

*Records of City Engineers Office
City Hall, San Diego, Cal.*

400
LEVEL

F.B. 394

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

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



LEVEL BOOK

No. 400



MANUFACTURED BY

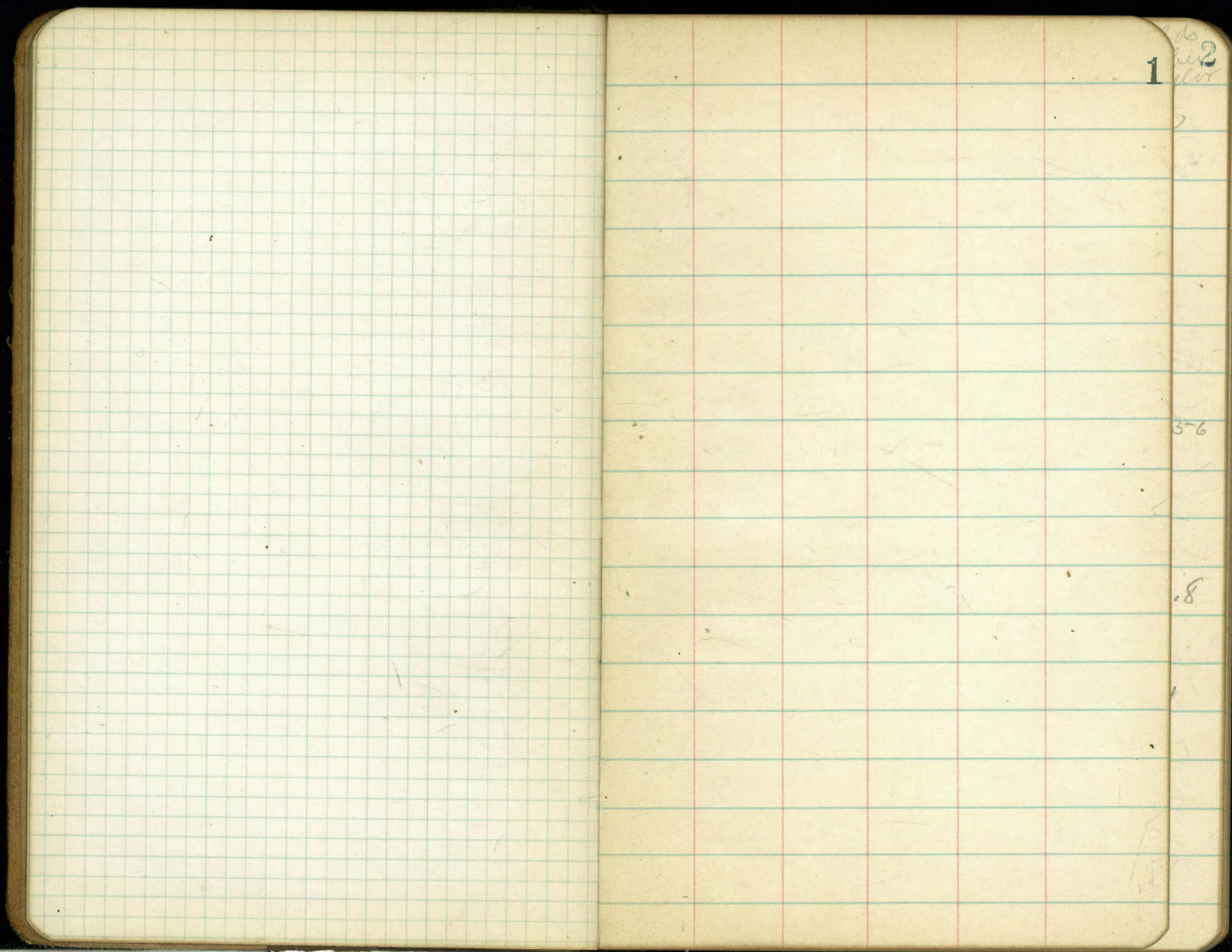
H. S. Crocker & Co.

SAN FRANCISCO

and

SACRAMENTO

215.07
1.02
216.09
12.46
203.63



111. Ft Stockton Blvd.
 Ex. Levels + X Section

Sta.	H.I.	Rod	Elev
0+00 = 14+25 old line	156.43	1.76	154.67
W		4.2	
C		1.76	154.67
E		0.0	0.0
0+50			
W		7.6	
C		4.9	
E		3.1	0.0
1+00			
W		11.1	
12' W of center		7.6	
C		6.6	
E		3.5	
1+50			
W		11.9	
C		8.1	
E		4.5	

15' each side of center. Feb 19/10 ^{Rebuilds} Barber Taylor

Sta.	H.I.	Rod	Elev
2+00	156.43		
W		17.5	
C		12.2	
E		6.5	
2+50			
E		9.8	
J.P.	2.11	145.67	12.87 143.56
C		4.53	
W		9.8	
3+00			
E		-1.1	146.8
C		4.9	
W		12.1	12.1
3+50			
E		0.8	
C		7.1	
W		14.0	

Sta.	H.I.	Rod	Elev.
4+00	145.67	11.45	134.22
E		6.5	
C		11.45	
E		6.0	
4+50		15.2	
C		13.2	
E		5.9	
5+00			
E		9.1	130.02
E		8.9	
J.P.	5.54	138.96	12.25 133.42
C		8.94	130.02
W		16.3	
W		16.0	
4+00			
W		12.4	
W		11.7	

Sta.	H.I.	Rod	Elev.
4+50	138.96		
W		13.9	
C		6.5	
5+50			
W		12.6	
C		6.5	
E		0.6	
6+00			
W		13.9	
C		8.6	
E		1.5	
6+35		8	129.61
W		16.3	
C		11.35	127.61
E		6.2	
M		16.2	

Sta.	H.I.	Rod Elev.
7 C	138.96	11.31
S		5.6
6+50		
S		6.1
C		9.5
M		14.7
7+00		
M		14.9
C		10.5
J.P.	5.87	11.35
S	133.48	127.60
7+50		1.5
S		4.9
9 C		8.6
M		12.1
8+00		
M		14.8

4

Sta.	H.I.	Rod Elev.
7 C	133.48	10.7
S		7.6
8+50		7.1
S		8.2
9 C		11.3
J.P.	0.78	122.54
M		11.72
9+00		4.7
M		1.3
C		3.6
S		6.8
9+50		
M		11.8
9 C		7.16
S		3.6
M		10.6
8+00		7.16
C		4.6
S		

