

Bench Book

771. 2nd S. add.

R. 2nd H. add.

2

F.B. 722

722

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       | 47   | 40       | 93½  | 60       | 140  |

MICROFILMED

PUBLISHED BY  
**EDWARD DENNY & CO.**  
 DRAWING PAPER & MATERIAL, MATHEMATICAL INSTRUMENTS, ETC.,  
 STATIONERS AND PRINTERS,  
 SAN FRANCISCO, CAL.

Table for Running on Slopes.

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

| Angle. | Cor. in links | 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          |

Handwritten notes on the right page of the notebook, including calculations and diagrams. Visible text includes:  
 27 R 64 K D 9 + 150  
 28 R 150 K 0 + 150 J + 150 E  
 29 H 10 E + 150  
 20 R + 150 D 4  
 19 P + 150 D 4  
 25 + 100 29 + 100  
 24 29 + 100  
 E 25 - 26

E. D. St. Everett Cor.

1

F. P. St. Franklin Ave.

G. St. Grant Ave

## N. St. Harrison Ave

St Cor Elev

Description

18

19

20

21

22

23 S 54.88

24 S 67.24

25 W 84.53

26 S 93.15

27 W 87.11

28

Iron pin 21" N.E.

" " 21" N.E.

" " 21" N.E.

" " 18" N.E.

## I. St. Inter Ocean Ave

St Cor Elev

Description

18

19

20

21

22

23 W 55.90

24 W 73.81

25 W 80.93

26 N 88.52

27 W 74.47

28

23 NW 55.03

25 S 88.11

28 N.W. 76.03

Droom fin 16" East

" " S.W.

" " 16" N.E.

" " S.W.

" " N.E.

Cops Jack top Cor post 175' N.E.

" " 4<sup>th</sup> lower step 2 story frame dwelling 60' S.E.

sp. tel pole

J. St. Julian Row.

St Cor Elev

Description.

18

19

20

21

22

S 48.41

23 N 52.42

24 N 63.91

25 W 87.35

26 N 81.05

27 W 73.65

28

24 E 64.50

25 S 86.96

Iron pin 16" N.E.

" 16" S.W.

" 16" "

Lath rail to post. 4 wire nails surrounding

Iron pin 16" S.W.

" 16" N.E.

Cop. on S.W. cor baseboard of Cottage 54' S.E.  
Wire nail to post - Faulk's Res.



Kerney Cor.

| St | Cor | Elev  | Description       |
|----|-----|-------|-------------------|
| 18 |     |       |                   |
| 19 |     |       |                   |
| 20 |     |       |                   |
| 21 | E   | 18.70 | Iron pin 18" S.W. |
| 22 | W   | 46.63 | Op. post          |
| 23 | E   | 48.12 | Iron pin 12" S.W. |
| 24 | E   | 58.88 | Cap. to Rail      |
| 25 | W   | 72.51 | " " "             |
| 26 | N   | 72.92 | Iron pin 24" S.W. |
| 27 | W   | 66.18 | " " 18" N.E.      |
| 28 |     |       |                   |

## Logan Ave

cor Elev

18  
19  
20  
21  
22  
23  
24  
25  
25

W 44.99

## Milton Ave.

St Cor Elev.

Description

18

19

20 S 29.2

21 E 31.89

22 ~~X~~S 38.07

23 W 37.23

24 W 39.29

25 W 51.38

26 N 55.95

27 N 52.18

28

24 37.22

25 E 53.12

26 E 56.51

Sp. tel

C. to rail 100' S.E.

Sp. fence 150' S.E.

Sp. post.

Iron pin 4" N.E.

" 2" S

Sp. 6" S.W. S.E.

Iron pin 12" S.W.

Sp. 150' West of W side of St 1st N of  
large gum tree

Sp. in lath fence 100' S.E.

Iron pin 12" N.W.

## Newton Ave.

| St | Cor | Elev          | Description  |
|----|-----|---------------|--|
| 18 |     |               |  |
| 19 |     |               |  |
| 20 | S   | 1.72<br>-2.85 | at top of 100' NW of Cor.<br>Iron pin 4" North East. |
| 21 | W   | 16.74         | Iron pin 16" "                                       |
| 22 | N   | 31.06         | " 16" South West                                     |
| 23 | N   | 33.28         | " 18" "  |
| 24 | N   | 31.98         | " 16" "  |
| 25 | S   | 38.18         | " 16" North East.                                    |
| 26 | E   | 39.97         | " 24" South West.                                    |
| 27 | N   | 38.23         | " 6" South East.                                     |
| 28 |     |               |  |

## Oliver Ave

St Cor Elev

Description

18

19

20

21 E 17.97

22 E 20.59

23 E 25.82

24 E 25.23

25 E 28.65

26 E 30.06

27 E 27.33

28 N 28.78

Iron pin 16" S.W.

