

W
674

TRAVELER'S

NO. 62

EUGENE DIETZGEN CO.

DRAWING MATERIALS, MATHEMATICAL and
SURVEYING INSTRUMENTS

Chicago New York San Francisco New Orleans Pittsburg Toronto

Distance from Center of Roadway for Cross-Sectioning
Roadway Street wide. Side Slopes 1 on 1.
For Single Track Embankment.

H	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	H
0		8.1	8.2	8.3	8.4	8.5	8.6	8.7	8.8	8.9	0
1		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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674

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.

alger

Indexed to p. 79, 2/7/46 *ms*

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SIERRA FILTER PLANT - 1-16
EUCIID AVE. P.L.

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EUCIID AVE P.L.

ALVARADO FILTER PLANT - EUCLID
AVE. P.L.

	Dist.	H	MAG	V	
6 to 12	722.7 (741)		POT	-9°02'	5.0 5.0
			POT		
6 to 7	149.7 (158)			-13°17'	5.0 5.0
3 to 6	588.5 (602)		POT	-8°38'	5.0 5.0
3 to 5	534.5 (547)		POT	-8°39'	5.0 5.0
3 to 4	67.7 (68)		POT	-6°45'	5.0 5.0
0 to 3	530.8 (532)		POT	-2°44'	5.1 5.1
0 to 2	345 (346)		POT	-3°06'	10.1 5.1
0 to 1	170.2 (171)	S43 ³⁰ W	POT	-3°08'	7.1 5.1
0					
			El. Point 0 = 496.9		4.2 5.1

6-19-44

217.4 ✓	
296.9 W.H.	
332.2	331.8 W.H.
340.5	
413.2	
421.1 ✓	
422.8 W.H.	
435.1 W.H.	
	← 31°32' 30"
	← Back for Murray P.L. produced
	Point #0 focal point 67+33 ^{±3}
	← Focal point Murray P.L. Sta. 67+33 ^{±3}

15 to 18	337.7 (340)	POT + 4°36'	5.0 5.0
15 to 17	129.7 (132)	POT - 7°35'	5.0 5.0
15 to 16	71.0 (72)	POT - 6°49'	5.0 5.0
13 to 15	276.6 (277)	POT + 2°18'	5.0 5.0
13 to 11	✓ (60)	POT - 1°08'	5.0 5.0
12 to 13	79.8 (81)	POT + 7°20'	5.0 5.0
12 to 11	106.6 (107)	POT - 6°45'	5.0 5.0
12 to 10	199.1 (210)	POT - 15°57'	5.0 5.0
12 to 9	236.2 (237)	POT - 3°24'	5.0 5.0
12 to 8	306.2 (307)	POT + 2°55'	5.0 5.0
6 to 13	80.5 (810)	POT - 7°28'	5.0 5.0

266.0 W.H.

221.5 W.H.

230.3 W.H.

238.8 ✓

226.5 W.H.

227.7 ✓

204.9 W.H.

161.9 W.H.

203.4 W.H.

233.0 W.H.

outcroppings
of sand
160-15 seems
to be fractured
in the soil

15 to

12 to 15
broken add

Start point 6 to 12
huge boulder
outcroppings

27 to 29	169.6 (170)	Pot	-0° 35'	11.0 5.0
27 to 28	137.4 (138)	S 4° E	7° 47' Lt + 0° 30'	13.0 5.0
27 to 26	75.0 (76)	Pot	+4° 23'	8.0 5.0
27 to 25	86.3 (88)	Pot	+4° 20'	11.0 5.0
23 to 27	364.9 (375)	Pot	-9° 27'	4.9 4.9
23 to 24	99.8 102	S 4 3/4° W	38° 11' Lt - 8° 26'	4.9 4.9
22 to 23	(12)	Pot	0.0	7.5 5.3
15 to 22	654.3 (663)	Pot	+6° 35'	5.0 5.0
15 to 21	482.3 (488)	Pot	+6° 12'	5.0 5.0
15 to 20	419.4 (425)	Pot	+5° 56'	10.0 5.0
15 to 19	368.2 (372)	Pot	+5° 51'	5.0 5.0

3

243.6 W.H. in mask
 244.5 W.H. ON TOP of CONG. WALL
 254.1 W.H.
 251.9 W.H.
 251.3 W.H.
 320.3 ?
 297.2
 312.0 ✓
 314.2 ✓
 291.2 W.H.
 282.5 W.H.
 276.5 W.H.

38 to 39	111.8 (112)	0.0	0.3 5.3
35 to 38	241.9 (245)	Pot +5°32'	8.8 4.8
35 to 37	126.3 (128)	Pot +6°36'	4.8
35 to 36	39.9 (41)	S 10°W 12°44' $\frac{1}{2}$ + 7°33'	4.8 4.8
27 to 35	770.6 (805)	Pot +11°55'	5.0 5.0
27 to 34	685.9 (716)	Pot +11°50'	5.0 5.0
27 to 33	607.1 (627)	Pot +10°15'	5.0 5.0
27 to 32	428.0 (435)	Pot +7°15'	5.0 5.0
27 to 31	345.5 348	Pot +4°53'	5.0 5.0
27 to 30	247.9 (248)	Pot +0°55'	5.0 5.0

438.4 W.H.

433.4 VV

428.5 W.H.

420.6 W.H.

413.9 ✓ 18' dirt road to Stadium

395.0 W.H.

361.1 W.H.

305.8 W.H.

280.8 W.H.

255.3 W.H.

18' dirt road

This road is on E. line
College Park
lot

to Stadium

47 to 48	155.7 (156)	S 40° W	1° 15' 30" L _H - 2° 26'	5.0 5.0
47 to 46	62.7 (63)	Pot	- 3° 44'	5.0 5.0
47 41 to 46	753.5 (770) (755) n.s.	Pot	- 2° 32'	5.0 5.0
41 to 45	513.1 (520)	Pot	- 5° 30'	15.0 5.0
41 to 44	310.4 (313)	Pot	- 5° 14'	5.0 5.0
41 to 43	115.1 (116)	Pot	- 5° 05'	5.0 5.0
41 to 42	(80)	S 41° W	31° 07' R _H	
38 to 41	509.9 (510)	Pot	+ 0° 43'	5.3 5.3
38 to 40	375.9 (376)	Pot	+ 1° 04'	5.3 5.3

401.0 W.H.

403.5 W.H.

407.6^{H.S.}
406.9

381.3 W.H.

412.5 W.H.

430.7 W.H.

440.9 W.H.

440.9

439.8

440.4 W.H.

Distances, hor. angles, vert. angles
Checked X to X - 5 to 41 - 79
11-8-44

Saper
King
Otten
Stephens

Note - El of this Point from BM in area = 440.9

W. Line College
Park lot

1st dirt road

road

1st dirt

54656 132.7
(133) Pot -2°35' 5.0
5.0

54655 (82) S 43°W 3°00' Rt -0°5'

49654 542.1
(543) Pot -2°19' 5.0
5.0

49653 328.3
(330) Pot -4°06' 5.0
5.0

49652 264.1
(275) Pot -11°30' 5.0
5.0

49652 143.5
(150) Pot -11°59' 5.0
5.0

49651 100.1
(110) Pot -13°30' 13.0
5.0

49650 45.2
(47) Pot -11°21' 5.0
5.0

47649 286.2
(288) Pot -3°15' 12.0
5.0

355.7 W.H.

361.6 W.H.

361.7 ✓

360.1 W.H.

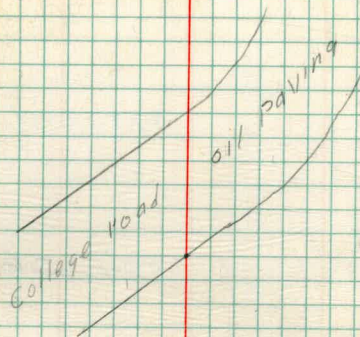
329.9 W.H.

353.1 W.H.

350.6 W.H.

374.5 W.H.

383.6 384.3 W.H.



58465	710.3 (720)	Pot	-6°41'	5.2 5.2	
58464	638.6 (650)	Pot	-7°38'	5.2 5.2	
58463	570.6 (580)	Pot	-6°49'	10.2 5.2	
58462	481.5 (490)	Pot	-7°34'	5.2 5.2	
58461	351.5 (345)	Pot	-11°25'	5.2 5.2	
58460	254.5 (264)	Pot	-10°55'	5.2 5.2	
58459	108.8 (117)	Pot	-13°57'	8.0 5.2	
57458	110.5 (110) (112) ^{H.S.}	S 50 ³ / ₄ ° W	8°00'30" R _L	-6°38'	5.2 5.2
54457	477.2 (480) (478) ^{H.S.}	Pot	-2°25'	5.0 5.0	

245.4 W.H.

249.0 W.H.

255.2 W.H.

264.7

261.7

279.5 W.H.

298.4 W.H.

328.6

341.2
341.6 W.H.

684074 $\begin{matrix} 534.0 \\ (547) \end{matrix}$ Pot $+8^{\circ}51'$ $\begin{matrix} 5.2 \\ 5.2 \end{matrix}$

684073 $\begin{matrix} 474.9 \\ (480) \end{matrix}$ Pot $+5^{\circ}56'$ $\begin{matrix} 5.2 \\ 5.2 \end{matrix}$

684072 $\begin{matrix} 342.9 \\ (343) \end{matrix}$ Pot $-0^{\circ}40'$ $\begin{matrix} 7.2 \\ 5.2 \end{matrix}$

684071 $\begin{matrix} 227.3 \\ (230) \end{matrix}$ Pot $-4^{\circ}45'$ $\begin{matrix} 11.2 \\ 5.2 \end{matrix}$

684070 $\begin{matrix} 155.4 \\ (160) \end{matrix}$ Pot $-7^{\circ}39'$ $\begin{matrix} 11.2 \\ 5.2 \end{matrix}$

684069 $\begin{matrix} 54.9 \\ (60) \end{matrix}$ $10^{\circ}56' \text{ Lt. } -15^{\circ}0'$ $\begin{matrix} 7.2 \\ 5.2 \end{matrix}$

584068 $\begin{matrix} 1293.1 \\ (1300) \end{matrix}$ ✓ Pot $-4^{\circ}10'$ ✓ $\begin{matrix} 5.2 \\ 5.2 \end{matrix}$ ✓

584067 $\begin{matrix} 1132.7 \\ (1140) \end{matrix}$ Pot $-4^{\circ}36'$ $\begin{matrix} 5.2 \\ 5.2 \end{matrix}$

584066 $\begin{matrix} 968.5 \\ (980) \end{matrix}$ Pot $-6^{\circ}12'$ $\begin{matrix} 5.2 \\ 5.2 \end{matrix}$

317.5 W.W.

283.7 W.W.

228.4 W.W.

209.4 W.W.

207.3 W.W.

217.4 W.W.

234.4 ✓

237.5 W.W.

223.3 W.W.

79 to 110 (846) 17°19'lt +0°06' 5.0
page 39 this book 5.0

Line Cont. As Transit survey Page 16

75 to 79 (416) ✓ Pot +5°33' ✓ 5.0
412.1 5.0

75 to 78 (380) Pot +6°05' 5.0
375.7 5.0

75 to 77 (324) Pot +5°33' 5.0
321.0 5.0

75 to 76 (242) S1°W 38°49'30"lt. +1°50' 10.0
339.3 5.0

68 to 75 (655) ✓ Pot +11°05' 5.2
626.0 5.2
(650) H.S.

399.2 H.S.

Pt. # 110 = Elev 399.0

This closure with line east of
State College made 11-10-44
Elev. from City B.M. makes this
point elev. 394.0 H.S.

Saper
King
Allen
Stephens

397.9 ✓ 392.18 = E1. from B.M. ✓
397.8 H.S.

398.0 H.H.

389.1 H.H.

373.2 H.H.

357.9 ✓

357.8 H.S.
357.1 H.H.

Alternate Route

6-22-44

0 to 8	613.3 (615)	POT	-3° 00'	5.2	
0 to 7	538.7 (542)	POT	-4° 25'	5.2	
0 to 6	498.2 (502)	POT	-4° 58'	5.2 5.2	
0 to 5	394.9 (400)	POT	-6° 29'	11.2 5.2	
0 to 4	316.7 (320)	POT	-5° 19'	6.1 5.2	
0 to 3	202.1 (205)	POT	-6° 48'	10.2 5.2	
0 to 2	103.2 (104)	POT	-4° 57'	5.2 5.2	
0 to 1	76.5 (77)	533 ¹⁰ ₂ W	23° 18' 23° 13'	-4° 25'	5.2 5.2

Point 0 Starting point = Point # 91 previous
 Backsight on Pt # 38 page 5
 Mag. S10°W H.S.

10.

437.7 w.H.

391.3 w.H.

Distances, hor. angles, vert. angles
 checked from T to T 11-8-44

Sapper
 King
 Allen
 Stephens

397.6 w.H.

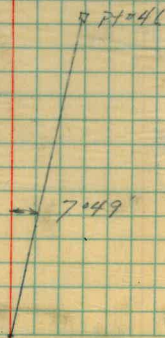
390.0 w.H.

407.6 w.H.

411.8 w.H.

432.0 w.H.

435.0 w.H.



Route Et. 440.9 w.H.

11 to 17	520.5 (525)	Pot -5°19'	5.2 5.2
11 to 16	390.9 (394)	Pot -5°05'	5.2 5.2
11 to 15	330.2 (333)	Pot -5°13'	5.2 5.2
11 to 14	250.2 (254)	Pot -6°59'	5.2 5.2
11 to 13	200.2 (205)	Pot -8°49'	5.2 5.2
11 to 12	71.3 (72)	Pot -5°49'	5.2 5.2
10 to 11	849.7 (850)	Pot -1°00'	5.2 5.2
0 to 10	753.8 (754)	Pot -1°00'	5.2 5.2
0 to 9	714.6 (715)	Pot -1°23'	5.2 5.2

377.7 W.H.

391.3 W.H.

395.9 W.H.

395.6 W.H.

392.0 W.H.

418.8 W.H.

426.1

427.8 W.H.

423.7 W.H.

23 to 25 361.6
(363) ✓ Pot -3°38' 5.2
5.2

25 to 21 194.3
(195) ✓ 9°27'30" Lt -3°23' 5.2
5.2

20^{HS}
21 to 23 396.4
(395) ✓ Pot -3°40' 4.7
(398') HS 4.7

20^{HS}
21 to 22 313.6
(315) ✓ Pot -3°49' 4.7
4.7

20 to 21 228.9
(230) ✓ 575² W 42°00' Rt -9°02' 4.7
42°36' Rt 4.7

11 to 20 567.3
(572) ✓ Pot -5°07' 5.2
5.2

11 to 19 542.4
(547) ✓ Pot -5°19' 5.2
5.2

11 to 18 540.4
(545) ✓ Pot -5°16' 5.2
5.2

326.8 HS
326.2 Pav 10' ← 30'

338.4 W.H. 40'

349.9 HS
349.2 Pav 10' ← 30'

354.4 W.H. Point #55
Previous line 32°11'30"
Edge paving
40' ← edge pav.

359.2 W.H. Edge Pav.
18' conc.
Invert
Curbled Catch

375.3 HS
374.4 40' paved

373.7 W.H.

373.3 W.H.

282.3
 285 ✓
 30 to 33 (283) Pot -5°35' ✓ 5.0
 5.0

(Shot #32 Evidently
 Not Taken
 w.H.)

86.3
 30 to 31 (87) 540°W 7°59' ✓ -5°14' 5.0
 5.0

1037.6
 25 to 30 (1030) Pot -2°43' ✓ 5.2
 1040 ✓ 5.2

1022.4
 25 to 29 (1025) Pot -2°52' 5.2
 5.2

682.0
 25 to 28 (684) Pot -3°04' 5.2
 5.2

515.3
 25 to 27 (517) — -3°17' 5.2
 5.2

268.8
 25 to 26 (270) 546°W 19°49' ✓ -3°45' 5.2
 5.2

250.0 H.S.
 249.8

269.7 W.H.

277.6 H.S.
 277.4

edge pav. | Leaf # WY

275.17 W.H.

edge Pav.

290.3 W.H.

277.2 W.H.

Point 27 edge Pav.

309.2 W.H.

3°00'30"

edge Pav.

Point 26

9°57'

edge Pav.

