

Sewer System  
9th Ward

1908

TRANSIT

F.B. 198

Hotel  
D.

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	2 1/3	21	49	41	95 2/3
2	4 2/3	22	51 1/3	42	98
3	7	23	53 2/3	43	100 1/3
4	9 1/3	24	56	44	102 2/3
5	11 2/3	25	58 1/3	45	105
6	14	26	60 2/3	46	107 1/3
7	16 1/3	27	63	47	109 2/3
8	18 2/3	28	65 1/3	48	112
9	21	29	67 2/3	49	114 1/3
10	23 1/3	30	70	50	116 2/3
11	25 2/3	31	72 1/3	51	119
12	28	32	74 2/3	52	121 1/3
13	30 1/3	33	77	53	123 2/3
14	32 2/3	34	79 1/3	54	126
15	35	35	81 2/3	55	128 1/3
16	37 1/3	36	84	56	130 2/3
17	39 2/3	37	86 1/3	57	133
18	42	38	88 2/3	58	135 1/3
19	44 1/3	39	91	59	137 2/3
20	46 2/3	40	93 1/3	60	140

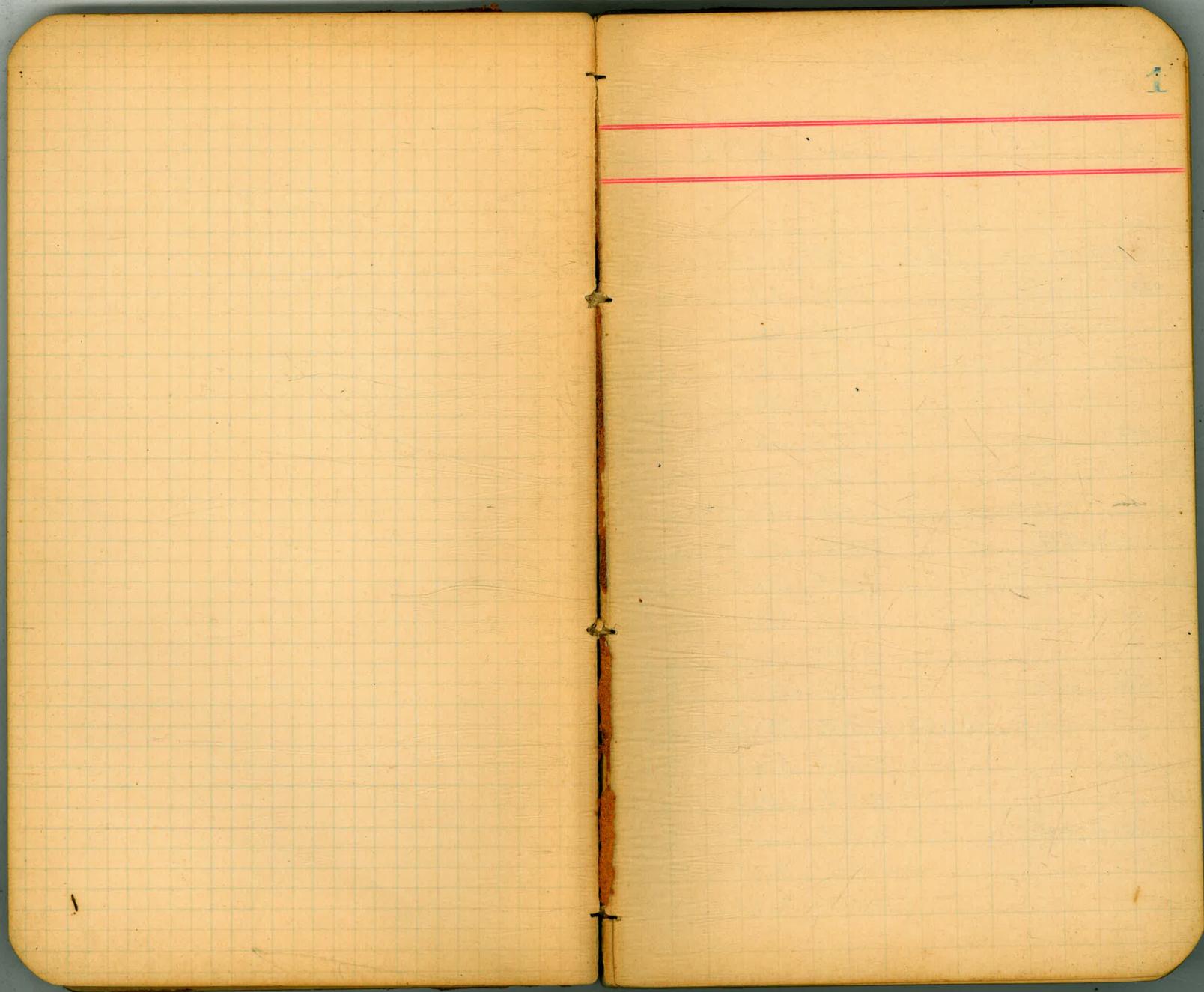
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 City Hall, San Diego, Cal.  
 TABLE FOR RUNNING ON SLOPES.

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						
0		0		0		0	
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

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Handwritten notes and calculations at the bottom of the page, including the number '22.07' and some illegible scribbles.





3  
13  
15 } Davis  
Lewin Line "5"  
Rooks

34.83

8+50	0.73	30.42	5.14	29.69
9			10.37	20.05
+50			11.74	18.68
10			8.38	22.04
+4716 N.H. 209			2.42	28.00
+50	12.37	40.65	2.14	28.28
11			5.96	34.69
+50			3.92	36.73
12			1.46	39.19
+50			1.81	38.84
13			2.58	38.07
+50			7.49	33.16
+775 N.H. 210			8.64	32.01
14	2.15	35.18	7.62	33.03
+50			9.15	26.03
15+50	11.09	45.91	0.36	34.82
16			5.81	40.10
+50			6.69	39.22

0.690

x

0.819

3/31 Levels Alley  
Hatch  
Lambert Boston - Main

3

21.20  
21.7  
23.55 HI  
30.12  
1.51  
30.98

	HI	Sta	3093	Elev	Grade	Fill
25.67	4.0					
26.01	56.0	8+94 <sup>9</sup>	9.79	21.19	(25.83)	25.97
26.35	57.7	9+12 <sup>73</sup>	12.27	18.66		26.09
26.70	54.7	9+31 <sup>06</sup>	12.44	17.49		26.22
		9+49 <sup>40</sup>	12.38	18.65		26.34
27.04	1.3	9+67 <sup>73</sup>	11.36	19.57		26.47
27.38	7.2	9+86 <sup>06</sup>	9.70	21.23		26.59
27.72	9.0	10+04 <sup>40</sup>	23.41 0.53	22.88		26.72
28.07	11.1	9+50	4.72	18.69		(26.54)
28.41	10.5					
28.76	9.3					
29.10	4.1					
29.30	2.7					
29.45	3.6					
29.89	53.9					
30.30						
30.71	4.1					
31.12	9.0					
31.53	7.7					

Line "5"

3/31 Hatch  
Lambert  
105

Alley

1111

Boston - Main

4591

17			8.59	37.32		31.99	5.4
	+06.9-N.H.211		8.65	37.26	X	<u>32.00</u>	5.3
	+50		8.46	37.45		32.65	4.8
18			4.72	41.19		33.41	7.8
	+50		2.98	42.93		34.17	8.8
19			2.86	43.05		34.92	8.1
	+50		3.24	42.67		35.68	7.0
20			2.26	43.65		36.44	7.2
	+36.4-N.H.212		2.96	42.95	X	<u>37.00</u>	6.0
	+50		3.12	42.79		37.08	5.7
	B.N. 642	49.30		42.85			
21			5.65	43.65		37.37	6.3
	+50		5.34	43.96		37.67	6.3
22			6.59	42.71		37.96	4.8
	+50		5.71	43.59		38.26	5.4
23			4.81	44.49		38.55	6.0
	+50		4.61	44.69		38.85	5.9
	+65.4-N.H.213		4.61	44.69		38.94	
24			3.80	45.50		39.14	6.4
	+50		6.73	42.57		39.44	3.1

618.8

13.17%

0.589%

15.64  
1.169  
13.47  
2.20  
9.90706

3.05  
42.86  
42.88

Line "5"

3/31 Hatch  
1/05 Lambert

Alley

Boston - Main

5

(4/18) 05

					Trestle No 6					
					Sta.	HI	Red	Elev	Grade	
		49.30								
25	2.61	40.54	11.37	37.93	39.73	f 1.8	25+16 <sup>2</sup>	35.53	5.41	33.12 39.83 6.71
+50			16.30	24.24	40.03	f 15.8	25+34 <sup>2</sup>		11.62	26.91 39.94 13.03
26	12.39	44.28	8.65	31.89	40.32	f 8.4	25+53 <sup>2</sup>	33.07	9.18	23.89 40.04 16.15
T.P	7.25	51.28	0.25	44.03	40.62	5.4	25+71 <sup>2</sup>		8.55	24.52 40.15 15.63
+50			5.32	45.96						
+94 = M.H 214			3.11	48.17	40.94		25+89 <sup>2</sup>	38.53	10.55	27.98 40.25 12.27
27			3.04	48.24	40.92	7.3	26+08 <sup>2</sup>		3.19	35.34 40.36 5.02
+50			1.70	49.58	40.22	8.4				(40.46)
28			1.55	49.73	41.51	8.2				
+50			2.31	48.97	41.81	7.2				
29			1.93	49.35	42.10	7.3				
+50	8.74	57.94	2.08	49.20	42.40	6.7				
30			6.84	51.10	42.69	8.4				
+34 = M.H 215			6.23	51.71	42.91					
+50			6.00	51.94	42.99	8.8				
31			5.10	52.84	43.28	9.6				
+50			4.75	53.19	43.58	9.6				
32			5.12	52.82	43.87	9.0				
+50			7.87	50.07	44.17	5.9				
33			9.42	48.52	44.46	4.1				
+										

0.550

$\left( \begin{array}{l} 3 \\ 13 \\ 83 \end{array} \right) \left\{ \begin{array}{l} \text{Davis} \\ \text{Lewis} \\ \text{Brooks} \end{array} \right.$  Line "S"

3/31/05 Hatch Lambert

Alley

Boston - Maine

6

		57.94		
33	150		9.90	48.04
	+73.8	MH 216	9.09	48.85
34			9.18	48.76
	+50		5.65	49.29
35	4.98	54.80	8.12	49.82
	+50		4.90	49.90
36			4.87	49.93
	+50	Ft. 32	5.66	49.17

0 68.00

44	76	3.3
44	90	
45	05	3.7
45	35	3.9
45	63	4.2
45	92	4.0
46	20	3.7
46	50	2.7

3 2 1 2 3 4

$\frac{862}{49.32}$   
 $\frac{49.35}{49.35}$

S. line

4/14/05

		52.15			
0+50	b		12.26	19.89	✓
1			11.87	20.28	✓
			11.48	20.67	✓
2			11.09	21.06	✓
			10.70	21.45	✓
3	1.49	33.86	12.02	21.84	✓
+50			11.63	22.23	✓
+5.8	M.H. 207		11.56	22.30	✓
4			11.28	22.58	✓
			10.94	22.92	✓
5			10.59	23.27	✓
			10.25	23.61	✓
6			9.91	23.95	✓
			9.57	24.29	✓
7			9.22	24.64	✓
+172	M.H. 208		9.10	24.76	✓
+50			8.88	24.98	✓
8.		31.90	6.58	25.32	✓
+50			6.23	25.67	✓
10+17 <sup>6</sup>	M.H. 209	31.82	4.80	27.02	✓
+50			4.78	27.04	✓

