EL CAPITAN
Pipe Line Survey
Line and Level Revisions

W191

Preliminary Survey El Capitan Pipe Line

①

	ang	Brng	Dst	Mag
Forward	Hub 34°03'R	N. G		S38°35'W
148+87.6	= 150+85		87.6	
+78				
8				
7				
6				
5				
4				
3				
1				
142+0				
+22				
+20				
+04		S29°03'W		
Sta 141+00	35°55'R			S14°35'W
139+50				
		S6°52'E		

Relocation Sta 141+0 to 150+85 /
Dec 30 - 1925

℄

Barin
Ruplinger
Simpson
Reynolds

148+87.6 New = 150+85 old

Edar Rd
" Rd

℄

(P)

Levels on Revised Line
Sta 141+00 to 148+87.6 = 150+85

B.M.				503.054
	2.720	505.774		
TP			0.060	505.714
	4.050	509.764		
141+00			3.4	506.4 ✓
+22			2.9	.9
142+00			4.3	505.5 ✓
143+00			4.9	504.9 ✓
144+00			4.9	504.9 ✓
TP			4.948	504.816
	6.010	510.826		
145+00			7.1	503.7 ✓
146+00			9.5	501.2 ✓
147+00			10.0	500.8 ✓
148+00			9.2	501.6 ✓
148+876	+150+85 of old line		7.9	502.9 ✓
B.M. near	Sta 149		1.585	509.241

← Record Elev

509.255

Nail on Power pole Left Sta 134+0

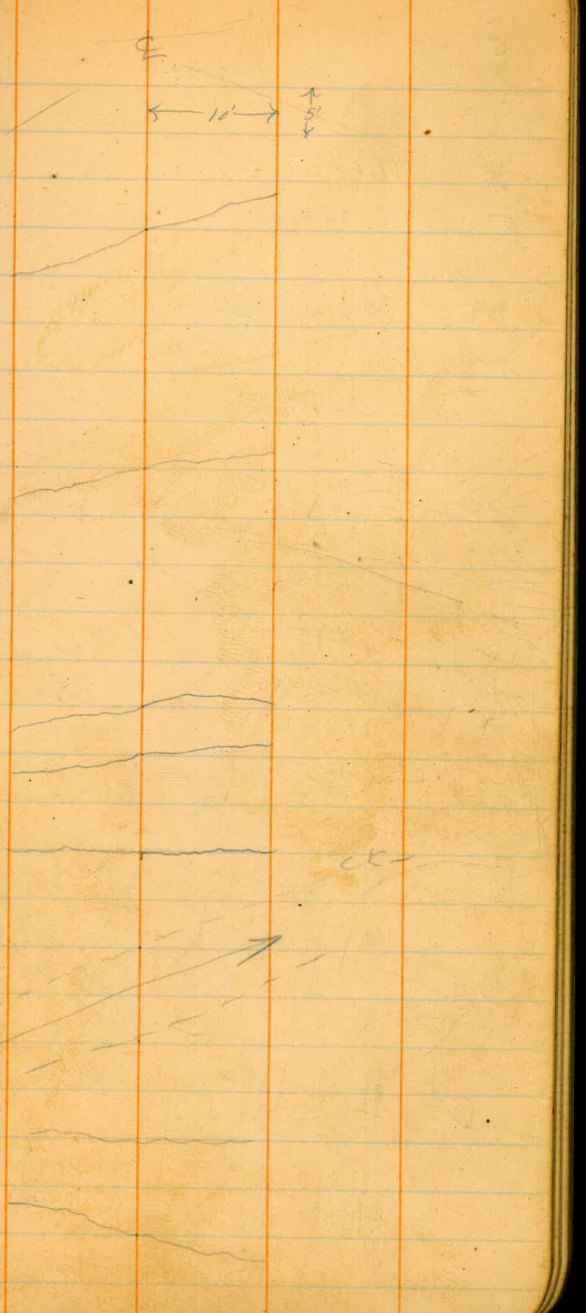
(3)

Sta	−	+	H.I.	−	Elev
B.M.	Sta 98 & +00 – Hub.				333.390
	6.55 N	339.94 N			
0+00 P.C.		981+89 6	3.8		336.1
+25		982+ 1 46	5.0		334.9 ✓
+50		" + 39 6	5.8		334.1 ✓
+75		" + 64 6	5.5		334.4 ✓
1+00		" + 89 6	5.3		334.6
+25		983+ 1 46	4.7		335.2 check
+50		" + 39 6	4.6		335.3
+75		+ 64 6	6.5		333.4
2+00		983+89 6	10.5		329.4
~~T.P.~~			~~11.644~~		~~328.298~~ ✓
		~~329.405~~			
	1.107	~~329.405~~			
~~2+25~~			4.1		
T.P.			~~11.706~~	~~317.699~~	~~327.699~~ ✓
T.P.			11.644		328.298 ✓
	0.284	328.582			
2+25		98H+ 1 46 ✓	3.3		325.3
T.P.			10.525		318.057
	1.092	319.149			
+50		98H+~~89~~ 64 6	2.5		316.6
+75		" +~~89~~ 64 6	10.1		309.0
T.P.			11.324		307.825 ✓
	0.703	308.028			
3+00		984+89 6	7.7		300.3
	8.131		33493		

Bissell – Reynolds – Ruplinger – 1/4 = 5-6-7 / 36

33.493
8.131
25.362
.203
25.565
333.390
307.825

(5)		308.028		307.52
Sta	0.203 +	π	−	Elev.
T.P.			11.793	296.235
	0.396	296.631		
3+30 E.C.	985+19.5		7.8	288.8
T.P.			10.946	285.685
	1.988	287.673		
T.P.			11.508	276.165
	0.450	276.615		
4+00	985+89.6		7.9	268.7
T.P.			11.100	265.515 check
	0.595	266.110		
T.P.			10.946	255.164
	2.728	257.892		
5+00	986+89.6		8.2	249.7
T.P. 5+75			11.025	246.867
	1.880	248.747		
T.P. 5+75			11.29	237.457
	2.297	239.842	18.5 x 0	
6+00	987+89.6		13.6	226.2
+35	988+24.6		15.6	224.2
+40	" +29.6		13.1	226.7
7	988+89.6		4.5	235.3



(6)	2.797 +	239.842	—	237.545 E1.
T.P.			1.381	238.461
	11,605	250.066		
8+04	B.C. 989+60		4.5	245.6
+25.4	990+03.7		2.9	247.2
+50.4	990+28.1		3.4	246.7
+64.7	E.C. 990+64		3.9	246.2
9	990+76		6.4	243.7
+30	991+06		10.2	239.9
10	991+76		11.5	238.6
11	992+76		10.7	239.4
	993.16			
+40			10.1	240.0
12	993+76		9.7	240.4
T.P.	13.902		11.385	238.681
	1.766	239.837	12.766	

Check

13.902
12.766
1.136
237.545
238.681

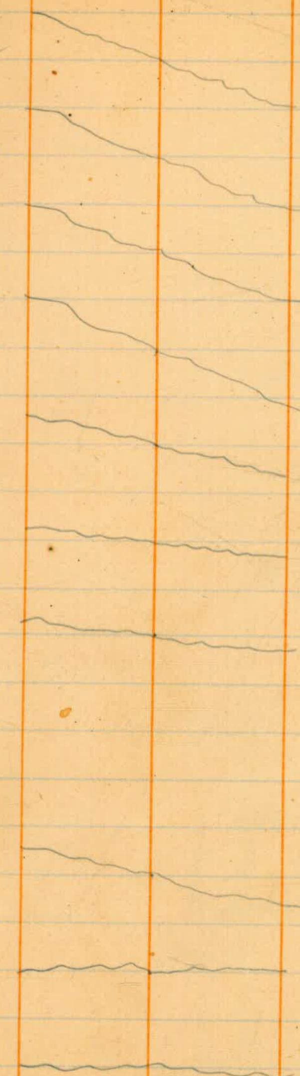
checked
Plotting to
here
P.E.R.

	1.156	239.837		-238.681
12+35	994+11³		7.2	✓32.6
+89.9	(P.I.) 994+66²		2.5	✓37.3
13+27.6	B.C. 995+03.		5.6	✓34.2
+47.6	995+23		7.2	✓32.6
+72.6	995+48		7.7	✓32.1
+97.6 +1 = 995+75.6	" +73		9.0	✓30.8
14+22.6	995+98²		11.	✓28.8
T.P.			10.71✓	✓29.128
	1.04✓	✓30.165		
+47.6	996+23.2		3.4	✓26.8
+72.6	996+48²		5.9	✓24.3
+97.6	" +73².		9.4	✓20.8
	✓.198			
T.P. & B.M. – on Hub.	P.I. 15+05.6		11.62✓ 22.336	✓18.543 ✓
	0.757	✓19.300		

Check

Small Gully

-22.336
+ 2.198
-20.138
-238.681
218.543



	0.757			218,543
15=996+75.6		219,300		
15+20	996+98²		1.7	217.6
+47.6	997+23²		6.8	212.5
T.P.			11.100	208.200
	0.024	208.224		
15+72	997+48²		1.3	206.9
+97	" 73²		7.4	200.8
16+20	997+95.6		11.5	196.7
T.P.			11.343	196.881
	1.047	197.928		
16+60	EC 998+40.5		7.6	190.3
T.P. &	1.828 16+80 =998+60.5		11.012 33.455	186.916 ✓
	10.850	197.766		
17+	998+90.5		13.1	184.7
+10	999+00.5		18.0	179.8
+25	999+15.5		13.7	184.1

check

1.8/1.4 – 10 min – setup –

-33,455
1.828
-31,627
218,543
186,916

Elev ck.

