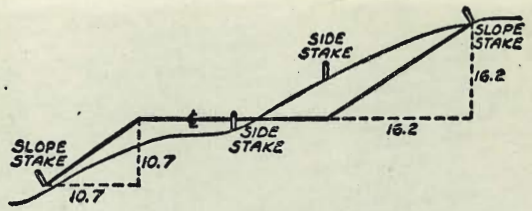


Distances from Side Stakes for Cross-Sectioning

Slope 1 to 1. Roadway of Any Width

	0	.1	.2	.3	.4	.5	.6	.7	.8	9	
0	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	0
1	1.00	1.10	1.20	1.30	1.40	1.50	1.60	1.70	1.80	1.90	1
2	2.00	2.10	2.20	2.30	2.40	2.50	2.60	2.70	2.80	2.90	2
3	3.00	3.10	3.20	3.30	3.40	3.50	3.60	3.70	3.80	3.90	3
4	4.00	4.10	4.20	4.30	4.40	4.50	4.60	4.70	4.80	4.90	4
5	5.00	5.10	5.20	5.30	5.40	5.50	5.60	5.70	5.80	5.90	5
6	6.00	6.10	6.20	6.30	6.40	6.50	6.60	6.70	6.80	6.90	6
7	7.00	7.10	7.20	7.30	7.40	7.50	7.60	7.70	7.80	7.90	7
8	8.00	8.10	8.20	8.30	8.40	8.50	8.60	8.70	8.80	8.90	8
9	9.00	9.10	9.20	9.30	9.40	9.50	9.60	9.70	9.80	9.90	9
10	10.00	10.10	10.20	10.30	10.40	10.50	10.60	10.70	10.80	10.90	10
11	11.00	11.10	11.20	11.30	11.40	11.50	11.60	11.70	11.80	11.90	11
12	12.00	12.10	12.20	12.30	12.40	12.50	12.60	12.70	12.80	12.90	12
13	13.00	13.10	13.20	13.30	13.40	13.50	13.60	13.70	13.80	13.90	13
14	14.00	14.10	14.20	14.30	14.40	14.50	14.60	14.70	14.80	14.90	14
15	15.00	15.10	15.20	15.30	15.40	15.50	15.60	15.70	15.80	15.90	15
16	16.00	16.10	16.20	16.30	16.40	16.50	16.60	16.70	16.80	16.90	16
17	17.00	17.10	17.20	17.30	17.40	17.50	17.60	17.70	17.80	17.90	17
18	18.00	18.10	18.20	18.30	18.40	18.50	18.60	18.70	18.80	18.90	18
19	19.00	19.10	19.20	19.30	19.40	19.50	19.60	19.70	19.80	19.90	19
20	20.00	20.10	20.20	20.30	20.40	20.50	20.60	20.70	20.80	20.90	20
21	21.00	21.10	21.20	21.30	21.40	21.50	21.60	21.70	21.80	21.90	21
22	22.00	22.10	22.20	22.30	22.40	22.50	22.60	22.70	22.80	22.90	22
23	23.00	23.10	23.20	23.30	23.40	23.50	23.60	23.70	23.80	23.90	23
24	24.00	24.10	24.20	24.30	24.40	24.50	24.60	24.70	24.80	24.90	24
25	25.00	25.10	25.20	25.30	25.40	25.50	25.60	25.70	25.80	25.90	25
26	26.00	26.10	26.20	26.30	26.40	26.50	26.60	26.70	26.80	26.90	26
27	27.00	27.10	27.20	27.30	27.40	27.50	27.60	27.70	27.80	27.90	27
28	28.00	28.10	28.20	28.30	28.40	28.50	28.60	28.70	28.80	28.90	28
29	29.00	29.10	29.20	29.30	29.40	29.50	29.60	29.70	29.80	29.90	29
30	30.00	30.10	30.20	30.30	30.40	30.50	30.60	30.70	30.80	30.90	30
31	31.00	31.10	31.20	31.30	31.40	31.50	31.60	31.70	31.80	31.90	31
32	32.00	32.10	32.20	32.30	32.40	32.50	32.60	32.70	32.80	32.90	32
33	33.00	33.10	33.20	33.30	33.40	33.50	33.60	33.70	33.80	33.90	33
34	34.00	34.10	34.20	34.30	34.40	34.50	34.60	34.70	34.80	34.90	34
35	35.00	35.10	35.20	35.30	35.40	35.50	35.60	35.70	35.80	35.90	35
36	36.00	36.10	36.20	36.30	36.40	36.50	36.60	36.70	36.80	36.90	36
37	37.00	37.10	37.20	37.30	37.40	37.50	37.60	37.70	37.80	37.90	37
38	38.00	38.10	38.20	38.30	38.40	38.50	38.60	38.70	38.80	38.90	38
39	39.00	39.10	39.20	39.30	39.40	39.50	39.60	39.70	39.80	39.90	39
40	40.00	40.10	40.20	40.30	40.40	40.50	40.60	40.70	40.80	40.90	40
41	41.00	41.10	41.20	41.30	41.40	41.50	41.60	41.70	41.80	41.90	41
42	42.00	42.10	42.20	42.30	42.40	42.50	42.60	42.70	42.80	42.90	42
43	43.00	43.10	43.20	43.30	43.40	43.50	43.60	43.70	43.80	43.90	43
44	44.00	44.10	44.20	44.30	44.40	44.50	44.60	44.70	44.80	44.90	44
45	45.00	45.10	45.20	45.30	45.40	45.50	45.60	45.70	45.80	45.90	45
46	46.00	46.10	46.20	46.30	46.40	46.50	46.60	46.70	46.80	46.90	46
47	47.00	47.10	47.20	47.30	47.40	47.50	47.60	47.70	47.80	47.90	47
48	48.00	48.10	48.20	48.30	48.40	48.50	48.60	48.70	48.80	48.90	48
49	49.00	49.10	49.20	49.30	49.40	49.50	49.60	49.70	49.80	49.90	49
50	50.00	50.10	50.20	50.30	50.40	50.50	50.60	50.70	50.80	50.90	50

Distance of slope stake from side or shoulder stake for any width roadway, slope 1 to 1. If ground is nearly level, the cut or fill at side stake is located by the double entry method in left column and top row. The number in body of table in same row and column gives distance from side stake to slope stake. If ground is not level estimate the difference in elevation between the side stake and slope stake, lower target by this amount if cut, elevate if fill. Add this amount to cut or fill and find distance in table. Set up rod at this point, and line of sight should cut target. If it does not make the slight adjustment necessary.

IMPROVED TABLES AND INFORMATION

DIRECTIONS FOR USE OF TABLES

TABLE No. XIV

Distance of slope stake from side or shoulder stake for any width roadway, slope 1½ to 1. If ground is nearly level, the cut or fill at side stake is located by the double entry method in left column and top row. The number in body of table in same row and column gives distance from side stake to slope stake. If ground is not level estimate the difference in elevation between the side stake and slope stake, lower target by this amount if cut, elevate if fill. Add this amount to cut or fill and find distance in table. Set up rod at this point, and line of sight should cut target. If it does not make the slight adjustment necessary.

TABLE No. VIII

To find Tangent and External for curve of any other degree, divide by degree of curve and add correction found in column of corrections. Degree of curve with a given I may be found by dividing tangent, (or external), opposite I by given tangent, (or external).

The distance from a point on the tangent to the curve is very nearly the square of the tangent length divided by twice the radius.

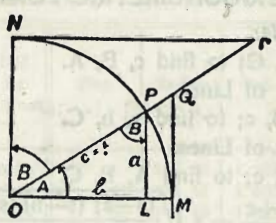


TABLE II
TRIGONOMETRIC FORMULÆ.

$\angle A = \angle MOP \qquad \angle B = \angle PON = \angle OPL$

$R = OB = c = 1$

$$\sin A = \frac{a}{c} = \frac{a}{1} = a = \text{sos } B = LP$$

$$\text{sos } A = \frac{b}{c} = \frac{b}{1} = b = \sin B = OL$$

$$\tan A = \frac{a}{b} = \frac{MQ}{OM} = \frac{MQ}{1} = MQ = \cot B = MQ$$

$$\cot A = \frac{NT}{ON} = \frac{NT}{1} = NT = \tan B = NT$$

$$\sec A = \frac{OQ}{OM} = \frac{OQ}{1} = OQ = \csc B = OQ$$

$$\csc A = \frac{OT}{ON} = \frac{OT}{1} = OT = \sec B = OT$$

$$\text{vers } A = \frac{LM}{OP} = LM = \text{covers } B$$

$$\text{covers } A = \frac{OP - LP}{OP} = OP - LP = \text{vers } B$$

$\text{exsec } A = PQ = \text{coexsec } B$

$\text{coexsec } A = PT = \text{exsec } B$

$$\sin \tfrac{1}{2} A = \sqrt{\frac{1 - \text{Cos } A}{2}} \qquad \cos \tfrac{1}{2} A = \sqrt{\frac{1 + \text{Cos } A}{2}}$$

$\sin 2A = 2 \sin A \cos A \qquad \cos 2A = \cos^2 A - \sin^2 A$

Law of Lines $\dfrac{\sin A}{a} = \dfrac{\sin B}{B} = \dfrac{\sin C^1}{C}$

Law of Cosines $c^2 = a^2 + b^2 - 2ab \cos C$

Law of Tangents $\dfrac{a+b}{a-b} = \dfrac{\tan \frac{1}{2}(A+B)}{\tan \frac{1}{2}(A-B)}$

TABLE XIII—CORRECTIONS FOR TANGENTS AND EXTERNALS

These corrections are to be added to the approximate values, found by dividing the tangent, or external, for a 1° curve (Table VIII) by the degree of curve, in order to obtain the true tangents, or externals. Intermediate values may be obtained by interpolation.

FOR TANGENTS ADD

Central Angle	Degree of Curve													
	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°
10°	03	.06	09	13	16	19	.22	.25	.28	.31	34	38	42	.46
15°	04	10	14	19	24	.29	.34	.39	45	.51	.53	58	.63	.68
20°	06	.13	19	.26	.32	.39	.45	.51	.58	.65	.72	79	.84	.90
25°	.08	16	.24	.33	40	49	.58	67	.75	.83	90	.99	1.06	1.14
30°	10	19	.29	39	49	.59	.69	79	.89	.99	1.09	1.20	1.29	1.39
35°	11	22	.34	47	.58	.69	.70	.81	.92	1.04	1.29	1.42	1.54	1.66
40°	13	.26	.40	.53	.67	.80	.93	1.06	1.20	1.34	1.49	1.64	1.79	1.94
45°	15	.30	44	60	76	91	1.06	1.21	1.37	1.52	1.70	1.87	2.04	2.21
50°	17	.34	.51	.68	.85	1.02	1.19	1.36	1.54	1.72	1.91	2.10	2.29	2.48
55°	19	38	.57	76	.95	1.14	1.32	1.52	1.72	1.92	2.14	2.35	2.56	2.77
60°	21	42	.63	.84	1.05	1.27	1.49	1.71	1.94	2.17	2.38	2.60	2.83	3.07
65°	23	46	.69	.93	1.16	1 40	1.64	1.88	2.13	2.38	2.63	2.88	3.13	3.39
70°	25	.51	76	1.02	1.28	1.54	1.80	2.06	2.33	2.60	2.88	3.16	3.44	3.72
75°	.27	.56	.83	1.12	1.40	1.69	1.98	2.27	2.57	2.87	3.16	3.47	3.78	4.09
80°	30	.61	.91	1.22	1.53	1.84	2.15	2.46	2 78	3.10	3.44	3.78	4.12	4.46
85°	33	66	1.00	1.33	1.68	2.02	2.36	2 70	3.05	3.40	3.77	4.14	4.55	4 89
90°	36	.72	1.09	1.45	1.83	2.20	2.57	2.94	3.32	3.70	4.10	4.50	4.91	5.32
95°	39	79	1.19	1.55	2.00	2.40	2.80	3.20	3.61	4.02	4.40	4.98	5.38	5.83
100°	43	.86	1.30	1.74	2.18	2.62	3.06	3.50	3.95	4.40	4.88	5.37	5.85	6.34
110°	51	1.03	1.56	2.08	2.61	3.14	3.67	4.21	4 76	5.31	5 86	6.43	7 01	7 60
120°	62	1.25	1 93	2.52	3.16	3.81	4 45	5.11	5.77	6 44	7 12	7.80	8.50	9 22

FOR EXTERNALS ADD

Central Angle	Degree of Curve													
	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°
10°	.001	.003	.004	.006	.007	.008	.009	.011	.012	.014	.015	.017	.018	.020
15°	.003	.007	.010	.014	.018	.023	.027	.029	.032	.035	.039	.043	.047	.051
20°	.006	.011	.017	.022	.028	.034	.038	.045	.051	.057	.063	.070	.076	.083
25°	.009	.018	.027	036	.046	.056	.065	.074	.083	.093	.106	120	127	135
30°	.013	.025	.038	.051	.065	.078	.090	.103	.116	.129	.149	.170	.179	.188
35°	.018	.035	.054	.072	.086	.109	.131	.153	.175	.197	.213	.230	.247	.264
40°	.023	.046	.070	.093	.117	.141	.172	.203	.234	.265	.277	.290	.315	.341
45°	.030	.060	.093	.119	.153	.184	.216	.254	.289	.325	.351	.378	.411	.445
50°	.037	.075	.116	.151	.189	.227	.266	.305	.345	.384	.425	.467	.508	.550
55°	.046	.093	.142	.188	.236	.283	.332	.381	.420	.479	.530	.582	.641	.700
60°	.056	.112	.168	.225	.283	.340	.398	.457	.516	.575	.636	.697	.774	.851
65°	.067	.135	.204	.273	.343	.412	.483	.554	.625	.697	.711	.845	.922	1.01
70°	.080	.159	.240	.321	.403	.485	.568	.652	.735	.819	.906	.994	1.08	1.17
75°	.095	.182	.286	.383	.480	.578	.678	.777	.877	.977	1.07	1.18	1.29	1.39
80°	.110	.220	.332	.445	.558	.671	.787	.903	1.02	1.13	1.25	1.38	1.50	1.62
85°	.128	.259	.391	.524	.657	.790	.926	1.06	1.20	1.34	1.47	1.62	1.76	1.91
90°	.149	.299	.450	.603	.756	.910	1.07	1.22	1.38	1.54	1.70	1.87	2.03	2.20
95°	.174	.350	.522	.706	.985	1.06	1.25	1.43	1.62	1.80	1.99	2.18	2.38	2.58
100°	.200	.401	.604	.809	1.01	1.22	1.43	1.64	1.85	2.06	2.28	2.50	2.73	2.96
110°	.268	.536	.806	1.08	1.35	1.63	1.91	2.20	2.48	2.76	3.05	3.35	3.66	3.96
120°	.360	.721	1.08	1.45	1.82	2.19	2.57	2.95	3.33	3.72	4.11	4.50	4.91	5.32

Index on page 1 →

Index

1

△ 50°-12' off back Tang + Secant of 78.2
= 5' back + 6' offset.

58°-00' / 94.2 = 5' ahead + 8' offset.

