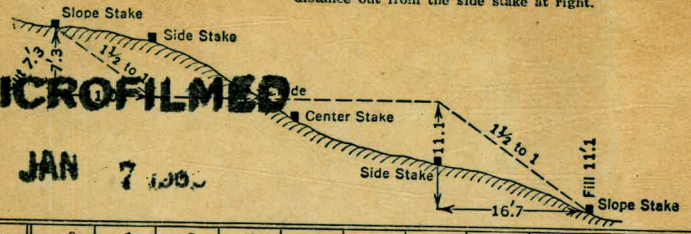
Mission Bay

No. 12

DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING

Roadway of any Width. Side Slopes 1½ to 1.

In the figure below: opposite 7 under "Cut or Fill" and under .3 read 11.0, the distance out from the side stake at left. Also, opposite 11 under "Cut or Fill" and under .1 read 16.7, the distance out from the side stake at right.



Cut or Fill	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	Cut or Fill
	Distance out from Side or Shoulder Stake										
0	0.0	0.2	0.3	0.5	0.6	0.8	0.9	1.1	1.2	1.4	0
1	1.5	1.7	1.8	2.0	2.1	2.3	2.4	2.6	2.7	2.9	1
2	3.0	3.2	3.3	3.5	3.6	3.8	3.9	4.1	4.2	4.4	2
3	4.5	4.7	4.8	5.0	5.1	5.3	5.4	5.6	5.7	5.9	3
4	6.0	6.2	6.3	6.5	6.6	6.8	6.9	7.1	7.2	7.4	4
5	7.5	7.7	7.8	8.0	8.1	8.3	8.4	8.6	8.7	8.9	5
6	9.0	9.2	9.3	9.5	9.6	9.8	9.9	10.1	10.2	10.4	6
7	10.5	10.7	10.8	11.0	11.1	11.3	11.4	11.6	11.7	11.9	7
8	12.0	12.2	12.3	12.5	12.6	12.8	12.9	13.1	13.2	13.4	8
9	13.5	13.7	13.8	14.0	14.1	14.3	14.4	14.6	14.7	14.9	9
10	15.0	15.2	15.3	15.5	15.6	15.8	15.9	16.1	16.2	16.4	10
11	16.5	16.7	16.8	17.0	17.1	17.3	17.4	17.6	17.7	17.9	11
12	18.0	18.2	18.3	18.5	18.6	18.8	18.9	19.1	19.2	19.4	12
13	19.5	19.7	19.8	20.0	20.1	20.3	20.4	20.6	20.7	20.9	13
14	21.0	21.2	21.3	21.5	21.6	21.8	21.9	22.1	22.2	22.4	14
15	22.5	22.7	22.8	23.0	23.1	23.3	23.4	23.6	23.7	23.9	15
16	24.0	24.2	24.3	24.5	24.6	24.8	24.9	25.1	25.2	25.4	16
17	25.5	25.7	25.8	26.0	26.1	26.3	26.4	26.6	26.7	26.9	17
18	27.0	27.2	27.3	27.5	27.6	27.8	27.9	28.1	28.2	28.4	18
19	28.5	28.7	28.8	29.0	29.1	29.3	29.4	29.6	29.7	29.9	19
20	30.0	30.2	30.3	30.5	30.6	30.8	30.9	31.1	31.2	31.4	20
21	31.5	31.7	31.8	32.0	32.1	32.3	32.4	32.6	32.7	32.9	21
22	33.0	33.2	33.3	33.5	33.6	38.8	33.9	34.1	34.2	34.4	22
23	34.5	34.7	34.8	35.0	35.1	35.3	35.4	35.6	35.7	35.9	23
24	36.0	36.2	36.3	36.5	36.6	36.8	36.9	37.1	37.2	37.4	24
25	37.5	37.7	37.8	38.0	38.1	38.3	38.4	38.6	38.7	38.9	25
26	39.0	39.2	39.3	39.5	39.6	39.8	39.9	40.1	40.2	40.4	26
27	40.5	40.7	40.8	41.0	41.1	41.3	41.4	41.6	41.7	41.9	27
28	42.0	42.2	42.3	42.5	42.6	42.8	42.9	43.1	43.2	43.4	28
29	43.5	43.7	43.8	44.0	44.1	44.3	44.4	44.6	44.7	44.9	29
30	45.0	45.2	45.3	45.5	45.6	45.8	45.9	46.1	46.2	46.4	30
31	46.5	46.7	46.8	47.0	47.1	47.3	47.4	47.6	47.7	47.9	31
32	48.0	48.2	48.3	48.5	48.6	48.8	48.9	49.1	49.2	49.4	32
33	49.5	49.7	49.8	50.0	50.1	50.3	50.4	50.6	50.7	50.9	33
34	51.0	51.2	51.3	51.5	51.6	51.8	51.9	52.1	52.2	52.4	34
35	52.5	52.7	52.8	53.0	53.1	53.3	53.4	53.6	53.7	53.9	35
36	54.0	54.2	54.3	54.5	54.6	54.8	54.9	55.1	55.2	55.4	36
37	55.5	55.7	55.8	56.0	56.1	56.3	56.4	56.6	56.7	56.9	37
38	57.0	57.2	57.3	57.5	57.6	57.8	57.9	58.1	58.2	58.4	38
39	58.5	58.7	58.8	59.0	59.1	59.3	59.4	59.6	59.7	59.9	39
40	60.0	60.2	60.3	60.5	60.6	60.8	60.9	61.1	61.2	61.4	40

KEUFFEL & ESSER CO., N. Y.

STA. 80+00 59° 23' 3:10

STA. 74+00 73° 42' 3:15

CAUSEWAY STA 60 = R 122+05.31

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PT

ORIGINAL SOUNDINGS OF PROJECT

No. 8. 0+00 = R88+67.58 SOUND EAST

In deposit

STA 107+00

DIST.	SOUND		DIST.	SOUND	
0+00	3.0	+3.1	70	2.9	+3.2
9:35 10	3.0	+3.1	9:37 80	3.0	+3.1
20	3.0	+3.1	(6.1) 90	3.7	+2.4
(6.1) 30	3.1	+3.0	2+00	4.5	+1.6
40	3.1	+3.0	10	4.7	+1.4
50	3.1	+3.0	20	4.6	+1.5
60	3.1	+3.0	30	4.5	+1.6
70	3.2	+2.9	40	4.—	+1.6
80	3.3	+2.8	50	4.5	+1.6
90	3.6	+2.5	60	4.3	1.8
1+00	3.3	+2.8	70	4.0	+2.1
10	3.2	+2.9	80	4.0	+2.1
20	3.0	+3.1	90	3.6	+2.5
30	3.0	+3.1	3+00	3.5	+2.6
40	3.0	+3.1	10	3.5	+2.6
50	2.9	+3.2	20	3.4	+2.7
60	2.9	+3.2	30	3.0	+3.1

STA 107+00

DIST	SOUND		DIST.	SOUND	
40	2.9	+3.2	40	3.3	+2.8
50	2.9	+3.2	50	3.3	
60	2.8	+3.3	60	3.3	
70	2.8	+3.3	70	3.3	
80	3.0	+3.1	80	3.3	
90	3.0	+3.1	90	3.4	+2.7
4+00	2.8	+3.3	6+00	3.5	+2.6
10	2.6	+3.5	10	3.4	+2.7
20	2.7	+3.4	20	3.4	
30	2.7	+3.4	30	3.4	
40	2.8	+3.3	(6.1) 40	3.4	
50	2.8	+3.3	50	3.4	
(6.1) 60	2.9	+3.2	9:47 60	3.4	
9:42 70	2.9	+3.2	70	3.4	
9:44 80	3.0	+3.1	80	3.2	+2.9
(6.1) 90	3.1	+3.0	90	3.2	+2.9
5+00	2.9	+3.2	7+00	3.5	+2.6
10	3.0	+3.1	10	4.1	+2.0
20	3.3	+2.8	20	5.0	+1.1
30	3.3	+2.8	30	5.0	+1.1

107+00

DIST	SOUND	
7+40	4.4	+ 1.7
50	3.4	+ 2.7
60	3.4	
70	3.4	
80	3.4	
90	3.5	
8+00	3.5	
10	3.4	
9:50 20	3.5	+ 2.6
30	3.5	+ 2.6
(6.1) 40	3.6	+ 2.5
50	3.6	+ 2.5
60	3.8	+ 2.3
70	3.9	+ 2.2
80	4.0	+ 2.1
90	4.0	
9+00	4.1	
10	3.8	+ 2.3
20	3.7	+ 2.4
30	3.7	+ 2.4

107+00

DIST	SOUND	
40	3.7	+ 2.4
9:52 50	3.7	
(6.1) 60	3.7	
70	4.0	+ 2.1
80	3.8	+ 2.3
90	3.7	+ 2.4
10+00	3.7	
10	3.7	
20	3.8	+ 2.3
30	3.8	
(6.1) 40	3.8	
50	3.8	
9:54 60	3.9	+ 2.2
70	3.9	
80	3.9	
90	3.9	
11+00	3.9	
10	4.0	+ 2.1
20	4.0	+ 2.1
30	4.0	+ 2.1

107+00

DIST	SOUND	
40	4.0	+ 2.0
50	4.0	
60	4.0	
70	4.0	
80	4.0	
90	4.0	
12+00	4.0	
9:57 10	4.0	
(6.0) 20	4.0	
30	4.0	
40	4.0	
50	4.0	
60	4.0	
70	4.0	
80	4.1	+ 1.9
9:58 90	4.1	
13+00	4.1	
(6.0) 10	4.1	
20	4.2	+ 1.8
30	4.2	+ 1.8

107+00

DIST	SOUND	
40	4.2	+ 1.8
50	4.3	+ 1.7
60	4.3	
70	4.3	
80	4.3	
90	4.3	
14+00	4.3	
10	4.3	
20	4.3	
30	4.2	+ 1.8
40	4.2	
50	4.2	
60	4.1	+ 1.9
(6.0) 70	4.2	+ 1.8
80	4.2	
10:01 90	4.2	
15+00	4.3	+ 1.7
10	4.3	
20	4.3	
30	4.3	

STA 107+00

DIST	SOUND		DIST	SOUND	
15+40	4.3	+1.7	40	4.1	+1.9
50	4.3		50	4.7	+1.8
60	4.3		10:05 60	5.0	+1.7
70	4.3		70	5.3	+0.7
80	4.3		80	5.0	+1.0
90	4.3		90	5.0	+1.0
16+00	4.3		18+00	4.9	+1.2
10	4.3		10	5.0	+1.0
10:03 20	4.3		20	4.9	+1.1
30	4.3		30	4.9	+1.1
40	4.3		40	4.8	+1.2
50	4.3		50	4.7	+1.3
60	4.3		60	5.1	+0.9
70	4.3		10:07 70	6.2	−0.2
80	4.3		80	7.3	−1.3
90	4.3		90	8.3	−2.3
17+00	4.3		19+00	9.4	−3.4
10	4.3		10	10.4	−4.4
20	4.2	+1.8	20	11.0	−5.0
30	4.2	+1.8	30	11.5	−5.5

6.0

6.0

107+00

DIST	SOUND		DIST	SOUND
40	12.0	−6.0	40	
10:09 50	11.1	−5.1	50	
60	9.7	−3.7	60	
70	8.7	−2.7	70	
80	8.1	−2.1	80	
90	7.8	−1.8	90	
20+00	8.1	−2.1	22+00	
10			10	
20			20	
30			30	
40			40	
50			50	
60			60	
70			70	
80			80	
90			90	
21+00			23+00	
10			10	
20			20	
30			30	

6.0

107+00

DIST	SOUND
23+40	
50	
60	
70	
80	
90	
24+00	
10	
20	
30	
40	
50	
25+00	

SOUND EAST 1-22-41 4

P.I. STA 108+00 0+00 = R88+67 58

DIST	SOUND		DIST	SOUND	
0+00	2.9	+2.9	90	4.2	+1.6
10:25 10	2.9		2+00	4.4	+1.4
20	2.9		10:27 10	4.5	+1.3
30	2.9		20	4.4	+1.4
40	3.0	+2.8	30	4.1	+1.7
50	3.0		40	4.0	+1.8
60	3.0		50	4.0	+1.8
10	3.1	+2.7	60	3.9	+1.9
20	3.1		70	3.7	+2.1
30	3.1		80	3.4	+2.4
40	3.1		90	3.1	+3.1
1+00	3.1		3+00	2.7	+3.1
10	3.1		10	2.6	+3.2
20	3.0	+2.8	20	2.6	
30	3.0	+2.8	30	2.6	
40	2.9	+2.9	40	2.6	
50	2.9		50	2.6	
60	2.9		60	2.5	+3.3
70	2.9		70	2.5	+3.3
80	3.5	+2.3			

108+00

DIST	SOUND	
3+80	2.5	3.3
10:30 90	2.5	
4+00	2.5	
10	2.5	
20	2.5	
30	2.5	
40	2.5	
50	2.5	
60	2.5	
70	2.5	
80	2.5	
90	2.9	+2.9
5+00	2.8	+3.0
10	2.8	+3.0
20	3.0	+2.8
30	3.1	+2.7
40	3.1	
50	3.1	
60	3.1	
70	3.2	+2.6

DIST	SOUND	
80	+3.2	+2.6
10:32 90	+3.3	+2.5
6+00	+3.2	+2.6
10	+3.3	+2.5
20	+3.3	+2.5
30	+3.3	+2.5
40	+3.3	+2.5
50	+3.3	+2.5
60	+3.2	+2.6
70	+3.2	+2.6
10:33 80	+3.3	+2.5
90	+3.1	+2.7
7+00	+3.0	+2.8
10	+3.4	+2.3
20	+4.0	+1.7
30	+4.1	+1.6
40	+4.3	+1.4
50	+4.3	+1.4
60	+3.7	+2.0
70	+3.4	+2.3

