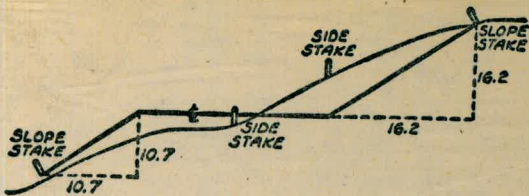




BOOK 845-A.



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

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	.81	.92	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	4.88	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	.029	.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	.711	.845	.922	1.01
70°	.080	.159	.240	.321	.403	.485	.568	.652	.735	.819	.906	.994	1.08	1.17
75°	.095	.182	.266	.353	.440	.528	.617	.707	.797	.877	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	.885	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 - X-SECTIONS.

SEPT. 26, '53

LEONARD - INSTRUMENT,
PALOTTINO - NOTES.

DAMP

NOTE: READINGS AT 150°, 180° AND 210° INCLUDE
ALLOWANCE FOR LOOSE MUCK ON BASIS OF 0.6'
BELOW TOP OF R.R. RAILS, TOE READINGS ARE
ALSO ADJUSTED ON AN ESTIMATION BASIS TO
COMPENSATE FOR LOOSE MATERIAL.

Leonard,

DAMP

DAMP

147+10

117

147+05

147+00

DEGREE	DIST.	DEG.	DIST.	DEG.	DIST.
0°	4.25	10°	4.05	20°	3.8
35°	3.6	50°	3.45	60°	3.65
70°	3.6	80°	3.7	90°	3.6
105°	3.65	120°	3.95	135°	4.1
150°	3.85	180°	3.4	210°	3.8
235°	4.4	245°	4.3	260°	4.25
270°	4.2	280°	3.95	290°	3.95
300°	3.7	315°	3.7	330°	3.75
340	4.05	350°	4.1		
0°	4.7	10°	4.55	20°	4.4
35°	3.8	50°	3.7	65°	3.45
75°	3.5	90°	3.6	105°	4.05
145°	4.25	135°	4.3	150°	3.85
180°	3.95	210°	3.65	235°	4.4
245°	4.4	255°	4.35	270°	3.95
275°	3.7	285°	3.7	300°	3.65
315°	3.65	330°	3.8	340°	4.1
345°	4.0	350°	4.35	355°	4.65
0°	4.15	15°	4.25	25°	4.35

DAMP

	DEG.	DIST.	DEG.	DIST.	DEG.	DIST.
147+00	45°	3.7	60°	3.7	70°	3.6
CONT'D	80°	3.55	90°	3.65	100°	3.9
	110°	4.35	130°	4.5	150°	3.75
	180°	3.25	210°	3.6	230°	4.2
	240°	3.9	255°	3.9	266°	3.95
	270°	3.8	280°	3.85	295°	4.25
	310°	3.9	315°	4.1	325°	4.25
	335°	4.05	340°	4.0	350°	4.35
	365°	4.05				

DAMP

146+95	0°	4.25	5°	4.5	15°	4.55
	25°	4.7	30°	4.4	50°	4.2
	60°	4.2	70°	3.95	90°	4.05
	105°	4.1	115°	4.3	130°	4.4
	150°	3.65	180°	3.3	210°	3.6
	230°	4.0	240°	3.95	255°	3.85
	270°	3.7	285°	4.0	300°	4.0
	310°	4.25	320°	4.1	330°	4.15
	340°	4.2	350°	4.1		

DAMP

146+90	0°	4.5	10°	4.6	20°	4.4
--------	----	-----	-----	-----	-----	-----

DAMP

	DEG.	DIST.	DEG.	DIST.	DEG.	DIST.
146+90	30°	4.4'	50°	4.2'	60°	4.4'
CONT.'D	75°	4.55'	90°	4.55'	105°	4.4'
	130°	4.5'	150°	3.6'	180°	3.3'
	210°	3.5'	230°	4.0'	240°	3.9'
	255°	3.3'	270°	3.4'	285°	3.5'
	300°	3.65'	310°	3.7'	320°	3.8'
	330°	3.85'	340°	4.1'	350°	4.4'

DAMP

146+85	0°	4.8'	10°	4.8'	20°	4.35'
	30°	4.25'	50°	4.1'	60°	4.1'
	75°	4.05'	90°	4.4'	100°	4.65'
	110°	4.65'	130°	4.7'	150°	3.6'
	180°	3.15'	210°	3.5'	230°	3.8'
	240°	3.8'	255°	3.5'	270°	3.2'
	280°	3.1'	300°	3.4'	310°	3.55'
	320°	3.8'	330°	4.0'	340°	4.3'
	350°	4.55'				

EXTRA SECTION BEGIN OF
CAR PASS HOLE #15.

DAMP

146+83	0°	5.1'	10°	5.25'	15°	5.0'
	25°	4.8'	35°	4.7'	50°	4.55'
	60°	4.8'	75°	5.2'	90°	5.1'

DEG. DIST. DEG. DIST. DEG. DIST.

146+83	100° 5.2'	115° 5.6'	125° 5.6'
CONT'D	150° 3.5'	180° 3.15'	210° 3.45'
	230° 3.8'	240° 3.75'	255° 3.4'
	270° 3.3'	285° 3.1'	295° 3.4'
	305° 3.55'	320° 4.1'	330° 3.9'
	340° 4.1'	350° 4.6'	

DAMP
CAR PASS HOLE

146+80	0° 4.75'	15° 4.75'	25° 4.8'
	35° 4.3'	50° 4.9'	65° 5.5'
	75° 5.7'	90° 6.0'	100° 6.2'
	105° 6.1'	120° 6.5'	150° 3.6'
	180° 3.1'	210° 3.5'	230° 3.9'
	245° 3.75'	260° 3.85'	270° 3.55'
	285° 3.6'	295° 3.55'	310° 3.8'
	325° 4.05'	340° 4.15'	350° 4.55'
	355° 4.75'		

DAMP
CAP PASS

146+75	0° 5.3'	10° 4.95'	20° 4.65'
	25° 4.7'	30° 4.8'	50° 4.75'
	60° 4.9'	70° 6.0'	80° 6.3'
	90° 6.6'	100° 6.2'	110° 6.3'

	DEG.	DIST.	DEG.	DIST.	DEG.	DIST.
146+75	120°	6.5'	150°	3.7'	180°	3.1'
CONT'D	210°	3.5'	235°	4.0'	255°	4.5'
	270°	4.4'	285°	4.25'	295°	4.15'
	305°	4.05'	320°	4.35'	330°	4.65'
	340°	4.65'	350°	5.0'		

EXTRA SECTION
END OF CAR PASS

	DEG.	DIST.	DEG.	DIST.	DEG.	DIST.
146+73	0°	4.25'	10°	4.25'	25°	4.3'
	45°	4.85'	60°	4.9'	65°	5.3'
	75°	5.2'	90°	5.4'	105°	5.45'
	115°	5.3'	125°	5.3'	150°	3.5'
	180°	3.1'	210°	3.5'	230°	4.0'
	255°	4.35'	270°	3.9'	285°	3.9'
	300°	3.9'	315°	4.1'	330°	3.85'
	340°	4.1'	350°	4.25'		

DAMP

	DEG.	DIST.	DEG.	DIST.	DEG.	DIST.
146+70	0°	4.4'	5°	4.55'	10°	4.35'
	20°	4.2'	30°	4.0'	45°	3.8'
	60°	3.6'	70°	3.3'	80°	3.0'
	90°	2.9'	100°	2.9'	110°	3.2'
	125°	3.75'	135°	3.9'	150°	3.5'
	180°	3.1'	210°	3.5'	230°	4.0'

DRIPPING WET

DAMP

	DEG.	DIST.	DEG.	DIST.	DEG.	DIST.
146+70	235°	4.0'	245°	4.4'	265°	4.25'
CONT'D.	275°	4.0'	290°	3.8'	300°	4.0'
	315°	4.15'	325°	4.15'	330°	4.05'
	340°	3.9'	350°	4.25'		
146+65	0°	4.0'	10°	4.2'	20°	4.15'
	35°	4.4'	45°	4.3'	50°	4.0'
	60°	3.65'	70°	3.5'	80°	3.55'
	90°	3.45'	100°	3.5'	115°	3.8'
	135°	3.8'	150°	3.6'	180°	3.2'
	210°	3.6'	230°	4.0'	245°	4.1'
	260°	4.0'	270°	4.1'	280°	4.35'
	290°	4.1'	305°	4.1'	320°	4.15'
	330°	4.1'	340°	4.0'	350°	4.15'
146+60	0°	4.3'	10°	4.35'	25°	4.6'
	35°	4.6'	45°	4.6'	60°	4.3'
	75°	4.1'	90°	4.0'	100°	3.9'
	115°	4.1'	130°	4.0'	150°	3.65'
	180°	3.25'	210°	3.6'	230°	4.1'
	245°	4.05'	260°	4.1'	270°	3.9'

146+60	285° 3.85'	300° 4.3'	315° 4.2'
CONT'D	325° 4.1'	330° 3.95'	340° 3.95'
	350° 4.25'		

DAMP

146+55	0° 4.65'	10° 4.5'	17° 4.15'
	20° 4.35'	30° 4.3'	45° 3.8'
	55° 3.8'	60° 3.5'	70° 3.5'
	80° 3.8'	90° 3.7'	100° 3.55'
	110° 3.8'	120° 3.7'	135° 3.9'
	150° 3.65'	180° 3.3'	210° 3.6'
	230° 4.0'	245° 4.05'	255° 3.9'
	270° 3.55'	285° 3.6'	290° 3.4'
	300° 3.6'	315° 3.9'	325° 3.9'
	330° 4.0'	340° 4.25'	350° 4.45'

DAMP

146+50	0° 4.45'	10° 4.5'	20° 4.2'
	30° 3.9'	45° 4.1'	55° 3.9'
	65° 3.5'	80° 3.85'	90° 3.8'
	105° 3.8'	115° 3.85'	130° 4.0'
	150° 3.8'	180° 3.2'	210° 3.5'
	230° 4.0'	245° 3.95'	260° 3.5'

146150	270° 3.35'	290° 3.4'	310° 3.6'
CONT'D	325° 3.9'	330° 4.15'	340° 4.1'
	350° 4.25'		

