

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.

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

MICROFILMED

JAN 10 1965

TABLE XIII—CORRECTIONS FOR TANGENTS AND EXTERNALS

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

FOR TANGENTS ADD

Central Angle	DEGREE OF CURVE													
	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°
10°	.03	.06	.09	.13	.16	.19	.22	.25	.28	.31	.34	.38	.42	.46
15°	.04	.10	.14	.19	.24	.29	.34	.39	.45	.51	.53	.58	.63	.68
20°	.06	.13	.19	.26	.32	.39	.45	.51	.58	.65	.72	.79	.84	.90
25°	.08	.16	.24	.33	.40	.49	.58	.67	.75	.83	.90	.99	1.06	1.14
30°	.10	.19	.29	.39	.49	.59	.69	.79	.89	.99	1.09	1.20	1.29	1.39
35°	.11	.22	.34	.47	.58	.69	.79	.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	.771	.845	.922	1.01
70°	.080	.159	.240	.321	.403	.485	.568	.652	.735	.819	.906	.994	1.08	1.17
75°	.095	.182	.266	.353	.440	.528	.617	.707	.797	.877	.970	1.07	1.18	1.29
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.

STEEL IN CUTOFF WALLS BETWEEN BUTTRESSES. 1-

Aug. 11, 1952.

CLEAR, WARM.

LEONARD, R & NOTES.
MARTEL } CHAIN
VARONFAKIS }

1.

STEEL IN CUTOFF WALL - BUTTRESS #9 TO #10.

NOTES:

"+" MEASUREMENTS ARE TAKEN AROUND ARC OF STEEL RODS, WITH THE ZERO END AT THE ROD WHOSE POSITION IS LOCATED BY COORDINATES, AT THE EAST END OF EACH STEP. EXTRA ROSE ARCH RODS ARE GIVEN FIRST ON EACH STEP.

"O" & "I" BEFORE "L" ORDINATE MEANS; "O" = OUTER

"I" = INNER

STEP COORDINATES ARE TAKEN IN LINE WITH THE STEEL, NEAR AS POSSIBLE.

STEP ELEV'S. ARE TO NEAREST 0.1' FT.

SUCCESSING PAGES WILL NOT BE LABELED AT THE HEAD OF EACH COLUMN, BUT DATA WILL BE RECORDED IN SAME ORDER AS ON PAGE ONE.

19. Leonard

"L"	"D"	+	LENGTH.	SIZE & SHAPE	STEP ELEV.
0.1158.87	1541.60		3.0'	5/8" O	1911.6'
			1.0'	"	"
			2.5'	"	"
			3.2'	"	"
			4.3'	"	"
			4.7'	"	"
			5.2'	"	"
			5.9'	"	"
			6.8'	"	"
			7.4'	"	"
0.1166.33	1543.78		3.0'	"	"
0.1157.63	1546.05		3.0'	"	"
			0.4'	"	"
			0.8'	"	"
			1.7'	"	"
			2.4'	"	"
			3.0'	"	"
			3.8'	"	"
			4.8'	"	"
0.1162.32	1547.80		3.0'	"	"
			3.0'	"	"

#9 TO #10- CONT'D.

NOTE: ALL ROUND BARS BETWEEN #9 & #10 ARE
VERTICAL. ALL 1" SQUARE BARS LEAN IN
A COUNTER-CLOCKWISE DIRECTION.

0.1166.78	1544.22	STEP	-	-	1912.7
0.1163.52	1548.00	"	-	-	"
0.1167.18	1544.25	-	2.3'	$\frac{5}{8}$ " O	"
		1.7	3.0'	"	"
		1.8	3.1'	1" □	"
		3.2'	3.0'	$\frac{5}{8}$ " O	"
		3.8'	3.0'	1" □	"
		4.6'	3.1'	"	"
		4.6'	3.0'	$\frac{5}{8}$ " O	"
		6.2'	3.0'	"	"
		6.4'	3.8'	1" □	"
		7.6'	3.1'	$\frac{5}{8}$ " O	"
		8.0'	3.5'	1" □	"
		9.0'	3.5'	$\frac{5}{8}$ " O	"
		9.5'	3.6'	1" □	"
		10.6'	3.5'	$\frac{5}{8}$ " O	"
		11.1'	3.6'	1" □	"
		12.0'	3.6'	$\frac{5}{8}$ " O	"
		12.6'	3.9'	1" □	"
		13.6'	3.9'	$\frac{5}{8}$ " O	"

#9 to #10 - CONT'D.

"0" 1176.60	1553.73	—	3.9'	1" □	1912.7'
? "8" 1163.48	1548.50	—	2.0'	$\frac{5}{8}$ " O	"
↓ 1163.48		0.8'	2.5'	"	"
		1.7'	2.4'	"	"
		2.6'	2.9'	"	"
		4.6'	3.5'	"	"
		5.1'	3.4'	1" □	"
		6.1'	3.5'	$\frac{5}{8}$ " O	"
		6.7'	4.0'	1" □	"
		7.6'	3.8'	$\frac{5}{8}$ " O	↓
		8.2'	4.0'	1" □	"
		9.1'	4.2'	$\frac{5}{8}$ " O	"
		10.2	4.4	1" □	"
		10.5	4.4'	$\frac{5}{8}$ " O	"
"8" 1171.55	1556.23	—	4.7'	1" □	"
"0" 1176.58	1554.47	STEP.	—	—	1913.9'
"8" 1172.02	1556.66	STEP	—	—	"
"0" 1177.20	1554.58	—	2.8'	$\frac{5}{8}$ " O	"
		0.8'	3.0	1" □	"
		1.7	3.0	$\frac{5}{8}$ " O	"

#9 TO #10-CONT'D.

			2.0'	3.4'	1" □	1913.9
			3.2'	3.4'	$\frac{5}{8}$ " 0	"
			3.6'	3.7'	1" □	"
			4.6'	3.7'	$\frac{5}{8}$ " 0	"
			5.2'	3.9'	1" □	"
			6.0'	3.8'	$\frac{5}{8}$ " 0	"
0.1178.70	1561.23	—	4.0'	1" □	"	"
0.1171.78	1556.71		3.4'	$\frac{5}{8}$ " 0	"	"
			0.5'	3.5'	1" □	"
			1.7'	3.6'	$\frac{5}{8}$ " 0	"
			2.2'	3.8'	1" □	"
			3.2'	3.9'	$\frac{5}{8}$ " 0	"
			3.9'	4.0'	1" □	"
			4.7'	4.0'	$\frac{5}{8}$ " 0	"
			5.3'	4.0'	1" □	"
0.1173.05	1562.67		4.5'	$\frac{5}{8}$ " 0	"	"
0.1178.56	1561.98	STEP				1915.5'
0.1173.72	1562.72	"				"
0.1178.80	1561.94		3.0'	$\frac{5}{8}$ " 0	"	"
		0.4	3.2'	1" □	"	"

29 TO 70 - CONT'D.

		1.5'	3.3'	$\frac{5}{8}$ " O	1915.5
		2.0'	3.7'	1" □	"
		3.0'	3.7'	$\frac{5}{8}$ " O	"
		3.6'	3.8'	1" □	"
		4.4'	3.8'	$\frac{5}{8}$ " O	"
		5.1'	4.0'	1" □	"
O. 1178.72	1568.55		4.4'	1" □	"
S. 1173.60	1562.91		3.2'	1" □	"
		1.2'	3.4'	$\frac{5}{8}$ " O	"
		1.5'	3.6'	1" □	"
		2.6'	3.7'	$\frac{5}{8}$ " O	"
		3.1'	4.0'	1" □	"
		4.0'	4.0'	$\frac{5}{8}$ " O	"
		5.2'	4.0'	1" □	"
S. 1173.64	1568.60		4.8'	$\frac{5}{8}$ " O	"
O. 1178.95	1568.86	STEP.			1917.0
S. 1173.72	1568.85	"			"
O. 1178.77	1569.18		3.2'	$\frac{5}{8}$ " O	"
		0.8'	3.3'	1" □	"
		1.6'	3.4'	$\frac{5}{8}$ " O	"

#9 TO #10 - CONT'D.

		2.1'	3.4'	1" □	1917.0
		3.1'	3.7'	$\frac{5}{8}$ " 0	"
		3.8'	4.1'	1" □	"
		4.6'	4.2'	$\frac{5}{8}$ " 0	"
		5.4'	4.2'	1" □	"
		6.0'	4.2'	$\frac{5}{8}$ " 0	"
		6.9'	4.7'	1" □	"
		7.6'	4.4'	$\frac{5}{8}$ " 0	"
O. 1176.24'	1576.98		4.8'	1" □	"
S. 1173.45'	1569.14		3.3'	1" □	"
		0.8'	3.4'	$\frac{5}{8}$ " 0	"
		2.0'	3.5'	1" □	"
		2.3'	3.6'	$\frac{5}{8}$ " 0	"
		3.0'	3.9'	1" □	"
		3.8'	4.0'	$\frac{5}{8}$ " 0	"
		5.0'	4.5'	1" □	"
S. 1171.71	1574.03		4.4'	$\frac{5}{8}$ " 0	"
O. 1176.17	1577.40	STEP.			1918.4
S. 1171.51	1574.85	"			"

#9 TO #10 - CONT'D.

0.1176.30	1577.60	3.3'	$\frac{5}{8}$ " 0	1918.4'	
		0.3'	3.5'	1" □	"
		1.6'	3.4'	$\frac{5}{8}$ " 0	"
		2.1'	3.6'	1" □	"
		3.0'	3.7'	$\frac{5}{8}$ " 0	"
		3.7'	3.9'	1" □	"
		4.5'	3.8'	$\frac{5}{8}$ " 0	"
		5.2'	4.0'	1" □	"
		6.0'	4.0'	$\frac{5}{8}$ " 0	"
		6.8'	4.4'	1" □	"
0.1172.29	1583.70	4.3'	$\frac{5}{8}$ " 0	"	
0.1171.35	1594.65	3.3'	1" □	"	
		0.7'	3.3'	$\frac{5}{8}$ " 0	"
		1.1'	3.4'	1" □	"
		2.2'	3.6'	$\frac{5}{8}$ " 0	"
		2.8'	3.8'	1" □	"
		3.7'	3.9'	$\frac{5}{8}$ " 0	"
		4.4'	4.2'	1" □	"
		5.2'	4.3'	$\frac{5}{8}$ " 0	"
		6.0'	4.6'	1" □	"

#9 TO #10 - CONT'D.

