

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 $30.6 + (20 - 16) \div 2$ or 2 ft. added to $30.6 = 32.6$. For slopes of 1 on 1½ see inside of back cover.

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1575
1999

This Field Book is manufactured of a High Grade 50% Rag Paper having a WATER RESISTING SURFACE, and is sewed with Bing Special Enamel Waterproof thread.

Made in U. S. A.

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- 2 Basement ties
- 5 Location of Basement Inlets
- 6 Sludge storage
- 7 Location of Piers Dig #6 - ^{CATWALK} CLAR #2
- 8 Detritor Clarifier #1
- 9-11, 6 Grades to 8" c/c Dig #6
- 12 #2 Aerator Wall forms
- 14 ~~Transfer~~ BM. 926 to B.P. ^{Tap. ch.} N. of
- 15 Check Wall add. to main Bldg ^{SL #3}
- 17 8" grit line Detritor Bldg. to CL #1
- 18 Junction Box N. 45. Eff. of CL #1
- 20-22 8" Aerator Drain // CL #1
- 23, 24 24" vent pipe to Stack ^(Stack Ties P. 57)
- 25 Brick Lined Flue to Stack
- 26 Check forms Detritor Bldg & Sludge Storage
- 27 X Sect for Grades 12" V.P. Air line
- 29 X Levels on N Outlet CLAR #1
- 30 X Sect - Scum Line CL #1
- 31 CUTS - " "
- 32 1st Floor - MAIN BLDG.
- 34 MAN HOLE "C"
- 35 CHECK 8" 10" 12" CL #2.
- 36 Check MH "C"
- 37-54 Sewer Administration Bldg
- 38 8" Sludge #1

- 40 10" Wash Line
- 41 10" Wash Line Line change
- 42 8" Scum Line #2 to pump house
- 43 8" Sludge #2 to pump house
- 44 8" Sludge - CONTROL Bldg to S.P.B.
- 45 36" Influent to #2
- 46 24" AIR LINE Main Bldg. to CL #2
- 47 Ties, M.H. E. side Detritor Bldg.
- 48 Ties, Blow off on 24" AIR, CL #1
- 49-53 Aerator drain E. side of CL #2
- 50 Location Elec. Cond. for St. Lights
- 51 (Aerator drain W. side CL #2)
- 55-56 8" Grit Line CL #2 to Detritor Bldg.
- 57-58 12" AIR EXHAUST LINE, Stack to CL #2
- 61 12" V.C. Pipe STAINLESS drain
- 62-63 ELUT. CIR. CL PLUMES A-B-C-D-E
- 64-65 4" x 6" Water line Main Bldg. Ely
- 66-67 Check ELLIOTT through CL #2
- 68 4" x 6" W.C. Cor. Add. Bldg
- 69 21" x 24" Stack to Elutr. Unit
- 70 Check Flue Headers
- 70 8" N. Outlet drain
- 71 8" Scum
- 72 6" Sewer - Adm. Bldg -
- 73 21" x 24" Detritor to Stack
- 74 Ties RR Siding, Grating
- 75 Corbels #6
- 75 TOP FORMS Dig #6
- 76 Corbels - " "
- 77 " & ANCHORS #6
- 78

10-21-49

Lt

BL

Rt

2

check last con. floor

Basement Main Add.

SAME BL. as used in 1680-70-76

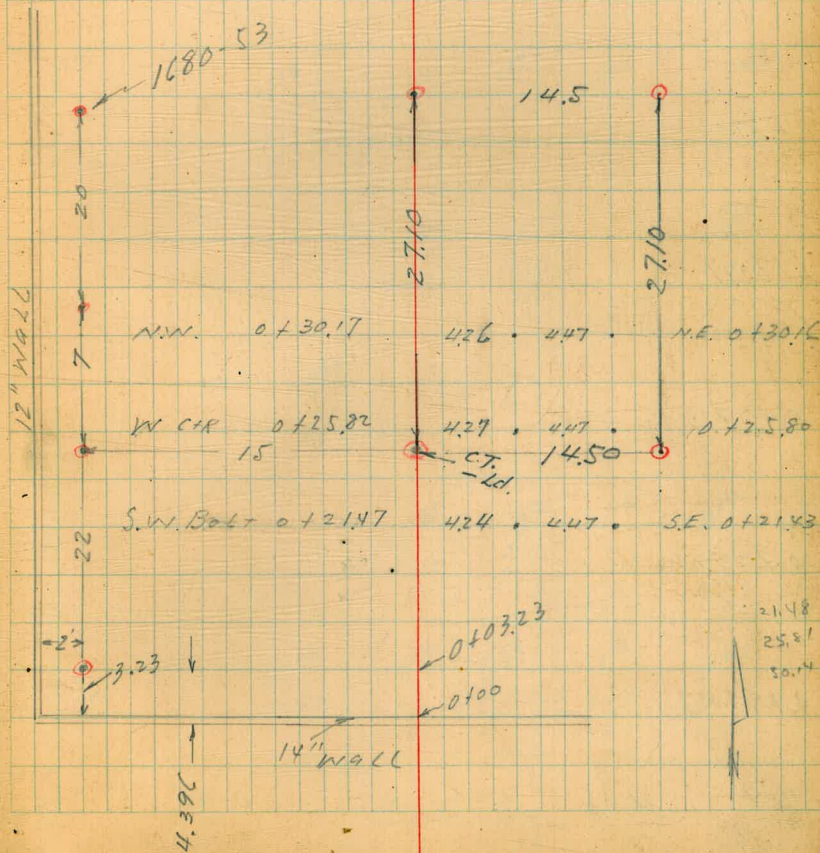
⊙ = ld. C.T., punch marked

Set ld. C.T. 0 + 25.23

0 + 00 inside 14" wall

Basement Ties

Add. Main Bldg.



0+4.7

0+38.7

0+33.3

0+31

0+30.7

0+28.13

0+25.82

0+21.47

B.V.

4.06

4.06

0.00

Lt

BL

Rt

3

-116
5.27
C

-114
5.20
C

-116
5.22
C

-116
5.22
C

-109
5.15
C

-101
5.07
C

-119
5.25
C

-121
5.27
C

-124
5.30?
drain

-118
5.24
C

-117
5.23
C

-115
5.21
C

-108
5.14
C

-103
5.09
C

-115
5.21
C

0.19
3.87
4.26
BOLT

0.20
3.86
4.73
BOLT

-113
5.19
C

-113
5.19
C

0.21
3.85
4.27
BOLT

-113
5.19
C

0.20
3.86
4.74
BOLT

1.00
5.00
17
C

-112
5.18
C

-114
5.20
C

0.23
3.83
4.24
BOLT

-113
5.19
C

0.21
3.85
4.71
BOLT

4.06

014

013

013

013 0151

0130 0150

012 0149

01 0145.5

012 0143.2

B.V.

$$\begin{array}{r} -108 \\ 5.14 \\ \hline 2 \end{array}$$

$$\begin{array}{r} -107 \\ 5.13 \end{array}$$

$$\begin{array}{r} -108 \\ 5.14 \\ \hline \text{Corr} \end{array}$$

$$\begin{array}{r} -107 \\ 5.13 \\ \hline 13 \\ \hline \text{Corr} \end{array}$$

$$\begin{array}{r} -102 \\ 5.08 \\ \hline 17 \\ \hline \text{Corr} \end{array}$$

$$\begin{array}{r} -109 \\ 5.15 \\ \hline C \end{array}$$

$$\begin{array}{r} -108 \\ 5.14 \\ \hline 9 \\ \hline \text{Corr} \end{array}$$

$$\begin{array}{r} -115 \\ 5.19 \\ \hline 11 \\ \hline \text{Corr} \end{array}$$

$$\begin{array}{r} -113 \\ 5.19 \\ \hline \text{Corr} \end{array}$$

$$\begin{array}{r} -110 \\ 5.16 \\ \hline 9 \\ \hline \text{Corr} \end{array}$$

$$\begin{array}{r} -103 \\ 5.09 \\ \hline 17 \\ \hline \text{Corr} \end{array}$$

$$\begin{array}{r} -114 \\ 5.20 \\ \hline C \end{array}$$

$$\begin{array}{r} -114 \\ 5.20 \\ \hline 6 \\ \hline \text{Corr} \end{array}$$

$$\begin{array}{r} -110 \\ 5.16 \\ \hline 9 \\ \hline \text{Corr} \end{array}$$

$$\begin{array}{r} -102 \\ 5.08 \\ \hline 17 \\ \hline \text{Corr} \end{array}$$

$$\begin{array}{r} -106 \\ \hline \end{array}$$

LOCATION OF BASEMENT INLETS

0+48.89 S. Bot. Cor. W. Wall

0+44.88 S. Bot. Cor. 3.00 x 3.75 H

0+39.21 S. Bot. Cor. 4.34 x 3.77 H

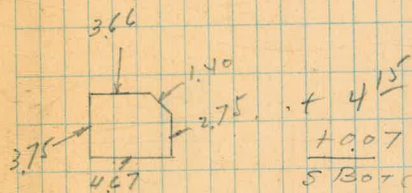
128.0x S. Bot. door 3-0 x 7-0
W. WALL

0+11.96 E sleeve for 4" Ins. Pipe W. Wall

0+11.30 Small out let on W. Wall
1" Pipe

0+00 INSIDE S. 14" WALL

BM 4.08 4.08 0.00



+ 4¹⁵

+ 0.07
S Bot Cor

+ 4¹⁷

+ 0.09
N. Bot Cor

+ 4¹⁶

+ 0.08
S Bot Cor

+ 4¹⁷

+ 0.09
N. Bot Cor

+ 4¹⁶

+ 0.08
S Bot Cor

+ 4¹⁶

+ 0.08
N. Bot Cor

3.27
S Bot door

- 0.82
3.26
N. Bot door

3.01
E sleeve
2.33

19.37
Bot
W.
Cor
25' x 35'H

23.00
E
sleeve

4.08

10-2-48

+20 Elev. of Ramp at NW door
Sludge Storage Bldg

+15

+10

+05

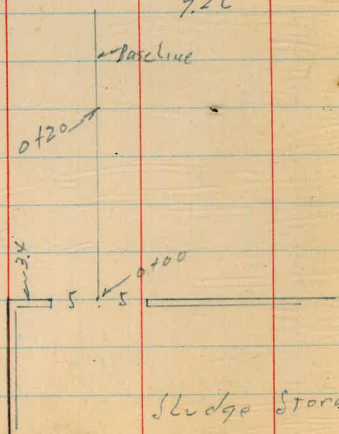
0+00

0-5 inside

B.M. 461 13.87

926

Baseline



Sludge Storage

6

849	850	10' door	853	857
5.38	5.37	8.55	5.29	5.30
7	5	5.32	5	10

842	852	850	860	861
5.39	5.35	5.31	5.27	5.20
8.4	5	5	5	10

851		863	869	869
5.28		5.24	5.19	5.18
8.4		5	5	8

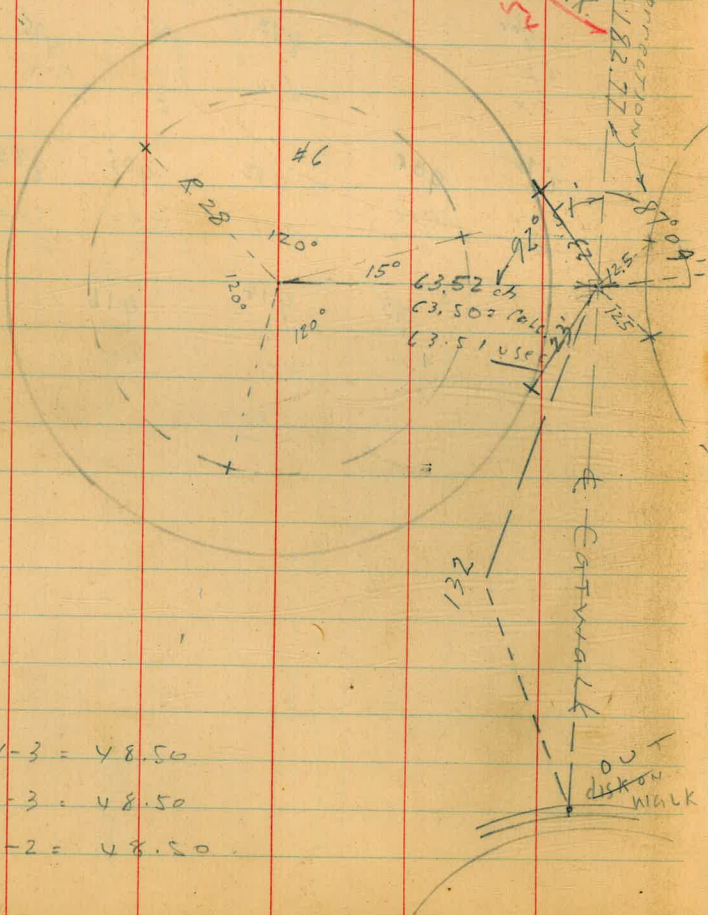
866		875	875	875
5.21		5.14	5.12	5.12
8.4		5	5	5

875	901	902	905	885
5.11	4.80	4.85	4.82	5.02
8.4	5	5	5	8

913	914	916
4.74	4.73	4.71
5	5	5
	<u>13.87</u>	

Location of Pieces in
Digester #6

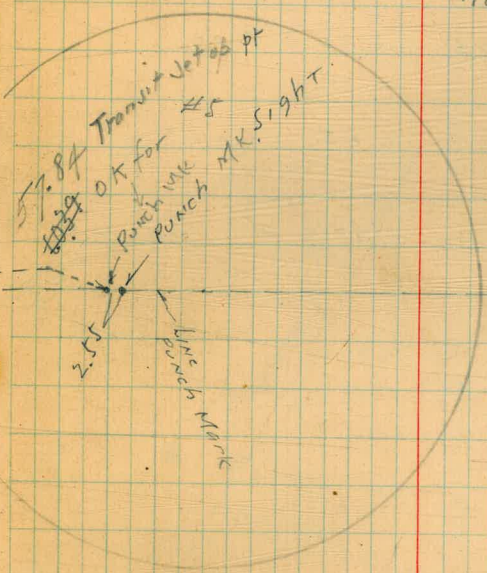
10-22-x8
ch. #2



ch. 1-3 = 48.50
" 2-3 = 48.50
" 1-2 = 48.50

4
0.3
57.84
5
2
55

Set R. on #6 and chd.
Hank's pt by 0.008 N
and 0.005 E
12-15-08
Hereafter use
Hank's R.P.S



60.39
43.52
123.91
74.56
49.35

57.84
255
60.39

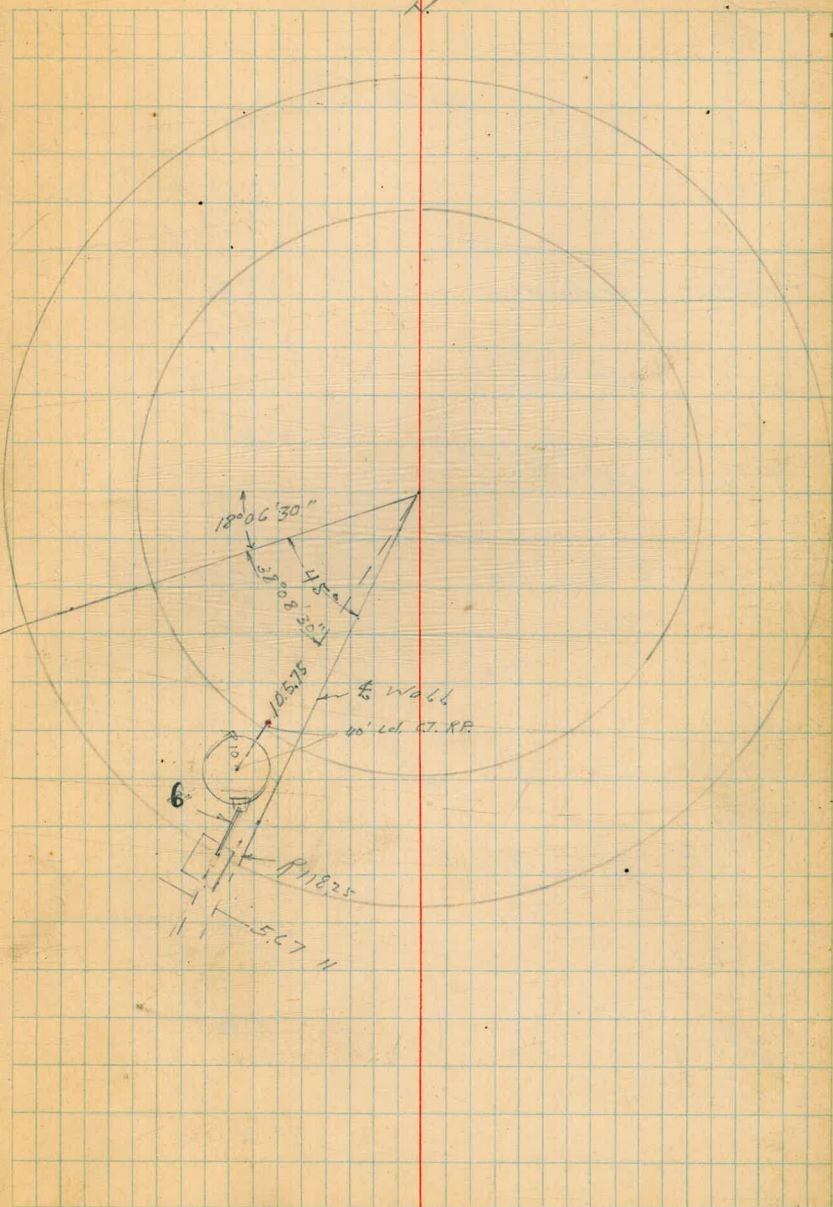
Punch Mk. To Rhd.
74.56 E. Side
#6

Detector, Character #1

8

B.M.	3.59	12.85	9.26
sub. gr.	90' to 107.25 R		8.00
"	114.25 to 122.5 R		7.07
"		6.10	6.75
6" C.I. Pipe Inv.		6.35	6.50
		4.60	8.25
TOP Arcator slab	3.85	9.00	
TOP Conv. R 122.5	6.85	6.00	
	4.60		

Line
Cathode



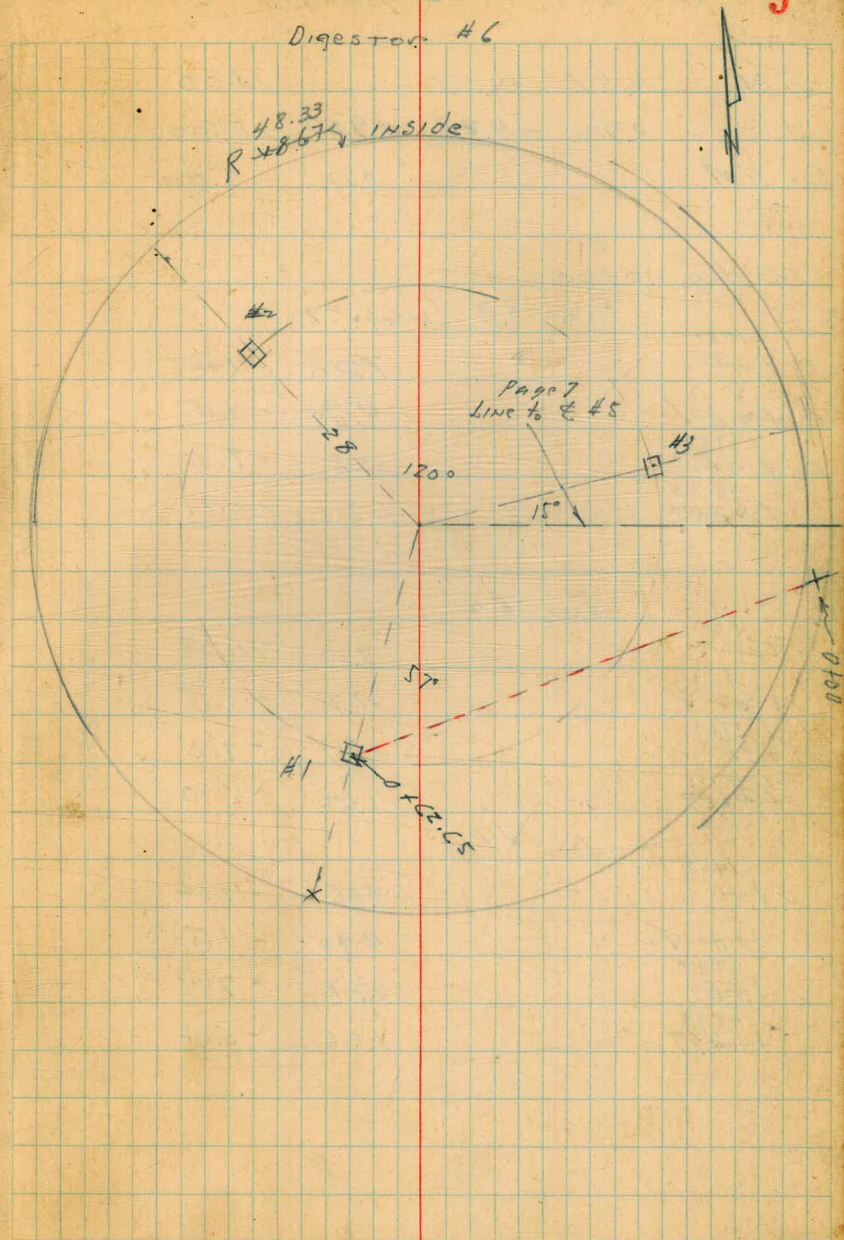
Grades to 8" C.I.P.

