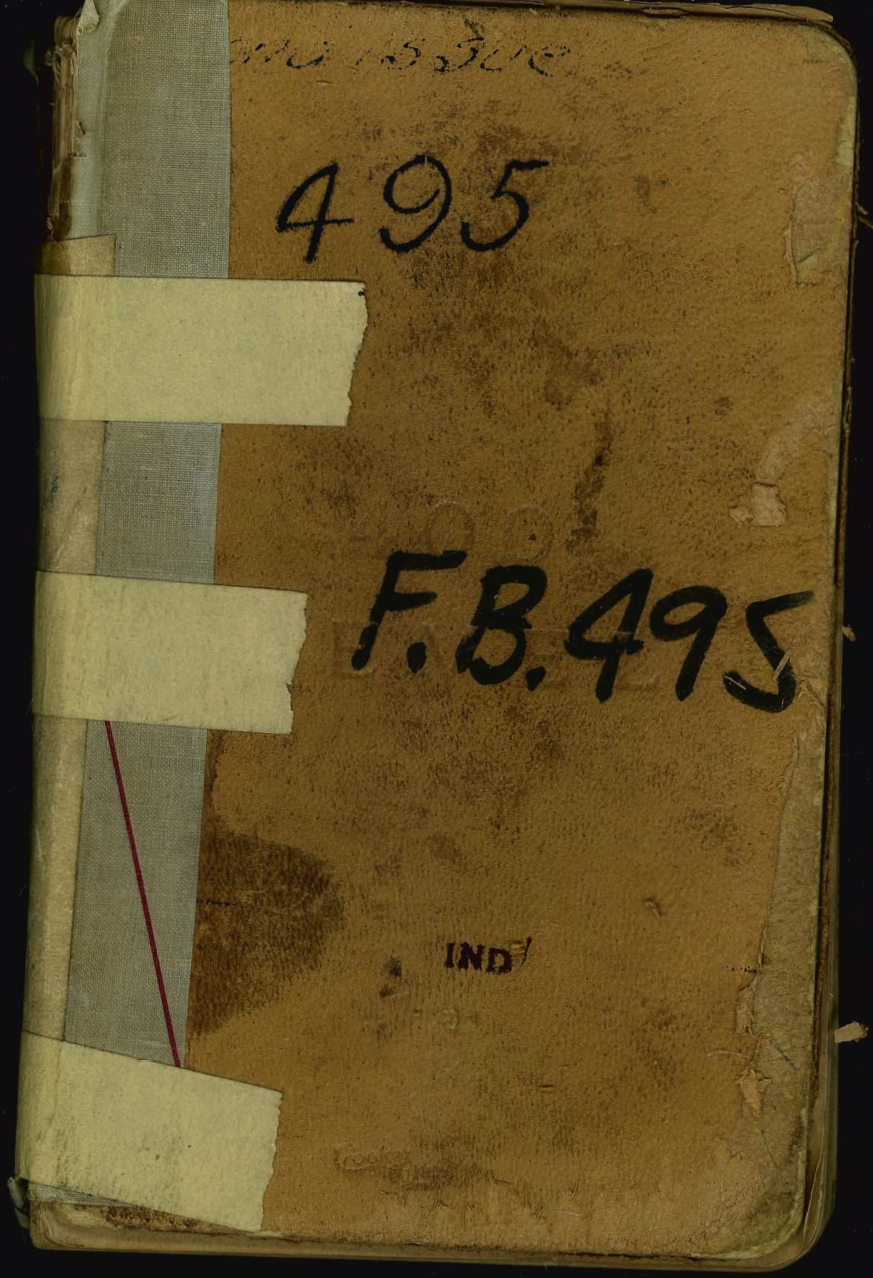
495
F.B.495
IND

Published by H. S. CROCKER COMPANY, Stationers, Drawing Materials, and Mathematical Instruments, San Francisco.

Table showing the difference of latitude and departure in running 80 chains at any course from 1 to 60 minutes.

MINUTES.	LKS.	MINUTES.	LKS.	MINUTES.	LKS.
1	2⅓	21	49	41	95¾
2	4⅔	22	51⅓	42	98
3	7	23	53⅔	43	100¼
4	9⅓	24	56	44	102¾
5	11⅔	25	58⅓	45	105
6	14	26	60⅔	46	107¼
7	16⅓	27	63	47	109¾
8	18⅔	28	65⅓	48	112
9	21	29	67⅔	49	114¼
10	23⅓	30	70	50	116¾
11	25⅔	31	72⅓	51	119
12	28	32	74⅔	52	121¼
13	30⅓	33	77	53	123¾
14	32⅔	34	79¼	54	126
15	35	35	81⅔	55	128¼
16	37⅓	36	84	56	130¾
17	39⅔	37	86⅓	57	133
18	42	38	88⅔	58	135¼
19	44⅓	39	91	59	137¾
20	46⅔	40	93⅓	60	140

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TABLE FOR RUNNING ON SLOPES.

In the following table the first column shows the angle, the second the number of links to be added to a chain on the slopes, to make one chain, horizontal measurement.

ANGLE	COR. IN LINKS	ANGLE	COR. IN LINKS	ANGLE	COR. IN LINKS	ANGLE	COR. IN LINKS
°		°		°		°	
4	0.24	11	1.88	18	5.14	25	10.54
5	0.38	12	2.24	19	5.76	26	11.26
6	0.55	13	2.63	20	6.42	27	12.24
7	0.76	14	3.06	21	7.11	28	13.37
8	0.98	15	3.53	22	7.85	29	14.34
9	1.24	16	4.02	23	8.64	30	15.47
10	1.55	17	4.56	24	9.47	35	22.07

Crocker Quality

LEVEL BOOK

495

No. 400

MANUFACTURED BY

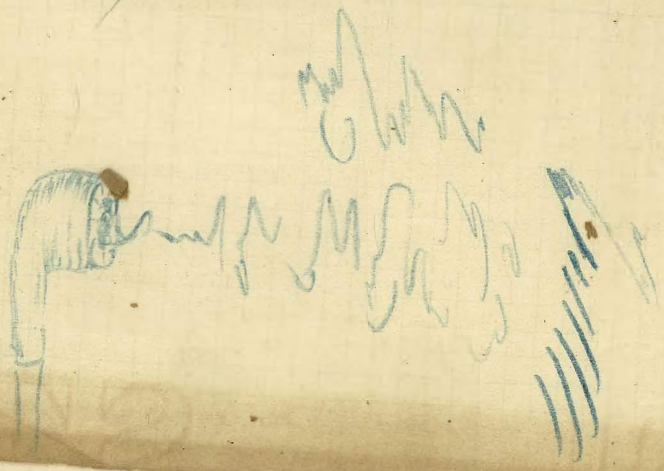
A. S. Crocker Co.

SAN FRANCISCO
and
SACRAMENTO

City Engineer's
Office
San Diego Cal.

Mrs Laws

Run lateral to E. side Lot 8
Blk 57 and E side Lot 41-58



Secant = 45° = 1.41421
Sine = 45° = .70711
Tangent 45° = 1.00000

```
.70711 ) 1.41421 ( 18.38473
            13
         424263
        141421
        18.38473
```

29th and L. NE cor. Hd. R.R. spk. pole 77.74

30th " J. S. E cor. inside prop line brass plg. in hyd. 75.09

32nd & "H" NE. cor. Hd. R.R. Sp. in pole 83.72

31st and "I" NE cor. Hd R.R. spk. pole 82.76

Alley bet. G and H From

0+00 M.H.	135.77		121.9
0+25		7.2	128.6
0+50	148.40	12.1	136.8
0+75		5.1	143.3
1+00 M.H.	160.44	11.8	148.6
1+25		9.9	150.5
1+50		7.7	152.7
1+75		5.5	154.9
2+00 M.H.		3.2	157.2
2+25 T.P.		1.21	159.23
2+50	166.07	5.3	160.8
2+75		5.0	161.1
3+00		5.0	161.1
3+25		4.9	161.2
3+50		4.9	161.2
3+75		5.6	160.5
4+00 F.T.		7.1	159.0

29th St. West

T.P Sta 12+00 Main L. = 123.69

116.35	5.6		
123.35	5.3	123.35 / 12.43	
130.35	6.0	130.35	
137.35	6.0	137.35 / 9.48	
144.35	4.3	144.35 / 11.63	
146.35	4.2	146.35 / 9.63	
148.35	4.4		
150.35	4.6	150.35 / 5.63	
152.35	4.9	152.35 / 3.63	
152.60	6.6	152.60 / 3.38	
152.85	8.0		
153.10	8.0	153.10 / 2.88	
153.35	7.8		
153.60	7.6	153.60 / 11.52	
153.85	7.4		
154.10	6.4	154.10 / 11.02	
154.25	4.8	154.25 / 10.87	

123.69 = T.P
12.08
135.77 H.I
0.26
135.51 = T.P.
12.89
148.40
0.92
147.48 = T.P.
12.96
160.44 = H.I.
1.21
159.23
6.84
166.07

2

123.69
12.09
135.78 H.I.
1.58
134.20
12.63
146.83 H.I.
347
143.36
12.62
155.98
1.14
154.88
10 24
165.12

Alley bet. "F" and "G" Sts from 29th St West

0+00		144.57		132.9	127.25 / 5.91	5.7		
0+25			4.7	139.9	133.16	6.7	133.16 / 10.72	
0+50		156.35	9.5	146.9	139.07	7.8		
0+75 M.H.			4.3	152.1	145.00	7.1	145.00 / 14.75	
1+00	T.P.		1.66	154.69	147.60	7.1	147.60 / 12.15	
1+25		167.23	10.7	156.5	150.20	6.3		
1+50			7.8	159.4	152.80	6.6	152.80 / 6.95	
1+75			6.1	161.1	155.40	5.7		
2+00	T.P.		2.44	164.79	158.00	6.8	158.00 / 1.75	T.P.
2+25		176.18	7.7	168.5	160.60	7.9		
2+50 M.H.			6.0	170.2	163.20	7.0	163.20 / 12.50	
2+75			4.8	171.4	163.53	7.9	163.53 / 12.26	
3+00			3.6	172.6	163.87	8.7	163.87 / 11.92	
3+25			3.2	173.0	164.20	8.8		
3+50			3.3	172.9	164.53	8.4	164.53 / 11.26	
3+75			3.8	172.4	164.86	7.5		
4+00 F.T.			5.9	170.3	165.20	5.1	165.20 / 10.59	

(Sta 16) 131.95 T.P.
12.62
144.57 H.I.
1.14
143.43
12.92
156.35 H.I.
1.66
154.69
12.38
167.07 H.I.
0.36
166.71
9.70
176.41 H.I.

131.95 / 11.93 / 143.88 H.I.
131.95 BM / 12.68 / 144.63 / 0.81 / 143.82 / 11.86 / 155.68 H.I.
154.69 / 5.06 / 159.75 H.I.
1.01 / 154.67 / 12.56 / 167.23 H.I.
164.79 / 11.00 / 175.79 H.I.
2.44 / 164.79 / 11.39 / 176.18 H.I.

Alley bet "D" and "E" from 29th St. West.

