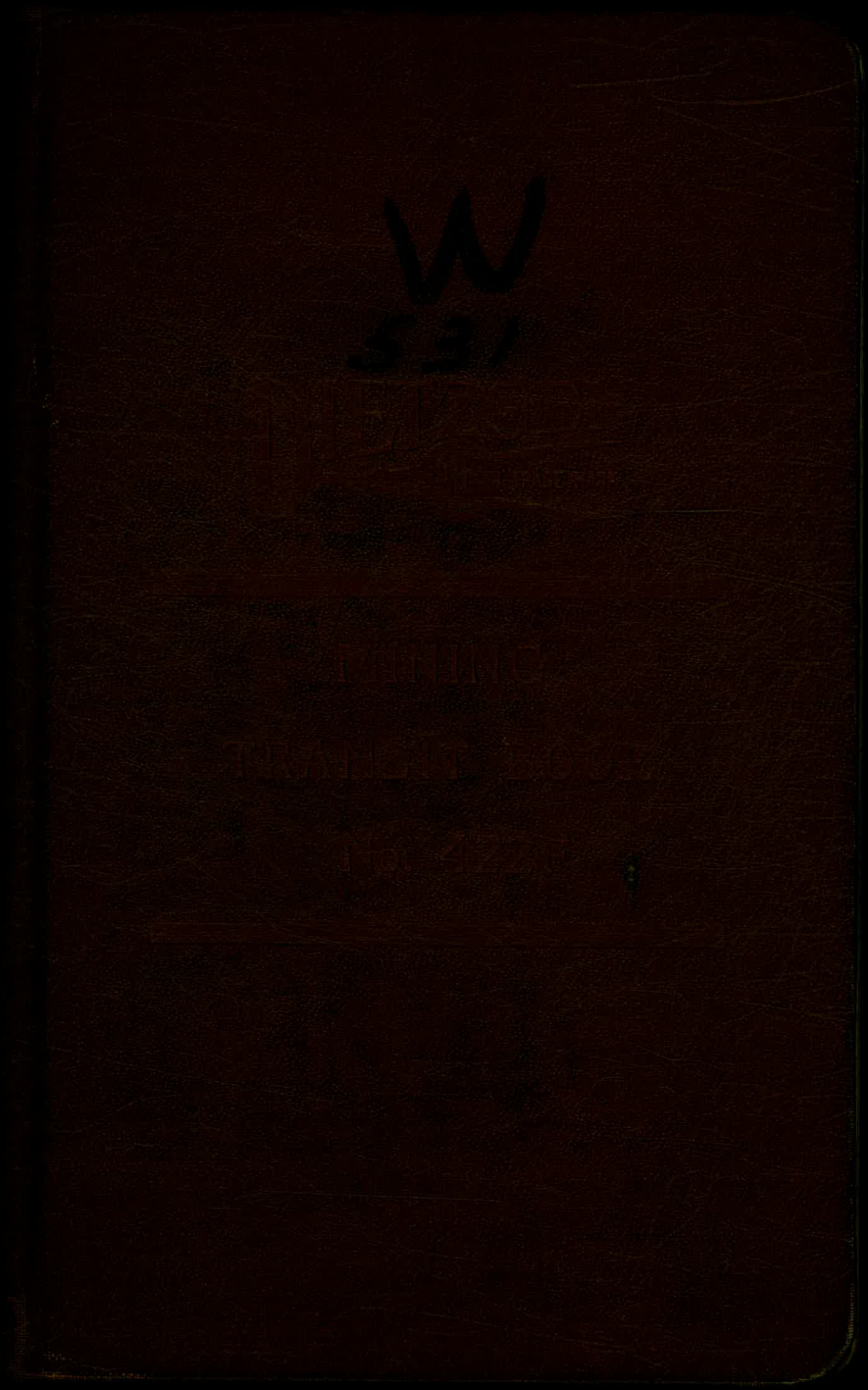

EUGENE DIETZGEN CO.

DRAWING MATERIALS, MATHEMATICAL and SURVEYING INSTRUMENTS

Chicago New York San Francisco New Orleans Pittsburg Toronto

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

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 of roadbed, correct above figures by one-half difference in width of roadbed; thus in example above, for 20 ft. roadbed distance will be 30.6+(20—16)÷2 or 2 ft. added to 30.6 =32.6. For slopes of 1 on 1½ see inside of back cover.

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This Field Book is manufactured of a high grade **50%** Rag Paper having a **WATER RESISTING** surface.

INDEX

INDEX Cont'd.

Aug 27 1936
Soper
Isbell
Remmen

Grade breaks Sta. 260+41.87 - 268+06.20

B.M #31				460.90	
	0.65	461.55			
					Grade
260+41.8695			11.5802	449.9698	449.9698
264+00.3695			13.050	448.500	448.500
T.P.			13.05	448.50	
	11.69	460.19			
268+06.20			12.71	447.48	447.48
T.P.			12.71	447.48	

Aug. 28 1936
Soper
Isbell
Remmen

Grades in ditch sta 268+25 - 276+43.02

B.M. 32			457.69	
	2.33	460.02		Grade
ck on grade 268+06.20			12.54	47.48	447.48
268+25			12.59	47.43	47.43
+50			12.65	47.37	47.37
+75			12.71	47.31	47.31
269			12.77	47.25	47.25
+25			12.84	47.18	47.18
+50			12.90	47.12	47.12
+60.16			12.92	47.10	47.10
+75			12.96	47.06	47.06
269+97.4945			13.018	447.002	447.002
TP			11.67	448.35	

Contd from page 2

			448.35	
	2.72	451.07		
272+06.6195		5.5856	45.4844	445.4844
276+43.023 B.C		6.70	44.37	44.37
T.P.		6.70	444.37	on grade hub sta 276+43.02

Grades in ditch sta. 276+50 – 288+21.09

					Grade
B.M. 33				458.00	
	0.58	458.58			
P.			11.52	447.06	
	1.16	448.22			
P			4.08	444.14	
	4.67	448.81			
L. on grade 276+43.02			4.44	44.37	444.37
276+50			4.46	44.35	44.35
+75			4.52	44.29	44.29
277+00			4.59	44.22	44.22
+25			4.65	44.16	44.16
+50			4.72	44.09	44.09
+75			4.78	44.03	44.03
278			4.84	43.97	43.97
+25			4.91	43.90	43.90

Sept 4 1936
Soper
Isbell
Moore

Cont'd from page 4

		448.81			
278+50			4.97	43.84	43.84
+62.97 Ex.			5.00	43.81	43.81
TP			5.22	443.59	
	6.99	450.58			
281+02.37 Brk			7.3878	443.1922	443.1922
TP			6.87	443.71	
	1.99	445.70			
286+77.87 Brk			4.60	41.10	441.10
288+21.09 BC			5.26	40.44	40.44

Sept. 8 1931
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Isbell
Moore

Grades in ditch sta 288+50 - 296+29.60

Grade at sta 288+21.09	11.81	452.25		440.44	
288+50			11.97	40.28	40.28
+75			12.10	40.15	40.15
289+00			12.24	40.01	40.01
+08.8070			12.286	439.964	439.964
+25			12.35	39.90	39.90
+50			12.45	39.80	39.80.
+75			12.55	39.70	39.70
290+00			12.65	39.60	39.60
+25			12.75	39.50	39.50
+50			12.85	39.40	39.40
291			13.05	39.20	39.20

Contd from page 6

		462.25			
PI			13.05	439.20	
	11.66	450.86			
291+25			11.76	39.10	39.10
+47.307			11.85	39.01	39.01
+75			11.88	38.98	38.98
292			11.90	38.96	38.96
+25			11.92	38.94	38.94
+50			11.94	38.92	38.92
+75			11.97	38.89	38.89
293			11.99	38.87	38.87
+25			12.02	38.84	38.84
+55.9945			12.0404	38.8196	438.8196
+75			12.11	38.75	38.75

Cont'd from page 7

		450.86			
294			12.20	38.66	38.66
+25			12.29	38.57	38.57
+50			12.37	38.49	38.49
+75			12.46	38.40	38.40
295			12.55	38.31	38.31
T.P.			12.55	438.31	
	10.50	448.81			
295+25			10.59	38.22	38.22
296			10.86	37.95	37.95
+29.04C			10.96	37.85	37.85
Ck on B.M. # 34			5.22	443.59	Rec. elev. 443.64

Grades in ditch sta. 296+29.60 - 309+33.09

Grade sta 296+29.60				437.85	
	9.76	447.61			
300+12.682			11.1225	36.4875	436.4875
TP.			11.47	436.14	
	10.04	446.18			
304+90.682			11.3331	34.8469	434.8469
TP.			12.76	433.42	
	10.15	443.57			
306+99.807			10.57	33.00	433.00
309+33.09			11.03	32.54	432.54
TP.			11.03	432.54	

Sept 10 1936
Sager
Isbell
Moore

Grades "raked in" sta 296+79.60 - 300+12.682
" " 300+12.682 - 304+90.682
" " 304+90.682 - 306+99.807
" " 306+99.807 - 309+33.09

