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.

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.

30th + El Cajon
Storm drain Const

W.O. # C

370.61 =
4.88
375.49 ✓

		F.L.
0+00	C.O. #1	366.0 9.49 6.08 C 3.41
0+50		365.80 9.69 5.59 C 4.10
1		365.60 9.89 5.26 C 4.63
+51.1	c6. inlet #1	365.40 10.09 5.16 C 4.93
1+80 & ST.		365.28 10.21 4.67 C 5.54
2		365.20 10.29 5.18 C 5.11
2+18.3	C.O. #2	365.13 10.36 5.03 C 5.33
+50		365.00 10.49 4.95 C 5.54
3 +0✓		364.80 10.69 4.81 C 5.88

C.I. Moore
Sorensen Meyer
Begg.
Allen

7-9-46.

2

BM S.E. 7'C.T. Monroe & Utah

Ex. c6. inlet 366.50 = F.L. new Box
8.99
5.83
C 3.16

Sw1 c6 inlet #1
366.05
9.44
4.76
C 4.68

S.E. c6 inlet #2
365.43
10.06
4.90
C 5.16

F.L. 375.49 T

3+51.42 B.C. C.B. #2 — 364.60 / 10.89 / 4.73 / C 6.16

+61.12 C.T. C.C. — 364.52 / 10.97 / 4.99 / C 5.98

3+86.81 E.C. C.O. #3 — 364.45 / 11.04 / 4.50 / C 6.54

364.45 / 11.00 / 3.85 / C 7.15

4 — 364.40 / 11.05 / 4.49 / C 6.56

+25 — 364.30 / 11.15 / 4.66 / C 6.49

+50 — 364.20 / 11.25 / 5.70 / C 5.55

+75 — 364.10 / 11.35 / 6.00 / C 5.35

5 — 364.00 / 11.45 / 6.87 / C 4.63

+25 — 363.90 / 11.55 / 7.01 / C 4.54

+50 — 363.80 / 8.77 / 3.87 / C 5.10 — T.P.

+75 — 363.70 / 8.87 / 5.05 / C 3.82

6 — 363.60 / 8.97 / 4.56 / C 4.41

+25 — 363.50 / 9.07 / 4.97 / C 4.10

+50 — 363.40 / 9.17 / 4.70 / C 4.47

+75 — 363.30 / 9.27 / 4.26 / C 5.01

4.54
370.97 = 370.97 Rev. SL Monroe

Top — 370.40 / 4.59 / C 0.09

370.90 / 4.55 / 3.85 / C 0.70 Top clean out

372.57 H.I. from p. 4.
3.67
368.90 T.P.
6.55
375.45 = H.I.

		F.L.
C + 95	C.B. #1	363.22 9.35 4.27 C 5.08
7 + 25	363.10 9.47 5.38 C 4.09	
7 + 50		363.0 9.57 5.35 C 4.22
+ 75	362.90 9.67 4.64 C 5.03	
8		362.80 9.77 4.70 C 5.07
+ 25	362.70 9.87 4.78 C 5.09	
+ 50		362.60 9.97 4.78 C 5.19
+ 75	362.50 10.07 4.76 C 5.31	
9		362.40 10.17 4.69 C 5.48
+ 25	362.30 10.27 4.64 C 5.63	
+ 50		362.20 10.37 4.57 C 5.80
+ 75	362.10 10.47 4.42 C 6.05	
10 + 00.96 B.C.L.T.		362.00 10.66 5.62 C 5.04
10 + 05.2	C.O. #4 Junc. Box	361.98 10.68 5.55 C 5.13

Tied ELY 25' & 50' WITH NAILS

Top grate 367.80
4.77
4.27
C 0.50 Top grate

Cuts Backed In
7-25-46

366.78 = S.E.B.P. Meade & Kansas
5.88
372.66 = π
5.22
367.44
5.13
372.57 π ✓

F.L.

10 + 23.65 — 361.85 / 10.81 / 5.28 / C 5.53

+ 47.24 — 361.69 / 10.97 / 5.41 / C 5.56

10 + 70.85 E.C. — 361.52 / 11.14 / 5.28 / C 5.86

11 — 361.32 / 11.34 / 5.55 / C 5.79

+ 50 — 360.96 / 11.70 / 5.79 / C 5.91

P.T. — 360.61 / 12.05 / 6.37 / C 5.68

12 + 47.07 C.O. #6 — 360.28 / 10.70 / 4.26 / C 6.44 ✓

Rate = 100400 per 100

S.E.B.P. 30th + Meade — 365.72 / 5.26 / 370.98 ✗

13 — 360.07 / 10.91 / 4.95 / C 5.96 ✓

+ 50 — 359.87 / 11.11 / 4.53 / C 6.58 ✓

372.66 ℄ front P.T.

366.78 / 5.72 / 372.50 — S.E.B.P. Meade + Kan.

C6 incl. #5 — 361.73 / 10.67 / 5.38 / C 5.29

℄ — 361.00 / 11.40 / 5.60 / C 5.80

C6. Incl. #6 — 361.77 / 10.63 / 5.42 / C 5.21

F.L.

14

359.66
11.32
5.33
C 5.99 V

+50

359.46
11.52
5.36
C 6.16 V

15

359.26
11.72
5.04
C 6.68 V

+50

359.05
11.93
5.21
C 6.72

15+65.59 BCRT C.O. #9

17.69 370.79

358.99
11.80
5.71
C 6.09

Set Gr. 7-16-46
S.E.B.R 30th + Meade
EB. 167.5-95

365.72
5.07
370.79

+83.28

359.91
11.88
5.04
C 6.84

365.72
OK

16+00.98

358.84
12.95
5.10
C 6.85

+18.67

358.77
12.02
5.38
C 6.64

16+36.37 E.C. C.O. #7

.00168 per foot

358.70
12.09
4.97
C 7.12

370.79

N.E. Cor Inlet #12

359.61
11.18
4.41
C 6.77

1/2

359.44
1135
4.59
C 6.76

N.W. " " #11

359.28
11.51
4.51
C 7.00

1/2 to Junc.

359.14
11.65
5.29
C 6.36

C6. Inl. #7
S.W. 30th + Meade

360.61
10.18
4.97
C 5.21

Top C.O. #9 9-V-46

SEBR 5.05 370.77 365.72 30th Meade

15+65.59 BC RT. 5.08 365.09 El. Pav. Top C.O. #9

Lix
F 0.46 to Top C.O. #9

C6. Inl. #8
Near S.E. 30th + Meade

359.57
11.22
4.97
C 6.25

		F.L.	
	⊼		
16 + 50	370.79	358.68	
		12.11	
		5.24	
		C 6.87	
17		358.60	
		12.19	
		5.39	
		C 6.80	
+ 50		358.51	
		12.28	
		5.38	
		C 6.90	
18	369.61	358.43	
		11.78	
		4.34	
		C 6.84	
+ 50		358.34	
		11.27	370.79
		4.88	5.49
		C 6.39	365.30
			4.31
19		358.26	369.61 ⊼
		11.35	
		4.57	
		C 6.78	
+ 50		358.18	
		11.43	
		4.61	
		C 6.82	
20		358.09	
		11.52	
		4.73	
		C 6.79	369.61
	⊼		4.75
+ 50	370.35	358.01	364.86
		12.34	5.49
		5.58	370.35 ⊼
		C 6.76	

		F.L.	
21	370.35	357.92	370.35
		12.43	6.07
		6.16	364.28
		C 6.27	364.27 = B.P. - NE Cor El Cajon & 30th
			+ 0.01
21+50		357.84	
		12.51	
		5.92	
		C 6.59	
21+75.73 B.C.L.T.	C.O. #8	357.79	364.27 = BMBP NE Cor 30th & El Cajon
		11.66	5.18
		5.32	369.45
		C 6.34	
+93.42		357.76	
		11.69	
		5.03	
		C 6.66	
22+11.11		357.73	
		11.77	
		4.78	
		C 6.94	
22+28.8		357.70	
		11.75	
		4.74	
		C 7.01	
22+46.48 E.C.		357.67	
		11.78	
		4.75	
		C 7.03	
23		357.58	
		11.87	
		4.94	
		C 6.93	
+50		357.49	
		11.96	
		4.94	
		C 7.02	

8-9-46

Grade of Old Pav. at Cleanout #8 at B.C.L.T. 21+75.73

369.45 = H.I.
5.32
364.13 = El. of Cut Mark
364.00 = El. " & on Pav.
C 0.13 to & Top C.O.

364.00
357.79
6.21

	F.L.	
		369.45 ±
		5.40
		363.99
24+00	357.41	4.83
	12.04	368.82 ±
	5.01	
	C7.03	TP1
25+50	357.34	
	11.50	
	4.08	
	C7.42	
25	357.24	
	11.58	
	4.70	
	C6.88	
25+09.41 BC L.T.	357.22	
	11.60	
	4.70	
	CC6.90	
25+22.5 Crn Cu.	357.20	
	11.67	
	4.75	
	C6.87	
25+35.59 EC.	357.18	
	11.64	
	5.00	
	C6.64	
25+57.64	357.15	
	11.67	
	5.10	
	CC6.57	
25+67.7 BC R.T.	357.12	
	11.70	
	4.79	
25+77.07 Crn Cu.	C6.91	
25+86.35 End	357.09	
	11.73	
	4.81	
	C6.92	

Utah and Meade
Storm drain

R.P. at 90°

0+00 = Cleanout #5 Junc. Box 18'4"5 N

1+50

(NE Cor. Curb Inlet) 363.01
9.39
4.23
C 5.16

1

1+50

1+58.7 = Cleanout #4

SW Cor. Curb Inlet 363.53
8.87
3.75
C 5.12

NW. Cor. Curb Inlet 363.41
8.99
3.82
C 5.17

S.E. Cor. Curb Inlet 362.82
9.58
4.16
C 5.42

H.I. R.P.
372.66 F.S.

362.61
10.05
4.47
C 5.58 = on 18' R.P. to N.

