Duzzon Conduit

[redacted]

W260

94
5, 96
97 - 100
101 - 107

Dulzura Conduit

Index

(Cont. on next page)

Index Continued

Flume No 6.

Dulzura Conduit.

(1st Flume below Barrett Dam)

Alignment & Cross Sections

3-Sheets.

Flume № 6 — Dulzura Conduit

Alignment

16+22.00 × Δ 14° 57' Rt

136.50

14+85.50 × Δ 11° 00' Rt

31.50

14+54.00 × Δ 4° 28' Rt

62.80

Flume № 6

13+91.20 × Δ 12° 38' Lt.

10.50

13+80.70 Beg. Flume × × Δ 4° 30' Lt.

72.70

Conduit

13+08.— × Angle Lt.

Approx. Finish Grade = 1502.80

(3, B)

Feb.-9-'28

Ward — Inst

Duermit — Chn.

Mc Bain — "

Flume No 6
Alignment

End Culvert 16+77	X	Angle Lt.	
16+56.88 End Culvert under Road.			20.75
16+56.25 End Flume	X	P.O.T.	
			11.25
16+45.00	X	Δ 18°00' Rt.	
			8.00
16+37.00	X	Δ 15°05' Rt.	
			7.50
16+29.50	X	Δ 14°17' Rt.	
			7.50

(76)

(77)

Flume No 6.

Dulzura Conduit

Cross Sections

Sheet 3

5

	Lt				℄		Rt		
End Flume					1502.48 ✓				
16+56.25	5.1	5.7	4.8	4.8	8.8	8.85	8.8	4.9	Flush with Culvert H.W. Crossing on Skew
	10	4.5	4.5	2.4	2.4	℄	2.4	2.4	
					1501.1 ✓				
+55	5.9	6.6	9.1		9.6		8.9	7.0	0.9
	10	5	4		℄		5	6	7
					1500.1 ✓				
+45.00 △	10.7	10.6	13.2		11.2		10.4	7.2	5.5 1.7
	13	9	5		℄		4	5	8 10
					1496.7 ✓				
+37.00 △	15.8	14.4	15.5		14.6		10.5	11.0	5.2 3.8 +0.4
	14	10	6		℄		1	5	7 11 16
					1496.5 ✓				
+29.50 △		17.2	16.5		14.8		11.6	8.0	2.0
		9	4		℄		6	8	15
					1497.2 ✓				
+22.00 △		17.0	16.3		14.1		10.9	9.4	3.0
		8	2		℄		4	7	14
					1498.1 ✓				
+10		15.4	15.3		13.2		13.2	7.6	2.7
		12	4		℄		3	6	13 Solid R.
					1495.0 ✓				
16+00		17.5	17.8		16.3		13.6	4.3	
		11	5		℄		6	14	
					1495.7 ✓				
15+84		18.6	18.0		15.6		12.4	9.0	5.5
		9	2		℄		6	14	17

1511.33 H.I.

Approx. Finish Grade = 1502.58

Cross Sections

Sheet 2

6

Lt. ℄ Rt.

1486.0 ✓

+68 — 29.2 (14) 26.8 (8) 25.3 ℄ 24.0 (5) 18.5 (11) 5.0 (15)

1487.9 ✓

+52 — 29.7 (12) 26.0 (7) 23.4 ℄ 21.2 (5) 16.2 (12) 11.1 (16)

1485.8 ✓

+36 — 29.3 (14) 28.0 (5) 25.5 ℄ 21.6 (7) 10.4 (15) Solid Rock

1485.8 ✓

+29 — 29.5 (12) 27.2 (6) 25.5 ℄ 25.6 (2) 19.2 (4) 5.0 (14) Solid Rock

1484.6 ✓

+19 — 30.0 (14) 29.4 (8) 26.7 ℄ 26.3 (4) 13.2 (6) 5.0 (13) Solid Rock

1487.8 ✓

15+00 — 27.3 (12) 26.1 (7) 23.5 ℄ 20.5 (8) 8.0 (9) 5.0 (12) Solid Rock

1492.3 ✓

+85,50 △ — 27.6 (13) 23.3 (8) 19.0 ℄ 7.0 (16)

1493.0 ✓

+70 — 25.6 (14) 22.0 (11) 21.6 (6) 18.3 ℄ 16.5 (5) 12.6 (7) 5.3 (15)

1497.0 ✓

14+60 — 24.5 (12) 20.8 (5) 15.8 (4) Boulder 14.3 ℄ 12.0 (6) 7.5 (12) 4.3 (16)

1511.33 H.I.

Cross Sections

7

	Lt			℄		Rt	
				1496.4 ✓			
+54.00 △	21.7	19.0	14.9	14.4	8.6	6.1	
	11	3	℄	7	12	15	
				1494.7 ✓			
+41	23.0	20.0	16.6	15.2	10.1		
	10	6	℄	7	14		
				1494.1 ✓			
+27	22.2	19.8	16.6	14.4	8.0		
	11	4	℄	5	14		
				1495.0 ✓			
+07	19.9	17.5	17.3	16.3	13.9	10.3	8.2
	12	9	5	℄	6	9	13
				1497.1 ✓			
14+00	18.4	15.8	15.6	13.6	11.6	9.6	6.8
	12	9	5	℄	4	9	14
				1499.8 5 ✓			
+91.20 △		12.9	12.7	11.8	10.0	6.7	4.4
		10	6	℄	5	10	14
				1500.7 ✓			
+83	14.0	7.9	7.1	10.3	10.6	10.0	8.6	4.6
	16	10	3	3	℄	3	7	8
		Boulder						
				1502.80 ✓				
13+80.70 Beginning	8.4	Wall 4.8	4.5	8.5 Flow Line	8.53	8.5	4.5	4.3	2.3
	10	9	2.4	2.4	℄	2.4	2.4	8	12

+10.27 1511.33 H.I.

1501.06 B.M.

This Elev. is Approx. — Assumed Elev.

Dakota Conduit

Flume #7

Relocation

Alignment & Cross-section

#7 Flume
Relocation

.1564' Gr per 100'

10.77

+97 77 = P.I.
+98.63 Ward P.I.

Δ = 5°21-20

1506.50 BM.

-.33 06.17

+90 77 "

Δ = 5°21-20

+83 77 "

Δ = 5-21-20

+76 77 "

Δ = 5°21-20

+69 77 "

Δ = 5°21-20

32+62 77 P.I.

Δ = 5° 21-20 Rt

~~42~~ 50

32+24 60

+09.5 for Rock on Right side only Point +12.0 runs out

32+07 0 Naval line P.O.T.

31+95.27 beginning of Flume
+96.79 center of Head Works

GT 1501Z

July 30-28
Watts
P.O.G.
Leach
Simpson

L+ ℄ R+

1 H.1 1506.17

9

12.2 4.0 | 9.0 | 7.8 3.2 | 5.5 4.6

13.8 4.0 | 13.7 3.5 | 12.6 2.3 | 10.0 | 6.9 2.5 | 5.2 4.5

Solid Rock

9.7 7.7 8.5 6.0 +16 6.27

Solid Rock | 13.3 4.8 | 8.0 | 7.0 1.3 | 4.1 4.0

Solid Rock | 12.4 5.3 | 11.2 4.8 | 8.8 | 7.8 1.0 | 6.3 4.0

1' to Rock → | 15.2 4.0 | 12.0 | 10.8 2.3 | 9.9 2.8 | 9.5 4.0
Solid Rock

Solid Rock → | 15.8 4.0 | 15.2 2.8 | 8.0 | 11.6 3.6 | 11.2 on Solid Rock 7.0 ✓
Loose Rock

Solid Rock | 14.8 4.0 | 13.8 2.8 | 10.5 | 8.7 3.0 | 8.0 4.0 ✓

Solid Rock | 12.8 4.7 | 12.3 3.2 | 10.0 | 6.8 2.8 | 6.9 4.0 ✓

9.3 2.6 | 0.9 3.3 | 0.0 4.3

Solid Rock | 16.1 4.8 | 12.2 2.9 | 9.9 | 7.4 3.1 | 6.5 50 ✓

0.9 2.4 | 4.2 2.2 | 4.7 | 4.6 2.2 | 0.9 2.4 ✓

8/11 Spotted NW

#7 Flume
Relocation

+74.77		20	
		20	
+54.77	1506.17		
+44.77	Rocky point	20	on Right only
+34.77			
		20	
34+14.77			
		20	
+94.77			
		20	
+74.77			
		20	
+54.77			
		20	
34.77	P.I.		Δ = 5°38 Lt
		18.72	
+16.27	P.O.T.		

July 30 - 28
Wallis
P.O.9
Leach
Simpson

Hi. 1506.17

15.2 13.2 12.9 8.4
4.0 1.7 4.2
loose granite — solid Rock

20.8 10.3 9.0 6.1 4.7
4.0 0.9 3.2 4.0
solid Rock

95.6 95.9 94.9 5.1 3.3
15.4 11.3 10.3 7.3 2.1 4.4
4.0 2.2 4.1
loose granite

15.4 14.7 11.7 9.3 7.3
4.0 3.1 2.9 4.5
loose granite

14.2 13.4 11.0 9.2 8.6
4.0 2.9 3.1 4.4
loose granite

13.6 13.2 11.0 10.7 9.4 8.6
4.0 2.8 1.4 2.9 4.8
soil + loose Rock

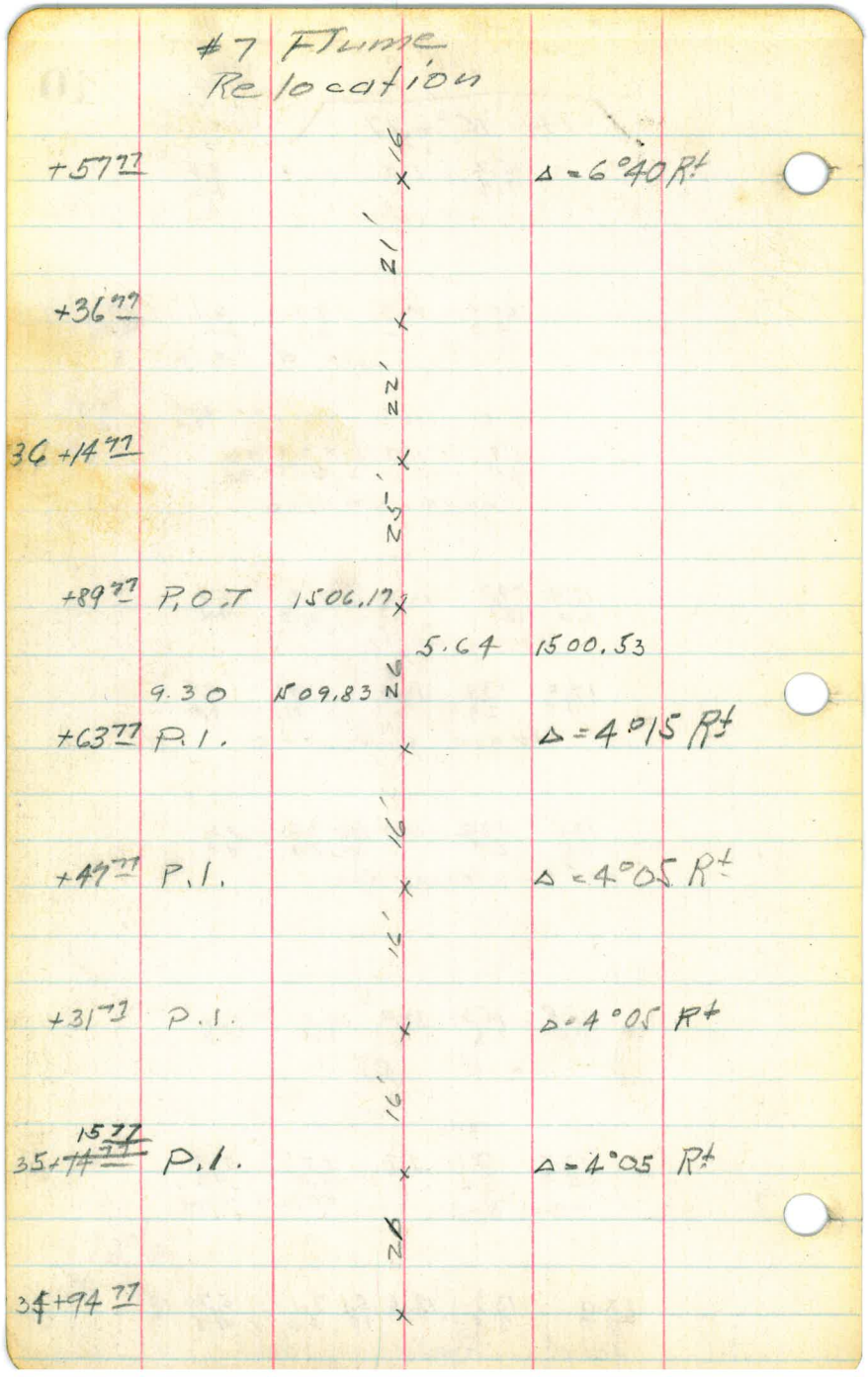
15.8 15.3 12.0 10.0 7.7
4.0 3.3 2.9 5.2
solid Rock

93.3 94.1
12.9 12.1 9.7 7.7 5.9
4.0 3.2 3.0 4.6
loose Rock — solid Rock

4/13/48
Rained W.

12.0 13.3 12.6 5.1 7.1 5.7
4.0 2.8 1.0 3.0 4.5
solid Rock

#7 Flume Relocation



July 30 - 28
Watts
P.O.S
Leach
Simpson

H.I - 1509.83

99.8 — 99.0 — 99.

24.7 4.0 — 20.0 — 17.8 4.2 — 20.4 5.4

solid Rock ↗ — ↑ solid Rock

84.↓

29.2 4.5 — 24.4 4.0 — 25.4 — 25.4 1.4 — 20.9 1.5 — 19.6 4.0 ← solid Rock

loose Rock →

80.07

27.7 4.0 — 29.0 2.0 — 29.1 — 27.3 4.0

solid Rock — loose granite — ↑ solid Rock

93.8

16.0 4.0 — 16.0 — 13.5 1.1 — 13.4 2.4 — 11.3 4.0

solid Rock — ↑ solid Rock ↑

94.↓

15.4 4.0 — 14.9 2.5 — 12.4 — 10.1 4.0

loose granite

95.1

19.7 4.0 — 18.7 1.7 — 14.1 — 12.2 2.0 — 9.4 4.0

loose granite

94.↓

19.2 4.0 — 15.4 — 9.9 4.0

loose granite

35 15 77
33 34 77
181 00

H.I. 1506.17

14.1 4.0 — 14.7 1.5 — 7.1 1.0 — 6.7 — 6.5 1.0 — 2.1 4.0

loose granite

solid Rock 12.6 4.0 — 8.2 — 7.7 1.5 — 4.3 4.0

↑ loose granite

93.↓

#4 Flume
Relocation

1509.83

5.17 1504.66

0.35 1505.01

+37 27 Normal conduit section

+30 27 downstream end of Flume

1 1/2 N

+25 77 P.O.T

20 N

37+05 77 P.I. Δ = 4°32 R±

+95 T Rock on Right only

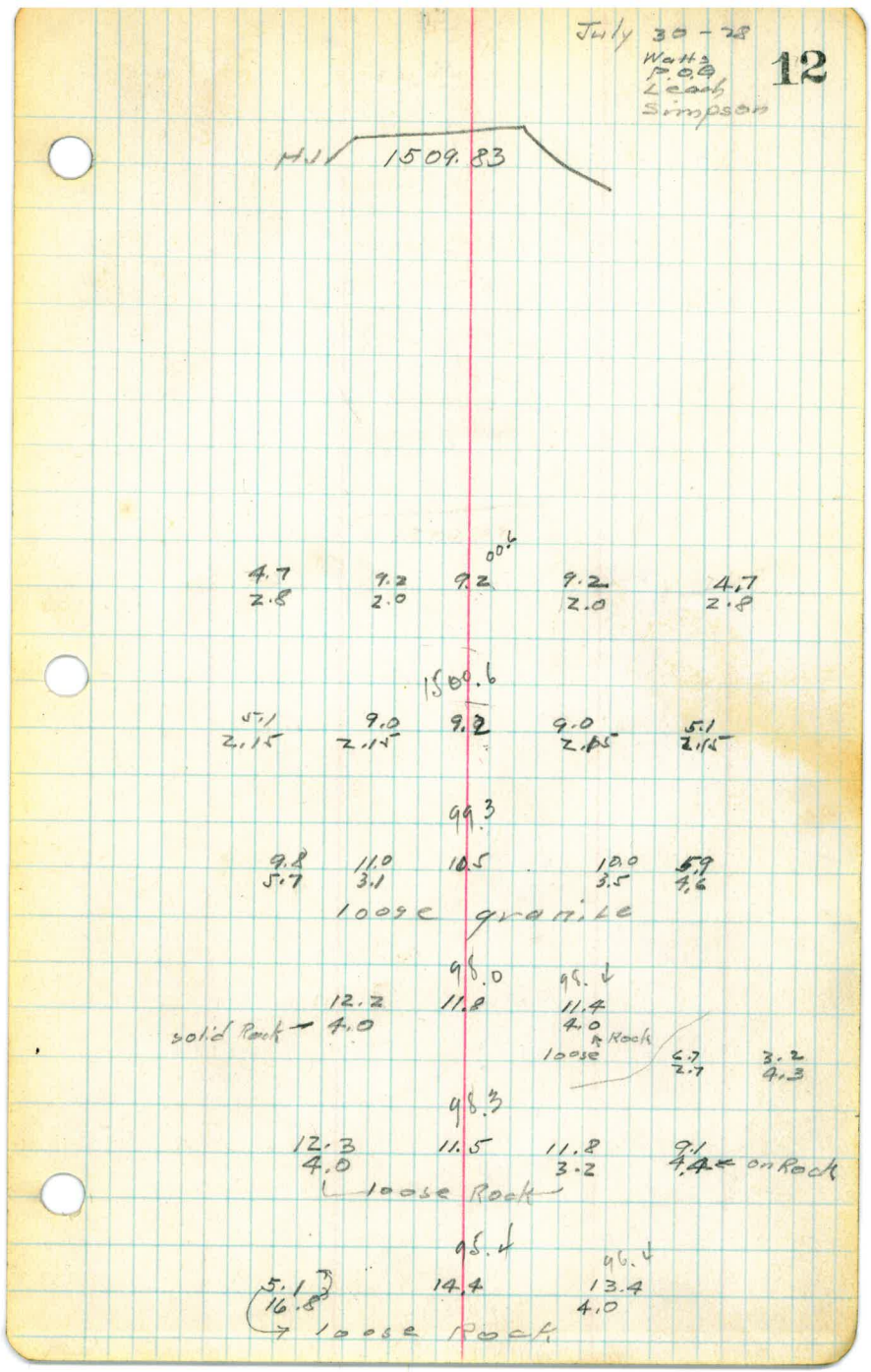
16

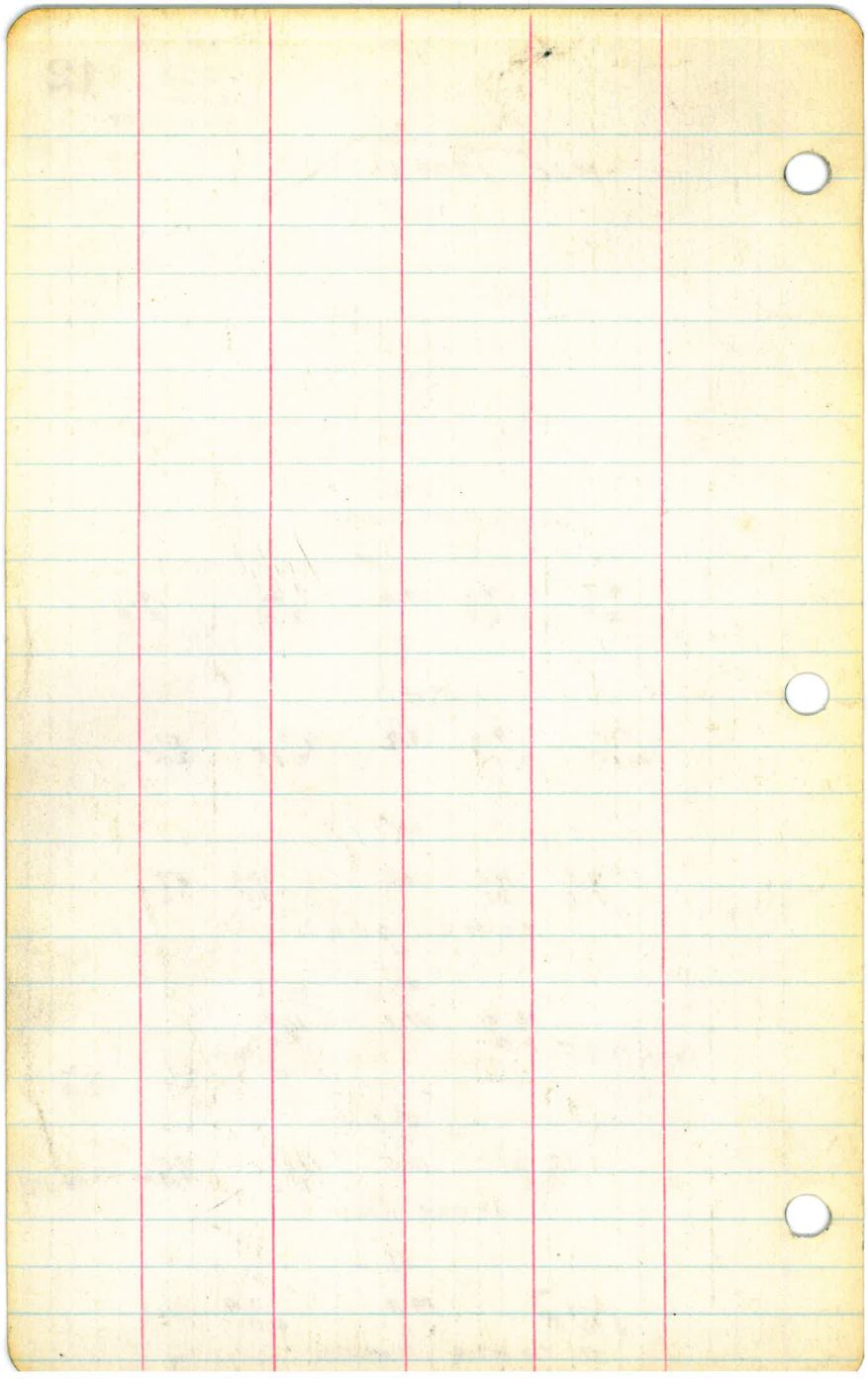
+89 72 P.I. Δ = 6°40 R±

10

36+73 77 P.I. Δ = 6°40 R±

July 30 - 28
Watts
P. Ott
Leach
Simpson

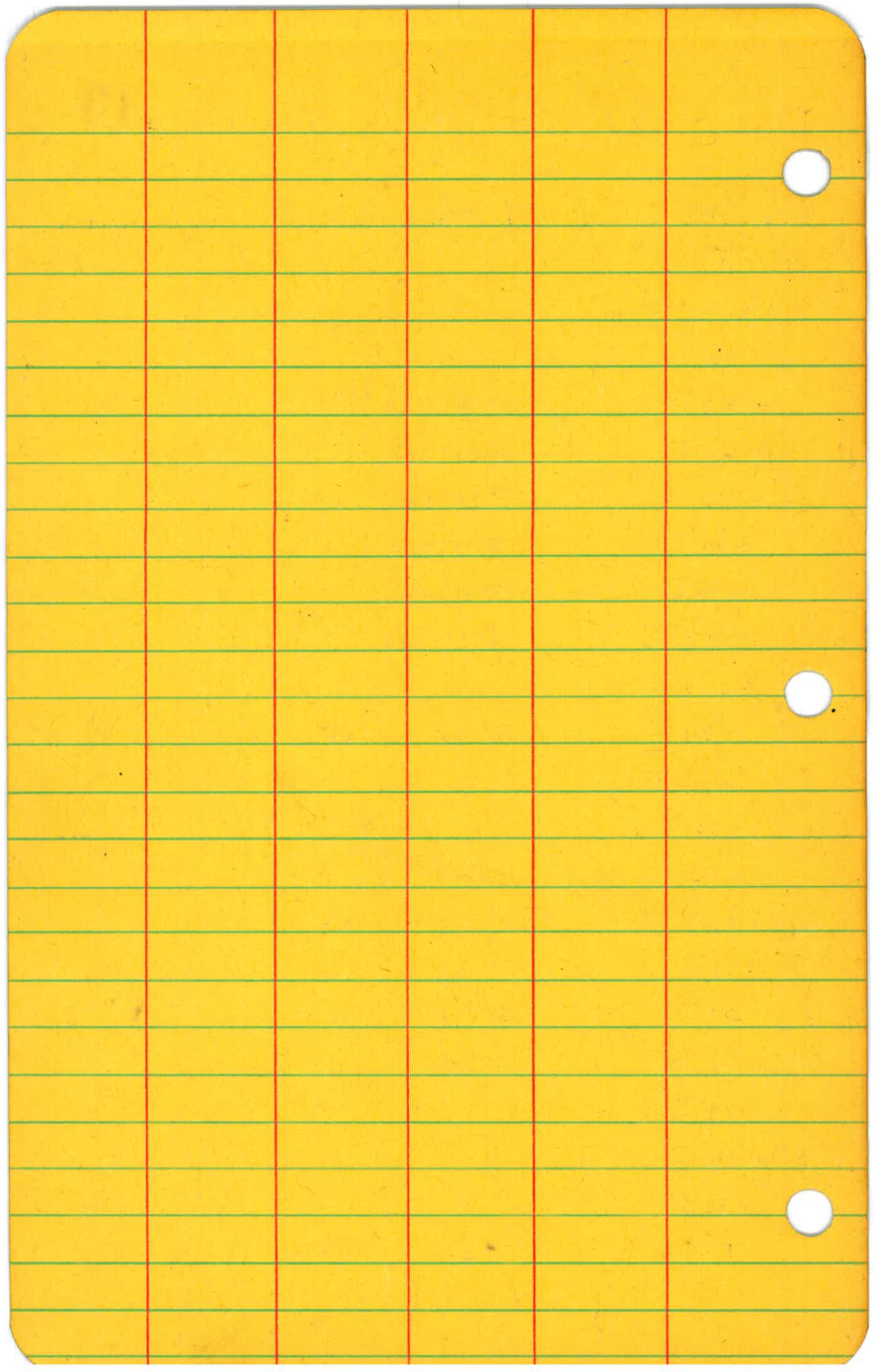




Flume No 7 - Alignment & Headwall

31+93.33		
32+07.0		
+24.6		
+42.0		
+62.77	5° 21' 20"	Rt
+69.77	5° 21' 20"	"
+76.77	5° 21' 20"	"
+83.77	5° 21' 20"	"
+90.77	5° 21' 20"	"
+97.77	5° 21' 20"	"
33+16.77		
+34.77	5° 38'	Rt
+54.77		
+74.77		
+94.77	Plot according to X-Sec Distances	
35+15.77	4° 05'	Rt
+31.77	4° 05'	"
+47.77	4° 05'	"
+63.77	4° 15'	"
+89.77		
36+14.77		
+36.77		
+57.77	6° 40'	Rt

8/6 [illegible] plotted [illegible]



+73 77	6°40'	Rt
+89 77	6°40'	"
37+05 77	4°32'	"
+75 77		
+30 27	℄ Headwall	

Flume No 7.

Dulzura Conduit

Alignment & Cross Sections.

Flume No 7 — Dulzura Conduit.

Alignment

33+34.30 △ × △ 5° 38' Lt.

48.90

32+85.40 △ × △ 12° 18' Rt.

7.60

32+77.80 △ × △ 19° 50' Rt.

81.80

31+96.00 △ × × △ 3° 00' Lt.

Beg. Flume

18.0

31+78 ± △ × Angle Lt.

Flume No 7.

Conduit

Approx. Finish Grade = 1501.35

Flume No 7 — Dulzura Conduit.

Alignment

36+16.50 X Δ 16°16' Lt.

22.50

35+94.00 Δ X Δ 18°54' Rt

44.70

35+49.30 Δ X Δ 9°28' Rt.

40.30

35+09.00 Δ X Δ 7°18' Rt.

94.50

34+14.50 Δ X Δ 3°07' Lt.

80.20

Flume No 7 — Dulzura Conduit.

Alignment

End Grs. = 1500, 92

37+44 ℄			Angle Lt.
	Conduit	9.20	
End Flume.			
37+34.80			Δ 13°00' Lt.
	Flume No 7	23.30	
37+11.50 Δ			Δ 6°48' Rt.
		31.70	
36+79.80 Δ			Δ 20°00' Rt.
		63.30	

Flume No. 7 - Dulzura Conduit

+90

36+79.80 Δ

+68

+57

+35

+28

36+16.50 Δ

36+00

35+94.00 Δ

Flume No 7 – Dulzura Conduit

Cross Sections

Sheet 5

Lt ℄ Rt

-8.02 1505.43 BM.

End Flume

37+34.80 Δ

1500.83

10.9	9.8	8.7	8.7	12.6	12.62.	12.6	8.7	8.5	6.0
12	5	4	2.1	2.1	℄	2.1	2.1	6	8

1499.1

+30

13.2	14.4	14.3	14.2	9.5	8.5
12	3	℄	3.5	4.5	9

1498.7

37+11.50 Δ

19.4	16.7	15.2	15.2	11.5	5.7	7.2
11	8	℄	5	8	8	10

1498.3

37+00

19.2	18.4	15.4	15.1	14.9	9.4	8.0
10	7	5	℄	4	4	12

1513.45 H.I.

Lt			℄	Rt		
		1498.1				
21.0 / 10	16.8 / 6	15.3	℄	15.0 / 6	9.9 / 15	
		1496.6				
25.0 / 10	20.8 / 6	16.8	℄	16.2 / 7	4.4 / 7	3.3 / 13
		1493.9				
27.9 / 9	24.4 / 6	19.5	℄	17.7 / 7	17.7 / 6	15.5 / 12
		1485.9				
33.4 / 11	28.7 / 5	27.5	℄	25.1 / 8	23.7 / 8	14.8 / 12
		1485.9				
36.6 / 12	33.1 / 11	31.6 / 2	27.5 ℄	18.0 / 17		
		1482.6				
37.7 / 12	32.8 / 7	30.8	℄	27.2 / 9	23.5 / 14	16.4 / 16
		1480.6				
42.6 / 12	37.0 / 7	32.7 / 3	32.8 ℄	30.2 / 10	25.1 / 12	
		1488.3				
40.5 / 15	37.5 / 6	25.1	℄	26.0 / 7	18.0 / 9	
		1490.0				
37.0 / 15	36.2 / 8	23.4	℄	19.0 / 4	16.5 / 10	9.4 / 12

1.5 13.45 H.I.

