

Mission Bay

No. 8

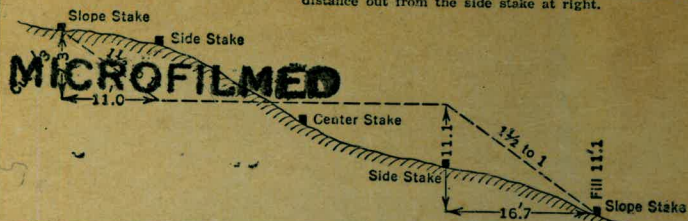
K & E

LEVEL BOOK

W. 373 A

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	Distance out from Side or Shoulder Stake									Cut or Fill	
	0	.1	.2	.3	.4	.5	.6	.7	.8		.9
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	33.8	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.

94+25 - 800
 94+50 - "
 +75 - "

96
 +25
 +50
 +75

F.B. No. 9

+25
 +50 - - 800
 +75 - - 700

93+25 - - 500 - 1500

+50
 +75
 94
 +25
 50
 75

96
 +25
 +50
 +75 - - 500 - 1500

The paper in this book No. 373A

is made of 50% high grade rag stock
 with a WATER RESISTING surface sizing.

29-17-26

7 29 20

21. 48 06

89 59 60

68-11-54

Contor

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

30

31

32

33

34

35

36

37

38

39

40

INDEX

PAGES		DATE
2-5	PROPOSED LAYOUT OF DIRT SURFACING GLEASON PT.	3-28-47
6	B/L FOR FINAL X-SEC. OF PROJ. #6 EL CARMEL PT.	4-1-47
7-11-66-72	FINAL X-SECTIONS OF PROJ. NO. 6.	4-1-47
12-65	FINAL SOUNDINGS OF ROCK SHOAL REMOVAL	4-2-47
73-75	X-SEC VENTURARD AT MISS. BLVD LOCATION & PROFILE OF PROPOSED	
76-77	LAUNCHING RAMP ON EL CARMEL PT.	12-16-47

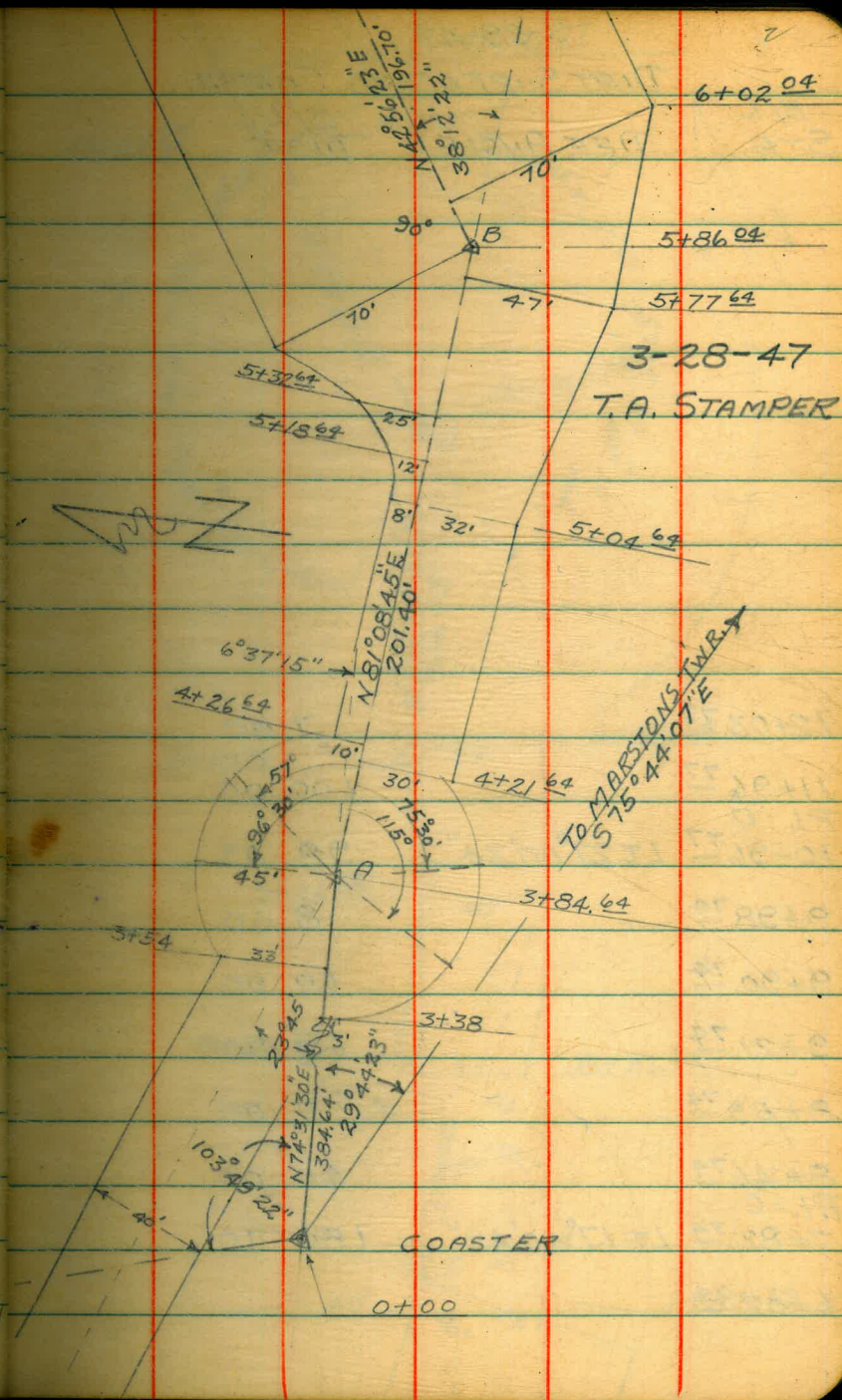
3-28-47
LAYOUT OF PROPOSED DIRT
SURFACING OF GLEASON PT.

Indexed

B/L. STA DEF. ANGLE B/L DIST.

6+02 ⁰⁴		16.00
P.I. - B		
5+86 ⁰⁴	LT. 38°12'22"	8.40
5+77 ⁶⁴		45.00
5+32 ⁶⁴		14.00
5+18 ⁶⁴		14.00
5+04 ⁶⁴		78.00
4+26 ⁶⁴		5.00
4+21 ⁶⁴		37.00
P.I. - A		
3+84 ⁶⁴	RT. 6°37'15"	30.64
3+54		16.00
3+38		338.00
U.S.C. & G.S. COASTER		
0+00	LT. 29°44'23"	

N 29°17'52" W
TO KINGSTON



6+02⁰⁴

5+86⁰⁴

5+77⁶⁴

3-28-47

T.A. STAMPER

5+04⁶⁴

4+21⁶⁴

3+84⁶⁴

3+38

COASTER

0+00

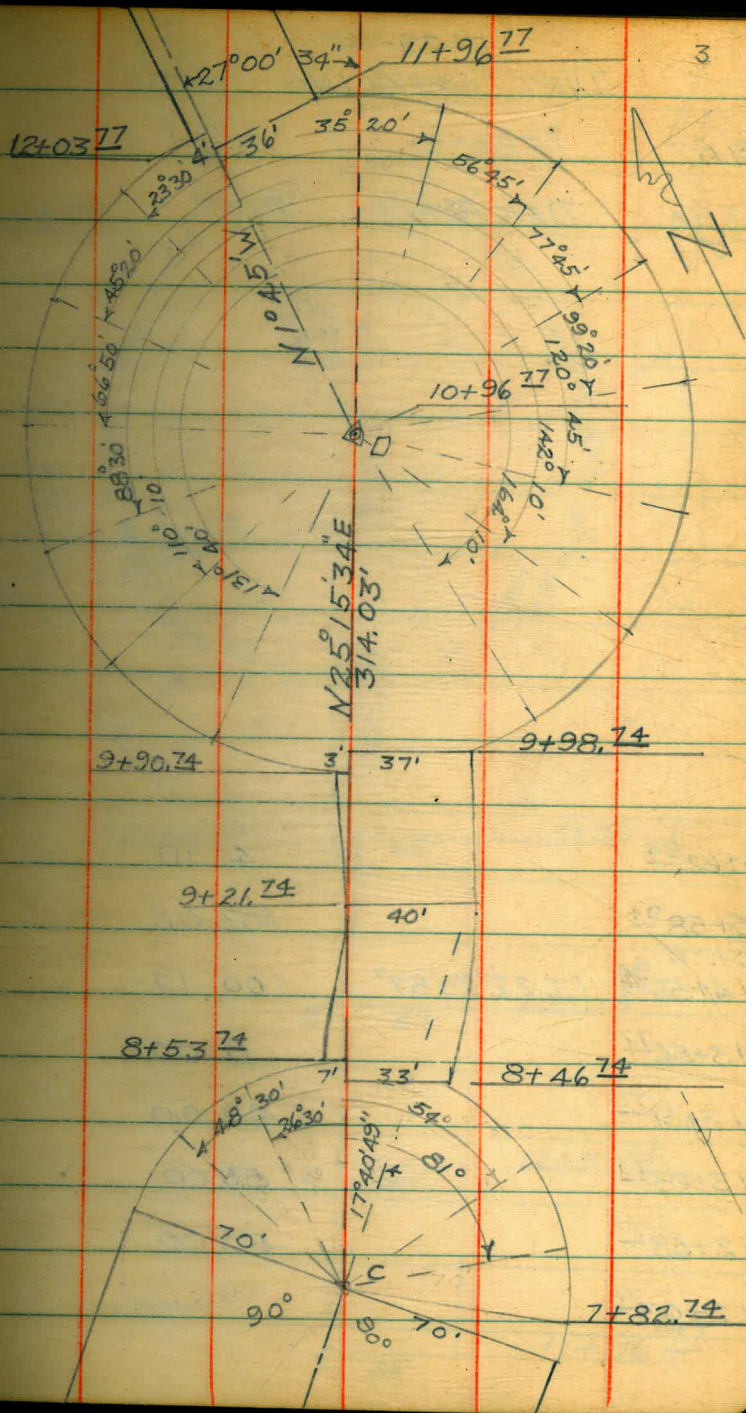
MARSTONS TWR.
75°44'07\"/>

3-29-47

DIRT SURFACING CONT'D.

B/L STA. DEF. ANGLE B/L. DIST.

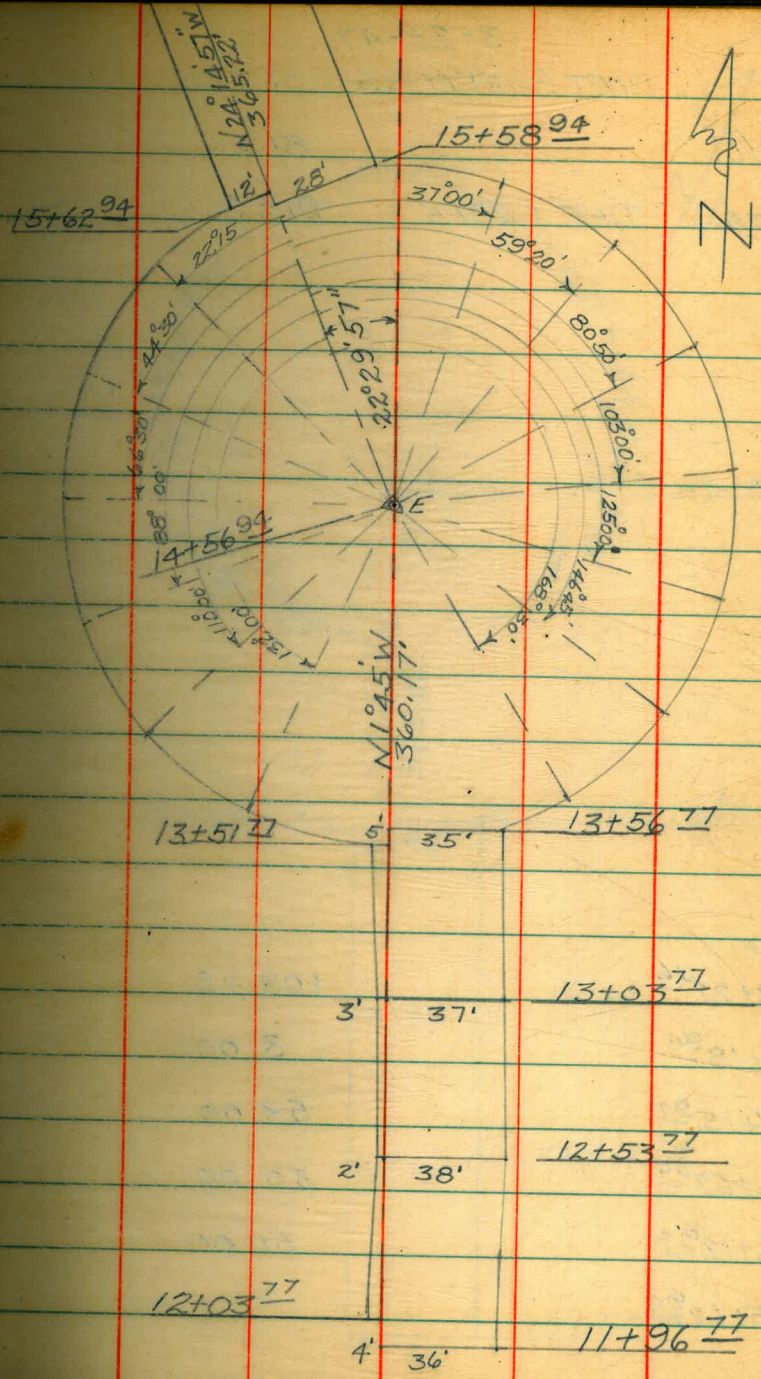
12+03.77		7.00
11+96.77		100.00
P.I. - D		
10+96.77	LT. 27°00'34"	98.03
9+98.74		8.00
9+90.74		69.00
9+21.74		68.00
8+53.74		7.00
8+46.74		64.00
P.I. - C		
7+82.74	LT. 17°40'49"	180.70
6+02.04		



3-29-47
 DIRT SURFACING CONTD.

B/L. B/L
 STA. DEF. ANGLE DIST.

15+62 ⁹⁴		4.00
15+58 ⁹⁴		102.00
P.I. - E ⁹⁴		
14+56 ⁹⁴	LT. 22°29'57"	100.17
13+56 ⁷⁷		5.00
13+51 ⁷⁷		48.00
13+03 ⁷⁷		50.00
12+53 ⁷⁷		50.00
12+03 ⁷⁷		



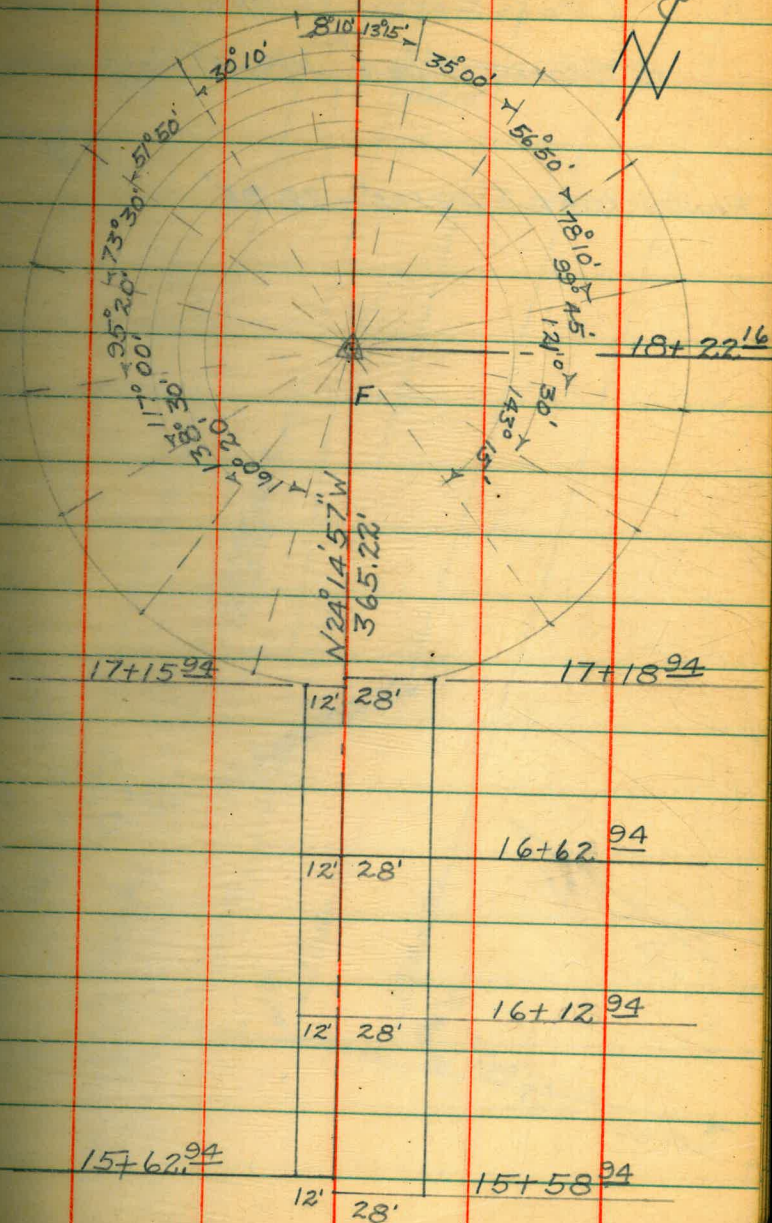
3-29-47

DIRT SURFACING CONT'D.

