

W

380A

1917

ENGINEERS

LEVEL 1000

No. 100

540.1

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

Roadway 16 feet wide. Side Slopes 1 on 1.

For Single Track Embankment.

H	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	H
0	8.0	8.1	8.2	8.3	8.4	8.5	8.6	8.7	8.8	8.9	0
1	9.0	9.1	9.2	9.3	9.4	9.5	9.6	9.7	9.8	9.9	1
2	10.0	10.1	10.2	10.3	10.4	10.5	10.6	10.7	10.8	10.9	2
3	11.0	11.1	11.2	11.3	11.4	11.5	11.6	11.7	11.8	11.9	3
4	12.0	12.1	12.2	12.3	12.4	12.5	12.6	12.7	12.8	12.9	4
5	13.0	13.1	13.2	13.3	13.4	13.5	13.6	13.7	13.8	13.9	5
6	14.0	14.1	14.2	14.3	14.4	14.5	14.6	14.7	14.8	14.9	6
7	15.0	15.1	15.2	15.3	15.4	15.5	15.6	15.7	15.8	15.9	7
8	16.0	16.1	16.2	16.3	16.4	16.5	16.6	16.7	16.8	16.9	8
9	17.0	17.1	17.2	17.3	17.4	17.5	17.6	17.7	17.8	17.9	9
10	18.0	18.1	18.2	18.3	18.4	18.5	18.6	18.7	18.8	18.9	10
11	19.0	19.1	19.2	19.3	19.4	19.5	19.6	19.7	19.8	19.9	11
12	20.0	20.1	20.2	20.3	20.4	20.5	20.6	20.7	20.8	20.9	12
13	21.0	21.1	21.2	21.3	21.4	21.5	21.6	21.7	21.8	21.9	13
14	22.0	22.1	22.2	22.3	22.4	22.5	22.6	22.7	22.8	22.9	14
15	23.0	23.1	23.2	23.3	23.4	23.5	23.6	23.7	23.8	23.9	15
16	24.0	24.1	24.2	24.3	24.4	24.5	24.6	24.7	24.8	24.9	16
17	25.0	25.1	25.2	25.3	25.4	25.5	25.6	25.7	25.8	25.9	17
18	26.0	26.1	26.2	26.3	26.4	26.5	26.6	26.7	26.8	26.9	18
19	27.0	27.1	27.2	27.3	27.4	27.5	27.6	27.7	27.8	27.9	19
20	28.0	28.1	28.2	28.3	28.4	28.5	28.6	28.7	28.8	28.9	20
21	29.0	29.1	29.2	29.3	29.4	29.5	29.6	29.7	29.8	29.9	21
22	30.0	30.1	30.2	30.3	30.4	30.5	30.6	30.7	30.8	30.9	22
23	31.0	31.1	31.2	31.3	31.4	31.5	31.6	31.7	31.8	31.9	23
24	32.0	32.1	32.2	32.3	32.4	32.5	32.6	32.7	32.8	32.9	24
25	33.0	33.1	33.2	33.3	33.4	33.5	33.6	33.7	33.8	33.9	25
26	34.0	34.1	34.2	34.3	34.4	34.5	34.6	34.7	34.8	34.9	26
27	35.0	35.1	35.2	35.3	35.4	35.5	35.6	35.7	35.8	35.9	27
28	36.0	36.1	36.2	36.3	36.4	36.5	36.6	36.7	36.8	36.9	28
29	37.0	37.1	37.2	37.3	37.4	37.5	37.6	37.7	37.8	37.9	29
30	38.0	38.1	38.2	38.3	38.4	38.5	38.6	38.7	38.8	38.9	30
31	39.0	39.1	39.2	39.3	39.4	39.5	39.6	39.7	39.8	39.9	31
32	40.0	40.1	40.2	40.3	40.4	40.5	40.6	40.7	40.8	40.9	32
33	41.0	41.1	41.2	41.3	41.4	41.5	41.6	41.7	41.8	41.9	33
34	42.0	42.1	42.2	42.3	42.4	42.5	42.6	42.7	42.8	42.9	34
35	43.0	43.1	43.2	43.3	43.4	43.5	43.6	43.7	43.8	43.9	35
36	44.0	44.1	44.2	44.3	44.4	44.5	44.6	44.7	44.8	44.9	36
37	45.0	45.1	45.2	45.3	45.4	45.5	45.6	45.7	45.8	45.9	37
38	46.0	46.1	46.2	46.3	46.4	46.5	46.6	46.7	46.8	46.9	38
39	47.0	47.1	47.2	47.3	47.4	47.5	47.6	47.7	47.8	47.9	39
40	48.0	48.1	48.2	48.3	48.4	48.5	48.6	48.7	48.8	48.9	40

The paper stock of this book is made of a high grade 50% rag paper having a water resisting surface and is sewed with Bing Special Enamel Waterproof Thread.

Made in U. S. A.

Example—If point is 22.6 ft. above grade, how far should it be from center line to be a slope stake point? Ans. from Table 30.6. For same slopes but other widths correct above figures by one-half difference in width of roadbed; thus in above, for 20 ft. roadbed distance will be 30.6 + (20—16) ÷ 2 or 2 ft. added to For slopes of 1 on 1½ see inside of back cover.

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Index

1936.

El Capitan - Lakeside Pipe Line.

Measurement in place of

Piperets after in trench

with Summary's

Pg.

Sta 0-103+54 1-20

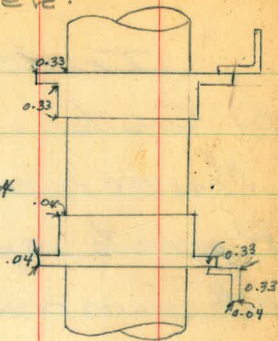
Sta 103+54 to 427+00⁵⁸ 21-61

Valve Chamber Sta 426+

62

Piers Bld.

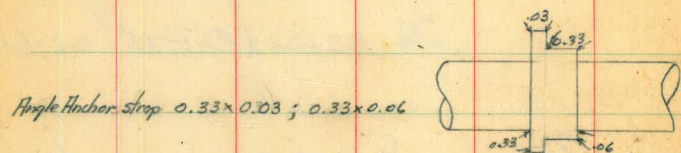
Measurements along Top of Pipe
for Pipe Quantities + etc.



2 Angle Anchor straps $1.67 \times 0.33 \times 0.33 \times 0.04$

2 Angle Anchor straps 0.33×0.04
 0.33×0.04

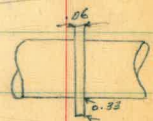
$0 + 13.0 \pm$



Angle Anchor strap 0.33×0.03 ; 0.33×0.06

4" P.H.V. v.v.v. $0 + 06 \pm$

Anchor strap 0.33×0.06

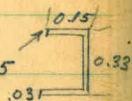


3" pipe connection to 48" pipes

Strap #3 (Bottom) $4.40 \times 0.33 \times 0.03$

Strap #2 (top) $5.50 \times 0.33 \times 0.03 \times 0.15$

Strap #1 (middle) $1.50 \times 0.42 \times 0.02$

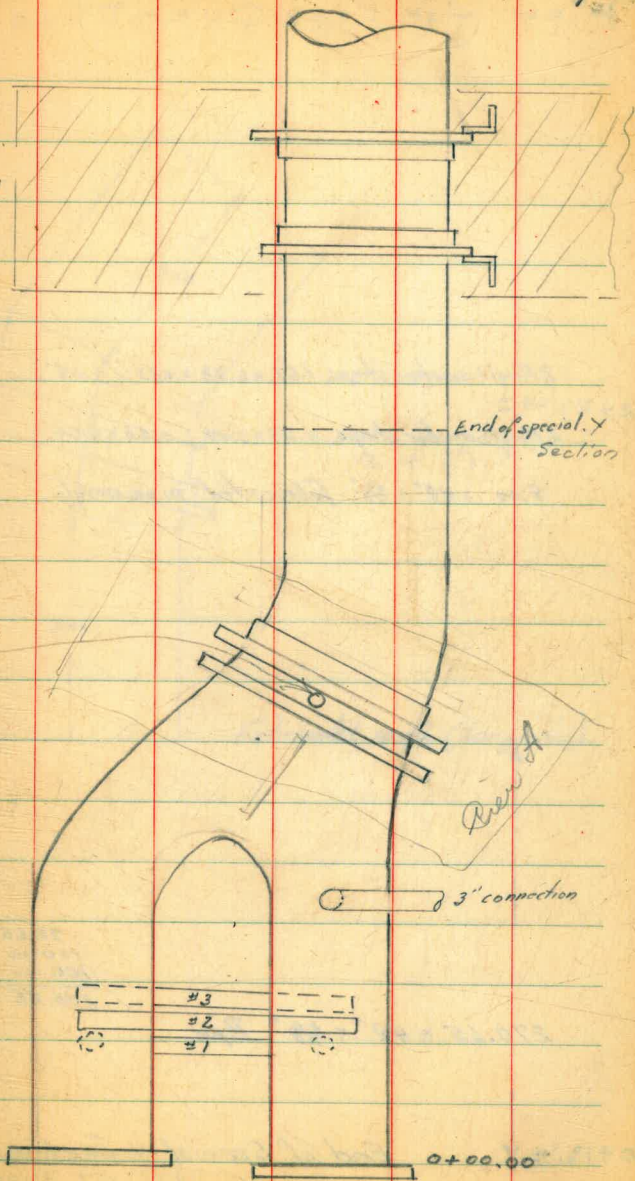


2 - 3" boiler flanges (Bottom of pipe) (drains)

$0 + 00$

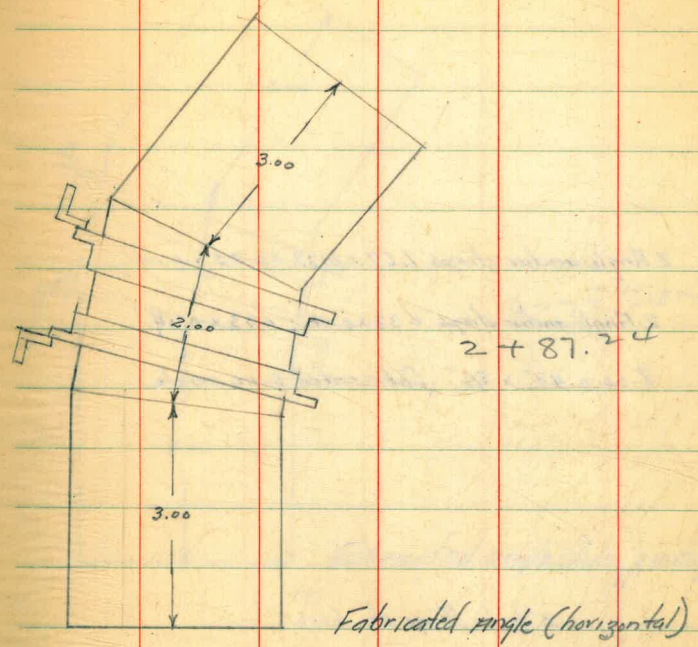
Super-

Pier #1



Measurements along Top of
Pipe for Pipe Quantities.

2 Angle anchor straps 1.67 x 0.33 x 0.33 x 0.04
2 + 87.24 ±
2 Angle anchor straps, 0.33 x 0.04 ; 0.33 x 0.04
8.00 x 48" x 3/8" fabricated pipe angle



70.65
100.00
100.00
270.65 ✓

270.65 x 48" x 3/8" Pipe

0 + 13.0 ± Y End of Special Y Section Connection
To 2-36" CI Pipe at
Tunnel Plug.



Measurements along Top Pipe for
Pipe Quantities.