Point 25

edge Pav. S. 46° W

33 to 42	693.7 (710)	Pot +8° 43'	5.0 5.0
33 to 41	606.2 (614)	Pot +6° 27'	5.0 5.0
33 to 40	537.8 (540)	Pot +3° 41'	5.0 5.0
33 to 39	414.2 (415)	Pot -2° 33'	5.0 5.0
33 to 38	353.4 (355)	Pot -3° 49'	10.0 5.0
33 to 37	303.1 (305)	Pot -4° 29'	10.0 5.0
33 to 36	231.3 (232)	Pot -8° 56'	11.0 5.0
33 to 35	131.7 (135)	Pot -9° 02'	16.0 5.0
33 to 34	78.3 (80)	Pot -8° 25'	5.0 5.0

356.4 H.S.
356.2 Point # 42 = Point # 75 previous line
See next page for
Hor. L.

318.5 W.H.

284.6 W.H.

231.5 W.H.

221.9 W.H.

221.2 W.H.

207.6 W.H.

204.10 W.H.

238.4 W.H.

75(2) to 76

S 1° W

36° 49' Lt H.S.
37° 01' Lt.

6-26-44

£

16

14+70²⁹

Void

0+00 17°19'30" L Lt.

use 101+00 for new pt

fd. L.P. & C.T.

fd. old nail
at end
of pav. in
49th St.

fd. L.P. & C.T.

£ 49th St.

0+00 = Point 79 Stadia
Survey Page 9

Euclid Ave. P.L. Loc. - 49th St. - Adams Ave., Monroe
to junction with Kil Capitan Pipeline.

107+01¹⁰ P.O.T.

Revised - 12/29/44

Book 679-51

π^{*79} - assumed sta. 101+00
for chained survey.

$18^{\circ}38' \text{lt}$

415.1

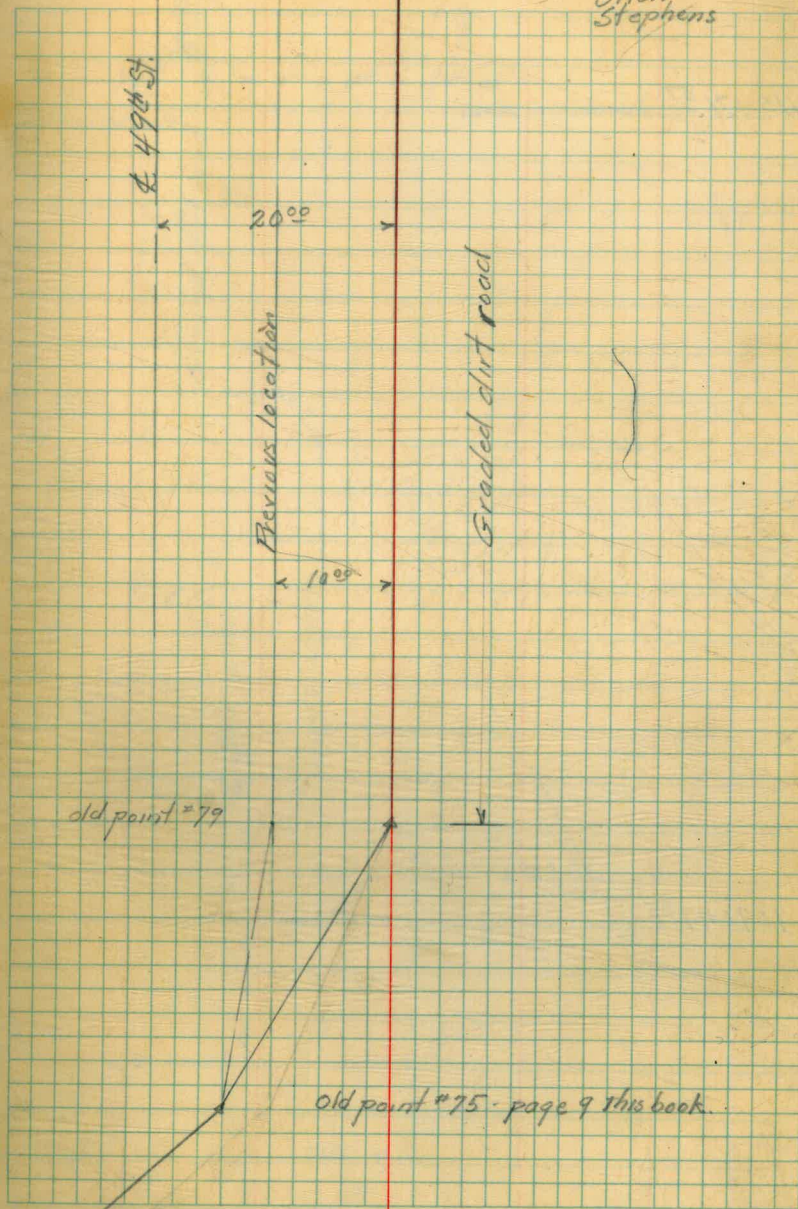
π^{*75} to π^{*79} (419)

$37^{\circ}26' \text{lt} + 5^{\circ}31'$

H.I. Rod
4.8 4.8

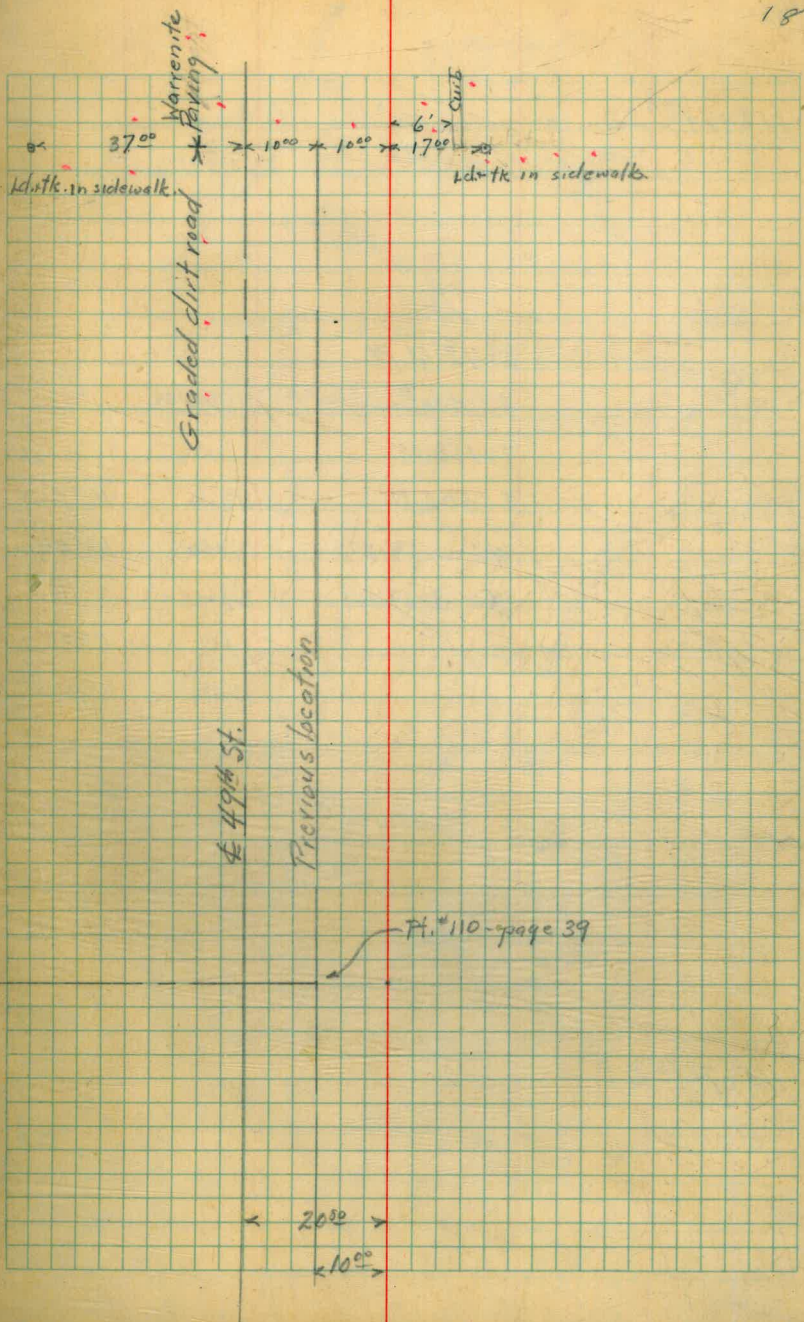
Continued from page 9 - this book

Nov. 14, 1944
Soper
King
O'Brien
Stephens 17



~~115+71⁵⁷~~

109+47²⁵



118+74³⁹ E.C.

$A = 43^{\circ} 21.12'$

$R = 400'$

$T = 158.98$

$L = 302.64$

def. 1: 4.297

def. 50: 3° 34.859

118+74.39 21° 40.5

+50 19° 56.7

118+00 16° 20.8

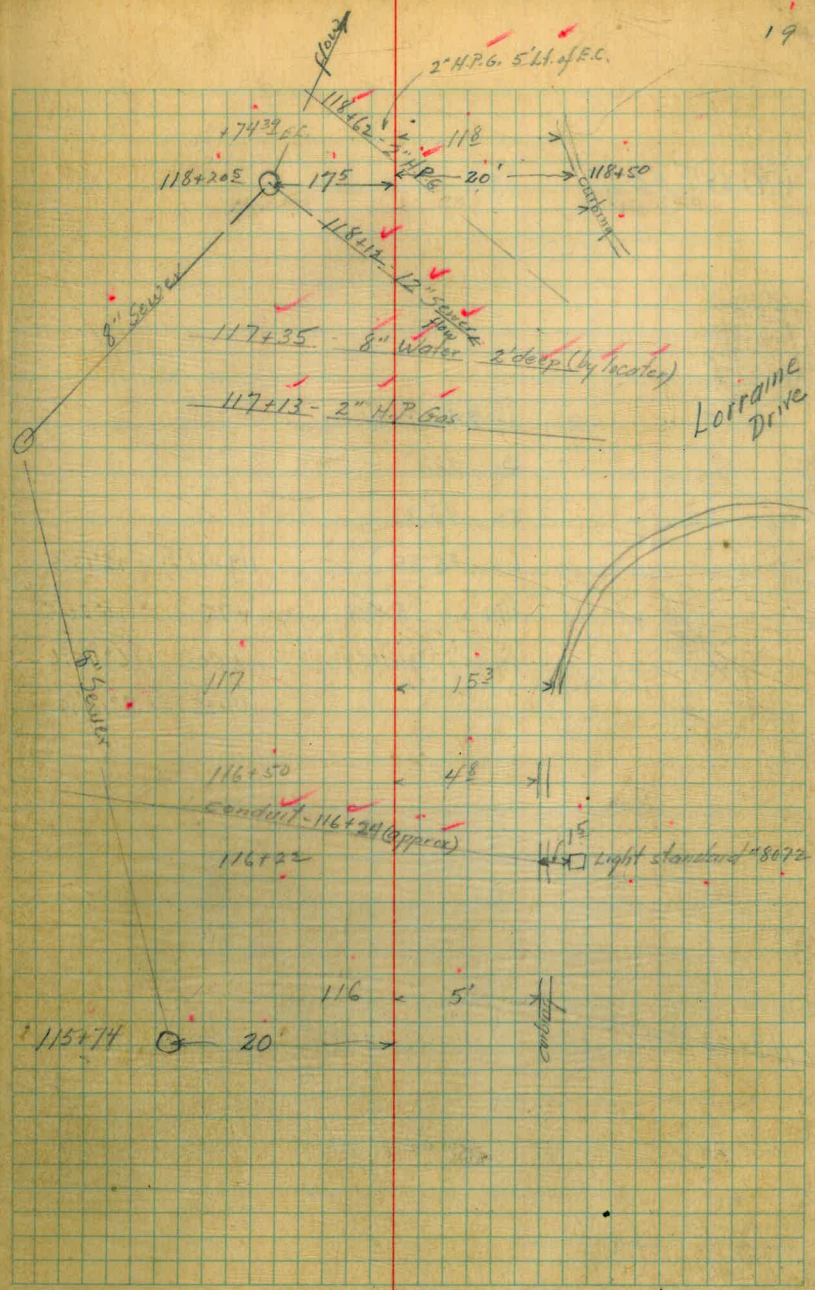
+50 12° 46.0

117+00 9° 11.7

+50 5° 36.2

116+00 2° 01.4

115+71⁷⁵ B.C.



119+88¹⁵ E.C.

$\Delta = 24^{\circ}27'21''$

$R = 200'$

$T = 43.33$

$L = 85.35$

def 1' = 8.594

def 25' = 3³⁴.859

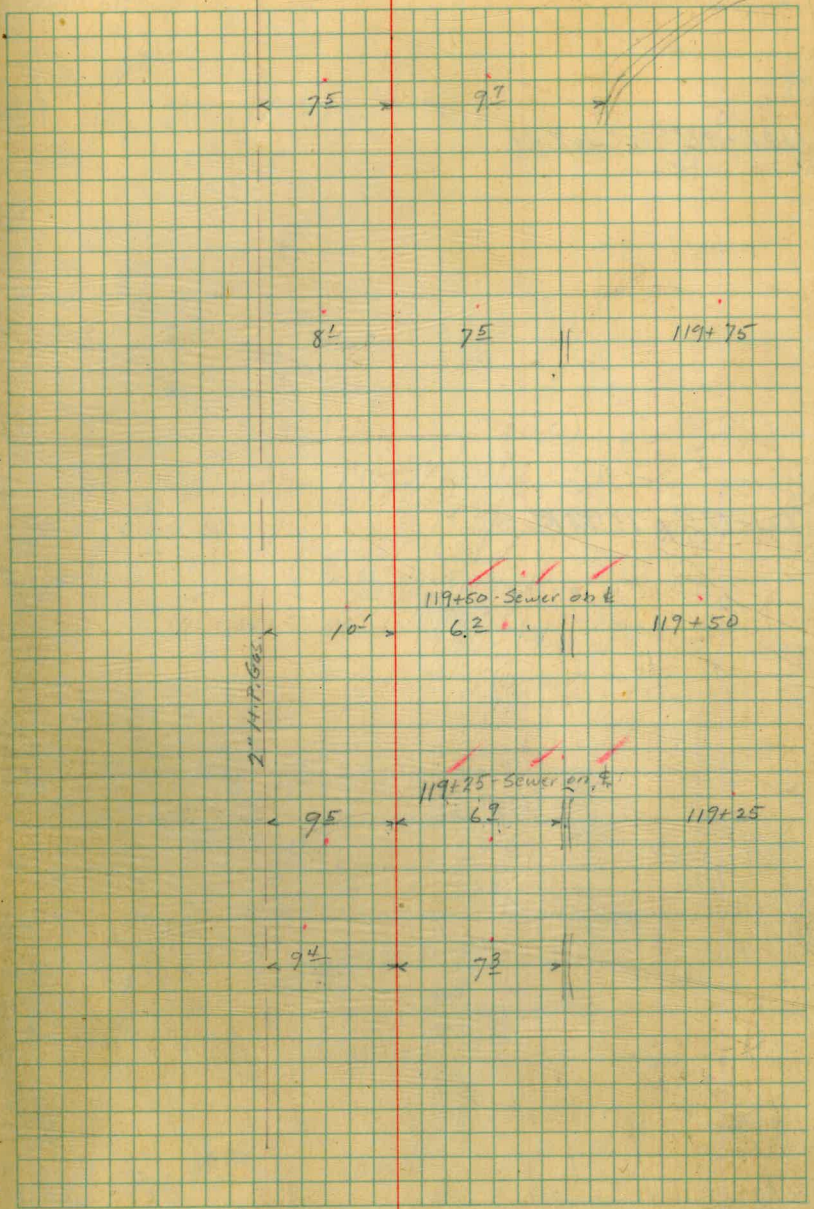
119+88¹⁵ = 12¹³.5

+75 = 10²⁰.5

+50 = 6⁴⁵.6

119+25 = 3¹⁰.8

119+02⁸⁰ B.C.



121+41⁷⁸ B.C. to Right

121+19⁹⁰ Δ 15°/8' RA

Nov. 15 1944
Soper
King
O'Brien
Stephens 21

80° x 80° Note: line from this point
parallels curbing - 8' out.

