

Field Book.

India North of Grape.
India South of Grape.

9

TRANSIT

F.B. 693

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	2½	21	49	41	95½
2	4½	22	51½	42	98
3	7	23	53½	43	100½
4	9½	24	56	44	102½
5	11½	25	58½	45	105
6	14	26	60½	46	107½
7	16½	27	63	47	109½
8	18½	28	65½	48	112
9	21	29	67½	49	114½
10	23½	30	70	50	116½
11	25½	31	72½	51	119
12	28	32	74½	52	121½
13	30½	33	77	53	123½
14	32½	34	79½	54	126
15	35	35	81½	55	128½
16	37½	36	84	56	130½
17	39½	37	86½	57	133
18	42	38	88½	58	135½
19	44½	39	91	59	137½
20	46½	40	93½	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.
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

Index

1

India S. Group 1
India N 2

1

Std + 10 - Elev

Bm

1

Station S of Grape

Sta	+	H ₂	-	elev
Bm	1.69			48.29
0		49.98	4.93	45.05
+13			4.90	45.08
+23			4.75	45.23
+33			4.62	45.36
+42			4.47	45.51
+32			4.28	45.70
+58			4.14	45.84
+67			4.27	45.71
+92			4.10	45.88
+17			3.72	46.26
+42			3.53	46.45
+67			3.54	46.44
+92			3.47	46.51
2+17			2.86	47.12
+42			2.80	47.18
+67			2.64	47.34
+92			2.71	47.27
3+17			2.57	47.41
+42			2.24	47.74
Bm			2.93	47.05

PC V 22' W center Grape

0+42 S of Grape

FT

N S Tin

India St. W. Grate

Stn	+	H ₂	-	Elv
Bm	0.84	49	17	48.29
0				
+10			4.11	45.06
+20			4.02	45.15
+30			3.92	45.35
+40			3.77	45.40
+50			3.74	45.43
+56			3.70	45.47
+67			3.87	45.80
+92			3.67	45.70
1+17			3.48	45.69
+42			3.36	45.81
+67			3.14	46.03
+92			3.17	46.00
2+17			3.01	46.16
+42			3.10	46.07
+67			3.00	46.17
+92			2.91	46.26
3+17			2.96	46.21
+42			2.76	46.41
Bm	4.13	50.30	3.01	46.16 46.17

S. S. Hawthorn
India S. Hawthorn

India N of Hawthorn

Stn	+	H ₂	-	Elev
+62		5030	3.85	46.45
+82			3.63	46.67
4+02			3.68	46.62
+22			3.70	46.60
+47			3.63	46.67
+72			3.54	46.76
+97			3.72	46.58
5+22			3.81	46.49
+47			3.88	46.42
+72			3.38	46.92
+97			3.43	46.87
6+22			3.20	47.10
+74			3.43	46.87
+72			3.49	46.81
+97			3.13	47.17
7+23			3.10	47.20
Bm 4.04	51.24		3.10	47.20
+43			3.91	47.33
+63			3.63	47.61
+83			3.70	47.54
8+09			3.63	47.61

Hawthorn St

N S Hawthorn St

S S Ivy St 47.50

Ivy & Duden

Ivy St

N S Ivy

Index of cost

Sto	F	HO	-	Clu	
+28		57.24	3.90	47.34	
+53			3.83	47.41	
+78			3.62	47.62	
9+09			3.50	47.74	
+28			3.27	47.97	
+53			3.28	47.96	
+78			3.28	47.96	
10+03			3.35	47.89	
+28			3.41	47.83	
+53			3.17	48.07	
+68			3.09	48.15	
1000	10.91	57.44	4.70	46.54	465.3
+79			9.38	48.06	
+90			9.02	48.42	
11+01			8.92	48.52	
+12			8.67	48.77	
+23			8.55	48.89	
+34			8.28	49.16	
+45			8.21	49.33	
+56			4.09	53.35	

PC 48.4

Barve India to Jumper

Sta	+	H.S	-	Elv
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467		57.44	3.30	54.14
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+74			2.36	51.88
-----	--	--	------	-------

+87				
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+92			2.26	55.18
-----	--	--	------	-------

#	6.38	62.76	1.06	56.38
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PT

Summer St of India

Sta	T	HD	-	Elev
0		62.76		
+13			7.45	53.33
+38			7.16	55.60
+63			5.91	57.45
+88			4.63	58.13
1+13			4.06	58.70
+38			3.37	59.39
+63			1.73	61.03
Bm	11.45	68.48	5.73	57.03
2			4.95	63.53
+38			3.74	64.70
+63			7.13	61.35
+88			9.26	59.22
3+13			11.15	57.35
+38			11.47	57.01
#	8.66	66.82	10.32	56.16
+63			11.53	53.29
+88			6.75	60.07
4+13			3.37	63.45
#	11.27	77.11	0.98	65.64

N S Columbia

Columbia St
N S Columbia

Jumpers C of State

Sto	+	HJ	-	CLW	
4+58		77.11	8.87	68.24	
+75			2.76	74.35	
BM	10.95	83.16	4.91	78.20	72.21
5+13			6.38	76.78	
+38			2.26	80.90	
+63			1.14	83.07	
#	10.69	93.13	1.72	82.44	
+88			8.84	84.34	
6+13			7.23	85.20	
+38			5.59	87.54	
+63			3.72	89.41	
+74			2.90	90.23	
+84			2.22	91.91	
+94			1.60	92.53	
7+04			0.78	92.35	
#	10.04	102.25	0.92	92.21	
+14			8.74	93.51	
+24			7.77	94.48	
+33			7.00	95.25	
+43			6.12	96.13	

W S State St.
State
State & Jumper
C S State St.

