

MISSION BAY

No 27

KOE
LEVEL BOOK

DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING

Roadway of any Width. Side Slopes 1 1/2 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.

Book # 27

5.0
12:43

BEFORE MOVING - POLE TO KENDAL

78° 22' 30"
HORSE TO CHIMNEY
49° 58'

AFTER MOVING - POLE TO KENDAL

94° 00'
HORSE TO CHIMNEY
49° 18'

The paper in this book No. 370A
is made of 50% high grade rag stock
with a WATER RESISTING surface sizing.

11,638-1. c, y, ya, km.

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BARRAGAN
SHERMAN
STANLEY 10-28-47

SOUNDINGS OF EAST HALF TIERRA DEL FUEGO ISLAND

~~103+00~~
103+00

0+00=PX, 280° E/STN. 103+00 CAUSEWAY B/W SOUND EAST.

DIST	SOUND	DIST	SOUND
1+00	2.6 +3.2	2+50	5.3 +0.5
08:59	3.9 +2.4	08:57	5.0 +0.8
(5.8)	4.0 +1.8		6.0 -0.2
	4.2 +1.6	(5.8)	6.2 -0.4
	4.9 +0.9		6.0 -0.2
50	5.5 +0.3	3+00	6.3 -0.5
	5.8 0.0		6.6 -0.8
	5.8 —		6.7 -0.9
	6.0 -0.2		6.8 -1.0
	6.4 -0.6		6.8 —
2+00	6.4 —	50	7.0 -1.2
	6.4 —		7.2 -1.4
	6.2 -0.4		7.0 -1.2
	5.8 0.0		7.0 —
2+40	5.4 +0.4	3+90	7.0 —

103+00 10-28-47

DIST	SOUND	DIST	SOUND
4+00	7.0 -1.2	5+80	4.7 +1.1
09:00	6.8 -1.0		4.7 —
	6.8 —	6+00	4.7 —
(5.8)	6.7 -0.9	(5.8)	4.6 +1.2
	6.6 -0.8		4.5 +1.3
50	6.5 -0.7		4.4 +1.4
	6.3 -0.5		4.2 +1.6
	6.0 -0.2	50	4.1 +1.7
	5.5 +0.3	09:09	
	5.2 +0.6		
5+00	5.2 —		
	5.0 +0.8		
	4.8 +1.0		
	4.8 —		
	4.8 —		
50	4.7 +1.1		
	4.7 —		
5+70	4.7 —		

Indexed

10-28-17

104+00

04:00 = Pt. 316 E/ST-104+00 CAUSEWAYS B/L: SOUND EAST

DIST	SOUND	DIST	SOUND
04:00	1.1 +4.7	2+30	5.7 +0.1
09:13	1.8 +4.0		5.5 +0.3
	2.8 +3.0	50	5.2 +0.6
1+00	2.9 +2.9	(5.8)	5.0 +0.8
(5.8)	3.0 +2.8		5.0 —
	3.2 +2.6	09:17	5.0 —
	3.9 +1.9		5.0 —
	4.6 +1.2	3+00	5.0 —
50	5.3 +0.5		5.0 —
	5.8 0.0		5.0 —
	6.0 -0.2		4.8 +1.0
	5.7 +0.1		4.5 +1.3
	5.5 +0.3	50	4.0 +1.8
2+00	5.3 +0.5		3.8 +2.0
	5.5 +0.3		3.8 —
2+20	5.5 —	3+80	3.8 —

10-28-17

104+00

DIST	SOUND	DIST	SOUND
3+90	3.8 +2.0	5+70	4.0 +1.8
4+00	3.9 +1.9		4.0 —
	4.0 +1.8	(5.8)	3.9 +1.9
(5.8)	3.8 +2.0	6+00	3.9 —
	3.8 —		3.8 +2.0
	3.5 +2.3		3.7 +2.1
50	3.5 —		3.6 +2.2
	3.3 +2.5		3.6 —
	3.4 +2.4	50	3.5 +2.3
	3.3 +2.5	09:22	
	3.2 +2.6		
5+00	3.2 —		
	3.4 +2.4		
	3.7 +2.1		
	3.9 +1.9		
09:20	4.1 +1.7		
5+50	4.2 +1.6		
5+60	4.1 +1.7		

10-28-77

PX 105+00

0+00 = Pt 1200 EST 105+00 CAUSEWAY Bk: SOUND EAST

DIST	SOUND	DIST	SOUND
0+10	1.4 +4.4	1+70	3.7 +2.1
09:30	2.7 +3.1		3.7 —
	3.0 +2.8	(5.8)	3.7 —
(5.8)	2.8 +3.0	2+00	3.7 —
50	2.5 +3.3		3.7 —
	2.1 +3.7		3.5 +2.3
	2.1 —		3.6 +2.2
	2.7 +3.4		3.5 +2.3
	3.1 + ² 3.7	50	3.5 —
1+00	3.1 +2.7		3.5 —
	3.1 —		3.5 —
	3.1 —		3.7 +2.4
	3.1 —		3.7 —
	3.2 +2.6	3+00	3.7 —
50	3.4 +2.4		3.5 +2.3
1+60	3.5 +2.3	3+20	3.5 —

105+00

10-28-77

(3)

DIST	SOUND	DIST	SOUND
3+30	3.5 +2.3		
	3.1 +2.7		
50	3.2 +2.6		
(5.8)	3.2 —		
	3.1 +2.7		
	2.1 —		
	3.1 —		
4+00	3.1 —		
09:30			

10-28-47

106+00
 Sta. 1110 Causeway 1/4 mi. SOUND EAST

DIST	SOUND	DIST	SOUND
07:00		17:00	4.6 +1.1
+10			
09:15	3.9 +1.8	09:48	3.8 +1.9
	4.0 +1.7		3.1 +2.6
(5.7)	4.0 —	(5.7)	3.2 +2.5
	4.0 —	21:00	3.4 +2.3
50	3.9 +1.8		3.8 +1.9
			3.9
	4.0 +1.7		3.9 +1.8
	4.0 —		3.9 —
	4.1 +1.6		3.2 —
	4.3 +1.4	50	4.1 +1.6
14:00	4.7 +1.0		4.1 —
	5.0 +0.7	(5.7)	3.8 +1.9
	5.1 +0.6	09:50	3.8 —
	5.1 —	(5.6)	3.6 +2.0
	5.1 —	34:00	3.5 +2.2
14:50	4.8 +0.9	34:10	3.6 +2.1

106+00

10-28-47

DIST	SOUND	DIST	SOUND
37:20	3.5 +2.1	54:00	3.6 +2.0
	3.5 —		3.7 +1.9
(5.6)	4.1 +1.5	(5.6)	3.7 —
50	4.0 +1.6		3.7 +2.2
	3.8 +1.8		3.2 +2.4
	3.5 +2.1	50	3.2 —
	3.7 +1.9		3.2 —
	3.6 +2.0		3.1 +2.2
44:00	3.5 +2.1		3.2 +2.4
	3.5 —		3.2 —
	3.6 +2.0	64:00	3.2 —
	3.5 +2.1	09:55	
	3.5 —		
50	3.5 —		
	3.6 +2.0		
	3.5 +2.1		
09:58	3.4 +2.2		
44:30	3.3 +2.3		

10-28-47

106+00

0+00 = POINT EAST-106+00 CAUSEWAY B/L: SOUND WEST

	DIST	SOUND		DIST	SOUND
	0+00	3.8 +1.7		1+60	3.8 +1.7
<u>10:03</u>	3.8	—	<u>10:05</u>	4.0	+1.5
	4.1	+1.4		4.0	—
(5.5)	4.0	+1.5	(5.5)	4.0	—
	4.1	+1.4	2+00	4.3	+1.2
50	4.3	+1.2		4.4	+1.1
	4.6	+0.9		4.5	+1.0
	4.5	+1.0		4.5	—
	4.3	+1.2		4.5	—
	4.2	+1.3	50	5.0	+0.5
1+00	4.2	—		5.0	—
	4.2	—		5.0	—
	4.0	+1.5		4.5	+1.0
	3.5	+2.0		4.9	+0.6
	4.0	+1.5	3+00	5.2	+0.3
1+50	4.0	—	3+10	5.2	—

106+00

10-28-47

	DIST	SOUND		DIST	SOUND
	3+20	5.2 +0.3			
		5.0 +0.5			
(5.5)		4.1 +1.4			
50		5.1 +0.4			
		5.5 0.0			
		5.6 -0.1			
		5.2 +0.3			
		5.8 -0.3			
4+00		5.7 -0.2			
		5.5 0.0			
		6.0 -0.5			
		6.0 —			
		6.3 -0.8			
50		6.4 -0.9			
		6.5 -1.0			
		6.6 -1.1			
		6.6 —			
<u>10:09</u>		6.6 —			
5+00		6.7 -1.2			

(5)

1020' E-105400

10-28-97

107+00

0+00 = Pt. 1020' #372 - 105400 CAUSEWAY 7/4" SOUND EAST

DIST	SOUND	DIST	SOUND	DIST	SOUND
0+00	3.6	+1.6	1+00	3.7	+1.5
10:28	3.5	+1.7		3.8	+1.4
	3.9	+1.8	10:32	3.9	+1.3
(5.2)	3.3	+1.9	(5.2)	4.0	+1.2
	3.5	+1.7	2+00	4.0	—
50	3.7	+1.5		4.3	+0.9
	3.7	—		4.5	+0.7
	3.5	+1.7		4.5	—
	3.6	+1.6		4.5	—
	3.4	+1.8	50	4.5	—
1+00	3.4	—		4.4	+0.8
	3.4	—		4.4	—
	3.5	+1.7		4.3	+0.9
	3.5	—		4.0	+1.2
	3.5	—		4.0	—
	3.5	—	3+00	4.0	—
1+50	3.5	—	3+10	4.0	—

107+00

10-28-97

(6)

DIST	SOUND	DIST	SOUND		
3+20	3.9	+1.3	5+00	3.0	+2.2
	3.9	—	10:37		
(5.2)	3.9	—			
50	3.9	—			
	3.9	—			
	4.0	+1.2			
	3.9	+1.3			
10:35	3.5	+1.7			
4+00	3.5	—			
	3.5	—			
	3.4	+1.8			
	3.5	+1.7			
	3.2	+2.0			
50	3.4	+1.8			
	3.2	+2.0			
	3.2	—			
	3.2	—			
4+90	3.2	—			

107+00

0+00 = PT. 1020' E / STA-105+00 CAUSEWAY 2/4" SOUND WEST

DIST	SOUND	DIST	SOUND
0+10	3.5 +1.5	1+70	3.9 +1.1
<u>10:41</u>	3.7 +1.3	<u>09:43</u>	3.9
	3.8 +1.2	(5.0)	3.9
(5.0)	3.8	2+00	3.9
50	3.7 +1.3		3.9
	3.5 +1.5		3.9
	3.5		3.9
	3.7 +1.3		3.9
	3.7	50	3.9
1+00	3.8 +1.2		3.9
	3.8		3.9
	3.9 +1.1		3.9
	3.8 +1.2		3.9
	3.8	3+00	4.4 +0.6
50	3.7 +1.3	<u>09:45</u>	
1+60	3.9 +1.1	3+20	

103+00

0+00 = PT. 880' E / STA-103+00 CAUSEWAY 2/4" SOUND WEST

DIST	SOUND	DIST	SOUND
0+10	2.5 +2.4	1+70	4.0 +0.9
<u>10:59</u>	3.0 +1.9		3.9 +1.0
	3.3 +1.6	(4.9)	3.8 +1.1
(4.9)	3.5 +1.4	2+00	3.8
50	3.6 +1.3		3.7 +1.2
	4.0 +0.9		3.7
	4.0		3.6 +1.3
	4.0		3.6
	4.0	50	3.8 +1.1
1+00	4.0		3.7 +1.2
	4.0		3.5 +1.4
	4.0		3.5
	4.0		3.7 +1.5
	4.0	3+00	3.9
50	4.0		3.7
1+60	4.0	3+20	3.3 +1.6

103+00			10-28-47		
DIST	SOUND		DIST	SOUND	
3+30	3.7	+1.6	5+10	3.0	+1.8
	3.3	—		2.9	+1.9
50	3.4	+1.5	(4.8)	2.5	+2.3
(4.9)	3.4	—		2.0	+2.8
	3.4	—	50	1.2	+3.6
	3.4	—			
	3.4	—			
	3.4	—			
1100	3.3	+1.6			
	2.8	+2.1			
(4.9)	3.2	+1.7			
10:58	3.2	—			
(4.8)	3.2	+1.6			
50	3.2	—			
	3.2	—			
	3.2	—			
	3.2	—			
	3.2	—			
5+00	3.0	+1.8			

104+00			10-28-47		
DIST	SOUND		DIST	SOUND	
0+00 - Pt. 210' E/CAUSEWAY B/W SOUND WEST					
0+10	2.0	+2.6	1+70	4.3	+0.3
11:10	3.5	+1.1	(4.6)	4.1	+0.2
	4.7	-0.1		4.5	+0.1
(4.6)	5.1	-0.5	2+00	4.5	—
50	5.5	-0.9		4.4	+0.2
	5.9	-1.3		4.2	+0.4
	6.2	-1.2		4.2	—
	6.2	—		4.2	—
	6.0	-1.4	50	4.1	+0.5
1+00	5.2	-0.6		4.0	+0.6
	4.5	+0.1		4.0	—
	4.8	+0.2		4.0	—
	4.3	+0.3		4.0	—
	4.3	—	3+00	4.0	—
50	4.3	—		4.0	—
1+60	4.3	—	3+20	4.0	—

10-28-47

105+00

0+00 = PT. 1020' E / STA-105+00 CAUSEWAY 8/4: SOUND WEST

DIST	SOUND	DIST	SOUND
6+10	1.0 +2.5	1+70	4.7 -1.2
12:30	1.4 +2.1	5.0	-1.5
(3.5)	1.7 +1.8	(3.5)	5.1 -1.6
	2.0 +1.5	2+00	5.3 -1.8
50	2.2 +1.3	5.5	-2.0
	2.4 +1.1	5.9	-2.4
	2.5 +1.0	6.0	-2.5
	2.9 +0.6	6.0	—
	3.1 +0.4	50	6.1 -2.6
1+00	3.1 —	6.3	-2.8
	3.1 —	6.5	-3.0
	3.1 —	6.8	-3.3
	3.5 0.0	6.8	—
	4.1 -0.6	3+00	6.8 —
50	4.2 -0.7	7.0	-3.5
1+60	4.4 -0.9	3+20	7.0 —