362.41
10.25
4.87
C 5.38

362.21
10.45
5.04
C 5.41

362.01
10.65
5.63
C 5.02

361.98

372.10 H.I.

Midway to S E Cor. Inlet 363.17
9.23
4.48
C 4.75

Midway 363.01
9.39
4.41
C 4.98

Midway to Cleanout #5 = 362.71
9.69
4.75
C 5.94

8-9-46

C6. grades on inlets

SEBP
30th & Meade 5.35 37.07 36.72

NE Cor 30th & Meade 36.21
4.86
4.68
C 0.18

NW Cor " " " 36.11
4.96
4.74
C 0.22

SW " " " 36.01
5.46
5.26
C 0.20

SEBP
Meade 5.23 37.01 36.78
Kansas

NE Cor #5
Meade & Kansas

36.80
5.21
4.98
C 0.23

~~36.73 = .07 Low~~
~~5.28~~

SE Cor #6
Meade & Kansas

36.77
5.24
5.01
C 0.23

Utah & Meade

6 grades on 10 Lots

Fwd. P11
372.01

T.P.	5.38	373.01	4.38	367.63

NE Cor Utah & Meade 368.01
5.00
4.81
C 0.19

NW " " " 368.48 ~~368.41~~ = Low
4.53
4.40
C 0.13

SW " " " 368.53
4.48
4.37
C 0.16

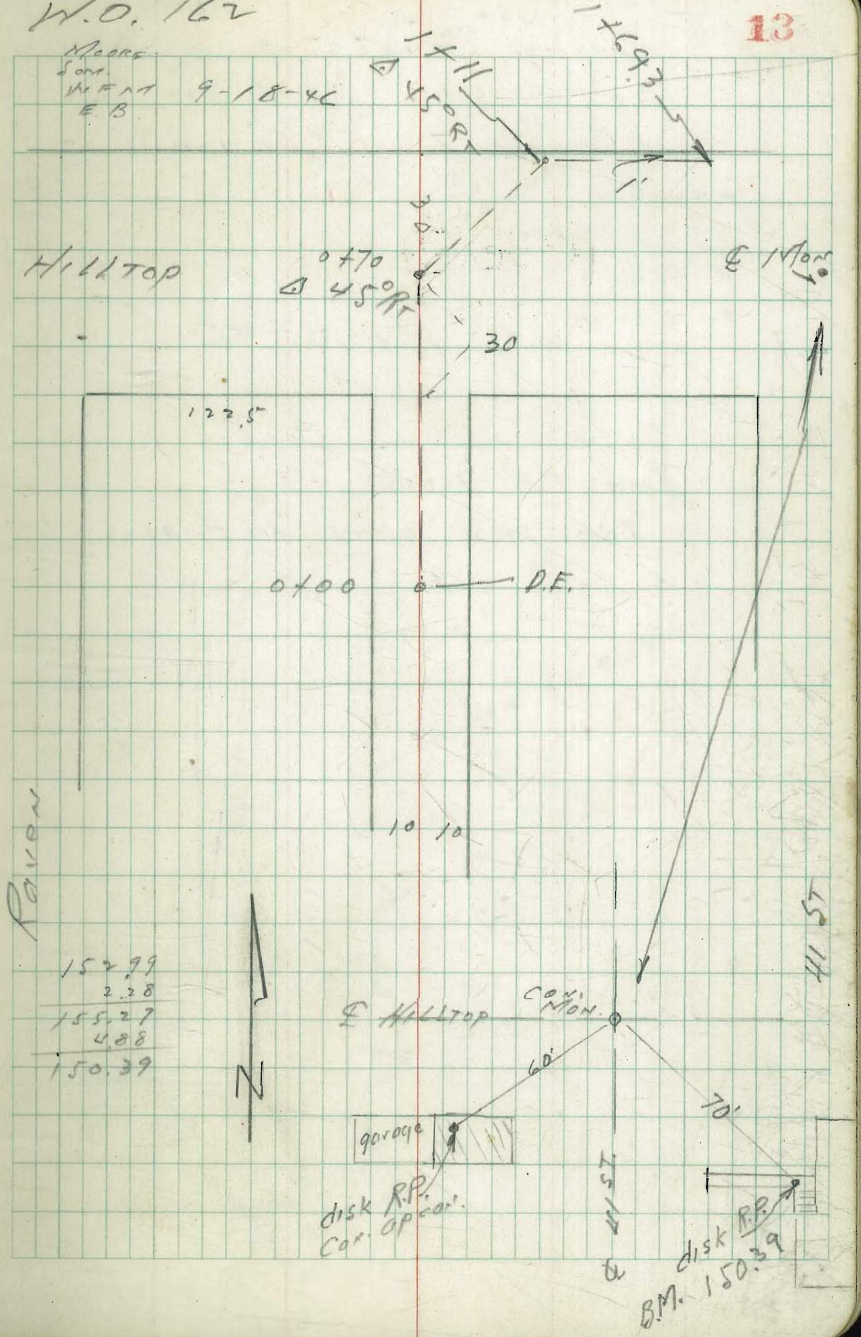
SE " " " 368.18 ~~368.17~~ = Low
4.83
4.75
C 0.08

Sewer Const.
Alley Blk 5 Sun Harbor Tr.

BM & Mon.
Hilltop
T Vist

	10+8	163.17	152.99	
0+00			147.06	153.34
			16.11	
			9.83	
			C 6.28	
0+35			149.30	156.47
			13.87	
			6.70	
			C 7.17	
0+70	Δ 45°Rt		151.54	160.13
			11.63	
			3.04	
			C 8.59	
1+11	Δ 45°Rt	152.16	152.77	161.84
			10.45	
		C 9.68	1.33	
			C 9.12	
1+40.15		152.60	153.56	158.81
		C 6.21	9.61	
			4.36	
			C 5.25	
1+C 9.3		153.04	154.40	
		C 3.56	8.77	156.60
			C 5.57	
			C 2.20	

W.O. 162

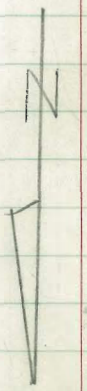


Paving Levels
on E. Side 30th St.
Meade to El Cajon

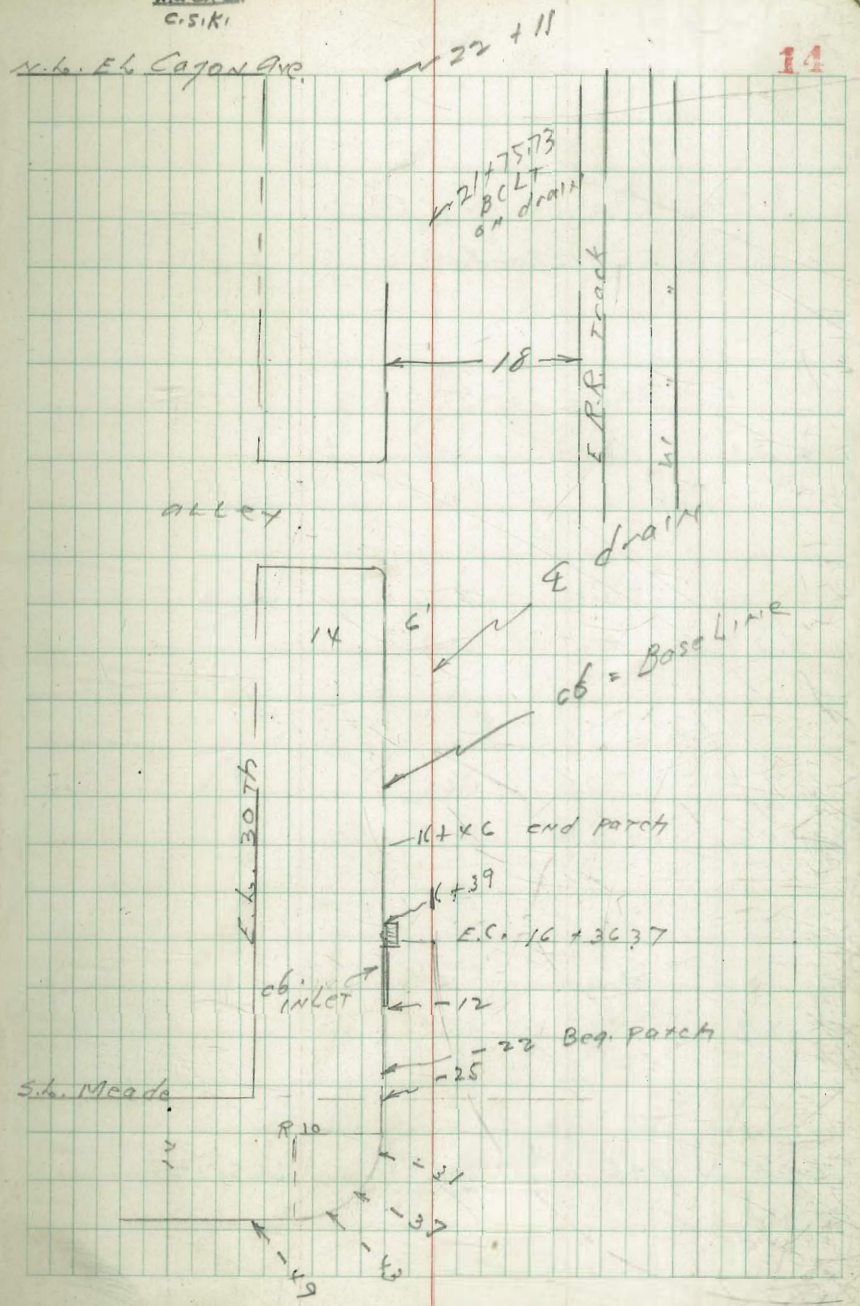
Contract
Joint Engineer
W.H.
E.B.

9-24-46 W.O. #6

See F.B. 1675
for pav. elev. on drain



Indexed
C.S.K.



− 25 = S.L. Meade			
− 21			
− 37			
− 43			
− 49			
SEBP 30th + Meade	4.96	370.68	365.72

BL. cont

R7 = W.

365.67	365.04	365.17
5.01	5.6K	5.51
	97	C
365.67	365.03	
5.01	5.65	
	97	
365.56	365.10	
5.12	5.58	
	97	
365.66	365.17	
5.02	5.51	
	97	
365.77	365.24	
4.91	5.4X	
	97	
370.68		

16 + 50

16 + 46 end pav. patch

16 + 39.1 Send cb. inlet

16 + 30.37 = drain E.C.

– 17 N. end cb inlet

– 22 Beg. pav. patch

370.68

B.L. Rt

Curb

365.53	364.91	365.16	365.53
5.15	5.77 / 9T	5.52 / C	5.15 / 18
365.55	364.93	365.16	365.55
5.13	5.75 / 9T	5.52 / C	5.13 / 18
365.57	364.72	365.04	365.59
5.11	5.96 / 9T grate	5.64 / C	5.09 / 18
365.58	364.61	365.03	365.60
5.10	6.07 / 9T grate	5.65 / C	5.08 / 18 E. Rail
365.66	364.69	365.07	365.61
5.02	5.99 / 9T	5.66 / C	5.07 / E Rail or E Track 18'
365.69	365.07	365.18	
4.99	5.66 / 9T	5.50 / C	

370.68

+52.5 end pav. patch

+69 Beg. pav patch

+37 end pav. patch

+28 Beg. pav. patch

17

16 +75

370.68

B.L. curb | Rt.

365.39	364.69	364.96	365.30
5.29	5.99 / 97	5.72 / C	5.38 / 18
365.40	364.69	364.93	365.30
5.28	5.99 / 97	5.75 / C	5.38 / 18
365.31	364.71	364.96	365.34
5.37	5.97 / 97	5.72 / C	5.34 / 18
365.31	364.91	364.92	365.34
5.37	5.97 / 97	5.76 / C	5.34 / 18
365.38	364.96	365.01	365.41
5.30	5.92 / 97	5.67 / C	5.27 / 18
365.43	364.82	365.08	365.48
5.25	5.86 / 97	5.60 / C	5.20 / 18

E rail
E TC

370.68

		B.L. cub.		Rt	
18+43		365.18	364.79	364.94	365.21
		5.50	5.89 / 6ft.	5.74 / 6	5.47 / 18
18+25		365.17	364.71	364.89	365.19
		5.51	5.97 / 6ft.	5.79 / 6	5.49 / 18
18+10		365.21	364.66	364.80	365.18
		5.47	6.02 / 6ft.	5.88 / 6	5.50 / 18
	Pond	365.26	364.66	364.81	365.20
18+00		5.42	Cor / 9ft	5.87 / 6	5.48 / 18
		365.27	364.69	364.91	365.21
17+87	Beg. par. parch	5.41	5.99 / 9ft	5.77 / 6	5.47 / 18
		365.31	364.65	364.93	365.25
17+75		5.37	6.03 / 9ft	5.75 / 6	5.43 / 18
					E. Rail E Tr.
	370.68	370.68			

Base Line
= Curb.