FC

Curve Sumner to Union

Sta	T	H ₂	-	Elev
+53		102.25	5.52	96.73
+63			4.65	97.60
+73			4.14	98.11
+83			3.87	98.38
Bm			8.11	99.14

FT 35-3.5. S. S. Sumner
Sumner & Union St.

Winn St & of Dumper
Sto 7 H 9 - 50 Elev

B.M.	7.76	101.91		94.15
+15			3.13	98.78
+40			3.12	98.79
+65			3.27	98.64
+90			3.47	98.44
1+15			3.81	98.10
+40			4.95	96.96
+65			10.43	91.48
+90			9.52	92.39
2+15			8.86	93.05
+40			6.29	95.62
+65			3.54	98.37
+83			3.35	98.56
3+05			2.54	99.37
+25			2.16	99.75
+45			2.24	99.67
#	4.22	103.95	2.18	99.73
B.M.			0.50	103.45
+70			3.93	100.02
+95			3.65	100.30

101.91
95
2.91

N to Dug 99.50

Dug St.

S to Dug

Winn St & Dug ex base

Winnipeg S of Lumber

Sta	+	H/O	-	blew
4+30		103.95	3.64	101.31
+45			3.49	101.46
+70			3.27	100.68
+95			3.08	100.87
3+20			2.83	101.12
1+45			2.60	101.35
+70			2.41	101.54
+95			2.19	101.76
6+20			1.94	102.01
2+45			1.80	102.15

S. L. Hawthorn Flash Tank

Columbus - N of Grapes

Sta	+	HS	-	Elv
BM	9.12	67.65		58.55
0			10.83	58.82
+13			4.08	59.57
+23			6.77	60.98
+33			6.12	61.53
+42			5.70	61.95
+52			5.46	61.79
+58			5.91	61.74
+67			5.71	61.94
+72			5.58	62.07
+17			5.60	62.05
+42			5.35	62.30
+67			4.96	62.69
+92			4.44	63.17
2+17			3.46	63.79
+42			3.51	64.34
+67			3.02	64.63
+92			2.81	64.84
3+17			2.46	65.19
+42			2.53	65.13
#	4.84	68.37	4.12	63.53

HC

67.65
63.50
4.15

HT

S. S. Hawthorn

Columbia N Hawthorn

Sto	+	H ₂	-	Elv
+63		68.57	3.25	65.12
+83			2.63	65.79
4+03			3.69	64.73
+23			3.57	64.80
Bm			0.32	68.03
+48			4.07	64.30
+73			4.76	63.61
+98			6.08	61.29
5+23			5.06	63.31
+48			3.77	64.60
+73			3.64	64.73
+98			3.41	64.96
6+23			3.26	65.11
+48			3.18	65.19
+73			2.67	65.70
+96			3.52	64.85
6+23			3.31	64.86
#	9.40	74.10	3.67	64.70
Bm			1.91	72.19

Hawthorn St

N S Hawthorn

Columbia St. S Grape

Sta	+	#	-	alt
Bm	2.64	61.19		58.55
0			5.50	55.69
+10			5.73	55.46
+20			6.08	55.11
+30			5.94	55.25
+40			6.05	55.19
+50			6.12	55.07
+56			6.52	54.67
+67			7.87	53.32
+92			11.68	49.51
1+17			11.53	49.66
+42			7.69	53.50
#	7.25	66.48	2.00	59.19
+67			4.41	62.07
+92			2.15	64.33
2+17			2.83	63.66
+42			3.17	63.31
+67			3.29	63.19
+92			3.29	63.19
3+17			3.37	63.11
+42			3.37	63.11
Bm			1.53	64.55

PC

0+92 S S Grape

FIT

Columbia St. South of H St.

Sta	+	HD	-	Elv
Bm	5.21	8.92		3.71
0			3.66	5.26
+10			4.64	4.28
+20			4.67	4.25
+30			5.11	3.81
+40			5.10	3.82
+50			5.03	3.89
+56			4.77	4.15
+75			4.45	4.47
1			4.48	4.44
+25			5.21	3.71
+30			5.34	3.58