Cross Sections — Sheet 3

Lt | ℄ | Rt

1494.1

+65 | 24.8 (12) | 23.5 (7) | 19.3 ℄ | 18.5 (3) | 15.0 (6) | 12.6 (11) | 10.0 (13)

+8.67 | 1513.45 H.I. | −3.73 | 1504.78 T.P.

1489.5

35+49.30 △ | 25.0 (10) | 19.7 (4) | 19.0 ℄ | 17.7 (3) | 2.5 (14)

1490.9

+33 | 22.5 (10) | 20.6 (4) | 17.6 ℄ | +1.7 (17)

1492.1

+09.00 △ | 24.0 (11) | 21.2 (5) | 16.4 ℄ | 10.4 (5) | 4.7 (10) | 2.7 (14)

1497.8

35+00 | 15.8 (12) | 13.6 (4) | 10.7 ℄ | 8.4 (6) | 2.5 (13)

1492.3

+77 | 24.4 (11) | 19.0 (7) | 16.2 ℄ | 15.0 (4) | 2.8 (11)

1489.0

+62 | 25.6 (12) | 22.2 (7) | 21.3 (3) | 19.5 ℄ | 16.4 (3) | 11.6 (4) | 0.4 (11)

1492.5

34+46 | 24.7 (11) | 21.7 (9) | 21.5 (1) | 16.0 ℄ | 10.0 (3) | 2.0 (12)

1508.51 H.I.

Cross Sections

Sheet 2

	Lt		℄		Rt	
			1493.2			
+24	23.6	15.3	12.6	4.0		
	10		℄	4	12	
			1493.8			
34+14.50 △	21.0	18.3	14.7	4.1	1.0	
	10	6	℄	10	14	
			1495.0			
34+00	21.8	16.4	13.5	10.6	7.5	4.0
	10	4	℄	4	7	12
			1494.5			
+83	19.5	17.2	14.0	12.3	9.8	6.3
	12	6	℄	4	10	14
			1492.3			
+67	22.0	18.0	16.2	14.3	9.6	4.8
	10	5	℄	4	9	13
			1496.2			
33+34.30 △	20.0	15.0	12.3	10.3	1.0	
	11	3	℄	3	13	
			1496.7			
33+00	19.2	11.8	10.4	8.7	+1.4	
	10		℄	3	4	14
+3.25	1508.51 H.I.					
	−4.17	1505.26 T.P.				
			1496.2			
32+85.40 △	22.2	18.2	13.2	4.8	3.8	
	9	5	℄	9	14	
	1509.43 H.I.					

Cross Sections

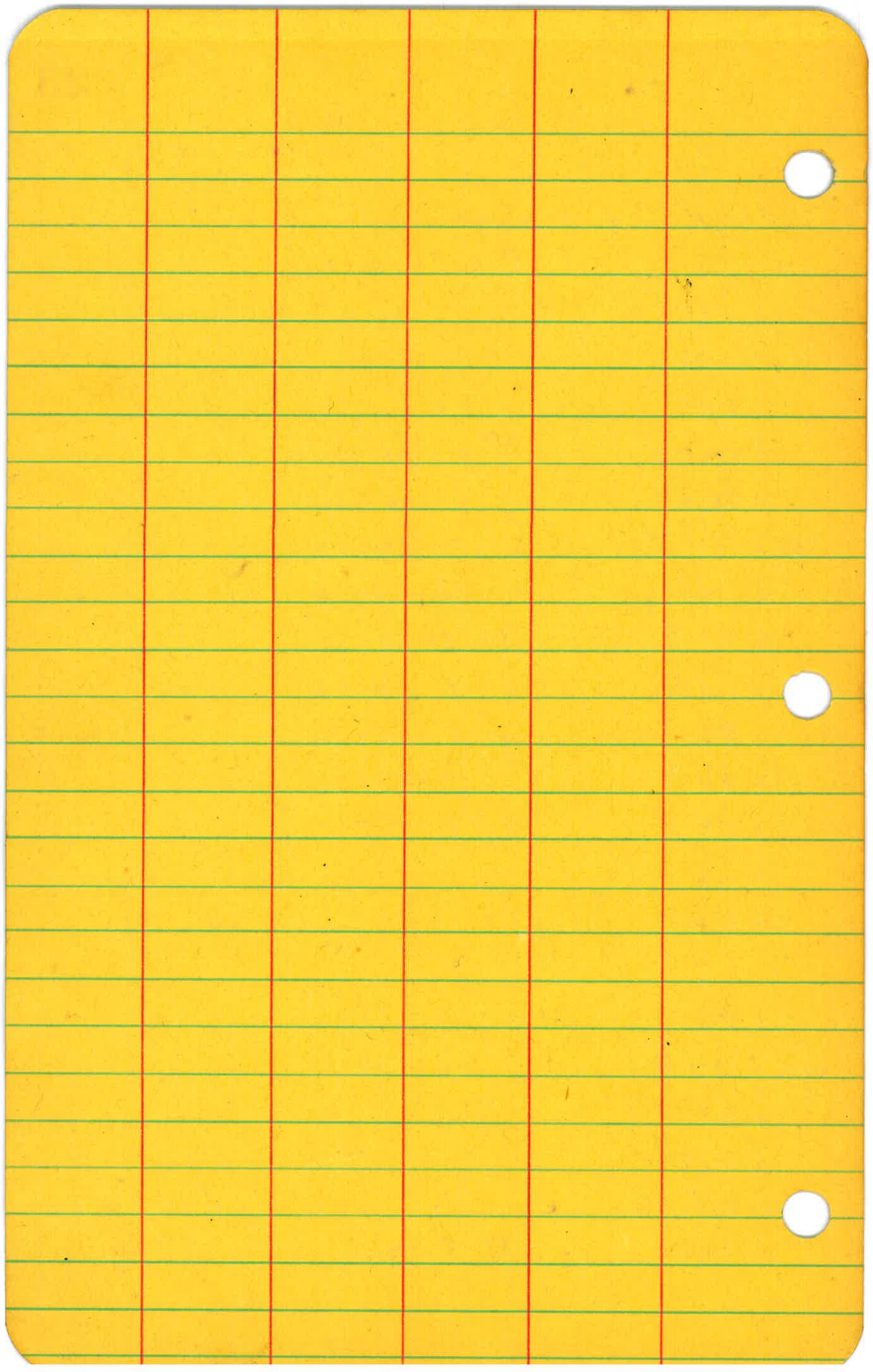
Sheet 1.

	Lt		℄		Rt		
			1496.9				
32+77.80 Δ	23.5 10	17.5 7	12.5 ℄	7.5 11	5.5 15		
			1495.9				
+64	23.0 10	18.6 5	13.5 ℄	14.4 8	7.7 15		
			1495.0				
+50	21.5 10	18.6 7	14.4 ℄	14.1 8	9.0 8	4.0 13	
			1491.6				
+34	25.0 10	21.8 6	17.8 ℄	14.5 8	4.4 8	0.0 9	
			1497.0				
+26	19.1 8	16.1 5	12.4 ℄	9.6 4	6.4 12		
			1498.7				
+14	21.7 10	14.8 5	10.7 ℄	9.7 3	6.1 4	2.8 10	
			1498.4				
32+02	24.0 12	18.8 5	11.0 ℄	8.1 5	1.8 10		
			1501.34				
31+96 ± Beginning	7.0 7	4.2 6	4.3 2.2	7.9 2.2	7.93 ℄ On Concrete →	8.09 ℄ ← Flume Floor	7.9 2.2	4.2 2.2	4.5 7
+2.93			1509.43 H.I.				
							1506.50 B.M.

Flume 8.

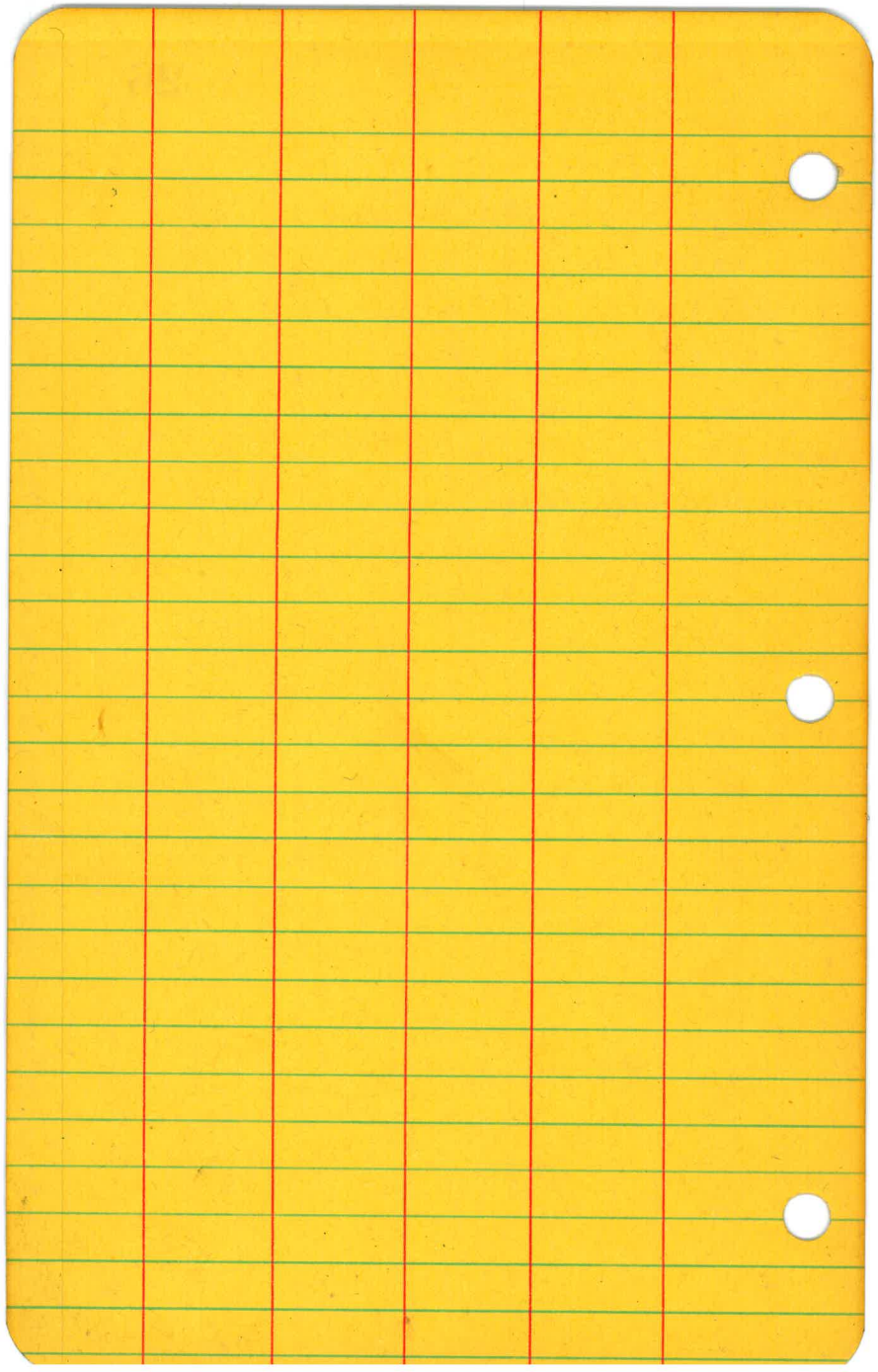
39+95 ±	℄ Headwall
+98 5	Rt. 2-10-30
40+19 5	
+39 5	
+59 5	
+77 5	R 0-10-00
+96 5	L 6-05-30
41+15 5	L 2-02-30
+34 5	" 4-01-30
+56 5	R 5-58-24
+69 5	" 5-58-24
+82 5	" 5-58-24
+95 5	" 5-58-24
42+08 5	L 2-55
+28 5	
+48 5	
+67 5	
+85 5	
43+07 5	
+28 5	
+48 5	
+68 5	
+89 5	R 3-34

8/1-2
Rathel
N



44+08 S	Rt 3-34
+27 S	" 3-34
+46 S	" 3-34
+65 S	" 8-20
+85 S	
45+05 ℄	
+14 ±	℄ Headwall

8/28
Reathel
22



8 - Flume
Relocation

July 30-28
Watts
PSG
Leach
Simpson

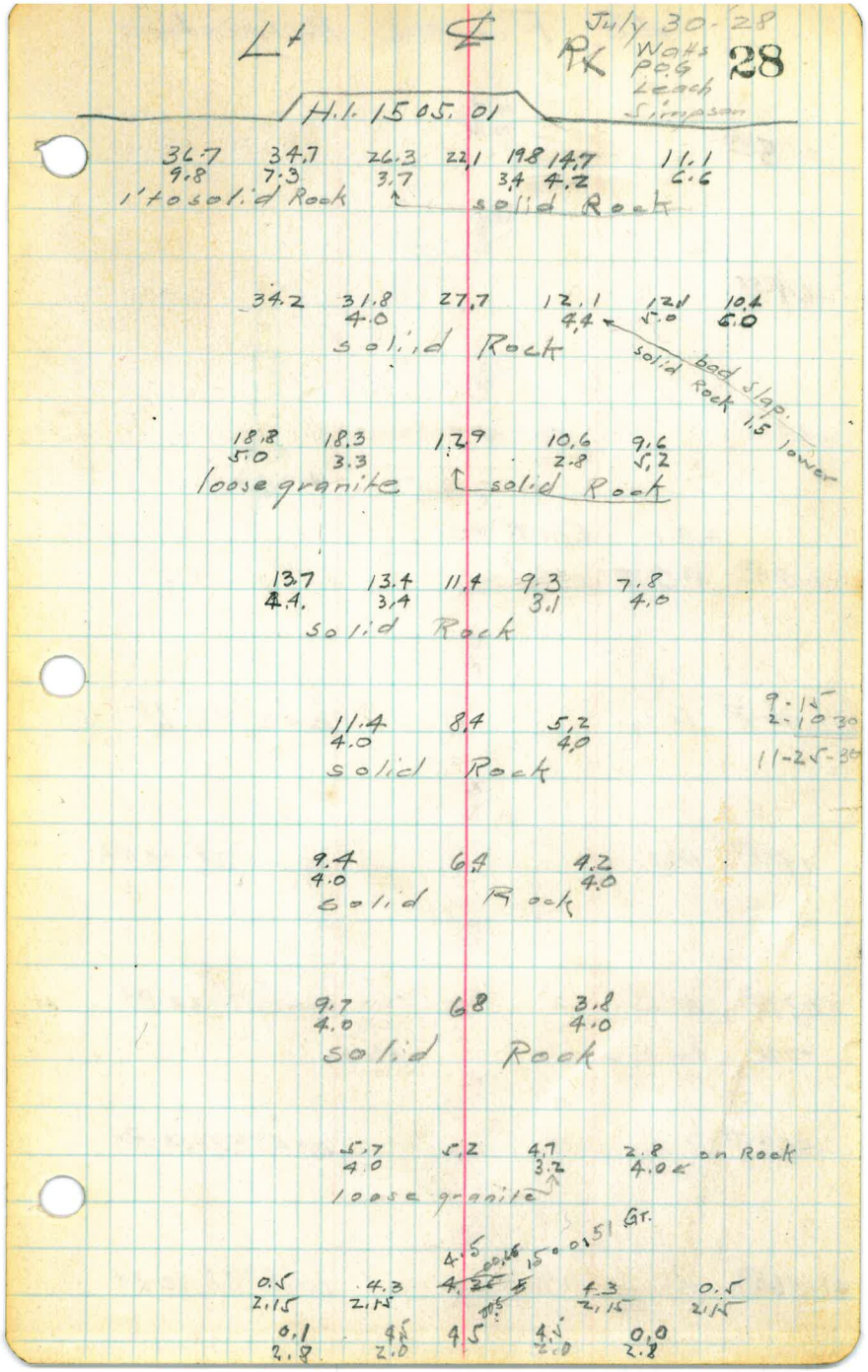
Alignment & Cross-section

27

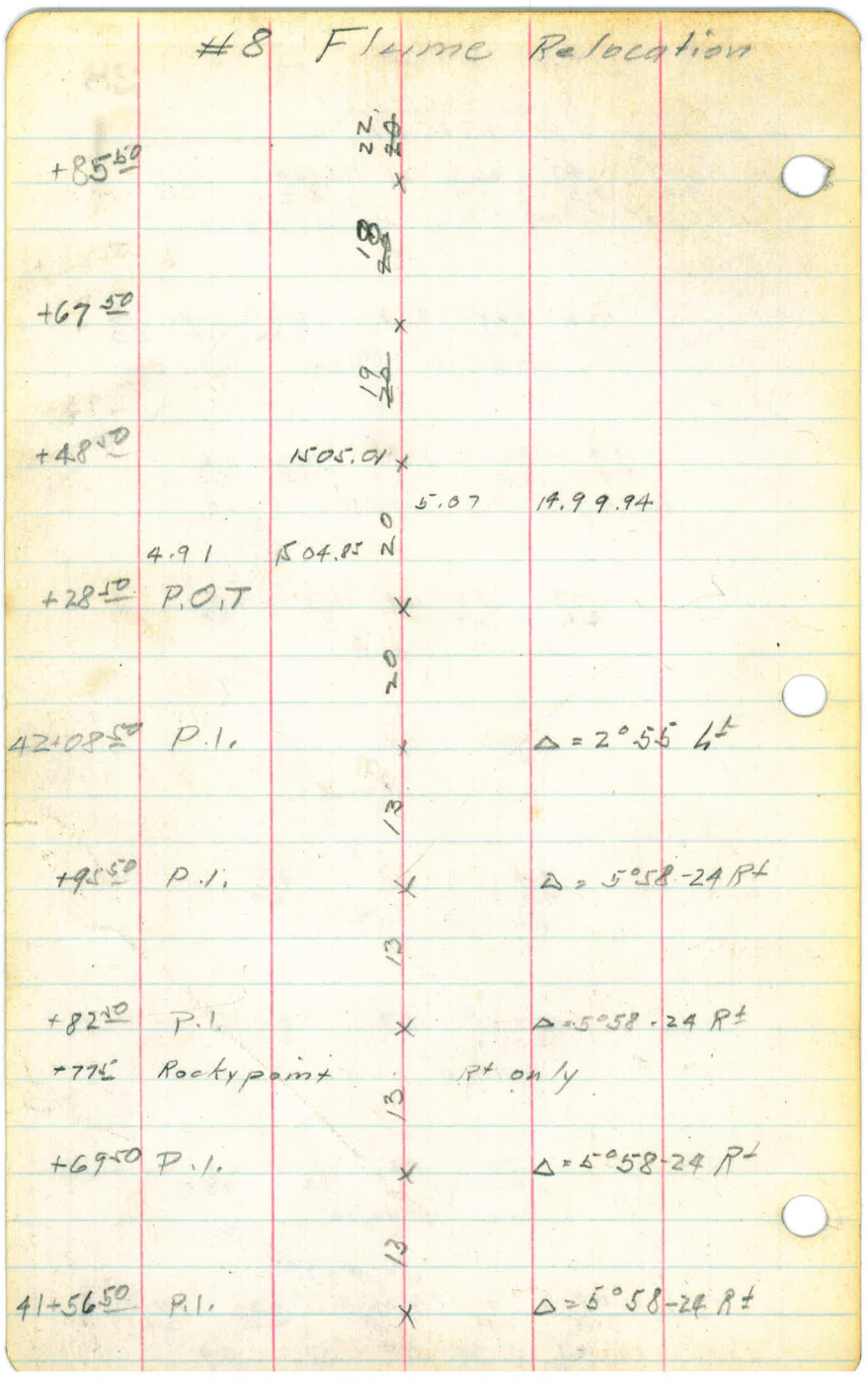
Use #120.

Flume #8 Relocation

+34 50		22'	Δ = 4°01 -30 L'
41+15 50	P.I.	19	Δ = 2°02 30 L'
+96 50	P.I.	19	Δ = 6°05 -30 L'
40+77 50	P.I.	19'	Δ = 0°10 Rt
+59 50		18' N. 05. 01	
+39 50		20	
40+19 50		20	
39+98 50	P.I.	21.	Δ = 2°10 30 Rt
39+95 00	Headwall	35'	
+87.	Normal section of conduit		


July 30-28
PK Walls P.G. Leach Simpson
28
L+
H.I. 1505.01
36.7 9.8
34.7 7.3
26.3 3.7
22.1
19.8 3.4
14.7 4.2
11.1 6.6
1'+ solid Rock
solid Rock
34.2
31.8 4.0
27.7
12.1 4.4
12.8 5.0
10.4 6.0
solid Rock
bad slop. solid Rock 1.5 lower
18.8 5.0
18.3 3.3
12.9
10.6 2.8
9.6 5.2
loose granite
solid Rock
13.7 4.4
13.4 3.4
11.4
9.3 3.1
7.8 4.0
solid Rock
11.4 4.0
8.4
5.2 4.0
solid Rock
9.4 4.0
6.4
4.2 4.0
solid Rock
9.7 4.0
6.8
3.8 4.0
solid Rock
5.7 4.0
5.2
4.7 3.2
2.8 4.0
on Rock
loose granite
GT.
0.5 2.15
4.3 2.15
4.5
4.3 2.15
0.5 2.15
0.1 2.8
4.5 2.0
4.5
4.5 2.0
0.0 2.8

#8 Flume Relocation



July 30-38
Watts
P.9.9
Leach
Simpson

H.I. 1504.85

17.4 7.0 | 15.5 4.0 | 14.4 | 13.6 3.8 | 10.4 4.8 ← on Rock

← loose granite →

16.0 6.0 | 15.0 1.5 | 13.3 | 11.3 4.0

loose granite — solid Rock

21.0 7.0 | 18.9 4.0 | 16.8 | 15.0 4.0 | 13.4 7.0

loose granite

22.3 7.0 | 27.3 4.0 | 19.2 | 17.5 4.0 | 15.1 7.0

16.9 7.0 | 12.4 3.8 | 12.6 | 12.6 3.5 | 17.6 4.0 | 15.8 6.0 | 90°

← solid Rock → | loose granite

loose granite | 21.4 7.0 | 20.4 | 17.8 7.0

H.I. 1502.01

20.8 7.0 | 20.6 | 19.3 6.0 | 90°

loose granite | 6.3 1.7 | 0.0 4.0

12.2 4.3 | 10.6 | 7.7 1.7 | 6.3 4.0

5-58-24
2-59-12
8-57-36
11-56-58
2-59-12
14-56-10

27.3 9.0 | 25.2 3.0 | 10.? | 9.0 3.0 | 8.3 4.5

solid Rock

8/3/38

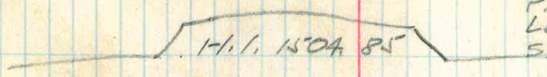
#8 Flume Relocation

+65 50	P.I.	20	8°20 Rt
+46 50		19	Δ = 3°34 Rt
+27 50		19	Δ = 3°34 Rt
44+08 50		19	Δ = 3°34 Rt
+89 50		20	Δ = 3°34 Rt
+68 50	P.I.	21	
+48 50		20	
+28 50		20	
43+07 50	P.O.T	21	

July 30-28

Watts
P.O.G
Leach
Simpson

30



22.0 4.8 | 17.2 | 13.9 4.3 | 3.5 5.0 ← on Rock
loose granite

13.1 4.0 | 11.6 | 10.5 3.0 | 9.2 4.0 ← on Rock
loose granite

16.7 4.0 | 15.4 | 11.6 4.0
loose granite

12.0 4.0 | 10.7 | 6.7 4.0
loose granite

13.3 4.0 | 10.8 | 10.0 4.0
loose Rock

16.2 4.0 | 14.0 | 9.6 4.0
loose Rock

15.3 4.0 | 14.5 | 11.7. 4.0
Loose granite

11.2 4.0 | 10.2 | 6.6 4.0
loose granite

16.6 8.0 | 15.6 4.0 | 15.4 | 12.6 4.0 | 12.1 6.0 ✓ SW/R
loose granite

#8 Flume Relocation

	N 09.85		
		0.82	N 04.03
5.32	1509.35		
		4 3 0	1505.05 = B.M.
			1505.07 Ward Elev.

45+14± downstream × end of Flume

P.O.T.

44+05±0 R. O.T ×

N. 8

44+85±0 P. O.T ×

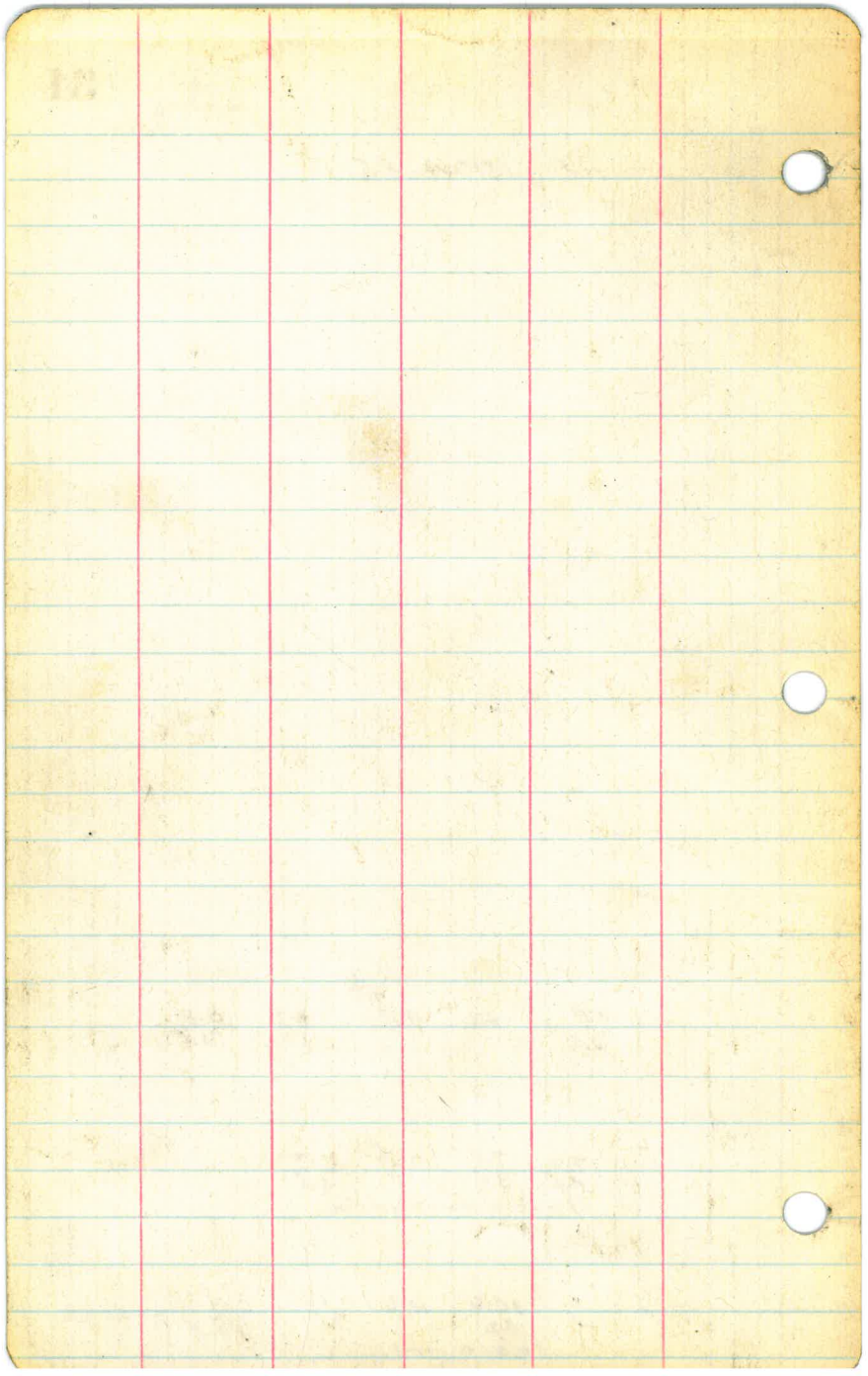
July 31 - 2.8
Watts
Pog
Leach
Simpson

H.I. 1504 85

0.8 4.7 4.7 (0.15) 4.7 0.8
2.5 2.5

7.0 7.5 7.5 5.9
4.5 3.5 4.5
loose graphite

12.6 10.6 7.1 0.0
4.7 3.5 4.5 K on Rock
loose graphite



Flume No 8.

Dulzura Conduit.

Alignment & Cross Sections.

REW
2/14/28

Flume No 8. — Dulzura Conduit

Alignment

40+80.60 △ × △ 6° 16' Lt.

46.70 Mag. S 23° 40' W

40+33.90 △ × △ 9° 14' Rt.

15.50 Mag. S 14° 55' W

40+18.40 △ × △ 8° 39' Rt.

23.40 Mag. S 6° 00' W

39+95.00 △ × △ 9° 15' Lt.

Beg. Flume.

30.00

39+65 ○ × Angle Rt.

Flume No 8.

Conduit

Finish Flow Grade

Feb.-14-28

Ward – Chf.

Duermit – Chn

Mc Bain – "

Flume No 8. — Dulzura Conduit.

Alignment

Flume No 8.

44+07.00 △ × △ 7° 20' Rt.

152.40 Mag. S22°30'W

42+54.60 △ × △ 12° 48' Lt.

63.10 Mag. S35°40'W

41+91.50 △ × △ 15° 00' Rt.

16.30 Mag. S20°45'W

41+75.20 △ × △ 14° 52' Rt.

62.20 Mag. S6°30'W

41+13.00 △ × △ 12° 08' Lt.

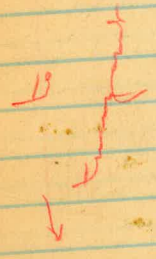
32.40 Mag. S18°20'W

Flume No 8 – Dulzura Conduit,

Alignment

45+55 ℄	Conduit		38.20	Mag. S46°10'W
		X		Angle Rt.
45+16.80 △ End Flume.	Flume No 8		61.50	Mag. S49°15'W
		X		△ 1° 40' Lt.
44+55.30 △			35.30	Mag. S40°30'W
		X		△ 9° 18' Rt.
44+20.00 △			13.00	Mag. S32°18'W
		X		△ 9° 23' Rt.

P.I
44+71 ~~E.C~~



42+14

Flume No 8.

Dulzura Conduit.

Flume No 8.

Dulzura Conduit.

