

967

F.B.
967

FIELD BOOK

360

KEUFFEL & ESSER CO.

DRAWING MATERIALS
AND
SURVEYING INSTRUMENTS.
NEW YORK.

CHICAGO. ST. LOUIS. SAN FRANCISCO. MONTREAL.

TABLES FOR EXCAVATIONS AND EMBANKMENTS.

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

ROADWAY 18 FEET WIDE SIDE SLOPES 1 TO 1.

FOR SINGLE TRACK EXCAVATION.

"Copyright, 1895, by Keuffel & Esser Co."

	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
0	9.0	9.1	9.2	9.3	9.4	9.5	9.6	9.7	9.8	9.9	0
1	10.0	10.1	10.2	10.3	10.4	10.5	10.6	10.7	10.8	10.9	1
2	11.0	11.1	11.2	11.3	11.4	11.5	11.6	11.7	11.8	11.9	2
3	12.0	12.1	12.2	12.3	12.4	12.5	12.6	12.7	12.8	12.9	3
4	13.0	13.1	13.2	13.3	13.4	13.5	13.6	13.7	13.8	13.9	4
5	14.0	14.1	14.2	14.3	14.4	14.5	14.6	14.7	14.8	14.9	5
6	15.0	15.1	15.2	15.3	15.4	15.5	15.6	15.7	15.8	15.9	6
7	16.0	16.1	16.2	16.3	16.4	16.5	16.6	16.7	16.8	16.9	7
8	17.0	17.1	17.2	17.3	17.4	17.5	17.6	17.7	17.8	17.9	8
9	18.0	18.1	18.2	18.3	18.4	18.5	18.6	18.7	18.8	18.9	9
10	19.0	19.1	19.2	19.3	19.4	19.5	19.6	19.7	19.8	19.9	10
11	20.0	20.1	20.2	20.3	20.4	20.5	20.6	20.7	20.8	20.9	11
12	21.0	21.1	21.2	21.3	21.4	21.5	21.6	21.7	21.8	21.9	12
13	22.0	22.1	22.2	22.3	22.4	22.5	22.6	22.7	22.8	22.9	13
14	23.0	23.1	23.2	23.3	23.4	23.5	23.6	23.7	23.8	23.9	14
15	24.0	24.1	24.2	24.3	24.4	24.5	24.6	24.7	24.8	24.9	15
16	25.0	25.1	25.2	25.3	25.4	25.5	25.6	25.7	25.8	25.9	16
17	26.0	26.1	26.2	26.3	26.4	26.5	26.6	26.7	26.8	26.9	17
18	27.0	27.1	27.2	27.3	27.4	27.5	27.6	27.7	27.8	27.9	18
19	28.0	28.1	28.2	28.3	28.4	28.5	28.6	28.7	28.8	28.9	19
20	29.0	29.1	29.2	29.3	29.4	29.5	29.6	29.7	29.8	29.9	20
21	30.0	30.1	30.2	30.3	30.4	30.5	30.6	30.7	30.8	30.9	21
22	31.0	31.1	31.2	31.3	31.4	31.5	31.6	31.7	31.8	31.9	22
23	32.0	32.1	32.2	32.3	32.4	32.5	32.6	32.7	32.8	32.9	23
24	33.0	33.1	33.2	33.3	33.4	33.5	33.6	33.7	33.8	33.9	24
25	34.0	34.1	34.2	34.3	34.4	34.5	34.6	34.7	34.8	34.9	25
26	35.0	35.1	35.2	35.3	35.4	35.5	35.6	35.7	35.8	35.9	26
27	36.0	36.1	36.2	36.3	36.4	36.5	36.6	36.7	36.8	36.9	27
28	37.0	37.1	37.2	37.3	37.4	37.5	37.6	37.7	37.8	37.9	28
29	38.0	38.1	38.2	38.3	38.4	38.5	38.6	38.7	38.8	38.9	29
30	39.0	39.1	39.2	39.3	39.4	39.5	39.6	39.7	39.8	39.9	30
31	40.0	40.1	40.2	40.3	40.4	40.5	40.6	40.7	40.8	40.9	31
32	41.0	41.1	41.2	41.3	41.4	41.5	41.6	41.7	41.8	41.9	32
33	42.0	42.1	42.2	42.3	42.4	42.5	42.6	42.7	42.8	42.9	33
34	43.0	43.1	43.2	43.3	43.4	43.5	43.6	43.7	43.8	43.9	34
35	44.0	44.1	44.2	44.3	44.4	44.5	44.6	44.7	44.8	44.9	35
36	45.0	45.1	45.2	45.3	45.4	45.5	45.6	45.7	45.8	45.9	36

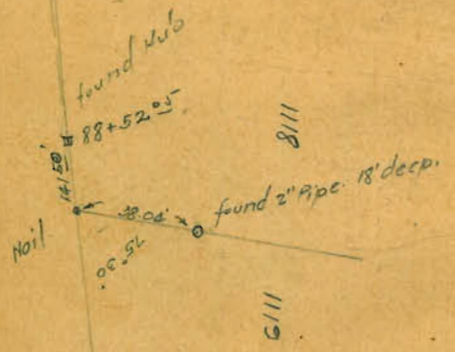
Calculated by Julien A. Hall, M. Am. Soc. C. E.

For Keith's Railroad Curve Tables see end of book.

North of Bearing of Dyke North of Bridge

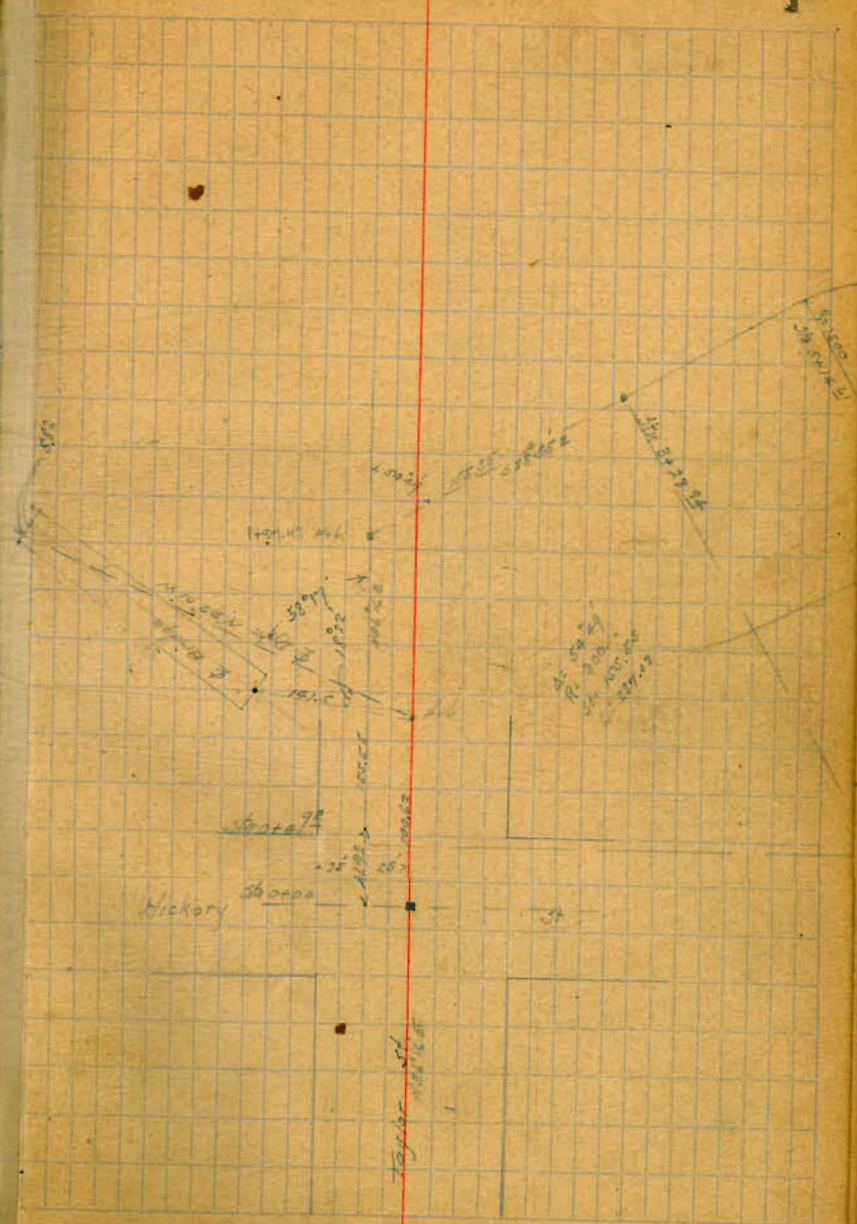
173-20
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173-30

o w 

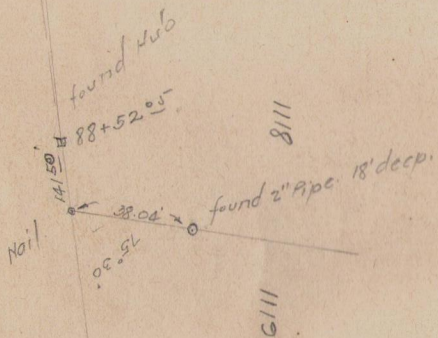


Survey of road cut at Mission Valley

1

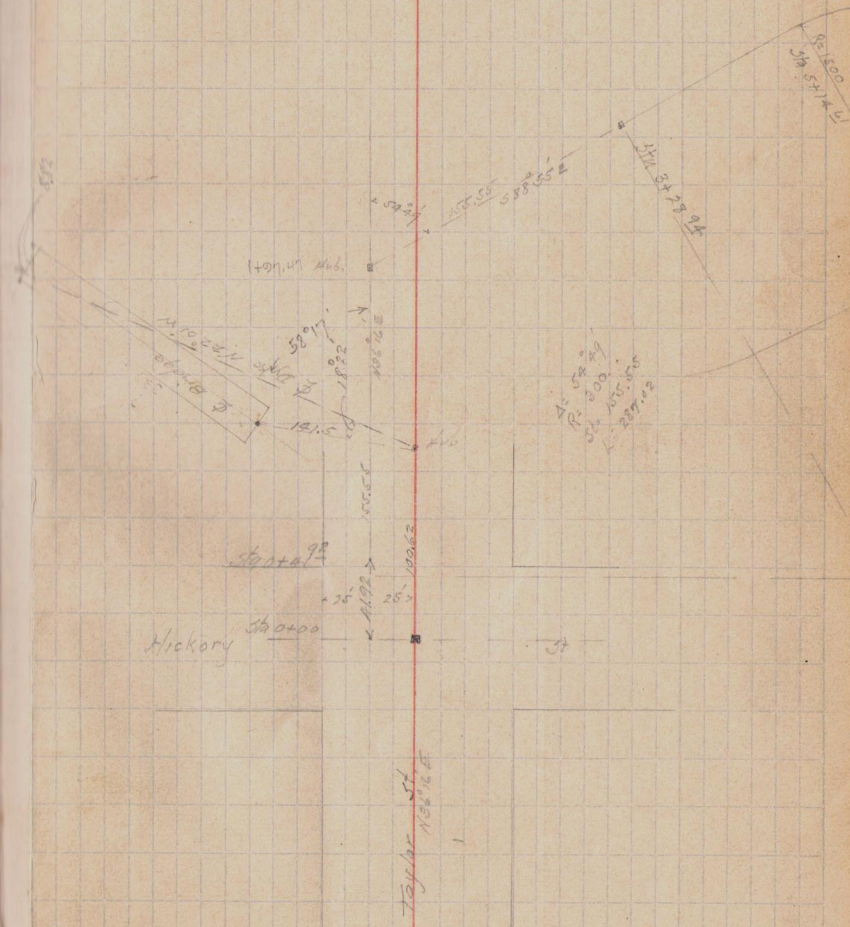


0 2'



Survey of road south of Mission Valley

1



10°10'
Hub. Sta 10+74.91

58504 E

$\Delta = 18.62$
 $R = 1600$
 $CA = 159.28$
 $L = 364.77$

0+97.89 Hub.

58504 E

Sta 5+14.41

58505 E

103°57' 86
Sta 29+97.86

Allen

Sta 39+47.62
Sta 40+87.82
Sta 51597 W

272.30

3.50

Mon. Mon.

Bernard

346.22
350.20

Mon. & Iris

E. Hartensie

58504 E

553°34' E

3115
146.81

Mon.

Sta 25+82.0

1/2 mile old town

58504 E

61.19
Sta 56+57

A=1170
R=1000
St=7776
L=194.90

Sta 57+64
66.29

S 76° 21' E

Sta 52+64.23

HUB

A=1150
R=1000
St=703.82
L=206.53

Sta 50+57.70

Sta 50+09.25 = ctr of Cattle Pass 35'

Sta 48+00 = 4.8' from fence

FAV & Co.

N 21° E

179.20

Sta 47+69.26

S 73° 11' E

516.00
47.00
368.00

50.00
47.00
263.00

N 74° 01' E

Sta 67+10
A=22.3
R=1000
St=41.18
L=82.82
918.2

N 70° 05' E

Sta 63+10
73.44

A=22.21
R=500
St=98.77
L=175.06

Sta 61+10
28.4

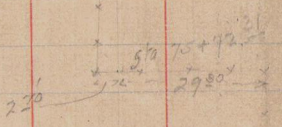
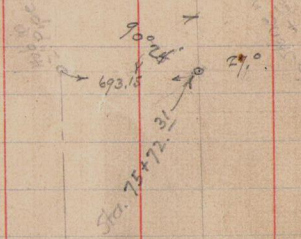
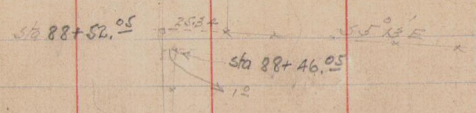
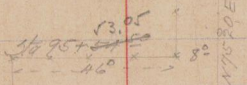
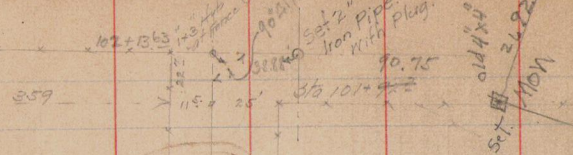
675.95
N 0° 20' W

22.53

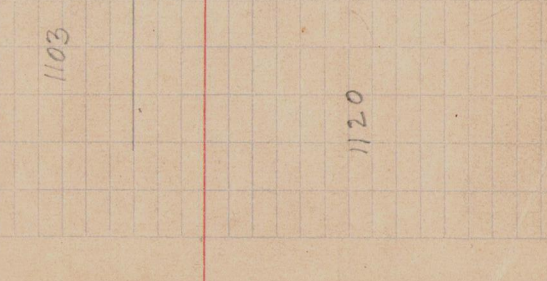
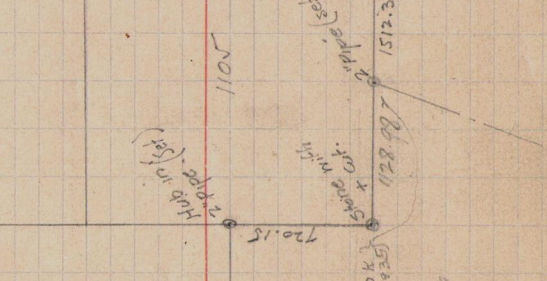
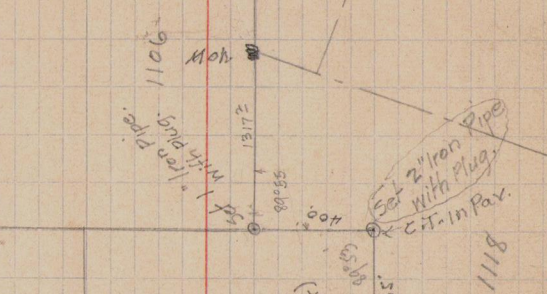
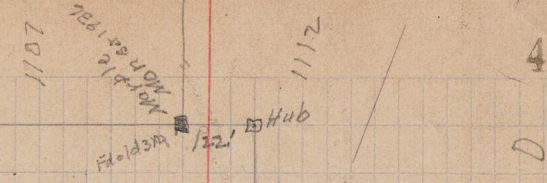
Sta 60+20
18.91

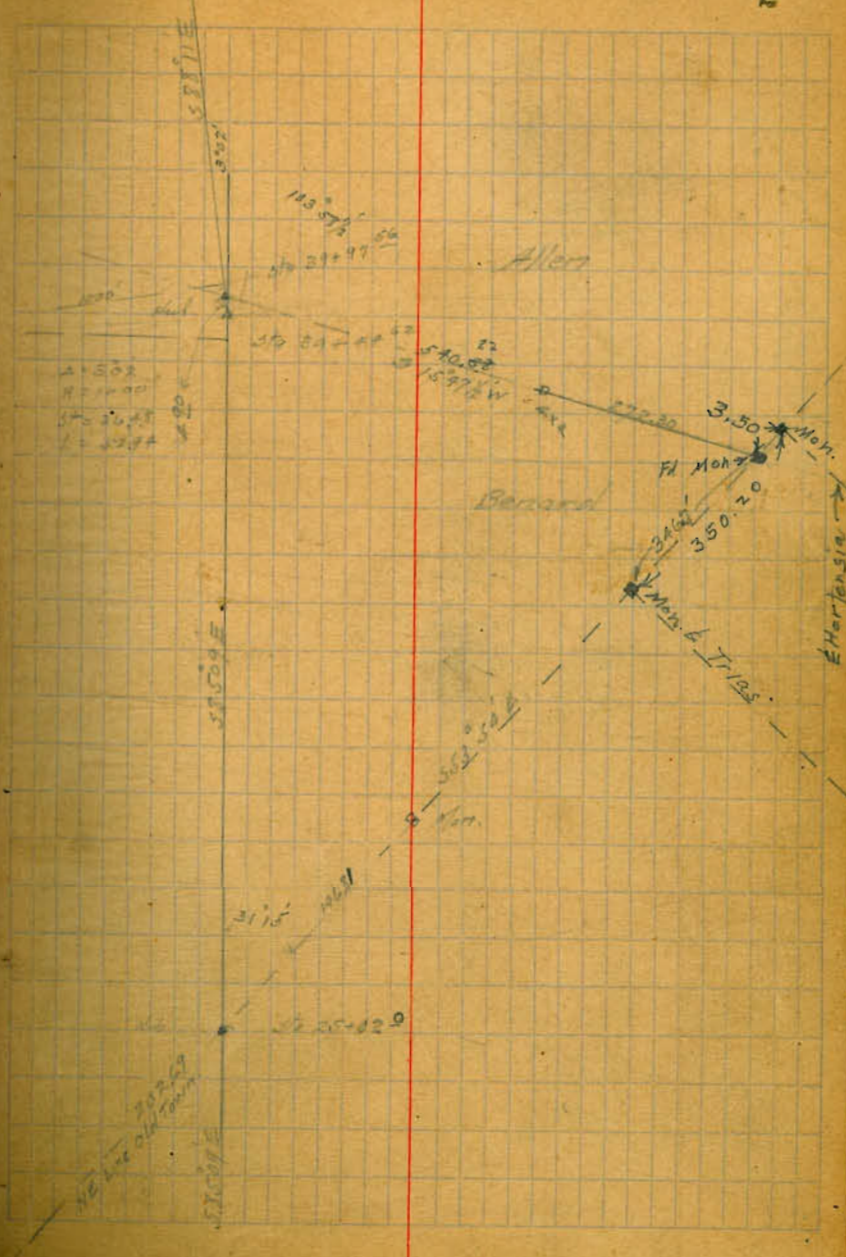
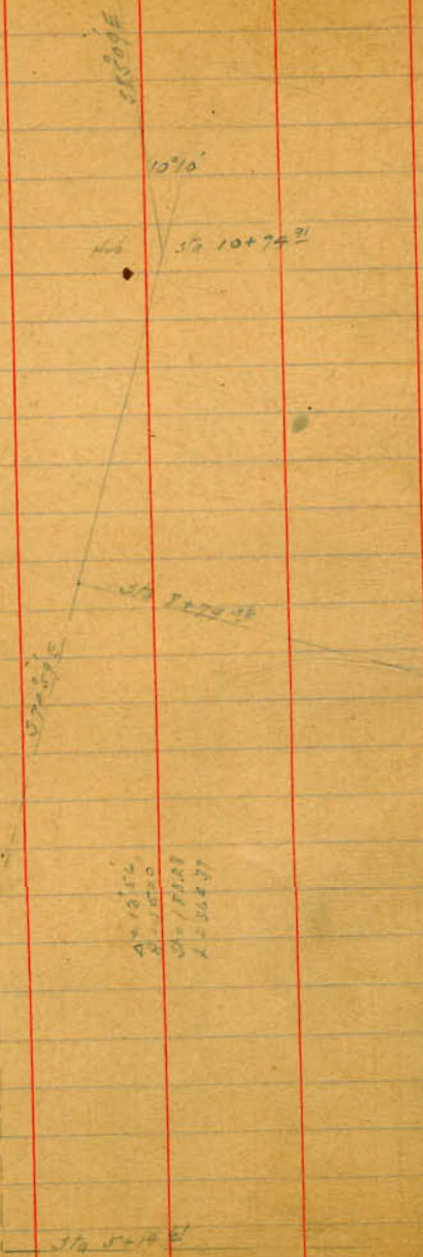
S 87° 21' E