Alvarado - Sewer

			B.M. #2-P 79
			84.00
			5.03
			89.03 π
1+62 48	69.82	86.18 π	
0.12 to	19.21	4+50 70.16	BM #2. P 79
	7.97	16.02	84.00
	C 11.24	6.46	2.18
		C-9.56	86.18 π
			6.46
1+57 48 = M.H. #1	69.81		79.72
Δ 10-54' Rt.	19.22	4+00 70.10	7.17
		16.08	86.89 π
		7.35	3.85
		C-8.73	83.04
1+52 48	69.80		Nail 11' Rt
	19.23	3+50 70.04	M.H. #2
	8.04	16.14	sta 6+91.18
	C-11.19	8.37	= B.M #3
		C-7.77	
		0.12 to	
		86.18	
1+00	69.74	3+00 69.98	
	19.29	16.20	
0.12 to	6.05	8.17	
	C-13.24	C 8.03	
		89.03 π	
0+50	69.68	2+50 69.92	
	19.35	19.11	
	4.21	8.42	
	C 15.14	C-10.69	
Existing stub end	89.03 π		
0+00	69.62	2+00 69.86	
	19.41	19.17	
	8.58	8.02	
	C-10.83	C 11.15	

Alvarado Sewer

6+91.18 = M.H. #2
△ 150-49' Lt.

70.45

6+86.18

86.89 ℄
70.44
16.45
6.67
C-9.78

84.09
70.44
13.65
5.87
C-9.78

6+50

70.40
16.49
5.17
C-11.32

6+00

0.12 ft

70.34
16.55
5.65
C-10.90

5+50

70.28
16.61
6.97
C-9.64

5+00

86.89 ℄
70.22
16.67
7.53
C-9.14

8+50

84.09 ℄
70.64
13.45
4.51
C-8.94 ✓

B.M. #3
83.04
1.05
84.09 ℄
7.32
76.77
7.83
84.60 ℄
2.60
82.00 B.M. #4
81.99
0.01 OK

8+36

8' T.

71.31
12.78
4.12
6-8.66

8+00

70.58
13.51
3.64
C-9.87 ✓

7+50

0.12 ft

70.52
13.57
5.30
C-8.27 ✓

7+00

70.46
13.63
4.09
C-9.54 ✓

6+96.18

84.09 ℄
70.45
13.64
4.44
C-9.20 ✓

Alvarado Sewer

11+00
70.94
13.66
4.45
C-9.21 ✓

10+50
70.88
13.72
5.52
C-8.20 ✓

10+00
70.82
13.78
8.12
C 5.66 ✓

9+51 0.12%
Manhole → 71.40
13.20
8.32
C-4.88 ✓

9+50
70.76
13.84
8.32 ✓
C-5.52 ✓

9+00
84.60 ✗
70.70
13.90
7.83
C-6.28 ✓

8" (T)
12+83
71.80
12.80
7.32
C-5.48 ✓
C 7.48

BM #4
81.99
2.61
84.60 ✗

12+50
71.12
13.48
9.07
C-4.41 ✓
C-6.41

✗ should be 86.45
see note page 5

12+00 0.12%
71.06
13.54
8.84
C-4.70 ✓
C-6.70

check
11+48.73 stub.
77.96
4.61
82.57
3.31
79.26
5.10
84.36
5.30
79.06 TA
12.26
91.32
0.10
91.22

11+58.78
84.60 ✗
71.01
13.59
8.84
C-4.75 ✓
C-6.75

11+53.78 M.H. #3
Δ 59°-09' Rt.
71.00
B.M. # 5
X. Top of wall
70.55 Rt of P.O.T.
Sta 16+34.32

11+48.78
71.00
13.60
6.64
C-6.96 ✓

Alvarado Sewer

14+24.75

71.33
13.27
8.16
C-5.11 ✓
C-7.11

14+19.75 M.H.# 4
Δ 11°-45' Lt.

71.32

91.22 B.M.#5
10
91.32
1.60
89.72 = B.M.#6
= 29.62 R.P.
M.H.#5

14+14.75

71.32
13.28
7.76
C-5.52 ✓
C-7.52

14+00

71.30
13.30
6.76
C-6.54
C 8.54

13+50

71.24
13.36
4.12
C-9.24 ✓
C 11.24

13+00

84.60 ℄
71.18
13.42
6.07
C-7.35 ✓
C 9.35

Note Rod of 2.61 should be 4.61
Making T @ 60 instead of @ 90.60
Increase cuts 2.00 each
M.H. #3 to M.H. #5

16+90 = Start Conc. encasement

16+60 End rock base

16+50

82.35 ℄
71.60
10.75
2.54
C-8.21 ✓
C10.61

Also place 8" (T)
El. = 72.30

16+00 T.P.

84.60 ℄
71.54
13.06
4.68
C-8.38 ✓
C10.38

84.60 ℄
468
7992
2.43
82.35 ℄

15+80 = Start Rock Base

15+50

71.48
13.12
7.52
C-5.60 ✓
C 7.60

15+00

71.42
13.18
9.17
C-4.01 ✓
C 6.01

0.12%

14+50

71.36
13.24
8.59
C-4.65 ✓
C 6.65

Alvarado sewer

18+49.24 = M.H. #5 — 71.84
Δ 11°-42' Rt.

18+44.24	80.53 71.83 8.70 1.41 7.29	82.35 ℄ 71.83 10.52 5.21 C-~~5.31~~ ✓ **C 7.31**	El. stub 79.14
18+00		71.78 10.57 8.07 C-~~2.50~~ ✓ **C 4.50**	0.12 80

17+90: End concrete encasement

17+50		71.72 10.63 13.47 F-~~2.84~~ ✓ **F 0.84**	T.EOP = 71.72 Fill .84 El. Stub = 68.88 = B.M. "A"
17+00		82.35 ℄ 71.66 10.69 7.60 C-~~3.09~~ ✓ **C 5.09**	71.72 Fill 0.84 70.88 = El. Stub = B.M. "A"

21+00	84.72 ℄ 72.14 12.58 8.40 C-4.18 ✓	85.08 ℄ 72.14 12.94 8.76 C 4.18	T.P.
20+50	84.72 ℄ 72.08 12.64 9.83 C-~~2.81~~	~~72.08~~ ~~13.06~~ ~~10.19~~ C. ~~2.81~~	
20+00	84.72 ℄ 72.02 12.70 7.97 C-~~4.73~~	72.02 13.06 8.34 C- 4.72	0.12 80
19+50		71.96 13.12 2.40 C 10.72	
19+00		71.90 13.18 3.20 C-9.98	
18+54.24		85.08 ℄ 71.84 13.24 5.06 C- 8.18	

B.M. #6 = 89.72 0.87 90.59 11.47 79.12 5.96 ℄ 85.08 8.76 76.32 4.49 ℄ 80.81 6.66 74.15 = Nail in Pole 28' Lt 21+90 = B.M. 7	T.P. on 19+44.24	
89.18 3.04 92.22 6.96 85.26 = Δ 30+08.03 Ctr. M.H. #7		
~~80.81 ℄~~ 1.47 79.34 6.26 85.60 7.38 78.22 7.37 85.59 1.36 84.23 8.25 92.48 3.30 89.18 =	7/25/50	50' Sly. R.P. M.H. #7 = B.M. #8

Alvarado sewer

24+00 — 72.50 / 13.32 / 4.63 — C- 8.69 ✓

23+50 — 72.44 / 13.38 / 5.08 — C- 8.30

23+00 — 85.82 / 72.38 / 13.44 / 6.60 — C- 6.84

0.12 ft

22+50 — 13.50 / 8.65 — C- 4.85

72.32 / 13.50 / 8.64 — C- 4.86

80.81 ✗ / 72.32 / 8.49 / 2.52 — C- 5.87

85.57 ✗ / 72.32 / 13.25 / 8.33 / 4.92

22+00 — 85.82 ✗ / 72.26 / 13.56 / 11.21 — C- 2.35

72.26 / 4.356 / 11.21 — C- 2.35

72.26 / 8.55 / 6.19 — C- 2.36

72.26 / 12.36 / 74.62 LEI stub / 10.90 / 85.52

21+50 — 85.82 ✗ / 72.20 / 13.62 / 11.47 / 2.15

84.77 ✗ / 72.20 / 12.57 / 10.37 — C- 2.20

80.81 ✗ / 72.20 / 8.61 / 6.45 — C- 2.16

13.31 / 11.15 / 2.16

25+50 — 82.94 ✗ / 72.68 / 10.26 / 5.87 — C- 4.39

85.82 ✗ / 72.68 T.P. / 13.14 / 8.75 — C- 4.39

25+00 — 72.62 / 13.20 / 6.14 — C- 7.06

0.12 ft

24+50 — 72.56 / 13.26 / 4.68 — C- 8.58

24+18.03 — 72.52

P.O.T.

24+13.03 M.H. #6 — 72.52 / 13.30 / 4.60 — C- 8.70

24+08.03 — 72.51

7-27-50

B.M. # 5

91.22 / 1.01 / 92.23 ✗ / 12.20 / 80.03 / .50 / 80.53 ✗ / 1.41 / 79.12 / 5.60 / 84.72 / 10.62 / 74.10 = Recheck BM. # 7

74.10 / 11.72 / 85.82 ✗ / 8.75 / 77.07 / 5.87 / 82.94 ✗

Alvarado sewer

28+50 — 82.94 ± − 73.04 = 9.90 + 0.15 = C-9.75 — T.P. — 89.82 ± − 73.04 = 16.78 + 7.03 = C-9.75

28+00 — 72.98 − 9.96 + 2.53 = C-7.43 — 82.94 ± + 15 = 82.79 + 7.03 = 89.82 ± + 0.66 = 89.16 = Check B.M.#8 = 89.18

27+50 — 72.92 − 10.02 + 5.14 = C-4.88 ± — 4.88 + 7.87 = 12.75 − 16.7

BM.#8 89.18

27+00 — 72.86 − 10.08 + 6.88 = C-3.20 — 0.210

89.18 + 2.11 = 91.29 − 11.56 = 79.73 + 3.82 = 83.55 + 3.62 = 79.93 + 4.24 = 84.17 + 3.79 = 80.38

89.18 + 2.0 = 91.23 − 11.52 = 79.71 + 3.73 = 83.44 + 3.72 = 79.72 + 4.28 = 84.00 + 3.23 = 80.77

N.G.

26+50 — 72.80 − 10.14 + 7.39 = C-2.75

26+00 — 82.94 − 72.74 = 10.20 + 8.00 = C-2.20 — = plug in Conc. valve chamber 60' Lt of 39+00± = B.M. #6 = 81.09 — 1624

30+13.03 — 0.120 — 93.63 − 73.24 = 20.39 + 8.37 = C-12.02

Also: start Rock Base

B.M.# 8 89.18 + 4.45 = 93.63 ± + 13.07 = 80.56 + 9.51 = 84.07 ± + 1.99 = 82.08 + 7.06 = 89.14 + 8.16 = 80.98 = BM.# 9 ok

Δ 46°-40' Rt.

30+08.03 M.H.#7 — 73.23

30+03.03 — 73.23 − 16.59 + 4.86 = C-11.73 — 9.63 − 73.23 = 20.40 + 8.65 = C-11.75 + .02

30+00 — 73.22 − 16.60

29+50 — 0.170 — 73.16 − 16.66 + 4.99 = C-11.67

29+00 — 89.82 ± − 73.10 = 16.72 + 5.63 = C-11.09

Alvarado sewer

32+30.63 — 73.49
20.14
4.66
C-15.48

32+25 = End. Conc. cradle

32+00 — 73.46
20.17
2.82
C-17.35 ✓

31+80 Start Conc. cradle

31+50 — 73.40
20.23
4.22
C-16.01 ✓

0.12%

31+00 — 73.34
20.29
7.26
C-13.03 ✓

93.63
30+50 — 73.28
20.35
7.65
C 12.70 ✓

34+00 — 73.70
10.37
4.43
C 5.94 ✓

84.07 ✗
33+50 — 73.64
10.43
4.69
C-5.74 ✓

93.63 ✗
33+00 — 73.58
20.05
11.52
C-8.53 ✓

0.12%

32+50 — 73.52
20.11
5.59
C-14.52 ✓

32+40.63 — 73.51
20.12
5.00
C-15.12 ✓

32+35.63 = M.H.# 8 — 73.50
Δ 54°-32'-47"

Alvarado sewer

BM #9

80.98
8.72
89.70 ℄
C

36+19.63 M.H. #9
△ 2°-32' Lt.

73.96

89.70 ℄
74.53
15.17
9.65
C-5.52 ✓

38+50

38+00

74.40
15.30
7.11
C-8.19 ✓

Also end rock base
36+12.63 M.H. #8
△ 2°-32' Lt.

73.95
15.75
2.00
C 13.75 ✓

89.94 ℄
73.95
15.19
1.06
C-14.13 ✓

36+00

89.70
73.94
15.76
1.42
C-14.34 ✓

89.14 ℄ P.8
73.94
15.20
0.86
C-14.34 ✓

37+50

74.28
15.42
4.86 ✓
C-10.56 ✓

35+90 start rock base

0.25%

37+00

74.15
15.55
7.81
C-7.74 ✓

35+50

84.07 ℄
73.88
10.19
4.50
C-5.69 ✓

36+50

74.03
15.67
3.74
C-11.93 ✓

35+00

73.82
10.25
4.57 ✓
C-5.68

0.2%10

36+27.63

73.97
15.73
1.03
C 14.70 ✓

34+50

84.07 ℄
73.76
10.31
4.64
C 5.67 ✓

Alvarado sewer

89.70 ↑
9.82
79.88
5.50
85.38 ↑
3.42
81.96
6.26
88.22 ↑

41+50
75.27
10.11
4.93
C-5.18 ✓

41+00
75.15
10.23
5.29
C-4.94 ✓

40+50
85.38 ↑
75.02
10.36
5.54
C-4.82 ✓

0.25%

40+00
89.70 ↑
74.90 T.P.
14.80
9.82
C-4.98 ✓

39+50
74.78
14.92
10.45
C-4.47 ✓

39+00
74.65
15.05
9.55
C-5.50 ✓

43+50
85.38 ↑
76.24 T.P.
9.14
3.42
C-5.72 ✓

43+00
75.89
9.49
3.68
C-5.81 ✓

0.10%

42+55
75.58

P.O.T.
42+50 = M.H. #10
75.54
9.84
4.16
C 5.68 ✓

42+45
75.53

0.25%

42+00
75.40
9.98
4.70
C 5.28 ✓

Alvarado sewer

46+50	78.34	
	9.88	
	3.31 ✓	
	C- 6.57	
46+00	77.99	
	10.23	
	4.50	
	C- 5.73 ✓	
45+50	77.64	
	10.58	
	4.90	
	C- 5.68 ✓	
45+00	77.29	
	10.93	
	5.18	
	C- 5.75 ✓	
44+50	76.94	
	11.28	
	5.53	
	C- 5.75 ✓	
	88.22 ✓	
44+00	76.59	
	11.63	
	5.64 ✓	
	C- 5.99	

79 94
11 12
91.06
84 84
6.21
5
11 2

11 — 12
5
16 12

48+78 M.H. #11 P.O.T.	79.94	
	16.18 ✓	
	5.06	
	C- 11.12 ✓	
48+73	~~79.90~~	
48+50	79.74	
	16.38 ✓	
	5.65	
	C- 10.73 ✓	
48+00	79.39	
	16.73	
	7.09 ✓	
	C- 9.64	
	96.12 ✓	
47+50	79.04	
	17.08	
	7.87 ✓	
	C- 9.21	
	88.22 ✓	
47+00	78.69 TP	
	9.53	
	0.98 ✓	
	C- 8.55	

* 88.22
.098
87.24
8.88
96.12 ✓
2.37
93.75 =
Set B.M. on ½
at 62.54 Lt of 52+30 C/L at
75°-26' Δ
F.B. radius
10
= B.M. #10

