

OFFICE
SEWERAGE
GRADES
BY LINES OF MISC. BRANCH

9.

TRANSIT.

F.B. 659

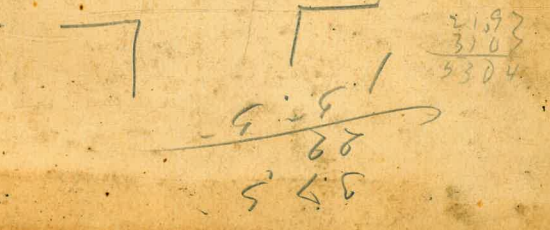
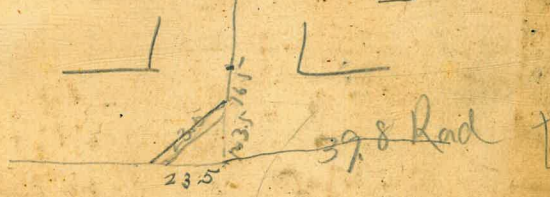
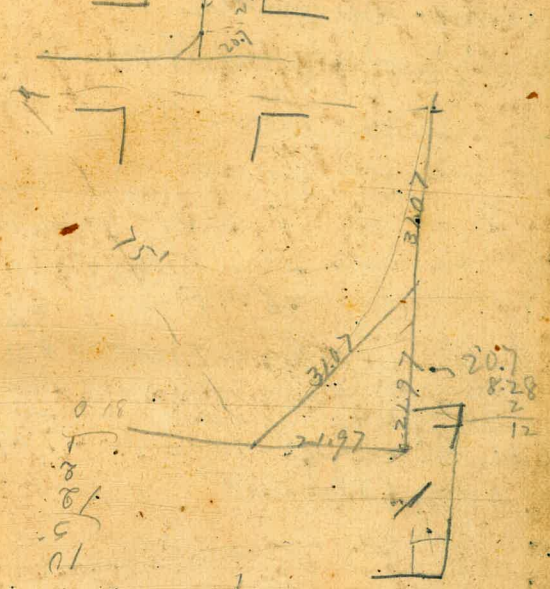
659

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 | 85 |
| 1 | 99.98 | 1.75 | 99.98 | 2.18 | 99.97 | 2.62 | 99.95 | 3.05 | 84 |
| 2 | 99.94 | 3.49 | 99.92 | 3.93 | 99.91 | 4.36 | 99.88 | 4.80 | 83 |
| 3 | 99.86 | 5.23 | 99.84 | 5.67 | 99.81 | 6.10 | 99.79 | 6.54 | 82 |
| 4 | 99.76 | 6.98 | 99.73 | 7.41 | 99.70 | 7.85 | 99.66 | 8.28 | 81 |
| 5 | 99.62 | 8.72 | 99.58 | 9.15 | 99.54 | 9.58 | 99.50 | 10.02 | 80 |
| 6 | 99.45 | 10.45 | 99.41 | 10.89 | 99.36 | 11.32 | 99.31 | 11.75 | 79 |
| 7 | 99.25 | 12.19 | 99.20 | 12.62 | 99.14 | 13.05 | 99.09 | 13.49 | 78 |
| 8 | 99.03 | 13.92 | 98.97 | 14.35 | 98.90 | 14.78 | 98.84 | 15.21 | 77 |
| 9 | 98.77 | 15.64 | 98.70 | 16.07 | 98.63 | 16.50 | 98.56 | 16.93 | 76 |
| 10 | 98.48 | 17.36 | 98.40 | 17.79 | 98.33 | 18.22 | 98.25 | 18.65 | 75 |
| 11 | 98.16 | 19.08 | 98.08 | 19.51 | 97.99 | 19.94 | 97.90 | 20.36 | 74 |
| 12 | 97.81 | 20.79 | 97.72 | 21.22 | 97.63 | 21.64 | 97.53 | 22.07 | 73 |
| 13 | 97.44 | 22.50 | 97.34 | 22.92 | 97.24 | 23.34 | 97.13 | 23.77 | 72 |
| 14 | 97.03 | 24.19 | 96.92 | 24.62 | 96.81 | 25.04 | 96.70 | 25.46 | 71 |
| 15 | 96.59 | 25.88 | 96.48 | 26.30 | 96.36 | 26.72 | 96.25 | 27.14 | 70 |
| 16 | 96.13 | 27.56 | 96.00 | 27.98 | 95.88 | 28.40 | 95.76 | 28.82 | 69 |
| 17 | 95.63 | 29.24 | 95.50 | 29.65 | 95.37 | 30.07 | 95.24 | 30.49 | 68 |
| 18 | 95.11 | 30.90 | 94.97 | 31.32 | 94.83 | 31.73 | 94.69 | 32.14 | 67 |
| 19 | 94.55 | 32.56 | 94.41 | 32.97 | 94.26 | 33.38 | 94.12 | 33.79 | 66 |
| 20 | 93.97 | 34.20 | 93.82 | 34.61 | 93.67 | 35.02 | 93.51 | 35.43 | 65 |
| 21 | 93.36 | 35.81 | 93.20 | 36.24 | 93.04 | 36.65 | 92.88 | 37.06 | 64 |
| 22 | 92.72 | 37.46 | 92.56 | 37.86 | 92.39 | 38.27 | 92.22 | 38.67 | 63 |
| 23 | 92.05 | 39.07 | 91.89 | 39.47 | 91.71 | 39.88 | 91.53 | 40.27 | 62 |
| 24 | 91.35 | 40.67 | 91.18 | 41.07 | 91.00 | 41.47 | 90.81 | 41.87 | 61 |
| 25 | 90.63 | 42.26 | 90.45 | 42.66 | 90.26 | 43.05 | 90.07 | 43.44 | 60 |
| 26 | 89.88 | 43.84 | 89.69 | 44.23 | 89.49 | 44.62 | 89.30 | 45.01 | 59 |
| 27 | 89.10 | 45.40 | 88.90 | 45.80 | 88.20 | 46.47 | 88.50 | 46.56 | 58 |
| 28 | 88.29 | 46.95 | 88.09 | 47.38 | 87.38 | 47.42 | 87.67 | 48.10 | 57 |
| 29 | 87.46 | 48.48 | 87.25 | 48.86 | 87.04 | 49.24 | 86.82 | 49.62 | 56 |
| 30 | 86.60 | 50.00 | 86.38 | 50.38 | 86.16 | 50.75 | 85.94 | 51.13 | 55 |
| 31 | 85.72 | 51.50 | 85.49 | 51.88 | 85.26 | 52.25 | 85.04 | 52.62 | 54 |
| 32 | 84.80 | 52.99 | 84.57 | 53.36 | 84.34 | 53.73 | 84.10 | 54.10 | 53 |
| 33 | 83.87 | 54.46 | 83.63 | 54.83 | 83.39 | 55.19 | 83.15 | 55.56 | 52 |
| 34 | 82.90 | 55.92 | 82.66 | 56.28 | 82.41 | 56.64 | 82.16 | 57.00 | 51 |
| 35 | 81.92 | 57.36 | 81.66 | 57.71 | 81.41 | 58.07 | 81.16 | 58.42 | 50 |
| 36 | 80.90 | 58.78 | 80.64 | 59.13 | 80.39 | 59.48 | 80.13 | 59.83 | 49 |
| 37 | 79.86 | 60.18 | 79.60 | 60.53 | 79.34 | 60.88 | 79.07 | 61.22 | 48 |
| 38 | 78.80 | 61.57 | 78.53 | 61.91 | 78.26 | 62.25 | 77.99 | 62.59 | 47 |
| 39 | 77.71 | 62.93 | 77.44 | 63.27 | 77.16 | 63.61 | 76.88 | 63.94 | 46 |
| 40 | 76.60 | 64.28 | 76.32 | 64.61 | 76.04 | 64.94 | 75.76 | 65.28 | 45 |
| 41 | 75.47 | 65.61 | 75.18 | 65.93 | 74.90 | 66.26 | 74.61 | 66.59 | 44 |
| 42 | 74.31 | 66.91 | 74.02 | 67.24 | 73.73 | 67.56 | 73.43 | 67.88 | 43 |
| 43 | 73.14 | 68.20 | 72.84 | 68.52 | 72.54 | 68.84 | 72.24 | 69.15 | 42 |
| 44 | 71.93 | 69.47 | 71.63 | 69.78 | 71.33 | 70.09 | 71.02 | 70.40 | 41 |
| 45 | 70.71 | 70.71 | | | | | | | |

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

Rad = 29



own mainline
No Y² for branch
sewers should be more
than 23.5' or less than 2'
from intersection of main
and branch lines.

In this case put Y at 3^d station
main curve. Then intersection of
branch curve = 69° $R=40$ $T=27.5$

In this case if $R=75$ $I=45^\circ$ $T=31.07'$
 $AB=21.97$ or longer (it must never be less)
 $BC=53.04$

when $BC=40'$ if $R=40$ $I=45$, $T=16.5$
 $AB=23.5$ (or less)

Length of curve $75'$ rad. ($I=90^\circ$) = 117.81

Main Line H St

| Sta | El | Grd | Cut | | |
|-------|-------------|-------|--------|----|--------|
| 0 | | -8.00 | | | |
| +19.4 | 2.71 | -7.98 | 10 .69 | 10 | 4 1/4 |
| +31.6 | 2.70 | -7.95 | 10 .65 | 10 | 7 3/4 |
| +44.1 | 1.94 | -7.99 | 9 .92 | 9 | 11 1/4 |
| +56.6 | 2.21 | -7.92 | 10 .18 | 10 | 1 5/8 |
| +69.1 | 2.00 | -7.90 | 9 .90 | 9 | 10 3/4 |
| +75 | 1.92 | -7.89 | 9 .81 | 9 | 9 3/4 |
| 1 | 1.36 | -7.86 | 9 .22 | 9 | 2 3/4 |
| +25 | 1.06 | -7.82 | 8 .88 | 8 | 10 3/4 |
| +50 | 0.84 | -7.79 | 8 .63 | 8 | 7 5/8 |
| +75 | 0.66 | -7.75 | 8 .41 | 8 | 4 3/4 |
| 2 | 0.45 | -7.71 | 8 .16 | 8 | 1 3/4 |
| +25 | 0.31 | -7.68 | 7 .99 | 7 | 11 7/8 |
| +50 | 0.24 | -7.64 | 7 .48 | 7 | 10 3/4 |
| +75 | 0.14 | -7.61 | 7 .79 | 7 | 9 1/2 |
| 3 | 1.00 | -7.57 | 7 .57 | 7 | 6 7/8 |
| 3+155 | 6" Y branch | | | | |
| +25 | | -7.54 | | | |
| +50 | | -7.50 | | | |
| +75 | | -7.46 | | | |
| 4 | | -7.43 | | | |
| +25 | | -7.39 | | | |
| +50 | | -7.36 | | | |
| +75 | | -7.32 | | | |
| 5 | | -7.29 | | | |