108+00

DIST	SOUND	
80	3.1	+2.6
90	3.1	+2.6
8+00	3.0	+2.7
10	3.0	+2.7
20	3.0	
30	3.0	
40	3.0	
10:35 50	3.3	+2.4
60	3.3	
70	3.3	
80	3.3	
90	3.4	+2.3
9+00	3.5	+2.2
10	3.5	
20	3.5	
30	3.5	
40	3.5	
50	3.5	
10+00	3.5	
10	3.5	

DIST	SOUND	
20	3.5	+2.1
30	3.5	
40	3.5	
10+00 50	3.5	
10 60	3.5	
20 70	3.5	
30 80	3.5	
40 90	3.5	
50 11+00	3.5	
60 10	3.6	+2.0
70 20	3.6	
80 30	3.6	
90 40	3.6	
11+00 50	3.6	
10 60	3.6	
10:38 20 70	3.6	
30 80	3.7	+1.9
40 90	3.7	
50 12+00	3.7	
60 10	3.7	

1-22-47

DIST	SOUND		DIST	SOUND	
12+70	3.7	+1.9	10+70	4.0	+1.6
80 30	3.7	+1.9	40 30	4.0	
10:39 90 40	3.8	+1.8	90 40	4.0	
12+00 50	3.8		14+00 50	4.0	
5.6 10 60	3.8		10 60	4.0	
20 70	3.8		20 70	4.0	
30 80	3.8		10:42 30 80	4.0	
40 90	3.8		5.0 40 90	4.0	
50 13+00	3.8		15+00 50	4.0	
60 10	4.0	+1.6	60 10	4.0	
70 20	4.0	+1.6	70 20	4.0	
40 30	3.8	+1.8	40 30	4.0	
90 40	3.8		90 40	4.0	
13+00 50	3.8		1500 50	4.0	
10 60	3.9	+1.7	10 60	4.0	
20 70	3.9		20 70	4.0	
30 80	3.9		30 80	4.0	
40 90	3.9		40 90	4.0	
50 14+00	3.9		50 16+00	4.0	
60 10	4.0	+1.6	60 10	4.0	

10:47

DIST	SOUND		DIST	SOUND	
70 70	4.0	+1.6	70 70	5.1	+0.4
80 30	4.0		80 30	6.0	-0.5
90 40	4.0		90 40	6.5	-1.0
16+00 50	4.0		18+00 50	7.7	-2.2
10 60	4.0		10 60	8.0	-2.5
20 70	4.0		20 70	10.3	-4.8
30 80	4.0		30 80	11.4	-5.9
40 90	4.0		40 90	12.0	-6.5
50 17+00	4.0		50 19+00	11.4	-5.9
10:44 60 10	3.9	+1.7	60 10	9.8	-4.3
5.0 20	3.9		3.2 5.5 20	8.5	-3.0
40 30	3.9		40 30	6.8	-1.3
60 40	3.9		60 40	6.5	-1.0
17+00 50	3.9		19+00 50	6.6	-1.1
10 60	3.9		10:47 10 60	6.5	-1.0
30 70	3.8	+1.8	20 70	6.6	-1.1
30 80	3.9	+1.7	30 80	7.3	-1.8
40 90	4.1	+1.5	40 90	7.7	-2.2
14+00 50	4.5	+1.1	50 20+00	7.8	-2.3
60 10	4.8	+0.8	60 10	8.0	-2.5

108+00

DIST	SOUND	
70	8.0	-2.5
80	7.8	-2.3
10:48 90	7.8	-2.3
20+00	7.8	-2.3

(5.5)

SOUND EAST 1-22-49 — 7

Rx 110+00 — 0+00 = 88+67 58

DIST	SOUND	
0+00	2.8	+2.7
10:55	2.9	+2.6
	2.8	+2.7
	2.8	+2.7
(5.5)	2.9	+2.6
50	2.9	+2.6
	3.0	+2.5
	3.0	|
	3.0	|
	2.8	+2.7
1+00	2.8	+2.7
	2.7	+2.8
	3.4	+2.1
	3.5	+2.0
	3.5	+2.0
50	3.6	+1.9
	3.7	+1.8
	3.7	|
80	3.7	|

DIST	SOUND	
	3.8	+1.6
2+00	3.6	+1.8
	3.0	+2.4
	2.8	+2.6
	2.6	+2.8
	2.6	+2.8
50	2.5	+2.9
(5.5)	2.5	|
	2.5	|
10:57	2.5	|
	2.5	|
3+00	2.5	|
10	2.5	|
	2.5	|
	2.5	|
	2.5	|
50	2.5	|
	2.5	|
60	2.5	|
70	2.5	|

DIST	SOUND	110+00	DIST	SOUND		DIST	SOUND	110+00	DIST	SOUND	
3+80	2.5	+2.9		3.0	+2.4		3.0	+2.4		3.0	+2.3
	2.6	+2.8	11:03	3.0			3.0			3.0	+2.3
4+00	2.6		6+00	3.0		8+00	3.0		10+00	3.3	+2.0
	2.6			3.1	+2.3	11:05	3.0		11:07	3.4	+1.9
	2.6		(3.4)	3.1			3.0			3.5	+1.8
	2.7	+2.7		3.1		(3.4)	3.0			3.5	
	2.8	+2.6		3.0	+2.4		3.0			3.5	
50	2.8	+2.6	50	3.0	+2.4	50	3.0		50	3.5	
(3.4)	3.0	+2.4		3.1	+2.3		3.0		(3.3)	3.2	+2.1
	3.0			3.2	+2.2		3.0			3.1	+2.2
11:02	3.0			3.2	+2.2		3.0			3.1	
	3.0			3.2	+2.2		3.0			3.1	
5+00	3.0		7+00	3.2	+2.2	9+00	3.0		11+00	3.1	
	3.0			3.1	+2.3		3.0			3.1	
	3.0			3.1	+2.3		3.0			3.1	
	3.0			3.0	+2.4		3.0			3.1	
	3.0			3.0			3.0			3.1	
50	3.0		50	3.0		50	3.0		50	3.3	+2.0
	3.1	+2.3		3.0			3.0			3.4	+1.9
	3.1	+2.3		3.0			3.0			3.4	+1.9

DIST	SOUND		DIST	SOUND	
	11+00				
11+80	3.5	+1.8		3.6	+1.
11:08	3.5			3.6	
12+00	3.5		14+00	3.6	
	3.5			3.6	
	3.7	+1.6	11:10	3.5	+1.
	3.7	+1.6		3.5	
	3.8	+1.5		3.5	
50	3.8		50	3.5	
	3.8			3.6	+1.
	3.8			3.7	+1.
	3.8			3.7	+1.
	3.8			3.5	+1.
13+00	3.8		15+00	3.5	+1.
	3.8			3.4	+1.
	3.8			3.3	+2.
	3.8			3.2	+2.
	3.8			3.2	
50	3.7	+1.6	50	3.2	
	3.7			3.3	+2.
	3.7			3.5	+1

DIST	SOUND		DIST	SOUND	
	11+00				
	3.9	+1.4		7.8	-2.6
	4.2	+1.1		8.0	-2.8
16+00	4.4	+0.9	18+00	8.0	
	4.5	+0.8		8.10	
	4.8	+0.5		8.8	-3.6
	5.2	+0.1		8.5	-3.3
	6.0	-0.7		8.5	-3.3
50	6.6	-1.3	50	8.8	-3.6
17:12	6.8	-1.5		9.0	-3.8
	6.7	-1.4		9.0	-3.8
	6.2	-0.9		8.4	-3.2
	6.0	-0.7		8.0	-2.8
17+00	5.7	-0.4	19+00	7.6	-2.4
	5.5	-0.2	11:14	7.4	-2.2
	5.3	0.0		7.2	-2.0
	6.5	-1.2		7.2	
11:13	6.7	-1.4		7.2	
50	7.3	-2.0	50	7.0	-1.8
	7.4	-2.1		6.2	-1.0
	7.5	-2.2		5.4	-0.2

110 +00

DIST	SOUND	
80	4.4	+08
11:15 90	4.2	+1.0
20+00	4.1	+1.1

(5.2)

SOUND EAST 1-22-47 10

RX 114+00 0+00 = R88+67 58

DIST	SOUND		DIST	SOUND	
0+00	2.9	+2.2		2.8	+2.2
11:30	2.9	+2.2	2+00	2.8	
(5.1)	2.9		11:33	2.8	
	2.9		(5.0)	2.8	
	2.9			2.8	
50	2.9			2.9	+2.1
	2.9		50	2.8	+2.2
	3.0	+2.1		3.0	+2.0
	3.0	+2.1		3.0	
	3.0			3.0	
1+00	3.0			3.0	
	3.0		3+00	3.0	
	3.0			3.0	
	2.9	+2.2	11:35	3.0	
	2.9		(5.0)	3.0	
50	2.9			3.0	
11:32	2.9		50	3.0	
(5.1)	2.9			3.0	
	2.9			3.0	

114+00

DIST	SOUND	
3+80	3.0	+2.0
	3.0	
4+00	3.0	
11:36	3.1	+1.9
(5.0)	3.2	+1.8
	3.2	+1.8
	3.2	
50	3.2	
	3.2	
	3.2	
(5.0)	3.3	+1.7
11:37	3.3	+1.7
5+00	3.3	
	3.3	
	3.3	
(5.0)	3.4	+1.6
	3.4	
50	3.4	
11:38	3.4	
	3.4	

DIST	SOUND	
8	3.4	+1.5
	3.4	+1.5
6+00	3.4	+1.5
	3.5	+1.5
	3.5	
	3.5	
	3.5	
50	3.4	+1.5
	3.4	
	3.4	
(4.9)	3.4	
	3.5	+1.5
	3.5	
7+00	3.5	
11:40	3.5	
	3.5	
50	3.5	
	3.5	
	3.5	

114+00

DIST	SOUND	
	3.5	+1.4
	3.5	+1.4
8+00	3.6	+1.3
	3.6	
	3.6	
	3.5	+1.4
	3.5	
50	3.5	
	3.5	
	3.5	
(4.9)	3.5	
	3.5	
9+00	3.5	
	3.5	
	3.5	
11:42	3.4	+1.5
	3.4	
	3.4	
50	3.4	
	3.4	
	3.5	+1.4

DIST	SOUND	11
	3.5	+1.4
	3.5	+1.4
10+00	3.5	
11:43	3.5	
	3.5	
(4.9)	3.5	
	3.5	
50	3.5	
	3.5	
	3.5	
	3.5	
	3.5	
11+00	3.5	
	3.5	
	3.6	+1.3
	3.6	
	3.6	
50	3.5	+1.4
	3.5	
	3.5	

114+00

DIST	SOUND		DIST	SOUND	
11+80	3.5	+1.3		3.1	+1.
11+95	3.5	+1.3		3.1	+1.
12+00	3.5		14+00	~~3.2~~ 3.2	+1.
	3.5			3.2	+1.
(4.8)	3.5			3.3	+1.
	3.4	+1.4		3.3	
	3.4		(4.7)	3.3	
50	3.4		50	~~3.3~~	
	3.4		11:47	3.4	+1.
	3.4			3.4	+1.
	3.3	+1.5		3.5	+1.
	3.3	+1.5		4.0	+0.
13+00	3.2	+1.6	15+00	~~4.1~~ 4.1	+0.
	3.2			4.5	+0.
(4.8)	3.2			5.0	-0.
11:46	3.2			5.5	-0.
	3.2		(4.7)	5.7	-1.
50	3.2		50	~~5.6~~ 5.6	-0.
	3.1	+1.7	11:48	5.1	-0.
	3.1	+1.7		4.8	-0.

