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

400
LEVEL

F.B.462

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

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

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

MINUTES.	LKS.	MINUTES.	LKS.	MINUTES.	LKS.
1	2⅓	21	49	41	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

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TABLE FOR RUNNING ON SLOPES.

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

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

Crocker Quality

LEVEL BOOK

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MINUTE

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Levels on Wightman. Idaho To 30th st 5/10/09 Dunkle
" 80' wide " Shane
B.M. N.E. spk Idaho & University 347.37 Dezier 1

B.M.	3.32	350.69			
				POSTED	
		E.L. Idaho			
N			6.3		344.4
ctr			6.0		344.7
S			6.6		344.1
		0+25 E			
S			6.7		344.0
ctr			5.8		344.9
N			6.1		344.6
		0+50			
N			6.0		344.7
ctr			6.3		344.4
S			6.5		344.2
		0+75			
S			6.5		344.2
ctr			6.2		344.5
N			5.9		344.8

350.69

1+0

N	5.2	345.5
ctr	4.4	346.3
S	6.0	344.7

1+25

S	6.1	344.6
ctr	6.2	344.5
N	5.6	345.1

1+50

N	5.9	344.8
ctr	5.8	344.9
S	5.4	345.3

1+75

S	6.1	344.6
ctr	5.7	345.0
N	5.6	345.1

2+0 = W.L. Utah 80' wide

N	4.7	346.0
ctr	5.9	344.8
S	6.1	344.6

Center

S	5.8	344.9
ctr	5.6	345.1
N	4.1	346.6

E.L. Utah St

N	4.6	346.1
ctr	5.5	345.2
S	5.9	344.8

0+25 E

S	5.7	345.0
ctr	5.0	345.7
N	4.6	346.1

		350.69		
		0+50		
N			3.7	347.0
ctr			5.7	345 0
S			5.7	345 0
		0+75		
S			5.0	345 7
ctr			5.3	345 4
N			5.2	345 5
T.P.	6.66	352.58	4.77	345.92
		1+0		
N			5.5	347 1
ctr			7.0	345 6
S			7.7	344 9
		1+25		
S			6.9	345 7
ctr			6.4	346 2
N			6.1	346 5

		352.58		
		1+50		
N			7.0	345 6
ctr			6.9	345 7
S			7.3	345 3
		1+75		
S			7.4	345 2
ctr			5.9	346 7
N			6.8	345 8
		2+0 = W.L. Sherman 80' wide		
N			5.8	346 8
ctr			6.9	345 7
S			5.8	346 8
		center.		
S			6.5	345 8
ctr			5.9	346 7
N			5.5	347 1

352.58

F. L. Sherman

N	5.3	3473
Ctr.	5.0	3476
S	6.6	3460
0+25 E		
S	5.8	3468
Ctr	4.9	3477
N	5.9	3467
0+50		
N	5.6	3470
Ctr	5.7	3469
S	5.8	3468
0+75		
S	5.9	3467
Ctr	5.5	3471
N	5.5	3471

1+0		
N	4.6	3480
Ctr	4.5	3481
S	5.5	3471
1+25		
S	4.8	3478
Ctr	4.4	3482
N	5.4	3472
1+50		
N	4.5	3481
Ctr	5.6	3470
S	6.1	3465
1+75		
S	4.6	3480
Ctr	4.8	3478
N	4.8	3478

352.58

2+0 = W.L. Kansas st 80'

N	4.8	347.8
Ctr	3.9	348.7
S	5.5	347.1

Center

S	4.1	348.5
Ctr	3.8	348.8
N	4.8	347.8

E.L. Kansas

N	4.3	348.3
Ctr	3.9	348.7
S	4.7	347.9

0+25 E

S	4.6	348.0
Ctr	4.3	348.3
N	4.0	348.6

0+50

N	3.7	348.9
Ctr	3.4	349.2
S	4.5	348.1

POST

0+75

S	4.4	348.2
Ctr	4.2	348.4
N	3.3	349.3

1+0

N	2.5	350.1
Ctr	3.6	349.0
S	4.4	348.2

1+25

S	4.3	348.3
Ctr	3.8	348.8
N	3.4	349.2

T.P. 4.79 354.74 2.63 349.95

	354.74			
	1+50			
N		5.2	349	5
ctr		5.4	349	3
S		5.7	349	0
	1+75			
S		6.0	348	7
ctr		5.1	349	6
N		4.2	350	5
	2+0 = W.L. 30th St			
N		3.5	351	2
ctr		4.5	350	2
S		5.0	349	7

Levels on Gunn St Idaho To 30th St 5/10/09 Drinker
" 80' wide Shaw
B.M. hub S.W. Idaho & Landis 343.82 Dizzie

B.M.	454	348.36		
	E.L. Idaho St			
N			3.9	344.5
ctr			3.9	344.5
S			4.6	343.8
	0+25 E			
S			4.8	343.6
ctr			4.9	343.5
N			4.2	344.2
	0+50			
N			4.7	343.7
ctr			4.6	343.8
S			4.6	343.8
	0+75			
S			5.5	342.9
ctr			5.5	342.9
N			4.8	343.6

POSTED

		348.36		
		1+0		
N			4.3	344.1
ctr			5.4	343.0
S			5.0	343.4
		1+25		
S			5.3	343.1
ctr			5.1	343.3
N			4.2	344.2
		1+50		
N			5.2	343.2
ctr			5.9	342.5
S			6.0	342.4
		1+75		
S			6.0	342.4
ctr			4.5	343.9
N			5.4	343.0

POSTED

348.36

2+0 W. Line Utah

N	5.3	343.1
ctr	5.9	342.5
S	5.3	343.1

Center

S	6.5	341.9
ctr	5.9	342.5
N	5.4	343.0

E line Utah

N	5.3	343.1
ctr	4.3	344.1
S	6.4	342.0

0+25

S	5.5	342.9
ctr	5.8	342.6
N	5.6	342.8

348.36

0+50

N	4.1	344.3
ctr	4.5	343.9
S	6.0	342.4

0+75

S	4.2	344.2
ctr	4.5	343.9
N	5.0	343.4

1+0

N	5.1	343.3
ctr	5.1	343.3
S	6.3	342.1

1+25

S	6.0	342.4
ctr	5.3	343.1
N	5.0	343.4

T.P	6.25	349.46	5.15	343.21

349.46

1+50

N	5.7	343.8
ctr	5.8	343.7
S	6.4	343.1

1+75

S	7.4	342.1
ctr	6.8	342.7
N	6.0	343.5

2+0 W Line Sherman

N	5.8	343.7
ctr	6.7	342.8
S	6.7	342.8

Center

S	6.7	342.8
ctr	6.3	343.2
N	6.5	343.0

349.46

E Line Sherman

N	4.8	344.7
ctr	6.7	342.8
S	6.3	343.2

0+25

S	6.4	343.1
ctr	6.1	343.4
N	5.6	343.9

0+50

N	5.9	343.6
ctr	6.5	343.0
S	6.4	343.1

0+75

S	5.5	344.0
ctr	5.8	343.7
N	4.6	344.9

		349.46		
		1+0		
N		6.2	343.3	
ctr		6.2	343.3	
S		6.8	342.7	
		1+25		
S		4.9	344.6	
ctr		6.0	343.5	
N		5.5	344.0	
		1+50		
N		5.4	344.1	
ctr		6.1	343.4	
S		6.3	343.2	
		1+75		
S		6.2	343.3	
ctr		6.2	343.3	
N		5.7	343.8	

		349.46		
		2+0 W line Kansas		
N		5.7	343.8	
ctr		5.0	344.5	
S		6.6	342.9	
		Center		
S		5.4	344.1	
ctr		5.7	343.8	
N		5.3	344.2	
		East line Kansas		
N		5.3	344.2	
ctr		5.9	343.6	
S		6.1	343.4	
		0+25		
S		6.3	343.2	
ctr		5.7	343.8	
N		5.2	344.3	
TP	384	348.25	5.05	344.41

348.25

0+50

N	4.3	3+43.9
ctr	4.3	3+43.9
S	4.9	3+43.3

0+75

S	4.6	3+43.6
ctr	4.1	3+44.1
N	3.4	3+44.8

1+0

N	4.0	3+44.2
ctr	4.3	3+43.9
S	4.8	3+43.4

1+25

S	4.6	3+43.6
ctr	4.4	3+43.8
N	3.5	3+44.7

348.25

1+50

N	3.6	3+44.6
ctr	3.9	3+44.3
S	4.5	3+43.7

1+75

S	4.0	3+44.2
ctr	2.7	3+65.5
N	3.1	3+45.1

2+0 W line 30th St

N	3.1	3+45.1
ctr	3.9	3+44.3
S	4.1	3+44.1

Levels Landis St. Idaho To 30th 7/10/09 Dunkle Shaw Dyrie

B.M. hub S.W. Idaho & Landis St 343.82

B.M.	2.79	346.61			
		E.L. Idaho			
N			4.2	342.4	
ctr			6.0	340.6	POSTED
S			5.9	340.7	
		0+25 E			
S			5.4	341.2	
ctr			5.2	341.4	
N			4.8	341.8	
		0+50			
N			4.8	341.8	
ctr			5.9	340.7	
S			5.4	341.2	
		0+75			
S			5.4	341.2	
ctr			5.0	341.6	
N			4.7	341.9	

