

2032

STP

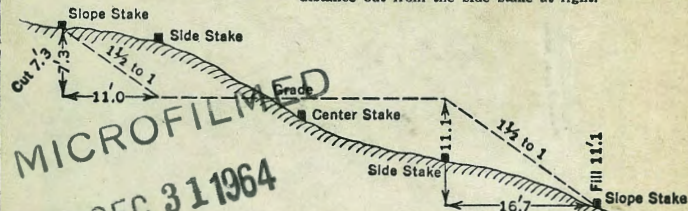
182

LEVEL BOOK

1832

**DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING
Roadway of any Width. Side Slopes 1½ to 1.**

In the figure below: opposite 7 under "Cut or Fill" and under .3 read 11.0, the distance out from the side stake at left. Also, opposite 11 under "Cut or Fill" and under .1 read 16.7, the distance out from the side stake at right.



Cut or Fill	Distance out from Side or Shoulder Stake										Cut or Fill
	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
0	0.0	0.2	0.3	0.5	0.6	0.8	0.9	1.1	1.2	1.4	0
1	1.5	1.7	1.8	2.0	2.1	2.3	2.4	2.6	2.7	2.9	1
2	3.0	3.2	3.3	3.5	3.6	3.8	3.9	4.1	4.2	4.4	2
3	4.5	4.7	4.8	5.0	5.1	5.3	5.4	5.6	5.7	5.9	3
4	6.0	6.2	6.3	6.5	6.6	6.8	6.9	7.1	7.2	7.4	4
5	7.5	7.7	7.8	8.0	8.1	8.3	8.4	8.6	8.7	8.9	5
6	9.0	9.2	9.3	9.5	9.6	9.8	9.9	10.1	10.2	10.4	6
7	10.5	10.7	10.8	11.0	11.1	11.3	11.4	11.6	11.7	11.9	7
8	12.0	12.2	12.3	12.5	12.6	12.8	12.9	13.1	13.2	13.4	8
9	13.5	13.7	13.8	14.0	14.1	14.3	14.4	14.6	14.7	14.9	9
10	15.0	15.2	15.3	15.5	15.6	15.8	15.9	16.1	16.2	16.4	10
11	16.5	16.7	16.8	17.0	17.1	17.3	17.4	17.6	17.7	17.9	11
12	18.0	18.2	18.3	18.5	18.6	18.8	18.9	19.1	19.2	19.4	12
13	19.5	19.7	19.8	20.0	20.1	20.3	20.4	20.6	20.7	20.9	13
14	21.0	21.2	21.3	21.5	21.6	21.8	21.9	22.1	22.2	22.4	14
15	22.5	22.7	22.8	23.0	23.1	23.3	23.4	23.6	23.7	23.9	15
16	24.0	24.2	24.3	24.5	24.6	24.8	24.9	25.1	25.2	25.4	16
17	25.5	25.7	25.8	26.0	26.1	26.3	26.4	26.6	26.7	26.9	17
18	27.0	27.2	27.3	27.5	27.6	27.8	27.9	28.1	28.2	28.4	18
19	28.5	28.7	28.8	29.0	29.1	29.3	29.4	29.6	29.7	29.9	19
20	30.0	30.2	30.3	30.5	30.6	30.8	30.9	31.1	31.2	31.4	20
21	31.5	31.7	31.8	32.0	32.1	32.3	32.4	32.6	32.7	32.9	21
22	33.0	33.2	33.3	33.5	33.6	33.8	33.9	34.1	34.2	34.4	22
23	34.5	34.7	34.8	35.0	35.1	35.3	35.4	35.6	35.7	35.9	23
24	36.0	36.2	36.3	36.5	36.6	36.8	36.9	37.1	37.2	37.4	24
25	37.5	37.7	37.8	38.0	38.1	38.3	38.4	38.6	38.7	38.9	25
26	39.0	39.2	39.3	39.5	39.6	39.8	39.9	40.1	40.2	40.4	26
27	40.5	40.7	40.8	41.0	41.1	41.3	41.4	41.6	41.7	41.9	27
28	42.0	42.2	42.3	42.5	42.6	42.8	42.9	43.1	43.2	43.4	28
29	43.5	43.7	43.8	44.0	44.1	44.3	44.4	44.6	44.7	44.9	29
30	45.0	45.2	45.3	45.5	45.6	45.8	45.9	46.1	46.2	46.4	30
31	46.5	46.7	46.8	47.0	47.1	47.3	47.4	47.6	47.7	47.9	31
32	48.0	48.2	48.3	48.5	48.6	48.8	48.9	49.1	49.2	49.4	32
33	49.5	49.7	49.8	50.0	50.1	50.3	50.4	50.6	50.7	50.9	33
34	51.0	51.2	51.3	51.5	51.6	51.8	51.9	52.1	52.2	52.4	34
35	52.5	52.7	52.8	53.0	53.1	53.3	53.4	53.6	53.7	53.9	35
36	54.0	54.2	54.3	54.5	54.6	54.8	54.9	55.1	55.2	55.4	36
37	55.5	55.7	55.8	56.0	56.1	56.3	56.4	56.6	56.7	56.9	37
38	57.0	57.2	57.3	57.5	57.6	57.8	57.9	58.1	58.2	58.4	38
39	58.5	58.7	58.8	59.0	59.1	59.3	59.4	59.6	59.7	59.9	39
40	60.0	60.2	60.3	60.5	60.6	60.8	60.9	61.1	61.2	61.4	40

KEUFFEL & ESSER CO., N. Y.

2032
SEWAGE
TREATMENT
PLANT

4th Book

The paper in this book No. 373A
is made of 50% high grade rag stock
with a WATER RESISTING surface sizing.

- 1- Check Anchor Bolts - Eng. Room
- 5 Sub GRADE ABCD - Sludge Pump Bldg -
- 6 Ex. Floor Elev. Room Above Main Pump Room.
- 7 Eng. Bases - 1st Fl. Main Bldg -
- 8 Pipe Hanger Holes -
- 9-14 check Anchor Bolts Eng. Room
- 15-14 Layout Stack (12" PIPE) ^{STACK} ^{TO} ^{WET WELL}
- 16 Ref. Pts. Floor below Eng. Room
- 17 Locate Flow Box & Condu. dig. #2 to #3
- 18-19 check 12" Air Ex. and Sludge & SCUM
- 20-21 Track Levels S. & Fly from Main Bldg.
- 22-23 check Corbels & Anchors dig. #5
- 24 check 10" Wash Line
- 25 " 8" Vit. dr. #3 Dig
- 26-31 Levels on Harbor Drive
- 32 Levels top Dig #6
- 33-35 check Baffles effluent trough Cl #1
- 37 Vac. Filters

- 38-39 Check 8" A.B.C., dig. 5 and dig. 6 75. Floor Elev. for Pumps
- 40 Roof Eng. Room R.P.
- 41-43 Locate 8" Steam Line dig. #6 to ^{Cover} _{Room}
- 45-46-47 Eng. Bases #1, #2, #4 + Rt & L drives
- 48-73 New Ely ELUT TANK
- 49-51-54 1 sec Spur track W of CL #1 79 Elev on catwalk of C/#1
- 55 Levels for drainage S of cl. #1
- 56 Locate 8" "A" Line and Sludge Line
- 57 " M.H. Natl City Meter
- 58 Check Eng. #4
- 59 Locate Elect Cond. + Pull Box S.E. of Sludge ST
- 60-61 Check Eng. Shafts #1, #2, #3, #4
- 62 Locate Propane tank S.E. of Sludge Storage
- 63-65 Add'l. Levels Harbor Drive
- 66-67 Locate 3" Water + 8" gas Line S. of dig. #6
- 68-77-78 New wly ELUT tank
- 69 Elev. Floor Beam, Main Eng. Room
- 70-71 Sketch for change of 10²-15" Lines at stack
- 72 Set B.M.^s Top cl. #1 and #2
- 74 Locate 6" + 8" Lines Heat Exchanger Bldg
Bet. #5 and #6 dig.

5-20-49 Check Anchor Bolts
ENGINE ROOM

π
0+36.21 S Meas.

✓ 0+31.53 0+36.22

✓ +32.77 +36.22

✓ +34.195 +36.21

✓ +35.605 "

✓ +37.035 "

✓ +38.455 +36.20

✓ +39.85 +36.19

✓ +40.695 +36.18 (X)

S 0+39.79 = π S

✓ 0+31.54 Meas. 0+39.79

✓ 0+32.785 0+39.78

✓ +34.205 +39.79

✓ +35.59 +39.80

✓ +37.03 +39.79

✓ +38.46 39.77

✓ +39.87 39.78

✓ +40.70 39.79

π S
0+41.08 S

✓ 0+30.51E Meas. 41.08

✓ 0+30.885E "

π S
41.415 Meas

✓ 0+30.57 41.41

✓ 0+30.88 "

π S

0+30.79 S Meas.

✓ 0+31.54 0+30.80

✓ 0+32.785 +30.79

✓ 0+34.19 +30.78

✓ 0+35.625 +30.79

✓ 0+37.04 +30.79

✓ 0+38.45 +30.78

✓ 0+39.88 +30.79

✓ 0+40.70 +30.775

π S S. Meas.

0+32.08

✓ +32.08 0+30.505

✓ 0+32.08 0+30.88

π S

0+27.21 S Meas

0+31.54 ✓ 0+27.22

0+32.76 ✓ +27.22

0+34.17⁰² ✓ +27.21

0+35.595 ✓ +27.21

0+37.02 ✓ +27.195

0+38.445 ✓ +27.20

0+39.85 ✓ +27.20

+40.69 ✓ 0+27.19⁰²

π S S. Meas.

0+32.415

✓ +32.415 30.505

✓ +32.415 +30.88

Check Elev. Anchor

TOPS
Bolts

5-23-49.

(1306)

Z

Anchor	Check Elev.	Anchor	TOPS Bolts	Design	Anchor	Check Elev.	Anchor	Design
B.B. BM	349	1459	11.10		+3208	1.38	11.68	11.63
T.P.	1.66	(1305)	3.19	11.40	"	1.39	.67	Design
0+2721	0.51		0.70	12.36	0+3245	1.38	.68	
	0.		0.71	12.35		1.39	.67	
	0.		0.71	5	+3621	0.72	12.34	.03 low 12.37 Design
	0.		0.70	6		0.72	4	.03 low
	0.		0.70	6		0.71	5	
	0.		0.71	5		0.72	4	.03 low
	0.		0.70	6		0.71	5	
	0.		0.70	6		0.70	6	
+3079	0.51		0.71	5		0.69	7	
	0.		0.70	6		0.67	9	
	3		0.71	5	0+3979	0.73	3	.04 low
	4		0.70	6	(5)	0.74	2	.05 low
	5		0.69	7		0.71	5	
	6		0.68	8		0.72	4	.03 low
	2	.03 high	0.67	12.39		0.69	7	
	8 = E		0.68	8		0.71	5	
						0.70	6	
						0.69	7	

(1306)

3

0 + 4.108 ① W

1.44

11.62

11.63

design

② E

1.44

+ 4.145 ③ W

1.44

④ E

1.44

Sunday - 5/11/1914

16

10

11/12

13

A-13-C-D. Check sub. gr
HI 5-23-49

3.26 14 36 11 10

9.36 500 design
invert

949

938

Random Reading
942

sub grade
943

947

960

945

925

5-23-49.

Baseline
INSIDE
E. Wall

RT.

6

Ex. Floor Elev. Room above

Main Pump Room

Main Bldg.

@ +4.50

0137

0128

0119

0110

0100 = N. inside Wall

RM. Mark 0.00 (+0.68)

on S. Wall

of This

Room

+0.68



-440	-445	-454	-450	-444
508	513	522	518	512
-437	-444	-441	-444	-442
505	512	513	512	510
-439	-446	-444	-444	-443
507	514	512	512	511
-440	-442	-444	-441	-442
508	510	512	509	510
-437	-437	-440	-436	-438
505	505	508	504	506
		12	18	24
				West Wall

Check Eng. Bases

Main Fl.
Main Bldg.

(34.995)

5-25-49

Set. Mark B.M.
NE Wall Upper Wall

40.005 (35.00)

(1)

B.M. 42x (4.26) 40.02

NE Top Base 4.8 30.515

NE Top Con Pion 1.44 2.82

SE " " 4.8

SE " " 1.44

Set Elev. Fan shaft Basement
Main Bldg.

SW " " 1.44

NW " " 1.44

B.M. Basement 413 (4.15) 40.02 Main Bldg.