B/L.	B/L.
STA.	DIST.

DEF. ANGLE

PT. F	
18+22 ¹⁶	103.22
17+18 ⁹⁴	3.00
17+15 ⁹⁴	53.00
16+62 ⁹⁴	50.00
16+12 ⁹⁴	50.00
15+62 ⁹⁴	



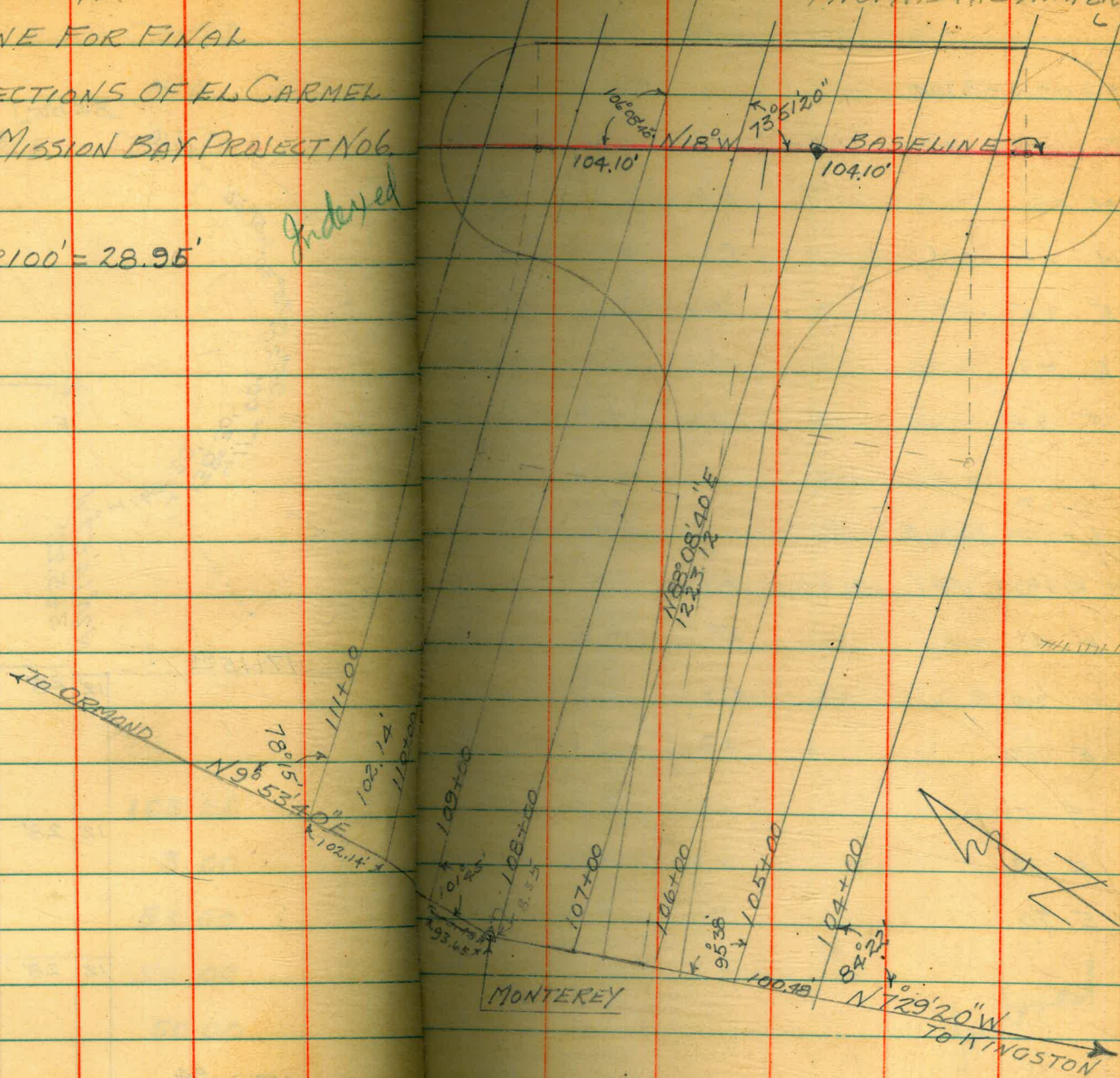
4-1-47

BASELINE FOR FINAL
CROSS SECTIONS OF EL CARMEL
POINT MISSION BAY PROJECT NO. 6

RANGE DIFF PER 100' = 28.95'

Indexed

THOMAS A. STAMPER



	+	H.L.	-	Elev.
X on NW Sta 104				8.40
T 104+00	5.0	13.40	5.2	8.2
W. 48			5.1	8.3
W 25			5.3	8.1
E 25			6.1	7.3
E 49			7.6	5.8
E 64			9.2	4.2

	+	H.L.	-	Elev.
X on NW Sta 105				8.41
T 105+00	5.45	13.86	5.1	7.8
W. 41			5.5	7.3
W 20			5.3	7.6
E 26			5.6	7.3
E 52			6.9	7.0
E 73			8.3	5.6
E 90			9.6	4.3

	+	H.L.	-	Elev.
X on NW 105				8.41
T 106+00	5.65	14.06	4.9	9.2
N 27			5.5	8.4
E 36			4.5	9.5
E 75			4.5	9.6
E 147			3.7	10.4
E 242			4.0	10.1
E 347			4.0	10.1
E 412			4.7	9.4
E 470			5.6	8.5
E 520			6.8	7.3
E 673			8.2	5.9

4/1/47
 E.I. Watson
 Nick
 841 AI

Indexed

	+	H.L.	-	E.L.
X 195W 57.7+100				8.4
600° E				
of N 97+00	75	N 92	5.2	10.7
N 612			7.6	8.3
N 600			7.4	8.5
N 500			6.9	9.0
N 445			7.8	8.1
N 400			7.7	8.2
N 345			6.8	9.1
N 300			6.4	9.5
N 245			5.5	10.4
N 200			5.3	10.6
N 145			5.1	10.8
N 100			5.2	10.7
N 50			5.5	10.4
E 54			5.5	10.4
E 100			5.4	10.5 10.4
E 153			5.2	10.7
E 220			5.5	10.4
E 295			5.4	10.5

	+	H.I.	-	Elev.
600'E of 107+00	Cont'd	159.4		
E 353			5.5	10.4
E 400			5.5	10.4
E 450			5.0	10.9
E 500			4.8	11.2
E 550			4.8	11.2
E 628	Sta. 7+00 of Carmel Pt. BL		4.85	11.1
TP	Top of 2x2 apx 2' N of		4.00	11.9
107+00	414 Carmel Pt. BL			16.08
E 27			5.25	10.8
E 83			5.2	10.8
E 122			5.6	10.4
E 155			8.1	8.0
E 195			10.9	5.2
E 220			14.5	0.6
Carmel Pt. Base Line	Top of Stake 106+00		4.13	11.95
"	105+00		4.7	11.4
"	104+00		4.45	11.63
"	103+00		9.97	6.1

Carmel B.L. Cont'd				
+	H.I.	-	Elev	
7+00 of Carmel Pt. BL.			16.08	Cont'd.
108+00	Top of Stake		3.9	12.2
109+00	"		36.4	12.44
110+00	"		3.5	12.6
111+00	"		3.97	12.1
111+00			16.2	5.2
112+00	Top of Stake 76'			8.55
111+00			16.2	5.2
112+00			15.0	11.2
1166			11.4	4.8
1135			8.25	8.0
1100			5.92	10.3
1130			5.27	10.9
E 45			5.1	11.1
E 100			5.5	10.7
E 145			8.65	7.5
E 183			11.44	4.8
E 220			15.0	1.2

Carmel Pt. Bl. contd

	+	H.I.	-	E.I.
X				
W. 112+00	3.5	14.05	5.17	6.9
E. 183			10.8	1.25
E. 143			7.74	4.3
E. 98			5.5	6.6
E. 41			4.6	7.5
W. 43			5.7	6.3
W. 76			7.3	4.8
W. 100			9.3	2.9
W. 190			11.0	1.1
X				
W. 110+00		16.67	5.0	11.7
E. 210			14.8	1.9
E. 185			11.8	4.9
E. 150			9.1	7.6
E. 115			6.3	10.4
E. 80			5.9	10.8
E. 35			5.5	10.2
W. 50			5.3	11.4

	+	H.I.	-	E.I.
W. 110+00 contd		16.67		
W. 100			5.81	10.5
W. 143			6.4	10.3
W. 190			9.7	7.0
W. 215			14.15	4.5
W. 235			14.7	2.0
W. 250			5.3	11.37
W. 121+00 contd		16.42		
E. 215			14.9	1.5
E. 170			9.7	6.5
E. 135			7.6	8.8
E. 105			5.95	10.5
E. 70			5.48	10.9
E. 37			5.1	11.3
W. 57			5.3	11.4
W. 128			5.3	11.1
W. 184			6.0	10.4
W. 215			8.7	8.2

	+	H.I.	-	E.I.
⌘ 109+00 cont'd				
W 248	16.42	11.6	4.8	
W 283		13.5	2.9	
				+
				12.2
				4.97
				16.27
⌘ 108+00	16.27	5.0	11.3	
W 43		4.95	11.3	
W 106		5.1	11.2	
W 167		5.35	10.9	
W 246		5.5	10.8	
W 302		6.4	9.9	
W 352		8.3	8.0	
W 410		10.2	6.1	
W 478		11.9	4.4	
W 544		12.5	3.8	
W 596		13.35	2.9	
E 52		5.44	10.8	
E 112		5.53	10.7	
E 148		5.75	10.5	
E 182		10.7	5.6	

	+	H.I.	-	Elev
⌘ 108+00 cont'd	16.27			
E 204		12.8	3.5	
				11.95
				4.25
				16.19
Carmel Bl.				
⌘ 106+00	16.19	5.2	11.0	
E 204		12.83	3.4	
E 145		9.8	6.4	
E 118		6.2	10.0	
E 63		5.16	11.0	
W 50		5.2	11.0	
W 102		5.2	11.0	
W 187		6.4	9.8	
W 245		7.5	6.7	
W 330		11.9	4.3	
W 415		11.9	4.3	
W 500		11.15	5.0	

Cont'd P. 69

Indexed

4-2-47

FINAL SOUNDINGS OF ROCK

SHOAL AREA AS REMOVED BY SUPPLEMENTAL CONTRACT

STA 90+00

0+00 = W. SHORE B/L. SOUNDING

DIST	SOUND		DIST	SOUND	
90	0.0			13.8	8.4
1+00	0.4	+50	50	13.8	8.4
8.42	0.7	+47		13.8	8.4
	1.2	+42		13.7	8.3
(5.4)	1.7	+37		14.1	8.7
	2.5	+29		14.3	8.9
50	3.6	+18	3+00	14.3	8.9
	4.8	+0.6		13.5	8.1
	6.5	-11	(5.3)	13.3	8.0
	8.0	-2.6		12.7	7.4
	8.4	30	8.47	12.8	7.5
2+00	8.2	2.8	50	13.2	7.9
8.45	8.9	3.1-		13.2	7.9
	12.5	7.1		12.7	7.4
	13.9	8.4		12.6	7.3

90+00

4-2-47

12

DIST SOUND DIST. SOUND

	12.6	7.3		13.2	7.9
4+00	12.1	6.9	6+00	12.7	7.4
	12.5	7.2		13.1	8.1
	13.6	8.3		12.8	7.5-
	13.7	8.4		13.3	8.0
	13.7	8.4		13.8	8.5-
50	13.4	8.1	50	14.3	9.0
	13.5	8.2		13.7	8.4
	13.3	8.0	(5.3)	13.3	8.0
	13.0	7.7		13.5	8.2
	12.8	7.5		13.5	8.2
5+00	12.6	7.3	7+00	13.3	8.0
	12.5	7.2		13.3	8.0
	12.6	7.3		13.3	8.0
(5.3)	12.8	7.5-	8.53	13.3	8.0
	13.2	7.9		13.5	8.2
50	13.2	7.9	50	13.6	8.3
	13.4	8.1		13.7	8.4
8.50	13.4	8.1		13.3	8.0
	13.7	8.4		13.3	8.0

90+00 - 4-2-47

DIST SOUND

	13.4	8.1
8+00	13.3	8.0
	13.0	7.7
	13.0	7.7
	13.0	7.7
8:55	12.8	7.5
50	12.5	7.2
	12.5	7.2
(5.3)	13.0	7.7
	13.3	8.0
	13.3	8.0
9+00	13.0	-7.7

4-2-47

STA 90+25 SOUND EAST

13

0+00 = W. SHORE BLW

DIST SOUND

DIST SOUND

0+95	0.0		14.4	9.4	
1+00	0.2	+1.0	14.0	8.8	
	1.0	+4.2	13.5	8.3	
9:01	1.3	+3.9	3+00	13.9	8.7
(5.2)	2.0	+3.2		13.8	8.6
	2.9	+2.3		14.0	8.2
50	3.8	+1.4		13.7	8.5
	4.6	+0.6		13.3	8.1
	6.5	-1.3	50	12.8	7.6
	8.1	-2.9		12.6	7.4
	9.0	-3.8		12.3	7.1
2+00	9.5	4.3		12.0	6.8
	10.5	5.3		12.0	6.8
	11.4	6.2	4+00	12.5	7.3
	12.0	6.5	9:05	13.5	8.3
9:03	14.0	8.8	(5.1)	13.7	8.5
50	14.2	9.0		14.0	8.8
	14.4	9.2		13.4	8.2

90+25-4-2-47

DIST SOUND

4+50	13.0	7.8
	13.0	7.8
	13.0	7.8
9:07	13.0	7.8
	12.5	7.3

5+00	12.5	7.3
	12.5	7.3
	12.8	7.6

(5.1)

	13.0	7.8
	13.3	8.2

50	14.3	9.2
----	------	-----

	13.5	8.4
--	------	-----

	13.4	8.3
--	------	-----

	13.3	8.2
--	------	-----

9:08	13.0	7.9
------	------	-----

6+00	12.7	7.6
------	------	-----

	12.5	7.4
--	------	-----

	12.3	7.2
--	------	-----

	13.0	7.9
--	------	-----

	13.0	7.9
--	------	-----

DIST SOUND

50	13.3	8.2
	13.3	8.2
	13.4	8.3
	13.6	8.5
	13.3	8.2

7+00	13.0	7.9
9:10	13.0	7.9
	13.0	7.9

(5.1)	13.2	8.1
-------	------	-----

	14.4	9.3
--	------	-----

50	14.4	9.3
----	------	-----

	14.5	9.4
--	------	-----

	13.5	8.4
--	------	-----

	13.6	8.5
--	------	-----

	13.8	8.7
--	------	-----

8+00	13.8	8.7
------	------	-----

	13.4	8.3
--	------	-----

	13.0	7.9
--	------	-----

	12.7	7.6
--	------	-----

	12.5	
--	------	--

90+25-4-2-47

DIST SOUND

8+50	12.5	7.4
9:12	12.7	7.6
	13.2	8.1
(5.1)	12.8	7.7
	12.6	7.5

9+00	12.5	7.4
	12.5	7.4

14

4-2-47

STA 90+50 SOUND EAST

0+00 = W. SHORE B/L

DIST	SOUND	DIST	SOUND
0+98	0.0 +50	14.0	90
1+00	0.2 +48	14.2	92
9:20	1.0 +40	14.0	90
	1.3 + 37	3+00	14.7 97
5.0	2.0 + 30		14.8 98
	3.0 + 20		14.4 94
50	3.9 + 11		14.4 94
	5.8 - 08		14.3 93
	7.3 - 43	50	14.0 90
	8.5 35	5.0	13.0 80
	8.7 37		12.5 76
2+00	9.2 42	9:24	12.0 71
	11.8 68	4.9	12.0 71
	11.7 67	4+00	12.3 74
9:22	12.5 75		12.8 79
	13.6 86		13.4 85
50	13.8 88		13.4 85
	14.0		13.4 85

90+50-4-2-47

DIST SOUND DIST SOUND

DIST	SOUND	DIST	SOUND
50	13.4 85	50	12.6 77
	13.4 85		12.4 75
	13.0 81	9:28	12.4 75
	13.0 81		12.5 76
	12.8 79		12.5 76
5+00	12.7 78	7+00	12.2 73
	12.7 78		12.2 73
	13.0 81		12.4 75
	13.2 83	4.8	12.4 76
4.9	13.2 83		12.6 78
50	13.3 84	50	13.3 85
	13.5 86		13.1 83
	13.1 82		13.4 86
	13.1 82		13.5 87
9:27	12.8 79		14.0 92
6+00	12.5 76	8+00	14.0 92
	12.4 75		14.0 92
	12.2 73		13.6 88
	12.4 75		13.4 86
	12.6 77		13.4 86