		346.61			
		1+0			
N			4.8	341.8	
ctr	POSTED		5.3	341.3	
S			5.4	341.2	
		1+25			
S			5.5	341.1	
ctr			5.4	341.2	
N			5.2	341.4	
		1+50			
N			5.2	341.4	
ctr			5.5	341.1	
S			6.0	340.6	
		1+75			
S			6.1	340.5	
ctr			5.8	340.8	
N			5.8	340.8	

346.61

240 = W. L. Utah 80' wide

d	6.3	340.3
ctr	6.0	340.6
S	6.2	340.4

Center

S	6.9	339.7
ctr	6.0	340.6
N	7.0	339.6

E. L. Utah

N	6.8	339.8
ctr	5.9	340.7
S	7.8	338.8

0+25' E

S	7.0	339.6
ctr	7.8	338.8
N	6.3	340.3

346.61

0+50

N	6.6	340.0
ctr	7.1	339.5
S	8.3	338.3

0+75

S	8.4	338.2
ctr	7.5	339.1
N	7.0	339.6

1+0

N	6.5	340.1
ctr	7.2	339.4
S	7.7	338.9

1+25

S	8.1	338.5
ctr	7.6	339.0
N	7.3	339.3

		346.61		
		1+50		
N			7.6	339.0
ctr			7.3	339.3
S			7.6	339.0
		1+75		
S			6.8	339.8
ctr			6.4	340.2
N			7.1	339.5
		2+0 W. line Sherman		
N			6.4	340.2
ctr			7.3	339.3
S			8.3	338.3
T.P	5.17	344.15	7.63	338.98
		Center		
S			5.0	339.2
ctr			4.8	339.4
N			4.1	340.0

		344.15		
		E. Line Sherman		
N			3.4	340.8
ctr			4.6	339.6
S			4.9	339.3
		0+25 E		
S			5.0	339.2
ctr			4.5	339.7
N			3.9	340.3
		0+50		
N			4.4	339.8
ctr			4.7	339.5
S			4.8	339.4
		0+75		
S			3.7	340.5
ctr			4.2	340.0
N			3.1	341.0

344.15

1+0

N	3.8	340.4
ctr	4.2	340.0
S	4.7	339.5

1+25

S	4.0	340.2
ctr	4.1	340.1
N	3.6	340.6

1+50

N	3.2	341.0
ctr	3.8	340.4
S	4.0	340.2

1+75

S	3.0	341.2
ctr	3.9	340.3
N	3.1	341.1

344.15

2+0 W. line Kansas

N	2.3	341.9
ctr	3.2	341.0
S	3.9	340.3

Center

S	3.3	340.9
ctr	4.1	340.1
N	3.2	341.0

E line Kansas

N	2.3	341.9
ctr	3.2	341.0
S	2.7	341.5
T.P.	4.24 344.92	3.47 340.68

0+25 E

S	4.4	340.5
ctr	3.8	341.1
N	3.8	341.1

	344.92	
	0+50	
N	3.8	341.1
ctr	3.8	341.1
S	4.4	340.5
	0+75	
S	4.4	340.5
ctr	3.8	341.1
N	4.3	340.6
	1+0	
N	4.7	340.2
ctr	4.5	340.4
S	4.6	340.3
	1+25	
S	4.7	340.2
ctr	4.5	340.4
N	4.4	340.5

	344.92	
	1+50	
N	4.5	340.4
ctr	4.6	340.3
S	4.4	340.5
	1+75	
S	4.1	340.8
ctr	4.8	340.1
N	3.2	341.7
	2+0 W Line 30'	
N	4.4	340.2
ctr	5.2	339.7
S	5.6	339.3

Levels on Dwight St Iaho To 30th St 5/12/09 Dunkle
" 80' wide Shaw
B.M. hub S.W. Idaho & Dwight 333.16 Dyjiel

B.M	8.90	342.06			
	E.L. Idaho				
N			5.6	336.5	
Ctr			6.3	335.8	
S			6.8	335.3	
		0+25 E			
S			6.2	335.9	
Ctr			5.6	336.5	
N			5.5	336.6	
		0+50			
N			5.0	337.1	
Ctr			5.2	336.9	
S			5.7	336.4	
		0+75			
S			5.4	336.7	
Ctr			5.6	336.5	
N			5.2	336.9	

		342.06			
		1+0			
N			4.8	337.3	
Ctr			5.3	336.8	
S			5.2	336.9	
		1+25			
S			5.2	336.9	
Ctr			4.5	337.6	
N			4.4	337.7	
		1+50			
N			4.4	337.7	
Ctr			4.9	337.2	
S			5.0	337.1	
		1+75			
S			4.8	337.3	
Ctr			4.9	337.2	
N			4.1	338.0	

342.06

2+0 = W.L. Utah 80'

N	4.1	338.0
Ctr	4.4	337.7
S.	5.3	336.8

center

S	5.2	336.9
Ctr	5.1	337.0
N	5.3	336.8

E.L. Utah

N	5.3	336.8
Ctr	5.1	337.0
S	6.2	335.9

0+25' E

S	5.1	337.0
Ctr	6.2	335.9
N	6.0	336.1

342.06

0+50

N	5.6	336.5
Ctr	5.0	337.1
S	6.0	336.1

0+75

S	4.3	337.8
Ctr	6.2	335.9
N	5.6	336.5

1+0

N	5.2	336.9
Ctr	5.5	336.6
S	5.8	336.3

1+25

S	5.1	337.0
Ctr	4.5	337.6
N	5.2	336.9

T.P.	4.89	341.52	5.43	336.63

341.52

1+50

N	4.5	337.0
ctr	4.9	336.6
S	5.4	336.1

1+75

S	4.8	336.7
ctr	3.6	337.9
N	4.8	336.7

2+0 - W.L. Sherman 89'

N	3.6	337.9
ctr	4.6	336.9
S	4.8	336.7

Center

S	3.3	338.2
ctr	4.3	337.2
N	4.7	336.8

341.52

E.L. Sherman

N	4.0	337.5
ctr	4.8	336.7
S	4.4	337.1

0+25 E

S	4.7	336.8
ctr	4.8	336.7
N	4.5	337.0

0+50

N	3.9	337.6
ctr	? 4.8	336.7
S	5.1	336.4

0+75

S	5.0	336.5
ctr	4.8	336.7
N	4.2	337.3

		341.52		
		1+0		
N			3.2	338.3
Ctr			5.0	336.5
S			3.8	337.7
		1+25		
S			4.7	336.8
Ctr			4.6	336.9
N			3.7	337.8
T.P.	5.24	343.33	3.43	338.09
		1+50		
N			5.7	337.6
Ctr			6.0	337.3
S			6.6	336.7
		1+75		
S			7.0	336.3
Ctr			5.7	337.6
N			5.3	338.0

		343.33		
2+0 = N.L. Kansas 80' wide				
N			5.9	337.4
Ctr			6.7	336.6
S			7.0	336.3
Center				
S			6.5	336.8
Ctr			6.0	337.3
N			5.1	338.2
F.L. Kansas				
N			5.1	338.2
Ctr			5.3	338.0
S			6.4	336.9
0+25 E				
S			6.4	336.9
Ctr			5.2	338.1
N			4.6	338.7

343.33

0+50

N	4.6	338.7
Ctr	4.5	338.8
S	5.8	337.5

0+75

S	5.1	338.2
Ctr	4.9	338.4
N	4.6	338.7

1+0

N	4.3	339.0
Ctr	4.3	339.0
S	5.4	337.9

1+25

S	4.5	338.8
Ctr	4.6	338.7
N	4.0	339.3

343.33

1+50

N	3.7	339.6
Ctr	4.5	338.8
S	4.5	338.8

1+75

S	3.7	339.6
Ctr	4.3	339.0
N	3.4	339.9

2+0 = N L 30th St

N	4.7	338.6
Ctr	5.3	338.0
S	5.1	338.2

Levels on Capps St Idaho To 30th St 5/14/09 Dunkle Shaw

B.M. hub cor Idaho & Myrtle				334.53	Digiel
B.M	5.64	340.17			
	E.L. Idaho				
N			6.2	334.0	
cte			6.8	333.4	
S			6.4	333.8	
		0+25 E			
S			5.7	334.5	
cte			6.3	333.9	
N			5.7	334.5	
		0+50			
N			4.8	335.4	
cte			5.0	335.2	
S			5.8	334.4	
		0+75			
S			5.5	334.7	
cte			4.8	335.4	
N			4.3	335.9	