1.49

33.86  
24.95  
12.41

677  
177  
4746  
675  
120.006

6.92

2288  
902  
3190

26.84  
7.98  
31.12

25.95  
4.05

26.84  
5.06

00.687  
24  
5748  
1374  
016488

X 4/15/05

4/17/05

S-line

4/17/05

11		31.82	4.44	27.38 ✓
			4.10	27.72 ✓
12	6.08	34.15	3.75	28.07 ✓
			5.74	28.91 ✓
13	9.79	38.55	5.39	28.76 ✓
			9.45	29.10 ✓
	+77° NW 210		9.25	29.30 ✓
14			9.07	29.48 ✓
			29.89	
15			30.30	
	11.46	42.17	30.71	
16			11.05	31.12 ✓
			10.69	31.53 ✓
17			10.23	31.94 ✓
	+07° NW 211		10.17	32.00 ✓
			9.52	32.65 ✓
18			8.76	33.41 ✓
			8.00	34.17 ✓
19			7.25	34.92 ✓
			6.49	35.68 ✓
20			5.73	36.44 ✓

0.519  
1.517

13+77°  
60  
14.37  
50  
12.5

3415  
27.02  
7.13

2741  
10.14

8

2807  
11.57  
39.64 ✓

3312  
963  
42.75 NI

2735  
12.26 ✓

2772  
11.92 ✓

2807  
11.57 ✓

2891  
11.23 ✓

2876  
10.88 ✓

2910  
10.54 ✓

4217  
37  
5.7

2948  
10.16

39.86  
1.81

41.67  
29.48

12.19

29.70  
2.10

37.58  
29.82

7.76  
37.58

30.71  
6.87

27.78  
1.0

29.62  
37.58  
7.96

.00819  
73  
1638  
2276  
34398  
2948  
29.22 -

.00819  
179

3276  
5733  
519

142506

4/26/05

Shine

	42.75			
20 + 36 <sup>4</sup> NCH 212		5.75	37.00	✓ ✓
		5.67	37.08	✓
21		5.38	37.37	✓
		5.08	37.67	✓
22		4.79	37.96	✓ 7/25/05
		4.49	38.26	✓
23		4.20	38.55	✓
		3.90	38.85	✓
+ 65 <sup>4</sup> NCH 213		3.81	38.94	✓
24		3.61	39.14	✓ 6/25/05
		3.31	39.44	✓
25				
26				
	48.18	7.56	40.62	✓ ✓
+ 94 <sup>2</sup> NCH 214		7.30	40.88	✓
27		7.26	40.92	✓
		6.96	41.22	✓ 7/28/05
28		6.67	41.51	✓
	10.51	52.32	6.37	41.81 ✓ 0588
29		10.22	42.10	✓

7288  
536  
48.24  
37  
11.24

37 37  
10 87  
3767  
57

.00589  
44  
2356  
2356  
25916

10.90  
37  
11.27

9

.00589  
159  
2356  
2945  
559

.00589  
44  
3585  
3899

35.34  
12.84

48.18 (HJ)

4/26/05

7/28/05

S line

9/28/05

	52.32			
		9.92	42.40	✓
30		9.63	42.69	✓
+34	NH 215	9.43	42.89	✓
	11.29	54.28	9.33	42.99
31		11.00	43.28	✓
		10.70	43.58	✓
32		10.41	43.87	✓
	53.09	8.92	44.17	✓
33		8.63	44.46	✓
+50		8.33	44.76	✓
+738	NH 216	8.19	44.90	✓
34		8.04	45.05	✓
		7.74	45.35	✓
35		7.46	45.63	✓
		7.17	45.92	✓
36		6.89	46.00	✓
+50	F4 32.	6.59	46.50	✓

0.0850  
1/24/05

54.28  
7417  
10.11

4818  
9240  
578

49.35  
377  
53.09

10

2945	589	.08579
589	34	288
	2356	4712
08133	1767	1767
589	20026	1178
9424		190182

3 Davis  
 18 Lewis  
 15 Brooks

Line "B"

Sta	Rod	Ground	Grade	<u>t</u>
M.H. 7			<u>3.70</u>	
+50	10.85	8.40	4.74	+3.7
1	7.15	12.10	5.78	+4.3
+50	5.18	14.07	6.82	+7.3
2	5.44	13.81	7.86	+6.0
+50	6.04	13.21	8.90	+4.3
3	3.88	15.37	9.94	+5.4
+071-M.H. 188	3.88	15.37	10.09	+5.3
+50	1.26	17.99	10.98	+7.0
4	7.93	20.63	12.02	+8.6
+50	7.32	21.24	13.06	+8.2
5	7.22	21.34	14.10	+7.2
+50	6.90	21.66	15.15	+6.5
6	6.08	21.48	16.19	+5.3
+378-M.H. 187	4.68	23.88	<u>17.00</u>	+6.9
+50	5.01	23.55	17.05	+6.5
7	4.15	24.41	17.23	+7.2
+50	3.20	25.36	17.42	+7.9
8	2.50	26.06	17.60	+8.5
+50	1.94	26.62	17.78	+8.9

0.05      19.25      19.20

10.57      28.56      1.26      17.99

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Sta	Rod	Ground	Grade	I				
					5.54	31.89	2.21	26.35
9	2.21	26.35	17.97	+8.4			2.21	
+50	5.66	26.23	18.16	+8.1				
168.5 M.H. 186	6.25	25.64	18.23	+7.4				
10	6.95	24.94	18.34	+6.6				
+50	5.48	26.41	18.53	+7.9				
11	4.76	27.13	18.71	+8.4				
+50	4.73	27.16	18.90	+8.3				
12	4.53	27.36	19.08	+8.3				
+50	5.55	26.84	19.27	+7.1				
198.8 = M.H. 185	6.02	25.87	19.45	+6.4				
13	6.05	25.84	19.454	+6.4				
+50	6.56	25.33	19.64	+5.7				
14	7.00	24.89	19.83	+5.1				
+50	6.46	25.43	20.01	+5.4				
15	5.37	26.52	20.20	+6.3	7.08	33.60	5.37	26.52
+50	6.05	27.58	20.38	+7.2				
16	5.34	28.26	20.57	+7.7				
129.1 M.H. 184	4.01	29.59	20.67	+8.9				
+50	3.55	30.05	20.75	+9.3				
17	2.76	30.84	20.94	+9.9				
+50	3.01	30.59	21.12	+9.5				
18	3.56	30.04	21.31	+8.7				

Rd. 0.377

$\frac{5}{20}$  } Dams  
 $\frac{20}{05}$  } Level "Line B"  
 } Bumpo

Sta	Rod	Ground	Grade	±
18+50	5.53	28.07	21.49	+6.6
19	5.41	28.19	21.68	+6.5
+50	5.66	27.94	21.86	+6.1
+59.7 M.H. 183	6.25	27.35	21.90	+5.5
20	5.34	28.36	22.05	+6.3
+50	6.03	27.57	22.23	+5.3
21	6.58	27.02	22.42	+4.6
+50	5.85	27.35	22.60	+4.8
22	5.57	27.63	22.79	+4.8
+50	5.40	27.80	22.98	+4.8
+90.3 M.H. 182	5.18	28.02	23.12	+4.9
23	5.22	27.98	23.16	+4.8
+50	5.36	27.84	23.35	+4.5
24	5.50	27.70	23.53	+4.17
+50	5.40	27.80	23.72	+4.1
25	5.23	27.97	23.90	+4.1
+50	5.26	27.94	24.08	+3.9
26	5.43	27.77	24.27	+3.5
+20.3 M.H. 181	5.38	27.82	24.35	+3.5
+50	4.74	28.46	24.46	+4.0

6.18      33.20      6.58      27.02

Note 0.137 A



Line "B"

22  
802  
1099

30.8

14

Sta	Rod	Ground	Grade	±
27	4.56	28.64	24.64	+4.0
+50	3.83	29.37	24.83	+4.5
28	3.02	30.18	25.02	+5.2
+50	2.17	31.03	25.20	+5.8
29	1.03	32.17	25.39	+6.8
+10.8-F.T23	0.7	32.50	25.50	+7.0

32.72

29+10.8  
6+37.8  
8500  
6819  
16810  
15211  
8990  
6819  
2171

22.730  
374 7/8

5.44      36.90

1.74

31.46

2.56

34.301  
34.85

D-Line

9/20/05

	6.81	12.05		5.24
0+00 =	MH 9		6.60	5.45
			6.12	5.93
1	12.38	20.48	3.95	8.10
T.P.	9.79	29.03	7.96	12.52
2			1.24	19.24
			7.98	21.05
+50			4.55	24.18
+70°	MH 134		4.66	24.37
3			4.65	24.38
			4.02	25.01
4			3.77	25.26
			3.32	25.71
5			2.68	26.35
+39°	MH 133		1.09	27.94
+50	12.88	41.03	0.58	28.15
6			11.20	29.83
			9.83	31.20
7			8.66	32.37
			7.45	33.58
8			6.92	34.11
			6.92	34.11

1" Alley

2515	27.15
637	6.82
3957	33.97
516	3.27
3038	30.70

15

Logan - Milton

	5.30	0.2
	7.10	f 1.2
	8.89	f 0.8
	10.70	1.8
	12.49	8.6
	14.29	9.9
	15.00	9.4
	15.70	8.7
	16.37	8.1
	18.03	7.2
	19.20	6.5
	20.36	6.0
	21.28	6.7
	21.53	6.6
	22.70	7.1
	23.86	7.4
	25.03	7.3
	26.19	7.4
	27.36	6.8
	28.53	5.6

D Line

Alley

16

Logan - Milton

41.03

8 + 70 <sup>0</sup>	NGH 132	6.88	39.15	✓	29.00	5.2
9		6.25	39.78		29.27	5.5
		5.29	35.74		29.73	6.0
10		4.39	36.64		30.18	6.4
		4.07	36.96		30.64	6.3
11		2.85	38.18		31.09	7.1
		2.27	38.76		31.55	7.2
12 + 00 <sup>0</sup>	NGH 131	1.87	39.16	✓	32.00	7.2
		1.75	39.28		32.27	7.0
13	3.84 44.79	0.08	40.95		32.53	8.4
		3.90	40.89		32.79	8.1
14		3.59	41.20		33.06	8.2
		4.32	40.47		33.33	7.2
15		4.91	39.88		33.59	6.3
+ 30 <sup>0</sup>	NGH 130	4.90	39.89		33.75	6.2
		4.76	40.03		33.86	6.2
16		4.37	40.45		34.12	6.3
		4.74	40.05		34.38	5.7
17		4.28	40.51		34.65	5.9
		4.96	39.83		34.92	4.9
18		4.67	40.12		35.18	5.0

0.917

0.537

D Line

Alley

Logan - Milton

		44.79		
18 + 50			3.55	41.24
+ 61°	N6H129		3.53	41.26
19			2.76	42.03
			2.22	42.57
20			3.88	40.91
	7.33	47.11	5.01	39.78 ✓
21			6.51	40.30
+ 50			6.27	40.84
- 91°	N6H128		5.50	41.31
22			5.65	41.46
			6.14	40.97
23			3.95	41.16
			3.02	42.09
24			4.31	42.80
			3.63	43.48
25			3.52	43.59
+ 22°	N6H127		3.93	43.18 ✓
+ 50			3.84	43.27
26			2.78	44.33
	12.83	59.91	6.03	47.08

0.53.97

2.19%

35.45	5.8	
35.51	5.8	- 0°10' Left. -
35.71	6.3	
35.98	6.6	
36.24	4.7	
36.51	2.3	
36.77	3.5	
37.04	3.8	
37.26	4.1	
37.30	4.2	
37.57	3.4	
37.83	3.3	
38.10	4.0	
38.36	4.5	
38.63	4.9	
38.89	4.7	
<u>39.00</u>	4.2	
39.61	3.7	
40.71	3.6	
41.80	5.3	