S. 1167.75	1583.30		4.5	$\frac{5}{8}$ " 0	1918.4'
O. 1171.42		STEP.			1920.0
S. 1167.45		"			"
O. 1171.13			3.0'	1" \square	"
			0.7	3.7' $\frac{5}{8}$ " 0	"
			1.0'	3.3' 1" \square	"
			2.8'	3.4' $\frac{5}{8}$ " 0	"
			2.9'	3.5' 1" \square	"
			3.8'	3.7' $\frac{5}{8}$ " 0	"
			4.9'	3.9' 1" \square	"
O. 1167.38'			4.1'	$\frac{5}{8}$ " 0	"
S. 1167.33			3.3'	1" \square	"
			1.0'	3.5' $\frac{5}{8}$ " 0	"
			1.6'	3.7' 1" \square	"
			2.5'	3.9' $\frac{5}{8}$ " 0	"
			3.1'	4.1' 1" \square	"
			4.0'	4.2' $\frac{5}{8}$ " 0	"
S. 1164.10			4.2'	1" \square	"
O. 1166.82	1587.39	STEP.			1921.4
S. 1163.65	1583.38	"			"

NOTE: DOZER PUSHED DIRT OVER STEP BEFORE
"D" COORDINATES WERE TAKEN.

F.B. 829

NOTE: REMAINDER OF STEEL IS RECORDED
IN F.B. #828, FOR THIS ARCH.
STEP COORDINATES ARE LISTED HERE.

OCT. 29, 1952 LEONARD
KROOSKOS.

O.M.	+7.45	1932.88	1925.43
FOOT BUTT. #1		-5.05	1927.83
2ND. STEP.		-6.48	1926.40
3RD. "		-8.04	1924.84
4TH. "		-9.64	1923.24
5TH. "		-11.43	1921.45
6TH. "		-12.88	1920.00

#9 TO #10 - CONT'D.

0.1163.10	1589.53	STEP.	1923.0
8.1159.74	1585.77	"	"
0.1157.35	1592.65	"	1924.9
8.1155.00	1588.29	"	"
0.1152.67	1594.81	"	1926.4
8.1150.70	1590.19	"	"
0.1144.45	1597.51	"	1927.7
8.1140.87	1593.84	"	"

Aug. 19, 1952.

LEONARD,
MARTEL,
VARNHAGEN.

10.

CLEAR, WARM,

STEEL IN CUT-OFF WALL BETWEEN BUTT. #8 & #9.

T.R.M.	+5.63	1921.81	1916.18	Rock	"L"	"D"	+	LENGTH	SIZE & SHAPE	FOOTING ELEV. ±
STEP, TOE BUTT. #8.	-10.14	1911.67			6.160.03'	0.148.680	0.0	3.2'	3/4" □ V.	1911.7 TO 1911.9
TOP OF KEY, EAST END.	9.58	1912.23					"	3.9'	"	"
STEP, MID-POINT	-9.90	1911.91					0.6'	4.9'	1" □	"
TOP KEY, MID-PT.	-9.39	1912.42					1.2'	3.4'	3/4" □	"
" " END - CRUMPLED.	-9.54	1912.27					1.5'	3.5'	" V.	"
STEP - STREAM X-ING.	10.45	1911.36					1.6"	5.0'	1" □	"
" TOE BUTT. #9.	10.51	1911.30					2.2'	3.2'	3/4" □	"
							2.6'	5.1'	1" □	"
							3.1'	3.6'	3/4" □ V.	"
							3.1'	2.8'	"	"
							3.7'	5.0'	1" □	"
							4.1'	3.1'	3/4" □	"
							4.8'	3.4'	"	"
							4.9'	5.2'	1" □	"
							5.3'	3.5'	3/4" □	"
							5.9'	5.1'	1" □	"
							6.4'	3.6'	3/4" □	"
							6.5	3.5'	" V	"

EMBEDDED STEEL

NOTE: BARS ARE SO ENCRUSTED IT IS DIFFICULT

TO DETERMINE THEIR TRUE SIZE.

BARS WITH A "V" IN SHAPE COLUMN ARE VERTICAL.

ALL OTHERS LEAN TOWARD CENTER OF ARCH.

#8 TO #9 - CONT'D.

NOTE: ALL EXTRADOS CURVED STEEL.

		7.2'	5.4	1" □	1911.9
		7.6'	3.8'	$\frac{3}{4}$ " □	"
		8.0'	5.6'	1" □	"
		9.0'	3.7'	$\frac{3}{4}$ " □ V	"
	—	8.5	3.9'	$\frac{3}{4}$ " □ V	"
		9.4'	5.7'	1" □	"
		9.9'	4.0	$\frac{3}{4}$ " □	"
		10.0'	3.5'	"	"
		10.6'	5.9'	1" □	"
		11.5'	3.8'	$\frac{3}{4}$ " □ V	"
		11.6'	3.9'	" V.	"
		12.0'	5.8	1" □	"
		13.0'	3.8'	$\frac{3}{4}$ " □	"
		13.6'	3.9'	$\frac{3}{4}$ " □	"
		13.7	5.9'	1" □	"
	*L-1123.30	15.3'	4.5	$\frac{3}{4}$ " □ V.	"
	D1489.3	15.7'	5.7'	1" □	"
		17.1'	3.8'	$\frac{3}{4}$ " □ V.	"
		17.8	5.8'	1" □	"

#8 TO #9 - CONT'D.

NOTE: ALL EXTRADOS STEEL.

		19.0'	4.0	$\frac{3}{4}$ " \square V.	1911.9
		19.8'	5.8	1" \square	"
		20.8'	4.0'	$\frac{3}{4}$ " \square	"
		21.7	5.8'	1" \square	"
		22.5'	6.0'	1" \square V.	"
		23.7'	6.0'	1" \square	"
		24.1'	6.0'	" V.	"
		25.8	6.0'	" V.	"
		26.8'	5.8'	"	"
		27.2'	6.0'	" V.	"
		28.7	6.0'	" V.	"
		"	6.0'	"	"
		30.5	6.0'	" V.	"
		31.8	6.0'	" V.	"
	* 1182.92'	33.2'	6.0'	"	"
	1503.35	35.0'	6.6'	"	"
		36.3'	6.2'	"	"
		38.3	7.0'	" V.	"
		39.8	7.5'	" V.	"

#8 TO #9 - CONT'D.

NOTE: ALL EXTRADOS STEEL.

	41.4'	6.5	1" □ V.	1911.9
	43.0'	5.7	" V.	"
	44.1	6.0	" V.	"
	45.9'	5.7'	" V.	"
	47.5	5.9'	" V.	"
	49.0'	5.9'	" V.	"
	50.5'	5.8'	" V.	"
	51.3'	5.8	" V.	"
	52.0'	6.0'	" V.	"
	53.6'	3.9	$\frac{3}{4}$ " □ V.	"
	54.2'	5.7	1" □	"
	55.8'	3.8	$\frac{3}{4}$ " □ V.	"
* 1178.25	56.3'	5.2	1" □	"
	57.9'	4.0'	$\frac{3}{4}$ " □	"
	58.2'	5.6'	1" □	"
	60.0'	4.3'	$\frac{3}{4}$ " □ V.	"
	60.5'	5.5'	1" □	1911.4
	62.0'	4.3	$\frac{3}{4}$ " □ V.	"
	63.0	5.8'	1" □	"

#8 TO #9-CONTD.

	65.9	4.5	$\frac{3}{4}$ " □	1911.3
-	65.0'	6.1'	1" □	"
	66.0'	4.5	$\frac{3}{4}$ " □	"
	66.9'	6.5'	1" □	"
-	67.9'	4.5'	$\frac{3}{4}$ " □	"
	69.2'	3.2'	$\frac{1}{2}$ " □	"
	70.0'	3.1'	"	"
-	70.7'	3.0'	"	"
	71.3'	3.0'	"	"
	71.8'	3.0'	"	"
	72.4'	2.9'	"	"
	72.9'	3.1'	"	"
-	73.7'	3.1'	"	"
	74.5'	3.0'	"	"
	75.2	3.2'	"	"
	75.6'	3.0'	"	"
-	76.2'	2.8'	"	"
	77.0'	2.9'	"	"
	78.1'	3.2'	"	"

#8 TO #9 - CONT'D.

EXTRADOS STEEL.

78.8 3.2' $\frac{1}{2}$ " \square 1911.3

79.7' 3.0' " "

80.5 2.8' " "

* 1158.30' 1538.65 81.4 3.0' " "

BEGIN INTRADOS STEEL.

* 1157.10' 1486.25 0.0 6.1' 1" \square 1911.91" \square BARS SLOPE CLOCKWISE.0.4' 3.7' $\frac{3}{4}$ " \square V. "1.4' 5.7' 1" \square "1.8' 3.6' $\frac{3}{4}$ " \square V. "2.4' 5.6' 1" \square "3.0' 4.0' $\frac{3}{4}$ " \square V. "3.3' 6.0' 1" \square "4.5' 6.0' 1" \square "4.8' 3.8' $\frac{3}{4}$ " \square V. "5.6' 6.0' 1" \square "6.3' 4.0' $\frac{3}{4}$ " \square V. "6.3' 6.0' 1" \square "

8.0' 6.0' " "

8.4' 4.1' $\frac{3}{4}$ " \square V. "9.1' 6.0' 1" \square "

#8 TO #9-CONT'D.

