

W

530

EUGENE DIETZGEN CO.

DRAWING MATERIALS, MATHEMATICAL and SURVEYING INSTRUMENTS
Chicago New York San Francisco New Orleans Pittsburg Toronto

MICROFILMED
DISTANCE FROM CENTER OF ROAD FOR CROSS-SECTIONING.

Roadway 16 feet wide. Side Slopes 1 on 1.

For Single Track Embankment.

Jan 13 1905

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 $30.6 + (20 - 16) \div 2$ or 2 ft. added to $30.6 = 32.6$. For slopes of 1 on $1\frac{1}{2}$ see inside of back cover.

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534
WATER DEPARTMENT
DIVISION OF DEVELOPMENT & CONSERV.
SAN DIEGO, CALIF.

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

FIELD NOTES. X SECTIONS

INDEX.

CLASS 2. Excavation	Pg. 1-12
Original Sect.	
CLASS 2. Excavation	Pg 15-23
Final Section	
PIERS IN TUNNEL etc	Pg 24-30
VALVE CHAMBER Sta 13+00	Pg 31.
Profile of Trench from Valve Chamber at Sta 13+00	Pg 32
Profile of Trench for Bloroff from Sta 17+00	Pg 33
Ex. for Bloroff North of Sta 17+00	Pg 34
Profile Levels of Pipe Location for CLASS 1 Ex	Pg 40-61
Additional Cut in bottom of Trench for Class 1 Ex apc Rock Cords	Pg 63-65
Measurements for Pipe Q	Pg 66-69.
Data for Appurtenances	70-71

Steps prior #35

EL CAPITAN-LAKESIDE PIPE LINE

L.A. MESA LEMON GROVE & SPRING VALLEY IRR. DIST.

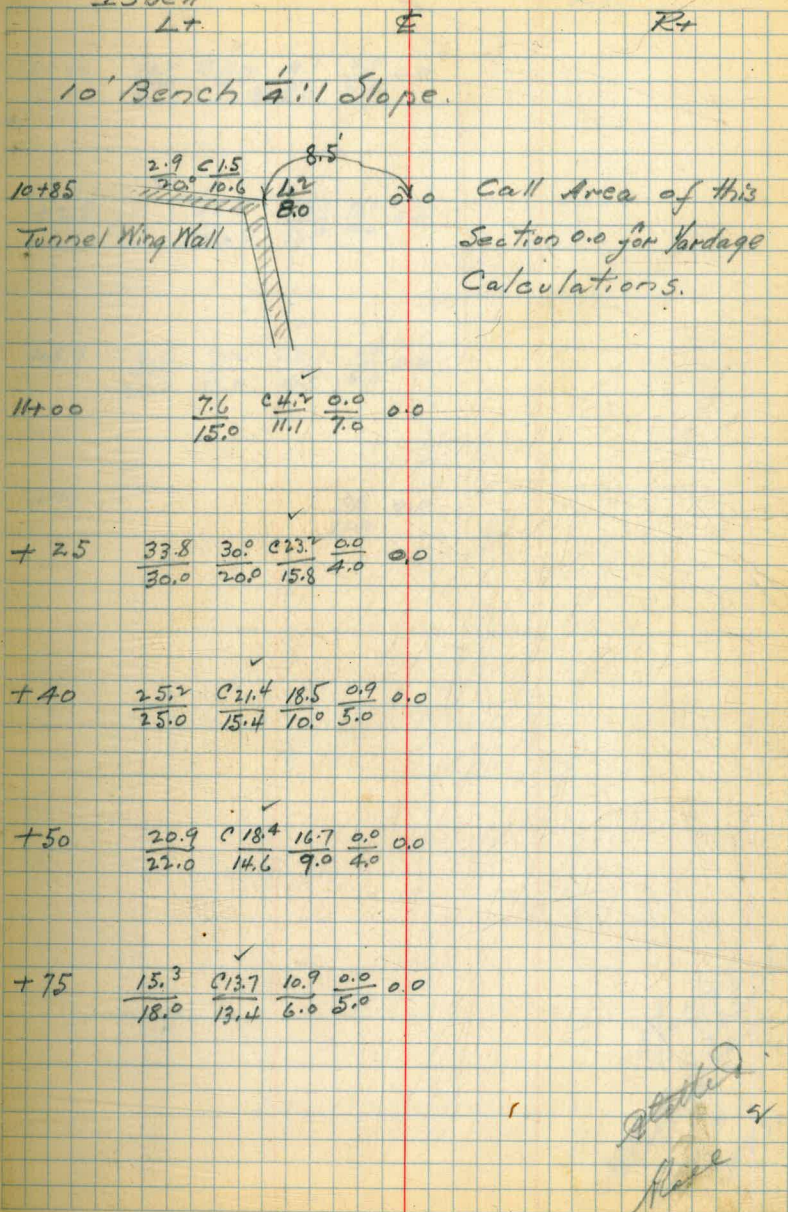
CLASS 2 EXCAVATION

Cross Section of Ground before Excavating

March 16, 1936,

Soper
Remmen
Isbell

0.0 - Present Pipe Bench.
10' Bench $\frac{1}{4}$: 1 Slope.



3
 0.0 = Present Road Grade
 10' Bench $\frac{1}{4}$:1 Slope.

	L+		R+		
13+31		$\frac{0.0}{10.0}$		0.0	
+39	$\frac{13.0}{17.5}$	$\frac{0.9}{12.7}$	$\frac{7.0}{5.0}$	0.0	
+55	$\frac{15.6}{20.0}$	$\frac{0.1}{13.0}$	$\frac{10.6}{10.0}$	0.0	
+75	$\frac{14.8}{18.0}$	$\frac{0.1}{12.8}$	$\frac{7.0}{3.0}$	$\frac{0.0}{2.0}$	0.0
14+00	$\frac{8.9}{17.0}$	$\frac{0.7}{12.0}$	$\frac{4.8}{4.0}$	$\frac{0.0}{3.0}$	0.0
+25	$\frac{5.5}{15.0}$	$\frac{0.5}{10.4}$		0.0	
+50	$\frac{5.4}{15.0}$	$\frac{0.3}{11.1}$		0.0	
+75	$\frac{3.1}{15.0}$	$\frac{0.2}{10.6}$		0.0	

Site 13+31-14+75
 12 Y³ Surface boulders.
 not included in X Section.

30 Cft	25	196	✓ 3
9	15	117	
20	108	2313	(12 Y ³)
30	48	196	
12			
6			
10			
117			

sketch
 in

$$\begin{array}{r}
 \text{L+} \qquad \qquad \qquad \text{R+} \\
 \checkmark \\
 15+00 \quad \frac{3.0}{15.0} \quad \frac{12.6}{10.7} \quad \frac{1.6}{3.5} \quad \frac{0.0}{2.5} \quad 0.0
 \end{array}$$

$$\begin{array}{r}
 \checkmark \\
 +25 \quad \frac{3.4}{15.0} \quad \frac{12.8}{10.7} \quad \frac{2.1}{3.0} \quad \frac{0.0}{2.5} \quad 0.0
 \end{array}$$

$$\begin{array}{r}
 \checkmark \\
 +50 \quad \frac{4.8}{15.0} \quad \frac{13.7}{10.9} \quad \frac{2.2}{3.0} \quad \frac{0.0}{2.5} \quad 0.0
 \end{array}$$

$$\begin{array}{r}
 \checkmark \\
 +77.4 \quad \frac{5.9}{15.0} \quad \frac{15.1}{11.3} \quad \frac{3.2}{3.0} \quad \frac{0.0}{2.5} \quad 0.0
 \end{array}$$

$$\begin{array}{r}
 \checkmark \\
 +85 \quad \frac{4.3}{15.0} \quad \frac{12.8}{10.7} \quad \frac{0.9}{3.0} \quad 0.0
 \end{array}$$

$$\begin{array}{r}
 \checkmark \\
 16+00 \quad \frac{5.6}{15.0} \quad \frac{14.2}{11.1} \quad \frac{2.3}{3.0} \quad \frac{0.0}{2.0} \quad 0.0
 \end{array}$$

$$\begin{array}{r}
 \checkmark \\
 +25 \quad \frac{7.8}{15.0} \quad \frac{16.7}{11.7} \quad \frac{3.8}{3.0} \quad \frac{0.0}{2.0} \quad 0.0
 \end{array}$$

$$\begin{array}{r}
 \checkmark \\
 +50 \quad \frac{9.7}{17.0} \quad \frac{16.9}{11.7} \quad \frac{2.1}{3.0} \quad \frac{0.0}{2.5} \quad 0.0
 \end{array}$$

10/10/10
 m.

	L+	✓	€	R+
16+76'	$\frac{8.3}{18.0}$	$\frac{C6.0}{11.5}$	$\frac{2.2}{3.0}$	$\frac{0.0}{2.5} \quad 0.0$
17+00	$\frac{8.4}{20.0}$	$\frac{C4.2}{11.1}$	$\frac{1.8}{5.0}$	$\frac{0.0}{4.0} \quad 0.0$
+25	$\frac{8.7}{18.0}$	$\frac{C4.7}{11.2}$	$\frac{2.2}{5.0}$	$\frac{0.0}{4.0} \quad 0.0$
+50	$\frac{8.3}{20.0}$	$\frac{C5.7}{11.4}$	$\frac{3.2}{3.5}$	$\frac{0.0}{3.0} \quad 0.0$
+75	$\frac{7.3}{20.0}$	$\frac{C6.0}{11.5}$	$\frac{2.7}{3.5}$	$\frac{0.0}{3.0} \quad 0.0$
18+00	$\frac{5.8}{20.0}$	$\frac{C9.1}{11.0}$	$\frac{2.7}{3.5}$	$\frac{0.0}{3.0} \quad 0.0$
+25	$\frac{4.2}{20.0}$	$\frac{C2.5}{10.6}$	$\frac{1.7}{4.0}$	$\frac{0.0}{0.0}$
+50	$\frac{9.5}{16.0}$	$\frac{C6.8}{11.7}$	$\frac{3.3}{5.0}$	$\frac{0.0}{4.5} \quad 0.0$
+58	$\frac{11.7}{20.0}$	$\frac{C9.5}{12.4}$	$\frac{9.0}{10.0}$	$\frac{0.0}{0.0}$

blotted + el
m.

	Lt		Ct		Rt	
18+75	15.3	12.5	5.0	0.0	0.0	
	25.0	16.0	11.3	9.0		
19+00				0.0	0.0	
				10.0		
+25	12.5	10.0	0.0	0.0	0.0	
	20.0	12.5	6.0			
+50	14.4	10.4	6.9	0.0	0.0	
	20.0	12.6	3.0	2.0		
+75	15.1	12.4	8.9	0.0	0.0	
	20.0	13.1	4.2	3.5		
20+00	16.5	13.8	5.8	0.0	0.0	
	20.0	13.5	5.0	4.0		
+25	16.7	15.3	11.1	0.0	0.0	
	20.0	13.8	7.0	3.0		
+42	23.1	17.8	10.9	0.0	0.0	
	30.0	14.5	4.0	2.0		
+50	24.5	22.1	26.0	12.0	11.1	1.4
	30.0	20.0	16.3	8.0	6.0	2.5
						13.0

Station 20+25 to
 " 20+50
 15. Y³ Surface Boulders
 not shown in X Sec.

Cu ft
 39
 100
 84
 40
 12
 24
 24
 6
 16
 10

27) 417 (15)

Handwritten signature/initials

	L+	€	R+
21+50	$\frac{7.3}{20.0}$	$\frac{C5.9}{11.5}$	$\frac{4.7}{4.5}$ $\frac{0.0}{3.5}$ $\frac{0.0}{0}$
+72.6	$\frac{6.0}{20.0}$	$\frac{C4.6}{11.2}$	$\frac{3.2}{3.0}$ $\frac{0.5}{3.0}$ $\frac{0.5}{0}$ $\frac{0.0}{5.0}$
22+00	$\frac{6.8}{20.0}$	$\frac{C5.7}{11.3}$	$\frac{4.1}{1.5}$ $\frac{2.0}{0}$ $\frac{0.0}{12.0}$
+25	$\frac{7.0}{20.0}$	$\frac{C5.7}{11.3}$	$\frac{5.2}{0}$ $\frac{2.9}{8.0}$ $\frac{0.0}{10.0}$
+50	$\frac{4.5}{20.0}$	$\frac{C4.1}{11.0}$	$\frac{3.7}{3.0}$ $\frac{2.7}{0}$ $\frac{0.0}{13.0}$
+80			$\frac{0.0}{10.0}$ $\frac{0.0}{0}$

Blotted + ch
m.

March 17, 36.

Soper
Isbell

Remmers. Lt £

Rt.

$$\begin{array}{r} 23+36 \\ \hline 10.0 \quad 0.0 \\ \quad \quad 0 \quad 0.0 \end{array}$$

$$\begin{array}{r} +50 \\ \hline 20.0 \quad 7.3 \quad 94.3 \quad 0.0 \quad 0.0 \\ \quad \quad 11.1 \quad 8.0 \quad 0 \end{array}$$

$$\begin{array}{r} +70 \\ \hline 20.0 \quad 10.6 \quad 97.4 \quad 3.0 \quad 0.0 \\ \quad \quad 11.8 \quad 4.0 \quad 4.0 \quad 0 \end{array}$$

$$\begin{array}{r} 24+00 \\ \hline 20.0 \quad 11.2 \quad 98.7 \quad 5.4 \quad 0.0 \\ \quad \quad 12.2 \quad 6.0 \quad 3.0 \quad 0 \end{array}$$

$$\begin{array}{r} +25 \\ \hline 20.0 \quad 10.5 \quad 97.4 \quad 6.4 \quad 0.0 \\ \quad \quad 11.9 \quad 10.0 \quad 5.0 \quad 0 \end{array}$$

$$\begin{array}{r} +50 \\ \hline 20.0 \quad 9.9 \quad 6.5 \quad 93.5 \quad 3.7 \quad 0.0 \quad 0.0 \\ \quad \quad 13.0 \quad 10.9 \quad 8.0 \quad 6.0 \quad 0 \end{array}$$

$$\begin{array}{r} +80 \\ \hline 10.0 \quad 0.0 \\ \quad \quad 0 \quad 0.0 \end{array}$$

plotted at
m.

L+

E

R+

25+60

$$\frac{0.0}{10.0} \quad \frac{0.0}{0}$$

26+00

$$\begin{array}{r} \checkmark \\ \frac{7.2}{30.0} \quad \frac{04.9}{11.7} \quad \frac{4.0}{3.0} \quad \frac{0.0}{2.0} \quad \frac{0.0}{0} \end{array}$$

+15

$$\begin{array}{r} \checkmark \\ \frac{7.0}{15.0} \quad \frac{06.9}{11.7} \quad \frac{4.9}{2.0} \quad \frac{1.0}{0} \quad \frac{0.0}{6.0} \end{array}$$

+25

$$\begin{array}{r} \checkmark \\ \frac{6.9}{15.0} \quad \frac{06.4}{11.6} \quad \frac{4.7}{2.0} \quad \frac{1.1}{0} \quad \frac{0.0}{7.0} \end{array}$$

+35

$$\begin{array}{r} \checkmark \\ \frac{7.2}{17.0} \quad \frac{06.1}{11.5} \quad \frac{3.9}{0} \quad \frac{0.0}{10.0} \end{array}$$

+50

$$\begin{array}{r} \checkmark \\ \frac{7.9}{17.0} \quad \frac{05.8}{11.5} \quad \frac{4.5}{3.0} \quad \frac{0.0}{0} \end{array}$$

+60

$$\begin{array}{r} \frac{6.4}{17.0} \quad \frac{05.4}{11.4} \quad \frac{4.4}{0} \quad \frac{3.6}{4.0} \quad \frac{0.0}{8.0} \end{array}$$

+75

$$\begin{array}{r} \frac{6.7}{17.0} \quad \frac{05.5}{11.4} \quad \frac{1.9}{0} \quad \frac{0.0}{3.0} \end{array}$$

2000 + 1000
m.

