

110

A. Remer

FIELD BOOK

360

$$\begin{array}{r}
 2640 \\
 105.5 \\
 \hline
 2534.5 \\
 1267
 \end{array}$$

$$\begin{array}{r}
 2659.3 \\
 1873 \\
 \hline
 786.3
 \end{array}$$

$$\begin{array}{r}
 1318 \\
 1182.8 \\
 \hline
 135.2
 \end{array}$$

Dec. 4-1914
N.E. $\frac{1}{4}$ of Sec. 34-142-26

N. $\frac{1}{4}$ Cor. - N.E. Sec. Cor. as
established by $\sqrt{F} = 2607.5$

\angle at N.E. Cor. = $88^{\circ}12'$ to R

\angle " N.W. Cor Sec. 35 = $91^{\circ}35'$ to R

1873 to C of Sag track

2659.3 to $\frac{1}{4}$ Cor. ^{See 1915} to S.E. Cor.
1329.6

\angle at N.E. Cor. = $89^{\circ}14'$

\angle at E. $\frac{1}{4}$ Cor = $181^{\circ}09'$ to R at S.E.

\angle " " " = $1^{\circ}09'$ " " " "

\angle at E. $\frac{1}{4}$ Cor sec. line with
 $\frac{1}{4}$ line = $90^{\circ}48' \pm$

$\frac{1}{4}$ Cor to Cen. Sec. 34 = 2623.7

\angle at Cen = $91^{\circ}02'$

1490.7 to South side of S. Row

2612.4 = dis from Center
to N. $\frac{1}{4}$ Cor.

\angle at E. $\frac{1}{4}$ Cor = $90^{\circ}44'$

\angle " " " = $90^{\circ}35'$ to R S.E.

1182.8 to C line of RR on $\frac{1}{4}$ W.

Expense acc't

| | | | |
|---------|----------------------------------------|-------|-----|
| June 9 | Breakfast Iron Jct | .20 | |
| | Virginig - Iron Jct | .20 | |
| | Telephone | .10 | |
| | Iron Jct - Duluth | 1.30 | |
| | Duluth - Hibbing | 1.68 | |
| June 10 | Supper " | .45 | |
| June 11 | Breakfast | .25 | |
| | Dinner | .40 | |
| | Supper | .30 | |
| | Room at Oliver 2 nights and drayage | 2.25 | |
| June 12 | Breakfast | .35 | |
| | Dinner | .25 | |
| | Drayage | .50 | |
| Mesaba | 4 Tickets - Hibbing - Chisholm | .80 | |
| G.N.R.R | " " Chisholm | .96 | |
| | 1 Ticket Hibbing - Swan Lake | .51 | 557 |
| 13 | 1 " " Jack Minneman | .51 | |
| | 2 axes | 2.00 | |
| 28 | 2 Fares Hibbing and return | 1.02 | |
| 29 | " " " | 1.02 | |
| | Dinner | .30 | |
| | Supper | 15.15 | 45 |
| | | 5.50 | |
| | | 20.15 | |

14-15 rain

3

Joe P. Davies

2/26 24 25 26-27
 1/1 1 1 1 1

Fri-at noon

Dinner

18/19 20 21 22 23 24 25 26 27

170 2.50 - 5.00 8

28.90 for boat

\$1.00 Cash

Chas Bangert

Pat Murphy

Full time

\$3.00 Expense money

Jack Kinsman

Lost Fri 9 Sat

14/15 16 17 18 19 20 21-22 1
 11 25 26 27

Ed. Ekman

Fri-Sat 21-22

Greene

10 11 12 13 14 15 16 -

17 18 19 20 21 22 23

Boat Hire

13 14 15 16 17 18 19 20 21 22

23 24 25 26 27

June 30, 1912

breakfast

.30

Dinner

.40

Supper

.40

June 31 Breakfast

.35

Ticket Hibbing-Duluth

1.68

Hotel

2.00

Meander Post

18 { W. Pine 12" for Corner .
 Birch 10" S. 75° W. 17 links
 " 14" S. 70° E. 9 "

19 { Tamarack 10" N 72 E 54
 " 5" S 65 E 68

21 { Tam 6" N 2 E 60
 " 8" N 28 W 51

22 { Ash 12" N 47 W 6
 " 8" N 55 E 18

23 { Ash 18" N 12 W 27
 " 6" N 44 E 21

24 { Birch 8" N 25 W 18
 " 8" N 10 E 32

Gov't Field Notes Sec. 36 T. 56 N. R. 23 W.

| | | Diagm. | Bearing | Lks | Feet |
|-----------|---------|--------|---------|-----|------|
| S.E. Cor. | Tam | 12" | N 40° E | 22 | |
| | Birch | 12" | N 45° W | 29 | |
| | W. Pine | 10" | S 65° W | 30 | |
| | W. Pine | 12" | S 47° E | 15 | |

| | | | | | |
|-------------|--------|----|---------|----|----|
| N. 1/4 Cor. | Tam | 8" | S 23° E | 13 | |
| | Spruce | 6" | N 62° E | 19 | |
| (New) | Spruce | 4" | N 62° E | | 8' |

| | | | | | |
|---------------|--------|-----|---------|----|--|
| N.E. 1/4 Cor. | Sugar | 12" | N 55° E | 12 | |
| | Sugar | 6" | N 22° W | 29 | |
| | Linden | 3" | S 66° W | 28 | |
| | Linden | 7" | S 55° E | 6 | |

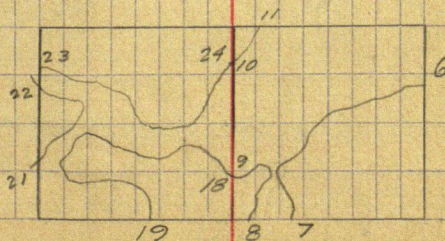
E. 1/4 Cor { In Lake (Swan)

| | | | | | |
|-----------|-------|-----|--------------|----|--|
| N.W. Cor. | Cedar | 10" | S 71° W | 14 | |
| | Cedar | 8" | S 76° E | 17 | |
| | Birch | 9" | N 50° E | 21 | |
| | Aspen | 15" | N 47 1/2° W. | 24 | |

| | | | | | |
|------------|-------|-----|---------|----|--|
| W. 1/4 Cor | Birch | 12" | N 32° W | 7 | |
| | Sugar | 24" | S 9° E | 18 | |

S.W. Cor { In Lake

S. 1/4 Cor { In Lake



Meander Cor. Sec. 31

Govt Field Notes Sec. 31. T 56 N. R. 22 W

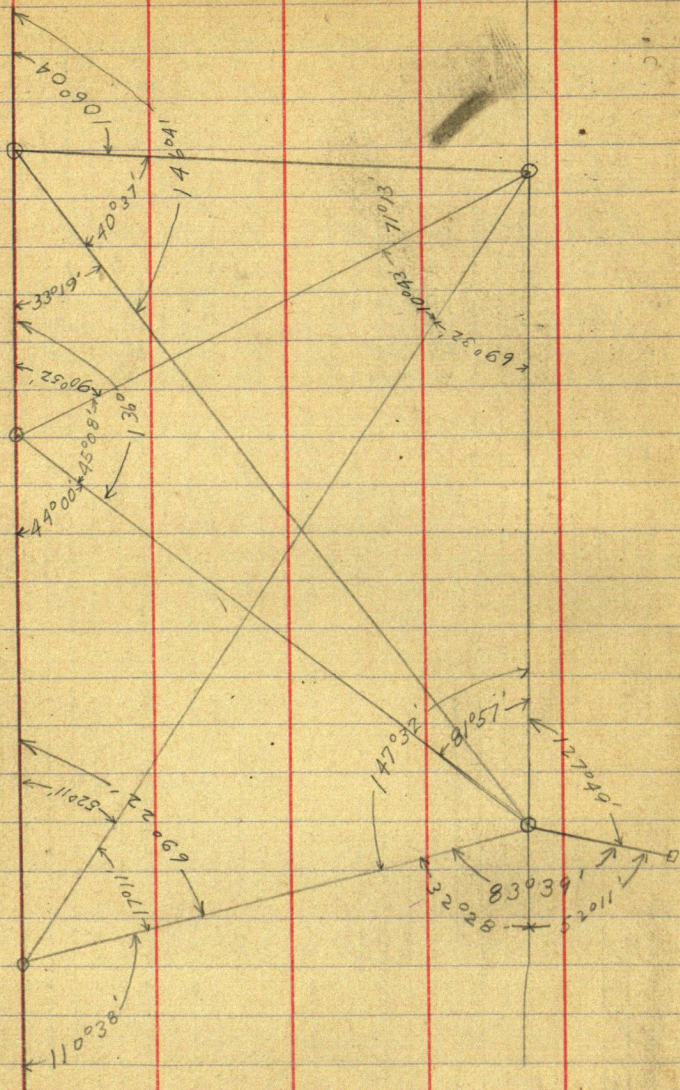
| | Diam | Bearing | |
|----------|----------|---------|----|
| S.E. Cor | Elm 7" | N 21 E | 15 |
| | Lytt 10" | N 75 W | 16 |
| | Fir 6" | S 15 W | 13 |
| | Fir 7" | S 22 E | 32 |

| | | | |
|------------|-----------|------------|----|
| E. 1/4 Cor | Fir 6" | N 61 1/4 W | 27 |
| | Birch 10" | S 53 W | 25 |

| | | | |
|----------|-----------|--------|----|
| N.W. Cor | Sugar 12" | N 55 E | 12 |
| | Sugar 6" | N 22 W | 29 |
| | Linden 3" | S 66 W | 28 |
| | Linden 7" | S 55 E | 6 |

| | | | |
|----------|-------------|--------|----|
| S.W. Cor | Tam 12" | N 40 E | 22 |
| | Birch 12" | N 45 W | 29 |
| | W. Pine 10" | S 65 W | 30 |
| | W. Pine 12" | S 47 E | 15 |

| | | | |
|------------|-----------|--------|----|
| S. 1/4 Cor | Birch 6" | N 40 W | 28 |
| | Birch 10" | S 40 E | 35 |



Nov. 18

N & S Sec. 1 ne Random

170

23 13

81° 56'

71° 48'

71° 51'

81° 57'

100 2

111° 5'

61° 28'

81° 56'

100 2

161° 28'

171° 5'

181° 15'

136°

90° 52'

45° 08'

211° 28'

121° 49'

81° 57'

100 2

27° 40'

111° 5'

111° 5'