105+00

10-28-47

(10)

DIST	SOUND	DIST	SOUND
3+30	7.0 -3.5	5+10	2.8 +0.7
	6.8 -3.3	2.9 +0.6	
50	6.7 -3.2	2.9 —	
12:35	6.8 -3.3	(3.5)	2.7 +0.8
	6.5 -3.0	50	2.5 +1.0
(3.5)	6.1 -2.6	2.1 +1.1	
	6.0 -2.5	2.2 +1.3	
4+00	5.7 -2.2	2.3 +1.2	
	5.0 -1.5	2.3 —	
	4.2 -0.7	6+00	2.3 —
	3.8 -0.3	12:38	2.3 —
	3.6 -0.1	(3.5)	2.3 —
50	3.4 +0.1	(3.7)	2.3 +1.1
	3.3 +0.2	2.3 —	
	3.1 +0.4	50	2.3 —
	3.0 +0.5	2.3 —	
	3.0 —	2.4 +1.0	
5+00	3.0 —	6+80	2.4 —

10-28-47		10-28-47	
DIST	SOUND	DIST	SOUND
6+90	2.1 +1.0	8+70	2.0 +1.4
7+00	2.1 —	2.1	+1.3
	2.1 —	(3.4)	2.1 —
(3.4)	2.1 —	9+00	2.1 +1.0
	2.3 +1.1	2.1	—
	2.3 —	2.5	+0.9
50	2.3 —	2.5	—
	2.3 —	2.1	+1.0
	2.3 —	50	2.1 —
	2.3 —	2.7	+0.7
	2.3 —	1.3	-0.9
8+00	2.3 —	9+80	5.2 -1.8
	2.0 +1.4	12+12	
	2.0 —		
	2.0 —		
12+10	2.0 —		
50	2.0 —		
8+60	2.0 —		

10-29-47 (11)			
PROF. ALONG LINE OF PROPOSED TRAMP BRIDGE			
(VENTURA PT. TO SUNSET DAN. P.T.) S/E SLOPE			
+100 = Hub South at S.E. End of Proposed Bridge			
STA	+	H.I.	- ELEV
H ₂ O LEVEL - 13.18			
H ₂ O 13.17 LEVEL			
		15.7	(2.6)
NW 0+56		13.2	2.5
NW 0+76		11.0	4.7
NW 0+99		10.8	4.9
NW 0+32		9.8	5.9
NW 0+30		8.2	7.5
NW 0+21		6.8	8.9
NW 0+11		5.3	10.4
SE 0+00		4.8	10.9
SE 0+19		4.7	11.0
SE 0+32		4.5	11.2
SE 0+43		3.8	11.9
SE 0+52		3.7	12.0

Indexed

Road Fill

Road Fill

10-28-77

10-28-77

(12)

PROFILE ALONG LINE OF PROPOSED BRIDGE

(VENTURA Pt. TO DANA Pt.)

SUNSET

0+00 = (HUD AT S/E END OF PROPOSED BRIDGE)

DIST			SOUND			DIST			SOUND		
						3+80	12.8	-10.7	5+60	12.7	-10.7
							13.0	-10.9	14:38	13.5	-11.5
0+60	0.0	+2.1	2+20	10.0	-7.9	4+00	13.0	—	(2.0)	13.6	-11.6
70	2.1	0.0		11.0	-8.9	(2.1)	13.1	-11.3		13.6	—
14:32	5.2	-3.1	(2.1)	10.2	-8.1		13.5	-11.4	6+00	13.5	-11.5
(2.1)	6.5	-4.4	50	10.1	-8.3		13.5	—		13.3	-11.3
1+00	8.0	-5.9		10.5	-8.4		13.2	-11.1		14.2	-12.2
	9.0	-6.9		11.2	-9.1	50	13.0	-10.9		14.5	-12.5
	10.1	-8.0		11.9	-9.8		12.5	-10.4		14.8	-12.8
	10.5	-8.4		12.1	-10.0		12.2	-10.1	50	14.7	-12.7
	10.5	—	3+00	12.0	-9.9		12.0	-9.9		14.7	-12.4
50	10.5	—		12.0	—		11.4	-9.3		14.3	-12.3
	10.6	-8.5	14:35	12.0	—	5+00	11.0	-8.9		14.3	—
	10.6	—		12.0	—		11.0	—	50	14.7	-12.4
	10.7	-8.6		11.5	-9.4		11.1	-9.0	7+00	14.5	-12.5
	10.6	-8.5	50	11.0	-8.9	(2.1)	11.5	-9.4		14.8	-12.8
2+00	10.2	-8.1		11.8	-9.7	(2.0)	11.2	-9.2		14.8	—
2+10	10.0	-7.9	3+70	12.2	-10.1	5+50	12.2	-10.2	7+30	14.6	-12.6

DIST SOUND DIST SOUND

7+40 11.4 -12.4 9+20 2.5 -5.5

50 11.2 -12.2 5.8 -3.8

(2.0) 13.8 -11.8 (2.0) 1.5 -2.5

13.7 -11.4 50 1.0 -2.0

12.5 -10.5 3.4 -1.4

12.3 -10.3 3.1 -1.1

8+00 13.3 — 11.95 3.0 -1.0

15.2 -13.2 2.8 -0.8

15.2 — 10+00 2.0 0.0

15.2 — 10+15 0.7 +1.3

15.0 -13.0 10+17 0.0 +2.0

50 15.0 —

12:43 11.5 -12.5

11.0 -12.0

13.2 -11.2

12.5 -10.5

9+00 12.0 -10.0

9+10 9.1 -7.4

PROFILE CONT'D. 10-22-47

(13)

N/W SLOPE

N/W

0+00 Hub at ~~the~~ End of Proposed Bridge

STA + H.I. - ELEV

H²O Level

13.19 15.1

(2.0) 14.53

SE 1+03

13.2 1.9

SE 0+91

11.9 3.2

SE 0+72

9.8 5.3

SE 0+56

8.0 7.1

SE 0+36

6.4 8.7

SE 0+22

5.5 9.6

SE 0+00

4.9 10.2

NW 0+22

4.2 10.9

NW 0+02

3.9 11.2

NW 0+85

3.5 11.6

NW 1+46

3.1 12.0

FINAL

1-8-78

BARTAGN
SHIPPY
STANLEY1-8-78
COOL
CALM
HAZE

SOUNDINGS OF EAST BAY APPROACH

(17)

CHANNEL SECTION "D" &

DIST SOUND

DIST SOUND

ADJOINING BORROW AREA

2+60 10.5 -7.0

STA-51+00

10.5 —

0+00 = STA-51+00 ON B/L: SECT. AT 90° TO B/L
SOUND SOUTH

(3.5) 10.5 —

DIST SOUND

DIST SOUND

(3.1) 11.2 -7.8

0+00 1.2 +2.3 1+30 11.3 -7.8

3+00 11.3 -7.9

+10 1.2 — (3.5) 10.9 -7.4

2.0 -3.6

12:03 1.2 — 50 10.5 -7.0

12:10 3.1 +0.3

(3.5) 1.4 +2.1 10.6 -7.1

2.5 +0.9

1.5 +2.0 10.5 -7.0

2.5 —

50 1.4 +2.1 10.5 —

50 2.4 +1.0

1.4 — 10.5 —

2.5 +0.9

1.4 — 2+00 10.9 -6.9

2.7 +0.7

1.4 — 10.4 —

2.5 +0.9

12:05 4.9 -0.9 10.5 -7.0

2.5 —

1+00 9.0 -5.5 12:08 10.5 —

4+00 2.5 —

10.3 -6.8 10.8 -7.3

1+20 11.3 -7.8 2+50 10.5 -7.0

Px Indexed

STA- 49+00

1-8-78

0700 = STA-49+00 ON B/L: SECT. AT 90° TO B/L

SOUND SOUTH

DIST SOUND

DIST SOUND

0400 1.0 +2.0 1+70 11.0 -8.0

+10 1.1 +1.9 11.1 -8.1

12:33 1.3 +1.7 (3.0) 11.1 —

(3.0) 1.3 — 2+00 11.1 —

1.4 +1.6 11.4 -8.4

50 1.5 +1.5 11.4 —

1.5 — 11.5 -8.5

1.4 +1.6 11.4 -8.4

1.4 — 50 11.3 -8.3

1.3 +1.7 11.0 -8.0

1+00 2.2 +0.8 11.1 -8.1

2.5 -4.5 11.0 -8.0

12:35 10.3 -7.3 10.8 -7.8

11.0 -8.0 3+00 11.2 -8.2

11.0 — (3.0) 12.1 -9.1

50 11.0 — (2.9) 11.0 -8.1

1+60 11.0 — 3+30 2.4 +0.5

STA-49+00 1-8-78

(15)

DIST SOUND

DIST SOUND

3+40 2.0 +0.9

50 2.0 —

12:40 2.0 —

(2.9) 2.0 —

2.8 +0.1

1.7 +1.2

4+00 1.7 —

STA: 78+00
300' OFFSET LINE
ON B/L SECT. AT 90° TO B/L.

1-8-78

0+00 = STA-78+00
SOUND SOUTH

DIST	SOUND	DIST	SOUND
0+00	1.0 +1.8	1+70	1.0 +1.8
+10	1.0 —		1.0 —
12:50	1.0 —	(2.8)	1.0 —
(2.8)	1.0 —	2+00	1.0 —
	1.0 —		1.0 —
50	0.9 +1.9		1.0 —
	0.9 —		1.3 +1.5
	0.9 —	12:53	1.0 +1.8
	0.9 —	50	1.0 —
	0.9 —		1.0 —
1+00	0.9 —		1.0 —
	0.6 +2.2		1.0 —
	3.0 -0.2		1.4 +1.4
	3.2 -0.4	3+00	8.0 -5.2
	3.2 —		11.5 -8.7
50	2.5 +0.3		13.4 -10.6
1+60	2.0 +0.8	3+30	14.0 -11.2

STA-78+00 | 1-8-78

(17)

DIST	SOUND	DIST	SOUND
3+40	14.3 -11.5	5+20	12.5 -9.8
50	14.4 -11.6		10.6 -7.9
(2.8)	14.4 —	(2.7)	5.5 -2.8
	15.0 -12.2	50	1.7 +1.0
	15.3 -12.5		1.7 —
	16.0 -13.2		1.4 +1.3
4+00	16.0 —		1.4 —
	15.1 -12.3		1.4 —
	16.2 -13.4	6+00	2.0 +0.7
	16.1 -13.3		2.1 +0.6
	15.5 -12.7		2.1 +0.3
50	15.2 -12.4		2.8 -0.1
(2.8)	15.0 -12.2		2.2 +0.5
(2.7)	14.1 -11.7	50	2.4 +0.3
12:55	14.0 -11.3	13:00	
	14.0 —		
5+00	13.8 -11.1		
5+10	13.2 -10.5		

STA- 47+00

1-8-78

STA- 47+00

1-8-78

(18)

0+00 = STA- 47+00 ON 300' OFFSET LINE; SECT. AT 30° TO

SOUND SOUTH

DIST			SOUND			DIST			SOUND		
						3+90	17.3	-14.8	5+20	14.0	-11.6
0+00	1.0	+1.5	1+70	16.1	-13.6	50	17.1	-14.6	(2.4)	12.2	-9.8
+10	1.0	—	13:13	16.0	-13.5	(2.5)	16.0	-13.5	13:20	3.5	-1.1
13:10	1.0	—	(2.5)	15.4	-12.9		14.0	-11.5	50	1.5	+0.9
(2.5)	1.0	—	2+00	16.0	-13.5		14.0	—		2.0	+0.4
	1.0	—		16.0	—		14.1	-11.6		1.4	+1.0
50	4.9	-2.4		15.8	-13.3	4+00	14.2	-11.7		1.5	+0.9
	10.5	-8.0		15.2	-12.7		14.4	-11.9		1.8	+0.6
	16.5	-14.0		15.2	—		14.5	-12.0	6+00	2.0	+0.4
	12.1	-14.6	50	15.3	-12.8		14.4	-11.9		2.5	-0.1
	16.0	-13.5		15.3	—	13:18	14.4	—		1.8	+0.6
1+00	15.1	-12.6		15.5	-13.0	50	14.1	-11.6		1.8	—
	15.2	-12.7		15.6	-13.1		14.1	—		1.9	+0.5
	15.5	-13.0	13:15	15.8	-13.3		14.2	-11.8	50	1.9	—
	15.8	-13.3	3+00	15.9	-13.4	(2.5)	14.3	—	13:23		
	16.0	-13.5		15.8	-13.3	(2.4)	14.1	-11.7			
50	16.2	-13.7		16.2	-13.7	5+00	14.1	—			
1+60	16.1	-13.6	3+30	17.5	-15.0	5+60	14.0	-11.6			

STA-46+00 1-8-78 STA-46+00 1-8-78 (19)

400=STA-46+00 ON 300' OFFSET LINE: SECT. AT 90° To line DIST SOUND DIST SOUND

SOUND SOUTH

DIST	SOUND		DIST	SOUND		DIST	SOUND		DIST	SOUND	
						3+40	16.0	-13.8	5+20	13.1	-10.9
0+00	1.0	+1.2	1+70	16.4	-14.2	50	13.1	-11.2		12.0	-9.8
+10	1.0	—		16.0	-13.8		13.1	-10.9	(2.2)	9.1	-1.9
13:33	1.0	—	(2.2)	16.5	-14.3	(2.2)	13.2	-11.0	50	2.1	+0.1
(2.2)	1.0	—	2+00	16.0	-13.8	13:40	13.5	-11.3		2.1	—
	1.0	—		16.0	—		13.5	—		2.0	+0.2
50	9.5	-2.3		16.0	—	7+00	13.6	-11.4		1.9	+0.3
	12.1	-9.9		15.8	-13.6		14.0	-11.8		1.9	—
	16.8	-14.6		15.5	-13.3		14.0	—	6+00	2.0	+0.2
	16.7	-14.5	50	15.6	-13.4		14.1	-11.7	13:43		
	16.0	-13.8		15.5	-13.3		14.1	—			
1+00	16.6	-14.4		15.5	—	50	14.1	—			
	16.5	-14.3		15.3	-13.1		14.0	-11.8			
	16.5	—		15.3	—		14.0	—	50		
13:35	17.1	-14.9	3+00	15.4	-13.2		14.0	—			
	16.8	-14.6		15.1	-12.9		14.0	—			
50	16.7	-14.5		16.1	-13.9	5+00	14.0	—			
1+60	16.7	—	3+30	16.8	-14.6	5+40	14.0	—			