Lt

E

Rt

11

$$\begin{array}{r}
 \checkmark \\
 27+00 \quad \frac{4.1}{17.0} \quad \frac{03.7}{10.9} \quad \frac{1.9}{2.0} \quad \frac{0.0}{0}
 \end{array}$$

$$\begin{array}{r}
 \checkmark \\
 +15 \quad \frac{5.9}{16.0} \quad \frac{03.8}{10.9} \quad \frac{1.4}{3.0} \quad \frac{0.0}{0}
 \end{array}$$

$$\begin{array}{r}
 \checkmark \\
 +50 \quad \frac{8.1}{17.0} \quad \frac{06.7}{11.6} \quad \frac{4.3}{6.0} \quad \frac{0.0}{3.0} \quad 0.0
 \end{array}$$

$$\begin{array}{r}
 \checkmark \\
 +75 \quad \frac{9.7}{18.0} \quad \frac{07.8}{12.0} \quad \frac{4.8}{4.0} \quad \frac{0.0}{3.0} \quad 0.0
 \end{array}$$

$$\begin{array}{r}
 \checkmark \\
 28+00 \quad \frac{8.2}{18.0} \quad \frac{06.7}{11.6} \quad \frac{3.9}{5.0} \quad \frac{0.0}{2.0} \quad \frac{0.0}{0}
 \end{array}$$

$$\begin{array}{r}
 \checkmark \\
 +25 \quad \frac{6.1}{18.0} \quad \frac{04.3}{11.1} \quad \frac{0.0}{5.0} \quad \frac{0.0}{0}
 \end{array}$$

$$\begin{array}{r}
 +50 \quad \frac{0.0}{10.0} \quad \frac{0.0}{0}
 \end{array}$$

$$\begin{array}{r}
 +75 \quad \frac{0.0}{10.0} \quad \frac{0.0}{0}
 \end{array}$$

$\frac{0.0}{10.0} \quad \frac{0.0}{0}$
 $\frac{0.0}{10.0} \quad \frac{0.0}{0}$

L+

±

R+

12

$$\begin{array}{r}
 29+00 \quad \frac{10.4}{20.0} \quad \frac{08.4}{12.1} \quad \frac{7.9}{5.0} \quad \frac{3.6}{4.0} \quad \frac{0.0}{0} \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 +25 \quad \frac{12.9}{20.0} \quad \frac{09.0}{12.3} \quad \frac{6.9}{5.0} \quad \frac{0.0}{3.0} \quad \frac{0.0}{0} \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 +50 \quad \frac{14.3}{20.0} \quad \frac{09.2}{12.3} \quad \frac{6.9}{6.0} \quad \frac{0.0}{3.0} \quad \frac{0.0}{0} \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 +75 \quad \frac{16.9}{20.0} \quad \frac{012.9}{13.2} \quad \frac{9.6}{6.0} \quad \frac{0.0}{3.0} \quad \frac{0.0}{0} \\
 \hline
 \end{array}$$

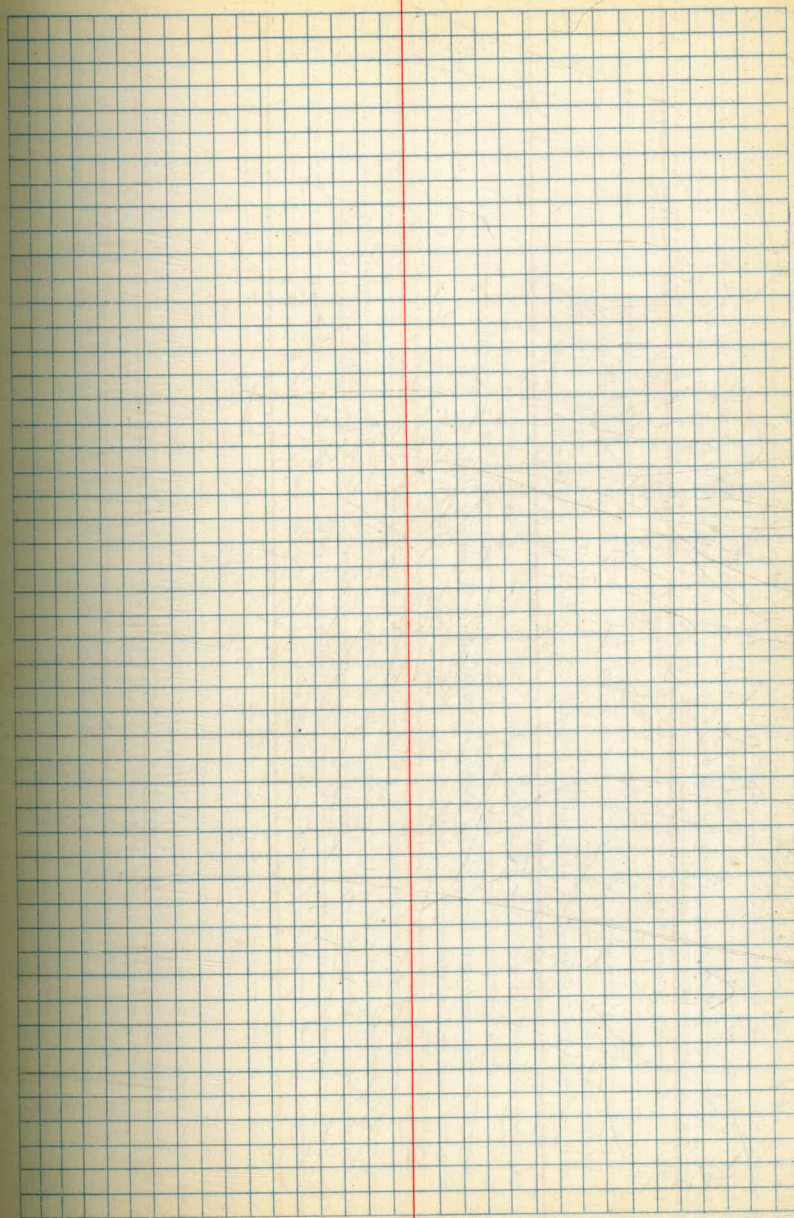
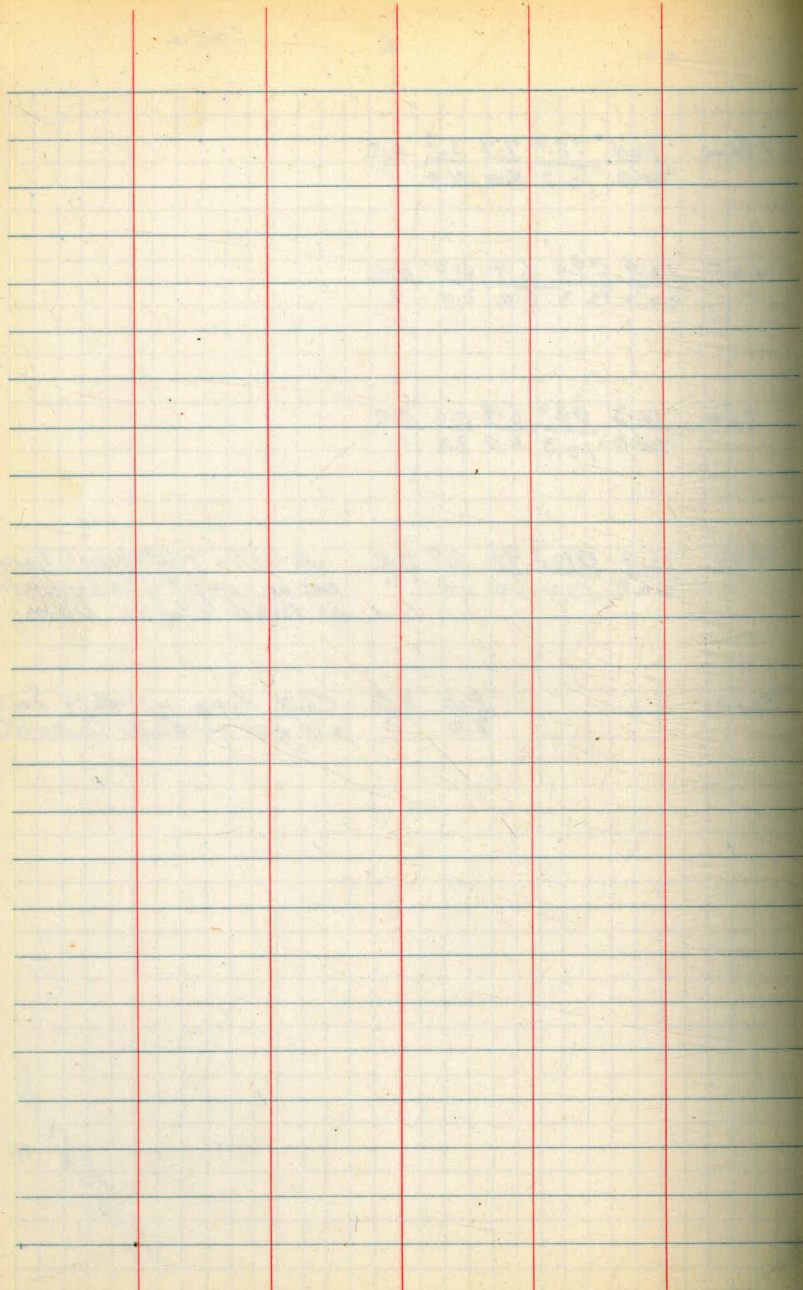
End 10' width bench here
on account of Embankment
of road to top of Dam.

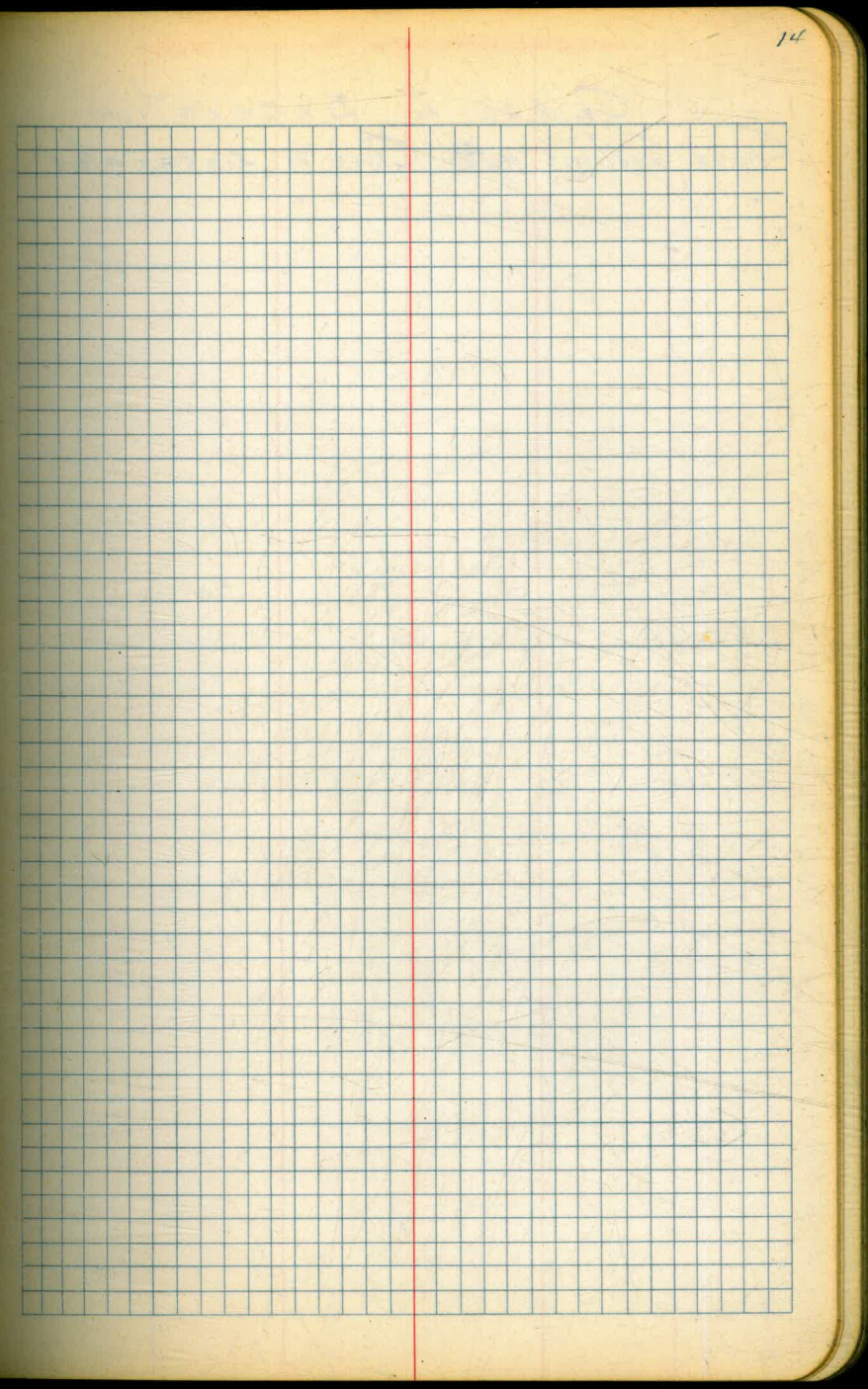
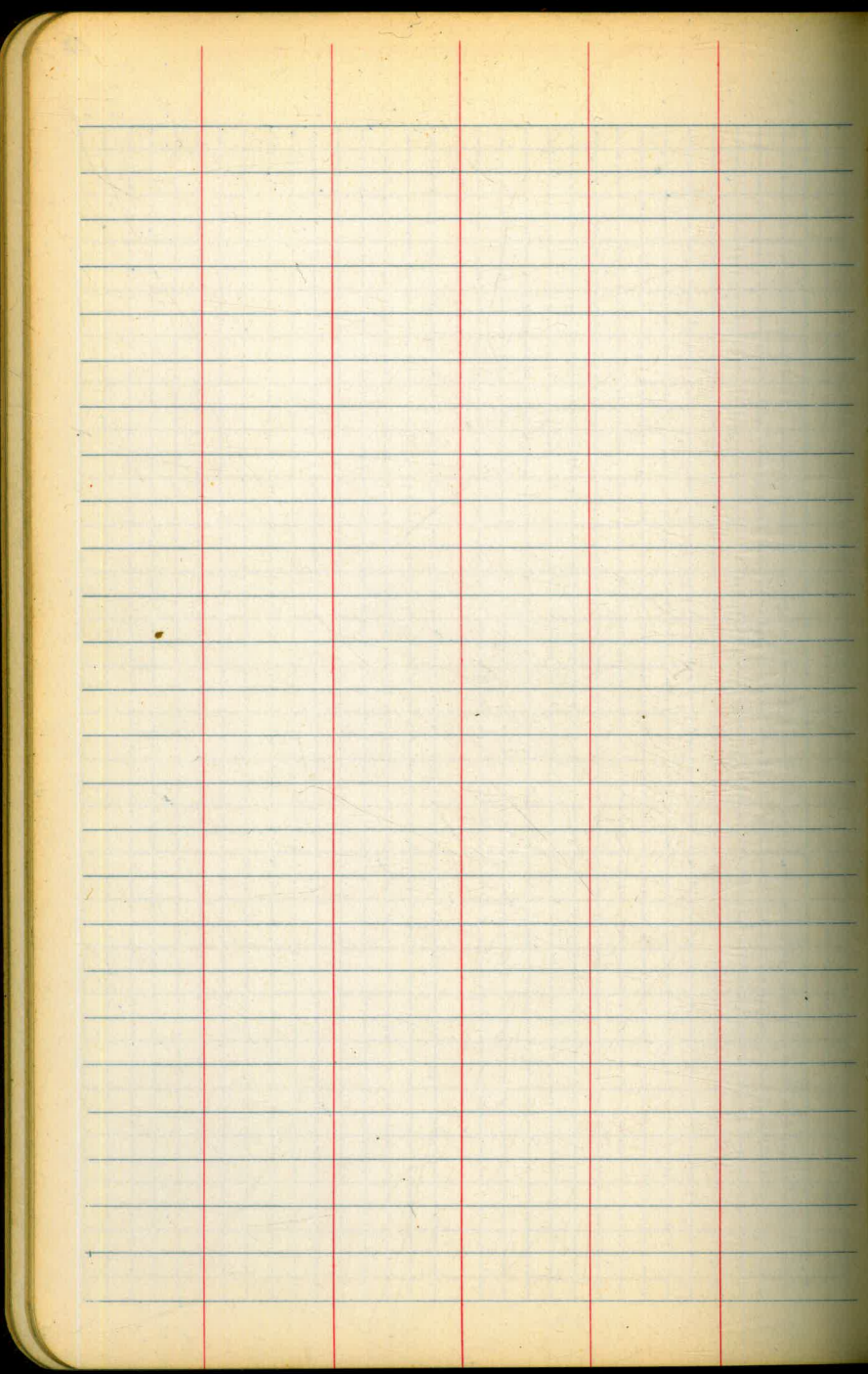
30+00