100 2

100 2

100 2

100 2

100 2

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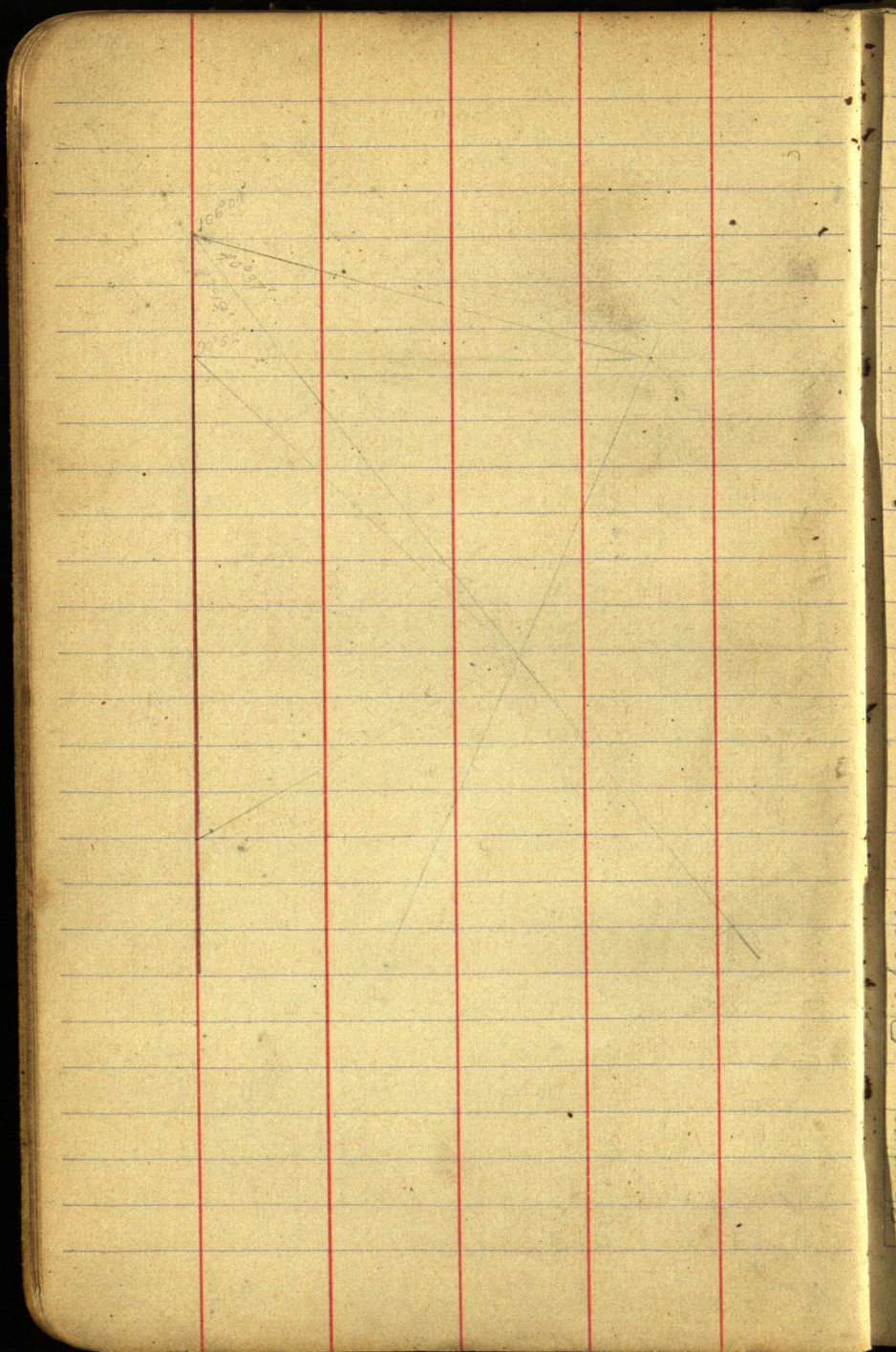
100 2

100 2

100 2

100 2

100 2



| Starting | Distance |
|-------------|----------|
| 00001 | X |
| S 87°02' W | 2640' |
| N 37°50½' W | 20265 |
| N 85°42½' W | 2640 |
| S 40°59½' W | 2244' |
| S 41° W | 30679 |
| S 88°27' E | X |
| S 23°26' W | 703.4 |
| S 20°45' E | 250.6 |
| S 50°03' E | 142.15 |
| S 58°43' E | 331 |
| N 61°38' W | 315.75 |
| N 20°07' W | 19.48 |
| N 35°27' W | 124.85 |
| N 66°35' W | 325.12 |
| N 81°53' W | 303.4 |
| N 49°19' W | 378.4 |
| N 79°29' W | 284.7 |
| S 78°56' W | 144.1 |
| S 79°52' W | 200.0 |
| N 73°58' W | 216.8 |
| S 13°24' W | 275.55 |
| S 43°38' W | 142.91 |
| S 40°53' W | 91.3 |
| N 66°07' W | 364.4 |
| S 85°51' W | 264.8 |
| S 59°25' W | 598.75 |
| S 46°53' E | 306.35 |
| N 39°29' E | 833.5 |
| N 51°49' E | 932.8 |
| N 52°19' E | 318.7 |
| N 0°57' E | 953.15 |
| N 27°25' E | 148.2 |

90.52
 15.12
 7.3.50
 120
 50

52

30.71
 15.12
 5.11
 3.50
 110

17
 17.11
 14

8

52° 11'

73° 32'

53° 31'

111° 12'

171° 58'

55° 14'

59° 12'

59° 12'

59° 12'

59° 12'

59° 12'

59° 12'

59° 12'

59° 12'

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59° 12'

15° 10'

73° 56'

111° 12'

171° 58'

55° 14'

59° 12'

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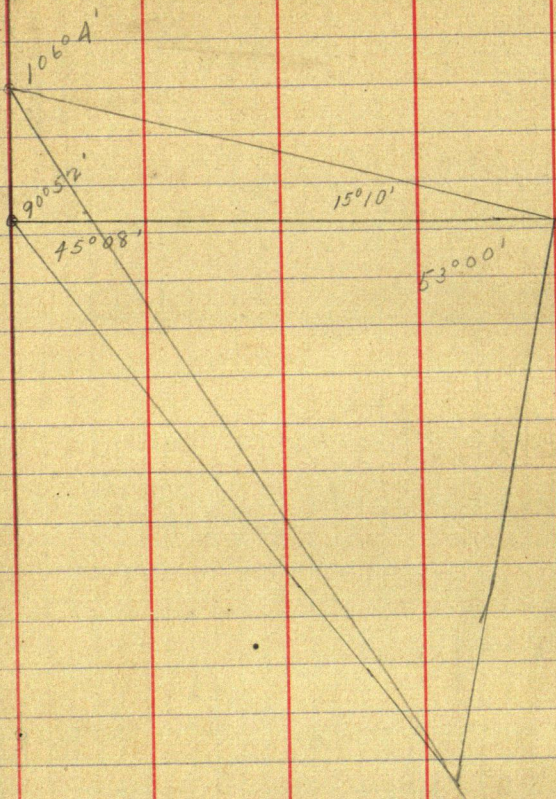
141° 17'

141° 17'

141° 17'

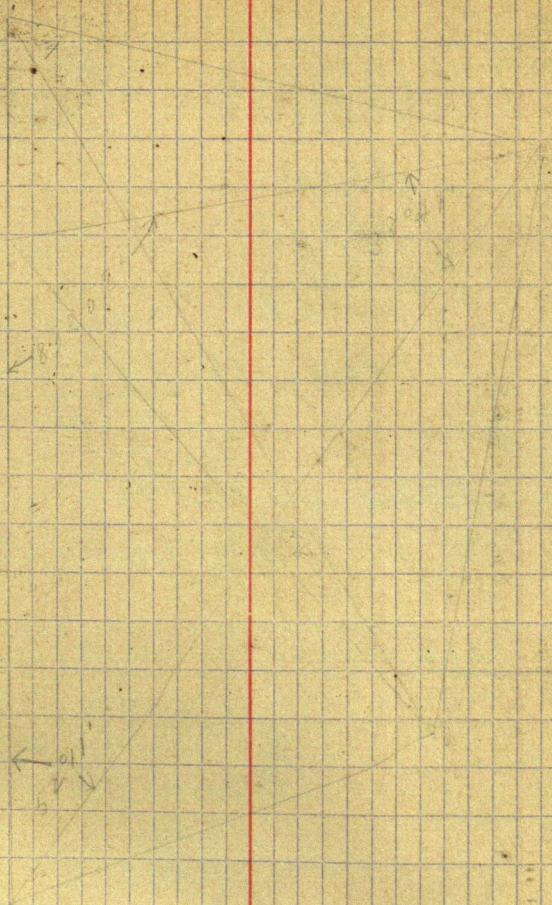
141° 17'

141° 17'



$81^{\circ}57'$

$$\begin{array}{r} 27804 \\ 2110281 \\ \hline 68906 \end{array}$$



$$\begin{array}{r} 1306.2 \\ 1329.6 \\ \hline 2635.8 \end{array}$$

$$\begin{array}{r} 2612.4 \\ 2659.3 \\ 2 \overline{) 5271.7} \\ \hline 2635.85 \end{array}$$

$$\begin{array}{r} 90^{\circ} 44' \\ 21 \\ \hline 91^{\circ} 05' \end{array}$$

$$\begin{array}{r} 01338 \\ 2612 \\ \hline 2676 \\ 1338 \\ \hline 7368 \\ 2676 \\ \hline 3428856 \\ 90^{\circ} 44' \\ \hline 88058 \\ \hline 1046 \end{array}$$

$$\begin{array}{r} 2608 \\ 2623.7 \\ 2 \overline{) 5231.7} \\ \hline 2615.85 \end{array}$$

$$\begin{array}{r} 2612.4 \\ \tan 1^{\circ} 46' = .03084 \\ \hline 104496 \\ 208992 \\ \hline 783720 \\ \hline 80566416 \end{array}$$

$$\begin{array}{r} 2659.3 \\ 47 \\ \hline 2612.3 \end{array}$$

$$\begin{array}{r} \tan 1^{\circ} 02' = 01804 \\ 2608 \\ \hline 14432 \\ 108240 \\ 3608 \\ \hline 4704832 \end{array}$$

1046'

$$\begin{array}{r} 42' \\ 16 \overline{) 2612} \\ \hline 16 \\ \hline 101 \\ 96 \\ \hline 52 \end{array}$$

$$\begin{array}{r} 0^{\circ} 21' \\ 9044 \\ 21 \\ \hline 90^{\circ} 23' 05'' \end{array}$$

, 20.1

2608

91°46'

1304

1304

88°41'

92°09' computed

88°14'

90°41'

88°55'

26753

92°07'