DAMP

146 + 45	0° 4.5'	10° 4.4'	20° 4.35'
	30° 4.2	35° 4.1	55° 3.9'
	70° 3.8'	80° 3.75'	90° 3.8'
	105° 3.9'	115° 4.15'	130° 4.0'
	150° 3.8'	180° 3.4'	210° 3.6'
	230° 4.0	240° 4.0	260° 3.85'
	270° 3.55'	285° 3.45'	295° 3.55'
	315° 3.9'	325° 4.0'	335° 4.1
	340° 4.1'	350° 4.1	

DAMP

146 + 40	0° 4.5	10° 4.15'	20° 4.1'
	30° 4.0'	40° 4.0'	55° 3.8'
	65° 3.85'	80° 3.8'	90° 3.9'
	105° 3.75'	115° 3.85'	130° 4.1'
	150° 3.6'	180° 3.15'	210° 3.5'
	230° 4.2'	245° 4.1'	260° 3.7'
	270° 3.65'	285° 3.75'	300° 3.85'

DAMP

146+40	315° 4.1'	325° 4.05'	340° 4.0'	
CONTD	350° 4.5'			
146+35	0° 4.8'	10° 4.7'	20° 4.6'	
	35° 4.2'	50° 4.45'	65° 4.3'	
	80° 4.4'	90° 4.2'	105° 3.95'	
	120° 3.75'	130° 3.9'	150° 3.5'	
	180° 3.15'	210° 3.45'	235° 4.3'	
	245° 4.4'	260° 3.95'	270° 3.9'	
	285° 4.15'	300° 4.2'	315° 4.2'	
	330° 4.3'	340° 4.5'	350° 4.6'	
DAMP	146+30	0° 5.0'	10° 4.8'	20° 4.6'
		30° 4.2'	40° 4.25'	50° 4.2'
		65° 4.15'	75° 4.0'	80° 3.9'
		90° 4.0'	100° 4.05'	115° 4.0'
		130° 3.9'	150° 3.6'	180° 3.2'
		210° 3.5'	230° 4.4'	240° 4.4'
		250° 4.05'	260° 3.7'	270° 3.5'
		285° 3.55'	300° 3.8'	315° 3.8'
		325° 4.1'	335° 4.2'	340° 4.35'
		350° 4.7'		

DAMP

146 + 25	0° 42.5'	10° 4.1'	20° 3.9°
	30° 3.7'	40° 3.5'	50° 3.15'
	60° 3.1'	70° 3.0'	80° 3.0'
	90° 3.0'	105° 3.2'	120° 3.7'
	130° 3.8'	150° 3.5'	180° 3.2'
	210° 3.5'	230° 3.8'	245° 3.9'
	255° 4.0'	270° 3.9'	285° 3.9'
	290° 3.5'	300° 3.65'	310° 3.7'
	320° 3.8'	330° 3.9'	340° 3.95'
	350° 4.25'		

DAMP

146 + 20	0° 4.65'	10° 4.5'	20° 4.0'
	30° 3.7'	40° 3.4'	50° 3.3'
	60° 3.25'	70° 3.4'	80° 3.45'
	90° 3.4'	100° 3.45'	110° 3.15'
	120° 3.8'	130° 3.9'	150° 3.5'
	180° 3.15'	210° 3.55'	230° 4.0'
	245° 3.95'	260° 3.6'	270° 3.4'
	285° 3.65'	300° 3.7'	310° 3.7'
	320° 3.95'	330° 4.15'	340° 4.15'
	350° 4.55'		

DAMP

146 + 15

0° 50' 10° 48' 25° 45'
35° 4.3' 45° 4.15' 55° 3.75'
70° 3.6' 80° 3.8' 90° 3.8'
100° 4.0' 105° 4.4' 120° 4.2'
130° 4.3' 150° 3.5' 180° 3.2'
210° 3.55' 230° 4.0' 255° 4.5'
270° 3.9' 280° 3.5' 290° 3.45'
300° 3.6' 315° 4.2' 325° 4.2'
335° 4.4' 345° 4.5' 350° 4.8'

DAMP

146 + 10

0° 4.1' 15° 4.1' 30° 4.2'
50° 4.2' 65° 4.1' 80° 3.95'
90° 4.05' 105° 4.2' 120° 4.3'
130° 4.3' 150° 3.65' 180° 3.3'
210° 3.6' 225° 3.8' 240° 4.0'
255° 3.45' 270° 3.25' 280° 3.5'
300° 3.75' 315° 3.6' 325° 3.7'
335° 3.65' 340° 3.7' 350° 3.75'

DAMP

146 + 05

0° 4.4' 15° 4.7' 20° 4.4'
30° 4.3' 50° 4.75' 60° 4.55'

146+05	70° 4.4'	80° 4.3'	90° 4.15'
CONT.D'	105° 4.5'	130° 4.5'	150° 3.0'
	180° 3.3'	210° 3.65'	225° 3.9'
	240° 3.8'	255° 3.5'	265° 3.8'
	270° 3.7'	285° 3.8'	300° 3.55'
	315° 4.0'	325° 4.4'	340° 4.25'
	350° 4.2'		

DAMP

146+00	0° 4.9'	10° 5.1'	15° 5.0'
"59%	20° 4.35'	30° 4.0'	45° 4.0'
	55° 3.75'	65° 3.55'	75° 3.65'
	90° 3.8'	100° 4.1'	120° 4.4'
	130° 4.4'	150° 3.6'	180° 3.3'
	210° 3.7'	225° 3.9'	235° 3.8'
	250° 3.95'	270° 3.75'	285° 4.05'
	300° 3.8'	310° 4.15'	320° 4.1'
	330° 4.45'	340° 4.7'	350° 4.75'

OCT. 10, 53.

LEONARD,
PALOMINO.

13.

Bottom Cleaned

145+95	0°	4.7'	10°	4.4'	20°	4.45'
*598	40°	4.2'	50°	3.95'	70°	3.55'
	85°	3.55'	90°	3.6'	105°	3.75'
	120°	4.0'	137°	4.35'	150°	3.8'
	180°	3.5'	190°	3.4'	200°	4.0'
	215°	4.15'	230°	4.0'	250°	3.8'
	265°	3.75'	270°	3.65'	280°	3.45'
	300°	3.0'	310°	4.1'	325°	4.9'
	330°	4.7'	340°	4.6'	350°	4.6'

Bottom Cleaned

145+90	0°	4.5'	20°	4.1'	30°	4.0'
*599	50°	4.1'	60°	4.0'	70°	4.05'
	85°	3.9'	90°	3.7'	100°	3.8'
	110°	3.75'	120°	3.7'	130°	3.8'
	145°	4.1'	150°	3.8'	170°	3.95'
	180°	3.5'	195°	3.8'	210°	3.85'
	220°	3.85'	230°	3.85'	250°	3.45'
	270°	3.55'	285°	3.8'	305°	4.1'
	320°	4.2'	330°	4.3'	340°	4.4'
	350°	4.4'				

Bottom, Cleaned

145+85

600

0°	4.75'	10°	4.55'	25°	4.3'
40°	3.75'	50°	3.8'	65°	3.7'
75°	3.85'	90°	3.85'	105°	4.05'
115°	4.55'	125°	4.6'	135°	4.25'
145°	4.2'	155°	3.6'	180°	3.4'
200°	3.7'	215°	3.75'	222°	4.15'
230°	4.2'	235°	4.5'	245°	4.4'
260°	4.0'	270°	3.85'	285°	3.9'
300°	4.0'	310°	4.0'	325°	4.05'
335°	4.4'	340°	4.6'	350°	4.65'

Bottom Cleaned

145+80

601

0°	4.7'	15°	4.85'	30°	4.4'
45°	3.95'	55°	3.6'	70°	3.35'
85°	3.2'	90°	3.4'	105°	3.55'
115°	3.25'	125°	4.0'	140°	3.8'
155°	3.5'	180°	3.45'	210°	3.25'
225°	4.25'	235°	4.55'	255°	4.3'
270°	4.0'	285°	4.1'	295°	4.05'
305°	4.05'	320°	3.85'	330°	4.1'
340°	4.4'	350°	4.6'		

Bottom Cleaned

145+75

³602

0°	4.9'	15°	4.5'	32°	4.8'
40°	4.4'	50°	4.6'	65°	4.6'
75°	3.8'	78°	3.4'	90°	3.6'
105°	3.8'	115°	4.1'	125°	4.35'
140°	4.0'	155°	3.75'	180°	3.7'
200°	4.1'	220°	4.7'	230°	4.85'
245°	4.65'	255°	4.15'	270°	4.0'
277°	4.15'	295°	3.95'	305°	3.9'
320°	4.25'	330°	4.3'	340°	4.4'
350°	4.55'				

Bottom Cleaned

145+70

³603

0°	4.7'	15°	4.5'	25°	4.15'
40°	3.7'	50°	3.35'	70°	3.3'
80°	3.4'	90°	3.3'	100°	3.6'
120°	4.0'	135°	4.55'	145°	4.75'
153°	4.2'	165°	4.25'	170°	3.75'
180°	3.85'	200°	4.25'	215°	4.9'
230°	5.15'	245°	4.6'	260°	3.9'
270°	4.05'	285°	3.75'	300°	3.85'
315°	3.9'	330°	4.4'	340°	4.55'
350°	4.7'				

Bottom, Cleared

145+65
604

0°	4.95'	15°	4.2'	25°	3.5'
45°	3.15'	65°	3.0'	75°	2.9'
90°	3.2'	105°	3.3'	115°	3.7'
130°	4.15'	140°	4.2'	155°	3.55'
165°	3.25'	180°	3.95'	205°	4.1'
220°	4.4'	230°	4.9'	240°	4.55'
260°	4.05'	270°	3.7'	280°	3.75'
290°	3.8'	310°	4.1'	316°	3.75'
330°	4.2'	340°	4.4'	350°	4.55'

Bottom Cleared

145+60
605

0°	4.35'	20°	4.5'	30°	4.15'
45°	3.5'	65°	3.1'	82°	2.85'
90°	3.0'	105°	3.15'	115°	4.1'
135°	4.2'	155°	4.0'	180°	3.55'
200°	3.65'	225°	4.6'	240°	4.45'
255°	4.1'	270°	4.0'	285°	3.75'
300°	3.9'	320°	4.1'	335°	4.3'
345°	4.45'	355°	4.35'		

