193

F.B.193

"IND"

193

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	95⅔
2	4⅔	22	51⅓	42	98
3	7	23	53⅔	43	100⅓
4	9⅓	24	56	44	102⅔
5	11⅔	25	58⅓	45	105
6	14	26	60⅔	46	107⅓
7	16⅓	27	63	47	109⅔
8	18⅔	28	65⅓	48	112
9	21	29	67⅔	49	114⅓
10	23⅓	30	70	50	116⅔
11	25⅔	31	72⅓	51	119
12	28	32	74⅔	52	121⅓
13	30⅓	33	77	53	123⅔
14	32⅔	34	79⅓	54	126
15	35	35	81⅔	55	128⅓
16	37⅓	36	84	56	130⅓
17	39⅔	37	86⅓	57	133
18	42	38	88⅔	58	135⅓
19	44⅓	39	91	59	137⅔
20	46⅔	40	93⅓	60	140

MICROFILMED DEC 1964

Return to City Engineers Office
City Hall, San Diego, Cal.

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

193
Return to City Engineers Office
City Hall, San Diego, Cal.

8 8 ×10
12 12 12) 80 (6
72
80

12 9.6 8 × 12/10

15.63 7 × 12 8.4
14

180) .500 (.277
3600
1400
1260
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.02579
15
.12895
2579
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200) 55 (
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1.70
39
2.09
14
3.49

.00277
10
1385
277
.04155

550.25) 14.1400 (2579
11 0050 170
318500 4.279
275125 6.858
433750 9.437
385175 12.016
48.5750 14.595
17.174
644
17.518

12
1.5 ×10

155) 120 (
.26
.645

4.15
23.25
27.40
16.58
10.82
.08
10.74

11.51
15.89

1.034
17.06
2.56
19.62
11.37
8.25

11.09
1.88
12.97
1.09
10.87
2.10

02.58
15
1290
258
.3870

7.68
1.88
9.56

23.25
1.11
24.36

13.01
.93
13.94

12.25
23.25
35.50

34.73
9.20
43.93

7.50
2.15
53.5) 13.8

535) 13.800 (2.579
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2675
4250
490

1.71
6.53
1.88
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12.35
9.56
2.79
2.29
.50

11.85
9.56
2.29
.04
2.25

52.46
0.35
52.81 ✓

63.33
1.28
64.61

7.42
1.88
9.30 ✓

10.68
1.26
10.56
.12
10.42
.99
10.29
.88
10.18

10.03
23.25
33.28 ✓
9.64
23.64 MH.3
4.17
29.11 M.H.4

41.77
11.40
53.17 ✓
0.35
52.82

9.30
.021
9.09
4.32
13.41 ✓
3.49
9.92
.52
8.89
5.68
7.73
6.97
6.44
8.26
5.15
9.55
3.86
10.19
3.22

73
1.4
2.13
16.15
1.4
17.55

1.93
52.58
64.51 ✓

2.78
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-1.38

23.25
1.44
24.69 ✓
15.99
8.70
14.71
9.98

13.42
11.27
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26.8
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2072 1.03

2.91

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25.3
6216
10360
4144
.524216

2.072 per 100 but Col. & State

M.H. #4 29.11 M.H. #3 23.64

7.12
23.25
30.37 ✓
17.55
12.82
18.57
11.80
19.95
10.42
21.40
8.97
22.85
7.52

24.31
6.06
25.04
5.33

25.04
25.564
27.636
29.708
30.723

29.11
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~~5.15~~
37.07

~~5.15~~
8.94
191.46
200.40
190.24 190.85
10.16 9.55
190.55 191.16
9.83 9.24

9.38
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31.75
6.96
38.71
25.56
13.15
5.95
37.70
25.56
12.14

26.60
11.10
27.64
10.06
28.68
25.64
12.06
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10.86 4.08
28.04 96.32
9.66
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7.26
31.62
6.08

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300

190.24
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190.85
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.88791
31.62
32.508
1.741
34.249
35.990
485
36425

43.15
32.70
10.45
33.64
9.51
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851
35.64
7.51
651
37.14
6.01
37.34
5.81

1612
1299
313) 5.45 (1.741
313
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2191
1290
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380

435
1575
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276) 5.45 (1.00
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6

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3.31
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42.54 M.N.6
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1.370 per 100

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5.15
41.92
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4.01
63.33
67.34
11.05
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11.64
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59.94
12.95
46.99

57
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10.21
62.82
8.64
64.39

42.54
37.70
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941.84
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330.12

.01466
11.72
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1466
.171815 2
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37.872

.01466
38.28
11728
2932
11728
4398
.561848
3770
38.261
1.466
39.727
41.193
42.659
4.42
55.70
60.12
8.7 13.29
64.3 46.83

4.8400 (1.4
33012
153880
132048
218320
198072
20248
19807
441

2333.6
21768
156.7

1.265
64
13.29

56.29 Grade 10' So. Gus. Hole at Cedar.
46.83 grade pipe 150' So. Cedar.

55.70 B.M. on curb bet. Beech & Cedar

66 62.82 grade pipe 10' So. inside Date

64.31 " " Norline Date (mon).

12.59
41.92
54.51
42.69
11.82
43.58
10.93
44.50
10.01
45.42
9.09

46.83
42.69
4.14 (01.84
225
1890
1800
90
90
.88688
1.84
27

42.69
88
43.577
1.84
45.417
1.84
47.257

56.29
46.97
9.320 (6.947
7835 2314 12020
14850 14103
12536 7470
6268

2.02
55.70
57.72
46.83
10.89
46.34
11.38
45.42
12.30
12.16
57.58
46.83
10.75
46.34
11.24

156.7

.05.947
23.2
11894
17841
1894
1.379704

46.97
57.72
48.35
9.37
51.32
6.40
52.51
5.21
48.44
9.28
51.62
146.7

2.97
51.32
1.380
4697
48.35
5.947
54.297

54.30
1.19
55.49
51.32
1.19
52.51

3.176
51.62
6.10
9320.06853
8802
5180.27060
4401
7790
7335
4550
1.474
4697
48.444
5289
4.83

268
23.2
.05.947
20
1.18940

48.444
6.353
54797

.06353
33.5
6.10 3176 5
4.27 19059
20 8 39059
2.128253

.6353
56.29
56.925
54.897
2.128
56.925
78.22
10.34
88.56
5.26
83.30

.06.353
23.2
.12706
19059
12706
1.473896

64.39

63.33
4.02
67.35

52.89
14.46

54.80
12.55
56.92
10.43
58.0
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58.81
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63.33
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72.46
59.62
12.84
60.44
12.02
61.25
11.21
62.07
10.39
62.88
9.58
63.85
8.61

27.88
23.33.5
45.45

.01.626
16.5
8130
9756
1626
.268290
56.92
57.188
1.626
58.814
60.440
62.066
63.692
6.186
64.380
78.22
1.90
80.12
12.97
67.20
10.74
69.38

64.31
56.92
17.39
4545
28450
27270
11800
9090
2700

.01.626
38
1.0008
4878
.53658
.61788
.1626
.813

63.69
.16
63.85

67.20 grade M #9

69.38 grade 12 So. Dis Elm

83.30 grade 20 So. " Fair

74.95 Grade Sat. y

July 7 1905

Sta.		Grade	H.I.	Rod	Elev.	Cut
0+00	E. line Atlantic	-2.80	13.94	12.06		
+50		-2.66		9.7	1.88	
1		-2.52		7.5		
+50		-2.39		5.6		
2	0.8. W of E. Cover.	-2.25 / 1.70 adj.		3.9		
+50.	Nail on S. Fe man	2.99		2.6		
3		4.28		2.3		
+50		5.57	24.36	11.35		
4		6.86		10.4	13.01	
+50		8.15		9.0		
+75°	N.H. #1	8.79		8.6		
5		9.44		7.8		
+50		10.73		7.1		
6		12.02		5.8		
+50		13.31		4.1		
7+00		14.59				
				2.5		
+50.25	old m.H.	15.8.9		1.0		
8		18.57	35.50	10.5		
+25	M.H. #2	19.22				
+50		19.95 av.		9.5		
9		21.40		8.3		

Arctic –
(KETTNER) & ASH

No. Stake – Take Prop. line
India
(old M.H.)

July 8 1905

Schilds
Gunn
Munson

3

Sta		Grade	H.I.	Rod	Elev. out
+50		22.85	35.50	7.0	
10		24.31		5.5	
+24.7	M.H. #3	25.04		4.7	
+50		25.64		3.8	
11		26.84		2.9	
+50		28.04		2.2	
12		29.24		0.77	34.73
+50		30.44	43.93	7.8	
+99	M.H. #4	31.62		6.6	
13 +50		32.64		5.1	
14		33.64		4.7	
+50		34.64		4.8	
15		35.64		4.2	
+50		36.64		3.3	
+74.6	(old M.H.)	37.14		3.5	
16		37.64		2.16	41.77
+11.72	M.H. #5	37.70	53.17	11.2	
+50		38.26		11.1	

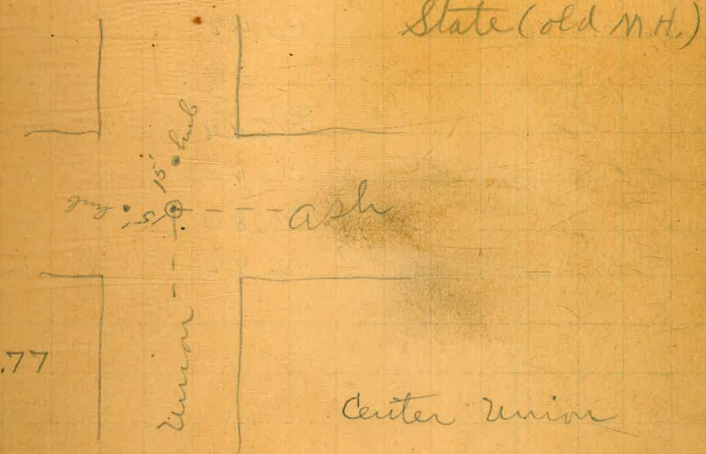
1025
825
200

1200
025
2.5

Columbia

1617
13
3.12

State (old M.H.)