W.S. Atlantic

All stations for wyes
are at center of main pipe

Sta

Cal H St line is
4.5 S of Center

Main Line H St

Sta El Gnd Cut

| | | | |
|--------|------|----------|---|
| 5+25 | | -7.25 | |
| +50 | | -7.21 | |
| +75 | | -7.18 | |
| 5+90.5 | 24x6 | Y branch | W |
| 6 | | -7.14 | |
| +25 | | -7.11 | |
| +50 | | -7.07 | |
| +75 | | -7.04 | |
| 7 | | -7.0 | |
| +25 | | -6.96 | |
| +50 | | -6.93 | |
| +75 | | -6.89 | |
| 8 | | -6.86 | |
| +25 | | -6.82 | |
| +50 | | -6.79 | |
| +75 | | -6.75 | |
| 8+75.5 | 24x6 | Y branch | W |
| 9 | | -6.71 | |
| +25 | | -6.68 | |
| +50 | | -6.64 | |
| +75 | | -6.61 | |
| 10 | | -6.57 | |

Running East on H St

W L
 6725
 Cretac
 Ed
 1:700
 W L
 8875
 India
 Eh

arch



India

| | |
|-------------------|----------------------------|
| 10425 | -6.54 |
| 50 | -6.50 |
| 75 | -6.46 |
| 11 | -6.43 |
| 75 | -6.39 |
| 11+385 | 24X6 Y Branches |
| 11+405 | -6.36 |
| 75 | -6.32 |
| 12 | -6.29 |
| +25 | -6.25 |
| +50 | -6.21 |
| +75 | -6.18 |
| 13 | -6.14 |
| +25 | -6.11 |
| +50 | -6.07 |
| +625 | -6.05 |
| +7296 | -6.04 |
| +8342 | -6.02 |
| +9388 | -6.01 |
| 141434 | -5.99 |
| +1480 | -5.98 |

Running Eastward 1/4 Sec
 H to State

11+625
 Column

WK
 EL

P.C.
 Cause

| | | | |
|---------------------|---------|--|------|
| 4 | | | |
| +25.26 | -5.96 | Curve H to State 75' Rad. | |
| +35.72 | -5.95 | | |
| +46.18 | -5.93 | | |
| +56.06 | -5.92 | | |
| +67.10 | -5.90 | | |
| +77.56 | -5.89 | | |
| +80.31 | -5.89 | P.T. | 0.00 |
| +5+05 ²⁵ | -5.85 ✓ | Tangerine Damming Southern State to F 240' | |
| +80 | -5.81 ✓ | | |
| +55 | -5.78 ✓ | | |
| +80 | -5.74 ✓ | | |
| +6+5 | -5.71 ✓ | | |
| +30 | -5.67 ✓ | | |
| +55 | -5.64 ✓ | | |
| +80 | -5.60 ✓ | | |
| +17+5 | -5.56 ✓ | | |
| +20 | -5.54 ✓ | P.C. | |
| +30.46 | -5.53 ✓ | Curve State to I | |
| +40.92 | -5.51 ✓ | | |
| +51.38 | -5.50 ✓ | | |

| | |
|---------------------|---------------|
| 761.84 | -5.48 ✓ |
| -172.30 | -5.47 |
| +82.76 | -5.45 |
| +93.22 | -5.44 |
| 1843.68 | -5.42 |
| +14.14 | -5.41 |
| +24.60 | -5.39 |
| +35.06 | -5.38 |
| +37.8 | -5.37 |
| 18463 ²⁵ | -5.34 |
| +88 | -5.30 |
| 9+13 | -5.27 |
| +38 | -5.23 |
| +63 | -5.20 |
| +88 | -5.16 |
| 20+13 | -5.12 |
| <hr/> | |
| 20+45 | 24x6 Y Branch |
| 20+38 | -5.09 |
| +63 | -5.05 |
| +88 | -5.02 |

Current State
to I. St

PT

Eastern I
to Final St

20+38
UNION

~

| Sto | Chw | Grade | but- | |
|-------|--------|----------|---------------|---------------------------|
| 21713 | | -4.98 | | East end I SE FRONT |
| +38 | | -4.95 | | |
| +63 | | -4.91 | | |
| +88 | | -4.87 | | |
| 21713 | | -4.84 | | |
| +31 | | -4.80 | | |
| +63 | | -4.77 | | |
| +88 | | -4.73 | | |
| 22492 | 24 X 6 | Y Facing | | |
| 22494 | 24 X 6 | Y Facing | | |
| 23113 | | -4.70 | 1 | 23 X 0.5 FRONT |
| +38 | | -4.67 | | FRONT SE |
| +63 | | -4.63 | | |
| +88 | | -4.60 | | |
| 24493 | | -4.56 | | |
| +38 | | -4.53 | | |
| +63 | | -4.49 | | |
| +88 | | -4.46 | | |
| 25719 | | -4.42 | | |
| +205 | 7.23 | -4.39 | 12. 12 12 1/2 | |
| +3371 | 7.94 | -4.37 | 12. 31 12 3/4 | |

-4.79.7

PC

Main Line I to J

| Sta | Elev | Grade | Dist. | Cont. |
|----------|------|-------|-------|-------------|
| 257 | | | | |
| +44.17 | 8.08 | -4.36 | 12.44 | 12' 5 1/4" |
| +54.63 | 8.12 | -4.34 | 12.56 | 12' 6 3/4" |
| 465.09 | 8.28 | -4.33 | 12.61 | 12' 7 3/8" |
| +75.55 | 8.33 | -4.31 | 12.64 | 12' 7 9/16" |
| +86.07 | 8.25 | -4.30 | 12.55 | 12' 6 3/8" |
| +96.47 | 8.07 | -4.28 | 12.35 | 12' 4 1/4" |
| 26+06.93 | 8.09 | -4.27 | 12.36 | 12' 4 3/8" |
| +17.39 | 8.09 | -4.25 | 12.34 | 12' 4 1/8" |
| +27.85 | 7.98 | -4.24 | 12.22 | 12' 2 3/8" |
| +38.31 | 7.71 | -4.22 | 11.93 | 11' 11 1/8" |
| +53 | 7.40 | -4.20 | 11.60 | 11' 7 1/8" |
| +78 | 6.94 | -4.15 | 11.10 | 11' 1 1/8" |
| 27+03 | 6.48 | -4.13 | 10.61 | 10' 7 3/8" |
| +28 | 5.97 | -4.09 | 10.06 | 10' 0 3/8" |
| +53 | 5.51 | -4.07 | 9.38 | 9' 4 3/8" |
| +78 | 4.82 | -4.03 | 8.85 | 8' 10 1/4" |
| 28+03 | 4.36 | -3.99 | 8.35 | 8' 4 1/4" |
| +28 | 3.68 | -3.96 | 7.64 | 7' 7 3/8" |
| +53 | 3.12 | -3.92 | 7.04 | 7' 0 1/2" |

Curve I to J

Curve J to K

26+38.31
26+53

PT

| Sto | Clear | Grade | but | |
|--------|---------|-------|------|---------------------------------|
| 28+65 | 2.71 | -3.90 | 6.61 | 6 7 ³ / ₈ |
| +78.46 | 2.58 | -3.89 | 6.47 | 6 5 ³ / ₈ |
| +88.92 | 2.19 | -3.87 | 6.06 | 6 0 ³ / ₈ |
| +99.38 | 2.36 | -3.16 | 6.22 | 6 2 ³ / ₈ |
| 29+984 | 2.38 | -3.84 | 6.22 | 6 2 ³ / ₈ |
| +20.30 | 2.56 | -3.83 | 6.39 | 6 4 ³ / ₄ |
| +30.76 | 2.52 | -3.81 | 6.33 | 6 4" |
| +41.22 | 2.58 | -3.80 | 6.18 | 6 2 ¹ / ₈ |
| +51.68 | 2.57 | -3.78 | 6.17 | 6 2" |
| +62.14 | 2.41 | -3.77 | 6.18 | 6 2 ¹ / ₈ |
| +72.60 | 2.70 | -3.75 | 6.45 | 6 5 ³ / ₈ |
| +83.06 | | -3.73 | | |
| 29+558 | 3.03 | -3.73 | 6.76 | 6 9 ¹ / ₈ |
| 30+11 | 2.93 | 3.69 | 6.62 | 6 7 ¹ / ₂ |
| +36 | 3.08 | -3.66 | 6.74 | 6 8 ⁷ / ₈ |
| +61 | 3.10 | -3.62 | 6.72 | 6 8 ⁵ / ₈ |
| +86 | 3.20 | -3.59 | 6.78 | 6 9 ¹ / ₂ |
| 31+11 | 3.23 | -3.55 | 6.78 | 6 9 ³ / ₈ |
| +36 | 3.25 | -3.52 | 6.77 | 6 9 ¹ / ₄ |
| +61 | 3.55 | -3.48 | 7.43 | 7 5 ¹ / ₈ |
| 31+69 | √ 6x2.4 | 2nd | St | |

PC

From 1st to 2nd

PT

From 2nd to 3rd

He 6
 9 East on J to 3rd

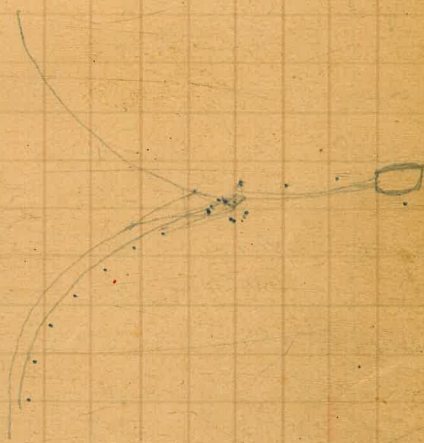
H H amlin
 A H amlin

| St. | Elev | Grade | bus | |
|----------|------|-------|------|-----------------|
| 31+86 | 4.07 | -344 | 7.51 | 7 6 1/2 |
| | 24X6 | Y | | |
| 32+11 | 5.51 | -341 | 6.92 | 6.11" |
| +36 | 2.27 | -337 | 5.64 | 5 7 3/4 31+91 |
| +61 | 1.64 | -334 | 4.98 | 4 11 3/4 |
| +86 | 1.58 | -330 | 4.88 | 4 10 3/4 |
| 33+11 | 1.18 | -326 | 4.44 | 4 5 1/4 |
| +36 | 1.47 | -323 | 4.70 | 4 8 3/4 |
| +61 | 1.56 | -319 | 4.55 | 4 6 3/4 |
| +86 | 1.58 | -315 | 4.55 | 4 6 3/4 |
| 33+96 | 1.48 | -314 | 4.62 | 4 7 1/2 |
| 34+646 | 1.53 | -313 | 4.66 | 4 7 7/8 |
| +16.92 | 1.04 | -312 | 4.16 | 4 1 7/8 |
| +27.38 | 1.15 | -310 | 4.25 | 4 3" |
| +37.84 | 1.31 | -308 | 4.39 | 4 4 3/4 6+24X |
| +48.30 | 1.03 | -307 | 4.10 | 4 1 1/4 |
| +58.76 | 1.03 | -306 | 4.09 | 4 1 1/4 |
| +69.22 | 1.27 | -304 | 4.31 | 4 3 3/4 |
| +79.68 | 1.31 | -303 | 4.34 | 4 4 1/4 4 X 1/2 |
| +90.14 | 1.49 | -301 | 4.50 | 4 6 |
| 35+00.60 | 1.49 | -300 | 4.49 | 4 5 3/4 |