NE " " 4.15 0.12

CTR Fan shaft 43.50

SE Ax. & Sw & CTR 4.15

Small ~~Eng.~~ Base
N. of Furnace

NW Top Con Pion 4.15

B.M. 409 (4.11) 40.02

Vi Pump

Eng. Bases, Top Floor Main

B.M. Top Dig #1 3.135 (37.135) 34.00

NE Con 4.07 40.04

NW Top 3.34 33.795

SE " 4.09 40.02

NE " 3.34

SW 4.08 40.03

SW " 3.34

NW 4.07 40.04

SE " 3.34

SW 6.62 30.515

NW 6.62

T.P. 487 (34.995) 7.01 30.125

Check Anchor Bolts

Eng. Room

9

S 39.79 = T Meas E as set

S 30.79 = T Meas E as set

X	39.76	39.79	0453.58	53.66	X
X	39.76	39.79	54.41	54.44	X
X	39.76	39.79	55.86		
✓	39.78		57.26		
✓	39.78		58.69		
X	39.76	39.79	60.11		
✓	39.79		61.53		
✓	39.77		62.76		

	30.79		0453.60		
	30.78		+54.46		
	30.77		+55.865		
	30.78		+57.30	57.27	X
	30.79		+58.72	58.69	X
	30.78		+60.13		
	30.77		+61.53		
	30.77		+62.77		

0436.21 = T

	36.19		53.61		
	36.20		54.43		
X	36.18	36.21	55.83	55.86	X
	36.19		57.26		
	36.20		58.70		
	36.19		60.11		
	36.20		61.54		
	36.20		62.77		

S. Set 4 Anchor Bolts

✓	S	34.58	63.41	E	✓
✓	S	34.58	63.78	E	(63.75) X
✓	S	34.91	63.71		✓
✓	S	34.92	63.78		(63.79) X

Ancho - Bolts

S 2721 = T (Meas. E. as is)

0 + 2720	+ 53.57	53.61	X
+ 2721	+ 54.41	54.44	X
+ 2720	+ 55.85		
+ 2721	+ 57.26		
+ 2721	58.69		
+ 2721	+ 60.10		
+ 2720	+ 61.51		
+ 2719	+ 62.73	62.76	X

Set 4 Bolts

02 ✓ S 0 + 25.90	Y + 63.35	E (63.42)
02 ✓ S 0 + 25.90	X + 63.72	E (63.75)
✓ S + 25.57	X 63.35	E (63.42)
✓ S + 25.57	X 63.72	E (63.75)

S. 0 + 0921 = T (Meas. E. as is)

10

0 + 0920	0 + 53.59	
+ 0921	+ 54.41	X 54.44
+ 0920	+ 55.88	
+ 09.19	+ 57.29	
+ 09.19	+ 58.69	
+ 09.19	+ 60.12	
+ 0920	+ 61.52	
+ 09.19	+ 62.77	

S 0 + 1279 = T

E as is

0 + 12.80	0 + 53.59	
+ 12.81	0 + 54.42	
+ 12.80	+ 55.84	
+ 12.79	+ 57.29	
+ 12.77	+ 58.69	
+ 12.81	+ 60.11	
+ 12.80	+ 61.50	
+ 12.78	+ 62.81	X 62.76

Set 4 Bolts

S 0+07.57 0+63.44 E
 S 0+07.57 0+63.81 X E (63.75)
 S 0+07.90 0+63.44 E
 S 0+07.90 0+63.81 X E (63.75)

S 0+21.79 = T Meas E as is

21.79 X +21.82 0+53.60
 21.81 +54.46
 21.81 +55.86
 21.79 +57.26
 21.79 +58.68
 No Bolt No Bolt?
 No Bolt " " ?
 0+21.78 0+62.74

S 0+18.21 = T

0+18.21 Meas. E. as is
 0+53.60
 +18.21 +54.44
 +18.21 +55.86
 +18.21 +57.25
 +18.20 +58.70

No Bolt ?
 " " ?
 " " ?

0+18.22 0+62.76

Set 4 Bolts

S 0+16.57 0+63.39 X E (63.42)
 S 0+16.57 0+63.39 X E (63.42)
 S 0+16.90 0+63.76 E
 S 0+16.90 0+63.76 E

13.13(16)
12.83(4)

Elev^s of Anchor Bolts

BM	346	1x56	11.10	
T.P.	1.72	(13.87)	2.41	12.15
Set 4 Bolts Beg. on West on ALL				
0+0757		1.45	12.42	12.38
"		1.44	12.43	
0+0790		1.44	12.43	
"		1.44	12.43	
0+0921		0.75	13.12	Beg. West
"		0.78	13.09	
"		0.77	13.10	
"		0.76	13.11	
"		0.77	13.10	
"		0.76	13.11	
"		0.77	13.10	
"		0.78	13.09	END EAST
0+1279		0.77	13.10	Beg. W
"		0.77	13.10	
"		0.77	13.10	

13.87
→

12

0+1279	0.76	13.11	
"	0.76	11	
"	0.77	10	
"	0.78	09	
"	0.77	10	end E
4 BOLTS			
0+1657	1.44	12.34	w 12.38
"	1.45		E
+1690	1.44		w
"	1.45		E
0+1821	0.77		Beg. West
"	0.74		
"	0.76		
"	0.76		
"	0.78		
"			no BOLT
"			" "
"	0.78		

(13.87)

0 + 21.79 Beg. West 0.77

" 0.80

" 0.78

" 0.77

" 0.78

" 1/2 Bolt

" "

" 0.80

Set 4 Bolts

0 + 25.87 Beg. W. 1.49 12.38 12.38

" 1.49

+ 28.90 1.49

" 1.49

0 + 27.21 Beg. West 0.77 13.10 13.13

" 0.77

" 0.76

" 0.77

" 0.79

(13.87)

13

0 + 27.21 0.77

" 0.78

" 0.78

0 + 30.79 Beg. West 0.77 13.10 13.13

" 0.79

" 0.77

" 0.76

" 0.78

" 0.77

" 0.78

" 0.76

4 Ann. Bolts

0 + 34.58 1.44 12.43 12.38

" 1.44

0 + 34.91 1.44

" 1.45

(13.87)

013821 Beg. W. 0.75 13.12 13.13

" 0.76

" 0.76

" 0.76

" 0.74

" 0.74

" 0.75

" 0.78

013979 Beg. W. 0.77 13.10

" 0.78

" 0.75

" 0.77

" 0.77

" 0.78

" 0.76

" 0.77

C-2-49

Layout Stack

TOP Bolt
 BM S.E. Cor. 449 13.74 925
 M. Bldg. 2023-50 = 15" VCLINES
 1999-57 = Stack Ties

1	Sub. Cor.		+ 2.0
2		11.74 4.79	11.74 5.13 C 6.61
3			11.74 5.09 C 6.65
4		11.74 5.52	11.74 5.20 C 6.54
5		11.74 5.24	11.74 5.09 C 6.65
6		11.74 5.19	11.74 5.09 C 6.65
7			11.74 5.09 C 6.65
8			11.74 5.19 C 6.55

Air ^{OTHER} Exhaust 1999-58-69

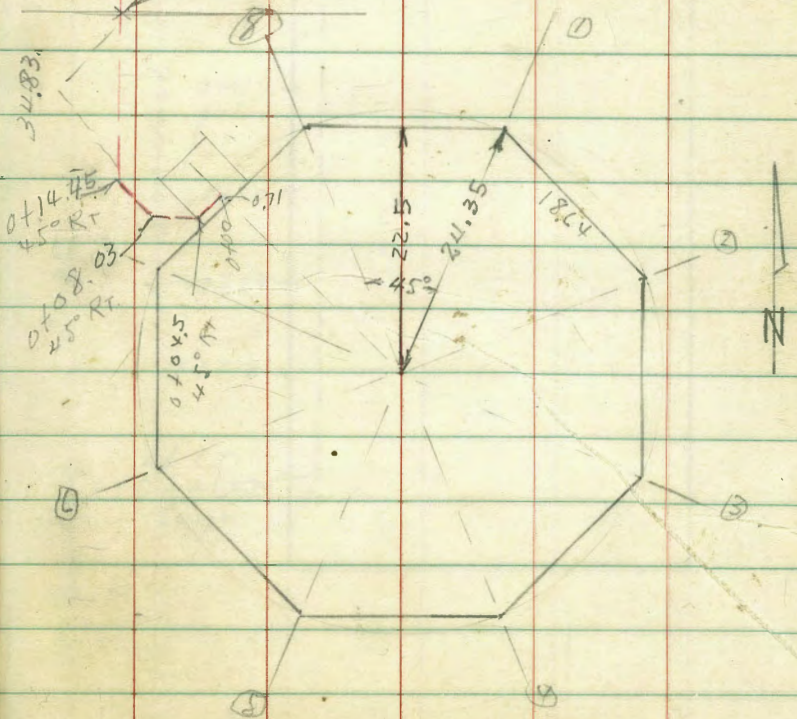
15

P. 44 For Sub. Check

0 + 0.45	45° RT	+ 0.50	F 0.79
0 + 0.803	45° RT	+ 0.40	F 0.57
0 + 12.83	"Tee" calc.	+ 0.25	C 0.70
0 + 14.45	45° RT	+ 0.23	

M Bldg.

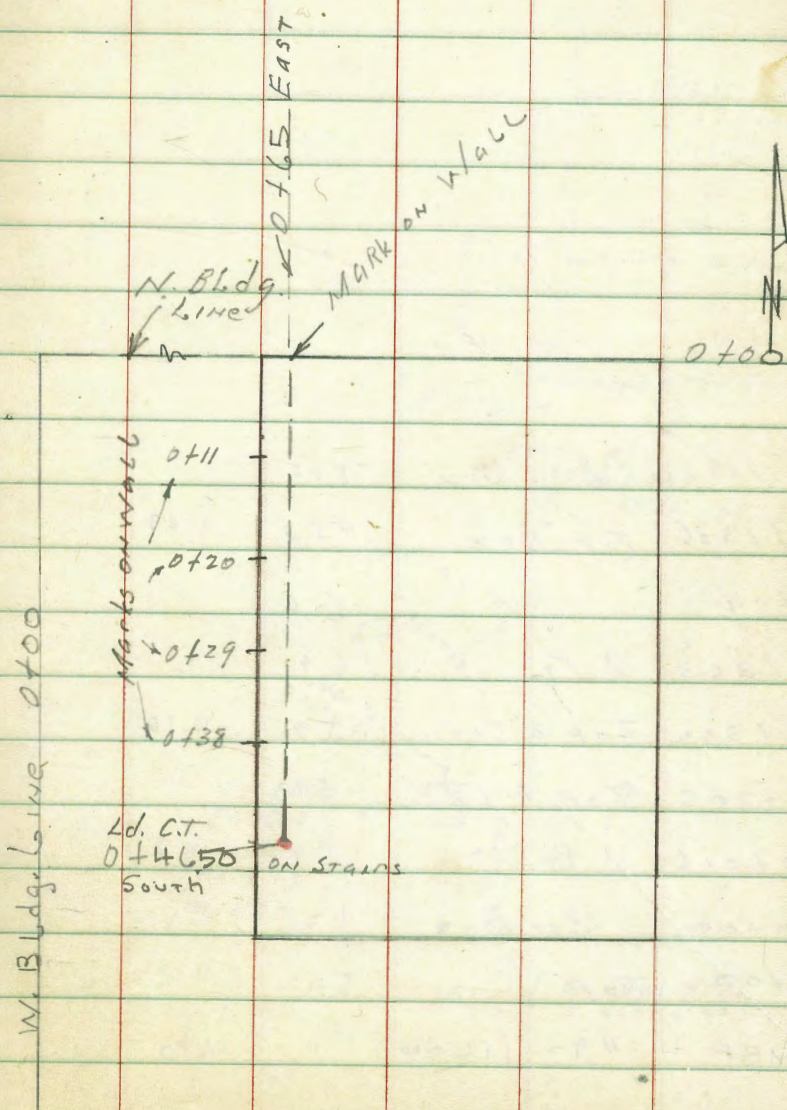
12" to wet well
 0 + 14.928
 5.09
 cross



C-13-49 Sub. gr. Corrd.
 BM 3.97 13.22 925
 T.P. 4.53 6.82 10.93 2.29
 4.82 2.00

Ref. Pts. ON FLOOR

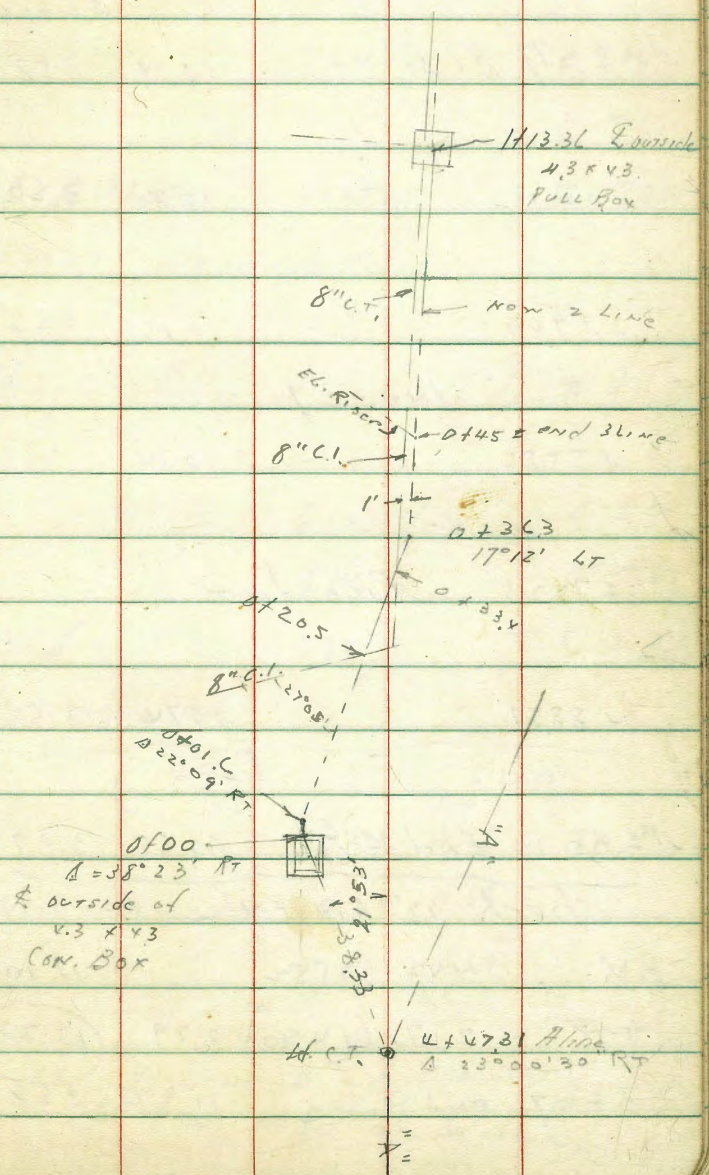
Below Main Eng. RM.



