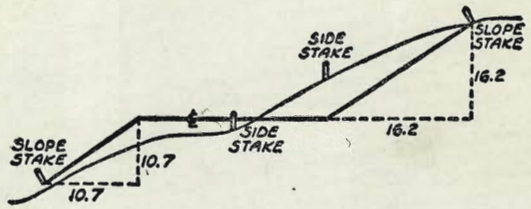


Distances from Side Stakes for Cross-Sectioning

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 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.

IMPROVED TABLES AND INFORMATION

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	.70	.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	4.98	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	.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	.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

PG

BALBOA AVE SLOPE STAKE 1-19

SWOC

SEOC 21

STA	SUPER	SLOPE	LT.	HINGE			℄	RT EP	HINGE	HINGE
+25		1:1		52.08 / 41	53.08 / 38	53.48 / 30				
15+		+0.3 ⑤	47.5 / C 5.5 / 5.5	50.72 / 41	51.72 / 38	52.12 / 30				
+75				49.44 / 41	50.44 / 38	50.84 / 30				
+50		+0.4 ⑤	48.9 / C 6.9 / 6.9	48.24 / 41	49.24 / 38	49.64 / 30				
+25				46.91 / 41	47.91 / 38	48.31 / 30				
14+		+0.2 ⑤	51.5 / C 9.5 / 9.5	45.97 / 41	46.97 / 38	47.37 / 30				
+75				45.11 / 41	46.11 / 38	46.51 / 30				
+50		+0.4 ⑤	51.6 / C 9.6 / 9.6	44.23 / 42-41	45.23 / 38	45.63 / 30				
+25		+0.1 ⑤	50.3 out / C 8.6 / 8.6	BK EDGE CB CB 44.95 / 41.72						
13+00		1:1	+0.6 ⑤ 50 out / C 7.9 / 7.9	BACK EDGE CURB CB 44.23 / 42.22						

Lt. Side void - See pg. 50

on Cut - Hinge out

INDEXED

OCT 9 1956

STA.	LT. SUPER	LT. SLOPE	LT.	LT. HINGE		℄	RT. E.P.	RT. HINGE		RT.	RT. SLOPE	RT. SUPER
+50		1:1	+0.7 (5) 42.7 / C 0.7 / 0.7	66.13 41	67.13 38		67.53 30	67.39 32.82	66.99 40.82	66.99 43.82	55.9 / F 8.1 / 12.1 out − 0.1 (5)	1½:1	
+25				64.55 41	65.55 38		65.95 30	65.74 34.23	65.34 42.23	65.34 45.23			
17+			+0.4 (5) 43.7 / C 1.7 / 1.7	62.97 41	63.97 38		64.37 30	64.09 35.64	63.60 43.64	63.60 46.64	56.7 / F 6.7 / 10.1 + 0.4 (5)		
+75				61.38 41	62.38 38		62.78 30	62.42 37.06	62.02 45.06	62.02 48.06			
+50			+0.7 (5) 45.2 / C 3.2 / 3.2	59.80 41	60.80 38		61.20 30	60.78 38.47	60.38 46.47	60.38 49.47	55.8 / F 4.2 / C 3.0 out + 0.6 (5)		
+25				58.22 41	59.22 38		59.62 30	59.13 39.88	58.73 47.88	58.73 50.88			
16+00			+0.3 (5) 45.5 / C 3.5 / 3.5	56.64 41	57.64 38		58.04 30	57.48 41.29	57.08 49.29	56.08 52.29	52.3 out / Grade − 0.6 / 5		
15+87.30								56.68 42	56.28 50	55.28 53		1½:1	
+75				55.08 41	56.08 38		56.48 30						
15+50		1:1	+0.5 (5) 46.56 / C 4.8 / 4.8	53.54 41	54.54 38		54.94 30						

Lt. Side void - See Pg 50

Rt. Side void - See pg. 51

(2)

③

=BM.=77.92=stake

STA.	SUPER	SLOPE		HINGE		E.P.	℄	E.P.	HINGE			SLOPE	SUPER
20+00		1½:1	+0.7 ⑤ 64.5 F15.1 22.7	81.86 41.75	81.86 38.75	82.26 30.75		82.26 30	81.86 38	81.86 41	48.8 F5.2 7.8 +1.2 ⑤	1½:1	
+75				80.53 41.47	80.53 38.47	80.93 30.47		80.93 30.47	80.53 38	80.53 41			
+50			+0.7 ⑤ 64.0 F15.2 22.8	79.17 41.19	79.17 38.19	79.57 30.19		79.57 30	79.17 38	79.17 41	54.8 F9.2 13.8 +0.5 ⑤		
+25				77.78 41.09	77.78 38.09	78.18 30.09		78.18 30	77.78 38.09	77.78 41.09			
19+00			+0.9 ⑤ 62.0 F14.0 21.0	76.35 ~~76.75~~ 41	76.35 38	76.75 30		76.75 30	76.35 ~~76.75~~ 38	76.35 ~~76.75~~ 41	54.7 F9.1 13.7 +0.3 ⑤		
+75				74.89 41	74.89 38	75.29 30		75.29 30	74.89 38	74.89 41			
+50			+2.9 ⑤ 54.8 out F9.2 13.8	73.39 41	73.39 38	73.79 30		79 ~~73.39~~ 30	73.39 ~~73.79~~ 38	73.39 41	52.3 F8.2 12.3 + 0 ⑤		
+25				71.86 41	71.86 38	72.26 30		72.26 30	71.86 38	71.86 41			
18+00			+0.7 ⑤ 45.2 F4.9 4.2	70.29 41	70.29 38	70.69 30		70.69 30	70.29 38	70.29 41	52.8 F7.9 11.8 +0.5 ⑤		
			+0.9 ⑤ 44.4 F2.3 3.4	69.0 70.3									
17+75		1½:1		68.71 41	68.71 38	69.11 30		69.04 31.41	68.64 39.41	68.64 42.41		1½:1	

Lt side void - See pg. 50

Cross on M.H. - L4 . 21+50 72.49

℄

④

STA.	SUPER	SLOPE		HINGE		EP	E.P.	HINGE		SLOPE	SUPER
+50	1/2:1	-0.1 / 2.0	85.5 / F2.8 / 38.1	68.2 93.96	94.96 43.81	95.36 35.81	95.36 30	116.8 63.8 94.96 93.96 C21.8 21.8 38 41	+1.4 (5)	1:1	
		-1.0 (5)	80.1 / F22.2 / 33.3	71.8 94.0							
+25											
22+		+0.1 (5)	83.2 / F14.7 / 37.0	67.6 92.34 46.25	92.34 43.25	92.74 35.25	92.74 30	102.8 52.5 92.34 91.34 C10.5 42.105 38 41	+1.4 (5)		
			80.2 / F22.6 / 33.9	69.7 92.3							
+75											
+50		-0.1 (5)	80.0 / F15.1 / 34.7	66.6 89.72 45.31	89.72 42.31	90.12 34.31	90.12 30	89.72 88.72 43.0 F1.3 2.0 38 41	+2.9 (5)	1:1 1/2	
		+0.2 (5)	77.4 / F21.4 / 32.1	68.3 89.7							
+25											
21+		+0.2 (5)	66.5 / F15.0 / 22.5	72.1 87.10 44	87.10 41	87.50 33	87.50 30	87.10 87.10 44.5 F2.3 3.5 38 41	+0.6 (5)	1/2:1	
20+75											
20+50	1/2:1	+0.2 (5)	67.0 / F16.2 / 24.3	84.48 42.69	84.48 39.69	84.88 31.69	84.88 30	84.48 84.48 44.9 F2.6 3.9 38 41	+1.7 (5)	1/2:1	
20+25											

L4 Side Wall - see pg. 50

UNOFFICIAL DOCUMENT

73.33 = T.P.
77.96 = T.P.
86.91 = T.P.

x on Mt. Rim N. 24+60 ~ 71.06

95.23 = T.P.

79.73 = Pole - Lt 26+00 = P.K.

125.05 = T.P. (5)

STA	SUPER	SLOPE			HINGE		E.P.			EP.		HINGE					SLOPE
25+00		1½:1	-1.5 (5)	71.1 / F16.1 / 24.1	92.0 / 108.06 / 47	108.06 / 44	108.46 / 36			108.46 / 30	109.9 / C17.7 / 8.9	+2.8 (5)	108.06 / 38	107.06 / 41	147.06 (81-87)	146.06 / 96	64.8 / 147.06 / 101	½:1
+75																		
+50		1½:1	-1.1 (10)	94.7 / F31.8 / 47.7	73.6 / 105.44 / 47	105.44 / 44	105.84 / 36			105.84 / 30	107.3 / C12.5 / 6.3	+1.7 (5)	105.44 / 38	104.44 / 41	144.44 (81-87)	143.44 / 96	56.9 / 144.44 / 101	½:1
+25																		
24+00		1½:1	-1.2 (5)	94.7 / F31.8 / 47.7	71.0 ✓ / 102.82 / 47	102.82 / 44	103.22 / 36			103.22 / 30	106.3 / C10.7 / 5.3	+2.1 (5)	102.82 / 38	101.82 / 41	141.82 (81-87)	140.82 / 96	52.5 / 141.82 / 101	½:1
+75																		
+50		1½:1	+1.1 (5)	94.2 / F31.5 / 47.2	68.9 ✓ / 100.20 / 47	100.20 / 44	100.60 / 36		139.0C = T.P.	100.60 / 30			134.8 / 100.20 / 38	99.20 / 41	76.6 (1) / C34.4 / 34.6		+2.6 (5)	1:1
+25																		
23+00		1½:1	+2.9 (5)	92.1 / F26.1 / 45.1	67.5 / 97.58 / 47	97.58 / 44	97.98 / 36			97.98 / 30			125.9 / 97.58 / 38	96.58 / 41	70.3 / C28.3 / 28.3		+1.6 (5)	1:1
22+75			+0.4 (5)	86.6 / F26.4 / 39.6	71.2 / 99.6 / 47	44												

STAKE FROM DITCH TO CENTER OF CURVE

104.16 = T.P.