121+1990 ← 50 → 107
120+82 (opp cur) light cable

121+00 ← 54 → 174

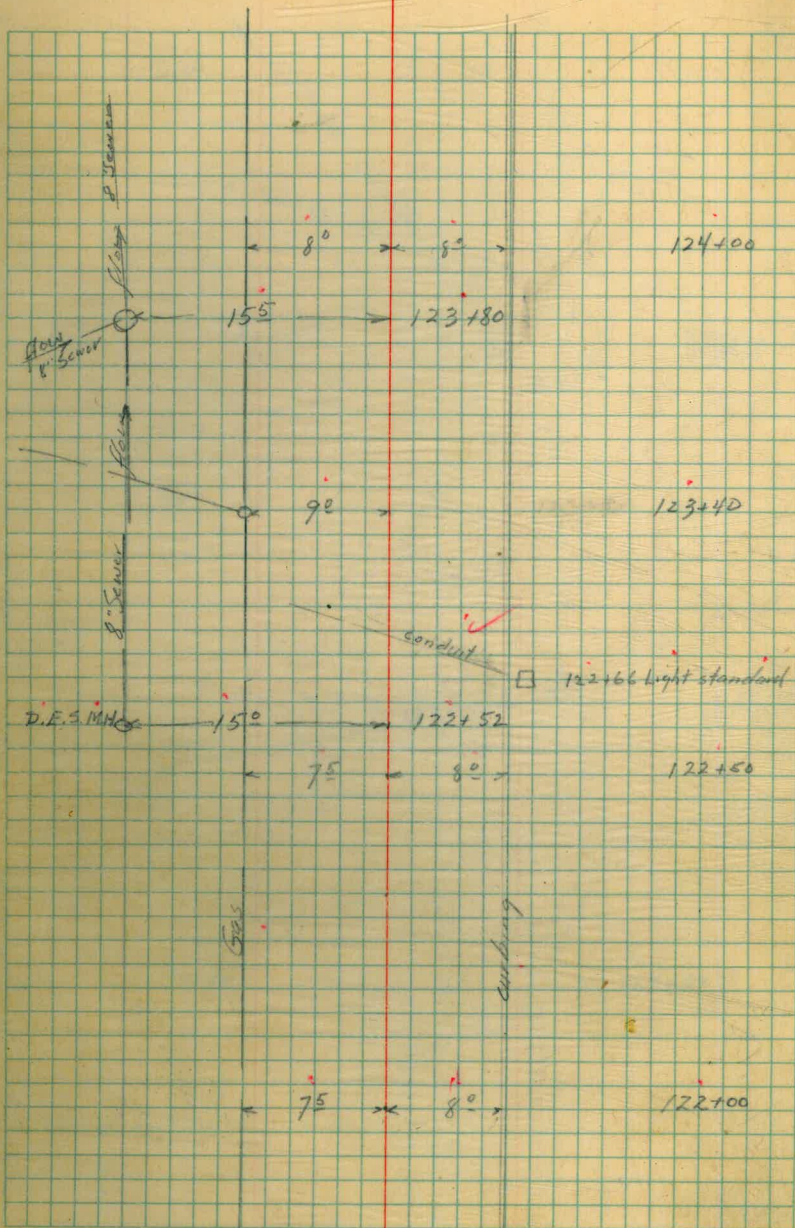
Gas
120+57⁸ ← 63 → 120+50
6" water 2⁵ deep (loc)

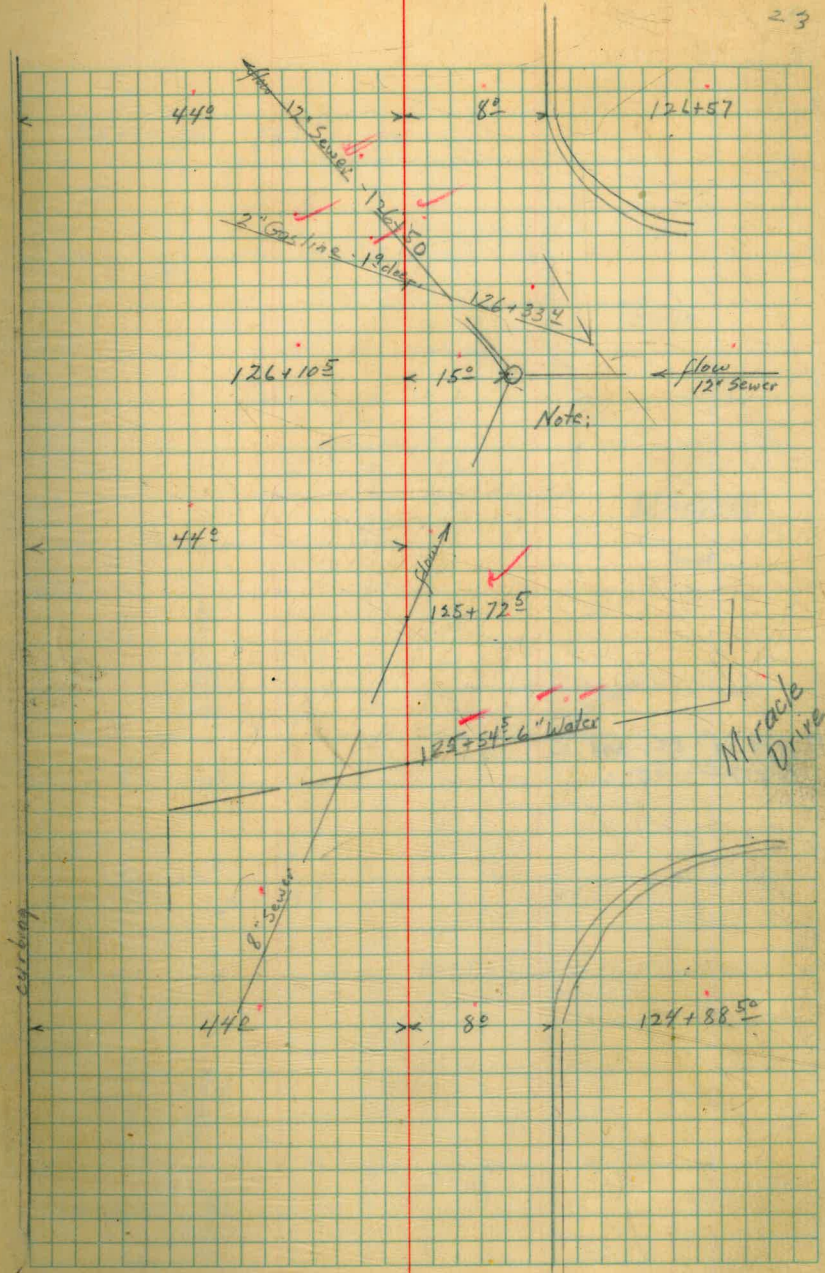
120+21⁵ ← 15° → 120+11
12" sewer
Gas 2⁵ deep (loc)

2" H.P.G.
120+08⁸ ← 65 → 129 → 120+00

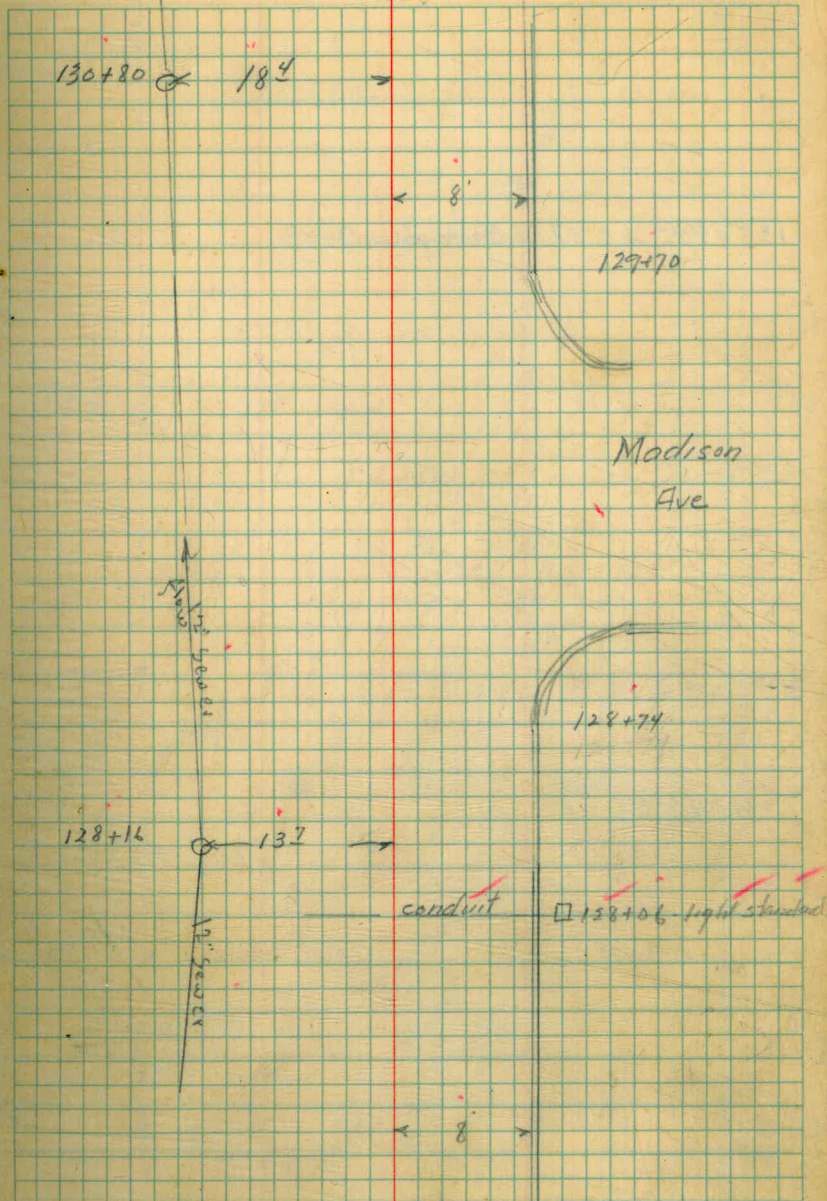
Jean Dr.

122+07.66' P.R.C. Euc.
~~122+17± P.R.C.~~





128+79.66° EC. E4E.
~~128+74° E.C.~~



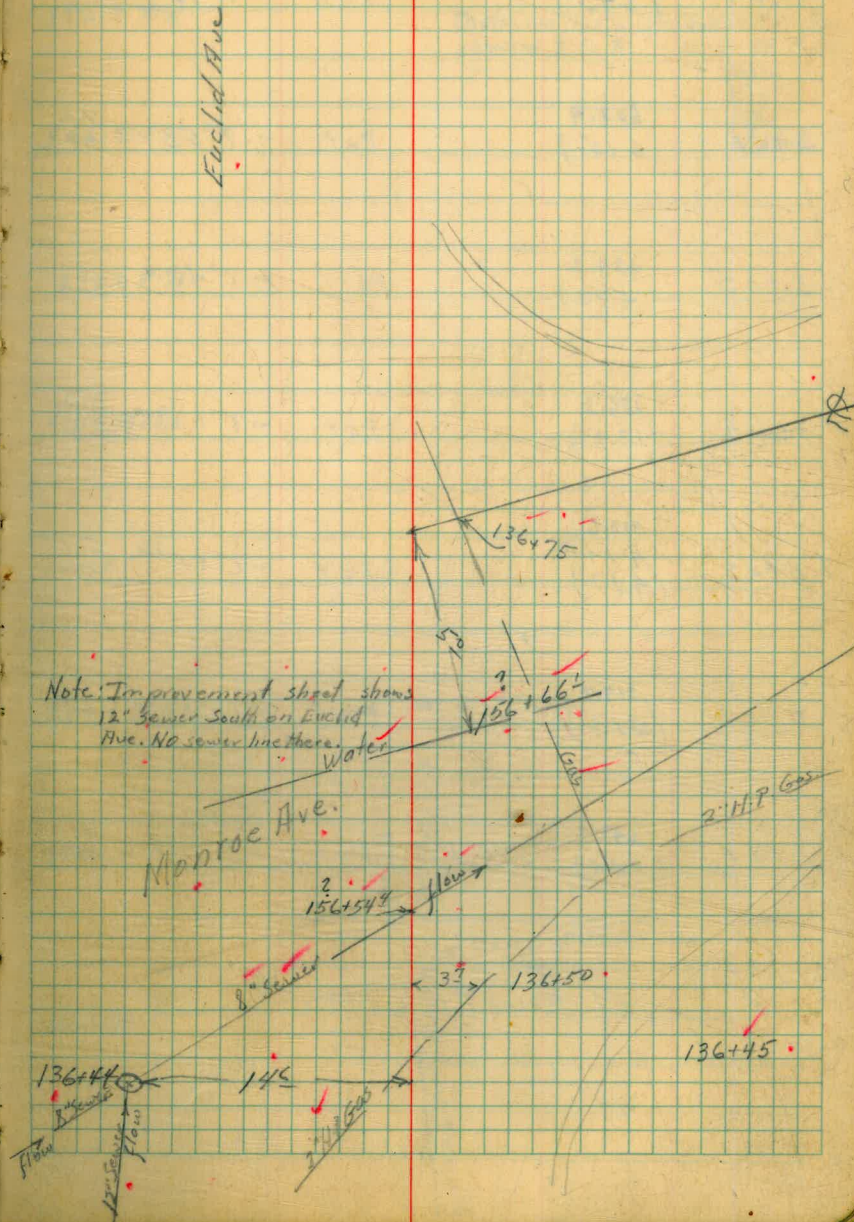
Continued on page 44. This book.

136+72.05 Δ 55°53' RT

Nov. 16, 1944

Saper
Kling
Otten
Stephens

26



Euclid Pl. alt. route via east side of
State College from Alvarado to tower plant
site 6-27-44

3 to 7	633.4 (645)	Pot	-7°42'	5.2 5.2
3 to 6	603.4 (615)	Pot	-7°53'	7.2 5.2
3 to 5	424.2 (432)	Pot	-7°42'	7 5.2
3 to 4	136.3 (139)	Pot	-8°02'	5.2 5.2
7 to 3	413.6 411 ^{HS} (417)	Pot	-1°45'	5.1 5.1
0 to 2	317.7 (318)	Pot	-1°43'	5.1 5.1
0 to 1	243.2 (244)	S 11° E	Pot -3°11'	5.1 5.1
#0	El. Point #0 = 443.6 ^{HS}			

Bayley
Giffen
Stephens

#

27

345.3 W.H.

Distances, hor. angles and vert. angles
checked T to T - 11-9-44

345.4 W.H.

Soper
King
Olsen
Stephens.

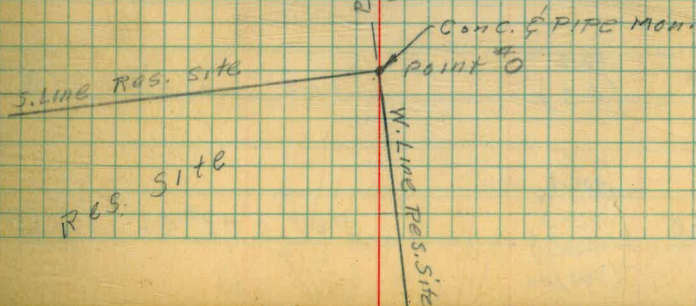
373.6 W.H.

411.8 W.H.

431.0^{HS}

434.1 W.H.

430.1 W.H.



14 to 16 (337) ✓ Pot +0°03' 4.8
4.8

321.9 W.H.

14 to 15 (234.9) (235) Pot -1°15' 4.8
4.8

316.5 W.H.

8 to 14 (560) ✓ Pot +0°30' 5.1 ✓
5.1 ✓

322.3
321.6 H.S. ✓

8 to 13 (441) 440.8 Pot -1°08' 5.1
5.1

308.0 W.H.

8 to 12 (312) 310.0 Pot -4°38' 5.1
5.1

291.6 W.H.

8 to 11 (185) 181.9 Pot -7°26' 11.1
5.1

287.0 W.H.

8 to 10 (125) 122.5 Pot -6°54' 7.1
5.1

299.8 W.H.

8 to 9 (63) 62.2 Pot -6°20' 5.1
5.1

309.8 W.H.

3 to 8 (935) 936.9 (933) (941) H.S. Pot -7°02' 5.2 ✓
5.2 ✓

317.1
316.7 H.S. ✓

311.8
21 to 25 (312) Pot -1° 29' 4.9
4.9

252.1
21 to 24 (253) Pot -3° 27' 8.9
4.9

206.4
21 to 23 (207) Pot -3° 09' 6.9
4.9

21 to 22 (69) 5 13° W 5° 35' 30" [✓] -1° 12' 4.9
4.9

374.8
18 to 21 (375) ✓ Pot +1° 12' ✓ 4.9 ✓
+1° 11' 4.9 ✓

18 to 20 (214) ✓ Pot +0° 59' 4.9
4.9

36.7
18 to 19 (37) 5 7½° W 19° 00' Rt. +5° 02' 4.9
4.9

773.5
788
19 to 18 (785) Pot +5° 59' 4.8 ✓
(782) H.S. +6° 0' 4.8 ✓

676.2
14 to 17 (682) Pot +5° 19' 4.8
4.8

403.0 W.H.

391.4 W.H.

397.2 W.H.

409.2 W.H.

411.8
410.6 H.S. ✓

406.5 W.H.

406.0 W.H.

404.0
402.8 H.S. ✓

384.5 W.H.



30 to 34 (474) ✓ Pot +0° 25' 5.0

30 to 33 (465) ✓ Pot +0° 25' 5.0

30 to 32 (275) ✓ Pot +0° 31' 5.0

30 to 31 (50) S 19 1/4° W 1° 19' N. 0° 0' 8.0
5.0

21 to 30 (682) ✓ 679.7 Pot +3° 18' 4.9
+3° 17' 4.9

21 to 29 (652) 650.9 Pot +2° 47' 4.9

21 to 28 (609) 609.6 Pot +2° 44' 7.9
4.9

21 to 27 (555) 554.3 Pot +1° 57' 4.9
4.9

21 to 26 (422) ✓ Pot -0° 31' 4.9
4.9

454.4
453.2 H.S.
453.4 W.W.