3 line

Locate Pull Box & Conduit
 dig #2 7. #3

1+1330	Bot. Box	575	
1+1336	Top Box	453	11.47
1+09		66	9.4
0+303	Δ Pt	69	9.1
0+330	Top 8" CI Pipe	590	10.10
0+205	Top 8" CI Pipe	583	
0+016	Δ Pt	66	9.4
0+00	Bot. Box	626	
0+00	Tap	502	11.0
BMBP	490 (1600)		11.10



6-8-49 12" Air Exhaust Line Cl#2
check sub-gr. stakes (Hanks)

BM	3.22	14.32	11.10	
			Sub-gr	
3706.77 BCR		10.74	3.58	
+23.13		10.80	3.52	
+39.49		10.76	3.56	
	Inv. +3.70			
+55.85		10.74	3.58	
+72.21	Pipe dict			
+88.57		10.74	3.58	

4700.10 End of Ex. line 10.65 3.67 = Inv.

check 12" AIR EX - 6-13-49

BM	4.42	15.52	11.10	
TIP	2.17 (14.90)	2.79	12.73	TIP
3707 end pipe		11.32	3.58	Inv 1260w

check Sludge Cuts (Hanks) Cl#1

BM	5.40	14.66	9.26	Cutsy
			5' stub	
2750			5.24	C. 6.16
2775			5.75	C. 5.61
3700.36	A. 33'45"		4.33	C. 7.03
3722	out			NO MORE FD

check Sewer Cuts Cl#1

1770			5.14	C. 5.50
2700			5.05	C. 5.57
2736.33	A. 33'45"		4.75	C. 5.88
				NO MORE FD

(14.90) 6-13-49

3740	10.24	4.66	TOP
3757	10.22	4.68	"
3780	10.29	4.61	"

TIP on 3" ELbow
1st 3" line E of catwalk
Cl. #2 MKD on Wall

8" C.I.
Check Sludge Line 6-13-49

CL #1 to S.P.B.

Sketch 2023-67

1999-38+39

BM 5.40 (14.66) 9.26

2+10 Top Pipe 11.09

2+40 " " 11.02

2+70 " " 10.92

3+00.36 A " " 10.92

3+30 " " 10.81

3+60 " " 10.55

3+90 " " 10.30

19
Check Sewer Line

CL #1 to S.P.B. 6-13-49

F.B. 2023-67

line o.k.

(14.66)

1+30 Top Pipe 10.25

1+60 " " 10.19

1+90 " " 10.26

2+17 end Inv. 10.95
PIPE

BM 5.77 (15.03)

2+36.33 A 33' 45" LT 10.15

2+50 " " 10.13

2+74 " " 10.19

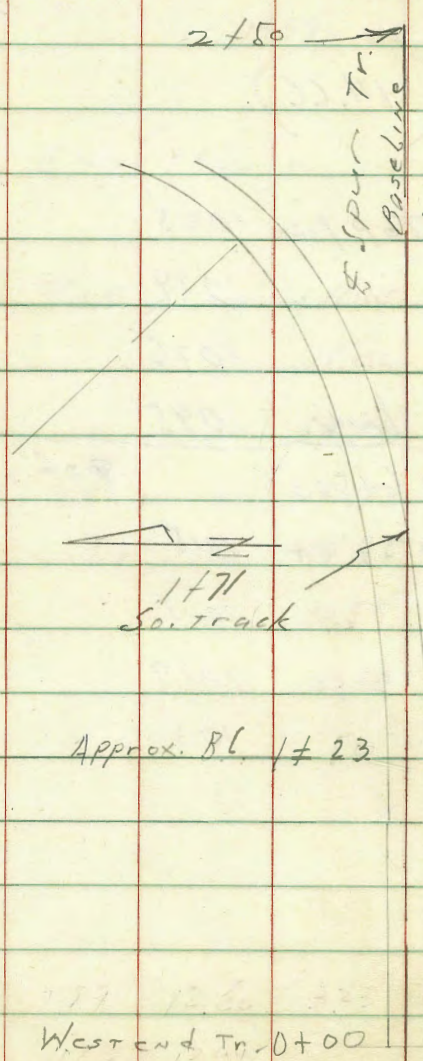
2+96 " " 10.30

9.26 Levels
6-15-49

Top Pipe

Track Levels, S + E Ly
of Main Bldg.

6-14-29



1+50
1+23
1+00
0+50
0+00

Approx. B.C. 1+23

67 86 B. 20

	$\frac{5.49}{10}$	$\frac{5.42}{3.0}$	$\frac{5.45}{1.74}$	$\frac{5.34}{10}$	
T.P.	4.51	(13.76)	3.54	9.25	
	$\frac{4.59}{10}$	$\frac{4.51}{2.35}$	$\frac{4.52}{2.35}$	$\frac{4.62}{10}$	$\frac{4.45}{20}$
	$\frac{4.63}{10}$	$\frac{4.63}{2.35}$	$\frac{4.63}{2.35}$	$\frac{4.65}{10}$	$\frac{4.71}{20}$
	$\frac{4.98}{10}$	$\frac{4.76}{2.35}$	$\frac{4.75}{2.35}$	$\frac{5.05}{10}$	$\frac{5.09}{20}$
T.P.	5.24	(12.79)	5.53	7.55	
	$\frac{4.96}{20}$	$\frac{5.02}{10}$	$\frac{5.00}{2.35}$ Fail	$\frac{5.00}{2.35}$ Fail	$\frac{5.15}{10}$
TOP B.M. Bolt	3.83	(13.08)		9.25	
12' SE of S.E. Cor Main Bldg.					

Lt

Rt

Rt

21

2750

44	5.00	5.00	4.7	50	5.1	4.5
39	29	23	70		70	20
	N. Rail	S. Rail				

2700

5.2	5.21	5.20	5.19	5.2
20	70.2	5		70
	N Rail	S. Rail		

1771

5.25	5.39	5.34	5.30
75	5	Rail	70
	Rail	Rail	

(1376)

13.76

Check Corbels Dwg. 5

6-15-49

2023 P. 35 = Sketch of #4

(24.47)

13.37 (24.47) 11.10

10.25
10.19

#17 ✓

10.23
10.23

18 ✓

10.22
10.25

03

#	✓	Numbered Counter Clockwise	10.22 10.24	14.25 ✓ 14.23	D2
1	✓		10.22 10.22	OK	
3	✓	Corbels on #5 same as #4	10.24 10.23	10.23 10.24	
4	✓		10.23 10.23		
5	+0.3		10.21 10.21	10.26 10.26	
6	-0.1		10.20 10.20	10.27	
7	+0.1		10.23 10.22		
8	✓		10.23 10.22		
9	✓		10.22 10.21		
10	✓		10.22 10.23		
11	+0.2		10.23 10.23	14.24	
12	✓		10.22 10.24		
13	✓		10.26 10.25	14.31 14.22	OK 03
14	✓		10.23 10.24		
15	-0.3		10.24 10.23		
16	✓		10.23 10.24		

10.23
10.23
10.22
10.25

03

Check Anchors, 2023 P 35

Dig #5

(24.47)

#	clock wise		
1		11.17	13.30
2		11.18	
3		11.25	13.22
4		11.14	13.33 ✓
5		11.17	
6		11.15	
7		11.16	
8		11.16	13.31
9		11.16	
10		11.16	
11		11.16	
12		11.17	

Anchors Reversed from #4 to #12
check + 0.06 on location

Check 10" Wash Line

6-16-49. from Ch. #2 SLY

T.P. 292 (1565) 1273
P. 18

4+21 Present end Pipe ~~98~~ ⁵ ~~767~~ TOP PIPE

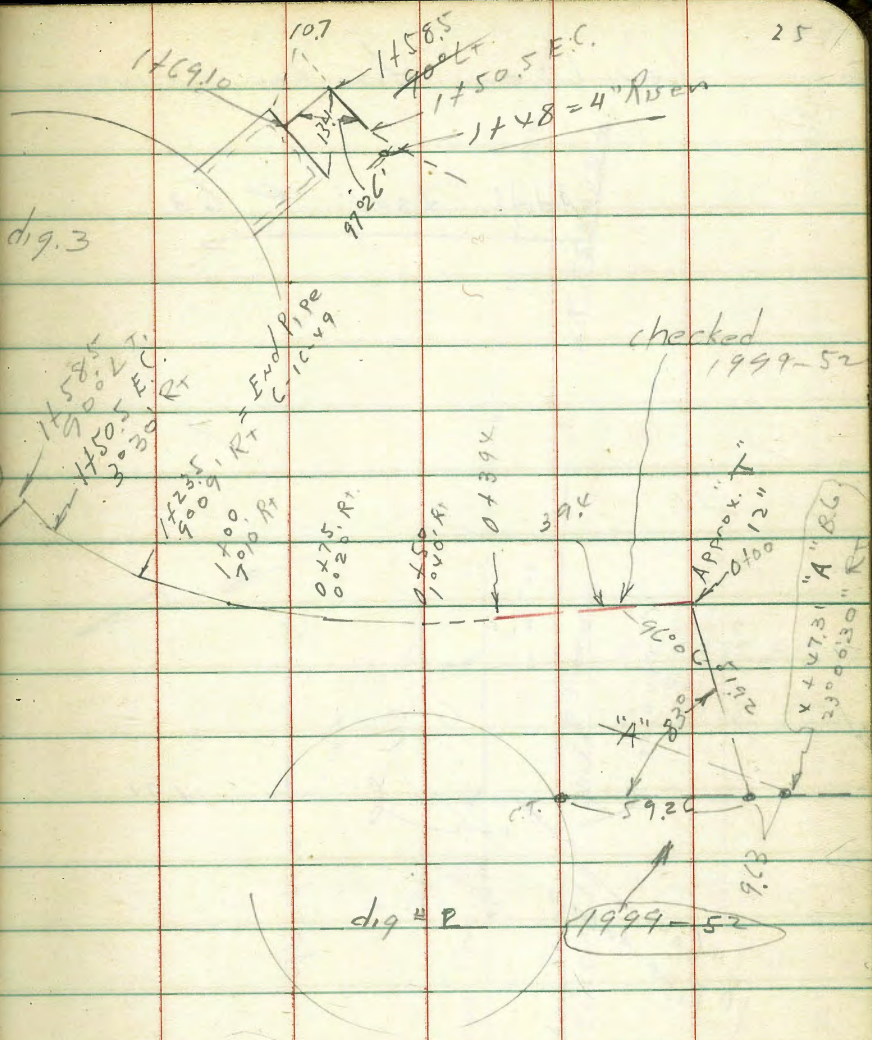
4+32 85 D 22 1/2" R ~~90~~ ⁵ ~~75~~ "

4+77+9 D 22 1/2" R 992 573 "



Check 8" Yr da Dig. #3
 to 12" Drain from Cl. #2

Top Conc. Box	1.60	11.86	
1469.1 out Side Box	11.11	2.35	Top Pipe
1458.5 = A 90° L	11.09	2.37	Top Pipe
1450.5 = E.C. 30° RT	11.11	2.35	Top Pipe
1448 = Top 4" Riser	6.28	7.18	Top 4" Riser
T.P. 243	13.46	3.15	11.03
B.M. P18	1.45	14.18	12.73
14235 A 90° RT	13.54	2.13	TOP END PIPE 6-16-49
1400 A = 7° 10' RT	13.90	1.75	TOP
0475 A 0° 20' RT	14.48	1.17	TOP
0450 A 1° 40' RT	15.00	0.65	TOP PIPE
04394	F.B. 1999-52		
T.P. P-18	2.92	15.65	12.73



Harbor Dr

1700

67	10 ⁷	10 ⁶	11 ³	11 ⁵
6.40	7.0	6.5	5.8	5.6
23	13	10	8	

BL = S.L.
Harbor Dr. 27

0780

10 ⁸	10 ³	10 ⁸	11 ⁴	11 ⁶
6.26	6.8	6.3	5.7	5.5
23	13	10	8	

Notes
Reduced
7/13/99
(Egg)

0760.5

11 ⁰	10 ⁵	10 ⁹	11 ⁴	11 ⁶
6.13	6.6	6.2	5.7	5.5
23	13	10	8	

0740

11 ⁴	10 ⁶	11 ⁰	11 ⁷	11 ⁸
5.99	6.5	6.1	5.4	5.3
23	13	10	8	

0719.5

11 ²³	10 ⁷	11 ⁵	11 ⁹	12 ⁰
5.90	6.4	5.6	5.2	5.1
23	13	10	8	

0700

11 ³²	10 ⁹	11 ⁶	12 ⁰	11 ⁸
5.81	6.2	5.6	5.1	4.9
23	13	10	8	

T.P. 4.35 17.13 405 12.78

B.M. 5.73 16.83 11.10

17.13

Harbor Dr.