East on J to 3rd

PC ✓ 0.14%

East on J to 3rd



| Sta | 6.lev | Diode | but | |
|----------|-------|-------|------|----------------------------------|
| 35+11.06 | | -2.98 | | |
| +13.81 | 1.63 | -2.98 | 4.61 | 4.7 ³ / ₄ |
| +39 | 1.29 | -2.94 | 4.23 | 4.2 ³ / ₄ |
| +64 | 1.00 | -2.90 | 3.90 | 3.10 ³ / ₄ |
| +89 | 0.76 | -2.87 | 3.63 | 3.7 ³ / ₄ |
| 36+14 | 0.51 | -2.83 | 3.34 | 3.4 ¹ / ₄ |
| +39 | 0.32 | -2.80 | 3.12 | 3.1 ¹ / ₂ |
| +64 | 0.03 | -2.76 | 2.79 | 2.9 ¹ / ₂ |
| +89 | 0.09 | -2.73 | 2.82 | 2.9 ³ / ₄ |
| 37+11 | 0.04 | -2.67 | 2.73 | 2.8 ³ / ₄ |
| +39 | -0.02 | -2.65 | 2.63 | 2.7 ¹ / ₄ |
| 37+44 | -0.15 | -2.64 | 2.49 | 2.5 ³ / ₄ |
| +54.46 | 0.11 | -2.62 | 2.73 | 2.8 ³ / ₄ |
| +64.92 | 0.16 | -2.61 | 2.77 | 2.9 ¹ / ₄ |
| +75.38 | 0.12 | -2.60 | 2.72 | 2.8 ³ / ₄ |
| +85.84 | 0.17 | -2.58 | 2.75 | 2.9 |
| +96.30 | 0.00 | -2.57 | 2.57 | 2.6 ³ / ₄ |
| 38+06.76 | -0.28 | -2.55 | 2.27 | 2.3 ¹ / ₄ |
| +17.22 | -0.13 | -2.54 | 2.41 | 2.4 ³ / ₄ |
| +27.68 | 0.38 | -2.52 | 2.90 | 2.10 ³ / ₄ |

35+12
 2nd East P T 35' ft from property line

Y 4 W

Y 4 C

Y 4 +95 W

Y 4 +15 C

+39 W

+64 C

+89 W

37+14 C

+37 W

HC

35' from property line
 35' 0.145%

down south to

12/27 17.71
at 94

11 K to 5th

| Sta | Clear | Grade | cut | | |
|---------|-------|-------|------|-----|-------|
| 38+3814 | 0.63 | -2.51 | 3.14 | 3.1 | 3/4 |
| +48.60 | 0.52 | -2.49 | 3.01 | 3.0 | 1/8 |
| +59.06 | | -2.48 | | | |
| +61.81 | 0.34 | -2.47 | 3.01 | 3.0 | 0 1/4 |
| +87 | 1.10 | -2.43 | 3.43 | 3.5 | 1/4 |
| 39+42 | 0.79 | -2.40 | 3.19 | 3.2 | 1/4 |
| +437 | 0.99 | -2.36 | 3.30 | 3.3 | 5/4 |
| +62 | 0.96 | -2.33 | 3.29 | 3.3 | 1/2 |
| +487 | 1.17 | -2.29 | 3.46 | 3.5 | 1/2 |
| 40+075 | 1.24 | -2.25 | 3.49 | 3.5 | 7/8 |
| +28 | 1.59 | -2.22 | 3.81 | 3.9 | 3/4 |
| +33 | 1.33 | -2.19 | 3.52 | 3.6 | 1/4 |
| +71 | 1.99 | -2.15 | 4.14 | 4.1 | 1/4 |
| +56 | 2.00 | -2.12 | 4.12 | 4.1 | 1/2 |
| 41+165 | 1.70 | -2.10 | 3.80 | 3.9 | 3/4 |
| +37 | 1.97 | -2.08 | 4.05 | 4.0 | 5/4 |
| +62 | 2.54 | -2.05 | 4.63 | 4.7 | 5/4 |
| +87 | 3.17 | -2.01 | 5.19 | 5.2 | 1/8 |
| 42+12 | 3.51 | -1.98 | 5.49 | 5.5 | 7/8 |
| +37 | 4.10 | -1.94 | 6.04 | 6.0 | 1/2 |
| +62 | 4.58 | -1.91 | 6.49 | 6.5 | 7/8 |

177

Bank on K to 6th

12 K to 6th St

.14
75

| Stn | Elev | Grade | Lat | |
|----------|------|-------|------|-------------------------------------|
| +87 | 4.89 | -1.88 | 6.77 | 6' 9 ¹ / ₄ |
| 43+12 | 5.14 | -1.84 | 6.98 | 6' 11 ³ / ₄ " |
| +37 | 5.14 | -1.81 | 6.95 | 6' 11 ³ / ₄ " |
| +62 | 5.08 | -1.77 | 6.85 | 6' 10 ¹ / ₄ " |
| +87 | 5.23 | -1.74 | 6.97 | 6' 11 ⁵ / ₄ " |
| 44+12 | 4.85 | -1.70 | 6.55 | 6' 6 ³ / ₄ " |
| +57 | 5.07 | -1.68 | 6.73 | 6' 8 ³ / ₄ " |
| +62 | 5.28 | -1.63 | 6.91 | 6' 10 ³ / ₄ " |
| +97 | 5.53 | -1.59 | 7.12 | 7' 1 ¹ / ₂ " |
| 45+12 | 5.80 | -1.56 | 7.36 | 7' 4 ³ / ₄ " |
| +37 | 6.10 | -1.52 | 7.62 | 7' 7 ³ / ₄ " |
| +52 | 6.05 | -1.50 | 7.55 | 7' 6 ³ / ₄ " |
| +62.46 | 6.49 | -1.48 | 7.97 | 7' 11 ⁵ / ₄ " |
| +72.92 | 6.52 | -1.47 | 7.99 | 7' 11 ⁷ / ₄ " |
| +83.58 | 6.15 | -1.45 | 7.60 | 7' 7 ¹ / ₄ " |
| +93.84 | 6.37 | -1.44 | 7.81 | 7' 9 ³ / ₄ " |
| 46+04.30 | 6.00 | -1.42 | 7.42 | 7' 5' |
| +14.76 | 5.89 | -1.41 | 7.30 | 7' 3 ³ / ₄ " |
| +25.22 | 5.83 | -1.39 | 7.32 | 7' 3 ¹ / ₄ " |
| +35.68 | 6.01 | -1.38 | 7.33 | 7' 4 ³ / ₄ " |

K to 6th St

C line 5th St

PC
C line K to 5th St

| Sta | Obs | Grade | Cut | | |
|----------|------|-------|------|---|--------------------------------|
| 46+46.14 | 5.97 | -1.36 | 7.33 | 7 | 4 |
| +56.60 | 6.06 | -1.35 | 7.41 | 7 | 4 ¹ / ₄ |
| +67.26 | | -1.34 | | | |
| 46.69.8 | 5.99 | -1.33 | 7.32 | 7 | 3 ³ / ₄ |
| +85 | 5.67 | -1.30 | 6.97 | 6 | 11 ⁵ / ₄ |
| 47+10 | 5.34 | -1.28 | 6.62 | 6 | 7 ¹ / ₂ |
| +35 | 5.09 | -1.24 | 6.28 | 6 | 3 ³ / ₄ |
| +60 | 4.72 | -1.20 | 5.92 | 5 | 11 |
| +85 | 4.60 | -1.16 | 5.76 | 5 | 9 ¹ / ₄ |
| 48+10 | 4.28 | -1.12 | 5.40 | 5 | 4 ³ / ₄ |
| +35 | 3.93 | -1.08 | 5.01 | 5 | 1 ¹ / ₄ |
| +60 | 3.76 | -1.05 | 4.81 | 4 | 9 ³ / ₄ |
| +85 | 3.49 | -1.01 | 4.48 | 4 | 5 ³ / ₄ |
| 49+10 | 3.18 | -0.97 | 4.15 | 4 | 1 ³ / ₄ |
| +25 | 3.21 | -0.94 | 4.15 | 4 | 1 ³ / ₄ |

0.357

PT

Jan 31

G. H. W. L. D. J. D. C.

49+43
6th St

FT 6th St B

+1581=
50773 -0.63

+38 -0.80

+63 -0.76

+88 -0.73

51+13 -0.69

+38 -0.66

+63 -0.62

+88 -0.58

52+13 -0.55

+38 -0.51

+63 -0.48

+88 -0.44

53+13 -0.41

+38 -0.37

+63 -0.33

52+23
7th

| | |
|-------|-------|
| 53+88 | -0.30 |
| 54+13 | -0.26 |
| +38 | -0.23 |
| +63 | -0.19 |
| +88 | -0.16 |
| 55+13 | -0.12 |
| +38 | -0.08 |
| +63 | -0.04 |
| +88 | -0.01 |
| 56+13 | 0.02 |
| +38 | 0.06 |
| +63 | 0.09 |
| +88 | 0.13 |
| 57+13 | 0.17 |
| +38 | 0.20 |
| +63 | 0.24 |
| +88 | 0.27 |
| 58+13 | 0.31 |
| +38 | 0.34 |
| +63 | 0.38 |
| +88 | 0.42 |

55+3
9th

57+83
9th

| | |
|-------|-------|
| 59+13 | 0.115 |
| +38 | 0.119 |
| +63 | 0.52 |
| +88 | 0.50 |
| 60+13 | 0.59 |
| +38 | 0.63 |
| +63 | 0.67 |
| +88 | 0.70 |
| 61+13 | 0.74 |
| +38 | 0.77 |
| +63 | 0.81 |
| +88 | 0.84 |
| 62+13 | 0.88 |
| +38 | 0.91 |
| +63 | 0.95 |
| 88 | 0.98 |
| 63+13 | 1.02 |
| +38 | 1.05 |
| +63 | 1.09 |
| +88 | 1.13 |

60+63
10thI Sheets to 16th63+43
11th

$$\begin{array}{r}
 94 \frac{3}{4} \\
 72 \\
 10 \\
 \hline
 1 \quad 11 \frac{1}{4}
 \end{array}$$

East of 11th St

Sta Elev Area Cut

| | | | | |
|-------|------|--------|-------|-------------------------------------|
| 64+13 | | 1.16 | | |
| +38 | | 1.20 | | |
| +63 | | 1.23 | | |
| +88 | | 1.27 | | |
| 65+13 | | 1.30 | 33 | |
| +38 | | 1.34 | | |
| +63 | | 1.37 | | |
| +88 | | 1.41 | | |
| 66+13 | 9.45 | {1.45} | 07.75 | 7' 9" |
| 66+10 | | {1.70} | | |
| +38 | 8.90 | 1.73 | 7.17 | 7' 2 ¹ / ₂ " |
| +63 | 6.83 | 1.77 | 5.06 | 5' 0 ³ / ₄ " |
| +88 | 4.75 | 1.80 | 2.95 | 2' 11 ³ / ₄ " |
| 67+13 | 3.69 | 1.84 | 1.85 | 1' 10 ¹ / ₄ " |
| +38 | 3.17 | 1.88 | 1.29 | 1' 3 ¹ / ₂ " |
| +63 | 2.81 | 1.91 | 0.90 | 0' 10 ³ / ₄ " |
| +88 | 2.49 | 1.95 | 0.54 | 0' 6 ¹ / ₂ " |
| 68+13 | 2.61 | 1.98 | 0.63 | 0' 7 ⁵ / ₈ " |
| +38 | 2.66 | 2.02 | 0.64 | 0' 7 ³ / ₄ " |
| +63 | 3.01 | 2.06 | 0.95 | 0' 11 ³ / ₄ " |
| 68+10 | | | | |
| +88 | 4.09 | 2.09 | 2.00 | 2' 00" |