1/2" Sub at
Pence Co



4
D





61.19
 570 56+57
 A=117.0
 B=1000
 C=127.6
 L=194.99

570 56+57
 66.79

570 57

570 56+57
 72

A=117.0
 B=1000
 C=127.6
 L=194.99
 206.52

570 50+57

1250+02.15 = 1252.15 Cott's Pass 35
 45+00 = 45 from Janca

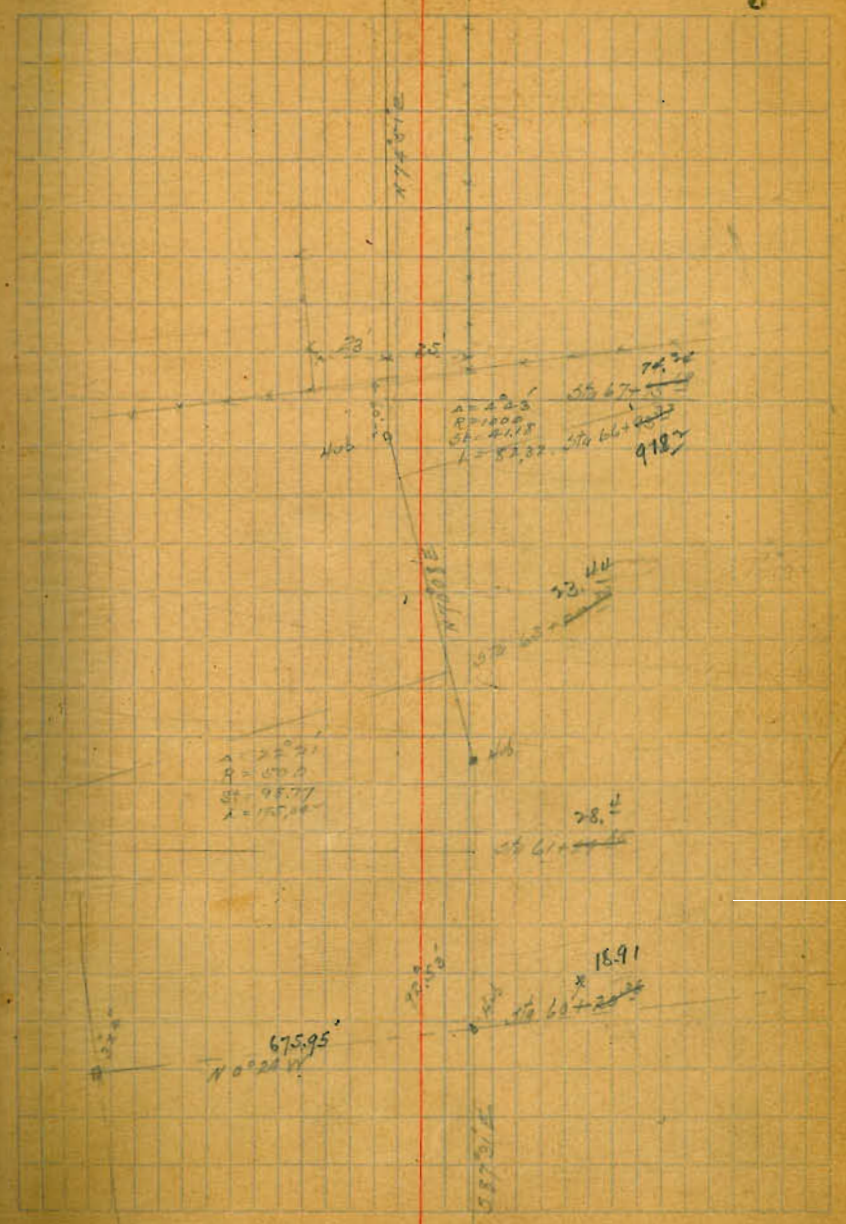
570 57
 177.20

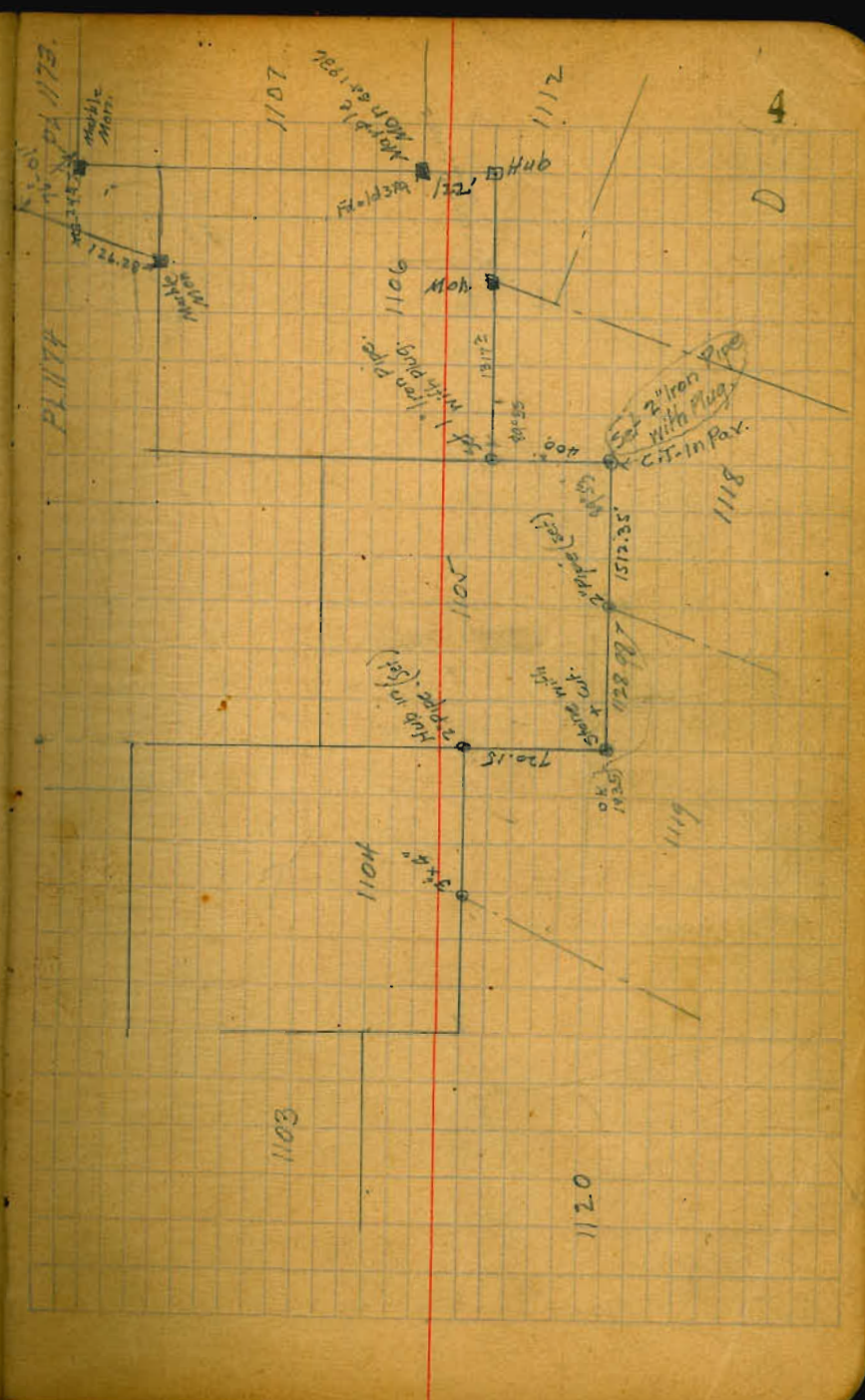
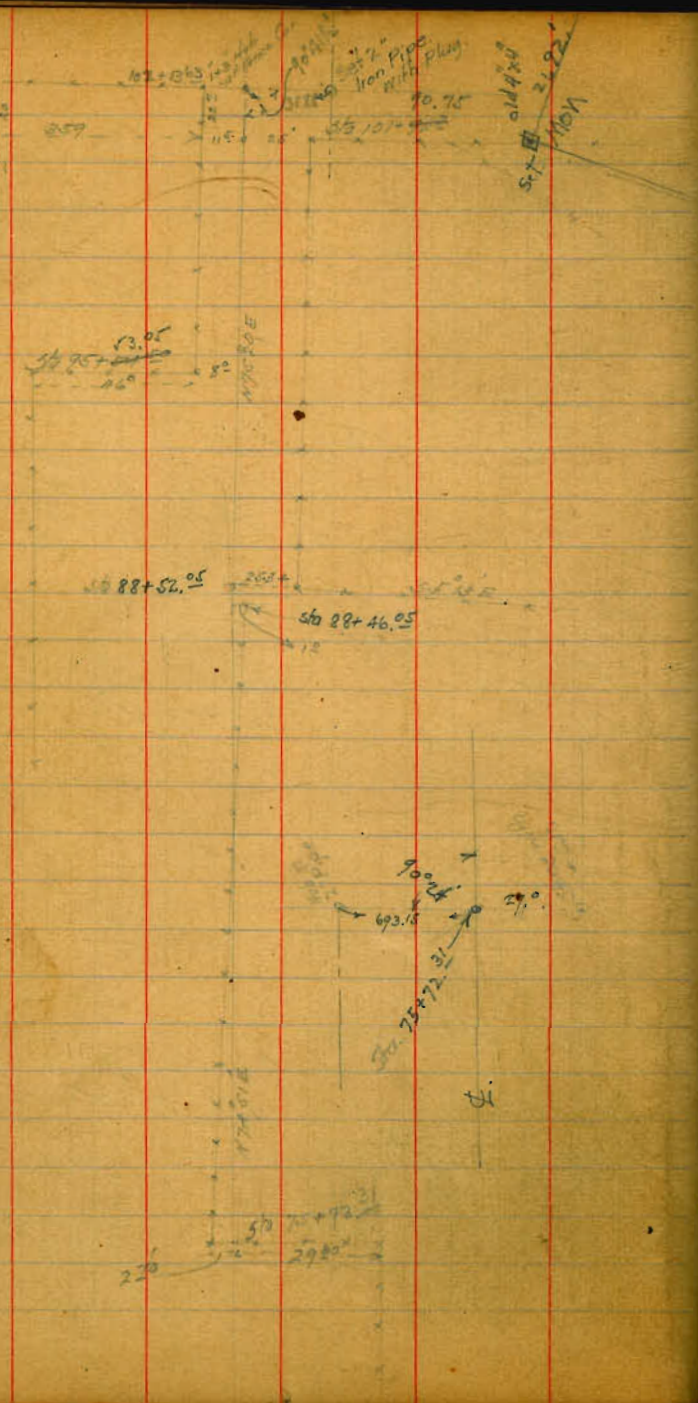
570 57+59

570 57

570 57
 40
 368.6

50
 47.2
 208.5

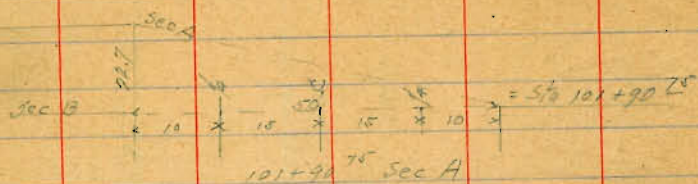




4/16/28
1/16/28

Xsec Road S. Side Mission Valley
from Old Town to Country Farm Grade

USGS 28 314 25.14 22.00 assumed



N	41	21.0
1/2	39	21.2
C	38	21.3
1/2	39	21.2
S	41	21.0
Sec B		
S	41	21.0
1/2	42	20.9
C	41	21.0
1/2	42	20.9
N	44	20.7
101+80		
N	47	20.4
1/2	46	20.5
C	42	20.9
1/2	39.2 24.6	19.9 20.5
S	41	21.0
101+00		
S	39	21.2
1/2	38 35.5	20.1 19.6

25.14

C	51	20.0
1/2	50	20.1
N	4.8	20.3
100+50		
N	4.9	20.2
1/2	4.7	20.4
7	5.4	19.7
C	4.8	20.3
1/2	4.7 4.7	19.6 20.4
S	3.9	21.2
100+10		
S	4.5	20.6
1/2	5.7	19.4
C	5.5	19.6
1/2	5.4	19.5
1/2	4.9	20.2
N	5.1	20.0
99+50		
N	5.0	20.1
1/2	5.1	20.1
7	5.6	19.5
C	5.7	19.4
1/2	5.7	19.4
7	5.5 2.4	19.3 20.2
S	4.6	20.5

Note: When these notes are noticed
 take elevations 0.25 lower

25.14

99+00

S	4.7	20.4
+3	5.1	20.0
	5.7	19.5
1/4	5.7	19.4
C	5.9	19.2
+6	6.0	19.1
1/2	5.6	20.0
N	5.2	19.9

98+50

N	5.4	19.7
1/2	5.4	19.7
+9	6.2	18.9
C	5.9	19.2
1/2	5.9	19.2
+6	5.0	19.1
	5.0	19.7
S	5.0	20.1

95+00

S	5.1	20.0
+2	5.7	19.5
1/2	5.7	19.4
C	6.1	19.0
+5	6.1	19.0
1/2	5.2	19.9
N	5.5	19.6

25.14

6

97+50

N	5.6	19.5
1/2	5.3	19.8
+10	6.1	19.0
C	6.0	19.1
+8	5.0	20.1
1/2	5.4	19.7
+5	5.9	19.2
S	5.1	20.0

97+00

S	5.2	19.9
+5	6.0	18.7
1/2	5.6	19.5
N	5.9	20.2
C	5.7	19.4
+5	6.2	18.9
1/2	5.3	19.2
N	5.6	19.5

96+50

N	5.9	19.2
1/2	5.6	19.5
+8	5.5	19.6
	6.2	18.9
C	5.7	19.4
+7	5.2	19.9
1/2	5.8	19.3

25.14		
+5	64	18.7
S	56	19.5
96+00		
S	55	19.6
+5	65	18.6
1/2	59	19.2
+8	56	19.5
c	59	19.2
+6	56.1 56	19.0 19.5
1/2	59	19.2
N	63	18.8
95+50		
N	62	18.9
1/4	61	19.0
+9	66	18.5
c	60	19.1
+8	58	19.3
1/4	62	18.9
+5	56.4 59	18.7 19.2
S	61	19.0
95+00		
S	61	19.0
1/2	61	19.0
c	60	19.1
1/4	58	19.3
N	63	18.8

25.14		
TOP 318	23.26	576
	94+50	19.38
N	42	19.1
1/2	41	19.2
c	41	19.2
1/2	42	19.1
S	40	19.3
94+00		
S	37	19.6
1/2	41	19.2
c	43	19.0
1/2	43	19.0
N	40	19.3
93+50		
N	44	18.9
1/2	43	19.0
c	44	18.9
1/2	44	18.9
S	39	19.5
93+00		
S	41	19.2
1/2	44	18.9
c	40	18.9
1/2	46	18.7
N	46	18.7

23.26

92+50

N	4.8	18.5
1/4	4.8	18.5
c	4.7	18.6
1/4	4.8	18.5
S	4.5	18.8

92+00

S	4.7	18.6
1/4	4.9	18.4
c	5.0	18.3
1/4	4.9	18.4
N	4.9	18.4

91+50

N	5.2	18.1
1/4	5.2	18.1
c	5.4	17.9
1/4	5.0	18.3
S	4.8	18.5

91+00

S	5.3	18.0
1/4	5.5	17.8
c	5.6	17.7
1/4	5.4	17.9
N	5.3	18.0

23.26

8

90+50

N	5.9	17.9
1/4	5.5	17.8
c	5.3	18.0
1/4	5.5	17.8
S	5.5	17.8

90+00

S	5.6	17.7
1/4	5.8	17.5
c	5.6	17.7
1/4	5.7	17.6
N	5.7	17.6

89+50

N	6.0	17.3
1/4	5.9	17.4
c	6.1	17.2
1/4	6.0	17.3
S	5.9	17.4

89+00

S	6.1	17.2
1/4	6.0	17.3
c	6.1	17.2
1/4	6.1	17.2
N	6.3	17.0

23.26

88+50 Angle

N		6.4	16.9
1/2		6.3	17.0
c		6.3	17.0
1/2		6.3	17.0
S		6.1	17.2
TP	315	21.21	5.20

85+00

S		4.6	16.6
1/2		4.4	16.8
c		4.1	17.1
1/2		4.2	17.0
N		4.4	16.8

87+50

N		4.6	16.6
1/2		4.4	16.8
c		4.2	17.0
1/2		4.4	16.8
S		4.5	16.7

87+00

S		4.4	16.8
1/2		4.5	16.7
c		4.2	17.0
1/2		4.6	16.6
N		4.6	16.6

21.21

9

167+50

N		4.5	16.4
1/2		4.6	16.6
c		4.3	17.2
1/2		4.3	16.9
S		4.6	16.6

86+00

S		4.4	16.8
1/2		4.4	16.8
c		4.3	16.9
1/2		4.4	16.3
N		4.9	16.3

85+50

N		5.1	16.1
1/2		4.9	16.3
c		4.5	16.7
1/2		4.5	16.7
S		4.5	16.7

85+00

S		4.7	16.5
1/2		4.6	16.6
c		4.8	16.4
1/2		5.2	16.0
N		5.2	16.0

21.21

84+50

N	5.2	16.0
1/4	5.1	16.1
c	4.8	16.4
1/4	4.5	16.7
S	4.6	16.6

84+00

S	4.7	16.5
1/4	4.7	16.5
c	4.8	16.4
1/4	5.2	16.0
N	5.5	15.7

83+50

N	5.2	16.0
1/4	5.3	15.9
c	4.9	16.3
1/4	4.7	16.5
S	5.0	16.2

83+10

S	5.2	16.0
1/4	5.1	16.1
c	5.0	16.2
1/4	5.9	15.9
N	5.6	15.6

21.21

82+50

N	5.7	15.5
1/4	5.3	15.9
c	5.8	15.9
1/4	5.6	15.6
S	5.4	15.8

82+00

S	5.3	15.9
1/4	5.4	15.8
c	5.4	15.8
1/4	5.8	15.4
N	5.7	15.5

81+50

N	5.6	15.6
1/4	5.5	15.7
c	5.3	15.9
1/4	5.4	15.8
S	5.3	15.9

81+00

S	5.7	15.5
1/4	5.8	15.4
c	4.8	16.4
1/4	5.8	15.4
N	6.0	15.2

21.21

80+50

N		6.1	15.1
1/6		5.9	15.3
c		5.5	15.7
1/6		6.0	15.2
S		5.9	15.3
TP	3.10	18.89	5.42
			15.79

80+00

S		3.7	15.2
1/6		3.8	15.1
c		3.4	15.5
1/6		3.8	15.1
N		4.1	14.8

79+50

N		4.0	14.9
1/6		4.1	14.8
c		3.7	15.2
1/6		3.7	15.2
S		3.6	15.3

79+00

S		3.8	15.6
1/6		3.5	15.4
c		3.7	15.2
1/6		3.7	15.2
N		3.9	15.0

18.89

11

78+50

N		4.4	14.5
1/6		3.8	15.1
c		3.6	15.3
1/6		3.5	15.4
S		3.4	15.5

78+00

S		3.5	15.4
1/6		3.5	15.4
c		3.7	15.2
1/6		4.2	14.7
N		4.3	14.6

77+50

N		4.8	14.1
1/6		4.3	14.6
c		3.9	15.0
1/6		3.4	15.5
S		3.3	15.6

77+00

S		3.6	15.3
1/6		3.7	15.2
c		3.9	15.0
1/6		4.6	14.3
N		4.7	14.2

18.89

76+50

N	5.2	13.7
1/6	5.0	13.9
0	4.3	14.6
1/4	4.4	14.5
5	4.1	14.8

76+00

S	4.8	14.1
1/6	4.7	14.2
c	4.7	14.2
1/6	5.3	13.6
N	5.3	13.6

TP on Park Cor. 125 11.61 1.33 12.56

BTH 125 1.54 12.07 12.15

78+50

N	5.3	13.3
1/4	5.1	13.5
0	4.7	13.9
1/4	4.6	14.0
S	4.4	14.2

78+00

S	4.4	14.2
1/4	4.6	14.0
0	5.2	13.4
1/4	5.3	13.3
N	5.3	13.3

12

15.61

74+50

N	5.3	13.3
1/6	5.4	13.2
c	5.6	13.0
1/6	5.4	13.2
S	4.9	13.7

74+00

S	5.7	12.9
1/6	5.9	12.7
0	5.8	12.8
1/6	5.5	13.1
N	5.4	13.2

78+50

N	5.3	13.3
1/6	5.5	13.1
0	5.8	12.8
1/6	6.0	12.6
S	5.9	12.7

78+00

S	6.1	12.5
1/6	5.9	12.7
0	5.5	13.1
1/6	5.1	13.5
N	4.9	13.7

1861

77+50

N	3.4	15.2
$\frac{1}{2}$ ⁺³	4.3	14.3
$\frac{1}{6}$	4.7	13.9
c	5.2	13.4
$\frac{1}{6}$	5.6	13.0
s	5.7	12.9

72+00

s	5.7	12.9
$\frac{1}{6}$	5.4	13.2
c	4.9	13.8
$\frac{1}{6}$	4.0	14.6
N	3.5	15.1

71+50

N	3.5	15.1
$\frac{1}{6}$	4.5	14.1
c	4.9	13.7
$\frac{1}{6}$	5.2	13.4
s	5.2	13.4

71+00

s	5.3	13.3
$\frac{1}{6}$	5.1	13.5
c	5.0	13.6
$\frac{1}{6}$	4.6	14.0
N	3.9	14.7

1861

13

70+50
71+50

N	4.2	14.4
$\frac{1}{6}$	5.1	13.5
c	5.4	13.2
$\frac{1}{6}$	5.3	13.3
s	5.9	13.6

70
71+00

s	5.6	13.0
$\frac{1}{6}$	5.3	13.3
c	5.4	13.2
$\frac{1}{6}$	5.7	12.9
N	4.6	14.0

69+50

N	4.7	13.9
$\frac{1}{6}$	5.8	12.8
c	5.6	13.0
$\frac{1}{6}$	5.6	13.0
s	5.8	12.8

69+00

s	6.2	12.4
$\frac{1}{6}$	5.7	12.9
c	5.7	12.9
$\frac{1}{6}$	6.2	12.4
N	5.0	13.6

1561

68+50

N	5.3	13.3
1/2	6.7	11.9
c	6.0	12.6
1/4	6.1	12.5
S	6.3	12.3

68+00

S	6.6	12.0
1/2	5.6	13.0
c	5.7	12.9
1/4	7.0	11.6
S	6.3	12.3

67+74²⁴ EC

N	7.1	11.5
1/2	7.2	11.4
+10	7.1	11.5
c	6.0	12.6
1/4	5.7	12.9
S	5.7	12.9
TP	11.32	23.79
	61.4	12.47