113.06 = B.M. on Rock - N. Side of Canyon. (6)

STA.	SUPER	SLOPE		HINGE		E.P.		E.P.	HINGE		SLOPE
27+50		1/2:1	-1.1 (S)	59.1 / F8.2 / 12.3	113.0 / 121.16 / 46.8	121.16 / 43.8	121.56 / 35.8	122.25 / 30	108.8 / C15.6 / 7.8 +2.0 (S)	122.32 121.32 (161.32) 160.32 161.32 / 38 41 (81-87) 96 101	1/2:1
27+25					119.85 / 47	119.85 / 44	120.25 / 36	120.77 / 30		120.79 119.79 (159.79) 158.79 159.79 / 38 41 (81-87) 96 101	1/2:1
27+00		-1.1 (S)	56.8 / F6.5 / 9.8	112.0 / 118.54 / 47	118.54 / 44		118.94 / 36	119.30 / 30	108.1 / C14.2 / 7.1 +1.4 (S)	119.25 118.25 (158.25) 157.25 158.25 / 38 41 (81-87) 96 101	1/2:1
26+75					117.23 / 47	117.23 / 44	117.63 / 36	117.83 / 30		117.72 116.72 (156.72) 155.76 156.92 / 38 41 (81-87) 96 101	1/2:1
26+50		-0.8 (S)	53.3 / FA7.2 / 6.3	111.7 / 115.92 / 47	115.92 / 44		116.32 / 36	116.41 / 30	109.6 / C17.1 / 8.6 +1.6 (S)	116.21 115.21 (155.21) 154.21 155.21 / 38 41 (81-87) 96 101	1/2:1
26+25					114.61 / 47	114.61 / 44	115.01 / 36	115.04 / 30		114.75 113.75 (153.75) 152.75 152.75 / 38 41 (81-87) 96 101	1/2:1
26+00		-1.6 (S)	55.9 / F5.9 / 8.9	107.4 / 113.30 / 47	113.30 / 44		113.70 / 36	113.70 / 30	113.3 / C24.5 / 12.3 +1.7 (S)	113.34 112.34 (152.34) 151.34 152.34 / 38 41 (81-87) 96 101	1/2:1
25+75					111.99 / 47	111.99 / 44	112.39 / 36	112.39 / 30		111.99 110.99 (150.99) 149.99 150.99 / 38 41 (81-87) 96 101	1/2:1
25+50		-1.7 (S)	53.6 / FA.4 / 6.6	106.3 / 110.68 / 47	110.68 / 44		111.08 / 36	111.08 / 30	112.3 / C22.6 / 11.3 +2.3 (S)	110.68 109.68 (149.68) 148.68 149.68 / 38 41 (81-87) 96 101	1/2:1
25+25		1/2:1									

149.73 = Stake - B.M. on N. Ridge Lt. 30+00

STAKE BROW DITCHES FROM CROSS-SECTIONS

STA.	SUPER	SLOPE		HINGE		E.P.	℄	E.P.	HINGE			SLOPE
30+00		1 1/2:1	+2.9 / (5); 99.2 / F36.1 / 54.2	98.2 134.27 45	134.27 42	134.88 34		138.50 29.1	139.11 37.1	146.8 138.11 40.2	48.9 / C7.7 / 7.7; +2.5 / (5)	1:1
+75				132.75 45.1	132.75 42.1	133.31 34.1		136.71 29.2	137.27 37.2	136.27 40.2		1:1
+50			+4.1 / (10); 112.0 / F44.5 / 66.8	86.9 131.35 45.2	131.35 42.2	131.86 34.2		134.94 29.3	135.46 37.3	153.0 134.46 40.3 41.3	58.8 / C17.5 / 17.5; +2.6 / (5)	1:1
+25				129.99 45.3	129.99 42.3	130.44 34.3		133.20 29.4	133.65 37.4	132.65 40.4		1:1
29+00 T.P. 107.25 = 5' stake			-1.2 / (5); 75.6 / F20.2 / 30.3	108.5 128.68 45.3	128.68 42.3	129.08 34.3		131.50 29.4	131.90 37.4	150.4 130.90 40.4	59.9 / C18.5 / -18.5; +2.0 / (5); 155.42 = T.P. (7)	1:1
+75				127.42 45.6	127.42 42.6	127.77 34.6		129.85 29.5	130.20 37.5	129.20 40.5		1:1
+50			-1.6 / (5); 65.6 / F13.1 / 19.7	113.1 126.20 45.9	126.20 42.9	126.50 34.9		128.26 29.6	71.9 / C30.3 / 30.3; +2.1 / (5) 128.55 37.6	158.9 127.55 40.6		1:1
+25				124.98 46	124.98 43	125.27 35		126.70 29.7	126.93 37.7	125.93 40.7 41.7	96 10	1:1
28+00			-1.4 / (5); 63.6 / F11.6 / 17.4	112.1 123.73 46.2	123.73 43.2	124.06 35.2		125.20 29.8	107.0 / C12.3 / 6.2; +2.7 / (5) 125.38 37.8	124.38 40.8	164.38 163.38 176.7 164.38 [illegible]	1/2:1
27+75		1 1/2:1		122.47 46.5	122.47 43.5	122.83 35.5		123.73 29.9	123.85 37.9	122.85 40.9	162.85 161.85 162.85 [illegible]	1/2:1

℄

STA	SUPER	SLOPE		HINGE		E.P.	E.P.	HINGE				SLOPE	SUPER
32+50		1½:1	+1.7 / (5) 44.1 / F1.7 / 2.6	149.4 151.07 41.5	151.07 38.5	151.71 30.5	155.55 27.9	156.19 35.9	118.9 156.19 38.9	94.9 / F37.3 / 56.0	−0.0 / (5)	1½:1	
32+25													
32+00			+2.0 / (5) 51.6 / F6.4 / 9.6	141.3 147.68 42	147.68 39	148.32 31.0	152.16 28.1	152.80 36.1	116.2 152.80 39.1	94.0 / F36.6 / 54.9	+1.7 / (5)		
31+75													
31+50			+3.1 / (5) 71.3 / F18.7 / 28.1	125.6 144.29 43.2	144.29 40.2	144.93 32.2	148.77 28.2	149.41 36.2	126.5 149.41 39.1	73.5 / F22.9 / 34.4	+1.3 / (5)		
31+25													
31+00			+3.7 / (5) 81.7 / F25.2 / 37.8	115.7 140.91 43.9	140.91 40.9	141.55 32.9	145.39 28.8	146.03 36.8	132.9 146.03 39.8	59.5 / F13.1 / 19.7	+1.1 / (5)		
30+75													
30+50			+3.5 / (5) 87.0 / F28.3 / 42.5	109.2 137.52 44.5	137.52 41.5	138.16 33.5	142.00 29.2	142.64 37.2	136.9 142.64 40.2	48.7 / F5.7 / 8.5	+1.9 / (5)		
30+25		1½:1		135.86 44.50	135.86 41.50	136.49 33.50	140.27 29.5	140.90 37.5	140.90 40.5			1½:1	

STAKE 6' BOTTOM DITCH FROM CROSS-SECTIONS

STAKE BROW DITCH FROM CROSS SECTIONS

133.89 T.P. Rt. 34+50

STA.	SUPER	SLOPE	HINGE		E.P.	E.P.	HINGE		SLOPE HINGE
35+00		+1.9 (5) 70.7 C322 32.2	167.77 37.5	201.0 168.77 34.5	169.22 26.5	171.92 26.6	172.37 34.6	148.5 172.37 37.6 73.5 F289 35.9 -3.5 (10)	1½:1
+75			165.84 37.8	166.84 34.8	167.35 26.8	170.39 26.8	170.89 34.8	170.89 37.8	
+50		+1.6 (5) 64.3 C249 24.9 39.4	163.94 38.4	189.8 164.94 35.4	165.50 27.4	168.86 26.8	169.42 34.8	115.0 169.42 37.8 119.4 F54.4 81.6 +4.8 (10)	
+25			162.09 38.5	163.09 35.5	163.69 27.5	167.29 27	167.89 35	167.89 38	
T.P. 187.55									
34+00		+0.9 (5) 59.1 C189 18.9	160.29 39.2	180.2 161.29 36.2	161.92 28.2	165.66 27	166.31 35	122.5 166.31 38 103.7 F43.8 65.7 +2.6 (5)	
33+75			158.54 39.5	158.54 36.5	160.18 28.5	164.02 27	164.66 35	164.66 38	
33+50		+1.0 (5) 53.9 C129 12.9	156.85 40	176.8 157.85 37	158.49 29	162.33 27	162.97 35	122.6 98.6 162.97 38 F40.4 60.6 +2.3 (5) = T.P. 124.90	
33+25									
33+00	1:1	+1.6 (5) 47.8 C63 6.3 41.5	153.46 40.5	160.8 154.46 37.5	155.10 29.5	158.94 27.5	159.58 35.5	121.2 96.1 159.58 38.5 F38.4 57.6 +2.2 (5)	
32+75						27.7			1½:1

LEFT LANE BASE LINE

RIGHT LANE BASE LINE

STAKE AT BOTTOM OF DITCH

171.33 = B.M. across Canyon - S. of 35+50 (10)

LEFT LANE BASE LINE / RIGHT LANE BASE LINE

STA	SLOPE		(values)	HINGE		EP.	EP.	HINGE			SLOPE
+50	½:1	-0.2 (5); 107.2 C20.3 10.2; 245.9	97 225.64; 92 224.64; 83 225.64; 77 225.64; 185.64	37	186.64 34	187.04 26	187.23 26	209.4 187.10 34	186.10 37 38	60.3 C22.3 22.3 -2.5 (5)	1:1
+25	½:1		97 223.94; 92 222.94; 83 223.94; 77 223.94; 183.94	37	184.94 34	185.34 26	185.67 26	185.62 34	184.62 37		
37+	½:1	+0.5 (5); 105.9 C17.8 8.9	97 222.25; 92 221.25; 83 222.25; 77 222.25; 182.25	37	183.25 34	183.65 26	184.15 26	203.0 184.16 34	183.16 37	56.8 C18.8 18.8 -1.9 (5)	
+75	½:1		97 220.55; 92 219.55; 83 220.55; 77 220.55; 180.55	37	181.55 34	181.95 26	182.62 26	182.68 34	181.68 37		
+50	½:1	-0.1 (5); 103.9 C13.8 6.9; 232.7	97 218.86; 92 217.86; 83 218.86; 77 218.86; 178.86	37	179.86 34	180.23 26	181.09 26	195.9 181.21 34	180.21 37	52.7 C14.7 14.7 -1.7 (5); 46.4 C8.4 8.4 +2.4 (5)	
+25	½:1		97 217.12; 92 216.12; 83 217.12; 77 217.12	177.12 37	178.12 34	178.46 26	179.56 26	179.73 34	178.73 37		
36+	½:1	+0.3 (5); 101.2 C8.3 4.2; 223.6	97 215.34; 92 214.34; 83 /; 77 215.34	175.34 37	176.34 34	176.65 26	178.04 26	48.7 178.27 34	177.27 37	48.4 C10.4 10.4 -2.0 (5)	
+75	1:1			173.49 37.1	174.49 34.1	174.60 26.1	176.50 26	176.79 34	175.79 37		
+50	1:1	+0.6 (5); 77.0 C38.9 38.9 38.1		171.60 37.1	214.5 172.60 34.1	172.94 26.1	174.98 26.2	178.9 175.32 34.2	174.32 37.2 38.2	41.8 C3.6 3.6 -2.5 (5) ?	
35+25	1:1			169.68 37.1	170.68 34.1	171.07 26.2	173.45 26.4	173.84 34.4	172.84 37.4		1:1

185.51 = B.M. = Cross Canyon - 39+50 - Rt. (11)