Iron pin 16" S.W.

Iron pin 20" S.W.

Iron pin 20" S.W.

Iron pin 20" S.W.

Iron pin 16" S.W.

Iron pin 16" S.W.

Iron pin 15" S.W.

## Pierce Ave

| St | Cor | Elev  | Description       |
|----|-----|-------|-------------------|
| 18 |     |       |                   |
| 19 |     |       |                   |
| 20 |     |       |                   |
| 21 | N   | 7.24  | Iron pin 16" S.W. |
| 22 | N   | 13.69 | " 16" "           |
| 23 | E   | 15.87 | " 16" "           |
| 24 | E   | 18.01 | " 16" "           |
| 25 | E   | 20.48 | " 16" "           |
| 26 | E   | 21.75 | " 16" "           |
| 27 | E   | 19.62 | " 16" "           |
| 28 | E   | 20.98 | " 16" "           |

Railroad Av.

13

## Miscellaneous

| Location   | Elevation | Description                                  |
|--|-----------|--|
| East of R.R. Station at Intersection<br>of 16 <sup>th</sup> and S 20 <sup>th</sup> 1/2 <sup>nd</sup> Ave | 10.38     | Sp on top N.E. Cor of Hydrant box            |
| N.E. Cor of Subdiv of R.R. add   | 64.69     | Cop. in top 4x4 stake 14 in high "Mound"     |
| S.E. Cor Grand Ave and 16 <sup>th</sup> S 1/2  |           | Iron pin 15" North 37.09                     |
| " " " "  |           | Cop. in b.s. board on N.W. Cor Cottage 39.68 |
| 24" S of <sup>NW</sup> Cor on boundary line bet R.R. & R.V.C.  |           | Iron pin 67.36                               |





## Reed Hubbells add.

St cor elm Grand ave

|    |      |        |
|----|------|--------|
| 26 | S.E  | 37.30  |
| 27 | N.W. | 47.192 |
| 28 | N.W. | 52.97  |
| 29 | N.E. | 56.404 |
| 30 | N.W. | 54.698 |
| 31 | S.W. | 58.81  |

Description

|          |                          |   |
|----------|--------------------------|---|
| Iron pin | 16" N.W.                 | ✓ |
| "        | 6" S.E.                  | ✓ |
| "        | 12" " "                  | ✓ |
| "        | 6" S.W.                  | ✓ |
| "        | 6" S.E.                  | ✓ |
| "        | " south of switch stand. |   |

## National ave

## Description

| st                | con  | elw    |
|-------------------|------|--------|
| 27 <sup>1/2</sup> | S.E. | 63,101 |
| 28                | S.E. | 57,798 |
| 29                | N.E. | 63,000 |
| 30                | N.E. | 64,173 |
| 31                | N.W. | 75,362 |

Upper sp. in Tel. Pole ✓  
 " " 6" NW. of House ✓

S.E. con top of stone wall ✓

Olive ave

18

| st. | cor. | Elev.  | Description             |
|-----|------|--------|-------------------------|
| 27  | N.E. | 62,367 | Iron spike SW of cor. ✓ |
| 28  | S.W. | 65,164 | " " " N.E. " " ✓        |
| 29  | N.W. | 68,908 | " " " S.E. " " ✓        |
| 30  | S.W. | 69,359 | " " " N.E. " " ✓        |
| 31  | S.W. | 78,035 | " " " " " " ✓           |

Boston ave

19

|    |    |        |
|----|----|--------|
| 27 | SE | 35,423 |
| 28 | SW | 42,584 |
| 29 | NE | 48,978 |
| 30 | SE | 50,636 |
| 31 | SW | 50,657 |

Iron sps 6" of car

|   |   |   |    |   |   |   |
|---|---|---|----|---|---|---|
| " | " | " | NW | " | " | ✓ |
| " | " | " | NE | ♂ | " | ✓ |
| " | " | " | SW | " | " | ✓ |
| " | " | " | NW | " | " | ✓ |
| " | " | " | NE | " | " | ✗ |

Yopuka ave.