Sta.	H.I.	Rod Elev.	Sta.	H.I.	Rod elev.
9+58	122.54		10+50	122.54	
M		12.5	M		11.4
C		8.7	C		8.1
S		7.0	S		4.7
9+65			11+00		
M		13.5	M		11.3
C		14.0	C		7.8
S		7.1	S		3.3
9+75			11+50		
M		18.2	M		15.8
C		11.3	C		11.58
S		6.8	S		6.6
10+00			12+00		
M		14.0	J.P.	0.07	109.87
C		10.7	M		12.74
S		6.8	C		109.80
			S		9.0
					5.0
					1.3

Feb 19/10 { Leblond
Barber 6
Taper

Sta.	H.I.	Rod Elev.
12+00	109.87	
n		13.6
C		10.5
S		7.1
13+00		
IP	3.76	100.97
n		12.66
C		7.0
S		5.2
13+50		
n		3.5
C		
S		
14+00		
n		7.4
C		6.2
S		6.1
14+50		
n		5.3
C		3.8
S		3.6

Sta.	#	H.I.	Rod	Elev.
14+300		100.97		
n			3.5	
c			2.46	98.57
s			1.6	
15+00			1.7	98.57
c			2.46	
w			3.2	
14+50				
W			0.4	98.57
c			4.0	
E			2.9	
15+00				
W			14.2	
c			12.8	
e			11.5	

See page 7 right Hand Page

Levels on changed line from
Sta. 6+49 'F' line

Sta	I.P.	H.I.	Rod	Elev.
0+00		0.94 209.57		203.63
n			5.7	
c			7.36	
s			10.0	
0+50				
n			7.8	
c			9.2	
s			10.8	
1+00				
n			7.2	
c			8.2	
s			9.1	
1+44.05 $\Delta = 6+49$				
n			5.0	
c			6.21	
10' w. center			7.8	
s			12.8	

Sta. 5+57.5 old line to
Feb 21/10

Childs
Barber
Taylor

see page 6

J.P.	1.15	89.88	12.24	88.73
15+37				
W			5.1	
c			6.9	
E			7.2	
15+50				
W			5.3	
10' w. center			8.3	
c			4.7	
E			8.2	
15+62 $\Delta = 13+05$				
c" line				
W			7.3	
c			4.70	85.19
E			10.9	

"F" Line. levels.

Sta.	H.I.	Rod Elev.
6+49	<u>209.57</u>	
E		5.0
C		6.21
W		7.7
6+56		
W		10.3
11' w. of center		8.0
C		6.3
E		5.1
6+68		
W		16.7
C		13.8
E		11.2
6+84		
W		7.0
C		6.0
E		6.1

Sta.	H.I.	Rod Elev.
7+00	<u>209.57</u>	
W		4.3
C		4.2
E		3.7
J.P.	1253	<u>221.93</u>
7+50		0.17 209.40
W		9.0
C		9.9
E		11.0
8+00		
E		2.0
C		1.4
J.P.	1250	<u>233.86</u>
W		0.57 221.36
		12.5
8+50		
W		11.6
C		12.0
E		12.0

Sta.	H.I.	Rod Elev.
8+76 Δ center ansta + Webster	<u>233.86</u>	
W		12.2
C		11.94
E		11.8
N		12.1
C		11.94
S		11.9
9+00		
9+70		11.6
C		11.5
S		11.6
9+50		
N		11.5
C		11.0
S		10.8

Sta.	H.I.	Rod Elev.
10+00	<u>233.86</u>	
N		11.1
C		10.6
S		9.2
10+50		
N		9.4
C		8.8
S		7.3
11+00		
N		7.1
C		5.2
S		4.0
11+50		
N		4.1
C		2.1
S		0.5

Sta.

H.I. Rod Elev.

12+00

J.P.

1298 244.95 1.89 23 1.97

n

12.4 ~~12.4~~

c

10.3

s

8.7

12+26.1

n

10.6

c

8.93

s

7.3

n

10.2

c

8.73

s

7.8

"X" Line levels.

Sta.	H.I.	Rod	Elev.
0+00 Sta. 6+35 E line			
M	<u>133.33</u>	11.4	
C		5.72	127.61
S		0.0	
0+50			
M		11.7	
C		7.0	
S		3.0	
1+00			
S		8.5	
C		12.4	
J.P.	0.56	<u>121.20</u>	120.64
M		4.0	
1+50			
M		9.1	
C		4.5	
S		0.7	

11

Sta.	H.I.	Rod	Elev.
2+00	<u>121.20</u>		
S		5.0	
C		8.9	
M		14.2	
2+50			
S		9.4	
C		13.2	
J.P.	0.40	<u>109.01</u>	108.61
M		5.1	
3+00			
M		8.1	
C		4.6	
S		1.7	
3+30			
M		11.2	
C		8.6	
S		5.5	

Sta	H.I.	Rod	Elev.
3+40	<u>109.01</u>		
n		15.0	
C		12.5	
S		9.4	
3+50			
n		14.8	
C		10.8	
S		8.8	
3+60			
n		11.8	
C		8.0	
S		6.1	
4+00			
n		7.0	
C		3.6	
S		1.2	

Sta	H.I.	Rod	Elev.
4+50	<u>109.01</u>		
n		6.1	
C		3.3	
S		0.0	
5+00			
n		10.0	
C		5.8	
S		1.6	
5+50			
n		13.3	
C		9.9	
S		6.1	
6+00			
S		10.1	
C		12.8	
J.P.	2.84	<u>99.06</u>	12.79 96.22
n		4.6	

Sta	H.I.	Rod	Elev
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6+50

99.06

M

5.4

C

3.9

S

2.3

6+96.2 = sta. 11+00 C" line

M

5.8

C

4.61

S

3.6

"I" Line Levels.

Sta.	H.I.	Rod	Elev.
0+00	= Sta. 12+26.1 ^{244.95} _{line}		
η		10.0	
C		8.93	
S		7.8	
0+50			
η		0.3	
C		4.1	
S		3.1	
1+00			
η		2.8	
C		1.6	
S		0.2	
1+50			
η		1.7	
C		0.8	
J.P.	4.67	249.47	0.15 244.80
S		4.5	

Feb 21/10

Childs
Barber
Taylor

14

~~H.I.~~

244.47

Sta.

2+00

η

7.0

C

6.1

S

5.6

2+50

η

7.8

C

7.4

S

7.1

3+00

S

7.7

C

3.3 1+00 ST

9.1

η

10.8

3+50

η

7.7

C

6.8

S

6.0

Sta.

H.S.

249.47

4+00

η

5.1

C

4.5

S

4.2

4+50

η

3.8

C

3.6

S

3.3

5+00

η

2.2

C

2.1

S

1.8

5+50

η

1.0

C

0.6

S

0.4

15

Sta.

J.P.

12.82

H.S.

261.85

Rod

0.44

Elev.

249.03

6+00

η

11.8

C

11.5

S

11.0

6+50

η

8.5

C

8.6

S

8.6

7+00

η

4.9

C

5.2

S

4.9

7+50

η

3.5

C

2.7

S

2.5

Sta. H.I. Rod Elev.

