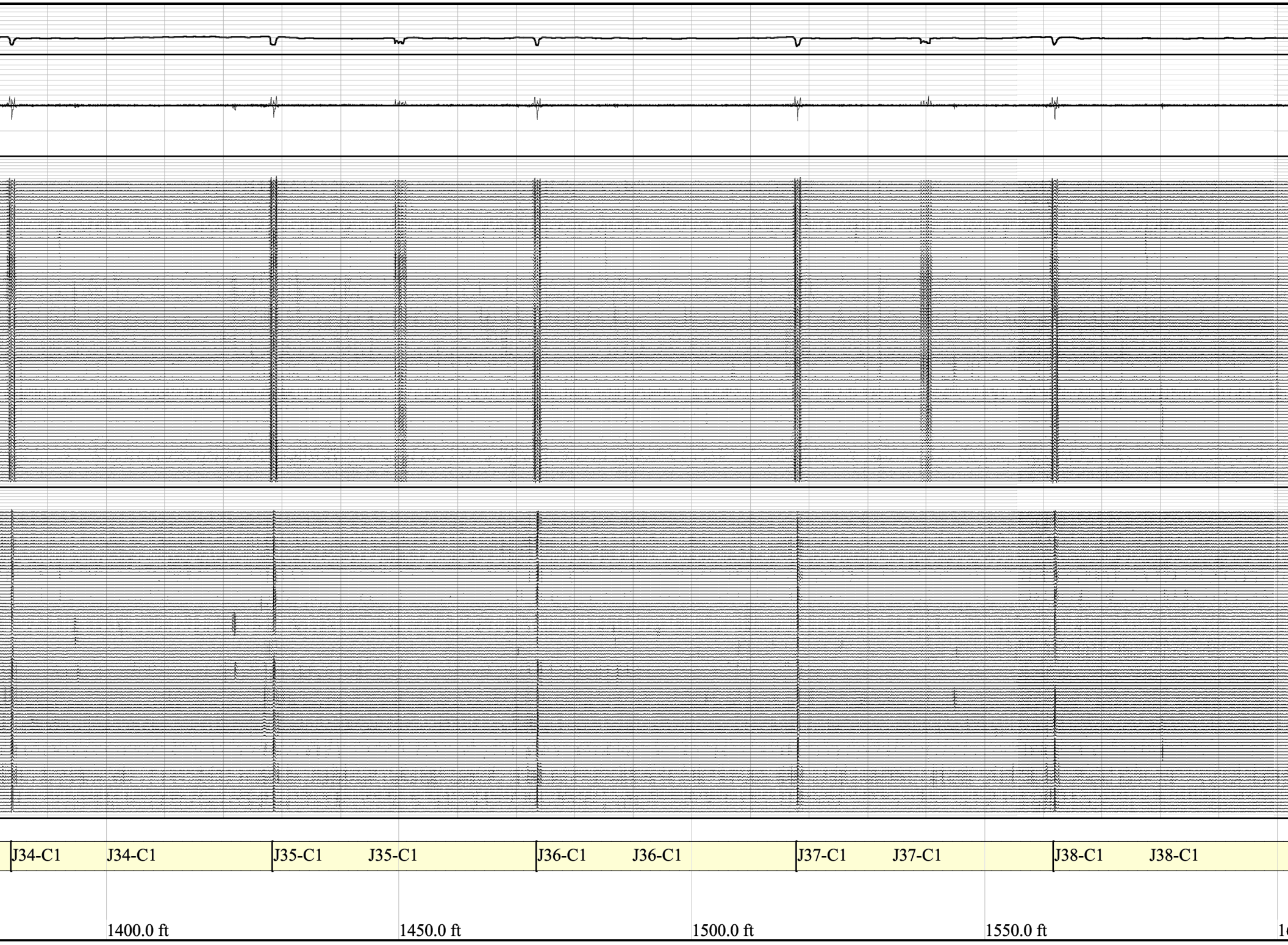
J30-C1
J30-C1
J31-C1
J31-C1
J32-C1
J32-C1
J33-C1
J33-C1
1200.0 ft
1250.0 ft
1300.0 ft
1350.0 ft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J34-C1
J35-C1
J35-C1
J36-C1
J36-C1
J37-C1
J37-C1
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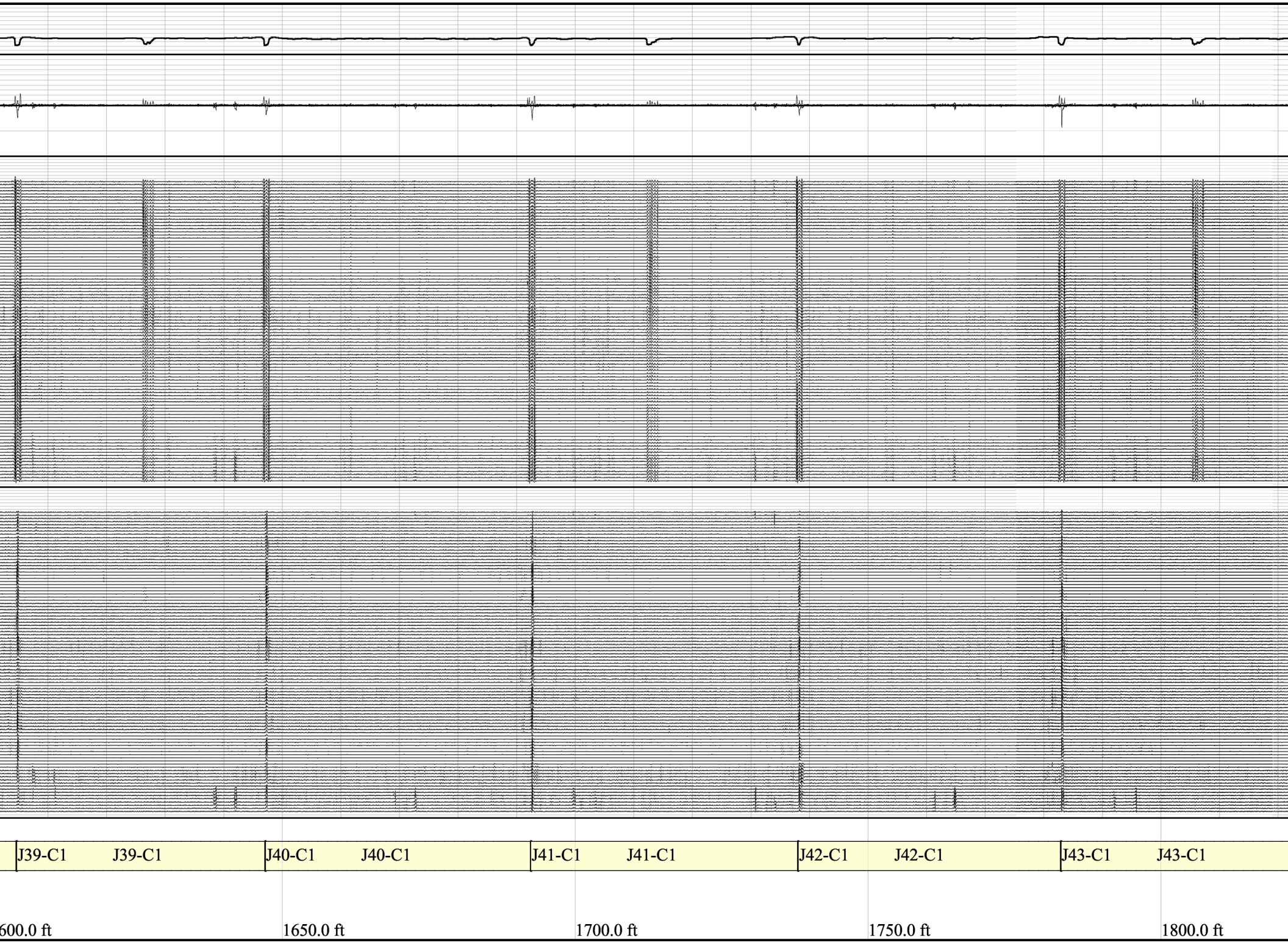
1450.0 ft
1500.0 ft
1550.0 ft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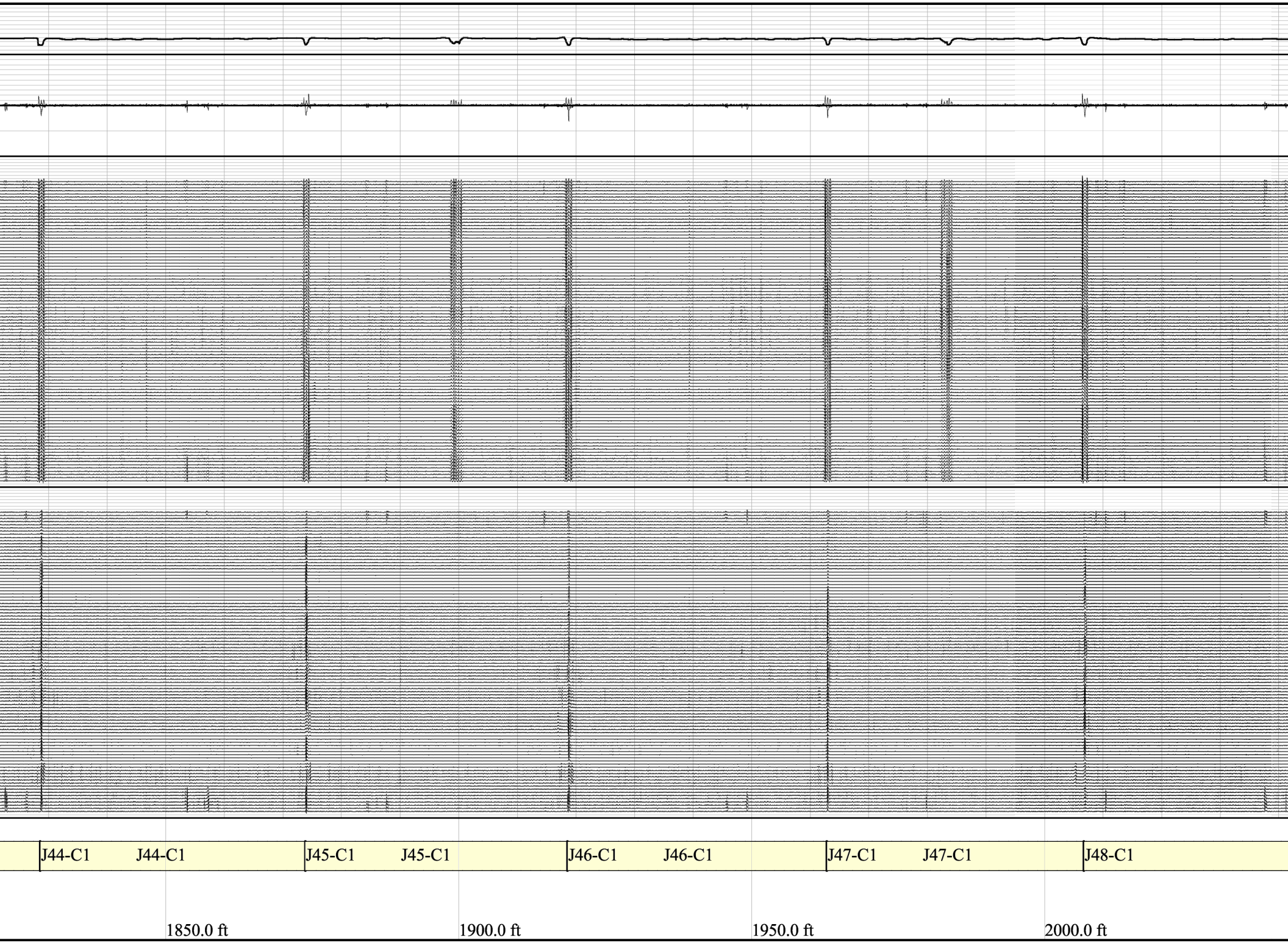
J39-C1