67+50

S	10.5	13.3
1/2	11.1	12.7
c	11.6	12.2
1/4	12.2	11.6
N	12.9	11.5

23.79

14

67+25

N	11.1	12.7
1/2	10.4	13.4
c	10.1	13.7
1/4	9.1	14.7
+5	9.3	14.5
S	11.2	13.6

67+00

S	7.6	16.2
1/2	8.3	15.5
c	9.2	14.6
1/4	9.9	13.9
N	10.0	13.8

66+91.8 BC

N	9.7	14.1
1/2	9.7	14.1
c	8.8	15.0
1/4	8.1	15.7
S	7.9	16.4

66+50

S	5.8	18.0
1/2	6.3	17.5
c	7.1	16.7
1/4	8.3	15.5
N	8.8	15.0

23.79

66+00

N	7.9	15.9
1/2	6.6	17.2
c	5.6	18.7
1/4	4.8	19.0
S	4.2	19.6

65+50

S	4.2	19.6
1/2	4.4	19.4
c	5.4	18.4
1/4	6.3	17.5
N	7.1	16.7

65+00

N	6.3	17.5
1/2	5.6	18.2
c	4.6	19.2
1/4	4.6	19.2
S	3.8	20.0

64+50

S	5.4	19.4
1/2	4.2	19.6
+5	5.7	18.1
c	5.2	18.6
1/4	6.0	17.8
N	6.8	17.0

23.79

64+00

N	7.2	16.6
1/2	6.3	17.5
c	7.1	16.7
1/4	5.9	17.9
S	5.9	17.9

63+50

S	8.1	15.7
1/2	8.2	15.6
c	9.2	14.6
1/4	8.5	15.3
N	8.8	15.0

63+23.4 EC

N	9.5	14.3
1/2	9.4	14.4
c	9.6	14.2
1/4	8.9	14.9
S	8.8	15.0

63+00

S	9.5	14.3
1/2	9.2	14.6
c	9.6	14.2
1/4	9.9	13.9
N	9.9	13.9

15

23.79

62+75

N	10.6	13.2
1/4	10.2	13.6
c	9.8	14.0
1/4	9.8	14.0
+6	9.8	14.0
S	8.4	15.4

62+50

S	6.9	16.9
1/4	10.3	13.5
c	10.1	13.7
1/4	10.3	13.5
N	10.8	13.0

62+25

N	10.9	12.9
1/4	10.6	13.2
c	10.5	13.3
+12	10.1	13.7
1/4	8.6	15.2
1/4	8.1	15.7
S	3.3	20.5

62+00

S	1.9	21.9
1/4	6.3	17.5
+5	8.2	15.6
c	10.0	13.8
c	10.4	13.4

23.79

16

1/4	10.7	13.1
N	10.9	12.9

61+75

N	10.8	13.0
1/4	10.8	13.0
c	10.3	13.5
+10	10.5	13.3
1/4	8.2	15.8
1/4	6.2	17.6
S	0.0	23.8

61+50

S	0.7	23.1
1/4	5.3	18.3
+5	8.1	15.8
c	10.6	13.2
c	10.4	13.4
1/4	11.2	12.6
N	11.0	12.8

61+25 BC

N	11.3	12.5
1/4	11.4	12.4
c	10.6	13.2
1/4	11.0	12.8
S	9.3	14.5
S	5.1	18.7

23.79

61+00

S	9.9	13.9
HA	11.3	12.5
C	10.6	13.7
1/2	11.5	12.3
N	11.1	12.7

60+50

N	11.5	12.3
1/2	11.7	12.1
C	10.5	13.3
1/2	11.0	13.1
S	10.5	13.3

60+00

S	11.2	12.6
1/2	11.8	12.0
C	11.0	12.8
1/2	11.8	12.0
N	11.7	12.1

TP 707 20.73 10.13 13.66

59+50

N	8.7	12.0
1/2	8.5	12.2
+9	7.5	13.2
C	7.6	13.1
+7	7.7	13.0

Pipe of 56 60+50

17

20.73

10	5.7	12.0
1/2	9.0	11.7
S	9.2	11.5

59+00

S	5.7	12.0
1/2	5.8	11.9
+1	8.0	12.7
C	7.5	13.2
1/2	7.9	12.8
N	8.6	12.1

58+50

N	5.5	12.2
1/2	8.1	12.6
C	7.5	13.2
1/2	5.5	12.2
S	8.1	12.6

58+00

S	7.0	13.7
+5	7.9	12.8
1/2	8.0	12.7
C	7.2	13.5
+10	7.0	13.3
1/2	8.0	12.3
N	7.8	12.9

20.73

57+50

N	7.7	12.9
1/2	7.1	13.6
c	6.5	14.2
1/4	7.0	13.7
S	4.7	16.0

57+00

S	2.8	17.9
1/2	5.1	15.6
c	5.9	14.8
1/4	6.4	14.3
N	7.0	13.7

56+61? EC

N	7.3	13.4
1/2	6.6	14.1
c	5.9	14.8
1/4	5.1	15.6
S	3.1	17.6

TP 6.69 24.59 2.83 17.90

56+50

S	7.5	17.1
1/2	9.4	15.2
c	9.9	14.7
1/4	10.8	13.8
N	11.5	13.1

24.59

18

56+25

N	11.7	12.9
1/2	10.6	14.0
c	10.3	14.3
1/4	9.4	15.2
S	7.6	17.0

56+00

S	7.4	17.2
1/2	8.8	15.8
c	10.3	14.3
1/4	11.0	13.6
N	12.1	12.5

53+70

N	12.2	12.4
1/2	11.3	13.3
c	10.9	13.7
1/4	8.7	15.9
S	5.4	19.2

55+50

S	3.5	21.1
1/2	7.6	17.0
c	10.7	13.9
1/4	11.5	13.1
N	12.2	12.4

20.59

55+25

N	12.2	12.4
1/2	11.5	13.1
+12	10.9	13.7
0	9.9	14.7
1/4	6.3	18.3
S	3.1	21.5

55+00

S	1.9	22.7
1/4	5.3	19.3
C	9.5	15.1
+5	11.1	13.5
1/4	11.4	13.2
N	12.3	12.3

54+66³

3'W	12.3	12.3
N	11.4	13.2
1/2	11.0	13.6
+8	10.4	14.2
C	8.1	16.5
1/4	3.4	21.2

54+50

3/4	3.0	21.6
C	7.5	17.1
+8	10.3	14.3
1/4	11.2	13.4
N	11.7	12.9
3'W	12.3	12.3

19

20.59

54+25

5'W	12.3	12.3
N	11.2	13.4
1/4	10.8	13.8
C	6.1	18.5

5400

7'W	12.3	12.3
N	11.3	13.3
+7	10.9	13.7
1/2	9.5	15.1
C	3.7	20.9

53+75

C	2.5	22.1
1/2	8.2	16.4
+8	10.9	13.7
N	11.1	13.5
10'W	11.1	13.5

53+50

N	9.0	15.6
1/2	5.6	19.0
TP	11.36	33.98
197		22.62
C	9.7	24.3
1/2	2.7	31.3
S	0.7	33.3

33.98

53+75

S 1.6 32.4

1/2 4.3 29.7

54+00

S 2.9 31.1

1/4 6.1 27.9

54+25

S 4.3 29.7

1/2 10.0 24.0

54+50

S 7.7 26.3

54+66³

S 9.0 25.0

53+25

S 1.4 33.6

1/2 2.5 31.5

C 6.7 27.3

1/4 13.2 20.8

N 16.2 17.8

53+00

N 13.2 20.8

1/2 10.5 23.5

C 3.9 30.1

1/4 1.3 32.7

S +0.5 34.5

33.98

20

52+64² EC

C 2.8 31.2

1/2 5.3 28.7

N 9.9 24.1

1/4 7.7 30.97

58.96 30.1 34.9

S 2.2 36.8

52+50

S 1.9 37.1

1/2 3.6 35.4

C 6.8 32.2

1/4 9.4 29.6

N 12.8 26.2

52+25

N 9.9 29.1

1/2 7.4 31.6

C 4.4 34.6

1/4 2.1 36.9

S 1.3 27.7

52+00

S 2.2 36.8

1/2 2.2 36.8

C 3.1 35.9

1/4 4.9 34.1

N 6.2 32.8

3896

57+75

N	4.5	34.5
1/4	4.0	35.0
c	2.6	36.4
1/2	2.8	36.2
S	3.2	35.8

51+50

S	5.4	33.6
1/4	4.8	34.2
c	4.1	34.6
1/2	5.1	33.9
N	5.8	33.2

51+25

N	11.2	27.8
1/4	8.8	30.2
c	7.2	31.8
1/2	7.1	31.9
S	7.5	31.5

57+00

S	11.3	27.7
1/4	12.2	26.8
c	13.3	25.7
1/2	14.1	24.9
N	14.6	24.4

100	0.51	27.72	11.75	27.21
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21

2772

50+75

N	11.2	16.5
1/4	10.0	17.7
c	8.4	19.3
1/2	6.8	20.9
S	5.8	21.9

50+57 Σ BC

S	7.4	20.3
1/4	8.2	19.5
c	10.1	17.6
1/2	11.1	16.6
N	12.1	15.6

50+25

N	11.8	15.9
1/4	11.6	16.1
c	11.9	15.8
1/2	10.1	17.6
S	7.2	20.5

50+00

S	9.3	18.4
1/4	11.2	16.5
c	11.4	16.3
1/2	11.0	16.7
N	11.2	16.5

100	7.32	23.91	14.83	16.49
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chub
100

28.11

49+60

S	5.4	18.4
1/2	5.3	18.5
c	5.2	18.6
1/4	5.7	18.1
N	5.8	18.0

49+00

N	6.3	17.5
1/2	5.5	18.3
c	5.0	18.8
1/4	4.4	19.4
S	4.0	19.8

48+75

S	3.8	20.0
1/2	4.2	19.6
c	5.2	18.6
1/4	5.7	18.1
N	5.5	18.0

45+50

N	0.9	22.9
1/2	1.8	22.0
c	2.6	21.2
1/4	2.4	21.4
S	1.9	21.9
T.P.	13.03	35.99
	0.85	22.96

35.99

22

48+25

S	7.0	29.0
1/2	7.1	28.9
c	6.5	29.5
1/4	6.5	29.5
N	6.7	29.3

48+00

N	1.0	35.0
1/2	1.9	35.1
c	1.1	34.9
1/4	0.0	36.0
S	4.05	36.5

T.P. 933 44.84 0.48 35.51

47+90

S	8.0	36.8
1/2	7.8	37.0
c	8.3	36.5
1/4	8.2	36.6
N	8.0	36.8

47+50

N	7.2	37.6
1/2	7.2	37.6
c	7.0	37.8
1/4	6.8	38.0
S	6.8	38.0

44.84

47+00

S	6.3	38.5
1/10	6.4	38.4
c	6.7	38.1
1/2	6.7	38.1
N	7.1	37.7

46+50

N	6.6	38.2
1/10	6.4	38.4
c	6.3	38.5
1/2	6.1	38.7
S	6.0	38.8

46+00

S	6.8	39.0
1/10	6.9	38.8
c	6.4	38.4
1/2	6.5	38.3
N	6.6	38.2

45+50

N	5.9	38.9
1/10	5.7	39.1
c	5.6	39.2
1/2	5.2	39.6
S	5.0	39.8

44.84

45+00

S	4.6	40.2
1/10	4.7	40.1
c	5.1	39.7
1/2	5.6	39.2
N	6.2	38.6

44+50

N	5.6	39.2
1/10	5.7	39.1
c	4.8	40.0
1/2	4.1	40.7
S	3.7	41.1

44+00

S	3.5	41.3
1/10	3.6	41.2
c	4.2	40.6
1/2	4.5	40.3
N	5.0	39.8

43+50

N	4.8	40.0
1/10	4.5	40.3
c	4.9	40.8
1/2	3.6	41.2
S	3.1	41.7

23

44.84

43+00

S	36	41.2
1/2	4.0	40.8
C	4.4	40.4
1/4	4.7	40.1
N	5.0	39.8

43+50

N	4.8	40.0
1/2	4.6	40.2
C	4.2	40.6
1/4	3.8	41.0
S	3.6	41.2

42+00

S	3.4	41.4
1/2	3.8	41.0
C	4.1	40.7
1/4	4.4	40.4
N	4.6	40.2

41+50

N	5.0	39.8		
1/2	4.9	39.9		
C	4.4	40.4		
1/4	3.9	40.9		
S	3.3	41.5		
TR	4.75	45.79	3.80	41.04

24

45.79

41+00

S	4.3	41.5
1/2	4.6	41.2
C	5.0	40.8
1/4	6.1	39.7
N	6.2	39.6

40+50

N	6.6	39.2
1/2	5.6	40.2
C	4.9	40.9
1/4	4.8	41.0
S	4.3	41.5

39+97 EC

S	3.9	41.9
1/2	3.7	42.1
C	5.1	40.7
1/4	5.9	39.9
N	6.4	39.4

39+70

N	6.1	39.7		
1/2	5.7	40.1		
C	4.4	40.9		
1/4	4.7	41.1		
S	4.8	41.6		
TR	3.39	44.31	4.87	40.92

4431

39+44^b BC

S	29	41.4
1/2	37	40.6
c	40	40.3
1/2	39	40.4
N	48	39.5

39+00

N	56	38.7
1/2	53	39.0
c	49	39.4
1/2	50	39.3
S	38	40.5

38+50

S	42	40.1
1/2	56	38.7
c	58	38.5
1/2	63	38.0
N	67	37.6

38+00

N	71	36.4
1/2	74	36.9
c	72	37.1
1/2	74	36.9
S	50	39.3

25

4431

37+50

S	65	37.8
1/2	86	35.7
c	88	35.5
1/2	90	35.3
N	93	35.0

T.P. 201 35.88 11.44

33.17

B.M. Bernardo 245

33.43 38625

= 37+00

N	25	33.4
1/2	21	33.8
c	18	34.1
1/2	18	34.1
S	18	35.1

36+50

S	15	34.4
1/2	26	33.3
c	20	31.9
c	38	32.1
1/2	39	32.0
N	44	31.5

36+00

N	83	27.6
1/2	68	29.1
c	64	29.5
1/2	62	29.7
N	49	31.0
S	47	31.2

35.88

35+50

S		7.5	28.4
1/2		8.3	27.6
C		8.9	27.0
1/4		9.1	26.8
N		12.8	23.1
TP	25.1	27.72	10.67
			25.21

35+00

N		9.1	18.6
1/2		4.6	23.1
+5		2.7	25.0
C		2.6	25.1
1/4		2.9	24.8
S		2.0	25.7

34+50

S		2.9	24.8
1/2		4.1	23.6
C		4.3	23.4
+10		4.6	23.1
1/4		6.7	21.0
N		8.3	19.4

34+00

S		1.6	26.1
1/2		2.1	25.6
+9		5.4	22.3

27.72

26

C		5.8	21.9
1/2		6.1	21.6
N		7.3	20.4

33+50

N		7.6	20.1
1/2		7.5	20.2
C		7.2	20.5
+10		7.2	20.5
1/4		3.0	24.7
S		+1.0	28.7

33+00

S		1.5	26.2
1/2		5.3	22.4
+5		8.2	19.5
C		8.5	19.2
1/4		8.6	19.1
N		8.7	19.0

32+50

N		11.9	15.8
1/2		10.2	17.5
C		10.0	17.7
1/4		9.8	17.9
+5		7.0	20.7
S		6.7	21.0

27.72

30+00

S	8.0	19.7
1/2	11.4	16.3
C	11.3	16.4
+10	11.9	15.8
1/4	13.3	14.4
N	15.3	12.4

31+50

N	16.3	11.4
1/4	16.0	11.7
+5	13.0	14.7
C	12.5	15.2
1/2	13.1	14.6
S	12.9	14.8

TP	2.84	17.86	12.70	15.02
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31+00

S	5.7	12.2
1/4	4.7	13.2
C	3.9	14.0
+10	4.4	13.5
1/2	6.5	11.4
N	6.9	11.0

30+50

N	6.9	11.0
1/4	6.7	11.2
+5	8.8	13.1

17.86

27

C	4.5	13.4
+10	5.1	12.8
1/2	6.8	11.1
S	7.1	10.8

30+00

S	7.5	10.4
1/2	7.0	10.9
+5	5.3	12.6
C	5.0	12.9
+10	5.2	12.7
1/4	6.5	11.4
N	6.4	11.5

29+50

N	6.6	11.3
1/2	6.4	11.5
+5	5.4	12.5
C	5.3	12.6
+10	5.6	12.3
1/4	6.7	11.2
S	7.3	10.6

29+00

S	6.9	11.0
1/4	6.7	11.2
+5	5.4	12.5
C	5.4	12.5

17.86

10	6.5	12.4
1/2	6.6	11.3
N	6.6	11.3
28+50		
N	6.7	11.2
1/2	6.8	11.1
+5	5.6	12.3
C	5.5	12.4
+10	5.6	12.3
1/2	7.0	10.9
S	7.0	10.9

28+00

3	7.7	10.2
1/2	7.3	10.6
+5	5.9	12.0
C	5.6	12.3
+10	5.8	12.1
1/2	6.8	11.1
N	6.9	11.0

27+50

N	6.7	11.2
1/2	6.9	11.0
+5	5.8	12.1
C	5.5	12.4
+10	5.8	12.1
1/2	7.4	10.5
S	7.7	10.2

17.86

28

10	16.36	5.45	12.1
27+00			
S	6.0		10.6
1/2	5.4		11.0
+5	4.3		12.1
C	4.0		12.4
+10	4.4		12.0
1/2	5.4		11.0
N	5.5		10.9

26+50

N	5.8		10.6
1/2	5.4		11.0
+5	4.4		12.0
C	4.2		12.2
+10	4.6		11.8
1/2	6.1		10.3
S	6.3		10.1

26+00

S	6.2		10.2
1/2	5.9		10.5
+5	4.6		11.8
C	4.2		12.0
+10	4.8		11.6
1/2	5.5		10.9
S	5.6		10.8

1636

25+50

N	5.7	10.7
1/2	6.0	10.4
+5	4.9	11.5
c	4.7	11.7
+10	4.9	11.5
1/4	6.6	9.8
S	6.7	9.7

25+00

S	6.5	9.9
1/2	7.0	9.4
+5	5.3	11.1
c	5.1	11.3
Sub. $\$ 56.25+029$	5.31	11.05
+10	5.6	10.8
1/4	6.8	9.6
N	6.3	10.1

24+50

N	7.2	9.2
1/2	7.0	9.4
+5	5.5	10.9
c	5.2	11.2
+10	5.4	11.0
1/4	7.0	9.4
S	7.2	9.2

1636

24+00

S	7.4	9.0
1/2	7.1	9.3
+5	5.6	10.8
c	5.3	11.1
+10	6.0	10.4
1/4	7.4	9.0
N	7.5	8.9

23+50

N	6.9	9.5
1/2	7.0	9.4
+5	5.9	10.5
c	5.6	10.8
+10	5.8	10.6
1/4	7.6	8.8
S	7.4	9.0

23+00

S	7.3	9.1
1/2	7.4	9.0
+5	6.1	10.3
c	5.8	10.6
+10	6.1	10.3
1/4	7.1	9.3
+5	7.5	8.9
N	5.8	10.6

29

1636

22+50

N	6.1	10.3
+5	7.1	9.3
1/2	6.8	9.6
+5	6.0	10.4
c	5.8	10.6
+10	6.1	10.3
1/2	7.6	8.8
S	8.0	8.5

22+00

N	5.7	10.7		
+5	6.9	9.5		
1/4	6.7	9.7		
+5	5.8	10.6		
c	5.7	10.7		
+10	6.0	10.4		
1/2	7.5	8.9		
S	7.6	8.8		
TP	2.25	14.64	3.97	12.39

21+50

N	4.7	9.9
+5	5.4	9.2
1/2	5.1	9.5
+5	4.3	10.3
c	3.9	10.7

1464

30

+10	4.3	10.3
1/2	5.3	9.3
S	5.6	9.0

21+00

S	5.1	9.5
1/2	4.6	10.0
c	5.9	10.7
+10	4.2	10.4
1/2	5.0	9.6
+5	5.4	9.2
N	4.5	10.1

20+50

N	5.0	9.6
1/2	4.9	9.7
+5	4.3	10.3
c	4.0	10.6
1/2	4.5	10.1
S	5.0	9.6

20+00

S	4.9	9.7
1/2	4.5	10.1
c	4.1	10.5
+10	4.6	10.0
1/2	5.4	9.2
N	5.4	9.2

14.64

19+50

N	5.3	9.3
1/4	5.6	9.0
+5	4.7	9.9
c	4.4	10.2
1/4	4.9	9.7
S	5.1	9.5

19+00

S	5.7	8.9
1/2	5.8	8.8
+5	5.1	9.5
c	4.9	9.7
+10	5.1	9.5
1/2	5.8	8.8
N	5.5	9.1

18+50

N	6.0	8.6
1/2	5.8	8.8
+5	5.4	9.2
c	5.2	9.4
+10	5.4	9.2
1/4	6.0	8.6
S	6.4	8.2

14.64

31

18+50

S	6.9	7.7
1/4	6.5	8.1
+5	5.6	9.0
c	5.6	9.0
+10	5.7	8.8
1/2	6.5	8.1
N	6.6	8.0

17+50

N	7.2	7.4
1/2	7.0	7.6
+5	6.0	8.6
c	5.7	8.9
+10	5.9	8.7
1/2	6.5	8.1
S	7.1	7.5

17+00

S	7.3	7.3
1/2	6.9	7.7
+5	5.8	8.8
c	5.7	8.9
+10	5.9	8.7
1/2	7.1	7.5
N	7.0	7.6

14.64

16+50

N	7.0	7.6
1/2	6.9	7.7
+5	6.2	8.4
c	5.9	8.7
+10	5.8	8.8
1/2	6.8	7.8
S	7.1	7.5

16+00

S	6.7	7.9
1/2	6.4	8.2
+5	6.1	8.5
c	5.8	8.8
+10	5.9	8.7
1/4	6.8	7.8
N	6.8	7.8

15+50

N	6.9	7.7
1/2	6.5	7.8
+5	6.2	8.4
c	6.0	8.6
+10	6.1	8.5
1/2	7.1	7.5
S	6.9	7.7

14.64

15+00

S	8.1	6.5
1/2	7.5	7.1
+5	6.5	8.1
c	6.1	8.5
1/4	6.9	7.7
N	6.5	7.8

14+50

N	7.0	7.6
1/2	6.9	7.7
c	6.1	8.5
+10	6.6	8.0
1/4	7.5	7.1
S	7.5	7.1

14+00

S	7.5	7.1
1/2	7.2	7.4
+5	6.3	8.3
c	6.1	8.5
1/4	7.0	7.6
N	7.0	7.6
T.P.	8.69	16.51 6.52
		8.17