453.3 W.W.

452.6 W.W.

446.9 W.W.

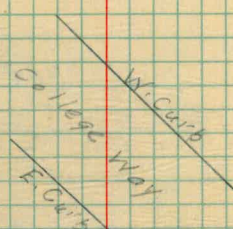
457.0
449.9 H.S. ✓

442.2 W.W.

436.6 W.W.

429.5 W.W.

406.8 W.W.



30 C.G. & E. M.H.
Bell tel. M.H.

374043 ^{223.9}
(225) Pot -3°59' 5.2
-5.2

374042 ^{190.6}
(193) Pot -6°29' 5.2
5.2

374041 ^{158.6}
(160) Pot -5°21' 5.2
5.2

374040 ⁸⁹
(95) Pot -14°39' 5.2
5.2

374039 ^{41.4}
(44) Pot -19°11' 5.2
5.2

374038 ^{18.3}
(21) S 5½°E 20°29'N - 21°01'N 5.2
5.2

π 344037 ^{260.9}
(261) ✓ Pot -1°19' ✓ 5.3
5.3

344036 ^{244.8}
^{245 H.S.}
(295) Pot -1°50' 5.3
5.3

344035 [✓]
(139) Pot -1°40' 5.3
5.3

431.4 W.H.

425.6 W.H.

432.2 W.H.

423.8 W.H.

436.6 W.H.

440.0 W.H.

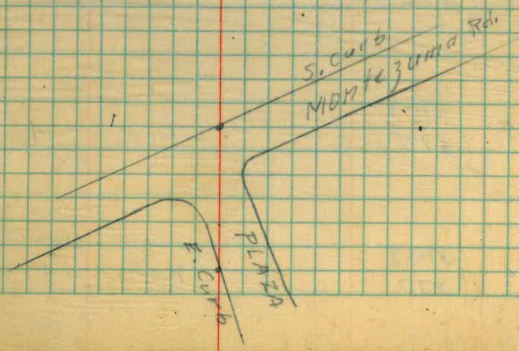
448.4

447.0 H.S.
447.2 W.H.

445.4 W.H.

449.2 W.H.

449.98 from B.M.



51 to 52 (66) ✓ 546°W ✓ 39°24'36" Rt. +0°15' ✓ 4.8
4.8

302.9 /
49 to 51 (303) ^{H.S.} ✓ Pot -1°44' ^{H.S.} 5.0 ✓
-0°44' 5.0 ✓

49 to 50 (150) ✓ 567°W ✓ 11°37' Rt. ✓ -0°39' ✓ 5.0
5.0

810.9
37 to 49 (812) ✓ Pot -2°03' ✓ 5.2 ✓
5.2 ✓

776.8
37 to 48 (778) ✓ Pot -2°19' ✓ 5.2 ✓
5.2 ✓

634.7
37 to 47 (638) ✓ Pot -4°09' ✓ 5.2 ✓
5.2 ✓

596.3
37 to 46 (600) ✓ Pot -4°32' ✓ 16.2 ✓
5.2 ✓

471.9
37 to 45 (475) ✓ Pot -4°38' ✓ 5.2 ✓
5.2 ✓

374.7
37 to 44 (377) ✓ Pot -4°32' ✓ 5.2 ✓
5.2 ✓

32
409.3 W.H.

409.0 H.S.
408.8 W.H.

416.3 W.H.

418.0 H.S. ✓

416.7 W.H.

400.9 W.H.

388.7 W.H.

408.8 W.H.

417.3 W.H.

564061 433.9
(434) Pot -0°58' 5.0
5.0

389.3 W.W.

564060 369.7
(370) Pot -1°40' 6.0
5.0

384.8 W.W.

564059 221.6
(222) Pot -2°22' 5.0
5.0

387.4 W.W.

564058 174.4
(175) Pot -3°27' 7.0
5.0

384.1 W.W.

564057 134.7
(135) 567¹⁰W 22°21'30"R - 2°38' 5.0
5.0

390.4 W.W.

564055 122.8
(123) Pot -2°26' 5.0
5.0

391.4 W.W.

564054 249.5
(250) Pot -2°30' 11.0
5.0

379.7 W.W.

514056 482.7
(483) ✓ Pot -1°28' 5.0
5.0

396.6 H.S. ✓

514053 189.7
(190) Pot -2°09' 15.0
5.0

391.9 W.W.

63 to 70	497.7 (498)	Pot	-1°21'	7.2 5.2
63 to 69	457.9 (460)	Pot	-3°53'	5.2 5.2
63 to 68	318.5 (326)	Pot	-8°44'	5.2 5.2
63 to 67	308.4 (318)	Pot	-9°59'	5.2 5.2
63 to 66	204.0 (214)	Pot	-12°28'	5.2 5.2
63 to 65	163.3 (175)	Pot	-15°00'	10.2 5.2
63 to 64	59.3 (62)	Pot	-11°56'	5.2 5.2
∩ 62 to 63	127.6 (130)	✓ S 68½° W	0°34'30" R. ✓	- 7°46' ✓ 5.0 5.0
∩ 56 to 62	525.8 (526)	✓ Pot	- 0°55' ✓	6.0 ✓ 5.0 ✓

356.1 W.H.

338.7 W.H.

320.9 W.H.

315.5 W.H.

324.7 W.H.

321.0 W.H.

357.3 W.H.

369.8 H.S. ✓

387.2 H.S. ✓

78 to 79 110.2
(111) Pot -4° 50' 5.8
4.8

355.2 W.W.

72 to 78 318.6
(319) ✓ Pot -1° 59' 4.9
4.9 ✓

371.5 W.W.
365.5 H.S. ✓

72 to 77 250.5
(251) Pot -2° 26' 13.9
4.9

356.6 W.W.

72 to 76 209.7
(210) Pot -2° 16' 4.9
4.9

367.9 W.W.

72 to 75 124.6
(125) Pot -3° 10' 11.9
4.9

362.3 W.W.

72 to 74 81.8
(82) Pot -2° 59' 4.9
4.9

371.9 W.W.

72 to 73 39.9
(42) Pot -12° 51' 4.9
4.9

367.1 W.W.

63 to 72 (604)
(610) H.S. Pot +0° 37' 5.2
5.2 ✓

376.2 H.S.
376.4 W.W.

63 to 71 (561) ✓
Pot +0° 34' 5.2
5.2

375.4 W.W.

83+088	469.8 (478)	Pot +7°30'	4.9 1.9	401.2 W.H.
83+087	346.2 (347)	Pot +2°51'	4.9 1.9	356.5 W.H.
83+086	178.1 (185)	Pot -11°07'	4.9 1.9	304.3 W.H.
83+085	153.2 (159)	Pot -11°0'	11.9 1.9	302.5 W.H.
83+084	62.5 (65)	Pot -11°13'	4.9 4.9	326.9 W.H.
78+083	434.8 (426)	Pot -3°01'	8.8 4.8	339.3 H.S.
78+082	285.1 (286)	Pot -3°10'	6.8 4.8	347.7 W.H.
78+081	238.2 (240)	Pot -4°56'	4.8 4.8	344.9 W.H.
78+080	170.8 (175)	Pot -8°55'	17.8 4.8	325.7 W.H.

93 to 97	180.9 210	Pot	-21° 51'	7.2 5.2
93 to 96	150.5 (167)	Pot	-18° 20'	14.2 5.2
93 to 95	99.2 (120)	Pot	-24° 35'	10.2 5.2
93 to 94	65.7 (80)	Pot	-25° 0'	5.2 5.2
92 (Square)? N 98 to 93	121.8 (123)	Pot	-5° 35'	5.2 5.2
N 90 to 92	192.9 (193)	Pot	-1° 10'	5.2 5.2
90 to 91	(55) 553 $\frac{1}{2}$ W	14° 54' 44" 0° 0'	5.5 5.2	
N 83 to 90	390.6 (600)	Pot	+7° 06' +7° 10'	5.9 4.9
83 to 89	526.9 (536)	Pot	+7° 29'	4.9

321.5 W.N.

337.2 W.N.

345.7 W.N.

365.5 W.N.

396.1 H.S. ✓

408.0 H.S. ✓

411.6 W.N.

411.9 H.S. ✓

408.5 W.N.

E 10' dirt road

109 to 110

(320)
317 H.S.Pot $+0^{\circ}11'$ $\frac{H.S.}{9.9}$ 4.9398.7 M.M.
399.0 H.S.

Elev from B.M. 394.02

→ 15' ←

↘ 90°22'

transit survey in 1905

8+46

ALVARADO FILTER PLANT -
EUCLID AVE. P.L.
ALTERNATE ROUTE "A"

6 to 8	236.5 (275)		-20° 05'	14.1 5.1
6 to 7	163.4 (175)	POT	-14° 53'	5.1 5.1
π 2 to 6	842.5 (883)	POT	-12° 22'	5.0 5.0
2 to 5	590.8 (620)	POT	-12° 32'	5.0 5.0
2 to 4	394.4 (418)	POT	-13° 29'	7.0 5.0
2 to 3	39.1 (40)	S 53½° W	0° 02' 24" - 8° 28'	5.0 5.0
π 0 to 2	484 (485)	POT	-2° 37'	5.1 5.1
0 to 1	243.7 (245)	S 53½° W	-3° 33'	8.1 5.1
0	El. Point #10 = 446.9			14.1 5.1

7-28-44
BYLER
KING
GILMAN
STEPHENS

141.9 W.H.

196.2 W.H.

239.6 ✓

293.0 W.H.

327.5 W.H.

418.5 W.H.

424.3 ✓

428.0 W.H.

= Focal Point
Murray Pl. Sta. 67433.23

π 21° 02' ✓

↳ back from Murray Pl.
Produced

↳ focal point Alvarado
Filter plant sites

Reddish adobe soil

π 15 to 19	681.5 (686)	Pot +1°40'	5.1 5.1
15 to 16	361.5 (362)	Pot +2°12'	5.1 5.1
π 12 to 15	395.0 (396)	Pot +2°52'	8.1 5.1
12 to 14	284.3 (285)	Pot +2°11'	8.1 5.1
12 to 13	204.6 (205)	Pot +2°37'	5.1 5.1
π 6 to 12	700.0 (710)	Pot -6°49'	5.1 5.1
6 to 11	599.7 (595)	Pot -9°13'	5.1 5.1
6 to 10	368.7 (390)	Pot -13°31'	5.1 5.1
6 to 9	310.3 (340)	Pot -14°30'	21.1 5.1

228.1 ✓

186.3 W.W.

172.4 ✓

163.8 W.W.

165.2 W.W.

155.9 ✓

145.5 W.W.

151.0 W.W.

117 wash

117 wash
141.2 W.W.

10' dirt road
75'

10' dirt road

reddish adobe soil

reddish adobe
with large boulders
from pt 8 to 11

24 to 26 (555) ✓
Pot +0°07' 4.9
4.9

24 to 25 (157) 156.9
S 17 1/4° E 6° 34' N -1° 15' 4.9
4.9

23 to 24 (290) 239.5
Pot +2°33' 5.0
5.0

22 to 23 (184) 180.8
S 23 1/2° E 22° 03' N +7° 32' 5.1
5.1

19 to 22 (640) 597.8
Pot +14°53' 5.1
5.1

19 to 21 (425) 396.9
Pot +14°54' 5.1
5.1

19 to 20 (83) 79.6
S 1° 30' E 55° 20' N +11° 42' 5.1
5.1

19 to 18 (170) 151.9
Pot -19°04' 5.1
5.1

19 to 17 (234) 220.2
Pot -14°02' 5.1
5.1

422.7

418.2 W.N.

421.6 ✓

410.9 ✓

386.9 ✓

333.7 W.N.

244.6 W.N.

175.6 W.N.

173.1 W.N.

451 P.P.B.I.

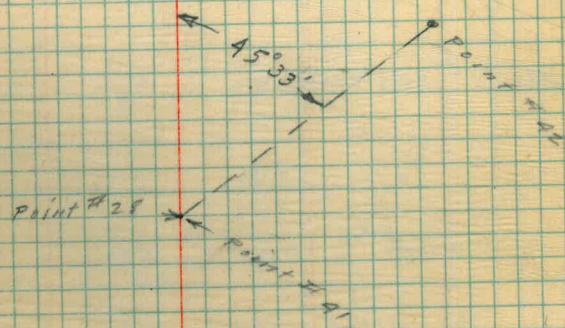
399 P.P.B.I.

115

Alternate from point #24 - page 74

π 27 to 28 (488) $13^{\circ}11'RL + 0^{\circ}46'$ $\begin{matrix} 5.0 \\ 5.0 \end{matrix}$

π 24 to 27 (670) \bullet 90° $+1^{\circ}03'$ $\begin{matrix} 4.9 \\ 4.9 \end{matrix}$

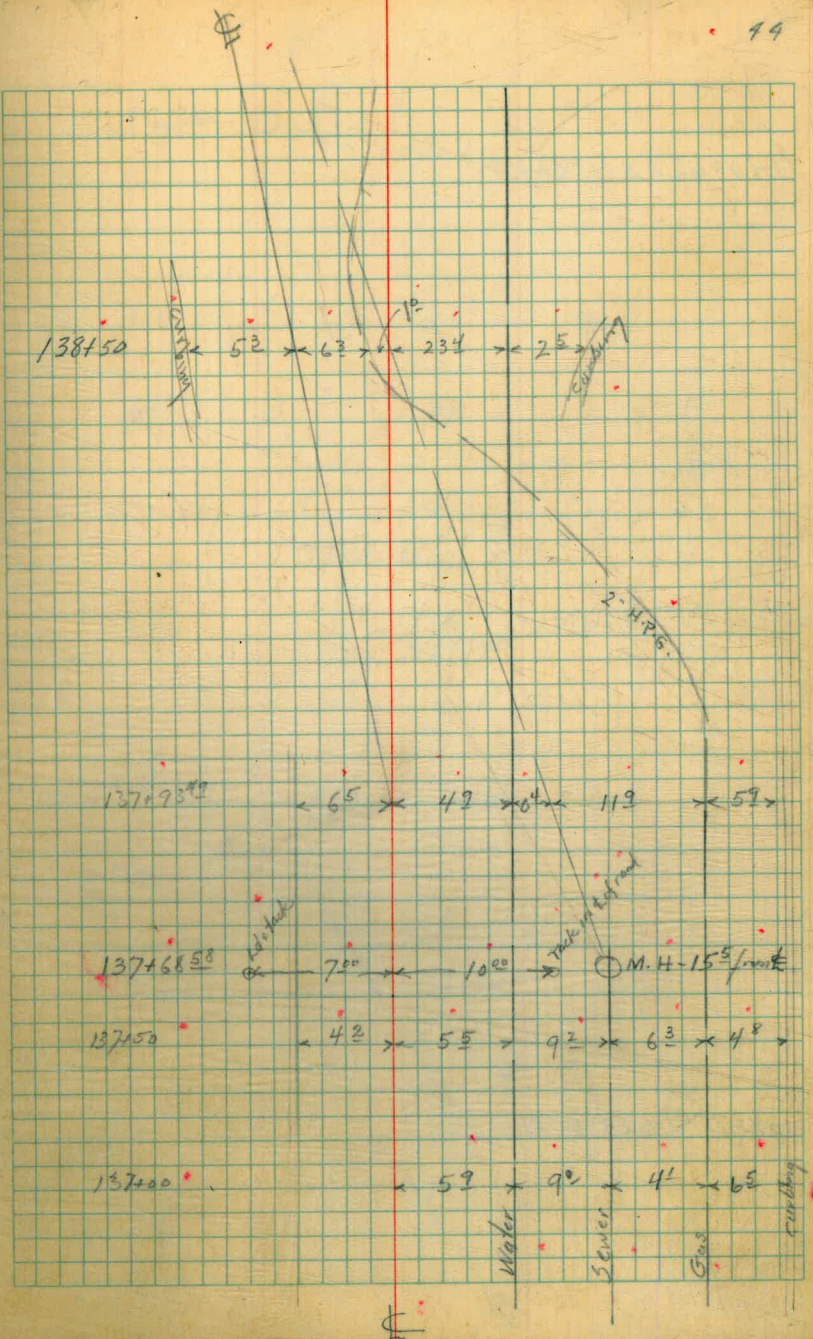


440.4
= Point #41 Previous line (page 5)