J40-C1
J40-C1
J41-C1
J41-C1
J42-C1
J42-C1
J43-C1
J43-C1
600.0 ft
1650.0 ft
1700.0 ft
1750.0 ft
1800.0 ft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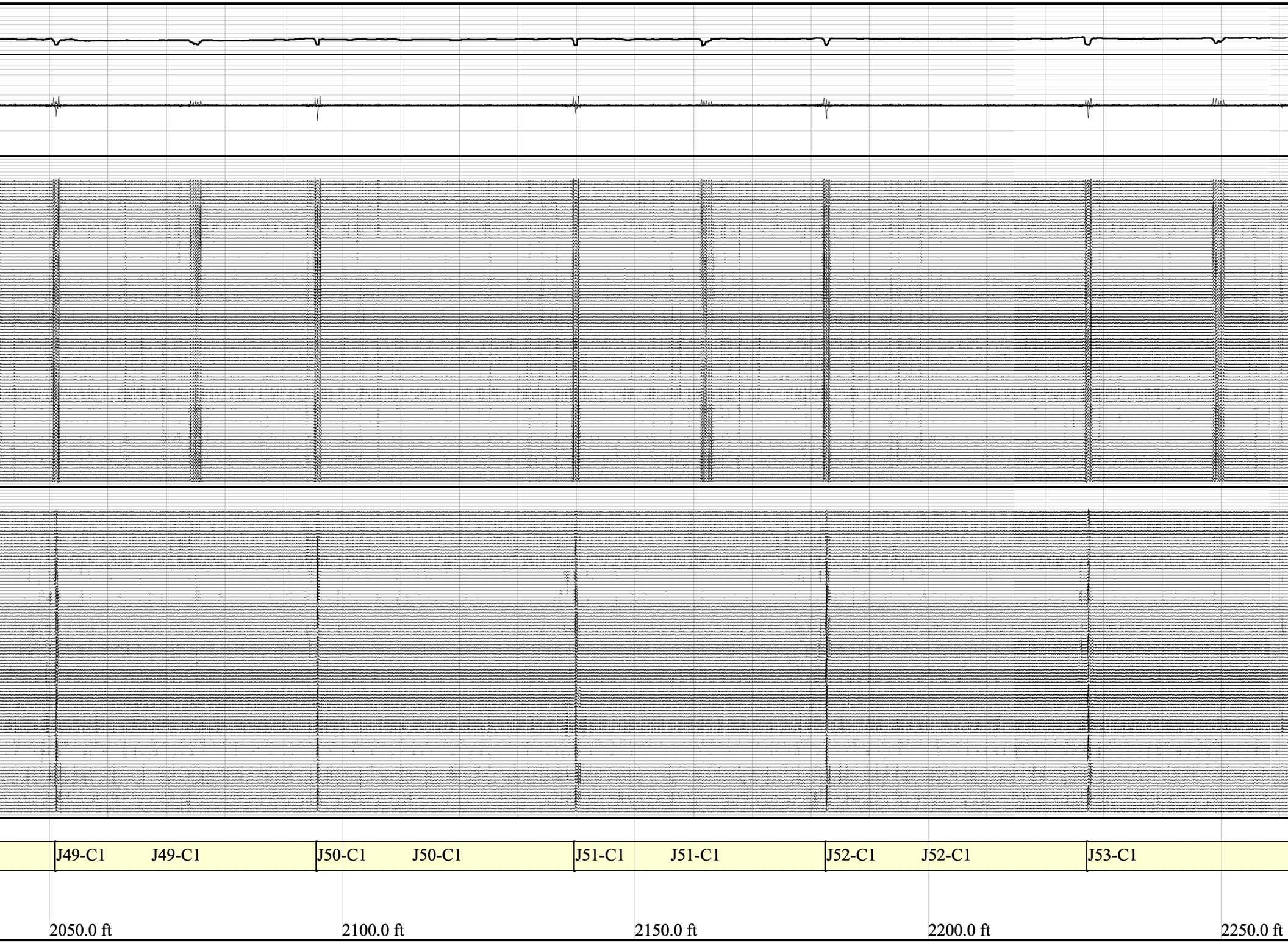
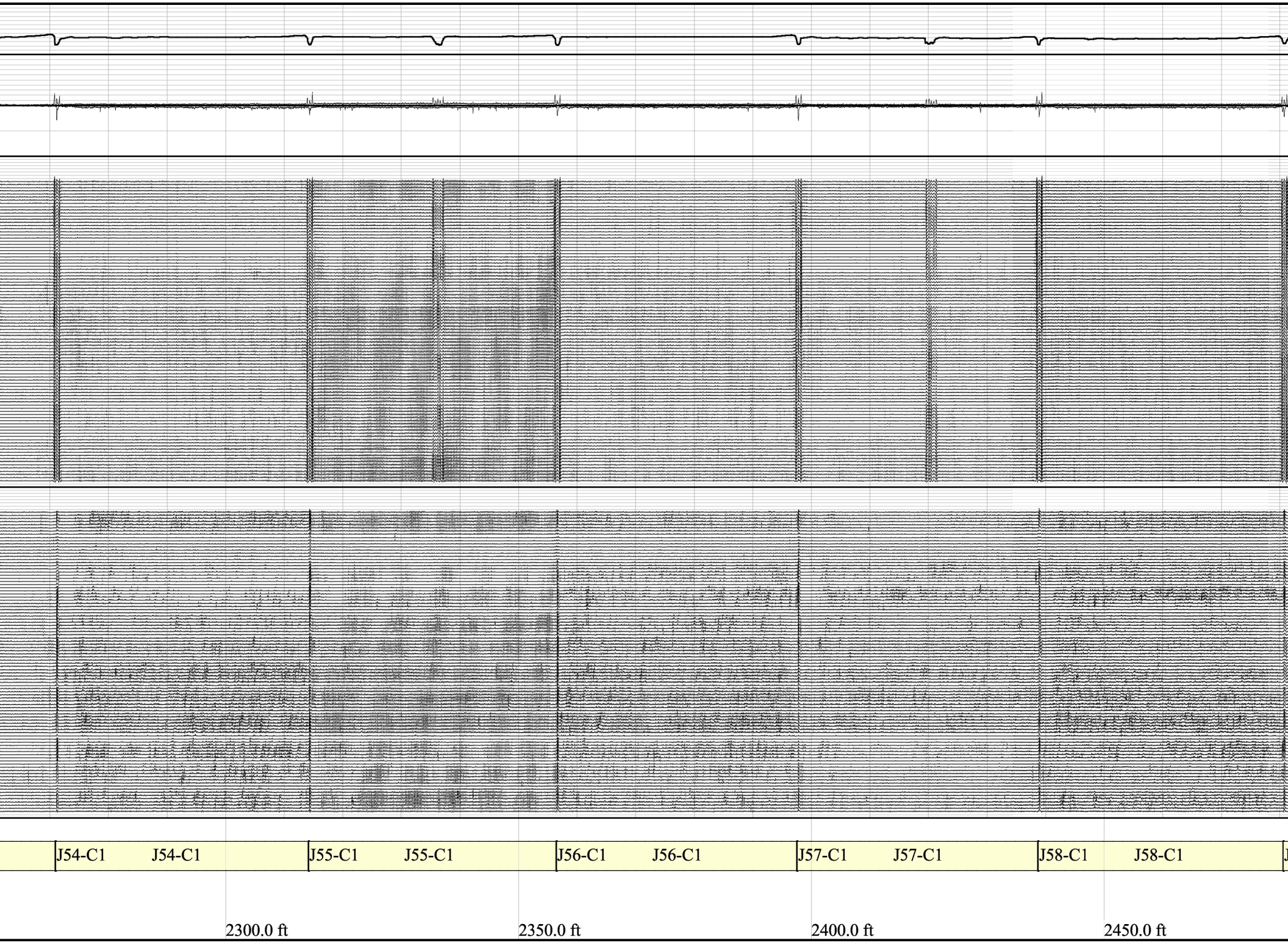
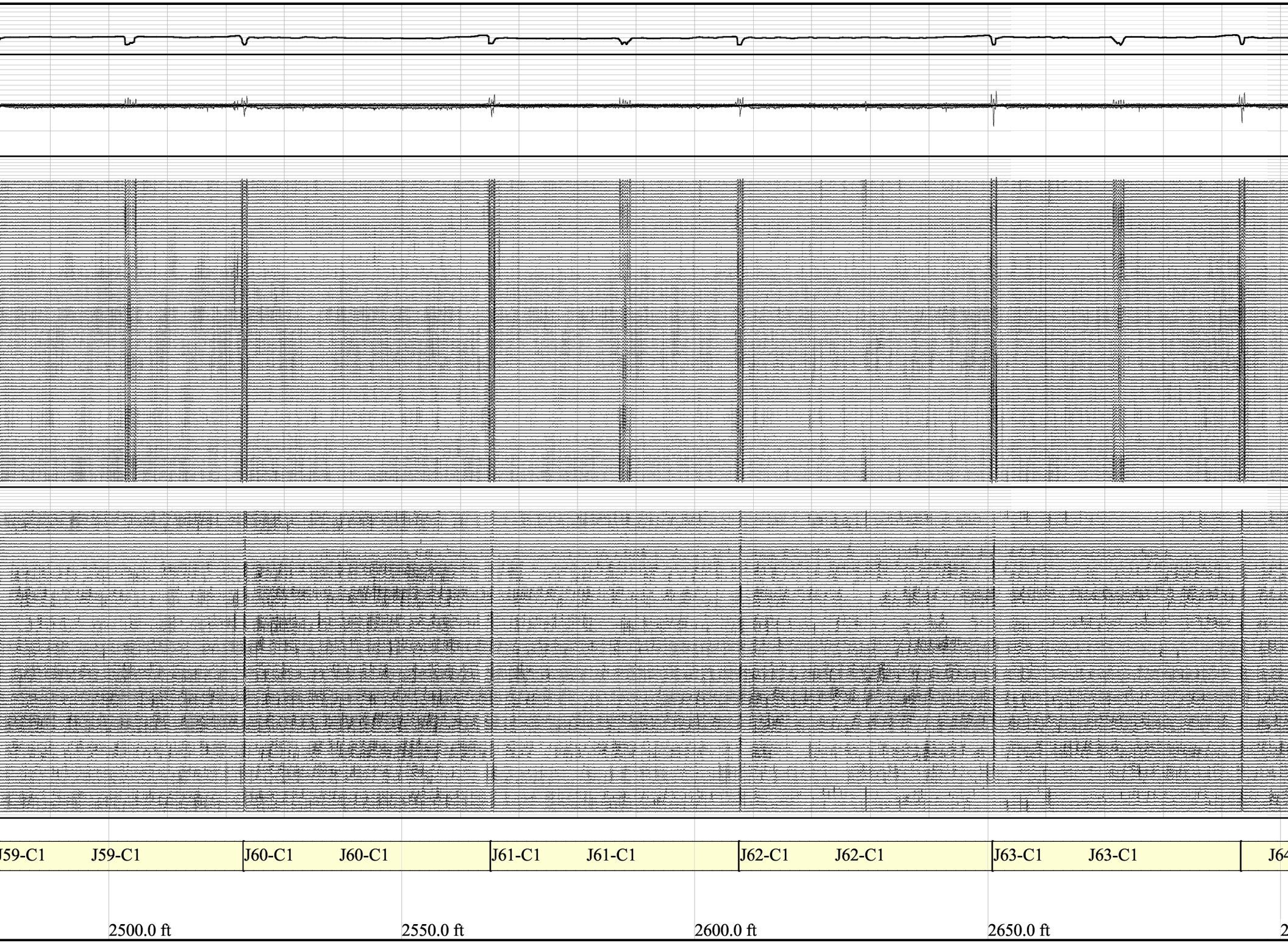
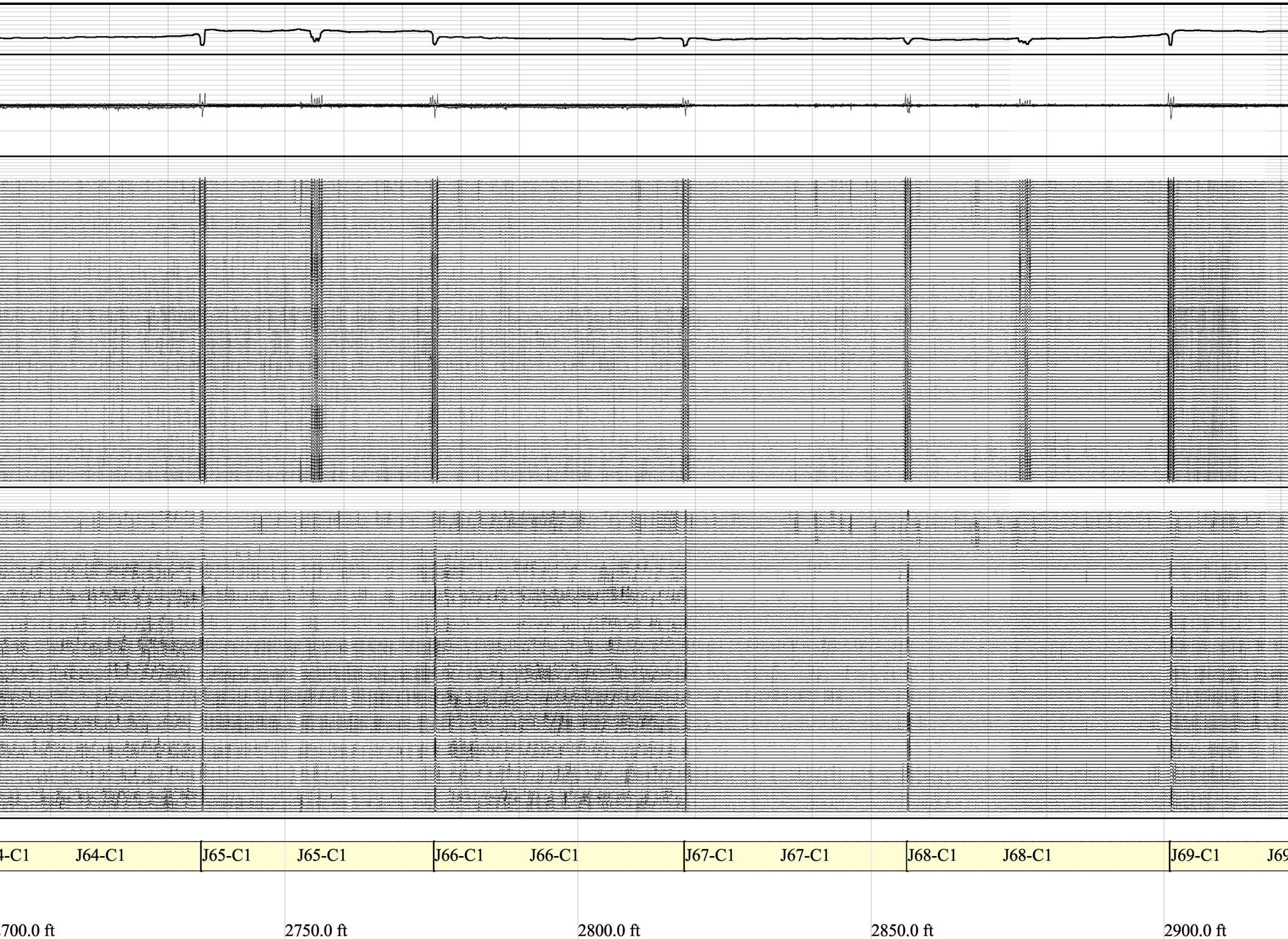
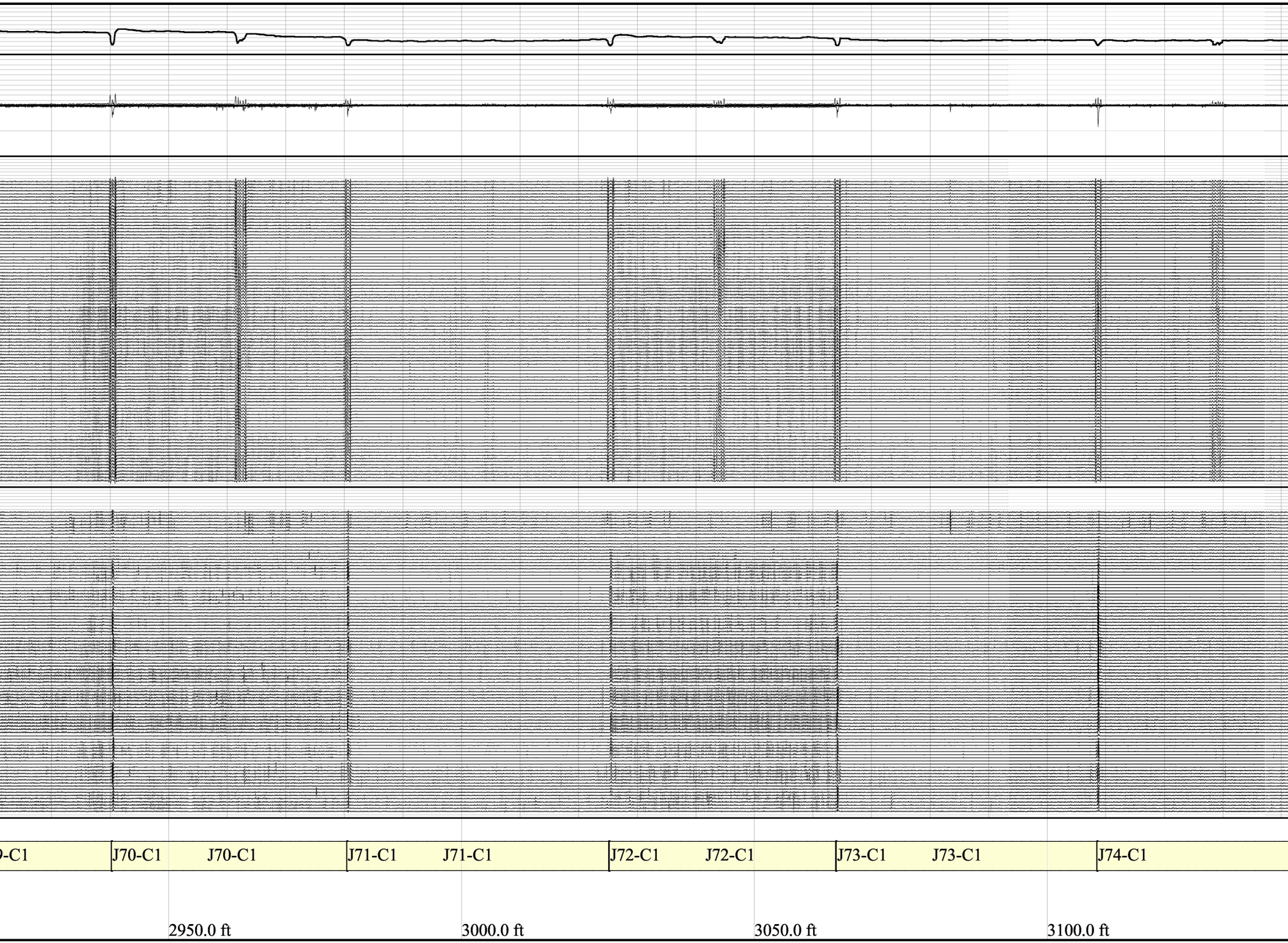
J44-C1
J45-C1
J45-C1
J46-C1
J46-C1
J47-C1
J47-C1
J48-C1
1850.0 ft
1900.0 ft
1950.0 ft
2000.0 ft