|    |      |        |
|----|------|--------|
| 27 | N.W. | 21,081 |
| 28 | S.E. | 36,106 |
| 29 | N.E. | 41,140 |
| 30 | N.E. | 43,573 |
| 31 | N.E. | 45,117 |

$$\begin{array}{r} 45112 \\ 4493 \\ \hline 99 \end{array}$$

Iron Sp. C" S.E. of car ✓  
 NE, spk in ground ✓  
 Iron Sp. 6" SW of car ✓  
 " " " " " " ✓  
 " " " " " " ✓

Cattaraugus

27 S.E. 24,810

28 N.W. 22,654

30 S.E. 23,977

31 N.W. 36,039

21

June 6<sup>th</sup> S.E. of C

" " 150' E " "

" " 6" S.E. " "

"

" " " N.W. " " ✓

" " " S.E. " " ✓

Bray ant.

22



The image shows an open notebook with two blank pages. The pages are cream-colored and feature light blue horizontal ruling. The right page is numbered '23' in the top right corner. The notebook is bound in the center, and the pages are slightly aged. The notebook is placed on a white surface against a dark background.

The image shows an open notebook with two blank pages. The pages are cream-colored and feature light blue horizontal ruling. Vertical red lines create margins on both pages. The right page is numbered '24' in the top right corner. The notebook is placed on a white surface, and the background is dark.



The image shows an open notebook with two blank pages. The pages are cream-colored and feature light blue horizontal ruling. The left page has a red margin line on the left side and a red grid line near the top. The right page has a red margin line on the right side and a red grid line near the top. The number '26' is printed in the top right corner of the right page. The notebook is placed on a white surface against a black background.

## Bridge #2

Stringers 2 pcs 32' } 7" x 16"  
 " 2 " 16' }

Ties 32 x 6' x 8' x 8'

Guard Rail 2 ft. 6 x 6 x 32

1 mud sill

Bulk head plate 2 pcs. 2 x 12 x 16

Opp. Chicken Ranch, 60 or yds. from

Bank on bridge approaches

Should be raised

20 or yds. slide in cut.

100 ft. bridge to be raised.

40 or yds. slide on cut west of  
 Wabash Canon 1/4 for passing  
 in cut at head of Wabash 150 ft.

Bridge Stocking Clark -

Best hills in bad condition

The image shows an open notebook with two pages. The pages are cream-colored and feature light blue horizontal ruling. The left page is divided into several vertical columns by red lines. The right page has a single vertical red line near the right edge. The number '28' is printed in the top right corner of the right page. The notebook is placed on a white surface against a dark background.

The image shows an open notebook with two blank pages. The pages are cream-colored and feature light blue horizontal ruling. The right page is numbered '29' in the top right corner. The notebook is bound in the center, and the pages are slightly aged. There are some faint, illegible markings on the right page, possibly bleed-through from the reverse side.





|      |       |      |       |       |
|------|-------|------|-------|-------|
| 1.77 | 53.65 |      |       | 52.18 |
| 5.96 | 58.91 | 0.70 | 52.95 |       |

|       |       |      |       |  |
|-------|-------|------|-------|--|
| 10.30 | 65.01 | 4.20 | 54.71 |  |
|-------|-------|------|-------|--|

|      |       |      |       |  |
|------|-------|------|-------|--|
| 6.27 | 64.67 | 6.51 | 58.40 |  |
|------|-------|------|-------|--|

|      |       |      |       |         |
|------|-------|------|-------|---------|
| 5.22 | 68.91 | 0.58 | 63.69 | B.M. 29 |
|------|-------|------|-------|---------|

|      |       |      |       |         |
|------|-------|------|-------|---------|
| 6.55 | 70.66 | 4.80 | 64.11 | B.M. 30 |
|------|-------|------|-------|---------|

|      |       |      |       |  |
|------|-------|------|-------|--|
| 8.95 | 78.17 | 1.44 | 69.22 |  |
|------|-------|------|-------|--|

|  |  |      |       |         |
|--|--|------|-------|---------|
|  |  | 2.87 | 75.30 | B.M. 31 |
|--|--|------|-------|---------|

|      |       |       |       |  |
|------|-------|-------|-------|--|
| 0.98 | 68.73 | 10.42 | 67.75 |  |
|------|-------|-------|-------|--|

|  |  |      |       |         |
|--|--|------|-------|---------|
|  |  | 5.98 | 62.76 | B.M. 32 |
|--|--|------|-------|---------|