10.3'	3.9'	$\frac{3}{4}$ " \square V.	1911.9		
10.3'	6.0'	1" \square	"		
11.7'	5.7'	"	"		
12.4'	4.0'	$\frac{3}{4}$ " \square V.	"		
13.2'	6.0'	1" \square	"		
14.4'	4.8'	$\frac{3}{4}$ " \square V.	"		
15.1'	5.9'	1" \square	"		
15.4'	5.4'	$\frac{3}{4}$ " \square V.	"		
17.3'	5.8'	1" \square	"		
18.3'	4.9'	$\frac{3}{4}$ " \square V.	"		
19.4'	5.9'	1" \square	"		
* 1174.55'	1496.82	20.3'	4.7'	$\frac{3}{4}$ " \square V.	"
		21.3'	5.3'	1" \square	"
		22.3'	4.8'	$\frac{3}{4}$ " \square V.	"
		23.5'	3.9'	$\frac{3}{4}$ " \square V.	"
		24.0'	6.0'	1" \square	"
		25.3'	3.8'	$\frac{3}{4}$ " \square V.	"
		26.0'	6.0'	1" \square	"
		26.9'	4.0'	$\frac{3}{4}$ " \square V.	"

#8 TO #9-CONT'D.

		28.5	4.2'	$\frac{3}{4}$ " \square V.	1911.9'
		30.0'	4.3'	" V.	"
		31.5	4.2'	" V.	"
* 1178.12	1508.46	33.0'	4.0'	" V.	"
		34.5'	4.1'	" V.	"
		36.0'	4.2'	" V.	"
		37.5'	4.0'	" V.	"
		39.0'	4.0'	" V.	"
		40.6'	3.9'	" V.	"
		42.0'	4.0'	" V.	"
		43.0'	5.8'	1" \square	"
		43.6'	4.1'	$\frac{3}{4}$ " \square V.	"
		45.2'	4.1'	" V.	"
		45.3'	5.8'	1" \square	"
		47.0'	4.0'	$\frac{3}{4}$ " \square V.	"
		47.4'	5.7'	1" \square	"
		48.7'	4.0'	$\frac{3}{4}$ " \square V.	"
	1524.41	49.8'	6.0'	1" \square	"
* 1178.48	1474.85	50.2'	4.1'	$\frac{3}{4}$ " \square V.	"

1" \square BARS LEAN COUNTER-CLOCKWISE.

#8 to #9 - CONT'D.

51.7	5.8'	1" □	1911.8
51.8	4.0'	$\frac{2}{4}$ " □ V.	"
53.6'	5.8	1" □	"
53.6'	4.2'	$\frac{2}{4}$ " V.	"
54.9'	4.1'	" V.	1911.5
55.6	2.9'	$\frac{1}{2}$ " O	"
56.7'	3.0'	"	"
57.6'	3.3'	"	"
58.2'	3.0'	"	"
58.9	2.9'	"	1911.4
59.4'	"	"	"
60.0'	"	"	"
60.6'	3.5'	"	"
61.4'	3.3'	"	"
62.0	3.0'	"	"
62.7'	3.0'	"	"
63.1'	"	"	"
63.6'	"	"	"
64.3	"	"	"

#8 to #9 - CONT'D.

		65.0	3.0	$\frac{1}{2}''$ 0	1911.3
		65.6'	3.3	"	"
		66.4	3.2	"	"
		67.1'	3.3	"	"
		67.7	3.0'	"	"
*	1157.24	1534.50'	68.5	2.6'	"

~~65.0~~
~~65.6~~
~~66.4~~

AUG. 19-20, 1952

LEONARD - X NOTES
MARTEL - LEVEL & CHAIN
VAROUFAKIS - ROD & CHAIN.

20.

CLEAR, HOT.

ELEV. OF STEPS IN CUTOFF WALL FROM #12 TO #13.

STEEL IN CUTOFF WALL BETWEEN BUTT. #12 & #13.

B.M.	ELEV.	DIFF.	ELEV.	Distance	+	LENGTH.	SIZE & SHAPE	STEP ELEV.
R.M.	+9.59	1949.87	1940.28					
T.P.	+12.24	1960.97	-6.14	0.0		5.4	1"φ	1960.2
T.P.	+11.91	1971.67	-1.21	0.5		5.7	3/4"φ	
TOE OF BUTT. #12.			-11.5'	1.1		5.4	1"φ	
STEP #1.			-8.1	1.6		4.9	1/2"φ	
" #2.			-6.9	1.8		5.6	3/4"φ	
" #3.			-5.8	2.5		5.6	1"φ	
" #4.			-4.9	3.0		5.0	1/2"φ	
" #5.			-4.0	3.3		5.6	3/4"φ	
" #6.			-2.4	4.1		5.5	1"φ	
" #7.			-1.1	4.6		5.0	1/2"φ	
T.P.	+9.47	1980.17	-0.97	4.7		5.5	3/4"φ	
								TOP OF 2" PIPE ON STEP #7.
STEP #8.			-8.16	5.4		4.8	1/2"φ	
" #9.			-6.96	5.4		1.3' 1/2"	1"φ	
" #10.			-5.60	0.0		6.2	1"φ	
" #11.			-4.54	1.3		5.1	1/2"φ	
				1.5		6.0	1"φ	
TOE OF BUTT. #13.			-3.90	2.2		6.7	1"φ	
CHECK R.M.			+8.16	2.4		5.3	1/2"φ	
				2.7		late step - 2.7	1"φ	
TOP OF BOLT IN BUTT. #13 (BY KING)			1988.29	3.3		5.4	1/2"φ	
				3.8		Intosity - 0.6	1"φ	

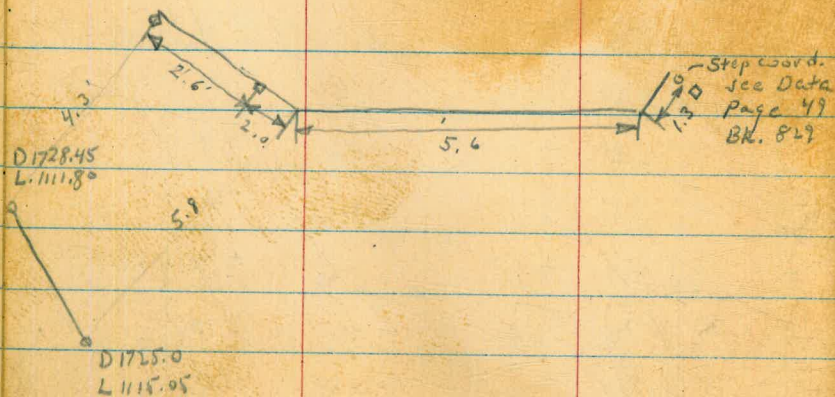
EXTRUDS

INTRUDS

Y

NOTE: THE STEP AT BOTTOM OF BUTTRESS #12 IS BARRIED. WILL BE MEASURED WHEN EXCAVATED.

EXTRADOS STEEL



.42
15.55
28.75

#12 TO #13 CONT'D.

L 1115.05	D 1725.0	STEP 1.			1963.6'
1111.80'	1728.45	STEP.			"
* 1114.88'	1725.95		1.7'	$\frac{1}{2}''$ O	"
			0.6'	3.9'	$\frac{3}{4}''$ □
			0.8'	2.4'	1'' □
			1.7'	5.4'	$\frac{5}{8}''$ □
			2.5'	3.9'	" V.
			2.7'	4.9'	$\frac{5}{8}''$ O.V.
			2.7'	5.7'	1'' □
			3.7'	4.0'	$\frac{3}{8}''$ O.V.
			3.7'	4.8'	$\frac{3}{4}''$ □
			4.0'	3.9'	" V.
1118.18	1729.03	STEP 2.			1964.8'
1114.68	1730.90	STEP 2.			"
			4.8'	4.6'	1'' □
			5.6'	3.2'	$\frac{3}{4}''$ □
			"	3.7'	"
			5.9	2.7'	$\frac{5}{8}''$ O
			7.0'	4.0'	1'' □

#12 to #13 CONT'D.

EXTRADOS STEEL.

		7.2'	3.3	$\frac{3}{4}$ " \square	1964.8
		7.7'	2.3	$\frac{5}{8}$ " O.V.	"
		7.9'	3.7	$\frac{3}{4}$ " \square V.	"
1126.25'	1732.40	STEP #3.			1965.9
1117.46'	1733.62	"			"
		8.9'	3.8'	$\frac{3}{4}$ " \square	"
		9.0'	3.5'	$\frac{5}{8}$ " O	"
		9.4'	4.2'	1" \square	"
		9.9'	2.3	$\frac{5}{8}$ " O V.	"
		10.5'	2.7	$\frac{3}{4}$ " \square	"
		10.6'	3.7	$\frac{3}{4}$ " \square	"
		11.6'	2.5'	$\frac{5}{8}$ " O	"
		12.0'	3.1'	$\frac{3}{4}$ " \square V.	"
		12.4'	3.6'	1" \square V.	"
1122.08'	1736.00'	STEP #4.			1966.8
1119.42'	1737.30'	"			"
		13.3	1.8'	$\frac{5}{8}$ " O V.	"
		13.6	3.2	$\frac{3}{4}$ " \square V.	"
		14.1	2.9	$\frac{3}{4}$ " \square	"

#12 TO #18 CONT'D.

EXTRAORDINARY STEEL.

STEP #5

L. 1124.66

D. 1740.70

" "

L. 1120.80

D. 1741.05

1123.76

1740.98

14.9	1.6'	$\frac{5}{8}$ " O.V.	1966.8'
15.2	4.1	$\frac{3}{4}$ " □ V.	"
15.2	3.1	$\frac{3}{4}$ " □	"
16.2'	1.6	$\frac{5}{8}$ " O.V.	"
16.6'	2.6	$\frac{3}{4}$ " □ V.	"
"	4.1	"	"
18.0'	3.4	$\frac{3}{4}$ " □	1967.7
18.8'	0.7'	$\frac{5}{8}$ " O.V.	"
19.0	3.6'	$\frac{3}{4}$ " □	"
19.6'	3.0	1" □ V.	"
20.0'	4.0'	$\frac{3}{4}$ " □	"
20.5'	0.8'	$\frac{5}{8}$ " O.V.	"
21.0'	3.1'	1" □ V.	"
21.5	3.7	$\frac{3}{4}$ " □	"
22.4	0.8	$\frac{5}{8}$ " O.V.	"
"	3.4	1" □	"
23.5'	1.1'	$\frac{5}{8}$ " O.V.	"
1124.96'	1746.98	STEP #6	1969.3
1120.98'	1746.95	"	"

[#]12 TO [#]18 - CONT'D.EXTRADOS STEEL, 1" \square BAR IN EDGE OF STEP.