2 Angle anchor straps $1.67 \times 0.33 \times 0.33 \times 0.04$

6+77.24 ±

2 Angle anchor straps 0.33×0.04 ; 0.33×0.04

$8.00 \times 48'' \times 3/8''$ fabricated pipe angle

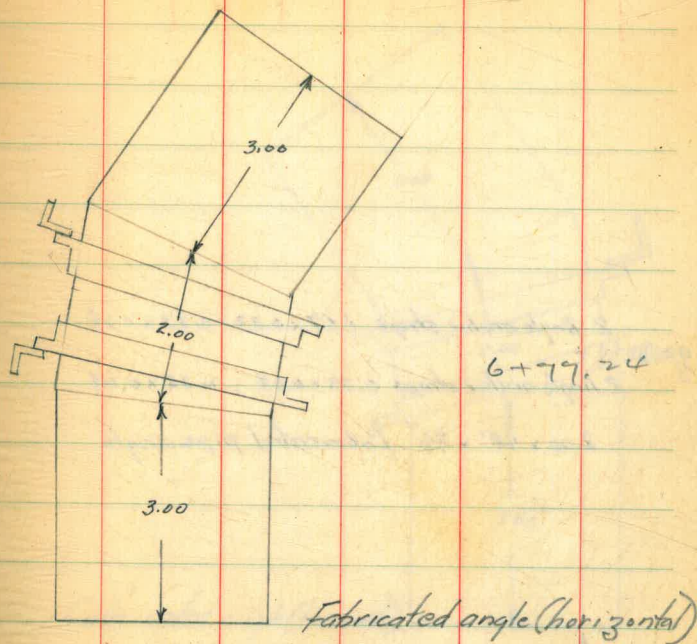
2" border flange sta. 6+10

Manhole - sta. 4+75

$382.12 \times 48'' \times 3/8''$ Pipe

82.12
100.00
100.00
100.00
<hr/>
382.12 ✓

End of fabricated angle



2 Angle anchor straps $1.67 \times 0.33 \times 0.33 \times 0.04$
 $10 + 31.38 \pm$
 2 Angle anchor straps 0.33×0.04 ; 0.33×0.04
 $8.00 \times 48" \times 3/8"$ fabricated pipe angle



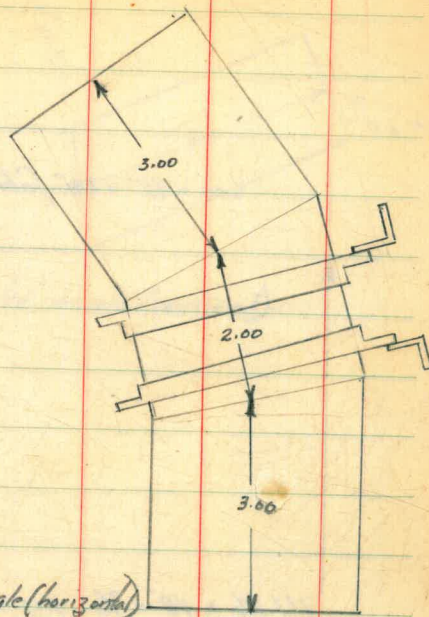
$346.45 \times 48" \times 3/8"$ pipe

46.45
 100.00
 100.00
 100.00

 $346.45 \checkmark$

$6 + 81.24 \frac{24}{3} \checkmark$

End of fabricated angle



11+50+

6.00 x 48" x 3/8" fabricated pipe angle



111.26 x 48" x 3/8" pipe

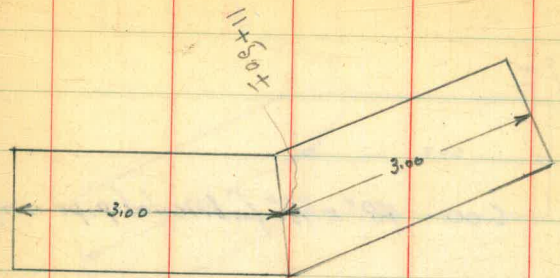
48" Dresser Coupling sta 11+25.1

Manhole - sta 10+81.6

6" blow off sta 10+67.2

10+35.38±

End of fabricated angle



Fabricated angle (vertical)



12+00.0±

6.00 - 48" x 3/8" fabricated pipe angle

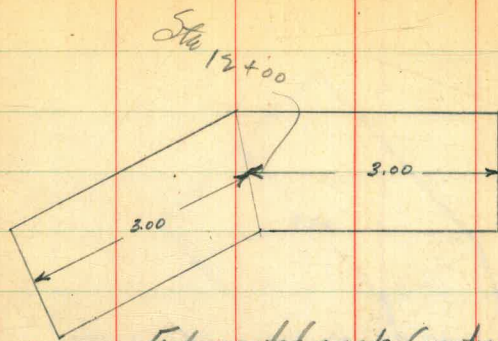


45.52 x 48" x 3/8" Pipe

11+53.0±

End of fabricated angle

6



Fabricated angle (vertical)



4" Cont. P. H. V + V. X sta 12+47

12+47.5

8.00 x 48" x $\frac{3}{8}$ " pipe

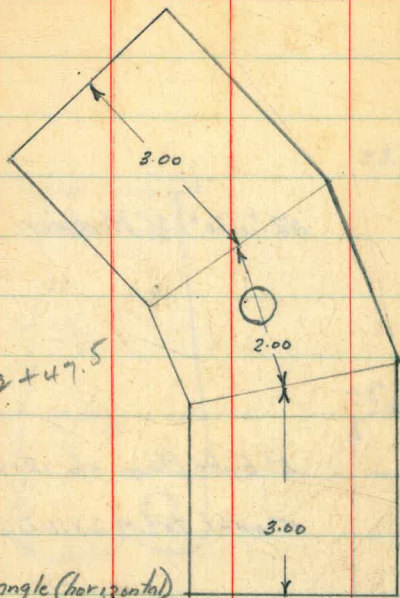
12+43.5



40.49 x 48" x $\frac{3}{8}$ " pipe

12+43.0

End of fabricated angle



12+98.8±

48" x 30" x 3/8" Reducer.

12+94.3±

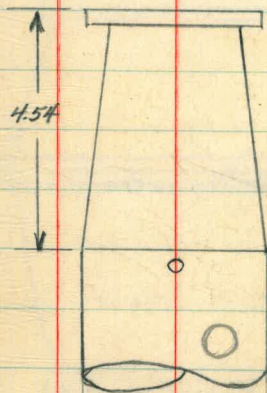
2" boiler flange sta 12+92.8

12" outlet to L.M.S.V.I.D. pump, sta 12+89

42.77 x 48" x 3/8" Pipe

12+51.5±

End of fabricated angle



13+09.6±

30" x 24" Pelton valve

13+04.0±

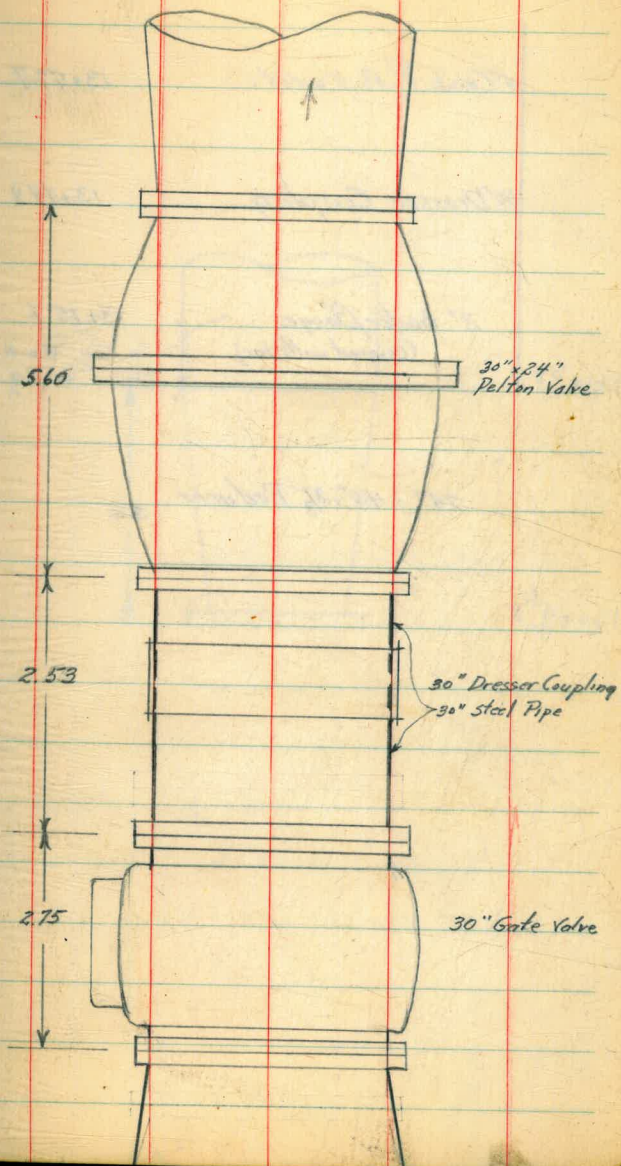
30" Dresser Coupling

13+01.5±

30" Gate valve

12+98.8±

9



4" Colab P.A.V. & V.V.

13+49.7

48" Dresser Coupling

13+44.8

2" boiler flange

(covered with tar)

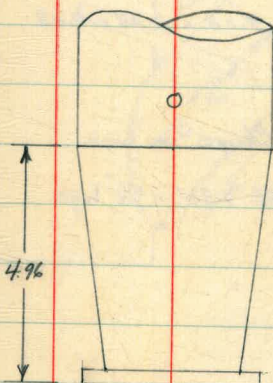
13+15.4

{ 2" to 3/4" Reducer
3/4" Plug

13+14.6 ± Y

24" x 48" x 3/8" Reducer

13+09.6 ±



57
17+03.±

2 straps - 4.00 x 0.33 x 0.03

2" boiler flange on wye

48" x 48" x 30" - 5/16" Wye

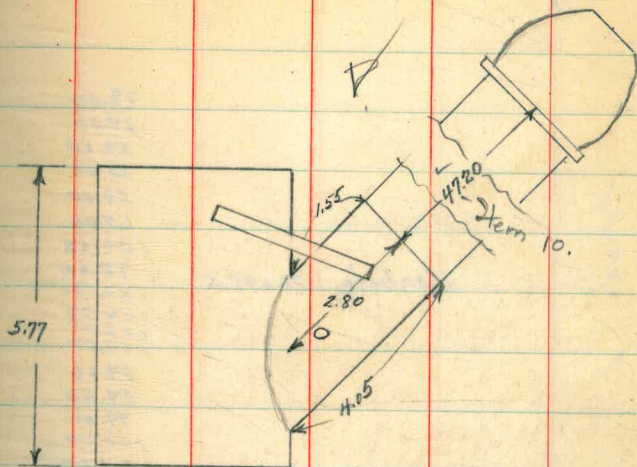
16+99.8±

383.20 x 48" x 1/4" Pipe

83.20
100
100
100
383.20

13+14.6 v

End of Reducer.



← sta 30+00 +

R.R. - 1" x 1"
• 11"

Manhole 26+98.5

73.00
29.00
29.00
30.00
29.00
65.00
100.00
78.00
100.00
100.00
100.00
100.00
59.00
59.00
79.00
100.00
64.00
100.00

1294.00 x 48" x 1/4" Pipe

1294.00 ✓

4" blow off

23+05

57
17+03. Y

End of Wye



↑ = sta 37+78.25 EC.

3" pressure tap 37+51.7

3" pressure tap 37+26.5

1" Manhole, sta 37+22.7

980.87 48" x 1/4" Pipe

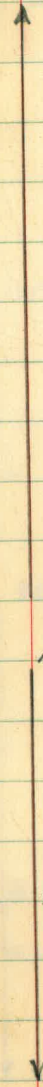
10.87
100.00
90.00
30.00
30.00
88.00
60.00
48.00
100.00
57.00
100.00
100.00
65.00
980.87

4" Comb. P.H.V.V.V. sta 30+98

4" Comb. P.H.V.V.V. sta 30+95

↓

= sta 54+16+



2" Pressure air valve sta 53+48

1438.00 48" x 1/4" Pipe

3' R.P. "x1" Manhole sta 46+59.2

1 Bristol Recorder

3/4" pressure tap 41+71 (Bristol Rec.)