Ctr ck.

Elev ck.

OK

(9)	10.850			186.916
		197.766		
18+	999+90		28	195.0
T.P.			0.549	197.217
	11.466	208.679		
			0,217	208.462
T.P.	11.096	219.558		
19+	1000+90		3.4	216.2
T.P.			0.073	219.485
	10.908	230.393		
T.P.			0,653	229.741
	11.444	241.183		
20+	1001+90		7.8	233.74
T.P.				
			0,444	240.739
TP	10.540	251.279		
			0.740	251.089
TP	11.153	262.192		
21+	1002+90		10.0	252.2
	99.451		0.385	261.807
	10.591	271.398	260	

+77.457
2580
+74.891
186.916
261.807

(10)

	+10.591			261.807	
		272.398			
22+	1003+90^5		2.0	270.4	
T.P.			0.680	271.718	
	11.418	283.136			
23	1004+90^5		7.2	275.9	
T.P.			0.445	282.691	
	11.281	293.972			
T.P.			0.176	293.796	check
	10.375	304.171			
24	1005+90^5		5.0	299.2	
24+01^8	BC +82^8				
T.P.			0.132	304.039	
	10.435	314.474			
24+76^8	1006+09^6		8.5	306.0	
+51^8	1006+34^6		4.2	310.3	
T.P.			0.097	314.377	
	10.848	325.225			
24+76^8	1006+59^6		8.4	316.8	
25+01^8	64.948		0.0	325.2	
T.P.	1006+82^8		0.812	324.413	✓
	11.137	335.550			

+64.948
− 2.342
+62.606
261.807
324.413

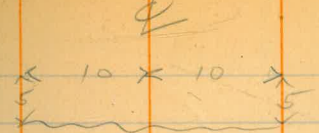
25 = 1006+90 E				
	11.137			336.413
		335.550		
25+25 E	1007+63		2.0	333.6
T.P.			0.916	334.634
	11.1×8	345.78		
B.M. on P.I. Hub - 25+55 E			9.808	335.97
25+51 E	1007+32		8.2	337.6
76 E	1007+87 E		6.8	339.8
26 = 1007+90 E				
26+01 E	1007+92 E		5.0	340.8
+26 E	1008+17 E		3.3	342.5
+51 E	1008+42 E		2.2	343.6
+76 E	1008+67 E		0.5	345.3
T.P.	22.285		0.116	345.666
	11.65	357.318	1.034	
27 =	1008+81			
27+01 E	Ec. 1008+82 E		9.2	348.0

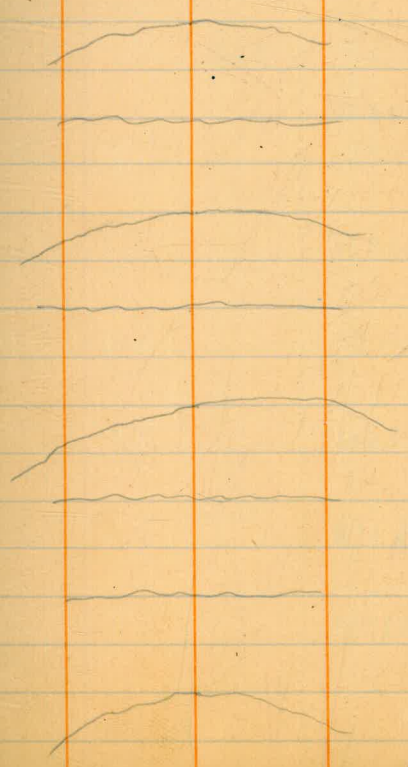
9.82	
22	
1011	
+22.285	
1.032	
+21.253	
336.413	
345.666	

	11.652	357.318		345.666
27+09.3	BC 1008+96.5		8.4	348.9
34.3	1009+15.3		6.5	350.8
	" +40.3			
59.3			4.6	352.7
84.3	" +65.3		3.7	353.6
28 =	1009+81			
28+09.3	" +90.3		2.7	354.6
TP			2.200	355.118
	9.400	364.518		
+34.3	1010+15.3		10.-	354.5
+59.3	" +40.3		9.1	355.4
+84.3	" +65.3		8.4	356.1
29 =	1010+81			
29+09.3	" +90.3		7.7	356.8
+21.5	EC 1011+02.7		7.4	357.1
30+0	1011+81		6.38	358.2

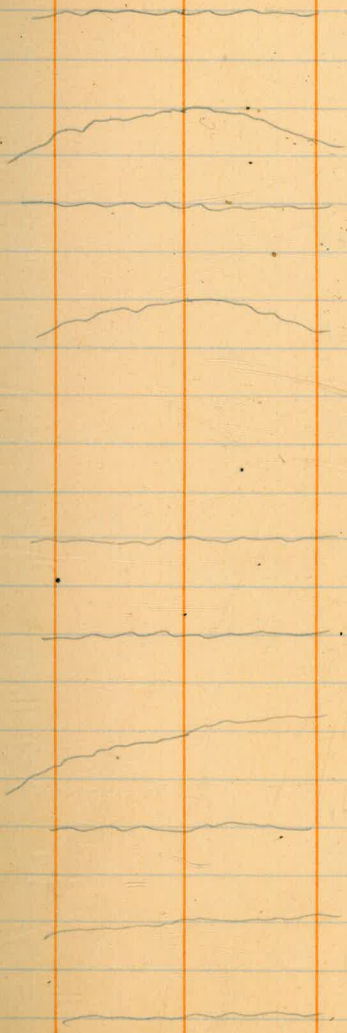
11.652
22
9.452
345.666
355.118

				355.118
	9.600	364.518		
31+	1012+81		4.8	359.7
32+	1013+81		3.5	361.0
33+	1014+81		1.3	363.2
T.P.			0.585	363.933
	6.478	370.411		
	(15.878)			
+50	1015+31		5.8	364.6
+75	1015+56		7.8	362.6
34+07.1	1015+88		4.5	365.9
+00	1016+28		8.2	362.2
+60	1016+48		4.5	365.9
35+	1016+81		8.5	361.9
+20	1017+01		8.8	361.6
+40	1017+11		5.7	364.7





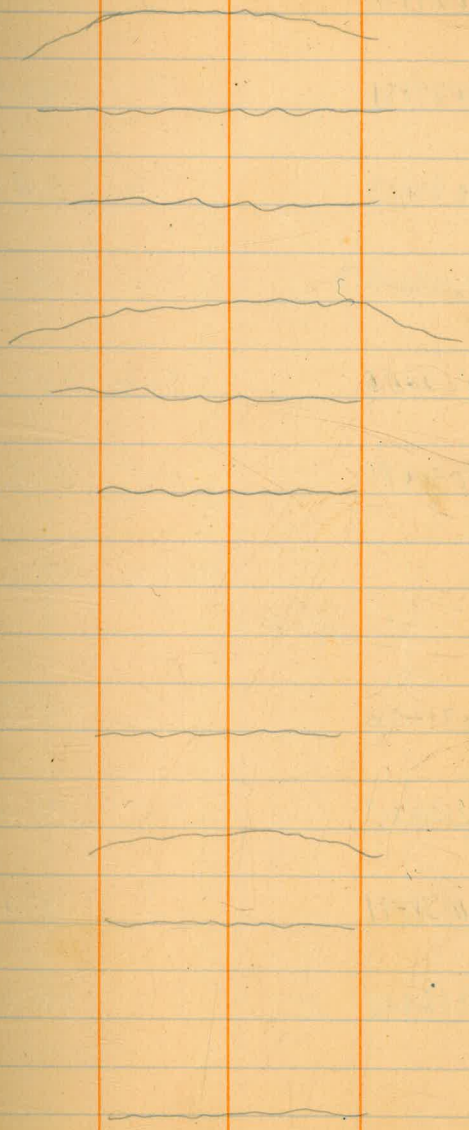
	1578	370.411	ONFS	
36+	1017+81		9.8	360.6
+20	1018+01		7.10	363.4
37+	1018+81		10.2	360.2
+35	1019+16		7.6	362.8
T.P.			7.8x0 8.075	362.971 check
	0.525	363.496		
38+	1019+81 16.403		3.2	360.3
39	1020+81		5.3	358.2
40	1021+81		6.1	357.4
+10	1022+01		7.6	355.9
+35	1022+16		6.4	357.1
41	1022+81		8.5	355.0



	16,403	363,496	8.005	
+30	1023+11		5.7	357.8
+50	1023+31		8.6	354.9
4+	1023+81		8.7	354.8
+60	1024+41		6.4	357.1
+80	1024+61		8.7	354.8
43+	1024+81		6.4	357.1
TP	~~16.403~~ 0.420	357.995 (358.0)	5.921 13.946	357.575
44+	1025+81		3.9	354.1
70	1026+01		7.0	356.0
45+	1026+81		5.1	357.9
+75 Pk M. 30' L. Hub			(3.958)	354.037
46+	1027+81		5.3	357.7

check

+16,403
−13.946
+2.457
355.118
357.575



		0.420	358.8	357.575
			357.995	
47+	1028+81		8.0	350.0
+40	1029+21		5.8	352.2
48+	1029+81		9.6	348.4
+50	PC 1030+31.2		9.2	348.8
+75	1030+56		10.6	347.4
49+	P.I. 1030+81		10.5	347.5
	T.T.		10.836	347.164
		0.861	348.030	
		1.28,		
+25	1031+06		2.3	345.7
+50	EC 1031+31.2		4.4	343.6
50+	EC 1031+81		5.8	342.2
+50	1032+31		8.0	340.0