STA	SLOPE			HINGE		E.P.
40+00	1/2:1	+1.5 (5)	102.7 / C11.3 / 57	253.9 242.58 97 241.58 82 242.58 83 242.58 77	202.58 37	203.58 34	203.98 26
+75							
+50	1/2:1	+1.1 (5)	104.5 / C14.7 / 70	254.1 239.19 97 238.19 82 239.19 83 239.19 77	199.19 37	200.19 34	200.59 26
+25							
39+	1/2:1	+0.4 (5)	106.5 / C18.9 / 90	254.7 235.80 97 234.80 82 235.80 83 235.80 77	195.80 37	196.80 34	197.20 26
+75							
+50	1/2:1	-0.3 (5)	107.8 / C21.5 / 108	253.9 232.41 97 231.41 82 232.41 83 232.41 77	192.41 37	193.41 34	193.81 26
+25	1/2:1			230.71 97 229.71 82 230.71 83 230.71 77	190.71 37	191.71 34	192.11 26
38+	1/2:1	-0.7 (5)	108.9 / C22.1 / 11	229.02 97 228.02 82 229.02 83 229.02 77	189.02 37	190.02 34	190.42 26
37+75	1/2:1			227.83 97 226.83 82 227.83 83 227.83 77	187.83 37	188.83 34	188.73 26
				97 82 83 77	37	34	26

℄	E.P.		HINGE		SLOPE
	203.98 26	203.58 34	161.1 203.58 37	100.8 / F42.5 / 63.8 — 1.8 (5) = T.P. = 159.32	1/2:1
	200.59 26	200.19 34	177.2 200.19 37	71.5 / F23.0 / 34.5 — 4.8 (10)	1/2:1
	197.20 26	203.7 196.80 34	195.80 37	44.9 / C6.9 / 6.9 — 2.8 (5)	1:1
	193.81 26	210.6 193.41 34	192.41 37	55.2 / C17.2 / 17.2 — 2.8 (5)	1:1
	192.11 26	191.74 34	190.74 37		1:1
	190.44 26	212.6 190.14 34	189.14 37	60.5 / C22.5 / 22.5 — 3.0 (5)	1:1
	188.81 26	188.59 34	187.59 37		1:1
	26	34	37		

STA	SLOPE			HINGE	E.P.		E.P.	HINGE			SLOPE
42+50	1/2:1	+2.3 (5)	105.2 / C116.3 / 8.2	219.52 37	220.52 34	220.92 26	220.92 26	220.52 34	176.6 220.52 37	102.9 / F43.9 / 65.9 +2.8 (5)	1/2:1
42+25											
42+00	1/2:1	+2.3 (5)	99.7 / C54 / 2.7	216.13 37	217.13 34	217.53 26	217.53 26	217.13 34	171.7 217.13 37	105.1 / F45.4 / 68.1 +2.1 (5)	
41+75											
41+50	1:1	+1.5 (3)	71.1 / C33.1 / 33.1	246.8 212.74 37	213.74 34	214.14 26	214.14 26	213.74 34	163.8 213.74 37	111.9 / F49.9 / 74.9 +3.1 (5)	
41+25											
41+00	1:1	+2.9 (5)	68.0 / C30.0 / 30.0	240.4 209.36 37	210.36 34	210.76 26	210.76 26	210.36 34	160.6 210.36 37	111.7 / F49.8 / 74.7 +3.1 (5)	
40+75											
40+50	1:1	+2.5 (5)	73.7 / C35.7 / 35.7	242.7 205.97 37	206.97 34	207.37 26	207.37 26	206.97 34	153.4 206.97 37	117.4 / F53.6 / 80.4 +2.9 (5) +5.2 (15)	1/2:1
40+25											

STAKE BROW DITCH

296.56 = BM on Rock

(13)

STA	SLOPE			HINGE	E.P.			E.P.	HINGE		SLOPE
45+	1/2:1	-0 (5)	108.0 / C22.0 / 11.0	298.5 97 276.46 92 275.46 83 276.46 77 276.46 236.46 37	237.46 34	237.86 26		237.86 26	237.46 34	186.5 237.46 37 113.5 / F51.0 / 76.5 +3.2 (5)	1½:1
+75										235.8	
+50	1/2:1	+2.5 (5)	109.4 / C24.7 / 12.4	297.8 97 273.07 92 272.07 83 273.07 77 273.07 233.07 37	234.07 34	234.47 26		234.47 26	234.07 34	187.0 234.07 37 107.7 / F47.1 / 70.1 +2.7 (5)	1½:1
+25											
44+	1/2:1	+2.9 (5)	103.2 / C12.4 / 6.2	282.1 97 269.69 92 268.69 83 269.69 77 269.69 229.69 37	230.69 34	231.09 26		231.09 26	230.69 34	186.8 230.69 37 102.9 / F43.9 / 65.9 +2.2 (5)	1½:1
+75										192.22 T.P.	
+50	1/2:1	+2.8 (5)	106+ / C18.2 / 9.1	284.5 97 266.30 92 265.30 83 266.30 77 266.30 226.30 37	227.30 34	227.70 26		227.70 26	227.30 34	187.3 227.30 37 97.0 / F40.0 / 60.0 +2.4 (5)	1½:1
+25											
43+00	1/2:1	+1.7	108.8 / C23.7 / 11.4	286.6 97 262.91 92 261.91 83 262.91 77 262.91 222.91 37	223.91 34	224.31 26		224.31 26	223.91 34	181.6 223.91 37 100.5 / F42.3 / 63.5 +2.4 (5)	1½:1
42+75											

Set B.M. 242.85 across Canyon Rt - 47+50 T.P. 207.11 (14)

STA	SLOPE			HINGE		E.P.	℄	E.P.	HINGE				SLOPE
47+50	1:1	40	+2.1 (5)	42.0 / C 4.0 / 4.0	254.76 37	255.76 34	259.8 255.64 26		254.70 26.1	254.36 34.1	212.6 254.36 37.1	99.8 / F41.8 / 62.1 +2.1 (5)	1½:1
+25				38	252.84 37	253.84 34	253.78 26		253.07 26	252.70 34	252.70 37		
47+	+3.50 / 6	42.5 / F3.0 / 45	2% +	248.9 251.93 38	250.93 37	251.93 34	251.92 26		251.41 26	251.01 34	205.3 251.01 37	105.5 / F45.7 / 48.5 +2.6 (5)	?
too 2%													
+75	+8.6 (21)	50.3 / F8.2 / 12.3	2% +	241.8 250.02 38	249.02 37	250.02 34	250.06 26		249.72 26	249.32 34	249.32 37		
+50	1:1	42 48.0 / C 10.0 / 10.0	2% +	258.1 248.10 38	247.10 37	248.10 34	248.22 26		248.03 26	247.63 34	200.1 247.63 37	108.3 / F47.5 / 71.3 +1.9 (5)	
+25	1:1				245.20 37	246.20 34	246.42 26		246.33 26	245.93 34	245.93 37		
46+00	½:1	100 -0.3 (5)	99.9 / C 5.7 / 2.9	289.1 282.37 282.37 282.37 282.37 27 22 83 77	243.37 37	244.37 34	244.66 26		244.64 26	244.24 34	195.4 244.24 37	110.2 from ℄ / F48.8 / 132 out +2.2 (5)	½:1
+75													
45+50	½:1	-0.3 (5)	105.9 / C 11.7 / 89	297.6 279.85 279.85 279.85 279.85 27 22 83 77	239.85 37	240.85 34	241.25 26		241.25 26	240.85 34	193.9 240.85 37	107.6 / F47.0 / 70.5 -2.7 (15)	½:1
45+25													

STAKE POINT

STA	SLOPE			HINGE	GUT.	F.P.	℄	E.P.	GUT	HINGE		SLOPE
50+00	1:1	+0.7 (5)	57.8 C 14.4 14.4	289.4 275.02 43.4	274.15 33.4	273.67 25.4		270.79 30.4	270.31 38.4	271.2 271.18 48.4	= Grade 48.4 from ℄ − 1.9 (5)	1:1
Change hinge												
49+75	1½:1										266.50 = T.P.	
49+50	1½:1	+0.5 (5)	39.5 F 2.1 3.2	268.7 270.76 36.3	270.76 33.3	270.29 25.3		267.41 29.3	266.93 37.3	256.3 266.93 40.3	56.2 F 10.6 15.9 − 1.2 (5)	1½:1
49+25	1½:1			269.01 36.2	269.01 33.2	268.55 25.2		265.72 29	265.24 37	265.24 40		1½:1
		−4.6 (12)	67.2 36.0 F 31.2 16.8									
49+00	1½:1	−1.1 (5)	88.4 F 34.9 52#	232.3 267.20 36	267.20 33	266.76 25.		264.06 28.8	263.59 36.8	233.2 263.59 39.8	85.4 F 30.4 45.6 = 1.8 (5)	1½:1
48+75	1½:1	221.22 +0.5 (5)	102.8 F 44.5 66.8	220.8 265.34 36	265.34 33	264.94 25.0		262.44 28.3	262.01 36.3	262.01 39.3	− 61.76 = Bot. of opening 32' Rt. of Rt Land	1½:1
48+50	1½:1	+1.3 (5)	87.1 F 34.1 51.2	229.3 263.42 35.9	263.42 32.9	263.08 24.9		260.87 28	260.48 36	213.0 260.48 39	110.3 F 47.5 71.3 + 7.5 (15)	1½:1
48+25	1½:1			261.51 35.8	261.51 32.8	261.22 24.8		259.34 27.5	259.00 35.5	259.00 38.5		1½:1
48+00	1½:1	+1.9 (5)	46.8 F 7.1 10.7	252.5 259.60 36.1	259.60 33.1	259.37 25.1		257.82 26.9	257.51 34.9	215.2 257.51 37.9	101.4 F 42.3 63.5 + 2.1 (5)	1½:1
47+75	1½:1			257.67 36.8	257.67 33.8	257.50 25.8		256.27 26.2	255.96 34.2	255.96 37.2		1½:1

87

297.89 = B.M. = ⊙ on Rock (16)
Rt. - 51+50

STA	SLOPE			HINGE		E.P.	E.P.	HINGE			SLOPE
50+50	1:1	+0.4 / (5)	67.2 / F14.5	277.5	GUT			GUT	294.0	56.5 / C5.9 / 5.9 + 0.1 / (5)	
				291.96	291.09	290.61	287.73	287.25	288.12		1:1
				45.4	35.4	27.4	32.6	40.6	50.6		
50+25											
52+25	1:1	-1.3 / (5)	45.0 Grade	288.6	GUT			GUT	294.4	59.9 / C9.7 / 9.7 + 0.2 / (5)	
				288.57	287.70	287.22	284.34	283.86	284.73		1:1
				45	35	27	32.2	40.2	50.2		
49+75											
50+50	1:1	-0.3 / (5)	57.6 / C13.1 / 13.1	295.9	GUT			GUT.	295.9	64.6 / C14.6 / 14.6 + 0.1 / 5	
				282.18	284.31	283.83	280.95	280.47	281.34		1:1
				44.8	34.5	26.5	32	40	50		
			N.G.	285.18							
50+25											
51+00	1:1	-0.2 / (5)	59.8 / C15.4 / 15.6	297.6	GUT			GUT	287.5	59.1 / C9.5 / 9.5 - 0.4 / (5)	
				281.79	280.22	280.44	277.56	277.08	277.35		1:1
				44	34	26	31.6	39.6	49.6		
49+75											
50+50	1:1	+0.5 / (5)	62.0 / C16.4 / 16.4	294.8	GUT			GUT.	279.1	53.4 / C4.6 / 4.5 - 0.6 / (5)	
				278.41	277.54	277.06	274.18	273.70	274.57		1:1
				45.6	35.6	25.6	30.2	38.9	48.9		
				43.6	33.6						
50+25											