Rt

	364.96	364.45	364.65	365.06
+25	5.72	6.23 / 97	6.03 / C	5.62 / 18
	365.04	364.40	364.68	365.10
19+04 Beg. pav. porch	5.64	6.20 / 97	6.00 / C	5.58 / 18
	365.04	364.47	364.63	365.12
18+93 end pav. porch	5.64	6.21 / 97	6.05 / C	5.56 / 18
	365.10	364.54	364.74	365.16
18+75	5.58	6.14 / 97	5.96 / C	5.52 / 18
	365.14	364.72	364.86	365.18
18+60	5.54	5.96 / CC.	5.82 / C	5.50 / 18
	365.14	364.64	364.91	365.22
18+50	5.54	5.94 / CC.	5.77 / C	5.46 / 18

E Pav. C
E T.

370.68

370.68

19+92	End pav. patch			
+75				
+50	Beg. pav. patch			
+43	End pav. patch			
+40				
19+35				
T.P.	5.18	370.18 370.68	5.68	365.00

B.L. Cr 6 Pt

364.88	364.79	364.52	365.06
5.30	5.89 9T	5.66 C	5.12 18
364.92	364.40	364.64	365.10
5.26	5.78 9T	5.54 C	5.08 18
364.98	364.39	364.64	365.11
5.20	5.79 9T	5.54 C	5.07 18
364.92	364.40	364.69	365.09
5.26	5.78 9T	5.51 C	5.09 18
364.93	364.41	364.64	365.08
5.25	5.77 9T	5.54 C	5.10 18
364.90	364.38	364.64	365.06
5.28	5.80 9T	5.54 C	5.12 18

E.o.t.
E T.

379.18

+65	E. 10' of alley				
20+55	Beg. pav. patch				
T.P. NEBP BM 30th and EL Cajon	4.86	369.12	5.92	364.26	364.27 0.01
20+75					
20+14	end pav patch				
20+03.5	Beg. pav. patch				
	370.18				

364.16 364.34 364.81

4.96 4.78 4.31

97 C 18

364.74 364.14 364.44 364.85

4.40 4.98 4.70 4.27

97 C 18

369.12

364.80 364.21 364.14 364.95

5.38 5.97 5.64 5.23

97 C 18

364.80 364.21 364.49 364.97

5.38 5.97 5.69 5.21

97 C 18

364.83 364.28 364.54 365.03

5.35 5.90 5.66 5.15

97 C 18

370.18

BL.
curb

RT

+ 00

+ 50

+ 38

+ 25

21 + 00.

20 + 75

369.12

363.97
364.03
364.46
5.20
97
5.09
C
4.66
18
in drive

364.38
363.95
364.10
364.52
4.74
5.17
97
5.07
C
4.60
18

364.06
364.15
364.57
5.06
97
4.97
C
4.55
18
in drive

364.11
364.26
364.62
5.01
97
4.86
C
4.50
18
in drive

364.25
364.34
364.72
4.87
97
4.78
C
4.40
18
in drive

364.69
364.15
364.30
364.78
4.43
4.97
97
4.82
C
4.34
18
Error
ETN

369.12

22 + 11 = N & EL Cajon Ave

22 + 05 end pav. patch

21 + 75.73 = B.C. Lt. on drain

369.12

Bl. curb Rt.

364.40 363.63 363.77 364.00

4.93 5.49 5.35 5.12

97 6 18

363.69 363.80 364.09

5.43 5.32 5.03

97 6 18

IN drive Old pav.

363.07 364.03 364.41

5.25 5.09 4.71

97 6 18

IN drive rail

Top Cleanout

369.12

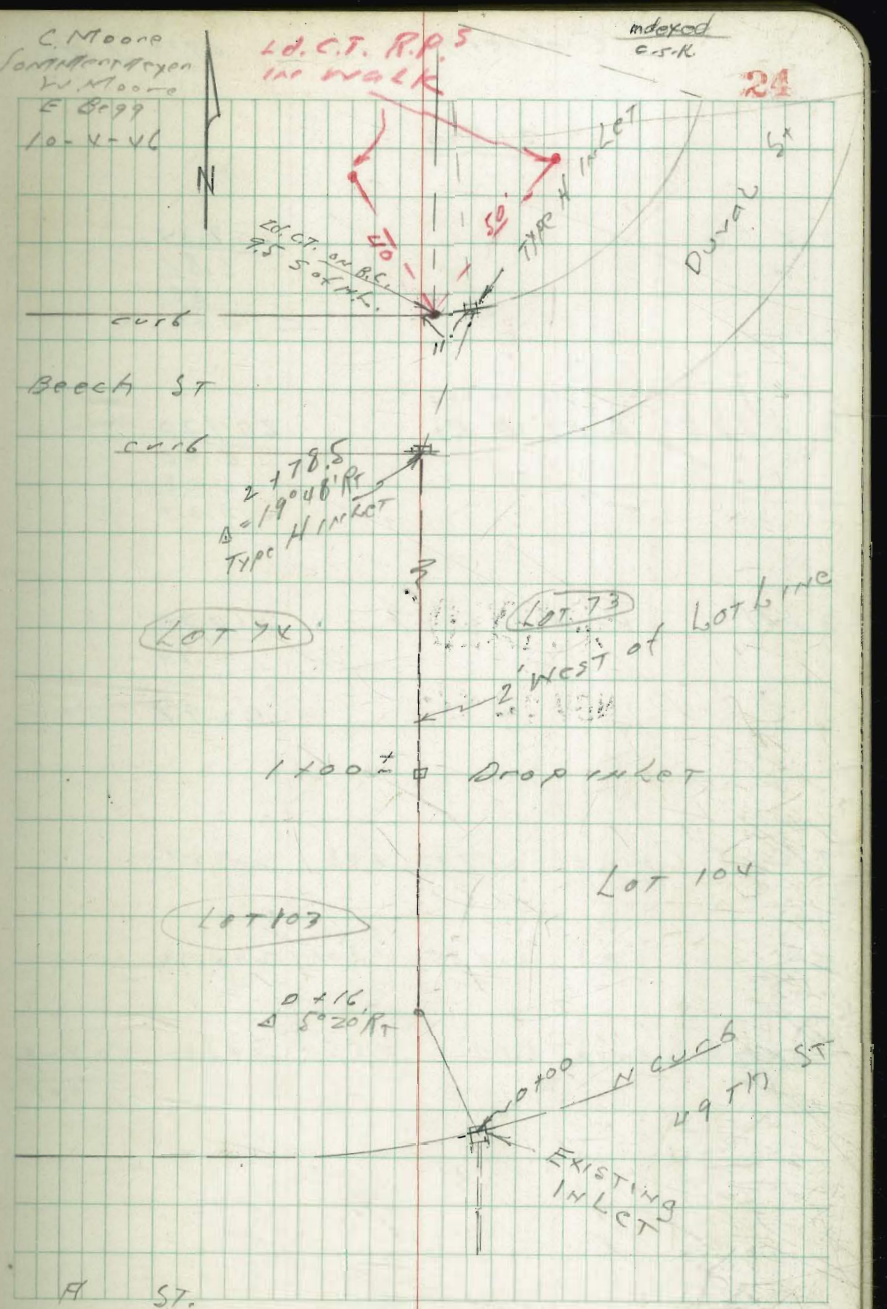
W.O. # 180

Culvert Const.

at 49th & A St. 66 12 L.

B.M. N.E. Top E.K.	2.32	210.61	208.29	49th & A
0+00			200.92	
			9.69	
			6.44	
			C 3.25	
T.P.	11.03	215.20	6.44	204.17
0+16 Δ 5°20' Rt			201.40	
			13.80	
			10.30	
			C 3.50	
0+50			202.40	
			12.80	
			9.20	
			C 3.60	
1+00 ± Drop Inlet			203.89	
			11.31	
			7.50	
			C 3.81	
1+50			205.37	
			9.83	
			6.75	
			C 3.08	
2+00			206.86	
			8.34	
			4.37	
			C 3.97	

INDEXED
WK
NOV 16 1948



Culvert Const. 49th & Hst.

215.20

2+50				208.34	
				6.86	
				2.86	
				C 4.00	
2+78.5	curb inlet = Δ 19°48 Rt			209.20	
				6.00	
				2.68	
				C 3.32	
3+11	Curb inlet			210.30	
				4.90	
				1.93	
				C 2.97	
T.P.	4.66	217.93	1.93	213.27	
T.P.	5.93	210.85	13.01	204.92	
check to orig. BM.			2.55	208.30	208.29
					0.01

Const. Drain Bet. A + B and 27+5 + 28+4
offsets C' ht

C.S.M.
C.S.
W.M.
E.B.
10-1X-46

0 + 33.53 B.C. 166.9X ✓

1 Thru 2 — 2°19' — 166.53 / 6.99 / 3.6X / C 3.35

2 Thru 3 — 6°38' — 166.11 / 7.41 / 4.37 / C 3.04

3 — 9°57' — 165.70 / 7.82 / 4.85 / C 2.97

X = 0 + 75.21 EC — 13°16' — 165.28 / 8.24 / 5.10 / C 3.14

0 + 80 Break — 165.09 / 8.43 / 4.97 / C 3.46

W.O. # 37

166.94
6.58
173.52 X

1737

1+00,		164.37
		9.15
		5.18
		C 3.97
+20		163.81
		9.71
		4.43
		C 5.28
+40		163.40
		10.12
		4.22
		C 5.90
+60		163.14
		10.38
		C.38
		C 4.0
1+72	Catch Basin	163.03
		10.49
		C.84
		C 3.65
1+83.93	B.C.	