Cross Sections

Ahead Rt

Sheet 4

28

Cross Sections

Lt ℄ Rt

Sheet 5

37

Finish Flow Grade = 1500.29

End Flume

45+16.80 Δ — 1500.17

Lt					℄					Rt
8.3	6.8	5.1	5.1	8.9	8.96	8.9	5.0	5.0	0.0
10	4	4	2.1	2.1	℄ Flow Line	2.1	2.1	4	7

+13 — 1497.6

12.2	8.4	10.3	11.5		9.6	0.6	
12	7	4	℄		4	7	

45+00 — 1498.3

16.2	15.3	11.3	10.8	10.9	4.0	1.6
10	5	4	℄	4	5	9

+87 — 1495.1

22.7	21.3	14.0	11.9	6.5	2.9	0.6
10	5	℄	4	4	7	10

+83 — 1488.4

27.6	24.0	20.7	19.8	16.4	2.8	0.7
11	9	℄	2	4	6	11

+71 — 1488.3

27.3	27.7	20.8	18.6	5.7	5.0	1.4
16	6	℄	3	5	6	12

44+55.30 Δ — 1490.5

20.2	18.7	19.6	18.6	15.0	9.8	1.5
14	10	6	℄	5	6	14

44+39 — 1493.6

21.8	18.3	15.5	15.4	15.4	10.2	7.9	5.4
12	3	℄	4	5	7	9	11

1509.13 H.I.

Cross Sections

Lt — Ahead ↑ — Rt

+4.61 — 1509.13 H.I.

−1.43 — 1504.52 T.P.

1486.7

44+20.00 △ — 23.0 (12) — 19.8 (4) — 19.2 ℄ — 19.5 (4) — 13.5 (5) — 10.0 (10) — 8.2 (15)

1495.9

44+07.00 △ — 15.4 (12) — 13.1 (4) — 10.0 ℄ — 10.7 (6) — 7.7 (8) — 5.1 (17)

1497.9

44+00 — 16.6 (12) — 14.7 (7) — 10.0 (5) — 8.0 ℄ — 8.8 (3) — 8.0 (5) — 7.0 (11) — 3.4 (14)

1494.8

+93 — 18.8 (14) — 18.8 (9) — 14.6 (4) — 11.1 ℄ — 10.4 (5) — 7.5 (6) — 5.3 (12)

1490.7

+75 — 22.0 (14) — 19.2 (7) — 15.2 ℄ — 11.2 (2) — 9.6 (7) — 6.0 (10) — 0.8 (11)

1493.5

+58 — 21.0 (12) — 18.2 (4) — 17.5 (1) — 12.4 ℄ — 10.2 (1) — 8.7 (6) — 3.3 (14)

1496.4

+30 — 12.8 (16) — 11.6 (5) — 9.5 ℄ — 6.4 (5) — 3.5 (9) — 0.3 (13)

1494.2

43+14 — 17.5 (17) — 14.0 (7) — 15.2 (3) — 11.7 ℄ — 9.0 (6) — 3.2 (12) — 2.0 (15)

1505.95 H.I.

Cross Sections

Lt | Rt

1493.9

43+00 | 21.7 12 | 17.8 2 | 10.8 2 | 12.0 ℄ | 9.1 3 | 7.3 6 | 3.4 13

1494.6

+86 | 19.1 14 | 14.4 5 | 11.3 ℄ | 5.7 7 | 3.2 10 | 1.2 13

1496.1

+66 | 19.6 14 | 18.1 9 | 13.3 8 | 9.8 ℄ | 6.1 7 | 1.5 13

1492.7

42+54.60 Δ | 22.7 16 | 18.6 9 | 13.2 ℄ | 7.5 10 | +3.0 12

1489.2

+43 | 23.5 15 | 20.6 8 | 18.2 1 | 16.7 ℄ | 13.3 3 | 12.0 8 | +3.0 10

1486.9

+25 | 25.2 15 | 23.3 7 | 19.0 ℄ | 14.8 6 | 11.4 6 | 3.8 7 | +4.0 12

1494.2

+14 | 27.0 15 | 25.2 10 | 16.2 8 | 12.1 3 | 11.7 ℄ | 11.8 8 | 1.8 9 | +4.0 13

1484.7

42+00 | 27.6 15 | 22.6 7 | 21.2 ℄ | 20.0 9 | +0.8 9 | +4.0 11

1505.95 H.I.

Cross Sections

Lt Rt

Sheet 2

1483.6

41+91.50 △ 26.0 (15) 23.7 (13) 23.0 (6) 22.3 ℄ 20.4 (11) +4.0 (10) Overhangs

+1.41 1505.95 H.I. -5.14 1504.54 T.P.

1483.7

41+75.20 △ 30.8 (15) 30.9 (8) 26.0 ℄ 24.7 (3) 15.0 (3) 12.7 (7) 5.3 (11)

1484.4

+69 41.0 (18) 32.8 (12) 32.0 (9) 25.3 ℄ 13.0 (2) 9.8 (8) 5.0 (12)

1492.7

+59 41.0 (10) 31.7 (8) 29.4 (2) 17.0 ℄ 14.3 (2) 11.4 (9) 0.0 (10)

1483.1

+51 45.0 (12) 32.0 (10) 26.6 ℄ 25.7 (2) 20.8 (4) 2.8 (7) 0.0 (9)

1481.7

+41 41.5 (8) 40.0 (6) 30.5 (5) 28.0 ℄ 22.0 (1) 20.2 (5) 17.6 (7) 3.8 (7) 0.0 (9)

1489.2

+25 42.2 (12) 37.4 (6) 23.4 (2) 20.5 ℄ 15.7 (6) 6.2 (8) 1.6 (12)

1489.0

41+13.00 △ 35.0 (13) 33.1 (8) 25.4 ℄ 20.7 ℄ 14.8 (5) 12.0 (6) 7.8 (10) 4.0 (14)

1509.68 H.I.

B.M. at South End Flume #7.

Lt Cross Sections Rt Sheet 1

41

				1491.9				
41+00	28.0	25.5	22.8	17.8	13.9	7.7	5.2	
	12	9	2	℄	5	10	13	
				1493.7				
40+80.60 △	23.7	19.3	18.5	16.0	13.6	9.3	4.9	
	12	6	2	℄	3	8	14	
				1493.6				
+65	24.2	20.9	19.4	16.1	13.0	10.3	4.4	
	14	9	5	℄	4	5	14	
				1494.7				
+48	24.1	20.8	18.7	15.0	10.8	4.4		
	15	9	5	℄	5	14		
				1496.3				
40+33.90 △		20.5	18.2	13.4	12.5	10.5	5.8	
		13	5	℄	3	5	13	
				1495.7				
40+18.40 △	18.3	14.6	16.1	14.5	11.7	8.2	5.1	
	14	9	3	℄	4	8	13	
				1498.4				
40+00	12.0	11.0	12.5	11.3	10.2	7.1	2.8	
	14	10	3	℄	3	5	12	
				1500.71				
	9.3	5.2	5.2	9.0	8.87	9.0	5.1	5.1	5.4	0.1
	10	4	2.1	2.1	℄	2.1	2.1	4	6.5	13

= 1500.71

→ 39+95?
Beginning +4.25

1509.68 H.I.

1505.43 B.M.

B.M. at South End Flume #7.

Flume No 9.

Dulzura Conduit

Alignment & Cross Sections.

R.E.W.
2/16/28

Flume No. 9 — Dulzura Conduit.

Alignment

Portal of Tunnel
51+13 ℄ — X — Angle Rt.

Conduit

8.10 — Mag. S 55° 30' W

51+04.90 △ End Flume ℄ — X — △ 20° 00' Rt.

67.30 — Mag. S 34° 40' W

50+37.60 △ — X — △ 11° 50' Lt.

Flume No. 9.

96.30 — Mag. S 46° 30' W

49+41.30 △ Beg. Flume. — X — △ 4° 55' Rt.

17.30

Conduit

49+24 ℄ — X — Angle Rt.

Finish Flow Grade = 1499.95

Feb. 16-28
Ward — chf.
Duermit — chn.
McBain — "

Flume No 9.

Dulzura Conduit.

Finish Flow Grade = 1499.82

Cross Sections

Lt ℄ Rt

Sheet 2

44

End Flume										
51+04.90 △	8.1	6.3	5.2	5.2	9.0	9.05	9.0	5.2	4.7	1.4	0.0
	12	4	4	2.2	2.2	℄	2.2	2.2	5	6	8
51+00		12.6	11.1		10.2	9.2	4.7	1.0			
		11	4		℄	3	4	7			
+86	21.5	14.3	14.0		11.6	9.8	6.0	1.4	0.0		
	15	7	4		℄	4	4	9	10		
+80		26.0	21.7		19.2	15.8	5.0	0.0			
		14	6		℄	6	8	11			
+70	23.3	18.6	16.2		15.4	14.1	10.0	5.9			
	14	6	3		℄	3	6	11			
+55	35.0	35.0	17.5		14.8	13.5	11.7	13.9	7.4		
	13	8	4		℄	4	9	12	14		
+46	36.5	35.2	27.6		25.1	21.5	19.2				
	15	7	3		℄	5	12				
50+37.60 △	32.4	28.3	27.5		23.5	20.6	19.0				
	11	8	6		℄	6	14				
+33		29.3	26.2		22.4	20.0	17.1				
		15	6		℄	10	16				
+23		28.5	24.7		21.7	19.8	16.0	11.8			
		17	6		℄	7	13	14			
50+07	27.0	24.8	23.1		21.4	20.8	5.6	3.1			
	14	10	2		℄	5	6	14			

1508.76 H.I.

Lt. Cross Sections Rt. Sheet 1

44
45

+97	28.9 15	25.6 9	19.8 9	14.0 6	12.1 4	12.2 ℄	12.2 5	6.3 6	2.4 15	
+81	27.6 13	20.4 7	20.2 3	13.8 ℄	11.3 2	11.2 6	8.9 7	6.6 12		
+69	24.1 14	23.5 8	22.2 5	17.8 ℄	17.0 3	15.6 5	14.6 7	6.3 7	4.0 12	
+61	20.5 15	19.1 7	17.2 3	13.5 ℄	11.5 3	11.1 6	8.4 10	1.4 10		
+53	15.0 14	16.8 7	16.5 3	13.6 ℄	10.7 4	9.5 6	5.7 6	1.7 9		
+45	10.8 13	10.2 9	12.1 4	10.5 ℄	10.1 3	3.3 3	0.6 5			
49+41.30 △ Beginning	6.8 11	5.0 5	5.1 2.2	8.9 2.2	8.91 ℄ Flow Line	8.9 2.2	5.0 2.2	5.0 4	1.9 4	+0.4 7

+3.69 1508.76 H.I.

−4.09 1505.07 B.M.

+3.55 1509.16 H.I.

1505.61 T.P.

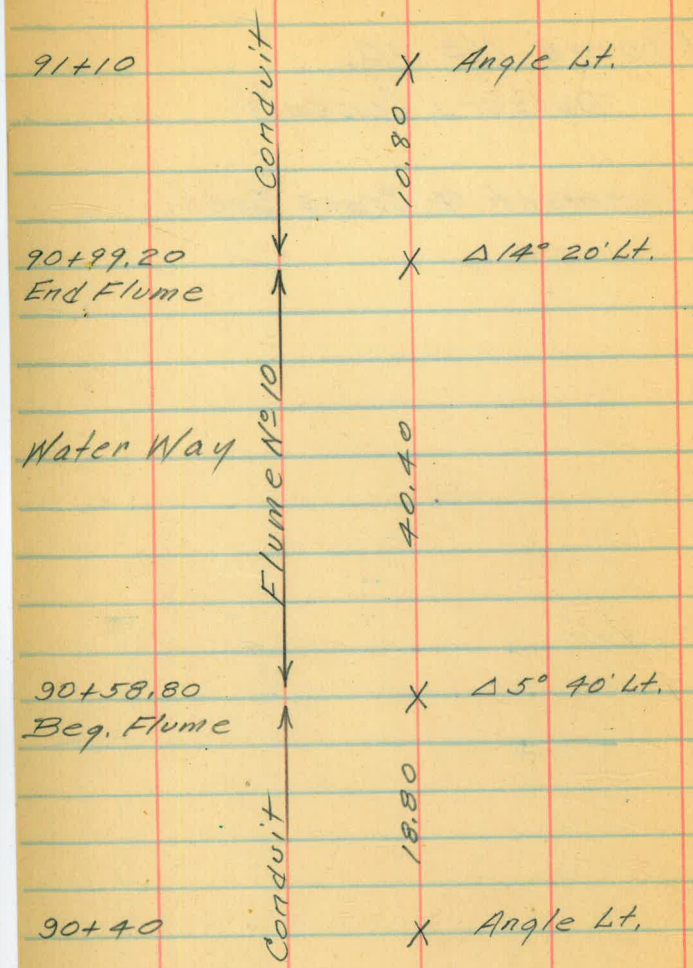
Flume No 10.
Dulzura Conduit.

Alignment & Cross Sec's.

R.E.W.
3/28/28

Flume No 10 — Dulzura Conduit

Alignment



Cross Section

	Lt				℄			Rt		
90+99.20 End →	4.9	4.4	1.4	1.4	5.3	5.36	5.3	1.4	1.4	1.0
	14	5.5	4	2.1	2.1	℄	2.1	2.1	4	14
+96 →			7.0	7.2	8.2		6.6	4.9	2.9	
			14	5	℄		3	9	13	
+89 →			12.3	11.6	11.2		10.8	8.3	7.0	
			16	4	℄		4	7	14	
+79 →				14.0	12.7	12.3		9.9	9.5	
				14	5	℄		11	14	
+70 →			12.1	10.8	10.8	8.6		10.3	7.6	
			14	10	3	℄		4	15	
+67 →			10.0	8.1	7.5	7.4	7.3	6.3	6.4	
			14	8	3	℄	4	10	15	
+61 →			6.9	6.2	6.7	6.7	6.7	3.6	3.0	
			16	10	3	℄	3	8	14	
90+58.80 Beginning →	5.1	3.6	1.3	1.3	5.3	5.33	5.3	1.3	1.3	2.0	1.4
	15	8	4	2.2	2.2	℄	2.2	2.2	4	9	13

1501.00 H.I.

H.I. = Approx. Elev. at Flume 10.

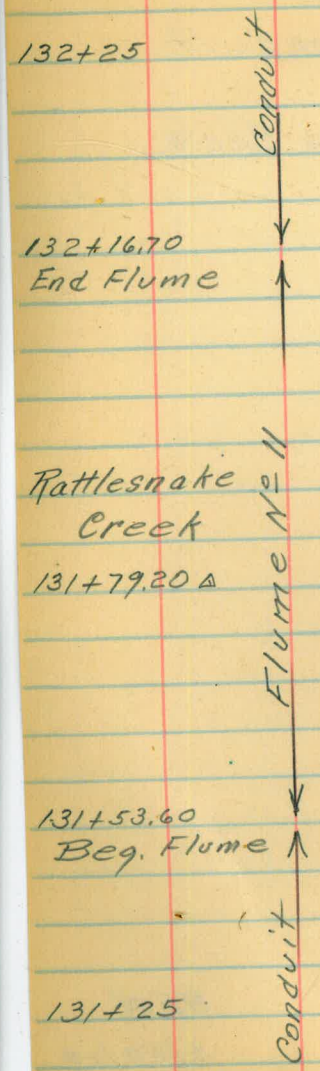
Flume No 11.
Dulzura Conduit

Alignment & Cross Sec's.

R.E.W.
3/28/28

Flume No 11 — Dulzura Conduit

Alignment



Cross Section

	Lt			℄		Rt			
132+16.70 End →	1.5	1.6	1.6	6.1	6.1	6.1	1.7	1.7	0.3
	10	3.5	2.1	2.1	℄	2.1	2.1	3	10
+14 →	1.5	4.6	6.8	6.8	6.8	2.7	2.6		
	10	4	3	℄	3	6	14		
132+03 →	6.5	7.2	8.7	9.4	9.7	9.5	8.2		
	14	9	4	℄	4	9	16		
+94 →	15.0	14.3	14.3	15.0	15.0				
	15	6	℄	6	15				
+87 →	14.5	14.4	16.2	16.0	15.0				
	14	8	℄	6	16				
+79.20 Δ →	14.0	13.4	12.2	13.3	10.4	8.9			
	16	8	℄	5	9	14			
+73 →	6.7	9.6	10.0	9.2	8.8	7.3			
	14	5	℄	5	12	15			
+64 →	8.7	8.0	9.4	8.4	8.5	7.3	4.5	2.5	
	16	10	5	℄	3	7	9	15	
+57 →	2.9	1.7	7.1	7.2	7.2	7.3	4.6	1.8	
	12	5	5	3	℄	3	6	14	
131+53.60 Beginning →	1.6	1.7	1.7	5.9	5.9	5.9	1.7	1.7	1.2	1.0
	14	4	2.2	2.2	℄	2.2	2.2	3.5	9	14

1499.00 H.I.

H.I. = Approx. Elev. at Flume 11.

First Sheet
(2-Sheets)

50

Flume No 12.
Dulzura Conduit.

Alignment & Cross Sec's.

R.E.W.
3/28/28

Flume Nº 12 — Dulzura Conduit

Alignment

148+68	Conduit	Angle Lt.	147+85.50
	9.40		+65
148+58.60 P.O.T. End Flume		P. O. T.	
	36.80		+58
148+21.80 Δ		Δ 27° 24' Lt.	
			+50
Water Way	36.30		
147+85.50 Δ	Flume Nº 12	Δ 28° 37' Lt.	+41.50
	41.00		+33
147+41.50 Δ		Δ 16° 30' Lt.	
	24.70		+18
147+16.80 P.O.T. Beg. Flume		P. O. T.	147+16.80 Beginni
	16.80		
147+00	Conduit	Angle Rt.	

Second Sheet.

Flume Nº 12.
Dulzura Conduit.

(2-Sheets.)

Second Sheet

Flume No 12 – Dulzura Conduit

Cross Section

	Lt				℄				Rt
148+58.60 End Flume →	12.0	5.5	5.3	5.3	9.2	9.2	9.2	5.2	5.2	0.0
	9	6	4	2.2	2.2	℄	2.2	2.2	4.5	10
+57 →	5.4	13.0	12.3	10.0	9.6		9.3	3.0	0.7	
	20	11	7	3	℄		4	8	11	
+50 →	13.0	18.3	17.3	12.3	11.3	10.4		4.6	0.0	
	19	14	8	4	℄	4		9	11	
+35 →	31.0		28.0	26.8	24.2	16.8		11.2	3.0	
	22		8	3	℄	6		8	11	
+21.80 △ →	36.5		32.8	24.3	18.0	11.4		0.0		
	24		11	7	℄	6		14		
+10 →	39.5	37.4	26.5	20.7	17.8	12.2		11.0	3.0	
	23	11	8	4	℄	4		7	16	
148+00 →			41.7	39.0	18.0	10.1		3.3		
			26	14	℄	7		17		

1500.00 H.I.

H.I. = Approx. Elev. at Flume 12.

H.I. = Approx. Elev. at Flume 12.

147+00 ℄ X Angle Rt.

Cross Section 1st Sheet

53

	Lt			℄		Rt		
0 △ →	45.2 30	39.3 12	21.8 ℄		18.5 3	12.8 9	9.6 12	Very
→	35.4 16	27.2 4	24.3 ℄		21.6 5	19.5 8	12.5 8	9.0 14
→	33.5 20	20.2 6	20.1 ℄		17.1 3	13.6 6	9.6 6	5.8 10	0.0 11
→	30.4 20	22.0 7	21.0 ℄		19.4 4	5.8 6	0.0 7.5	
0 △ →	29.6 20	24.1 10	14.1 5	12.4 ℄	12.5 5	9.6 8	5.4 9	0.0 10
→	24.1 13	18.2 5	15.2 ℄		14.6 3	11.2 5	6.3 12	0.0 16
→	9.5 11	9.7 3	9.5 ℄		9.0 3	8.5 5	3.4 5	0.0 8
80 →	9.0 11	5.2 8	3.1 4	5.1 2.2	9.0 2.2	9.0 ℄	9.0 2.2	5.1 2.2	5.0 4	0.0 7

nning

1500.00 H.I.

H.I. = Approx. Elev. at Flume 12.

#12½ Flame

Gottschling -
7/31/28

2

18-4

#12½ Flume
Relocation
X-Section

4.07 485.90 1481.88 B.M.

+89 46 P.I. Δ = 6°10 L+

+70 46 P.O.T

+50 46

+31 46 Δ = 8°00 R+

+21 46 Δ = 8°00 R+

+11 46 Δ = 8°00 R+

307+01 46 Δ = 8°00 R+

306+85 no importance

306+82 46 Headwall

L ℄ Rt

H1. 14+85.90

13

19.2 6.0 | 17.9 4.0 | 12.8 | 12.8 0.9 | 10.2 4.0

25.0 5.0 2' | 24.0 2.0 | 22.7 | 19.1 2.4 | 17.8 2.4 | 16.7 4.0

loose material

24.0 3.6 | 22.1 | 19.9 4.0

indefinite depth loose material

21.2 6.9 2' | 20.9 4.0 | 20.0 | 18.6 1.9 | 16.7 4.0 | 16.7 4.6 ℄ Footing ↑ Blk | 10.0 4.6

20.4 6.4 | 19.7 4.5 | 19.1 | 18.8 0.9 | 16.2 5.2

2' loose soil

17.7 6.0 | 18.0 4.0 | 20.0 2.0 | 20.0 | 17.4 1.0 | 16.4 3.2 | 9.6 5.4

3' loose material

306+85 / 16.45

307+01.46 / 18.50

14.2 6.0 | 15.8 4.0 | 17.9 2.0 | 15.2 | 15.1 3.4 | 10.6 4.0 | 6.1 6.0 | 306+82.96

loose granite 2.0' to solid

4.2 2.35 3.65 3.45 | 7.9 2.35 7.9 1.8 | 7.9 7.9 | 7.9 2.3 7.9 1.8 | 4.2 2.35 3.90 3.45

#12½ Flume Relocation
X-Section

+11⁹⁶ downstream x end of Flume

5
9

+08⁶⁸

308+02⁴⁶ P.I. x Δ = 6°10' +

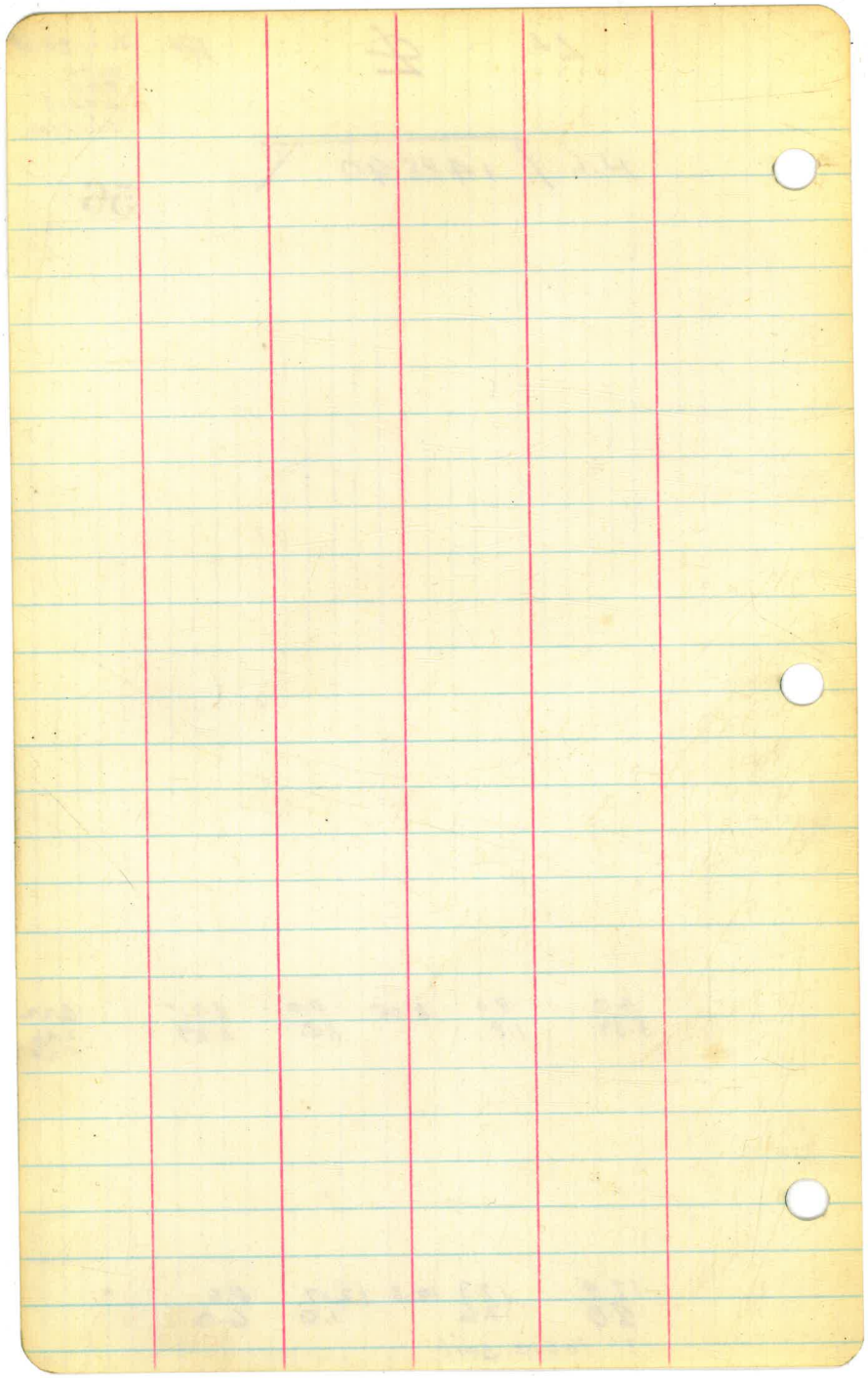
Lt ℄ Rt July 30-28
Watts
Pool
Leach
Simpson

H.I. / 148590

56

4.0 8.0 8.0 8.0 3.9 8.22
3.37 1.8 1.8 3.37 2.46
8.68

17.4 17.3 14.3 12.7 8.6
6.0 2.6 1.6 6.0
3' loose soil



Dulzura Conduit

Flume No 13"A"

Alignment & Cross Sec's.

R.E.W.
4/16/28.

Flume No 13"A" — Dirzura Conduit

(Orig. No 13 Replaced by Tunnel #5 1/4)

305+7.5 — Angle Lt.

Conduit

12.10

305+62.90 End Flume — Δ 30° 40' Lt

Flume No 13"A"

45.90

305+17.2 Beginning Flume — P.O.T.

Conduit

37.0

304+80 — Angle Lt.

Cross Sec's

	Lt				℄			Rt		
305+62.90 End →	12.2	8.6	9.1	5.1	5.1	9.7	9.7	9.7	5.1	5.1	0.0
	14	8	4	4	2.2	2.2	℄	2.2	2.2	5	12
+55 →	10.3	8.0	7.6	10.3	10.3		14.4	9.7	0.0		
	13	10	5	3	℄		3	5	11		
+50 →	8.0	6.1	10.8	11.6	11.4		11.3	10.8	0.0		
	14	10	6	3	℄		3	5	10		
+33 →	16.3	15.0	15.8	11.7	10.4		9.2	0.0			
	15	11	6	℄	3		6	8.5			
+20 →	23.6	20.8	18.2	11.7	10.7		9.8	0.0			
	18	13	10	3	℄		5	7.5			
305+17.2 Beginning →	13.3	12.8	5.1	5.1	9.2	9.2	9.2	5.1	5.1	0.0	
	8	6	4.5	2.2	2.2	℄	2.2	2.2	4.5	7.5	

+5.28 1487.33 H.I.

1482.05 T.P.

Dulzura Conduit

Flume No 14 "A"

Alignment & Cross Sec's.

REW

4/16/28

Flume No 14 "A" – Dulzura Conduit

(Orig. No 14 Replaced by Tunnel #5 1/4)

308+25	Conduit	15.20	Angle Lt.
308+09.80 △ End of Flume			△ 12° 10' Lt.
	Flume No 14 "A"	22.20	
307+17.60 △			△ 30° 15' Rt.
		32.60	
306+85℄ Beginning Flume			P.O.T.
	Conduit	60.0	
306+25			Angle Lt.