$$\frac{0.0}{3.0} \quad \frac{0.0}{0}$$

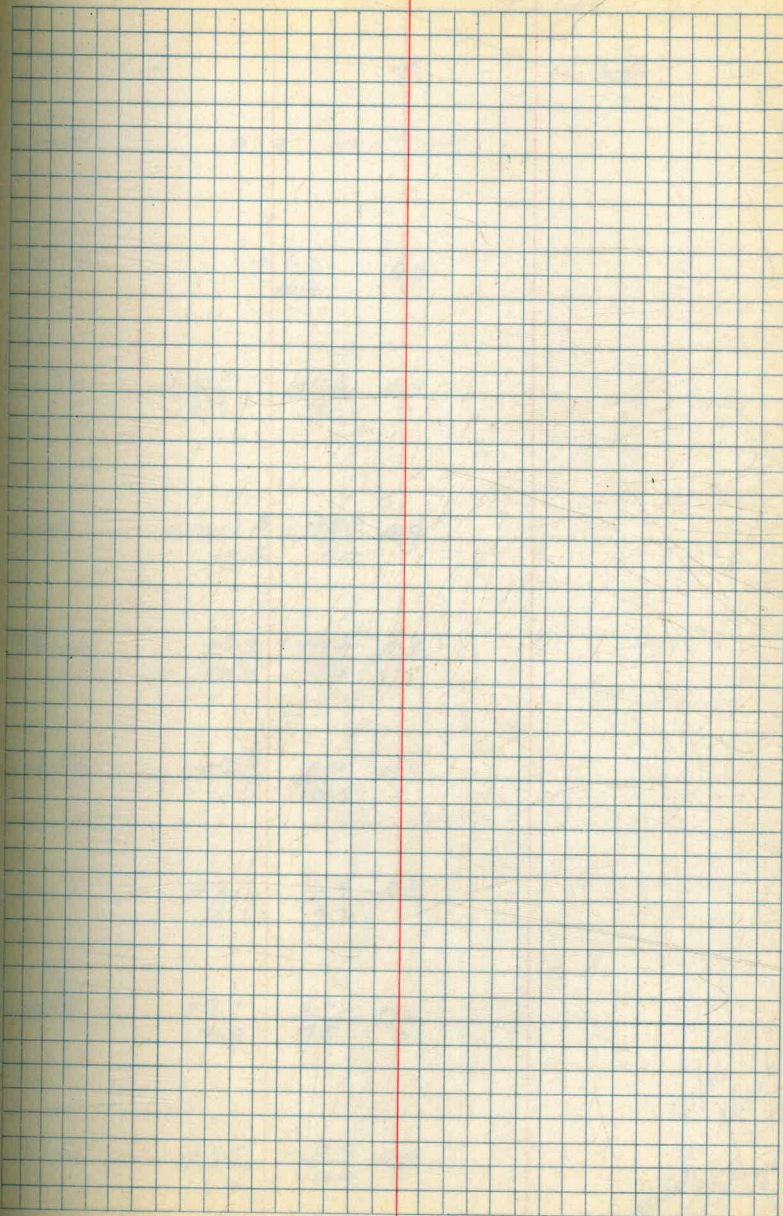
Call Area of this Section
0.0 for yardage Calculation.

2000' x 10'
m.





CLASS 2 Excavation
Cross Sections after Class 2 Excavated.



CLASS 2
FINAL X SECTIONS

April 30, 1936.

16

Jepen
Kemmen
Tsbell

	L+		R+
13+31		0.0	Section
+34		$\frac{+1.0}{10.0}$	$\frac{0.0}{0}$
+50	$\frac{+12.0}{12.2}$	$\frac{+1.5}{7.0}$	$\frac{0.0}{0}$
+67	$\frac{+12.5}{13.5}$	$\frac{+5.0}{9.0}$	$\frac{0.0}{0}$
14+00	$\frac{+7.9}{12.0}$	$\frac{+0.5}{9.0}$	$\frac{0.0}{0}$
+50	$\frac{+3.7}{11.6}$	$\frac{0.0}{10.0}$	$\frac{0.0}{0}$
15+00	$\frac{+2.6}{10.6}$	$\frac{0.0}{9.2}$	$\frac{0.0}{0}$
+50	$\frac{+3.7}{10.9}$	$\frac{0.0}{9.5}$	$\frac{0.0}{0}$
16+00	$\frac{+5.5}{13.0}$	$\frac{0.0}{10.0}$	$\frac{0.0}{0}$

6/11/36
checked
on
Roll #1.
1936

CLASS 2
FINAL X SECTIONS.

$$16+25 \quad \frac{+6.7}{11.7} \quad \frac{0.0}{9.3} \quad \frac{0.0}{0}$$

$$+50 \quad \frac{+6.9}{11.8} \quad \frac{0.0}{10.4} \quad \frac{0.0}{0}$$

$$+76 \quad \frac{+6.0}{11.5} \quad \frac{0.0}{10.5} \quad \frac{0.0}{0}$$

$$17+00 \quad \frac{+4.7}{11.0} \quad \frac{0.0}{10.0} \quad \frac{0.0}{0}$$

$$+50 \quad \frac{+5.7}{11.5} \quad \frac{0.0}{10.2} \quad \frac{0.0}{0}$$

$$18+00 \quad \frac{+4.1}{11.0} \quad \frac{0.0}{9.0} \quad \frac{0.0}{0}$$

$$+25 \quad \frac{3.3}{11.0} \quad \frac{0.0}{9.5} \quad \frac{0.0}{0}$$

$$+50 \quad \frac{+6.8}{12.7} \quad \frac{0.0}{10.0} \quad \frac{0.0}{0}$$

5/1/36
Super
Remmen
Isbell.

at
x 1
or
12.

CLASS 2
FINAL SECTIONS

$$18+75 \quad \begin{array}{r} +5.0 \\ \hline 11.4 \end{array} \quad \begin{array}{r} 0.0 \\ \hline 10.2 \end{array} \quad \begin{array}{r} 0.0 \\ \hline 0 \end{array}$$

$$19+00 \quad \begin{array}{r} +3.3 \\ \hline 11.3 \end{array} \quad \begin{array}{r} 0.0 \\ \hline 10.2 \end{array} \quad \begin{array}{r} 0.0 \\ \hline 0 \end{array}$$

$$+25 \quad \begin{array}{r} +10.0 \\ \hline 12.5 \end{array} \quad \begin{array}{r} 0.0 \\ \hline 11.0 \end{array} \quad \begin{array}{r} 0.0 \\ \hline 0 \end{array}$$

$$+50 \quad \begin{array}{r} +10.4 \\ \hline 12.6 \end{array} \quad \begin{array}{r} 0.0 \\ \hline 10.0 \end{array} \quad \begin{array}{r} 0.0 \\ \hline 0 \end{array}$$

$$+75 \quad \begin{array}{r} +12.4 \\ \hline 13.1 \end{array} \quad \begin{array}{r} 0.0 \\ \hline 10.2 \end{array} \quad \begin{array}{r} 0.0 \\ \hline 0 \end{array}$$

$$20+00 \quad \begin{array}{r} 14.3 \\ \hline 14.3 \end{array} \quad \begin{array}{r} 0.0 \\ \hline 11.0 \end{array} \quad \begin{array}{r} 0.0 \\ \hline 0 \end{array}$$

$$+25 \quad \begin{array}{r} 16.6 \\ \hline 16.0 \end{array} \quad \begin{array}{r} 0.0 \\ \hline 10.5 \end{array} \quad \begin{array}{r} 0.0 \\ \hline 0 \end{array}$$

$$+50 \quad \begin{array}{r} 22.0 \\ \hline 17.5 \end{array} \quad \begin{array}{r} 0.0 \\ \hline 10.0 \end{array} \quad \begin{array}{r} 0.0 \\ \hline 0 \end{array}$$

$$+75 \quad \begin{array}{r} +20.3 \\ \hline 15.5 \end{array} \quad \begin{array}{r} +3.1 \\ \hline 9.2 \end{array} \quad \begin{array}{r} 0.0 \\ \hline 0 \end{array}$$

total checked
page #1
7/27/77

CLASS 2
FINAL X SECTIONS

$$21+00 \quad \begin{array}{r} +16.4 \\ \hline 14.5 \end{array} \quad \begin{array}{r} +5.3 \\ \hline 11.0 \end{array} \quad \begin{array}{r} 0.0 \\ \hline 0 \end{array}$$

$$+25 \quad \begin{array}{r} +9.0 \\ \hline 11.7 \end{array} \quad \begin{array}{r} 0.0 \\ \hline 9.0 \end{array} \quad \begin{array}{r} 0.0 \\ \hline 0 \end{array}$$

$$+50 \quad \begin{array}{r} +5.9 \\ \hline 11.5 \end{array} \quad \begin{array}{r} 0.0 \\ \hline 10.0 \end{array} \quad \begin{array}{r} 0.0 \\ \hline 0 \end{array}$$

$$+75 \quad \begin{array}{r} +5.1 \\ \hline 12.7 \end{array} \quad \begin{array}{r} 0.0 \\ \hline 10.2 \end{array} \quad \begin{array}{r} 0.0 \\ \hline 0 \end{array}$$

$$22+00 \quad \begin{array}{r} +5.2 \\ \hline 11.3 \end{array} \quad \begin{array}{r} 0.0 \\ \hline 4.0 \end{array} \quad \begin{array}{r} 0.0 \\ \hline 0 \end{array}$$

$$+16 \quad \begin{array}{r} +5.5 \\ \hline 11.8 \end{array} \quad \begin{array}{r} 0.0 \\ \hline 8.0 \end{array} \quad \begin{array}{r} 0.0 \\ \hline 0 \end{array}$$

$$+50 \quad \begin{array}{r} +4.1 \\ \hline 11.0 \end{array} \quad \begin{array}{r} 0.0 \\ \hline 8.4 \end{array} \quad \begin{array}{r} 0.0 \\ \hline 0 \end{array}$$

$$+80 \quad \begin{array}{r} 0.0 \\ \hline 10.0 \end{array} \quad \begin{array}{r} 0.0 \\ \hline 0 \end{array}$$

0 Section -

Handwritten notes:
 11.0
 11.0
 11.0

CLASS 2
FINAL X SECTIONS.

$$23436 \quad \begin{array}{r} 0.0 \\ 10.0 \\ \hline 0 \end{array} \quad \begin{array}{r} 0.0 \\ 0 \end{array}$$

$$+50 \quad \begin{array}{r} +4.3 \\ 11.3 \\ \hline 9.7 \end{array} \quad \begin{array}{r} 0.0 \\ 9.7 \\ \hline 0 \end{array} \quad \begin{array}{r} 0.0 \\ 0 \end{array}$$

$$+70 \quad \begin{array}{r} +7.4 \\ 11.6 \\ \hline 10.0 \end{array} \quad \begin{array}{r} 0.0 \\ 10.0 \\ \hline 0 \end{array} \quad \begin{array}{r} 0.0 \\ 0 \end{array}$$

$$24400 \quad \begin{array}{r} +8.7 \\ 12.2 \\ \hline 11.2 \end{array} \quad \begin{array}{r} +4.5 \\ 11.2 \\ \hline 5.2 \end{array} \quad \begin{array}{r} 0.0 \\ 0.0 \\ \hline 0 \end{array} \quad \begin{array}{r} 0.0 \\ 0 \end{array}$$

$$+25 \quad \begin{array}{r} +7.4 \\ 11.9 \\ \hline 10.2 \end{array} \quad \begin{array}{r} 0.0 \\ 10.2 \\ \hline 0 \end{array} \quad \begin{array}{r} 0.0 \\ 0 \end{array}$$

$$+50 \quad \begin{array}{r} +3.5 \\ 10.9 \\ \hline 10.1 \end{array} \quad \begin{array}{r} 0.0 \\ 10.1 \\ \hline 0 \end{array} \quad \begin{array}{r} 0.0 \\ 0 \end{array}$$

$$+80 \quad \begin{array}{r} 0.0 \\ 10.0 \\ \hline 0 \end{array} \quad \begin{array}{r} 0.0 \\ 0 \end{array}$$

Sorted
on fall
2/1/11

CLASS 2.

21

FINAL X SECTIONS

$$25+60 \quad \frac{0.0}{10.0} \quad \frac{0.0}{0}$$

$$26+00 \quad \frac{+4.9}{11.5} \quad \frac{0.0}{8.4} \quad \frac{0.0}{0}$$

$$+15 \quad \frac{+6.9}{13.0} \quad \frac{0.0}{8.3} \quad \frac{0.0}{0} \quad \frac{0.0}{6.0}$$

$$+25 \quad \frac{+6.4}{13.0} \quad \frac{0.0}{7.2} \quad \frac{0.0}{0} \quad \frac{0.0}{7.0}$$

$$+35 \quad \frac{+6.1}{14.0} \quad \frac{0.0}{7.8} \quad \frac{0.0}{0} \quad \frac{0.0}{10.0}$$

$$+50 \quad \frac{5.8}{11.5} \quad \frac{+0.6}{8.8} \quad \frac{0.0}{0}$$

$$+60 \quad \frac{+5.4}{11.8} \quad \frac{0.0}{7.6} \quad \frac{0.0}{0} \quad \frac{0.0}{8.0}$$

$$+75 \quad \frac{+6.3}{12.8} \quad \frac{0.0}{9.1} \quad \frac{0.0}{0} \quad \frac{0.0}{3.0}$$

Plotted + ch
on scale
m.

FINAL X SECTIONS.

$$27+00 \quad \begin{array}{r} +3.7 \\ \hline 10.9 \end{array} \quad \begin{array}{r} 0.0 \\ 8.4 \\ \hline 0 \end{array} \quad \begin{array}{r} 0.0 \\ 0 \end{array}$$

$$+15 \quad \begin{array}{r} +3.8 \\ \hline 11.8 \end{array} \quad \begin{array}{r} 0.0 \\ 7.9 \\ \hline 0 \end{array} \quad \begin{array}{r} 0.0 \\ 0 \end{array}$$

$$+50 \quad \begin{array}{r} +6.8 \\ \hline 12.6 \end{array} \quad \begin{array}{r} 0.0 \\ 10.4 \\ \hline 0 \end{array} \quad \begin{array}{r} 0.0 \\ 0 \end{array}$$

$$+75 \quad \begin{array}{r} +7.8 \\ \hline 11.9 \end{array} \quad \begin{array}{r} 0.0 \\ 10.7 \\ \hline 0 \end{array} \quad \begin{array}{r} 0.0 \\ 0 \end{array}$$

$$28+00 \quad \begin{array}{r} +6.2 \\ \hline 11.7 \end{array} \quad \begin{array}{r} 0.0 \\ 10.3 \\ \hline 0 \end{array} \quad \begin{array}{r} 0.0 \\ 0 \end{array}$$

$$+25 \quad \begin{array}{r} +4.3 \\ \hline 11.2 \end{array} \quad \begin{array}{r} 0.0 \\ 10.6 \\ \hline 0 \end{array} \quad \begin{array}{r} 0.0 \\ 0 \end{array}$$

$$+50 \quad \begin{array}{r} +3.1 \\ \hline 14.0 \end{array} \quad \begin{array}{r} 0.0 \\ 11.0 \\ \hline 0 \end{array} \quad \begin{array}{r} 0.0 \\ 0 \end{array}$$

$$+75 \quad \begin{array}{r} 0.0 \\ 10.0 \end{array} \quad \begin{array}{r} 0.0 \\ 0 \end{array}$$

Apr 24 1936

Saper.
Remmer
Tobell.#1.
on hall
stated
system

$$29+00 \quad \begin{array}{r} +8.4 \\ \hline 12.4 \end{array} \quad \begin{array}{r} +5.0 \\ \hline 11.0 \end{array} \quad \begin{array}{r} 0.0 \\ \hline 0 \end{array}$$

$$+25 \quad \begin{array}{r} +9.6 \\ \hline 13.0 \end{array} \quad \begin{array}{r} 0.0 \\ \hline 11.7 \end{array} \quad \begin{array}{r} 0.0 \\ \hline 0 \end{array}$$

$$+50 \quad \begin{array}{r} +9.2 \\ \hline 12.3 \end{array} \quad \begin{array}{r} 0.0 \\ \hline 10.9 \end{array} \quad \begin{array}{r} 0.0 \\ \hline 0 \end{array}$$

$$+75 \quad \begin{array}{r} +12.9 \\ \hline 13.2 \end{array} \quad \begin{array}{r} 0.0 \\ \hline 10.5 \end{array} \quad \begin{array}{r} 0.0 \\ \hline 0 \end{array}$$

$$30+00 \quad \begin{array}{r} 0.0 \\ \hline 3.0 \end{array} \quad \begin{array}{r} 0.0 \\ \hline 0 \end{array}$$

6/1/36
 Blotted & checked
 Roll #1
 177.2

April 16 1936

Super
Isbell
Tanner

PIERS IN TUNNEL

B.M.	7.49	557.79		550.30
T.P.	8.82	565.69	0.92	556.87

4/16/36

PIER "A" Adjacent to Tunnel Plug. 4x7 in Plug

Elev. R.P. Pier #1	0.34	567.61		<567.27>
Ch. Top Flange S. Pipe		+2.25		569.86
PIER A Reference Elevations	+2.39		570.00	570.00
B.M. Pier #1	0.34	567.61		567.27
Point A			6.01	561.60
B.			5.97	561.64
C.			6.12	561.49
D.			6.19	561.42
E.			5.95	561.66
F.			6.29	561.32
G.			4.65	562.96
H.			5.58	562.03

Top Pier
569.51

Fit = 7.90

7.86

8.01

8.08

7.84

8.18

6.54

7.47

↑
Top of Pier

7.5

565.69

Points 1.0' above
Top of Pier in Side
of Tunnel Lining
Reference points.