0+00	M.H.		155.17			136.20		Sec 467-61 M.H. No 50
						3.56		
0+25				10.5	144.7	139.76	4.9	139.76 / 12.51
0+50				7.7	147.5	143.32	4.2	
0+75				6.1	149.1	146.88	2.2	146.88 / 5.39
1+00				4.2	151.0	150.44	0.6	
1+25	T.P.			0.47	154.70	154.00	0.7	154.00 / 9.80
1+50			167.07	7.4	159.7	157.56	2.1	161.12 / 2.68
1+75				1.6	165.5	161.12	4.4	168.24 / 12.33
2+00			179.22	7.9	171.3	164.68	6.6	175.36 / 5.21
2+25				4.1	175.1	168.24	6.9	178.90 / 1.67
2+50	T.P.			1.73	177.5	171.80	5.7	179.30 / 1.27
2+75			190.47	10.1	180.4	175.36	5.0	
3+00	M.H.			7.2	183.3	178.90	4.4	
3+25				4.9	185.6	179.30	6.3	
3+50				3.8	186.7	179.70	7.0	180.10 / 12.19
3+75				2.8	187.7	180.10	7.6	
4+00				2.1	188.4	180.50	7.9	

143.79 = T.P.
11.38
155.17 = H.I.
0.47
154.70 = T.P.
12.37
167.07
0.70
166.37
12.85
179.22
1.73
177.49
12.98
190.47

143.79 T.P.
8.48
152.27
1.36
150.91 T.P.
12.89
163.80
1.34
162.46 T.P.
12.89
175.35
1.78
173.57
7.00
180.57

189.16
3.13
192.29

4+25. T.P.	190.47	1.31	189.16	180.90	8.2	180.90 / 11.39	190.47	
4+50	193.58	4.1	189.5	181.30	8.2		1.31	
4+75		3.4	190.2	181.70	8.5	181.70 / 10.59	189.16	
5+00		2.8	190.8	182.10	8.7	182.10 / 12.93	4.42	
5+25 [Hot in]				187.50		182.90 / 12.13	193.58	
5+50		3.8	189.8	187.90	6.9	183.70 / 11.33	3.93	
5+75		3.9	189.7	183.30	6.4		184.65	
6+00		3.4	190.2	183.70	6.5	184.50 / 10.53	192.29	
6+25		3.5	190.1	184.10	6.0		189.16	
6+50 F.T.		3.9	189.7	184.5	5.2		6.87	
			5				195.03	

ALLEY Bet. C & D from M.H. West.

0+00		156.78	5.1	151.7	145.80	5.9
0+25		166.21	7.4	158.8	152.80	6.0
0+50		176.31	10.3	166.0	159.80	6.2
0+75	T.P.		3.22	173.09	166.80	6.3
1+00		181.99	1.7	180.3	173.80	6.5
1+25	D.E.	185.44	0.65	184.79	180.80	4.0

125) 35.00000
250
1000
1000

.28
25
140
56
7.00

173.09
12.35
185.44

180.80
5.47

166.80
7.39

152.80
13.68

148.79
12.99
156.78
0.05
156.73
9.48
166.21
0.91
165.30
11.01
176.31
3.22
173.09
8.90
181.99

184.79
1.48
186.27

173.09
1.10
174.19
8.19
166.00
0.48
166.48

Alley bet B & C. West

0+00	M.H. ✓	185.16		172.36
0+25			15.2	170.0
0+50			7.8	177.4
0+75			1.4	183.8
1+00	M.H.	197.14	8.5	188.6
1+25			7.0	190.1
1+50			3.7	193.4
1+75	Not in			
2+00	T.P.		1.29	195.85
2+25		201.41	3.9	197.5
2+50	M.H?		2.46	198.95
2+75				
3+00				

from M.H.

166.0 / 4.65	6.4	175.80 / .16	
170.65	5.6		
175.30 ✓	2.1		
179.95	3.9		
184.60 / 1.50	4.0	184.60 / 13.74	
186.10	4.0	187.60 / 10.74	
187.60	5.8		
189.10		190.60 / 7.74	
190.60 ✓	5.2	193.60 / 4.74	
192.10	5.4		
193.60 ✓	5.3		

172.36
12.80
185.16
0.42
184.74 T.P.
1.40
197.14
1.29
195.85
5.56
201.41
175.46
195.85
2.49
198.34

Alley between A and B Ste. R

0+00	188.68		172.6
0+25		7.4	181.3
0+50 T.P.		1.02	187.66
0+75	200.74	7.4	193.3
1+00 MH.		3.5	197.2
1+25		1.3	199.4
1+50	207.42	6.3	201.1
1+75		5.3	202.1
2+00		4.6	202.8
2+25		4.1	203.3
2+50		3.20	204.2

Running west from M.H.

168.0	4.6		
6.5			
174.50	6.8	174.50	
		9.85	
181.0	6.7	181.00	
		3.85	
187.5	5.8		
194.0	3.5	194.00	
		.95	
194.83	4.6	194.83	
		1.042	
195.66	5.4		
196.49	5.6	196.49	
		8.76	
197.32	5.5	197.32	
		7.93	
198.15	5.2	198.15	
		7.10	
199.0	5.2	199.0	
		6.25	

T.P. 176.70
176.70
7.65
184.35

176.70
11.98
188.68
1.02
187.66
13.08
200.74
0.38
200.36
7.06
207.42

187.66
7.29
194.95
.95
194.00
11.21
205.21

missing								
168	4+00	226.50	5.2	221.3	21266	8.6	21266 / 12.79	225.45 H1.
174	4+25		4.7	221.8	213.33	8.5	21333 / 12.12	
✓181	4+50		4.3	222.2	214.00	8.2	21400 / 11.48	
187	4+75		3.8	222.7	214.66	8.0	21466 / 10.79	217.5
✓194	5+00		3.5	223.0	215.23	7.7		
194	5+25		3.1	223.4	21600	7.4	21600 / 9.48	
195	5+50		2.8	223.7	216.66	7.0		
✓196	5+75		2.0	224.5	217.33	6.2	217.33 / 8.12	
✓197	6+00 = M.H.		2.7	223.8	218.00	5.8	21800 / 7.45	
198								

Alley bet. "B" & "C" from M.H. 59 W. of ℄ 29th St. East.

					155.00			49	
					157.34		157.34	57	
0+00	℄ 29th St	171.94	8.0	163.9	159.00	4.9	5.44	67	
					4.25		159.00	5.30	
0+25			2.9	169.0	163.25	5.8	3.78	T.P.	159.33
									12.61
0+50		182.70	9.1	173.6	167.50	6.1	167.50		171.94
							12.87		0.74
0+75			4.5	178.2	171.75	6.5	176.00		171.20 T.P.
							4.37		11.50
1+00	T.P. M.H.		0.98	181.72	176.00	5.7			182.70
					2.75				0.98
1+25		193.83	8.5	185.3	178.75	6.6	181.50		181.72
							7.78		12.11
1+50			5.5	188.3	181.50	6.8	187.00		193.83
							2.28 T.P.		0.62
1+75			2.5	191.3	184.25	7.1			193.21 T.P.
									11.17
2+00		204.38	9.8	194.6	187.00	7.6		187.00	204.38
								12.69	0.55
2+25			7.5	196.9	189.75	7.2		199.69	203.83
								1.69	12.32
2+50			6.2	198.2	192.50	5.7	192.50	198.00	216.15
							7.19	12.96	
2+75			2.9	201.5	195.25	6.3		210.96 M.H.	159.33
								1.18	2.45
3+00	M.H.	216.15	11.4	204.7	198.0	6.7	198.00	209.78	162.78
							1.69	8.64	
3+25			9.0	207.1	198.25	8.9	198.25	213.42	159.33
							12.71		12.20
3+50			6.3	209.8	198.50	11.3	198.50		171.53
							12.46		1.76
3+75			4.9	211.2	198.75	12.5	198.75		169.77 T.P.
							14.67		10.60
4+00			4.0	212.1	199.00	13.1	199.00		180.37
							14.42		0.78
									179.59 T.P.
									9.69
									189.28

4+25		216.15	3.3	212.8	✓199.75	13.6	199.25 / 14.61	209.78 / 4.08 / 213.86 / 1.04 / 212.82 / 3.30 / 216.12 / 8.38 / 207.74 / 1.71 / 209.45
4+50			2.9	213.2	✓199.50	13.7	199.50 / 14.36	
4+75			2.2	213.9	✓199.75	14.2	199.75 / 16.37	
5+00			1.9	214.2	200.00	14.2	200.00 / 16.1	
5+25			1.8	214.3	200.25	14.1	200.25 / 15.87	
5+50			3.1	213.0	200.50	12.5	200.50 / 15.62	
5+75			8.4	207.8	200.75	7.1	200.75 / 8.70	
6+00	F.T.		12.3	203.8	201.0	7.8	201.00 / 8.4✓	

See 479-53 for extension

Prof. X

"28" St Line

0+00	M.H. & H St. (68)	112.65	9.9	102.8
0+25			8.4	104.3
0+50			7.6	105.1
0+75			7.3	105.4
1+00			7.2	105.5
1+25			6.7	106.0
1+50			6.2	106.5
1+75	8" Sewer		5.6	107.1
2+00			5.0	107.7
2+25			3.4	109.3
2+50			2.3	110.4
2+75			1.9	110.8
3+00	T.P.		0.68	111.97
3+25		124.37	12.2	112.2
3+50			12.3	112.1
3+75			13.2	111.2
3+90.3	M.H. G.St. (67) =0+00		12.6	111.8

Main Line

97.90	4.9	
98.55	5.7	99.19 / 10.17
99.19	5.9	
99.84	5.6	100.49 / 8.87
100.49	5.0	
101.15	4.9	101.80 / 7.56
101.80	4.7	103.10 / 6.26
102.45	4.7	104.39 / 10.88
103.10	4.6	
103.74	5.6	105.68 / 9.59
104.39	6.0	
105.04	5.8	106.98 / 8.29
105.68	6.3	108.00 / 7.27
106.33	5.9	
106.98	5.1	
107.62	3.6	
108.00	3.8	

Pole

B.M. 108.87
3.78
112.65
0.68
111.97 T.P.
12.40
124.37 H.I.

108.87
0.49
109.36 H.I.