2

3

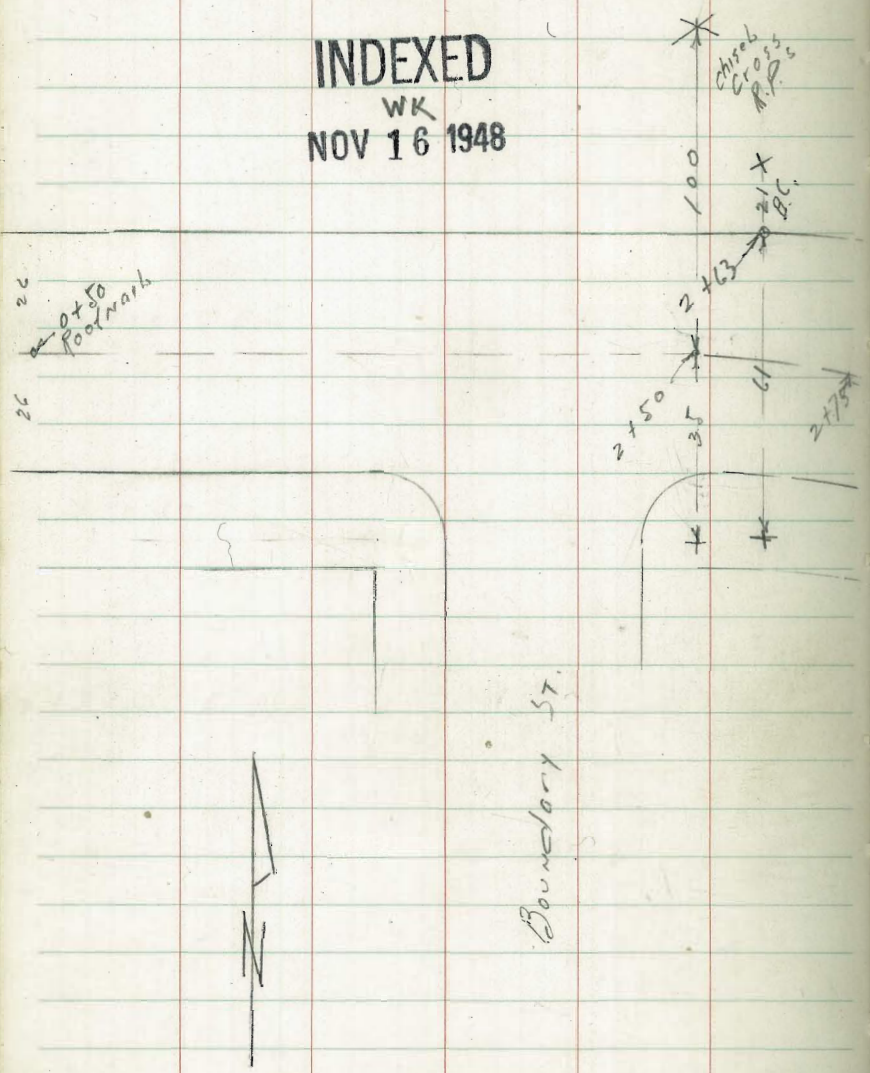
4 = 2 + 1 C.Y 5 E.C.

2 + 50 Y.D

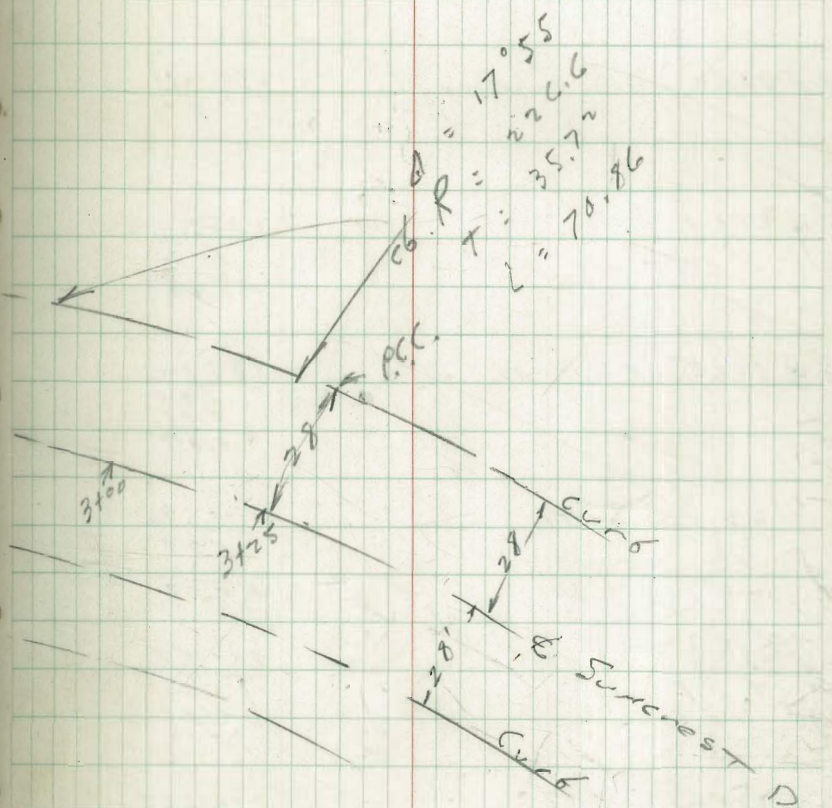
2 + 8 V. 3 C Ex. P, pe

Constr. Paving & Curbs
on Sunkrest Drive
at Boundary

C. Moore
Surv.
W.M.
E.B.
11-6-48



W.O. # 123



℄ data

2+50	B.C.
2+75	2° 59.15'
3+00	5° 58.30'
3+25	8° 57.45'

Sunerest Dr.
N. Curb grade

1+91.64	= W.L. Boundary		385.76
			5.79
2+21.64			385.73
			5.82
			6.25
			F 0.43
2+51.64	= E.L. "		385.70
			5.85
			6.02
			F 0.17
2+63	B.C. P.I.		385.685
1'V.3'L			5.87
			6.44
			F 0.57
2+77.31	1°V 8.5'		385.67
1'V.3'			5.88
			6.49
			F 0.61
2+91.64	3°37'		385.655
1'V.3'			5.90
			6.58
			F 0.68
3+05.94	5°25.3		385.64
13.9L			5.91
			6.65
			F 0.74
3+19.90	7°11.4		.575
13.9L			5.98
			6.72
			F 0.74
3+33.84	= P.C.C. 8°57.5		385.51

38679 BM SE 7' C.T.
4.76
391.55
Bolt at Sunerest

Suncrest Dr.

W. Gutter Grade

BM BP SE. adams + Bdry = 390.96

0+50	4.10 / 375.06 / 4.45 / 388.61 / 3.32 / 391.93 / 5.14 / 386.79 = SE. 7' C.T. Bdry. Suncrest Drive / 3.59 / 390.38		385.61
0+75			385.54
1+00			385.47
1+25			385.40
1+50	Break		385.33
1+75	Break		385.26
1+91.64 - W.L. Bdry.		385.20 / 5.18 / 4.61 / C 0.57	
2+01.64		385.18 ✓	
2+21.64 E "		385.12 / 5.26 / 4.09 / C 1.17	
2+51.64 E.L. "		385.04 ✓ / 5.34 / 4.02 / C 1.32	
2+63 = B.C.		385.01 ✓ / 5.37 / 3.75 / C 1.62	
2+77.31		384.97 ✓ / 5.41 / 4.07 / C 1.34	
2+91.64		384.93 ✓ / 5.45 / 4.29 / C 1.16	

P. 32

Sunecrest Dr.
N. Gutter Grade

3 + 05.94

38+89
5.49
4.55
C0.94

3 + 19.9

38+80
5.58
4.66
C0.92

3 + 33.84

38+70
5.68

Sunscrest Dr.

No. 13' Line grades

Suncrest Dr.
℄ Par. grades

2+75	2°59.15'	385.91
2+51.64 = E℄ Bdry		386.16 ✓
2+50 B.C.R.		386.16 ✓
2+41.64 E c6 Bdry		386.18 ✓
2+31.64 E 1/4 Bdry		386.11 ✓
2+21.64 = ℄ Bdry		385.98
2+11.64		385.70
2+01.64 W c6 Bdry		385.42

Bdry.

3.8679 B.M. SE 7 C.T. Suncrest 34

4.32
391.11

3+25	8°57.45	385.43 ✓
3+00	5°58.30	385.67 ✓

Stake Perry St. Sewer
at San Antonia

0+00 M.H. - 4.23
14.39
12.47
C 6.72

offsets only

0+40 2.27
12.89
7.32
C 5.57 I.P.

0+80 8.77
18.15
11.48
C 6.67

1+20 15.27
11.65
4.48
C 7.17

I.P.

1+60 P.E. 21.77
5.15
0.68
C 4.47

W.O. #199

C.M.
C.S.
WM
E.B.

11-21-46.

3.Cr B.M. SW 7'C.T.
11.5x
15.1C = ↗
0.18
14.98
11.9x
26.92 ↗
11.9x
14.98
0.35
15.33
11.71
3.62 ✓

Perry & San Antonia

H.H. Peterson
Private Contract.

Set curb stakes (curb grade)
3' Back of Curb Line

31 C.V. - B

Lots 41-42 Blk 33
Second Fortuna Park Add.