BM	-4.28	10.00
437	14.37	10.00
0 +00		16.83 ← 9" Pipe
	-4.28	7.54
+05.15 Inside Wall		3.26
		11.11
+05.5 45° Bend		1.83
		12.94
+18.83 45° Bend (-4.28)		16.83
		11.11
		1.89
		13.00
0 +21 2 Pipe D3		-6.50
		2.22
		4.11
		1.89
+33.91 " " D2		-6.50
		2.22
		5.07
		3.40
+47.53 " " D1		-6.50
		2.22
		6.31
		5.09
+50.15 67½° Bend		-6.50
		2.22
		6.28
		4.06
+58.13 " "		+12.75
		17.03
		5.84
		22.87
+62.65 2 Tube		+12.75
		17.03
		5.41
		22.44

Offsets 4' R+

Digestor #6

9



B	BM.	4.57	14.57	10.00
	T.P.	0.72	-4.28	19.57 - 5.00
	Set B.M.		0.72	- 5.00

CTR. dig = 0400

Pier #3 Sketch P.9

14.67	0 + 15	7.08	- 11.36
37.67	0 + 28 ✓	4.90	- 9.18
48.33	0 + 38	3.28	- 7.56
148.67	+ 48.67	1.51	- 5.79

Pier #2

14.67	0 + 15	7.10	- 11.38
37.67	+ 28 ✓	4.90	- 9.18
48.33	+ 38	3.27	- 7.55
148.67	+ 48.67	1.62	- 5.90

Pier #1

14.67	0 + 15	7.06	- 11.34
37.67	+ 28 ✓	4.90	- 9.18
48.33	+ 38	3.27	- 7.55
148.67	+ 48.67	1.56	- 5.84

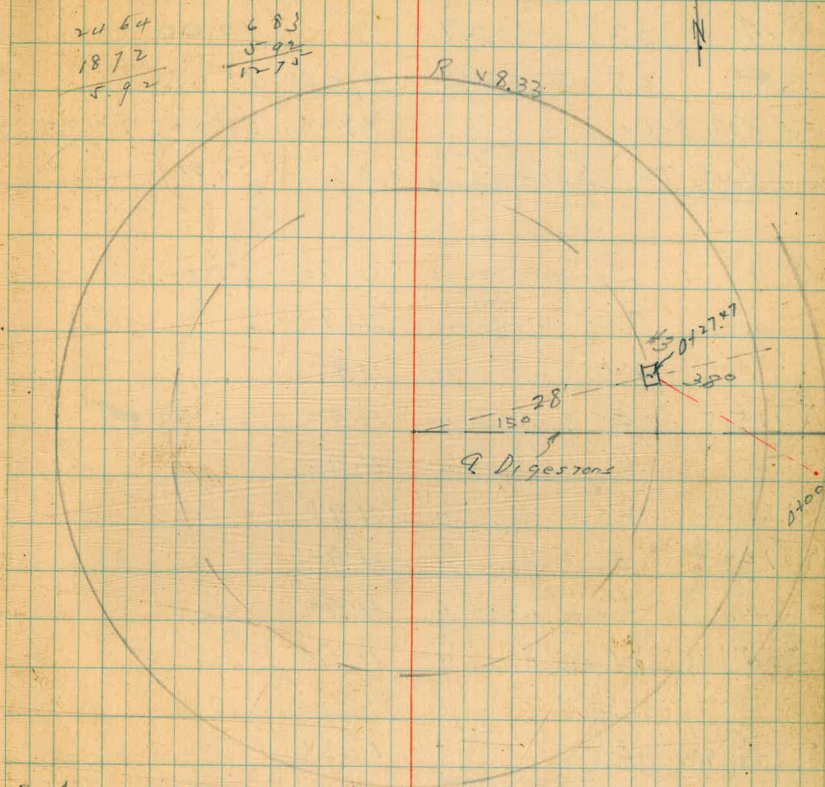
.1657 av. slope.

Grades & 8" Pipe Dig. #1 11-3-48.

B.M.	437	1437	10.00
T.P.	313	-187	1937 -5.00
			8" Pipe
0400			+6.83
			7.54
			10.68
			F 3.74
+0438	inside wall		+6.83
			8.70
			4.10
			F 12.80
+08.92	Int. & dig.		+6.83
			8.70
			4.80
			F 13.50
+14.00	8" Pipe Sup.		+6.83
			8.70
			5.00
			F 14.30
	str. change		+6.83
+7.72	45° Bend		+6.83
(+13.72)			8.70
			1.12
			F 16.85
+22.64	45° Bend		+12.75
(+24.64)			14.62
			7.04
			F 21.66
+27.47	8" tube		+12.75
ch. 27.45			14.62
			7.59
			F 22.21
0414	Top Con. Pipe Support	539	-7.26
B.M.	450	1450	10.00
check	11-12-48		
Top Pier for 105	12.00	2.50	Gave Marks to Men

offsets 3' 6"

11



B.M.	193	-307	-5.00
			str. change 11-12-48
041872	45° Bend		+6.83
			7.90
			5.12
			F 15.02
042464	" "		+12.75
			15.87
			6.00
			F 21.82

check Herator #2

Wall Form 15

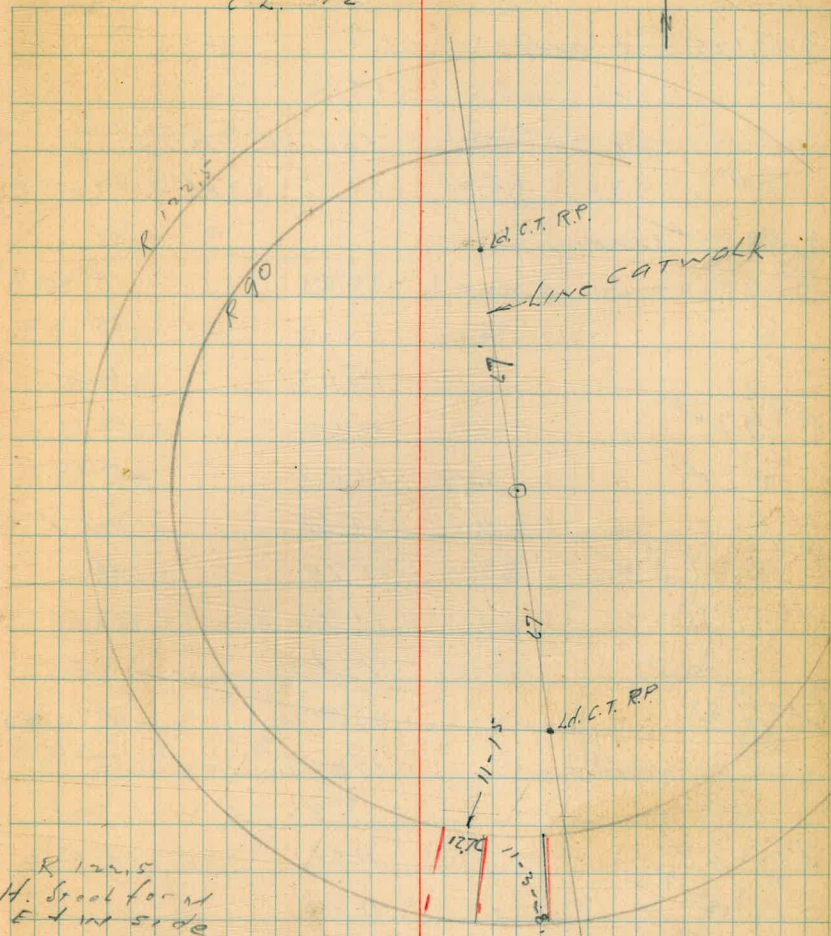
B.M.	327	1327		10.00
T.P.	25.15	<u>38.42</u>	0.00	13.27
Ed B.M. Bolt		4.42	34.00	<u>34.00</u>
Set B.M. Top Bolt Line		cr. wt. 3.61	(34.81)	<u>0.00</u>

R 97	E. on steel	11.90	26.50	
"	E " "	11.90		
"	W " "	11.91		
R 115.5	E " "	11.92	26.50	
"	E " "	11.92		
"	W " "	11.91		
R 122.5	E " "	11.92		
"	E " "	11.90		
"	W " "	11.90		
R 121.83	E	17.30		
"	W	17.30		
5' W of Edge Top Box		12.25		
R 90.67	E side	17.29		
R "	W side	17.33		
R 90	W Top steel	14.63		
"	E " "	14.64		
"	Tee Bd.	26.57	11.55	
"	Top Box	15.21		
	807 off catwalk			

Wood Form
26.50
5.37 =
21.13

R 122.5
H. Steel form
E & W side

CL #2



90' R = 90.82 on slope at
1' above top steel form
from center pin cl. #2
top R. PIN 12.20 to 1'
above (11.30 PIN to top form)

#1
38.42

R 121.25 E side 1917
" W " 1914

check steel forms 11-15-48

BM 3x0 38.21 34.81

R 90.82 slope

R 90 top steel 14.43 E

" " " 14.43 C

" " " 14.42 W

R 97 " " 11.65 E

" " " " 11.66 C

" " " " 11.68 W

R 115.5 " " 11.70 E

" " " " 11.71 C

" " " " 11.68 W

R 121.83 " " 17.06 E

" " " " 17.065 C

" " " " 17.06 W

R 122.5 " " 11.69 E

" " " " 11.68 C

" " " " 11.68 W

R 90.67 on Cor. 17.04 E

" Steel form NOT PLACED

BM 3.35 38.16 34.81

R 90 W Top steel 14.39 check

" E 14.39 4th sec.

11-22
A.M.

3816

97 R W Top steel 11.64

" E 11.65

115.5 R W 11.66

" E 11.65

122.44 R W 11.66

" E 11.66

BM 3.35 38.16 34.81

R 90 W 14.39

" 90 E 14.37

" 97 W 11.64

" 97 E 11.61

" 115.5 W 11.69

" 115.5 E 11.68

" 122.5 W 122.475 11.66

" 122.5 E " 11.66

Set B.M. 38.16 Top 11.64

WALL R. 115.5 8' from catwalk

BM 11.64 38.16 26.52

R 90 W 14.39

" E 14.40

" 97 W 11.64

" E 97.04 11.64

R 115.5 W 11.64

" E 115.49 11.64

R 122.5 E 122.44 11.64

" E 122.43 11.64

122.45 ← Corrected?

26.52

Control
P. 33

chk 5:14 PM
11-22

2-5-2-11 9:42

11-4-48

Pier Elev^s

Sludge Storage Shed

H.1.

BM 5.05 14.31 9.26

West Pier = #1 5.39 8.92

H 2 5.30 9.01

#3 5.24 9.07

#4 5.21 9.10

Fly Pier = #5 5.24 9.07

Faces = North
10' SE and
NW Cor. Piers

5-

Transfer B.M. 9.26 11.4" 14

to B.P. Top SW Cor Sludge Venturi Meter
Valve Control

Box N. of S.P.B.

B.M. 4.85 13.945 9.26

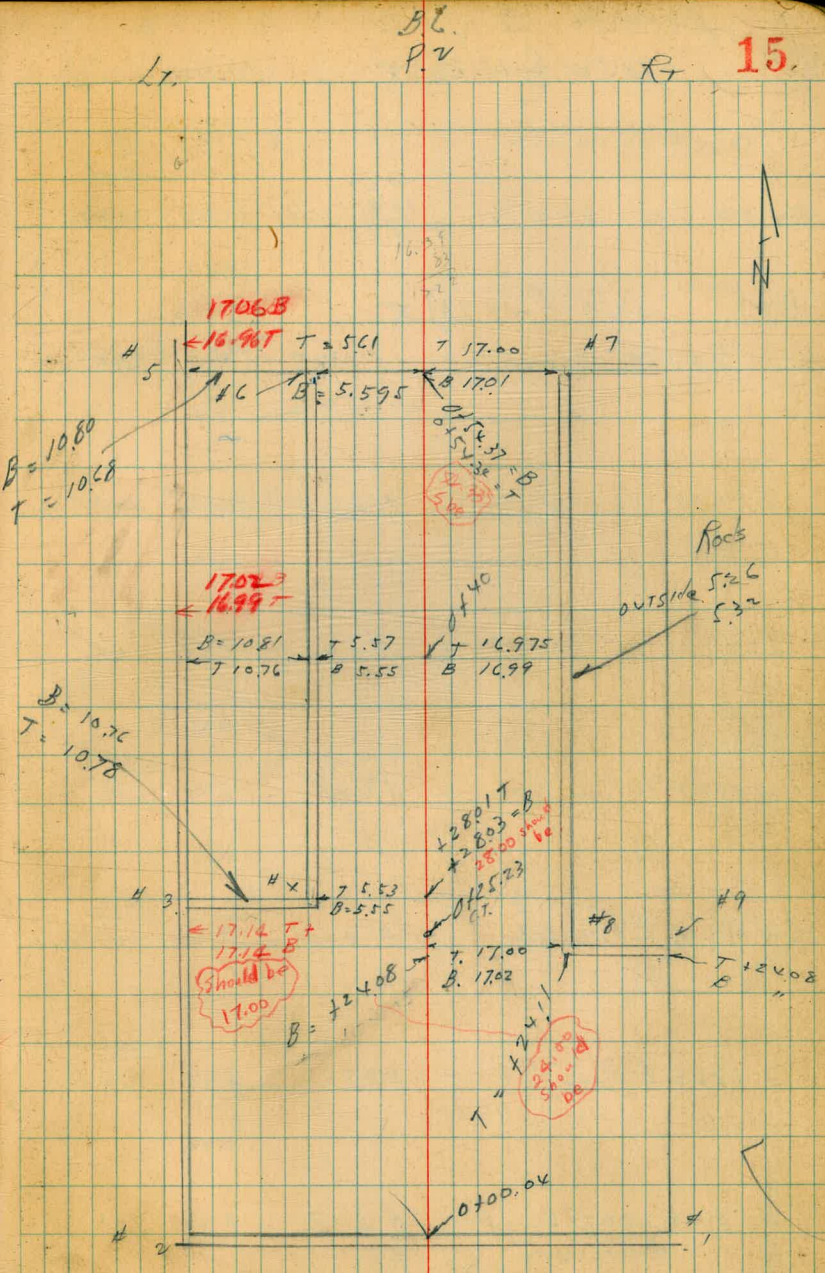
T.P. 5.49 14.325 5.11 8.835

B.M.B.P. 3.22 11.105

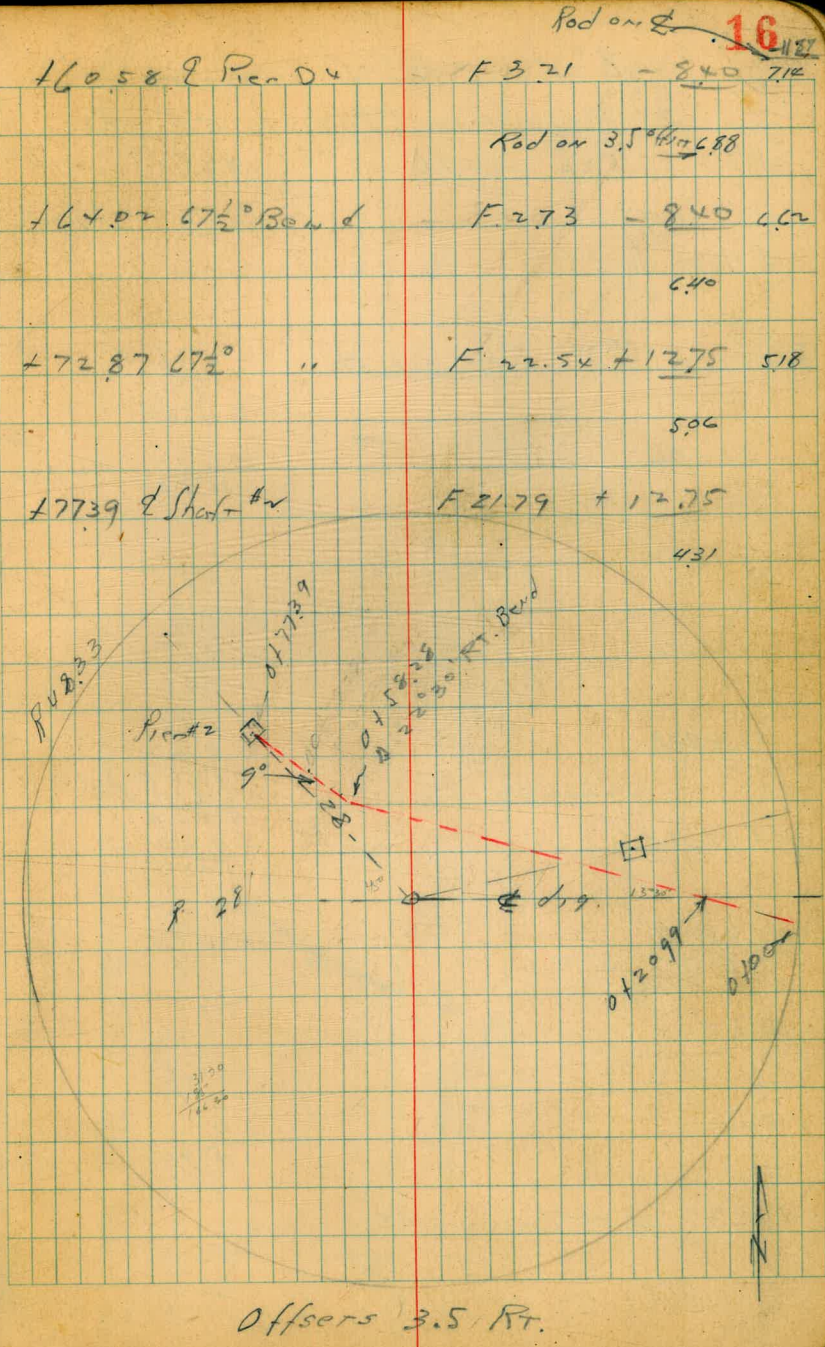
11-4-42
 check walls, add. to Main Bldg.

