EUGENE DIETZGEN CO.

DRAWING MATERIALS, MATHEMATICAL and SURVEYING INSTRUMENTS

Chicago New York San Francisco New Orleans Pittsburg Toronto

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

Roadway 16 feet wide. Side Slopes 1 on 1.

For Single Track Embankment.

H	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	H
0	8.0	8.1	8.2	8.3	8.4	8.5	8.6	8.7	8.8	8.9	0
1	9.0	9.1	9.2	9.3	9.4	9.5	9.6	9.7	9.8	9.9	1
2	10.0	10.1	10.2	10.3	10.4	10.5	10.6	10.7	10.8	10.9	2
3	11.0	11.1	11.2	11.3	11.4	11.5	11.6	11.7	11.8	11.9	3
4	12.0	12.1	12.2	12.3	12.4	12.5	12.6	12.7	12.8	12.9	4
5	13.0	13.1	13.2	13.3	13.4	13.5	13.6	13.7	13.8	13.9	5
6	14.0	14.1	14.2	14.3	14.4	14.5	14.6	14.7	14.8	14.9	6
7	15.0	15.1	15.2	15.3	15.4	15.5	15.6	15.7	15.8	15.9	7
8	16.0	16.1	16.2	16.3	16.4	16.5	16.6	16.7	16.8	16.9	8
9	17.0	17.1	17.2	17.3	17.4	17.5	17.6	17.7	17.8	17.9	9
10	18.0	18.1	18.2	18.3	18.4	18.5	18.6	18.7	18.8	18.9	10
11	19.0	19.1	19.2	19.3	19.4	19.5	19.6	19.7	19.8	19.9	11
12	20.0	20.1	20.2	20.3	20.4	20.5	20.6	20.7	20.8	20.9	12
13	21.0	21.1	21.2	21.3	21.4	21.5	21.6	21.7	21.8	21.9	13
14	22.0	22.1	22.2	22.3	22.4	22.5	22.6	22.7	22.8	22.9	14
15	23.0	23.1	23.2	23.3	23.4	23.5	23.6	23.7	23.8	23.9	15
16	24.0	24.1	24.2	24.3	24.4	24.5	24.6	24.7	24.8	24.9	16
17	25.0	25.1	25.2	25.3	25.4	25.5	25.6	25.7	25.8	25.9	17
18	26.0	26.1	26.2	26.3	26.4	26.5	26.6	26.7	26.8	26.9	18
19	27.0	27.1	27.2	27.3	27.4	27.5	27.6	27.7	27.8	27.9	19
20	28.0	28.1	28.2	28.3	28.4	28.5	28.6	28.7	28.8	28.9	20
21	29.0	29.1	29.2	29.3	29.4	29.5	29.6	29.7	29.8	29.9	21
22	30.0	30.1	30.2	30.3	30.4	30.5	30.6	30.7	30.8	30.9	22
23	31.0	31.1	31.2	31.3	31.4	31.5	31.6	31.7	31.8	31.9	23
24	32.0	32.1	32.2	32.3	32.4	32.5	32.6	32.7	32.8	32.9	24
25	33.0	33.1	33.2	33.3	33.4	33.5	33.6	33.7	33.8	33.9	25
26	34.0	34.1	34.2	34.3	34.4	34.5	34.6	34.7	34.8	34.9	26
27	35.0	35.1	35.2	35.3	35.4	35.5	35.6	35.7	35.8	35.9	27
28	36 0	36.1	36.2	36.3	36.4	36.5	36.6	36.7	36.8	36.9	28
29	37.0	37.1	37.2	37.3	37.4	37.5	37.6	37.7	37.8	37.9	29
30	38.0	38.1	38.2	38.3	38.4	38.5	38.6	38.7	38.8	38.9	30
31	39.0	39.1	39.2	39.3	39.4	39.5	39.6	39.7	39.8	39.9	31
32	40.0	40.1	40.2	40.3	40.4	40.5	40.6	40.7	40.8	40.9	32
33	41.0	41.1	41.2	41.3	41.4	41.5	41.6	41.7	41.8	41.9	33
34	42.0	42.1	42.2	42.3	42.4	42.5	42.6	42.7	42.8	42.9	34
35	43.0	43.1	43.2	43.3	43.4	43.5	43.6	43.7	43.8	43.9	35
36	44.0	44.1	44.2	44.3	44.4	44.5	44.6	44.7	44.8	44.9	36
37	45.0	45.1	45.2	45.3	45.4	45.5	45.6	45.7	45.8	45.9	37
38	46.0	46.1	46.2	46.3	46.4	46.5	46.6	46.7	46.8	46.9	38
39	47.0	47.1	47.2	47.3	47.4	47.5	47.6	47.7	47.8	47.9	39
40	48.0	48.1	48.2	48.3	48.4	48.5	48.6	48.7	48.8	48.9	40

Example—If point is 22.6 ft. above grade, how far should it be from center line to be a slope stake point? Ans. from Table 30.6. For same slopes but other widths of roadbed, correct above figures by one-half difference in width of roadbed; thus in example above, for 20 ft. roadbed distance will be 30.6+(20—16)÷2 or 2 ft. added to 30.6 =32.6. For slopes of 1 on 1½ see inside of back cover.

Unit No 1
Sorrento Pipe Line
Trench Grades.

Starting Point Stn 3+00

Stn	Grade Chang.	Rate	Grade Elev
3+00	12.28	2.28%	12.28
3+41.4 BC			11.34
3+50			11.14
4+00	10.00		10.00
4+50		-2.%	9.00
5+00			8.00
5+50			7.00
6+00			6.00
6+50			5.00
7+0			4.00
+50			3.00
8+00	2.00		2.00
+50		-0.769	1.62
9+00			1.23
9+50			0.85
10+00			0.46
10+50			+0.08
11+00			-0.30

Stn	Pt. of Change	Rate	Elevation
11+00			-0.30
11+17.2 EC	-0.50		-0.50
+50		-3.143	-1.29
+75			-2.07
12+00			-2.86
+50			-4.43
13+00	-6.00		-6.00
13+50		+1.555%	-5.22
14+0			-4.45
14+50			-3.67
15+0			-2.89
15+22.5	-2.50		-2.50
15+50		-.364	-2.59
16+0			-2.77
16+50			-2.95
17+00			-3.14
17+50			-3.32
18+00	-3.50		-3.50
18+50		1.25%	-4.13
19+00			-4.75
19+50			-5.38
20+00	-6.00		-6.00
20+50		.80%	-5.60
21+00	-5.2		-5.20

Note From Stn 9+50 to 19 grade of trench is 4 ft. 2 in. below shown to provide for sand cushion.

2

Trench Grades

Stn	Change	Rate	Elev.	Changed Grade
21+00	-5.20		-5.20	5.20
21+50		470%	-2.85 <	✓2.85
21+62.5	-2.26		-2.26 <	× -3.26
22+0		.037%	-2.23 <	-3.23
+50			-2.21 <	-3.21
23+0			-2.19 <	-3.19
+50			-2.17 <	-3.17
24+00			-2.15 <	-3.15
+50			-2.14 <	-3.14
25+00			-2.12 <	-3.12
+50			-2.10 <	-3.10 ✓
26+00			-2.08 <	-3.08
+50			-2.06 <	-3.06
27+00			-2.04 <	-3.04
+50			-2.02 <	-3.02
28+00			-2.00 <	-3.00
+50			-1.99 <	-2.99
29+00			-1.97 <	-2.97
+50			-1.95 <	-2.95
30+00			-1.93 <	-2.93
+50			-1.91 <	-2.91
31+00			-1.89 <	-2.89
31+50			-1.87 <	-2.87
32+00			-1.86 <	-2.86
32+50			-1.84 <	-2.84

	Change	Rate	Elev	
33+00			-1.82 <	-2.82
+50		.037	-1.80 <	-2.80
34+0			-1.79 <	-2.79
+50			-1.77 <	-2.77
35+0			-1.75 <	-2.75
+50			-1.73 <	-2.73
36+0			-1.71 <	-2.72
+50			-1.69 <	-2.69
37+00			-1.67 <	-2.67
+50			-1.65 <	-2.65
38+00			-1.64 <	-2.64
+50			-1.62 <	-2.62
39+00	- 1.60		-1.60 <	-2.60
39+50		+.0057%	-1.57 <	-2.57
40+00			-1.54 <	-2.54
+50			-1.51 <	-2.51
41+00			-1.48 <	-2.48
+50			-1.45 <	-2.45
42+00			-1.42 <	-2.42
+50			-1.39 <	-2.39
43+00			-1.37 <	-2.37
+50			-1.34 <	-2.34
44+00			-1.31 <	-2.31
+50			-1.28 <	-2.28
45+00			-1.26 <	-2.26

Note All trench grades between Stns 9+49 are to be lowered 0.50 ft. allow for sand cushion.

