

1820

DUNN

ENGINEERS  
FIELD BOOK  
No. 1017

# EUGENE DIETZGEN CO.

DRAWING MATERIALS, MATHEMATICAL and  
SURVEYING INSTRUMENTS

Chicago New York San Francisco New Orleans Pittsburg Toronto

Distances from Center of Roadway for Cross-Sectioning  
Roadway 16 feet wide. Side Slopes 1 on 1.  
For Single Track Embankment.

H	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	H
0	8.0	8.1	8.2	8.3	8.4	8.5	8.6	8.7	8.8	8.9	0
1	9.0	9.1	9.2	9.3	9.4	9.5	9.6	9.7	9.8	9.9	1
2	10.0	10.1	10.2	10.3	10.4	10.5	10.6	10.7	10.8	10.9	2
3	11.0	11.1	11.2	11.3	11.4	11.5	11.6	11.7	11.8	11.9	3
4	12.0	12.1	12.2	12.3	12.4	12.5	12.6	12.7	12.8	12.9	4
5	13.0	13.1	13.2	13.3	13.4	13.5	13.6	13.7	13.8	13.9	5
6	14.0	14.1	14.2	14.3	14.4	14.5	14.6	14.7	14.8	14.9	6
7	15.0	15.1	15.2	15.3	15.4	15.5	15.6	15.7	15.8	15.9	7
8	16.0	16.1	16.2	16.3	16.4	16.5	16.6	16.7	16.8	16.9	8
9	17.0	17.1	17.2	17.3	17.4	17.5	17.6	17.7	17.8	17.9	9
10	18.0	18.1	18.2	18.3	18.4	18.5	18.6	18.7	18.8	18.9	10
11	19.0	19.1	19.2	19.3	19.4	19.5	19.6	19.7	19.8	19.9	11
12	20.0	20.1	20.2	20.3	20.4	20.5	20.6	20.7	20.8	20.9	12
13	21.0	21.1	21.2	21.3	21.4	21.5	21.6	21.7	21.8	21.9	13
14	22.0	22.1	22.2	22.3	22.4	22.5	22.6	22.7	22.8	22.9	14
15	23.0	23.1	23.2	23.3	23.4	23.5	23.6	23.7	23.8	23.9	15
16	24.0	24.1	24.2	24.3	24.4	24.5	24.6	24.7	24.8	24.9	16
17	25.0	25.1	25.2	25.3	25.4	25.5	25.6	25.7	25.8	25.9	17
18	26.0	26.1	26.2	26.3	26.4	26.5	26.6	26.7	26.8	26.9	18
19	27.0	27.1	27.2	27.3	27.4	27.5	27.6	27.7	27.8	27.9	19
20	28.0	28.1	28.2	28.3	28.4	28.5	28.6	28.7	28.8	28.9	20
21	29.0	29.1	29.2	29.3	29.4	29.5	29.6	29.7	29.8	29.9	21
22	30.0	30.1	30.2	30.3	30.4	30.5	30.6	30.7	30.8	30.9	22
23	31.0	31.1	31.2	31.3	31.4	31.5	31.6	31.7	31.8	31.9	23
24	32.0	32.1	32.2	32.3	32.4	32.5	32.6	32.7	32.8	32.9	24
25	33.0	33.1	33.2	33.3	33.4	33.5	33.6	33.7	33.8	33.9	25
26	34.0	34.1	34.2	34.3	34.4	34.5	34.6	34.7	34.8	34.9	26
27	35.0	35.1	35.2	35.3	35.4	35.5	35.6	35.7	35.8	35.9	27
28	36.0	36.1	36.2	36.3	36.4	36.5	36.6	36.7	36.8	36.9	28
29	37.0	37.1	37.2	37.3	37.4	37.5	37.6	37.7	37.8	37.9	29
30	38.0	38.1	38.2	38.3	38.4	38.5	38.6	38.7	38.8	38.9	30
31	39.0	39.1	39.2	39.3	39.4	39.5	39.6	39.7	39.8	39.9	31
32	40.0	40.1	40.2	40.3	40.4	40.5	40.6	40.7	40.8	40.9	32
33	41.0	41.1	41.2	41.3	41.4	41.5	41.6	41.7	41.8	41.9	33
34	42.0	42.1	42.2	42.3	42.4	42.5	42.6	42.7	42.8	42.9	34
35	43.0	43.1	43.2	43.3	43.4	43.5	43.6	43.7	43.8	43.9	35
36	44.0	44.1	44.2	44.3	44.4	44.5	44.6	44.7	44.8	44.9	36
37	45.0	45.1	45.2	45.3	45.4	45.5	45.6	45.7	45.8	45.9	37
38	46.0	46.1	46.2	46.3	46.4	46.5	46.6	46.7	46.8	46.9	38
39	47.0	47.1	47.2	47.3	47.4	47.5	47.6	47.7	47.8	47.9	39
40	48.0	48.1	48.2	48.3	48.4	48.5	48.6	48.7	48.8	48.9	40

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

BMs	"A" line	Salboa	Park	Topog.	Control	2-5
"	"C" line	"	"	"	"	6
"	"D"	"	"	"	"	7
"	"E"	"	"	"	"	8
"	"B"	"	"	"	"	9
"	"F"	"	"	"	"	10
"	"G"	"	"	"	"	11
"	"H"	"	"	"	"	12-13
"	"L"	"	"	"	"	14-15
"	J	"	"	"	"	16
"	K <sub>2</sub>	"	"	"	"	18
"	K	"	"	"	"	17

(64-66

Cross Sec. Alleys	B/K. 15	Pt. Loma Hgts	19-29
" "	Everts	Felspar to Diamond	30-35
" "	Olney	Garnet to Felspar	36
Cross Sec. Alleys	B/K. 16	Pt. Loma Hts	40-46
Additional Local Alley	B/K. 15	Pt. Loma Hts	47
Survey drain	Spice - Dove	to Eagle	v. 2

Walker  
Hendricks  
Becker  
Johnson  
12-26-47

BALBOA PARK - BENCH MARKS

Topog. Control "A" Line

		3.13	245.00	
T.P.	11.06	248.13	0.39	237.07
T.P.	0.39	<del>230.72</del>	7.13	230.33
T.P.	13.13	237.46	0.39	224.33
T.P.	12.70	224.72	0.94	217.02
T.P.	13.16	212.06	0.42	198.20
T.P.	12.16	199.32	0.18	187.16
T.P.	12.62	187.34	3.00	174.72
T.P.	12.39	178.32	0.35	165.23
T.P.	13.07	166.32	0.09	153.25
T.P.	12.80	153.34	11.17	140.54
T.P.	0.12	151.71	12.17	151.59
TP.	0.40	163.76	12.78	163.36
TP.	2.29	176.08	12.52	173.79
CP#2			1.07	186.31
TP.	0.09	187.38	12.68	187.29
TP.	2.61	199.97	12.58	197.36
CP#1			5.30	209.94
				2,10.53 = Record
T.P.	6.49	215.24	4.81	208.75
T.P.	5.70	213.56	2.37	207.86
T.P.	12.55	210.23	0.55	197.68
T.P.	12.20	198.23	0.12	186.03
T.P.	2.78	186.15	3.91	183.37
B.M.	11.29	187.28		175.29

Hub 37 + 43.19 CP #7  
 Id. & Disk 33 + 59.78 CP #6  
 Hub Sta. 30 + 30.41 CP #5

Hub 36 + 67.10 CP #4

Hub Sta. 24 + 43.10 CP #3

Hub Sta 22 + 70.23 CP #2

Void  
 New Levels  
 P-5

Hard Copy Note: Mon. is worn off some. Probably by amount of diff.  
 Mon. CP#1 Sta. 20 + 27.20

Stake on Fence Line Lt. of starting Mon.

B.M. c.t. Id. Ptg. North end Balboa Stadium  
 in Front Ticket office

Balboa Park - Bench Marks  
 Topog. Control "A" Line

3

Void - see p. 5

= End "A" Line

→ cont. p. 4

T.P.	4.93	262.37	5.01	257.44
T.P.	8.25	262.45	1.38	254.20
T.P.	8.29	255.58	5.74	247.29
T.P.	8.16	253.03	3.26	244.87
		248.13		

on Pav. in over Id. & Disk	46+22.01	C.P. #12
Id. & Disk	42+13.61	C.P. #9
on Pav. over Id. & Disk	38+98.95	C.P. #8
on Pav. over Id. & Disk	36+09.40	C.P. #7a

Bench Marks - "C" Line  
Balboa Park Topog. Control

Void - Sec P. 6

T.P.	7.73	213.90	11.98	206.17
T.P.	1.16	218.15	12.25	216.99
			7.28	221.26
T.P.	2.00	229.34	11.20	227.14
T.P.	0.72	238.44	8.73	237.72
			11.36	235.09
T.P.	2.73	246.45	3.99	243.72
			5.76	241.95
T.P.	1.41	247.71	10.87	246.30
			7.45	242.72
			6.94	250.23
T.P.	0.54	257.17	12.62	256.63
T.P.	0.52	269.25	7.03	268.73
T.P.	1.39	275.76	6.49	274.37
T.P.	4.06	280.86	4.27	276.80
			4.58	276.49
T.P.	12.50	281.07	1.66	268.57
T.P.	9.13	270.23	1.27	261.10
			7.02	255.35

262.37  
K from P. 3

4

Hub	41+81.81	C.P. 34
Hub	38+10.68	
Hub	35+98.03	C.P. 32
Spike	32+42.39	C.P. 30
Hub		C.P. #31
Hub	29+34.60	C.P. #27
Hub		C.P. #28
Hub		C.P. #26
Hub	27+29.79	C.P. #25
Hub	23+69.23	C.P. #24
Hub	19+26.63	C.P. #20
B.M. Brass Peg	NW corner of Park Blvd.	
or Pin over		
1d + Disk	14+35.21	C.P. #19
1d + Disk	10+00	C.P. #18
1d + Disk	0+00	C.P. #13

Bench Marks

"A" Line - Balboa Park  
Topog. Control

↗ Cont P. 6

T.P.	4.23	268.74	5.01	263.81
T.P.	8.25	268.82	1.38	260.57
T.P.	8.29	261.95	5.74	253.66
T.P.	8.16	259.40	3.26	251.24
			3.13	251.37
T.P.	11.06	254.50	0.39	243.44
			7.13	236.70
T.P.	13.13	243.83	0.39	230.70
T.P.	12.70	231.09	0.04	218.39
T.P.	13.16	218.43	0.42	205.27
T.P.	12.16	205.69	0.18	193.53
T.P.	12.62	193.71	3.60	181.09
T.P.	12.39	184.69	0.39	172.30
T.P.	13.07	172.69	0.09	159.62
T.P.	12.80	159.71	11.17	146.21
T.P.	0.12	158.08	12.17	157.96
T.P.	0.40	170.13	12.72	169.73
T.P.	2.29	182.45	12.52	180.16
Side shot			10.7	191.61
T.P.	0.09	192.68	12.68	192.59
T.P.	2.61	205.27	12.58	202.66
			5.30	209.94
	215.24			
	↖ from P. 2			

on Par. over	Ld + Disk	46+22.01	CP # 12
	Ld + Disk	42+13.61	CP # 9
on Par. over	Ld + Disk	38+98.95	CP # 8
on Par. over	Ld + Disk	36+09.40 - Base Line	CP # 7a
	Hub	37+43.19	CP # 7
	Ld. Ply. + Disk	33+59.78	CP # 6
	Hub	30+30.41	CP # 5
	Hub	26+67.10	CP # 4
	Hub	24+43.10	CP # 3
	Hub	22+70.33	CP # 2
Conc. Mon.		20+27.20	CP # 1

Walker  
Handricks  
Sackel  
Johnson  
12-29-47

Bench Marks -  
"C" Line Topog. Control  
Balboa Park

check	Mon				0.03
			10.30	209.94	209.97
T.P.	7.73	220.27	11.98	212.54	
T.P.	1.16	224.52	12.25	223.36	
			7.28	228.33	
T.P.	2.00	235.61	11.20	233.61	
T.P.	0.72	244.81	8.73	244.09	
			11.36	241.46	
T.P.	2.73	252.82	3.99	250.09	
			5.76	248.32	
T.P.	1.41	254.08	10.87	252.67	
			7.45	256.09	
			6.94	256.60	
T.P.	0.54	263.54	12.62	263.00	
T.P.	0.52	275.62	7.03	275.10	
T.P.	1.39	282.13	6.49	280.74	
T.P.	4.06	287.23	4.27	283.17	
			4.58	282.86	
T.P.	12.50	287.44	1.66	274.94	
T.P.	9.13	276.60	1.27	267.47	
			7.02	261.72	
			268.74 x from P-5		

Mon	20+27.20	CP#1	P-5
Hub	41+81.81	CP#34	
Hub	38+106.8	CP#33	
Hub	35+98.03	CP#32	
Spike	32+42.39	CP#30	
Hub		CP#31	
Hub	29+34.60	CP#27	
Hub		CP#28	
Hub		CP#26	
Hub	27+29.79	CP#25	
Hub	23+69.23	CP#24	
Hub	19+26.63	CP#20	
Brass Pkg. NW. Laurel & Park Blvd.			
	on Pav. over		
Id. & Disk	14+35.21	CP#19	
	on Pav. over		
Id. & Disk	10+00	CP#18	
Id. & Disk	0+00	CP#13	

~ Bench Marks -  
"D" line

T.P.				
			5.10	<sup>0.01</sup> 260.57 P-5 260.58
T.P.	6.75	265.68	9.67	258.93
T.P.	5.70	268.60	0.36	262.90
T.P.	12.80	263.26	0.07	250.46
T.P.	12.88	250.53	0.13	237.65
T.P.	12.64	237.78	3.89	225.14
T.P.	7.47	229.03	3.34	221.56
T.P.	12.82	224.90	1.63	212.68
T.P.	7.42	213.71	3.83	206.29
T.P.	10.59	210.12	3.48	199.53
T.P.	10.15	203.01	3.79	192.86
T.P.	12.29	196.65	2.20	184.36
T.P.	10.54	186.56	1.59	176.02
T.P.	7.17	177.61	0.05	170.44
T.P.	12.34	170.49	0.10	158.15
	11.34	158.25		146.91

		CP# 9 P-5
11+87.66		CP# 38
11+07.12		CP# 37
9+89.85		CP# 36
8+24		CP# 35
5+87.35		CP# 34a
2+79.37		CP# 33a
		CP# 33a
Hub		CP# 9 P-5

Walker  
Henricks  
Dackel  
Johnson  
12-22-47

Bench Marks - "E" Line  
Topog. Control Bolboa Park

			280.74
check		379	280.70
	9.16	284.49	1.45 275.33
T.P.	11.49	276.78	4.82 265.29
T.P.	2.26	270.11	9.63 267.85
T.P.	1.20	277.48	2.30 276.28
T.P.	7.09	278.58	0.91 271.49
T.P.	10.59	272.40	7.16 261.81
T.P.	9.39	268.97	0.13 259.58
T.P.	12.67	259.71	0.23 247.04
T.P.	12.74	247.27	1.57 234.53
T.P.	3.85	236.10	1.92 232.25
T.P.	12.65	234.17	0.38 221.52
T.P.	11.83	221.90	1.41 210.07
T.P.	11.71	211.48	1.39 199.77
	8.30	201.16	1.92.86