BARS LEAN COUNTER CLOCKWISE.

NOTE: ON STEP #6, 3 - $\frac{5}{8}$ " \circ STUBS ABOUT 0.1' TO 0.2'HIGH STICK UP OUTSIDE OF \square BARS - NOT LISTED HERE.

1124.20	1747.00	+24.2	2.1	1" \square	1969.3
		+25.7	2.2'	"	"
		"	2.3'	"	"
		27.0	2.4'	" V.	"
		28.5	2.6'	"	"
		28.8	2.4'	" V.	"
1123.97	1752.32	STEP #7			1970.6
1120.21	1751.90	"			"
		29.4'	2.1	1" \square V.	"
		29.5'	2.2	"	"
		29.0'	0.4'	$\frac{5}{8}$ " \circ V.	"
		22.1'	2.5'	1" \square V.	"
		22.3'	0.7'	$\frac{5}{8}$ " \circ V.	"
		22.0'	2.5'	1" \square	"
		22.8'	2.6'	" V.	"
		22.9'	0.5'	$\frac{5}{8}$ " \circ V.	"
		24.7'	2.6'	1" \square	"
		25.2'	0.5'	$\frac{5}{8}$ " \circ V.	"
		26.1'	2.3'	1" \square V.	"

#12 TO #13 - CONT'D.

EXTRAORD. STEEL.

		36.3'	0.6	$\frac{5}{8}$ " O.V.	1970.6'
		37.0	3.8'	1" \square	"
		37.3'	3.7'	" V.	"
		38.2'	1.0'	$\frac{5}{8}$ " O.V.	"
		38.6'	3.8'	1" \square	"
1119.92'	1760.35	STEP #8			1972.0
1116.78	1758.05	"			"
		39.0'	3.4'	1" \square V.	"
		39.5'	3.3'	"	"
		39.9'	0.8'	$\frac{5}{8}$ " O.V.	"
		41.0'	3.3	1" \square	"
		"	3.6'	$\frac{3}{4}$ " \square V.	"
		42.6'	3.7'	1" \square	"
		42.8'	3.6'	$\frac{3}{4}$ " \square V.	"
		43.9'	3.6"	1" \square	"
		44.4	0.2'	$\frac{5}{8}$ " O.V.	"
		44.7	3.3'	$\frac{3}{4}$ " \square V.	"
		45.3	3.3'	1" \square	"

12 TO #18 - CONT'D.

EXTRAORDS STEEL.

L 1115.16	1765.58	STEP #9			1938.2
1118.27	1762.48	"			"
		46.2	3.8'	1" □	"
* 1114.60'	1765.97	46.7	3.6'	$\frac{3}{4}$ " □ V.	"
		47.2	3.8'	1" □	"
		48.4	3.5	"	"
		48.6	3.5	$\frac{3}{4}$ " □ V.	"
		48.6'	0.2	$\frac{5}{8}$ " □ V.	"
		49.0'	4.0	$\frac{3}{4}$ " □	"
		50.0'	4.0'	1" □	"
		50.5	0.5'	$\frac{5}{8}$ " □ V.	"
		50.7	3.2'	$\frac{3}{4}$ " □ V.	"
		50.9'	4.1'	"	"
		51.6'	4.0'	1" □	"
		51.9	0.5	$\frac{5}{8}$ " □ V.	"
		52.1	4.0	$\frac{3}{4}$ " □	"
		52.6	3.8	" V.	"
		52.7	4.0'	1" □	"

#12 to #13- CONT'D.

EXTRAORD. STEEL.

L. 1110.45'	1770.45	STEP #10		1974.6'
1107.54'	1767.20	"		"
		52.9	3.3'	1" \square
		53.0'	0.8'	$\frac{5}{8}$ " O.V.
		53.6'	2.8'	$\frac{3}{4}$ " \square
		54.2'	1.0	$\frac{5}{8}$ " O.V.
		54.6'	3.9'	1" \square
		54.7'	3.2'	$\frac{3}{4}$ " O.V.
		55.0'	3.5'	"
		55.5'	4.1	1" \square
		56.3	1.0'	$\frac{5}{8}$ " O.V.
		56.4'	4.4'	1" \square
		57.2'	3.9'	$\frac{3}{4}$ " \square
		57.5'	4.4	1" \square
		58.1'	4.0	$\frac{3}{4}$ " \square
		58.4	4.2'	1" \square
		58.9	3.9	$\frac{3}{4}$ " \square
		59.3	4.0	1" \square
		59.5	1.4	$\frac{5}{8}$ " O.V.
		60.0	3.7	$\frac{3}{4}$ " \square

IN FACE OF STEP 1

#12 TO #13-CONT'D.

EXTRA DGS STEEL.

L 1103.75 1774.12 STEP #11 1975.6

1101.87 1770.85 "

IN FACE OF STEP

60.3	3.8'	1" □	"
60.6'	0.5	$\frac{5}{8}$ " V.	"
60.7	3.8	$\frac{3}{4}$ " □	"
60.9	3.8	" V.	"
61.6'	3.9'	1" □	"
62.0	3.7	$\frac{3}{4}$ " □	"
62.6	4.1	1" □	"
63.1	3.8	$\frac{3}{4}$ " V.	"
63.2	3.8	"	"
63.9	4.0'	1" □	"
64.4	4.0'	$\frac{3}{4}$ " □	"
65.2	3.8'	" V.	"
65.3	3.4'	1" □	"
65.7	3.8'	$\frac{3}{4}$ " □	"
66.4	3.4'	1" □	"
66.9'	3.5'	$\frac{3}{4}$ " □	"
67.6'	3.0	" V.	"

#12 TO #15 - CONT'D.

EXTRADOS STEEL.

BEGIN INCRADOS CIRCLE ON STEP 21/

3 BARS LEAN CLOCKWISE.

		67.6	3.4	1" \square	1976.6
		68.0'	3.5'	$\frac{3}{4}$ " \square	"
		68.4	3.2'	1" \square	"
		69.0	3.6'	$\frac{3}{4}$ " \square V	"
L1096.71	1778.48	STEP #12. Toe Butt #12.			1976.3
1098.48	1775.70	"	"	"	"
	1278.48	69.6'	3.3'	1" \square	"
1097.65'	1776.68	70.2	3.4	$\frac{3}{4}$ " \square	"
L1111.85	D1728.50	0.0'	2.3'	$\frac{5}{8}$ " \square V.	1963.6
		0.3'	2.0	"	"
		0.8'	2.8'	1" \square	"
		1.0	2.0	$\frac{5}{8}$ " \square	"
		1.4	3.5'	$\frac{3}{4}$ " \square	"
		1.8	2.4	1" \square	"
		1.9	1.8'	$\frac{5}{8}$ " \square	"
		2.7'	4.2	$\frac{3}{4}$ " \square	"
		3.0'	1.9	$\frac{5}{8}$ " \square	"
		3.0'	2.5	1" \square	"
		3.1	4.1	"	"

1100
 1.19
 1016.21

$\frac{1}{2}$ TO $\frac{1}{3}$ - CONT'D.

STEP ²	INTRADOS CURVE.	(LEAN EAST)			4.8	4.0'	$\frac{3}{4}$ " \square	1964.8'
					6.2	4.1'	" V.	"
					6.4	4.2'	1" \square	"
STEP ³	1ST BAR IN FACE OF STEP.				7.8	3.5	$\frac{3}{4}$ " \square V.	1965.9
					9.0	3.6'	"	"
					9.4	3.6'	1" \square	"
					10.6	4.2'	$\frac{3}{4}$ " \square V.	"
STEP ⁴					12.2	3.4	"	1966.8
					13.7	3.6'	" V.	"
					15.2	3.7'	" V.	"
STEP ⁵			* 1121.00'	1941.74	16.6	3.2'	" V.	1967.7
					18.1	3.3'	" V.	"
					19.5	3.2'	" V.	"
					21.3	3.5'	" V.	1969.3
STEP ⁶					22.8	3.6'	" V.	"
1" \square BARS LEAN COUNTER-CLOCKWISE.					23.0	2.9'	1" \square	"
					24.3	3.2'	$\frac{3}{4}$ " \square V.	"
					25.7	3.5'	1" \square	"
					26.2	3.3	$\frac{3}{4}$ " \square V.	"

312 TO 319 - CONT'D.

STEP #7. INTRADIAS.

27.5	3.2'	$\frac{3}{4}$ " \square V.	1970.6
28.2	3.1	1" \square	"
29.2	3.2	$\frac{3}{4}$ " \square V.	"
30.2	3.3	1" \square	"
30.9	3.5	$\frac{3}{4}$ " \square V.	"
32.0	3.2	1" \square	"
32.6	3.4	$\frac{3}{4}$ " \square V.	"
33.8	3.6'	1" \square	"
34.2	3.0'	$\frac{3}{4}$ " \square V.	"

STEP #8. 1" \square BAR IN FACE OF STEP.

34.4	3.2'	1" \square	1972.0'
35.9	3.2'	1" \square	"
36.1	3.0'	$\frac{3}{4}$ " \square V.	"
37.4	3.1	1" \square	"
37.7	2.6	$\frac{3}{4}$ " \square V.	"
39.0'	3.8	1" \square	"
39.7	3.4	$\frac{3}{4}$ " \square V.	"
40.0	3.7	1" \square	"

STEP #9. 1" \square BAR IN FACE OF STEP.

* 1111.94	1763.46	41.7	3.3	$\frac{3}{4}$ " \square V.	"
					1973.2

#12 TO #13 - CONT'D.

STEP #10 1" Δ OR IN FACE.

41.9	2.4	1" Δ	1973.2
43.2	3.5	"	"
43.4	3.6	$\frac{3}{4}$ " Δ V	"
44.1	3.3	1" Δ	"
45.2	3.6	"	"
45.7	3.7	$\frac{3}{4}$ " Δ V.	"
46.5	3.7	1" Δ	"
47.5	3.3	1" Δ	1974.6'
47.7	3.4	$\frac{3}{4}$ " Δ V.	"
48.5	3.3'	1" Δ	"
49.9	3.2	$\frac{3}{4}$ " Δ	"
"	4.1	1" Δ	"
51.2	4.3	1" Δ	"
51.4	0.7	$\frac{5}{8}$ " Δ V.	"
52.1	3.2'	$\frac{3}{4}$ " Δ	"
52.6	4.4'	1" Δ	"
53.1	4.0	"	"
53.7	2.7	$\frac{5}{8}$ " Δ V.	"
54.2	3.0	1" Δ	"
51.3	3.6	$\frac{3}{4}$ " Δ V.	"

2/2 to 2/3 - CONT'D.