Bottom Cleared

145+55

606

0°	44	15°	4.25'	30°	4.3
45°	4.1'	60°	4.15'	80°	4.5
90°	5.0'	110°	5.9'	120°	6.1
135°	5.2'	150°	4.6'	170°	4.2
180°	4.3'	195°	4.2'	220°	4.95'
230°	4.75'	245°	4.35'	260°	3.75'
270°	3.8'	285°	3.9'	295°	3.7
310°	4.1'	320°	4.0'	330°	4.05'
340°	4.3'	350°	4.6'		

Bottom Cleared

145+50

607

0°	4.5'	15°	4.6'	35°	4.65'
50°	4.25'	70°	4.7'	80°	5.3'
90°	5.5'	100°	5.8'	110°	5.9'
115°	5.8'	120°	5.7'	135°	5.55'
145°	5.25'	160°	4.3'	180°	4.05'
190°	3.75'	210°	4.1'	220°	4.25'
230°	3.85'	245°	3.35'	265°	3.65'
275°	3.7'	290°	3.55'	310°	3.8'
320°	4.3'	330°	4.6'	340°	4.45'
350°	4.5'				

Bottom cleaned

145+45

*608

0°	4.1'	15°	4.1'	30°	4.05'
45°	4.15'	60°	4.1'	75°	4.9'
90°	4.95'	100°	5.0'	120°	4.7'
130°	4.9'	140°	4.95'	155°	4.75'
165°	4.35'	180°	4.0'	200°	4.25'
222°	4.9'	237°	4.0'	242°	4.0'
260°	3.5'	270°	3.5'	285°	3.45'
300°	3.4'	315°	3.8'	325°	3.9'
335°	3.95'	345°	4.1'	355°	4.05'

Bottom cleaned

145+40

*609

0°	4.4'	15°	4.4'	25°	4.3'
35°	4.2'	50°	4.75'	60°	4.13'
70°	4.1'	80°	4.05'	90°	3.9'
105°	4.1'	110°	4.18'	125°	5.0'
135°	5.95'	150°	4.6'	165°	4.2'
180°	3.25'	200°	4.25'	215°	4.25'
230°	5.0'	240°	4.5'	250°	4.5'
260°	4.4'	270°	3.7'	285°	3.8'
300°	3.25'	310°	3.95'	325°	4.0'
340°	3.25'	350°	4.0'		

Bottom Cleared

145+35

610

0°	3.2'	8°	3.7'	20°	3.75'
30°	3.85'	40°	3.9'	55°	4.05'
60°	4.1'	70°	4.05'	80°	4.05'
90°	4.5'	100°	4.45'	110°	4.65'
125°	4.7'	135°	4.8'	140°	4.6'
155°	4.5'	180°	4.15'	205°	4.65'
220°	4.25'	235°	4.4'	255°	4.5'
270°	3.85'	290°	3.7'	305°	3.95'
330°	3.15'	340°	3.0'	350°	2.95'

Bottom Cleared

145+30

611

0°	3.5'	10°	3.9'	20°	4.1'
30°	4.25'	40°	4.4'	50°	4.75'
65°	4.45'	75°	3.95'	90°	4.25'
100°	4.35'	107°	4.5'	120°	4.35'
135°	4.95'	142°	5.0'	150°	4.75'
180°	4.6'	210°	4.8'	215°	4.7'
225°	4.3'	240°	4.4'	250°	4.4'
270°	4.1'	280°	3.95'	300°	3.8'
310°	3.95'	330°	3.9'	330°	4.0'
342°	3.65'	355°	3.35'		

Bottom cleaned

145+25

*612

0°	3.8'	20°	3.85'	30°	4.2'
45°	4.05'	55°	4.5'	73°	4.4'
85°	4.05'	90°	3.85'	100°	4.15'
110°	4.25'	120°	4.65'	130°	4.9'
140°	4.75'	150°	4.75'	160°	4.55'
180°	4.1'	190°	4.1'	205°	3.9'
220°	4.55'	235°	3.8'	255°	3.5'
275°	4.0'	290°	4.4'	300°	4.05'
315°	4.0'	330°	3.6'	340°	3.95'
350°	3.85'				

Bottom cleaned

145+20

*613

0°	4.4'	10°	4.35'	20°	4.1'
30°	4.15'	45°	4.15'	60°	3.95'
75°	4.2'	85°	4.4'	90°	4.2'
100°	4.0'	110°	4.15'	120°	4.6'
130°	4.9'	136°	5.0'	145°	4.7'
160°	4.7'	180°	4.5'	200°	4.5'
210°	4.35'	220°	4.55'	233°	4.35'
245°	3.9'	270°	3.85'	277°	3.95'
290°	3.75'	310°	4.1'	325°	3.9'
340°	4.1'	350°	4.1'		

Bottom cleaned

145+15

614

0°	9.8'	15°	4.7'	30°	4.5'
45°	9.65'	55°	4.1'	70°	4.4'
80°	4.05'	87°	3.75'	90°	3.8'
100°	4.0'	115°	4.1'	130°	4.85'
142°	5.25'	150°	4.9'	180°	4.55'
210°	5.1'	215°	4.75'	221°	4.9'
237°	4.1'	255°	3.8'	262°	3.4'
270°	3.7'	285°	3.9'	300°	4.0'
320°	5.0'	330°	4.8'	345°	4.75'
355°	4.75'				

Bottom Cleaned

145+10

615

0°	4.35'	20°	4.05'	40°	4.4'
50°	4.1'	65°	4.1'	75°	4.4'
85°	3.9'	90°	3.75'	105°	3.95'
115°	4.1'	125°	4.25'	135°	4.35'
145°	4.6'	155°	4.4'	180°	4.25'
205°	4.5'	220°	4.7'	240°	4.05'
260°	3.7'	270°	4.5'	275°	4.35'
285°	4.0'	295°	4.2'	310°	4.2'
325°	4.7'	335°	4.4'	350°	4.55'

Bottom cleaned

145+05	0° 4.4'	15° 4.15'	40° 4.0'
*616	60° 4.6'	80° 4.95'	90° 4.4'
	105° 4.2'	120° 4.5'	135° 4.9'
	147° 5.25'	155° 4.75'	160° 4.3'
	180° 4.0'	195° 4.35'	205° 4.55'
	220° 4.25'	232° 4.35'	255° 4.0'
	270° 3.95'	290° 4.1'	305° 4.1'
	320° 4.4'	335° 4.6'	350° 4.55'

DRY Bottom cleaned

145+00

*617.

0° 4.5'	20° 4.4'	40° 4.6'
45° 4.1'	60° 3.85'	70° 4.05'
80° 4.35'	90° 4.25'	110° 4.6'
125° 4.85'	135° 5.45'	140° 5.4'
155° 4.8'	172° 4.5'	180° 4.25'
200° 4.15'	215° 4.8'	235° 4.6'
250° 3.9'	270° 3.85'	290° 4.0'
300° 4.1'	315° 4.2'	335° 4.65'
345° 4.8'		

Oct. 9, 1958.

LEONARD.
B. ROMERO, JR.

23.

Bottom cleared

SEE SECT. TAKEN OCT. 19.

144+95	0°	4.2	20°	4.1	50°	5.0
618	60°	4.6	80°	4.6	90°	4.05
	105°	4.15	115°	4.55	120°	4.95
	130°	5.2	140°	5.1	150°	4.7
	165°	4.4	180°	4.25	200°	4.6
	220°	5.0	230°	4.55	240°	4.15
	255°	3.9	270°	3.9	290°	3.7
	310°	4.3	320°	3.95	330°	4.0
	340°	3.8	350°	4.1		

Bottom cleared

144+90.

619.

	0°	4.3	10°	4.5	25°	4.45
	40°	4.25	55°	4.3	75°	4.1
	90°	4.2	105°	4.55	120°	4.95
	127°	5.25	136°	5.5	150°	4.95
	165°	4.6	180°	4.4	195°	4.5
	210°	4.2	220°	4.05	240°	3.65
	255°	3.6	270°	3.5	285°	3.75
	300°	4.0	320°	4.3	330°	4.1
	340°	4.3	355°	4.55		

Bottomed cleaned

144+85

*620

0°	4.4	10°	4.2	25°	4.5
40°	4.35	50°	4.25	65°	4.25
80°	4.4	85°	4.7	95°	4.45
105°	4.7	115°	5.1	120°	5.5
138°	6.2	142°	5.9	158°	4.25
180°	4.15	200°	4.35	220°	5.2
230°	4.8	236°	4.25	248°	4.35
270°	3.75	285°	3.65	300°	3.85
320°	4.55	330°	4.6	340°	4.3
350°	4.2				

Bottom cleaned

144+80

*621

0°	4.25	10°	4.2	25°	4.2
45°	4.1	60°	3.8	70°	4.0
90°	4.1	100°	4.25	115°	4.8
123°	6.0	130°	5.3	132°	4.35
140°	4.05	150°	3.95	165°	4.05
180°	3.9	200°	4.15	210°	4.2
225°	4.9	232°	5.1	245°	4.5
260°	4.1	270°	3.95	295°	3.8
310°	4.4	320°	4.6	330°	4.8
345°	4.35	350°	4.55		

Bottom cleaned

144+75

672.

0°	4.25	15°	4.15	25°	4.15
40°	3.8	50°	3.8	65°	3.7
80°	3.25	90°	3.25	105°	3.45
115°	3.45	125°	4.0	135°	4.45
140°	4.7	150°	4.35	155°	4.4
165°	4.05	180°	3.75	200°	4.0
220°	4.65	240°	4.85	250°	4.55
260°	4.15	270°	4.15	280°	4.25
290°	4.65	305°	4.95	320°	4.4
330°	4.45	340°	4.5	350°	4.65
0°	4.7	5°	4.6	12°	5.0
25°	4.6	40°	4.45	50°	4.5
60°	4.55	70°	4.9	80°	3.85
90°	3.6	96°	4.25	105°	4.75
120°	4.2	130°	4.2	140°	4.25
150°	4.6	165°	4.15	180°	4.2
200°	4.4	210°	4.65	225°	4.9
235°	4.4	245°	4.15	260°	4.5
273°	4.7	285°	4.45	300°	4.4
312°	4.6	325°	4.7	335°	4.65

Bottom cleaned

144+70

623.