Levels top walls

BM.	3.42	<u>13.42</u>	10.00
#1		4.44	
#2		4.45	
#3		{ outside 5.25 inside 5.00	
#4		{ 5.35 5.00	
#5		{ 5.33 5.01	
#6		5.32 5.00 4.44	
#7	5.26	outside 4.00 inside 5.33	
#8		outside 5.29 inside 5.32	
#9		outside 5.22 inside 5.32	



B.M.	8" C.I.P. Dig. #	11-5-42		
	4.50 (14.50) X	-10.00		
			8 PIPE grade	Rod
0+00		+6.83	10.81	
			10.82	
B.M.	0.27 (-4.73) X	-5.00		
	10.910 45° Bend	F 13.75	+6.83	1.94
			on 3.5" RT.	1.69
	+20.99 Int. Dig. ✓	F 3.22	+5.06	3.72
				3.55
	+24.33 45° Bend	F 0.40	-8.40	$\frac{-9.15}{4.42}$
				4.07
	+27.39 E Pier D7	F 0.88	-8.40	$\frac{-9.57}{4.84}$
				4.55
	+35.64 E Pier D6	F 2.10	-8.40	$\frac{-10.84}{6.11}$
				5.77
	+48.39 E Pier D5	F 3.55	-8.40	$\frac{-12.47}{7.74}$
				7.22
	+58.28 22½° Bend Δ Rt. 22½	F 3.47	-8.40	7.51
				7.14



FINAL, 11-10-48
8" V.T. C.P. Grout Line

Dormitor Bldg. to Cb. #1

BIM, 520 1446 976

Inv.

044571 Old BC - 1680-61

044762 New BC. Pipe 010 LT. -2.76 ✓
17.25
5.55
C 11.67

+60.56 -2.12 OUT
16.58 ✓

+73.50 -1.29
15.95
5.76
C 10.19

+86.44 -0.85
15.31
5.47
C 9.84

+99.38 -0.22
14.68
5.12
C 9.56

1+1231 EC +0.42
14.04
5.70
C 9.34

1+40 +1.78
12.68
5.24
C 7.44

1+65 +3.01
11.45
5.52
C 5.93

2+00 +4.73
9.73
5.52
C 4.21

2+12.35 Δ 45° 5' RT
15' " RP,
90° off BS.
15.34
9.12
5.04
C 4.08

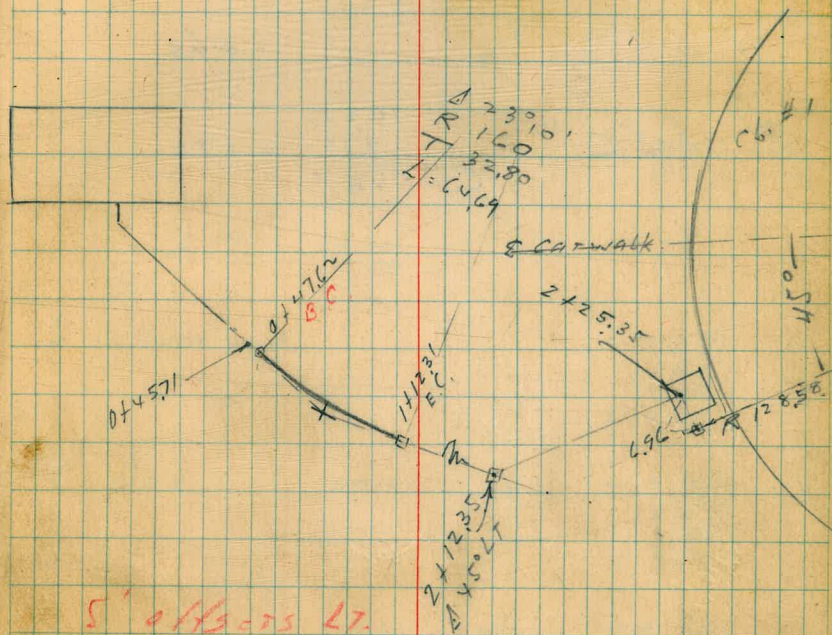
Inv.

17

2+22.02 Break 4' RT +5.83
8.23
8.55
C 0.08

2+25.35 = Box +6.50
7.96
8.51
F 0.55

CUT ON R



check Grit Line

Sketch P. 17

B.M.	530	<u>1452</u>	926	
04676 ~ B.S.	1739	-2.77	- $\frac{2.76}{0.01}$	
046056	1686	-2.24 ^v	- $\frac{2.12^v}{0.12}$	
04735	1607	-1.45	- $\frac{1.49^v}{0.05}$	
048644	1554	-0.92	- $\frac{0.85}{0.07}$	
0491	1530	-0.68	- $\frac{0.63}{0.05}$	

8" Meridian Line (North Side)

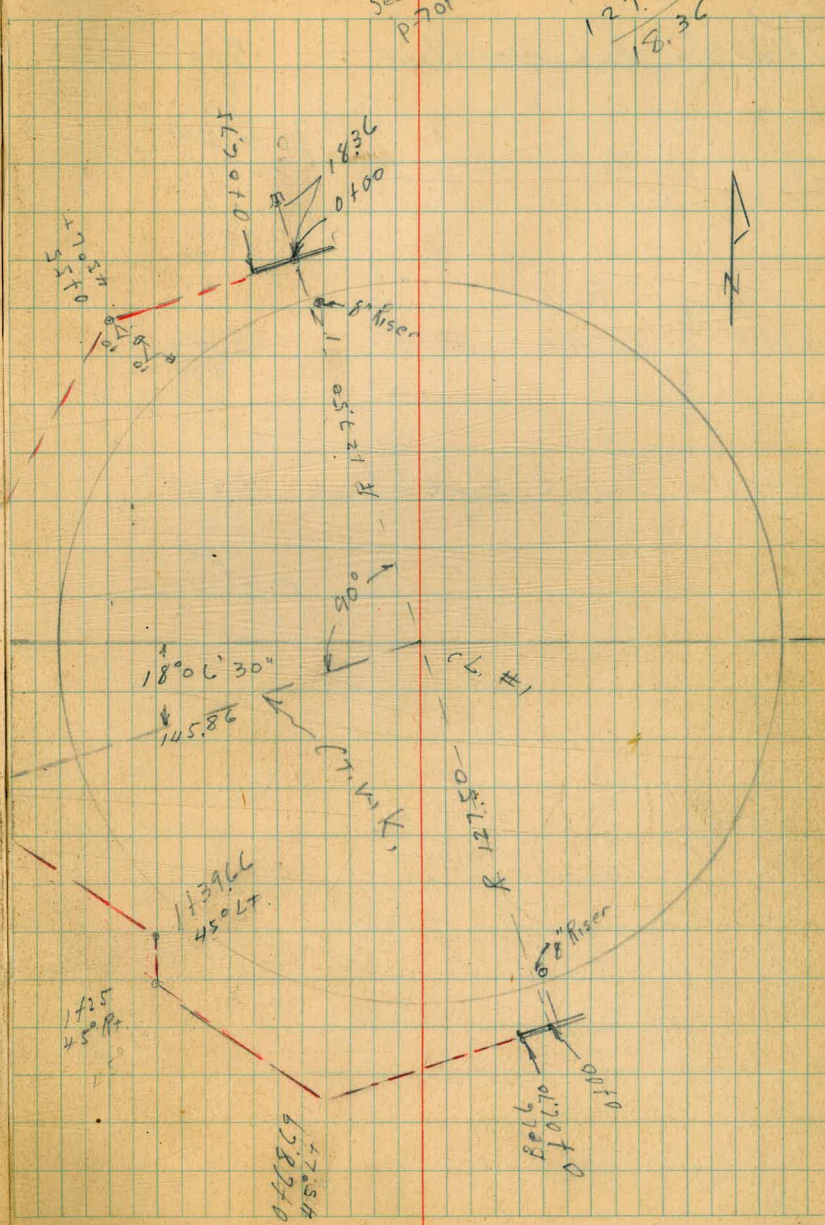
11-18-48

See Also
P 70178

14586
127.50
18.36

20

B.M.	503	1429	926	
			Inv.	
0700			16.50	
			<u>7.79</u>	
0706.75	Bell	7.80	6.49	
			6.50	
			<u>7.79</u>	
0712.75			2.05	
			6.50	
			<u>7.79</u>	
0715.5	45° LT		2.87	
			6.50	
			<u>7.79</u>	
			2.21	
			6.30	
			<u>6.09</u>	
			2.21	
730	officer Chisolm		5.65	
	9' Lt		<u>8.24</u>	
			5.29	
			<u>3.35</u>	
			5.31	
			<u>8.98</u>	
			5.13	
			<u>3.85</u>	
	B.M. 926		5.14	
			<u>9.15</u>	
			4.70	
			<u>4.45</u>	
1475			5.14	
			<u>9.77</u>	
			5.55	
			<u>4.45</u>	

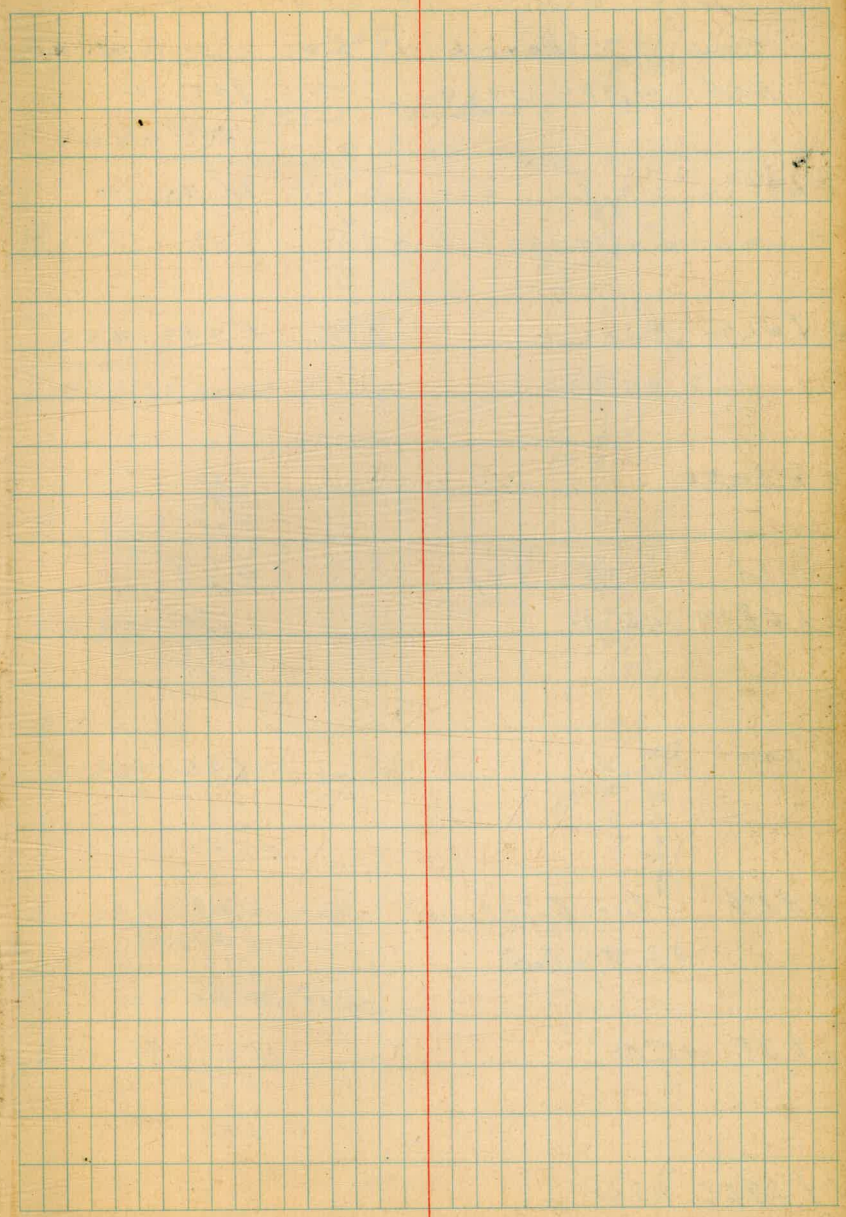


1787.32 Int. Washline 5.00 Break
 9.91
 5.41
 C 4.50

2100 5.00
 9.91
 4.67
 C 5.24

2118.5 ~~2370~~ 45° RT Δ 5.00
 9.91
 4.67
 C 5.24

2141.71 = Junc. with Sline 5.00
 9.91
 4.80
 C 5.11



24" V.C. Pipe
 Detector Bldg to Stack

				9.26 BM	
				4.44	
				13.70	
BM	4.50	13.76	9.26	7.83	
				5.87	
				1.2	
				inv 5.99	

				INV.	
0104.04				1640	
				636	
				740	

MK. on Bldg 2

0104.71	340	10.36	6.66	C 4.0
---------	-----	-------	------	-------

0112.04	445° RT	4.81	8.95	6.00 grade
	R.P. 5 + 15 LT		C 2.95	7.76
			4.81	C 2.95

0114.71	12" x 21" Y	4.78		6.00
	R.P. 55' ME. X	8.98	8.98	7.76
	Line on Sludge		C 2.98	4.78
				2.98

0145.54	(Break)	5.03	8.73	6.00
			C 2.73	7.76
			5.03	C 2.73

0174.15	24" x 12" Y	5.17	8.59	4.62
			C 3.95	9.14
				5.17
				C 3.95

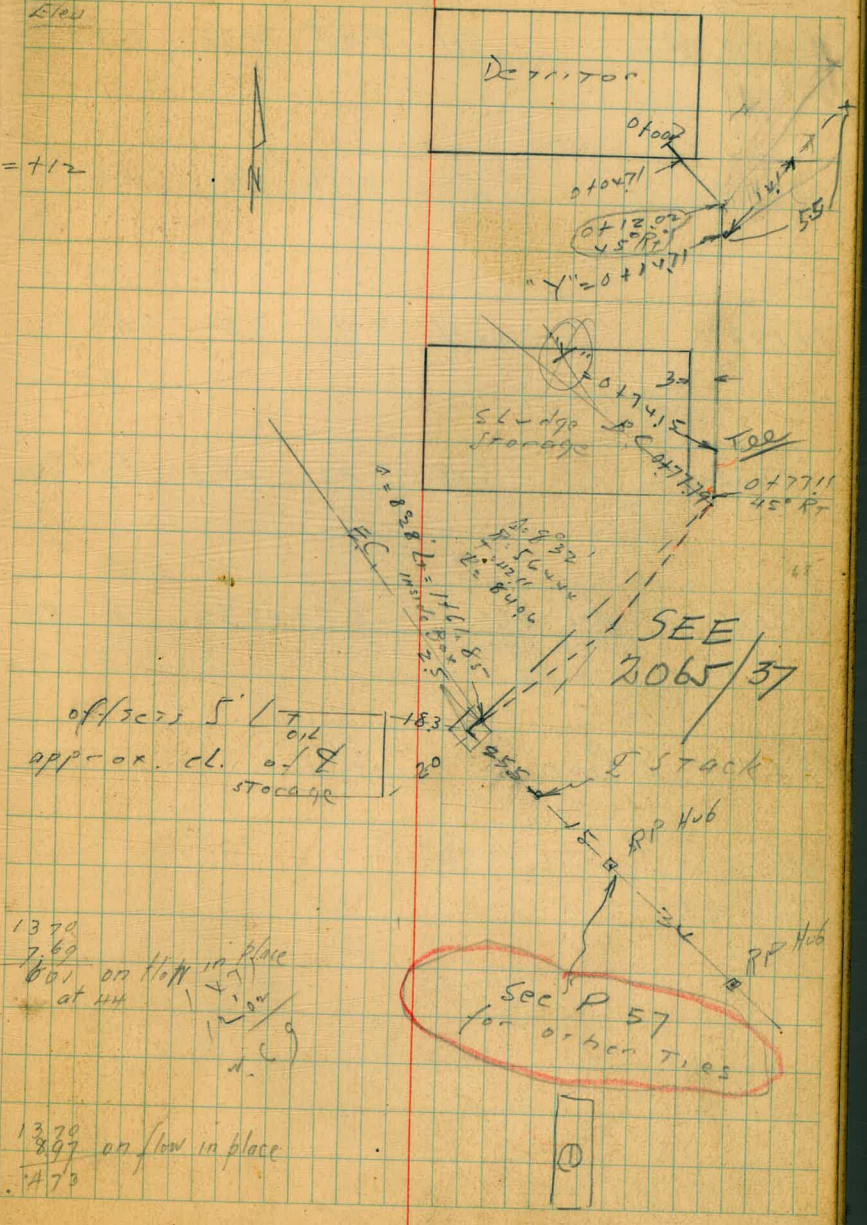
0177.11	Δ 45° RT	5.22	8.54	4.50
	R.P. 5 + 15 LT.		C 4.04	9.26
				5.22
				C 4.04

Ed.
 Elev

= +12

1370
 769
 601 on flow in place
 at 44

1370
 897 on flow in place
 at 44



1376 Elev

cut

0+7779 BC Rt 531 8.45 4.48 3.97 ✓

0+988.8 524 8.54 3.99 4.55

1+1980 537 8.39 3.50 4.89

1+4084 528 8.48 3.00 5.48 ✓

1+6185 EC, 118' 28.67.50y 8.74 + 2.50 6.24 -
To Cr. Box
R.P. 10 + 20 157

1+6435 2 Box

B.M. (12.98) 9.25

1+6185
+2.50
10.48
12.54
F 2.60

New Cuts on 24" Line 24

1408

0+75.7 4.81

+77.11 D 45° R 535 4.77

+77.79 BC 4.25

+98.8 4.19

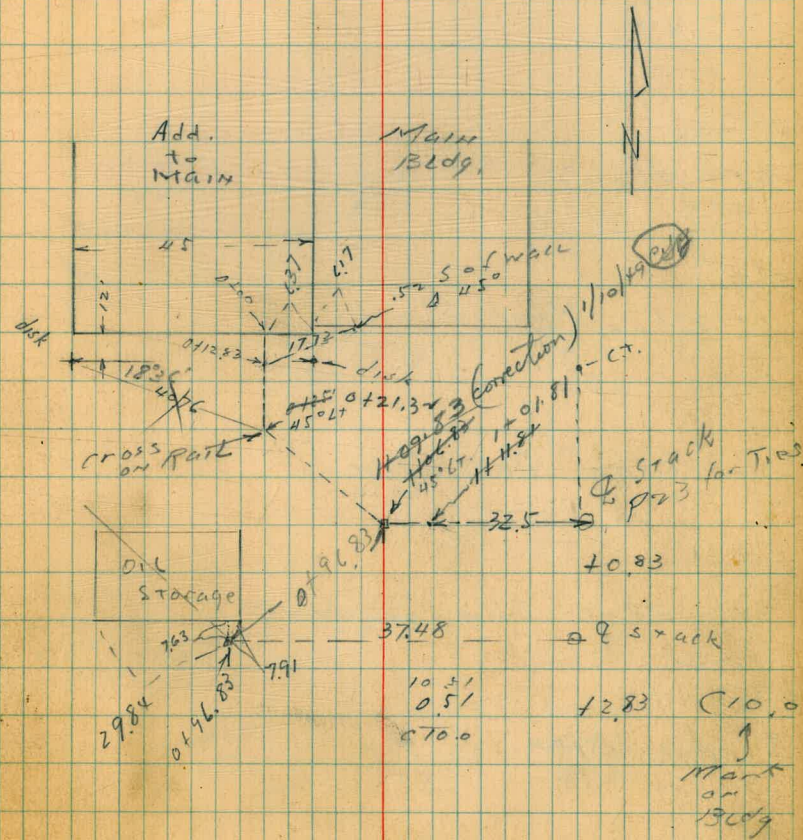
1+1980 7.89
3.63
C 4.34

1+4084 10.45
5.70
C 4.75

1+6185 EC, 3.07
11.01
5.60
C 5.41

2.50
11.58
5.34
C 6.24

Brick lined Flue, Add. to stack					
					Sub. GR.
BMBP					10.00
deg. 45	3.34	13.34			
1401.81					
111.81		4.74	8.66	+0.83	C 7.77
0146.83					
106.83	1/4 45° Lt.	4.90	8.44	+0.83	C 7.61
	RP 5 1/2 15 Lt. Fwd.				
0154.8	2.6 NE of MH.	5.31	8.03	10.83	C 7.20
0121.32					
125	A 45° Lt	5.30	8.04	+0.83	C 7.21
0122.83	Line Y to Main Bldg	5.44	7.92	+0.83	C 7.09
0107.17		5.41	7.93	+0.83	C 7.10
0100			10.51	+2.83	C 6.68
			3.83		
			16.68		



Check Con for NWS Con. Floor
for Dorn. Bldg + Sludge Stor.