433.7
433.974.24

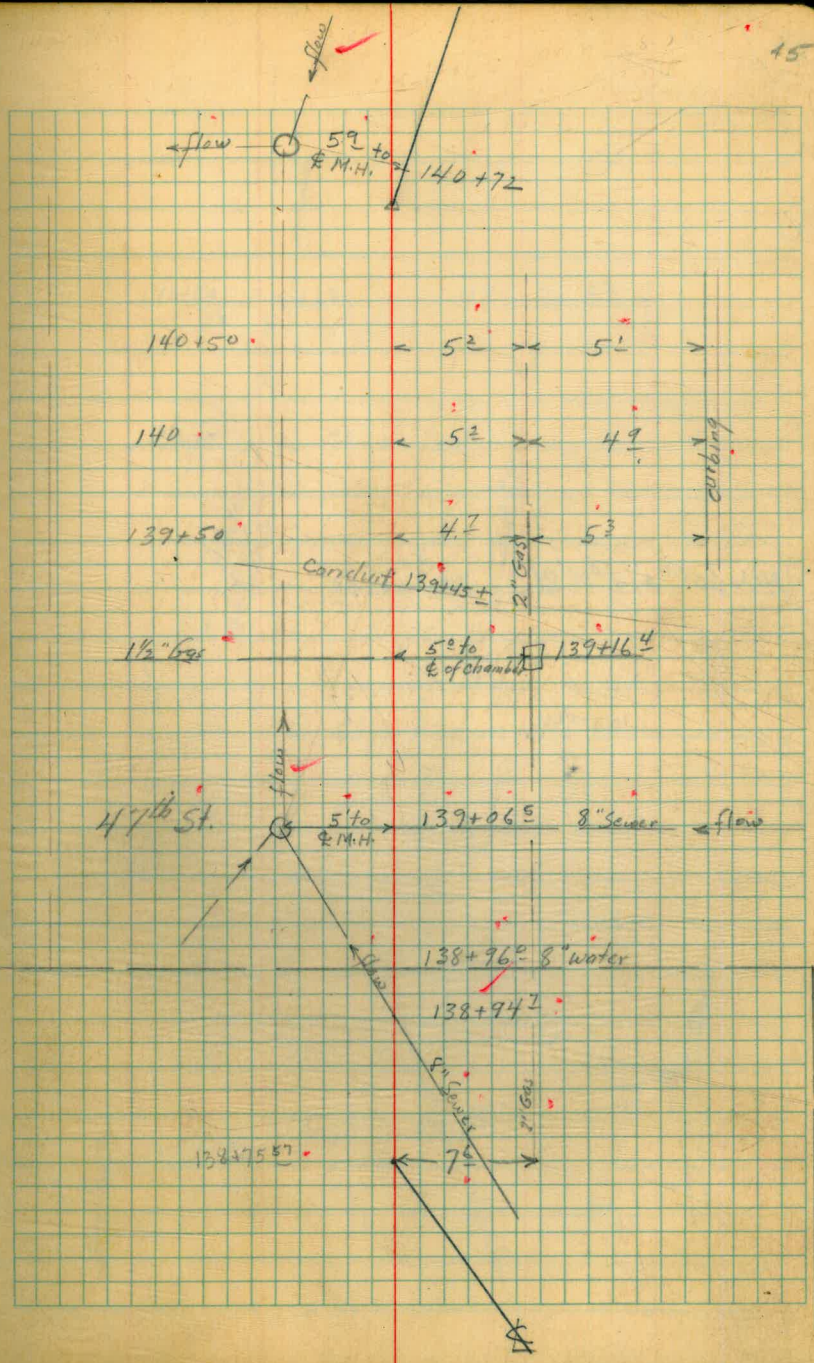
137+93⁴⁹ Δ 23°43'14"

Continued from page 26

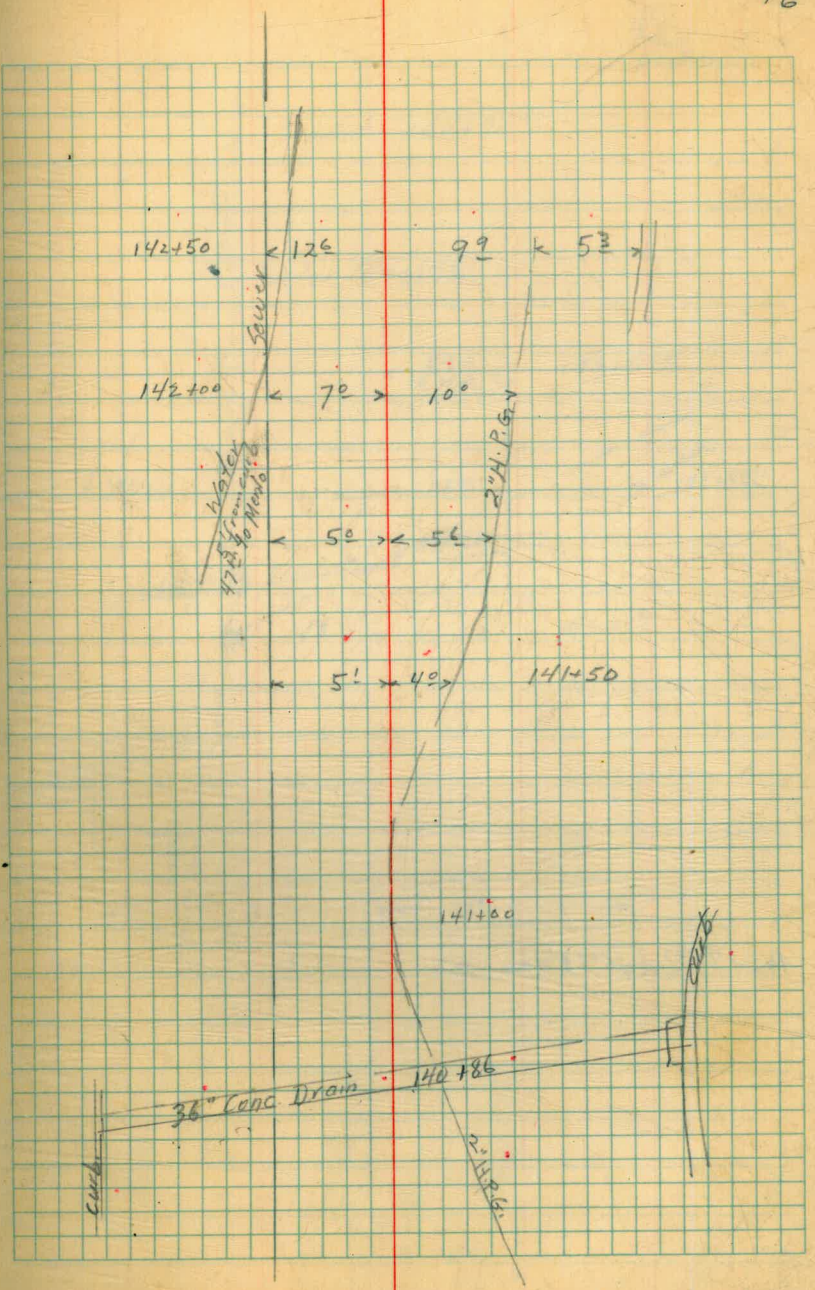


140+66⁹⁸ Δ 11° 58' RT

138+75⁵⁷ Δ 23° 59' RT



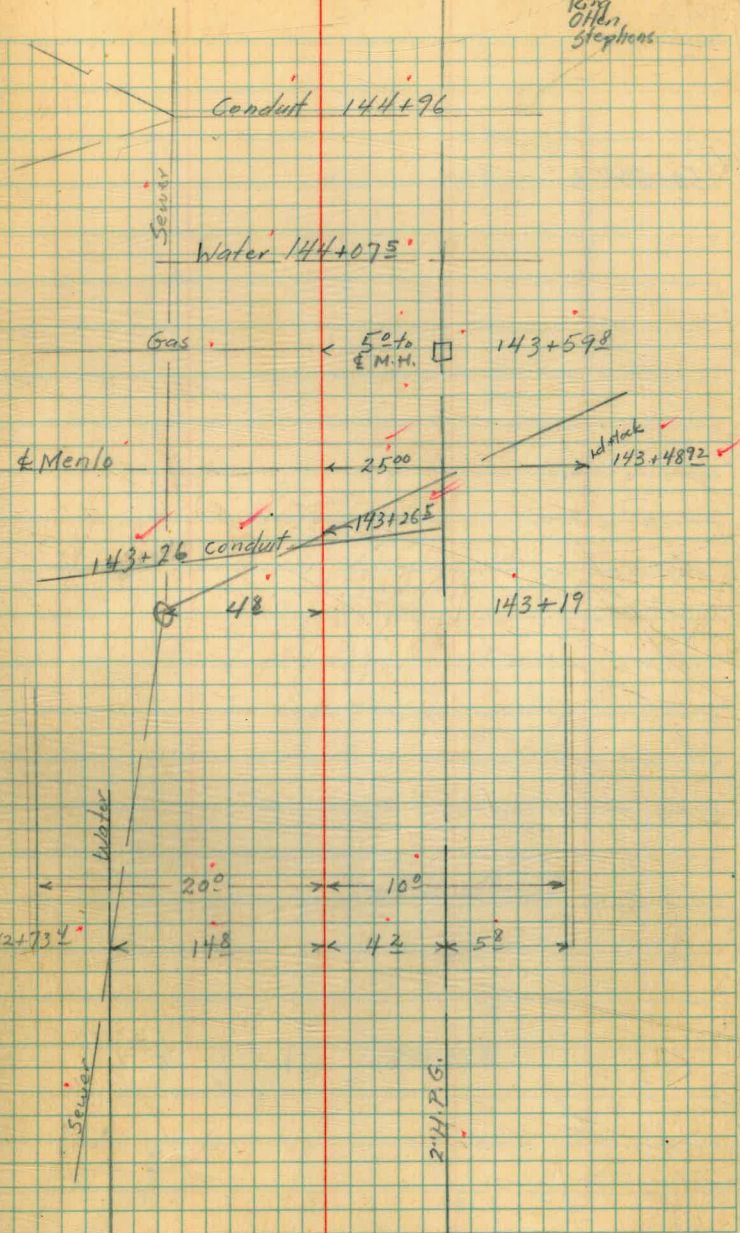
141+60.50 Δ 4°08'18"