STEP #//

56.2	3.1	1" \square	1975.6		
56.4	3.2	$\frac{3}{4}$ " \square V	"		
56.5	3.5	1" \square	"		
57.9	2.5	"	"		
58.5	3.0	$\frac{3}{4}$ " \square V.	"		
58.8	0.8'	$\frac{5}{8}$ " \square V.	"		
59.2	3.4	1" \square	"		
60.4	3.6	"	"		
60.7	3.2	$\frac{3}{4}$ " \square V.	"		
61.6"	3.8	1" \square	"		
62.5	4.0	"	"		
62.6	0.7	$\frac{5}{8}$ " \square V.	"		
63.3	3.8	1" \square	"		
1193.31	1774.23	63.7	3.5'	"	"

ELEV. OF STEPS IN CUT OFF WALL - #13 TO #14.

B.M.	+4.40	1992.69	1988.29
STEP #1		-11.6	1981.1
" #2		-10.8	1981.9
" #3		-10.1	1982.6
" #4		-8.7	1984.0
" #5		-8.0	1984.7
" #6		-7.0	1985.7
" #7		-6.1	1986.6
" #8		-5.3	1987.4
" #9		-4.2	1988.5
" #10		-3.4	1989.3
" #11		-2.5	1990.2
" #12		-1.7	1991.0
" #13 TOE OF ROTT. #14		-0.5	1992.2
T.P. ON TOP 2" PIPE.		-0.23'	1992.46
	+6.00	1998.46	
CHECK B.M.		-10.16	1988.30

TRANSIT PT. L 1100 - D1810
 " " L 1075 - D1810

AUG. 20, 1952.

" 21, "

LEONARD
 MARTEL
 VAIRONFRANCOIS.

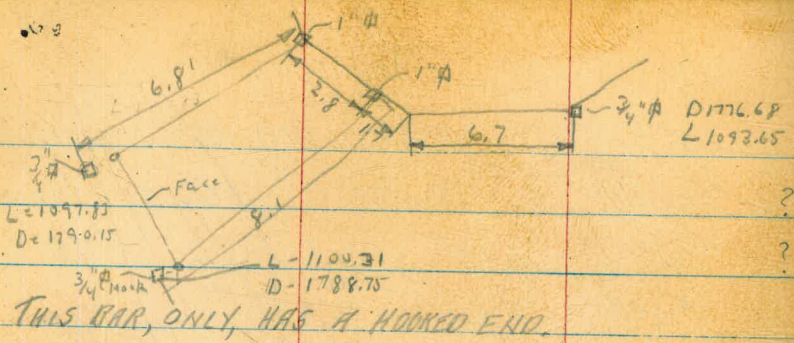
34.

CLEAR-HIGH

STEEL IN CUT OFF WALL BETWEEN BUTTRESS #13 & #14.

"L"	"D"	Distance	Size	Length	
		0.0	1"φ	3.2	1976.5
		0.8	3/4"φ	3.4	
		1.2	1"φV	3.6	
		1.6	1"φ	3.3	
		2.3	3/4"φ	2.8	
		2.8	1"φ	3.5	
		3.0	3/4"φV	3.4	
		3.7	3/4"φ	2.9	
		4.4	1"φ	3.3	
		4.9	3/4"φ	3.1	
		5.0	"φV	3.5	
		5.5	1"φ	2.5	into face of it
		6.7	3/4"φV	3.5	
		6.8	3/4"φV	0.3	
		0.0	1"φ	2.9	
		0.7	1"φ	3.1	
		1.1	3/4"φV	3.2	
		2.3	1"φ	3.5	
		3.1	3/4"φV	3.3	
		3.3	1"φ	3.3	
		4.8	3/4"φV	3.3	
		4.9	1"φ	2.6	into face of next step
		on face of step or below top	1"φ	4.3	

NOTE: BOTTOM STEP AT TOE OF BUTTRESS #13 IS BORIED.
 THIS PAGE RESERVED FOR STEEL, WHEN EXPOSED.



#13 to #14 - Cont'd.

L=1097.55	01787.02	STEP #1.			1981.1
1100.21	1788.95	"			"
1100.31	1788.75	0.0	3.5	3/4" V.	"
		0.7	0.3'	1" □	"
		1.3	3.3'	3/4" □	"
		1.3'	0.3'	3/4" □	"
		2.2'	4.4	1" □	"
		2.6	0.3'	3/4" □	"
		3.4	3.8'	"	"
		4.0'	0.2'	"	"
		4.2'	5.1'	1" □	"
1104.55	1791.70	STEP #2.			1981.9
1106.55	1794.20	"			"
		6.0	0.2'	3/4" □	"
		7.4	0.4'	"	"
1106.92	1795.15	STEP #3			1982.6
1108.58	1797.15	"			"
		8.9	0.1'	3/4" □	"
		10.4	4.9'	"	"
		12.0	4.4	"	"

1810
23.78
1787.02

#13 to #14 - Cont'd.

1108.22'	1799.85	STEP ^{#4}			1984.0
1104.41	1801.08	"			"
1107.68	1800.18	13.6	4.0	3" \square V.	"
		14.8'	4.9	1" \square V.	"
		14.9	1.5	" V.	"
		15.7	1.5	" V.	"
		15.8	4.5'	" V.	"
		17.4	3.1'	" V.	"
		17.6	4.4	" V.	"
1108.76	1804.65	STEP ^{#5}			1984.7
1104.77	^{O.K.} 1804.65	"			"
		19.1	2.2	1" V.	"
		19.2	4.7'	" V.	"
		20.7	2.6'	" V.	"
		20.8	4.9'	" V.	"
1108.55'	1808.80'	STEP ^{#6}			1985.7
1104.55	1808.48	"			"
1108.02	1810.40	22.5	2.2'	1" \square V.	"
		"	4.1'	"	"

STEEL IS IN FACE OF STEP.

#13 to #14 - cont'd

NOTE: BEGIN BARS SLOPING COUNTER-CLOCKWISE.

		24.0	4.4	1" V.	1985.7
		"	2.1	" V.	"
		24.6	5.8	"	"
		25.8	2.8	" V.	"
		"	4.7	" V.	"
1107.65	1818.30	Step #7			1986.6
1108.68	1818.35	"			"
		26.9	5.5	1" V.	"
		27.5	0.8'	" V.	"
		"	3.9'	" V.	"
		28.2	5.0'	"	"
		29.1	0.8'	" V.	"
		"	4.3'	" V.	"
		30.1'	5.4	"	"
		30.8'	1.5'	" V.	"
		"	4.2'	" V.	"
1105.88	1817.50	Step #8			1987.4
1102.13	1816.25	"			"
		31.4	5.4 wck →	1" V.	"

IN FACE OF STEP.

#13 to #14 - Cont'd.

			32.4	2.0'	1" □ V.	1987.4
			"	4.2'	" V.	"
			33.1	5.8	"	"
			34.1	4.3	" V	"
			34.8'	5.8'	"	"
			36.0'	3.6'	$\frac{3}{4}$ " □ V.	"
			"	5.6'	1" □	"
x	1102.79	1822.28'	STEP #9			1988.5
	1099.69	1819.67	"			"
			37.4	5.1	1" □	"
			37.9	3.8	$\frac{3}{4}$ " □ V.	"
			38.4	6.0'	1" □	"
			39.2	4.0	$\frac{3}{4}$ " □ V.	"
			40.0	5.6	1" □	"
			40.4	4.0	$\frac{3}{4}$ " □ V.	"
			41.0	5.8	1" □	"
x	1098.47	1825.07	41.6	4.1	$\frac{3}{4}$ " □ V.	"
	1099.14	1826.13	STEP #10			1989.3
	1096.42	1823.22'	"			"

#13 to #14 - Contd.

NOTE: $\frac{3}{4}$ " BARS HAVE SLIGHT LEAN NORTHWARD.

		42.4'	5.0'	1" \square	1989.2'
		42.8	3.7	$\frac{3}{4}$ " \square V.	"
		43.5	4.9	1" \square	"
		44.0	4.0	$\frac{3}{4}$ " \square V.	"
		44.6'	4.8'	1" \square	"
		44.8'	4.2'	$\frac{3}{4}$ " \square	"
		46.0	5.6'	1" \square	"
		"	4.5	$\frac{3}{4}$ " \square V.	"
		46.3	5.1	1" \square	"
		47.1	4.1	$\frac{3}{4}$ " \square V.	"
1094.55	1830.12	STEP #11			1990.2
1092.20	1826.76	"			"
		48.1	5.1	1" \square	"
		"	4.1	$\frac{3}{4}$ " \square V.	"
		48.5	4.6	"	"
		49.1	5.3	1" \square	"
		49.2	4.0	$\frac{3}{4}$ " \square V.	"
		49.7	4.6	"	"
		50.2	4.0	" V.	"

NOTE: $\frac{3}{4}$ " BARS NOT MARKED VERTICAL, SLOPE IN SAME
ANGLE AS 1" BARS, COUNTER-CLOCKWISE.

#13 to #14-Cont'd.

		50.5	5.6	1" □	1990.2'
		51.0	4.9	$\frac{3}{4}$ " □	"
		51.2	4.0	" V.	"
		51.7	6.0	1" □	"
		52.1	5.1	$\frac{3}{4}$ " □	"
		52.3	4.0	" V.	"
		52.5	5.9	1" □	"
		53.0	4.7	$\frac{3}{4}$ " □	"
		53.2	3.7	" V.	"
		"	5.4	1" □	"
		"	4.7	$\frac{3}{4}$ " □	"
		54.4	3.4	" V.	"
		"	4.9	1" □	"
1088.78	1833.58	Step #12			1991.0
1086.65	1830.24	"			"
		54.8	3.6	$\frac{3}{4}$ " □	"
		55.2	4.6	1" □	"
		55.6	3.8	$\frac{3}{4}$ " □ V	"
		55.8	3.7	"	"

#13 to #4-Cont'd.

