

DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING  
SLOPE 1 TO 1. ROADWAY OF ANY WIDTH

	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
0	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	0
1	1.00	1.10	1.20	1.30	1.40	1.50	1.60	1.70	1.80	1.90	1
2	2.00	2.10	2.20	2.30	2.40	2.50	2.60	2.70	2.80	2.90	2
3	3.00	3.10	3.20	3.30	3.40	3.50	3.60	3.70	3.80	3.90	3
4	4.00	4.10	4.20	4.30	4.40	4.50	4.60	4.70	4.80	4.90	4
5	5.00	5.10	5.20	5.30	5.40	5.50	5.60	5.70	5.80	5.90	5
6	6.00	6.10	6.20	6.30	6.40	6.50	6.60	6.70	6.80	6.90	6
7	7.00	7.10	7.20	7.30	7.40	7.50	7.60	7.70	7.80	7.90	7
8	8.00	8.10	8.20	8.30	8.40	8.50	8.60	8.70	8.80	8.90	8
9	9.00	9.10	9.20	9.30	9.40	9.50	9.60	9.70	9.80	9.90	9
10	10.00	10.10	10.20	10.30	10.40	10.50	10.60	10.70	10.80	10.90	10
11	11.00	11.10	11.20	11.30	11.40	11.50	11.60	11.70	11.80	11.90	11
12	12.00	12.10	12.20	12.30	12.40	12.50	12.60	12.70	12.80	12.90	12
13	13.00	13.10	13.20	13.30	13.40	13.50	13.60	13.70	13.80	13.90	13
14	14.00	14.10	14.20	14.30	14.40	14.50	14.60	14.70	14.80	14.90	14
15	15.00	15.10	15.20	15.30	15.40	15.50	15.60	15.70	15.80	15.90	15
16	16.00	16.10	16.20	16.30	16.40	16.50	16.60	16.70	16.80	16.90	16
17	17.00	17.10	17.20	17.30	17.40	17.50	17.60	17.70	17.80	17.90	17
18	18.00	18.10	18.20	18.30	18.40	18.50	18.60	18.70	18.80	18.90	18
19	19.00	19.10	19.20	19.30	19.40	19.50	19.60	19.70	19.80	19.90	19
20	20.00	20.10	20.20	20.30	20.40	20.50	20.60	20.70	20.80	20.90	20
21	21.00	21.10	21.20	21.30	21.40	21.50	21.60	21.70	21.80	21.90	21
22	22.00	22.10	22.20	22.30	22.40	22.50	22.60	22.70	22.80	22.90	22
23	23.00	23.10	23.20	23.30	23.40	23.50	23.60	23.70	23.80	23.90	23
24	24.00	24.10	24.20	24.30	24.40	24.50	24.60	24.70	24.80	24.90	24
25	25.00	25.10	25.20	25.30	25.40	25.50	25.60	25.70	25.80	25.90	25
26	26.00	26.10	26.20	26.30	26.40	26.50	26.60	26.70	26.80	26.90	26
27	27.00	27.10	27.20	27.30	27.40	27.50	27.60	27.70	27.80	27.90	27
28	28.00	28.10	28.20	28.30	28.40	28.50	28.60	28.70	28.80	28.90	28
29	29.00	29.10	29.20	29.30	29.40	29.50	29.60	29.70	29.80	29.90	29
30	30.00	30.10	30.20	30.30	30.40	30.50	30.60	30.70	30.80	30.90	30
31	31.00	31.10	31.20	31.30	31.40	31.50	31.60	31.70	31.80	31.90	31
32	32.00	32.10	32.20	32.30	32.40	32.50	32.60	32.70	32.80	32.90	32
33	33.00	33.10	33.20	33.30	33.40	33.50	33.60	33.70	33.80	33.90	33
34	34.00	34.10	34.20	34.30	34.40	34.50	34.60	34.70	34.80	34.90	34
35	35.00	35.10	35.20	35.30	35.40	35.50	35.60	35.70	35.80	35.90	35
36	36.00	36.10	36.20	36.30	36.40	36.50	36.60	36.70	36.80	36.90	36
37	37.00	37.10	37.20	37.30	37.40	37.50	37.60	37.70	37.80	37.90	37
38	38.00	38.10	38.20	38.30	38.40	38.50	38.60	38.70	38.80	38.90	38
39	39.00	39.10	39.20	39.30	39.40	39.50	39.60	39.70	39.80	39.90	39
40	40.00	40.10	40.20	40.30	40.40	40.50	40.60	40.70	40.80	40.90	40
41	41.00	41.10	41.20	41.30	41.40	41.50	41.60	41.70	41.80	41.90	41
42	42.00	42.10	42.20	42.30	42.40	42.50	42.60	42.70	42.80	42.90	42
43	43.00	43.10	43.20	43.30	43.40	43.50	43.60	43.70	43.80	43.90	43
44	44.00	44.10	44.20	44.30	44.40	44.50	44.60	44.70	44.80	44.90	44
45	45.00	45.10	45.20	45.30	45.40	45.50	45.60	45.70	45.80	45.90	45
46	46.00	46.10	46.20	46.30	46.40	46.50	46.60	46.70	46.80	46.90	46
47	47.00	47.10	47.20	47.30	47.40	47.50	47.60	47.70	47.80	47.90	47
48	48.00	48.10	48.20	48.30	48.40	48.50	48.60	48.70	48.80	48.90	48
49	49.00	49.10	49.20	49.30	49.40	49.50	49.60	49.70	49.80	49.90	49
50	50.00	50.10	50.20	50.30	50.40	50.50	50.60	50.70	50.80	50.90	50

Distance of slope stake from side or shoulder stake for any width roadway, slope 1 to 1. If ground is nearly level, the cut or fill at side stake is located by the double entry method in left column and top row. The number in body of table is same row and column gives distance from side stake to slope stake. If ground is not level estimate the difference in elevation between the side stake and slope stake, lower target by this amount if cut, elevate if fill. Add this amount to cut or fill and find distance in table. Set up rod at this point, and line of sight should cut target. If it does not make the slight adjustment necessary.

Please Return to  
City of San Diego Water Dept  
Room 903 Civic Center

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JAN 10 1965



TABLE XIII—CORRECTIONS FOR TANGENTS AND EXTERNALS

These corrections are to be added to the approximate values, found by dividing the tangent, or external, for a 1° curve (Table VIII) by the degree of curve, in order to obtain the true tangents, or externals. Intermediate values may be obtained by interpolation.

FOR TANGENTS ADD

Central Angle	DEGREE OF CURVE													
	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°
10°	.03	.06	.09	.13	.16	.19	.22	.25	.28	.31	.34	.38	.42	.46
15°	.04	.10	.14	.19	.24	.29	.34	.39	.45	.51	.53	.58	.63	.68
20°	.06	.13	.19	.26	.32	.39	.45	.51	.58	.65	.72	.79	.84	.90
25°	.08	.16	.24	.33	.40	.49	.58	.67	.75	.83	.90	.99	1.06	1.14
30°	.10	.19	.29	.39	.49	.59	.69	.79	.89	.99	1.09	1.20	1.29	1.39
35°	.11	.22	.34	.47	.58	.69	.79	.89	.99	1.04	1.29	1.42	1.54	1.66
40°	.13	.26	.40	.53	.67	.80	.93	1.06	1.20	1.34	1.49	1.64	1.79	1.94
45°	.15	.30	.44	.60	.76	.91	1.06	1.21	1.37	1.52	1.70	1.87	2.04	2.21
50°	.17	.34	.51	.68	.85	1.02	1.19	1.36	1.54	1.72	1.91	2.10	2.29	2.48
55°	.19	.38	.57	.76	.95	1.14	1.32	1.52	1.72	1.92	2.14	2.35	2.56	2.77
60°	.21	.42	.63	.84	1.05	1.27	1.49	1.71	1.94	2.17	2.38	2.60	2.83	3.07
65°	.23	.46	.69	.93	1.16	1.40	1.64	1.88	2.13	2.38	2.63	2.88	3.13	3.39
70°	.25	.51	.76	1.02	1.28	1.54	1.80	2.06	2.33	2.60	2.88	3.16	3.44	3.72
75°	.27	.56	.83	1.12	1.40	1.69	1.98	2.27	2.57	2.87	3.16	3.47	3.78	4.09
80°	.30	.61	.91	1.22	1.53	1.84	2.15	2.46	2.78	3.10	3.44	3.78	4.12	4.46
85°	.33	.66	1.00	1.33	1.68	2.02	2.36	2.70	3.05	3.40	3.77	4.14	4.55	4.89
90°	.36	.72	1.09	1.45	1.83	2.20	2.57	2.94	3.32	3.70	4.10	4.50	4.91	5.32
95°	.39	.79	1.19	1.55	2.00	2.40	2.80	3.20	3.61	4.02	4.40	4.98	5.38	5.83
100°	.43	.86	1.30	1.74	2.18	2.62	3.06	3.50	3.95	4.40	4.88	5.37	5.85	6.34
110°	.51	1.03	1.56	2.08	2.61	3.14	3.67	4.21	4.76	5.31	5.86	6.43	7.01	7.60
120°	.62	1.25	1.93	2.52	3.16	3.81	4.45	5.11	5.77	6.44	7.12	7.80	8.50	9.22

FOR EXTERNALS ADD

Central Angle	DEGREE OF CURVE													
	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°
10°	.001	.003	.004	.006	.007	.008	.009	.011	.012	.014	.015	.017	.018	.020
15°	.003	.007	.010	.014	.018	.023	.027	.032	.035	.039	.043	.047	.051	
20°	.006	.011	.017	.022	.028	.034	.038	.045	.051	.057	.063	.070	.076	.083
25°	.009	.018	.027	.036	.046	.056	.065	.074	.083	.093	.106	.120	.127	.135
30°	.013	.025	.038	.051	.065	.078	.090	.103	.116	.129	.149	.170	.179	.188
35°	.018	.035	.054	.072	.086	.109	.131	.153	.175	.197	.213	.230	.247	.264
40°	.023	.046	.070	.093	.117	.141	.172	.203	.234	.265	.277	.290	.315	.341
45°	.030	.060	.093	.119	.153	.184	.216	.254	.289	.325	.351	.378	.411	.445
50°	.037	.075	.116	.151	.189	.227	.266	.305	.345	.384	.425	.467	.508	.550
55°	.046	.093	.142	.188	.236	.283	.332	.381	.420	.479	.530	.582	.641	.700
60°	.056	.112	.168	.225	.283	.340	.398	.457	.516	.575	.636	.697	.774	.851
65°	.067	.135	.204	.273	.343	.412	.483	.554	.625	.697	.771	.845	.922	1.01
70°	.080	.159	.240	.321	.403	.485	.568	.652	.735	.819	.906	.994	1.08	1.17
75°	.095	.182	.286	.383	.480	.578	.678	.777	.877	.977	1.07	1.18	1.29	1.39
80°	.110	.220	.332	.445	.558	.671	.787	.903	1.02	1.13	1.25	1.38	1.50	1.62
85°	.128	.259	.391	.524	.657	.790	.926	1.06	1.20	1.34	1.47	1.62	1.76	1.91
90°	.149	.299	.450	.603	.756	.910	1.07	1.22	1.38	1.54	1.70	1.87	2.03	2.20
95°	.174	.350	.522	.706	.985	1.06	1.25	1.43	1.62	1.80	1.99	2.18	2.38	2.58
100°	.200	.401	.604	.809	1.01	1.22	1.43	1.64	1.85	2.06	2.28	2.50	2.73	2.96
110°	.268	.536	.806	1.08	1.35	1.63	1.91	2.20	2.48	2.76	3.05	3.35	3.66	3.96
120°	.360	.721	1.08	1.45	1.82	2.19	2.57	2.95	3.33	3.72	4.11	4.50	4.91	5.32

INDEX.

BLACK CANYON TUNNEL - CROSS SECTIONS.

STATION 155+95 TO

SEE ALSO F.R. #849 AND #850.



JULY 15, 1953

D. LEONARD  
D. BROWN - NOTES

BLACK CANYON TUNNEL X-SECTIONS

HARD GRANITE DAMP

155+95	0° 4.6'	10° 4.9'	20° 5.1'
	30° 5.0'	40° 4.6'	50° 3.8'
	60° 3.3'	75° 3.1'	90° 3.35'
	105° 3.55'	125° 3.6'	150° 3.8'
	150° 3.3'	180° 3.0'	210° 3.3'
	230° 3.8'	240° 3.5'	255° 3.5'
	270° 3.2'	280° 3.1'	295° 3.3'
	310° 3.25'	330° 3.5'	335° 3.7'
	340° 4.2'	350° 4.35'	355° 4.55'

NOTE: ON READINGS FOR 150°, 180° AND 210°, 0.6' IS ADDED TO ACTUAL READINGS TAKEN AT TOP OF RAILS, TO ALLOW FOR LOOSE MUCK IN BOTTOM OF TUNNEL. THE READINGS ALLOW FOR LOOSE MUCK ALSO, ON AN ESTIMATION BASIS.

*Leonard*

HARD GRANITE DAMP

155+90	0° 4.9'	10° 5.1'	20° 5.0'
	30° 4.8'	40° 4.45'	50° 4.05'
	65° 3.6'	80° 3.6'	90° 3.6'
	105° 3.65'	120° 3.85'	130° 4.0'
	150° 3.4'	180° 3.1'	210° 3.25'
	230° 3.8'	240° 3.6'	255° 3.3'
	270° 3.2'	290° 3.1'	310° 3.25'
	338° 4.3'	345° 4.1'	355° 4.7'

HARD GRANITE DAMP

155+85	0° 5.2'	10° 5.35'	20° 5.9'
	30° 5.3'	40° 4.65'	50° 4.05'
	60° 3.75'	70° 3.55'	80° 3.6'



JULY 11, 1953

D. LEONARD

D. BROWN - NOTES

155+85 CINT	90°	3.6'	105°	3.9'	115°	4.2'
	130°	4.2'	150°	3.4'	180°	3.2'
	210°	3.5'	230°	3.8'	245°	3.6'
	270°	3.35'	290°	3.15'	305°	3.3'
	330°	4.6'	340°	4.75'	360°	4.8'

HARD GRANITE DAMP.