7+83.20

261.85

W

3.4

C

2.5

S

1.6

W

2.2

C

2.5

E

3.1

8+00

W

1.1

C

1.3

E

1.8

J.P.
8+509.55 271.31

0.09

261.76

W

8.3

C

8.6

E

8.1

Sta.

H.I.

Rod Elev.

9+00

271.31

W

6.8

C

6.9

E

6.5

9+50

W

5.5

C

5.8

E

5.3

10+00

W

4.7

C

4.8

E

4.7

10+50

W

3.9

C

4.3

E

4.3

Feb. 21/10 { Schields
Barber 17
Taylor

Sta. #I. Rod Elev.

11+00

27131

W

3.5

C

3.8

E

3.8

11+33.13 =

W

3.1

C

3.6

E

3.5

Xth Sec. 15th St. S. to Yth. 14' Walks 5' 1/4"

B.M. Brass Plug N.W. Cor. 15th + H.Sts. 29.950

4.39 34.34 29.950

North Line H.St.

W	4.0	30.3
crb	4.3	30.0
1/4	4.4	29.9
M	4.3	30.0
1/4	4.5	29.8
crb	4.5	29.8
E	4.2	30.1
E	3.9	30.4
crb	4.6	29.7
1/4	4.7	29.6
M	5.1	29.1
1/4	4.3	30.0
crb	4.3	30.0
W	3.7	30.6

Shaw
Evans
Tichinon

30/12/10

34.34

0+50

18

W	3.9	30.4
crb	4.6	29.7
1/4	4.9	29.4
M	5.3	29.0
1/4	4.7	29.6
crb	4.6	29.7
E	3.8	30.5
	0+75	
E	4.1	30.2
crb	4.7	29.6
1/4	5.2	29.1
M	5.1	29.2
1/4	5.2	29.1
crb	5.0	29.3
W	4.1	30.2

3434

1+0

W	5.1	29.1
cb	5.4	28.9
1/4	5.2	29.1
M	5.4	28.9
1/4	5.4	28.9
cb	5.3	29.0
E	4.7	29.6

1+25

E	5.4	28.9
cb	5.4	28.9
1/4	5.6	28.7
M	5.6	28.7
1/4	5.3	29.0
cb	5.2	29.1
W	5.0	29.3

3434

1+50

19

W	4.8	29.5
cb	5.0	29.3
1/4	5.3	29.0
M	5.3	29.0
1/4	5.3	29.0
cb	5.3	29.0
E	5.2	29.1

1+75

E	5.2	29.1
cb	5.0	29.3
1/4	5.0	29.3
M	5.1	29.2
1/4	4.7	29.6
cb	4.8	29.5
W	4.6	29.7

3434

2+0

W	4.2	30.1
ub	4.5	29.8
1/4	4.5	29.8
M	4.8	29.5
1/4	4.7	29.6
ub	4.8	29.5
E	4.8	29.5

2+25

E	4.0	30.3
ub	4.5	29.8
1/4	4.4	29.9
M	4.6	29.7
1/4	4.7	29.6
ub	4.6	29.7
W	6.1	28.2

3434

2+50

20

W	6.0	28.3
ub	6.0	28.3
1/4	5.5	28.8
M	4.2	30.1
1/4	4.2	30.1
ub	4.1	30.2
E	3.6	30.7

2+75

E	2.2	32.1
ub	3.3	31.0
1/4	3.6	30.7
M	4.1	30.2
1/4	4.5	29.8
ub	4.9	29.4
W	5.6	28.7

T.P	7.61	36.95	5.00	29.34
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36.98

3+0

21

W	8.0	29.0
+5	8.2	28.8
+10	8.2	30.8

crb	6.4	30.6
-----	-----	------

1/4	7.0	30.0
+12	6.9	30.1
+14	5.7	31.3

M	5.2	31.8
---	-----	------

1/4	5.3	31.7
-----	-----	------

crb	5.3	31.7
+6	4.9	32.1
E	2.6	34.4

3+08 = South Line Gt St

E	2.1	34.9
---	-----	------

brt	2.4	34.6
+1	3.3	33.7
1/4	3.8	33.2

M	4.1	32.9
---	-----	------

1/4	2.7	34.3
-----	-----	------

crb	2.6	34.4
-----	-----	------

W	2.9	34.1
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X Sec. First St. South Line Robinson to 200' South.
 70' wide - 14' Walks - 5' 1/4's
 B.M. Brass Plug N.E. Cor 1st & Robinson 269.965

B.M. 2.46 272.42 269.96

South Line Robinson

E 2.1 270.3

crb 3.3 269.1

1/4 3.3 269.1

M 3.5 268.9

1/4 3.9 268.5

crb 4.0 268.4

W 3.3 269.1

0+25 South

W 4.2 268.2

crb 3.8 268.6

1/4 3.6 268.8

M 3.6 268.8

1/4 3.4 269.0

crb 3.0 269.4

+7 2.7 269.7

E 3.0 269.4

272.42

0+50

E 4.4 268.0

crb 3.7 268.7

1/4 4.1 268.3

M 4.3 268.1

+7 4.2 268.2

1/4 5.4 267.0

crb 6.2 266.2

W 6.4 266.0

0+75

W 7.2 265.2

crb 7.4 265.0

1/4 7.2 265.2

M 5.8 266.6

1/4 5.6 266.8

crb 5.8 266.6

+7 4.6 267.8

E 5.7 266.7

22

272.42

1+0

E	8.6	263.8
erb	8.7	263.7
1/4	8.7	263.7
M	8.1	264.3
1/4	7.7	264.7
erb	7.8	264.6
W	7.4	265.0

1+25

W	7.9	264.5
erb	8.2	264.2
1/4	8.4	264.0
M	8.9	263.5
1/4	9.3	263.1
erb	9.9	262.5
+7	10.4	262.0
E	11.5	260.9

TP	446	266.45	10.43	261.99
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266.45

1+50

E	15.8	250.7
+5	11.9	254.6
erb	9.6	256.9
1/4	8.9	257.6
M	4.9	261.6
1/4	2.9	263.6
erb	2.8	263.7
W	2.5	264.0

1+75

W	3.1	263.4
erb	5.2	261.3
1/4	5.9	260.6
M	10.3	256.2

TP	320	256.79	12.86	253.59
----	-----	--------	-------	--------

1/4	5.1	251.7
erb	6.3	250.5
E	11.4	245.4

23

256.79

2+0

E	11.1	245.7
+10	15.3	241.5
erb	14.7	247.1
114	12.9	243.9
M	7.6	249.2
114	3.6	253.2
erb	1.9	254.9
W	+1.4	258.19