State St South of Jumper

Sewer

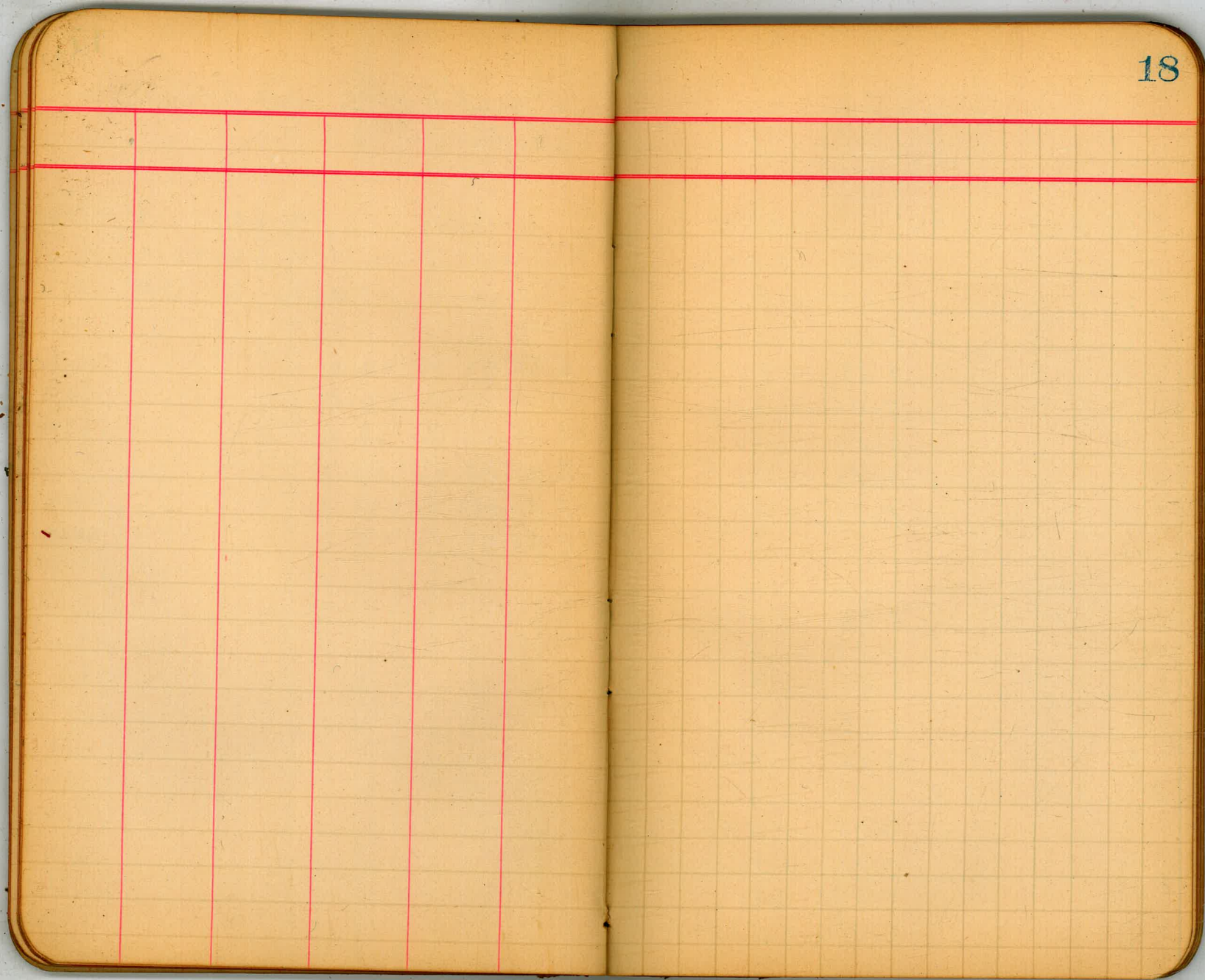
Grades for Masonry

Building on 6th & H

B.M. + H.O. - elev Grade

but

B.M.	2.67	30.31		27.64	
#	5.86	31.99	4.14	26.13	
#	4.41	31.51	4.89	27.10	
0				20.63	
+25			4.96	26.53	21.20
+50			5.47	26.04	21.77
+75			5.96	25.55	22.35
1			6.32	24.99	22.92
+25			6.67	24.84	23.49
+44			6.58	24.93	23.93
					1.60



California St
Sta + H₂O - Elev

Bm	3.23	2.94	-0.29
0		3.28	-0.34
+10		3.25	-0.31
+20		3.12	-0.14
+30		3.67	-0.73
+40		4.58	-1.64
+50		4.78	-1.44
+56		5.24	-2.30
+81		5.38	-2.44
+06			
+31			
+56		4.29	-1.35
+81		4.50	-1.56
2+06		4.39	-1.45
+31		4.40	-1.46
+36		3.96	-1.02
#	5.84	5.15	3.63 -0.69
+81		6.12	-0.97
3+06		5.71	-0.36
+31		5.50	-0.35
+55		5.67	-0.52

H.H.
A.H.

May 24 1881

19

North of H St

H & Atl.

FIT of H St

S & G St

bal north of H St

H. H.
A. H.

May 25 1888

Sta	+	H 9	-	Clear
+92.5		5.15	4.37	0.78
4+30			4.64	0.51
Bm	3.95	5.49	3.61	1.54
+55			4.87	0.62
+80			4.84	0.65
5705			4.61	0.88
+30			5.13	0.86
+55			4.42	1.07
+80			3.82	1.67
6+05			3.69	1.80
+30			3.83	1.66
+55			3.60	1.89
+80			3.11	2.38
7+05			3.34	2.15
+30			2.67	2.82
#	4.92	8.17	2.24	3.25
Bm	4.37	7.70	4.84	3.33
+67.5			4.34	3.36
8+05			4.34	3.36
+30			4.79	2.91

G St

N S St

Bm bal & S St

S S St

bal & F

F St

N S St

Cal North of H St

H St B St

May 25

Sto	+	H St	-	Blv
8+55		7.70	9.82	2.98
+80			4.70	3.00
9+05			4.82	2.88
+30			4.89	2.81
+55			4.75	2.93
+80			4.16	3.54
10+05			3.54	4.16
#	3.93	9.43	2.20	5.50
B.M.			3.00	6.43
+30				
+55				
+80			5.12	4.31
11+05			5.25	4.18
B.M.	2.99	9.42		6.43
+925			5.12	4.30
+80			5.12	4.30
12+05			5.21	4.21
+30			5.11	4.31
+55			4.99	4.43
+90			4.95	4.47

S S B St

B.M.