B.M. E Ld.
La Playa
Ingraham

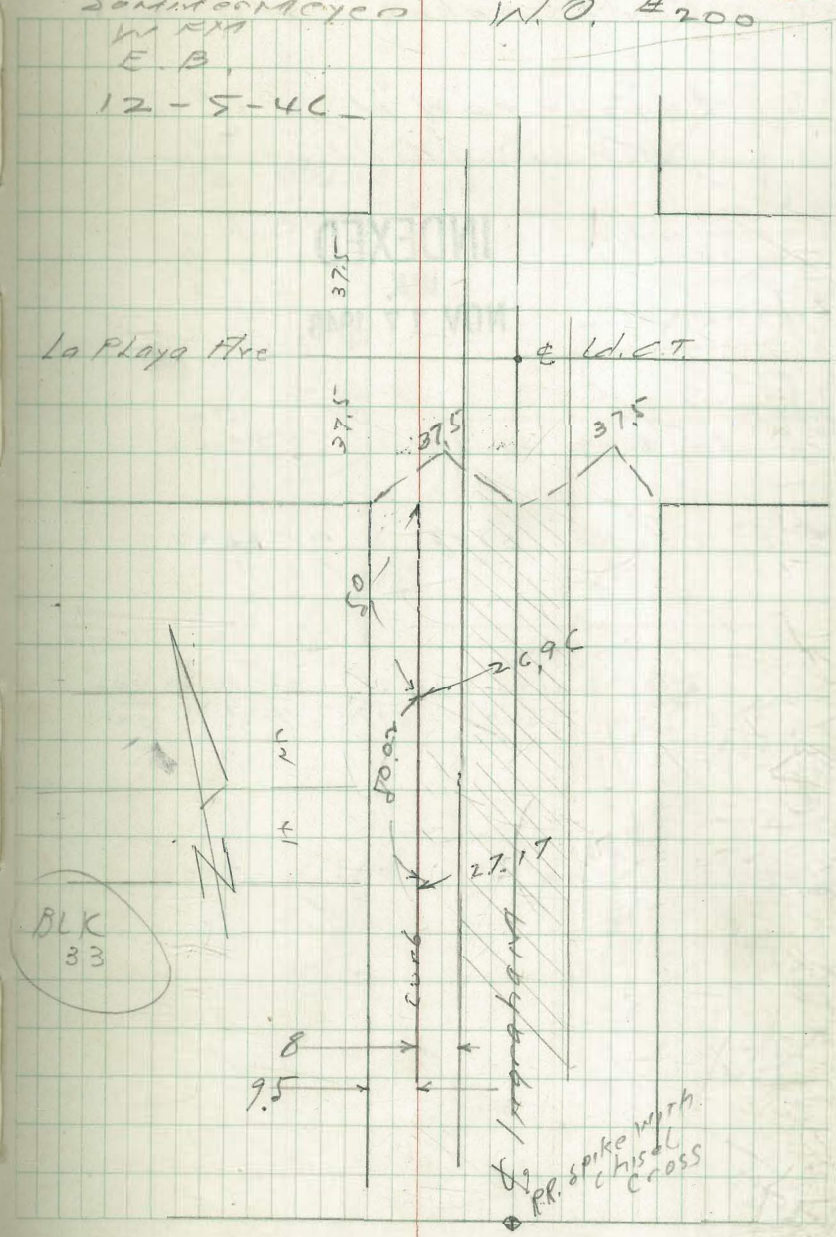
5.31 31.75 26.44

26.96
4.79 ✓

27.17
4.58 ✓

C. Moore
Sanitary Engr.
W.K.
E.B.
12-5-48

W.O. 4200



Curb stakes W.O. 210

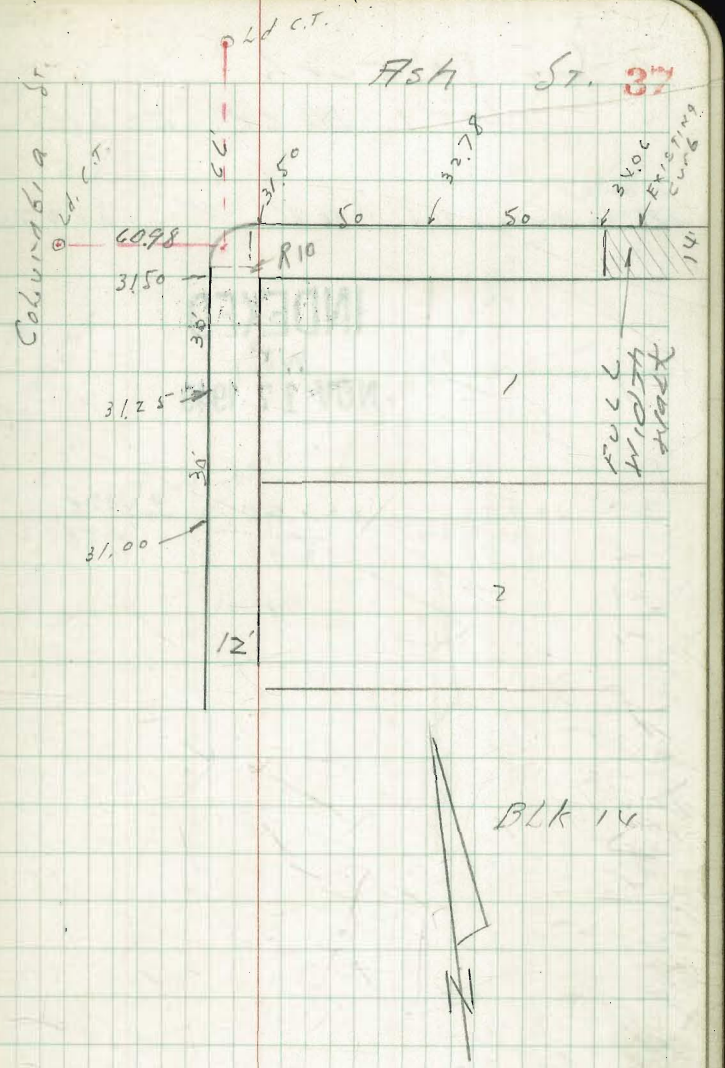
Lots 1 and N 10' of 2
BLK 14 Middletown

Extend
Sanitary Mgr
W 1/2 ...
E Bldg
12-11-46

Sta BP Columbia	8.49	3X.9X		2C.45
T.P.	C.20	37.47	3.47	31.27

31.00 / 6.47 — 31.25 / 6.72 — 31.50 / 5.97 — 32.78 / X.69 — 3X.0C / 3.X

Sw Curb	Ash & State	0.37	37.10	



Lot 50' curb

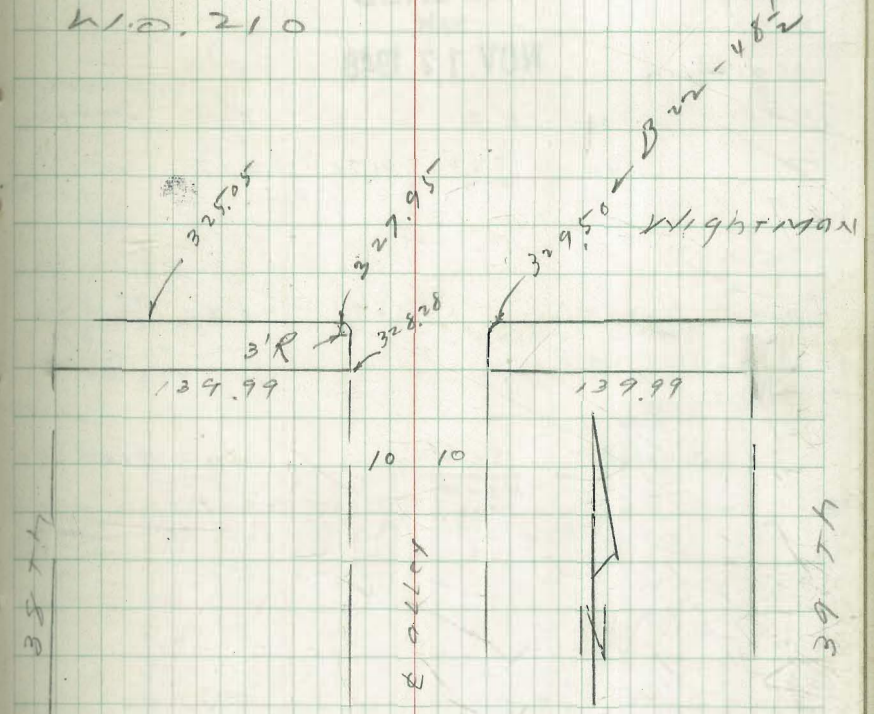
Lot 1 Blk CC E S.D.

NW BP
28'4th Highway 111 330.8C 319.70

INDEXED
WK
NOV 17 1948

325.05 327.95 328.28 329.50
5.81 2.91 2.58 1.3C
1.27
0.09
High

CM Coon
C.S
W.M.
EB
12-11-46
W.O. 210



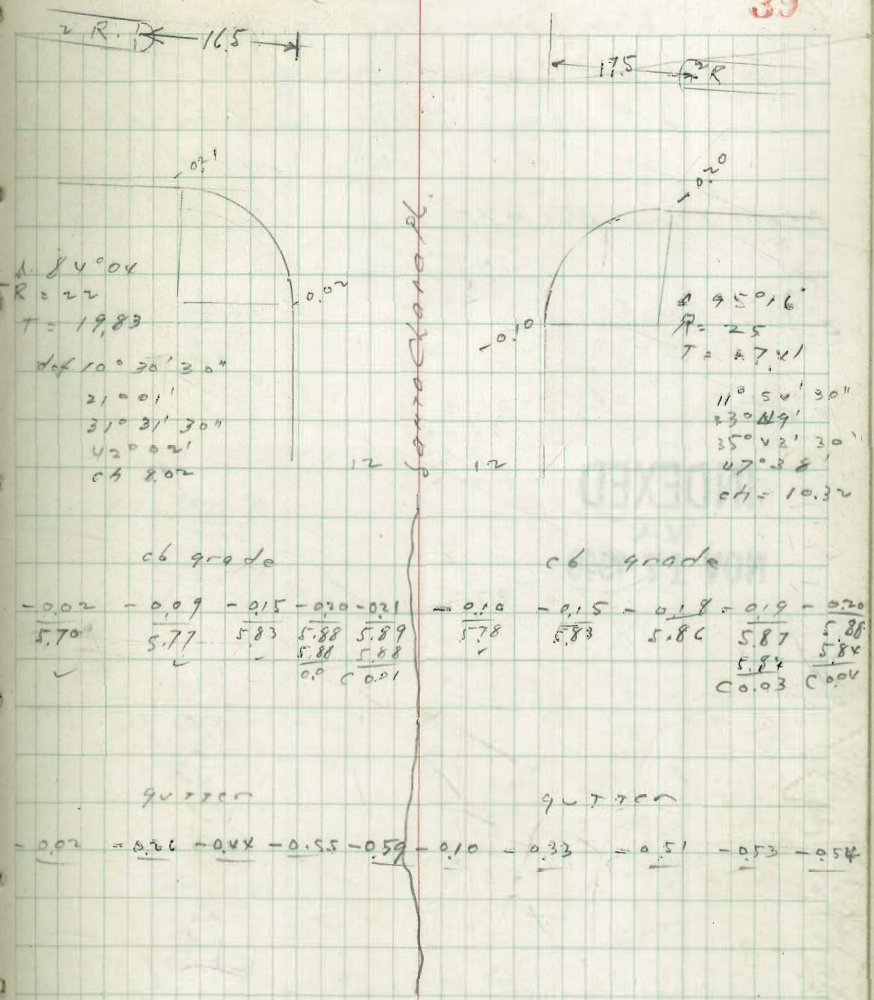
Const of Returns
Santa Clara Pl. & Mission Blvd

Moore
Begg
Green
Roberts
3-24-47

W.O. #210

BMBP	4.72	11.91		7.19	Santa Clara Seawall
	5.40	5.57	11.74	0.17	3' offset
NEBP Santa Clara Mission Blvd.		5.91	-0.3x	-0.23 / 0.11 error	
	5.91	5.68 / used this		-0.23 Used this	

Mission Blvd



Moore
Bagg
Green
4-16-47

6" Water Line Const. on Sapphire St. Mission Blvd. to Bayard St.

W.O. #

	E.L.		
0+00 = Mission Blvd	94.66		
	73.06		
	10.48		
	C 2.58		
0+10 Brook		94.9	
		12.82	
		9.92	
		C 2.90	
0+50	95.7		
	12.02		
	7.82		
	C 4.20		
1		96.7	
		11.02	
		6.37	
		C 4.65	
+50	97.71		
	10.01		
	5.41		
	C 4.60		
2		98.71	
		9.01	
		4.83	
		C 4.18	
+50	99.71		
	8.01		
	4.25		
	C 3.76		
3		100.72	
		7.00	
		3.80	
		C 3.20	
+50	101.72		
	6.00		
	3.15		
	C 2.85		
4		102.72	
		12.99	
		10.65	
		C 2.34	
+50	103.73		
	11.98		
	8.97		
	C 3.01		

N.W. B.P. Mission Blvd	9.18	107.72	
T.P.	11.14	115.71	98.54
	3.15	104.57	
check to N.W. RR spike Bayard Sapphire	0.43	115.28	115.29
			0.01
5+00			104.73
			10.98
			7.09
			C 3.95
+50		105.73	
		9.98	
		5.64	
		C 4.34	
6			106.74
			8.97
			4.06
			C 4.91
+42.8 Brk		107.60	
		8.11	
		3.15	
		C 4.96	
6+57.8 w.l. Bayard			107.70
			8.01
			3.46
			C 4.55

Stakes out 4' S of & of ditch

ditch 10' S of & St.

Moore
Bagg
Green
Johnson

Sewer Const.