340° 4.95 348° 5.2 353° 4.5

144+65

#624

0°	4.65	15°	4.75	25°	4.55
30°	4.8	45°	4.65	65°	4.1
78°	4.5	85°	3.85	90°	4.0
100°	4.25	106°	4.0	112°	4.5
130°	4.35				

Muck Pile

240°	5.0	250°	5.1	260°	5.1
270°	4.75	280°	4.5	290°	4.7
305°	4.85	320°	5.0	330°	5.3
340°	5.1	350°	4.8		

144+60

#625

0°	5.0	10°	4.75	20°	4.25
35°	4.0	45°	3.75	60°	4.2
75°	4.6	90°	3.8	96°	4.15
112°	4.0	120°	4.95		

Muck Pile

240°	4.65	250°	4.65	270°	4.5
285°	4.65	300°	4.5	315°	4.8
330°	4.9	340°	4.35	350°	4.45

144+55

0°	4.8	6°	5.05	15°	4.53
30°	4.1	35°	4.8	50°	4.1
60°	4.5	75°	4.4	87°	4.6
90°	4.5	97°	4.45	115°	4.9
130°	5.5	150°	4.3	188	4.0
210°	4.0	235°	5.4	250°	4.9
260	5.0	270°	5.05	282°	5.0
290°	4.4	300°	4.35	315°	4.7
325°	4.8	340°	4.6	350°	4.2

ADJUSTED NORTH PORTAL.

144+53

0°	open	42°	4.35	60°	3.7
75°	4.75	80°	5.65	90°	5.2
100°	4.7	110°	4.75	115°	5.1
135°	5.3	150°	4.6	190°	4.0
210°	4.3	225°	4.15	235°	4.3
450°	4.35	270°	4.2	280°	4.8
290°	5.15	305°	4.9	315°	5.0

See next
page. ~~19~~

Remainder Top open

Oct. 19, 53.

LEONARD.
COLE.

28.

RECHECK X-SECTIONS AFTER TRIMMING.

NOTE: FOLLOWING SECTIONS TAKEN ON CORRECTED
STATIONING, ADJUSTED 0.45'

144 + 53

0°	OPEN	45°	5.2	60°	3.85
72°	4.8	83°	6.5	90°	5.95
95°	5.15	105°	4.85	125°	4.9
145°	4.8	180°	3.65	200°	4.0
215°	4.05	230°	4.3	245°	4.0
255°	4.3	270°	4.0	280°	4.5
295°	4.9	300°	4.6	310°	5.5
REMAINDER		DER		TOP OPEN	

144 + 56

0°	4.9	5°	5.1	15°	4.55
35°	4.15	50°	4.15	70°	4.35
90°	4.7	95°	4.45	110°	4.85
125°	5.8	135°	5.1	155°	4.65
165°	4.35	170°	4.0	180°	4.0
190°	3.9	205°	4.05	220°	4.65
230°	5.5	235°	5.4	250°	5.1
260°	4.9	270°	5.0	290°	5.05
300°	4.55	310°	4.4	325°	4.45
337°	3.8	350°	3.7	355°	3.9

	DEG.	DIST.	DEG.	DIST.	DEG.	DIST.
144+60	0°	4.35	10°	4.75	25°	4.2
	43°	3.8	61°	4.2	75°	4.55
	90°	3.8	102°	4.85	115°	4.45
	118°	4.9	130°	4.7	140°	5.3
	146°	4.85	152°	4.2	166°	4.5
	180°	4.1	190°	3.8	205°	3.8
	220°	4.15	230°	4.5	245°	4.8
	260°	4.85	270°	4.5	280°	4.6
	300°	4.4	315°	4.4	320°	4.7
	322°	4.6	330°	4.85	340°	4.45
	350°	4.6				

144+65	0°	4.7	10°	4.85	20°	4.6
	30°	4.8	38°	4.45	50°	4.55
	53°	4.15	71°	4.5	80°	4.0
	90°	3.9	102°	4.4	106°	4.0
	112°	4.55	120°	4.35	135°	4.25
	150°	4.2	165°	4.2	175°	3.95
	180°	4.1	195°	4.4	205°	4.8

DEG.	DIST.	DEG.	DIST.	DEG.	DIST.
215°	4.9	225°	4.8	227°	5.1
237°	5.0	250°	5.1	266°	5.15
280°	4.5	287°	4.5	295°	5.0
300°	4.85	315°	4.9	325°	5.2
335°	5.4	345°	4.9	350°	4.65
144+70					
0°	4.7	10°	5.0	20°	4.65
30°	4.65	40°	4.5	50°	4.45
60°	4.55	70°	4.7	80°	4.55
90°	4.15	100°	4.5	120°	4.25
135°	4.4	145°	4.55	153°	5.1
160°	4.25	170°	4.15	180°	4.2
185°	4.6	192°	5.0	200°	5.1
206°	4.7	221°	5.25	235°	4.45
245°	4.75	260°	5.15	270°	4.8
285°	4.5	290°	4.2	300°	4.4
310°	4.3	320°	4.65	330°	4.7
340°	4.6	345°	5.1	350°	4.6

	DEG.	DIST.	DEG.	DIST.	DEG.	DIST.
144+75	0°	4.3	10°	4.15	20°	4.2
	35°	3.5	55°	3.7	65°	3.8
	80°	3.7	90°	3.7	100°	4.3
	110°	4.1	120°	4.7	130°	4.6
	140°	4.75	150°	4.5	155°	4.6
	160°	4.15	180°	4.0	200°	4.05
	210°	4.65	216°	4.85	230°	4.70
	240°	4.8	255°	4.55	270°	4.2
	280°	4.3	290°	4.6	300°	4.6
	310°	4.9	320°	4.45	330°	4.3
	340°	4.6	350°	4.6		

144+80	0°	4.15	10°	4.2	20°	4.1
	30°	4.0	40°	4.1	50°	4.15
	60°	4.1	70°	3.85	80°	3.9
	90°	3.9	100°	4.2	110°	4.75
	120°	5.35	125°	6.2	130°	5.7
	135°	4.35	150°	4.0	165°	4.05
	180°	4.0	195°	4.3	210°	4.2

DEG.	DIST.	DEG.	DIST.	DEG.	DIST.	
228°	5.15	240°	4.65	247°	4.7	
260°	4.05	270°	4.05	280°	4.0	
295°	3.9	305°	4.15	315°	4.55	
320°	4.35	335°	4.3	350°	4.4	
144+85	0°	4.35	10°	4.25	20°	4.25
	30°	4.3	40°	4.25	50°	4.2
	60°	4.35	70°	4.5	75°	4.2
	90°	4.8	100°	4.75	110°	5.1
	116°	5.55	130°	6.0	140°	6.5
	150°	4.85	160°	4.25	170°	4.15
	180°	4.15	190°	4.4	205°	4.0
	220°	4.15	230°	4.35	245°	4.4
	260°	3.95	270°	3.9	285°	3.75
	300°	3.8	317°	4.65	335°	4.4
	343°	3.85	350°	3.95	355°	4.15

	DEG.	DIST.	DEG.	DIST.	DEG.	DIST.
144+90	0°	4.25	10°	4.45	25°	4.35
	40°	4.25	50°	4.25	65°	4.2
	80°	4.0	90°	4.25	105°	4.4
	115°	4.8	130°	5.3	135°	5.5
	140°	5.5	150°	4.95	165°	4.55
	180°	4.55	195°	4.7	205°	4.6
	220°	4.1	230°	4.2	245°	4.0
	260°	4.0	270°	4.0	285°	3.95
	300°	4.0	315°	4.3	330°	4.3
	340°	4.15	350°	4.5		

144+95	0°	4.2	15°	4.45	20°	4.25
	30°	4.35	38°	4.7	45°	4.1
	52°	4.35	65°	4.25	75°	4.25
	80°	4.45	90°	4.15	100°	4.0
	110°	4.3	125°	4.16	135°	5.5
	145°	4.9	160°	4.75	180°	4.6
	200°	4.6	213°	4.9	220°	4.4
	245°	3.9	270°	3.85	285°	3.75

Oct. 21, 1953

LEONARD

COLE

34.

DEG.	DIST.	DEG.	DIST.	DEG.	DIST.
295°	4.6	305°	4.0	310°	4.5
325°	4.0	335°	4.1	345°	4.0
355°	4.0				

DEG.	DIST.	DEG.	DIST.	DEG.	DIST.	
145+00	0°	4.4	15°	4.4	40°	4.6
	48°	4.15	60°	3.9	80°	4.35
	90°	4.3	100°	4.4	105°	4.75
	120°	4.8	130°	5.45	142°	5.4
	150°	5.15	160°	4.7	170°	4.65
	180°	4.35	205°	4.25	210°	4.65
	220°	5.2	235°	4.85	245°	4.7
	250°	4.25	270°	4.0	280°	3.95
	295°	4.3	315°	4.15	335°	4.3
	340°	4.7	350°	4.6		

DEG.	DIST.	DEG.	DIST.	DEG.	DIST.	
145+05	0°	4.55	10°	4.2	20°	4.05
	30°	4.0	45°	4.1	60°	4.4
	85°	4.9	90°	4.6	100°	4.4
	118°	4.8	125°	5.0	140°	5.35

DEG.	DIST.	DEG.	DIST.	DEG.	DIST.
150°	4.8	160°	4.3	170°	4.35
180°	4.25	195°	4.55	205°	4.75
210°	4.9	225°	5.05	240°	4.55
255°	4.3	270°	4.05	290°	4.05
305°	4.2	315°	4.4	330°	4.4
335°	4.55	340°	4.55	350°	4.5
	145+10	0°	4.4	10°	4.45
		45°	4.5	50°	4.15
		75°	4.35	90°	4.1
		125°	4.15	135°	4.4
		150°	4.25	160°	4.35
		170°	4.45	180°	4.2
		195°	4.6	200°	4.8
		225°	5.3	230°	4.75
		250°	4.15	265°	4.4
		276°	4.4	290°	3.85
		320°	4.55	330°	4.7
		350°	4.5	340°	4.45

	DEG.	DIST.	DEG.	DIST.	DEG.	DIST.
145+15	0°	4.75	10°	4.7	20°	4.4
	35°	4.6	50°	4.6	53°	4.1
	64°	4.05	75°	4.45	85°	3.8
	90°	3.85	100°	3.9	105°	4.1
	115°	4.15	130°	4.5	141°	5.2
	156°	4.9	165°	4.55	180°	4.5
	195°	4.8	210°	5.05	215°	4.7
	222°	4.85	230°	4.2	245°	4.1
	260°	4.2	270°	3.9	275°	4.05
	290°	3.75	292°	4.05	300°	4.25
	320°	4.9	330°	4.45	340°	4.45
	350°	4.5				