3

French Grades

Sta	Change	Rate	1	Grade Elev.	Grade Bonsar
45+00				-1.26 <	-2.26
+50		.057%		-1.23 <	-2.23
46+00				-1.20 <	-2.20
+50				-1.17 <	-2.17
47+00				-1.14 <	-2.14
+50				-1.12 <	-2.12
48+00				-1.09 <	-2.09
+50				-1.06 <	-2.06
49+00				-1.03 <	-2.03
49+50	-1.0			-1.00 <	-2.00
50+00		0.24%		-0.88 <	-1.88
+50				-0.76 <	-1.76
51+00				-0.64 <	-1.64
+50				-0.52 <	-1.52
52+00	-0.40			-0.40 <	-1.40
+50		.467%		-0.17 <	-1.17
53+00				+0.07 <	-0.93
+50				+0.30 <	-0.70
54+00				+0.53 <	-0.47
+50				+0.76 <	-0.24
55+00	+1.00			+1.00 <	00
+50				+1.10 <	+0.10
56+00				+1.20 <	+0.20
4137 BL				+1.21 <	+0.21
+50				+1.30	+0.30

Sta	Change	Rate	Grade Elev.	
56+50			+1.30 <	+0.30
57+00	1.40		+1.40 <	0.40
57+50		0.12	1.34 <	0.84
58+00			1.28 <	1.28
+50			+1.22 <	
58+82			1.18 <	
59+00			1.16 <	
+50			1.10 <	
60+00			+1.04 <	
+50			.98 <	
61+00			.92 <	
+50			+.86 <	
62+00			.80 <	
+50			.74 <	
63+00			+.68 <	
+50			.62 <	
64+00			+.56 <	
+50			.50 <	
65+00	+0.44		+0.44 <	
+50			+0.38 <	
66+00			+0.32 <	
+50			+0.26 <	
67+00			+0.20 <	
67+50			+0.14	

4

Trench Grades

Sta	Change	Rate		Grade Elev
68+00			.092	+10.08 <
68+50				+10.02 <
68+625	0.00			0.00
69+0		+8.328		3.12 <
69+50				7.28 <
70+0				11.44 <
+50				15.60 <
71+0				19.76 <
+50				23.93 <
72+00				28.09 <
72+13.44				29.17 <
72+50	32.25			32.25 <
73+0		1.187		32.84 <
73+13	33.00			33.00

$\delta = 5°02$

$\frac{\Delta}{2} = 2°31$ 9.642563

$R = 3110.2$ 3.492788

0.301030

273.14 2.436381

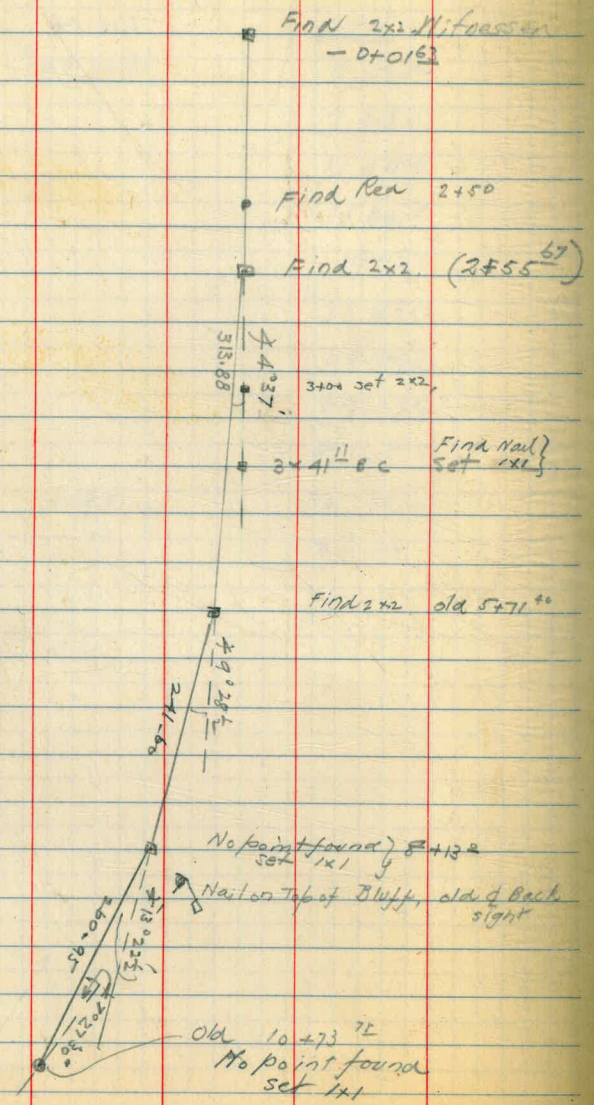
22

57

5

13 July 1942

Relocation Survey of Sorrento Pipe Line. Unit # 1.



118.28
9.14
4.37

5472.40

9-15
4 37

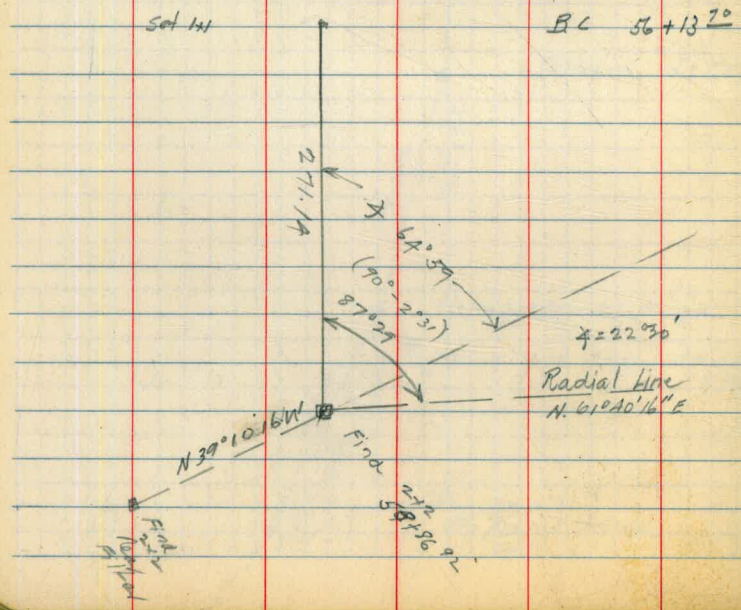
313.88
257.30
571.18

2 55 67
1 62
257.30

341.11
2 55 67
85 44

Sal 141

BC 56+13.70



N. 61-40-16-E
N39°-10'-16" E
22 30-00

89 60
- 22-30-00
67 30-00
- 02 31
64-59

23-17 44
02 31
25-48 44

165°-02
02 31

offset of A8700

8

July 17-1942 Whiles

sta	+ B.S.	Π	F.S.	Rod	Elev
	4.17	6.20			2.03
			4.70		1.50
	8.39	9.89			
			2.94		6.95
	1.97	8.92			
			8.26		0.66
	4.36	5.02			
			2.07		2.95
	4.53	7.48			
			7.74		-0.26
	5.35	5.09			
			5.35		-0.26
	12.63	12.37			
				1.89	10.48
			6.97		5.40
	4.76	10.16		0.28	9.88
	46.16		38.03		

B.M. City Brass plug south end of S.W. Wing of Concrete abutment on Sorrento R.R. Bridge over old Highway

46.16
+2.03
48.19
~~40.31~~
7.88

48.19
38.31
9.88
~~+4.76~~

Corr 46.16
38.03
8.13
+2.03
10.16

= Sta 5+72.14 on old survey-line

= Temp B.M drove 30-D spike on south side of tel pole near pump house 110 of tag on pole is D-34735 T

2.03
46.16
48.19
38.03
10.16

9 ℄ July - 17 - 1942 Whiles & Jacks

Sta	B.S.	I	F.S.	Rod	Elev
8		10.16			
8+50				3.83	6.33
9+00				6.56	3.60
9+50				6.97	3.19
10+00				7.36	2.80 <
10+50				7.55	2.61 <
11+00				8.04	2.12 <
11+17.92				8.12	2.04 <
T.P.	4.56	6.60	8.12		2.04
11+50				4.95	1.65 <
12+00				5.04	1.56 <
12+50				5.40	1.20 <
13+00				6.05	0.55 <
13+50				6.19	0.41 <
14+00				5.07	1.53 <
14+50				5.53	1.07 <
15+00				5.27	1.33 <
15+50				5.28	1.32 <
16+00				5.38	1.22
T.P.			5.67		0.93
	7.83	18.31			10.48
2+55.67				1.45	16.86
	1239		13.79		

Grade Cut

1.62

1

10.16
4.56
7.83
22.55
2.04
24.59
13.79
10.80

12.39
2.04
14.43
13.79
0.64

2.04
4.56
7.83
14.43
13.79
.64

9.88
4.76
14.64
8.12
6.52

2x2 5 S.W. of Sta 16+00 ℄

= Sta 5+72.10 on old survey line 16.84

= Sta 2+55.67 on old survey line

Offset

July - 17 - 1942 Whiles & Jocks

(10) Offsets

Sta	B.S.	Π	F.S.	Rod	Elev	Grade	Cut
		10.16					
8+50 (7)				3.17	6.99	1.62	5.37 ✓
9+00 (7)				6.64	3.52	1.23	2.29 ✓
9+50 (7)				7.36	2.80	0.85	1.95 ✓
10+00 (7)				7.43	2.73	0.46	2.27 ✓
10+50 (7)				7.40	2.76	+ 0.08	2.68 ✓
11+00 (7)				7.93	2.23	− 0.30	2.53 ✓
TP ~~11+17~~ 9.20 (7)		6.60				~~no offset~~	
11+17.22 (7)				4.46	2.14	− 0.50	2.64 ✓
11+50 (7)				4.83	1.77	− 1.29	3.06 ✓
12+00 (7)				5.39	1.21	− 2.86	4.07 ✓
12+50 (7)				5.38	1.22	− 4.43	5.65 ✓
13+00 (7)			no offset			− 6.08	
13+50 (20)				8.25	− 1.65	− 5.22	3.57 ✓
14+00 (20)				7.92	− 1.32	− 4.45	3.13 ✓
14+50 (20)	~~Score cut as this sta.~~			8.15	− 1.55	− 3.67	2.12 ✓
15+00 (20)				8.34	− 1.74	− 2.89	1.15 ✓
15+50 (20)				8.28	− 1.68	− 2.59	0.91 ✓
16+00 (20)				8.23	− 1.63	− 2.77	1.14 ✓
T.P.							