114+00

DIST	SOUND		DIST	SOUND	
	4.5	+0.2		9.3	-4.6
	4.0	+0.7		7.8	-3.1
16+00	4.0	+0.7	18+00	6.4	-1.7
	3.9	+0.8	11:50	5.0	-0.3
	3.9	+0.8	(4.7)	3.7	+1.0
	3.8	+0.9		2.4	+2.3
(4.7)	4.2	+0.5		2.3	+2.4
50	6.5	-1.8	50	2.0	+2.7
11:49	8.3	-3.6		1.5	3.2
	9.5	-4.8		1.0	3.7
	10.0	-5.3	11:52	0.0	EAST SHORE
	10.4	-5.7	(4.7)		
17+00	10.8	-6.1	19+00		
	10.6	-5.9			
	10.7	-6.0			
	10.5	-5.8			
	10.5	-5.8			
50	10.2	-5.5	50		
	10.0	-5.3			
	9.6	-4.9			

SOUND EAST. STA 116+00 0+00 = R88+67.5

1-23-47

DIST	SOUND		DIST	SOUND	
P.X					
0+00	4.4	+1.6	2+00	4.4	+1.6
10:04	4.4	+1.6	10:07	4.4	
(6.0)	4.4		(6.0)	4.4	
	4.5	+1.5		4.4	
	4.4	+1.6		4.4	
50	4.4		50	4.4	
	4.4			4.4	
	4.4			4.4	
	4.4			4.4	
	4.4			4.4	
1+00	4.4		3+00	4.4	
10:06	4.4		10:08	4.4	
	4.4		(6.0)	4.4	
(6.0)	4.4			4.4	
	4.4			4.4	
50	4.4		50	4.4	
	4.4			4.4	
	4.4			4.4	
	4.4			4.4	
	4.4			4.4	

116+00

13

DIST	SOUND		DIST	SOUND	
4+00	4.4	+1.6	6+00	4.8	+1.2
	4.5			4.8	
	4.4			4.8	
	4.4			4.8	
	4.4			4.9	+1.1
50	4.5	+1.5	50	5.0	+1.0
	4.5			5.0	
(6.0)	4.5			5.0	
	4.5		(6.0)	5.0	
	4.5			5.0	
5+00	4.5		7+00	5.0	
	4.5			5.1	+0.9
	4.5			5.0	+1.0
	4.5			5.2	+0.8
	4.5			5.2	+0.8
50	4.5		50	5.0	+1.0
10:10	4.5			5.0	+1.0
	4.5			4.8	+1.2
	4.6	+1.4	10:12	4.8	
	4.6	+1.4		4.8	

DIST	SOUND	
8+00	4.9	+ 1.1
	5.0	+ 1.0
	5.0	+ 1.0
10:13	5.1	+ 0.9
	5.1	
50	5.1	
	5.2	+ 0.8
	5.2	+ 0.8
	5.1	+ 0.9
	5.2	+ 0.8
9+00	5.2	
	5.2	
	5.0	+ 1.0
	5.0	
	5.0	
50	5.0	
	5.0	
	5.0	
	5.0	
	5.0	

DIST	SOUND	
10+00	4.9	+ 1.
10:15	4.9	
	4.9	
	4.9	
	4.9	
50	4.9	
	4.9	
	4.9	
	4.9	
	4.8	+ 1.
11+00	4.8	+ 1.
	5.0	+ 1.
	5.1	+ 0.
10:17	5.2	+ 0.
	5.2	
50	5.2	
	5.2	
	5.2	
	5.4	+ 0.
	5.4	+ 0.

DIST	SOUND	
12+00	5.4	+ 0.6
10:18	5.1	+ 0.9
	5.1	
	5.1	
	5.0	+ 1.0
50	5.0	
	5.0	
	5.0	
	5.0	
	4.8	+ 1.2
13+00	4.7	+ 1.3
	4.7	
	4.7	
	4.7	
	4.6	+ 1.4
50	4.6	+ 1.4
10:20	4.6	+ 1.4
	4.5	+ 1.5
	4.5	
	4.5	

DIST	SOUND	
14+00	4.5	+ 1.5
	4.5	
	4.5	
	4.5	
	4.5	
50	4.5	
	4.5	
	4.5	
	4.5	
10:22	4.6	+ 1.4
15+00	5.0	+ 1.0
	5.4	+ 0.6
	6.0	0.0
	7.0	− 1.0
	7.3	− 1.3
10:23 50	7.6	− 1.6
	7.2	− 1.2
	7.2	− 1.2
	7.6	− 1.6
	8.6	− 2.6

DIST	SOUND		DIST	SOUND	
	116+00		1-23-47		
16+00	9.0	-3.0	18+00	2.1	+3.
	9.8	-3.8		1.0	+5.
10:24	10.7	-4.7	+15	0.0	SHOT
	11.4	-5.4			
	11.8	-5.8			
50	12.0	-6.0	50		
	12.0				
	12.0				
6.0	12.0				
10:25	11.7	-5.7			
17+00	11.6	-5.6			
	11.4	-5.4			
	11.0	-5.0			
	10.0	-4.0			
	7.8	-1.8			
10:26					
50	5.5	+0.5			
	4.4	+1.6			
	3.7	+2.3			
	3.1	+2.9			
	2.7	+3.3			

DIST	SOUND		DIST	SOUND	
VK-23-47 STA 120+00 - 0+00 = R88+67.58				SOUND EAST	15
0+00	4.9	+1.1	2+00	5.2	+0.8
10:41	4.9			5.2	
	4.9			5.2	
	4.9			5.4	+0.6
	4.9		10:44	5.4	
50	5.0	+1.0	50	5.4	
	5.0			5.4	
	5.0			5.4	
6.0	5.0		6.0	5.4	
	5.0			5.4	
1+00	5.0		3+00	5.4	
	5.0			5.4	
	5.0			5.4	
	5.0			5.4	
10:43	5.0		10:45	5.4	
50	5.0		50	5.3	+0.7
	5.1	+0.9		5.3	+0.7
	5.1			5.2	+0.8
	5.1			5.2	
	5.2	+0.8		5.2	

DIST	12 0+00 SOUND		DIST	1-23-47 SOUND	
4+00	5.2	+0.7	6+00	5.4	+0.5
10:46	5.3	+0.6		5.3	+0.6
	5.4	+0.5		5.1	+0.8
	5.4	+0.5	10:48	5.0	+0.9
	5.2	+0.7		4.9	+1.0
50	5.2	+0.7	50	4.9	
	5.1	+0.8		4.9	
	5.1			4.9	
	5.1			4.9	
	5.3	+0.6		4.8	+1.1
5+00	5.3	+0.6	7+00	4.7	+1.2
	5.4	+0.5		4.7	
10:47	5.5	+0.4		4.7	
	5.6	+0.3		4.8	+1.1
	5.7	+0.2		4.8	
50	5.6	+0.3	50	4.8	
	5.5	+0.4		4.8	
	5.5	+0.4		4.8	
	5.5	+0.4		4.8	
	5.4	+0.5		4.8	

DIST	12 0+00 SOUND		DIST	1-23-47 SOUND	
8+00	4.8	+1.1	10+00	4.5	+1.4
	4.9	+1.0		4.5	+1.4
	4.9			4.6	+1.3
	4.9		10:52	4.6	
10:50	4.8	+1.1		4.6	
50	4.8		50	4.6	
	4.8			4.7	+1.2
	4.7	+1.2		4.7	
	4.7	+1.2		4.7	
	4.6	+1.3		4.8	+1.1
9+00	4.6		11+00	4.8	
	4.6		10:53	4.8	
	4.7	+1.2		4.8	
	4.7			4.8	
	4.7			4.8	
50	4.6	+1.3	50	4.8	
	4.6			4.8	
	4.6			4.8	
	4.6			4.8	
	4.5	+1.4		4.8	

120+00			1-23-47		
DIST	SOUND		DIST	SOUND	
12+00	4.7	+1.2	14+00	4.6	+1.2
10:54	4.7		10:56	5.0	+0.8
	4.7		(5.4)	5.0	+0.8
	4.7			5.1	+0.7
	4.8	+1.1		6.0	-0.2
50	4.8	+1.1	50	7.0	-1.2
	4.7	+1.2		7.6	-1.8
(5.9)	4.7			8.0	-2.2
	4.7			8.4	-2.6
	4.7		10:57	8.7	-2.9
13+00	4.7		15+00	9.1	-3.3
	4.6	+1.3	(2.3)	9.5	-3.7
	4.8	+1.1		10.0	-4.2
	4.9	+1.0		10.1	-4.3
	4.8	+1.1		10.3	-4.5
50	4.8		50	10.5	-4.7
	4.8			10.5	-4.7
	4.7	+1.2		10.5	
	4.6	+1.3		10.5	
	4.6	+1.3		10.5	

120+00			1-23-47	
DIST	SOUND		DIST	SOUND
16+00	10.2	-4.4	18+00	
10:58	9.0	-3.2		
	7.3	-1.5		
	5.5	+0.3		
	4.6	+1.2		
50	4.0	+1.8		
	3.5	+2.3		
(5.2)	3.0	+2.8		
	2.7	+3.1		
	2.2	+3.6		
17+00	2.0	+3.8		
	1.5	+4.3		
11:00	1.1	+4.7		
	0.4	+5.4		
+35	0.0	+5.8		
50				

END SHORE TOE OF SLOPE

SOUND EAST 122+00 1-23-47 0+00 = R58+67.5 122+00 1-23-47

PX

DIST	SOUND		DIST	SOUND		DIST	SOUND		DIST	SOUND	
0+00	4.8	+0.8	2+00	4.8	+0.8	4+00	4.8	+0.8	6+00	4.4	+1.2
	4.8			4.7	+0.9	11:23	4.7	+0.9		4.4	
11:18	4.8			4.8	+0.8		4.7			4.4	
	4.8			4.9	+0.7		4.7			4.4	
	4.8			4.9	+0.[illegible]		4.7			4.7	+0.9
50	4.8		50	4.9	+0.7	50	4.8	+0.8	50	4.5	+1.1
	4.7	+0.9		5.0	+0.6		4.9	+0.7	11:26	4.5	+1.1
	4.8	+0.8		5.4	+0.[illegible]	[illegible]	4.9	+0.7		4.4	+1.2
(5.6)	4.8	+0.8	(5.6)	5.4	+0.[illegible]		4.6	+1.0	(5.6)	4.4	
	4.9	+0.7		5.5	+[illegible]		4.5	+1.1		4.4	
1+00	4.9		3+00	5.5	+[illegible]	5+00	4.5	+1.1	7+00	4.4	
	4.9			5.7	-[illegible]		4.5			4.4	
	4.9		11:22	5.8	-0.[illegible]		4.5			4.4	
11:20	4.9			6.0	-0.[illegible]		4.5		11:27	4.6	+1.0
	4.9			5.5	+0[illegible]		4.4	+1.2		5.1	+0.5
50	4.8	+0.8	50	5.3	+[illegible]	50	4.4		50	5.2	+0.4
	4.8			5.1	+0.[illegible]		4.4			5.0	+0.6
	4.8			5.0	+[illegible]		4.4			4.7	+0.9
	4.8			5.0	+[illegible]	11:25	4.4			4.6	+1.0
	4.8			4.9	+[illegible]		4.4			4.8	+0.8

DIST	122+00 SOUND		1-23-47 DIST	SOUND	
8+00	5.3	+0.2	10+00	6.0	-0.5
11:28	5.7	-0.2		6.0	
	5.8	+0.3		6.0	
	6.0	-0.5		5.6	-0.1
	6.1	-0.6		5.5	0.0
50	6.4	-0.9	50	5.3	+0.2
	6.4	-0.9		5.4	+0.1
	6.5	-1.0		5.4	
	6.5	-1.0		5.4	
	6.5	-1.0		5.4	
9+00	6.2	-0.7	11+00	5.4	
	6.2	-0.7	11:32	5.2	+0.3
	6.2	-0.7		5.2	+0.3
	6.1	-0.6		5.1	+0.4
	6.0	-0.5		5.0	+0.5
11:30 50	6.0	-0.5	50	5.0	
	5.8	-0.3		5.0	
	5.8	-0.3		5.0	
	5.8	-0.3		5.1	+0.4
	6.0	-0.5		5.1	+0.4

DIST	122+00 SOUND		1-23-47 DIST	SOUND	
12+00	5.0	+0.5	14+00	8.4	-2.9
11:33	5.1	+0.4	11:35	9.8	-3.7
	5.1			10.8	-5.3
	5.1			11.1	-5.6
	5.1			11.3	-5.8
50	5.0	+0.5	50	11.5	-6.0
	5.0			11.0	-5.5
	5.0			10.5	-5.0
	5.0			10.0	-4.5
	5.0			9.2	-3.7
13+00	5.0		15+00	8.7	-3.2
	5.0			8.0	-2.5
	5.0			7.8	-2.3
	5.0			7.4	-1.9
	4.8	+0.7		6.5	-1.0
50	4.7	+0.8	50	6.0	-0.5
	4.8	+0.7		5.0	+0.5
	5.3	+0.2		4.4	+1.1
	6.2	-0.7	11:37	4.0	+1.5
	7.2	-1.7		3.5	+2.0

DIST	122+00 SOUND	
16+00	3.2	+2.2
	3.1	+2.3
	2.9	+2.5
	2.4	+3.0
	2.0	+3.4
50	1.5	+3.9
11:38	1.0	+4.4
70	0.0	+5.4
17+00		

DIST	126+00 SOUND 1-23-47	
0+00	4.8	+0.5
11:51	4.8	+0.5
	4.9	+0.4
	5.0	+0.3
50	5.0	
	5.0	
	5.0	
	5.0	
	5.0	
1+00	5.0	
	5.0	
	4.9	+0.4
	4.8	+0.5
	4.8	+0.5
50	4.9	+0.4
11:53	4.9	+0.4
	5.0	+0.3
	5.0	+0.3
	4.8	+0.5

DIST	0+00 = R98+67.58 SOUND 7	SOUND EAST 20
2+00	4.8	+0.5
	4.8	
	4.8	
	4.8	
50	4.8	
	4.8	
	4.7	+0.6
	4.7	
	4.7	
	4.7	
3+00	4.7	
	4.7	
	4.8	+0.5
	4.8	+0.5
	4.7	+0.6
50	4.7	+0.6
	4.6	+0.7
	4.6	+0.7
	4.5	+0.8
	4.5	+0.8

126+00 - 1-23-47					
DIST	SOUND		DIST	SOUND	
4+00	4.5	+0.7	6+00	4.4	+0.8
	4.5	+0.7		4.4	
	4.5			4.4	
	4.5			4.4	
	4.5			4.4	
50	4.5		50	4.3	+0.9
11:55	4.5			4.4	+0.8
	4.5			4.2	+1.0
	4.5			4.3	+0.9
	4.4	+0.8		4.2	+1.0
5+00	4.4		7+00	4.4	+0.8
	4.4		11:57	4.3	+0.9
	4.3	+0.9		4.3	+0.9
	4.2	+1.0		4.4	+0.8
	4.2	+1.0		4.8	+0.4
50	4.4	+0.8	50	5.5	-0.3
	4.4			6.2	-1.0
	4.4			7.0	-1.8
	4.2	+1.0		7.6	-2.4
	4.4	+0.8		7.9	-2.7