STA	SLOPE			HINGE		E.P.
55+	1½:1	+0.1 (5)	49.1 F1.2 1.0	304.2 305.39 47.3	GUT 304.52 37.3	304.04 29.3
+75	1½:1			304.46 47.2	GUT 303.59 37.2	303.11 29.2
+50	1½:1	-0.2	49.3 F1.5 2.3	301.9 303.40 47	GUT 302.53 37	302.05 29
+25	1½:1			302.27 46.9	GUT 301.40 36.9	300.92 28.9
54+	1½:1	-0.2 (5)	47.0 F0.3 0.5	300.8 301.05 46.5	GUT. 300.18 36.5	299.70 28.5
+75	1½:1			299.74 46.3	GUT. 298.87 36.3	298.39 28.3
+50	1½:1	-0.2 (5)	47.0 C0.9 0.9	299.3 298.35 46.1	GUT 297.48 36.1	297.00 28.1
+25	1½:1			296.87 45.9	GUT 296.00 35.9	295.52 27.9
53+00	1½:1	-0.0 (5)	46.1 F0.4 0.6	294.9 295.31 45.5	GUT. 294.44 35.5	293.96 27.5
52+75	1½:1			291.96 45.5	GUT 291.09 35.5	290.61 27.5

	E.P.	HINGE			SLOPE
3.1	301.28 33.8	GUT 300.83 41.8	303.2 301.70 51.8	53.3 C1.5 1.5 − 0 (5)	1:1
	300.25 33.8	GUT. 299.78 41.8	300.65 51.8		1:1
01.1	299.17 33.6	GUT 298.69 41.8	299.56 51.8	54.1 C2.3 2.3 − 0.1 (5)	1:1
	298.04 33.5	GUT 297.56 41.5	298.43 51.5		1:1
98.8	296.82 33.3	GUT 296.34 41.3	300.2 297.21 51.3	54.3 C3.0 3.0 − 0 (5)	1:1
	295.51 33.3	GUT. 295.03 41.3	295.90 51.3		1:1
	294.12 33.2	GUT. 293.64 41.2	298.9 294.51 51.2	55.6 C4.4 4.4 − 0 (5) — T.P. 298.87	1:1
	292.64 33	GUT 292.16 41	293.03 51		1:1
	291.08 32.9	GUT. 290.60 40.9	296.6 291.47 50.9	56.0 C5.1 5.1 − 0.1 (5)	1:1
	289.42 32.9	GUT. 288.94 40.9	289.81 50.9		1:1

STA	SLOPE			HINGE		E.P.	℄	E.P.	HINGE		SLOPE
		+0.1 (5)	55.8 C4.8 4.8	13.4 308.62 51	GUT 307.75 41	307.81 33	8.2	307.17 33	GUT 09.6 306.85 307.72 41 51	52.9 C1.9 1.9	-0.1 (5)
+50											
				308.64 51	GUT 307.77 41	307.76 33		307.06 33	GUT 306.73 307.60 41 51		
		+0.1 (5)	54.7 C3.7 3.7	12.3 308.59 51	GUT 307.72 41	307.65 33	7.8	306.85 33	GUT 306.51 307.38 41 51	52.4 C1.4 1.4	-0.1 (5)
57+	1:1										
				308.43 50.8	GUT 307.62 40.8	307.48 32.8		306.54 33	GUT 306.19 307.06 41 51		
		-0.1 (5)	53.8 C3.2 3.2	311.5 308.31 50.6	GUT 307.44 40.6	307.24 32.6	7.1	306.11 33	GUT 07.8 305.76 306.63 41 51	52.2 C1.2 1.2	-0.1 (5)
+50	1:1										
				308.06 49	GUT 307.19 39	306.93 31		305.55 33.5	GUT 305.22 306.09 41.5 51.5		
		-0 (5)	49.6 C1.4 1.4	09.1 307.73 48.2	GUT 306.86 38.2	306.55 30.2	6.1	304.86 34	GUT 07.3 304.56 305.43 42 52	53.9 C1.9 1.9	-0.4 (5)
56+	1:1										
				307.30 48	GUT 306.43 38	306.07 30		304.07 34	GUT 303.76 304.63 42 52		
04.22-T.P.											
		-0 (5)	48.3 F0.3 0.5	06.5 306.81 47.8	GUT 305.94 37.8	305.53 29.8	4.8	303.19 34	GUT 305.0 302.82 303.69 42 52	53.3 C1.3 1.3	-0.2 (5)
55+50	1/2:1										
				306.17 47.5	GUT 305.30 37.5	304.85 29.5		302.25 33.8	GUT. 301.84 302.71 41.8 51.8		
+25	1/2:1										

307.22 = c.t. on S. at Alley

STA				HINGE		EP	℄	EP	HINGE			SLOPE
+25	1:1			07.71 308.31 51	7.47 307.44 41	7.59 307.61 33		7.00 307.02 33	6.80 306.73 41 87	06.96 307.60 51		
58+00	1:1	+0.1 / (5)	55.6 / c4.6 / .46	13.1 308.45 51	307.58 41 87	307.73 33	8.2	307.14 33	306.84 41 87 71	10.9 307.71 51	54.2 / c3.2 / 3.2 −0.4 / (5)	
57+75	1:1			308.55 51	307.68 41 87	307.80 33	℄	307.19 33	306.88 41 87	307.75 51		

S

58

57

S.W.O.C.

Void - See pg. 55

	SLOPE			HINGE	GUT / EP	EP
24+50	1:1			46.37 31.8	GUT 45.50 21.4	45.91 14
24+25	1:1	-0.3 (5)	37.6 out C 5.6 5.6	46.73 32	GUT 45.86 22	46.44 14
24+	1:1	-0.3 (5)	38.4 out C 6.4 6.4	47.29 32	GUT 46.42 22	47.08 14
23+75	1:1	-0.6 (5)	38.9 out C 6.9 6.9	48.11 32	GUT 47.24 22	47.89 14
23+50	1:1			49.21 32	GUT 48.34 22	48.88 14
+26.78=PC 23+25	1:1	-1.8 (5)	38.5 out C 6.3 6.5	50.53 32	GUT 49.66 22	50.00 14
23+00	1:1			51.75 32	GUT 50.88 22	51.06 14
22+75	1:1	-1.0 (5)	37.2 out C 5.2 5.2	52.64 32	GUT 51.77 22	51.91 14
22+50	1:1		10' Lt 54.9 = C 1.3 40.7 out	53.56 30.7	GUT 52.69 20.7	52.79 12.7
22+30.40		-1.0 (5)	31.6 out C 1.6 1.6	54.35 30	GUT 53.48 20	53.51 12

LEFT LANE RIGHT EDGE PAVEMENT
RT LANE LEFT EDGE PAVE

S.E.O.C.

Void - See pg. 55

	EP	HINGE			SLOPE
	55.63 12	55.23 20	54.23 23	24' out Grade +2.3 (5)	1:1
	53.79 12	53.24 20	52.24 23		1:1
	52.05 12	51.41 20	50.41 23	27.6 C 3.6 3.6 + 0 (5)	1:1
	50.60 12	49.94 20	48.94 23	29.4 C 5.4 5.4 + 0.1 (5)	1:1
	50.27 12	49.84 20	48.84 23		1:1
	50.41 12	50.01 20	49.01 23	35.4 C 11.4 11.4 + 0.2 (5)	1:1
	51.11 12	50.71 20	49.71 23	36.8 C 12.8 12.8 + 0.6 (5)	1:1
	51.91 12	51.51 20	50.51 23	38.8 C 14.8 14.8 + 0.1 (5)	1:1
℄	52.71 12	52.31 20	51.31 23-24		1:1
℄	53.34 12	52.94 20	51.94 23	38.3 C 14.3 14.3 + 0.4 (5)	1:1

Curve Data - Lt Lane = West

SW. O.C.

Δ = 104° 16' 48"
R = 112'
d = 15.347

Void

= 13+60.83 = Balboa
24+68.94 = E.C.

+25'	11° 14' 15"
24+00	17° 38'
+75'	24° 01' 45"
+50	30° 25' 15"
+25'	36° 49'
23+00	43° 12' 45"
Set Rad.	
22+65.10 = B.C.	52° 08' 30"

22+30.40 = End

45' S. = R.P. Hub. to end.

Line to Wly. of E. Signal - end of Cross Member.

Rt Lane = East

SE. O.C.

Δ = 75° 43' 12"
R = 106'
d = 16.2157

Void

~~= 15+87.30 = ℄ Sta~~
+66.87 = E.C.

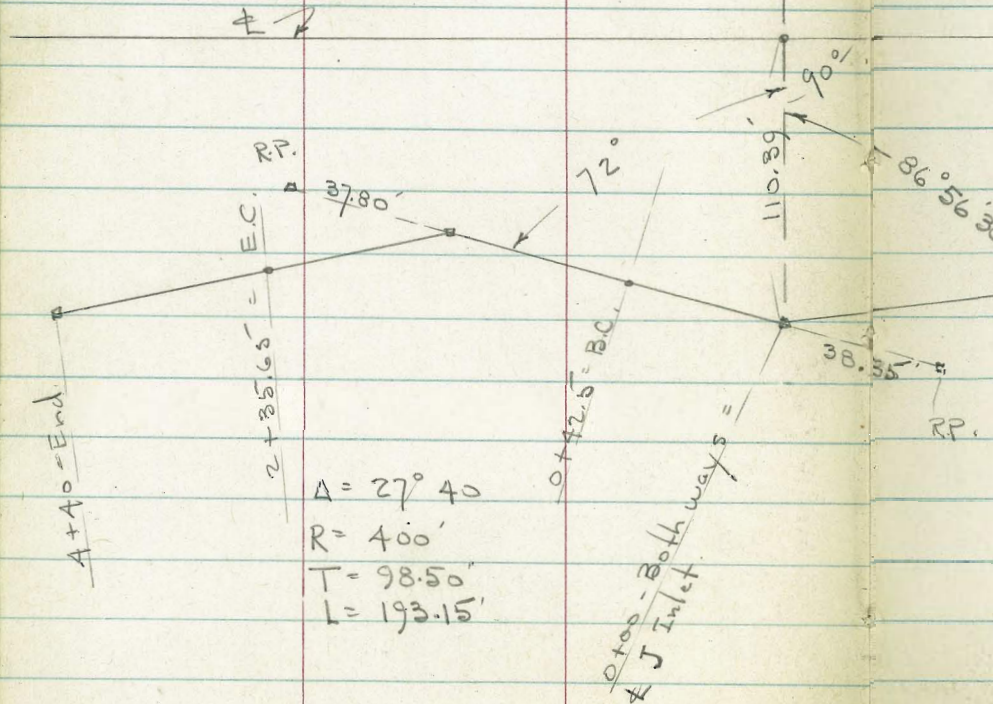
	37° 51' 36"
+50	33° 18'
+25'	26° 32' 45"
24+00	19° 47' 15"
+75'	13° 02'
+50	6° 16' 30"

23+26.78 = B.C.

6-16-55 7.0.