July-18-1942 Whiles Jacks

Sta	B.S.	I	F.S.	Rod	Elev	Grade	Cut
	5.01	5.94			0.93	272 Hub Temp B.M.	5.0' S.W. ℄ Sta 16+00
16+00 ℄	" "			4.84	1.10		
15+50	checks only			4.65	1.29		
16+50 ℄				4.88	1.06	-2.95	
" (7)				4.94	1.00		3.95 ✓
" (20)				7.56	-1.62		1.33
17+00 ℄				4.80	1.14	-3.14	
" (7)				4.61	+1.33		4.47 ✓
" (20)				7.64	-1.70		1.44 ✓
17+50 ℄				4.87	1.07	-3.52	
" (7)				4.74	+1.20		4.52 ✓
" (20)				7.70	-1.86		1.46 ✓
18+00 ℄				4.75	1.19	-3.50	
" (7)				4.67	+1.27		4.77 ✓
" (20)				7.75	-1.81		1.69 ✓
18+50 ℄				4.87	1.07	-4.13	
" (7)				4.85	+1.09		5.22 ✓
" (20)				7.38	-1.44		2.69 ✓
19+00 ℄				4.74	1.20	-4.75	
" (7)				4.98	+0.96		5.71 ✓
" (18)				7.64	-1.70		3.05 ✓
19+50 ℄				5.37	0.57	-5.38	
" (7)				7.83	-1.89		3.49 ✓
" (20)				7.80	-1.86		3.52 ✓

Sta	B.S.	I	F.S.	Rod	Elev
		5.94			
20+00 ℄				3.82	2.12
" (7)				7.82	-1.88
" (20)				8.16	-2.22
20+50 ℄				5.33	0.61
" (7)				8.12	-2.18
" (20)				7.74	-1.80
21+00 ℄	Cuts OK to this point			4.42	1.52
" (7)				7.55	-1.61
" (20)				7.91	-1.97
T.P.	3.86	5.97	3.83		+2.11
21+50 ℄	O.K. on cuts to this point			4.27	1.70
" (7)				5.10	+0.87
" (20)				7.82	-1.85
21+62.50 ℄				3.80	2.17
" (7)				3.76	+2.21
" (20)				7.86	-1.89
22+00 ℄				3.89	2.08
" (7)				5.32	+0.65
" (20)				7.61	-1.64
22+50 ℄				4.75	1.22
" (7)				5.10	+0.87
" (20)				7.58	-1.61
23+00 ℄				5.05	0.92
" (7)				5.02	+0.95
"				7.56	-1.59

Grade Cut

-6.00		
	4.12 ✓	
	3.78 ✓	
-5.60		
	3.42	
	×	
	3.80	
-5.20		
	3.59	
	3.23	
-2.85		Beyond this point increase cuts by 1'-0" until reaching sta. 57+00
	4.72	
	~~3.72~~	
	2.00	57+50 increase 0.50
	~~1.00~~	
-2.26		58+00 is OK
	5.47	
	~~4.47~~	
	1.37	
	~~0.37~~	
-2.23		
	3.88	
	~~2.88~~	
	1.59	
	~~0.59~~	
-2.21		
	4.08	
	~~2.08~~	
	1.60	
	~~0.60~~	
-2.19	4.14	
	~~3.14~~	
	~~0.60~~	
	1.60	

5.94
3.83
2.11
3.86
5.98

Sta	B.S.	I	F.S.	Rod	Elev
		5.97			
23+50 ℄				5.03	0.94
" (7)				4.97	+1.00
"				7.52	-1.55
24+00 ℄				5.04	0.93
" (7)				5.12	+0.85
" (20)				7.48	-1.51
24+50 ℄				5.07	0.90
" (7)				5.00	+0.97
" (20)				7.55	-1.58
25+00 ℄				5.10	0.87
" (7)				5.15	+0.82
" (20)				7.56	-1.58
25+50 ℄				5.10	0.87
" (7)				5.02	+0.95
" (20)				7.58	-1.61
T.P.	4.96	5.83	5.10		+0.87
26+00 ℄				4.88	0.95
" (7)				4.92	+0.91
" (20)				7.59	-1.76
26+50 ℄				4.97	0.86
" (7)				4.83	+1.00
" (20)				7.17	-1.34
27+00 ℄				4.89	0.94
" (7)				4.83	+1.00
"				7.32	-1.49

Grade Cut

Grade	Cut
-2.17	4.17
	~~3.17~~
	1.62
	~~0.62~~
-2.15	4.00
	~~3.00~~
	1.64
	~~0.64~~
-2.14	4.11
	~~3.11~~
	1.56
	~~0.56~~
-2.12	3.94
	~~2.94~~
	1.54
	~~0.54~~
-2.10	4.05 ✓
	~~3.05~~
	1.49 ✓
	~~0.49~~
-2.08	3.99
	~~2.99~~
	1.32
	~~0.32~~
-2.06	4.06
	~~3.06~~
	1.72
	~~0.72~~
-2.04	4.04
	~~3.04~~
	~~0.55~~ 1.55

Note Grade between 1.00 in this section & cut 0.5 higher for sand cushion. Cuts increased 1.5

5.97
5.10
0.87
4.96
5.83

Sta	B.S.	I	F.S.	Rod	Elev
℄		5.83			
27+50 ℄				4.90	0.93
" (7)				4.88	+0.95
" (20)				7.32	-1.49
28+00 ℄				4.84	0.99
" (7)				4.83	+1.00
" (20)				7.62	-1.79
28+50 ℄				4.90	~~0.93~~
" (7)				4.92	0.91
" (20)				7.82	-1.99
29+00 ℄				4.92	0.91
" (7)				4.90	+0.93
" (18)				7.59	-1.76
29+50 ℄				4.85	0.98
" (7)				4.79	+1.04
" (20)				7.84	-2.01
30+00 ℄				5.00	0.83
" (7)				4.80	+1.03
" (20)				7.73	-1.90
30+50 ℄				5.10	0.73
" (7)				5.06	+0.77
" (20)				7.96	-2.13
T.P.	5.07	5.80	5.10		+0.73
31+00 ℄				5.12	0.68
" (7)				5.30	+0.50
" (18)				7.69	-1.89

Grade	Cut - Fill	
-2.02		
	3.97	
	~~2.97~~	
	1.53	
	~~0.53~~	
-2.00		
	4.00	
	~~3.00~~	
	~~1.29~~	
	~~0.29~~	
-1.99		
	3.90	
	~~2.90~~	
	1.00	
	~~0.04~~	Grade
-1.97		
	3.90	
	~~2.90~~	
	1.21	
	~~0.21~~	
-1.95		
	3.99	
	~~2.99~~	
	0.94	~~0.06~~ Fill
-1.93		
	3.96	
	~~2.96~~	
	1.03	
	~~0.03~~	
-1.91		
	3.68	
	~~2.68~~	
	0.78	0.22 Fill
-1.89	3.39	
	~~2.39~~	
	1.10	Grade

5.83
5.10
0.73
5.07
5.80

Sta	B.S.	I	F.S.	Rod	Elev	Grade	Cut	Fill
		5.80						
31+50 ℄				5.01	0.79	-1.87		
(7)							3.88	
"				4.79	+1.01		~~2.88~~	
(18)				7.83	-2.03			
"							0.84	~~0.16~~
32+00 ℄				4.97	0.83	-1.86		
(7)							3.81	
"				4.85	+0.95		~~2.81~~	
(22)				8.10	-2.30		0.56	~~0.44~~
32+50 ℄				5.00	0.80	-1.84		
(7)							3.82	
"				4.82	+0.98		~~2.82~~	
(20)				7.65	-1.85		0.99	~~0.01~~
33+00 ℄				5.11	0.69	-1.82		
(7)							3.66	
"				4.96	+0.84		~~2.66~~	
(20)				7.71	-1.91		0.91	~~0.09~~
33+50 ℄				4.94	0.86	-1.80		
(7)							3.70	
"				4.90	+0.90		~~2.70~~	
(20)				7.52	-1.72		1.08	
34+00 ℄				5.15	0.65		~~0.08~~	
(7)						-1.79		
"				4.93	+0.87		3.66	
(18)				7.34	-1.54		~~2.66~~	
"							1.25	
34+50 ℄				4.86	0.94	~~-1.77~~	~~0.25~~	
(7)						-1.77		
				4.93	+0.87		3.64	
(20)				7.57	-1.77		~~2.64~~	
35+00 ℄							1.00	
(7)				5.12	0.68		Grade	
						-1.75		
(18)				5.03	+0.77		3.52	
	5.46						~~2.52~~	
				7.28	-1.48		1.27	
T.P	5.46	6.15	5.11		+0.69		~~0.27~~	

5.80
5.11
0.69
5.46
6.15

0.69
5.46
6.15

Sta	B.S.	↑	F.S.	Rod	Elev
		6.15 ✓			
35+50 ℄				5.60	0.55
(7)					
"				5.12	+1.03
" (20)				7.87	-1.72
36+00 ℄				5.23	0.92
(7)					
"				5.21	+0.94
" (20)				8.15	-2.00
36+50 ℄				4.95	1.20
(7)					
"				4.93	+1.22
" (22)				8.32	-2.17
37+00 ℄				5.04	1.11
(7)					
"				4.80	+1.35
" (20)				8.12	-1.97
37+50 ℄				4.82	1.33
(7)					
"				4.86	+1.29
" (20)				7.95	-1.80
38+00 ℄				5.10	1.05
" (7)				4.92	+1.23
" (20)				7.92	-1.77
38+50 ℄				5.09	1.06
(7)					
"				5.10	+1.05
" (20)				7.68	-1.53
39+00 ℄				4.94	1.21
(7)					
"				4.92	+1.23
(22)				7.93	-1.78
			5.45		+0.70 B.M

Grade	Cut	Fill
-1.73	3.76 ~~2.76~~ 1.01 ~~0.01~~	
-1.71	3.65 ~~2.65~~ 0.71	~~0.29~~
-1.69	3.91 ~~2.91~~ 0.52	~~0.48~~
-1.67	4.02 ~~3.02~~ 0.70	~~0.30~~
-1.65	3.94 ~~2.94~~ 0.85	0.15
-1.64	3.87 ~~2.87~~ 0.77	~~0.13~~
-1.62	3.69 ~~2.69~~ 1.09 ~~0.09~~	
-1.60	3.83 ~~2.83~~ 0.82	~~0.18~~

6.15
5.45
0.70

Est. 2x2= 10' south of ℄ sta 39+00

July 20 - 1942 Whiles

Sta	B.S.	Π	F.S.	Rod	Elev
	5.52	~~1.72~~ 6.22			+0.70
39+50 ℄				4.95	+1.27
(7)				4.82	+1.40
(22)				7.88	-1.66
40+00 ℄				4.90	1.32
(7)				4.90	+1.32
(20)				7.87	-1.65
40+50 ℄				4.83	1.39
(7)				4.82	+1.40
(20)				7.95	-1.73
41+00 ℄				4.87	1.35
(7)				4.88	+1.34
(20)				7.40	-1.18
41+50 ℄				4.98	1.24
(7)				4.97	+1.25
(20)				7.02	-0.80
42+00 ℄				5.06	1.16
(7)				4.81	+1.41
(22)				6.92	-0.70
42+50 ℄				4.90	1.32
(7)				4.73	+1.49
(22)				6.79	-0.57
43+00 ℄				4.92	1.30
(7)				4.90	+1.32
(20)				7.33	-1.11
43+50 ℄	5.35	6.65 ✓	4.92		+1.30