BB	515	14x1	920	1123-48
TP	384	13x5	961	
TR	471	13.77	901	

0 + 3.5

Check grades as
constructed

W edge floor **2045 ± 28**
Begg

W edge oil tanks

W edge Det. door

W edge Sludge door

E edge 0700

Lr
Floor
 $\frac{4.75}{9.01}$
 $\frac{4.59}{9.08}$

The numbers

SEC. $\frac{4.70}{9.01}$ → $\frac{4.59}{9.18}$ $\frac{4.69}{9.08}$ $\frac{4.63}{9.14}$ $\frac{4.62}{9.15}$
Con. Header Con.

$\frac{4.31}{9.14}$

$\frac{4.44}{9.01}$
NW Cor Sludge

$\frac{4.48}{8.97}$

$\frac{4.49}{8.96}$
SW Cor

NW Cor
 $\frac{4.45}{9.00}$
Con

$\frac{4.45}{9.00}$

$\frac{4.45}{8.97}$
SE Cor
Sludge

$\frac{4.44}{9.01}$
SE Det

$\frac{4.58}{9.07}$

W edge
door Sludge
Ramped floor

$\frac{4.35}{9.10}$

$\frac{4.37}{9.08}$

$\frac{4.44}{9.01}$

Det
Floor
9.01
P.S.C

$\frac{4.27}{9.18}$

$\frac{4.34}{9.13}$

$\frac{4.19}{9.20}$

1345

New grades on
12" Line (H.C.) P. 27

14.08

Sub grades

Sub. gr.

6+37.98 Δ

5.56

8.52 -

+3984 B.C.

5.57

8.51 ✓

166.09

5.72

8.36

+92.34

5.87

8.21

1+11.8 Hand Ex. C.I.

5.98

B.M.

4.31

13.57

9.26

1+30 = F end Ex. C.I.

1+30

→ 7.14

Inv.

PLAN

6.03

6.50

Set Lost
STAKES

007 Low
Pipe was
raised
to 14' set
grade

1+40.84

12-9-48

6.74

6.87 ✓

1+73.04 end Line

7.20

6.37 ✓

5.37

6.10

Mark on
CON.

Ground
of Levels on N. side of \checkmark
Sketch Pro

3 + 4831 N. Rim Ex. MH. 5.3

3 Pav 5.1

+ 91 on edge P. 5.0

~ + 80 5.4

2 + 4171 Junction 4.4

2 + 1935 45' R. 4.5

2 + 00 5.6

Outlet & ground

Junction N.
2 + 6015 = 24171 outlet 5.4 9.91

2 + 327 5.6 9.71

B.M. 505 1431 9.26

Xsec SCUM LINE, CL. #1

3+2511 Cor 132dg.

Inv. 4.00

3+1994 Con. Walk 9.39 5.35

+80 9.50 5.2

+50 9.7 5.0

+35.65 33.045 9.9
2+3479 33.28 4.8

2+16 9.9 4.8

1+96 9.27 5.1

178 EL Con. 9.05 5.16

+64 W.L. 9.26 5.2

Main Dr

+47 EL Con. 9.37 5.37

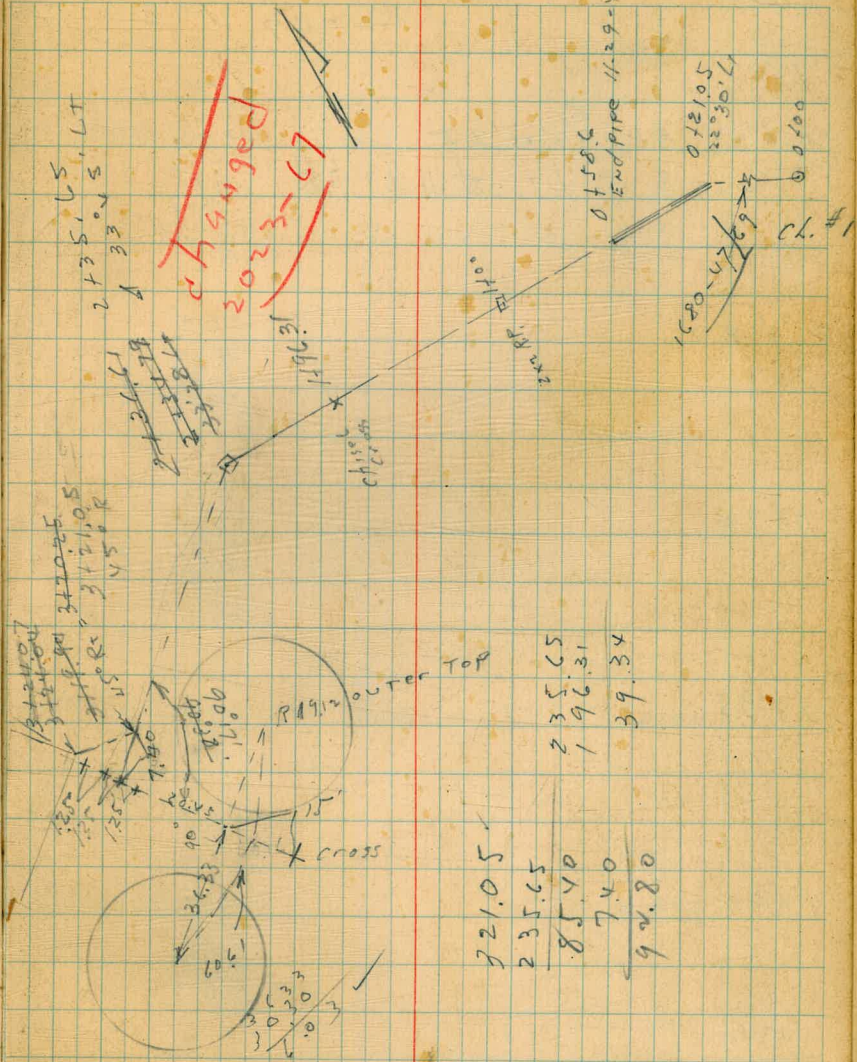
1 8.9 5.8

0+58C End Pipe 9.4 5.3
11-29-48

4.11 ← 1680-69

BM 5.48 14.74

9.26



321.05
235.65
85.40
74.0
<u>94.80</u>

235.65
196.31
39.34

1-7-49
8" Sours Cuts C/L #1
Sketch P. 30

2 + 35.65 Δ 33'45" LT
CUTS 5' LT. + 11 LT to ~~8~~
INV. 404
9.89
4.17
C 5.72

2 + 00
405
9.88
4.38
C 5.50

1 + 70
407
9.86
4.61
C 5.25

1 + 35
408
9.85
4.00
C 5.85

1 + 00
409
9.84
4.02
C 5.82

2 + 58.6 end pipe 11.29.48
4.11

BM x 67 13.93
9.26

See Inv. Bot. dir ch 2-2-49
BM. and 5.82 13.09 9.26 **31**

0 + 70 INV. 410 SUB 506
4.05
17.06

1 + 00 checked Hank's 4.09 404
Sub. 17.05
4

1 + 35 end of 2 off LT. 4.08 403
17.06

3 + 21.05 25' LT $\frac{7}{13}$ C/L d₂. 4.00

3 + 00 4.01

2 + 70 4.03

Slope R 9082 From P. 13
 Check WALL FORMS CL #2

BM. ^{TOP} WALL	199	28.51	26.52	P. 13
90 R/E		475		
" R/W		476		
97 W	96.96	198		CON
" E		199		
1155 W		2.00		CON
" E	114.96	200		
1225 W		2.00		CON
" E	122.97	201		

B.M. II	140	27.92	26.52	P. 13
R 90 W - CON.		410		
" E - "		409		
R 97 E		136		
" E STOOD		124		
" W. CON.		131		
R 1155 "		135		
" E STEEL		139		
" E CON		142		
R 1225 W		135		
" E STEEL		137		
" E CON.		138		

CH-12-3

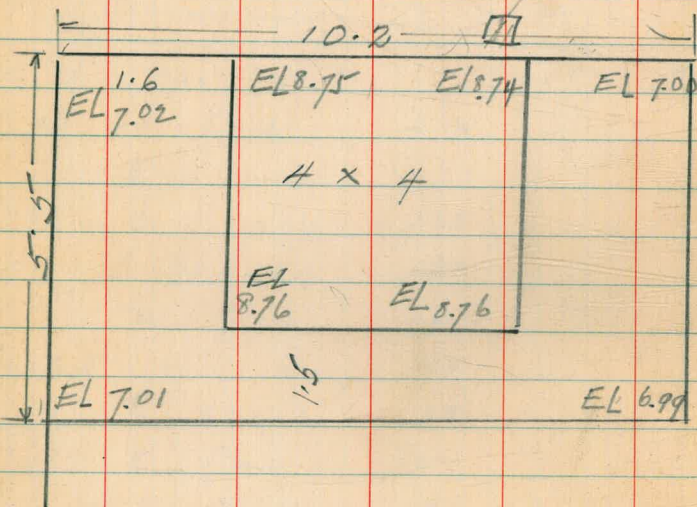
Original notes in Dimensions
Levelman's Book

Doesn't do us much good not in this book!



Excavation

Set X
blue tops
@ -2.75



Check 8"-10" + 12" Pipes CL #2

B.M. 1.67 13.77 12.50

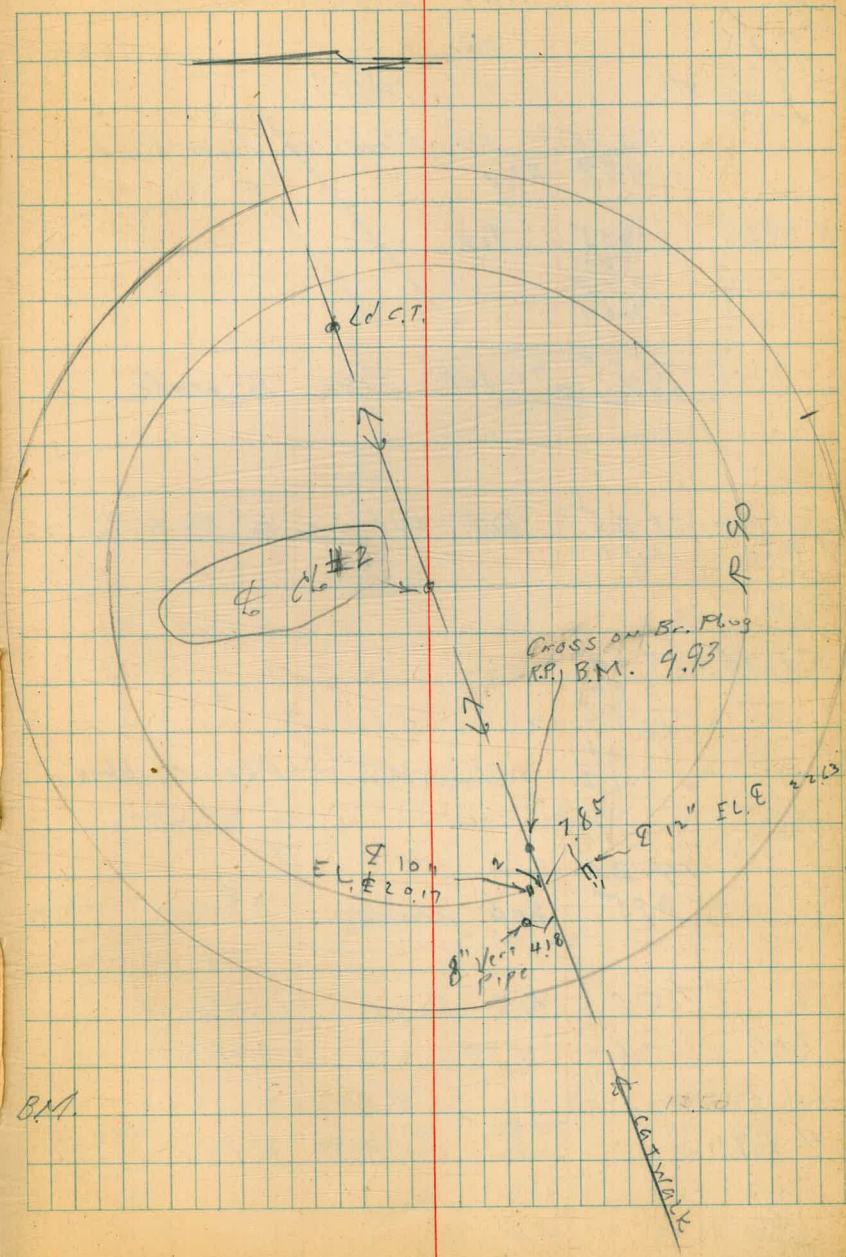
12" Pipe 7.85 E of ^{cat-}walk + 886 22.63

10" " 2 W of C.Walk + 640 20.17

8" Vert 4.18 W " " R 95.13

B.M. 1.67 14.12 12.50

Set B.M. B.P. sly P.P. CL #2 4.19 9.93



Final Check on M.H.C.

9.26
2.20
11.46 HI
42" 3099

~~13.35~~ on Flowline from East
~~-1.89~~ Elev

5+61.9
~~9.35~~ top
~~3.80~~
~~13.15~~
~~-1.69~~
-1.75
13.21 find Set Pipe To grade

East end of Pipe -1.85
12.71 Set east end of East Pipe

5+15
8.99
3.80
12.79
11.46
~~-1.33~~ check (01) Pipe in place

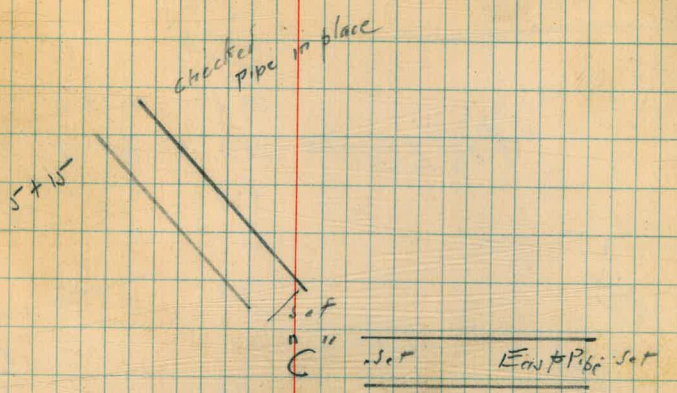
14.21
-2.75 sub grade OK

Check 42" Pipe 12-15-86

B.M. 2.6 11.90 9.26

4+91 12.94 -1.04 Inv. 1.13
0.09

see p 67 1680



HI.
~~11.90~~
check at S M.H. "C" + add.
B.M. 4x2 13.68 9.26
E opening 6.87 6.81
W " 13.68 1.85 Top Form
M. Low Top 24" 11.00 2.68
W Top 8" pipe 12.42 1.28
check Wly Junc. Box 42" Pipe

B.M. 1.80 14.30 12.50

1680-65
S inlet Inv.
N " Inv.
F outlet = 2421.98 13.18 1.12 12.5 Inv.
2+40 } TOP 42" PIPE 9.55 13.24 1.06 1.09
2+60 } -3.81 13.36 0.94 0.91
2+80 9.80 13.61 0.69 0.73
2+82 13.63 0.67 0.71

check Hank's Sludge CUTS

2+99.44 Δ 33°45' LT
 Inv. 3.33
~~3.34~~ BREITK
 11.56
 5.18
 C.C. 38

2+70
 3.32
 11.58
 5.65
 C 5.93

2+35
 3.29
 11.61
 5.59
 C 2.02

2+00
 3.27
 11.63
 4.81
 C 6.82

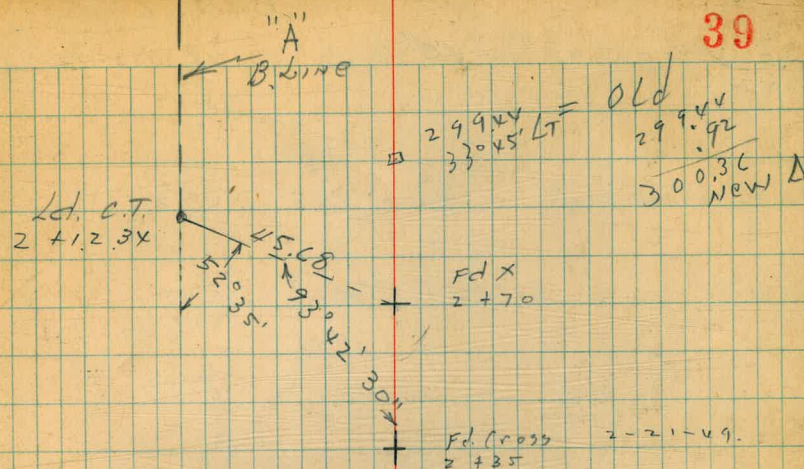
1+80.71 EC
 3.26 11.64
 4.98
 11.64
 5.12
 C 6.52 C 6.66

+67.91 EC
 3.25
 11.65
 4.71
 C 6.92

1+55.11 BC R
 3.24
 11.66
 5.00
 C 6.62

1+37.10 Ent Ex. 8"
 3.23
 11.67
 5.27
 C 6.40
 9.26

BM 5.64 14.90



4+17.95 = PUMP Bldg 4.00

4+12.08 45° RT

3+90

+60

3+30

3+21 B

334

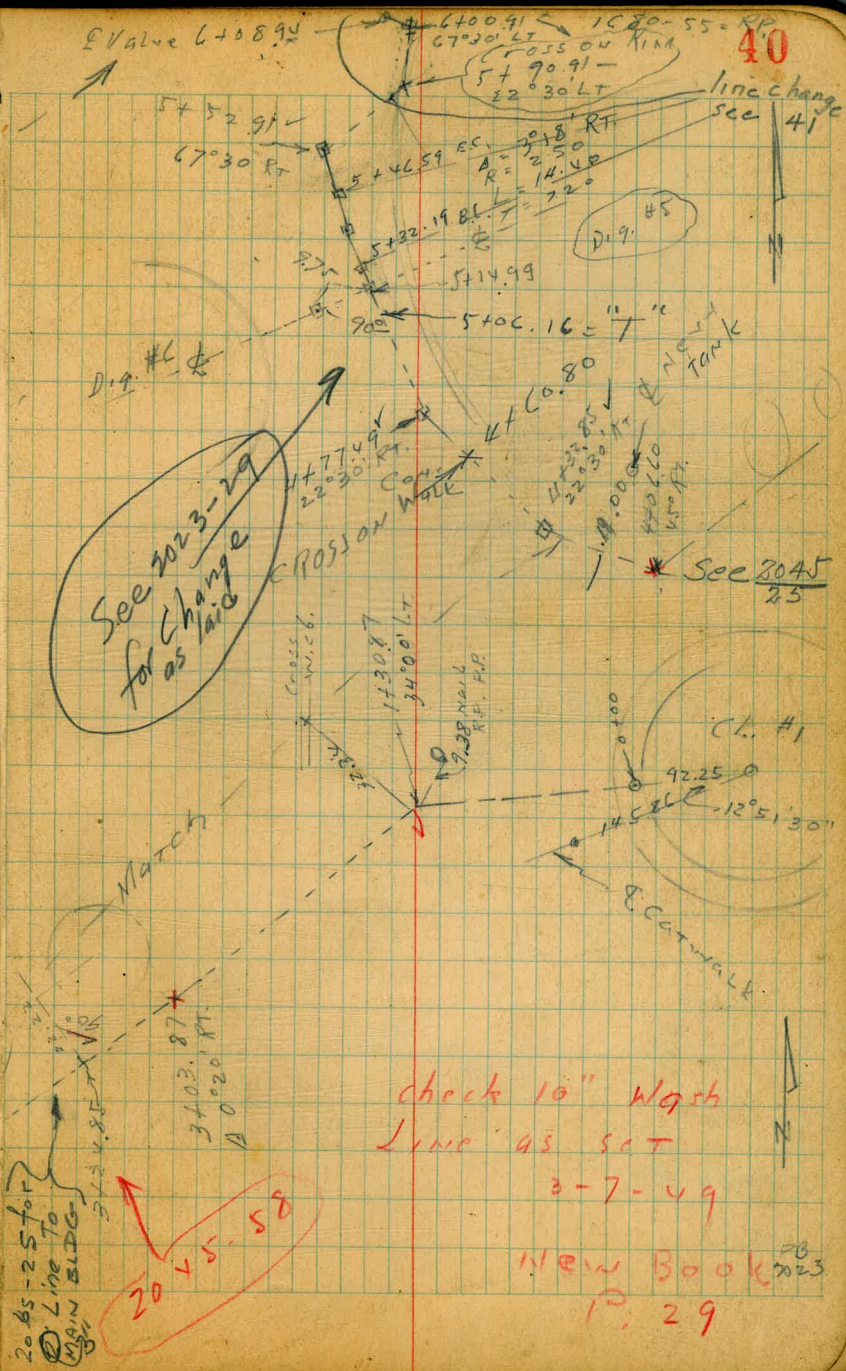
FROM 1680-V6
Grades on 10" Wash Line, 12-13-48