Sept 11 1936
Soper
Isbell
Moore

Grades in ditch sta 313+01.26 - 317+25

BM #35				438.93	
	2.43	441.36			
313+01.26			8.84	32.52	432.52
313+20.76			8.84	32.52	432.52
313+25.76			9.18	32.18	432.18
313+55.76			9.34	32.02	432.02
313+70.26			9.36	32.00	432.00
+87.80			9.56	31.80	431.80
314+05.34			9.77	31.59	431.59
314+16.23			9.79	31.57	431.57
+25			9.81	31.55	31.55
+50			9.86	31.50	31.50
+75			9.91	31.45	31.45

Cont'd from page 10

		441.36			
315+05.79			9.98	31.38	431.38
P.			9.98	431 38	
	10.62	442.00			
315+25			10.66	31.34	31.34
+50			10.71	31.29	31.29
+75			10.76	31.24	31.24
316+00			10.81	31.19	31.19
+11.775 = +06.41			10.83	31.17	31.17
316+25			10.87	31.13	31.13
+50			10.91	31.09	31.09
+75			10.96	31.04	31.04
317+00			11.01	30.99	30.99
+25			11.06	30.94	30.94

Not Original x-section

Sept 12 1936
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Moore

Cuts on offsets - Valve Chamber 312+21

B M # 35		438.93	
	3.83	442.76	
			Sub-grade
312+17.32 (9.08 Rt) 2' offset	4.73	38.03	430.35
312+17.32 (12.58 Lt) 2' offset	4.06	38.70	30.55
312+25.48 (9.08 Rt) 2' offset	4.89	37.87	30.45
312+25.48 (12.58 Lt) 2' offset	4.11	38.65	30.65

Cuts on offsets - Pressure Reg. Chamber 313+63.

313+58.18 (3.83 Rt) 2' offset	10.14	32.62	30.35
313+58.18 (3.83 Lt) 2' offset	8.96	33.80	30.35
313+67.84 (3.83 Rt) 2' offset	8.57	34.19	30.25
313+67.84 (3.83 Lt) 2' offset	7.90	34.86	30.25

Cut on 2' offset
7.68

8.15

7.42

8.00

Cut on 2' offset
2.27

3.45

3.94

4.61

Sept 14, 1936
Siper
Isbell
Moore

Grades in ditch sta 309+50 - 311+98.43

B.M. 35				438.93	
	3.89	442.82			
ck on 309+33.09			10.28	32.54	433.54
309+50			10.32	32.50	32.50
+75			10.36	32.46	32.46
+98.057			10.4122	32.4078	432.4078
310+25			10.47	32.35	32.35
+50			10.52	32.30	32.30
+75			10.57	32.25	32.25
311			10.62	32.20	32.20
+25			10.67	32.15	32.15
+50			10.72	32.10	32.10

Contd from page 13

	442.82		
311+75.807		10.772	432.048
+77.96 EC.		10.78	32.04
311+98.43		10.82	432.00

Offset stakes for V. Chamber - 312+21

B.M.#35			438.93	
	4.35	443.28		
				Subgrade
312+25.48 (9.08 RH) 2' offset		6.20	37.08	430.45
312+17.32 (9.08 RH) 2' offset		7.17	36.11	430.35
ck. on 312+17.32 (12.58 LH) 2' offset		4.58	38.70	(Page 17)

Sept 15 1936
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Moore

15

Cut 6.63

Cut 5.76

Sept 17 1936
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Isbell
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16

Grades in ditch sta 319+50 - 329+54.33

B.M. 36			441.06	
	4.31	445.37		Grade
329+54.33			11.30	434.07	434.07
TP			12.24	433.13	
	8.86	441.99		
325+45.927			11.6947	30.2953	430.2953
321+87.427			11.964	30.026	430.026
TP.			11.96	430.03	
	11.31	441.34		
319+50			10.85	30.49	430.49
ck on grade 317+25			10.40		30.94

Sept 18 1936
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Grades in ditch - sta 329+93.907 - 335+01.03

B.M. 36			441.06	
	5.32	446.38		
ck on grade 329+54.33			12.31	434.07
329+75			12.12	34.26	34.26
329+93.907			11.9374	34.4426	434.4426
330			11.92	34.46	34.46
+25			11.85	34.53	34.53
+50			11.78	34.60	34.60
+75			11.71	34.67	34.67
331			9.64	36.74	34.74
+35			11.57	34.81	34.81
+50			10.50	35.88	34.88
+75					34.95

Cut 2.00 (2.88 out)

Cut 1.00 (2.63 out)

)Contid from page 171

		446.38			
332+00			11.36	35.02	35.02
+25			11.29	35.09	35.09
P.			11.29	435.09	
	12.35	447.44			
+50			12.28	35.16	35.16
+62.32			12.25	35.19	435.19
+75			11.75	35.69	35.69
333			10.77	36.67	36.67
+25			9.77	37.65	37.65
+45.65 EC.			8.98	38.46	38.46
335+01.03			2.88	44.56	444.56
P. on prolonga			2.88	444.56	

Elev. for.

Final x-section of Valve chamber - 312+21

B.M° 35			438.93
	2.98	441.91	
312+17.32 (9.68Rt)		11.6	430.3
312+17.32 (12.58Lt)		11.4	430.5
312+25.48 (9.08Rt)		11.5	430.4
312+25.48 (12.58Lt)		11.3	430.6

OK
W

Final x-section of
Pressure Reg. Chamber. Sta 313+63

313+58.18 (3.83Rt)		11.6	430.3
313+58.18 (3.83Lt)		11.6	430.3
313+67.84 (3.83Rt)		11.7	430.2
313+67.84 (3.83Lt)		11.7	430.2

OK.
W

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(Copied from scratch pad)

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Moore

Grades in ditch sta 317+50 – 319+00

Grade at 317+00			430.99	
	10.57	441.56		
ck as grade 317+25		10.62	30.94	30.94
317+50		10.67	30.89	30.89
+75		10.72	30.84	30.84
318+01		10.78	30.78	30.78
+25		10.82	30.74	30.74
+50		10.87	30.69	30.69
+75		10.92	30.64	30.64
319		10.97		30.59

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Grades in drain ditch for valve chamber Sta 13+00

0+00 = outside of concrete chamber. Grade = -1.00% (except under boulder)

B.M.				570.22	
	2.38	572.60			
T.P.			10.10	562.50	
	8.51	571.01			
Bottom of drain tile at V. Chamber.			10.39	560.62	Grade for bottom of Pipe.
0+15			10.55	560.46	60.46
T.P.			11.82	559.19	
	7.26	566.45			
+23.6			9.28	57.17	57.17
+35.6			9.40	57.05	57.05
+49.6			8.54	57.91	56.91
+78.6			7.83	58.62	56.62

Cut 1.0

Cut 2.0

Grades in ditch sta 311+98.43 - 312+40

B.M. #35			438.93	
	3.86	442.79		
ck on grade 311+98.43			10.79	32.00	432.00
312+10.03			10.31	32.48	32.48
312+15.03			10.32	32.47	32.47
312+27.76			10.02	32.77	32.77
312+40			10.66	32.73	32.73
Nail in floor 312+24			11.61	31.18	
top steel under 36" gate valve			10.55		
top of steel under 20" gate valve			10.27		

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156.11
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Sept 21 1936
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Isbell
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Grades in ditch sta 333+45.65 - 341+87.425

TP.				
grade-335+01.03			444.56	
	12.66	457.22		
TP.			0.94	456.28
	12.82	469.10		
338+88.80			7.3052	61.7948	461.7948
TP.			3.84	465.26
	12.52	477.78		
340+67.94			9.7696	68.0104	468.0104
341+87.425			8.82	68.96	468.96
TP. on grade				
341+87.425			8.82	468.96

Grades "raked in" between grade breaks.

Fill - from nail in floor to ℄ of 30" Gate Valve

B.M "35				438.93	
	4.24	443.17			
Elev. of ℄ of 30" G.V. Sta 312+21			12.20	430.97	433.98

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B.M "35				438.93	
	4.28	443.21			
top of flange - 30" Gate valve			7.60	35.61	435.59

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Fill 3.01 to ℄ of 30" G.V.

435.39 = Grade for top of flange

433.98
1.25
0.36
435.59

Final x-section of drain ditch sta 13+00

0+00 = outside of valve chamber.

B.M				570.22
	0.79	571.01		
0+00			10.8	560.2
0+15			11.1	599
0+18.5			4.2	66.8
0+25.5			4.0	67.0
TP.			11.82	559.19
	7.26	566.45		
0+26			9.7	56.7
0+46			9.9	56.5
0+46			9.5	56.9
0+82			9.8	56.6

Note: 0+00 - 0+46 was excavated 0.50 below pipe grade and filled with concrete.