52.46 41.77
0.35 11.40 1.93

July 10, 1905

Schilds Gum summer

4

Sta.		Grade	H.I.	Rod	Elev. cut.	
17		38.99	53.17	9.7		
+50		39.73		8.4		
18		40.46		6.9		
+50		41.19		5.6		
19		41.92		4.1		
+51.84	M.H.#6	42.69		2.7		Beech
20		43.58		2.4		
+50		44.50		2.5		
21		45.42		1.7		
+50		46.34		0.59	52.58	
+76.8	M.H.#6½	46.83				
22		48.24	64.61	10.4		
+50		51.62		6.6		
23		54.80		3.2		
+33.5	M.H.#7	56.92		1.1		Cedar

1952
1672
340

2177
1933
2.25

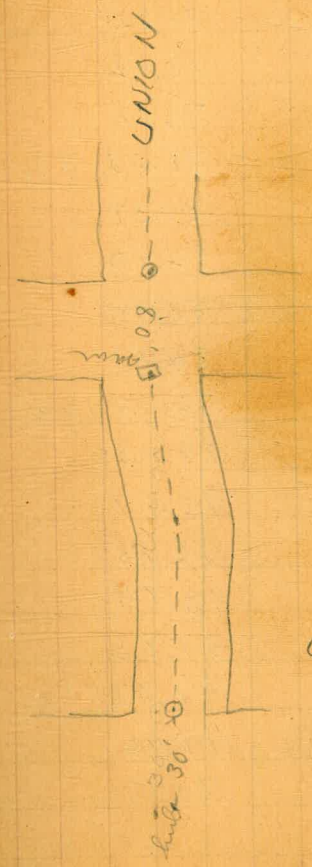
2933
9
8

July 12. 1905

Childs
Gunn
Munson

5

Sta.		Grade	H.I.	Rod	Elev. cut
23+50		57.19	72.69	8.8	
24		58.00		7.8	
+50		58.81		7.2	
25		59.62		6.0	
+50		60.44		5.2	
26		61.25		4.3	
+50		62.07		3.4	
27		62.88		2.4	
+50		63.69		2.02	
+88	M.H.8	64.31			
+91.7	Stone mon.		76.39	2.5.3	
28		64.52		5.0	
+50		65.37		4.1	
29		66.23		3.4	
+50		67.08		2.5	
+57	M.H. 9	67.20		2.4	
30		67.91	83.55	8.6	
+50		68.74		8.0	
31		69.56		7	
+50		70.39		7.2	
+75	M.H. 9½	70.80		6.7	



Date

E.

Elm

July 15, 1905.

Schilds
Grum
Munson

Sta		Grade	H.I.	Rod	Elev. cut
7 50			83.55		
32		71.86		4.2	
+50		73.99		2.7	
33		76.12		0.9	
+50		78.25	93.68	9.2	
34		80.37		6.5	
+50		82.50		3.9	
+73.5	M.H. #10	83.50		2.1	ALBATROSS & 5 side Fur
35		84.50		0.8	
+50		86.39	104.83	10.8	
36		88.28		9.4	
+50		90.17		6.6	
37		92.05		4.7	
+50		93.94		2.8	
38		95.83		0.7	
+50		97.72	116.17	10.1	
39	M.H. #11	99.60		9.1	old Ins. Hold nd. Grape
+33.5	M.H. #11	100.87		8.4	
+50		102.20		7.8	
40		106.22		3.4	

3475
3175
3

3733
3475
460

I July 15 1905

Sta		Grade	H.I.	Rod	Elev.	cut	
+50		110.23	126.96	10.1			
41		114.25		5.7			
+50		118.27		1.7			
42		122.29	139.41	9.7			
+33.7	M.H. #12 Old Ins. hole	125.00		6.			S.S. Hawthorn
+50		125.84		6.5			
43		128.40		4.7			
+13.	M.H. not built ~~M.H. #12~~	129.07		4.6			
+50		130.96		2.8			
44		133.52	150.28	10.4			
+50		136.09		7.5			
45		138.65					
+06.7	M.H. #12½	139.00		4.1			
+50		142.98		1.1			
46		147.58	158.20	5.7			
+13.25	M.H. #13	148.80		5.2	153.0	4.2	Old F.J. 5' Ivy.
+50		149.78	158.79	4.2	154.6	4.8	
47		151.12	168.64	7.4	161.2	10.1	
+50		152.46		1.8	166.8	14.3	
48		153.80		0.1	168.5	14.7	
+25		154.36		7.4	161.2	6.8	End of trestle

Schilds
Gunn
Munson

July 18. 1905

Sta.		Grade	H.I.	Rod	Elev.	cut	
49+10		156.74	168.64	8.1	160.5	3.8	End of trestle
+50		157.80		3.87	164.77	7.0	
49+94.6	M.H. #14	159.0		6.5	162.1	3.1	55. Juniper
50		159.16	175.84	13.5	162.3	3.1	
+50		160.60		7.3	168.5	7.9	
51		162.05		2.6	173.2	11.2	
+50		163.49		2.8	173.0	9.5	
52		164.94		6.0	169.8	4.9	
+50		166.38		1.7	174.1	7.7	
53		167.83		0.65	175.19	7.4	
+50		169.27	181.98	5.0	177.0	7.7	
+75.2	M.H. #15	170.0		6.3	175.7	5.7	55. Kalmia
54		170.29	184.75	10.3	174.5	4.2	
+50		170.89		13.1	171.7	0.8	
55		171.48		13.1	171.7	0.2	
+50		172.08		3.9	180.9	8.8	
56		172.67		0.80	183.95	11.3	
+50		173.27	190.62	5.7	184.9	11.6	
57		173.86		7.1	183.5	9.6	
+50		174.46		6.6	184.0	9.5	
+95.2	M.H. #16	175.0		7.4	183.2	8.2	Center Laurel

July 22 1905

Sta.		Grade	H.I.	Rod	Elev.	cut	
58		175.37	190.62	6.9	183.7	8.3	
+50		179.21	202.06	10.4	191.7	12.5	
59		183.05		4.5	197.6	14.6	
+50		186.89		1.07	200.99	14.1	
60		190.73	209.19	6.4	202.8	12.1	
+50		194.57		3.4.1	205.78 / 205.77	11.2	{Old bench / New bench
+75.1	M.H.#16.2	196.50		2.3	206.9	10.4	Center Front & Laurel
July 27 1905							
61		198.42	213.50	6.4	207.1	8.7	
+50		202.27		4.5	209.0	6.7	
62		206.11		0.53	212.97	6.9	
+50		209.96	223.70	7.0	216.7	6.7	
63		213.80		3.28	220.42	6.6	
+15.6	M.H.#17	215.00		2.1	221.6	6.6	1st Street
+50		215.86	231.64	8.6	223.0	7.1	
64		217.11		7.7	223.9	6.8	
+50		218.35		6.8	224.8	6.5	
65		219.60		5.5	226.1	6.5	
+50		220.84		3.92	227.72	6.9	(?)
+96.9	M.H.#18	222.01		2.5	229.1	7.1	2nd Street

230.33 B.M. N.W.Cor. sp. in tel. pole

631.5
607.5
24.0

6.597
6.316
281

July 31, 1905.

Fields
Gunn
Munson

Sta.		Grade	H.I.	Rod	Elev.	cut	
66+50		223.34	238.21	7.6	230.6	7.9	6877 6597 280
67		224.59		6.8	231.4	6.8	
+50		225.83		5.2	233.0	7.2	7198 6877 321
68		227.08		3.2	235.0	7.9	
+50		228.32	245.59	9.16	236.43	8.1	
+77.1	M.H.#19	229.00		8.5	237.1	8.1	3rd Street
69		229.45		8.9	236.7	7.3	
+50		230.43		8.6	237.0	6.6	
70		231.42		8.0	237.6	6.2	
+50		232.40		7.1	238.5	6.1	
71		233.38		5.7	239.9	6.5	
+50		234.36		4.1	241.5	7.1	B.M. 244.35 Top first S.E. Co.
+97.6	M.H.#20	235.30		3.3	242.3	7.0	Center 4th & Laurel.

Childs
Gunn
Munson

Aug. 3. 1905

Sta.		Grade	H.I.	Rod	Elev.	cut	
72+50		236.73	254.03	10.6	243.4	6.7	7538 / 7792 / 254
73		238.10		9.1	244.9	6.8	
+50		239.46		7.6	246.4	6.9	
74		240.83		6.0	248.0	7.2	
+50		242.19		4.4	249.6	7.4	
75		243.56		2.9	251.1	7.5	B.M. S.W. cor sp. tel pole.
+38	M.H.#21	244.60		1.7	252.3	7.7	(252.04) Maple.
+50		244.93		1.48	252.55	7.6	
76		246.29	264.85	11.2	253.6	7.3	7719 / 7538 / 381
+50		247.66		10.4	254.4	6.7	
77		249.02		9.1	255.7	6.7	
+50		250.39		7.9	256.9	6.5	
78		251.76		6.6	258.2	6.4	
+50		253.12		5.3	259.5	6.4	
79		254.49	267.98	7.2	260.8	6.3	B.M. 261.56 S.W. cor.
+18.6	M.H.#22	255.00		7.0	261.0	6.0	Nutwood

Aug. 9. 1905

Sta.		Grade	H.I.	Rod
+50		255.19	267.98	6.5
80		255.48		5.8
+50		255.78		5.3
81		256.07		4.8
+50		256.37		4.4
82		256.66		4.0
+50		256.96		3.6
+99.1	M.H.# 23	257.25		3.4
	Aug. 11. 1905			
83 +50		257.55	270.77	5.6
84		257.84		5.4
+50		258.14		5.2
85		258.43		5.0
+50		258.73		4.6
86		259.02		4.4
+50		259.32		4.2
+80	M.H.# 24	259.50		3.9