56.4	3.8	$\frac{3}{4}$ " V.	1991.0
"	5.2	1" \square	"
57.0	3.5	$\frac{3}{4}$ " \square	"
57.5	3.8	" V.	"
"	5.2	1" \square	"
58.1	4.1	$\frac{3}{4}$ " \square	"
58.5	4.0	" V.	"
58.7	5.3	1" \square	"
59.3	4.7	$\frac{3}{4}$ " \square	"
59.6	4.2	" V.	"
59.7	5.4	1" \square	"
60.5	5.5	$\frac{3}{4}$ " \square	"
60.6	3.9	" V.	"
60.8	5.3	1" \square	"
61.2	1.9	$\frac{3}{4}$ " \square V.	"
61.4	4.9	"	"
61.6	4.0	" V.	"

1086.78	1836.77	STEP #13	1992.2
1090.39	1833.00	"	"

#18 to #14 Cont'd.

62.0	5.4	1" □	1992.2		
62.2	4.4	$\frac{3}{4}$ " □	"		
62.5	5.4	1" □	"		
62.9	4.2	$\frac{3}{4}$ " □ V.	"		
63.1	4.4	"	"		
63.6	4.9	1" □	"		
64.0	4.1	$\frac{3}{4}$ " □ V.	"		
"	3.9	"	"		
64.5	4.8'	1" □	"		
65.0'	4.4'	$\frac{3}{4}$ " □	"		
65.1	4.0	" V.	"		
65.5	4.9	1" □	"		
65.6'	0.7'	$\frac{3}{4}$ " □ V.	"		
66.0'	3.9'	"	"		
66.2	3.6	" V.	"		
66.4	4.1'	1" □	"		
* 1076.30	1836.45	67.1	2.6'	$\frac{3}{4}$ " □ V.	"

IN FACE OF HAUNCH, AT TIE

" " " "

" " " "

#13 to #14 - Part 2.

<u>BEGIN INTRADOS CIRCLE.</u>	STEP #/1	L 1097.83	1790.15	0.0'	3.6	$\frac{3}{4}$ "	1981.1
LEANS CLOCKWISE.				0.5'	4.4	1"	"
				1.0'	3.0'	$\frac{3}{4}$ "	"
				2.9	4.5	1"	"
				4.4'	5.2'	"	"
				4.5	0.7	$\frac{3}{4}$ "	"
STEP #2.				6.3	0.4	"	1981.9
				8.3	0.6	"	"
STEP #3.				10.0	5.3	" V.	1982.6
				11.6	4.7	1" V.	"
				12.1	4.2	" V.	"
STEP #4.		1109.66	1806.08	13.2	4.5	" V.	1984.0
				13.4	1.7	" V.	"
				14.2	1.6	" V.	"
				14.3	4.6	" V.	"
				15.7	1.1	" V.	"
				15.8	4.5	" V.	"
STEP #5.				19.2	5.0	" V.	1984.7'
				20.5	2.6	" V.	"
				"	5.2	" V.	"

#13 to #14 Cont'd.

STEP #6.

LEANS WEST.

" EAST.

STEP #7. LEANS EAST, OR COUNTER-CLOCKWISE.

STEP #8.

		21.0	5.0	1 st	1985.7
1104.68	1910.15	22.3	2.9	" V.	"
		22.5	5.2	"	"
		23.4	5.5	"	"
		23.9	2.1	" V.	"
		24.0	4.9	" V.	"
		25.0	5.1	"	1986.6
		25.6	5.0	" V.	"
		25.7	0.8	" V.	"
		26.6	5.0	"	"
		27.2	1.7	" V.	"
		27.4	5.0	" V.	"
		28.2	4.9'	"	"
		28.8	1.5	" V.	1987.4
		28.9	4.7'	" V.	"
		29.4	4.6'	"	"
		30.4	1.8	" V.	"
		"	4.9	" V.	"
		31.1	4.4	"	"

#18 to #4 - cont'd.

STEP #9.

32.1	4.2'	1 $\frac{1}{2}$ " V.	1987.4
32.6	4.8'	"	"
33.5	4.6'	"	1988.5
34.0	4.5'	" V.	"
34.9	4.5'	"	"
35.5	3.5'	$\frac{3}{4}$ " V.	"
36.8	5.1'	1 $\frac{1}{2}$ "	"
37.5	4.7'	"	"

*1097.13

1823.0'

STEP #10

37.7	3.5'	$\frac{3}{4}$ " V.	"
38.4	4.5'	1 $\frac{1}{2}$ "	1989.3
39.4	3.9	"	"
39.5	3.2	$\frac{3}{4}$ " V.	"
40.2	4.3	1 $\frac{1}{2}$ "	"
42.1	3.4	$\frac{3}{4}$ " V.	"
"	4.7	1 $\frac{1}{2}$ "	"
43.1	5.7	"	"

STEP #11.

44.1	3.8	$\frac{3}{4}$ " V.	1990.2
44.3	5.9	1 $\frac{1}{2}$ "	"
45.6	5.7	"	"

#13 to #14 - Cont'd.

45.9	4.1'	$\frac{3}{4}$ " V.	1990.2
46.7	5.6'	1" □	"
47.9	6.0'	"	"
48.3	4.1'	$\frac{3}{4}$ " V.	"
49.1	5.0'	1" □	"
50.1	4.8'	"	"
50.4	4.5'	$\frac{3}{4}$ " V	"
"	0.4'	"	"
50.9	5.6'	1" □	1991.0
51.0	4.4'	"	"
53.0'	3.9	$\frac{3}{4}$ " V.	"
53.8	5.8	1" □	"
54.8	5.6'	"	"
55.8	3.8'	$\frac{3}{4}$ " V.	"
56.0	5.0	1" □	"
56.9	2.8'	$\frac{5}{8}$ " V	"
57.0	3.7'	" V.	"
57.2	5.8'	1" □	"
58.8	5.2'	"	"

STEP #12.

IN FACE OF STEP #13

#13 to #14 - cont'd.

STEP #/S.

		59.3	4.7	$\frac{5}{4}$ " V.	1992.2
		59.4	1.5	" V.	"
		59.6	5.5	1" \square	"
		60.0	5.2	"	"
		61.0	4.6'	"	"
		61.1	4.2	$\frac{3}{4}$ " V.	"
1076.05	1834.00'	62.3	5.5	1" \square	"

Krocker
Browne
Oct. 31, 1952

♀
Buttress No. 7

N
↑

48.

Depth Steel Hole	Steel from axis	Steel Hole	Steel Hole	Steel from axis	Depth Steel Hole
	36.0		35.6	36.0	1.37'
	34.0		33.6	33.9	1.41'
	31.8			31.9	
	29.9			30.0	
	28.0			27.7	
	26.1			25.8	
	24.0		23.3	23.9	1.75'
	21.8		21.2	21.8	1.75'
1.85'	19.9	19.3	19.2	19.7	1.73'
1.75'	17.4	17.0	16.9	17.5	1.85'
1.85'	15.9	15.5	14.8	15.4	1.80'
1.80'	13.5	12.9	12.8	13.2	1.80'
1.75'	11.4	10.9	10.2	10.9	1.80'
1.77'	8.9	8.4	8.4	8.7	1.60'
1.75'	6.4	6.0	6.3	6.9	1.65'
1.70	4.8	4.5	4.4	4.8	1.9'
	2.4			2.3	
	0.2			0.2'	

AXIS of Dam

⊕
Buttress No. 7

N
↑

49.

Depth Steel Hole	⊕ steel from axis	Steel Hole	Steel Hole	⊕ steel from axis	Depth steel Hole
1.85'		44.9			
1.75'	43.6	43.1		43.7	
1.65'	42.0	41.0		42.1	
Hole that is full of sand	40.0	39.2		39.9	
	38.0			37.9	

Depth Steel Hole	E steel from axis	Steel Hole	Steel Hole	E Steel from axis	Depth Steel Hole
1.85	34.0	34.3	34.5	34.0	1.90'
1.80'	31.9	32.3	32.5	32.0	1.90'
1.85'	29.7	30.3	30.3	29.9	1.90'
1.80'	27.6	27.9		27.7	
1.80'	25.6	25.8		25.7	
	23.4			23.5	
	21.3			21.6	
	19.2			19.3	
	17.0			16.9	
	15.0			15.2	
	12.6			12.8	
	10.4			10.6	
	8.3			8.6	
	6.3			6.8	
	5.8	Step 2.10'		6.4	
	4.4			4.1	
	2.0'			1.8	
		Axis of Dam			

Bay out of
2 steps
5.8

Bay of 2 steps
6.4

Buttress No. 7

51.