5.22

68.91

63.69

64.11

4.80

4.8773.30

| Sta | + | H <sub>2</sub> | - | Elv | check |
|-----|---|----------------|---|-----|-------|
|-----|---|----------------|---|-----|-------|

|      |        |        |       |        |  |
|------|--------|--------|-------|--------|--|
| B.M. | 11,100 | 29.099 |       | 17.999 |  |
| #    | 11,770 | 40.821 | 0598  | 28.551 |  |
| B.M. |        |        | 9.160 | 31.161 |  |
| #    | 10,805 | 50.444 | 0182  | 40.139 |  |
| B.M. |        | 60.221 | 4.445 | 46.499 |  |
| #    | 11,233 | 61.857 | 0.320 | 50.624 |  |
| #    | 11,195 | 61.172 | 0.880 | 60.977 |  |
| #    |        |        | 0903  |        |  |

Calif & Juniper

## Check on Benches Dist 12 to 26

|      | +     | HI     | -     | E      | check |  |
|------|-------|--------|-------|--------|-------|--|
|      | 0.75  | 74.10  |       | 73.35  |       |  |
|      | 1.29  | 63.60  | 11.79 | 62.31  |       |  |
| B.M. |       |        | 3.54  | 60.06  |       | 13 Street North west cor spike in ground<br>at cor wall                  |
|      | 53.0  | 61.84  | 7.06  | 56.54  |       |  |
| B.M. |       |        | 1.64  | 60.20  | 60.27 | 14 and Dist NW cor   |
| B.M. |       |        | 4.13  | 57.91  |       | 11 spike in cor fence SW cor   |
|      | 3.71  | 60.99  | 4.66  | 57.28  |       |  |
| B.M. |       |        | 2.51  | 58.38  | 59.28 | 15 Dist north E cor spike in fence cor                                   |
|      | 2.15  | 54.04  | 9.10  | 51.89  |       |  |
|      |       |        | 4.26  | 49.18  | 49.24 |  |
| B.M. |       |        | 1.53  | 52.21  |       | 16 1st fence post<br>14 spike about 100' north of cor<br>East side of st |
|      | 11.98 | 65.12  | 0.90  | 53.14  |       |  |
| B.M. |       |        | 3.23  | 61.19  |       | 17 1st spike in ground 50' south on west side<br>cor                     |
|      | 10.99 | 75.81  | 0.30  | 64.82  |       |  |
|      | 11.69 | 86.75  | 0.75  | 75.06  |       |  |
|      | 11.54 | 98.10  | 0.19  | 84.56  |       |  |
| T.P. | 6.95  | 102.87 | 2.36  | 95.72  |       |  |
| B.M. |       |        | 2.57  | 100.00 |       | 18 100' south of cor East side of street<br>back in north rail of step   |
|      | 1.14  | 94.84  | 8.99  | 93.68  |       |  |
| B.M. |       |        | 7.80  | 87.04  |       | 19 100' south of cor East of street<br>Spike in ground near cor lot      |

|      | +     | HI     | -    | E      |  |                                    |
|------|-------|--------|------|--------|--|------------------------------------|
|      |       | 94.84  |      |        |  |                                    |
| B.M. | 10.10 | 103.38 | 1.56 | 93.28  |  |                                    |
|      |       |        | 6.49 | 96.87  | 20 <sup>th</sup> 50' north of cor Spk in ground East side Street |                                    |
|      | 11.89 | 114.91 | 0.30 | 103.08 |  |                                    |
| B.M. |       |        | 1.84 | 113.07 | 21 Spk in E lect pole SW cor                                     |                                    |
|      | 11.53 | 125.67 | 0.77 | 114.14 |  |                                    |
|      | 11.65 | 136.51 | 1.01 | 124.66 |  |                                    |
|      | 11.55 | 147.67 | 0.19 | 136.12 |  |                                    |
| B.M. |       |        | 5.29 | 142.38 | 142.45   | 22 Spk in top of fence just SW cor |
|      | 11.9  | 159.42 | 0.17 | 147.50 |  |                                    |
|      | 16.43 | 170.22 | 0.63 | 158.79 |  |                                    |
| B.M. |       |        | 7.76 | 162.46 | 162.34   | 23 Spk in fence cor SW             |
|      | 12.13 | 179.98 | 0.37 | 169.80 |  |                                    |
| B.M. |       |        | 4.96 | 178.02 | 174.89.6   | 24 North west cor eqir tek in plug |
| B.M. |       |        | 7.80 | 172.18 | 172.25   | 24 and E St                        |
|      |       |        |      |        | 24 125 feet south of cor on E side of St                         |                                    |
| B.M. | 11.49 | 190.63 | 1.24 | 178.74 | Spk in ground  |                                    |
|      | 2.99  | 192.81 | 0.80 | 189.83 |  |                                    |
| B.M. |       |        | 7.82 | 184.99 | 25 <sup>th</sup> 25 feet NE of NE cor Spk in ground              |                                    |
|      | 7.60  | 198.88 | 1.63 | 191.28 |  |                                    |
|      |       |        | 0.98 | 197.98 |  |                                    |
| TP   |       |        | 2.51 | 190.07 | 26 East end of step of cement wall                               |                                    |