4-2-47

STA 90+50

DIST	SOUND	
8+50	13.4	8.6
	12.8	8.0
	13.4	8.6
(4.8)	13.0	8.2
9:34	13.0	8.2
9+00	12.8	8.0

4-2-47

STA 90+75 SOUND EAST

10

0+00 = W. SHORE B/L

DIST	SOUND		DIST	SOUND	
1+00	0.0	+47		14.2	9.5-
	0.7	+40		14.5	9.8
2:38	1.0	+37	3+00	15.0	10.3
	1.7	+30		14.5	9.8
(4.7)	2.5	+22		14.7	10.0
50	3.8	+09		14.2	9.5-
	6.0	-1.3		14.2	9.5-
	8.0	-3.3	50	14.2	9.5-
	8.4	-3.7		14.2	9.5-
	8.5	-3.8	(4.7)	14.2	9.5-
2+00	9.1	4.4		14.2	9.5-
	10.1	5.4	9:42	14.0	9.3
	10.8	6.1	4+00	13.4	8.7
	12.5	7.8		12.5	7.8
	14.0	9.3		13.5	8.8
50	14.0	9.3		13.5	8.8
9:40	14.1	9.4		13.4	8.7
	14.0	9.3	50	13.1	8.4

4-2-47
90+75

DIST	SOUND	DIST	SOUND
4+60	12.7 8.0	12.4	7.8
	12.7 8.0	12.3	7.7
	12.5 7.8	12.2	7.6
	12.5 7.8	12.2	7.6
5+00	12.5 7.8	7+00	12.2 7.6
9:44	12.4 7.7		12.0 7.4
	12.2 7.5		12.0 7.4
<u>4.6</u>	12.2 7.6		11.8 7.2
	12.5 7.9		12.0 7.4
50	13.0 8.4	50	13.0 8.4
	13.0 8.4		13.0 8.4
	12.8 8.2	9:48	12.7 8.1
	12.6 8.0		12.5 7.9
	12.3 7.7	<u>4.6</u>	12.5 7.9
6+00	12.3 7.7	8+00	12.7 8.1
	12.5 7.9		12.5 7.9
	12.4 7.8		12.5 7.9
	12.4 7.8		12.5 7.9
9:46	12.5 7.9		12.3 7.7
50	12.6 8.0	50	12.2 7.6

90+75-4-2-47

DIST	SOUND
<u>4.6</u>	12.2 7.6
9:50	12.5 7.9
9:40	13.3 8.7

4-2-47

STA 91+00 SOUND EAST

0+00 = W. SHORE BL

DIST		SOUND		DIST		SOUND	
1+05	0.0	+4.4	14.0	9.6			
	0.3	+4.1	14.0	9.6			
(4.4)	0.5	+3.9	3+00	14.0	9.6		
9.59	1.0	+3.4	14.5	10.1			
	1.7	+2.7	10:02	14.2	9.8		
50	3.0	+1.4	14.5	10.1			
	4.5	-0.1	14.6	10.2			
	7.3	-2.9	50	14.7	10.3		
	8.0	-3.6	14.0	9.6			
	8.1	-3.7	(4.4)	14.0	9.6		
2+00	10.8	6.4	13.8	9.4			
	10.5	6.1	14.0	9.6			
	12.5	8.1	4+00	14.0	9.6		
	12.5	8.1	14.0	9.6			
	14.0	9.6	10:04	14.0	9.6		
50	14.0	9.6	(4.3)	13.1	8.8		
	14.0	9.6	12.5	8.2			
	14.0	9.6	50	12.5	8.2		

91+00-4-2-47

18

DIST		SOUND		DIST		SOUND	
12.4	8.1	12.2	7.9				
12.4	8.1	12.2	7.9				
12.0	7.7	12.0	7.7				
12.0	7.7	12.0	7.7				
5+00	12.0	7.7	7+00	11.8	7.5		
12.0	7.7	11.7	7.4				
10:06	12.0	7.7	11.6	7.3			
12.2	7.9	11.5	7.2				
12.6	8.3	10:10	12.8	8.4			
50	12.5	8.2	50	13.2	8.8		
12.5	8.2	12.8	8.4				
(4.3)	12.2	7.9	(4.3)	12.6	8.3		
12.2	7.9	12.5	8.2				
12.0	7.7	12.4	8.1				
6+00	11.8	7.5	8+00	12.5	8.2		
11.5	7.2	12.5	8.2				
10:08	11.5	7.2	12.2	7.9			
11.7	7.4	12.2	7.9				
12.0	7.7	12.0	7.7				
50	12.0	7.7	50	11.5	7.2		

91+00 - 4-2-47

DIST SOUND

8+60 12.3 8.0

70 12.3 -8.0

(4.3)

4-2-47

STA 91+25 SOUND EAST

0+00 = W. SHORE B.L.

19

DIST SOUND

1+20 0.0 +4.1 3+00 13.7 9.6

1.0 +3.1 13.5 9.4

10:18 1.5 +2.6 13.4 9.3

50 2.5 +1.6 13.4 9.3

3.6 +0.5 13.4 9.3

6.1 -2.0 50 13.5 9.4

(4.1) 7.5 -3.4 13.5 9.4

7.8 -3.7 13.6 9.4

2+00 9.0 -4.9 14.0 9.9

10.3 -6.2 14.0 9.9

11.0 6.9 4+00 13.5 9.4

12.6 8.4 10:22 13.5 9.4

13.2 9.1 13.5 9.4

50 14.0 10.1 (4.1) 13.4 9.3

10:20 14.4 10.3 12.8 8.7

14.5 10.4 50 12.3 8.2

13.5 9.4 12.0 7.7

13.7 9.6 11.8 7.7

91+25 - 4-2-47			DIST SOUND		
DIST	SOUND		DIST	SOUND	
4+80	11.5	7.4	11.2	7.1	
	11.5	7.4	11.4	7.3	
5+00	11.3	7.2	7+00	11.4	7.3
	11.1	7.0	11.3	7.2	
	11.1	7.0	11.3	7.2	
	11.1	7.0	11.4	7.3	
(4.1)	11.5	7.4	10:27	11.5	7.2
50	11.4	7.3	50	11.8	7.2
10:25	12.4	8.3	13.0	8.1	
	12.0	7.9	13.0	8.1	
	11.6	7.5	(4.1)	12.5	8.1
	11.3	7.2	12.5	8.1	
6+00	11.2	7.1	8+00	12.5	8.1
	11.2	7.1	10:28	12.3	8.3
	11.1	7.0	(4.0)	12.1	8.1
	11.1	7.0	12.0	8.0	
	11.5	7.4	12.0	8.0	
50	11.5	7.4	50	11.8	7.8
	11.5	7.4	11.5	7.8	
	11.1	7.0	12.0	8.1	

91+50 - 4-2-47			DIST SOUND		
0+00 = W. SHORE B/LW SOUND EAST ²⁰					
DIST	SOUND		DIST	SOUND	
1+23	0.0 + 4.0		13.5	9.6	
(4.0)	0.5 + 3.5		13.0	9.1	
10:34	1.4 + 2.5		12.8	8.9	
50	2.4 + 1.5		13.0	9.1	
	3.5 + 0.4	50	13.0	9.1	
(3.9)	6.4 - 2.5		13.0	9.1	
	7.4 - 3.5		12.8	8.9	
	7.4 - 3.5	(3.9)	12.8	8.9	
	8.5	4.6	12.8	8.9	
	9.0	5.1	4+00	12.8	8.9
	10.3	6.4	13.7	9.8	
	12.0	8.1	13.3	9.4	
	13.1	9.4	13.1	9.2	
50	13.5	9.6	10:39	12.8	8.9
	13.5	9.6	50	12.7	8.8
10:36	13.5	9.6	12.7	8.8	
	13.5	9.6	12.7	8.8	
	13.5	9.6	12.7	8.8	
3+00	13.7	9.8	12.8	8.9	

91+50-4-2-47

DIST	SOUND	DIST	SOUND
5+00	12.8	8.9	7+00 11.3
	12.8	8.9	11.1
	12.8	8.9	10:43 11.0
	12.6	8.7	10.6
50	12.0	8.1	10.5
30	10.7	6.8	50 10.6
	10.0	6.1	11.8
10:41	9.2	5.3	12.2
	9.5	5.6	12.0
(3.9)	10.4	6.5	11.8
6+00	10.4	6.5	8+00 11.7
	10.4	6.5	11.5
	10.4	6.5	11.4
	11.5	7.6	10:45 11.3
	12.4	8.5	11.2
50	12.0	8.1	50 11.0
	11.4	7.5	11.0
	11.1	7.2	10.4
	11.1	7.2	12.2
	11.3	7.4	11.1

91+50-4-2-47

DIST	SOUND	DIST	SOUND
9+00	11.0	7.2	
	11.0	7.2	
	11.4	7.6	
(3.8)	11.4	7.6	
	11.4	7.6	
50	11.1	7.3	
	9.4	5.8	
10:47	8.0	4.2	

21

4-2-47

STA 91+75 SOUND EAST

0400 = W. SHORE B/L

DIST		SOUND		DIST		SOUND	
1+25	0.0	+36	3+00	12.8	9.2		
	0.4	+32	10.57	12.8	9.2		
10:55	1.3	+23		13.0	9.4		
50	2.1	+1.5		13.0	9.4		
	3.2	+0.6	(3.6)	13.0	9.4		
	6.1	-2.5	50	13.0	9.4		
(3.6)	6.8	-3.2		12.8	9.2		
	7.4	-3.8		13.0	9.4		
2+00	9.0	5.4		13.0	9.4		
	9.3	5.7	10.58	13.0	9.5		
	10.3	6.7	4+00	12.7	9.2		
	11.4	7.8		12.7	9.2		
	13.0	9.4		13.0	9.5		
50	13.0	9.4	(3.5)	13.3	9.5		
	13.0	9.4		12.0	8.5		
	13.0	9.4	50	12.0	8.5		
	12.8	9.2		12.3	8.8		
	12.8	9.2		12.1	8.6		

91+75

4-2-47

22

DIST		SOUND		DIST		SOUND	
	12.1	8.6		12.2	8.7		
	12.0	8.5		12.5	9.0		
5+00	12.0	8.5	7+00	12.1	8.6		
	12.0	8.5		12.3	8.8		
	12.0	8.5		11.0	7.5		
	12.0	8.5		10.5	7.0		
	12.0	8.5		10.5	7.0		
50	12.0	8.5	50	10.8	7.2		
	12.3	8.8		11.5	8.0		
(3.5)	12.4	8.9	(3.5)	11.4	7.9		
	12.4	8.9		11.2	7.7		
	12.0	8.5		10.5	7.0		
6+00	10.4	6.9	8+00	11.0	7.5		
	11.4	7.9		10.8	7.3		
	11.8	8.3	11:05	10.8	7.3		
11:02	12.2	8.7		10.5	7.0		
	12.4	8.9		11.0	7.5		
50	12.5	9.0	50	11.4	7.9		
	12.5	9.0		11.3	7.8		
	12.2	8.7		11.0	7.0		

4-2-47

STA 92+00 SOUND EAST

DIST		SOUND		DIST		SOUND	
0+00 = W. SHORE B/L				12.4	9.1	12.0	8.7
DIST		SOUND		11:17	12.4	9.1	12.0
1+26	0.0	+34	3+00	12.5	9.1	5+00	12.3
	0.3	+31	(3.4)	12.6	9.2		12.0
11:11	1.2	+22	11:14	12.5	9.1		12.2
50	2.0	+14		12.3	9.0		12.4
	3.0	+0.4		12.3	9.0		12.2
	6.2	-28	50	12.5	9.2	50	12.1
(3.4)	7.7	-43		13.4	10.1		12.1
	8.0	-4.6	(3.3)	13.5	10.2	(3.3)	12.1
2+00	9.0	√.6		13.5	10.2		12.1
	10.1	6.7		13.0	9.7	11:19	12.2
	11.2	7.8	4+00	12.5	9.2	6+00	12.3
	11.2	7.8		12.4	9.1		12.3
	12.0	8.6		12.4	9.1		12.3
50	12.1	8.7		12.4	9.1		12.0
11:13	12.3	8.9		13.3	10.0		12.2
	12.5	9.1	50	13.3	10.0	50	12.4
	12.5	9.1		13.6	10.3		12.4
	12.5	9.1		12.9	9.6		12.0

4-2-47 92+00

DIST SOUND

23

DIST		SOUND		DIST		SOUND	
12.4	9.1	12.0	8.7				
11:17	12.4	9.1	12.0	8.7			
5+00	12.3	9.0	7+00	12.0	8.7		
	12.0	8.7		12.0	8.7		
	12.2	8.9		12.0	8.7		
	12.4	9.1		12.0	8.7		
	12.2	8.9		11.8	8.5		
50	12.1	8.8	50	10.1	6.8		
	12.1	8.8		10.0	6.7		
(3.3)	12.1	8.8		11.4	8.1		
	12.1	8.8		11.1	7.8		
11:19	12.2	8.9		11.0	7.7		
6+00	12.3	9.0	8+00	11.0	7.7		
	12.3	9.0		11.0	7.7		
	12.3	9.0		11.0	7.7		
	12.0	8.7		11.0	7.7		
	12.2	8.9	11:23	11.1	7.9		
50	12.4	9.1	50	11.1	7.9		
	12.4	9.1	(3.2)	11.5	8.0		
	12.0	8.7		12.0	8.8		

92+00 - 4-2-47

DIST SOUND

8+80 11.8 8.6

10.5 7.3

9+00 10.8 7.6

11.3 7.1

3.2 11.3 7.1

1125 11.0 6.8

10.5 7.3

50 10.5 7.3

9.5 6.3

4-2-47

21

STA 92+25 SOUND EAST

0+00 = W. SHORE B/L

DIST SOUND

DIST SOUND

1+31 0.0 +3.1

12.0 8.9

11:30 0.9 +2.2

12.0 8.9

50 1.3 +1.8

12.0 8.9

2.3 +0.8

12.1 9.0

3.1 5.5 -1.4

50 12.4 9.3

7.0 -3.9 11:34 13.0 9.9

8.0 -4.7 13.0 9.9

2+00 8.5 5.3

3.1 13.0 9.9

9.0 5.9 12.1 9.0

10.6 7.5 4+00 12.3 9.7

11:32 11.3 8.4 12.0 8.9

11.8 8.7 11.8 8.7

50 12.0 8.9 11.8 8.7

12.0 8.9 11.8 8.7

12.0 8.9 50 12.0 8.9

12.0 8.9 12.4 9.3

12.0 8.9 12.5 9.4

3+00 12.0 8.9 13.0 9.5

92+25-4-2-47		DIST SOUND	
DIST	SOUND	DIST	SOUND
	13.0 10.0		11.5 8.5
5+00	13.0 10.0	7+00	12.0 9.0
11:37	13.0 10.0		11.8 8.8
	12.5 9.5		12.0 9.0
	12.0 9.0	11:41	12.0 9.0
	11.5 8.5		12.0 9.0
50	11.3 8.3	50	12.0 9.0
	11.3 8.3		11.1 8.1
(3.0)	11.3 8.3		12.3 9.3
	11.4 8.4	(3.0)	12.3 9.3
	11.5 8.5		11.7 8.7
6+00	12.0 9.0	8+00	11.3 8.3
	12.0 9.0		10.5 7.5
	11.8 8.8		10.5 7.5
	11.6 8.6	11:43	10.5 7.5
	11.6 8.6		10.5 7.5
50	12.3 9.3	50	10.5 7.5
	12.3 9.3		10.5 7.5
	12.0 9.0		10.0 7.0
	12.0 9.0		

4-2-47		STA 92+50 SOUND EAST		25
0+00 = W. SHORE B/W				
DIST	SOUND	DIST	SOUND	
	0.0 +1.9		10.8 8.9	
	0.7 +1.2		10.8 8.9	
12 ⁰	1.5 +0.4	50	11.0 9.1	
	4.0 -2.1		11.7 9.8	
	5.5 -3.6		12.0 10.1	
2+00	6.3 4.4	(1.9)	11.4 9.5	
	7.8 5.9		10.7 9.8	
	8.5 6.6	4+00	10.3 8.4	
	9.5 7.6		10.3 8.4	
	10.0 8.1	10	10.2 8.3	
50	10.3 8.4	1:24	10.2 8.4	
	10.4 8.5		10.2 8.4	
	10.4 8.5	50	10.0 8.2	
	11.0 9.1	(1.8)	10.0 8.2	
	10.3 8.4		10.0 8.2	
3+00	10.1 8.2		10.7 8.9	
	10.2 8.3		11.0 9.2	
	10.4 8.5	5+00	11.0 9.2	

92-50 - 4-2-47		92-50 - 4-2-47	
DIST	SOUND	DIST	SOUND
5+10	11.0 9.2	10.5	8.7
	11.0 9.2	10.5	8.7
	11.0 9.2	10.6	8.8
1:26	10.8 9.0	10.5	8.7
50	10.2 8.4	50	10.6 8.8
	9.8 8.0	"	10.5 8.7
(1.8)	9.8 8.0	"	10.3 8.5
	9.8 8.0	"	9.1 7.3
	9.8 8.0	"	9.3 7.5
6+00	9.8 8.0	8+00	9.5 7.7
	9.8 8.0	(1:30)	9.8 8.1
	9.8 8.0	(1.7)	9.8 8.1
	10.2 8.4	"	9.9 8.2
	11.0 9.2	"	9.8 8.1
50	11.0 9.2	50	9.5 7.8
	10.8 9.0	"	9.3 7.6
	10.8 9.0	"	10.4 8.7
	10.5 8.7	"	11.0 9.3
	10.5 8.7	"	11.0 9.3
7+00	10.0 8.2	9+00	10.5 8.8