Hub	19+2663	CP#20	P-4
1st Pk	13+21.22	CP#22	
	10+60.03	CP#43	
	9+15.79	CP#42	
	7+90.41	CP#41	
	5+59.82	CP#40	
	3+42.63	CP#39	
	3+42.63	CP#39	
		CP#34-A	P-7

Walker  
Hendricks  
Becker  
Johns  
12-25-47

Bench Marks - "B" line  
Balboa Park Topog. Control

Cont P. 10

T.P.	2.46	284.31	2.31	282.35
			5.42	279.24
T.P.	6.75	284.66	3.89	277.91
T.P.	6.07	281.80	3.20	275.73
T.P.	6.54	278.93	2.62	272.39
T.P.	7.65	275.01	2.91	267.36
<del>T.P.</del>			5.54	264.73
T.P.	5.05	270.27	6.11	265.22
T.P.	5.94	271.33	5.46	265.39
T.P.	3.80	270.85	6.37	267.05
T.P.	8.72	273.42	4.72	264.70
T.P.	4.84	269.42	4.34	264.58
T.P.	10.60	268.92	6.49	258.32
	3.09	264.81		261.72

Lid + Disk	15 + 167.46	CP # 44
Hub	13 + 3813	CP # 89
Hub	12 + 7081	CP # 88
Hub	11 + 8770	CP # 87
Hub	10 + 9685	CP # 86
Hub	9 + 7822	CP # 85
Hub	9 + 1533	CP # 84
Hub	8 + 2651	CP # 83
Hub	6 + 9701	CP # 82
Hub	5 + 7790	CP # 81
on Pav. over Lid + Disk	4 + 2173	CP # 17
on Pav. over Lid + Disk	2 + 0843	CP # 16
Lid + Disk	0 + 00	CP # 14
B.M. Lid + Disk		CP # 13

Walker  
Hendricks  
Becker  
Johns  
12-8

Bench Marks - "F" Line  
Balboa Park Topog. Control

Johnson  
12-35-47

T.P.			15.8	254.20	C.P. # 47-C
	530	270.00		264.70	C.P. # 47
check			10.22	261.80	
			7.32	264.70	
T.P.	0.30	272.02	7.80	271.72	Hub 8+6132 C.P. # 47
			4.17	275.35	Ld + Disk 5+5875 C.P. # 46
			3.98	275.54	Ld + Disk 5+4412 C.P. # 45
check	4.58	279.52	9.89	274.94-P-6	Ld + Disk "F" Line 4+40,12 C.P. # 18 = 10+100 "C" Line P-6
		284.81		274.92	

Walker  
Handrichs  
Dicker  
Johnson  
12-30-97

Bench Marks "G" LINE  
Balboa Park Topsy, Control

564  
251.93 - B.M.

chk			1.08	251.97
T.P.	7.89	253.05	5.20	245.16
T.P.	5.17	250.36	5.18	245.19
			2.58	247.79
T.P.	2.81	250.37	9.97	247.56
T.P.	2.04	257.53	6.24	255.42
	4.11	262.43		258.32

NW Brass Pkg. Laurel & 6th

Christed Cross	11 + 09.87	C.P.# 53
Ld + Disk	7 + 09.87	C.P.# 52
Nail	6 + 93.87	C.P.# 51
Ld + Disk	3 + 67.44	C.P.# 15
B.M. Ld + Disk		C.P.# 14. P-9

Walker  
Hendricks  
Becker  
Johnson  
12-36-47

Bench Marks - "H" line  
Balboa Park - Topog. Control

T.P.	-0.05	198.73	12.57	198.78
T.P.	0.46	211.35	12.10	210.89
T.P.	0.35	222.99	6.80	222.64
T.P.	7.64	229.44	6.78	221.80
T.P.	3.80	228.58	5.08	224.78
T.P.	7.84	229.86	3.03	222.02
T.P.	8.53	225.05	11.1	216.52
T.P.	13.12	217.63	5.03	204.51
T.P.	5.51	209.54	0.99	204.03
T.P.	13.24	205.02	6.12	191.78
T.P.	12.47	197.90	2.69	185.43
T.P.	12.69	188.12	0.13	175.43
T.P.	12.80	175.56	8.23	162.76
T.P.	0.09	170.99	12.39	170.90
T.P.	0.49	183.29	12.58	182.80
T.P.	0.92	195.38	11.01	194.46
T.P.	1.48	205.47	7.12	203.99
T.P.	2.43	211.11	12.92	208.68
T.P.	0.71	221.60	5.73	220.89
T.P.	3.63	226.62	8.57	222.99
T.P.	0.93	231.56	8.73	230.63
T.P.	3.98	239.36	8.99	235.38
	0.93	244.37		243.44

12

Hub	31+07.92	CP #69
Hub	30+39.24	CP #68
Ld + Disk	28+64.54	CP #67
Ld + Disk	25+97.42	CP #66
Christad Cross in Conc. Mark	22+51.07	CP #65
Hub	22+24.80	CP #64
<del>Perman</del> Hub + Disk	19+33.02	CP #63
Hub	17+81.53	CP #62a
Hub	16+29.50	CP #62
on Ld + Disk	CP #61	
Passing over Ld + Disk		CP #61
Hub		CP #60
Ld + Disk	13+78.33	CP #59
on Ray over Ld + Disk	13+78.33	CP #59
Ld + Disk	10+51.75	CP #58
on Ray over Ld + Disk	8+49.61	CP #56
Hub	4+64.21	CP #54
Hub	2+00.10	
Hub	7+11.6 "K2" line	CP #100
B.M. Ld + Disk		CP #6 Page 5

Bench Marks—

"H" Line Cont. from P. 12

chk				
			0.12	264.58
		1.69		264.70
T.P.	12.98	266.39	1.09	253.41
T.P.	8.77	254.50	1.42	245.73
T.P.	13.10	247.15	1.20	234.05
T.P.	13.16	235.25	0.84	222.09
T.P.	12.78	222.93	0.20	209.95
T.P.	12.79	210.05	1.8	197.26
T.P.	12.12	198.54	1.06	186.42
T.P.	10.15	187.48	1.88	177.33
T.P.	8.59	179.21	3.28	170.62
T.P.	10.63	173.90	1.51	163.27
T.P.	11.65	164.78	7.41	153.13
T.P.	0.28	160.54	10.30	160.26
T.P.	0.27	170.56	3.39	170.29
T.P.	7.79	173.68	2.62	165.89
T.P.	11.56	168.51	0.25	156.95
T.P.	11.99	157.20	5.87	145.21
T.P.	4.63	151.08	0.31	146.45
T.P.	0.78	146.76	9.62	145.98
T.P.	2.77	155.60	11.36	152.83
T.P.	0.28	164.19	12.08	163.91
T.P.	0.57	175.99	12.99	175.42
T.P.	0.18	188.41	10.50	188.23
		198.73		

π from P. 12

Rev.  
over hd & Disk CP# 16 Page 9

Hub 48+20.10 CP# 79

Hub 46+15.75 CP# 78

Hub 44+8.21 CP# 77

Hub 42+68.94 CP# 76

~~42+83.74~~ CP# 76

Hub 40+29.48 CP# 75

Hub 38+33.48 CP# 74

Hub 35+69.92 CP# 73

Hub 35+32.39 CP# 72

Hub 33+71.31 CP# 71

Hub 31+64.58 CP# 70

Walker  
Hendricks  
Becker  
Johnson  
12-31-97

Bench Marks -  $\frac{1}{2}$ " Line  
Balboa Park Topog. Control

T.P.	12.42	180.35	4.89	167.93
T.P.	11.92	172.82	0.14	160.90
T.P.	11.67	161.04	3.70	149.37
T.P.	6.93	153.07	0.16	146.14
T.P.	11.13	146.30	11.97	135.17
T.P.	0.70	147.14	3.86	146.44 (146.45)
T.P.	1.28	150.30	11.36	149.02
T.P.	1.06	160.38	12.74	159.32
T.P.	0.12	172.06	13.20	171.94
T.P.	1.62	185.14	11.98	183.52
T.P.	1.12	195.50	9.25	194.38
T.P.	1.77	203.63	12.74	201.86
T.P.	0.20	214.60	11.62	214.40
T.P.	0.09	226.02	8.27	225.93
			5.41	228.79
T.P.	0.94	239.20	10.52	233.26
T.P.	1.20	243.78	6.69	242.58
T.P.	3.19	249.27	12.47	246.08
T.P.	2.12	258.55	7.10	256.93
			6.14	257.39
T.P.	6.47	263.53	6.46	257.04
			11.70	251.80
	2.93	263.50		260.57

Hub	17+1283	CP # 111
Hub	15+0639	CP # 110
Hub	13+22.44	CP # 109
Hub	12+43.28	CP # 72
Hub	10+37.17	CP # 108
Hub	8+99.40	CP # 106
Hub		CP # 107
Hub	7+51.66	CP # 105
Hub	6+77.38	CP # 104
Hub	4+53.10	CP # 103
Hub + Disk	2+30.48	CP # 102
Hub	1+18.91	CP # 101
Hub + Disk	42+13.61	CP # 9 P-5

Bench Marks - "L" Line  
Cont. from P-14

15

				0.01	
chk			3.15	256.43	256.44
			8.92	250.67	
T.P.	13.07	259.59	2.50	246.52	
T.P.	10.89	249.02	1.55	238.13	
T.P.	11.73	239.68	0.26	227.95	
T.P.	12.69	228.21	0.81	215.52	
T.P.	11.09	216.33	4.08	205.24	
T.P.	10.63	209.32	0.74	198.69	
T.P.	12.94	199.43	1.99	186.49	
T.P.	9.51	188.48	1.38	178.97	
		180.35			
		* from P-14			

Hub	23+14.80	CP# 103	Page 14
Hub	22+54.02	CP# 114	
Hub	21+52.26	CP# 113	
Hub	18+91.44	CP# 112	
	on foot by Creek		

Walker  
Hendricks  
Becker  
Johnson

Bench Marks J. Line

Balboa Park - Topog. Control

				0.02	253.66
chk			2.31		253.64
T.P.	9.66	255.95	2.96	246.29	
			6.08	243.17	
T.P.	10.65	249.25	3.66	238.60	
T.P.	6.42	242.26	2.37	235.84	
	7.58	238.21		230.63	

on Pav.					
over Ad + Dicks	11+33.27	CP # 8 - P. 5			
Ld + Disk	8+31.89	CP # 92			
Hub in Court Yard		CP # 93			
Ld + Disk	4+66.51	CP # 91			
Ld + Disk	3+13.13	CP # 90			
B.M.	0100	CP # 54 P. 12			

Walker  
Hendricks  
Becker  
Johnson  
12-31-47

Bench Marks - "X" Line

Balboa Park - Topog. Control

Cont. P. 18

T.P.	6.72	225.67	0.78	218.95
T.P.	12.78	219.73	0.01	206.95
T.P.	13.12	206.96	11.81	193.84
T.P.	0.53	205.65	9.52	205.12
T.P.	2.07	214.64	12.54	212.57
T.P.	0.37	225.11	9.68	224.74
	3.79	234.42		230.63

17

7 + 56.56 CP # 96

6 + 02.15 CP # 95

6 + 02.15 CP # 95

Id. & Disk 3 + 42.77 CP # 94

BM. Hub. 0100 CP # 54 - P. 16

Walker  
Hendricks  
Becker  
Johnson  
12-31-97

Bench Marks - K<sub>2</sub> Line  
Balboa Park - Topog. Control

18

chk.				$\frac{0.02}{235.38 \rightarrow P-12}$ 235.40
T.P.	8.73	237.41	1.20	228.68
T.P.	12.56	229.88	12.80	217.22
T.P.	1.09	230.02	3.95	228.93
T.P.	9.73	232.88	2.52	223.15
		225.67		
		$\pi$ from P-17		

Hub	7+1160	C.P. #100	P-12
Ld & Disk	4+81.79	C.P. #99	
Hub	3+6761	C.P. #98	
Hub	1+7917	C.P. #97	



Alley Bk. 15 Pt. L. Hgts.

Fly. + Wly. stem of "T"

T.P. 201 Hub  
# 143252

3.00 110.97 8.01 107.97

0+70

0+63

Rt = End. Conc. slab.

0+45

13<sup>2</sup> Rt = start conc. slab.

0+40

10<sup>2</sup> Rt = End board fence.

7<sup>2</sup> Lt = back of pole # A3608

0+12

6<sup>1</sup> Lt = Ctr. deadman

0+06

10<sup>3</sup> Rt =  $\phi$  3' Wide Conc. walk.

0+00

10<sup>2</sup> Rt =  $\phi$  8" Conc. Block N. to S. wall  
5' High.  
10<sup>3</sup> Rt = start board fence.  
Wly. line Capistrano

0+07

on  $\frac{1}{2}$  Hub. 111.82 104.16 BM #1

See F.B. 1822 P. 31 for alley returns.

S.W. 7' Lt +  
Capistrano

1.16

115.98

114.82

F.B. 1822  
28

Aliphant

20

109.74 <sup>5</sup>	108.81 <sup>9</sup>	107.38 <sup>4</sup>	106.98 <sup>107.0</sup>	107.28 <sup>3</sup>	106.78 <sup>107.0</sup>	103.78 <sup>16</sup>
$\frac{6.5}{25}$	$\frac{7.1}{75}$	$\frac{8.6}{5}$	9.0	$\frac{8.7}{72}$	$\frac{9.0}{20}$	$\frac{12.2}{30}$
109.28 <sup>3</sup>	108.78 <sup>107.0</sup>	107.98 <sup>108.0</sup>	107.08 <sup>1</sup>	105.88 <sup>9</sup>	106.68 <sup>17</sup>	106.08 <sup>1</sup>
$\frac{6.7}{25}$	$\frac{9.0}{10}$	$\frac{8.0}{75}$	$\frac{8.9}{5}$	10.1	$\frac{9.3}{75}$	$\frac{9.9}{14}$
109.78 <sup>4</sup>	107.58 <sup>6</sup>	106.38 <sup>8</sup>	106.08 <sup>11</sup>	105.88 <sup>106.0</sup>	105.98 <sup>106.0</sup>	106.10 <sup>107.0</sup>
$\frac{6.2}{25}$	$\frac{8.4}{75}$	$\frac{9.6}{5}$	9.9	$\frac{10.0}{75}$	$\frac{9.9}{13.9}$	$\frac{9.82}{13.9}$
108.88 <sup>9</sup>	108.38 <sup>4</sup>	107.08 <sup>1</sup>	105.78 <sup>8</sup>	105.38 <sup>4</sup>	105.45 <sup>1</sup>	104.98 <sup>1</sup>
$\frac{7.1}{20}$	$\frac{7.6}{11}$	$\frac{8.9}{75}$	$\frac{10.2}{5}$	10.5	$\frac{10.0}{75}$	$\frac{10.53}{10.3}$
117.78 <sup>5</sup>	106.58 <sup>15</sup>	106.48 <sup>5</sup>	105.58 <sup>5</sup>	105.18 <sup>11</sup>	107.58 <sup>6</sup>	104.60 <sup>10</sup>
$\frac{8.2}{15}$	$\frac{9.30}{75}$	$\frac{9.5}{75}$	$\frac{10.4}{5}$	10.8	$\frac{11.4}{75}$	$\frac{11.38}{75}$
	Cl. End	End			End.	Cl. End
						End of walk
						End of grade of walk
						Back of slab
						Back of slab
						Start of slab
						Back of slab

115.98

Alley, BIK. 15. Pt. Loma Hqts.