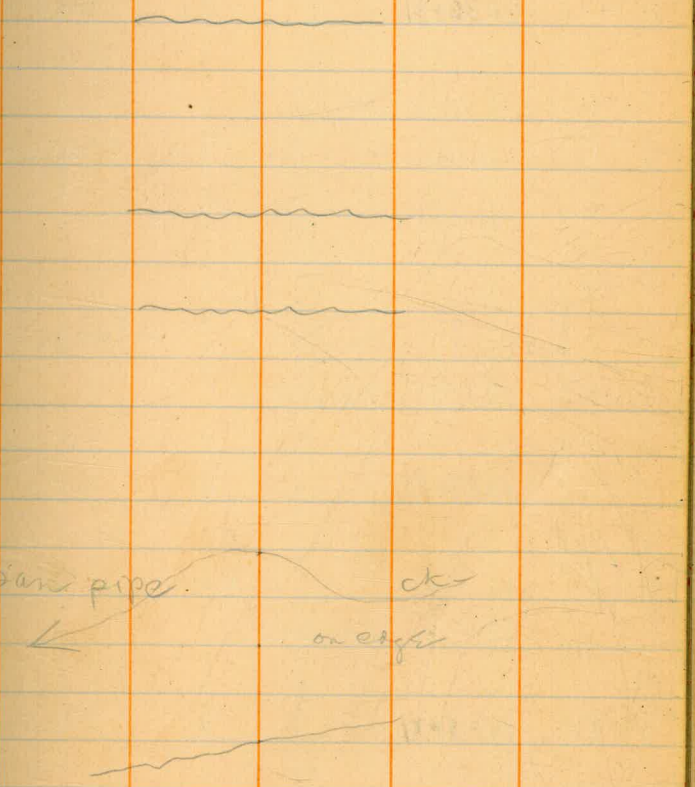
	1,28.1		10.476	
		3x8.030		
T.P.			11.571	336.459
	0.7x8	336.707		
51+	1032+81		4,5	332.2
T.P.			11,000	325.707
	0,718	325.925		
52+	1033+81		4,8	321.1
+35	1034+16		9,2	316.7
T.P.			11.470	314.455
	0.140	314.595		
+95	1034+76			
			14,4	300.2
53	1034+81		11,5	303.1
54+	1035+81		1,4	313.2
T.P.			10.540	314.055
	1.887 10.935	314.990	10.540	

Hook

+ 1,887
4.707
-03.520
357.707
314.055

℄

Steam pipe



	10.675			314.055
		324.990		
T.P.			0.775	324.215
	10,700	334.915		
55+	1036+81		8.1	326.8
B.M. 30 & T.P.	R. Sta 55+00 Hub.		5.108	329.807 ✓
	11.635		5.883	? P.E.R.
1/5/26				
				329.807
	11.492	341.299		
56+	1037+81		3.8	337.5
T.P.			4.274	337.025
	3.576	340.601		
56+60	1038+21		2.1	338.5
57+	1038+81		5.0	335.6
+50	1039+31		7.7	332.9
	15.068		7.774	

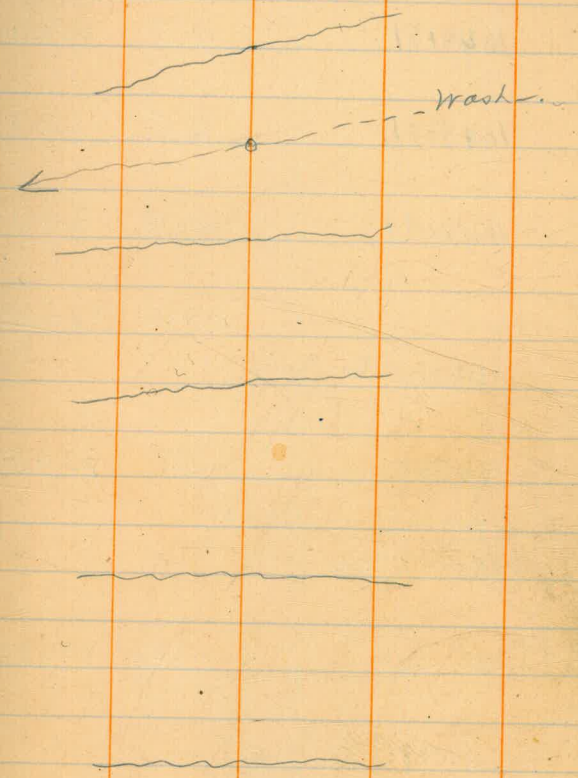
+21.635
5.883
+15.752
314.055
329.807

Plotted to here by P.E.R.

	15.068	3 x 0.601	4.2 ✓	
T.P.			11.750	328.851
	4626	333.477		
58+	1039+81		8.4	325.1
+25	1040+06		13.0	320.5
T.P. & 58+70			0.140	333.337
	10.99 ✓	344.329		
59+	1040+81		5.1	339.2
T.P.			0.084	344.245
+40	1041+21		0.4	343.9
	11.546	355.841		
60	1041+81		5.2	350.6
TP	4+28 ✓		0.115	355.746 ✓
	3.058	358.784	16.363	
61	1042+81		4.5	354.3

check

+42.28 ✓
16.363
+25.919
329.607
355.726



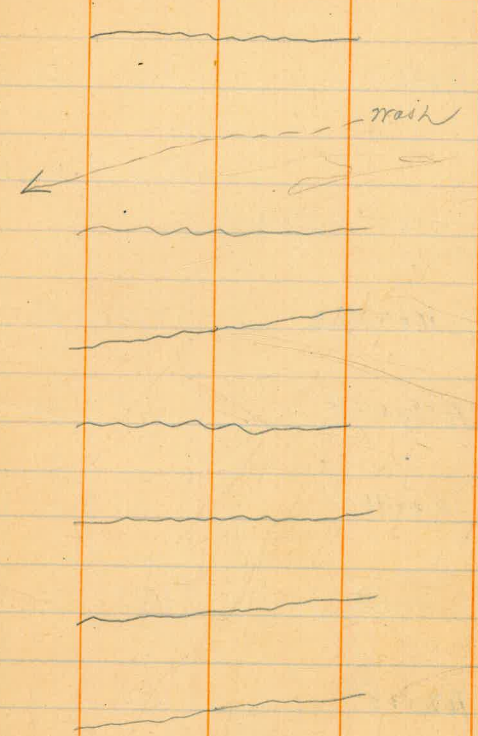
	3.0.58	358.784		
62+	1043+81		3.4	355.4
63+	1044+81		4.8	354.0
64	1045+81		6.5	352.3
65	1046+81		10.3	348.5
T.P.			11.734	347.050
	0.600	347.650		
66	1047+81		7.8	339.8
	2-#66 stations - 66&66b.			
	Odds-100ft time.			
BM & T.P.	20'L. 66b.		11.269	336.381 ✓
	3.658		23.003	
	0.088	336.469		
66b.67	1048+81		1.3	335.2
~~67~~ 66	1049+81		4.7	331.8

-23.003
3.658
-19.345
355.726
336.381

	0.088	336.469			
68+69	1050+81		7.2	329.3	✓
69+70	1051+81		9.4	327.1	
70+71	1052+81		10.4	326.1	
71+72	1053+81		9.8	326.7	
72+73	1054+81		8.6	327.9	check
73+74	1055+81		9.5	327.0	
T.P.			8.608	327.861	
	1.858	329.689			
74 75	1056+81		5.6	324.1	
75 76	1057+81		6.8	323.4	
76 77	1058+81		6.8	322.9	
T.P.			11.776	317.913	
	1.916		√0.384		

	1,916		20,384		
T.P.				317.913	
	0.862	318.775			
77 78	1059+81		2.3	316.5	
+75	1060+56		11.–	307.8	
78 79	1060+81		7.7	311.1	
79 80	1061+81		6.4	312.4	
80 81	1062+81		5.9	312.9	check
81 82	1063+81		7.2 ✓	311.6	
82 83	1064+81		9.2 ✓	309.6	
83 84	1065+81		6.8	312.0	
T.P.	2.770		2.810	315.965 ✓	
	11,476	327.441 ✓	23.194		
			1.920	325.521 ✓	
84 85	1066+81		10.5	316.9	

-23,194
2778
-20.416
336,381
315.965



Bm 325,403 – .118

	11.476		315.965 ✓	✓ BER
		327.441		
85+80	1067+81		5.9	321.5
86 87	1068+81		3.0	324.4
T.P.			2.793	324.648
	6.559	331.207		check
	18.038			
88	1069+81			
88+09.8 P.C.	1069+90.2		6.2	325.0
+34.8	1070+15.8		6.5	324.7
+59.8	" +40.8			
BM. To L. 87+55. Hub			(4.553)	326.652 B.M. ✓ P.E.R
+84.8	1070+65.8		6.2	325.0
88+09.8	1070+81 " +90.8		6.3	324.9
+19.8	EG 1071+00.2		6.6	324.6
89 90	1071+91		7.2	324.0

	18.035	331.207	2743	315.965
90 91	1072+81		9.7	321.5
T.P.			11.539	319.668
	1.982	321.650		
91 92	1073+81		3.2	318.4
92 93	1074+81		5.2	316.4
93 94	1075+81		6.9	314.7
94+53	PC 1076+34.5		8.2	313.4
+78	" +59.4		9.6	312.0
95 +03	1076+81		10.7	310.9 ~~311.0~~
T.P.	20.017		11.510 25.842	310.140
	1.058	311.198		
+28	1077+09.4		1.7	309.5
+53	" +34.4		3.2	308.0
+83	EC 1077+64.5		6.1	305.1