	Left								
	561.85	561.21	561.92	Elev	566.27	Top Pier			
PIER-1	3.84	4.48	3.77	0.58					
	4.0	0	4.0	9.2	-1.58	567.27	567.27		
Fill	9.4	4.4	5.06	4.35	0				
	4	0	4	9.2					
	561.44	560.69	561.44						
2	4.25	5.00	4.25		0.63	565.06	565.06		
	4.0	0	4.0						

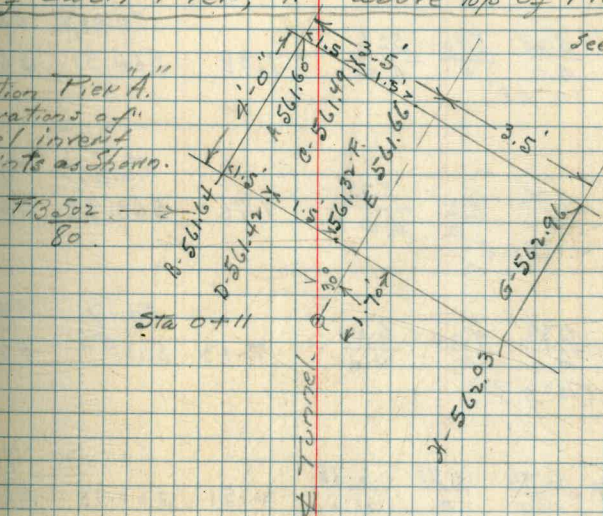
16" wide x 8' long Vert Sides Ends.

B.M. Lead & Tack at L point 6+83.80 (8' offset)

Set lead and Tack on each side of Tunnel on
E of each Pier, 1.00' above top of Pier

See FB 507/80

Location Pier "A"
+ Elevations of
Tunnel invert
at points as shown.



See Cal Sheet

5.58

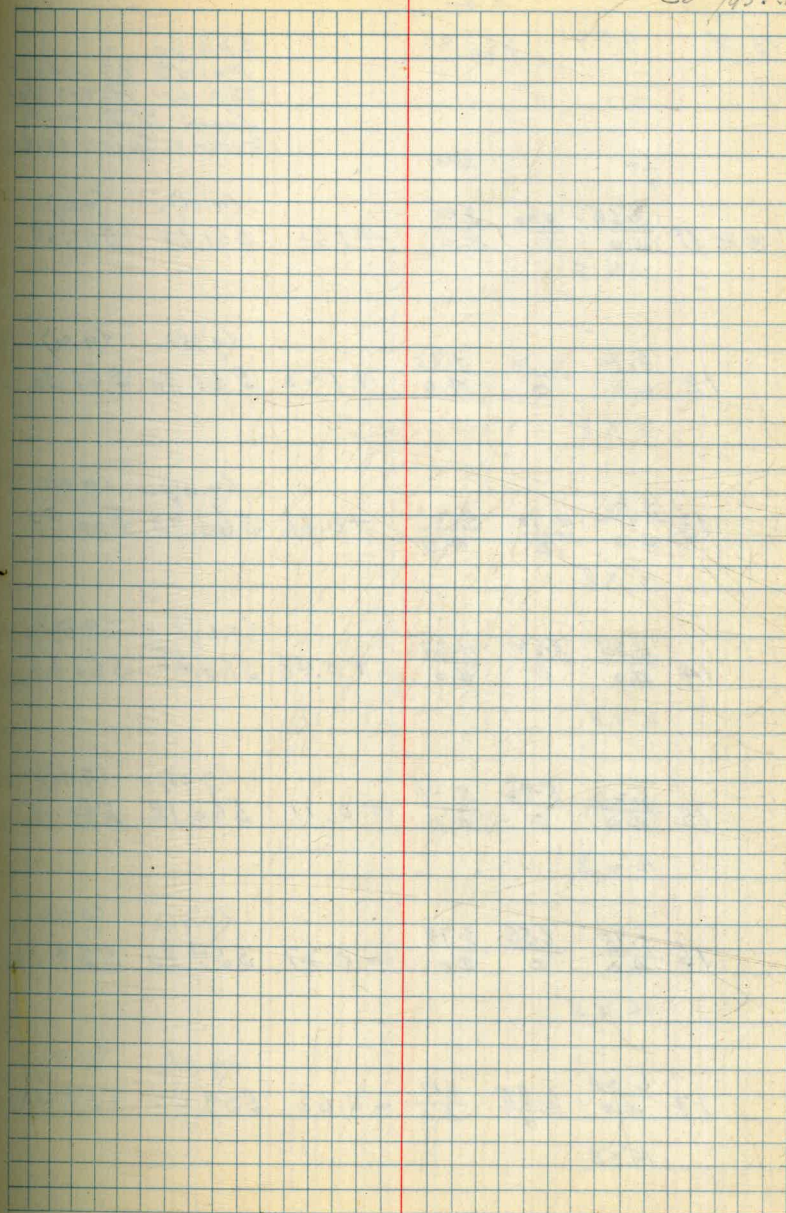
507

16" wide,
across Tunnel.

PIERS - Contd

	565.69 Rt				Points 1.0' above Top of Piers. S. Side N. Side	
PIER-3	$\frac{4.62}{4.0}$	$\frac{5.30}{0}$	$\frac{4.45}{4.0}$	1.00	$\langle 8.90 \rangle$	$\langle 8.82 \rangle$
	(16" x 8')				564.69	564.69
4	$\frac{5.28}{4.0}$	$\frac{5.90}{0}$	$\frac{5.26}{4.0}$	1.38	$\langle 8.88 \rangle$	$\langle 8.94 \rangle$
	(16" x 8')				564.31	564.31
5	$\frac{5.76}{4.0}$	$\frac{6.41}{0}$	$\frac{5.75}{4.0}$	1.76	$\langle 8.86 \rangle$	$\langle 9.14 \rangle$
	(16" x 8')				563.93	563.93
6	$\frac{6.38}{4.0}$	$\frac{7.00}{0}$	$\frac{6.41}{4.0}$	2.13	$\langle 9.11 \rangle$	$\langle 9.26 \rangle$
	(16" x 8')				563.56	563.56
7	$\frac{6.90}{4.0}$	$\frac{7.51}{0}$	$\frac{6.75}{4.0}$	2.51	$\langle 9.21 \rangle$	$\langle 9.20 \rangle$
	(16" x 8')				563.18	563.18
8	$\frac{7.31}{4.0}$	$\frac{8.00}{0}$	$\frac{7.26}{4.0}$	2.88	$\langle 9.35 \rangle$	$\langle 9.23 \rangle$
	(16" x 8')				562.81	562.81
9	$\frac{8.05}{4.0}$	$\frac{8.63}{0}$	$\frac{7.98}{4.0}$	3.26	$\langle 9.67 \rangle$	$\langle 9.51 \rangle$
	(16" x 8')				562.43	562.43
Pier Pierced Angle	$\frac{8.35}{4.0}$	$\frac{9.05}{0}$	$\frac{8.57}{4.0}$	1.80	$\langle 10.14 \rangle$	$\langle 10.59 \rangle$
	2' x 10' x 4' N of R + To South Side Tunnel.				563.89	563.89
	562.89 top pier 2.80' to Left				-1.0' to top Conc	-2.83' to top Conc

Cu 7/5. Conc.



PIERS CONTD.

4/7/36

Soper
Kernmen
Isbell

26

* I.

B.M.	9.77	560.07		550.30	
				Points 1.0 above Top of Piers. Set from * I. with ruler + spirit level.	
	L+	R+			
PIER 11	$\frac{3.29}{4.0}$	$\frac{4.00}{0}$	$\frac{3.45}{4.0}$	+1.61	$\frac{(9.56)}{561.68}$ $\frac{(9.66)}{561.68}$
	16" x 8'				
12	$\frac{3.70}{4.0}$	$\frac{4.34}{0}$	$\frac{3.77}{4.0}$	+1.23	$\frac{(9.35)}{561.30}$ $\frac{(9.74)}{561.30}$
	16" x 8'				
13	$\frac{4.30}{4.0}$	$\frac{4.90}{0}$	$\frac{4.21}{4.0}$	+0.86	$\frac{(9.48)}{560.93}$ $\frac{(9.80)}{560.93}$
	16" x 8'				
14	$\frac{4.84}{4.0}$	$\frac{3.52}{0}$	$\frac{4.82}{4.0}$	+0.48	$\frac{(9.62)}{560.55}$ $\frac{(9.82)}{560.55}$
	16" x 8'				
15	$\frac{5.23}{4.0}$	$\frac{5.92}{0}$	$\frac{5.28}{4.0}$	+0.11	$\frac{(9.66)}{560.18}$ $\frac{(9.90)}{560.18}$
	16" x 8'				
16	$\frac{5.75}{4.0}$	$\frac{6.55}{0}$	$\frac{5.79}{4.0}$	-0.27	$\frac{(9.72)}{559.80}$ $\frac{(9.86)}{559.80}$
	16" x 8'				
17	$\frac{6.20}{4.0}$	$\frac{6.85}{0}$	$\frac{6.17}{4.0}$	-0.65	$\frac{(9.81)}{559.42}$ $\frac{(9.97)}{559.42}$
	16" x 8'				

PIERS CONTD.

560.07

	$\frac{6.70}{4.0}$	$\frac{7.36}{0}$	$\frac{6.68}{4.0}$		$\langle 9.95 \rangle$	$\langle 9.93 \rangle$
PIER-18				-1.02	559.05	559.05
	16" x 8'					

	$\frac{7.30}{4.0}$	$\frac{7.89}{0}$	$\frac{7.22}{4.0}$		$\langle 9.91 \rangle$	$\langle 9.96 \rangle$
19				-1.40	558.67	558.67
	16" x 8' Vert Sides + Ends.					

B.M.	7.04	557.34	-9.77	$\langle 550.30 \rangle$	$\frac{5.2}{36} \times 100$
Ch. on *19			+1.33	$\langle 558.67 \rangle$	$\frac{4.18}{36}$
					Super. Remmen Tobell
PIER-20			+0.96	$\langle 11.94 \rangle$	$\langle 11.97 \rangle$
				558.30	558.30
21			+0.58	$\langle 12.16 \rangle$	$\langle 11.84 \rangle$
				557.92	557.92
22			+0.20	$\langle 12.32 \rangle$	$\langle 11.72 \rangle$
				557.54	557.54

B.M.	5.22	555.52		$\langle 550.30 \rangle$
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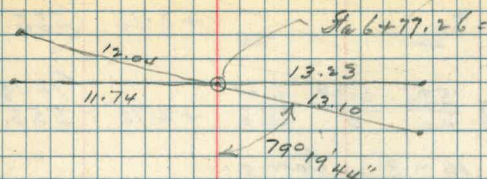
PIER-20	$\frac{4.88}{4.0}$	$\frac{5.19}{0}$	$\frac{4.79}{4.0}$		
	16" x 8' Battered Sides + Vert Ends per Dwg 710.538				

21	$\frac{5.30}{4.0}$	$\frac{5.60}{0}$	$\frac{5.34}{4.0}$		
	16" x 8' Same				

22	$\frac{5.73}{4.0}$	$\frac{6.08}{0}$	$\frac{5.72}{4.0}$		
	16" x 8' Same				

PIERS CONTD.

B.M.	7.36	557.66						4/21/36. S. Side Saper Remmen Isbell North 1.74' S of C -1.0' to top (11.94) -2.83 to top (13.23)
PIER 23	See 90° Back Tang.		+1.34	559.00	559.00			
	ch. on #22		0.12	(557.54)				
B.M.	5.22	555.52		(550.30)				5/2/36. Same
	top	558.00						
		+2.48						
		1.9						
PIER 23A	4.64	5.99	6.55	6.62	6.51	x Sec R4 angle to		
	9.3	4.0	0	1.5	4.0	N side back Tang.		
	2x To tunnel on S. side x 4' to top of it							
	Sides lateral & ends Vert							
B.M.	4.67	554.97		(550.30)				5/1/36
	ch. on Pier 23. Ref. Pt.		+4.03	559.00				
PIER 24			+1.82	556.79	556.79			(12.09)
B.M.	5.22	555.52		(550.30)				5/2/36
	L.H.	R.H.						
PIER 24	6.90	7.22	6.92					
	4.0	0	4.0					
	16" x 8' Battered Sides & Vert ends.							
B.M.	4.53	554.83		(550.30)				5/2/36
PIER 25	6.79	7.18	6.85	+1.59	556.42	556.42		(12.19) (12.16)
	4.0	0	4.0					
	16" x 8' Same							
26	7.26	7.68	7.36	+1.21	556.04	556.04		(12.21) (12.23)
	4.0	0	4.0					
	16" x 8' Same							
27	7.74	8.24	7.82	+0.83	555.66	555.66		(12.20) (12.26)
	4.0	0	4.0					
	16" x 8' Same							
ch. on #23			+4.17	(559.00)				



PIERS. CONTD.

5/4/36.
Super
K. M. R. G. S.
Isbell

29

B.M. 2.21 552.51 $\langle 550.30 \rangle$ Ch on Pier #27 $\frac{2.21}{2.1}$ +3.15 $\langle 555.66 \rangle$ PIER #28 $\frac{5.94}{4.0}$ $\frac{6.29}{0}$ $\frac{6.01}{4.0}$ +2.78 $\langle 12.18 \rangle$ $\langle 12.39 \rangle$
555.29 555.29

16" x 8' Same

29 $\frac{6.29}{4.0}$ $\frac{6.64}{0}$ $\frac{6.27}{4.0}$ +2.40 $\langle 12.24 \rangle$ $\langle 12.40 \rangle$
554.91 554.91

16" x

30 $\frac{6.90}{4.0}$ $\frac{7.20}{0}$ $\frac{6.94}{4.0}$ +2.03 $\langle 12.30 \rangle$ $\langle 12.14 \rangle$
554.54 554.5431 $\frac{7.42}{4.0}$ $\frac{7.71}{0}$ $\frac{7.49}{4.0}$ +1.65 $\langle 12.33 \rangle$ $\langle 12.27 \rangle$
554.16 554.1632 $\frac{7.92}{4.0}$ $\frac{8.16}{0}$ $\frac{7.95}{4.0}$ +1.28 $\langle 12.34 \rangle$ $\langle 12.36 \rangle$
553.79 553.7933 $\frac{8.45}{4.0}$ $\frac{8.73}{0}$ $\frac{8.46}{4.0}$ +0.90 $\langle 12.39 \rangle$ $\langle 12.33 \rangle$
553.41 553.4134 $\frac{8.86}{4.0}$ $\frac{9.16}{0}$ $\frac{8.95}{4.0}$ +0.52 $\langle 12.41 \rangle$ $\langle 12.28 \rangle$
553.03 553.03
5/6/36.B.M. 1.91 552.21 $\langle 550.30 \rangle$

T.P. 2.51 548.37 6.35 545.86

Ch on #34 +4.66 $\langle 553.03 \rangle$

5/6/26

30

2.2 ✓
548.37Ref Points 1.0 above
Top of Conc. Pier $\langle 12.50 \rangle$ ✓ $\langle 12.69 \rangle$ ✓5/9/36 changed to 1.0 above Top Conc. 553.73 553.73
PIER 35. +6.19 554.56 554.56+2.45 3.14 4.92 5.24 5.00 3.28 +2.45 Top Pier affords
 $\frac{12.1}{10.}$ 4.0 10.3 12.0

North + South across Tunnel.