126+00 1-23-47					
DIST	SOUND		DIST	SOUND	
8+00	8.5	-3.3	10+00	3.8	+1.4
11:58	9.5	-4.3	12:00	3.8	
	9.6	-4.4		3.8	
	9.0	-3.8		3.8	
	7.0	-1.8		3.8	
50	5.5	-0.3	50	3.8	
	4.5	+0.7		3.7	+1.5
	4.4	+0.8		3.7	
	4.4	+0.8		3.7	
	4.0	+1.2		3.6	+1.6
9+00	4.0	+1.2	11+00	3.6	+1.6
	4.0			3.7	+1.5
	4.0			3.7	
	3.8	+1.4		3.7	
	3.8			3.7	
50	3.8		50	3.7	
	3.8			3.7	
	3.8			3.6	+1.6
	3.8			3.5	+1.7
	3.8			3.5	+1.7

126+00 1-23-47

12+00	3.5	+1.7	14+00	8.7	-3.6
12:02	3.5			7.8	-2.7
	3.5			7.0	-1.9
(5.2)	3.5			6.7	-1.6
	3.5			6.6	-1.[illegible]
50	3.5		50	6.5	-1.[illegible]
	3.5			6.9	-1.[illegible]
	3.5		(5.1)	7.3	-2.[illegible]
	3.4	+1.8		7.4	-2.[illegible]
	3.4		12:05	7.1	-[illegible]
13+00	3.4		15+00	6.7	-1.[illegible]
12:03	3.4			6.0	-0.[illegible]
(5.2)	3.6	+1.6		5.2	-0.[illegible]
	3.7	+1.5		4.5	+0.[illegible]
	4.2	+1.0		4.0	+1.[illegible]
50	5.0	+0.2	50	3.4	+1.[illegible]
	5.7	-0.5		3.0	+2.[illegible]
	7.0	-1.8		2.7	+2.[illegible]
	8.8	-3.6		2.0	+3.[illegible]
	9.1	-3.9		1.8	+[illegible]
			16+00 10 20	1.2 0.5 0.0	[illegible]

SOUND EAST 128+00-0+00=R88+67.58

PX

DIST	SOUND	1-23-47	DIST	SOUND	
0+00	4.5	+0.4	2+00	4.5	+0.4
[illegible]	4.6	+0.3		4.5	
	4.6			4.5	
12:18	4.6			4.5	
	4.5	+0.4		4.4	+0.5
50	4.5		12:20 50	4.4	+0.5
	4.5			4.3	+0.6
	4.6	+0.3		4.4	+0.5
(4.9)	4.6	+0.3	(4.9)	4.4	
	4.6	+0.3		4.4	
1+00	4.5	+0.4	3+00	4.4	
	4.5	+0.4		4.4	
	4.6	+0.3		4.5	+0.4
	4.7	+0.2		4.5	+0.4
	4.7	+0.2		4.4	+0.5
50	4.6	+0.3	50	4.4	+0.5
	4.6	+0.3		4.3	+0.6
	4.5	+0.4		4.4	+0.5
	4.5	+0.4		4.2	+0.7
	4.4	+0.5		4.2	+0.7

DIST	128+00 SOUND		DIST	1-23-47 SOUND	
4+00	4.3	+0.6	6+00	4.2	+0.7
	4.3	+0.6		4.3	+0.6
	4.4	+0.5		4.3	+0.6
	4.4			4.2	+0.7
	4.4			4.2	
50	4.3	+0.6	50	4.2	
12:22	4.3			4.2	
	4.3			4.3	+0.6
(9 K)	4.3		(9 K)	4.4	+0.5
	4.3			4.3	+0.6
5+00	4.2	+0.7	7+00	4.3	
	4.2			4.3	
	4.2			4.3	
	4.2			4.3	
	4.3	+0.6		4.3	
50	4.3		50	4.3	
	4.3			4.4	+0.5
12:23	4.2	+0.7		4.4	+0.5
	4.2			4.3	+0.6
	4.2			4.2	+0.7

DIST	128+00 SOUND		DIST	1-23-47 SOUND	
8+00	4.2	+0.6	10+00	4.0	+0.8
12:25	4.2			4.0	
	4.2			4.0	
	4.2			4.0	
	4.2		(8 K)	4.0	
50	4.2		50	4.0	
	4.1	+0.7	12:27	4.0	
	4.1			4.0	
(8 K)	4.1			4.0	
	4.1			4.0	
9+00	4.1		11+00	3.9	+0.9
	4.1			3.8	+1.0
	4.0	+0.8		3.7	+1.1
	4.0			3.7	
	4.0			3.7	
50	4.0		50	3.7	
	4.1	+0.7	12:28	3.6	+1.1
	4.2	+0.6	(7 K)	3.6	+1.1
	4.2	+0.6		3.6	+1.1
	4.1	+0.7		3.5	+1.2

DIST	128+00 1-23-47 SOUND		DIST	SOUND	
12+00	3.5	+1.2	14+00	3.3	+1.3
	3.5	+1.2		3.8	+0.8
	3.5	|		4.4	+0.2
	3.5	|		5.0	-0.4
	3.5	|		5.8	-1.2
50	3.4	+1.3	50	6.1	-1.5
	3.4	|		6.5	-1.9
	3.4	|		6.4	-1.8
(4.7)	3.3	+1.4	(4.6)	6.7	-2.1
	3.3	|		8.0	-3.4
13+00	3.3	|	15+00	9.1	-4.5
12:30	3.3	|		10.2	-5.6
	3.4	+1.3		11.0	-6.4
	3.3	+1.4		10.5	-5.9
	3.2	+1.5		8.8	-3.8
50	3.2	+1.5	50	6.7	-2.7
	3.1	+1.6	12:33	4.3	+0.3
	3.1	|		3.0	+1.6
	3.1	|		2.5	+2.1
	3.1	|		2.0	+2.6

128+00 1-23-47 DIST	SOUND	
16+00	1.5	+3.1
10	1.0	+3.6
20	0.5	+4.1
24	0.0	+4.6 EAST SHORELINE
(4.6)		

63+00 0+00 = R100 S. WEST
1-24-47

DIST	SOUND		DIST	SOUND	
0+00	2.0	+3.8	2+00	8.5	-2.7
10:11	2.0	+3.8		8.5	-2.7
(5.8)	2.6	+3.2		8.4	-2.6
	2.8	+3.0		8.3	-2.5
	3.1	+2.7		8.1	-2.3
50	3.4	+2.4	50	8.0	-2.2
	3.6	+2.2	10:15	8.0	-2.2
10:12	3.8	+2.0		8.0	-2.2
(5.7)	4.4	+1.4	(5.9)	7.8	-2.0
	4.6	+1.2		7.5	-1.6
1+00	4.7	+1.1	3+00	7.4	-1.5
	5.1	+0.8		7.4	-1.5
	6.4	-0.6		7.3	-1.4
10:13	7.0	-1.2		7.5	-1.6
(5.9)	7.4	-1.6		7.4	-1.5
50	7.4	-1.6	50	7.4	-1.5
	7.4	-1.6		7.1	-1.2
	7.4	-1.6		7.2	-1.3
	8.0	-2.2		7.0	-1.1
	8.4	-2.6		6.8	-0.9

63+00 - 1-24-47

25

DIST	SOUND	
4+00	6.6	-0.7
	6.5	-0.6
	6.6	-0.7
10:18	6.8	-0.9
(5.9)	7.0	-1.1
50	6.8	-0.9
	6.5	-0.6
	6.9	-1.0
	7.3	-1.4
	7.3	-1.4
5+00	8.0	-2.1
	7.6	-1.7
	7.7	-1.8
	7.1	-1.2
10:20	7.0	-1.1
50	6.8	-0.9
(5.9)		

67+00 0+00 = R100+00 SOUND WEST
1-24-47

DIST	SOUND		DIST	SOUND	
3+50	9.2	-3.3	+50	14.5	-8.6
11:04	9.6	-3.7		15.0	-9.1
	9.8	-3.9		15.3	-9.4
	10.3	-4.4		15.3	-9.4
	10.3	-4.4		15.7	-9.8
4+00	10.4	-4.4	6+00	16.3	-10.4
	11.0	-5.1		17.0	-11.1
(2.9 5.)	11.2	-5.2	11:06	17.0	-11.1
	11.3	-5.3	(2.9 5.)	16.9	-10.9
	11.5	-5.6		16.6	-10.7
50	12.0	-6.1	50	17.0	-11.1
	12.0	-6.1		17.1	-11.2
	12.2	-6.3		17.4	-11.5
	12.5	-6.6		17.6	-11.7
	12.8	-6.9		17.2	-11.3
5+00	13.0	-7.1	7+00	17.5	-11.6
	13.3	-7.4			
	13.7	-7.8			
	14.0	-8.1			
	14.2	-8.3			

69+00 - 0+00 = R100 SOUND WEST
1-24-47

DIST	SOUND		DIST	SOUND	
0+00	9.1	-3.2	2+00	15.2	-9.3
10:40	9.3	-3.4		15.7	-9.8
	10.0	-4.1		15.1	-9.2
	10.0	-4.1		16.1	-10.2
	10.4	-4.5	10:43	12.0	-11.1
50	11.5	-5.6	50	17.1	-11.2
	11.5	-5.6		17.0	-11.1
(2.9 5.)	12.3	-6.4	(2.9 5.)	17.3	-11.4
	12.8	-6.9		17.8	-11.9
	13.2	-7.3		17.9	-12.0
1+00	13.2	-7.3	3+00	17.5	-11.6
	13.3	-7.4		17.4	-11.5
	13.8	-7.9		17.5	-11.6
	14.0	-8.1		17.5	-11.6
	14.3	-8.4	10:45	17.7	-11.8
50	14.3	-8.4	50	17.3	-11.4
	14.5	-8.6		17.3	-11.4
	14.9	-9.0		17.5	-11.6
	15.0	-9.1		17.1	-11.2
	15.2	-9.3		17.8	-11.9

69+00 - 1-24-47

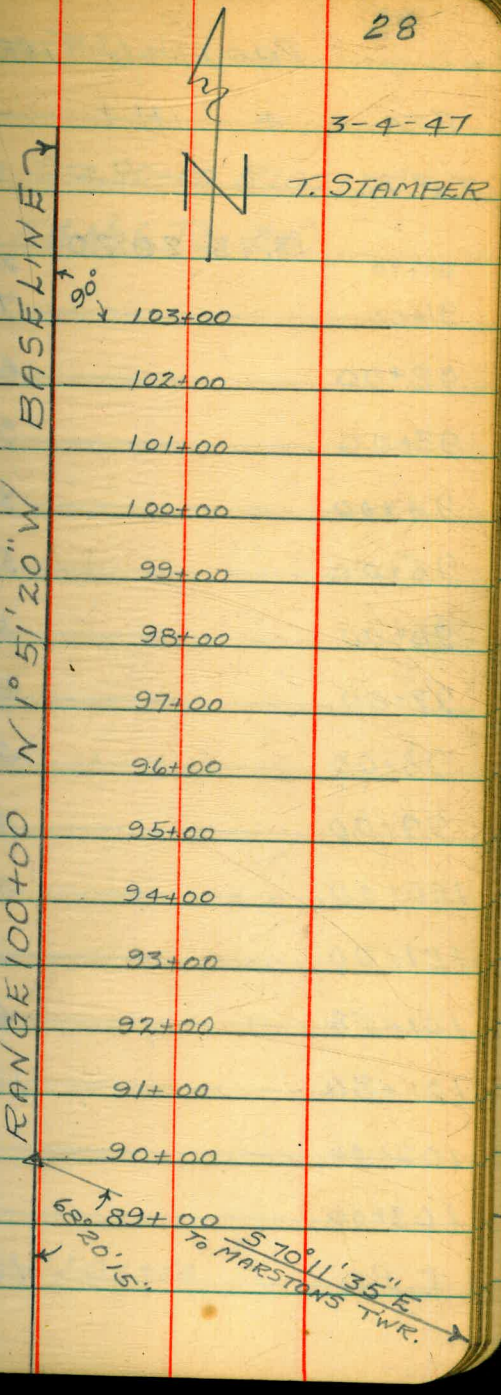
DIST.	SOUND		DIST	SOUND	
4+00	17.5	-11.6	6+00	17.3	-11.4
	17.8	-11.9		17.3	-11.4
	17.7	-11.8		17.5	-11.6
10:47	17.6	-11.7		17.0	-11.1
	17.7	-11.8		17.0	-11.1
50	17.8	-11.9	50	18.0	-12.1
	17.6	-11.7		18.0	-12.1
	17.6	-11.7		17.1	-11.2
5.9	18.0	-12.1	5.9	17.0	-11.1
	18.4	-12.5		17.7	-11.8
5+00	17.5	-11.6	7+00	18.0	-12.1
	17.5	-11.6		19.4	-13.5
	17.5	-11.6		18.0	-12.1
	17.1	-11.2		18.0	-12.1
	17.8	-11.9		18.0	-12.1
50	18.0	-12.1	50	17.5	-11.6
10:50	17.8	-11.9		16.5	-11.6
	17.0	-11.1	10:53	16.5	-11.6
	17.0	-11.1		17.3	-11.4
	17.0	-11.1		17.7	-11.8
				17.7	-11.8