POSTED

		340.17		
		1+0		
N			4.9	335.3
cte			5.7	334.5
S			5.4	334.8
		1+25		
S			4.6	335.6
cte	E		5.0	335.2
N			4.5	335.7
		1+50		
N			4.3	335.9
cte			4.7	335.5
S			5.1	335.1
		1+75		
S			5.8	334.4
cte			5.6	334.6
N			4.6	335.6
T.P.	6.40	341.32	5.25	334.92

341.32

2+0 = W.L. Utah 80'

N	5.7	335.6
ctr	5.4	335.9
S	5.9	335.4

Center

S	6.4	334.9
ctr	6.1	335.2
N	5.4	335.9

E.L. Utah

N	7.0	334.3
ctr	6.9	334.4
S	6.7	334.6

0+25' E

S	7.7	333.6
ctr	7.7	333.6
N	7.6	333.7
T.P. 6.05 339.84	7.53	333.79

339.84

0+50

N	6.4	333.4
ctr	5.3	334.5
S	6.5	333.3

0+75

S	6.9	332.9
ctr	7.0	332.8
N	7.3	332.5

1+0

N	6.8	333.0
ctr	7.1	332.7
S	7.1	332.7

1+25

S	7.0	332.8
ctr	7.7	332.1
N	7.7	332.1

339.84

1+50

N	6.6	333.2
ctr	7.7	332.1
S	7.6	332.2

1+75

S	8.0	331.8
ctr	7.4	332.4
N	7.7	332.1

2+0 = W.L. Sherman St. 80'

N	7.5	332.3
ctr	7.7	332.1
S	8.4	331.4

center

S	8.7	331.1
ctr	7.2	332.6
N	7.2	332.6

339.84

E.L. Sherman

N	7.5	332.3
ctr	8.1	331.7
S	8.7	331.1

0+25 E

S	8.1	331.7
ctr	7.6	332.2
N	5.7	334.1

0+50

N	6.6	333.2
ctr	7.5	332.3
S	7.5	332.3

0+75

S	8.1	331.7
ctr	7.3	332.5
N	6.9	332.9

T.P.	5.08	339.02	5.90	333.94

339.02

1+0

N	5.3	333.7
ctr	6.3	332.7
S	7.3	331.7

1+25

S	7.7	331.3
ctr	7.0	332.0
N	6.3	332.7

1+50

N	6.0	333.0
ctr	6.9	332.1
S	7.5	331.5

1+75

S	5.9	333.1
ctr	6.9	332.1
N	6.3	332.7

339.02

2+0 = W.L. Kansas St 80'

N	5.5	333.5
ctr	6.9	332.1
S	5.8	333.2

center

S	6.0	333.0
ctr	5.8	333.2
N	5.2	333.8

E.L. Kansas

N	5.7	333.3
ctr	5.4	333.6
S	5.8	333.2

0+25 E

S	3.8	335.2
ctr	3.9	335.1
N	5.2	333.8

339.02

0+50

N	3.8	335.2
cte	4.2	334.8
S	4.7	334.3

0+75

S	3.7	335.3
cte	4.5	334.5
N	4.3	334.7

1+0

N	4.2	334.8
cte	4.5	334.5
S	2.8	336.2

1+25

S	3.0	336.0
cte	3.9	335.1
N	3.0	336.0

339.02

1+50

N	2.9	336.1
cte	2.6	336.4
S	3.8	335.2

1+75

S	2.7	336.3
cte	1.7	337.3
N	2.4	336.6

2+0 = N.L. 30th St

N	2.80	336.2
cte	3.5	335.5
S	3.4	335.6

Levels Myrtle Idaho to 30th st 5/14/09 Dunkle
" 80' wide Shaw
B.M. hub N.W. Myrtle & Idaho 339.53 Dizel

B.M.	5.59	340.12			
		E.L. Idaho st			
N			5.8	334.3	
ctr			7.2	3329	
S			5.9	334.2	
		0+25			
S			6.7	333.4	
ctr			6.6	333.5	
N			6.1	3340	
		0+50			
N			5.6	334.5	
ctr			6.7	333.4	
S			5.8	334.3	
		0+75			
S			6.9	333.2	
ctr			6.5	333.6	
N			6.0	334.1	

		340.12			
		1+0			
N			4.1	336.0	
ctr			6.6	333.5	
S			6.8	333.3	
		1+25			
S			6.8	333.3	
ctr			5.6	334.5	
N			5.9	334.2	
		1+50			
N			5.3	334.8	
ctr			6.5	333.6	
S			7.2	332.9	
		1+75			
S			6.5	333.6	
ctr			5.7	334.4	
N			5.2	334.9	

340.12

2+0 = W.L. Utah 80' wide

N	4.2	335.9
ctr	4.5	335.6
S.	6.0	334.1

Center

S	6.0	334.1
ctr	5.3	334.8
N	5.1	335.0

E.L. Utah St.

N	4.6	335.5
ctr	5.2	334.9
S	5.9	334.2

0+25' E

S	5.7	334.4
ctr	5.6	334.5
N	5.4	334.7

340.12

0+50

N	5.1	335.1
ctr	5.8	334.3
S	5.8	334.3

0+75

S	6.0	334.1
ctr	5.3	334.8
N	5.9	334.2

1+0

N	5.8	334.3
ctr	6.2	333.9
S	6.4	333.7

1+25

S	6.7	333.4
ctr	5.7	334.4
N	6.6	333.5

		340.12		
		1+50		
N			7.3	332.8
ctr			7.6	332.5
S			7.1	333.0
		1+75		
S			7.5	332.6
ctr			7.4	332.7
N			7.5	332.6
		2+0 - W.L. Sherman 80'		
N			8.2	331.9
ctr			7.6	332.5
S			7.8	332.3
		Center		
S			8.5	331.6
ctr			8.7	331.4
N			9.3	330.8
T.P.	427	336.01	8.38	331.74

		336.01		
		E.L. Sherman		
N			6.3	329.7
ctr			4.9	331.1
S			6.0	330.0
		0+25 E		
S			5.8	330.2
ctr			6.0	330.0
N			6.5	329.5
		0+50		
N			7.0	329.0
ctr			7.5	328.5
S			6.5	329.5
		0+75		
S			7.8	328.2
ctr			7.0	329.0
N			5.3	330.7

336.01

1+0

N	5.9	330.1
Ctr	5.6	330.4
S	7.4	328.6

1+25

S	7.6	328.4
Ctr	6.7	329.3
N	5.9	330.1

1+50

N	6.1	329.9
Ctr	6.0	330.0
S	7.5	328.5

1+75

S	6.7	329.3
Ctr	6.3	329.7
N	5.1	330.9

336.01

2+0 – W.L. Kansas 80'

N	5.7	330.3
Ctr	6.2	329.8
S	6.8	329.2

Center

S	5.6	330.4
Ctr	5.9	330.1
N	5.7	330.3

E.L. Kansas

N	4.0	332.0
Ctr	5.9	330.1
S	6.3	329.7

0+25 E

S	6.0	330.0
Ctr	5.9	330.1
N	5.4	330.6

336.01

0+50

N	5.2	330.8
ctr	4.4	331.6
S	6.3	329.7

0+75

S	6.3	329.7
ctr	5.8	330.2
N	4.4	331.6

1+0

N	5.2	330.8
ctr	5.0	331.0
S	5.7	330.3

1+25

S	6.2	329.8
ctr	4.7	331.3
N	5.4	330.6

336.01

1+50

N	5.0	331.0
ctr	5.8	330.2
S	6.4	329.6

1+75

S	5.3	330.7
ctr	4.2	331.8
N	4.6	331.4

2+0 = W.L. 30th St

N	5.3	330.7
ctr	5.7	330.3
S	6.1	329.9

x-sec Greely St 30th To 32nd St 5/17/09 Dunfield
" 80' wide Shaw
B.M. brass plg Logan & 30th 70.91 Dyziel

B. M.	8.46	79.37		
	E.L. 30th St			
S			4.6	74.8
crb	POSTED		4.8	74.6
1/4			4.6	74.8
M			4.8	74.6
1/4			4.5	74.9
crb			5.4	74.0
N			5.3	74.1
	0+25' E			
N			5.4	74.0
crb			6.2	73.2
1/4			5.3	74.1
M			5.0	74.4
1/4			4.9	74.5
crb			6.1	73.3
S			5.4	74.0