155+80	0°	4.8'	10°	5.4'	15°	5.4'
	22°	5.0'	40°	4.0'	50°	3.85'
	70°	3.6'	80°	3.65'	90°	3.95'
	110°	4.05'	125°	4.6'	150°	3.4'
	180°	3.2'	210°	3.5'	230°	3.9'
	245°	3.7'	270°	3.45'	290°	3.65'
	305°	3.9'	330°	4.0'	340°	4.25'
	350°	4.6'	355°	4.7'		

HARD GRANITE DRY

155+75	0°	4.6'	10°	4.5'	25°	4.2'
	45°	4.35'	55°	4.0'	70°	3.9'
	85°	3.7'	90°	3.95'	105°	4.1'
	120°	4.9'	130°	4.3'	150°	3.5'
	190°	3.2'	210°	3.4'	225°	3.75'
	235°	3.55'	250°	3.5'	270°	3.25'
	270°	3.45'	315°	3.9'	330°	3.95'



July 15, 1953

D. LEONARD

D. BROWN - NOTES

HARD GRANITE DAMP

155+75 CONT

155+70

340° 4.3'	345° 3.95'	355° 4.25'
0° 4.65'	8° 5.0'	15° 4.9'
25° 4.8'	45° 4.4'	60° 4.25'
70° 4.3'	80° 4.05'	90° 4.1'
100° 4.55'	110° 4.7'	125° 4.4'
150° 3.5'	180° 3.3'	210° 3.5'
230° 4.0'	240° 3.8'	255° 3.3'
270° 3.3'	280° 3.3'	305° 3.6'
315° 3.9'	325° 4.0'	390° 3.8'
350° 4.1'	355° 4.6'	

HARD GRANITE WET

155+65

0° 4.85'	10° 5.0'	25° 5.0'
45° 4.6'	65° 4.4'	70° 4.0'
80° 4.0'	90° 4.0'	100° 4.25'
115° 4.7'	125° 5.6'	150° 3.5'
180° 3.2'	210° 3.5'	230° 3.9'
250° 3.6'	260° 3.25'	270° 3.2'
285° 3.25'	305° 3.4'	320° 3.8'
335° 4.3'	390° 4.4'	390° 4.6'



JULY 1/2 1953

D. LEONARD

D. BROWN - NOTES

HARD GRANITE DAMP

155+60	0° 4.8'	10° 4.8'	25° 4.7'
	45° 4.9'	50° 4.2'	60° 3.8'
	75° 4.25'	85° 3.9'	90° 3.75'
	105° 3.75'	110° 4.2'	125° 4.5'
	150° 3.4'	180° 3.2'	210° 3.4'
	230° 3.9'	250° 4.05'	270° 3.6'
	290° 3.5'	310° 3.55'	325° 3.9'
	330° 4.05'	340° 4.45'	345° 4.65'
	350° 4.7'		

HARD GRANITE DRY OVERHEAT, DAMPSIDES

155+55

0° 4.85'	10° 4.75'	20° 4.6'
40° 4.3'	50° 4.15'	60° 3.95'
72° 4.0	80° 3.85'	90° 3.7'
100° 3.65'	115° 4.0'	130° 4.3'
150° 3.4'	180° 3.2'	210° 3.3'
225° 3.9'	235° 3.7'	255° 3.55'
270° 3.4'	285° 3.65'	300° 3.6'
310° 3.75'	325° 4.15'	340° 4.45'
350° 4.7'		



## HARD GRANITE DAMP

155+60	0°	4.5'	10°	4.45'	25°	4.35'
	45°	4.25'	60°	3.95'	75°	3.85'
	90°	3.6'	100°	3.6'	110°	3.8'
	120°	4.0'	130°	4.2'	150°	3.5'
	180°	3.4'	210°	3.4'	225°	3.7'
	235°	3.45'	250°	3.4'	270°	3.35'
	290°	3.6'	305°	3.75'	320°	4.2'
	330°	4.0'	340°	4.35'	350°	4.6'

## HARD GRANITE TOP DRY SIDES DAMP

55+45	0°	4.3'	15°	4.35'	30°	4.4'
	50°	3.75'	60°	3.65'	70°	3.45'
	80°	3.45'	100°	3.35'	110°	3.9'
	125°	4.3'	150°	3.5'	180°	3.2'
	210°	3.5'	230°	4.0'	245°	4.1'
	260°	3.8'	270°	3.4'	285°	3.15'
	300°	3.75'	315°	3.75'	330°	4.2'
	340°	4.2'	350°	4.1'		

## HARD GRANITE TOP DRY SIDES DAMP

155+40'	0°	4.4'	10°	4.25'	25°	4.1'
	45°	4.0'	65°	4.0'	75°	3.7'
	90°	3.6'	105°	3.75'	120°	4.2'
	130°	4.3'	150°	3.4'	180°	3.25'



HARD GRANITE DAMP

HARD GRANITE DAMP

155+40 cont.	210° 3.5'	230° 4.2'	250° 4.25'
	240° 3.8'	270° 3.75'	280° 3.9'
	300° 3.65'	310° 4.0'	320° 4.1'
	330° 4.35'	340° 4.4'	350° 4.6'
155+35	0° 4.2'	10° 4.5'	30° 4.5'
	45° 4.25'	50° 3.95'	60° 3.55'
	75° 3.6'	85° 3.25'	95° 3.2'
	105° 3.55'	130° 4.2'	150° 3.5'
	180° 3.1'	210° 3.5'	230° 4.3'
	245° 4.3'	260° 4.25'	270° 4.05'
	280° 4.25'	300° 4.15'	315° 4.1'
	325° 4.2'	335° 4.5'	345° 4.25'
	350° 4.3'		
155+30	0° 4.25'	10° 4.6'	20° 3.85'
	30° 3.8'	45° 3.5'	55° 3.25'
	65° 3.0'	90° 3.55'	110° 2.9'
	130° 3.7'	135° 3.8'	150° 3.4'
	180° 3.25'	210° 3.45'	230° 4.0'
	240° 4.0'	260° 4.8'	270° 4.4'
	295° 4.2'	315° 4.95'	330° 4.4'



DAMP

155+30 CONT.

345°	3.95'	350°	4.0'	355°	4.2'
0°	4.35'	10°	4.3'	20°	4.1'
30°	3.8	40°	3.3'	55°	3.3'
70°	3.2'	90°	3.0'	105°	3.25'
120°	3.35'	130°	3.9'	150°	3.4'
180°	3.2'	210°	3.5'	230°	4.0'
250°	4.25'	270°	3.75'	290°	3.7'
300°	3.7'	320°	4.8'	330°	4.55'
335°	4.35'	340°	4.6'	350°	4.7'

WET

155+20

0°	4.75'	10°	4.4'	20°	4.3'
40°	3.6'	60°	3.0'	90°	3.0'
95°	3.3'	110°	3.2'	130°	3.8'
150°	3.5'	180°	3.2'	210°	3.5'
230°	3.7'	240°	3.6'	250°	3.4'
270°	3.35'	280°	3.6'	290°	3.7'
305°	3.9'	320°	4.05'	330°	4.5'
340°	4.6'	350°	4.6'		



HARD GRANITE DRY

155 F15

0°	5.0'	10°	4.25'	20°	4.5'
40°	3.9'	50°	3.6'	60°	3.45'
85°	3.0'	90°	2.85'	105°	3.25'
130°	3.8'	150°	3.45'	180°	3.2'
210°	3.4'	235°	4.6'	250°	4.3'
260°	4.4'	270°	4.3'	285°	3.9'
300°	3.7'	315°	4.2'	320°	4.4'
335°	4.65'	340°	4.35'	350°	4.6'

HARD GRANITE DRY

155 F10

0°	4.65'	10°	4.4'	20°	4.25'
40°	4.45'	50°	4.2'	60°	3.65'
65°	3.8'	75°	3.6'	90°	3.75'
105°	3.85'	115°	4.0'	130°	3.8'
150°	3.5'	180°	3.2'	210°	3.5'
235°	4.0'	255°	4.3'	270°	4.0'
280°	3.55'	290°	3.7'	315°	4.0'
330°	4.35'	340°	4.6'	350°	4.25'

HARD GRANITE DRY

155 F05

0°	4.45'	10°	4.4'	20°	4.25'
40°	4.1'	60°	3.9'	70°	3.9'
80°	3.25'	90°	3.6'	105°	3.9'
130°	4.4'	150°	3.5'	180°	3.2'



155+05 CONT

210°	3.5'	230°	3.8'	240°	3.6'
250°	3.25	260°	3.3'	270°	3.0'
290°	3.1'	310°	3.6'	320°	4.0'
330°	4.2'	335°	4.3'	340°	4.7'
350°	4.35'				

RAIPING WET

155+00

0°	4.4'	10°	4.5'	25°	4.55'
45°	4.2'	60°	3.5'	75°	3.3'
90°	3.5'	110°	4.0'	130°	4.3'
150°	3.5'	180°	3.2'	210°	3.5'
225°	3.8'	230°	3.55'	240°	3.8'
260°	3.3'	270°	3.25'	270°	3.2'
310°	3.3'	320°	3.45'	330°	3.8'
340°	4.15'	350°	4.55'		



JULY 25, 1953

D. LEONARD

F. BROWN - NOTES

DAMP

154+95	0°	4.15'	10°	4.25'	25°	4.25'
	45°	4.0'	55°	3.75'	70°	3.3'
	90°	3.55'	105°	3.75'	130°	4.3'
	150°	3.6'	180°	3.4'	210°	3.6'
	233°	4.1'	245°	4.0'	260°	3.7'
	270°	3.7'	298°	3.2'	310°	3.4'
	325°	3.8'	335°	3.6'	350°	3.9'

WET

154+90	0°	4.05'	25°	4.4'	45°	4.3'
	60°	3.55'	70°	3.4'	80°	3.5'
	90°	3.45'	105°	4.05'	130°	4.5'
	150°	3.6'	180°	3.4'	210°	3.6'
	235°	4.4'	250°	4.1'	270°	3.85'
	298°	4.1'	300°	3.9'	320°	3.8'
	340°	3.75'	350°	3.7'		

DAMP

154+85	0°	4.25'	20°	4.0'	30°	3.9'
	45°	3.7'	60°	3.2'	80°	2.95'
	90°	3.15'	105°	3.55'	130°	4.0'
	150°	3.6'	180°	3.4'	210°	3.6'
	230°	4.0'	240°	3.8'	255°	3.65'
	270°	3.6'	280°	3.85'	295°	4.15'



July 25, 1953

DAMP

154+85 cont?	310°	4.3'	325°	4.15'	340°	4.15'
154+80	0°	3.7'	10°	3.7'	35°	3.5'
	50°	3.4'	65°	3.25'	80°	3.15'
	90°	3.25'	105°	3.25'	115°	4.15'
	130°	4.1'	150°	3.6'	180°	3.4'
	210°	3.6'	227°	4.2'	250°	3.9'
	270°	3.45'	290°	3.75'	305°	3.9'
	320°	4.35'	330°	4.6'	340°	4.15'
	350°	3.25'	335°	4.5'		

DAMP

154+75	0°	4.1'	10°	3.9'	35°	3.75'
	55°	3.7'	65°	3.75'	80°	3.6'
	90°	3.5'	105°	3.8'	115°	4.1'
	135°	4.0'	150°	3.6'	180°	3.3'
	210°	3.6'	230°	4.1'	245°	3.95'
	260°	3.6'	270°	3.7'	295°	4.0'
	300°	4.0'	320°	4.1'	335°	4.0'

DAMP

154+70	0°	4.85'	5°	4.85'	12°	4.4'
	20°	4.0'	35°	3.9'	45°	3.5'
	65°	3.45'	80°	3.5'	90°	3.5'
	105°	3.8'	130°	4.4'	150°	3.5'



JULY 25, 1953

15470 cont.	180°	3.3'	210°	3.5'	230°	4.0'
	245°	3.8'	270°	3.9'	290°	3.85'
	305°	4.05'	320°	4.25'	330°	4.15'
	335°	4.0'	345°	4.7'	350°	4.85'

154766.5	0°	4.4'	10°	4.6'	20°	4.3'
	35°	4.35'	50°	4.15'	70°	3.6'
	90°	3.55'	120°	4.9'	125°	5.0'
	150°	3.45'	180°	3.3'	210°	3.5'
	230°	4.0'	245°	3.8'	270°	3.6'
	290°	3.75'	305°	4.0'	315°	4.1'
	330°	4.4'	340°	4.45'	350°	4.5'

154765	0°	4.4'	15°	4.6'	35°	4.5'
	45°	4.35'	65°	5.3'	75°	4.9'
	85°	4.65'	90°	5.0'	100°	5.5'
	120°	5.8'	150°	3.6'	180°	3.3'
	210°	3.5'	230°	4.0'	245°	3.8'
	270°	3.3'	285°	3.85'	305°	4.0'
	312°	4.2'	330°	4.3'	340°	4.15'

DAMP EXTRA SECTION  
START CAR-PASS HOLE #10.