56.00
100.00
100.00
100.00
60.00
59.00
59.00
39.00
100.00
100.00
59.00
68.00
100.00
100.00
98.00
48.00
100.00
100.00
1438.00

= sta 62+01 ±

Note:

55+04.94
Equation 55+54.94

835.00 48" x 1/4" Pipe

R.P. - 1' x 1'
20' Manhole, sta. 55+09

57.00
60.00
60.00
60.00
47.00
100.00
100.00
100.00
100.00
60.00
61.00
835.00 ✓

July 28 1936

Soper
Remmen
Lbell

16

= sta. 73+68.96 E.C.

4" Comb. P.A.V. + V. Valve 72+55

4" Comb. P.A.V. + V. Valve 72+52

33.83
60.00
57.00
57.00
57.00
60.00
64.00
93.00
100.00
100.00
100.00
100.00
100.00
60.00
60.00
60.00
1167.83 ✓

1167.83' x 48" x 1/4" Pipe

6" Blowoff sta 68+49

16" R.P.M.H. - 1"x1" Manhole 64+95

July 29 1936
Soper
Remmen
156.11

17

= sta 88+30+

10' R.P.M.H. - 1" x 1" Manhole 85+05

59.00
59.00
96.00
48.00
100.00
100.00
100.00
100.00
59.00
59.00
84.00
160.00
100.00
100.00
100.00
100.00
100.00
100.00
1458.00 ✓

1458.00 x 48" x 1/4" Pipe

20' R.P.M.H. - 1" x 1" Manhole 75+11

July 30 1936
Paper
K. J. ...
Isbell

18

= 92 + 164

387.00 x 48" x 1/4" Pipe

7.00
100.00
100.00
90.00
90.00
387.00 ✓

4" Blow off Sta 89+98

Aug 3 1936

Super
Remission
Isbell

19

= sta 103+54.00

7" R.P.M.H. 1"x1"
Manhole 103+53.5

2" Passhole sta 103+40.5

1 @ 38.70 x 48" x 1/4" Pipe

4" Comb.P.A.V.V. 98+20

4" Comb.P.A.V.V. 98+17

3.70
100.00
60.00
60.00
60.00
89.00
59.00
79.00
100.00
60.00
59.00
57.00
60.00
60.00
60.00
70.00
100.00
<u>1138.70</u>

R.P. - 1"x1"
7" Manhole 97+00

Summary District Contract

1239.26 x 48" x 3/8" Pipe

9082.60 x 48" x 1/4" Pipe

44.00 x 48" x 3/8" Fabricated angles

2.53 x 30" x 3/8" Pipe

30 x 1/4" Pipe

Length Sta.

13 - 1-Special

1-48" x 30" x 3/8" Reducer

1-24" x 48" x 3/8" Reducer

1-30" Gate Valve

2-30" - 24" Pelton Valves

1-48" x 48" x 30" x 5/16" Wye

1 4" Comb. P.H. V.V. V. 0+06

1 " " " 12+47

1 " " " 13+49.7

1 " " " 30+95

1 " " " 30+98

1 2" Pressure air Valve 53+48

0+00

12+98

13+10

13+00

13+05

17+00

17+00

1 4" Comb. P.A. V.V. V. 72+52

1 " " " 72+55

1 " " " 98+17

1 " " " 98+20

1 48" Dresser Coupling 11+25.1

1 30" " " 13+02

1 48" " " 13+44.8

1-6" Blowoff 10+67.2 Stations of Manholes

1-4" " 23+05 4+75 37+22.7 64+95 94+00

1-6" " 68+49 10+81.6 46+59.2 75+11 103+53.5

1-4" " 89+98 26+98.5 55+09 85+05

3-3" boiler flange on special 0+00

1-2" " " 6+10

1-12" outlet to L.M.S.V.I.D. 12+89

1-2" tap 12+72.8

1-2" tap with reducer and 3/4" plug 13+15.4

1-2" boiler flange on Wye 17+00

1-3" pressure tap 37+26.5

1-3" pressure tap 39+51.7

1-3/4" connection for Bristol 41+71

1-2" tap 103+40.5

Aug 7 1931

Super
Remover
Islet

End of 1/4" Pipe 125+01 ±
(125+31)

R.P.M.H. - Iron pin
38' Manhole - 123+47

59.19
79.00
100.00
100.00
100.00
100.00
30.00
60.00
58.00
30.00
59.00
67.00
99.00
100.00
100.00
100.00
100.00
85.00
90.00
90.00
90.00
90.00
95.00
60.00
60.00
29.91
32.00

R.P.M.H. - 1"x1"
13' Manhole 113+62

2177.10
2147.19 x 48" x 1/4" Pipe

2147.19 ✓
+ 29.91
2177.10

2" tap 103+56

Y 103+54.00

21

Note: this pipe distance is to actual end of
1/4" pipe at sta. 125+01 ±.

1/4" pipe should end at sta 125+34.175.

C.S.C. crane dropped 1 section of 1/4" pipe
and to avoid delay started using 3/32" pipe
before reaching intended station for change.

First section of 3/32" pipe is 29.91 feet long,
if City pays for first section as 1/4" pipe,
add 29.91 to 1/4" pipe and subtract
29.91 from 3/32" pipe.

Aug 12 1956
Soper
Remmen
13 bell

= 146 + 94.68 E.C.

16' R.P.M.H. - 1" x 1"
Manhole 143 + 47

2162.77
2192.68 x 48" x 1/2" Pipe

6" Blowoff 134 + 50

37' Manhole 133 + 43
R.P.M.H. - 1" x 1"

74.68
59.00
77.00
100.00
100.00
100.00
100.00
100.00
100.00
59.00
59.00
60.00
60.00
60.00
59.00
89.00
100.00
100.00
100.00
59.00
59.00
60.00
60.00
60.00

2192.68 ✓
- 29.91 ✓
2162.77 ✓

See note preceding pg

146 + 94.68
125 + 101.0
271.68

checked Sept 11, 1956, total - 2192.68

Aug 13 1936

Soper
Remmon
Isbell

23

= 159 + 97.3t

4" P.H.V. + V. Valve - 159 + 92.3 ✓

48" Dresser Coupling 159 + 76

159 + 12.76 Ahead

159 + 54.35 Back

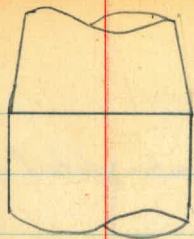
4" blowoff 154 + 75 ✓

1293.90 × 48" × 9/32" Pipe

35' W.P.M.H. - 1" x 1"

Manhole 153 + 45

56.90
30.00
58.00
60.00
60.00
59.00
59.00
52.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
1293.90 ✓ m



Equation

Aug 22 1936
Soper
Bohl
Remmer

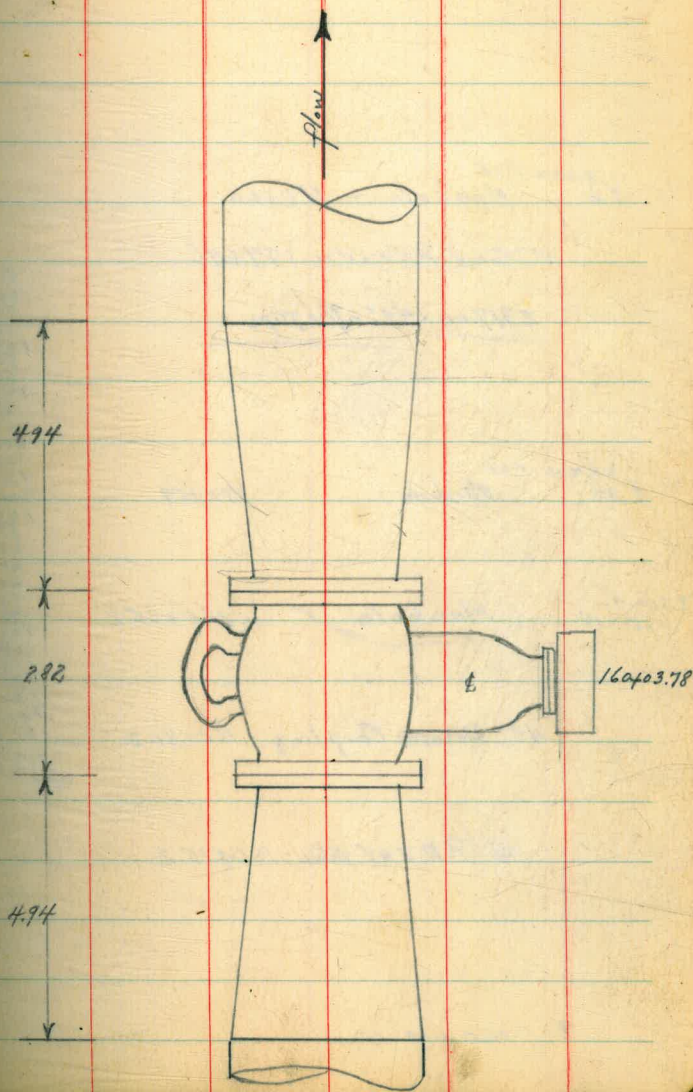
Valve chamber detail - sta 160+03

1 - 48" x 36" x 5/16" Reducer.

1 - 36" Gate Valve sta 160+03.78

1 - 48" x 36" x 5/16" Reducer.

24



Aug 22 1936

Soper
Remmen
Isbell

25

= 183+27.3+

R.P.M.H. - 1" x 1"
4' 14" Manhole - 180+60

4" Comb. P.B.V. + V.V. 177+96 ✓

2317.00 x 48" x 7/8" pipe

50.00
60.00
90.00
44.00
100.00
58.00
50.00
100.00
87.00
100.00
100.00

R.P.M.H. - 1" x 1"
4' 35" Manhole - 170+59

100.00
100.00
100.00
100.00
59.00
60.00
60.00
59.00

R.P.M.H.
1" x 1" - 16' Manhole - 160+65.2

76.00
100.00
100.00
100.00
100.00
100.00
100.00

✓ 48" Dresser Coupling - 160+40.2

100.00
100.00
2317.00 ✓

4" P.H. + V.V. Valve - 160+15.2 ✓

Y 160+10.15

Aug 22 1936

Soper
Remmen
Isbell

26

1
= 195+03.5±

1175.10 x 48" x 3/32" Pipe

R.P.M.H - 1" x 1"
37' Manhole 190+60

75.10
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
1175.10

Y

= 226+65.81 E.C.

6" Blowoff 227+20 ✓

822.16 x 48" x 7/8" pipe

62.16
60.00
60.00
30.00
60.00
85.00
34.00
29.00
64.00
55.00
60.00
60.00
59.00
59.00
45.00
822.16 ✓_w

R.P.M.H - 1" x 1"
30'

Manhole 222+11

= 235 + 33.88 End of 9/32" pipe.

Summary 9/32" Pipe.