Grade cut Fill

-13 M - 2x2 EST 10 - South of 39+00

-1.57
3.97
~~2.97~~
0.91 0.09

-1.54
3.86
~~2.76~~
0.89 0.11 ~~0.21~~

-1.51
3.91
~~2.81~~
0.78 0.22

-1.48
3.82
2.78
1.30
~~0.20~~

-1.45
3.70
2.70
1.65
~~0.65~~

-1.42
3.83
~~2.85~~
1.72
~~0.72~~

-1.39
3.88
~~2.88~~
1.82
~~0.82~~

-1.37
3.69
~~2.59~~
1.26
~~0.16~~

0.70
5.52
6.22
-4.92
1.30
5.35
1.30
6.65
-4.92
1.73
5.35
4.92
0.43

0.70
5.52
6.22

6.22
4.92
1.30

Sta	B.S.	I	F.S.	Rod	Elev	Grad	Cut	Fill
		6.65						
43+50 ℄				5.35	1.30	-1.34		
(7)				5.22	+1.43		3.79	
(22)				7.35	-0.70		~~2.69~~	
							1.64	
							~~0.64~~	
44+00 ℄				5.19	1.36	-1.31		
(7)				5.12	+1.53		3.84	
(18)				6.84	-0.19		~~2.84~~	
							2.12	
							1.02	
44+50 ℄				5.09	1.56	-1.28		
(7)				5.08	+1.57		3.85	
(22)				7.37	-0.72		~~2.75~~	
							1.56	
							~~0.46~~	
45+00 ℄				5.24	1.41	-1.26		
(7)				5.03	1.62		3.88	
(18)				7.44	-0.79		~~2.88~~	
							1.47	
							~~0.37~~	
45+50 ℄				5.21	1.44	-1.23		
(7)				5.02	+1.63		3.86	
(18)				6.83	-0.18		~~2.76~~	
							2.05	
							~~0.95~~	
46+00 ℄				5.15	1.56	-1.20		
(7)				5.09	+1.56		3.76	
(20)				7.02	-0.37		~~2.66~~	
							1.83	
							~~0.83~~	
46+50 ℄				5.07	1.58	-1.17		
(7)				5.04	+1.61		3.75	
(20)				7.00	-0.35		~~2.75~~	
							1.82	
							~~0.82~~	
47+00 ℄				4.90	1.75	-1.14		
(7)				4.94	+1.71		3.86	
(20)				7.71	-1.06		~~2.85~~	
							1.08	0.02

Sta	B.S.	I	F.S.	Rod.	Elev
~~47+50~~ ℄		6.65 ✓			
47+50 ℄				5.09	1.56
(7)				4.96	+1.69
(20)				7.23	-0.58
48+00 ℄				4.83	1.82
(7)				4.73	+1.92
(18)				6.77	-0.12
~~48+50~~ ℄				4.72	1.93
(7)				4.61	+2.04
(22)				8.26	-1.61
49+00 ℄				4.75	1.90
(7)				4.72	+1.93
(22)				7.98	-1.33
49+50 ℄				4.81	+1.84
(7)				4.62	+2.03
(20)				7.48	-0.83
T.P	6.01	7.85 ✓	4.81		+1.84
50+00 ℄				5.71	2.14
(7)				5.66	+2.19
(20)				6.73	+0.12
50+50 ℄				5.65	2.20
(7)				5.64	+2.21
51+00				5.67	2.18
(7)				5.55	+2.30
51+50 ℄				5.58	2.27
(7)				5.56	2.29

Grade	Cut	Fill
-1.12	3.81 ~~2.81~~ 1.54 ~~0.54~~	
-1.09	4.01 ~~2.91~~ 1.98 ~~0.97~~	
-1.06	3.10 ~~2.10~~	
	0.45	~~0.65~~
-1.03	3.96 ~~2.96~~	
	0.69	~~0.31~~
-1.00	4.03 ~~2.93~~ 1.17 ~~0.17~~	
-0.86	4.07 ~~3.07~~ 2.00 ~~1.00~~	
-0.76	3.97 ~~2.97~~	
0.64	3.94 ~~2.94~~	
0.52	3.81 2.81	

+19.50

4.75
6.02
+0.83

6.01
1.24
2.25

1.00
.31
.69

6.65
6.01
12.66
4.81
7.85

6.65
4.81
1.84
6.01
7.85

Sta	B.S.	I	F.S.	Rod	Elev
52+00 ℄		7.85		5.28	2.57
(7)				5.45	2.40
52+50 ℄				5.03	2.82
(7)				5.13	2.72
53+00 ℄				5.03	2.82
(7)				5.00	2.85
53+50 ℄				4.69	3.18
(7)				4.57	3.28
54+00 ℄				4.25	3.60
(7)				4.02	3.83
54+50 ℄				4.25	3.60
(7)				4.34	3.51
55+00 ℄				4.00	3.85
(7)				3.91	3.94
55+50 ℄				3.84	4.01
(7)				3.66	4.19
(16)				4.18	3.67
56+00 ℄				3.82	4.03
(7)				3.84	4.01
(20)				4.17	2.68
56+13.70 ℄				3.79	3.96
(7)				3.88	3.87
(20)				3.82	3.93
T.P.	5.70	9.59	3.96		3.89
			0.48		9.11 BM

Grade	Cut	Fill
-0.40		
-1.40	3.80	
	2.70	
	3.89	
-0.17	2.78	
+0.07		
	3.68	
+0.07	2.68	
+0.30		
	3.88	
	2.88	
	4.30	
+0.53	3.30	
+0.76		
	3.84	
0.76	2.84	
+1.00		
	3.84	
	2.84	
0.10 +1.10		
	3.99	
	2.99	
	3.57	
	2.57	
+0.20 +1.30		
	3.71	
	2.71	
	2.38	
	1.38	
+0.21 +1.21		
	3.66	
	2.66	
	2.72	

951 − 568 = 383

951 − 572 = 379

951 − 568 = 383

951 + 572 = 1523

7.85 + 3.96 = 11.81

3.89 + 5.70 = 9.59

9.59 − 0.48 = 9.11 B.M.

7.85 + 5.70 = 13.55

13.55 − 4.44 = 9.11

Note. Subsequent checks & back checks indicate 9.01 as correct elevation. Error of .10 somewhere.

Est. 2x2 - 42.0' north of sta 56+13.70 ℄ 3.0' from post

Sta	B.S.	I	F.S.	Rod	Elev
	0.50	9.61			9.11 - B.M
56+50 ℄				5.15	4.36
⑦				5.05	4.46
57+00 ℄				5.09	4.42
⑦				5.00	4.51
57+50 ℄				4.82	4.69
⑦				4.72	4.79
58+00 ℄				4.37	5.14
⑦				4.13	5.38
58+50 ℄				3.90	5.64
⑦				5.20	4.31
58+86.92 ℄				3.87	5.64
⑦				4.93	4.58

Grade	Cut	Fill
56+13.78		
2.30		
+ 1.30		
	4.06	
	~~3.16~~	
2.40		
+ ~~1.40~~		
	4.11	
	3.11	
1.84		
+ ~~1.34~~		
	3.95	
	~~3.45~~	
+ 1.28		
	4.10	
+ 1.22		
	3.09	
+ 1.18		
	3.40	

as of preceding page take this B.M
G.S 9.01
not 9.11

July-21-1942 Whiles

Sta	B.S.	I	F.S.	Rod	Elev
	7.56	18.04			10.48 B.M
2+55.67				1.19	16.85
~~3+00 ℄~~				2.17	
	2.93	19.79			16.86 B.M
3+00 ℄				3.91	15.88
(7)				3.83	15.96
3+41 ⊥ ℄				4.91	14.88
(7)				4.86	14.93
3+50 ℄				5.12	14.67
(7)				5.49	14.30
4+00 ℄				6.18	13.61
(7)				6.23	13.56
4+50 ℄				7.42	12.37
(7)				7.09	12.70
5+00 ℄				8.40	11.39
(7)				8.16	11.63
5+50				9.36	10.43
(7)				9.20	10.59
	3.55	14.03			10.48 B.M
6+00 ℄				4.63	9.40
(7)				3.89	10.14
6+50 ℄				5.66	8.37
(7)				4.47	9.56
7+00 ℄				6.08	7.95
(7)				5.02	9.01

Grade	Cut	Fill
P.O.T. Sta 5+72.40 on old survey line see page #9		
	16.84 See F.B 593-2	
12.28		
= Sta 2+55.67		
12.28		
	3.68 ✓	
11.34		
	3.59 ✓	
11.44		
	3.16 ✓	
10.00		
	3.56 ✓	
9.00		
	3.70 ✓	
8.00		
	3.63 ✓	
7.00		
	3.59 ✓	
= P.O.T Sta 5+72.40		
6.00		
	4.14 ✓	
5.00		
	4.56 ✓	
4.00		
	5.01 ✓	

16.86
2.93
19.79
3.83
16.96
-12.28
3.68

23

July-21-1942- Whiles

Sta	B.S.	I	F.S.	Rod	Elev
		14.03			
7+50 ℄				7.15	6.88
(7)				4.03	8.00
8+00 ℄				8.79	5.24
(7)				6.96	7.07
8+50 ℄					
(7)				7.04	6.99
22 daily					
BM	4.63	13.64			9.01
Top of Rod				2.90	10.74
" "				3.16	10.48
BM	0.30	9.31			9.01
T.P	4.46	7.25	6.52		2.79
TP	4.76	6.62	5.39		1.86
T.P	5.02	6.26	5.38		1.24
TP	4.67	5.85	5.08		1.18
TP	5.06	5.89	5.02		0.83
TP	5.04	6.05	4.88		1.01
T.P	5.13	6.03	5.15		0.90
TP	4.09	6.30	3.82		2.21
TP	4.85	6.13	5.02		1.28
T.P	5.28	6.82	4.59		1.54
	35		35		
	49.66		50.85		

Grade	Cut	Fill
3.00		
	5.00	✓
2.00		
	5.07	✓
1.62		
	5.37 ✓	Checks with page 1079 #10 ✓

See P 20

11.6 } from F.B 593-p.9
10.7 }

9.01
48.66
57.67
50.85
6.82

B.M

Sta	
43+00 (7)	(1.2)
38+00 (7)	1.23
34+00 (7)	0.87
30+00	1.03
26+00	0.91
18+00	1.27

Stn	BS	H.I	F.S	Rod	Elev
		6.82			
TP	8.58	12.11	3.29		3.53
BM				2.24	9.87
5+72.40	8.03	18.49	1.65		10.46
2+53.(7)4			1.64		16.85