DAMP



July 25, 1953

DAMP

SPRING AT 430°

154460	0°	4.3'	10°	4.5'	20°	4.2'
	35°	4.1'	50°	4.5'	65°	5.2'
	75°	5.9'	90°	6.0'	100°	5.7'
	120°	5.9'	150°	3.6'	180°	3.3'
	210°	3.6'	230°	4.2'	240°	3.8'
	270°	3.35'	295°	3.6'	310°	3.8'
	318°	4.0'	330°	4.05'	340°	4.2'

DAMP

EXTRA SECTION

END OF CAR-PASS HOLE 150°

154457	0°	4.5'	15°	4.7'	35°	4.4'
	50°	4.2'	70°	4.7'	90°	5.6'
	105°	5.4'	125°	5.5'	150°	3.6'
	180°	3.3'	210°	3.5'	230°	3.9'
	235°	3.65'	255°	3.35'	270°	3.55'
	280°	3.75'	295°	3.55'	316°	3.85'
	320°	4.3'	338°	4.2'	345°	4.5'
	350°	4.5'				

DAMP

SPRING AT 340°

154455	0°	4.55'	10°	4.7'	20°	4.8'
	35°	4.65'	45°	4.7'	55°	4.55'
	65°	4.0'	75°	3.7'	90°	3.65'
	100°	3.6'	115°	4.0'	125°	4.5'
	150°	3.6'	180°	3.3'	210°	3.5'



July 25, 1953

154+55 CONT 225° 3.8' 235° 3.55' 250° 3.3'

270° 3.15' 290° 3.2' 315° 3.7'

335° 4.2' 340° 4.3' 350° 4.5'

DAMP

154+50 0° 4.8' 15° 4.75' 35° 4.25'

45° 4.9' 55° 4.95' 65° 4.75'

75° 4.6' 80° 4.25' 90° 4.25'

110° 4.5' 128° 4.9' 150° 3.7'

180° 3.4' 210° 3.5' 225° 3.8'

235° 3.55' 255° 3.2' 270° 3.2'

295° 3.35' 325° 4.4' 335° 4.55'

345° 4.65' 353° 4.85'

DAMP

154+45 0° 4.5' 20° 4.65' 40° 4.85'

60° 4.45' 75° 4.45' 90° 4.3'

105° 4.3' 130° 4.8' 150° 3.7'

180° 3.4' 210° 3.6' 230° 4.4'

250° 4.2' 270° 3.85' 290° 3.4'

305° 3.5' 325° 3.6' 333° 4.35'

345° 4.3' 350° 4.55'



July 25, 1953

DAMP

154+40

0°	4.4'	20°	4.35'	40°	4.6'
50°	4.25'	60°	4.3'	75°	3.8'
90°	3.65'	100°	3.9'	115°	4.2'
130°	4.6'	150°	3.6'	180°	3.4'
210°	3.6'	230°	4.0'	250°	3.75'
270°	3.95'	290°	3.6'	315°	3.9'
330°	4.3'	340°	4.3'	350°	4.5'

DAMP

154+35

0°	4.5'	20°	4.3'	40°	4.05'
50°	3.85'	70°	3.7'	90°	3.6'
105°	3.8'	135°	4.2'	150°	3.6'
180°	3.4'	210°	3.6'	225°	3.8'
235°	3.5'	260°	3.4'	270°	3.3'
282°	3.5'	300°	3.5'	315°	3.8'
330°	4.3'	340°	4.55'	350°	4.6'

DAMP

154+30

0°	4.7'	10°	4.2'	20°	4.0'
35°	3.75'	50°	3.3'	65°	3.1'
80°	3.25'	90°	3.45'	110°	3.75'
130°	4.2'	150°	3.6'	180°	3.35'
210°	3.6'	225°	4.0'	240°	3.85'
270°	3.65'	300°	3.8'	315°	4.25'



July 25, 1953

DAMP

154+30 CONT.	323°	4.35'	330°	4.2'	340°	4.6'
154+25	0°	4.5'	10°	4.1'	30°	3.45'
	45°	2.85'	65°	2.85'	75°	2.4'
	90°	2.5'	105°	2.7'	120°	3.0'
	135°	3.8'	150°	3.5'	180°	3.2'
	210°	3.6'	220°	4.2'	245°	4.1'
	250°	3.95'	270°	4.0'	285°	4.15'
	300°	4.45'	310°	4.6'	325°	4.65'
	335°	5.2'	345°	4.95'	350°	4.9'

WET

154+20	0°	4.55'	10°	4.5'	30°	4.0'
	40°	3.95'	50°	3.0'	70°	3.15'
	90°	3.15'	105°	3.0'	120°	3.35'
	135°	3.8'	150°	3.6'	180°	3.2'
	210°	3.55'	230°	4.0'	245°	4.1'
	270°	3.8'	280°	3.8'	290°	3.6'
	310°	4.2'	325°	4.5'	335°	4.75'
	345°	4.65'	350°	4.7'		

WET

LEFT SIDE VERY WET

154+15'	0°	4.5'	15°	4.5'	35°	4.1'
	50°	3.6'	65°	3.55'	75°	3.95'
	90°	3.15'	110°	3.2'	140°	3.8'



July 25, 1953

154+15 cont.	150° 3.5'	180° 3.1'	210° 3.5'
	230° 4.5'	245° 4.3'	270° 4.3'
	290° 4.8'	310° 5.0'	330° 5.05'
	340° 4.85'	350° 4.8'	

WET  
SPRING AT 50°

154+10	0° 4.7'	15° 4.5'	38° 4.45'
	50° 4.7'	55° 3.75'	80° 3.45'
	90° 3.45'	110° 3.7'	115° 3.6'
	135° 4.0'	150° 3.6'	180° 3.1'
	210° 3.5'	235° 4.5'	245° 4.5'
	260° 4.6'	270° 4.35'	285° 4.3'
	300° 4.5'	315° 4.6'	330° 4.7'
	340° 5.2'	350° 5.2'	

WET

154+05	0° 4.3'	20° 4.3'	50° 4.4'
	50° 4.15'	65° 4.15'	75° 4.3'
	90° 3.9'	100° 4.15'	120° 4.2'
	130° 4.4'	150° 3.6'	180° 3.2'
	210° 3.5'	230° 3.9'	240° 3.9'
	260° 3.3'	270° 3.25'	290° 3.3'
	305° 3.65'	320° 3.7'	330° 4.25'
	340° 4.3'	345° 4.2'	350° 4.2'



JULY 25, 1953

WET

154+00

0°	4.8'	10°	4.25'	17°	4.25'
40°	4.65'	50°	4.5'	65°	4.15'
75°	3.7'	90°	3.7'	105°	3.8'
120°	4.2'	135°	4.0'	150°	3.5'
180°	3.5'	210°	3.35'	225°	3.8'
230°	3.4'	245°	3.35'	270°	3.15'
290°	3.0'	305°	3.3'	327°	4.1'
340°	3.95'	345°	4.25'	350°	4.45'
355°	4.85'				

WET

153+95

0°	4.8'	15°	5.2'	25°	4.6'
40°	4.5'	55°	3.8'	70°	4.1'
80°	4.4'	90°	4.6'	110°	4.6'
130°	4.4'	150°	3.6'	180°	3.2'
210°	3.45'	225°	3.6'	235°	3.4'
245°	3.3'	270°	2.75'	285°	2.65'
305°	3.0'	320°	3.55'	335°	3.75'
345°	4.15'	350°	4.6'	355°	4.75'

WET

153+90

0°	4.85'	5°	5.4'	15°	5.55'
40°	5.2'	40°	4.85'	50°	4.55'
65°	4.7'	90°	5.25'	100°	5.7'



July 25, 1953

153+90 cont

105°	5.65'	120°	5.0'	150°	3.6'
180°	3.2'	210°	3.4'	225°	3.75'
235°	3.6'	250°	3.3'	265°	3.0'
270°	3.25'	290°	3.3'	310°	3.4'
320°	3.5'	335°	4.0'	345°	4.5'
350°	5.0'				

WET

153+85

0°	4.2'	25°	4.3'	45°	4.8'
50°	4.75'	65°	4.55'	75°	4.35'
80°	4.7'	90°	4.5'	105°	4.45'
120°	4.4'	130°	4.3'	150°	3.6'
180°	3.3'	210°	3.6'	220°	3.7'
230°	3.45'	245°	3.15'	270°	2.65'
285°	2.9'	300°	3.3'	320°	3.9'
335°	4.0'	345°	4.3'	350°	4.25'

WET

153+80

0°	4.1'	15°	4.1'	25°	4.25'
40°	4.1'	50°	4.0'	57°	4.05'
65°	3.9'	80°	3.9'	90°	3.7'
100°	3.9'	110°	3.9'	125°	3.15'
130°	4.2'	150°	3.6'	180°	3.35'
210°	3.6'	225°	3.6'	235°	3.0'



JULY 25, 1953

WET

153+80 CONT	250° 3.0'	270° 2.95'	300° 3.35'
	325° 3.75'	340° 3.25'	350° 4.4'
163+75	0° 4.15'	10° 4.15'	20° 4.1'
	30° 4.1'	45° 4.2'	55° 4.05'
	70° 3.4'	80° 3.3'	90° 3.3'
	100° 3.55'	115° 3.9'	130° 4.3'
	150° 3.5'	180° 3.2'	210° 3.5'
	230° 4.6'	240° 3.85'	265° 3.65'
	270° 3.4'	290° 3.55'	300° 3.35'
	320° 3.5'	330° 3.7'	340° 3.8'
	350° 4.0'	355° 4.2'	

WET

SPRING AT 490

153+70	0° 4.6'	15° 4.5'	25° 4.2'
	45° 4.05'	50° 3.95'	55° 3.35'
	65° 3.35'	80° 3.2'	90° 2.95'
	100° 2.85'	105° 3.65'	110° 3.35'
	130° 4.0'	150° 3.6'	160° 3.2'
	210° 3.7'	230° 4.3'	240° 4.75'
	255° 4.25'	270° 3.8'	280° 4.3'
	290° 4.75'	300° 4.95'	310° 4.7'
	325° 4.2'	345° 4.75'	350° 4.6'



July 25, 1953

WET

153+65	0°	4.25'	10°	4.35'	20°	4.2'
	30°	5.0'	40°	4.3'	55°	3.75'
	70°	3.95'	90°	3.3'	105°	3.25'
	115°	3.15'	140°	3.4'	150°	3.5'
	180°	3.2'	210°	3.6'	230°	4.2'
	240°	4.0'	250°	3.8'	270°	4.0'
	285°	4.35'	300°	5.0'	310°	5.15'
	318°	4.85'	330°	5.1'	340°	4.85'
	350°	5.0'				

WET

153+60	0°	4.45'	20°	4.65'	40°	4.4'
	50°	3.95'	60°	3.55'	70°	3.55'
	80°	3.3'	90°	3.1'	105°	3.2'
	120°	3.35'	135°	3.6'	150°	3.5'
	180°	3.1'	210°	3.6'	230°	4.2'
	255°	4.35'	270°	4.2'	290°	4.1'
	310°	4.3'	325°	4.2'	335°	4.5'
	345°	4.4'	350°	4.4'		

WET

153+55'	0°	4.5'	20°	4.75'	40°	4.7'
	50°	4.15'	65°	3.7'	90°	3.9'
	110°	3.4'	135°	4.0'	150°	3.6'



JULY 25, 1953

153+55 CONT	180° 3.2'	210° 3.6'	230° 4.1'
	240° 3.9'	260° 3.55'	270° 3.4'
	280° 3.55'	295° 3.4'	310° 4.05'
	320° 4.0'	330° 4.2'	340° 4.55'

WET

153+50	0° 4.5'	20° 4.55'	25° 4.35'
	35° 4.5'	45° 4.55'	50° 4.5'
	65° 4.55'	90° 4.7'	105° 5.0'
	130° 5.2'	150° 3.6'	180° 3.2'
	210° 3.6'	225° 3.8'	235° 3.5'
	250° 3.15'	270° 2.9'	290° 3.2'
	300° 3.45'	325° 4.35'	340° 4.25'
	350° 4.25'		

WET

153+45	0° 4.6'	35° 5.0'	50° 4.6'
	60° 4.2'	75° 4.2'	90° 4.5'
	100° 5.0'	120° 5.4'	150° 3.6'
	180° 3.2'	210° 3.5'	220° 3.6'
	230° 3.2'	240° 3.2'	250° 2.85'
	270° 2.9'	280° 3.0'	295° 3.35'
	310° 3.5'	320° 3.85'	330° 4.05'
	340° 4.15'	350° 4.2'	353° 4.5'



JULY 25, 1953

WET

153+40	0°	4.6'	10°	4.8'	20°	5.0'
	35°	5.3'	40°	4.9'	50°	4.3'
	60°	3.85'	75°	3.5'	90°	3.6'
	100°	3.7'	115°	4.0'	135°	4.0'
	150°	3.6'	180°	3.2'	210°	3.6'
	225°	3.8'	235°	3.8'	250°	3.5'
	270°	3.25'	290°	3.1'	305°	3.35'
	315°	3.55'	330°	4.15'	340°	4.35'
	350°	4.7'				

WET

153+35	0°	4.6'	5°	4.55'	15°	4.25'
	25°	4.4'	35°	4.0'	50°	3.65'
	65°	3.4'	80°	3.2'	90°	3.4'
	100°	3.4'	115°	3.5'	130°	4.2'
	150°	3.6'	180°	3.25'	210°	3.6'
	225°	3.9'	240°	3.5'	250°	3.3'
	270°	3.4'	290°	3.4'	300°	3.65'
	320°	4.3'	330°	4.5'	340°	4.55'
	350°	4.7'				



July 26, 1953

WET

153+30

0°	5.0'	7°	5.1'	15°	4.8'
25°	4.6'	35°	4.3'	50°	3.7'
65°	3.45'	80°	3.0'	90°	3.15'
105°	3.1'	120°	3.45'	135°	4.0'
150°	3.6'	180°	3.3'	210°	3.6'
225°	3.8'	235°	3.6'	250°	3.45'
270°	3.45'	282°	3.15'	297°	3.25'
310°	4.4'	320°	4.6'	335°	5.0'
340°	4.5'	350°	4.85'		



AUGUST 1, 1953

D. LEONARD

D. BROWN

WET

153+25

0°	4.65'	10°	4.5'	20°	4.5'
35°	4.3'	45°	3.95'	60°	3.15'
80°	2.95'	90°	3.0'	110°	3.3'
135°	4.0'	150°	3.6'	180°	3.95'
210°	3.6'	230°	4.1'	240°	4.05'
255°	3.5'	270°	3.45'	290°	3.65'
310°	4.4'	323°	5.3'	330°	5.05'
345°	5.15'	350°	4.95'		

WET

153+20

BEGIN CAR-PASS

0°	5.15'	15°	5.2'	25°	5.4'
35°	5.2'	50°	5.1'	65°	4.9'
80°	5.0'	90°	5.0'	105°	5.4'
125°	5.4'	150°	3.6'	180°	3.4'
210°	3.55'	235°	4.4'	250°	4.05'
220°	4.1'	285°	3.75'	312°	5.2'
320°	4.55'	336°	4.4'	350°	5.1'

WET

153+15

0°	5.0'	15°	4.9'	35°	5.7'
50°	6.1'	65°	5.9'	70°	6.15'
90°	6.1'	100°	6.6'	110°	6.8'
120°	7.0'	150°	3.65'	170°	3.5'
210°	3.6'	230°	4.0'	245°	3.7'



AUGUST 1, 1953

153+15 CONT. 270° 3.45' 290° 3.5' 310° 4.05'

330° 4.4' 340° 4.45' 350° 4.7'

WET

153+10 0° 5.15' 23° 5.35' 40° 5.0'

END OF CAR-PASS

50° 5.1' 70° 4.7' 90° 5.3'

110° 5.7' 120° 6.0' 150° 3.5'

180° 3.4' 210° 3.5' 230° 4.0'

240° 3.6' 255° 3.45' 270° 3.3'

290° 3.55' 310° 4.0' 320° 4.4'

335° 4.85' 345° 5.2' 355° 4.95'

WET

153+05 0° 5.6' 40° 5.65' 40° 5.0'

60° 4.2' 90° 3.8' 105° 3.95'