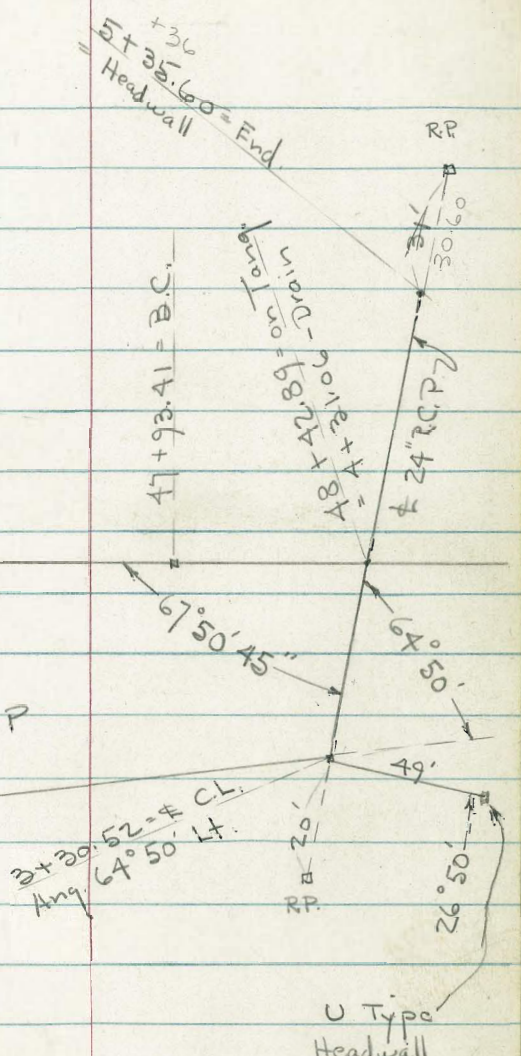
Ties for Culverts-
Sheets 2889 - 2888 - D

Profile - P. 27



Δ = 27° 40
R = 400'
T = 98.50'
L = 193.15'

Profile - P. 28



Profile of Prop. Culvert

Void

2+12 = ℄ of wash - to S.E. = 1' in from Toe of Fill		212.0 ℄ wash	
1+75		22.4	
1+50		24.3	08.3 35 = ℄ Creek
1+00		19.4	11.9 16 ℄ Creek
0+50		17.7	14.0. 8 = ℄ creek
0+00 = Creek Bottom		19.8	
B.M. = 5' offset. -48+75	221.22		

179 60
87 17
92 43'

3+81.59 = 2+13.5 on ℄ Cross Culvert = Ang. 92° 43' Lt.

3+25 - 34' Lt. = Int. of 3 creeks.

2+40 = ℄ Creek.

2+01.47 25' Rt. = ℄ Creek = Ang. 23° 19' Rt.

1+50 - 14' Rt. = ℄ Creek

0+70 - 14' Rt. = ℄ Creek

0+20 = ℄ wash

44+75 - 115'.39 from ℄ at 90° = 0+00 = ℄ inlet = 5' out from toe

Ang. 78° 45' - N.E. To Ang Pt.

Profile of Culvert - W. of Inlet - Rt. - 44+75
Sketch - P. 24

	Lt. = S ℄			Rt. = N
4+40 = End.	61.0 / 15	54.2 / 6	54.6	54.5 / 5	59.9 / 10
4+00	64.2 / 10	58.0 / 1	58.0	59.1 / 13	
3+50	65.3 / 15	61.6 / 7	61.6	62.8 / 12	67.5 / 15
3+00	71.0 / 13	66.0 / 8	65.3	66.1 / 14	
2+35.65 = E.C.	73.3 / 16	69.3 / 13	69.2	69.4 / 6	72.7 / 15
1+87.37 - 3/4	76.6 / 15	74.3 / 11	73.5	73.2 / 7	72.0 / 15
1+39.08 - 1/2 Mid. Pt.	83.0 / 12	77.2 / 7	76.6	75.8 / 15	
0+90.79 - 1/4 outs Radial	84.8 / 12	79.0 / 7	78.8	78.9 / 10	
0+42.5 = B.C.	86.9 / 12	81.4 / 3	81.8	83.4 / 15	
Tang. = 72° N To W.					
0+00 = ℄ Inlet. 110.39 Rt. at 90° from ℄ 44+75 = ~~0+00~~ Both ways - See P. 28	89.6 / 10	185.9		86.1 / 10	

100' fig. Not Noted.

Profile of Culvert. E. of Inlet 44+75

Sketch - P. 24

5+35.6°

	Lt	℄	Rt
3+37		07.2	
3+30.52 = ℄ Clean Out Ang. Pt.		11.6	15.6 (10)
3+00	05.8 (15)	07.2 (8)	12.2 / 16.8 (10)
2+50		03.4 (9) / 07.2	12.8 (10)
2+00	98.7 (15)	99.5	99.5 (2) / 103.0 (10)
1+50	97.0 (15)	95.3	95.3 (1) / 99.5 (10)
1+00	96.2 (15)	94.4 (4) / 93.1	91.8 (4) / 92.0 (11 Toe)
0+60	96.0 (15)	94.8 (7) / 92.0	90.1 (4) / 89.4 (12)
0+25	90.2 (15)	86.5	86.5 (5) / 90.2 (10)
0+00 = ℄ of Inlet. - P. 27		85.9	

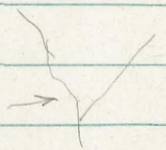
0+65 = Profile of Creek

0+49 = End of U Type Inlet

0+25

0+00 = C.L. = 3+30.52 - P.28

Beg. 49' stub to U Type inlet



5+50 = Profile of Creek Int.

5+35.60 = End

5+00

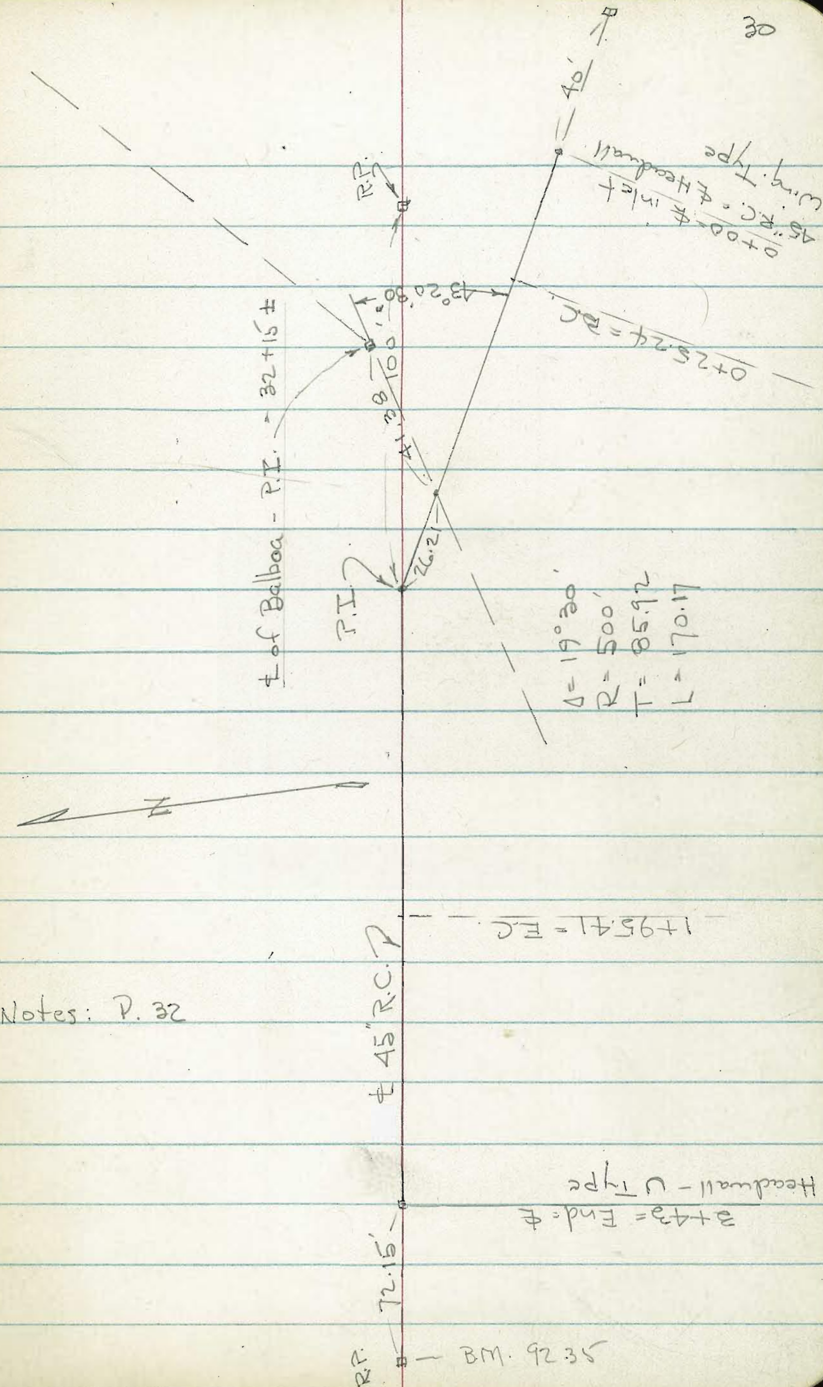
4+50

4+00

3+75

3+50

	Lt.	℄	Rt
		14.0	
	15.2	12.1	17.7
	10		10
	09.3	12.4	16.9 = S
= N.	10		10
		11.6	
	23.8	20.3	19.7
	10		10
	23.0	19.8	22.1
	10		10
	21.1	15.7	19.3
	10		10
	18.0	13.3	12.4 14.5
	10		5 10
	13.0	09.2	13.4
	10		10
	08.6	08.8	11.6
	10		10
		06.3	
		= Int. of Creeks.	


40'
0+00 = ℄ Inlet
45" R.C. = ℄ Headwall
Wing Type
R.P.
43°20'30"
0+25.24 = B.C.
℄ of Balboa - P.I. - 32+15 ±
100'
41.38'
26.21'
P.I.
Δ = 19°30'
R = 500'
T = 85.92
L = 170.17
N
1+95.41 = E.C.
℄ 45" R.C.
3+43 = End ℄
Headwall - U Type
72.15'
R.P.
B.M. 92.35

Notes: P. 32

Profile of Culvert - 45" R.C.
Inlet - 32+25 - Rt. - See sketch - P. 30

3+50 = Profile

3+32.50 = end

3+00

2+50 - in Bulldozer Road

2+00

1+50

1+00

0+65

0+50

0+00 = inlet = ℄ Headwall - Wing type

0-15 = creek Profile

Void

Lt.	℄	Rt.
87.3 (5)	87.0	86.7 (6)
87.6 (7) Bank	87.0	87.0 (5) Bank — 91.1 (10)
89.4 (10)	88.4	88.2 (4) — 93.1 (10)
96.9 (10)	91.4	91.4 (11) = Bank
07.5 (10)	103.5	99.6 (10)
15.8 (10)	12.5	07.6 (10) — 96.5 (33 - Creek ℄)
19.7 (10)	15.9	11.5 (10)
19.4 (10)	15.4	11.7 (10) — 101.1 (37 = Int. of Creeks.)
18.7 (10)	13.8	09.8 (10)
14.1 (10)	09.2	08.8 (5) — 11.8 (10)
13.1 (10)	110.5 ℄ Creek	13.6 (3) — 15.2 (10)

Profile of Culvert - 45" R.C.
Inlet - 32+25 - Realignment
See p. 30 for Sketch.