FINAL CROSS SECTIONS
OF MISSION BAY PROJECT No. 6
FOR PAYMENT ON TIERRA-DEL-
FUEGO ISLAND
BASELINE LAYOUT

NOTE: SECTIONS ARE TAKEN
EAST & WEST OF BASELINE
& ARE SO INDICATED

Indexed

3-4-47
T. STAMPER



PROJ NO 6 TIERRA-DEL-FUEGO

3-4-47

STA	+	H.I.	−	ELEV.
T.B.M.				6.47
	13.73	20.20		
90+10			7.8	12.4
91+00			7.5	12.7
92+00			6.1	14.1
93+00			5.2	15.0
94+00			3.5	16.7
95+00			5.3	14.9
96+00			3.4	16.8
97+00			3.6	16.6
98+00			4.0	16.2
99+00			4.4	15.8
100+00			5.7	14.5
101+00			6.2	14.0
101+58			6.9	13.3
101+80			13.6	6.6
102+00				
103+00				
T.P.			13.63	6.57

TOP OF 2"X2" HUB STA. 90+00 R100+00
(SEE MISSION BAY F.B. NO 6. PG. 38)

Top of Hub Sta 101+80

PX Sta 103+00

Sta	+	H.I.	−	El
TBM	2.28	8.85		6.57
W 312			6.1	2.7
W 256			6.3	2.5
W 200			6.2	2.6
W 150			6.2	2.6
W 96			6.2	2.6
W 38			6.0	2.8
00			5.4	3.4
E 30			5.5	3.3
E. 83			5.6	3.2
E 146			5.9	2.9
E 210			5.9	2.9
E. 270			5.7	3.1
E 348			5.8	3.0
E. 422			4.9	3.9
E. 510			5.7	3.1
E 590			5.7	3.1
E. 654			5.7	3.1
E 725			6.0	2.8

Sta 103+00

Sta	+	H.I.	−	El
		8.85		
E750			6.7	2.2

P.X. Sta 102+00

Sta	+	HI	−	EI
TBM	4.03	10.60		6.57
E 9+00			8.5	2.1
E 8+50			7.6	3.0
E 7+90			7.1	3.5
E. 7+25			6.4	4.2
E 6+72			5.5	5.1
E 6+34			9.7	5.9,
E. 5+60			4.1	6.5
E 4+75			3.8	6.8
E. 3+90			3.9	6.7
E. 3+12			2.7	7.9
E 2+20			2.9	7.7
E 1+50			4.3	6.3
E 92			5.2	5.4
E. 43			5.3	5.3
00			5.1	5.5

Hub Sta 101+80

3-4-47

P.X.

Sta 102+00

Sta	+	HI	−	EL
		10.60		
W 48			6.0	4.6
W 1+10			6.6	4.0
W 1+73			7.4	3.2
W 230			7.8	2.8
W.				

3-4-47 37

Sta 101+80

Sta	+	HI	−	EL
	4.8	11.37		6.57
W 214			8.4	2.9
W 152			8.0	3.3
W 36			7.8	3.5
W 50			7.0	4.3
30			6.3	5.0
E 10			5.2	6.1
E 38			5.0	6.3
E 61			3.9	7.4
74			2.8	8.5
			0.7	10.6
	7.86			6.57
		14.43		
74 30 104 100 174			1.2	13.2
			1.9	12.5
TP.			1.85	12.58

3-4-47

P.X Sta 101+80

Dist	+	HI	−	EI
E. 174	5.1	17.7		12.58
106 E 280			4.3	13.4
215 E 389			3.8	13.9
325 E 499			3.9	13.8
455 E 629			4.9	12.8
473 E 647			11.5	6.2
502 E 676			12.1	5.6
560 E 734			13.0	4.6
620 E 792			13.8	3.9
680 E 854			14.8	2.9
710 E 884			15.5	2.2

3-4-47

Sta 101+00

Dist	+	HI	−	EI
P.X	4.6	18.6		14.0
E. 900			14.2	4.4
E. 824			14.8	3.8
E. 744			13.2	5.4
E. 702			12.2	6.4
E. 686			6.3	12.3
E. 622			4.4	14.2
E. 550			5.1	13.5
E. 480			4.5	14.1
E. 370			4.6	14.0
E. 310			4.9	13.7
E. 212			5.0	13.6
E. 160			5.4	13.2
E. 100			5.1	13.5
E. 27			4.6	14.0
E. 00			4.6	14.0

3-4-47

Sta 101+00

Dist	+	HI	-	EI
	4.6	18.6		14.0
W 45			5.0	13.6
W. 80			6.0	12.6
W 133			6.3	12.3
W 150			12.1	6.5
W 190			14.0	4.6
W 232			14.7	3.9
W. 276			14.9	3.7
W 350			14.7	3.9
W				

P.X. Sta 100+00

Dist	+	HI	-	EI
	4.0	18.5		14.5
W 360			14.4	4.1
W 320			13.9	4.6
W 300			12.9	5.6
W 280			11.2	7.3
W 265			5.8	12.7
W 232			5.3	13.2
W 200			5.5	13.0
W 154			5.9	12.6
W 110			5.1	13.4
W 68			4.2	14.3
00			4.0	14.5
E 64			3.4	15.1
E 105			2.8	15.7
E 148			3.0	15.5
E 210			3.0	15.5
E 310			2.6	15.9
E 400			2.7	15.8

3-4-47

Sta 100+00 Cont.

Dist	+	H I	−	E l
		18.5		14.5
E 470			2.4	16.1
E 558			4.1	14.4
T.P.				
E (628)			4.90	13.6
	4.7	18.3		
48				
E 676			5.4	12.9
62				
E 690			6.6	11.7
70				
E 698			11.3	7.0
123				
E 751			12.8	6.0
190				
E 818			13.8	4.5
250				
E 878			14.7	3.6
316				
E 954			15.9	2.4

3-5-47

35

PX

STA 99+00

Dist	+	H I	−	E l
TBM	5.1	20.9		15.8
W 390			16.6	4.3
W 364			16.0	4.9
W 340			14.2	6.7
W 320			9.8	11.1
W 262			8.0	12.9
W 200			7.5	13.4
W 145			6.8	14.1
W 95			6.3	14.6
W 43			5.4	15.5
0			5.1	15.8
E 53			4.8	16.1
E 108			4.8	16.1
E 174			4.9	16.0
E 245			4,6	16.3
E 312			4.3	16.6
E 382			5.6	15.3
E 450			6.9	14.0

PV 3-5-47

STA 99+00 CONT

DIST	+	H.I.	−	El.
E A80		20.9	5.2	15.7
E 530			6.0	14.9
E 620			7.7	13.2
E (684)			8.5	12.4
T.P.			8.4	12.5
	4.95	17.5		
10 E 694			5.3	12.2
16 E 700			9.6	7.9
56 E 740			11.1	6.4
108 E 792			12.0	5.5
160 E 844			12.9	4.6
210 E 894			13.5	4.0
253 E 937			14.2	3.3

3-5-47

STA 98+00

PV 36

DIST	+	H.I.	−	El.	
E (684)		17.5			
T.P.			5.1	12.4	
	5.0	17.4			
E 684			5.1	12.3	
12 E 696			5.5	11.9	
20 E 704			9.5	7.9	
76 E 760			11.0	6.4	
169 E 853			12.3	5.1	
250 E 934			12.8	4.6	
320 E 1004			14.7	2.7	
				12.4	HUB
E 684	8.80	21.2			
E 600			7.4	13.8	
E 524			5.9	15.3	
E 440			6.1	15.1	
E 348			4.8	16.4	
E 230			5.1	16.1	
E 118			4.9	16.3	

3-5-47 P.X.

STA 98+00 CONT.

DIST	+	H.I.	−	EL.
E 48		21.2	4.8	16.4
0			5.0	16.2
W 76			4.6	16.6
W 154			5.3	15.9
W 210			7.4	13.8
W 315			9.0	12.2
W 380			10.1	11.1
W 388			14.7	6.5
W 440			16.5	4.7

3-5-47 PX 37

STA 97+00

DIST.	+	H.I.	−	EL
0	4.4	21.0		16.6
W 550			16.4	4.6
W 490			15.3	5.7
W 428			12.2	8.8
W 420			8.7	12.3
W 393			8.6	12.4
W 325			8.1	12.9
W 260			7.8	13.2
W 200			6.2	14.8
W 142			6.1	14.9
W 88			4.9	16.1
W 40			4.8	16.2 ✓
E 44			4.0	17.0
E 108			3.8	17.2
E 168			3.6	17.4
E 230			5.4	15.6
E 300			6.1	14.9
E 350			6.8	14.2
E 450			5.5	15.5

PX STA 97+00 CONT. 3-5-47

DIST	+	H.I	−	EL.	
E 500		21.0	5.5	15.5	
E 563			6.3	14.7	
E 624			7.7	13.3	
E 705			8.7	12.3	
T.P.			8.50	12.50	TOP OF HUB 97-E705
	4.95	17.45			
E 730.25			4.2	13.2	
E 740.35			6.9	10.5	
E 751.46			10.4	7.0	
E 795.90			11.2	6.2	
E 850.145			11.8	5.6	
E 900.195			13.1	4.3	
E 948.243			13.8	3.6	

PX STA 96+00 3-6-47

DIST	+	H.I.	−	EL.	
0	5.4	22.2		16.8	
W 413			10.6	11.6	
T.P.			10.28	11.92	TOP OF HUB 96-413'W
W 360			9.4	12.8	
W 300			8.5	13.7	
W 240			7.8	14.4	
W 180			7.1	15.1	
W 125			6.3	15.9	
W 80			5.7	16.5	
W 33			5.9	16.3	
E 44			4.5	17.7	
E 100			5.6	16.6	
E 170			6.1	16.1	
E 240			7.2	15.0	
E 292			7.5	14.7	
E 360			7.7	14.5	
E 430			8.1	14.1	
E 494			7.3	14.9	

3-6-47

P.X STA 96+00 CONT.

DIST	+	H.I.	−	El.	
E 572		22.2	7.3	14.9	
E (655)			9.3	12.9	
T.P			8.70	13.50	TOP OF HUB 96-655E

3-6-47

P.X STA 95+00

DIST	+	H.I.	−	El.	
0	5.4	20.3		14.9	
E (640)			7.2	13.1	
T.P.			6.7	13.6	TOP OF HUB 95-640'E
E 575			7.0	13.3	
E 510			6.8	13.5	
E 450			6.7	13.6	
E 392			6.8	13.5	
E 325			6.4	13.9	
E 293			6.4	13.9	
E 225			6.6	13.7	
E 130			6.1	14.2	
E 60			5.4	14.9	
0			5.4	14.9	
W 62			4.9	15.4	
W 130			3.8	16.5	
W 200			4.6	15.7	
W 260			6.4	13.9	
W 356			8.0	12.3	

3-6-47

PX

STA 95+00 CONT.

DIST	+	H.I.	−	El.	
W (358)		20.3	8.0	12.3	
T.P			7.2	13.1	TOP OF HUB 95. W358

3-6-47

STA 94+00

40

PX

DIST	+	H.I.	−	El.	
0	5.0	21.7		16.7	
W (370)			10.0	11.7	
T.P			9.50	12.20	TOP OF HUB 94-370'W
W 330			9.0	12.7	
W 270			7.5	13.2	
W 220			7.4	14.3	
W 160			6.8	14.9	
W 108			6.0	15.7	
W 70			6.2	15.5	
W 35			5.8	15.9	
0			5.0	16.7	
E 50			5.9	15.8	
E 103			6.6	15.1	
E 160			7.4	14.3	
E 220			8.2	13.5	
E 285			8.5	13.2	
E 360			8.5	13.2	
E 430			8.4	13.3	

3-6-47

P.X. STA 94+00 CONT.

DIST	+	H.I.	−	EL.	
E 503		21.7	8.9	12.8	
E 580			8.8	12.9	
E 640			8.8	12.9	
E 730			9.2	12.5	
E (738)					
T.P.			7.30	14.40	TOP OF HUB 94-738

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STA 93+00

41

DIST	+	H.I.	−	EL.	
P.X. 0		20.1	5.1	15.0	
E (690)					
T.P			6.0	14.1	TOP OF HUB 93-690'E
E 688			7.8	12.3	
E 480			7.3	12.8	
E 370			7.0	13.1	
E 285			6.6	13.5	
E 214			5.0	15.1	
E 123			4.0	16.1	
E 38			4.9	15.2	
0			5.1	15.0	
W 68			5.6	14.5	
W 150			5.6	14.5	
W 230			7.2	12.9	
W 302			8.2	11.9	
W 350			7.9	12.2	
W 360			13.8	6.3	
W 410			14.8	5.3	

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P.I. STA 93+00 CONT.

DIST	+	H.I.	−	El.
W 470		20.1	15.4	4.7

3-6-47

STA 92+00

DIST.	+	H.I.	−	El.
0 P.I.	4.9	19.0		14.1
W 442			14.2	4.8
W 393			14.0	5.0
W 356			13.4	5.6
W 300			12.2	6.8
W 280			7.1	10.9
W 230			6.9	12.1
W 160			6.5	12.5
W 105			5.8	13.2
W 60			6.0	13.0
W 32			5.6	13.4
0			4.9	14.1
E 35			5.4	13.6
E 90			5.1	13.9
E 150			4.4	14.6
E 230			3.6	15.4
E 293			4.6	14.4
—			—	—

3-6-47

STA 92+00 CONT

P.X.

DIST	+	H.I.	−	EL.
E 380		19.0	5.6	13.4
E 475			6.3	12.7
E 538			6.6	12.4
E 620			7.4	11.6
E 630			7.4	11.6
E 643			10.7	8.3
E 683			12.0	7.0
E 716			13.6	5.4
E 750			14.6	4.4

3-6-47

P.X.