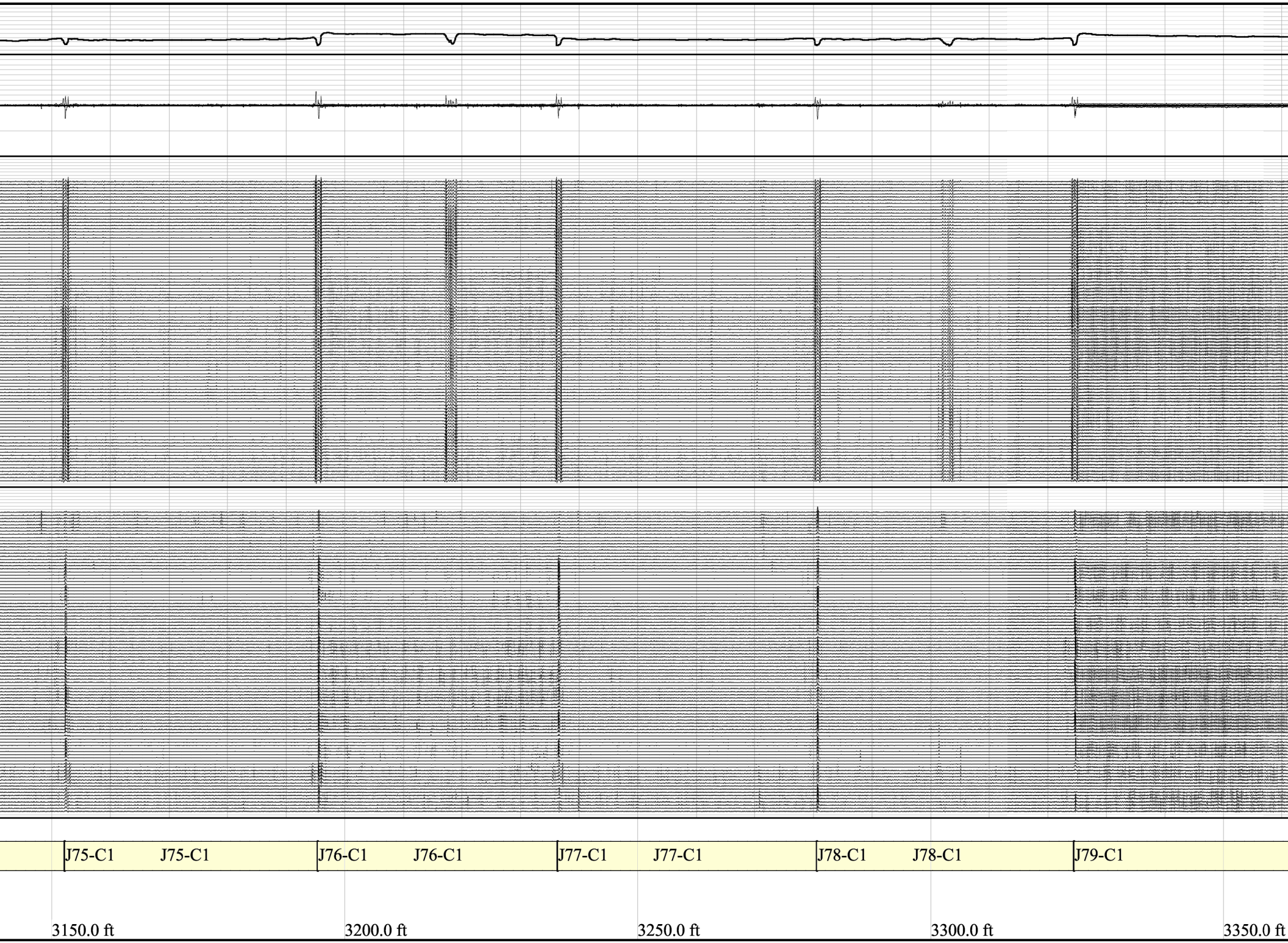

J49-C1
J49-C1
J50-C1
J50-C1
J51-C1
J51-C1
J52-C1
J52-C1
J53-C1
2050.0 ft
2100.0 ft
2150.0 ft
2200.0 ft
2250.0 ft

