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## **Township 44 north, ranges 31, 32, 33, and 34 west, specimens 30316b-30332. No. 215 [1891]**

McKim, James A.

[s.l.]: [s.n.], [1891]

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215  
LAKE SUPERIOR SURVEY

McKim



*Ind. det.*

## LAKE SUPERIOR SURVEY. INSTRUCTIONS.

**Topography.**—On the left-hand page map as much of the section as has actually been seen, counting each of the spaces between the blue lines as 100 paces, and 20 of these spaces to one mile, or 2,000 paces. The scale is four inches to the mile, and the heavier blue lines, outlining one inch squares, mark forties. Denote streams, lakes, swamps, marshes, etc., by the topographical signs annexed.

The geologist will consult with the compassman, and describe as accurately as possible, the timber traversed. When pine is found, give its proportion; tell whether good or poor, and indicate kind—white, norway, jack. If hemlock is found, note the relative amount. In hard wood districts, designate as good or poor, heavy or light, and indicate predominant kinds, oak, maple, birch, etc. Cedar swamps, spruce swamps, tamarack swamps and meadow swamps will be always discriminated. Outline burnt timber.

Each day, just before leaving camp, the geologist will compare his own and the camp aneroids, and the reading of each, with time, will be recorded. At work the aneroid will be read on gentle slopes at intervals of 200 paces; on steeper slopes at intervals of 100 paces; also at all maxima and minima. When minima are streams the map and notes will indicate this, showing width and character of streams. When a stream has made a cut of importance, aneroid readings will be made where the banks break off and at water level. If instead of an abrupt break, the stream valley has steep slopes, aneroid readings will be made with sufficient frequency to show this character.

At reading points the compassman will stop, read the dial compass, and remain until the records are complete. The readings will, as fast as made, be placed upon the map at the right-hand side of the line traveled, and in the notes, the numbers being inclosed in parentheses, basing the work upon the bench-mark which served as a starting point. At bench-marks the absolute reading of the aneroid and the altitude as shown by the bench-mark will be recorded to serve as a base for subsequent readings. For instance, aneroid 29.13 inches; altitude on bench-mark, 275 feet. At each subsequent reading, by setting 275 on the altitude circle at 29.13 on the fixed dial, altitudes may be directly recorded. When the next bench-mark is found at two miles distance, the difference between the aneroid reading on the basis of the first bench-mark and the second bench-mark will be recorded. At intervals of a half hour during the day the time will be attached to the aneroid readings. Upon reaching camp, after the day's work, the geologist will record the readings of his own and the camp aneroid, and also the time. Interpolations will then be made, based upon the bench-marks and times (not distances) if the day has been one of no abnormal atmospheric disturbances, or upon both bench-marks and camp aneroid readings if there have been unusual disturbances, and the corrected numbers, less a constant of 4 feet, will be placed upon the face of the map at the left-hand side of the lines of travel, and in the notes without parentheses, but the parentheses numbers will not be erased.

At each aneroid reading the trend of a horizontal contour line will be indicated upon the face of the map, making the length of the line correspond as nearly as may be with the actual distance seen. In passing directly up or down a slope, the contour lines will be at right angles to the direction of travel. In passing up a hill diagonally the contour lines will intersect the lines of travel at various angles, which can be estimated and plotted with sufficient accuracy by an appreciation of the north and south direction.

The course of travel will be always north and south. In starting from a quarter or a sixteenth post, the work will be plotted on the assumption that the true course is followed, but upon reaching the next section line the geologist will remain in the position at which the line is struck by the compassman until the latter finds the adjacent bench-mark. The intervening distance will then be paced by the compassman, and the point of intersection of the section line marked. From this point to the starting-point, a right line will be drawn to the actual course of travel. The positions of the contour lines, aneroid readings, etc., will not be changed.



**Geology.** — In running the north and south lines, the compassman will, if possible, determine the course by the dial compass. At the time the geologist reads his aneroid, the compassman will determine the magnetic variation, which will be given to the geologist and recorded in the note-book. Each morning the watch of the compassman will be set to apparent time (corrections being made for the equation of time and for longitude), so that he will need to make no correction in reading magnetic variation. On cloudy days, and at times when the sun is too low for the use of the dial compass, the course run will be by needle upon the supposition that the magnetic variations indicated on the township plats are right when corrected by deducting  $3^{\circ}$  if the variation is east, or by adding the same amount if the variation is west.