Check Levels on 6<sup>th</sup> 12<sup>th</sup> 24

|      | +     | 7#1   | -     | Σ     |   |
|------|-------|-------|-------|-------|---|
| B.M  | 7.11  | 80.46 |       | 73.35 | 12 and D  |
|      | 8.19  | 87.66 | 0.99  | 79.47 |   |
| B.M  |       |       | 1.78  | 85.88 | 12 and 6  |
|      | 1.45  | 77.65 | 11.46 | 76.20 |   |
|      | 5.09  | 71.11 | 11.63 | 66.02 |   |
| B.M  |       |       | 2.16  | 68.95 | 13 North East spike in cor fence                              |
|      | 6.54  | 76.67 | 0.98  | 70.13 |   |
| B.M  |       |       | 9.97  | 69.70 | 14 St SW  |
|      | 11.90 | 88.51 | 0.06  | 74.61 |   |
| B.M  |       |       | 0.16  | 88.35 | 14 St 56 East of cor 3' north of property line                |
|      |       |       | 2.43  | 86.02 |   |
|      |       |       | 0.97  | 87.05 |   |
| B.M  |       |       | 5.05  | 82.00 | 15 St spike in cor fence SW cor                               |
|      | 0.10  | 75.23 | 11.92 | 75.13 |   |
|      | 1.29  | 64.64 | 11.85 | 63.35 |   |
| B.M# | 1.10  | 61.77 | 3.97  | 60.67 | 6071  |
|      | 4.21  | 56.35 | 9.63  | 52.14 |   |
| B.M  |       |       | 4.41  | 51.94 |   |
|      |       |       | 4.30  | 52.05 | 62.35   |
|      | 5.16  | 58.06 | 3.45  | 52.29 | 17 South west cor third part south of cor<br>Old B.M 17 St SW |

|     | +     | HI     | -    | E      |  |                               |
|-----|-------|--------|------|--------|--|-------------------------------|
|     |       | 58.06  |      |        |  |                               |
| BM  |       |        | 1.01 | 57.05  | 18 st north East cor                       |                               |
| BM  |       |        | 3.92 | 54.14  | 50' north of cor East side st              |                               |
|     | 11.74 | 69.04  | 0.80 | 57.26  |  |                               |
|     | 12.00 | 80.48  | 0.56 | 68.48  |  |                               |
| BM  |       |        | 1.62 | 78.86  | 19 South E cor tack in lower step of house |                               |
|     | 10.67 | 90.62  | 0.73 | 79.75  |  |                               |
|     | 11.93 | 101.83 | 0.82 | 89.80  |  |                               |
| BM  |       |        | 4.85 | 94.48  | 96.67                                      | 20 and D check,               |
| BTH | 11.87 | 110.98 | 2.62 | 98.11  | 99.15                                      | 20 and e st                   |
|     | 11.27 | 122.00 | 0.25 | 110.73 |  |                               |
| BM  |       |        | 8.36 | 113.60 |  | 21 and e spk in Elect pole SW |
|     | 11.92 | 132.06 | 0.86 | 124.14 |  |                               |
|     | 11.51 | 144.31 | 0.26 | 132.80 |  |                               |
| BM  |       |        | 7.34 | 136.97 |  | 22 " " " " " "                |
|     | 11.96 | 155.65 | 0.62 | 143.69 |  |                               |
|     | 11.91 | 167.92 | 0.44 | 155.21 |  |                               |
|     |       |        | 5.47 | 161.65 |  | 23 and e                      |
|     | 11.81 | 178.45 | 0.48 | 166.44 |  |                               |
|     | 5.68  | 184.04 | 0.29 | 178.16 |  |                               |

| →     | 751    | -    | £     |
|-------|--------|------|-------|
| 11.99 | 80.47  |      | 68.48 |
|       |        | 1.61 | 70.09 |
| 11.95 | 90.52  | 0.90 | 79.57 |
| 11.48 | 101.95 | 0.48 | 90.04 |
|       |        | 4.55 |       |