Pipe	Start	End	Length
22	5 to 125 + 31.00	to 146 + 94.68	2162.77
23	" * 146 + 94.68	to 159 + 97.3	1293.90
24	" * 149 + 97.3	to 160 + 10.15 ^{take} _{Redc}	—
25	" 160 + 10.15	to 183 + 27.30	2317.00
26	" 183 + 27.30	to 195 + 03.50	1175.10
27	" 195 + 03.50	to 218 + 44.00	2341.00
28	" 218 + 44.00	to 226 + 65.81	822.16
29	" 226 + 65.81	to 235 + 33.81	868.61
Total as Measured			10980.54 ^x

868.61 x 48" x 9/32" pipe



Manhole 235 + 30
 3" top 235 + 26

Manhole 234 + 13
 (Covered with steel plate)

4" P.A.V. x V.V. 234 + 04.7 ✓
 4" P.A.V. x V.V. 234 + 01.7 ✓

68.61
 100.00
 100.00
 100.00
 100.00
 100.00
 100.00
 100.00
 868.61 x

* See Equation. -8.41'
 Shortage take + Redc - 12.85'

= 237+41.5 End of $\frac{3}{8}$ " Pipe.

2" tap 235+34.2

61.25
61.25 ✓

202.38.48" x $\frac{3}{8}$ " pipe

6.00 x 48" x $\frac{3}{8}$ " fabricated pipe angle

81.13
60.00
141.13

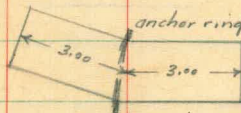
Summary $\frac{3}{8}$ " Pipe.

Sta 235+33.88 to 237+41.5 } = 202.38^x
Less Fabricated Angle }

Sept 8 1936
Soper
Isbell
Moore

30

236+76.94 $\frac{3}{8}$ "



Flv.

= 253 + 98.59 P.O.T.

R.P.M.H. 1" x 1"
43' Manhole sta 245 + 23

1657.54 x 48" x 5/16" pipe

57.54
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
1657.54

Sept 18 1936
Super
12 bell
Moore

31

= 281 + 33 ±

4" P.V. v. Valve 280 + 97 ✓

100.00
100.00
100.00

88.00

60.00

47.00

100.00

100.00

100.00

100.00

100.00

100.00

100.00

89.00

49.00

100.00

100.00

100.00

100.00

100.00

100.00

100.00

100.00

100.00

100.00

2733.00 ✓

R.P.M.H. 34' Manhole 274 + 01
1" x 1" 49.5' Nail in bank

R.P.M.H. Nail in bank
28.3' Manhole - 265 + 23

4" P.V. v. Valve 260 + 67 ✓

4" Blowoff 258 + 00

30' R.P.M.H. - 1" x 1" Manhole 255 + 40

2733.00 x 48" x 5/8" pipe

Sept 18, 1936

Soper
Isbell
Moore

32

= 300 + 92 ±

Manhole 294 + 67
(Covered with steel plate)

Manhole - 284 + 04
(Covered with steel plate)

1960.00 x 48" x 5/16" pipe

100.00
100.00
100.00
100.00
60.00
60.00
60.00
59.00
49.00
100.00
49.00
100.00
60.00
59.00
59.00
45.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
1960.00 ✓

Sept 19 1930

Super
Isbell
Maure

35

= 311 + 95.30 ± End of 5/16" pipe

✓
8 extra circular seams.

1103.11 x 48" x 5/16" pipe

Manhole - 304 + 01
(Covered with steel plate)

25.11
29.00
29.00
30.00
30.00
30.00
30.00
30.00
40.00
100
100
100
100
100
100
100
100
1103.11

Sept 25 1931

Soper
Isbell
Moore.

Summary of 5/16" Pipe

Page Sta Dist

31 - 237 + 41.56 to 253 + 98.59 = 1657.54

32 - 253 + 98.59 to 281 + 33 = 2733.00

33 - 281 + 33 to 300 + 92 = 1960.00

34 - 300 + 92 to 311 + 95.3 1103.11

7453.65

16 - sections @
14' 9 3/4" ✓
8 extra circular seams

B.C. 309 + 33.09
30' section

30' section

Sta 308 + 76 1 - 1' foot section
added - account of pipe short
1 extra weld - no pay

34

1 - 5' section used to utilize
extra pipe length - extra
weld - no pay.

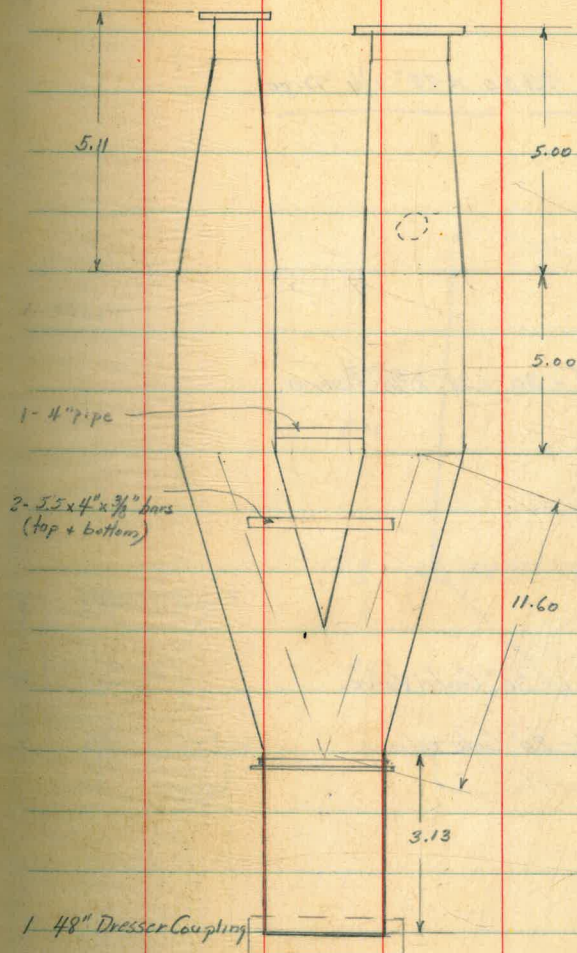
1- 36" x 30" - 5/8" Reducer

1- 36" x 20" - 3/8" Reducer

6" blowoff. 312+12 ✓

Anchor ring - 4" x 3/4" plate.

1- 48" Dresser Coupling 311+95.3

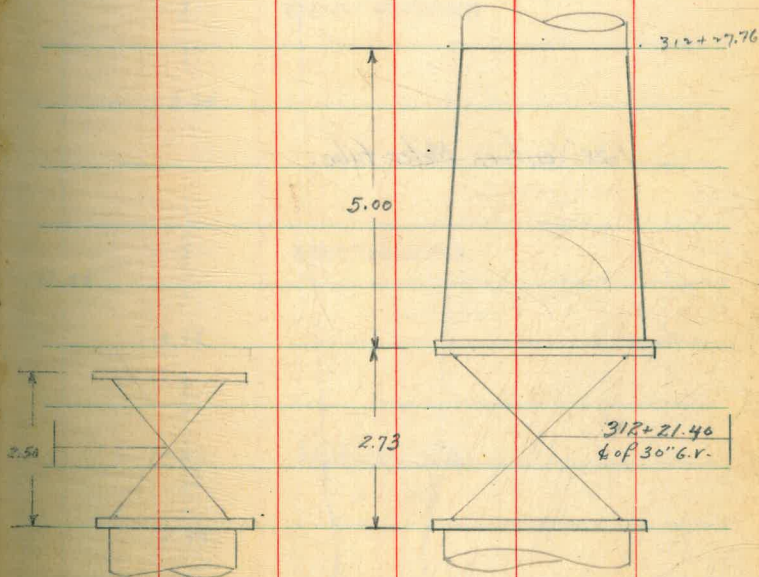


73.50 x 28" x 1/4" Pipe.

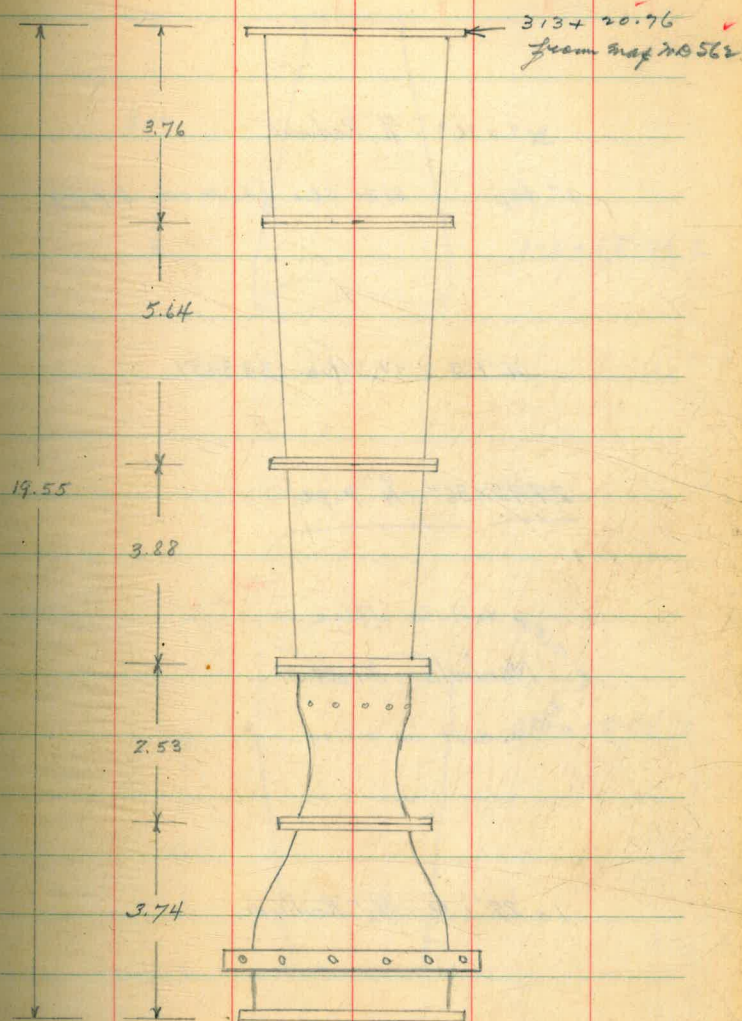
1 - 30" x 28" x 5/16" Reducer.

1 - 30" Gate Valve.

1 - 20" Gate Valve.



1-28" Venturi Meter tube.



36" x 16" x 5/16" Reducer.

1" top 313+56.0 (North side of pipe)

4" PA.V. v. Valve. 313+51 ✓

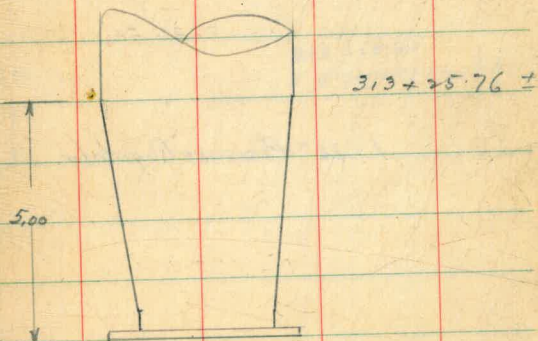
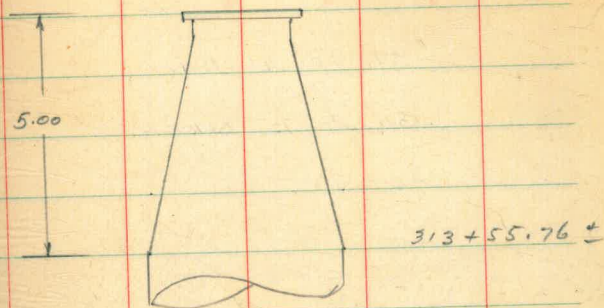
29.95 x 36" x 1/4" pipe

17.65" Nail in office

Manhole - 313+31

21.8" Nail in office

1-28" x 36" x 5/16" Reducer.