32

16.51

13+50

N	7.1	7.7
1/2	9.0	7.8
0	8.2	8.6
1/4	8.8	8.0
S	9.1	7.8

13+00

S	8.9	7.9
1/2	8.4	8.4
0	8.0	8.8
1/4	8.8	8.0
N	8.7	8.1

12+50

N	8.5	8.3
1/2	8.4	8.4
0	7.6	9.2
1/4	8.0	8.8
S	8.2	8.6

12+00

S	7.2	9.6
1/2	7.2	9.6
0	6.8	10.0
1/4	7.6	9.2
N	7.6	9.2

14.81

33

11+50

N	6.7	10.1
1/2	6.6	10.2
0	6.2	10.6
1/4	6.3	10.5
S	6.4	10.4

11+00

S	4.8	12.0
1/2	5.1	11.7
0	6.4	11.4
1/4	5.8	11.0
N	5.8	11.0

11+74¹ angle

N	6.0	10.8
1/2	5.4	11.4
0	5.0	11.8
1/4	4.7	12.1
2 1/2 Cor. wall at Reaping Plat 4.7		12.1

(B7)

26.2

14.19

14.12

10+50

30.5 S of Cor. wall	5.2	11.6
1/2	5.2	11.6
0	5.2	11.6
11.5 N = 8 E. of Cor. wall	5.4	11.4

137m	273	16.92	14.19
		10+25	
N		5.7	11.2
1/2		5.3	11.3
c		5.2	11.7
1/4		5.4	11.5
24'S = end of wall		5.4	11.5
		10+00	
S		0.0	16.9
1/2		5.7	11.2
c		5.0	11.9
+10		4.6	12.3
1/2		4.9	12.9
N		3.8	13.1
		9+75	
N		4.5	12.4
1/2		4.7	12.2
c		4.9	12.0
1/4		5.6	11.3
S		+3.9	20.8
		9+50	
S		+5.0	21.9
1/4		5.7	11.2
c		4.8	12.1
1/2		4.3	12.6
N		4.7	12.2

	16.92	34
	9+25	
N	10.9	6.0
1/2	7.3	9.6
+5	2.8	12.1
c	5.1	11.8
1/2	5.7	11.2
S	+4.3	21.2
	9+00	
S	+3.5	20.4
1/2	5.7	11.2
c	5.2	11.7
1/2	4.8	12.1
N	7.7	9.2
	8+79 ³⁰ = C	
N	6.6	10.4
1/2	5.2	11.7
c	5.1	11.8
+13	5.4	11.5
1/2	3.9	13.0
+5	+2.7	19.6
S	+4.0	20.9
	8+50	
S	+4.0	20.9
+6	+2.0	18.9
1/2	5.4	11.5

16.92

C	5.1	11.8
1/4	5.1	11.8
+5	5.2	11.7
N	6.9	10.0

8+25

N	8.3	8.6
+5	5.7	11.2
1/4	5.0	11.9
C	5.1	11.8
1/4	5.5	11.4
+3	+2.6	19.5
S	+3.4	20.3

8+00

S	+2.8	19.7
+8	+1.4	18.3
1/4	5.7	11.2
C	5.1	11.8
1/4	5.1	11.8
N	8.5	8.1

7+75

N	8.1	8.8
1/4	5.1	11.8
C	5.1	11.8
1/4	5.4	11.5
+2	+1.5	18.4
S	+1.4	18.3

16.92

35

7+50

S	+1.6	18.5
+8	+1.6	18.5
1/4	5.2	11.7
C	5.0	11.9
+12	5.0	11.9
1/4	6.9	10.0
N	11.3	6.6

7+25

N	11.5	6.4
1/4	5.1	8.8
+5	5.1	11.8
C	5.1	11.8
1/4	5.4	11.4
+3	+0.6	17.5
S	+1.3	18.2

7+00

S	+0.8	17.7
+8	1.4	15.3
1/4	5.5	11.4
C	5.0	11.9
+10	5.2	11.7
1/4	8.0	8.8
N	12.7	6.2

16.92

6+75

N	11.1	5.8
1/2	7.6	9.3
+5	4.9	12.0
c	4.9	12.0
1/4	5.1	11.8
+2	2.1	14.8
S	9.5	16.4

6+50

S	0.9	16.0
1/2	1.8	15.1
+1	5.1	11.8
c	4.9	12.0
+12	5.0	11.9
1/4	6.9	10.0
N	10.5	6.4

6+25

N	10.3	6.6
1/2	6.9	10.0
+3	4.7	12.2
c	4.7	12.2
+13	5.2	11.7
1/2	7.31	19.40
1/4	4.83	12.09
5	5.2	
S	5.7	

19.40

36.

6+00

S	2.6	16.8
1/2	3.2	16.2
+2	7.6	11.8
c	7.2	12.2
+12	7.0	12.4
1/4	8.1	11.3
N	10.6	8.8

5+75

N	11.3	8.1
1/2	8.4	11.0
+3	6.9	12.5
c	7.1	12.3
1/4	7.4	12.0
+2	5.2	17.2
S	1.0	18.4

5+50

S	0.3	19.1
+5	2.1	17.3
1/2	7.2	12.2
c	6.8	12.6
+12	7.0	12.4
1/4	8.7	10.7
N	9.1	10.3

19.40
5+14.6' BC

N	9.1	10.3
1/4	7.5	11.9
+3	6.1	13.3
0	6.5	12.9
1/4	6.8	12.6
+2	1.8	17.6
S	+1.2	20.6

3700

S	1.7	17.7
+8	3.6	15.8
1/4	6.9	12.5
C	6.2	13.2
1/4	6.1	13.3
N	7.9	10.5

4+50

N	7.9	11.5
H6	6.2	13.2
1/4	5.7	13.7
C	5.9	13.5
1/4	6.3	13.1
S	4.9	14.5

4+00

S	5.3	14.1
1/4	6.1	13.3

19.40

C	5.7	13.7
1/4	4.9	14.5
N	2.7	16.7

3+50

N	3.2	16.2
+7	4.8	14.6
1/4	4.9	14.5
C	6.4	14.0
1/4	6.2	13.2
S	5.0	14.4

3+28.24 EC

S	5.2	14.2
1/4	5.9	13.5
C	5.3	14.1
1/4	5.0	14.4
+5	5.1	14.3
N	2.8	16.6

TP	5.06	20.16	4.80	14.60
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3+00

N	5.2	15.0
1/4	5.6	14.6
C	5.7	14.4
1/4	6.5	13.7
S	6.1	14.1

20.16

2+75

S	5.7	14.5
1/2	6.6	13.6
c	5.8	14.4
1/2	5.5	14.7
N	6.0	14.2

2+50

N	5.5	14.7
1/2	5.4	14.8
c	5.9	14.3
1/2	6.4	13.8
S	5.7	14.5

2+25

S	5.4	14.8
1/2	6.2	14.0
c	6.0	14.2
1/2	5.5	14.7
N	5.5	14.7

2+00

N	5.3	14.9
1/2	5.5	14.7
c	5.9	14.3
1/2	5.7	14.3
S	5.0	15.2

20.16

1+75

S	5.4	14.8
1/2	6.0	14.2
c	5.7	14.5
1/2	5.4	14.8
N	5.1	15.1

1+50

N	5.0	15.2
1/2	5.2	15.0
c	5.5	14.7
1/2	5.7	14.5
S	4.3	15.9

1+25

S	4.8	15.4
1/2	5.6	14.6
c	5.5	14.7
1/2	5.9	14.3
N	6.1	14.1

1+00

N	6.0	14.2
1/2	5.7	14.5
c	5.4	14.8
1/2	5.6	14.6
S	5.2	15.0

38

20.16

0+75

S	5.7	14.5
1/2	5.5	14.7
c	5.2	15.0
1/4	5.1	15.1
N	4.7	15.5

0+50

N	4.5	15.7
1/2	4.8	15.6
c	5.2	15.0
1/4	5.5	14.7
S	5.5	14.7

0+419² BC

S	5.6	14.6
1/2	5.5	14.7
c	5.1	15.1
1/4	4.9	15.3
N	4.7	15.5

0+00

N	6.5	13.7
1/2	6.2	14.0
c	6.0	14.2
1/4	5.9	14.3
S	5.9	14.3
	4.26	15.90

20.16

39

172	211	15.18	9.54	103.2
B7M Taylor-Chestnut		7.01		6.12 604
Mason's Gate Sw. Side of Buchanan Dr 1/4 mi.				
B7M 107		8.5.12		84.05
108		7.89	12.71	72.41
101		5.992	12.95	59.91
016		27.07	13.01	46.91
112		34.15	13.04	34.03
USGS B7M (Marked 28 ft)		12.15		22.00
322		25.22		
137		25.52	5.05	20.17
355		21.95	6.14	18.40
410		19.30	6.75	15.20
432		19.37	5.25	14.25 14.15
276		21.03	1.10	19.27
509		18.29	7.83	13.20
1155		27.26	2.68	15.61
10 men 50+00			10.98	16.48
916		36.54	10.8	27.35
1119		46.76	0.97	35.57
350		25.91	1.65	42.11
452		38.57	11.86	34.25
men at Remands			5.10	33.47 33.63
485		34.33		34.05
141		22.22	12.50	21.83

21/24/15
H
Check Levels. Mason Valley Road,

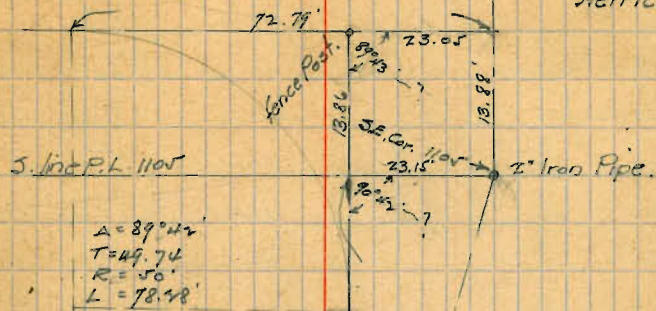
22,24

318	15.79	963	12.11	
To 25+00"		473	11.06	11.13
447	13.69	657	9.22	
476	17.05	140	12.29	
²⁸⁸ Pumping plant,	17.10	283	14.22	14.12
279	17.12	287	14.73	
Iron Taylor Chestnut,		11.60	6.12	6.04

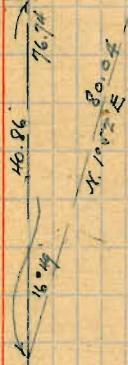
9/16/18

Davis
Monroe
Herrick.

P.L. 1105



P.L. 1118.



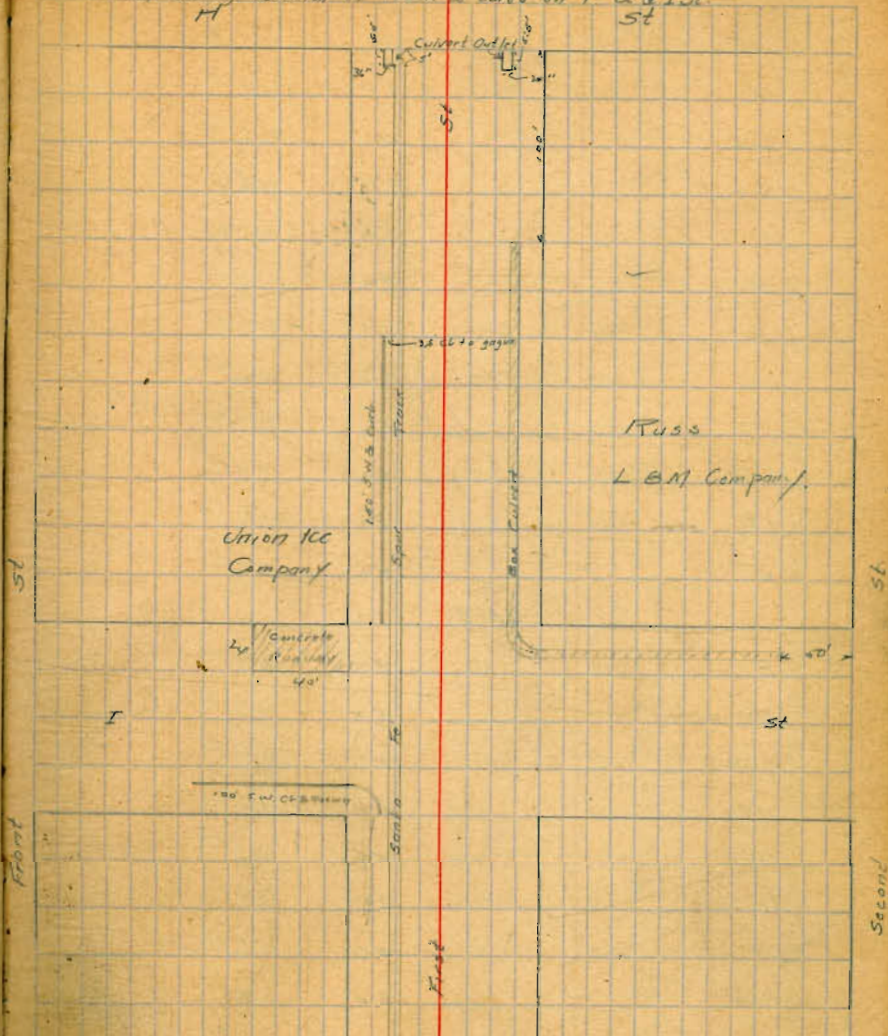
32
 Gross Section of First St. to line H to Saline I. ^{15' from} ^{to} ^{the} ^{ground} ^{level}

2.97 1.592 11.93 B.M. 5d 174 P.

So line H on paving

W		37.5m 4.2 ground	17.7 ✓
Ch		40	11.9 ✓
4		42	11.7 ✓
e		42	11.7 ✓
4		42	11.7 ✓
Ch		45	11.4 ✓
E		42	11.7 ✓
	5'50 H	-	-
E		41	11.8 ✓
Ch		47	11.3 ✓
Center End Culvert outlet		579	9.93
+6		46	11.3 ✓
4		45	11.4 ✓
C		44	11.5 ✓
4		46	11.5 ✓
+7		46	11.3 ✓
E rail		512	10.8 ✓
Center outlet of Culvert		585	10.31 ✓
W. rail		560	10.73 ✓
Ch		48	11.1 ✓
W		44	11.5 ✓

Sketch showing location of Trunk & Cuts on 1st & 1st St



Note Runway 40' wide should be left for Union Ice Co.
 Culvert should be placed around lumber Co's property where old
 box culvert is now.

15.92

25' 30" Lt

W	4.8	11.1 ✓
cl	5.0	10.9 ✓
gutr	6.7	10.2 ✓
W. rail	5.2	10.8 ✓
E	5.2	10.7 ✓
H	5.0	10.9 ✓
C	4.7	11.2 ✓
H	4.7	11.2 ✓
+7	5.0	10.9 ✓
gutr	6.0	9.9 ✓
cl	4.8	11.1 ✓
E	4.5	11.4 ✓

50' S.

E	5.0	10.9 ✓
cl	5.2	10.7 ✓
gutr	6.0	9.9 ✓
+5	5.2	10.7 ✓
H	5.0	10.9 ✓
C	4.9	11.0 ✓
H	5.1	10.8 ✓
rails	5.2	10.6 ✓
gutr	5.5	10.4 ✓
cl	4.9	11.0 ✓
W	4.8	11.0 ✓

75' S.

cl	4.7	11.2 ✓
cl	5.3	10.6 ✓
gutr	5.6	10.3 ✓
rails	5.2	10.5 ✓
H	5.3	10.6 ✓
C	5.4	10.5 ✓
H	5.2	10.7 ✓
H	5.4	10.5 ✓
gutr	6.1	9.8 ✓
cl	5.3	10.6 ✓
E	5.4	10.5 ✓

100' S.

E	5.4	10.3 ✓
cl	5.2	10.3 ✓
gutr	6.2	9.7 ✓
H	5.2	10.7 ✓
H	5.2	10.6 ✓
C	5.5	10.4 ✓
W	5.5	10.4 ✓
cl/rails	5.5	10.3 ✓
gutr	5.5	10.1 ✓
cl	5.5	10.4 ✓
W	4.5	11.3 ✓

43

159
125 So H

W	5.2	10.7 ✓
d	5.5	10.5 ✓
rails	5.70	10.2 ✓
u	5.5	10.4 ✓
C	5.5	10.4 ✓
u	5.7	10.5 ✓
ch	5.2	10.7 ✓
E	5.2	10.7 ✓

150 So

E	5.1	10.8 ✓
ch	5.2	10.6 ✓
u	5.5	10.4 ✓
C	5.7	10.2 ✓
u	5.7	10.4 ✓
rails	5.92	10.0 ✓
gutr	5.5	10.5 ✓
a	5.2	10.7 ✓
W	4.9	11.0 ✓

175 So

wd	5.6	10.5 ✓
gutr	6.0	9.9 ✓
rails	6.05	9.87
u	5.8	10.1 ✓
C	5.9	10.0 ✓
u	5.6	10.3 ✓
ch	5.3	10.6 ✓
E	5.4	10.5 ✓

159

44

200 So

E	5.2	10.7 ✓
ch	5.3	10.6 ✓
u	6.0	9.9 ✓
C	6.0	9.9 ✓
u	6.1	9.8 ✓
rails	6.25	9.87
gutr	6.4	9.5 ✓
ch	5.5	10.3 ✓

225 So

wd	5.25	10.1
gutr	6.9	9.0 ✓
rails	6.4	9.4
u	6.1	9.8 ✓
C	6.1	9.8 ✓
u	6.1	9.8 ✓
ch	5.6	10.3 ✓
E	5.2	10.5 ✓

Tip 291 13.60 6.18 9.8 9.77

250 So

E	3.2	10.5 ✓
ch	3.8	9.9 ✓
u	3.9	9.8 ✓
C	4.2	9.5 ✓
u	4.0	9.7 ✓
rails	4.4	9.24
gutr	4.5	9.1 ✓
ch	3.8	9.9 ✓

275' S.

Wch	4.5	9.63
gut	5.0	8.7 ✓
raib	4.71	9.0 ✓
h	4.4	9.3 ✓
c	4.6	9.1 ✓
tu	4.5	9.2 ✓
cl	4.0	9.7 ✓
E	3.3	10.4 ✓

300' Salt. Noline I

E	3.9	9.8 ✓
cl	4.4	9.3 ✓
h	4.6	9.1 ✓
c	4.7	9.0 ✓
h	5.1	8.6 ✓
raib	4.17	9.51
gut	5.1	8.5 ✓
cl	4.21	9.5 ✓
W	4.2	9.5 ✓

No. cl.

rd	4.4	9.3 ✓
cl	5.1	8.6 ✓
raib	5.0	8.7 ✓
h	4.8	8.9 ✓
c	4.8	8.7 ✓
h	4.6	9.1 ✓
cl	4.6	9.1 ✓
E	4.4	9.3 ✓

1.6.40 I

E	5.0	8.7 ✓
cl	4.8	8.9 ✓
tu	4.7	9.0 ✓
c	4.8	8.9 ✓
h	5.0	8.7 ✓
raib	5.2	8.43
cl	5.1	8.3 ✓
W	5.5	8.2 ✓

Chr. I.