111.97
2.08
114.05

111.97
3.30
115.27

4+25		124.37	11.2	113.2	109.40	3.8		
4+50			9.6	114.8	✓110.40	4.4	110.40 / 4.87	
4+75			8.5	115.9	111.40	4.5	112.40	
5+00			6.2	118.2	✓112.40	5.8	112.40 / 13.07	
5+25			3.4	121.0	113.40	7.6	114.40 / 12.81	
5+50	T.P.		0.75	123.62	✓114.40	9.2	T.P. 123.62 / 115.40 / 11.81	1.85 H.I. 125.47
5+75		136.40	10.7	125.7	✓115.40	10.3		
6+00			8.6	127.8	✓116.40	11.4	116.40 / 15.54	
6+25			7.5	128.9	✓117.40	11.5	117.40 / 14.54	
6+50			6.8	129.6	118.40	11.2	118.40	
6+75			6.7	129.7	✓119.40	10.3		
7+00			8.9	127.5	120.40	7.1	119.40 / 12.54	
7+25			11.3	125.1	121.40	3.7		
7+30.3	M.H. (66) 5 line 3.		11.3	1	✓121.60		120.40	
7+50			10.8	125.6	✓123.20	2.4	123.20 / 8.96	121.60 / 10.34
7+75			5.6	130.8	125.20	5.6		
8+00			3.5	132.9	127.20	5.7	127.20 / 4.96	
8+25	T.P.	148.11	9.9	138.21	✓129.20	9.0	129.20 / 12.70	

390.2
380
7.30.2
230
960.2

124.37
0.75
123.62
12.78
136.40
0.48
T.P. 135.92
1.20.9
148.11
115.27

123.62
3.59
127.21

123.62
8.32
131.94

~~1481~~
1481.90

T.P. 121.60
10.56
H.I. 132.16

									9602 380 1340.2	
										148.11 1.31 146.80
8+50		148.11	7.3	140.8	✓131.20	9.6	131.20 10.70	3		- 8.13 154.93
8+75			4.4	143.7	✓133.20	10.5	133.20 16.83			2.25 152.68
9+00	T.P.		1.31	146.80	✓135.20	11.6				10.57 163.25
9+25		154.93	5.0	149.9	✓137.20	12.7	135.20 14.83			
9+50			5.3	149.6	✓139.20	10.4	137.20 12.83			146.80 3.23 150.03
9+60.2	M.H. (56)	valley bet E & F			✓140.0	9.8	139.20 10.83			146.80 1.31
9+75			5.6	149.3	✓140.15	9.1				H.I. 148.11
10+00			5.9	149.0	✓140.40	8.6	140.00 10.03			9.90 138.21
10+25			6.8	148.1	✓140.65	7.4	140.65 11.82	140.15 9.88		3.69 141.90
10+50			8.9	146.0	140.90	5.1		140.40 9.63	567	146.80 567
10+75			10.7	144.2	✓141.15	3.0	141.15 11.32			152.47 152.68
11+00			12.1	142.8	141.40	1.4				8.30 H.I. 160.98
11+25			12.2	142.7	✓141.65	1.0	141.65 10.82			
11+50			8.6	146.3	141.90	4.4				
11+75			5.4	149.5	✓142.15	7.3	142.15 10.32			
12+00	T.P.		2.25	152.68	✓142.40	10.3	163.18 142.40 10.78			
12+25		163.25	7.0	156.2	✓142.65	13.5	142.65 18.33			
12+50			4.6	158.6	✓142.90	15.7	142.90 18.08			

12+75		163.25	2.6	160.6	143.15	17.4	143.15 / 18.65			163.25 / 12.72 / 150.53
13+00			2.5	160.7	143.40	17.3				5.08 / 155.61
13+25			2.7	160.5	143.65	16.8			T.P.	152.68
13+40.2	M.H. (57)				143.80					9.12
13+50	& alley bet D.&E.		3.7	159.5	143.90	15.6			H.I.	161.80
13+75			4.4	158.8	144.15	14.6	144.15 / 17.65			150.53 / 4.64
14+00			5.9	157.3	144.40	12.9	144.40 / 17.40		H.I.	155.17
14+25			9.2	154.0	144.65	9.3	144.65 / 17.15			150.53 / 11.23
14+50	T.P.		12.72	150.53	144.90	5.6	144.90 / 10.27	143.80 / 17.96		161.76
14+75		155.61	9.6	146.0	145.15	0.8				
15+00			9.6	146.0	145.40	0.6	145.40 / 9.77			
15+25			7.4	148.2	145.65	2.5				
15+50			6.0	149.6	145.90	3.7	145.90 / 9.27			
15+75			5.8	149.8	146.15	3.6				
16+00			6.1	149.5	146.40	3.1	146.40 / 8.77			
16+25			6.8	148.8	146.65	2.1	146.65 / 8.52			
16+50			10.8	144.8	146.90	F.2.1				
16+75			7.3	148.3	147.15	1.1	147.15 / 8.02			

17+00		155.61	4.8	150.8
17+20.2	M.H. (30)			
17+25	T.P.		2.11	153.50
	¢ alley bet "C" + "D"			
17+50		165.36	8.8	156.6
17+75			5.3	160.1
18+00			3.8	161.6
18+25			3.0	162.4
18+50			2.6	162.8
18+75			2.1	163.3
19+00			2.6	162.8
19+25	T.P.		1.10	164.26
19+50		176.89	9.7	167.2
19+75			7.1	169.8
20+00			4.1	172.8
20+25	T.P.		1.13	175.76
20+50		188.09	9.9	178.2
20+75			7.8	180.3
21+00.2	M.H. (58) bet. B+C		5.5	182.6

1720.2
380
2100.2

1720.2
960.2
760.0

147.40	3.4	147.40 / 6.67	147.15 / 6.92	155.61 H.I. / 2.11
✓147.60		147.60 / 6.47		153.50 T.P. / 11.86
148.00	5.5		146.65 / 7.42	165.36 / 1.10
✓150.00	6.6	150.00 / 12.44	146.40 / 7.67	164.26 / 12.63
152.00	8.1			176.89 / 1.13
✓154.00	7.6	154.00 / 8.44	T.P. 175.76	175.76 / 12.33
156.00	6.4			188.09 / 0.57
✓158.00	4.8	158.00 / 10.16		153.50 / 11.82
160.00	3.3			165.32 / 12.04
✓162.00	0.8	162.00 / 6.16		177.36 / 153.50 / 0.57
164.00	0.3			H.I. 154.07
✓166.00	1.2	166.00 / 2.16		153.50 / 8.94
168.00	1.8			H.I. 162.44
✓170.00	2.8	170.00 / 4.12		T.P. 164.26 / 3.90
172.00	3.8		T.P. 175.76 / 10.36	H.I. 168.16 / 164.26 / 9.86
174.00	4.2	174.00 / 12.12	H.I. 186.12	H.I. 174.12
176.00	4.3			
178.00	4.6	178.00 / 8.12		

21+25		188.09			179.87				188.09
21+50	T.P.		0.57	187.52	✓181.68	5.8	181.68		0.57
21+75		199.39	10.8	188.6	183.52	5.1	4.44		T.P. 187.52
22+00			8.6	190.8	✓185.36	5.4	185.36		11.87
22+25			6.9	192.5	✓187.20	5.3	187.20	HI.	199.39
22+50			4.1	195.3	✓189.04	6.3	11.30		2.44
22+75		204.50	7.1	197.4	190.88	6.5	189.04	T.P.	196.95=BM
22+92	MH-& BM		7.0	197.5	✓192.0	5.5	9.46		187.52
23+00			6.9	197.6	192.22	5.4	192.00		10.98
23+50			6.2	198.3	✓193.35	5.0	12.37	HI.	198.50
24+00			5.1	199.4	✓194.48	4.9	193.35		25.2
24+50			4.0	200.5	✓195.61	4.9	11.02		201.02
25+00			2.5	202.0	✓196.74	5.3	194.48	BM.	196.95
25+50			1.4	203.1	197.87	5.2	9.89		7.42
26+00	F.T.		0.3	204.2	199.00	5.2	195.61	HI.	204.37
							8.76		
							196.74		
							7.63		
							197.87		
							6.50		
							199.00		
							5.37		

Hoith St. from Main 10" Line N. to H" St.

0+00 = M.H.		106.64		93.7	89.0	0.7		93.65 = T.P.
								12.99
								106.64 H.I.
0+25			12.9	94.7	93.0	1.7	93.00	1.76
							12.10	104.88
0+50			5.3	101.3	97.0	4.3	97.00	13.17
							8.10	118.05
0+75	T.P.		1.76	104.88	101.0	3.9	101.00	0.07
							4.10	117.98
1+00		118.05	8.3	109.8	105.0	4.8	109.00	12.82
							8.43	130.80
1+25			3.5	114.6	109.0	5.6		0.65
							117.00	130.15
1+50	T.P.		0.07	117.98	113.0	5.0	11.61	12.62
								142.77
1+75		130.80	8.2	122.6	117.0	5.6	125.00	0.04
							13.08	142.73
2+00			5.3	125.5	121.0	4.5	137.00	7.71
							1.03	150.44
2+25	T.P.		0.65	130.15	125.0	5.1		104.88
								0.22
2+50		142.77	8.6	134.2	129.0	5.2	138.82	105.10
							10.21	104.88
2+75			5.2	137.6	133.0	4.6		12.55
							139.73	117.43
3+00	M.H.		2.4	140.4	137.0	3.4	9.30	117.98
								10.63
3+25	T.P.		0.04	142.73	137.91	4.8	141.00	128.61
							8.03	11.42
3+50		150.44	6.0	144.4	138.82	5.6		130.15
							142.73	7.88
3+75			4.8	145.6	139.73	5.9	141.00	138.03
							9.45	7.72
4+00			4.1	146.3	140.64	5.7		150.45
4+10 F.T.			3.8	146.6	141.0	5.6		142.73
								6.30
								149.03

Alley bet H and I St from 28th St. West.

0+00	M.H. & 28th St	110.80	7.7	103.1	93.90	9.2		
0+25			10.5	100.3	94.15	6.2	94.40 / 15.27	
0+50			11.9	98.9	✓ 94.40	4.5		
0+75			12.5	98.3	94.65	3.7	94.90 / 14.77	
1+00			7.4	103.4	✓ 94.90	8.5	95.00 / 14.67	
1+10	M.H.		5.5	105.3	✓ 95.00 / 3.6	10.3	98.60 / 11.07	
1+25			2.4	108.4	✓ 98.60 / 6.00	9.8	104.60 / 13.06	
1+50		122.35	9.4	112.9	✓ 104.60	8.3	110.60 / 7.06	
2+75			4.4	117.9	✓ 110.60	7.3	116.60 / 1.06	
2+00		135.05	10.9	124.2	✓ 116.60	7.6	122.60 / 12.65	
2+25			6.7	128.3	✓ 122.60	5.7	126.38 / 8.87	
2+35	M.H.				✓ 125.00			
2+50			3.5	131.6	126.38	5.2	128.68 / 6.57	
2+75	T.P.		0.37	134.68	✓ 128.68	6.0	131.00 / 4.25	
3+00	F.T.	139.82	3.4	126.4	✓ 131.00	5.4		

109.67
10.74
98.93
94.40
4.53

BM 108.87
1.93
110.80
0.39
T.P. 110.41
11.94
122.35
0.02
122.33
12.72
135.05
0.37
134.68
5.14
139.82

108.87
0.80
109.67
1.32
108.35
9.31
117.66
1.06
116.60

134.68
0.57
135.25

Alleg bet "E" an "F" St. from Main Line East,
Lina entre Calles E. F. desde 28th St