Alvarado sewer

93.75 BM
6.97
100 72

Δ 7°-54' Rt.
53+56.83 M.H. # 12 — 8329

51+00
81.50
14.62 ✓
3.72
C-10.90 ✓

50+50
81.15
14.97 ✓
4.37
C-10.60 ✓

50+00
80.80
15.32 ✓
4.60
C-10.72 ✓

10%
0

49+50
80.45
15.67 ✓
4.38
C-11.29 ✓

49+00
96.12
80.10
16.02 ✓
4.50
C-11.52 ✓

48~~+83~~
~~79.97~~

53+51.83
100 72
83.26
17.46
5.71 ✓
11.75 ✓

53+00
100 72
82.90
17.82
3.79 ✓
C 14.03

52+50
10%
0
100.72
82.55
18.17
3.96 ✓
C 14.21

52+00
92.12 ✱
82.20
13.92
1.35 ✓ ✓
C-12.57

51+50
96.12 ✱
81.85
14.27
2.96 ✓ ✓
C-11.31

Alvarado sewer

100 72
9 60
9 12 TP
8 35
99 47 HI

56+00
99 47
85.00
14 47
7 39
C 7.08 ✓

55+50
100 72
84.65
16 07
9 60
C 6.47 ✓

55+00
100 72
84.30
16 42
8 63
C 7.79 ✓

0.10 TP

54+50
100.72
83.95
16.77
6 61
C 10.16 ✓

54+00
100.72
83.60
17 12
6 70
C 10.42 ✓

53+61.83
100 72
83.32 ✓
17.40
6 09
C 11.31

P.O.T.
58+80.63 M.H.# 13
104 46
86.96
17.50
4 65
C 12.85 ✓

58+75 63
86.93 L

58+50
99 47
86.75
12.72
0 26
C 12.46 ✓

58+00
86.40
13.07
1 42
C 11.65 ✓

0.10 TP

57+50
99 47
86.05
13 42
3 36
C 10.06 ✓

57+00
85.70
13 77
4 82
C 8.95 ✓

56+50
99 47
85.35
14 12
4 72
C 9 35

99 47 HI
0 26
99 21 TP
5.25
104 46 HI

99.82
85.35
14.47
5.07
C 9.40

Alvarado sewer

104 46 HI

111.40
88.50
15.96
2.13
C 13 83 ✓

88.50
+ 2.90
91.5
13 85 ✓

60+50
88.15
16.31
3.16
C 13 15

C 13.45

60+00
87.80
16.66
4.78
C 11.88 ✓

59+50
0.10
87.45
17.01
4.86
C 12.15 ✓

10 44 6
59+00
87.10
17.36
4.49
C 12 87 ✓

~~5+85.63~~
87.00

P.O.T.
64+00.63 M.H #1A
111 40
90.60
20 80
5 85
C 14.95 ✓

~~63+95~~ 63
90.57

63+50
90.25
21.15
6.08
C 15.07 ✓

63+00
89.90
21 50
7 07 ✓
C 14.43

62+50
89.55
21.85
7 68 ✓
C 14.17

111 40
62+00
89.20
22.20
7 81 ✓
C 14.39

104 46
61+50
88.85
15.61
1 45 ✓
C 14.16

104 46 HI
- 1 45
103 01 TP
+ 5 79
108.80 HI
- 0 93
107 87 — #11 set BM on Sycamore tree Sta 63+75
3 53
111 40 HI
108 80
2 88
105.92
elev of Hub at 64+00 63

111 40
88 85
225 5 ✓
8 38
C 14.17

Alvarado sewer

	HI 111.40	HI 111.40
		6.45
66+50	92.35	104.95
	19.05	10.41
		HI 115.16
	6.45	
	C 12.60 ✓	
66+00	92.00	
	19.40	
	6.15	
	C 13.25 ✓	
65+50	91.65	
	19.75	
	6.42 ✓	
	C 13.33	
65+00	91.30	
	20.10	
	6.46 ✓	
	C 13.64	
	111.40	
64+50	90.95	
	20.45	
	6.21 ✓	
	C 14.24	
~~64+05.63~~	~~90.64~~	

Δ 140-59' Lt.		X 15.16
68+61.93 M.H. # 15		~~93.83~~
		~~21.33~~
		~~7.72~~
		C 13.61
68+55.93	93.80	
	21.36 ✓	
	8.10	
	C 13.26	
~~68+50~~	~~93.75~~	
	~~21.41~~	
68+00	93.40	
	21.76	
	9.32	
	C 12.44 ✓	
67+50	93.05	
	22.11	
	10.06	
	C 12.05 ✓	
	115.16	
67+00	92.70	
	22.46	
	10.75 ✓	
	C 11.71	

Alvarado sewer

		115 16 HI			119 91
	115 16	6 43		119.85 ✗	8 45
71+00	97.30	108.73 TP	74+00	101.68	111.46 ✗ BM #12
	17.86	11 18		18.17	@ 73+25 30 lft.
	6.43	119.91 HI		6.99	119 91
	C 11.43			C 11.18	6 43
				119 91 ✗	113 49 ✗ Hub
70+50	96.57		73+50	100.95 100.95	at Sta MH
	18.59			18.90 18 96	113 60 -
	7 51			6.43 6 49	0.11
	C 11.08 ✓			C 12.47 C 12.47	
					113 34
70+00	95.84		73+00	100.22	— 0.46
	19 32			19 69	112.88
	7 50			7 04	5 52
	C 11.82 ✓			C 12.65	118 40 HI
1.46 %			1.46 %		6.94
69+50	95.11		72+50	99.49	111 46 check BM
	20.05			20 42	
	7 20			7 97	
	C 12 85 ✓			C 12.45	113.49 T.P. 1/2
					6.36
69+00	94.38		72+00	98.76	119.85 ✗
	20 78			21.15	
	7 72			8 03	
	C 13 06 ✓			C 13.12	
	115 16			119 91	
68+66.93	93,90		71+50	98.03	
	21 26			21.88	
	7 72 ✓			9 65	
	C 13.54			C 12.23	

Alcarado sewer

75+50

103.88
15.97
6.55
C-9.42

75+00

103.15
16.70
6.76
C-9.94

74+50 1.46%

102.42
17.43
7.36
C-10.07

74+33"

102.17
17.68
7.13
C-10.55

Δ 3°-00' Rt.
74+28" M.H.# 16

~~102.10~~
~~17.75~~

74+23"

102.02
17.83
6.77
C-11.06

P.O.T.
78+38 C/ M.H.# 17

119.85
108.09
11.76
3.85
C-7.91

for check on college line
116.86
108.09
8.77
0.85
C 7.92 ok

78+33 C/

~~108.03~~
~~11.82~~
~~3.85~~
~~C-7.97~~

78+00

107.53
12.32
4.31
C-8.01

77+50

106.80
13.05
5.14
C-7.91

77+00 1.46%

106.07
13.78
5.23
C-8.55

76+50

105.34
14.51
5.48
C-9.03

76+00

104.61
15.24
6.15
C-9.09

Alvarado Sewer

80+13.11 — 110.64 / 15.09 / 7.52 / C 7.57

80+00 — 125.73 / 110.44 / 15.29 / 7.73 / C 7.56

119.53 / 6.20 / 125.73 ℄

79+50 — 119.85℄ / 109.71 / 10.14 / 2.84 / C-7.30

119.85℄ / 0.32 / 119.53 / 40' Rt of Sta. 78+00 = B.M.#16

1.46%

79+00 — 125.73 / 108.98 / 16.75 / 9.60 / Check C 7.15 — 108.98 / 10.87 / 3.73 / C-7.14

119.85℄ / 3.57 / 116.28 ℄ / M.H #17

78+50 — 108.25 / 11.60 / 4.16 / C-7.44

78+43.63 — 108.16

82+00 — 112.90 / 12.83 / 6.53 / C 6.30

81+50 — 112.30 / 13.43 / 6.53 / C 6.90

81+00 — 111.90 / 14.03 / 6.80 / C 7.23

1.20%

80+50 — 111.10 / 14.63 / 7.00 / C 7.63

80+23.11 — 110.78 / 14.95 / 7.54 / C 7.41

125.73 ℄

Δ 16°.57'-30" Rt.

80+18.11 M.H.# 18 — 110.72

Alvarado sewer

9-14-50

			125.73			B.M.#13
			3.03			125.32
			122.70 = P.O.T.			7.12
			85+11.3 ±			132.44 ℄
85+00	132.44 ℄	125.73 ℄		87+00	122.93	
	116.50	116.50			9.51	
	15.94	9.23			3.60	
	10.22	3.48			C-5.91	
	C-5.72	C5.75				
			115.73			
			041			
84+50		115.90	125.32 = Nail	86+50	120.12	
		9.83	Intrac 30'LT	5.63%	12.32	
		3.86	of 84+10 ±		6.66	
		C5.97	= B.M.#13		C-5.66	
84+00		115.30		86+13.97	118.09	
		10.43			14.35	
1.20%		4.11			9.16	
		C6.32			C-5.19	
				Δ 28°-43' Rt.		
83+50		114.70		86+08.97 M.H.#19	117.81	
		11.03				
		4.35				
		C6.68				
83+00		114.10		86+03.97	117.76	
		11.63			14.68	
		5.12			9.24	
		C6.51			C-5.44	
				1.20%		
82+50		113.50	125.73	85+50	132.44 ℄	
		12.23			117.10	
		6.44			15.34	
		C5.79			9.69	
					C-5.65	

Alvarado Sewer

132.44 ℄
0.72
131.72
10.98
142.70 ℄
4.99
137.71
℄ 50' Lt
M.H. # 21

88+65 1.40 90

137.01

P.O.T.
88+60 = M.H. # 20

131.94
10.76
6.08
C- 4.68

88+55

131.66

88+50

131.38
11.32
6.29
C 5.03

5.63 76

88+00

142.70 ℄
128.56
14.14
8.15
C- 5.99

87+50 t.p.

132.44
125.75
6.69
0.72
C- 5.97

FB 254-16
X-in Rock
= Δ 56°-38' Rt.
EL.: 254.63
7.89
262.52
13.19
249.33
0.20
249.53
12.67
236.86
0.49
237.35
12.00
225.35
1.48
226.83
2.40
224.43
25' Rt. R.P. M.H. # 24

95+83.87
= B.M. # 14

226.83 ℄
8.86
217.97

P.O.T.
90+80 = M.H. # 21 135.02

90+75 134.95

90+50 142.70 ℄
134.60
8.10
3.80
C- 4.30

90+00 1.40 76

133.90
8.80
3.49
C- 5.31

89+50 133.20
9.50
3.32
C- 6.18

89+00 132.50
10.20
4.63
C- 5.57

Alvarado Sewer

P.O.T.
94+40 ℄ = M.H. # 23 — 194.18 T
176.50
17.68
10.33
C 7.35

stub.
93+06.56 (yellow sheet.)

168.33
12.85
181.18 T
0.24
180.94
13.74
194.18 T
0.05
194.13
12.58
206.71 T
38
206.33
12.34
218.67 T
159
217.08
8.39
225.47 T
1.01
224.46 = B.M. # 1A
224.43
0.03

B.M. # 1A 224.43
1.01
225.44 T

94+35 ~~176.00~~

94+00 — 181.18 T
172.61
8.57
3.15
C 5.42

93+50 — 181.18 T
167.76
13.42
8.50
C 4.92

0.01 ft.

93+00 — 162.91

B.M. # 1A 224.43
1.01

92+50 — 158.06

92+45 — 157.58

CITY OF SAN DIEGO
ESTIMATING SHEETS

Sept 16-50
Asisson
Garber
Rorer

SUBJECT

BY

DATE 19

FORM 291

No. Check

93+40						166.80	7.82 2.57 C5.25		181.18 ✗ 166.80 14.38 9.12 C 5.26 ✓
93+06.66						163.57	11.05 5.39 C4.76		163.57 Grade C 4.76 168.33 EL. stub
+73.33					9.7	160.33	14.29 5.24 C4.4		
TP			10.81	174.62	0.38	163.81			
+40 = MH "22						157.10	6.99 2.46 C4.53		
92+08						152.68	11.41 5.30 C5.51		
91+76						148.27	15.82 9.98 C5.84		
TP			13.35	164.09	0.62	150.74			
91+44					13.8	143.85	7.51 1.82 C5.81		
91+12						139.41	11.93 7.52 C4.41		
90+80	MH 21					135.02	11.34 12.09 C4.25		
BM			12.46	151.86		138.90	90+50		134.50 4.50 138.9

P.O.T. 92+40 = M.H. # 22	157.10	
92+35	156.41	
92+00	151.58	
91+50	144.68	13.80 TP
91+00	137.78	
90+85	135.71	

P.O.T. 94+40 = M.H. # 23	194.18 ℄ 176.50 17.68 10.33 C 7.35	stub. 93+06.66 (yellow sheet.) 168.33 12.85 181.18 ℄ 0.24 180.94 13.24 194.18 ℄ 0.05
92+35 ~~92+35~~	176.00	
94+00	181.18 ℄ 172.61 8.57 3.15 C 5.42	194.13 12.58 206.71 ℄ 38 206.33 12.34 218.67 ℄ 159 217.08 8.39 225.47 ℄ 1.01
93+50	181.18 ℄ 167.76 13.42 8.50 C-4.92	
93+00	162.91	224.46 = B.M. # 14 224.43 0.03 B.M. # 14 224.43 1.01 225.44 ℄
92+50	158.06	
92+45	157.58	

Alvarado Sewer

Δ 22°-26' Rt.
95+83.87 = M.H.# 24 — 214.91

95+78.87 — 213.58
5.09
3.82
C-1.27

95+50 — 218.67 ℄
205.87
12.80
9.59
C-3.21

95+00 — 206.71 ℄
192.52
14.19
10.38
C-3.81

26.70 ℄

94+50 — 194.19 ℄
179.17
15.01
8.67
C-6.34

94+45 — 179.84

96+92.50
↑
Expantion Joint
↓
96+92.33

⊗ 7'Lt+7'Rt
96+75
℄ Bent #2

7' Rt.
220.15 ℄
216.73
3.42
8.30
F 4.88

216.73
4.88
211.85 = H.I. Cross

211.85
7.67
219.52 ℄

⊗ 7'+21' Rt
96+30
℄ Bent #1

~~7' Rt.~~
~~217.97~~
~~215.83~~
C-2.14

⊗ 21' Lt
219.52 ℄
217.97
1.55
12.19
F 10.64

7' Lt
+11' Rt.
Start Beam
96+15

2.00 ℄

7' Lt.
225.44 ℄
215.53
9.91
8.78
C-1.13

Levels from Back line

95+88.87

~~218.67 ℄~~
~~215.01~~
~~3.67~~
~~11.59~~
C-7.08

Levels from Fwd. line

225.44 ℄
215.01
10.43
8.39
C-2.04 this Fits line to east.

℄ From P.21
226.83
8.86
217.97 T.P.
2.18
220.15 ℄
7.95
212.20 =
B.M.# 15
16' Rt of

Alvarado Sewer

1578 ft

* 220.15 (P-23)

98+00 — 219.23

2%

7½ Rt.
220.15
218.71
144
4.03
F 2.59

289.50 *
219.71
1079
13.36
F 2.57

97+73.83
End. Conc. Beams

10½ Rt.
220.15 *
218.33
1.82
6.89
F 5.07

97+54.83
℄ Bent #4

2%

97+50 — 218.23

219.50 *
217.42
2.08
1.13
F 2.05

7½ Rt.
220.15 *
217.42
2.73
4.77
F 2.04

97+09.83
℄ Bent #3

97+05.40
97+07.40
Δ 5°30' Lt.
Δ 5-25' Lt

217.34

99+87.23 — 245.53

9%

X 6.7 Lt.
99+59.70
Δ 18°-32' Lt.