24

x-section Pine St for Proposed Change

for 7.5' 14" of 50' wide

B.M. S.M. Et Station 211.4 m by

1/20, 211.4 m by
1/11, 211.4 m by

13.41 2.89 269.23
T.P. 0.75 258.54 11.44 257.79

x-section "A"

S 3.6 254.9
crk 4.9
1/4 6.2
M 7.4 251.1
1/4 8.5
crk 9.7
N 12.8 245.7
+20 16.3

x-section "B"

-20 18.3
N 18.2 245.3
crk 10.8
1/4 8.8
M 7.6 250.9
1/4 6.8
crk 5.0
S 3.6 254.9

0+25 m of "B"

25

S 3.9 254.6
+2 4.4
crk 9.0
+4 11.0
1/4 11.8

M 13.3 245.2
1/4 14.7

crk 16.1
N 19.4 239.1

+30 29.3

0+50

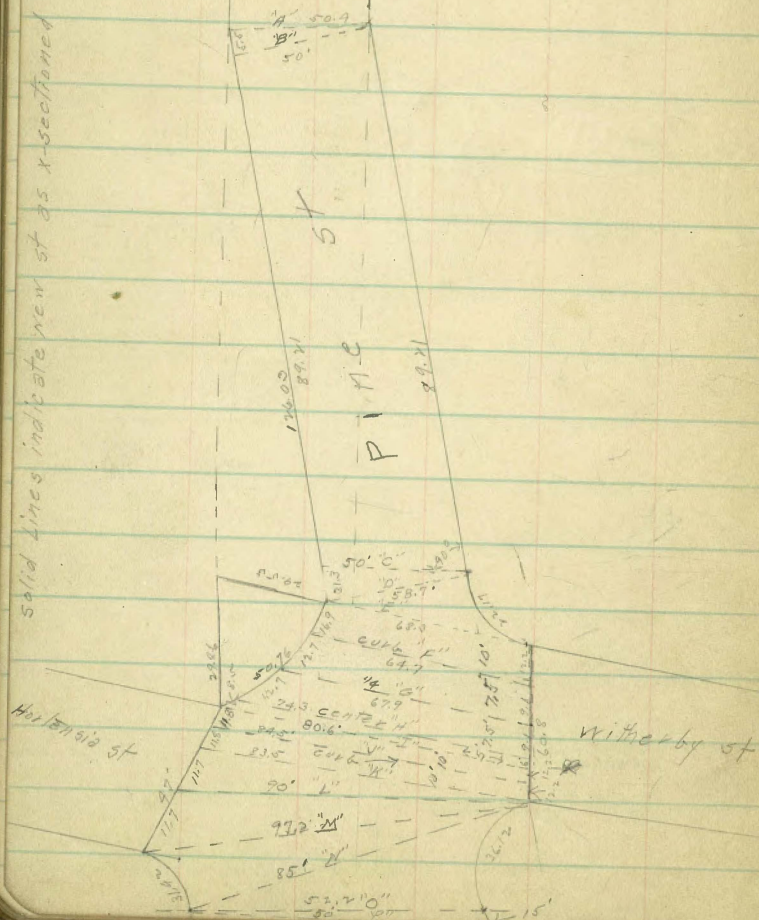
-15 43.2
-35 39.9
+30 35.2
N 26.3 237.2
crk 20.9
1/4 18.6

M 17.0 241.5
1/4 15.6
+3 15.0

crk 12.0

S 4.8 253.7

Solid lines indicate new st as x-sectioned



258.54

26

0+75

S	6.2	251.2
crk	13.5	
1/4	17.6	
M	20.3	239.2
1/4	23.2	
crk	27.3	
+2	30.2	
N	32.2	226.3
+3	33.3	
+25	44.3	
+35	45.2	
+50	42.3	

0+89.2 W of sec "B" = sec "C"

-35	37.0	
-20	32.4	
-15	33.2	
N	32.1	226.4
+7	30.1	
crk	27.9	
1/4	26.5	
+3	23.0	
M	20.1	239.4
1/4	17.2	
crk	14.1	
S	7.1	251.4
T.P.	118.9	253.24
	7.4	251.40

-253.29

x-sec "D"

S	11.8	251.4
crk	9.0	244.2
1/4	13.5	
M	15.1	238.1
1/4	15.2	
crk	17.1	
N	16.0	237.2
+20	15.8	

x-sec "E"

N	16.0	237.2
crk	15.1	
1/4	12.9	
+7		
M	10.2	243.0
1/4	9.0	
1/4	6.1	
+4	4.1	
crk	3.5	
S	11.0	252.2

x-sec "E"

27

S	4.7	248.5
+10	6.0	
+20	7.1	
+30	7.3	
+40	9.2	
+50	11.0	
+64.7=N	12.5	240.7

x-sec "G"

N	9.9	243.3
+10	9.6	
+20	8.6	
+30	7.4	
+40	7.0	
+50	5.7	
+60	5.2	
+67.9=S	5.1	248.1

25329

x-sec "H"

S	5.8	247.9
+10	5.8	
+20	6.3	
+30	6.5	
+40	7.4	
+50	8.1	
+60	8.7	
+74.3 = N	8.4	244.8

x-sec "I"

N	7.5	245.7
+10	7.3	
+20	7.9	
+30	7.7	
+40	7.1	
+50	6.7	
+60	6.4	
+70	6.0	
+80.6 = S	5.1	248.1

x-sec "J"

28

S	4.7	241.5
+10	5.5	
+20	6.0	
+30	6.6	
+40	6.4	
+50	6.3	
+60	5.5	
+70	4.6	
+84.5 = N	3.9	249.3

x-sec "K"

N	2.6	250.6
+10	2.8	
+20	3.1	
+30	3.6	
+40	4.6	
+50	5.2	
+60	4.8	
+70	3.6	
+83.5 = S	3.2	250.0
T.P.	2.90	258.97
	3.17	250.07

258.97

x-sec "L"

5	7.0	250.0
+10	7.2	
+20	7.2	
30	10.2	
40	10.1	
50	9.1	
60	8.0	
70	7.4	
80	7.2	
+90 = N	6.2	252.8

x-sec "M"

N	4.6	254.4
+10	5.5	
20	6.0	
30	7.3	
40	7.9	
50	8.9	
60	9.5	
70	9.9	
80	9.0	
90	8.9	
99 ² = S	9.0	250.0

29

x-sec "N"

5	9.0	250.0
+10	8.9	
+20	8.8	
30	8.8	
40	8.1	
50	7.3	
60	6.5	
70	5.5	
+85 = N	4.1	254.9

x-sec "O"

N	4.2	254.8
crk	4.9	
"q	5.4	
M	5.9	
"k	6.4	
crk	6.6	
S	7.1	251.9

25397

X-sec "P" = 90° from P.P. running W

S 5.1 253.9

crb 5.4

1/4 5.4

1/4 5.4

1/4 4.9

crb 4.6

N 7.2 254.8

0+25 W of "P"

N 1.9 257.1

crb 2.4

1/4 2.5

1/4 2.7

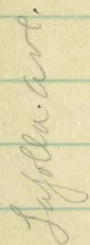
1/4 2.7

crb 2.7

S 2.6 256.4



Childs
Taylor 31
Bunker



76°33'

Miller

Union

76°33'

101.9
12.26
89.66

90°21'

Murray

76°33'

10442.86

89°39' 16" 10'

Harlow ave.