	Vx3	14.V3	10.00
Inv. Wash Line	at V	CL. #V	7.65
			6.78
Inv. Sewer End Ex Pipe			8.06
			6.37
Inv. Sludge			8.8x
			5.59

532.19
477.49

54.70

0+532.5	1680-V6 Bell end pipe 10-13-48		+3.93
0+38		X	+3.05
0+00		X	+3.27
B.M.			9.26



2045-25 for
Line to
MAN BLDG

Sec p 40

10.00
5.91
15.91 HI

10" water

14.38 HI

5+52.91 L

5.00
9.38
4.74
4.64

5+85.85 L

13.65

5+87.68

5+92.20

Top 7.90

Elv 8.01

Flow 7.12

6+01.33

Top 7.83

8.08

7.20

6+07.33

Top 8.28

7.63

6.74

Sec 2045 25
from 4+06.6

0+00

41

Line change 10" water

Sec 40

5+52.91

6+30

12.70

5+85.85

5+90.91

12.70

5+85.85

Line changed

13.65

6+30

6+04

5 85 85
5 52 91
3 2 94

6 01 33
5 87 85
15.48

6+01.33

2.3

Valve

5.9

3.1

6" line

3.1

6+07.33

#70 CL

8" CI Sludge Line of H₂

12-21-18
 14.64 HI
 7.95
 Top 6.69 Inv
 7.71
 Flow 5.98

2 L 57.72 Sludge Pump Bldg. 6.00

2 + 29.5² 15.91 m 9.1x
 9.33 5.14
 6.58 C 4.0

18.5
 2 + 11.06 E.C. 15.91
 9.40 5.86
 6.40 9.28
 1.07 low 5.30
 5.79 C 3.98

11.18
 1 + 99.28 E Curve 15.91
 9.44 5.81
 6.47 9.33
 7.1 5.15
 5.76 C 4.18

1 + 87.50 B.C.L. 15.91
 5.78
 9.36
 4.88 C 4.48

1 + 78.56 45° R_T 15.91
 9.43 5.75
 6.48 9.39
 7.1 4.61
 5.77 C 4.70

1 + 53.06 15.91
 9.51 5.67
 6.40 top 9.47
 7.1 3.35
 5.69 C 6.12

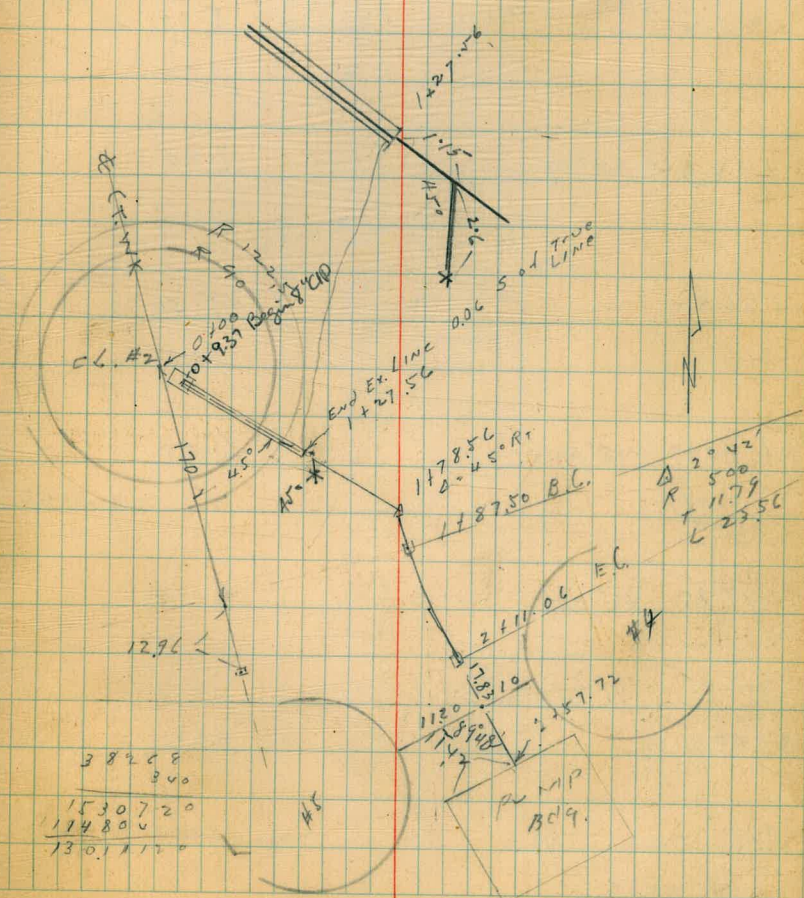
1 + 27.56 End Ex. Line 15.91
 5.59
 9.55

B.M. 5.14 15.14 15.91 HI 10.00
 5.91
 10 BM

Check on pipe in place

5.76 flow 5.76
 4.54 7.1
 10.30 5.05
 6.00 4.54
 4.30 9.59
 6.00
 3.59

4.54
 7.1
 5.25



8" RAW Sludge, Dig. # 1/2 to

1464 HI
 792
 Top 672
 Flwd 601

12-21-48

sludge
 Pump
 Bldg.
 to
 Dig. Cont.
 Bldg.

LINED

44

1+35.45 PUMP BLDG. 5.00

1+14.84 45° LT 5.00

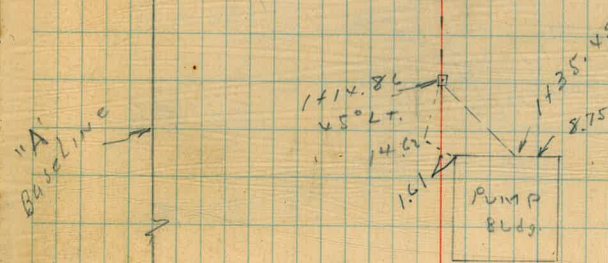
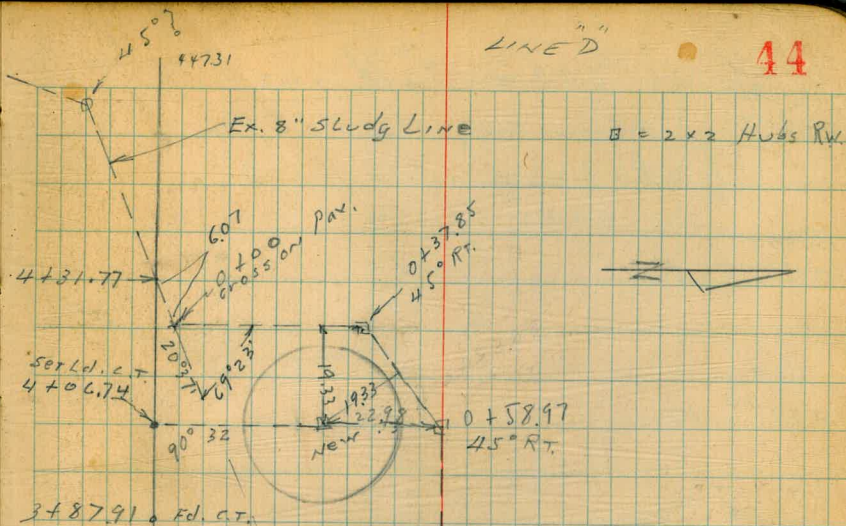
0+86.92 5.50

0+58.97 45° RT 6.00

0+37.85 45° RT 6.00

0+00 6.03

BM 10.00



44731
 406.63
 147.31
 259.32
 76.83
 44731
 122.11
 117.5

4400 Inv. Ex Line 8.05 6.03
 BM 4.08 14.08 10.00

2+69.07
~~2+68.90~~
 36" C.I. Pipe Influent Line
 Main Bldg. to Ch. H₂
 #2 7.32

2+33.45
~~2+33.18~~ EC 6.4

1+83.71
~~1+83.54~~ BC 6.8

1+55.27
~~1+55.47~~
 1+55.30 45° 7.2

1+08.68
~~1+08.51~~ crossed Sludge 7.4
 Dig #6

0+46.47
~~0+46.30~~ 45° 8.00

0+05 7.42

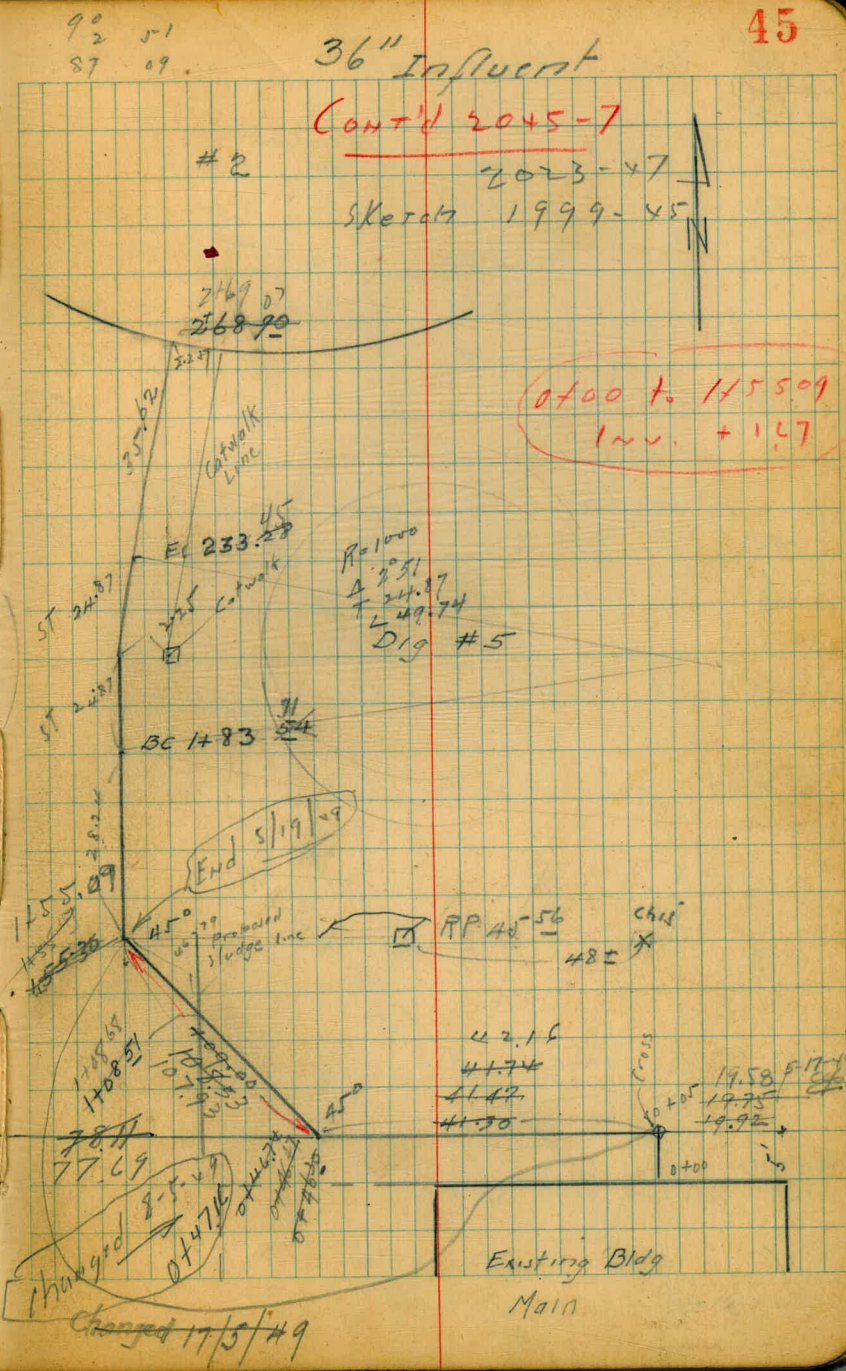
0+00 7.32

BM 6.36 1636 1000 BM

BK. 2023-47
FOR CUTS

5-17-49
changed

Cross W. side
TOP. Well



Clearlaid
4-20-49

24" Air Line Main Bldg to cl. #2

CUTS Book 2023-49

HI	14.98	Rod	Elevation in Place	Design	
Flow			11.72	8.60	} 2.67
Top	} of BEATS only from Air Box (C)		9.60	4.72	
"			9.59	4.73	
"			9.45	4.87	
Flow at Air Box	2+31 ±	5.03	9.39		.29 high

Top 6.60 from Top of Pipe to wall Clarifier of airbox

Set cuts for 24" from to 45° ft.

#1/6/49	14.08	14.08	grade @ 2.67
5/		2.67	
		11.41	11.41
		4.89	5.23
		6.52	6.18

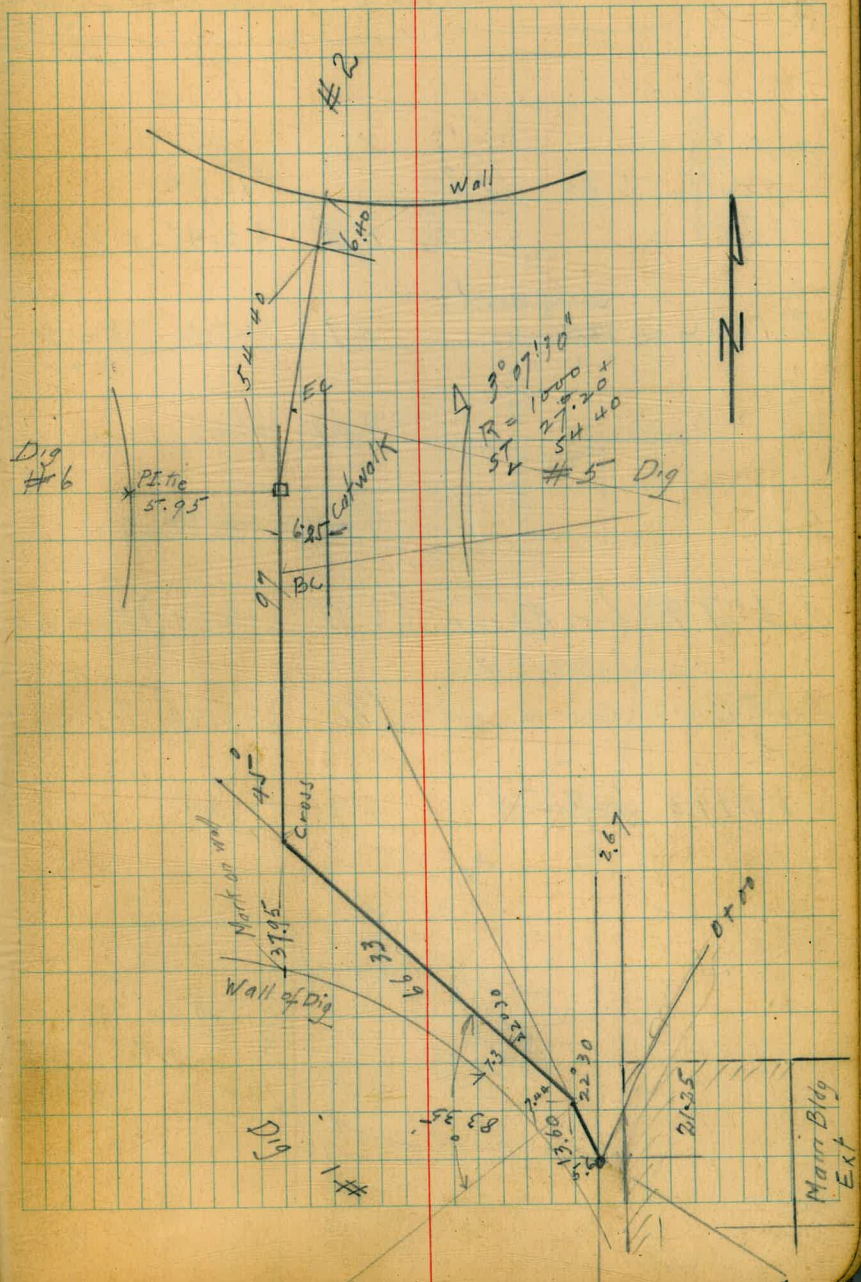
Check 24" Air Line 6-20-49
Sub

0+875 end Pipe	11.71	2.82	Inn.
0+7993 Δ 45° Rt	11.91	N.B.	Sub
0+50	11.92		Sub
0+13.6 Δ 22 1/2° Lt	11.92	2.61	Hankp Sub. Stakes

0+00 Final check P 47

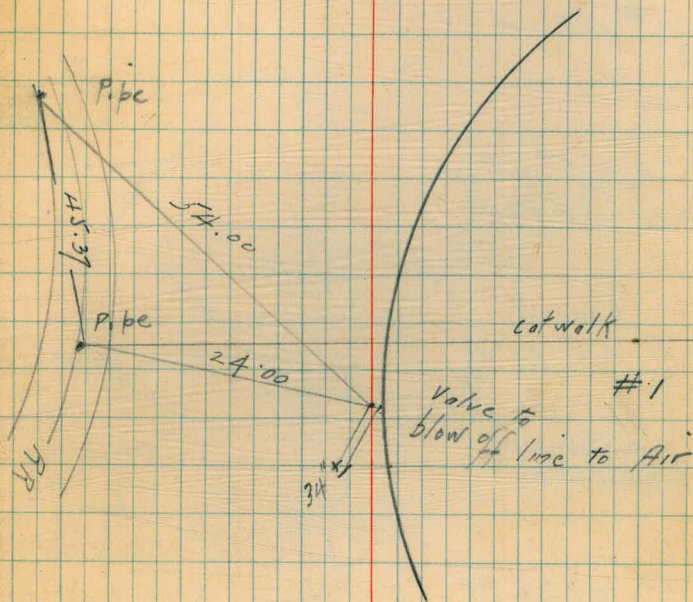
BM	1.80	14.53	12.73
----	------	-------	-------