Nov. 17, 1944

Soper
16.79
O'Hara
Stephens

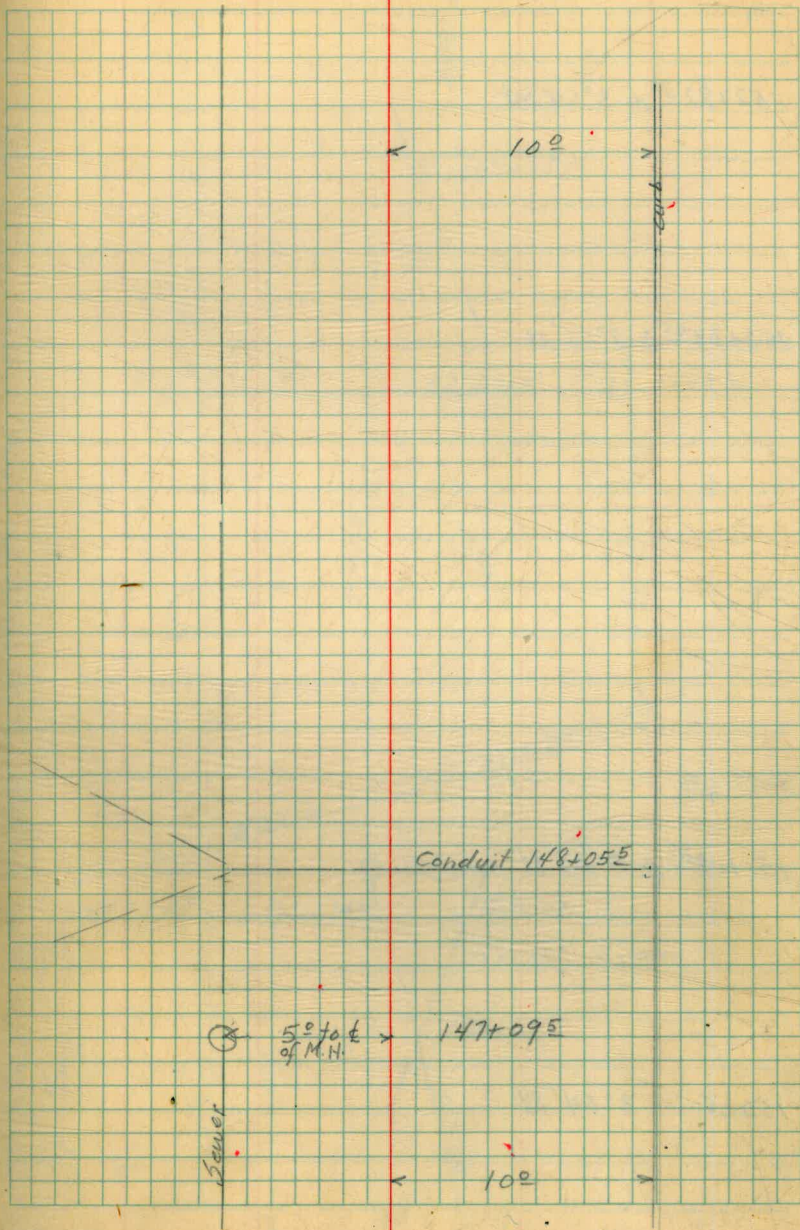
17



142+734 A 15°55' LH

150+50° A

48

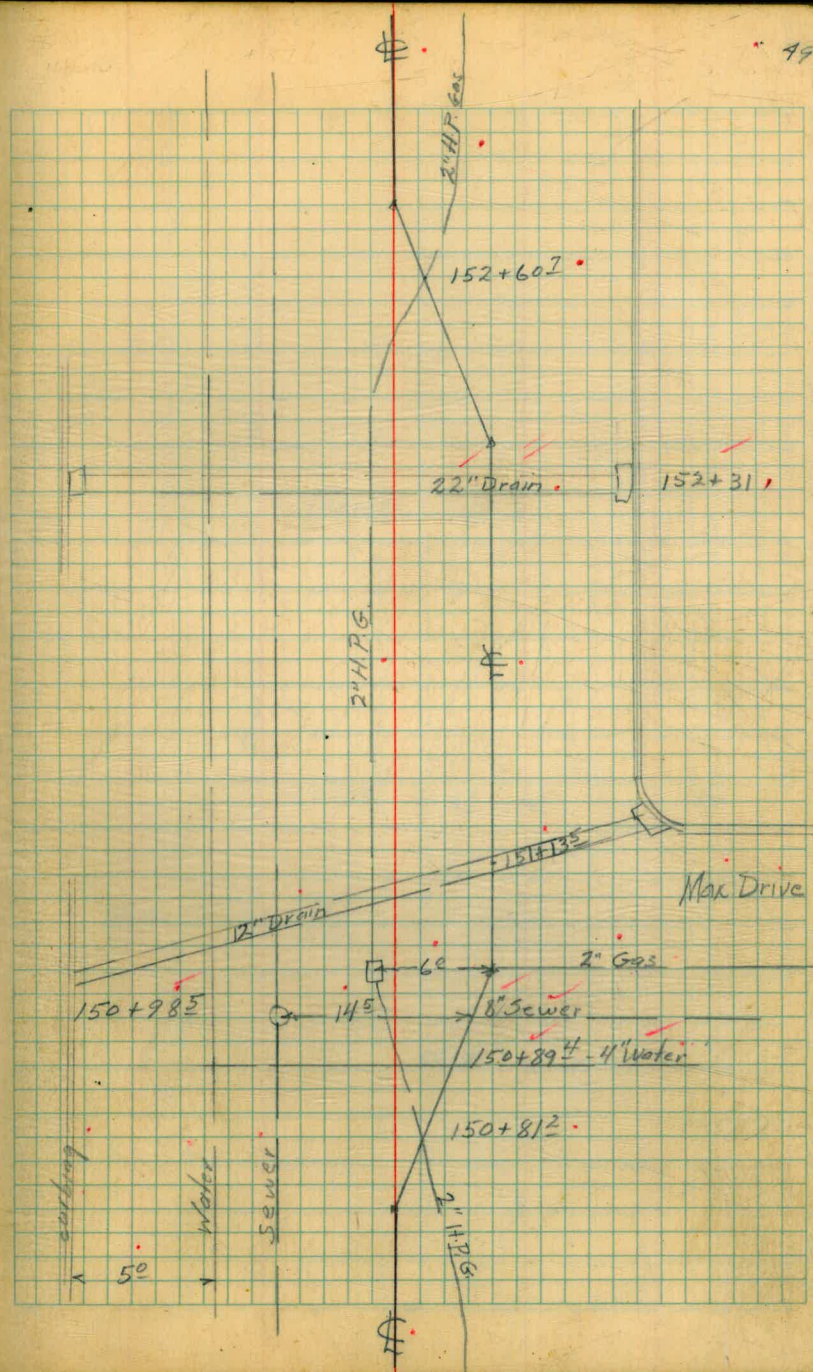


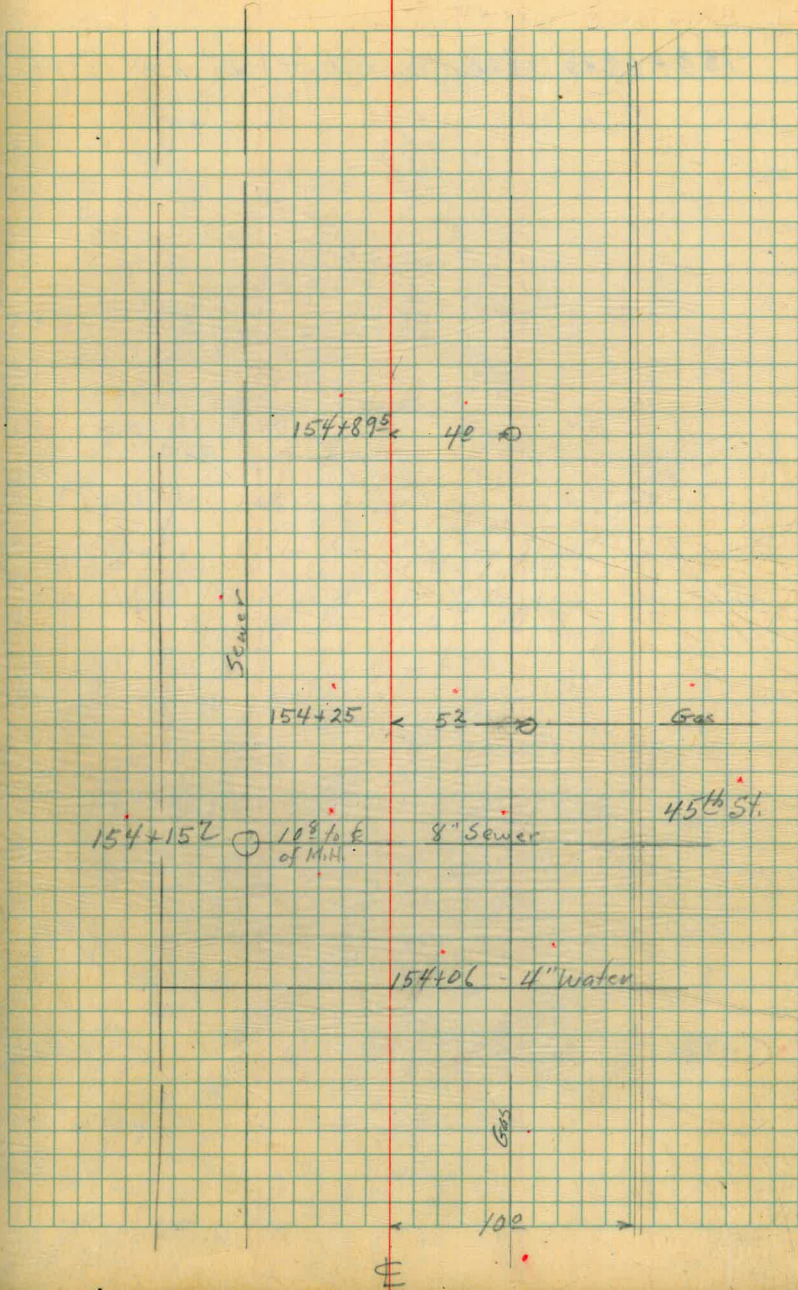
152+92³⁰ Δ 3°54' RT

152+33⁴⁵ Δ 3°54' LT

151+08⁸⁵ Δ 3°54' LT

150+50 3°54' RT





Water 160+52

160+50 - 45 →

Water

Sewer

Gas

Conduit

158+58

Conduit

158+51.5

Gas

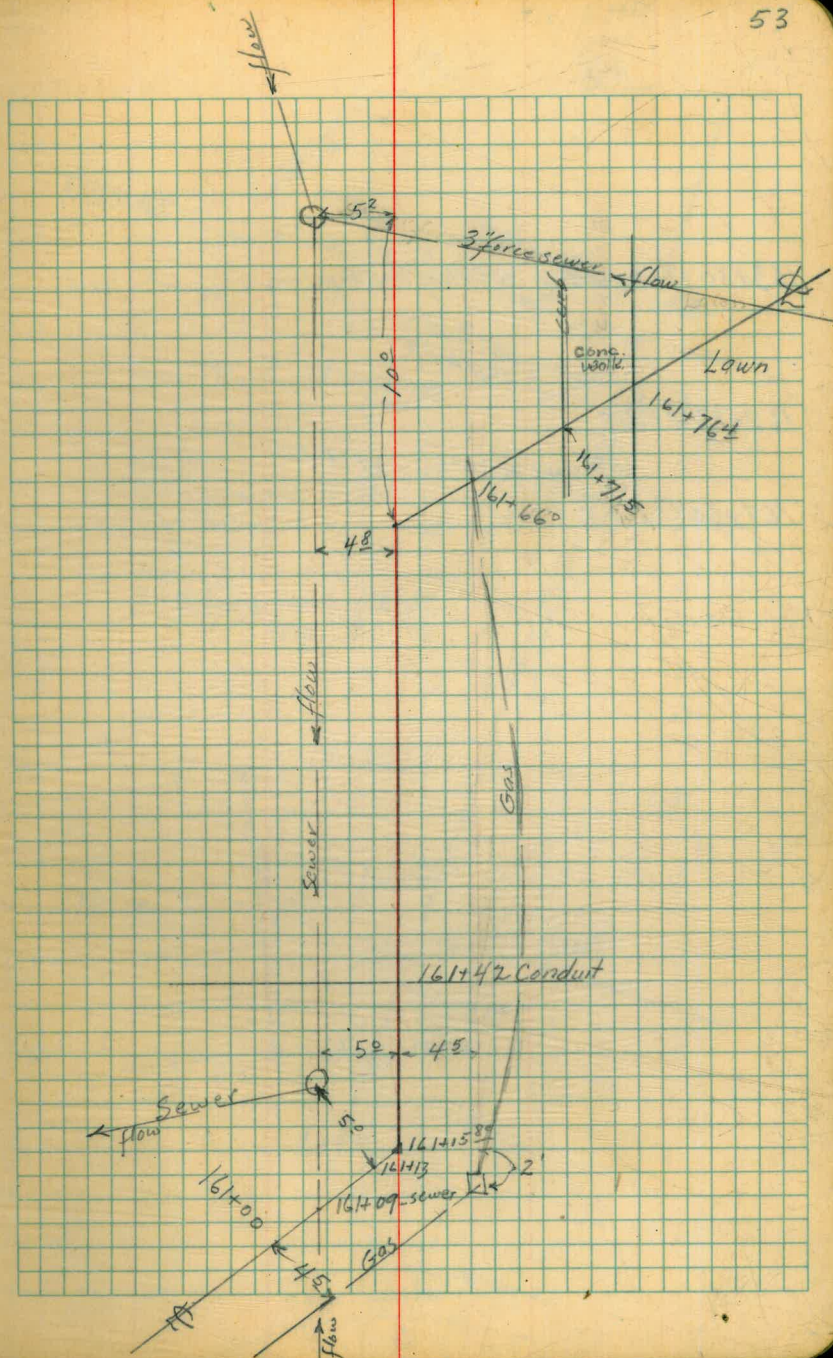
← 4' → 158+37

Highland
Ave.

Gas

161461⁰⁰ A 73°47'12"

161415⁸⁰ A 50°43'14"

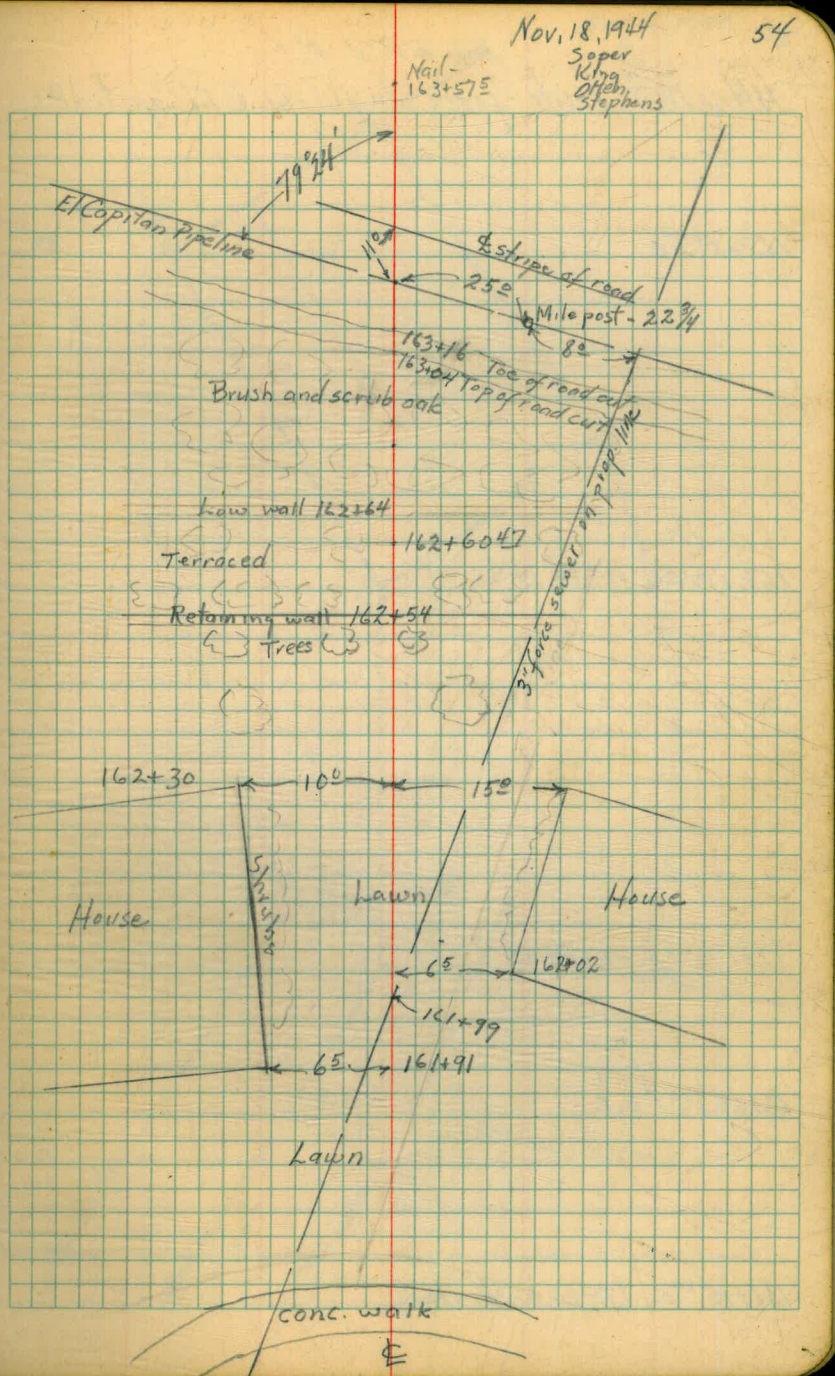


163+30 Intersection with El Capitan Pipeline

162+87⁷⁸ P.O.T

30° slope of $24' \cdot 26' = 27' \frac{31}{100}$

162+60⁴⁷ P.O.T



Euclid P.L.
Alternate route - from sta 161+61 to E/Capitan P.L.

162+88⁰⁰ Δ

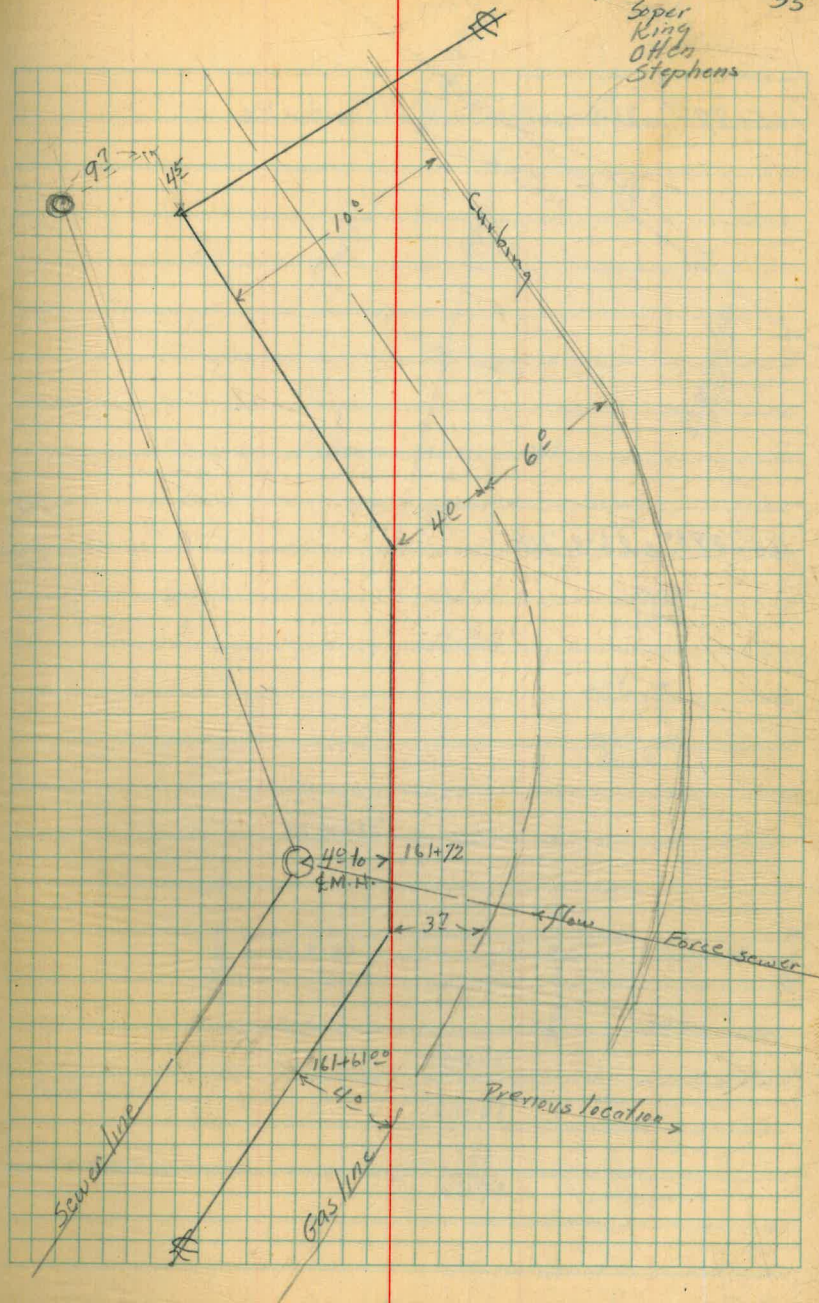
162+10⁰⁰ Δ 12° 19' 14"

161+70⁰⁰ Δ 26° 52' 14"

161+61⁰⁰ P.O.Y.