7937

	0+50			
S			6.3	73.1
crb			6.7	72.7
1/4			5.4	74.0
M			5.5	73.9
1/4			5.3	74.1
crb			6.8	72.6
N			6.1	73.3
	0+75			
N			6.5	72.9
crb			6.9	72.5
1/4			6.1	73.3
M			5.9	73.5
1/4			6.0	73.4
crb			7.4	72.0
S			6.3	73.1

79.37

1+0

S	6.6	72.8
crb	7.7	71.7
1/4	6.5	72.9
M	6.2	73.2
1/4	6.9	72.5
crb	7.3	72.1
N	6.7	72.7

1+25

N	7.1	72.3
crb	8.0	71.4
1/4	7.2	72.2
M	6.8	72.6
1/4	7.3	72.1
crb	8.4	71.0
S	7.7	71.7

79.37

1+50

S	7.8	71.6
crb	8.5	70.9
1/4	7.8	71.6
M	7.3	72.1
1/4	7.6	71.8
crb	8.5	70.9
N	7.9	70.5

1+75

N	8.3	71.1
crb	8.7	70.7
1/4	8.3	71.1
M	7.8	71.6
1/4	8.2	71.2
crb	8.9	70.5
S	7.7	71.7

		79.37		
		2+0		
S			8.0	71.4
crb			8.8	70.6
1/4			8.2	71.2
M			8.1	71.3
1/4			8.3	71.1
crb			9.3	70.1
N			8.8	70.6
		2+25		
N			9.5	69.9
crb			9.9	69.5
1/4			8.6	70.8
M			8.7	70.7
1/4			8.6	70.8
crb			9.4	70.0
S			8.5	70.9

		79.37		
		2+50		
S			9.5	69.9
crb			9.7	69.7
1/4			9.5	69.9
M			9.6	69.8
1/4			9.2	70.2
crb			10.6	68.8
N			10.4	69.0
		2+75		
N			10.8	68.6
crb			11.8	67.6
1/4			10.3	69.1
M			10.4	69.0
1/4			10.2	69.2
crb			10.7	68.7
S			10.7	68.7
T. P.	2.12	70.80	10.69	68.68

70.80

3+0

S	1.7	49.1
crb	3.0	47.8
1/4	2.7	48.1
M	2.6	48.3
1/4	2.4	48.4
crb	4.1	46.7
N	4.8	46.0

3+25

N	5.8	45.0
crb	5.5	45.3
1/4	4.2	46.6
M	3.2	47.6
1/4	3.1	47.7
crb	3.7	47.1
S	2.7	48.1

70.80

3+50

S	3.3	47.5
crb	4.2	46.6
1/4	4.1	46.7
M	4.9	45.9
1/4	6.0	44.8
crb	7.1	43.7
N	6.8	44.0

3+75

N	8.3	42.5
crb	8.2	42.6
1/4	7.0	43.8
M	6.1	44.7
1/4	6.1	44.7
crb	5.5	45.3
S	3.3	47.5

70.80

4+0

S	5.1	65.7
crb	6.5	64.3
"4	6.7	64.1
M	6.9	63.9
"4	8.0	62.8
crb	9.9	60.9
N	9.5	61.3

4+25

N	11.2	59.6
crb	10.6	60.2
"4	9.8	61.0
M	8.8	62.0
"4	7.8	63.0
crb	7.4	63.4
S	6.4	64.4

70.80

4+50

S			7.5	63.3
crb			8.7	62.1
"4			9.0	61.8
M			9.8	61.0
"4			11.3	59.5
crb			13.0	57.8
N			13.5	57.3
T.P.	5.45	64.21	12.04	58.76

4+75

N	8.9	55.3
crb	9.2	55.0
"4	7.3	56.9
M	5.0	59.2
"4	3.1	61.1
crb	2.8	61.4
S	1.6	62.6

64.21

5+0

S	2.3	61.9	
crb	3.4	61.8	
"4	5.3	58.9	
M	7.4	56.8	
"4	10.8	53.4	
crb	12.0	52.2	
N	11.9	52.3	

5+25

N	14.1	50.1	
crb	14.2	50.0	
"4	12.8	51.4	
M	10.1	54.1	
"4	7.6	56.6	
crb	3.9	60.3	
S	2.9	61.3	

64.31

5+50

S			6.0	58.3
crb			9.0	55.3
"4			12.2	52.0
M			14.0	50.2
"4			14.8	49.4
crb			15.5	48.7
N			16.2	47.5
T.P	0.33	52.85	11.69	52.52

5+75

N	6.0	46.9	
crb	7.1	45.8	
"4	5.8	47.1	
M	5.3	47.6	
"4	4.2	48.7	
crb	2.6	50.3	
S	0.9	52.0	

52.85

6+0 = W.L. 31st St 60' wide

S	3.7	49.3
crb	4.8	48.1
1/4	5.8	47.1
M	7.1	45.8
1/4	7.9	45.0
crb	9.0	43.0
N	7.0	45.9

W. curb

N	8.8	44.1
crb	9.7	43.3
1/4	8.8	44.1
M	8.3	44.6
1/4	6.9	46.0
crb	6.1	46.8
S	4.8	48.1

52.85

W 1/4

S	5.4	47.5
crb	6.7	46.3
1/4	7.9	45.0
M	9.5	43.4
1/4	9.7	43.3
crb	10.4	42.5
N	9.2	43.7

Center

N	10.0	42.9
crb	11.8	41.1
1/4	10.5	42.4
M	10.3	42.6
1/4	9.1	43.8
crb	7.9	45.0
S	6.5	46.4

52.85

E 1/4

S	7.2	45.7
crb	9.3	43.6
1/4	10.7	42.2
M	11.5	41.4
1/4	11.9	41.0
crb	12.8	40.1
N	11.1	41.8

E. CURB

N	12.4	40.5
crb	13.5	39.4
1/4	12.0	40.9
M	12.1	40.8
1/4	11.4	41.5
crb	10.1	42.8
S	8.7	44.2

52.85

E. L. 31st St

S	10.1	42.8
crb	11.2	41.7
1/4	12.3	40.6
M	13.1	39.8
1/4	12.9	40.0
crb	14.7	38.2
N	12.9	40.0

T.P.	3.15	43.05	12.95	39.90

0+25 E

N	4.7	38.4
crb	7.1	36.0
1/4	5.5	37.6
M	5.3	37.8
1/4	3.9	39.2
crb	3.4	39.7
S	2.4	40.7

43.05

0+50

S	3.5	39.6
crb	4.3	38.8
1/4	5.0	38.1
M	6.9	36.2
1/4	7.4	35.7
crb	8.7	34.4
+6	8.5	34.6
N	5.3	37.8

0+75

N	7.5	35.6
+8	9.8	33.3
crb	9.2	33.9
1/4	8.3	34.8
M	7.9	35.2
1/4	6.7	36.4
crb	6.1	37.0
S	4.5	38.6

43.05

1+0

S	5.4	37.7
crb	6.3	36.8
1/4	6.6	36.5
M	9.2	33.8
1/4	9.8	33.3
crb	11.2	31.9
+10	12.2	30.9
N	9.6	33.5

1+25

N	10.9	32.2
+4	13.0	30.1
crb	13.4	29.7
1/4	10.6	32.5
M	9.6	33.5
1/4	6.9	36.2
crb	6.3	36.8
S	6.6	36.5

43.05

1+50

S	6.6	34.5
crb	7.7	35.4
1/4	9.5	33.6
M	11.4	31.7
1/4	12.5	30.6
crb	14.0	29.1
+ 8	13.6	29.5
N	11.1	32.0

1+75

N	12.0	31.1
+ 6	14.2	28.9
crb	14.6	28.5
1/4	13.8	29.3
M	12.6	30.5
1/4	10.9	32.2
crb	8.4	34.7
S	6.5	36.6

43.05

2+0

S	8.5	34.6
crb	9.9	33.2
1/4	10.4	32.7
M	12.4	30.7
1/4	13.7	29.4
crb	14.9	28.2
+12	14.1	29.0
N	12.7	30.4

2+25

N	13.1	30.0
+2	14.7	28.4
crb	14.9	28.2
1/4	14.3	28.8
M	12.5	30.6
1/4	11.0	32.1
crb	9.8	33.3
S	7.0	36.1

43.05

2+50

S	5.1	38.0
crb	7.8	35.3
11/4	8.9	34.2
M	10.9	32.2
11/4	13.0	30.1
+4	13.1	30.0
+5	15.0	28.1
crb	15.7	27.4
+11	15.6	27.5
N	14.6	28.5

2+75

N	17.4	25.7
+4	16.2	26.9
+5	14.6	28.5
crb	12.8	30.3
11/4	11.9	31.2
M	9.6	33.5
11/4	8.0	35.1
crb	6.5	36.6
S	4.5	38.6