42.03  
3.82  
45.85  
4.855  
40.795

D Line -

59.91

27		8.66	51.25
		4.35	55.56
28		2.91	57.00
	+32° N. 126	2.23	57.68
	+30 7.89	66.70	1.10 58.81
29		6.30	60.40
		5.86	60.84
30		5.11	61.59
		4.18	62.52
31		3.15	63.55
	+43° Ft. 19-	2.46	64.24

219.070

Alley

13

Logan - Milton

42.90	8.4
43.99	11.6
45.09	11.9
45.79	11.9
46.18	12.6
47.28	13.1
48.37	12.5
49.47	12.1
50.56	12.0
51.66	11.9
52.60	11.7

7.15  
5882  
5887

B. Line

7/28/05

B.C. 11.30 8.32 -2.98

0+00 <sup>11.43</sup> MH 7. 15.33 4.62 3.70 ✓

1 10.59 4.74 ✓

1 9.55 5.78 ✓

2 8.51 6.52 ✓

2 7.47 7.56 ✓

3 6.43 8.90 ✓

3 13.03 22.97 5.39 9.94 ✓

+07<sup>1</sup> MH 188 12.88 10.09 ✓

11.99 10.98 ✓

4 10.95 12.02 ✓

9.91 13.06 ✓

5 8.87 14.10 ✓

10.75 25.93 7.82 15.15 ✓

6 9.74 16.19 ✓

+37<sup>2</sup> MH 189 8.93 17.00 ✓

8.88 17.05 ✓

7 8.70 17.23 ✓

8.51 17.42 ✓

8.33 17.60 ✓

8.15 17.78 ✓

Alley

19

Main - Newton

Go to P. 37

3 Dana  
20 Lewis  
15 Brooks  
Line "C"

3210  
182  
1870

3815  
095  
3710  
1920  
1590

20

Sta	Rod	Ground	Grade	±
0-M.H. 8	6.08	8.57	4.50	+2.1
+50	3.75	10.90	5.83	+5.1
1	2.27	12.38	7.15	+5.2
+50	1.47	13.18	8.48	+5.7
2	1.20	13.45	9.81	+3.6
+50	7.70	14.27	11.14	+3.1
3	6.61	15.36	12.46	+2.9
+50	5.40	16.57	13.79	+2.8
4	4.04	17.93	15.12	+2.8
+22.7-M.H. 137	3.42	18.55	15.72	+2.7
+50	2.01	19.96	16.44	+3.5
5	8.48	22.92	17.77	+5.2
+50	7.38	24.02	19.10	+4.9
6	6.67	24.73	20.43	+4.3
+50	4.17	27.23	21.75	+5.5
7	2.12	29.28	23.08	+6.2
+50	0.25	31.15	24.41	+6.7
+53.3-M.H. 138	0.25	31.15	24.50	+6.7
8	6.58	31.94	24.71	+7.2
+50	6.41	32.11	24.99	+7.2

Note 26.52%  
 (7.7)

12.57	17.65		2.08
8.52	21.97	1.20	13.45
10.61	31.00	1.18	20.79
7.37	38.52	0.25	31.15

C line 7/29/05

21

Sta	Rod	Ground	Grade	±
9	6.19	32.33	25.16	+7.2
+50	5.71	32.81	25.39	+7.4
10	5.32	33.20	25.62	+7.6
+50	5.16	33.36	25.84	+7.5
+63.9 N.H. 139	5.52	33.00	26.00	+7.0
11	5.77	32.75	26.07	+6.7
+50	3.66	34.86	26.30	+8.6
12	4.67	33.85	26.53	+7.3
+50	3.92	34.60	26.75	+7.9
13	3.86	34.66	26.97	+7.7
+50	4.66	33.86	27.21	+6.7
14	3.82	34.70	27.43	+7.3
+14.2 N.H. 140	3.70	34.82	27.59	+7.23
+50	3.30	35.22	27.66	+7.6
15	3.05	35.47	27.89	+7.6X
+50	2.85	35.67	28.11	+7.6
16	2.70	35.82	28.34	+7.5
+50	3.74	36.13	28.57	+7.6
17	3.67	36.30	28.80	+7.5
+44.6 N.H. 141	3.56	36.31	29.00	+7.3

38.52

105

39.87

270

35.82

C Line. 9/29/05

22

Sta	Rod	Ground	Grade	±
17+50	3.62	36.25	29.03	+7.2
18	3.59	36.28	29.21	+7.0
+50	4.28	35.59	29.59	+6.0
19	5.95	33.92	29.88	+4.1
+50	5.69	34.18	30.16	+4.0
20	5.45	34.42	30.44	+4.0
+50	5.15	34.72	30.73	+4.0
1745-M.H.142	5.58	34.29	30.87	+3.4
21	5.42	34.45	31.01	+3.5
+50	5.26	34.61	31.29	+3.3
22	5.27	34.60	31.58	+3.0
+50	6.16	34.77	31.86	+2.9
23	6.60	34.33	32.14	+2.2
+50	5.61	35.32	32.43	+2.8
24	5.29	35.64	32.71	+3.0
+05.8° M.H.143	5.38	35.55	32.74	+2.8
+50	5.15	35.77	32.99	+2.8
25	4.57	36.34	23.27	+3.1
+50	3.52	37.41	33.56	+3.9
26	3.28	37.65	33.74	+3.8

39.87

315  
36.73  
36.69 10m

6.33

40.93

5.27

34.60

C Line

7/29/05

Sta	Ref	Ground	Grade	±
26+50	2.26	38.67	34.12	+4.6
27	1.22	39.71	34.41	+5.3
36 <sup>0</sup>	MH 144 7.46	40.70	34.61	+6.1
+50	7.13	41.03	34.69	+6.4
28	6.45	41.71	34.97	+6.8
+50	5.87	42.29	35.26	+7.0
29	5.43	42.73	35.54	+7.2
+50	5.07	43.09	35.82	+7.3
30	3.38	44.78	36.10	+8.7
+50	3.48	44.68	36.39	+8.3
+66 <sup>3</sup>	MH 145 3.44	44.72	36.48	+8.3
31	3.02	45.14	36.67	+8.5
+50	2.85	45.31	36.95	+8.4
32	2.18	45.98	37.24	+8.8
+50	2.60	45.56	37.52	+8.1
33	4.96	44.79	37.80	+6.9
+50	5.67	44.08	38.09	+6.0
+92 <sup>5</sup>	MH 146 5.00	44.75	38.33	+6.4
34	4.63	45.12	38.37	+6.8
	3.82	45.93	38.65	+7.3
35	3.66	46.09	38.94	+7.2

C Line  
22(2) 40.00

49.58  
12.38  
37.20  
37.37

13m

33

	40.93			
8.46	48.16	1.23	37.70	
	49.7541			
36+50	4.22	45.53	39.23	+6.3
36	5.00	44.75	39.52	+5.2
+50	4.21	45.54	39.70	+5.8
36+85	1.21	45.85	40.00	+5.9
	4.19	47.75	2.60	45.56

R. line

4/5/05

Alley

Grand - Boston

24

0+00	8.52	42.19	33.67
+50		7.23	34.96
1		7.75	34.44
		7.85	34.34
2		6.08	36.11
		6.28	35.91
3		5.30	36.89
+138	NGH 171		
+50		4.20	37.99
4		3.54	38.65
		3.23	38.96
5		2.72	39.47
	5.31	45.11	2.39 39.80
6		5.56	39.55
+312	NGH 170	5.68	39.43
		5.30	39.81
7		3.68	41.73
		2.38	42.73
8		1.56	43.55
		5.28	39.73
9		12.84	32.27

1

1.725%

X

0.659%

27.00	6.7
27.71	7.3
28.42	6.0
29.14	5.2
29.85	6.3
30.56	5.4
31.27	5.6
31.97	
31.98	6.0
32.70	6.0
33.41	5.6
34.12	5.4
34.83	5.0
35.54	4.0
36.00	3.4
36.11	3.7
36.44	5.0
36.77	6.0
37.10	6.5
37.43	2.3
37.75	f 5.5

0.142  
 142  
 568  
 142  
 19.98

4/11/05  
Trestle No 2.

Sta.

El. Grade Fill

39.63							
9+00	18(1)	7.38	32.25	37.75	5.50		
9+18	33 (2)	9.51	30.12	37.57	7.75		
9+36	66 (3)	9.42	30.21	37.99	7.78		
9+55	99 (4)	7.46	32.17	38.11	5.94		
9+73	33 (5)	4.84	34.79	38.23	3.44		
9+50		2.02	31.61	38.33			

R. Line 4/5/05

45.11

+50			13.50	31.61
10	10.58	50.63	5.06	40.05
+30	NGH 169			
+50			5.37	45.26
11			4.90	45.76
			6.10	44.53
12			4.61	46.02
+50			2.83	47.80
+91 <sup>3</sup>	NGH 168			
			4.62	46.01
13			5.42	45.21
			5.04	45.59
14			2.37	48.26
	3.86	47.17	7.32	43.31
15			12.07	35.10
			10.56	36.61
16	8.91	53.59	2.49	44.68
+21 <sup>3</sup>	NGH 167			
			7.41	46.18
+50			4.82	48.77
17			3.68	49.91
			3.60	49.99
18			4.02	49.57

0.659 9/0

4/8/05

Alley  
Grand - Boston

35

17.5

38.09 f. 6.5

38.41 1.7

38.9

38.74 6.5

39.07 6.7

39.40 5.1

39.73 6.3

40.06 7.7

40.33

40.39 4.8

40.72 4.9

41.04 7.2

41.37 2.0

41.70 f. 6.6

42.03 f. 5.4

42.36 2.3

42.60 3.7

42.70 6.1

43.03 6.9

43.36 6.6

43.70 5.9

4/11/05

Trestle No 3.