Depth of Steel Hole	Steel from axis	Steel Hole	Steel Hole	Steel from axis	Depth of Steel Hole
1.75'	69.4	70.0	71.8	(1.3) 69.5 70.8 67.3 68.6	1.75'
	67.3			65.3	
	65.2			65.2	
	Face of Step ③	elev. 1921.16		Face of Step ③	
	65.1	step 2.70'		65.2	
1.70'	63.7	64.3	64.4	64.0	1.70'
1.80'	61.5	61.7	62.5	61.9	1.90'
1.75'	59.4	59.7	60.3	59.9	1.90'
1.70'	56.8	57.1		57.6	
1.70'	55.1	55.4		55.2	
0.75' (E)		53.5			
1.70' (W)	53.2	53.3	53.5	53.2	1.90
1.70'	51.2	51.6	51.7	51.4	1.85
1.75' (E)		49.6			
0.50' (W)	48.9	49.6	49.9	49.5	1.90'
1.70'	46.8	47.2	47.4	47.1	1.90'
0.70' (E)		45.0			
1.80' (W)	44.7	45.0		44.9	
1.90'	42.6	43.2		42.8	
1.90'	40.5	41.0	41.4	40.9	1.95'
	38.3		39.0	38.4	1.90'
	36.2		36.8	36.3	1.90'

Depth of Steel Hole	Steel from axis	Steel Hole	Steel Hole	Steel from axis	Depth of Steel Hole
1.70	105.7	105.9		108.0 109.3 105.9 107.2	
	103.7			103.6 104.9	
	101.5			101.7 103.0	
	99.4			99.6 100.9	
	97.0			97.2	
1.70	94.9	95.9	99.3	99.5 95.0 96.3 92.9	1.70
				94.2 90.9	
1.70	92.9	93.7		92.2 88.8	
1.75	90.8	91.8		90.1 86.5 87.8	
	88.7			84.4	
	86.7			85.7 82.2	
1.75'	84.4	85.0		83.5 80.2	
1.70'	82.3	82.7		81.5 78.1	
1.70'	80.2	80.7		77.4 76.3	
1.60'	78.3	78.8		77.6 74.0	1.65'
	76.0		78.5	75.8 71.8	1.70'
1.80'	73.8	74.1	76.1	73.1	
	71.6				

Depth of Steel Hole	Steel from axis	Steel Hole	Steel Hole	Steel from axis	Depth of Steel Hole
	124.6			124.8	
1.70'	122.4	122.4		126.1	
	120.1			122.5	
				123.8	
1.65'	118.1	118.9	122.6	120.5	1.65'
				121.8	
1.65'	116.0	117.0	120.7	118.3	1.65'
				119.6	
1.35'	114.1	114.9	118.3	116.2	1.70'
				117.5	
	111.9		116.5	114.4	1.70'
				115.7	
1.75'	109.7	110.2	114.3	112.1	1.75'
				113.4	
1.75'	107.6	108.2		110.0	
				111.3	

Setup Point L = 1072.15
D = 1870.0

Bergman
Browne
Krauskos
Nov. 6, 1952

55.

Intrades

Steel in Cutoff wall between

Extrades

Buttress 14 and 15

Size Bar	Length Bar	Inner Steel Distance	Step Elev.	Horiz. & Clockwise	Distance from Setup		Size Bar	Length Bar	Outer Steel Distance	Step Elevation	Horiz. & Clockwise	Distance from Setup	
					Slope	Vertical &						Slope	Vertical &
	Step coordinate		1992.33	8° 50'	26.10	25° 01'		Step coordinate		1992.33	10° 57'	29.00	24° 5'
	face of Butt. 14				Horiz.	23.65'		face of Butt. 14				Horiz.	26.47
3/4" #V	1.4	0.4					3/4" #V	5.1	0.1				
" V	6.0	0.5					" V	0.9	0.1 ^{o.c.}				
" V	2.4	2.2					" V	5.0	1.9				
" V	5.0	2.3					" V	0.3	1.9 ^{o.c.}				
" V	0.6	3.9					" V	4.8	3.8				
3/4" #V	4.8	4.0					" V	0.4	3.8 ^{o.c.}				
3/4" #V	1.9	5.3					" V	4.7	5.7 ^{o.c.}				
3/4" #V	4.7	6.0					3/4" #V	1.5	5.7 ^{o.c.}				
	Step coordinate		1994.45	25° 01'	25.39	28° 55'		Step coordinate		1994.45	26° 38'	28.98	30° 21'
					Horiz.	22.22						Horiz.	25.01
3/4" #V	4.0	1.0					1" #V	0.7	0.6'				
" V	6.3	1.0 ^{o.c.}					3/4" #V	4.6	0.7'				
" V	4.9	2.3					cut 1" #V	1.4	1.6 ^{o.c.}				
" V	0.9	2.5 ^{o.c.}					1" #V	0.8	2.1				
1" #V	1.0	3.2'					3/4" #V	4.6	2.2				
	Step coordinate		1995.34	35° 31'	24.53	28° 39'		1" #V	5.7	3.3 ^{o.c.}			
					Horiz.	21.53'		1" #V	1.2	3.7			
1" #V	0.9	0.1					3/4" #V	4.7	3.8				
3/4" #V	4.7	0.2						Step coordinate		1995.34	36° 33'	28.04	29° 30'
												Horiz.	24.41

Setup Point L = 1072.15
D = 1870.0

56.

Intrados

Steel in Cutoff wall between

Buttress 14 and 15 Extrados

Size Bar	Length Bar	Inner Steel Distance	Step Elevation	Horiz. & Clockwise	Distance from Setup		Size Bar	Length Bar	Outer Steel Distance	Step Elevation	Horiz. & Clockwise	Distance from Setup	
					Slope	Vertical						Slope	Vertical
3/4" #V	4.4	0.8					1" #V	0.7	0.9				
1" #V	1.6	1.6					3/4" #V	4.6	1.0				
3/4" #V	4.5	1.7					clock						
1" #V	1.9	3.0					1" #V	5.0	1.1				
3/4" #V	1.9	3.1					1" #V	0.9	2.5				
Step coordinate 1996.26				46° 09'		Horiz. 20.84	3/4" #V	4.6	2.6				
1" #V	0.7	0.8					1" #V	1.4	4.1				
3/4" #V	4.7	0.9					3/4" #V	4.8	4.2				
" V	4.6	2.2					step coordinate		1996.26		47° 36'	Horiz. 24.12	
1" #V	1.5	2.3					1" #V	0.7	0.8				
1" #V	1.7	3.4					3/4" #V	4.7	0.9				
3/4" #V	4.8	3.5					1" #V	1.0	2.4				
Step coordinate 1997.18				57° 02'		Horiz. 19.74	3/4" #V	4.5	2.5				
1" #V	0.9	1.1					3/4" #V	4.6	3.7				
" V	4.9	1.2					1" #V	1.4	3.8				
" V	1.9	2.2					step coordinate		1997.18		59° 56'	Horiz. 23.38	
" V	5.1	2.4					1" #V	5.4	0.4				
" V	1.6	3.8					1" #V	3.8	2.2				
" V	5.5	3.9					1" #V	2.6	3.5				
Step coordinate 1998.24				69° 13'		Horiz. 18.53'	3/4" #V	4.9	3.6				

Setup Point L = 1072.15
D = 1870.0
Intrados

57

Steel in Cutoff wall between Buttrass 14 and 15

Extrados

size Bar	Length Bar	Inner Steel Distance	Step Elevation	Horiz. & Clockwise	Distance from Setup		size Bar	Length Bar	Outer Steel Distance	step Elevation	Horiz. & clockwise	Distance from Setup		
					Slope	Vertical &						Slope	Vertical &	
1"ΦV	1.2	1.1								Step coordinate	1998.24	71°55'	Horiz	22.25
"V	4.9	1.2					1"ΦV	0.5	0.1					
"V	1.2	2.1					3/4"ΦV	4.3	0.2					
"V	4.9	2.3					1"ΦV	1.4	1.3					
	Step coordinate		1999.23	82°47'	Horiz.	17.43	"V	5.4	1.4					
1"ΦV	0.7	0.3					1"ΦV	1.6	2.4					
"V	4.7	0.4					1"ΦV	5.0	2.5					
"V	1.0	1.6					1"ΦV	5.2	4.3					
"V	4.8	1.7					1"ΦV	1.2	4.3 ^{T.C.} 0.1					
3/4"Φ	4.9	2.4 ^{T.C.} 0.3						Step coordinate		1999.23	85°01'	Horiz.	21.32'	
1"ΦV	0.8	3.2					1"ΦV	0.6	0.6 ^{T.C.} 0.1					
"V	4.8	3.3					1"ΦV	4.5	0.6					
	Step coordinate		2000.22	98°26'	Horiz.	16.04	1"ΦV	0.9	2.2 ^{T.C.} 0.1					
3/4"Φ	4.3	0.1 ^{T.C.} 0.1					1"ΦV	4.5	2.2					
1"ΦV	0.6	0.1					1"ΦV	4.9	3.9					
"V	4.4	0.2					1"ΦV	1.5	3.9 ^{T.C.} 0.2					
"V	4.7	1.6					1"ΦV	1.4	5.3 ^{T.C.} 0.2					
"V	1.1	1.7					"V	5.7	5.3					
3/4"Φ	4.2	2.5 ^{T.C.} 0.2						Step coordinate		2000.22	100°56'	Horiz.	20.25'	

Setup Point
 L = 1072.15
 D = 1870.0

Intrados

Steel in Cutoff wall between
 Distance from Setup

Size Bar	Length Bar	Inner Steel Distance	Step Elevation	Horiz. & clockwise	Distance from Setup
1"φV	4.8	3.4			
"V	1.4	3.5			
Step coordinate			2001.23	112° 22'	Horiz. 15.25'
3/4"φ	4.2	0.1			
1"φV	4.7	1.1			
"V	1.0	1.2			
3/4"φ	4.7	2.1 T.C. 0.1			
1"φV	4.9	2.8			
"V	1.4	2.9			
Step coordinate			2002.18	128° 05'	Horiz. 14.99
3/4"φ	4.5	0.05			
1"φV	4.8	0.3			
"V	1.0	0.4			
3/4"φ	5.0	1.2			
"φV	4.9	2.2			
1"φV	1.6	2.3			
3/4"φ	5.0	2.6 T.C. 0.1			
3/4"φ	5.1	3.5 T.C. 0.2			
"V	4.7	4.2			

Extrados

Buttress 14 and 15

Size Bar	Length Bar	Outer Steel Distance	Step Elevation	Horiz. & clockwise	Distance from Setup
1"φV	0.8	1.2 T.C. 0.1			
1"φV	4.8	1.2			
Counterclockwise					
1"φ	4.5	2.0			
1"φV	1.0	2.8			
1"φV	4.9	2.9			
1"φV	1.3	4.3			
1"φV	5.1	4.5			
Step coordinate			2001.23	114° 14'	Horiz. 19.53'
1"φ	4.7	0.2			
1"φV	0.9	1.5			
3/4"φV	4.4	1.6			
1"φ	4.7	3.2			
1"φV	1.2	3.3			
3/4"φV	4.7	3.4			
Step coordinate			2002.18	127° 27'	Horiz. 18.77
1"φV	0.6	0.6 T.C. 0.1			
3/4"φV	0.6	0.7 T.C. 0.1			
1"φ	4.5	1.0			
1"φ	1.1	2.7			