Sept 18 1936

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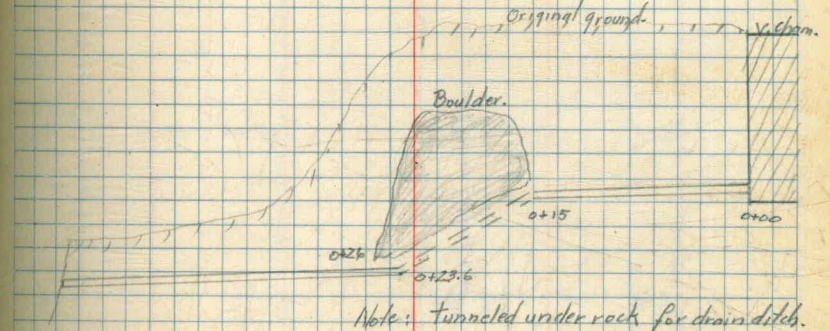
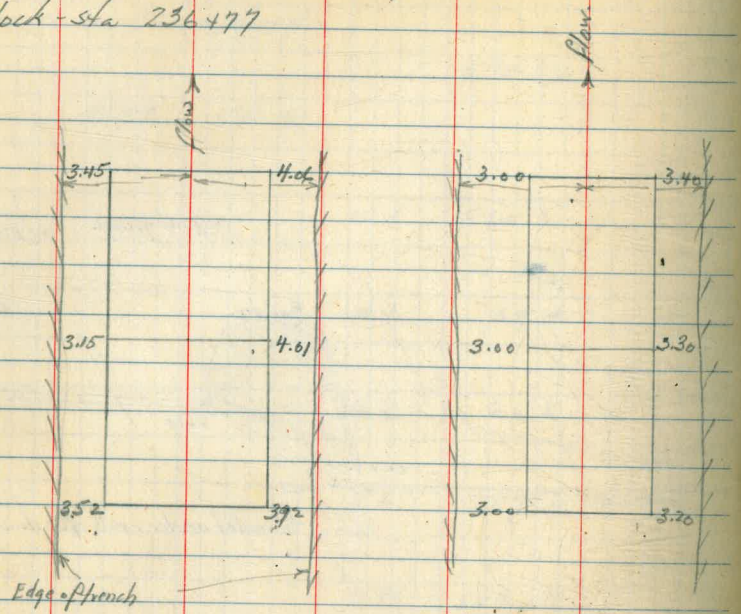
(Copied from scratch pad)



Note: tunneled under rock for drain ditch.

Measurement of excavation for anchor block - sta 236+77



1.0 above pipe

1.0 below pipe

Col.

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Sept 22 1936
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Isbell
Moore

Grades in ditch Sta 341+87.425 – 356 + 19.53

T.P.				
Grade 341+87.425			468.96	
	11.15	480.11		
Ckon BM #38		3.79	476.32	Recks. 476.31
				Grade
343+25		11.71	468.40	468.40
343+36.795		12.01	468.10	468.10
343+66.67		12.34	467.77	467.77
T.P.		11.18	468.93	
	1.37	470.30		
346+35.41		10.43	59.87	459.87
346+60		10.75	59.55	59.55
+90		10.12	60.18	59.18
348+00		12.52	57.78	57.78
T.P.		12.52	457.78	

Cut 1.00 (2.47 out)

Cont'd from page 27

			467.78	
	6.45	464.23		Grade
351+73.12			11.20	53.03	453.03
PI			10.13	454.10	
	11.65	465.75		
356+19.53 EC			9.79	55.96	455.96

Grades "raked in" between grade breaks.

Final x-section - blowoff ditch and box, 134+50

0+00 = 28 from ℄ of pipe.

top of pipe (sta 134+50)				502.5
	5.3	507.8		
0+00			9.8	498.0
0+10.2			9.9	97.9
Bottom of blowoff box excavation.			12.3	95.5

Used for Del

5-7-8
5-5
60¢
M

Sept 23 1936

Soper
Isbell
Moore

Grades in ditch sta 346+35.41 - 347+35

Grade-sta 348+00				457.78	Grade
	11.40	469.18			
347+35			9.58	59.60	458.60
347+10			9.26	59.92	58.92
346+60			9.63	59.55	59.55
346+35.41			9.31	59.87	59.87

Sept 25 1936
Soper
Isbell
Moore

30

Cut 1.0

Cut 1.0

Original x-section for anchor block 423+19.78.

ground elev. 423+19.78				409.6
	5.3	414.9		
"A"			5.4	409.5
"B"			5.1	09.8
"C"			5.3	09.6
"D"			5.0	09.9

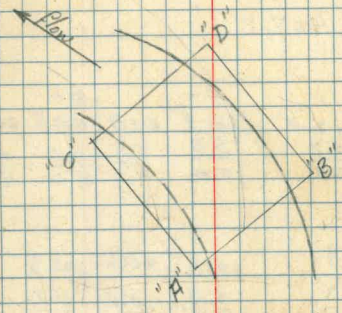
Final x-section for anchor block

Oct. 14 1936
Soper
Isbell
Moore

Grade-Sta 423+12.28				400.83
	4.05	404.88		
			5.2	399.7

Sept. 25 1936
Soper
Isbell
Moore

31



Bottom of anchor excavation

Yatre Chamber

Original x-section for ~~blow off box~~ - 426+38.67

℄ Elev. sta 426+38.67				401.9		
	5.3	407.2				
		Lt	℄		Rt	
		~~402.0~~	401.9	401.7	402.5	402.3
		5.2	5.3	5.5	4.7	4.9
426+34.6		5.3	0.0	3.0	5.0	9.1
		401.9	401.8	401.6	402.5	402.3
		5.3	5.4	5.6	4.7	4.9
426+42.8		5.3	0.0	3.0	5.0	9.1

Copied x sheet (5-8-58) AW

Yatre Chamber

Oct 7 1936
Soper
Isbell
Moore

Final x-section for ~~blow off box~~ - 426+38.67

County B.M.			400.22	
	5.27	405.49		
426+34.59	(5.33 Lt)		12.6	392.9
426+34.59	(9.08 Rt)		12.7	92.8
426+42.75	(5.33 Lt)		12.5	93.0
426+42.75	(9.08 Rt)		12.6	92.9

used AW ✓ plot (5-8-58) AW

Sept 25 1936
Soper
Isbell
Moore

Sept 26 1936
Soper
Isbell
Moore

Grades in ditch - 356+19.53 - 360+06.89

Grade - Sta 356+19.53			455.96	
	11.39	467.35		Grade
356+21.23			11.38	55.97	55.97
+37.50			11.59	55.76	55.76
+50			11.76	55.59	55.59
+62.50			11.92	55.43	55.43
+75			12.08	55.27	55.27
+87.50			12.25	55.10	55.10
357+00			12.41	54.94	54.94
+12.5			12.57	54.78	54.78
+25			12.74	53.61	54.61
+37.5			12.90	54.45	54.45
TP			12.90	54.45	

Cont'd from page 33

				454.48	
	9.23	463.68			
357+50			9.39	54.29	54.29
+62.5			9.56	54.12	54.12
+75			9.72	53.96	53.96
+87.5			9.88	53.80	53.80
358+01.86 E.C.			10.07	53.61	53.61
360+06.89			12.75	450.93	450.93

Re-set grades in ditch 340+67.945 - 343+66.67

Grade sta 343+25			468.40	
	11.17	479.57		
340+67.945			11.5596	468.0104
343+36.795			11.47	468.10
343+66.67			11.80	467.77

Sept 28 1936
Soper
Isbell
Moore

Sept 28 1936
Soper
Isbell
Moore

Final x-section for blowoff trench and box 154+75

Top of pipe 154+75				498.8
	5.3	504.1		
0+00			9.7	94.4
0+10.2			9.8	94.3
Bottom of blowoff box excavation			11.6	492.5

Two 5'x8' 55+00

Original x-section blowoff trench and box - 258+00

	0+00 = 28 from ℄ of pipe			
top of pipe sta 258+00				450.1
	5.3	455.4 ✓		
0+00			4.3	51.1 ✓
0+10.2			4.3	51.1 ✓
0+17			4.3	51.1 ✓

Final x-section blowoff trench and box 258+00

top of pipe 258+00				450.1
	5.3	455.4 ✓		
0+00			10.2	45.2 ✓
0+10.2			10.2	45.2 ✓
Bottom of box excavation			12.1	43.3 ✓

Used in Est Ck 354 - Cal

528 / 56+60 / 94.T.III

Sept 29 1936
Soper
Isbell
Moore

Original x-section for blow off trench 227+20

0+00 = 2.8 from ℄ of pipe

top of pipe 227+00	5.3	479.8 ✓	474.5
0+00		3.3	476.5 ✓
0+19		3.2	476.6 ✓
0+25.2		10.3	469.5 ✓

Final x-section for blow off trench 227+20

top of pipe 227+00	5.3	479.8 ✓	474.5
0+00		10.2	469.6 ✓
0+25.2		10.3	469.5 ✓

Class. A Ex Rock 5 yd 60 C.Y.