14

42.87

① 5.79 37.08 41.55 4.97

② 7.24 35.63 41.67 6.04

③ 7.55 35.32 41.79 6.47

④ 9.16 33.71 41.91 8.20

⑤ 5.80 37.07 42.03 4.96

(41.93)

(42.19)

0.659

0.59 31

46.52

R. Line 4/8/05

Alley  
Grand - Boston

26

		53.59							
+50		4.48	49.11	44.03	5.1			7.11	46.48
19		3.58	50.01	44.36	5.7	55.27		46.52	
+50		2.8.1	50.78	44.69	6.1	5.84			
+51 <sup>E</sup>	NH 166	2.81	50.78	44.70	6.1	56.16		46.73	✓
20		1.06	52.53	44.90	7.6	11.83		1.58	
	5.09	58.09	0.59	53.00	45.10	47.33		46.77	✓
21		4.68	53.71	45.31	7.9	2.95		1.54	✓
		4.78	53.31	45.37	7.8	48.31	HI	47.22	✓
22		4.71	53.38	45.71	7.7			1.09	✓
		4.71	53.38	45.91	7.5				
+81 <sup>E</sup>	NH 165	5.00	53.09	46.04	7.1	Sta. 24+80	Traverse No. 4		
23		4.91	53.18	46.12	7.1	48.31	HI	Rod. 6.51	Elev. 41.80
		5.29	52.80	46.32	6.5	24+98 <sup>23</sup>		46.85	5.05
24		5.94	52.15	46.52	5.7	25+16 <sup>26</sup>		9.91	38.40
	0.54	48.22	10.41	46.73	1.0	25+35 <sup>2</sup>		10.35	37.96
25		9.71	38.51	46.93	f.84	25+53 <sup>32</sup>		8.56	39.75
	11.48	52.81	6.89	47.13	f.5.8			6.52	41.79
26		1.58	57.23	47.34	3.9			47.15	5.36
+09 <sup>7</sup>	8.33	NH 164	60.27	47.38	4.6				
		7.03	53.24	47.54	5.7				
27		6.36	53.91	47.74	6.2				

R line

4/8/05

Alley

Grand - Boston

27

60.27

			6.40	53.87
28			6.04	54.23
			4.22	56.05
29			4.28	55.99
+50	N6H 163		3.95	56.32
30			5.30	54.97
			6.65	53.62
31			7.11	53.16
			6.55	53.72
32			6.35	53.92
			6.00	54.27
+89 <sup>8</sup>	N6H 162		5.40	54.87
33	5.55	60.02	5.80	54.47
			4.54	55.48
34			4.65	55.37
			5.20	54.82
35			4.72	55.30
			3.17	56.85
36			2.43	57.59
			1.84	58.18
37			2.60	57.42
+50	N6 31		3.90	56.12

0.006

47.94	6.0
48.15	6.1
48.35	7.1
48.55	7.5
48.76	7.6
48.96	6.0
49.16	4.5
49.36	3.8
49.57	4.2
49.77	4.2
49.97	4.3
50.13	4.8
50.18	4.3
50.38	5.1
50.58	4.8
50.79	4.0
50.99	4.3
51.19	5.7
51.40	6.2
51.60	6.6
51.80	5.6
52.00	4.1

4275  
55.745  
55.77

R line

BMG	342	38.37	34.95	
0+50			10.66	27.71 ✓
			9.95	28.72 ✓
			9.23	29.17 ✓
			8.52	29.75 ✓
BMG	578	40.73	7.81	30.36 ✓
3			9.46	31.27 ✓
+13 <sup>E</sup>	NH 171		9.26	31.47 ✓
+50			8.75	31.98 ✓
4			8.03	32.70 ✓
			7.32	33.41 ✓
5			6.61	34.12 ✓
			5.90	34.83 ✓
6	3.64	44.42	8.88	35.54 ✓
+31 <sup>Z</sup>	NH 170		8.42	36.00 ✓
+50			8.31	36.11 ✓
7		42.25	7.98	36.74 ✓
			5.48	36.99 ✓
8			5.15	37.10 ✓
			4.82	37.43 ✓
9				37.75 ✓

Trestle

3763

Alley

ft 31

55.77  
3.27  
59.04

23

Grand - Boston  
from P 29.

4/18/05

			57.67	
27+50			9.73	47.94 ✓
28			9.52	48.15 ✓
			9.32	48.35 ✓
29		59.04	10.49	48.55 ✓
+50	NH 163		10.28	48.76 ✓
30		48.96 11.67 60.63 48.76 11.87	10.08	48.96 ✓
			9.88	49.16 ✓
31			9.68	49.36 ✓
		58.77 2.52 60.59 29.92 10.6	9.47	49.57 ✓
32			9.27	49.77 ✓
			9.07	49.97 ✓
+19 <sup>E</sup>	NH 162	60.59	10.46	50.13 ✓
33			10.41	50.18 ✓
			10.21	50.38 ✓
34			10.01	50.58 ✓
			9.80	50.79 ✓
35			9.60	50.99 ✓
			9.40	51.19 ✓
36			9.19	51.40 ✓
			8.99	51.60 ✓
37			8.79	51.80 ✓
+50	ft 31		8.59	52.00 ✓

$\frac{40\%}{37.36}$   
 $\frac{100}{0.60}$   
 R line  
 $\frac{480}{34}$  17  
 $\frac{1624}{1218}$   
 $\frac{13804}{4612}$  9/17  
 $\frac{4626}{1119}$

37.63  
 4973  
 12.12  
 4973  
 3891  
 11.34  
 4215  
 522  
 41.37 HI  
 4973  
 75043980  
 979  
 9.66  
 4975  
 2309  
 168  
 2977  
 2551  
 11.94  
 918  
 6198  
 12.69  
 29

Station	Notes	Value 1	Value 2	Value 3	Value 4	Value 5	Value 6	Value 7
		42.25						
+60								
10		3.84	38.41	✓				
+30	NGH 169	3.64	38.61	✓				
B.NG	4.58	49.67	45.09	✓				
+50		10.93	38.74	✓				
11		10.60	39.07	✓				
		10.27	39.40	✓				
12		9.94	39.73	✓				
		9.61	40.06	✓				
+91 <sup>3</sup>	NGH 165	9.24	40.33	✓				
13		9.28	40.39	✓				
		8.95	40.72	✓				
14		8.63	41.04	✓				
		8.30	41.37	✓				
15	- Trestle 3-		41.70	✓				
			42.03	✓				
16	47.37	5.01	42.36	✓				
+21 <sup>3</sup>	NGH 167	4.87	42.50	✓				
+60		4.67	42.70	✓				
17		4.34	43.03	✓				
		4.01	43.36	✓				
18		3.67	43.70	✓				
18+50								
19		10.15				56.67		
+50								
+51 <sup>2</sup>	NGH 166							
20								
21								
22						57.45		
+81 <sup>3</sup>	NGH 165							
23								
24								
25								
26								
+09 <sup>1</sup>	NGH 164							
27								

Go. to. P. 28

4 Davis  
 3 Brooks Line K  
 107 Gunn

5/3/10

Hatch  
 Melmore

30

	254	75.22		72.68
0-M.H.24 1/2			8.0	67.2
+50			6.5	68.7
1			7.3	67.9
+50			6.9	68.3
+58.2 M.H.37			6.9	68.3
226.4 M.H.36			6.4	68.8
+50			6.4	68.8
3			6.0	69.2
+50			5.8	69.4
4			5.7	69.5
+50			5.8	69.4
5	5.20	75.36	5.06	70.16
+26.4 M.H.35			4.7	70.7
+50			4.9	70.5
6			4.9	70.5
+50			5.5	69.9
7			5.4	70.0
+50			5.6	69.8
8			5.6	69.8
+25.7 M.H.34			5.5	69.9

110

x

0.247

62.50	9.7
63.05	5.7
63.60	4.3
64.15	4.2
64.24	4.0
65.00	3.8
65.06	3.7
65.15	4.0
65.30	4.1
65.43	4.1
65.55	3.8
65.67	4.5
65.73	5.0
65.79	4.7
65.91	4.6
66.04	3.8
66.16	3.8
66.28	3.5
66.40	3.4
66.46	3.4

2.18  
 260  
 68.2  
 68.2  
 .07882  
 1.10

250 | 226  
 220 | 110  
 290  
 220  
 140

1150 K

5/31/05

31

75.36

8+50		5.5	69.9
9		5.4	70.0
+50		5.2	70.2
10		5.2	70.2
+50		5.2	70.2
11		5.1	70.3
+50	71.6	4.87	70.49
+50.7	M.H.33	6.9	70.8
12		6.9	70.8
+50		6.6	71.1
13		6.5	71.2
+50		6.4	71.3
14		6.2	71.5
+50		6.2	71.5
15		5.9	71.8
+50		4.8	72.9
+35.8	M.H.32	5.3	72.4
16		5.7	72.0
		5.6	72.1
17		5.3	72.4
+50		5.1	72.6

0.274

0.285

66.52	3.4
66.65	3.4
66.77	3.4
66.89	3.3
67.01	3.2
67.13	3.2
67.26	3.2
67.34	3.5
67.38	3.4
67.50	3.6
67.62	3.6
67.74	3.6
67.87	3.6
67.99	3.5
68.11	3.7
68.20	4.7
68.24	4.2
68.38	3.6
68.52	3.6
68.67	3.7
68.81	3.8

K Line

5/31/05

Alley

32

Webster - N. St.

		77.65		
18	R66	81.74	4.57	73.08
+50	NH 31	x	5.1	73.6
19			8.5	73.2
			8.4	73.3
20			7.3	74.4
			8.0	73.7
21			7.4	74.3
+50			4.3	77.4
+66 <sup>c</sup>	NH 30	x	7.5	74.2
22			6.1	75.6
			7.1	74.6
23			4.7	77.0
			6.0	75.7
24			6.5	75.2
+50			6.1	75.6
+77 <sup>d</sup>	NH 29		5.3	76.4
25			5.1	76.6
			3.8	77.9
26	10.85	70.04	2.55	79.19
			8.2	81.8
27			6.3	83.7

5.5%

x

1.35%

x

1.679%

68.95	4.1
69.09	4.5
69.23	4.0
69.38	3.9
69.52	4.9
69.66	4.0
69.80	4.5
69.95	7.4
70.00	4.2
70.46	5.1
71.16	3.4
71.85	5.1
72.54	3.2
73.24	2.0
73.93	1.7
74.30	2.1
74.69	1.9
75.53	2.4
76.36	2.8
77.20	4.6
78.04	5.7

412  
 73.53 check  
 30<sup>th</sup> of Webster

K hire

5/31/05

90.04

27+50			4.7	85.3	✓	1679/8
27+86 <sup>e</sup>	FL. 5		4.0	86.0	✓	
K hire						
0+00	10.61	73.11		62.50	✓	1100/0
0+50			10.06	63.05	✓	
1			9.51	63.60	✓	
+58 <sup>E</sup>	MH 27		8.87	64.24	✓	1100/0
BM	1.93			72.68	✓	
2+26 <sup>e</sup>	MH 36	74.61	9.61	65.00	✓	
+50			9.55	65.06	✓	
3			9.43	65.18	✓	
			9.31	65.30	✓	
4			9.18	65.43	✓	
			9.06	65.55	✓	
5			8.94	65.67	✓	0.294
7+26 <sup>e</sup>	MH 35	75.00	9.27	65.73	✓	
+50			9.21	65.79	✓	
6			9.09	65.91	✓	
			8.96	66.04	✓	
7			8.84	66.16	✓	
			8.72	66.28	✓	

Alley

Webster - N. St.

33

7889	6.4	89.52	18M top of
7950	6.5		3d post East of Barn

0.52  
89.52  
74.61

6/10/05

7268  
193  
7461

6553  
945  
7500

6/13/05

6/14/05

Go to P. 80.