Cross Sec's

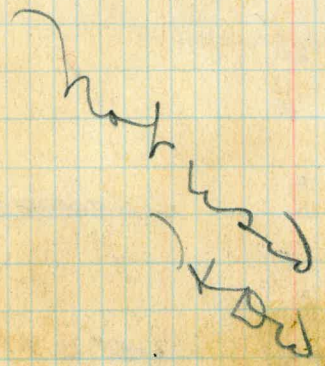
	Lt			℄			Rt		
308+09.80 End	8.0	5.7	5.7	9.8	9.8	9.8	5.7	5.7	5.2	0.0
	12	4	2.2	2.2	℄	2.2	2.2	4	7	10
+06			19.0	19.0	16.5	14.7	6.0	5.2		
			18	9	℄	4	8	10		
308+00			26.8	21.5	16.4	13.2	12.0	2.4		
			13	11	℄	5	6	12		
+94	26.2	21.3	20.6	16.2	14.0	11.2	2.6			
	13	10	6	℄	3	7	11			
+70	29.5	27.3	25.3	23.6	16.8	5.0				
	16	12	5	℄	8	14.5				
+50		26.2	25.3	24.0	22.1	18.2	5.0			
		16	8	℄	5	12	14.5			
+30			26.0	22.8	21.5	18.8	5.0			
			15	6	℄	5	14			
+17.60 △	22.8	20.3	20.3	20.7	20.0	11.2	8.1	5.5		
	16	12	5	℄	5	9	13	15		
307+00				14.2	16.0	15.1	5.5	0.0		
				13	℄	3	8	15		
306+85℄ Beginning	9.5	7.3	5.5	5.7	9.7	9.7	9.7	5.7	5.2	0.0
	14	10	4	2.2	2.2	℄	2.2	2.2	5	8.5

+5.28 1487.33

1482.05 T.P.

Revised Location
#15 Flume
Dulzura Conduit

P.O.G.
4/14/28



Revised alignment Flume #3

375+26.65 P.I. — ~~Δ 7°30 Rt~~

375+06.65 P.I. — Δ 10° Rt

374+86.65 P.O.T

~~374+66.65 P.I.~~ — ~~Δ 70°30 Lt~~

374+58.65 P.O.T

374+30.65 P.I. — Δ = 32° 27-30 Lt

374+10.65 P.O.T

373+82.65 P.O.T

373+62.65 P.O.T

~~373+64.65 E.C.~~ ~~35°54~~

26-57-45

17-58-30

8°59-15

373+28.39 P.C. 0°00

373+15.61

20

20

20

20

20

20

18.13

55°

Δ ~~71°54~~ Lt

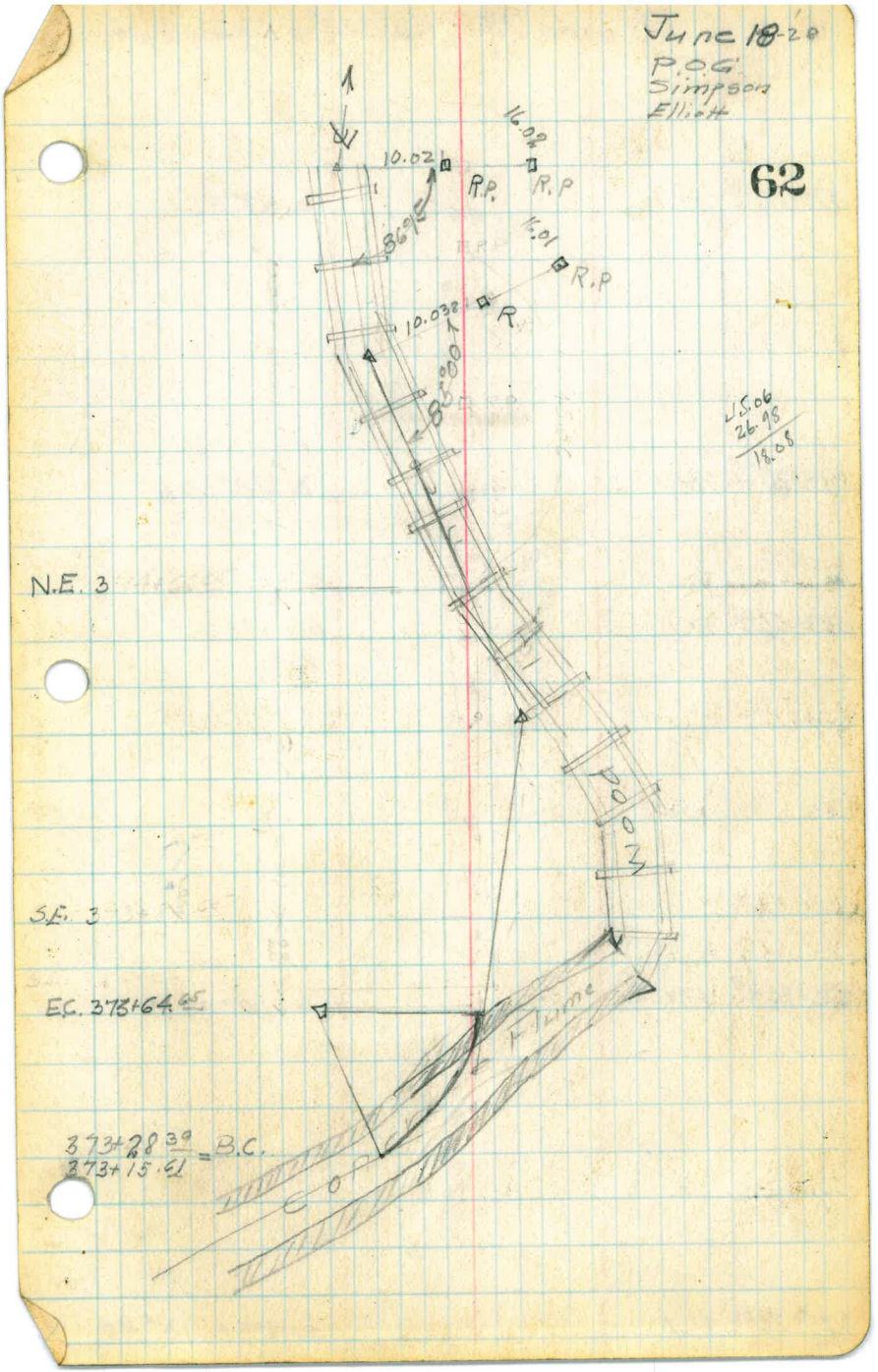
R = 25'

~~ST 18.13~~

~~LA 36.12~~

June 18-20
P.O.G.
Simpson
Elliott

62



15.06
26.98
18.08

373+28.39 = B.C.
373+15.61

Flume #5 Revised alignment

378+26 C/L P.I. — Δ = 12° Rt

40.00'

377+86 C/L P.I. — Δ = 20°30 Lt

20.00

377+66 C/L P.I. — Δ = 7°30 Lt

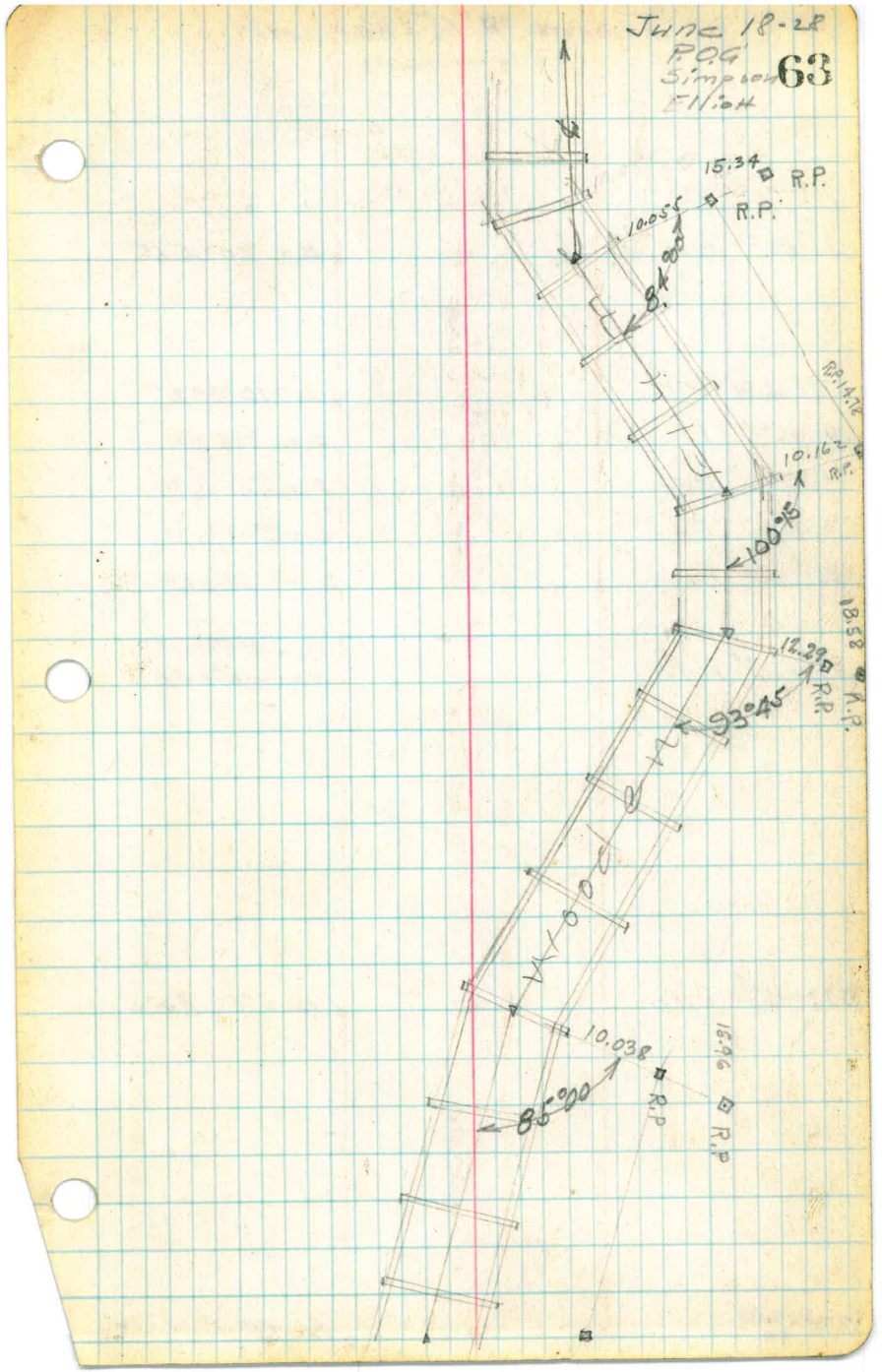
120.00'

376+46 C/L P.I. — Δ = 10°00 Rt

140.00'

375+26 C/L P.I. — Δ = 7°30 10" Rt

JUNE 18-28
P.O.G.
Simpson
Field



Flume #15 Revised alignment

381+86 C&S P.I. — Δ = 20°10 Lt

20.00'

381+66 C&S P.I. — Δ = 10°00 Lt

384+46 C&S P.I. — Δ = 1°26 Rt

+26 C&S P.I. — Δ = 2°51½ Rt

+06 C&S P.I. — Δ = 2°51½ Lt

380+86 C&S P.I. — Δ = 8°33½ Lt

20 20 20 20 20 20 20 20 20

380+66 C&S P.I. — Δ = 4°52½ Lt ~~Δ = 12°00 Lt~~

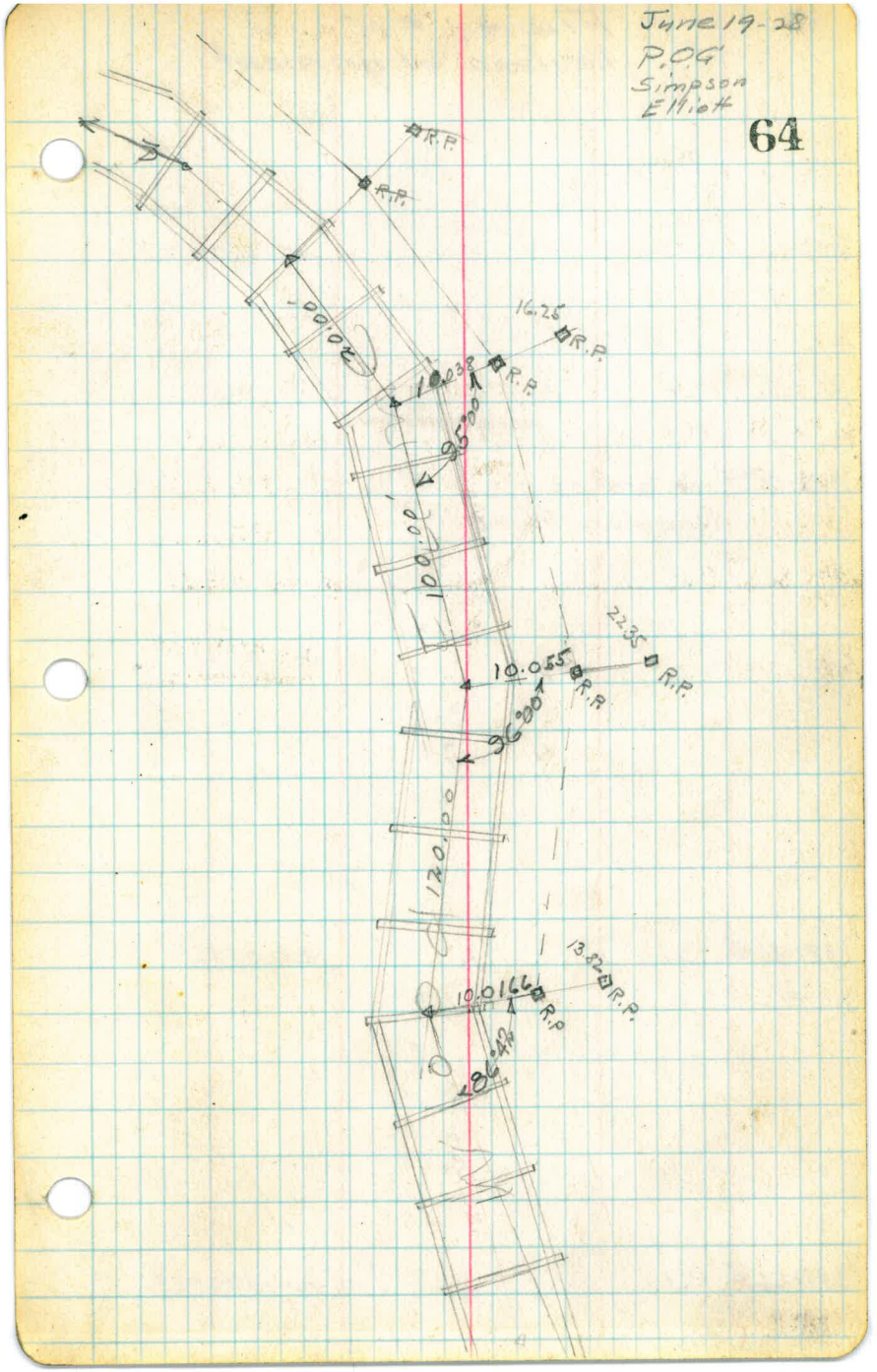
170.00'

379+46 C&S P.I. — Δ 6°36 Rt

120.00'

378+26 C&S — Δ = 12° Rt

June 19-28
P.O.G
Simpson
Elliot



Flume #15
Revised alignment

382+05±2 to end of Wooden Flume

184.77'

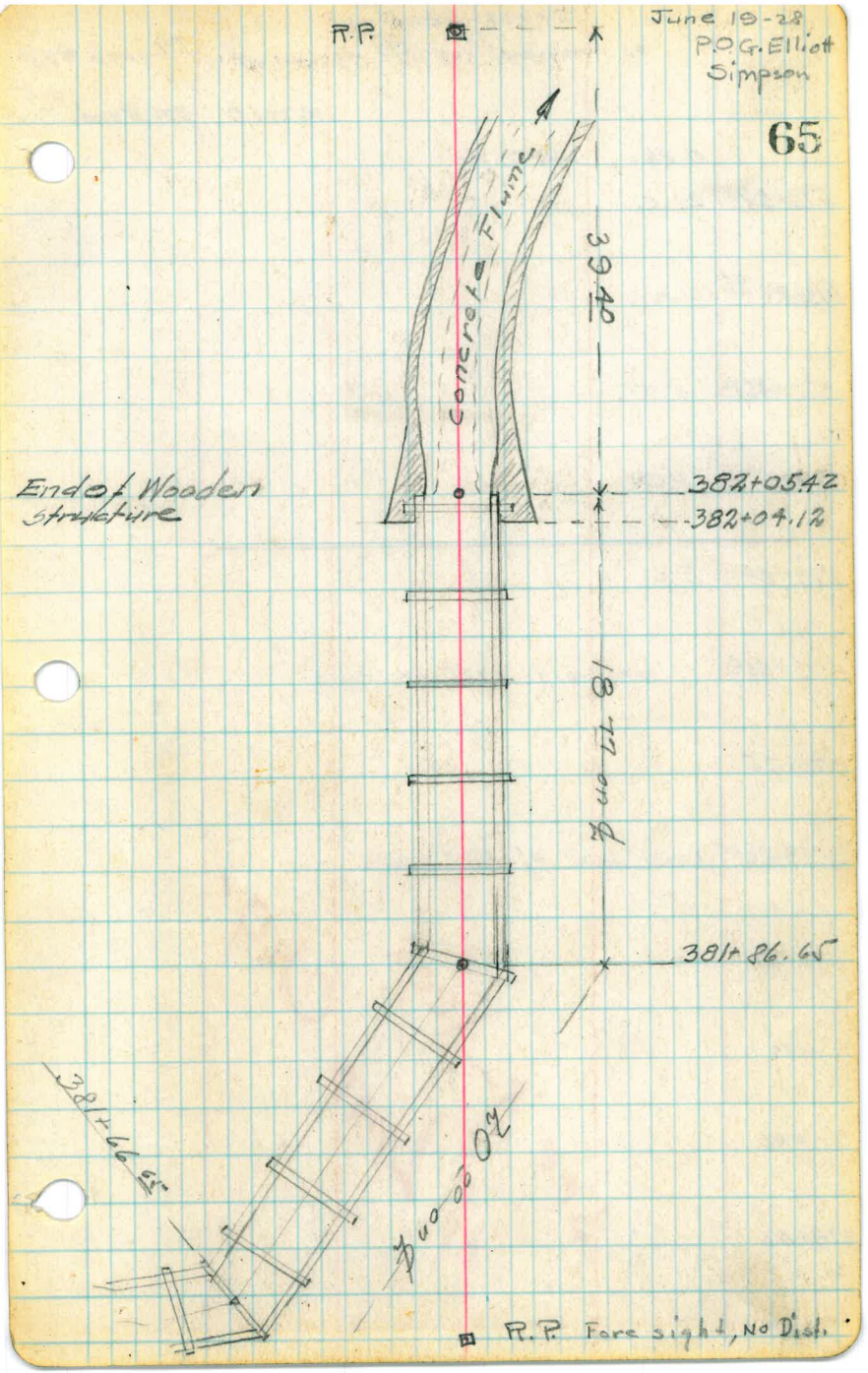
381+86.45 P.I. Δ=20°10'±

80.00'

381+66.45 P.I. Δ=10°00'±

June 19-28
P.O.G. Elliott
Simpson

65



Cross-section
of Preceding Alignment Flume #15

1479.50 B.M. End #15 Flume

0.86. 1480.36 ✓

373+28.39 B.C.

373+37.45 P.O.C

373+46.72 P.O.C

373+55.78 P.O.C

373+64.85 E.C.

373+66.85 on soil 18" to Rock

373+75

373+86.45 East end of 80' span

+88.2

+90.

+96

374+03

+09

See X-Secs of Line Chg'

Rt June 20-28
PAG
Leach
Simpson
Elliott

H.I. 1480-36

76.9 77.7 77.6 77.7 76.9
3.5 7.7 7.8 7.7 3.5
3.3 1.7 7.7 3.3

76.9 72.7 77.61 72.7 76.9
3.5 7.7 7.75 7.7 3.5
3.3 1.9 1.4 3.35

76.9 72.7 72.7 72.7 76.9
3.5 7.7 7.7 7.7 3.5
1.95 0.2 3.2 4.6

Game 77.9 77.7 78.4 78.6 78.1 76.9 72.7 72.7 76.9
Slope 7.5 3.2 2.0 1.8 2.3 3.5 7.7 7.7 3.5
20.8 13.8 9.4 3.0 3.5 5.4 11.0 13.2

70.5 77.7 78.0 80.2 77.3 76.9
9.9 3.2 2.4 0.0 3.1 3.5
21.8 7.6 6.7 9.0 13.4

70.5 77.9 76.6 77.7 77.7 78.5 76.9 76.9
9.9 7.5 3.9 3.2 3.2 1.9 3.5 3.5
17.4 12.1 6.7 3.0 5.0 8.7 16.3

77.0 71.9 77.1
8.7 8.5 8.0
6.0 6.0

56.7 57.1 58.7 59.7 59.9 60.0 60.8 60.8 59.8 58.8 59.1 64.1 62.6
25.7 23.7 28.0 21.7 21.2 20.5 20.4 19.6 19.6 20.6 21.6 21.0 19.3 17.8
12.8 10.7 7.0 5.8 2.4 2.2 5.4 6.7 7.2 9.0 11.7 12.5 17.5

60.5
19.9

53.7
26.7

54.9
25.5

57.1
28.0

53.8
26.6

Cross-section of Revised Location Flume #5

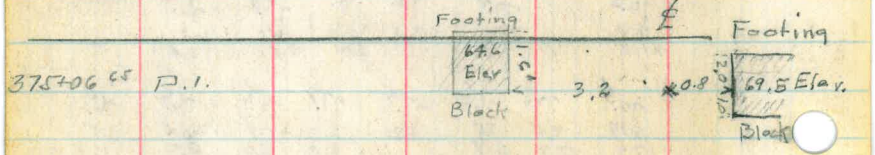
374+29 1480.36

+39

+51

374+66.65 P.I. W. End 80' Span

374+86.65 P.O.T



375+06.65 P.I.

375+26.65 P.I. on soil 12" to Rock

375+46.65 P.O.T

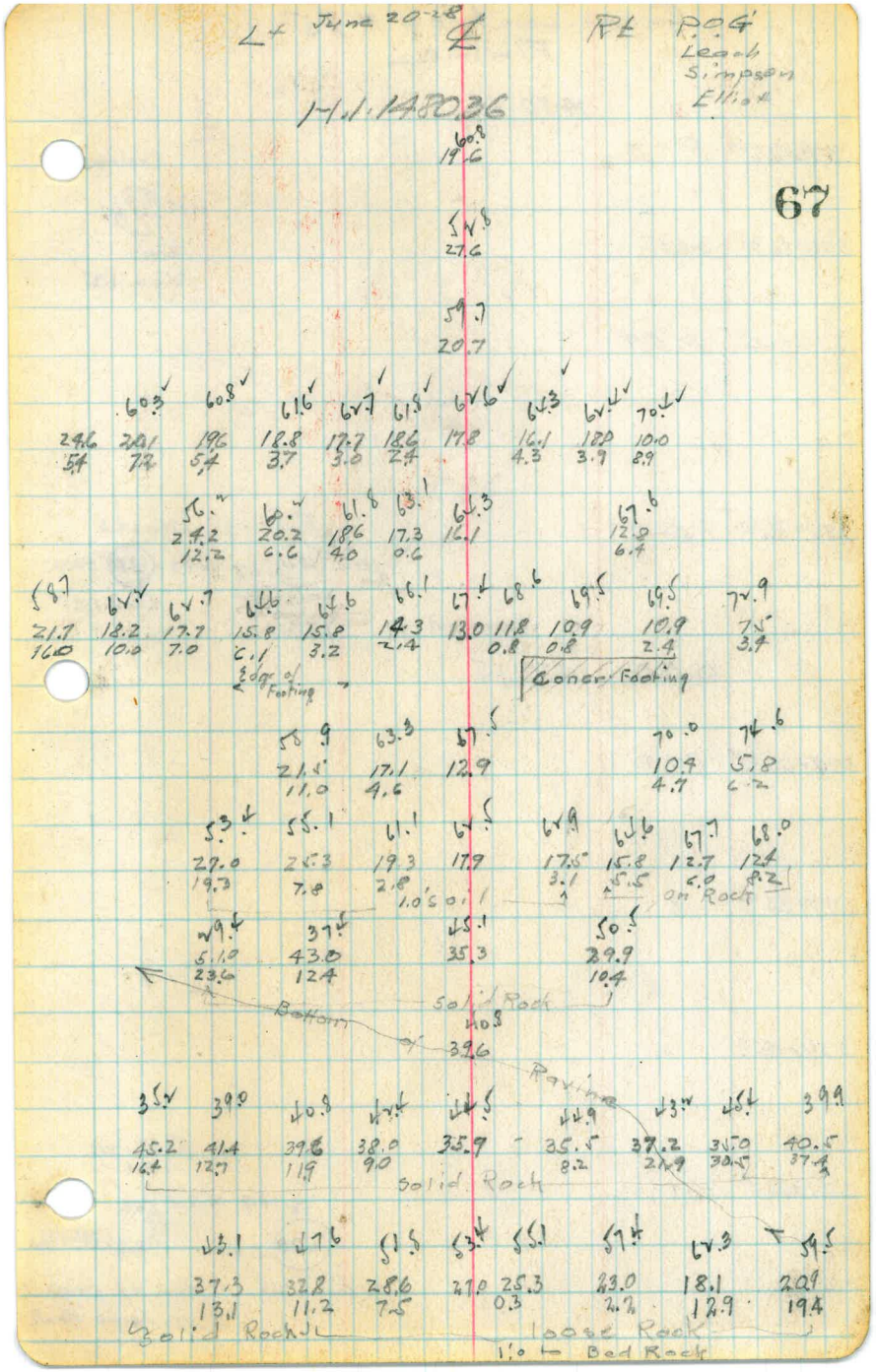
375+66.65 "

375+72.5

375+86.65

376+02.6 6.65

See X Sec of Line Ch 1/2


June 20-28
PL
P.O.C.
Leach
S. Simpson
Elliott
1-1.1:1480326
Edge of Footing
Concr. Footing
on Rock
Solid Rock
Bottom of Ravine
Solid Rock
Loose Rock
Bed Rock
Solid Rock

Cross-section #15

Flume

1480.36

℄

376+26 cs P.O.T.

Footing

1.35 (Elev 69.3)

376+46 cs P.I.

Block

Diam 1.25'

376+66 cs P.O.T

376+86 cs P.O.T

Footing Blocks

Elev. (69.25) x 1.7' x 3.3' x (43.35) Elev.

diam 1.25' diam 1.25'

4.11 1476.26

0.90 1477.15

377+06 cs P.O.T

377+26 cs "

377+46 cs "

377+66 cs P.I.

Footing

Block

3.8 x 2.8' 0.6

1.0' 67.45 Elev

(68.8) Elev.

dim 1.25 dep of cement on large Rock

L+ C RL 5-20-29
P.O.
Leach
Simpson
Ellis #

H.L. 1480.36

56.1 60.5 66.6 68.7 70.4 71.3
24.3 19.9 13.8 12.2 10.0 9.1
11.8 4.8 4.4 5.7 8.7
soil 0.6' to Rock — solid Rock

57.8 66.6 67.6 68.4 69.2 69.4 69.8 74.7
22.6 13.8 12.8 12.0 11.2 11.2 10.6 8.2
7.6 4.1 1.95 2.15 3.4 4.9 6.1
solid Rock — soil

58.6 60.6 66.4 67.9 69.4 70.3 74.6
21.8 19.7 14.0 12.5 11.0 10.1 5.8
8.5 6.5 3.8 3.3 4.4 4.4
soil — solid Rock

56.7 60.8 63.1 65.7 70.1
23.7 19.8 17.3 14.7 10.3
11.1 4.9 3.3 5.8
soil 1.0' to Rock — Rock

H.L. 1477.15

60.3 67.1 67.8 65.3 68.3 69.9 73.3
16.9 15.1 14.4 12.9 8.9 7.3 3.9
7.4 6.5 5.8 3.8 4.4 4.3
Rock — soil 1.0' Rock

58.9 61.5 63.4 65.6 68.8
18.3 15.7 13.8 11.6 8.4
8.0 3.5 3.0 5.0
0.6' to Rock

59.0 60.7 64.7 68.4 70.0
18.2 16.7 12.5 8.8 5.2
7.3 4.0 5.0 7.3
0.6' to Rock

56.1 60.3 63.7 63.9 67.5 67.5 69.6
21.1 16.9 14.0 13.3 9.7 9.7 7.6
9.2 3.8 1.2 2.8 3.4 6.9
soil — Rock
1.3' to Rock

Cross-section of Flume "N"
Revised location

1477.15 ℄

377+86 $\frac{65}{}$ P.I.

378+06 $\frac{65}{}$ P.O.T

Footing. Blocks
dim. 1.25'

Elev. (67.35) 3.2 × 3.8 (6.9.40) Elev.

378+26 $\frac{65}{}$ P.I.

378+46 $\frac{65}{}$ P.O.T

378+66 $\frac{65}{}$ "

378+86 $\frac{65}{}$ "

379+06 $\frac{65}{}$ "

379+26 $\frac{65}{}$

379+46 $\frac{65}{}$

Lt ℄ Rt

6-20-28
P.O.G.
Leach
Simpson
Ell. 0 ft

69

F.S. 1477.5'

61.7	64.2	67.1	69.0	71.7
15.5	13.0	10.1	8.2	5.5
7.8	4.3		3.3	6.6

Soil 1.5' to Rock

63.4	65.4	67.4	69.3	70.4	71.8
13.8	11.8	9.8	7.9	6.8	5.4
8.0	4.5	3.2		4.5	4.9

Soil 2.0' to Rock

61.0	66.6	68.4	70.6	72.3
13.2	10.6	8.8	6.6	4.9
8.4	3.3		2.9	6.7

Soil 2.0' to Rock

55.4	60.5	65.7	67.9	70.6
21.8	16.7	11.5	9.3	6.6
11.9	6.7		3.0	6.6

Soil 2.5' Rock

51.4	55.4	60.0	66.3	71.3
25.8	22.0	17.2	10.9	5.9
9.9	3.8		6.0	9.2

Soil 2.0' to Rock

46.7	50.4	54.4	57.8	60.0	64.0
30.5	26.8	22.8	19.4	17.2	13.2
11.0	9.4	4.5		3.7	8.2

Soil 2.0' to Rock

54.2	58.4	59.4	64.9	64.4	67.4
23.0	19.0	18.0	14.3	13.0	9.8
8.0	4.3	1.2		2.9	6.3

Soil 2.0' to Rock

Flume #15 Revised Location

℄

1477.15

379+26 65 P.O.T.

1.0 Elev. (60.05) ×42 ×3.6 (63.6) Elev. corner Footing Block

9.73 1469.42

6.79 1476.21

379+46 65 P.I.

379+66 65 P.O.T

379+86 65 "

380+06 65 "

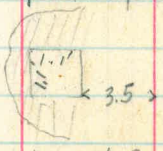
380+26 65 "

380+46 65 "

380+66 65 P.I

Footing Block

Elev 594



Cap of Cement on Solid Rock

L+ ℄ R+

H.L. 1477.15

54.4 60.1 64.5 66.4 68.3
22.8 17.1 19.7 10.8 8.9
11.8 9.5 3.6 6.1
soil 2.0' to Rock

H.L. 1476.21

68.4 68.8 70.1 70.3 73.7
7.8 7.4 6.1 5.9 2.5
6.7 2.5 3.7 7.5
soil 2.0 to Rock

68.1 68.6 68.9 69.3 71.0 73.7
8.1 7.6 7.3 6.9 5.2 2.5
6.5 3.2 2.7 5.9 7.7
soil 2.0 to Rock

64.6 64.0 65.7 67.3 69.6 70.8
13.6 12.2 10.5 8.9 6.6 5.4
9.3 4.0 4.1 5.8 8.9
soil 2.5' to Rock

56.8 61.5 64.2 65.7 67.4 70.0
19.4 14.7 12.0 10.5 8.8 6.2
9.6 3.7 3.0 5.9 7.2
soil 2.0' to Rock

56.7 61.0 63.2 65.0 66.2 69.2
19.5 15.2 13.0 11.2 8.0 7.0
11.2 2.8 3.9 6.0 8.7
soil 2.0' to Rock

51.3 54.2 56 56.6 57.2 59.7 64.3 67.2 67.8 70.7
24.9 22.0 19.0 19.6 19.0 16.5 11.9 9.0 8.4 5.5
7.9 6.7 4.0 3.2 2.5 5.7 7.3 8.6 10.7
soil [Rock] soil 1.5' to Rock

51.9 53.8 57.0 59.2 61.4 63.4 67.2 68.1 71.3
24.3 22.4 19.2 16.8 14.8 12.8 9.0 8.1 4.9
9.5 7.4 5.3 3.5 2.5 3.2 5.5 5.8

Cross-Section #17 Flume
Revised location
1476.21

380+86 CL P.O.T

381+06 CL "

381+26 CL "

381+46 CL "

381+53 CL " to show overhanging Rock

381+66 CL P.I.