4-12-47 Francis St. W.O. 31128

offsets 5' Rt. or East

M.H. " " 15' " @ 90°

1+50			30.57 9.31 1.50 C 7.81	
2		26.95 12.93 4.53 C 8.40		
1+80 M.H. #1			25.50 14.38 2.30 C 8.08	
1+50		24.90 14.98 8.12 C 6.86		
1+00			23.91 15.97 10.34 C 5.63	
0+50		22.92 16.96 10.51 C 6.45		
0+00 Ex. M.H. #1 & Gillette			21.93 17.95 11.79 C 6.16	
T.P.	10.56	39.88	3.42	29.32
B.M. B.P. & Nail Bridge E of 33rd Imp.	3.17	32.74		29.57

6			55.33 9.01 3.24 C 5.77	
5+50				51.84 12.50 6.82 C 5.68
5+00			48.36 15.98 10.18 C 5.80	
T.P.	12.74	64.34	0.22	52.10
4+50				44.87 7.45 1.31 C 6.14
4+00			41.39 10.93 3.57 C 7.36	
3+80 M.H. #2 & Tomkins				40.00 12.32 3.73 C 8.59
3+50			37.82 14.50 4.49 C 10.01	
3+00				34.20 18.12 8.78 C 9.34
T.P.	12.76	52.32	0.32	39.56
		39.88		

Francis St Sewer Const.

9 + 44.55 D.E.			75.02 12.18 6.45 C 5.73	
9				72.97 14.23 7.37 C 6.86
+ 50			70.66 16.54 8.77 C 7.77	
T.P.	10.77	87.20	0.18	76.43
8				68.35 8.26 1.5x C 6.72
7 + 60.05 M.H. #3 & L St.			66.50 10.11 2.54 C 7.57	
+ 50				65.78 10.83 2.77 C 8.11
7			62.30 14.31 5.61 C 8.70	
6 + 50				58.81 17.80 10.80 C 7.00
T.P.	12.35	76.61 64.3x	0.08	64.26

87.20

T.P.	12.69	99.44	0.45	86.75
check 1/10 8 STUB 35th & K St.			0.58	98.86	98.86

W.O. 31128

35th St. Sewer Const.

TP	12.94	59.98	0.29	47.04	
2+50				36.97	10.86 3.00 c 7.86.
2+25			13.74	33.79	13.54 5.05 c 8.49.
2+00			30.60		16.73 9.77 c 6.96.
TP	12.48	47.33	0.04	34.85	
1+60	MH #4 A 0°08' Rt.			25.50	9.39 3.81 c 5.58.
1+20		9.63 4.36 c 5.26	25.27	~~25.16~~	9.72 4.34 c 5.38.
0+80		9.85 4.77 c 5.08	25.04	~~24.82~~	10.07 4.75 c 5.32
0+40		10.08 6.04 c 4.04	24.81	~~24.48~~	10.41 5.56 c 4.85
0+00 Ex. MH #1 & Gillette		10.31 4.81 c 5.50	24.80 1 FHS to Channel to North	24.14	10.75 4.80 c 5.95
BM	5.06	34.89		29.83	Top Rim MH 0+0 1709-1

offsets Nails + Staked
5' East of ℄ Sewer

April 28-47
Sisco
McCoy
Miles

43

Location + Levels 1709-1

6+00		62.26	7.42 1.86 c 5.56
+50		60.28	9.40 3.12 c 6.28
5+00		58.30	11.38 4.29 c 7.09
+50		56.32	13.36 5.59 c 7.77
4+00		54.34	15.34 6.24 c 9.10.
3+80 M.H. #5 & Tomkins		53.55	16.13 6.70 c 9.43.
+50		49.72	19.96 7.37 c 12.59
TP	10.08	59.68	0.38 59.60
3+00			43.35 16.63 4.77 c 11.86.
		59.98	

35th St. Sewer

1+50			87.01	19.32 9.81 c 9.51	
TP	11.63	106.33	0.41	94.70	
9				83.38	11.73 4.64 c 7.69
1+50			79.75	15.86 9.62 c 5.74	
TP	12.64	95.11	0.04	82.47	
8				76.12	6.39 2.33 c 4.06
1+50			72.49	19.02 2.90 c 7.12	
7				68.86	13.65 5.90 c 7.75
6+50			65.23	17.28 11.24 c 6.04	
TP	12.94	82.51	0.11	69.57	
6+20	M.H. #6 Δ = 1°24' Rt. Δ 1°09' Rt.			63.05	6.63 0.98 c 5.70
		69.68			

0.26

11+75 = D.E. 95.03 11.90 / 4.72 / c 7.18

1+50 94.32 12.01 / 2.77 / c 9.24

11 92.90 12.43 / 3.00 / c 10.43

0.28

1+50 91.48 14.85 / 3.56 / c 10.29

10 90.06 16.27 / 5.67 / c 10.60

9+64.3 DROP MH #7 8 90.5 17.28 / 8.49 / c 8.79 8805 18.28 / 8.49 / c 9.79

8.17 7.15 98.88 0.25 x 45 / 5.21 x 45 / 1709.6 / 9890

10623

P. line grades for drive, walk etc.
Lot 11 Pt. Loma Hts.

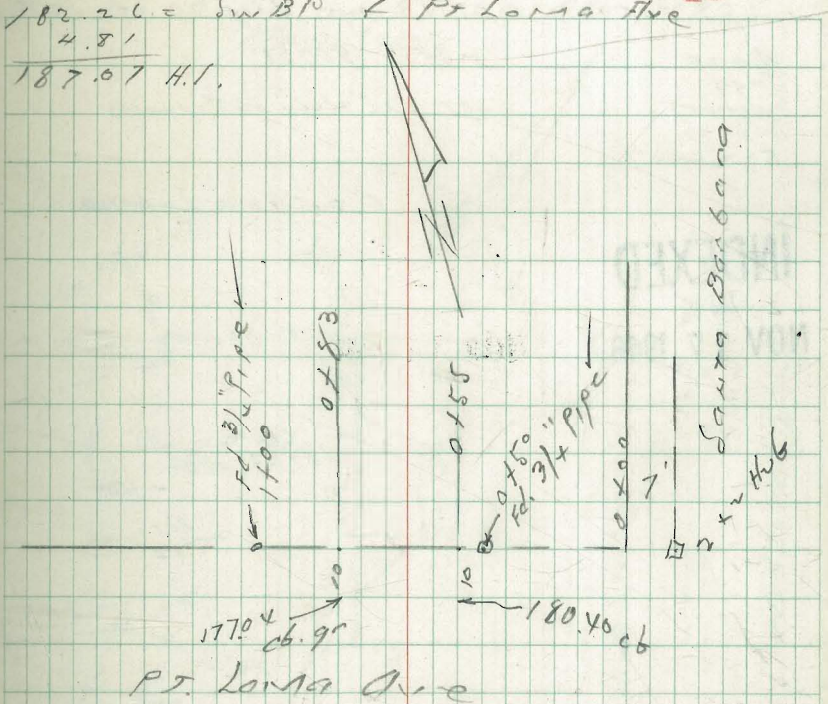
Moore
B-99
Carson
Roberts
5-24-47

W.O. 21018

Stakes set Property grade on Prop. Line

0+55	180.50 / 6.57
0+83	177.14 / 9.93

182.26 = Sw BP & Pt Loma Ave
4.81
187.07 H.I.

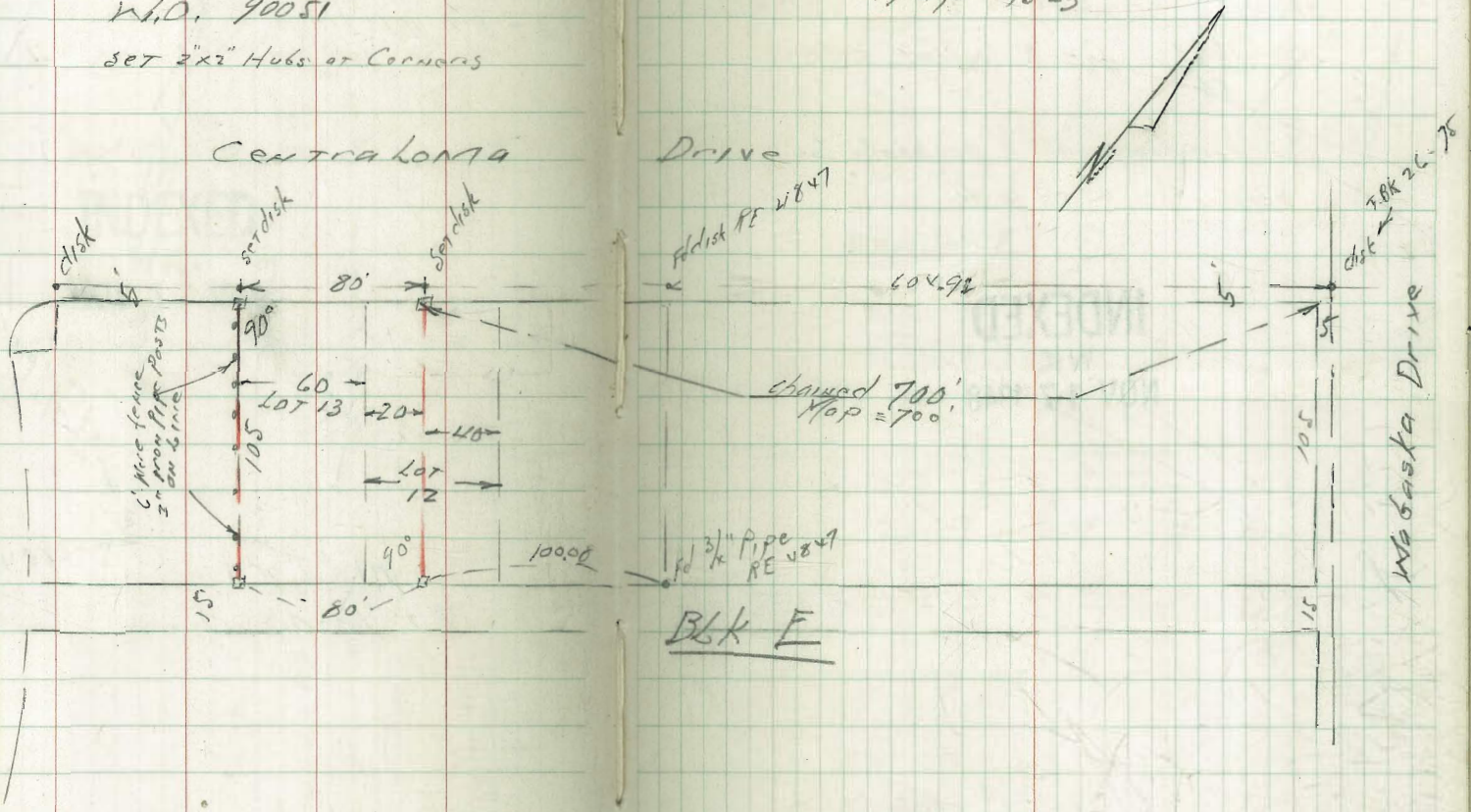


Survey Lot 13 and Sly 20' of Lot 12 Blk. E Resub. of Pt. Loma Hts. Map #1523

W.O. 90051

Set 2"x2" Hubs at Corners

Moore
Begg
Green
Roberts
5-26-47.