STA- 45+00 1-8-98						STA- 15+00 1-8-98					
0+00= STA-15+00 ON 300' OFFSET LINE: SECT. AT 90° TO LINE.											
SOUND SOUTH											
DIST	SOUND		DIST	SOUND		DIST	SOUND		DIST	SOUND	
0+00	1.1	40.9	1+70	17.3	-15.3	3+10	16.0	-14.0	5+20	12.8	-10.9
0+10	1.1	—		17.3	—	50	16.5	-14.5	(1.9)	10.0	-8.1
13:53	1.1	—	(2.0)	17.0	-15.0	(2.0)	16.3	-14.3		2.9	-1.0
(2.0)	2.9	-0.9	2+00	16.7	-14.7	(1.9)	16.0	-14.1	50	2.4	-0.5
	10.4	-8.4		16.1	-14.1		14.1	-12.2		2.4	—
50	15.0	-13.0		16.0	-14.0	4+00	13.4	-11.5		2.6	-0.7
	17.5	-15.5		16.6	-14.6		13.8	-11.9		2.5	-0.6
	18.3	-16.3	13:58	16.1	-14.1	13:02	13.8	—		2.5	—
	18.7	-16.7	50	17.8	-12.8		14.0	-12.1	6+00	2.9	-1.0
13:55	18.5	-16.5		15.0	-13.0		14.0	—		2.5	-0.6
1+00	18.2	-16.2		17.8	-12.8	50	13.8	-11.9		2.6	-0.7
	18.2	—		14.5	-12.5		13.5	-11.6		2.6	—
	18.2	—		14.2	-12.2		13.5	—		2.8	-0.9
	18.2	—	3+00	14.5	-12.5		13.5	—	50	3.0	-1.1
	18.0	-16.0		15.1	-13.1		13.5	—	14:06		
50	18.0	—		15.4	-13.4	5+00	13.5	—			
1+60	17.9	-15.9	3+30	16.0	-14.0	5+10	13.7	-11.8			

STA-44700					STA-44700				
1-8-76					1-8-78				
0+00 = STA-44700 ON 300' OFFSET LINE: SECT AT 90° TO LINE					(21)				
SOUND SOUTH					DIST		SOUND		
DIST	SOUND	DIST	SOUND	DIST	SOUND	DIST	SOUND	DIST	SOUND
0+00				3+40	15.0	-13.4	5+20	13.8	-12.3
0+00	0.5	+1.1	1+70	15.4	-13.8	50	14.1	-12.5	(1.5) 11.0 -9.5
+10	0.5	—	1+35	15.4	—	(1.6)	14.0	-12.4	3.0 -1.5
1+30	0.6	+1.0	(1.6)	15.2	-13.6		13.5	-11.9	50 2.5 -1.0
(1.6)	0.7	+0.9	2+00	15.1	-13.5		13.2	-11.6	2.5 —
	6.4	-4.8		15.1	—		13.3	-11.7	2.8 -1.3
50	12.5	-10.9		15.0	-13.4	4+00	13.3	—	2.6 -1.1
	16.4	-14.8		15.0	—	(1.6)	13.8	-12.2	2.7 -1.2
	17.5	-15.9		14.7	-13.1	(1.5)	13.8	-12.3	6+00 2.8 -1.3
	17.8	-16.2	50	14.1	-12.5	14+00	13.7	-12.2	14+13
14+33	17.8	—		14.0	-12.4		13.5	-12.0	
1+00	19.0	-17.4		14.0	—	50	13.5	—	
	19.0	—		14.3	-12.7		13.5	—	
	18.7	-17.1		14.3	—		13.6	-12.1	
	17.0	-15.4	3+00	14.3	—		13.6	—	
	16.4	-14.8		14.7	-13.1		13.8	-12.3	
50	16.1	-14.5	11:35	14.4	-12.8	5+00	14.0	-12.5	
1+60	15.8	-14.2	3+30	14.6	-13.0	5+10	14.0	—	

FINAL

BARRAGAN
SHERIDAN
STANLEY
1-12-78
COOL
LIGHT WIND
MOD. VISIBILITY

STA-5+00

1-12-78

(22)

SOUNDINGS - EAST BAY APPROACH

CHANNEL SECTION "B" PROJ. # 3-1

PX STA-5+00

DIST SOUND

DIST SOUND

2+80 12.0 -8.4

12.0 —

PX

3+00 12.0 —

Inclined

0+00 = STA-5+00 ON 100' OFFSET LINE; SECT. A + 90° TURN

SOUND EAST

DIST SOUND

DIST SOUND

(3.6)

11.5 -7.9

0+00 1.5 +2.2 1+40 12.6 -8.9

11.1 -7.8

+10 4.0 -0.3 50 12.4 -8.7

10.0 -6.4

11:00

7.5 -3.8 (3.7) 12.5 -8.8

9.5 -0.9

(3.7)

9.0 -5.3 12.5 —

50 1.7 +1.9

9.0 — 12.6 -8.9

11:02 2.0 +1.6

50 9.2 -5.5 12.6 —

2.3 +1.3

9.3 -5.6 2+00 13.0 -9.3

2.6 +1.0

9.3 — 12.8 -9.1

3.0 +0.6

9.0 -5.3 12.4 -8.7

11:00 3.0 —

8.8 -5.1 (3.7) 12.5 -8.8

1+00 12.6 -8.9 (3.6) 12.6 -9.0

12.8 -9.1 50 12.5 -8.9

12.8 — 11:05 12.5 —

1+30 12.8 — 2+70 12.0 -8.4

		STA = 6+00		1-12-18		STA = 6+00		1-12-18	
S 0+00 = STA 6+00 ON 100' OFFSET LINE: SECT. AT 90° TO LINE		DIST SOUND		DIST SOUND		DIST SOUND		DIST SOUND	
SOUND EAST		DIST SOUND		DIST SOUND		DIST SOUND		DIST SOUND	
						3+40	3.4	+0.1	
		0+00	7.8 -4.3	1+70	12.5 -9.0	50	3.4	—	PX
		+10	9.0 -5.5		12.4 -8.9		4.1	-0.9	
	14:15		9.3 -5.8	(3.5)	12.0 -8.5	(3.5)	5.0	-1.5	
		(3.5)	9.5 -6.0	2+00	11.8 -8.3		5.0	—	
			9.4 -5.9		12.2 -8.7		4.1	-0.9	
		50	9.0 -5.5		12.0 -8.5	9+00	4.1	-0.6	
			8.8 -5.3		12.1 -8.4				
			8.7 -5.2		12.0 -8.5				
			8.0 -4.5	50	12.0 —				
			7.5 -4.0		11.8 -8.3				
		1+00	13.2 -9.7		11.5 -8.0				
			13.1 -9.6		11.5 —				
			13.0 -9.5		11.1 -7.6				
			13.0 —	3+00	11.1 —				
	14:17		12.8 -9.3		11.1 —				
		50	12.5 -9.0		11.5 -8.0				
		1+60	12.5 —	3+80	9.0 -5.5				

STA - 7+00				STA - 7+00				
1-12-48				1-12-48				
S 0+00 = STA-7+00 ON 100' OFFSET LINE; SECT AT 90° TO LINE								
SOUND EAST				DIST SOUND		DIST SOUND		
DIST	SOUND	DIST	SOUND	DIST	SOUND	DIST	SOUND	
PX	9.0	-5.7	1+70	11.8	-8.5	3+40	5.0 -1.7	
0	+10	9.0	—	11.5	-8.2	50	3.8 -0.5	
1	<u>14:29</u>	9.3	-6.0 (3.3)	11.5	—	(3.3)	2.6 +0.7	
2	(3.3)	9.2	-5.9	2+00	11.5	—	2.0 +1.3	
		9.0	-5.7		12.8	-9.5	2.1 +1.2	
L	50	8.9	-5.6		12.8	—	4+00	1.0 +2.3
		8.5	-5.2	<u>14:32</u>	12.8	—	<u>14:34</u>	
		8.0	-4.7		12.5	-9.2		
		7.2	-3.9	50	12.5	—		
		6.5	-3.2		12.1	-8.5		
	1+00	10.0	-6.7		12.1	—		
		12.2	-8.9		12.1	—		
		12.2	—		12.1	—		
		12.0	-8.7	3+00	12.1	—		
		12.0	—		12.1	—		
	50	12.0	—		12.3	-9.5		
	1+60	12.0	—	3+30	12.3	—		

(29)

STA- 8+00 1-12-18

SOUND EAST

DIST	SOUND	STA- 8+00	DIST	SOUND
0+00	3.0	-5.9	1+70	11.8
+10	3.0	—		11.7
14:42	9.0	—	(3.1)	11.8
(3.1)	8.8	-5.7	2+00	12.0
	8.6	-5.5		12.1
50	8.4	-5.3		11.9
	8.0	-4.9		11.1
	7.2	-4.1		11.2
	7.0	-3.9	50	11.5
	8.8	-5.7		11.8
1+00	12.0	-8.9		11.9
	12.0	—		12.0
	12.0	—		12.0
	12.0	—	3+00	12.0
	12.0	—		12.0
14:35 50	11.8	-8.7		11.5
1+60	12.0	-8.9	3+30	8.0

STA- 8+00 1-12-18

DIST SOUND DIST SOUND

DIST	SOUND	DIST	SOUND
3+10	1.7	+1.4	PX
50	1.4	+1.7	
(3.1)	1.0	+2.0	
11:33	0.5	+2.6	

FINAL

DARRISAN
SHIFFR'S
STANLEY1-15-78
CLEAR
CALM
WARM

1-15-78

SOUNDINGS OF APPROACH CHANNEL

SECTION "B" PROJ-3-1

PX
END SECTION 250' EAST OF -1700

Indexed 26

PX
END SECTION 150' EAST OF -1700

0+00 = PT. ON X-SECTION LINE 150' EAST OF STA -1700.

SOUND N/E FROM THIS PT. AT 90° TO X-SECTION LINE.

2+00 = PT. ON X-SECTION LINE 250' EAST OF STA -1700
SOUND N/E FROM THIS PT. AT 90° TO X-SECTION LINE

DIST	SOUND		DIST	SOUND
0+00	2.9	+2.1	1+10	12.5 -7.5
+10	2.9	—		12.5 —
09:37	3.1	+1.9	(5.0)	12.4 -7.4
(5.0)	3.1	—		12.5 -7.5
	3.2	+1.8	50	12.6 -7.6
50	3.2	—		12.8 -7.8
	3.5	+1.5		12.9 -7.9
	4.0	+1.0		13.0 -8.0
	10.0	-5.0		13.3 -8.3
	12.1	-7.1	2+00	13.4 -8.4
1700	12.5	-7.5		

DIST	SOUND		DIST	SOUND
0+00	10.1	-5.1	1710	15.0 -10.0
+10	10.3	-5.3		14.8 -9.8
09:45	10.3	—	(5.0)	14.9 -9.9
(5.0)	10.1	-5.1		14.8 -9.8
	10.0	-5.0	50	14.5 -9.5
50	10.0	—		14.6 -9.6
	10.1	-5.1		14.9 -9.4
	10.1	—		14.5 -9.5
	10.1	—		14.5 —
	12.5	-8.5	2+00	14.7 -9.7
1+00	11.8	-9.8	09:50	

STA- 9+00

1-14-98

STA 9+00

1-15-98

(27)

0+00 = STA- 9+00 ON 100' OFFSET LINE: SECT. AT 90° TO LINE

DIST SOUND

DIST SOUND

SOUND EAST

DIST SOUND

DIST SOUND

3+10 2.5 +2.7

0+00 11.2 -6.0 1+70 15.0 -9.8

50 2.2 +3.0

+10 11.3 -6.1 10:13 15.0 —

(5.2) 2.3 +2.9

10:10 11.3 — (5.2) 14.8 -9.6

2.1 +3.1

(5.2) 11.0 -5.8 2+00 14.0 -8.8

2.7 +2.8

11.0 — 13.5 -8.3

2.9 —

50 11.0 — 13.5 —

4+00 2.9 —

10.3 -5.1 13.7 -8.5

9.8 -4.6 13.7 —

9.4 -4.2 50 13.9 -8.7

9.0 -3.8 14.1 -8.9

1+00 12.5 -7.3 14.1 —

13.6 -8.4 14.1 —

14.0 -8.8 14.0 -8.8

14.5 -9.3 3+00 13.5 -8.3

15.1 -9.9 13.9 -8.7

50 15.0 -9.8 10:15 13.2 -8.0

1+60 15.0 — 3+30 8.0 -2.8

STA-10+00

1-15-48

STA-10+00

1-15-48

(28)

0+00=STA-10+00 ON 100' OFFSET LINE: SECT. AT 90° TO LINE

DIST SOUND DIST SOUND

SOUND EAST

DIST SOUND

DIST SOUND

3+40 2.8 +2.4

0+00 12.5 -7.3 1+70 14.0 -8.8

50 2.8 —

+10 12.6 -7.4 13.9 -8.7

2.7 +2.5

10:23 12.5 -7.3 (5.2) 14.0 -8.8

(5.2) 2.6 +2.6

(5.2) 12.5 — 2+00 13.8 -8.6

2.6 —

12.5 — 14.0 -8.8

2.6 —

50 12.0 -6.8 13.1 -9.9

4+00 2.5 +2.7

11.4 -6.2 15.0 -9.8

10:39

10.4 -5.2 15.2 -10.0

9.2 -4.0 50 15.2 —

10.8 -5.6 15.0 -9.8

1+00 14.4 -9.2 14.7 -9.5

14.4 — 14.8 -9.6

14.2 -9.0 14.8 —

11.1 -8.9 3+00 14.7 -9.5

14.0 -8.8 14.0 -8.8

10:25

50 14.0 — 12.5 -7.3

1+60 14.0 — 3+30 9.0 -3.8

STA-11+0.0

1-15-98

STA-11+00

1-15-98

(29)