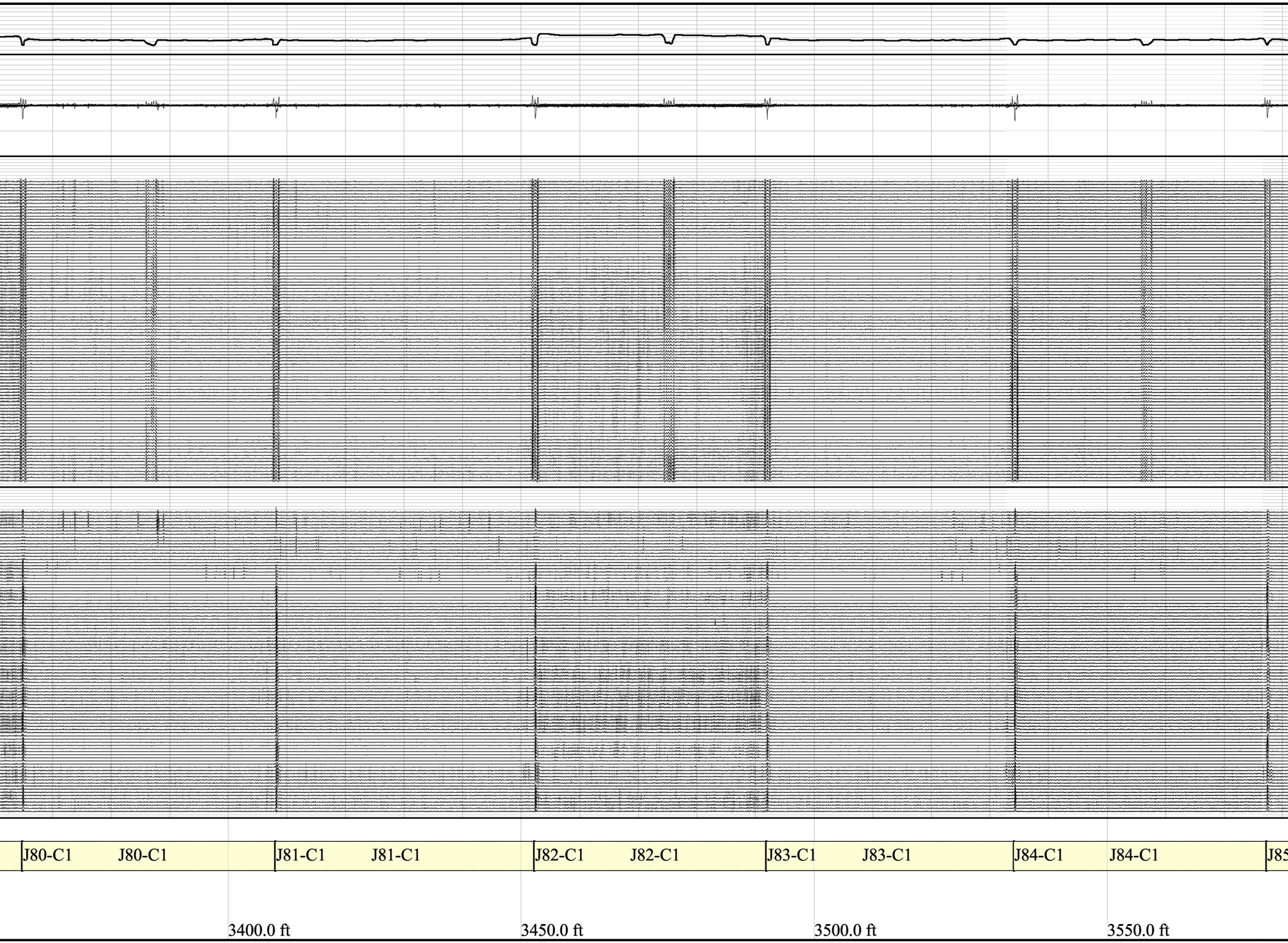

J54-C1
J54-C1
J55-C1
J55-C1
J56-C1
J56-C1
J57-C1
J57-C1
J58-C1
J58-C1
2300.0 ft
2350.0 ft
2400.0 ft
2450.0 ft

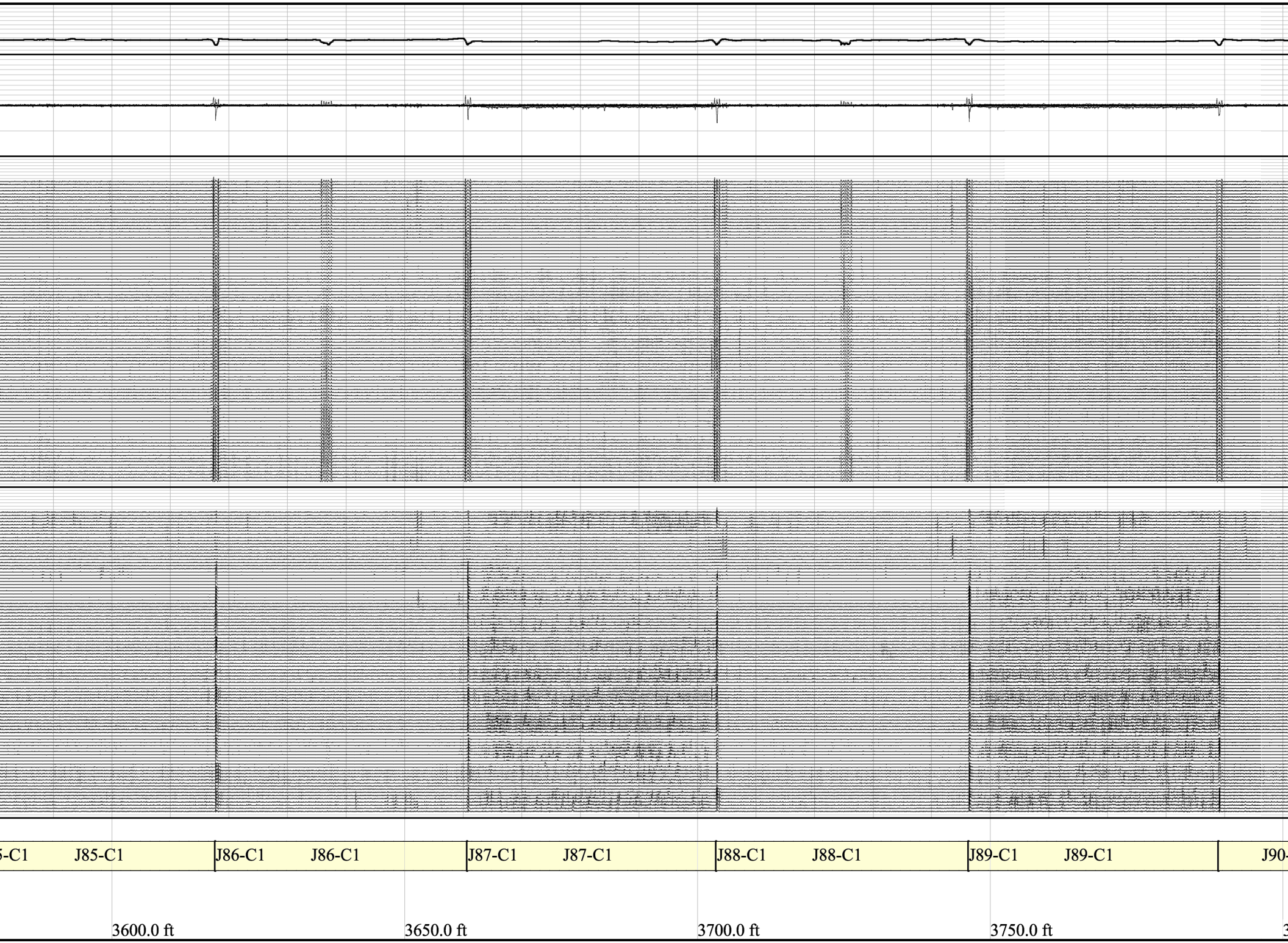

J59-C1
J59-C1
J60-C1
J60-C1
J61-C1
J61-C1
J62-C1
J62-C1
J63-C1
J63-C1
2500.0 ft
2550.0 ft
2600.0 ft
2650.0 ft


4-C1
J64-C1
J65-C1
J65-C1
J66-C1
J66-C1
J67-C1
J67-C1
J68-C1
J68-C1
J69-C1
J69
700.0 ft
2750.0 ft
2800.0 ft
2850.0 ft
2900.0 ft


-C1
J70-C1
J70-C1
J71-C1
J71-C1
J72-C1
J72-C1
J73-C1
J73-C1
J74-C1
2950.0 ft
3000.0 ft
3050.0 ft
3100.0 ft


J75-C1
J75-C1
J76-C1
J76-C1
J77-C1
J77-C1
J78-C1
J78-C1
J79-C1
3150.0 ft
3200.0 ft
3250.0 ft
3300.0 ft
3350.0 ft


J80-C1
J80-C1
J81-C1
J81-C1
J82-C1
J82-C1
J83-C1
J83-C1
J84-C1
J84-C1
J85
3400.0 ft
3450.0 ft
3500.0 ft
3550.0 ft