9+00 (7)

-(9.87 ac/p 9). This is closing point

(10.49 ac/p 8)

(16.85 ac/p 22)

6.82

July-23-1942 - Whiles

Sta	B.S.	I	F.S.	Rod	Elev
	4.88	13.89			9.01 B.M.
59+00 ℄				10.79	3.10
(10)				9.34	4.55
(20)				8.43	5.46
north rail				3.12	10.77
south rail				3.39	10.50
59+50 ℄				6.90	6.99
(10)				4.97	8.92
(20)				5.03	8.86
60+00 ℄				9.81	4.08
(10)				10.06	3.83
(20)				10.32	3.57
60+50 ℄				11.05	2.84
(10)				10.55	3.34
(20)				9.74	4.15
61+00 ℄				9.87	4.02
(10)				9.92	3.97
(20)				9.89	4.00
T.P.	4.55	8.57	9.87		4.02
61+50 ℄				4.60	3.97
(10)				4.75	3.82
(20)				4.48	4.09
62+00 ℄				5.56	3.01
(10)				4.64	3.93
(20)				4.73	3.84

Grade	Cut	Fill
2x2 EST. 420' north		
1.16		
	3.39	
	4.30	
1.10		
	2.82	
	2.76	
1.04		
	2.79	
	2.53	
0.98		
	2.36	
	3.17	
0.92		
	3.05	
	3.08	
0.86		
	2.96	
	3.23	
0.80		
	3.13	
	3.04	

56x13 20 ft of [illegible]

9.01
4.88
4.56
18.44
9.87
8.57

Sta	B.S.	Π	F.S.	Rod	Elev	Grade	Cut
		8.57					
62+50 ℄				5.45	3.12		
(7)				4.59	3.98	0.74	
(20)				4.92	3.65		3.24
63+00 ℄				4.94	3.63		2.91
(7)				5.11	3.46	0.68	
(20)				5.22	3.35		2.78
63+50 ℄		not true contour		5.84	2.73		2.67
(7)				4.70	3.87	0.62	
(20)				4.76	3.81		3.25
64+00 ℄				5.00	3.57		3.19
(7)				4.76	3.81	0.56	
(20)				4.85	3.72		3.25
64+50 ℄				4.90	3.67		3.16
(7)				4.86	3.71	0.50	
(20)				4.88	3.69		3.21
65+00 ℄				4.46	4.11		3.19
(7)				4.64	3.93	0.44	
(20)				4.85	3.72		3.49
65+50 ℄				4.43	4.14		3.28
(7)				4.37	4.20	0.38	
(20)				4.41	4.16		3.82
66+00 ℄				4.80	3.77		3.78
(7)				4.69	3.88	0.32	
(20)				4.52	4.05		3.56
							3.73

Sta	B.S.	A	F.S.	Prod	Elev
		8.57			
66+50 ℄				4.82	3.75
(7)				5.30	3.27
(20)				5.08	3.49
	8.16	11.91	4.82		3.75
67+00 ℄				8.36	3.55
(7)				8.00	3.91
(20)				7.73	4.18
67+50 ℄				8.42	3.49
(7)				8.15	3.76
(20)				7.75	4.16
68+00 ℄				7.77	4.14
(7)				7.88	4.03
(20)				7.53	4.38
68+50 ℄				7.78	4.13
(7)				7.78	4.13
(20)				7.91	4.00
68+62.50 ℄				8.15	3.76
(7)				8.10	3.81
(20)				7.98	3.93
69+00 ℄				5.16	6.75
(7)				5.10	6.81
(20)				6.40	5.51
69+50 ℄				1.68	10.23
(7)				1.84	10.07
(20)				2.19	9.72

Grade	Cut	
0.26		
	3.01	
	3.23	
0.20		
	3.71	
	3.98	
0.14		
	3.62	
	4.02	
0.08		
	3.95	
	4.30	
0.02		
	4.11	
	3.98	
0.00		
	3.81	
	3.93	
3.12		
	3.69	
	2.39	
7.28		
	2.79	79
	2.44	

8.57
8.16
16.73
4.82
11.91

10.07
7.28
2.79

Sta	B.S.	Π	F.S.	Rod	Elev	Grade	Cut
		11.91	1.68		10.23		
T.P.	13.01	23.24					
70+00 ℄				8.40	14.84	11.44	
(7)				8.54	14.70		3.26
(20)				8.85	14.39		2.95
70+50 ℄				4.67	18.57	15.60	
(7)				4.72	18.52		2.92
(20)				4.91	18.33		2.73
T.P.	12.24	35.04	0.44		22.80		
71+00 ℄				11.59	23.45	19.76	~~3.69~~
(7)				11.77	23.27		3.51
(20)	12.24	35.04	0.44	12.24	22.80		3.04
71+50 ℄				7.87	27.17	23.93	
(7)				8.14	26.90		
(20)				8.69	26.35		2.97
72+00 ℄				3.74	31.30	28.09	2.42
(7)				4.04	31.00		2.91
(20)				4.94	30.10		2.01
72+13.42 ℄				2.29	32.75	29.17	
(10)				2.94	32.10		2.93
T.P.	8.90	41.00	2.94		32.10		
72+50 ℄				5.19	35.81	32.25	
(10)				5.69	35.31		3.06
(20)				8.57	32.43		0.18

11.91
13.01
24.92
1.68
23.24
12.24
35.48
.44
35.04
.89
43.94
2.94
41.00

Sta	B.S.	I	F.S.	Rod	Elev
		41.00			
73+00 ℄				4.03	36.97
(10)				4.70	36.30
(20)				5.12	35.88
73+13 19 ℄				4.53	36.47
(10)				4.68	36.32
(20)				4.86	36.14
T.P.	6.94	45.58	2.36		38.64
T.P.	4.86	46.13	4.31		41.27
				4.32	41.81 BM.

32.84		
	3.46	
	3.04	
33.00		
	3.32	
	3.14	End of Work

N.W. Cor. of pump House on Concrete Wall

Stds 183+00 to ~~88~~ 184+84
removed
~~ds~~ also 174 to 176

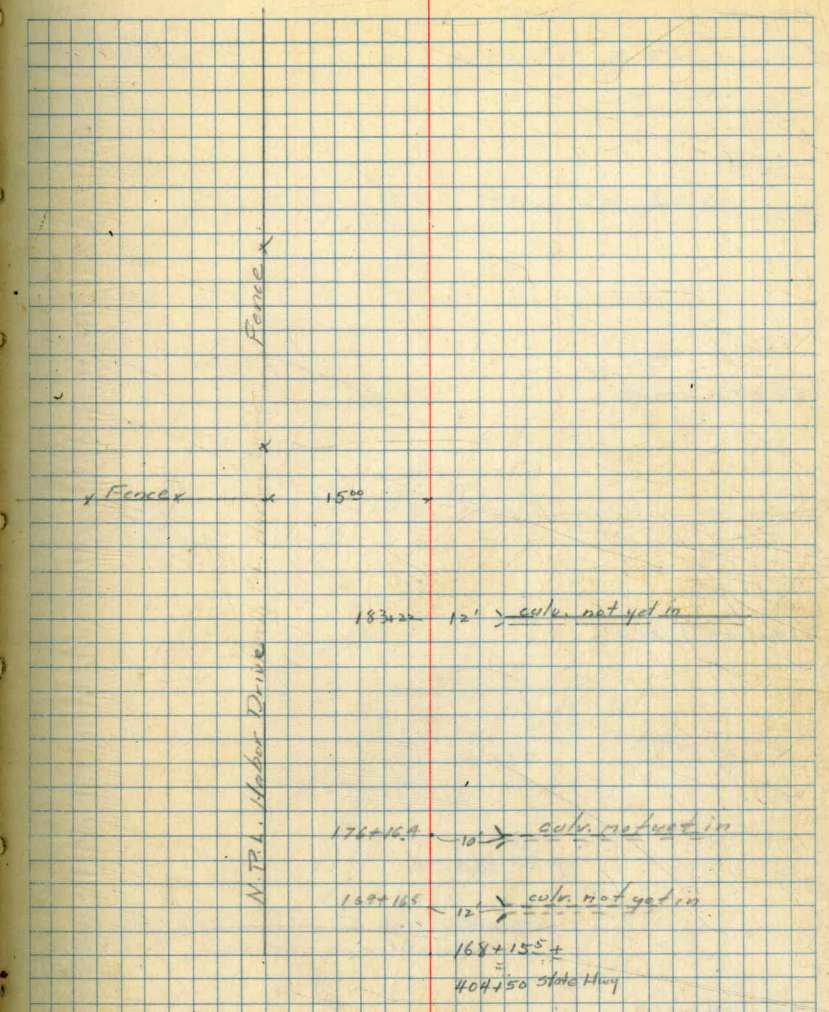
41.00
6.94
47.94
2.36
45.58
4.86
50.44
4.31
46.13

Unit #6 Alignment

Δ = 3°34'55" Rt	+09 - 1°47.5
R = 5185	188 - 1°44.2
L = 324.15	+50 - 1°27.6
	187 - 1°11.1
def 1' = 0.3346	+50 - 0°54.5
def 50' = 0°16'.580	186 - 0°37.7
	+50 - 0°21.3
	185 0°04.7

184+85.61 B.C.

168+03 (end of C.I.P.