Sept 29 1931
Soper
Isbell
Moore

Grades in ditch - 360+06.89 - 377+38.4318

grade - sta					
360+06.89				450 93	
	5.86	456.79			
ck. on B.M.#40			3.75	453.04	
T.P.			12.61	444.18	
	2.32	446.50			Grade
367+98.35			3.50	443.00	443.00
369+91.96			10.22		436.28
T.P.			12.65	433.85	
	2.47	436.32			
373+20.50			7.72	428.60	428.60
ck on B.M.#41			5.09		
T.P.			12.93	423.39	
	0.50	423.89			
376+19.0218			6.3171		417.0729
377+38.4318			11.4278		412.4622

Sept 29 1936
Soyer
Isbell
Moore

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Rec. elev. 453.02

Rec. elev. 431.23

Sept 30 1936
Soper
Isbell
Moore

Grades in ditch - 377+38.4318 - 400+08.213

B.M "42			404.45	
	6.28	410.73		
				Grade
383+00		5.49	405.24	405.24
388+13.8468		11.0894	99.6406	398.6406
389+33.1268		9.204		401.526
B.M "42			404.45	
	12.61	417.06		
390+82.311		8.3558	408.7042	408.7042
391+42.022		5.947	411.113	411.113
392+31.589		2.7215	414.3385	414.3385
TP		2.73	414.33	
	12.50	426.83		
395+60.103		3.9284		422.9016

Cut - 1.00

Cont'd from page 40

426.83

397+39.343 2.1368 424.6932 424.6932

PI 2.14 424.69

5.10 429.79

400+08.213 4.1463 425.6437

Oct. 1, 1936
Soper
Isbell
Moore

Grades in ditch 400+08.213 - 409+34.14

Grade - sta 400+08.213				425.6437	
	1.24	426.8837			
402+47.17			5.8290	421.0547	421.0547
TP.			11.5337	415.35	
	0.25	415.60			
405+75.64			4.545	411.055	411.055
409+34.14			4.97	410.63	410.63
TP.			5.84	409.76	
	9.23	418.99			
Conc BM #44			1.95	417.04	

Rec. elev. 417.06

Oct 1 1936
Soper
Ichell
Moore

Gradebreck - sta 360+06.89 - Reset

358+01.86			453.61
	8.54	462.15	
360+06.89		11.22	450.93

Elevation of top of existing 36" line.

County B.M.		400.22
	6.24	406.46
	8.30	398.16

423+19.78
385.55
427+05.33 = ~~end of pipe~~
.25
427+05.58 cut .25 off existing pipe for bulkhead removal.

Sta of end of trench excavation = 427+07.0

Oct 3 1936
Soper
Isbell
Moore

Top of existing Lakeside - San Diego 36" line.

Thickness = $\frac{19}{64}$"

Oct 5 1936
Soper
Isbell
Moore

45

Grades in ditch - 423+12.28 - 424+71.733

County B.M			400.22	
	6.40	406.62		
I.P.			9.35	397.27
	9.92	407.19		
424+71.733			10.846	396.344
I.P.			7.33	399.86
	8.97	408.83		
424+22.301			8.887	397.943
423+62.551			8.05	400.78
Grade - sta 4				
423+62.551			400.78	
	12.34	413.12		
423+50			12.33	406.79
423+25.15				
423+27.28			12.30	400.82
423+12.28			12.29	400.83

Original and Final x-sections on page 32

Offsets for Valve chamber - 426+38.67

County B.M			400.22	
	4.89	405.11		
TP			3.10	402.01
	4.84	406.85		
				Subgrade
"A" (2' offset)			4.56	402.29	393.05 (cut-9.24)
"B" (2' offset)			5.65	401.20	392.95 (cut-8.25)
"C" (2' offset)			4.42	402.43	392.95 (cut-9.48)
"D" (2' offset)			7.80	399.05	392.80 (cut-6.25)
426+25			11.19	95.66	95.66
426+50			11.40	95.45	95.45

Oct 6 1936
Soper
Isbell
Moore

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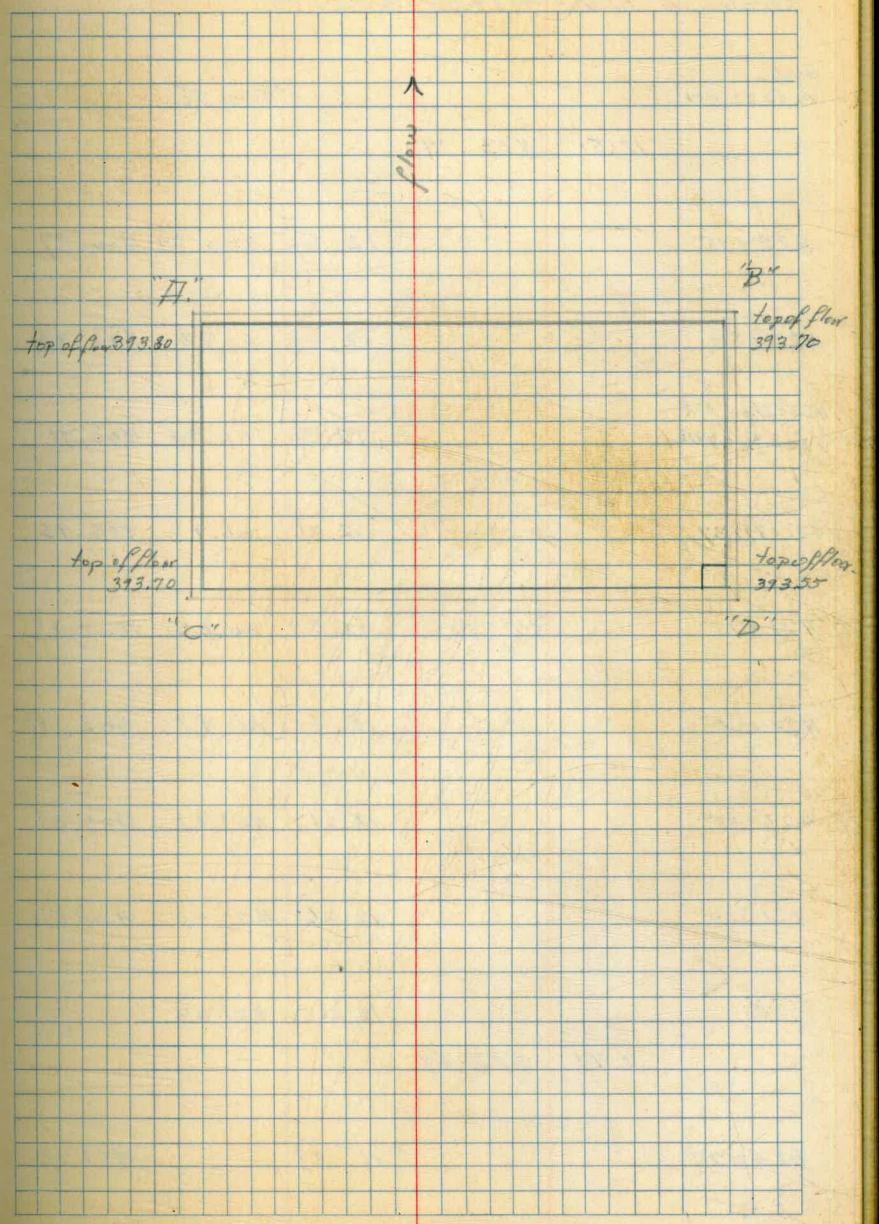

Oct C 1936
Soper
Isbell
Moore

Grades in ditch - 412+50 - 422+75

Grade - Sta 423+62.55				400.78	
	12.51	413.29			
422+75			12.42	400.87	400.87
422+60			12.41	00.88	406.88
422+21.02 Back 422+36.68 Ahd			12.38	00.91	400.91
421+99.37			12.36	00.93	400.93
421+75			12.33	00.96	400.96
421+50			12.31	00.98	400.98
421+25			12.28	401.01	401.01
421+00			12.26	401.03	401.03
"			12.26	401.03	
	11.41	412.44			
420+75			11.38		401.06

(Contd from page 47)

412.44

420+48.93 BC.		11.35	401.09	401.09
420+35		11.33	01.11	01.11
420+00		11.30	01.14	01.14
419+75		11.28	01.16	01.16
419+66.77 BC.		11.27	01.17	01.17
419+50		11.25	01.19	01.19
419+25		11.23	01.21	01.21
419+14.44 BC.		11.21		01.23
PI.		11.61	400.83	
	11.61	412.44		
417+55.01		11.05		401.39
412+50		9.04		403.40

Original x-section for blow off trench & box 312+12

0+00 = 2.3 from ℄ of 36" pipe

B.M # 35			438.93
	1.87	440.80 ✓	
0+00		3.5	37.3 ✓
0+03		3.7	37.3 ✓
Blow off box		3.7	37.1 ✓

5 x 8 / 5

5 x 8 / 60

for class 3

for class 4

N

Final x-section for blow off trench and box 312+12

0+00		9.1	31.7 ✓
0+03		9.1	31.7 ✓
Blow off box		11.5	429.3 ✓

Oct 2 1936

Soper
Isbell
Moore

(Copied from pad)

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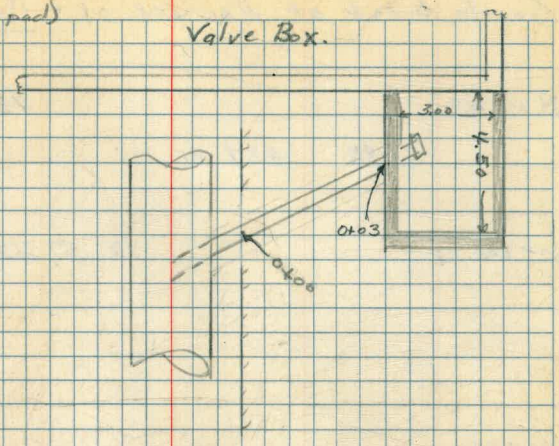
Valve Box.