12'

Mar. 9/11

Labilets
Taylor
Bunker

32

12'

45°47'

12+43.22

27.30

13+21.84

Potterbaugh

25'

Levels on Loma pass road from
to inspiration Mts.

Mar. 10/11 Childs
Taylor
Baker 33

Sta.	H.I.	Red	Elev.
J.P.	87.82		
0+00 East line of Estudillo		9.12	78.70
+30		6.3	81.5
+46		2.0	85.8
+50		2.6	85.2
J.P.	12.08 99.45	0.45	87.37
1+00		10.5	89.0
+50		7.3	92.2
+57		8.2	91.3
+68		7.3	94.2
+69		6.5	93.0
+99.35 Hub west line Jefferson		4.3	95.2
2+83		1.9	97.6
J.P.	12.65 111.79	0.31	99.14
+50		12.2	99.6
+57		10.5	101.3
+77.82 Hub east line Jefferson		7.92	103.87
3+00		5.7	106.1
+37		3.5	108.3

Sta.	H.I.	Red	Elev.
3+50	111.79	4.3	107.5
+69		4.2	107.6
+85		0.8	111.0
J.P.	12.90 123.76	0.93	110.86
+92		10.2	113.6
4+00		9.4	114.4
+50		4.2	119.6
+81.7 no line survey		3.78	119.98
5+00		3.8	120.8
+24.9 west line of Columbia		4.44	119.3
+32		2.5	121.3
+50		1.1	122.7
J.P.	12.94 134.89	1.81	121.96
+73		12.7	122.2
+79.63 east line of Columbia		11.21	123.7
6+00		11.2	123.7
+05		9.6	125.3
+50		3.8	131.1
+66		4.6	130.3

Sta.	H.I.	Rod	Elev.
6+69	134.89	6.6	128.3
+77		4.3	130.6
J.P.	12.86	1.51	133.38
7+00	146.24	10.8	135.4
+03		13.4	132.8
+25		11.2	135.0
+34		8.5	137.7
+50		4.3	141.9
+71		2.4	143.8
+85.55 West line of Union		3.37	142.8
8+00		2.6	143.6
+15		3.0	143.2
+19		4.7	141.5
+28		2.7	143.5
+36.98 East line of Union	13.07	0.49	145.75
J.P.	158.82	9.9	148.9
+50		4.5	154.3
9+00			

Mar. 11/11 *Lehman* 34
Taylor
Blumberg

Sta.	H.I.	Rod	Elev.
9+25	158.82	1.8	157.0
9+50		2.8	156.0
+80		1.6	157.2
+85		3.5	155.3
+90		4.1	154.7
10+00		2.7	156.1
+22		1.6	157.2
J.P.	12.65	0.92	157.90
+27	170.55	11.2	159.4
+42.86 West line of Hartman Ave.		9.26	161.3
+50		8.5	162.0
+63		9.0	161.5
+73		7.4	163.1
+97.43 East line of Hartman Ave.		5.33	165.2
11+00		5.0	165.5
+07		3.5	165.0
+27		4.2	166.3

Sta.	H.T.	Rod Elev.
11+40	170.55	0.6
JP.	11.81	182.18
+50		11.5
+70		11.2
+76		12.1
+87		9.1
12+00		8.0
+08		8.5
+12		9.7
+17		7.9
+43.21 Hub angle		24.89
12+50		5.5
+64		6.6
+66		6.9
+75		5.5
+85		5.9
13+00		4.8

Mar 11/11

Helix Hills
Zayley
Bunker

35

Sta.	H.T.	Rod Elev.
13+14		3.9
+16		1.9
+21.84 hub. p. b. l. o. line		0.49
		0.91

Re X sec of Pine St (50) E of Wetherby
to Angle 189.2 E

3/12 Sample
12 Pine St
327 26840 26513 33m Wetherby + Slope

(30) 75 25732 1183 25657
(582) E line of Wetherby

S 2 31 254.2

bl 38 253.8

7 36 253.7

6 39 253.4

7 46 252.7

bl 46 252.7

7 45 252.8

(38) 318' E of Nelson of Wetherby = 00
on S E line of Wetherby

SL 31 254.2

bl 34 253.9

7 33 254.0

6 8.0 249.3

4 13.0 244.3

(31.6) 215' E of Wetherby at 0.0 sin

SL 27 254.6

bl 2.6 254.7

7 2.6 254.7

7 6.6 250.7

6 12.4 244.9

(31.2) 50' E of Wetherby

SL 22 255.1

bl 17 255.6

7 2.9 254.2

4 6.1 251.2

6 11.6 245.7

7 16.1 241.2

25732

(2E)	75'	E of	Wichahy st	
SL			20	255.3
hh			23	255.0
7			30	254.3
b			87	248.6 ¹⁵
4			110	246.3 ¹¹
hh			130	244.3
SL			152	242.1

(L7)	89.2	E = Angle on S		
SL			11.9	245.4
hh			96	247.7
7			76	249.7
b			62	251.1
7	74		30	254.3
hh			26	254.7
SL			23	255.0
SL			25	254.8

25732

5.208 Angle on S
Angle Pt on S (10.50)

37

(29)				
SL			25	254.8
hh			25	254.8
7	70'		24	254.9
b			30	254.3
4			40	253.3
hh			67	250.6
SL			75	249.8
SL			101	247.2
20' n station			123	

(2H) 25' E of Angle Pt.

n			47	252.6
hh			26	254.7
4			20	255.3
b			20	255.3
7			14	255.9
hh			19	255.4
SL			1.1	256.2

TP 0.40 244.92 1275 244.57

24497
24500

lin E	75'	E of	Wetherby	
20' n of rd			86	236.4
(29)	50'	S of	Mutely	
20' n of rd			67	238.3
n lin			100	235.0
20' n of rd			166	228.4