Not less than once per week the accuracy of the watch of the geologist in charge of a party (who will give time each morning to the compassmen), will be tested. This may be done, first, by obtaining correct time from a railway station by means of a packer when sent out for provisions. Such time will be mean, i. e., watch time for the nintieth meridian. Second, corrected time may be found by blazing out a north and south section line, preferably a range line, for some distance, setting a signal on the line and placing the dial compass duly leveled, in a north and south direction upon a Jacob's-staff just before mid-day, and setting the watch at 12 at the time the line strikes the noon hour. In a watch thus set all corrections are made.

It will be the constant business of the geologist to search for outcrops. All hills within a reasonable distance of the course of travel will be examined. Oftentimes upon the steeper slopes of a hill a rock surface is covered with a coating a few inches thick of moss, leaves or vegetable mold and can be stripped with the pick. Where the exposure is small and there is the least possibility that it may be a large boulder, indicate this fact in the notes and by a query on the map. All ledges off the line of travel of the compassman will be located by the geologist pacing to this line in an east and west direction, his course being determined by compass.

Denote the ledges of rock, when no structure is made out, by cross-hatching, making the cross-hatching cover as nearly as possible the areas occupied by the exposures. If the rock is a massive one, but still more or less plainly bedded, use the same sign with a dip arrow and number attached, showing the direction and amount of the dip. Denote a shaly or other very plainly bedded ledge by right parallel lines, and a ledge having a secondary structure by wavy parallel lines running in the direction of the strike, having strike line and dip arrow with numbers attached. The greatest care must be taken to avoid confusing slaty or schistose structure, with bedding, and in all cases where there is the least doubt about the true bedding direction, indicate it by a query.

To each exposure on the face of the map, attach the number of the specimens representing it. On the right hand page place the notes descriptive of the exposures. Begin in each case with the number of the specimen, placing the number on the left hand side of the red line, after which give in order on the right of the same red line, the position of the ledges as reckoned in paces from the southeast corner of the section, and the dip and strike when observable, for instance, No. 437, 1226, N., 353 W., *Strike*, N.  $47^{\circ}$  E., *Dip*,  $68^{\circ}$  S. E. Then follow with as full a description of the ledge as possible.

Collect a specimen from every ledge, and, if the ledge exposes different kinds of rock, collect a specimen of all varieties. Take care to get fresh material, unless for a special purpose the weathered surface is desired. Where ledges are infrequent the normal size of specimens will be  $3 \times 4 \times 1$  inch. In case several specimens of the same ledge are necessary, and when ledges are numerous, specimens  $2 \times 2\frac{1}{2} \times \frac{3}{4}$  inch will be allowed. In all cases collect chips for slicing. No two specimens will be given the same number. In the cases in which several specimens come from the same ledge, the different numbers assigned to them, will enable an easy description of their relations. Specimens will be placed at once in paper bags provided, upon which shall be marked in at least two places, with a blue or red pencil, the specimen number.



# TOPOGRAPHICAL SIGNS.

|                                |                        |   |                     |
|--------------------------------|------------------------|---|---------------------|
| <p>PINE OR HEMLOCK</p>         | <p>HARDWOOD</p>        | <p>SPRUCE OR FIR<br/>AND<br/>HARDWOOD</p>       | <p>CEDAR SWAMP</p>  |
| <p>SPRUCE OR FIR<br/>SWAMP</p> | <p>MARSH</p>           | <p>RAILROAD<br/>ROAD</p> <p>CREEK<br/>RIVER</p> | <p>NO STRUCTURE</p> |
| <p>NEARLY MASSIVE</p>          | <p>SHALY OR BEDDED</p> | <p>85°<br/>SECONDARY STRUCTURE.</p>             |                     |

# EQUATION OF TIME FOR 1891.

| Day | Min. | Day | Min. | Day | Min. |
|-----|------|-----|------|-----|------|
|-----|------|-----|------|-----|------|

## JUNE.

Add to watch time.

|                           |   |       |   |       |   |
|---------------------------|---|-------|---|-------|---|
| 1-6                       | 2 | 7-11  | 1 | 12-16 | 0 |
| Subtract from watch time. |   |       |   |       |   |
| 17-21                     | 1 | 22-26 | 2 | 27-31 | 3 |

## JULY.

Subtract from watch time.