0.38

0+00	M.H. 56	159.46	9.6	149.8	140.0	9.8			146.80 = T.P.
									12.66
									159.46
0+25			1.7	157.7	144.0	13.3			0.02
									159.44 T.P.
0+50		171.70	6.9	164.8	148.0	16.8			12.26
									171.70
0+75			2.9	168.8	152.0	16.8			0.83
									170.87
1+00		180.49	8.7	171.8	156.0	15.8			9.62
									180.49
1+25			5.6	174.9	160.0	14.9	17	B.M.	184.69
									0.38
1+50			4.0	176.5	164.0	12.5			185.07
									9.25
1+75			2.9	177.6	168.0	9.6	160.00		175.82
							17.12		4.34
2+00	M.H. 55		3.7	176.8	172.0	4.8	164.00		180.16
							16.16		3.63
2+25	T.P.		4.7	175.82	172.33	3.5	168.00		176.53 T.P.
							12.16		0.59
2+50			5.0	175.5	172.668	2.8	172.00		177.12
							8.16		8.22
2+75			4.4	176.1	173.002	3.1	172.33		168.90 T.P.
							7.83		
3+00			3.2	177.3	173.336	4.0	173.00		
							7.16		
3+25			2.0	178.5	173.670	4.8	173.67		
3+50			1.9	178.6	174.004	4.6	6.49		
3+75					174.34				
3+81	F.T.	186.22	11.80	174.42	174.42	0.0	174.42		
							5.74		

Alley Between 6 & 8 Sts. from main line West

0+00	(30)	156.27	2.7	153.6	147.60	6.0		T.P.	153.50
									2.77
0+25			8.4	147.9	147.70	0.2	147.70 / 11.55		156.27
									0.30
0+50			12.5	143.8	147.80	F 4.0			T.P. 155.97
									13.08
0+75			9.8	146.5	147.90	F 1.4			169.05
									0.65
1+00			5.8	150.5	148.00	C 2.5	148.00 / 11.25		168.40
									12.34
1+20 M.H.	(31)		2.2	153.2	148.08	5.1	148.08 / 11.17		180.74
					1.72				0.26
1+50		169.05	9.8	159.2	155.42	3.8	155.42 / 11.71		180.48
									12.83
1+75			3.7	165.3	161.54	3.8			193.31
									0.72
2+00		180.74	8.0	172.7	167.67	5.0	167.67 / 11.67		192.61
									11.29
2+25			1.5	179.2	173.78	5.4	179.34		203.90
2+50		193.33	8.4	184.9	179.90	5.0	179.90 / 12.02		P. 153.59
									5.75
2+75 M.H.	(32)		3.3	190.0	186.00	4.0	186.00 / 13.68		T. 159.25
					1.75				0.01
3+00 T.P.			0.72	192.61	187.75	4.9			T. 159.24
									8.09
3+25		203.90	8.7	195.2	189.50	5.7	189.50 / 10.18		M. 167.33
									0.69
3+50			5.0	198.9	191.75	7.7	191.25 / 13.43		T. 166.64
									12.70
3+75			3.7	200.2	193.00	7.2	193.00 / 11.68		M. 179.34
									0.63
4+00			1.9	202.0	194.75	7.2			179.21
									12.71
									M. 191.92
									0.00
								T.P.	192.61
									7.00
									M. 199.68
									192.61
									12.07
									204.68

						194.75 1.75			203.90 0.46
4+25	T.P.		203.90	0.46	203.44	196.50	6.9	196.50 8.18	203.44 9.90
4+50			213.34	8.7	204.6	198.25	6.4		213.34 5.88
4+75	M.H. (33)			7.4	205.9	200.00	5.9	200.00 4.68	207.46 5.53
5+00				6.2	207.1	200.33	6.8		212.99 11.82
5+25				4.8	208.5	200.66	7.8	200.66 11.66	201.17 201.125
5+50				4.4	208.9	201.00	7.9		Hl 204.68
5+75				4.6	208.7	201.33	7.4	201.33 10.99	203.44 8.88
6+00				5.3	208.0	201.66	6.3		Hl. 212.32
6+25	~~M.H.~~	T.P. F.T.		5.88	207.46	202.00	5.5	202.00 10.32	

Alley Between 6 & D sts.

0 + 25		165.40	7.1	158.3
0 + 50	T.P.		0.34	165.06
0 + 75		176.33	5.2	171.1
1 + 00	M.H.	186.79	9.4	177.4
1 + 25			5.1	181.7
1 + 50			3.2	183.6
1 + 75			1.2	185.6
2 + 00	M.H.	197.62	10.3	187.3
2 + 25			7.4	190.2
2 + 50			5.5	192.1
2 + 75			4.0	193.6
3 + 00			2.5	195.1
3 + 25			2.1	195.5
3 + 50			1.7	195.9
3 + 75			1.4	196.2
4 + 00	T.P.		1.20	196.42
4 + 25		201.02	4.1	196.9

from main line East to 2nd

147.6						
153.85	4.5			165.06 T.P.		158.50
				7.83		1.9
160.10	5.0	160.10		172.89 H.I.		165.40
		17.79		029		0.34
166.35	4.8			172.60	T.P.	165.06
				13.18		1.27
				185.78		176.33
172.6	4.8	172.60		012		8.79
28		0.79		185.21		
				8.70	T.P.	175.54
				H.I. 194.31		1.25
175.1	6.6		2.28			186.79
						0.64
179.6	6.0			196.42 T.P.		186.15
				2.38		1.47
180.1	5.5	180.1		H.I. 198.80		197.62
		5.68				1.20
182.6	4.7	182.60				
1.42		11.91		196.42 T.P.		196.42
183.02	7.2	185.54		3.32		4.60
		14.40		199.94		201.02
183.44	8.7			196.42		165.32
				1.11		027
				197.53		165.06
183.86	9.7	183.86				12.00
		10.45		183.86		177.06
				13.67		027
184.28	10.8	184.28				176.29
		14.52		182.60		12.57
				12.11		188.86
184.70	10.8	184.70		194.71		
		14.10				177.4
185.12	10.8	185.12				12.44
		13.68		183.44		190.02
185.54	10.7	185.54		11.27		027
		13.26				189.45
185.96	10.4	185.96		183.02		12.71
		12.84		11.69		202.16
186.38	10.5	186.38				3.15
		12.42				199.01

4+50	201.02	4.1	196.9	
4+75		4.1	196.9	
5+00		4.4	196.6	
5+25		5.2	195.8	
5+50		5.9	195.1	
5+75	F.T.	6.7	194.3	
6+00				

18638

186.80	10.1	186.80 / 13.14	199.94	
187.22	9.7	187.22 / 12.72		
187.64	9.0	187.64 / 12.30		
188.06	7.7	188.06 / 11.88		
188.48	6.6	188.48 / 11.46		
188.90	5.4	188.90 / 11.04		

Branch line up Canon

28th St Line

0+00		10.6	153.2	148.8	4.4
0+25	163.78	8.1	155.7	148.99	6.7
0+50		5.5	158.3	149.19	9.1
0+75		6.2	157.6	149.38	8.2
1+00		6.2	157.6	149.57	8.0
1+25		3.6	160.2	149.76	10.4
1+50 T.P.		0.59	163.19	149.96	13.2
1+75	170.84	6.8	164.0	150.16	13.8
2+00		5.9	164.9	150.35	14.6
2+25		5.7	165.1	150.55	14.6
2+50		5.4	165.4	150.74	14.7
2+75		5.1	165.7	150.93	14.8
3+00		6.2	164.6	151.13	13.5
3+25		4.9	165.9	151.32	14.6
3+50		5.3	165.5	151.51	14.0
3+75 T.P.		9.92	160.92	151.71	9.2
3+88.7 M.H. [Grd. Elev.] (2)		11.8	159.0	151.8	7.2
4+00	171.72	12.8	158.9	152.16	6.7

Void see page 37

T.P. 153.50
10.28
M.H. 163.78
0.59
163.19
7.65
170.84
9.92
3+75 T.P. 160.92
10.80
171.72

						10+20.4			345.18 232.55 577.73 379.94 957.67 392.36 1350.03	
4+25				13.1	158.6	✓152.91	5.7	152.91 11.80		
4+50			171.72	12.3	159.4	153.66	5.7			
4+75				12.3	159.4	✓154.41	5.0	154.41 9.72		171.72 1.43
5+00				10.2	161.5	155.16	6.3			T.P. 170.29 2.73 173.02
5+25				10.1	161.6	✓155.91	5.7	155.91 8.22		
5+50				8.8	162.9	✓156.66	6.2	156.66 7.47		H.I. 164.71
5+75				6.0	165.7	157.41	8.3		T.P.	170.29 0.89
6+00				3.2	168.5	158.16	10.3	158.16 13.93	H.I.	171.18 9.57 161.61
6+25	T.P.			1.43	170.29	158.91	11.4			2.52 H.I. 164.13
6+50			173.02	5.7	167.3	159.66	7.6			170.29 1.18
6+75				9.9	163.1	✓160.41	2.7	160.41 11.06		H.I. 171.47
7+00				6.8	166.2	161.16	5.0			170.29 1.80
7+25				6.6	166.4	✓161.91	4.5	161.91 9.56		H.I. 172.09
7+50				7.4	165.6	162.66	2.9			
7+75				6.3	166.7	✓163.41	3.3	163.41 8.06		
7+86.7	M.H. (11)			4.9	168.1	✓163.80 .52	4.3	163.80 7.69		
8+00				4.3	168.7	164.32	4.4			

8+25		178.02	5.3	167.7	165.32	2.4	165.32 / 10.50	173.02 / 1.84 / 171.18
8+50			5.4	167.6	166.32	1.3	167.32 / 8.50	12.64 / 183.82
8+75			4.6	168.4	167.32	1.1		0.38 / 183.44
9+00	T.P.		1.84	171.18	168.32	3.5		7.62 / 191.06
9+25		183.82	9.1	174.7	169.32	5.4	169.32 / 11.94	171.18 / 9.64 / 175.82 Hi
9+50			6.9	176.9	170.32	6.6	170.32 / 10.94	171.18 / 1008 / Hi 181.26
9+75	T.P.		0.38	183.44	171.32	12.1	171.32 / 9.94	
10+00		191.06	7.8	183.3	172.32 (81)	11.0	172.32 / 16.35	183.44 / 5.23
10+20.4	M.H.		7.4	183.6	173.13	10.5	173.13 / 15.54	Hi 188.67

X "H" St. from 28th St. West

0+25		117.68	14.4		
0+50			13.8		
0+75			9.2		
1+00	T.P.		0.23	117.45	
1+25		129.84	6.8		
1+50	T.P.		0.75	129.09	
1+75		141.95	7.5		
2+00	T.P.		0.91	141.04	
2+25		153.81	8.3		
2+50			3.3		
2+60	M.H.				
2+75	T.P.		0.51	153.30	
3+00		165.49	8.2		
3+25			4.3		
3+50	T.P.		0.23	165.26	
3+75		172.92	6.2		
3+90	F.T.				
~~4+00~~	~~F.T.~~		5.3		

97.90

Not cu

151.00 grade St = 155.6

154.00 grade St = 159.5

B.M. 108.87
8.81
117.68 H.I.
0.23
117.45 T.P.
12.39
129.84
0.75
129.09
12.86
141.95
0.91
141.04
12.77
153.81
0.51
153.30
12.19
165.49
0.23
165.26
7.66
172.92

Alley bet. B & C. St. E from M.H. on canon to 28th St.