11th Street to 16th St

12th St

14 L. G. 12 Sh

| Sta | Elev | Grade | cut | | |
|-------|------|-------|------|----|---|
| + | | | | | |
| 69+13 | 6.30 | 2.13- | 4.17 | 4' | 2" ⁶⁹⁺⁰³ 13 th |
| +38 | 5.33 | 2.17 | 3.16 | 3' | 1 $\frac{3}{4}$ " |
| +63 | 5.89 | 2.20 | 3.69 | 3' | 8 $\frac{1}{4}$ " |
| +88 | 6.70 | 2.24 | 4.46 | 4' | 5 $\frac{1}{2}$ " |
| 70+13 | 7.59 | 2.27 | 6.32 | 5' | 8 $\frac{1}{4}$ " |
| +38 | 8.19 | 2.31 | 5.88 | 5' | 10 $\frac{3}{4}$ " |
| +63 | 8.67 | 2.34 | 6.33 | 6' | 4" |
| +88 | 8.68 | 2.38 | 6.90 | 6' | 3 $\frac{5}{8}$ " |
| 71+13 | 8.38 | 2.42 | 5.96 | 5' | 11 $\frac{1}{4}$ " |
| +38 | 6.23 | 2.45 | 3.79 | 3' | 9 $\frac{3}{4}$ " |
| 71+60 | B.J. | | | | |
| +63 | 5.01 | 2.49 | 2.52 | 2' | 6 $\frac{1}{4}$ " |
| +88 | 6.02 | 2.52 | 3.50 | 3' | 6" ⁷¹⁺⁵³ 14 th |
| 72+13 | 7.11 | 2.56 | 4.55 | 4' | 6 $\frac{3}{4}$ " |
| +38 | 7.29 | 2.59 | 4.70 | 4' | 8 $\frac{3}{4}$ " |
| +63 | 7.91 | 2.63 | 4.78 | 4' | 9 $\frac{3}{4}$ " |
| +88 | 7.51 | 2.66 | 4.85 | 4' | 10 $\frac{1}{4}$ " |
| 73+13 | 7.26 | 2.70 | 4.56 | 4' | 6 $\frac{3}{4}$ " |
| +38 | 7.88 | 2.74 | 5.14 | 5' | 1 $\frac{3}{4}$ " |
| +63 | 8.57 | 2.77 | 5.80 | 5' | 9 $\frac{3}{4}$ " |
| +88 | 8.71 | 2.81 | 5.90 | 5' | 10 $\frac{3}{4}$ " |

I Street to 16th

y N

y S

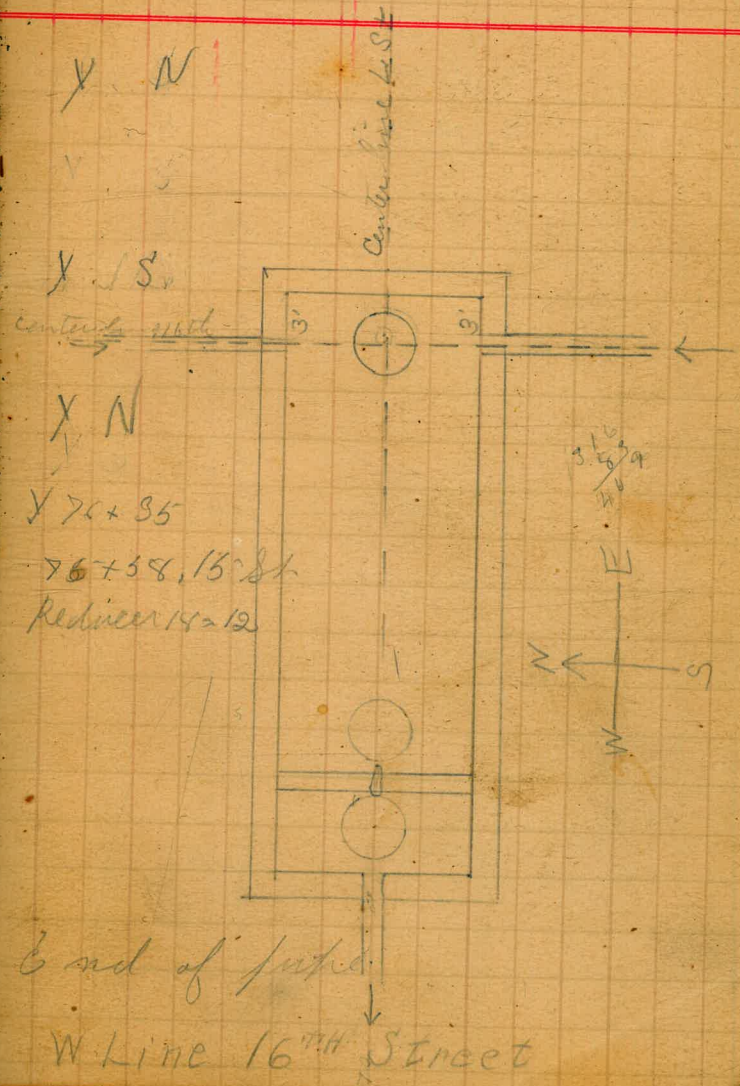
17

| St | Elev | Grade | Cut |
|-------|-------|-------|----------------|
| 74+13 | 8.46 | 2.84 | 5.62 5 7/8 |
| +38 | 8.59 | 2.88 | 5.71 5 8 1/2 |
| +63 | 8.54 | 2.91 | 5.63 5 7 1/2 |
| +88 | 8.52 | 2.95 | 5.57 5 6 7/8 |
| 75+13 | 8.50 | 2.79 | 5.31 5 3 3/4 |
| +38 | 8.46 | 3.02 | 5.44 5 5 1/4 |
| +63 | 8.54 | 3.06 | 5.28 5 3 3/4 |
| +88 | 8.66 | 3.09 | 6.57 6 6 7/8 |
| 76+13 | 11.13 | 3.13 | 8.00 8.00 |
| +38 | 12.06 | 3.16 | 9.90 9 10 3/4 |
| 76+35 | 14.59 | 3.20 | 11.39 11 4 7/8 |
| +63 | 14.59 | 3.20 | 11.39 11 4 7/8 |
| +88 | 15.73 | 3.30 | 12.43 12 5 1/4 |
| 77+13 | 15.98 | 3.40 | 12.58 12 7 |
| +38 | 16.29 | 3.50 | 12.79 12 9 1/2 |
| +63 | 16.24 | 3.60 | 12.64 12 7 3/4 |
| +88 | 16.48 | 3.70 | 12.78 12 9 3/4 |
| 78+13 | 17.05 | 3.80 | 13.25 13.3 |
| +38 | 18.28 | 3.90 | 14.38 14.4 1/4 |
| +58 | 19.28 | 4.00 | 15.28 15.3 3/4 |