Uniform Slope 100' North

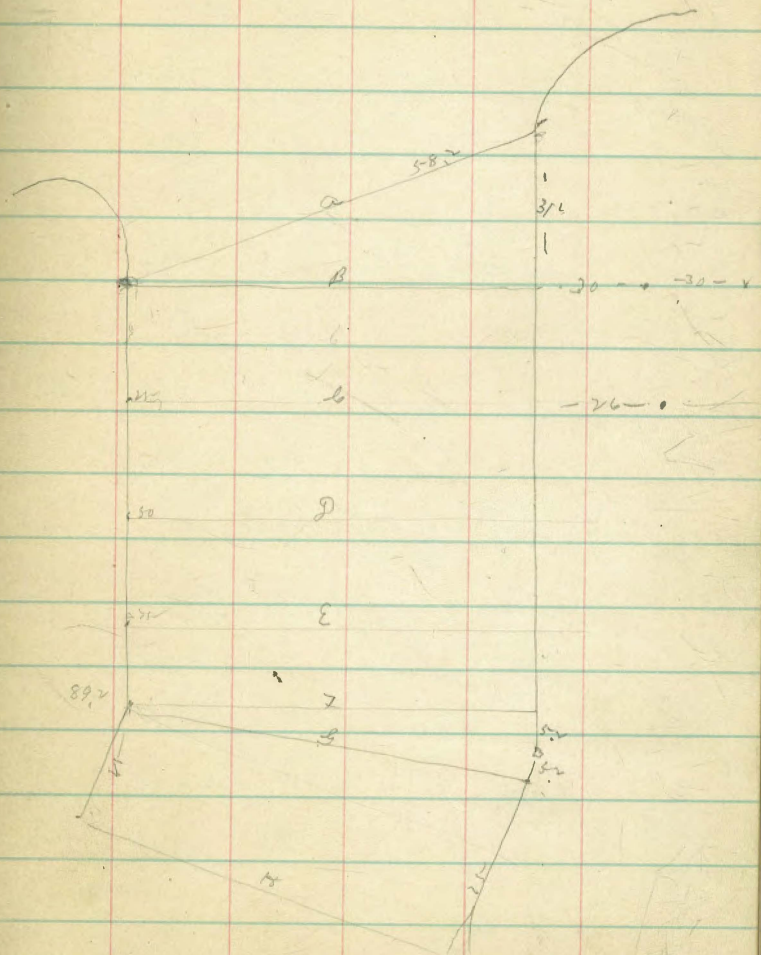
(26)	25'	E of	Wetherby	
n 1/4			50	240.0
n 1/2			100	235.0
n 1/4			168	228.2
26' n of rd			249	220.1
60' n of rd			410	204.0

(26) (21.8 E of Mutely or n)
E 21.8 Mutely or S

n 1/2			53	239.5
n 1/4			116	233.4
30' n of rd			234	221.6
60' n of rd			247	220.3

43.47
89.21
132.68

38



$\frac{2}{M}$ / $\frac{1}{V}$ X Sec of Andersen Place (50')
 (15' bands)

	586	285.77	279.91
	E line of	5th st	
S			
bl	Butte	5.3 6.9 5.7	280.5 280.1
4			
6			
7		5.4	280.4
bl			
7	Butte	5.6 5.8 5.1	280.2 280.7
	25'	E of	5th st
7			
bl		4.2	281.6
6		5.0	280.8
bl		4.8	281.0
		5.3	280.5
S		5.0	280.8

285.77

Andersen

39

	50'	E of	5th st	
S				
bl			4.4	281.4
6			4.7	281.1
bl			4.3	281.5
7			4.3	281.5
			3.7	282.1
	75'	E of	5th st	
7				
bl			3.2	282.6
6			3.7	282.1
bl			3.8	282.0
S			4.4	281.4
			4.1	281.7
	100'	E of	5th st	
S				
bl			3.8	282.0
6			4.1	281.8
bl			3.5	282.3
bl			3.5	
Submark + center is in			2.85	283.0