7<sup>1</sup> Lt. = start board fence.

1+60 7<sup>2</sup> Lt. = Pole # A3632.

8<sup>2</sup> Rt. = End conc. block wall

1+59. 7<sup>3</sup> Rt. = End footing for block wall

8<sup>1</sup> Rt. = line of wall.

Footing for block wall.

1+37 7<sup>5</sup> Rt. = break in grade of conc.

1+29 17<sup>5</sup> Lt. = <sup>5179</sup>Car under Const. ?

to be about 6' High.

8<sup>5</sup> Rt. = start conc. block wall under Const.

1+19 7<sup>6</sup> Rt. = start footing for wall.

1+05

110.97

8.3 45	7.4 75	6.1 7	5.9	5.1 75	4.8 25	102.67	103.57	104.87	105.07	105.87	106.17
7.8 45	6.2 75	5.8	4.9 75	5.6 72	103.17	104.77	105.17	106.07	105.37	106.17	
5.8 50	3.6 25	3.3 75	3.2	3.4 75	4.0 75	105.17	107.77	107.57	106.92	107.57	107.27
					3.1 75	107.37	107.67	107.57	106.07	107.57	107.27
					2.9 75	107.67	107.67	107.57	106.07	107.57	107.27
					3.1 75	107.27	107.67	107.57	106.07	107.57	107.27
					2.7 75	107.27	107.67	107.57	106.07	107.57	107.27
					3.1 75	107.27	107.67	107.57	106.07	107.57	107.27
					2.7 20	107.27	107.67	107.57	106.07	107.57	107.27
					5.6 75	107.27	107.67	107.57	106.07	107.57	107.27

110.97



212-2+67<sup>00</sup>  
 211075  
 T.P.

Alley BIK 15 Pt. L. Hqts.  
 12.53 101.54 91.57 89.01

3+60<sup>06</sup> = E. line of Nit. S. alley BIK 15. <sup>see</sup> page 19

3+59<sup>3</sup> 5<sup>8</sup> Lt. = End picket fence.

3+40

3+20 6<sup>8</sup> Rt. = start picket fence

3+10

3+08 6<sup>7</sup> Lt. = Ctr. deadman

2+81

2+80 7<sup>2</sup> Lt. = End board Rail Fence  
 7<sup>2</sup> Lt. = pole # A 3656

2+75

2+60

2+52

98.58

91.28	91.38	90.38	89.48	88.68
7.9	7.9	8.2	7.4	7.4
75	75	75	75	75
91.28	91.38	90.38	89.48	88.68
7.3	8.2	8.5	9.5	9.9
30	75	75	75	75
91.88	90.08	89.38	89.48	88.58
6.7	8.5	9.2	9.1	10.0
30	75	75	75	75
93.68	90.78	89.78	89.68	88.88
4.9	7.8	8.6	8.9	7.7
45	75	75	75	45
94.78	91.38	90.58	89.78	90.08
3.8	7.2	8.0	8.8	8.5
45	75	75	75	75
92.88	91.88	91.88	91.88	92.08
5.7	6.7	6.8	7.5	4.5
75	75	75	75	75
93.08	92.78	92.28	92.28	92.28
5.5	5.8	5.3	3.3	4.3
75	75	4	75	30
94.78	93.88	92.78	92.78	92.78
4.7	4.7	4.7	4.7	4.7
30	30	30	30	30
98.58	98.58	98.58	98.58	98.58

Also see P. 64

0+00 = Nly. line Oliphant.

0-01 8<sup>s</sup> Lt. = start. 16" wide hedge.

0-07

0-08 7<sup>s</sup> Lt. & Rt. = curb E.C.s

0-10 = Nly. Ch. line Oliphant

0-10<sup>1</sup> = Nly. gutter Oliphant

0+00 = E. N. 45. Alley Nly line Oliphant

101.54

96.87 4.67 75 Cl. End.	97.14 4.4 75 Ord.	97.04 4.5 5	94.34 7.2 2	94.37 7.2	94.34 7.2 2	98.04 3.5 5	97.94 3.6 75 Ord.	96.91 4.63 75 Cl. End.
		97.09 4.5 75 Ord.		96.64 4.9		97.64 3.9 75 Ord.		
	96.66 4.88 75 cl	96.59 5.0 75 Ord.		96.53 5.01 Hub		96.80 4.74 75 Ord. + cl		
		96.65 4.89 75 Cl. E.C.		95.94 5.9 75 Ord.		95.74 5.8 75 Ord.		96.79 4.75 75 Cl. E.C.
	96.35 4.19 100	96.80 4.74 50	96.61 4.93 95 Cl. B.C.		96.79 4.75 75 Cl. B.C.		97.48 4.06 50	
	96.39 5.15 100	95.82 5.72 50	95.62 5.92 95	95.61 5.93 75	95.70 5.84	95.73 5.81 75	95.74 5.80 95	96.57 5.03 50

24

101.54

1+18<sup>E</sup> 6<sup>3</sup> Lt. = End wire fence

1+00

0+75

0+52 11<sup>3</sup> RT. = End (N.W. cor.) stucco house

0+40 6<sup>5</sup> Lt. = start wire fence

0+39 7<sup>1</sup> Lt. = pole # P.A. 1907

0+38 7<sup>5</sup> Lt. end 18" wide hedge

0+26 11<sup>5</sup> RT. = S.W. Cor. stucco house

0+14

101.54

12.24 <sup>2</sup>	91.44 <sup>4</sup>	91.14 <sup>1</sup>	90.34 <sup>3</sup>	89.54 <sup>5</sup>	89.24 <sup>2</sup>	90.84 <sup>8</sup>	90.34 <sup>3</sup>
$\frac{9.3}{25}$	$\frac{10.1}{75}$	$\frac{10.4}{1}$	11.2	$\frac{12.0}{1}$	$\frac{12.3}{5}$	$\frac{10.7}{75}$	$\frac{11.2}{25}$
92.04 <sup>8</sup>	91.84 <sup>8</sup>	91.74 <sup>7</sup>	89.84 <sup>8</sup>	89.84 <sup>8</sup>	91.94 <sup>8</sup>	91.74 <sup>7</sup>	91.64 <sup>6</sup>
$\frac{9.7}{25}$	$\frac{9.7}{75}$	9.8	$\frac{11.7}{1}$	$\frac{11.7}{7}$	$\frac{9.6}{5}$	$\frac{9.8}{75}$	$\frac{9.9}{25}$
94.24 <sup>2</sup>	92.84 <sup>8</sup>	93.24 <sup>2</sup>	91.84 <sup>8</sup>	90.94 <sup>9</sup>	92.24 <sup>2</sup>	92.94 <sup>9</sup>	92.64 <sup>6</sup>
$\frac{7.3}{25}$	$\frac{8.7}{75}$	8.3	$\frac{10.7}{1}$	$\frac{10.6}{4}$	$\frac{7.3}{5}$	$\frac{8.6}{75}$	$\frac{8.9}{25}$
94.74 <sup>7</sup>	93.64 <sup>5</sup>	93.74 <sup>7</sup>	92.04 <sup>0</sup>	93.94 <sup>4</sup>	94.24 <sup>2</sup>	94.04 <sup>0</sup>	
$\frac{6.8}{25}$	$\frac{7.7}{75}$	$\frac{7.8}{2}$	9.5	$\frac{8.1}{2}$	$\frac{7.3}{75}$	$\frac{7.5}{11.4}$ At house	
95.54 <sup>5</sup>	95.64 <sup>6</sup>	95.44 <sup>4</sup>	93.44 <sup>4</sup>	93.74 <sup>7</sup>	95.54 <sup>5</sup>	95.94 <sup>9</sup>	
$\frac{6.0}{75}$	$\frac{5.7}{3}$	$\frac{8.1}{1}$	8.1	$\frac{7.8}{3}$	$\frac{6.0}{75}$	$\frac{5.6}{11.5}$ At house	
96.04 <sup>0</sup>	95.94 <sup>9</sup>	96.04 <sup>0</sup>	94.04 <sup>0</sup>	94.04 <sup>0</sup>	98.14 <sup>1</sup>	96.54 <sup>5</sup>	95.84 <sup>6</sup>
$\frac{5.5}{25}$	$\frac{5.6}{75}$	$\frac{5.5}{1}$	7.5	$\frac{7.5}{3}$	$\frac{3.4}{75}$	$\frac{5.0}{15}$	$\frac{5.7}{25}$

101.54





+ 71 Cont.

27' Lt. =  $\pm$  Gar. doors North Entrance

2+71 165' Lt. = N.E. Cor. double Gar.

T.P. 6.76 88.11 9.99 81.35

Faces north onto Wawena Dr.

2+51 17' Lt. = S.E. Cor Double garage.

2+50 Cont.

2+50

2+45

91.34

5.09  
27  
Conc. Floor

5.2  
16.5  
Crd. at  
Gar

3.9  
12

5.1  
75

6.2  
4

6.1

6.0  
3

5.5  
6

4.6  
75

83.03

82.91

84.21

83.00

81.91

82.01

82.11

82.61

83.51

88.11

83.04

82.94

8.3  
30

8.4  
17

84.14  
7.2  
74

83.64  
7.7  
75

83.74  
7.9  
5

82.84  
8.5  
3

83.44  
7.9

83.04  
8.3  
5

84.04  
7.3  
75

84.24  
7.1  
15

85.24  
6.1  
30

84.34  
7.0  
75

84.24  
7.1  
5

83.44  
7.9  
3

83.74  
7.6

83.24  
8.1  
5

84.14  
7.2  
75

84.44  
6.9  
15

91.34

should be S.W.

EI 86.44

This plug shown as NW B.P. in bench book

S.W. B.P.  
Wawona + Chastworth 1.80 86.31 See FB 1822 P 13 86.33

3+05<sup>1</sup> =  $\Phi$  Wawona

88.2

2+85<sup>1</sup> = Sly gutter Wawona

2+85<sup>09</sup> = Sly. Cl. line Wawona

also = So. Edge Cono. gutter

2+83<sup>08</sup> { 7.45 Lt. } = curb. B.C.  
          { 7.42 Rt. }

2+75<sup>08</sup> { 7.37 Pt = start cl.  
          { 7.40 Lt. = start curb.  
          { Sly. line Wawona

88.11

81.81	81.11	81.91	83.11	85.11
6.3 50	7.0 20	6.2	5.0 25	3.0 50
81.85	81.17	81.57	81.55	82.52
81.18	81.32	81.41	81.59	84.54
6.46 50	6.94 32	6.79 95	6.70 75	6.57
6.56 75	6.52 95	6.59 25	3.57 50	
82.61	82.58	82.26	82.62	83.50
5.50 50	6.87 32 Drive	5.85 95 Cl. E.C.	5.49 95 Cl. E.C.	4.61 25
82.32	81.61	81.78	81.87	82.52
5.79 745 Cl. B.C.	6.50 745 G	6.33	6.24 745 G	5.59 742 Cl. B.C.
82.58	81.91	82.01	82.31	82.58
5.53 740 top Cl. end	6.2 74	6.1	5.8 73	5.53 737 top Cl. end

88.11

X-section Everts  
Felspar to Diamond

7-12-48

Sommermeier

W.L.O. 25001

McCoy  
Melton

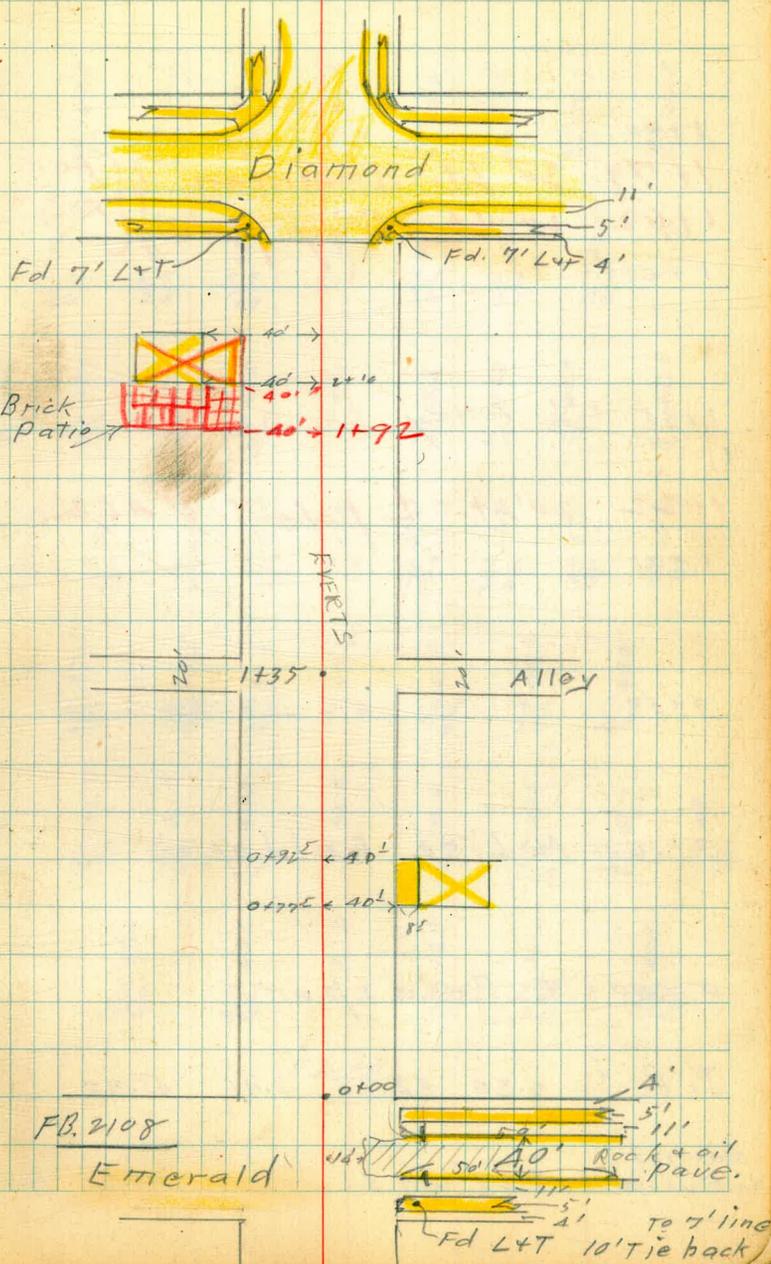
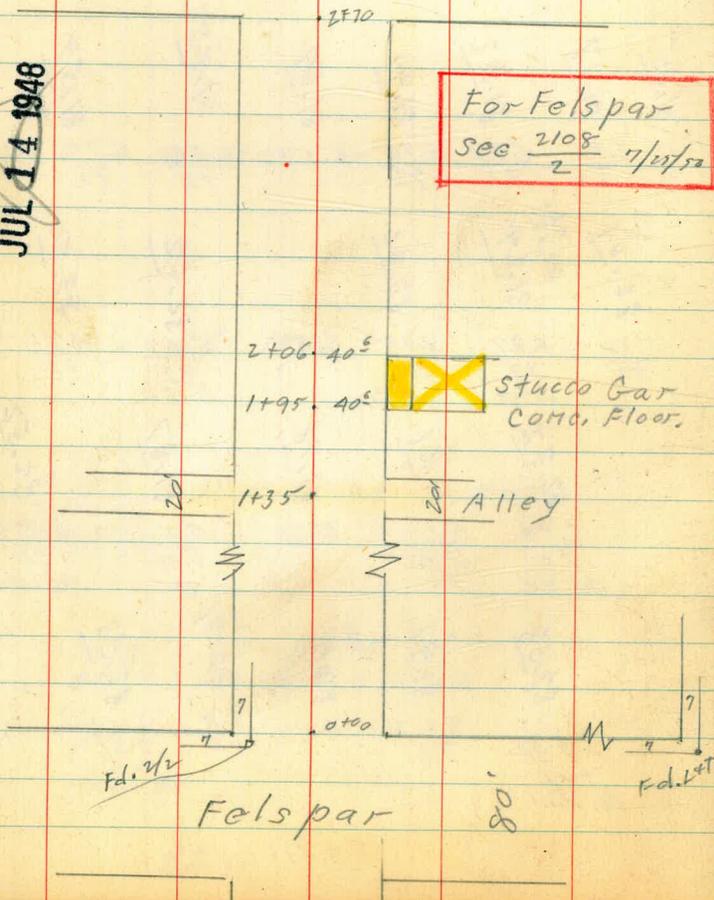
F.B. 2108