381+86 CL

+96 CL see next page

"

"

382+05.42 End of Flume

382+06 CL

Footing

66.0 × 2.8' × 2.7'

diam 1.25

Block 2.1'

dia of cement on Rock

4.79

O.V.T. for check

1471.42

BM # West end

Lt 1476+21 Rt

June 21-28
R.G.
Leach
Simpson
Elliott

71

	63.1	64.4	65.3	65.3	68.3	68.9	74.5
vert drop	13.1	12.9	10.9	10.9	7.9	7.2	3.7
35'	10.5	6.55	3.0	2.0	3.1	3.3	4.9

solid Rock

	66.4	66.4	66.7	68.5	70.0	73.5
vertical	9.8	9.8	9.5	7.7	6.2	2.7
drop 50'	3.0	2.5		3.1	5.5	6.6

solid Rock

	66.3	67.5	68.4	68.6	69.1	75.0	75.8
vertical	9.3	8.7	8.0	7.4	7.1	1.2	0.4
drop 50'	3.7	2.3		2.5	3.7	3.4	5.0

solid Rock

	67.8	68.6	68.9	69.1	69.3	74.5	74.7
vertical	8.4	7.6	7.3	7.1	6.9	1.7	1.5
drop to sealevel	5.3	2.3		2.4	3.9	4.3	6.1

solid Rock Footing

	67.8	68.6	69.1	69.3	74.5	77.0
vertical	8.4	7.6	7.1	6.9	2.0	+0.8
drop 40'	4.8	2.6	2.5	3.8	3.4	3.6

solid Rock

	57.3	58.5	63.4	65.7	67.9	68.7	68.5	75.1
vertical	18.9	17.7	12.8	10.5	8.3	8.0	7.6	1.1
drop 15'	8.0	5.0	3.0	2.4	1.0	2.5	4.4	4.9

solid Rock Block

	63.8	65.9	65.1	66.0	68.5	68.5	68.9	74.0
	12.4	10.3	11.1	10.2	7.7	7.4	7.4	0.2
	10.2	7.7	5.9	3.4		2.7	4.8	6.7

Solid Rock

3.4	40 +/-	75.46	75.46	75.46	71.46	71.4	71.46	75.4	75.4	77.4
	2.6	0.75	0.75	0.75	4.75	4.8	4.75	0.8	0.8	+1.0
9.3	6.2	5.4	4.0	2.3	2.1		2.1	2.3	4.25	4.25

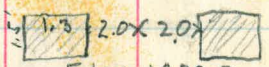
	75.5	75.5	71.4	71.4	71.4	75.5	75.5
	0.7	0.7	4.8	4.8	4.8	0.7	0.7
	3.9	2.4	2.2		2.05	2.35	3.9

Revised location
Flume #5
1476.21

℄

381+96.00 P.O.T

382+03.00 P.O.T



Elev. 1470.0
Footing Blocks

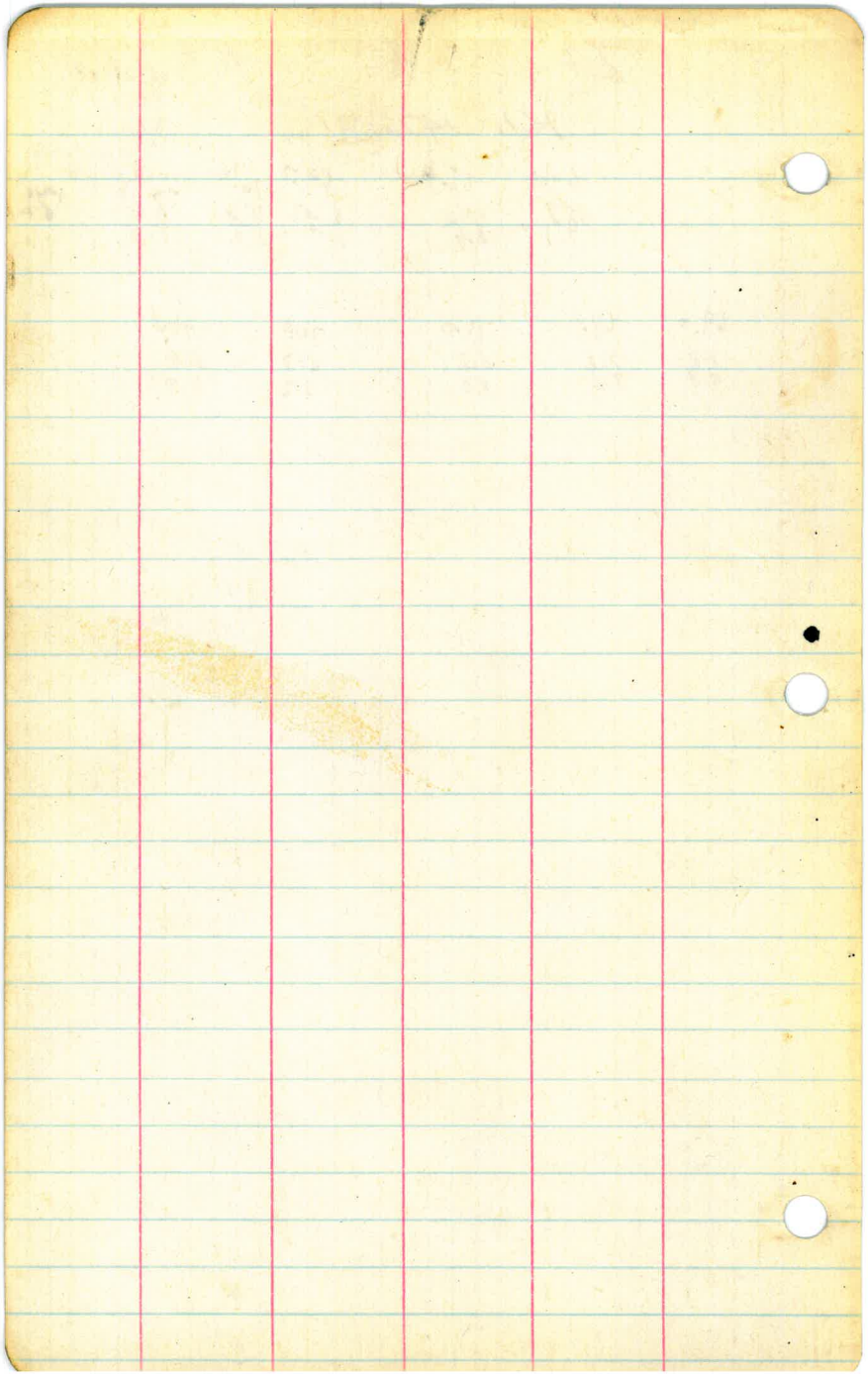
L ℄ ℄ R ℄

5-21-28
P.O.G
Leach
Simpson
Elliott

H.I. 1476-21

64.1	65.9	69.7	70.8	71.8		
12.1	10.3	6.5	5.4	3.4		
7.1	2.9	3.5	5.2	2.3		

69.0	69.0	70.0	70P	70.4
7.2	7.2	6.2	6.2	5.8
9.8	3.2	3.0	3.2	3.8

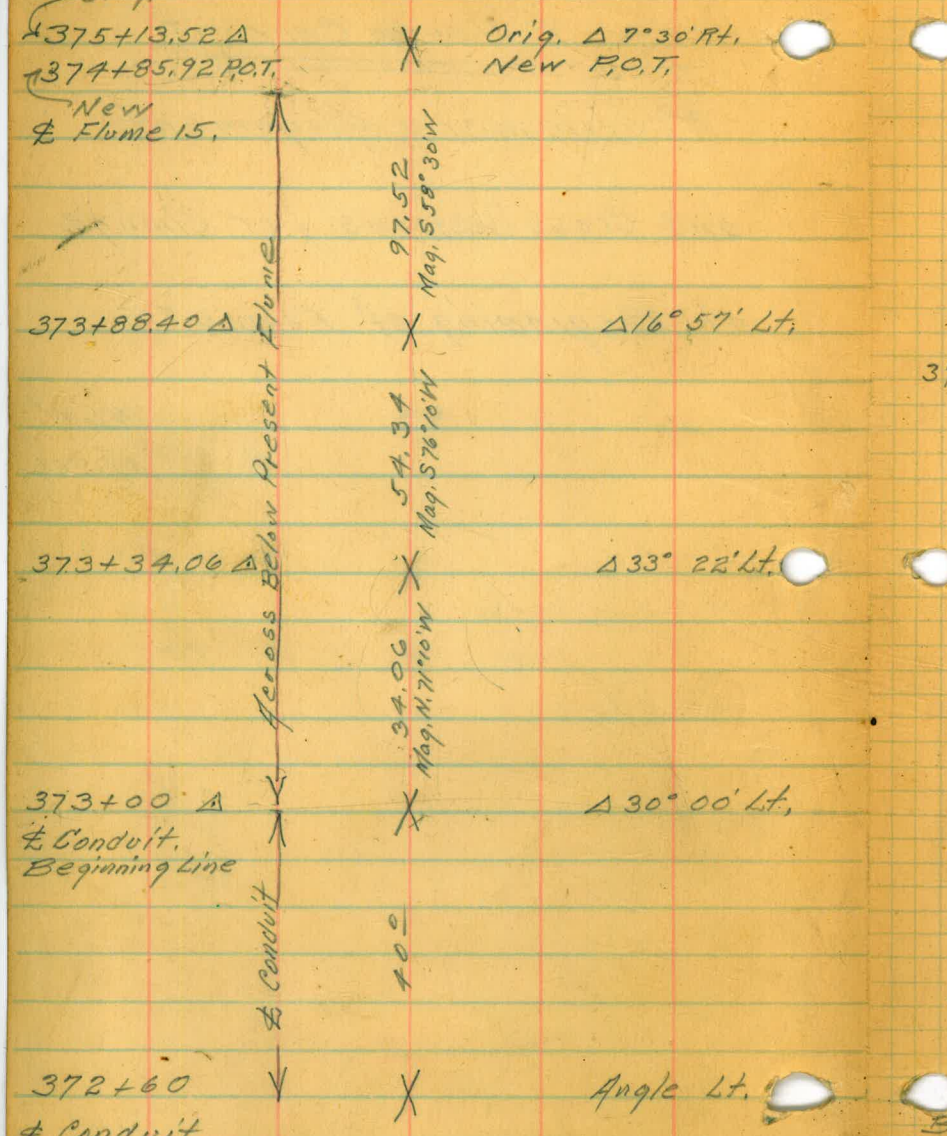


Flume No 15.
Dalzura Conduit

Preliminary Alignment
and Cross Sections for Change
at Beginning of Flume #15.

P.E.W.
4/6/28

Alignment for Change at Beginning of Flume No 15 – Dulzura Conduit.



Lt. Cross Sections Rt

74

375+13.52 Δ
374+85.92 P.O.T.

66.3 4.0 ℄

+75		13.7 16	8.4 8	9.4 65.9 ℄	0.2 5	+3.4 8	+8.2 15	
+52		24.2 15	18.8 10	11.8 58.5 ℄	10.4 3	5.6 11		
+25		27.5 42.8 32	34.0 36.3 12	49.9 20.4 ℄	57.1 12.7 3	61.3 9.0 14	63.9 6.4 20	
+10	40.3 36	37.2 26	36.5 13	20.5 6	52.3 18.0 ℄	14.5 11	12.2 16	10.0 19
374+00	36.3 32	30.6 24	28.0 14	19.2 7	58.2 12.1 ℄	4.5 13	4.5 24	
+88.40 Δ	29.5 24	26.5 16	19.0 8	58.3 12.0 ℄	5.2 12	4.0 20	3.7 25	
+76		30.0 21	24.3 7	50.9 19.4 ℄	15.5 11	9.8 16	Edge Boulder	
+68	24.8 22	22.0 12	22.0 6	51.1 19.2 ℄	10.6 14	8.0 20	Lower Edge Boulder	

+2.53 1470.26 H.I.

-12.60 1467.73 T.P.

+54		20.1 23	16.8 11	65.4 14.9 ℄	14.0 6	18.3 13	18.5 18	14.2 23
+43		16.6 23	12.4 11	73.1 7.2 ℄	3.4 10	3.4 2.5	Edge Conduit	
+34.06 Δ		13.3 18	3.7 4	77.7 2.6 ℄	1.8 2	1.8 8	3.4 13	Edge Conduit
+15		6.4 18	1.8 9	79.8 0.5 ℄	3.5 4.5	Edge Conduit		
373+00 Δ Beginning	14.9 3.4 17	15.8 14.1 1.4 13	14.1 1.2 9	14.9 3.4 4.5	14.7 3.6 3.5	72.5 7.8 1.7 ℄	7.8 1.7 Conduit.	14.3 3.5 3.2	14.7 3.6 5

+0.83 1480.33 H.I.

1479.50 BM.

BM on Rock at East end Flume No 15.

449 + 96
446 + 71
3 25

75

Flume #15
Alignment Notes
2 pages

(2) Alignment Flume No. 15 – Dulzura Conduit.

(2 sheets)

Angle in Conduit.			
382+16.72 △			△ 15° 00' Rt.
	11.30		
382+05.42 P.O.T. End Flume #15			
	18.66		
381+86.76 △			△ 18° 40' Lt.
	17.37		
381+69.39 △			△ 12° 20' Lt.
	108.64		
380+60.75			△ 12° 20' Lt.
	103.75		
379+57.00 △			△ 5° 30' Rt.
	120.27		
378+36.73 △			△ 14° 15' Rt.
	56.93		
377+79.80 △			△ 28° 40' Lt.
	142.82		
376+36.98 △			△ 10° 55' Rt.
	123.46		
375+13.52 △			△ 7° 30' Rt.

① Alignment Flume No. 15 – Dulzura Conduit

(2 sheets)

374+98.00 △	15.52		△ 8° 30' Rt.
374+65.92 △	32.08		△ 10° 10' Rt.
374+51.28 △	14.64		△ 2° 20' Rt.
374+21.23 △	30.05		△ 10° 40' Lt.
374+06.51 △	14.72		△ 16° 20' Lt.
373+91.83 △	14.68		△ 11° 00' Lt.
373+77.13 △	14.70		△ 31° 00' Lt.
373+51.00 Ahead 373+63.00 Back Line Beginning Flume No. 15	26.13		△ 17° 40' Lt.
373+50± △	13.±		Angle Lt. in Conduit.

Jan. 4 – '28
Ward – Inst.
Duermit – Chn.
Mc Bain – "

Cross Sections of Flume
№ 15 — Dulzura Conduit.

Every Section taken at Trestle
Bent of present Flume.

<7 sheets>

Cross Sec's for Flume No 15 on Dulzura Conduit.

B.M. on Boulder 8' Lt. 373+50 1479.50 B.M.

1.29 1480.79

1480.79 H.I.

373+63 ℄
373+51 ℄
Beg. Flume #15

Each Section at Trestle Bent on Present Flume.

+62.5

+77.13 △

+71.83 △

374+06.51 △

+21.23 △

+28 ℄

+36 ℄

+43.5

+51.28 △

+58.5

+65.92 △

+73.5

Flume Profile / Ground Profile

60°	76.6	76.6	76.6	72.6	72.62	72.12	72.6	76.6	76.6	80.4
	4.6	4.2	4.2	8.2	8.17	8.17	8.2	4.2	4.2	0.4
	8	4	3	2.5	℄	0	2.5	3	4	7
70°		71.5	71.0	72.5		70.8	70.6	76.4		
		8.3	9.8	8.3		10.0	10.2	4.4		
		8	3	℄		0	5	8		
			67.1	72.3		68.8	69.3	75.7	76.1	
Face Boulder			13.7	8.5		12.0	11.5	5.1	4.7	
= Down 10'-Up 20'			4	℄		0	7	11	18	
and 20' Thick										
		65.3	65.8	72.4		67.9	68.1			
Face Boulder		15.5	15.0	8.4		12.9	12.7			
		9	6	℄		0	16			
60°		65.2	66.3	72.3		67.2	67.1	69.6		
		15.6	14.5	8.5		13.6	13.7	11.2		
		22	12	℄		0	10	15		
60°	66.3	65.8	67.4	72.3		69.0	71.6		30° ↗	
	15.5	15.0	13.4	8.5		11.8	9.2			
	20	7	6	℄		0	10			
60°	65.6	65.6	68.2	72.3		68.8	70.1	74.0	75.0	
	15.2	15.2	12.6	8.5		12.0	10.7	6.8	5.8	
	18	7	5	℄		0	8	11	17	
80°		65.1	65.2	72.3		67.1	68.8	73.3	68.3	
		15.7	15.6	8.5		13.7	12.0	7.5	12.5	
		14	6	℄		0	6	10	15	
70°			54.5	72.3		63.0	65.3	74.6		
			26.3	8.5		17.8	15.5	6.2	60° ↗	
			17	℄		0	6	15		
70°			57.2	72.3		63.5	67.4	71.5	74.1	
			23.6	8.5		17.3	13.4	8.3	6.7	60° ↗
			14	℄		0	5	9	13	
80°			58.0	72.2		63.2	64.8	68.8	74.9	Vert. 10' ↑
			21.8	8.6		17.6	16.0	12.0	5.9	
			11	℄		0	4	5	12	
90°			60.1	72.1		62.5	65.8	73.8	Vert. ↑	
			20.7	8.7		17.3	15.0	7.0		
			9	℄		0	5	13		
70°			55.4	72.1		62.2	65.5	69.1	72.5	
			25.4	8.7		18.6	15.3	11.7	8.3	70° ↗
			11	℄		0	6	7	12	

(2) Flume #15 – Dulzura Conduit.

+	H.I.	–	Elev.
	1480.79		
374+82 ℄			
+90 ℄			
+98.00 △			
		4.50	1476.29 T.P.
		2.58	1478.87
375+06 ℄			
+13.52 △			
+21 ℄			
+29 ℄			
+41 ℄			
+50 ℄			
+63 ℄			
+79 ℄			
+93 ℄			
376+08 ℄			

Each Section at Trestle Bent of Flume

Flume Profile — Ground Profile

Flume 1480.79 H.I.

80

10° ↙		55.8	72.2	63.6	66.8	72.8	74.6	10° ↗
		25.0	8.6	17.2	14.0	8.0	6.2	
		10	℄	0	6	11	16	
70° ↙	58.6	61.3	72.1	65.2	72.7	78.8		80° ↗
	22.2	19.5	8.7	15.6	8.1	2.0		
	11	6	℄	0	9	19		
60° ↙	57.8	62.5	72.2	67.2	69.3	74.1	78.4	10° ↗
	23.0	18.3	8.6	13.6	11.5	6.7	2.4	
	14	7	℄	0	6	9	16	

1478.87 H.I.

57.9	60.5	72.2	65.3	69.6	74.5	78.5	
21.0	18.4	6.7	13.6	9.3	4.4	0.4	
13	9	℄	0	4	7	13	
55.7	59.9	61.2	72.1	66.3	70.1	76.9	81.3
23.2	19.0	17.8	6.8	12.6	8.8	2.0	+2.4
13	9	6	℄	0	5	10	16
	54.4	59.9	72.1	65.9	70.4	76.3	80.4
	24.5	19.0	6.8	13.3	8.5	2.6	+1.5
	13	6	℄	0	6	8	15
53.5	58.9	59.5	72.1	65.0	68.7	74.9	80.3
23.4	20.0	19.4	6.8	13.9	10.2	4.0	+1.4
14	9	7	℄	0	4	7	14
55.3	58.9	59.6	72.2	62.4	65.4	71.3	73.4
23.6	20.0	19.3	6.7	16.5	13.5	7.6	5.5
15	9	6	℄	0	5	10	17
49.1	50.2	52.1	72.2	58.1	67.9	76.1	
29.8	28.7	26.8	6.7	20.8	11.0	2.8	
17	10	3	℄	0	7	18	
45° ↙	37.7	44.3	72.0	48.1	51.8	56.4	45° ↗
	41.2	34.6	6.9	30.8	27.1	22.5	
	14	6	℄	0	9	18	
45° ↙	35.9	39.2	72.0	41.9	44.9		60° ↗
	43.0	39.7	6.9	37.0	34.0		
	17	11	℄	0	25		
45° ↙	40.1	50.2	72.1	48.9	53.9	48.9	53.4	10° ↗
	38.8	28.7	6.8	30.0	25.8	30.0	25.5	
	17	7	℄	0	12	28	41	
40.2	43.1	47.9	51.4	72.0	54.9	64.8	64.8	67.2
38.7	35.8	31.0	27.5	6.9	25.0	17.1	14.0	11.7
23	14	11	8	℄	0	8	13	26

③ Flume #15 Dulzura Conduit.

+	H.I. 1478.87	−	Elev.

376+22.5

+36.98 △

+45.0

+52.5

+60.5

+68.5

+77.0

+85.0

+92.5

377+00.5

+08.5

+16.5

+24.0

+32.0

Each Section at Trestle Bent

1478.87 H.I.

Flume profile / Ground profile

45°
54.4 57.0 72.0 65.2 67.5 71.7 73.9
24.5 21.9 6.9 13.7 11.4 7.2 5.0
14 7 ℄ 0 4 13 22

45°
54.5 62.5 71.9 65.9 70.3 75.8 77.9
24.4 16.4 7.0 13.0 8.6 3.1 1.0
11 6 ℄ 0 8 13 21

40°
57.9 66.4 72.0 67.9 69.5 72.4 76.7
21.0 12.5 6.9 11.0 9.4 6.5 2.2
9 5 ℄ 0 5 7 15

40°
55.7 62.3 72.0 66.9 68.8 74.7 77.1 79.9
23.2 16.6 6.9 12.0 10.1 4.2 1.8 +1.0
7 6 ℄ 0 4 8 13 17

40°
54.9 59.4 72.0 66.4 68.9 76.7 81.3
24.0 19.5 6.9 12.5 10.0 2.2 +2.4
12 6 ℄ 0 6 8 14

35°
57.6 67.8 72.0 68.7 69.9 75.2 79.5 82.9
21.3 11.1 6.9 10.2 9.0 3.7 +0.6 +4.0
8 4 ℄ 0 4 5 9 14

55.3 60.7 72.0 66.9 68.2 75.8 79.9 82.5
23.6 18.2 6.9 12.0 10.7 3.1 +1.0 +3.6
14 6 ℄ 0 4 5 8 12

54.6 60.5 71.9 66.3 70.4 75.2 81.3
24.3 18.4 7.0 12.6 8.5 3.7 +2.4
14 6 ℄ 0 6 10 12

56.1 61.4 72.0 65.6 67.4 71.6 76.5 77.4 81.9
22.8 17.5 6.9 13.3 11.5 7.3 2.4 1.5 +3.0
11 7 ℄ 0 3 5 9 12 13

54.7 59.1 63.6 71.9 68.3 69.7 74.0 77.7 79.9
24.2 19.8 15.3 7.0 10.6 9.2 4.9 1.2 +1.0
15 10 4 ℄ 0 3 5 9 14

55.4 59.5 62.7 71.9 67.1 69.9 75.5 80.5 82.0
23.5 19.4 16.2 7.0 11.8 9.0 3.4 +1.6 +3.1
14 8 5 ℄ 0 4 8 12 15

same slope
57.1 61.6 71.9 65.6 67.8 73.2 76.7 81.5
21.8 17.3 7.0 13.3 11.1 5.7 2.2 +2.6
11 5 ℄ 0 4 7 11 15

same
56.9 61.1 71.9 65.6 68.9 73.8 78.5
22.0 17.8 7.0 13.3 10.0 5.1 0.4
11 5 ℄ 0 5 10 15

55.6 59.9 71.9 64.1 65.1 68.4 75.9 79.7
23.3 19.0 7.0 14.8 13.8 10.5 3.0 +0.8
12 6 ℄ 0 3 5 8 14

④ Flume No 15 – Dulzura Conduit

+	H.I.	–	Elev.
	1478.87		
377+40 ℄			
+48 ℄			
+55 ℄			
+64 ℄			
+72 ℄			
377+79.80 △			
+81.5			
+89.5			
+97 ℄			
378+05.5			
+13.5			
+22 ℄			
+30 ℄			

Each Sec. at Trestle Bent

7.63 1471.24 T.P.

4.85 1476.09

1478.87 H.I.

Flume / Ground

55.6	60.2	71.9	64.6	66.2	72.1	74.8	79.9	
23.3	18.7	7.0	14.3	12.7	6.8	4.1	+1.0	
12	6	℄	0	4	7	10	14	
54.2	60.1	71.9	65.1	66.9	77.8	81.3		
24.7	18.8	7.0	13.8	12.0	1.1	+2.4		
12	6	℄	0	5	7	11		
54.6	58.9	71.8	63.2	64.9	67.4	72.4	80.4	81.9
24.3	20.0	7.1	15.7	14.0	11.5	6.5	+1.5	+3.0
12	6	℄	0	2	3	4	10	12
54.7	58.5	71.8	63.4	68.6	70.3	79.7		
24.2	20.4	7.1	15.5	10.3	8.6	+0.8		
12	6	℄	0	4	8	17		
55.5	60.2	71.7	65.2	65.9	73.2	78.3		
23.4	18.7	7.2	13.7	13.0	5.7	0.6		
12	6	℄	0	4	9	16		
57.2	61.7	71.7	66.1	71.4	80.4			
21.7	17.2	7.2	12.8	8.5	+1.5			
12	6	℄	0	5	14			
59.4	63.7	71.8	68.7	70.5	75.3	81.3		
19.5	15.2	7.1	10.2	8.4	3.6	+2.4		
12	6	℄	0	5	9	15		
59.9	64.1	71.8	68.6	71.1	76.2	80.5		
19.0	14.8	7.1	10.3	7.8	2.7	+1.6		
12	6	℄	0	5	9	15		
59.9	65.2	71.8	68.9	70.2	78.0	81.3		
19.0	13.7	7.1	10.0	8.7	0.9	+2.4		
12	6	℄	0	4	10	14		
60.5	65.3	71.8	68.9	70.5	72.3	80.5	82.1	
18.4	13.6	7.1	10.0	8.4	6.6	+1.6	+3.2	
12	6	℄	0	4	7	13	16	
62.3	66.1	71.8	68.9	70.3	72.7	81.4		
16.6	12.8	7.1	10.0	8.6	6.2	+2.5		
12	6	℄	0	4	7	16		
61.2	64.7	71.7	69.1	69.6	73.3	78.9		
17.7	14.2	7.2	9.8	9.3	5.6	0.0		
12	6	℄	0	3	9	14		

(5) Flume № 15 – Dulzura Conduit

+	H.I. 1476.09	–	Elev.
78+36.73 △			
+44 ±			
+52 ±			
+60 ±			
+68 ±			
+76 ±			
+85 ±			
+93 ±			
379+01 ±			
+09 ±			
+17 ±			
+25 ±			
+34 ±			

Each Section at Trestle Bent

1476.09 H.I.

Flume / Ground

60.3	63.8	71.6	68.1	69.4	72.1	78.4
15.8	12.3	4.5	8.0	6.7	4.0	+2.3
12	6	℄	0	4	9	15
53.9	59.9	71.7	65.3	68.6	71.3	76.9
22.2	16.2	4.4	10.8	7.5	4.8	+0.8
12	6	℄	0	4	9	15
50.9	55.5	71.7	62.1	66.5	76.9	
25.2	20.6	4.4	14.0	9.6	+0.8	
12	6	℄	0	7	18	
48.0	53.4	71.7	58.9	64.9	72.6	78.3
28.1	22.7	4.4	17.2	11.2	3.5	+2.2
12	6	℄	0	6	12	18
48.9	54.5	71.7	58.3	64.6	71.9	76.5
27.2	21.6	4.4	17.8	11.5	4.2	+0.4
12	6	℄	0	8	12	17
48.1	53.1	71.7	57.8	63.1	69.9	76.5
28.0	23.0	4.4	18.3	13.0	6.2	+0.4
12	6	℄	0	6	11	17
48.3	52.8	71.6	57.5	63.1	67.4	72.7
27.8	23.3	4.5	18.6	13.0	8.7	3.4
12	6	℄	0	8	11	17
49.1	54.5	71.6	58.4	65.7	75.1	
27.0	21.6	4.5	17.7	10.4	1.0	
12	6	℄	0	9	18	
49.3	55.4	71.7	59.6	67.7	76.4	
26.8	20.7	4.4	16.5	8.4	+0.3	
12	6	℄	0	9	18	
50.5	52.9	56.8	71.6	58.7	67.1	72.5	76.4
25.6	23.2	19.3	4.5	17.4	9.0	3.6	+0.3
12	6	6	℄	0	7	13	17
50.7	52.7	56.8	71.6	69.0	69.8	76.6	
25.4	23.4	19.3	4.5	16.1	6.3	+0.5	
12	6	6	℄	0	12	17	
	53.7	57.9	71.6	63.1	66.9	78.1	
	22.4	18.2	4.5	13.0	9.2	+2.0	
	12	6	℄	0	5	17	
	57.9	61.4	71.6	66.0	69.5	78.1	80.1
	18.2	14.7	4.5	10.1	6.6	+2.0	+4.0
	12	6	℄	0	6	12	15

Conc. Wall

(6) Flume No 15 – Dulzura Conduit

+	H.I.	–	Elev.
	1476.09		
379+41			
+49			
+57 00 △			
+65			
+73			
+81			
+89			
+97			
380+04 5			
+13			
+20 5			
+28 5			
+44 5			

Each Section at Trestle Bent

1476.09 H.I.

Flume				Ground			
62.8	67.8	71.6	69.4	69.8	70.4	79.7	80.7
12.3	8.3	4.5	6.7	6.3	5.7	+3.4	+4.6
12	6	℄	0	3	5	11	13
64.3	68.1	71.6	69.1	70.4	81.1		
11.8	8.0	4.5	7.0	5.7	+5.0		
15	9	℄	0	3	12		
64.7	68.4	71.6	68.7	69.8	81.3		
11.4	7.7	4.5	7.4	6.3	+5.2		
15	9	℄	0	5	13		
63.9	68.0	71.5	68.8	70.7	80.8		
12.2	8.1	4.6	7.3	5.4	+4.7		
14	8	℄	0	6	13		
62.7	67.0	71.5	68.4	69.3	71.1	80.5	
13.4	9.1	4.6	7.3	6.8	5.0	+4.4	
13	7	℄	0	3	8	13	
60.1	65.1	71.5	68.5	69.3	72.4	80.9	
16.0	11.0	4.6	7.6	6.8	3.7	+4.8	
13	7	℄	0	4	8	16	
58.7	62.1	71.5	65.7	66.6	70.1	75.5	
17.4	14.0	4.6	11.4	9.5	6.0	0.6	
12	6	℄	0	3	9	16	
54.9	58.3	71.5	63.9	68.0	76.1		
21.2	17.8	4.6	12.2	8.1	0.0		
12	6	℄	0	8	13		
55.3	59.4	71.4	63.2	66.9	74.3	76.1	
20.8	16.7	4.7	12.9	9.2	1.8	0.0	
12	6	℄	0	6	10	14	
58.3	62.3	71.5	65.5	68.8	77.3		
17.8	13.8	4.6	10.6	7.3	+1.2		
12	6	℄	0	6	16		
57.8	60.9	71.4	64.6	69.1	71.1	76.3	
18.3	15.2	4.7	11.5	7.0	5.0	+0.2	
12	6	℄	0	7	8	16	
55.1	58.7	71.5	62.1	66.1	71.1	74.3	
21.0	17.4	4.6	14.0	10.0	5.0	1.8	
12	6	℄	0	5	10	15	
49.8	56.5	71.3	60.5	67.6	70.4	74.6	
26.3	19.6	4.8	15.6	8.5	5.7	1.5	
12	6	℄	0	7	9	16	

(7) Flume N° 15 – Dulzura Conduit

+	H.I. 1476.09	–	Elev.
380+60.75 △			
+73 ±			
+81 ±			
+89 ±			
+98 ±			
381+13 ±			
+30 ±			
+37 ±			
+46 ±			
+54 ±			
381+69.39 △			
+77 ±			
381+86.76 △			
382+05.42 △ End Flume #15			

Each Section at Trestle Bent.