265-77

125' E of 5-11

2 bl in	23	2833.5
2 bl	3.0	2828
b	3.7	2826
bl	3.6	2822
S	3.7	2821

150' E of 5-11

S	3.1	2827
bl	3.3	2825
b	2.6	2832
2 bl	2.7	
bl	1.7	2841

175' E of 5-11

2 bl	1.1	2847
2 bl	2.1	2837
b	1.9	2839
bl	2.4	2834
S	2.4	2834

193'
192.8

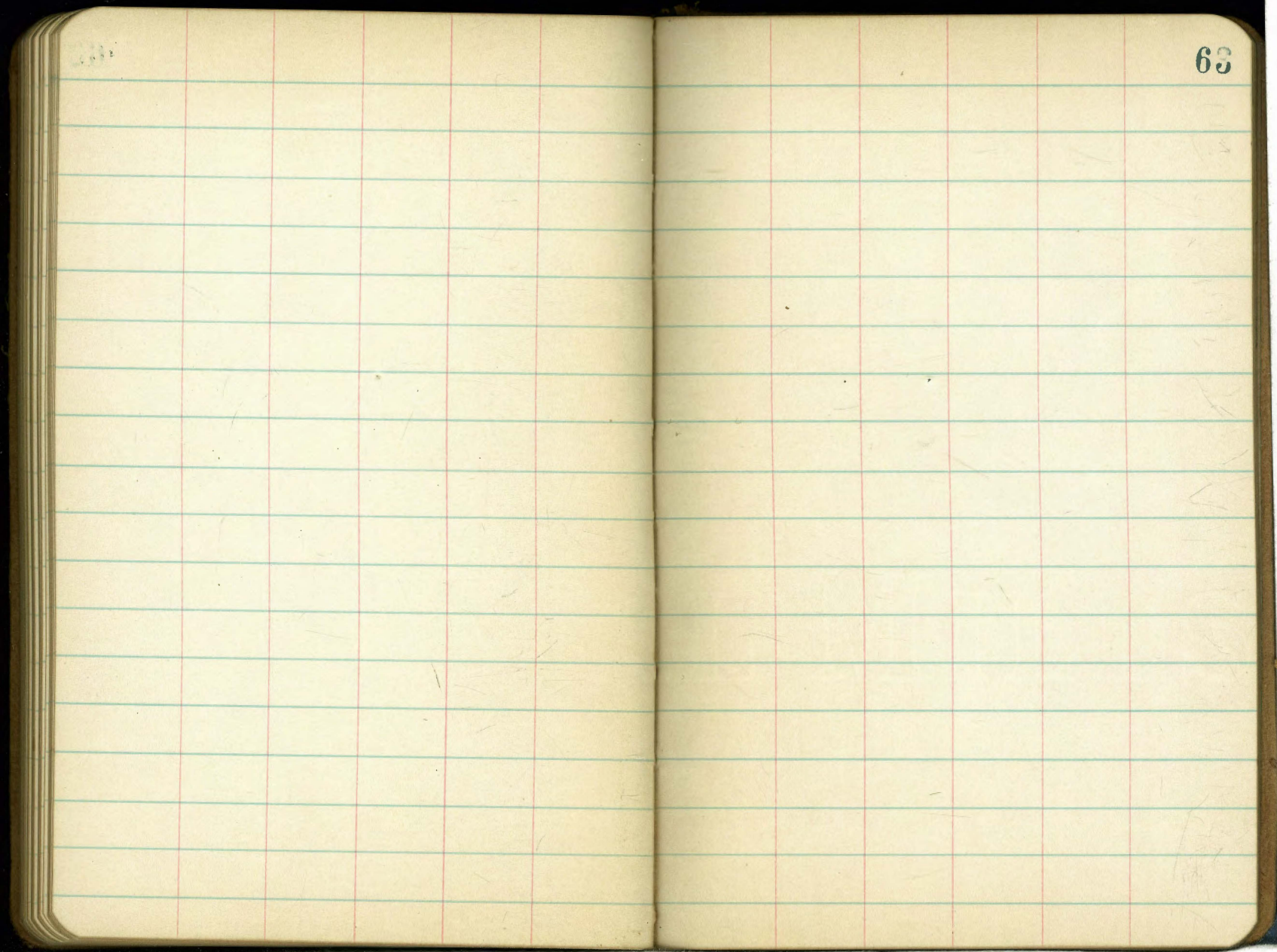
E of 5-11 = W of 6-11

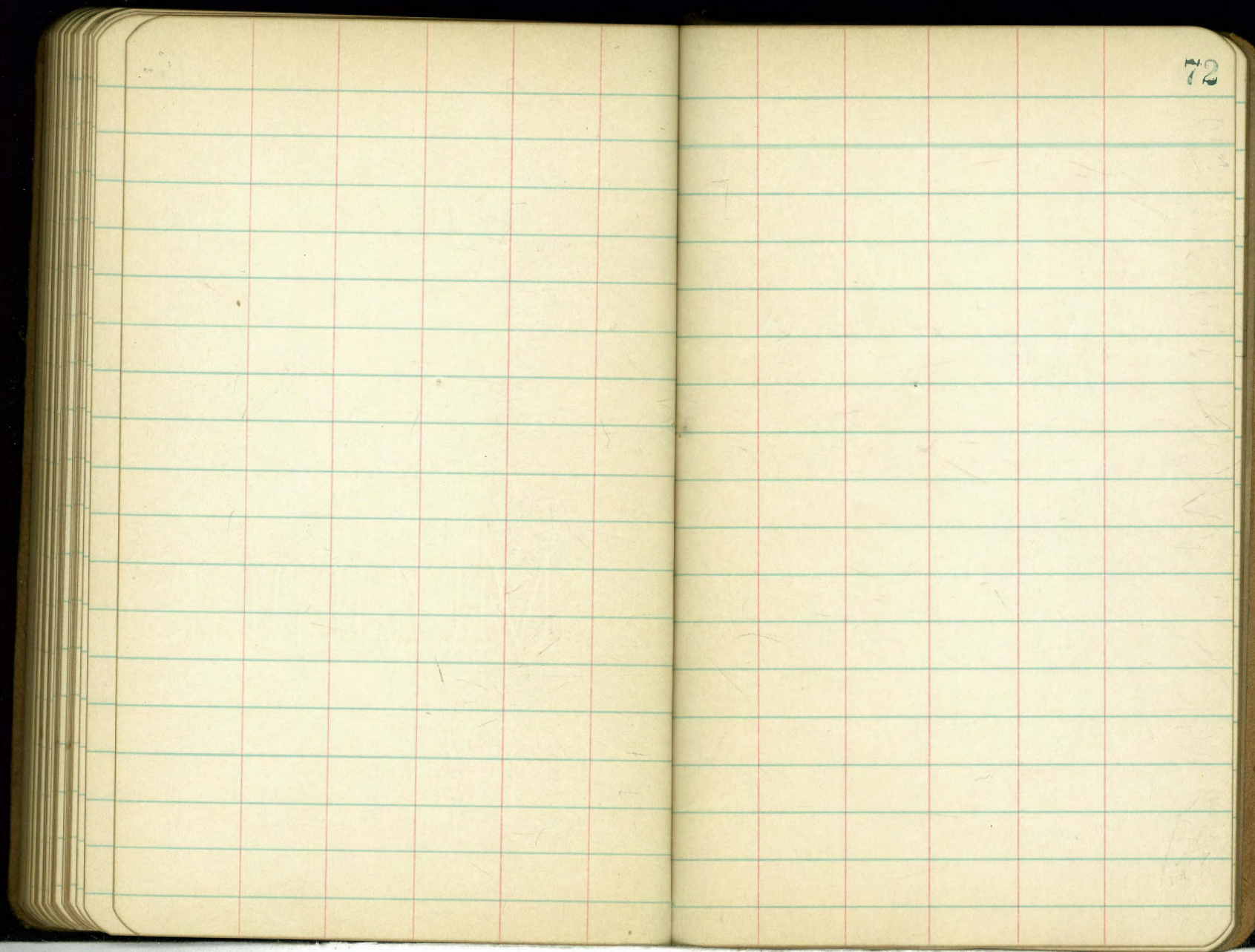
40

S	1.6	2842
bl	1.7	2841
b	1.3	2845
2 bl	1.1	2847
2 bl	0.7	2851