145+20	0°	4.3	10°	4.55	20°	4.15
	35°	4.15	50°	3.9	65°	4.05
	80°	4.2	86°	4.25	90°	4.15
	106°	4.05	115°	4.6	130°	5.15
	140°	4.85	150°	4.65	160°	4.75
	170°	4.65	180°	4.55	195°	4.5

DEG.	DIST.	DEG.	DIST.	DEG.	DIST.
215°	4.7	230°	4.35	240°	4.0
260°	3.8	270°	3.8	280°	4.05
295°	3.25	315°	4.1	320°	4.2
325°	3.95	335°	4.15	340°	4.05
350°	4.15				
145 + 25					
0°	3.7	10°	3.95	25°	4.1
30°	4.15	45°	4.05	55°	4.5
65°	4.5	75°	4.45	90°	4.0
100°	4.35	110°	4.25	120°	4.75
135°	4.95	140°	4.6	150°	4.7
160°	4.5	170°	4.25	180°	4.1
190°	4.05	200°	3.9	210°	4.3
220°	4.3	230°	4.35	240°	4.45
250°	4.3	260°	3.95	270°	4.1
285°	3.95	300°	3.95	310°	4.05
320°	3.85	330°	3.8	345°	3.8
355°	3.95				

	DEG.	DIST.	DEG.	DIST.	DEG.	DIST.
145+30	0°	4.15	10°	4.15	20°	4.3
	30°	4.45	40°	4.6	50°	4.75
	60°	4.3	75°	4.0	85°	3.95
	90°	4.2	105°	4.7	115°	4.3
	125°	4.35	135°	4.95	145°	5.0
	160°	4.45	165°	4.6	180°	4.65
	195°	4.6	205°	4.75	218°	4.75
	218°	4.4	220°	4.5	240°	4.45
	260°	4.35	270°	3.95	280°	3.85
	300°	3.9	310°	3.75	320°	3.85
	330°	3.8	340°	4.05	350°	4.35
	355°	4.05				

145+35	0°	3.9	10°	3.75	30°	3.85
	45°	3.85	60°	4.0	70°	4.1
	85°	4.0	90°	4.4	98°	4.8
	111°	4.65	120°	4.75	135°	4.95
	145°	4.5	155°	4.45	175°	4.2
	180°	4.1	190°	4.15	195°	4.75

DEG.	DIST.	DEG.	DIST.	DEG.	DIST.
205°	4.65	220°	4.25	236°	4.65
245°	4.4	255°	4.25	270°	3.75
285°	3.7	305°	3.9	320°	3.65
336°	3.85	345°	3.85	350°	4.05
145 + 40					
0°	4.55	15°	4.45	30°	4.35
40°	4.4	50°	4.8	60°	4.45
70°	4.2	80°	4.1	90°	3.9
100°	4.1	108°	4.4	110°	4.75
120°	4.9	130°	5.25	135°	5.5
140°	5.05	155°	4.35	165°	4.15
180°	3.8	190°	3.95	205°	4.25
215°	4.35	220°	4.35	230°	5.0
235°	4.85	240°	4.35	250°	4.4
255°	4.55	270°	4.7	280°	4.1
290°	3.95	295°	4.15	300°	4.0
315°	4.0	325°	4.1	335°	3.85
345°	4.05	355°	3.95		

	DEG.	DIST.	DEG.	DIST.	DEG.	DIST.
145+45	0°	4.1	10°	4.45	20°	4.1
	30°	4.0	45°	3.95	60°	4.65
	70°	4.95	80°	5.0	90°	5.1
	105°	5.0	115°	5.0	125°	4.95
	130°	4.95	140°	4.9	150°	4.65
	160°	4.5	170°	4.3	180°	4.25
	190°	4.2	200°	4.15	210°	4.3
	220°	4.5	230°	4.3	240°	3.9
	255°	4.0	270°	4.05	285°	4.0
	300°	4.2	310°	3.95	320°	3.95
	335°	4.2	345°	4.1	355°	4.05

145+50	0°	4.7	10°	4.75	20°	4.8
	35°	4.8	40°	5.1	50°	4.75
	55°	5.0	65°	5.35	75°	5.45
	90°	5.6	100°	5.75	120°	5.75
	130°	5.7	140°	5.4	150°	4.95
	160°	4.55	170°	4.15	180°	4.15
	190°	4.4	200°	4.45	210°	4.75

DEG.	DIST.	DEG.	DIST.	DEG.	DIST.	
200°	4.65	230°	4.5	240°	4.35	
245°	4.6	270°	4.35	272°	3.9	
280°	4.15	295°	4.4	310°	4.4	
318°	4.7	325°	4.55	335°	4.65	
340°	4.55	350°	4.55			
145+55	0°	5.1	10°	4.65	20°	4.4
	30°	4.35	40°	4.0	60°	4.0
	70°	4.2	80°	4.1	90°	4.5
	100°	4.7	110°	4.7	120°	4.9
	126°	5.0	140°	4.9	145°	4.65
	160°	4.1	170°	3.9	180°	4.0
	190°	4.0	206°	4.4	215°	4.4
	220°	4.7	230°	4.75	237°	4.35
	250°	4.15	270°	4.1	280°	4.3
	285°	4.05	295°	4.05	305°	4.1
	315°	4.6	325°	4.25	335°	4.5
	343°	5.0	355°	4.65		

	DEG.	DIST.	DEG.	DIST.	DEG.	DIST.
145+60	0°	4.35	10°	4.1	20°	4.05
	35°	4.2	50°	4.0	55°	4.05
	75°	4.0	85°	4.25	90°	4.15
	188°	4.2	115°	4.35	120°	4.45
	130°	4.4	140°	4.7	145°	4.8
	155°	4.4	165°	4.1	180°	3.9
	195°	3.95	205°	4.1	215°	4.25
	225°	4.5	235°	4.55	250°	4.45
	260°	4.65	270°	4.5	285°	4.2
	294°	4.1	296°	3.85	315°	4.3
	325°	4.2	340°	4.5	350°	4.65
145+65	0°	4.6	10°	4.55	20°	4.7
	30°	4.4	45°	4.15	50°	4.4
	60°	4.35	65°	3.75	75°	3.8
	90°	3.9	95°	3.75	110°	4.45
	120°	4.55	130°	4.25	140°	4.25
	150°	4.1	160°	4.0	170°	4.1
	180°	4.0	195°	4.05	210°	4.35

220°	4.6	230°	4.75	240°	4.65
250°	4.55	270°	4.55	280°	4.35
290°	4.1	305°	4.0	310°	4.45
320°	4.2	330°	4.1	340°	4.5
350°	4.4				

145+70

0°	5.05	10°	4.65	20°	4.55
35°	3.95	40°	4.35	50°	4.25
65°	4.2	80°	4.05	90°	4.25
95°	4.4	110°	4.4	115°	4.15
125°	4.5	135°	4.4	147°	4.45
160°	4.15	170°	4.05	180°	4.05
195°	4.15	205°	4.4	220°	5.2
230°	5.15	240°	4.95	250°	4.8
270°	4.05	285°	3.9	300°	3.95
315°	4.05	325°	4.25	335°	4.5
348°	4.45	352°	5.05		

145+75	0°	4.6	10°	4.6	25°	4.35
	40°	4.3	50°	4.15	65°	4.2
	75°	4.25	90°	4.25	95°	3.9
	110°	4.05	120°	4.15	130°	4.1
	140°	4.1	147°	4.0	150°	4.2
	160°	4.0	170°	3.95	180°	3.95
	195°	4.05	210°	4.3	220°	4.5
	235°	4.65	250°	4.5	260	4.45
	270°	4.15	285°	4.0	300°	3.95
	315°	4.05	330°	4.0	340°	4.35
	350°	4.65				

145+80	0°	4.95	10°	4.3	25°	3.95
	35°	3.8	50°	4.25	55°	4.35
	65°	3.9	75°	3.85	85°	3.75
	90°	3.7	105°	3.7	115°	3.9
	130°	4.2	140°	4.05	145°	4.35
	150°	4.2	165°	4.0	180°	4.05
	200°	4.3	210°	4.35	230°	4.55

250°	4.6	260°	3.95	270°	4.05
280°	4.05	290°	4.0	300°	3.95
310°	3.8	325°	3.85	335°	4.05
340°	4.25	350°	4.6	356°	5.05

145+85

0°	4.15	10°	3.85	25°	4.05
40°	4.05	45°	4.2	60°	4.2
70°	4.25	75°	3.8	80°	3.7
90°	3.8	100°	3.9	110°	4.0
120°	4.1	135°	4.45	150°	4.25
165°	3.85	180°	3.85	195°	3.95
210°	3.9	215°	3.95	220°	4.4
230°	4.4	235°	4.5	245°	4.5
250°	4.15	260°	3.9	270°	3.85
290°	3.95	310°	3.9	325°	4.1
335°	4.3	345°	4.4	350°	4.5

145+90

0°	4.1	10°	4.15	20°	4.3
30°	4.2	40°	3.95	50°	3.95

70°	4.2	80°	3.85	90°	4.0
105°	3.9	115°	4.1	125°	3.95
140°	4.1	145°	4.05	150°	4.15
165°	3.9	180°	3.65	190°	3.85
205°	4.1	215°	4.25	230°	4.25
245°	4.15	260°	4.15	270°	4.2
285°	4.0	295°	4.1	305°	4.15
315°	4.25	325°	4.15	330°	4.2
340°	4.2	350°	4.25		

145 + 95

0°	4.7	10°	4.55	20°	4.5
30°	4.45	40°	4.0	50°	3.9
60°	3.8	70°	4.1	80°	4.4
90°	4.35	100°	4.05	110°	3.95
125°	4.35	130°	4.5	140°	4.25
150°	4.0	170°	3.75	180°	3.75
195°	3.85	215°	4.55	225°	4.3
240°	4.0	250°	4.05	270°	4.05
280°	4.5	285°	4.4	290°	4.35

OCT. 28, '53.

LEONARD
COLE.

47.