0+00		166.66		158.60	151.8	6.8	153.88	160.92
					104		11.85	5.74
0+25			10.9	155.8	152.84	3.0		166.66
0+50			10.8	155.9	153.88	2.0	155.96	175.76
0+75			7.5	159.2	154.92	4.3	9.77	164.26
								153.50
1+00			3.4	163.3	155.96	7.3		164.26
								14.76
1+25 B.E.			0.5	166.2	157.0	9.2		145.73

Alley bet. B & C West from M.H. in canon. to 27th St

0+00	M.H. (21)	173.64		158.60	151.80	7.2	162.80 / 2.93	162.80 / 13.06 / 175.86 / 0.24 / 175.62 / 10.91 / 186.53	165.93 / 160.92 / 12.72 / 173.64 / 0.29 / 173.35 / 12.50 / 185.85 / 0.62 / 185.23 / 11.00 / 196.23 / 1.87 / 194.36 / 10.54 / 204.90 / 1.40 / 203.50 / 9.82 / 213.32
0+25			4.8	168.8	162.80	6.0			
0+50	MH	185.85	7.5	178.3	173.8	4.5	173.80 / 12.73		
0+75		196.23	12.8	183.4	178.8	4.6			
1+00			6.7	189.5	183.8	5.7	183.80 / 2.73	183.80 / 12.36 / 196.16	
1+25			1.87	194.36	188.8	5.6	193.80 / 2.36		
1+50	M.H.	204.90	6.1	198.8	193.8	5.0			
1+75			3.4	201.5	194.47	7.0		203.50 / 5.07 / 208.57	
2+00	T.P.		1.40	203.50	195.13	8.4	195.13 / 13.44		
2+25		213.32	8.3	205.0	195.80	9.2	195.80 / 12.77		
2+50			6.5	206.8	196.46	10.3	196.46 / 12.11		
2+75			5.1	208.2	197.13	11.1	197.13 / 1.44		
3+00			4.4	208.9	197.80	11.1	197.80 / 14.18		
3+25			4.3	209.0	198.46	10.5	198.46 / 13.42		
3+50			4.4	208.9	199.13	9.8	199.13 / 12.75		
3+75			4.7	208.6	199.80	8.8	199.80 / 12.08		
4+00			5.8	207.5	200.47	7.0			
4+20	F.T.		6.7	206.6	201.0	5.6	201.88 / 10.88		

203.50 / 8.48 / H.I. 211.98

203.50 / 8.38 / H.I. 211.88

D

Alley bet A and B Sts from

0+00 M.H.		175.19		168.1
0+07				
0+19	Trestle.		11.8	163.4
0+21				
0+43				
0+50			5.2	170.0
0+75		184.25	5.0	179.2
1+00	T.P. V. Curve.		1.32	182.93
1+25		195.08	10.8	184.3
1+50			9.9	185.2
1+75			4.8	190.3
2+00			2.3	194.8
2+25	D.E.		1.0	194.1

M.H. East to 28th St

163.80	4.3		
164.71			
166.27			
167.83	F 3.6		
169.39			
170.30	F 0.3	170.30	
		13.36	
173.55	5.7	173.55	
		10.11	
176.80	6.1		
2.70			
179.50	4.8	179.50	
		4.16	
182.20	3.0		
184.90	5.4	184.90	
		7.68	
187.60	5.7		
190.30	3.8	190.30	
		2.38	

16707
16380
3.25
130
184.25
1.82
182.93
12.15
195.08
- 171.18
4.01
175.19

T.P. 182.93
0.73
M.H. 183.66

182.93
9.65
M.H. 192.58

170.29
1.10
M.H. 171.39
164.71
6.68

187.60
176.8

Alley bet. "A" and "B" from

0+00	M.H.	184.25		168.1
0+25			12.2	172.0
0+50			8.4	175.8
0+75			4.8	179.4
1+00			1.2	183.0
1+25		195.08	8.0	187.1
1+50			3.3	191.8
1+75		207.02	11.0	196.0
2+00			7.7	199.3
2+25	V.C.		4.3	202.7
2+50			1.7	205.3
2+75	T.P.		0.11	206.9
2+90	F.T.	209.52	2.2	206.8

M.H. West to 27th St.

163.80	4.3			171.18
				13.07
167.49	4.5	167.49		184.25
		8.33		
171.18	4.6	174.87		19.208
		10.87		0.64
174.87	4.5	182.25		T.P. 194.44
		3.49		12.58
178.56	4.4			207.02
		189.63		0.11
182.25	4.9	4.81		T.P. 206.91
				2.61
185.94	5.9	197.00		209.52
		12.97		
189.63	6.4	198.50		175.82
		11.47		0.30
193.32	6.0			175.52
				10.22
197.0	5.7	200.90		185.74
1.5		9.07		0.21
198.5	6.8			185.53
				8.91
		197.00		194.44
200.0	6.9	7.29		
		204.29		206.91
200.90	5.9	193.32		3.06
		10.97		209.97

A St. from M.H. West to 27th St.

		194.04		183.60				181.06 178. 3.06 1.03	183.44 10.60 194.04
0+00			10.4	183.6	178.00	5.6	178.00 10.67		
0+25			9.3	184.7	179.53	5.2	179.53 9.14		Hd. 188.67
0+50	V. Curve		7.4	186.6	181.06	5.5	15		
0+75			4.7	189.3	185.09	4.2	185.09 3.58		TP 193.17 6.80
1+00	T.P.		0.87	193.17	189.12	4.0			Hd. 199.97
1+25		205.42	7.9	197.5	193.15	4.4	193.15 6.82		
1+50			3.5	201.9	197.18 2.42	4.7			
1+65	D.E.		0.8	204.6	199.6	5.0	199.60 0.37		

A St. from M.H. East to 28th St

0+00			194.04		183.60	178.00	5.6	178.00 / 10.39	196.8 / 173.0 / 23.80 / 21.00 / 28.00 / 28.00	350 / 16.8 / 17	194.04
0+25				10.8	183.2	✓178.50	4.7	178.50 / 9.89			0.48
0+50				11.3	182.7	179.00	3.7				193.56
0+75				11.2	182.8	✓179.50	3.3	179.50 / 8.89			11.86
1+00				10.4	183.6	180.00	3.6				205.42
1+25				9.4	184.6	✓180.50	4.1	180.50 / 7.89			T.P. 183.44 / 4.95 / H.I. 188.39
1+50	V.C.			8.1	185.9	181.0	4.9				T.P. 193.56 / 7.30 / H.I. 200.86
1+75				6.5	187.5	✓182.97	4.5	182.97 / 5.42			
2+00				4.6	189.4	184.95	4.4				
2+25				2.5	191.5	✓186.92	4.6	186.92 / 13.94			
2+50	T.P.			0.48	193.56	188.90	4.6				
2+75			205.42	9.7	195.7	190.87	4.8	190.87 / 9.99			
3+00				7.6	197.8	192.85	5.0				
3+25				5.6	199.8	194.82	5.0	194.82 / 6.04			
3+50	F.T.			3.6	201.8	196.80	5.0	196.80 / 4.06			

From page 26

Change in Line from M.H. in alley bet. "C" and "D" West of 28th to M.H. bet B & C

Commence at M.H. 31 thence 190' N. parallel to and 1 St. 70' N. of N. Line 28th St. to ℄ "C" St thence to M.H. in alley bet. "B" & "C" dist 150' N. of N. line 28th St.

0+00		154.07	0.9	153.2	148.08	5.1		T.P.	153.59
									.54
									154.07
									2.92
									153.15
0+25		165.18	10.7	154.5	148.18	6.3	148.28		12.03
							7.86		165.18
0+50			12.0	153.2	148.28	4.9			1.24
									163.94
0+75			14.1	151.1	148.38	2.7	145.48 (65')		4.18
							7.66	H.I.	168.12
1+00			13.8	151.4	148.48	2.9			2.16
									165.96
									153.50
									2.64
1+25			12.2	153.0	148.58	4.4			156.14
								T.P.	153.50
1+50			11.7	153.2	148.68	4.5	14868		7.39
							12.21	H.I.	160.89
1+75			10.9	154.3	148.78	5.5			
1+90	M.H. ℄ "C" St.		10.0	155.2	148.84	6.4	148.84	T.P.	160.92
							12.03		.399
2+25			7.7	157.5	149.34	8.7	149.34	H.I.	164.71
							11.55		
2+50			5.9	159.3	149.71	9.6	149.71		
							11.18		
2+75			4.8	160.4	150.07	10.3	150.07		
							10.82		
3+00			4.6	160.6	150.44	10.2	150.44		
							10.45		
3+25			4.0	161.2	150.80	10.4	150.80		
							10.09		
3+50			1.3	163.9	151.17	12.7	151.17		
							13.54		
3+95		168.12	7.2	160.9	151.53	9.4	151.53	151.80	
							13.18	12.91	
3+95.8 = 3+88.7	M.H. (Cont'd page 27)		9.6	158.6	151.80	6.8			

See page 27

2/3/2x Gregory Sewer Levels & Alley bet G and Market East of 27th

	0.04	176.40		176.36	Mon SE Cerro Gordo
340' E of ℄ of 27th = 0+00	sewer should be. 3.5 deep.		6.2	170.2	
+20			4.3	172.1	
+40			3.1	173.3	
+75			2.3	174.1	
1			3.2	173.2	
+20			5.0	171.4	
+40			7.5	168.9	
+60			10.7	165.7	
T.P.	0.30	163.67	13.03	163.37	
+80			2.0	161.67	
2			5.5	158.17	
+20			8.3	155.37	
+50			13.5	150.15	
T.P.	0.82	151.86	12.63	151.04	
+75			7.1	144.76	
3+00			9.3	142.56	

+40 = Ground.	10.2	141.66
+40 = Top of Center of M.H.	11.38	140.48
Flow Line	26.75	126.11

East side of 32nd St. Alignment same as planned on page 14 - Book 284.