6-20-55 7.0. 32

	Lt	℄	Rt.
3+00	89.1 10	88.7 2 89.8	95.6 10
2+50	92.0 10	91.8	97.8 10
2+15	+0.4	94.2	94.2 10
1+95.41 = E.C.	03.2 10	99.3	95.2 10
1+52.88 = 3/4 Curve	08.3 10	03.4	99.1 10
1+10.33 = Mid point	12.2 10	07.4	02.9 10
0+67.79 = 1/4 Curve	14.6 10	10.3	05.7 10
0+25.24 = B.C.	13.0 10	07.1	05.6 7 Toe 08.7 10
0+00 = Inlet = ℄ Headwall - Wing type	14.3 10	07.3 ℄ Creek	08.8 ℄ Toe Bank 12.6 10
0-15 = creek profile	15.3 10	11.1	10.7 4 Toe 14.6 10

Lt. ℄ Rt

3+60 = profile

3+43 = end = ℄ Head wall
= 72.18 to R.P.

92.4 (10) 87.2 86.5 (10)

90.6 (10) 87.4 (7) 87.0 86.8 (5) 90.7 (10)

Profile 24" = ℄ 14+62.50 6-21-55 7.0

	Lt.	℄	Rt.
1+43.14 = E.C. = end = Sly. inside of 72" pipe	52.7 / 10	52.3 ℄ of Creek	54.9 / 10
1+11.43 = 3/4	55.2 / 10	55.3	53.8 / 10
0+79.71 = ℄ = 1/2	56.1 / 10	55.1	55.1 / 10
0+47.99 = 1/4	56.9 / 10	55.5	55.3 / 10
0+16.28 = B.C.	57.6 / 10	56.1	55.3 / 10
0+00 = ℄ 24" = ℄ Inlet. See 2890-D		58.3	

Stake 5' Bottom Ditch - 32+50 to 34+50 outside of Toe of Fill on South.

6-21-55 7.0.

℄ sta.	Ditch sta.	Dist. out from ℄ = Nly. Top of Ditch	Ditch Slope	This stake - 2' out from 1½:1 Toe stake	5' Bottom Grade	Hinge	Ditch slope	
34+50	0+00	121.4	1:1	16.1 114.0 C 2.1 2.1 out	114.0	7.1	½:1	22.5 114.0 C 8.5 4.3 out
34+00	0+58	105.7	1:1	23.5 113.2 C 10.3 10.3 out	113.2	15.3	½:1	35.4 113.2 C 22.2 11.1 out
33+50	1+02	100.6	1:1	23.4 112.4 C 11.0 11.0 out	112.4	16.0	½:1	36.4 112.4 C 24.0 12.0 out
33+00	1+60	98.1	1:1	22.0 111.6 C 10.4 10.4 out	111.6	15.4	1:1	38.2 111.6 C 23.6 23.6 out
32+50	2+15	96.9	1:1	18.9 110.8 C 8.1 8.1 out	110.8	13.1		20.5 110.8 C 9.7 9.7 out
	2+42 = at Inlet. - 0 Area.							

X-Sect. 72" Culvert Loc.

	Lt.		℄	Rt		
3+00	62.5 (10)		61.5	60.7 (10)		
2+50	59.9 (10)		59.0	58.3 (10)		
2+00	58.2 (10)		57.8	57.1 (10)		
1+60	55.7 (10)		56.2	56.7 (10)		
1+20	54.8 (10)		54.0	53.7 (10)		
0+85	55.0 (10)	54.2 (4)	51.5	51.7 (6)	53.3 (10)	
0+55	54.6 (10)	50.9 (4)	49.8	49.7 (2)	52.8 (10)	
0+45 - in Ditch	54.8 (15)	51.1 (6)	40.5 (4)	40.0	40.5 (3)	52.0 (6)	52.4 (10)
0+20 = in old Ditch	54.7 (15)	52.4 (10)	38.5 (4.5)	38.5	38.5 (2.5)	50.5 (4)	51.2 (10)
0+00 = ℄ of inlet = end of Exist. 72" R.C.			36.89			

4+94.95
5 65.54
10+60.49

Curve Data
Δ = 22° 44' 20"
R = 1425'
T = 286.54'
L = 565.54'
d = 1.2062

		Lt.	℄	Rt.
8+00	6° 08'	65.7 10	65.3	65.6 10
7+50	5° 07' 30"	65.2 10	64.9	64.9 10
7+00	4° 07' 15"	63.9 10	63.8	64.3 10
6+50	3° 07'	61.1 10	62.9	62.8 10
6+00	-2° 06' 45"	59.4 10	61.0	61.4 10
5+50	- 1° 06' 30"	59.3 10	59.3	59.6 10
4+94.95	= BC	50.8 10	59.9	60.0 10
4+50		64.5 10	64.5	64.3 10
4+00		65.0 10	64.6	64.0 10
3+50		64.8 10	64.2	63.0 10

80' ahead - 10' Higher = on Nose

13+70 = ℄ Creek - Turnes to Rt

13+35 = ℄ old Creek

13+00

12+50

12+00 = Profile

11+80.49 = End pipe

11+40

11+00

10+60.49 = E.C. 11° 22' 10"

10+00 10° 09' 15"

9+97 - 5.6' rt. = ℄ Sewer M.H. 70.90 = N. Rim

9+50 9° 09'

9+00 8° 08' 30"

8+50 7° 08' 15"

Lt.	℄	Rt.
	78.1 / 10	75.5
steep slope 78.2 / 10	76.0	77.0 / 10
75.2 / 10	75.4	75.8 / 10
75.9 / 10 — 73.5 / 5	73.7	75.1 / 10
72.1 / 10	72.1	72.5 / 10
72.2 / 10 — 71.4 / 4	71.6	72.0 / 10
77.5 / 10 — 73.2 / 6	73.1	72.2 / 10
73.7 / 10	73.4	73.4 / 7 — 70.5 / 15
73.0 / 10	72.7	70.2 / 5 — 69.0 / 10
71.0 / 10	69.4	67.6 / 10
68.8 / 10	68.2	67.2 / 10
67.6 / 10	67.6	68.6 / 10
66.9 / 10	66.7	66.6 / 10

Stake 24" R.C. Culvert - ℄ Sta. 48+42.89

See P. 24 for Sketch.

= 3+30.52 - 10'S. on line			
0+00 = ℄ of Clean out	09.52	03.50	C 6.02
stakes 6' Lt			
+35	08.77	06.23	C 2.54
+70	10.54	08.96	C 1.58
1+05	13.58	11.68	C 1.90
+40	16.19	14.40	C 1.79
+75	18.98	17.13	C 1.85
face of Head wall 10' Lt			
2+05.48 = ℄ end =	23.76	19.50	C 4.26
14' Rt.	20.97	19.50	C 1.47

Beg. 49' Side Drain to U Type Inlet.

0+00 = ℄ CL.		03.50	
+25 - 6' Lt.	10.93	07.84	C 3.09
+49 = ℄ end = face of Headwall			
8' Rt.	13.83	12.00	C 1.83
12' Lt. at 90°	13.85	12.00	C 1.85

B.M. = 221.22 = 5 off Lt. 48+75

40

Beg. 27" R.C. at Clean out = 0+00

0+00 = ℄ C.L.		03.50	
+35	07.78	101.48	C 6.30
+70	06.48	99.45	C 7.03
1+05	04.00	97.42	C 6.58
+40 T.P.	00.65	95.39	C 5.26
+75	97.76	93.36	C 4.40
2+10	95.06	91.33	C 3.73
+45	93.58	89.30	C 4.25
+80	91.00	87.27	C 3.73
3+05	89.25	85.82	C 3.43
+30.52 = ℄ of J Drop Inlet.			
I.E.	87.74	84.34	C 3.40
Top	87.74	90.00	F 2.26
℄ Inlet = 0+00 to W.		8	
0+42.50 = B.C.	83.66	81.30	C 2.36
+74.69	81.29	79.00	C 2.29
1+06.88	79.68	76.71	C 2.97
+39.07	77.90	74.41	C 3.49
+71.26	75.82	72.18	C 3.70

Stake 45" RC. Drain - 32+00 ℄ Sta
sketch-P. 30. - 7-8-55 7.0

0+00 = ℄ inlet = face of Headwall - wing type

0+00 - 12' Rt.		10.54	10.54 08.50	C 2.04
6 Lt.		11.00	11.00 08.50	C 2.50
0+25.24 = PC		08.40	8.40 06.85	C 1.55
+59.27		06.80	6.80 04.62	C 2.18
+93.31		05.33	5.33 02.39	C 2.94
1+27.34		02.29	2.29 100.16	C 2.13
+61.38		99.65	9.65 97.93	C 1.72
+95.41 = E.C.		97.14	7.14 95.70	C 1.44
2+35		95.07	5.07 93.10	C 1.97
+70		93.20	3.20 90.80	C 2.40
3+05		91.13	91.13 88.50	C 2.63

+43 = end = ℄ outlet = face of Headwall - U type

6' Lt.		88.62	8.62 86.00	C 2.62
6' Rt.		88.08	8.08 86.00	C 2.08

2+03.45	T.P.	73.55	73.55 69.83	C 3.72
+35.65 = E.C.		71.59	71.59 67.54	C 4.05
+70		69.42	9.42 65.10	C 4.32
3+05		66.87	6.87 62.67	C 4.26
64.80 +40		64.07	4.07 60.12	C 3.95
+75		62.06	62.06 57.63	C 4.43
4+10		60.05	60.05 55.14	C 4.91

+40 = End = ℄ face of Headwall

6' Lt.		57.76	7.76 53.00	C 4.76
14' Rt.		58.17	8.17 53.00	C 5.17

Stake 72" Drain
15' offset - Lt. = N.