125° 3.9' 130° 4.0' 150° 3.6'

180° 3.4' 210° 3.5' 225° 3.8'

230° 3.5' 250° 3.35' 270° 3.15'

290° 3.4' 305° 3.9' 320° 4.3'

335° 4.6' 350° 5.2'

WET

153+00 0° 5.0' 20° 5.4' 35° 4.5'

50° 4.15' 65° 4.2' 80° 3.8'

90° 3.7' 105° 4.1' 125° 4.3'

150° 3.6' 180° 3.35' 210° 3.55'



August 1, 1953

153700 CONT. 225° 3.5' 240° 3.25' 255° 3.2'

270° 2.9' 290° 3.0' 310° 3.55'

327° 4.6' 345° 4.85' 355° 4.25'

WET

152775 0° 4.7' 15° 4.7' 35° 4.2'

50° 3.9' 65° 3.55' 90° 3.7'

110° 4.15' 125° 4.0' 135° 4.1'

150° 3.65' 180° 3.4' 210° 3.6'

225° 3.7' 230° 3.5' 250° 3.15'

270° 2.95' 295° 3.0' 305° 2.95'

310° 3.45' 330° 4.25' 340° 4.5'

WET

152790 0° 4.7' 10° 4.5' 30° 4.6'

45° 4.0' 50° 3.6' 55° 3.7'

90° 3.55' 110° 3.45' 130° 4.0'

135° 4.2' 160° 3.8' 180° 3.5'

210° 3.7' 225° 4.0' 240° 3.6'

260° 3.4' 278° 3.25' 300° 3.5'

310° 4.0' 320° 4.4' 335° 4.65'

345° 4.6' 350° 4.75'



August 1, 1953

DAMP

152+85

0°	4.45'	15°	4.5'	35°	4.25'
50°	4.1'	70°	3.75'	90°	3.4'
110°	3.8'	125°	4.15'	130°	4.2'
150°	3.7'	180°	3.5'	210°	3.7'
230°	4.0'	245°	3.9'	270°	3.3'
295°	3.6'	300°	4.2'	325°	3.95'
335°	4.3'	345°	4.1'	357°	4.45'

DAMP

152+80

0°	3.85'	20°	3.95'	45°	3.6'
60°	3.5'	75°	3.3'	90°	3.3'
110°	3.75'	125°	4.25'	135°	4.4'
150°	3.75'	180°	3.5'	210°	3.7'
230°	4.3'	250°	4.1'	270°	3.9'
295°	3.8'	310°	4.1'	320°	4.15'
335°	4.05'	345°	3.75'		

DAMP

152+75

0°	4.05'	40°	3.75'	30°	3.7'
50°	3.95'	60°	3.65'	90°	3.3'
105°	3.4'	110°	3.9'	130°	4.0'
135°	4.2'	150°	3.85'	180°	3.5'
210°	3.85'	230°	4.3'	245°	4.05'
270°	3.5'	295°	3.85'	310°	3.65'



August 6, 1953

DAMP

152+75 CONT.	325° 4.0'	340° 4.05'	350° 3.95'
152+70	0° 3.55'	25° 3.75'	50° 3.75'
	60° 3.3'	75° 3.15'	90° 3.15'
	100° 3.4'	115° 3.6'	135° 4.2'
	150° 3.8'	180° 3.5'	210° 3.8'
	230° 4.2'	245° 4.0'	270° 3.4'
	280° 3.35'	290° 3.8'	300° 4.1'
	313° 4.2'	325° 4.05'	340° 3.85'

DAMP

SPRING AT 245°, DISTANCE

152+65	0° 3.8'	20° 3.8'	45° 3.85'
	55° 3.65'	75° 3.0'	90° 3.25'
	110° 3.55'	130° 4.2'	150° 3.75'
	180° 3.5'	210° 3.8'	230° 4.3'
	245° 4.4'	270° 3.9'	285° 3.8'
	310° 3.95'	325° 4.1'	335° 4.0'
	345° 3.8'		

DAMP

152+60	0° 4.6'	20° 4.15'	40° 3.7'
	55° 3.6'	70° 3.9'	80° 4.1'
	90° 3.95'	95° 4.15'	110° 3.8'
	120° 4.2'	135° 4.5'	150° 3.8'
	180° 3.5'	210° 3.7'	230° 4.1'



August 1, 1953

D

152+60 cont	245° 3.8'	270° 3.55'	295° 3.8'
	305° 4.1'	320° 4.5'	330° 4.8'
	345° 4.65'	350° 4.75'	

DAMP

152+55	0° 4.6'	20° 4.7'	30° 3.9'
	40° 4.05'	60° 4.05'	70° 4.35'
	80° 4.1'	90° 4.1'	105° 4.25'
	125° 4.25'	135° 4.4'	150° 3.7'
	180° 3.4'	210° 3.6'	225° 4.0'
	230° 3.65'	260° 3.85'	270° 3.5'
	305° 3.55'	311° 4.5'	320° 4.6'
	330° 4.8'	340° 5.2'	350° 4.8'

DAMP

152+50	0° 4.35'	18° 4.8'	40° 4.25'
	50° 4.1'	65° 3.9'	75° 3.75'
	90° 4.75'	105° 4.15'	112° 4.4'
	125° 4.2'	135° 4.4'	150° 3.7'
	180° 3.3'	210° 3.5'	225° 3.9'
	240° 3.6'	243° 3.0'	247° 2.8'
	255° 2.9'	270° 2.8'	290° 2.65'
	305° 2.9'	310° 3.95'	315° 4.25'
	325° 4.1'	345° 3.9'	355° 4.05'

6



August 13, 1953

DAMP

152+45	0° 4.5'	10° 4.3'	20° 4.35'
	40° 4.4'	55° 4.5'	65° 4.05'
	80° 3.85'	90° 3.55'	100° 3.65'
	110° 4.0'	135° 4.3'	150° 3.6'
	180° 3.3'	210° 3.6'	230° 4.1'
	240° 3.9'	250° 3.95'	260° 3.5'
	270° 3.3'	285° 3.5'	300° 3.3'
	305° 3.7'	320° 3.7'	335° 4.0'
	345° 4.05'	350° 4.15'	

DAMP

152+40

	0° 4.4'	20° 4.9'	30° 4.8'
	40° 4.6'	50° 4.2'	65° 4.1'
	75° 3.7'	90° 3.65'	105° 3.8'
	135° 4.0'	150° 3.45'	180° 3.3'
	210° 3.6'	230° 4.2'	250° 4.2'
	270° 3.5'	285° 3.3'	300° 3.45'
	320° 3.05'	325° 4.2'	335° 4.2'
	345° 4.25'	355° 4.15'	



August 1, 1953

DAMP

152+35	0°	4.45'	12°	4.55'	20°	3.6'
	35°	3.75'	50°	3.75'	70°	3.45'
	90°	3.25'	110°	3.2'	120°	3.45'
	140°	3.8'	150°	3.6'	180°	3.35'
	210°	3.6'	230°	4.2'	245°	4.15'
	255°	3.85'	270°	3.7'	275°	3.4'
	290°	3.55'	300°	3.6'	315°	4.1'
	330°	4.35'	340°	4.55'	350°	4.7'

DAMP

DRILL STEEL STUCK, BOTTOM RT.

152+30	0°	4.05'	20°	4.35'	35°	4.1'
	45°	4.05'	65°	3.7'	80°	3.15'
	90°	3.0'	110°	3.4'	135°	4.0'
	150°	3.6'	180°	3.3'	210°	3.6'
	225°	4.2'	255°	4.5'	270°	4.0'
	285°	3.5'	300°	3.5'	315°	4.3'
	330°	3.8'	340°	4.0'	350°	3.9'

DAMP

152+25	0°	4.7'	20°	4.5'	35°	4.2'
	50°	4.05'	65°	3.6'	90°	3.65'
	100°	3.95'	120°	3.65'	140°	4.0'
	150°	3.6'	180°	3.35'	210°	3.2'
	225°	4.2'	240°	4.0'	260°	3.8'



August 1, 1953

152+25 cont.	270° 3.8'	290° 4.25'	300° 4.3'
	310° 4.3'	320° 4.3'	335° 4.8'
	345° 4.8'	350° 4.65'	

DAMP

152+20	0° 4.2'	15° 4.2'	30° 3.9'
	45° 4.1'	65° 4.0'	90° 3.3'
	90° 3.5'	105° 4.0'	115° 4.2'
	135° 4.3'	150° 3.7'	180° 3.4'
	210° 3.7'	230° 4.3'	240° 4.1'
	255° 3.8'	270° 3.9'	290° 4.2'
	300° 4.1'	315° 4.2'	338° 4.4'
	340° 4.5'	350° 4.15'	

AUGUST 8, 1953

D. LEONARD  
D. BROWN - NOTES

DAMP

152+15	0° 3.8'	15° 3.8'	40° 3.9'
	55° 4.0'	60° 3.6'	80° 3.9'
	90° 4.25'	105° 4.2'	120° 4.3'
	130° 4.4'	150° 3.85'	180° 3.55'
	210° 3.9'	230° 4.4'	250° 4.5'
	270° 3.55'	295° 3.35'	290° 3.65'
	315° 3.5'	335° 4.0'	345° 4.2'



August 8, 1953

DAMP

152+10	0°	4.9'	60°	4.25'	150°	3.8'
	40°	3.6'	55°	3.4'	70°	3.55'
	85°	3.65'	95°	3.6'	110°	3.75'
	120°	4.1'	135°	4.2'	150°	3.9'
	180°	3.5'	210°	3.85'	235°	4.3'
	245°	4.2'	260°	3.55'	270°	3.45'
	285°	3.5'	295°	4.2'	310°	3.85'
	330°	4.15'	350°	4.85'	355°	4.75'

DAMP

152+05	0°	4.8'	10°	4.65'	20°	4.5'
	40°	3.8'	50°	3.45'	60°	3.65'
	72°	3.55'	82°	4.1'	90°	4.0'
	105°	3.9'	120°	4.2'	135°	4.3'
	150°	3.8'	180°	3.6'	210°	3.75'
	225°	3.9'	235°	3.8'	250°	3.8'
	260°	3.8'	270°	3.8'	290°	3.85'
	300°	3.9'	320°	4.25'	335°	4.35'
	350°	4.9'				



August 8, 1953

DAMP

152+00

0°	4.35'	20°	4.3'	30°	4.3'
40°	4.35'	55°	4.3'	70°	4.05'
90°	3.85'	110°	4.2'	130°	4.6'
150°	3.9'	180°	3.55'	210°	3.8'
230°	4.0'	240°	3.95'	255°	3.7'
270°	3.55'	280°	3.45'	290°	3.7'
307°	3.6'	325°	4.2'	330°	4.15'
345°	4.75'	356°	4.1'		

DAMP

151+95

0°	4.2'	15°	4.4'	30°	4.4'
45°	4.2'	60°	4.1'	70°	4.05'
90°	3.45'	100°	3.65'	120°	3.9'
135°	4.2'	150°	3.8'	181°	3.5'
210°	3.7'	230°	4.3'	245°	4.35'
255°	3.7'	270°	3.3'	283°	3.15'
290°	3.5'	312°	3.5'	325°	3.35'
335°	4.0'	345°	4.2'	355°	4.2'

DAMP

151+90

0°	4.35'	10°	4.25'	25°	3.9'
50°	3.8'	60°	3.6'	75°	3.7'
90°	3.7'	105°	3.9'	135°	4.2'
150°	3.75'	180°	3.5'	210°	3.7'



August 8, 1953

151790 cont.	235° 4.5'	245° 4.4'	270° 3.45'
	300° 3.2'	330° 3.8'	337° 3.95'
	345° 3.8'	350° 4.45'	

DAMP

151785	0° 4.05'	20° 4.15'	35° 4.2'
	50° 4.2'	70° 4.05'	90° 3.75'
	105° 4.0'	125° 4.1'	140° 4.1'
	150° 3.9'	180° 3.6'	210° 3.85'
	230° 4.0'	240° 4.1'	255° 3.85'
	270° 3.4'	290° 3.55'	323° 4.25'
	330° 4.1'	345° 4.0'	353° 3.9'

DAMP

151780	0° 4.2'	12° 3.75'	25° 3.8'
	50° 4.0'	60° 4.6'	75° 4.6'
	90° 4.5'	95° 4.4'	97° 4.95'
	110° 4.75'	125° 4.45'	130° 4.4'
	150° 3.9'	180° 3.6'	210° 3.9'
	225° 4.1'	240° 3.65'	270° 3.15'
	285° 3.45'	300° 3.6'	315° 3.7'
	332° 3.8'	350° 4.55'	



August 8, 1953

DAMP  
 BEGIN CAR-PASS-HOLE #12.