✓PER

PER ✓

−25.842
+20.017
−5.825
315.965
310.140

PER ✓

	1.058	311.198			
9546	1077+81		7.3	303.9	
T.P.		(300.0)	11.875	299.323	
	0.665	299.988			
+84^{3}	1078+64^{7}		6.2	293.8	0
9647	1078+81		8.8	291.2	check
T.P.			10.996	288.992	
	1.072	290.064			
			11.520	278.544	
	0.650	279.194			
9798	1079+81		9.0	270.2	
TP & B.M., 2'L. 97+10	Hub		11.177	268.017	
	0.903	268.920			
TP	4.348		11.612 / 57.180	257.308	✓
	0.387	257.691			
9849	1080+81		6.7	251.0	
			~~11.530~~	~~46.161~~	

+ 4,348
− 57,180
− 52,832
310,140
257.308

Down [illegible] back

	0.383	257.691			check PER
TP			11.078	246.618	
	0.677	247.295			
TP			11.476	235.819	
	0.724	236.543			
99+10	1081+81		7.4	229.1	
T.P.			11.710	224.833	
	0.438	225.271			check
T.P.			11.520	213.746	
	0.106	213.852			
100+81	1082+81		7.6	206.2	
TP & BM-	20'R-100+	20- Rock	11.197	202.655	
	1.450	202.105			
T.P.	8.778		10.888	193.217	✓
	0.6x0	193.857	67.869		
101.0 ✓	1083+81		6.7	187.2	
T.P.			11.224	187.633	✓
	.640	193.777			
		10.584			
		182.633			

- 67.869
+ 3.778
- 64.091
257.308
193.217

Down 5.584 back ✓

PER

TP				182.633	
	0.634	183.267			
TP			11.376	171.891	
	0.135	172.026			
102+107	1084+81		0.6	171.4 ~~171.5~~	PER.
TP			11.310	160.716	
	0.496	161.212			
	1.265				check
TP+B.M. Hub-30L. 102+80			11.395 / 34.081	149.817	
	0.404	150.221			
103+104	1085+81		3.1	147.1	
~~T.P.~~			~~10.502~~	~~139.719~~	
	1.076			149.817 ✓	
		150.893			
	~~.745~~		11.182 ~~15.255~~	139.711 ✓	
	0.397	140.108			
104+105	1086+81		2.6	137.5	
+40	1087+41		8.2	131.9	
+75	1087+56		11.1	129.0	
105+06	1087+81		10.7	129.4	

+ 45.263
+ 2.765
− 42.518
182.633
140.115

34.081
1.265
− 32.816
182.633
149.817
10.106
139.711

11.182
1.076
10.106

Draw along bank

G/L Flat

Edge of wash

Ctr ✓

Edge ✓

				139.711	✓ PER
	0.397	140.108			
T.P.			11.530	128.578	
	1.461	130.039			
~~106~~ 107	1088+81		3.9	126.1	
107 108	1089+81		8.3	121.7	check
108 9	1090+81		9.4	120.6	
T.P.			11.773	118.266	
	1.078	119.344			
~~109~~ 110	1091+81		3.7	115.6	
110 111	1092+81		8.4	110.9	
TP	2.926		11.200 34.510	108.134	✓
	1.148	109.282			
~~111~~ 112	1093+81		2.5	106.8	
~~112~~ 113	1094+81		5.4	103.9	

−34.518
2.936
−31.577
139.711
108.134

Flr. flat

next →

	1,148	109,282		BPER
X311	1095+81		6,X	102.9
+50	1096+31		7.7	101.6
+85	1096+66		7,7	101,6
TW15	1096+81		8.6	100.7
T.P.			1,570	107.712
	3,932	111.642		
TW16	1097+81		3.9	107.7
TW17	1098+81		4,3	107,3
+91	BC 1099+72		6,7	104.9
16 = 1099+81				
118+16	1099+97		9,9	103.7
+41	1100+22		9.0	102.6
+66	" +47		11.8	99.8
TP			11,459	100.185
	1.040		13.079	

111.6
11.5
99.8
11+6

2' Wash

Edge of wash

2' Deep

Edge ✓

check

TP	5.080		13.029		
				100.185	PER
	2.038	102.223			
1119+91	1100+72		6.2	96.0	
1100+91					
1119+16	1100+97		8.7	93.5	check
+41	1101+22		10.3	91.9	
+66	" +47		10.8	91.4	
+91	" +72		12.9	89.3	
TP			10.854	91.369	
	0.795	92.164			
1120 = 1101+81					
1119+16	1101+97		2.1	90.1	
41	1102+22		2.7	89.5	
66	" +47		3.4	88.8	
91	" +72		4.1	88.1	
1121 = 1102+81					
1120+16	1102+97		4.1	88.1	
	7.913		28.883		

10.3
9.4
10.2

	2.913		23.883	V P.E.R	
		92.164			
120+41	1103+22		4.3	87.9	
66	11 +47		4.3	87.9	
91	E.C. 1103+22		7.8	84.4	In Ck.
121	1103+81		7.0	85.2	Edge Ck.
123	1104+81		5.1	87.1	Check
B.M. & T.P.			3.020	89.144	Nail - Sey - Tree - 30 R. 122+20
	2.662	91.806			
125	1105+81		5.7	86.1	Edge Mark 2' Deep —
+20	1106+01		5.4	86.4	✓ ✓ ✓
126	1106+81		6.7	85.1	
130	1107+81		7.5	84.3	
129	1108+81		7.9	83.9	
T.P.			0.830	90.976	
	10.575		91.938		

	10.575		27.733	108.134	√ PER
T.P.				90.976	
	10.616	101.592			
128	1109+81		12.6	89.0	
T.P.			0.453	101.139	check
	11.122	112.261			
129	1110+81		7.9	104.4 ~~94.4~~	
			7.415	104.846	
	31.313		31.601	=104.781	(.065)
		−	3.288		
129+22.7	B.C. 1111+05.4			104.846	
	10.942			104.781	
	1111+05.4	115.723			
130			11.5	104.2	
+23.2	~~= B.C. 1110+04.2~~		8.3	107.4	
T.P.			1.449	114.274	
	11.638	125.912			
+48.2			8.9	117.0	
+73.2			4.0	121.9	
+98.2			0.9	125.0	

104.781
7.415
112.196

112.3
7.9
104.4
112.3

		125.912		
T.P.			0.863	125.049
	10.640	135.689		
138+23.2			7.8	127.9
+48.2			5.8	129.9
+73.2			4.5	131.2
+98.2			4.1	131.6
139+23.2	EC 1114+55.4		3.6	132.1
139			5.0	130.7
139.4			7.1	128.6
139.5			5.3	130.4
139.6			4.4	131.3
139.7			3.6	132.1

PER

check

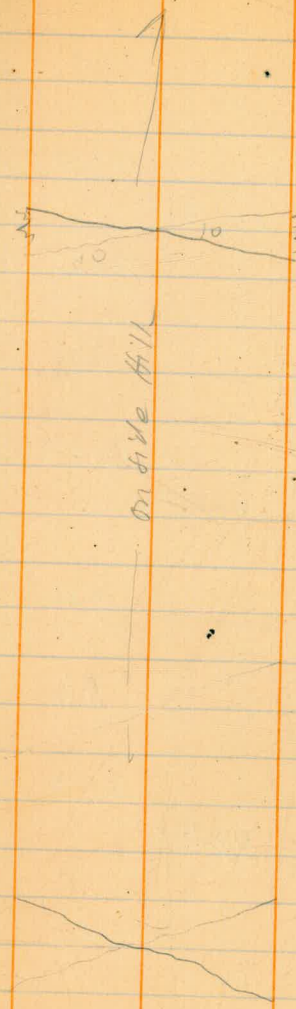
		135.689			✓ PER
137 ~~7~~ 8			1.1	134.6	
T.P.			0.697	134.992	check
	11.168	146.160			
+02 2 BC			11.6	134.6	
+					
+y 2			11.6	134.6	
+5x 2			10.7	135.5	
+7 7 2			9.6	136.6	
139 +02 2			8.0	138.2	
+y 2			6.9	139.3	
+5x 2			7.0	139.2	
+7 7 2			8.2	138.0	

		146.160			✓ PER
134 to 02			9.2 ✓	137.0	
+27			9.9	136.3	check
+47			9.4	136.8	
140			7.0	139.2	
+49	EC		8.846	137.314	✓ PER 137.312
141			2.9	143.3	
T.P.			1.3 ✓	144.818	
		5.060	149.878		
147 ✓			5.1 ✓	144.5	
143			5.5	144.4	
+64 ✓	PC		4.2 ✓	145.7	
+89 ✓			3.9	146.0	

PER

	149.878		
144+14		4.6	145.3
+3		3.2	146.7
+6		3.4	146.5
+8		4.7	145.2
145+14		4.6	145.3
+35		5.0	144.9
+4	E.C	6.9	143.0
+.50		6.5	143.4
146		9.7	140.2
T.P.		11.686	138.19
	0.11	138.304	
147		2.3	136.0

check



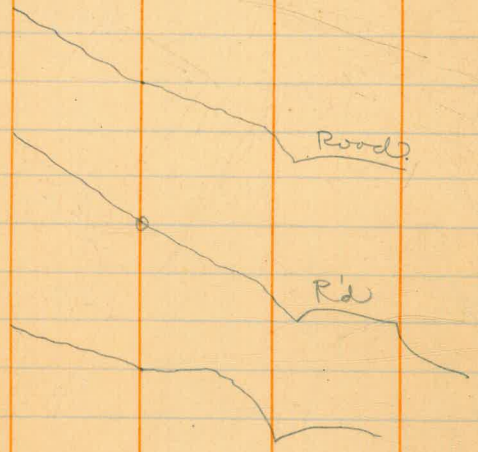
		138.30✓			PER ✓
148			7.3	131.0	check
~~147~~ T.P.			11,358	126.946	
	3,638	129.584			
		—	2335	127.249	27.274 PER ✓
149			5.0	124.6	
TP			11,223	118.361 ✓	
	2,905	121.266 ✓			
150			4.4	116.9	
151			9.6	111.7	
~~152~~ T.P.			10,738	110.528 ✓	
	2,310	~~112.838~~			
152			4.1	~~108.9~~ 109.7	PER
148½	PC		6.✓	~~106.8~~ 106.6	