300°	4.5	310°	4.65	325°	4.9
340°	4.55	350°	4.65		

146+00

0°	4.9	10°	5.05	20°	4.8
35°	4.9	50°	4.5	65°	4.1
75°	4.35	85°	4.2	90°	4.1
105°	4.2	115°	4.2	125°	5.0
140°	4.6	150°	4.15	165°	3.8
180°	3.6	190°	3.6	195°	4.0
205°	4.4	215°	4.5	225°	4.65
235°	3.9	240°	3.8	250°	4.15
270°	3.95	285°	4.15	290°	3.95
300°	3.9	305°	4.1	320°	4.0
325°	4.5	335°	4.75	340°	4.75
350°	4.75				

146+05

0°	4.3	15°	4.95	25°	4.7
35°	4.95	37°	4.55	50°	4.75
60°	4.65	70°	5.05	80°	4.5

	DEG.	DIST.	DEG.	DIST.	DEG.	DIST.
146 + 05 cont'd.	90°	4.15	100°	4.15	110°	4.55
	125°	4.65	136°	4.5	146°	4.25
	150°	4.15	165°	3.9	180°	4.0
	205°	4.25	215°	4.5	225°	4.35
	232°	4.45	245°	4.1	260°	3.9
	270°	3.7	285°	3.9	300°	4.25
	310°	4.25	320°	4.25	330°	4.3
	340°	4.15	350°	4.15		

146 + 10	0°	4.25	10°	3.95	20°	4.1
	35°	4.1	50°	4.2	60°	4.15
	70°	4.0	80°	3.9	90°	4.0
	105°	4.1	115°	4.45	130°	4.65
	140°	4.3	150°	4.1	165°	3.8
	180°	3.65	190°	3.85	205°	4.0
	215°	4.3	230°	4.8	240°	4.1
	255°	4.15	270°	4.15	285°	4.25
	300°	4.15	310°	4.15	320°	3.9
	330°	4.0	340°	4.05	350°	4.45

146 + 15	0°	4.6	10°	4.8	20°	4.55
	30°	4.4	45°	4.5	60°	4.25
	70°	4.1	80°	4.35	90°	4.3
	105°	4.4	120°	4.6	132°	5.5
	140°	5.05	150°	4.4	165°	4.0
	180°	4.1	195°	4.3	208°	4.3
	225°	3.9	240°	4.35	247°	4.7
	255°	4.7	265°	4.25	270°	4.3
	275°	3.95	290°	3.95	300°	3.9
	310°	3.9	315°	4.1	325°	4.2
	330°	4.45	340°	4.65	350°	4.5

146 + 20	0°	4.75	10°	4.55	25°	4.2
	40°	3.9	50°	3.95	65°	4.1
	75°	4.05	85°	4.2	90°	4.25
	105°	4.45	120°	4.6	130°	4.75
	140°	4.4	150°	4.1	155°	3.75
	170°	3.75	180°	3.85	195°	3.9
	210°	4.15	220°	4.15	226°	4.85

DEG.	DIST.	DEG.	DIST.	DEG.	DIST.	
235°	4.65	245°	4.4	255°	4.55	
265°	4.3	280°	3.95	295°	4.2	
305°	3.9	315°	4.05	325°	4.1	
335°	4.0	345°	4.3	350°	4.6	
146+25	0°	4.25	10°	4.05	20°	3.8
	35°	3.75	40°	4.05	50°	4.1
	60°	4.2	70°	4.25	80°	4.55
	90°	5.0	100°	4.9	115°	4.8
	125°	4.5	135°	4.15	145°	4.2
	160°	3.8	170°	3.7	180°	3.75
	195°	3.8	210°	3.8	220°	4.1
	240°	4.1	245°	4.55	260°	4.3
	270°	4.0	285°	3.9	295°	3.8
	300°	3.75	315°	3.9	320°	3.85
	330°	4.05	340°	4.05	350°	4.05
146+30	0°	4.9	10°	4.75	20°	4.3
	25°	4.1	35°	4.25	42°	4.3

146+30 CONT'D

55°	4.1	70°	4.1	80°	4.1
90°	4.05	105°	4.05	120°	4.15
130°	4.05	140°	4.55	145°	4.25
150°	4.1	160°	3.8	180°	3.65
195°	3.8	210°	4.3	225°	5.15
230°	5.0	243°	4.45	260°	4.45
270°	4.5	281°	3.75	295°	3.75
300°	3.85	315°	3.9	325°	4.0
335°	4.2	345°	4.55	350°	4.85

146+35

0°	4.65	5°	4.85	15°	4.9
25°	4.35	35°	4.3	50°	4.5
65°	4.25	80°	4.25	90°	4.2
110°	4.0	120°	4.0	135°	4.15
145°	4.15	155°	4.0	170°	3.85
180°	3.9	200°	4.0	210°	4.15
220°	4.35	230°	4.25	236°	4.55
245°	4.1	257°	4.1	260°	4.2
270°	4.5	285°	4.0	295°	4.0

DEG.	DIST.	DEG.	DIST.	DEG.	DIST.	
310°	4.1	320°	4.15	330°	4.25	
340°	4.2	350°	4.6			
146+40	0°	15°	4.1	30°	3.95	
	50°	4.4	65°	4.45	77°	5.15
	80°	4.15	90°	4.2	110°	3.95
	130°	4.3	145°	4.0	155°	4.2
	170°	4.0	180°	3.95	200°	4.25
	210°	4.1	215°	4.4	225°	4.5
	230°	4.45	245°	4.1	255°	3.9
	270°	3.8	285°	3.85	295°	3.85
	310°	4.1	325°	4.15	330°	4.2
	340°	4.3	345°	4.1	350°	4.15
	335°	4.45				

146+45	0°	4.6	10°	4.35	25°	4.15
	40°	4.15	55°	3.9	60°	3.95
	75°	3.85	85°	4.05	90°	3.8
	100°	3.95	115°	4.3	127°	4.65

	DEG.	DIST.	DEG.	DIST.	DEG.	DIST.
146+45 CONT'D	135°	4.4	150°	4.05	170°	3.75
	180°	3.8	190°	3.8	200°	3.85
	210°	4.0	220°	4.0	235°	4.25
	250°	3.9	260°	3.85	270°	3.85
	285°	3.85	295°	3.7	305°	3.75
	315°	4.0	325°	4.05	335°	4.0
	342°	3.95	350°	4.25		
146+50	0°	4.5	10°	4.65	20°	4.35
	30°	3.95	40°	4.0	50°	4.15
	56°	4.35	60°	4.05	75°	4.0
	90°	4.65	95°	4.25	110°	4.0
	120°	4.0	130°	4.6	138°	5.0
	145°	4.9	150°	4.75	160°	4.35
	170°	4.2	180°	4.05	190°	4.0
	200°	4.1	215°	4.25	225°	4.25
	240°	4.25	260°	4.25	270°	4.15
	285°	4.0	300°	3.65	315°	3.7
	330°	4.0	340°	4.35	350°	4.25

146+55

0°	4.75	10°	4.5	20°	4.3
25°	4.35	35°	4.0	45°	4.0
55°	4.1	70°	3.95	75°	3.8
90°	4.4	100°	4.4	110°	3.9
120°	3.7	130°	3.9	140°	4.15
150°	3.9	165°	3.65	180°	3.5
200°	3.75	220°	4.4	235°	4.05
245°	4.1	260°	3.9	270°	3.65
285°	3.6	295°	3.5	306°	3.35
315°	3.95	325°	3.9	340°	4.2
350°	4.25	355°	4.75		

LEWIS
COLE

OCT. 29 '53

LEONARD

55.

C622

RE-X SECTION AFTER TRIMMED & CLEANED.

146+60

0°	4.3	10°	4.3	25°	4.55
35°	4.5	45°	4.3	50°	4.6
60°	4.3	75°	4.1	80°	4.1
90°	4.0	100°	4.25	110°	4.1
120°	4.15	135°	4.25	145°	4.0
160°	3.75	180°	3.6	190°	3.75
210°	4.1	220°	4.35	235°	4.45
250°	4.1	270°	4.1	280°	3.85
290°	3.9	300°	4.1	305°	4.25
320°	4.05	330°	4.0	340°	4.0
350°	4.2				

146+65

0°	3.95	15°	4.0	35°	4.35
50°	4.1	60°	4.1	70°	3.65
80°	3.65	90°	3.75	110°	3.85
125°	4.0	135°	3.95	150°	3.7
165°	3.75	180°	3.7	205°	4.0
215°	4.25	225°	4.45	240°	4.2
255°	4.15	270°	4.1	285°	4.3

	DEG.	DIST.	DEG.	DIST.	DEG.	DIST.
146+65 cont'd	290°	4.0	300°	3.95	310°	4.1
	320°	4.1	330°	4.05	340°	3.95
	350°	4.0				

146+70	0°	4.35	5°	4.45	15°	4.2
	30°	4.05	45°	4.0	50°	4.05
	60°	4.0	70°	3.7	80°	3.7
	90°	3.7	100°	3.7	110°	3.95
	125°	4.0	135°	4.15	150°	3.9
	160°	3.75	180°	3.7	190°	3.8
	200°	3.7	210°	4.0	220°	4.35
	235°	4.9	250°	4.35	270°	4.0
	280°	3.95	295°	3.75	305°	4.0
	320°	4.2	330°	4.05	340°	3.9
	350°	4.0				

146+73	0°	4.25	20°	4.35	35°	4.5
	50°	4.9	60°	5.0	70°	5.35
	80°	5.4	90°	5.4	100°	5.1

146+73 cont'd	110°	5.1	120°	4.8	135°	4.6
	150°	4.2	160°	4.1	180°	4.1
	200°	4.2	215°	4.55	225°	4.3
	250°	4.3	260°	4.5	270°	4.3
	280°	4.4	290°	3.85	305°	3.9
	320°	4.25	335°	3.85	340°	4.15
	350°	4.25				

146+75	0°	5.15	5°	5.25	20°	4.8
	30°	4.75	45°	4.8	60°	4.9
	70°	6.5	85°	6.5	90°	6.3
	100°	6.3	120°	6.8	135°	5.1
	145°	4.5	160°	3.95	180°	3.85
	200°	3.8	215°	4.3	230°	4.5
	240°	4.85	250°	4.8	260°	4.3
	270°	4.35	285°	4.2	300°	4.1
	310°	4.15	320°	4.55	330°	4.3
	340°	4.35	350°	5.1		