E Line

5/5/05

Alley

5711

34

Kearney - Julian

BMC	8.77	48.99	40.22
0400	MCH 13		
		12.23	36.76
1		8.21	40.78
+10 <sup>2</sup>	MCH 94	7.84	41.15
+50		6.61	42.38
2		4.00	44.99
		3.61	45.38
3		4.20	44.79
3+10 <sup>3</sup>	MCH 95	4.38	44.61
+50		3.84	45.15
4		3.06	45.93
		1.86	47.13
5		1.45	47.54
5+11 <sup>2</sup>	MCH 96	1.61	47.35
	8.14	53.06	47.92
6		5.31	47.75
		5.12	47.94
7		5.25	47.78
		4.91	48.15
8		7.70	48.36
+41	MCH 97	4.65	48.41

x 150/100

x 150/100

20.50	10.8
28.00	8.8
35.50	5.3
37.00	4.2
37.34	5.1
37.76	7.2
38.18	7.2
38.60	6.2
38.69	6.0
39.02	6.2
39.44	6.5
39.86	7.3
40.28	7.3
40.37	7.0
40.70	4.2
41.12	6.6
41.54	6.4
41.96	5.8
42.38	5.8
42.80	5.6
43.14	5.3

0.10 Rt.

.891  
 105  
 ---  
 420.6  
 891  
 .888305

891  
 891  
 ---  
 09251

E line

5/5/55

53.06

8+30			1.50	48.56
9			1.62	48.44
			1.96	48.10
10			4.91	48.15
			1.38	48.68
11	8.18	56.93	1.31	48.75
			7.81	49.12
+71 <sup>2</sup>	NH 98		7.60	49.33
12			6.40	50.53
			5.09	51.84
13			4.50	52.43
			4.90	52.03
14			4.15	52.78
			3.32	53.61
15			3.25	53.68
+31 <sup>0</sup>	NH 99		2.64	54.29
			2.46	54.47
16			1.78	55.15
	6.20	62.00	1.13	55.80
17			5.54	56.76
			3.20	56.80

Alley-

35

Kearney - Julian

43.22	5.3
43.64	4.8
44.06	4.1
44.48	3.7
44.90	3.8
45.32	3.4
45.74	3.4
45.92	3.4
46.16	4.4
46.58	5.3
47.00	5.4
47.42	4.6
47.84	5.0
48.26	5.4
48.68	5.0
48.94	5.4
49.12	5.4
49.54	5.6
49.96	5.9
50.38	6.1
50.80	6.0

$$\frac{52.53}{52.52} \text{ 18m}$$

E line

575/00

62.00

18			1.67	57.33
+50			4.88	57.12
+93°	NH100		6.17	55.83
19			5.94	56.06
			5.69	56.31
20			4.30	57.70
			2.23	59.77
21	1280	73.52	1.28	60.72
			9.12	64.40
+73	NH101		7.50	65.72
22			6.52	67.00
	1018	80.88	2.82	70.70
23			6.45	74.43
			3.93	76.95
24			2.62	78.26
+54°	Fr. 17		2.50	78.38

1/200

2.88

4.70

Alley

86

Nearney - Julian

51.22	6.1
51.64	5.5
<u>52.00</u>	3.8
52.20	3.9
53.63	2.7
55.06	2.7
56.49	3.3
57.92	2.8
59.35	5.1
<u>60.00</u>	5.7
61.27	5.7
63.62	7.1
65.97	8.5
68.32	8.6
70.67	7.6
<u>73.20</u>	5.2

136  
79.52  
 79.50

B Line

4/28/05

From P19.

25.93

9			7.96	17.97	✓
			7.77	18.16	✓
+685	3.01	29.23	11.00	18.23	✓
	MH 170		10.89	18.34	✓
10			10.70	18.53	✓
			10.52	18.71	✓
BK.	3.34	29.71	10.81	18.90	✓
			10.63	19.08	✓
			10.44	19.27	✓
+985	MH 185		10.26	19.45	✓
13			10.26	19.45	✓
			10.07	19.64	✓
14			9.88	19.83	✓
			9.70	20.01	✓
15			9.51	20.20	✓
			9.33	20.38	✓
16			9.14	20.57	✓
+291	MH 184	32.60	11.93	20.67	✓
			11.85	20.75	✓
17			11.66	20.94	✓
+50			11.48	21.12	✓

25.93	26.22	29.23	26.37
19.20	3.01	29.34	
6.73		29.89	
19	(11)		

37

16.39  
60  
16.89

4/29/05

5/2/05

B line

5/2/05

		32.60			
18			11.29	21.31	
BNC -	6.30	32.67	11.11	21.49	✓
19				26.37	
			10.99	21.68	✓
			10.81	21.86	✓
+59 <sup>2</sup>	MH173		10.77	21.90	✓
20			10.62	22.05	✓ 0
			10.44	22.23	✓ 4
21			10.25	22.42	✓ 7
			10.07	22.60	✓ 0
22	9.55	32.34	9.88	22.79	✓
			9.36	22.98	✓
+90 <sup>3</sup>	MH182		9.22	23.12	✓
23			9.18	23.16	✓
			8.99	23.35	✓
24			8.81	23.53	✓
			8.62	23.72	✓
25	8.61	32.51	8.44	23.90	✓
			8.43	24.08	✓
26			8.24	24.27	✓
+20 <sup>3</sup>	MH151		8.16	24.35	✓
+50			8.05	24.46	✓

2190  
 1020  
 3260 ME

33

19+597  
 - 60  
 20.197  
 22+903  
 7706  
 - 60  
 3366

20 20<sup>3</sup>  
 2290<sup>3</sup>  
 330

5/1/05

B line

5/1/05

27		32.51	7.87	24.64	✓
			7.68	24.83	✓
28.			7.49	25.02	✓
			7.31	25.20	✓
29			7.12	25.39	✓
+108	F2 23		7.01	25.50	✓

C line

5/3/05

B.M.	12.87	14.95		2.08	
0+50			9.12	5.83	✓
1			7.50	7.15	✓
			6.47	8.48	✓
2			5.14	9.81	✓
			3.81	11.14	✓
3	13.00	25.46	2.49	12.46	✓
			11.67	13.79	✓
4			10.34	15.12	✓
+227	MH 137		9.74	15.72	✓
+50		25.78	9.09	16.44	✓
5			7.71	17.77	✓
+50			6.35	19.10	✓

2546  
1920  
626

39

11.60  
11  
11.79

193  
246  
266

.0264  
2  
0528

3450  
450  
20000 17538  
15076 264  
49270  
46228  
30126  
30152

C time

11.25

40

5/3/05

		25.48		
6			5.05	20.43 ✓
	12.61	34.36	3.73	21.75 ✓
7			11.28	23.08 ✓
+53 <sup>2</sup>	MH138		9.86	24.50 ✓
8			9.65	24.71 ✓
	10.44	35.38	9.42	24.94 ✓
9			10.22	25.16 ✓
			9.99	25.39 ✓
10			9.76	25.62 ✓
B.N.	3.09	36.87		33.75 ✓
			11.03	25.84 ✓
+83 <sup>2</sup>	MH139		10.87	26.00 ✓
11			10.80	26.07 ✓
			10.37	26.30 ✓
12			10.34	26.53 ✓
			10.12	26.75 ✓
13	12.36	39.34	9.89	26.98 ✓
			12.13	27.21 ✓
14			11.91	27.43 ✓
+14 <sup>2</sup>	MH140		11.85	27.49 ✓
			11.68	27.66 ✓
15			11.45	27.89 ✓

✓  
5/4/05

C time

5/2/5

39.34

15450			11.23	28.11	✓
16	11.50	40.17	11.00	28.34	✓
			11.57	28.57	✓
17			11.34	28.80	✓
+44 <sup>5</sup>	MH141		11.14	29.00	✓
18			10.83	29.31	✓
			10.55	29.59	✓
19			10.26	29.88	✓
			9.98	30.16	✓
20			9.70	30.44	✓
			9.41	30.73	✓
+74 <sup>5</sup>	MH142		9.27	30.87	✓
21			9.13	31.01	✓
			8.85	31.29	✓
22			8.56	31.57	✓
			8.28	31.86	✓
23	7.03	39.17	8.00	32.14	✓
			6.74	32.43	✓
24			6.46	32.71	✓
+05 <sup>6</sup>	MH143		6.43	32.94	✓
+58			6.28	32.99	✓

325  
21.29  
36.69

17+445  
2+535  
9907

41

2550  
1212  
4092  
29  
1192

75000 (9907)  
39625 125  
53720  
79536  
4185

C Line

5/2/55

3917

37.54

1.63

42

39.17

25

5.90 33.27 ✓

5.61 33.56 ✓

26

5.33 33.84 ✓

12.60 46.78

5.05 34.12 ✓

27

12.31 34.41 ✓

+36° MH 144

12.11 34.61 ✓

12.03 34.69 ✓

28

11.75 34.97 ✓

11.46 35.26 ✓

29

11.18 35.54 ✓

10.90 35.82 ✓

30

10.62 36.10 ✓

10.33 36.39 ✓

+66° MH 145

10.24 36.48 ✓

31

10.05 36.67 ✓

12.25 49.20

9.77 36.95 ✓

32

11.96 37.24 ✓

11.68 37.52 ✓

33

11.40 37.80 ✓

+50  
+92° MH 146

11.11 38.09 ✓

10.87 38.33 ✓

34

10.83 38.37 ✓

1.64  
+ 5.08

242056

60

241656

27+30

2844

16

27+656

5/6/55

7672

86

7672

4672

3819

8.53

2

C line

5/6/05

	50.05			
24+50		11.40	38.65	✓
25		11.11	38.94	✓
		10.82	39.23	✓
36		10.53	39.52	✓
+50		10.25	39.80	✓
+85 Ft 21		10.05	40.00	✓

30.40

37.37 BM  
12.65  
50.05

4.67  
50.1  
9.68  
524  
50.1  
70.25

21.27  
12.16  
33.44  
30.40  
30.4

D. line

B.M.	10.31	14.98		4.67	
0+50		10.25	3.15	7.10	✓
1			1.36	8.89	✓
+50			4.28	10.70	✓
2			2.49	12.49	✓
	12.98	27.27	0.69	14.29	✓
+70° MH 134			12.27	15.00	✓
3			11.57	15.78	✓
			10.40	16.87	✓
4			9.24	18.23	✓
			8.07	19.20	✓
5			6.91	20.36	✓
+39.6	12.91	37.19	5.99	21.28	✓
	MH 133				

5/12/05

5/8/05

3.59 2.0  
2.030%

D line

5/9/08

44

		34.19			
5+30			12.66	21.53	✓
6			11.49	22.70	✓
			10.33	23.86	✓
7			9.16	25.03	✓
			8.00	26.19	✓
8			6.83	27.36	✓
			5.66	28.53	✓
+70°	MH132		5.19	29.20	✓
9	7.60	36.87	4.92	29.27	✓
			7.14	29.73	✓
10			6.69	30.18	✓
			6.23	30.64	✓
11			5.78	31.09	✓
			5.32	31.55	✓
12+00 <sup>3</sup>	MH131		4.87	32.00	✓
	7.30	45.17		32.83	✓
			12.50	32.27	✓
13			12.24	32.53	✓
	11.98	44.77	12.40	32.79	✓
14			11.71	33.06	✓
			11.44	33.33	✓
15			11.18	33.59	✓

45.19  
32  
13.19

36.73  
8.36  
75.19

2.333%

0.91%

0.53%

1.67%

# D Line

5/9/05

44.77

15+30 <sup>3</sup> MH 130	11.02	33.75	✓
+50	10.91	33.86	✓
16	10.65	34.12	✓
	10.39	34.38	✓
17	10.12	34.65	✓
	9.85	34.92	✓
18	9.59	35.18	✓
	9.32	35.45	✓
+61 <sup>0</sup> MH 129	9.26	35.51	✓
BMC. 5-16 46.16	10.45	35.71	✓
19	10.18	35.98	✓
20	9.92	36.24	✓
	9.65	36.51	✓
21	9.39	36.77	✓
	9.12	37.02	✓
+91 <sup>0</sup> MH 128	8.90	37.26	✓
22	8.86	37.30	✓
	8.59	37.57	✓
23	8.33	37.83	✓
	8.06	38.10	✓
24	7.80	38.36	✓

45

41  
 7.07  
 45.07  
 35.51 ✓  
 9.56

0.10 left.