Childs
Gunn
Munson

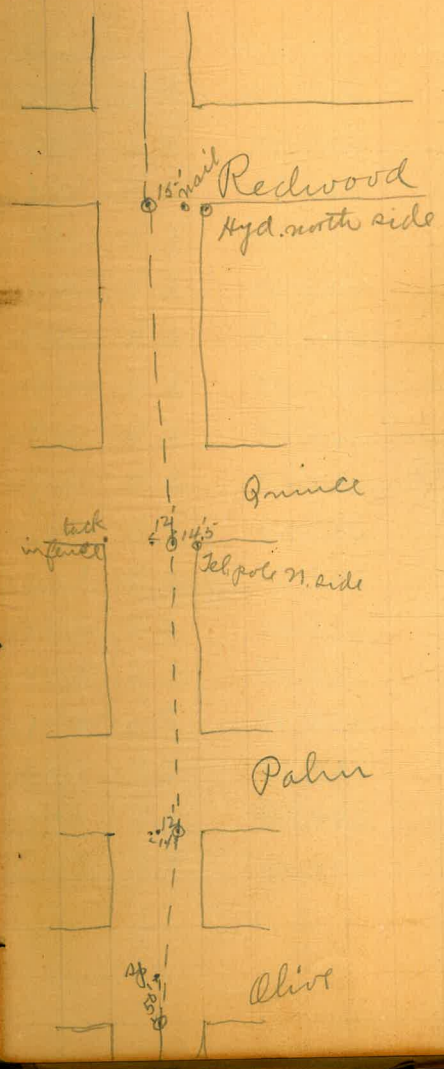
12

Elev.	cut	
261.5	6.3	
262.2	6.7	
262.7	6.9	83 7919 582
263.2	7.1	
263.6	7.2	
264.0	7.3	
264.4	7.4	B.M. 266.47 N.E. of Tel. pole
264.6	7.4	angle point - Olive
265.2	7.7	
265.4	7.6	1680 2299 381
265.6	7.5	
265.8	7.4	
266.2	7.5	
266.4	7.4	
266.6	7.3	B.M. 269.04 N.E. cor New Home
266.9	7.4	Palm Street.

Aug. 12 1905

Sta.	Grade	H.I.	Rod	Elev.	cut	
87				266.9	7.3	
+50	259.61	270.77	3.9	267.0	7.1	
88	259.91		3.8	267.1	6.9	
+50	260.21		3.7	266.9	6.4	
89	260.51		3.9	267.6	6.8	
+50	260.80		3.2	268.10	7.0	
90	261.10		2.67	268.4	7.0	
+50	261.39	273.66	5.3	268.6	6.9	B.M. 269.40 N.E. cor. new Home.
+60.5 M.H.#25	261.69		5.1	268.6	6.9	Quince Street
91	261.75		5.1	268.6	6.6	
+50	261.98		5.1	268.8	6.5	
92	262.28		4.9	269.0	6.4	
+50	262.57		4.7	269.0	6.1	
93	262.87		4.7	269.4	6.2	
+50	263.16		4.3	269.5	6.0	
94	263.46		4.2	269.9	6.2	B.M. 270.94 N.E. old Plane pole
+41.8 M.H.#26	263.75		3.8	270.1	6.1	Redwood
	264.00		3.6			

Schields
Grant
Summer 13


15' west
Redwood
Hyd. north side
Quince
tack in fence
12'
14.5'
Tel. pole N. side
Palm
12'
Olive

Aug 18. 1905

Schields
Gunn
Thomas. 15

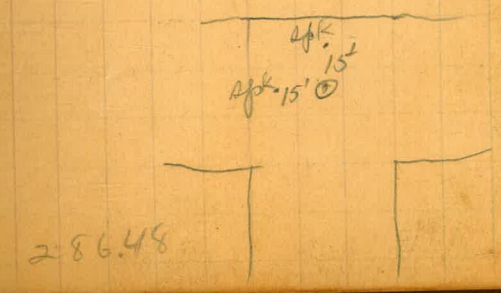
Sta.		Grade	H.I	Rod	Elev. out		
94+~~41~~.8	M.H. 26	264.00					Redwood
+50		264.06	275.95	5.9	270.0	5.9	
95		264.45		6.0	269.9	5.5	
+50		264.85		5.8	270.1	5.3	9922 9342 38 0
96		265.24		5.5	270.4	5.2	
+50		265.64		5.0	270.9	5.3	
97		266.03		4.7	271.2	5.2	
+50		266.43		4.3	271.6	5.2	
98		266.82		3.8	272.1	5.3	B.M. 273.18 N.E. New Phone Spruce
+21.9	M.H. #27	266.99		3.7	272.2	5.2	
+50		267.22		3.5	272.4	5.2	10203 9922 381
99		267.61	284.43	11.6	272.8	5.2	
+50		268.00		10.8	273.6	5.6	
100		268.39		9.9	274.5	6.1	
+50		268.79		8.8	275.6	6.8	
101		269.18		7.9	276.5	7.3	
+50		269.58		6.8	277.6	8.0	B.M. 279.64 N.E. bolt in old phone Thom
102+028	M.H. #28	270.00		5.7	278.7	8.7	

Aug. 19. 1905

Sta.		Grade	H.I.	Rod	Elev.	cut	
+50		270.14	284.43	5.4	279.0	8.9	
103		270.28		4.9	279.5	9.2	
+50		270.42		4.1	280.3	9.9	
104		270.56		3.2	281.2	10.6	
+50		270.71		2.6	281.8	11.1	
105		270.85	291.48	8.6	282.9	12.1	
+50		271.00		7.7	283.8	12.8	BM. 285.38 N.E. New Plume Upas.
+83.8	M.H.#29	271.10		7.3	284.2	13.1	
106		271.14		7.1	284.4	13.3	
+50		271.29		6.8	284.7	13.4	
107		271.43		6.3	285.2	13.8	
+50		271.58		5.8	285.7	14.1	
108		271.72		5.2	286.3	14.6	
+50		271.86		4.4	287.1	15.2	BM. 288.56 S.W. cor. of cement step (Shaw's) 4th & Walnut
+70.7	M.H.#30	271.92		4.6	286.9	15.0	

105 84
102 3

108 70
105 84
2 86



Aug 19, 1905

Sta.		Grade	H.I.	Rod	Elev.	cut	
108+70.7	M.H. 30		291.48	4.6	286.9		
109		272.00		4.9	286.6	14.6	
+50		272.15		5.6	285.9	13.8	
110		272.29		6.0	285.5	13.2	
+50		272.44		6.7	284.8	12.4	
111		272.58		7.0	284.5	11.9	B.M. 286.48 N.W. cor. cement wall. Center 5th & Walnut.
+50.35	M.H. 31	272.73					

11 p 59
8 71
2 79

.0029
32
58
87
.0928

.0029
3
.0087

29
20
.0580

29
26
116
18
.0696

29
5
145
29
.0435

29
12
58
29
.0348

5.40
286.48
291.93

5.85
285.38
291.23
271.29
19.94
6.34
13.60
5.82
285.41
271.43
13.98
5.12
.86
286.11
271.58
14.53
4.77
286.46
271.72
14.74
3.89
287.34
271.86
15.48
4.20
287.03
271.92
15.11

5.32
286.48
291.80
271.93
19.87
4.53
15.04
272.1
19.70
5.19
14.51
272.0
19.80
5.07
14.73
272.04
19.76
5.17
14.59

5.07

26
.29
234
52
.0754

29
13
87
29
.0377

5.17

5.40
286.48
291.88
272.58
19.30
7.25
12.05
272.06
19.82
5.26
14.56

5.38
286.48
291.86
272.15
19.71
5.86
13.85
272.22
19.64
5.98
13.66
272.33
19.53
6.26
13.27
27223
19.63
5.98
13.65
272.19
19.67
5.87
13.80

6.26

8.16

272.44
19.49
6.88
12.61
272.58
19.35
7.12
12.23
272.73
19.20
8.16
11.04

5246 41.77 1.93

x 4th Street extension

Aug. 10. 1905.

Childs
Gunn
Munson

Sta.		Grade	H.I.	Rod	Elev.	cut		
0		203.85	216.13	4.9	211.2	7.4	old F.J.	Juniper
+50		205.37		4.0	212.1	6.7		
1		206.90		3.0	213.1	6.2		
+50		208.42		2.0	214.1	5.7		
2		209.95	226.25	11.22	215.03	5.1		
+50		211.47		9.2	217.0	5.5		
3		213.00		7.4	218.8	5.8		
+50		214.52		5.9	220.3	5.8		
4		216.05		3.8	222.4	6.4		
+31.3	M.H.#	217.00		2.8	223.4	6.4		Kalmia
+50		217.89	235.14	11.18	223.96	6.1		
5		220.28		9.6	225.5	5.2		717 030 357
+50		222.67		7.7	227.4	4.7		
6		225.06		4.6	230.5	5.4		
+50		227.45	244.67	11.53	233.14	5.7	25-0	
7		229.84		9.0	235.7	5.9		
+50		232.23		6.1	238.6	6.4		
+87	F.J.	234.00		4.3	240.4	6.4		

Sept. 16, 1905

Childs
Brooks
Hawkins

18th St. Sewer line from N. line E to 20' So. 20.