36 $\frac{5.89}{4.0}$ $\frac{5.88}{0}$ $\frac{5.93}{4.0}$ +4.36 $\langle 9.19 \rangle$ ✓ $\langle 33.20 \rangle$ ✓
552.73 552.73B.M. 0.99 553.72 ✓ $\langle 552.73 \rangle$ Plug 337 $\frac{11.68}{4.0}$ $\frac{11.71}{0}$ $\frac{11.77}{4.0}$ B.M. 1.86 554.59 ✓ $\langle 552.73 \rangle$ 11+07.7 $\frac{4.3}{5.0}$ $\frac{6.1}{0}$ $\frac{7.6}{5.0}$ } original ground
on Pier 3811+10.0 $\frac{3.3}{5.0}$ $\frac{5.2}{0}$ $\frac{6.3}{5.0}$ Pier 38 0.88 553.61 ✓ $\langle 552.73 \rangle$
Finals.11+07.7 $\frac{12.3}{4.4}$ $\frac{12.3}{5.1}$

11+08.86

11+10.02 $\frac{12.2}{4.4}$ $\frac{12.1}{5.1}$

X- Section of Ground for Valve Chamber.
(Sta 13+00)

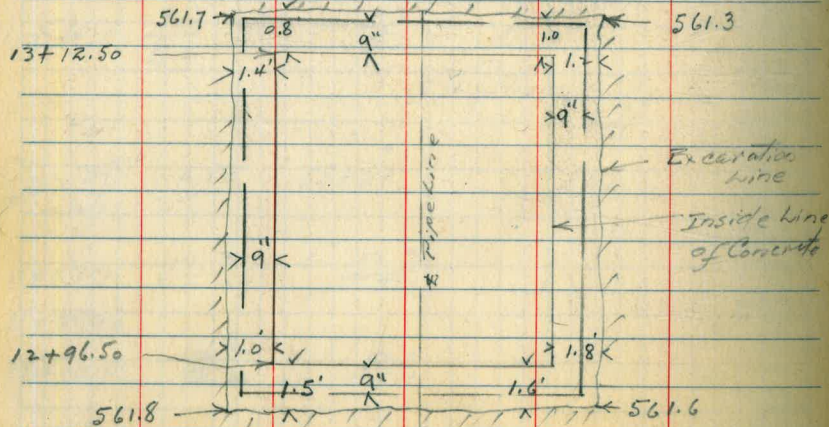
May 8, 1936
Saper
Bernier
Isbell

B.M.	13.09	576.74	< 563.65 >	
	Lt ✓	±	Rt	Grade
	Cut 12.2	12.2	11.5	Bottom Conc
12+95.75	El 574.0	574.0	573.3	561.84
	Red 2.7	2.7	3.4	
	6.4	0	5.1	
(5.9) A	12.7	12.3	11.8	
	574.4	573.9	573.4	561.68
13+13.25	Red 2.3	2.8	3.3	
	6.4	0	5.1	

Staked for Elev 561.8 as bottom of Concrete
at Sta 13+00

Concrete above ground to be moved
not shown in above Sec. (Part of Dist Pipe Support) 4.56

Final X Sec. bottom of Valve Chamber



Note:

Excavation to be allowed to
near outside lines of Chamber.
J.T.W.

May 12, 1936.

Soper,
Remsen
Isbell.

Profile of Ground for Drain Trench

Sta	13+12	FB	529 7	Grade.
B.M.	8.10	578.32	570.22	
0+00	= N. Side Valve Cham at Sta 13+14	4.7	573.6	560.6
0+20		5.2	573.1	560.4
0+35.5		6.8	571.5	560.2
T.P.	2.37	571.21	9.48	568.84
0+48		10.2	561.0	560.1
0+78		10.9	560.3	559.8
0+78		11.4	559.8	"

32

x Sec of Trench 20" wide bottom 6' Vert
1/2:1 Slope above 6' 0" Grade - 1.0%

Station	Left Side	Right Side	Bottom of Trench
0+00	$\frac{C 13.0}{2.6}$	$\frac{13.0}{0}$	$\frac{C 13.0}{2.6}$ 560.2 <small>2.13.4</small>
0+20	$\frac{12.5}{2.4}$	$\frac{12.7}{0}$	0+15 559.9 <small>13.2</small>
0+35.5	$\frac{11.3}{2.0}$	$\frac{11.3}{0}$	0+20 556.9 <small>14.5</small> 557.05
0+44	$\frac{6.0}{0}$	$\frac{6.0}{0}$	
0+48	$\frac{0.9}{0}$	$\frac{0.9}{0}$	0+49.6 556.9 <small>4.0</small>
0+78	$\frac{0.5}{0}$	$\frac{0.5}{0}$	
0+78	$\frac{0.0}{0}$	$\frac{0.0}{0}$	0+78.6 556.6 <small>3.2</small>

Original Ground $\frac{529}{7}$
531
-25

See

529
23735

Profile of Ground for Blow Off Ditch.

Sta 17+00 Grade = -1.0%
 B.M. #2 1.98 57255 (570.57)
 of Pipe Sta Grade
 0+00 = 2' R. 17+00 561.2

0+03			561.17
0+03	4.9	567.7	561.17
+12	5.2	67.4	61.08
+40	6.2	66.4	60.80
+48.5	6.4	66.2	60.71

Class 4 Excavation

~~Class 3. Excavation for valve structure
 See Next Page.~~

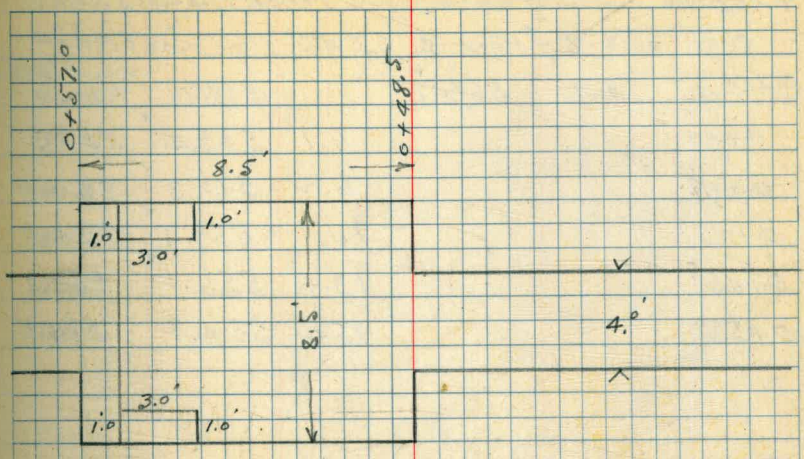
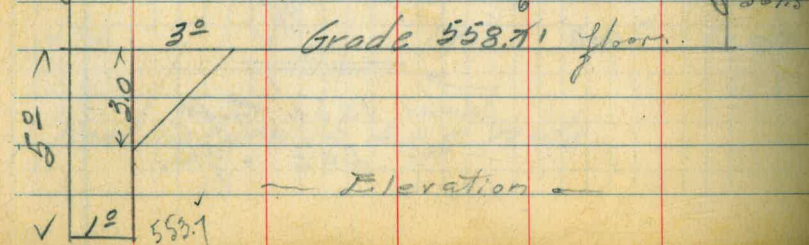
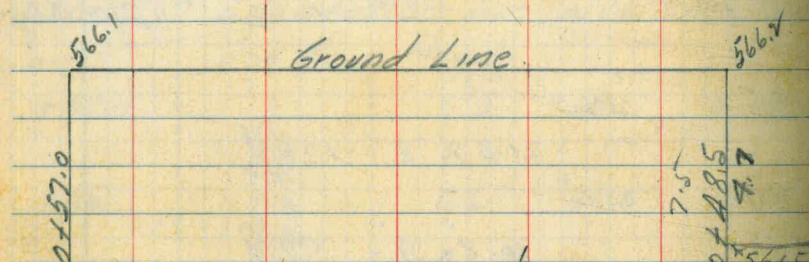
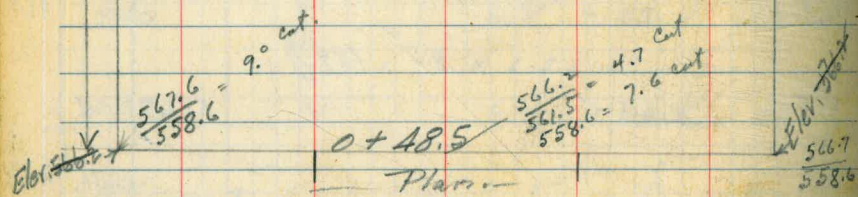
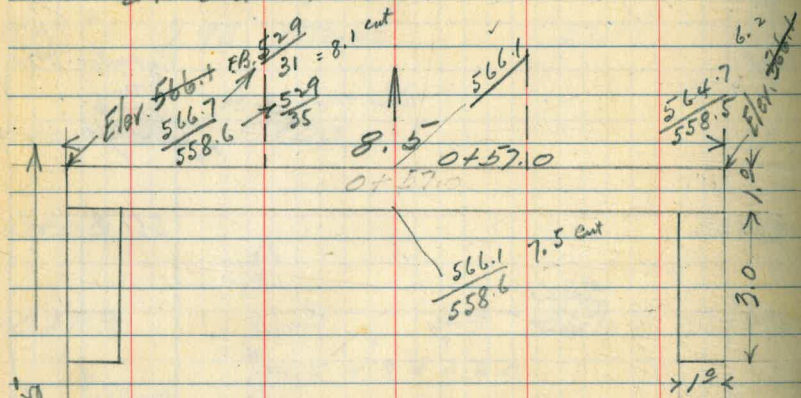
+57.0	6.5	66.1	60.63
+65	6.6	66.0	60.55
+74	12.1	60.5	60.46

Class 4 Excavation

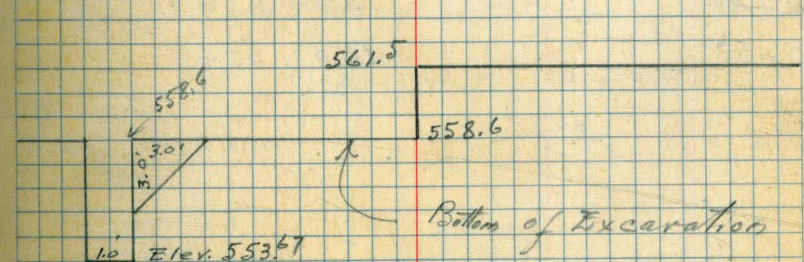
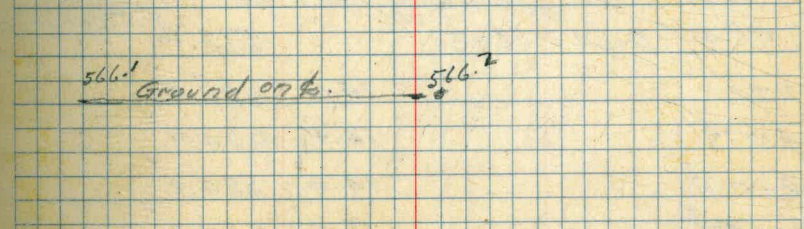
Neat line trench 4.0 ft wide.

Cut.	Spuff	Backfill	Grade Sub. Grade Backfill	Fill	Cu ft
0.0			561.9	.7	
6.5	26.0				47.8
		25.6 x 9 = 230.4			
6.3	25.2		561.7	.7	
		23.8 x 28 = 666.4			
5.6	22.4				85.5
		22.2 x 8.5 = 188.7			
5.5	22.0		561.5	.8	
					cast. 1333
					Backfill Cu ft = 4.9
5.5	22.0				
		21.8 x 8 = 174.4			
5.4	21.6				
		10.8 x 9 = 97.2			
0.0	0.0				
Total 1357.1 Cu ft					
= 50.3 x 30					

Excavation Class 3 for blow-off valve
of Sta. 17+00.



Sta 17+00-50'R. Plan of Layout for Balanced Valve



Sec. Elev. of Tooting for
Balanced Valve
Sta 17+00-50'R.

8/1/36
Saper
Isbell
Remmen

Original X Sec. for Blowoff trench Sta 23 to 5

0.00 = 2.8' from ϕ of 48" Pipe. See FB 530

Station	Offset	Station	Elev. Bottom Trench
BM #4	0.71	569.47	568.76
0+00		6.1	563.4
0+19		6.2	563.3
0+26.5		10.1	559.4
0+48.5		13.4	556.1
0+53.0		15.2	554.3

Final X Sec for Blowoff trench Sta 23 to 5

0.00 = 2.8' from ϕ of 48" Pipe.

8/15/36
Saper
Isbell
Remmen

Station	Offset	Station	Elev. Bottom Trench
BM #4	0.54	569.30	568.76
0+00		14.0	555.3
0+19		14.4	554.9
0+26.5		14.4	554.9
0+48.5		15.0	554.3
0+53		15.0	554.3

From FB 530

35
Trench 20" width. Bottom 6.0
Vertical. above 6.0 Side Slopes 1/4 to 1.

Cut

8.1 ✓
8.4 ✓
4.5 ✓
1.8 ✓
0 ✓

Aug 3 1936
Super
Recommen
Isbell.

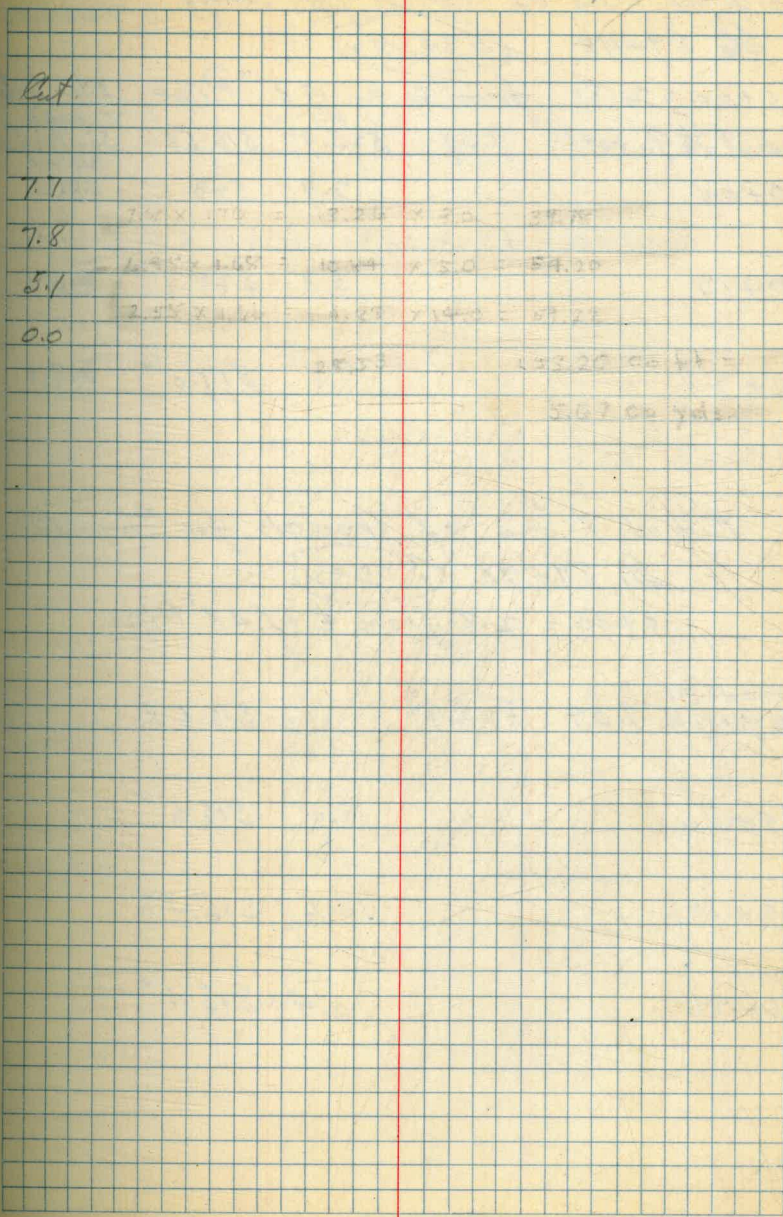
Original X-Sec for Blowoff Trench
Sta 68+49. (F.B. $\frac{530}{42}$)

0+00 = 2.8 from \pm of 48" Pipe. Final Gr			
BM#9 2.69 539.92	537.23	See below	
0+00	4.2	535.7 ✓	528.0
0+03	4.1	535.8 ✓	528.0
0+08	6.8	533.1 ✓	528.0
0+22	12.4	527.5 ✓	527.5

Final X Sec for Blowoff Trench
Sta 68+49. (F.B. $\frac{530}{42}$)

BM#9 2.69 539.92	537.23		
0+00	11.9	528.0 ✓	
0+03	11.9	528.0 ✓	
0+08	11.9	528.0	
0+22	12.4	527.5	

Trench 20" wide. Bottom 6.0' Sides ³⁶
Vertical above 6.0' Side Slopes 1/4 to 1.