W	5.4	8.3 ✓
cl	5.2	8.3 ✓
raib	5.5	8.2 ✓
h	5.2	8.5 ✓
c	4.8	8.9 ✓
h	4.8	8.9 ✓
cl	4.9	8.8 ✓
E	5.1	8.6 ✓

504 I

E	5.2	8.5 ✓
cl	5.0	8.7 ✓
tu	4.9	8.8 ✓
c	5.0	8.7 ✓
tu	6.3	8.4 ✓
raib	5.85	7.83
cl	5.9	8.0 ✓
W	5.5	8.2 ✓

13.6P

So. Ch. I

W.	572	7.96
d	58	7.9 ✓
raile	612	7.86
4	55	8.2 ✓
C	53	8.4 ✓
4	52	8.5 ✓
d	52	8.5 ✓
E	52	8.5 ✓

So. line I

E	51	8.6 ✓
ch	54	8.3 ✓
4	56	8.1 ✓
C	55	8.1 ✓
4	59	7.8 ✓
raile	624	7.40
ch	572	7.96

Cross Section of I St Front to Second

13.6P

Dor
Haw
46

E. line Front.

50	84	5.3 ✓
ch	84	5.3 ✓
4	78	5.9 ✓
C	75	6.2 ✓
4	73	6.4 ✓
ch	76	6.1 ✓
+3	68	6.9 ✓
4	67	7.0 ✓
25 E Front		
ch	62	7.5 ✓
ch	67	7.0 ✓
4	73	6.4 ✓
C	71	6.6 ✓
4	75	6.2 ✓
ch	79	5.8 ✓
5	80	5.7 ✓
50 E Front		
5	78	6.2 ✓
4	76	6.3 ✓
4	72	6.5 ✓
C	70	6.7 ✓
4	69	6.8 ✓
4	64	7.3 ✓
No	57	8.0 ✓

VI

13.67

75 E Feet

No	54	83 ✓
cl	64	73 ✓
4	67	70 ✓
c	68	69 ✓
4	68	69 ✓
cl	71	66 ✓
So	72	64 ✓

10. E Feet

So	67	70 ✓
cl	69	68 ✓
4	66	71 ✓
c	63	74 ✓
4	64	73 ✓
cl	63	74 ✓
No	53	84 ✓

15 E Feet

No	41 52	91 ✓
cl	52	83 ✓
4	59	78 ✓
c	59	78 ✓
4	62	75 ✓
gutr	70	67 ✓
So cl	66	71 ✓

13.7

47

150 E Feet

So cl	627	741
gutr	66	71 ✓
4	60	77 ✓
c	57	80 ✓
4	59	78 ✓
cl	50	87 ✓
No	52	93 ✓

175 E Feet

No	45	943
cl	46	91 ✓
+10	55	82 ✓
4	55	82 ✓
c	55	82 ✓
4	57	80 ✓
gutr	61	76 ✓
cl	60	76

W Line 1st St

So cl	572	796
4	55	82 ✓
c	52	83 ✓
4	55	82 ✓
cl	44	93 ✓
No	42	95 ✓

13.68
E. line 1st St.

No	39	9.8 ✓
Ch	44	9.3 ✓
W	50	8.7 ✓
C	51	8.6 ✓
H	52	8.5 ✓
Ch	52	8.5 ✓
So	51	8.6 ✓

25' E 1st

So	52	8.4 ✓
Ch	47	8.8 ✓
W	50	8.7 ✓
C	51	8.6 ✓
H	50	8.7 ✓
Ch	42	9.3 ✓
No	38	9.9 ✓

50' E 1st

No	37	10.0 ✓
Ch	43	9.4 ✓
H	50	8.7 ✓
C	52	8.5 ✓
H	52	8.5 ✓
Ch	52	8.5 ✓
So	53	8.4 ✓

75' E

So	57	8.0 -
Ch	57	8.0 -
H	56	8.1 -
C	55	8.2 ✓
H	50	8.7 ✓
Ch	42	9.5 ✓
No	37	10.0 ✓

100' E

Ch	38	9.9 ✓
Ch	43	9.4 ✓
H	52	8.5 ✓
C	59	7.8 ✓
H	61	7.6 ✓
Ch	61	7.8 ✓
S	60	7.7 ✓

125' E

So	62	7.5 ✓
Ch	43	7.4 ✓
H	62	7.4 ✓
C	62	7.5 ✓
H	61	7.6 ✓
Ch	54	8.3 ✓
No	49	8.8 ✓

81

13.6P

150° E 1st St

No	65	82 ✓
cl	5.7	80 ✓
41	6.3	74 ✓
0	6.3	74 ✓
U	6.4	73 ✓
cl	6.6	71 ✓
So	6.1	76 ✓

175° E

Σ	6.7	70 ✓
cl	7.0	67 ✓
W	6.6	71 ✓
U	6.7	70 ✓
44	6.5	72 ✓
cl	6.9	68 ✓
No	6.1	76 ✓

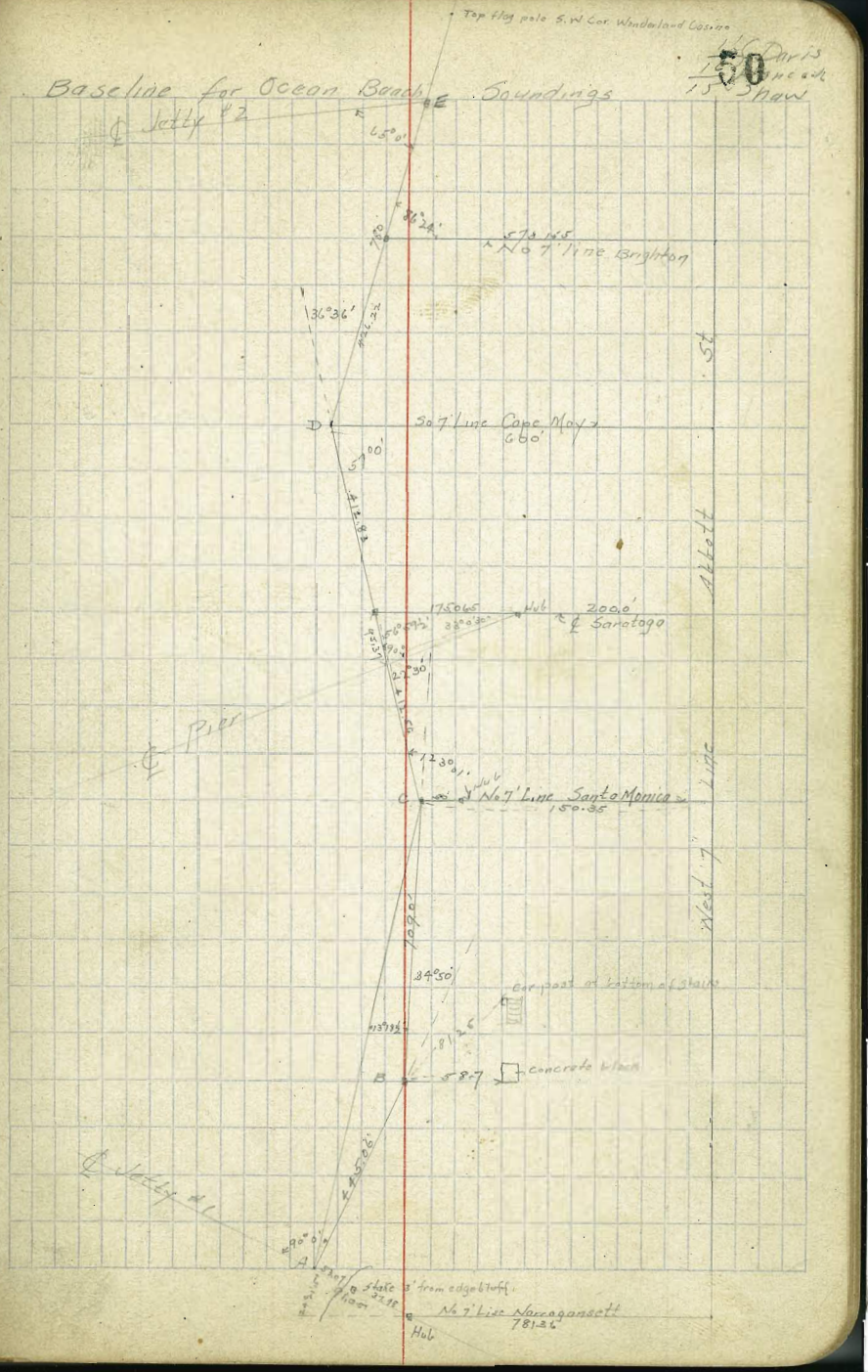
200° E. N.L. 2nd St

1/2	6.1	76 ✓
cl	6.3	74 ✓
guts	6.8	69 ✓
4	6.7	70 ✓
0	6.7	70 ✓
4	6.8	69 ✓
guts	7.1	66 ✓
cl	6.8	69 ✓
So	6.6	71 ✓

49

Baseline for Ocean Beach Soundings

16 Davis
15 Shaw



	1	147	-	1514	
	368	10.12	✓	6.50	1301 P _{1/4} NE Abbott * New point
Point "C"			970	0.42	✓
T.P.	6.60	5.32	1146	-1.28	✓
Point "D"			0.91	1.41	✓
	3.42	992	✓	6.50	
Point "C" West 292		+0.75	12.09	-0.17	Point "C"
			6.90	-6.15	Point B

Levels and Soundings for Jetty #2 Ocean Beach ^{11 Davis} ^{12 West} ^{13 Schwartz} ^{14 Hines} ^{15 Shaw} Elev.

47

	H.I	Ang	Vert Ang	R.R	Elev.
1	653	0°0'		9.4	-8.9
2		13°03'		10.0	-3.5
3		7°10'		10.5	-4.0
4		11°57'		11.3	-4.8
5		14°50'		12.0	-5.5
6		18°49'		12.8	-6.3
7		22°49'	✓	13.6	-7.1
8		27°0'	✓	14.4	-8.9
9		30°47'	✓	15.7	-9.2
10		34°29'	✓	15.7	-9.2
11		38°05'	✓	15.8	-9.3
12		41°27'	✓	15.9	-9.4
13		44°50'	✓	16.3	-9.8
14		47°56'	✓	16.8	-10.3
15		50°49'	✓	17.0	-10.5
16		53°39'	✓	17.3	-10.8
17		56°12'	✓	17.5	-11.0
18		64°28'	+0°05'	Scaled Dist. 745	Calculated +108 -12.7
19		68°25'	+0°04'	780	+91 -12.6
20		71°48'	0°0'	812	-13.5
21		80°26'	-0°05'	930	-13.5 -14.8
22		82°07'	0°0'	970	-13.5
23		85°02'	+0°02'	1030	+0.6 -12.9
24		86°58'	0°0'	1075	-13.5
25		87°56'	-0°04'	1104	-13.8 -14.75
26		98°31'	+0°04'	1120	+1.30 -12.7
27		88°50'	+0°04'	1128	+1.35 -12.7

52

Note Instrument at "D" Foresight on "E" All horizontal

Angles to the left. All Vertical Angles taken to top of 20' pole + angles are above H.I - angles are below.

Levels & Soundings over & Proposed Pier Ocean Beach

11 Paris
12 West
13 Schmitt
14 Haniel
15 Star-shill

	H.T.	Ang	Vert. Ang	R.R.	Elev
1	5.42	0°0'		5.6	-0.2
2		L 9°22'		9.0	-3.6
3		17°56'		11.2	-5.8
4		23°45'		13.0	-7.6
5		32°38'		14.3	-8.9
6		38°17'		15.2	-9.9
7		46°13'		19.5	-14.1
8		50°30'	20°15'	20.0	+9
9		53°07'	40°08'	37.0	+9
10		56°02'		16.5	-11.1
11		58°17'		17.5	-12.1
12		59°46'		18.5	-13.1

Instrument at "B" Foresight on "C" All Angles to the left.

-0.78	L 26°34'		12.5	-14.3
	26°36'		13.0	-13.8
	33°20'		10.0	-10.8
	39°36'		13.0	-13.8
	40°36'		13.0	-13.8
	40°48'		13.5	-14.3

Note Instrument at "C" Foresight on "D" All horizontal angles to the left. All vertical angles taken to top of 20' pole + angles are above H.T. - angles are below.

Levels and Soundings over of Proposed Jetty #1 Ocean Beach

HI	Ang	Vert Ang	R.R	Elev	
4.26	0° 0'		4.5	-0.1	
	0° 41'		5.0	-0.6	
	1° 34'		13.0	-8.6	
	1° 56'		14.0	-9.6	
	2° 16'		10.0	-5.6	
	4° 17'		11.0	-6.6	
	4° 26'		15.5	-11.1	
	5° 42'		12.0	-8.6	
	7° 18'		16.0	-11.6	
	9° 06'		15.0	-7.6	
	10° 29'		18.0	-13.6	
	10° 58'		15.5	-11.1	
1	14° 41'	+0° 02'	1033	+3.6	-12.0
2	12° 04'	+0° 11'	1032	+3.3	-12.3
3	11° 11'	+0° 01'	1043	+0.3	-15.3
4	14° 56'	+0° 08'	1033	+2.4	-13.2
5	18° 25'	+0° 08'	1027	+2.4	-13.2
6	20° 31'	+0° 05'	1025	+1.5	-14.1
7	20° 15'	+0° 12'	1025	+3.6	-12.0

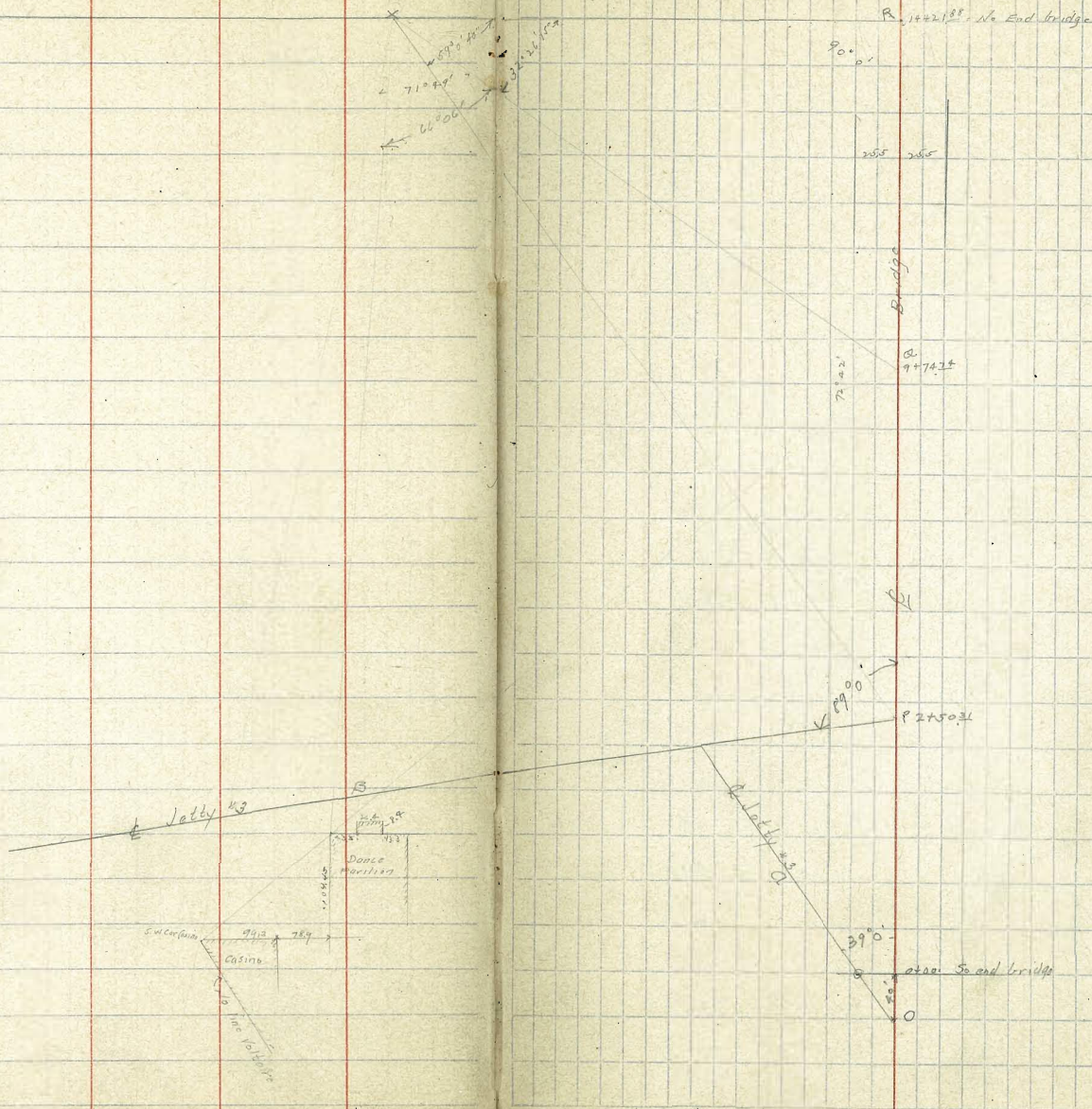
1/19 } Darris
1/19 } Fields
1/19 } Shaw

57

Instrument at 'C' Foresight on 'A' All angles to the right

All vertical angles taken to top of 20' pole + angles above H.I. - angles below

Baseline for Soundings Jetty #3



Levels over Bridge across False Bay and to Point X on Base Line				
Sta	+	HI	-	Elev
	279	7.17 ✓		3.38 N.E. Long Branch 9/26/44
T.P.	504	7.44 ✓	4.77	2.40 ✓
T.P.	866	11.57 ✓	4.53	2.91 ✓
0+000 So End bridge			8.66	2.91 ✓
1			7.60	3.94
2			6.45	5.12
3			5.40	6.17
4			4.50	7.07
5			4.40	7.17
6			4.30	7.27
T.P.	500	12.27 ✓	4.30	7.27
7			5.10	7.17
8			5.11	7.16
9			5.06	6.91
10			5.80	6.47
11			6.02	6.25
12			6.16	6.11
T.P.	503	11.12 ✓	6.16	6.11 ✓
13			5.16	5.98
14			5.30	5.84
+ 2188 - No. End Bridge			5.32	5.82 ✓
T.P.	370	3.64	1.20	-0.06 ✓
Point X			3.59	7.05 ✓

Sta	Ang	Vert Ang	R.R	± 100
10-98	0° 0'		8.6	+2.4
O	6° 22'		8.2	+2.8
	9° 0'		15.0	-4.0
	26° 20'		18.0	-7.0
	50° 25'		19.5	-8.5
	63° 0'	-0° 30'		-10.7
	70° 23'		27.6	-16.6

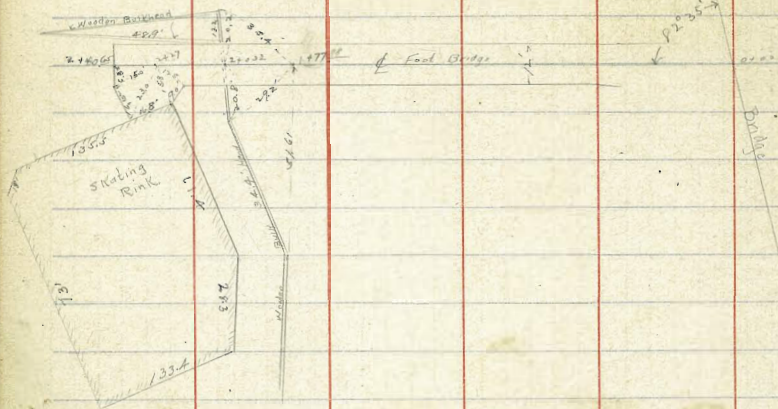
B	442	R 17° 29'	14.5	-10.1
	22° 0'	10.0	-5.6	
	27° 10'	10.0	-5.6	
	32° 17'	10.5	-6.1	
	37° 19'	12.4	-8.0	
	41° 31'	12.0	-7.6	
	46° 32'	11.7	-7.3	
	51° 24'	12.5	-8.1	
	56° 09'	12.0	-7.6	
	60° 31'	13.0	-8.6	
	64° 36'	13.0	-8.6	
	67° 58'	13.0	-8.6	
	71° 09'	13.5	-9.1	
73° 55'	14.2	-9.8		
76° 00'	17.0	-9.6		

Note for Section A. Instrument at P. foresight on O.

Vertical Angles to top of 20' pole. - Angles below H.L.

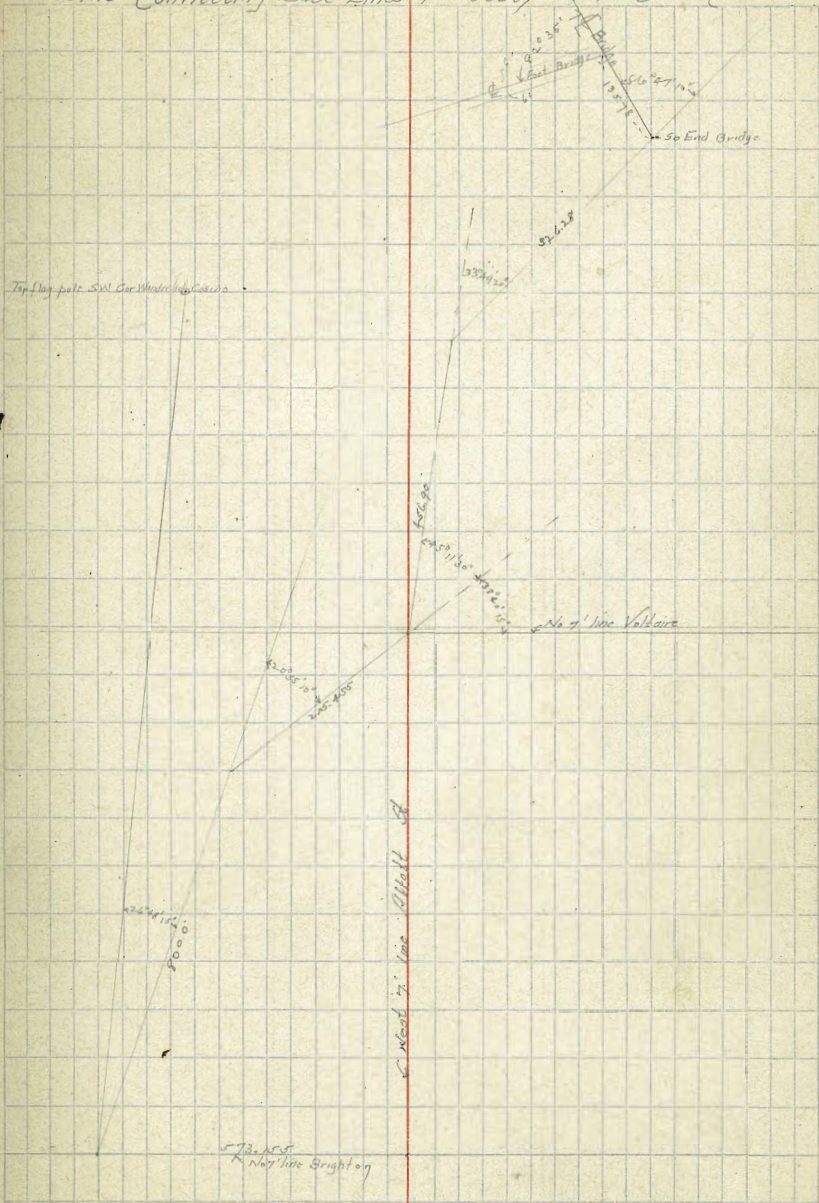
+ Angles above

For Section B. Instrument at X. foresight on P



Line Connecting Base Lines for Jetty #2 & #3

58

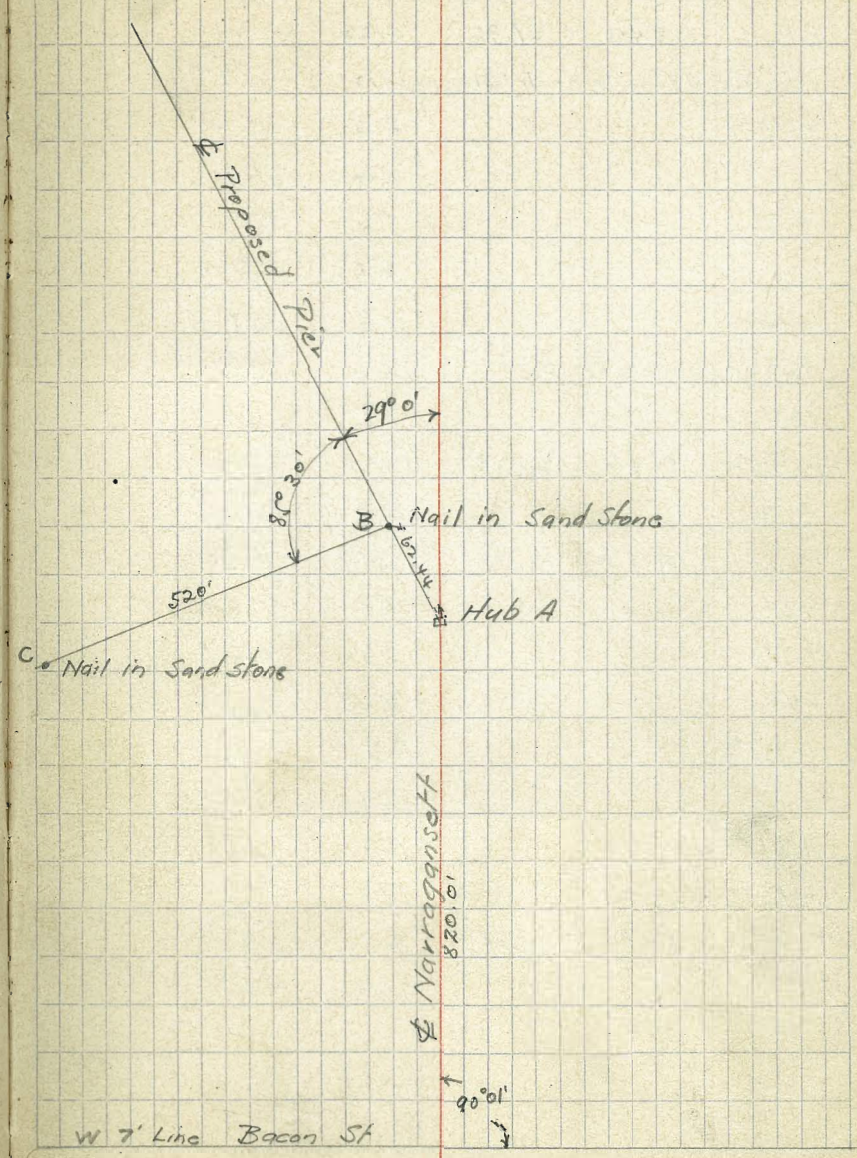


Soundings for proposed Pier off Narragansett Ave. ^(Davis) ^(Hancock) ^(Herrick)

H.I.	Ang.	Vert. Ang	Elev	Dist (scaled)	Vert. Height
10.13	L 6° 36'	+0° 03'	-9.4	522	+0.45
	L 14° 50'	+0° 19'	-6.8	563	+3.11
	L 15° 09'	-0° 14'	-12.2	568	-2.31
	L 19° 52'	-0° 10'	-11.6	610	-1.77
	L 25° 20'	-0° 30'	-15.7	673	-5.87
	L 27° 25'	-0° 20'	-14.0	703	-4.09

Copied from Book G.R.H.