Sta			Grade	H.I.	Rod	Elev.	cut
0+00	M.H. N. line E.		76.50	94.78	9.7	85.1	8.6
+50			76.95		9.3	85.5	8.6
1			77.39		8.3	86.5	9.1
+50			77.84		8.9	85.9	8.1
2			78.29		9.0	85.8	7.5
+50			78.74		7.7	87.1	8.4
+80	F.J.		79.0		8.1	86.7	7.7
	New	Line	7.45' E of Ctr.			3.96	89.84
		Ground	Grade	±	Rod		
0=No line E		85.09	76.~~50~~ 70	+8.6	4.75		
+50		85.54	76.~~95~~ 77.15	+8.6	4.3		
1		86.44	77.~~39~~ 59	+9.1	3.4		
+50		85.94	77.~~84~~ 78.04	+8.1	3.9		
2		86.00	78.~~29~~ 49	+7.7	3.85		
+50		86.8	78.~~74~~ 94	+8.1	3.0		
+80	F.T.	86.6	79.20	+7.6	3.2		

Grades raised 0.2

85.88

J.P. Sta 0.0 85.16

J.P. 88.49 nail cor. wall.

Sept. 28. 1905

Sewer line bet. M & N. in alley from 24th to 26th

Lehilds
Brooks
Hawkins

25

Sta.		Grade	H.I.	Rod	Elev.	cut	Changed Grade	cut	
0	M.H.1	48.59	58.58	6.73	51.85	3.26	47.35	4.50	
+50		48.85		7.00	51.58	2.73	47.82	3.76	
1		49.10		6.66	51.92	2.82	48.29	3.63	
+50		49.36		6.76	51.82	2.46	48.76	3.06	3.3 cu. yds.
2		49.62		6.33	52.25	2.63	49.23	3.02	
+50		49.88		6.02	52.56	2.68	49.70	2.86	
+90	M.H.2	50.08		5.06	53.52	3.44	50.08	3.44	
3		50.13		4.87	53.71	3.58			
+50		50.39		4.24	54.34	3.95			
4		50.64		4.14	54.44	3.80			
+50		50.90		3.52	55.06	4.16			
5		51.15		2.62	55.96	4.81			
+50		51.41		2.07	56.51	5.10			
+90	M.H.3	51.62		1.42	57.16	5.54			
6		51.67		1.35	57.23	5.56			
+50		51.93		2.49	56.09	4.16			
7		52.18	64.62	8.84	55.78	3.60			
+50		52.44		5.51	59.11	6.67			
8		52.69		5.49	59.13	6.44			
+50		52.95		5.07	59.55	6.60			
+80.6	M.H.4	53.10		5.31	59.31	6.21			

Center alley

Sta.		Grade	H.I.	Rod	Elev.	Cut
9		53.20	64.62	5.65	58.97	5.77
+50		53.46		6.54	58.08	4.62
10		53.72		5.67	58.95	5.23
+50		53.98		5.15	59.47	5.49
11		54.23		4.94	59.68	5.45
+50		54.49		4.65	59.97	5.48
12		54.74		4.33	60.29	5.55
+50.6	F.J. 1	55.00		4.63	59.99	4.99

Sta.		Grade	H.I.	Rod	Elev.	cut.
0 = 8+80.8	M.H.4	53.10	64.62	5.31	59.31	6.21
+02		53.16		5.27	59.35	6.19
+50		54.66		4.04	60.58	5.92
		56.22		2.70	61.92	5.70
+25	F.J. 2	57.00		2.10	62.52	5.52
0 = 8+80.8	M.H. 4	53.10		5.31	59.31	6.21
+50		53.58		6.91	57.71	4.13
+93	M.H. 5	54.00		8.71	55.91	1.91

L Nov. 20 1905

Profile on center alley bet. B & C

Childs
Hawkins
Taylor.

	H.I.	Rod	Elev.
W. line 25th	202.53	8.3	194.2
25' W		7.3	195.2
50' "		6.7	195.8
75 "		6.2	196.3
100' "		5.7	196.8
125 "		5.2	197.3
150 "		4.7	197.8
175 "		4.3	198.2
200 "		3.5	199.0
225 "		3.1	199.4
250 "		3.6	198.9
275 "		4.0	198.5
300 "		4.6	197.9
325 "	H.I. 199.05	1.5	197.5
350 "		2.2	196.8
375 "		2.9	196.1
400 "		3.5	195.5
425 "		4.5	194.5
450 "		5.2	193.8 End of trench
475 "		6.4	192.6
500		7.8	191.2

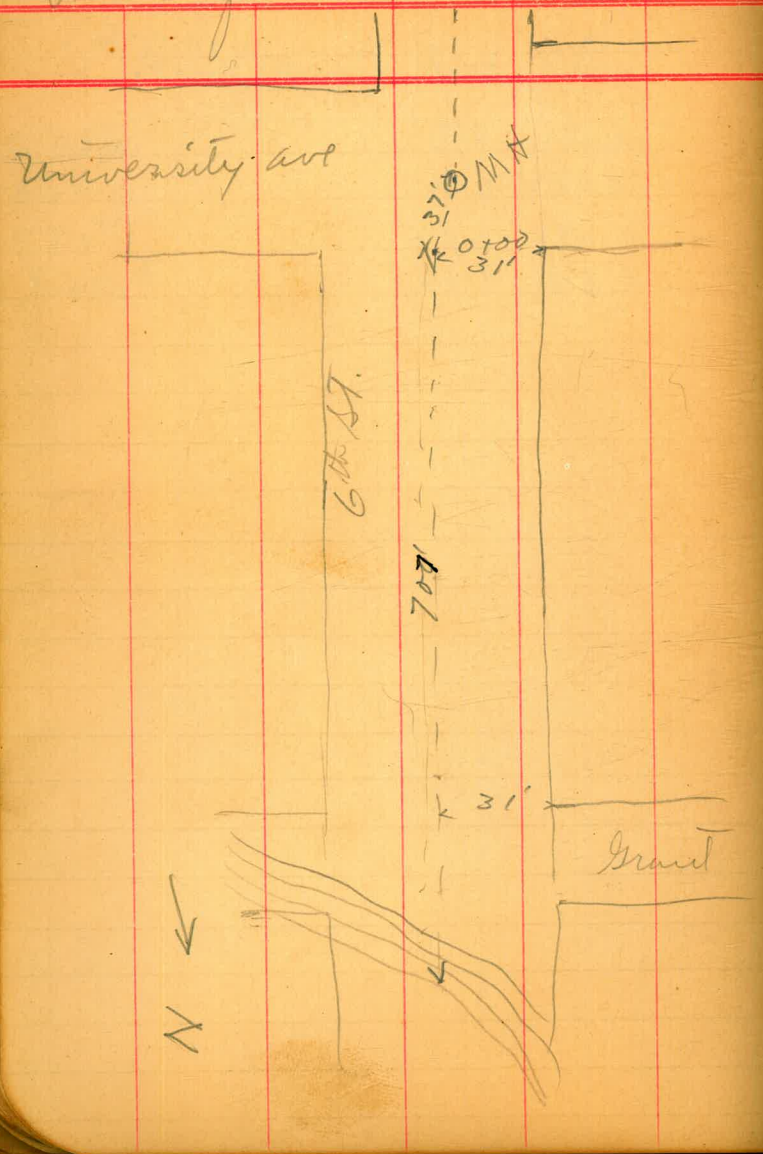
Profile cont.

Pt H.I 199.05	Rod	Elev.
525 W.	9.0	190.0
550	10.5	188.5
575	13.0	186.0
E. line 24th	16.8	182.2

POSTED

Nov. 10 1906 { Schields, Evans, Bell

Levels for Sewer on 6th North University ave.



POSTED

Sta			Rod	Elev.	
		H.I.			
	0.20	283.74		283.54	B M1
AA H. 3	7'so. Mulie		0.5	283.2	
0+00			1.6	282.1	
+50			3.2	280.5	
1+00		POSTED	5.2	278.5	
+50			8.4	275.3	
1+65			9.6	274.1	
2+00			7.8	275.9	
+50			4.6	279.1	
3+00			3.2	280.5	
+50			2.4	281.3	
4+00			2.7	281.0	
+50			2.8	280.9	
5+00			1.4	282.3	
+50			1.7	282.0	
6+00			1.9	281.8	
+50			2.2	281.5	
6+80			3.1	280.6	
7+00			10.0	273.7	
+07			12.9	270.8	

Sewer. bet. m & n + 26, 370'
East.

Sta.			H.I. 65.68 Rod	Grade	Grade	cut
0+00	about 5' cover of fill,		5.5	60.2	55.2	+5.0
+50			4.7	61.0	55.45	+5.5
1+00		POSTED	4.4	61.3	55.70	+5.6
+50			4.6	61.1	54.95	+5.1
2+00			6.5	59.2	56.20	+3.0
+50			6.7	59.0	56.45	+2.5
3+00			6.2	59.5	56.70	+2.8
+50			6.5	59.2	56.95	+2.2
+70	~~Fill~~.		6.6	59.1	57.05	+2.0

Sewer on 5th st Douglas & Brooks

POSTED

Sta.		H.I. 285.44	Grade
0+00	M.H in Brooks		274.62
			274.58
+50			274.55
			274.51
1+00			274.48
			274.44
+50			274.40
			274.37
2+00			274.33
			274.29
+50			274.26
			274.22
3+00			274.19
			274.15
+50			274.12
			274.08
4+00			274.04
			274.01
+50			273.97

H.I.

5.62 285.01 279.39 Bm.

274.58	274.55	274.51	274.48	274.44	274.40
10.43	10.46	10.50	10.53	10.57	10.61
274.37	274.33	274.29	274.26	274.22	274.19
10.64	10.68	10.72	10.75	10.79	10.82

POSTED

H.E.

157 332.57 330.94

6+40

Blk. 82

Grade should be 8' below surface

6 and

20'

140

0+00 – meade

125'

10

110

32° 40'

334.9

200.2

Maryland

3+34.9

6° 37'

3+34.9

6° 37'

3+34.9

6° 37'

20° 23'

Van Buren

70'

8+55

10'

Maryland

Void

See Page 38

Present Pavement

332.51

Levels for Sewer in Blk. 82 University Hts. & to connect with present sewer.

H.I.