Ash Station
88°46' 1308
88°41' 1304
88°36' 1300
88°31' 1296
88°26' 1292
88°21' 1288
88°16' 1284
88°11' 1280
88°06' 1276
88°01' 1272
87°56' 1268
87°51' 1264
87°46' 1260
87°41' 1256
87°36' 1252
87°31' 1248
87°26' 1244
87°21' 1240
87°16' 1236
87°11' 1232
87°06' 1228
87°01' 1224
86°56' 1220
86°51' 1216
86°46' 1212
86°41' 1208
86°36' 1204
86°31' 1200
86°26' 1196
86°21' 1192
86°16' 1188
86°11' 1184
86°06' 1180
86°01' 1176
85°56' 1172
85°51' 1168
85°46' 1164
85°41' 1160
85°36' 1156
85°31' 1152
85°26' 1148
85°21' 1144
85°16' 1140
85°11' 1136
85°06' 1132
85°01' 1128
84°56' 1124
84°51' 1120
84°46' 1116
84°41' 1112
84°36' 1108
84°31' 1104
84°26' 1100
84°21' 1096
84°16' 1092
84°11' 1088
84°06' 1084
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71°46' 492
71°41' 488
71°36' 484
71°31' 480
71°26' 476
71°21' 472
71°16' 468
71°11' 464
71°06' 460
71°01' 456
70°56' 452
70°51' 448
70°46' 444
70°41' 440
70°36' 436
70°31' 432
70°26' 428
70°21' 424
70°16' 420
70°11' 416
70°06' 412
70°01' 408
69°56' 404
69°51' 400
69°46' 396
69°41' 392
69°36' 388
69°31' 384
69°26' 380
69°21' 376
69°16' 372
69°11' 368
69°06' 364
69°01' 360
68°56' 356
68°51' 352
68°46' 348
68°41' 344
68°36' 340
68°31' 336
68°26' 332
68°21' 328
68°16' 324
68°11' 320
68°06' 316
68°01' 312
67°56' 308
67°51' 304
67°46' 300
67°41' 296
67°36' 292
67°31' 288
67°26' 284
67°21' 280
67°16' 276
67°11' 272
67°06' 268
67°01' 264
66°56' 260
66°51' 256
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66°41' 248
66°36' 244
66°31' 240
66°26' 236
66°21' 232
66°16' 228
66°11' 224
66°06' 220
66°01' 216
65°56' 212
65°51' 208
65°46' 204
65°41' 200
65°36' 196
65°31' 192
65°26' 188
65°21' 184
65°16' 180
65°11' 176
65°06' 172
65°01' 168
64°56' 164
64°51' 160
64°46' 156
64°41' 152
64°36' 148
64°31' 144
64°26' 140
64°21' 136
64°16' 132
64°11' 128
64°06' 124
64°01' 120
63°56' 116
63°51' 112
63°46' 108
63°41' 104
63°36' 100
63°31' 96
63°26' 92
63°21' 88
63°16' 84
63°11' 80
63°06' 76
63°01' 72
62°56' 68
62°51' 64
62°46' 60
62°41' 56
62°36' 52
62°31' 48
62°26' 44
62°21' 40
62°16' 36
62°11' 32
62°06' 28
62°01' 24
61°56' 20
61°51' 16
61°46' 12
61°41' 8
61°36' 4
61°31' 0
61°26' 36
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56°26' 36
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53°06' 36
53°01' 32
52°56' 28
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52°46' 20
52°41' 16
52°36' 12
52°31' 8
52°26' 4
52°21' 0
52°16' 36
52°11' 32
52°06' 28
52°01' 24
51°56' 20
51°51' 16
51°46' 12
51°41' 8
51°36' 4
51°31' 0
51°26' 36
51°21' 32
51°16' 28
51°11' 24
51°06' 20
51°01' 16
50°56' 12
50°51' 8
50°46' 4
50°41' 0
50°36' 36
50°31' 32
50°26' 28
50°21' 24
50°16' 20
50°11' 16
50°06' 12
50°01' 8
49°56' 4
49°51' 0
49°46' 36
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-1°16' 12
-1°11' 8
-1°06' 4
-1°01' 0
-1°56' 36
-

Started work Dec. 9 - 10 - 11
County Road.

Cor $\frac{33}{4} \frac{34}{3}$ Reset Stake

Ran East on Sec. line
Dec 14 & 15

$\frac{1}{4}$ Cor $\frac{34}{3}$ Sta 0. Ran North

L $107^{\circ}35'$ to $\frac{1}{4}$ Cor $\frac{27}{34}$

Set up at $\frac{1}{4}$ Cor $\frac{34}{3}$ turned off
 $3^{\circ}41'$ W. - computed L

5272.66 = Computed length of $\frac{1}{4}$ line,

L Sec. Line Random to S.W. Sec. Cor

and computed $\frac{1}{4}$ L = $84^{\circ}22'$ N.W. L

106.1 = $\text{Cotan } 0^{\circ}32'$

25 $\overline{) 2652}$

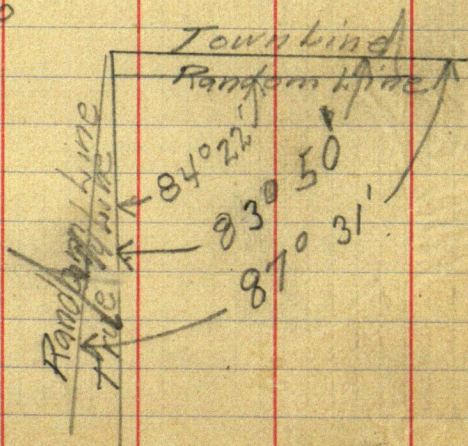
25

152

150

20

$0^{\circ}32'$



$\frac{5}{11} \frac{1}{2}$
 $\frac{5}{11} \frac{1}{2}$
 $\frac{10}{11} \frac{1}{2}$
 $\frac{14}{11} \frac{1}{2}$
 $\frac{15}{11} \frac{1}{2}$

-14-15 Dec. 11/1914

23

Transit - J.M. Greene

Axe & Chain - Ben LaFale

from old B.T.s

B.H. Alley

2651.5' to Random State. 5' to pin

5175.5' to Random Cor.

357.5' to 1/4 Cor

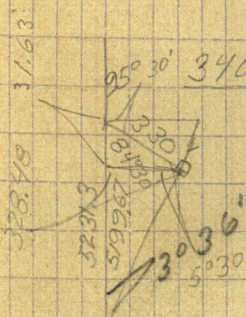
$$72^{\circ}25' \sin = 95328 \cos = 95328$$

$$5175.5 = 108.0 = 340.79$$

$$108.0$$

$$5283.5 \text{ offset } 340.79$$

$$15.503 = \cot 3^{\circ}41'$$



$$340.8 \quad 5283.5$$

$$340.8$$

$$5280$$

$$187.55$$

$$48.7$$

$$170.40$$

$$5231.3$$

$$171.50$$

$$170.40$$

$$110.00$$

$$5231.3$$

$$31.63$$

$$\sin 5^{\circ}30' 09585 \quad .99540$$

$$330$$

$$.330$$

$$32848.5 / 99.67 = 159 \sim 3^{\circ}36'$$

$$287550$$

$$298620$$

$$32848$$

$$28755$$

$$298620$$

$$191487$$

$$31.63 \quad 050$$

$$298620$$

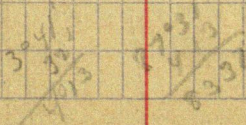
$$164040$$

$$3284820$$

$$272470$$

$$10004$$

$$8$$



Dec. 19-14

Sta. 0 1/4 Cor. 22-27

Dis. on random line = 541.5

Offset $\angle = 93^\circ 28'$ S.W. \angle

11 Dis. = 152'

$$\sin 3^\circ 28' = .06407$$

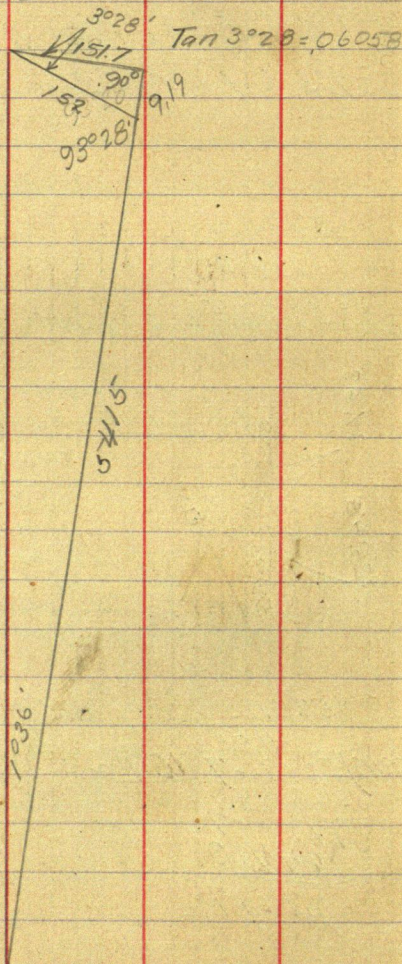
$$\cos 3^\circ 28' = .99817$$

$$\begin{array}{r} 152 \\ \times .99817 \\ \hline 152725.64 \\ 15172.184 \end{array}$$

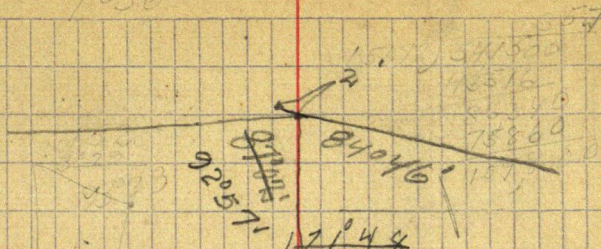
$$\begin{array}{r} 151.72 - 7 \\ .06058 - 1.7 \\ \hline 121376 \\ 75860 \\ 910320 \\ \hline 9191976 \end{array}$$

$$\begin{array}{r} 5415 \\ 919 \\ 151.72 \overline{) 5424.19} \quad 35.75 = \\ \underline{45516} \quad \text{cotang } 1^\circ 36' \\ 87259 \\ \underline{75860} \\ 113990 \\ \underline{106204} \\ 77860 \end{array}$$

$$.99961 \overline{) 542419} \quad \text{L}$$



1036'



171°48'

177°46' 84°46'

92°20'

177°06'

84°46'

92°57'

177°43'

94°085'

92°17'

51°26'

Dec. 21-14-

Starting at $\frac{1}{4}$ Cor. ^{North side} on
road using the $\frac{1}{4}$ Cor as Sta: 0
County road running south to
 $\frac{1}{4}$ Cor. is a stake from which

Elm 8" N. 32° E 54.8 ft

" 14" N. 88° W, 146 ft

Sta 54 + 31.3 = $\frac{1}{4}$ Cor 22 & 27
from which a bears a

Birch 14" N. 46° E 39'

Elm 12" N. 63° W 43.1'

Sta 106 + 45.3 = $\frac{1}{4}$ Cor 27 & 34

Birch 14" N. 55° E 37.9

" 16" N. 59° W 42.8

Sta. 159 + 41.9 = $\frac{1}{4}$ Cor. between
from which bears a

Birch 18" N. 40° E 82.2'

W. Pine 7" S. 40° W 84.9

and Stakeholder { Bill Utley
 and Benjamin { Ben Maple
 Sec. 22-143-29
 Federal Dam - Cohasset State

we commenced to Stake out
 Grave Lake

bears two witness trees as follows
 Sta 0

T143N. R26W.
 Sta. 54+31.3

1°36' to the W

3°36'

Sta. 106+45.3

3°36' to the E

83°50'

3 & 34 on Town line T.L. Sta 159+41.9

159+41.9
 106+45.3
 52966

0°180° = Mag. North N 82°E

Vicinity Sandy Lake

| Bearing | Distance | sin | cos | North | South |
|-----------|----------|--------|--------|---------|-------|
| N 59°39'W | 397.7 | .86295 | .50528 | 200.95 | |
| N 7°43'E | 109.68 | .13427 | .99094 | 108.69 | |
| N 1°14'E | 629.58 | .02152 | .99977 | 629.43 | |
| N 8°56'W | 717.34 | .15529 | .98787 | 708.64 | |
| N 8°35'W | 2148.37 | .14925 | .98880 | 2124.31 | |
| N 11°33'E | 101.35 | .20022 | .97975 | 99.30 | |
| N 8°49'W | 662.95 | .15387 | .98878 | 655.11 | |
| N 16°24'W | 488.3 | .28234 | .95937 | 468.43 | |
| N 76°19'W | 577.8 | .97162 | .23656 | 136.68 | |

34

42

N 16°35'W

57

N E

27

28

2

513.54

7°35'

2

1

81

21

ke
th

North of Virginia

31

East West Loc

343.2 1/4-B

1/4 Cor. W. Sec. 7

14.73

B-C

13.55

C-D

111.40 DE

8°35'

320.64 E-G

20.29

G-H

101.61 H-I

137.86 I-J

561.40 J - 1/4 Cor W. Sec. 18

17

11

19

28

7

13

82°35'