1476.09 H.I.

Flume Profile

Ground Profile

80° ↓
50.1 52.6 71.5 60.1 62.1 68.6 72.7 76.5
26.0 23.5 4.6 16.0 15.0 7.5 3.4 +0.4
9 6 ℄ 0 3 5 11 18

90° 20' ↓
50.4 53.6 71.4 62.7 64.7 71.8 77.6 79.3
25.7 22.5 4.7 13.4 11.4 4.3 +1.5 +3.2
9 6 ℄ 0 3 6 14 18

80° ↓
61.7 71.4 63.9 67.8 72.5 77.8 79.9
14.4 4.7 12.2 9.3 3.6 +1.7 +3.8
7 ℄ 0 3 6 11 15

90° ↓
61.7 65.0 71.5 68.2 67.7 76.1 81.7
14.4 11.1 4.6 7.9 8.4 0.0 +5.6
11 6 ℄ 0 4 6 15

90° ↓
61.4 63.1 66.7 71.5 68.6 69.3 81.6
14.7 13.0 9.4 4.6 7.5 6.8 +5.5
11 8 7 ℄ 0 6 11

90° ↓
61.8 71.4 66.8 68.8 78.7 83.9
14.3 4.7 9.3 7.3 +2.6 +7.8
6 ℄ 0 4 6 13

90° ↓
65.4 68.0 71.4 68.7 69.2 75.3 80.6 82.1
10.7 8.1 4.7 7.4 6.9 0.8 +4.5 +6.0
5 4 ℄ 0 3 4 10 17

90° ↓
64.8 68.4 71.4 69.0 70.0 79.9 81.9
11.2 7.7 4.7 7.1 6.1 +3.8 +5.8
9 5 ℄ 0 4 7 16

85° ↓
67.7 71.4 68.9 69.5 74.7 78.1 81.5 84.1
8.4 4.7 7.2 6.6 1.4 +2.6 +5.4 +8.0
6 ℄ 0 4 4 7 10 16

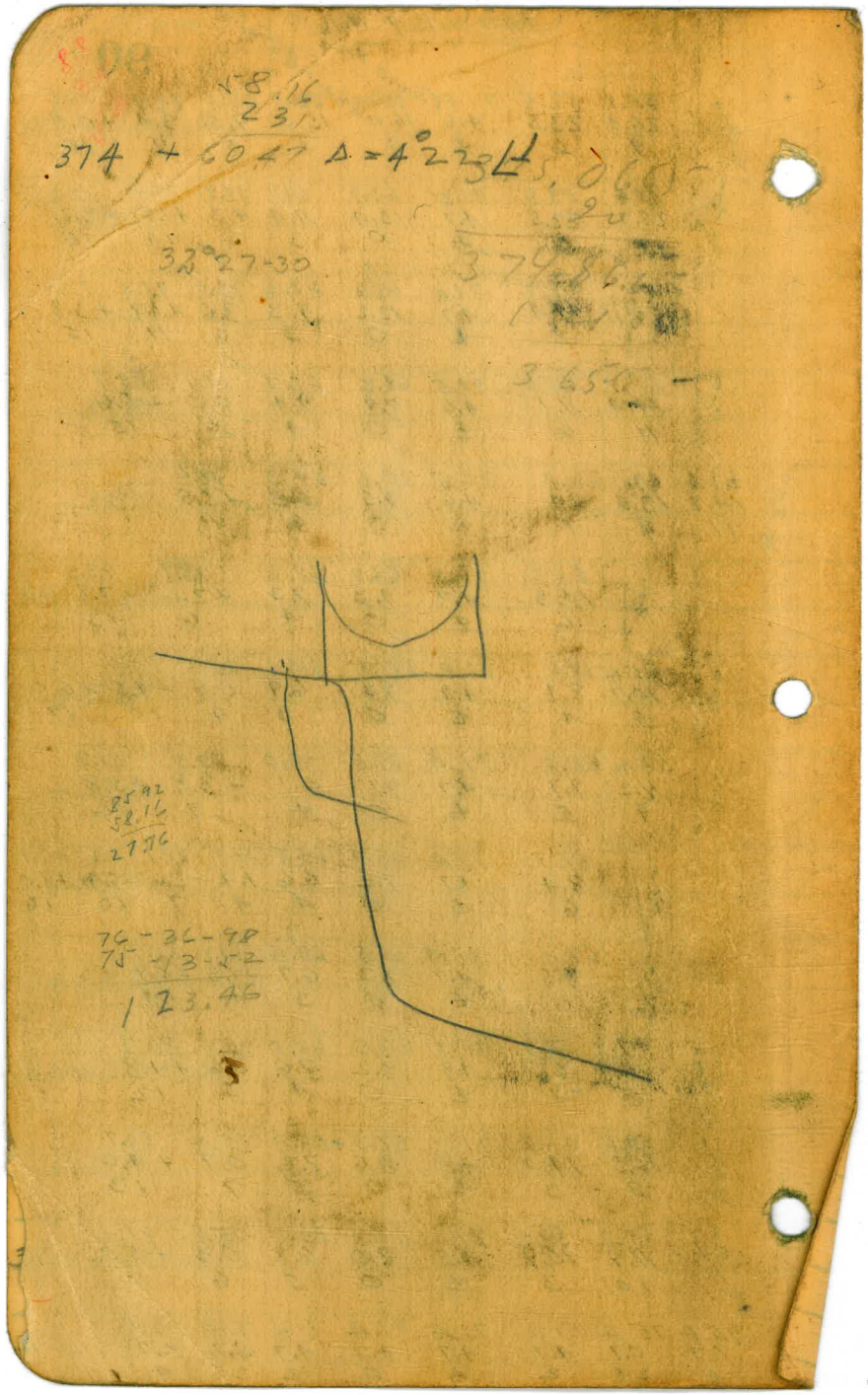
85° ↓
67.6 71.4 68.8 69.4 74.8 83.0
8.5 4.7 7.3 6.7 +1.3 +6.9
6 ℄ 0 3 4 14

60° ↓
57.7 59.6 71.3 67.9 68.5 75.5 80.9
18.4 16.5 4.8 8.2 7.6 0.6 +4.8
8 4 ℄ 0 4 5 12

60° ↓
59.6 61.7 71.3 67.5 68.9 75.4 80.7
16.5 14.4 4.8 8.6 7.2 0.7 +4.6
8 3 ℄ 0 5 7 13

60° ↓
64.2 65.2 71.3 68.1 69.3 75.8 81.1
11.9 10.9 4.8 8.0 6.8 0.3 +5.0
10 3 ℄ 0 5 6 11

75.4 75.4 71.4 71.4 71.4 71.4 76.4 76.8
0.7 0.7 4.7 4.7 4.7 4.7 0.7 0.7
4 2.5 2 ℄ 0 2 2.5 4


374 + 60.47 Δ = 4°23'44"
32°27'30
85.92
58.16
27.76
76 - 36 - 98
75 - 73 - 52
123.46

Flume No 16.

Dulzura Conduit.

Alignment & Cross Sections.

Flume No 16 – Dulzura Conduit.

Alignment.

394+10 — Angle Rt.

Conduit →

12.1

End Flume.

393+97.9 — Δ 10° 30' Rt.

← Flume No 16 →

Water Way 40.4

393+57.5 — Δ 23° 40' Lt.

Beginning Flume

← Conduit

10.5

393+47 — Angle Lt.

Ground Cross Sections.

1470.54 Finish Grade

	Lt					Rt			
End 393+97.9	1.1	0.6	0.6	4.6	4.60	4.6	0.6	0.6	1.3
	10	4	2.2	2.2	℄	2.2	2.2	4.5	10
+89	8.9		8.9		9.5	8.5		7.3	
	10		5		℄	5		10	
+80	10.8		10.2		9.3	9.2		8.4	
	10		5		℄	5		10	
+67	8.2		8.7		9.1	8.0		6.1	
	10		5		℄	5		10	
373+57.5 Beginning	3.4	0.6	0.5	4.5	4.52	4.5	0.4	0.5	0.0
	10	4.5	2.2	2.2	℄	2.2	2.2	4	6

1470.58 Finish Grade Flow Line

1475.00 H.I.

2/7/28
REW

Flume No 17.

Dulzura Conduit,

Alignment & Cross Sections.

Flume No 17 — Dulzura Conduit.

Alignment

403+40 — X — Angle Lt.

Conduit →

10.4

End Flume

403+29.6 — X — Δ 49° 30' Lt.

← Flume No 17 →

Water Way

33.9

402+95.7 — X — Δ 19° 10' Lt.

Beg. Flume

← Conduit

10.7

402+85 — X — Angle Lt.

1469.76 Finish Grade

1468.80 Finish Grade Flow Line

Ground Cross Sections.

	Lt					Rt			
End 403+29.6	4.2	0.4	0.4	4.3	4.33	4.3	0.4	0.4	0.1
	3.0	5.5	4.5	2.2	2.2	℄	2.2	2.2	4	8
	10									
+25	3.9	5.5		5.8		5.2	4.6	3.4		
	10	5		℄		5	8	10		
+18	6.3	6.2		6.1		5.1	4.5			
	10	5		℄		5	10			
+10	6.3	6.2		5.5		4.7	4.5			
	10	5		℄		5	10			
403+00	3.5	5.2		5.1		3.8	3.6	+0.5		
	10	5		℄		5	8.5	11		
402+95.7	2.0	0.4	0.4	4.3	4.30	4.3	0.4	0.4	0.0	
Beginning	10	4	2.2	2.2	℄	2.2	2.2	4	10	

1474.00 H.I.

2/7/28
FREW

Flume No 18.

Dulzura Conduit.

Alignment & Cross Sections

Flume No 18 - Dulzura Conduit.

Alignment.

433+07 X Angle Lt.

↓ Conduit

9.0

End Flume
432+98± X Δ 24°00' Lt.

↑ Flume No 18

Water Way

40.0

↓ Flume No 18

432+58± X Δ 29°10' Lt.
Beg. Flume

↑ Conduit

41.0

↓ Conduit

432+17 X Angle Rt.

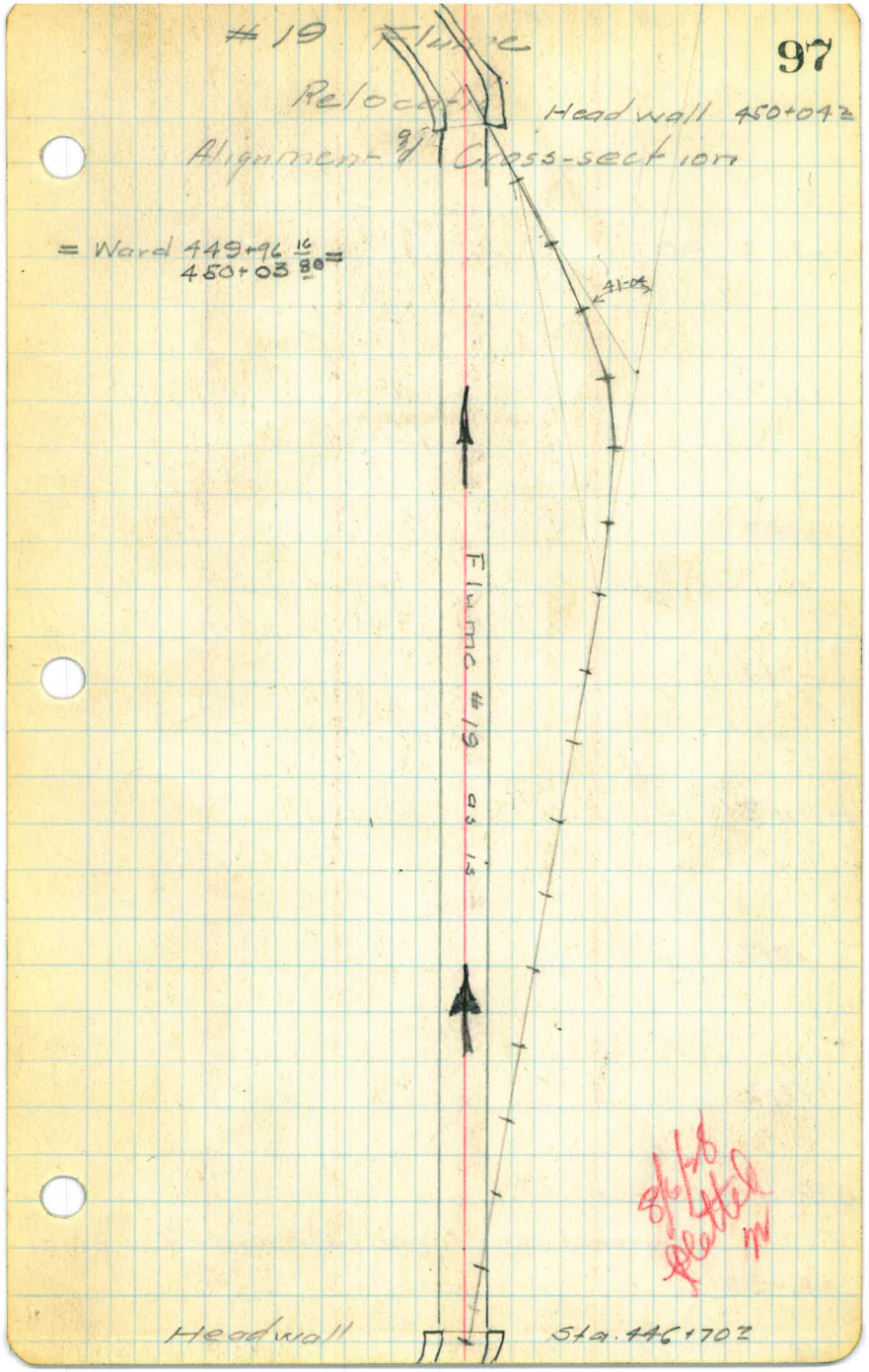
Ground Cross Sections

	Lt				℄				Rt	
End										
432+98±	0.8	0.9	0.9	4.9	4.96	4.9	0.9	0.9	3.6	
	10	4	2.3	2.3	℄	2.3	2.3	4	12	
+95		1.9	6.0		6.5		6.6		5.3	
		10	4		℄		5		10	
+87		5.3	6.4		7.2		7.8		7.7	
		10	5		℄		5		10	
+79		9.3	9.2		9.0		8.9		8.5	
		10	5		℄		5		10	
+72		9.0	8.9		8.9		8.4		7.8	
		10	5		℄		5		10	
+68		6.6	7.7		8.0		7.5		6.6	
		10	5		℄		5		10	
+60	3.2	3.7	6.0		6.4		6.5	4.0		3.9
	10	6	4		℄		4	7		10
432+58±	1.7	0.8	0.8	4.9	4.93	4.9	0.8	0.8	3.0	3.0
	10	4	2.3	2.3	℄	2.3	2.3	4	8	12
Beginning										

1467.12 → 1467.15 Finish Grade Flow Line

1472.00 H.I.

2/7/28
REW


#19 Flume
Relocated
Headwall 450+04 ±
Alignment & Cross-section
= Ward 449+96 16/80 =
450+03 80 =
41-05
Flume #19 @ 3 1/2
Headwall
Sta. 446+70 ±
Sketch plotted in

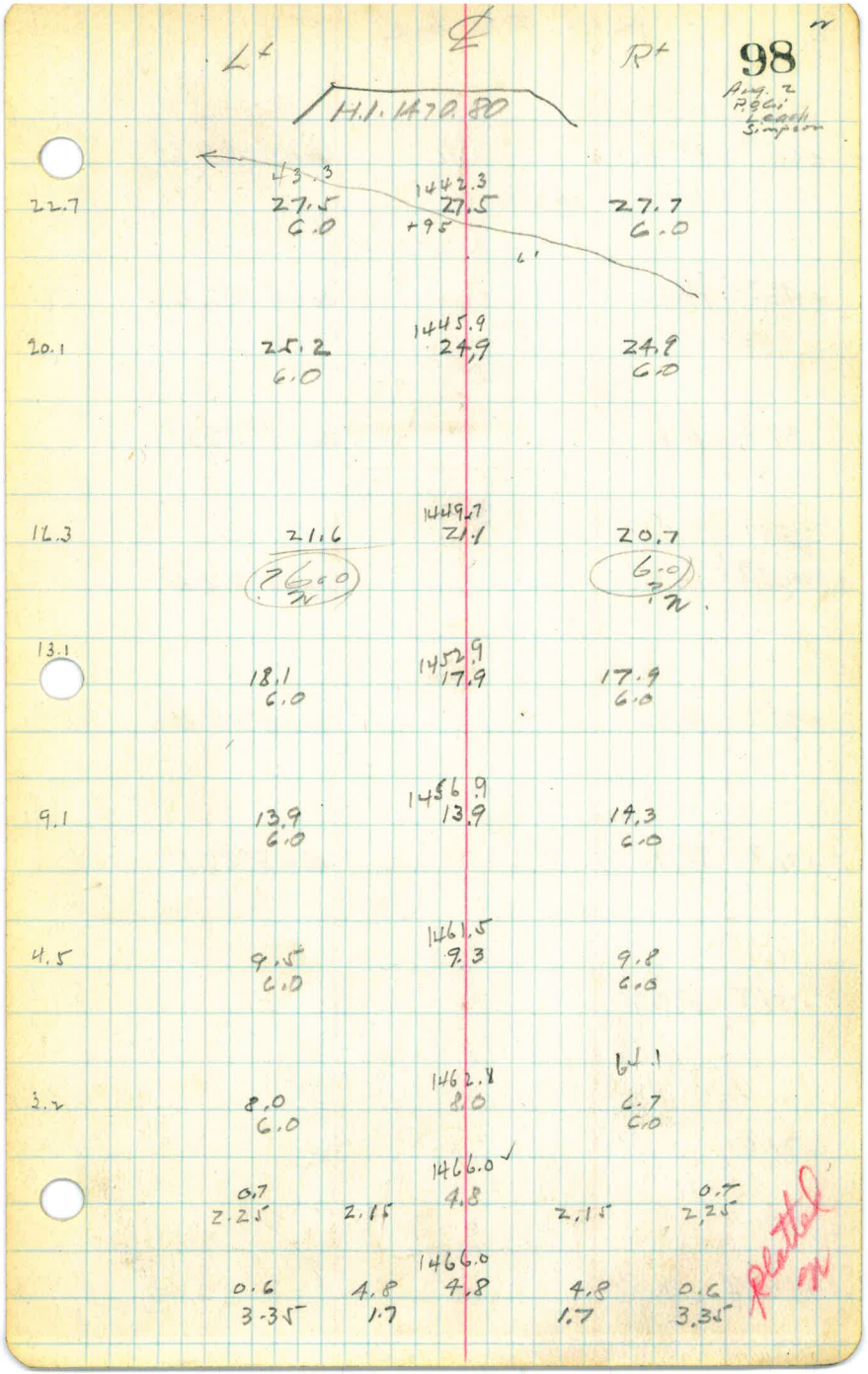
#19 Flume

+91 I	P.O.T	20
+71 I	"	20
+51 I	"	20
+31 I	"	20
447+11 I	"	20
+91 I	"	10.5'
+81 I	"	10.5'
446+70 I	Headwall	

Normal section of conduit

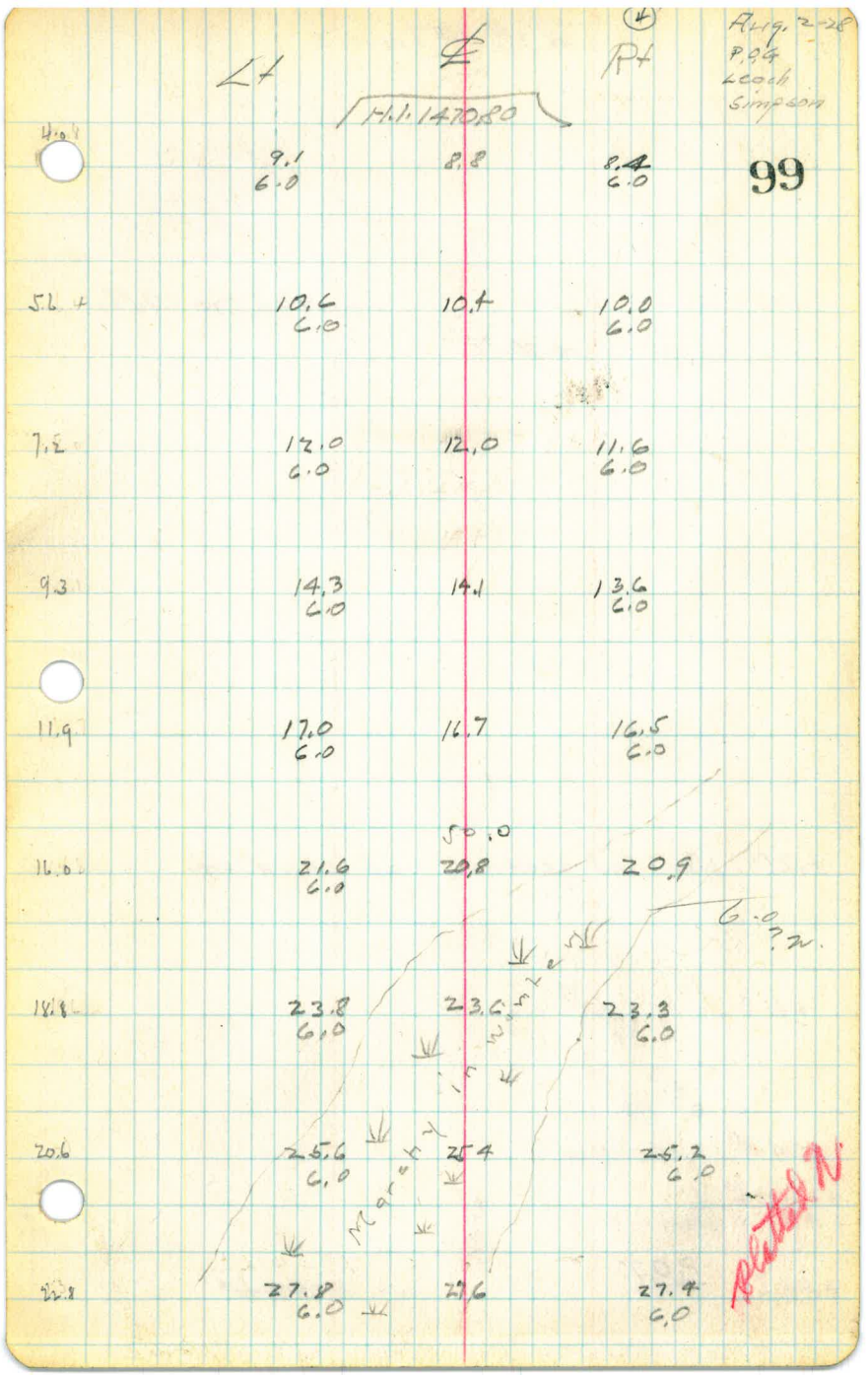
446+50

Avg. 2 Regi. Leach Simpson



(5) #19 Flume

+65 I	P.I.	19	Δ = 5°52 Lt
		147080	
+46 I	P.I.	19	Δ = 5°52 Lt
+27 I	P.I.	19	Δ = 5°52 Lt
147+09 I ?	P.I.	19	Δ = 5°52 Lt
+90 I	P.I.	19	Δ = 5°52 Lt
+71 I	P.I.	19'	Δ = 5°52 Lt
+51 I	P.O.T	20'	
+31 I	"	20	
148+11 I	"	20	


L+
℄
R+
H.I. 147080
Rig. 2-28
P.94
Leach
Simpson
99
4.0
9.1
6.0
8.8
8.4
6.0
5.6
10.6
6.0
10.4
10.0
6.0
7.2
12.0
6.0
12.0
11.6
6.0
9.3
14.3
6.0
14.1
13.6
6.0
11.9
17.0
6.0
16.7
16.5
6.0
50.0
16.0
21.6
6.0
20.8
20.9
6.0 ?N.
14.8
23.8
6.0
23.6
23.3
6.0
20.6
25.6
6.0
25.4
25.2
6.0
22.8
27.8
6.0
27.6
27.4
6.0
Retested N.

#19 Time

1465.70 B.M.

5.10 1470.80

+20 Normal section of conduit

8:1

+113

to Lake

1:1

05. N

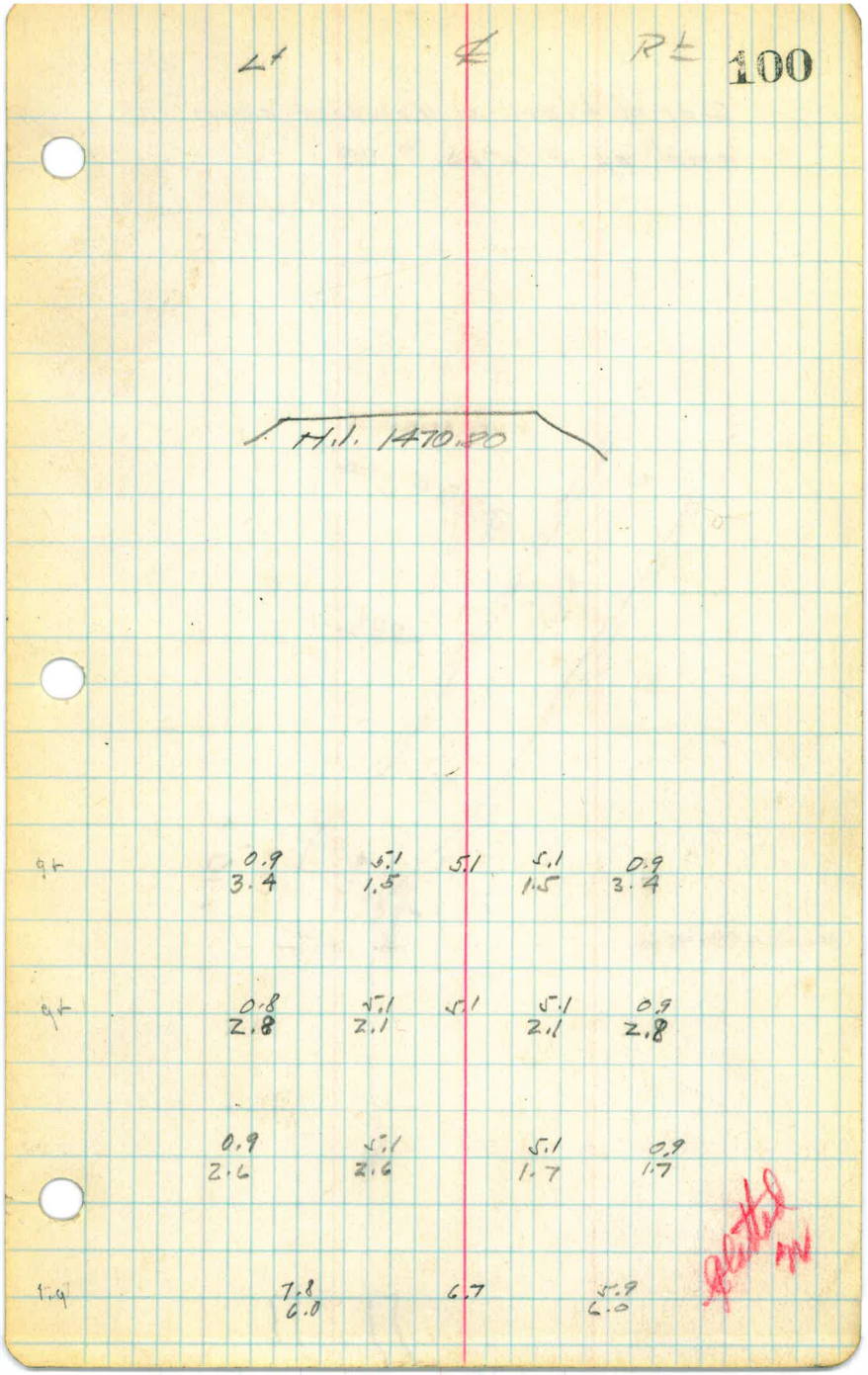
+04 30 Head wall

4 50+03 80 =
4 49+96 20 Ward line

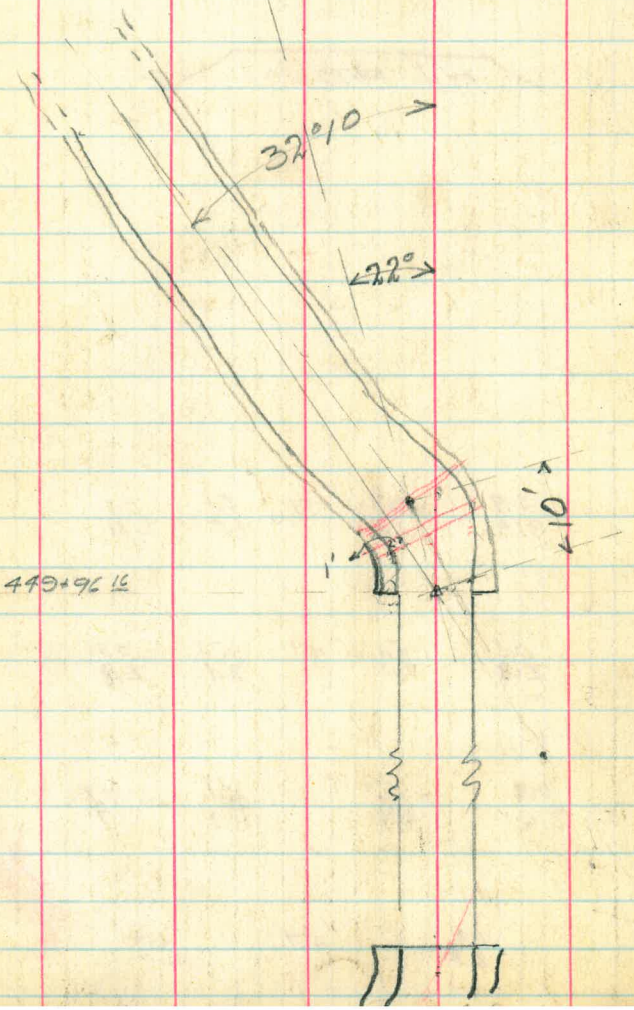
+847 P.O.T.