151+78	0° 3.9'	20° 3.85'	45° 4.15'
	65° 4.3'	75° 5.3'	90° 6.0'
	105° 5.9'	115° 6.2'	150° 3.9'
	180° 3.6'	210° 3.9'	230° 4.4'
	240° 4.25'	255° 3.35'	270° 3.5'
	285° 3.2'	308° 3.75'	327° 3.65'
	338° 4.1'	350° 4.1'	

DAMP

151+75	0° 4.1'	15° 4.25'	50° 4.9'
	70° 5.4'	90° 6.1'	105° 6.2'
	120° 6.4'	150° 3.9'	180° 3.6'
	210° 3.8'	230° 4.3'	240° 4.2'
	260° 3.6'	270° 3.55'	282° 3.55'
	300° 3.25'	325° 4.1'	340° 4.4'
	350° 4.35'		

DAMP

151+70	0° 4.4'	15° 4.4'	25° 4.1'
	40° 4.1'	60° 4.8'	70° 4.9'
	80° 5.5'	90° 5.9'	105° 5.95'
	120° 6.1'	150° 4.0'	180° 3.8'
	210° 3.95'	230° 4.2'	240° 4.1'
	255° 3.8'	270° 4.0'	290° 3.6'



August 8, 1953

DAMP EXTRA SECTION  
END OF CAR-PASS

151+70 CONT

315° 3.65' 330° 3.6' 335° 3.9'

350° 3.95'

151+67

0° 3.85' 20° 4.0' 40° 4.0'

60° 3.95' 75° 4.2' 90° 4.6'

100° 5.5' 120° 5.6' 150° 3.9'

180° 3.6' 210° 3.9' 225° 4.1'

240° 4.0' 255° 3.7' 270° 3.85'

290° 3.1' 310° 3.7' 320° 3.8'

335° 3.95' 345° 3.7' 350° 3.95'

TOP DRY, SIDES PAMP

151+65

0° 4.1' 20° 4.15' 45° 3.6'

55° 3.1' 90° 3.8' 95° 4.3'

110° 4.2' 130° 4.5' 150° 3.9'

180° 3.5' 210° 3.85' 240° 4.0'

235° 3.45' 270° 3.3' 280° 2.85'

275° 3.3' 310° 3.75' 345° 4.2

337° 3.9 355° 4.25'

OK



AUGUST 15, 1953

DLEONARD

D. BROWN - NOTES

DRY

151+60

0°	4.0	20°	4.3	25°	4.0
45°	3.75	60°	3.65	75°	3.25
90°	2.95	110°	3.45	130°	4.3
150°	3.75	180°	3.6	210°	3.7
225°	3.9	235°	3.7	250°	3.25
270°	3.0	295°	3.2	315°	3.7
335°	4.0	350°	4.0		

DRY

151+55

0°	4.05	25°	3.9	50°	3.9
65°	3.75	90°	3.8	110°	3.9
135°	4.3	150°	3.6	180°	3.6
210°	3.65	225°	3.8	235°	3.65
255°	3.45	270°	3.45	295°	3.15
315°	3.65	330°	4.05	345°	4.15

DRY

151+50

0°	4.0	40°	3.9	30°	3.65
45°	3.7	70°	3.55	90°	3.7
110°	4.15	130°	4.3	150°	3.6
180°	3.5	210°	3.7	230°	4.1
240°	4.0	255°	4.1	270°	3.6
285°	3.4	310°	3.4	320°	3.6
330°	3.85	390°	3.8	350°	3.9



AUGUST 15, 1953

DRY

151+45	0°	4.8'	15°	4.85'	25°	4.3'
	40°	4.35'	60°	3.45'	80°	3.55'
	90°	3.55'	100°	3.4'	110°	3.75'
	135°	4.0'	150°	3.6'	180°	3.45'
	210°	3.6'	230°	3.9'	240°	3.8'
	260°	3.75'	270°	3.6'	285°	3.65'
	300°	3.6'	315°	3.8'	330°	4.0'
	340°	4.2'	345°	4.65'	350°	4.7'

DRY

151+40	0°	5.0'	12°	4.9'	20°	4.6'
	35°	4.5'	45°	4.0'	60°	3.6'
	75°	3.6'	90°	3.15'	110°	3.3'
	135°	3.7'	150°	3.5'	180°	3.3'
	210°	3.5'	230°	3.9'	240°	3.6'
	255°	3.15'	270°	3.3'	290°	3.35'
	320°	3.6'	335°	3.85'	340°	4.45'
	350°	4.7'				

DRY

151+35	0°	5.0'	15°	4.6'	40°	4.3'
	50°	4.3'	60°	3.95'	75°	3.9'
	90°	4.0'	110°	3.85'	115°	3.95'
	135°	4.0'	150°	3.6'	180°	3.3'



August 15, 1953

151+35 cont.	210° 3.5'	230° 3.8'	240° 3.65'
	255° 3.55'	270° 3.7'	285° 3.5'
	300° 3.6'	325° 4.2'	335° 4.05'
	345° 4.25'	350° 4.4'	

DRY

151+30	0° 4.5'	25° 4.6'	40° 4.65'
	60° 4.25'	90° 3.9'	110° 4.45'
	130° 4.6'	150° 3.6'	180° 3.3'
	210° 3.6'	230° 3.9'	240° 3.7'
	270° 3.7'	290° 4.4'	298° 4.3'
	340° 4.0'	345° 4.2'	335° 4.1'
	345° 4.25'	350° 4.45'	

DRY OVERHEAD, SIDES DAMP

151+25	0° 4.8'	30° 4.9'	50° 4.7'
	65° 4.3'	80° 3.9'	90° 3.6'
	110° 3.5'	125° 3.75'	135° 3.9'
	150° 3.6'	180° 3.4'	210° 3.3'
	225° 3.65'	235° 3.45'	250° 2.9'
	255° 3.05'	270° 3.0'	295° 3.2'
	315° 3.0'	335° 4.7'	345° 4.4'
	350° 4.8'		



August 15, 1953

DAMP

151+20	0° 4.15'	30° 4.45'	60° 4.35'
	70° 4.15'	80° 3.75'	85° 3.7'
	90° 3.6'	110° 3.5'	130° 4.2'
	150° 3.6'	180° 3.4'	210° 3.45'
	225° 3.6'	235° 3.05'	255° 3.1'
	270° 3.5'	290° 3.2'	310° 3.6'
	320° 3.6'	330° 3.75'	340° 4.2'
	350° 4.15'		

DAMP

151+15	0° 4.35'	20° 4.4'	30° 4.0'
	45° 4.0'	60° 3.7'	70° 3.4'
	90° 3.45'	105° 3.75'	125° 3.75'
	135° 4.0'	150° 3.7'	180° 3.5'
	210° 3.6'	220° 3.8'	235° 3.3'
	250° 3.15'	270° 3.0'	295° 3.3'
	300° 3.8'	325° 3.8'	345° 3.9'

DAMP

151+10	0° 4.65'	20° 4.55'	70° 4.0'
	45° 4.05'	60° 3.55'	75° 3.15'
	90° 3.25'	110° 3.35'	130° 4.2'
	150° 3.6'	180° 3.5'	210° 3.7'
	225° 4.0'	235° 3.9'	255° 3.6'



August 15, 1953

DAMP

151+10	270°	3.4'	290°	3.8'	310°	4.1'
	320°	4.25'	325°	4.05'	340°	4.7'
151+05	0°	4.1'	15°	4.2'	30°	4.3'
	40°	4.95'	50°	3.75'	60°	3.2'
	75°	3.6'	90°	3.4'	110°	3.4'
	130°	4.3'	150°	3.75'	180°	3.55'
	210°	3.7'	225°	3.9'	230°	3.65'
	250°	3.7'	270°	3.2'	275°	3.5'
	305°	4.2'	315°	4.7'	325°	4.6'
	340°	4.25'	350°	4.1'		

DAMP

151+00	0°	4.15'	15°	4.0'	35°	3.6'
	45°	3.9'	60°	3.5'	70°	3.0'
	90°	2.95'	110°	3.25'	135°	4.2'
	150°	3.8'	180°	3.6'	210°	3.9'
	225°	4.2'	235°	3.8'	250°	3.2'
	270°	3.05'	290°	3.4'	300°	3.2'
	310°	3.6'	325°	4.0'	335°	4.25'
	340°	4.7'	350°	4.0'		



August 13, 1953

DAMP

150+95	0°	4.6'	25°	4.7'	35°	3.75'
	50°	3.6'	70°	3.2'	90°	3.0'
	110°	3.0'	120°	3.25'	135°	3.9'
	150°	3.7'	180°	3.55'	210°	3.25'
	225°	4.0'	235°	3.8'	270°	3.45'
	280°	3.15'	285°	3.1'	315°	3.5'
	330°	3.95'	340°	4.4'	350°	4.6'

DAMP

150+90	0°	4.8'	20°	4.8'	35°	4.2'
	50°	4.3'	65°	4.0'	80°	3.75'
	95°	4.1'	90°	3.95'	100°	3.8'
	120°	3.9'	140°	4.2'	150°	3.9'
	180°	3.6'	210°	3.85'	225°	4.0'
	235°	3.75'	245°	3.5'	270°	3.2'
	290°	3.6'	305°	4.0'	325°	4.3'
	330°	5.0'	345°	5.1'	350°	5.1'

DAMP

EXTRA SECTION

150+88	0°	3.5'	35°	4.1'	45°	3.8'
	50°	4.1'	65°	3.75'	80°	3.5'
	90°	3.6'	110°	3.9'	130°	4.4'
	150°	3.8'	180°	3.4'	210°	3.9'
	225°	4.0'	230°	3.85'	250°	3.65'



AUGUST 15, 1953

DAMP

150+88 CONT.	270° 3.4'	300° 3.7'	320° 4.15'
	330° 4.1'	340° 3.75'	350° 3.7'
150+85	0° 4.7'	10° 4.0'	30° 4.2'
	40° 4.1'	50° 3.9'	65° 3.75'
	75° 4.0'	90° 3.7'	100° 3.65'
	105° 4.0'	130° 4.5'	150° 4.0'
	180° 3.6'	210° 4.05'	220° 4.2'
	235° 3.75'	250° 3.6'	270° 3.4'
	275° 2.8'	295° 3.5'	310° 3.5'
	312° 3.9'	320° 4.25'	330° 4.5'
	340° 4.25'	350° 4.25'	
DAMP	0° 4.1'	10° 4.15'	20° 3.8'
	35° 3.9'	50° 4.1'	60° 3.95'
	75° 3.9'	90° 3.9'	110° 4.1'
	120° 4.3'	135° 4.5'	150° 4.0'
	180° 3.65'	210° 4.0'	225° 4.2'
	240° 3.9'	260° 3.75'	270° 3.25'
	285° 3.45'	310° 3.9'	325° 3.8'
	335° 4.05'	340° 4.0'	350° 4.15'

150+80



August 15, 1953

DAMP

150+75	0° 4.8'	12° 4.5'	15° 3.8'
	35° 3.9'	45° 3.5'	60° 3.5'
	75° 3.6'	90° 3.7'	110° 4.5'
	130° 4.6'	150° 4.6'	180° 3.6'
	210° 4.0'	240° 4.1'	245° 4.15'
	270° 3.75'	282° 4.3'	300° 4.15'
	315° 4.5'	325° 4.2'	335° 4.3'
	340° 4.6'	350° 4.25'	

DAMP

150+70	0° 4.0'	20° 4.0'	40° 3.6'
	60° 3.35'	75° 3.15'	90° 3.4'
	110° 3.7'	135° 4.3'	150° 3.9'
	180° 3.45'	210° 3.95'	225° 4.0'
	235° 3.9'	250° 3.35'	270° 3.4'
	280° 3.55'	285° 3.35'	300° 3.7'
	310° 4.15'	320° 4.6'	335° 5.0'
	340° 4.85'	350° 4.6'	

DAMP

150+65	0° 4.85'	15° 4.6'	25° 4.3'
	35° 4.3'	45° 4.15'	55° 3.7'
	70° 3.45'	80° 3.15'	90° 2.85'
	100° 3.2'	110° 3.55'	135° 4.2'

CORE HOLE # 3, 150+64,

0.6 WEST OF R.



August 15, 1953

150+65 con	150°	3.7'	180°	3.5'	210°	3.7'
	225°	3.9'	235°	3.6'	255°	3.4'
	270°	3.4'	290°	3.6'	305°	4.25'
	320°	4.9'	330°	4.7'	335°	4.95'
	340°	4.7'	350°	4.75'		

DAMP

150+60	0°	4.6'	7°	4.5'	25°	4.85'
	35°	4.8'	45°	4.4'	60°	4.0'
	75°	3.45'	83°	3.2'	90°	3.35'
	100°	3.6'	110°	3.9'	120°	3.95'
	135°	4.2'	150°	3.7'	180°	3.55'
	210°	3.7'	245°	4.0'	240°	3.7'
	260°	3.65'	270°	3.9'	290°	4.0'
	315°	4.6'	325°	4.6'	335°	4.7'
	340°	4.6'	350°	4.6'		

DAMP

150+55	0°	4.9'	15°	4.8'	30°	4.9'
	40°	4.9'	55°	4.5'	70°	4.2'
	80°	4.2'	90°	3.95'	100°	4.0'
	115°	3.9'	135°	4.3'	150°	3.8'
	180°	3.5'	210°	3.7'	225°	4.0'
	240°	3.7'	250°	3.65'	270°	3.65'



August 15, 1953

DAMP

150+55 CONT,	285° 3.75'	300° 3.9'	315° 4.0'
	330° 4.4'	340° 4.9'	345° 5.25'
150+50	0° 4.6'	10° 4.6'	20° 4.0'
	35° 4.1'	45° 4.1'	60° 4.05'
	75° 3.9'	85° 3.75'	90° 3.7'
	105° 3.65'	120° 4.2'	135° 4.4'
	150° 3.9'	180° 3.55'	210° 3.9'
	225° 4.0'	240° 3.75'	250° 3.4'
	265° 3.4'	270° 3.25'	290° 3.25'
	300° 3.1'	320° 3.25'	335° 3.75'
	340° 4.15'	350° 4.2'	355° 4.5'

August 22, 1953

D. LEONARD  
REBROWN - NOTES

DAMP

150+45	0° 4.6'	120° 4.15'	35° 4.3'
	50° 4.55'	65° 4.2'	75° 3.85'
	90° 3.6'	110° 3.8'	120° 4.25'
	<del>130°</del> 140° 4.3'	150° 3.25'	180° 3.5'
	210° 3.7'	230° 4.0'	245° 3.9'
	255° 3.55'	270° 3.0'	295° 2.8'
	310° 3.05'	330° 4.05'	<del>345</del> 4.4'
	350° 4.5'		



August 22, 1953

TOP DRY, SIDES DAMP

150+40

0°	4.4'	20°	4.05'	30°	4.0'
45°	4.0'	60°	4.05'	75°	3.9'
90°	4.2'	100°	4.1'	110°	4.65'
130°	4.8'	150°	3.8'	180°	3.5'
210°	3.7'	225°	4.1'	240°	3.7'
250°	3.5'	260°	3.0'	270°	3.0'
285°	3.1'	310°	3.45'	320°	4.05'
330°	4.0'	340°	3.95'	345°	4.25'
358°	4.45'				

TOP DRY, SIDES DAMP

150+35

0°	4.0'	20°	4.05'	25°	4.2'
45°	4.0'	60°	3.9'	75°	3.9'
90°	4.05'	95°	4.3'	105°	4.25'
130°	4.6'	150°	3.8'	180°	3.5'
210°	3.75'	220°	3.9'	230°	3.65'
245°	3.45'	270°	3.55'	285°	3.6'
305°	3.7'	320°	3.9'	335°	3.95'
345°	4.1'	350°	3.9'		

TOP DRY, SIDES DAMP

150+30

0°	4.45'	7°	4.6'	15°	4.3'
25°	3.85'	40°	3.8'	50°	3.5'
65°	3.15'	75°	3.25'	90°	3.45'



August 22, 1953

150+30 cont.	110° 3.6'	115° 3.9'	135° 4.3'
	150° 3.9'	180° 3.55'	210° 3.85'
	205° 4.0'	240° 3.25'	250° 3.7'
	270° 3.5'	290° 3.05'	310° 3.25'
	325° 3.4'	340° 3.7'	350° 4.0'
	355° 4.3'		