Additional notes in red 7/24/50

INDEXED

JUL 14 1948

EMERALD



1+90

1+79 20' Lt. = deadman } par  
 1+62 20' Lt. = Guy pole } pole # 4624

1+60

1+35 = £ Alley

1+22 20' Lt. = £ pole # P 4624

1+00

0+50

0+00 = N. Line Feldspar

0-40 = £ Feldspar

T. P. 6.86 52.26 2.41 45.40

Garnet + Everts 8.28 47.81 -- 39.53 N.W.B.P.

50.2	49.8	50.0	49.1	49.9	49.2	50.8	50.7	51.8
$\frac{2.1}{100}$	$\frac{2.5}{40}$	$\frac{2.3}{24}$	$\frac{3.2}{18}$	2.4	$\frac{3.1}{18}$	$\frac{1.5}{24}$	$\frac{1.6}{40}$	$\frac{0.5}{90}$
	49.1	49.6	49.6	49.2	48.8	50.1	50.0	
	$\frac{3.2}{40}$	$\frac{2.7}{24}$	$\frac{3.7}{17}$	3.1	$\frac{3.5}{20}$	$\frac{2.2}{25}$	$\frac{2.3}{40}$	
48.3	49.0	49.3	48.0	49.1	48.3	49.2	49.9	50.8
$\frac{4.0}{100}$	$\frac{3.3}{40}$	$\frac{3.3}{20}$	$\frac{4.3}{16}$	3.2	$\frac{4.0}{18}$	$\frac{3.1}{23}$	$\frac{2.4}{40}$	$\frac{1.5}{100}$
47.9	48.1	48.3	47.3	48.0	47.6	48.9	49.1	49.6
$\frac{4.4}{75}$	$\frac{4.2}{40}$	$\frac{4.0}{18}$	$\frac{5.9}{15}$	4.3	$\frac{4.7}{18}$	$\frac{3.4}{24}$	$\frac{3.2}{40}$	$\frac{2.7}{75}$
	47.3	47.5	46.6	47.1	46.8	48.3	48.4	
	$\frac{5.0}{40}$	$\frac{4.8}{18}$	$\frac{5.7}{15}$	5.2	$\frac{5.5}{18}$	$\frac{4.0}{22}$	$\frac{3.9}{40}$	
45.9	46.7	46.8	46.0	46.4	46.4	47.5	47.7	48.1
$\frac{6.4}{75}$	$\frac{5.6}{40}$	$\frac{5.5}{20}$	$\frac{6.3}{15}$	5.9	$\frac{5.9}{18}$	$\frac{4.8}{24}$	$\frac{4.6}{40}$	$\frac{4.2}{75}$
	44.7	45.2	46.0	46.0	45.9	46.6	47.8	
	$\frac{7.6}{100}$	$\frac{7.1}{40}$	6.3	6.3	$\frac{6.4}{15}$	$\frac{5.7}{40}$	$\frac{4.5}{100}$	
				52.26				

14' Rt. = start rock + oil pav.  
2+90<sup>+</sup> = S. Gutter line Emerald

40' Rt. = start E. + W. conc. cb.  
2+90 = S. Ch. line Emerald

2+79 40' Rt. = N.W. Cor. E+W. 5' walk  
(page 30)

2+74 40' Rt. = S.W. Cor. E+W. 5' walk

2+70 = S. Line Emerald

2+30

T.P. 9.17 60.68 0.75 51.51  
N.W. Cor. Apron

2+06 40<sup>e</sup> Rt. = End same

Sing. Car.

1+95 40<sup>e</sup> Rt. = start Conc Apron to

52.26

8.52.7	7.52.8	8.52.0	8.52.6	8.52.6	8.52.5
8.0	7.9	8.5	8.1	8.1	8.2
40	22	18	14	19	40
			Star + pave	Pave	Pav
			53.42	53.86	
			7.26	6.81	
			40	40	
			top of	top of	
				53.57	
				7.11	
				40	
				N.W. Cor. walk	
				53.62	
				7.06	
				S.W. Cor walk	
8.52.3	8.51.9	9.51.7	8.52.2	9.51.7	8.52.5
8.4	8.3	9.0	8.5	9.0	8.2
40	23	18	18	18	24
9.51.4	9.51.5	10.50.30	9.50.8	10.1.4	9.51.6
9.3	9.2	10.4	7.9	10.1.4	9.1
40	22	18		20	24
			60.68		
				51.50	
				0.76	
				405	
				Apron	
				51.40	
				0.86	
				405	
				Apron	
				51.69	
				0.57	
				43±	
				Car. floor	
				51.69	
				0.57	
				43±	
				Car. floor	





# Events

Orig. B.M.		7.84	39.53	<u>37.53</u>
T.P.	2.03	47.37	8.75	45.34
T.P.	0.44	54.09	12.10	53.65
N.W. B.P.				
Diamond + Events	SS	4.68	61.07	<u>60.98</u>

Gutter. by number

Curb. Returns by number

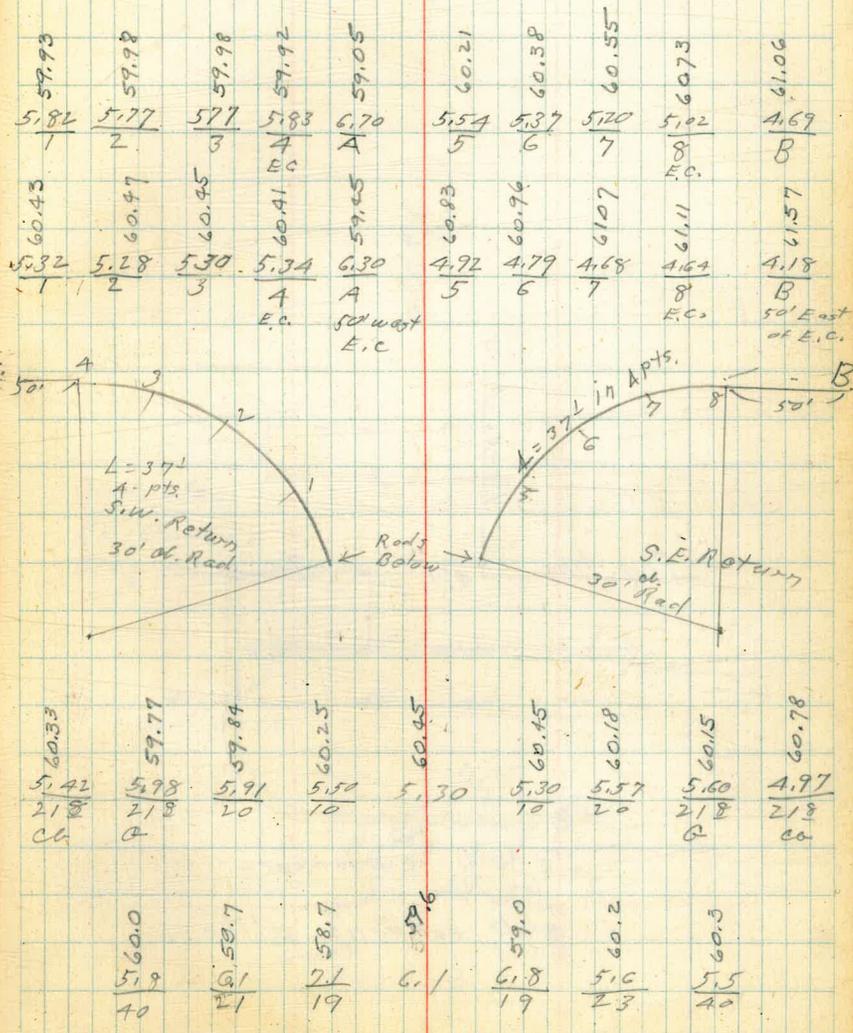
21<sup>2</sup> L + 21<sup>3</sup> R = start curbs

pavement. Rods on Pav.

2+70 = S. Line Diamond = start. Conc.

2+35

65.75



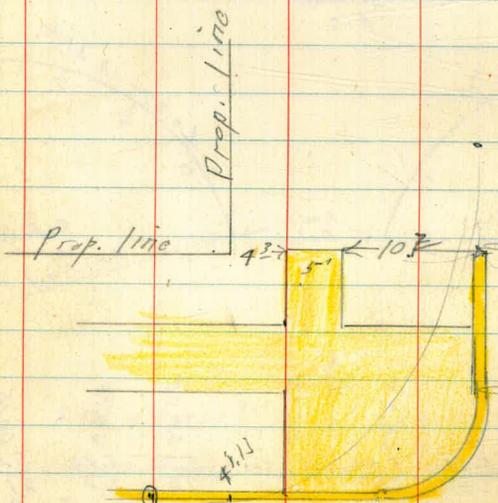
65.75

X-sec. OLNEY - Garnet to Felspar.

W.O. 25001

9-30-48

Sammarmeyer  
McCoy &  
Allen  
Jones.



Details curb. Returns.

E. & W. returns alike.

INDEXED

WIK.  
OCT 1 1948

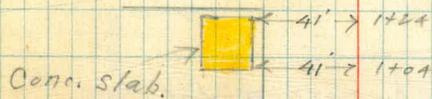
L+T & Diamond

36

3+10 = ± Felspar.

2+70

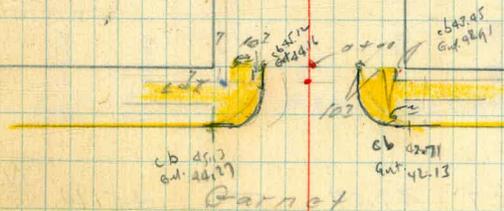
OLNEY



Ex. Garage  
Bldg. torn down



= Nail



117. Garnet & pendolite

0+60 A0<sup>2</sup> Lt. = 4' wide Conc. walk.

0+50

0+00 = N. line Garnet. - End A.C. Pav.

0-10 20' Rt = cb. return E.C.

0-20 = N. cb. line Garnet.

0-20' = N. gutter line Garnet

Olney to Garnet 4.57 49.67 — 45.10 N.W.B.P.

47.11  
2.56  
50  
on walk.

46.4  
3.3  
40

45.3  
4.4  
34

44.4  
5.3  
16

43.6  
5.1

43.8  
5.9  
12

44.3  
5.4  
20

44.0  
5.7  
40

45.7  
4.0  
40

45.12  
4.58  
20  
cb  
End

44.16  
5.51  
20  
G.

44.14  
5.53  
10

43.94  
5.98  
Ass.

43.47  
6.24  
10

43.91  
6.76  
20  
G.

43.45  
6.22  
20  
cb.

43.2  
6.5  
40

45.02  
4.65  
20  
cb

44.13  
5.54  
20  
G.

42.62  
7.05  
20  
G

43.18  
6.47  
20  
cb

45.13  
4.54  
40  
cb

45.04  
4.63  
30  
cb, Rt  
B.C

42.88  
6.79  
30  
cb, Rt  
B.C

43.71  
6.96  
40  
cb.

44.27  
5.40  
40

44.08  
5.59  
30

43.90  
5.77  
20

43.23  
6.04  
10

43.33  
6.34  
10

42.99  
6.68  
10

42.58  
7.09  
20

42.29  
7.38  
30

42.13  
7.54  
40

49.67

2+00

T.P. 12.11 58.58 3.20 46.47

1+50

1+35 & Alley

1+24 4' L. = End slab.

1+04 4' L. = start conc. slab.

1+00

49.67

$\frac{5.1}{100}$	$\frac{10.8}{50}$	$\frac{11.0}{40}$	$\frac{11.8}{17}$	11.1	$\frac{12.0}{10}$	$\frac{11.3}{17}$	$\frac{12.8}{40}$	$\frac{13.3}{55}$	$\frac{11.6}{100}$
<sup>58.5</sup>	<sup>47.8</sup>	<sup>47.6</sup>	<sup>46.8</sup>	<sup>47.2</sup>	<sup>44.6</sup>	<sup>47.3</sup>	<sup>45.8</sup>	<sup>45.3</sup>	<sup>47.0</sup>
<u>58.58</u>									

$\frac{2.9}{40}$	$\frac{3.5}{20}$	$\frac{4.0}{17}$	3.6	$\frac{4.2}{9}$	$\frac{3.5}{15}$	$\frac{4.4}{40}$
<sup>46.8</sup>	<sup>46.2</sup>	<sup>45.7</sup>	<sup>46.1</sup>	<sup>45.5</sup>	<sup>44.2</sup>	<sup>45.3</sup>

$\frac{0.0}{70}$	$\frac{3.1}{40}$	$\frac{4.2}{17}$	3.7	$\frac{4.4}{8}$	$\frac{4.3}{17}$	$\frac{4.8}{40}$	$\frac{5.7}{100}$
<sup>49.7</sup>	<sup>46.6</sup>	<sup>45.5</sup>	<sup>46.0</sup>	<sup>45.3</sup>	<sup>45.4</sup>	<sup>44.9</sup>	<sup>44.0</sup>

$\frac{2.63}{57}$	$\frac{3.00}{41}$
N.W. Cor slab.	N.E. Cor slab.
<sup>47.04</sup>	<sup>46.67</sup>

$\frac{2.72}{46}$	$\frac{2.96}{41}$
CR slab	S.E. Cor slab.
<sup>44.95</sup>	<sup>46.71</sup>

$\frac{2.0}{75}$	$\frac{3.1}{40}$	$\frac{4.2}{32}$	$\frac{4.8}{17}$	4.4	$\frac{5.0}{9}$	$\frac{4.6}{16}$	$\frac{5.0}{40}$	$\frac{5.2}{75}$
<sup>47.7</sup>	<sup>46.6</sup>	<sup>45.5</sup>	<sup>44.8</sup>	<sup>45.3</sup>	<sup>44.7</sup>	<sup>45.1</sup>	<sup>44.7</sup>	<sup>44.5</sup>

49.67

ML. Garnet + Olney Rod = 1296  
 Boots = 50  
 Total rod 13.46 12.46 46.12

3+10 = £ Felspar.