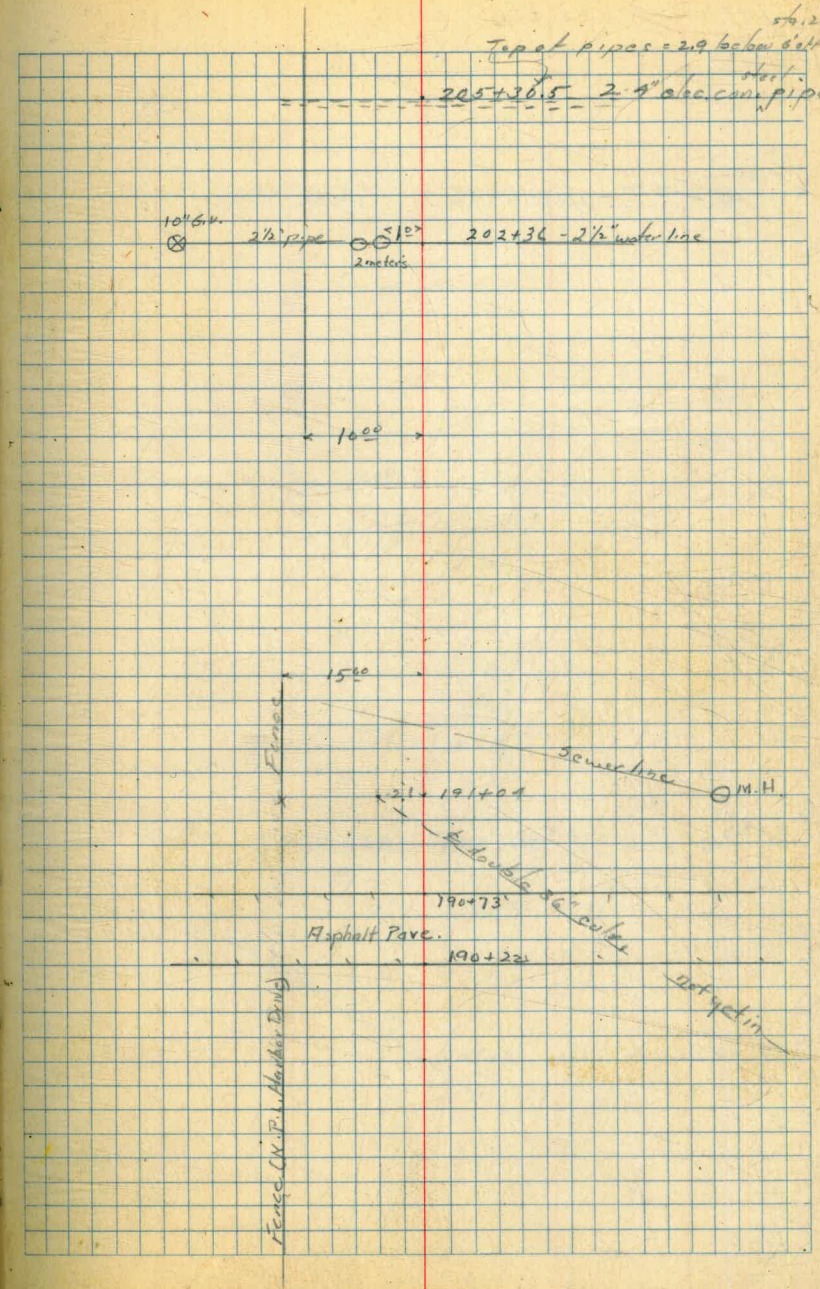
Note: Set a offset hub. 6' lt of 168+03 which is 2.50 above top of C.I.P.

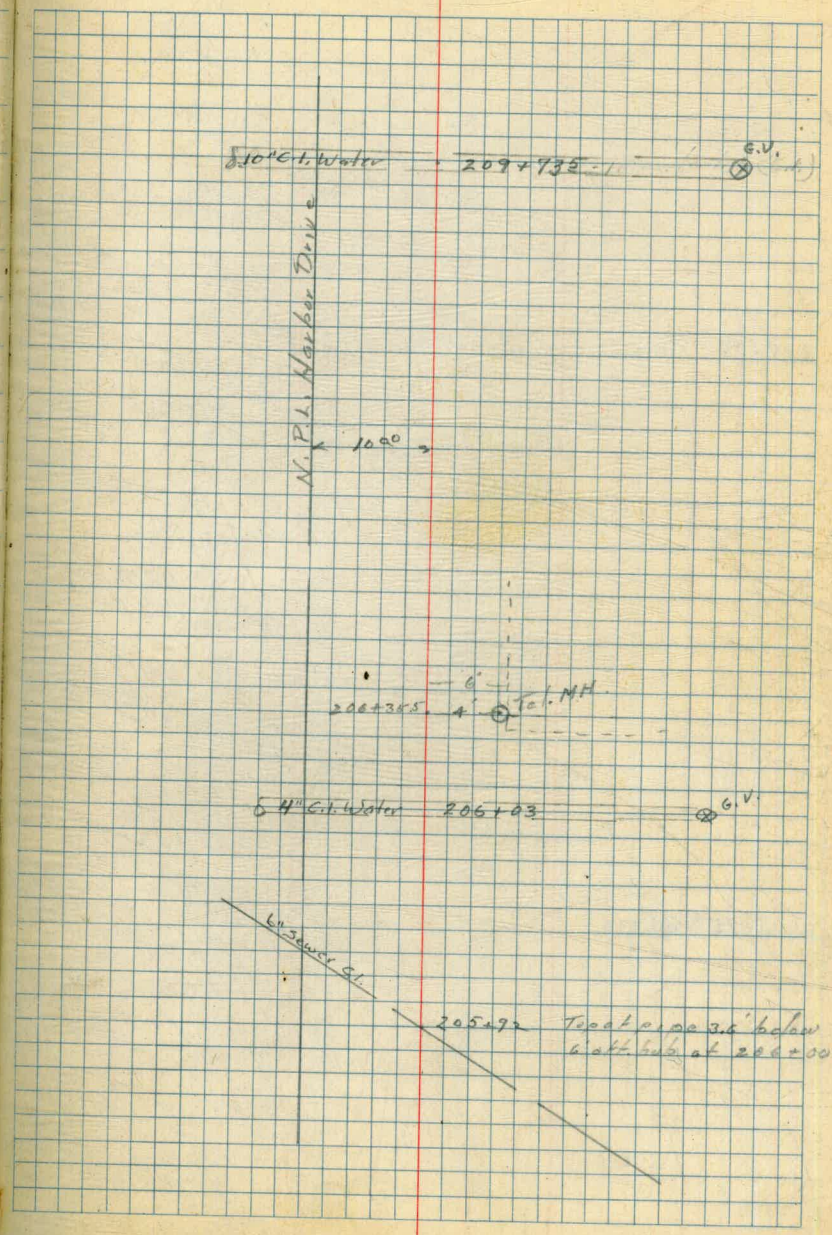
202+00 Δ 1°25' Rt

200+00 Δ 1°25' Lt

Note: Guard stake for E.C. is marked 188+08.96
which station was used in going ahead. = 387+62.99
State Hwy Sta

188+09.96 E.C.




8" C.I. Water
209+935
G.V.
N. P.L. Harbor Drive
100°
6'
208+365
4'
Tel. MH
6" C.I. Water
206+03
G.V.
6" Sewer Sl.
205+92
Top of pipe 3.6' below
bott. tub at 206+00

214+89.6 P.O.C. = end of existing 16" C.I.P.

Δ = 17°55'10"

R = 2138.5

214+89.6 1°16'

214+50 - 0°40'

213+95.31 BC.

213+95.31 ← 10.00 → 358+76.02 E.C. State Hwy

Unit #6 - Profile of ℄ and offsets

B.M.	4.83	7.84		3.01	
			9.1	− 1.3	
168+03 ℄			6.3	+ 1.5	
" 6' off			6.6	1.2	− 2.8
168+50 ℄			6.4	1.4	
" 6' off.			6.5	1.3	−2.85
169+00 ℄			6.4	1.4	
" 6' off			6.6	1.2	−2.9
			5.8	2.0	
169+50 ℄			6.3	1.5	
" 6' off			6.5	1.3	−2.95
170 ℄			6.3	1.5	
" 6' off			6.4	1.4	−3.0
+50 ℄			6.5	1.3	
" 6' off			6.7	1.1	3.05
171 ℄			6.6	1.2	
" 6' off			6.8	1.0	−3.10

Pipe opposite 404+44 (State Hwy Sta)

Top of 16" C.I.P. at sta 168+03

C.4.0

C4.15

C4.1

on hub for curb. 12' Rt 169+16 ℄ (no cut marked on stake

4.25

C4.40

C4.15

C4.10

		7.84				
171 +50 ¢			6.5	1.3		
" 6 off			6.9	0.9	-3.15	C 4.05
172 ¢			6.4	1.4		
" 6 off			6.8	1.0	-3.20	C 4.20
+50 ¢			6.4	1.4		
" 6 off			6.8	1.0	-3.25	C 4.25
173 ¢			6.5	1.3		
" 6 off			6.8	1.0	-3.30	C 4.30
+50 ¢			6.7	1.1		
" 6 off			7.0	0.8	-3.35	C 4.15
174 ¢			6.8	1.0		
" 6 off			6.8	1.0	-3.40	C 4.40
+50 ¢			6.6	1.2		
" 6 off				2.0	-3.45	" 5.45 [illegible] should be replaced just prior to use.
175 ¢			7.1	0.7		
" 6 off			7.1	0.7	-3.50	C 4.20
TP	C 78	7.51	7.11	0.73		

7.51

175+50 ℄		6.4	1.1	
" 6' off		6.5	1.0	-3.55	4.35
175+75			0.8	-3.6	4.40
176 ℄		6.4	1.1	
" 6' off		6.8	0.7	-4.0	4.70
176+25			0.6	-4.5	5.10 on hub for culvert 10' Rt 176+16.4 marked C4.4 to F.L.
+50 ℄		6.1	1.4	
" 6' off		6.3	1.2	-4.0	5.20
176+75			1.1	-3.5	4.60
177 ℄		6.3	1.2	
" 6' off		6.5	1.0	-3.5	4.50
+50 ℄		6.4	1.1	
" 6' off		6.5	1.0	-3.45	4.45
178 ℄		6.8	0.7	
" 6' off		6.8	0.7	-3.4	4.10
+ 50 ℄		6.6	0.9	
" 6' off		6.1	1.4	-3.35	4.75
179 ℄		6.4	1.1	
" 6' off		6.4	1.1	-3.3	4.40

		7.51				
179	+50 ℄		6.9	0.6 ✓		
	" 6' off		6.9	0.6 ✓	-3.25	3.85
180	℄		6.6	0.9 ✓		
	" 6' off		6.3	1.2 ✓	-3.2	4.40
	+50 ℄		6.4	1.1 ✓		
	" 6' off		5.9	1.6 ✓	-3.15	4.75
181	℄		6.1	1.4 ✓		
	" 6' off		5.9	1.6 ✓	-3.10	4.70
	+50 ℄		6.1	1.4 ✓		
	" 6' off		6.0	1.5 ✓	-3.05	4.55
182	℄		6.4	1.1 ✓		
	" 6' off		6.3	1.2 ✓	-3.0	4.20
	+50 ℄		6.4	1.1 ✓		
	" 6' off		6.4	1.1 ✓	-2.95	4.05
183	℄		6.1	1.4 ✓		
	" 6' off		6.1	1.4 ✓	-2.9	4.30
TP	8.14	9.60	6.05	1.46		