5-C1
J85-C1
J86-C1
J86-C1
J87-C1
J87-C1
J88-C1
J88-C1
J89-C1
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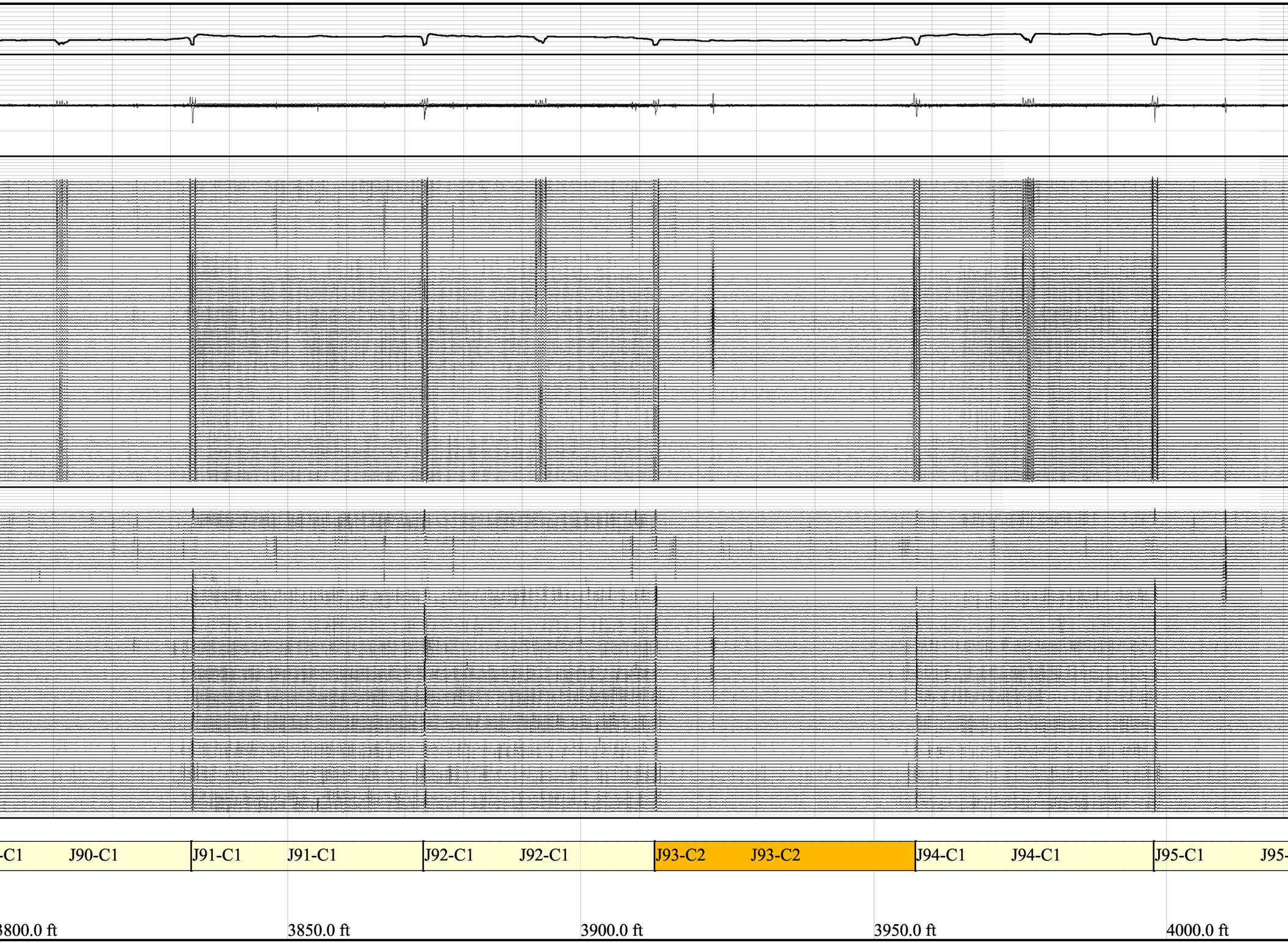
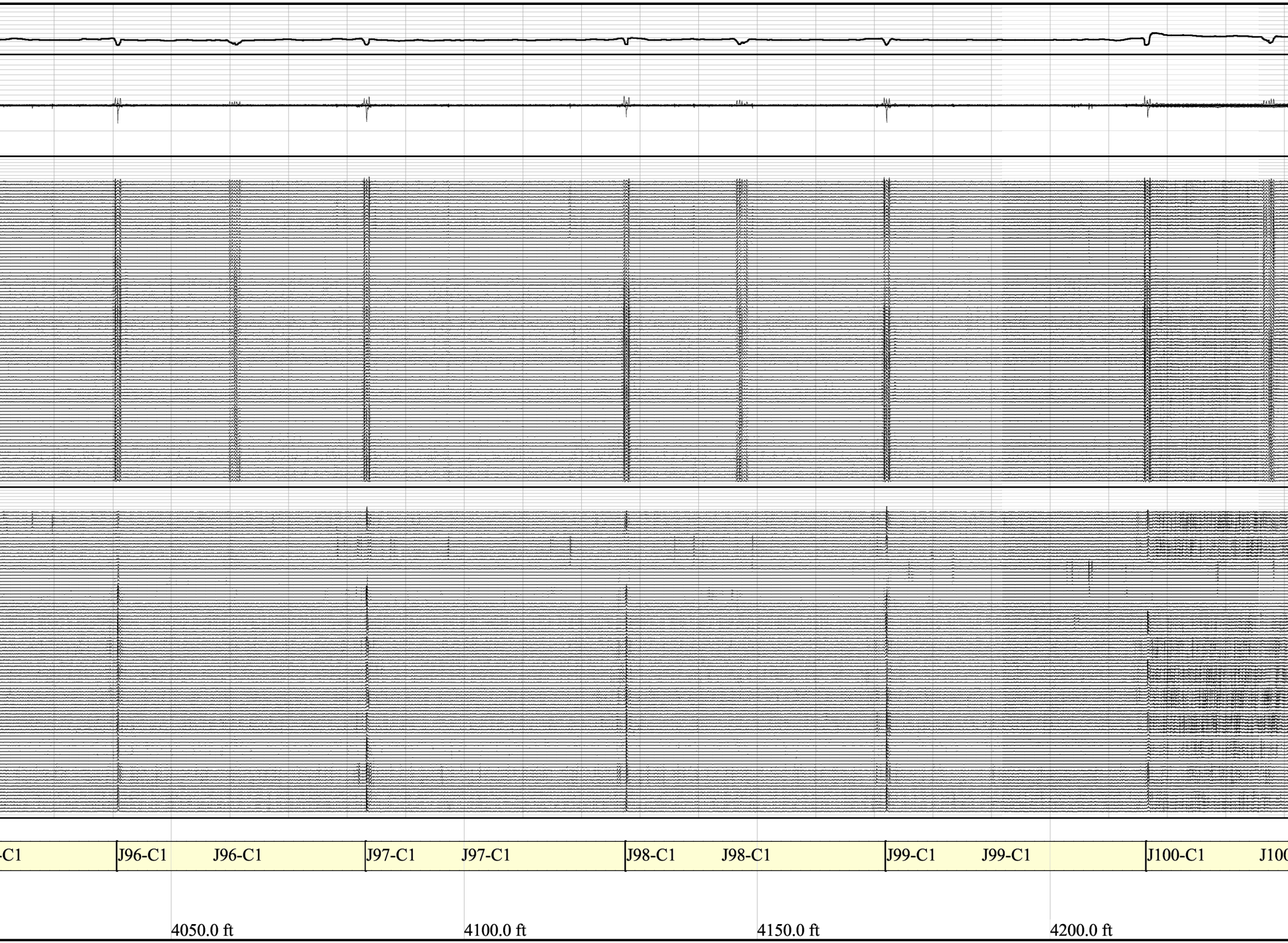
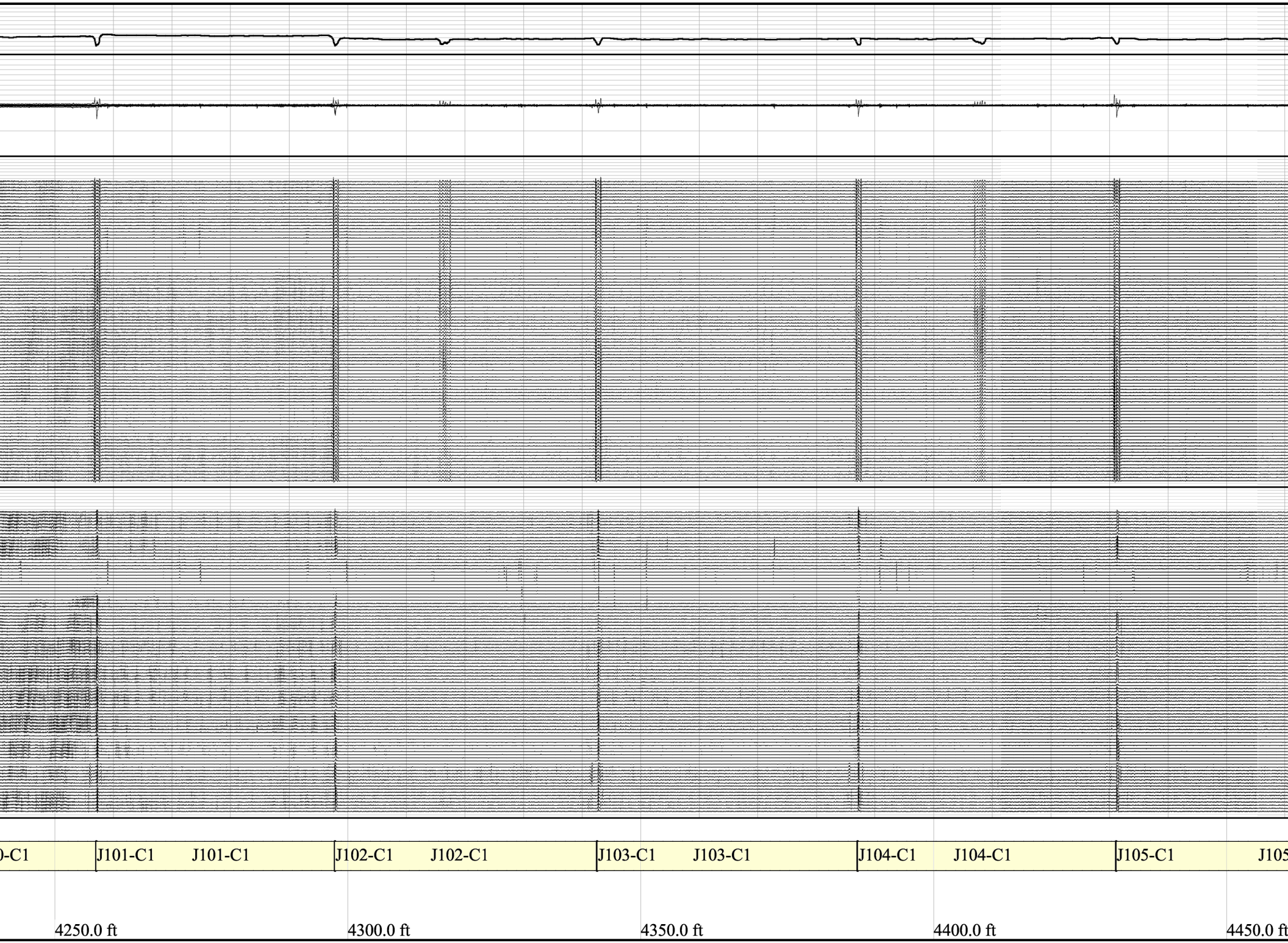
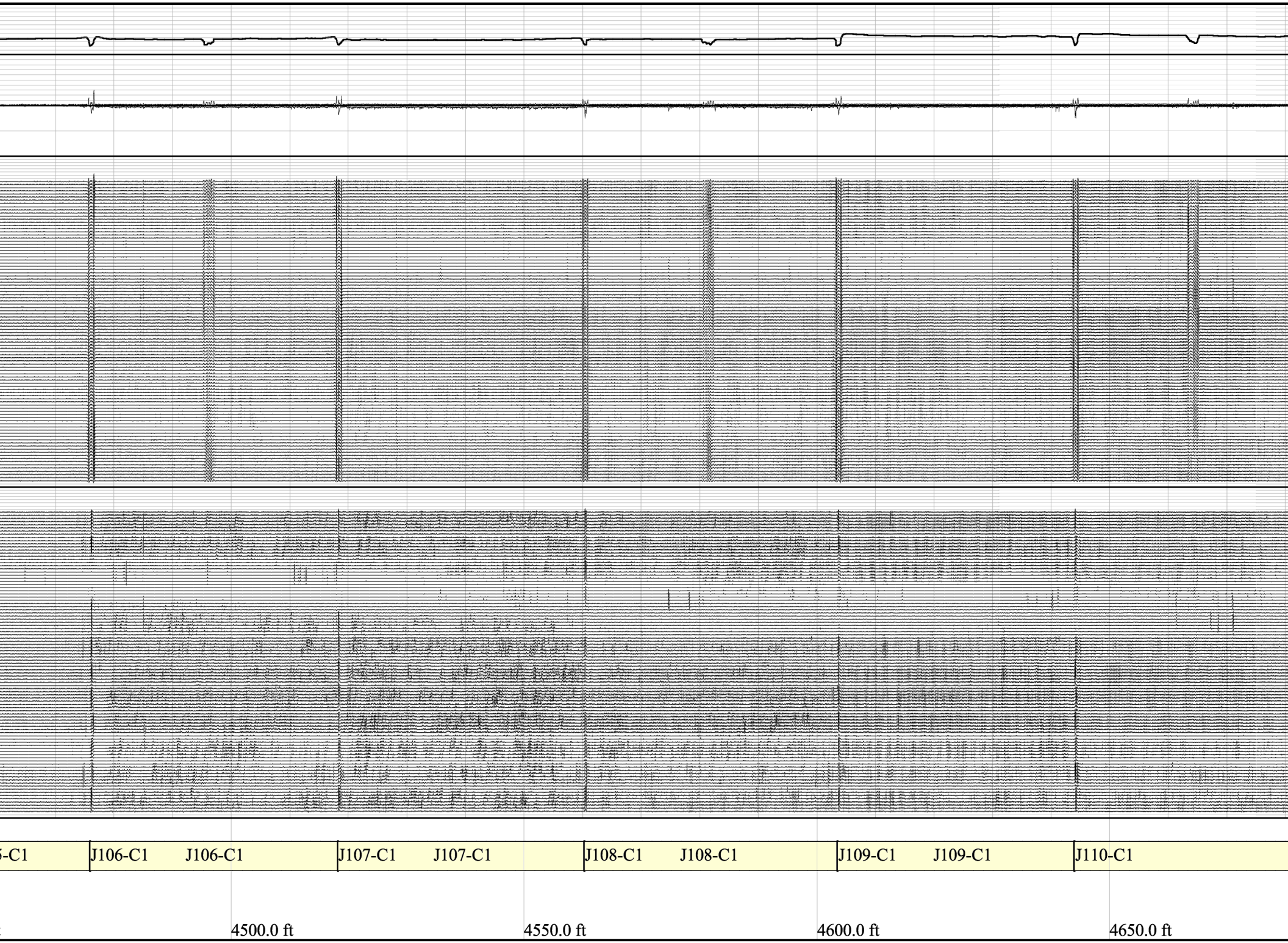
J90-
3600.0 ft
3650.0 ft
3700.0 ft
3750.0 ft
3


-C1
J90-C1
J91-C1
J91-C1
J92-C1
J92-C1
J93-C2
J93-C2
J94-C1
J94-C1
J95-C1
J95-
3800.0 ft
3850.0 ft
3900.0 ft
3950.0 ft
4000.0 ft


-C1
J96-C1
J96-C1
J97-C1
J97-C1
J98-C1
J98-C1
J99-C1
J99-C1
J100-C1
J100
4050.0 ft
4100.0 ft
4150.0 ft
4200.0 ft


0-C1
J101-C1
J101-C1
J102-C1
J102-C1
J103-C1
J103-C1
J104-C1
J104-C1
J105-C1
J105
4250.0 ft
4300.0 ft
4350.0 ft
4400.0 ft
4450.0 ft