Original X Sec of Trench for Bloroff

8/10/36
Soper
Isbell
Kammer.

Sta 89+98 (530/52)

0+00 = 2.80 from $\frac{1}{2}$ of 48" Pipe. Elev Bottom

Grade at Sta 90+09.36 9.39 525.97 516.58 Trench See Final Sec Below

0+00 2.9 523.1 516.0

0+17 3.3 522.7 515.4

0+26 9.0 517.0 515.1

Final X Sec of Trench for Bloroff

Sta 89+98 (530/52)

0+00 = 2.8' from $\frac{1}{2}$ of 48" Pipe

Grade at Sta 90+09.36 9.39 525.97 516.58

0+00 10.0 516.0

0+17 10.6 515.4

0+26 10.9 515.1

Trench 20' wide. Bottom 6.0' Sides
Vertical. Above 6.0' Side Slopes 1/4 to 1.

Cut

7.1

7.3

1.9

5/16/36

Soper
Kemmets

X Section for Pier 38

Copy of Original Notes $\frac{529}{15}$

offset Plug Pier 38 1.86 554.59 ✓ 552.73

550.3 ✓ 548.5 ✓ 547.0 ✓

11+07.7 $\frac{4.3}{5.0}$ $\frac{6.1}{0}$ $\frac{7.6}{5.0}$

478.529

551.3 ✓ 549.4 ✓ 548.3 ✓

11+10.0 $\frac{3.3}{5.0}$ $\frac{5.2}{0}$ $\frac{6.3}{5.0}$

Final X-Sec. for Excavation of Pier 38 $(\frac{529}{26})$

offset Plug Pier 38 0.88 553.61 ✓ 552.73

11+09.70 $\frac{541.3 \text{ Elev. } \pm}{12.3}$ $\frac{4.4}{4.4}$ $\frac{541.3 \text{ R.}}{12.3}$ $\frac{5.1}{5.1}$

541.4 ✓ 541.5 ✓

11+10.02 $\frac{12.2}{4.4}$ $\frac{12.1}{5.1}$

Blank lined page with five vertical red margin lines.

Blank grid page with a vertical red margin line on the left side.

See FB. 515

PROFILE of PIPE for CLASS / Ex.

4/30/36
Soper
Isbell
Remmen

BM #	9.60	(573.25)	(563.65)	Grade
11+12.7			Ground	550.7
11+25		16.7	556.5	550.7
+50		10.3	62.9	550.7
+65		7.4	65.8	554.7
12+00		2.9	70.3	564.0
+50		0.2	73.0	564.81
T.P.	3.83	(576.17)	0.91	(572.34)
13+00		2.3	73.9	564.8
+50		5.4	70.8	564.3
14+00		5.2	71.0	563.9
+50		5.4	70.8	563.4

See same sheet
plus of 5' and
5' and

6.4

0.0

5.8

12.2

11.1

16.3

8.2

9.1 Metre Chamber to Pg 31.

6.5

17.1

7.4

PROFILE ~~4~~ PIPE for CLASS 1 BX

			Ground	Grade	
15+00	<576.17>	6.7	569.5	563.0	
+50		7.3	568.9	562.5	
T.P.	4.98 <573.81>	7.34	<568.83>		
B.M.*2	2.68 <573.25>	3.27	<570.54>	Rec. El 570.57	
				5/1/36 Saper Remmer Isbell	
16+00		4.2	569.0	562.1	
+25		4.6	68.6	61.9	
+50		4.8	68.4	61.6	
+75		5.5	67.7	61.4	
17+00		5.7	67.5	61.2	
+50		5.8	67.4	61.1	
18+00		5.0	68.2	61.0	

Cut

6.5
6.4
6.9
6.7
6.8
6.3
6.3
7.2

PROFILE & P.P. for CLASS 1 BX

			Ground	Grade	
18+25	<573.25>	4.4	568.8	560.9	✓
+50		4.0	69.2	60.9	✓
+75		3.7	69.5	60.8	✓
19+00		3.5	69.7	60.8	✓
+25		3.2	70.0	60.7	✓
+50		4.0	69.2	60.6	✓
+75		4.2	69.0	60.6	✓
20+00		5.1	68.1	60.5	✓
+25		5.8	67.4	60.5	✓
+50		6.3	66.9	60.4	✓
T.P.	1.53 <570.85>	3.93	<569.32>		
+75		4.2	66.6	60.4	✓

Cut
7.9
8.3
8.7
8.9
9.3
8.6
8.4
7.6
6.9
6.5
6.2

			Ground	Grade	Cut
21+00	(570.85)	4.9	565.9	560.3	5.6
+25		4.7	66.1	59.9	6.2
+50		4.9	65.9	59.4	6.5
+72.6		5.1	65.7	58.9	6.8
22+00		5.4	65.4	58.4	7.0
+50		6.6	64.2	57.4	6.8
BM #4		2.14	568.71	(568.76)	
				4/25/36 S. J. J. Kammen J. S. Bell.	
BM #4	3.64	(572.49)	(568.76)		
				$\frac{544}{30}$	
23+00		8.7	63.7	56.4	7.3
+50		9.3	63.1	56.2	6.9
24		9.0	63.4	56.5	6.9
+50		9.2	63.2	56.7	6.5

			Ground	Grade	Cut	
25+00		572.40	8.3	564.1	556.9	7.2
+50		824/30	8.5	63.9	57.1	6.8
26+00			5.8	66.6	58.7	7.9
+25			4.9	67.5	59.6	7.9
+50			3.7	68.7	60.30	8.4
+75			4.3	68.1	60.4	7.7
27+00.			4.3	68.1	60.5	7.6
BM#5	5.78	585.51		579.73		
T.P.	3.20	575.71	13.00	572.51		
27+50		524/28	7.5	568.2	560.6	7.6
+75			7.5	68.2	60.7	7.5
28+00			7.5	68.2	61.0	7.2
+25			7.0	68.7	61.7	7.0

4/24/36
Super
Remmen
Isbell.

	Level	Ground	Grade	Cut	
28+50	$\frac{524}{21}$ (575.71) ✓	6.3 ✓	569.4 ✓	562.5 ✓	6.9 ✓
+75		5.5 ✓	70.2 ✓	63.2 ✓	7.0 ✓
29+00		4.4 ✓	71.3 ✓	64.0 ✓	7.3 ✓
+25		3.7 ✓	72.0 ✓	65.1 ✓	6.9 ✓
T.P.	13.00 (585.51) ✓	3.20 (572.51) ✓			
29+50		12.3 ✓	573.2 ✓	66.2 ✓	7.0 ✓
30+00	$\frac{524}{21}$ ✓	9.2 ✓	76.3 ✓	68.5 ✓	7.8 ✓
B.M. #5	6.92 (586.65) ✓	(5.78) ✓	(579.73) ✓		
30+75	$\frac{500}{21}$	8.6 ✓	78.1 ✓	70.0 ✓	8.1 ✓
+50		7.2 ✓	79.5 ✓	71.5 ✓	8.0 ✓
31+00		4.9 ✓	81.8 ✓	73.9 ✓	7.9 ✓
+50		5.0 ✓	81.7 ✓	73.6 ✓	8.1 ✓

500
24

	$\langle 586.65 \rangle$	Ground	Grade
32+00	6.4	580.3	573.2
+50	7.4	79.3	71.9
33+00	8.5	78.2	70.3
+33	9.0	77.7	69.3
+50	9.7	77.0	68.8
+75	10.8	75.9	68.0
34+00	11.5	75.2	66.9
+75	12.6	74.1	65.4
	0.79 $\langle 580.52 \rangle$	$\langle 579.73 \rangle$	
+50	7.8	72.7	63.9
+75	9.5	71.0	62.4
35+00	10.9	69.6	60.9
+30.02 Back	13.5	67.0	59.1
+30.18 Ahead =			

7.1
7.4
7.9
8.4
8.2
7.9
8.3
8.7
8.8
8.6
8.7
7.7

Equation

$$\frac{508}{26}$$

Ground Grade

	0.60	<569.66>	<569.06>	
35+50			3.6	566.1 557.9
36+00			6.8	67.9 55.0
+30			9.0	60.7 54.3
+50			9.2	60.5 53.9
+95			9.5	60.2 57.8
37+00			10.0	59.7 52.7
+25			11.6	58.1 52.2
+43			15.5	54.2 51.7
	3.72	<570.64>	<566.92>	
+50			16.5	54.1 51.6
38+00			17.9	57.7 50.7
+50			10.3	60.3 49.7
	1.46	<570.34>	<568.88>	
39+00			10.5	59.8 48.8

8.2
7.9
6.4
6.6
7.4
7.0
5.9
2.5
2.5
7.0
10.6
11.0

		$\frac{508}{17}$	Ground Grade	
39+50	$\langle 570.34 \rangle$	13.5	556.8	547.8
	1.78	$\langle 558.56 \rangle$	13.06	$\langle 557.78 \rangle$
40+00		4.7	53.9	46.9
+10	$\frac{508}{17}$	4.2	54.4	46.7
+50		5.1	53.5	46.0
+65		7.8	50.8	45.9
41+00		8.0	50.6	45.6
+50		8.5	50.1	45.2
42+00		9.4	49.2	44.8
+50	$\frac{509}{17}$	8.7	49.9	44.4
+75	$\frac{508}{16}$	8.4	50.2	44.2
43+00	$\frac{509}{17}$ $\frac{508}{16}$	8.7	49.9	44.0
+50		9.3	49.3	43.6

9.0
7.0
7.7
7.5
4.9
5.0
4.9
4.4
5.5
6.0
5.9
5.7

508
79

<558.56> Ground Grade

44+00 9.6 549.0 543.2

+50 17.7 45.9 42.8

3.86 <552.62> 9.80 <548.76>

45+00 4.2 48.4 42.4

+50 3.8 48.8 41.7

46+00 4.3 48.3 41.1

+50 5.7 46.9 40.4

47+00 6.5 46.1 39.7

+50 7.5 45.1 39.1

48+00 8.6 44.0 38.4

+50 8.8 43.8 37.7

49+00 9.3 43.3 37.0

5.24 <548.68> 9.18 <543.44>

+50 5.7 543.0 36.8

35.8v
3.1v
6.0v
7.1v
7.2v
6.5v
6.4v
6.0v
5.6v
6.1v
6.3v
6.2v

508
30

<548.68>

Ground Grade

50+00	6.0 ✓	542.7 ✓	536.7 ✓
+25	6.1 ✓	42.6 ✓	36.7 ✓
+50	6.2 ✓	42.5 ✓	36.6 ✓
51+00	6.0 ✓	42.7 ✓	36.5 ✓
+50	5.6 ✓	43.1 ✓	36.4 ✓
52+00	5.0 ✓	43.7 ✓	36.3 ✓
+50	4.7 ✓	44.0 ✓	36.2 ✓
53+00	4.8 ✓	43.9 ✓	36.1 ✓
+50	6.0 ✓	42.7 ✓	36.0 ✓
54+00	7.4 ✓	41.3 ✓	35.9 ✓
+50	6.0 ✓	42.7 ✓	35.7 ✓
+75	5.1 ✓	43.6 ✓	35.7 ✓

1.76 <545.35> 5.09 <543.59>

6.0 ✓
5.9 ✓
5.9 ✓
6.2 ✓
6.7 ✓
7.4 ✓
7.8 ✓
7.8 ✓
6.7 ✓
5.9 ✓
7.0 ✓
7.9 ✓

508
-21

<545.35>

Ground Grade

55+00 1.4 544.0 535.6

50'

+50 1.7 43.7 35.0

4.94 ft

55+54.94 Back = 1.8 43.6 35.0

55+04.94 Ahead =

45.06 ft

+50 3.1 42.3 34.3

50'

56+00 4.7 40.7 33.7

+25 5.3 40.1 33.3

+50 5.6 39.8 33.0

+75 5.4 40.0 32.7

9.34 <544.98> <535.64> TR 524/3

57+00 6.7 38.3 32.3

+50 7.4 37.6 31.6

58+00 7.0 38.0 31.4

+15 6.1 38.9 31.4

8.4

8.7

8.6

8.0

7.0

6.8

6.8

7.3

6.0

6.0

6.6

7.5

Equation

54.98

<544.98>

Ground Grade

58+50	5.9	539.1	531.3
59+00	5.8	39.2	31.2
+50	6.4	38.6	31.1
60+00	6.4	38.6	31.0
+50	6.5	38.5	30.9
61+00	6.5	38.5	30.8
+50	6.7	38.3	30.6
62+00	6.7	38.3	30.5
+50	6.8	38.2	30.4
63+00	6.3	38.7	30.3
+50	7.0	38.0	30.2
64+00	7.3	37.7	30.1

1.26 544.37 1.85 543.13

7.8
8.0
7.5
7.6
7.6
7.7
7.7
7.8
7.8
8.4
7.8
7.6

	$\langle 544.37 \rangle$	$\frac{524}{5}$	Ground	Grade
64+50	7.0	✓	37.4	530.0
65+00	7.0	✓	37.4	29.8
+50	7.4	✓	37.0	29.7
66+00	7.6	✓	36.8	29.6
+50	7.9	✓	36.5	29.5
67+00	8.0	✓	36.4	29.4
+50	8.5	✓	35.9	29.3
68+00	8.4	✓	36.0	29.2
+50	9.0	✓	35.4	29.0
69+00	7.4	✓	37.0	29.5
+50	5.9	✓	38.5	30.2
+75	5.5	✓	38.9	30.5

7.4 ✓

7.6 ✓

7.3 ✓

7.2 ✓

7.0 ✓

7.6 ✓

6.6 ✓

6.8 ✓

6.4 ✓

7.5 ✓

8.3 ✓

8.4 ✓

$\frac{524}{6}$
 $\langle 544.37 \rangle$

Ground Grade

70+00	4.9	539.5	530.8
+75	4.3	40.1	31.1
+50	4.2	40.2	31.4
+75	3.8	40.6	31.8
71+00	3.6	40.8	32.1
+75	3.5	40.9	32.4
+50	3.2	41.2	32.7
+75	2.8	41.6	33.1
72+00	2.7	41.7	33.4
+75	2.5	41.9	33.7
+50	2.5	41.9	34.0
+75	2.5	41.9	33.9

8.7 \checkmark 9.0 \checkmark 8.8 \checkmark 8.8 \checkmark 8.7 \checkmark 8.5 \checkmark 8.5 \checkmark 8.5 \checkmark 8.3 \checkmark 8.2 \checkmark 7.9 \checkmark 8.0 \checkmark

524
/ 5

	$\langle 544.37 \rangle$	Ground	Grade
73+00		2.6 ✓ 541.8 ✓	533.8 ✓
+25		2.7 ✓ 41.7 ✓	33.7 ✓
+50		3.1 ✓ 41.3 ✓	33.6 ✓
+69		3.5 ✓ 40.9 ✓	33.6 ✓
	1.84 ✓ $\langle 543.20 \rangle$	3.01 ✓ $\langle 541.36 \rangle$	
74+00		2.5 ✓ 40.7 ✓	33.4 ✓
+50		3.2 ✓ 40.0 ✓	33.2 ✓
75+00		3.3 ✓ 39.9 ✓	33.0 ✓
+50		3.6 ✓ 39.6 ✓	32.8 ✓
76+00		3.9 ✓ 39.3 ✓	32.6 ✓
+50		4.5 ✓ 38.7 ✓	32.1 ✓
77+00		5.3 ✓ 37.9 ✓	31.5 ✓
+50		5.8 ✓ 37.4 ✓	30.8 ✓