0+00=STA-11+00 ON 100' OFFSET LINE: SECT. AT 90° TO

DIST SOUND DIST SOUND

SOUND EAST

DIST SOUND

DIST SOUND

3+10 4.1 +1.0

DIST SOUND

0+00 13.8 -8.5 1+70 13.0 -7.7

50 3.0 +2.4

+10 14.2 -8.9 13.2 -7.9

(5.4) 3.0 —

10:35 15.5 -10.2 (5.3) 13.2 —

3.0 —

(5.3) 15.5 — 2+00 13.4 -8.1

2.9 +2.5

15.0 -9.7 13.5 -8.2

2.9 —

50 15.0 — 10:40 13.6 -8.3

4+00 3.0 +2.4

14.0 -8.7 (5.4) 13.4 -8.0

10:45

12.5 -7.2 13.5 -8.1

10.0 -4.7 50 13.8 -8.4

7.0 -1.7 14.0 -8.6

1+00 13.1 -7.8 14.1 -8.7

13.5 -8.2 14.1 —

10:58 13.5 — 14.4 -9.0

13.5 — 3+00 14.3 -8.9

13.5 — 14.5 -9.1

50 13.4 -8.1 14.2 -8.8

1+60 13.3 -8.0 3+30 9.8 -4.4

6+00=STA-12+00 ON 100' OFFSET LINE: SECT. AT 90° To line

STA- 12+00				1-15-78	
DIST	SOUND	DIST	SOUND		
0+00	9.0	-3.6	1+70	14.7	-9.3
+10	12.5	-7.1		14.8	-9.4
<u>11:00</u>	15.0	-9.6	(5.4)	14.6	-9.2
(5.4)	16.1	-10.7	2+00	14.2	-8.8
	17.2	-11.8		14.5	-9.1
50	18.0	-12.6		15.3	-9.9
	18.0	—		15.6	-10.2
	17.4	-12.0		15.0	-9.6
	16.1	-10.7	50	15.2	-9.8
	14.4	-9.0	<u>11:05</u>	14.9	-9.5
1+00	11.6	-6.2		14.7	-9.3
	13.5	-8.1		14.3	-8.9
	14.8	-9.4		14.5	-9.1
<u>11:03</u>	15.3	-9.9	3+00	14.5	—
	15.2	-9.8		14.3	-8.9
50	15.1	-9.7		13.4	-8.0
1+60	15.0	-9.6	3+30	13.0	-7.6

STA- 12+00 1-15-78 (30)

STA- 12+00				1-15-78	
DIST	SOUND	DIST	SOUND		
3+40	7.0	-1.6			
50	3.2	+2.2			
(5.4)	3.0	+2.4			
	3.1	+2.3			
	3.1	—			
	3.1	—			
4+00	3.1	—			
<u>11:08</u>					

STA- 13+00 1-15-48

60+00 = STA-13+00 ON 100' OFFSET LINE. SECT. AT 90° TO

SOUND EAST					
DIST	SOUND	DIST	SOUND	DIST	SOUND
0+00	5.0	+0.4	1+70	13.5	-8.1
+10	6.7	-1.3		13.0	-7.6
11:13	8.0	-2.6	(5.4)	13.7	-8.3
(5.4)	9.8	-4.4	2+00	14.0	-8.6
	12.5	-7.1		14.0	—
50	13.8	-8.4		13.8	-8.4
	15.5	-10.1		14.5	-9.1
	16.8	-11.4		14.7	-9.3
11:15	17.9	-12.5	50	14.5	-9.1
	17.9	—		14.8	-9.4
1+00	17.4	-12.0		15.0	-9.6
	15.5	-10.1		16.1	-10.7
	15.0	-9.6		16.4	-11.0
	19.5	-9.1	3+00	16.1	-10.7
	14.0	-9.6		16.1	—
50	13.6	-8.2		13.5	-8.1
1+60	13.1	-7.7	3+30	11.5	-6.1

STA- 13+00 1-15-48

(31)

DIST	SOUND	DIST	SOUND
3+40	6.3	-0.9	
50	3.5	+1.9	
11:20	3.4	+2.0	
(5.4)	3.4	—	
	3.4	—	
	3.3	+2.1	
4+00	3.2	+2.2	

STA-14+00

1-15-98

STA-14+00

1-15-98

(32)

0+00 = STA-14+00 ON 100' OFFSET LINE, SECT. AT 90° TO LINE

SOUND EAST

DIST SOUND

DIST SOUND

DIST SOUND

DIST SOUND

3+90

5.1

~~-0.1~~

0+00

12.9

-7.9

1+70

14.1

-9.1

50

9.8

~~+0.2~~

+10

12.5

-7.5

14.4

-9.4

9.4

+0.6

12:18

12.5

—

(5.0)

13.4

-8.4

(5.0)

9.5

+0.5

(5.0)

12.7

-7.7

2+00

13.0

-8.0

9.9

+0.6

12.8

-7.8

13.9

-8.9

9.8

+0.2

50

13.1

-8.1

13.4

-8.4

4+00

9.3

+0.7

13.1

—

13.2

-8.2

12:20

13.4

-8.4

13.2

—

13.5

-8.5

50

13.4

-8.4

13.5

—

13.1

-8.1

1+00

14.0

-9.0

12:23

13.0

-8.0

14.0

—

12.5

-7.5

15.6

-10.6

14.3

-9.3

15.0

-10.0

3+00

14.5

-9.5

14.8

-9.8

15.0

-10.0

50

14.7

-9.7

13.5

-8.5

1+60

14.4

-9.4

3+30

8.0

-3.0

STA-15+00

1-15-96

0+00 = STA-15+00 ON 100' OFFSET LINE; SECT. AT 90°

DIST	SOUND	DIST	SOUND
0+00	12.8 -7.8	1470	15.2 -10.2
110	13.0 -8.0	12:33	14.8 -9.8
12:36	13.0 —	(5.0)	14.8 —
(5.0)	13.0 —	(9.9)	14.5 -9.6
	12.8 -7.8		14.1 -9.2
50	13.1 -8.1		13.0 -8.1
	14.0 -9.0		10.1 -5.1
	14.4 -9.4		12.0 -7.0
	14.5 -9.5	50	13.4 -8.5
	14.7 -9.7	12:40	14.7 -9.8
1+00	14.4 -9.4		14.1 -9.1
	14.0 -9.0		14.3 -9.4
	14.0 —		14.0 -9.1
	14.8 -9.8	3+00	11.5 -6.5
	14.7 -9.7		7.5 -
			11.4 -6.5
50	14.4 -9.4		7 -
			9.5 -4.5
1+60	16.0 -11.0	3+30	8.4 -3.5

STA-15+00

1-15-95

(33)

DIST	SOUND	DIST	SOUND
3+90	8.4 -3.5	5+20	8.4 -3.5
50	8.4 —		8.3 -3.4
(1.9)	8.4 —	(1.9)	8.2 -3.3
	8.4 —	50	8.2 —
	8.4 —		8.2 —
	8.4 —		8.2 —
4+00	8.5 -3.6	12:46	8.1 -3.5
	8.5 —		8.5 -3.6
	8.5 —	6+00	8.5 —
12:42	8.5 —		
	8.4 -3.5		
50	8.4 —		
	8.4 —		
	8.5 -3.6		
	8.4 -3.5		
	8.4 —		
5+00	8.4 —		
5+10	8.4 —		

FINAL

1-15-78

SOUNDINGS-APPROACH CHANNEL SECTION "C"

PX

STA-39+00

0+00=STA-39+00 ON 100' OFFSET LINE - SECTION AT 90° TURN

SOUND SOUTH EAST

DIST	SOUND		DIST	SOUND
0+00	3.5	+1.0	1+50	13.0 -8.5
+10	3.5	—		13.4 -8.9
<u>13:19</u>	4.0	+0.5	(4.5)	13.4 —
(4.5)	3.8	+0.7		13.2 -8.7
	3.5	+1.0		13.2 —
50	4.4	+0.1	2+00	13.0 -8.5
	4.1	+0.4		13.2 -8.7
	4.3	+0.2		13.2 —
	4.2	+0.3		13.2 —
	4.1	+0.4		13.0 -8.5
1+00	6.0	-1.5	50	13.0 —
	11.4	-6.9		12.8 -8.3
	12.5	-8.0		13.0 -8.5
	13.0	-8.5		13.1 -8.6
1+40	13.0	—	2+30	13.2 -8.7

ST-39+00

1-15-78

(39)

DIST	SOUND		DIST	SOUND
3+00	13.0	-8.5		
	13.1	-8.6		
(4.5)	11.0	-6.5		
	5.1	-0.6		
	4.0	+0.5		
50	3.8	+0.7		
	3.8	—		
	3.8	—		
	3.9	+0.6		
	3.9	—		
4+00	4.0	+0.5		

Induced

STA- 38+00

1-15-48

STA- 38+00

1-15-48

0+00 = STA 38+00 ON 100' OFFSET LINE: SECT AT 90° TO

~~SOUND SOUTH EAST~~

~~DIST SOUND~~ DIST SOUND

DIST SOUND DIST SOUND

0+00 4.4 0.0 170 12.9 -8.5

3+10 4.6 -0.3

50 4.5 -0.2

+10 3.8 +0.6 13.0 -8.6

(4.3) 4.8 -0.5

13:02 3.7 +0.7 (4.4) 13.2 -8.8

4.7 -0.4

(4.4) 3.8 +0.6 2+00 13.2 -

4.7 -

3.6 +0.8 13.1 -9.0

4.8 -0.5

50 3.9 +0.5 13.4 -

4+00 4.8 -

3.5 +0.9 13.4 -

13:38

3.8 +0.6 13.3 -8.9

4.0 +0.4 50 13.3 -

6.1 -1.7 (4.4) 13.2 -8.8

1+00 8.8 -4.4 (4.3) 13.2 -8.9

12.0 -7.6 13:37 13.4 -9.1

12.4 -8.0 13.5 -9.2

12.4 - 3+00 13.7 -9.4

12.4 - 13.7 -

50 12.7 -8.3 12.2 -7.9

1+60 12.9 -8.5 3+80 5.0 -0.7

1-15-78

STA- 37+00

10+00 = STA-37+00 ON 100' OFFSET LINE: SECT. AT 30° T. LINE.

SOUND S/E					
DIST	SOUND	DIST	SOUND	DIST	SOUND
0+00	3.7	+0.5	1+70	13.0	-8.8
+10	3.8	+0.4	13.97	13.0	—
13:49	3.9	+0.3	(4.2)	13.0	—
(4.2)	3.9	—	2+00	13.2	-9.0
	3.9	—		13.5	-9.3
50	3.9	—		13.3	-9.1
	4.2	0.0		13.3	—
	4.2	—		13.3	—
	4.0	+0.2	50	13.3	—
	5.3	-1.1		13.3	—
1+00	10.4	-6.2		13.4	-9.2
	12.0	-7.8		13.4	—
	12.5	-8.3		13.4	—
	12.5	—	3+00	13.4	—
	12.7	-8.5		13.4	—
50	12.9	-8.7		11.0	-6.8
1+60	13.1	-8.9	3+30	5.4	-1.2

1-15-78

STA- 37+00

SOUND					
DIST	SOUND	DIST	SOUND	DIST	SOUND
3+10	4.8	-0.6			
50	5.0	-0.8			
(4.2)	5.0	—			
	4.8	-0.6			
	4.9	-0.7			
	5.1	-0.9			
4+00	5.1	—			
13:52					

(36)

STA-36+00

1-15-48

0+00=STA-36+00 ON 100' OFFSET LINE; SECT. AT 90° TO LINE

SOUND S/E

	DIST	SOUND		DIST	SOUND	
	0+00	3.5	+0.5	1+70	12.7	-8.7
	+10	3.5	—		12.7	—
	<u>13:57</u>	3.5	—	(4.0)	12.8	-8.8
	(4.0)	3.6	+0.4	2+00	12.7	-8.7
		3.5	+0.5		12.8	-8.8
	50	3.5	—		12.7	-8.7
		3.5	—		12.7	—
		3.8	+0.2	<u>19:02</u>	12.8	-8.8
		3.9	+0.1	50	12.8	—
		8.1	-4.1		12.8	—
	1+00	12.4	-8.4		12.7	-8.7
		12.4	—		12.7	—
		12.4	—		12.7	—
		12.5	-8.5	3+00	12.5	-8.5
		12.7	-8.7		12.5	—
	50	12.8	-8.8		9.5	-3.5
	1+60	12.4	-8.4	3+30	4.0	0.0

STA-36+00

1-15-48

(37)

DIST	SOUND		DIST	SOUND
3+40	4.0	0.0		
50	4.0	—		
(4.0)	4.0	—		
	3.9	+0.1		
	3.9	—		
	3.8	+0.2		
4+00	3.8	—		
<u>13:26</u>				

STA-35+00 1-15-48
 0+00 = STA-35+00 ON 100' OFFSET LINE: SECT. AT 30° TO LINE.