T.P. 191 | 322.19 | 12.23 | 320.28

POSTED

*0+00	Center Meade & Center alley Blk. 82			9.6	322.9
+40				8.2	324.3
+90				6.6	325.9
1+40		H.I.		4.6	327.9
SS.	13.00	342.47	3.04	329.47	
+90				12.6	329.9
2+40				10.9	331.6
+90				7.6	334.9
3+40				4.4	338.1
+90				2.3	340.2
4+40				1.2	341.3
+90				0.4	342.1
5+40				0.2	342.3
+90				0.6	341.9
6+40				2.0	340.5
*0+00	Center meade & alley		H.I. 332.51	9.6	322.9
+50				10.0	322.5
1+00				11.4	321.1
+50				10.3	322.2
2+00				10.6	321.9
+50				11.1	321.4
				12.6	319.9

POSTED

3+34.9	Angle			2.9	319.3
+50		H.I.		8.6	313.6
	1.01	313.13	10.07	312.12	
3+83				18.0	295.1
4+00				8.1	305.0
+25		H.I. 322.19		5.9	316.3
+50				4.8	317.4
5+00				3.0	319.2
+50				4.0	318.2
6+00				3.0	319.2
6+50				3.3	318.9
7+00				2.2	320.0
+50				2.8	319.4
8+00				2.6	319.6
+55	Sewer constructed			2.6	319.6

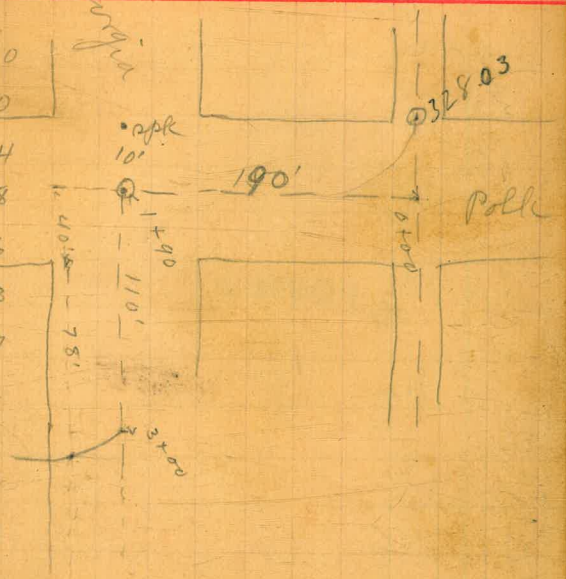
Sewer line Polk & Georgia — Oct. 12, 1907 — Childs, Evans, Barbee

Sta.		H.I.	Rod	Grade	Grade cut
0+00		340.67	3.4	337.3	328.25 +9.0
+50			3.2	337.5	328.55 +9.0
1+00			3.4	337.3	328.86 +8.4
+50			3.7	337.0	329.16 +7.8
+90	M.H. Center Polk & Georgia		4.7	336.0	329.41 +6.6
2+00			4.9	335.8	329.47 +6.3
+50			5.2	335.5	329.77 +5.7
3+00			6.4	334.3	330.08 +4.2
+50			7.5	333.2	330.38 +2.8
4+00			9.0	331.7	330.69 1.0

POSTED

Was not built as laid out

B.M. S.W. cor. of alley & Polk bet. Park Boul. & Georgia. 7.97 337.70



POSTED

337.70 − 4.03 = 341.73 − 13.18 = 328.55

337.70 − 337 = 341.57 − 13.02 = 328.55 − 13.12 = 328.45

12.71 − .62 = 12.09 − 13.37 = 328.86 − 2.0 = 328.86 − 12.71 = 328.41 − 12.16

1337 − 35 = 13.19 − 328.16 − 12.41

329.20 − .35 − .17 = 12.67 − .62 = 13.23

℄ Sewer in alley back of of

Blk. 82 University Hts. Jan 21 1908 {Child, Barber, Rogers}

Sta		HI.	Rod	Grade
0+00	M.H. Center meade & alley west Blk. 82	330.98	8.1	322.9
+50			6.6	324.4
1+00			4.9	326.1
+50			2.8	328.2
2+00		343.85	13.85	330.3
+50	POSTED		11.7	332.1
3+00			8.2	335.6
+20	M.H.		6.6	337.2
+50			5.3	338.5
4+00			3.4	340.4
+50			2.4	341.4
5+00			1.7	342.1
+50			1.6	342.2
6+00			2.1	341.7
+20	F.J.		2.5	341.3

Grade	cut
315.0	+7.9
316.45	+8.0
317.90	+8.2
319.35	+8.9
320.80	+9.5
322.25	+9.9
323.70	+11.9
324.28	+12.9
325.15	+13.4
326.60	+13.8
328.05	+13.4
329.50	+12.6
330.95	+11.3
332.41	+9.3
333.0	+8.3

180
335.91
321.70
12.21

151
336.20 F.G.
18.88
347.08
8.10
338.98
324.28
14.70

85.2
338.56
325.06
13.50

662
340.46
326.51
13.95

338.15
2.93
339.08
2.56
337.71
18.0
324.71
316.05
8.26
323.70
14.01
2
POSTED
318.40
5.15
323.55
316.32
7.23

332.29 H.F.
328.52
319.35
9.17
1.68
330.61
320.80
9.81
322.25
10.04
5.88
326.41
317.96
8.67

~~330.94 B.M. at Hub S.W. cor~~ Meade
335.15 B.M. - 30' N. of N.W. Cor. Maryland & Arch
29 Mus.

Maryland

Jan. 21. 1908 } Childs
Barber
Rogers

Sta		N.Z.	Rod	Ground	Grade out	
	M.H. center Meade					
0+00	+ alley West Blk. 8	330.98	8.1	322.9	315.0	+7.9 ✓
+50			8.6	322.4	314.75	+7.7 ✓
1+00			10.0	321.0	314.50	+6.5 ✓
+50			8.9	322.1	314.25	+7.8 ✓
2+00			9.2	321.8	314.01	+7.8 ✓
+50			10.0	321.0	313.77	+7.2 ✓
3+00			11.3	319.7	313.52	+6.2 ✓
+34.9	M.H. on Maryland		11.7	319.3	313.35	+6.0
+50		326.94	13.0	318.9	313.27	+0.6 ✓
4+00	Trestle		9.8	317.1	313.03	
+50			9.8	317.4	312.79	+4.3 ✓
5+00	3		7.8	319.1	312.54	+6.6 ✓
+50			8.7	318.2	312.30	+5.9 ✓
6+00			7.5	319.4	312.05	+7.4 ✓
+50			8.3	318.6	311.80	+6.8 ✓
7+00			7.9	319.0	311.56	+7.4 ✓
+50			8.0	318.9	311.32	+7.6 ✓
8+00			7.7	319.2	311.07	+8.1 ✓
+14.4	M.H. 98		7.2	319.7	311.0	+8.7 ✓

See next page for diagram

checked Lickenbrock Spring Sewerage

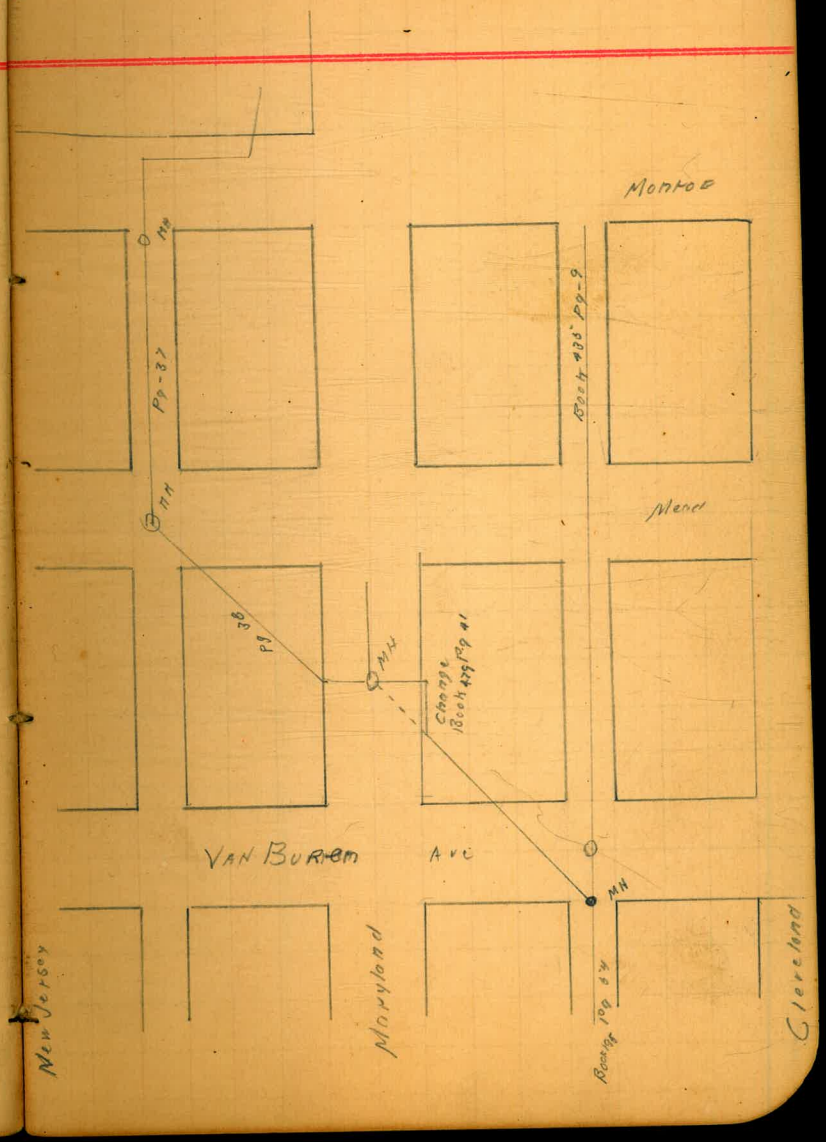
30' W. Sta. 6+50
Hub
T.B.M.