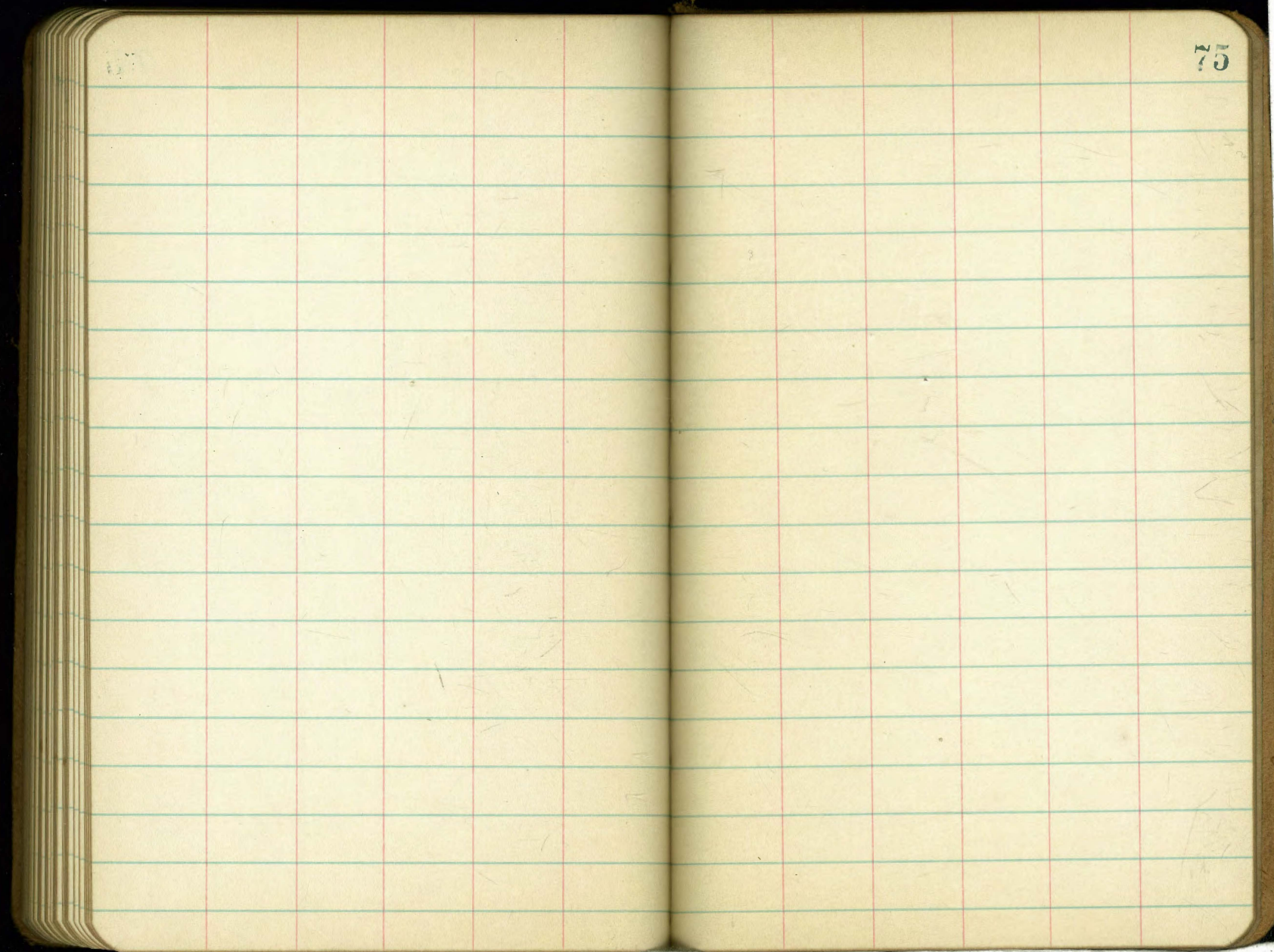
Side walls + cut are in E 193' on N side

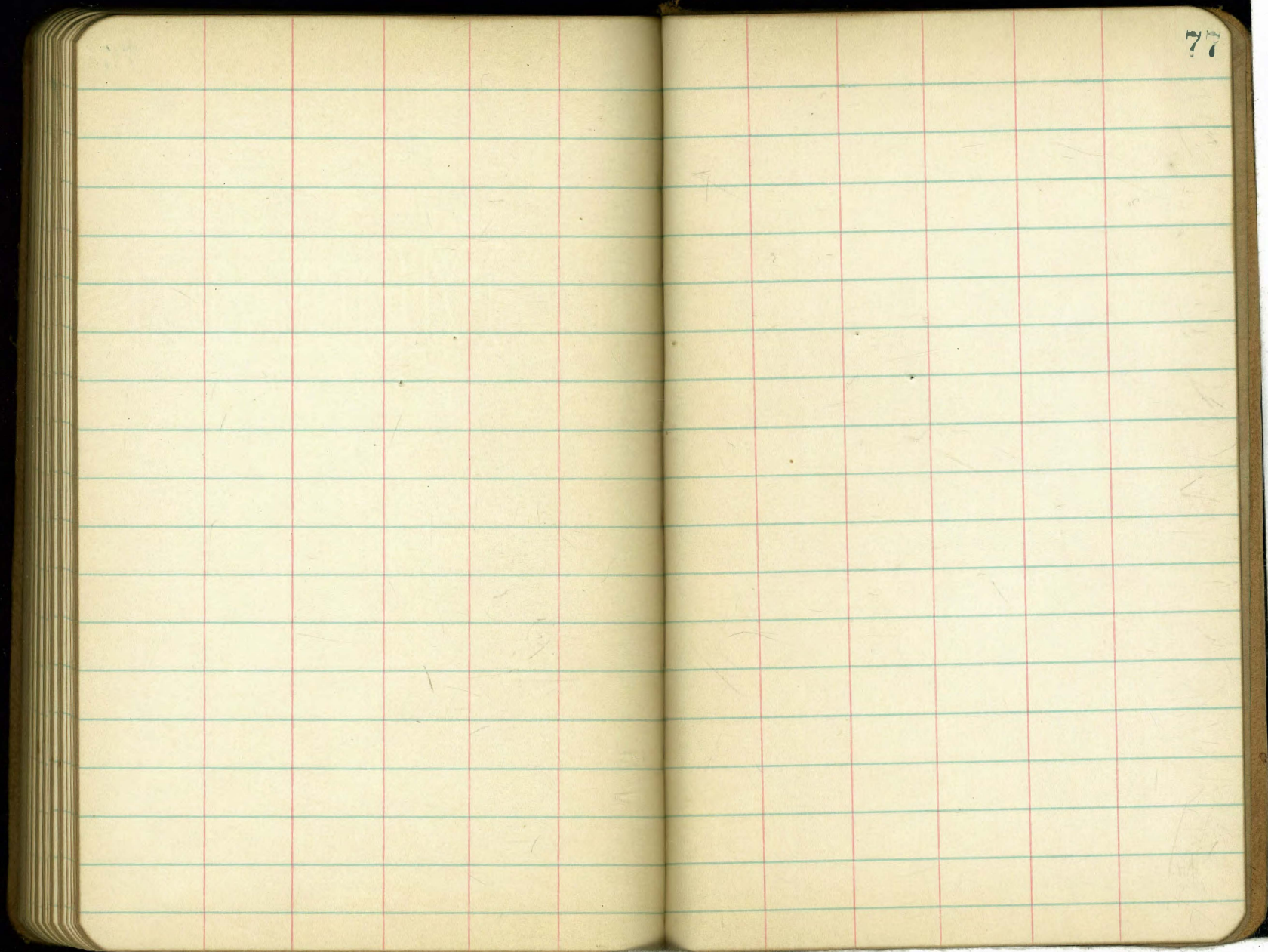
60





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TRAVERSE TABLE FOR TRANSIT BOOK.

From 1° to 90° for a distance of 100.

Degrees.	DEGREES.		½ DEGREE.		¼ DEGREE.		¼ 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.	DEGREES.		½ DEGREE.		¼ DEGREE.		¼ DEGREE.		Degrees.
	Dep.	Lat.	Dep.	Lat.	Dep.	Lat.	Dep.	Lat.	