43.05

3+0

S	3.1	40.0
crb	4.4	38.7
11/4	6.5	36.6
M	8.7	34.4
11/4	11.5	31.6
crb	13.1	40.0
N	15.4	27.7

3+25

N	14.5	28.6
crb	10.2	32.9
11/4	8.3	34.8
M	5.6	37.5
11/4	3.6	39.5
crb	2.3	40.8
+1	1.8	41.3
+13	3.1	40.0
S	3.3	39.7

43.05

3+50

S	4.0	39.1
+1	3.7	39.4
+3	1.7	41.4
crb	2.1	41.0
"4	2.3	40.8
M	3.6	39.5
"4	6.4	36.7
crb	8.5	34.6
N	12.8	30.3

3+75

N	12.2	30.9
crb	9.4	33.7
"4	6.7	36.4
M	4.0	39.1
"4	2.9	40.2
crb	2.6	40.5
+11	2.2	40.9
+13	4.4	38.7
S.	4.6	38.5

43.05

4+0

S	6.1	37.0
+1	5.9	37.2
+3	4.0	39.1
crb	4.0	39.1
"4	4.0	39.1
M	4.8	38.3
"4	6.5	36.6
crb	9.4	33.7
N	11.3	31.8

4+25

N	21.9	21.2
+5	19.9	23.2
+10	9.4	33.7
crb	7.9	35.2
"4	6.2	36.9
M	5.7	37.4
"4	5.8	37.3
crb	6.3	36.8
+11	6.6	36.5
+13	8.1	35.0
S	8.5	34.6

		43.05		
		4+50		
S			11.6	31.5
+1			11.5	31.6
+3			10.6	32.5
crb			9.8	33.3
1/4			9.3	33.8
+11			9.3	33.8
M			10.5	32.6
+5			13.5	29.6
1/4			16.9	26.2
+9			22.2	20.9
crb			22.5	20.6
N			22.8	20.3
T.P.	0.27	30.47	12.85	30.20
		4+75		
N			6.8	23.7
+6			9.7	20.8
crb			11.0	19.5
1/4			9.8	20.7
M			10.6	19.9
+7			10.1	20.4
1/4			1.7	28.8
crb			1.5	29.0
S			2.0	28.5

Note - for Location & elevations of N.C.&O. Tracks see book 404 p58

		5+0	43.05	
S			4.5	38.6
crb			6.3	36.8
+6			11.3	31.8
1/4			11.4	31.7
M			10.4	32.7
1/4			12.2	30.9
+6			11.3	31.8
crb			8.5	34.6
N			11.0	32.1
		5+25		
N			15.1	28.0
crb			14.1	29.0
1/4			11.5	31.6
M			11.7	31.4
1/4			11.5	31.6
crb			11.1	32.0
S			10.8	32.3

30.47

5+50

S	12.9	17.6
crb	12.1	18.4
+ 9	12.1	18.4
+ 6	13.4	17.1
1/4	14.1	16.4
M	15.4	15.1
1/4	15.6	14.9
crb	16.7	13.8
N	17.1	13.4

5+75

N	16.6	13.9
crb	18.8	11.7
1/4	18.0	12.5
M	17.3	13.2
1/4	15.6	14.9
crb	14.8	15.7
S	12.3	18.2

30.47

6+0 = W.L. 32nd St

S	17.8	12.7
crb	18.3	12.2
1/4	19.6	10.9
M	18.3	12.2
1/4	17.2	13.3
crb	17.0	13.5
N	15.1	15.4

x-section 22nd st "N" st to S.L. 5/7/09 Dunkle
Shermans Add. 22nd 80' wide Shaw
B.M.R.R. SPK cor 21st & "N" st 42.85 Orgill

B.M	8.82	51.67		
	S.L. "N" st			
W			5.2	46.5
Crk			5.2	46.5
1/4			5.2	46.5
M			5.0	46.7
1/4			4.8	46.9
Crk			4.5	47.2
E			4.2	47.5
	0+25 S			
E			4.0	47.7
Crk			4.4	47.3
1/4			5.0	46.7
M			5.6	46.1
1/4			5.7	46.0
Crk			6.2	45.5
W			6.3	45.4

POSTED
POSTED

	0+50			
W			6.9	44.8
Crk			6.3	45.4
1/4			6.0	45.7
M			5.7	46.0
1/4			5.3	46.4
Crk			5.2	46.5
E			3.9	47.8
	0+75			
E			4.0	47.7
Crk			4.4	47.3
1/4			5.2	46.5
M			5.7	46.0
1/4			6.2	45.5
Crk			6.6	45.1
W			7.2	44.5

	51.67		
	1+0		
W		7.3	44.4
crb		6.7	45.0
1/4		6.1	45.6
M		6.0	45.7
1/4		5.6	46.1
crb		5.1	46.6
E		5.4	46.3
	1+24 25 = S.L. Shermans Add		
E		5.5	46.2
crb		5.4	46.3
1/4		6.0	45.7
M		6.1	45.6
1/4		7.1	44.6
crb		7.9	43.8
W		8.5	43.2

X-sec Quince st from 100' E. of 2nd st To Dunkle
W.L. 3rd st Quince st 80' wide 5/17/09 Shaw
B.M. brass plg 2nd & Quince 263.03 Dizel

B.M.	6.01	269.04		
	1+0 E of Second st			
N			2.6	266.4
+ 4 = con side walk			3.15	265.89
con-curb			3.32	265.72
1/4		POSTED	4.10	
M			4.10	
1/4		POSTED	5.2	
Con curb			5.02	264.02
S- Con side walk.			4.52	264.52
		1+25		
S			5.7	263.3
Crb			6.3	262.7
gutter			6.7	
1/4			5.8	
M			4.8	
1/4			4.7	
gutter			4.9	
Crb			4.2	264.8
+ 10			3.7	265.3
N			3.1	265.9

		269.04		
		1+50		
N			3.8	265.2
+ 4			4.7	264.3
Crb			5.3	263.7
gutter			5.7	
1/4			5.9	
M			5.9	
1/4			6.8	
gutter			7.9	
Crb			7.2	261.8
S			6.9	262.1
		1+75		
S			8.1	260.9
Crb			8.0	261.0
gutter			8.7	
1/4			7.6	
M			6.8	
1/4			6.5	
gutter			6.6	
Crb			6.2	262.8
+ 11			5.3	263.7
N			4.5	264.5

269.04

2+0 = W.L. 3+9 St

N	5.8	263.2
crb	6.2	262.8
gutter	6.9	
1/4	7.3	
M	7.5	
1/4	8.2	
curb	9.1	259.9
S	9.2	258.8

Levels at intersection of Ninth & Robinson st showing Location of graded Road & Elevations 5/21/09 Dunkle Shaw Dazie

B.M. hub S.W. Cor No 1 Robinson & Ninth St				251.22 ~~252.22~~
B.M.	9.47	261.69		

POSTED

Sec "A"

0+0 S.W. Cor Rob. & 9th			0.0	261.7
0+10= W. side of graded road			11.1	250.6
0+23= E.L.	"	"	9.8	251.9
T.P.	0.06	250.30	11.45	250.24
N.W. Rob & 9th St			12.6	137.7

Sec "B"

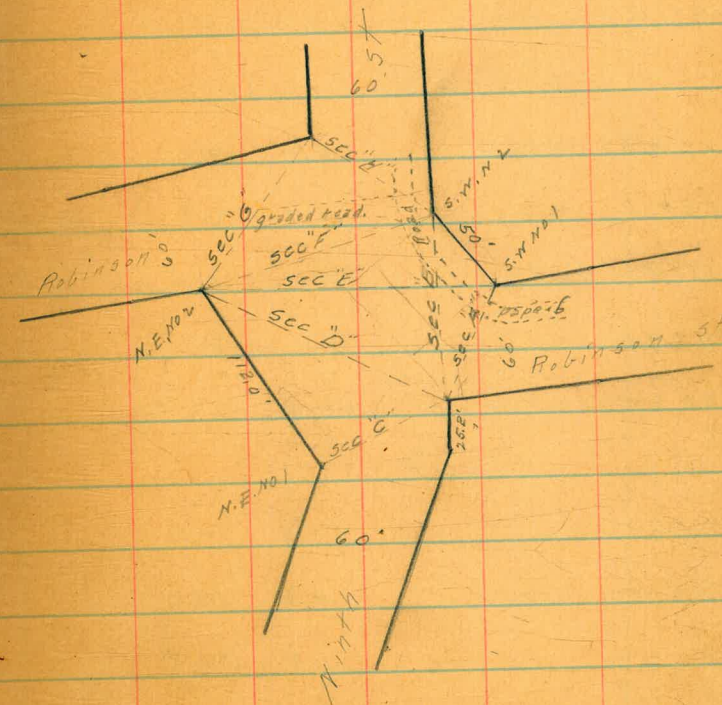
0+0= S.W. Cor No 2 of Rob & 9th	+ 1.9	252.2
0+23= W.L. Road	4.7	245.6
0+97.5= E.L. "	0.8	249.5