PER

	113838			
152+73 ↓		7.3	105.5 ~~105.7~~	
+98 ↓		8.2	104.6 ~~104.8~~	PER
153+23 ↓		8.6	104.4 ~~104.6~~	
		5.668	107.170	107.164
+48 ↓		8.5	104.3	
+73 ↓		8.7	104.1	check
153+98 ↓		8.7	104.1	
150+23 ↓		7.9	104.9	
+48 ↓		7.3	105.5	
+73 ↓		6.8	106.0	
+98 ↓		5.8	107.0	
155+23 ↓		4.9	107.9	

		112.838		PER.
T.P.			4.103	108.735
	0.593	109.328		
155+48 ±			+0.5	108.8 ~~108.8~~ PER.
65			+1.1	108.2 ~~108.4~~
+73 ±			2.9	106.4
TP			11.385	97.943
	2.377	100.315		
+98 ± E.C.			5.8	94.5
156+50			6.1	94.2
+75			5.3	95.0
157			7.7	92.6
+44			8.8	91.5

Edge of Rd



		100.375			PER
158			7.2	93.1	
159			4.6	95.7	
160			2.3	98.0	check
+60	T.P. on Hub.		1,807	98.508	
	.8946	107.454			PER
			9.448	98.006	97.955
161			8.6	98.8	
162			7.5	99.9	PER
163			5.9	~~101.6~~ 101.5	PER
164			5.2	~~102.5~~ 102.2	
165			4.2	103.2	
166			3.4	~~105.1~~ 105.0	PER

9448
99006
107.454
107.45
7.1

9955
75
107.0

925
75
100.0

107
107.5
7.5
100.0

107.4
75.
99.9
107.4

41

PER

		107.4ft		
166+87.8	+ T.P.		0.000	107.4ft
	8.540	116.294		
167			8.7	107.6
168			7.5	108.8
169			5.9	110.4
170			4.5	111.8
171			3.0	113.3
+70			2.7	113.6
172			1.7	114.6
T.P.			0.112	116.18
	11.775	117.975		
		(118.0)		
173			11.3	116.7
174			9.7	118.3

		178.0		PER	
		121.957			
175			6.9	121.1	
+57			5.6	122.4	check
176			4.7	123.3	
177			3.3	124.7	
178			1.4	126.6	
T.P.			1.205	126.757	
	9.606	136.358			
179			5.7	130.7	
180			3.3	133.1	
+946 = 1151+186			1.6	134.8	
B.M. at Bdge			0.463	135.895	135.938

0.463

(-250)	5.090	141.023		135.933	✓ PER
1151+18.6	1148+50 / 1148+68.6				
+22	Blk Hd. +92		6.0	135.0	
+22.5	ck bot. +72.5		10.4	130.6	check
+35	℄ ck. +85		11.8	129.2	
+56	1149+06 ck-bot. Blk Hd.		9.9	131.1	
+58	Top Blk Hd. +08		4.5	136.5	
1152	1149+50		7.5	133.5	
1153	1150+50		3.9	137.1	
1154	1151+50		1.4	139.6	
TP.			0.261	140.961	
	11.653	152.414			
1155	1152+50		10.3	142.1	
1156 =	1153+48.8		6.6	145.8	
-251 1157	1154+48.8		4.1	148.3	

1151+18.6 / 40

2 below lor. of Rd –

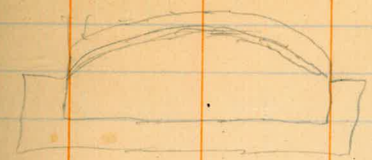
In E. Gutter.

		152.414			
1158	=1155+48		1.7	150.7	In E. Gutter
TP	11.965		0.010	150.404	
		164.369			
1159	1156+487		11.5	152.9	
1160	1157+485		7.4	157.0	
1161	1158+485		4.0	160.4	
1162	1159+485		0.7	163.1	
TP			0.558	163.816	
	11.224	175.040			
1163	1160+485		8.6	166.4	
1164	1161+488		5.9	169.1	
	2.060	175.032	~~2.060~~	172.980	172.972 PER?
1165	1162+48		2.0	173.0	
TP			0.491	174.591	

P.E.R.

T.P.				174.591	
	11.947	186.538			
1166	1163+47		10.1	176.6	
1167	1164+46		6.7	179.8	
(-53)					check
1168	1165+46		3.9	182.6	
T.P.			0.714	185.796	
	11.329	197.145			
1169	1166+46		10.7	186.4	
1170	1167+46		6.7	190.8	
1171	1168+44		3.5	193.6	
	7.965	197.165	7.965	~~189.180~~	189.200
T.P.			0.573	196.643	
	11.303	207.946			
1172	1169+45		10.6	197.3	

		207.946			✓ PER
1173	1170+45		7.4	200.5	
[illegible]	1172+14.9				
1174	1171+44		4.1	203.8	check
+72 Pl. = 1172+14.9					
1175 (-257)	1172+43		1.9	206.0	
T.P.			0.340	207.606	
	10.345	217.951			
1176	1173+43		8.5	209.4	
1177	1174+42.6		5.7	212.2	
		(218.0)			
	4.449	217.962	~~4.449~~	~~213.502~~	(213.513)
1178	1175+42.3		3.2	214.8	
T.P.			0.154	217.808	
	10.695	228.503			
1179	1176+42.2		10.2	218.3	
1180	1177+42.2		7.2	221.3	
	+39				
+03	Bot. 18" Culv.		8.4	220.1	



				✓ PER
		238.503		
1181	1178+42 ±		4.8	223.7
1182 ✓	1179+42		7.4	226.1
T.P.			0.474	238.029 check
	10.620	238.649		
1183 ✓	1180+42		10.8	228.3
1184	1181+42		2.9	230.7
	1182+37			
+95	18" C.I.C. Bot.		7.4	✓31.2
1185	1182+42		5.8	✓32.8
+10	1182+5 ✓			
1186 (-258)	1183+42		3.6	✓35.0
1187	✓1184+40		1.2	✓37.4
TP			0.026	238.678
	11.858	✓50.481		
1188	E=75'		11.0	✓39.5
	1185+89			

PER

		250.481		
	10,166	250.~~xxx~~ 10.166	~~260.315~~ 260.278	
	1185+77			
1188+38	Tap 40" Culv.	12,1	238.3	
1189	1186+35	8.8	241.6	✓ check
1190	1187+3H	5.0	245.4	✓
1191	= 1188+30.9	1,3	249.1	✓
(-269)				
TP		0.104	250.362	
	11,951	262.293		
1192	✓ 1189+31	8,5	253.8	✓
1193	✓ 1190+31	4,1	258.2	✓
1194	1191+31		262.7	✓
TP		0.255	262.088	
	11,934	273.992		
1195	✓ 1192+31	6.8	267.2	
+15 = 1194+58				
1196	1193+31	~~1.1~~	~~2729~~	
(-269)			~~271.4~~	
T.P.		0.61	271.91	

1187+78

270.28	H.I.	251.16
10.88		11.4
1188 =		239.8
		.92
1189		282.0
		1.54
1190		245.4
		1.4
1191		249.3
		.50
T.P.		250.36
		+11.7
H.I.		262.06
		5.4
1192 =		253.7
		4.1
1193		258.0
		0.32
T.P.		261.74
		+ 10.24
		272.52
		9.8
1194		262.7
		5.1
		267.4
		1.1
		~~271.62~~

	11.730	283.640		271.91	
1197	1194+31		7.7	275.9	
+60 =	1194+90				
1198 269	1195+31		2.5	281.1	
T.P. + B.M.			2.135	281.505	281.491
		B.M.		281.491	
	11.812	293.303			check
1199+0	1196+31		7.3	286.0	
1200+0	1197+31		2.5	290.8	
T.P.			0.440	292.863	
	10.400	303.263			
1201+0	1198+31		7.3	296.0	
1202+0	1199+31		1.5	301.8	
T.P.			0.220	303.043	
	9.727	312.770			
1203+0	1200+31		5.2	307.6	
1204+0 269 +28 =	1200+59		0.6	312.2	
	1201+31				
T.P.			0.220	312.550	
	10.606	323.156			
1205	1202+31		4.0	317.2	Record
1206+0	1203+31		1.7	321.5	
T.P. + B.M.			1.480	321.676	321.748
	11.190	332.938			
1207	1204+31		5.0	327.9	

✓ PER

		332.938		
TP			0.270	332.668
	10.370	343.038		
1208	1205+31		9.9	333.1
+0V	=1205+31.7			check
1209	1206+5		6.0	337.0
+32	=1206+57.7			
⊙ formr Bezelle			4.583	338.455
TP			1.785	341.253
	5.580	346.833		
1210+17			4.6	342.2
+52			2.2	344.6
TP			11.895	334.938
	7.100	342.038		
1210+85			11.2	330.8
1211+0			4.7	337.3
TP			2.040	339.998
	12.753	352.751		
1211+21			6.0	346.7
TP			2.704	350.047
	12.150	362.197		
+40			8.5	353.7
+65			8.4	353.8
+72			4.9	357.3
1212+0			4.3	357.9
+50			4.3	357.9
+57			4.7	357.5