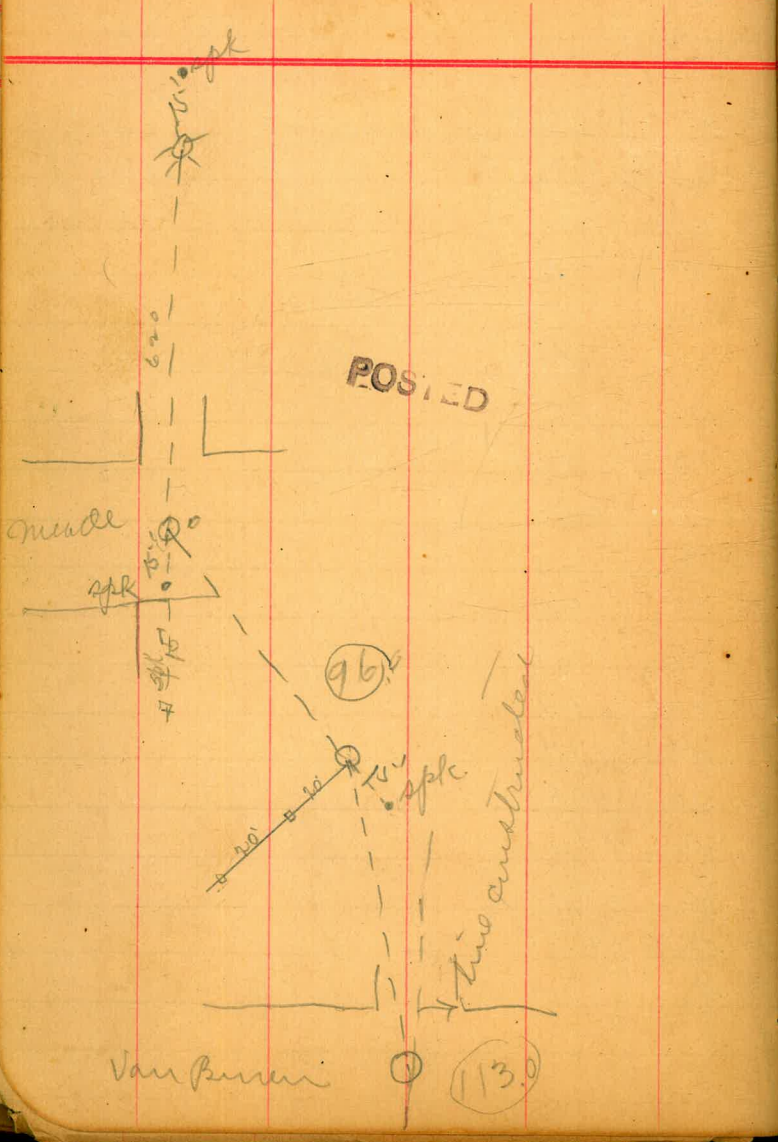
POSTED

335.15
2.28
H.I. 337.93
12.68
325.25
0.17
H.I. 325.42
7.02
318.40

335.15
0.27
335.42
11.20
324.17
8.12
332.29
3.79
328.50

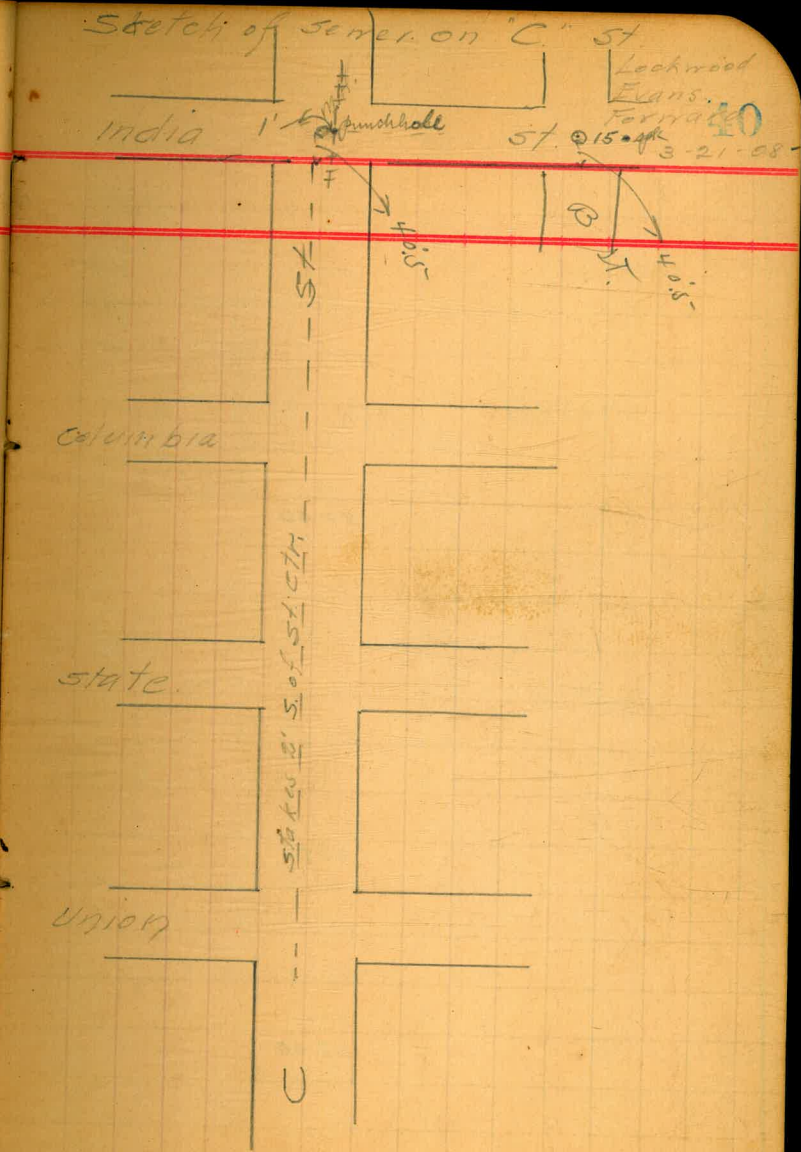
S.P.


Monroe
Mend
Van Buren Ave
Maryland
New Jersey
Cleveland
MH
Pg-37
Book 435 Pg-9
Pg 80
Change Book 475 Pg 11
Book 100 87


POSTED
Mendle
spk
96.0
113.0
Line centerline
Van Buren

0+00 = manhole inter. C & India St.
8+50

Sketch of sewer on "C" St.
Lockwood Evans. Ferrari
3-21-08



Water Sewer cut stakes and grade
Wallace
Emery on C Street
India to 5th

	680	23.70	Elev	16.9.0 Grade	BM NE Cor Cut	
0 = Cr. India - C.		Rail: 7.34	16.36	9.92.5	6.43	
50		6.86	16.84	10.50	6.34	
100	POSTED	5.83	17.87	11.07	6.80	
150		4.93	18.77	11.64	7.13	
200		4.01	19.69	12.21	7.48	
BM Columbia		3.31	20.40			
250		3.21	20.49	12.78	7.71	
275	N.H. center rd			13.06		
300		2.60	21.10	13.35	7.75	
350		1.84	21.86	13.92	7.94	
400	6.74 29.41	1.03	22.67	14.49	8.18	
450		6.26	23.15	15.06	8.09	
500		5.68	23.73	15.63	8.10	
550 Cr State		5.42	23.99	16.20	7.79	
BM State		5.34	23.98			
50		4.96	24.45	16.82	7.63	
100		3.97	25.44	17.43	8.01	
150		2.99	26.42	18.05	8.37	
200		2.15	27.26	18.67	8.57	
BM Union 665		1.29	28.00			
250		1.33	28.08	19.28	8.80	
3705 Cr Union				19.53		
300	34.80	6.02	28.78	19.90	8.88	
350		5.56	29.24	20.52	8.72	
400		5.32	29.48	21.14	8.34	
450		4.79	30.01	21.75	8.26	

Rate = 1.405

Rate = 1.231

1277 / 62 / 12.89 — 4922 — 1236 / .7386

2040 / 22 / 25.41 — 2039 / 141 / 21.80 — 1164 / 10.16 — 1221 / 9.59 — 1278 / 9.02 — 1335 / 8.45 — 13.92 / 7.88

14.49 / 7.311 — 15.06 / 6.74 — 15.63 / 6.17 — 3146 / 190 / 33.86 — 19.53 / 11.34 — 19.90 / 1097 — 20.52 / 12.34

314 / 12.22 — 2175 / 1161 — 2237 / 10.99 — 2500 / 387 / 30.77 — 1928 / 11.59 — 1867 / 1220 — 1805 / 12.32

1743 / 1169 / 07 / 10.57 — 1682 / 1.65 / 11.70 — 1620 / 12.27 — 2398 / 449 / 28.47 — 992 — 396

1830 — 12

12.78 / 8.68 — 2040 / 106 / 21.46 — 11.65 / 9.82

13.06 / 8.40 — 12.20 / 9.26

POSTED

BM-3d 38.450
" 3 41.96
" 4 47.95

	3480				
BM Front		3.23	31.46		
500		3.52	31.28	22.37	8.91
524.5 Cr Front Angle Left					
550		2.66	32.14	22.96	9.15
600	6.17 38.63	2.34	32.46	23.58	8.83
650		5.52	33.11	24.20	8.88
700		5.01	33.62	24.84	8.78
750		4.23	34.40	25.42	8.94
800		3.77	34.86	26.04	8.78
BM 1st		3.57	34.97		
824.5 Cr 1st				26.34	
850	44.52	3.09	35.54	26.66	8.83
900				27.28	
950				27.89	
1000				28.51	
1050				29.13	
1100		5.55	38.97	29.74	9.23
1104.5 Cr 2d		5		29.80	
50		5.21	39.31	30.50	8.81
100		4.47	40.05	31.20	8.85
150		3.82	40.70	31.91	8.79
200	48.93	3.28	41.24	32.61	8.63
250		7.11	41.82	33.31	8.51
280 Cr 3d Rail		6.52	42.41	33.73	8.68
300		6.28	42.65	34.01	8.64