|     |   |      |   |       |   |
|-----|---|------|---|-------|---|
| 1-6 | 4 | 7-13 | 5 | 14-31 | 6 |
|-----|---|------|---|-------|---|

## AUGUST.

Subtract from watch time.

|       |   |       |   |       |   |
|-------|---|-------|---|-------|---|
| 1-7   | 6 | 8-13  | 5 | 14-18 | 4 |
| 19-23 | 3 | 24-26 | 2 | 27-29 | 1 |
| 30-31 | 0 |       |   |       |   |

2  
1  
5



# SEPTEMBER.

Add to watch time.

|       |   |       |    |       |   |
|-------|---|-------|----|-------|---|
| 1- 2  | 0 | 3- 5  | 1  | 6- 8  | 2 |
| 9-11  | 3 | 12-14 | 4  | 15-17 | 5 |
| 18-19 | 6 | 20-22 | 7  | 23-25 | 8 |
| 26-28 | 9 | 29-30 | 10 |       |   |

# OCTOBER.

Add to watch time.

|       |    |       |    |       |    |
|-------|----|-------|----|-------|----|
| 1     | 10 | 2- 4  | 11 | 5- 8  | 12 |
| 9-12  | 13 | 13-16 | 14 | 17-22 | 15 |
| 23-31 | 16 |       |    |       |    |

# NOVEMBER.

Add to watch time.

|       |    |       |    |       |    |
|-------|----|-------|----|-------|----|
| 1-13  | 16 | 14-19 | 15 | 20-23 | 14 |
| 24-26 | 13 | 27-29 | 12 | 30    | 11 |

Book 2, 1  
Beginning June 17,

James A. McKim  
Geologist.

George Ferris  
Compassman.

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SPECIMENS : 3166 : 332

TOWNS : 44

RANGES : 31, 32, 33, 34



2

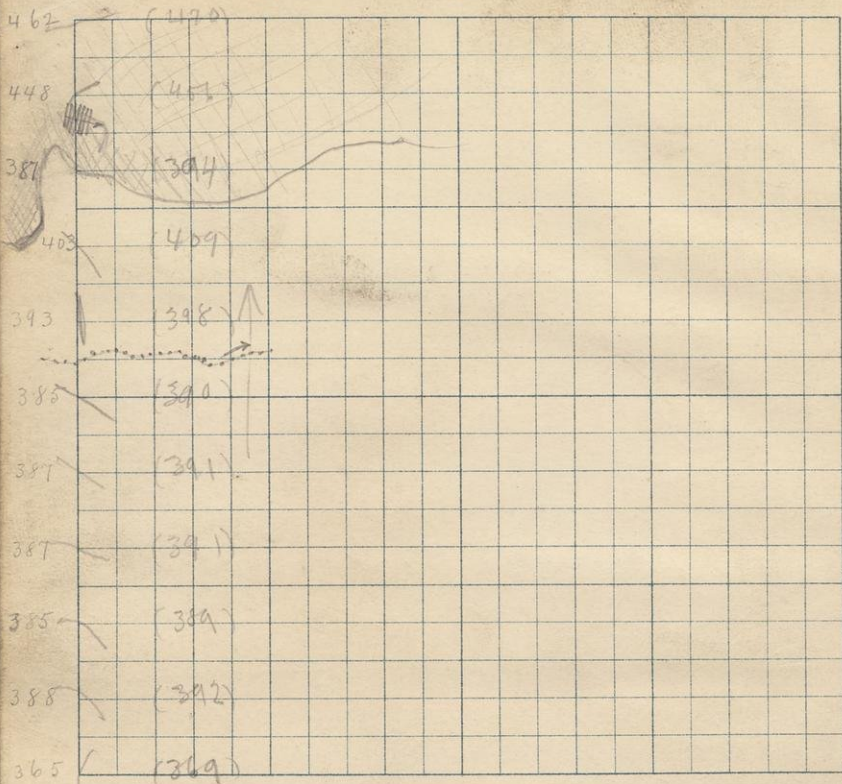
bx June 17,

O.K.

S. 20

T. 44

R. 31



462 / 2000 (470)  
 448 18 (456)  
 387 16 (394) at 8:20  
 403 14 (409)  
 393 12 (398) Max.  
 385 10 (390)  
 387 8 (391)  
 387 6 (391)  
 385 4 (389)  
 388 2 (392) max.  
 365 B.M. ~ 369. at 7:40 Bar =

3  
 show  
 been  
 the  
 show  
 life

Camp = 28.650

28.567

.083

Mine = 28.644 at 7:10 A.M.