C St

N S C St

California North of

H St

Sta	f	H ₂ O	-	elev
13+05		9.42	4.43	4.59
+30			4.55	4.87
+35			4.44	4.98
+40			4.46	4.96
14+05			4.21	5.21
+30			4.03	5.39
+35			4.64	4.78
+40			3.64	5.78
B.M.	3.87	11.39	1.90	7.52
15+05			5.97	5.42
+30			5.00	6.39
+35			5.07	6.32
+40			6.00	5.39
16+05			4.87	6.52
+30			5.00	6.39
+35			5.34	6.05
+40			5.34	6.05
17+05			5.49	5.90
+30			5.26	6.13
+35			5.07	6.32
+40			4.78	6.61

S S D Street

N S D St

May 29

23

California North

Sta	+	HS	-	Elev
18+05		11.39	4.77	6.62
+30			4.63	6.76
+55			4.65	6.74
+72			4.61	6.78
Bm	3.91	11.96	3.34	8.05
+92			4.93	7.03
19+12			5.01	6.95
+32			5.23	6.73
+52			5.10	6.86
+77			4.91	7.05
20+02			5.00	6.96
+27			4.85	7.11
+52			5.08	6.88
+77			5.16	6.80
21+12			4.91	7.05
+27			4.88	7.08
+52			4.86	7.10
+77			4.82	7.14
22+02			4.47	7.49
+27			4.43	7.53
+52			4.79	7.17

of H St H. Hamilton
A. HamiltonS S B St
Cal & B St exp on of platform

B St

N S B St

11.96

7.50

4.46

S S B St

California Wash

Sta	+	HO	-	Eliv
#	2.93	11.03	3.86	8.10
772			3.80	7.23
+72			3.61	7.42
23+12			3.50	7.53
+32			3.59	7.44
Bm			2.84	8.19
+57			3.74	7.29
+82			3.76	7.27
24+07			3.67	7.36
+32			3.60	7.43
+57			3.58	7.45
+82			3.43	7.60
25+07			3.19	7.84
+32			3.30	7.73
+57			3.19	7.84
+82			3.17	7.86
26+07			3.04	7.99
+32			3.02	8.01
#	4.64	13.94	1.77	9.26
Bm			4.40	9.50

May 31 1888
 H H amlin
 H H amlin

of H St

B St
 N S B St
 Cal & B St

S S St
 Cal & A

California Street

Sta	+	HI	-	Elv
-----	---	----	---	-----

BM	3.14	14.50		11.36
+52			6.18	8.32
+72			5.87	8.88
+92			5.41	8.69
27+12			5.80	8.70
+37			5.51	8.99
+62			5.37	9.13
+87			5.31	9.19
28+12			5.10	9.40
+37			5.11	9.39
+62			4.96	9.54
+87			4.79	9.71
29+12			4.54	9.96
+37			4.36	10.14
+62			4.26	10.24
+87			4.17	10.33
30+12			3.98	10.52