0+00		85.25		
0+25				
0+50				
0+75				
1+00	T.P.		6.53	78.72
1+25		85.36		~~9.9~~
1+50			7.1	78.3
1+75				
2+00			6.8	78.6
2+25				
2+50			6.8	78.6
2+75				
3+00			5.5	79.9
3+25				
3+50			4.7	80.7
3+75				
4+00			3.8	81.6

74.00		74.20 / 9.36	
74.10			
74.20		74.40 / 8.50	
74.30			
74.40	4.3	74.60 / 8.30	
74.50			
74.60	3.7		
74.70			
74.80	3.8	74.80 / 8.10	
74.90			
75.00	3.6	75.00 / 7.90	
75.10		75.20 / 7.70	
75.20	4.7		
75.30			
75.40	5.3	75.40 / 7.50	
75.50			
75.60	6.0	75.60 / 7.30	

77.74 / 7.51 / 85.25 H.I. / 6.53 / 78.72 T.P. / 6.64 / 85.36

75.72 / 4.14 / 82.90

78.72 / 4.84 / 83.56

4+25		85.36		
4+45.63	M.H. ℄ Dodson St.		2.0	83.4
4+75			1.2	84.2
5+00	T.P.		1.01	84.35
5+25	~~T.P.~~	91.19	6.7	84.5
5+50			6.5	84.7
5+75			5.0	86.2
6+00			4.5	86.7
6+25			5.6	85.6
6+50			5.7	85.5
6+75			6.2	85.0
7+00			6.0	85.2
7+25			5.2	86.0
7+50			2.8	88.4
7+75				
7+79	M.H. 38th St		1.15	90.0
8+00	T.P.		0.59	90.60
8+25		92.53	0.8	91.7
8+50			8.1	84.4

75.70				3.71	
✓75.78	7.6	75.78 / 7.12		84.35 / 6.41 / 90.76	85.36 / 1.01 / 84.35 / 6.84 / 91.19
✓75.90	8.3	75.90 / 12.40	77.00 / 13.76		0.59 / 90.60
✓76.00	8.3	76.00 / 12.30			1.93 / 92.53
76.10	8.4		77.12 / 13.64		82.90
✓76.20	8.5	76.20 / 12.10	77.20 / 13.56		84.35 / 3.95 / 88.30
76.30	9.9	76.30 / 12.00			
✓76.40	10.3	76.40 / 11.90		90.60 / 2.94 / 93.54	90.60 / 1.16 / 91.76
✓76.50	9.1	76.50 / 11.80			83.68 / 3.71 / 87.39
✓76.60	8.9	76.60 / 11.70	77.20 / 16.34		
✓76.70	8.3	76.70 / 11.60			84.35 / 5.45 / 89.80
✓76.80	8.4	76.80 / 13.00			
✓76.90	9.1	77.00 / 12.80			84.35 / 5.40 / 89.75
✓77.00	11.4	77.10 / 12.70	76.90 / 12.85		
77.10					
✓77.12	12.9	77.12 / 14.64	77.00 / 12.75		
✓77.20	13.4				
77.30	14.4	77.40 / 9.99			
✓77.40	7.0				

9+00		92.53	7.2	85.3	✓77.60	7.7	77.60 / 9.13
9+50			8.5	84.0	✓77.80	6.2	77.80 / 8.93
10+00			8.6	83.9	✓78.00	5.9	78.00 / 8.73
10+50	T.P.		8.85	83.68	✓78.20	5.6	78.20 / 8.53
11+00		88.83	6.3	82.5	✓78.40	4.1	78.40 / 8.33
11+50			6.1	82.7	✓78.60	4.1	78.60 / 8.13
12+00			5.3	83.5	✓78.80	4.7	78.80 / 7.93
12+50			4.8	84.0	✓79.00	5.0	79.00 / 7.73
13+00			4.1	84.7	✓79.20	5.5	79.20 / 7.53
13+27.3	M.H. & 7"ST		4.2	84.6	✓79.31	5.3	79.31 / 7.42
13+50			3.9	84.9	✓79.40	5.5	79.40 / 9.43
14+00			3.3	85.5	✓79.60	5.9	79.60 / 9.23
14+50			3.2	85.6	✓79.80	5.8	79.80 / 9.03
15+00			4.1	84.7	✓80.00	4.7	80.00 / 8.83
15+50	T.P.		4.19	84.64	✓80.20	4.4	80.20 / 8.63
16+00		92.01	7.8	84.2	✓80.40	3.8	80.40 / 8.43
16+50			7.3	84.7	✓80.60	4.1	80.60 / 8.23

92.53 H.I.
8.85
83.68 T.P.
5.15
88.83
4.19
84.64
7.37
92.01

83.68
3.71
87.39 = H.I.

83.68
3.05
86.73

T.P. 84.64
4.19
88.83

17+00	92.01	7.0	85.0
17+29.4 M.H. ℄ 31st St.		6.9	85.1
17+54.4			
17+67.6 cor. barn			
21.6			
17.89 N. side "			
18+00 T.P.		4.17	87.84
18+50	95.61	6.6	89.0
19+00		5.3	90.3
+50		4.4	91.2
20+00		4.0	91.6
+50		4.5	91.1
21+00		4.7	90.9
+50		5.5	90.1
21+73.30 M.H. ℄ "H" St.		6.9	88.1
22+00 T.P.		5.82	89.79
22+50	93.90	4.0	89.9
23+00		4.5	89.4
+50	97.41	8.5	88.9

80.80	4.2	80.80 / 7.03			
80.92	4.2	80.92 / 7.91			
81.02		81.02 / 7.81			
		13.96 / 13.48 / 48	95.61 / 5.82	86.86 / 5.82	
81.70	6.6		89.79 / 411 / 93.90 / 5.80	80.84 / 4.11 / 84.65 / 5.80	
81.40	7.6	81.20 / 13.48	88.10 / 9.31 / 97.41	78.85 T.P. / 9.31 / 88.16	
81.60	8.7	81.40 / 13.28	94.68 / 95.16		
81.80	9.4	81.60 / 13.08			
82.00	9.6	81.80 / 12.88	87.79 / 514 / 94.93		
82.20	8.9	82.00 / 12.68			
82.40	8.5	12.68			
82.60	7.5	82.20 / 12.48	89.79 / 3.53 / 93.32		
82.70	6.0	82.40 / 12.28	83.20		
82.80	7.0	82.60 / 12.08	10.12	87.84 / 6.84 / 94.68	
83.00	6.9	82.70 / 11.98		89.79 / 2.65 / 92.44	
83.20	6.2	82.80 / 11.88	83.00 / 11.68	83.40 / 9.04	
83.40	5.4	11.88			

92.01 / 9.25 / 82.76 / 4.17 / 78.59 / 82.76 / 4.84 / 77.92

92.01 / 4.17 / 87.84 / 87.84 / 9.25 / 88.59

						Cut	3008.6 760 3768.6 13 3755.6	37307 25 37557
24+00		97.41	7.8	89.6	83.60	6.0	83.60 11.80	87.38 81 86.57 38
+50			6.4	91.0	83.80	7.2	83.80 11.60	
25+00	T.P.		4.46	92.95	84.00	8.9	84.00 9.40	
+50		100.40	6.4	94.0	84.20	9.8	84.20 13.89	
+71.2	M.H. ℄ "G" St.		7.2	93.2	84.29	8.9	84.29 13.80	
26+00			6.8	93.6	84.40	9.2	84.40 13.69	
+50			4.9	95.5	84.60	10.9	84.60 13.49	
27+00			5.4	95.0	84.80	10.2	84.80 13.29	
+50			10.5	89.9	85.00	4.9	85.00 12.09	
28+00			11.3	89.1	85.20	3.9	85.20 12.89	
+50			12.6	87.8	85.40	2.4	85.40 12.69	
29+00			10.0	90.4	85.60	4.8	85.60 12.57	
29+50			6.7	93.7	85.80	7.9	85.80 12.39	
30+00	T.P.		6.35	94.05	85.90 86.00	8.1	86.00 12.19	
30+08.6	M.H. ℄ 32 8 "F"		6.4	94.0	86.04	8.0	86.04 12.13	
30+50		102.39	6.0	96.4	86.57 87.38	9.0	86.57 11.60	
30+75							87.38 10.79	

97.41
4.46
92.95
7.45
100.40
6.35
94.05
8.34
102.39

88.16 H.I.
4.46
83.70
7.45
91.15
6.35
T.P. 84.80
8.34
93.14

92.44
2.48
89.96
5.44
H.I. 95.40
T.P. 92.95
5.14
H.I. 98.09

H.I. 98.17

31+00 +07	Trestle	102.39	9.9	92.5	89.01	3.5	89.01	92.27 89.01 3.26	102.39	93.14	
					√89.24		89.24		0.66	0.66	
					89.83		8.93		101.73	92.48 T.P.	
									12.52	12.52	
									114.25	105.00	
31+50 +60					90.64				0.85	0.85	
					√90.96	90.96	90.96		113.40	104.15	
							7.21		12.55	12.55	
31+75					91.45				125.95	116.70	
									163	T.P. 94.05	
32+00 +10			12.8	89.6	92.27	F.2.7				4.12	
					√92.59		92.59			H.I. 98.17	
							5.58				
32+25			5.5	96.9	√93.08	3.8	93.08			T.P. 101.73	
							5.09			4.91	
32+50	3%		2.4	100.0.0	93.90	6.1				H.I. 106.64	
										101.73	
32+75			1.1	101.3	√94.71	6.6	94.71			8.41	
							11.93			H.I. 110.14	
33+00	T.P.		0.66	101.73	95.53	6.2				T.P. 113.40	
										12.57	
33+25		114.25	11.5	102.8	√96.34	6.5	96.34			H.I. 125.97	
							10.30				
33+50			9.5	104.8	97.16	7.6					
33+75			8.1	106.2	√97.97	8.2	97.97	98.46			
33+89.6	M.H. ϕ Est.		7.1	107.2	√98.46	8.7	12.17	11.68			
34+00			5.7	108.60	99.815	8.8					
34+25			3.2	111.1	√103.072	8.0	103.07				
							7.07				
34+50	T.P.		0.85	113.40	106.33	7.1					
34+75		125.95	9.2	116.7	√109.59	7.1	109.59				
							.55				
35+00			6.0	119.9	112.85	7.0					

GEO. R. K

35+25	125.95	2.3	123.6	116.11	7.5	
35+50	138.02	10.4	127.6	119.36	8.2	
35+75		7.0	131.0	122.62	8.4	
36+00		1.6	136.4	125.88	10.5	
36+25	150.04	7.7	142.3	129.14	13.2	
36+50		3.4	146.6	132.39	14.2	
36+75	162.01	11.9	150.1	135.65	14.4	
37+00		9.7	152.3	138.91	13.4	
37+25		8.3	153.7	142.17	11.5	
37+50		6.5	155.5	145.42	10.1	
37+55.7 = 13.64 "D" St.						
148.7 MH. & D" St.			156.31	147.86	8.4	
37+75		4.7	157.3	148.18	9.1	
38+00		3.5	158.5	149.43	9.1	
38+25		2.7	159.3	150.68	8.6	
38+50		1.2	160.8	151.93	8.9	
38+75 B.M.	171.71	9.35	162.36	153.18	9.2	
39+00		7.2	164.5	154.43	10.1	

MH 125.97

116.11 + 7.5 = 123.61 − 9.86 = 113.75

122.62 + 8.4 = 131.02 − 3.85 = 127.17

125.88 + 10.5 = 136.38 − 11.96 = 124.42

129.14 + 13.2 = 142.34 − 20.34 = 122.00

132.39 + 14.2 = 146.59 − 17.09 = 129.50

135.65 + 14.4 = 150.05 − 18.13 = 131.92

138.91 + 13.4 = 152.31 − 19.26 = 133.05

142.17 + 11.5 = 153.67 − 16.00 = 137.67

145.42 + 10.1 = 155.52 − 12.95 = 142.57

147.86 + 8.4 = 156.26 − 10.31 = 145.95

148.18 + 9.1 = 157.28 − 8.74 = 148.54

149.43 + 9.1 = 158.53 − 14.81 = 143.72

150.68 + 8.6 = 159.28 − 13.56 = 145.72

151.93 + 8.9 = 160.83 − 12.31 = 148.52

153.18 + 9.2 = 162.38 − 11.06 = 151.32

154.43 + 10.1 = 164.53

1 2 8.5
3 2.6

MH 125.97 6 1 1
137
TH 126.01 25.95
1304 0.18 T.P.
137.64 25.77
1.15 12.25
136.49 38.02
12.95 0.59
MH 149.78 37.43
2.89 12.61
146.59 50.04
3.78 0.65
149.39
12.62
162.01
2.92
159.09
12.62
171.71