92+50 - 4-2-47		26
DIST	SOUND	
	10.0 8.3	
	10.0 8.3	
	9.6 7.9	
(1.7)	9.6 7.9	
50	9.1 7.4	
	8.0 6.3	
	4.0 2.3	

4-2-47

STA 92+75 SOUND EAST

0+00 = W. SHORE B/L

DIST SOUND DIST SOUND

1+53 0.0 +1.6 10.1 8.5

0.5 +1.1 10.2 8.6

2.5 -0.9 50 10.5 8.7

(1.6) 4.6 -3.0 11.1 9.5

— 11.5 9.9

2+00 6.5 -4.9 (1.6) 10.8 9.2

7.0 5.4 10.2 8.6

7.4 5.8 4+00 10.2 8.6

9.0 7.4 10.2 8.6

1:39 9.4 7.8 1:42 10.0 8.4

50 9.6 8.0 9.9 8.3

10.0 8.4 9.8 8.2

10.1 8.5 50 9.8 8.2

10.0 8.4 10.0 8.4

10.3 8.7 10.1 8.5

3+00 10.0 8.4 10.1 8.5

10.0 8.4 10.2 8.6

10.2 8.6 5+00 10.2 8.6

92+75-4-2-47

DIST SOUND

DIST SOUND

10.4 8.8 10.1 8.6

10.3 8.7 10.3 8.8

10.4 8.8 10.2 8.7

10.4 8.8 1:47 10.2 8.7

50 11.2 9.6 50 10.2 8.7

11.8 10.2 10.4 8.9

12.0 10.4 (1.5) 10.1 8.6

(1.5) 10.1 8.6 10.4 8.9

10.1 8.6 9.4 7.9

6+00 10.3 8.8 8+00 9.0 7.5

10.5 9.0

10.5 9.0

1:44 10.5 9.0

10.9 9.4

50 10.1 8.6

10.0 8.5

10.2 8.7

10.7 9.1

10.4 8.9

7+00 10.2

27

4-2-47

STA 93+00 SOUND EAST

0+00 = W. SHORE B/L

DIST SOUND DIST SOUND

1+51 0.0 +1.4 10.0 8.6

0.8 +0.6 10.2 8.8

(1.57) 2.4 -1.0 50 11.0 8.6

(1.4) 4.4 -3.0 11.3 8.9

5.5 -4.1 11.1 8.7

2+00 6.1 -4.7 2.00 10.0 8.6

6.8 5.4 (1.4) 10.1 8.7

7.8 6.4 4+00 9.8 8.7

8.8 7.4 9.3 7.9

9.2 7.8 9.0 7.6

50 9.2 7.8 9.0 7.6

9.6 8.7 9.2 7.8

9.8 8.4 50 9.4 8.0

10.0 8.6 9.8 8.4

10.3 8.9 9.8 8.5

3+00 10.4 9.0 9.9 8.5

10.0 8.9 9.9 8.5

10.0 8.9 5+00 10.0 8.6

4-2-47-93+00

DIST SOUND

10.0 8.6

10.0 8.6

2.03 10.2 8.8

(1.4) 10.2 8.8

50 10.5 9.1

11.2 9.8

11.3 9.9

11.5 10.1

10.5 9.1

6+00 10.0 8.6

10.0 8.6

10.0 8.6

10.4 9.0

11.5 10.1

50 11.2 9.8

10.0 8.6

9.7 8.3

10.0 8.6

10.1 8.7

7+00 10.5 9.1

DIST SOUND

10.2 8.8

2.06 10.0 8.6

10.0 8.6

10.0 8.6

50 10.0 8.6

10.0 8.6

(1.4) 10.0 8.6

10.2 8.8

10.5 9.1

8+00 9.5 8.1

9.0 7.6

8.7 7.3

8.7 7.3

8.8 7.4

50 8.8 7.4

8.7 7.3

8.2 6.8

8.0 6.6

8.3 6.9

9+00 8.5 7.1

28

4-2-47

STA 93+25 SOUND EAST

0+00 = W. SHORE B/L

DIST	SOUND	DIST	SOUND
1+ 29	0.0	3+00	10.8
	0.4		11.2
	1.1		11.8
50	1.8	(1.2)	11.6
2:20	4.0	2:23	10.4
(1.2)	4.5	50	10.1
	5.5		9.5
	6.5		9.3
2+00	6.8		9.2
	7.0		9.0
	9.7	4+00	9.1
	10.4	9.2	9.0
	10.4		9.4
50	10.3		9.6
	10.3		9.5
	10.4	50	9.4
	10.4		9.4
	10.8		9.6

4-2-47

STA 93+25 SOUND EAST 29

0+00 = W. SHORE B/L

DIST	SOUND	DIST	SOUND	DIST	SOUND
1+46	0.0	+1.0	9.8	8.8	
50	0.8	+0.2	10.0	9.0	
	2.4	1.4	10.0	9.0	
2:47	4.0	3.0	50	10.5	9.5
(1.1)	4.4	3.4		10.5	9.5
	4.8	3.8	(1.1)	10.0	9.0
2+00	6.0	5.0		9.4	8.4
	6.5	5.5		9.0	8.0
	7.0	6.0	4+00	9.2	8.2
	7.8	6.8		9.2	8.2
	9.0	8.0		9.2	8.2
50	9.5	8.5		9.3	8.3
	9.5	8.5		9.3	8.3
	9.5	8.5	50	9.5	8.5
	9.8	8.8		10.1	9.1
	9.8	8.8		9.8	8.8
3+00	9.8	8.8		9.0	8.0
	9.8	8.8		9.0	8.0

93+25-4-2-47

DIST SOUND		DIST SOUND		DIST SOUND	
5+00	9.5	8.5	7+00	9.8	8.8
	9.7	8.7		9.8	8.5
(1.0)	9.7	8.7		9.8	8.8
2:49	9.9	8.9		9.8	8.9
	10.4	9.4	(1.0)	9.8	8.8
50	11.0	10.0	50	9.8	8.8
	11.0	10.0		10.1	9.1
	11.0	10.0	2:53	10.2	9.2
	10.1	9.1		10.2	9.2
	9.5	8.5		10.2	9.2
6+00	9.5	8.5	8+00	9.0	8.0
	9.5	8.5		8.8	7.8
	9.8	8.8		9.0	8.0
(1.0)	10.1	9.1		9.0	8.0
	10.9	9.9		8.8	7.8
50	11.0	10.0	50	8.0	7.0
	11.4	10.4			
	11.4	10.4			
	10.0	9.0			
	9.7	8.7			

4-2-47

STA 93+50		SOUND EAST		30	
0+00 = W. SHORE B/L					
DIST SOUND		DIST SOUND			
1+39	0.0	+1.0	10.0	-9.0	
			10.0	-9.0	
50	0.9	+0.1	10.1	9.1	
3:02	1.5	-0.5	3:04	10.8	9.8
	4.3	-3.3	50	11.0	10.0
(1.0)	4.3	-3.3		10.0	9.0
	4.5	-3.5		9.5	8.5
2+00	6.5	-5.5		9.5	8.5
	6.8	-5.8		9.5	8.5
	6.8	5.8	4+00	9.0	8.0
	7.8	6.8		9.0	8.0
	10.0	9.0		9.0	8.0
50	10.2	9.2	(1.0)	9.1	8.1
	10.2	9.2		9.1	8.1
	10.4	9.4	50	9.4	8.4
	10.4	9.4		9.4	8.4
	10.1	9.1		9.5	8.5
3+00	10.2	9.2		9.4	8.4

93+50		-4-2-47	
DIST	SOUND	DIST	SOUND
	9.8 8.8		11.0 10.0
5+00	10.1 9.1	7+00	10.0 9.0
	10.1 9.1		9.8 8.8
	9.7 8.7		9.8 8.8
	9.7 8.7		9.8 8.8
	10.4 9.4		9.8 8.8
50	11.0 10.0	50	9.8 8.8
	11.0 10.0		10.0 9.0
(1.0)	11.0 10.0		10.4 9.4
	10.5 9.5		9.0 8.0
3:08	10.0 9.0	(1.0)	8.5 7.5
6+00	10.0 9.0	8+00	8.3 7.3
	10.2 9.2	3:11	8.3 7.3
	10.2 9.2		8.3 7.3
	10.5 9.5		8.4 7.4
	10.5 9.5		8.4 - 7.4
50	10.5 9.5		
	10.5 9.5		
	10.8 9.8		
	11.0 10.0		

4-2-47		31	
STA	93+75	SOUND	EAST
0+00 = W. SHORE B/L			
		DIST	SOUND
		DIST	SOUND
1+30	0.0 +1.0		10.4 9.4
	1.0 0.0	3:20	10.5 9.5
50	1.3 -0.3		10.9 9.9
	2-7 -1.7		11.2 10.2
3:17	2.7 -1.7	50	11.2 10.2
	4.1 -3.1		11.0 10.0
	4.6 -3.6		10.3 9.3
2+00	6.2 -5.2		9.7 8.7
	6.7 5.7		9.4 8.4
(1.0)	6.7 5.7	4+00	9.4 8.4
	7.5 6.5		9.3 8.3
	9.3 8.3		9.2 8.2
50	9.3 8.3	(1.0)	9.2 8.2
	9.6 8.6		9.2 8.2
	9.7 8.7	50	9.2 8.2
	10.0 9.0		9.1 8.1
	10.0 9.0		9.1 8.1
3+00	10.2 9.2		9.1 8.1

4-2-47 93775		DIST SOUND		DIST SOUND	
	9.3	8.3		10.8	98
5+00	9.6	8.6	7+00	10.8	98
3:23	10:0	9.0		11.0	100
(1.0)	9.8	8.8		10.8	98
	10.1	9.1		10.0	90
	11.0	10.0		7.5	65
50	10.2	9.2	50	7.5	65
	10.8	9.8		8.0	70
	10.4	9.4		9.2	82
	10.0	9.0	(1.0)	9.2	82
	9.4	8.4		9.0	80
6+00	9.4	8.4	8+00	8.8	78
3:25	9.5	8.5	3:28	8.7	77
	9.5	8.5		8.6	76
	9.5	8.5		8.5	75
	9.6	8.6		8.3	73
50	10.0	9.0	50	8.2	72
	10.0	9.0		8.0	70
	10.0	9.0		7.8	68
	10.5	9.5		8.0	70

4-2-47 X		STA 94+00 SOUND EAST		32	
0+00 = W. SHORE B/L		DIST SOUND		DIST SOUND	
1+27	0.0	+1.0	3+00	10.2	-9.2
	0.3	+0.7		10.4	9.4
	0.9	+0.1		10.7	9.7
50	1.0	0.0		11.2	10.2
	1.4	-0.4		11.2	10.2
(1.0)	3.5	-2.5	50	11.5	10.5
	4.0	-3.0		11.5	10.5
3:35	4.5	3.5	3:39	9.0	8.0
2+00	5.4	4.4		8.8	7.8
	7.0	6.0		9.0	8.0
	8.3	7.3	4+00	9.0	8.0
	9.1	8.1		9.0	8.0
	9.5	8.5		9.0	8.0
50	9.7	8.7	(1.0)	9.0	8.0
	9.8	8.8		9.0	8.0
	9.6	8.6	50	9.0	8.0
	9.6	8.6		9.2	8.2
	10.0	9.0		-9.5	8.5

94+00 - 4-2-47		94+00	
DIST	SOUND	DIST	SOUND
	9.4 8.3	10.5	9.4
	9.5 8.4	3:44 11.0	9.9
5+00	9.5 8.4	7+00 10.7	9.6
3:41	9.7 8.6	10.8	9.7
	9.5 8.4	11.0	9.9
	9.5 8.4	11.0	9.9
	10.1 9.0	10.2	9.1
50	10.4 9.3	50 7.5	6.4
	11.2 10.1	7.8	6.7
(1.9)	11.8 10.7	(2.9) 9.7	8.6
	10.0 8.9	9.5	8.4
	9.5 8.4	9.1	8.0
6+00	10.1 9.0	8+00 9.0	7.9
	10.1 9.0	9.0	7.9
	10.0 8.9	8.7	7.6
	10.0 8.9	8.6	7.5
	10.1 9.0	8.5	7.4
50	10.0 8.9	50 8.4	7.3
	10.0 8.9	8.3	7.3
	10.0 8.9	8.2	7.1

94+00		94+00	
DIST	SOUND	DIST	SOUND
	9.1 -8.0		
	9.3 8.2		
9+00	9.0 7.9		
	8.8 7.7		
	8.5 7.4		
	8.5 7.4	(1.1)	
	8.5 7.4		
50	8.3 7.2		
	8.2 7.1		
	7.0 6.1		
	3.0 -1.9		

4-3-47

STA 94+25 SOUND EPST

0+00 = W. SHORE B/L.

DIST.	SOUND	DIST.	SOUND
0+85	0.0 +5.7	14.0	8.3
	0.5 +5.2	14.0	8.3
1+00	1.3 +4.4	14.0	8.3
	2.7 +3.0	14.0	8.3
(5.7)	3.3 +2.7	3+00 14.1	8.3
	4.2 +1.5	14.4	8.7
	4.7 +1.0	14.8	9.1
50	5.6 +0.1	(5.7) 15.3	9.6
	6.1 -0.4	15.5	9.8
	8.5 -2.8	50 16.4	10.7
	9.5 -3.8	16.4	10.7
		14.3	8.6
2+00	10.0 4.3	14.0	8.3
	10.4 4.7	14.0	8.3
	11.5 5.8	4+00 14.2	8.3
	12.3 6.6	14.3	8.6
	13.0 7.3	14.4	8.7
50	13.9 8.2	14.3	8.6

94+25-4-3-47

31

DIST.	SOUND	DIST.	SOUND
	14.1 8.4	14.6	8.7
50	14.0 8.3	50 14.0	8.3
	13.8 8.1	14.8	9.1
	13.7 8.0	14.5	8.8
	13.4 7.7	14.7	9.0
	13.5 7.8	15.0	9.3
5+00	13.4 7.7	7+00 15.3	9.6
	14.0 8.3	15.5	9.8
	14.5 8.8	15.5	9.8
(5.7)	14.4 8.7	(5.7) 15.7	10.0
	14.5 8.8	15.4	9.7
50	15.0 9.3	50 14.8	9.1
	15.5 9.8	13.0	7.3
	16.3 10.6	13.3	7.6
	14.4 8.7	13.6	7.9
	14.1 8.4	13.6	7.9
6+00	14.3 8.6	8+00 13.5	7.8
	14.0 8.3	13.4	7.7
	14.2 8.5		
	14.4 8.7		

4-3-47

STA 94+50 SOUND EAST

	DIST.	SOUND		DIST.	SOUND
0+00	=	W. SHORE B/L.			
0+90	0.0	+5.6	"	13.5	7.9
1+00	0.3	+5.3	"	13.8	8.2
1+10	1.5	+4.1	"	14.1	8.5
	2.4	+3.2	3+00	14.1	8.5
(5.6)	3.2	+2.4	"	14.3	8.7
	4.1	+1.5	"	14.7	9.1
50	7.0	-1.4	"	15.2	9.6
5.0	8.3	-2.7	"	15.4	9.8
	8.5	2.9	50	16.0	10.2
	8.7	3.1	"	16.3	10.7
	9.0	3.4	"	15.0	9.5
2+00	9.5	3.9	"	15.1	9.6
2+10	10.0	4.4	"	15.2	9.6
	10.8	5.2	4+00	15.2	9.6
	11.8	6.2	"	15.1	9.5
	12.5	6.9	"	15.1	9.5
50	13.3	7.7	"	15.0	9.4
5.0	13.6	8.0	"	15.0	9.4

4-3-47-94+50

35

DIST SOUND

DIST SOUND

	DIST	SOUND		DIST	SOUND
50	14.8	7.2	50	14.5	8.9
	14.5	8.9		14.4	8.8
	14.0	8.4		14.5	8.9
	14.2	8.6		14.4	8.8
	14.0	8.4		15.0	9.4
5+00	14.0	8.4	7+00	15.0	9.4
	13.8	8.2		15.5	9.9
	14.0	8.4		16.0	10.4
	13.8	8.2		16.0	10.5
	13.8	8.2	(5.5)	16.0	10.5
50	14.7	9.1	50	15.7	10.2
	15.4	9.8		14.0	
	15.4	9.8		14.5	
(5.6)	14.0	8.4		14.1	
	13.5	7.9		14.0	
6+00	13.5	7.9	8+00	13.8	
	14.0	8.4		13.8	
	14.0	8.4		13.8	
	14.0	8.4			
	14.4	8.8			

4-3-47

STA. 94+75 SOUND EAST

DIST SOUND

0+00 = W. SHORE B/L.