SOUND S/E					
DIST	SOUND	DIST	SOUND	DIST	SOUND
0+00	3.2	+0.6	1+70	12.1	-8.3
+10	3.2	—		12.2	-8.4
<u>14:16</u>	3.4	+0.4	(3.8)	12.1	-8.3
(3.8)	3.4	—	2+00	12.2	-8.4
	3.5	+0.3		12.4	-8.6
50	3.5	—		12.3	-8.5
	3.6	+0.2		12.0	-8.2
	3.5	+0.3		12.1	-8.3
	3.5	—	50	12.1	—
	3.4	+0.4		12.1	—
1+00	8.4	-4.6	<u>19:20</u>	12.2	-8.4
	11.1	-7.3		12.2	—
	12.0	-8.2		12.2	—
	11.8	-8.0	3+00	12.3	-8.5
	12.0	-8.2		12.3	—
50	12.2	-8.4		11.5	-7.7
1+60	12.1	-8.3	3+30	3.0	+0.8

STA-35+00 1-15-48 (38)

DIST	SOUND	DIST	SOUND
3+40	2.9	+0.9	
50	2.9	—	
	2.8	+1.0	
(3.8)	2.8	—	
	2.9	+0.9	
	2.9	—	
4+00	2.9	—	
<u>19:21</u>			

STA-34+00

1-15-48

STA-34+00

1-15-48

(39)

0+100 = STA-34+00 ON 100' OFFSET LINE; SECT. AT 90° TAKEN

DIST SOUND

DIST SOUND

SOUND S/E

DIST SOUND

DIST SOUND

3+40 2.9 +0.7

PX

0+00 3.2 +0.4 1+70 11.8 -8.2 50 2.9 —

+10 3.0 +0.6 11.8 —

(3.6) 3.0 +0.6

14:28

2.9 +0.7 (3.6) 12.2 -8.6

3.2 +0.4

(3.6)

2.7 +0.9 2+00 12.2 —

3.4 +0.2

2.8 +0.8 12.2 —

1.9 —

50 2.8 — 12.0 -8.4 4+00 2.9 —

3.4 +0.2 12.0 —

14:35

1.4 -0.8 12.0 —

4.5 -0.9 50 12.0 —

11.8 -8.2 11.8 -7.0

17 1+00 11.7 -8.1 11.8 —

11.5 -7.9 11.7 -7.0

11.7 -8.1 14:31 11.7 —

11.8 -8.2 3+00 11.0 -7.0

11.7 -8.1 9.0 -0.4

50 11.7 — 3.2 +0.0

17 1+60 11.7 — 3+30 2.9 +0.0

STA-33700

1-15-98

STA-33700

1-15-98

(40)

0+00=STA-33700 ON 100' OFFSET LINE: SECT. AT 90° TAKEN

DIST SOUND DIST SOUND

DIST	SOUND	DIST	SOUND	DIST	SOUND	DIST	SOUND	
0+00	2.5	+1.0	1770	12.0	-8.5	50	3.0	+0.5
+10	2.7	+0.8		12.0	—		3.5	0.0
<u>14:38</u>	2.5	+1.0	(3.5)	12.2	-8.7	(3.5)	3.2	+0.3
(3.5)	2.5	—	2+00	12.4	-8.9		3.1	+0.4
	2.5	—		12.6	-9.1		2.1	—
50	2.5	—		12.4	-8.9	4+00	3.1	—
	2.9	+1.1		12.4	—	<u>14:40</u>		
	2.4	—		12.3	-8.9			
	2.4	—	50	12.3	—			
	3.7	-0.2		12.2	-8.9			
1700	8.7	-5.2		11.8	-8.9			
<u>14:40</u>	11.5	-8.0		11.8	—			
	11.3	-7.8		11.8	—			
	11.4	-7.9	3+00	11.9	-8.4			
	11.5	-8.0		11.8	-8.3			
50	11.8	-8.3		11.5	-8.0			
1760	12.0	-8.5	3+30	5.0	-1.5			

DIST SOUND

3+90

3.1

+0.4

DIST SOUND

50

3.0

+0.5

3.5

0.0

(3.5)

3.2

+0.3

3.1

+0.4

2.1

—

4+00

3.1

—

14:40

—

—

—

—

—

—

—

—

—

—

—

F. W. WALKER
 SOUNDINGS OF BORROW AREA
 ADJOINING CHANNEL SECT. "D" "E" "C"

BARRAGAN 1-20-98
 SHERRY
 WATSON
 CALM
 COOL
 WARM

1-20-98 (41)

Indexed

END SECTION 50' N-SEC. "D" "B" "L."
 150' SOUTH #6 W

0100 = PT. 50' N 150' SOUTH OF #6 W. SEC. AT 90°

DIST.	SOUND		DIST.	SOUND	
SOUND EAST					
0100	1.2	+0.9	1+10	12.4	-10.3
+10	2.2	-0.1		16.4	14.3
11:25	1.7	+0.4	(2.1)	16.7	13.6
(2.1)	1.0	+1.1	11:35	16.0	13.9
	0.7	+1.4	50	15.2	13.1
50	1.0	+1.1		15.8	13.7
	0.6	+1.5		16.0	13.9
11:27	0.6	+1.5		15.8	13.7
	0.7	+1.4		15.5	13.4
	0.9	+1.2	2+00	15.5	13.4
1400	5.3	-3.2	+10	15.5	13.4

END SECTION 100' SEC. "D" "B" "L."
 300' SOUTH #6 W

0100 = PT. 100' SOUTH OF #6 W SEC. AT 90°

DIST.	SOUND		DIST.	SOUND	
SOUND EAST					
0100	6.1	-4.1	1400	18.7	16.7
+10	6.1	4.1	(2.0)	18.0	16.0
12:30	6.7	4.7		17.0	15.0
(2.0)	6.5	4.5		17.7	15.7
	7.0	5.0		17.9	15.9
+50	6.1	4.1	50	18.2	16.2
	6.0	4.0	12:33	18.0	16.0
	6.0	4.0		18.2	16.2
	19.0	17.0		18.2	16.2
0+20	19.0	17.0	1+90	18.3	16.3

1-20-48
STA 39+00SEC N.E. ALONG SECTION "C" B/L
0+00 = STA 39+00 ON SEC "C" B/LSOUND N.E.

DIST	SOUND		DIST.	SOUND
0+00	1.0	+1.0	1+30	17.0
	1.1	+0.9	(2.0)	16.8
(2.0)	1.0	+1.0	12:43	16.1
12:40	1.9	+0.1	50	16.8
	6.3	-4.3	50	17.0
+50	12.8	-10.8	1+60	16.9
	18.0	-16.0		
	20.1	18.1		
	18.0	16.1		
	16.8	14.8		
1+00	16.8	17.8		
	16.8	19.8		
	17.0			
1+20	16.0	15.0		

1-20-48
STA. 48+00

PX

SEC. WEST ALONG SEC "D" B/L.

0+00 = STA. 48+00 ON SEC "D" B/L.

DIST.	SOUND		DIST.	SOUND	
0+00	10.2	+2.2	1+50	15.0	-13.0
0+23	0.0	+2.0			
+30	5.2	-3.2			
13:05	11.5	-9.5			
50	14.0	12.0			
(2.0)	14.8	12.8			
	14.5	12.5			
	14.8	12.8			
	14.5	12.5			
1+00	14.9	12.9			
	14.5	12.5			
13:08	14.6	12.6			
	14.7	12.7			
1+40	14.8	12.8			

1-20-98

STA. 48+00

0+00 = STA 48+00 SEC "D" B/L

SOUND SOUTH

PX

<u>DIST. SOUND</u>			<u>DIST. SOUND</u>		
0+00	+0.2	+2.2	1450	14.5	-12.5
+20	0.0	+2.0		13.0	-11.0
<u>13:17</u>	9.6	-7.6	<u>13:20</u>	13.5	-11.5
<u>(2.0)</u>	11.5	-9.5	<u>(2.0)</u>	14.0	-12.0
+50	16.3	-19.3		14.0	-12.0
0	17.2	-15.2	1+00	14.1	-12.1
	16.9	14.9			
	16.5	14.5			
	16.1	14.1			
1+00	16.0	14.0			
	15.3	13.3			
	14.8	12.8			
	13.8	11.8			
1+40	13.0	11.0			

1-20-98

(93)

STA 49+00

0+00 = STA 49+00 SEC "D" B/L

SOUND SOUTH

PX

<u>DIST. SOUND</u>			<u>DIST. SOUND</u>		
0+00	+0.3	+2.3	1+50	9.0	-7.0
+20	0.0	+2.0	<u>(2.0)</u>	9.0	-7.0
	9.0	-7.0	<u>13:30</u>	9.0	-7.0
<u>13:26</u>	13.0	-11.0		9.5	-7.5
+50	16.0	-19.0	1+90	9.5	-7.5
<u>(2.0)</u>	16.7	-19.7			
	16.2	-19.2			
	16.1	-19.1			
	16.0	-19.0			
1+00	15.8	-13.8			
	16.0	-19.0			
	15.0	-13.0			
	14.1	-12.1			
1+40	10.2	-8.2			

FINAL

BARRAGAN 1-22-98
SWEET'S
SPRINKLEY
HISE
CALAM
COOL

SOUNDINGS OF BORROW AREA ADJOINING

APPROACH CHANNEL SECTIONS "D" "E" "C"

PX

PROJ-3-1

END SECTION

STA-#6/WEST

0+00 = STA-#6/WEST SECTION "D" B/L

SOUND EAST ALONG B/L

DIST SOUND DIST SOUND

0+00 5.2 -1.8 1720 19.1 -15.7

+10 4.6 -1.2 18:45 18.0 -14.6

10:43 4.0 -0.6 (3.7) 17.5 -14.1

(3.7) 3.5 -0.1 50 17.5 -

3.7 0.0 17.5 -

50 3.9 -0.5 17.6 -14.2

3.3 +0.1 17.5 -14.1

2.7 +0.7 17.3 -13.9

2.7 - 2+00 17.5 -14.1

3.0 +0.4

1700 10.1 -7.0

1710 18.1 -14.7 2+30

PX

1-22-98

(79)

END SECTION 200' S/ OF STA-#6/WEST.

FT. 200'-S. SEC-D' B/L.

1400 = PT. ON X-SECTION LINE 200' SOUTH OF STA-#6-WEST

SOUND EAST AT 90° TO X-SECT. LINE.

0+00 4.3 -1.0

+10 4.1 -0.8

10:48 4.3 -1.0

(3.3) 10.5 -7.2

16.8 -13.5

50 21.0 -17.7

19.9 -16.6

19.2 -15.9

13.0 -15.7

19.0 -

1700 19.0 -

19.0 -

19.0 -

10:50 18.8 -15.5

18.3 -15.0

1450 18.3 -

PX

1-22-48

1-22-48

(95)

END SECTION 80' SOUTH OF STA-50+00

END SECTION

0+00=PT. ON X-SECT. LINE 80' SOUTH OF STA-50+00 SEC. D R.L.

DIST SOUND DIST SOUND

SOUND WEST AT 90° TO X-SECT. LINE.

DIST SOUND DIST SOUND

6+00 1.1 +2.1 1+50 17.0 -13.8

3+00 16.3 -13.2

+10 1.2 +2.0 17.0 -

(3.1) 16.3 -

16.1 -13.0

11:05 5.0 -1.8 (3.2) 17.0 -

16.0 -12.9

16.0 -

(3.2) 10.5 -7.3 17.0 -

50 16.0 -

14.9 -11.7 16.9 -13.7

50 18.2 -15.0 2+00 16.9 -

18.2 - 16.9 -

18.2 - (3.2) 17.4 -14.7

18.1 -14.9 (3.1) 18.2 -15.1

17.7 -14.5 11:10 19.2 -16.1

1+00 17.5 -14.3 50 18.1 -15.0

17.1 -13.9 15.0 -11.9

17.1 - 15.4 -12.3

17.0 -13.8 15.8 -12.7

1+90 17.0 - 2+90 15.8 -12.7

PX

1-23-98

END SECTION 200' SOUTH OF STA 50+00

0+00 = PT. ON X-SECT. LINE 200' SOUTH OF STA 50+00 - SEC. 01

SOUND WEST AT 90° TO X-SECT. LINE

DIST	SOUND	DIST	SOUND
0+00	10.2 -8.1	1+50	16.0 -13.9
+10	10.2 -8.1		15.3 -13.2
12:32	10.2 -	(2.1)	16.0 -13.9
(2.1)	10.4 -8.3		15.8 -13.7
	10.4 -		15.3 -13.2
50	10.3 -8.2	2+00	15.2 -13.1
	10.2 -8.1		14.3 -12.2
	10.2 -		13.5 -11.4
	10.1 -8.0	(2.1)	13.5 -11.4
	10.1 -	(2.0)	13.5 -11.5
1+00	10.1 -	50	13.2 -11.2
	10.0 -7.9		13.1 -11.1
	10.0 -		13.2 -11.2
	10.8 -8.7		13.2 -
1+40	13.1 -11.0	2+90	13.2 -

PX

1-22-98

END SECTION

(26)

DIST	SOUND	DIST	SOUND
3+00	13.3 -11.3	4+80	13.8 -11.8
11:37	13.5 -11.5	(2.0)	13.8 -
(2.0)	13.4 -11.4	5+00	13.8 -
	13.5 -11.5		13.8 -
	13.5 -11.5		13.5 -11.5
50	13.7 -11.7		13.5 -
	13.7 -		13.5 -
	14.0 -12.0	50	13.5 -
	14.0 -		13.5 -
	14.0 -		13.8 -11.8
4+00	14.0 -		14.0 -12.0
	14.0 -	12:42	14.0 -
	14.0 -12.9	6+00	14.0 -
	14.0 -12.0		14.0 -
	13.8 -11.8		14.0 -
50	13.8 -		14.0 -
	13.8 -		14.0 -
4+70	13.8 -	6+50	14.0 -

FINAL

1-22-78

56+00

1-22-78

(97)

SOUNDINGS OF APPROACH CHANNEL SECT. 2

DIST SOUND

DIST SOUND

at **PX** STA-56+00

3+00 12.8 -11.1

PX

Inducted

S 0+00 = STA-56+00 ON 100' OFFSET LINE: SECT. AT 90° T. L.