Note: This blow off box enlarged by Bob Watson to enable valve to be taken off.

3.00 x 4.50 inside.

Grade break at 400+08.21 - Reset.

B.M 43				435.33	
	1.88	437.21			
400+08.21			12.57	424.64	425.64

Oct 7 1936
Soper
Isbell
Moore

Fill - 1.00

Oct 7, 1936
Soper
Isbell
Moore

Grades in ditch 409+34.14 – 412+43.19

Grade – Sta				
409+34.14			410.63	
	3.92	414.55		
409+50			3.97	10.61	410.61
+75			3.97	10.58	10.58
410+00			4.00	10.55	10.55
410+23.77			4.03	10.52	410.52
410+53.64			4.15	410.40	410.40
410+75			4.94	09.61	409.61
P.			4.81	409.74	
	5.42	415.16		
411+73.35			9.17	05.99	405.99
411+80.67 – 411+81.05			9.44	05.72	05.72
ck on grade					
412+50			11.76	03.40	403.40
412+43.19			11.733	03.427	403.427

Original x-section of blowoff trench and box - 322+01

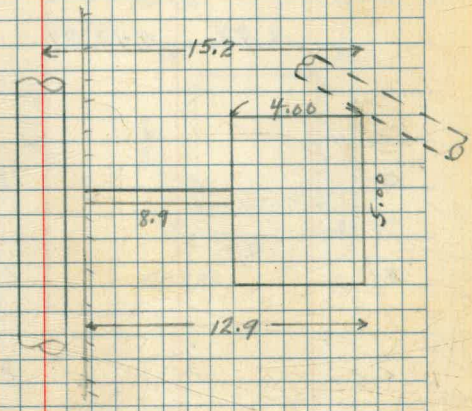
0+00 = 2.3 from ℄ of 36" pipe

top of pipe 322+00.			433.0
	5.3	438.3 ✓	
0+00		2.5	435.8 ✓
		2.6	435.7 ✓
Blow off box.		2.6	435.7 ✓

Final x-section B.O. trench + box 322+01 Class 3 & 4 { 5-8 / 5-8 61 yd. } Cal

Oct. 15, 1936 Soper Isbell Moore

top of pipe 322+00			433.0
	5.3	438.3 ✓	
0+00		9.3	428.9 ✓
0+08.9		9.4	428.9 ✓
Blow off box		11.1	428.7 ✓



Note: Box moved in to clear County Culvert

Oct 7 1936

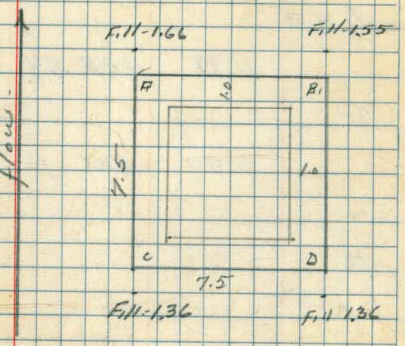
Elevs of floor for Recording Sta. 313+00

B.M #35			438.93	
	3.94	442.87		
				Floor elevation
"A"		6.53	36.34	438.00
				Fill - 1.66
"B"		6.42	36.45	438.00
				Fill - 1.55
"C"		6.23	36.64	438.00
				Fill - 1.36
"D"		6.23	36.64	438.00
				Fill - 1.36
Average ground elev.		6.40	436.47	

Cld. 528/68

2' offsets

Fill - 1.66 Fill - 1.55



Fill - 1.36 Fill - 1.36

Measurement of foundation thickness after pouring.

Elev.

Oct 7 1936
Soper
Isbell
Moore

Grades in valve chamber -426+38.67

County B.M.		✓		400.22	
	4.82	405.04			
TP.			3.23	401.81 ✓	
	4.35	406.16 ✓			floor grate
H			12.36	393.80 ✓	393.80
B			12.46	93.70 ✓	393.70
C			12.46	93.70 ✓	393.70
D			12.61	93.55 ✓	393.55

Original x-section for blow off trench 388+27

0+00 = 2.3 from ℄ of 36" pipe

top of pipe 388+25			401.9
	9.5	411.4 ✓	
0+00		8.2	403.2 ✓
0+16		8.4	403.0 ✓
0+30		10.7	400.7 ✓
0+30		10.7	400.7 ✓

Final x-section blow off trench 388+27 calculation (5-28-61)

top of pipe 388+25			401.9
	5.3	407.2 ✓	
0+00		9.5	397.7 ✓
0+24.4		10.2	97.0 ✓
0+24.4		10.7	96.5 ✓
0+27.9		10.7	96.5 ✓W (6-28-61)

Oct 8 1936
Soper
Isbell
Moore

55

Oct 14 1936
Soper
Isbell
Moore

Oct 29 1936
Soper
Isbell
Moore

Original x-section for blowoff trench 351+75

0+00 = 2.3 from ℄ of 36" Pipe

top of pipe 351+75			456.0
	8.9	447.9 ✓	
0+00		8.4	456.5 ✓
0+12		10.3	454.6 ✓
0+25		10.5	454.4 ✓

Final x-section for blowoff trench 351+75

top of pipe 351+75			456.0
	5.3	411.3 ✓	
0+00		9.6	451.7 ✓
0+10.7		9.9	451.4 ✓
0+10.7		11.2	450.1 ✓
0+14		11.2	450.1 ✓

Used 5+81 / 7.1

Cre

Oct 8 1936
Soper
Isbell
Moore

Original x-section for blow off trench and box
Sta 426 + 14.3 ; 0+00 = 2.3 from ℄ 36" Pipe

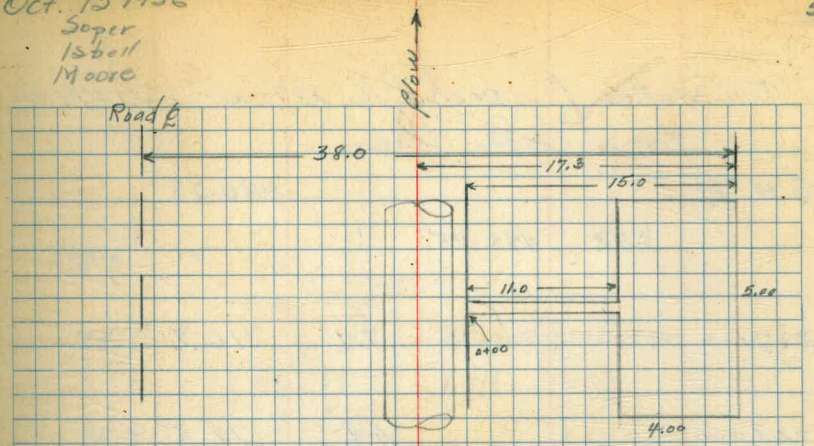
Grade at 426+25	12.2	407.9 ✓		395.7
0+00			5.3	402.6 ✓
0+11			5.9	402.0 ✓
Box			5.9	402.0 ✓

Final x-section for blow off trench and box 426+14

Grade at 426+25	Top Pipe at 5.3	404.1 ✓ ~~401.0~~		398.8 ~~395.7~~
0+00			9.1	395.0 ✓ ~~391.9~~
0+11			9.1	395.0 ✓ ~~391.9~~
Box			11.2	394.9 ✓ ~~389.8~~

(Comment Grade 395.87)

Oct. 13 1936
Soper
Isbell
Moore



Note: 4" boiler flange on pipe moved back 12.0 to sta 426+14.3 on account of tree + 12 bend off
Changed accordingly.

Fill stakes for back fill. 227+00 - 229+74.24
For Insp. Use.