Sec "C"

0+0= N.W. Cor Rob & 9th St	12.6	137.7
0+34	12.6	137.7
0+75= N.E. Cor No 1 Rob & 9th	0.6	249.7

POSTED

S



N

250.30

Sec "D"

0+0 = N.W. Cor Rob & 9th	12.6	237.7
0+50	13.8	236.5
1+0	10.0	240.3
1+91 = N.E. Cor No 2	3.0	247.3

Sec "E"

0+0 = N.E. Cor No 2	3.0	247.3
0+50	15.7	234.6
1+09 = E.L. Road	3.6	246.7
1+39 = W.L. "	2.1	248.2
1+56 = S.W. Cor No 1	+11.4	261.7

Sec "F"

0+0 = S.W. Cor No 2	+1.9	252.2
0+14 = W.L. Road	7.3	248.0
0+29 = E.L. "	7.8	242.5
0+75	16.7	233.6
1+25 = N.E. No 2	3.0	247.3

Sec "G"

0+0 = N.E. Cor No 2	3.0	247.3
0+34 = center road leading E. on Robinson	11.1	
0+96 = S.E. Cor Rob & Ninth	18.8	231.5

Sec "G"

0+0 = S.W. Cor No 2	+1.9	252.2
0+20 = W.L. Road	8.2	242.1
0+38	9.2	241.1
0+76 = S.E. Cor Rob & 9th	18.8	231.5

Levels at intersection of Pennsylvania & Ninth st showing location & levels of graded road — 5/21/09 — Dunkle, Shaw, Dezil

B.M. hub S.W. Cor Robinson & 9th St				251.22 ~~252.22~~
B.M.	9.97	261.69		
T.P.	0.06	250.30	11.45	250.24
T.P.	0.15	237.47	12.98	237.32
T.P.	4.43	229.66	12.24	225.23

Sec "A"

0+0 = N.W. Cor Penna & 9th St	4.9	224.8
0+11 = W.L. road	5.8	223.9
0+26 = E.L. " "	5.9	223.8
0+64.3 = N.E. Cor Penna & 9th	9.7	220.0

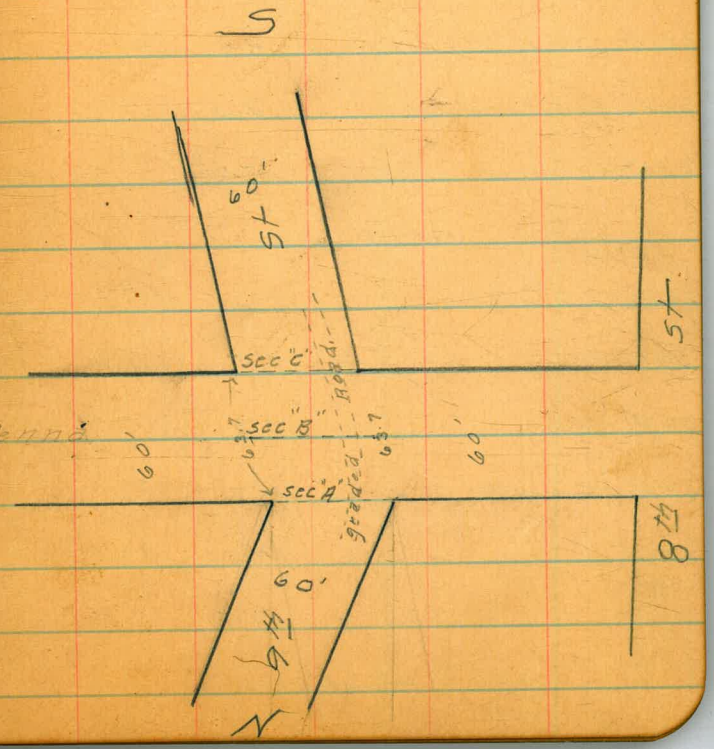
Sec "B"

0+0 = W.L. 9th St	1.5	228.2
0+10 = W.L. road	6.8	222.9
0+21 = E.L. "	6.7	223.0
0+64.3 = E.L. 9th St	8.4	221.3

Sec "C"

0+0 = S.W. Cor Penna & 9th	0.9	228.9
0+9 = W.L. road	7.2	222.5
0+21 = E.L. "	7.9	221.8
0+64.3 = S.E. Cor Penna & 9th St	10.7	219.0

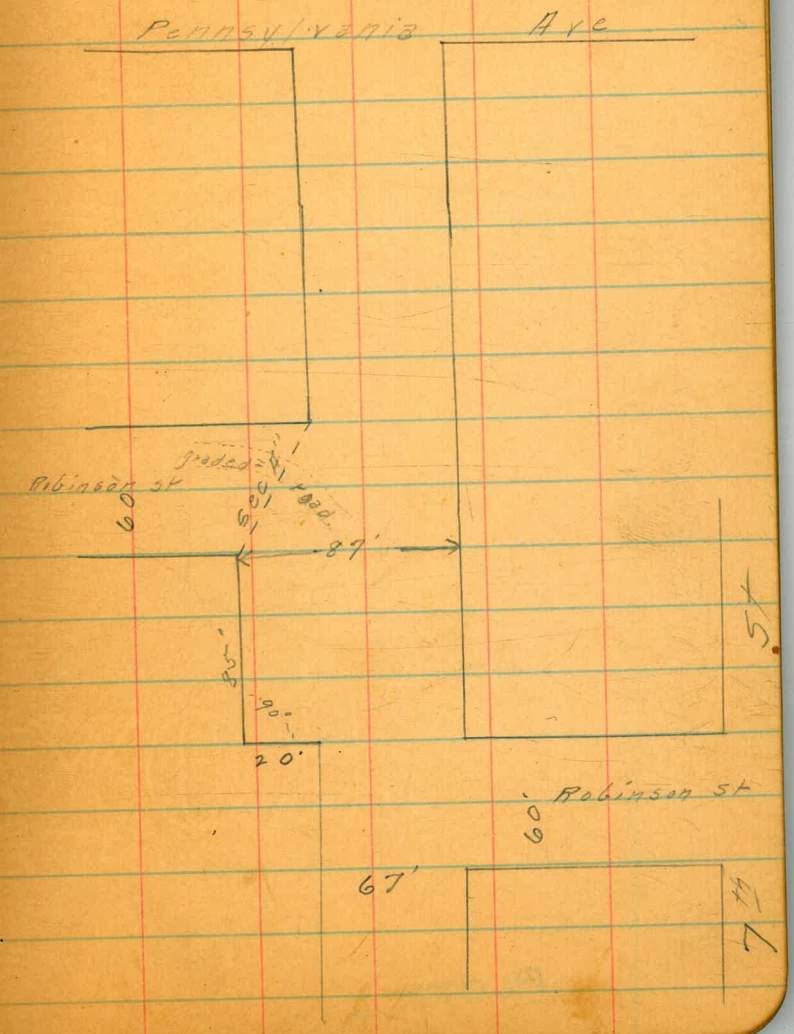
POSTED



Levels on 8th St Robinson to Robinson — 5/21/09 — Dunkle, Shaw, Dizier

B.M. brass plg Robinson & 6th St 285.51

B.M.	1.51	287.02		
T.P.	2.08	277.26	11.84	275.18
		S.L. Robinson		S Plot
0+0 = W.L. 8th cement walk			3.10	274.16
0+12 8 = cement curb			3.3	274.0
0+33.0 = center bet. present curb			5.2	272.1
0+53 2 = end cement curb			4.3	273.0
0+67 = E.L. for a 67' St			4.0	273.3
0+87 = E.L. for an 87' St.			5.6	271.7
		0+25' S		
0+0 = E.L. 8th St			16.6	260.7
0+21 = E.L. graded road			9.5	267.8
0+41 W.L.	"	"	8.3	269.0
0+60			15.4	261.9
0+75			14.7	262.6
0+87 = W.L. 8th St			17.5	259.8
T.P.	0.66	266.84	11.08	266.18



266.84

0+50 S

0+0 = W.L. 8th St	11.5	255.3
0+31	12.4	254.4
0+50 = W.L. road	2.5	264.3
0+62 = E.L. "	2.6	264.2
0+87 = E.L. 8th St.	15.9	250.9
0+85 5 = N.L. Robinson		
0+0 E.L. 8th St	19.7	247.1
0+20 = E.L. road	6.2	260.6
0+32 = W.L. "	5.8	261.0
0+50	18.2	248.6
0+87 = W.L. 8th St	21.0	245.8