12.8 —

SOUND SOUTH

DIST SOUND DIST SOUND

(1.7) 12.5 -10.8

6 0+00 1.0 +0.8 1+50 11.5 -9.7

10.2 -8.5

+10 1.0 — (1.8) 11.1 -9.3

9.8 -3.1

12:53

1.1 +0.7 11.0 -9.2

50 9.9 -2.7

(1.8) 1.1 — 11:58 11.6 -9.8

9.2 -2.5

1.2 +0.6 11.7 -9.9

9.4 -2.7

50 1.9 -0.1 2+00 11.4 -9.6

9.1 -2.4

1.7 +0.1 12.0 -10.2

9.0 -2.3

1.6 +0.2 12.0 — 1+00 9.0 —

1.7 +0.1 (1.8) 12.0 — 12:02

1.9 -0.1 (1.7) 11.8 -10.1

14:00 2.0 -0.2 50 11.5 -9.8

8.0 -6.2 11.5 —

11.1 -9.3 11.5 —

11.5 -9.7 12.0 -10.3

17:40 11.8 -10.0 2+30 12.4 -10.7

PX STA- 57+00

0+00 = STA- 57+00 ON 100' OFFSET LINE: SECT. AT 90° To

SOUND SOUTH					
DIST	SOUND	DIST	SOUND	DIST	SOUND
0+00	3.0 -1.4	1+70	11.2 -9.6		
+10	3.3 -1.7		11.0 -9.4		
<u>13:08</u>	3.3 -	(1.6)	10.7 -9.1		
(1.6)	3.4 -1.8	2+00	10.7 -		
	3.4 -		10.6 -9.0		
50	3.5 -1.9		10.5 -8.9		
	3.5 -	<u>13:13</u>	10.7 -9.1		
	3.4 -1.8		10.9 -9.3		
	3.4 -	50	11.0 -9.4		
<u>13:10</u>	3.4 -		11.0 -		
1+00	4.9 -2.8		11.1 -9.5		
	11.0 -9.4		11.1 -		
	11.5 -9.9		11.1 -9.8		
	11.5 -	3+00	11.7 -10.1		
	11.5 -		11.7 -		
50	11.5 -		10.0 -8.4		
1+60	11.5 -	<u>13:15</u>	3.2 -1.6		

STA- 57+00 1-22-98 (98)

DIST SOUND		DIST SOUND	
3+40	2.8 -1.2		
50	2.5 -0.9		PX
	2.0 -0.4		
(1.6)	2.0 -		
	2.0 -		
	1.9 -		
	2.1 -0.3		
1+20	1.9 -		

PX

STA-58+00

1-22-78

PX

STA-58+00

1-22-78

(79)

0+00 = STA-58+00 ON 100' OFFSET LINE; SECT. AT 90° TO LINE

DIST SOUND DIST SOUND

DIST	SOUND	DIST	SOUND
0+00	3.5	-2.0	1+70 10.8 -9.3
+10	3.5	-	10.6 -9.1
<u>13:23</u>	3.5	-	(1.5) 10.3 -8.8
(1.5)	3.5	-	2+00 10.3 -
	3.5	-	10.3 -
50	3.5	-	<u>13:27</u> 10.2 -8.7
	3.7	-2.2	10.1 -8.6
	3.8	-2.3	10.0 -8.5
	4.0	-2.5	50 10.0 -
	4.5	-3.0	10.0 -
1+00	5.0	-3.5	10.0 -
	10.1	-8.6	10.2 -8.7
	11.2	-9.7	10.5 -9.0
	11.1	-9.6	3+00 10.8 -9.3
	11.0	-9.5	10.9 -9.4
50	10.6	-9.1	9.8 -8.3
1+60	10.9	-9.4	3+30 3.5 -2.0

DIST	SOUND	DIST	SOUND
3+40	2.6	-1.1	
50	2.0	-0.5	
(1.5)	1.7	-0.2	
<u>13:30</u>	1.9	-0.4	
	1.5	0.0	
	2.0	-0.5	
4+00	2.0	-	

PX STA-59+00 1-22-98

0+00=STA-59+00 ON 100' OFFSET LINE: SECT. AT 90° TO LINE

SOUND SOUTH					
DIST	SOUND	DIST	SOUND	DIST	SOUND
0+00	3.2	-1.8	1+70	10.0	-8.6
+10	3.2	—		10.0	—
<u>13:37</u>	3.2	—	<u>13:40</u>	9.7	-8.3
(1.9)	3.1	-1.7	2+00	9.7	-8.0
	3.1	—	(1.9)	9.4	—
50	3.1	—		9.5	-8.1
	2.9	-1.5		9.5	—
	2.9	—		9.6	-8.2
	2.7	-1.3	50	9.8	-8.4
	2.9	-1.5		9.6	-8.2
1+00	7.1	-5.7		9.8	-8.4
	9.8	-8.4		9.8	—
	10.9	-9.0		10.0	-8.6
	10.3	-8.9	3+00	10.0	—
	10.2	-8.8		10.0	—
50	10.0	-8.6		9.2	-7.8
1+60	10.0	—	3+30	2.0	-7.6

PX STA-59+00 1-22-98

DIST	SOUND	DIST	SOUND
3+90	1.0	+0.4	
50	0.9	+0.5	
(1.9)	1.0	+0.4	
3+70	1.0	—	
<u>13:44</u>			
4+00			

(50)

FX

STA-60+00

1-22-98

STA-61+00

1-22-98

(51)

0+00 = STA-60+00 ON 100' OFFSET LINE: SECT. AT 90° TO LINE

0+00 = STA-61+00 ON 100' OFFSET LINE: SECT. AT 90° TO LINE

SOUND SOUTH

SOUND SOUTH

DIST SOUND

DIST SOUND

DIST SOUND

DIST SOUND

0+00	2.1	-0.8	1+70	10.0	-8.7
+10	2.1	-	(1.3)	10.0	-
<u>13:40</u>	1.9	-0.6		10.0	-
(1.3)	1.9	-	2+00	10.0	-
	1.7	-0.4		10.0	-
50	1.4	-0.1		10.0	-
	1.4	-	<u>13:53</u>	9.7	-8.4
	1.3	0.0		10.0	-8.7
	1.3	-	50	10.1	-8.8
	1.6	-0.3		10.3	-9.0
1+00	7.0	-5.7		9.8	-8.5
	9.8	-8.5		9.8	-
	10.0	-8.7		9.7	-8.4
	10.0	-	3+00	9.6	-8.3
	9.8	-8.5		9.0	-7.7
50	10.2	-8.9		8.0	-6.7
1+60	10.2	-		1.1	+0.2
			3+40	0.4	+0.9

0+00	1.0	+0.3
+10	0.9	+0.4
<u>14:00</u>	0.9	-
(1.3)	0.8	+0.5
	0.8	-
50	0.8	-

BARRAGAN
SHERRY
STANLEY
2-13-78
CLEAR
LIGHT WIND
COOL

STA-23+00 2-13-78

(53)

FINAL SOUNDINGS OF APPROACH CHANNEL

DIST SOUND DIST SOUND

SECTION "A" PROJ-3-1

2+80 10.7 -7.8

STA-23+00

(2.9) 10.5 -7.6

0+00=STA-23+00 ON SECT. "A" 2/4: SECT. AT 90° TO Bk
SOUND SOUTH

3+00 10.6 -7.7

DIST SOUND DIST SOUND

10.8 -7.9

0+00 1.3 +1.7 1+40 10.2 -7.2

9.8 -6.9

+10 1.3 — 50 10.2 —

8.9 -6.0

19:22 1.2 +1.8 10.5 -7.5

3.0 -0.1

(3.0) 1.2 — 10.3 -7.3

5.0 3.7 -0.8

1.2 — (3.0) 10.0 -7.0

3.7 —

50 1.3 +1.7 19:25 10.0 —

3.8 -0.9

1.3 — 2+00 10.1 -7.2

3.4 -0.5

1.2 +1.8 (2.9) 10.5 -7.6

4.7 -1.8

1.2 — 11.8 -8.9

9+00 5.4 -2.5

2.0 +1.0 11.0 -8.1

19:28

1+00 2.5 -4.5 10.9 -8.0

10.7 -7.7 50 11.0 -8.1

10.5 -7.5 10.8 -7.9

1+30 10.5 — 2+70 10.7 -7.8

Indetop

2-13-48

STA-22+00

2-13-48

(33)

PX

STA-22+00

DIST SOUND

DIST SOUND

PX

0+00=STA-22+00 ON SECT. "A" 8/4: SECT AT 90° TO 8/4

3+20 10.3 -7.5

SOUND SOUTH

DIST SOUND

DIST SOUND

6.0 -3.2

0+00 1.5 +1.3 1+60 10.8 -8.0

(2.8) 0.5 +2.3

+10 1.4 +1.4 (2.8) 10.7 -7.9

3+50 0.0 +2.8

11:36 1.4 — 10.6 -7.8

11:42

(2.8) 1.4 — 10.9 -8.1

4+00 0.1 +2.7

1.4 — 2+00 11.2 -8.4

50 1.4 — 11.2 —

1.4 — 10.0 -7.2

1.4 — 10.0 —

1.3 +1.5 10.5 -7.7

5.0 -2.2 50 10.5 —

1+00 10.1 -7.3 10.4 -7.6

10.5 -7.7 10.5 -7.7

10.5 — 10.5 —

10.6 7.8 10.2 -7.4

11:38 10.5 -7.7 3+00 10.0 -7.2

1+50 10.5 — 3+10 10.3 -7.5

FINAL

BARRAGAN
SWAPP'S
STANLEY2-16-98
CLEAR
CALM
WARM

SOUNDINGS OF BORROW AREA ADJOINING CHANNEL

STA-47+00

2-16-98

(57)

SECTION "D" SOUTH SIDE (TIES ON PREVIOUS SOUNDINGS)

0+00=STA-47+00 SECT. "D" B/L SOUND SOUTH AT 90° TO B/L.

PX

STA-46+00

DIST SOUND DIST SOUND

0+00=STA-46+00 SECT. "D" B/L SOUND SOUTH AT 90° TO B/L.

2+00 13.6 -10.9 3+60 17.2 -14.5

DIST SOUND DIST SOUND

+10 13.6 — 17.0 -14.3

2+00 13.6 -11.0 3+40 19.4 -16.8

11:00
— 13.8 -11.1 (2.7) 16.8 -14.1

+10 13.6 — 50 19.4 —

(2.7) 13.8 — 16.8 —

10:15
13.7 -11.1 (2.6) 18.8 -16.2

13.7 -11.0 4+00 17.1 -14.4

(2.6) 14.0 -11.4 18.5 -15.9

50 13.5 -10.8 17.3 -14.6

13.8 -11.2 19.1 -16.5

13.5 — 17.4 -14.7

50 13.5 -10.9 19.3 -16.7

13.6 -10.9 17.4 —

13.5 — 4+00 20.1 -17.5

13.6 — 17.5 -14.8

13.5 — 20.5 -17.9

14.2 -11.5 50 17.6 -14.9

13.7 -11.1 21.0 -18.4

3+00 15.0 -12.3 17.6 —

15.5 -12.9 20.5 -17.9

16.7 -14.0 17.5 -14.8

3+00 16.8 -14.2 20.0 -17.4

18.0 -15.3 17.5 —

18.7 -16.1

19.6 -17.0 50 19.4 -16.8

17.7 -15.0 17.3 -14.6

4+60 19.0 -16.4

18.4 -15.7 5+00 17.1 -14.4

3+30 19.5 —

10:50

3+50 17.5 -14.8 11:03

(BORROW AREA SOUTH SECT. "D") 2-16-48

STA-18+00

0+00=STA-18+00 SECT. "D" B/L. SOUND SOUTH AT 90° TO B/L.

DIST	SOUND	DIST	SOUND
2+00	19.5 -11.8	3+60	15.7 -12.7
2+10	14.6 -11.9		15.8 -13.1
<u>11:15</u>	14.9 -12.2		16.2 -13.5
(2.7)	15.0 -12.3		16.5 -13.8
	15.0 —	4+00	16.5 —
50	14.7 -12.0		16.8 -14.1
	14.5 -11.8		17.0 -14.3
	14.5 —		17.0 —
	17.3 -14.6		17.2 -14.5
	17.4 -14.7	50	16.8 -14.1
3+00	17.5 -14.8		16.8 —
	17.2 -14.5		17.0 -14.3
	16.6 -13.9		17.0 —
	16.3 -13.6	<u>11:20</u>	16.8 -14.1
	16.0 -13.3	5+00	16.8 —
		+10	16.8 —
3+50	15.9 -12.7	5+20	16.7 -14.0

FINAL 2-16-48

(55)

SOUNDINGS OF APPROACH CHANNEL SECT. "A"

PROJ. # 3-1

PX

STA-21+00

0+00=STA-21+00 ON SECT. "A" B/L. SOUND SOUTH AT 90° TO B/L.

DIST	SOUND	DIST	SOUND
0+00	1.9 +1.7	1+40	11.9 -8.3
+10	1.9 —	50	11.9 —
<u>12:24</u>	1.9 —		11.8 -8.7
(3.1)	1.9 —	(3.1)	12.0 -8.9
	1.5 +1.6		11.8 -8.7
50	1.5 —		11.6 -8.5
	1.5 —	2+00	11.0 -7.9
	1.5 —		11.7 -8.6
	1.5 —		12.0 -8.9
	1.7 +1.4		12.0 —
1+00	2.5 -4.4		12.0 —
	11.1 -8.0	50	12.5 -9.4
	11.1 —		12.5 —
1+30	11.2 -8.1	2+70	13.0 -9.9

STA-21+00

2-16-98

DIST	SOUND	DIST	SOUND
2780	3.2	-10.1	
(3.1)	13.1	-10.0	
3700	12.9	-9.8	
	12.2	-9.1	
	10.0	-6.9	
	1.1	+2.0	
12:40	0.5	+2.6	
50	0.5	—	

2-16-98

(56)

STA-20+00

STATION STA. 20+00 SECT "A" B/H: SOUND SOUTH AT 90° TO R/L.