TOP DRY, SIDES DAMP

150+25	0° 4.3'	15° 3.75'	25° 3.8'
	40° 3.7'	55° 3.5'	70° 3.4'
	80° 3.6'	90° 3.6'	100° 3.9'
	110° 4.35'	130° 4.5'	150° 3.8'
	180° 3.5'	210° 3.85'	225° 4.35'
	245° 4.35'	260° 3.6'	270° 3.2'
	290° 3.15'	305° 3.2'	315° 3.8'
	330° 3.95'	340° 4.05'	350° 4.3'

TOP DRY, SIDES DAMP

150+20	0° 5.0'	15° 4.8'	25° 4.7'
	35° 4.6'	45° 4.5'	60° 4.5'
	75° 4.4'	90° 4.35'	105° 4.5'
	115° 4.8'	130° 5.0'	150° 3.85'
	180° 3.4'	210° 3.9'	225° 4.3'
	245° 4.1'	260° 3.6'	270° 3.5'



AUGUST 22, 1933

150+20 CONTI

285°	3.25'	300°	3.75'	315°	4.3'
3.25'	4.25'	335°	4.35'	340°	4.45'
350°	4.7'	352°	5.0'		

150+15

0°	4.55'	10°	4.2'	25°	4.2'
40°	4.15'	50°	4.1'	60°	4.0'
70°	3.65'	80°	4.1'	90°	4.3'
105°	4.4'	120°	4.5'	130°	4.7'
150°	3.9'	180°	3.6'	210°	3.8'
230°	4.3'	240°	4.1'	250°	3.8'
270°	3.6'	275°	3.5'	305°	4.0'
307°	4.65'	330°	4.15'	340°	4.35'
350°	4.5'	355°	4.65'		

TOP DRY, SIDES DAMP

TOP DRY, SIDES DAMP

150+10

0°	4.4'	10°	4.4'	22°	4.65'
40°	3.5'	55°	3.35'	70°	3.45'
80°	3.4'	90°	3.75'	105°	3.8'
120°	4.3'	135°	4.5'	150°	4.0'
180°	3.6'	210°	3.95'	225°	4.3'
240°	4.2'	240°	4.0'	270°	3.8'
285°	3.5'	290°	3.25'	300°	3.3'
315°	3.55'	325°	3.5'	335°	3.75'



AUGUST 22, 1953

DAMP  
QUARTZ VEINS

150+10 CONT.	341° 4.1'	345° 4.4'	350° 4.45'
150+05	0° 4.8'	10° 4.25'	25° 4.6'
	30° 4.7'	40° 4.3'	50° 4.4'
	70° 4.0'	90° 4.05'	105° 4.0'
	120° 4.0'	135° 4.4'	150° 4.0'
	180° 3.7'	210° 3.95'	225° 4.2'
	245° 4.1'	260° 3.6'	270° 3.45'
	290° 3.5'	305° 3.7'	310° 4.1'
	320° 4.4'	330° 4.7'	340° 5.1'
	350° 5.25'		

DAMP

150+00	0° 4.35'	15° 4.45'	25° 4.35'
	35° 4.3'	45° 4.6'	55° 4.75'
	65° 4.3'	75° 4.1'	90° 4.25'
	100° 4.05'	110° 4.1'	130° 4.3'
	135° 4.4'	150° 4.0'	180° 3.7'
	210° 3.9'	225° 4.3'	240° 4.0'
	255° 3.6'	270° 3.3'	280° 3.85'
	295° 3.8'	310° 3.8'	320° 4.3'
	330° 4.55'	340° 4.7'	350° 4.55'



AUGUST 22, 1953

DAMP

149+95	0° 3.0'	10° 4.9'	25° 5.2'
	35° 4.85'	50° 4.5'	60° 4.65'
	70° 4.75'	80° 4.25'	90° 4.05'
	105° 3.95'	115° 3.75'	135° 4.4'
	150° 4.0'	180° 3.65'	210° 3.95'
	225° 4.0'	235° 3.8'	250° 3.55'
	270° 3.6'	285° 3.7'	295° 4.2'
	305° 4.0'	315° 4.3'	335° 4.45'
	335° 4.7'	345° 5.2'	350° 5.1'

AUGUST 29, 1953

D. LEONARD  
P. BROWN - NOTES

TOP DRY SIDES DAMP  
START CAR-PASS HOLE

149+90	0° 4.5'	20° 4.85'	30° 4.9'
	50° 4.7'	70° 4.7'	85° 4.45'
	90° 5.1'	105° 5.7'	120° 6.0'
	135° 4.7'	150° 3.9'	180° 3.5'
	210° 3.8'	230° 4.4'	245° 4.1'
	265° 4.45'	275° 4.25'	285° 4.0'
	300° 3.95'	315° 4.0'	325° 3.95'
	340° 4.8'	350° 4.6'	



August 29, 1953

TOP DRY, SIDES DAMP  
EXTRA SECTION

149+86	0° 4.9'	15° 5.1'	25° 4.85'
	40° 5.3'	50° 5.2'	60° 5.3'
	75° 6.0'	90° 6.1'	100° 6.0'
	115° 6.2'	120° 6.2'	130° 5.0'
	150° 3.9'	180° 3.5'	210° 3.8'
	235° 4.8'	255° 4.5'	270° 4.15'
	285° 4.05'	305° 4.2'	325° 3.95'
	330° 4.3'	340° 4.5'	355° 4.25'

TOP DRY, SIDES DAMP

149+84	0° 4.1'	15° 4.2'	25° 4.1'
	40° 4.3'	50° 4.5'	60° 4.9'
	75° 5.5'	90° 5.6'	100° 5.5'
	125° 6.0'	135° 4.6'	150° 3.8'
	180° 3.45'	210° 3.8'	230° 4.2'
	240° 3.65'	270° 3.35'	290° 3.3'
	300° 3.4'	307° 4.0'	320° 4.25'
	330° 4.1'	345° 4.5'	350° 4.5'

TOP DRY, SIDES DAMP  
END IF CAR PASS

149+81	0° 4.2'	15° 4.3'	25° 4.6'
	30° 4.0'	45° 3.95'	60° 3.95'
	80° 3.6'	90° 4.15'	105° 4.45'
	125° 4.7'	150° 3.85'	180° 3.9'



AUGUST 29, 1953

149+81 cont.	210° 3.7'	225° 4.0'	235° 3.85'
	250° 3.4'	270° 3.4'	290° 3.3'
	300° 3.3'	310° 4.0'	320° 4.3'
	330° 4.5'	340° 4.15'	350° 4.15'

DAMP

149+75	0° 4.0'	10° 4.2'	20° 3.75'
	40° 3.8'	50° 3.6'	65° 3.5'
	75° 3.55'	85° 4.05'	90° 3.9'
	100° 3.7'	110° 4.0'	130° 4.4'
	150° 3.8'	180° 3.4'	210° 3.8'
	225° 4.0'	235° 3.7'	255° 3.45'
	270° 3.0'	290° 3.6'	305° 3.7'
	320° 3.7'	330° 3.8'	340° 4.15'
	350° 4.05'		

DAMP

149+70	0° 4.8'	10° 4.5'	20° 4.1'
	30° 4.3'	40° 4.15'	55° 4.0'
	60° 3.8'	75° 3.95'	85° 3.65'
	90° 3.8'	100° 3.6'	110° 3.8'
	120° 4.1'	130° 4.3'	150° 3.8'
	180° 3.45'	210° 3.75'	225° 4.0'
	240° 3.7'	260° 3.7'	270° 3.55'



AUGUST 29, 1953

DAMP

149+70 cont.

285° 3.5' 300° 3.65' 310° 3.7'

320° 4.05' 332° 4.65' 345° 4.6'

149+65

0° 4.55' 10° 4.25' 20° 4.45'

30° 4.0' 40° 4.2' 50° 3.9'

60° 3.6' 70° 3.55' 90° 3.4'

100° 3.7' 120° 4.2' 130° 4.4'

150° 3.9' 180° 3.4' 210° 3.75'

225° 4.0' 235° 3.75' 250° 3.35'

270° 3.3' 280° 3.6' 285° 4.05'

310° 3.95' 320° 4.65' 335° 4.8'

340° 4.75' 350° 4.55'

149+60

0° 4.55' 15° 4.55' 20° 4.6'

30° 4.1' 40° 4.05' 55° 3.85'

65° 3.4' 80° 3.45' 90° 3.4'

105° 4.1' 115° 4.25' 130° 4.5'

150° 3.7' 180° 3.35' 210° 3.7'

225° 4.0' 240° 3.5' 260° 3.0'

270° 2.85' 285° 2.9' 290° 3.0'

310° 4.4' 322° 4.6' 335° 4.4'

340° 5.1' 350° 4.8'

DAMP



AUGUST 29, 1953

DAMP

149+55	0° 4.55'	10° 4.45'	20° 3.95'
	30° 3.8'	45° 3.75'	55° 3.6'
	70° 3.8'	90° 3.85'	105° 3.75'
	115° 4.05'	135° 4.5'	150° 3.9'
	180° 3.35'	210° 3.8'	230° 4.2'
	240° 4.0'	255° 3.8'	270° 3.85'
	285° 3.45'	300° 3.4'	311° 3.5'
	324° 3.6'	335° 4.15'	340° 4.2'
	350° 4.4'		

DAMP

149+50	0° 4.55'	10° 4.6'	20° 4.95'
	30° 4.05'	45° 3.75'	60° 3.75'
	75° 3.8'	90° 3.85'	105° 3.95'
	115° 4.2'	135° 4.5'	150° 3.8'
	180° 3.4'	210° 3.8'	230° 4.6'
	250° 4.7'	270° 4.15'	290° 3.95'
	305° 3.8'	315° 3.75'	325° 4.1'
	340° 4.6'	350° 4.7'	

DAMP

149+45	0° 4.4'	10° 4.15'	17° 3.75'
	25° 3.9'	40° 4.0'	50° 4.0'
	65° 3.9'	80° 3.5'	90° 3.7'



August 29, 1953

149+45 CONT.

105°	3.8'	120°	4.15'	135°	4.4'
150°	3.85'	180°	3.5'	210°	3.8'
230°	4.7'	245°	4.35'	260°	4.2'
270°	4.4'	285°	4.1'	300°	4.1'
307°	4.15'	320°	3.8'	330°	4.1'
335°	4.5'	340°	4.35'	350°	4.35'

149+40

0°	3.8'	10°	3.6'	20°	3.5'
30°	3.6'	40°	3.8'	50°	4.0'
70°	4.05'	75°	3.5'	90°	3.25'
95°	3.55'	110°	3.8'	120°	4.2'
135°	4.5'	150°	3.85'	180°	3.45'
210°	3.85'	230°	4.8'	250°	4.5'
270°	4.2'	280°	4.05'	295°	4.05'
305°	4.4'	315°	4.1'	325°	4.2'
335°	4.15'	340°	4.15'	350°	4.2'

149+35

0°	3.85'	15°	3.8'	25°	3.8'
40°	3.5'	50°	3.45'	60°	3.0'
70°	2.75'	80°	2.6'	90°	2.7'
100°	2.95'	115°	3.4'	120°	4.1'
130°	4.15'	140°	4.0'	150°	3.8'

DAMP

DAMP



August 29, 1953

149+35 CONT. 180° 3.5' 210° 3.9' 225° 4.2'  
240° 4.1' 255° 3.95' 270° 3.8'  
485° 3.6' 300° 3.8' 315° 3.7'  
330° 3.8' 340° 4.1' 350° 4.15'

149+30 0° 4.35' 15° 4.3' 30° 4.1'  
45° 3.4' 55° 3.0' 70° 4.7'  
90° 2.8' 100° 3.0' 120° 3.65'  
137° 4.2' 150° 3.8' 180° 3.5'  
210° 3.8' 225° 4.0' 252° 3.9'  
260° 3.3' 270° 3.2' 490° 3.2'  
300° 3.05' 315° 3.5' 330° 3.6'  
340° 3.65' 350° 4.1'

149+25 0° 3.85' 15° 4.25' 25° 4.0'  
45° 3.8' 60° 3.0' 70° 4.55'  
90° 2.8' 100° 2.8' 115° 3.25'  
120° 3.7' 140° 4.1' 150° 3.75'  
180° 3.4' 210° 3.65' 225° 3.9'  
235° 3.65' 245° 3.45' 270° 3.3'  
295° 3.55' 310° 3.45' 325° 3.75'  
335° 3.65' 345° 3.7' 355° 3.85'

DAMP

DAMP



AUGUST 29, 1953

DAMP

149+20	0°	4.15'	15°	3.8'	25°	4.0'
	45°	4.2'	55°	3.7'	70°	3.35'
	90°	3.15'	110°	3.45'	135°	4.2'
	150°	3.65'	180°	3.3'	210°	3.7'
	222°	3.9'	230°	3.6'	245°	3.25'
	260°	3.45'	270°	3.5'	290°	3.6'
	305°	3.8'	320°	4.05'	330°	4.3'
	340°	4.35'	350°	4.45'		

DAMP

149+15	0°	4.1'	15°	4.05'	30°	3.6'
	40°	3.8'	50°	3.55'	65°	3.1'
	80°	2.9'	90°	2.9'	105°	3.8'
	115°	3.8'	135°	4.4'	150°	3.65'
	180°	3.2'	210°	3.6'	230°	4.5'
	245°	4.3'	270°	4.1'	290°	4.05'
	298°	4.4'	306°	4.6'	315°	4.3'
	330°	4.45'	340°	4.5'	350°	4.25'

DAMP

149+10	0°	4.5'	15°	4.3'	25°	4.4'
	40°	4.4'	50°	3.9'	65°	3.8'
	70°	3.35'	90°	3.2'	100°	3.7'
	115°	3.7'	135°	4.0'	150°	3.6'



AUGUST 29, 1953

149+10 cont. 180° 3.25' 210° 3.2' 230° 4.8'  
 245° 4.35' 270° 4.2' 280° 4.4'  
 295° 4.6' 305° 4.8' 320° 4.7'  
 330° 4.65' 340° 4.55' 345° 4.65'

149+05 0° 4.5' 10° 4.35' 45° 4.35'  
 40° 4.2' 50° 3.9' 65° 3.55'  
 75° 3.3' 90° 3.25' 110° 3.45'  
 120° 3.85' 135° 4.0' 150° 3.75'  
 180° 3.35' 210° 3.8' 230° 4.3'  
 245° 3.9' 260° 3.9' 270° 4.0'  
 290° 4.2' 305° 4.4' 320° 4.55'  
 330° 4.7' 340° 4.95' 350° 5.0'