19 11

19 11 tack in step 88

check on BM on 12<sup>th</sup> from 12 to 26

|    | +     | 751                 | -     | 6     |       |
|----|-------|---------------------|-------|-------|-------|
| BM | 7.22  | 80.57               |       | 73.35 |       |
|    | 8.29  | 87.76               | 1.10  | 79.47 |       |
| BM |       |                     | 1.88  | 85.88 |       |
|    | 0.27  | 79.60               | 11.83 | 75.93 |       |
| BM |       |                     | 7.65  | 68.95 |       |
| 14 | 3.89  | 77.61               | 2.88  | 73.72 |       |
| BM |       |                     | 10.90 | 66.71 |       |
|    | 11.98 | 88.97               | 0.62  | 76.99 |       |
| BM |       |                     | 0.61  | 88.36 |       |
|    | 1.63  | 89.03               | 1.57  | 77.40 |       |
| BM |       |                     | 7.01  | 82.02 |       |
|    | 0.10  | 77.20               | 11.93 | 77.10 |       |
|    | 1.02  | 66.33               | 11.89 | 65.31 |       |
| BM |       |                     | 5.64  | 60.69 |       |
|    | 3.23  | 60.53 <sup>55</sup> | 9.03  | 57.30 |       |
| BM |       |                     | 8.29  | 52.24 | 52.21 |
|    | 0.23  | 56.50               | 4.26  | 56.27 |       |
| BM |       |                     | 4.42  | 52.08 | 52.23 |
|    |       |                     | 4.54  | 51.96 |       |
|    | 4.52  | 58.08               | 2.94  | 53.56 |       |

12 and D-st

12 and 6

13 st NE cor spk in fence

14 st SW i i i i

14 st 50' east of cor 3' north of st line

15 spk in cor fence SW

16 lower top in cor fence SE

check on 16 st.

17 old

17 SW cor stand most south of cor



|    | +     | 78'   | -    | 6     |
|----|-------|-------|------|-------|
| BM |       | 58.09 |      |       |
|    |       |       | 3.90 | 54.18 |
|    | 10.37 | 67.42 | 1.03 | 57.15 |
|    | 11.56 | 78.20 | 0.77 | 66.65 |
|    | 5.03  | 82.23 | 1.00 | 77.20 |
| BM |       |       | 3.35 | 78.89 |

18 50' north of cor East side st <sup>Spk in fence</sup>

19 st tek in Lower stp SE cor

Check Levels on C St. from  
16th to 24th St

| Sta  | +     | HO     | -    | Elev   | check |
|------|-------|--------|------|--------|-------|
| B.M. | 11.02 | 63.25  | 2.57 | 52.23  |       |
| #    | 0.40  | 57.21  | 6.44 | 60.68  |       |
|      |       |        |      | 56.81  |       |
|      |       |        | 5.26 | 51.95  |       |
| #    | 4.53  | 56.37  | 5.23 | 51.98  |       |
|      |       |        | 2.35 | 54.16  |       |
| #    | 10.32 | 66.16  | 0.67 | 55.84  |       |
| #    | 12.11 | 77.61  | 0.66 | 65.50  |       |
| #    | 6.55  | 82.76  | 1.40 | 76.21  |       |
|      |       |        | 3.87 | 78.89  |       |
| #    | 11.71 | 99.54  | 0.93 | 81.83  |       |
|      | 11.73 | 104.44 | 0.83 | 92.71  |       |
|      |       |        | 5.33 | 99.11  |       |
| #    | 11.83 | 115.42 | 0.85 | 103.59 |       |
|      |       |        | 1.79 | 113.63 |       |
| #    | 11.64 | 126.17 | 0.89 | 114.53 |       |
| #    | 11.82 | 137.15 | 0.84 | 125.39 |       |
| #    | 11.67 | 148.64 | 0.18 | 136.97 |       |
|      | 11.89 | 159.63 | 0.90 | 147.74 |       |
|      | 11.87 | 170.74 | 0.76 | 158.87 |       |
|      |       |        | 9.10 | 161.64 |       |

B.M. 24th & 16 174.96 w/ back 40  
24th Plug 1' from SW. cor  
B.M. 178.79 Plug 80' S of SE cor

Remarks

B.M. 16th & 16.

16th + 6.

17th + 6.

18th + 6.

19th + 6.

20th + 6.

21st + 6.

22nd + 6.