POSTED

3146 4.56 36.0245 3497 .44 40.41

497 35.44 3635 9.09

Angle
W Side at E Side
23.31 Front 2806 1296
13.21 26.04 9.98

2358 12.44 2420 11.82 2481 11.21 2542 10.60
2728 13.13 27.59 12.52

497 3544 2661 8.78

28.45 6.07 44.52

4196 697 4893

28.51 11.90 29.13 11.28 29.74 32.61 11.87
34.97 9.51 44.48 29.80 14.68 12.23 1.95 30.54 13.98 12.03 0.95 31.40 13.28 32.91 12.57 33.31 11.17 34.01 10.47

3497 587 40.84 3664 1418

3497 471 3968 3664 13.02

2287 55 2342

.01 2331 445.5 6124 4893 54.39

	4893				
350		3.48	43.45	34.71	8.74
400		4.34	44.59	35.42	9.17
450		3.25	45.68	36.12	9.56
500		2.27	46.66	36.82	9.84
525				37.17	
550				37.52	
	6.72	5.67		47.95	RM 4"
560 Cr 4"		7.19	47.48	37.66	9.82
50		6.97	48.70	38.36	9.34
100		5.87	48.80	39.06	9.74
150		4.56	50.11	39.76	10.35
200		3.38	51.29	40.46	10.83
250		2.56	52.11	41.16	10.95
280 Cr 5"		2.45	52.22	41.60	10.62

Rate = 1.00

3976
13
52.76
4795
4.81

44.48
35.84
9.64

34.71
9.77 42 42 NR
5.60
48.02 N.I.
35.84
12.18

206

36.35
11.67

37.17
10.85
5
113
5

92
92

4795
328
50.23 N.I.

38.64
12.57

37.66
12.57

38.36
11.87

39.06
11.17

47.95
328
50.23 N.I.

39.76
12.92

40.46
12.22

41.16
11.52

4795
273
52.68 N.I.
536
52.12

4/3/08 Childs Barber Rogers & Sewer grades & cut stakes on India St. C to B.

		Rod	Elev.	Grade	Cut
		H.I. 21.46	rail 1" north of M.H.		
M.H. 0 = Cr.	℄ 44' west cr. India	5.20	16.26	9.880	6.38
50		4.9	16.6	9.31	7.3
100		4.9	16.6	8.74	7.9
150		5.2	16.3	8.17	8.1
200		4.8	16.7	7.60	9.1
250		4.9	16.6	7.03	9.6
300		5.0	16.5	6.46	10.0
350		5.3	16.2	5.89	10.3
379.85	M.H. Cr. B. 4' west cr. India	4.8	16.7	+5.548	11.2
+50				5.10	
1				4.66	
+50				4.21	
2				3.77	
+50				3.32	
+71	M.H. Arctic			3.15	
3				2.75	
				2.06	
4				1.38	
				0.69	
5				00	

Rate 1.405

Rate 0.89

Rate 1.373

12.19 / 0.32 / 11.87 — 2.266 / 7 / 1.204 / 4.1 / 7.94

15.575 BM India R. Hydt Nozzle / 6.293 / 15.850 Rt / 5.50 / 13.30

16.895 / 5.495 / 20.390 / 9.55 / 10.51

15.85 / 6.99 / 12.86 / 3.64 / 15.02 Rt

11.87 / 3.15 sl to Cal Pipe / sl to India 2.63.16 fr

+2.55 old grade / +3.15 sl water pipe / .60 to be removed

4.66 / 10.36 — 4.21 / 10.81 — 3.77 / 11.25 — 3.32 / 11.70

3.15 / 11.87 — 12.36 BM 5 Side M.H. Arctic / 4.57 / 16.93 Rt / 5.10 / 11.83

12.36 BM Arctic / 2.03 / 10.33 / 6.86 / 05.03 / 4.50 / 12.83 Rt

83 / 86 / 247

~~2.75 / 10.06~~ — ~~1.45 / 11.68~~ — ~~0.79 / 12.04~~ — ~~0.13 / 12.70~~

-.090 / ~~12.23~~ / -.055 / 13.38

2.75 / 10.08 — 2.06 / 10.79 — 1.38 / 11.45 — 0.69 / 12.14 — 00 / 12.83

.96 / 1.28 / 9.32 Rt

-.055 / 9.87

1178
435
7.30

+40.5 MHCal.	-0.55
+50	-0.67
-6	-1.24
	-1.51
7+07 End of Curve	-2.38
+32.5	-2.46
	-2.75
+.58	-3.04
+835	-3.33
8+09 MH Atlantic.	-3.62

504
128
432

-124
10.56

-151
11.13

~~-238~~
~~11.90~~

-246
11.78

-275
12.07

-304
12.36

-333
12.65

Grade raised 8" at manhole on Atlantic and tapered back to 7+07

Proposed Sewer in alley bet. N. & Webster East of 32nd.

B.M. S.E. cor 31st & N 74.51 on hub.
" on So. side of F.S. rim 86.20 40' west 32nd.

Spk set on offset line 18.8' W of 1-2.

Sta.		H.I.	Rod	Elev.	Grade
		95.66			
0.0	F.S. about 40' west 32nd		9.46	86.20	80.00
50			8.4	87.3	81.0
100			5.9	89.8	82.0
150			5.1	90.6	83.0
200			3.5	92.2	84.0
250			4.5	91.2	85.0
300			5.5	90.2	86.0
					1.7

POSTED

Elev. Bottom of flush T. 80.0

BM.	8.40	94.60		86.20	Side Mtg.
0 = opposite Ft				86.20	80.0
+50			7.42	87.18	81.0
1			5.10	89.50	82.0
+50			4.04	90.56	83.0
2			2.46	92.14	84.0
+50			3.51	91.69	85.0
3			4.30	90.30	86.0

Rim at Ft.
at
6.20
6.18
7.50
7.56
8.14
6.09
4.30

Bench Mark Water Dam

May 14 '08

86.20
7.88
94.08
80.00
13.08 +10

94.08
82
12.08
1

94.08
83.00
11.08
1+10

94.08
84.00
10.08
2

94.08
85.00
9.08
2+50

	4.81	284.72		279.91 - BM N W 5th Bro	
TR	7.70	286.76	6.66	279.06	
0+00		278.30 = Grade old pipe at 5th			
+50		278.55			
1		278.80			
+50		279.05			
2+14.2	N.H CH 6th	279.37			
	278.55	278.80	279.05	279.37	0.98
	8.21	7.96	7.71	7.39	278.78
			3.84	0.98	215
			3.87	6.41	+078 - Tp

through Taylor George Mayor } Location of Sewer on Anderson Pl
This was taken to find out the
Condition of the ground

40

POSTED

5th

50'

C 3x 277.3 ℄ of Pipe (Estimated) by Mc G.

Sewer Fall
.2 in 50'

Anderson Place

C 3.8 50 277.7

C 4x 100 278.1

C 4.6 150 278.5

C 6.1 200 278.9

55' C 6.6 250 279.1 6th St Flush Tank

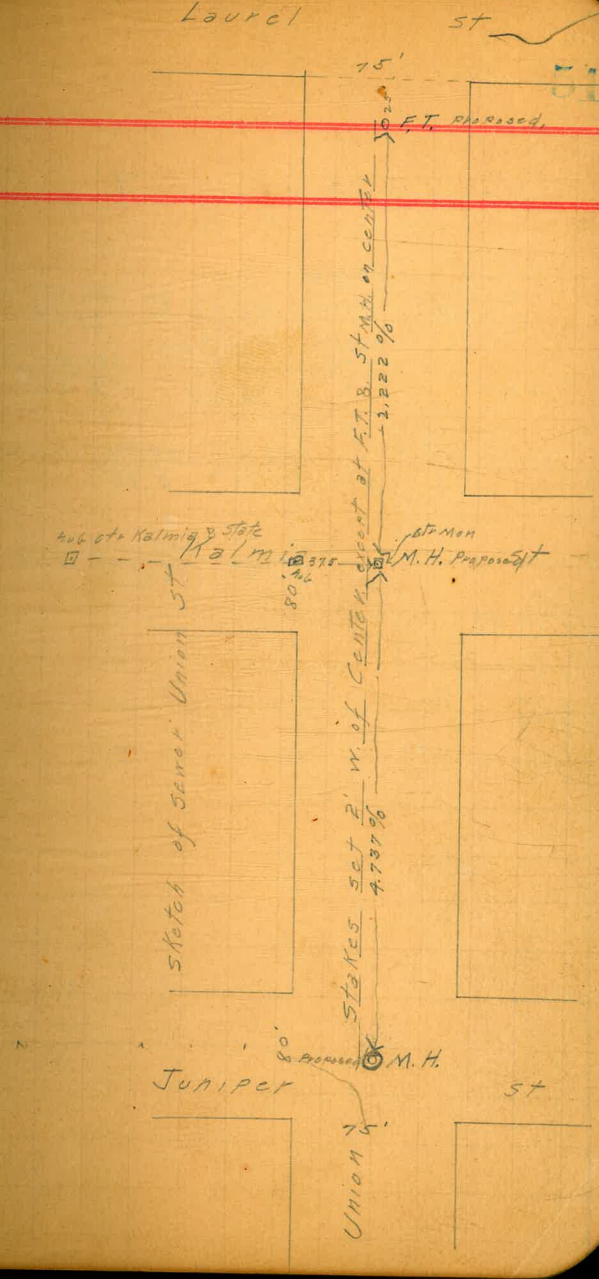
Grd 6th 285.0

5th & Broadway 279.91 - N W cor.