2706

1794 18" Cor. Pipe drain

738
9.75
59.7
1000
cleaning
Box

1786

1775 10.3 LT N. side PP 3591

1760

1740

1720

17.13

LT n13 BL

28

10²⁰ 9³ 10⁴ 10⁸
10 9.3 7.8 6.7 6.3
23 13 70

10²⁵ 10²⁸ 7⁵³ 7⁶ 10⁹ 10⁹
6.88 7.05 9.60 9.5 6.2 6.7
23 10.7 10.7 9 5
hd w/ top 1000 x

10³⁰ 9⁶ 11⁰ 11⁰
6.83 7.5 6.1 6.1
23 12 8

10⁴² 9⁹ 10³ 10⁹ 11⁰
6.71 7.2 6.8 6.2 6.1
23 13 10 8

10⁵³ 9⁹ 10⁶ 11² 11²
6.60 7.2 6.5 5.9 5.9
23 13 10 8

10⁶⁵ 10⁰ 10⁵ 11² 11³
6.48 7.1 6.6 5.9 5.8
23 13 10 8

17.13

Harbor Dr.

2+58.75 E East Lane Pav.

LT	15.53	BK.	
940	945	953	999
5.73	6.08	6.00	5.54
23	13	10	

29

2+52.75 Harbor Dr. B.C.P.

985	941	952	1002
5.68	6.12	6.01	5.51
23	13	10	

2+50 Wedge of E Lane

949	940	949	1005
5.54	6.13	6.04	5.48
23	13	10	
CON.	CON.	CON.	CON.

2+40

946	936	957	1001	1004
5.57	6.17	6.04	5.4	5.1
23	13	10	6	
CONC.	CONC.	CONC.		

2+27.33 "A" Base Line E West Lane Pav.

1007	934	952	1002
5.46	6.19	6.01	5.51
23	12	10	

T.P 306 15.53 x66 1247

15.53

2+16.5

1015	94	97	1006
6.98	7.9	7.4	6.5
23	12	10	

17.13

17.13

3132 W. Pool Siding

$$\begin{array}{r} 953 \\ \hline 600 \end{array}$$

3120

$$\begin{array}{r} 973 \\ \hline 5.80 \\ 23 \end{array} \quad \begin{array}{r} 95 \\ \hline 6.0 \\ 13 \end{array} \quad \begin{array}{r} 99 \\ \hline 5.7 \\ 10 \end{array} \quad \begin{array}{r} 10^0 \\ \hline 5.5 \end{array}$$

3106 Top M.H. Water Meter

$$\begin{array}{r} 998 \\ \hline 5.55 \\ 15 \\ \text{Top M.H.} \end{array}$$

3101 86 LT GR F.Hyd

3100

$$\begin{array}{r} 973 \\ \hline 5.80 \\ 23 \end{array} \quad \begin{array}{r} 92 \\ \hline 6.3 \\ 13 \end{array} \quad \begin{array}{r} 99 \\ \hline 5.6 \\ 10 \end{array} \quad \begin{array}{r} 10^0 \\ \hline 5.5 \end{array}$$

2170

$$\begin{array}{r} 977 \\ \hline 5.76 \\ 23 \end{array} \quad \begin{array}{r} 94 \\ \hline 6.1 \\ 13 \end{array} \quad \begin{array}{r} 96 \\ \hline 5.9 \\ 10 \end{array} \quad \begin{array}{r} 10^2 \\ \hline 5.3 \\ 7 \end{array} \quad \begin{array}{r} 95 \\ \hline 5.0 \end{array}$$

2167 E.L. of E. Lane

15.53

$$\begin{array}{r} 978 \\ \hline 5.75 \\ 23 \end{array} \quad \begin{array}{r} 949 \\ \hline 6.04 \\ 13 \end{array} \quad \begin{array}{r} 959 \\ \hline 5.94 \\ 10 \end{array} \quad \begin{array}{r} 10^02 \\ \hline 5.51 \\ \text{Corr} \end{array}$$
15.53

Final

check to B.M. M.H. 'A' 570 926 926

T.P. 232 1496 289 1200

3180

937	99	95	98
616	66	60	57
23	13	10	

3160

950	90	93	94
603	65	62	61
23	13	10	

3140

968	93	96	94
585	62	59	61
23	13	10	

31377

E Rail siding

955
598

15.53

15.53

Levels Top Dig #6
6-17-49.

BM 1.61 35.61 34.00

Top Col. 4 3/2" 36.2 31.99

Top Steel inner edge 9.59 26.02

Top Tank 7.38 28.23

Top Steel edge 9.68 25.93

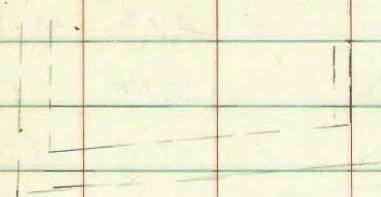
Top Col. With Rod 36.3 31.98

Check Baffles, Effl. Trough

C-20-49 Cl. # 1

BM	1090	2016	920	
T.P.	1120	3142	0.00	2016
T.P.	242	<u>2618</u>	766	2376

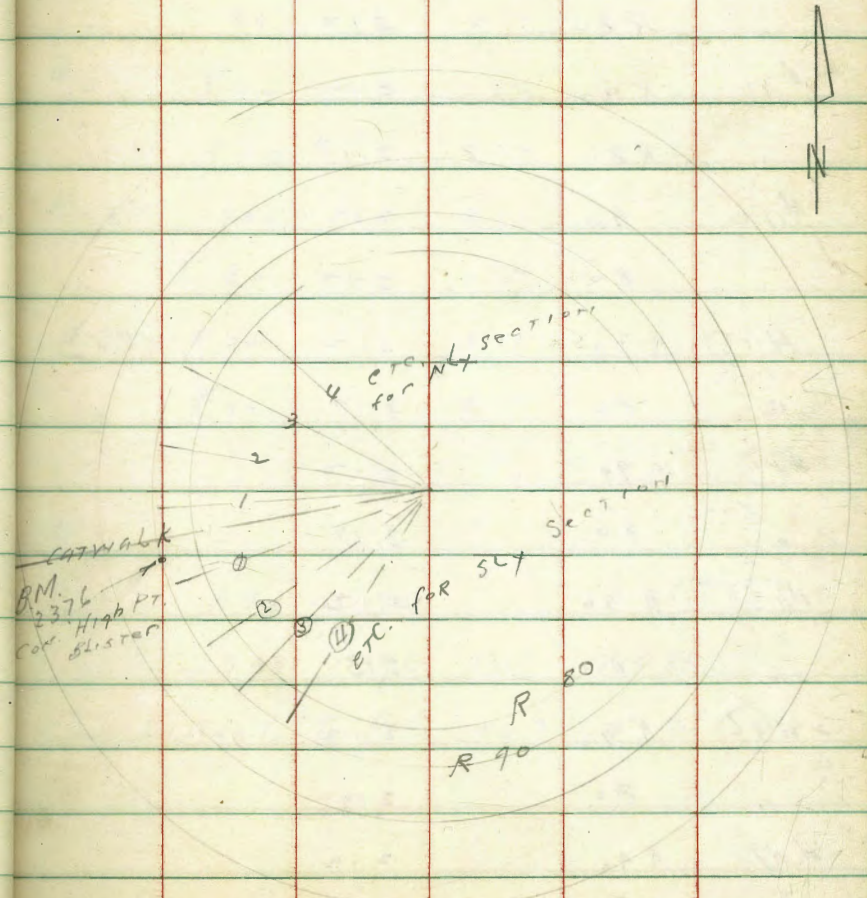
check
2376 = banks BM



2608 ✓
R40

SLY SECTION

#1	R90	212	2406
"	R80	217	
#2	R90	212	
"	R80	213	2405
#3	R90	212	
"	R80	217	
#4	R90	211	2407
"	R80	217	
#5	R90	212	
"	R80		
#6	R90	212	
"	R80	217	
#7	R90	212	
"	R80	217	



2618

5LY SECTION

#8	R 90	2.12
"	R 80	2.14
#9	R 90	2.12
"	R 80	2.11
#10	R 90	2.12
"	R 80	2.12
#11	R 90	2.12
"	R 80	2.13
#12	90	2.12
"	80	2.14
#13	R 90	2.12
"	80	2.14
#14	R 90	2.12
"	80	2.14
#15	R 90	2.12
"	80	2.13
#16	R 90	2.12
"	80	2.13
#17	R 90	2.12
"	80	2.13

2618

34

#18	R 90	2.12
"	80	2.13
#19	R 90	2.12
"	R 80	2.13
#20	R 90	2.12
"	80	2.12
#21	R 90	2.12
"	R 80	2.12
#22	90	2.11
"	R 80	2.12
#23	R 90	2.11
"	R 80	2.12

check Back to B.M.

B.M.	794	3170	23.75
	- 993	1396	781
			23.89
check Back to B.M.	469	927	926
			0.01

present
endused
45 flev.
23.77
would be OK

Nly Section Wiers #1

26.18

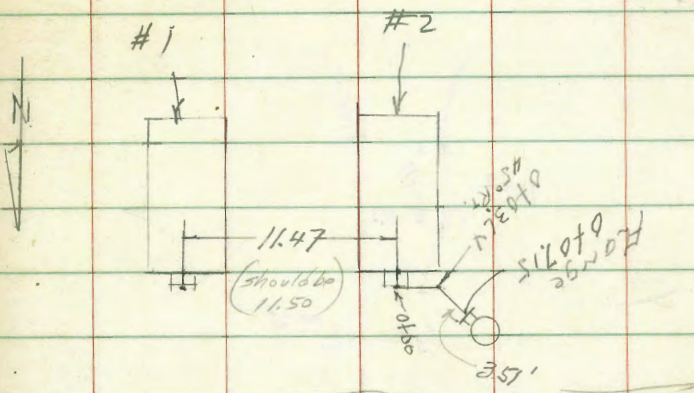
1	R 90	212	
"	80	212	
2	R 90	212	
"	80	211	
3	R 90	211	
"	R 80	212	
4	R 90	211	2407
"	R 80	214	2604
5	R 90	212	
"	R 80	215	2603
6	R 90	212	
"	R 80	214	
7	R 90	212	
"	R 80	213	End

Save for
cl #1

7/7/49

BM, Bolt 12' S.E. of SE Cor. M.B.	3.77	13.02		9.25	
T.P.	12.14	<u>22.04</u>	3.12	9.90	
East Filter	ZIRK Fitting	2.39	19.65	19.67	should be 19.67
"	" Bot. Flange	5.84	16.20	16.27	
0+00	ZIRK fitting	2.40	19.64	19.67	
"	Bot. Flange	5.84	16.20	16.27	
"	Floor Elev.	1325			
0+0364	"	1322			
0+0715	Top Cov. Collar	12.83			
"	1/4" Flange	14.76	7.28		
"	of Pipe		7.53	7.53	
VAC. FILTERS					
BM	42C	1351		9.25	
T.P.	492	(1389)	4.54	8.97	chisel
	Floor below #1	5.13	8.76		
	Top Belt on ^{lower} drum	2.44	11.45		
	Bot. Flange #1	+3.25	17.14		

Vac. Filters, Add. to Main Bldg
" FLOOR



(13.89)

Bot. flange #2	+3.21	17.10
Floor below "	5.12	8.77
Top Belt	1.29	
Average S. end V. FILTERS	1.25	12.64

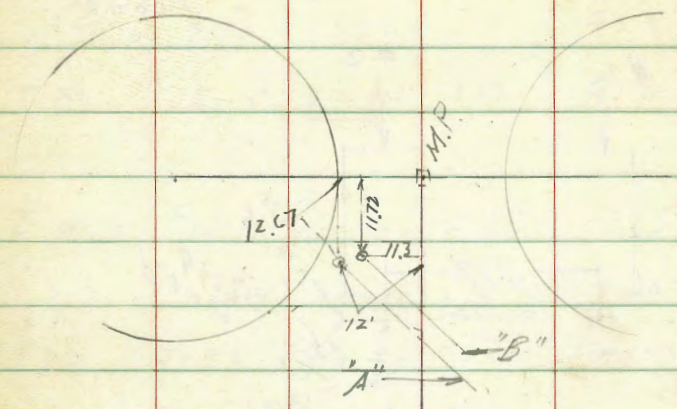
W. edge 12.5
E. edge 13.3

1.33

1.25

As Laid
Check 8" C.I. Lines A-B-C-

6-20-49 "A" at Dig #6



39
Check "B Line" As Laid

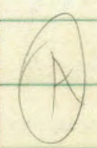
0+80.3 = Pisen 7.55

0+714 "Y" to Lt. 7.60

0+50.5 7.70

0+19.30 Δ 45° 20' Rt 8.78

0+100
"A" B.C.P.
4+06.78 = 0+80.57
R.P. 2023-68



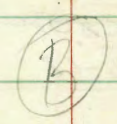
BM. P18 1.69 14.42 12.73

Top 0+791.0 Pisen 7.5x Top

Top 0+49.3 7.73 Top

Top 8 0+18.0 C/A 4x40 Rt 8.77 Top P.P.

0+100
0+787.6 =
R.P.
2023 P18



14.42

check "C" 8" line 6-20-49

6-21-49

39

FLUTRIATION Tanks

ELY Tank

B.M.	074	11.84	11.10	
T.P.	366	12.12	338	8.46 Top Valve
			4.08	+ 8.04 = Elev. Mkd.

WYLY Tank

T.P.	348	11.94	8.46	
			3.90	+ 8.04 = EL. Mkd.

See P 68-70 2003

~~0119.72~~

~~0142.44~~

45° ± R

770

TOP
END

0150.96

~~0117.44~~

A 45° 20' R

873

Top 800

0168.37

~~0160.00~~

~~0158.37~~

2023-18

1442

6-21-49 Roof, Engine Room

Locate end flg. 2x" C.I. AIR

0+38.62

0+38.64 E

0+34.47 S

38.62

21

17.62

77.58 PLUMB

0.02

Location New Fan Fd.