149+00 0° 4.4' 20° 4.35' 30° 4.2'  
 40° 4.05' 50° 3.85' 60° 3.85'  
 70° 3.8' 80° 3.75' 90° 3.6'  
 110° 3.9' 120° 4.05' 135° 4.4'  
 150° 3.8' 180° 3.5' 210° 3.8'  
 230° 4.3' 245° 4.25' 260° 4.05'  
 270° 4.2' 285° 4.3' 300° 4.3'  
 310° 4.0' 320° 4.2' 330° 3.9'

DAMP

DAMP



AUGUST 29, 1953

TOP DRY, SIDES DAMP

149+00 CONT	340° 3.9'	350° 4.1'		
148+95	0° 4.45'	10° 4.0'	20° 4.05'	
	30° 4.1'	40° 4.15'	50° 4.1'	
	65° 3.85'	75° 4.0'	90° 3.8'	
	95° 4.0'	105° 3.85'	110° 4.3'	
	120° 4.35'	135° 4.4'	150° 3.85'	
	180° 3.5'	210° 3.9'	230° 4.5'	
	245° 4.3'	270° 4.0'	280° 4.15'	
	290° 4.1'	295° 3.85'	305° 4.05'	
	315° 4.0'	320° 4.25'	330° 4.2'	
	340° 4.25'	350° 4.5'	355° 4.6'	

TOP DRY, SIDES DAMP

148+90	0° 4.7'	10° 4.2'	20° 4.15'	
	30° 4.1'	40° 4.0'	50° 3.95'	
	60° 3.8'	70° 3.8'	85° 4.0'	
	90° 3.9'	100° 4.2'	110° 4.55'	
	130° 4.6'	150° 3.9'	180° 3.55'	
	210° 3.9'	225° 4.2'	235° 3.75'	
	250° 3.6'	270° 3.55'	280° 3.7'	
	295° 3.8'	315° 4.2'	330° 4.05'	
	340° 4.05'	350° 4.35'		



AUGUST 29, 1953

TOP DRY, SIDES DAMP

148785	0° 4.0'	20° 4.1'	30° 4.0'
	45° 4.05'	60° 3.9'	70° 3.9'
	80° 4.25'	90° 4.4'	105° 4.7'
	135° 5.0'	150° 4.0'	180° 3.6'
	210° 3.9'	220° 4.2'	235° 3.9'
	250° 3.7'	270° 3.45'	290° 3.4'
	310° 3.75'	320° 3.8'	330° 4.0'
	340° 4.05'	350° 4.05'	

TOP DRY, SIDES DAMP

148780	0° 4.0'	15° 4.55'	30° 5.1'
	40° 4.8'	50° 4.8'	60° 4.4'
	70° 4.1'	80° 4.2'	90° 4.2'
	105° 4.4'	125° 4.5'	135° 4.7'
	150° 4.05'	180° 3.65'	210° 3.95'
	220° 3.9'	230° 3.55'	245° 3.1'
	260° 2.85'	270° 2.9'	285° 3.5'
	295° 3.2'	305° 3.3'	322° 4.25'
	330° 4.05'	340° 3.9'	350° 3.9'

DAMP

148725	0° 4.0'	10° 4.3'	40° 4.25'
	33° 4.2'	40° 4.0'	60° 4.2'
	70° 4.2'	80° 4.7'	90° 4.9'



AUGUST 29 1953

148+75 cont. 105° 4.9' 115° 4.95' 130° 5.0'  
150° 4.2' 180° 3.7' 210° 4.0'  
240° 4.0' 230° 3.5' 245° 2.9'  
270° 2.9' 280° 3.15' 300° 3.65'  
310° 3.7' 320° 3.65' 330° 3.9'  
340° 4.1' 347° 3.55' 355° 3.9'

148+70 0° 3.85' 15° 4.2' 25° 4.4'  
35° 4.4' 45° 4.3' 60° 4.25'  
75° 4.45' 90° 4.5' 100° 4.65'  
110° 4.9' 125° 5.0' 130° 5.1'  
150° 4.05' 180° 3.6' 210° 4.0'  
220° 3.8' 230° 3.4' 240° 3.0'  
255° 2.7' 270° 2.9' 290° 3.05'  
300° 3.1' 310° 3.05' 325° 3.1'  
340° 3.45' 350° 3.65'

148+65 0° 3.7' 10° 3.95' 20° 4.3'  
30 4.3' 40° 4.6' 50° 4.5'  
65° 4.75' 75° 4.7' 90° 5.0'  
105° 4.75' 120° 4.9' 130° 5.0'  
150° 4.2' 180° 3.65' 210° 4.0'

DAMP

DAMP



AUGUST 29, 1953

148+65 cont. 240° 3.8' 235° 3.6' 250° 3.25'

270° 2.8' 290° 2.75' 305° 2.8'

330° 2.7' 340° 3.0' 350° 3.45'

148+60 0° 3.5' 20° 3.7' 40° 3.9'

65° 4.45' 80° 4.8' 90° 4.7'

95° 5.0' 105° 4.9' 115° 4.85'

130° 5.0' 150° 4.0' 180° 3.55'

210° 3.8' 217° 3.6' 230° 3.35'

250° 3.3' 270° 2.9' 291° 3.2'

310° 3.3' 330° 3.3' 345° 3.25'

148+55 0° 3.85' 20° 4.1' 40° 4.3'

55° 4.1' 65° 4.5' 75° 4.1'

90° 4.45' 110° 4.2' 130° 4.5'

150° 4.0' 180° 3.6' 210° 3.75'

220° 3.7' 235° 3.5' 250° 3.3'

270° 3.3' 280° 3.5' 295° 3.2'

310° 3.6' 325° 3.8' 340° 3.95'

350° 3.95'

DAMP

DAMP



August 29, 1953

DAMP

148+50	0°	4.2'	20°	4.5'	30°	4.05'
	45°	3.6'	65°	3.35'	80°	3.3'
	90°	3.3'	110°	3.5'	125°	4.05'
	135°	4.2'	150°	3.7'	180°	3.4'
	210°	3.8'	225°	4.0'	240°	3.25'
	255°	3.5'	270°	3.4'	285°	4.0'
	300°	4.15'	320°	4.45'	335°	4.15'
	350°	4.35'				

DAMP

148+45	0°	4.2'	15°	4.35'	25°	4.3'
	35°	3.85'	45°	3.35'	60°	3.15'
	75°	3.25'	90°	3.15'	105°	3.35'
	120°	3.85'	135°	4.3'	150°	3.9'
	180°	3.4'	210°	3.7'	230°	4.2'
	245°	4.0'	260°	4.1'	270°	4.15'
	290°	4.25'	300°	4.4'	310°	4.6'
	320°	4.2'	330°	4.1'	340°	4.1'
	350°	4.15'				

DAMP

148+40	0°	4.1'	20°	3.8'	35°	3.95'
	50°	3.7'	65°	3.5'	80°	3.5'
	90°	3.25'	105°	3.7'	120°	3.7'



August 29, 1953

148+40 cont.

135°	4.3'	150°	3.7'	180°	3.45'
210°	3.8'	230°	4.4'	255°	4.05'
270°	3.9'	290°	3.65'	310°	3.6'
330°	3.75'	340°	4.0'	350°	4.25'

DAMP

148+35

0°	4.2'	20°	4.15'	35°	4.1'
55°	3.6'	65°	3.75'	80°	3.55'
85°	3.95'	90°	3.9'	100°	4.0'
120°	4.4'	135°	4.3'	150°	3.8'
180°	3.4'	210°	3.75'	230°	4.5'
260°	4.25'	270°	4.2'	285°	4.2'
300°	4.2'	305°	4.1'	315°	4.2'
330°	3.85'	340°	4.05'	350°	4.25'

DAMP

148+30

0°	4.0'	25°	3.5'	35°	4.0'
50°	4.3'	45°	4.2'	80°	3.9'
90°	3.8'	105°	3.9'	120°	4.3'
135°	4.4'	150°	3.9'	180°	3.45'
210°	3.65'	225°	4.0'	245°	3.6'
260°	3.5'	270°	3.35'	285°	3.5'
310°	3.75'	325°	3.65'	340°	3.9'
350°	4.05'				



August 29, 1953

DAMP

148+25	0° 3.75'	20° 3.85'	35° 4.2'
	50° 4.05'	65° 4.1'	80° 4.25'
	85° 3.85'	90° 3.75'	105° 3.85'
	120° 4.0'	135° 4.3'	150° 3.8'
	180° 3.45'	210° 3.8'	225° 4.0'
	245° 3.7'	260° 3.6'	270° 3.65'
	285° 3.3'	305° 3.6'	320° 4.0'
	330° 4.3'	340° 4.0'	350° 3.8'

DRY OVER HEAD      DAMP ON-SIDE  
 BEGIN CAR PASS HOLE #14.

148+20      SEPT. 12, 53      LEONARD PALOMINO - NOTES.

148+20	0° 4.35'	15° 4.5'	25° 4.5'
	30° 3.85'	50° 4.0'	60° 4.6'
	75° 5.0'	90° 5.1'	100° 5.5'
	120° 6.0'	150° 3.85'	180° 3.5'
	210° 3.7'	230° 4.0'	245° 3.9'
	260° 4.0'	270° 3.9'	285° 3.6'
	300° 4.1'	320° 3.6'	330° 3.65'
	340° 4.15'	350° 4.2'	

DAMP      CAR PASS HOLE #14.

148+15	0° 5.0'	15° 5.05'	25° 4.3'
	45° 4.2'	55° 4.75'	75° 5.6'



END OF CAR PASS HOLE #4.  
DAMP

TOP DRY, SIDE DAMP

148+15	90°	6.2'	100°	6.3'	<sup>120°</sup> <del>125°</del>	7.0'
CONT'D	150°	3.8'	180°	3.95'	210°	3.65'
	225°	3.9'	240°	3.7'	255°	3.45'
	270°	3.45'	285°	3.6'	300°	4.0'
	317°	3.9'	326°	4.4'	335°	4.15'
	340°	4.6'	350°	4.75'	355°	4.7'
148+10	0°	4.3'	10°	3.95'	20°	4.1'
	25°	3.75'	45°	3.7'	60°	4.1'
	75°	3.6'	90°	3.7'	105°	4.0'
	120°	4.05'	135°	4.2'	150°	3.9'
	180°	3.4'	210°	3.8'	225°	4.2'
	250°	4.1'	270°	3.85'	285°	3.55'
	300°	3.6'	310°	3.95'	320°	4.05'
	325°	3.9'	335°	4.1'	340°	4.35'
	350°	4.45'	355°	4.5'		
148+05	0°	4.4'	25°	4.6'	30°	3.8'
	50°	3.95'	60°	3.6'	75°	3.6'
	90°	3.5'	110°	3.5'	130°	4.0'
	140°	4.2'	150°	3.85'	180°	3.4'



148405 210° 3.75' 230° 4.0' 250° 4.1'  
 CONT'D 270° 3.9' 285° 3.65' 300° 3.7'  
 315° 3.85' 322° 4.15' 335° 4.2'  
 340° 4.5' 350° 4.5' 355° 4.65'

TOP DRY SIDES DAM P

148400 0° 4.8' 15° 4.4' 25° 4.3'  
 40° 4.2' 50° 4.2' 60° 4.0'  
 75° 3.85' 90° 3.9' 100° 4.0'  
 125° 4.0' 137° 4.2' 150° 3.85'  
 180° 3.4' 210° ~~2.85~~<sup>3.9</sup> 225° 4.0'  
 245° 2.95' 260° 3.8' 270° 3.6'  
 285° 3.8' 300° 3.9' 315° 4.15'  
 325° 4.1' 335° 4.35' 345° 4.55'

TOP DRY SIDES DAM P

147495 0° 4.1' 10° 4.05' 25° 4.1'  
 40° 4.0' 50° 4.05' 65° 4.05'  
 80° 4.0' 90° 4.0' 105° 4.1'  
 120° 4.3' 135° 4.5' 150° 3.9'  
 180° 3.4' 210° 3.85' 230° 4.0'  
 245° 4.2' 255° 4.2' 270° 4.1'  
 285° 3.9' 300° 4.1' 315° 4.4'



TOP ~~DAMP~~<sup>DRY</sup> SIDES ~~DRY~~<sup>DAMP</sup>

DAMP

147+95 330° 4.0' 340° 4.2' 350° 4.2'  
CON'T

147+90 0° 4.9' 15° 4.6' 30° 4.6'  
35° 4.7' 50° 4.15' 60° 3.75'  
75° 3.6' 90° 4.0' 105° 4.05'  
120° 4.3' 125° 4.4' 150° 3.85'  
180° 3.45' 210° 3.80' 225° 4.0'  
240° 4.6' 245° 4.7' 255° 4.7'  
265° 4.35' 270° 4.3' 285° 4.35'  
300° 4.3' 310° 4.4' 325° 4.5'  
335° 4.3' 345° 4.55' 350° 4.7'

147+85 0° 4.85' 15° 4.7' 25° 4.7'  
40° 5.0' 50° 4.0' 60° 3.55'  
70° 3.35' 75° 3.65' 90° 3.6'  
105° 3.8' 115° 4.2' 135° 4.4'  
150° 3.18' 180° 3.4' 210° 3.85'  
225° 4.0' 240° 4.5' 250° 4.8'  
270° 3.95' 290° 4.05' 300° 4.2'  
310° 4.4' 325° 4.9' 330° 4.75'  
335° 5.0' 345° 5.1' 350° 5.05'



DAMP

147+80	0°	5.6'	10°	5.2'	20°	4.85'
	30°	4.7'	45°	4.1'	60°	4.15'
	70°	4.0	80°	4.15'	90°	4.0'
	105°	4.25'	110°	4.55'	130°	5.0'
	150°	3.9'	180°	3.35'	210°	3.75'
	230°	4.2'	240°	4.1'	255°	3.75'
	270°	3.7	285°	3.65'	300°	3.85'
	310°	4.3	320°	4.7	330°	5.15'
	340°	5.3	350°	5.6		

DAMP

147+75	0°	4.3	10°	4.2	25°	4.4'
	30°	4.6	45°	4.5'	60°	4.1'
	75°	3.9'	90°	3.85'	105°	4.2'
	115°	4.4'	130°	4.7	150°	4.0'
	180°	3.5'	210°	3.8	230°	4.3'
	240°	4.1'	255°	4.05'	270°	3.9'
	280°	4.0'	295°	4.35'	305°	4.65'
	320°	4.35	328°	5.2'	340°	4.6
	350°	4.8				