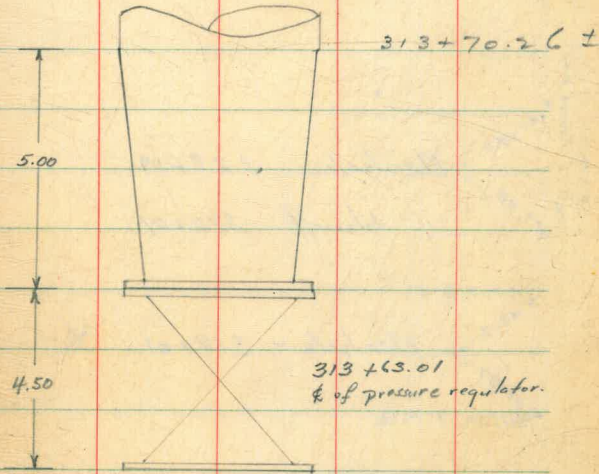
313 + 06.41 = 319.41

313 + 11.76 = 324.76

1/2" tap 313 + 69.5 (south side of pipe)

1 - 16" x 36" x 5/16" Reducer.

1 - 16" Pressure Regulator.



= 332+02 ±

316+06.41 Abd
316+11.775 Bek

1838.00 x 36" x 1/4" PIPE

R.P.M.H.
Nail in Fence post
44.7
48

Manhole 328+19

4" blowoff 322+01

R.P. 318+50

Manhole - 318+01 X

42.4
46.37

Nail in P. Post

60.00
60.00
57.00
61.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
1838.00 ✓

36" Dresser Coupling 313+75.4

Oct 2 1936
Soper
Isbell
Moore

314+06 - 314+16

1 10' foot section put in by contractor

No pay for extra weld.

= 356401 ±

2400.00 x 36" x 1/4" Pipe

4" Blue fl. 351+75 ✓

R.P.M.H. - 1"x1"
17" Manhole 348+18.5

4" P.D.V. + V.V. 341+92.5 ✓

4" P.D.V. + V.V. 341+79.5 ✓

Nail in Bank

12.7
Manhole - 339+02

13.5
Nail in bank

100.00
~~100.00~~
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
40.00
60.00

Σ 400.00 ✓

Oct 3 1936
Soper
Isbell
Moore

= 358 + 01.86 EC.

12 extra circular seams.

200.08 x 36" x 1/4" pipe

Nail in Tree

32.92

Manhole

367 + 99

R.P.E.C. Nail in tree

8.08
20.00
19.00
19.00
19.00
19.00
19.00
19.00
19.00
19.00
19.00
200.08

4" P.A.V. + V.Y. 356 + 24 ✓

Oct 3 1936

Sager
15 Bell
Moore

42

30' section

EC.

18 sections @ 9' 9 3/4"

12 extra circular seams

↑

BC.

30' section

= End of 1/4" Pipe 376+19 ±

2 extra circular seams

1016.32 x 36" x 1/4" pipe

Nap hole 368+02

4" P.V.V. 367+92 ✓

16.32
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00

1016.32 ✓

Oct. 6 1936

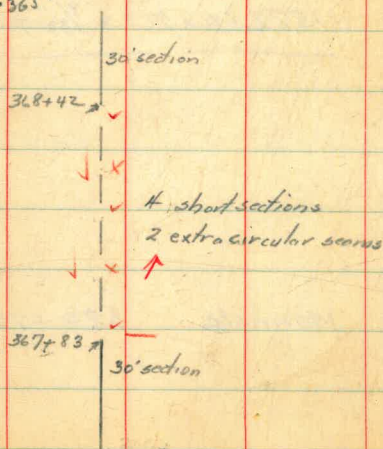
Soper
Isbell
Moore

44

Summary of 36" x 1/4" Pipe

Page 38	313+25.76	to	313+55.76	29.95 ✓
* " 39-40	313+55.76	to	332+02	1838.00 ✓
" 41	332+02	to	356+01	2400.00 ✓
" 42	356+01	to	358+01.86	200.08 ✓
" 43	358+01.86	to	366+01	799.92 ✓
" 44	366+01	to	376+19	1016.32 ✓
" 46	391+40	to	410+83.17	6284.27 ✓
				1942.92 ✓
				<hr/> 8227.19 ✓

Less Valvete - 14.50'
Equation + 5.365'



End of $\frac{7}{32}$ " Pipe 391+40±

Manhole 390+25

6" Blow off 388+28.3✓

1522.60 x 36" x $\frac{7}{32}$ " Pipe

22.60
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
1522.60 ✓

Manhole 380+70

Oct 13 1936
Soper
Isbell
Moore

45

= 410 + 83.17 End of 1/4" pipe

1942.92 x 36" x 1/4" pipe

403 + 10 ± Manhole.

4" P.F.V. & V. Valve 399 + 99 ✓

62.92
80.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
100.00
1942.92 ✓

Oct. 13 1936

Soper
Isbell
Moore

46

Note: End of 1/4" pipe and beginning of 1/2" pipe
should have been at sta. 410 + 23.77.

= 411 + 71.5 ±

89.04 x 36" x 7/32" Pipe

4" P.F. V.V. Valve 411 + 08.2 ✓

411+83 ±

411+81.07 #hd

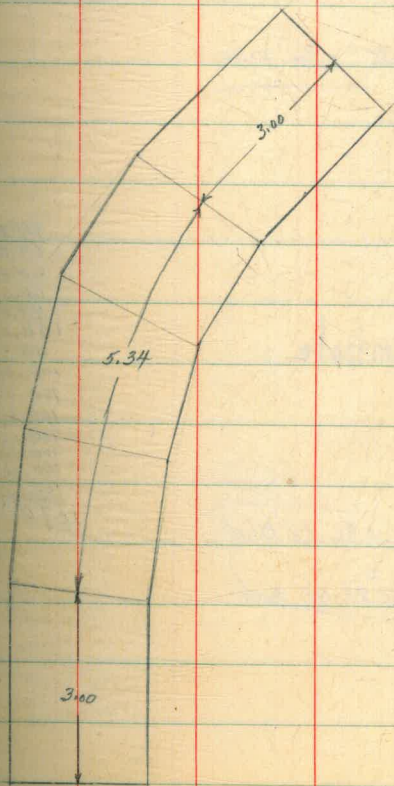
411+80.65 Bek

1 - fabricated horizontal angle, sh 411+77.21
(11.34 x 36" x 9/32" pipe)

Oct. 14 1936

Soper
Istall
Moore

48



423 + 10.2 ±

1110.33 x 36" x $\frac{7}{32}$ " PIPE

414 + 87 ½ Manhole

422 + 36.68 Hhd

=
422 + 21.02 Bck

34.24
63.09
60.00
60.00
48.00
100.00
45.00
100.00
101.00
102.00
100.00
100.00
100.00
100.00
1110.33

Oct. 14 1936
Soper
Isbell
Moore

49

$$= 423 + 29.2 \pm$$

$$423 + 27.25 \text{ Hhd}$$

$$= 423 + 25.15 \text{ Bck}$$

1 - fabricated horizontal angle sta 423+19.98

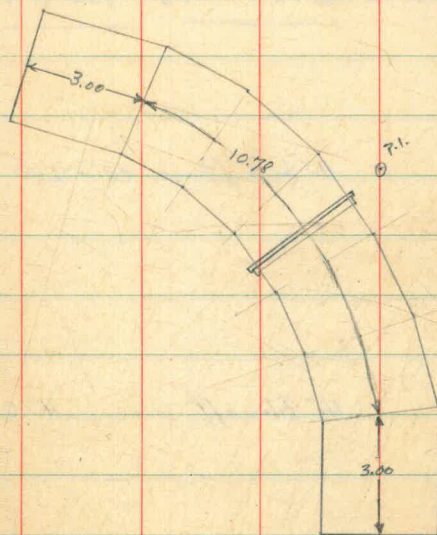
(16.78 x 36" x 9/32" pipe)

1 - 3 1/2" x 3 1/2" x 3/8" Anchor ring

Oct. 14 1936

Soper
Isbell
Moore

50



= 426+31.6 ±

302.84 x 36" x 7/32" pipe

4" boiler flange 426+26.5 (plugged & tanded)

2.84
100.00
100.00
100.00
<hr/>
302.84 ✓

4" blow off- 426+17.3

1 - 36" Dresser Coupling 426+01.5

v

Oct. 15 1936
Soper
Isbell
Moore

51

$$= 426 + 45.7 \pm$$

30" x 30" x 5/16" Reducer

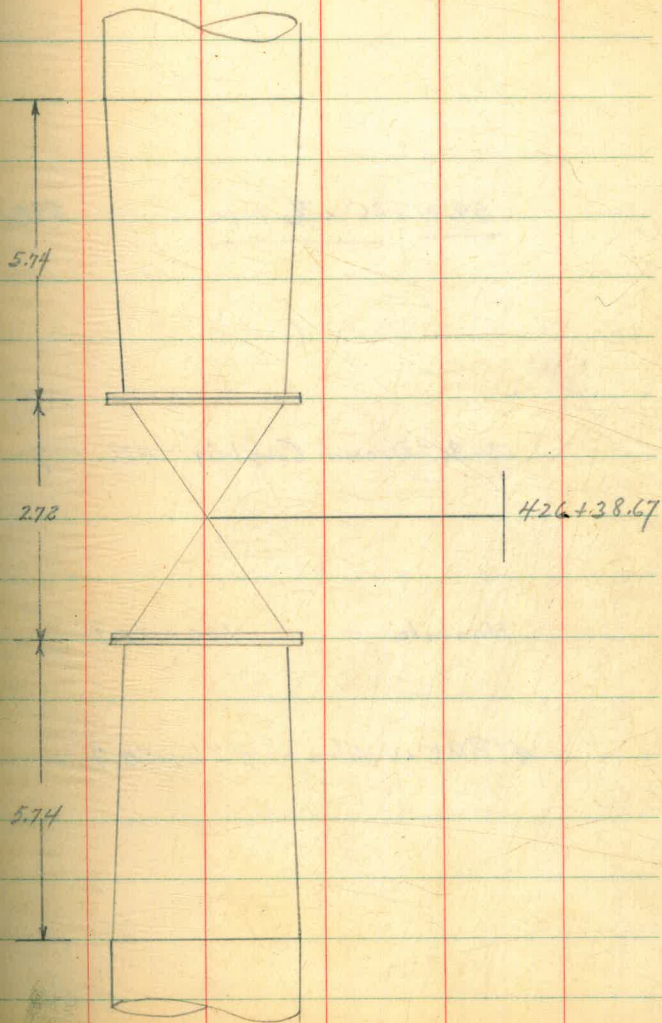
→ 30" Gate valve

36" x 30" x 5/16" Reducer

Oct 15 1936

Soper
13 bell
Moore

52



= End of pipe. 427+05.58
(Site correction $\frac{531}{44}$)

59.91 x 36" x $\frac{7}{32}$ " pipe 59.91

✓ 1-36" Dresser Coupling - 426.75.7

Manhole - 426+55.8

4" P.B.V. valve - 426+50.7 ✓

Oct. 15 1936

Soper
Isbell
Moore

53

Summary - San Diego Contract.

2,177.10 x 48" x $\frac{1}{4}$ " Pipe

10,980.54 x 48" x $\frac{7}{32}$ " Pipe

202.38 x 48" x $\frac{3}{8}$ " Pipe

7,453.65 x 48" x $\frac{5}{16}$ " Pipe

Item 15 8,227.19 x 36" x $\frac{1}{4}$ " Pipe

Item 16 3,084.72 x 36" x $\frac{7}{32}$ " Pipe

" 18 73.50 x 28" x $\frac{1}{4}$ " pipe

Summary - Con't'd.

		3fa
2.	48" x 36" x 5/16" Reducers	160+03
3	36" x 30" x 5/16" Reducers	1-312+21 2-426+38
1	36" x 28" x 5/16" Reducer	313+20
1	36" x 26" x 5/16" Reducer	312+21
2	36" x 16" x 5/16" Reducers	313+55 313+63
1	30" x 28" x 5/16" Reducer	312+21
1	Special Wye	312
1	6.00 x 48" x 5/16" fab. Vert. angle	236+77
1	11.34 x 36" x 7/32" fab. Hor. angle	411+77
1	16.78 x 36" x 7/32" fab. Hor. angle	423+20

Summary - Con't'd.