255.11 *
243.05
12.06
6.67
C. 5.39

99+29.84 — 239.02

13.5%

X-116 Lt.
98+99.27
Δ 44°-42' Lt.

242.42 *
234.99
7.43
0.95
C. 6.48

15.7%

X-12.8 Lt.
98+58.47
Δ 6°-27' Lt.

242.42 *
228.47
13.95
6.16
C- 7.79

98+29.24 — 223.85

15.80%

Alvarado Sewer

Sept. 29-50

101+50 — 252.14

X - 6± Lt.
101+25 — 259.45 ℄ / 251.39 / 8.0 C / 1.91 / C - 6.15

3 @ 10

X 3± Lt.
100+91.63
Δ 10°-44' Rt. — 259.45 ℄ / 250.39 / 9.0 C / + 1.16 / C - 11.22

X 5± Lt.
100+66.00 — 259.45 ℄ / 249.58 / 9.87 / 2.24 / C - 7.63

3.1 @ 10

100+40.38 — 248.80

(3+25.62)

100+19.76 — ~~248.16~~

X - 8°
100+14.76 M.H.# 25 — 255.11 ℄ / 248.01 / 7.10 / 0.96 / C - 6.34
Δ 18°-03' Lt.

100+09.76 — 247.56

9 @ 10

X - 6' on line of bridge
102+67.04 — 258.01 ℄ / 255.13 / 2.88 / 3.83 / F 0.95
Δ 47°-17' Lt.

102+65.50 — 255.10
End Beams

2 @ 10

102+16.50 — 254.13
End Conc.

X - 5's on line of bridge
102+14.95 — 259.45 ℄ / 254.10 / 5.35 / 3.81 / C 1.54
Δ 56°-38' Rt.

102+00 — 253.64

9 @ 10

X - 7° Lt.
101+75 — X - 254.15 ℄ / 252.89 / 6.56 / 0.59 / C 5.97

102+14.95
X on rock
254.63 / 4.82 / 259.45 ℄ / 9.09 / 250.36 / 4.75 / 255.11 - ℄ / 12.79 / 242.32 / 0.10 / 242.42 ℄ / 13.13 / 229.29 / 0.21 / 229.50 ℄

254.63 B.M. / 3.38 / 258.01 ℄

Alvarado Sewer

□ -7'Lt.
104+00
275.11 ↑
267.62
7.49
3.12
C 4.37

4.10%

X-6'
103+66.04
266.22
8.89
5.13
C-3.76

103+61.04 M.H.#26
Δ 38°-25' Rt
266.02

□-6'
103+56.04
265.82
9.29
8.47
C-0.82

4.10%

Brk
103+30
□-10'Lt.
264.75
10.36
12.03
F 1.67

22.8%

Brk.
102+90
X-10'Lt.
265.69
255.60
10.09
11.19
F 1.10

265.69 ↑
255.13
10.56
11.70
F 1.14

□-10'Lt.
106+50
280.15 ↑
274.04
6.11
4.72
C-1.39

X-10'Lt.
106+00
273.04
7.11
4.38
C-2.73

X-10'Lt.
105+50
272.04
8.11
7.58
C-0.53

2%

X-10'Lt.
105+00
271.04
9.11
12.01
F 2.90

□-6'
104+72.50
L
Δ 21°-51' Rt.
104+67.50
270.38

280.15 ↑
270.48
9.67
11.67
F 2.00

X-6'
104+62.50
275.11 ↑
270.18
4.93
2.33
C-2.60

X-7'Lt.
104+50
269.67
5.44
4.90
C-0.54

BM#18
286.16
.091
287.07 ↑
9.88
277.19
2.94
280.13 ↑
2.40
277.73
6" R.P. 2003/68
277.75

BM#22
277.75
2.40
280.15 ↑
8.63
271.52 T.P.
3.59
275.11 ↑
9.42
265.69 T.P.
.00
265.69 ↑

Alvarado Sewer

109+88 53 M.H.#28 — 280.16
Δ 59°-00' Lt.

286.16 B.M. #18
073
286.89 ✱

109+83 53 — 280.13
6.76
4.70
C 2.06

286.16 B.M. #18
1.09
287.25 ✱

109+37 25 — 286.89 ✱
End Exist 279.8
21" V.C. 7.09
7.05
.04

Connect to Exist 21"

107+18 50 M.H.#27 — 275.40

Δ-10' Lt. — 280.15 ✱ (P.26)
107+00 — 275.04
5.11
3.48
C 1.63

112+00 — 281.65
5.60
4.15
C 1.45

111+50 — 281.30
5.95
4.85
C 1.10

111+00 — 280.95
6.30
5.04
C 1.26

110+50 — 280.60
0.70%
6.65
5.11
C 1.54

110+00 — 280.25
7.00
4.99
C 2.01

109+93 53 — 286.89 ✱ — 287.25
280.20 — 280.20
6.69 — 7.05
4.67 — 5.04 ✓
C 2.02 — C 2.04 ✓

Alvarado Sewer

114+00	~90.46 283.27 7.19 6.44 C 0.75	
113+50	~90.46 282.84 7.62 7.08 C 0.54	
113+00	~90.46 282.41 8.05 7.17 0.88	0.88
112+60 87	~90.46 282.07 8.39 6.72 C 1.67	
112+55 87 △ △ 16°-00'Lt.		
		282.03
112+50 87 HI	286.16 #28 .430 290.46 6.57 28389 282 1.89	287.25 A 282.00 5.25 3.36 C 1.89
116+00		285.64 11.42 8.28 ✓ C 3.14
115+50		284.89 1.21.7 9.59 ✓ C 2.58
115+05 16		~97.06 284.21 1.28 ✓ 11.73 ✓ C 1.52
115+00 16 M.H. # 29 △ 15°-33'Lt.		284.14
114+95 16	~90.46 284.10 6.36 4.67 C 1.69	285.79 284.10 C 1.69
		~90.46 HI 4.67 285.79 11.27 ✓ ~97.06 HI
114+50	~90.46 283.70 6.76 5.76 C 1.00	0.76

Alvarado Sewer

118+47 47 Δ 26°-59' Lt.	289.35	
	7.71	
118+42 47	289.28	
	7.78	
	not set ~~5~~ on stub	
118+20	20 Rt. 2.03	
	295.03 B.M. #29	
118+00	288.64	
	8.42	
	5.95 ✓	
	C 1.47	
117+50	287.89	
	9.17	
	6.81 ✓	
	C 2.36	
117+00	287.14	
	9.92	
	7.04 ✓	
	C 2.88	
	297.06 T	
116+50	286.39	
	10.67	
	7.67 ✓	
	C 3.00	

	297 41 06	
121+00	293.13	302.69 T
	3.93	293.13
	1.96	9.56
	C 1.97	7.59
		C 1.97
120+50	292.38	
	4.68	
	2.54	
	C 2.14	
120+00	291.63	
	5.43	
	3.30	
	C 2.13	
119+50	290.88	
	6.18	
	3.84	
	C 2.34	
119+00	290.13	
	6.93	
	4.35	
	C 2.58	
118+52 47	289.42	
	7.64 ✓	
	5.13	
	C 2.51	

Alvarado Sewer

123+00
296.47
6.22
4.80
C-1.42

2.15 ø/o

122+54 43
chis on 24" pt. post
16.2 Rt 6.27 ft
302.69 ✗
295.49
7.20
5.56
C-1.64

122+49 43 △
7°-33' Rt. RP
chis X on Rock
16.2 R & 6.27 R
295.38

122+44 43
302.69
295.30
7.39
5.54
C-1.85

302.12 ✗
295.30
6.82
C-1.47

out

297.06
3.30
293.76
8.36
302.12
2.17
299 ✓
on cross 16.2 Rt

122+00
1.50 ø/o
302.69 ✗
294.63
8.06
6.76
C-1.30

297.06
294.63
2.43
0.95
C-1.48

121+50
302.69 ✗
293.88
8.81
6.96
C-1.85

297.06
293.88
3.18
1.36
C-1.82

124+69 40
5.38 ø/o
310.15 ✗
300.28
9.87
6.35
C-3.52

311.29 ✗
300.28
11.01
7.50
C-3.51 ✓

B.M. #19
299.95
274
302.69 ✗
2.48
300.21
9.94
310.15 ✗
0.95
309.20
12.25
321.45
1.33
320.12
=320.11
0.01
x. on dam
1873
10

124+64 40 △
44°-20' Rt.
300.00

124+59 40
299.90
10.25
6.78
C-3.47

x. 6'
310.15 ✗
299.70
10.45
6.82
C-3.63

B.M. #20
320.11
8.05
328.16 ✗

124+50

124+00
2.15 ø/o
302.69 T.R.
298.62
4.07
2.48
C-1.59

123+50
297.54
5.15
3.42
C-1.73

Alvarado Sewer

	℄ cuts	X-12'Lt.		
126+73.47 ∆ 9°-20'Lt.	9.61 7.30 C 2.31	320.86* 311.25 9.61 1.25 C 8.36		
126+68.47		310.99		
126+50	10.86 8.56 C-2.30	□-6'Lt. 310.00 10.86 8.19 C-2.67		
126+00	13.55 11.65 C-1.90	□-10 Lt. 320.86* 307.31 13.55 7.57 C-5.98	□-20 Lt.	
5.38 to 1				
125+50	6.67 5.37 C-1.30	X-10'Lt. 311.29* 304.62 6.67 4.45 C-2.22	□-20'Lt. 6.67 4.24 C-2.43	
125+00	9.36 7.86 C-1.50	□-7' 311.29* 301.93 9.36 7.65 C-1.71		

10/10/50

320.11 = BM #20

				0.82
128+60.79		328.16*	325.95*	320.93
		315.88	315.88	13.17
		12.28	10.07	307.76
		8.26	6.05	3.53
		C 4.02	C-4.02	311.29*
				0.91
				310.38
				10.48
128+50	℄ cut 10.23 7.23 C-3.00	□-6'Lt. 315.72 10.23 6.10 C-4.13		320.86*
				91
				319.95
				6.00
				325.95 X
		□-6'Lt.		5.84
128+00	10.99 3.99 C 7.00	325.95* 314.96 10.99 3.79 C 7.20		320.11 BM #20
1.50 to 1				
127+50	℄ 6.66 2.35 C 4.31	□-6' 320.86 314.20 6.66 0.91 C-5.75		
Brk.	7.11 4.94* C 2.20	□-10'Lt. 320.86* 313.75 7.11 1.30 C 5.81	□-15'Lt.	
127+20				
	℄	□-6'		
127+00	8.18 5.18 C-3.00	320.86 312.68 8.18 3.52 C-4.66		
5.38 to 1				
126+78.47		311.52		

Alvarado Sewer

328.16 ℄
316.73
11.43
8.00
C 3.43

130+50

316.52
11.64
8.57
C-3.07

130+00

316.31
11.85
9.32
C-2.53

0.42%

129+50

316.10
12.06
9.42
C-2.64

129+00

328.16 ℄
315.98
12.18
8.39
C-3.79

128+70.79

315.96

128+65.79 M.H.#30
Δ 41°-53' Rt.

328.41 ℄
317.99
10.42
3.53
C 6.89

133+50

317.78
10.63
4.08
C-6.55

133+00

317.57
10.84
4.89
C-5.95

132+50

317.36
11.05
5.63
C-5.42

0.42%

132+00

317.15
11.26
6.52
C-4.74

131+50

328.41 ℄
316.94
11.47
7.53
C-3.94

131+00

B.M.#20
320.11
8.05
328.16 ℄
8.00
320.16
8.25
328.41 ℄
5.51
322.90 =
50' Rt. of 2/2.
50' Rt of
135+78.82
= B.M.#21

Alvarado Sewer

10/5/50

BM #21
322.90
6.58
329.48 ℄
3.45
326.03 ℄
8.60
334.63 ℄
1.82
332.81 = B.M.#23

6" stub. 145+25 [25]

135+73 [82] M.H.#31 — 318.93
Δ 39°-12' Lt.

135+68 [82] — 329.48 ℄ / 318.91 — 10.57 / 4.75 — C-5.82 ✓ — 328.41 ℄ / 318.91 — 9.50 / 3.68 — C-5.82

135+50 — 318.83 — 9.58 / 3.53 — C-6.05

135+00 — 318.62 — 9.79 / 3.60 — C-6.19
0.42%

134+50 — 318.41 — 10.00 / 3.68 — C 6.32

134+00 — 318.20 — 10.21 / 3.26 — C-6.95

138+00 — 329.48 ℄ / 319.83 — 9.65 / 4.14 — C-5.51

137+50 — 319.63 — 9.85 / 3.80 — C 6.05

137+00 — 319.43 — 10.05 / 3.95 — C-6.10
0.40%

136+50 — 319.23 — 10.25 / 4.38 — C-5.87

136+00 — 319.03 — 10.45 / 4.55 — C-5.90

135+78 [82] — 318.95 — 10.53 / 4.78 — C-5.75

Alvarado Sewer

P.O.T.		5' Back	5' Ahead		
140+50.25 M.H.# 32	320.84	320.82	320.86	143+50	323.42
	13.79				11.21
	6.07				2.68
	C 7.72				C-8.53
	334.63 T				334.63 T
140+00	320.63			143+00	322.99
	14.00				11.64
	6.93				3.50
	C-7.07				C-8.14
	329.48 T				
139+50	320.43			142+50	322.56
	9.05				12.07
	3.45				4.54
	C-5.60				C-7.53
0.40 %				0.86 %	
139+00				142+00	322.13
	320.23				12.50
	9.25				4.70
	4.01				C-7.80
	C 5.24				
138+50				141+50	321.70
	320.03				12.93
	9.45				5.03
	4.63				C 7.90
	C-4.82				
		329.48 T			
138+44.55 (T) only		320.50		141+00	321.27
		8.98			13.36
		4.55			6.05
		C-4.43			C 7.31

Alvarado Sewer

B.M. #23
332.81
7.68
340.49 π

145+35 25 —
324.99
15.50
7.45
C 8.05

145+30 25 — MH #33
Δ 4°-04'-30" Lt.
324.97

145+25 25 —
324.93
9.70
1.82
C - 7.88

145+00
15.78
7.89
C 7.89
324.71
9.92
2.02
C - 7.90

0.98

144+50
324.28
10.35
1.94
C - 8.41

144+00
323.85
10.78
2.40
C - 8.38

148+00
326.05
14.44
5.58
C - 8.86

147+50
325.85
14.64
4.94
C - 9.70

147+00
325.65
14.84
5.54
C - 9.30

146+50
325.45
15.04
5.98
C - 9.06

0.40

146+00
325.25
15.24
6.34
C 8.90

145+50
325.05
15.44
7.43
C - 8.01

Alvarado Sewer

149+92 45	342.61 ℄ 326.85 15.76 8.50 C-7.26	343.79 ℄ 326.85 16.94 9.27 7.67		
149+87 45 M.H.#34 Δ 9°-58'-30" Lt.	326.80			
149+82 45	340.49 ℄ 326.78 13.71 6.27 C-7.44	326.78 C 7.44 334.22 = El. stub 9.75 343.97 ℄ to page 45		
149+50	326.65 13.84 5.15 C-8.69			
149+00	326.45 14.04 5.32 C-8.72			
148+50	326.25 14.24 4.88 C-9.36			
152+50	329.43 13.18 4.31 C-8.87			
152+00	328.93 13.68 5.25 C-8.43			
151+50	328.43 14.18 6.60 C-7.58			
151+00	327.93 14.68 7.42 C-7.26			
150+50	327.43 15.18 7.90 C-7.28			
150+00	326.93 15.68 8.09 C-7.59			
			340.49 ℄ 6.27 334.22 T.P. 8.39 342.61 ℄ 4.83 337.78 = 50' N/y. R.P. M.H.#34 149+87 45	

Alvarado Sewer

154+84 CL MH #35 — 331.77
Δ 0°-56'-30" Rt.