Set up point

L = 1072.15

D = 1870.0

Intrados

Steel in Outoff wall between

Extrados

Buttress 14 and 15

Size Bar	Length Bar	Inner Steel Distance	Step Elevation	Horiz. & Clockwise	Distance from Setup	Size Bar	Length Bar	Outer Steel Distance	Step Elevation	Horiz. & Clockwise	Distance from Setup
1"φV	2.0	4.3	2003.22	145° 07'	Horiz. 15.59	3/4"φV	4.9	2.8			
3/4"φ	4.1	0.1 T.C. 0.2				1"φ	5.0	4.2			
"	4.8	1.0 T.C. 0.1				1"φV	1.4	4.7			
1"φV	1.4	1.6				3/4"φV	5.0	4.8	2003.22	144° 06'	Horiz. 18.75
3/4"φV	4.7	1.7				1"φ	4.3	0.4			
3/4"φ	4.6	2.1 T.C. 0.1				1"φV	0.6	0.8			
1"φV	1.8	2.3				3/4"φV	4.2	0.9			
3/4"φ	4.6	3.4 T.C. 0.1				1"φV	1.0	3.0			
3/4"φV	5.2	3.4				3/4"φV	4.2	3.1			
3/4"φ	5.0	4.7 T.C. 0.1				1"φ	4.8	3.4			
3/4"φV	5.0	5.3 T.C. 0.1				1"φ	5.4	4.5			
			2004.22	163° 55'	Horiz. 17.02'	1"φV	1.3	4.9			
1"φV	1.1	0.1	Step Coordinate			3/4"φV	5.3	5.0			
3/4"φV	4.7	0.2				1"φ	5.0	5.5			
3/4"φ	5.5	0.5 T.C. 0.1							2004.22	161° 08'	Horiz. 19.89
3/4"φ	5.7	1.8				1"φ	4.6	0.3			
3/4"φV	4.8	1.8 T.C. 0.1				1"φV	0.6	1.0 T.C. 0.1			
1"φV	1.5	1.9				3/4"φV	4.8	1.1 T.C. 0.1			
						1"φ	4.9	1.5			

Setup Point L = 1072.15

D = 1870.0

Intrados

Steel in cutoff wall

between Buttress 14 and 15

Extrados

Size Bar	Length Bar	Inner Steel Distance	Step Elevation	Horiz. & Clockwise	Distance from Setup	Size Bar	Length Bar	Outer Steel Distance	Step Elevation	Horiz. & Clockwise	Distance from Setup
3/4"	1.9	3.6				1"	0.4	2.4 ^{T.C.} _{0.1}			
3/4"	5.3	3.7				3/4"	4.2	2.5 ^{T.C.} _{0.1}			
1"	2.0	3.8				1"	4.8	2.6			
1"	Step coordinate		2005.21	176° 39'	Horiz. 18.88	1"	5.0	3.6			
3/4"	3/4"	4.2	0.1 ^{T.C.} _{0.1}			1"	4.8	4.4			
3/4"	3/4"	4.2	1.2			Step coordinate		2005.21	173° 52'	Horiz. 21.23	
3/4"	3/4"	4.2	1.2			1"	1.2	0.2			
1"	1"	0.6	1.3			3/4"	0.7	0.3			
3/4"	3/4"	4.8	1.5 ^{T.C.} _{0.1}			1"	5.0	0.7 ^{O.C.} _{0.1}			
3/4"	3/4"	4.8	1.8 ^{T.C.} _{0.1}			1"	5.3	2.1 ^{O.C.} _{0.1}			
3/4"	3/4"	5.1	3.4			3/4"	1.0	2.1			
3/4"	1"	1.2	3.5			1"	1.0	2.5			
3/4"	3/4"	4.8	3.8 ^{T.C.} _{0.1}			1"	5.3	3.2 ^{O.C.} _{0.1}			
1"	Step coordinate		2006.09	187° 00'	Horiz. 21.05	1"	5.3	4.1 ^{O.C.} _{0.1}			
3/4"	3/4"	4.7	0.6 ^{T.C.} _{0.1}			1"	1.5	4.2			
3/4"	3/4"	4.6	1.2			3/4"	1.5	4.3			
3/4"	1"	1.3	1.3			Step coordinate		2006.09	184° 24'	Horiz. 23.10'	
3/4"	3/4"	4.9	1.9 ^{T.C.} _{0.1}			1"	4.9	0.4 ^{O.C.} _{0.1}			
1"	3/4"	5.0	3.3 ^{T.C.} _{0.1}			1"	5.0	1.6 ^{O.C.} _{0.1}			
3/4"	3/4"	5.2	3.5			3/4"	5.4	2.1			

Setup Point - L = 1072.15

D = 1870.0

Intrados

Steel in cutoff wall between

Extrados

Buttress 14 and 15

Size Bar	Length Bar	Inner steel Distance	Step Elevation	Horiz. & Clockwise	Distance from Setup	Size Bar	Length Bar	Outer steel Distance	Step Elevation	Horiz. & Clockwise	Distance from Setup
1"φV	2.8	3.6				1"φV	1.9	2.2			
3/4"φ	4.6	4.0				1"φ	5.7	3.1 ^{0.6} _{0.1}			
	Step	coordinate 2007.10		196°24'	Horiz. 26.60	3/4"φV	1.5	3.7			
3/4"φ	4.8	0.9 ^{T.C.} _{0.1}				1"φV	3.2	3.8 ^{0.6} _{0.1}			
1"φ	1.2	1.2				1"φ	6.0	4.0			
3/4"φ	5.0	1.9 ^{T.C.} _{0.1}					Step	coordinate 2007.10		194°06'	Horiz. 25.14'
3/4"φV	4.5	2.7				1"φ	5.0	0.8			
3/4"φV	4.8	3.7				1"φ	4.6	1.4			
1"φV	1.4	3.8				1"φ	4.4	2.2			
3/4"φ	4.4	4.2 ^{T.C.} _{0.1}				1"φV	1.7	1.7 ^{0.6} _{0.3}			
3/4"φ	4.0	4.8				3/4"φ	4.7	1.9			
	Step	coordinate 2008.42		205°06'	Horiz. 26.95	1"φ	4.6	4.4			
3/4"φV	3.5	0.4				1"φV	1.6	3.5 ^{0.6} _{0.3}			
3/4"φ	3.6	0.6				3/4"φV	5.1	3.6 ^{T.C.} _{0.1}			
						1"φ	4.6				
							Step	coordinate 2008.42		203°11'	Horiz. 27.68
						1"φ	3.9	0.4			
						1"φ	4.2	1.8			
						hooked 1"φ	3.8	3.2			

Elevations Steps in Cutoff wall
between Buttress 14+15 Rod

Elevation Grout Pipe Step #4 = 1999.15 9.84

Elevation

Step No.

Step No.	Elevation		
1	At face Butt. 14	1992.33	
2		1994.45	
3		1995.34	
4		1996.26	
5		1997.18	11.81
6		1998.24	10.75
7		1999.23	9.76
8		2000.22	8.77
9		2001.23	7.76
10		2002.18	6.81
11		2003.22	5.765
12		2004.22	4.77
13		2005.21	3.78
14		2006.09	2.90
15		2007.10	1.885
16		2008.42	0.576

69.

70.

70.

76

77

71

72

107

78.

73

74

78.

Buttress 7

CWB
WSK

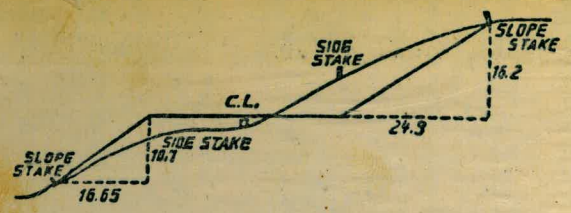
79.

Existing steel,
West side from North to South

Pilasters

1" S.B.	1" S.B.	7/8" S.B.	1" S.B.	1" S.B.	1 1/8" S.B.	1 1/4" S.B.	③ ⊕	② ⊕	① ⊕
41"	2' 1 1/2"	5' 2 1/2"	4' 0"	5' 1 1/2"	1' 1"	4' 6 1/2"	1 1/4" S.B.	1 1/4" S.B.	1 1/4" S.B.
4' 11"	1' 11 1/2"	5' 4"	4' 0"	9"	4' 4"	4' 2"	7' 4 1/2"	6' 11"	11' 3"
4' 3"	63' 168"	5' 3"	4' 0"	6"	5' 1"	4' 3"	6' 3 1/2"	6' 10"	10' 10"
5' 11 1/2"	5' 6"	4' 7"	40' 87"	3' 4"	3' 7"	7' 9"	7' 9"	10' 11 1/2"	
7' 3"	6' 0"	4' 7"	3' 10"	4' 3"	7' 3"	7' 9 1/2"	11' 6"		
8' 7 1/2"	3' 3"	1' 1 1/2"	3' 3"	4' 5"	7' 1 1/2"	6' 7"	42' 30 1/2"		
4' 6"	3' 3"	1' 2"	3' 6"	4' 0"	6' 10"	32' 46 1/2"			
4' 1"	3' 1"	1' 3"	4' 4"	4' 3 1/2"	40' 31 1/2"				
4' 7"	3' 5"	1' 6"	4' 1"	5' 3 1/2"	Horizontal				
5' 7 1/2"	3' 8"	1' 5 1/2"	4' 7"	4' 0"	1916.36	1918.46	1921.16		
4' 11"	3' 8 1/2"	1' 2"	4' 3"	4' 0"	14' 7"	15' 9"	9"		
5' 10"	44' 44"	1' 11"	3' 9 1/2"	3' 9 1/2"			9 1/2"		
1' 2"		4' 5"	4' 5"	4' 7"			8 1/2"		
1' 4"		1' 1 1/2"	45' 58 1/2"	5' 4"			2' 10"		
1' 7"		9 1/2"		6' 6"			2' 37"		
1' 7"		1' 1"		6' 2"					
1' 5 1/2"		1' 4"		4' 0"					
1' 10"		1' 4 1/2"		72' 62"					

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



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	71.25	71.40	71.55	71.70	71.85	47
48	72.00	72.15	72.30	72.45	72.60	72.75	72.90	73.05	73.20	73.35	48
49	73.50	73.65	73.80	73.95	74.10	74.25	74.40	74.55	74.70	74.85	49
50	75.00	75.15	75.30	75.45	75.60	75.75	75.90	76.05	76.20	76.35	50

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