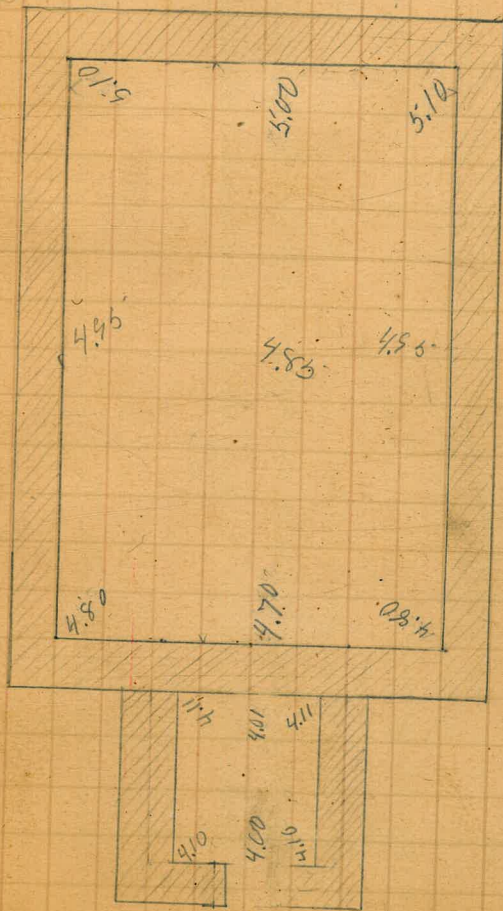
I
SE to 16th

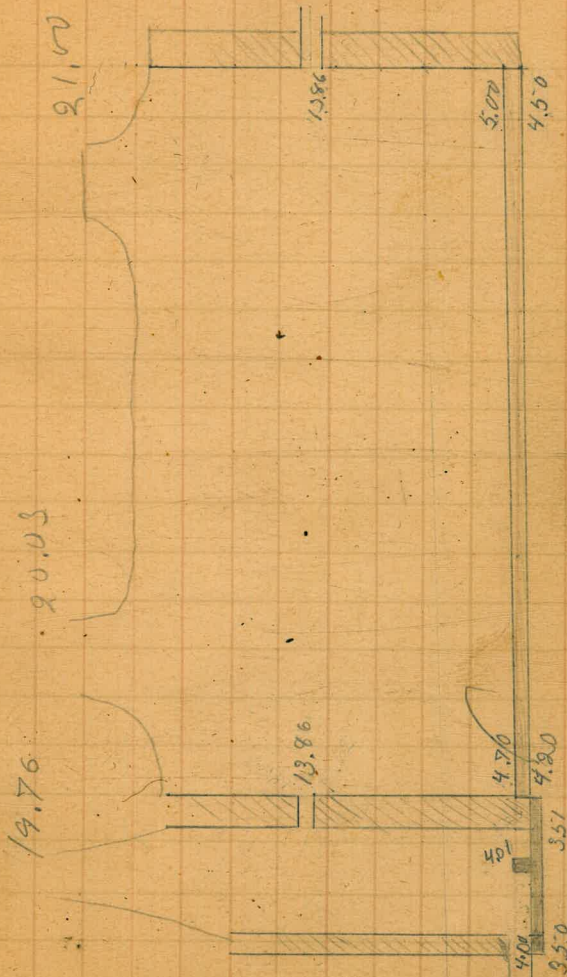
3.0
4.0

Plan showing location
of Large Flush Tank Cor 16th. 19



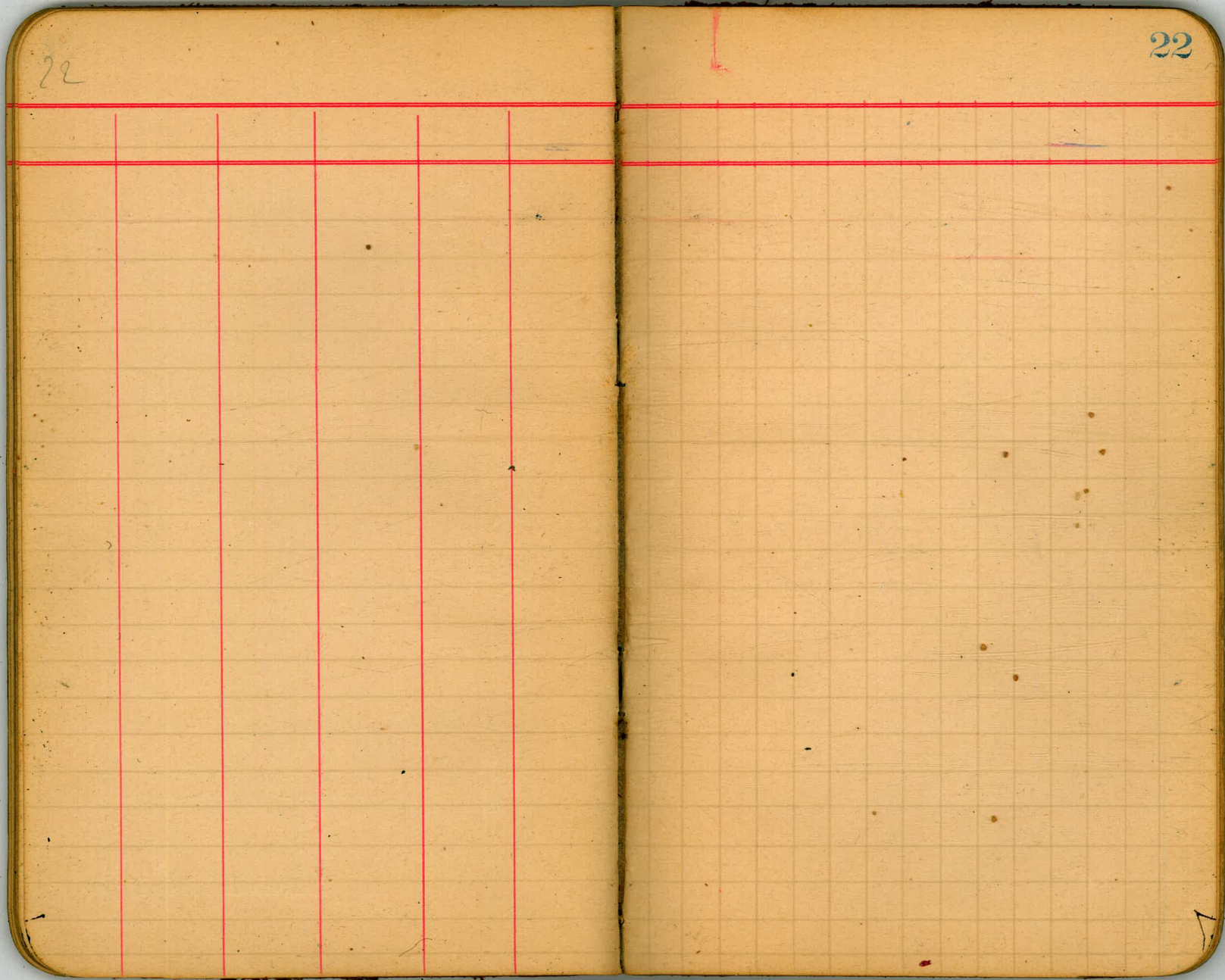
| B.M. | + | H.I. | - | Grade | Rod |
|------|------|------|---|-------|------|
| 7.97 | 1.12 | 9.09 | | 5.10 | 3.99 |
| | | | | 5.00 | 4.09 |
| | | | | 5.10 | 3.99 |
| | | | | 4.80 | 4.29 |
| | | | | 4.70 | 4.39 |
| | | | | 4.80 | 4.29 |
| 7.97 | 1.36 | 4.33 | | 4.95 | 4.38 |
| | | | | 4.95 | 4.34 |
| | | | | 4.85 | 4.48 |
| 7.97 | 1.21 | 9.18 | | 4.11 | 5.07 |
| | | | | 4.11 | 5.07 |
| | | | | 4.01 | 5.17 |
| | | | | 4.10 | 5.08 |
| | | | | 4.10 | 5.08 |
| | | | | 4.00 | 5.18 |





22

22



22

23

12/21

H. Hanley
S. Hanley

24 Inlet to Reservoir

-8.5 O.S. 24

Sta Elev Grade

| | | |
|-----|-------|--|
| -0 | -8.08 | |
| +10 | -8.08 | |
| +20 | -8.09 | |
| +30 | -8.09 | |
| +40 | -8.10 | |
| +50 | -8.10 | |
| +60 | -8.10 | |
| +70 | -8.11 | |
| +80 | -8.11 | |
| +90 | -8.12 | |
| 1 | -8.12 | |
| +10 | -8.12 | |
| +20 | -8.13 | |
| +30 | -8.13 | |
| +40 | -8.14 | |
| +50 | -8.14 | |
| +60 | -8.15 | |
| +70 | -8.15 | |
| +80 | -8.16 | |
| +90 | -8.16 | |

25

25

Ste bbo small

| | |
|-----|--------|
| 2 | -8.17. |
| +10 | -8.17. |
| +20 | -8.18. |
| +30 | -8.18. |
| +40 | -8.19. |
| +50 | -8.19. |
| +60 | -8.20. |
| +70 | -8.20. |
| +80 | -8.21. |
| +90 | -8.21. |
| 3 | -8.21. |
| +10 | -8.21. |
| +10 | -8.22. |
| +30 | -8.22. |
| +40 | -8.23. |
| +50 | -8.23. |
| +60 | -8.24. |
| +70 | -8.24. |
| +80 | -8.25. |
| +90 | -8.25. |

96

26

| Dte | Elev | Grad |
|-----|------|-------|
| 9 | | -8.26 |
| +10 | | -8.26 |
| +10 | | -8.27 |
| +20 | | -8.27 |
| +40 | | -8.28 |
| +50 | | -8.28 |
| +60 | | -8.29 |
| +70 | | -8.29 |
| +80 | | -8.29 |
| +90 | | -8.30 |
| 5 | | -8.30 |
| +10 | | -8.30 |
| +10 | | -8.31 |
| +31 | | -8.31 |
| +40 | | -8.32 |
| +50 | | -8.32 |
| +60 | | -8.33 |
| +70 | | -8.33 |
| +80 | | -8.34 |
| +90 | | -8.34 |

| | |
|-----|-------|
| 6 | -8.35 |
| +10 | -8.35 |
| +20 | -8.36 |
| +30 | -8.36 |
| +40 | -8.37 |
| +50 | -8.37 |
| +60 | -8.38 |
| +70 | -8.38 |
| +80 | -8.39 |
| +90 | -8.39 |
| 7 | 8.39 |
| +10 | 8.39 |
| +20 | 8.40 |
| +30 | 8.40 |
| +40 | 8.41 |
| +50 | 8.41 |
| +60 | 8.42 |
| +70 | 8.42 |
| +80 | 8.43 |
| +90 | 8.43 |

| | |
|-----|--------|
| 8 | -8.44- |
| +10 | -8.44- |
| +20 | -8.45- |
| +30 | -8.45- |
| +40 | -8.45- |
| +50 | -8.46- |
| +60 | -8.47- |
| +70 | -8.47- |
| +80 | -8.47- |
| +90 | -8.48- |
| 9 | -8.48- |
| +10 | -8.49- |
| +20 | -8.49- |
| +30 | -8.50- |
| +40 | -8.50- |
| +50 | -8.51- |
| +60 | -8.51- |
| +70 | -8.52- |
| +80 | -8.52- |
| +90 | -8.53- |

| | |
|-----|--------|
| 10 | -8.53- |
| +10 | -8.53- |
| +10 | -8.54- |
| +30 | -8.54- |
| +40 | -8.55- |
| +50 | -8.55- |
| +60 | -8.56- |
| +70 | -8.56- |
| +80 | -8.57- |
| +90 | -8.57- |
| 11 | -8.58- |
| +10 | -8.58- |
| +90 | -8.58- |

Grades of 6th St. on L

| Sta | Elev | Grade | cut | | |
|--------|------|-------|------|---|--------|
| 49+17 | 3.24 | -0.94 | 4.18 | 4 | 2 1/4 |
| +26+12 | 3.17 | -0.92 | 4.09 | 4 | 1 1/4 |
| 13584 | 3.01 | -0.91 | 3.92 | 3 | 11 |
| +4526 | 2.09 | -0.90 | 2.99 | 2 | 11 7/8 |
| 15469 | 2.77 | -0.89 | 3.66 | 3 | 7 7/8 |
| +6410 | 2.76 | -0.87 | 3.63 | 3 | 7 5/8 |
| 17352 | 2.59 | -0.86 | 3.45 | 3 | 5 3/4 |
| 18294 | 2.62 | -0.85 | 3.47 | 3 | 5 3/4 |
| +22 | 2.63 | -0.83 | 3.46 | 3 | 5 1/2 |
| 50+02 | 2.64 | -0.82 | 3.50 | 3 | 6 |
| +17 | 2.78 | -0.40 | 3.38 | 3 | 7 |
| +42 | 3.12 | -0.76 | 3.88 | 3 | 10 5/8 |
| +67 | 3.59 | -0.72 | 4.31 | 4 | 3 3/4 |
| +92 | 3.70 | -0.64 | 4.34 | 4 | 4 5/8 |
| 61+17 | 4.13 | -0.64 | 4.77 | 4 | 9 1/4 |
| +42 | 4.57 | -0.60 | 5.17 | 5 | 2 |
| +62 | 4.70 | -0.56 | 5.26 | 5 | 3 1/8 |
| +92 | 5.00 | -0.53 | 5.53 | 5 | 6 3/8 |
| 32+12 | 5.24 | -0.44 | 5.72 | 5 | 4 5/8 |
| +92 | 5.70 | -0.45 | 6.15 | 6 | 1 3/4 |
| +62 | 5.66 | -0.42 | 6.08 | 6 | 1 |
| +22 | 5.90 | -0.34 | 6.24 | 6 | 3 1/2 |

PC

C.S. 6th St
PT

W. line 7th St. July 29

7th St

E. line 7th St

| Sta | Elev | Grade | Cut |
|-------|------|-------|-----|
| 52+72 | | -0.35 | |
| +97 | | -0.31 | |
| 53+22 | | -0.24 | |
| +47 | | -0.24 | |
| +72 | | -0.20 | |
| +97 | | -0.16 | |
| 54+22 | | -0.12 | |
| +47 | | -0.09 | |
| +72 | | -0.07 | |
| +92 | | -0.04 | |
| 55+12 | | -0.01 | |
| +32 | | 0.32 | |
| +52 | | 0.07 | |
| +77 | | 0.11 | |
| 56+02 | | 0.15 | |
| +27 | | 0.19 | |
| +52 | | 0.23 | |
| +77 | | 0.26 | |
| 57+02 | | 0.30 | |
| +27 | | 0.34 | |

$$\frac{0.71}{-9.591}$$

Caline 7th St.

W L 8th St.

8th St.

Caline 8th St.