#1 { 0+12.52 S to CTR. 2.75 x 2.75
inside

0+54.5 E " "

0+54.5 E " " " "

#2 { 0+43.06 S " "

Roof R.P.S

46

0+83

0+11

0+138

0+57.27

+

0+57.27

E 4121

10.8810.8



Locate Steam Line

D. g. #6 to dig. #1-2

As Laid

BM	0.56	1329	1273	
<u>P. 18</u>				
0+00	Inv. of Outer	898		
	TOP			
0+05	Roller	888	441	+4.45
0+17	"	0.05W	892	
0+29	"	0.10W	891	
0+41	"	0.15W	895	
0+53.1	"	0.20W	893	436 Inv. 8" +4.40
BM	1.22	1395	1273	
0+00		953	4.40	Inv. 8"
0+0x83	Vert. & Horiz. 90° up	951	4.44	" "
"	Higher Level	617	7.78	" "
0+1337	15" Tee	612	7.83	" "
0+23.03	90° ELL up	6.08	7.87	" "

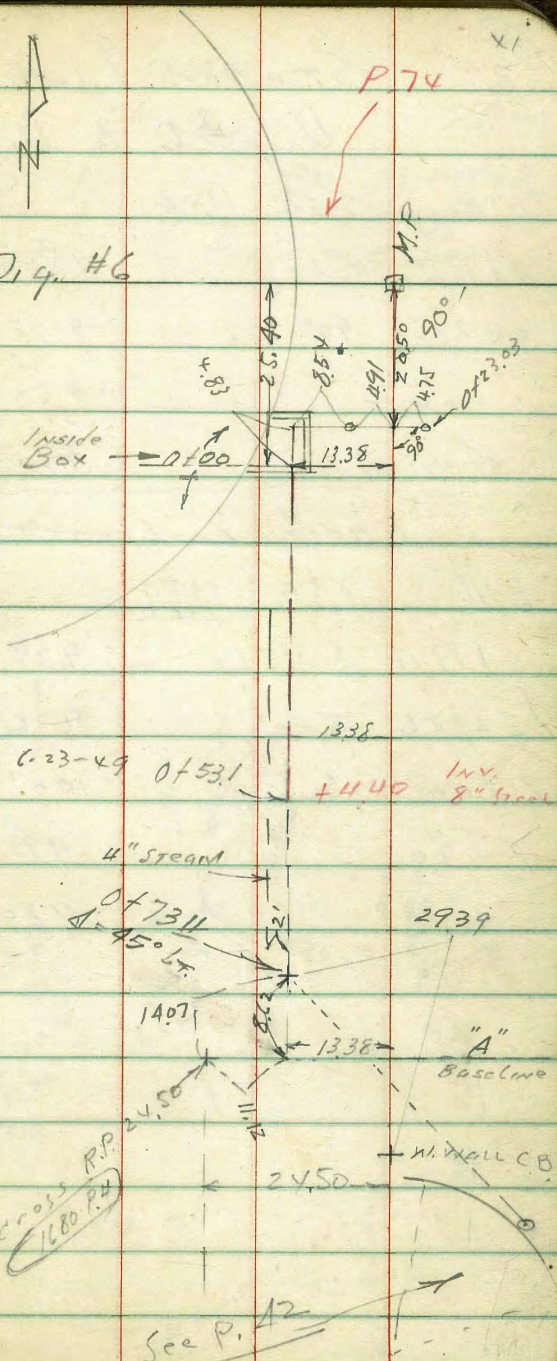
D. g. #6

Inside Box

End 6.23-49 0+53.1

Cross P.P. 1680 P. 4

See P. 12



check 8" Steam Line

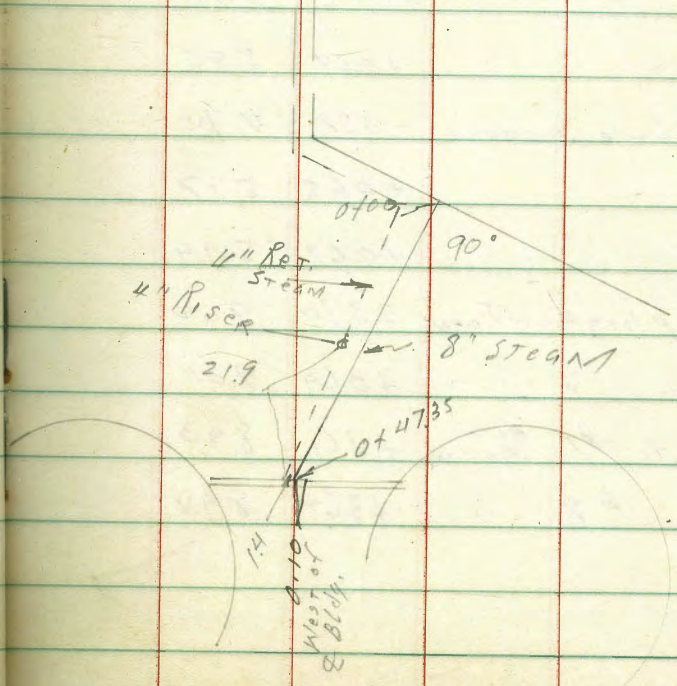
8-3-49

Sketch P 42

0.79	12.79	12.00
0+00	Top 8" Line	7.75 50x
0+22	" " "	7.78 501
0+43.79	Δ NOT PLACED	

Final Check 8-4-49

BM	307	15.07	12.00
at Bldg	0+47.35	Top 8"	10.04 503
at Bldg.	Top 4" Line	11.74	333



FROM P 15
 C-22-49 LAYOUT Stack
 Form check

BM	362	12.87	9.25
T.P	332	<u>5.32</u>	10.87 2.00
#1	TOP FORM	+0.63	5.95
#2		+0.67	5.99
#3		+0.70	6.02
#4		+0.67	5.99
#5		+0.66	5.98
#6		+0.64	5.96
#6 1/2	FLUE groove	-0.58	4.74
#7		+0.65	5.97
#8		+0.67	5.99
#8	TOP HIGH FORM	+3.70	9.02
#1	" " "	+3.69	9.01
	OPPOSITE #1 HIGH FORM	+3.61	8.93
	" #8 "	+3.62	8.94

C-27-49

	Embedded	Piping-Stack ⁴⁴
BM	386 1311	9.25
		+4.75
	4" Pipe Inv. at #8 Pt	7.61 +5.50
	4" INV: CTR. Stack	7.28 +5.83
	4" " at Ventilate Chamber	8.28 +4.83

Elev. TOP BOLTS
Rt A base

6-23-49

13.95

45

BM 516 144 925
 SET BM 494 13.95 540 901

LD. CT.
0138 S
0183 E

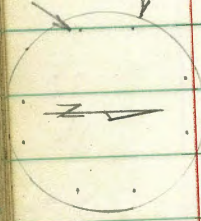
#6 304 10.91
 #7 304
 #8 304
 #3 Eng

NW BOLT = #1 305 10.90

#1 Eng = MOST SLY

NW BOLT = #1 clock wise 304 10.91

#1 #2 304
 #3 304
 #4 305 10.90
 #5 307 10.88
 #6 307
 #7 307
 #8 305 10.90



#2 Eng

NW BOLT = #1 305 10.90
 #2 304 10.91
 #3 303 10.92
 #4 303
 #5 306 10.89

#2 305
 #3 303 10.92
 #4 302 10.93
 #5 303 10.92
 #6 304 10.91
 #7 304
 #8 305 10.90

#4 Eng. MOST SLY

NW BOLT = #1 305 10.90

#2 305
 #3 304 10.91
 #4 304
 #5 302 10.93
 #6 303 10.92
 #7 303
 #8 303

EL. Steel plates on Eng. Bases

R.F.
B.M. C.T.
0.138
0.183

4.908 13.918

901

Most Nly = Eng. #1

NW Plate 1.728 12.19

NE " 1.710 12.21

SE " 1.730 12.19

Eng. #2

NE Plate 1.755 12.16

NW " 1.730 12.19

Eng. #3

NE Plate 1.72 12.20

NW " 1.727 12.19

Eng. #4

NE Plate 1.688 12.23

T.P. 508 14.09 4.908 901 B.M.

SW Plate Eng. #1 1.88 12.21

14.09

40

Eng. #2

SW Plate 1.91 12.18

SE " 1.94 12.15

T.P. 5.045 14.055 508 901 B.M.

Eng. #4

NW Plate 1.83 12.225

T.P. 4.775 13.785 5.045 901 B.M.

Eng. #3

SW Plate 1.58 12.205

SE " 1.60 12.185

Eng. #4

SE Plate 1.56 12.225

SW " 1.56 12.225

F.L. Con Base Eng. 1-2-3-4
6-23-49

BM 498 13.99 9.01

MN 1403 1.89 12.14

CT 1.89 12.14

Eng. #1 NE 1.90 12.13

NW 1.85 12.14

Eng #3 South

CTC 7.84 12.15

BM 642 15.43 9.01 BM

NE 1.85 12.14

SW 3.29 12.14

BM 607 15.08 9.01

CT 3.29 12.14

SW 2.90 12.18

SE 3.29 12.14

C 2.93 12.15

Eng #4

SE 2.94 12.14

NW 15.43 3.25 12.18

15.08

C 3.24 12.19

Eng #2 NE 3.26 12.17

NW 2.93 12.15

BM 9.01

E 2.94 12.14

4.67 13.68

NE 2.99 12.09

SW 1.50 12.18

BM 5.03 14.03 9.01

C 1.52 12.16

Eng #2 SE 1.52 12.16

SW 1.89 12.14

C 1.89 12.14

SE 1.93 12.10

6-25-49.

UNIT #1

New, Ely, E. L. T. Tank

Cont. P. 73

Sec 1999-69

B.M.	440	1366	9.26
S. Gr. CTR Hole	14.07	-0.41	
Subgr.		2.67	
Bottom finish		3.50	

Check CTR. Col. 7-8-49.

3201 to CTR Col. and 0.01 West from "A" BL.

B.M.	Cur	15.68	9.26
	outside		
	TOP FORM	0.15	15.53

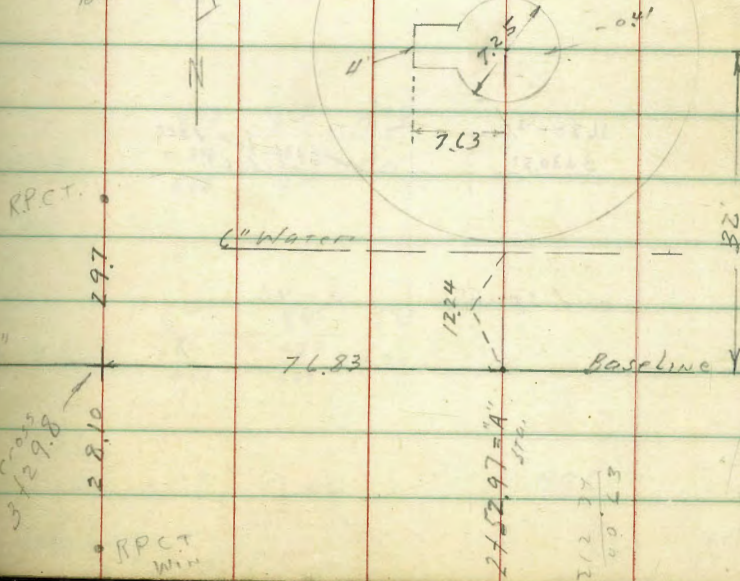
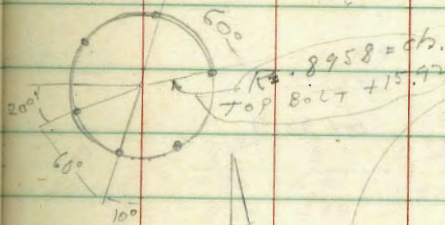
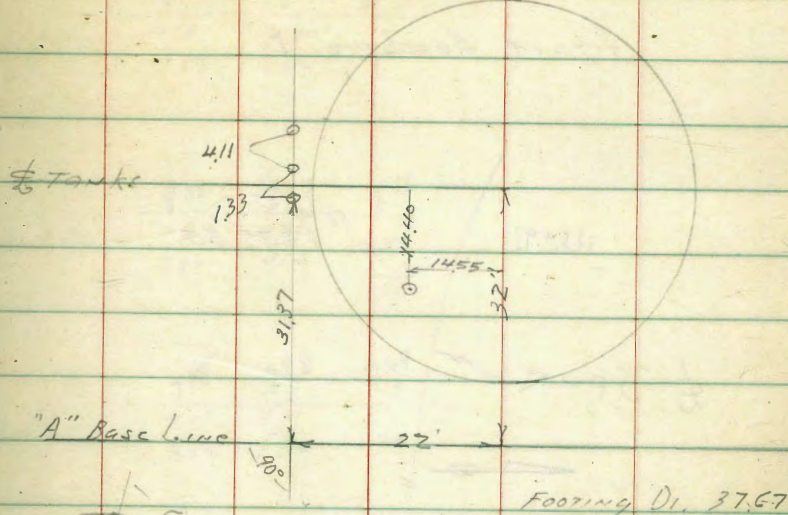
Check TOP FORM CON POUR 8-12-49

B.M.	4.86	14.12	9.26
S and N side	+4.05	18.17	

Wily tank P. 68

48

Location of Risers



Xsec of Spur Track
from Baseline "B"

1154.97

Fd. Ld. C.T.