161+15⁸⁰ Δ (page 53 this book)

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Super
King
O'Hara
Stephens



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Soper
King
O'Brien
Stephens

Profile of Euclid Ave. P.H. Loc. - 49th - Adams - Monroe
to El Capitan P.H.

B.M.	6.01	395.34		389.33
TP	6.79	398.22	3.91	391.43
TP	4.97	400.73	2.46	395.76

74.279	Book 679-71	8.6		392.1
--------	-------------	-----	--	-------

101+00		8.6		392.1
--------	--	-----	--	-------

102		6.4		394.3
-----	--	-----	--	-------

103		5.1		395.6
-----	--	-----	--	-------

104		4.8		395.9
-----	--	-----	--	-------

105		5.2		395.5
-----	--	-----	--	-------

106		5.5		395.2
-----	--	-----	--	-------

107		5.6		395.1
-----	--	-----	--	-------

108		6.0		394.7
-----	--	-----	--	-------

	2.78	397.54	5.97	394.76
--	------	--------	------	--------

109		3.3		394.2
-----	--	-----	--	-------

+47 ²⁵		3.8		393.7
-------------------	--	-----	--	-------

110		4.0		393.5
-----	--	-----	--	-------

111		4.1		393.4
-----	--	-----	--	-------

112		5.0		392.5
-----	--	-----	--	-------

B.P. N.E. Cor. Winona & Adams Ave

397.54

113		6.2	391.3
114		8.4	389.1
115		10.3	387.2
π	1.57	11.81	385.73
		1.1	86.2
115+71 ⁶ edge of pave.		1.6	85.7
116			
16 50		2.2	85.1
+ 50		3.3	84.0
117		3.8	83.5
+ 50		4.6	82.7
118		5.4	81.9
+ 50		6.1	81.2
		5.4	81.9
118+74 ³⁹ C.C.		6.4	80.9
119+62 ⁸⁰ B.C.		6.7	80.6
+ 25		7.1	80.2
+ 50		7.4	79.9
+ 75		7.7	79.6
119+88 ⁵ C.C.		7.8	79.5
120		7.9	79.4

Rim of M.H. 20' at 115+74 - 7' to flow line

Rim of M.H. 17' at 118+20 - 25' to flow line

387.30

		7.9	379.4
120+50		8.2	79.1
121		9.0	78.3
+19.90 A		9.1	78.2
+41.78 BC.		9.3	78.0

TP	3.90	381.90	7.30	378.00
----	------	--------	------	--------

121+50		3.9	78.0
--------	--	-----	------

122		4.2	77.7
-----	--	-----	------

+50		4.5	77.4
-----	--	-----	------

		4.0	77.9
--	--	-----	------

123		4.7	77.2
-----	--	-----	------

+50		5.0	76.9
-----	--	-----	------

		4.7	77.2
--	--	-----	------

124		5.2	76.7
-----	--	-----	------

+50		5.3	76.6
-----	--	-----	------

125		5.4	76.5
-----	--	-----	------

+50		5.2	76.7
-----	--	-----	------

126		5.4	76.5
-----	--	-----	------

B.M.		6.33	375.57
------	--	------	--------

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Rim of M.H. 15' Lt 120+11	23.2	to flow line
---------------------------	------	--------------

Rim of M.H. 15' Lt 122+50	6.5	to flow line
---------------------------	-----	--------------

Rim of M.H. 15' Lt 123+80	7.1	to flow line
---------------------------	-----	--------------

B.P. S.W. Cor. Adams + Miracle Dr.

381.90

5.8 376.1

126+50

5.8 76.1

TP

3.74

379.87

5.77 376.13

127

4.0 75.9

+50

4.2 75.7

128

4.4 75.5

4.1 75.8

128+50

4.7 75.2

128+74° EC.

4.7 75.2

129

4.6 75.3

+50

4.8 75.1

130

5.2 74.7

+50

5.9 74.0

131

6.4 73.5

7.0 72.9

+50

8.2 71.7

Rim of M.H. 15' RT 126+10

- 22⁸ to flow line
Note: 7⁴ to flow line line from East.

Rim of M.H. 13' LT 128+16

22⁸ to flow line

Rim of M.H. 18' LT 130+80

21¹ to flow line

	379.87		
132		9.7	370.2
+50		11.3	68.6
133		13.0	66.9
TP	0.46	367.44	12.89 366.98
		1.8	65.6
133+54 ⁵⁵ B.C.		2.1	65.3
134		3.9	63.5
+50		5.9	61.5
		6.8	60.6
135		7.8	59.6
135+44 ²⁸ A		9.6	57.8
136.00		11.8	55.6
B.M.		12.00	355.44

Continued on next page

Rim of M.H. 18⁴ LT 133+43 13⁸ to flow line

Rim of M.H. 18⁴ LT 134+76 - 9⁰ to flow line

B.P.S.E. Cor. Euclid + Monroe, Elev. 355.48

	343.49		
139+50		8.5	335.0 ✓
140		11.4	32.1 ✓
+50		13.8	29.7 ✓
+66 ²⁸ _A		14.6	28.9 ✓
		14.7	28.8 ✓
		27.9	15.6 ✓
141		15.0	28.5 ✓
+50		12.2	31.3 ✓
+60 ⁵⁰ _A		11.5	32.0 ✓
142		8.4	35.1 ✓
+50		4.0	39.5 ✓
77	10.85	350.45	3.89 339.60
142+73 ⁴²		7.4	41.0 ✓
143		8.1	42.3 ✓
B.M.		6.87	343.58

Rim of M.H. 5⁹ Lt 140+72 - 6² to flow line

H. line 36" Conc drain 10 Rt 140+90 (other end inaccessible)
Flow from Lt to Rt.

B.P.S.E. Cor. Monroe + Menlo - Elev 343.62

350.45

		7.2	343.2	✓
143+50		6.2	43.8	✓
144		5.6	44.8	✓
+50		4.6	45.8	✓
145		3.4	47.0	✓
+50		2.2	48.2	✓
146		1.1	49.3	✓
+50		0.0	50.4	✓
TP	7.17	356.99	0.63	349.82
147		5.5	51.5	✓
		5.30	51.7	✓
+50		4.8	52.2	✓
148		4.4	52.6	✓
+50		4.2	52.8	✓
149		4.4	52.6	✓
+50		5.5	51.5	✓
150		7.6	49.4	✓

64

Rim of M.H. 4⁸ 143+194⁴ to flow lineRim of M.H. 5¹⁴ 147+09512⁸ to flow line

356.99

150+50 Δ 9.8 347.2 ✓

B.M. 9.97 357.51 9.45 347.54 ✓

10.27 347.24 ✓

11.1 46.4 ✓

14.6 42.9 ✓

16.0 41.5 ✓

151+68⁸⁵ Δ 11.1 46.4 ✓

150 11.3 46.2 ✓

152 11.5 46.0 ✓

15.4 42.1 ✓

14.1 43.4 ✓

152+33⁴⁵ Δ 11.3 46.2 ✓152+92³⁰ Δ 8.7 48.8 ✓

153 8.2 49.3 ✓

+50 4.9 52.6 ✓

B.P.S.E. Cor. Monroe + Max Drive Elev. 347.60 ✓

B.P. N.E. Cor. Monroe + Max Drive

Rim of M.H. 14⁵ LT 150+98⁵ 5³ to flow line ✓Fl. line 12" Conc. drain 24⁴ LT 151+07 ✓Fl. line 12" Conc. drain 8⁵ RT 151+15 ✓Fl. line 22" Conc. drain 4⁴ RT 152+31 ✓" " " " 21² LT 152+31 ✓

357.51

154			2.9	354.6
			2.5	55.0
154+50			2.1	55.4
155			1.6	55.9
+50			1.2	56.3
156			0.6	56.9
TP	7.16	364.03	0.64	356.87
156+50			6.6	57.4
				57.8
157			6.2	58.8
+50			5.7	58.3
			5.3	58.7
158			5.3	58.7
Profile of Highland Ave Loc. Book 679 page 7-11				
+50			5.6	58.4
159			6.1	57.9
+50			6.5	57.5
160			6.9	57.1

Rim of M.H. 10⁸ Lt 154+15213² to flow lineRim of M.H. 5¹ Lt 157+64⁵8² to flow line

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 Stephens

	364.03		
160+50		7.3	356.7
B.M.		7.25	356.78
B.M.	3.41	360.24	356.83
161+00		4.2	56.0
		4.4	55.8
161+15 ⁸⁰ A		4.7	55.5
161+61 ⁰⁰ A		4.8	55.4
		4.6	55.6
161+71 ⁵ - gutter		5.5	54.7
161+71 ⁵ Top of curb		4.9	55.3
162		5.5	54.7
+ 53 - ground		7.6	52.6
+ 54 top of wall		7.1	53.1
+ 54 ground		9.6	50.6

B.P. S.E. Cor. Monroes + 44⁵ - Elev. 356.83
 (Checked level for adjustment here - slightly out)

Rim of M.H. 5° Lt 116+13 - 5² to flow line

Rim of M.H. 5² Lt and 10° ahead of 161+61 - 4⁴ to flow line

360.24

162+64 10.7 349.5

TP 1.27 351.03 10.48 349.76

162+66 4.8 346.2

TP 0.77 338.69 13.11 337.92

162+97 9.2 328.5

163+04 12.0 26.7

TP 11.91 341.01 9.59 329.10
340.01 328.10

TP 1.30 329.32 12.99 328.02
328.32 327.02

TP 0.57 317.00 12.89 316.43
316.00 315.43

163+16 11.3 305.7

163+24 11.1 305.9

163+30 10.6 306.4

10.0 307.0

TP 12.30 328.87 0.43 316.57
327.87 315.57

TP 12.45 340.76 0.56 328.31
339.76 327.31

Top of road cut

Top of road cut

Edge of oil paving

Ground elev. - Intersection with El Capitan Pipeline

Q of Fairmount Ext. - opposite 116+30

Set temp. B. M. Nailers and post of guard fence - west side of Fairmount Ave. 200' ± South of line

		340.76		
		339.76		
TP	12.79	353.41	0.14	340.62
		352.41		339.62
TP	5.69	358.10	1.00	352.41
		357.10		351.41
TP	4.76	359.80	3.06	355.04
		358.80		354.04
B.M.			2.96	356.84
				355.84

B.P. S.E. Cor 44th & Monroe Elev 356.83

Euclid Ave. Pl.

Profile over alternate line - 44th to Fairmount

B.M.	3.52	360.35	356.83
161+61		4.9	55.4
161+70A		5.1	55.2
		4.8	55.5
162+10A		5.3	55.0
+50		5.2	55.1
162+48A		5.4	54.9
		5.00	55.3
162+98		6.11	54.24
..		5.53	54.82
163		5.5	54.8
+01		5.37	54.98
+50		6.7	53.6
164		8.0	52.3
+10		8.5	51.8
+42		11.2	49.1
FF	0.93	348.30	12.98
			347.37
164+49.6A		1.3	47.0

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B.P.S.E. Cor 44th and Monroe.

Rim of sewer M.H. 40 Lt 161+72 43' to follow line

Rim of sewer M.H. 92 Lt. - 45' ahead of apt.

Gutter

Top of curb

On conc. walls

Lt.
-1.0
10

±

RT Note: + and - are
from elev.
9.0
10.0

	348.30			
164+70		12.0	336.3	
TP	0.99	337.15	12.14	336.16
165+00		13.5	23.6	
TP	0.96	325.52	12.59	324.56
165+12		4.0	21.5	
+24		9.4	16.1	
+26		10.7	14.8	
+31		10.7	14.8	
+39 ⁰⁴		10.2	15.3	
		12.3	13.2	
B.M.		8.97	316.55	

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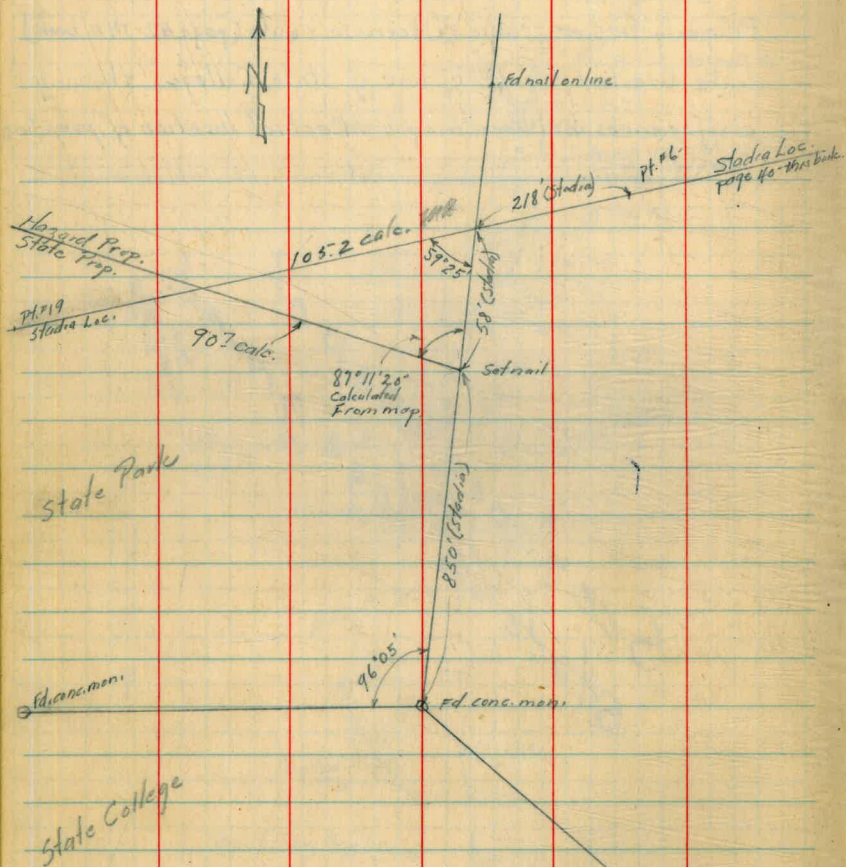
Lt	E	Rt
Note: + and - arc from Elev.	$\frac{-90}{20}$ Gully	$\frac{+87}{20}$
	$\frac{-30}{15}$ Gully	$\frac{+28}{15}$
	$\frac{-40}{13}$ Gully	$\frac{+05}{15}$
	$\frac{-20}{8}$ Gully	$\frac{+50}{90}$
	$\frac{-20}{7}$ Gully	$\frac{00}{10}$ on road

Fl. line 18" Culu. 5' Lt 165+31

Nail in end post of guard fence. West side Fairmount Ave.

Evard Arc PL.

Properties - Stadia location with State and Hazard properties.