23rd + 6.

| Star | + 365 | - | Ele. | Check |
|------|-------|---|------|-------|
|------|-------|---|------|-------|

|        |        |        |        |               |
|--------|--------|--------|--------|---------------|
| Star   | 170.74 | 0.70   | 170.04 |               |
| #      | 11.89  | 181.93 | 0.70   | 170.04        |
| B. No. |        |        | 3.55   | 178.38        |
|        | 4.24   | 181.92 | 4.25   | 177.68        |
| B. m   |        |        | 6.98   | 174.94 174.96 |
| B. m   |        |        | 3.19   | 178.73 178.74 |

24<sup>th</sup> & D. Tack in N. end of bottom step.

Old Bench

24<sup>th</sup> & D.







The image shows an open notebook with two pages. The pages are cream-colored and feature light green horizontal ruling. The left page is divided into six vertical columns by red lines. The right page is divided into two vertical columns by a red line. The number '45' is printed in the top right corner of the right page. The notebook is placed on a white surface, and the background is dark.











| + | % | - | ell |
|---|---|---|-----|
|---|---|---|-----|

|       |        |       |        |
|-------|--------|-------|--------|
| 4,577 | 43,107 |       | 38,23  |
| 11,37 | 48,669 | 5,808 | 37,299 |
| 7,584 | 54,776 | 1,477 | 47,192 |
| 6,710 | 58,082 | 1,804 | 52,972 |
| 3,311 | 59,713 | 1,578 | 56,404 |
| 9,866 | 64,531 | 5,750 | 64,666 |
|       |        | 5,766 | 68,765 |

$$\begin{array}{r}
 56,404 \\
 8,915 \\
 \hline
 65,319 \\
 1,608 \\
 \hline
 63,746
 \end{array}$$

Handwritten calculations and notes on the left page of the notebook, including various numbers and mathematical operations.

82206  
74199  
77.57

48027 8406  
9160 2.95

67.80 33554 67.80  
208 145

66.77 66.35  
570 225

71.42 64.27  
81.1 570

62.132 71.570 10.5

50944 69.97  
0320 910

50.624 60.87

50944 54499  
4445 17999  
11200

29099 19.5  
08480

24619 67

24619 2.37  
05484 9.1

30650 71.47  
500 5.08  
66.29

TRAVERSE TABLE FOR TRANSIT BOOK,  
From 1° to 90° for a distance of 100.