~~2023 P 48~~
2023 P 48
see



Ties to blow off line on 24" Air

48



Aerator Drain East Side
Clarifier #2

2+237⁸ 45° LT

3+209⁸ 45° LT

2+147 catwalk

1+70⁹⁸ 22° 30' R
5671

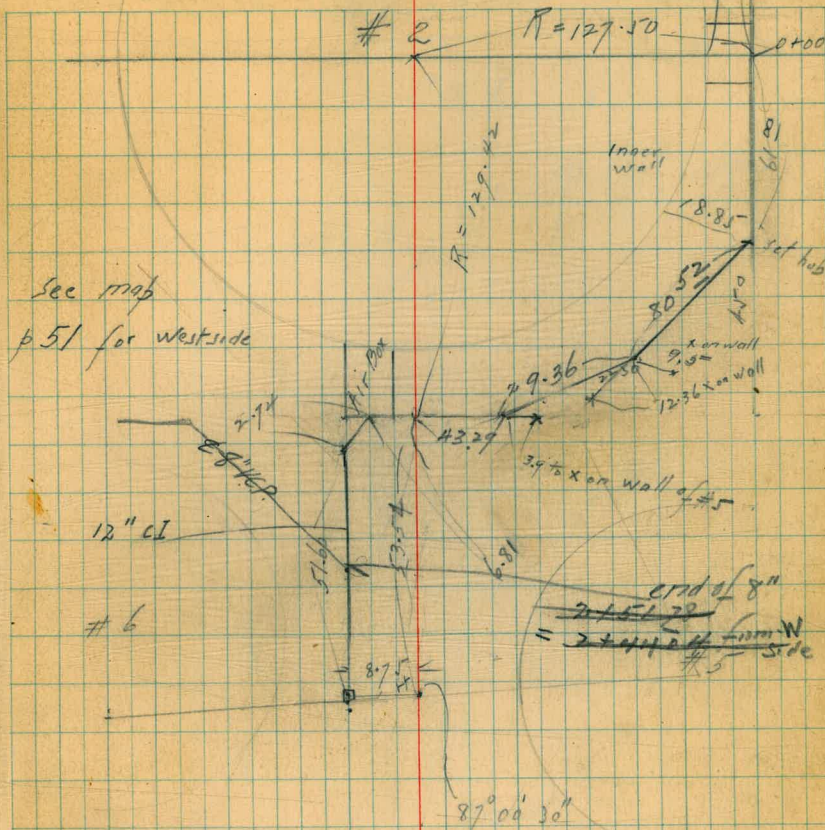
1+41⁵² 22° 30' RT

0+61 45° R

0+00

Void

See p 53
for change

$$\begin{array}{r} 3.9 \\ +3.29 \\ \hline 7.19 \\ +7.81 \\ \hline 15.00 \\ 53.94 \end{array}$$


See map
p 51 for west side

12" CI
#6

end of 8"
2+51.72
= 2+41.52 from W
side

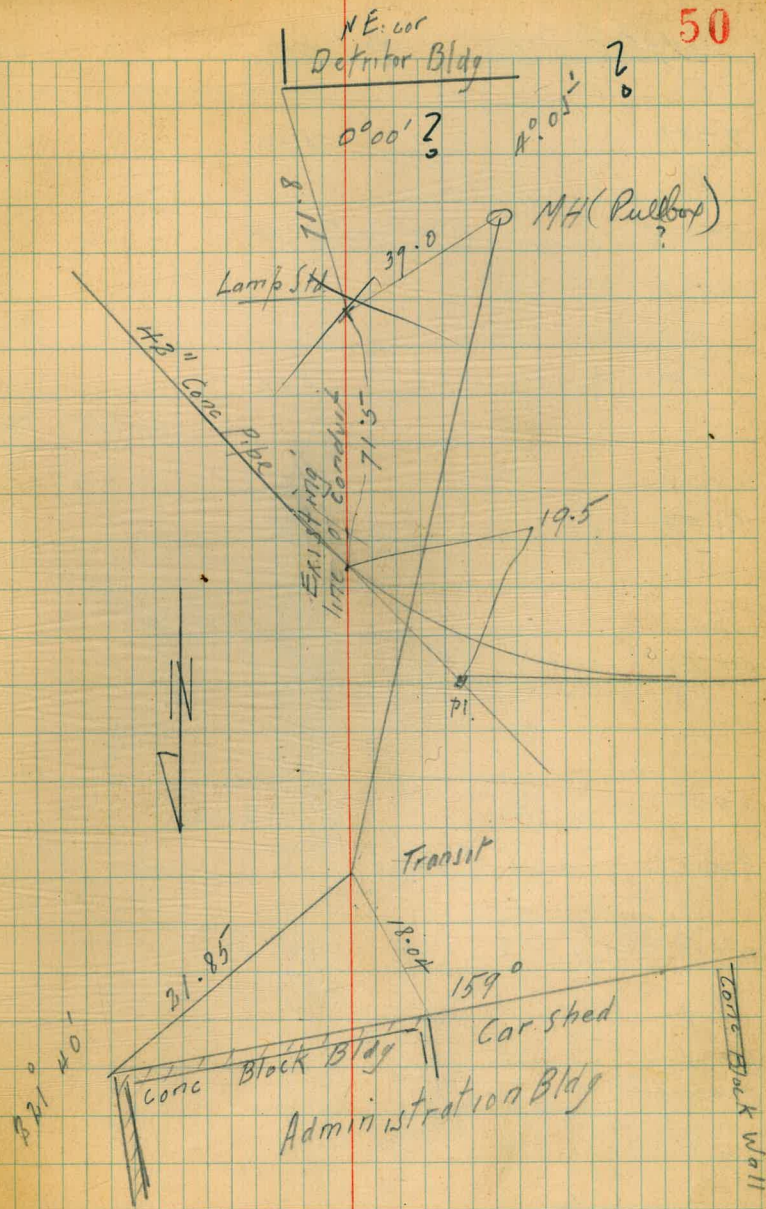
$$\begin{array}{r} 43.29 \\ 3.91 \\ \hline 47.20 \\ 47.19 \\ \hline 55.94 \end{array}$$

Catwalk line

$$\begin{array}{r} 5.41 \\ 1.25 \\ \hline 4.16 \end{array}$$

Location of elec. conduit for street lights

50

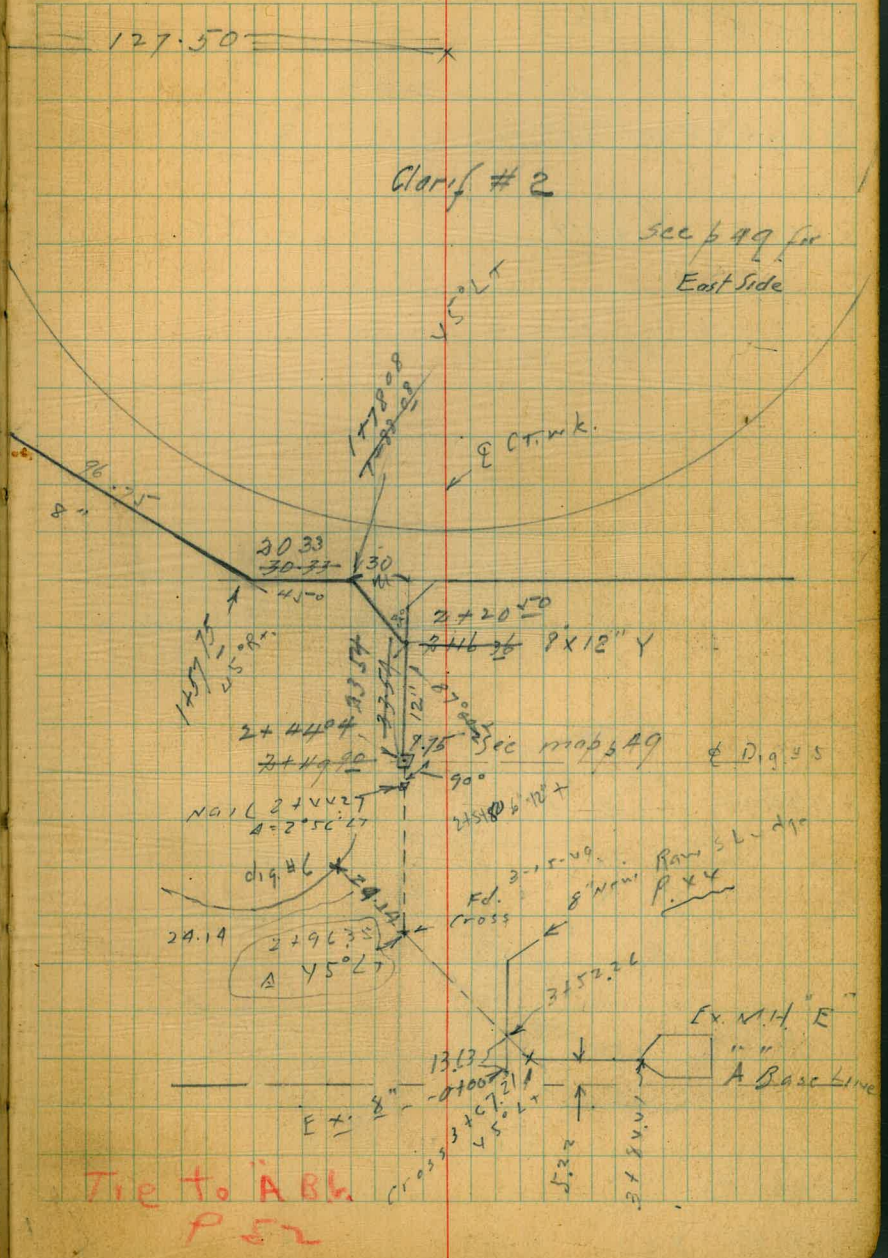


Aerator Drain

West Side

	invert	
0+00	6.50	
0+30.5	6.50	
0+61 $\Delta 45^\circ L$	6.50	
1+00	5.65	
1+57.75 $\Delta 45^\circ L$	4.38	
78.08 1+89.08	4.5 R+	3.94
B.M. 4.30 (1430)		10.00
20.50 $\Delta 45^\circ R$	8+12 Y	3.00
2+16.30		11.30
		1.30
		C 10.00
44.04		
2+19.90	E dig. #511	
2+44.27 $\Delta 2^\circ 56' L$		+1.71
		12.59
		5.45
		C 7.14

(9.52)



Tie to ABh
P 52

2+64.54 FROM P. 51 +6.61

2+84.81 Break 8"x12" cross Grade -0.50

2+96.35 45° L -1.20

3+01.57 Y 8"x12 -1.25

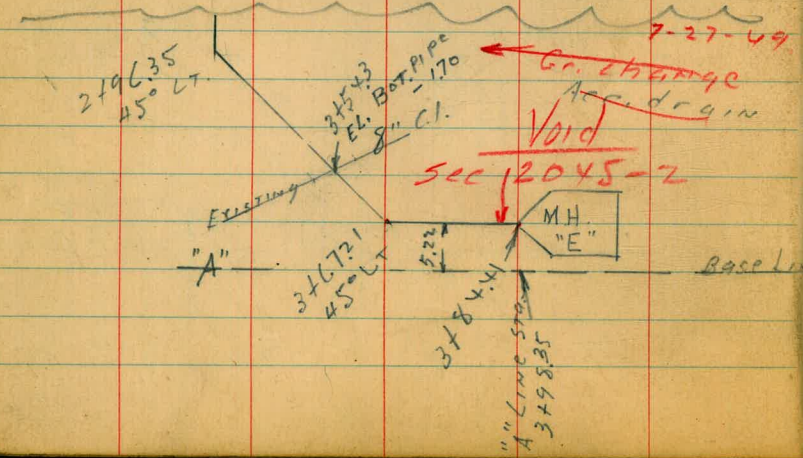
3+52.26 Int. New 8" Raw Sludge

3+54.47

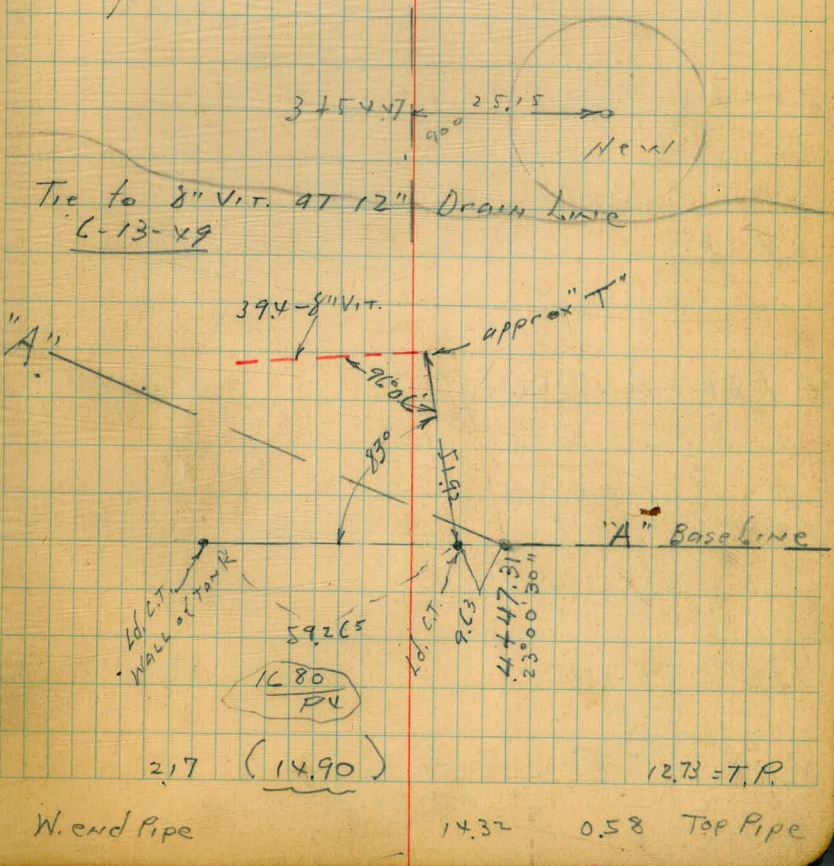
3+61.21 8" v.c.P drain FROM dig. 1 -1.45

3+67.21 45° L -1.50

3+84.41 EX. M.H. "E" -1.60



B 4.41 14.41 10.00 El. 3.00 = 8" 2+20.50 Y 8"x12 11.58 2.83 = 12" ✓ Inv. of



8" Annular dr. E side
C.L. HW
Inv.

1 + 35.02

5.77
10.09
4.27
C 5.82

1 + 15.99 B CRT

6.16
9.70
5.05
C 4.65

1 + 12.04 8" Y

6.24
9.62
5.22
C 4.40

1 + 07.8 Break

6.33
9.53
5.09
C 4.44

0 + 885

6.41
9.45
5.05
C 4.40

0 + 61 Δ 45° RT.

6.50
9.36
4.36
C 5.00

0 + 30.5

6.50
9.36
6.21
C 3.15

0 + 00

6.50

B.M. 586 15.86

10.00

See Sheet P. 21

Set Cuts, 1-18-49

53

2 + 4940 Y 8 x 12

3.00
11.65
3.71
C 7.94

2 + 3587

3.84
10.81
2.31
C 8.00

2 + 2184 45° LT

21.84

19.10

2.74

4.68
9.87
4.91
C 5.00

2 + 1910 Δ 45° LT

4.85
9.80
4.50
C 5.30

T.P. 5.33 14.65 6.54 9.32

2 + 0081

4.96
10.90
6.85
C 4.15

1 + 9453 E.C.

5.00
10.80
4.80
C 5.94

1 + 7489 offset LT

5.22
10.64
5.30
C 4.78

1 + 5526 Break

5.38
10.48
5.52
C 4.90

15.86

6" V.I.T. Sewer
to serve New Add. Bldg
Sketch P 37

177028
177310 Δ 45° RT

5.70
10.34
5.89
C 4.45

173493

6.54
9.50
5.33
C 4.17

0+9676 = Y from SE corner of Bldg

7.39
8.65
4.90
C 3.75

169 Δ 45° RT

8.00
8.04
4.80
C 3.20

1615 ✓

8.05
7.99
4.62
C 3.37

0+34

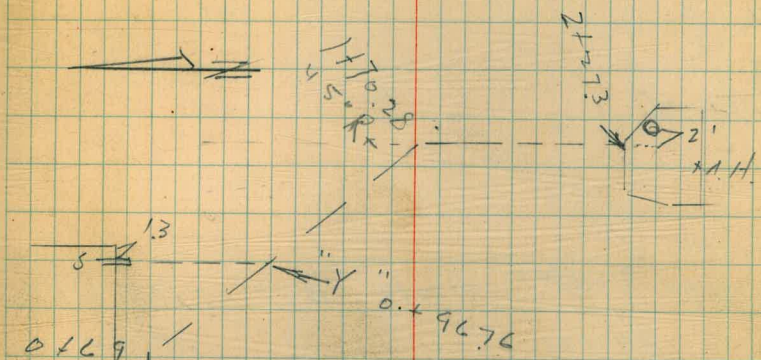
8.25
7.79
4.19
C 3.60

0+00

18.50
7.54
4.04
C 3.50

B.M. 6.04 16.04

1-24-49



0+69
45° RT
S = 0+61.5

S = 0+34

0+32 Begin cement

0+00 D.E.

-9.50
Stakes
5' LT

2+27.3 Ex M.H.

1198.85

4.50
11.54
6.95
C 4.59

5.10
10.94
6.34
C 4.60

3+93.19 $\begin{array}{r} 4.49 \\ 9.81 \\ 1.29 \\ \hline C 8.52 \end{array}$ 4.49

3+74.19 45° LT $\begin{array}{r} 4.00 \\ 10.30 \\ 1.31 \\ \hline C 8.99 \end{array}$ 4.00
30.25

3+43.94 $\Delta 2^{\circ} 25' R$ $\begin{array}{r} 3.08 \\ 11.22 \\ 4.63 \\ \hline C 6.59 \end{array}$ 3.08
2' R.P. Crosses
on Key groove

3+17.94 $\begin{array}{r} 2.29 \\ 12.01 \\ 4.02 \\ \hline C 7.99 \end{array}$ 2.29

2+91.94 45° R $\begin{array}{r} 1.50 \\ 12.80 \\ 4.59 \\ \hline C 8.21 \end{array}$ +1.50

BMBP 4.30 14.30 10.00 $\begin{array}{c} \uparrow \\ \text{set} \\ 3-15-49 \end{array}$
2+70 1.22

2+34.02 $\begin{array}{r} 35.98 \end{array}$ 0.77

2+12.50 45° R +0.50 ✓

End, Gait Line cl. # 56
as laid 3-30-49

B.M. dig 5 389 (1389) 1000
3+16.4 Inv. 11.19 2.70

21/8/49
 $\begin{array}{r} 24.50 \\ 1+11.94 \\ 1+36.44 \end{array}$ $\begin{array}{r} 92.6 \\ 3.74 \end{array}$ H/ 13.00 15.07 = -2.07 inv.