154+79 CL — 342.61 IT
331.73
10.88
1.38
C-9.50

= T.P. EL.: 341.23
5.88
347.11 IT
0.48
346.63
= CL offset @ 154+12.72

154+50 — 347.11 IT
331.43
15.68
6.48
C-9.20 ✓

331.43
11.18
1.98
C-9.20

154+00 — 330.93
11.68
2.68
C-9.00

1%

153+50 — 330.43
12.18
3.44
C-8.74

153+00 — 329.93
12.68
3.70
C-8.98

157+00 — 332.63
14.48
4.81
C-9.67

156+50 — 332.43
14.68
5.20
C-9.48

156+00 — 332.23
14.88
5.51
C-9.37

155+50 — 332.03
15.08
5.78
C-9.30

0.40 ft

155+00 — 331.83
15.28
6.12
C-9.16

154+89 CL — 347.11 IT
331.79
15.32
6.07
C-9.25

Alvarado Sewer

10/20/50

159+17 72 M.H. #36
△ 12°-08' Rt.
333.50

159+12 72
347.11 ℄
333.48
13.63
0.48
C-13.15

159+00
353.78
333.43
20.35
7.53
C 12.82
check
333.43
13.68
0.86
C-12.82

158+50
0.40%
333.23
13.88
1.67
C-12.21

158+00
333.03
14.08
2.87
C-11.21

157+50
332.83
14.28
3.98
C-10.30

=T.P.= El. 0 = 346.63
7.15
353.78 ℄
1.04
352.74
6.78
359.52 ℄
2.10
357.42
4.51
361.93 ℄
4.10
357.83 =
B.M. #25
High cor. Conc.
Mon. Sly. line
State Highway

161+50
353.78 ℄
340.93
12.85
3.90
C-8.95

161+00
339.33
14.45
6.06
C-8.39

160+50
337.73
16.05
6.97
C-9.08

160+00
3.20%
336.13
17.65
7.58
C-10.07

159+50
334.53
19.25
6.87
C-12.38

159+22 72
353.78 ℄
333.66
20.12
7.16
C-12.96

Alvarado Sewer

163+00	359.52 A.P. 38 345.00 14.52 6.52 C-8.00
162+71 66	344.72
162+66 cc M.H. # 37 P.O.T.	353.78 344.67 9.11 1.04 C-8.07
162+61 cc	343.50
162+50	344.13 9.65 1.67 C-7.98
162+00	342.53 11.25 2.75 C 8.50

166+00	348.00 11.52 5.13 C-6.39
165+50	347.50 12.02 5.32 C-6.70
165+00	347.00 12.52 4.32 C-8.20
164+50	346.50 13.02 5.43 C-7.59
164+00	346.00 13.52 5.78 C-7.74
163+50	345.50 14.02 6.13 C-7.89

Alvarado

Line for stub.
167+71 66

End of Line.

167+66 66 M.H. #38
Δ 5°-44'-30" Rt.

359.52 π 359.52 ft.
349.67 1.8
9.85 357.7 = End
2.10
C-7.75

167+50

349.50
10.02
2.46
C-7.56

167+00

349.00
10.52
3.27
C-7.25

166+50

348.50
11.02
4.95
C-6.07

State College Line

sheet { 1418-D / 1421-C-D.

2+00 — 123.86 — 14.55 — 7.34 — C 7.21

1+50 — 138.41 ℄ — 120.07 — 18.34 — 10.58 — C 7.76

7.46%

7.58%

1+00 — 126.8 C ℄ — 116.28 — 10.58 — 2.97 — C 7.61

0+50 — 112.49 — 14.37 — 7.35 — C 7.02

14.37 / 7.35 / 7.02

(0+13 - M.H.) 0+05 — 126.86 ℄ — 109.68 — 17.18 — 10.54 — C 6.64

0+00 = M.H. #17

(0.1418

P.O.T 5+04.85 M.H. #1 — 161.38 ℄ — 146.98 — 14.40 — 8.70 — C 5.70

check: 164.14 ℄ — 146.98 — 17.16 — 11.46 — C 5.70 ✓

B.M. #16 — 119.53 — 7.33 — 126.8 C ℄ — 0.89 — 125.97 — 12.44

4+50 — 151.33 ℄ — 142.81 — 8.52 — 2.60 — C 5.92

138.41 ℄ — 0.34 — 138.07 — 13.26

4+00 — 139.02 — 12.31 — 4.87 — C 7.44

151.33 ℄ — 1.30 — 150.03 — 11.35 —

7.58%

3+50 — 151.33 ℄ — 135.23 — 16.10 — 9.54 — C 6.56

161.38 ℄ — 2.99 — 158.39

B.M. #17 25' Rt. of 5+30 ±

158.39 — 5.75 —

7.46%

3+00 — 138.41 ℄ — 131.44 — 6.97 — 0.34 — C 6.63

164.14 ℄

2+50 — 127.65 — 10.76 — 3.94 — C 6.82

College Line

7+84 85
Exist. 10"

192.60
180.50 ±
12.10
5.8
C- 6.3

7+49 85

182.45 ℄
176.37
6.08
14.89 ±
C- 1.19

Δ L 20°-06' Rt.
7+44 85 175.78

7+39 85

175.18
7.27
4.96
C- 2.31

7+00

182.45 ℄
170.40
12.05
5.51
C- 6.54

6+50

196.71 ℄
164.40
12.31
3.34
C- 8.97

6+00 12 0/0

176.71 ℄
158.40
18.31
11.06
C- 7.25

5+50

164.14 ℄
152.40
11.74
5.25
C- 6.49

164.14 ℄
0.42
163.72
12.99
176.71 ℄
0.13
176.58
5.87
182.45 ℄
0.60
181.85
10.75
192.60 ℄

11+50

211.54 ℄
204.00
7.54
4.56
C- 2.98

2054
66
chiseled □
So. End Culvert
w. " Head wall

192.90
12.17
205.07
1.26
203.81
7.73
211.54 ℄

11+00

203.00
8.54
5.95
C- 2.59

10+50 2 0/0

202.00
9.54
6.51
C 3.03

10+00

201.00
10.54
6.69
C- 3.85

9+74 85

200.50
11.04
6.61
C- 4.43

Δ 20°-05'44
9+69 85
M.H. #3
} 200.40

211.54 ℄
9+64 85
200.18
11.36
6.18
C 5.18

9+49 85 -
Exist 10"
199.50 ±

College Line

14+50
223.96 ✕
217.50
6.46
1.14 T.P.
C- 5.32
211.54 ✕
009
211.45
12.51
223.96 ✕
1.14
222.82
13.22
236.04 ✕
0.54
235.50
13.07
248.57 ✕
0.37
248.20
12.84
261.04 ✕
.40
260.64
13.30
273.94 ✕
0.88
273.06
12.37
285.43 ✕
0.13
285.30
12.73
298.03 ✕
0.13
297.90
12.80
310.70 ✕
0.04
310.66
10.34
321.00 ✕
10.98
310.02
309.91

14+00
214.00
9.96
5.64
C 4.32

13+50
223.96 ✕
210.50
13.46
8.96
C-4.50

P.O.T.
12+99 85 M.H.#4
211.54 ✕
207.00 = T.B.
4.54
0.09
C-4.43

12+50
206.00
5.54
2.33
C-3.21

12+00
211.54 ✕
205.00
6.54
3.87
C- 2.67
2054
77

15+44 85
273.94 ✕
256.40
17.54
11.85
C-5.69
50%

15+24 85 Brk.
261.04 ✕
246.40
14.64
8.78
C- 5.86
62%

14+99 85 Brk.
248.57 ✕
230.90
17.67
12.14
C- 5.53

14+89 85
236.04 ✕
224.70
11.34
6.22
C- 5.12

14+79.85
221.07
14.97
8.97
C- 6.00

14+74 85 M.H.#5 = 219.25
Δ -35°-39' Lt.

14+69 85
236.04 ✕
218.90
17.14
9.88
C- 7.26

College line

Exist. sewer
connect to

17+19.03±
17+11.03 = M.H. #6

321.00 ℄
306.10
14.90
6.58
C- 8.32

16+77 85
16+69 85 Brk

310.70 ℄
295.80
14.90
8.29
C- 6.61

44

16+47 85
16+44 85

35.6%

298.03 ℄
286.90
11.13
5.88
C- 5.25

45

16+19 85 Brk

25%

285.43 ℄
278.00
7.43
4.24
C- 3.19

28

15+89 85 Brk

26%

285.43 ℄
270.50
14.93
10.59
C- 4.34

4

15+64 85 Brk

38%

273.91 ℄
264.00
9.91
4.65
C- 5.29

5

Reservoir Dr. Sewer.

Sheet 1421-D
" 1421-B-D.

2+50 — 331.77
12.20
3.41
C-8.79

2+00 — 330.82
13.15
5.05
C-8.10

1+50 — 329.87
14.10
6.33
C-7.77

1.90%

1+00 — 328.92
15.05
7.32
C-7.73

0+50 — 327.97
16.00
9.11
C-6.89

Exist M.H.
= 0+39.82=
M.H. #34
149+87.35
(1421-D.

327.78

From page 36

343.97 ✕
0.86
343.11
8.08
351.19 ✕

5+05 — 336.61
14.58
5.00
C 9.58

D-25'+50' Lt.
Δ 15°-18' Lt.
5+00 = M.H.#1 — 336.52

4+95 — 336.43
14.76
5.30
C 9.46

4+50 — 335.57
15.62
6.55
C 9.07

1.90%

4+00 — 351.19
334.62
16.57
7.88
C-8.69

3+50 — 343.97 ✕
333.67
10.30
1.33
C-8.97

3+00 — 332.72
11.25
2.40
C-8.85

7+50 3.50 %

341.75
18.53
7.97
C-10.56

7+20 - Brk

360.28 ★
3.28
357.00
Brk.

340.70
19.58
8.65
C-10.93

7+00

360.28 ★
340.32
19.96
8.87
C-11.09

6+50 1.90 %

351.19 ★
339.37
11.82
1.42
C 10.40

6+00

338.42
12.77
2.96
C-9.81

5+50

337.47
13.72
3.99
C 9.73

351.19 ★
0.01
351.12
9.16
360.28 ★
1.40
358.88
9.19
368.07 ★
.38
367.69
10.83
378.52 ★
2.05
376.47 : B.M. #2
= +/- 52.8' Lt.
of M.H. # 4
Sta 18+15

10+00 2.40 %

350.28
10.00
2.42
C-7.58

P.O.T.
9+80 M.H. #2

349.80
10.48
2.83
C-7.65

9+50

348.75
11.53
3.42
C-8.11

9+00

347.00
13.28
4.46
C-8.82

8+50 3.50 %

345.25
15.03
5.38
C-9.65

8+00

343.50
16.78
6.85
C-9.93

Reservoir Dr.

13+00
357.48
10.59
4.13
C 6.46

12+50
356.28
11.79
4.94
C 6.85

12+00
355.08
12.99
5.81
C 7.18

11+50
2.40 %
353.88
14.19
7.43
C 6.76

11+00
368.07 ℄
352.68
15.39
8.15
C 7.24

10+50
360.28 ℄
351.48
8.80
1.40
C 7.40

15+00
362.20
16.32
9.57
C 6.75

2.20 %

14+60
378.52 ℄ ℄ AC
361.31
17.21
10.10
C 7.11

27° 11' Rt.
14+55 = M.H. #3 = 361.20
028 + 513 Lt.

14+50
368.07 ℄
361.08
6.99
0.38
C 6.61

14+00
2.40 %
359.88
8.19
1.78
C 6.41

13+50
358.68
9.39
3.29
C 6.10

Reservoir Dr. 1170

18+00
368.80
9.72
3.19
C-6.53

17+50
367.70
10.82
3.95
C-6.87

17+00
366.60
11.92
4.95
C-6.97

2.10 ft

16+50
365.50
13.02
6.34
C-6.68

16+00
364.40
14.12
7.44
C-6.68

15+50
363.30
15.22
8.87
C-6.35

19+50
386.02 ℄
371.95
14.07
7.38
C-6.69

19+00
370.90
15.12
8.51
C-6.61

18+50
386.02
369.85
16.17
9.34
C-6.83

2.10 ft

18+20
378.52 ℄
369.22
9.30
2.45
C-6.85

Δ 1°07' Rt
18+15 = M.H.#4 369.12
∴ 8° 25 + 52 Lt.

18+10
369.02
9.50
2.71
C-6.79

2.10 ft

369.22 I.E. 18+20
6.85
376.07 EL. Stub.
9.95
386.02 = ℄

386.02 ℄
369.02
17.00
10.21
C 6.79
ok

Reservoir Dr. line

ahead
=21+99.50 = 14.44 5 — 377.13
21+98.25 Back
Δ 22°-58'-30"
30' Lt along
Saranac line

21+93.26 — 377.03
8.99
1.98
C 7.01

21+50 — 376.15
9.87
2.72
C 7.15

21+00 — 375.10
10.92
4.06
C 6.86

20+50 — 374.05
11.97
5.05
C 6.92

2.10 ℄

20+00 — 386.02 ✕
373.00
13.02
5.93
C- 7.09

24+00 — 381.13
13.68
7.12
C 6.56

23+50 — 380.13
14.68
7.60
C 7.08

23+00 — 379.13
15.68
8.49
C- 7.19

394.81 ✕
22+50 — 378.13
16.68
9.61
C 7.07

2 ℄

22+00

22+04.50 — 386.02 ✕
377.23 = T.P.
8.79
1.92
C-6.87

386.02 ✕
1.92
384.10
10.71
394.81 ✕

Reservoir Dr. line

26+05 ℄

394.81 ℘
385.23
9.58
1.43 = T.P.
C- 8.15

Δ 2°-36' Lt.
26+00 = M.H. #6
□ - 25.4 40' Lt

385.17

℘ 394.81
1.43
393.38
9.65
403.03 ℘

25+95

385.03
9.78
2.10
C 7.68

25+50

384.13
10.68
4.02
C- 6.66

25+00 ℄

383.13
11.68
5.61
C- 6.07

24+50

382.13
12.68
6.24
C 6.44

29+00 +05

391.23
11.80
2.54
C- 9.26

28+50 +55

390.23
12.80
4.64
C- 8.16

28+00 +05

389.23
13.80
6.54
C- 7.26

27+50 +55 ℄

388.23
14.80
7.84
C- 6.96

27+00 +05

387.23
15.80
7.61
C- 8.19

26+50

403.03
386.13
16.90
7.11
C- 9.79

Reservoir Dr. line

End of line
29+65
0 27' Rt.
Pipe 7" Lt.

