

Grades
Inspection Pipes.

9

TRANSIT

F. B. 699

699

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.
°		°		°		°	
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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Atlantic	1
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Frank	24
First	25

1 Atlantic St.
St Bm + HJ Grade Rod

2 Atlantic

2

3

Atlantic

3

9

California

4

The image shows an open notebook with two pages. The left page is ruled with a grid of red lines, featuring a header row and several columns. The right page is also ruled with a grid of red lines. The word 'California' is written in cursive in the top left of the left page, and the number '4' is in the top right of the right page.

5

California

5

California

7

Arctic

7

Arctic

?

12/20

H H umlin
H H umlin

Indian St

B9m	+	HD	-	Grade	Rod
-----	---	----	---	-------	-----

7.84	5.03	12.87		6.30	6.57
------	------	-------	--	------	------

				7.50	5.37
--	--	--	--	------	------

9.31	4.70	14.01	6.50	7.51	
------	------	-------	------	------	--

				9.50	4.51
--	--	--	--	------	------

10.51	5.31	15.82	6.32	9.50	
-------	------	-------	------	------	--

13.65	3.63	17.28		13.30	3.98
-------	------	-------	--	-------	------

13.65	6.63	20.28		16.50	3.78
-------	------	-------	--	-------	------

13.84	4.00	19.84		17.00	2.84
-------	------	-------	--	-------	------

19.72	3.04	22.76		19.50	3.26
-------	------	-------	--	-------	------

A Street
F Street

C Street

D St

G St

B St

India

Columbus

Bm	+	H.S.	-	Grade	Rock
3.71	9.53	13.24		10.50	
					3.24
10.89	6.50	17.39	7.40	9.99	
13.04	5.75	18.79		13.80	4.09
			5.48	13.31	
14.80	7.25	22.05		15.30	3.99
			7.27	15.78	
18.54	5.96	24.55	7.54	17.70	4.85
				17.17	
22.28	3.72	26.00		21.50	3.55
			4.94	21.02	
27.05	1.53	24.58		22.30	4.20
			6.78	21.40	
19.72	10.74	30.46		27.30	3.16

E Street

F Street

G Street

H Street

I Street

J Street

A Street

India

Columbus

14

Columbia

14

State

+	170	-	Grade	Road	B.M.	
7.70	21.18		14.30	7.88	13.48	S. St
			17.00			T. St
		3.07	3.07		18.11	
3.86	21.98	5.47	17.01		18.12	
			19.50	2.98		G. St.
3.38	25.46	6.47	19.49		22.08	
			23.10	2.86		10 St
5.77	29.70	6.10	23.10		22.93	
2.00	41.14		36.30	4.84	39.14	A Street

89m + H9 Snake Rock 7.50

13.50 31.28 14.3 5.50 7.10

17.00

18.50

23.00 31.77 32.180 4.00 4.50

27.00 31.50 3.50

Wm. Min

+	HD	-	Elev	Grade	Rod
	36.7	46.73	43.06	42.20	4.5'3
			38.00		
			41.50		
			37.00		
			35.50		
			36.20		
			27.50		

A. Street

St. St.

St. St.

St. St.

St. St.

St. St.

St. St.

State

BM	+	40	Grade Rod	+50
			76.50	
			81.50	
			76.50	

Grape St

Hawthorn St

Long St

Winn

BM + 4.9 Grade Rod + 30

			4.50		
9.81	4.20	14.01	10.30	3.71	4.21
16.85	2.97	19.82	16.30	3.52	4.02
			20.50		
			25.00		
			27.30		
40.38	15.7	46.95	29.0	6.46	6.95

I Street
 H Street
 G Street
 F Street
 E Street
 D Street
 B Street

Wm

Bm + HJ Grade Rod +.50

42.70

A Street

40.50

A sh. Street

50.50

Beech St

64.00

Cedar St

70.50

Hate St

74.50

Oak St

90.00

Tir St

Union

93.00

102.00

99.50

Grape St.

Hawthorn St.

Lang St.

Juniper St.