DIST SOUND DIST SOUND

1+00 0.0 + 5.4 14.5 9.1

0.6 + 4.8 14.0 8.6

1.5 + 3.9 3+00 13.3 7.9

(5.4) 2.8 + 2.6 13.3 7.9

3.0 + 2.4 14.1 8.7

50 5.5 - 0.1 14.5 9.1

7.1 - 1.7 (5.4) 15.3 9.9

7.8 - 2.4 50 15.6 10.2

8.4 - 3.0 15.8 10.4

8.8 - 3.4 14.3 8.9

2+00 9.3 - 3.9 14.5 9.1

10.3 4.9 14.6 9.2

11.1 5.7 4+00 14.5 9.1

11.5 6.1 14.5 9.1

13.1 7.7 14.4 9.0

50 13.7 8.3 14.3 8.9

13.8 8.4 14.4 9.0

14.0 8.6 50 14.4 9.0

4-3-47-94+75

36

DIST SOUND

14.7 9.3 13.8 8.5

15.0 9.6 14.1 8.8

15.0 9.6 (5.3) 14.0 8.7

14.5 9.2

5+00 14.5 9.1 7+00 14.8 9.5

14.1 8.7 15.3 10.0

14.0 8.6 15.5 10.2

(5.4) 14.0 8.6 15.5 10.2

14.0 8.6 14.5 9.2

50 14.0 8.6 50 14.0 8.7

14.1 8.7 14.4 9.1

14.8 9.4 14.5 9.2

15.3 9.9 14.5 9.2

13.0 7.6 14.0 8.7

6+00 13.0 7.6 8+00 14.0 8.7

13.4 8.0 14.0 8.7

13.4 8.0

13.3 7.9

13.3 7.9

50 13.5 8.1

4-3-47

STA 95+00 SOUND EAST

0+00 - W. SHORE B/L

DIST	SOUND	DIST	SOUND
1+15	0.0 +5.2	13.5	8.2
	0.8 +4.4	3+00 14.0	8.7
(5.2)	1.5 +3.7		14.0 8.7
9:52	2.8 +2.4		15.0 9.7
50	5.5 -0.3		15.3 10.0
	7.3 -2.1		15.1 9.9
	8.4 -3.2	50	15.3 10.0
	8.8 3.6		14.8 9.6
	9.4 4.2		14.0 8.8
2+00	9.8 4.6	(5.2)	14.0 8.8
	10.7 5.5		14.0 8.8
	11.0 5.8	4+00	14.0 8.8
	11.3 6.1		14.0 8.8
	12.0 6.8		14.0 8.8
50	12.5 7.3		13.8 8.6
	13.0 7.8		13.8 8.6
	13.5 8.3	50	14.0 8.8
	13.5 8.3		14.0 8.8

4-3-47-95+00 X 37

DIST SOUND

DIST	SOUND	DIST	SOUND
14.0	8.8	13.2	8.1
14.0	8.8	13.2	8.1
14.0	8.8	13.5	8.4
5+00 14.0	8.8	7+00 14.1	9.0
14.5	9.3		14.4 9.3
14.3	9.1	(5.1)	14.8 9.7
(5.2)	14.6 9.4		15.0 9.9
	14.0 8.8		15.0 9.9
50 13.8	8.6	50 15.0	9.9
	14.0 8.8		14.3 9.2
	14.5 8.7		14.8 9.7
	15.1 9.9		14.8 9.7
(5.1)	14.4 9.3		14.3 9.7
6+00 14.0	8.9	8+00 14.0	8.9
	14.3 9.2		14.0 8.9
	14.0 8.9		13.3 8.2
	13.3 8.2		13.3 8.2
	13.0 7.9		13.1 8.0
50 13.0	7.9	50 13.1	8.0
	13.2 8.1		13.0 7.9

4-3-47-95+00		DIST SOUND	
	13.0	7.9	
	12.9	7.8	
	12.7	7.6	
9+00	12.7	7.6	
	13.5	8.4	
	13.5	8.4	
	13.5	8.4	
(5.1)	13.0	7.9	
50	13.0	7.9	
	12.8	7.7	
	12.8	7.7	
	12.7	7.6	
	13.0	7.9	
10+00	14.0	8.9	
	14.0	8.9	
	12.5	7.4	
	9.4	4.3	
	6.3	-1.2	
50			

4-3-97		STA 95+25 SOUND EAST		38
0+00 = W. SHORE B/L.				
DIST SOUND		DIST. SOUND		
1+25	0.0 +4.9	3+00	13.3	8.4
10.14	0.6 +4.3		13.3	8.4
(4.9)	1.7 +3.2		13.5	8.6
50	3.0 +1.9		14.5	9.6
	5.3 -0.4		15.0	10.1
	6.7 -1.8	50	15.3	10.4
	8.0 -3.1		15.6	10.7
	7.3 .44		15.8	10.9
2+00	10.4 5.5	(4.9)	13.5	8.6
	11.0 6.1		13.4	8.5
	11.0 6.1	4+00	13.5	8.6
	11.0 6.1		14.0	9.1
	12.4 7.5		14.4	9.5
50	13.4 8.5		14.4	9.5
	15.8 8.9		14.0	9.1
	14.0 9.1	50	13.6	8.7
	14.2 9.3		13.5	8.6
	13.5 8.6		13.6	8.7

95+25 - 4-3-47		DIST SOUND	
	13.5	8.6	
	13.5	8.6	
5+00	13.8	8.9	7+00
	13.4	8.5	
(4.9)	13.4	8.5	
	13.8	8.9	(4.8)
	14.3	9.4	
50	14.5	9.6	50
	14.9	10.0	
	14.5	9.7	4.8
(4.8)	14.8	10.0	
	14.3	9.5	
6+00	14.3	9.5	8+00
	13.8	9.0	
	13.2	8.4	
	12.5	7.7	
	12.5	7.7	
50	12.8	8.0	
	12.8	8.0	
	13.2	8.4	

4-3-47		STA 95+50 SOUND EAST		39
0+00 = W. SHORE B/L				
DIST SOUND		DIST SOUND		
1+38	0.0	+4.7	13.5	8.8
	0.4	+4.3	13.8	9.1
50	1.6	+3.1	14.5	9.8
(4.7)	3.0	+2.7	15.0	10.3
	5.0	-0.3	50 15.5	10.8
10+29	5.9	-1.2	14.5	9.8
	8.1	-3.4	(4.7)	13.3
2+00	9.5	4.8	13.2	8.5
	9.7	5.0	13.0	8.3
	9.8	5.1	4+00 13.0	8.3
	10.4	5.7	13.0	8.3
	12.0	7.3	13.0	8.3
50	12.4	7.7	13.0	8.3
	13.0	8.3	13.0	8.3
	13.2	8.5	50 13.0	8.3
	13.2	8.5	13.0	8.3
	13.2	8.5	13.3	8.6
3+00	13.3	8.6	13.4	8.7

95+50-4-3-47			DIST SOUND		
	14.3	9.6		12.8	8.7
5+00	14.8	10.1	7+00	13.2	8.6
	14.4	9.7		13.2	8.6
(4.7)	13.4	8.7		14.0	9.4
	13.5	8.8		14.0	9.4
(4.6)	13.9	9.3		13.5	8.9
50	14.0	9.4	50	12.5	7.9
	15.0	10.4		12.5	7.9
	15.0	10.4	(4.6)	13.0	8.4
	14.7	10.0		13.3	8.7
	14.0	9.4		13.3	8.7
6+00	13.4	8.8	8+00	13.3	8.7
	13.0	8.4			
	13.0	8.4			
	12.5	7.9			
	12.5	7.9			
50	12.5	7.9			
	12.5	7.9			
	12.8	8.2			
	12.8				

4-3-47				STA 95+75 SOUND EAST 40	
0+00 = W. SHORE (B) L				DIST. SOUND	
1+42	0.0	+4.3		13.5	9.2
50	0.8	+3.5		13.5	9.2
	2.2	+1.9		14.3	10.0
(4.3)	3.4	+0.9	(3+50)	14.8	10.5
10+43	5.2	-1.0		14.0	9.7
	7.0	-2.7	(4.3)	13.1	8.8
2+00	8.4	-4.1		13.5	9.2
	9.0	4.7		13.4	9.1
	9.1	4.8	50	13.2	8.9
	10.0	5.7		13.1	8.8
	11.0	6.7		13.1	8.8
50	12.1	7.8		13.1	8.8
	12.4	8.1		13.1	8.8
	12.5	8.2	4+50	13.4	9.1
	12.8	8.5		12.5	8.2
	13.0	8.7		12.5	8.2
3+00	13.0	8.7		12.5	8.2
	13.4	9.1		12.7	8.4

95+ 75-4-3-77			DIST. SOUND		
5+00	12.7	-8.5	7+00	12.7	8.5
	13.0	8.8		13.2	9.0
	13.4	9.2		14.0	9.8
	14.0	9.8		14.3	10.1
	14.1	9.9		14.3	10.1
50	14.1	9.9	50	14.3	10.1
	14.3	10.3		14.0	9.8
(4.2)	15.0	10.8	(4.2)	13.3	9.1
	14.5	10.3		13.0	8.8
	13.3	9.3		12.8	8.6
6+00	13.3	9.3	8+00	12.5	8.0
	13.5	9.3			
	13.0	8.8			
	12.2	8.0			
	12.0	7.8			
50	12.4	8.2			
	12.4	8.2			
	12.8	8.6			
	13.0	8.8			
	12.4	8.2			

4-3-47			STA 96+00 SOUND EAST		
			0+00 = W. SHORE (B) W		
			DIST. SOUND		
1+53	0.0	+4.0		12.5	-8.5
	1.0	+3.0		13.0	9.0
	2.5	+1.5	50	13.5	9.5
11+02	4.0	0.0		13.5	9.5
	6.1	-2.1		13.5	9.5
(4.0)	7.6	-3.6	(4.0)	13.3	9.3
	8.0	4.0		12.8	8.8
	9.0	5.0	4+00	12.8	8.8
	9.5	5.5		13.0	9.0
	9.5	5.5		12.8	8.8
50	11.8	7.8		12.8	8.8
	12.4	8.4		12.7	8.7
	12.4	8.4	50	12.5	8.5
	12.3	8.5		12.5	8.5
	12.5	8.5		12.5	8.5
3+00	12.5	8.5		13.0	9.0
	12.5	8.5		13.2	9.2
	12.5	8.5	5+00	13.0	9.0

96+00 - 4-3-47		96+00 - 4-3-47		X
DIST	SOUND	DIST	SOUND	
5+10	13.4 9.5		13.2 9.3	
11:07	13.0 9.1		14.0 10.1	
(3.9)	13.0 9.1		14.0 10.1	
	12.8 8.9		14.0 10.1	
50	13.1 9.2	50	14.2 10.3	
	14.7 10.8		14.2 10.3	
	14.5 10.6	(3.9)	14.0 10.1	
	13.5 9.6		14.2 10.3	
	13.2 9.3		14.4 10.5	
6+00	13.2 9.3	8+00	14.2 10.3	
	13.5 9.6		14.4 10.5	
	13.1 9.2		14.4 10.5	
	12.7 8.8		14.4 10.5	
	12.0 8.1		14.4 10.5	
50	12.0 8.1	50	14.2 10.3	
	12.3 8.4		14.3 10.4	
	12.5 8.6		14.4 10.5	
	12.8 8.9		14.2 10.3	
	12.5 8.6		13.3 9.4	
7+00	12.8 8.9	9+00	12.5 8.6	

96+00 - 4-3-47		96+00 - 4-3-47		X
DIST	SOUND	DIST	SOUND	42
12.2	8.4		11.5	7.7
12.4	8.6	(3.8)	8.3	4.5
12.1	8.3		5.4	-1.6
12.0	8.1			
50	11.5 7.6	50		
	11.5 7.6			
(3.8)	11.5 7.7			
	11.5 7.7			
	12.0 8.2			
10+00	12.0 8.2			
	12.8 9.0			
	13.2 9.4			
	13.0 9.2			
	13.0 9.2			
50	14.0 10.2			
	12.5 8.7			
	12.0 8.2			
	12.2 8.4			
	12.4 8.6			
11+00	12.4 8.6			

4-3-47

STA 96+25 SOUND EAST

0+00 = W. SHORE B/L

DIST SOUND DIST SOUND

1+68 0.0 +2.8 12.3 9.6

12+00 0.2 +2.6 50 12.4 9.6

(2.8) 1.4 +1.4 12.5 9.7

4.0 -1.2 12.0 9.7

2+00 6.1 -3.3 (2.8) 11.6 8.8

6.5 -3.7 11.5 8.7

7.3 4.5 4+00 11.5 8.1

8.2 5.4 11.6 8.1

9.4 6.6 12.0 9.2

50 10.5 7.7 12.4 9.6

11.0 8.2 12.0 9.7

11.1 8.3 50 11.8 9.0

11.5 8.7 11.8 9.0

11.3 8.5 11.8 9.0

3+00 11.1 8.3 11.6 8.8

11.2 8.4 11.5 8.7

11.2 8.4 5+00 12.0 9.7

11.5 8.7 11.8 9.0

96+25 4-3-47

DIST SOUND DIST SOUND

43

12.0 -9.3 12.3 9.6

12.4 9.7 12.6 9.9

12.0 -9.3 12.4 9.7

50 11.7 9.0 50 12.5 9.8

11.5 8.8 12.5 9.8

(2.7) 12.0 9.3 12.6 9.9

12.1 9.4 12.6 9.9

12.3 9.7 12.7 10.0

6+00 12.1 9.4 8+00 12.7 -10.0

12.2 9.5

12.4 9.7

12.6 9.9

12.2 9.5

50 11.0 8.3

10.8 8.1

11.4 8.7

11.5 8.8

11.5 8.8

7+00 12.1 9.4

12.5 9.8

4-3-47

STA 96+50 SOUND EAST

0+00 = W. SHORE B/L.

DIST SOUND DIST SOUND

1+80 0.0 +2.6 12.1 9.5

12:57 2.4 +0.2 11.4 8.8

²⁺⁰⁰
(2.6) 4.5 -1.9 12.5 9.9

5.5 -2.9 11.5 8.9

7.4 -4.8 4+00 11.0 8.4

8.0 5.4 11.1 8.5

8.1 5.5 11.4 8.8

50 10.6 8.0 11.3 8.7

11.5 8.9 (2.6) 11.3 8.7

11.8 9.2 50 11.3 8.7

11.8 9.2 11.0 8.4

11.8 9.2 11.1 8.5

3+00 11.8 9.2 11.3 8.7

11.8 9.2 12.1 9.5

11.7 9.1 5+00 12.0 9.4

11.5 8.9 12.0 9.4

12.2 9.6 12.0 9.4

50 12.0 9.4 12.3 9.7

96+50 - 4-3-47

DIST SOUND DIST SOUND 44

12.5 9.9 12.2 9.6

50 14.0 11.4 50 12.2 9.6

13.5 10.9 12.4 9.8

12.8 10.2 12.4 9.8

12.4 9.8 (2.5) 12.5 10.0

12.0 9.4 12.5 10.0

6+00 13.0 10.4 8+00 12.3 9.8

12.5 9.9

12.7 10.1

(2.6) 12.5 9.9

12.5 10.2

50 12.8 10.2

12.0 9.4

10.5 7.9

10.7 8.1

11.3 8.7

7+00 11.6 9.0

12.2 8.6

11.8 9.2

12.4 9.8

4-3-47

STA 96+75 SOUND EAST

0+00 = W. SHORE B/L

DIST SOUND DIST SOUND

1+86 0.0 +1.9 11.3 9.4

1:33 0.6 +1.3 11.1 9.2

2+00
(1.9) 4.4 -2.5 10.8 8.9

5.0 -3.1 10.7 8.7

7.0 -5.1 4+00 11.4 9.5

7.2 -5.3 11.4 9.5

7.9 6.0 (1.9) 12.4 10.5

50 8.0 6.1 14.0 12.1

10.2 8.3 13.5 11.6

10.6 8.7 50 10.7 8.8

10.4 8.5 10.6 8.6

10.4 8.5 11.1 9.2

3+00 10.4 8.5 11.0 9.1

11.1 9.2 11.6 9.7

12.3 10.4 5+00 12.0 10.1

12.1 10.2 12.2 10.3

12.0 10.1 12.5 10.4

50 11.5 9.6 12.7 10.5

96+75 - 4-3-47

DIST SOUND

DIST SOUND

45

12.0 10.1 12.0 10.1

50 11.8 9.9 50 12.0 10.1

11.7 9.8 (1.9) 12.0 10.1

11.8 9.9 12.0 10.1

11.5 9.6 12.0 10.1

11.8 9.9 12.0 10.1

6+00 12.0 10.1 8+00 12.2 10.3

12.2 10.3

(1.9) 12.4 10.5

12.1 10.2

11.5 9.6

50 10.8 8.9

10.8 8.9

10.2 8.3

10.4 8.5

10.0 8.1

7+00 10.8 8.9

12.3 10.4

12.1 10.2

12.1 10.2

4-3-47

STA 97+00 SOUND EAST

0+00 = W. SHORE B/L.