N of H

June 2 1886
H Hamlin
A Hamlin

25

ASH

N S ASH

S S ASH ST

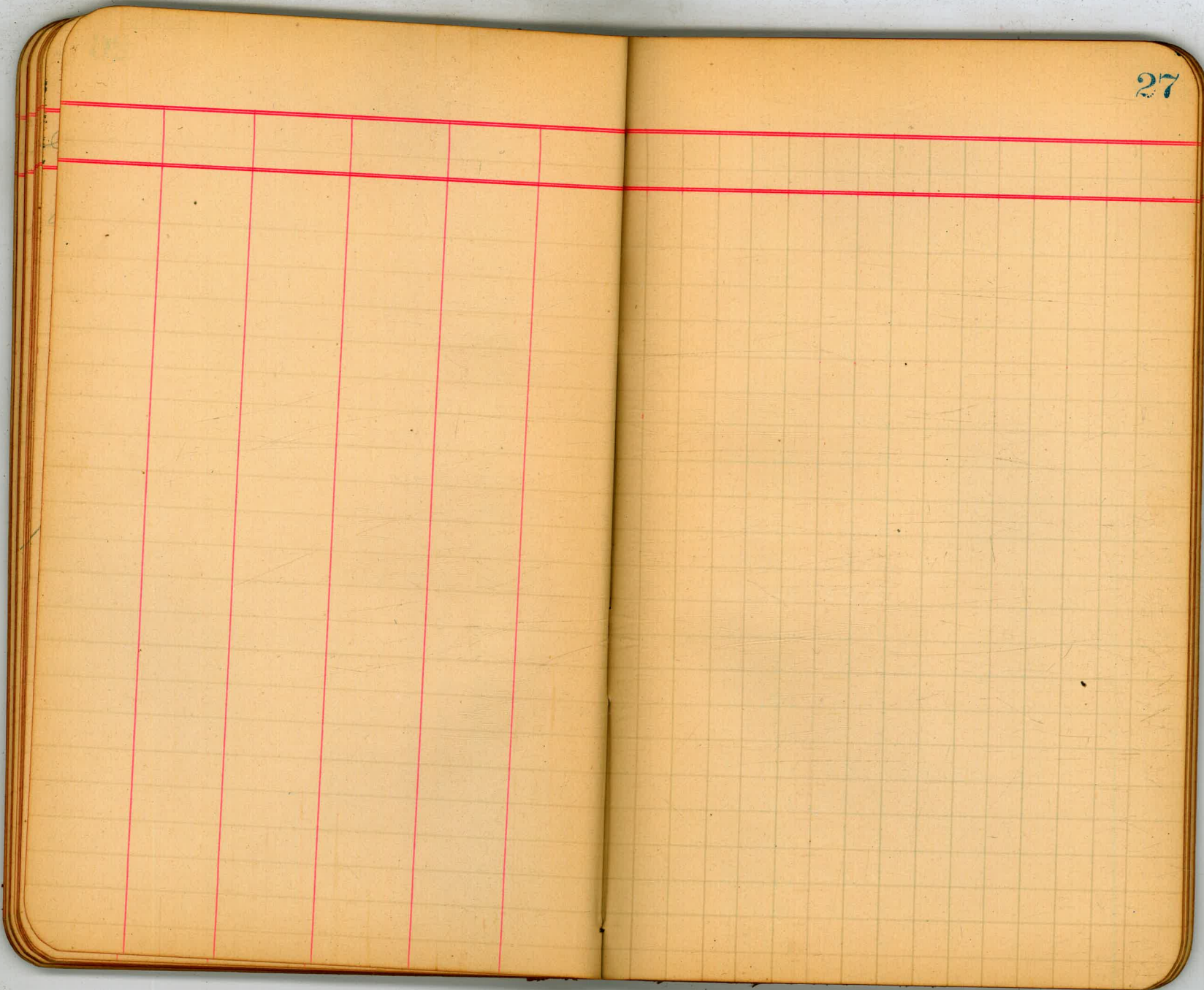
June 13 1888
H. H. Hamlin
A. Hamlin

26-

Ash

W. W. Smith of

Sta	r	HD	-	Blv
Bm	7.29	46.11		38.92
0			5.16	40.95
+10			5.25	40.86
+20			5.18	40.93
+30			5.11	41.00
+40			4.92	41.19
+49			4.72	41.39
+54			4.49	41.62
+79			4.37	41.74
+104			3.61	42.50
+29			2.99	43.12
+59			2.66	43.51
+79			2.44	43.67
+89			2.07	44.04



Columbia St. South of

Jumper

Sta	+	HT	-	Elev
B 9m	5.35	62.39		57.04
0			0.18	62.21
+10			1.78	60.51
+20			3.99	58.45
+30			5.74	56.65
+40			7.51	54.88
+50			9.34	53.05
+60			10.17	52.22
+70			11.97	50.45
+82			11.42	50.97
+117			7.55	54.84
+42			6.19	56.20
+67			5.28	57.11
+92			3.69	58.70
2+17			1.98	60.41
#	8.26	64.95	1.70	60.69
+42			6.73	62.22
+67			5.53	63.42
+92			4.57	64.38
+117			4.03	64.92
+42			4.08	64.87
Bm			4.22	64.73

May 26 1882

H. Hamlin
A. Hamlin

Jumper

Sta	+	HO	-	Elev
B.M	6.82	79.03		72.21
0			7.56	71.47
+10			5.70	74.13
+20			3.82	75.21
+30			3.64	75.39
+40			2.88	76.15
+50			2.64	76.39
+58			2.88	76.15
+67			3.14	75.89
+92			4.04	74.99
+117			5.78	73.25
+92			8.68	70.35
+67			11.45	67.58
+92			9.67	69.36
+117			8.13	70.90
+42			6.33	72.70
+67			2.67	76.36
+92			1.95	77.08
+117			1.39	77.64
+42			1.13	77.90
#	4.52	82.56	0.99	78.04

7C

7T

N.S. of Long St

State St South of

Jennipier

May 26 1830

H Hamilton
A Hamilton

Sta	+	W	-	Elev
+62		82.56	4.66	77.90
+62			5.42	77.14
4+02			6.29	76.27
+22			6.14	76.38
Bm			7.39	75.17
+47			5.95	76.61
+72			5.50	77.06
+97			4.97	77.59
5+22			4.38	78.18
+47			3.77	78.79
+72			3.39	79.17
+97			3.04	79.52
6+22			2.77	79.79
+47			2.42	80.12
+72			1.99	80.57
+97			1.55	81.01
7+22			1.17	81.39
Bm			2.25	80.31

Log St

S. D. Log St.
State & Log St W. spk. fork

81.36
76.01
5.36

N. S. Hawthorn, Filush Fork
State & Hawthorn N. W. spk. P.

May 30 1888

31

1 St St

H. Hamlin
A. Hamlin

St. Anthony St. East of

Sta	+	HD	-	Elev
B M	9.16	174.15		164.99
0			10.02	164.13
+10			9.23	164.92
+20			9.84	165.31
+30			8.45	165.70
+40			7.76	166.39
+50			6.50	167.65
+56			5.99	168.16
+67			5.07	169.08
#	11.98	185.37	0.74	173.41
#	1.70	180.37	6.53	174.84
#	1.24	170.45	11.53	169.31
#	3.06	161.70	11.81	158.64
2+42			3.79	157.91
#	9.34	170.13	1.11	161.59
3+18			11.71	158.42
+28			8.77	161.36
+47			9.30	161.93
+62			10.98	159.15
+57			9.50	160.93

Hawthorn St. East of

Sta	+	H ₂	-	Elev
Bm	9.84	174.93		164.99
0			10.69	164.14
+18			9.90	164.93
+20			9.52	165.31
+30			9.13	165.70
+40			8.43	166.40
+50			7.18	167.65
+56			6.67	168.16
+67			5.75	169.08
#	9.06	183.03	0.86	173.97
+92			5.01	178.02
+117			5.66	177.37
+42			6.07	176.96
+67			5.58	177.45
+92			7.34	175.69
#	0.79	172.31	11.51	171.52
2+17			2.57	169.74
#	2.39	163.67	11.03	161.28
+38			3.48	160.19
#	7.86	160.66	10.87	152.80