W L 9th St.

| Str | Clev | Grade | Lat |
|-------|------|-------|-----|
| +52 | | 0.37 | |
| +72 | | 0.40 | |
| +82 | | 0.43 | |
| 58+12 | | 0.47 | |
| +32 | | 0.50 | |
| +57 | | 0.54 | |
| +82 | | 0.58 | |
| 59+07 | | 0.62 | |
| +32 | | 0.66 | |
| +57 | | 0.70 | |
| +82 | | 0.73 | |
| 60+07 | | 0.77 | |
| +32 | | 0.80 | |
| +52 | | 0.83 | |
| +72 | | 0.86 | |
| +92 | | 0.89 | |
| 61+12 | | 0.93 | |
| +57 | | 0.97 | |
| +62 | | 1.01 | |
| +82 | | 1.05 | |

0.01
-9.921

W Line 9th St

9th St

E Line 9th St

W Line 10th St

10th St

E Line 10th St

Main Line C 6th St
Sto Elev Grade Cont

| | |
|-------|------|
| 62+12 | 1.09 |
| +37 | 1.13 |
| +62 | 1.17 |
| +87 | 1.21 |

63+12

+32

+52

+72

+92

64+17

+42

+67

+92

65+17

+42

+67

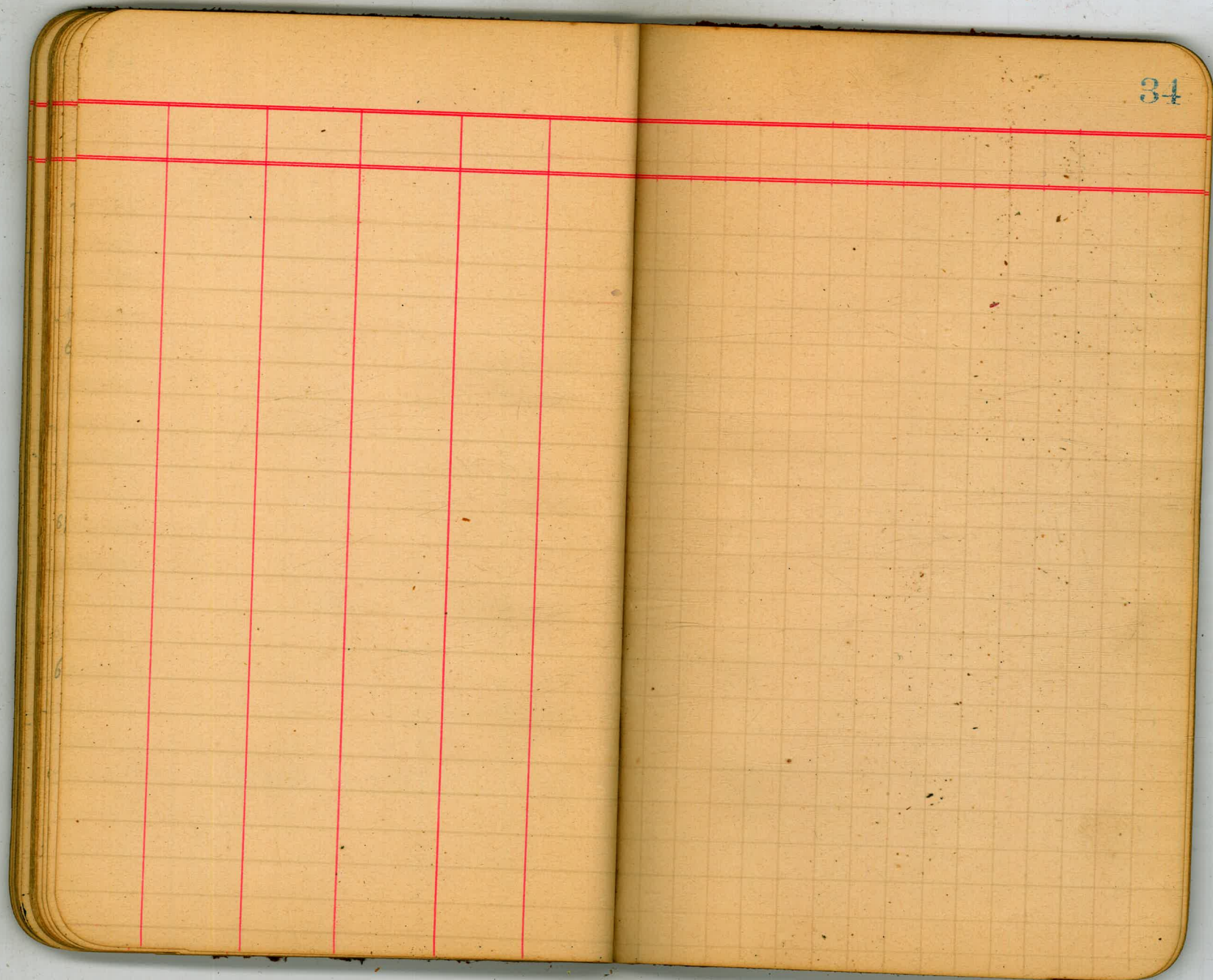
+92

Kidner 24 = 18 from hole

2.01
95.51

W Line 11 th St

W Line 12 th St



Main Line of H.S.A.

| Sta | Elev | Grade | cut | | |
|-------|-------|-------|------|---|--------|
| 0 | | -8.00 | | | |
| +19.1 | | -7.98 | | | |
| +31.6 | | -7.95 | | | |
| +44.1 | | -7.94 | | | |
| +56.6 | | -7.92 | | | |
| +69.1 | | -7.90 | | | |
| +75 | | -7.89 | | | |
| 1 | 1.35 | -7.86 | 9.21 | 9 | 2 1/2 |
| +25 | 1.06 | -7.82 | 8.99 | 8 | 10 3/4 |
| +50 | 0.84 | -7.79 | 8.63 | 8 | 7 3/4 |
| +75 | 0.65 | -7.75 | 8.40 | 8 | 4 3/4 |
| 2 | -0.09 | -7.71 | 7.62 | 7 | 7 1/2 |
| +25 | -0.25 | -7.68 | 7.43 | 7 | 5 1/4 |
| +50 | -0.26 | -7.64 | 7.39 | 7 | 4 3/4 |
| +75 | -0.64 | -7.61 | 6.93 | 6 | 11 1/4 |
| 3 | -0.56 | -7.57 | 7.01 | 7 | 1/4 |
| +25 | -0.65 | -7.54 | 6.89 | 6 | 10 3/4 |
| +50 | 0.50 | -7.50 | 7.00 | 7 | 00 |
| +75 | 0.30 | -7.46 | 7.10 | 7 | 1 1/4 |
| 4 | -0.33 | -7.43 | 7.10 | 7 | 1 1/4 |

W Line Atlantic - 0.5
 Man-hole connection with
 Atlantic St.

PIT

W S Atlantic St.

W Line California St.
 3737.5 California St.
 W Line California St.

| Sta | Clev | Grade | cut | | |
|------|-------|-------|------|---|--------|
| 4+25 | -0.34 | -7.39 | 7.05 | 7 | 5/8 |
| +30 | -0.19 | -7.36 | 7.17 | 7 | 2 |
| +75 | +0.05 | -7.32 | 7.37 | 7 | 4 1/2 |
| 5 | -0.10 | -7.29 | 7.19 | 7 | 2 1/4 |
| +25 | +0.06 | -7.25 | 7.31 | 7 | 3 3/4 |
| +30 | -0.07 | -7.21 | 7.14 | 7 | 1 3/4 |
| +75 | +0.03 | -7.18 | 7.21 | 7 | 2 1/2 |
| 6 | -0.11 | -7.14 | 7.03 | 7 | 3/4 |
| +25 | +0.09 | -7.11 | 7.20 | 7 | 2 3/4 |
| +50 | +0.26 | -7.07 | 7.33 | 7 | 4 |
| +75 | 0.26 | -7.04 | 7.30 | 7 | 3 5/8 |
| 7 | 0.49 | -7.00 | 7.49 | 7 | 5 7/8 |
| +25 | 0.69 | -6.96 | 7.60 | 7 | 7 1/4 |
| +30 | 0.71 | -6.93 | 7.64 | 7 | 7 3/4 |
| +75 | 0.58 | -6.89 | 7.47 | 7 | 5 5/8 |
| 8 | 0.86 | -6.86 | 7.72 | 7 | 8 5/8 |
| +25 | 0.93 | -6.82 | 7.75 | 7 | 9 |
| +30 | 1.06 | -6.79 | 7.85 | 7 | 10 1/4 |
| +75 | | -6.75 | | | |
| 9 | | -6.71 | | | |
| +25 | | -6.68 | | | |

Feb 29

W Line Arctic

6+12.5 Arctic St

C L Arctic

W Line India St Man-hole

8+47.5 India St

C Line India

| Sta | Elev | Grade | cut |
|---------|--------|-------|-----|
| | +50 | -6.57 | |
| | +75 | -6.61 | |
| 10 | | -6.57 | |
| | +25 | -6.54 | |
| | +50 | -6.50 | |
| | +75 | -6.46 | |
| 11 | | -6.43 | |
| | +25 | -6.39 | |
| | +50 | -6.36 | |
| | +75 | -6.32 | |
| 12 | | -6.29 | |
| | +25 | -6.25 | |
| | +50 | -6.21 | |
| | +75 | -6.18 | |
| 13 | | -6.14 | |
| | +25 | -6.11 | |
| | +50 | -6.07 | |
| 13+62.5 | | -6.05 | |
| | +72.95 | -6.04 | |
| | +83.42 | -6.02 | |