DIST	SOUND		DIST.	SOUND
1+84	0.0	+1.8	11.2	9.4
	1.0	+0.8	11.2	9.4
2+00	3.3	-2.5	11.0	9.2
11.50	4.8	-3.0	10.7	8.9
(1.8)	5.8	-4.0	4+00 10.5	8.7
	6.5	4.7	10.3	8.5
	7.4	5.6	10.6	8.8
50	9.2	7.4	(1.8) 10.6	8.8
	11.0	9.2	10.6	8.8
	11.0	9.2	50 11.1	9.3
	11.2	9.4	10.7	8.9
	11.7	9.9	10.3	8.5
3+00	11.4	9.6	11.0	9.2
	11.0	9.2	11.6	9.8
	10.8	9.0	5+00 12.2	10.4
	11.5	9.7	12.5	10.7
	11.5	9.7	12.5	10.7
50	11.4	9.5	12.5	10.7

97+00 - 4-3-47

DIST	SOUND		DIST.	SOUND	+ 46
	11.8	10.0	12.3	10.5	
50	11.7	9.9	50 12.3	10.5	
	11.2	9.4	12.0	10.2	
	11.4	9.6	12.0	10.2	
	11.5	9.7	(1.8) 12.0	10.2	
	11.6	9.8	12.0	10.2	
6+00	11.7	9.9	8+00 12.0	10.2	
	11.6	9.8	12.0	10.2	
	11.4	9.6	11.7	9.9	
(1.8)	11.4	9.6	11.5	9.7	
	11.5	9.7	11.5	9.7	
50	11.8	10.0	50 11.7	9.9	
	12.0	10.2	12.0	10.2	
	12.0	10.2	12.0	10.2	
	12.0	10.2	12.0	10.2	
	11.5	9.7	12.0	10.2	
7+00	11.5	9.7	9+00 12.2	10.4	
	12.3	10.5	12.2	10.4	
	12.3	10.5	12.2	10.4	
	12.4	10.6	12.2	10.4	

97+00-4-3-47				X	
DIST	SOUND	DIST	SOUND		
	12.2 10.5		12.6 10.9		
9+50	12.2 10.5	50	12.0 10.3		
	12.0 10.3		12.0 10.3		
(1.7)	11.8 10.1		11.8 10.1		
	11.6 9.9		11.8 10.1		
	11.3 9.6		11.7 10.0		
10+00	11.3 9.6	12+00	11.5 9.8		
	11.3 9.6		11.3 9.5		
	11.0 9.3		11.0 9.3		
	11.0 9.3		8.5 6.8		
	10.7 9.0		8.0 6.2		
50	10.2 8.5	50			
	10.2 8.5				
	10.2 8.5				
	11.0 9.3				
	11.3 9.6				
11+00	13.0 11.3				
	13.4 11.7				
	13.0 11.3				
	12.8 11.1				

4-3-47				2 + 47	
STA	SOUND	SOUND	EAST		
0+00	= W. SHORE	B/L.			
	DIST	SOUND	DIST	SOUND	
1+77	0.0 +1.7	50	11.0 9.3		
2+10	0.5 +1.7		10.8 9.1		
(1.7)	2.3 -0.6		10.2 8.5		
2+00	2.5 -0.8		10.0 8.3		
	4.1 2.4		10.6 8.7		
	5.0 3.3	4+00	10.0 8.3		
	6.4 4.7		10.0 8.3		
	7.8 6.1		10.0 8.3		
50	9.0 7.3	(1.7)	9.8 8.1		
	9.5 7.8		9.7 8.0		
	10.0 8.3	50	10.0 8.3		
	10.0 8.3		10.1 8.4		
	10.5 8.8		10.2 8.5		
3+00	11.0 9.3		10.4 8.7		
	12.0 10.3		10.0 8.3		
	11.5 9.8	5+00	10.0 8.3		
	12.0 10.3		10.7 9.0		
	12.0 10.3		10.8 9.1		

98+00 - 4-3-47		98+00 - 4-3-47		X
DIST	SOUND	DIST	SOUND	
5+30	10.8 9.1	7+ 19.5	17.8	
	11.0 9.3	7.6 21.0	19.3	
50	10.8 9.1	7+50 25.0	23.3	
	10.7 9.0	7.7 25.0	23.3	
(1.7)	10.5 8.8	7.1 25.0	23.3	
	10.4 8.7	7.0 25.0	23.3	
	10.3 8.6	6.9 25.0	23.3	
6+00	10.0 8.3	8+00 24.5	20.0	
	10.0 8.3	25.0	23.3	
	10.5 8.8	25.0	23.3	
	10.8 9.1	25.0	23.3	
	10.7 9.0	(1.7) 25.7	23.3	
50	10.4 8.7	50 25+	23.3	
	10.7 9.0	25	23.3	
	11.1 9.4	25	23.3	
	16.0 14.3	25	23.3	
	17.5 15.8	25	23.3	
7+00	17.5 15.8	9+00 24.5	23.3	
	19.7 18.0	23.5	21.0	
	19.5 17.8	23.0	21.0	

98+00 - 4-3-47		98+00 - 4-3-47		? X 48
DIST	SOUND	DIST	SOUND	
	22.0 20.3		10.8 9.1	
	19.0 17.3		10.8 9.1	
50	17.8 16.1	50	10.8 9.1	
	15.5 13.8		11.4 9.7	
	15.5 13.8		11.3 9.6	
	15.5 13.8		11.0 9.3	
	15.2 13.5		11.3 9.6	
10+00	14.7 13.0	12+00	11.3 9.6	
	12.7 11.0		11.0 9.3	
(1.7)	10.1 8.4		10.7 9.0	
	10.4 8.7	(1.7)	10.8 9.1	
	10.5 8.8		10.7 9.0	
50	10.5 8.8	50	10.7 9.0	
	10.8 9.1		10.5 8.8	
	11.0 9.3		10.5 8.8	
	11.0 9.3		10.6 8.9	
	11.0 9.3		10.6 8.9	
11+00	10.8 9.1	13+00	10.6 8.9	
	10.8 9.1		10.5 8.8	
	10.8 9.1		10.5 8.8	

4-3-47
STA 98+00

DIST	SOUND	?
13+30	10.4	8.7
	10.4	8.7
50	9.5	7.8
?	8.0	6.3
(1.7) assumed AF	7.7	6.0
	8.0	6.3
	8.0	6.3
14+00	8.2	6.5
	8.4	6.7
	7.5	5.8
	4.5	2.8
		?

4-3-47
STA 96+75 SOUND EAST
CHECK FOR CHANNEL DEPTH FINAL SOUNDINGS
0+00 = W. SHORE BL

LINES ARE L TO COASTER ETC + KINGSTON BL

DIST	SOUND	DIST	SOUND
5+00	11.0 - 9.8	11.5	10.3
	11.8 - 10.6	11.3	10.1
	12.0 - 10.8	11.0	9.8
(1.2)	12.0 - 10.8	7+00	11.0 - 9.8
	12.0 - 10.8	7+00	11.0 - 9.8
50	12.1 - 10.9		10.8 - 9.6
	11.0 - 9.8	(1.2)	10.7 - 9.5
	11.7 - 10.5		10.3 - 9.1
	11.7 - 10.5	50	10.2 - 9.0
	11.7 - 10.5		10.0 - 8.8
6+00	12.0 - 10.8		
	12.5 - 11.3		
	12.0 - 10.8		
	11.5 - 10.3	8+00	9.5 - 8.3
	11.5 - 10.3	14.7	13.5
50	11.5 - 10.3	9.4	8.2
	11.5 - 10.3	9.3	8.1

STA - 96+75

4-3-47

0+00 = MESHINE STA - 96+50
OF B.L.

4-3-47

SOUND EAST 50

LINES ARE \perp TO COASTER ECC. & KINGSTON $\frac{1}{4}$

DIST	SOUND	DIST	SOUND	DIST	SOUND
8+50	9.2	8.0	9.5	9.5	8.3
8+50	9.5	8.3		9.5	8.3
	9.4	8.2	10+50	9.9	8.7
	9.4	8.2		9.8	8.6
	9.5	8.3	(1.2)	9.7	8.5
	9.8	8.6		9.8	8.6
9+00	9.8	8.6		9.7	8.5
	9.9	8.7	11+00	9.8	8.6
(1.2)	9.9	8.7		9.8	8.6
	9.8	8.6		9.8	8.6
	9.6	8.4			
9+50	9.5	8.3			
	9.3	8.1			
	9.0	7.8			
	9.2	8.0			
	9.0	7.8			
10+00	9.0	7.8			
	9.2	8.0			
	9.4	8.2			

DIST	SOUND	DIST	SOUND	DIST	SOUND
5+00	11.0	10.0		11.2	10.2
	11.1	10.1	7+00	11.0	10.0
	11.2	10.2		11.0	10.0
	11.3	10.3		11.0	10.0
	11.4	10.4		11.0	10.0
7+50	11.0	10.0		10.8	9.8
	10.8	9.8	+50	10.5	9.5
(1.0)	10.7	9.7	(1.0)	10.5	9.5
10.9	9.9			10.7	9.7
	11.1	10.1		10.8	9.8
8+00	11.3	10.3		10.5	9.5
	10.9	9.9	8+00	10.0	9.0
	10.8	9.8		9.0	8.0
	10.6	9.6		8.3	7.3
	10.6	9.6		8.3	7.3
+50	10.7	9.7		8.4	7.4
	11.0	10.0	9.0	8.6	7.6
	11.2	10.2		8.8	7.8
	11.2	10.2		8.8	7.8

DIST	SOUND	DIST	SOUND
'	8.8	-7.8	'
'	8.8	7.8	'
9+00	8.9	7.9	11+00
	9.0	8.0	
	8.8	7.8	
(1.0)	8.9	7.9	(1.0)
	9.2	8.2	
50	8.6	7.6	50
	8.9	7.9	
	9.0	8.0	
	8.6	7.6	
	8.6	7.6	
10+00	8.5	7.5	
	8.7	7.7	
	8.8	7.8	
	9.0	8.0	
	8.8	7.8	
50	9.0	8.0	
	9.2	8.2	
	9.3	8.3	

0+00=W/S B/L 96+25 SOUND EAST 71
 LINES ARE ⊥ TO COASTER ECG. & KINGSTON B/L

DIST	SOUND	DIST	SOUND
5+00	11.0	10.0	'
	10.8	9.8	7+00
	10.8	9.8	'
	11.0	10.0	'
	10.8	9.8	'
50	10.9	9.9	(1.0)
(1.0)	10.6	9.6	50
	10.7	9.7	'
	11.0	10.0	'
	11.0	10.0	'
5+00	11.0	10.0	'
	11.0	10.0	8+00
	10.4	9.4	'
	10.4	9.4	'
	10.8	9.8	'
50	11.0	10.0	'
'	10.9	9.9	50
'	10.8	9.8	'
'	11.0	10.0	'

STA - 96+25 4-3-47		DIST	SOUND	DIST	SOUND
'	11.9	10.9	'	8.2	72
'	12.4	11.4	'	7.9	69
9+00	13.3	12.3	11+00	8.0	70
'	11.9	10.9	'	7.9	69
'	9.4	8.4	'	8.0	70
(1.0)	11.1	10.1	(1.0)	8.3	73
'	12.4	11.4	'	8.0	70
50	12.6	11.6	50	8.8	78
'	14.2	13.2	'	9.0	80
'	15.6	14.6	'	9.5	85
'	16.8	15.8	'	9.4	84
'	16.8	15.8	'	9.0	80
16+00	17.0	16.0	12+00	8.8	78
'	15.5	14.5	'	8.8	78
'	13.0	12.0	'	8.6	76
'	12.6	11.6	'	8.1	71
'	11.0	10.0	'	8.0	70
50	8.5	7.5	50		
'	8.6	7.6			
'	8.3	7.3			

STA 96+00		SOUND EAST		0+00 = W. SHORE	
7-9-47 52					
BL. LINES ARE J TO BL.					
DIST.	SOUND	DIST.	SOUND	DIST.	SOUND
5+00	14.6	8.9	15.7	10.0	
	15.0	9.3	15.5	9.8	
855	15.2	9.5	7+00	18.5	17.6
(5.9)	15.4	9.7		21.2	15.5
	15.4	9.7		23.0	17.3
50	15.4	9.7		24.5	18.8
	15.4	9.7		25.1	19.4
	15.4	9.7	50	25.5	19.8
	15.8	10.1	(5.7)	25.5	19.8
	15.8	10.1		27.0	21.3
6+00	15.5	9.8		27.0	21.3
	15.5	9.8		27.0	21.3
	15.5	9.8	8+00	27.0	21.3
	15.5	9.8		23.5	17.8
	15.5	9.8		23.5	17.8
50	15.5	9.8		24.0	18.3
	15.7	10.0		22.1	16.4
	15.8	10.1	50	21.5	15.8

4-4-47-96+00

DIST	SOUND	DIST.	SOUND
8+60	21.0	15.4	16.0 104
	21.0	15.4	13.0 11.4
	20.7	15.1	16.5 109
	21.5	15.9	16.2 106
9+00	22.5	16.9	11+00 16.0 104
9:02	23.1	17.5	14.5 8.9
(5.6)	23.0	17.4	15.5 9.9
	21.5	15.9	15.2 9.6
	23.0	17.4	15.4 9.8
50	23.8	18.2	50 17.0 11.4
	22.4	16.8	17.3 11.2
	23.4	17.8	17.1 11.6
	23.5	17.9	(5.5) 17.8 12.3
	23.5	17.9	16.8 11.3
10+00	23.5	17.9	12+00 13.0 7.5
	21.5	15.9	13.0 7.5
	22.7	17.1	13.0 7.5
	22.5	16.9	12.8 7.3
	22.0	16.4	13.0 7.5
50	20.4	14.8	50 13.0 7.5

96+00 - 4-4-47

53

DIST	SOUND	DIST	SOUND
	13.0 7.5		8.5 2.9
	13.1 7.6		9.0 3.4
	12.8 7.3	(5.6)	8.5 2.9
	12.5 7.0		9.8 4.2
13+00	12.4 6.9	15+00	12.0 6.4
	11.8 6.3		
	11.5 6.0		
	(5.5) 10.2 4.8		
	9.5 3.9		
50	9.0 3.4		
	8.2 2.6		
	8.0 2.4		
	8.0 2.4		
	8.0 2.4		
14+00	8.4 2.8		
	8.5 2.9		
	9.7 4.1		
	10.0 4.4		
	9.8 4.2		
50	9.0 3.4		

4-4-47

STA 95+75 SOUND EAST

0+00 = W. SHORE B/L LINES ARE

RUN AT RT. ANGLES TO B/L.

DIST SOUND DIST SOUND

5+00 14.7 9.1 15.5 9.9

15.0 9.4 15.5 9.9

9:20 15.0 9.4 15.5 9.9

(5.6) 15.0 9.4 7+00 20.0 14.4

15.0 9.4 22.2 16.6

50 15.0 9.4 (5.6) 22.8 17.2

15.2 9.6 24.5 18.9

15.2 9.6 27.5 18.9

15.2 9.6 50 28.5 18.9

15.0 9.4 30.0 24.4

6+00 15.3 9.7 30.2 24.4

15.3 9.7 30.0 24.4

15.0 9.4 30.0 24.4

15.4 9.8 8+00 29.0 23.0

15.4 9.8 28.1 22.0

50 15.4 9.8 28.1 22.0

15.5 9.9 27.7 22.0

95+75-4-4-47

DIST SOUND DIST SOUND

26.7 21.1 21.0 15.4

50 26.0 20.4 50 17.4 11.8

25.2 19.6 19.5 13.9

24.4 18.8 19.0 13.4

23.0 17.4 (5.6) 20.3 14.7

23.0 17.4 21.2 15.6

9+00 24.1 18.5 11+00 20.4 14.8

24.6 19.0 20.0 14.4

25.0 19.4 21.0 15.4

(5.6) 25.0 19.4 23.4 17.8

24.5 18.9 26.0 20.4

50 24.5 18.9 50 26.5 21.0

24.0 18.4 26.5 20.9

24.0 18.4 26.0 20.4

24.0 18.4 25.0 19.4

22.5 16.9 22.5 16.9

10+00 20.0 14.4 12+00 19.4 13.8

19.2 13.6 16.0 10.4

22.0 16.4 13.0 7.4

22.5 16.9 12.8 7.2

95+75 - 4-4-45

DIST	SOUND	DIST	SOUND
	13.0 7.5		17.2
50	13.0 7.5	50	16.5
	13.3		15.4
(5.6)	13.6		15.0
	13.8	(5.6)	14.3
	13.8		14.0
13+00	14.1	15+00	14.0
	13.8		
	14.0		
	13.6 8.1		
	13.7		
50	14.5		
	15.3		
	15.0		
	15.0		
	14.8		
14+00	14.2		
	15.5		
	16.7		
	17.2		

4-4-47

STA 95+50 - SOUND EAST

0+00 = W. SHORE B/L. LINES AT 90° BL.