May 30 1884

32

I St

H Hamilton
A Hamilton

PT

Hawthorne St East

Sta	+	H 9	-	Elev
+34		160.86	9.10	157.56
#	9.53	159.72	11.47	149.19
+78			11.07	147.65
+98			5.49	153.23
#	11.58	163.49	0.81	157.91
3+18			11.05	158.91
+28			8.07	161.42
#	8.45	176.98	0.96	168.53
Bm			1.51	175.47
Bm	12.7	167.80		166.53
5+28			7.72	160.08
+484			7.43	160.37
+38.4			8.53	159.27
+78.4			10.46	157.34
#	2.03	158.11	11.72	156.08
+98.4			5.34	152.77
4+18.4			8.01	150.10
#	1.40	148.07	11.44	146.67
+38.4			6.10	141.97
+58.4			9.43	138.64

June 1, 1884

H Hamlin

33

of 4 St A Hamlin

ET

End of Hawton

ET Elev on plug on 4' of set

BT on center line

Hawthorn St East

Sta	+	H ₀	-	Blv
-----	---	----------------	---	-----

4		148.02		
#	7.59	143.97	11.69	136.38
+78.4			9.10	134.87
+96.7=0			3.55	140.42
+10			0.36	143.61
#	10.94	154.23	0.73	143.25
+20			6.92	147.31
+30			5.39	148.84
+40			3.16	151.07
#	3.96	156.80	1.39	152.84
+50			1.82	154.98
+60			1.20	155.60
+70			2.39	154.41
+80			3.30	153.50
+90			4.43	152.37
1			5.13	151.67
+10			6.45	150.35
+30			4.24	152.56
+50			3.43	153.37
+70			5.65	151.15

June 1 1888

34

of 1st H Hamlin
H Hamlin
H Hamlin

FC Curve Hawthorn St

3rd St North of
Sta + H.D. - Elev

1790		156.80	9.34	147.46
#	9.23	155.19	10.44	145.96
2+10			11.39	143.80
+30			7.94	147.25
+50			4.30	150.89
+70			0.76	154.43
#	10.79	165.26	0.72	154.47
+90			9.52	155.74
3+10			6.97	158.29
+30			3.12	162.14
#	11.01	175.54	0.73	164.53
+50			7.68	167.86
3+77.7			4.72	170.88
+97.9			0.89	174.65
#	11.84	186.53	0.89	174.65
4+17.7			8.96	177.57
+37.7			4.09	182.44
+57.7			5.50	181.03
+82.7			6.01	190.52
5+07.7			1.64	184.89
#	11.65	197.33	0.85	185.68

Hawthorn

June 1 1896 35
H Hamlin
at Hamlin

ET
S S Craig

Craig St

N S Craig St

3rd St Work of
Sta + H₂ - Elev

543 2.7	197.33	7.44	199.89
+ 57.7		1.91	195.42
# 11.93	208.42	0.84	196.49
+ 82.7		10.61	197.81
6+ 07.7		8.20	200.22
+ 32.7		6.31	202.11
+ 57.7		3.40	205.02
+ 82.7		0.59	207.83
# 5.65	213.34	0.73	207.69
7+ 07.7		4.15	209.19
+ 32.7		2.59	210.75
+ 57.7		1.51	211.83
Don		9.04	204.30

Hawthorn

June 1 1936
H. Hamilton
H. Hamilton

S & Juniper St
3rd & Juniper

3rd St South of

Sta + H₂ - Blue

B ₁	1.26	167.79		166.53
#	2.74	158.75	11.78	156.01
0			11.43	147.32
+10.6			9.55	151.20
+20.6			2.85	155.90
#	11.21	168.81	1.15	157.60
+30.6			8.10	160.71
+40.6			5.64	163.17
+50.6			3.28	165.53
+60.6			2.81	166.60
+71.6			0.71	168.10
#	7.66	175.77	0.70	168.11
+80.6			4.31	171.46
+88.			3.69	173.08

June 4 1888
H. Hamlin 37
H. Hamlin

70

ET plug on 9" offset to West

71

3rd St South of
Sta + H2 - Elev

Bm	11.54	178.07		166.53
0+88			5.00	173.07
#	10.58	187.91	0.74	177.33
1+12			9.10	178.91
+37			5.39	182.52
+62			2.39	183.52
+87			1.37	186.54
#	4.65	191.43	1.13	186.78
2+12			3.71	187.72
+37			3.81	187.62
+62			4.54	186.89
+87			5.84	183.59
2+12			7.19	184.24
+37			8.47	182.96
+62.4			9.85	181.58
Bm			7.60	183.83

Hawthorn

AT

N. L. Grasse St

2nd Street North of
Sta + 49 - Elev

Bm	1.41	176.88		175.47
#	1.67	166.82	11.73	165.15
0			7.64	159.18
+10			10.89	155.93
#	8.78	163.87	11.73	155.09
+20			11.31	152.56
+30			11.31	152.56
+40			5.41	154.46
+50			0.96	162.91
#	10.79	173.84	0.82	163.05
+60			7.14	166.70
+70			1.21	172.63
#	11.49	184.64	0.69	173.15
+80			7.30	177.34
+90			3.58	181.06
#	11.34	195.13	0.85	183.79
1			10.88	184.25
+13.9			7.89	187.24
+26.6			7.31	187.92
+57.6			6.29	184.84

June 9 1884
H Hamilton 39
H Hamilton

ET

2nd Street North of

Sta	+	Had	-	Blor
1+76.6		195.13	5.79	189.34
2+01.6			5.34	189.79
+26.6			4.32	190.41
+37.6			4.05	191.08
+76.6			2.22	192.91
3+01.6			1.67	193.46
#	7.35	201.79	0.69	194.44
+26.6			6.70	195.09
+51.6			6.26	195.53
Bm			3.36	198.43