5/10/05

D hite

5/10/05

	46.16			
24+30		7.53	38.63	✓
25		7.27	38.89	✓
+22° MK127		7.16	39.00	✓
		6.55	39.61	✓
26		5.95	40.71	✓
	56.89	15.09	41.80	✓
27		13.99	42.90	✓
		12.90	43.99	✓
28	60.52	15.43	45.09	✓
+32° MK126	60.52	14.73	45.79	✓
		11.34	46.18	✓
29	62.70	15.42	47.28	✓
		14.33	48.37	✓
30	65.10	15.63	49.77	✓
	65.10	17.54	50.56	✓
	66.68	15.02	51.66	✓
31	67.83	15.23	52.60	✓
+43° Ft 19				✓

5/19/06

62.2	901	622
088	5	407
	896	235
3.5	35.87	901
2.2	67.83	5882
720		6783
770		5286
		15.23
		52.60
		14.08
		66.68
		13.11
		51.57
		13.53
		65.10
		13.24
		77.38
		60.52
		45.09
		11.80
		56.89
		40.71
		16.18

5/16/05

5/19/06

E line

5/1/55

BM	9.26	33.92	24.66	
	3.11	33.35	26.8	20.24
0+00	MH. 13		12.85	20.50
T.P.	11.56	41.80		30.24
+50				25.00
1	BM.	4.73	45.05	35.30
+10	MH 94		8.05	40.22
				37.00
+50			7.71	37.34
2	BM.	7.45	47.67	40.22
+50			9.91	37.76
3			9.49	38.18
+10 <sup>s</sup>	MH. 95		9.07	38.60
+50			8.98	38.69
4			8.65	39.02
+50			8.23	39.44
5			7.81	39.86
+11 <sup>o</sup>	MH 96		7.39	40.28
BM.	3.66	53.33	7.30	40.37
+50			12.63	49.67
6				40.70
+50			12.21	41.12
7			11.79	41.54
+50			11.37	41.96
8			10.95	42.38
+41 <sup>2</sup>	MH. 97		10.53	42.80
			10.19	43.14

24.66  
 9.26  
 33.92  
 20.50  
 37.2

1296  
 40.22  
 48.2  
 45.05  
 37.05

~~30.27~~  
 30.27  
 15.0  
 15.0  
 45.00  
 28  
 29.50  
 41.80  
 12.30

33.92  
 3.67  
 30.27  
 3.11  
 33.35  
 20.50  
 12.85

E wine

5/11/05

5333

8+50		10.11	43.22	✓
9		9.69	43.64	✓
+50		9.27	44.06	✓
10		8.85	44.48	✓
+50		8.43	44.90	✓
11		8.01	45.32	✓
+50		7.59	45.74	✓
+71 <sup>3</sup>	4.61 57.13	11.21	45.92	✓
12		10.97	46.16	✓
+50		10.55	46.58	✓
13		10.13	47.00	✓
+50		9.71	47.42	✓
14		9.29	47.84	✓
+50		8.87	48.26	✓
15		8.45	48.68	✓
+31 <sup>2</sup>	77.99	8.19	48.94	✓
+50		8.01	49.12	✓
16		7.59	49.54	✓
+50		7.17	49.96	✓
17		6.75	50.38	✓
+50		6.33	50.80	✓

52.52  
53.63  
7.89  
43.74

7.89

43

11 ft. back of  
Sta 12-

8.41  
8.41  
10.97  
11.06

5/12/05

5/12/05

5/12/05

E Line

5/12/05

5713  
5.91

49

57.13

18			5.91	51.22	✓	1.45%
+50			5.49	51.64	✓	2.05%
+93°	MK100		5.13	<u>52.00</u>	✓	2.05%
B.M.	653	64.91		57.88		
19			12.21	52.20	✓	
+50			10.78	53.63	✓	
20			9.35	55.06	✓	
+50			7.92	56.49	✓	2.05%
21			6.49	57.92	✓	2.05%
+50			5.06	59.35	✓	2.05%
+73°	MK101		4.41	<u>60.00</u>	✓	2.05%
22			3.14	61.27	✓	
+50	12.63	76.25	0.79	63.62	✓	2.05%
23	10.15	76.12	10.28	65.97	✓	2.05%
+50	10.63	78.95	7.80	68.32	✓	2.05%
24			8.28	70.67	✓	
+54°	Feb 17		5.75	<u>73.20</u>	✓	

em 57.88  
4045  
61925  
52.00  
9.925

5/13/05

5/15/05

1.679%

The image shows an open notebook with two pages. The left page is a ledger page with a grid of red lines. It has two horizontal lines near the top, creating a header section. Below these, there are six vertical lines that divide the page into seven columns of varying widths. The right page is a ruled page with light blue horizontal lines and a vertical margin line on the left side. The number '50' is written in blue ink in the top right corner of the right page. The notebook is bound in the center, and the pages are a light cream color.

F Line -

5/5/55

	1.91	47.57	45.66
0+00	NH 15		
1		11.94	35.63
	b	10.06	37.51
2		13.63	33.94
		6.46	41.17
3	57.45	52.95	0.07
		1.35	48.60
+56°	NH 92	5.18	47.77
		6.27	46.68
4		5.96	46.99
		4.63	48.32
5		3.34	49.61
		2.94	50.01
6		1.60	51.35
		1.13	51.82
7	9.82	0.80	52.15
+12°	NH 91	62.74	0.03
		9.72	53.02
8		8.53	54.21
		7.80	54.94

2109%

Alley

Tulliam - Irving

	34.00	
	35.05	0.6
	36.11	1.4
	37.16	f3.2
	38.22	3.0
	39.27	8.2
	40.32	8.3
	41.38	6.4
	41.51	5.2
	42.43	4.6
	43.49	4.8
	44.54	5.1
	45.59	4.4
	46.65	4.7
	47.70	4.1
	48.76	3.4
	49.01	3.9
	49.71	3.2
	50.86	3.4
	51.92	3.0

0.2109  
6  
126.52  
41.38  
41.506  
2530.2109  
48.76  
27.01

9/18/51

1.679%

- F Line -

5/5/05

62.74

9		6.78	55.96	2.109%	
		5.89	56.85		
10		4.73	58.01		
	+ 43° NCH 90	2.86	59.88	✓	
		2.30	60.44		
11	12.55	79.76	1.53		62.21
			10.34	64.42	0.1667%
12			7.72	67.04	
			4.94	69.82	
13			3.35	71.41	X
			3.10	71.66	
	+ 73° NCH 89		2.45	71.31	
14			4.00	70.76	X
			4.33	70.43	
15			6.08	68.68	
	12.77	77.21	10.02	64.74	0.805%
16			13.45	63.76	
			13.00	64.21	
	+ 84° NCH 88		11.10	66.11	4.487% X 0.805%
17			11.46	65.75	
			10.46	66.75	

Alley

Julian - Irving

52

52.97	3.0
54.03	2.8
55.08	2.9
<u>56.00</u>	3.9
56.11	4.3
56.94	5.3
57.77	6.6
58.61	8.4
59.44	10.4
60.27	11.1
61.10	10.6
<u>61.50</u>	9.8
61.71	9.1
62.11	8.3
62.52	6.2
62.92	1.8
63.32	0.5
63.72	0.5
<u>64.00</u>	2.1
64.42	1.0
66.96	f 0.2

0.002%

X 13.87%

1.679% X

F. Line

77.21

18

7.70 69.51

4.487%

1222

87.76 1.71 75.50

19

9.00 78.76

6.25 81.51

+96°

Ft 15

3.40 84.36

4.487%

Alley

Julian - Irving

53

69.20 0.3

71.45 4.0

73.69 5.0

75.93 5.6

78.00 6.4

84.36

75.0

92.16

277

89.39

8940

132m

1.679%

1.387%

1.679%

F Line

5/15/05

	1.92	47.58	45.66	
			<u>34.00</u>	
0+50		12.53	35.05	✓
1		11.47	36.11	✓
+50			37.16	
2		9.36	38.22	✓
+50	50.91			
		11.64	39.27	✓
3		10.59	40.32	✓
+50		9.53	41.38	✓
+56°	NH 92	9.40	41.51	✓
4		8.48	42.43	✓
+50		7.42	43.49	✓
5		6.37	44.54	✓
+50		5.32	45.59	✓
6		4.26	46.65	✓
+50		3.21	47.70	✓
7		9.98	48.76	✓
+12°	NH 91	9.73	49.01	✓
+50		8.93	49.81	✓
8		7.88	50.86	✓
+50		6.82	51.92	✓
9	806	61.03	5.77	52.97

Alley

54

Julian - Irving -

4566	4566	4566
299	100	783
<u>4810</u>	<u>47.16</u>	<u>5379</u>
34	34	408
	1316	<u>4941</u>
		<u>150</u>
		50.91

40.56 NI			5274	
①	②	③	6	54.74
965	624	746	<u>58.74</u>	4770
<u>3091</u>	<u>39.32</u>	<u>33.10</u>	4770	7.
3659	3709	3674	3.04	
<u>5.68</u>	2.67	374		

- 1+226 ①
- 1+346 ②
- 1+46.6 ③

5/16/05

211	
<u>326</u>	
1256	
422	
<u>422</u>	
47686	4218
3611	<u>2109</u>
-0-36587	25308
	253
②-36890	
③-37093	

138/0  
1679%



- G Line -

B.M.	395	60.10	56.15
0+00	NH 17		
1		11.39	48.71
		9.34	50.76
2		7.60	52.50
		6.12	53.98
+54.5	NH 65	4.65	55.45
		4.45	55.65
3		3.36	56.74
		2.16	57.94
4		3.57	56.53
		4.21	55.59
5		2.70	57.40
	11.23	8.17	59.93
+84.5	NH 66	10.74	60.42
6		10.35	60.81
		8.49	62.67
7		8.78	62.38
		7.56	63.60
8		5.67	65.49
		4.73	66.43

200.5

Alley

Irving - Harrison

	41.50	
42.55	6.1	
43.59	7.2	
44.64	7.9	
45.69	8.3	
46.73	8.7	
46.82	8.8	
47.78	8.9	
48.83	9.1	
49.88	6.6	
50.92	5.0	
51.97	5.4	
53.02	6.9	
53.75	6.7	
54.06	6.7	
55.11	7.6	
56.16	6.2	
57.20	6.4	
58.25	7.2	
59.30	7.1	

55.76  
 59  
 61.06  
 11.09  
 49.96

1109  
 5096  
 6205  
 59  
 5615

2090  
 45  
 10475  
 8380  
 594.275

345  
 15475  
 8380  
 6285  
 727.775

138.81  
 1699%

G Line

Alley

Irving - Harrison

57

71.16

9			3.78	67.38
+15 <sup>8</sup>	NH67		3.85	67.31
			3.50	67.66
10			3.10	68.06
			2.26	68.90
11			1.34	69.82
			1.70	69.46
12	12.98	82.91	1.23	69.93
+46 <sup>2</sup>	NH68		11.40	71.51
			11.33	71.58
13			10.96	71.95
			10.00	72.91
14			9.39	73.52
			8.60	74.31
15			7.13	75.78
			4.85	78.06
+76 <sup>5</sup>	NH69		3.92	78.99
16	12.03	93.09	1.85	81.06
			8.20	84.89
17			5.82	87.27
			4.93	88.16

20950

60.35	7.0
60.68	6.6
61.89	6.3
62.45	5.6
63.50	5.4
64.54	5.3
65.59	3.9
66.64	3.3
67.61	3.9
67.69	3.9
68.73	3.2
69.78	3.1
70.83	2.7
71.87	2.4
72.92	2.9
73.97	4.1
74.53	4.5
75.02	6.0
76.07	8.8
77.12	10.2
78.17	10.0

2095  
458  
16760  
10475  
8380  
959510  
35  
61.31 68.00  
97  
68.61

265  
10475  
12570  
4190  
645.175

- angle -

1.287%  
1.679%

G Line

Alley

58

Irving - Harrison

9309

18		5.09	88.00
+36 <sup>5</sup>	NH 70	5.92	87.17
		5.72	87.37
19		7.91	88.18
		4.66	88.73
20		4.24	88.85
		4.40	88.69
+97 <sup>2</sup>	Et 13	4.00	89.09

1.5350 + 8095

79.22	8.8
<u>80.00</u>	7.2
80.21	7.2
80.97	7.2
81.74	6.7
82.51	6.3
83.28	5.7
<u>84.00</u>	5.1