9.60

	7.53	2.07 ✓		
183+50 ℄	8.0	1.6 ✓		
" 6' off	7.4	2.2 ✓	-2.85	
184 ℄	7.6	2.0 ✓		
" 6' off	6.6	2.9 ✓	-2.80	
+50 ℄	7.5	2.1 ✓		
" 6' off	7.6	2.0 ✓	-2.75	
184+85 6' BC. ℄	7.9	1.7 ✓		
" 6' off	8.1	1.5 ✓	-2.70	
185 ℄	8.0	1.6 ✓		
" 6' off	8.4	1.2 ✓	-2.7	
+50 ℄	7.8	1.8 ✓		
" 6' off	8.2	1.4 ✓	-2.65	
186 ℄	7.8	1.8 ✓		
" 6' off	7.8	1.8 ✓	-2.60	

on hub 12' Rt 183+22 Marked ℄ 257 to F.L. (culvert)

5.05

5.70

4.75

4.20

3.90

4.05

4.40

960

186+50 ℄	7.8	1.8		
" 6' off	8.1	1.5	-2.55	4.05
187 ℄	8.0	1.6		
" 6' off	8.0	1.6	-2.5	4.10
150 ℄	7.9	1.7		
" 6' off	7.7	1.9	-2.45	4.35
188+09.76 EC. ℄	7.8	1.8		
" 6' off	8.0	1.6	-2.40	4.00
" 11' off	7.1	2.5	-2.40	
188+50 ℄	7.6	2.0		
" 11' off	7.0	2.6	-2.35	4.95
189 ℄	7.4	2.2		
" 11' off	6.8	2.8	-2.30	5.10
150 ℄	8.0	1.6		
" 11' off	7.1	2.5	-2.25	4.75
190 ℄	6.1	3.5		
" 11' off	5.5	4.1	-2.20	6.30

		9.60			
190+22 ℄			4.8	4.8 ✓	
"					
190+50 ℄			4.5	5.1 ✓	
" 11' off			4.5	5.1 ✓	-2.10
+73 ℄			4.7	4.9 ✓	
191 ℄			5.4	4.2 ✓	
" 11' off			5.4	4.2 ✓	-4.0
TP	5.61	9.77	5.44	4.16	
191+25				4.1	-4.0
			5.80	3.97 ✓	
191+50 ℄			5.8	4.0 ✓	
" 11' off			5.3	4.5 ✓	-3.25
191+75				5.0	-2.5
192 ℄			5.8	4.0 ✓	
" 11' off			4.8	5.0 ✓	-2.45
			19.4	-9.6 ✓	
B.M.			5.85	3.92 ✓	Rec. 3.94

7.20

8.20

8.10

on hub for culvert marked C 4 67 to F.L.

7.75

7.50

7.45

Ft line of ? sewer in M.H. 180' Rt 192+00

X on rim of sew. M.H.

9.77

192+50 ℄	5.6	4.2		
" 11' off	5.1	4.7	-2.4	7.10
193 ℄	5.4	4.4		
" 11' off	4.8	5.0	-2.35	7.35
193+50 ℄	5.2	4.6		
" 11' off	5.0	4.8	-2.3	7.10
194 ℄	5.3	4.5		
" 11' off	4.7	5.1	-2.25	7.35
+50 ℄	5.3	4.5		
" 11' off	4.9	4.9	-2.2	7.10
195 ℄	5.1	4.7		
" 11' off	4.7	5.1	-2.15	7.25
195+50 ℄	4.8	5.0		
" 11' off	4.3	5.5	-2.1	7.60
196 ℄	4.5	5.3		
" 11' off	3.9	5.9	-2.05	7.95

		9.77				
196+50 ¢			5.2	4.6 ✓		
" 11' off			4.8	5.0 ✓	-2.0	7.00
197 ¢			5.5	4.3 ✓		
" 11' off			5.7	4.1 ✓	-1.95	6.05
+50 ¢			6.0	3.8 ✓		
" 11' off			6.0	3.8 ✓	-1.9	5.70
TP	5.53	9.34	5.96	3.81		
198 ¢			5.5	3.8 ✓		
" 11' off			5.5	3.8 ✓	-1.85	5.65
+50 ¢			5.5	3.8 ✓		
" 11' off			5.5	3.8 ✓	-1.8	5.60
199 ¢			5.1	4.2 ✓		
" 11' off			5.2	4.1 ✓	-1.75	5.85
+50 ¢			4.8	4.5 ✓		
" 11' off			4.7	4.6 ✓	-1.7	6.30
200+00 ¢			4.5	4.8 ✓		
" 6' off			4.4	4.9 ✓	-1.65	6.55
11' off			4.4	4.9 ✓		

9.34

200+50 ℄	5.4	3.9 ✓	
" 6' off	5.3	4.0 ✓	-1.6
201 ℄	6.3	3.0 ✓	
" 6' off	6.1	3.2 ✓	-1.55
+50 ℄	6.6	2.7 ✓	
" 6' off	6.7	2.6 ✓	-1.50
202 ℄	5.8	3.5 ✓	
" 6' off	6.1	3.2 ✓	1.50
	7.4	1.9 ✓	
202+50 ℄	5.8	3.5 ✓	
" 6' off	5.9	3.4 ✓	-1.5
203 ℄	6.1	3.2 ✓	
" 6' off	5.9	3.4 ✓	-1.5
+50 ℄	5.8	3.5 ✓	
" 6' off	5.9	3.4 ✓	-1.5

5.60

4.75

4.10

4.70

Top of 2½" water line - 202+36

4.90

4.90

4.90

		9.34			
204 ℄			5.6	3.7	
" 6' off			5.4	3.9	-1.5
150 ℄			5.7	3.6	
" 6' off			5.6	3.7	-1.5
205 ℄			6.3	3.0	
" 6' off.			6.2	3.1	-3.0
			9.1	0.2	
205+50 ℄			6.0	3.3	
" 6' off			6.3	3.0	-3.0
π	3.70	6.76	6.28	3.06	
			6.8	0.0	
206+00 ℄			3.3	3.5	
" 6' off			3.2	3.6	-3.0
			5.8	1.0	
			3.5	3.3	
206+50 ℄			3.4	3.4	
" 6' off			3.7	3.1	-2.0

92
26
58

5.40

3.20

6.10

Top of 2- 4" steel elect. conduit pipes 205+30.5

6.00

Top of 6" C.I. sewer 205+92

6.60

Top of 4" C.I. water line

Rim of Tele M.H. 4' Rt 206+35.5

5.10

6.76

207 ℄		3.6	3.2 ✓	
" 6' off		3.4	3.4 ✓	-2.0
+50 ℄		3.9	2.9 ✓	
" 6' off		3.7	3.1 ✓	-2.0
208 ℄		4.0	2.8 ✓	
" 6' off		3.7	3.1 ✓	-2.0
+50 ℄		3.8	3.0 ✓	
" 6' off		3.8	3.0 ✓	-2.0
209 ℄		4.4	2.4 ✓	
" 6' off		4.0	2.8 ✓	-2.0
209+25			2.3	-2.0
+50 ℄		4.3	2.5 ✓	
" 6' off		4.2	2.6 ✓	-2.5
209+75		6.7	2.2 ✓	-3.0
210 ℄		4.6	2.2 ✓	
" 6' off		4.2	2.6 ✓	-2.5
210+25			2.8	-2.0
+50 ℄		4.4	2.4 ✓	
" 6' off		4.0	2.8 ✓	-2.0

5.40

5.10

5.10

5.00

4.80

5.30

5.10

0.1 Top of 10" C.I. water main - 209+73.5 C5.2

5.10

4.8

4.8

		6.76			
211 ℄			4.5	2.3	✓
" 6' off			4.3	2.5	✓ -2.0
+50 ℄			5.3	1.5	✓
" 6' off			5.4	1.4	✓ -2.0
212 ℄			4.3	2.5	✓
" 6' off			4.7	2.1	✓ -2.1
+50 ℄			4.0	2.8	✓
" 6' off			3.9	2.9	✓ -2.1
213 ℄			4.6	2.2	✓
" 6' off			4.3	2.5	✓ -2.1
+50 ℄			4.5	2.3	✓
" 6' off			4.4	2.4	✓ -2.2
213+95.3' BC ℄			4.4	2.4	✓
" 6' off			4.4	2.4	✓ -2.2
TP	4.96	7.34	4.38	2.38	
B.M.			3.88	3.46	Rec. 3.465
	4.07	7.53			

(over)

4.50

3.40

4.20

5.00

4.60

4.60

4.60

True pin in base of fence post H 2144

7.53

214+50 ℄	5.0	2.5'	
" 6' off	4.9	2.7'	-2.2
214+89 ℄	5.1	2.4'	
" 6' off.	5.2	2.3'	-2.3?
	8.36	- 0.83	

4.90

4.6

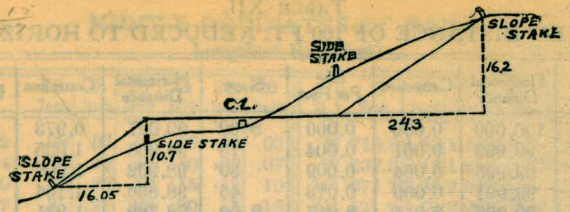
Top of Existing 16" C.I.P.

IMPROVED TABLES

AND

INFORMATION

192
15



DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING.

SLOPE 1½ TO 1. ROADWAY OF ANY WIDTH.