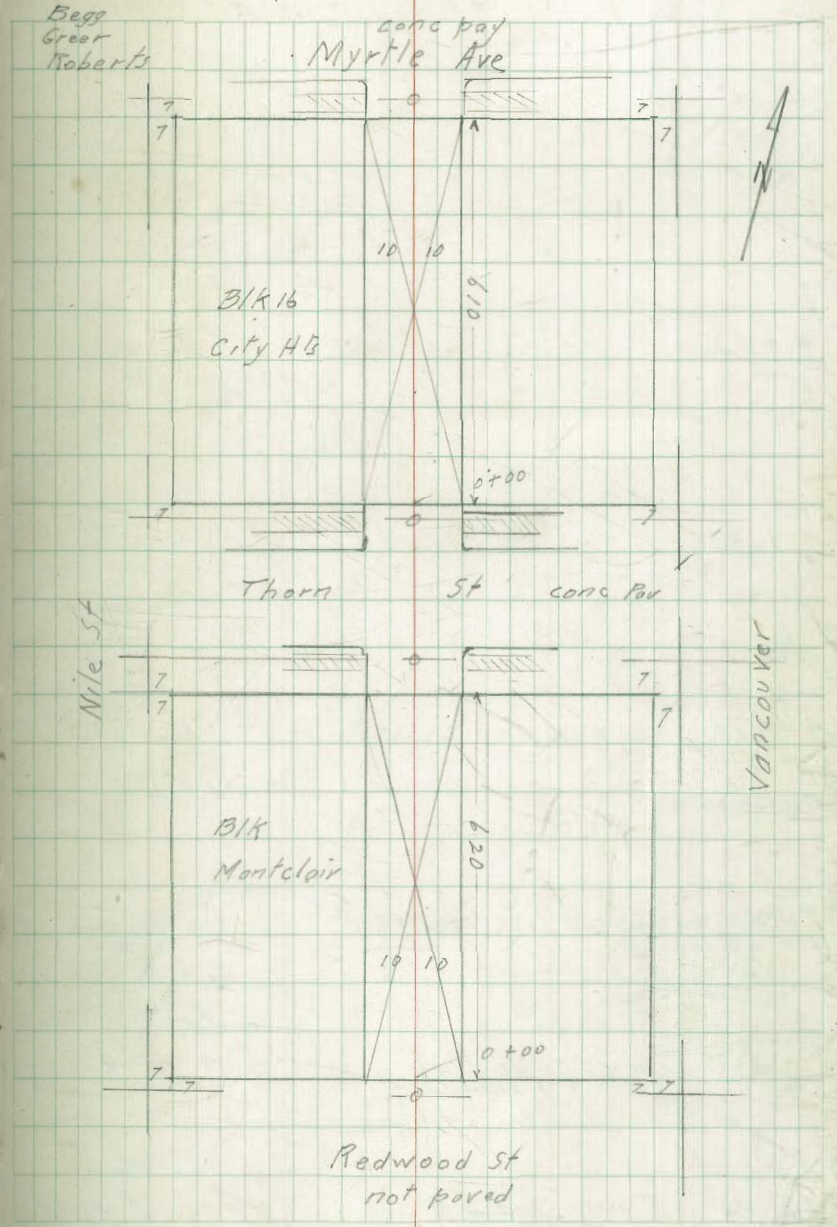
24 June 47

Stake Alleys 15+16 City Hgts as shown on 6697-6 W.O. 31190

See 1673/54 for X section notes

for construction property to property & 20' wide

INDEXED
WK
NOV 17 1948



	+	HI	−	EI	
1+00					
0+50					
0+30					
0+10					
0+00	North Line Redwood				
	4.45	304.43 ✓		299.98	8-15-47
SW BP	5.04	305.02		299.98	Redwood & Vancouver

W

301.16
3.83
C 0.03 ✓

300.60
4.16
C 0.26 ✓

300.10
4.49
C 0.43 ✓

299.30
4.93
3.72
C 0.79 ✓

12" 299.00
5.13
GR 5.92 Cor
Cut 0.89 ✓

℄

300.40

299.90

299.10

298.80

305.02

E

301.34
3.39
C 0.29 ✓

300.30
3.82
C 0.40 ✓

300.30
4.06
C 0.66 ✓

299.50 299.50
4.93 4.73
3.87
C 1.06 C 1.19 ✓

12" R 299.20
Red 4.80
GR 5.87
Cut 1.02 ✓

	+	HI	−	EI
3+00				
2+50				
	6.52	309.43		
TP.			2.11	302.91
2+00				
1+50				
T.P.	4.43	306.92	1.94	302.49
		304.43		
		305.02		

W ℄ E

303.41
5.64
C 0.38 ✓

303.51
5.04
C 0.88 ✓

302.85
6.35
C 0.73 ✓

309.43

302.97
5.90
C 0.56 ✓

302.79
2.23
C 0.60 ✓

302.79
4.63
4.65
F 0.02

302.42
2.24
C 0.36 ✓

301.77
Rod 3.28
C 0.02 ✓

301.88
5.04
4.86
C 0.18

301.88
2.84
0.30 ✓

305.02

Redwood to Thorn

30

	W	℄	E
5+00	305.66 3.44 C 0.33 ✓		305.67 2.82 ← 1.14 C 0.94 ✓
4+50	305.10 3.78 C 0.55 ✓		305.13 3.09 C 1.21 ✓
4+00	304.54 4.66 C 0.23 ✓	304.59 3.81 3.60 ← 0.21	304.59 4.31 C 0.53 ✓
3+50	303.97 4.75 C 0.71 ✓	303.97 4.43 4.41 C 0.02	304.05 4.74 C 0.64 ✓
	309.43	309.43	

T.P. 4.81 308.40 3.33 303.59

306.92

	+	HI	−	EI	NEBP Nile & Thorn
			7.20	303.71	303.69
					.02
6+20	South	Line	Thorn		
6+10					
5+90					
5+70					
5+50					
	4.22	310.91			
T.P.			2.74	306.69	
5+30					
		308.40			
		309.43			

Redwood to Thorn

W	℄	E
305.24		305.24
5.71		5.68
F 0.04 ✓		F 0.06 ✓
305.30	305.30	305.30
3.68	3.10	4.29
C 1.93 ✓	1.33 C 1.77	C 1.32 ✓
305.80		305.80
3.89		3.71
C 1.22 ✓		C 1.40 ✓
306.10		306.10
3.97		4.00
C 0.84 ✓		C 0.81 ✓
306.15		306.15
4.10		4.13
C 0.66 ✓	310.91	C 0.61 ✓
306.00		306.00
2.98		2.67
C 0.43 ✓		C 0.76 ✓
	309.43	

	+	HI	−		
0+80					
0+60					
T.P.	6.07	313.34	3.55	307.27	
0+40					
	5.90	314.19			
TP			3.00	308.29	
0+00	N.L Thorn				
	7.13	310.82		303.69	8/15/47
NEBP	7.60	311.29		303.69	Nile & Thorn

Thorn to Myrtle

52

W ℄ E

308.75 — 4.94 — C 1.00 ✓ — 308.25 — 5.09 — 4.58 — C 0.51 — 307.75

5.09 — 4.16 — C 0.93 — 308.25 — 4.72 — C 1.72 ✓

307.75 — 5.57 — C 0.87 ✓ — 307.75 — 5.59 — 4.38 — C 1.21 — 307.45

307.75 — 4.55 — C 1.89 ✓

307.20 — 5.82 — C 1.17 ✓ — 307.20 — 3.67 — 2.23 — C 1.39 — 306.90

307.20 — 5.75 — C 1.24 ✓

314.19

306.00 — 5.36 — F 0.07 ✓ — 305.70

306.00 — 5.32 — F 0.03 ✓

311.29

Thorn To Myrtle

	+	HI	-	
	5.33	315.39		
			4.13	310.06
2+00				
1+50				
1+20				
1+00				
		313.34		
		314.19		

W ℄ E

315.39 over

309.43 / 4.14 / C 0.62 ✓ — 3.91 / 3.61 / C 0.30

309.43 / 3.91 / 3.59 / C 0.32 — 309.43 / 3.89 / C 0.87 ✓

309.04 / 4.50 / C 0.65 ✓

309.04 / 4.30 / 3.67 / C 0.63 — 309.04 / 4.24 / C 0.91 ✓

308.80 / 4.17 / C 0.63 ✓ — 308.80 / 4.54 / 4.82 / F 0.28 — 308.50

4.54 / 3.99 / C 0.55 — 308.80 / 4.43 / C 0.96 ✓

308.60 / 4.47 / C 4.12 ✓ — 4.74 / 4.08 / C 0.66 — 308.30

308.60 / 4.74 / 4.10 / C 0.64 — 308.60 / 4.13 / C 1.46 ✓

314.19

	+	HI	-	
4+00				
3+50				
T.P.	4.82	316.11	3.50	311.29
3+00				
2+50				
T.P.	5.32	314.79	3.87	309.47
		313.34		
		315.39		

Thorn to Myrtle

54

W ℄ E

311.00
3.46
C 0.93 ✓

310.70

311.08
4.09
C 0.30 ✓

310.61
3.72
C 1.06 ✓

310.61
4.18
3.27
C 0.91

4.18
3.86
C 0.32

310.61
3.96
C 0.82 ✓

310.21
4.95
C 0.23 ✓

310.21
4.79
C 0.39 ✓

309.82
5.10
C 0.17 ✓

309.82
5.03
C 0.54 ✓

315.39

	+	#1	−	
6+10	S. Line	Myrtle		
6+00				
5+60				
		10		
5+50				
5+00				
4+50		316.11		
	6.42	318.04		
		315.39	3.77	311.62