1.387%

1.679%

Ghirie

5/18/05

	1.33	55.29	6.59	50.96	
	5.58	54.28	12.78	48.70	✓
0+50			11.73	42.55	✓
1	12.76	56.35	10.69	43.59	✓
+50			11.71	44.64	✓
2		b	10.66	45.69	✓
+50			9.62	46.73	✓
+54 <sup>5</sup>	12.71	M.H. 65	9.53	46.82	✓
3		59.33	11.75	47.75	✓
+50			10.70	48.83	✓
4			9.65	49.88	✓
+50			8.61	50.92	✓
5			7.56	51.97	✓
+50	8.08	61.10	6.51	53.02	✓
+84 <sup>5</sup>	M.H. 66		7.35	53.75	✓
6			7.04	54.06	✓
+50			5.99	55.11	✓
7		68.35	12.19	56.16	✓
+50			11.15	57.20	✓
8			10.10	58.25	✓
+50			9.05	59.30	✓
9	0.33	73.23	12.88	72.90	✓
B.M.				60.35	✓

Alley

Irving - Harrison

59

55.37  
48.39  
11.78

68.35  
55.11  
12.24  
60.4  
55.1  
5.3  
1.3  
7.7

76.1  
73.6  
69.71  
72.90  
0.33  
73.23

5/19/05

✓

5/22/05

1.6799%

G line

5/22/05

73.23

9	+15 <sup>8</sup> MH67		12.55	60.68	✓
	+50		11.84	61.39	✓
10			10.78	62.45	✓
	+50		9.73	63.50	✓
11			8.69	64.54	✓
	+50		7.64	65.59	✓
12	11.68	78.32	6.59	66.64	✓
	+40 <sup>2</sup> MH68		10.71	67.61	✓
	+50		10.63	67.69	✓
13			9.59	68.73	✓
	+50		8.54	69.78	✓
14			7.49	70.83	✓
	+50		6.45	71.87	✓
15			5.40	72.92	✓
	+50		4.35	73.97	✓
	+76 <sup>5</sup> MH69		3.79	74.53	✓
16		83.82	8.80	75.02	✓
	+50		7.75	76.07	✓
17			6.70	77.12	✓
	+50		5.65	78.17	✓
18			4.60	79.22	✓

2095/0

Alley

16

73.23  
68.85  
12.55

60

Irving - Harrison

1070

80.00

8385

7453

7932

78.32

7501

681

73.23

556

67.37

42095

4

08380

45.59

12.73

7291

6.92

6.97

71.85

7832

7290

64

7352

480

7431

101

765

5

5

16+36

5

735

37  
34  
05

138/0

1.679%

G Line - 5/23/05

18+36 <sup>5</sup> SMH70	9202	12.02	80.00	✓	x
+50		11.81	80.21	✓	
19		11.05	80.97	✓	
+50		10.28	81.74	✓	
20		9.51	82.51	✓	
+50		8.74	83.28	✓	
+97 <sup>0</sup> Ft 13		8.02	84.00	✓	

1535

Alley

Irving - Harrison

61

70.94  
10.5  
12.02

H Line

5/25/05

0+00	1273 MH 19	61.73	5	49.00	
				8.92	52.81
1	1155	68.16	5.12	56.61	10%
	9.79	70.21	7.74	60.42	✓
2		<del>76.54</del>	5.98	64.23	✓
+36±	MH.63		9.54	67.00	✓
	12.64	80.15	9.03	67.51	✓
3			10.76	69.39	✓
			8.89	71.26	✓
4	400	86.17	7.01	73.14	✓
+36±	MH.62		11.67	74.50	✓
bm.	2.35	84.52	9.94	74.58	✓
5			9.64	74.88	✓
			9.33	75.19	✓
6	9.00	84.49	9.03	75.79	✓
			8.70	75.79	✓
7			8.39	76.10	✓
+66±	MH.61		8.09	76.40	✓
			7.99	76.30	✓
8			7.09	77.40	✓

Alley

Harrison - Grant

62

1299	5217	8217
6939	178	373
8238	83.95	86.90
7126	7314	601
11.12	10.81	7880
	86.17	579
7126	7750	76.54
11.09	11.67	6423
8235		12.31
7314		67
9.21		9.50
	8235	1112
	7750	1875
	<del>07.50</del>	12995
	7.55	

5/27/05

angle

1.387%  
1.679% x

H Line

5/27/05

		84.99		
+50			5.75	78.74 ✓
9		86.97	4.41	80.88 ✓
	12.40	93.81	5.06	81.41 ✓
10			11.06	82.75 ✓
			9.72	84.09 ✓
+98°	10860		8.43	85.38 ✓
11			8.38	85.43 ✓
			7.04	86.77 ✓
12	7.93	96.03	5.71	88.10 ✓
			6.59	89.94 ✓
13			5.25	90.78 ✓
			3.91	92.12 ✓
14			2.57	93.96 ✓
+20°	1811.		2.03	94.00 ✓

2.67/05

Alley

63

Harrison - Grant

76.00		76.50
10.08	10.48	9.75
86.98	2.00	86.25
6.37	13.58	80.05
81.11	60	6.17
	17.18	75.74
76.10		7.51
86.17	10.05	9.85
76.50	9.75	27.00
9.77	23	8.85
	39	

Ally line Evans St /  
5/31/05

1.38/06  
1.679% x

H Line

Alley

Harrison - Grant

61

57/100

BM	11.74	64.95		53.21
0+00	MH 19			
0+50				
1		5	9.01	35.94
			6.22	58.73
+50	12.22	75.18	1.99	62.96
2			6.32	68.86
+36±	MH 63		2.16	73.02
+50	11.80	86.13	0.85	74.33
3			9.28	76.85
+50			7.23	78.90
4			3.65	82.48
+36±	MH 62		3.93	82.20
+50			3.38	82.75
5			3.47	82.66
+50			3.47	82.66
6			3.45	80.68
+50			6.29	79.84
7			7.80	77.33
+50	12.85	89.92	9.06	77.07
+66±	MH 61		13.20	76.72
8			12.50	77.42
+50			10.36	79.56

76/14  
3.75  
6.06

				49.00
				52.81 3.1
				56.61 2.1
				60.42 2.5
				64.23 4.6
				67.00 6.0
				67.51 6.5
				69.39 7.5
				71.26 7.6
				73.14 9.3
				74.50 7.7
				74.58 8.2
				74.88 7.8
				75.19 7.5
				75.49 5.2
				75.79 4.0
				76.10 2.2
				76.40 0.7
				76.50 0.2
				77.40 0.0
				78.74 0.8

— H line —

5/11/05

89.92

9		6.44	83.48
		3.24	86.68
10	8.40	97.18	1.14 88.78
		6.62	90.56
+ 98°	104.60	6.58	90.60
11		6.48	90.70
		5.90	91.28
12		5.90	91.28
		4.98	92.20
13	8.74	104.32	1.60 95.58
		5.08	99.24
14		3.61	100.71
+ 50	Fr 11	3.32	101.00

2.0  
7.7  
8.0

Alley

650

Harrison - Grant

80.08	3.4
81.41	5.3
82.75	6.0
84.09	6.5
85.38	5.2
85.43	5.3
86.77	4.5
88.10	3.2
89.44	2.8
90.78	4.8
92.12	7.1
93.46	7.2
94.00	7.0

104.32
97.18
11.70

- I Line -

5/8/25

BM	12.58	72.37		59.79
0+00	MH 21			
+50	12.58	82.63	2.32	70.05
1		5	11.05	71.55
+50			8.14	74.49
2	10.93	90.43	3.13	79.50
+50			6.69	83.74
+80°	MH 53		4.45	85.98
3			3.78	86.65
+50			4.54	85.89
4			5.61	84.82
+50			6.40	84.03
5			7.47	82.96
+50			8.06	82.37
6			8.19	82.24
+49°	MH 54		8.11	82.32
7	11.58	91.75	10.26	80.17
+50			11.16	80.59
8			11.56	80.19
+50			10.96	80.79
9			7.92	83.83
+50			6.70	85.93

6.755%

0.756%

Alley

Grant - Franklin

660

55.50	
58.89	11.2
62.28	9.3
65.68	8.8
69.08	10.4
72.46	11.3
74.50	11.5
74.66	12.0
75.05	10.9
75.45	9.4
75.84	8.2
76.23	6.7
76.63	5.8
77.02	5.2
77.41	4.9
77.80	2.4
78.20	2.4
78.59	1.6
78.98	1.8
79.38	4.4
79.77	5.3

6+49.3  
3.70  
2793

6+49.3  
2.35  
8+84

7938  
5.5  
7338

30+9  
50 } 136  
793 Newer

41

1.611%

I Lirre

5/5/55

91.75

0	9+80 NH 55	5.19	86.56
10		4.52	87.23
11		3.90	87.85
11		3.77	87.98
12		3.13	88.62
12		1.17	90.58
13	1.58 .9268	0.65	91.10
13		2.14	90.54
13	+09 NH 52.	2.58	90.16
14		3.44	89.24
14		5.20	87.48
15		6.04	86.64
15		7.36	85.32
16		7.42	85.26
16		7.93	84.75
16		6.62	86.06
17		4.80	87.88
17	+30° Ft. 10.	3.54	89.14

0.607%

0.475%

Alley

Grant - Franklin

67

80.00	6.6
80.12	7.1
80.42	7.4
80.72	7.3
81.03	7.6
81.33	9.3
81.64	9.5
81.94	8.6
82.00	8.1
82.19	7.1
82.43	5.1
82.67	4.0
82.90	2.4
83.14	2.1
83.38	1.4
83.62	2.5
83.86	4.0
84.00	5.2

6.493	3.50
6.60	1.0
13.093	6.0
7.20	13.293
17.293	11.293

246
9022
90.19

angle

1.287%

1.679%

I line

6/3/05

0	+42 0450	1171	67.21	8.86	55.50 58.35 58.89	✓	6.785%
1			78.23	12.55	62.28 65.68	✓	
2			78.23	9.15	69.08	✓	
			83.20	10.54	72.46	✓	
+80°	NH 53		87.50	13.00	74.50	✓	
3			87.50	12.84	74.66	✓	
				12.95	75.05	✓	
4				12.05	75.45	✓	
				11.66	75.84	✓	
5				11.27	76.23	✓	
				10.87	76.63	✓	
6	+49° 8m.	NH 54		10.48	77.02	✓	
		177	85.19	10.09	77.91	✓	
				7.39	83.42 77.80	✓	
				6.99	78.20	✓	
8				6.60	78.59	✓	
				6.21	78.98	✓	
9		12.93	92.31	5.81	79.38	✓	
+50				12.54	79.77	✓	

Alley

Grant - Franklin

63

		786		BM
		0.2194		8342
				408
				NH 87.50
				5342
				177
				85.19
				77.91
				7.78
				8300
				1170
				7130
				693
				78.23 NH

6/2/05

1+15.	73.40	10.10	63.30	✓
6+80		12.97	60.93	✓

6093  
1039  
7132  
5835  
12.97

6/5/05

1.679%

I line - 6/5/05

Alley  
Grant - Franklin

69

72.31

87.20

B					
0	9+80	MH53	12.31	<u>80.00</u>	✓
1	10		12.19	80.12	✓
2	11		11.89	80.42	✓
3	12		11.39	80.72	✓
4	13		11.28	81.03	✓
5	14		10.98	81.33	✓
6	15		10.67	81.64	✓
7	16		10.37	81.94	✓
8	+59 <sup>3</sup>	MH56	10.31	<u>82.00</u>	✓ X
9	17		10.12	82.19	✓
0	18		9.88	82.43	✓
1	19		9.64	82.67	✓
2	20		9.41	82.90	✓
3	21		9.17	83.14	✓
4	22		8.93	83.38	✓
5	23		8.69	83.62	✓
6	24		8.45	83.86	✓
7	+30 <sup>2</sup>	Ft 10	8.31	<u>84.00</u>	✓
8					
9					