Sec "A" see plot P. 52

0+0 = S.E. cor Rol 88th St	2.7	264.1
0+20 = S.L. road	5.5	261.3
0+37 = N.L. "	6.7	260.1
0+63 8 = N.E. Rol 8th	19.7	247.1

PLOTTED

Levels Dalbergia St. from 1st St S. of 37th To
city Limits ,, 100' wide
B.M. R.R. SPK Boston & 31st St 50.52

Dunkle
Shaw
Dezel

B.M.	5.95	56.47		
T.P	1.43	49.60	8.30	48.17
T.P.	4.68	48.93	5.35	44.25

POSTED S.L. St

E			4.7	44.2
ctr			8.5	40.4
W			14.5	34.4
		0+50 S		
W			11.3	37.6
ctr			7.2	41.7
E			4.1	44.8
		1+0		
E			4.1	44.8
ctr			7.6	41.3
W			11.5	37.4

PLOTTED

48.93

		1+50		
W			10.7	38.2
ctr			7.2	41.7
E			3.8	45.1
		2+0		
E			3.5	45.4
ctr			5.2	43.7
W			7.5	41.4
		2+45		
W			5.2	43.7
ctr			4.7	44.2
E			5.6	43.3
		2+70 on center Line		
center			7.4	41.5
		2+97 on W. Line		
W			9.3	39.6
T.P.	2.42	38.78	12.57	36.36
T.P.	0.81	26.93	12.66	26.12

26.93

2+70 on E. Line

E	8.1	18.8

3+0 on center Line

center	8.5	18.4

3+17 on W. Line

W	9.3	17.6

2+93 on E. Line = W. rail N.C.O.

E	5.10	21.8

3+50

E	22.3	4.6
0+54 = W. rail N.C.O.	6.5	20.4
W	12.0	14.9

4+0

W	8.7	18.2
0+5 = W. rail	7.6	19.3
ctr	26.5	0.4
E	28.5	−1.6

PLOTTE

26.93

on W. Line

4+09 = W. rail N.C.O.

W	7.8	19.1

4+25 on W.L. = R.R. bridge abutment

W Top	10.3	16.6
bottom	28.5	−1.6

T.P.	0.84	15.13	12.64	14.29
T.P.	2.46	4.93	12.66	2.47

4+50

E	9.2	−4.3
ctr.	6.0	−1.1
W	6.9	−2.0

5+0

W	9.9	−5.0
ctr	8.5	−3.6
E	9.0	−4.1

4.93

5+50

E	6.1	-1.2
Ctr	5.6	-0.7
W	8.0	-3.1

6+0 - N.L. Pluto 5+60'

W	6.4	-1.5
Ctr	8.3	-3.4
E	4.8	0.1

Center

E	6.1	-1.2
Ctr	8.3	-3.4
W	4.8	0.1

S.L. Pluto.

W	8.3	-3.4
Ctr	8.3	-3.4
E	6.1	-1.2

PLOTTED

4.93

0+50 E

E	6.0	-1.1
Ctr	8.2	-3.3
W	8.3	-3.4

1+0

W	5.3	-0.4
Ctr	8.3	-3.4
E	8.0	-3.1

1+50

E	7.8	-2.9
Ctr	7.9	-3.0
W	8.2	-3.3

2+0

W	7.8	-2.9
Ctr	7.5	-2.6
E	7.4	-2.5

		4.93		
		2+50		
E			6.9	-2.0
ctr			7.3	-2.4
W			6.4	-1.5
		3+0		
W			7.1	-2.2
ctr			7.0	-2.1
E			7.2	-2.3
		3+50		
E			7.2	-2.3
ctr			7.3	-2.4
W			6.4	-1.5
		4+0		
W			6.5	-1.6
ctr			6.3	-1.4
E			7.2	-2.3
T.P.	6.52	6.73	4.72	0.21

PLOTTED

		6.73		
		4+50		
E			9.1	-2.4
ctr			7.8	-1.1
W			11.4	-4.7
		5+0		
W			8.8	-2.1
ctr			7.4	-0.7
E			3.4	3.3
		5+50		
E			3.1	3.6
ctr			5.1	1.6
W			4.2	2.5
		5+550 on W.L. = E. rail N.C.O.		
E. rail			3.5	3.2
		5+850 on W.L. = W. rail N.C.O.		
W rail			3.7	3.0

6.73

6+0 = N.L. Rigel St, 60' wide		
W	4.2	2.5'
0+4 = N. Rail	3.8	2.9
ctr	6.9	-0.2
E	5.0	1.7
6+05 = N. Rail Calif Southern R.R.		
N. Rail	3.9	2.8
Center		
0+0 = E Line	6.9	-0.2
0+32 = N. Rail Calif Sou.	3.9	2.8
ctr	7.7	-1.0
0+89 = N. rail N.C.O. R.R.	4.0	2.7
W	7.6	-0.9
S.L. Rigel St		
0+0 W. Line	8.9	-2.2
0+17 = N. rail N.C.O	4.1	2.6
0+29 = N. rail Calif Sou	4.0	2.7
Center	9.2	-2.5'
E	7.2	-0.5'

PLOTTED

6.73

0+24.5 on W.L. = N. rail Calif Sou. R.R.		
N. rail Calif Southern	4.2	2.5'
0+50.5		
0+0 E.L.	7.4	-0.7
ctr	10.1	-3.4
0+71 = N. rail N.C.O. R.R.	4.1	2.6
W	8.4	-1.7
1+0		
0+0 = W.L.	7.2	-0.5'
0+36 = N.R. N.C.O.	4.1	2.6
ctr	4.5	2.2
E	7.3	-0.6
1+50		
0+0 = E.L.	6.9	-0.2
ctr	3.9	2.8
0+57 = N. rail N.C.O	4.3	2.4
W	7.4	-0.7

POSTED

6.73

Note. N.C.B.O. Track in center of st from sta 2+0 South
All center elev. Taken on W. rail,

		2+0		
W			7.3	-0.6
ctr			4.3	2.4
E			6.7	0.0
		2+50		
E			4.9	-3.2
ctr			4.4	2.3
W			6.5	0.2
T. P.	2.91	5.26	4.38	2.35
		3+0		
W			5.5	-0.2
ctr			3.0	2.3
E			4.4	0.9
		3+50		
E			5.1	0.2
ctr			3.0	2.3
W			5.2	0.1

PLOTTED

5.26

		4+0	
W		6.6	-1.3
ctr		3.0	2.3
E		5.1	0.2
		4+50	
E		5.1	0.2
ctr		3.0	2.3
W		5.2	0.1
		5+0	
W		5.3	0.0
ctr		3.0	2.3
E		5.4	-0.1
		5+50	
E		4.6	0.7
ctr		3.0	2.3
W		5.5	-0.2

5.26

6+0=N.L. Sive St 60' wide

W	5.5	-0.7
ctr	3.0	7.3
E	4.5	0.8

center

E	4.4	0.9
ctr	3.0	7.3
W	5.5	-0.7

5.L. Sive St

W	5.5	-0.7
ctr	2.9	7.4
E	4.4	0.9

0+50 S

E	3.9	1.4
ctr	2.7	7.6
W	4.9	0.4

PLOTTED

5.26

1+0

W	4.6	0.7
ctr	2.5	7.8
E	3.9	1.4

1+50

E	7.6	-7.3
ctr	2.1	3.7
W	3.8	1.5

2+0

W	3.3	7.0
ctr	1.5	3.8
E	5.1	0.2

2+50

E	2.8	2.5
ctr	1.1	4.2
W	3.0	2.3
T.R.	11.53	14.29	2.50	2.76

POSTED

		14.29			
		3+0			
W			11.8	2.5	
cte			9.1	5.2	
E			12.9	1.4	
		3+50			
E			11.9	2.4	
cte			8.2	6.1	
W			8.1	6.2	
		4+0			
W			4.9	9.4	
cte			7.2	7.1	
E			13.2	1.1	
		4+50			
E			9.1	5.2	
cte			6.4	7.9	
W			4.5	9.8	

PLOTTED

		14.29			
		5+0			
W			4.8	9.5	
cte			5.7	8.6	
E			7.2	7.1	
		5+50			
E			8.3	6.0	
cte			4.8	9.5	
W			5.1	9.2	
		6+0 = N.L. Thor st 60'			
W			5.7	8.6	
cte			3.9	10.4	
E			8.6	5.7	
T.P.	11.14	19.72	5.67	8.62	Hub N.W. Cor Thor.
		center			
E			12.8	6.9	
cte			8.6	11.1	
W			12.1	7.6	