4+71.94 END 6.50

4+50.19 43.5 5.94

4+28.44 45° R 5.39

4+12.19 45° LT $\begin{array}{r} 4.97 \\ 9.33 \\ 0.22 \\ \hline C 8.71 \end{array}$
 $\begin{array}{r} 3 \\ 74.19 \\ 38.00 \end{array}$

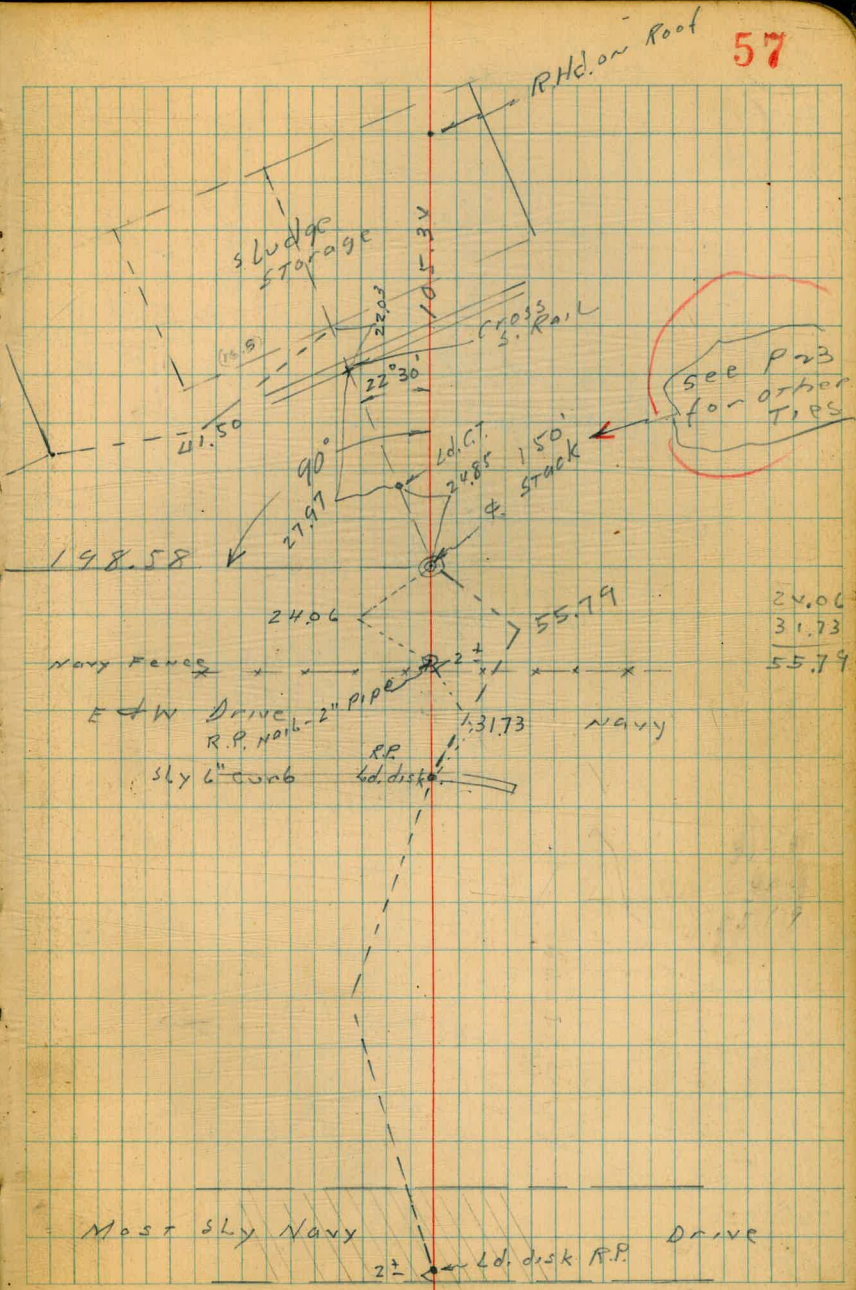
2-1-49

~~AIR LINE~~

~~Stack to Cl #2 (sketch P. 50)~~

(Ret. Pts. for Stack)

MAIN Bldg.



5-17-49
Beg 99

Check	Levels	Air Ex	12"	
BM	14.22	14.32	11.10	
Top of Pipe				Design
4+65.69		9.85	4.77	3.75 flow 1.08 4.83 Top 3.36 Low
4+40.99 EC	laid to here	10.57 shoulder 10.60 flow	3.72	.03 low
4+28 BC		10.65 10.72	3.60	1.07 low
4+04 BC		10.65 10.62		93 low

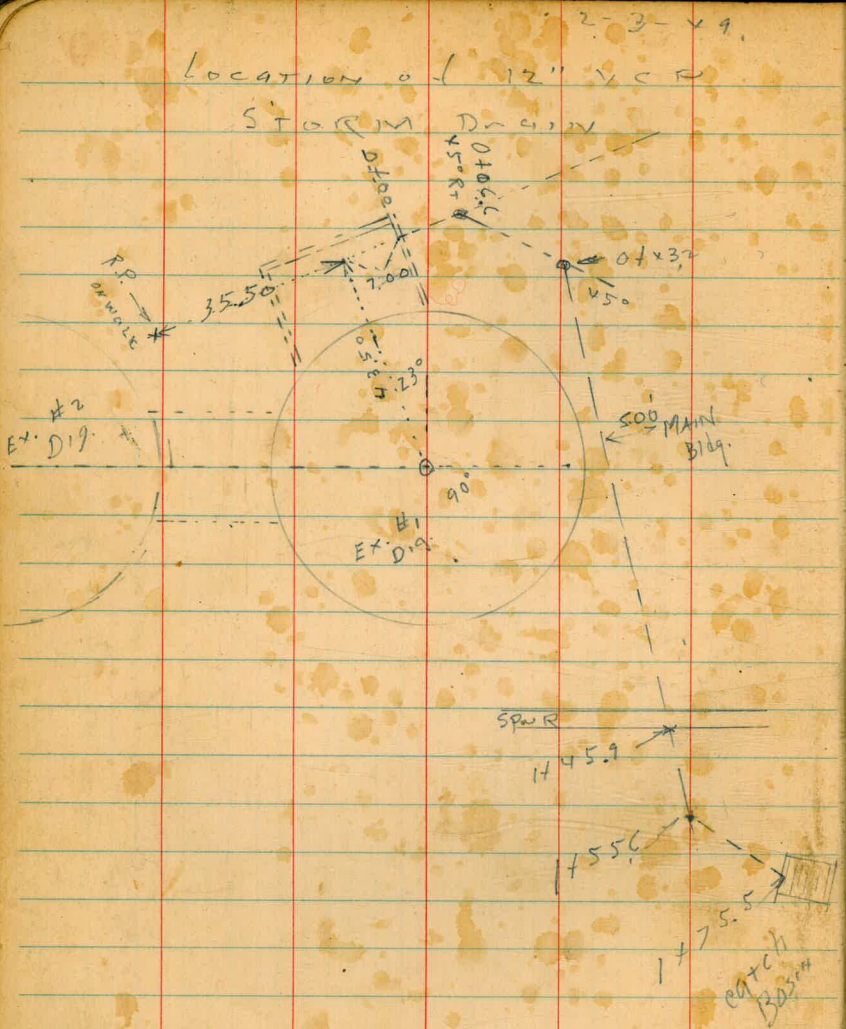
check top 12" C.I. Sta. 4+78.69

BM	3.59	14.69	11.10	4.25
4+78.69	Top C.I.	10.44	4.25	3.19 3.75
4+65.69	" VIT	10.22	4.47	low 0.56 " 0.36

Beg 99/12/49
Check levels Air Exhaust 27" 59

1+86.67	L.P.T.	not connected	
1+88	L.P.T.	9.02	4.85
17			
2+05		9.02	4.85
17			
2+22		9.01	
4.61			
9.26			
13.87	#1	13.87	
		9.02	
		4.85	

Res.
for
AIR
CUTS

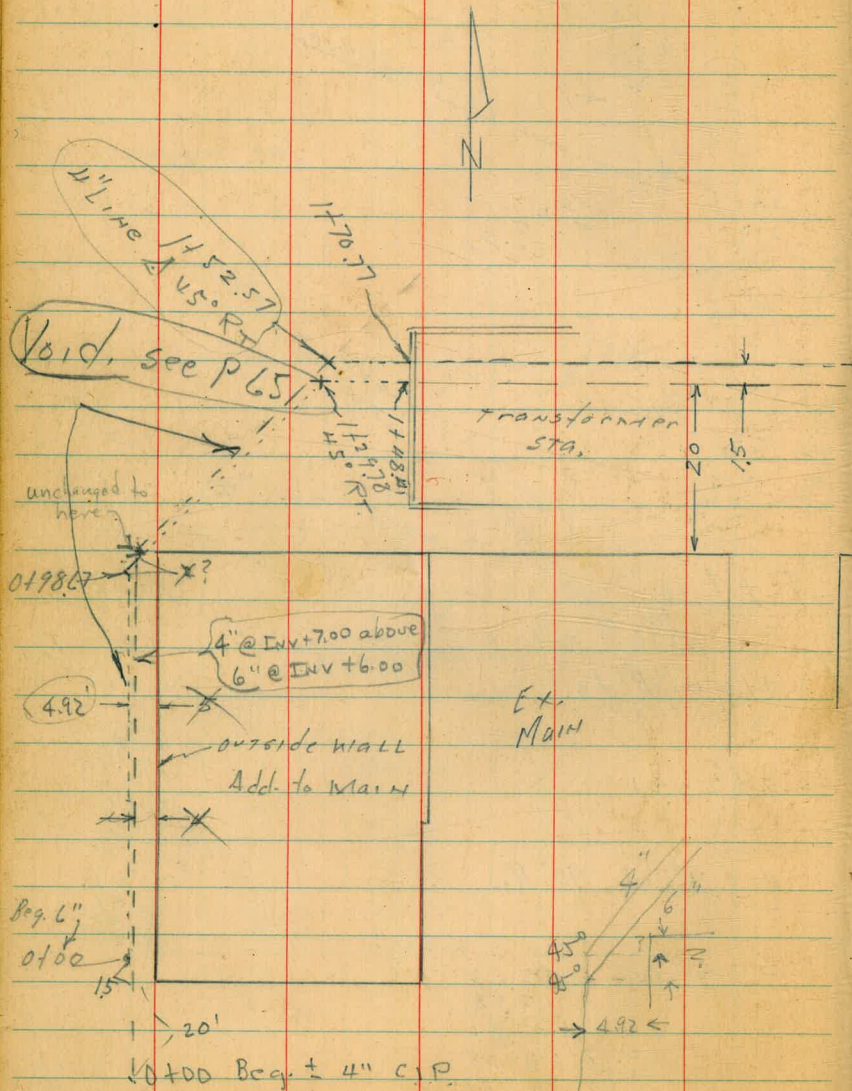


10.00 61

0+00	14	12.50 = 1.00	
0+06.6	15	10.23 0.56 C 9.67	10.23 0.44 C 9.77
0+24.7	14	2.38	10.23 0.65 C 9.58
0+43.7		2.28	10.43 3.17 C 7.26
1+12		2.19	10.52 3.11 C 7.41
T.P. 500 (1300) 2 CROSS	477	7.94	
1+45.9 S. RAIL		2.09	
1+55.6		2.07	
1+75.5 = EX. Catch Basin		10.93 5.13 C 5.80	
Check subg. 2-15-49		2.00	
		11.00 5.46 C 5.54	
BM 327	(13.27)	10.00	BM B.P.
0+00	dir	10.92	
0+06.6	45° R. dir	10.96	
0+24.7	on stub	10.94	
0+43.7	" "	11.00	
0+52	" "	11.03	
0+61	" "	11.06	end

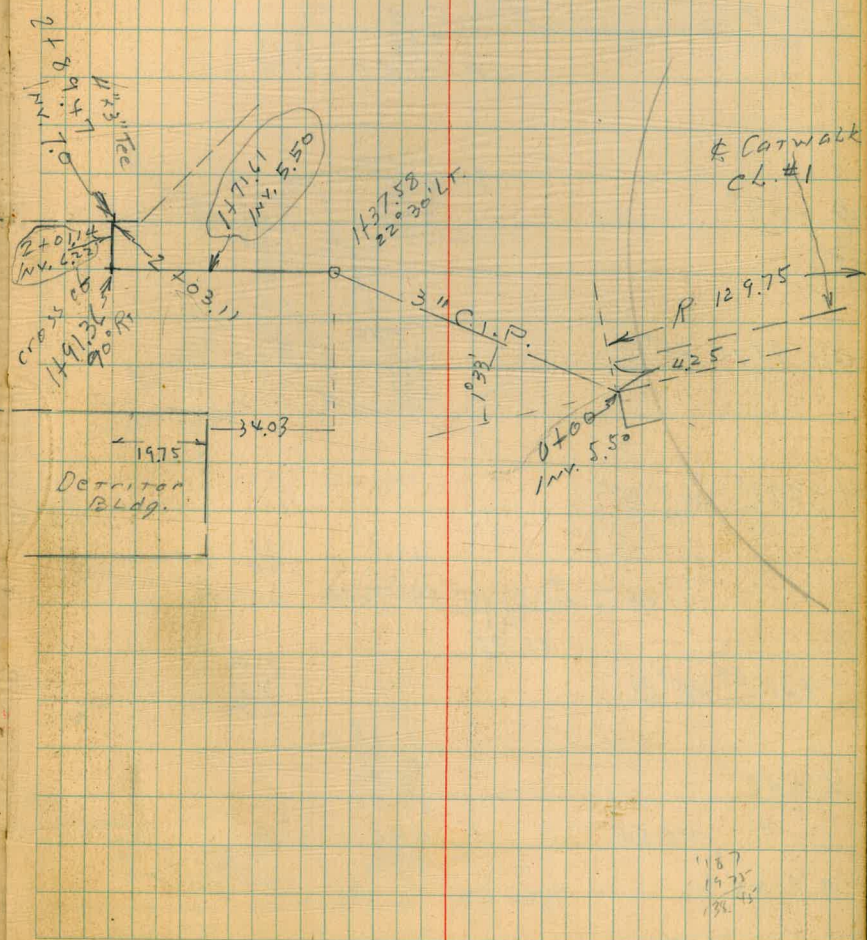
2-7-49

4" and 6" Water Lines
Main Bldg. N.E.Ly



148.41
 29.78
 18.62
 170.77
 52.57
 18.2
 (Water)

3" CIP to Clav #1



1187
 1975
 198.15

6" Water Line

085 10.83 10.00

0+00

change
6.10
4.73
3.36
C 1.37

6.00
4.83
3.36
C 1.47

0+28

change
6.10
4.73
5.88
F 1.15 F

6.00
4.83
5.88
C 1.05

0+50±

change
6.10
4.73
3.80
C 0.93

6.00
4.83
3.80
C 1.03

0+98.75 45° Rt.

change
6.10
4.73
2.81
1.92

6.00
4.83
2.81
C 2.02

1+29.71 on 45°

7.383

4" Invert @ 7.00 all the way
4.1
11.93

C 2.33 out marked on L.P.P.
1.50

1+21.29 45° Rt.

7.00
4.93
2.07
C 1.72

1+00

7.00
4.93
3.57
C 1.36

4.93
2.99
1.94

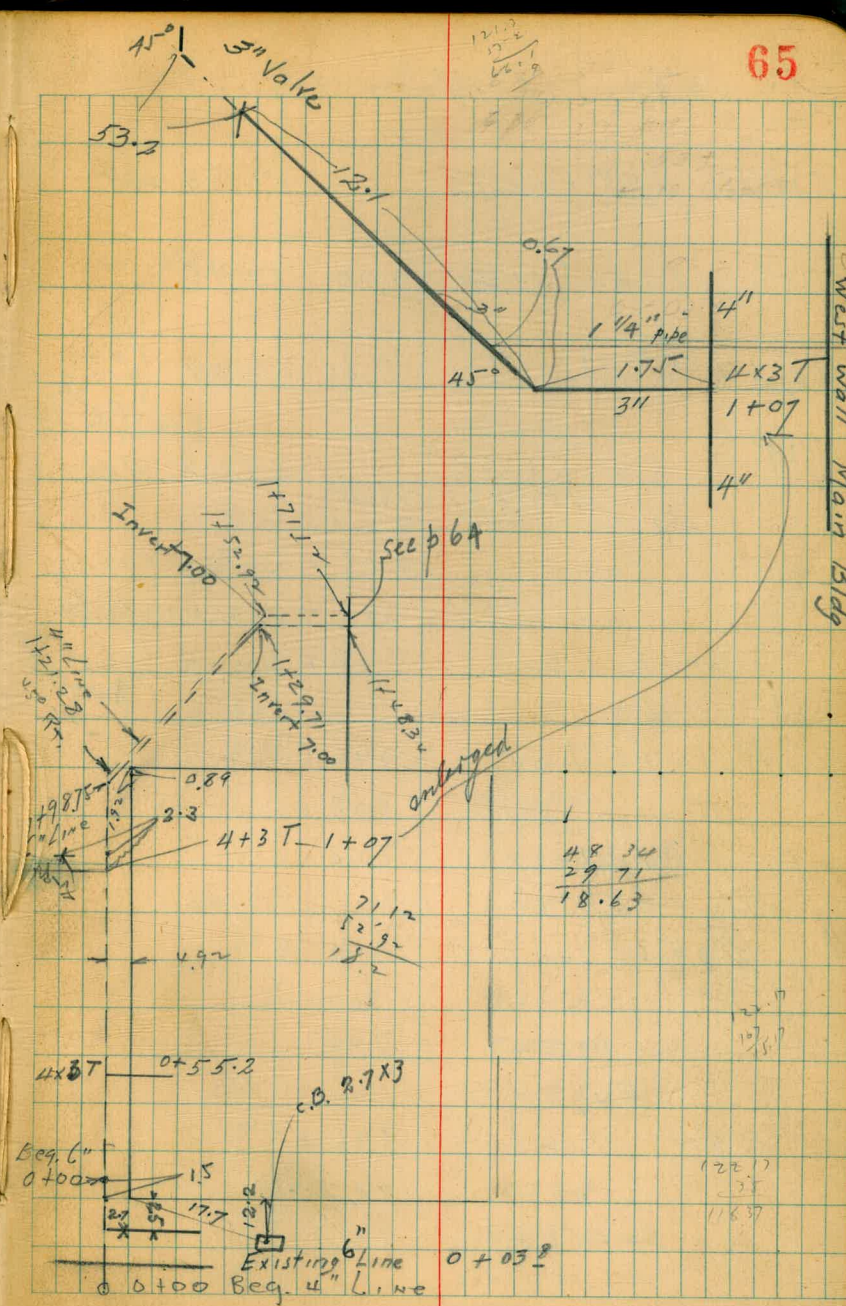
4.93
4.01
0.92

0+50

0+20±

0+038

Elev $\frac{6.30}{5.63}$
Top 6" Pipe



Check Effluent Trough

ch. #2

BM. 525 17.75 12.50 ←

T.P. 1380 (31.55) 0.00 17.75

check to chisel R 115.5 5.06 26.49 Top Wall 26.52

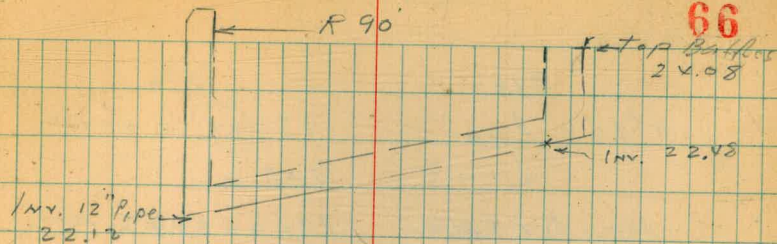
BM 505 (31.53) 126.48 Hawk's
#1 = 157 E of Crnk or Savely
ERROR 0.03
USE THIS EL.

R 90 + INV 9.45 x 22.08 (22.12)
" 9.08 x 22.45 22.48
Top Baffle #2 7.48 x 24.05 (24.08) ✓
K. Smith
be.