DIST	SOUND	DIST	SOUND
5+00	15.8 -10.2		15.0
	15.6		19.4
9.50	15.9	7+00	21.5 -16.0
(5.6)	15.5		23.3
	15.4		24.5
50	15.0 -9.4		26.0
	15.0		29.2
	14.7	50	29.4 -23.9
	14.8		29.5
	15.0	(5.5)	29.5
6+00	15.0 -9.5		29.3
	15.0 9.4		28.6
	15.0	8+00	28.2 -22.7
	15.0		28.0
	15.0		27.0
50	15.0 -9.5		26.1
	15.0		24.0
	14.7	50	21.8 -16.3

95+50-4-4-47			95+50-4-4-47		
DIST	SOUND		DIST	SOUND	
8+60	23.5	18.0	21.0	15.5	
	23.5	18.0	20.1	14.6	
	23.3	17.8	17.3	11.8	
	23.8	18.3	17.5	12.0	
9+00	24.1	18.6	11+00	17.0	11.5
	24.0	18.5	18.6	13.0	
(5.5)	23.5	18.0	16.3	10.5	(5.4)
	21.0	15.5	(5.4)	20.0	14.6
	18.1	12.6	24.0	18.6	
50	21.4	15.9	50	26.4	21.0
	21.7	16.2	26.0	20.0	(5.3)
	22.0	16.5	26.3	20.1	
	22.4	16.9	26.0	20.6	
	22.1	16.6	26.0	20.1	
10+00	19.0	13.5	12+00	20.5	15.1
	19.5	14.0	18.0	12.6	
	15.4	11.9	15.5	10.1	
	19.3	13.8	14.3	8.9	
	18.4	12.9	12.7	7.3	
50	19.5	14.0	50	13.0	7.6

95+50-4-4-47			95+50-4-4-47		
DIST	SOUND		DIST	SOUND	
	13.1	7.7	13.0	7.6	7.7
	13.8	8.4	13.0	7.7	
	14.0	8.6	(5.3)	13.0	7.7
	13.5	8.1	13.0	7.7	
13+00	14.0	8.6	15+00	13.0	7.7
	14.2	8.8	13.1	7.8	
(5.4)	15.3	9.9	13.1	7.8	
	16.0	10.6	13.1	7.8	
	16.8	11.5	13.5	8.2	
50	17.4	12.1	50	13.9	8.6
	(5.3)	17.5	12.2	13.5	8.2
	17.5	12.2	13.8	8.5	
	17.7	12.4	14.2	8.9	
	17.5	12.2	14.4	9.1	
14+00	17.5	12.2	16+00	14.5	9.2
	17.4	12.1			
	17.3	12.0			
	17.2	11.9			
	16.7	11.4			
50	14.5	7.2			

4-4-47				95+25 - 4-4-47			
STA 95+25 SOUND EAST, DIST SOUND				DIST SOUND			
W. SHORE B/L. LINES ARE 90° TO B/L.							
DIST	SOUND	DIST	SOUND	DIST	SOUND	DIST	SOUND
				17.1	12.0	19.7	14.7
				16.0	10.9	18.5	13.5
5+00	15.3	10.1	22.5	17.0	11.9	15.3	10.3
	15.4	10.2	24.0	17.5	12.4	17.3	12.3
	15.3	10.1	7+50 24.5	9+50 18.5	13.4	11+00 18.0	13.0
10:25	15.4	10.2	24.5	19.4	14.3	20.3	15.3
(5.2)	15.5	10.3	27.0	(5.1) 17.0	11.9	23.5	18.5
50	15.3	10.1	(5.2) 29.3	15.8	10.7	(5.0) 24.4	19.4
	15.1	9.9	28.0	15.2	10.1	24.0	19.0
	14.9	9.7	50 25.1	50 19.0	13.9	50 22.4	17.4
	14.7	9.5	18.5	16.1	11.0	20.5	15.5
	14.2	9.0	19.4	18.0	12.9	20.2	15.2
6+00	14.6	9.4	19.3	18.0	12.9	19.0	14.0
	14.3	9.1	18.7	16.2	11.1	16.8	11.8
	14.4	9.2	8+50 20.5	10+00 15.7	10.6	12+00 15.5	10.5
	14.4	9.2	24.5	15.4	10.3	15.0	10.0
	14.1	8.9	25.0	14.4	9.3	13.5	8.5
50	14.3	9.1	23.7	14.4	9.3	13.0	8.0
	17.0	11.8	20.0	15.6	10.5	12.8	7.8
	20.5	15.3	8+00 18.1	50 19.3	14.2	250 13.0	8.0
		50					

95+25-4-4-47

DIST	SOUND	DIST	SOUND
12+60	13.0	8.0	12.3 7.3
	14.3	9.3	12.3 7.3
	14.3	9.3	12.2 7.2
	16.2	11.2	12.0 7.0
13+00	17.0	12.0	15+00 12.0 7.0
	17.5	12.5	12.8 7.8
(5.0)	18.3	13.3	(5.0) 13.4 8.4
	18.5	13.5	13.6 8.6
	18.8	13.8	14.0 9.0
13+50	18.5	13.5	50 14.0 9.0
	18.2	13.2	
	17.5	12.5	
	17.5	12.5	
	17.1	12.1	
14+00	15.3	10.3	
	14.0	9.0	
	12.8	7.8	
	12.5	7.5	
	11.7	6.7	
50	12.2	7.2	

4-4-47.

13

STA 95+00 SOUND EAST 0+00 =			
W. SHORE B/L. LINES AT 90° TO B/L.			
DIST	SOUND	DIST	SOUND
5+00	14.5	9.7	24.2 19.4
10.55	15.0	10.2	25.7 20.9
(4.8)	15.3	10.5	7+00 26.6 21.8
	15.0	10.2	28.0 23.2
	14.7	9.9	30.0 25.2
50	14.7	9.9	31.0 26.2
	14.5	9.7	30.0 25.2
	14.3	9.5	50 28.2 23.4
	14.1	9.3	22.0 17.2
	14.0	9.2	(4.8) 19.1 14.3
6+00	14.0	9.2	23.5 18.7
	14.0	9.2	24.0 19.2
	13.8	9.0	8+00 24.7 19.9
	13.8	9.0	25.5 20.7
	14.4	9.6	27.0 22.2
50	15.3	10.5	27.4 22.6
	20.5	15.7	27.0 22.2
	22.0	17.2	50 26.0 21.2

95+00 - 4-4-47			
DIST	SOUND		DIST SOUND
8+60	23.5	18.8	15.4 105
	21.8	17.1	14.0 94
	19.3	14.6	18.0 134
	17.2	12.5	19.0 144
9+00	16.4	11.7	11+00 18.2 136
11:02 (4.7)	17.3	12.6	16.5 119
	18.0	13.3	19.4 145
	15.7	11.0	19.4 145
	14.1	9.4	19.4 145
50	14.5	9.8	50 18.5 139
	14.8	10.1	(4.6) 17.5 129
	15.4	10.7	16.7 121
	15.0	10.3	16.1 115
	14.4	9.7	15.0 105
10+00	14.4	9.7	12+00 14.3 71
	14.2	9.5	13.8 92
	16.0	11.3	13.8 92
	17.0	12.3	13.4 81
	16.3	11.6	12.9 83
50	15.5	10.8	50 12.7 84

95+00 - 4-4-47				59
DIST	SOUND		DIST SOUND	
	13.8	9.1	13.8	9.2
	15.0	10.4	13.7	9.1
	16.7	12.1	13.2	8.7
	17.7	13.1	(4.5) 13.2	8.7
13+00	18.5	13.9	15+00 13.5	10.0
	19.0	14.4	13.4	8.9
	18.5	13.9	13.3	8.7
	19.0	14.4	13.3	8.7
(4.6)	18.0	13.4	13.2	8.6
50	16.5	11.9	50 13.2	8.6
	14.6	10.0		
	14.0	9.4		
	14.8	10.2		
	16.2	11.6		
14+00	15.5	10.9		
	16.0	11.4		
	17.4	12.8		
	16.8	12.2		
	15.5	10.9		
50	14.3	9.1		

4-4-47

STA 94+75 SOUND EAST 0+00 DIST

W. SHORE B/L LINES RUN AT 90° TO B/L

DIST SOUND

5+00 13.0

13.2

12:35 13.1

(3.6) 13.1

13.2

50 13.0

12.8

12.8

12.7

12.5

6+00 12.5

12.8

13.0

13.4

13.5

50 13.5

14.6

18.0

DIST SOUND

19.6

20.4

7+00 20.8

24.5

27.0

27.0

27.5

50 26.0

23.2

21.2

(3.6) 23.4

24.1

8+00 25.2

27.0

(3.5) 27.0

26.1

24.8

50 22.5

94+75-4-4-47

SOUND DIST SOUND

60

20.3

16.0

17.0

16.0

13.8

14.8

14.0

15.1

9+00 13.5

11+00 14.0

13.0

14.0

12.9

16.9

14.1

17.5

13.4

18.4

50 13.4

50 18.5

13.5

(3.5) 18.5

13.2

15.0

12.0

(3.4) 14.6

13.5

14.0

10+00 12.8

12+00 12.7

13.0

13.0

15.3

12.7

13.6

12.5

15.0

13.5

50 15.5

50 13.2

94+75 - 4-4-47			
DIST	SOUND	DIST	SOUND
12+60	15.4		13.2
	13.6		12.5
	13.7	(3.4)	13.0
	13.6	(3.3)	13.5
13+60	13.1	15+00	13.2
	14.7		12.0
(3.4)	16.0		12.0
	16.0		12.0
	14.1		12.0
50	13.5	50	12.0
	14.1		
	15.9		
	15.5		
	15.8		
14+00	15.8		
	16.0		
	16.0		
	15.7		
	15.4		
50	14.7		

4-4-77				61
STA. 94+50 SOUND EAST. 0+00 =				
W. SHORE B/L. LINES ARE RUN AT 90° TO B/L.				
DIST	SOUND		DIST	SOUND
5+00	12.9	-10.2		16.1
^{2.9} 13:05	12.8			19.0
(2.7)	12.8		7+50	21.2 -18.5
	13.0			22.8
	13.0			25.0
50	12.9	-10.2		27.0
	12.7			27.7
	12.3		⁵⁰ 7+00	28.0 -25.3
	12.3			28.0
	12.5			27.1
6+00	12.7	-10.0		27.2
	12.7			27.4
	13.0		8+00	27.8 -25.1
	13.0			27.8
	13.0		(2.7)	27.8
50	13.4	-10.7	(2.6)	28.0
	12.9			28.0
	12.9		50	26.1 -23.4

94+50		4-4-47			
DIST	SOUND	DIST.	SOUND		
8+60	23.8		16.4		
	22.5		16.0		
	20.5		14.8		
	19.0		14.2		
9+00	16.4	-13.8	11+00	13.2	-10.6
	13.1			18.3	
	15.7			19.0	
(2.6)	16.5		(2.5)	18.5	
	16.3			16.8	
50	16.0	-13.4	50	19.8	-17.3
	14.0			18.0	
	12.8			15.7	
	12.0			14.1	
	12.7			13.5	
10+00	12.2	-9.6	12+00	12.6	-10.1
	12.2			12.8	
	10.4	7.8		13.1	
	11.0			13.4	
	12.3			13.4	
50	14.7	-12.1	50	13.4	

94+50		4-4-47		62	
DIST	SOUND	DIST	SOUND		
+60	13.4	+60	14.0		
	13.4		13.1		
	13.2		13.3		
	13.3		14.0		
13+00	13.4	15+00	13.8		
	13.7		13.0		
	13.8		12.5		
	13.8		12.3		
	14.2		12.3		
50	14.2	+50	12.5		
	15.0				
	15.2				
	15.2				
	15.2				
14+00	14.7				
	14.3				
(2.5)	14.0				
(2.4)	14.0				
	14.0				
50	14.2				

STA 94+25 SOUND EAST 0400 =
W/SHORE B/L LINES ARE RUN AT 90° TO B/L

94+25 4-4-47

DIST	SOUND	DIST	SOUND
5400	13.2		16.5
13:35	13.2	7+00	17.8
(2.2) ^{2.7}	13.1		18.9
	12.8		19.3
	12.8		24.0
50	12.9		27.0
	13.0	50	27.0
	12.7		28.0
	12.8		28.0
	12.8		27.7
6+00	13.1	(2.2) ^{2.7}	27.5
	13.2	8+00	27.5
	13.3	2.1 ^{2.6}	27.5
	13.3		27.5
	13.1		27.5
50	13.2		27.5
	12.8	50	26.7
	12.7		25.6
	13.5		24.0

DIST	SOUND	DIST	SOUND
	22.5		17.5
	22.0		16.0
9+00	19.5	11+00	15.8
	16.5		15.0
	14.7		19.0
	15.0		20.5
	13.8		20.5
50	13.5	50	18.6
	14.0		15.1
	13.1		15.2
(2.1) ^{2.4}	12.8		15.0
	12.1		14.7
10+00	10.8	8.0	12+00 13.2
	9.4		12.7
(2.5)	11.3		12.9
(2.0)	12.0		13.4
	12.5		13.4
50	16.7	50	13.4
	18.3	2.0 ^{2.5}	13.1
	18.2	(1.9) ^{2.4}	13.0

DIST	SOUND	DIST	SOUND
	13.0		12.7
	12.9		12.8
13+00	13.1	15+00	13.0
(2.4)	13.3		
(1.9)	13.3		
	13.3		
	13.5		
50	14.2	50	
	14.6		
	14.6		
	14.5		
	14.3		
14+00	14.0		
	13.5		
	13.0		
	12.9		
	13.0		
50	13.0		
	13.0		
	12.5		

STA - 94+00 SOUND EAST 0+00 =
 W/SHORE B/L LINES ARE RUN AT 90° TO B/L ⁶⁴

DIST	SOUND	DIST	SOUND
5+00	11.5 -9.4		12.5
14+10 2.3	12.0	7+00	12.4 -10.3
(2.1)	12.0		12.3
	12.8		16.5
	12.7	<u>2.1</u>	<u>19.0</u>
50	13.0 -10.9	(2.0)	20.3 -18.3
	12.9	50	23.5
	12.8		25.0
	11.8		26.2
	11.2		26.0
6+00	10.5 -8.4		24.5
	10.5	8+00	25.0 -23.0
	11.0		26.0
	12.3		25.5
	12.8		25.1
50	12.8 -10.7		24.0
	12.7	50	24.8 -22.8
	12.9		24.2
	12.3		24.0

94+00			4-4-47			94+00			4-4-47			6v
DIST	SOUND		DIST	SOUND		DIST	SOUND		DIST	SOUND		
	23.1			19.5			12.5			12.1		
(2.0)	22.2			19.5			12.8			12.0		
9+0.0	20.8	-18.8	11+0.0	19.0	-17.0	13+0.0	13.0		15+0.0	12.5		
	19.0			19.5		(1.9)	12.7		14:38			
	16.3			19.7			12.8					
	16.0			17.8		(1.9)	12.8					
	15.5			20.3			13.3					
50	16.0	-14.0	50	20.2	-18.2	50	13.5					
	14.8			19.7			13.0					
	13.3	$\frac{10.6}{1.7}$		17.0			14.0					
	11.4	1.7		12.5			13.8					
	9.8			11.5			13.2					
10+0.0	13.4	-11.4	12+0.0	12.0	-10.0	14+0.0	12.8					
	15.5			12.0			12.5					
	16.5			12.0			12.4					
	17.0			12.0			12.4					
	16.0			12.3			12.4					
50	19.3	-17.3	50	12.3		50	12.2					
2.0	19.5			12.4			12.0					
(1.9)	19.5			12.5			12.0					

STA-112+00

4-9-47

SOUND WEST 0+00 = CARMEL POINT 3/6

DIST	SOUND	DIST	SOUND
1+14	0.0	+1.6	
08:48	0.5	+1.1	
(1.6)	2.0	-0.4	
	6.0	4.4	
50	5.3	3.7	
	7.4	5.8	
	9.0	7.4	50
	10.7	9.1	
	10.5	8.9	
2+00	10.5	8.9	
	10.5	8.9	
08:50	10.5	8.9	
	10.3	8.7	
08:51	10.0	-8.4	

STA-111+00

4-9-47⁶⁶

SOUND WEST 0+00 = CARMEL POINT 3/6 +

DIST	SOUND	DIST	SOUND
1+94	0.0	+1.7	
2+00	0.4	+1.4	
08:57	1.5	+0.2	
(1.7)	4.0	-2.3	
	4.4	2.7	
	8.3	6.6	
50	10.4	8.7	
	10.8	9.1	
	10.9	9.2	
	11.0	9.4	
08:59	11.0	-9.4	

2+00

STA-110+00				STA-109+00				67	
4-9-47				4-9-47					
SOUND	WEST	0+00 = CARMEL POINT B/L		SOUND	WEST	0+00 = CARMEL POINT B/L		LINE X	
DIST	SOUND	DIST	SOUND	DIST	SOUND	DIST	SOUND	DIST	SOUND
2+36	00	+1.7		2+95	0.0	+1.8		8.5	6.6
09:05	0.4	+1.3		3+00	0.3	+1.5		8.5	6.6
(1.7) 50	3.0	-1.3		09:16	2.4	-0.6	5+00	8.5	6.6
	4.0	2.3		(1.8)	6.5	4.7		8.1	6.2
	6.5	4.8		8.8	6.	7.0		7.5	5.6
	7.6	5.9			9.2	7.4		7.6	5.7
	9.0	7.3		50	9.2	7.4		7.3	5.4
3+00	9.0	7.3			9.0	7.2	50	7.3	5.4
	9.2	7.5			8.5	6.7		7.5	5.6
	10.3	8.6			8.4	6.6	09:22	8.4	6.5
09:08	10.5	-8.8			8.3	6.5		10.2	8.3
14:00				14:00	8.3	6.5		9.5	7.6
50					8.1	6.3	6+00	9.4	7.5
					8.1	6.3	(1.9)	9.2	7.3
				09:19	8.1	6.3		9.6	7.7
				(1.9)	8.1	6.2		9.8	7.9
				50	8.3	6.4		10.0	8.1
					8.5	6.6	50	10.4	8.5
					8.4	6.5		10.0	8.1

STA. 109+00

4-9-47

STA - 108+00

4-9-47

68

DIST SOUND

DIST SOUND

SOUND WEST

0+00 = CARMEL POINT 3/4 X

9.8 7.9 10.2 8.4

DIST SOUND DIST SOUND

9.5 7.6 10.2 8.3

7+80 1.0 +1.1 4.3 2.2

9.4 7.5 10.0 8.1

10:03 1.5 +0.6 4.0 1.9

7+0.0
50 9.8 7.9 9+00
50 9.5 7.6

8+00 1.5 +0.6 4.3 2.2

10.1 8.2 9.2 7.3

2.5 -0.4 10+00 3.0 -0.9

10.1 8.2 09:28 7.0 5.1

2.6 0.5 3.8 -1.7

10.0 8.1 5.8 3.8

2.8 0.7 (2.1) 2.5 -0.4

9.8 7.9 (2.0) 5.1 3.1

2.9 0.8 1.3 +0.8

+50
7+00 9.1 7.2 9+00
+50 4.5 2.4

50 2.9 0.8 +37 0.0 +2.1

09:25 8.7 6.8 3.2 1.2

(2.1) 3.4 1.3 10:07

(1.9) 8.5 6.6 2.0 0

3.5 1.4

8.4 6.5 1.7 +0.3

4.0 1.9

10+00 8.8 6.9 +90
+70 0.0 +7.0

4.2 2.1

8+0.8
50 8.9 7.0 09:30

9+00 4.5 2.4

8.9 7.0

5.0 2.9

9.1 7.2

3.5 1.4

9.8 7.9

3.2 1.1

10.0 8.1

4.0 1.9

+50
8+00 10.3 8.4

50 4.0 1.9

10.4 8.5

3.7 -1.6

Carmel B.L.