STA 91+00

DIST	+	H.I.	−	EL.
0	5.1	17.8		12.7
E 780			13.0	4.8
E 670			11.5	6.3
E 603			10.8	7.0
E 540			11.2	6.6
E 530			5.3	12.5
E 500			5.2	12.6
E 430			4.6	13.2
E 363			4.5	13.3
E 286			4.3	13.5
E 200			4.5	13.3
E 100			5.1	12.7
0			5.1	12.7
W 60			5.2	12.6
W 115			5.4	12.4
W 174			5.7	12.1
W 200			10.3	7.5
W 262			11.5	6.3
W 348			12.8	5.0

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Pix. STA 90+00

DIST	+	H.I.	−	EL.	
0	5.1	11.57		6.47	
W 262			7.1	4.5	
W 230			6.6	5.0	
W 160			6.0	5.6	
W 96			5.5	6.1	
W 50			5.5	6.1	
0			5.1	6.5	
E (50)					
T.B.M.	10.40	16.87		6.47	STA 93 RG. 100
E 34 (−16)			5.2	11.7	
E 118 (68)			4.8	12.1	
E 200 (150)			5.1	11.8	
E 290 (240)			4.4	12.5	
E 340 (290)			10.2	6.7	
E 405 (355)			11.7	5.2	
E 500 (450)			12.7	4.2	
E 575 (525)			12.6	4.3	
E 653 (603)			12.5	4.4	

P.X.

3-6-47

STA 89+80

STA	+	H.I.	−	ELEV	
T.B.M	3.58			6.47	
		10.05			
W215			5.5	4.5	
W170			5.0	5.0	
W105			4.5	5.5	
W. 50			4.4	5.6	
0			4.3	5.7	
T P.			6.0	4.05	Sta 89+80 S. Shot
E 60			4.3	5.7	
E 124			3.9	6.1	
E. 156			3.9	6.1	
E. 245			3.6	6.4	
E. 302			4.4	5.6	
E. 370			5.2	4.8	
E 4.25			5.6	4.4	
E 4.92			6.3	3.7	
E 5.50			6.3	37	
E 5.85			5.8	4.2	

3-6-47

Sta 89+00

Sta	+	Hi	−	ELEV

3-6-47

P.X. 89+00

Sta	+	H.I.	−	El.	
	4.3	8.35		4.05	
E. 362			4.6	3.7	Stake at 360 E
E. 306			4.1	4.2	
E. 260			4.0	4.3	
E. 196			3.9	4.4	
E 150			4.0	4.3	
E. 100			4.0	4.3	
E. 58			4.1	4.2	
E 30			4.6	3.7	
0			4.7	3.6	
W. 30			4.1	4.2	
W 54			4.1	4.2	

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STA 93+00 CONTD EAST

STA	+	H.I	−	ELEV.
690 E				
T.B.M.	3.6	17.7		14.1
6				
696 E		P.X.	5.4	12.3
12				
702 E			11.0	6.7
60				
750 E			12.0	5.7
120				
810 E			13.2	4.5
176				
866 E			14.0	3.7

STA 94+00 CONTD EAST

738 E				
T.B.M.	3.3	17.7		14.4
4				
742 E		P.X.	5.7	12.0
12				
750 E			10.8	6.9
60				
798 E			11.9	5.8
108				
846 E			12.6	5.1
208				
946 E			14.5	3.2

3-6-47

P.X STA 95+00 CONTD EAST

STA	+	H.I	−	ELEV.
640 E				
T.B.M.	4.0	17.6		13.6
320				
960 E			14.0	3.6
270				
910 E			13.2	4.4
210				
850 E			12.0	5.6
136				
776 E			10.2	7.4
130				
770 E			5.8	11.8
120				
760 E			4.7	12.9
18				
718 E			5.0	12.6
34				
674 E			4.9	12.7
640 E			4.6	13.0

3-6-47

P.X. STA 96+00 CONTD EAST

STA	+	H.I.	−	ELEV.
(655E) T.B.M.	4.2	17.7		13.5
655E			4.0	13.7
54 709E			5.6	12.1
106 761E			5.3	12.4
118 773E			5.8	11.9
130 785E			10.9	6.8
193 848E			12.4	5.3
263 918E			13.6	4.1
320 975E			14.6	3.1

96+00 CONTD WEST

(413W) TBM	4.5	16.4		11.9
413W		P.X.	4.9	11.5
8 421W			4.5	11.9
15 428W			9.0	7.4
60 473W			10.9	5.5
115 528W			11.3	5.1
160 573W			12.0	4.4

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P.X. STA 95+00 CONTD WEST

STA	+	H.I.	−	ELEV.
T.P. (358W)	4.3	17.4	13.1	4.3
173 531W			12.7	4.7
128 486W			12.3	5.1
66 424W			10.6	6.8
60 419W			5.7	11.7
30 388W			6.0	11.4
358W			5.1	12.3

STA 94+00 CONTD WEST

T.P. (370W)	4.5	16.7		12.2
370W		P.X.	5.0	11.7
20 380W			5.6	11.1
27 397W			10.0	6.7
63 439W			11.2	5.5
100 470W			12.0	4.7
150 520W			12.2	4.5
T.B.M.				6.57
	13.11	19.68		
T.B.M.			3.42	16.26

STA 90 R100 2"x2"

TOP OF GRADE MARKER

RADIUS 2X2 ON TIERRA-DEL-FIEGO PROJ. NO 6.

SOUNDING DISTANCES EAST OF R100

91+00 520' E

90+00 290 E

3-7-47

P.X. STA 89+00 SOUND EAST

0+00 = 362' E. OF R 100+00

DIST	SOUND		DIST	SOUND	
0+10	2.8	+2.7		3.0	+2.5
8:55	2.6	2.9	2+00	3.0	}
	2.3	3.2	"	3.0	}
	2.1	3.4	"	3.2	2.3
50	2.3	3.2	5.5	3.5	2.0
5.5	3.2	2.3		3.0	2.5
	3.5	2.0	50	2.6	2.9
	3.5	}	"	2.8	2.7
	3.5	}		2.8	2.7
1+00	3.7	1.8		2.7	2.8
8:57	3.4	2.1		2.1	3.4
	3.4	2.1	3+00	1.6	3.9
	3.2	2.3	9:00	1.0	4.5
	3.1	2.4			
50	3.0	2.5			
	2.8	2.7			
	3.0	2.5			
	3.0	2.5			

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P.X.

STA 90+00 SOUND EAST

0+00 = 290' E. OF R100+00

DIST.	SOUND		DIST	SOUND	
3+50	1.0	+4.7		2.0	+3.7
9:12	1.3	4.4		2.0	
	1.5	4.2	50	2.0	
	1.7	4.0	9:16	2.0	
(5.7)	2.0	3.7		2.1	3.6
4+00	2.1	3.6		2.1	3.7
	2.2	3.5	(5.7)	2.0	3.7
	2.1	3.6	6+00	1.3	4.4
	2.8	2.9		1.4	4.3
	3.2	2.5		1.5	4.2
50	3.2	2.5		1.8	3.9
	3.0	2.7		2.6	3.1
	3.0	2.7	50	2.1	3.6
	2.5	3.2	(5.8)	2.1	3.7
	—			1.7	4.1
5+00	2.5	3.2		2.1	3.7
	2.3	3.4	9:20	2.1	3.7
	2.0	3.7	7+00	1.6	4.2

3-7-47

P.X.

STA 91+00 SOUND EAST

0+00 = 520' E. OF R100+00

2+50	0.9	+5.0		2.0	+3.9
9:37	0.9	5.0	50	2.1	3.8
	1.0	4.9		2.0	3.9
(5.9)	1.2	4.7	9:43	2.0	
	—		(5.9)	2.0	
3+00	1.4	4.5		2.1	3.8
	1.2	4.7	5+00	2.2	3.7
	1.4	4.5		2.2	3.7
	2.5	3.4		1.8	4.1
	2.8	3.1		2.1	3.8
50	1.7	4.2			
9:41	1.5	4.4			
	1.5				
	1.5				
	3.0	2.9			
4+00	3.0	2.9			
	2.3	3.6			
	2.0	3.9			
	2.0	3.9			

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P.X. STA 92+00 SOUND EAST.

0+00 = 690' E. OF R100+00

DIST	SOUND		DIST	SOUND	
0+00	1.2	+4.8		1.8	+4.2
10:07	1.3	4.7		1.9	4.1
	1.4	4.6	2+00	1.7	4.3
(6.0)	1.4	4.6	10:10	1.5	4.5
	1.5	4.5		1.5	4.5
50	1.5	}		2.3	3.7
	1.5			1.7	4.3
	1.5		50	1.7	}
	1.5			1.7	
	1.5			1.6	4.4
1+00	1.8	4.2		2.4	3.6
	2.1	3.9		3.4	2.6
	2.0	4.0	3+00	3.0	3.0
	1.9	4.1		2.7	3.3
	1.8	4.2		2.6	3.4
50	2.0	4.0		2.6	3.4
	1.7	4.3		2.7	3.3
	1.9	4.1	50	2.7	3.3

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P.X. STA 92+00 SOUND EAST

DIST	SOUND	
3+60	2.6	+3.4
10:12	2.6	}
	2.6	
	2.6	
4+00	2.8	3.2
	2.7	3.3
(6.0)	2.8	3.2
	2.9	3.1
	3.0	3.0
50	3.0	3.0

CROSS SECTIONS EAST FROM CAUSEWAY

PROJ. # 8 STA 87 + STA 93

Indexed

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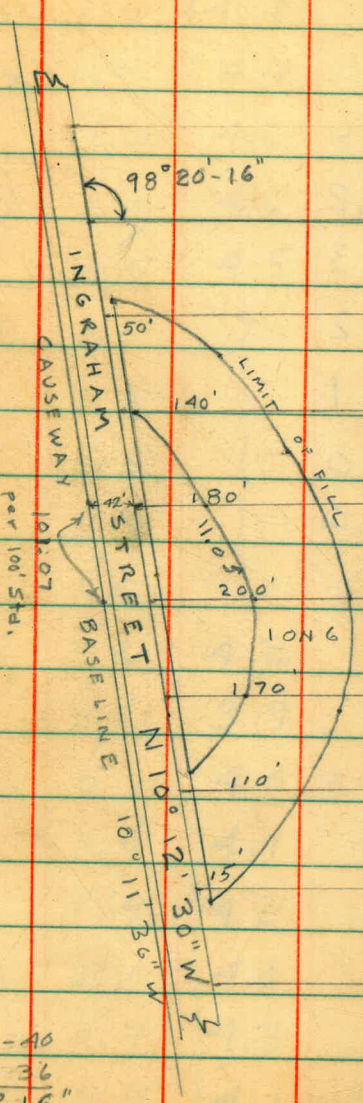
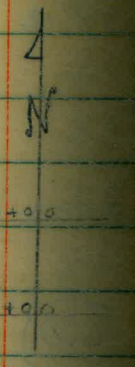
G.W. WILLIAMS

A. SHERRY

N. STANLEY





88-08-40
10-11-36
98°-20° 16"

STA 87+00
PROPOSED TURNOUT
ORIGINAL CROSS SECTIONS
ALONG EAST SIDE OF
MISSION BAY CAUSEWAY

STA	+ H.I.	-	ELEV.
T.B.M.			11.36
	4.22 15.58		
0.0		4.2	11.4
E 11		4.7	10.9
E 23		10.5	5.1
E 42		12.7	2.9
E 84		13.8	1.8
E 143		13.9	1.7
E 212		14.1	1.5
E 278		13.6	2.0

3-13-47

NOTE: SEE B/L SHETCH ON (PG. 52)

J. STAMPER
G. WILLIAMS
A. SHERRY
N. STANLEY

FAIR-WARM

2"x2" HUB W. SIDE OF CAUSEWAY

3-1

STA 86+00

STA	+	H.I.	−	ELEV.	
T.B.M.				11.34	F.B. #5 Pg. 26 Top 2x2"
	4.37	15.71			
E 278			13.1	2.6	
E 250			12.9	2.8	
E 185			14.1	1.6	
E 112			14.2	1.5	
E 69			13.9	1.8	
E 42			12.1	3.6	
E 24			10.8	4.9	
E 11			4.2	11.5	
0+00			4.4	11.3	

3-13-47

STA 88+00

STA	+	H.I.	−	ELEV.	
T.B.M.				11.29	F.B. #5 Pg. 26 Top 2x2
	4.77	16.01			
00			4.6	11.4	
E 9			4.7	11.3	
E 13			5.9	10.1	
E 26			11.5	4.5	
E 53			13.9	2.1	
E 115			14.2	1.8	
E 172			14.3	1.7	
E 226			14.3	1.7	
E 276			14.5	1.5	

3-13-47
STA 89+00

STA	+	H.I.	−	ELEV.	
T.B.M.	4.82	15.97		11.15	F.B. #5 PG 26 2X2
E 312			14.4	1.6	
E 268			14.4	1.6	
E 216			14.5	1.5	
E 167			14.2	1.8	
E 122			14.2	1.8	
E 68			14.0	2.0	
E 24			11.1	4.9	
E 14			5.8	10.2	
E 5			4.6	11.4	
0+00			4.7	11.3	

3-13-47
STA 90+00

STA	+	H.I.	−	ELEV.	
T.B.M.				11.15	F.B. #5 Pg. 26 2"X2" HUB
	4.83	15.98			
0+00			4.8	11.2	
E 11			5.6	10.4	
E 23			11.5	4.5	
E 60			13.3	2.7	
E 102			13.9	2.1	
E 176			14.4	1.6	
E 250			14.4	1.6	
E 330			14.7	1.3	

3-13-47

STA 91+00

STA	+	H.I.	−	ELEV.	
T.B.M.				11.01	F.B. #5 Pg 26 2"x2" Hub
	4.92	15.93			
℄ E 268			14.8	1.2	
℄ E 210			14.3	1.7	
℄ E 155			14.4	1.6	
℄ E 115			14.2	1.8	
℄ E 55			13.3	2.7	
℄ E 24			11.5	4.5	
℄ E 10			5.2	10.8	
℄ 0+00			4.8	11.2	

3-13-47

STA 92+00

STA	+	H.I.	−	EVEN.	
T.B.M.				11.00	F.B. #5 Pg 26 2"x2" Hub
	4.74	15.74			
0+00			4.7	11.0	
E 9			5.1	10.6	
E 17			10.7	5.0	
E 42			13.7	2.0	
E 50			14.1	1.6	
E					
E					

P1

3-26-47

PROGRESS CROSS SECTIONS

OF MISSION BAY PROJECT No. 7

STA 72+00

0+00 = CAUSEWAY BASELINE

STA	+ H.I.	- ELEV.	
T.B.M.		11.68	TOP 2X2 HUB
	5.1 16.78		
0		5.1	11.7
W 12		5.0	11.8
W 40		5.3	11.5
W 68		5.5	11.3
W 96		5.9	10.9
W 134		8.8	8.0
W 160		11.0	5.8
W 190		14.4	2.4

P2

3-26-47 57

Sta 71+00

0+00 = Causeway B.L.