1955

× Δ = 5 58 ~~4~~


Lt
℄
Rt
H.I. 1470.20
0.9
3.4
5.1
1.5
5.1
5.1
1.5
0.9
3.4
0.8
2.8
5.1
2.1
5.1
5.1
2.1
0.9
2.8
0.9
2.6
5.1
2.6
5.1
1.7
0.9
1.7
7.8
6.0
6.7
5.9
6.0

Condition a downstream
end of Flume # 19

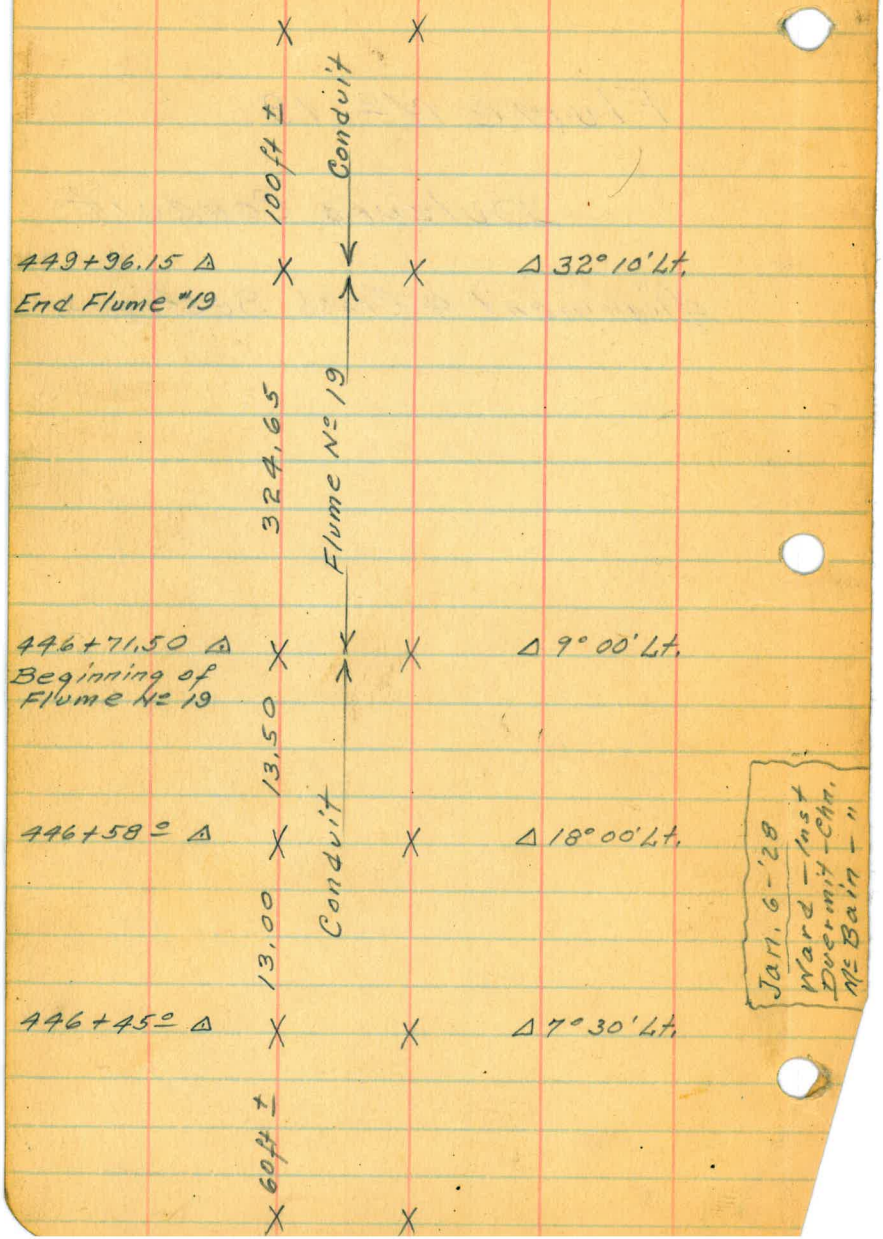


Flume No 19

Dulzura Conduit

Alignment & Cross Sections.

① Alignment of Flume No 19.
Dulzura Conduit. <1 Sheet>



Jan. 6-'28
Ward — Inst
Dulzura Conduit
Mc Bain — "

Cross Sections & Profiles
of Flume No. 19.
Dulzura Conduit.

Sections taken at Trestle
Bents of Existing Flume
(3 Sheets)

R.E. Ward
1/7/28

Cross Sections for Flume No. 19.
Dulzura Conduit. (3 sheets)

B.M. - Spk. in Hub 25' Lt. Sta. 450+00

1465.70 B.M.

5.43 1471.13 H.I.

446+71.50
Beginning Flume 19.

+80 ±

+87.5 ±

+95 ±

447+03 ±

+11 ±

+19 ±

+35 ±

+50.5 ±

+66.5 ±

+82.5 ±

+98 ±

Each Section at Bent of Trestle.

Jan 7 - '28
Ward - Notes
Duermit - Rod
Mc Bain - Chn.

1471.13 H.I.

Flume profile / Ground profile

70.0	70.0	66.0	66.0			66.0	70.0	70.0
1.0	1.0	5.1	5.1	1471.13		5.1	1.0	1.0
4	2.2	2.2	℄		0	2.2	2.2	4
66.1	66.5	64.5	63.0	65.8	63.1	63.1	65.5	63.8
5.0	4.6	6.6	8.1	5.3	8.0	8.0	6.6	7.3
15	10	4	3	℄	0	4	8	15
	63.4	62.9	65.7		62.5	62.3	67.0	60.7
	7.7	8.2	5.3		8.6	8.8	9.1	10.4
	15	5	℄		0	5	10	15
	61.2	60.3	65.8		61.0	60.2	58.7	
	9.9	9.8	5.3		10.1	10.9	12.4	
	15	6	℄		0	6	15	
					59.0			
	60.0	58.9	65.8		59.1	58.5	57.5	
	11.1	12.2	5.3		12.1	12.6	13.6	
	15	6	℄		0	6	15	
	57.9	57.1	65.8		56.7	56.7	56.5	
	13.2	14.0	5.3		14.4	14.4	14.6	
	15	6	℄		0	6	15	
	55.7	55.3	65.8		54.5	54.8	54.5	
	15.8	15.8	5.3		16.6	16.3	16.6	
	15	6	℄		0	6	15	
					52.1			
	51.7	51.9	65.8		51.7	51.9	52.3	
	19.0	19.2	5.3		19.0	19.2	18.8	
	15	6	℄		0	6	15	
	49.1	49.1	65.6		49.3	49.4	49.5	
	22.0	22.0	5.5		21.8	21.7	21.6	
	15	6	℄		0	6	15	
	46.6	46.4	65.6		46.0	45.9	46.9	
	24.5	24.7	5.5		25.1	25.2	24.2	
	15	6	℄		0	6	15	
	43.3	44.1	65.6		44.8	44.4	45.0	
	27.8	27.0	5.5		26.3	26.7	26.1	
	15	6	℄		0	6	15	
	43.3	42.9	65.6		43.2	43.1	42.8	
	28.8	28.2	5.5		27.9	28.0	28.3	
	15	6	℄		0	6	15	

(2)

Cross Sect's for Flume N° 19
Dulzura Conduit. (3 Sheets)

1471.13 H.1.

48+14°

+30°

+46°

+61.5

+77.5

+85.5

+93.5

449+01°

+09°

+17°

+25°

+33°

+41°

+49°

1471.13 H.1.

Flume Profile			Ground Profile		
42.6	42.6	65.7	42.9	43.2	43.9
28.5	28.5	5.4	28.2	27.9	27.3
15	6	℄	0	6	15
45.1	44.8	65.6	43.8	44.4	41.7
26.0	26.3	5.5	27.3	26.7	26.4
15	6	℄	0	6	15
49.3	47.7	65.7	46.4	47.0	46.5
21.8	23.4	5.4	24.7	24.1	24.6
15	6	℄	0	6	15
52.5	51.8	65.7	51.2	51.2	49.5
18.6	19.3	5.4	19.9	19.9	21.6
15	6	℄	0	6	15
54.4	53.8	65.6	53.3	54.0	53.8
16.7	17.3	5.5	17.8	17.1	18.3
15	6	℄	0	6	15
55.5	54.8	65.7	54.8	54.9	54.1
16.6	16.3	5.4	16.3	16.2	17.0
15	6	℄	0	6	15
54.9	55.3	65.7	55.3	55.7	55.5
16.2	15.8	5.4	15.8	15.4	15.6
15	6	℄	0	6	15
55.4	55.9	65.6	55.9	56.2	56.1
15.7	15.2	5.5	15.2	14.9	15.0
15	6	℄	0	6	15
56.0	56.4	65.6	56.3	57.1	57.3
15.1	14.7	5.5	14.8	14.0	13.8
15	6	℄	0	6	15
56.5	56.1	65.6	57.0	57.5	57.9
14.6	14.0	5.5	14.1	13.6	13.2
15	6	℄	0	6	15
57.1	57.6	65.5	57.5	57.1	58.7
14.0	13.5	5.6	13.6	13.0	12.4
15	6	℄	0	6	15
57.5	57.9	65.6	58.3	58.6	59.2
13.6	13.2	5.5	12.8	12.5	11.9
15	6	℄	0	6	15
58.1	58.6	65.6	59.0	59.4	59.8
13.0	12.5	5.5	12.1	11.7	11.3
15	6	℄	0	6	15
58.7	59.5	65.6	59.7	59.8	60.6
12.4	11.6	5.5	11.4	11.3	10.5
15	6	℄	0	6	15

(3) Cross Sec's for Flume No 19
Dulzura Conduit (3 sheets)

1471.13 H.I.

449+57 ℄

+65 ℄

+73 ℄

+80 ℄

+86.5 ℄

449+96.15
End Flume.

1471.13 H.I.

Flume Profile			Ground Profile			
59.1	60.7	65.6	60.7	60.8	61.2	
11.3	10.4	5.5	10.4	10.3	9.9	
15	6	℄	0	6	15	
60.9	61.5	65.6	61.4	61.6	62.3	
10.2	9.6	5.5	9.7	9.5	8.8	
15	6	℄	0	6	15	
62.1	62.4	65.6	62.4	62.5	63.1	63.4
9.0	8.7	5.5	8.7	8.6	8.0	7.7
15	6	℄	0	4	5	15
63.1	63.4	65.6	63.1	63.0	63.9	64.3
8.0	7.7	5.4	8.0	8.1	7.2	6.8
15	6	℄	0	4	6	15
64.5	63.6	65.6	63.4	63.4	64.9	65.3
6.6	7.5	5.5	7.7	7.7	6.2	5.8
15	6	℄	0	4	6	15
69.6	69.6	65.6	65.6	65.6	65.6	69.6	69.6
1.5	1.5	5.5	5.5	5.5	5.5	1.5	1.5
4	2.2	2.2	℄	0	2.2	2.2	4

Flume No 20.

Dulzura Conduit,

Alignment & Cross Sections

Flume No 20 — Dulzura Conduit

Alignment.

427+25 — Angle Lt.

Conduit →

8.0

End Flume

467+17.2 — Δ 15° 00' Lt.

← Flume No 20 →

Water Way

52.0

← Flume No 20

466+65.2 — Δ 17° 00' Lt.

Beg. Flume

Conduit →

5.0

466+60 — Angle Lt.

2/8/28

R.E.W.

Ground Cross Sections

	Lt			℄		Rt			
End									
467+17.2	1.4	0.6	0.6	4.7	4.74	4.7	0.6	0.6	0.7
	10	4.5	2.3	2.3	℄	2.3	2.3	4	10
+15	2.3	2.4	5.8		6.0	4.8	2.0	1.7	
	13	10	3		℄	4	8	12	
467+05		7.2	7.8		7.8	7.6	7.1		
		10	5		℄	5	10		
+95		12.0	11.5		11.4	11.2	10.2		
		10	5		℄	5	10		
+85		11.0	11.0		10.8	10.2	10.2		
		10	5		℄	5	10		
+76	4.5	4.5	7.0		7.2	7.8	9.3		
	12	9	4		℄	5	10		
+67	0.4	0.4	5.8		6.4	5.9	4.3	4.5	
	12	10	3		℄	4	5	10	
466+65.2	0.4	0.6	0.6	4.6	4.65	4.6	0.6	0.6	2.2	3.5
	10	4	2.3	2.3	℄	2.3	2.3	4	5	10

Finish Grade — Flow Line → 1464.27

1464.33 ←

Beginning 1469.00 H.I.

Flume No 21.

Dulzura Conduit.

Alignment & Cross Sections

Flume No 21 — Dulzura Conduit.

Alignment.

476+28 — Angle Lt.

Conduit

8.2

End Flume

476+19.8 — Δ 16°00' Lt.

Flume No. 21 — Water Way — Flume 27.3

31.8

475+92.5 — P.O.T.

Beg. Flume

Conduit

475+88.0 — Δ 24°00' Lt.

5.0

475+83 — Angle Lt.

Ground Cross Sections

	Lt					℄			Rt		
End											
476+19.8	1.7	4.8	1.2	1.2	5.2	5.20	5.2	1.2	1.2	3.8	3.8
	10	6	5	2.3	2.3	℄	2.3	2.3	4	5	10
+17	2.3	6.3	7.2			7.5	6.2	5.0	5.1		
	12	8	4			℄	5	7	10		
+08		9.2	8.4			8.1	7.5	6.5			
		10	5			℄	5	10			
476+00		8.8	8.0			7.3	6.3	4.5			
		10	5			℄	5	10			
+95		6.3	6.0			6.6	6.1	3.1	2.4		
		10	4			℄	5	6	10		
475+92.5	3.7	3.2	1.2	1.2	5.1	5.15	5.1	1.2	1.2	2.6	1.3
Beginning	10	5	4	2.3	2.3	℄	2.3	2.3	4	5	10

1463.56 → Finish Grade - Flow Line → 1463.59

1468.70 H.I.

2/8/28
R.E.W.

2-Sheets.

112

Flume No 22

Dulzura Conduit.

Alignment & Cross Sections

2-Sheets.

Flume No 22 — Dulzura Conduit.

Alignment

Sheet 1

522+93		X	Angle Pt.
	Conduit	19.5	
End Flume 522+73.5		X	Δ 31° 00' Lt.
	Flume No 22 — Water Way	119.7	
521+53.8 Beg. Flume		X	Δ 13° 40' Lt.
	Conduit	33.8	
521+20		X	Angle Pt.

Flume No 22 – Dulzura Conduit,

Sheet 2

Flume No 22

Ground Cross Sections

Finish Grade 1459.70

	Lt				℄				Rt	
End					1459.57					
522+73.5	+3.3	+2.2	0.4	0.4	4.6	4.63	4.6	0.4	0.4	1.7	2.2
	10	6	4	2.2	2.2	℄	2.2	2.2	3.5	4	10
	Boulder										
					1457.2					
+72	+3.5	+2.6	0.2	6.8		7.0	6.0	2.3	1.8	3.9	
	10	6	3	3		℄	5	6	8	9	
	Boulder										
					1454.1					
+62		10.2	10.8		10.1		10.0	6.6	8.2		
		15	6		℄		5	6	10		
					1450.5					
+54	12.0	11.0	8.3	8.3		13.7		13.3	11.9		
	15	8	4	1		℄		5	10		
			Boulder								
					1455.4					
+50	13.1	10.6	8.7	10.6		8.8		14.7	14.0	14.0	
	15	10	4	2		℄		1	5	15	
		Boulder									
					1448.5						
+42		15.5	15.6		15.7		15.9	15.6			
		15	6		℄		7	15			
					1445.2						
+25		19.0	18.5		19.0		18.7	18.4			
		15	9		℄		5	15			
					1443.5						
522+18		19.5	20.7		20.7		20.5	18.7	18.3		
		17	12		℄		7	10	15		

1464.20 H.I.

2/8/28 REW

(Continued)

1448.9

+03 19.4 18.1 15.3 14.9 16.5 16.2
15 1 ℄ 3 8 15

1452.4

522+00 19.2 18.5 13.6 11.8 15.3 15.3 16.2 16.0
15 8 6 ℄ 3 6 10 15
Boulder

1451.3

+90 13.3 10.8 10.2 12.1 12.9 13.7 6.1 5.3
10 4 2 1 ℄ 6 7 10
Sec. all Solid Rock

1452.4

+85 11.4 7.9 11.8 10.6 6.4 5.9 4.8
10 4 ℄ 5 5 8 13
Sec. all Solid Rock

1456.5

+75 12.4 9.1 9.0 7.7 7.4 4.1 4.9
15 10 5 ℄ 4 5 9
Sec. all Solid Rock

1457.7

+65 7.1 5.6 6.8 6.5 6.4 4.7 3.3
12 8 4 ℄ 4 6 10
Solid Rock

1457.8

+55 4.6 3.4 6.0 6.4 4.8 2.0 0.1
12 8 3 ℄ 5 5 9
Solid Rock

1459.85

521+53.8 3.2 3.0 0.3 0.3 4.35 4.35 4.35 0.3 0.3 1.5 0.3
10 5 4 2.3 2.3 ℄ 2.3 2.3 4 5 9
Beginning Solid Rock

1464.20 H.I.

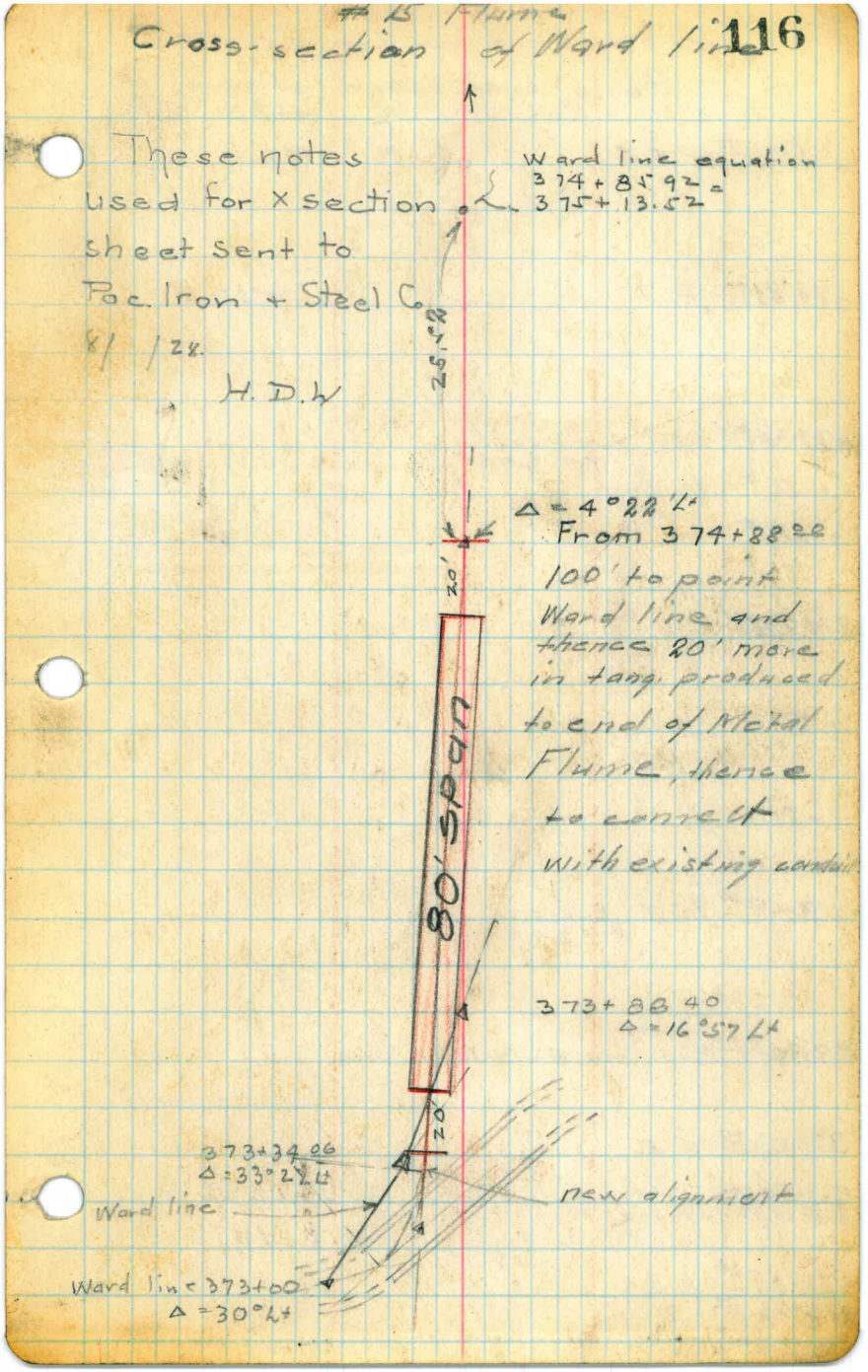
2/8/28
PEW

1459.82 Finish Grade — Flow Line

Cross-section of Ward line #5 Flume

These notes used for X section sheet sent to Pac. Iron + Steel Co 8/ /28.

H. D. W



Cross-section for 20
Piers over Ward alignment

0.33 1467.64 1467.31 B.M.

375+08.00 P.O.T 4.93 1462.71

20

374+88.00 P.I. Δ = 4°22.4'

20

374+68.00 P.O.T West end 80' span

+ 58.0

+ 38.0

374+20.00

+ 95

+ 91.

373+88.00 P.O.T East end 80' span

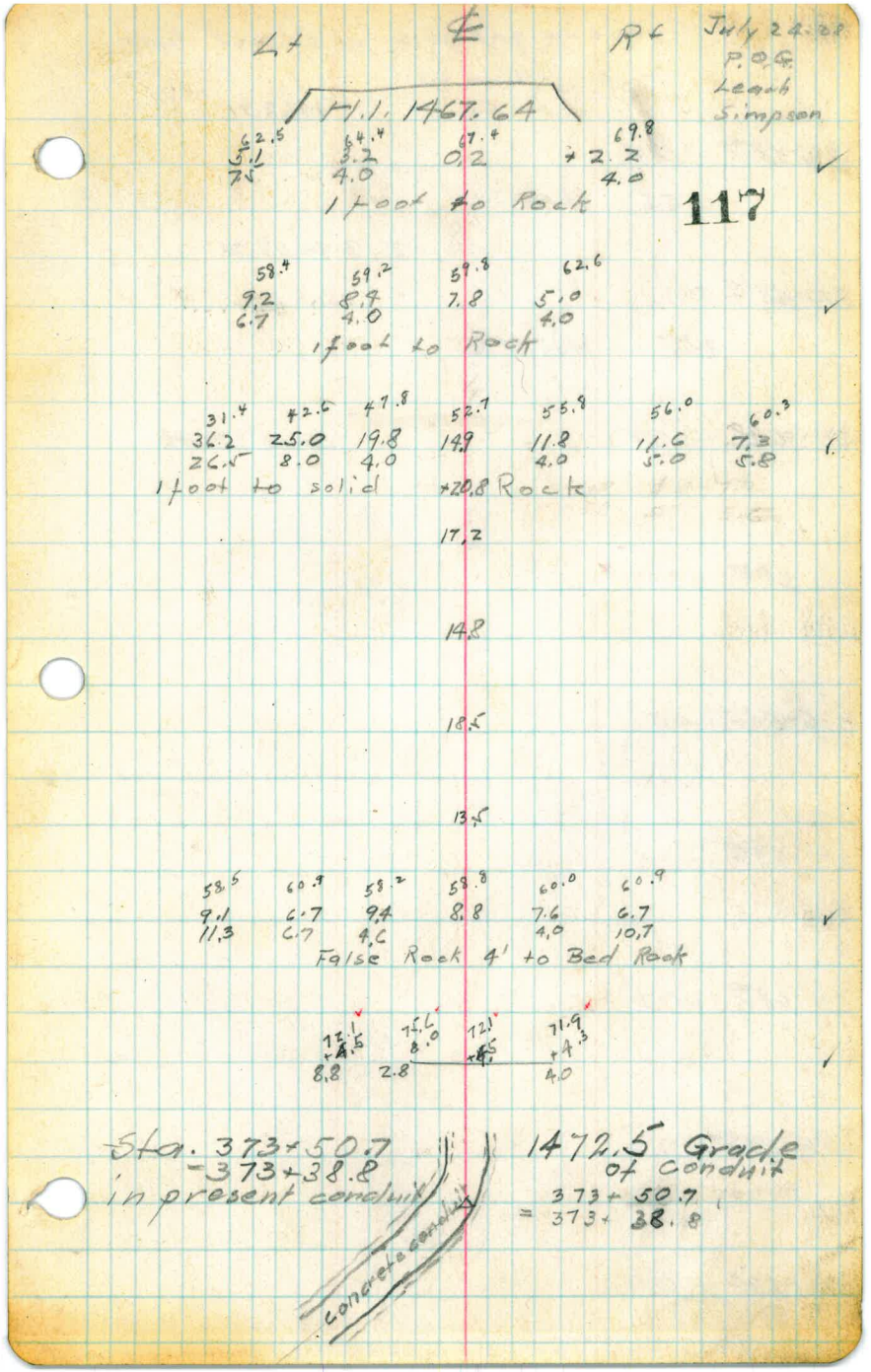
20

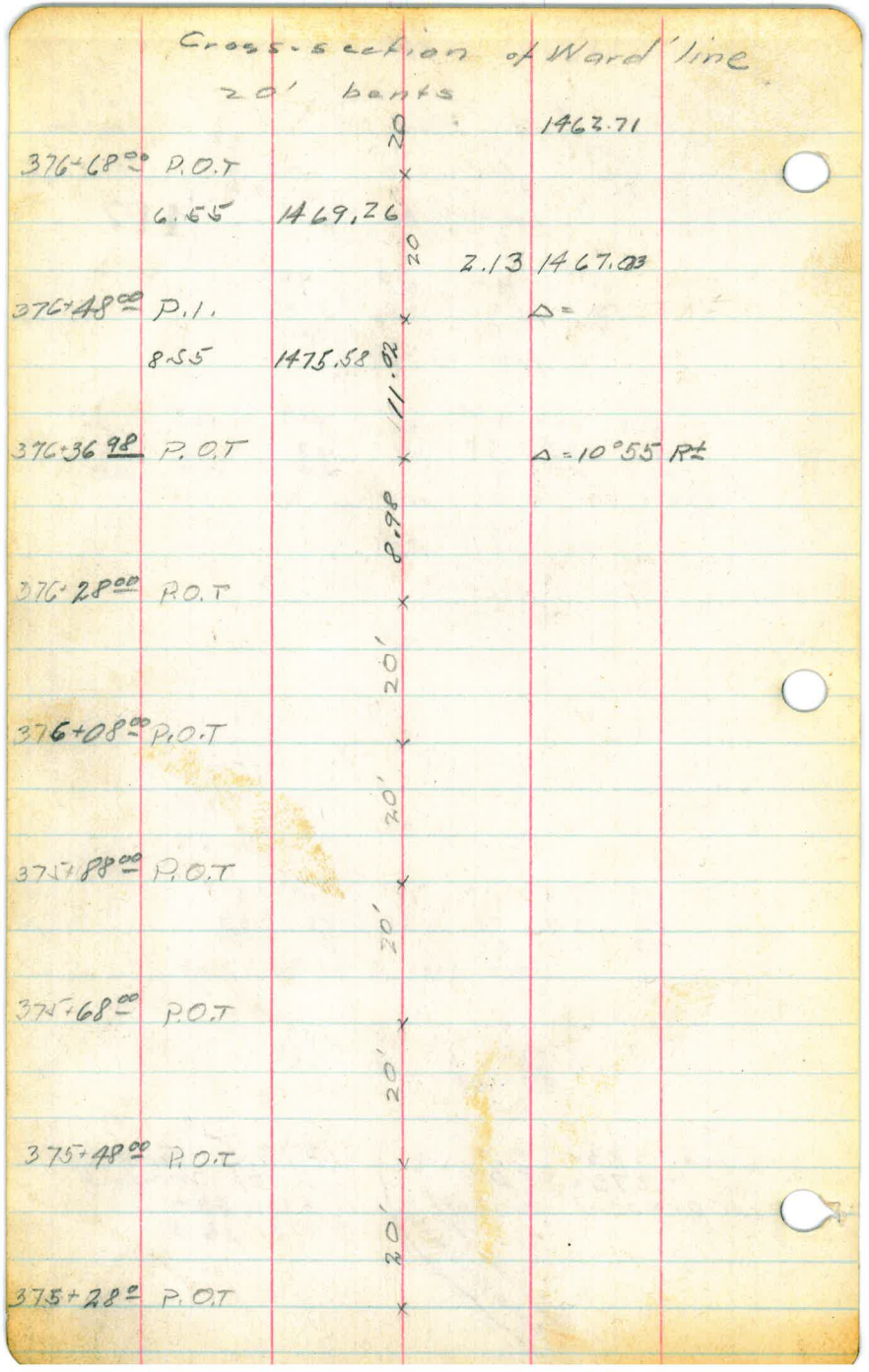
373+68.00 P.O.T, Beginning of Metal Flume

373+43.29 E.C

373+50.70 = P.I. Δ = 63°02
373+38.80 in Flume R = 25'

373+35.20 B.C.
373+23.5 = old line


L ℄ R
July 24.28
P.O.E.
Leach
Simpson
F.L. 1467.64
62.5 64.4 67.4 69.8
5.1 3.2 0.2 +2.2
7.5 4.0 4.0
1 foot to Rock
117
58.4 59.2 59.8 62.6
9.2 8.4 7.8 5.0
6.7 4.0 4.0
1 foot to Rock
31.4 42.5 47.8 52.7 55.8 56.0 60.3
36.2 25.0 19.8 14.9 11.8 11.6 7.3
26.5 8.0 4.0 4.0 5.0 5.8
1 foot to solid +20.8 Rock
17.2
14.8
18.5
13.5
58.5 60.9 59.2 58.8 60.0 60.9
9.1 6.7 9.4 8.8 7.6 6.7
11.3 6.7 4.6 4.0 10.7
False Rock 4' to Bed Rock
72.1 75.6 72.1 71.9
+4.5 8.0 +4.5 +4.3
8.8 2.8 4.0
Sta. 373+50.7
-373+38.8
in present conduit
1472.5 Grade of conduit
373+50.7
= 373+38.8
Concrete conduit


Cross-section of Ward line
20' banks
20
1463.71
376+68.00 P.O.T
6.65 1469.26
20
2.13 1467.03
376+48.00 P.I.
8.55 1475.58
11.02
376+36.98 P.O.T
Δ = 10°55 Rt
8.98
376+28.00 P.O.T
20'
376+08.00 P.O.T
20'
375+88.00 P.O.T
20'
375+68.00 P.O.T
20'
375+48.00 P.O.T
20'
375+28.00 P.O.T

Lt

Rt

H.I. 1475.58

66.9	67.6	68.6	70.0	74.9
8.7	8.0	7.0	5.6	+ 0.7
4.9	4.0		4.0	6.0

solid Rock

65.5	66.6	68.6	71.0	72.9
10.1	9.0	7.0	4.6	2.7
5.8	4.0		4.0	6.0

Solid Rock

62.4	62.6	68.2	68.6
13.2	13.0	7.4	7.0
6.0	4.0	4.0	6.0

solid Rock 1' to Rock

H.I. 1469.26

58.2	60.3	63.7	67.3	68.9	
11.1	9.0	5.6	2.0	0.4	
7.0	4.0		4.0	6.0	

43.1	50.2	52.3	53.8	58.1	60.4	
26.2	19.1	17.0	15.5	11.2	8.9	
13.0	8.0	4.0		4.0	6.0	