R 90 + INV 9.46 x
" 9.08 x
Baffle #3 7.48 x

R 90 + INV 9.45 x
" 9.07
Baffle #4 7.46

R 90 INV 9.46 x
" 9.08 x
Baffle 7.46



#5
R 90 INV 9.46 x
" 9.08 x
✓ Baffle #6 7.47

R 90 + INV 9.46 x
" 9.06
✓ Baffle #7 7.45

R 90 INV 9.48 (44)
" 9.09 x
Baffle #8 7.48 x

R 90 INV 9.46 x
" 9.09 x
Baffle #9 7.48 x

R 90 INV 9.45 x
" 9.09 x
Baffle 7.47

#10
 P90 Inv 951 (XX)
 " 908 x
 Baffle 748 x 2405 ←

#1 = 1st W. of (turb)

R90+ Inv 946 x
 " 907
 Baffle 746

#2

R90 Inv 947 x
 " 906
 Baffle 745

#3

R90+ Inv 947 x
 " 906
 Baffle 747

#4

R90+ Inv. (closed #4 to #6)
 " 908 x
 Baffle 746

#5

R90 Inv.
 " 911 x 2224
 Baffle 748 +

#C

P90+ Inv
 " 909 x
 Baffle 747 2406

CONTD. IN NEW BK. P. 16-17-19

Soil Pipe Lines 2-11-49
 B.M. 3.44 (13.44) 1000

0+00 = Ex. 4" at Bldg ^{Alt.} $\frac{13.87}{22.67} = 36.50$
 $\frac{10.05}{Grade}$
 1/2 out to Bldg $\rightarrow 3.60$
 $\leftarrow 3.45$ at Bldg $\frac{10.05}{Grade}$
 13.08
 0+07.56 = WL Main Bldg. 2.29
 $\frac{17.15}{3.63}$
 0+13.30 = 4" Y ^{6x4x11} 7.52 Cut 200
 1.40 8.78 _{out low}
 0+15.22 45° LT 1.11 8.96 _{at high}
 $\frac{13.00}{C}$
 0+37.89 = 6" Y +0.91 8.24 ✓
 $\frac{4.00}{C}$

Sly E + W 4"

0+00 +1.50 $\frac{13.08}{9.62}$ ✓
 $\frac{11.94}{5.52}$
 $\frac{1.48}{C 1.96}$ Cut 200
 0+06.45 4" MAIN +1.29
 $\frac{12.15}{3.62}$
 $\frac{10.86}{C 8.53}$

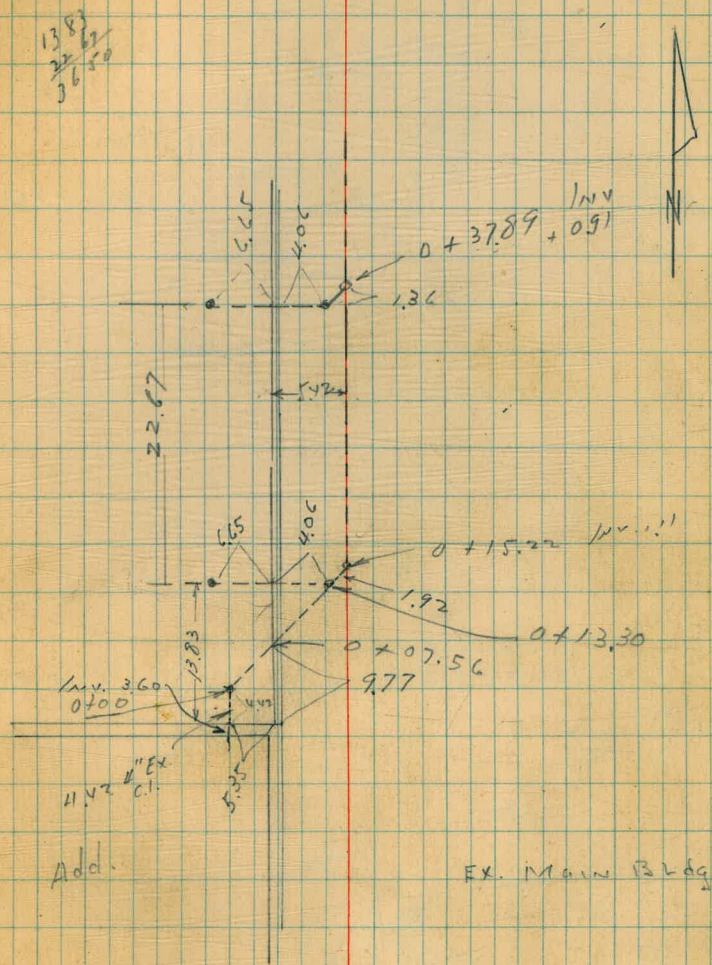
Nly E + W Line

0+0 1.08 ^{Grade} 10.05
 $\frac{12.36}{4.67}$
 $\frac{11.28}{C 7.69}$
 0+06.45 at MAIN +0.98
 $\frac{12.46}{3.85}$
 $\frac{11.48}{C 8.61}$

Check on Points Station

H/13.08

4" V.C. Pipe + 6" VCP 68
 NE Cor #dd. Bldg.



Add.

EX. MAIN Bldg.

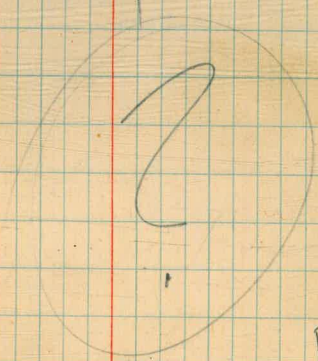
1-28-49
 Check Flue Headers Skotch P. 25

B.M	452	13.78		926
	232	5.38	1072	306
T.P	232	5.38		
0+00				3.66
0+07.17 Break ✓		3.78	1.60	1.66
0+12.83				1.66
0+21.32 Δ 45° P		3.78	1.60	1.66
0+41.3		3.77	1.61	
0+54.8		3.74	1.64	1.66
0+90.83 Δ 45° Laid to here ↑		3.74	1.64	1.66

Check 8" VCP 70
 H.I. N outlet drain
 P.I. New BK. (7.53) (13.56)
 1465 7.53
 1480 7.77
 1495 7.84
 2410 7.84
 2+18.5 Δ 45° P 7.80 +6.84
 2+41.71 Junc with S. drain 7.46
 2+50 7.65 5.91
 2+60 7.92 5.44
 2+85 end 7-14-49 8.11 5.45

X 10 PPS
 Top 8" VCP

5.00
 5.01
 Top 12"
 Add 1.09



13.56
 7.11

13.56

Proven ✓
 P. 78 ?

See

12-8-49.
Check 21" & 24" V.C.P.

Detection to stack

Sketch P-23

B.M.	4.8 ~ 14.08	9.26	Mean of 2 Rods	at Bell
0 + 14.71 A	6.02	6.07	Top Pipe	
0 + 45.54 E Bell	6.08	6.03	" "	
0 + 50.5 E Bell	6.18	5.93	" "	
0 + 55.5 " "	6.43	5.68	" "	
0 + 60.5 " "	6.69	5.42	" "	
0 + 65.5 " "	6.91	5.20	" "	
0 + 70.3 Nodge Bell	7.01	5.10	end 21"	
0 + 72.25 A	6.97	4.92 ✓	TOP Pipe	
" 2 L = A 12"	8.40	5.68 ✓	INV.	
0 + 75.7 end Ex. 24"	9.27	4.81 ✓	" "	

(1.97 & 2.19 Inv to Top 21" 24")

Check Sec. of 12" C.I. Pipe

1 + 11.8	7.88	6.20	INV.
1 + 30.2	7.5x	6.54	"

2-5-49.

73

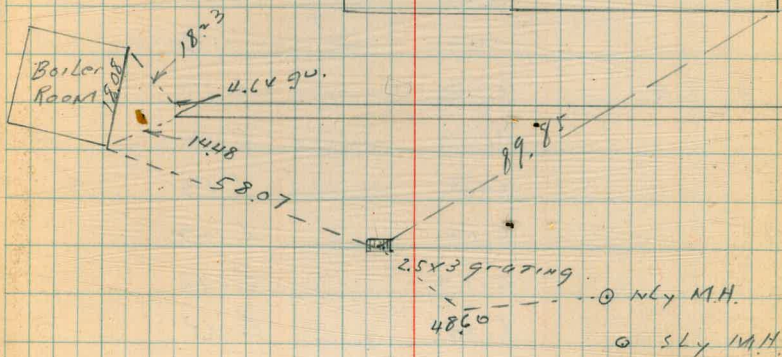
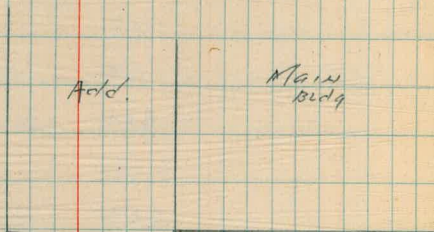
Set Elev. of 4 TOP
Cons. of Sludge Pump Bldg

B.M.	P. 13	110 (27.62)	26.52
SW Top Roof		8.98	18.64
SE " "		8.92	18.70
NE " "		8.80	18.82
NW " "		8.94	18.68

12-7-48

74

Tie RR siding +
grating to Main
and Boiler Bldgs.



Reserve

1038 = Old Rod
 New Rod → 1037 2037 10.00

#			
4	C.12	14.25	C.12
5	C.12		C.12
6	C.12		C.12
7	C.13		C.13
8	C.12		C.13
9	C.13		C.12
10	C.12		C.12
11	C.12		C.12
12	C.13		C.12
13	C.13		C.13
14	C.13		C.13
15	C.12		C.12
16	C.12		C.13
17	C.13		C.13
18	C.13		C.13
	C.		
19	C.12		C.12
20	C.12		C.13
3	C.13		C.13
check #9	C.13		C.13

1-3-49. 75
 check Top Foreings of dig. #1

B.M.	3.42	38.23	34.81	B.M.
				P.12
E. Line dig.	inside	10.00	28.23	
" "	outside	10.02		
S side	inside	10.00		
" "	outside	10.03		
W side	inside	10.01		
" "	outside	9.98	28.25	
N side	inside	10.00		
" "	outside	10.03		

check on Corbels Dig #6
 + #1
 10.37 20.37 BM 10.00

#	Rod	Corrected Rod + .05	Elev	
# 1	6.073	6.123	14.25	✓
	6.070	6.120	14.25	
20.32 2	6.080	6.130	14.24	X
	6.098		14.22	
3	6.085		14.235	✓
	6.082		14.24	
4	6.068		14.26	?
	6.079		14.24	
5	6.070		14.25	✓
	6.078		14.24	
6	6.073		14.25	✓
	6.078		14.24	
7	6.088		14.23	X
	6.100		14.22	
8	6.078		14.24	✓
	6.083		14.24	
9	6.100		14.22	X
	6.090		14.23	
10	6.068		14.25	✓
	6.058		14.26	
11	6.083		14.24	?
	6.093		14.23	
12	6.050		14.27	?
	6.070		14.25	

covers on corbels in place
 .05 thick add .05 to Rod

76

#	Rod	Corrected Rod	Elev	
13	6.030		14.29	X
	6.052		14.27	
14	6.040		14.28	X
	6.050		14.27	
15	6.070		14.25	✓
	6.078		14.24	
16	6.048		14.27	?
	6.065		14.25	
17	6.074		14.25	✓
	6.084		14.24	
18	6.087		14.23	X
	6.102		14.22	

Check Corbels Dig. #6

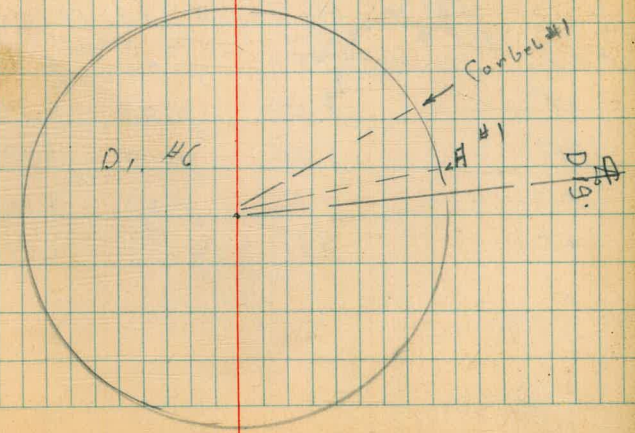
B.M. 431 (1431) 10.00
 T.P. +11.12 (25.43) 0.00 14.31

#				
1		11.16 11.15	14.27	-
2		11.18	14.25	✓
3		11.17 11.18	14.26	✓
4		11.15	14.28	X
5		11.15	14.28	X
6		11.15	14.28	X
7		11.15	14.28	X
8		11.16	14.27	-
9		11.18	14.25	✓
10		11.15	14.28	X
11		11.16	14.27	-
12		11.14	14.29	XX
13		11.13	14.30	XX
14		11.14	14.29	XX
15		11.16	14.27	-
16		11.14	14.29	X
17		11.15	14.28	X
18		11.18	14.25	✓

Check Anchors Dig. #6 77

13.33

#			
1		12.105	13.33 ✓
2		12.08	13.35 -
3		12.09	13.34 ✓
4		12.09	13.34 ✓
5		12.11	13.32 ✓
6		12.11	13.32 ✓
7		12.09	13.34 ✓
8		12.10	13.33 ✓
9		12.13	13.30 X
10		12.13	13.30 X
11		12.12	13.31 -
12		12.10	13.33 ✓



11-29 11-25. CL. #,
check 8" VCP on N. outlet

B.M.	525	14.57	926		
0+06			Top	Flow	
0+15	Top Pipe	7.57	6.92	6.19	
+25	"	7.39	7.12	6.39	
+35	"	7.23	7.08	6.36	
+45	"	7.38	7.13	6.40	
+55	Δ Top 45°	7.45	7.06	6.33	
+65	Top	7.28	7.03	6.30	
+75	"	7.58	6.98	6.20	
+85	"	7.62	6.89	6.16	
+95	"	7.70	6.81	6.08	
1+05	"	7.80	6.65	√ 5.92	
+15	"	8.02	6.47	6.74	
+25	End 11-25	8.18	6.33	6.60	

9.26
5.28
14.54

Re check on relaid pipe

	Bed	Top of Pipe	Flow
+08	7.50	7.04	6.31
15	7.47	7.07	6.34
25	7.35	7.19	6.46
35	7.31	7.23	6.50
45	7.37	7.17	6.44

TOP
check 8" S outlet

520	1446	7.27	1446 6.50 7.96	78 7.96 7.22
0+15		7.28		
0+30		7.24		
0+45		7.20		
+60		7.20		
0+68	69 Δ	7.21		
+80		7.29		
1		7.27		
117		7.46		
1+25	Δ	7.23		
+39	65 Δ	7.50		
+50		7.56		
+65		7.52		
+80		7.66		
2+00	end 11-30-48	7.81		5.90

✓ V.P. 20
P. 78

Check Top 24" C.I.P.

11-23-48

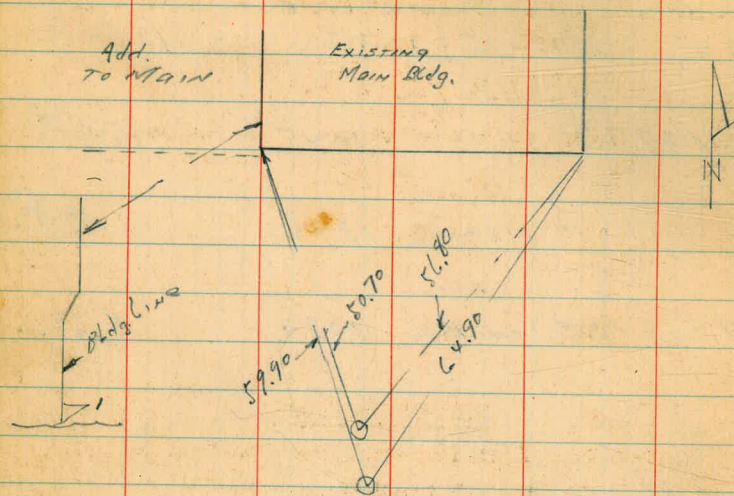
AIR LINE
CL. #1

B.M.	4.47	<u>13.73</u>		9.26
0+90			7.90	
1+00			8.03	
1+20			8.07	5.71 3.63
1+39.25	approx $\frac{1}{2}$ " L ₁		7.96	
1+50			7.93	
1+75			7.95	
2			7.95	
2+17.7	approx. $\frac{1}{8}$ " LINE		7.93	
2+25			7.90	5.83 3.75
2+36			7.85	5.88 3.80
2+38.5	TOP 22 $\frac{1}{2}$ " Bend		7.68	
2+51.9	TOP end Bell only Rod on Bell		2.29	11.44 9.36

Check Inv. of N. outlet **79**
36" Cor. Pipe CL. #2

B.M.	2.53	<u>15.03</u>		12.50
0+97.7			10.45	4.58 (4.00)
0+197.7			2+180.2	13.46 1.57 (1.2)
2+91.0	Inv. Cor. Box		10.34	4.69

Tie 2 Navy M.H.^s to Corners
of Main Bldg. from 11-23-48
CIR. of M.H.^s



BMBP
5.81M
d. 7.25

2.84	12.84	10.00
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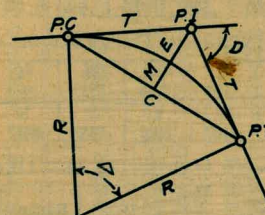
nly M.H. Rint	4.88	+7.96
" " Inv.	20.83	-7.99
sly " Rint	4.49	+8.35
" " Inv.	20.67	-7.83

1.6 @ nly M.H. to inside



DIETZGEN'S RAILROAD CURVE AND REDUCTION TABLES

Copyright, 1914, by Eugene Dietzgen Co., New York City



CURVE FORMULAS

- Radius= $R = \frac{50}{\sin \frac{D}{2}}$ (1) Degree of Curve= D and $\sin \frac{D}{2} = \frac{50}{R}$ (2)
Tangent= $T = R \tan \frac{\Delta}{2}$ (3) Length of Curve= $L = 100 \frac{\Delta}{D}$ (4)
Middle ordinate= $M = R(1 - \cos \frac{\Delta}{2})$ (5) $= R \text{vers} \frac{\Delta}{2}$ (6)
External= $E = T \tan \frac{\Delta}{4}$ (7) $= R \div \cos \frac{\Delta}{2} - R$ (8) $= R \text{exsec} \frac{\Delta}{2}$ (9)
Long Chord= $C = 2 R \sin \frac{\Delta}{2}$ (10) $\Delta = \text{Central Angle}$

EXPLANATION AND USE OF TABLES

Stations.—Given P. I.—Sta. 161+60.35 to find Sta. of P. C. and P. T. $\Delta = 62^\circ 10'$ $D = 8^\circ 20'$. From Table IV for 1° curve $T = 3454.1$ and $+8\frac{1}{2} = 414.49$ ft. From Table V correction $= .36$ or $T = 414.85$ ft. P. C.—Sta. P. I.— $T = 157 + 45.50$. Also from (4) $L = 746.00$ and P. T.—Sta. P. C. + $L = 164 + 91.50$.

Offsets.—Tangent offsets vary (approximately) directly with D and with square of the distance. Thus tangent offset for Sta. 158 on above curve is 2.16 ft. found as follows. From Table III tangent offset for 100 ft. $= 7.27$ ft. Distance $= 158 - \text{Sta. P. C.} = 54.50$, hence offset $= 7.27 (54.50 \div 100) = 2.16$ ft. Also square of any distance divided by twice the radius equals (approximately) the distance from tangent to curve. Thus $(54.50)^2 \div (2 \times 688.26) = 2.16$ ft.

Deflections.—Deflection angle $= \frac{1}{2} D$ for 100 ft., $\frac{1}{4} D$ for 50 ft., etc. For c ft. $= (\text{in minutes}) .3 \times C \times D^\circ$ or $= \text{defl. for 1 ft. from Table III} \times C$. For Sta. 158 of above curve $= .3 \times 54.5 \times 8\frac{1}{2} = 136.2'$ or $2^\circ 16.2'$, or $= 2.50 \times 54.5 = 136.2'$ from Table III. For Sta. 159 deflection angle $= 2^\circ 16.2' + 8^\circ 20' \div 2 = 6^\circ 26.2'$, etc.

Externals.—May be found in similar manner to tangents. Thus E for curve above is 115.37. For from Table IV for 1° curve $E = 960.6$ for $8^\circ 20' = 960.6 \div 8\frac{1}{2} = 115.27$ and from Table V correction $= .10$ or $E = 115.37$ ft. Or suppose $\Delta = 32^\circ$ and E is measured and found to be 42 ft. What is D ? From Table IV $E = 230.9$ and $+42 = 5.5$ or $D = 5^\circ 30'$.

DIA
HOR

FR

Enter on
of the st
stadia cor
run vertic
line repre
location o
the dotte
gives the
from the
"f + c"
be addec
Distance
scale plu
5° of vert
is the V

© 189



38268
20.92

76536
344412
765360
8005665.6

7.11
2.60
4.51

+40



Top 6" C.I. Water
6 ± N of M.H. = 4.95

Blot 3 50 finish
10" sub. grade
2.67 OK

53219
51499
17.20
7.20
24.40

5291
54659
6.32

7.20
13.50

6.85
4.90
6.95
DISTANCES FROM CENTER OF ROADWAY FOR
CROSS-SECTIONING.
Roadway 16 feet wide. Side Slopes 1 on 1 1/2
For Single Track Embankment.

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

Example—If point is 22.6 ft. above grade, how far should it be from center line to be a slope stake point? Ans. from Table 41.9. For some 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 = 47.9. For slopes of 1 on 1 see inside of front cover.