11.66  
84  
95.66  
91.19  
4.97

25  
35  
0.9

J. Linn <sup>5</sup>/<sub>3</sub> Hatch  
<sub>65</sub> <sup>23</sup>/<sub>65</sub> <sup>1</sup>/<sub>65</sub> <sup>1</sup>/<sub>65</sub>

Alley.  
 Franklin - Everett

70 80

	5.02	73.65	686.3
0	0+00	NH. 23-	
1			8.25 65.40
1			5.52 64.53
2		b	5.31 65.34
2			7.70 65.95
			5.56 68.09
+58°	NH. 57		5.52 68.13
3			5.05 68.60
			4.74 68.91
4			3.32 70.33
			2.14 71.51
5			2.09 71.56
+38°	NH. 50		2.32 71.33
			2.15 71.50
6	6.78	78.69	1.74 71.91
			4.95 73.74
7			4.89 73.80
			4.55 74.14
8			3.20 75.49
+19°	Ft 9		3.96 74.73

1.386

	59.30	
	59.98	5.4
	60.65	4.2
	61.33	4.0
	62.01	4.0
	62.68	5.4
	62.75	5.4
	63.36	5.2
	64.04	4.9
	64.72	5.6
	65.39	6.1
	66.07	5.5
	66.55	4.8
	66.75	4.7
	67.42	4.5
	67.10	5.7
	68.78	5.0
	69.45	4.7
	70.13	5.4
	70.40	4.3

14.98  
 1.60  
 2.50  
 5.38  
 8.18

225  
 7694  
 7590

560  
 280  
 258  
 540  
 518

258  
 6  
 558  
 90  
 518

0.6820  
 1.3870  
 1.6799

J. Line - 6/7/05

Alley

Franklin - Everett

80

	845	68.24		59.79	
BM	0+00	7.76	8.94	59.30	✓
	0+50	67.06	7.08	59.98	✓
			6.41	60.65	✓
1		5	5.73	61.33	✓
			5.05	62.01	✓
2			4.38	62.68	✓
	+58°	MH 57	72.62	9.87	62.75 ✓
				9.26	63.36 ✓
3				8.58	64.04 ✓
				7.90	64.72 ✓
4				7.23	65.39 ✓
		11.00		10.32	66.07 ✓
5				9.84	66.55 ✓
	+38°	MH 50		9.64	66.75 ✓
6				8.97	67.42 ✓
				8.29	68.10 ✓
7				7.61	68.78 ✓
				6.94	69.45 ✓
8				6.26	70.13 ✓
	+19°	MH 49		5.99	70.40 ✓

1.355  
0.9065

6201  
1061  
7262

7590  
77

1355  
677  
2032

0.285%  
0.187%  
1.679%

N line 5/19/05

BM	11.28	102.97		91.19
0	5.00	NH 46		10.74 91.73
			)	8.03 99.44
1				1.42 98.05
				2.35 100.12
2				1.56 100.91
				2.42 100.05
3				2.00 100.47
+ 30	NH 47			1.53 100.94
+ 50	4.61	106.95	0.13	102.34
4				3.71 103.24
				4.47 102.48
5				4.60 102.35
				4.28 102.67
6				4.70 102.25
+ 30 <sup>e</sup>	NH 48			4.36 102.59
+ 50				4.66 102.27
7				5.50 101.45
				7.03 99.92
8				9.12 97.83
	7.40	103.36	10.99	95.96
9				7.50 95.86

2.625%

0.35%

Alley  
Sargent - Woolman -

83.60	8.1	✓
84.91	9.5	
86.22	11.8	
87.54	12.6	
88.85	12.0	
90.16	9.9	
91.47	9.0	
92.00	9.0	
92.10	10.2	
92.27	11.0	
92.44	10.0	
92.62	9.8	
92.79	9.9	
92.96	9.3	
93.06	9.5	
93.13	9.2	
93.30	8.2	
93.47	6.7	
93.65	7.2	
93.82	2.2	
93.99	1.9	✓

8.84  
98.11  
99.10

↑  
out  
↓

0.582%  
0.285%  
1.187%  
1.387%  
1.679%

N. Line

5/17/35

10336

0	9+10	NK 49	7.16	96.20	0.3750
			6.00	97.36	
1	10.		4.05	99.31	
			3.78	99.58	
2	11		3.85	99.51	
			5.80	97.60	
	+90	FB 8	7.83	95.5	

11.90  
 6.30  
 5.60  
 2.50  
 4.30  
 9.10

Alley

4.16  
 95.76  
 105.42  
 3.82  
 96.20

7330

Sargent - Woolmart

94.02	2.2	✓
94.16	3.2	
94.33	5.0	
94.51	5.1	
94.68	4.8	
94.86	2.7	✓
95.00	0.5	

103.4

- ④ 9.7 99.7
- ③ 7.7 95.7
- ② 9.7 93.7
- ① 11.0 92.7

6.00  
 7.00  
 7.00  
 5.00  
 7.00  
 10.90  
 93.90  
 0.3  
 0.24  
 502

0.288%

X 1.387%

X 1.679%

# N. line

6/26/05

B.M.	4.55	95.74		91.19	
0 + 30	630	97.99	11.83	89.91	✓
1	12.93	99.15	11.27	86.22	✓
			11.66	87.54	✓
2	9.57	100.76	11.91	88.85	✓
	12.50	102.66	10.60	90.16	✓
3			11.19	91.47	✓
3 + 30	MH 47		10.66	92.00	✓
			10.56	92.10	✓
4		104.69	12.42	92.27	✓
			12.25	92.44	✓
5			12.07	92.62	✓
			11.90	92.79	✓
6			11.73	92.96	✓
6 + 30	MH 48			93.06	✓
			11.56	93.13	✓
7		101.69	11.39	93.30	✓
			8.22	93.47	✓
8			8.04	93.65	✓
			7.97	93.82	✓
9			7.70	93.99	✓

2.025%

0.375%

# Alley

Sargent - Woodman.

3.22

636.25

131.25 - 5 ft ahead of 2+00

11.91  
11.78

92  
12.69  
109.69

98.11  
3.62  
101.75  
95.105  
101.69

93.97  
11.22

6/27/05

6/28/05

6/27/05

1.679%

- N. Line -

26 25  
12  
5 250  
262 5  
31 500

12 29  
32  
12 61

15

101.69

6/27/05

B 0	9+10	NH 49	7.67	94.02	✓
			7.53	94.16	✓
10			7.36	94.33	✓
			7.18	94.51	✓
2 11			7.01	94.68	✓
			6.83	94.86	✓
	+90	Ft 8	6.69	95.00	✓

0.375%

X  
1.387%  
X  
1.679%  
X

M. Line <sup>Watch</sup> <sub>5/23/65</sub>

0	13M	2.00	86.91	84.91
	0+00	NH 28		6.30 80.61
1			5	6.30 80.61
				5.08 81.83
2				3.90 83.01
				3.80 83.11
3				2.56 84.35
	+15	NH 4.4		2.54 84.37
				2.84 84.07
4				3.35 83.56
				3.55 83.36
5		667	90.27	3.21 83.60
				6.95 83.32
6				7.53 82.74
	+29	NH 4.3		7.06 83.21
				6.45 83.82
7				7.40 82.87
				7.38 82.89
8				7.42 82.85
	+50			7.20 83.07
9				7.55 82.72
				7.75 82.52

Alley  
Sargent - Clay

72.00	5.6
72.40	8.2
72.80	9.0
73.20	9.8
73.60	9.5
74.00	10.4
74.40	10.0
74.80	9.6
75.20	8.8
75.60	8.2
76.00	8.0
76.40	7.3
76.80	6.3
77.04	6.4
77.20	6.8
77.60	5.7
78.00	5.3
78.40	4.9
78.80	4.7
79.20	3.9
	3.3

6+292  
60  
6+897  
2.5  
4.80  
2.5  
7.50

82.25  
82.27  
83.00

0.80

X  
1.679%

M Line

90.27

0	+40	NK 42	9.07	81.20	
	+50	12.12	92.82	9.57	80.70
1	10		12.56	80.26	
			9.70	83.12	
2	11		6.52	86.30	
		6.71	98.49	1.04	91.78
	12		5.00	93.49	
3	+50	Feb. 7	8.63	89.86	

12.50  
6.30  
6.00  
3.10  
6.30  
9.10

0.50

Alley

Sargent - Clay

79.52	1.7	✓
79.60	1.1	
80.00	0.3	
80.40	2.7	
80.70	5.5	
81.20	10.6	
81.60	11.9	
82.00	7.9	✓

98.99  
10.15  
88.84  
9.13  
97.97  
1.23  
89.05

55.08

1.68

1.29  
80.70  
85.00  
38.00  
81.2

3.5

79.60  
1  
83.5 4.2



M Live

		57.69		6/23/05	
9+50			8.09	79.60	✓
10			7.69	80.00	✓
			7.29	80.40	✓
11	12.98	93.78	6.89	80.50	✓
			12.58	81.20	✓
12			12.18	81.60	✓
+50	Ft 7		11.78	82.00	✓

Alley

Sargent - Clay

.008  
3  
529

7930

✓  
6/28/05

0.285%  
1.387%  
1.679%

73.52  
6.09  
79.65  
69.80  
9.85

K line

from P. 33 -

		75.00		6/14/05
8			8.60 66.70 ✓	
+25	MH 34		8.54 66.46 ✓	
+50			8.48 66.52 ✓	
9			8.35 66.65 ✓	
13M	2.69	74.70	7.93 66.77 ✓	
10			7.81 66.89 ✓	
11			7.69 67.01 ✓	
			7.57 67.13 ✓	
			7.44 67.26 ✓	
+80	MH 33		7.36 67.34 ✓	
13M	4.63	76.60	7.19 67.38 ✓	
12			9.10 67.50 ✓	
13			8.98 67.62 ✓	
			8.86 67.74 ✓	
14			8.73 67.87 ✓	
			8.61 67.99 ✓	
15			8.49 68.11 ✓	
+35	MH 32		8.40 68.20 ✓	
+50			8.36 68.24 ✓	
16			8.22 68.37 ✓	
			8.08 68.52 ✓	

926

K line

805

80

48.81  
9.36  
78.17

6/15/05

		74.60		6/15/05
17			7.93 68.67 ✓	
			7.79 68.81 ✓	
18			7.65 68.95 ✓	
+50	MH 31		9.08 69.09 ✓	
19			8.94 69.23 ✓	
			8.79 69.38 ✓	
20			8.65 69.52 ✓	
			8.51 69.66 ✓	
21			8.37 69.80 ✓	
+50		79.65	9.70 69.95 ✓	
+66	MH 30		9.65 70.00 ✓	
22			9.19 70.46 ✓	
	10.67	81.83 ✓	8.49 71.16 ✓	
23			9.98 71.85 ✓	
			9.29 72.34 ✓	
24			8.59 73.24 ✓	
+50			7.90 73.93 ✓	
+77	MH 29		7.53 74.30 ✓	
25			7.46 74.69 ✓	
			6.30 75.53 ✓	
26			5.47 76.36 ✓	



Handwritten calculations and notes on the left page of the notebook. The page is filled with various mathematical operations, including long division and multiplication, and some text notes. A prominent red number '198' is written in the upper middle section. Other numbers and symbols are scattered throughout, often with small circles or underlines. At the bottom, there are some larger numbers and a note that reads '17.33 - BM S. Riv. Mt. H. SAN'.

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	8.73	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	22.93	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							

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