1972

S.L. Thor

W	10.4	9.3
Ctr	8.0	11.7
E	11.6	8.1

0+50 S

E	8.8	10.9
Ctr	6.8	12.9
W	8.1	11.6

1+0

W	5.7	14.0
Ctr	5.5	14.2
E	6.9	12.8

1+50

E	4.9	14.8
Ctr	4.1	15.6
W	6.3	13.4

PLOTTED

1972

2+0

W	5.3	14.4
Ctr	2.9	16.8
E	2.6	17.1

2+50

E	1.1	18.6
Ctr	1.6	18.1
W	3.8	15.9
T.P. 8.82	25.08	3.46 16.26

3+0

W	6.9	18.7
Ctr	5.9	19.7
E	4.4	20.7

3+50

E	2.9	22.2
Ctr	5.0	20.1
W	5.4	19.7

25.08

4+0

W	4.0	21.1
Ctr	4.5	20.6
E	2.7	22.4

4+50

E	3.3	21.8
Ctr	4.4	20.7
W	4.7	20.4

5+0

W	5.4	19.7
Ctr	4.4	20.7
E	4.5	20.6

5+50

E	5.5	19.6
Ctr	4.4	20.7
W	6.4	18.7

PLOTTED

25.08

6+0 = N.L. Una st 60' wide

W	7.0	18.1
Ctr	4.4	20.7
E	5.1	20.0

center

E	6.1	19.0
Ctr	4.3	20.8
W	7.9	17.2

S.L. Una

W	7.3	17.8
Ctr	4.3	20.8
E	6.5	18.6

6+50 S

E	5.3	19.8
Ctr	4.2	20.9
W	6.4	18.7

POSTED

		25.08			
		1+0			
W			6.2	18.9	
ctr			4.2	20.9	
E			4.8	20.3	
		1+50			
E			4.1	21.0	
ctr			4.2	20.9	
W			5.8	19.3	
		2+0			
W			5.9	19.2	
ctr			4.2	20.9	
E			4.40	20.7	
		2+50			
E			5.2	19.9	
ctr			4.3	20.8	
W			5.1	20.0	
T. P.	8.51	23.11	10.48	14.60	3.0 Underpass

PLOTTED

		23.11			
		3+0			
W			5.0	18.1	
ctr			2.5	20.6	
E			3.7	19.4	
		3+50			
E			4.8	18.3	
ctr			2.9	20.2	
W			5.2	17.9	
		4+0			
W			4.9	18.2	
ctr			3.5	19.6	
E			5.5	17.6	
		4+50			
E			6.9	16.7	
ctr			4.3	18.8	
W			3.5	19.6	

23.11

5+0

W		5.0	18.1
ctr		5.0	18.1
E			

5+50

E		7.9	15.7
ctr		5.9	17.2
W		5.8	17.3

6+0 = N.L. Vesta St 60' wide

W		8.3	14.8
ctr		6.3	16.8
E		6.7	16.4

Center

E		7.7	15.4
ctr		6.9	16.7
W		8.4	14.7
T.P.	6.66	21.73	8.04	15.07

PLOTTED

21.73

S.L. Vesta

W		7.4	14.3
ctr		5.1	16.6
E		6.2	15.5

0+50

E		5.6	16.1
ctr		5.0	16.7
W		7.3	14.4

1+0

W		7.0	14.7
ctr		4.8	16.9
E		5.7	16.0

1+50

E		4.8	16.9
ctr		4.8	16.9
W		6.4	15.3

21.73

2+0

W	6.0	15.7
Ctr	4.7	17.0
E	5.6	16.1

2+50

E	5.4	16.3
Ctr	4.7	17.0
W	6.2	15.5

3+0

W	5.7	16.0
Ctr	4.8	16.9
E	5.1	16.6

3+50

E	4.4	17.3
Ctr	4.9	16.8
W	5.7	16.0

PLOTTED

21.73

4+0

W	5.3	16.4
Ctr	5.0	16.7
E	4.4	17.3

4+50

E	4.0	17.7
Ctr	5.3	16.4
W	4.2	17.5

5+0

W	4.9	16.8
Ctr	5.7	16.0
E	3.2	18.5

5+50

E	4.3	17.4
Ctr	6.8	14.9
W	5.4	16.3

		21.73		
	0+0 = N.L. 39th St 60' wide			
W			6.4	15.3
ctr			8.4	13.3
E			4.9	16.8
		Center		
E			6.9	14.8
ctr			9.3	13.4
W			8.5	13.2
		S.L. 39th St		
W			10.4	11.3
ctr			10.0	11.7
E			9.8	11.9
T.P.	3.49	13.33	11.89	9.84
		0+50 S		
E			5.8	7.5
ctr			7.7	10.6
W			7.7	9.6

PLOTTED

		13.33		
		1+0		
W			4.4	8.9
ctr			3.6	9.7
E			8.3	5.0
		1+50		
E			8.9	4.4
ctr			4.2	9.1
W			8.4	4.9
		2+0		
W			9.6	3.7
ctr			4.6	8.7
E			8.8	4.5
		2+50		
E			8.4	4.9
ctr			4.9	8.4
W			9.4	3.9

13.33

3+0

W 9.3 4.0

Ctr 4.9 8.4

E 8.3 5.0

3+50

E 8.3 5.0

Ctr 5.1 8.3

W 9.1 4.2

4+0

W 8.9 4.4

Ctr 5.1 8.2

E 7.9 5.4

4+50

E 8.0 5.3

Ctr 5.1 8.2

W 8.6 4.7

PLOTTED

1333

5+0

W 8.3 5.0

Ctr 5.0 8.3

E 7.7 5.6

5+50

W 7.5 5.8

Ctr 4.5 8.8

W 8.3 5.0

T.P. 11.04 15.56 / 16.56 8.81 / 7.81 4.52 / 5.52

6+0 = N.L. Yama St 60' wide

1656 H.I.

W 11.1 4.5

Ctr 7.1 8.5

E 10.9 4.6 +1.0'

Center

E 10.5 5.1

Ctr 6.7 8.9

W 10.7 4.9

1333
7.81
5.52
11.04
16.56
.71
9.6

15.56

S.Z. Yama st

W		10.6	5.0
ctr		6.3	9.3
E		10.1	5.5
	0+50 S		
E		9.6	6.0
ctr		5.4	10.2
W		10.7	4.9
	1+0 S		
W		9.8	5.8
ctr		4.2	11.4
E		9.5	6.1
	1+50		
E		8.6	7.0
ctr		3.2	12.4
W		10.2	5.4

PLOTTED

15.56

		2+0		
W			10.5	5.1
ctr			1.7	13.9
E			9.1	6.5
		2+50		
E			7.8	7.8
ctr			0.1	15.5
W			10.3	5.3
T.P.	11.71	26.64	0.63	14.93
		3+0		
W			16.3	10.3
ctr			9.8	16.8
E			11.3	15.3
		3+50		
E			0.4	26.2
ctr			8.1	18.5
W			5.0	21.6
T.P.			0.67	25.97
				26.01

+10'

POSTED

Stakes 3+50
Nail
E. side

PLOTTED

	6.10	6.96		0.86	Bm Main & Rigel
E L Rigel DR			4.40		
TP			1.37	5.59	
TP	4.00	6.76	4.20	2.76	6.96
E L Sive S Rail			3.90	2.9	4.20
TP	10.62	14.32	3.06	3.70	2.76
E L Thor			2.55	11.8	3.70
TP	10.40	23.26	1.46	12.86	10.62
E L Una TP S Rail	2.91	23.67	2.50	20.76	14.32
[illegible]			9.17	Una Bm 14.50	2.55
TP	2.30	22.37	3.6	20.07	11.8
E L Vesta	5.2		5.40		14.32
TP	5.27	22.14	5.50	16.87	1.46
W L 29			9.15	11.30	12.86
E L 29	1.12	12.86	10.40	11.74	10.40
E L Yama			2.5	18.3	23.26
			0.46	12.40	2.60
					20.76
					2.91
					23.67
					9.17
					14.50
					23.67
					3.6
					20.07
					2.30
					22.37
					5.40
					16.97
					22.37
					5.50
					16.87
					5.27
					22.14
					10.4
					11.54
					12.86

	2.30	14.74		12.44
E L Yama N			8.4	6.3
E L Yama S			8.7	6.0
		10.80		
W L Tambert			1.20	9.6
100 W			2.2	8.6
50 W			1.8	9.0

Tp	12.09	17.68		5.59	
					13' m
	10.23	25.26	2.65	15.03	Collinear
					Rigid 5.59
					2.09
					13' m 17.68
	9.40	28.20	6.46	18.80	Bent 2.65
					15.03
	5.72	33.00	0.92	27.28	10.23
					25.26
					13 m 6.46
			4.67	28.33	Radia 18.80
					9.40
					28.20
					.92
					27.28
					5.72
					33.00
					4.67
					28.33

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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.		