5-C1
J106-C1
J106-C1
J107-C1
J107-C1
J108-C1
J108-C1
J109-C1
J109-C1
J110-C1
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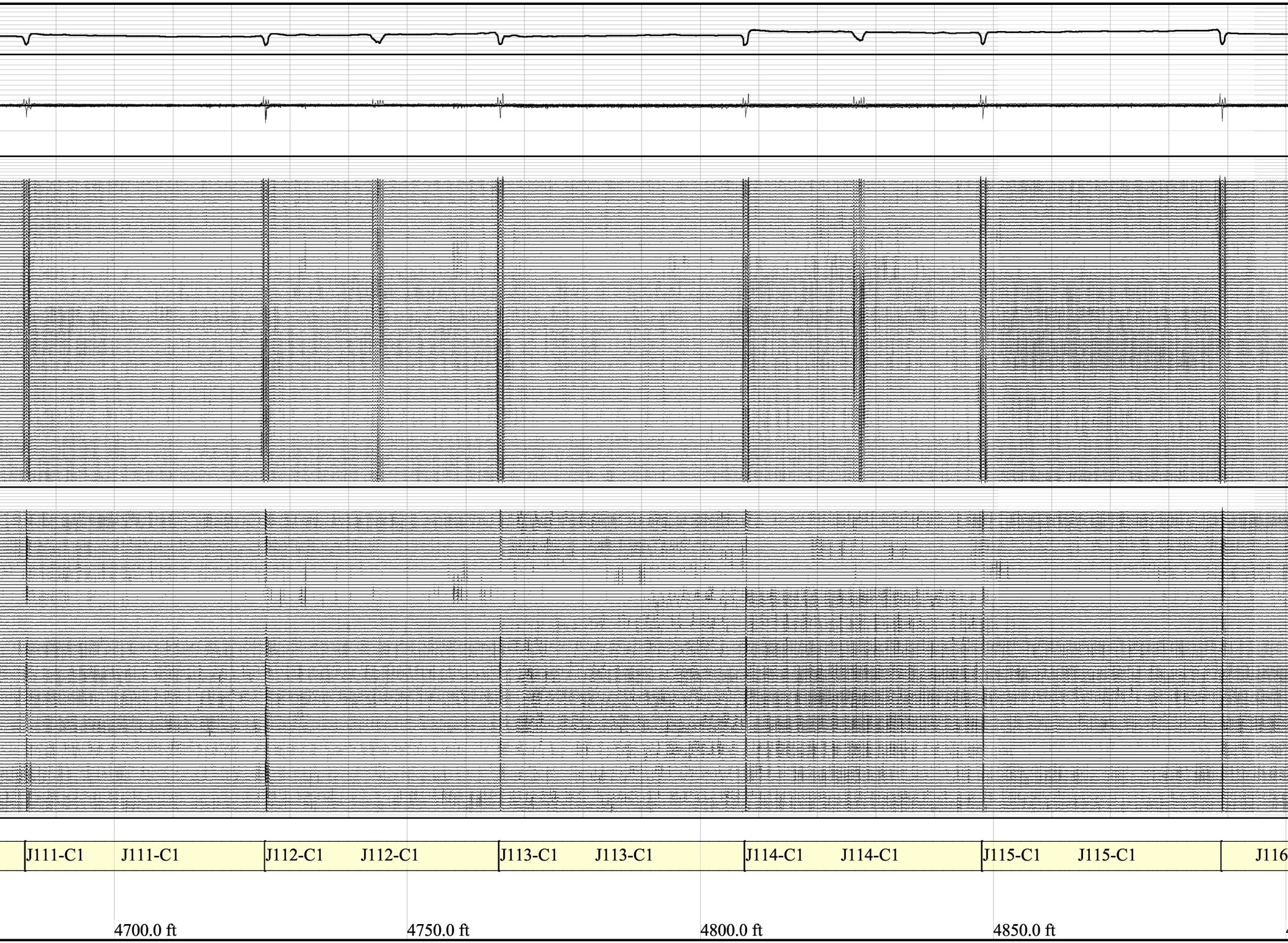
4550.0 ft
4600.0 ft
4650.0 ft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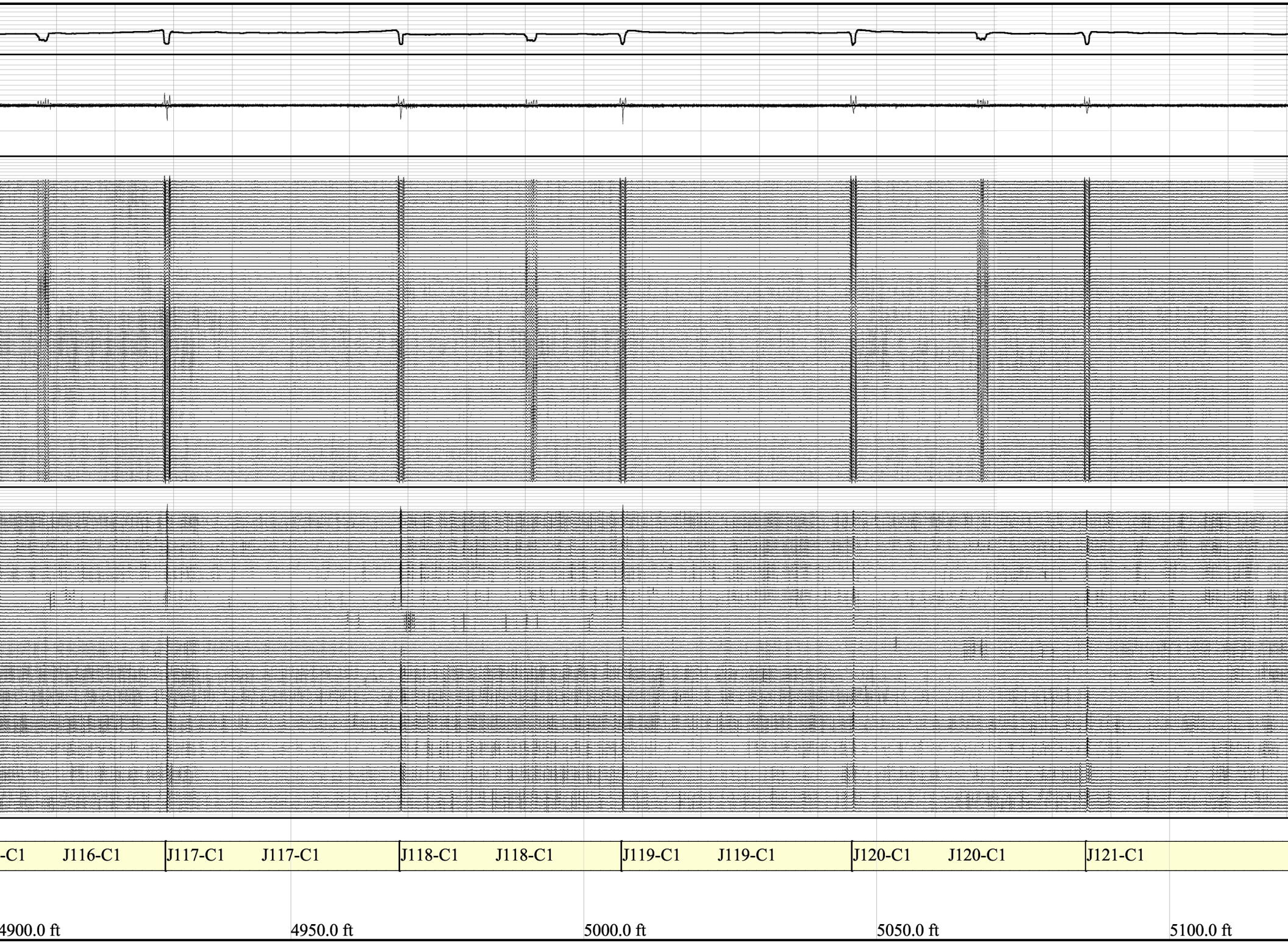