Sta 0+0 of "B" 1.17

		362197			PER	
+70			4.0	358.2		
1212+94.1			2.2	360.0		
1213+00			2.2	360.0		
1214+0			4.3	357.9	Record	
1215+0			4.5	357.7		
TP			4.170	358.027	358.028	
	7.543	365.571				
1216+0			10.1	355.5	check	
1216+75			12.9	352.7		
1217+00			12.2	353.4		
1218+0			9.6	356.0		
1219+0			7.2	358.4		
In Gutter N. Side			7.9	357.7	Record Elev	El Cajon Blvd
on Curb N "			6.8	358.8		of Parked area
1220+0			6.1	359.5		
+08			6.5	359.1		
on BM SWX			1.750	365.821	363.85	El Cajon & Pawley

Line from 1210+17 via Fairmount ave

PER

Peg at 341.253

Near 1209+0

	10.673	351.926			
1210+17			9.7	342.2	
1211+00			5.0	346.9	
TP			1.420	350.506	
	10.135	360.641			
1212+0			9.3	351.3	check
1213+0			5.7	354.9	
1214+0			5.2	355.4	
1215+0			4.8	355.8	
1216+0			4.6	356.0	
1217+0			4.4	356.2	
TP			4.195	356.446	
	8.227	364.673			
1218+0			8.1	356.6	
1219+0			7.9	356.8	
1220+0			7.7	357.0	
+33			6.8	357.8	
+71.8	curb		6.5	358.2	
1221+0			6.5	358.2	
1222+0			5.8	358.9	
PI of Line thru Alley			5.6	259.1	Record Elev
			0.878	343.795	363.85

Re-loc.

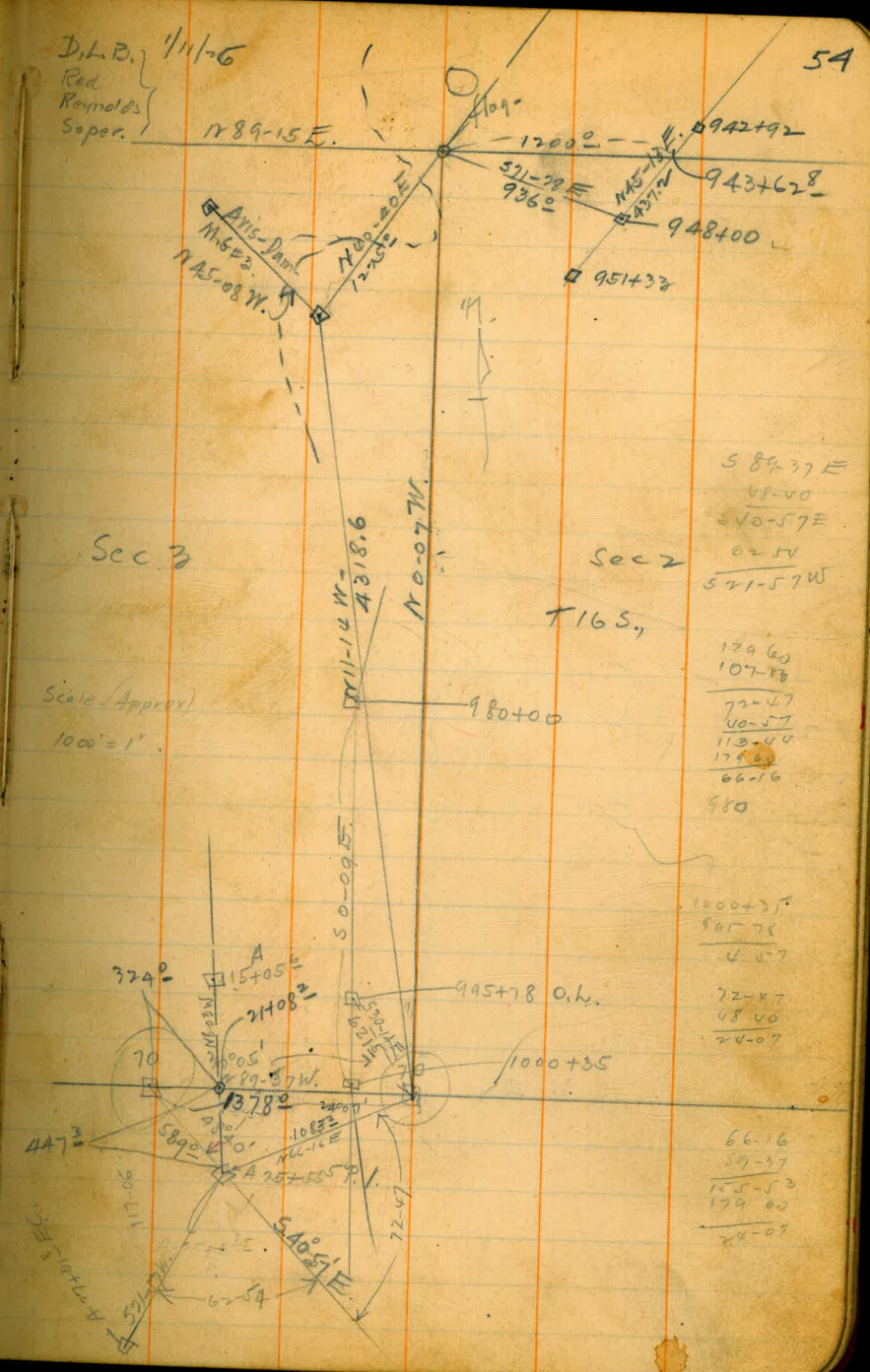
B.M. pole-4773-Sta 415+42 417.355

Sta	+	⊼	−	Elev.
	4.170	421.525 ✓		
413+40.8 B.C.			1.7	419.8
41~~8~~+13			2.3	419.2
414+85.3 E.C.			5.5	416.0
415+00			4.9	416.6
415+25			6.2	415.3
416+00			10.7	410.8
T.P.			12.458	409.067 ✓
	4.142	413.209 ✓		
416+50			5.5	407.7
417+00			5.6	407.6
418+00			4.8	408.4
419+00			5.3	407.9
420+00			6.1	407.1

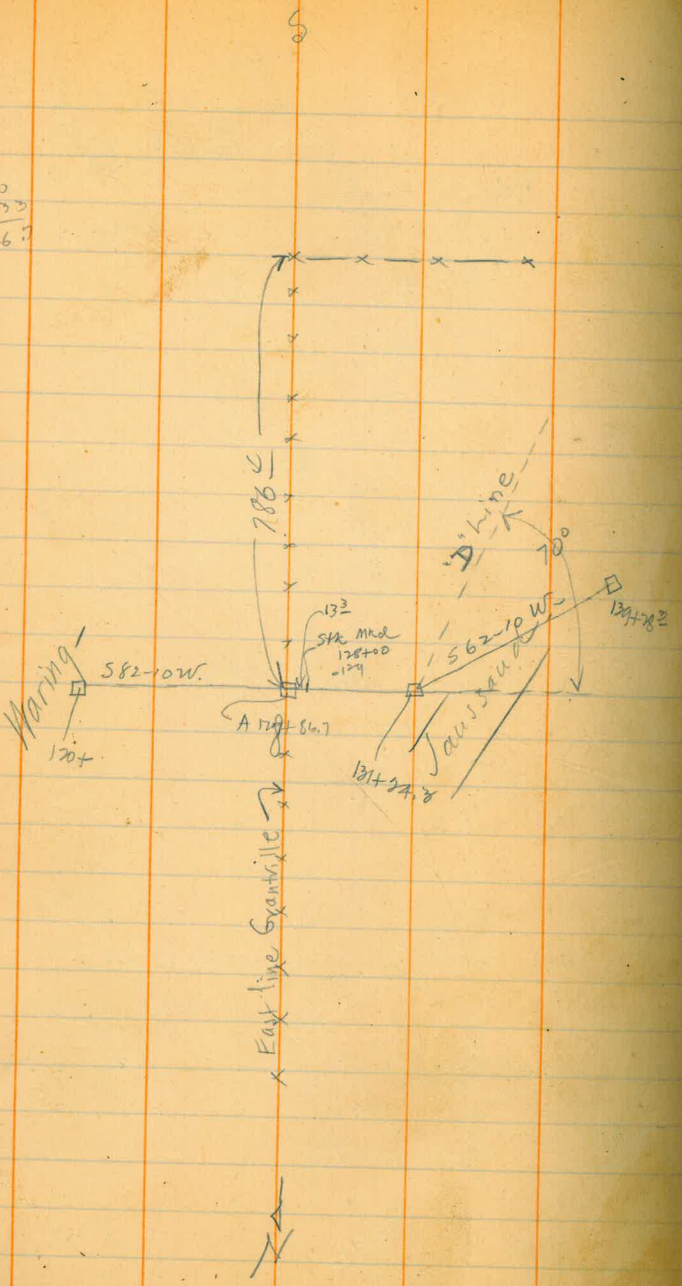
Sta	+	⊼	−	Elev.
		413.209		
420+80.9 B.C.			6.8	406.4
~~422+25~~ T.P.			8.576	404.633 ✓
	5.080	409.713 ✓		
422+25			5.5	404.2
422+40			5.3	404.4
422+45			3.2	406.5
423+68.7 E.C.			4.8	404.9
424+00			5.0	404.7
425+00			4.7	405.0
426+00			4.9	404.8
427+00			4.6	405.1
427+~~18~~ 25			5.7	404.0
427+30			7.8	401.9

Sta	+	−	Elev.	
		409.713		
427+40			5.3	404.4
427+90			6.2	403.5
428+00			9.0	400.7
+15			9.4	400.3
+25			6.0	403.7
+31			6.1	403.6
40	Paramount		7.3	402.4
60	✓		7.3	402.4
428+10 ✓	P.I.	+T.P.	8.715	400.998
		5.495	406.493	
			6.080	400.413

D.L.D. 1/11/26
Red Reynolds Super.