4

16

48.07 14

157591

4807

1527.84

335843

1527.84 5131.54

458352

548020

458352

896680

763920

1327600

1262272

653280

611136

421440

5131.54

5131.54

2052616

2565770

513154

1539462

513154

2565770

26332702.7716

2334295.0656

28666997.8372

1527.84

152784

611136

1222272

1069488

305568

768920

152784

2334295.0656

5354.16

128666997.8372

26

100 | 366

309

1060 | 5769

5325

10700 | 44497

42816

107080 | 168183

107080

1070820 | 6110302

5354.16

5280

74.16

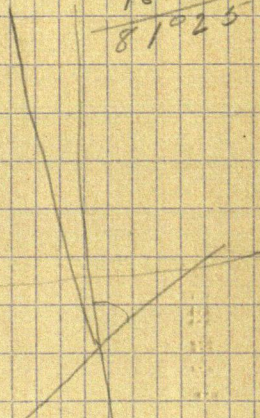
2677

$1^{\circ}25'$
 1692.65
 $.02472$

 33852.0
 1184855
 677060
 338530

 41.8423070
 $81^{\circ}25'$
 $16^{\circ}35'$

 $64^{\circ}50'$
 9
 $N 64^{\circ}50' \text{ VE}$
 $16^{\circ}35'$

 $81^{\circ}25'$


$$\begin{array}{r} 14925 - 3 - \\ 871.79 - 5 - \end{array} \quad \begin{array}{r} 871.79 \\ 98880 \end{array} \quad 2$$

$$\begin{array}{r} 134325 \\ 104475 \\ 14925 \\ 119400 \end{array} \quad \begin{array}{r} 134325 \\ 104475 \\ 14925 \\ 104475 \\ 119400 \end{array} \quad \begin{array}{r} 2677 \\ 2509.73 \\ 168. \\ 2566 \\ 2509 \\ 57. \end{array}$$

$$\begin{array}{r} 122071575 \\ 119400 \end{array} \quad \begin{array}{r} 122071575 \\ 119400 \end{array} \quad \begin{array}{r} 122071575 \\ 119400 \end{array}$$

87179

9888

5
6

200.95

343.2

697432

108.69 14.73

697432

629.43 13.55

697432

708.64

111.40

784611

862.02

130.11

762025952

2509.73

584.71

28.28

556.43

| Sin | Cos | N. | S. | E. | W. |
|-------|-------|----------------------|----|---------------------|--------|
| 14925 | 98880 | 862.03 [✓] | | 130.11 [✓] | |
| 14320 | 98969 | 709.94 | | 102.72 [✓] | |
| 31565 | 94888 | 597.40 | | 198.73 | |
| 42077 | 90717 | 99.50 | | 46.15 | |
| 67538 | 73747 | 293.29 | | 477.71 | 268.60 |
| | | 2562.16 [✓] | | 268.60 | |
| | | | | 219.11 | |

| | | | | | |
|-------|--------|--|---------|--------|--------|
| 14925 | 98880. | | 1262.28 | | 190.53 |
| 48048 | 87701 | | 88.88 | | 48.69 |
| 14522 | 98940 | | 655.92 | | 96.27 |
| 01338 | 99991 | | 488.26 | | 6.53 |
| 85851 | 51279 | | 296.29 | 496.05 | 12.22 |
| | | | 2791.63 | 496.05 | 342.02 |
| | | | 2562.16 | 342.02 | 342.02 |
| | | | | 154.03 | |

Distance

Bearing

871.79

N 8°35' E

717.34

N 8°14' E

629.58

N 18°24' E

109.68

N 24°53' E

397.7

N 42°29' W

1276.58

S 8°35' W

101.35

S 28°43' W

662.95

S 8°21' W

488.3

S 0°46' W

577.8

S 59°09' E

51.4995

133.621688137

66810

020037

13362

66730

53448

133020

120258

127620

120258

73,620

.7764

.7852

1°6'45"

Cor 1°7' - 99981

4995

3032

.1963

Sin Cos Dis Bearing

5149.35 due W.
 95923.282.63 1692.65 75° 37'
 6842.00
 39.37
 6881.37 133.6

1° 6 ⁹/₄'

95923 - 1

1393 - 7

287769

84330.7

287769

95923

133.620739

4 33.4

28262 - 2

1393 - 7

84786

254358

84786

28262

39.36896 6

5149.35
 39.37
 5188.72

$$\begin{array}{r}
 8224 \\
 15.11 \overline{) 5355.00} \quad 0^{\circ}42' \\
 \underline{5208} \\
 14620 \\
 \underline{13022} \\
 15980 \\
 \underline{13022} \\
 29580
 \end{array}$$

4° 9'

45

Total 5355

2677.5

2562.16

115.34

114.73

1692.65

1585.97

106.68

1585.97

1577.2

8.27

2677.5

2791.63

114.13

115.34

2229.47

114.73

1382

114.73 / 1585.97

114.73

43867

34419

94480

91784

26960

1692.65

1884.5

1506.16

219.11

154

65.11

32.5

154.5

186.5

Soc. Cor

5183.72

5295.40

1,0723

1585.97

114.73.00

1110179

371810

317194

546,160

634.35 - 3

.0723 3

190305

126870

444045

45,863505

1 Survey of County Road
 + S H.1 - S Elev Obj. E. km
 4.05 104.05 5.1 98.95¹⁰⁰ Sta. 0 1/4
 0+33 South

2.55 101.50 1

3 101.05 2

3.3 100.75 3

3.7 100.35 4

1.8 102.25 Sta. 4 T.P.

9.85 112.10[✓]

10.3 101.8 5

11.3 100.8 6

10.5 101.6 7

7.9 104.2 8

4.3 107.8 9

set up

3.3 108.8 10

5.15 106.95 11

4.1 108.0 12

✓ 2.35 109.75 Sta. 12 T.P.

8.3 118.05

6.2 111.85 13

5.5 112.55 14

7.9 110.15 15

7.55 110.50 16

6.3 111.75 17

4.52 113.53 Sta. 17 T.P.

5.05 118.58[✓]

5.05

Roof of N.E.B.T. = 100'

between Sec 22-15 T-143N R. 26W

Cleared-Timber { Birch Cedar
Balsam Spruce

Greentimber

Cedar slash

Open

Balsam

Greentimber

Balsam
Easy Clearing

Leave woods

Open brushy

| | | | | |
|-------|-----------------------|-------|---------------------|-----------------------|
| 2 | | | | |
| +5 | H.1 | -S | Elev | Obj. |
| | 118.58 ⁶ | | | 1 |
| | | 4.7 | 113.98 | 18 |
| | | 4.9 | 113.7 | 19 |
| | | 5.7 | 112.9 | 20 |
| | | 8.8 | 109.8 | 21 |
| | | 10.1 | 108.5 | 22 |
| | | 8. | 110.6 | 23 |
| | | 6. | 112.6 | 24 |
| | | ✓ 4.2 | 114.38 ^v | sf 24 T.P. |
| 13.42 | 127.80 | | | |
| | | 10.6 | 117.2 | 25 |
| | | 6.7 | 121.1 | 26 |
| | | 3.35 | 124.45 | 27 |
| | | 1.2 | 126.6 | 28 |
| | | 1.67 | 126.13 | 27 st T.P. |
| 5.85 | 131.98 ¹³² | | | |
| | | 5.4 | 126.6 | 28 |
| | | 4.5 | 127.5 | 29 |
| | | 3.65 | 128.35 | 30 |
| | | 8.8 | 123.2 | 31 |
| | | 10.95 | 121.03 | T.P. on |
| 0 | 121.03 | | | |
| | | 8.2 | 123.8 | 32 |
| | | 12.93 | 108.10 | T.P. on |
| 2.2 | 100.3 | | | |

This is double
and maybe 14.42

open Cut over
Mostly Cedar stumps
and small poplar brush

Enter woods
Balsam

Crown and Birch

Drop to swamp

Balsam log

log

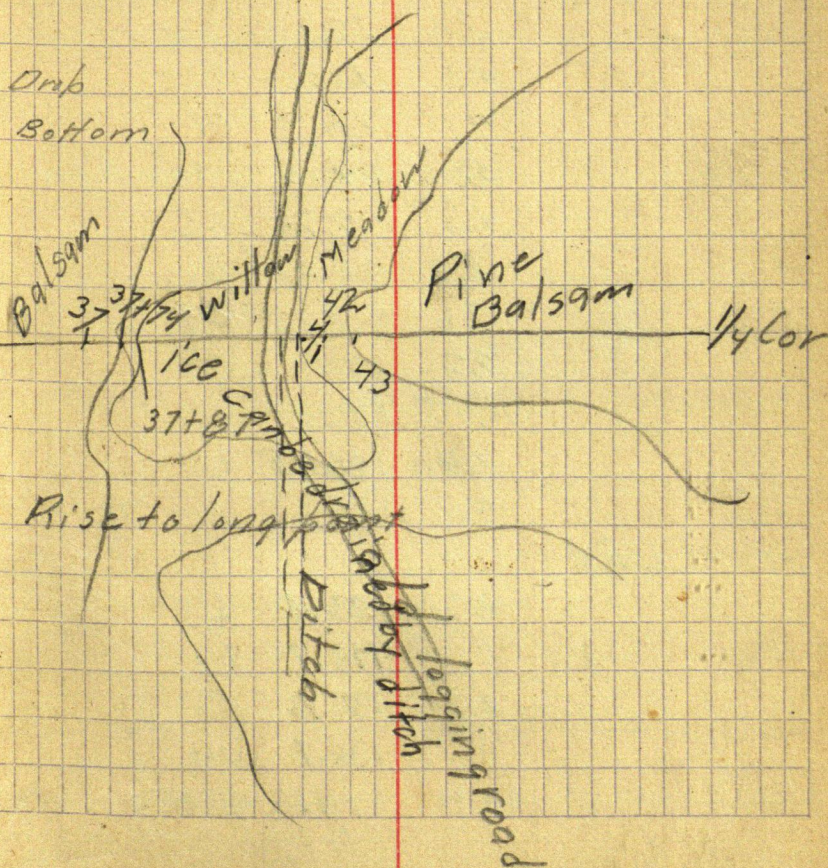
3

| + S | H.I. | - S | Elev | Obj |
|------|--------|-------|--------|------------|
| | 110.3 | | 105 | 32 + 50 - |
| | | 6.7 | 103.6 | 33 |
| | | 7.55 | 102.75 | 34 |
| | | 5.4 | 104.9 | 35 |
| | | 3.82 | 106.48 | 35 st T.P. |
| 8.87 | 115.35 | | | |
| | | 3.75 | 111.60 | 36 |
| | | 1.4 | 114.95 | 37 ch T.P. |
| 1.75 | 116.70 | | | |
| | | 11.8 | 110.9 | 37 + 84 |
| | | 11.5 | 104.4 | 37 + 87 |
| | | 12.7 | 109.0 | 38 |
| | | 11.35 | 105.35 | 39 st T.P. |
| 3.4 | 108.75 | | | |
| | | 9.6 | 99.1 | 39 |
| | | 9.7 | 99.0 | 40 |
| | | 7 | 101.7 | 41 |
| | | 0.63 | 108.07 | Birch st, |
| 12.2 | 120.27 | | | |
| | | 6.94 | 113.4 | 42 |
| | | 2.55 | 117.8 | 43 |
| | | 2.65 | 117.6 | 44 |
| | | 2.54 | 117.7 | 45 |
| | | 1.6 | 119.7 | 46 |
| 4.6 | 124.3 | | | |
| 7.6 | 124.3 | | | |

37
 74
 113.95
 74
 114.69

117.64
 114.95
 2.69

116.70
 114.95
 1.75



4

+S H.1 -S Elev Obj.

124.3

4.6 119.7 47

8.65 115.65 48

11.5 112.8 49

6.5 117.8 50

2. 122.3 51

4.5 123.85 TIP 51

10.5 134.35

7 127.35 52

4.3 130.05 53

5. 129.3 54

5.2 129.15 54+3.3 1/4 Cor.