"D" LINE

Alternate Stadia loc. from Pt^a 24 page 43 to Pt^a 30, page 13

Dist.	Mag	Hor. L	Vert L	H.I. Red
π 2 to 8 (551)			+2° 37'	5.2 5.2
π 2 to 7 (363)			-1° 10'	5.2 5.2
π 2 to 6 (263)			-12° 08'	5.2 5.2
π 2 to 5 (222)			-14° 37'	5.2 5.2
π 2 to 4 (181)			-24° 42'	5.2 5.2
π 2 to 3 (47)			-20° 50'	5.2 5.2
π 1 to 2π (182) (184)		P.O.T.	-5° 56'	5.2 5.2
		S 32° 30' W		
π 0 to π (90) (90)		50° 12' Rt	0° 00'	5.0 2.5
		S 17° 30' E		

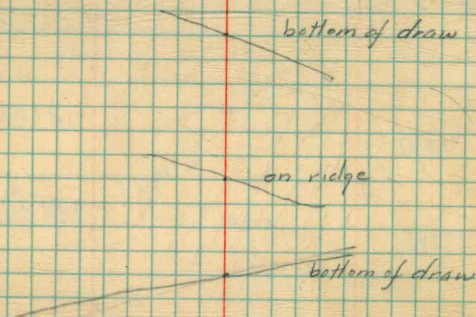
*24 = new point - 0

Lat Point *24 - page 43 - 674 - sight on Pt^a 27

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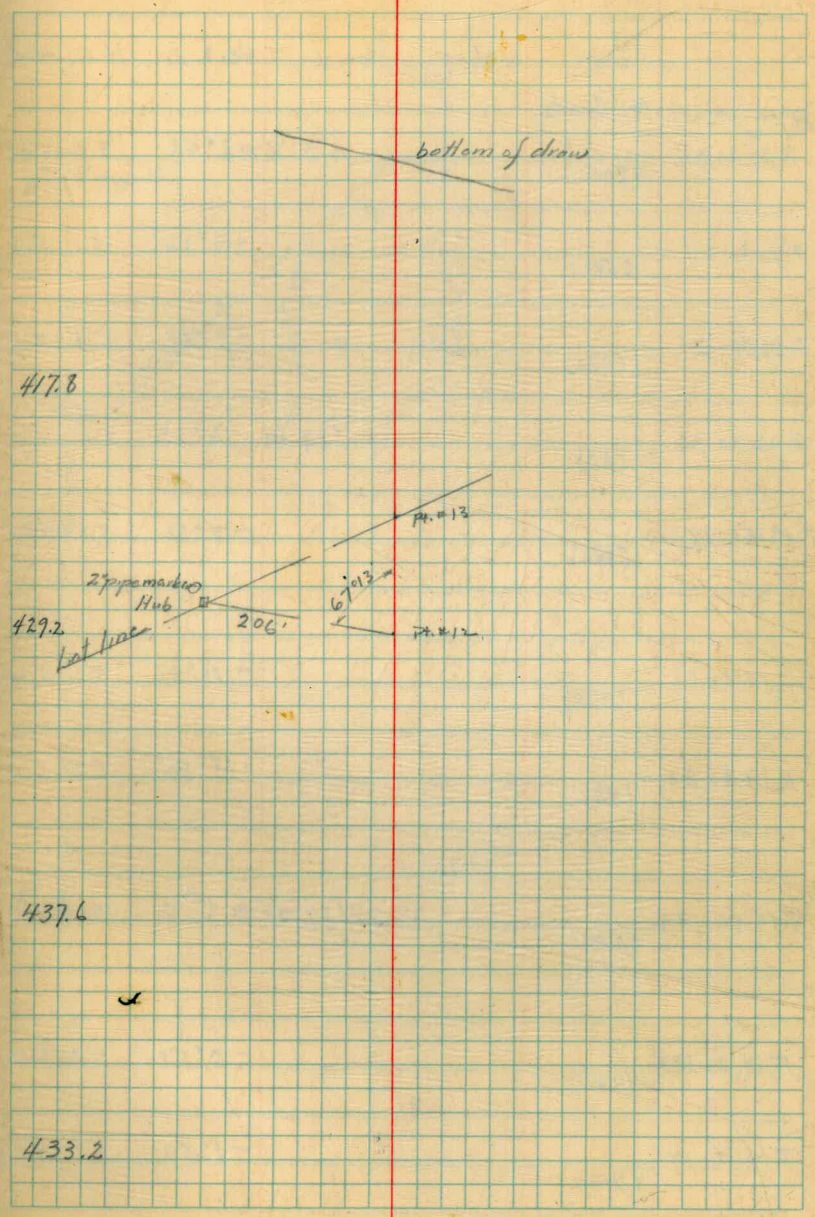
405.2

424.1

431.6

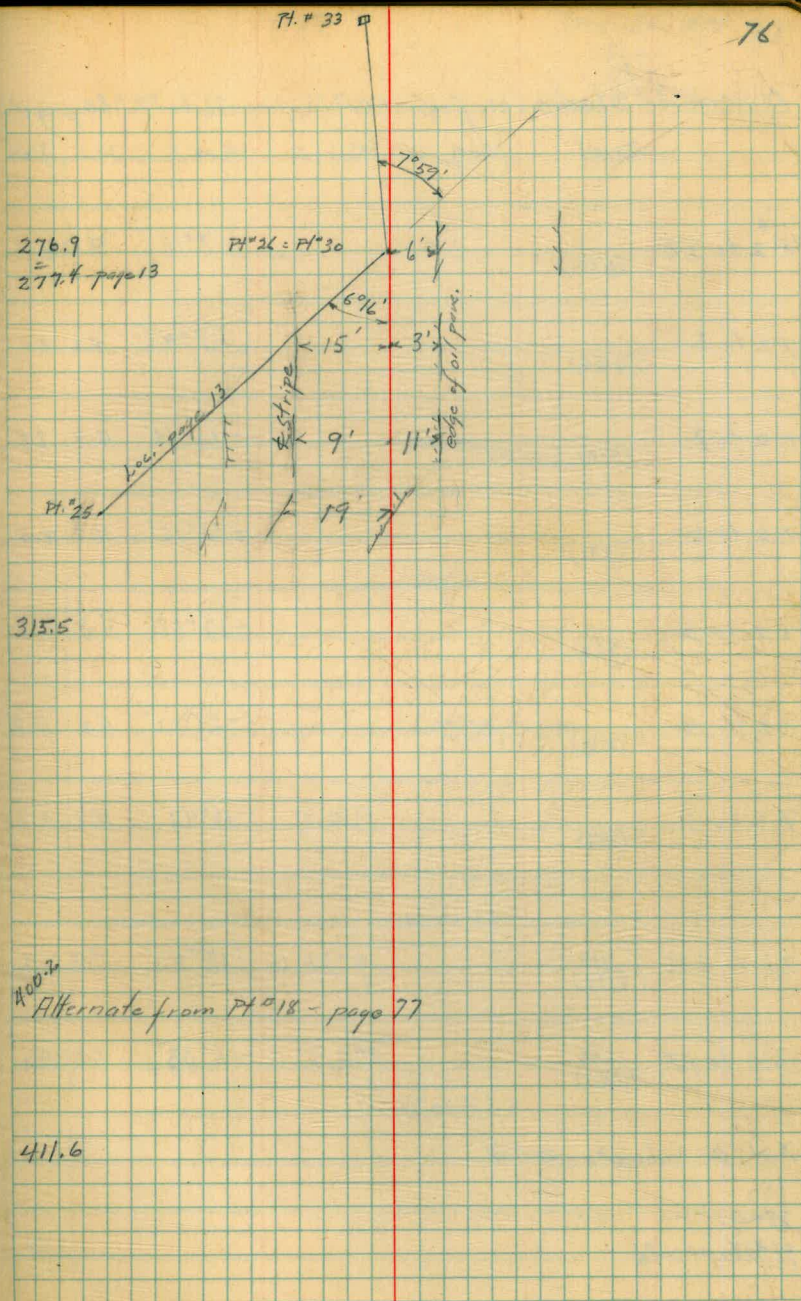
	Dist.	Mag.	Hor. L	Verd. L	H.I.	Rod
$\pi 14$ to 16	(171)			$-14^{\circ}30'$	5.2	10.2
$\pi 14$ to 15	(55)		P.O.T.	$-12^{\circ}18'$	5.2	5.2
$\pi 12$ to 14π	(341)		P.O.T.	$-1^{\circ}55'$	5.1	5.1
$\pi 12$ to 13	(292)			$-2^{\circ}22'$	5.1	5.1
$\pi 11$ to 12π	(534)		P.O.T.	$-0^{\circ}54'$	5.1	5.1
$\pi 11$ to 10	(360)			$-1^{\circ}41'$	5.1	11.1
$\pi 9$ to 11π	(418)		P.O.T.	$+0^{\circ}36'$	5.1	5.1
$\pi 2$ to 9π	685 (686)		P.O.T.	$+2^{\circ}20'$	5.2	5.2

532°30'W.



433.2

	Dist.	Mag.	Hor. L	Vert. L	H.I.	Red
Pt #30 - page 13 - this book						
$\pi 22$ to 26	(800)			$-2^{\circ}46'$	5.1	5.1
$\pi 22$ to 25	(542)			$-3^{\circ}22'$	5.1	5.1
$\pi 22$ to 24	(230)			$-3^{\circ}51'$	5.1	5.1
			$S 40^{\circ} W$			
$\pi 22$ to 23	(43)		$34^{\circ}29' R$	$-5^{\circ}13'$	5.1	5.1
$\pi 19$ to 22	(342)			$-14^{\circ}51'$	5.2	5.2
$\pi 19$ to 21	(275)			$-16^{\circ}37'$	5.2	5.2
$\pi 19$ to 20	(92)			$-18^{\circ}50'$	5.2	5.2
			$S 40^{\circ}30' W$			
$\pi 18$ to 19	(110)		$27^{\circ}39' L$	$-5^{\circ}59'$	5.1	5.1
$\pi 14$ to 18	(423)			$-0^{\circ}51'$	5.2	5.2
$\pi 14$ to 17	(315)			$-1^{\circ}50'$	5.2	5.2
			$S 32^{\circ}30' W$			



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Alternate Stadia Loc from Pt. #18, page 76 to Pt. #30, page 83

Dist	Mag	Hor. L	Vert L	H.I.	Red
$\pi 2$ to 9π (652)			$-7^{\circ}18'$	4.8	4.8
$\pi 2$ to 8 (620)			$-7^{\circ}44'$	4.8	4.8
$\pi 2$ to 7 (510)			$-10^{\circ}48'$	4.8	7.8
$\pi 2$ to 6 (391)			$-10^{\circ}36'$	4.8	4.8
$\pi 2$ to 5 (320)			$-12^{\circ}38'$	4.8	4.8
$\pi 2$ to 4 (241)			$-21^{\circ}12'$	4.8	4.8
$\pi 2$ to 3 (49)		P.O.T.	$-16^{\circ}43'$	4.8	4.8
		S $23^{\circ}30'$ W			
$\pi 1$ to 2π (112) (118)		9 $^{\circ}34'$ Lt	$-13^{\circ}33'$	5.1	5.1
$\pi 0$ to 1π (159) (161)		P.O.T.	$-6^{\circ}03'$	5.1	5.1
		S $32^{\circ}30'$ W			

 $\pi 0$ - backsight on Pt #14Pt #0
Pt #18 - page 76

285.8

bottom of draw

ridge

bottom of draw

367.8

394.7

411.6

Dist.	Mag.	Hor. L	Vert. L	H.I.	Red
-------	------	--------	---------	------	-----

Pt #30 page 13

Pt #26 = page 76

π 9 to 11 π

(258)

-1°40' 5.0 5.0

S 38° W

π 9 to 10

(152)

14°25' RT -2°26' 5.0 5.0

278.3
 =
 276.9
 377.6
 =
 277.4

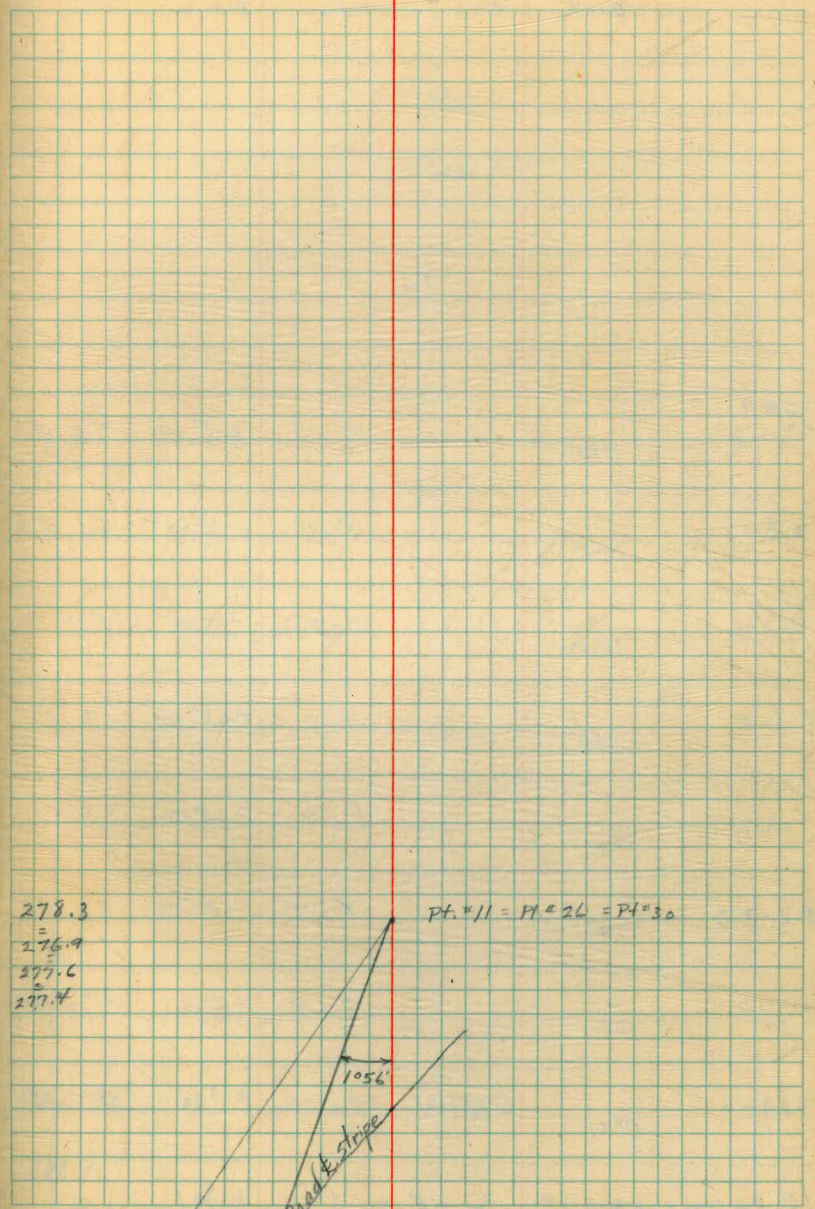
Pt. #11 = Pt. #26 = Pt. #30

Pt #25 page 13

Pt #22 page 76

Road & stripe

1°56'



ALT. STODIA LINE From Pt 22 - Page 42 To Pt 9 Page 75

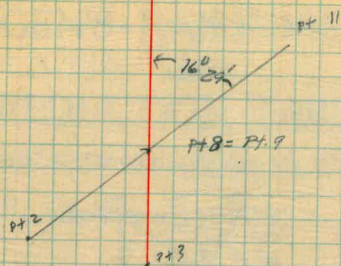
ALT - "D"

Dist Mag Hor. L Vert. L H. I. Rd

3-8	(738)	P.O.T.	+2° 43'	5.1	5.1	
3-7	(646)	P.O.T.	+3° 01'	5.1	5.1	
3-6	(378)	P.O.T.	-1° 49'	5.1	5.1	
3-5	(238)	P.O.T.	-2° 43'	5.1	5.1	
3-4	(94)	P.O.T.	-2° 08'	5.1		
2-3	(170)	P.O.T.	-8° 58'	5.0	5.0	
1-2	(241)	P.O.T.	+4° 03'	4.7	4.7	
2A-1	(102)	S N° 30' W	4° 20' Rt	+11° 04'	5.1	5.1
Signature	22-23	L 4° 20' Rt	to Pt 1			

H. I. KING
STAPLINS
12-27-44

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431.8
433.2 page 75

396.9

423.1

406.1

386.9

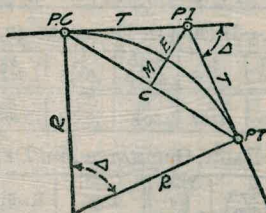
B.M. S.E. Cor. Montezuma & College Ave.
Top F.P. 452.51

B.M. N.W. end of curb Montezuma.
Linda Paseo 453.64

B.P.S.E. Cor Monroe & Euclid	355.48
B.P.S.E. " " Menlo	343.62
B.P.S.E. " " Max Drive	347.60
B.P.S.E. " " 44th	356.83

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— $C = 2 R \sin \frac{\Delta}{2} (10)$ Δ—Central Angle

EXPLANATION AND USE OF TABLES

Stations.—Given P. I.—Sta. 161+60.35 to find Sta. of P. C. and P. T. Δ=62° 10' D=8° 20'. From Table IV for 1° curve T=3454.1 and ÷ 8 1/3 = 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—Sta. P. C.=54.50, hence offset=7.27 (54.50 ÷ 100)²=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 ÷ (2 x 688.26)=2.16 ft.

Deflections.—Deflection angle=1/2 D for 100 ft., 1/4 D for 50 ft., etc. For c ft.=(in minutes) .3 x C x D° or=defl. for 1 ft. from Table III x C. For Sta. 158 of above curve=.3 x 54.5 x 8 1/3 = 136.2' or 2° 16.2', or=2.50 x 54.5=136.2' from Table III. For Sta. 159 deflection angle=2° 16.2' + 8° 20' ÷ 2=6° 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° 20'=960.6 ÷ 8 1/3 = 115.27 and from Table V correction=.10 or E=115.37 ft. Or suppose Δ=32° 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° 30'.

11565
 1470
 10095

Hydraulic Gradient
 from Alvarado Filter Plant
 0.23%

1629 B+
 H9

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	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 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.

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