1175.55

SPUR

B.C. Spur

0+92.9

1680-4

3+30.52

0+100 for Xsec.
Fd. Ld. C.T.

end spur

0-46

L.T.

"B"

29

820	819	824
469	470	465
7.57	2.82	

0+60

802	803	816
487	486	473
7.90	3.78	

0+40

798	798	769
4.91	4.91	5.20
8.22	3.52	

0+20

T.P. 3.64 12.89 3.67 9.25

802	802	771
4.90	4.90	5.21
8.50	3.79	

0+00

803	804	776
4.89	4.88	5.16
8.88	4.15	

0-23

806	805	793
4.86	4.87	4.99
9.23	4.57	

0-46

PM Bolt 3.67 12.92 9.25
12 S.E. of
Main Bldg.

1775.55

B
1760

M
1740

1720

1700

1692.9

1680

LT.	864	866	"8"
	21.25	4.23	863
	<u>19.56</u>	14.65	4.26

50

857	858	857
4.32	4.31	4.32
<u>14.97</u>	10.18	

852	858	851
4.37	4.31	4.38
<u>11.17</u>	7.32	

832	838	849
4.57	4.51	4.40
<u>8.57</u>	5.83	

834	832	837
4.58	4.57	4.52
<u>7.45</u>	2.68	

837	833	838
4.52	4.56	4.51
<u>7.33</u>	2.37	

829	828	820
4.60	4.61	4.59
<u>7.34</u>	2.58	

12.89

Spur track levels

Lt

Bk

Rt 51

West of Cl. #1 S. edge Harbor Drive

2+60.35

0+47.6

5.30
4.77

5.24
0.0

EL. RIM 876
MH.

1+54.33

18.50

0+40

5.37
5.86

5.32
1.18

1+52.55

0+30

5.56
7.75

5.51
3.00

1503.21
1" pipe

N 1000

0+20

5.72
9.85

5.61
5.05

90°

0+47.60

INT. E. RAIL

0+10

5.75
11.84

5.55
7.05

8.14

8.92

0+00

Baseline

0+00

5.58
14.71

5.50
9.76

BM.

5.06

14.32

9.20

1710

27
5.16
0.95

14.32
86.

PT
5.11
3.80

52

1700 = N 1000

9.16
5.16
0.85

9.18
5.14
3.81

0790

5.23
0.97

5.25
3.81

0780

5.38
1.39

5.35
3.98

0770

5.41
2.10

5.38
2.66

0760

5.33
3.14

5.29
1.63

0750

9.04
5.28
4.45

9.04
5.23
0.33

14.32

14.32

1770

L
5.05
8.09

B.L.
1432
5.06
3.30

R

53

1760

5.17
5.99

5.21
4.23

1752.55 Int. F Rail

5.16
4.78

5.16
0.0

1750

9.19
5.13
4.34

9.0
5.12
0.41

1740

5.05
7.99

5.02
7.78

1730

5.04
1.92

5.04
3.83

1720

5.08
1.25

5.08
3.52

1432

1432

14.32

	LT	BL	R	LT	BL	R	54
2+40	$\frac{4.90}{37.0}$	$\frac{4.89}{28.80}$					

2+30	$\frac{4.95}{29.03}$	$\frac{4.91}{23.88}$					
------	----------------------	----------------------	--	--	--	--	--

2+20	$\frac{4.94}{24.75}$	$\frac{4.94}{19.34}$					
------	----------------------	----------------------	--	--	--	--	--

2+10	$\frac{4.98}{19.65}$	$\frac{4.97}{15.0}$					
------	----------------------	---------------------	--	--	--	--	--

2+00	$\frac{4.98}{16.44}$	$\frac{5.00}{11.58}$					
------	----------------------	----------------------	--	--	--	--	--

T.P	5.18	(14.44)	5.06	9.26			
-----	------	---------	------	------	--	--	--

1+90	$\frac{9.44}{4.88}$	$\frac{9.41}{4.91}$					
	13.30	8.45					

2+60.35 SL. Pay	$\frac{4.72}{45.75}$	$\frac{4.73}{40.30}$					
-----------------	----------------------	----------------------	--	--	--	--	--

1+80	$\frac{4.93}{10.46}$	$\frac{4.94}{5.66}$					
------	----------------------	---------------------	--	--	--	--	--

14.32

2+50	$\frac{4.85}{39.70}$						
------	----------------------	--	--	--	--	--	--

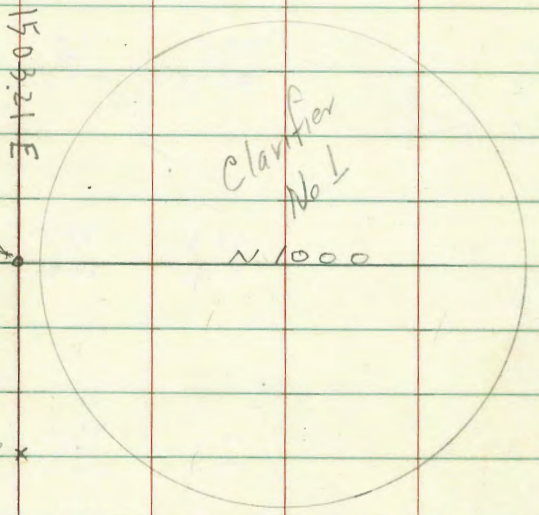
	$\frac{4.85}{34.5}$						
	(14.44)						

6/30/49

Levels for drainage
S. of CL. #1

1805	$\frac{108}{4.7}$ 250	$\frac{115}{4.0}$ 200	$\frac{124}{4.7}$ 150	$\frac{109}{4.6}$ 100	$\frac{93}{6.2}$ 50	B.L. 7.9 6.6	$\frac{94}{6.1}$ 50
1750						9 ¹ 6.4	$\frac{95}{6.3}$ 50
1700						9 ³ 6.7	$\frac{94}{6.7}$ 50
1650						9 ⁸ 5.7	$\frac{96}{6.9}$ 50
1600						10 ⁰ 5.5	$\frac{99}{6.6}$ 50
1550 E						9 ² 6.3	$\frac{93}{6.2}$ 50
1503.21 E 0-50						9 ⁰ 6.5	$\frac{92}{6.3}$ 50 = 0-100
1800 E							92.5

Reduced
6/30/49
C.A.



1400

1503.21 E

Clarifier
No. 1

N. 1000

Baseline

0-100

0-50

0-100

1503.21 E
0-50

B.M. 6.25 15.50

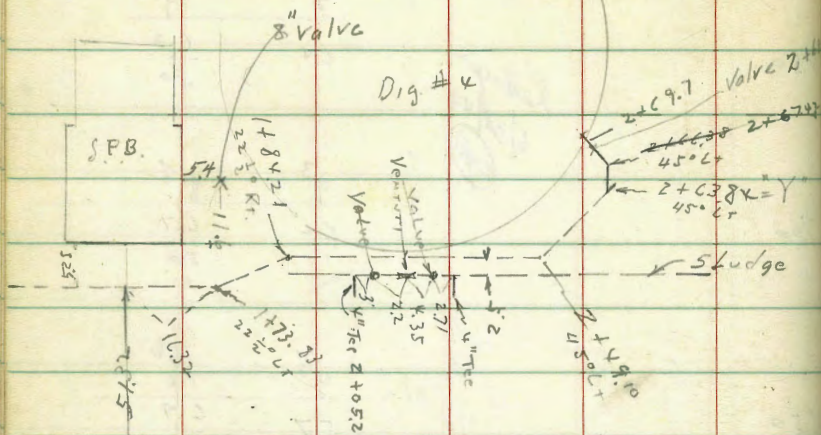
50 = 0-100

6-30-49

56

Location of "A" 8" line

Ref. Pt 2023-CC-08



"A" Baseline

S.P.B.
3129.80

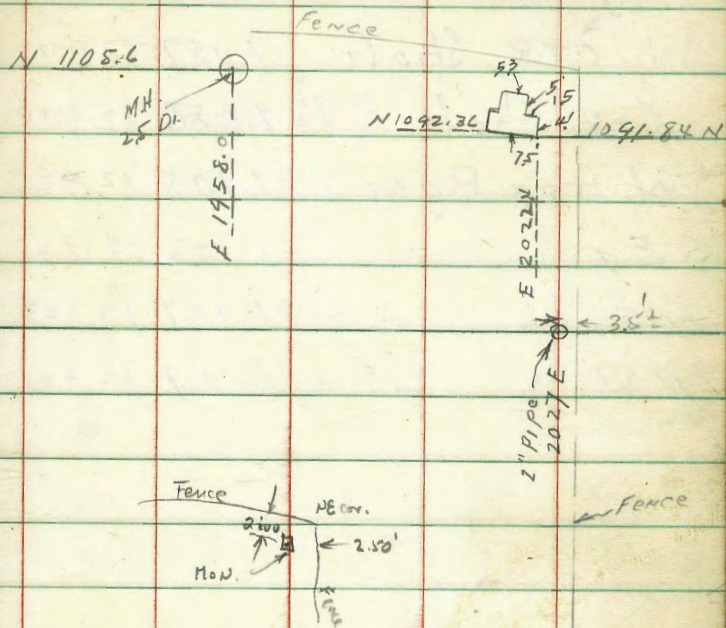
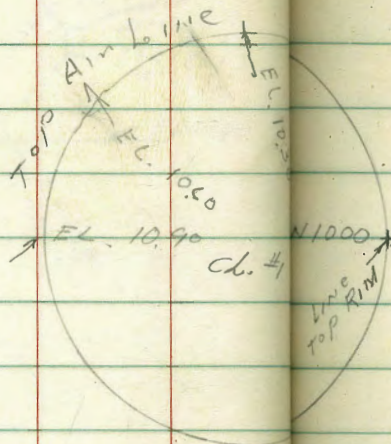
BM.	2.72	<u>11.98</u>	9.26
2+05.2	Top Pipe	5.97	6.10
2+19.10	" "	5.10	6.94
2+63.84	" "Y"	4.82	7.16
2+66.4		4.88	
2+69.7		4.92	7.08

7-1-29

59

Location of M.H. and
Con. slab N.E. Area

BM	492	1418	9.26
Top M.H.		4.55	9.63
"	Con. Box Meter	4.42	9.76



check Eng #4

BM 5.02 14.03 901

Removed
CASING

W. CTR Shaft 1.087 12.943 Rule

CTR Shaft R. A. ^{drive} 2.086 12.944 "

S.W. Top Base 1.105 12.925

S.E. " " 1.105 12.925

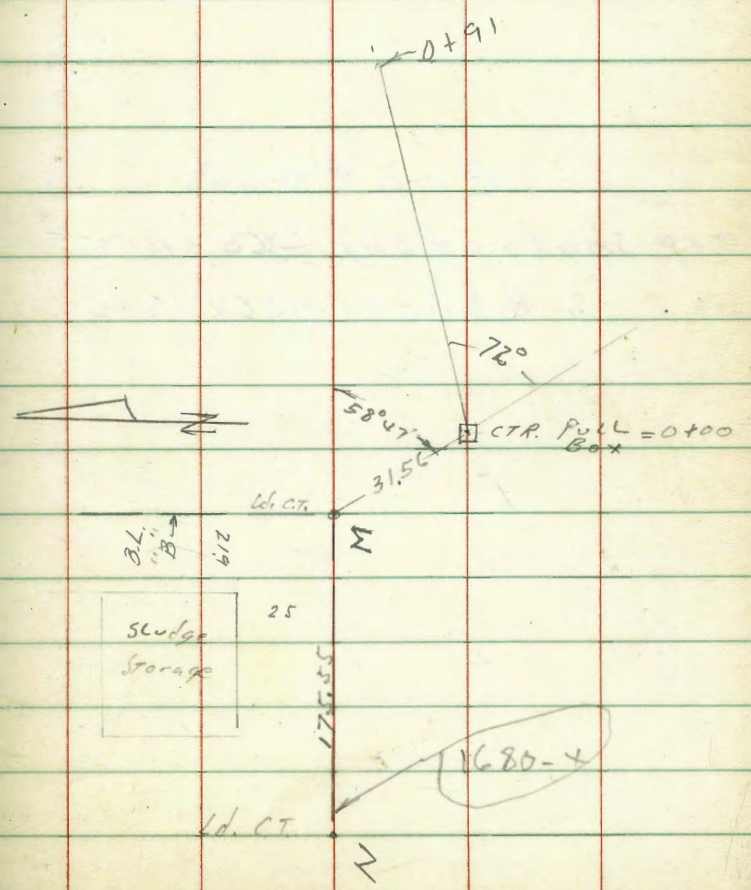
N.E. " " 1.107 12.923

N.W. " " 1.109 12.921

7-7-29. Location of Fl. Concl.
S.E. of Sludge Bldg.