BM #27				480.23
	3.72	483.95		
227+00			7.1	476.8
228+00			4.4	79.5
229+00			4.3	79.6
229+50			2.3	81.6
229.74.24			+0.3	84.2

Oct 13 1931
Soper
Isbell
Moore.

top of pipe

74.7	2.1	Above top of pipe
75.9	3.3	"
78.4	1.2	"
79.9	1.7	"
80.6	3.1	"

Fill stakes in Valve Chamber - 426 + 38

County B.M. 400.22

6.29 406.51

		Invert grade
12.83	393.68	395.80
12.78	393.73	395.80

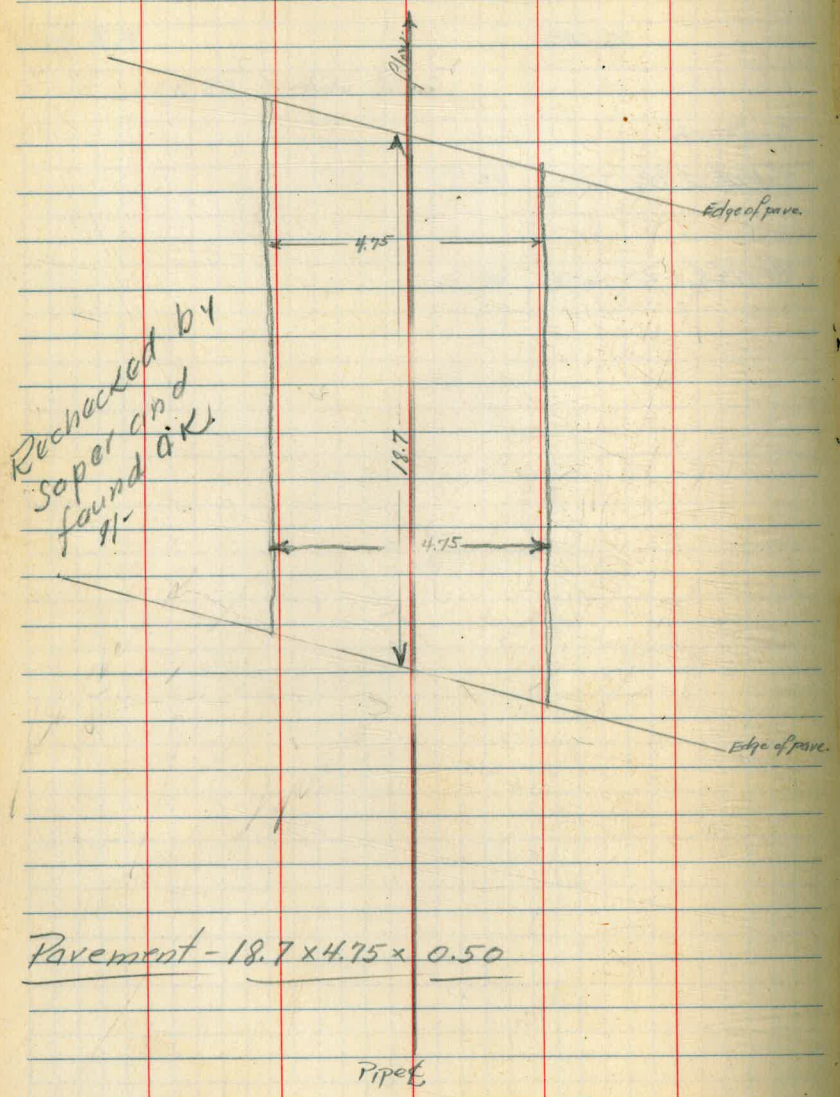
Oct. 14 1936
Soper
Isbell
Moore

Fill 2.12

Fill 2.07

Oct 14 1936
Soper
Isbell
Moore

Concrete excavation - State Highway crossing 423+00



Rechecked by Soper and found OK. H-

Pavement - 18.7 x 4.75 x 0.50

Pipe ℄

Oct. 14/1936
Soper
Isbell
Moore
61

Elev. of concrete under Venturi Meter

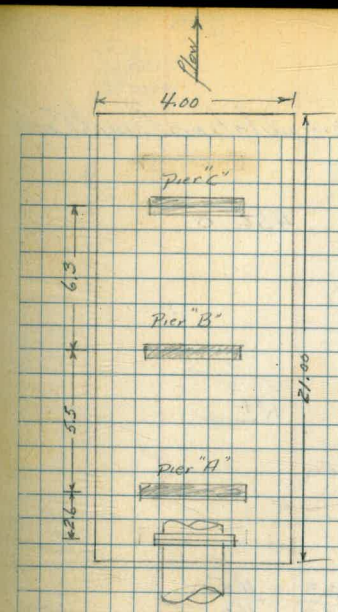
3.11 "35			438.93
	4.14	~~4.14~~	
		443.07 ✓	
		11.90	431.17 ✓
		11.90	431.17 ✓

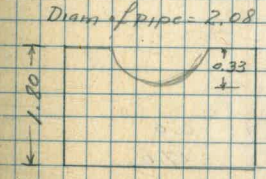
528/87

Work in pail

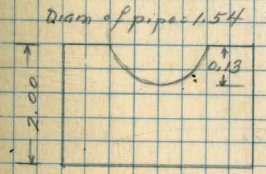
Concrete foundation for Venturi Meter tube - 0.50 x 4.00 x 21.00

Elev. - top of concrete - 431.17

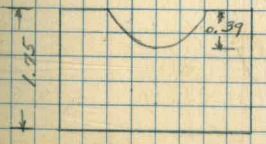




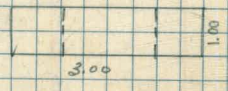
Pier "C"

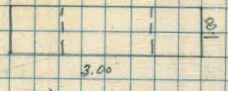


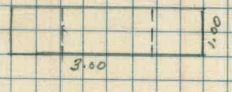
Pier "B"



Pier "A"







Oct 14 1936
Soper
Isbell
Moore

X-section for back fill yardage computation Quail Creek.

top of pipe
351+75 — 456.0

5.3

461.3 ✓

	Lt		Rt	
351+50	level section			
351+55	5.2 / 10.0	5.4 / 3.0	3.3 / 3.0	4.5 / 11.0
351+69	5.6 / 10.0	5.6 / 3.0	5.9 / 3.0	6.0 / 17.0
351+85	level section			

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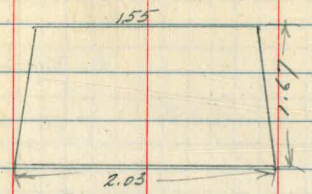
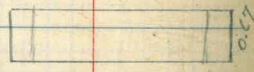
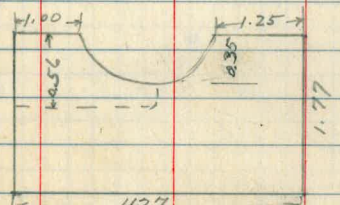
Isbell
Moore

Persia Valve Chamber - 3/2+2/

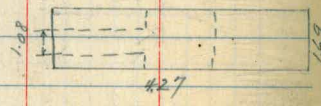


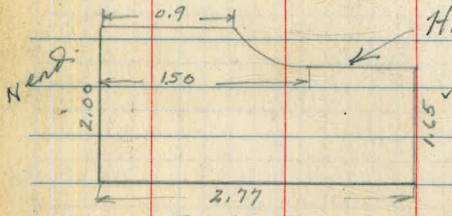
Pier "C"





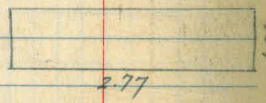
Pier "B"

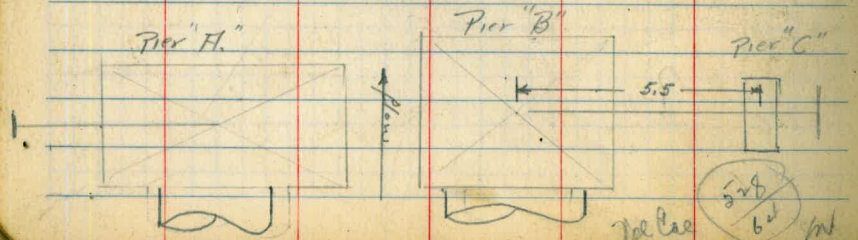




Housing of Valve gate. rests on this.

Pier "A"





℄ 30" Gate Valve & Outside Bi-Pass = 3.2

℄ 20" " " " " " " " = 2.2'

7" Clearance between Bi-Pass on 20" + 30" Valve.