8.0 ✓
8.0 ✓
7.7 ✓
7.3 ✓
7.3 ✓
6.8 ✓
6.9 ✓
6.8 ✓
6.7 ✓
6.6 ✓
6.4 ✓
6.6 ✓

			Ground Grade	
78+00		6.7	536.5	529.9
+50		7.7	35.5	29.0
79+00		8.6	34.6	28.1
+50		9.6	33.6	27.2
80+00	0.18	4.0	32.9	26.3
+50		4.7	32.2	25.4
81+00		5.6	31.3	24.5
+50		5.9	31.0	23.6
82+00		6.5	30.4	22.7
+50		6.9	30.0	22.6
83+00		7.2	29.7	22.4
+50		7.0	29.9	22.3

6.6v
6.5v
6.5v
6.4v
6.6v
6.8v
6.8v
7.4v
7.7v
7.9v
7.3v
7.6v

524
/ 32

<536.87> Ground Grade

84+00		7.6	529.3	522.7
+50		6.8	30.1	22.1
	3.73	<533.66>	6.94	<529.93>
85+00		3.9	29.8	22.0
+50		4.4	29.3	21.8
86+00		4.5	29.2	21.7
+50		5.1	28.6	21.6
87+00		5.2	28.5	21.5
+30		5.3	28.4	21.1
+50		6.5	27.2	20.8
88+00		6.4	27.3	20.0
+50		7.8	25.9	19.2
+95		7.5	26.2	18.5

7.1
8.0
7.8
7.5
7.5
7.0
7.0
7.3
6.4
7.3
6.7
7.7

52.2
3.4

	533.66		Ground	Grade
89+00		7.4	526.3	518.4
+30		7.8	25.9	17.9
+50		9.4	24.3	17.6
90+00		10.4	23.3	16.7
+50		10.6	23.1	16.9
	8.77	<537.04>	10.39	<523.27>
91+00		8.5	23.5	17.4
+50		8.1	23.9	17.8
92+00		7.6	24.4	18.2
+50		7.1	24.9	18.7
93+00		6.4	25.6	19.1
+50		6.1	25.9	19.6
94+00		6.1	25.9	20.0

7.9v

8.0v

6.7v

6.6v

6.2v

6.1v

6.1v

6.2v

6.2v

6.5v

6.3v

5.9v

524
195

	537.04	Ground	Grade
94+50		5.4	576.6 520.4
95+00		4.3	27.7 21.8
+50		2.6	29.4 23.4
96+00		1.0	31.0 24.9
+32	5.00 <536.82>	0.22 <531.82>	4.8 32.0 25.4
+50		5.3	31.5 25.5
+75		5.0	31.8 25.7
97+00		4.5	32.3 25.9
+75		4.4	32.4 26.2
+50		4.3	32.5 26.4
+75		4.4	32.4 26.6
98+00		4.2	32.6 26.8

6.2v
5.9v
6.0v
6.1v
6.6v
6.0v
6.1v
6.4v
6.2v
6.1v
5.8v
5.8v

524
39

536.82

Ground Grade

98+25	4.1 ✓	537.7 ✓	526.8 ✓
+50	4.6 ✓	32.2 ✓	26.4 ✓
99+00	5.5 ✓	31.3 ✓	25.6 ✓
+50	6.0 ✓	30.8 ✓	24.7 ✓
100+00	6.1 ✓	30.7 ✓	23.9 ✓
+50	6.5 ✓	30.3 ✓	22.8 ✓
101+00	7.5 ✓	29.3 ✓	21.5 ✓
+50	9.7 ✓	27.1 ✓	20.1 ✓

0.59 ✓ $\langle 527.78 \rangle$ 9.63 ✓ $\langle 527.19 \rangle$

102+00	2.4 ✓	25.4 ✓	18.8 ✓
+50	3.1 ✓	24.7 ✓	17.4 ✓

5.9v

5.8v

5.7v

6.1v

6.6v

7.5v

7.8v

7.0v

6.6v

(Equation)

7.3v

527.78

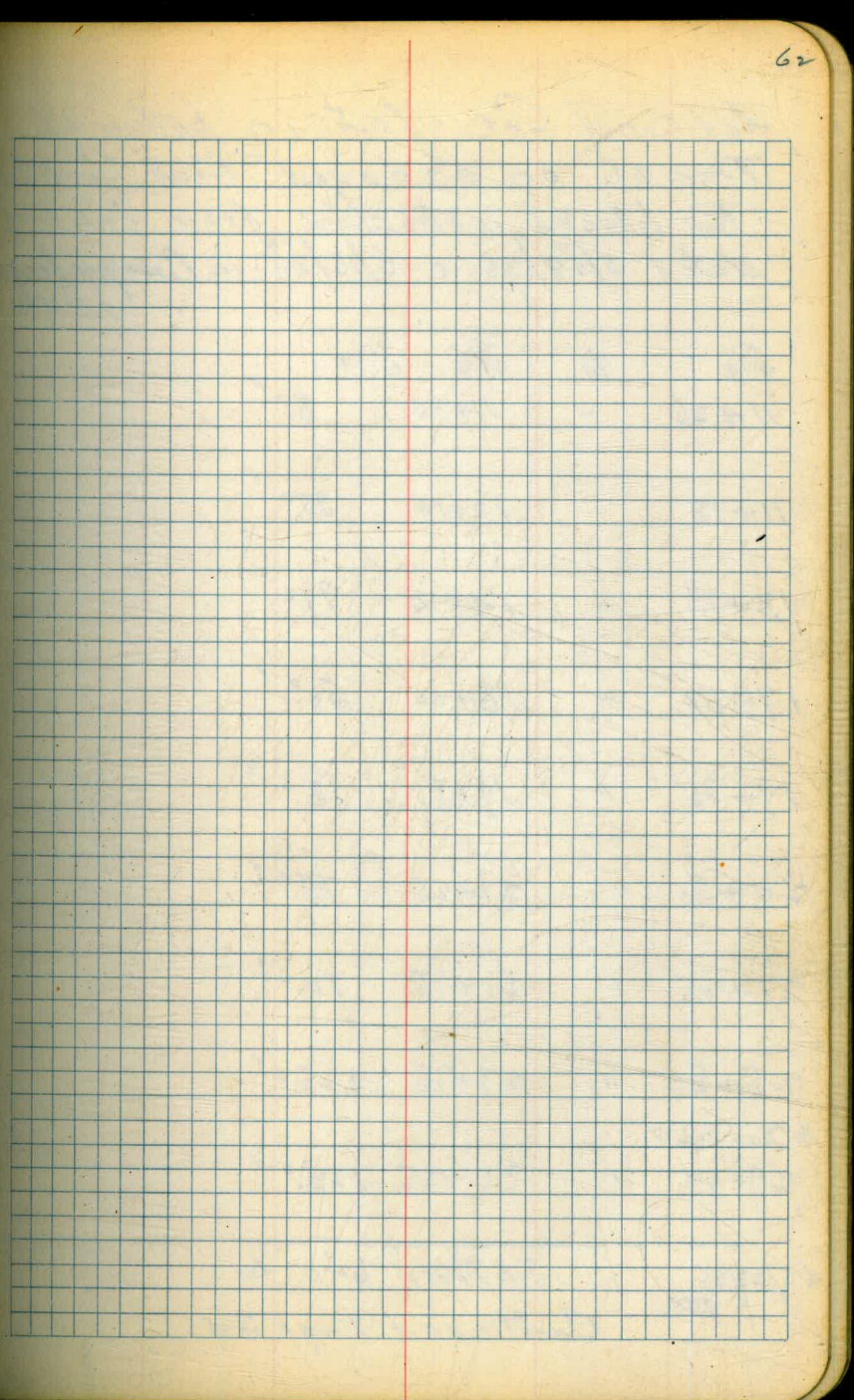
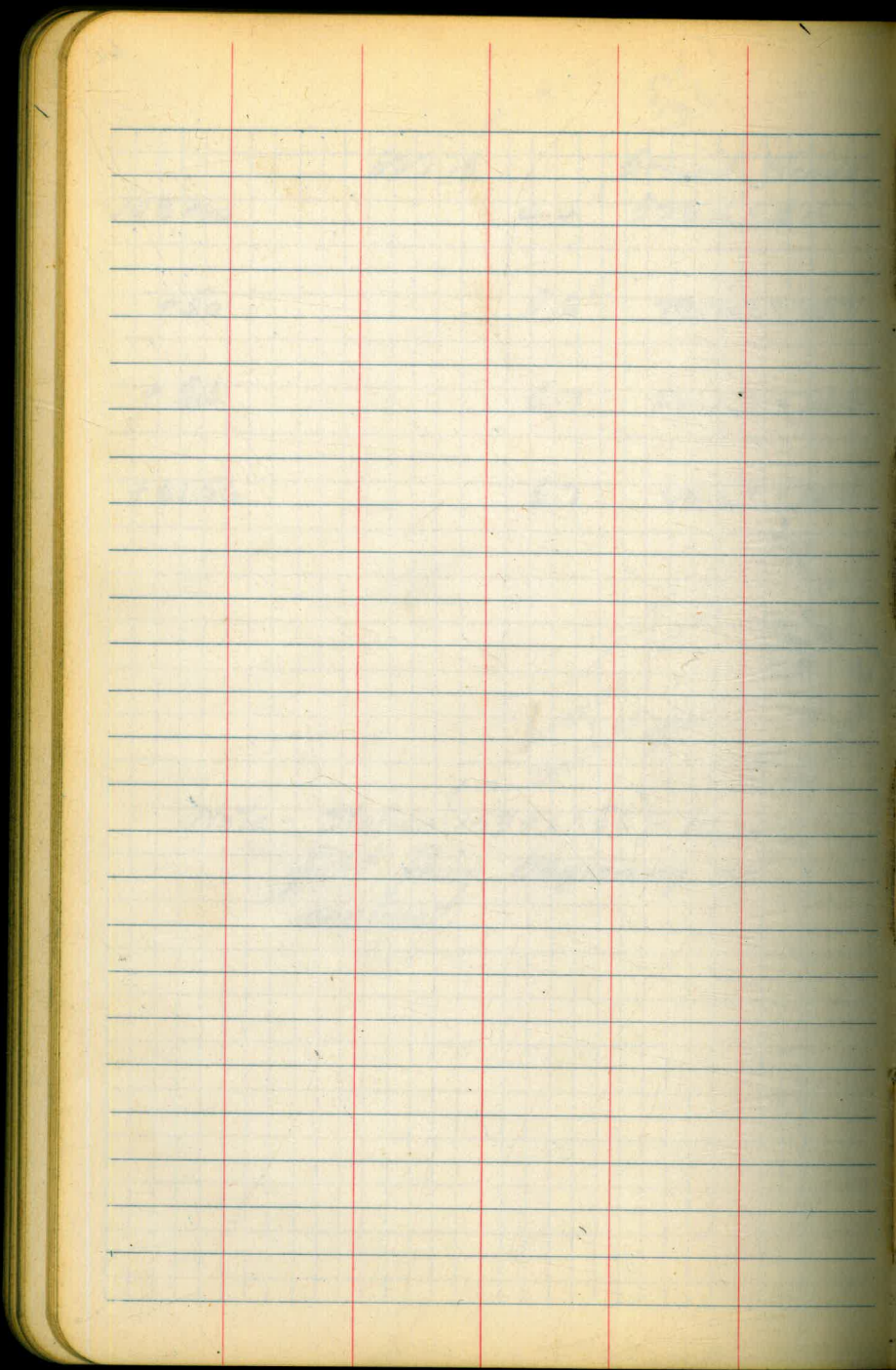
	527.78	Ground Grade	
103+00	4.4	523.4	516.1
+50	5.6	22.2	14.7
+54	5.7	22.1	14.6
+61.56	5.7	22.1	14.4

7.3
7.5
7.5
7.7
5.5
5.1
4.8
4.5

Ground levels checked 2/22

Backsight this at check

Note - Station (103+61.56) = 10,400 feet from beginning of contract.



Additional Cut of 0.5' in bottom of
 Trench on account Rock Condition.
 Per letters of instructions from Res Eng
 dated 5/28/36 + 6/16/36. in Correspondence
 Book.

Sta	to	Sta	Dist
11+26	"	11+34	8.0 ✓
11+75	"	12+10	35.0 ✓
13+13	"	14+10	97.0 ✓
17+50	"	18+00	50.0 ✓
19+35	"	19+50	15.0 ✓
20+50	"	21+25	75.0 ✓
21+25	"	21+35	10.0 ✓
25+50	"	27+75	225.0 ✓
* See Pg 64			
29+00	"	30+25	125.0 ✓

6/23/36
 Sub Total - 640. ✓
 Continued Page 64

Brought Forward 640.0 ✓

Sta	to	Sta	Dist
28+75 ✓	to	29+00 ✓	25 ✓
31+35 ✓	to	32+70 ✓	135 ✓
34+00 ✓	to	34+40 ✓	40 ✓
35+30 ✓	to	35+40 ✓	10 ✓
35+75 ✓	to	35+95 ✓	20 ✓
<hr/>			
To 6/29/36 xrv.			
Letter 7/2/36.			
38+25	to	40+00	175 ✓
43+00	to	57+00	1400 ✓
<hr/>			
Letter 1/3/36			
60+40	to	60+65	25 ✓
61+20	to	61+50	30 ✓
64+50	to	64+75	25 ✓
66+35	to	66+60	25 ✓
86+25 ✓	to	86+50	25 ✓
			Sub Total 2575. ✓

Continued Page 65

Brought Forward 2575.

65

Sta	to	Sta	Dist
✓ 87+00	to	87+25	25
✓ 90+50	to	90+75	25
✓ 94+50	to	95+00	50
✓ 100+75	to	101+50	75
✓ 102+25	to	102+75	50

8/21/36

Total on District Cont. = 2800. ft Check 2800.
per Recd.

Measurements along top of Pipe
 from Plug in Tunnel (0+00) to Sta 103+84
 Original notes & fuller details in FB 540
 Stations Pg 1-20

6+81.24 ± End of Fab. Angle (Hor)
 (Item 15)

6+73.24 ± Begin of Fab Angle (Hor)

382.12' of 48" x 3/8" Pipe (Item 4)

2+91.24 ± End Fabricated Angle (Horizontal)
 (Item 15)

2+83.24 ± Begin Fabricated Angle (Horizontal)

270.65' of 48" x 3/8" Pipe (Item 4.)

0+130

Special Y Connection at Tunnel Plug.
 Paid for under (Item 12.)
 0+00

Read

Measurements along Top Pipe
for Pipe Quantities Contd.

- 13+94.0± (Item 6) (10' Item 6.)
 ✓ 25± 30" Steel Pipe & Dresser Coupling.
- 13+01.5±
 ✓ 2.75' - 30" Gate Valve (Item 11)
- 12+98.8±
 ✓ 48" x 30" x 3/8" Reducer (Item 5)
- 12+94.3±
 ✓ 42.77' - 48" x 3/8" Pipe (Item 4)
- 12+51.5± End Fab Angle
 (Item 15)
- 12+43.5± Begin Fab. Angle
 40.49' - 48" x 3/4" Pipe (Item 4)
- 12+03.5± End Fabricated Angle (Vertical)
 (Item 15)
- 11+97.0± Begin Fabricated Angle (Vertical)
 45.52' - 48" x 3/8" Pipe. (Item 4)
- 11+53.0± End Fabricated Angle (Vert.)
 (Item 15.)
- 11+47.0± Begin Fab Angle (Vertical)
 111.26' - 48" x 3/8" Pipe. (Item 4)
- 10+35.38± End Fab. Angle (Horizontal)
 (Item 15)
- 10+17.38± Begin Fabricated Angle (Horizontal)
 346.45' - 48" x 3/8" Pipe (Item 4.)
- 6+81.24± End Fabricated Angle (Horizontal)

270.65	✓
382.12	✓
346.45	✓
111.26	✓
45.52	✓
40.49	✓
42.77	✓
<hr/>	
Total Item 4 =	1239.26 ft.

Measurements along Top Pipe
for Pipe quantities - Contd.