2+70 = S. line Felspar.

2+35

58.58

$\frac{2.7}{100}$	$\frac{6.3}{40}$	$\frac{6.8}{17}$	6.2	$\frac{6.6}{10}$	$\frac{5.6}{20}$	$\frac{4.3}{20}$	$\frac{3.4}{85}$	$\frac{4.3}{150}$
55.9	52.3	51.8	52.4	52.0	53.0	54.3	55.2	54.3
$\frac{8.9}{40}$	$\frac{9.0}{27}$	$\frac{9.8}{17}$	8.9	$\frac{9.3}{10}$	$\frac{9.0}{19}$	$\frac{8.4}{40}$		
49.7	49.6	48.8	49.7	49.3	49.6	50.2		
$\frac{10.0}{40}$	$\frac{10.7}{27}$	$\frac{10.9}{17}$	10.3	$\frac{10.8}{9}$	$\frac{10.5}{16}$	$\frac{11.1}{40}$		
48.6	47.9	47.7	48.3	47.8	48.1	47.5		

58.58



Cross Section East & West Hill  
Block 16 Point Loma Hts.

Sketch Page 40

+41 7.8 Lt of L - Fly High Board Fence  
+40 7.5 Lt of L - Sly Post & Tall Pole # 97.6608

+14

+10 = Fly Curb on Lt

0+0 = West Line of Capistrano St.

0-5

0-10 = West Curb Line Capistrano St.

BM 7.50 79.20

71.70

NN 80  
Capistrano  
Top

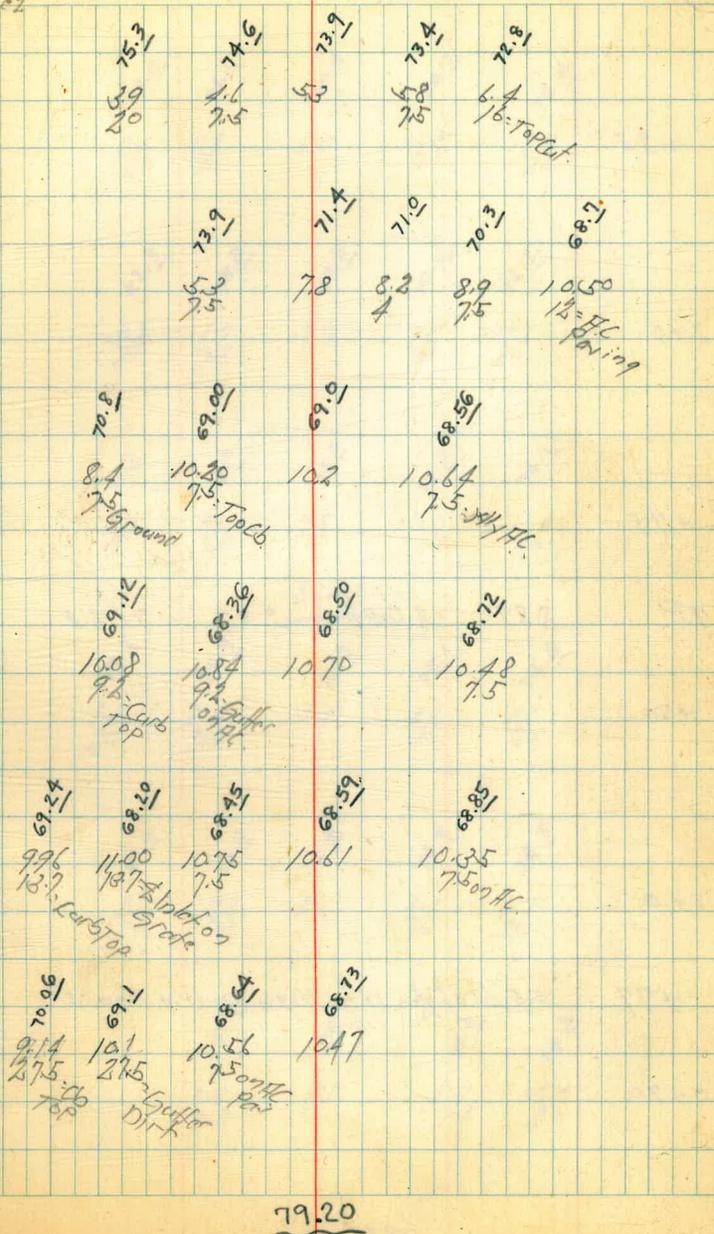
June 16-99  
H.S. 1100  
Garber  
Cofa  
Chavez

Lt = 5

Z

pt = 11

41



79.20

+25

2+0

+75

TP 8.89 85.52 2.57 76.63

+50

1+0

+77 5.5 St of  $\frac{1}{2}$  - 11 1/4 High Board Fence

0+70

7920

Lt.

St

Rt.

42

83.9	81.1	80.4	80.0	76.6
$\frac{25}{20}$	$\frac{11}{15}$	51	$\frac{57}{25}$	$\frac{89}{20}$
82.3	78.8	77.8	76.5	74.2
$\frac{32}{20}$	$\frac{67}{25}$	77	$\frac{92}{25}$	$\frac{113}{20}$
79.5	76.9	76.0	75.3	74.1
$\frac{80}{20}$	$\frac{86}{25}$	95	$\frac{102}{25}$	$\frac{114}{20}$
		<u>85.52</u>		
77.7	76.9	75.8	75.1	74.6
$\frac{125}{20}$	$\frac{26}{25}$	54	$\frac{41}{25}$	$\frac{46}{20}$
77.0	76.0	75.6	74.9	74.5
$\frac{22}{20}$	$\frac{32}{25}$	66	$\frac{42}{20}$	$\frac{47}{20}$
	75.7	75.1	74.8	74.2
$\frac{80}{25}$	41		$\frac{44}{25}$	$\frac{57}{20}$

7920





210

73.9	73.1	73.1	73.2	74.0
10.8	11.6	11.6	11.5	10.7
20	7.5		7.5	7.5

Top Conc Black Wall

+83

15.93	75.10	73.6	73.5	73.81	74.4
8.82	9.75	11.1	11.2	10.9	10.3
36	7.5	7.5		7.5	7.5

At FH DO. Conc Drive  
Ground. Top Conc Black Wall

+45.02 N.L. F + W Alley 7.1 Rto 1/2 Sky Conc Black Wall

8.88	8.25	9.5	10.9	10.1	9.8	8.80
20	7.5	7.5	7.5		7.5	7.5

7.1 - Ground Top Conc Black Wall

+12 1' Hold Top SDG 10.3 Gate Valve Box

+37.52 F + W Alley

74.59  
10.16  
Top Sewer Man Hole

+30.02 S.L. F + W Alley 6.8 Rto 1/2 Nly High Board Fence

75.9	75.6	75.4	75.7
8.8	9.1	9.3	9.0
20	7.5		7.5

1+03 6.8 Rto 1/2 High Board Fence

17.93	17.23	16.7	16.3	16.3
6.36	7.0	8.0	8.4	8.4
36	7.5	7.5	7.5	20

At FH DO. Conc Drive

84.75

84.75





Moose  
Hardin  
Sweeney  
Sisson

Survey for drain

on Spruce St.

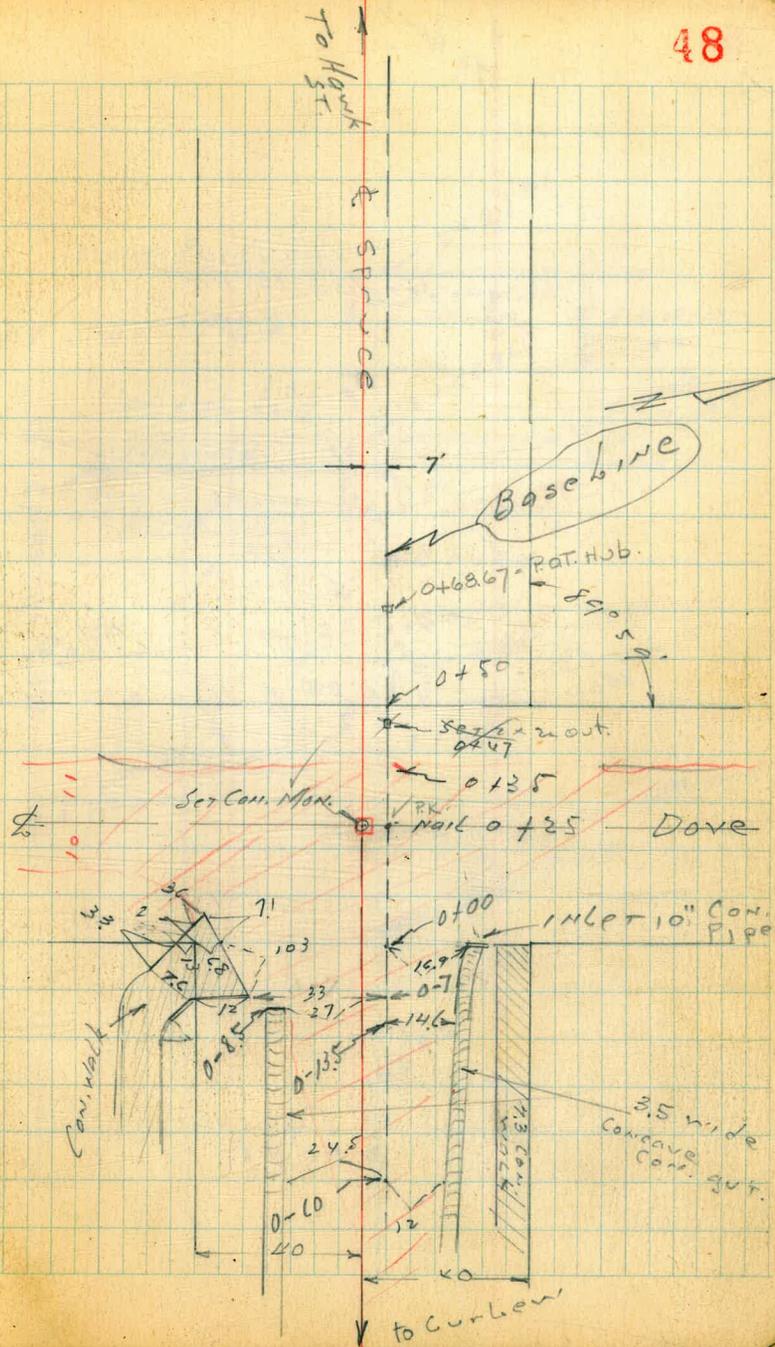
Bern. Dove & Eagle

W.O. 20587

8049-L

INDEXED  
W.K.  
OCT 25 1949

Red =  
1" to 1 1/2"  
cold lay





0-100

0-07

0-85 3x LT 12" di. Eucal. Tree

Top Block  
End Wall

0-13.5 37' LT 10" di. Eucal.

0-23 34 LT 14" di. Eucal. Tree

0-28 22 RT TEL.P 468592 H

0-30

Par. Edge = P.F

0-60

RM Nail  
P.P. 3196  
± Spruce  
and  
Sly. Dove

7x8 192.48 Fd. → 185.00 = used:-

Check Elev. + Profile - 9-28-54 - 7.0.  
Same to

50

182.32	182.82	182.1	182.8	183.1	182.5	181.80	180.81	181.1	183.0	182.4
9.6	9.56	10.0	9.7	9.4	10.0	10.58	11.9	10.67	9.5	10.24
47	40.2	24	7	0	25	16.9	18.0	19.6	22	22.3
CON	WALK	P	P	P	P	9.6	10.0	10.0	10.0	WALK

183.85	183.14	182.7	183.4	183.7	183.9	183.1	182.37	181.90	182.32	183.3	183.64	
10.15	9.8	10.01	10.19	9.6	8.9	8.6	9.4	10.11	10.58	10.12	9.2	8.84
30.5	28.7	28.7	27	26.5	17	13	15.2	14.7	18.7	20	20.3	
9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6	

184.6	184.3	182.98	182.5	182.77	183.4	184.1	184.3	183.7	182.54	182.6	183.1	184.1	184.64
8.7	9.5	10.0	9.71	9.1	8.9	8.2	8.8	9.6	9.88	9.6	8.4	7.84	
33	30.1	28.3	26.6	25.1	7	0	10.6	14.6	14.3	18.1	20	20.3	

182.5	192.4	190.28	189.76	190.07	190.2	190.6	190.00	189.71	190.24	192.0	192.34
0.0	0.1	2.20	2.72	2.41	2.3	1.9	2.48	2.77	2.24	0.5	0.6
47	33	28	24.3	24.5	12	9	12	13.7	15.5	20	26.4

W.O. 32381 ✓ = Sect. O.K.

0747

0746 16.6 Lt Beg. Picket fence

0745.7 = Cross 3' Picket fence

0745 6.3 Lt. P.P. 15" d. = BM. 185.00

0738 = & Prop. Clean out

0735 w. edge Cold tax Pav.

0725 E Dove St

0720.5 - 72 Lt. & Sewer Mt.

T.P. = spike

0.03 185.03 7x8 185.00

S. Rim I.E  
81.23 73.22

0714

192.48

179.0	179.8	81.0	81.2	180.7	180.0
$\frac{10}{47}$	$\frac{52}{25}$	$\frac{37}{7}$	$\frac{36}{7}$	$\frac{4.3}{20}$	$\frac{5.0}{33}$
		<del>181.3</del>	<del>181.4</del>		

C.P.P.  
P.P.  
31.94  
6.3

178.0	179.0	180.3	181.1	181.2	180.7	180.4
$\frac{7.0}{60}$	$\frac{6.0}{47}$	$\frac{4.7}{25}$	$\frac{3.9}{7}$	$\frac{3.7}{7}$	$\frac{4.3}{20}$	$\frac{4.0}{33}$
			<del>181.3</del>			

177.5	178.5	179.9	180.62	180.77	180.3	179.7
$\frac{7.5}{60}$	$\frac{5.5}{47}$	$\frac{5.7}{25}$	$\frac{4.62}{7}$	$\frac{3.77}{7}$	$\frac{4.7}{20}$	$\frac{5.3}{33}$
			<del>180.7</del>			

178.0	178.3	180.3	181.02	181.1	180.8	180.3
$\frac{7.0}{60}$	$\frac{5.1}{47}$	$\frac{4.7}{25}$	$\frac{4.02}{7}$	$\frac{3.9}{7}$	$\frac{5.2}{20}$	$\frac{4.7}{33}$
			170.0			

178.9	179.0	180.5	181.5	181.6	181.2	180.9
$\frac{13.5}{45}$	$\frac{12.5}{35}$	$\frac{12.0}{25}$	$\frac{7.0}{13}$	$\frac{10.44}{10}$	$\frac{10.9}{11}$	$\frac{11.3}{20}$
P.F.	P	P	P	P	P	P.F.