9.12 Tab of footing 59

B.M. Bolt SE M. Bdg	491	14.16	9.25	
0+00	Pull Box	4.99	9.17	TOP
"	Sub "	6.7	7.5	
0+10	"	7.5	6.7	
+25	"	7.6	6.6	
+40	"	7.8	6.4	
+55	"	7.6	6.6	
+70	"	7.5	6.7	
+90	"	6.3	7.9	



7-8-49 Check Eng. #1

BM	5.86	<u>14.87</u>	901	CTR Shaft			
Top Shaft at Eng	1.75x	13.116			12.944		
" " " R.A.D.	1.75x	13.116			12.944		

Eng. #3

60

6.265	15.275	901	CTR Shaft			
Top Shaft at Eng	2.167	13.108			12.941	
" " R.A.D.	2.165	13.110			12.943	

Eng. #2

Top Shaft at Eng	1.760	13.110		CTR Shaft		
" " R.A.D.	1.76x	13.106			12.943	

Eng. #4

Top Shaft at Eng	2.162	13.113		CTR Shaft		
" " R.A.D.	2.162	13.113			12.946	

check levels

Engine

North 1

West End

$\cdot 24$ low

#2

West end

$\frac{2}{50}$ " low = $\cdot 04$ "

#3

West end

$\cdot 04$ " low

#4

West end

$\cdot 17$ " low

Location of Propane Tank

7-8-49 SE of Sludge Storage

BM Bolt
SE M Bldg 778 14.03 - 9.25

N. Saddle E side 0.86 13.17 TOP
Pier

" " W " 0.86 13.17 "

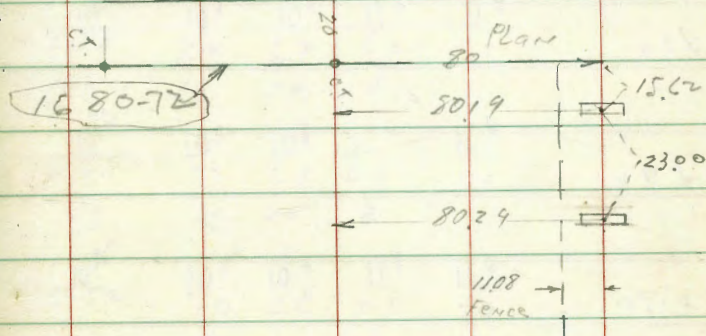
C+R in Saddle 2.07 11.96

S Pier E side 0.86 13.17 TOP

" " W " 0.86 13.17 "

C+R in Saddle 2.07 11.96

Sludge
Storage



7-12-49

Moore

Add. Levels, Harbor Dr.

LT

17^s

BL.

(3)

1+70

FROM P. 26

1137	99	103	108	111
6.10	7.6	7.2	6.7	6.4
23	13	10	8	

1+50

1051	100	104	111	112
6.96	7.5	7.1	6.4	6.3
23	13	10	8	

1+30

1057	101	104	112	114
6.90	7.4	6.8	6.3	6.1
23	13	10	8	

Notes
Reduced
7/13/49
(egl)

1+10

1059	101	108	113	114
6.78	7.4	6.7	6.2	6.1
23	13	10	8	

0+90

1082	103	108	114	116
6.65	7.2	6.7	6.1	5.9
23	13	10	8	

0+70

1095	105	109	114	116
6.52	7.0	6.6	6.1	5.9
23	13	10	8	

0+50

1109	106	110	115	117
6.38	6.9	6.5	6.0	5.8
23	13	10	8	

0+30

1116	107	111	118	120
6.31	6.8	6.4	5.7	5.5
23	13	10	8	

0+10

1127	109	116	119	122
6.20	6.6	5.9	5.6	5.3
23	13	10	8	

B.M.

6.37 17.47

11.10

par.
edge

17^s
17.47

3+30

976
6.20
23

96 98 98
6.4 6.7 6.2
12 10

3+10

974
6.20
23

96 100 101
6.4 6.0 5.9
12 10

2+90

976
6.20
23

99 101 103
6.7 5.9 5.7
15 10

2+70

978
6.18
23

94 97 103 105
6.6 6.3 5.7 5.5
12 10 7

2+30

1004
5.92
23

944 946 1001
6.52 6.50 5.95
12 10

2+10

1018
5.78
23

94 104 108
6.6 5.6 5.2
12 10

J.P. 527 15.96 6.78 10.69

15.96

1+90

1027
7.20
23

96 111 112
7.9 6.4 6.5
10 5

17.47

17.47

267

B.6.

cx

Levels, Harbor Dr. W. of 0+00

65

26.

55

0-750'

↑

Vertical
curve

0-700'

0-600'

↓

0-500'

0-400'

0-300'

0-200'

0-100'

B.M.

594 17.04

11.10

17.04

12.4

46

12.6

21.4

12.9

41

13

12.9

41

13

12.6

44

13

12.4

46

13

90.7

11.8

5.2

90.7

11.1

5.9

13 90.7

Notes reduced
7/13/59
(26)

Location of 3" Water
8" Gas Line

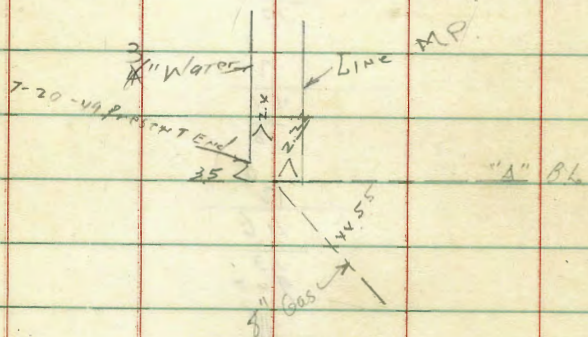
13.59

0-17	TOP 1" WATER	6.00	7.57
0100	1" W RISE	5.94	7.65
0400	TOP 2" W	7.31	6.98
01643	TOP PRESENT END	7.30	
"	42 WEST TOP SECOND LINE	7.00	5.93

6" CI Gas Line at Dig #6

B.M. 267 1407 12.00

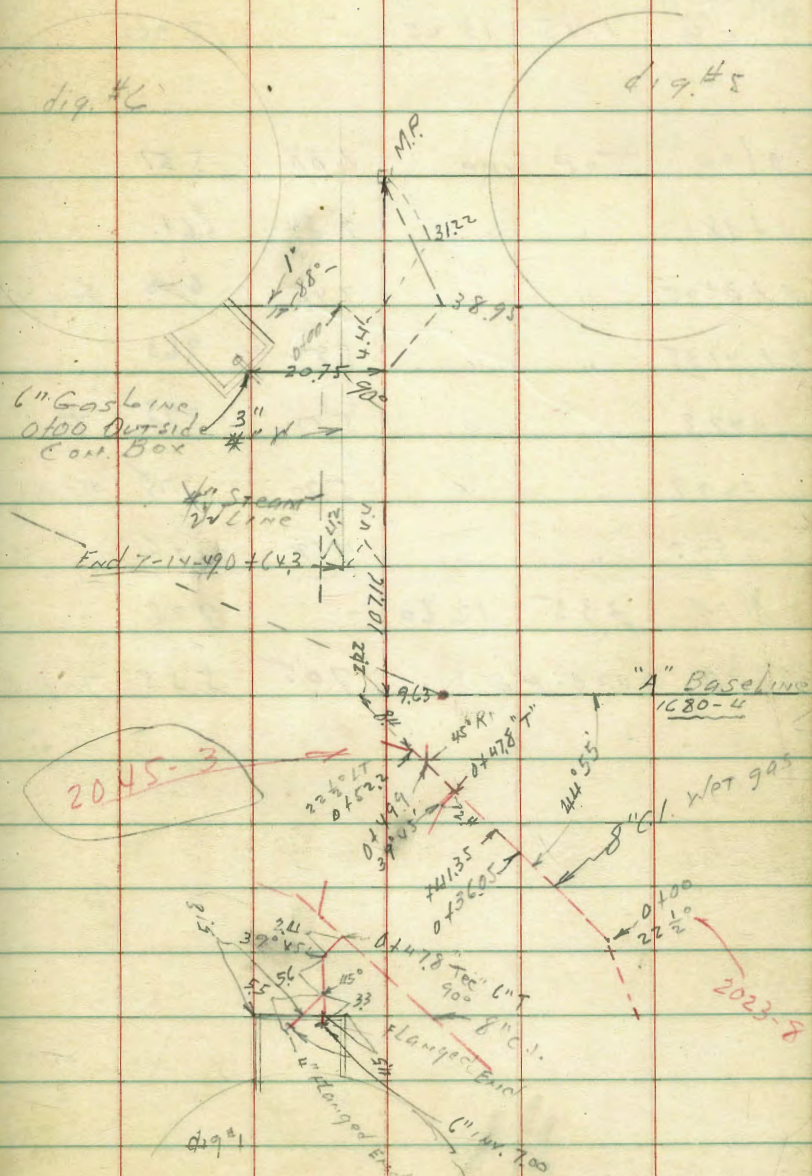
0400 Top 6" CI 6.00 8.07



7-20-49.

8" Wet Gas Line

Level #7 46



Ref. 0+47.8 = T
10.3 N.E. Cor C.B.
Tres. 13.2 N.W. "

7-20-49

Levels on 8" C.I. Gas Line

67

B.M. Cross
ON
C.B.

1.45

13.25

12.00

0+00 Top Pipe 7.88 5.37

0+78 " " 7.84 6.61

0+36.05 " " 7.45 6.50 Rev. V. B.

0+41.35 " " 5.82 7.63 " "

+47.8 " " 5.72 7.73 Tee

+49.9 " " 5.70 7.75 45° R

0+52.7 " " 5.59 7.76

B.M. 3.35 12.60 9.25

0+00 2023-P8 7.05 5.55 Top Pipe

7-20-49 New, Wly FLUT TANK

See P 48

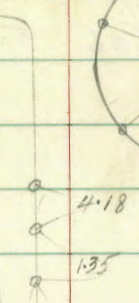
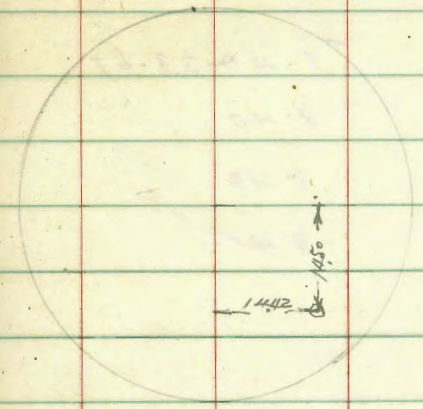
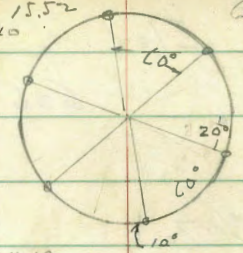
BM. ^{Cross WALL} CB	145	13.45	1200
Top 8" C.I. Pipe	1386	-041	

EL. 9 5.97

CONT'd P 77

di. 1-79
 El. Top Con. 15.52
 Bolt prof. 0.40

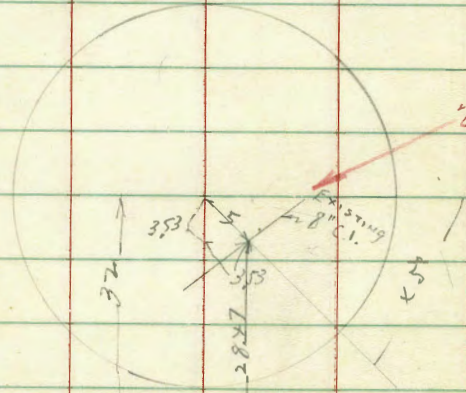
68



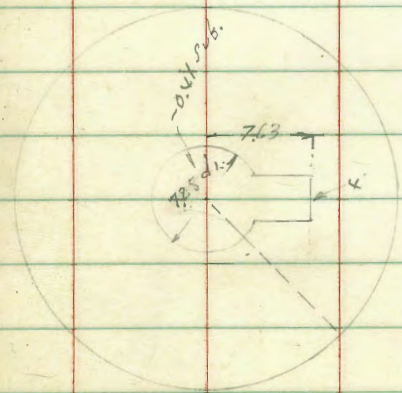
"A" line 22.00

Featuring di. 37.67

32
 3.53
 2 8.47



"A" Baseline



32

1106.43

76.83

3129.80
 Cross



Elev of floor Beam Main Engine Rm

626 15.27

701 BM

North

+ 8.40 23.67

3

8.40

3

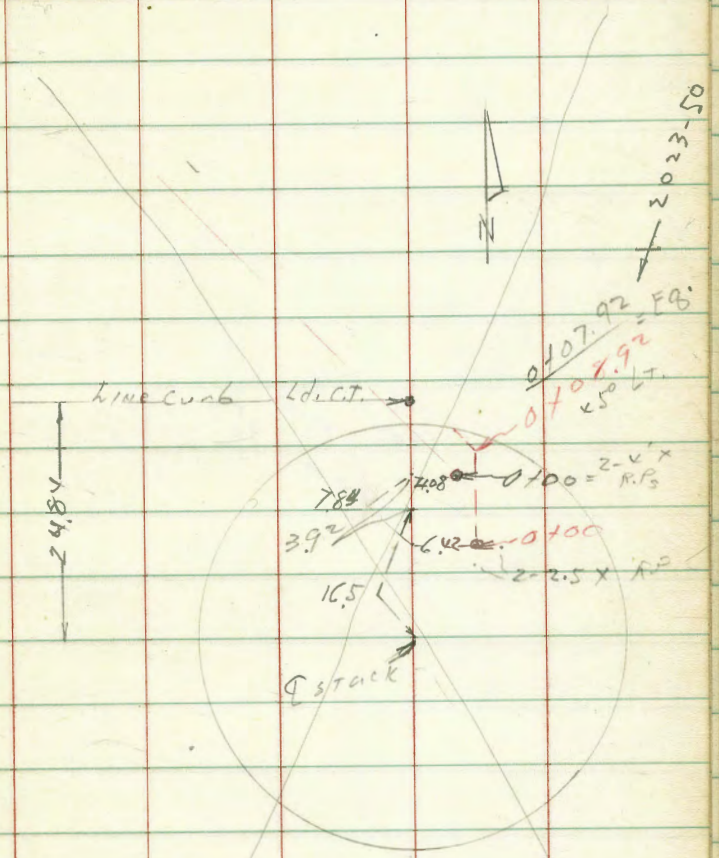
8.40

South

8.40

change not made
change 2-15" vcp lines

7-25-49 stack to Main Bldg.
from 2023-50



Save
for 15"

Save
15" vs 0

Set BM^s CL #2

Set BM^s CL #1

ORIG.