Sewer grades & cut stakes on Union from ctr Juniper to point 25' S. of Laurel

1/21 Dunkle
10 Shaw
Evans

Sta	+ R	H.I	− R	Elevation Top of hubs	grade Bottom sewer	cut from top of hub
B.M. cut-stake Iry & Union B.M.	8.72	105.72		97.00		
0+0 = ctr Juniper & Union M.H. proposed			10.40	95.32	90.00	5.32
0+50			10.44	95.28	92.24	3.04
1+00			7.42	98.30	94.48	3.82
1+50			4.64	101.08	96.72	4.36
2+00			1.87	103.85	98.96	4.89
T.P.	11.42	117.32	0.32	105.40		
2+50			10.67	106.65	101.20	5.45
3+00			7.69	109.63	103.44	6.19
3+50			6.12	111.20	105.68	5.52
3+80 = ctr Kalmia M.H.			5.41	Top of M.H. 111.91	107.00	4.91
4+45			3.70	113.62	108.55	5.07
4+95			2.48	114.84	109.74	5.10
5+45			1.08	116.24	110.93	5.31
T.P.	2.32	124.56	1.08	116.24		
5+95			6.85	117.71	112.12	5.59
6+45			5.57	118.99	113.31	5.68
6+95 = 25' S. of S.L. Laurel F.T. Extended			4.17	120.39	114.50	5.89



Grades for page 51

99.875
1.405
101.28 H.I.
90.00
11.28

92.24
9.04
94.48
6.80

2.97
98.31 J.P.
11.75
110.06 H.I.
96.72
13.34

98.96
11.10

103.44
6.62

101.20
5.86

105.68
4.38

107.00
3.06

041
109.65 J.P.
9.03
118.68 H.I.
107
11.68

108.55
10.13

109.74
8.94

110.93
7.75

112.12
6.56

113.31
5.37

114.50
4.18

1.34
117.34 J.P.
5.86
123.20
114.50
8.70
2.90
5.80

18575
313
21.705
534
6865
67 | 4,705

1343
405
6715
5372
.543915

5 00
6.67
4 1.34
2.01
3 2.68
3.069

29
40.5
269

1,373
405
6865
5492
556065

315
55
370

19650
18865
7850

315
50
2.65 - 3
686
1.964
1.278 - 4
.592
.094 - 5

189

315
60
370 | 24995
24995 | 1343
10050
8085
19650
10780
8700 1,373

1343 2
29. 2
12087
2686
.38947

315
55
370

39
54
268
3.61
1373
29
12357
686 3746
49817
50

686
592
.094

55
09
46

405
18
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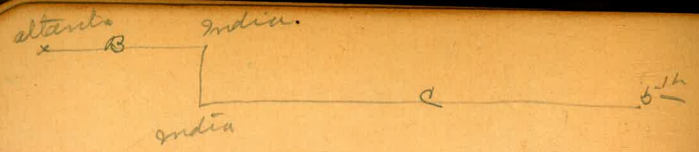

Center	Atlantic	— 3.96	} Rate = 1.1405
"	State	16.20	
"	2d 1/2	29.80	
"	5 —	41.60	

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13600 | 11045
11045 | 1.2313
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22090
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1180 | 840
840 | 1.4047
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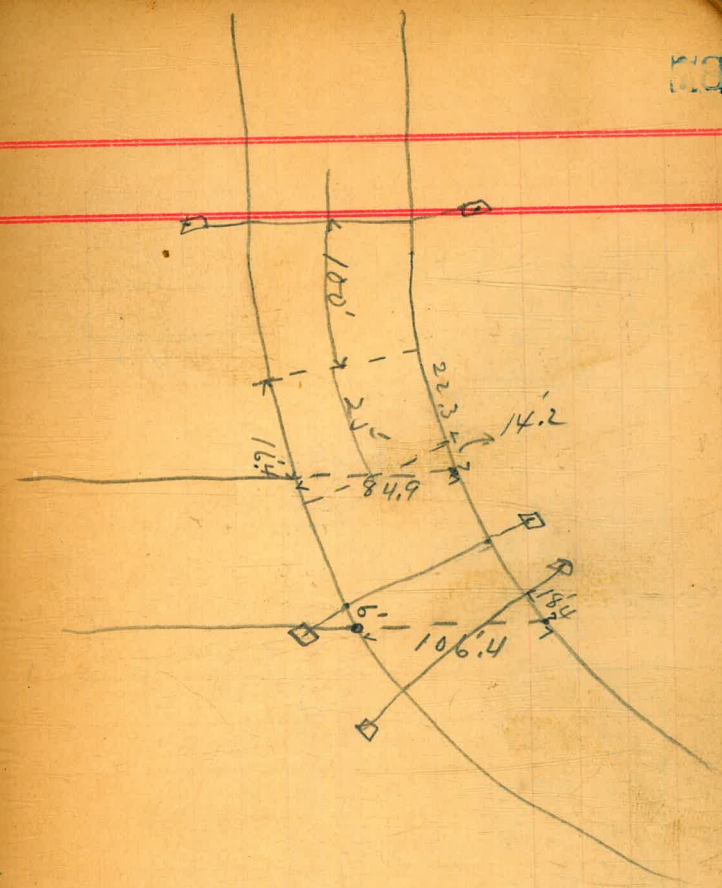

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S.E. cor. Ivy st. stop tel. Pole.

assumed elev. 100.'

100

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104.67 H.I.

10.00

94.67 grade F.S.

104.67

0.54

104.13

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114.52 H.I.

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18

255.186

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256.368

256.959

257.550

258.141

258.732

259.323

260.505

261.096

261.687

262.278

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263.460

58

264.062

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290181

.00591

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193
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TRAVERSE TABLE FOR TRANSIT BOOK.

From 1° to 90° for a distance of 100.

Degrees.	DEGREES.		¼ DEGREE.		½ DEGREE.		¾ DEGREE.		Degrees.
	Lat.	Dep.	Lat.	Dep.	Lat.	Dep.	Lat.	Dep.	
0			100.00	0.44	100.00	0.87	99.99	1.31	89
1	99.98	1.75	99.98	2.18	99.97	2.62	99.95	3.05	88
2	99.94	3.49	99.92	3.93	99.91	4.36	99.88	4.80	87
3	99.86	5.23	99.84	5.67	99.81	6.10	99.79	6.54	86
4	99.76	6.98	99.73	7.41	99.69	7.85	99.66	8.28	85
5	99.62	8.72	99.58	9.15	99.54	9.58	99.50	10.02	84
6	99.45	10.45	99.41	10.89	99.36	11.32	99.31	11.75	83
7	99.25	12.19	99.20	12.62	99.14	13.05	99.09	13.49	82
8	99.03	13.92	98.97	14.35	98.90	14.78	98.84	15.21	81
9	98.77	15.64	98.70	16.07	98.63	16.50	98.56	16.93	80
10	98.48	17.36	98.40	17.79	98.33	18.22	98.25	18.65	79
11	98.16	19.08	98.08	19.51	97.99	19.94	97.90	20.36	78
12	97.81	20.79	97.72	21.22	97.63	21.64	97.53	22.07	77
13	97.44	22.50	97.34	22.92	97.24	23.34	97.13	23.77	76
14	97.03	24.19	96.92	24.62	96.81	25.04	96.70	25.46	75
15	96.59	25.88	96.48	26.30	96.36	26.72	96.25	27.14	74
16	96.13	27.56	96.00	27.98	95.88	28.40	95.76	28.82	73
17	95.63	29.24	95.50	29.65	95.37	30.07	95.24	30.49	72
18	95.11	30.90	94.97	31.32	94.83	31.73	94.69	32.14	71
19	94.55	32.56	94.41	32.97	94.26	33.38	94.12	33.79	70
20	93.97	34.20	93.82	34.61	93.67	35.02	93.51	35.43	69
21	93.36	35.84	93.20	36.24	93.04	36.65	92.88	37.06	68
22	92.72	37.46	92.55	37.86	92.39	38.27	92.22	38.67	67
23	92.05	39.07	91.88	39.47	91.71	39.87	91.53	40.27	66
24	91.35	40.67	91.18	41.07	91.00	41.47	90.81	41.87	65
25	90.63	42.26	90.45	42.66	90.26	43.05	90.07	43.44	64
26	89.88	43.84	89.69	44.23	89.49	44.62	89.30	45.01	63
27	89.10	45.40	88.90	45.79	88.70	46.17	88.50	46.56	62
28	88.29	46.95	88.09	47.33	87.88	47.72	87.67	48.10	61
29	87.46	48.48	87.25	48.86	87.04	49.24	86.82	49.62	60
30	86.60	50.00	86.38	50.38	86.16	50.75	85.94	51.13	59
31	85.72	51.50	85.49	51.88	85.26	52.25	85.04	52.62	58
32	84.80	52.99	84.57	53.36	84.34	53.73	84.10	54.10	57
33	83.87	54.46	83.63	54.83	83.39	55.19	83.15	55.56	56
34	82.90	55.92	82.66	56.28	82.41	56.64	82.16	57.00	55
35	81.92	57.36	81.66	57.71	81.41	58.07	81.16	58.42	54
36	80.90	58.78	80.64	59.13	80.39	59.48	80.13	59.83	53
37	79.86	60.18	79.60	60.53	79.34	60.88	79.07	61.22	52
38	78.80	61.57	78.53	61.91	78.26	62.25	77.99	62.59	51
39	77.71	62.93	77.44	63.27	77.16	63.61	76.88	63.94	50
40	76.60	64.28	76.32	64.61	76.04	64.94	75.76	65.28	49
41	75.47	65.61	75.18	65.93	74.90	66.26	74.61	66.59	48
42	74.31	66.91	74.02	67.24	73.73	67.56	73.43	67.88	47
43	73.14	68.20	72.84	68.52	72.54	68.84	72.24	69.15	46
44	71.93	69.47	71.63	69.78	71.33	70.09	71.02	70.40	45
45	70.71	70.71							
Degrees.	Dep.	Lat.	Dep.	Lat.	Dep.	Lat.	Dep.	Lat.	Degrees.
	DEGREES.		¾ DEGREE.		½ DEGREE.		¼ DEGREE.		

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