4.6 129.75 55

5.2 129.15 56

7.6 127.75 57

9.2 124.15 58

11.45 122.90 59

7.9 126.45 60

9.1 125.25 60 T.P.

10.15 135.4

9.2 126.2 61

6.65 128.75 62

4.6 130.8 63

4.7 130.7 64

15.8 119.6 64+50

11.45

9.1

2.35

12 2.90

2.35

bottom of ravine

+5 4.1 - S Elev Obj

135.4

4.8 130.6 65

4.65 130.75 66

9. 126.4 67

7.4 128.0 67 T.F.

1.8 129.8

8 121.8 67+35

1.7 128.1 67+65

1.9 127.9 68

8.3 121.5 69

12.6 117.2 70

10.96 118.85 70 T.F.

-1.3 118.55

6.5 112.05 71

9.6 108.95 72

7.9 110.65 73

7.7 110.85 74

6.8 111.75 75

4.3 114.25 76

1.5 116.05 77

-1 117.65 77 T.F.

6.2 123.85

4.1 119.75 78

6.25 117.60 79

10.2 113.65 80

8.7 115.15 80 T.F.



67 80

leave Woods into open dry Cedar

68 slopes toward river
edge of old slash

west side road runs in old
cedar cutting and Burnt Clear
of everything except stumps

Enter Green timber

+5 4.1 - S Elev Obj.
115.15 80TP

2.55 117.70

5.4 112.3 81

6.3 111.4 81+40

4.1 113.7 80+70

6.3 111.4 82

10.3 107.4 83

1.2 116.5 84

-0 117.7 85

12.1 129.8

3.1 126.7 85

1.7 128.1 T.P. 85

9.25 137.35 95

6.4 130.95 86

1.7 135.65 87

4.2 133.15 88

4.5 132.85 89

1.3 10 127.35 90 T.P. 6r.

1.3 127.65 85 127.8 90

1.3 127.45

12.64 125.00 91 Gr. T.P.

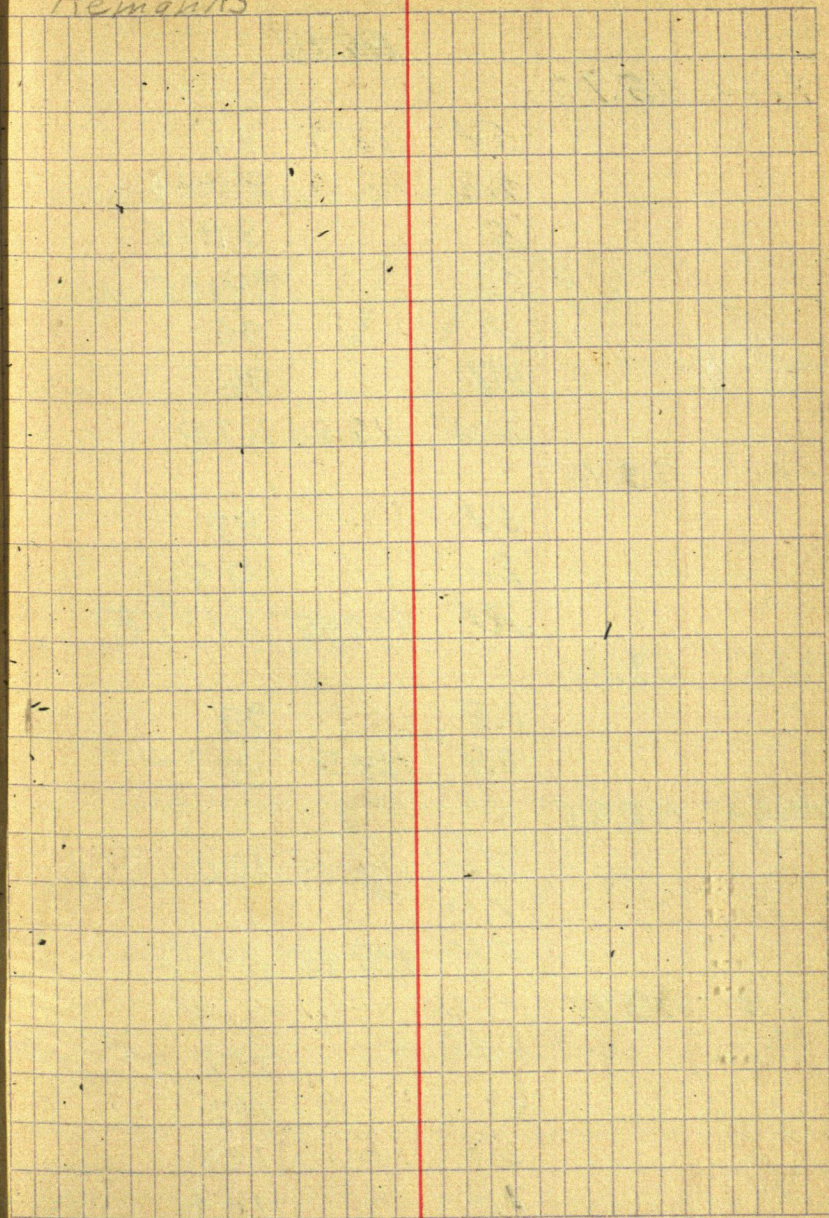
1.7 125.7

12.3 113.4 92

12.9 112.8 93

11.45 119.25 93 T.P.

Remarks



+5 H.I. -S Elev Obj.
114.25

1.65 115.90

5.4 111.5 94

7.9 94+30

5. 94+65

8.1 94+85

7 95

4.7 96

3.05 112.85 96 T.P.

10.3 123.15

5.1 97

2. 98

1.70 122.45 98.5 T.P.

9.85 132.30

3.8 99

2.4 129.9 99 T.P.

10.35 140.25

7.65 100

1.7 101

1.4 138.85 101 T.P.

4.9 143.95

2.25 102

4.1 103

5.8 104

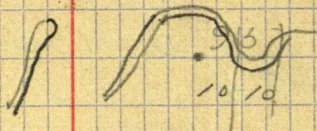
7.7 105

Cedar Birch Pine Balsam

Creek on ice 10' wide

Creek

94



148.75

14.

103.85

10.6

106

6.5

114.00

6.55

107

5.15 138.60

107.75

4.8

148.4

3.1

108

2.8

09

4.3

10

5.3

11

5.2

12

7.6

13

5.

115

4.6

116

4.3

117

4.6

118

3.

140.4

118.75

19.3

114

21

114.50

3

140.7

3.1

129

4.3

120

6.2

124

6.1

122

4.

122.50

Furanen

Hibbing - Virginia Rd by K. 1.68

Virginia - Sand Lake Jct .25

13

14

15



140.7

6.4

123

10.4

124

9.2

124 + 60

13.5 127.7

125

11.95

128.75

126 Top T.P.

115 128.90

7.2

121.7

126

14.2

127

9.

126 + 70

17?

127 + 50 cur

17.7

127 + 60 r'so

4.

128

2.75

126.15

128 +

10.9 137.05

1

7.1

128 + 10

5.7

129

6.3

30

6.1

31

4.7

32

5.

33

5.5

4

4.9

5

3.8

136

2.4

124.65

136.75

2.2 136.85

c. 2

Henry Furanen

| | |
|---------------------------|------------|
| Duluth - Hibbing | 1.68 |
| Hibbing - Virginia | .45 |
| Virginia - Sand Lake Jct. | .25 |
| 1 meal Sand Lake Jct. | .25 |
| | <hr/> 2.63 |

| | | |
|--------------------|-------|-------|
| J. M. Greene | 1 day | 10.50 |
| Duluth - Hibbing | | 1.68 |
| Hibbing - Virginia | | .45 |
| Virginia - Hibbing | | .45 |
| Hibbing - Virginia | | .45 |

Breakfast .35

Drayage .35

Telephone .50

July Ormonde 1.00

Dinner .50

Supper .45

Breakfast .35

Dinner .50

1 day 10.50

Ormonde 1.50

Breakfast .45

Dinner .75

Lunch .35

Supper .35

\$38.00
5.50

\$8.40

36.69
5.50

41.19
57.80

13685

6.2

137

14

138

12.32 124.53 138 T.P.

2.6 127.13

x82

139

10.5

140

11.1

141

12.2

142

10.6 116.53 142 T.P.

1.6 118.13

4.6

143

5.5

144

7.1

145

7.2

146

5.9

147

5.2 1122.3 148 T.P. Bx

7.1 119.4

6.4

149

5.1

150

5.5

151

7.3

152

8.1

153

6.5 112.9 153 T.P.

8.25 121.15

ts H.1 - S Elev Obj

121.15

9.7

154

10.1

155

11.0

156

10.6

157

9.8

158

8.2

159

5.2

159 + 419

10.75 110.40

B.M. 607

16.95 117.35

4.9

160

8.2

161

12.4

162 + 87

1

163 + 26.8

13.25 104.10

64

8.25

163 +

5.2

164 + 13.3

3.8

165

1.7

166

2.85

166 + 67

-1.15 117.50

166 T.P

2.07 119.57

3.3

6.3

167

9.

168

8.8

169

69

86 14 13.3

$$169 + 15.5 = C.$$

$$172 + 18.6 = D$$

$$164 + 13.3$$

$$159 + 11.9$$

$$471.1$$

= 1/4 Cor

in roof of Elm Stub Near A.

East shore Bear River

West " "

Ice in River 6' water

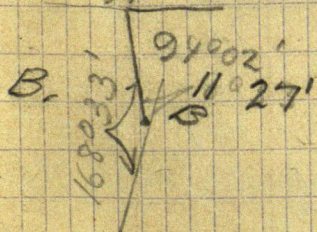
High Bank

= A.

$$A = 164 + 13.3$$

$$163 + 11.6$$

$$135$$



+S H.I -S Elev Obj

119.57

7.5

169+15.5

✓ 7.35 112.22 169 T.P.

4.83 117.05

6.3

170

7.7

171

7.5

172

7.3

✓ 172+18.6

6.2

110.85 172 T.P.

4.14 114.99

4.15

✓ 173

✓ 3.2 111.8 173 T.P.

10.9 122.7

8.

174

5.6

175

5.8

176

5.7

177

4.4

178

2.5

179

3.8

180

4.8

181

9.6

113.1

182

3.3

✓ 183

2.3

120.4

T.P. 183

10.05 130.45

= 0

$$C/1710 = 169 + 15.5$$

82° 39'

$$D = 172 + 18.6$$

25° 05' 30" 154° 08' 30" 22° 21' 30"

= 0

$$E$$

157° 38' 30"

Cut off Ted Lake

- 3' ice in Ted Lake

5' = Depth of water

15' - 20' W.

TS H.1 -S Elev Obj

130.45

7

184

5.4

184 + 71.7

4.4

185

1.8

186

✓ ,42 130.03 186 T.P

12.65 142.68

8.6

187

4.

188

2.6

140.08

188 T.P

1295 153.03

3.35

189

3.9

189 + 21.3

6.3

189 + 50

2.3

189 + 80

3.4

190

1.8

190 + 30

B.