192.48

0+88.5 - 7' Lt. = ± 1" Acacia

0+85 - 4.2 Lt. = ± 1" Euc.

0+80 - out.

0+76 - 10.6 Lt. = ± 16" Euc.

0+75 - 10' Lt + 16" diam Eucal out.

0+72

0+71 7' R ✓ 8" di. Acacia Eucal

T.P. 0.26 176.55 8.74 176.49

0+62 - out

0+53 - Toe of Bank

0+50 w.l. Dove

185.03

Lt

Rt

Rt

52

145.6	146.8	146.6	146.0	144.8	142.0	142.0	148.0	149.6	148.4
10.9	9.7	9.9	10.6	14.8	14.5	14.5	8.5	7.0	8.4
30	17	11	7	4	2	10	15	30	

146.8	147.4	148.0	145.8	146.0	170.0	172.0	170.0	168.4
9.8	9.1	8.6	10.7	10.6	6.6	4.5	6.6	8.1
33	17	8	7	5	5	15	30	

148.2	149.2	170.4	173.2	172.2	176.0	174.0
8.6	7.4	6.1	3.4	3.3	0.6	0.6
33	17	5	5	5	5	30

170.8	171.8	178.9	176.55 ✓	176.0	175.9
14.2	13.2	9.1	9.2	9.0	9.1
25	17	7	9	20	33

174.6	174.8	176.3	175.7	176.0	175.9
10.4	10.2	9.0	8.6	7.5	9.1
47	25	7	10	20	33

178.4	179.2	180.6	180.5 ✓	179.9
6.6	5.8	5.5	4.2	5.1
47	25	7	10	33

185.03 ✓

1+48 - filled in

1+40

1+33 - Sect. out.

1+15 = Beg. wash

1+14 - Sect. out.

T.P	0.83	151.80	12.80	150.97 ✓
T.P	0.28	163.83	13.00	163.55 ✓

1+03 ✓ 2' RT-10" di. Pepper Tree Sect. out.

0+97 - out

0+95.5 - 4' Lt. = ± 1 1/2" Acacia

0+95

0+87 - out

176.55

86. 70  
53

148.3	147.8	145.3	141.5	142.2	38.2	38.2	38.2	42.8	44.0	147.8	147.8
30	20	17	10	3	2	2	4	10	20	30	30
42.8	10	149.4	143.2	141.8	140.1	143.0	143.1	46.2 = top bank	148.3	148.9	
7.0	3.4	8.6	10.0	11.7	8.8	8.7	5.3	3.5	7.1	5.1	
18	17	9	4	2	8	5	12	28	35	35	

48.3	47.3	43.4	49.8	54.0			
10	6	147.2	145.0	148.1	10	164.8	
156.8	155.8	146.6	147.2	149.1	149.1	164.8	
30	4.0	5.0	4.0	6.77	4.6	3.7	2.7
17	15	13	3	2	15	28	36

Fl. outlet  
10" Con.  
PIPE. 151.80 ✓

173.6	160.2	150.4	148.4	150.6	151.4	152.0	156.6	166.8	167.0
30	16.3	26.1	28.2	26.0	25.2	22.5	20.0	9.7	9.6
15.5	17	8	2	7	13	25	31	66	

162.6	162.2	152.0	153.2	155.2	162.8	166.0	166.8
14.0	4.5	24.5	23.3	21.3	13.7	10.6	9.7
30	17	8	11	13	20	30	

163.8	165.4	56.4	58.5	63.7			
10	10	144.4	157.6	158.0	158.4	166.8	169.0
12.7	11.2	12.1	19.0	18.4	9.8	7.5	8.6
30	17	11	8	6	10	20	33

176.55 ✓





See B.2361 - P. 20

2+87.92 = 0+34.56 = E.C. on "C" Line

2+75 - on Eagle St Tang

Cent from P. 55

check to	13' d. C.T.	1.95	161.47	161.47
cut low at Torrence				<u>0.00</u>

T.P.	11.15	163.42	0.34	152.27
------	-------	--------	------	--------

T.P.	4.39	152.59	1.72	148.20
------	------	--------	------	--------

T.P.	11.34	149.92	0.02	138.58
------	-------	--------	------	--------

T.P.	12.57	138.60	0.69	126.03
------	-------	--------	------	--------

T.P.	12.55	126.74	3.31	114.17
------	-------	--------	------	--------

3+00 W C 6 Eagle

2+99 A 90-

117.48

L+

BL

56

07.22  
on Cross

08.41	08.65	08.67	08.70	08.00	08.88
3	2		2	3.3	7 = edge
gut.	Top		walk	edge of	A.C.
			Beq. Conc.	Cont. &	
			Slab.	Beq. A.C.	

Notes Reduced. 1-12-30

113.34
4.4
<u>30</u>

109.83
7.65

106.30
11.8
<u>30</u>

112.91
4.57
<u>30</u>

109.56
7.92

106.10
11.38
<u>30</u>

117.48 ✓



Elev. of Inlets + culverts along - w. cb.  
 Line of 38<sup>th</sup> - across Univ. Ave.  
 - curb face is Base line.

# 4221

W.O. 20659

0+14 = S. cb. of Univ.

345.32	344.98	345.12
5.06	5.40	5.26
38	38	29
Top	gut.	gut.

344.88	345.34	344.43	345.01	345.16	345.25	345.71
5.50	5.04	5.96	5.37	5.22	5.13	4.67
17	14.9	14.9	12	7		10
gut.	Top	± of 17	opening			
	cb.					

0+12.5 = 1' Rt. = ± of 2' x 2' Inlet Box - with Iron Grate

344.35	345.35	345.23	344.34
6.03	5.03	5.15	6.04
14.9	14.9	Top	1 = I.F.
I.E. of	Top of	Grate	of Box
Box	Lid.		

0+00 = S.L. Univ.

(1.7' x 1.7')  
with Iron lid.

344.34	345.41	344.16	344.27	345.37	345.62
6.04	4.97	6.22	6.11	5.01	4.76
gut.	Top	I.E. of	2.4	2.4	10
		Culvert.	gut.	Top	wall + Pav

0-05 = S.L. of 24' x 6' cb. Inlet.

344.15	345.21	344.16	345.37
6.23	5.17	6.20	5.01
gut.	Top	2.4 =	10
		end of	
		wall	

0-50

343.48	344.05	344.00
6.90	6.33	6.38
gut.	Top	10

0-100 = 100' S. of S.L. Univ.

342.14	342.14
8.24	7.64
gut.	Top

4.73 350.38

345.65 N.W.B.P.

38<sup>th</sup> + Univ.

350.38 ✓

W. cb. face - Base line

58

Rt. = E.

Lt. = W.

85.5 N. = N. end of Inlet.

80.5' N. = Nly. of Conc. Headwall to Inlet

80' N. = P.L.

0+67.5 - 1' Rt. =  $\pm$  of 2' x 2' Box inlet with Iron Grate

0+66 = N. cb.

0+54 = end new Cover

0+40 =  $\pm$  Univ.

0+25.5 = Beg. New C.L. Cover.

4

$\pm$  = cb. line Rt.

59

344.99	345.64	345.08	345.29	345.92
5.39	4.74	5.30	5.09	4.46
gut	Top	gut.	Top	10
			end of wall	

344.82	345.55	344.73	344.78	345.68	346.01
5.56	4.83	5.45	5.60	4.70	4.57
gut.	Top	1.2 =	2.2	2.2	10
	$\pm$ I.E. of	Conduit.	gut.	Top =	Cor. Inlet

344.61	345.68	345.65	344.74	345.98
5.77	4.70	4.73	5.64	4.40
14.8	14.8	Top of	1 =	10
I.E. of	Top of Iron	Grate	I.E. of	
Box	Cover to		Box	
	17' x 17' Box			

345.98	345.61
4.40	4.77
50	50
Top	gut.

345.56	344.96	344.82	345.67	345.44	345.66	345.69
4.82	5.42	5.56	4.71	4.94	4.79	4.69
16	16	14.8	12	12	7	
Top	gut.	gut.	Top	gut.		
		$\pm$ of 17'				
		opening in				
		cb.				

345.96
4.42
10

346.06
4.32
14

346.14
4.24

346.19
4.19
10

346.44
3.94
14

346.42
3.96

346.42
3.96
10

345.80
4.58
14

345.82
4.56

345.91
4.47
10

350.38 ✓

1+30 = end.

1+23.9 - 19.8 Lt. = £ 12" Diam. Gas Lid.

1+12.8 - 19.6 Lt. = £ 12" Diam. Gas intake Lid.

346.06 346.72  
4.32 3.66  
4+1. Top

346.83  
3.58  
19.6 =  
Top. 346.65  
3.73 = Top  
19.6

350.38 ✓

REDUCED 4-12-50 by AER.

00  
Elev. of Inlets + culverts along E. cb.  
of 38<sup>th</sup> - across Univ.

0+14 cont.

0+14

1<sup>1</sup>/<sub>2</sub> ft.  
0+12.1 = ± of 2x2 Box - Iron Grate  
14.7 ft. = ± of 17x17 Box - Iron Lid

0+00 = S.L. Univ. = Nly. of Inlet.

0-05 = sly. of Inlet.

0-50

0-100

Lt. = W.

a E. cb. line

pt. = E 61

345.47	345.80
4.91	4.58
50	50
gut.	Top

345.99	345.81	345.65	345.51	345.72	344.91	345.38	345.76
4.39	4.57	4.73	4.87	4.66	5.47	5.00	4.62
26	10		12	12	14.7	16	16
			gut.	Top	gut.	gut.	Top
					± of 17' opening		

345.78	344.60	345.52	345.75	344.77
4.60	5.78	4.86	4.63	5.61
10	IE of Box	Top Grate	Top of Lid	IE of Box

345.90	345.74	345.70	344.58	344.54	344.62	345.76
4.48	4.64	4.68	5.80	5.84	5.76	4.62
26	10	2.3	2.3	11 = I.E. of Culvert	gut.	Top

345.28	344.50	344.47	345.58
5.10	5.88	5.91	4.80
17	2.3	gut.	Top
	Cor. Pavc		

344.22	343.72	344.38
6.16	6.66	6.00
10	gut.	Top

342.48	343.12
7.90	7.26
gut.	Top

350.38 ✓ P. 60

0+80.9 = Nly. of Headwall to cb. Inlet  
 0+80

0+67.6 = 1' - Lt =  $\pm$  of 2'x2' Box Inlet - Grate - Iron

0+66 Cont.

0+66 = N. cb.

0+54 = end. Cover

0+40 =  $\pm$

0+25.5 = Beg. New Cover

Lt.

cb. line. (E)

Rt 62

346.31	346.09	346.03	345.20	345.12	345.22	346.02
4.07	4.31	4.35	5.18	5.26	5.16	4.36
26	10	22	22	11	9	10
		Top	gut.	I.E. of Culvert	9-ft.	Top

346.10	345.06	345.94	346.18	345.25
4.28	5.32	4.44	4.20	5.13
10	1	15	15	15
	I.E. of Box	Top - $\pm$ of 17'x17' Box Iron lid	15' I.E. of Box	

346.12	345.75	346.22
4.26	4.63	4.16
17	50	50
Top	gut.	Top

346.29	346.11	345.97	345.85	345.48	346.18	345.25	345.47
4.09	4.27	4.41	4.53	4.90	4.20	5.13	4.91
26	10	9	14	14	15	17	17
			gut.	Top	gut.	$\pm$ 1.7' Opening	gut.

346.28	346.25	346.23	346.17
4.10	4.13	4.15	4.21
26	10		14

346.46	346.50	346.53	346.54
3.92	3.88	3.85	3.84
26	10		14

346.06	346.09	346.07	346.03
4.32	4.29	4.31	4.35
26	10		14

350.28 ✓

1+30

0+85.9 = Nly. of Inlet.

346.12

4.26

10

345.43

4.95

2.2  
Top  
end of  
wall

345.23

5.15

2.2  
9.4

345.25

5.13

9.4

346.09

4.29

Top

346.33

4.05

9.4

346.99

3.39

Top

350.38 ✓

REDUCED 4-12-50 BY AEL

N+S Alley BIK 15 Pt. Loma Hgts

Sommermayor  
Begg  
Shepard  
oltman

6-June '51  
N.O. 31743

Additional notes

See pages 19+24 for Orig. Notes;

Nail in Pole # P.A 1925

T.P. 0.94 90.66 8.57 89.72 = T.P.#1

1+45

1+30

use these notes  
for yardage

1+00

0+50

0+10

0+00

Nly. Aliphant

1.38 98.29

9691 = B.M. "A"

INDEXED  
JUN 7 1951

89.4 89.2 89.6  
8.9 9.1 8.7  
75 75 75

90.7 90.4 90.2 90.6  
7.5 7.9 8.1 7.7  
75 6 75

92.0 92.0 91.5 91.2 91.4 91.8 91.5  
6.3 6.3 6.8 7.1 6.9 6.5 6.8  
10 75 5 6 75 10

93.9 93.7 93.3 93.3 93.7 94.2 94.2  
4.4 4.6 5.0 5.0 4.6 4.1 4.1  
10 75 5 6 75 10

96.3 96.3 96.9 96.1 96.1 96.5  
2.0 2.0 2.4 2.2 2.2 1.8  
10 75 7 75 8

96.61 96.1 96.2 96.4 96.61  
1.68 2.2 2.1 1.9 1.68  
Prop. Pavc Gr. 75 75  
pave grade

Ch end 75 ft. 0+00 Page 24. (on L+T)



Alley BIK 15 Pt Lorna Hqts  
 Also Alley BIK 16 Pt. Lorna Hqts

0-10<sup>5</sup> 4' Mt. = Ctr. 4'x4' storm drain C.O.

4.72 85.77 8.78 81.05 T.P. end of  
7340100

0.11 89.83 - 89.72 T.P.#1  
P 64

£ = sly. edge conc. gutter

~~0-12~~ 7Ry } = Δ 17 sly line conc. gutter  
~~3+23~~ 29'4"

~~0-13~~ 11 Mt. } warona N.W. side driphant  
~~3+22~~ 3A' Lt. } = Δ 17 sly line conc. gutter

Start BIK 16.

2+88 End conc. gutter

2+85 17 Conc. gutter

2+83<sup>1</sup> - start conc. cross gutter

4

66

IMPROVED  
 JUL 8 1951

90.69 90.81 90.82  
 5.08 4.96 4.95  
 2 6  
 wly Ely edge  
 Edge

85.77

90.10 90.64 90.84  
 10.56 10.02 9.82  
 29 7

90.14 90.87 92.73  
 10.52 9.79 7.93  
 34 11 38

81.59 81.67 81.76  
 9.07 8.99 8.88  
 75 75

81.58 81.50 81.53  
 9.28 9.16 9.13  
 75 75

82.30 81.63 81.73 81.82 82.46  
 8.36 9.03 8.93 8.84 8.20  
 75 75 74 74  
 6 6 6 6

90.66

0+30 7<sup>2</sup> Rt = start conc. cobble wall

0+19<sup>6</sup> 8<sup>L</sup> Rt. = start 1<sup>5</sup>' wide N.Y.S. Conc. walk

use these notes for  
Yardage

0+19<sup>5</sup> 7<sup>2</sup> Rt. = end conc. cobble wall.