403.03
392.43
10.60
1.41
C- 9.19

29+~~50~~ +55

392.23
10.80
1.76
C 9.04

Locust St

Poe to oliphant

Curb Stakes

26, 14 Mar. '51

W.O. 31233

Sommerman
Begg
Walker

B.M. = S.W. Prop. Mon. Locust + Poe = 14.43

Transferred to 17th R.P. cross in Conc. drive $\frac{2036}{53}$ - E. cross = 14.86

	#1 (S) Lat	#2 (S) Lat	#3 (S) Lat
	10.89	10.06	6.82
	5.25	4.23	3.84
	C-5.64	C-5.83	C-2.98

INDEXED La.10 MAR 20 1952

see P 77 - for Returns

	Rough East	Curb East	Curb west	Rough West
	East N.-0.1			West
1+25	2.57	1.65	1.93	3.69
	12.10	12.10	12.60	12.60
	C0.47	F0.45	F0.67	C1.09
	X-5'			
0+75	1.73	1.85	2.14	14.08
	12.30	12.30	12.80	12.80
	F0.57	F0.45	F0.66	C1.28
				X-5'
0+25 ob.B.C.	2.45	2.37	2.44	486
	12.50	12.50	13.00	13.00
	F0.05	F0.13	F0.56	C1.86
Sly. Poe 0+00	2.66			1.69
	12.50			13.65
	E0.16			C0.94
Nly. Poe 0-70	16.08		8.35	8.35
	14.00		15.00	15.00
	C-2.1		C3.4	C3.4

	East	Curb east	Curb west	West N. on line	
Sly oliphant 2+70	3.74			6.31	C31
	12.50			13.30	13.50
	C1.24			C3.01	C2.81
Nly oliphant 2+00	on line				
	13.55			4.47	4.47
	11.79			12.55	12.90
	C-1.76			C-1.92	C-1.57
	N.-0.1				
ob. B.C. 1+75	3.21	1.63	2.12	4.40	
	11.90	11.90	12.40	12.40	
	C1.31	F0.27	F0.28	C2.00	

Oliphant

26-Mar, '31.

Locust to Rosecrans

	North	cl.	South	
	cl.		cl.	
2+73. = Exist Pave. Cl. B.C.	7.60	7.60	7.76	7.80 - 7.76 = C 0.04
2+54	cl. 7.89	7.90 - 7.89 = C 0.01		8.08
2+34	8.75 - 8.21 = C 0.54	7.77 - 8.21 = F 0.44	7.86 - 8.41 = F 0.55	8.80 - 8.41 = C 0.39
1+81.8	9.25 - 9.00 = C 0.25	2+00 F 0.40	1+98 F 0.41	10.31 - 9.29 = C 1.02
1+29.5	10.39 - 9.80 = C 0.59	1+50 ~~F 0.31~~ F 0.71	1+50 F 0.38	1.07 - 10.16 = C 0.91
		1+00 ~~F 0.34~~ F 0.63	1+00 F 0.43	
0+77.3	X+0.3 1.53 - 10.60 = C 0.93	0+50 F 0.34	0+50 F 0.35	2.56 - 11.03 = C 1.53
N.E.C. 0+25	2.88 - 11.40 = C 1.48	10.97 - 11.40 = F 0.43	1.55 - 11.90 = F 0.35	3.42 - 11.90 = C 1.52
Ely Locust. 0+00	3.55 - 11.70 = C 1.85			3.74 - 12.32 = C 1.42

Pac. St.

53

Locust to Rosecrans.

	North	cl.	cl.	south
Exist. Pave. N.B.C. 2+73	6.67 - 6.63 = C 0.04	6.63	6.79	6.82 - 6.79 = .03
2+54	0-2 7.30 - 7.18 = C 0.02	7.40 - 7.18 = C 0.32	6.77 - 7.19 = F 0.42	C. 84 - 7.19 = F 0.35
2+08.2	0-1 8.30 - 8.25 = C 0.05	2+25 C 0.06	2+25 F 0.50	7.37 - 8.16 = C 0.79
1+62.4	M.-0.1 10.25 - 9.32 = C 0.93	1+75 C 0.36	1+75 F 0.15	8.89 - 9.12 = F 0.23
1+16.6	M-0.2 11.53 - 10.38 = C 1.15	1+25 F 0.37	1+25 F 0.60	0.25 - 10.08 = C 0.17
0+70.8	13.04 - 11.44 = C 1.60	0+25 F 0.42	0+75 F 0.40	11.16 T.P. - 11.04 = C 0.12
0+25	15.66 - 12.50 = C 3.16	2.25 - 12.50 = F 0.25	1.95 - 12.00 = F 0.05	2.31 - 12.00 = C 0.31
Ely. Locust 0+00	16.08 - 13.30 = C 2.78			2.66 - 12.40 = C 0.26

3-Apr 1951

Chatsworth
Quimby - To Capistrano

54

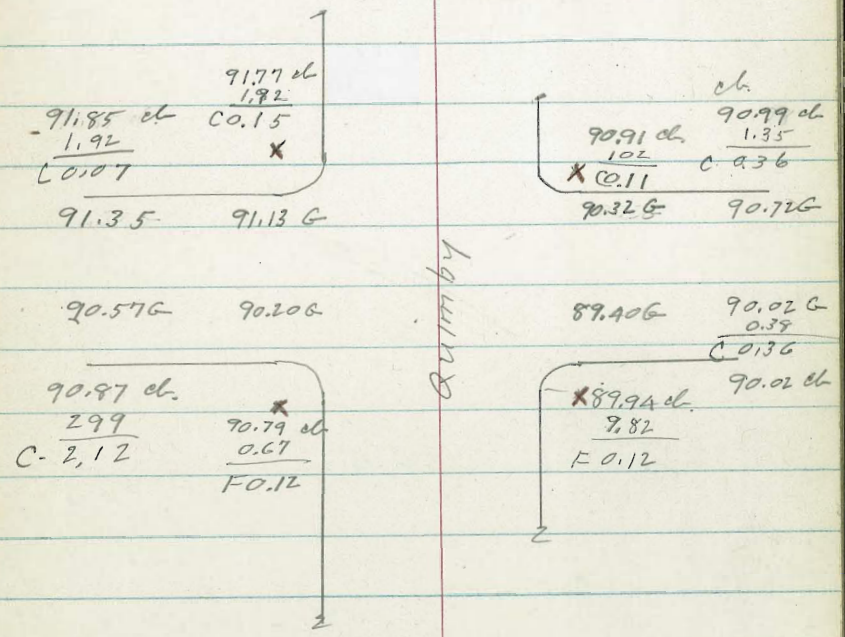
PAGE 54

3-Apr. 1951

Quimby - Chatsworth To Capistrano

X = 2' Rad. cross

Capistrano



Chatsworth

Set Water Meter Box grades
Sequoia St
Crown Point Dr. to Pac. Beach Dr.

Sommermeyer
Begg
D. Sisson
Wiereszewski.

9-Apr. 1951

N.E. 7'L+T.
P.B. Drive + Lamont
35.10

Used direct Elev. Rod

Set B.M. prop. +7' S.E.L+T.]
P.B. Drive + Sequoia]
EL. = 39.52

Grades on Nly stake.

1+26	6.20 24.73 C 1.47	
3+25	4.52 24.32 C 0.20	
2+50	2.78 23.27 C 0.51	
2+01	1.74 22.57 F 0.83	
1+20	0.30 21.58 F 1.28	
0+16	0.28 21.07 F 0.79	
0+00 = N.wly line Crown Pt. Dr. (on left.)		
1+58		2.08 R 22.79 F 0.71
1+45		2.30 R 22.73 F 0.43
0+67	3.80 22.98 L C 0.82	
0+25	4.78 22.85 L C 1.93	
0+19		5.35 R 22.33 C 3.02
0+12.5 cl. = B.C.		
0+00		
0-02		5.72 R. 22.26 C 3.46
0+00 = Ny. Roosevelt.		
5+03	23.30	Move back & prep
Ny. Roosevelt. 5+00		
4+87.5 = cl. B.C.		
4+65	6.35 23.94 C 2.41	

(W)
Sequoia

0+00 = Nly. Fortuna
0+05 = ∅. 2 C.

4+30	L	5.70 24.68 C 1.02		0-03	L For. T.P. = 29.74
3+73	R	3.52 23.54 F 0.02		6+03	L
3+44	L	3.67 23.89 F 0.22		6+00 = Sly Fortuna. 5+91	R 6.84 26.45 C 0.39
3+17	R	2.75 23.30 F 0.55	.0324 = Rate	5+87 = ∅. B. C. 26.42. 5+75	8.19 26.80 L C 1.39
2+83	L	2.95 23.68 F 0.73		5+48	R 6.21 25.92 C 0.29
2+73	R	2.15 23.17 F 1.22		5+20	7.35 26.03 L C 1.32
2+72	L	2.72 23.64 F 0.92		4+76	6.40 25.40 L C 1.00
2+35 2+24 H.	R	1.80 23.05 F 1.25	2.22 23.47 F 1.25	4+64	R 4.52 24.77 F 0.20
1+70			2.45 L 23.31 F 0.8 C	4+48	R 4.44 24.44 X

(W)
Sequoia

0+23 L 3.96 / 32.95 / C 1.01

9+13.4 = ℄ P.C.

0+00 = Nly. Chico

0-04 L

Sly. Chico
2+00 L

2+85 = ℄ E.C.

1+68 R 0.45 / 30.60 / F 0.15

1+25 L 1.41 / 30.26 / C-1.15

1+11 R 9.68 / 29.54 / C 0.14

0+70 R 9.28 / 28.78 / C 0.50

0+40 R 8.98 / 28.23 / C 0.75

3+30.3 = Sly. line P.B. Drive.

2+50 R 7.05 / 37.19 / F 0.14

2+37 L 8.60 / 37.33 / C-1.27

1+88 R 5.82 / 35.24 / C 0.58

1+30 R 4.67 / 34.20 / C 0.47

1+20 R 4.13 / 34.03 / C 0.10

0+72 L 4.94 / 33.75 / C-1.19

Hyacinth Drive
Curb stakes

Indexed 3-20-52

8538-L
FEB. 1872

stakes 8' b

Start ch. on Rt.	1.06 D-8'	3.23 D-8'
End ch. on Lt.	141.63	142.39
1+02	F0.57	C0.84
17°-42.56'		Meet Curb.
	D-10'	
	2.82	
0+76 5	143.50	
13°-16.92'	F0.68	
	D-8'	
	5.13	
0+51	145.25	
8°-51.28' ch. = 25-47	F0.12	
Start. ch. on Lt.	D-2'	
0+25 5	147.17	
4°-25.64'	Meet	
Ely. Amaryllis	149.16	
0+00		

End ch. on Rt.	9.38	
1+59.58	137.75	D-8'
	C-1.63	
1+53 03 E.C.	9.92	
26°-35'	138.30	D-7'
	C 1.62	
ch. 25.5		
1+27 5	1.85	D-8'
22°-08.20'	140.38	
ch. = 25.47	C 1.77	

Sequoia

Crown pt. Dr. to Pac. Beach Dr.

21 May 51.

Sammermeyer
B 99
R 51800
Telpaugh off

	Rough Grd. El.: Sub grade West	Rough Grd. El.: Sub grade East	Mon. Sequoia & Crown pt. Dr. El. = 20.77 curbs west	Mon. Sequoia & Crown pt. Dr. El. = 20.77 curbs east
2+50	4.76 22.33 C-2.43	2.98 21.83 C 1.15	F0.79	F0.72
2+00	3.98 21.95 C-2.33	2.07 21.15 C 0.92	F0.54	F0.80
1+50	3.00 20.97 C-2.03	0.84 20.45 C0.39	F0.53	F0.88
1+30 Ft.	2.71 20.70 C-2.01	—	1.07 21.70 F0.63	
1+14.5 Pt. U.E.C.	—	20.31 19.95 C0.36	—	0.68 20.95
1+10	2.33 20.47 C-1.86	19.93	0.93 21.47 F0.54	
0+55	1.56 20.23 C-1.33		0.67 21.23 F0.56	
Crown Pt. Dr. 0+00	20.00		0.53 21.00 F0.47	

Rough Grade
El = gutter sub grade

Roosevelt. 5+00			curbs west	curbs East	
A+87 E	6.04 22.38 C-4.26	6.10 21.88 C4.22	23.38	2.97 22.88 C 0.99	
4+70	6.48 22.86 C-3.62	5.97 22.36 C-3.61	3.92 23.86 C0.06	3.48 23.36 C 0.12	
4+50	6.71 23.33 C-3.38	5.75 22.83 C-2.92	4.56 24.33 C 0.23	3.79 23.83 F0.04	
4+30	6.89 23.68 C-3.21	5.69 23.18 C-2.51	4.82 24.68 C0.14	4.25 24.18 C0.07	6' Back ←
4+10	6.84 23.88 C-2.96	5.39 23.38 C-2.01	4.88 24.88 ×	4.38 24.38 ×	
3+90	6.55 23.96 C-2.59	5.09 23.46 C 1.63	4.83 24.96 F0.13	4.19 24.46 F0.27	4.24 24.46 F0.22
3+70	6.17 23.88 C-2.29	4.64 23.38 C-1.26	4.74 24.88 F 0.14	4.49 24.38 C0.02	3.80 24.38 F0.58
3+50	5.91 23.68 C-2.23	4.83 23.18 C 2.65	4.40 24.68 F 0.28	4.06 24.18 F 0.12	
3+00	5.54 23.00 C-2.54	3.74 22.50 C 1.24	F0.10	F0.20	

Sequoia

	Rough Grade West	Rough Grade East	Curbs West	Curbs East
3+40	5.02 22.87 C-2.15	2.76 22.37 C 0.39	3.84 23.87 F 0.03	2.84 23.37 F 0.53
3 ~	4.28 22.73 C-1.55	1.77 22.23 F 0.46	F 0.50	F 1.07
2+50	3.52 22.57 C 0.95	1.50 22.07 F 0.57	F 0.75	F 1.07 2+15 2
2 ~	3.47 22.41 C 1.06	1.55 21.91 F 0.36	F 0.49	F 1.30
1+50	3.47 22.25 C 1.22	1.96 21.75 C 0.21	F 0.69	F 0.69
1 ~	3.79 22.09 C 1.70	3.13 21.59 C 1.54	F 0.16	F 0.14
0+50	4.32 21.93 C 2.39	4.48 21.43 C 3.05	F 0.21	F 0.02
0+12.5 E.C.	5.29 21.81 C 3.48	4.65 21.31 C 3.34	3.00 22.81 C 0.19	2.33 21.31 C 0.02
N/y. Roosevelt. 0+00 =				

Sly Fortuna

	Rough Grade West	Rough Grade East	Curbs West	Curbs East
6+00				
5+87.5 B.C.	8.85 25.92 C 2.93	6.82 25.42 C 1.42	26.92	6.73 26.42 C 0.31
5+40	8.21 25.25 C 2.96	5.98 24.75 C 1.23	F 0.16	C 0.24
5 ~	7.62 24.67 C 2.95	5.01 24.17 C 0.84	F 0.17	C 0.07
4+60	7.26 24.10 C 3.16	4.66 23.60 C 1.06	F 0.14	F 0.15
4+20	6.11 23.51 C 2.60	3.85 23.04 C 0.81	4.73 24.54 C 0.19	3.97 24.04 F 0.07
4 ~	5.51 23.30 C 2.21	3.41 22.80 C 0.61	4.50 24.30 C 0.20	3.69 23.80 F 0.11
3+80	5.24 23.10 C 2.14	3.23 22.60 C 0.63	4.15 24.10 C 0.05	3.48 23.60 F 0.12
3+60	5.22 22.96 C 2.26	3.16 22.46 C 0.70	4.07 23.96 C 0.11	3.28 23.46 F 0.18