Indexed

Sta	+ H.I.	- Elev	
T.B.M.		11.13	Top of 2x2 Hub
	5.03 16.16		
W 350		13.5	3.2
W 325		10.2	6.5
W 294		7.3	9.4
W 260		5.2	11.5
W 220		5.0	11.7
W 180		4.8	11.9
W 130		4.9	11.8
W 80		4.6	12.1
W 40		4.4	12.3
W 10		5.0	11.7
0-0		5.0	11.7

PX

3-26-47

Sta 70+00

0+00 = Causeway B1

Sta	+	H.I.	-	Elev	
T.B.M.				11.16	TOP 2X2 HUB
	5.11	16.26			
0			5.1	11.2	
W 12			5.0	11.3	
W 50			5.1	11.2	
W 90			5.0	11.3	
W 140			5.4	10.9	
W 185			4.8	11.1	
W 234			4.7	11.6	
W 290			5.0	11.3	
W 355			5.2	11.1	
W 410			5.4	10.9	
W 433			5.9	10.2	
W 444			11.0	5.3	
W 466			13.6	2.7	

PX

3-26-47

58.

Sta 69+00

0+00 = Causeway B2

Sta	+	H.I.	-	Elev.	
T.B.M.				11.22	TOP 2X2 HUB
	5.12	16.34			
W 460			12.2	4.1	
W 450			10.8	5.3	
W 440			5.5	10.8	
W 385			5.3	11.0	
W 330			6.0	10.3	
W 270			5.5	10.8	
W 208			5.2	11.1	
W 130			5.1	11.2	
W 75			5.2	11.1	
W 40			5.4	10.9	
W 8			5.6	10.7	
0			5.1	11.2	

PX

3-2C-47

Sta 68+00

0+00 = Causeway BL

Sta.	+	HI	-	Ele.
TB, NI				11.30
	5,15	16.45		
0+0			5.1	11.3
W 11			5,2	11.2
W 56			5,3	11.1
W 110			5,4	11.0
W 176			5.7	10.7
W 220			5.8	10.6
W 280			6.0	10.4
W 355			6.6	9.8
W 368			10.8	5,6
W 380			12.9	3.3

PX

3-2C-47

59

Sta 67+00

0+00 = Causeway BL

Sta	+	HI	-	Ele.
T.B.N.				11,27
	5,22	16,49		
W 290			12.5	3.9
W 280			11.5	4.9
W 270			6.3	10.1
W 223			5.9	10.5
W 170			5,7	10.7
W 128			5,4	11.0
W 84			5,2	11.2
W 45			5,4	11.0
W 6			5,4	11.0
0.0			5,2	11.2

Rx

3-26-47

Sta 66+00

0+00 Causeway BL.

Sta	+	HI	−	Elev.
TBM				11.02
	5.24	16.26		
0.0			5.2	11.0
W 16			5.7	10.5
W 65			5.4	10.8
W 126			6.0	10.2
W 188			5.8	10.4
W 230			5.9	10.3
W 242			11.8	4.4

Rx

3-26-47

60

Sta 65+00

0+00 Causeway BL

Sta	+	HI	−	Elev.
TBM				10.81
	5.28	16.09		
W 235			11.5	5.4
W 226			5.9	11.0
W 183			5.9	11.0
W 140			5.7	11.2
W 80			5.2	11.7
W 45			5.1	11.8
W 19			5.0	11.8
0.0			5.3	11.6

PX

3-26-47

Sta 64+00

0+00 = Causeway BL

Sta	+	HI	−	Elev
TBM.				10.79
	5.10	15.89		
0.0			5.1	10.8
W 16			4.9	11.0
W 55			4.3	11.6
W 93			4.5	11.4
W 140			5.0	10.9
W 183			5.3	10.6
W 240			5.8	10.1
W 248			9.7	6.2
W 268			11.0	4.9
W 293			11.1	4.8

PX

3-26-47

61

Sta 63+00

0+00 = Causeway BL

Sta	+	HI	−	Elev
TBM				10.71
	5.08	15.79		
W 350			10.9	5.0
W 318			10.5	5.4
W 295			10.2	5.7
W 280			6.0	9.9
W 260			5.0	10.9
W 218			5.4	10.5
W 174			5.0	10.9
W 120			4.7	11.2
W 80			4.6	11.3
W 22			4.6	11.3
0.0			5.1	10.8

PT 3-26-47

Sta 62+00

0+00 = Causeway T.B.L.

Sta	+	HI	−	Elev.	
TBM.				10.60	
	5.24	15.84			
0.0			5.2	10.6	
W. 22			5.1	10.7	
W 80			4.5	11.3	
W 140			5.1	10.7	
W 220			4.9	10.9	
W 300			4.7	11.1	
W 346			5.5	10.3	
W 370			5.8	10.0	
W 390			9.4	6.4	
W 425			10.4	5.4	
W 463			11.0	4.8	
W 510			11.8	4.0	

PT 3-26-47 62

Sta 61+00

0+00 = Causeway T.B.L.

Sta	+	HI	−	Elev.	
T.B.M.				10.68	
	5.37	16.05			
W 770			5.3	10.7	SET STK.
W 725			9.8	6.2	
W 660			9.8	6.2	
W 610			9.4	6.6	
W 580			7.4	8.6	
W 558			6.0	10.0	
W 490			6.3	9.7	
W 410			5.2	10.8	
W 340			5.5	10.5	
W 288			5.3	10.7	
W 230			5.2	10.8	
W 175			5.1	10.9	
W 110			5.0	11.0	
W 60			5.1	10.9	
W 20			5.2	10.8	
0.0			5.4	10.6	

PX

3-26-47

Sta 60+00

0+00 = Causeway T.L.

Sta	+	HI	−	Elev
T.B.M.				10.68
	5.28	15.96		
0			5.3	10.6
W 18			6.3	9.6
W 60			5.7	10.2
W 124			5.2	10.7
W 180			4.6	11.3
W 260			5.2	10.7
W 320			5.3	10.6
W 405			5.0	10.9
W 470			5.2	10.7
W 512			4.9	11.0
W 500			4.9	11.0
T.P.			4.16	11.80

Set Stk.

PX

3-26-47

Included 64

Sta 59+00

0+00 = Causeway T.L.

Sta.	+	HI	−	Elev.
T.B.M				10.95
	5.31	16.26		
W 746			5.9	10.4
W 690			5.8	10.5
W 630			5.9	10.4
W 550			6.0	10.3
W 480			6.1	10.2
W 430			5.1	11.2
W 390			5.2	11.1
W 310			6.4	9.9
W 260			5.9	10.4
W 186			4.9	11.4
W 134			5.8	10.5
W 96			5.2	11.1
W 64			5.1	11.2
W 12			6.3	10.0
W 9			5.4	10.9
0.0			5.3	11.0

PX

3-26-47

Sta 58+00

0+00 = Causeway B.L.

Sta	+	HI	-	Elev
T.B.M.				10.98
	5.32	16.30		
0.0			5.3	11.0
W 9			5.4	10.9
W 11			6.5	9.8
W 40			5.9	10.4
W 86			5.6	10.7
W 156			5.4	10.9
W 210			5.5	10.8
W 265			7.0	9.3
W 340			6.9	9.4
W 400			6.9	9.4
W 470			7.2	9.1
W 550			7.7	8.6
W 670			8.0	8.3
W 740			8.1	8.2
W 806			8.6	7.7
W 890			9.3	7.0

PX

3-26-47

Sta 57+00

0+00 = Causeway B.L.

Sta	+	HI	-	Elev
T.B.M.				11.24
	5.32	16.56		
W 765			9.7	6.9
W 700			9.6	7.0
W 640			9.3	7.3
W 560			9.0	7.6
W 500			8.8	7.8
W 430			8.8	7.8
W 370			8.6	8.0
W 324			7.6	9.0
W 282			6.6	10.0
W 233			5.4	11.2
W 168			5.2	11.4
W 120			5.6	11.0
W 80			5.5	11.1
W 50			5.8	10.8
W 13			5.5	11.1
W 9			5.3	11.3
0.0			5.3	11.3

Rt

3-26-47

Sta. 56+00

0+00 = Causeway B.L.

Sta	+	HI	−	Elev
TBM.				11.37
	5.18	16.55		
0			5.2	11.3
W 9			5.0	11.5
W 12			5.9	10.6
W 50			5.4	11.1
W 100			5.0	11.5
W 150			4.4	12.1
W 200			5.2	11.3
W 260			6.4	10.1
W 308			7.5	9.0
W 360			8.9	7.6
W 410			9.3	7.2
W 468			9.3	7.2
W 510			9.6	6.9
W 520			9.7	6.8

Rt

3-26-47

66

Sta 55+00

0+00 = Causeway B.L.

Sta	+	HI	−	Elev
T.B.M				11.29
	5.14	16.43		
W 498			10.3	6.1
W 440			9.7	6.7
W 375			8.9	7.5
W 330			8.2	8.2
W 275			7.0	9.4
W 230			5.5	10.9
W 210			4.5	11.9
W 155			4.0	12.4
W 120			5.2	11.2
W 80			5.7	10.7
W 54			5.6	10.8
W 17			5.9	10.5
W 6			5.3	11.1
0 0			5.1	11.3
TBM			8.34	8.19
"			4.48	12.05
"			5.22	11.31

STA
52+00
53+00
54+00

Pt

Sta 54+00

0+00 = Causeway B.L

Sta.	+	HI	-	Elev
T.B.M				11.31
	4.62	15.93		
0.0			5.0	10.9
E. 4			5.0	10.9
E. 7			4.4	11.5
W 38			4.3	11.6
W 100			4.9	11.6
W. 136			3.6	12.3
W 188			4.0	11.9
W 230			4.6	11.3
W 295			6.1	9.8
W 344			6.8	9.1
W 400			7.8	8.1
W 480			9.1	6.8

Pt

Sta 53+00

0+00 = Causeway B.L

Sta	+	HI	-	Elev
T.B.M				12.05
	4.35	16.40		
W 580			10.3	6.1
W 525			10.0	6.4
W 474			9.2	7.2
W 430			8.0	8.4
W 383			6.9	9.5
W 330			5.1	11.3
W 280			4.4	12.0
W 236			4.4	12.0
W 180			5.0	11.4
W 130			5.4	11.0
W 78			5.2	11.1
W 35			4.6	11.8
0.0			5.0	11.4
E 16			4.9	11.5
E 20			4.8	11.6

PX

3-26-47

Sta 52+00 = R 123+22.56

0+00 = Causeway B.L

Sta	+	HI	-	Elev
T.B.M				8.19
	8.20	16.39		
0.0			9.1	7.3
E 33			8.6	7.8
E 40			4.8	11.6
W 6			9.0	7.4
W 25			4.2	12.2
W (60)			5.2	11.2
60 W 120			4.0	12.0
150 W 210			3.6	12.8
~~245~~ W 305			6.3	10.1
320 W 380			7.4	9.0
394 W 454			8.6	7.8
475 W 535			9.3	7.1
580 W 640			9.8	6.6
645 W 705			10.2	6.2
730 W 790			10.0	6.4

Sta 52+00 Cont.

Sta	+	HI	-	Elev	
		16.39			
825 W 885			9.5	6.9	
920 W 980			8.7	7.7	
1010 W 1070			8.0	8.4	
1100 W 1160			9.3	7.1	
1190 W 1250			8.3	8.1	
950 (910)			8.48	7.91	
0+00 = 1010 W of Causeway B.L. on Sta 52					
T.B.M				7.81	
	5.2	13.11			
260 W 270			3.8	9.3	
283 W 298			6.1	7.0	
328 W 338			6.6	6.5	
360 W 1390			7.3	5.8	
430 W 1440			8.0	5.1	
TBM			6.15	6.96	49+00 1010' W STA. 52
TBM			2.70	10.41	50+00 1010 W STA. 52
TBM			2.91	10.20	51+00 1010' W STA 52+00

3-26-47

68

PX

3-27-47

Sta 51+00

0+00 = 1010' W of Causeway, STA. 52

STA	+	H.I.	−	ELEV	
51+00	4.44	14.6		10.20	1020' W of Causeway STA. 52+0
0			5.2	9.4	
E 1080			3.5	11.1	
E 1060			9.5	5.1	
E 1020			9.1	5.5	
E 924			9.2	5.4	
E 800			8.6	6.0	
E 700			7.8	6.8	
E 670			7.1	7.5	
E 585			6.0	8.6	
E 494			5.3	9.3	
E 392			5.7	8.9	
E 315			6.6	8.0	
E 240			6.8	7.8	
E 160			6.3	8.3	
E 93			6.2	8.4	
E 36			5.6	9.0	

3-27-47

69

Sta 51+00 Cont.