Base line for proposed Pier Soundings Narragansett Ave.



Levels over $\frac{1}{2}$ Narragansett & Portion of proposed pier

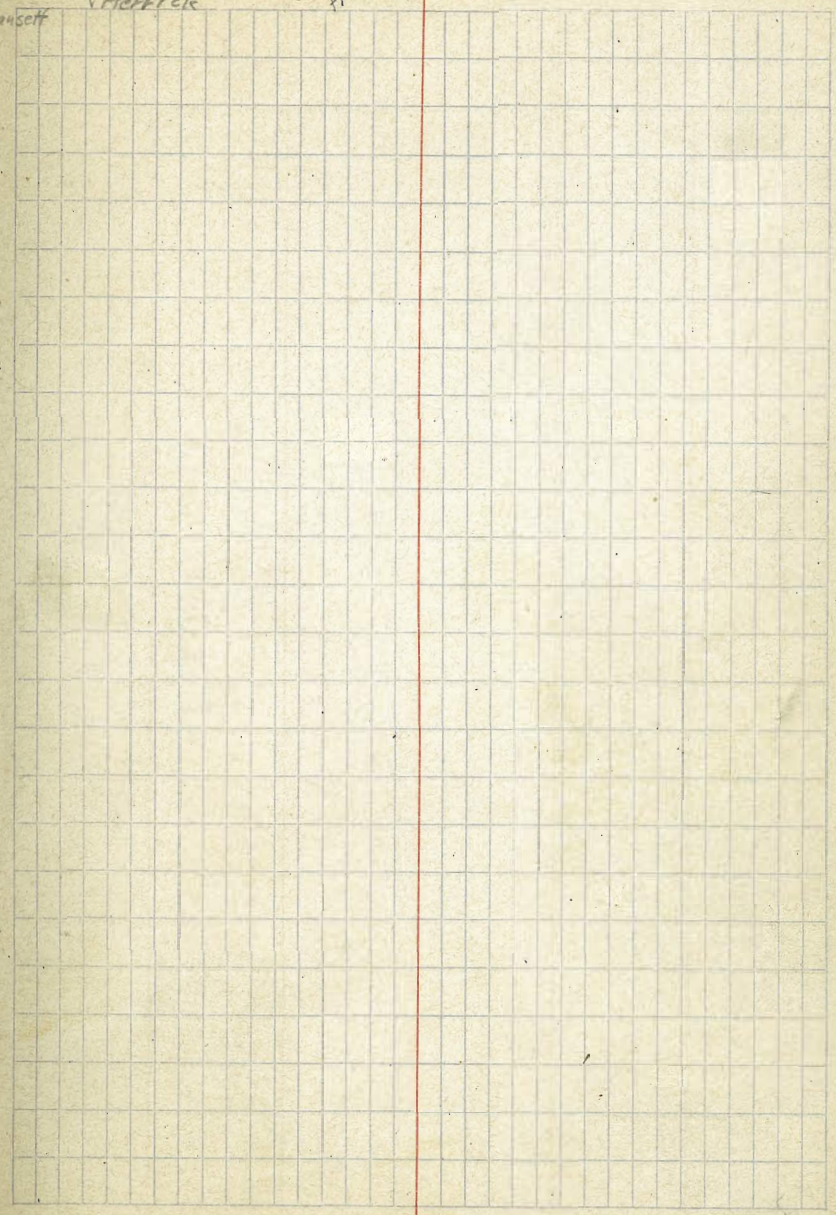
12-6-15

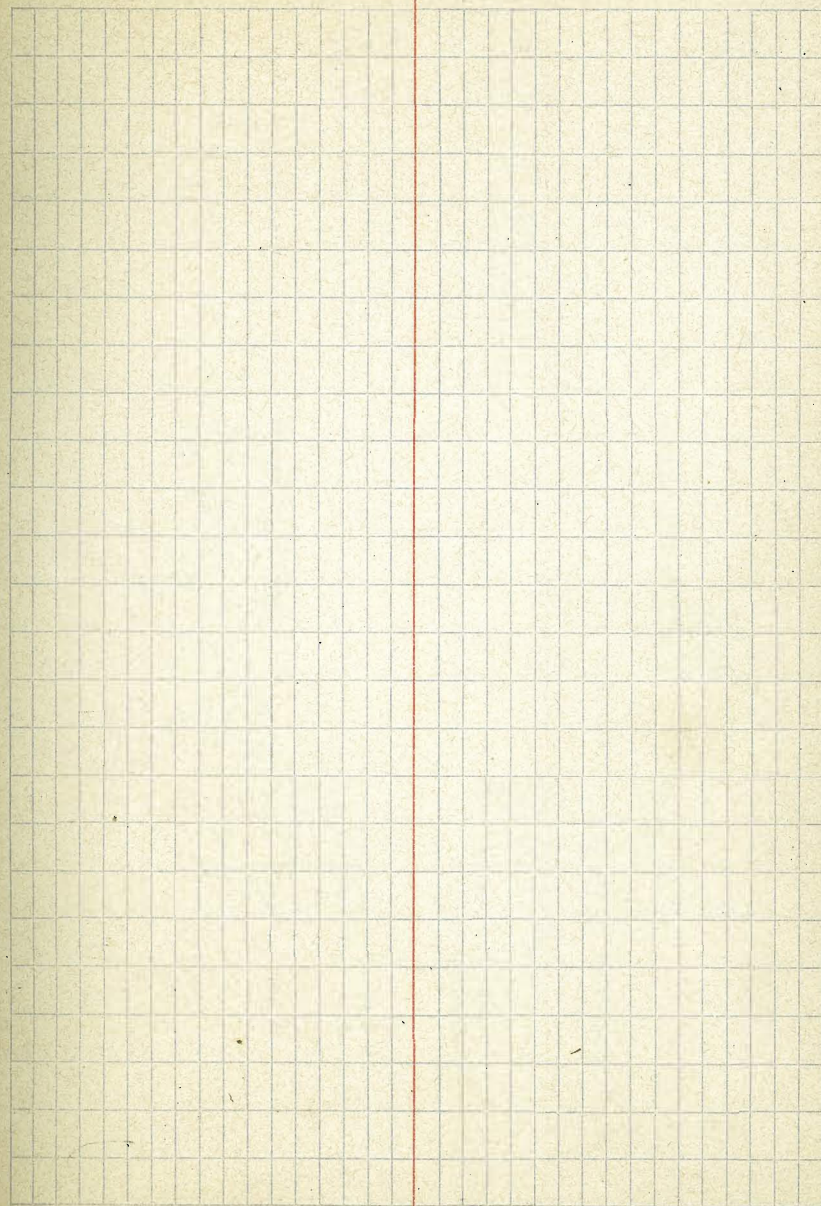
Davis
Hancock
Herrick

Copied from Book
G.R.H.

60

Sta.	+	H.I.	-	Elev
	9.65	28.73		19.08
				NW Cor Bacon + 1/4 in Narragansett 79 in Curb.
T.P.	9.49	37.90	0.32	28.41
6+00 W. of W7 Line Bacon - ch Narragansett				32.7
+50			2.3	35.6
7			0.6	37.3
+50			0.5	37.4
8			2.1	35.8
+13			2.8	35.1
+20 - "A" - 0+00 $\frac{1}{2}$ Pto. Pier			2.2	35.7
+08			1.8	36.1
T.P. +12	0.26	25.26	12.90	25.00
+23			10.0	15.3
T.P.	0.13	12.51	12.88	12.38
+34			4.7	7.8
+35			7.6	4.9
+46			9.0	3.5
"B" +62.44			9.58	2.93
+80			12.4	0.1
+81			15.1	-2.6
1+15			15.8	-3.3
T.P.	5.69	8.62	9.58	2.93
"C"			3.82	4.80





12/18/15
150

Gregory Moore Miller
LEVELS ON BRIDGE MAIN ST
AT PLUTO

B.M.	+	H.J.	15.55	8.88	SE MAIN
T.P.			9.24	6.31	+33' spike 17' pole

12/15
Gregory
Moore
Miller

LEVELS ON BRIDGE
MAIN ST AT PLUTO ST

- 8.0

63

BM	0.47	39.06	38.59	51100 - Mon 5224 - Main	
T.P.	0.26	26.44	12.88	26.18	
T.P.	0.46	14.11	12.79	13.65	
T.P.	1.34	3.18	12.27	1.54	
#1		9.15	- 5.97 = Top of Mud		West bent. So. Side of Bridge
			+ 1.03 = depth		
			- 7.00 = Top of cap		on piling
#2		9.23	- 5.85 = Top of Mud		East bent So. Side of Bridge
			+ 1.10 = depth		
			- 6.95 = Top of cap		on piling
#3		9.03	- 5.85 = Top of Mud		East bent No. Side of Bridge
			+ 1.18 = depth		
			- 7.03 = Top of Cap		on piling
#4		9.07	- 5.89 = Top of Mud		West bent No. Side of Bridge
			+ 1.30 = depth		
			- 7.19 = Top of Cap		on piling
T.P.	2.87	11.71	1.34	1.94	
			6.13	5.58 = Surface of	Asphalt West end of Bridge Axis
			6.80	4.91 =	East

+	-	
0.47	12.88	38.59
0.26	12.79	35.11
0.46	12.27	3.18 ✓
1.34	3.99	
2.53	2.53	
	35.41	

West Abutment is 38' East of the West Line of
Pluto St. measured from tack in curb which is 17' So. of
C of Main + 13' West of C of Pluto.

Report on Mission Bay Bridge

$\frac{18}{16}$ } *Lewis*
Hansen
March

Note Bents are numbered beginning with #1 at South end of bridge and ending with #90 at North end.

Piles in each bent are numbered from 1 to 11 beginning on the west with #1

Bent # 6 Pile #6 out

" # 7 " #8-9 & 10 out #11 Sprung

" # 8 " #8 & 11 out

" # 9 " #5 Sprung

" # 10 " #2-4-5-6 & 7 out #8-9 & 11 Sprung

" # 12 " #10 out #2 & 11 Sprung

" # 13 " #11 Sprung

" # 14 " #11 Sprung

" # 14 " #11 Sprung & Split

" # 11 " #3-4-5-6 & 8 out

It will take 25 New Piles in repairing bridge

Piles seem to be in good condition as to timbers etc.

1916 Bridge Report

64

GB 219-57

88 BENTS

90 BENTS

11 + 5 Bulkheads

Counted as

BENTS

Bent #1

1916 Bridge
Report

G.B. 219-57

88 Bents

90 Bents

N + S Bulbheads

counted as

Bents

Location Proposed ϕ for 8' walk around
cliffs - connecting proposed ϕ Pier with ϕ
steps in front "Budd's" Fish House.

EN. NW. Boat.
& Pier to pier
7.40 26.48 19.08
T.P. 0.76 25.72

12.44 38.16

EN. Hib. ϕ Pier to pier & 802 W of 7' pier 2.40 35.76

T.P. 11.85 26.31

T.P. 1.28 27.59 12.57 15.02

0.62 15.64

T.P. Nail = 0+62nd of ϕ Pier 11.85 12.69 2.95

Nail 0+40 Walk = 0+41 ϕ Pier 120°30' R.

0+53.82 = P.C.

0+80.10 = P.C.

1+06.39 = P.C.

1+32.67 = P.C.

1+58.96 = P.C.

2+37.40 = P.C.

2+44.90 = P.T.

2+49.09 = P.C.

3+02.50 = End of 8' walk

3+04.25 = P.C.

3+24.26 = P.T.

4+00.95 = P.C.

4+82.79 = P.T.

5+53.00 = End of Pier - Fish House. T.P.

$\Delta = 77^{\circ}14'R$
 $R = 78.00$
 $ST = 62.30$

$\Delta = 68^{\circ}25'L$
 $R = 10$
 $ST = 6.77$

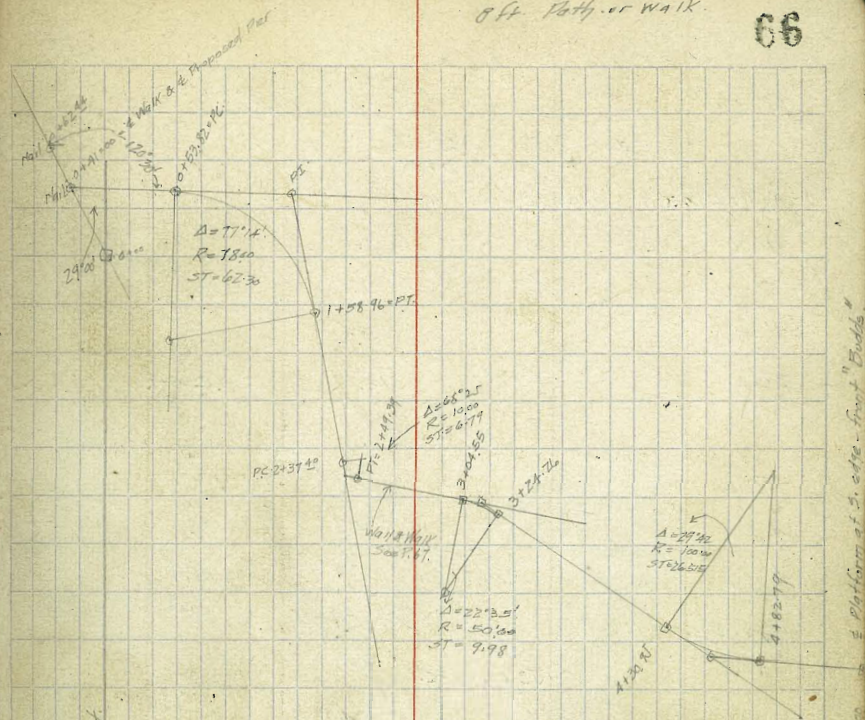
$\Delta = 22^{\circ}35'R$
 $R = 50$
 $ST = 9.78$

$\Delta = 29^{\circ}42'L$
 $R = 100$

$ST = 26.515$

Sketch showing Proposed ϕ Location
8 ft Path. or Walk.

66

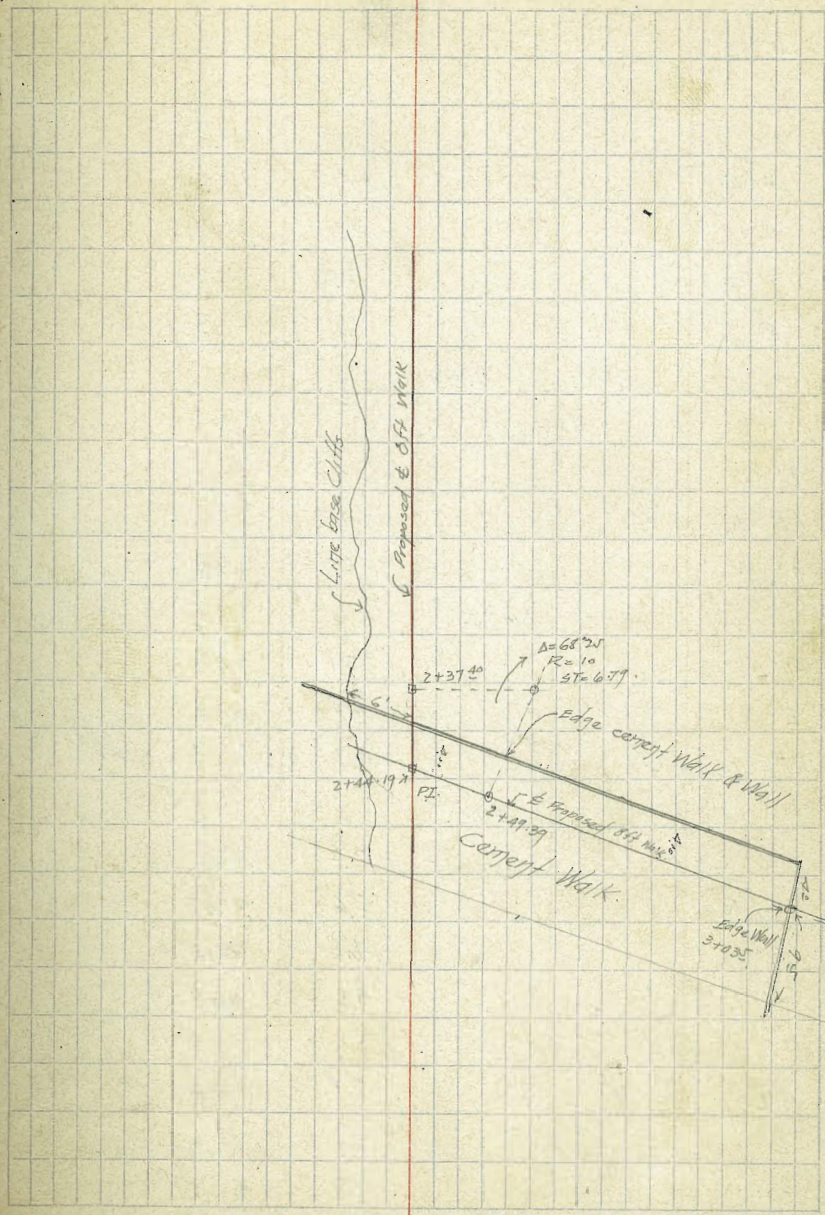


8 ft Pier

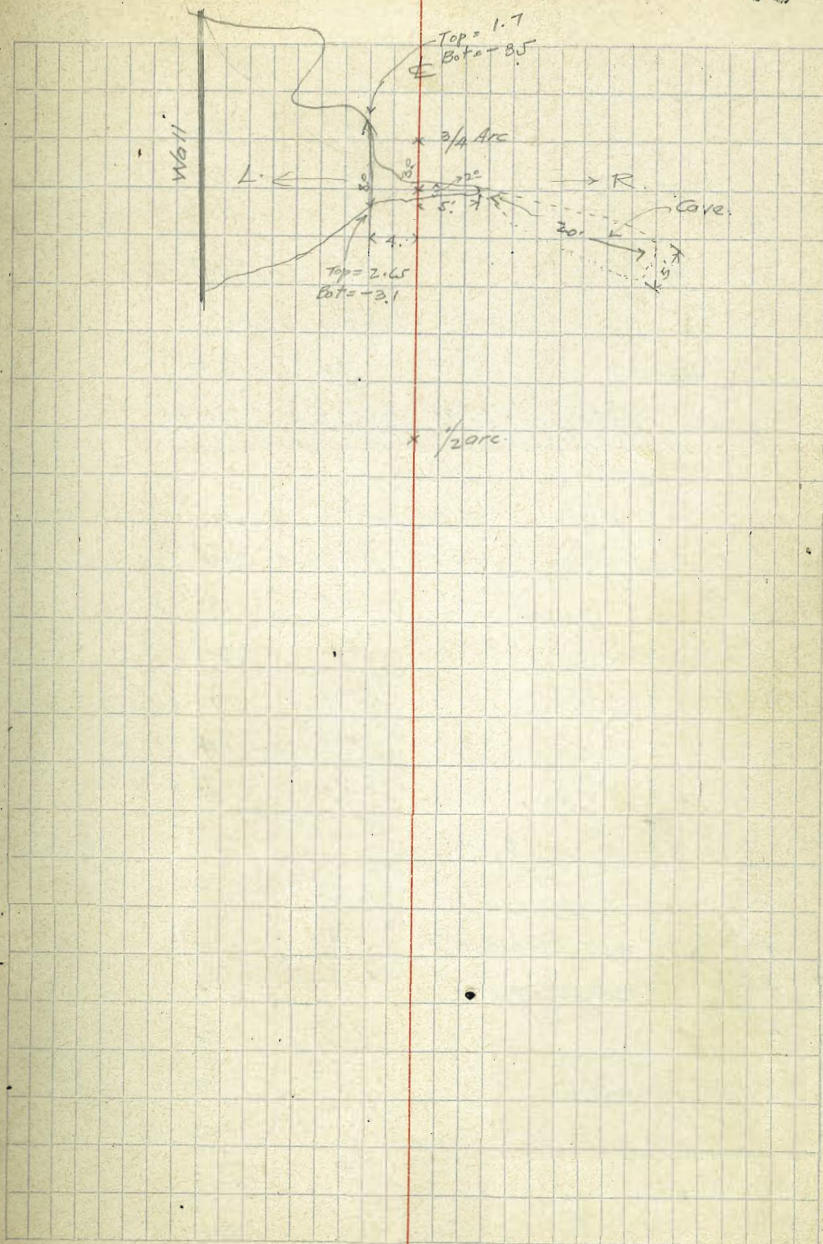
820 ft

EN. NW. Boat.