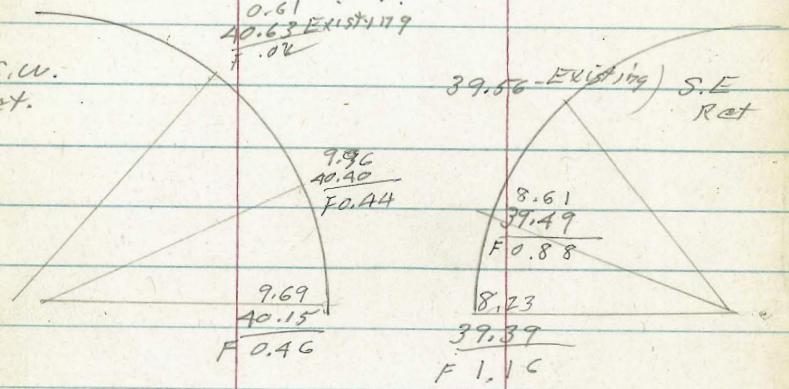
Sequoia

	Rough Gr. West	Rough Gr. East	Curbs West	Curbs East
0+13.4 ch. E.C.	4.75 31.79 C-2.96	1.35 31.29 C0.06	2.67 32.79 F0.12	2.06 32.29 F0.23
N'ly Chico 0+00				
S'ly Chico 2+00				
1+85 ch. B.C.	3.20 30.42 C2.78	9.92 29.92 X	31.42	0.56 30.92 F0.36
1+50	3.02 29.76 C3.26	9.25 29.26 F0.01	C-0.11	F0.20
1+00	2.71 28.84 C-3.87	9.11 28.34 C0.77	F-0.15	C0.05
0+50	1.12 27.92 C-3.20	8.28 27.42 C0.86	F.0.01	C0.55
0+12.5 ch. E.C.	3.60 27.22 C3.38	7.51 26.72 C0.79	28.22	27.72
N'ly, Fortuna 0+00				

	Rough Gr. West	Rough Gr. East	Curbs West	Curbs East
2+70	0.44 37.48 C2.98	6.67 36.98 F0.31	8.40 38.48 F0.08	7.26 37.98 F0.72
2+50	A 0.15 36.69 C-3.46	6.45 36.19 C0.26	7.65 37.69 F0.04	A' Back 6.91 37.19 F0.28
2+30	7.57 35.99 C-3.58	6.02 35.49 C0.53	6.98 36.99 F0.01	6.32 36.49 F0.17
2+10	8.76 35.37 C-3.39	5.80 34.87 C0.93	6.46 36.37 C0.09	5.88 35.87 C0.01
1+90	8.41 34.84 C-3.57	5.55 34.34 C-1.21	6.13 35.84 C0.29	5.41 35.34 C0.07
1+70	7.77 34.39 C-3.38	4.57 33.89 C0.68	5.64 35.39 C0.25	5.10 34.89 C-0.21
1+50	7.42 34.02 C-3.40	4.42 33.52 C0.90	5.23 35.02 C0.21	4.74 34.52 C-0.22
1+00	6.38 33.20 C-3.18	2.88 32.70 C0.18	4.28 34.20 C0.08	3.68 33.70 F0.02
0+50	6.15 32.38 C-3.77	1.81 31.88 F0.07	3.44 33.38 C0.06	T.P. 2.65 32.88 F0.23

Sequoia St.

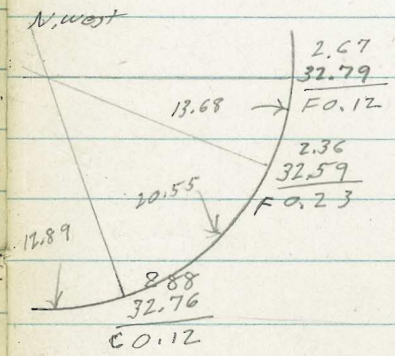
Returns Sequoia & P.B. Drive

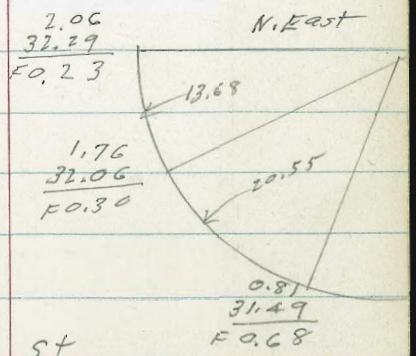


Rough Gr.

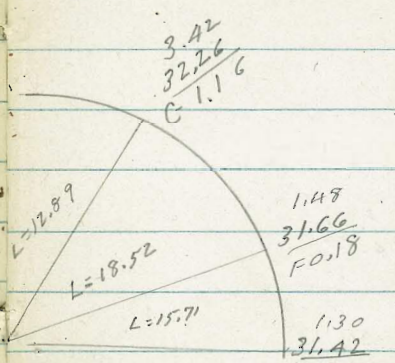
			Curbs West	Curbs East
Sly. P.B. Drive				
3+30 (Map)				
3+11.8 obsc.	41.10 39.12 C-1.98	7.74 38.38 F0.64	40.15	39.39
2+90	40.78 38.30 C. 2.48	7.12 37.80 F0.68	9.03 39.30 F-0.27	7.92 38.80 F0.88

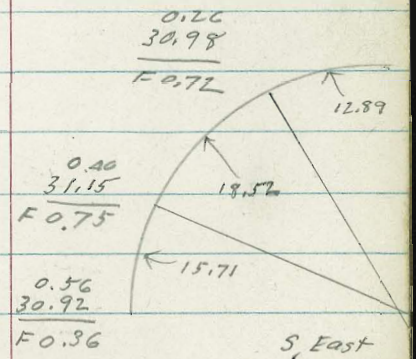
Curb returns Chico & Sequoia





Chico St





Cb. Returns

Segoia & Fortuna

Δ = #1 24°-40
#2 45°
#3 65°-20'
#4 = 90°

N.W. Ret.

8.33
28.22
C0.11

8.27
27.72
C0.55

8.34
28.00
C0.34

8.18
27.50
C0.68

8.14
27.96
C0.18

8.55
28.04
C0.51

12.89
10.67
12.89
10.67

N.E. Ret.

½Δ 12°-20'
½Δ 10°-10'
½Δ 10°-10'
½Δ 12°-20'

8.03
27.30
C0.73

7.80
26.94
C 0.86

Fortuna St

8.26
27.50
C0.76

7.34
27.20
C0.14

7.28
27.00
C0.28

7.07
26.92
C 0.15

S.W. Ret.

7.77
26.43
C0.34

6.89
26.53
C 0.36

6.79
26.50
C0.29

6.73
26.42
C0.31

S.E. Ret.

Segoia & Cr. P. Drive & Roosevelt.

Cb. Ret.

0.68
20.95
F0.27

0.55
20.93
F0.38

0.31
20.60
F0.29

20.25
F0.65

12.26
12.31
12.31
19.60

N.E. Segoia + Crown pt. Dr.

R=20

N.west

3.00
22.81
C0.19

3.06
22.77
C0.29

3.09
22.80
C0.29

3.33
22.91
C0.42

N. East

2.33
22.31
C0.02

2.25
22.27
F0.02

2.50
22.22
C0.28

3.46
22.19
C 1.27

12.89
10.67
10.67
12.89

Roosevelt St.

5.28
22.92
C 2.36

3.88
22.90
C0.98

3.58
23.04
C0.54

3.73
23.38
C 0.35

S. West

2.79
22.21
C 0.58

2.48
22.39
C 0.09

2.69
22.55
C 0.14

2.97
22.90
C 0.07

S. East.

Sewer to Bird Rock School

Electric Ave. south of Colima

22 June 1951

W.O. 62216

Sommermeyer
Oltman
Guile

Shoot 4222-B

used I.E. exist M.H. North of Clara way EL. = 75.00

2+06 stub	81.94 76.44 C 5.50	
1+59 = M.H. Δ 121° Rt.	81.11 76.11 C 5.00	
1+50	81.10 76.05 C 5.05	
1+00	80.96 75.70 C 5.26	
0+50	80.87 75.35 C 5.52	
0+00 = Existing M.H.	80.80 75.00 C 5.80	

Storm Drain

64

Lot 23 Randolph Terrace

(Nly. end Plumosa Way)

Sommermeyer
Begg
R Sisson
Oltman

sheets (B 4199, B 4200)

13-July '51

25 0.97 T.P.
245.33 T.P.
236.57 T.A.

B.M. = □ in walk FB 210/50 EL. = 257.36

0+58 = end of pipe	229.90 228.22 C 1.68
0+30	245.33 240.11 C 5.22
0+02 start pipe	8.11 252.00 C 6.11
Type H. Ch. inlet Tied - stub 7.15 East	7.37 252.00 C 5.37

Pipe 8.27 west

1.75 East of 0+00 = ℄ South face

0+00 = Slyline Randolph Terrace

See 4199-B

Stake sewer from
Imperial + Francis - 100' south

Sommerveyer
Begg
R. S. Sson
C. Ford

8-30-51
W.O. 20009

0+00 = Ctr. M.H. Imperial + Francis
I.E. M.H. = 17.80
I.E. stub to south = 18.10

Laid on 12% grade

B.M. = Stub 18.10
11.80
39.90

1+00 — 30.10 — 9.80 + 1.70 — C-11.50 — Flow Line of Dead end

0+75 — 27.10 — 12.80 — 5.37 — C- 7.43

0+50 — 24.10 — 15.80 — 11.23 — C- 4.57

0+25 — 21.10 — 18.80 — 12.15 — C- 6.65

0+00 — 18.10 — 21.80 — 12.36 — C- 9.44

Alley Blk. 69-O.B.

Bacon - Westerly

Between Del Monte & Santa Cruz

9-5-41
W.O. 31392

Sommermeyer
Bc99.
R. 3.3500
C. Ford

B.M. = N.W.B.P. Del Monte + Bacon. El. = 24.04
1+10 Rt. 32.18
2+50 Lt. 39.55
3+10 Rt. 44.98

0+85 North = Lat # 7	on left.	40.23 35.33 C 4.90
0+30 North = Lat # 6	on left	41.69 37.06 C 4.63
3+80 = Lat # 5	on left.	42.52 36.89 C 5.63
3+15 Lat # 4	on left.	41.30 35.25 C 6.05
2+65 = Lat. # 1	on right	Reset. 45.75 44.14 35.00 35.00 C 10.75 C 9.14
2+60 = Lat # 3	on left.	40.09 33.86 C 6.23
2+00 = Lat # 2	on left	37.70 31.70 C 6.00

Alley Blk. 69-O.B.

Ely. & Wly. Alley

INDEXED
Law
MAR 20 1952

Restaked 11/1/57
Q 281/57

		Lt.: South	Rt.: North
1+80		C.59 35.40 C 1.19	6.63 35.40 C 1.23
1+60		5.58 33.80 C 1.78	5.93 33.80 C 2.13
1+40		4.33 31.93 C 2.40	3.88 31.93 C 1.95
1+20	T.P.	32.81 30.31 C 2.50	32.19 30.31 C 1.88
1+00		30.97 29.02 C 1.95	30.63 29.02 C 1.61
0+80		9.13 28.08 C 1.05	7.14 28.08 F 0.94
0+60	X - 2'	7.30 27.47 F 0.17	6.82 X - 2' 27.47 F 0.65
0+40	N. - 0.10	7.54 27.20 C 0.34	26.73 X - 2' 27.20 F 0.47
0+00 Wly Bacon		7.07 27.06 C 0.01	27.06 26.97 C 0.09

E + W Alley Blk 69 O.B.

3+80	2.52 41.89 C 0.63	6.92 41.89 C 5.03
W. line Alley to South 3+70	2.57 41.64 C 0.93	8.81 41.64 C 7.17
E. line alley to South 3+50	2.32 41.13 C 1.19	9.51 41.13 C 8.38
3+30	1.84 40.63 C 1.21	6.23 40.63 C 5.60
3+10	1.19 40.12 C 1.07	4.97 40.12 C 4.85
T.P. 2+90	40.48 39.61 C 0.87	44.35 39.61 C 4.74
2+55	9.60 38.73 C 0.87	38.73
2+25	8.05 37.83 C 0.22	40.42 37.83 C 2.59
2+00	7.70 36.70 C 1.00	7.95 36.70 C 1.25

E + W. Alley Blk. 69 - O.B.

	Left = South	Right = North
W. line alley to North 4+30	1.32 42.35 F 1.03	
℄ to north 4+20	1.86 42.35 F 0.49	
E. line Alley to North 4+10	1.96 42.30 F 0.54	
B.C. to north 4+00	2.10 42.20 F 0.10	3.27 42.15 C 1.12
3+90	2.01 42.06 F 0.05	T.P. 4.75 42.05 C 2.70

Alley to North Blk. 69 - O.B.

0+00 = Sly. line Ely. + Wly. pavement

		Lt. = West	Rt. = East	
0+90	0.18 40.15 C 0.03	0.17 40.16 C 0.02	1.54 40.15 C 1.39	1.25 40.15 C 1.10
0+70	0.58 40.87 F 0.29	0.98 40.87 C 0.11	2.24 40.87 C 1.37 OK	
0+64		1.18 41.08 C 0.10 OK	2.48 41.08 C 1.40 OK	
0+50		2.32 41.58 C 0.74 OK	3.11 41.58 C 1.53 OK	
0+40		1.89 41.85 C 0.04 OK	2.99 41.83 C 1.16	3.01 41.83 C 1.18
0+30	1.39 42.06 F 0.67	1.71 42.06 F 0.29	2.97 42.05 C 0.88	2.95 42.05 C 0.90
0+20		1.77 42.20 F 0.43 OK	—	
0+10		1.88 42.30 F 0.42 OK	—	
0+00		1.32 42.35 F 1.03 OK	—	

Alley to North Blk. 69. O.B.

Restaked 11/1/51

El. Pave on Ely. line = 37.40

		Lt. = West	Rt. = East	
Del Monte Sly. line 1+70	El. Pave = 37.40	7.31 37.26 Pave	6.71 37.05 F 0.34 OK	El. Pave = 36.91
1+60	7.69 37.63 Grade	7.61 37.63 F 0.02	8.71 37.53 C 0.24	7.41 37.53 F 0.12
1+50		8.15 38.01 C 0.14 OK	8.41 38.01 C 0.44	7.78 38.01 F 0.23
1+30	8.87 38.72 C 0.15	8.85 38.72 C 0.13	9.59 38.72 C 0.87 OK	
1+10		9.54 39.44 C 0.10 OK	10.68 39.44 C 1.24 OK	

Alley to South Blk. 69. O.B.

0+00 = Sly. line Ely. + Wly. Alley

Restake 11/1/51

		Lt. = East	Rt. = West	
End Pave,				
0+90		40.24 39.90 C 0.34 OK	~~9.89~~ ~~39.90~~ ~~F 0.01~~	9.86 39.90 F 0.04
0+60		1.26 40.18 ~~C 1.08~~ OK	~~1.17~~ ~~40.18~~ ~~C 0.94~~	1.14 40.18 C 0.96
0+30		1.57 40.73 C 0.84 OK	~~1.77~~ ~~40.73~~ ~~C 1.04~~	1.31 40.73 C. 0.58
0+10		1.87 41.25 C 0.62 OK	1.91 41.25 C 0.66 OK	
0+00	165 41.13 C 0.52	~~2.37~~ ~~41.13~~ ~~C 1.19~~	~~2.58~~ ~~41.64~~ ~~C 0.93~~	~~1.17~~ ~~41.64~~ F 0.47

63rd - North of Akins

storm Drain

9-7-51
W.O. 20762

Sommermeyer
Begg.
R.S. 8507
C. Ford

Ref. B. sheet A147-B.