146780	0°	4.7	10°	4.6	20°	4.7
	30°	4.45	40°	4.2	50°	4.9
	60°	5.2	70°	5.6	80°	5.8
	90°	6.3	110°	6.5	115°	7.0
	125°	6.0	135°	5.05	145°	4.75
	160°	4.35	180°	4.0	190°	3.8
	200°	4.0	220°	4.4	240°	3.8
	255°	3.75	270°	3.9	290°	3.6
	310°	3.9	330°	4.05	340°	4.15
	350°	4.55				

146783	0°	5.0	10°	5.2	20°	4.9
	30°	4.75	45°	4.35	60°	4.75
	80°	4.55	90°	4.85	105°	5.25
	115°	5.25	130°	5.5	140°	5.0
	150°	4.6	165°	4.35	180°	4.3
	195°	4.3	215°	4.75	230°	4.15
	240°	4.05	250°	3.8	270°	3.85
	275°	4.0	295°	3.7	305°	4.2

146+83 cont'd	320°	4.0	330°	3.9	340°	4.1
	350°	4.6				

146+85	0°	4.8	10°	4.7	20°	4.3
	30°	4.1	40°	4.15	55°	4.15
	70°	4.05	80°	4.1	90°	4.2
	100°	4.7	110°	4.6	115°	4.85
	125°	4.95	135°	4.65	140°	4.6
	150°	4.4	165°	4.35	170°	4.45
	180°	4.05	190°	3.95	200°	4.0
	210°	4.15	220°	4.25	230°	4.05
	245°	3.8	265°	3.55	270°	3.65
	280°	3.6	295°	3.85	310°	3.8
	325°	3.9	340°	4.35	350°	4.6

146+90	0°	4.45	10°	4.5	25°	4.35
	35°	4.45	50°	4.35	60°	4.5
	70°	4.5	80°	4.4	90°	4.55
	100°	4.5	115°	4.45	130°	4.4

146+90 cont'd	145°	4.5	155°	4.85	170°	4.25
	180°	4.0	200°	3.9	210°	4.25
"	225°	4.5	240°	4.2	260°	3.9
	270°	3.95	285°	3.7	300°	3.7
	315°	3.75	330°	3.8	340°	4.05
	350°	4.35				

146+95	0°	4.4	10°	4.55	20°	4.6
	30°	4.5	40°	4.4	55°	4.3
	70°	4.1	80°	4.05	90°	3.95
	105°	4.0	120°	4.4	130°	4.6
	140°	4.7	150°	4.95	160°	4.85
	180°	4.5	200°	4.7	210°	4.7
	230°	4.45	240°	4.05	250°	4.1
	260°	4.05	270°	4.0	285°	4.05
	300°	4.25	305°	4.4	315°	4.1
	330°	4.15	340°	4.15	350°	4.25

147+00

0°	4.25	15°	4.2	30°	4.4
40°	4.3	55°	4.3	75°	4.2
90°	4.25	100°	4.2	110°	4.2
125°	4.35	135°	4.35	145°	4.3
160°	4.3	175°	4.35	180°	4.2
195°	4.15	210°	4.3	225°	4.75
235°	4.55	255°	4.05	265°	4.15
270°	4.0	280°	3.85	295°	3.85
310°	4.0	325°	4.05	340°	4.05
350°	4.0				

147+05

0°	4.65	20°	4.1	35°	3.85
50°	3.9	60°	4.05	75°	4.0
90°	4.0	110°	4.3	120°	4.45
125°	5.0	140°	5.0	150°	5.0
160°	5.0	170°	4.6	180°	4.3
195°	4.45	210°	4.35	220°	4.5
235°	4.35	250°	4.4	260°	4.0
270°	3.95	280°	3.85	295°	3.95

	DEG.	DIST.	DEG.	DIST.	DEG.	DIST.
147+05 Contd	310°	3.7	320°	3.65	335°	4.0
	340°	3.95	350°	4.25		

147+10	0°	4.2	25°	3.6	35°	3.95
	50°	4.15	65°	4.25	75°	4.15
	85°	4.25	90°	4.2	105°	3.85
	115°	3.85	130°	4.15	140°	4.45
	145°	4.65	155°	4.55	170°	4.2
	180°	4.1	190°	4.3	195°	4.15
	205°	4.6	215°	4.6	220°	5.0
	230°	4.65	245°	4.7	260°	4.3
	270°	4.1	280°	3.9	295°	3.75
	310°	3.6	320°	3.6	335°	3.75
	340°	3.95	350°	4.05		

147+15	0°	4.55	10°	4.45	25°	4.35
	40°	4.2	50°	4.25	60°	4.15
	75°	3.9	90°	3.95	105°	4.35
	120°	4.65	130°	4.8	140°	5.0

147+15 cont'd	150°	4.5	160°	4.25	175°	3.7
	180°	3.9	190°	4.3	200°	4.35
	210°	4.35	220°	4.6	230°	4.7
	250°	4.3	260°	4.5	270°	4.55
	285°	3.95	300°	3.8	310°	3.75
	325°	3.85	335°	4.2	350°	4.6

Oct. 30, '53

LEONARD,
COLE.

147+20	0°	4.15	10°	4.45	25°	4.2
	40°	4.55	55°	4.1	75°	3.9
	90°	3.85	105°	4.3	120°	4.65
	130°	4.7	145°	4.25	160°	4.15
	170°	3.95	180°	3.85	190°	4.0
	200°	4.15	210°	4.35	220°	4.4
	225°	4.15	235°	4.2	250°	3.85
	260°	3.9	270°	4.15	275°	4.0
	285°	4.2	295°	4.3	305°	4.4
	310°	4.65	320°	4.2	330°	4.0
	340°	4.05	350°	4.1		

147+25	0°	4.3	10°	4.35	20°	4.35
	30°	4.05	40°	3.95	50°	4.0
	70°	4.05	90°	4.35	95°	4.55
	110°	4.1	125°	4.25	135°	4.3
	150°	3.95	165°	3.7	180°	3.7
	195°	3.65	210°	3.9	220°	4.35
	230°	4.35	240°	4.1	255°	4.1
	270°	3.9	285°	4.1	300°	4.0
	310°	4.2	320°	4.5	330°	4.7
	340°	4.6	350	4.45		

147+30	0°	4.4	10°	4.25	20°	4.05
	30°	4.05	55°	4.1	70°	4.1
	90°	4.4	100°	4.5	110°	4.25
	120°	4.5	130°	4.85	140°	4.95
	150°	4.65	160°	4.5	170°	4.1
	180°	4.0	190°	3.85	200°	4.2
	210°	4.65	215°	4.95	220°	5.0
	225°	5.1	235°	4.95	245°	4.4

147+30 contd	260°	4.0	270°	3.8	285°	3.9
	300°	3.9	305°	4.25	325°	4.05
	335°	4.15	345°	4.45	355°	4.6

147+35	0°	4.05	15°	4.3	30°	4.0
	50°	4.0	70°	4.2	80°	4.2
	90°	4.25	105°	4.15	120°	4.45
	125°	4.7	140°	5.0	150°	4.4
	160°	4.15	170°	4.2	180°	4.1
	190°	4.15	195°	4.15	205°	4.85
	210°	5.1	220°	5.35	230°	5.1
	245°	4.95	260°	4.4	270°	4.5
	280°	4.25	290°	4.4	300°	4.25
	310°	4.15	325°	4.25	340°	4.1
	350°	4.2				

147+40	0°	4.5	10°	4.3	25°	4.3
	40°	4.05	55°	4.0	70°	4.0
	90°	4.2	100°	4.5	115°	4.55

147+40 Cont'd	125°	5.0	140°	5.0	150°	4.5
	160°	4.1	170°	4.0	180°	4.1
	190°	4.0	200°	3.9	220°	4.05
	228°	4.75	235°	4.55	250°	4.5
	270°	4.55	280°	4.7	290°	4.55
	300°	4.5	310°	4.7	320°	4.95
	330°	4.75	340°	4.4	350°	4.3

147+45	0°	4.8	15°	4.55	30°	4.1
	40°	4.25	55°	4.15	70°	4.0
	80°	4.2	90°	3.9	105°	4.3
	115°	4.7	135°	5.75	150°	4.75
	160°	4.25	180°	4.25	190°	4.15
	200°	4.15	215°	4.35	225°	4.35
	240°	3.9	250°	3.8	260°	3.95
	270°	4.25	280°	4.55	290°	4.3
	300°	4.4	320°	4.25	335°	4.55
	340°	4.8	350°	4.7		

	DEG.	DIST.	DEG.	DIST.	DEG.	DIST.
147+50	0°	4.3	15°	4.35	30°	4.6
	50°	4.6	65°	4.6	80°	5.0
	90°	4.2	100°	3.95	110°	4.5
	120°	5.0	130°	5.2	140°	4.45
	150°	4.2	160°	4.15	170°	4.15
	180°	3.9	190°	3.85	210°	3.85
	215°	3.9	220°	4.15	230°	4.05
	240°	4.35	250°	4.3	260°	4.3
	270°	4.1	280°	3.85	290°	3.95
	300°	3.75	315°	4.2	325°	4.15
	335°	4.05	340°	4.05	350°	4.05
	355°	4.25				

147+55	0°	5.0	20°	4.8	25°	4.5
	35°	4.8	50°	4.6	65°	4.4
	80°	4.55	90°	4.55	100°	4.8
	110°	4.7	120°	4.7	130°	4.8
	135°	4.5	145°	4.4	160°	4.1
	170°	4.15	180°	4.1	190°	4.25

147+55 cont.	200°	4.35	210°	4.55	220°	4.55
	230°	4.5	240°	4.6	250°	4.1
	270°	3.85	285°	3.2	315°	4.1
	325°	3.65	330°	3.85	340°	4.05
	345°	4.35	350°	4.6		

147+6.0	0°	4.4	20°	4.7	30°	5.0
	40°	4.65	50°	4.65	60°	4.75
	80°	5.15	90°	4.75	100°	4.55
	110°	4.6	125°	4.75	135°	4.3
	145°	3.95	160°	3.95	170°	4.1
	180°	4.15	190°	4.45	200°	4.6
	210°	4.8	220°	5.1	230°	4.75
	240°	4.35	250°	4.55	260°	4.65
	270°	4.15	290°	3.95	305°	3.95
	310°	4.05	325°	4.2	330°	4.3
	340°	4.35	350°	4.35		