		<u>Sta.</u>
1	36" Gate Valve	160+03
2	30" Gate Valves	312+21 426+38
1	20" Gate Valve	312+21
1	16" Pressure Regulator	313+63
1	28" Venturi meter tube	313+00

Summary - Cont'd

1	48" Dresser Coupling	159+76
1	48" Dresser Coupling	160+40.2
1	48" Dresser Coupling	311+95.3
1	36" Dresser Coupling	313+75.4
1	36" Dresser Coupling	426+01.5
1	36" Dresser Coupling	426+75.7
1	6" Blowoff	134+50
1	4" Blowoff	154+75
1	6" Blowoff	227+20
1	4" Blowoff	258+00
1	6" Blowoff	312+12
1	4" Blowoff	322+01
1	4" Blowoff	351+75
1	6" Blowoff	388+28.3
1	4" Blowoff	426+14.3

Summary - Cont'd.

1	4" Comb. P.A. Valve	V. Valve	159+92.3
1	"	"	160+15.2
1	"	"	177+96
1	"	"	234+01.7
1	"	"	234+04.7
1	"	"	260+67
1	"	"	280+97
1	"	"	313+57
1	"	"	341+79.5
1	"	"	341+82.5
1	"	"	356+24
1	"	"	367+92
1	"	"	399+99
1	"	"	411+08.2
1	"	"	426+50.7

Summary - Cont'd.

Stations of Manholes.

113+62	265+23
123+47	274+01
133+43	313+31
143+47	318+01
153+45	328+19
160+65.2	338+02
170+59	348+18.5 ?
180+60	357+99
190+60	368+02
200+65	380+70
209+87	390+25
222+11	403+10
235+30	414+87
245+23	426+55.8
255+40	

Summary - Cont'd.

1 2" tap 103+56

1 3" tap 235+26

1 2" tap 235+34.2

1 1" tap 313+56

1 1/2" tap 313+69.5

1 4" boiler flange, plugged. 426+26.5

8 extra circular seams, 48" pipe 309 - 311

12 " " " 36" pipe 356 - 358

2 " " " 36" pipe 368

Summary - Cont'd.

Equations.

$$\begin{array}{l} 159 + 62.76 \text{ Ahd} \\ = \\ 159 + 54.35 \text{ Bck} \end{array}$$

8.41

$$\begin{array}{l} 316 + 06.41 \text{ Ahd} \\ 316 + 11.77 \text{ Bck} \end{array}$$

5.36

$$\begin{array}{l} 411 + 81.07 \text{ Ahd} \\ = \\ 411 + 80.65 \text{ Bck} \end{array}$$

.42

$$\begin{array}{l} 422 + 36.68 \text{ Ahd} \\ = \\ 422 + 21.02 \text{ Bck} \end{array}$$

15.66

$$\begin{array}{l} 423 + 27.25 \text{ Ahd} \\ = \\ 423 + 25.15 \text{ Bck} \end{array}$$

2.10

26.59

$$\begin{array}{r} 427 + 05.58 \\ 103 + 54.00 \\ \hline 323 + 51.58 \\ \quad 21.23 \end{array}$$

$$\begin{array}{r} 26.59 \\ 5.36 \\ \hline 21.23 \end{array}$$

$$323 + 30.35$$

Corrected horizontal distance station

$$103 + 54 - 427 + 05.58 = 32,330.35$$

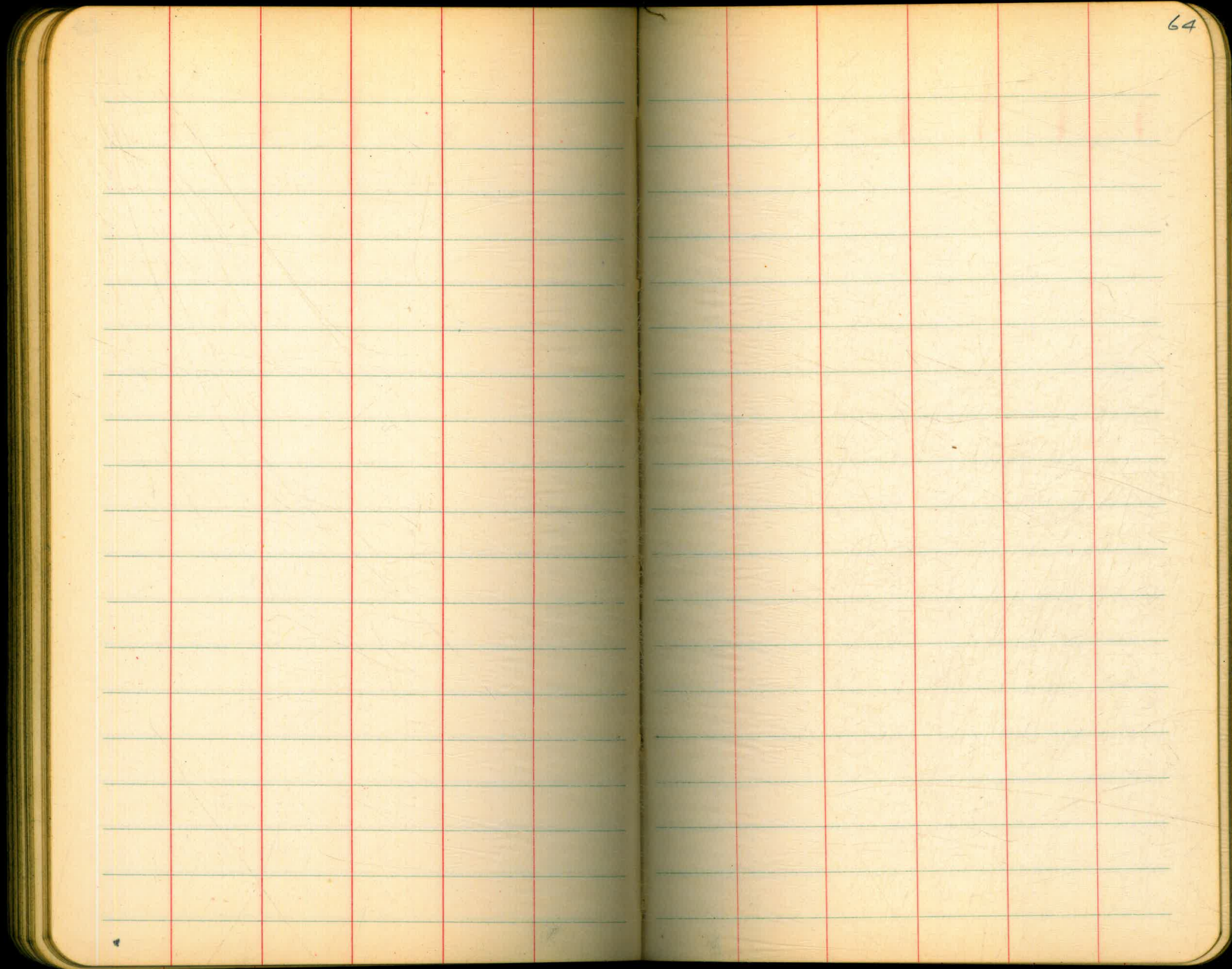
11/9/36.