128+00
133
177+86.7



NB2 Rue Super Bypass 1/12/36

D. Line Beg. at "A" = 129+22.7

(237.0)

= 1121+05.4

139+22 E.C. = 1123+42.4 O.L.

R. 28°00' S40-10W

10° C

T = ~~143.0~~ 142.9

E = 17.5

L = 280.

25' ch'ds.

R = 572.96

1830.6

137+85 P.I. = 1121+99.4 O.L.

137+42 B.C.

136

135

134+

133+

27.3

132+72.7 E.C.

369.3

713.9

130+97.2 ctr. of curve

20°C.

T = ~~201~~ 200.6

E = ~~63.5~~ 63.2

L = 350.0

R = 286.48

25' ch'ds

S12-10W

201.6

A 131+22.2 P.I. Δ 70°00'

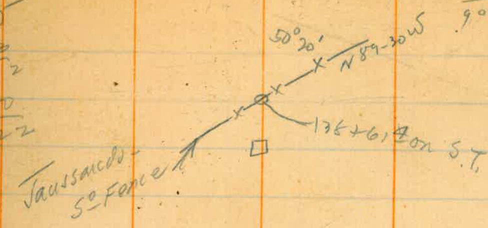
129+22.7 = 1111+05.4 B.C. on "A" Line

S62-10W

100.6
24.2
76.4

137+85
138+61.4
137+85
1.4
136+42
2.80
139+22

40-10
50-20
90-30



136+42
25
136+67
25
136+92
25
137+17
+ 62.2
+ 67

76-118
13-57

27-54

27.9

136+42
132+72.7
369.3
1.43
201.6
713.9

137+85
131+22
6 60

Put in cons-pins- 1135+75

S6°46'W

1141+39.3 E.C. = 1139+03.8

20°C
T = 123.9
E = 25.6
L = 233.9
25' chords
R = 286.48

1140+30 P.I. L 46-47
1 2W6

2 339
1139+05.4 B.C. = 1136+69.6

S40°04'W

235.8

1140+30
1 2W6
1141+54.6

206.8
-4.6
202.2 Grd at Inst.
2.V

H.I.
206.8

204.475

205.394
.92
204.475

Inst. at 1145 on tang. pt. 5°

(202.2)

	Azi	Dist.	V.a.		Horiz	Dif El.	Elev	
	81°30'	20.0	-16°		18	-5.3	196.9	✓
	111°00'	25.0	-16°10'		22	-6.3	195.9	✓
	48°00'	160.0	-25°40'		130	-62.8	139.4	✓
	61°30'	170.0	-26°20'	up 3	138	-70.0	132.2	✓
	36°00'	188.0	-22°20'		160	-66.0	136.2	✓
	27°10'	122.0	-28°20'	up 2	94	-53.0	149.2	✓
359-60	8°10'	112.0	-29°30'	up 2	85	-50.0	152.2	✓
18-20	341°20'	100.0	-28°10'	up 4	78	-45.6	156.6	✓
	350°30'	125.0	-13°30'		117	-28.3	173.9	✓
	7°00'	130.0	-15°30'		121	-33.4	168.8	✓
	17°45'	155.0	-14°30'		145	-37.6	164.6	✓
	6°30'	156	-7°10'		152	-19.4	182.8	✓
	0°00'	159	-3°30'		158	-9.7	192.5	✓
	352°00'	153	-2°15'		153	-6.0	196.2	✓
	348°00'	50	-26°00'	up 2	47	-20.8	181.4	✓
	33°00'	55	-26°10'	up 3	53	-24.6	177.6	✓

~~170+71.2~~ P.O.T. = ~~175+59.6 E.C.~~

175+59.6 S42°43'W

~~170+70.9~~ E.C.

E=8.1
T=107.7
R=716.20
D=8°
L=213.8

Δ ~~169+64.8~~ 17° 06'

173+45.8
~~174+44.5~~
~~168+57.1~~ B.C.

173+44.8 = 168+56.1 S59°49W 1.0

~~168+56.1~~ E.C.

E=1.7
T=19.6
R=114.59
D=50°
L=38.9

Δ 168+36.8 19°27'R

168+17.2 B.C.

S40°22'W 3233.5

Δ 135+83.7 4°02'L

S44°24'W 80.7

135+03.0 E.C.

175+59.3

174+53.2 Old Sta 174+68

128.3

(173+44.5)

173+24~~4~~9 E.C.

32531

135+83.7 P.O.T

Sta	Hor L	Bear	Vert L	H. I	Rod	Vert. Dist	Elev.	Hor Dist	
K 25+51	Δ 58°11'R						229.5		
		*	-9°35'		6.83	-112.3		665	Frd from "G"
J 23+71	P.O.T						221.7		
		N 39°20' W	-13°20'		5.11	-115.1		485	Frd. from "G"
I 23+45	P.O.T.						222.3		
			-14°02'		4.87	-114.5		459	Frd. from "G"
H 23+04	P.O.T						214.4		
			-16°19'		4.53	-122.4		418	Frd. from "G"
G 18+86	Δ 10°17'L	*					336.8		
			-11°18'		2.23	-42.9		215	Frd from "F"
F 16+71	P.O.T						379.7		
			-2°03'		1.18	-4.2		119	Frd from "D"
E 10+52	P.O.T						286.9		
		N 29°03' W	-10°57'		5.18	-97.0		500	Back from "D"
D 15+52	P.O.T						383.9		
			+8°47'		6.04	+91.2		590	Frd. from "B"
C 2+19	P.O.T.						190.4		
			-16°34'		1.11	-30.6		103	Frd. from Sta "A"
B 9+62	P.O.T.						292.7		
			+4°25'		9.67	+74.2		962	Frd from 0+00
A 1+16	P.O.T						231.0		
			+1°15'		1.15	+2.5		116.0	Frd. from 0+00
0+00	Δ 05°00'R						218.5		= Sta 15+05.6 "A" Line
12+89.9		S 45°57' N					Sta on "A" Line		

Sta.	Hor. ∠	Bear.	Vert. ∠	H.I.	Rod	Vert. Dist.	Elev.	Hor. Dist.	
W59+36.5	27°32'R						279.8		
		N61°40'E	-1°09'		0.74	- 1.5		75	Frd from "V"
V58+55.5	37°01'R						281.3		
		N24°39'E	-0°40'		2.53	- 3.0		254	Frd from "U"
U56+01.5	10°49'L						284.3		
		N35°28'E	-1°10'		1.83	- 3.7		184	Frd from "T"
T54+17.5	15°19'L						288.0		
		N50°47'E	-0°49'		3.74	- 5.3		375	Frd from "S"
S50+42.5	12°27'30"R						293.3		
		N38°19.5'E	-1°02'		6.70	- 12.1		671	Frd from "R"
R43+71.5	30°03'30"R						305.4		
		N8°16'E	-2°26'		2.16	- 9.1		217	Frd from "Q"
Q41+54.5	60°02'30"L						314.5		
		N68°18.5'E	-2°43'		1.32	- 6.3		133	Frd. from "P"
P40+21.5	12°26'R						320.8		
		N55°52.5'E	+2°57'		3.90	+ 20.1		390	Frd. from "O"
O36+31.5	31°12'R						300.7		
		N24°40.5'E	+4°14'		4.00	+ 29.5		399	Frd. from "N"
N32+39.5	13°00'R						271.2		
		N11°40.5'E	+3°21'		1.03	+ 6.1		104	Frd. from "M"
M31+35.5	25°17'L						265.1		
		N36°37.5'E	+4°06'		2.94	+ 21.0		292.5	Frd. from "L"
L28+43	18°6'30"R						294.1		
		N18°51'E	+3°51'		2.92	+ 19.6		292	Frd. from "K"
K25+51	58°11'R						224.5		
		(H39-20W)	-9°35'		6.83	-112.3		665	Frd from "G"

Sta.	Hor. ∠	Bear.	Vert. ∠	H.I.	Rod	Vert. Dist.	Elev.	Hor. Dist.	
I, 93+46	Δ 13°20'30"L						~~294.1~~ 293.1		
		S65°52.5'E	-3°20'		3.56	- 20.7	~~314.8~~ 313.8	356	Frd from "H,"
H, 89+90	Δ 29°08'L								
		S36°44.5'E	-4°06'		2.11	- 15.1	~~329.9~~ 328.9	211	Frd. from "G,"
G, 87+79	Δ 50°50'R								
		S87°34.5'E	-3°28'		1.59	- 9.7	~~339.6~~ 338.6	159	Frd from "F,"
F, 86+20	Δ 35°12'L								
		S52°22.5'E	-3°42'		2.16	- 13.9	~~353.5~~ 352.5	216	Frd from "E,"
E, 84+04	Δ 30°29'30"R								
		S82°52'E	-1°20'		3.66	- 8.5	361.0	367	Frd from "D,"
D, 80+37	Δ 36°39'R								
		N60°29'E	+0°31'		0.80	+ .72	360.3	81	Frd from "C,"
C, 79+56	Δ 21°43'R								
		N38°46'E	+3°22'		6.92	+ 40.6	319.7	691	Frd from "B,"
B, 72+65	Δ 19°16'30"R								
		N24°29.5'E	+1°56'		5.36	+ 18.1	301.6	~~536.5~~ 537	Frd from "A,"
A, 67+28.5	Δ 21°47'R								
		N2°42.5'E	+0°28'		0.93	+ 0.8	300.8	94	Frd from "Z"
Z 66+34.5	Δ 56°09'30"R								
		N53°27'W	+3°49'		3.16	+ 21.0	279.8	316	Frd from "Y"
Y 63+18.5	Δ 47°39'30"L								
		N5°47.5'W	+1°12'		0.74	+ 1.5	278.3	75	Frd from "X"
X 62+43.5	Δ 94°59'30"L								
		N89°12'E	-0°17'		3.12	- 1.5	279.8	313	Frd from "W"
W 59+30.5	Δ 27°32'R								