147+65

0°	4.65	15°	4.2	30°	4.25
40°	4.2	50°	4.4	60°	4.65
65°	4.8	80°	4.4	90°	4.0
100°	4.05	115°	4.4	125°	4.5
135°	4.9	145°	4.3	155°	4.25
170°	4.05	180°	3.9	200°	4.25
210°	4.9	220°	5.2	230°	4.55
240°	4.5	250°	4.6	260°	4.25
270°	4.25	290°	4.4	295°	4.2
310°	4.35	320°	4.75	335°	4.65
345°	4.55	350°	4.35		

147+70

0°	4.9	10°	4.65	25°	4.2
40°	4.15	50°	4.2	60°	4.35
70°	4.35	90°	4.65	100°	4.45
110°	4.3	120°	4.6	125°	4.85
130°	4.65	140°	4.15	150°	3.85
160°	3.75	170°	3.8	180°	3.85
190°	3.95	200°	4.05	205°	4.2

147+70 cont'd	210°	4.2	216°	4.4	225°	4.4
	235°	4.45	245°	4.3	255°	4.35
	270°	4.3	280°	4.4	290°	4.55
	300°	5.0	310°	5.0	320°	4.95
	330°	5.15	340°	5.0	345°	5.15
	350°	4.95				

147+75	0°	4.3	15°	4.25	30°	4.3
	40°	4.4	50°	4.1	65°	4.0
	80°	4.6	90°	4.3	100°	4.2
	115°	4.3	125°	4.8	135°	4.85
	140°	4.7	150°	4.4	160°	4.25
	170°	4.65	180°	3.95	190°	3.85
	205°	4.0	210°	4.3	220°	4.5
	230°	4.4	240°	4.25	250°	4.05
	270°	4.15	280°	3.9	290°	4.0
	300°	4.3	310°	4.6	325°	5.15
	340°	4.55	350°	4.75		

	DEG.	DIST.	DEG.	DIST.	DEG.	DIST.
147+80	0°	5.6	10°	5.3	20°	5.1
	30°	4.9	40°	4.65	50°	4.4
	60°	4.5	70°	4.05	80°	4.6
	90°	4.4	100°	4.6	110°	4.45
	120°	4.5	130°	4.55	140°	4.55
	150°	4.3	160°	4.0	180°	3.85
	190°	3.85	200°	3.75	210°	4.05
	225°	4.5	240°	4.05	245°	4.0
	255°	4.15	265°	4.25	270°	4.0
	290°	4.0	300°	4.15	310°	4.35
	320°	4.8	325°	4.6	330°	4.85
	340°	5.05	350°	5.5		

147+85	0°	4.8	10°	4.6	25°	4.55
	30°	4.45	40°	5.0	50°	4.15
	60°	4.05	70°	4.05	80°	4.15
	90°	4.1	100°	4.0	110°	4.2
	120°	4.35	130°	4.5	140°	4.85
	150°	4.35	160°	4.1	170°	4.0

147+85 cont'd

180°	3.9	195°	3.9	205°	3.85
220°	4.35	230°	4.5	240°	4.5
255°	5.0	270°	4.4	290°	4.3
300°	4.3	310°	4.5	320°	4.8
330°	4.65	335°	5.05	345°	5.1
350°	5.05				

147+90

0°	4.95	10°	4.85	25°	4.55
35°	4.7	50°	4.15	60°	4.05
70°	4.0	85°	4.35	90°	4.1
100°	4.0	110°	4.0	120°	4.3
125°	4.7	135°	5.0	140°	4.7
150°	4.25	160°	4.1	170°	3.9
180°	3.9	190°	4.15	200°	4.35
210°	4.65	215°	4.95	225°	5.3
230°	5.2	240°	4.85	250°	4.75
260°	4.75	270°	4.35	280°	4.25
290°	4.4	300°	4.35	310°	4.5
320°	4.65	325°	4.65	330°	4.45

147+90 cont'd

340° 4.3 350° 4.65

147+95

0° 4.15 10° 4.1 20° 4.1

30° 4.1 40° 4.3 50° 4.0

65° 4.1 80° 4.3 90° 4.05

105° 4.05 115° 4.3 130° 4.35

140° 4.1 150° 3.8 160° 3.9

170° 3.85 180° 3.9 190° 4.05

200° 4.35 210° 4.7 220° 4.65

230° 4.55 240° 4.4 250° 4.4

265° 4.3 270° 4.05 280° 3.95

295° 4.0 305° 4.15 315° 4.35

330° 4.05 340 3.85 350° 4.1

148+00

0° 4.8 10° 4.6 20° 4.35

30° 4.1 40° 4.1 50° 4.25

60° 4.05 65° 4.05 80° 4.05

90° 3.95 100° 3.85 110° 3.95

125° 4.25 140° 4.5 150° 4.2

148400 Cond'd	160°	3.8	170°	3.75	180°	3.65
	190°	3.85	195°	4.1	200°	4.3
	210°	4.4	215°	4.6	230°	4.5
	240°	4.55	250°	4.1	260°	4.1
	270°	3.9	285°	3.85	295°	3.95
	310°	4.05	315°	4.25	320°	4.1
	330°	4.2	340°	4.25	350°	4.55

Recon - JAN. 16, 1954

LEONARD
HAGLUND.

75,

RECON-SECTION S. END AFTER TRIMMED.

Top Timbered

	DEG.	DIST.	DEG.	DIST.	DEG.	DIST.
172+32 PORTAL,	40°	4.3	60°	4.45	75°	4.65
	90	4.25	110	4.4	135	4.8
	145	4.5	160	4.3	180	4.2
	190	4.0	205	4.05	220	4.4
	232	5.0	240	4.7	260	4.5
	270	4.3	280	4.3	295	4.9
	315	4.6				

172+295	0	4.95	15	4.45	45	4.2
	65	4.35	90	4.2	105	4.15
	135	5.25	145	4.7	155	4.45
	180	4.1	200	4.15	215	4.7
	230	4.9	240	4.4	250	4.75
	260	4.75	270	4.55	290	4.55
	300	4.7	320	4.6	330	4.65
	340	4.25	345	4.5	350	5.0

172+24.3	0	4.85	10	4.7	25	4.1
	40	4.05	60	4.15	75	4.1

172 + 24.3
(Cont)

90	4.15	110	4.4	130	4.85
150	4.3	165	3.85	170	4.15
180	4.25	190	4.1	195	3.9
205	4.0	220	4.5	230	4.95
250	4.35	270	4.45	290	4.7
310	4.4	320	4.5	335	4.4
345	4.3				

172 + 22.5

0	4.45	10	4.1	25	4.1
45	4.75	70	4.5	90	3.9
110	4.0	120	4.4	140	4.2
160	4.0	170	4.15	180	4.2
195	4.05	210	4.3	230	5.3
245	4.4	260	4.15	270	4.5
285	5.6	290	5.7	296	5.2
310	5.85	315	5.5	320	5.25
335	4.45	340	4.55	350	4.4

172 + 20

0	5.25	10	4.8	20	4.85
25	4.7	40	4.25	50	4.4
70	4.1	90	4.0	100	3.9
115	4.15	135	5.1	150	4.55
160	4.3	180	4.1	200	4.35
220	4.55	230	5.3	255	4.5
270	5.0	285	4.6	295	4.4
310	6.1	325	5.35	335	5.1
340	5.3	350	5.2		

172 + 15

0	6.0	10	6.4	20	5.35
35	5.1	40	5.0	50	4.3
65	4.25	80	4.15	90	4.2
105	4.4	115	4.3	140	4.65
150	4.4	170	4.25	180	4.3
205	4.4	220	4.65	230	5.4
245	5.2	260	5.0	270	4.95
280	5.0	295	5.25	305	4.95
310	5.2	315	5.1	330	4.9
340	5.0	3.50	5.0		

	DEC.	DIST.	DEC.	DIST.	DEC.	DIST.
172+10	0	5.0	15	4.5	25	4.7
	40	4.9	55	4.3	65	4.65
	75	4.8	80	4.45	90	4.3
	100	4.8	110	4.7	130	5.1
	140	4.45	160	4.0	170	4.0
	180	4.05	195	4.15	210	4.5
	220	4.9	230	5.15	240	5.1
	255	4.5	270	4.4	280	4.75
	300	4.4	310	4.65	320	5.4
	335	5.2	345	4.95	355	5.0

172+05	0	5.5	10	5.4	25	5.25
	35	5.3	45	5.1	55	4.75
	70	4.75	80	4.7	90	4.5
	105	4.55	115	4.75	130	5.0
	145	4.3	160	4.0	170	4.05
	180	4.0	195	4.0	210	4.25
	220	4.65	235	5.35	245	4.9
	260	4.4	270	4.3	285	4.4

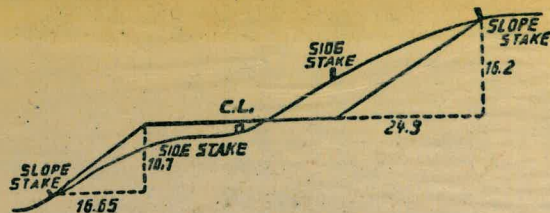
	Deq	Dist	Deq	Dist	Deq	Dist
172†	305	4.85	315	5.2	320	5.75
	335	5.6	345	5.75		
172 + 00	0	5.0	10	5.0	20	5.0
	35	4.95	50	4.65	70	4.2
	90	4.05	110	4.2	130	4.55
	150	4.05	170	3.8	180	3.7
	195	3.8	210	4.15	230	5.1
	245	4.3	260	4.05	270	4.0
	290	4.35	305	4.45	315	4.6
	325	5.2	330	5.3	350	5.25

Refer to Book # 845-B

Pg. 38

SPAD # 51.	147+15.01	CUT 4.39
" # 52.	146+55.55	" 4.80
" # 53.	145+98.39	" 4.47
" 54.	145+49.52	" 4.21
" 55.	144+97.62	" 4.13
" PORTAL FRAME	144+51.21	" 3.73

1899.67
 3.73
 1901.40 - 1901.46



DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING.
 SLOPE 1 1/2 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	71.20	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

THE NATIONAL BLANK BOOK COMPANY
 HOLYOKE MASSACHUSETTS
 NEW YORK CHICAGO BOSTON SAN FRANCISCO