41.8	43.2	43.6	46.3	46.0	46.4	45.6	
27.5	26.1	25.8	23.0	23.3	22.9	23.7	
12.0	8.0	6.0		6.0	8.0	13.0	

solid Rock

38.1	38.7	38.1	42.2	46.6	47.5	49.0	
31.2	30.6	30.2	27.1	23.7	21.8	20.3	
12.0	8.0	4.0		6.0	8.0	13.0	

Solid Rock

51.7	54.0	57.7	61.5	62.9
17.6	15.3	11.6	7.8	6.4
8.0	4.0		4.0	6.0

61.7	63.4	67.3	68.1	
7.6	5.9	2.0	0.6	
7.0	4.0		4.0	

1 foot to Rock

Cross-section Ward line
20' bents

378+28.00	P.O.T	1475.58	8.73
378+08.00	P.O.T		20
377+88.00	P.O.T		20
377+79.80	P.I.		8.20
			Δ = 28°40½'
377+68.00	P.O.T		11.80
377+48.00	P.O.T		20
377+28.00	P.O.T		20
377+08.00	P.O.T		20
376+88.00	P.O.T		20

L ℄ R

H.I. 14K.58

65.0	65.9	67.9	70.9	71.7
10.6	9.7	7.7	4.7	3.9 ✓
6.0	4		4.0	6.0
1' to Rock		2' to Rock		

65.2	66.8	68.9	70.9	73.4
10.4	8.8	6.7	4.7	2.2 ✓
6.0	4.0		4.0	6.0
2.0 to Rock				

63.0	64.0		71.7	70.0
~~71.7~~	~~70.0~~	67.6	65.0	63.0
3.9	5.6	8.0	10.6	12.6 ✓
6.0	4.0		4.0	6.0
1' to Rock				

Apparently transposed

61.8	63.5	67.1	70.6	72.1
13.8	12.1	8.5	5.0	3.5 ✓
6.0	4.0		4.0	6.0
1' to Rock			1.5 to Rock	

60.0	61.2	64.8	68.8	69.6
15.6	14.4	10.8	7.3	6.0 ✓
6.0	4.0		4.0	6.0
1' to Rock				

60.1	60.7	64.6	67.3	74.8
15.5	14.9	11.0	8.3	0.8 ✓
6.0	4.0		4.0	6.0
0.5 to Rock				0 to Rock

60.0	61.6	65.1	68.4	70.7
15.6	14.0	10.5	7.2	4.9 ✓
6.0	4.0		4.0	6.0
1.5 to Rock			1.5	

62.8	63.5	66.6	70.0	71.6
12.8	12.1	9.0	5.6	4.0 ✓
6.0	4.0		4.0	6.0
	0.5 to Rock			

61.9	63.0	66.6	70.0	71.0
13.7	12.6	9.0	5.6	4.6 ✓
6.0	4.0		4.0	6.0
1' to Rock			1' to Rock	

Cross-section of Wadlink

20' bents

379+68.9 P.O.T 147.58

379+57.00 P.I. Δ = 5°30 Rt

8 36.73

1 20.27

379+48.00 P.O.T

379+28 "

379+08.00 "

378+88.00 P.O.T

378+68.00 P.O.T

378+48.00 "

11.27

378+36.73 P.I. Δ = 14°15 Rt

7-79.50

56.77

20

110

100

20

00

20

20

20

0

11.27

33

July 26 - 28
P.O.G.
Leach
S. Simpson

I-1. 1475.N-8

68.2	68.6	69.6	70.6	71.7	
7.4	7.0	6.0	5.1	3.9	✓
6.0	4.0		4.0	6.0	

2.5' to Rock

68.8	68.7	69.6	69.7	72.5	
6.8	6.9	6.0	5.9	3.1	✓
6.0	4.0		4.0	6.0	

2.5' to Rock armor

68.9	68.7	70.3	72.1	72.9	
6.7	6.9	5.3	3.5	2.7	✓
6.0	4.0		4.0	6.0	

2.5' to Rock armor

59.8	60.6	63.6	66.3	68.5	
15.8	15.0	12.0	9.3	7.1	✓
6.0	4.0		4.0	6.0	

2.0 to Rock

56.0	57.9	61.6	66.2	67.3	
19.6	17.7	14.0	9.4	8.3	✓
6.0	4.0		4.0	6.0	

2.0 to Rock 2.5'

52.2	54.2	57.6	60.4	61.1	
23.4	21.4	18.0	15.2	14.5	✓
6.0	4.0		4.0	6.0	

2' to Rock

58.0	54.1	58.6	62.2	64.2	
23.6	21.5	17.0	13.4	11.4	✓
6.0	4.0		4.0	6.0	

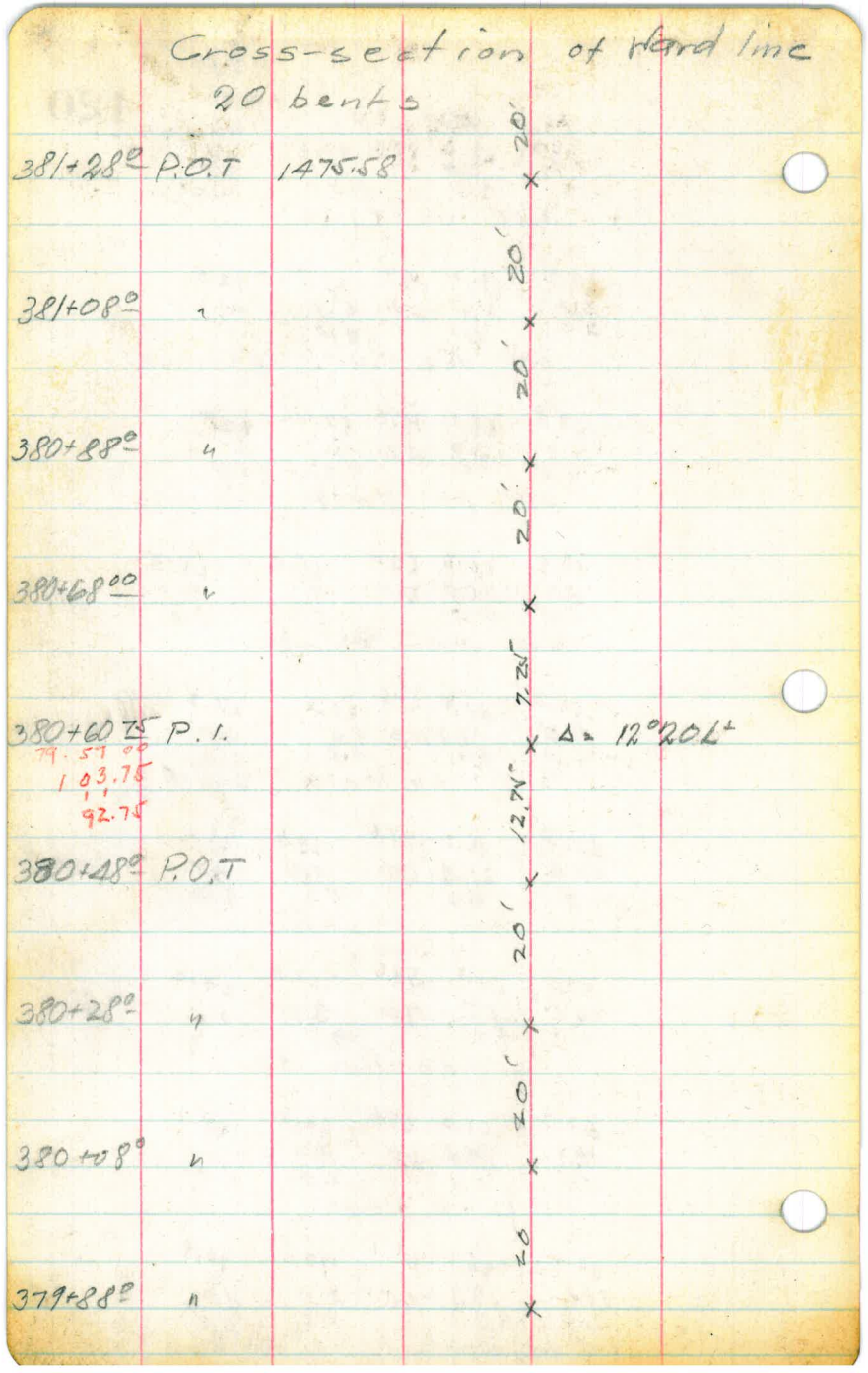
2' to Rock

57.3	61.2	64.6	66.8	68.1	
18.3	14.4	11.0	8.8	7.5	✓
6.0	4.0		4.0	6.0	

1' to Rock

64.0	66.1	68.1	70.6	70.9	
11.6	10.5	7.5	5.0	4.7	✓
6.0	4.0		4.0	6.0	

1.5 to Rock 1' to Rock


Cross-section of Hard line
20 bents
381+28.00 P.O.T 1475.58
381+08.00
380+88.00
380+68.00
380+60.75 P.I.
79.57.00
103.75
92.75
380+48.00 P.O.T
380+28.00
380+08.00
379+88.00
20'
20'
20'
20'
7.25°
Δ = 12°20'
12.75°
20'
20'
20'

L-L RL July 26-28

POG

Leach Eng.

HL-1475.5-8

64.0	67.8	68.5	69.1	74.0	75.6	76.2
11.6	7.8	7.1	6.5	1.5	0.0	+0.6 ✓
5.0	3.9		2.8	2.4	3.1	4.0

↓ solid Rock

121

61.3	66.8	68.7	69.6	73.6	
14.3	8.8	6.9	6.0	2.0	✓
4.5	3.6		4.0	6.0	

↓ solid Rock

64.9	65.0	67.1	69.1	77.1	
10.7	10.6	8.5	6.5	+1.5	✓
6.0	4.0		4.0	6.0	

solid Rock

58.3	59.5	63.5	67.4	69.6	
17.3	16.1	12.4	8.2	6.0	✓
6.0	4.0		4.0	6.0	

solid Rock

53.7					
	55.6	61.0	67.3	69.2	
21.9	20.1	14.6	8.3	6.4	✓
solid Rock 6.0 →	4.0		4.0	6.0	
	2.5	to	Rock		

55.2	57.0	60.8	63.9	66.8	
20.4	18.6	14.8	11.7	8.8	✓
6.0	4.0		4.0	6.0	

1.5 to Rock

59.4	60.2	63.6	66.0	68.0	
16.2	15.4	12.0	9.6	7.6	✓
6.0	4.0		4.0	6.0	

1.5 to Rock

61.6	62.3	64.6	67.1	68.6	
14.0	13.3	11.0	8.5	7.0	✓
6.0	4.0		4.0	6.0	

2.5 to Rock

63.0	63.6	65.6	67.7	69.6	
12.6	12.0	10.0	7.9	6.1	✓
6.0	4.0		4.0	6.0	

2.5 to Rock

Cross-section of Ward line

20 bents

1475.58

4.16 1471.42 B.M. West End

382+05.42 End of line

17.42

381+88° P.O.T

1.24

381+86.76 P.I. Δ = 18°40 Lt

17.37

381+69.39 P.I. Δ = 12°20 Lt

80 60 25

1 08.64

1.89

381+68° P.O.T

80

381+48° "

July 26.28

℄ RL P0.6

LL H.I. 14 75: 58

122

69.3		69.5	70.2	71.7
C-3			5.4	3.9
4.0		C.1	3.0	4.0

Solid Rock

64.9	65.3	67.8	69.1	
10.7	10.3	8.1	6.5	
6.0	4.0		4.0	

		25		
64.9	65.3	67.3	69.1	
10.7	10.3	8.3	6.5	
6.0	4.0		4.0	

Solid Rock

59.7	62.2	65.5	68.6	75.4
17.9	13.4	10.1	7.1	0.2
6.0	4.0		3.9	4.2

Solid Rock

59.7	62.2	65.5	68.6	75.4
17.9	13.4	10.1	7.1	0.2
6.0	4.0		3.9	4.2

67.8	68.3	68.9	69.4	74.6
7.8	7.3	6.7	6.2	1.0
6.0	4.0		3.2	4.0

Solid Rock

89-60
18-40
71-20

89-60
9-20

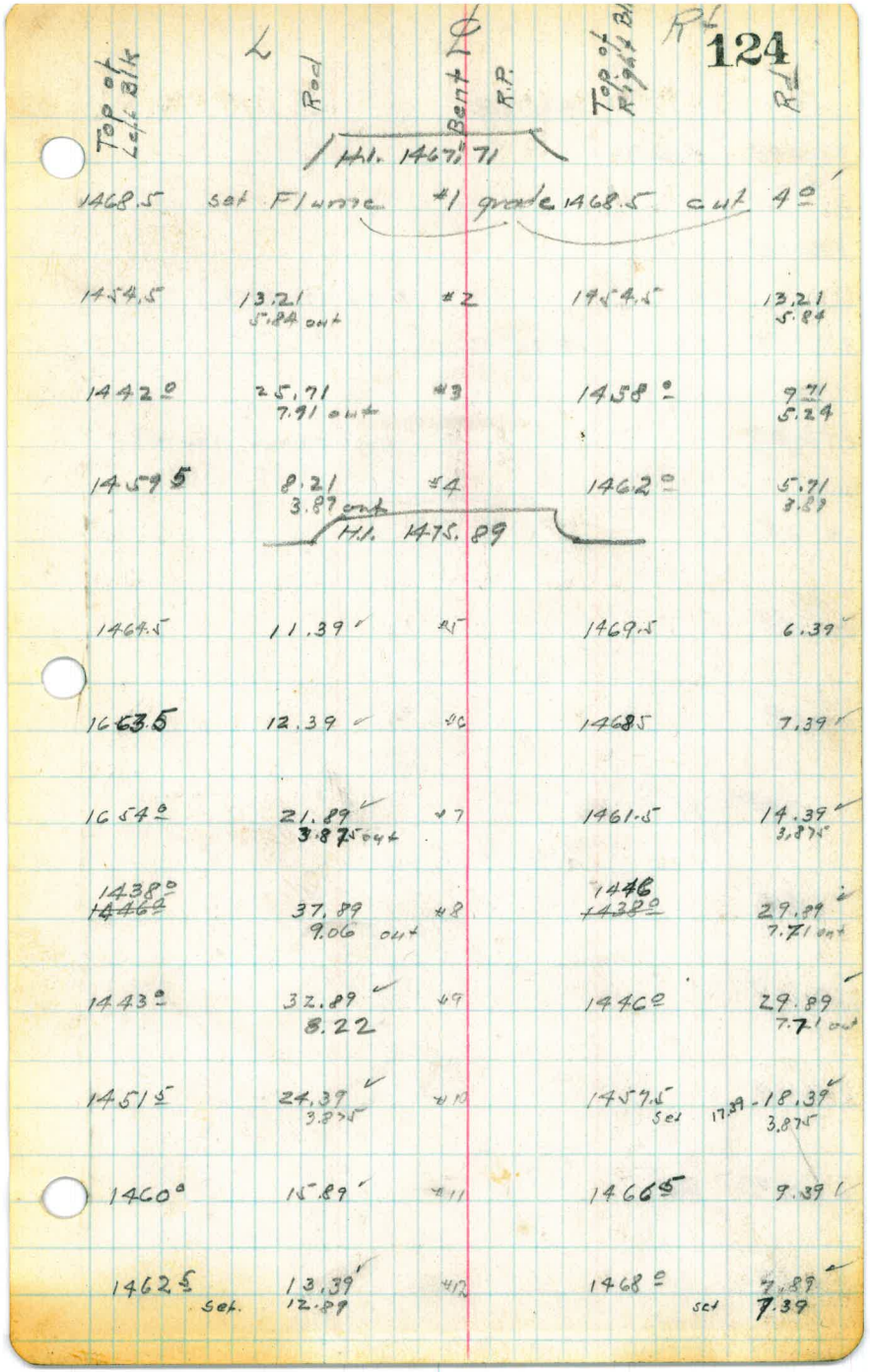
80-40
18-40
99-20

Grade of Footing B/4s
#15 Flume

123

Aug. 28
P.O.G

Sta.				Grade	B.M.
	0.40	1467.71		1467.31	1
373+68	Headwall upstream			1472.50	
373+88	East end 80' Span				
374+68	West " "				
374+88	P.I.				
	8.86	1475.89	0.68		1467.03
	0.55	1463.52	12.92		1462.97
375+08	P.O.T.	Lt #7	1454°	9.52	
		~~R~~ #8	~~1438°~~	~~25.52~~	
+28	"	Lt #10	1451.5°	12.02	
		Rt #10	1457.5°	6.02	
+48	"	13	13.01	1450.51	
	2.63	1473.14			
+68	"	Rt #9	1446°	7.14	
		Lt #9	1443°	10.14	
+88	"	Rt #8	1446°	7.14	
		~~Lt #8~~	~~1438°~~	~~15.14~~	
376+08	"		12.30	1440.84	
	8.84	1449.68			
+28	"	Lt #8	1438°	11.68	
376+36.98	P.I.				



Top of Left Bk | Rod | Bent 10 | R.P. | Top of Right Bk | Rd

Hi. 1467.71

1468.5 set Flume #1 grade 1468.5 cut 4.0

1464.5	13.21 5.84 out	#2	1464.5	13.21 5.84
1442.0	25.71 7.91 out	#3	1458.0	9.71 5.24
1459.5	8.21 3.89 out	#4	1462.0	5.71 3.89
	Hi. 1475.89			
1464.5	11.39	#5	1469.5	6.39
1463.5	12.39	#6	1468.5	7.39
1454.0	21.89 3.875 out	#7	1461.5	14.39 3.875
1438.0 ~~1446~~	37.89 9.06 out	#8	1446 1438.0	29.89 7.71 out
1443.0	32.89 8.22	#9	1440.0	29.89 7.71 out
1451.5	24.39 3.875	#10	1457.5 set	17.39 - 18.39 3.875
1460.0	15.89	#11	1466.5	9.39
1462.5 set.	13.39 12.89	#12	1468.0 set	7.89 7.39

		1475.89	
376+48	P.O.T		
376+68			
			8.86 1467.03
376+88	5.74	1472.77	
377+08			check Road Left @ 15
			1463.0 - 9.77
+ 28			
+ 48			
+ 68			
+ 7980	P.I.		
+ 88			
378+08			
+ 28			
+ 3673	P.I.		
+ 48			

Top of Left Bk	Rod	= Back	Top of Right Bk	Rod
		H.I. 1475.89		
1466	9.89	#13	1470	5.39
1467	8.89	#14	1469	6.39
				Set. 5.89
1463	12.89	#15	1470	5.89
		H.I. 1472.77		
1463	9.27	#16	1470	2.77
1461	11.27	#17	1468	4.27
1461	11.77	#18	1467	5.77
1461	11.27	#19	1468	4.27
1464	8.77	#20	1470	2.27
1465	7.27	#21	1470	2.77
1467	5.27	#22	1471	1.77
1466	6.27	#23	1471	1.77
1465	7.27	#24	1471	1.77
1461	11.77	#25	1467	5.77

1472.77

378+68

+88

379+08

+28

+48

+57½

+68

+88

380+08

+28

+48

+60½ P.I.

+68

H.I. 1472.77'

Top of Left Blk	Rd		Top of Right Blk	
1454 ±	18.27 ✓ 17.27 set	#26	1462 ±	10.27 ✓
1454 ±	18.27 ✓	#27	1460 ±	12.27 ✓
1458 ±	14.27 ✓	#28	1466 ±	6.77 ✓
1461 ±	11.77 ✓	#29	1466 ±	6.27 ✓
1469 ±	3.77 ✓ 2.77 set	#30	1470 ±	2.27 ✓ 1.27 set
1469 ±	3.77 ✓	#31	1470 ±	2.77 ✓ 1.77 set
1469 ±	3.77 ✓	#32	1471 ±	1.77 ✓
1469 ±	8.77 ✓	#33	1468 ±	4.77 ✓
1462 ±	10.27 ✓	#34	1467 ±	5.27 ✓
1460 ±	12.27 ✓	#35	1466 ±	6.77 ✓
1457 ±	15.27 ✓	#36	1464.5	8.27 ✓
1456 ±	16.77 ✓	#37	1467 ±	5.27 ✓
1460 ±	12.77 ✓	#38	1467 ±	5.27 ✓

1472.77

380+88

381+08

+28

+48

+69.39 P.I.

+86.76 P.I.

1.34 1471.43

+88

382+05.92 Downstream Headwall

Cross-section to determine

Rock excavation on Right of ℄ 1471.42

11.3 1482.7

381+33.4

381+42.3

381+48 =241

381+54.3

381+60.4

Top of Left Bk	R4		Top Right Bk	Rd
	H.I. 1472.77			
1465±	7.27	#39	1469±	3.27
1461±	11.27 / 2.27	#40	1469±	3.27
1465±	7.27	#41	1469±	3.77
1468±	4.27	#42	1469±	3.27
1462±	10.27	#43	1468±	4.27
1465±	7.27	#44	1468±	4.77 / 3.77
1469±	3.27	#45	1470±	2.77

67.0 68.2 74.7 76.7 77.0
1467 1468 80 6.0 5.7 c 72 / 4.5 out
2.1 4.8 3.9 5.0

68.2 68.9 77.1 77.3
1468 13.8 5.6 5.4 c 68 / 4.5
2.8 3.9 4.8

68.9 69.4 74.6 77.0
1468 13.3 8.1 5.7 / 4.5 out
3.2 4.0 5.0

69.4 69.4 78.4
1463 13.3 4.3 c 67 / 4.5
2.1 5.2

69.3 69.5 77.0 77.2 c 77 / 4.5 out
1464 13.2 5.7 5.7
2.0 3.9 4.5

Rock excavation Cross-section

381+68 = #42 1482.7

381+51.8

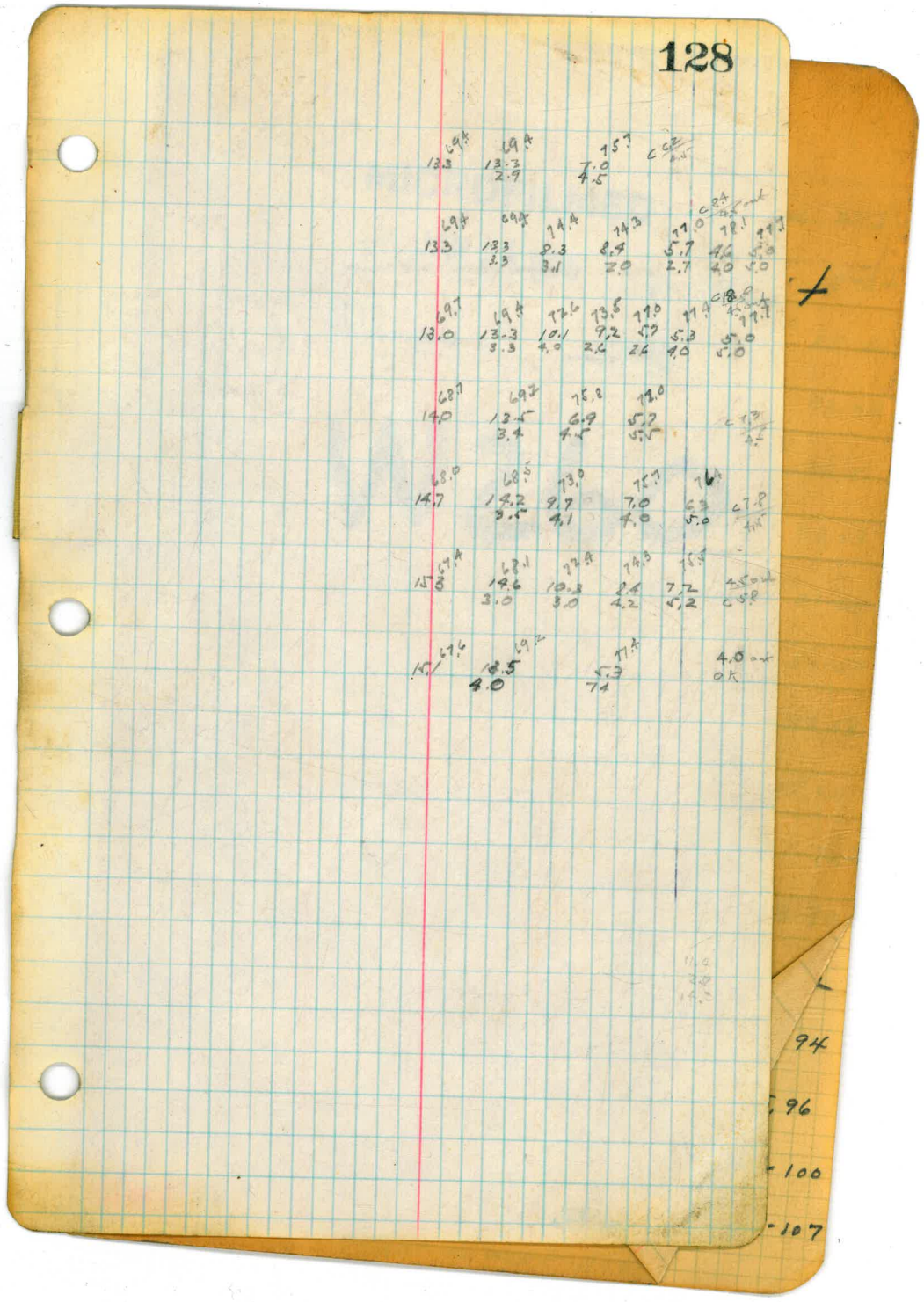
381+74.2

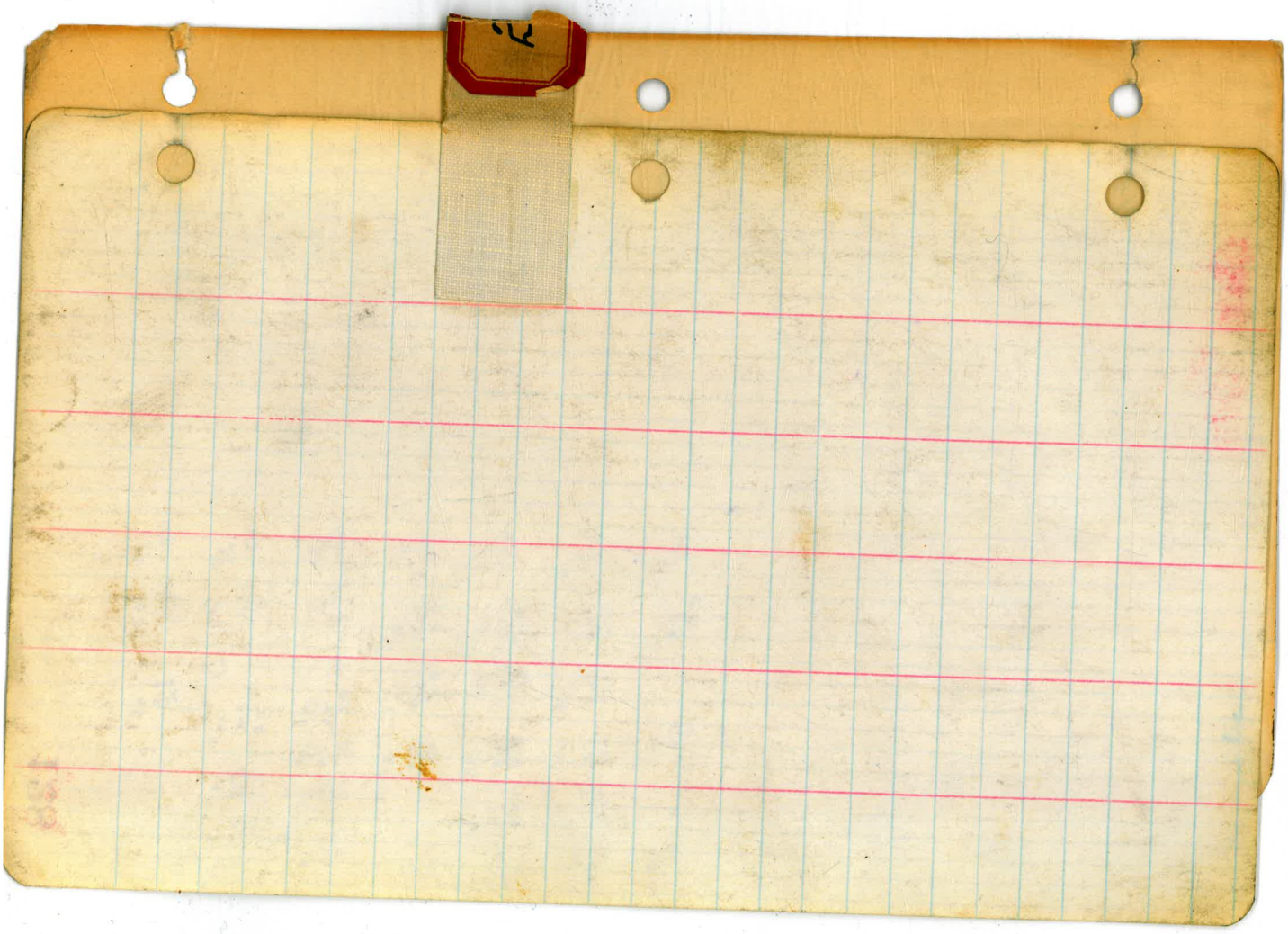
381+81"

381+69 39 = #43

+71.7

381+76.0





Book # 260

Revised location of Flume #5

	0.11	1479.61	12.30	1479.50
	2.99	14 70.30		14 67.31
			20	
374+86 6W	P.O.T.		×	
			20	
374+58 6S	P.O.T		×	
			28	
374+30 6S	P.I.		×	Δ=32°27½ Lt
			20	
374+10 6W	P.O.T		×	
			28	
373+82 6S	P.O.T		×	
			20'	
373+62 6S	End of Metal Flume		×	

130

Lt. Ft. 149030 Rt

See former X-Section

49.7 57.7 59.2 60.1 60.7 61.6 63.2 63.9 64.3

20.6 12.6 11.1 10.2 9.8 8.7 7.1 6.4 5.0
9.8 9.8 7.3 5.1 3.8 3.8 5.3 5.4

+39.8

63.1 64.7 65.7 64.9 65.9 65.9 67.2

7.2 5.6 4.8 4.4 4.5 4.4 3.1
8.9 5.1 3.8 3.8 6.1 6.7

58.3 60.3 61.3 62.3 64.3 65.1 64.6 66.9

12.9 10.0 9.0 8.0 6.0 5.2 5.7 3.4
10.9 7.6 5.1 3.8 3.8 6.7 10.5

58.6 59.7 59.8 60.7 60.1 59.4 59.6 58.6 60.3

11.7 10.6 10.2 10.1 9.4 10.7 11.7 10.0
5.9 5.1 3.8 3.6 5.1 7.0 9.2

See former X-Section

Book # 260