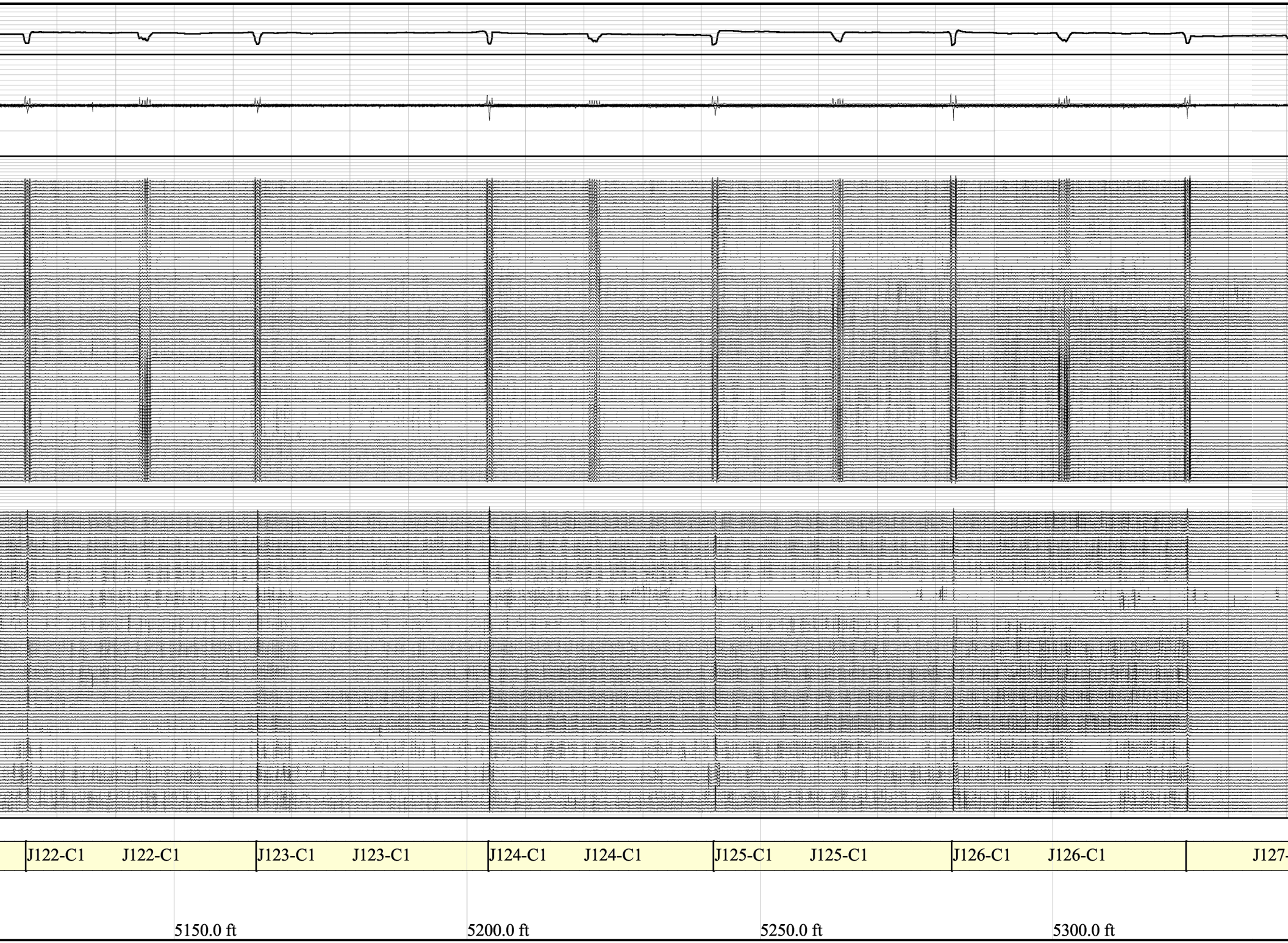
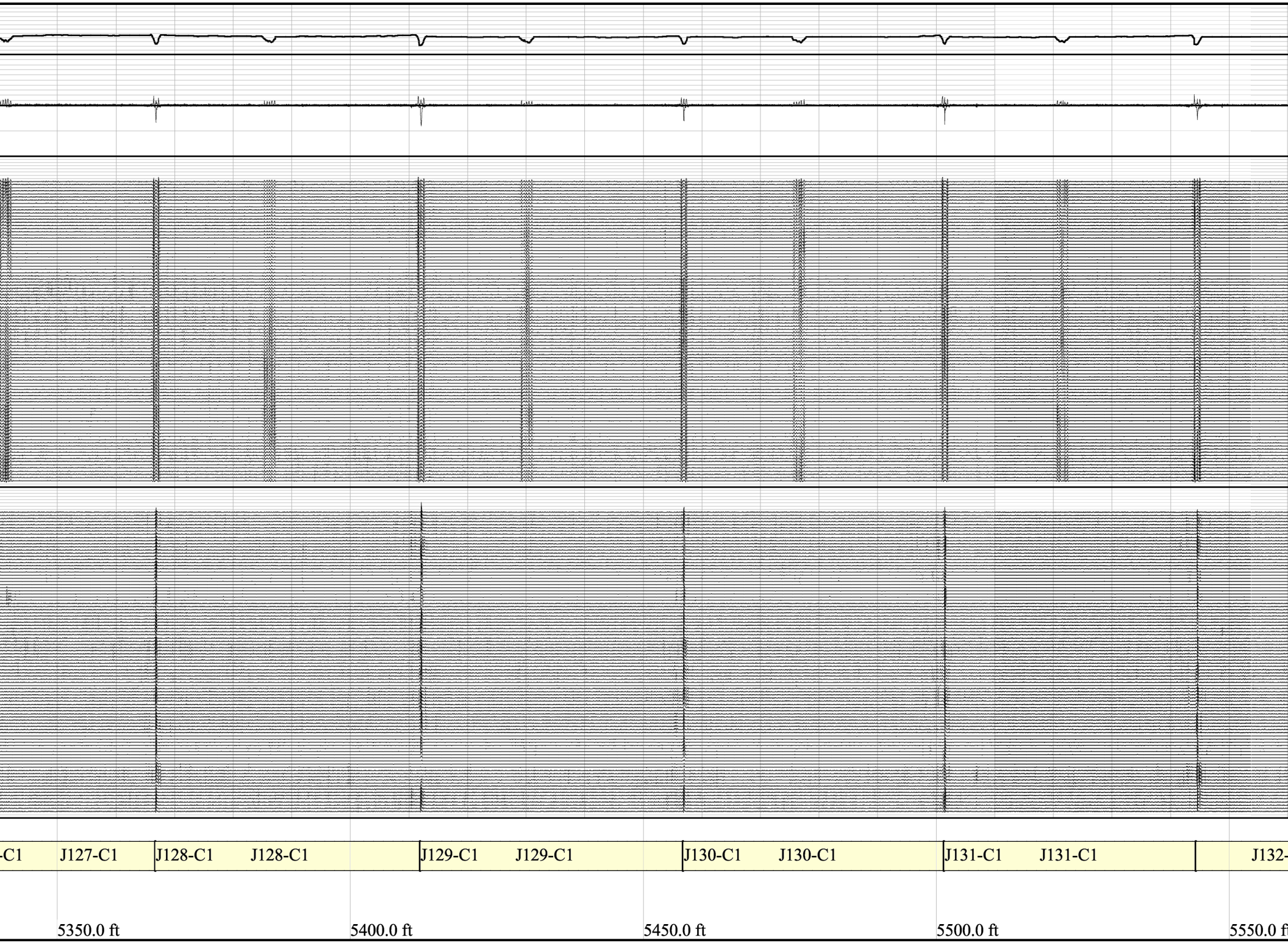
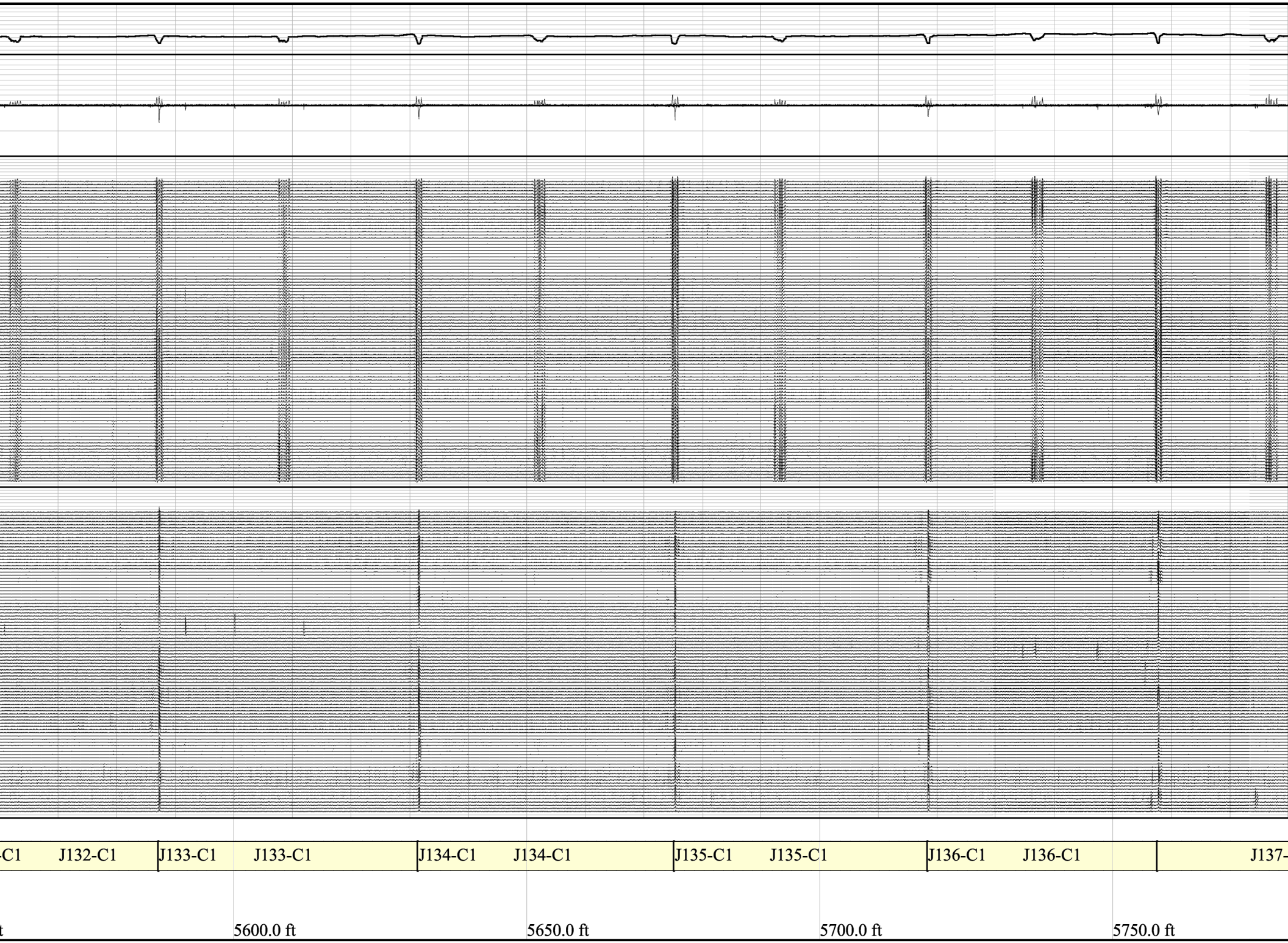
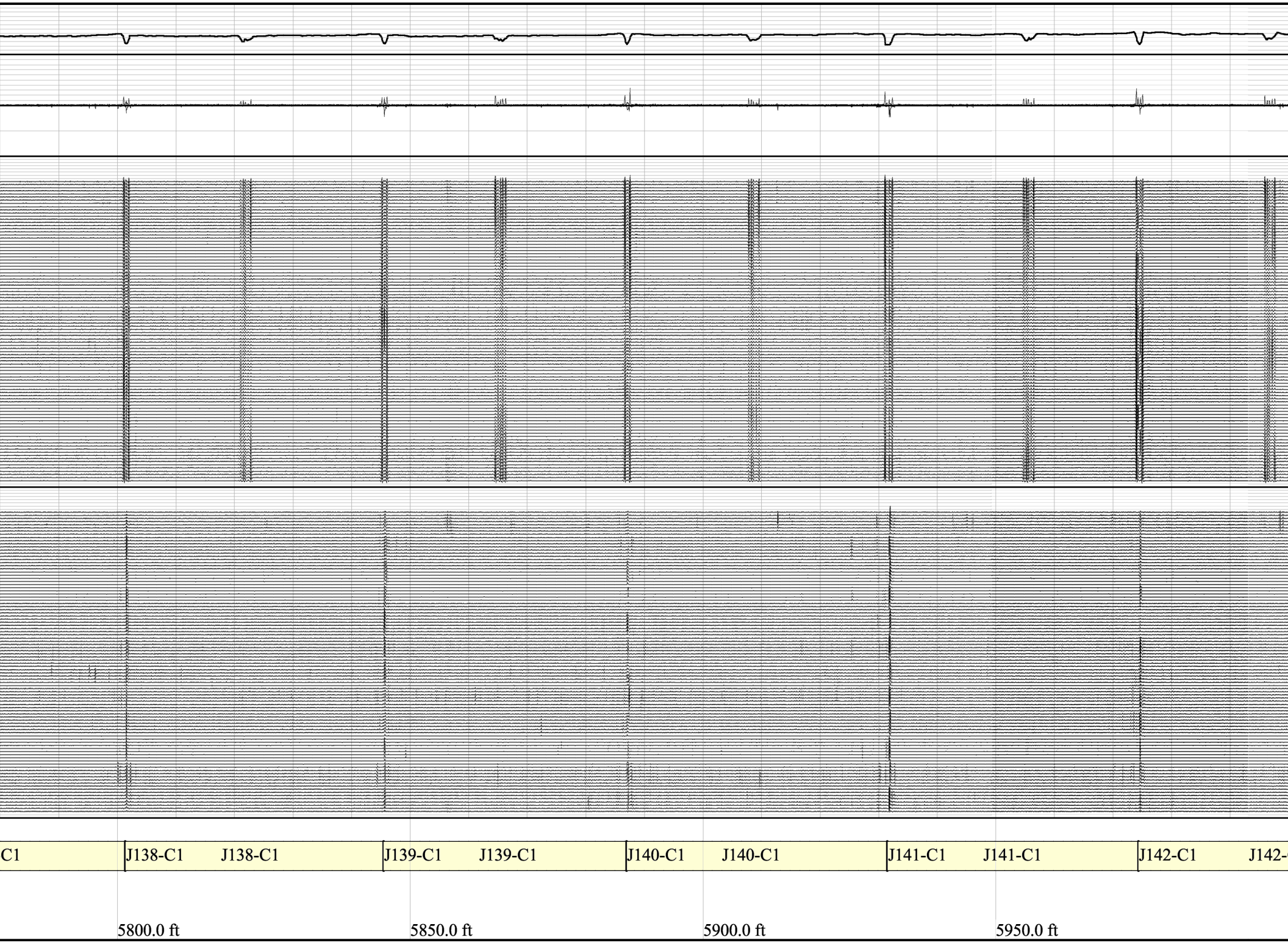
J111-C1
J112-C1
J112-C1
J113-C1
J113-C1
J114-C1
J114-C1
J115-C1
J115-C1
J116
4700.0 ft
4750.0 ft
4800.0 ft
4850.0 ft