W ℄ E

313.40 present poi.
4.61
C 0.03 ✓
313.28
3.57
C 1.19 ✓

313.41 present poi
4.63
C 0.08 ✓
313.28
4.65
C 0.61 ✓

312.68
3.89
C 1.47 ✓

312.38

312.68
4.88
C 0.48 ✓

312.58
4.30
C 1.16 ✓

312.58
3.53
1.82
C 1.71

3.53
3.02
C 0.51

312.58
4.95
C 0.51 ✓

312.05
~~5.44~~
C ~~0.55~~ ✓

312.05
4.06
3.13
C 0.63

312.05
5.49
C 0.50 ✓

~~311.52~~
~~5.78~~
C ~~0.74~~ ✓

311.52
4.59
3.95
C 0.64
318.04

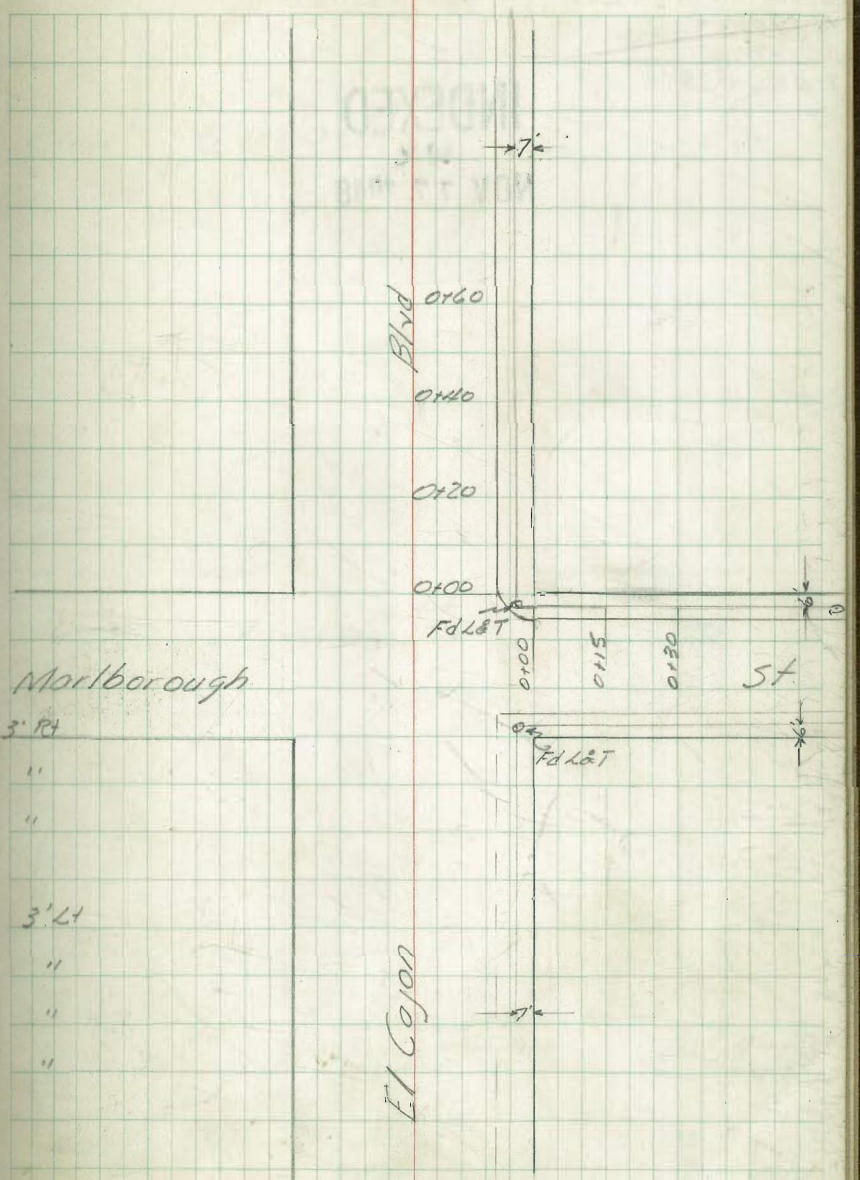
311.52
6.30
C 0.22 ✓

+	#1	−		
				Nile & Myrtle SE BP
		5·19	314.53	314-56 03
5·90	319.72			
	318-04	4·22	313·82	

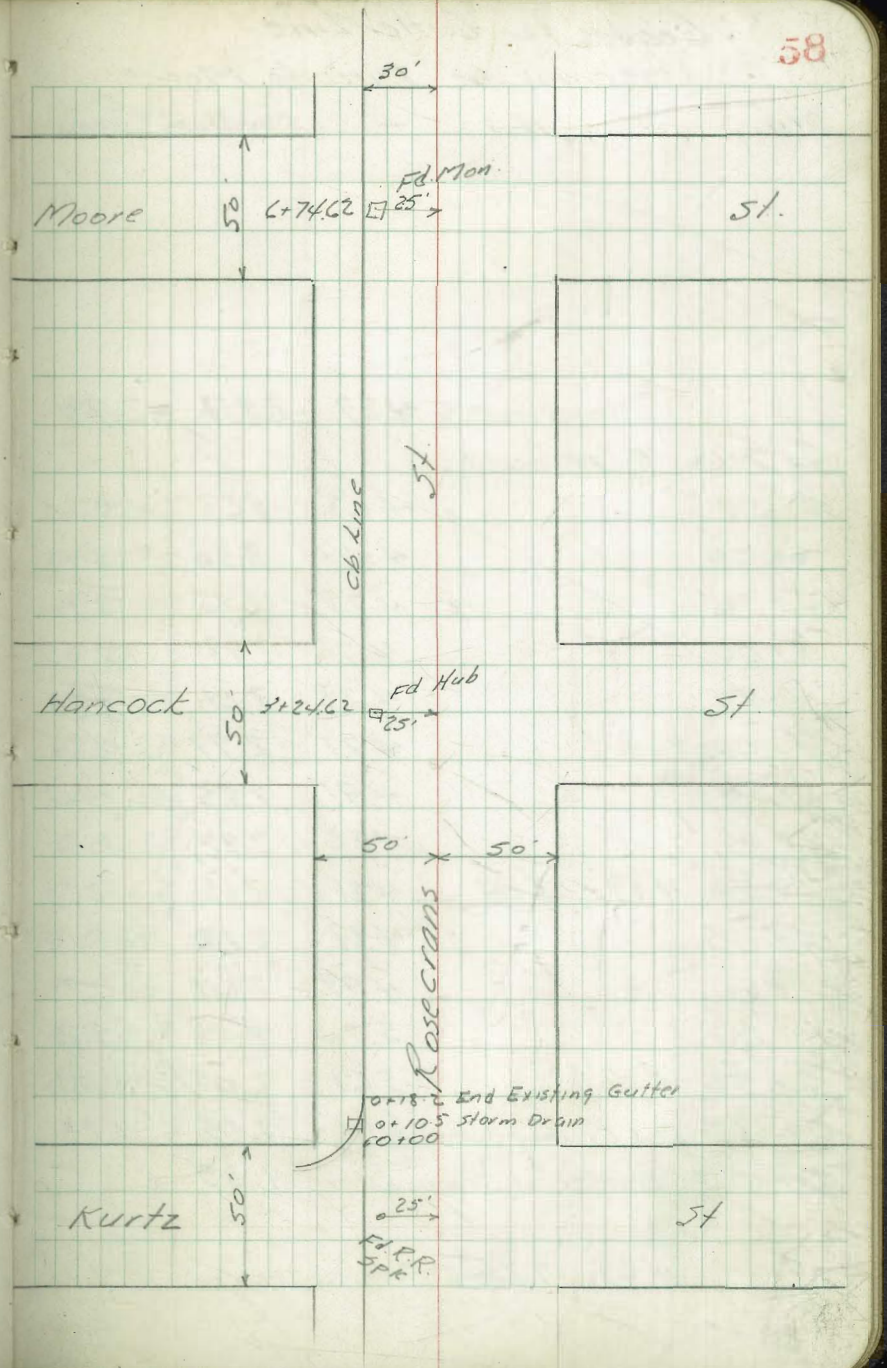
318 · 04

July 16, 1947 Stake Curb & Sidewalk S.E. Cor. Marlborough & El Cajon
Hendricks
W Moore
Sherman
WO # 21018
Sta

Sta	+	H.I.	−	Elev. Grade	Elev. Nails	Fills
Check Existing Curbs						
0+00	on Marlborough		5.23	364.91		
0+30	"	"	5.31	364.83		
0+00	on El Cajon		5.29	364.85		
0+60	"	"	5.43	364.71		
0+30			5.74	364.81	364.40	F0.41
0+15			5.73	364.85	364.41	F0.44
0+00	on Marlborough		5.76	364.90	364.38	F0.52
0+60			5.74	364.74	364.40	F0.34
0+40			5.67	364.80	364.47	F0.33
0+20			5.64	364.85	364.50	F0.35
0+00	on El Cajon		5.63	364.90	364.51	F0.39
B.M.	5.00	370.14				365.14



July 16, 1947 Grades for Gutter Line
Hendricks Rosecrans Ave. Kurtz to Moore
W. Moore
Sherman
WO #60135



Grades for Gutter Line
Rosecrans Ave Kurtz to Moore

Sta	+	H.I	—	Elev Stakes	Elev Grade	
						Cuts 3' offset Lt.
			4.87	2.97	2.93	Mom & Moore 25' Lt. & Rosecrans
6+76.2 & Moore						
6+50			4.08	3.68	3.23	C 0.45
6+00			4.44	3.30	3.10	C 0.20
5+50			4.79	2.95	2.98	F 0.03
5+00			4.76	2.98	2.85	C 0.13
4+50			4.73	3.01	2.73	C 0.28
4+00			4.71	2.97	2.60	C 0.37
3+50			4.91	2.83	2.48	C 0.35
3+00			4.82	2.92	2.35	C 0.57
T.P. 2+50	4.89	7.74	4.81	2.85	2.23	C 0.62
2+00			4.87	2.79	2.10	C 0.69
1+50			4.99	2.67	1.98	C 0.69
1+00			5.24	2.42	1.85	C 0.57
0+50			5.61	2.05	1.73	C 0.32
0+18.2	End Existing Gut		6.01	1.65	1.65	
0+10.5	Gutter at Storm Drain		6.33	1.33		
	4.69	7.66			2.97	S W. B.P. Rosecrans & Kurtz

25-33'

Sly drain

60

Const. do. drain on Euclid
600' S of Chalk Rt
W.O. 80053

Moore
Ernest
Roberts
8-18-47.

36"

Δ = 40°
R = 22.5
T = 8.19
L = 15.7

For Both drains

N Ly drain
offsets 10' N of ℄

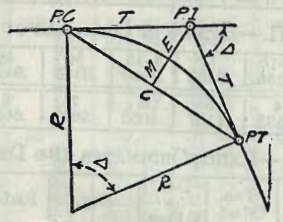
0+31.7 end			168.02 11.28 8.25 C 3.03
0+15.7 E.C.			167.73 11.57 9.93 C 1.64
0+7.85 ℄ Curve			167.58 11.72 10.00 C 1.72
0+00 B.C. Lt. or hdwl.			167.44 ✓ 11.86 ✓
B.M. Top hdwl. 1733-74	8.20	179.30	171.10

INDEXED
WK
NOV 17 1948

offsets 10' S of ℄

0+35.7 end	168.02 11.28 7.25 C 4.03
0+19.7 E.C.	167.76 11.54 6.17 C 3.37
0+11.85 ℄ Curve	167.63 11.67 8.61 C 3.06
0+04 B.C. Lt.	167.50 11.80 8.54 C 3.26
0+00	167.44 11.86 ✓

DIETZGEN'S RAILROAD CURVE AND REDUCTION TABLES



CURVE FORMULAS

Radius=R=$\frac{50}{\text{sin. } D/2}$ (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 vers $\frac{\Delta}{2}$ (6)

External=E=T tan $\frac{\Delta}{4}$ (7)=R ÷ cos. $\frac{\Delta}{2}$—R (8)=R 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 ÷8⅓=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 $(54.50 \div 100)^2$=2.16 ft. Also square of any distance divided by twice the radius equals (approximately) the distance from tangent to curve. Thus $(54.50)^2 \div (2 \times 688.26)$=2.16 ft.

Deflections.—Deflection angle=½ D for 100 ft., ¼ 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 8⅓=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÷8⅓=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′.

2 7 8.5
3 2.5
3 1 1.0

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.

MADE IN U.S.A.