-1

44 Hambleton
24 Hambleton

12/2, 7th Street

13m	+	99	-	Grade Rod
-----	---	----	---	-----------

59.08 5.13 64.21

59.30 4.91

6 Street

59.63 5.98 65.61

61.00 4.61

B St

103.07 3.53 106.60

95.50 11.10

A St

132.30 4.18 136.48

130.00 6.48

Ash St

150.73 8.68 159.41

150.00 9.41

150.73 11.75 162.48

160.00 24.8

20

H Hamlin
A Hamlin

7/2/23 7th Street

BM	+	HD	-	Grade	Road
----	---	----	---	-------	------

68.66	5.77	69.43		62.00	7.43
-------	------	-------	--	-------	------

68.22	6.22	69.44		63.50	5.94
-------	------	-------	--	-------	------

65.00	5.77				
-------	------	--	--	--	--

23

B Street

H H Amber
 12/25 9th St

B.M.	+	H.I.	-	Grade	Rod
140.70	11.55	152.25		148.50	3.75
159.48	9.25	168.73		Clear	
	0.22	167.85	11.60	157.13	
				148.50	8.95
125.76	1.57	125.13		117.50	7.63
			11.04	Clear	
				114.09	
	1.15	115.24		105.00	10.24
84.10	2.57	86.67		84.00	2.67
70.69	11.15	81.84		Clear	
	5.99	84.89	2.94	78.90	
				84.00	6.89
69.22	6.22	69.44		67.50	1.94
63.66	5.77	69.43		64.80	4.63
63.04	5.18	68.26		64.80	3.46

Cedar St

Center Street

Back Street

7th Street

A St. Street

Check

B Street

C Street

72/19

H. H.
S. H.

10th St

Bm	+	HA	-	Gauge Rod
----	---	----	---	-----------

8.56	9.05	11.61		6.80	5.91	M Street
------	------	-------	--	------	------	----------

12/24

17 St.

H.H.
A.H.

Bm	+	W	-	Grade	Roll
----	---	---	---	-------	------

6.58	4.72	11.10			
------	------	-------	--	--	--

4.30	6.80				
6.30	4.80				

N Street
M St.

12/24

12th St

H.H.
A.H.

Blk	+	HO	-	Gro	Red
-----	---	----	---	-----	-----

1.33	6.45	7.78		1.60	5.98
				3.60	3.98

N St
M St

12/24

13th St

97th
A.H.

Bm

+

40

-

Grade Rod

0.72

4.58

5.30

2.50

2.80

N. St

3.00

12/24

14th St

Bm	+	GD	-	Grade	Road
-0.36	6.65	6.29		3.00	3.29
-0.36	8.50	8.14		7.00	1.14

14th St

14th St

India

F	7.50
E	9.50;
D	13.30
C	16.50
B	17.00
A	19.50
A sh	23.50

1/2/24

15th St

H.H.
A.H.

Bm	+	H.I	-	Druck	Kod
----	---	-----	---	-------	-----

1.64	8.07	9.71		4.30	5.41
				8.00	1.71

H.H.
M. St

12/24

16th St

H.H.
A.H.