W Line Columbia St
 11+62.5 Columbia St
 6 L Columbia St

#3

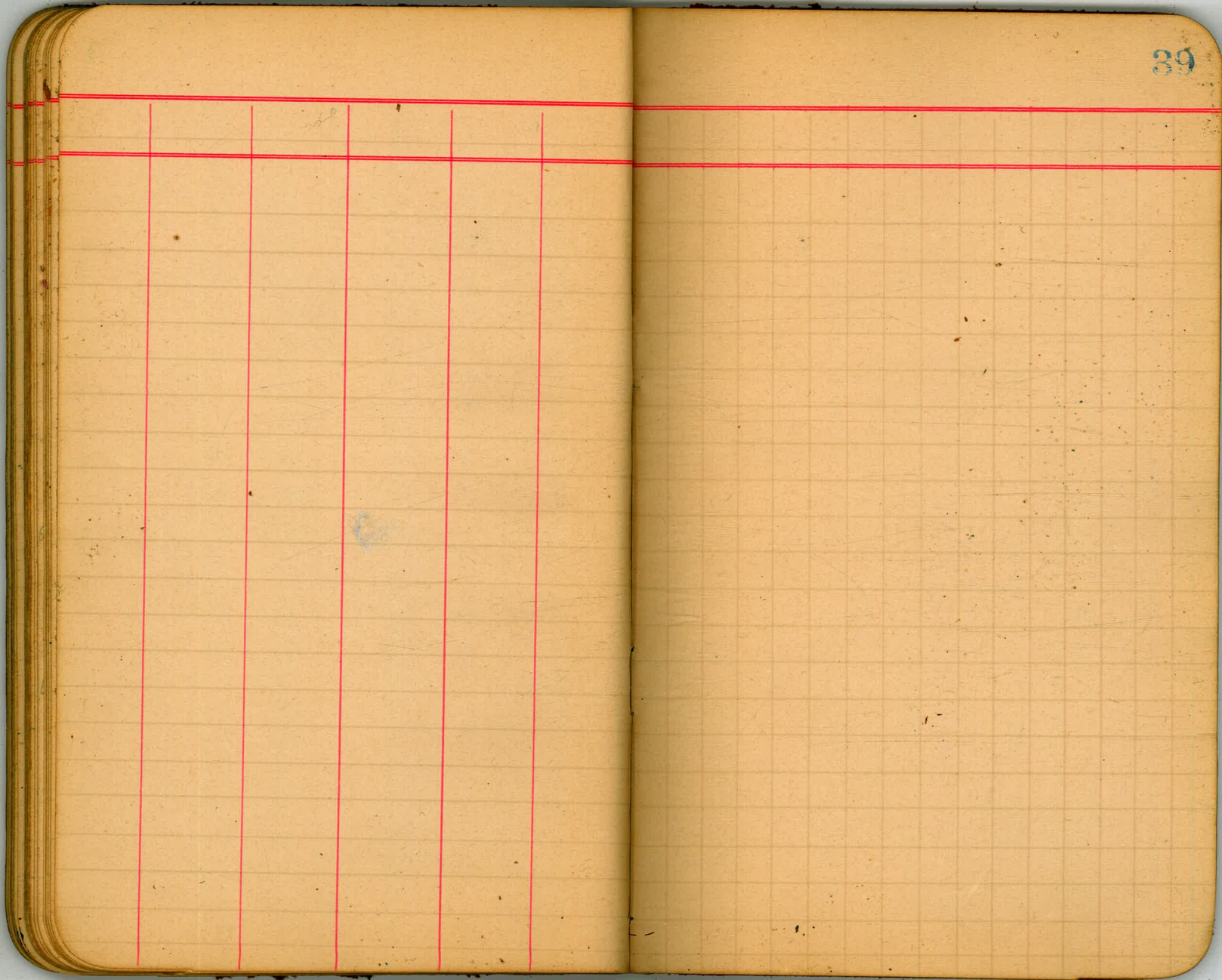
19+77.3 - 9 manhole
 WZ Station

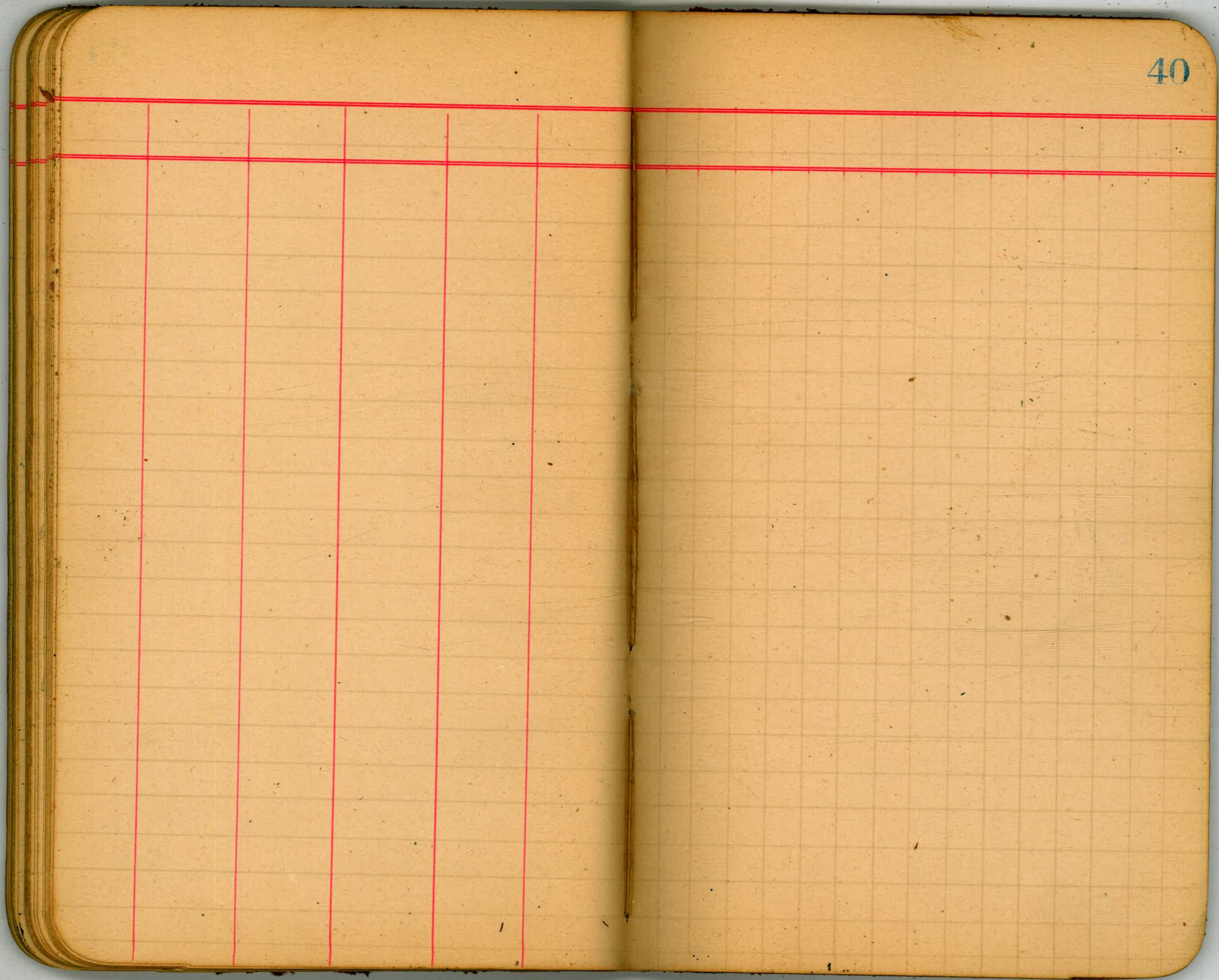
man-hole
 at
 start

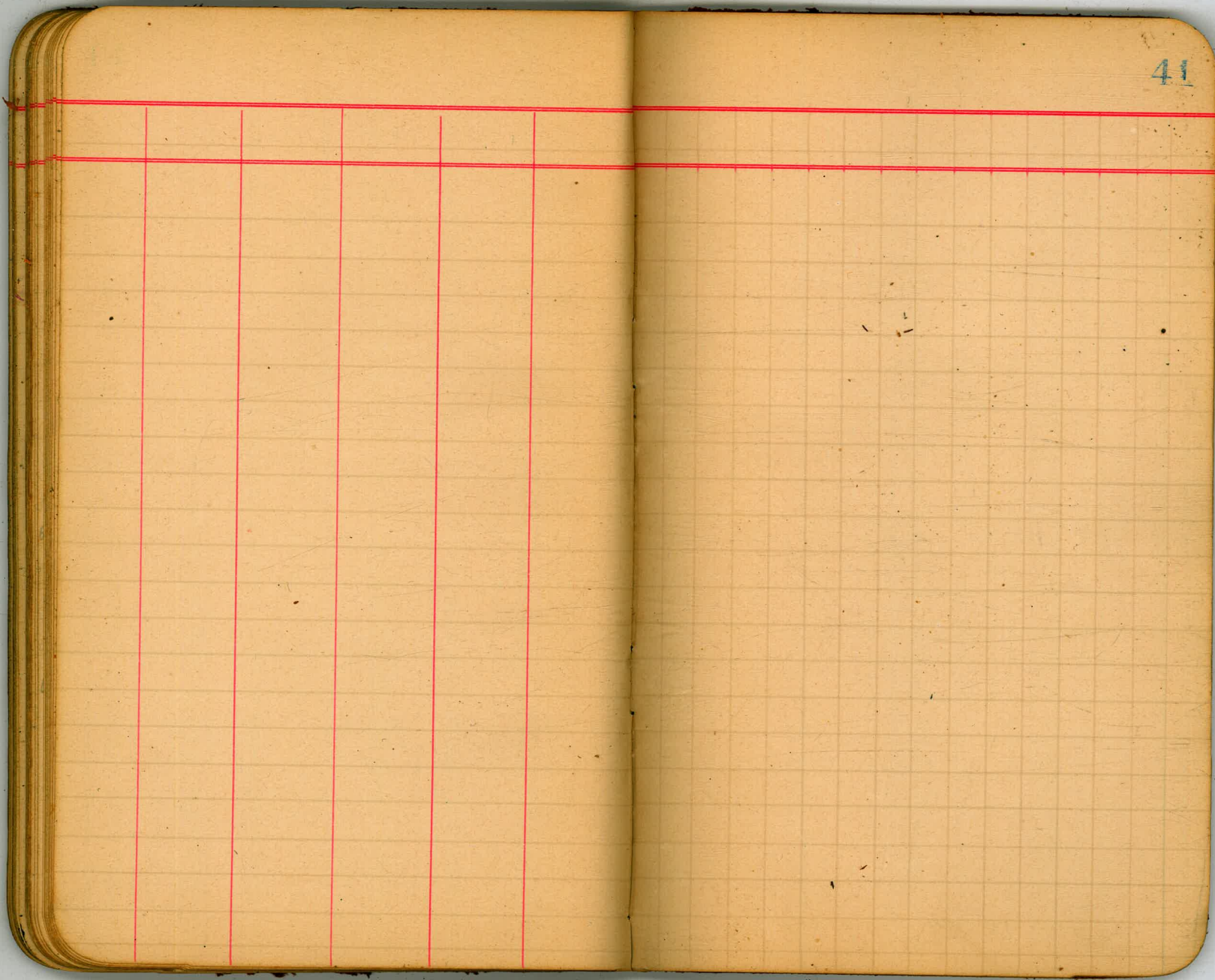
Sta Elev Gravel bar

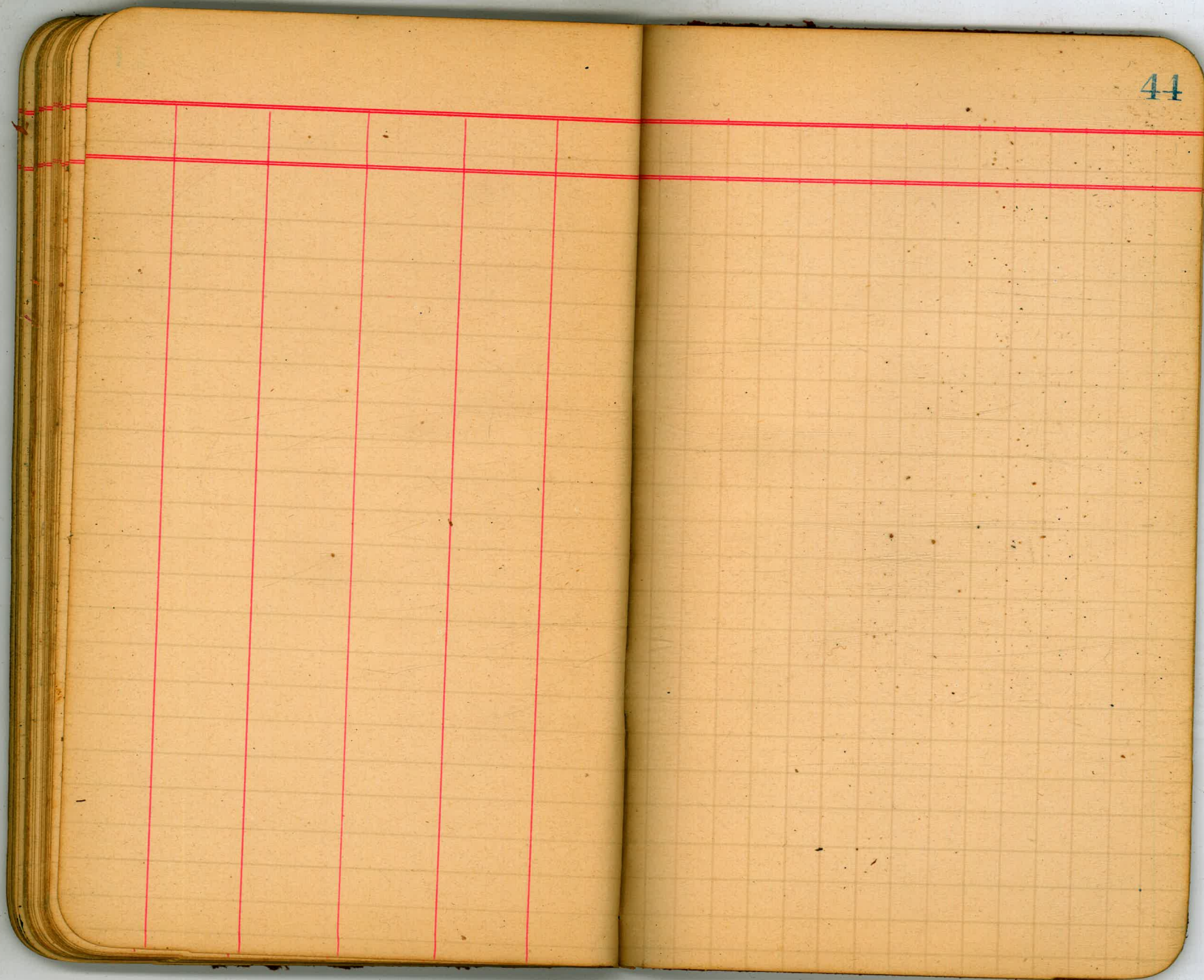
| | |
|---------|-------|
| 1392.94 | -6.05 |
| 1404.34 | -5.99 |
| +1480 | -5.98 |
| +25.24 | -5.96 |
| +35.72 | -5.95 |
| +46.14 | -5.93 |
| +56.66 | -5.92 |
| +67.16 | -5.96 |
| +77.60 | -5.89 |
| +88.01 | -5.89 |