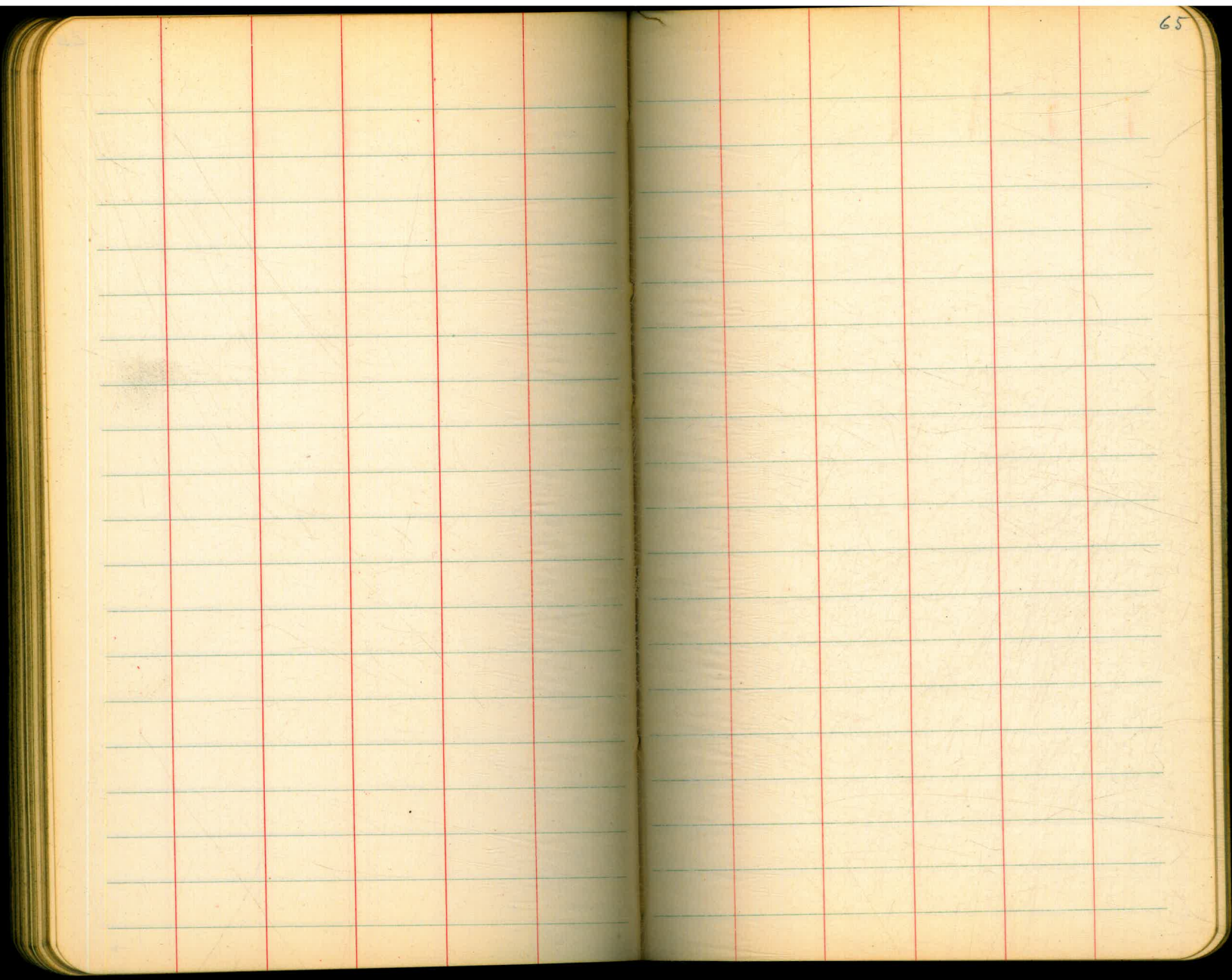
Tahre Chum Lakeside

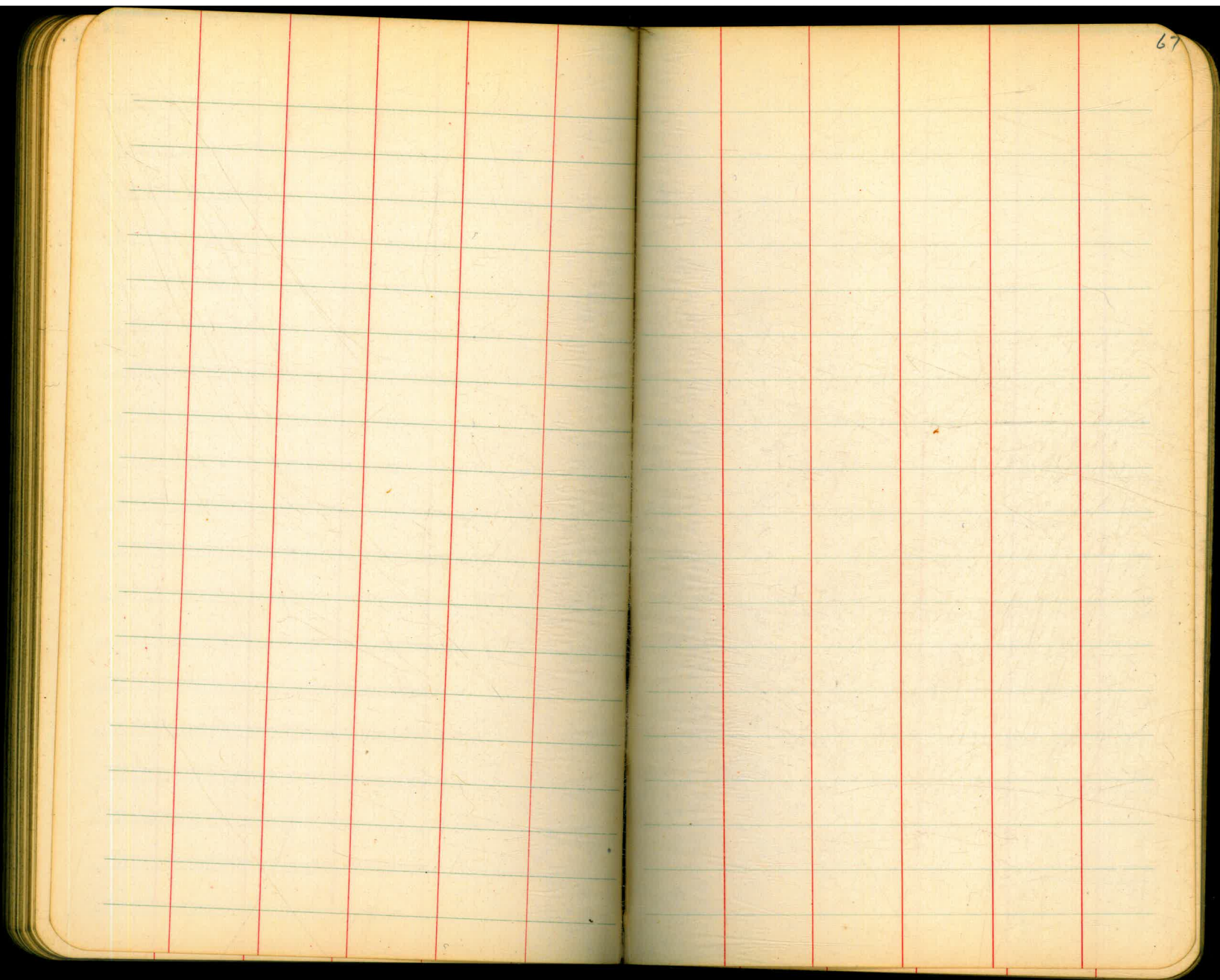
At A. Pier 2.35 2.0 to Pipe.

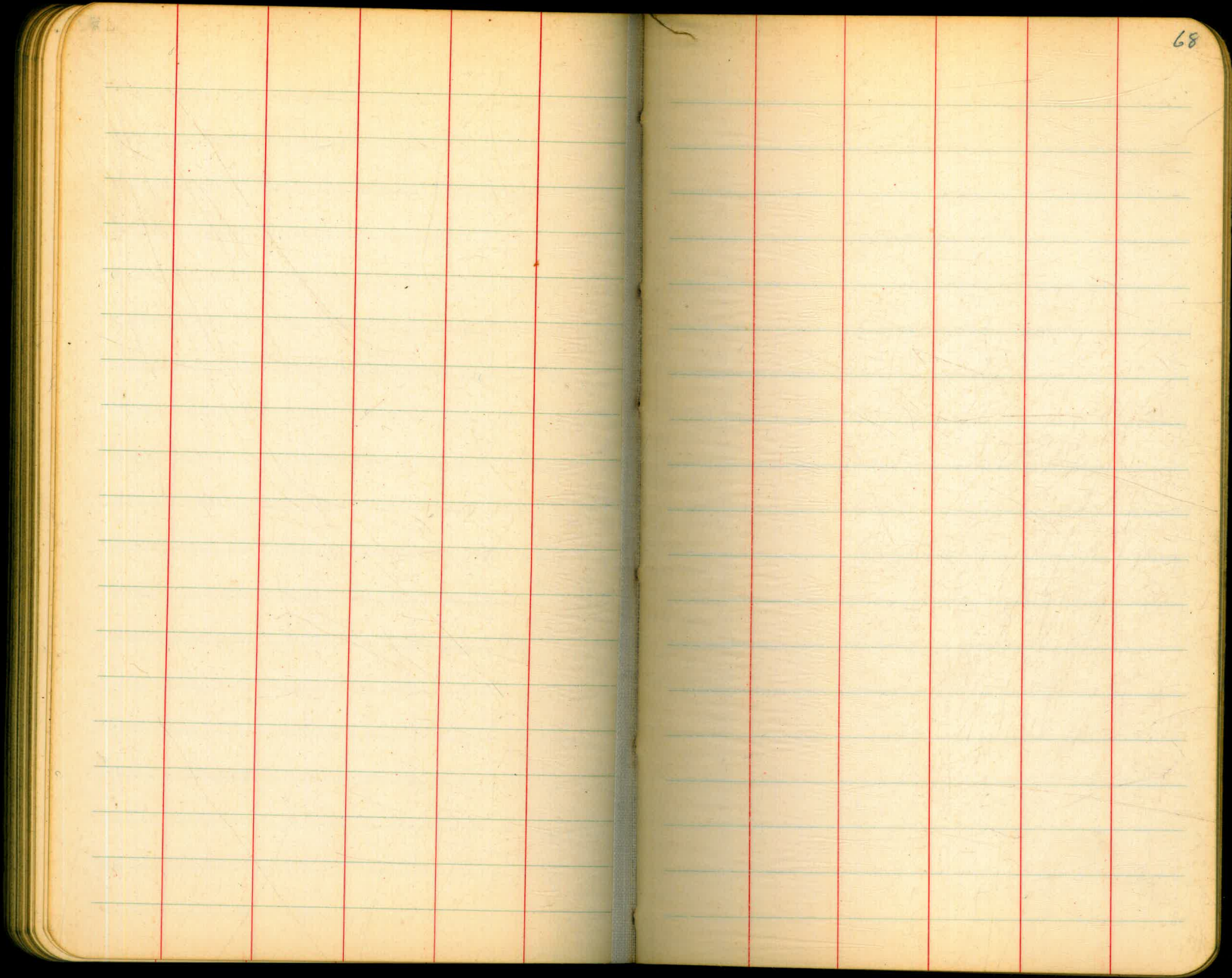
" B " 2.4 to bottom of 2' diam.
Grease Case.