T.P. Nail		2.75	✓
	5.70	8.65	0+00
0+00 = Int. E. Work of Proposed prior to 0+14			
4' R.		3.9	4.75 ✓
±		4.7	3.95 ✓
4' L.		5.4	3.25 ✓
30' L.		12.77	-4.12 MIN ✓
	0+25		
-50' L.		12.77	-4.12 ✓
4' L.		5.7	2.95 ✓
±		5.4	3.25 ✓
4' R. Base Cliff.		5.1	3.55 ✓
	0+53.82 = P.C.		
4' R.		4.1	4.55 ✓
3' R. Base Cliff.		6.6	2.05 ✓
±		7.0	1.65 ✓
4' L.		7.0	1.65 ✓
52' L.		12.77	-4.12 ✓
	1/2 arc.		
35' L.		12.77	-4.12 ✓
4' L.		8.5	0.15 ✓
±		8.0	0.65 ✓
3' R. Base Cliff.		7.4	1.25 ✓
4' R.		4.7	3.95 ✓
	1/2 arc.		
4' R.		3.7	4.95 ✓
1' R. Bot Cliff.		3.7	4.95 ✓
±		5.1	0.65 ✓
4' L.		8.7	0.0 ✓



42'L	8.65	12.77	-4.12	MHT.
		$\frac{3}{4}$ arc.		
35'L		12.77	-4.12	✓
4'L		12.0	-3.35	✓
±		3.8	4.85	✓
4'R		28	5.85	✓
T.P.		9.87	-1.22	✓
	529	4.07		
	1+58.96	RT.		
4'R.		0.8	3.3	✓
± = Bot Cliff		4.9	-0.8	✓
4'L		5.7	-1.6	✓
	1+75.			
4'L		5.1	-1.03	✓
±		4.9	-0.8	
Bot Cliff = 4'R.		{ 4.7	-0.6	
		{ 2.0	6.1	
	2+00.			
8'R		22	1.9	
4'R.		36	0.5	
±		4.1	0.0	
4'L		48	-0.7	
	2+25.			
4'L.		38	0.3	
±		29	1.2	
+4		20	2.1	
		↓		
		Up to tip.		



A.07

2+37.40 = PC.

4' L.		36	0.5
±		34	0.7
+4		28	1.3
+7	Bot Cliff.	22	1.9

2+39.6 = Flush Concrete Wall.

Nat Beach.		36	0.5
T.P. Top. Wall = Wedge proposed 8' walk.	0.76	0.76	3.31 ✓

0.46 3.77

2+49.39 = PC.

6' R = Edge Cement walk		0.4	3.4
±		0.5	3.3
4' L = Edge cement walk.		0.6	3.2
Nat beach - hard pan.		3.7	0.1
30' L. " "		5.2	-1.4
100 L. " "		6.3	-2.5

2+75

64' L. " "		7.89	-4.12 ✓
4' L = Bot wall - hard pan.		4.1	-0.3
4' L = Top wall = edge walk.		0.7	3.1
±		0.6	3.2
6' R = E. edge walk.		0.5	3.3

3+83.5 = Hand cement walk & Wall.

4' R = E. edgewalk.	Top 0.5	3.3
	Bot 4.5	-0.7
±	Bot 2.6	-0.8
	Top 0.8	3.0
4' L = W " "	Top 0.9	2.7
	H. Pan. 5.6	-0.8

3.77

50' L.	H. Pagn.	6.5	-2.7
100' L.	H "	5.8	-2.0
105' L.	H "	7.9	-4.12

3+04⁵⁵ = PC.

4' L.		4.7	-0.9
±	Sand {	4.4	-0.6
	H. Pagn. {	5.5	-1.7
4' R.		4.2	-0.4

3+14² = ± Curve = base.

4' R.		4.2	-0.4
±	Surface {	4.5	-0.7
	H. Pagn. {	5.5	-1.7
4' L.		4.7	-0.9

3+24²⁶ = PT.

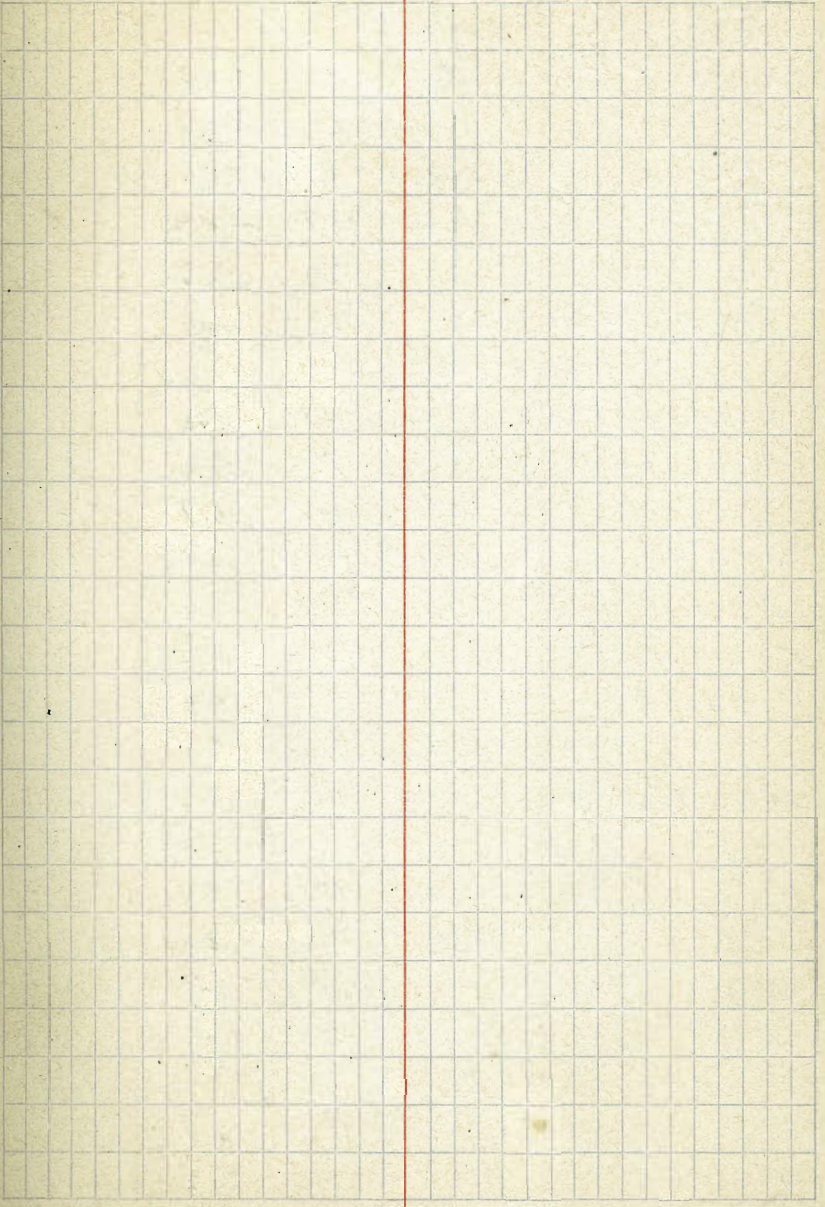
72' L.	H. Pagn.	7.89	-4.12 ✓
50' L.	H. Pagn.	6.4	-2.6 ✓
4' L.		4.7	-0.9 ✓
±	Hard Pagn. {	6.0	-2.2
	Sand surface {	4.5	-0.7
4' R.		4.0	-0.2
12' R = Base cliff		3.3	0.5

3+50

63' L.	H. Pagn.	7.9	-4.12 ✓
4' L.		4.1	-0.3
±	Surface {	4.0	-0.2
	H. Pagn. {	6.0	-2.2
4' R.		3.7	0.1
9' R = Base cliff		3.4	0.4

3+75

10' R = Base cliff.		3.2	0.6
4' R.		3.3	0.5
±	Surface {	3.6	0.2
	H. Pagn. {	6.1	-2.3
4' L.		4.3	-0.5
62' L.	H. Pagn.	7.9	-4.12 ✓



3.77

4+00.

45' L	Hard Pan	7.9	-4.12 ✓
4' L.		4.2	-0.4
±	Surface	3.7	0.1
	H. Pan.	6.7	-2.9
4' R.		3.1	0.7
8' R = Base Cliff.		2.8	1.0

4+30.95 = PC.

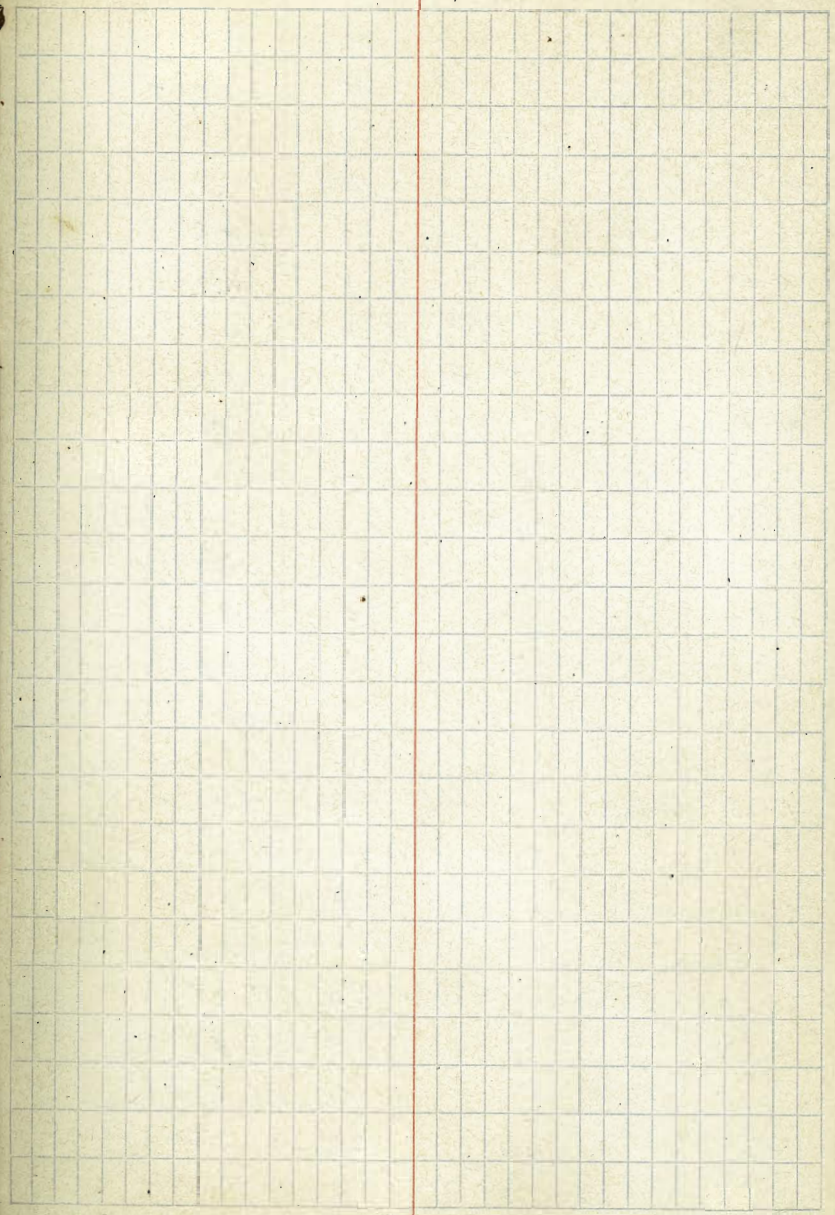
10' R = Base Cliff.		2.8	1.0
4' R.		2.9	0.9
±	Surf.	3.1	0.7
	H. Pan.	5.3	-1.5
4' L.		3.7	0.1
45' L = sand.		7.89	-4.12 ✓
45' L H. Pan.		8.4	-4.6

4+56.57 = ± Curve = 1/2 arc

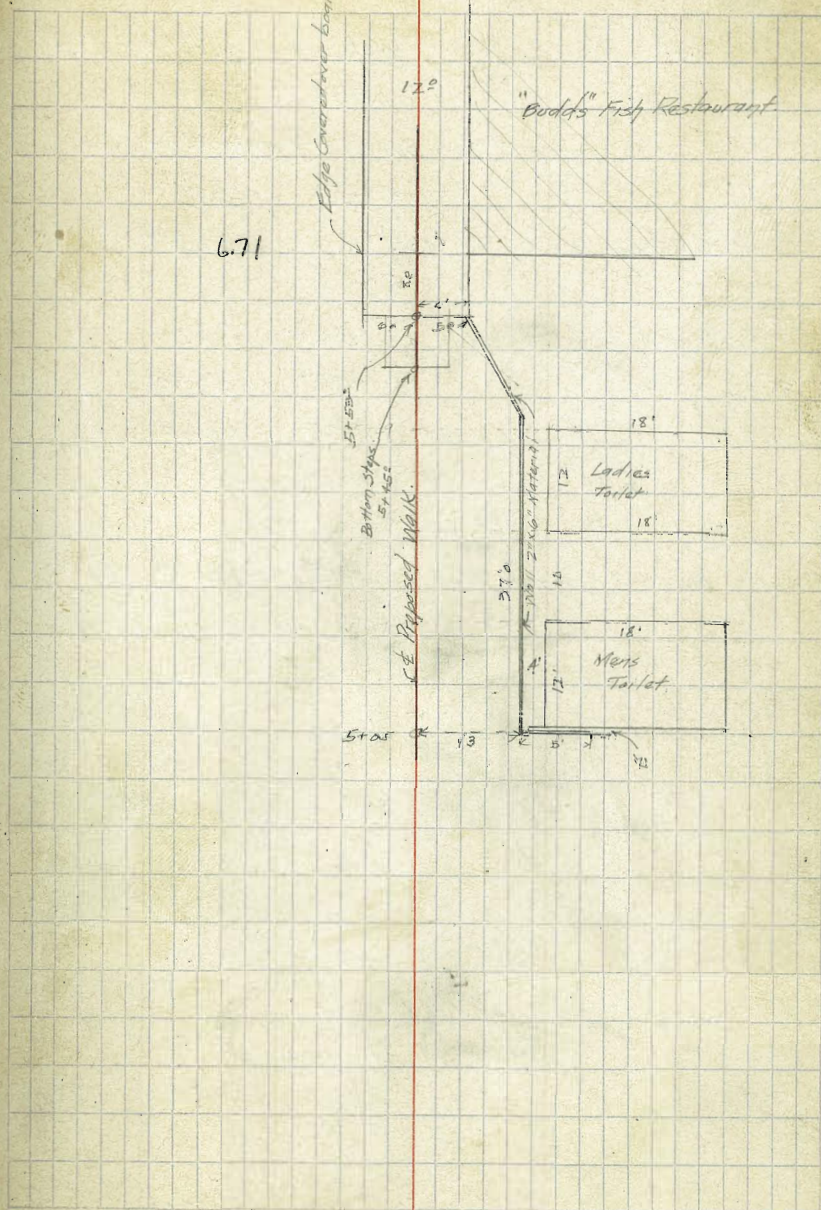
48' L. Hard Pan.		7.9	-4.12 ✓
4' L.		2.9	0.9
±	Surface	2.9	0.9
	Hard Pan.	6.4	-2.6
4' R.		2.4	1.4
8' R = Base Cliff.		1.9	1.9

4+82.39 = PT.

10 R = Base Cliff.		2.7	1.1
4' R.		3.11	0.7
±	Surface	3.1	0.7
	Hard Pan	7.1	-3.3



		3.77	
4' L.		3.5	0.3
50' L.	H. Ptg.	7.9	-4.12 ✓
	5+00		
50' L.	Sand	7.9	-4.12 ✓
50' L.	H. Ptg.	8.4	-4.6
4' L.		3.1	0.7
±	Surface	2.9	0.9
	Hard Pan	7.0	-3.2
4' R.		2.9	9
10' R.	Base Hill	2.5	.27
	5+25		
15' R.	Bot. 2'x6" Wall	2.3	.47
4' R.		2.6	.17
±	Surface	2.5	1.3
	Hard Pan	7.0	-3.4
4' L.		3.9	-0.1
15' L.	Sand	7.9	-4.12 ✓
	5+45 = Bottom step stairs from Budds		
45' L.	Sand	7.9	4.12 ✓
4' L.		4.1	-0.3
±	Bottom stair of steps	3.3	0.5
4' R.		3.2	0.6
9' R.	Flush	2.3	1.5
T.P.		2.68	1.09 ✓
	9.26	10.35 ✓	



72

1035

5+53 = Top steps - end walk front "Bucks"

£

3.64

6.71 ✓

Top 2"x6" Board Ret wall front toilets

→ 4.82

5.53

Floor Ladies toilet (estimated) 5.2

5.15 ✓

Floor Mens toilet (Cement)

5.30

5.05 ✓

T.P.

0.85

9.50 ✓

T.P.

12.78

22.28

0.68

21.60 ✓

T.P.

6.32

27.92 ✓

11.20

16.72 ✓

2.88

19.60 ✓

B.M. NW. Bacon & Niagara Plug

6.57

13.03 ✓

12.99

12.99

0.04

12.99

West
of Hwy
Moore 5/20/16

73

6/16 Gregory Moore Miller

CONTOURS AT WEST END OF NARRAGANSETT ST. From top of Cliff to the Beach.

B.M.	11.90	30.95 ✓	19.05	41.70-44.00 + 826.09
T.P.	11.08	41.66 ✓	30.58 ✓	
(NB. Base Line = S.L. of Narragansett St.) 723' W. of N.L. Bacon = 00				
10' S. of Base Line		7.0	34.7 ✓	
9' - - -		4.2	37.5 ✓	
4' - - -		4.1	37.6 ✓	
00		5.2	36.5 ✓	
13' N. of Base		6.3	35.4 ✓	
16' - - -		8.3	33.4 ✓	
22' - - -		8.7	33.0 ✓	
28' - - -		6.9	34.8 ✓	
40' - - -		5.8	35.9 ✓	
55' - - -		6.9	34.8 ✓	
56' - - -		9.2	32.5 ✓	
60' - - -		5.9	32.8 ✓	
62' - - -		6.4	35.3 ✓	
66' - - -		6.4	35.3 ✓	
70' - - -		8.9	32.8 ✓	
70' - - -		6.0	35.7 ✓	
80' - - -		5.6	36.1 ✓	
83' - - -		4.6	37.1 ✓	
90' - - -		4.6	37.1 ✓	
5' W. of 00				
90' - - -		4.9	36.8 ✓	
80' - - -		5.9	35.8 ✓	
69'		6.4	35.3 ✓	

66' No. of Base	5.7 10.7	33.0 ✓ 37.0 ✓
66' - - -	10.8 7.45	30.9 ✓ 34.9 ✓
64' - - -	6.4	35.3 ✓
60' - - -	8.6	33.1 ✓
58' - - -	8.2	33.5 ✓
50' - - -	6.7	35.0 ✓
46' - - -	6.1	35.6 ✓
46' - - -	6.7	35.0 ✓
20' - - -	8.0	33.7 ✓
16' - - -	9.1 7.2	32.6 ✓ 34.5 ✓
7' - - -	5.4	36.3 ✓
00 = Base	5.9	35.8 ✓
8' So. of ✓	6.3	35.4 ✓
10' - - -	8.7	33.0 ✓
5.5' W. of 00		
7' No. of Base	4.4	37.5 ✓
13' - - -	4.7	37.0 ✓
8' W. of 00		
10' So. of Base	14.8	26.9 ✓
Base	11.5	29.9 ✓
5' N. of Base	5.5	36.2 ✓
7' - - -	5.1 4.3	36.0 ✓ 37.4 ✓
13' - - -	4.5	37.2 ✓
17' - - -	7.6 11.1	34.1 ✓ 30.6 ✓
19' - - -	10.7	31.0 ✓

22' No. of Base	5.7	36.0 ✓
30' - - -	6.5	35.7 ✓
40' - - -	6.2	35.5 ✓
53' - - -	6.5	35.2 ✓
59' - - -	8.7 } 10.4 }	33.0 ✓ 31.3 ✓
64' - - -	7.0	34.7 ✓
65' - - -	11.8	29.9
67' - - -	10.7	31.0 ✓
69' - - -	6.5	35.2 ✓
73' - - -	9.3	32.4 ✓
77' - - -	6.1	35.6 ✓
80' - - -	5.8	35.7
90' - - -	4.8	36.9
	13' 14' of 00	
95' No. of Base	5.3	36.4 ✓
13' - - -	4.7	37.0 ✓
20' - - -	5.7	36.0 ✓
26' - - -	6.2	35.5 ✓
27' - - -	9.7	32.0 ✓
64' - - -	13.3	28.4 ✓
63' - - -	11.9 } 23.5 }	29.8 ✓ 19.2 ✓
62' - - -	10.4 }	31.3 ✓
60' - - -	14.6	27.1 ✓
57' - - -	14.6 } 23.1 }	27.1 ✓ 18.6 ✓
53' - - -	6.7	35.0 ✓
44' - - -	6.6	35.1 ✓
33' ✓ - -	6.8	35.5 ✓

22' No. of Base	4.8	36.9 ✓
17' - - -	14.7	27.0 ✓
15' - - -	14.7	27.0 ✓
11' - - -	8.0	33.7 ✓
9' - - -	8.5	33.2 ✓
5' - - -	13.8	27.9 ✓
Base	16.3	25.4 ✓
10' 50' of Base	18.9	22.8
	18' 14' of 00	
2' 50' of Base	20.4	21.3 ✓
	20' 17' of 00	
10' 50' of Base	22.5	19.2 ✓
6' - - -	22.8 } 26.8 }	18.9 ✓ 14.9 ✓
7' No. ✓	18.0 } 25.0 }	23.7 ✓ 16.7 ✓
13' - - -	17.3	24.4 ✓
16' - - -	13.1	28.3 ✓
23' - - -	10.9	30.8 ✓
26' ✓ - -	5.1	36.6 ✓
33' - - -	5.1	36.6 ✓
44' ✓ - -	5.9	35.8 ✓
47' ✓ - -	6.6	35.1 ✓
52' - - -	21.8	19.9 ✓
60' - - -	24.3	17.4 ✓
65' ✓ - -	23.1	18.3 ✓
77' ✓ - -	5.6	36.1 ✓
90' ✓ - -	5.1	36.6 ✓

23' W. of 00

20' No. of Base		5.9	35.8	✓
28' No. of Base	24' W. of 00	9.1	32.6	✓
33' No. of Base		5.3	36.4	✓
40' - - -		6.0	35.7	✓
T.P.	0.69	30.06	12.29	29.37 ✓
T.P.	5.89	26.75	9.20	20.86 ✓
22' No. of Base		+ 0.3	27.4	? 27.1
16' - - -		1.6	25.2	✓
9' - - -		2.1	24.7	✓
10' So. - -		9.2	17.6	✓
50' No. ✓		15.4	11.4	✓
50' No. ✓		1.0	25.8	✓
54' - - -		9.1	17.7	✓
64' - - -		11.0	15.8	✓
80' - - -		+ 6.5	33.6	? 33.3
90' - - -		2.5	24.3	✓
	30' W. of 00			
90' - - -		7.0	19.8	✓
80' - - -		7.1	19.7	✓
73' - - -		5.7	21.1	✓
64' - - -		12.7	14.1	✓
57' - - -		12.7	14.1	✓
53' - - -		7.1	19.7	✓
42' - - -		4.1	22.7	✓
38' - - -		3.5	23.3	✓
33' - - -		+ 0.2	22.3	(?) 27.0

24' No. of Base		3.4	22.4	✓
15' - - -		5.6	21.2	✓
7' - - -		5.4	21.4	✓
3' - - -		6.6	20.2	✓
Base		6.0	20.8	✓
2' So. of Base		12.6	14.2	✓
8' - - -		12.7	14.1	✓
10' - - -		10.1	16.7	✓
15' - - -		17.0	9.8	✓
	27' W. of 00			
10' So. of Base		15.3	11.5	✓
Base		11.9	14.9	✓
	37' W. of 00			
10' S. of Base		17.6	9.2	✓
5' - - -		15.6	11.2	✓
1' - - -		10.6	16.2	✓
4' No. ✓		10.4	16.4	✓
6' - - -		13.2	13.6	✓
10' - - -		14.2	12.6	✓
12' - - -		10.1	16.7	✓
20' - - -		8.9	17.9	✓
27' - - -		8.1	18.7	✓
28' - - -		10.5	16.3	✓
33' - - -		9.4	17.4	✓
43' ✓ - -		9.0	17.8	✓
52' ✓ - -		10.7	16.1	✓

57' No. of Base	14.7	12.1	✓
62' - - -	16.5	10.3	✓
65' - - -	13.1	13.7	✓
80' - - -	12.1	14.7	✓
95' - - -	11.2	15.6	✓
90' - - -	12.7	14.1	✓

42' W. of oo.