Sta.	Hor. ∠	Bear.	Vert. ∠	H.I.	Rod	Vert. Dist	Elev.	Hor. Dist.	
U,	Δ 8°06'30"R						284.5		
			-0°08'		6.56	-1.5	~~284~~	657	Frd from "T,"
T,	Δ 19°16'30"R						286.0		
			+3°02'		0.68	+3.7		69	Frd from "S,"
S,	Δ 68°57'L						282.3		
			-0°58'		6.60	-11.2		661	Frd from "R,"
R,	Δ 36°36'30"R						293.5		
			-1°18'		1.18	-2.7		119	Frd from "Q"
Q	Δ 70°24'R						296.2		
			-0°05'		4.78	-.72		479	Frd from "P,"
P,	Δ 22°20'L						296.9		
			-2°26'		2.30	-9.7		231	Frd. from "O,"
O,	Δ 26°05'30"L						306.6		
			-3°28		0.91	-5.5	31	92	Frd from "N,"
N,	Δ						312.1		
		N7°04'E	-3°40'		6.66	-42.6	~~354.7~~ ~~355.7~~	664	Frd. from "M,"
M, 111+60	Δ 0°48'L								
		N7°52'E ✓	-1°55'		3.15 ✓	-10.5 ✓	~~365.2~~ ~~366.2~~	316 ✓	Frd from "L,"
L, 108+44	Δ 30°15'30"L								
		N38°07.5'E ✓	+2°15'		2.83 ✓	+11.1 ✓	~~354.1~~ ~~355.1~~	284 ✓	Frd from "K,"
K, 105+60	Δ 23°11'30"L								
		N61°19'E ✓	+2°22'		5.78 ✓	+23.9 ✓	~~330.2~~ ~~331.2~~	577 ✓	Frd. from "J,"
J, 99+83	Δ 39°28'L								
		S79°13'E ✓	+3°20'		6.38 ✓	+37.1 ✓	~~293.1~~ ~~294.1~~	637 ✓	Frd. from "I,"
I, 93+46	Δ 13°20'30"L								

Relocation El Monte Park

April 1926

127+85.1 E.C.

= 127+87.5 E.C.

Δ 126+92.7 25°45' L

E = 11.1
T = 98.4
R = 430.50
D = 13°20'
L = 193.2

P.I.

125+94.3 B.C.

S70°24'W 172.0

124+22.3 E.C.

Δ 122+46.2 14°07' L

E = 10.9
T = 176.9
R = 1432.40
D = 4°00'
L = 353.0

P.I.

120+69.3 B.C.

S84°31'W 417.5

116+51.8 E.C.

Δ 116+32.5 8°23' L

E = 0.7
T = 19.6
R = 267.45
D = 21°32'
L = 38.9

P.I.

116+12.9 B.C.

N87°06'W

Δ 14°07'

Δ 8°23'

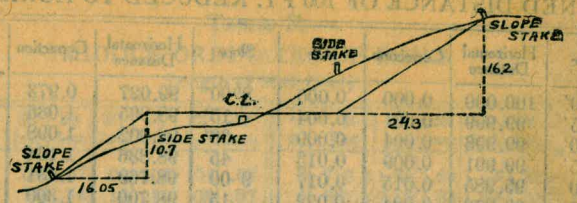
1307×4.3 Pl. L. 70°00' V.A +12-40

10°C.

IMPROVED TABLES

AND

INFORMATION



DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING.

SLOPE 1½ TO 1. ROADWAY OF ANY WIDTH.

	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
0	0 00	0 15	0.30	0.45	0.60	0.75	0.90	1.05	1.20	1.35	0
1	1.50	1 65	1 80	1.95	2.10	2.25	2.40	2.55	2.70	2.85	1
2	3.00	3.15	3.30	3 45	3.60	3 75	3.90	4.05	4.20	4 35	2
3	4.50	4 65	4.80	4.95	5 10	5 25	5 40	5.55	5.70	5.85	3
4	6.00	6 15	6.30	6.45	6.60	6.75	6.90	7.05	7.20	7.35	4
5	7 50	7.65	7.80	7.95	8.10	8.25	8.40	8.55	8.70	8.85	5
6	9 00	9 15	9.30	9.45	9.60	9.75	9.90	10.05	10.20	10.35	6
7	10.50	10 65	10.80	10.95	11.10	11.25	11.40	11.55	11 70	11.85	7
8	12.00	12 15	12.30	12.45	12.60	12.75	12.90	13 05	13.20	13.35	8
9	13 50	13.65	13 80	13 95	14.10	14.25	14.40	14 55	14.70	14.85	9
10	15.00	15 15	15 30	15 45	15.60	15.75	15.90	16.05	16.20	16 35	10
11	16 50	16 65	16 80	16.95	17 10	17.25	17.40	17.55	17.70	17.85	11
12	18 00	18.15	18.30	18 45	18.60	18 75	18.90	19.05	19.20	19 35	12
13	19 50	19 65	19.80	19.95	20.10	20.25	20 40	20.55	20.70	20.85	13
14	21.00	21 15	21.30	21.45	21 60	21.75	21.90	22 05	22 20	22 35	14
15	22 50	22 65	22 80	22 95	23.10	23.25	23.40	23.55	23.70	23.85	15
16	24.00	24 15	24 30	24 45	24.60	24.75	24 90	25 05	25.20	25.35	16
17	25.50	25 65	25.80	25 95	26.10	26 25	26 40	26.55	26.70	26.85	17
18	27.00	27 15	27.30	27 45	27.60	27.75	27.90	28.05	28 20	28.35	18
19	28 50	28 65	28 80	28.95	29.10	29.25	29 40	29.55	29.70	29.85	19
20	30 00	30 15	30.30	30.45	30.60	30.75	30.90	31.05	31.20	31.35	20
21	31 50	31 65	31.80	31.95	32 10	32 25	32.40	32.55	32 70	32 85	21
22	33 00	33 15	33 30	33 45	33.60	33 75	33.90	34.05	34.20	34.35	22
23	34 50	34 65	34.80	34.95	35.10	35 25	35 40	35.55	35.70	35 85	23
24	36.00	36 15	36.30	36 45	36.60	36.75	36.90	37.05	37 20	37.35	24
25	37.50	37.65	37 80	37.95	38.10	38.25	38.40	38.55	38.70	38.85	25
26	39 00	39 15	39.30	39 45	39 60	39.75	39.90	40.05	40.20	40.35	26
27	40 50	40 65	40 80	40.95	41.10	41.25	41 40	41.55	41.70	41.85	27
28	42 00	42 15	42.30	42.45	42.60	42 75	42.90	43.05	43.20	43.35	28
29	43 50	43 65	43.80	43 95	44.10	44 25	44 40	44.55	44.70	44 85	29
30	45 00	45 15	45.30	45 45	45.60	45.75	45 90	46.05	46 20	46.35	30
31	46.50	46.65	46.80	46 95	47.10	47.25	47.40	47.55	47.70	47.85	31
32	48 00	48.15	48.30	48 45	48.60	48 75	48.90	49.05	49 20	49.35	32
33	49.50	49 65	49.80	49.95	50.10	50.25	50.40	50.55	50 70	50.85	33
34	51 00	51.15	51.30	51.45	51.60	51.75	51 90	52.05	52.20	52.35	34
35	52 50	52.65	52.80	52.95	53.10	53.25	53.40	53.55	53.70	53.85	35
36	54 00	54 15	54.30	54 45	54.60	54.75	54.90	55.05	55.20	55.35	36
37	55 50	55 65	55.80	55 95	56.10	56.25	56.40	56.55	56.70	56.85	37
38	57.00	57.15	57 30	57 45	57.60	57 75	57.90	58.05	58.20	58 35	38
39	58 50	58.65	58 80	58 95	59.10	59 25	59.40	59 55	59.70	59.85	39
40	60 00	60 15	60 30	60 45	60 60	60.75	60 90	61.05	61 20	61.35	40
41	61.50	61 65	61 80	61 95	62 10	62 25	62.40	62 55	62 70	62.85	41
42	63 00	63.15	63 30	63 45	63 60	63 75	63 90	64 05	64 20	64.35	42
43	64.50	64 65	64 80	64.95	65.10	65 25	65 40	65.55	65.70	65.85	43
44	66 00	66 15	66 30	66.45	66.60	66.75	66.90	67.05	67.20	67.35	44
45	67 50	67 65	67 80	67 95	68.10	68.25	68.40	68.55	68.70	68.85	45
46	69 00	69 15	69 30	69.45	69.60	69.75	69.90	70.05	70.20	70.35	46
47	70 50	70 65	70 80	70 95	71.10	71.25	71 40	71.55	71.70	71.85	47
48	72.00	72 15	72.30	72.45	72.60	72.75	72.90	73 05	73.20	73 35	48
49	73 50	73 65	73.80	73.95	74.10	74.25	74.40	74.55	74.70	74.85	49
50	75.00	75.15	75.30	75.45	75.60	75.75	75.90	76.05	76.20	76.35	50

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