At Tahre to limit of B. Pier 3.2

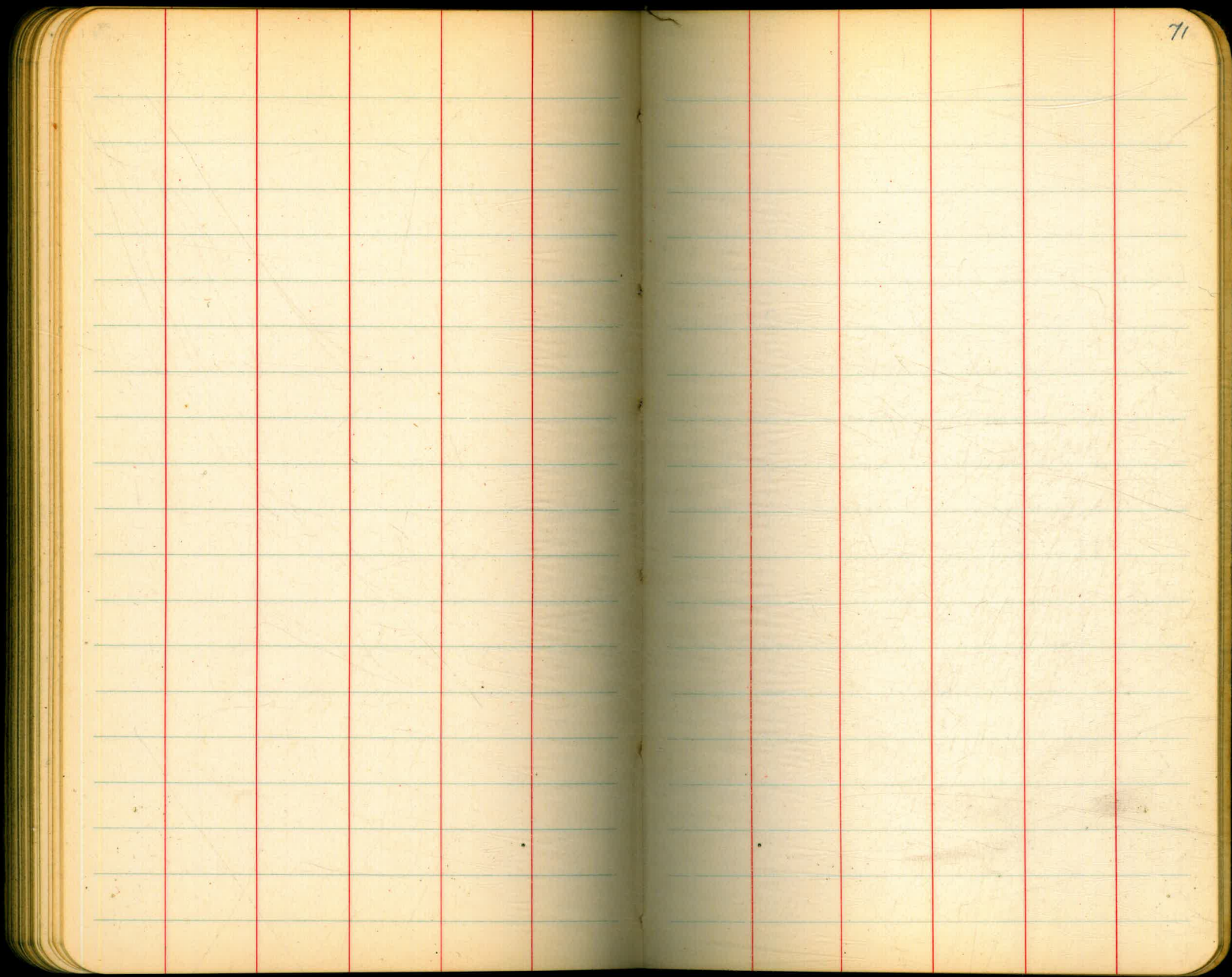




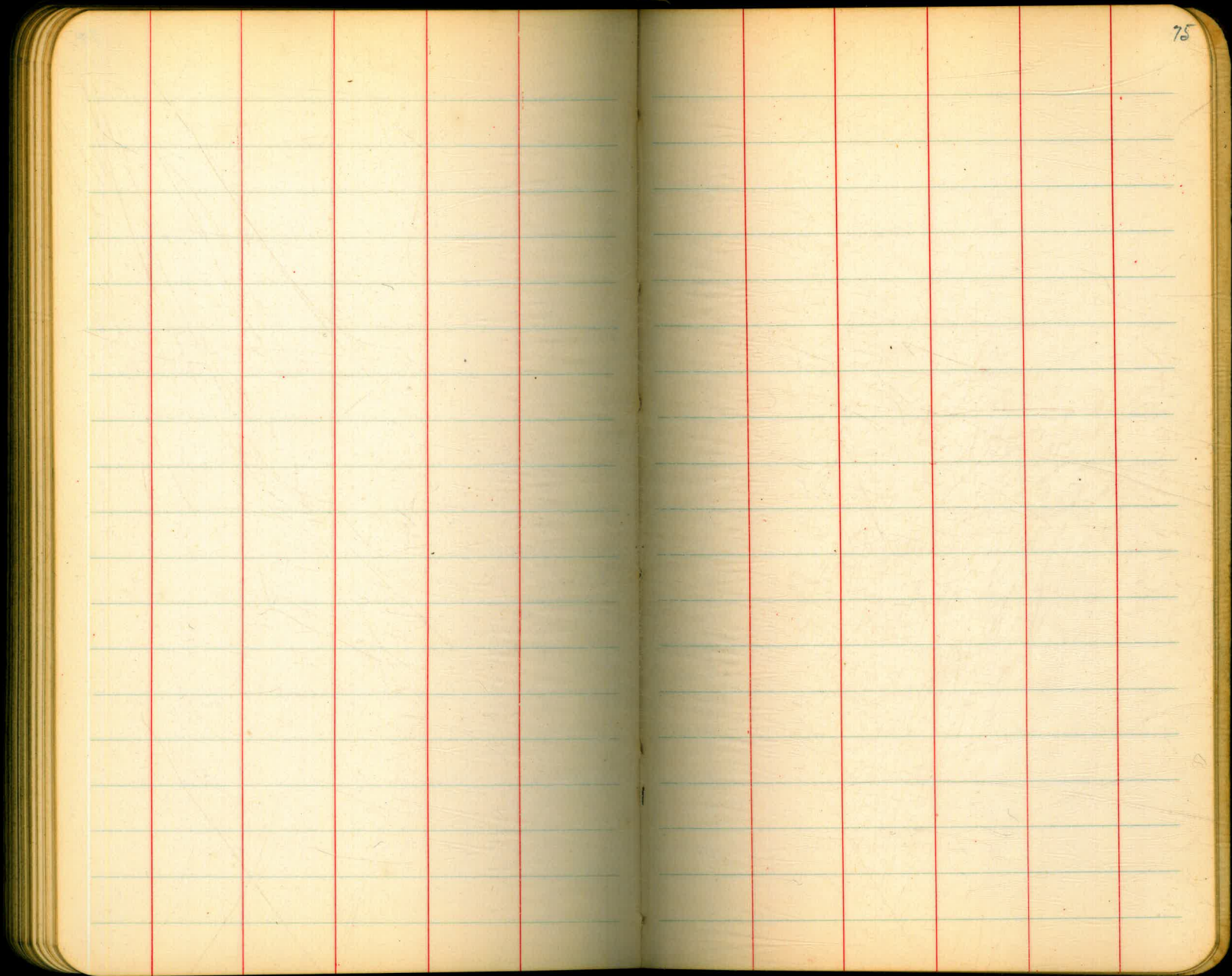




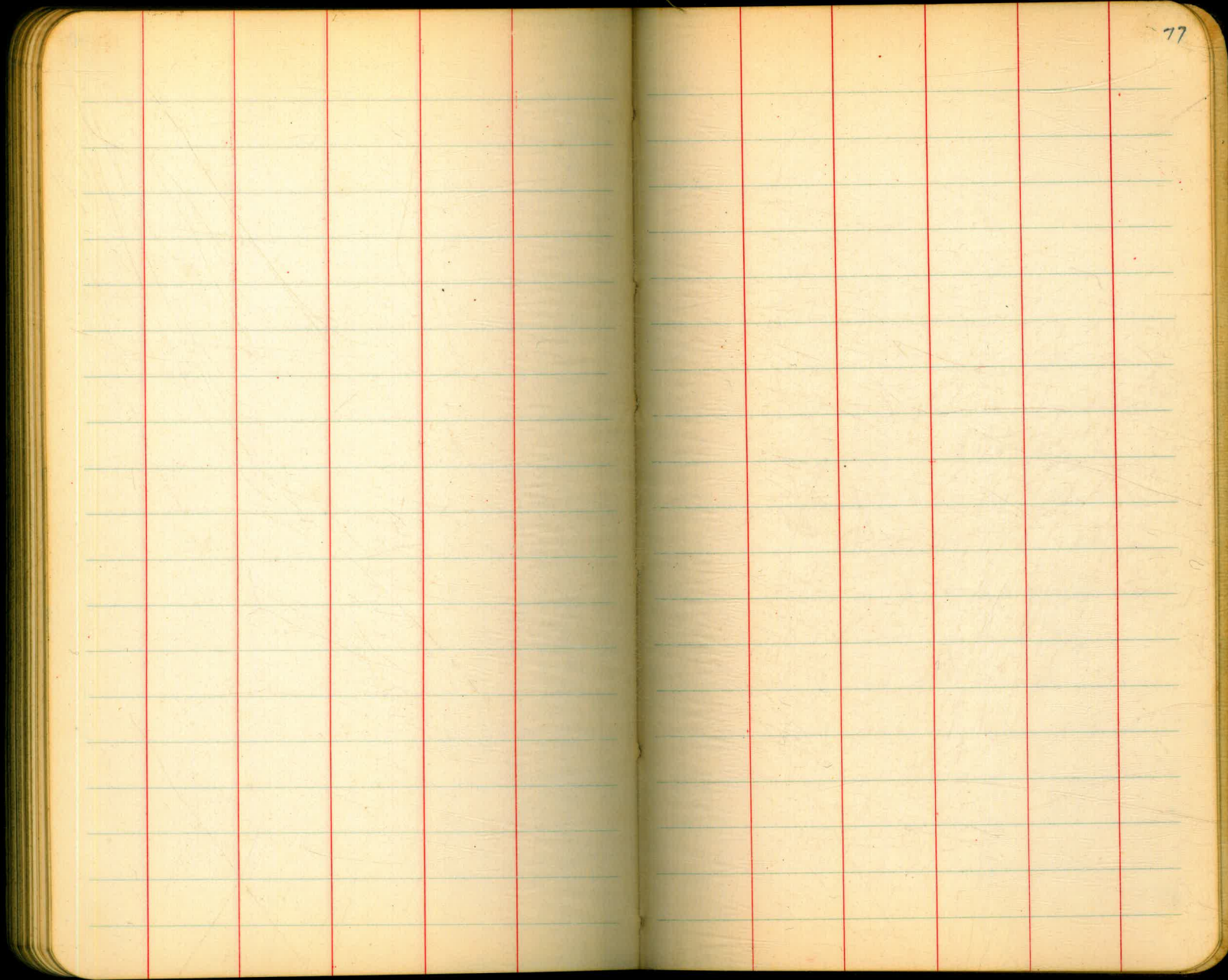
68



71



8



DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

Roadway 16 feet wide. Side Slopes 1 on 1½

For Single Track Embankment.

H	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	H
0	8.0	8.2	8.3	8.5	8.6	8.8	8.9	9.1	9.2	9.4	0
1	9.5	9.7	9.8	10.0	10.1	10.3	10.4	10.6	10.7	10.9	1
2	11.0	11.2	11.3	11.5	11.6	11.8	11.9	12.1	12.2	12.4	2
3	12.5	12.7	12.8	13.0	13.1	13.3	13.4	13.6	13.7	13.9	3
4	14.0	14.2	14.3	14.5	14.6	14.8	14.9	15.1	15.2	15.4	4
5	15.5	15.7	15.8	16.0	16.1	16.3	16.4	16.6	16.7	16.9	5
6	17.0	17.2	17.3	17.5	17.6	17.8	17.9	18.1	18.2	18.4	6
7	18.5	18.7	18.8	19.0	19.1	19.3	19.4	19.6	19.7	19.9	7
8	20.0	20.2	20.3	20.5	20.6	20.8	20.9	21.1	21.2	21.4	8
9	21.5	21.7	21.8	22.0	22.1	22.3	22.4	22.6	22.7	22.9	9
10	23.0	23.2	23.3	23.5	23.6	23.8	23.9	24.1	24.2	24.4	10
11	24.5	24.7	24.8	25.0	25.1	25.3	25.4	25.6	25.7	25.9	11
12	26.0	26.2	26.3	26.5	26.6	26.8	26.9	27.1	27.2	27.4	12
13	27.5	27.7	27.8	28.0	28.1	28.3	28.4	28.6	28.7	28.9	13
14	29.0	29.2	29.3	29.5	29.6	29.8	29.9	30.1	30.2	30.4	14
15	30.5	30.7	30.8	31.0	31.1	31.3	31.4	31.6	31.7	31.9	15
16	32.0	32.2	32.3	32.5	32.6	32.8	32.9	33.1	33.2	33.4	16
17	33.5	33.7	33.8	34.0	34.1	34.3	34.4	34.6	34.7	34.9	17
18	35.0	35.2	35.3	35.5	35.6	35.8	35.9	36.1	36.2	36.4	18
19	36.5	36.7	36.8	37.0	37.1	37.3	37.4	37.6	37.7	37.9	19
20	38.0	38.2	38.3	38.5	38.6	38.8	38.9	39.1	39.2	39.4	20
21	39.5	39.7	39.8	40.0	40.1	40.3	40.4	40.6	40.7	40.9	21
22	41.0	41.2	41.3	41.5	41.6	41.8	41.9	42.1	42.2	42.4	22
23	42.5	42.7	42.8	43.0	43.1	43.3	43.4	43.6	43.7	43.9	23
24	44.0	44.2	44.3	44.5	44.6	44.8	44.9	45.1	45.2	45.4	24
25	45.5	45.7	45.8	46.0	46.1	46.3	46.4	46.6	46.7	46.9	25
26	47.0	47.2	47.3	47.5	47.6	47.8	47.9	48.1	48.2	48.4	26
27	48.5	48.7	48.8	49.0	49.1	49.3	49.4	49.6	49.7	49.9	27
28	50.0	50.2	50.3	50.5	50.6	50.8	50.9	51.1	51.2	51.4	28
29	51.5	51.7	51.8	52.0	52.1	52.3	52.4	52.6	52.7	52.9	29
30	53.0	53.2	53.3	53.5	53.6	53.8	53.9	54.1	54.2	54.4	30
31	54.5	54.7	54.8	55.0	55.1	55.3	55.4	55.6	55.7	55.9	31
32	56.0	56.2	56.3	56.5	56.6	56.8	56.9	57.1	57.2	57.4	32
33	57.5	57.7	57.8	58.0	58.1	58.3	58.4	58.6	58.7	58.9	33
34	59.0	59.2	59.3	59.5	59.6	59.8	59.9	60.1	60.2	60.4	34
35	60.5	60.7	60.8	61.0	61.1	61.3	61.4	61.6	61.7	61.9	35
36	62.0	62.2	62.3	62.5	62.6	62.8	62.9	63.1	63.2	63.4	36
37	63.5	63.7	63.8	64.0	64.1	64.3	64.4	64.6	64.7	64.9	37
38	65.0	65.2	65.3	65.5	65.6	65.8	65.9	66.1	66.2	66.4	38
39	66.5	66.7	66.8	67.0	67.1	67.3	67.4	67.6	67.7	67.9	39
40	68.0	68.2	68.3	68.5	68.6	68.8	68.9	69.1	69.2	69.4	40

Example—If point is 22.6 ft. above grade, how far should it be from center line to be a slope stake point? Ans. from Table 41.9. For same slopes but other widths of roadbed correct above figures by one-half difference in width of roadbed; thus in example above for 20 ft. roadbed distance will be $41.9 + (20 - 16) \div 2$ or 2 ft. added to 41.9 = 43.9. For slopes of 1 on 1 see inside of front cover.