90' No. of Base	19.3	7.5	✓
80' - - -	17.2	9.6	✓
65' - - -	17.1	9.7	✓
62' - - -	18.6	8.2	✓
54' - - -	17.6	9.2	✓
48' - - -	13.8	13.0	✓
43' - - -	14.2	12.6	✓
T.P. 0.98	14.82	12.91	13.84

33' No. of Base	2.5	12.3	✓
22' - - -	4.2	10.6	✓
	0.2	14.6	✓
18' - - -	0.4	14.4	✓
12' - - -	5.4	9.4	✓

Base	6.2	8.6	✓
4' So. of	8.0	6.8	✓
10' - - -	9.3	5.5	✓

45' W. of oo.

10' So. of Base	10.5	4.3	✓
7' - - -	10.7	4.1	✓
	9.0	5.0	✓
5' No. - -	8.6	6.2	✓

7' No. of Base	7.1	7.7	✓
16' - - -	5.7	9.1	✓
17' - - -	3.8	11.0	✓
25' - - -	5.6	9.2	✓
35' - - -	3.8	11.0	✓
48' - - -	6.9	7.9	✓
50' - - -	8.5	6.3	✓
65' - - -	8.2	6.6	✓
80' - - -	6.7	8.1	✓
90' - - -	8.4	6.4	✓

50' W. of oo.

90' No. of Base	10.5	4.3	✓
80' - - -	9.6	5.2	✓
73' - - -	10.1	4.7	✓
	12.3	2.5	✓
59' - - -	9.0	5.0	✓
54' - - -	11.0	3.8	✓
43' - - -	10.4	4.4	✓
30' - - -	8.7	6.1	✓
25' - - -	9.7	5.1	✓
15' - - -	9.2	5.6	✓
Base	11.3	3.5	✓
10' So. - -	12.1	2.7	✓

55' W. of 00

10' So. of Base	13.2	1.6	✓
3' " " "	11.6	3.2	✓
7' 1/2 " " "	10.7	4.1	✓
25 " " "	11.0	3.8	✓
40 " " "	10.9	3.9	✓
67 " " "	14.0 } 12.5 }	.8 2.3	✓ ✓
80 " " "	12.4	2.4	✓
90 " " "	13.6	1.2	✓

62' W. of 00

90' No. of Base	14.1	.7	✓
70' " " "	13.6 15.1	1.2 4.3	✓
50' " " "	12.3	2.5	✓
40' " " "	12.6	2.2	✓
2' " " "	11.5	3.3	✓
Base	13.3	1.5	✓
10' So. of ✓	12.7	2.1	✓

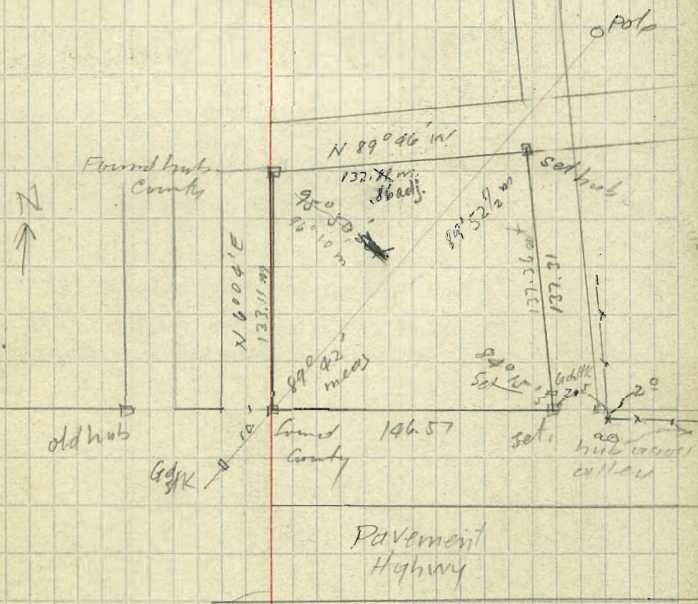
T.P. 7.95 11.26 11.87 2.95 = part in Sandstone
see page 66 for elevation

67

79

	8.63	8.63	8.29	0.34	0.0	Crown of Pavt on E. side of curb @ inference
S. E. Cor.			8.2	0.4		
S. side Ch.			7.6	1.0		
S.W. Cor.			7.1	1.5		
Dr. W. side			4.7	3.9		
N.W. Cor.			2.5	6.1		
Dr. N. side			3.1	5.5		
N. E. Cor.			3.6	5.0		
Ch. E side			5.7	2.9		
Ch. Lot.			5.3	3.3		

96 170
 88 42
 83 15
 89 52 1/2
 358 119 1/2



KEITH'S RAILROAD CURVE TABLES.

Published by KEUFFEL & ESSER CO., New York.

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HOW TO USE KEITH'S TABLES.

EXAMPLE.

Wanted a Curve with an Ext. of about 12 ft. Angle
of Intersection or I. P.= $23^{\circ} 20'$ to the R. at Station
542+72.

Ext. in Tab. IV opposite $23^{\circ} 20'$ =120.87

$120.87+12=132.87$. Say a 10° Curve.

Tan. in Tab. IV opp. $23^{\circ} 20'$ =1183.1

$1183.1+10=1193.1$.

Tab. V. correction for A. $23^{\circ} 20'$ for a 10° Cur.=0.16

$1193.1+0.16=1193.26$ =corrected Tangent.

(If corrected Ext. is required find in same way)

Ang. $23^{\circ} 20'$ = $23.33^{\circ}+10=33.33^{\circ}$ =L. C.

$2^{\circ} 19\frac{1}{2}'$ =def. for sta. 542	I. P.=sta. 542+72
$4^{\circ} 49\frac{1}{2}'$ = " " " +50	Tan.= 1.18.47
$7^{\circ} 19\frac{1}{2}'$ = " " " 543	B. C.=sta. 541+53.53
$9^{\circ} 49\frac{1}{2}'$ = " " " +50	L. C.= 2.33.33
$11^{\circ} 40'$ = " " " 543+	E. C.=sta. 543+36.86
	86.86

$100-53.53=46.47 \times 3'$ (def. for 1 ft. of 10° Cur.)= $139.41'$ =
 $2^{\circ} 19\frac{1}{2}'$ =def. for sta. 542.

Def. for 50 ft.= $2^{\circ} 30'$ for a 10° Curve.

Def. for 36.86 ft.= $1^{\circ} 50\frac{1}{2}'$ for a 10° Curve

(These tables are published in Field Books of
KEUFFEL & ESSER Co., New York, N. Y.)

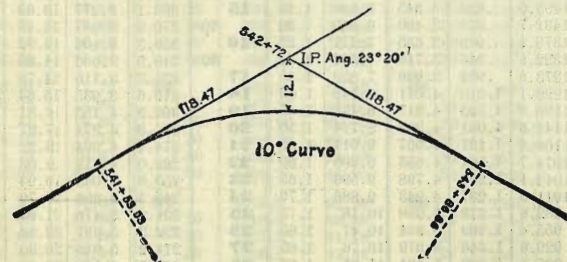


TABLE I. — Minutes in Decimals of a Degree.

Table with 10 columns (1-10) and 10 rows (1-10) of decimal values for minutes in a degree.

TABLE II. — Inches in Decimals of a Foot.

Table with 11 columns (1-11) and 11 rows (1-11) of decimal values for inches in a foot.

TABLE III. — Radii, Ordinates and Deflections.

Large table with 12 columns (Deg., Radius, Mid. Ord., Tan. Def., Chd. Def., Def. for 1 Foot) and 12 rows (0-40) for each degree, showing radii, ordinates, and deflections.

TABLE IV. — Tangents and Externals to a 1° Curve.

Table with 9 columns (Angle, Tangent, External) and 12 rows (1-12) for each angle, showing tangent and external values for a 1-degree curve.

Natural Tangents

sec.	0'	10'	20'	30'	40'	50'	sec.	0'	10'	20'	30'	40'	50'	sec.	
0	0000	0029	0058	0087	0116	0145	89	40	8391	8441	8491	8541	8591	8642	49
1	0175	0204	0233	0262	0291	0320	88	41	8693	8744	8796	8847	8899	8952	48
2	0349	0378	0407	0437	0466	0495	87	42	9004	9057	9110	9163	9217	9271	47
3	0524	0553	0582	0612	0641	0670	86	43	9325	9380	9435	9490	9545	9601	46
4	0699	0729	0758	0787	0816	0846	85	44	9657	9713	9770	9827	9884	9942	45
5	0875	0904	0934	0963	0992	1022	84	45	1.0000	1.0058	1.0117	1.0176	1.0235	1.0295	44
6	1051	1080	1110	1139	1169	1198	83	46	1.0355	1.0416	1.0477	1.0533	1.0599	1.0661	43
7	1228	1257	1287	1317	1346	1376	82	47	1.0724	1.0786	1.0850	1.0913	1.0977	1.1041	42
8	1405	1435	1465	1495	1524	1554	81	48	1.1106	1.1171	1.1237	1.1303	1.1369	1.1436	41
9	1584	1614	1644	1673	1703	1733	80	49	1.1504	1.1571	1.1640	1.1708	1.1778	1.1847	40
10	1763	1793	1823	1853	1883	1914	79	50	1.1918	1.1988	1.2059	1.2131	1.2203	1.2276	39
11	1944	1974	2004	2035	2065	2095	78	51	1.2349	1.2423	1.2497	1.2572	1.2647	1.2723	38
12	2126	2156	2186	2217	2247	2278	77	52	1.2799	1.2876	1.2954	1.3032	1.3111	1.3190	37
13	2309	2339	2370	2401	2432	2462	76	53	1.3270	1.3351	1.3432	1.3514	1.3597	1.3680	36
14	2493	2524	2555	2586	2617	2648	75	54	1.3764	1.3848	1.3934	1.4019	1.4106	1.4193	35
15	2679	2711	2742	2773	2805	2836	74	55	1.4281	1.4370	1.4460	1.4550	1.4641	1.4733	34
16	2867	2899	2931	2962	2994	3026	73	56	1.4826	1.4919	1.5013	1.5108	1.5204	1.5301	33
17	3057	3089	3121	3153	3185	3217	72	57	1.5399	1.5497	1.5597	1.5697	1.5798	1.5900	32
18	3249	3281	3314	3346	3378	3411	71	58	1.6003	1.6107	1.6212	1.6319	1.6426	1.6534	31
19	3443	3476	3508	3541	3574	3607	70	59	1.6643	1.6753	1.6864	1.6977	1.7090	1.7205	30
20	3640	3673	3706	3739	3772	3805	69	60	1.7321	1.7437	1.7556	1.7675	1.7797	1.7917	29
21	3839	3872	3906	3939	3973	4006	68	61	1.8040	1.8165	1.8291	1.8418	1.8546	1.8676	28
22	4040	4074	4108	4142	4176	4210	67	62	1.8807	1.8940	1.9074	1.9210	1.9347	1.9486	27
23	4245	4279	4314	4348	4383	4417	66	63	1.9626	1.9768	1.9912	2.0057	2.0204	2.0353	26
24	4452	4487	4522	4557	4592	4628	65	64	2.0503	2.0655	2.0809	2.0965	2.1123	2.1283	25
25	4663	4699	4734	4770	4806	4841	64	65	2.1445	2.1609	2.1775	2.1943	2.2113	2.2286	24
26	4877	4913	4950	4986	5022	5059	63	66	2.2460	2.2637	2.2817	2.2998	2.3183	2.3369	23
27	5095	5132	5169	5206	5243	5280	62	67	2.3559	2.3750	2.3945	2.4142	2.4342	2.4545	22
28	5317	5354	5392	5430	5467	5505	61	68	2.4751	2.4960	2.5172	2.5386	2.5605	2.5828	21
29	5543	5581	5619	5658	5696	5735	60	69	2.6051	2.6279	2.6511	2.6746	2.6985	2.7228	20
30	5774	5812	5851	5890	5930	5969	59	70	2.7475	2.7725	2.7980	2.8239	2.8502	2.8770	19
31	6009	6048	6088	6128	6168	6208	58	71	2.9042	2.9310	2.9600	2.9887	3.0178	3.0475	18
32	6249	6289	6330	6371	6412	6453	57	72	3.0777	3.1084	3.1397	3.1716	3.2041	3.2371	17
33	6494	6536	6577	6619	6661	6703	56	73	3.2709	3.3052	3.3402	3.3759	3.4124	3.4495	16
34	6745	6787	6830	6873	6916	6959	55	74	3.4874	3.5261	3.5656	3.6059	3.6470	3.6891	15
35	7002	7046	7089	7133	7177	7221	54	75	3.7321	3.7760	3.8208	3.8657	3.9136	3.9617	14
36	7265	7310	7355	7400	7445	7490	53	76	4.0108	4.0611	4.1126	4.1653	4.2193	4.2747	13
37	7536	7581	7627	7673	7720	7766	52	77	4.3315	4.3897	4.4494	4.5107	4.5736	4.6382	12
38	7813	7860	7907	7954	8002	8050	51	78	4.7046	4.7729	4.8430	4.9152	4.9894	5.0658	11
39	8098	8146	8195	8243	8292	8342	50	79	5.1446	5.2257	5.3093	5.3955	5.4845	5.5764	10

sec.	60'	50'	40'	30'	20'	10'	sec.	60'	50'	40'	30'	20'	10'	sec.
80	5.6713	5.7694	5.8708	5.9758	6.0844	6.1970	9							
81	6.3138	6.4348	6.5606	6.6912	6.8269	6.9682	8							
82	7.1154	7.2687	7.4287	7.5958	7.7704	7.9530	7							
83	8.1443	8.3450	8.5555	8.7769	9.0098	9.2553	6							
84	9.5144	9.7882	10.078	10.385	10.7111	11.0595	5							
85	11.430	11.826	12.250	12.706	13.197	13.7274	4							
86	14.300	14.924	15.605	16.350	17.160	18.0753	3							
87	19.081	20.206	21.470	22.903	24.542	26.432	2							
88	28.636	31.242	34.368	38.189	42.964	49.104	1							
89	57.290	68.750	85.940	114.588	171.885	343.770	0							

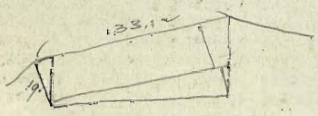
Natural Cotangents

102 + 13.63
75 + 72.31
26 41.32

693.15
27.00
720.15

S side angle of protecting wall
Pumping Plant brassplug
Top of wall 14.12
N L E of Grove 5 Allens
Darryl Man 13.76
N front house Bernard
Pole witness
Man 3362
N prop line abt
1300' E pump sta
inside prop Man 10.50

133
26
115.0
150
170
370
260
1040



07 15
19
652
758
14402
05 12 74 51
19 15 33
5508
614
77628 0024
144 89 36
150 00
133 12
260
130.52
180.42
8630
3108
17
9911
1508
10610
14080
9048
419880
13146
90

22960 S side inside E. line County Pool farm Plot
 19,202 " " NE cor Brennan Place
 14,148 N " " " " Stebbing " "
 13,762 " " angle E of Euclid's Cove
 33,625 " " Bonards.
 10,496 " " rd 1300 E of Pumping Plant
 14,123 S " angle of wall (Top. Brice) Pumping Plant
 6.24 Taylor Chestnut. Afon.

Sw 1 x 1/4 1193

106.37		3.7	82.5	040	1.4	84.8
12.80						
93.57	+10	6.7	79.3	+50	4.8	81.4
6.26						
74.53	+56	8.7	77.5	170	8.6	77.6
12.10	+15	9.6	76.6			
82.43	+97	10.2	76.0			
3.78						
86.21	+60	11.0	75.2			

180.00
157.39
22.21
40.62

4848 | 400000
 393920
 660800
 540880
 17120

6.9

62
11
510
62
0750

6.24 Taylor Chestnut
 4.94
 5.37
 -0.78
 6.15
 5.72
 14.1
 6.53

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.
 ROADWAY 14 FEET WIDE. SIDE SLOPES 1 1/2 TO 1.
 FOR SINGLE TRACK EMBANKMENT.

	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
0	7.0	7.2	7.3	7.5	7.6	7.8	7.9	8.1	8.2	8.4	0
1	8.5	8.7	8.8	9.0	9.1	9.3	9.4	9.6	9.7	9.9	1
2	10.0	10.2	10.3	10.5	10.6	10.8	10.9	11.1	11.2	11.4	2
3	11.5	11.7	11.8	12.0	12.1	12.3	12.4	12.6	12.7	12.9	3
4	13.0	13.2	13.3	13.5	13.6	13.8	13.9	14.1	14.2	14.4	4
5	14.5	14.7	14.8	15.0	15.1	15.3	15.4	15.6	15.7	15.9	5
6	16.0	16.2	16.3	16.5	16.6	16.8	16.9	17.1	17.2	17.4	6
7	17.5	17.7	17.8	18.0	18.1	18.3	18.4	18.6	18.7	18.9	7
8	19.0	19.2	19.3	19.5	19.6	19.8	19.9	20.1	20.2	20.4	8
9	20.5	20.7	20.8	21.0	21.1	21.3	21.4	21.6	21.7	21.9	9
10	22.0	22.2	22.3	22.5	22.6	22.8	22.9	23.1	23.2	23.4	10
11	23.5	23.7	23.8	24.0	24.1	24.3	24.4	24.6	24.7	24.9	11
12	25.0	25.2	25.3	25.5	25.6	25.8	25.9	26.1	26.2	26.4	12
13	26.5	26.7	26.8	27.0	27.1	27.3	27.4	27.6	27.7	27.9	13
14	28.0	28.2	28.3	28.5	28.6	28.8	28.9	29.1	29.2	29.4	14
15	29.5	29.7	29.8	30.0	30.1	30.3	30.4	30.6	30.7	30.9	15
16	31.0	31.2	31.3	31.5	31.6	31.8	31.9	32.1	32.2	32.4	16
17	32.5	32.7	32.8	33.0	33.1	33.3	33.4	33.6	33.7	33.9	17
18	34.0	34.2	34.3	34.5	34.6	34.8	34.9	35.1	35.2	35.4	18
19	35.5	35.7	35.8	36.0	36.1	36.3	36.4	36.6	36.7	36.9	19
20	37.0	37.2	37.3	37.5	37.6	37.8	37.9	38.1	38.2	38.4	20
21	38.5	38.7	38.8	39.0	39.1	39.3	39.4	39.6	39.7	39.9	21
22	40.0	40.2	40.3	40.5	40.6	40.8	40.9	41.1	41.2	41.4	22
23	41.5	41.7	41.8	42.0	42.1	42.3	42.4	42.6	42.7	42.9	23
24	43.0	43.2	43.3	43.5	43.6	43.8	43.9	44.1	44.2	44.4	24
25	44.5	44.7	44.8	45.0	45.1	45.3	45.4	45.6	45.7	45.9	25
26	46.0	46.2	46.3	46.5	46.6	46.8	46.9	47.1	47.2	47.4	26
27	47.5	47.7	47.8	48.0	48.1	48.3	48.4	48.6	48.7	48.9	27
28	49.0	49.2	49.3	49.5	49.6	49.8	49.9	50.1	50.2	50.4	28
29	50.5	50.7	50.8	51.0	51.1	51.3	51.4	51.6	51.7	51.9	29
30	52.0	52.2	52.3	52.5	52.6	52.8	52.9	53.1	53.2	53.4	30
31	53.5	53.7	53.8	54.0	54.1	54.3	54.4	54.6	54.7	54.9	31
32	55.0	55.2	55.3	55.5	55.6	55.8	55.9	56.1	56.2	56.4	32
33	56.5	56.7	56.8	57.0	57.1	57.3	57.4	57.6	57.7	57.9	33
34	58.0	58.2	58.3	58.5	58.6	58.8	58.9	59.1	59.2	59.4	34
35	59.5	59.7	59.8	60.0	60.1	60.3	60.4	60.6	60.7	60.9	35
36	61.0	61.2	61.3	61.5	61.6	61.8	61.9	62.1	62.2	62.4	36

Calculated by Julien A. Hall, M. Am. Soc. C. E.

98.77

MADE IN GERMANY.