Original x-section anchor block 411+77.21

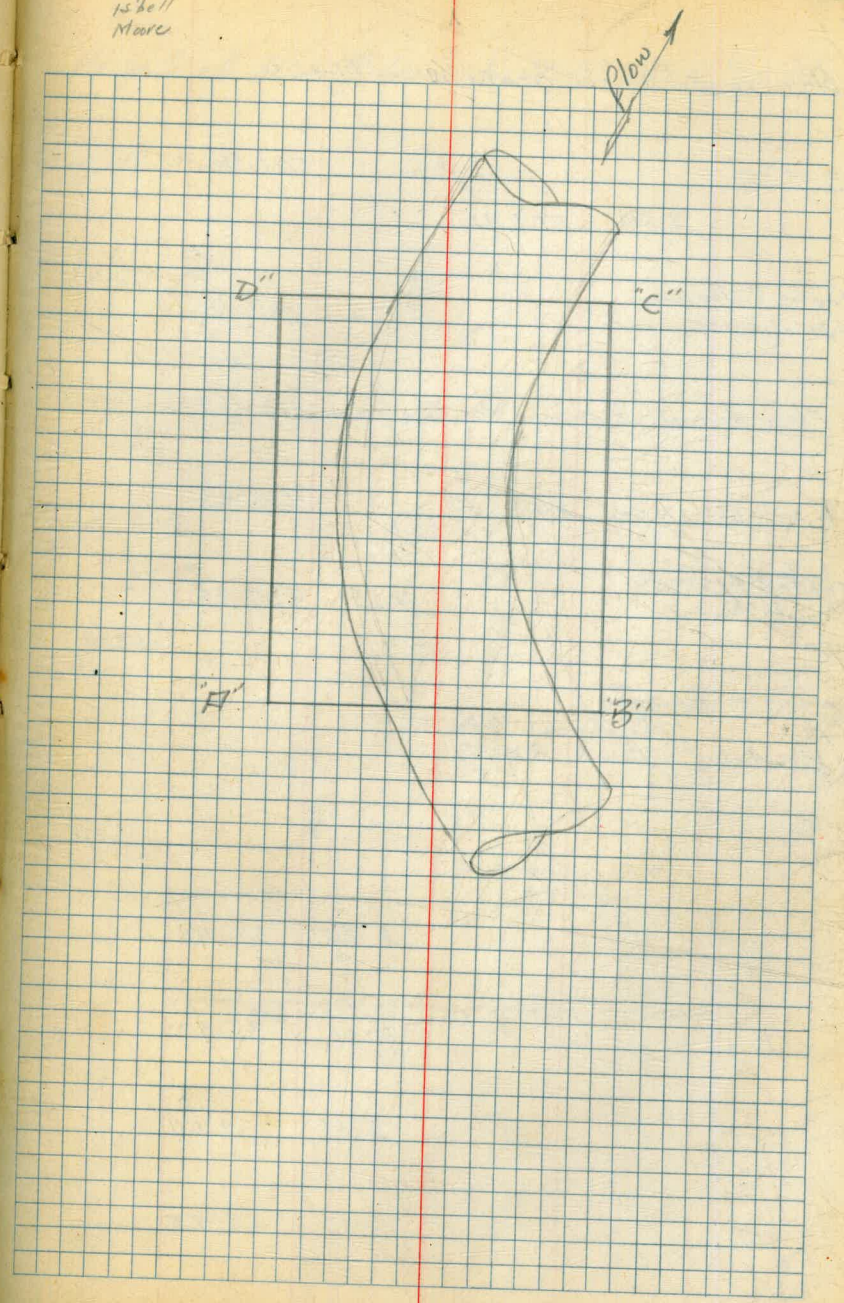
B.M.#			417.06
	1.07	418.13 ✓	
"A"		6.9	411.2 ✓
"B"		6.8	11.3 ✓
"C"		7.1	11.0 ✓
"D"		7.3	10.8 ✓

Final x-section anchor block 411+77.21

Oct. 23 1936
Soper
Ishell
Moore

B.M.#44	1.08	418.14 ✓	417.06
"A"		13.44	404.70 ✓
"B"		13.44	404.7 ✓
"C"		13.64	404.5 ✓
"D"		13.64	404.5 ✓

Oct. 19 1936
Soper
Ishell
Moore



Elev. top of Valve Chamber - 160+00

B.M = 21			501.12
	8.80	509.92	
top of V. Chamber Sta 160+00		3.22	506.70

Elev. top of Pressure Reg. Chamber 313+63

B.M = 35	3.60	442.53	438.93
top of conc. Pressure Regulator chamber.		4.68	437.85

(Elev. top of V. Chamber 312+21)

"A"	3.55	38.98
B.	3.61	38.92
"C"	3.46	39.07
"D"	3.58	38.95

Oct. 21 1936
Seger
Isbell
Moore

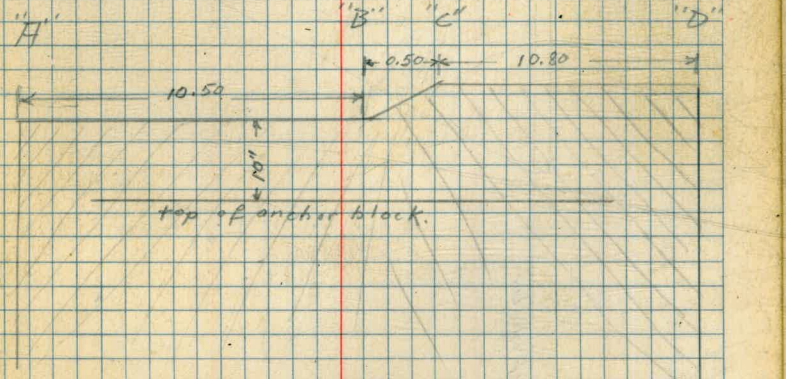
65

Heights of blowoff boxes - top of floor to top of box

134 + 50	8.4
154 + 75	9.0
258 + 00	8.25
312 + 18	5.65
322 + 01	8.35
426 + 14	7.62 (Add 0.50 for top)

5.28
6.3 etc
M

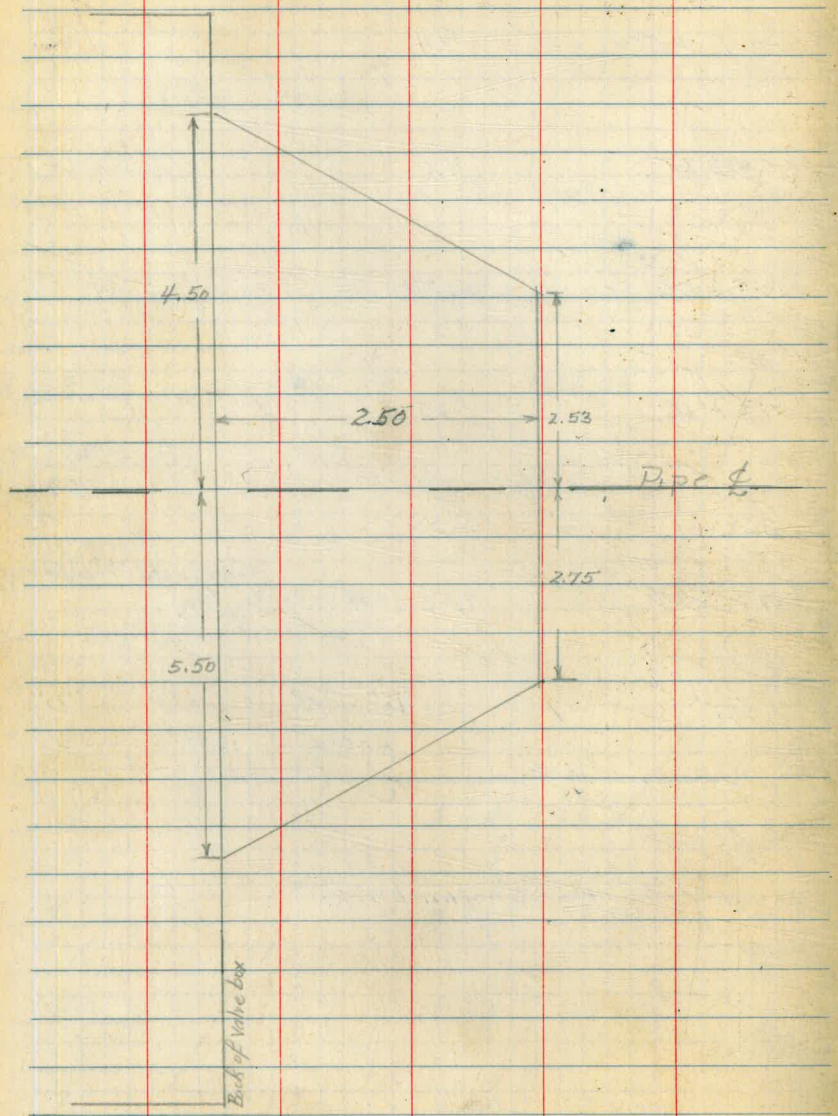
Concrete Top (Removable)



Oct 22 1936
Soper
Isbell
Moore

66

Anchor block on Valve Chamber 426+38



Oct. 22 1936
Soger
Isbell
Moore

Check on floor of Valve Chamber 426+38.47
(Requested by Inspector Shreiber.)

County B.M.				400.22	
	4.90	405.12 ✓			
TP			3.29	401.83 ✓	
	4.75	406.58 ✓			
"A"			12.77	93.81 ✓	393.80
"B"			12.88	93.70 ✓	393.70
"C"			12.89	93.69 ✓	393.70
"D"			12.97	93.61 ✓	393.55

Grades on page 46

Oct. 23 1936
Soper
Isbell
Moore

Set road grades by air valve cover's sta 72 + 52 (pipe sta.)