Bm + H2 - Grubb Med

9.27 7.88 17.15

9.40 7.35

15.40

K Street

M St

L St

K St

J St

38.63 0.00 38.63

29.50 9.16

34.80 3.80

I St

H St

91.91
A.H.

32

12/26 H St

Bm	+	H ₀	-	Grade	Rod
----	---	----------------	---	-------	-----

38.63	2.57	41.20		38.50	2.70
-------	------	-------	--	-------	------

54.47	1.66	56.13		49.50	6.63
-------	------	-------	--	-------	------

64.37	7.80	72.31		66.50	3.81
-------	------	-------	--	-------	------

17 th St

18 th St

19 th St

12/26

19th

BCh +

069

-

Buck Rod

69.56 4.27 73.83

67.00 6.83

19th 2nd

91.91.
H.H.

12/26 I SA

BBM	+	92	-	Sum	Prod
-----	---	----	---	-----	------

9201	1.57	93.54			
------	------	-------	--	--	--

825.0	10.88
96.00	
104.00	

20 th SA
 21 st SA
 22 and SA

July 10 1888

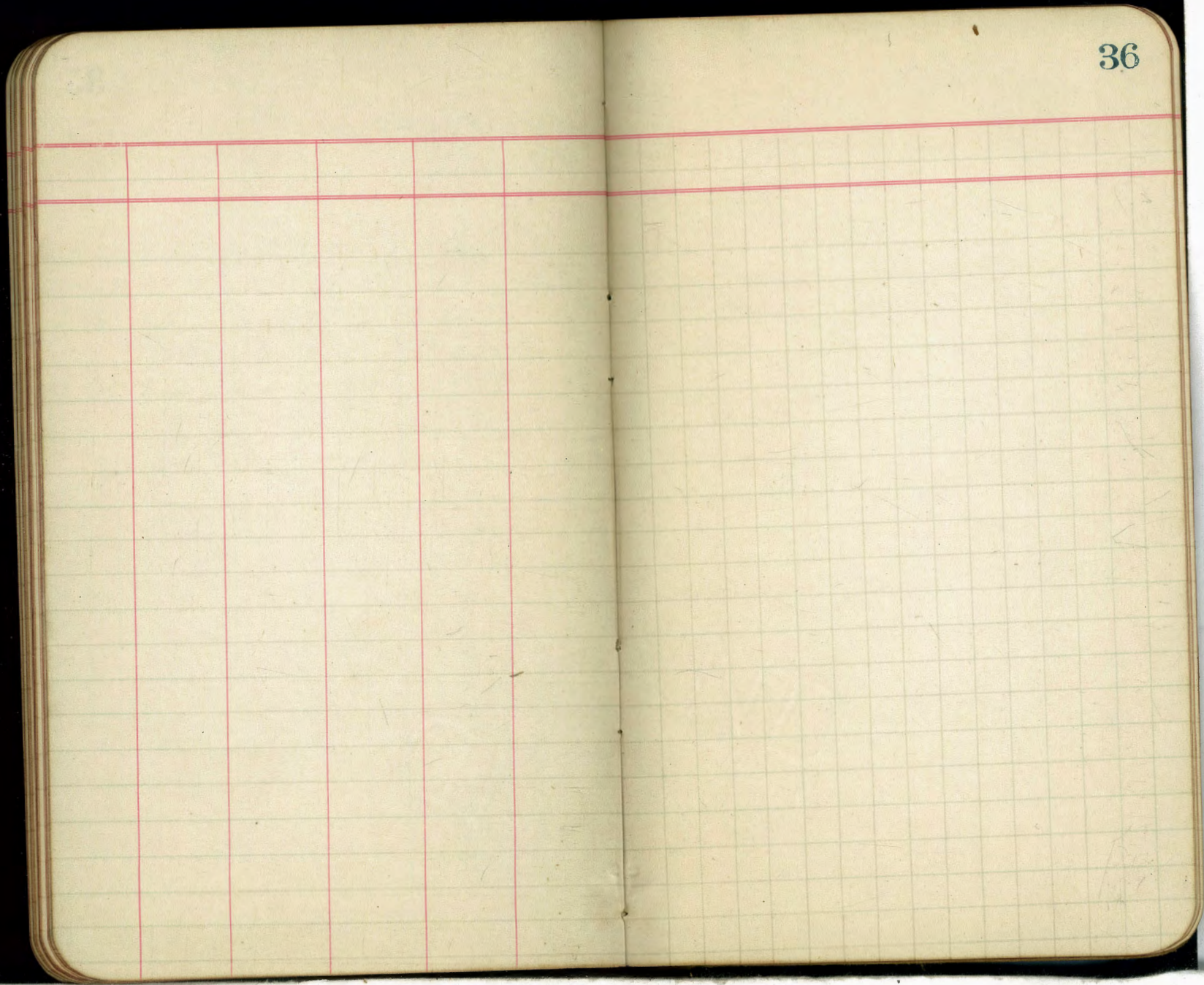
H Hamlin
A Hamlin 35

Grades for Lateral Sewer for B King

Sta	+	HL	-	Clev. made	cut
-----	---	----	---	------------	-----

Lot 10 Block 7 M T Add.					
25+27		Clev of Y		13.30	
Bm	4.21	26.58		22.37	
#	2.44	23.04	6.42	20.16	
Clev of ground		4.50	14.54		
				16.30	

23.04
 2.44
 20.60



The image shows an open notebook with two pages. The left page is ruled with a grid and has a vertical margin line on the left. The right page is ruled with a grid and has the number 37 printed in the top right corner. The notebook is placed on a white surface against a dark background.

The image shows an open notebook with two pages. The pages are cream-colored and feature a grid of lines. The left page has a grid with 6 vertical columns and 18 horizontal rows. The right page has a grid with 18 vertical columns and 18 horizontal rows. Two prominent red lines are drawn across both pages: one horizontal line near the top and one vertical line on the left side of the left page. The rest of the grid lines are a light green color. The notebook is placed on a white surface, and the background is dark.

The image shows an open notebook with two pages. The left page is ruled with a grid of 5 columns and 20 rows. The right page is ruled with a grid of 20 columns and 20 rows. The number 48 is printed in the top right corner of the right page. The notebook is placed on a white surface against a dark background.

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	97.05	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.	DEGREES.		¼ DEGREE.		½ DEGREE.		¾ DEGREE.		Degrees.

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93.83
66.50
2.93

16 30
111 94
1.46

60 / 120
13 30
14 30