		Grade	Cut.
0+00 = Meet	53.11	53.11 36.90	C 16.21
+50	48.54	48.54 38.59	C 9.95
1 ~	49.44	9.44 40.28	C 9.16
+50	51.63	51.63 41.97	9.66
2 ~	54.10	54.10 43.66	10.44
+50	57.15	57.15 45.35	11.80
3 ~	60.22	60.22 47.04	13.18
+50	63.57	63.57 48.73	14.84
4 ~	66.20	66.20 50.42	15.78
+50	66.15	66.15 52.11	14.04
+94.95 = B.C.	61.36	61.36 53.47	7.89
5+30	59.74	9.74 54.25	5.49
+65	59.39	9.39 55.03	4.36
6+00	59.78	9.78 55.82	3.96
+35	60.62	60.62 56.60	4.02
+70	62.65	62.65 57.38	5.27
7+05 = T.P.	64.17	64.17 58.17	6.00
+40	67.24	67.24 58.95	8.29
+75	68.22	68.22 59.73	8.49

8+10	66.56	6.56 60.52	6.04
+45	66.69	6.69 61.30	5.39
8+80	67.13	7.13 62.08	5.05
9+15	67.67	7.67 62.86	4.81
9+50	69.07	9.07 63.65	5.42
9+85	70.77	70.77 64.43	6.34
10+20	71.67	71.67 65.21	6.46
10+60.49 = E.C.	72.85	72.85 66.12	6.73
11+00	74.63	74.63 67.00	7.63
+40	74.77	74.77 67.89	6.88
+80.49 = End	73.25	73.25 68.80	4.45

Stake water pipe at vault.
4' = Cross

0+00 = Conn.	62.26	62.8 58.0	C 4.3
5' Lt. 0+08 = Ang. 45° Rt.	61.75	61.7 57.5	C 4.2
5' Lt. 0+52.5 = Join 72"	64.95	65.0 55.0	C 10.0

Final Sub. grade Stakes

	51 out	39.2 out	10.2	3.8
58 +00	08.45	06.87	06.98	06.83
57 +50	08.62	07.02	06.94	06.85
	42 out.	30.2 out.	1.2 out	
57 ~	08.59	06.95	06.60	
+50	08.31	06.65	05.93	
56 ~	07.73	06.04	04.93	
+50	06.81	05.11	03.60	
55	05.39	03.66	01.95	
+50	03.40	01.67	99.92	
54 ~	01.05	99.32	97.58	
+50	98.35	96.62	94.88	
53 ~	95.31	93.58	91.84	
+50	91.96	90.23	88.49	
52 ~	88.57	86.84	85.10	
+50	85.18	83.45	81.71	
51 ~	81.79	80.06	78.32	
+50	78.41	76.68	74.94	
50 ~	75.02	73.29	71.55	

Lt. cut = Base Line

Rt. cut = Base Line

Type "H" curb Section from 50 +00 on

(43)

	39.2	51
	06.16	07.71
	06.18	07.72
	1.2 out. 30.2 out.	42 out.
	05.84	07.38
05.87	05.06	06.63
04.84	03.88	05.43
03.49	02.15	03.69
01.81	00.18	01.70
99.79	98.05	99.56
97.44	95.70	97.21
94.74	93.00	94.51
91.72	89.96	91.47
88.35	86.61	88.12
84.96	83.22	84.73
81.57	79.83	81.34
78.18	76.44	77.95
74.80	73.06	74.57
71.41	69.67	71.18

Curve Data - Spirals + Reg.

℄ Spiral - 27+18.76 = P.S.
used for slope stakes

27 + 18.76 = P.S.
+50 0° 01' 15"
+75 0° 04'
28 ~ 0° 08' 15"
+25 0° 14'
+50 0° 21' 30"
+75 0° 30' 15"
29 ~ 0° 40' 45"
+25 0° 52' 45"
+50 1° 06' 30"
+75 1° 21' 30"
30+06.76 = P.S.C. 1° 43' 08"
Beg. 1600' Rad Curve
30+25' 0° 19' 30"
+50 0° 46' 30"
+75 1° 13' 15"
31 ~ 1° 40' 15"
31+25' 2° 07'
+50 2° 34'
+75' 3° 00' 45"
32 ~ 3° 27' 30"
+25 3° 54' 30"
+50 4° 21' 15"
+75' 4° 48' 15"
33 ~ 5° 15'
+25 5° 42'
+50 6° 08' 45"
+75' 6° 35' 30"
34 ~ 7° 02' 30"
+15.03 = P.C.S. 7° 18' 30"
Beg. Spiral - Run from P.T. 1° 43' 15"
34+25' 1° 36'
+50 1° 19' 30"
+75' 1° 04' 30"
35 ~ 0° 51' 15"
+25' 0° 39' 15"

35+50	0° 29'
+75	0° 20' 15"
36 ~	0° 13' 15"
+25	0° 07' 30"
+50	0° 03' 30"
+75	0° 01'
37+03.03 = P.T.	

Reg. Curve used for slope stakes.
R = 1200' d = 1.4324

47+93.41 = B.C.	
48+00	0° 10'
+50	1° 21' 15"
49 ~	2° 32' 45"
+50	3° 44' 30"
50 ~	4° 56'
+50	6° 07' 45"
51 ~	7° 19' 15"
+50	8° 31'
52 ~	9° 42' 30"

52+50	10° 54' 15"
53 ~	12° 05' 45"
+50	13° 17' 15"
54 ~	14° 29'
+50	15° 40' 30"
55 ~	16° 52' 15"
+50	18° 03' 45"
56 ~	19° 15' 30"
+20.17 = E.C.	19° 44' 15"

Beg. H. Lane spiral 2fbh = 0.7336
46+96.59 = P.S.

47+00	0° 00' 0"
+50	0° 06' 15"
48 ~	0° 23' 45"
+50	0° 52'
49 ~	1° 31' 30"
+12.59 = P.S.C.	1° 43' 08"

Beg 1200' Rad.

49+50	0° 53' 30"

50 ~	2°	05'	15"
+50	3°	16	45
51 ~	4°	28'	30"
+50	5°	40	
52 ~	6°	51'	45"
+50	8°	03'	15"
53 ~	9°	15'	
+50	10°	26'	30"
54 ~	11°	38'	15"
+50	12°	49'	45"
55 ~	14°	01'	30"
+23.35 = P.C.S.	14°	34'	45"
Beg. Spiral - Run from P.T.			
2 fbh = 8.696			
55 + 23.35 = P.C.S.	1°	43'	08"
+50	1°	19'	15"
56 ~	0°	43'	
+50	0°	17'	45"
57 ~	0°	03'	30"
+39.35 = P.T.	0°		

Beg. Rt. Lane spiral

46 + 73.13 = P.S.	
47 + 00	0° 01' 30"
+50	0° 13'
48 ~	0° 35' 30"
+50	1° 09' 15"
+89.13 = P.S.C.	1° 43' 08"
Beg. 1200' Rod.	
49 + 00	0° 15' 30"
+50	1° 27' 15
50 ~	2° 38' 45"
+50	3° 50' 30"
51 ~	5° 02'
+50	6° 13' 45"
52 ~	7° 25' 15"
+50	8° 37'
53 ~	9° 48' 30"
+50	11° 00 15"
54 ~	12° 11' 45"

54 + 50	13° 23' 30"	
+99.89 = P.C.S.	14° 34' 45"	
Rt Lane Spiral - Run from P.T.		
54 +99.89 = P.C.S.	1° 43' 08"	
55 +00	1° 43'	
+50	1° 00' 45"	
56 ~	0° 29' 45"	
+50	0° 09' 30"	
57 ~	0° 00' 30"	
+15.89 = P.T.		

Curves on Interchange at Bottom.

d = 15.347

West. Curve - R = 112' Δ = 104° 16' 48"

24 + 68.94 = E.C.	
ch = 43.66	
+25	11° 14' 15"
ch = 24.95	
24 +00	17° 38'
23 +75	24° 01' 45"
+50	30° 25' 15"
+25	36° 49'
23 +00	43° 12' 45"
ch = 34.76	
22 +65.10 = B.C.	52° 08' 30"

East Curve - R = 106' Δ = 75° 43' 12"

d = 16.2157'

23 +26.78 = B.C.	
ch = 23.17	
+50	6° 16' 30"
+61.73 ch = 24.94 Δ = 18° 55'	
+75	13° 02'
24 ~	19° 47' 15"
+25	26° 32' 45"
+50	33° 18'
+66.87 = E.C.	37° 51' 30"

Lt. Lane spiral—

27+39.83 = P.S.	
+50	0° 00' 15"
28 ~	0° 04' 30"
+50	0° 15"
29 ~	0° 32'
+50	0° 55'
30 ~	1° 24' 15"
+27.83 = P.S.C.	1° 43' 08"

Beg. 1600' Rad.

30+50	0° 23' 45"
31 ~	1° 17' 30"
+50	2° 11' 15"
32 ~	3° 05'
+50	3° 58' 45"
33 ~	4° 52' 30"
+50	5° 46'
34 ~	6° 39' 45"
+36.10 = P.C.S.	7° 18' 30"

Beg. spiral

Run from P.T.

34 +36.10 = P.C.S.	1° 43' 08"
+50	1° 33' 30"
35 ~	1° 02' 30"
+50	0° 37' 45"
36 ~	0° 19' 15"
+50	0° 06' 45"
37 ~	0° 00' 45"
+24.10 = P.T.	

Beg. Rt. Lane spiral

27+10.60 = P.S.	
+50	0° 02'
28 ~	0° 10'
+50	0° 24' 15"
29 ~	0° 44' 30"
+50	1° 11' 15"
+98.60 = P.S.C.	1° 43' 08"

Beg. 1600' Rad. - Rt. Lane

29+98.60 = P.S.C.	
30 ~	0° 01' 30"
+50	0° 55' 15"
31 ~	1° 49'
+50	2° 42' 45"
32 ~	3° 36' 15"
+50	4° 30'
33 ~	5° 23' 45"
+50	6° 17' 30"
34 ~	7° 11' 15"
+06.87 = P.C.S.	7° 18' 30"

Beg. spiral - Run from P.T.

34+06.87 = P.C.S.	1° 43' 08"
+50	1° 14' 30"
35 ~	0° 47' 15"
+50	0° 26'
36 ~	0° 11' 15"
36+50	0° 02' 30"
+94.87 = P.T.	

Balboa Ave. Slope Stakes

Sta.	Slope	Hinge
15 –		+0.1 (5) 53.9 / C 5.8 / 5.8 — 57.6 51.72 47.88'
+75		50.44 47.5
+50		+0.5 (5) 54.1 / C 7.1 / 7.1 — 56.3 49.27 47
+25		48.11 46.5
14 –		+0.3 (5) 55.6 / C 9.6 / 9.6 — 56.7 47.07 46
+75		46.11 45.5
+50		+0.3 (5) 54.9 / C 9.9 / 9.9 — 55.1 45.23 45'
+25		+0.4 (5) 59.9 / C 9.4 / 9.4 — 54.4 45.00 50.5
13 –	1:1 C.	+0.7 (5) 58.8 / C 8.8 / 8.8 — 53.1 44.28 50'

℄	Hinge
52.60	
51.32	
50.12	
48.99	
47.95	
46.99	
46.11	
45.31	
44.59	

Balboa Ave Slope Stakes

Sta.	Slope	Hinge
+25		65.55 48
17−		+0.5 (5) 50.3 / C 2.3 / 2.3 — 66.3 63.97 48
+75		62.38 48
+50		+0.5 (5) 52.0 / C 4.8 / 4.8 — 64.8 60.80 48
+25		59.22 48
16−		+0.5 (5) 51.9 / C 3.9 / 3.9 — 61.5 57.64 48
+75		56.08 48
+50		+0.0 (5) 53.3 / C 5.3 / 5.3 — 59.8 54.54 48
15+25	C 1:1	53.08 48

℄	Hinge	Slope
66.43	65.47 45.18'	F 1½:1
64.85	63.86 46.57'	
63.26	62.24 47.97	
61.68	60.60 49.36'	
60.10	58.93 50.75'	
58.52	57.22 52.13'	F 1½:1
56.96		
55.42		
53.96		