-C1
J116-C1
J117-C1
J117-C1
J118-C1
J118-C1
J119-C1
J119-C1
J120-C1
J120-C1
J121-C1
4900.0 ft
4950.0 ft
5000.0 ft
5050.0 ft
5100.0 ft


J122-C1
J122-C1
J123-C1
J123-C1
J124-C1
J124-C1
J125-C1
J125-C1
J126-C1
J126-C1
J127-
5150.0 ft
5200.0 ft
5250.0 ft
5300.0 ft


-C1
J127-C1
J128-C1
J128-C1
J129-C1
J129-C1
J130-C1
J130-C1
J131-C1
J131-C1
J132-
5350.0 ft
5400.0 ft
5450.0 ft
5500.0 ft
5550.0 f


-C1
J132-C1
J133-C1
J133-C1
J134-C1
J134-C1
J135-C1
J135-C1
J136-C1
J136-C1
J137-
t
5600.0 ft
5650.0 ft
5700.0 ft
5750.0 ft


C1
J138-C1
J138-C1
J139-C1
J139-C1
J140-C1
J140-C1
J141-C1
J141-C1
J142-C1
J142-
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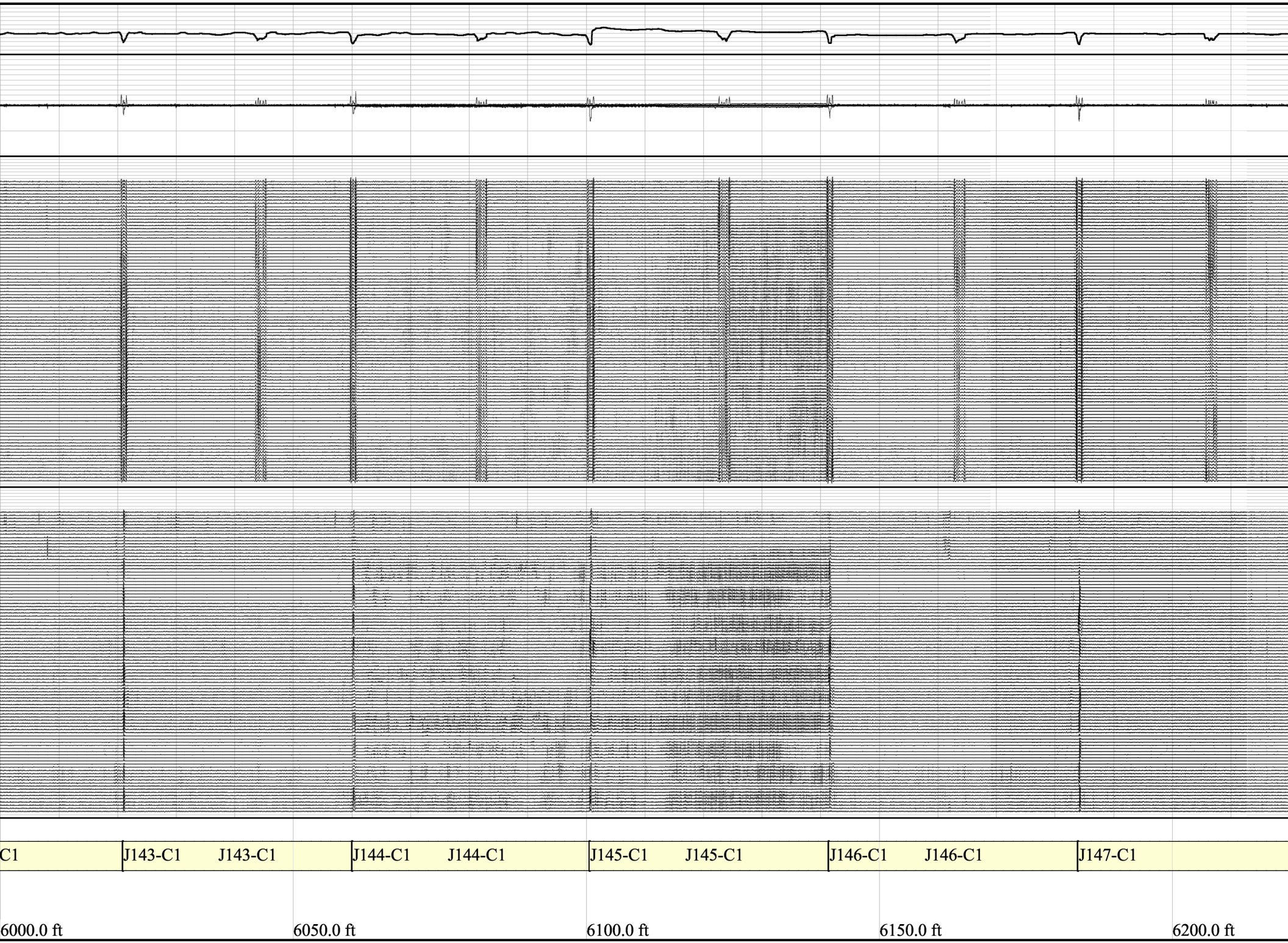
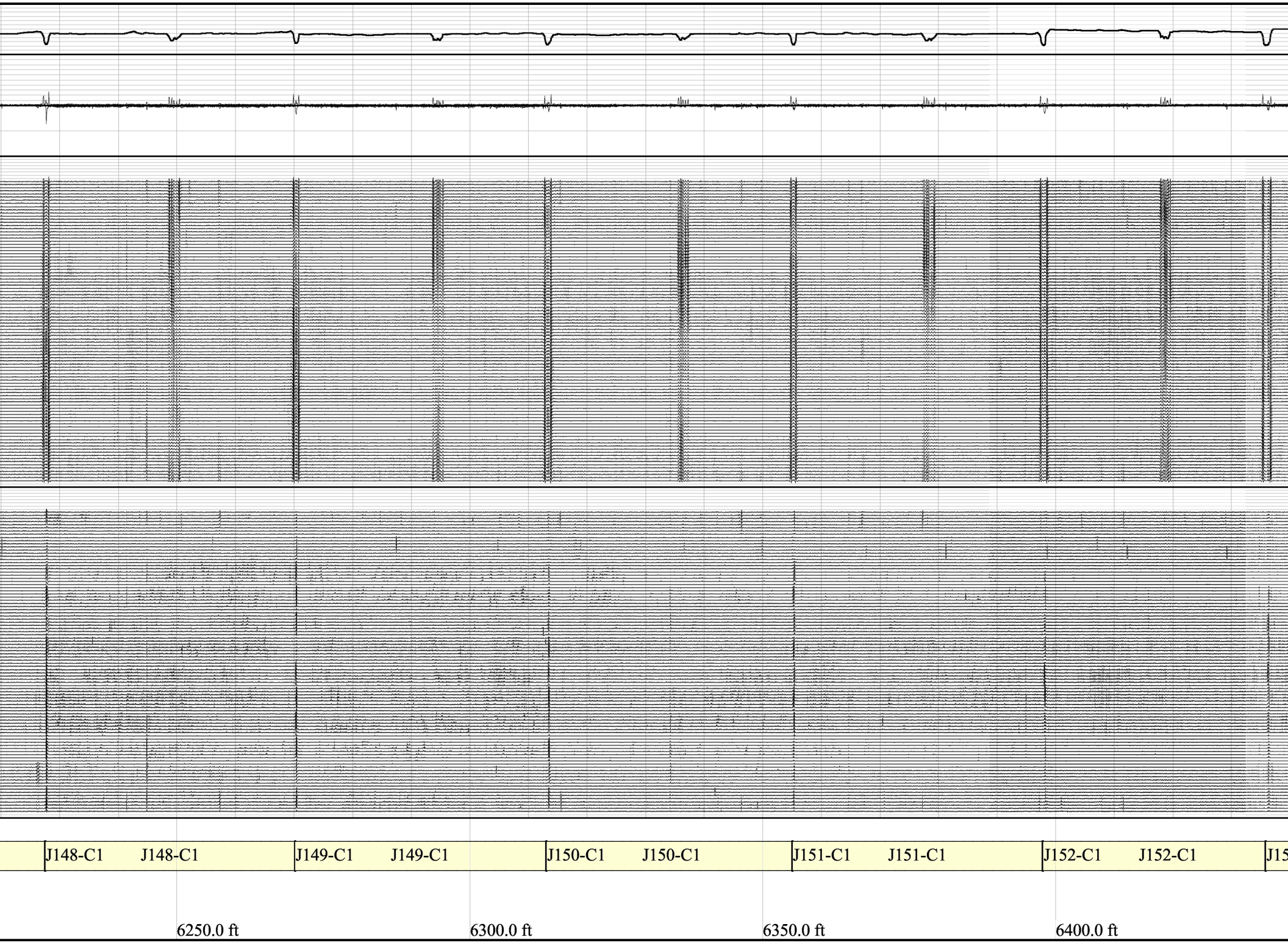
5850.0 ft
5900.0 ft
5950.0 ft


C1
J143-C1
J143-C1
J144-C1
J144-C1
J145-C1
J145-C1
J146-C1
J146-C1
J147-C1
6000.0 ft
6050.0 ft
6100.0 ft
6150.0 ft
6200.0 ft


J148-C1
J148-C1
J149-C1
J149-C1
J150-C1
J150-C1
J151-C1
J151-C1
J152-C1
J152-C1
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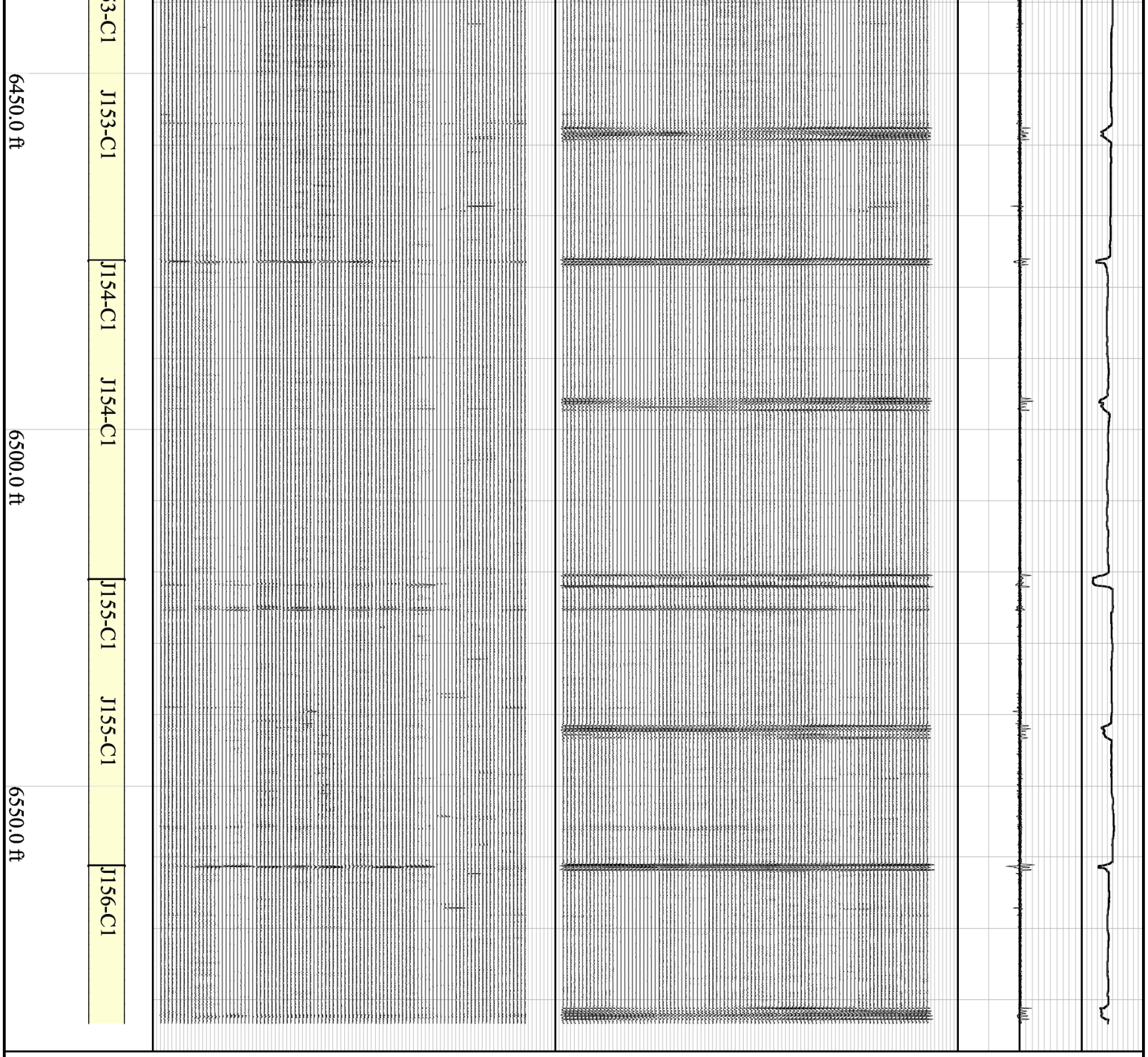
6300.0 ft
6350.0 ft
6400.0 ft



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