190 + 20

4.1

190 + 85

2.4

191

-1.2

+20

1.25

157.78

191 T.P.

5.3 157.08

5.25

192

3.15

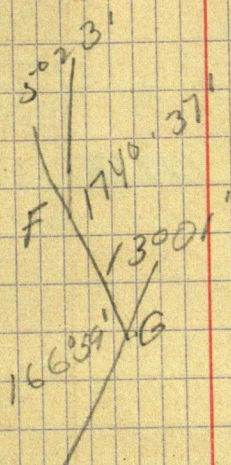
193

In old Road

E

In "

"



| +S | H.I | -S | Elev | Obj |
|------|--------|------|--------|------------|
| | 157.08 | | | |
| | | 5.0 | | 193 + 79 |
| | | 6.55 | | 194 |
| | | 10 | | 195 |
| | | 13.6 | | 196 |
| | | 12 | | 197 Road |
| | | 8.65 | | 198 |
| | | 7.4 | 149.68 | 198 T.P |
| 2.6 | 152.28 | | | |
| | | 1.4 | | 191 + 70 |
| | | 5.1 | | 198 + 21 |
| | | 55 | | 199 |
| | | 2.5 | | 200 |
| | | 3.1 | | 200 + 48.1 |
| | | 1.2 | 151.08 | 200 T.P |
| 4.27 | 155.35 | | | |
| | | 3.3 | | 201 |
| | | 2. | 153.35 | 201 T.P |
| 11.1 | 164.45 | | | |
| | | 8.8 | | 202 |
| | | 1.95 | | 203 |
| | | .53 | 163.92 | 203 T.P |
| 6.23 | 170.15 | | | |
| | | 4.9 | | 203 + 67.5 |
| | | 7.9 | | 204 |

G

29°52'30" G

H 150°07'30"

171°34'

8°26'

5' 32" ←

I

7°27'

172°33'

K-208

= H

= I

= U

+S 4.1 - S Elev Obi

170.15

11.9

205

7.7

204.50

11.35 158.80

205 TP

242 167.22

4.8

206

11.45

207

12.8

148.42

T.P

1.14 149.56

8.1

208 = K

6.45

209

9.2

210

5.3

7th int

6.8

211

8.25

141.31

T.P. Rock

79 149.21

6.1

212

4.8

2

5.

213

10.4

214

16.1

215

13.8

216

12.6

137.61

216 + 70

3.1

140.71

5

135.71

M.

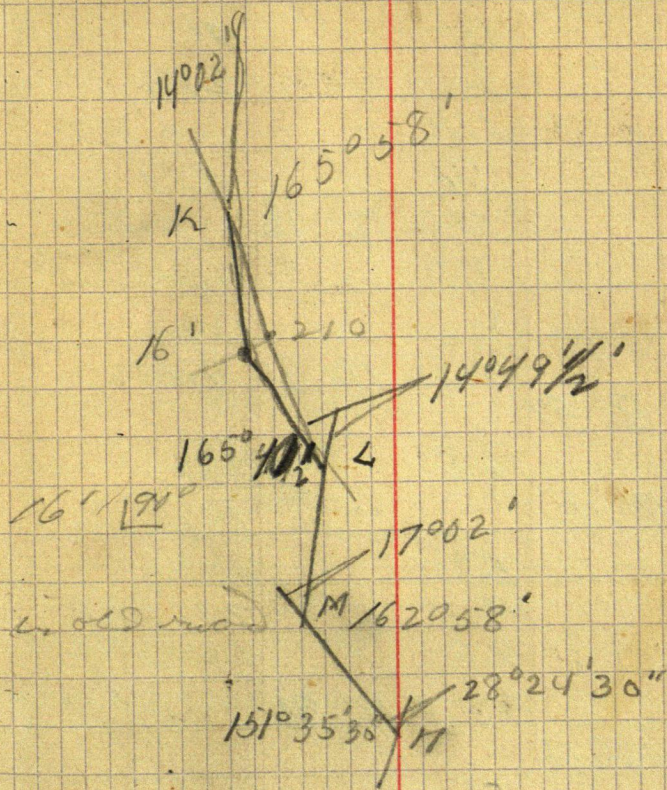
8.8

131.9

217

12.37

128.34

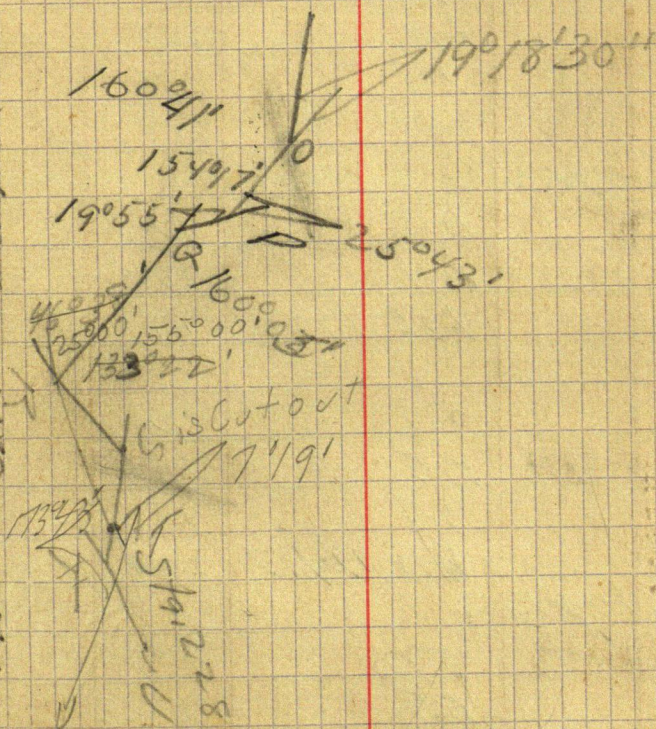


T.P high point

| TS | H.I. | -S | Elev | Obj. |
|------|--------|-------|--------|------------|
| | | | 128.34 | |
| 3.42 | 131.76 | | | |
| | | 5.1 | | N |
| | | 6.1 | | 218 |
| | | 218 | | " +50 |
| | | 11.6 | | 219 |
| | | 10.6 | 121.16 | 219.85 |
| | | 11.8 | | 220 |
| | | 11.7 | | 221 |
| | | 10.55 | 121.21 | T.P. 221 |
| 5.36 | 126.57 | | | |
| | | 6.5 | | 222 |
| 5.25 | 126.46 | | | P m. level |
| | | 5.85 | | 223 |
| | | 4.25 | | 223 +50 |
| | | 4.8 | | 224 |
| | | 3.7 | 122.76 | 224 T.P. |
| 2.3 | 125.06 | | | |
| | | 5.6 | | 225 |
| | | 5.2 | 119.86 | T.P. |
| | | 3.7 | | R |
| 6.52 | 126.38 | | | |
| | | 4.4 | | 226 |
| | | 2.5 | | 227 |
| | | 1.54 | 125.84 | 227 T.P. |

Runs next to swamp on west side of hill

cedar lake cut off



11986

6.54 / 26.40

6.3

226

5.1

R

7.2

227

-1.2

227.188

1

125.40 T.P.

5.3 130.78

5.2

J

6.3

228

7.4

229

6.4

→

229 T.P.

5.35 / 29.65

124.3

5.5

U

8.4

230

7.45

122.20

11

J.P.

5.3 / 27.5

5.2

V

4.5

231

3.7

232

2.9

124.7

232

J.P.

4.35 / 29.05

5.2

S

6.8

233

1.5

234

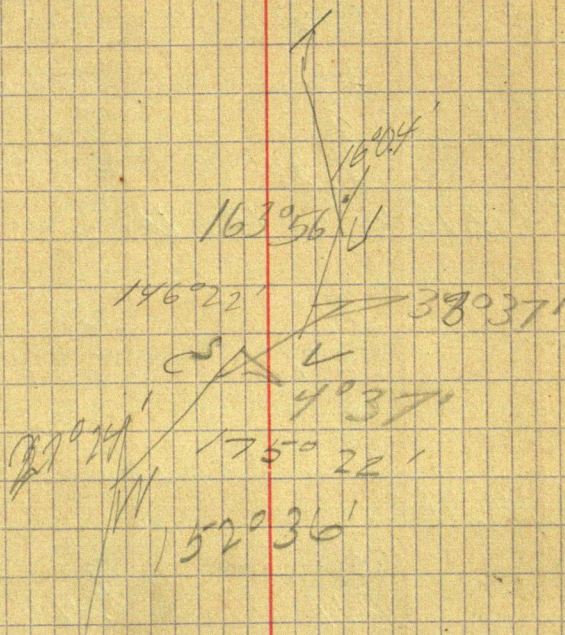
4.5

128.60

11

J.P.

Edge of Grass 609



128.6

7.6 136.2

55

235

54

W

6

236

4

237

2.92

T.P. 237

6.65 139.93

133.28

5.3

W

3.7

238

2.5

239

0.8

139.13 239 T.P.

4.05 143.18

5.2

Y

3.4

240

1.1

241

0

143.18

0

T.P.

3.8 146.98

6.9

242

6.8

243

5.9

244

5.6

245

4.42

142.56

"

T.P.

3.3 146.90

1/4 Cor South side 34

83

A 16413.3

1[#]

B 16667.0

2[#]

C 16915.5

3[#]

D 17218.6

4[#]

E 18471.7

F 18921.3

G 19307.9

H 19821.0

I 20048.1

J 20367.5

K 20800.

L 21292

M 21670.2

N 21767.

O 22170.6

P 22269.

Q 22474.1

R 22587.1

S 22696.5

T 22879.7

U 22916.2

V 23016.1

W 23559.0

X 23767.5

Y 23910.1

Z

180° 28' 32"

161° 03' 21"

53° 26'

126° 37'

100° 6'

149° 53' 21"

7° 57'

8° 37'

171° 02' 31"

120° 02'

22788.75-

T = 22788.75

U. 22937.3

U. 22956.2

1' 145.9

5.0

246 #1

4.9

247

3.45

248

2.34 143.56

"

T.P.

4.13 148.9

5.1

249

7.3

250

6.1

141.59

250

T.P.

3.12 144.79

5.2

251

4.44

252

3.25

141.54

"

T.P.

5.35 146.89

5.75

253

10.3

254

9.03

137.96

"

T.P.

1.3 138.16

8.1

255

6.2

256

5.35

132.81

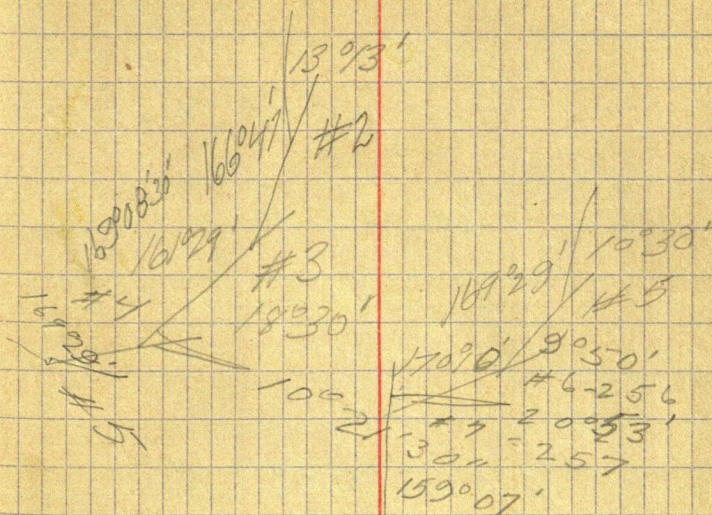
4.5 128.31

7.05

6.45

12.186

4.2 126.06



12606

4.7 123.36 258

4.55

259

3.55 122.51

"

T.F

22.5 124.76

11.5 113.76

8.51

7.7

7.7

6.89

81

81

162.1

$$256 + 64$$

16

$$5^{020}$$

$$\# 17 =$$

$$254 + 58$$

$$288 + 42,5$$

$\sqrt{1040} = 32$

$$\begin{array}{r} 27 \\ 1381 \\ \hline 351 \\ 1054 \\ 179 \\ \hline 16 \end{array}$$

$$\begin{array}{r} 10566 \\ 23 \overline{) 10566} \\ \underline{46} \\ 179 \\ \underline{66} \\ 113 \\ \underline{66} \\ 47 \end{array}$$

set Sec. Cor from

$$\begin{array}{r} 7820 \\ 15.5 \\ \hline 1304.5 \end{array}$$

1315, 5^m

1246

$$\begin{array}{r} 1320 \\ 1320 \\ \hline 2640 \end{array}$$

12.03.