Sta	+	HI	−	Elev
		14.6		
W 38			4.6	10.0
W 123			3.3	11.3
135 T.P.			1.38	13.26
W	3.93	17.19		
W 138			4.8	12.12
22 W 157			5.0	12.2
30 W 165			10.1	7.1
82 W 217			10.7	6.5
145 W 280			11.2	6.0
185 W 320			11.4	5.8
240 W 376			11.7	5.5

P.X

3-27-47

Sta 50+00

0+00 = 1010' W of Causeway Sta 52+00

Sta	+	HI	-	Elev
TBM				10.41
	4.46	14.87		
W 300			9.6	5.2
W 230			9.6	5.2
W 174			9.0	5.8
W 120			8.6	6.2
W 80			8.3	6.5
W 46			7.7	7.1
W 35			5.0	9.8
0.0			4.9	9.9
E 34			4.3	10.5
E 90			4.1	10.7
E 150			4.5	10.3
E 220			4.6	10.2
E 300			5.0	9.8
E 370			5.2	9.6
E 390			7.9	6.9

Sta 50+00 Cont.

141
14.87

Sta	+	-	Elev
E 440		8.6	6.2
E 500		8.6	6.2
E 560		9.0	5.8
E 610		9.4	5.4
E 700		9.5	5.3
E 760		9.6	5.2
E 820		9.8	5.0

RX

3-27-97

Sta 49+00

0+00 = 1010' W of Causeway Sta 52+00

Sta	+	HI	−	Elev	
TBM				6.96	
	3.38	10.34			
E 310			5.4	4.9	
E 280			5.4	4.9	
E 240			4.6	4.7	
E 160			3.8	6.5	
E 90			3.5	6.8	Toe of Slope
E 70			3.6	6.7	
E 30			4.1	6.1	
0.0			4.4	5.9	
W46			4.7	5.6	
W 90			4.8	9.5	
W 160			4.9	5.4	
W 226			5.0	5.3	

Toe of Slope averages 25'

W 1280 of Causeway Sta 52+00

0+00 = 1280' W. of Causeway, B.L. STA 52 3-27-97 71

Sta 53+00

Sta	+	HI	−	Elev	
TBM				7.91	Sta 52+00
	4.22	12.13			
E 415			6.3	5.8	
E 360			6.0	6.1	
E 310			5.7	6.4	
E 240			5.3	6.8	
E 190			5.2	6.9	
E 140			5.2	6.9	
E 50			5.0	7.1	
0.0			5.1	7.0	
W 45			5.6	6.5	
W 92			4.5	6.4	
W 116			2.2	9.9	
W 125			5.3	6.8	
W 175			6.1	6.0	
W 220			6.6	5.5	
W 300			7.2	4.9	
W 365			7.4	4.7	

3-27-47

Sta 54+00

0+00 = 1470' + 200' - 190 = 1480 W. of Causeway B.L STA 52.

Sta	+	HI	-	Elev	
T.B.M		12.13			
T.P	+4.08	12.52	3.69	8.44	W 1200 top of Stob Sta 52+00
E 280			7.0		
E 240			6.4		
E 190			6.3		
E 120			5.9		
E 32			5.4		
0.0			5.3		
W 40			6.0		
W 110			6.3		
W 175			7.0		
W 193			8.1		
T P			4.30	8.22	54+00 1470' W of Sta 52+00 Cswy

3-27-47

72

Sta 55+00

0+00 = 1470' W of Causeway BL Sta. 52+00

Sta	+	HI	-	Elev	
	4.46	12.68		8.22	
W 310			7.3		
W 285			7.0		
W 160			6.1		
W 110			5.5		
W 40			4.2		
0.0			5.0		
60+00			6.20	6.48 (5.34)	1470' W of Cswy. Sta 52+00
59+00			6.38	6.38 (5.16)	"
58+00			5.16	7.52 (6.36)	"
57+00			3.39	9.29 (8.13)	"
56+00			2.95	9.73 (8.59)	"
		12.68			
E 35			4.8		
E 75			5.5		
E 120			6.6		

3-27-47

Sta 56+00

0+00 = 1470' W of Causeway B.L. Sta 52+00

Sta	+	HI	-	El
T.B.M	4.46	14.19		9.73
E 150			8.2	
E 120			7.3	
E 80			6.7	
E 36			6.0	
0.0			5.6	
W 42			5.2	
W 84			5.4	
W 158			5.5	
W 225			6.1	
W 304			7.4	
W 360			8.1	
W 410			8.5	
W 420			9.2	5.2

Sta 57+00

0+00 = 1470' W of Causeway B.L. Sta 52+00

Sta	+	HI	-	Elev
T.B.M	4.84	14.13		9.29
W 560			9.0	
W 510			8.4	
W 450			7.8	
W 400			7.4	
W 340			6.1	
W 280			5.5	
W 230			5.8	
W 170			5.9	
W 110			6.3	
W 70			5.9	
W 40			5.5	
0.0			5.3	
E 46			4.6	
E 90			5.4	
E 130			6.7	
E 170			7.5	
E 205			8.4	

3-27-47

Sta 58+00

0+00 = 1470' W of Causyway BL. Sta 52+00

Sta	+	HI	-	Elev
T.BM	4.42	11.94		7.52
E 290			6.0	
E 260			5.5	
E 230			5.0	
E 195			4.0	
E 150			3.2	
E 84			3.9	
E 40			4.5	
0.0			5.0	
W 56			5.4	
W 120			5.7	
W 180			5.6	
W 220			5.2	
W 310			4.5	
W 370			3.7	
W 410			3.5	
W 470			4.6	
W 530			5.2	
W 585			5.5	
W 650			4.9	7.0

3-27-47

Sta 59+00

0+00 = 1470' W of Causyway BL. Sta 52+00

Sta	+	HI	-	Elev
TBM	4.42	10.80		6.38
W 720			5.7	
W 680			4.7	
W 630			3.9	
W 580			3.0	
W 525			2.1	
W 470			2.4	
W 420			3.2	
W 360			4.1	
W 310			4.5	
W 260			5.0	
W 220			5.7	
W 190			5.7	
W 150			5.8	
W 125			5.7	
W 100			5.1	
W 42			4.8	

3-27-47

Sta 52+00 Cont

Sta	+	HI	−	Elev
		10.8		
0+0			4.8	
E 50			4.5	
E 80			4.4	
E 150			3.6	
E 230			3.5	
E 300			2.5	
E 360			2.8	
E 410			2.7	
E 460			2.8	
E 530			1.5	
E 620			0.4	10.4
T.B.M.	4.30	15.67		11.37
52+00			QR 7.96	7.71
			TOPHUB 6.82	8.85
			1.14	

STA 52+00 CAUSEWAY 1010' W

10.4
9.2
1.2

8-29-47

(75)

X-SECTIONS OF SOUTH SLOPES PROJECT #8

Indexed

STA-82+20 R-113+00

STA	+	H.I.	−	ELEV	WATER LEVEL
	09:06				
	11.9	15.8		3.9	09:06
S-08			11.9	3.9	
0+00	PX		10.8	5.0	
N-27			5.8	10.0	
N-55			2.5	13.3	

STA-82+20 R-111+50

	09:10				
	11.4	15.3		3.9	09:10
S-09			11.4	3.9	
0+00	PX		7.3	8.0	
N 20			4.0	11.3	
N 40			1.8	13.5	

STA-82+20 R-110+20

	09:15				
	10.70	14.6		3.9	09:15
S.54			10.7	3.9	
S.23	PX		6.0	8.6	
0+00			2.9	11.7	
N 12			1.9	12.7	

0+00 = STAKE # 11

STA-	+	H.I.	−	ELEV
	09:20			
	11.5	15.5		4.0
0+00			3.1	12.4
E 27		PX	6.8	8.7
E 53			11.5	4.0

0+00 = STAKE # 12

	09:25			
	11.0	15.0		4.0
0+00			3.3	11.7
W 14		PX	2.2	12.8
E 23			6.8	8.2
E 48			11.0	4.0

0+00 = STAKE # 13

	09:30			
	11.1	15.1		4.0
0+00			3.0	12.1
S 38		PX	6.0	9.1
S 76			11.1	4.0

0+00 = STAKE # 15

	09:33			
	11.5	15.5		4.0
0+00			3.4	12.1
S-39		PX	7.3	8.2
S-72			11.5	4.0

0+00 = STAKE # 16

STA-	+	H.I.	−	ELEV
	09:35			
	11.9	15.9		4.0
0+00			3.6	12.3
S-30		PX	6.3	9.6
S-69			11.8	4.1

0+00 = STAKE # 17

	09:40			
	11.4	15.4		4.0
0+00			3.5	11.9
S-37		PX	6.7	8.7
S-78			11.4	4.0

0+00 = STAKE # 18

	09:43			
	11.5	15.5		4.0
0+00			2.6	12.9
S/W 34		PX	4.9	10.6
S/W 50			7.0	8.5
S/W 74			11.5	4.0

1400
730
[illegible]0

1470
113

2:40 - 26

750 6.7

179 - 60
92 - 20
---
77 40

Sta.

3.08
1.14

4.22

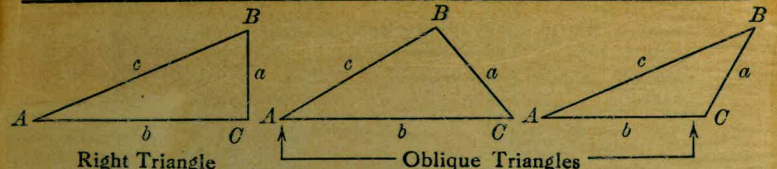
STA 82+20
R 113+00

STA 82+20
R 111+50

STA 82+20
R 110+20

PT - 11
11 - 12
11 - 13
11 - 15
11 - 16
11 - 17
11 - 18

TRIGONOMETRIC FORMULÆ



Solution of Right Triangles

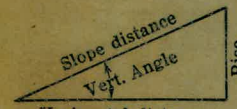
For Angle A. $\sin = \frac{a}{c}$, $\cos = \frac{b}{c}$, $\tan = \frac{a}{b}$, $\cot = \frac{b}{a}$, $\sec = \frac{c}{b}$, $\operatorname{cosec} = \frac{c}{a}$

Given	Required	
a, b	A, B, c	$\tan A = \frac{a}{b} = \cot B, c = \sqrt{a^2 + b^2} = a\sqrt{1 + \frac{b^2}{a^2}}$
a, c	A, B, b	$\sin A = \frac{a}{c} = \cos B, b = \sqrt{(c+a)(c-a)} = c\sqrt{1 - \frac{a^2}{c^2}}$
A, a	B, b, c	$B = 90° - A, b = a \cot A, c = \frac{a}{\sin A}$.
A, b	B, a, c	$B = 90° - A, a = b \tan A, c = \frac{b}{\cos A}$.
A, c	B, a, b	$B = 90° - A, a = c \sin A, b = c \cos A$,

Solution of Oblique Triangles

Given	Required	
A, B, a	b, c, C	$b = \frac{a \sin B}{\sin A}, C = 180° - (A + B), c = \frac{a \sin C}{\sin A}$
A, a, b	B, c, C	$\sin B = \frac{b \sin A}{a}, C = 180° - (A + B), c = \frac{a \sin C}{\sin A}$
a, b, C	A, B, c	$A + B = 180° - C, \tan \frac{1}{2}(A - B) = \frac{(a-b)\tan \frac{1}{2}(A+B)}{a+b}$, $c = \frac{a \sin C}{\sin A}$
a, b, c	A, B, C	$s = \frac{a+b+c}{2}, \sin \frac{1}{2}A = \sqrt{\frac{(s-b)(s-c)}{bc}}$, $\sin \frac{1}{2}B = \sqrt{\frac{(s-a)(s-c)}{ac}}, C = 180° - (A+B)$
a, b, c	Area	$s = \frac{a+b+c}{2}$, area $= \sqrt{s(s-a)(s-b)(s-c)}$
A, b, c	Area	area $= \frac{bc \sin A}{2}$
A, B, C, a	Area	area $= \frac{a^2 \sin B \sin C}{2 \sin A}$

REDUCTION TO HORIZONTAL



Horizontal distance = Slope distance multiplied by the cosine of the vertical angle. Thus: slope distance = 319.4 ft. Vert. angle = 5° 10′. From Table, Page IX. cos 5° 10′ = .9959. Horizontal distance = 319.4 × .9959 = 318.09 ft. Horizontal distance also = Slope distance minus slope distance times (1 — cosine of vertical angle). With the same figures as in the preceding example, the following result is obtained. Cosine 5° 10′ = .9959. 1 — .9959 = .0041. 319.4 × .0041 = 1.31. 319.4 — 1.31 = 318.09 ft.

When the rise is known, the horizontal distance is approximately: — the slope distance less the square of the rise divided by twice the slope distance. Thus: rise = 14 ft., slope distance = 302.6 ft. Horizontal distance $= 302.6 - \frac{14 \times 14}{2 \times 302.6} = 302.6 - 0.32 = 302.28$ ft.