No map.

NO "nuthin'" more.

B.M. = Mon. S.L. Akins ℄ 63rd 197.81

1+31	end of pipe	10' east of wly line 63rd
0+87 4		
0+43 7		
		8.75 east of wly. line 63rd
0+00 = Nly. Akins on west		

℄

9.62
191.00
C 2.62

3.15
190.67
C-2.48

195.06
190.33
C= 4.73

187.03
190.00
F 2.97

62nd North of Akins
Storm Drain

9-7-57

sheet 4188-B
F.B. 1600 - P. 55

0+00 = Head wall as shown on 4188-B
Stakes 10' west of ℄

B.M. = Mon. ℄ 62nd, Sly. line Akins } El. 197.81

3+80
13.19
206.50
C- 6.69

3+40
9.91
203.60
C- 6.31

Cont. on left.

3+00
6.71
200.68
C 6.03

2+60
T.P.
3.61
197.76
C- 5.85

2+20
200.33
194.84
C- 5.49

1+80
5.11
191.92
C- 3.19

1+40 Brk
91.05
189.00
C- 2.05

1+32 Brk
90.57
188.57
C 2.00

0+88
89.04
186.88
C- 2.16

0+44
~~88.91~~ 8.98
~~185.17~~ 185.19
C- ~~3.72~~ 3.99

0+00
90.18 90.03
183.50 183.50
C- 6.68 C- 6.53

Alley Blk 201 Mission Beach

9-17-51

Sommermeyer
Begg
R Sisson
Altman

Sheet 7940-L

Stakes = stub 2' back or as noted
□ = stub
N = nail

B.M. = plug in sea wall & San Jose place. EL = 7.08

Sewer lateral #8

-2.54
6.59
4.62
C-1.97

	Lt. = South	Rt. = North
Ely. line Bayside lane		
0+54 28	-1.20	-1.20
	5.11	5.11
	5.21	5.21
		F 0.10
		□-2'
0+27 14	-1.10	-1.10
	5.91	5.01
	4.53	5.09
	C-0.48	F 0.08
0+00	N. line	N. line
Ely. end Comst.	3.91 ℄	3.91 ℄
See 7940-L	-1.00	-1.00
	4.91	4.91
	4.19	3.74
	C-0.72	C-1.17

Blk. 200 - Mission Beach

72

1+59 L Lt. = T.P. = -0.13
4.18
+4.05 = ℄
5.38
-1.33
5.24
3.91 - ℄

Regular rod.

INDEXED
Law
MAR 20 1952

		Lt. = South	Rt. = North	
Ely. line Mission Blvd.				
1+84 54		-0.58	-0.58	
		4.63	4.63	
		4.71	4.69	
1+59 L Brk.		-0.46	-0.46	
		4.51	4.51	
		4.18	4.31	
		C 0.33	C 0.20	
1+09 L	X+0.30	-0.69	-0.69	N 0.30
		4.74	4.74	
		4.32	4.10	
		C 0.42	C 0.64	
0+59 L	□-0 5'	-0.92	-0.91	
		4.97	4.96	
		4.70	5.29	
		C 0.27	F 0.33	
			3.91 ℄	
0+09 L	N-1'	-1.14	-1.14	
		5.19	5.05	
		4.18	5.05	
		C 1.01	X	
0+00		-1.31	-1.35	
wly. Bayside lane		5.36		

Blk. 199 - Mission Beach.

Self reading rod.

		Lt = South		Rt = North
Wly. Ely. line Strand				
1+52		5.93		5.88
1+32	0-1'	5.28 4.97 C 0.31		N +0.16 5.91 4.97 C 0.94
0+92		3.17 3.08 C 0.09		0-0.3 3.14 3.08 C 0.06
0+72	0-1'	2.50 2.22 C 0.28		2.55 2.22 C 0.33
0+52		2.06 1.51 C 0.55		1.05 T.P. 1.51 F 0.46
0+32		0.91 0.96 F 0.05		0.38 0.96 F 0.58
0+12		0.56 0.56 X		0.75 0.56 C 0.19
0+00 Wly. line Mission Blvd.		0.14 ✓		0.12 ✓

Blk. 198 - Mission Beach.

	Lt = South	Rt = North
0+53.33	5.51 5.20 C 0.31	5.42 5.20 C 0.22
0+26.7	6.39 5.62 C 0.77	5.79 5.59 C 0.20
= 0+00 Wly. line Strand Way.	6.03 6.00 ✓	5.98

Allen

Blk. # 245 - Mission Beach

9-17-51

W.O. 31869

Sommermeyer
Begg
R. Sisson
Oltman

F.B. 2047 p62
Sheet 8353-L

grades on stub 2' back, or as noted

B.M. = B.P. Seawall + York Ct. EL. = 7.08

Also see F.B. 281 / 61

2+65 Rt. = #1 — -0.68 / -2.11 / C 1.43

2+17.5 Lt. = #10 — -1.04 / -1.98 / C 0.94

2+15 Rt. = #2 — -1.09 / -1.97 / C 0.90 (Omit)

1+90 Lt. = #9 — -0.43 / -1.90 / C 1.47

1+67.5 Rt. = #8 — -1.84 — Omit

1+65 Lt. = #3 — -0.73 / -1.83 / C 1.10

"

0+90 Lt. = #5 — -0.65 / -1.63 / C 2.18

0+17.5 Lt. = #7 — 2.84 / -1.23 / C 4.07

0+15 Rt. = Lat. #6 — 3.15 / -1.22 / C 4.37

Sewer in 56th St
Trojan Northerly

10-2-51
W.O. 62224

Sommermeyer
Bag
R.S. [illegible]
W. Oltman

checked into Adelaide 425 45
425 46
01

F.P. 2131-2
Sheet 8978-L

B.M. = Mon. FB 2131-P2 ℄ Trojan & W. Line 56 = 377.44

Stakes set 6' Lt. of ℄ sewer.

INDEXED
Rec'd
MAR 20 1952

2+29.8		387.72 380.75 C 6.97	Plug. 5+29.8 ↑	412.33 404.75 C 7.58
1+79.8	7.5%	384.67 377.00 C 7.67	4+79.8	408.92 400.50 C 8.42
1+29.8		381.28 373.25 C 8.03	4+29.8 8.5%	404.36 396.25 C 8.11
M.H.#1 Δ 90-33' Lt. 0+79.83		376.80 369.50 C 7.30	M.H.#2 ↓ 3+79.8 ↑	399.63 392.00 C 7.63
0+39.91	11.5%	372.39 366.50 C 5.89	3+29.8	394.84 388.25 C 6.59
Exist. M.H. 0+00		374.52 363.50 C 11.02	11.5% 2+79.8	390.41 384.50 C 5.91

Stake Portion Alley Blk. 19 - O.B.

10-24-51

C.H.S.
Boyd
Allen
Oltmon

Stakes for grade only - not on line

0+00 = Ely. line Fronde

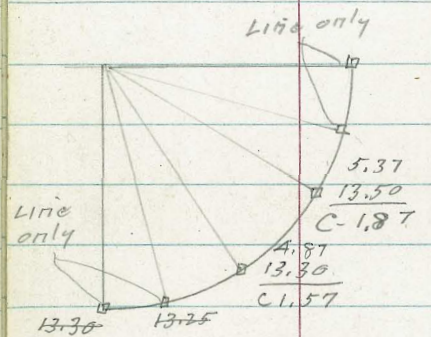
	North	South	
1+16	20.80 116.56 C-4.24	19.55 116.36 C-3.19	10' Rt. 0+00 2135/1C Elev. 97.45 12.80 107.25 0.21 107.04 T.P. Nail Sly. post of barricade 0+15
0+96	18.45 112.70 C-5.75	16.38 112.50 C-3.88	
0+78	15.50 108.58 C-6.92	14.48 108.38 C 6.10	
0+60	13.19 104.46 C-8.73	12.29 104.26 C-8.03	

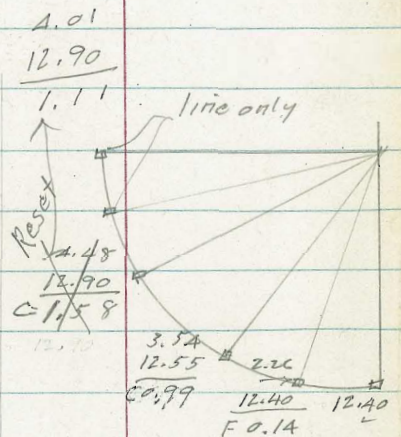
	North	South
1+96	9.03 129.16 F 0.13	29.09 128.96 C-0.13
1+76	27.05 126.43 C 0.62	26.42 126.23 C 0.19
1+56	24.75 123.42 C-1.33	24.63 123.22 C 1.41
1+36	23.00 120.13 C-2.87	21.94 119.93 C 2.01

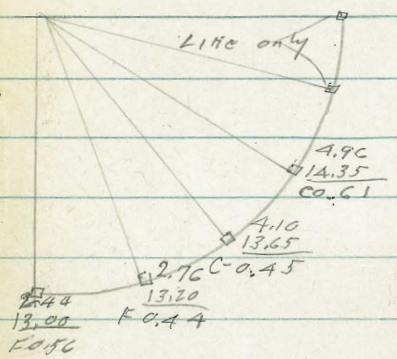
Locust St. at + Poe Oliphant

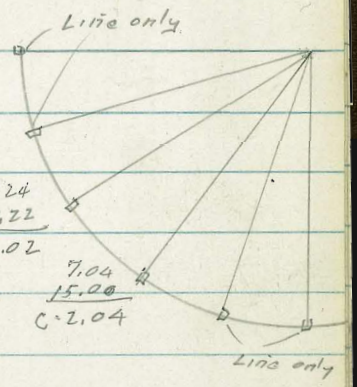
Curb. returns

See 12,52

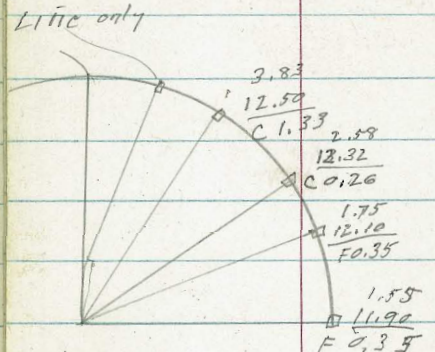


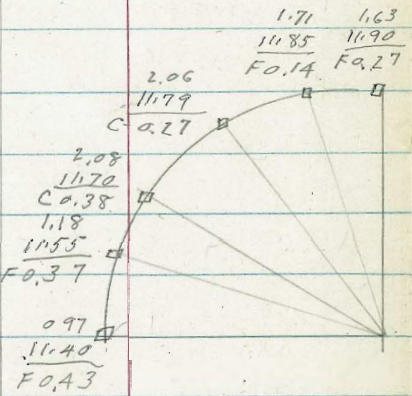


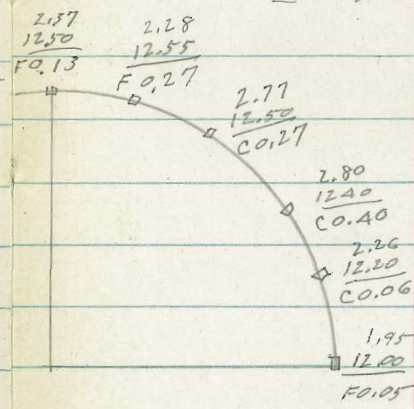


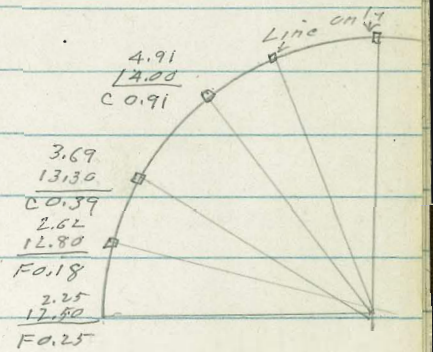


℄ Locust.









℄ Oliphant

℄ Poe

B.M. #20	FB 1873 / 10	320.11
B.M. #21 (P 32)		322.90
B.M. #22	60' Lt. 107+18±	277.75
B.M. #23	(P. 33)	332.81
B.M. #24	(P. 36)	337.78
B.M. #25	FB. 1873 / 17	357.01
BM #26	P-46	376.47
B.M. #27	FB 2040 / 15	118.78
B.M. #28		121.83

X-on (N. end spillway) top of dam. 25' Rt. Sta 127+80±

½ 50' Rt. of M.H. #31 = 135+73.82

½ R.P. 62' Nly. from 120" Multiplate Culvert 2003 / 68

6' stub. Sta. 1A5+25.25 (M.H. #33 - west stub)

50' Nly. R.P. From M.H. #34 = Sta. 1A9+87.A5

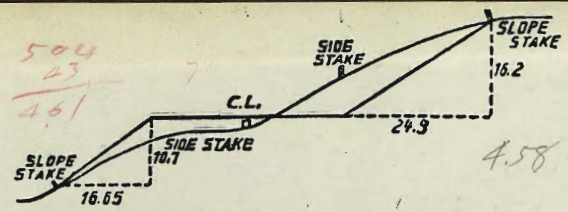
N. Ely top. of water valve box 56' Rt of 7+20 Reservoir Dr. 1110

½ 52.8 Lt. of M.H. #4 Sta. 18+15 Reservoir Dr.

Mon. N.W. Cor. College Grds. (30' wly. M.H #18)

X-in Sly. side Rim M.H. #17. Alvarado Canyon

B.M.#1 = Chisel □ S/y Head wall		73.28	(BM #57 / 1629 / 9) old culvert under Camino Del Rio + 200't west of Fairmount
B.M.#2 2040/43		84.00	Nail in pole #5199746H 12' Lt. Sta 1+02
B.M.#3		83.04	Nail in Pave. 22' Rt M.H.#3 Sta 6+91.18 (P.2)
B.M.#4 2040/43		81.99	1/2 R.P. 30' Rt. M.H.#3 (11+53.78)
B.M.#5 (P.-4)		91.22	X in wall 74.56 Rt. of P.I.T. Sta. 16+34.62
B.M.#6 (P-5)		89.72	Stub. 29.63 Rt. M.H.#5 Sta 18+49.24
B.M.#7 (P.6)	Re check P.7	74.10	Nail in pole 25' Lt. Sta. 21+90±
B.M.#8 (P.6)		89.18	= 50' R.P. stub M.H.#7 (30+08.03)
B.M.#9 (P.8)	Use this Elev. for Const.	80.98	60' Lt. aprox 39+00 Plug in top valve chamber
B.M.#10 (P-12)		93.75	6.2.54' Tie @ 75°-26' to Sta. 52+30.63 = 2/2 F.B. 2040/10
BM 11 (P 15)		107.87	20 Lt Base of tree 63+75
BM 12		111.46	30 R " spike 73+25
BM #13 (P. 20) Secd 16		125.32	30' Lt. - 84+10 spike in tree
B.M.#14 (P 21)		224.43	R.P. 25' Rt M.H.#24 Sta. 95+83.87
BM.#15 (P. 23)		212.20	Paint on rock 15' Rt of 97+51
BM#16 (P 19)		119.53	Stub. 40' Rt. of Sta 78+00
B.M.#17 (P.41)		158.39	" 25' Rt of 5+30 - College line
BM#18		286.16	R.R. spike in Sycamore 25' Rt of 110+00± FB 2040 - P 22
B.M.#19		299.95	X on rock 16.2' Rt of △ 122+49.43



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	71.20	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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