June 9 1888

H H Hamlin

40

H H Hamlin

2nd St South of

BM	+	49	-	Blw
BM	0.28	175.75		175.47
#	1.38	165.50	11.63	164.12
0			5.04	160.46
0'			6.50	159.00
+10			8.82	158.68
+20			10.84	154.66
#	1.17	154.97	11.70	153.80
+30			3.67	151.30
+40			6.79	148.19
+50			8.85	146.12
+60			10.72	144.25
+70			11.95	143.62
+80			11.75	143.22
+90			11.55	143.42
#	1.17	144.23	11.91	143.06
1			1.78	142.45
+10			3.59	140.64
+20			5.76	138.47
+40			10.71	133.32
#	2.14	134.89	11.48	132.75

June 8, 1888
H H and 41

Hawthorn St & Hamilton

B.T. Blw on 4' offset F.C.
0' Blw on center line
0.0 at 0+4.

2nd St South of				
Sta	+	H ₂	-	Elv
1+60		134.89	8.80	128.09
+80			9.69	125.20
2			8.74	126.11
+20.0			0.64	134.25
#	10.07	144.23	0.73	134.16
+40			3.01	141.22
#	11.03	154.44	0.82	143.41
+60			7.13	147.31
+80			1.04	153.40
#	10.91	164.60	0.75	153.69
3			3.43	160.77
#	11.16	175.06	0.70	163.90
3+07	=	0.0		
+20			8.32	166.74
+20			8.99	166.07
+28			6.40	168.66
+53.2			2.76	172.30
#	5.60	178.50	2.16	172.90
B M #	8.91	183.05	2.36	176.14
B M			1.27	183.78

Hawthorn

June 8 1888
H Hamlin
B Hamlin

42

Bentley Line ET
4' offset

N & Grape

2nd & Grape
3rd & Grape

Second St N of How

Third St

Sta	+	H ₂ O	-	Clw
Bm	8.32	206.74		198.42
+171.6			10.27	196.77
+91.6			9.55	197.19
47 H.6			8.67	198.07
+31.6			7.51	199.23
+56.6			7.17	199.57
+81.6			7.04	199.70
5+06.6			5.76	200.98
+31.6			5.09	201.65
+56.6			4.92	201.82
+81.6			4.32	202.42
6+06.6			3.54	203.16
+31.6			3.27	203.47
+56.6			2.83	203.91
+81.6			1.73	205.01
7+06.6			0.83	205.91
#	4.01	210.05	0.70	206.04
+31.6			3.17	206.88
Bm			3.44	206.57

206.74

195.50

11.24

Long St

N of Long

S. S. Juniper

Grades for Trestle on

Sta	+	H.I.	-	Blv.
B on	1.16	58.20		57.04
0+42				
+50			4.95	53.25
+58			6.27	51.93
+66			7.73	50.47
+74			10.00	48.20
+82			11.20	47.00
+90			8.39	44.81
+98			6.68	51.52
+106			5.53	52.67
+114			4.49	53.71
+122				

Columbia I of Jump

58.20
53.57
4.63

Levels for tunnel on

Sta	+	HD	-	Obs
Bm	1.18	39.73		38.55
	+6.7			
	+77.5		7.97	51.76
	+88.5		9.33	50.38
	+93.5		10.19	49.64
	+101.5		10.76	48.97
	+109.5		10.60	49.13
	+117.5		10.04	49.69
	+125.5		8.96	50.77
	+133.5		8.17	51.56
	+141.5		6.88	52.45
	+149.5			

Columbian Grape

Check Levels on A.H.

Sta	+	H.D.	-	Blk
BM	4.74	8.94		3.70
26+	80		8.84	-0.40
27+			9.50	-0.56
+20			9.37	-0.93
+40			9.10	-0.86
+60			9.40	-0.96
+85			9.21	-0.77
28+10			9.60	-1.10
+35			9.65	-1.21
+60			9.40	-0.96
+85			9.48	-1.04
29+10			9.63	-1.19
B.M.	0.88	5.41		4.53
+35			7.24	-1.83
+60			7.43	-2.02
+85			6.39	-0.98
30+10			6.57	-1.16
+35			6.59	-1.18
+57			6.51	-1.10
+65			6.95	-1.54

D.S.A.H.

A.H.

H.S.A.H.

D.C. S.S. Attumble St.

Att. St curve to
Sta T H₂ - elev

+78	5.41	6.64	-1.23
+80		6.14	-0.73
+84		4.86	+0.55
+95		5.51	-0.10
31+03		4.26	+1.15
+11		3.42	1.99
+18		3.05	2.36
+21		2.57	2.84

717

Levels for cut-off on trestle

Sta	+	HI	-	alt
B.M.	7.71	64.75		57.04
3+01			6.70	58.05
+09			7.16	57.59
+17			7.50	57.25
B.M.	5.15	62.19		57.04
+25			5.31	56.88
+33			5.26	56.93
+41			5.07	57.12
+49			5.45	56.74
B.M.	4.77	61.81		57.04
+57			6.72	55.09
+65			6.67	55.14
+73			6.27	55.54
+81			5.05	55.78
+89		64.75	5.92	58.43
+97			4.69	60.06
4+05			2.90	61.85
+13			1.70	63.15
B.M.	8.67	65.71		57.04
+21			1.61	64.10
+29			0.96	64.73

and Sta 43

Damper between bottom

Levels for cut-offs on roads
Sta + H.O. - Elev

Bm	5.15	62.18		57.04
0			3.31	56.88
+14			5.26	56.93
+17			5.07	57.12
+25			5.45	56.74
Bm	4.77	61.91		57.04
+35			6.72	55.09
+41			6.67	55.14
+49			6.27	55.54
+57			6.05	55.78