6.89

$$\begin{array}{r} 12.46 \\ 13.29 \\ \hline 25.75 \end{array}$$

5270.76

$$\begin{array}{r} 2658 \\ 46 \\ \hline 2602 \end{array}$$

2262

549/58x31

John F. 1908

line 224.

Hand-drawn survey map on graph paper. The map shows a 'ROAD' and various survey points and measurements.

- Top Left:** 'ROAD' label with an arrow pointing up and to the right.
- Top Center:** '178°' and '60.04'.
- Top Right:** '26.65', '38°', '0.5', '13', '10.33', 'West 0°', '26', '46.75', '91°04', '91°05', 'True V', '88°00'.
- Center:** '91°04', '91°05', '91°05', '10.33', 'West 0°', '26', '46.75', '91°04', '91°05', 'True V', '88°00'.
- Bottom Left:** 'from', '92°03', '52', '78.7', '26.35', '26.58', '90°'.
- Bottom Center:** '90°03', '91°04', '91°05', '91°05', '10.33', 'West 0°', '26', '46.75', '91°04', '91°05', 'True V', '88°00'.
- Bottom Right:** '90°03', '91°04', '91°05', '91°05', '10.33', 'West 0°', '26', '46.75', '91°04', '91°05', 'True V', '88°00'.

90° 51'
13
21° 04'

01454 91
264

99936
69-6
999424
599616
6895584
10
68.85

.03579
6885
17895
28632
28632
21474
24641 415

5816
8724
2908
38385-6

2659 = tan 45° -

52 70.76
68.85 √ 52 73.22
48 195
453 72
41 310
40620
34420
62000
61960

90° 51 1/2
13 1/2
010 04 1/2
389 010 04 1/2
264 91° 54'
3029 91° 29'

2658
7320
2640
31.5
2608.5
38.4
2646.9
2660.1

2658
263538
22.82
1.46
21.16
.50
20.66

0° 50' = 01455 tan -1

3443
4365
5820
5820
4365
5009 565

25.5 = 13° 30' tan -1

20.66 √ 5280
4132
11480
10380
11500

2564
1320
1244

W. H. Gregory - Cass Lake

| | | | |
|-------|--------------|----------|-------------|
| Jan 3 | J. M. Greene | 1/2 day | 2.50 |
| | Wm Uhley | 1/2 " | 1.00 |
| | Joe Cluckey | 3 " | .60 |
| | Jno " Jr | 3 " | .60 |
| | " " Sr | 3 1/2 hr | .70 |
| 4 | J. M. Greene | 1 day | 5.00 |
| | Wm Uhley | 1 " | 2.00 |
| | Joe Cluckey | 1/2 day | .80 |
| | Jno " Jr | 1 " | 1.60 |
| | " " Sr | 1 " | 1.60 |
| | | | <hr/> 16.70 |
| | Bd. | | 2.50 |
| | | | <hr/> 19.20 |

1.30 - 50

93

11
111

2568
132
1283

Fri 3/4

Sat 1

Sun 1/4

Tues 1

31

Joe Cluckey

1.40

3 days

Jno "

2.20

15

" " Sr

2.30

6

2.50

21

8.40

15.40

7.00

5.60

15.40

61

10531
1283
9248

[illegible]

2623.7

554.5
I.M.

91°05'

90°35'
90°12.5'

89°52'

3.E. 1/4 of
34

Sec. 142-26

Survey for J. H. Klenon

2041.16
554.5
2595.66

2554.8

I.M.

88°02'

89°48'

2653.7

90°12'

91°58'

32.3'

$$79.1 = \cotan 43^\circ$$

$$32.3 \overline{) 25548}$$

$$\underline{2261}$$

$$2938$$

$$\underline{2907}$$

$$310$$

$$91^\circ 05'$$

$$\underline{90^\circ 25'}$$

$$40'$$

$$2041.16$$

$$2595.66$$

$$\underline{2554.8}$$

$$40.86$$

$$2575$$

$$\underline{.01164} \tan 40'$$

$$10300$$

$$15450$$

$$2575$$

$$\underline{2575}$$

$$2997300$$

$$64.9 = \cot 53^\circ$$

$$40.86 \sqrt{2653.70}$$

$$\underline{24516}$$

$$20210$$

$$\underline{16344}$$

$$38660$$

$$91^\circ 05'$$

$$\underline{53^\circ}$$

$$90^\circ 12'$$

$$91^\circ 58'$$

| | | | | |
|------|--------|------|--------|--------------|
| +5 | H.I | -5 | Elev. | |
| | | | 100.75 | = Water |
| 12.5 | 113.25 | | | |
| | | 2.3 | 110.95 | = T.P. |
| 1.15 | 112.10 | | | |
| | | 6.45 | 105.65 | Sta. 1 |
| | | 9.14 | 102.96 | 2 |
| | | 10.4 | 101.7 | 3 Swamp T.P. |
| 6.7 | 108.4 | | | |
| | | 6.7 | 101.7 | 4 |
| | | | 101.7 | 4+75 |
| | | 3.5 | 104.9 | 5 Hill |
| | | 6.35 | 102.05 | 6 |
| | | 6.9 | 101.50 | 7 |
| | | 6.65 | 101.75 | 8 |
| | | 5.9 | 102.5 | T.P. |
| 4.9 | 107.4 | | | |
| | | 7.4 | 100 | |

Lock

13.00

12.88

12

12.6

1

12.5

Levels on school

| +5 | H.1 | -S | Elev | |
|-----------|-------------------|----------------|--------------|--------------------------|
| | | | 97.59 | |
| | | | 96.59 | x on E. side |
| 4' 1 3/4" | | | Add 1 to | |
| 4.15 | 101.69 | | All Elev. in | |
| O-O-A | 100.69 | 5.94 | This Column | on P. 0-0 |
| 9 70 | 100.7 | 6'5" 6.41 | 94.75 | |
| 6 20 | | 6'3" 6.25 | 94.38 | |
| 0 30 | | 6'9" 6.75 | 94.44 | |
| d 40 | | 6'6 1/2" 6.54 | 94.94 | |
| 0 50 | | 6'8" 6.67 | 94.15 | |
| f 60 | | 6'11" 6.92 | 94.02 | |
| 9 70 | | 6'9" 6.75 | 93.77 | |
| h 80 | | 6'6" 6.50 | 93.94 | |
| 1 90 | | 6'8" 6.67 | 94.19 | |
| A | | 6'5" 6.41 | 94.02 | |
| O-O-1 | | 6'0" 6.0 | 94.28 | |
| 1 10 | | 5'10 1/2" 5.9 | 94.69 | |
| 2 2 | | 5'10 1/2" 5.9 | 94.81 | |
| 3 | | 5'8" 6.67 | 94.81 | O-B.W. Cor |
| 4 | | 5'3" 6.25 | 94.08 | |
| 5 | | 5'4" 5.08 | 94.4 | Elev. 0-0 in pin = 95.00 |
| 6 | | 5'1" 5.08 | 95.6 | |
| 7 | | 4'11 1/2" 4.96 | 95.6 | |
| 8 | | 4'9 1/2" 4.8 | 95.78 | |
| 9 | | 4'10" 4.83 | 95.98 | |
| 10 | | 4'8" 4.67 | 95.91 | |
| I-A-1 | 10 | | 96.28 | |
| 6 20 | | 4'5 1/2" 4.46 | 96.28 | |
| 0 30 | | 4'11" 4.9 | 95.84 | |
| d 40 | | 4'4" 4.33 | 96.41 | |
| e 50 | | 4'2 1/2" 4.7 | 96.04 | |
| f 60 | | 4'6" 4.5 | 96.24 | |
| g 70 | | 4'4 1/2" 4.4 | 96.34 | |
| h 80 | | 4'7" 4.6 | 96.11 | |
| 1 90 | | 6'7" 6.6 | 94.14 | |
| A-A-1 | | 6'5" 6.4 | 94.34 | |
| 1 | | 6'1" 6.1 | 94.61 | |
| 2 | | 5'8" 5.66 | 95.08 | |
| 3 | | 5'7" 5.6 | 95.14 | |
| 4 | | 5'3" 5.25 | 95.51 | |
| 5 | | 4'8" 4.67 | 96.00 | |
| 6 | | 4'8" 4.67 | 96.01 | |
| 7 | | 4'4 1/2" 4.4 | 96.34 | |
| 8 | | | | |
| 9 | | | | |

Grounds.

101

school house steps.

3"± high

| +S | H.I | -S | Elev | |
|------------------|--------------------------|----------------|-------|----------------------|
| | 2.95 100.01 102.96 | | 95.25 | |
| 7'2 1/2" 7.2' | 102.95 | 54" 5.33 | 97.62 | O-2 |
| | | 5'8" 5.67 | 97.28 | A-2 |
| | | 6'3 1/2" 6.3 | 96.65 | B-2 |
| | | 6'12" 6.1 | 96.85 | C-2 |
| | | 6'0" 6.0 | 96.95 | D-2 |
| | | 4'5" 4.42 | 98.53 | D-1 |
| | | 5'3 1/2" 5.3 | 97.65 | C-1 |
| | | 5'4" 5.33 | 97.62 | B-1 |
| | | 4'8 1/2" 4.7 | 98.25 | Do P.O. |
| | | 4'11 1/4" 4.95 | 98.0 | " Ground |
| | | 5'0" 5.0 | 97.95 | C.O. P.O. |
| | | 5'2" 5.17 | 97.78 | C-O Gr. |
| | | 5'12" 5.1 | 97.85 | B ₀ |
| | | 5'11 1/2" 5.95 | 97. | B ₀ -6.96 |
| | | 5'2" 5.17 | 97.78 | 4-O Gr. |
| | | 4'11 1/4" 4.95 | 98.0 | 4-O P.O. |
| | | 4'6" 4.5 | 98.45 | A-4 |
| | | 6'7" 6.6 | 96.35 | B-4 |
| | | 6'3" 6.25 | 96.70 | C-4 |
| | | 5'3" 5.25 | 97.70 | D-4 |
| | | 4'11 3/4" 4.98 | 97.97 | D-1/6 in |
| | | 5'11 3/4" 5.96 | 96.97 | D-3 |
| | | 6'9 1/2" 6.8 | 96.45 | C-3 |
| | | 4'4" 7.33 | 95.62 | B-3 |
| | | 5'8" 5.7 | 97.25 | A-3 |
| | | 5'0 1/2" 5.04 | 97.91 | O-3 |
| | | 4'11" 4.96 | 98.01 | O-3 - A-3 + 70' |

94
12 11 1/2 5
108
95

103

10212

102.95 5'10" 5.9 97.0

5'10 5.83 97.1

5'4" 5.33 97.6

6'11 6.9 96.0

5'4" 5.33 97.6

6'0 6.0 96.9

6'1.2 6.1 96.8

5'10" 5.8 97.1

5'3 5.25 97.7

5'7" 5.6 97.3

5'3 5.25 97.7

7
96.59

2.3

99.85

98.89

99.9

4.1

95.75

4.1

~~94.79~~

4.