88+30±

1458.00 - 48" x 1/4" Pipe (Item 13)

73+68.96±

1167.83 - 48" x 1/4" Pipe (Item 13)

62+01±

835.00 - 48" x 1/4" Pipe (Item 13)

54+16±

1438.00 - 48" x 1/4" Pipe (Item 13)

39+78.25±

980.87 - 48" x 1/4" Pipe (Item 13)

30+00.00±

1294.00 - 48" x 1/4" Pipe (Item 13)

17+03.57±

17+00± } 1-30"x24" Balanced Valve (1 of Item 7)
47.2 ft - 30"x2" Steel Pipe (Item 10)

17+03.57± End 48"x48"x30"x5/16" Y.
(Steel Wye Item 9)

16+97.8± Begin 48"x48"x30"x5/16" Y

383.20 - 48" x 1/4" Pipe (Item 13)

13+14.6± End of Reducer.

24"x48" x 3/8" Reducer. (Item 8)

13+09.6±

30"x24" Balanced Valve (1 of Item 7)

13+04.00±

Note Equation $55+04.94$
 $55+54.94$

Measurements along Top of Pipe
for Pipe Quantities. Concl.

69

103+54.0

1138.7° - 48" x $\frac{1}{4}$ " Pipe (Item 13)

92+16.0±

387.0° - 48" x $\frac{1}{4}$ " Pipe (Item 13)

88+30±

Total 48" x $\frac{1}{4}$ " Pipe Item 13.

383.20

1294.0

980.87

1438.00

835.00

1167.83

1458.00

387.00

1138.70

9082.60 ✓ Total Item 13.

Pipe etc for Appurtenance
Assembly Connection. from T.V. Huffs record.

Sta 0+06 Comb. P.A.V. & Y. Valve.

> 2- 4" x 12" W.I. Nipples

1- 4" Gate Valve.

+ 1- 4" Comb. P.A.V. & Y. Valve.

1- $\frac{1}{2}$ " pet Cock.

1- $\frac{1}{2}$ " Coupling.

Sta 10+67 > 6" Blow off.

1- 6" Street Ell.

> 1- 6" x 27" W.I. Nipple.

1- 6" Gate Valve.

Sta 12+47, Comb. P.A.V. & Y. Valve.

1- 4" Comb. P.A.V. & Y. Valve

1- 4" Gate Valve.

+ 1- 4" x 12" W.I. Nipple.

+ 1- 4" x 36" " "

1- $\frac{1}{2}$ " pet Cock - brass.

1- $\frac{1}{2}$ " Coupling.

Pipe + B to for Appearance
Assembly Connection - from T.V. record

Sta 13+49, 4" Comb P.A. V. + V. Valve Assembly
1-4" Comb P.A. V. + V. Valve.
1-4" Gate Valve.
1-4" x 12" W.I. Nipple.
1-4" x 42" " "
1- 1/2" Pet Cock - brass -
1- 1/2" Coupling.

(Item 17)

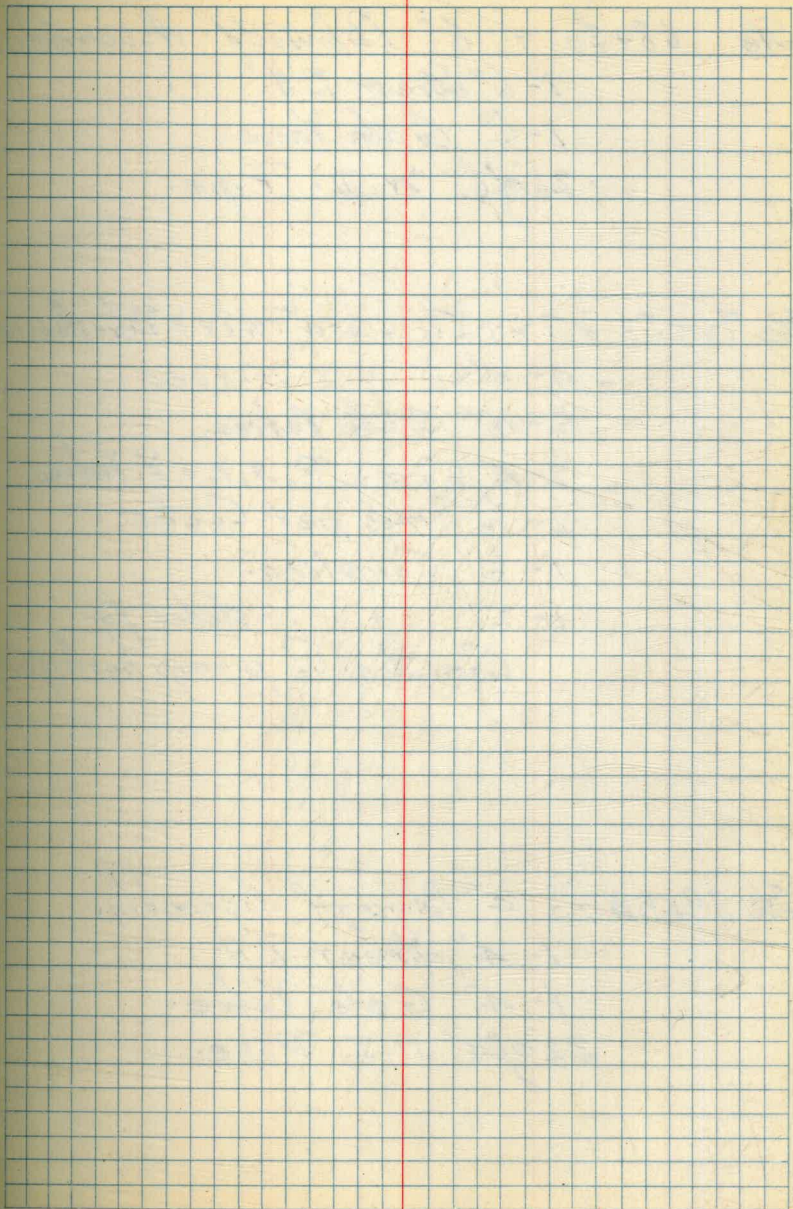
Sta 23+06, 4" Blowoff Assembly
1-4" Street B.H.
1-4" x 30 W.I. Nipple.
1-4" Gate Valve.
37'-5" 4" W.I. Pipe.

1- 20"-12 gauge Stand pipe
over 4" Gate Valve - 8'-0" long

Pipe and Etc. for Apparatus
Assembly Connections from T.V. Huff. 1944

- Sta 31+00, 2- 4" Comb P.A.Y. + Y. Valves.
- > 2- 4" Close Nipples.
- > 2- 4" x 6" " "
- 2- 1/2" brass pet Cocks.
- 2- 1/2" Couplings.
- 2- 4" Gate Valves.
- 2- 4" Comb. P.A.Y. + Y. Valves.

- Sta 53+48, - 2" P.A.R. Valve.
- 2- 2"-90° Street Elts.
- 1- 2"-90° " "
- > 1- 2" x 6" W.I. Nipple.
- > 1- 2" x 12" " "
- > 1- 2" x 8'-7" W.I. Pipe T2E.
- 1- 2" Gate Valve.
- 1- 2" P.A.R. valve.
- 1- 1/2" brass pet Cock
- 1- 1/2" Coupling.



Pipe and Bto for Appurtenance
Assembly Connection from T.V. Hoff.

Sta 68+50 - 6" Blowoff Assembly
1-6" Street Ell.
1-6" Gate Valve.
26' of 6" W.I. Pipe.

Sta 72+53 + 72+56 - 2-4" P.A.Y. & Valve Assembly
4-4"x6" W.I. Nipples
2-4" Gate Valves.
2-4" Comb. P. A. Y. & Y. Valves.
2-1/2" Brass pet Cocks.
1-1/2" Coupling.
1-2" " installed for
Con. Steel Co. pump hookup.

Sta 89+98 - 4" Blowoff Assembly.
1-4" Street Ell.
1-4" Gate Valve.
32' of 4" W.I. Pipe.

Pipe + Etc for Appurtenance
Assembly Connection from T.V. stuff.

74

Sta 98+21 + 98+24, P.A. + 7" Valve Assembly

2-4"x6" W.I Nipples

2-4" Gate Valves.

2-4" P.A. Part 7" Valves.

1- $\frac{1}{2}$ " Coupling

2- $\frac{1}{2}$ " brass pet Cocks.

1-2" Coupling for Con Steel
benefit.

Manholes placed in Irrig. Dist Sta
to facilitate welding, priming
from a. r. r. record.

Sta

4+75

10+82

27+00

37+25

46+57

55+09

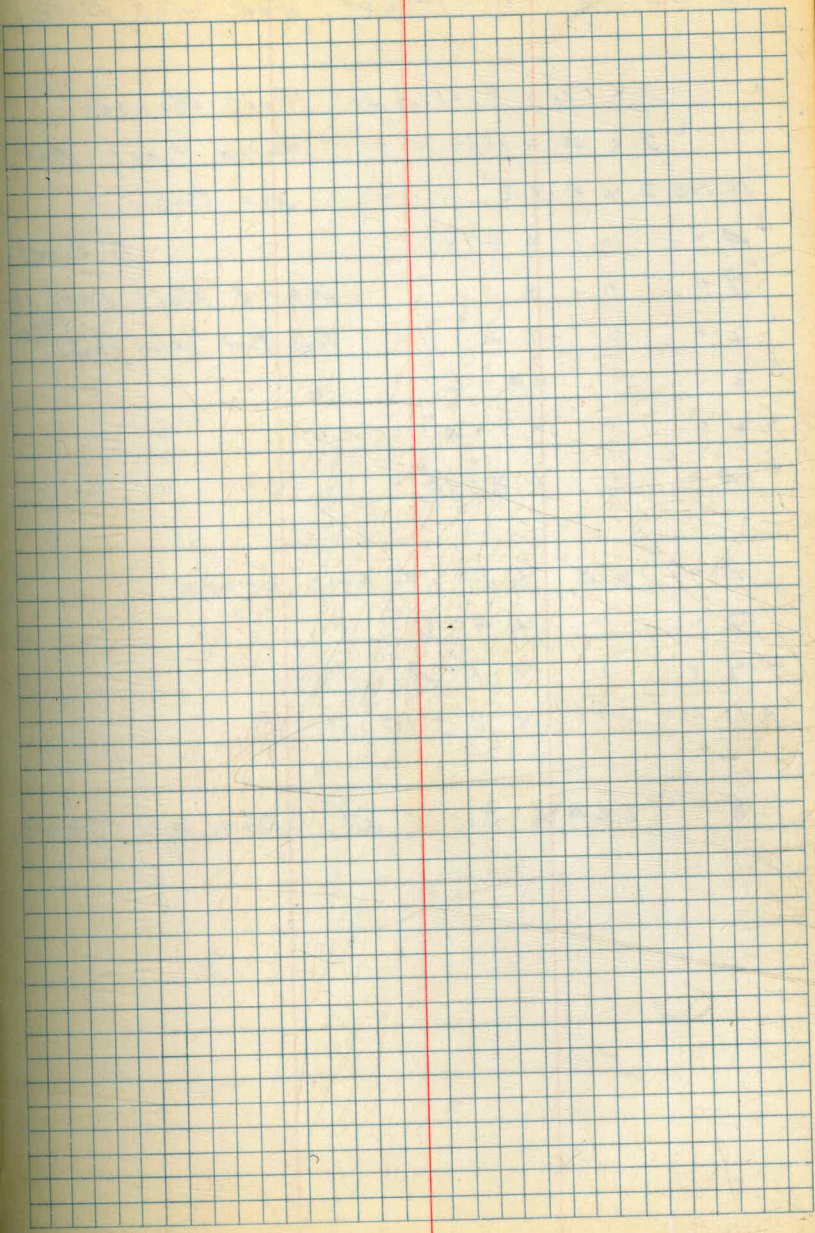
64+95

75+11

85+05

93+97

103+53

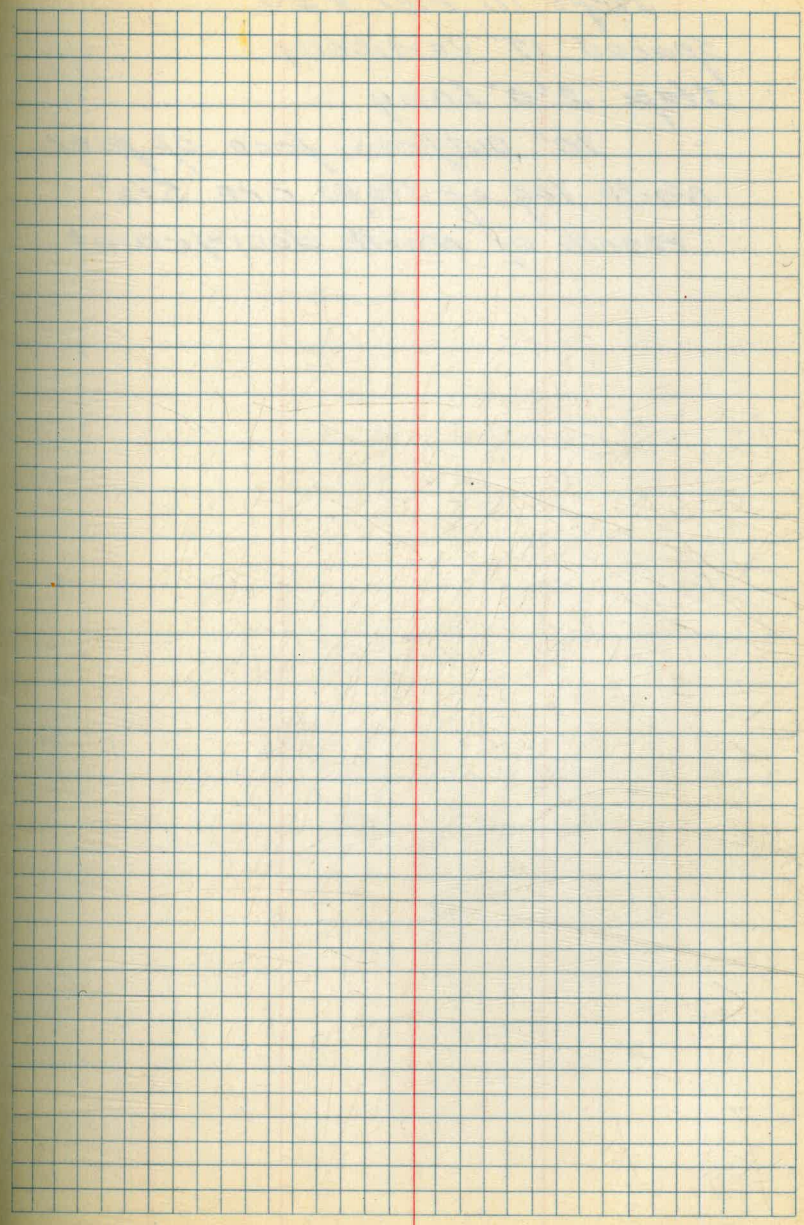


Dressed Lumber for Cat Walks.

- ↓ 2" x 12" - 81-lin ft Foot Beards
- ↓ 2" x 4" - 118- " " Hand Rail Hor.
- ↓ 16 Pos 2 x 4 x 3' Hand Caps.
- ↓ 4" " x 4'-8" " " to Piers.
- ↓ 9" " x 3' Hand Rail Vert above
- ↓ 2" " x 5' Vert Post below floor. ² walk
- ↓ 2" " x 4'-6" " " " "
- ↓ 2" " x 7'-4" " " " "
- ↓ 14" " x 8'-10" " " " "

- ↓ 2" 1 x 4 x 5' Cross brace
- ↓ 2" " x 4'-6" " "
- ↓ 2" " x 7'-4" " "
- ↓ 11" " x 8'-10" " "

- ↓ 8" 2 x 4 x 3 at Bottom of Bents.



Ladder Rungs.

Steps in Pier #25

spaced 17" vertically

Steps 2'0" Long

" 10" out from face of pier

North leg of steps are 5 1/2"

north of north door frame

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Blank lined page with five vertical red margin lines.

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DIRECTIONS FOR USE OF TABLES

TABLE No. 1.

Distance of slope stake from side or shoulder stake for any width roadway, slope $1\frac{1}{2}$ to 1. If ground is nearly level, the cut or fill at side stake is located by the double entry method in left column and top row. The number in body of table in same row and column gives distance

IMPROVED TABLES
AND
INFORMATION

TABLE No. 2.

To find tangent and external for curve of any other degree, divide by degree of curve and add connection found in column of connections. Degree of curve with a given L may be found by dividing tangent (or external), opposite L by given tangent (or external). The distance from a point on the tangent to the curve is very nearly the square of the tangent length divided by twice the radius.

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 $41.9 + (20 - 16) \div 2$ or 2 ft. added to 41.9 = 43.9. For slopes of 1 on 1 see inside of front cover.