+ H.I. - E.I.
Top of Stake
11.4

Contd from P. 11

4/8/47 69
Watson

X	H.I.	N.	E.	E.I.
R 104700 Carmel B.L. 4.3		<u>N. 7</u>	5.2	10.5
E. 65			5.0	10.7
E 110			5.5	10.7
E. 155			9.0	6.7
E. 195			12.4	3.3
W. 70			5.2	10.5
W. 153			5.4	10.3
W. 192			8.9	6.8
W 240			12.7	3.0
R 104400 74				Top of Stake 11.63
R 104400 Carmel B.L. 4.4	16.0	5.3		10.7
W. 225			12.7	3.3
W. 200			11.0	5.0
W. 168			8.3	7.7
W. 125			5.8	10.2
W. 60			5.5	10.5
E 54			6.3	9.7

+ H.I.	-	E.I.
R 104400 Gnts. 16.0		
E 95	7.4	8.6
E 130	10.3	5.7
E 168	14.9	3.1
X		Top of Stake 6.1
R 103400 Carmel B.L. 4.3	10.4	4.9
E 45	7.3	3.1
W. 47	3.9	6.5
W. 105	4.3	6.1
W. 105	5.7	4.7
W. 188	7.3	3.1

112400
Carmel B.L. 3.3 11.85

112400 C.B.L.
Top of Stake
8.55

W.S. 4/9/47 8:10 AM 10.45 1.4

	+	H.I.	-	E.I.	X
				Top of stake	
				12.7	

X Carmel B.L.
108+00 4.0 16.2

W 650 14.0 2.2

W 704 14.4 1.8

W 760 14.5 1.7

W 785 15.0

X on C.W. sta. 103+00 8.48

W. Shore B.L.
103+00 4.8 13.28 5.2 8.1

W. 53 4.8 8.5

W 47 5.2 8.1

F. 32 5.2 8.1

E. 60 7.9 5.3

E. 85 10.7 4.6

"x" C.W. sta. 102 8.43

W. Shore B.L.
K 102+00 4.6 13.03 5.0 8.0

109
E. 109 9.8 3.2
10.3

E. 90 8.1 4.0

	+	H.I.	-	E.I.
K 102+00 Contd				13.03

E. 60 5.9 7.1

E. 30 5.1 7.9

W 25 5.1 7.9

W 52 4.7 8.3

X
"x" C.W. 101+00 8.42

W. Shore B.L.
K 101+00 4.6 13.02 5.1 7.9

W. 48 4.8 8.2

W 29 4.8 8.2

E. 30 5.2 7.8

E. 60 5.7 7.3

E. 85 7.8 5.2

E. 110 10.1 2.9

	+	H.L.	-	Elev.
"X" in CN 34100				8.47
W. Shore BL				
X 100+00	4.7	14.87	5.0	7.9

E. 123			10.0	2.9
--------	--	--	------	-----

E. 98			7.3	5.6
-------	--	--	-----	-----

E. 72			5.1	7.8
-------	--	--	-----	-----

E. 40			5.1	7.8
-------	--	--	-----	-----

W. 40			4.7	8.2
-------	--	--	-----	-----

	+	H.L.	-	Elev.
"X" in CN 99+00				8.51
W. Shore BL.				
X 99+00	4.6	13.1	4.9	8.2

W. 25			4.5	8.7
-------	--	--	-----	-----

E. 34			5.1	8.0
-------	--	--	-----	-----

E. 85			5.0	8.1
-------	--	--	-----	-----

E. 115			7.5	5.6
--------	--	--	-----	-----

E. 147			10.0	3.1
--------	--	--	------	-----

	+	H.L.	-	E.L.
"X" in CN 95+00				8.45
W.S. BL. 95+00.				
X	4.7	13.15	5.1	8.1

E. 150			10.0	3.1
--------	--	--	------	-----

E. 135			7.9	5.3
--------	--	--	-----	-----

E. 93			4.8	8.3
-------	--	--	-----	-----

E. 63			4.7	8.4
-------	--	--	-----	-----

E. 31			4.8	8.3
-------	--	--	-----	-----

W. 9			4.9	8.2
------	--	--	-----	-----

	+	H.L.	-	Elev.
"X" in CN 97+00				8.40
W.S. BL.				
X 97+00	4.9	13.3	4.9	8.4

E. 27			5.4	7.9
-------	--	--	-----	-----

E. 65			5.0	8.3
-------	--	--	-----	-----

E. 98			4.6	8.7
-------	--	--	-----	-----

E. 135			7.2	6.1
--------	--	--	-----	-----

E. 173			10.3	3.0
--------	--	--	------	-----

	+	H.I.	-	E.I.
X				
X 96+00				8.6
W.S.B.L.				
A 96+00	√.0	13.6	√.0	8.6
E 155			10.7	2.9
E. 121			7.3	6.3
E. 87			√.6	8.0
F 55			√.6	8.0
E 155 EMCW			√.5	8.1

	+	H.I.	-	E.I.
X				
X 95+00	√.4			8.5
W.S.B.L.				
A 95+00	√.5	13.2	√.5	8.0
E 6			√.4	7.8
E. 35			√.5	7.7
E. 70			√.2	8.0
E. 98			7.7	5.5
E 128			10.2	3.0

	+	H.I.	-	E.I.
X				
"X" 94+00				8.5
W.S.B.L.				
A 94+00	√.3	13.8	√.3	8.5
E. 8			√.3	8.5
E. 60			√.2	8.6
E. 79			8.6	5.2
E 100			10.4	3.4

	+	H.I.	-	E.I.
X				
"X" 93+00				8.5
W.S.B.L.				
A 93+00	√.3	13.8	√.3	8.5
E.			√.3	8.5
F 52			√.8	8.0
E 80			8.0	5.8
E 120			10.3	3.5

7v

X

11.39
9.01
2.38

9/30/47
Indexed

PAVING VENTURA BLVD

STA + H.I. - ELEV. 73
+6.18

SEC 3+90⁶

STA	+	H.I.	-	ELEV.			
					S-40		5.4
B.M.	3.80	+6.18		+2.38	S-28		5.3 +1.1
					⊕		5.3 5.4 +0.9
5+21.7					N-28		6.1 6.4 +0.1
M.H.			5.28	+0.90	TOP		
"			10.28	-4.10	F.L.	N 40 (Concrete)	6.82 6.61 -0.64

B.C. SEC 4+38.33

SEC 3+74⁶

S-40			5.1	+1.1	S-40		5.4 +0.8
S-28			4.9	+1.3	S-28		5.3 +0.9
⊕			5.40	+0.8	⊕		5.4 +0.8
N 28			6.0	+0.2	N 28		6.4 -0.2
N 40			6.1	+0.1	N-40 (Concrete)		6.61 -0.43

SEC 4+00

3+50
SEC. 3+62²⁹

S-40					S-40		5.2 7.0 +1.0
S-28			5.0	+1.2	S-28		5.3 6.8 +0.9
⊕			5.3	+0.9	⊕		5.6 +0.6
N 28			6.1	+0.1	N-28		6.8 -0.6
N 40			6.5	-0.3	N-40		7.0 -0.8

STA	+	H.I	-	ELEV.
		+6.18		
		SEC. 3+00		
S-40			5.3	+0.9
S-28			5.4	+0.8
⊕			5.8	+0.4
N-28			7.1	-0.9
N-40			7.0	-0.8
		SEC. 2+50		
S-40			5.5	+0.7
S-28			5.5	+0.7
⊕			6.2	0.0
N-28			7.4	-1.2
N-40			7.4	-1.2
		SEC. 2+00		
S-40			5.8	+0.4
S-28			6.0	+0.2
⊕			6.5	-0.3
N-28			7.6	-1.4
N-40			7.7	-1.5

	+	6.18	-	Elev.	74
				SEC. 1+75	
S-40			6.0	+0.2	
S-28			6.3	-0.1	
⊕			6.7	-0.5	
N-28			7.7	-1.5	
N-40			7.7	-1.5	
				SEC. 1+50	
S-40			6.3	-0.1	
S-28			6.5	-0.3	
⊕			6.5	-0.3	
N-28			7.8	-1.5	
N-40			7.8	-1.5	
Top Foundation			6.47	-0.29	
				SEC. 1+00	
S-40			6.9	-0.7	
S-28			7.2	-1.0	
⊕			7.1	-0.9	
N-28			8.0	-1.8	
N-40			7.9	-1.7	
TP	3.77	+3.53	6.42	-0.24	

+ +3.53 - Elev.

SEC. 0+60.9

S-40	4.7	-1.2
S-28	4.8	-1.3
±	4.9	-1.4
N-28	5.4	-1.9
N-40	5.4	-1.9

SEC. 0+44.85

S-40	4.84	-1.3
S-28	4.8	-1.3
±	5.1	-1.6
N-28	5.6	-2.1
N-40	5.5	-2.0

SEC. 0+35.52

S-40 (Gutter)	5.13	-1.60
S-28	5.2	-1.7
±	5.3	-1.8
N-28 (C.T.)	5.80	-2.3
N-40	5.48	-1.95
Top C.B.	6.05	-2.52

+ +3.53 - Elev.

0+20 ±	5.17	-1.64
0+00 ±	4.38	-0.85
0+02 ±	5.01	-1.48
-0+02 ±	5.02	-1.49
BM-Top of F.H.	1.53	+2.00
Top of Slab, Gas Sta.	5.09	-1.56

Δ = 85°45' @ 0+00, turned R.F.

± to Center Power Pole = 8.9' north (16" pole)

Gate Valve = 22.5 north, Sta. 0+35.5

BARRAGAN
SHERRY
12-16-97
BRIGHT
CLEAR
COOL

12-16-97

(76)

LOCATION & PROFILE OF PROPOSED LAUNCHING

PROFILE CONT'D.

LOCATION & PROFILE OF PROPOSED LAUNCHING					PROFILE CONT'D.						
RAMP ON EL CARMEL POINT					DIST	SOUND		DIST	SOUND		
					2+15	2.6	+2.9	3+10	13.7	-8.2	
STA	+	H.I.	-	ELEV	20	3.1	+2.4	15	13.6	-8.1	
(13) STA-15+26 (MH.#5)	4.52	15.32		10.80	(5.5) 25	3.5	+2.0	(5.5) 20	13.5	-8.0	
0+00			4.68	10.64	30	4.6	+0.9	25	13.5	-8.0	
0+25			4.8	10.5	35	7.1	-1.9	30	13.5	-8.0	
0+50			5.0	10.3	40	8.2	-2.7	35	13.5	-8.0	
0+75			4.9	10.4	45	8.5	-3.0	40	13.6	-8.1	
1+00			4.9	10.4	2+50	9.0	-3.5	45	13.9	-8.1	
1+25			5.1	10.2	55	9.5	-4.0	3+50	14.0	-8.5	
1+50			6.66	8.66	60	9.9	-4.4	55	14.0	-8.5	
1+75			8.9	6.4	65	10.3	-4.8	60	14.0	-8.5	
1+80			9.30	6.02	70	10.5	-5.0	65	14.2	-8.7	
1+90			10.3	5.0	75	10.9	-5.4	70	14.2	-8.7	
SET T.B.M.			4.67	10.65	80	11.4	-5.9	75	14.2	-8.7	
DIST	SOUND		DIST	SOUND		85	12.0	-6.5	80	14.2	-8.7
1+95	(5.5) 0.7	+4.8			90	12.5	-7.0	85	14.2	-8.7	
2+00	1.2	+4.3			95	12.5	-7.0	90	14.3	-8.8	
2+05	1.5	+4.0			1+00	12.8	-7.3	95	14.2	-8.7	
2+10	2.0	+3.5			3+05	13.4	-7.9	1+00	14.2	-8.7	

Indexed

TOP HUB (13)
CARMEL PX. ST.
LINE. MH. #5

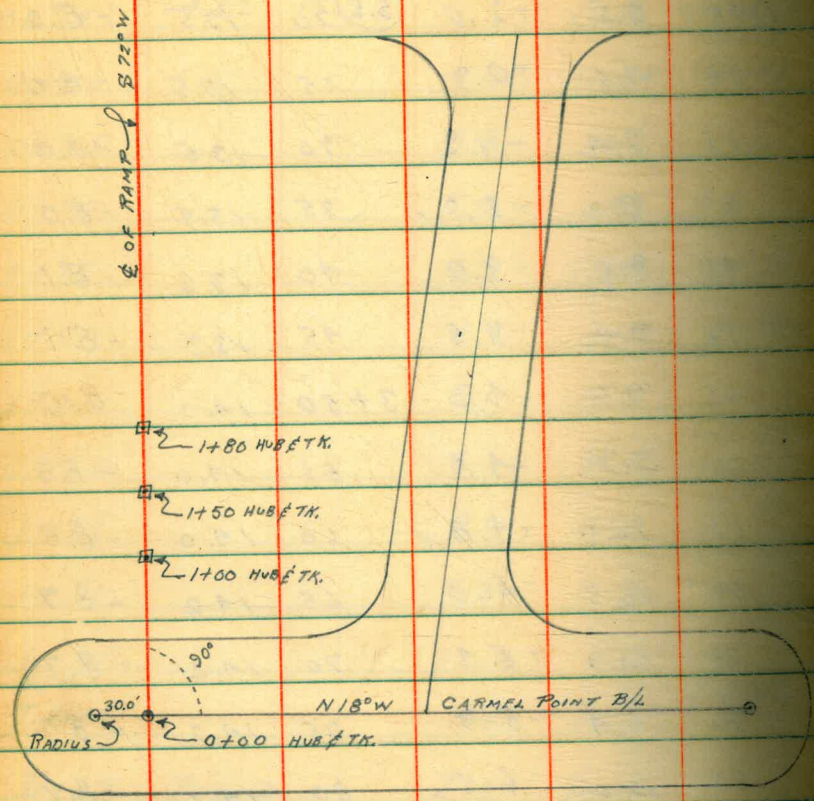
TOP HUB
(FLUSH)

TOP HUB
(FLUSH)

TOP HUB
(FLUSH)

TOP HUB AT
SOUTH RADIVS
EL CARMEL P.

LOCATION OF PROPOSED LAUNCHING RAMP ON EL CARMEL POINT



5' NORTH

STA 94+25

TIDE 1.6

$$10+00 = 7.4 = 5.8$$

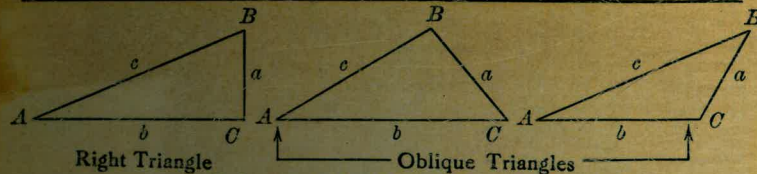
$$8' N + 10 = 8.0 = 6.4$$

$$10' N + 20 = 8.0 = 6.4$$

$$+ 30 =$$

9+90

TRIGONOMETRIC FORMULÆ



Solution of Right Triangles

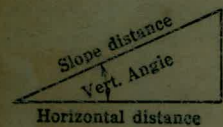
For Angle A. $\sin = \frac{a}{c}$, $\cos = \frac{b}{c}$, $\tan = \frac{a}{b}$, $\cot = \frac{b}{a}$, $\sec = \frac{c}{a}$, $\operatorname{cosec} = \frac{c}{a}$.

Given	Required	Formulas
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	$B = 90^\circ - A, b = a \cot A, c = \frac{a}{\sin A}$
A, b	B, a, c	$B = 90^\circ - A, a = b \tan A, c = \frac{b}{\cos A}$
A, c	B, a, b	$B = 90^\circ - A, a = c \sin A, b = c \cos A$

Solution of Oblique Triangles

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

REDUCTION TO HORIZONTAL



Horizontal distance = Slope distance multiplied by the cosine of the vertical angle. Thus: slope distance = 319.4 ft. Vert. angle = $5^\circ 10'$. From Table, Page IX, $\cos 5^\circ 10' = .9959$. Horizontal distance = $319.4 \times .9959 = 318.09$ 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. $\cos 5^\circ 10' = .9959$. $1 - .9959 = .0041$. $319.4 \times .0041 = 1.31$. $319.4 - 1.31 = 318.09$ 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.

1st pier of Sand of Bridge

*17
1.2
3.5
5.17
1.67
3.0*