116.11 + 7.5 = 123.61 − 9.86 = 113.75
0.18
116.29
2.25
118.54
0.59
122.62 + 8.4 = 131.02 − 3.85 = 127.17
128.18
1.29
129.47
0.65
125.88 + 10.5 = 136.38 − 11.96 = 124.42
140.14
1.62
141.76
3.94
129.14 + 13.2 = 142.34 − 20.34 = 122.00
149.84
2.62
152.46
7.35
132.39 + 14.2 = 146.59 − 17.09 = 129.50
135.65 + 14.4 = 150.05 − 18.13 = 131.92
138.91 + 13.4 = 152.31 − 19.26 = 133.05
142.17 + 11.5 = 153.67 − 16.00 = 137.67
145.42 + 10.1 = 155.52 − 12.95 = 142.57
147.86 + 8.4 = 156.26 − 10.31 = 145.95
148.18 + 9.1 = 157.28 − 8.74 = 148.54
149.43 + 9.1 = 158.53 − 14.81 = 143.72
150.68 + 8.6 = 159.28 − 13.56 = 145.72
151.93 + 8.9 = 160.83 − 12.31 = 148.52
153.18 + 9.2 = 162.38 − 11.06 = 151.32
154.43 + 10.1 = 164.53

1308
25
6515
2606
3.2575

162.36
9.58
171.94

135.65
16.52
152.17
162.36
0.37
MH 162.73
8.97
153.76
7.41
158.17
162.36
3.13
155.49

39+25		171.71	5.6	166.1
39+50			4.2	167.5
39+75			3.1	168.6
40+00			1.6	170.1
40+25	T.P		0.78	170.93
40+50		181.15	9.2	172.0
40+75			8.7	172.5
41+00			8.1	173.1
41+25			7.5	173.7
41+50.6 = M.H. ℄ Cst.				173.8
41+50			7.2	174.0
41+75			7.3	173.9
42+00			9.0	172.2
42+25			9.3	171.9
42+50			9.1	172.1
42+75			7.5	173.3
43+00			7.8	173.4
43+25			8.2	173.0

3768.7
382
4150.70

154.43
125

172.24 H.I.

155.68	10.4	155.68 / 16.56	171.71 H.I.	162.46
156.93	10.6	156.93 / 15.31	0.78 / 170.93	0.78 / 161.68
158.18	10.4	158.18 / 14.06	10.22 / 181.15	10.22 / H.I. 171.90
159.43	10.7	159.43 / 12.81	1.18 / 179.97	1.18 / 170.72
160.68	10.2	160.68 / 11.56	2.85 / 182.82	2.85 / 170.57
161.93	10.1	161.93 / 14.99	170.93 T.P. / 5.99 / 176.92	162.53 / 8.97 / H.I. 171.50
163.18	9.3	163.18 / 13.74		162 / 165.3
164.43	8.7	164.43 / 12.49		
165.68	8.0	166.93 / 9.99		
166.93	6.9			
167.182	6.7	167.44 / 9.48	168.99 / 7.93	
167.440	4.8	167.95 / 8.97		
167.698	4.2	168.47 / 8.45		
167.956	4.1			
168.214	5.1			
168.472	4.9			
168.730	4.3			

3755.7
13
3768.7
380.
4148.7

43+50		181.15	10.2	171.0
43+75			10.3	170.9
44+00			8.0	173.2
44+25			4.6	176.6
44+50	T.P.		1.18	179.97
44+75		182.82	1.0	181.8
45+00			2.8	180.0
45+30.95	~~FT~~ MH		2.3	180.5

17
1055
645

168.73

176.92 H.I.

168.988	2.0	169.50 / 7.42	T.P. 179.97 / 2.46 / 182.43
169.246	1.7	169.76 / 12.67	
169.504	3.7	170.02 / 12.41	
169.762	6.8	170.28 / 12.15	
170.020	10.0	170.54 / 11.89	
170.278	11.5		
170.536	9.5	170.86 / 11.57	
170.86	9.6		

26

√ Line in Alley bet. H. & I sts from M.H. ¢ 31st running 590 ft West

0+00 = M.H. on Main Line
0+45 = M.H. ¢ 31st & ¢ alley

					Grade	Cuts		
0+00	M.H. ¢ alley	95.72	7.7	88.0	82.00	6.0	B.M. N.E. Cor 31st & I.	82.76
0+25			6.9	88.8	83.25	5.5	✓ 82.00 / 13.35	12.96
0+50		5	6.7	89.0	84.50	4.5	✓ 84.50 / 10.85	95.72
0+75			5.8	89.9	85.75	4.1		T.P. 0.93
1+00			4.3	91.4	87.00	4.4	✓ 87.00 / 8.35	T.P. 94.79
1+25			1.6	94.1	88.25	5.8		11.35
1+50	T.P.		0.93	94.79	89.50	5.3	✓ 89.50 / 5.85	106.14
1+75		106.14	9.9	96.2	90.75	5.5		82.76
2+00			8.5	97.6	92.00	5.6	✓ 92.00 / 10.48	12.59
2+25			7.6	98.5	93.25	5.2		H.I. 95.35
2+50			7.0	99.1	94.50	4.6	✓ 94.50 / 7.98	5.85
2+75			6.4	99.7	95.75	4.0		89.50
2+80	M.H.				96.00		✓ 96.00 / 6.48	12.98
3+00			6.1	100.0	96.67	3.3		H.I. 102.48
3+25			5.8	100.3	97.51	2.8	✓ 97.51 / 4.97	
3+50			4.9	101.2	98.35	2.9		
3+75			4.3	101.8	99.19	2.6	99.19 / 3.29	
4+00			4.1	102.0	100.03	2.0		

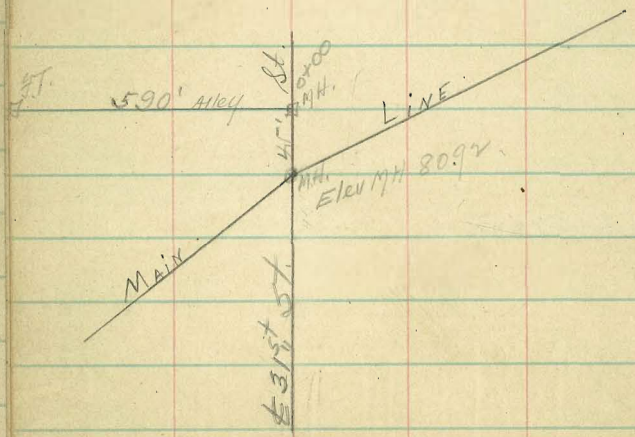
at Sta 5+00 the line angles to a pt. opp. sta 5+90 which is 2' N. of straight line

4+25		106.14	3.1	103.0	100.86	2.1	100.86 / 1.62
4+50	T.P.		2.29	103.85	101.70	2.1	
4+75		113.57	9.2	104.4	102.54	1.9	102.54 / 7.83
5+00			7.4	106.2	103.38	2.8	
5+25			6.2	107.4	104.22	3.2	104.22 / 6.15
5+50			4.8	108.8	105.06	3.7	
5+75			2.7	110.9	105.90	5.0	105.90 / 4.47
5+90	F.T.		1.7	111.9	106.40	5.5	106.40 / 3.97

Finish stakes 10-26-09
Lockwood
Evans
Lambert

106.14 H.I.
2.29
103.85 T.P.
9.72
113.57

102.48
1.63
100.85
9.52
H.I. 110.37



Sewer on Third from no. line of maple to Sta. 2 North of Olive

Dec. 11/11 { Chiles Taylor Williams

Sta.		H.I.	Rod	Ground	Grade	cut
J.P.	741	263.45		256.04	B-M nutmeg	
0+00	No. line of maple.		13.6	249.9	245.60	4.3
+50			12.93	250.52	246.47	4.0
1+00			11.9	251.6	247.33	4.3
+50			11.0	252.5	248.20	4.3
2+00			9.9	253.6	249.06	4.5
+50			8.94	254.51	249.93	4.6
3+00			8.0	255.5	250.80	4.7
+40.48	M.H. center of Nutmeg.		7.4	256.1	251.50	4.6
+50			7.3	256.2	251.64	4.6
4+00			6.8	256.7	252.36	4.3
+50			6.1	257.4	253.08	4.3
5+00			5.08	258.37	253.80	4.6
+50			4.4	259.1	254.53	4.6
6+00			3.5	260.0	255.25	4.8
+50			2.8	260.7	255.97	4.7

250.52
5.30
255.82 H.I.
245.60
10.22
249.06
6.76
249.93
5.89
251.50
8.21
258.37
5.19
263.56 H.I.
251.64
11.92
253.80
9.76
254.53
9.03
255.97
7.59

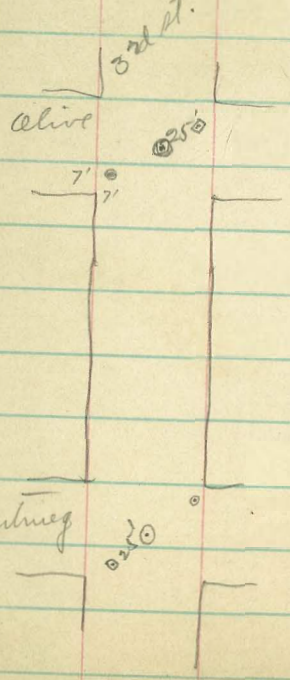
246.47
9.35
247.33
8.49
248.20
7.62
254.51
5.20
259.71 H.I.
250.80
8.91
252.36
11.20
253.08
10.48
255.25
8.31

Cont. from page 50

Sta.	H.I. 263.45	Rod	Grund	Grade cut
7+00		2.04	261.41	256.70 ✓ 4.7
+20.9 M.H. Center of Olive.		1.8	261.7	257.00 ✓ 4.7
+50		1.4	262.1	257.12 5.0
8+00		1.12	262.33	257.32 5.0
+30 dead end.		1.3	262.2	257.44 4.8

263.56 H.I.
256.70 ✓
6.86

257.00
6.56 ✓



2/3/05 Gregory

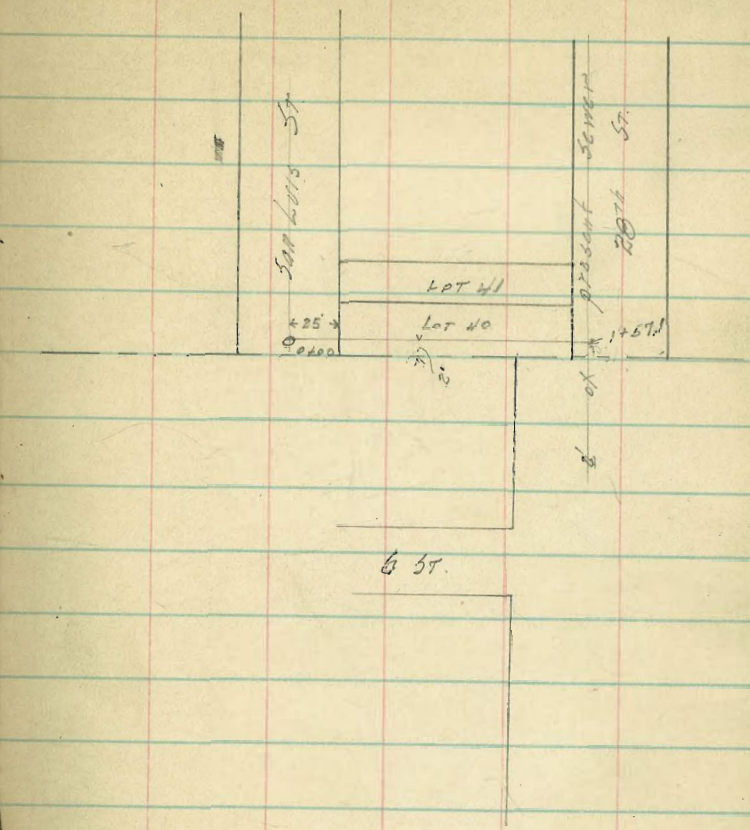
Sewer Levels on a Line 8' N. of S.L. of Lot 40 Pacific View Homestead from ℄ of San Luis St to Main Line in 28th St.