DIST	SOUND	DIST	SOUND
0+00	0.9	+2.2	1760 11.3 -8.2
710	0.9	—	11.0 -7.9
12:45	0.9	—	(3.1) 11.0 —
(3.1)	0.9	—	11.0 —
	0.9	—	2700 11.2 -8.1
			11.9
50	0.9	—	10.9 -8.8
	0.9	—	12.1 -9.1
	0.9	—	11.4 -8.3
	1.0	+2.1	12:18 12.8 -9.7
	1.0	—	50 13.4 -10.3
1+00	6.2	-3.1	13.4 —
	10.8	-7.7	13.4 —
	11.4	-8.3	13.4 —
	11.4	—	13.3 -10.2
	11.4	—	3700 12.7 -9.6
1+50	11.3	-8.2	3710 12.4 -9.3

2-16-78

STA-19+00

DIST	SOUND	DIST	SOUND
3+20	10.6	-7.4	
	4.0	-0.8	
(3.2)	1.7	+1.5	
50	1.7	—	
	1.8	+1.4	
	1.8	—	
	1.8	—	
	2.0	+1.2	
7+00	2.6	+0.6	

13:03

2-16-78

STA-18+00

PX

(58)

STATION 18+00 SEC. "A" B/L: SOUND SOUTH AT 90° TO B/L.

DIST	SOUND	DIST	SOUND
2+00	1.4	+1.8	1760 10.8 -7.6
410	1.4	—	10.7 -7.5
13:11	1.4	—	(3.2) 10.6 -7.4
(3.2)	1.5	+1.7	10.6 —
	1.5	—	2+00 11.0 -7.8
50	1.5	—	13:13 10.8 -7.6
	1.5	—	12.0 -8.8
	1.5	—	11.0 -7.8
	1.5	—	11.1 -7.9
	2.1	+1.1	50 11.1 —
1+00	8.0	-4.8	11.5 -8.3
	11.1	-7.9	11.6 -8.4
	11.1	—	11.8 -8.6
	11.1	—	11.7 -8.5
	11.0	-7.8	3+00 11.7 —
1+50	10.8	-7.6	3+10 11.9 -8.2

STA- 18+00 2-16-78

DIST	SOUND	DIST	SOUND
3+20	10.8 -7.6		
	4.5 -1.3		
(3.2)	4.2 -1.0		
50	4.0 -0.8		
	3.1 +0.1		
	3.8 -0.6		
	4.1 -0.9		
	4.2 -1.5		
4+00	5.0 -1.8		

13:16

STA- 17+00 2-16-78 (5)

1+00 = STA-17+00 SECT. "A" B/L. SOUND SOUTH AT 90° TO B/L.

DIST	SOUND	DIST	SOUND
0+00	1.4 +1.8	1+60	12.1 -8.9
4+10	1.4 —		12.0 -8.8
13:23	1.4 —		12.1 -8.9
(3.2)	1.4 —	(3.2)	12.3 -9.1
	1.5 +1.7	2+00	12.3 —
50	1.5 —		11.3 -8.1
	1.5 —		12.0 -8.8
	1.5 —		12.0 —
	1.4 +1.8		12.2 -9.0
	2.0 +1.2	50	12.2 —
1+00	8.5 -5.3		12.5 -9.3
	11.4 -8.2		12.3 -9.1
	12.0 -8.8		12.3 —
	12.2 -9.0		12.5 -9.3
13:25	12.4 -9.2	3+00	12.3 -9.1
1+50	12.3 -9.1	3+10	12.1 -8.9

STA-17+00 2-16-78

DIST	SOUND	DIST	SOUND
3+20	12.0 -8.8		
	7.9 -4.7		
(3.2)	7.5 -4.3		
50	7.3 -4.1		
	7.2 -4.0		
	7.1 -3.9		
	7.0 -3.8		
	6.7 -3.5		
4+00	6.1 -2.9		

STA-16+00 2-16-78 (62)

0+00 = STA-16+00 SECT. "A" B/L. SOUND SOUTH AT 90° TO B/L.

DIST	SOUND	DIST	SOUND
0+00	7.3 -4.1	1+60	11.1 -7.9
+10	7.3 —		11.1 —
13:35	7.0 -3.8		11.0 -7.8
(3.2)	7.0 —	(3.2)	11.0 —
	7.1 -3.9	2+00	11.8 -8.6
50	7.1 —		11.9 -8.7
	7.1 —		12.0 -8.8
	7.1 —		12.1 -8.9
	7.1 —		12.3 -9.1
	7.0 -3.8	50	12.0 -8.8
1+00	7.0 —		12.0 —
	10.4 -7.2		11.9 -8.7
	11.9 -8.7		11.8 -8.6
	11.9 —	13:40	11.6 -8.4
	12.0 -8.8	3+00	11.5 -8.3
1+50	11.1 -7.9	3+10	11.8 -8.6

STA: 16+00 2-16-48

DIST	SOUND	DIST	SOUND
3+20	10.0	-6.8	
PX	3.1	-0.2	
(3.2)	2.3	+0.9	
50	2.0	+1.2	
	1.9	+1.3	
	1.9	—	
	1.9	—	
	1.9	—	
4+00	1.9	—	

13.92

STA: 15+00 2-16-48 (61)

0+00 = STA: 15+00 SECT. "A" B/L; SOUND SOUTH AT 90° TO B/L.

DIST	SOUND	DIST	SOUND
0+00	2.8	+0.4	1+60 10.6 -7.4
+10	2.8	—	10.6 —
13.92	2.6	+0.6	11.0 -7.8
(3.2)	2.5	+0.7	(3.2) 11.1 -7.9
	2.4	+0.8	2+00 11.1 —
50	2.3	+0.9	12.1 -8.9
	2.3	—	12.3 -9.1
	2.4	+0.8	11.7 -8.5
	2.7	+0.5	11.8 -8.6
	3.1	+0.1	50 12.0 -8.8
1+00	2.4	-4.2	12.2 -9.0
	10.8	-7.6	12.1 -8.9
	11.4	-8.2	12.1 —
	11.0	-7.8	12.1 —
	10.8	-7.6	3+00 12.0 -8.8
1+50	10.8	—	3+10 11.7 -8.5

2-16-78

STA- 15+00		DIST SOUND	
3+20	10.7	-7.2	
	3.7	-0.5	
(3.2)	1.8	+1.4	
50	2.1	+1.1	
	1.9	+1.3	
	1.8	+1.4	
	1.8	-	
	2.0	+1.2	

4+00 1.8 +1.4

13:55

2-16-78 (62)

STATION = STA = 17+00, SECT. "A" 7/4". SOUND SOUTH AT 90° To B/L.

STA- 17+00		DIST SOUND		DIST SOUND	
0+00	2.0	+1.2	17+60	11.2	-8.0
7+0	2.0	+1.2		11.0	-7.8
<u>14:00</u>	2.1	+1.1		11.1	-7.9
(3.2)	2.2	+1.0	(3.2)	11.2	-8.0
	2.2	+1.0	2+00	11.2	-8.0
50	2.2	+1.0	<u>14:02</u>	11.5	-8.3
	2.2	+1.0		11.6	-8.4
	2.2	+1.0	N.G.	8.1	-4.9
	2.1	+1.1	CUT		
	2.1	+1.1	INCOMPLETE	3.0	+1.2
	2.1	+1.1			
1+00	3.0	-5.8			
	10.8	-7.6			
	11.0	-7.8			
	11.0	-7.8			
	11.0	-7.8			
1+50	11.5	-8.3			

MAY NOT BE IN ORIGINALS 2-16-78

STA-24+00 2-16-78

(63)

STA-24+00

DIST SOUND

DIST SOUND

0+00=STA-24+00 SECT. "A" 8/4: SOUND SOUTH AT 90° TO B/L

3+20 12.7 -9.2

DIST SOUND

DIST SOUND

14:35 13.7 -10.2

0+00 1.2 +2.0 1460 11.0 -7.8

14.0 -10.8

+10 1.3 +1.9 14:32 11.7 -8.5

50 15.5 -12.3

14:28 1.3 — 12.8 -9.6

(3.2) 15.8 -12.6

(3.2) 1.4 +1.8 (3.2) 12.6 -9.4

15.5 -12.3

3.7 -0.2 2+00 12.2 -9.0

17.0 -10.8

50 1.8 +1.4 11.7 -8.5

13.5 -10.3

2.2 +1.0 12.0 -8.8

4+00 13.4 -10.2

5.2 -2.0 12.0 —

10.4 -7.2 12.1 -8.9

12.0 -8.8 50 12.1 —

1+00 12.0 — 11.9 -8.7

11.7 -8.5 12.0 -8.8

11.0 -7.8 11.7 -8.5

11.0 — 11.6 -8.4

10.8 -7.6 3+00 12.0 -8.8

1+50 10.8 — 3+10 11.8 -8.6

SECTION 100' E & PAR. WITH
~~ALONG~~ SECT. "B" B/H

2-16-98

PX

STA-29+08.95

0+00=STA-29+08.95 SOUND SOUTH

DIST	SOUND	DIST	SOUND
0+00	7.3 -4.2	1+30	12.0 -8.9
+10	9.0 -5.9		12.0 —
<u>14:50</u>	7.0 -3.9	50	11.8 -8.7
(3.1)	7.1 -4.0	(3.1)	12.1 -9.0
	8.1 -5.0		12.0 -8.9
50	8.1 -5.3		11.6 -8.5
	8.5 -5.4		11.7 -8.6
	9.2 -6.1	2+0.0	12.5 -9.4
	8.8 -5.7		12.1 -9.3
	12.0 -8.9		12.3 -9.2
1+00	12.0 —		12.4 -9.3
	13.0 -9.9		12.3 -9.2
1+20	11.9 -8.8	2+50	12.1 -9.0

STA-

2-16-98

(57)

DIST	SOUND	DIST	SOUND
2+60	12.0 -8.9		
	12.1 -9.0		
(3.1)	12.1 —		
	12.1 —		
3+00	11.7 -8.6		
	11.7 —		
	12.5 -9.4		
	13.5 -10.4		
	13.9 -10.8		
50	13.4 -10.3		
	14.0 -10.9		
	13.8 -10.9		
	15.0 -11.9		
	15.1 -12.0		
	15.0 -11.9		
4+00	14.7 -11.6		

PX

14:55

BARRAGAN 2-26-98
 SWIRRY CLEAR
 STAMMAY COOL
 LIGHT WIND

STA-15+00

2-22-98

(65)

CHECK SOUNDINGS AFTER SHOAL REMOVAL

DIST SOUND DIST SOUND

STA-15+00 APPROACH CHANNEL SECT. "B"

3+60 8.2 -2.8

STA-15+00

(5.4) 8.1 -3.0

0+00=STA-15+00 SECT. "B" B/L: SOUND EAST AT 90° T.

DIST SOUND 2+10 14.0 -8.6

0+00 13.3 -7.9 14.3 -8.9

+50 13.5 -8.1 (5.4) 15.0 -9.6

^{10:00} 90 13.5 - 14.5 -9.1

1+00 14.5 -9.1 50 14.9 -9.5

(5.4) 14.3 -8.9 14.8 -9.4

14.2 -8.8 14.8 -

14.5 -9.1 14.5 -9.1

15.5 -10.1 14.9 -9.0

15.0
 50 +6.0 -9.6 3+00 14.5 -9.1

16.3
~~16.2~~ -10.9 11.2 -5.8

15.6
~~16.6~~ -10.2 10.1 -5.0

15.2 -9.8 8.5 -3.1

15.0 -9.6 8.2 -2.8

2+00 14.8 -9.4 3+50 8.2 -

FINAL

2-26-18

SOUNDINGS OF APPROACH CHANNEL SECT. "D"

STA- 52+00

0+00=STA- 52+00 SECT. "D" B/L: SOUND SOUTH AT 90° To B/L.

DIST	SOUND		DIST	SOUND	
0+00	3.0	+2.8	1+50	13.1	-7.3
+10	3.3	+2.5		13.5	-7.7
<u>10:40</u>	3.1	+2.7	(5.8)	13.3	-7.5
(5.8)	3.1	—		13.8	-8.0
	3.1	—		14.0	-8.2
50	3.2	+2.6	2+00	14.1	-8.2
	3.2	—		13.7	-7.9
	3.4	+2.4	<u>10:43</u>	14.0	-8.2
	3.5	+2.3		14.0	—
	4.8	+1.0		13.5	-7.7
1+00	10.2	-4.4	50	13.5	—
	13.1	-7.3		13.8	-8.0
	13.0	-7.2		13.2	-7.4
	13.0	—		13.4	-7.6
1+40	13.0	—	2+30	13.2	-7.4

STA- 52+00

2-26-18

(66)

DIST SOUND DIST SOUND

3+00 13.2 -7.4

13.0 -7.2

(5.8) 12.6 -6.8

13.0 -7.2

10:45 12.4 -6.6

50 12.0 -6.2

8.7 -2.9

7.0 -1.2

5.2 +0.6

4.9 +0.9

4+00 5.0 +0.8

5.0 —

5.1 +0.7

5.8 0.0

5.8 —

50 5.3 +0.5

10:47

CHECK

2-26-48

SOUNDINGS STA-66400 CHANNEL-SECT. "D" B/L.

STA - 66400

0+00 = STA-66400 SECT. "D" B/L. SOUND SOUTH AT 90° TO B/L.

DIST	SOUND	DIST	SOUND
0+00	5.5 +0.3	1+50	13.8 -8.0
(5.8)	5.5 —	(5.8)	13.9 -7.6
11:05	5.4 +0.4	11:10	13.9 —
	5.3 +0.5		13.8 -8.0
	5.4 +0.4		14.0 -8.2
50	5.4 —	2+00	13.8 -8.0
	5.4 —		14.0 -8.2
	5.4 —		13.8 -8.0
	5.4 —		13.9 -7.9
	5.4 —		13.8 -8.0
1+00	12.0 -6.2	50	13.8 -8.0
	13.8 -8.0		
	14.1 -8.3		
	14.2 -8.4		
1+40	14.2 —		

FINAL

2-26-48

SOUNDINGS OF SOUTH ISLAND PATERA GROUP

P.P.O.J. - # 3-1

STA-119+00

0+00 = STA-119+00 PATERA B/L. SOUND WEST AT 90° TO B/L.