	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
0	0 00	0 15	0.30	0.45	0.60	0.75	0.90	1.05	1.20	1.35	0
1	1.50	1 65	1 80	1.95	2.10	2.25	2.40	2.55	2.70	2.85	1
2	3.00	3.15	3.30	3 45	3.60	3 75	3.90	4.05	4.20	4 35	2
3	4.50	4 65	4.80	4.95	5.10	5 25	5 40	5.55	5.70	5.85	3
4	6.00	6 15	6.30	6.45	6.60	6.75	6.90	7.05	7.20	7.35	4
5	7 50	7.65	7.80	7.95	8.10	8.25	8.40	8.55	8.70	8.85	5
6	9 00	9 15	9.30	9.45	9.60	9.75	9.90	10.05	10.20	10.35	6
7	10.50	10 65	10.80	10.95	11.10	11.25	11.40	11.55	11 70	11.85	7
8	12.00	12 15	12.30	12.45	12.60	12.75	12.90	13.05	13.20	13.35	8
9	13 50	13.65	13 80	13 95	14.10	14.25	14.40	14 55	14.70	14.85	9
10	15.00	15 15	15 30	15 45	15.60	15.75	15.90	16.05	16.20	16 35	10
11	16 50	16 65	16 80	16.95	17 10	17.25	17.40	17.55	17.70	17.85	11
12	18 00	18.15	18.30	18 45	18.60	18 75	18.90	19.05	19.20	19.35	12
13	19 50	19 65	19.80	19.95	20.10	20.25	20 40	20.55	20.70	20.85	13
14	21.00	21 15	21.30	21.45	21 60	21.75	21.90	22 05	22 20	22 35	14
15	22 50	22 65	22 80	22 95	23.10	23.25	23.40	23.55	23.70	23.85	15
16	24.00	24 15	24 30	24 45	24.60	24.75	24 90	25 05	25.20	25.35	16
17	25.50	25 65	25.80	25 95	26.10	26 25	26 40	26.55	26.70	26.85	17
18	27.00	27 15	27.30	27 45	27.60	27.75	27.90	28.05	28 20	28.35	18
19	28 50	28 65	28 80	28.95	29.10	29.25	29.40	29.55	29.70	29.85	19
20	30 00	30.15	30.30	30.45	30.60	30.75	30.90	31.05	31.20	31.35	20
21	31 50	31 65	31.80	31.95	32 10	32 25	32.40	32.55	32 70	32 85	21
22	33 00	33 15	33 30	33 45	33.60	33 75	33.90	34.05	34.20	34.35	22
23	34 50	34 65	34.80	34.95	35.10	35 25	35 40	35.55	35.70	35 85	23
24	36.00	36 15	36.30	36 45	36.60	36.75	36.90	37.05	37.20	37.35	24
25	37.50	37.65	37 80	37.95	38.10	38.25	38.40	38.55	38.70	38.85	25
26	39 00	39 15	39.30	39 45	39 60	39.75	39.90	40.05	40.20	40.35	26
27	40 50	40 65	40 80	40.95	41.10	41.25	41 40	41.55	41.70	41.85	27
28	42 00	42 15	42.30	42.45	42.60	42 75	42.90	43.05	43.20	43.35	28
29	43 50	43 65	43.80	43 95	44.10	44 25	44 40	44.55	44.70	44 85	29
30	45 00	45 15	45.30	45 45	45.60	45.75	45.90	46.05	46 20	46.35	30
31	46.50	46.65	46.80	46 95	47.10	47.25	47.40	47.55	47.70	47.85	31
32	48 00	48.15	48.30	48 45	48.60	48 75	48.90	49.05	49 20	49.35	32
33	49.50	49 65	49.80	49.95	50.10	50.25	50.40	50.55	50.70	50.85	33
34	51 00	51.15	51.30	51.45	51.60	51.75	51.90	52.05	52.20	52.35	34
35	52 50	52.65	52.80	52.95	53.10	53.25	53.40	53.55	53.70	53.85	35
36	54 00	54.15	54.30	54 45	54.60	54.75	54.90	55.05	55.20	55.35	36
37	55 50	55 65	55.80	55.95	56.10	56.25	56.40	56.55	56.70	56.85	37
38	57.00	57.15	57.30	57 45	57.60	57.75	57.90	58.05	58.20	58 35	38
39	58 50	58.65	58 80	58.95	59.10	59 25	59.40	59 55	59.70	59.85	39
40	60 00	60.15	60 30	60 45	60 60	60.75	60 90	61.05	61 20	61.35	40
41	61.50	61 65	61 80	61 95	62 10	62 25	62.40	62 55	62 70	62.85	41
42	63 00	63.15	63 30	63 45	63 60	63 75	63 90	64 05	64 20	64.35	42
43	64.50	64 65	64 80	64.95	65.10	65 25	65 40	65.55	65.70	65.85	43
44	66 00	66 15	66.30	66.45	66.60	66.75	66.90	67.05	67.20	67.35	44
45	67 50	67 65	67 80	67.95	68.10	68.25	68.40	68.55	68.70	68.85	45
46	69 00	69 15	69 30	69.45	69.60	69.75	69.90	70.05	70.20	70.35	46
47	70.50	70 65	70 80	70 95	71.10	71.25	71.40	71.55	71.70	71.85	47
48	72.00	72 15	72.30	72.45	72.60	72.75	72.90	73 05	73.20	73 35	48
49	73 50	73 65	73.80	73.95	74.10	74.25	74.40	74.55	74.70	74.85	49
50	75.00	75.15	75.30	75.45	75.60	75.75	75.90	76.05	76.20	76.35	50

Computed by L. Leland Locke.

El. 2.09 1½" pipe sta. 395+93
" 1.53 " " " 387+78
" 3.94 X N. side sew. MH 380+76
3.47 Steel pin in fence post base 387+77
3.01 1" iron pipe 404+44

Subtract 6.12 from Elevations of U.S.G.S. to agree with City of San Diego Datum.

176+16.4

169+16.5

255.67
85.14
341.11

49.99
4
199.96
36.30
38.74
275.00

49.53
4
198.12

36.30
198.12
38.74
273.16

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

Roadway 16 feet wide. Side Slopes 1 on 1½

For Single Track Embankment.

H	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	H
0	8.0	8.2	8.3	8.5	8.6	8.8	8.9	9.1	9.2	9.4	0
1	9.5	9.7	9.8	10.0	10.1	10.3	10.4	10.6	10.7	10.9	1
2	11.0	11.2	11.3	11.5	11.6	11.8	11.9	12.1	12.2	12.4	2
3	12.5	12.7	12.8	13.0	13.1	13.3	13.4	13.6	13.7	13.9	3
4	14.0	14.2	14.3	14.5	14.6	14.8	14.9	15.1	15.2	15.4	4
5	15.5	15.7	15.8	16.0	16.1	16.3	16.4	16.6	16.7	16.9	5
6	17.0	17.2	17.3	17.5	17.6	17.8	17.9	18.1	18.2	18.4	6
7	18.5	18.7	18.8	19.0	19.1	19.3	19.4	19.6	19.7	19.9	7
8	20.0	20.2	20.3	20.5	20.6	20.8	20.9	21.1	21.2	21.4	8
9	21.5	21.7	21.8	22.0	22.1	22.3	22.4	22.6	22.7	22.9	9
10	23.0	23.2	23.3	23.5	23.6	23.8	23.9	24.1	24.2	24.4	10
11	24.5	24.7	24.8	25.0	25.1	25.3	25.4	25.6	25.7	25.9	11
12	26.0	25.2	26.3	26.5	26.6	26.8	26.9	27.1	27.2	27.4	12
13	27.5	27.7	27.8	28.0	28.1	28.3	28.4	28.6	28.7	28.9	13
14	29.0	29.2	29.3	29.5	29.6	29.8	29.9	30.1	30.2	30.4	14
15	30.5	30.7	30.8	31.0	31.1	31.3	31.4	31.6	31.7	31.9	15
16	32.0	32.2	32.3	32.5	32.6	32.8	32.9	33.1	33.2	33.4	16
17	33.5	33.7	33.8	34.0	34.1	34.3	34.4	34.6	34.7	34.9	17
18	35.0	35.2	35.3	35.5	35.6	35.8	35.9	36.1	36.2	36.4	18
19	36.5	36.7	36.8	37.0	37.1	37.3	37.4	37.6	37.7	37.9	19
20	38.0	38.2	38.3	38.5	38.6	38.8	38.9	39.1	39.2	39.4	20
21	39.5	39.7	39.8	40.0	40.1	40.3	40.4	40.6	40.7	40.9	21
22	41.0	41.2	41.3	41.5	41.6	41.8	41.9	42.1	42.2	42.4	22
23	42.5	42.7	42.8	43.0	43.1	43.3	43.4	43.6	43.7	43.9	23
24	44.0	44.2	44.3	44.5	44.6	44.8	44.9	45.1	45.2	45.4	24
25	45.5	45.7	45.8	46.0	46.1	46.3	46.4	46.6	46.7	46.9	25
26	47.0	47.2	47.3	47.5	47.6	47.8	47.9	48.1	48.2	48.4	26
27	48.5	48.7	48.8	49.0	49.1	49.3	49.4	49.6	49.7	49.9	27
28	50.0	50.2	50.3	50.5	50.6	50.8	50.9	51.1	51.2	51.4	28
29	51.5	51.7	51.8	52.0	52.1	52.3	52.4	52.6	52.7	52.9	29
30	53.0	53.2	53.3	53.5	53.6	53.8	53.9	54.1	54.2	54.4	30
31	54.5	54.7	54.8	55.0	55.1	55.3	55.4	55.6	55.7	55.9	31
32	56.0	56.2	56.3	56.5	56.6	56.8	56.9	57.1	57.2	57.4	32
33	57.5	57.7	57.8	58.0	58.1	58.3	58.4	58.6	58.7	58.9	33
34	59.0	59.2	59.3	59.5	59.6	59.8	59.9	60.1	60.2	60.4	34
35	60.5	60.7	60.8	61.0	61.1	61.3	61.4	61.6	61.7	61.9	35
36	62.0	62.2	62.3	62.5	62.6	62.8	62.9	63.1	63.2	63.4	36
37	63.5	63.7	63.8	64.0	64.1	64.3	64.4	64.6	64.7	64.9	37
38	65.0	65.2	65.3	65.5	65.6	65.8	65.9	66.1	66.2	66.4	38
39	66.5	66.7	66.8	67.0	67.1	67.3	67.4	67.6	67.7	67.9	39
40	68.0	68.2	68.3	68.5	68.6	68.8	68.9	69.1	69.2	69.4	40

Example—If point is 22.6 ft. above grade, how far should it be from center line to be a slope stake point? Ans. from Table 41.9. For same slopes but other widths of roadbed correct above figures by one-half difference in width of roadbed; thus in example above for 20 ft. roadbed distance will be 41.9+(20—16)÷2 or 2 ft. added to 41.9 =43.9. For slopes of 1 on 1 see inside of front cover.