B.W. = Base of wall

T.W. = top of wall

7<sup>5</sup> Rt. = Face conc. cobble wall

7<sup>2</sup> Lt. }  
7<sup>5</sup> Rt. } = End alley curbs

0+00 = Nly. line Wawona

0-0<sup>2</sup> 7<sup>2</sup> = start 1' high Cobble Conc. wall on curb.

0-07<sup>5</sup> 7<sup>5</sup> Lt. }  
7<sup>2</sup> Lt. } = E.C. 2<sup>5</sup>' Rad. cb. Ret.

0-08 Nly edge Conc. gutter

18<sup>8</sup> Lt. = Ely end curb inlet  
10' Lt. }  
10' Rt. } = B.C. 2<sup>5</sup>' cb Ret

0-10 = Nly cb. line Wawona

80.9 81.6  
4.9 4.2  
7<sup>2</sup> 7<sup>2</sup>  
B.W. T.W.

80.2 80.3 80.3 81.7 81.62 81.67  
5.6 5.5 5.5 4.1 4.15 4.10  
7<sup>5</sup> 5 7<sup>5</sup> 8<sup>L</sup> 9<sup>5</sup>  
walk walk

80.7 79.7 82.3  
5.1 6.1 3.5  
7<sup>2</sup> 7<sup>2</sup> 7<sup>2</sup>  
B.W. T.W.

81.1 81.05 80.9 81.1 81.2 81.54 81.2 82.5 82.5  
4.7 4.72 4.9 4.7 4.6 4.23 4.6 3.3 3.3  
10 7<sup>2</sup> 7<sup>2</sup> 7<sup>2</sup> 7<sup>2</sup> 7<sup>2</sup> 7<sup>2</sup> 7<sup>2</sup> 15  
cb B.W. T.W.

81.00 80.5 80.8 81.47  
4.77 5.3 5.0 4.30  
7<sup>2</sup> 7<sup>2</sup> 7<sup>5</sup> 7<sup>5</sup>  
cb cb

80.99 80.42 80.67 80.83 81.48  
4.78 5.35 5.10 4.94 4.29  
7<sup>2</sup> 7<sup>2</sup> 7<sup>5</sup> 7<sup>5</sup>  
cb G G cb

80.87 80.05 80.90 80.34 80.71 80.76 81.47 81.90 82.85  
4.90 5.72 4.87 5.43 5.06 5.01 4.30 3.87 2.92  
18<sup>8</sup> 18<sup>8</sup> 10 10 10 10 10 30 30  
cb G cb G G cb G cb

85.77

0+95 22 Lt. = start conc. drive

0+89 6<sup>2</sup> Rt. =  $\frac{1}{2}$  E+W. Cobble Conc. wall.

0+70 7<sup>0</sup> Rt. = line of fence

0+46 7<sup>2</sup> Rt. = end Conc. walk  
7<sup>4</sup> Rt. = start 6' high board fence

0+44<sup>7</sup> 8<sup>1</sup> Rt. =  $\Delta$  in wly line walk

0+39 7<sup>1</sup> Lt. = Back edge Pole # J.P.A. 1953

0+34<sup>E</sup> 8<sup>0</sup> Rt. = start 1<sup>5</sup> wide Conc. walk

0+34<sup>E</sup> 8<sup>0</sup> Rt. = End Conc. walk.  
7<sup>2</sup> Rt. = { also = Nly. Face E+W. Conc. wall  
End Cobble Conc. wall

17.87 77.71  
7.90 8.06  
37 22  
Car. Floor Dr.

17.4 76.4 79.0  
8.4 9.4 6.8  
6.2 6.9  
B.W. T.W.

18.1 77.8 78.0 79.0  
7.7 8.0 7.8 6.8  
7<sup>E</sup> 6 7<sup>E</sup>

19.6 79.0 79.5 79.9 80.3 80.39 80.45  
6.2 6.8 6.3 5.9 5.5 5.38 5.32  
7<sup>E</sup> 6 7<sup>E</sup> 7<sup>E</sup> 7<sup>E</sup> 7<sup>E</sup> walk

80.44  
5.33  
8.1

19.9 79.5 79.9 80.5 80.58 80.63  
5.9 6.3 5.9 5.3 5.19 5.14  
7<sup>E</sup> 6 7<sup>E</sup> 8 9<sup>E</sup>  
walk

19.9 79.5 80.0 80.9 79.8 81.7 81.62  
5.9 6.3 5.8 4.9 6.0 4.1 4.15  
7<sup>E</sup> 6 7<sup>E</sup> 7<sup>E</sup> 7<sup>E</sup> 8<sup>0</sup>  
B.W. T.W. walk

85.77

1467 8<sup>6</sup> Lt. = Δ to left in wall

+59 7<sup>5</sup> Rt. = Face of wall

1+55 7<sup>1</sup> Lt. start conc. wall

1+45 7<sup>1</sup> Rt. = also = start N+S. Conc. block wall  
Sly. face E+W. Conc. Block wall

T.P. 1.81 77.82 9.76 76.01 Nail in pole # P.A. 1975

1+40 7<sup>2</sup> Lt. = pole # P.A. 1975

1+31 37 Lt. = double Car. Conc. floor

1+30 6<sup>8</sup> Rt. = end board fence.  
Sly. line E+W. Alley to east

1+10 22' Lt. = end Conc. drive

1+00 7<sup>0</sup> Rt. = line of fence

75.3	74.2	74.4
2.5	3.6	3.4
8 <sup>5</sup>	8 <sup>5</sup>	8 <sup>5</sup>
T.W	B.W	8 <sup>5</sup>

75.4	74.4	74.4
2.4	3.4	3.4
7 <sup>2</sup>	7 <sup>2</sup>	7 <sup>2</sup>
T.W	B.W	End

75.3	74.7	74.4	74.5	74.3	75.8	74.8
2.5	3.1	3.4	3.3	3.5	2.0	3.0
7 <sup>5</sup>	6		7 <sup>1</sup>	7 <sup>2</sup>	7 <sup>1</sup>	7 <sup>5</sup>
				B.W	T.W.	

77.82

76.23  
9.54  
37  
Car. floor

75.1	75.2	74.9	75.1	75.7
10.1	10.6	10.9	10.7	10.1
7 <sup>5</sup>	6		6	7 <sup>5</sup>

77.87  
7.90  
37  
Car. Floor

77.63  
8.14  
22  
drive

77.0	76.5	76.3	76.4
8.8	9.3	9.5	9.4
7 <sup>5</sup>	6		7 <sup>5</sup>

85.77

T.P. 4.60 76.07 6.35 71.47

2+79 5' RT. & 18' x 4' catch basin

71.22 71.14 71.86  
6.60 6.68 5.96  
5' 6' 6'  
lip grate cd

6' RT. = Face of cd.  
8' Lt. = end pipe + wire fence

2+75 7' Lt. = start alley cd

72.32 71.7 71.3 71.2 71.94 73.4  
5.50 6.1 6.5 6.6 5.88 4.4  
7' 7' 6' 6' 7' 7'  
cd. top curb T.W.

2+37 9' Lt. = pipe + wire fence.

7' RT. = Face of wall

2+35 6' RT. = start alloy curb

73.0 72.6 72.3 72.3 72.57 72.3 71.5 72.5  
4.8 5.2 5.5 5.5 5.25 5.5 6.3 4.7  
7' 6' 6' 6' 6' 7' 7' 7'  
CG R.W. T.W.

2+29 15' Lt. = end conc. drive

73.71  
4.11  
15

2+20 15' Lt. = start conc. drive

75.22 73.77  
2.60 4.05  
3' 15'  
Gar. floor

22' Lt. = end conc. drive

74.99 73.7 73.3 73.5 72.4 74.1  
2.83 4.1 4.5 4.3 5.4 3.7  
22' 7' 7' 7' 7' 7'  
drive floor T.W.

1+90 7' RT. = Face of wall

1+75 22' Lt. = end conc. wall  
= start conc. drive

75.87 75.13  
1.95 2.69  
3' 22'  
Gar. floor drive

77.82

			0.54	114.86	(114.82)
T.P.	11.55	115.140	1.20	103.85	
B.M. "A"					
P 64	8.16	105.05	1.51	96.89	(96.91)
T.P. #1					
P. 64	8.66	98.40	0.88	89.74	(89.72)
T.P.	9.55	90.62	4.81	81.07	(81.05)
T.P.	1.58	85.88	2.75	84.30	
T.P.	8.96	87.05	1.72	78.09	
T.P.	7.07	79.81	3.33	72.74	Nail in pole P3675

2+88 = Nly edge conc. gutter

2+85 = sly. cb. line poc  
wly cor. 2<sup>5</sup> X 2<sup>5</sup> drain clean. out. grate on

2+83 = sly edge conc. gutter

2+82<sup>5</sup> 7<sup>5</sup> Lt. = B.C. 2<sup>5</sup> Rad. w. Rot.

2+81 6<sup>9</sup> Rt. = B.C. 4' Rad. cb. Rot.

Page 20 Poe + Chatsworth. & do not check with B.M. on

These Elev. from F.B.  $\frac{1822}{28}$  Page 20<sup>book</sup> this

End of 7<sup>5</sup> Lt. 0+00 P 66

Sly. B.P. Poe + Chatsworth

72.27	71.47	71.29	71.12	70.65
3.80	4.60	4.78	4.95	5.42
30	75		75	30

73.06	72.12	72.23	71.32	71.14	70.87	71.70	70.41	71.36
3.01	3.95	3.84	4.75	4.93	5.20	4.37	5.66	4.71
30	30	10	10		109	109	30	30
cc	G	cc	G		G	cc	G	cc
		E.C.				E.C.		

72.21	71.63	71.43	71.20	71.85
3.80	4.44	4.64	4.87	4.22
75	75		75	75
cc	G		G	cc

72.22	71.6
3.85	4.5
75	75
cc	

71.16	71.86
4.91	4.21
69	69
Top	cl

76.07 Catch basin





X-SEC'S OLNEY ST. CONT'D.

1+00 2" Pine 7' High 39' Rt.

0+98  $\phi$  Car Port 18' Wide on Lt. Gravel Base

0+92  $\phi$  3" Pine 7' High 39' Rt.

0+88  $\phi$  3' Conc. Slab Porch Stoop on Lt.

0+84  $\phi$  2" Pine 5' High 39' Rt.

0+76  $\phi$  2.5' Conc. Walk on Rt.

0+73  $\phi$  2" Pine 6' High 39' Rt.

0+72  $\phi$  3.5' Conc Walk on Lt.

0+65 End 2-Car Gar on Lt.

0+50 5/4 line 2-Car Gar on Lt.

70.74

8-19-53

74

	Lt.	$\phi$	Rt.
	622	622	634
	7.8 50	7.9 40	7.1 50
	625	622	632
	7.9 39.8	7.8 15	6.6 40
	628	622	634
	7.86 39.8	7.9 19	7.1 50
	Top Conc Slab		
	627	630	634
	8.27 39.6	7.04 30.4	7.31 40.4
	Top Walk	Conc Walk Top Walk	
	628	622	634
	7.91 41.2		
	Conc Floor		
	628	622	634
	7.90 41.0	8.2 40	8.3 60
	602	602	622
	10.3 21	10.0 15	8.4 40
	594	594	622
	11.3 19	11.3 13	8.4 40
	594	594	622
	11.1 10	11.3 11	8.4 40
	602	602	622
	10.0 15	10.0 22	8.4 40
	622	622	622
	8.4 40	8.3 60	8.3 60

70.74

X-SEC'S OLNEY ST. CONTD.

1+45 Nly Line Alley Cor 3' Picket fence 40' Rt.

1+35 & Alley Sec.

1+26 Top Sec

1+25 Top Sec, 5/4 Line Alley,  
& Lateral Conk Blk Wall 4' High on Lt.

1+25 4' Lateral Picket fence 34' Rt.

1+23<sup>5</sup> & P. Pole No P. 4629 22' Lt.

1+10 & 3' Conc Slab, Porch Stoop on Lt.

70.74

8-19-53

Lt

±

Rt

75

67 <sup>2</sup>	67 <sup>±</sup>	66 <sup>±</sup>	65 <sup>±</sup>	65 <sup>±</sup>	65 <sup>±</sup>	65 <sup>±</sup>	65 <sup>±</sup>	65 <sup>±</sup>	65 <sup>±</sup>
3.0	3.3	4.2	5.5	5.0	5.5	5.7	5.0	5.7	6.2
50	40	23	18	0	8	17	24	40	50
			Get.						

67 <sup>±</sup>	66 <sup>±</sup>	65 <sup>±</sup>	64 <sup>±</sup>	65 <sup>±</sup>	65 <sup>±</sup>	64 <sup>±</sup>	64 <sup>±</sup>	65 <sup>±</sup>	64 <sup>±</sup>	64 <sup>±</sup>
3.5	3.9	4.9	6.1	5.22	5.2	5.9	6.0	5.7	6.2	6.5
50	40	24	19	11	0	9	17	19	40	50
			Get.	E.M.H.	E.R.M.					

67 <sup>±</sup>	66 <sup>±</sup>	65 <sup>±</sup>	63 <sup>±</sup>	64 <sup>±</sup>	64 <sup>±</sup>	64 <sup>±</sup>	64 <sup>±</sup>	64 <sup>±</sup>
3.7	4.4	5.4	6.7	5.8	6.5	5.8	6.1	6.6
50	40	22	19	0	16	23	40	50

67 <sup>±</sup>	63 <sup>±</sup>	64 <sup>±</sup>	63 <sup>±</sup>	64 <sup>±</sup>	64 <sup>±</sup>	64 <sup>±</sup>	64 <sup>±</sup>	64 <sup>±</sup>
3.32	7.6	7.7	16.1	6.8	5.8	6.5	5.8	6.1
40	40	23	18	0	16	23	40	50
		Top Wall	Conk Wall					

7.55  
50  
on Walk

62.22  
7.75  
39.8  
Conc Slab

70.74

X-SEC'S OLNEY ST. CONTD

2+47 & 12" Tree 20' Spread 37.5' Lt.

2+16 & 12" Tree With 20' Spread 37' Lt.

2+07 End 3' Woven Wire & Begin 4' Woven Wire 40' Lt.  
TP. 8.47 77.73 - 1.48 69.26

2+00

1+68 Begin 3' Woven Wire fence 40' Lt.

1+65 & 3.5' Conc Walk

1+56

70.74

8-19-53

Lt.