	17.95	111.01	98.03
	13.05	124.03	0.03 110.98
	801	131.98	0.06 123.97

℄ of San Luis St

+0.400	1.53	130.45
+50	10.5	121.18
+75	16.6	115.4
+122	16.4	115.6
+134	11.2	120.78
+144	4.7	127.28
+146	5.4	126.58
+155	5.4	126.58
+157.1	5.93	126.00

51 L N



Lateral to Jones House Blk 113 E.W. Morse addn

0+00 = Sta 24+00	95.40			Grade ✓ 83.86			H.I. 95.40
0+20		6.5	88.9	✓ 84.04	5.1	84.04 / 9.62	853 / 836 / 1.70 / 157 / 1.57 / 1.083 / 1300 / 1246 / 54 / 540
0+50		6.8	88.6	✓ 84.32	4.5	84.32 / 9.34	
1+00		7.5	87.9	✓ 84.78	3.2	84.78 / 8.88	
1+50				✓ 85.23			
1+57 House		8.7	86.7	85.30	1.4	85.23 / 8.43	108 / 57 / 756 / 540 / 615 — 108 / 2 / 216

Sta 25+00 TP 92.95 / 0.71 / 93.66 H.I.

Glass 1'8" x 2'8"

20" x 32"

137 / .25 / 685 / 6745 / 2745 / 34.25

84.78 / .45 / 2.3

4150.6
3768.6
382.0

382) 19.0000000 (.049
1528

.05
6.3
1.5
30
.315

.05
5
.05
25
25
10
1.25

3768.7
3389.6
379.1

166.86
147.86
1900

379.1) 49.4000000000 (.1303
3791
11490
11373
11700
11373
11373

.1303
10.4
52 12
1303
1.3.5.5 1 2

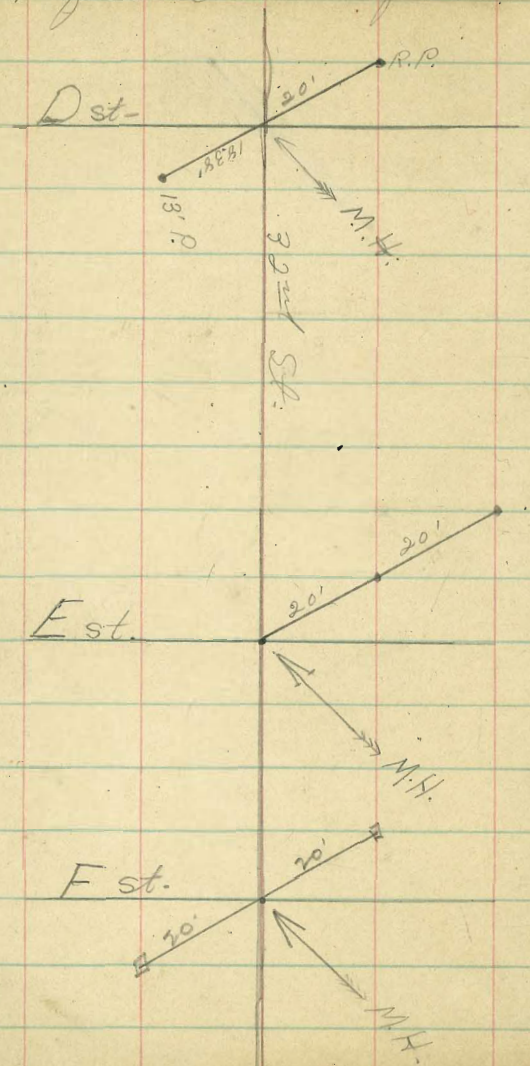
.1303
18.7
9121
10424
1303
2.4.3661

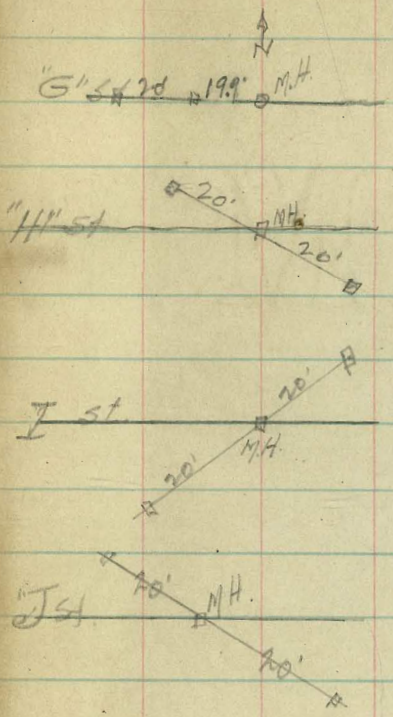
147.86
98.46
49.40

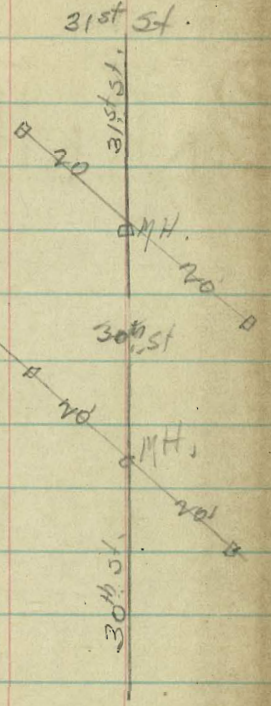
.1303
50
6.5 1 5 0
99.8 1 5
106.330
112.845
119.360
125.875
132.390
138.905
145.420
2.436
147.856

147.86

Reference Points for Man Holes on 32nd St. Sewer Lines







ed by H. S. CROCKER COMPANY, Stationers, Drawing
als, Mathematical Instruments, etc., San Francisco.

VERSE TABLE FOR TRANSIT BOOK.

From 1° to 90° for a distance of 100.

REES.		¼ DEGREE.		½ DEGREE.		¾ DEGREE.		Degrees.
	Dep.	Lat.	Dep.	Lat.	Dep.	Lat.	Dep.	
		100.00	0.44	100.00	0.87	99.99	1.31	89
8	1.75	99.98	2.18	99.97	2.62	99.95	3.05	88
4	3.49	99.92	3.93	99.91	4.36	99.88	4.80	87
6	5.23	99.84	5.67	99.81	6.10	99.79	6.54	86
6	6.98	99.73	7.41	99.69	7.85	99.66	8.28	85
2	8.72	99.58	9.15	99.54	9.58	99.50	10.02	84
5	10.45	99.41	10.89	99.36	11.32	99.31	11.75	83
5	12.19	99.20	12.62	99.14	13.05	99.09	13.49	82
3	13.92	98.97	14.35	98.90	14.78	98.84	15.21	81
7	15.64	98.70	16.07	98.63	16.50	98.56	16.93	80
8	17.36	98.40	17.79	98.33	18.22	98.25	18.65	79
6	19.08	98.08	19.51	97.99	19.94	97.90	20.36	78
1	20.79	97.72	21.22	97.63	21.64	97.53	22.07	77
4	22.50	97.34	22.92	97.24	23.34	97.13	23.77	76
3	24.19	96.92	24.62	96.81	25.04	96.70	25.46	75
9	25.88	96.48	26.30	96.36	26.72	96.25	27.14	74
3	27.56	96.00	27.98	95.88	28.40	95.76	28.82	73
3	29.24	95.50	29.65	95.37	30.07	95.24	30.49	72
1	30.90	94.97	31.32	94.83	31.73	94.69	32.14	71
5	32.56	94.41	32.97	94.26	33.38	94.12	33.79	70
7	34.20	93.82	34.61	93.67	35.02	93.51	35.43	69
6	35.84	93.20	36.24	93.04	36.65	92.88	37.06	68
2	37.46	92.55	37.86	92.39	38.27	92.22	38.67	67
5	39.07	91.88	39.47	91.71	39.87	91.53	40.27	66
5	40.67	91.18	41.07	91.00	41.47	90.81	41.87	65
3	42.26	90.45	42.66	90.26	43.05	90.07	43.44	64
8	43.84	89.69	44.23	89.49	44.62	89.30	45.01	63
0	45.40	88.90	45.79	88.70	46.17	88.50	46.56	62
9	46.95	88.09	47.33	87.88	47.72	87.67	48.10	61
46	48.48	87.25	48.86	87.04	49.24	86.82	49.62	60
.60	50.00	86.38	50.38	86.16	50.75	85.94	51.13	59
5.72	51.50	85.49	51.88	85.26	52.25	85.04	52.62	58
4.80	52.99	84.57	53.36	84.34	53.73	84.10	54.10	57
3.87	54.46	83.63	54.83	83.39	55.19	83.15	55.56	56
82.90	55.92	82.66	56.28	82.41	56.64	82.16	57.00	55
81.92	57.36	81.66	57.71	81.41	58.07	81.16	58.42	54
80.90	58.78	80.64	59.13	80.39	59.48	80.13	59.83	53
79.86	60.18	79.60	60.53	79.34	60.88	79.07	61.22	52
78.80	61.57	78.53	61.91	78.26	62.25	77.99	62.59	51
77.71	62.93	77.44	63.27	77.16	63.61	76.88	63.94	50
76.60	64.28	76.32	64.61	76.04	64.94	75.76	65.28	49
75.47	65.61	75.18	65.93	74.90	66.26	74.61	66.59	48
74.31	66.91	74.02	67.24	73.73	67.56	73.43	67.88	47
73.14	68.20	72.84	68.52	72.54	68.84	72.24	69.15	46
71.93	69.47	71.63	69.78	71.33	70.09	71.02	70.40	45
70.71	70.71							

Degrees.	Dep.	Lat.	Dep.	Lat.	Dep.	Lat.	Dep.	Lat.	Degrees
	DEGREES		¾ DEGREE.		½ DEGREE.		¼ DEGREE.		