~~95.7~~

~~94.89~~

96.0

3'10.5 3.9 95.0

3'7" 3.6 95.3

2'9 2.75 97.25

2'9 2.75 96.25

5'8" 5.67 94.2

5'10 5.8 94.1

4'4.5 4.4 95.5

200' W of A

4'3 4.25 95.14

187' W of A

5.9 94.0

300 W of A

6'6.5 6.54 93.45

" W of O.D.

2'11" 2.9 97.0

2'3" 2.3 97.6

| School grounds | | | | | Cut. Fill |
|------------------|---------|------|---------------------------|------|-----------|
| +5 | H.1 | -5 | Elevation Grade Ground | | |
| 0 4.87 | 100.62 | 4.9 | 95.7 ^{95.75} | 95.5 | .2 |
| 1 | √ 4'6" | 4.5 | 96.1 | 97.1 | 1.0 |
| 2 | √ 4'1" | 4.12 | 96.5 | 97.6 | 1.1 |
| 3 | √ 3'8½" | 3.72 | 96.9 | 97.9 | 1.0 |
| 4 | √ 3'4" | 3.32 | 97.3 | 97.8 | .5 |
| A ₀ | √ 4'6" | 4.5 | 96.1 | 95.3 | .8 |
| A ₁ | √ 4'1" | 4.12 | 96.5 | 97.0 | .5 |
| A ₂ | √ 3'8½" | 3.72 | 96.9 | 97.3 | .4 |
| A ₃ | √ 3'4" | 3.32 | 97.3 | 97.2 | .1 |
| A ₄ | √ 3'2½" | 3.22 | 97.4 | 98.4 | 1.0 |
| B | √ 4'1" | 4.12 | 96.5 | 97.0 | .5 |
| B ₁ | √ 3'8½" | | 96.9 | 97.6 | .7 |
| B ₂ | 3'4" | | 97.3 | 96.6 | .7 |
| B ₃ | | .22 | 97.4 | 95.6 | 1.8 |
| B ₄ | | | 97.5 | 96.3 | 1.2 |
| C ₀ | √ 3'8½" | 3.72 | 96.9 | 97.8 | .9 |
| C ₁ | √ 3'4" | 3.32 | 97.3 | 97.6 | .3 |
| C ₂ | 3'2½" | 3.22 | 97.4 | 97.3 | .1 |
| C ₃ 3 | 3.1 | 3.12 | 97.5 | 96.1 | 1.4 |
| C ₄ | 3.00 | 3.02 | 97.6 | 96.7 | .9 |
| D ₀ | √ 3'4" | 3.32 | 97.3 | 98.0 | .7 |
| D ₁ | √ 3'2½" | 3.22 | 97.4 | 98.5 | 1.1 |
| D ₂ | | | 97.5 | 96.9 | .6 |
| D ₃ | | | 97.6 | 97.0 | .6 |
| D ₄ | | | 97.7 | 97.7 | Grade |

14
12
28
14
168

inches

2.4

1.2

13.2

12

6.0

9.6

6.

4.8

1.

12.

6.

8.4

8.4

21.6

14.4

10.8

3.6

1.2

16.8

10.8

8.4

13.2

7.2

7.2

Grade

87
2
174
87
1044

72
2
144
72
864

34
23
244

87
12
103
196
90
244

| +S | H.I | -S | Elevation Grade | Ground S.W.P.N | Fill |
|----------------|-----------|------|--------------------|-------------------|-------|
| 6.1 | 101.85 | | 95.75 | | |
| B ₂ | 4' 6 1/2" | 4.55 | 97.3 | 96.6 | .7 |
| C ₂ | 4' 5 1/2" | 4.45 | 97.4 | 97.3 | .1 |
| D ₂ | 4' 4" | 4.35 | 97.5 | 96.9 | .6 |
| D ₃ | 4' 3" | 4.25 | 97.6 | 97.0 | .6 |
| C ₃ | 4' 4" | 4.35 | 97.5 | 96.1 | 1.4 |
| B ₃ | 4' 5 1/2" | 4.45 | 97.4 | 95.6 | 1.8 |
| B ₄ | 4' 4" | 4.35 | 97.5 | 96.3 | 1.2 |
| C ₄ | 4' 3" | 4.25 | 97.6 | 96.7 | .9 |
| D ₄ | 4' 2" | 4.15 | 97.7 | 97.7 | Grade |

$$\begin{array}{r} 15 \\ 12 \\ \hline 30 \\ 15 \\ \hline 180 \end{array}$$

B₁ - 96.9

$$\begin{array}{r} 33 \\ 12 \\ \hline 20 \\ 35 \\ \hline 120 \end{array}$$

$$\begin{array}{r} 13 \\ 12 \\ \hline 20 \\ 45 \\ \hline 120 \end{array}$$

$$\begin{array}{r} 55 \\ 12 \\ \hline 110 \\ 55 \\ \hline 660 \end{array}$$

R

+S H.1 - S Elev

5.8 103.1 97.3 A₃

A₃ + 43N

5' 8 1/2"

5.7 97.4

4 A₃ A₄ B₃ B₄

A₄ + 50N

6' 5' 10"

6' 5' 85 97.1

6' 7.2"

6.6 96.5

6' 2.4"

6.2 96.9

5.70 97.4

5.8 97.3

5' 7.2"

5.6 97.5

5.84

5.7 97.4

$$\frac{975}{10}$$

$$\frac{3900}{48}$$

78

111

$$\frac{85}{100} = \frac{x}{12}$$

$$\frac{96}{102}$$

15

$$\frac{6}{10} = \frac{x}{12}$$

34

3

Premier Bear River Road.

| | | | | |
|---------|------|---|------|----------|
| 1/4 Cor | 159 | + | 41.9 | 476.4 |
| A | 164 | + | 13.3 | 253.7 |
| B | 166 | | 67 | 248.5 |
| C | 169 | | 15.5 | 303.1 ✓ |
| D | 172 | | 18.6 | 1253.1 ✓ |
| E | 184 | | 71.7 | 448.6 ✓ |
| F | 189 | | 21.3 | 386.6 ✓ |
| G | 193 | | 07.9 | 513.1 |
| H | 198 | | 21 | 227.1 |
| I | 200 | | 48.1 | 319.4 |
| J | 203 | | 67.5 | 432.5 |
| K | 208 | | 00 | 492.0 |
| L | 212 | | 92 | 378.2 |
| M | 216 | | 70.2 | 96.8 |
| N | 217+ | | 67.0 | 403.6 |
| O | 221 | | 70.6 | 98.4 |
| P | 222 | | 69 | 405.1 |
| Q | 224 | | 74.1 | 113.0 |
| R | 225 | | 87.1 | 201.6 |
| F | 227 | | 88.7 | 148.6 |
| U | 229 | | 37.3 | (13.9) |
| U | 229 | | 51.2 | 64.9 |
| V | 230 | | 16.1 | 414.6 |
| S | 234 | | 30.7 | 128.5 |
| W | 235 | | 59.2 | 208.3 |
| X | 237 | | 67.5 | |

| | | | | | |
|----|--------|------|-------|-----|---|
| W | 235 | 59.2 | 208.3 | 235 | 5 |
| X | 237 | 67.5 | 142.6 | | |
| Y | 239 | 10.1 | 517.9 | | |
| Z | 244 | 28 | 172.0 | | |
| 1 | 246 | 00 | 196.4 | | |
| 2 | 247 | 96.4 | 300.4 | | |
| 3 | 250 | 96.8 | 179.6 | | |
| 4 | 252 | 76.4 | 162.6 | | |
| 5 | 254 | 39. | 161.0 | | |
| 6 | 256 | 00 | 100 | | |
| 7 | 257.00 | | 216.4 | | |
| 8 | 2594 | 16 | 383.6 | | |
| 9 | 263 | 100 | 384.6 | | |
| 10 | 266 | 34.6 | 384.8 | | |
| 11 | 270 | 19.4 | 380.6 | | |
| 12 | 274 | 00 | 475.0 | | |
| 13 | 278 | 75 | 325.0 | | |
| 14 | 282 | 00 | 125.4 | | |
| 15 | 283 | 25.4 | 254.3 | | |
| 16 | 285 | 79.7 | 262.8 | | |
| 17 | 288 | 42.5 | | | |

+5

H.1

-5

Elev.

S.B. S.D C.M.D. N.B

94

5.1

199.1

4.8

7.33

94.391.8

2.66 6.9 4.75 7.75 5.4 96.4 92.2 94.4 91.4 93.7

1.75 6.6 4.8 8.6 -2 98.3 92.5 94.3 90.5 99.3

2.75 6.55 4.8 8.5 4.0 96.3 92.5 94.3 91.6 95.1

3.8 6.55 4.7 7.3 4.6 95.3 92.5 94.4 91.8 94.5

Sta 15+97

Sta 15+97

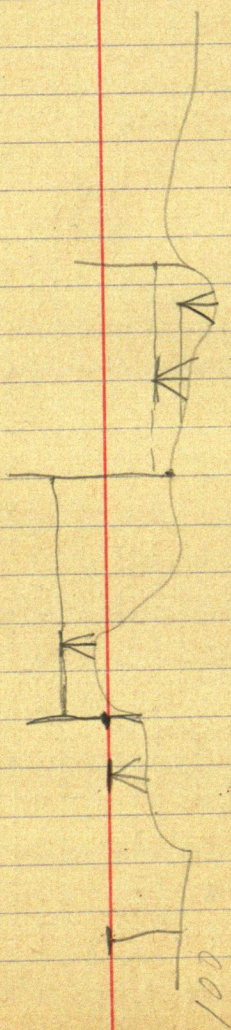
16+47

2,3

16+97

17+07

17+07



1001

$$\begin{array}{r} 1\frac{3}{4} \\ \hline 12 \\ 175 \\ 14 \end{array} \quad \begin{array}{r} 146 \\ 12 \overline{) 175} \\ \underline{12} \\ 55 \\ \underline{48} \\ 70 \end{array}$$

$$\begin{array}{r} 15' 11'' 84 \\ 12 \overline{) 1125} \\ \underline{108} \\ 45 \end{array}$$

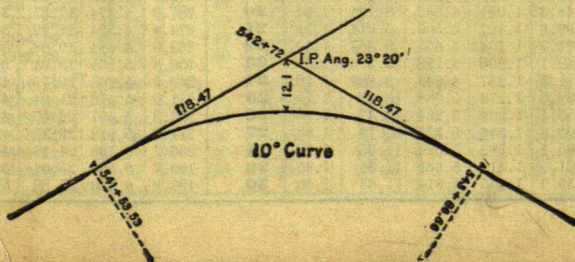
| | | | | | |
|---------|---|---|-------|------------|-----------|
| | | | 543 | | 1.18.47 |
| 49½' | " | " | +50 | B. C.=sta. | 541+53.53 |
| 11° 40' | " | " | 543+ | L. C.= | 2.33.33 |
| | | | 86.86 | E. C.=sta. | 543+86.86 |

$$100 - 53.53 = 46.47 \times 3' (\text{def. for 1 ft. of } 10^\circ \text{ Cur.}) = 139.41' = 2^\circ 19\frac{1}{2}'' = \text{def. for sta. 542.}$$

Def. for 50 ft. = $2^\circ 30'$ for a 10° Curve.

Def. for 36.86 ft. = $1^\circ 50\frac{1}{2}'$ for a 10° Curve

(These tables are published in Field Books of
KEUFFEL & ESSER Co., New York, N. Y.)



39 Birch 14"

43.1 Elm 8