28.562

.082

3

Started N from the S.W. cor sec 20-44-31

Started in burned country of hard wood &amp; pine cuttings. cherry underbrush slightly rolling land.

Min. or  $(386)^{382}$  at 670Max of  $(400)^{396}$  508 EQ 765

Tumble down logging camp at Sta 1000, with log roads leading to it all around.

Creek at 1100 =  $(380)^{375}$  E & W. 28 mids. flow E

Sta 1500 is just at the foot of the granite ledge met with yesterday.

(Strike N 23° E) (dip 60° N 113° E)

Found at 1735 <sup>S.E. cor. sec 19.</sup> Outcrop above about 1600 ft.

Sta 1800 is on top of ledge.

Ledge is 72 ft. high at Sta 1820

With a bit of Magnetite (very good) on top of the ledge at Sta 2000

3166

should have  
been 317  
but forgot  
I had a 316  
before

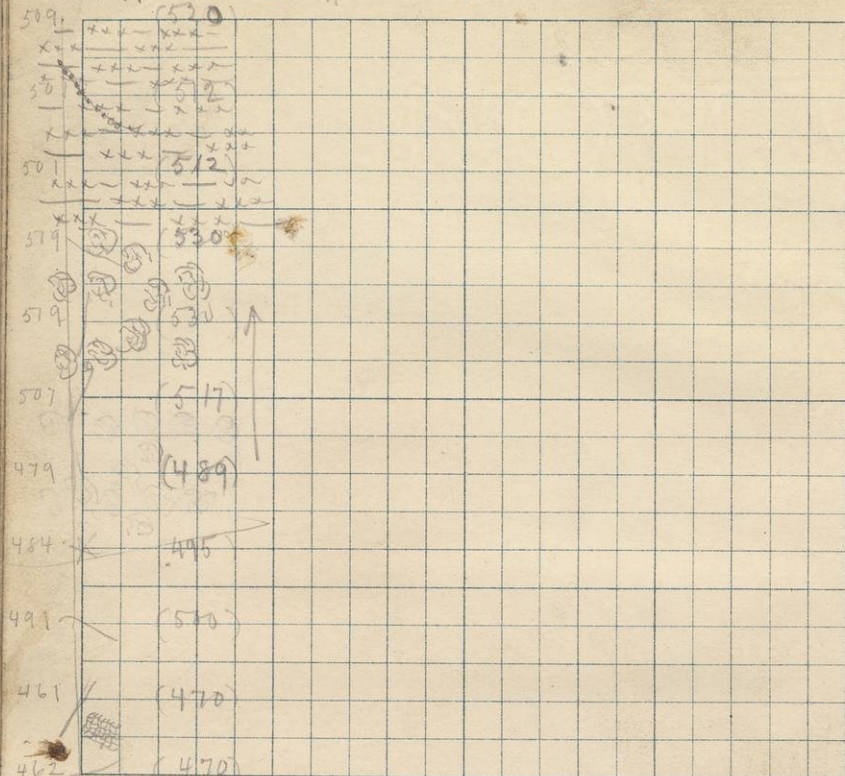


O. K.

S. 17

T. 44

R. 31



509 = 200 (520) B.M. = 513. at 10; 50 Baro = 28,452

501 = 18 (572)

579 12 (530)

507 10 (517) at 955

479 8 (489)

484 6 (495)

491 4 (500) Max.

461 2. 470

347. } Started N from the S.W. cor sec 17-44-31  
 Price off of outcrop of Massena granite  
 at Sta 190. Ledge running N to S, with face  
 toward the E.

Thick growth of alders all over the ledge  
 around 200.

Poplar under growth from 400 to 1040

Wind fall from 200 to 1040.

Hardwood timber from 1040 to 1430

Ledges underlying the ground from the  
 Main ledge N to 1700

Max of 53 <sup>524</sup> at 1186

Entered cedar swamp at Sta 1430. Left at <sup>Sec. line</sup>

(East) creek in swamp at Sta 1800 N-W by N. 20° wide

Struck the line 10 P to late + 40 P W to post.