Balboa Ave Slope Stakes

Sta	Slope	Hinge			℄	Hinge	
					80.05		
+50		+1.4 (5)	68.9 F14.6 21.9	64.6 79.17 47	80.05		
+25				77.78 47	78.66		
19 –		+3.2 (5)	66.9 F13.3 19.9	63.1 76.35 47	77.23		
+75				74.89 47	75.77		
+50		+2.3 (5)	60.0 F8.7 13	64.7 73.39 47	74.27		
+25				71.86 47	72.74		
18 –		+0.7 (5)	49.1 F1.4 2.1	68.9 70.29 47	71.17	70.29 41	F1½:1
+75	F1½:1 C1:1			68.71 C48 F47	69.66	68.68 42.39	
17+50	C 1:1	+0.5 (5)	49.5 C1.5 1.5	68.6 67.13 46'	68.01	67.07 43.39'	F1½:1

Balboa Ave. Slope Stakes

Sta.	Slope	Hinge	℄	Hinge
+75				
+50		+0.4 (5) 79.1 / F21.4 / 32.1 — 68.3 89.72 47	90.60	
+25				
21−		+0.4 (5) 69.8 / F18.2 / 22.8 — 71.9 87.10 47	87.98	
+75				
+50		+1.3 (5) 71.2 / F16.1 / 24.2 — 68.4 84.48 47	85.36	
+25				
20−		+1.0 (5) 68.7 / F14.5 / 21.7 — 67.4 81.86 47	82.74	
19+75	F1½:1	80.53 47	81.41	

Balboa Ave. Slope Stakes

Sta	Slope	Hinge		℄		Hinge
23 –			97.58 47		98.46	
+75						
+50		-0.4 (S)	82.5 F 23.7 35.5	71.3 94.96 47	95.84	
+25						
22 –	F 1½:1	-0.9 (S)	80.9 F 22.6 33.9	69.7 92.34 47	93.22	

Morena Blvd Slope Stakes

65.87 = B.M. on 45' R.P. Hub. – S. end.

S.W.O.C.

Sta.	Slope	Hinge	
+75	-0.4 (8)	31.3 / C5.3 / 5.3	52.1 / 46.76 / 26
+50	-0.4 (5)	31.3 / C5.3 / 5.3	52.8 / 47.50 / 26
+27.65 P.C.C.	-0.3 (5)	30.7 / C4.7 / 4.7	53.1 / 48.35 / 26
23 –	-0.3 (5)	29.4 / C3.4 / 3.4	53.1 / 49.71 / 26
22+83.24 Beg. S.W.C.			50.65 / 26

Morena Blvd. Lt. Lane

+83.24 E.C.			50.65 / 38
+75	-0.4 (5)	40.5 / C2.5 / 2.5	51.16 / 38
+50	-0.5 (5)	39.2 / C1.2 / 1.2	54.0 / 52.77 / 38
22+40.06 E.C.	-0.7 (5)	38.0 / Grade	53.8 / 53.82
34.6 = end			53.43 / 38

S.E.O.C.

Hinge		Sta
54.0 / 53.06 / 24	25.9 / C1.9 / 1.9 + 0.4 (5)	+25
55.0 / 51.28 / 24	27.7 / C3.7 / 3.7 + 0.8 (5)	24 –
55.8 / 50.27 / 24	29.5 / C5.5 / 5.5 + 0.5 (5)	+75 ✓
59.7 / 50.01 / 24	33.7 / C9.7 / 9.7 + 0.0 (5)	+50
61.0 / 50.22 / 24	34.8 / C10.8 / 10.8 + 0.5 (5)	+26.78 B.C.
63.0 / 50.84 / 24	36.7 / C12.7 / 12.7 + 0.9 (5)	23 – P.O.T.S.E.O.C.

Morena Blvd. Rt. Lane

From ℄ = 24	66.3 / 51.65 / ~~36~~	50.6 / C14.6 / 14.6 + 0.7 (5)	+72.47 B.C.
24	52.40 / ~~36~~	50.5 / C14.5 / 14.5 + 0.4 (5)	+50
24	53.05 / ~~36~~	49.5 / C13.5 / 13.5 + 0.7 (5)	22+30.40 P.O.T.

Morena Blvd. Slope Stakes

S.E.O.C.

56.41
23.86

-0.6 (8) 24.5 (0.5) 55.7 55.15 24

Balboa
15+87.30
24+66.87 EC
S.E.O.C.

24+50

Stake Culvert at 39+25

90° To ℄ at 39+25

91' Lt. = N. = ℄ of inlet + wall			
I.E. − 91' Lt 8' W	35.52	234.30 (5.52)	C 1.22
8' F. out	36.55	34.30 (6.55)	C 2.25
77' Lt 5' W − I.E. =	31.06	234.00 (37.06)	C 3.06
36' Lt. = ℄ Type I Box			
5' W. − Top	96.98	98.77 (6.98)	F 1.79
I.E.		95.60	C 1.38
5' E. Top	97.53	98.77 (7.53)	F 1.24
I.E.		95.60	C 1.93
℄ − 5' W.	99.31	94.92 (9.31)	C 4.39
34.5' Rt. = ℄ of Box			
5' W. − Top	98.15	99.17 (8.15)	F 1.02
I.E.	98.15	94.24	C 3.91
5' E. Top	98.81	99.17 (8.81)	F 0.36
I.E.	98.81	94.24	C 4.57
43.5 Rt. = ℄ of outlet + wall			
8' W. − I.E.	01.78	94.08 (01.78)	C 7.70
8' E.	98.73	94.08 (98.73)	C 4.65

Culvert at 44+75

90° To ℄ at 44+75

36' Lt. = ℄ "I" inlet			
5' W. Top	34.28	36.01 (4.28)	F 1.73
I.E.		32.70	C 1.58
5' E. Top	34.86	36.01 (4.86)	F 1.15
I.E.		32.70	C 2.16
5' W. of ℄ at ℄	36.41	36.41 (32.02)	C 4.39
34.5' Rt. = ℄ "H" Inlet			
5' W. − Top	35.29	36.44 (5.29)	F 1.15
I.E.		31.34	C 3.95
5' E. Top	36.04	36.44 (6.04)	F 0.40
I.E.	36.04	31.34	C 4.70

Stake -Slope- for 20' Road for access to House - Sta. 14+50 - 90° to ℄ of Baboa
47' out to N. = Hinge = 0+00 on Road Sect.

			Hinge = 10'	E		Hinge = 10'		
0+00 = 47' out. = Hinge on Baboa				49.24				
0+07.1 = Top of Slope	+0.2 / 5	C 6.7 / 6.7	56.8 50.1	50.09		57.0 50.1	C 6.9 / 6.9	+0.3 / 5
0+25	0.0 / 5	C 5.2 / 5.2	57.4 52.2	52.24		57.0 52.2	C 4.8 / 4.8	+0.2 / 5
0+75	0.0 / 5	F 0.1 / 0.1	58.1 58.2	58.24		58.8 58.2	C 0.6 / 0.6	+0.2 / 5
1+00	-0.1 / 5	Grade	59.5 59.5	59.5		60.6 59.5	C 1.1 / 1.1	+0.4 / 5
1+35	-0.3 / 5	F 0.4 / 0.6	62.0 62.4	62.4		63.6 62.4	C 1.2 / 1.2	+0.2 / 5
1+50 = ℄ 10' wide Rd. = Meet. Ang. 58° Lt.				63.64				

Stake 24" RC. Pipe at 14+62.50 - ℄

8' N. - I.E.	49.79	46.51 (9.28) C 3.28
Top.		50.26 F 0.47
I Type - Drop		
0+00 = ℄ Inlet. - I.E.		46.51 C 3.16
8' S. - Top	49.67	50.26 (9.67) F 0.59
5' at ℄		
0+16.28 = B.C.	50.22	45.91 C 4.31
+41.65	51.12	44.99 C 6.13
+67.02 (5 Parts.)	50.97	44.07 C 6.90
+92.39	50.81	43.14 C 7.67
1+17.76	49.80	42.22 C 7.58
+43.14 = EC. Join 72"	48.97	41.30 C 7.67

12' of 24" To Headwall

0+00 = ℄ Inlet

0+12 = ℄ inlet - 8' N.	52.34	54.00 F 1.66
+ Headwall		
8' S. - I.E.	60.00	54.00 C 6.00

Ditch

0+00 - ℄ inlet at wall	54.00	
0+42	56.4	54.66 C 1.7
+78	56.5	55.22 C 1.3
1+28	58.6	56.00 C 2.6

℄ of I - Drop Inlet at 13+27 - 42.8' Lt

8' E. of ℄ - Top = 6' = Cor.	44.66	44.80 F 0.14
I.E.	44.66	40.50 (4.66) C 4.16
8' W. of ℄ - Top - 6' = Cor.	48.62	44.68 F 3.94
I.E.	48.62	40.50 (8.62) C 8.12

14.5' S. = Conn. to 72"

5' S. on Line - I.E. of 24"	44.78	38.40 (4.78) C 6.38

Stake Water Line – Balboa – Hwy to East.
Plan – 2891-C-D – 5-11-56 – 7.0.

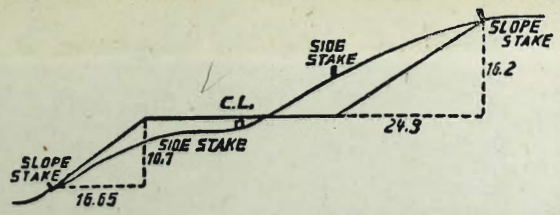
1+06 = Meet		17.00	
+50	22.6	22.6 17.4	C 5.2
2 ~	23.9	23.9 17.8	C 6.1
+50	25.1	25.1 18.3	C 6.8
3 ~	26.3	26.3 18.7	C 7.6
+50	27.4	27.4 19.1	C 8.3
4 ~	28.7	28.7 19.6	C 9.1
+50 = Brk.	30.0	20.00	C 10.0
5+06 = Brk	31.3	31.3 26.50	C 4.8
+50	32.4	32.4 27.6	C 4.8
6 ~	33.5	33.5 28.7	C 4.8
+50	34.7	34.7 29.9	C 4.8
7 ~	36.1	6.1 31.1	C 5.0
+25 = Brk	36.65	66.5 31.75	C 4.90
+50	37.3	7.3 32.0	C 5.3
8 ~	38.5	8.5 32.6	C 5.9
+50	39.7	9.7 33.2	C 6.5
9 ~	40.9	40.9 33.8	C 7.1
+50	42.1	42.1 34.4	C 7.7
10 ~	43.3	43.3 35.0	C 8.3
+50	44.5	44.5 35.6	C 8.9
11 ~	45.8	45.8 36.3	C 9.5
+50	46.9	46.9 36.9	C 10.0
12 ~	46.6	46.6 37.5	C 9.1
+50	46.4	46.4 38.1	C 8.3
13 ~	47.1	47.1 38.7	C 8.4
+30 = End	48.8	48.8 39.00	C 9.8
on 8" stake at N.L.	47.5	47.5 36.5	C 11.0

204.66
32.77
237.43
77

43862
77
307634
307634
33.77374

36.01
4.80
1.21

6.44
5.70
74



DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING.

SLOPE 1½ 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

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