B.M. 9			537.23
	6.59	543.82	
2' Lt of pipe ℄		1.84	541.98
2' Rt of pipe ℄		1.36	542.46

Road sta = 338 + 30
Grade = 538.50
Super elev = .120 per foot
℄ grade carried on inside of curve.

top of Valve chamber 426+38

400.72

5.52 405.74

4.24 401.50

Oct 29 1936
Soper
Isbell
Moore

top of Valve chamber
(anchor runs to top of Valve box)

Oct 30 1936
Soper
Isbell
Moore

Original x-section of drain ditch from valve chamber sta 160 (0+00 = outside of V. Chamber)

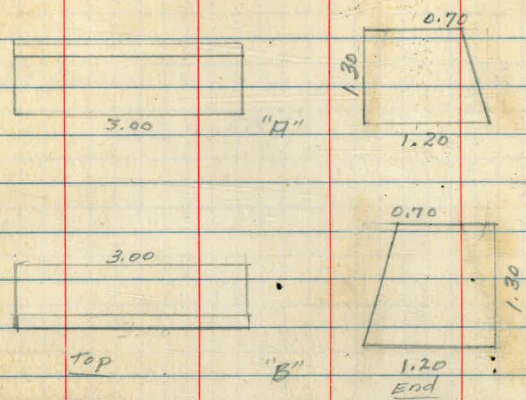
top of V. Chamber			506.70
	2.3	509.0	
0+00		4.3	504.7
0+21		4.3	504.7
0+41		10.7	498.3

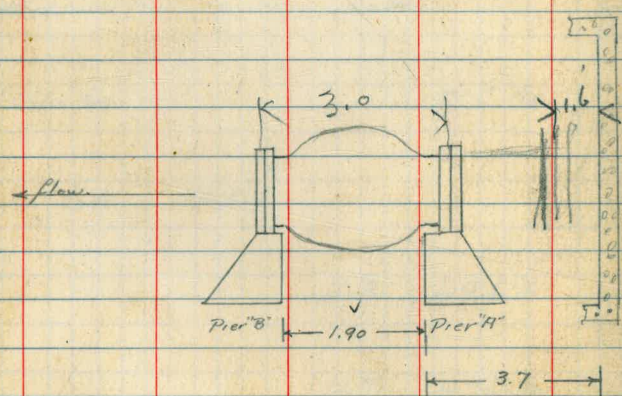
Nov. 9 1936
Soper
Isbell
Moore

Final x-section of drain ditch

top of V. Chamber			506.70
	1.0	507.7	
0+00		11.3	496.4
0+42		11.7	496.0

Piers in Pressure Regulator Chamber. 313+63

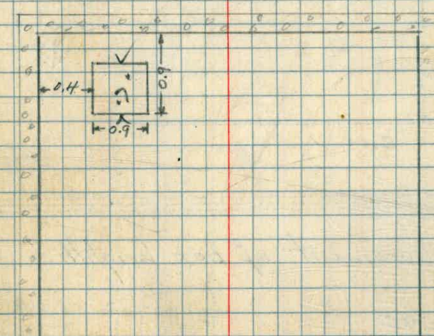




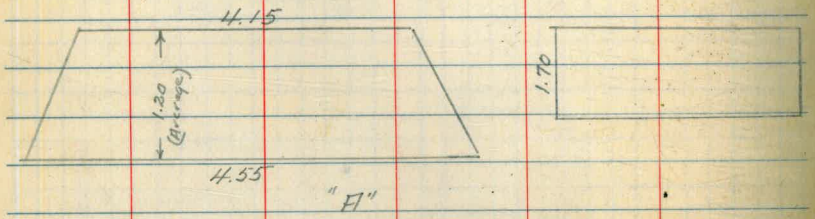
Oct. 29 1936
Soper
Isbell
Moore

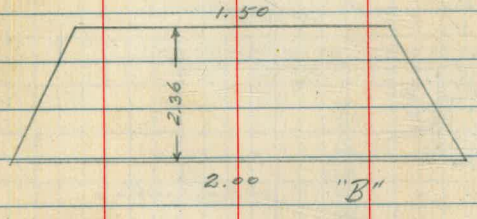
(copied from scratch pad)

Location of outlet in East wall of Pressure Reg. chamber for copper tube connections to panel.
Measurements from inside of Chamber.



Piers in Valve Chamber 426+38.



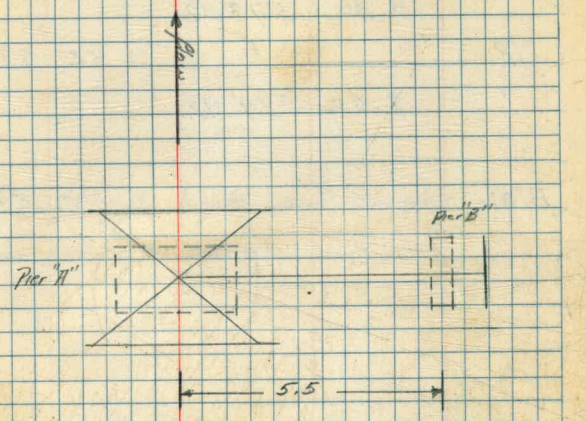


Cal Sub 67 NW

Inside measurement of box height. = 24 Walls less floor + Roof

Cal Sub 67 NW

6.95
6.90
7.09
6.97
4)27.91 6.98 Average height

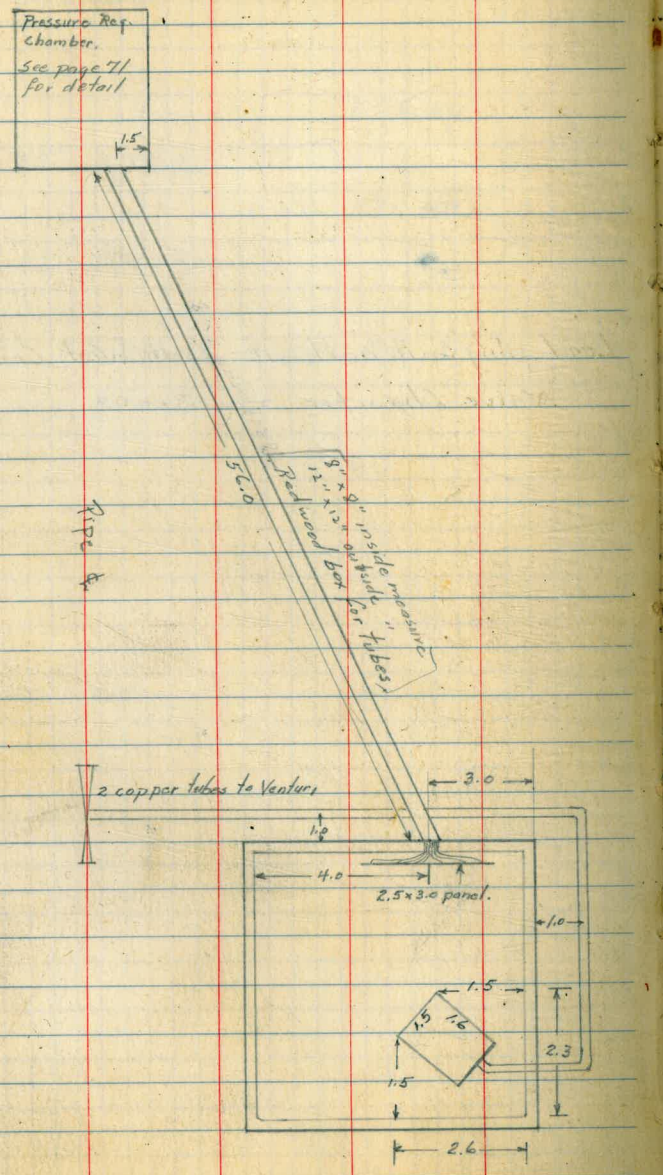


B.M on Valve Chamber sta 13+00

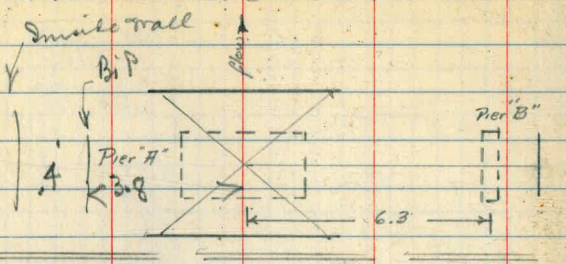
B.M #2			570.57
	3.35	573.92	
T.P.		2.52	571.40
	8.52	579.92	
B.M		2.55	577.37

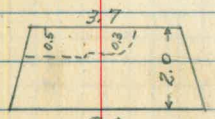
Lead plug with nail in North West Corner of Valve Chamber sta 13+00

Detail of Recording sta and connections

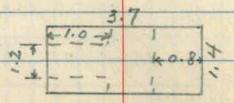


Piers in Valve Chamber Sta 160+00





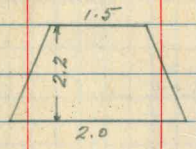
Side



top.

End.

Pier "A"



Side

top

1-7/5/36.

IMPROVED TABLES
AND
INFORMATION

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	25.2	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)÷2 or 2 ft. added to 41.9 =43.9. For slopes of 1 on 1 see inside of front cover.