| Degrees. | DEGREES. |       | ¼ 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  | 84       |
| 1        | 99.98    | 1.75  | 99.98     | 2.18  | 99.97     | 2.62  | 99.95     | 3.05  | 85       |
| 2        | 99.94    | 3.49  | 99.92     | 3.93  | 99.91     | 4.36  | 99.88     | 4.80  | 86       |
| 3        | 99.86    | 5.23  | 99.84     | 5.67  | 99.81     | 6.10  | 99.79     | 6.54  | 87       |
| 4        | 99.76    | 6.98  | 99.73     | 7.41  | 99.69     | 7.85  | 99.66     | 8.28  | 88       |
| 5        | 99.62    | 8.72  | 99.58     | 9.15  | 99.54     | 9.58  | 99.50     | 10.02 | 89       |
| 6        | 99.45    | 10.45 | 99.41     | 10.89 | 99.36     | 11.32 | 99.31     | 11.75 | 90       |
| 7        | 99.25    | 12.19 | 99.20     | 12.62 | 99.14     | 13.05 | 99.09     | 13.49 | 91       |
| 8        | 99.03    | 13.92 | 98.97     | 14.35 | 98.90     | 14.78 | 98.84     | 15.21 | 92       |
| 9        | 98.77    | 15.64 | 98.70     | 16.07 | 98.63     | 16.50 | 98.56     | 16.93 | 93       |
| 10       | 98.48    | 17.36 | 98.40     | 17.79 | 98.33     | 18.22 | 98.25     | 18.65 | 94       |
| 11       | 98.16    | 19.08 | 98.08     | 19.51 | 97.99     | 19.94 | 97.90     | 20.36 | 95       |
| 12       | 97.81    | 20.79 | 97.72     | 21.22 | 97.63     | 21.64 | 97.53     | 22.07 | 96       |
| 13       | 97.44    | 22.50 | 97.34     | 22.92 | 97.24     | 23.34 | 97.13     | 23.77 | 97       |
| 14       | 97.03    | 24.19 | 96.92     | 24.62 | 96.81     | 25.04 | 96.70     | 25.46 | 98       |
| 15       | 96.59    | 25.88 | 96.48     | 26.30 | 96.36     | 26.72 | 96.25     | 27.14 | 99       |
| 16       | 96.13    | 27.56 | 96.00     | 27.98 | 95.88     | 28.40 | 95.76     | 28.82 | 100      |
| 17       | 95.63    | 29.24 | 95.50     | 29.65 | 95.37     | 30.07 | 95.24     | 30.49 |          |
| 18       | 95.11    | 30.90 | 94.97     | 31.32 | 94.83     | 31.73 | 94.69     | 32.14 |          |
| 19       | 94.55    | 32.56 | 94.41     | 32.97 | 94.26     | 33.38 | 94.12     | 33.79 |          |
| 20       | 93.97    | 34.20 | 93.82     | 34.61 | 93.67     | 35.02 | 93.51     | 35.43 |          |
| 21       | 93.36    | 35.84 | 93.20     | 36.24 | 93.04     | 36.65 | 92.88     | 37.06 |          |
| 22       | 92.72    | 37.46 | 92.55     | 37.86 | 92.39     | 38.27 | 92.22     | 38.67 |          |
| 23       | 92.05    | 39.07 | 91.88     | 39.47 | 91.71     | 39.87 | 91.53     | 40.27 |          |
| 24       | 91.35    | 40.67 | 91.18     | 41.07 | 91.00     | 41.47 | 90.81     | 41.87 |          |
| 25       | 90.63    | 42.26 | 90.45     | 42.66 | 90.26     | 43.05 | 90.07     | 43.44 |          |
| 26       | 89.88    | 43.84 | 89.69     | 44.23 | 89.49     | 44.62 | 89.30     | 45.01 |          |
| 27       | 89.10    | 45.40 | 88.90     | 45.79 | 88.70     | 46.17 | 88.50     | 46.56 |          |
| 28       | 88.29    | 46.95 | 88.09     | 47.33 | 87.88     | 47.72 | 87.67     | 48.10 |          |
| 29       | 87.46    | 48.48 | 87.25     | 48.86 | 87.04     | 49.24 | 86.82     | 49.62 |          |
| 30       | 86.60    | 50.00 | 86.38     | 50.38 | 86.16     | 50.75 | 85.94     | 51.18 |          |
| 31       | 85.72    | 51.50 | 85.49     | 51.88 | 85.26     | 52.25 | 85.04     | 52.62 |          |
| 32       | 84.80    | 52.99 | 84.57     | 53.36 | 84.34     | 53.73 | 84.10     | 54.10 |          |
| 33       | 83.87    | 54.46 | 83.63     | 54.83 | 83.39     | 55.19 | 83.15     | 55.56 |          |
| 34       | 82.90    | 55.92 | 82.66     | 56.28 | 82.41     | 56.64 | 82.16     | 57.00 |          |
| 35       | 81.92    | 57.36 | 81.66     | 57.71 | 81.41     | 58.07 | 81.16     | 58.42 |          |
| 36       | 80.90    | 58.78 | 80.64     | 59.13 | 80.39     | 59.48 | 80.13     | 59.83 |          |
| 37       | 79.86    | 60.18 | 79.60     | 60.53 | 79.34     | 60.88 | 79.07     | 61.22 |          |
| 38       | 78.80    | 61.57 | 78.53     | 61.91 | 78.26     | 62.25 | 77.99     | 62.59 |          |
| 39       | 77.71    | 62.93 | 77.44     | 63.27 | 77.16     | 63.61 | 76.88     | 63.94 |          |
| 40       | 76.60    | 64.28 | 76.32     | 64.61 | 76.04     | 64.94 | 75.76     | 65.28 |          |
| 41       | 75.47    | 65.61 | 75.18     | 65.93 | 74.90     | 66.26 | 74.61     | 66.59 |          |
| 42       | 74.31    | 66.91 | 74.02     | 67.24 | 73.73     | 67.56 | 73.43     | 67.88 |          |
| 43       | 73.14    | 68.20 | 72.84     | 68.52 | 72.54     | 68.84 | 72.24     | 69.15 |          |
| 44       | 71.93    | 69.47 | 71.63     | 69.78 | 71.33     | 70.09 | 71.02     | 70.40 |          |
| 45       | 70.71    | 70.71 |           |       |           |       |           |       |          |
| Degrees. | Dep.     | Lat.  | Dep.      | Lat.  | Dep.      | Lat.  | Dep.      | Lat.  | Degrees. |
|          | DEGREES. |       | ¼ DEGREE. |       | ¼ DEGREE. |       | ¼ DEGREE. |       |          |