DAMP

147+70	0°	4.7'	10°	4.7'	15°	4.4'
	25°	4.35'	35°	4.2'	50°	3.85'
	60°	3.7'	75°	3.95'	90°	4.2'
	105°	3.9'	115°	4.6'	130°	4.8'
	150°	4.0'	180°	3.5'	210°	3.8'
	225°	4.2'	245°	4.3'	260°	3.9'
	270°	4.3'	285°	4.4'	300°	4.8'
	312°	4.7'	315°	5.0'	326°	5.15'
	335°	5.05'	345°	5.15'	350°	5.05'

EXTRA SECTION

DAMP

147 +67	0°	5.5'	15°	5.3'	25°	4.85'
	35°	5.0'	45°	5.0'	55°	4.85'
	65°	4.55'	80°	4.3'	90°	4.1'
	105°	4.25'	120°	4.25'	135°	4.5'
	150°	3.9'	180°	3.5'	210°	3.95'
	230°	4.3'	245°	4.2'	260°	4.1'
	270°	4.2'	275°	4.3'	290°	4.3'
	300°	4.4'	315°	4.8'	330°	5.45'
	335°	5.0'	340°	5.45'	350°	5.25'



DAMP

147+65	0°	4.4'	15°	4.25'	30°	4.2'
	40°	4.1'	50°	4.3'	65°	4.65'
	75°	4.55'	90°	4.05'	105°	4.0'
	145°	4.3'	130°	4.6'	150°	3.95'
	180°	3.5'	210°	3.85'	230°	4.5'
	250°	4.35'	260°	4.5'	270°	3.95'
	285°	4.25'	290°	4.4'	295°	4.1'
	305°	4.1'	320°	4.5'	335°	4.6'
	340°	4.35'	350°	4.4'		

DAMP

147+60	0°	4.45'	15°	4.65'	30°	5.25'
	40°	5.0'	50°	4.8'	60°	4.85'
	75°	4.55'	90°	3.9'	100°	4.2'
	110°	4.55'	130°	4.7'	150°	3.9'
	180°	3.5'	210°	3.9'	225°	4.3'
	240°	4.15'	255°	3.8'	270°	3.5'
	280°	3.65'	300°	3.7'	315°	3.85'
	325°	4.3'	335°	4.4'	340°	4.65'
	360°	4.6°				

+6



DAMP

147+55

0°	5.05'	10°	4.9'	25°	4.85'
30°	4.6'	35°	4.75'	50°	4.31'
60°	4.45'	75°	4.6'	90°	4.6'
105°	4.75'	120°	4.8'	130°	5.01'
150°	3.9'	180°	3.45'	210°	3.8'
225°	4.2'	240°	3.9'	255°	3.65'
270°	3.2'	290°	3.3'	305°	3.05'
320°	3.5'	330°	4.0'	340°	4.2'
350°	4.6'				

DAMP

147+50

0°	4.45'	15°	4.6'	30°	4.7'
40°	4.6'	50°	4.55'	60°	4.3'
70°	4.55'	80°	4.7'	90°	4.9'
100°	4.5'	110°	4.7'	120°	5.0'
150°	3.9'	180°	3.5'	210°	3.8'
230°	4.3'	240°	3.9'	250°	3.75'
270°	3.8'	290°	3.8'	310°	3.6'
315°	4.0'	330°	4.3'	340°	4.4'
350°	4.6'				



DAMP

147+45	0° 4.6'	20° 4.3'	30° 3.75'
	45° 3.95'	60° 3.8'	75° 3.55'
	90° 3.8'	105° 4.0'	120° 4.6'
	125° 4.8'	150° 3.75'	180° 3.45'
	210° 3.65'	225° 4.0'	240° 3.85'
	260° 3.5'	270° 3.8'	290° 3.8'
	300° 3.85'	315° 3.0'	330° 3.75'
	335° 3.65'	345° 4.0'	353° 4.7'

TOP DRY

SIDE DAMP

147+40	0° 3.85'	20° 3.85'	30° 4.15'
	40° 4.1'	55° 4.1'	65° 4.25'
	75° 4.0'	90° 4.2	100° 4.5'
	115° 4.8'	130° 5.0	150° 3.75'
	180° 3.4'	210° 3.65'	230° 4.6'
	250° 4.4'	270° 4.35'	280° 4.7'
	295° 4.25'	310° 4.15'	320° 3.95'
	335° <del>3.85'</del> <sup>3.9</sup>	345° 4.0	355° 3.8'

TOP DRY

SIDE DAMP

147+35	0° 3.9	15° 3.85'	30° 3.8'
	45° 3.75'	50° 4.0'	60° 3.9'
	75° 4.1'	90° 4.2'	100° 4.3'
	115° 4.45'	130° 4.7'	150° 3.8°



147+35	180° 3.4	210° 3.7	230° 4.6
CONT'D	255° 4.7	270° 4.55	280° 4.45
	290° 4.2	300° 4.1	310° 4.0
	325° 4.35	330° 4.25	340° 4.1
	350° 4.1		

DAMP  
TOP DRY

147+30	0° 4.45	10° 4.4	20° 4.1
	30° 3.95	40° 3.7	50° 3.6
	65° 3.85	75° 3.95	90° 3.9
	105° 3.95	120° 4.1	135° 4.3
	150° 3.75	180° 3.9	210° 3.8
	230° 4.3	250° 4.2	260° 3.9
	270° 3.85	290° 3.7	300° 3.9
	305° 4.2	315° 4.15	325° 4.0
	335° 4.15	345° 4.5	350° 4.5

TOP DRY  
SIDES DAMP

147+25	0° 4.2	10° 4.35	20° 4.3
	30° 4.0	40° 4.0	55° 3.75
	70° 3.95	75° 3.65	90° 3.95
	100° 4.3	110° 4.15	120° 4.1
	135° 4.2	150° 3.8	180° 3.4



TOP DRY  
SIDES DAMP

TOP DRY  
SIDES DAMP

CONT'D IN F.B. 845-A.

147 + 25	210° 3.85'	230° 4.25'	240° 4.0'
CONT'D	250° 3.7'	270° 3.85'	280° 4.1'
	290° 4.1'	300° 3.95'	310° 3.75'
	325° 3.75'	335° 3.65'	340° 3.89'
	350° 4.15'		

147 + 20	0° 4.15'	12° 4.55'	20° 4.3'
	30° 4.2'	40° 4.45'	50° 4.35'
	60° 3.95'	75° 3.8'	90° 3.75'
	100° 4.2'	120° 4.35'	135° 4.4'
	150° 3.8'	180° 3.45'	210° 4.0'
	230° 4.3'	240° 4.1'	250° 3.95'
	260° 3.8'	270° 3.95'	290° 4.05'
	300° 3.85'	315° 3.7'	320° 3.95'
	330° 4.05'	340° 4.2'	350° 4.25'

147 + 15	0° 4.6'	10° 4.45'	20° 4.0'
	35° 4.15'	50° 4.1'	60° 3.9'
	75° 3.7'	90° 3.55'	100° 3.55'
	105° 3.85'	120° 4.2'	135° 4.4'
	150° 3.9'	180° 3.55'	210° 4.0'

CONT'D NEXT PAGE.



SPAD	STATION	COT
# 37	154+9228	4.17
# 38	154+45.78	4.41
# 39	153+87.15	4.46
# 40	153+28.42	4.78
# 41	152+73.54	3.63
# 42	152+18.52	4.01
# 43	151+61.67	3.96
# 44	151+02.45	4.44
# 45	150+48.98	4.40
# 46	149+91.86	4.23
# 47	149+33.58	3.64
# 48	148+75.91	3.95
# 49 TEMPORARY SPAD.	148+25 <sup>±</sup>	4.32 TEMPORARY.
# 49. PERMANENT.	148+26.06	3.71
# 50	147+65.43	4.29
# 51	147+15.01	4.40

147+15	230° 4.4'	245° 4.3'	260° 4.15'
Cont'D	270° 3.75'	280° 3.45'	285° 3.55'
	300° 3.7'	310° 3.75'	320° 3.9'
	330° 3.9	340° 4.05	350° 4.15'

SEE F.R. 845-A FOR ADDITIONAL  
SECTIONS.



3

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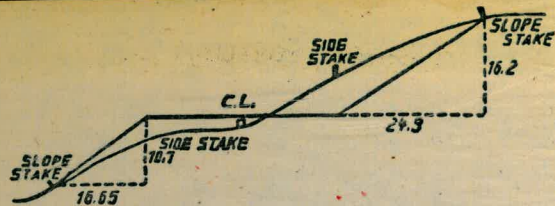
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Please Return to  
 City of San Diego Water Dept.  
 Room 903 Civic Center



DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING.  
 SLOPE 1/4 TO 1. ROADWAY OF ANY WIDTH.

	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
0	0.00	0.15	0.30	0.45	0.60	0.75	0.90	1.05	1.20	1.35	0
1	1.50	1.65	1.80	1.95	2.10	2.25	2.40	2.55	2.70	2.85	1
2	3.00	3.15	3.30	3.45	3.60	3.75	3.90	4.05	4.20	4.35	2
3	4.50	4.65	4.80	4.95	5.10	5.25	5.40	5.55	5.70	5.85	3
4	6.00	6.15	6.30	6.45	6.60	6.75	6.90	7.05	7.20	7.35	4
5	7.50	7.65	7.80	7.95	8.10	8.25	8.40	8.55	8.70	8.85	5
6	9.00	9.15	9.30	9.45	9.60	9.75	9.90	10.05	10.20	10.35	6
7	10.50	10.65	10.80	10.95	11.10	11.25	11.40	11.55	11.70	11.85	7
8	12.00	12.15	12.30	12.45	12.60	12.75	12.90	13.05	13.20	13.35	8
9	13.50	13.65	13.80	13.95	14.10	14.25	14.40	14.55	14.70	14.85	9
10	15.00	15.15	15.30	15.45	15.60	15.75	15.90	16.05	16.20	16.35	10
11	16.50	16.65	16.80	16.95	17.10	17.25	17.40	17.55	17.70	17.85	11
12	18.00	18.15	18.30	18.45	18.60	18.75	18.90	19.05	19.20	19.35	12
13	19.50	19.65	19.80	19.95	20.10	20.25	20.40	20.55	20.70	20.85	13
14	21.00	21.15	21.30	21.45	21.60	21.75	21.90	22.05	22.20	22.35	14
15	22.50	22.65	22.80	22.95	23.10	23.25	23.40	23.55	23.70	23.85	15
16	24.00	24.15	24.30	24.45	24.60	24.75	24.90	25.05	25.20	25.35	16
17	25.50	25.65	25.80	25.95	26.10	26.25	26.40	26.55	26.70	26.85	17
18	27.00	27.15	27.30	27.45	27.60	27.75	27.90	28.05	28.20	28.35	18
19	28.50	28.65	28.80	28.95	29.10	29.25	29.40	29.55	29.70	29.85	19
20	30.00	30.15	30.30	30.45	30.60	30.75	30.90	31.05	31.20	31.35	20
21	31.50	31.65	31.80	31.95	32.10	32.25	32.40	32.55	32.70	32.85	21
22	33.00	33.15	33.30	33.45	33.60	33.75	33.90	34.05	34.20	34.35	22
23	34.50	34.65	34.80	34.95	35.10	35.25	35.40	35.55	35.70	35.85	23
24	36.00	36.15	36.30	36.45	36.60	36.75	36.90	37.05	37.20	37.35	24
25	37.50	37.65	37.80	37.95	38.10	38.25	38.40	38.55	38.70	38.85	25
26	39.00	39.15	39.30	39.45	39.60	39.75	39.90	40.05	40.20	40.35	26
27	40.50	40.65	40.80	40.95	41.10	41.25	41.40	41.55	41.70	41.85	27
28	42.00	42.15	42.30	42.45	42.60	42.75	42.90	43.05	43.20	43.35	28
29	43.50	43.65	43.80	43.95	44.10	44.25	44.40	44.55	44.70	44.85	29
30	45.00	45.15	45.30	45.45	45.60	45.75	45.90	46.05	46.20	46.35	30
31	46.50	46.65	46.80	46.95	47.10	47.25	47.40	47.55	47.70	47.85	31
32	48.00	48.15	48.30	48.45	48.60	48.75	48.90	49.05	49.20	49.35	32
33	49.50	49.65	49.80	49.95	50.10	50.25	50.40	50.55	50.70	50.85	33
34	51.00	51.15	51.30	51.45	51.60	51.75	51.90	52.05	52.20	52.35	34
35	52.50	52.65	52.80	52.95	53.10	53.25	53.40	53.55	53.70	53.85	35
36	54.00	54.15	54.30	54.45	54.60	54.75	54.90	55.05	55.20	55.35	36
37	55.50	55.65	55.80	55.95	56.10	56.25	56.40	56.55	56.70	56.85	37
38	57.00	57.15	57.30	57.45	57.60	57.75	57.90	58.05	58.20	58.35	38
39	58.50	58.65	58.80	58.95	59.10	59.25	59.40	59.55	59.70	59.85	39
40	60.00	60.15	60.30	60.45	60.60	60.75	60.90	61.05	61.20	61.35	40
41	61.50	61.65	61.80	61.95	62.10	62.25	62.40	62.55	62.70	62.85	41
42	63.00	63.15	63.30	63.45	63.60	63.75	63.90	64.05	64.20	64.35	42
43	64.50	64.65	64.80	64.95	65.10	65.25	65.40	65.55	65.70	65.85	43
44	66.00	66.15	66.30	66.45	66.60	66.75	66.90	67.05	67.20	67.35	44
45	67.50	67.65	67.80	67.95	68.10	68.25	68.40	68.55	68.70	68.85	45
46	69.00	69.15	69.30	69.45	69.60	69.75	69.90	70.05	70.20	70.35	46
47	70.50	70.65	70.80	70.95	71.10	71.25	71.40	71.55	71.70	71.85	47
48	72.00	72.15	72.30	72.45	72.60	72.75	72.90	73.05	73.20	73.35	48
49	73.50	73.65	73.80	73.95	74.10	74.25	74.40	74.55	74.70	74.85	49
50	75.00	75.15	75.30	75.45	75.60	75.75	75.90	76.05	76.20	76.35	50

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 HOLYOKE MASSACHUSETTS  
 NEW YORK CHICAGO BOSTON SAN FRANCISCO