Source of the data
77









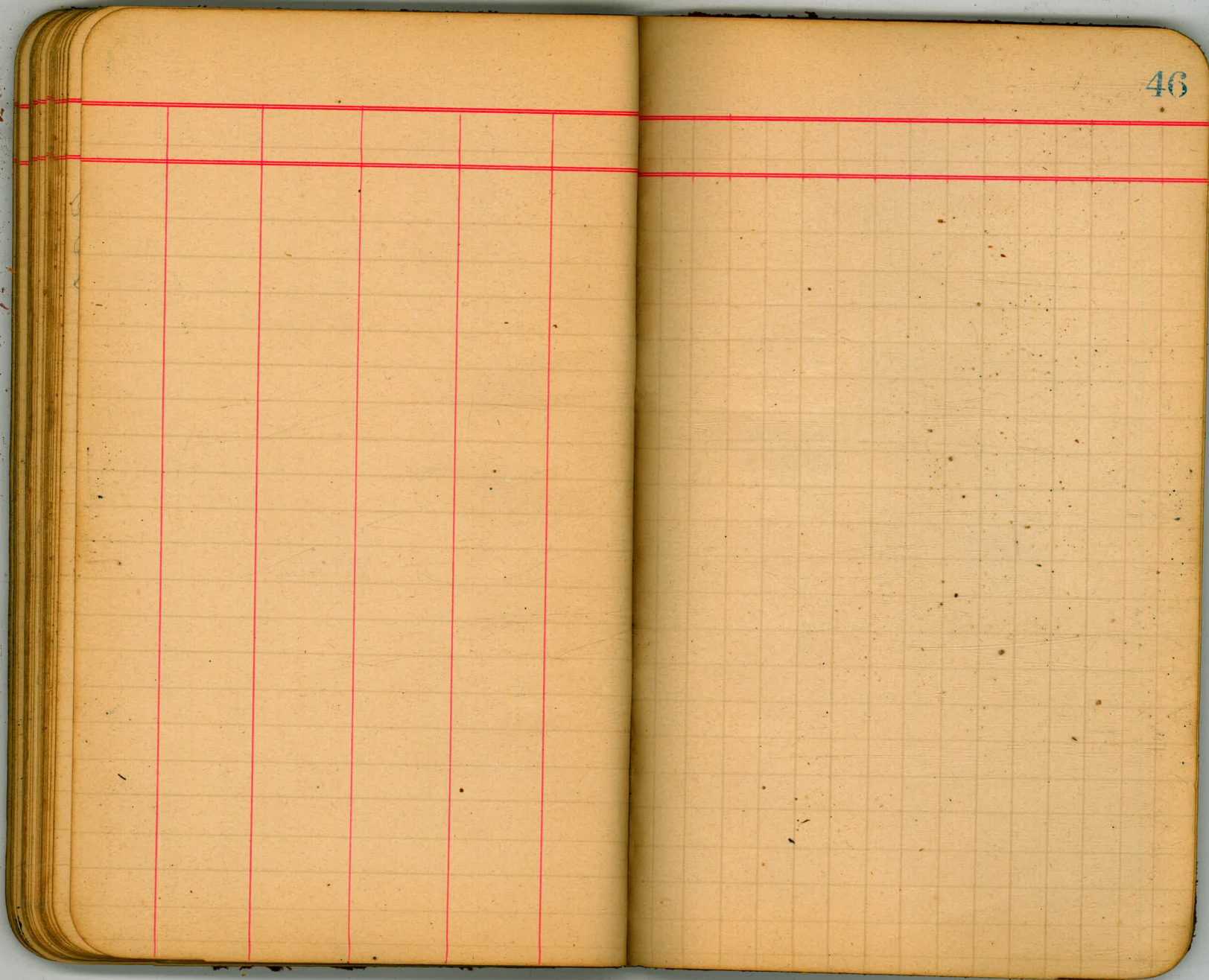
Nov 15 H. Hamlin
 H. Hamlin
 N St. B. M.

| | + | HD | - | Clu BB |
|-------|-------|-------|-------|--------|
| B M # | 5.45 | 10.32 | | 4.87 |
| B M # | 2.97 | 9.35 | 3.94 | 6.38 |
| B M # | 4.284 | 5.617 | 8.102 | 1.33 |

10 & 11

N & 11 NE Driv from near est

N & 12 NW Driv from near est



12/28
 H. H.
 H. H.
 Thrush Tank State S.D.

| Stc | + | H. H. | - | Clear |
|------|------|-------|-------|-------|
| B.M. | 3.32 | 10.55 | | 7.23 |
| # | 0.74 | 2.94 | 4.35 | 2.20 |
| 0 | | | 1.44 | 1.50 |
| # | 4.99 | -0.31 | 4.24 | 5.30 |
| +10 | | | 2.60 | 2.91 |
| +75 | | | 6.30 | 6.61 |
| 1 | | | 6.81 | 7.12 |
| 2 | | | 7.23 | 7.56 |
| 3 | | | 7.96 | 8.27 |
| 4 | | | 8.51 | 8.82 |
| 5 | | | 9.50 | 9.81 |
| +50 | | | 10.22 | 10.53 |

3.20

3.29

3.77

4.25

4.73

5.05

5.37

5.68

6.01

6.33

3.20
3.45

3.77
4.05
4.41
4.73

76 | 703 | 9
4

40



Run tangent from 20°
curve to 25° west of Euline
of H Street

Sta. Ref. Land

| | | |
|--------|------|-------|
| 0 | 0 | |
| +19.04 | 1.54 | 1.54 |
| +44.04 | | 4.24 |
| | | 6.54 |
| | | 9.04 |
| | | 11.54 |
| | | 13.33 |
| | | 16.59 |

22.50
 1.54
 24.04
 1.41
 25.45
 1.90

4.10
 2.30
 12.5
 69.04
 49.92
 2.00
 50.92

13.03
 13.33
 11.54
 1.39
 1.904
 61
 69.5
 91
 58.58
 9.16
 58.58

1.00
 19.04
 165
 135.54
 69.50
 5.00
 20.00
 6.95
 5.00

657
 657
 13.54
 75
 35730
 1910
 7640
 6248

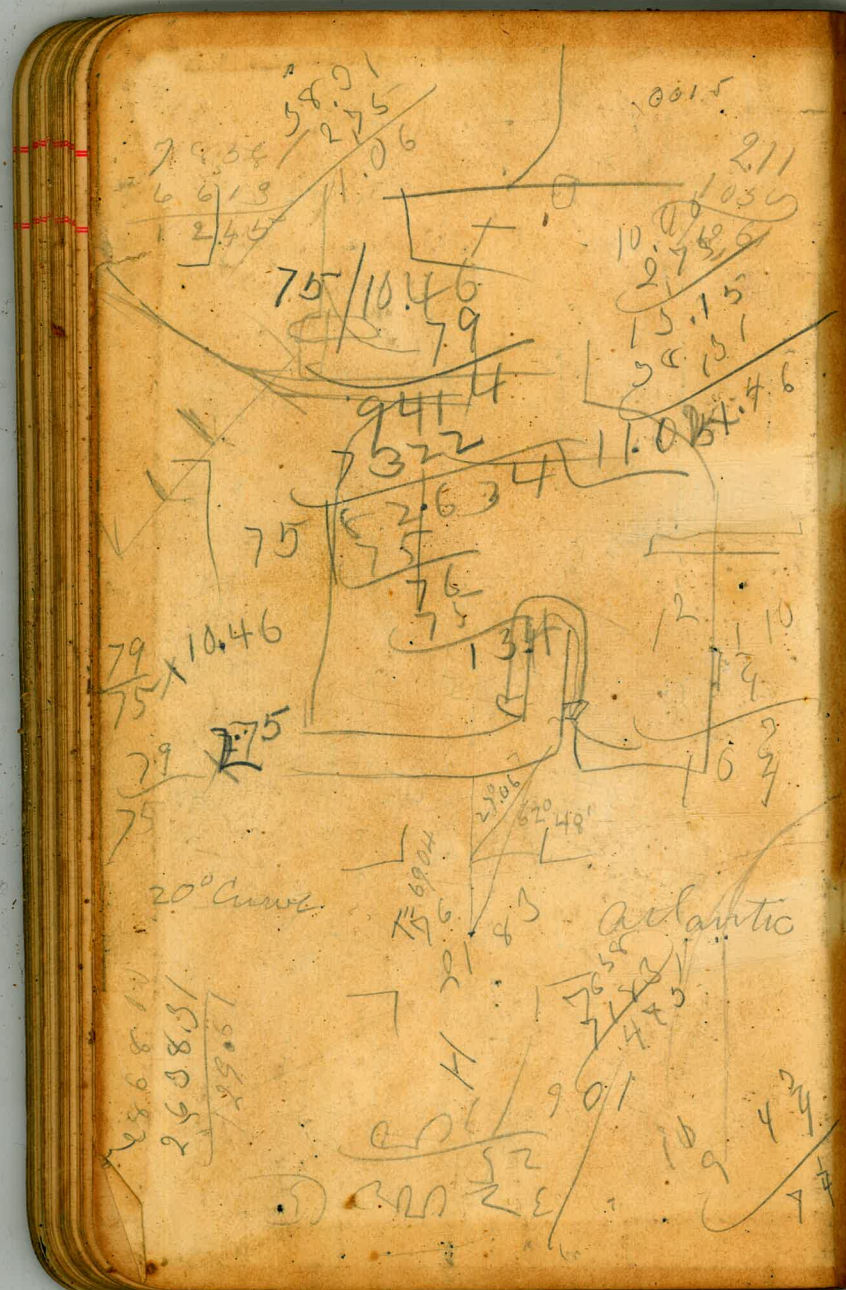


Table showing the difference of latitude and departure in running 80 chains at any course from 1 to 60 minutes.

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

Handwritten calculations on the table:

- 66.23 / 32 = 2.07
- 66.13 / 32 = 2.07
- 65.91 / 32 = 2.06
- 66.23 / 32 = 2.07
- 65.90 / 32 = 2.06
- 10.50 / 23 = 0.45
- 10.19 / 23 = 0.44

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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 |