±

Rt

76

Top Prop Car Pipe S.E. Cor Emerald & Olney Streets

70 <sup>±</sup>	70 <sup>±</sup>	69 <sup>±</sup>	66 <sup>±</sup>	67 <sup>±</sup>	66 <sup>±</sup>	67 <sup>±</sup>	66 <sup>±</sup>	67 <sup>±</sup>
0.3	0.5	1.5	3.8	3.4	4.1	3.6	3.8	3.6
50	40	23	20	0	19	24	40	50
			cut					
69 <sup>±</sup>	69 <sup>±</sup>							
1.43	1.68							
49 <sup>±</sup>	39 <sup>±</sup>							
68 <sup>±</sup>	67 <sup>±</sup>	66 <sup>±</sup>	65 <sup>±</sup>	65 <sup>±</sup>	65 <sup>±</sup>	65 <sup>±</sup>	65 <sup>±</sup>	65 <sup>±</sup>
2.4	2.9	4.0	5.3	4.9	5.3	5.6	5.2	4.8
50	40	22	19	0	8	17	20	26
						cut		
								54
								55
								50

70.74

X-SEC'S OLNEY ST. CONT'D.

NOTE: For Curb Return Elev's

See Pg. 72

2+69.85 Skyline Erievald End's Bkct fence 40' Lt.  
End's Woven Wire 40' Lt.

2+67 ± 12" P.P.N. P-4648 20.3 Lt.

2+50

77.73

8-19-53

Lt.

±

Rt.

77

73 <sup>4</sup>	73 <sup>0</sup>	73 <sup>2</sup>	69 <sup>7</sup>	69 <sup>2</sup>	69 <sup>1</sup>	69 <sup>2</sup>	69 <sup>2</sup>	69 <sup>2</sup>
4.3	4.7	6.2	8.0	8.4	8.4	8.0	8.4	8.7
50	40	23	21	0	17	19	40	50

73.0	72 <sup>6</sup>	71 <sup>2</sup>	69 <sup>1</sup>	68 <sup>6</sup>	68 <sup>2</sup>	69 <sup>0</sup>	68 <sup>2</sup>	58 <sup>9</sup>
4.6	5.1	6.4	8.6	9.1	9.4	8.7	9.0	9.2
50	40	24	19	0	20	22	40	50

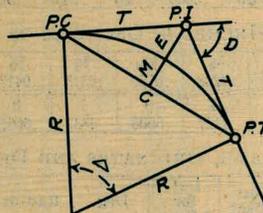
77.73





# DIETZGEN'S RAILROAD CURVE AND REDUCTION TABLES

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## CURVE FORMULAS

Radius— $R = \frac{50}{\sin \frac{D}{2}}$  (1) Degree of Curve= $D$  and  $\sin \frac{D}{2} = \frac{50}{R}$  (2)

Tangent— $T = R \tan \frac{\Delta}{2}$  (3) Length of Curve— $L = 100 \frac{\Delta}{D}$  (4)

Middle ordinate— $M = R(1 - \cos \frac{\Delta}{2})$  (5)  $= R \text{vers} \frac{\Delta}{2}$  (6)

External— $E = T \tan \frac{\Delta}{4}$  (7)  $= R \div \cos \frac{\Delta}{2} - R$  (8)  $= R \text{exsec} \frac{\Delta}{2}$  (9)

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

## EXPLANATION AND USE OF TABLES

**Stations.**—Given P. I. = Sta. 161+60.35 to find Sta. of P. C. and P. T.  $\Delta = 62^\circ 10'$   $D = 8^\circ 20'$ . From Table IV for  $1^\circ$  curve  $T = 3454.1$  and  $\div 8\frac{1}{3} = 414.49$  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 =  $7.27 (54.50 \div 100)^2 = 2.16$  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 =  $\frac{1}{2} D$  for 100 ft.,  $\frac{1}{4} D$  for 50 ft., etc. For  $c$  ft. = (in minutes)  $.3 \times C \times D^\circ$  or = defl. for 1 ft. from Table III  $\times C$ . For Sta. 158 of above curve =  $.3 \times 54.5 \times 8\frac{1}{3} = 136.2'$  or  $2^\circ 16.2'$ , or =  $2.50 \times 54.5 = 136.2'$  from Table III. For Sta. 159 deflection angle =  $2^\circ 16.2' + 8^\circ 20' \div 2 = 6^\circ 26.2'$ , etc.

**Externals.**—May be found in similar manner to tangents. Thus  $E$  for curve above is 115.37. For from Table IV for  $1^\circ$  curve  $E = 960.6$  for  $8^\circ 20' = 960.6 \div 8\frac{1}{3} = 115.27$  and from Table V correction = .10 or  $E = 115.37$  ft. Or suppose  $\Delta = 32^\circ$  and  $E$  is measured and found to be 42 ft. What is  $D$ ? From Table IV  $E = 230.9$  and  $\div 42 = 5.5$  or  $D = 5^\circ 30'$ .

INDEXED  
AUG 20 1953

TABLE I.—MINUTES IN DECIMALS OF A DEGREE.

1'	.0167	11'	.1833	21'	.3500	31'	.5167	41'	.6833	51'	.8500
2	.0333	12	.2000	22	.3667	32	.5333	42	.7000	52	.8667
3	.0500	13	.2167	23	.3833	33	.5500	43	.7167	53	.8833
4	.0667	14	.2333	24	.4000	34	.5667	44	.7333	54	.9000
5	.0833	15	.2500	25	.4167	35	.5833	45	.7500	55	.9167
6	.1000	16	.2667	26	.4333	36	.6000	46	.7667	56	.9333
7	.1167	17	.2833	27	.4500	37	.6167	47	.7833	57	.9500
8	.1333	18	.3000	28	.4667	38	.6333	48	.8000	58	.9667
9	.1500	19	.3167	29	.4833	39	.6500	49	.8167	59	.9833
10	.1667	20	.3333	30	.5000	40	.6667	50	.8333	60	1.0000

TABLE II.—INCHES IN DECIMALS OF A FOOT.

1/16	1/32	1/8	3/16	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8
.0052	.0078	.0104	.0156	.0208	.0260	.0313	.0417	.0521	.0625	.0729	.0833
1	2	3	4	5	6	7	8	9	10	11	12
.0833	.1667	.2500	.3333	.4167	.5000	.5833	.6667	.7500	.8333	.9167	1.0000

TABLE III.—RADI, ORDINATES AND DEFLECTIONS.

Deg.	Radius	Mid. Ord.	Tan Offset	Def. for 1 Foot	Deg.	Radius	Mid. Ord.	Tan Offset	Def. for 1 Foot
0° 10'	34377.5	.036	.145	0.05	7°	819.02	1.528	6.105	2.10
20	17188.8	.073	.291	0.10	20	781.84	1.600	6.395	2.20
30	11459.2	.109	.436	0.15	30	764.49	1.637	6.540	2.25
40	8594.42	.145	.582	0.20	40	747.89	1.673	6.685	2.30
50	6875.55	.182	.727	0.25	50	731.88	1.708	6.830	2.35
1 10	5729.65	.218	.873	0.30	8 20	688.16	1.819	7.266	2.50
20	4911.15	.255	1.018	0.35	30	674.69	1.855	7.411	2.55
30	4297.28	.291	1.164	0.40	40	661.74	1.892	7.556	2.60
40	3819.83	.327	1.309	0.45	50	649.31	1.928	7.701	2.65
50	3437.87	.364	1.454	0.50	6 20	637.28	1.965	7.846	2.70
1 20	3125.36	.400	1.600	0.55	30	614.56	2.037	8.136	2.80
30	2864.93	.436	1.745	0.60	40	603.80	2.074	8.281	2.85
40	2644.58	.473	1.891	0.65	50	593.42	2.110	8.426	2.90
50	2455.70	.509	2.036	0.70	6 30	573.69	2.183	8.716	3.00
1 30	2292.01	.545	2.181	0.75	40	546.44	2.292	9.150	3.15
40	2148.79	.582	2.327	0.80	50	521.67	2.402	9.585	3.30
50	2022.41	.618	2.472	0.85	6 40	499.06	2.511	10.02	3.45
2 10	1910.08	.655	2.618	0.90	30	478.34	2.620	10.45	3.60
20	1809.57	.691	2.763	0.95	40	459.28	2.730	10.89	3.75
30	1719.12	.727	2.908	1.00	50	441.68	2.839	11.32	3.90
40	1637.28	.764	3.054	1.05	6 50	425.40	2.949	11.75	4.05
50	1562.88	.800	3.199	1.10	7 10	410.28	3.058	12.18	4.20
1 40	1494.95	.836	3.345	1.15	30	396.20	3.168	12.62	4.35
2 20	1432.69	.873	3.490	1.20	40	383.07	3.277	13.05	4.50
30	1375.40	.909	3.635	1.25	50	370.78	3.387	13.49	4.65
40	1322.53	.945	3.718	1.30	6 10	359.27	3.496	13.92	4.80
50	1273.57	.982	3.926	1.35	20	348.45	3.606	14.35	4.95
1 50	1228.11	1.018	4.071	1.40	30	338.27	3.716	14.78	5.10
2 30	1185.78	1.055	4.217	1.45	40	319.62	3.935	15.64	5.40
3 10	1146.28	1.091	4.362	1.50	50	302.94	4.155	16.51	5.70
20	1109.33	1.127	4.507	1.55	6 20	287.94	4.374	17.37	6.00
30	1074.68	1.164	4.653	1.60	30	274.37	4.594	18.22	6.30
40	1042.14	1.200	4.798	1.65	40	262.04	4.814	19.08	6.60
50	1011.51	1.237	4.943	1.70	50	250.79	5.035	19.94	6.90
1 60	982.64	1.273	5.088	1.75	6 30	240.49	5.255	20.79	7.20
2 40	955.37	1.309	5.234	1.80	7 40	231.01	5.476	21.64	7.50
30	929.57	1.346	5.379	1.85	8 50	222.27	5.697	22.50	7.80
40	905.13	1.382	5.524	1.90	9 10	214.18	5.918	23.35	8.10
50	881.95	1.418	5.669	1.95	10 20	206.68	6.139	24.19	8.40
1 70	859.92	1.455	5.814	2.00	30	199.70	6.360	25.04	8.70
2 50					40	193.18	6.583	25.88	9.00

NOTE. Chord Deflection=2 times tangent deflection.

TABLE IV.—TANGENTS AND EXTERNALS TO A 1° CURVE.

Central Angle	Tangent	External	Central Angle	Tangent	External	Central Angle	Tangent	External
1°	50.00	.22	11°	551.70	26.50	21°	1061.9	97.57
10'	58.34	.30	10'	560.11	27.31	10'	1070.6	99.16
20	66.67	.39	20	568.53	28.14	20	1079.2	100.75
30	75.01	.49	30	576.95	28.97	30	1087.8	102.35
40	83.34	.61	40	585.36	29.82	40	1096.4	103.97
50	91.68	.73	50	593.79	30.68	50	1105.1	105.60
2 10	100.01	.87	12	602.21	31.56	22	1113.7	107.24
20	108.35	1.02	10	610.64	32.45	10	1122.4	108.90
30	116.68	1.19	20	619.07	33.35	20	1131.0	110.57
40	125.02	1.36	30	627.50	34.26	30	1139.7	112.25
50	133.36	1.55	40	635.93	35.18	40	1148.4	113.95
1 10	141.70	1.75	50	644.37	36.12	50	1157.0	115.66
2 20	150.04	1.96	13	652.81	37.07	23	1165.7	117.38
30	158.38	2.19	10	661.25	38.03	10	1174.4	119.12
40	166.72	2.43	20	669.70	39.01	20	1183.1	120.87
50	175.06	2.67	30	678.15	39.99	30	1191.8	122.63
1 20	183.40	2.93	40	686.60	40.99	40	1200.5	124.41
30	191.74	3.21	50	695.06	42.00	50	1209.2	126.20
4 10	200.08	3.49	14	703.51	43.03	24	1217.9	128.00
20	208.43	3.79	10	711.97	44.07	10	1226.6	129.82
30	216.77	4.10	20	720.44	45.12	20	1235.3	131.65
40	225.12	4.42	30	728.90	46.18	30	1244.0	133.50
50	233.47	4.76	40	737.37	47.25	40	1252.8	135.35
1 30	241.81	5.10	50	745.85	48.34	50	1261.5	137.23
2 40	250.16	5.46	15	754.32	49.44	25	1270.2	139.11
30	258.51	5.83	10	762.80	50.55	10	1279.0	141.01
40	266.86	6.21	20	771.29	51.68	20	1287.7	142.93
50	275.21	6.61	30	779.77	52.89	30	1296.5	144.85
1 40	283.57	7.01	40	788.26	53.97	40	1305.3	146.79
2 50	291.92	7.43	50	796.75	55.13	50	1314.0	148.75
3 10	300.28	7.86	16	805.25	56.31	26	1322.8	150.71
20	308.64	8.31	10	813.75	57.50	10	1331.6	152.69
30	316.99	8.76	20	822.25	58.70	20	1340.4	154.69
40	325.35	9.23	30	830.76	59.91	30	1349.2	156.70
50	333.71	9.71	40	839.27	61.14	40	1358.0	158.72
1 50	342.08	10.20	50	847.78	62.38	50	1366.8	160.76
2 60	350.44	10.71	17	856.30	63.63	27	1375.6	162.81
30	358.81	11.22	10	864.82	64.90	10	1384.4	164.86
40	367.17	11.75	20	873.35	66.18	20	1393.2	166.95
50	375.54	12.29	30	881.88	67.47	30	1402.0	169.04
1 60	383.91	12.85	40	890.41	68.77	40	1410.9	171.15
2 70	392.28	13.41	50	898.95	70.09	50	1419.7	173.27
3 20	400.66	13.99	18	907.49	71.42	28	1428.6	175.41
30	409.03	14.58	10	916.03	72.76	10	1437.4	177.55
40	417.41	15.18	20	924.58	74.12	20	1446.3	179.72
50	425.79	15.80	30	933.13	75.49	30	1455.1	181.89
1 70	434.17	16.43	40	941.69	76.86	40	1464.0	184.08
2 80	442.55	17.07	50	950.25	78.26	50	1472.9	186.29
3 30	450.93	17.72	19	958.81	79.67	29	1481.8	188.51
40	459.32	18.38	10	967.38	81.09	10	1490.7	190.74
50	467.71	19.06	20	975.96	82.53	20	1499.6	192.99
1 80	476.10	19.75	30	984.53	83.97	30	1508.5	195.25
2 90	484.49	20.45	40	993.12	85.43	40	1517.4	197.53
3 40	492.88	21.16	50	1001.7	86.90	50	1526.3	199.82
4 50	501.28	21.89	20	1010.3	88.39	30	1535.3	202.12
50	509.68	22.62	10	1018.9	89.89	10	1544.2	204.44
1 90	518.08	23.38	20	1027.5	91.40	20	1553.1	206.77
2 100	526.48	24.14	30	1036.1	92.92	30	1562.1	209.12
3 50	534.89	24.91	40	1044.7	94.46	40	1571.0	211.48
4 60	543.29	25.70	50	1053.3	96.01	50	1580.0	213.86

60198

48  
25  
---  
23

4.81

DISTANCES FROM CENTER OF ROADWAY FOR  
CROSS-SECTIONING.

Roadway 16 feet wide. Side Slopes 1 on 1 1/2  
For Single Track Embankment.

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

Example—If point is 22.6 ft. above grade, how far should it be from center line to be a slope stake point? Ans. from Table 41.9. For 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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