49

on Jumpers & Columbus

61.81
4.88
 56.93

B M's in ...
Sta + H9 - 8.00

B M 1.69 49.98 48.29

0 # 5.51 49.52 5.77 44.21

+4 B M 4.13 50.30 3.55 46.17

+1 B M 4.17 51.37 3.10 47.20

+2 4.81 46.56

Ninth St connection

+3 B M 4.16 16.51 9.15

+4 0 4.40 11.91

+4 +14 4.99 11.32

+5 +20 4.93 11.98

+6 +26 4.71 11.60

+35-1 4.44 11.83

Tenth St connection

B M 8.70 17.26 8.56

0 2.90 14.36

+14 3.52 13.74

+20 3.20 14.06

+26 3.16 14.10

+35-1 2.58 14.68

N.W. ...
S.W. ...

8th & 2 St

MARK ON ST

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	81
1	99.98	1.75	99.98	2.18	99.97	2.62	99.95	3.05	80
2	99.94	3.49	99.92	3.93	99.91	4.36	99.88	4.80	79
3	99.86	5.23	99.84	5.67	99.81	6.10	99.79	6.54	78
4	99.76	6.98	99.73	7.41	99.69	7.85	99.66	8.28	77
5	99.62	8.72	99.58	9.15	99.54	9.58	99.50	10.02	76
6	99.45	10.45	99.41	10.89	99.36	11.32	99.31	11.75	75
7	99.25	12.19	99.20	12.62	99.14	13.05	99.09	13.49	74
8	99.03	13.92	98.97	14.35	98.90	14.78	98.84	15.21	73
9	98.77	15.64	98.70	16.07	98.63	16.50	98.56	16.93	72
10	98.48	17.36	98.40	17.79	98.33	18.22	98.25	18.65	71
11	98.16	19.08	98.08	19.51	97.99	19.94	97.90	20.36	70
12	97.81	20.79	97.72	21.22	97.63	21.64	97.53	22.07	69
13	97.44	22.50	97.34	22.92	97.24	23.34	97.13	23.77	68
14	97.03	24.19	96.92	24.62	96.81	25.04	96.70	25.46	67
15	96.59	25.88	96.48	26.30	96.36	26.72	96.25	27.14	66
16	96.13	27.56	96.00	27.98	95.88	28.40	95.76	28.82	65
17	95.63	29.24	95.50	29.65	95.37	30.07	95.24	30.49	64
18	95.11	30.90	94.97	31.32	94.83	31.73	94.69	32.14	63
19	94.55	32.56	94.41	32.97	94.26	33.38	94.12	33.79	62
20	93.97	34.20	93.82	34.61	93.67	35.02	93.51	35.43	61
21	93.36	35.84	93.20	36.24	93.04	36.65	92.88	37.06	60
22	92.72	37.46	92.55	37.86	92.39	38.27	92.22	38.67	59
23	92.05	39.07	91.88	39.47	91.71	39.87	91.53	40.27	58
24	91.35	40.67	91.18	41.07	91.00	41.47	90.81	41.87	57
25	90.63	42.26	90.45	42.66	90.26	43.05	90.07	43.44	56
26	89.88	43.84	89.69	44.23	89.49	44.62	89.30	45.01	55
27	89.10	45.40	88.90	45.79	88.70	46.18	88.50	46.56	54
28	88.29	46.95	88.09	47.33	87.88	47.72	87.67	48.10	53
29	87.46	48.48	87.25	48.86	87.04	49.24	86.82	49.62	52
30	86.60	50.00	86.38	50.38	86.16	50.75	85.94	51.13	51
31	85.72	51.50	85.49	51.88	85.26	52.25	85.04	52.62	50
32	84.80	52.99	84.57	53.36	84.34	53.73	84.10	54.10	49
33	83.87	54.46	83.63	54.83	83.39	55.19	83.15	55.56	48
34	82.90	55.92	82.66	56.28	82.41	56.64	82.16	57.00	47
35	81.92	57.36	81.66	57.71	81.41	58.07	81.16	58.42	46
36	80.90	58.78	80.64	59.13	80.39	59.48	80.13	59.83	45
37	79.86	60.18	79.60	60.53	79.34	60.88	79.07	61.22	44
38	78.50	61.57	78.53	61.91	78.26	62.25	77.99	62.59	43
39	77.71	62.93	77.44	63.27	77.16	63.61	76.88	63.94	42
40	76.60	64.28	76.32	64.61	76.04	64.94	75.76	65.28	41
41	75.47	65.61	75.18	65.93	74.90	66.26	74.61	66.59	40
42	74.31	66.91	74.02	67.24	73.73	67.56	73.43	67.88	39
43	73.14	68.20	72.84	68.52	72.54	68.84	72.24	69.15	38
44	71.93	69.47	71.63	69.78	71.33	70.09	71.02	70.40	37
45	70.71	70.71							36
Degrees.	Dep.	Lat.	Dep.	Lat.	Dep.	Lat.	Dep.	Lat.	Degrees.
	DEGREES.		¼ DEGREE.		½ DEGREE.		¾ DEGREE.		

Published by Edward Denny & Co., Stationers, Drawing Materials,
Mathematical Instruments, Etc., San Francisco.

139.25
 162.25
 139.4
 9.43
 9.51
 8.82
 2.11
 6.71
 169.60
 162.25
 2.35
 $3 + 20$
 $+ 24$
 25
 $+ 53.2$
 159.20
 2
 161.20
 125.20
 36.10