GR. BM. Bolt 3985 37985 3400
 Top Bolt NW #3 dia. 3.18 34805 34.81

T.P. 3.225 31.50 971 28275

T.P. ^{old} BM 510 31.61 499 26.51

chisel \square
S side #2
26.51

BM^s CL #2

Set BM, BP E. side 5.09 26.52
 " " N " 5.05 26.56
 " " W " 5.05 26.56
 " " S " 5.08 26.53

^{Top} T.P. N. 315 31.40 936 2825 dig. #4

T.P. ^{Page 33} on CL #1 Hanks BM 764 2376 2376

Check BM^s on CL #2 - P. 76

TOP #1
 Walker T.P.P. 33 7.92 31.68 23.76

BM, B.P. W. side 5.15 26.53

" N " 5.17 26.51

~~VOID~~

" E " 5.145 26.535

" S " 5.17 26.51

BM 7.97 31.73 23.76 Hanks

BM, BP W. side 5.22 26.51

" N " 5.24 26.49

" E " 5.21 26.52

" S " 5.24 26.49

BM, B.P. W. side 8.94 35.45 26.51 CL #1

check to Top Bolt 0.65 34.80 34.805

NW side dig. (43) #1 0.005

FROM P. 48

4.1 -
8.00

73

Levels on Bot. E New Tank

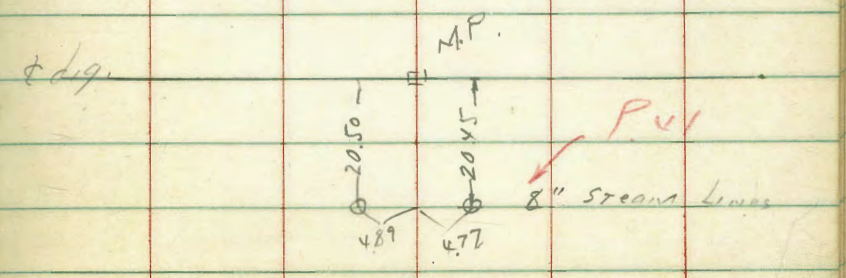
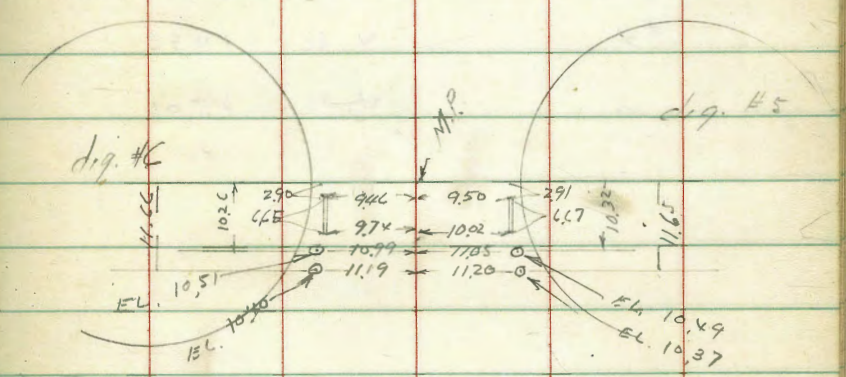
BM	268	1194	9.26	West			
T.P.	479	(800)	873	3.21	edge Cone	5.88	
	South	edge Cone to ^{Tank} inside 4 Pt.		#1		5.40	
			3.65	#2		5.18	
Bot. edge of Cone		5.86		#3		4.94	
#1		5.50		#4	inside Tank	4.74	
#2		5.21		Set B.M.	NE Side	0.00	8.00
#3		4.92		Col.			
#4	inside Tank	4.67					
	EAST						
	edge Cone	5.85					
#1		5.52					
#2		5.21					
#3		5.00					
#4	inside Tank	4.69					
	North						
	edge Cone	5.90					
#1		5.48					
#2		5.20					
#3		4.90					
#4	inside Tank	4.67					

8-2-49

HEAT EXCHANGER BLDG

Location 6" flanged ends Pipes

BM H.C. Bet. dig. #5 and #6				
Floor Engine Room	499	1400	901	
TP	419	(1426)	393	1007
Set BM. Id. C.T.		4.3x5	9.915	12' South of M.P.
Lower 6" Flange E. side	2.80	11.26	6" Pipe	
" " " W. side	2.72	11.54	" "	
Upper 6" " W. side	+2.52	16.78	" "	
" " " E. side	+2.51	16.77	" "	
E side Top 6" Flange	377	10.49		
" " 8" "	389	10.37		
W side 6" "	375	10.51		
" " 8" "	386	10.40		
West Pump Fl.	423	10.03		
East " "	424	10.02		



Floor Elev. for Pumps

75

Ref. 2023-79

BM	2,95 - 10.05	-13.00
Pump #1	4.85	-14.90
"	4.84	-14.89
"	4.87	-14.92
"	4.84	-14.89
"	4.87	-14.92
"	4.87	-14.87
"	4.86	-14.91
"	4.96	-15.01

2-21-50

Moore Check B.M.^s on
Boggs
Shanahan Ch. #2 - from P. 74

B.M.
Top ch. #1 4.12 38.12 3400

T.P. 723 31.29 9.86 2826

RECHECK
2/21/50 ESTABLISHED
7/25/49

Check B.M. East 4.995 26.495 26.52

" " North 4.94 26.55 26.56

" " West 4.95 26.54 26.56

" " South 4.96 26.53 26.53

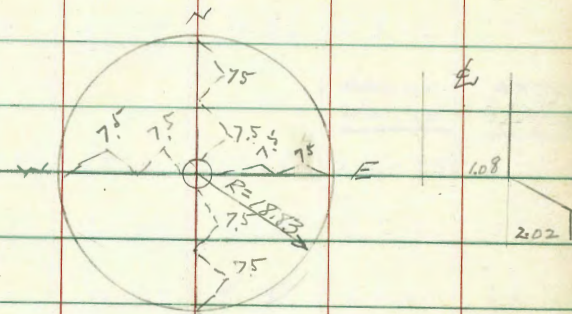
FROM WLY ELU + TANK

check sub. grade

B.M. 471 13.72 901

T.P. 300 742 996 376.

1.23 R
1.08 R
2.31 ✓ of



N + S CR

S side 480 2.62 267

5475 5.42 200 Notes

at Cone Cone 5.88 1.54 1.53 reduced

" " " 5.86 1.56 1.53

475 5.52 1.90

N side 4.80 2.62 267

W + E CR

W side 480 2.62 267

475 5.30 2.12

at edge Cone 5.72 1.70 1.53

742

77

at F side Cone 5.90 1.52 1.53

475 5.62 1.80

at E side 4.83 2.58 2.67

4 check points for leveling arms 2.76 4.66

1.23
1.08
2.31
+ 7.53

Wly ELUT Tank

Elev on Cotwalk #1 Clar Taken on Ben's
 5.03 31.54 26.51 West BM

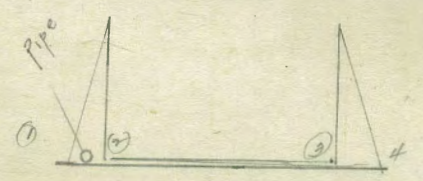
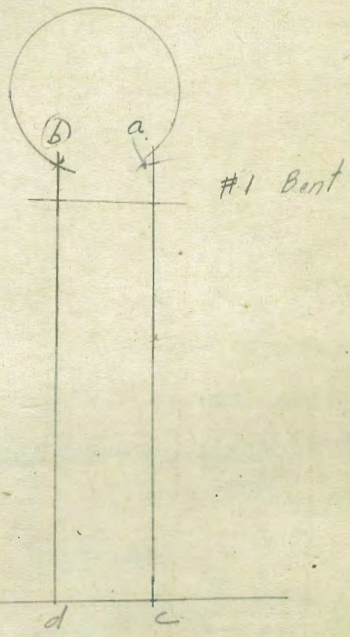
on Plates	(b) 4.99	(a) 4.99		
Bent #1	5.02	4.96	4.94	4.98
2	5.01	4.95	4.94	4.96
3	5.03	4.95	4.91	4.93
4	5.02	4.92	4.88	4.91
5	4.98	4.87	4.83	4.84
6	4.94	4.86	4.82	4.84
7	4.94	4.87	4.84	4.85
8	4.95	4.88	4.85	4.87
9	4.96	4.89	4.86	4.87
10	4.98	4.90	4.87	4.90
11	4.96	4.91	4.90	4.94
12	4.99	4.94	4.95	5.00
13	5.03	4.98	4.99	5.03
d	5.04		c 5.04	

with Pipe on North Panel

Begg Sherman Crawford 12/29/49
 see 2065-142

79

6 9.64
 7 4.2
 2.22



B)
 B)

by the
 19.4ft.
 10'=
 slope
 th the
 follow-
 =.0041.
 pe dist-
 =14 ft.,
 28 ft.
 U. S. A.

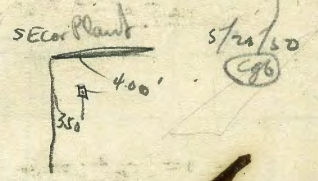
321 v C-2 5/8

12.92 Eng.
0.77 Boat

159.93 193
154.33

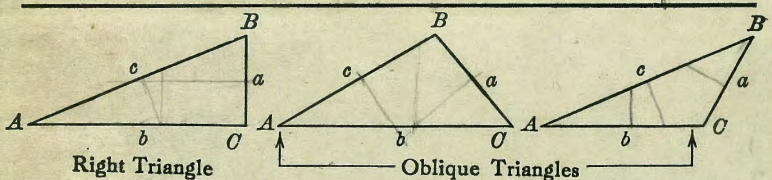
1.92 B.M. B.S.M.T
SW on Col.

13.81



B.M.
3400 = 0.19
3481 Bolt NW side
TOP d. 4.1

TRIGONOMETRIC FORMULÆ



Solution of Right Triangles

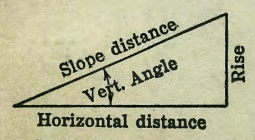
For Angle A. $\sin = \frac{a}{c}$, $\cos = \frac{b}{c}$, $\tan = \frac{a}{b}$, $\cot = \frac{b}{a}$, $\sec = \frac{c}{a}$, $\operatorname{cosec} = \frac{c}{b}$

Given	Required	Formulas
a, b	A, B, c	$\tan A = \frac{a}{b} = \cot B$, $c = \sqrt{a^2 + b^2} = a \sqrt{1 + \frac{b^2}{a^2}}$
a, c	A, B, b	$\sin A = \frac{a}{c} = \cos B$, $b = \sqrt{(c+a)(c-a)} = c \sqrt{1 - \frac{a^2}{c^2}}$
A, a	B, b, c	$B = 90^\circ - A$, $b = a \cot A$, $c = \frac{a}{\sin A}$
A, b	B, a, c	$B = 90^\circ - A$, $a = b \tan A$, $c = \frac{b}{\cos A}$
A, c	B, a, b	$B = 90^\circ - A$, $a = c \sin A$, $b = c \cos A$

Solution of Oblique Triangles

Given	Required	Formulas
A, B, a	b, c, C	$b = \frac{a \sin B}{\sin A}$, $C = 180^\circ - (A + B)$, $c = \frac{a \sin C}{\sin A}$
A, a, b	B, c, C	$\sin B = \frac{b \sin A}{a}$, $C = 180^\circ - (A + B)$, $c = \frac{a \sin C}{\sin A}$
a, b, C	A, B, c	$A + B = 180^\circ - C$, $\tan \frac{1}{2}(A - B) = \frac{(a - b) \tan \frac{1}{2}(A + B)}{a + b}$ $c = \frac{a \sin C}{\sin A}$
a, b, c	A, B, C	$s = \frac{a + b + c}{2}$, $\sin \frac{1}{2}A = \sqrt{\frac{(s - b)(s - c)}{bc}}$ $\sin \frac{1}{2}B = \sqrt{\frac{(s - a)(s - c)}{ac}}$, $C = 180^\circ - (A + B)$
a, b, c	Area	$s = \frac{a + b + c}{2}$, $\text{area} = \sqrt{s(s - a)(s - b)(s - c)}$
A, b, c	Area	$\text{area} = \frac{bc \sin A}{2}$
A, B, C, a	Area	$\text{area} = \frac{a^2 \sin B \sin C}{2 \sin A}$

REDUCTION TO HORIZONTAL



Horizontal distance = Slope distance multiplied by the cosine of the vertical angle. Thus: slope distance = 319.4 ft. Vert. angle = 5° 10'. From Table, Page IX. $\cos 5^\circ 10' = .9959$. Horizontal distance = $319.4 \times .9959 = 318.09$ ft. Horizontal distance also = Slope distance minus slope distance times (1 - cosine of vertical angle). With the same figures as in the preceding example, the following result is obtained. $\cos 5^\circ 10' = .9959$. $1 - .9959 = .0041$. $319.4 \times .0041 = 1.31$. $319.4 - 1.31 = 318.09$ ft. When the rise is known, the horizontal distance is approximately: the slope distance less the square of the rise divided by twice the slope distance. Thus: rise = 14 ft., slope distance = 302.6 ft. Horizontal distance = $302.6 - \frac{14 \times 14}{2 \times 302.6} = 302.6 - 0.32 = 302.28$ ft.