DIST	SOUND	DIST	SOUND
1490	2.9 +1.9	3+20	13.2 -8.4
1430		2+80	
12:40	2.7 +2.1		12.8 -8.0
50	3.0 +1.8	3+00	12.5 -7.7
2+00			
(4.8)	3.0 —	(4.8) ⁵⁰	11.7 -6.9
	3.0 —		10.5 -5.7
	3.0 —		8.8 -4.0
	3.0 —		7.5 -2.7
	3+00	7.1 +0.7	50 6.9 -1.6
50	6.8 -2.0	4+00	4.6 +0.2
	3.0 -4.2		3.0 +1.8
	3.1 -4.6		1.9 +2.9
	6.4		
	7.2 -2.4		1.1 +3.7
	4+40		
50	13.2 -8.4	4+00	0.5 +4.3
3+00	13.1 -8.3	50	
3+10			
2+70	13.1 —		
		1+60	

(67)

Indexed

STA-119+00

2-26-78

STA-119+00

2-26-78

(68)

0+00=STA-112+00 PATERA 7/2i SOUND EAST AT 90° TO 2h

DIST SOUND DIST SOUND

DIST	SOUND	DIST	SOUND
0+50	1.5 + 3.1	3+00	3.2 + 1.4
1+00	1.6 + 3.0		3.3 + 1.3
1+50	2.0 + 2.6	(4.6)	3.3 —
(4.6)	2.0 —		3.3 —
	2.2 + 2.4		3.1 + 1.5
	2.4 + 2.2	⁵⁰ 3+00	3.1 —
	2.5 + 2.1	<u>12:58</u>	3.1 —
2+00	2.6 + 2.0		3.1 —
	2.8 + 1.8		3.0 + 1.6
	2.9 + 1.7		3.0 —
	2.9 —	4+00	3.0 —
	2.9 —		3.0 —
50	3.0 + 1.6		3.0 —
	3.0 —		3.0 —
<u>12:55</u>	3.1 + 1.5		3.0 —
	3.1 —	50	3.0 —
2+90	3.1 —	4+60	3.0 —

DIST	SOUND	DIST	SOUND
4+70	2.9 + 1.7		
	2.7 + 1.9		
(4.6)	2.7 —		
5+00	2.7 —		
	2.7 —		
	2.7 —		
	2.7 —		
	3.5 + 1.1		
50	6.0 - 1.4		
	8.2 - 3.6		
	9.5 - 4.9		
	10.1 - 5.5		
	10.2 - 5.6		
6+00	10.7 - 5.8		

13:03

2-26-48

STA-120+00

~~0+00=STA-120+00~~
 120+00 PATERN B/L SOUND EAST

DIST SOUND DIST SOUND

0+00 3.0 +1.3 1+60 3.1 +1.2

+10 3.0 — 3.1

13:13 3.0 — (4.3) 3.1

(4.3) 3.0 — 3.1

3.0 — 2+00 3.1

50 3.0 — 3.1

3.0 — 3.1

3.0 — 3.1

3.0 — 3.1

3.0 — 50 3.1

1+00 3.0 — 3.1

3.1 +1.2 3.1

3.1 — 3.1

13:15 3.1 — 3.1

3.1 — 3+00 3.1 +1.2

1+50 3.1 — 3+10 3.0 +1.3

STA-120+00

2-26-48

(69)

DIST SOUND DIST SOUND

3+20 3.0 +1.3 5+00 2.5 +1.8

3.0 — (4.3) 2.5 —

(4.3) 2.9 +1.4 13:20 2.4 +1.9

50 2.9 — (4.2) 2.2 +2.0

2.9 — 2.1 +2.1

3.0 +1.3 50 2.1 —

3.0 — 2.2 +2.0

3.0 — 3.3 +0.9

4+00 3.0 — 5.7 -1.5

3.1 +1.2 7.7 -3.5

3.1 — 6+00 8.7 -4.5

2.9 +1.4 9.1 -4.9

2.8 +1.5 9.4 -5.2

50 2.7 +1.6 9.4 —

2.6 +1.7 9.5 -5.3

2.6 — 50 9.4 -5.2

2.6 — 13:23 9.4 —

4+30 2.6 6+70 9.3 -5.1

STA-120+00

0+00 = STA-120+00 PATERA B/L: SOUND WEST

DIST SOUND DIST SOUND

0+10 2.7 +1.4 1+90 3.0 +1.1

13:26 2.7 — — 4.0 +0.1

(4.1) 2.7 — (4.1) 2.7 -3.6

2.7 — 2+00 9.0 -4.9

50 2.7 — — 9.1 -5.3

~~2.6~~
3.6 +1.5 — 10.4 -6.3

~~2.6~~
3.6 — — 11.0 -6.9

2.6 — — 11.0 —

2.6 — 50 11.2 -7.1

1+00 2.7 +1.4 — 11.0 -6.9

2.7 — — 10.7 -6.6

2.8 +1.3 — 10.5 -6.4

3.0 +1.1 — 9.7 -5.6

3.1 +1.0 3+00 8.0 -3.9

50 3.1 — 13:30 6.2 -2.1

1+60 3.0 +1.1 3+20 5.2 -1.1

STA-120+00 2-26-48

(70)

DIST SOUND

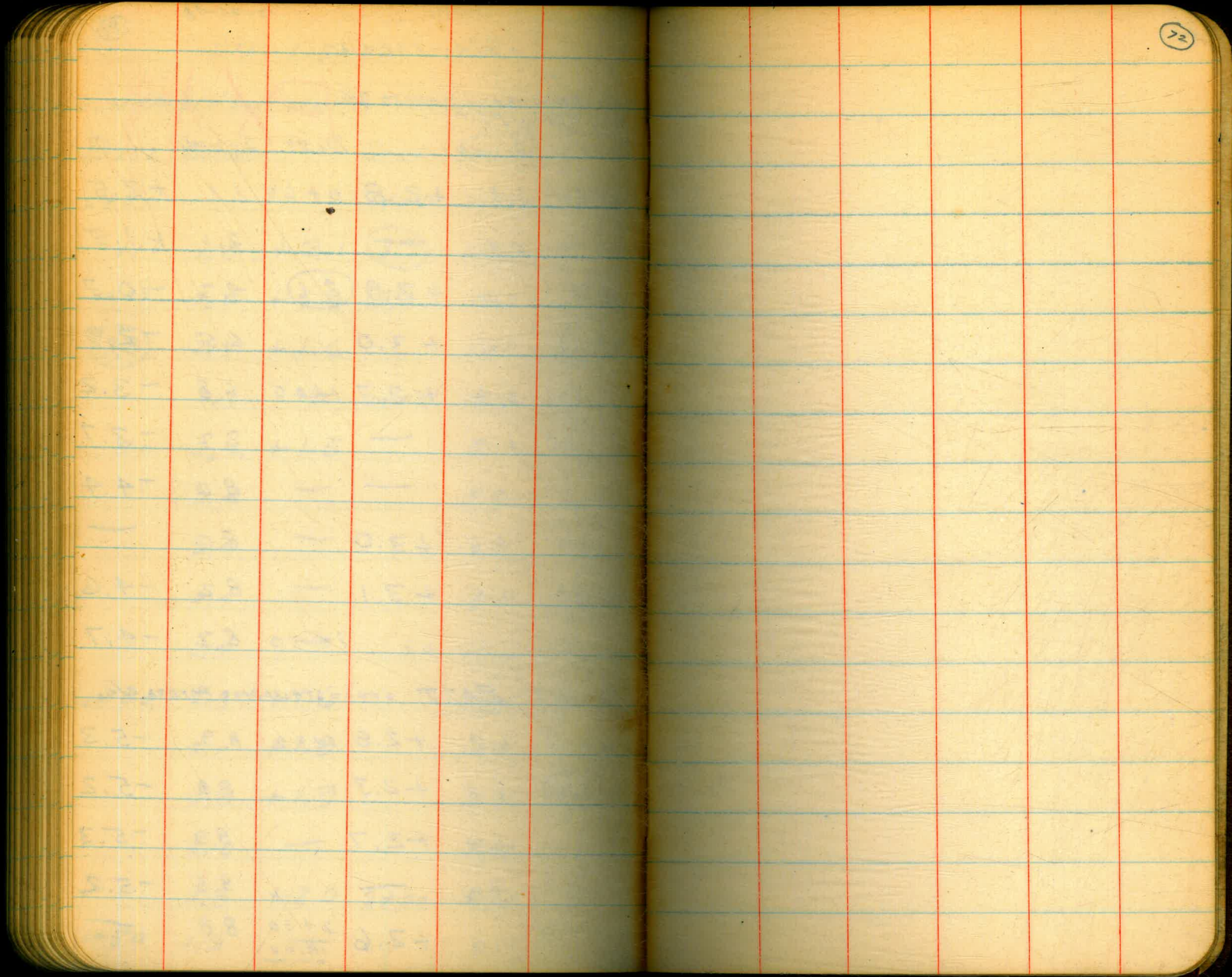
DIST SOUND

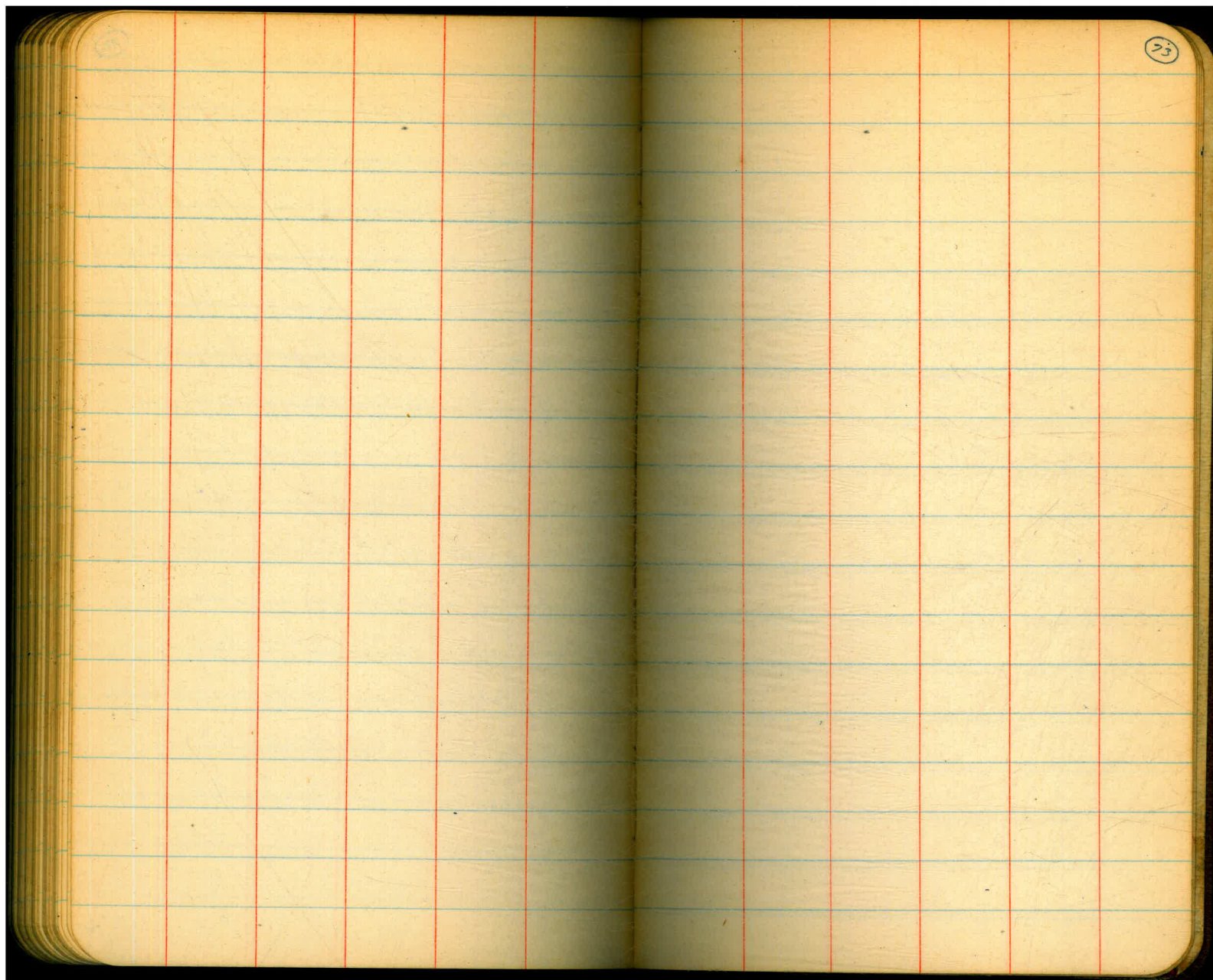
3+30 3.0 +1.1

(4.1) 2.0 +2.1

3+50 1.0 +3.1

PX





1420 3.2
14:42 2.8

NORTH ISLAND PATERA GROUP

TO			TO		
WENDAL	HORSE		HORSE	CHIMNEY	
43°	47'		46°	12'	#1
45°	30'	(3.0 A.V.)	46°	30'	#2
47°	12'		47°	50'	#3
50°	54'		49°	10'	#4
53°	30'		50°	30'	#5
54°	30'		51°	22'	#6
52°	38'		51°	10'	#7
50°	20'		50°	07'	#8
50°	03'		50°	15'	#9
48°	25'		49°	52'	#10
44°	40'		47°	30'	#11
43°	10'		46°	20'	#12
41°	50'		45°	30'	#13
42°	35'		45°	50'	#14
	40'				#15

Indexed

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49° 00 49° 50 DISCH

315' 90°
380' 104°+

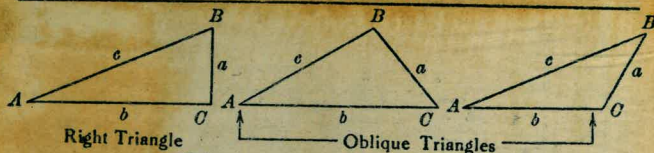
105.49
101.07
7.72 N-107

23+31.27^{PT.}"8"

106° 35'
108° 37'



TRIGONOMETRIC FORMULÆ



Right Triangle

Oblique Triangles

Solution of Right Triangles

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

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. $\text{Cosine } 5^\circ 10' = .9959$. $1 - .9959 = .0041$. $319.4 \times .0041 = 1.31$. $319.4 - 1.31 = 318.09$ ft.

When the rise is known, the horizontal distance is apparent less the square of the rise divided by twice the slope distance = 302.6 ft. Horizontal distance = $302.6 - \frac{14 \times 14}{2 \times 30}$