6

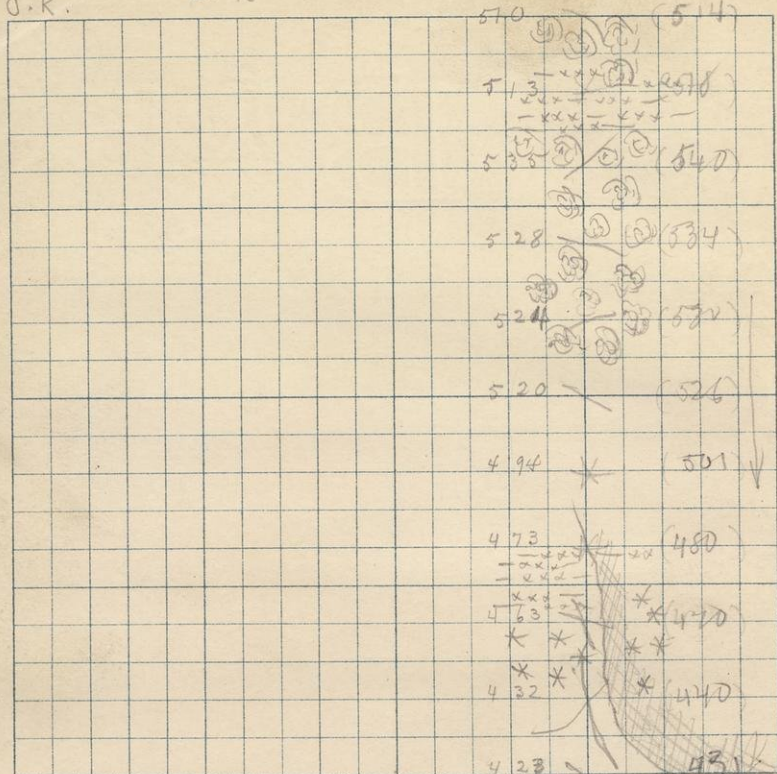
3rd June 19

S. 18

T. 44

R. 31

O.K.



510 B.M. = 514 at 11.4. Baric 28,450 Anom = 520  
 513 200 (518)  
 535 4 (540) Max.  
 528 6 (534)  
 524 8 (530)  
 520 10 (526)  
 494 12 (501)  
 473 14 (480) min  
 463 16 (470)  
 432 18 (440)  
 423 2000 (431) at 10.M.

Started W from the N-E cor sec 18-44-31

Went S from the N-E  $\frac{1}{8}$  pt sec 18-44-31

Started S in hard wood with alder brush which rapidly merged into cedar swamp & thick windfall.

Left swamp at 300 but windfall continues. Windfall stops at 500.

Hardwood from 300 to 870

Pop. small growth (thick) from 870 to

Old windfall from 870 to 1400

Enter cedar swamp at 1400 leave at 1500 & enter pine & pine cuttings. Cross the main granite ledge from 1500 to 1900

At Sta 1801 it rises at an angle of  $40^{\circ}$  to a height of 40'. The general slope of the southern exposure is about  $45^{\circ}$ .

Thick growth of raspberry bushes from 1500 to sec. line.



8

4th June 19

O. R.

S. 19

T. 44

R. 31

|  |  |  |  |  |     |   |       |
|--|--|--|--|--|-----|---|-------|
|  |  |  |  |  | 423 |   | (43)  |
|  |  |  |  |  | 411 | ○ | (420) |
|  |  |  |  |  | 401 | × | (412) |
|  |  |  |  |  | 410 | → | (420) |
|  |  |  |  |  | 412 | × | (422) |
|  |  |  |  |  | 398 | ○ | (408) |
|  |  |  |  |  | 420 | ○ | (430) |
|  |  |  |  |  | 435 | ○ | (435) |
|  |  |  |  |  | 412 | ✓ | (422) |
|  |  |  |  |  | 408 | × | (418) |
|  |  |  |  |  | 388 | ✓ | (398) |

|       |      |       |     |
|-------|------|-------|-----|
| 423   | 2000 | (431) |     |
| 411   | 2    | (420) | Min |
| 401   | 4    | (412) |     |
| 410   | 6    | (420) |     |
| 412   | 8    | (422) | Max |
| 398   | 10   | (408) |     |
| 420   | 12   | (430) |     |
| ✓ 335 | 14   | (435) |     |
| 412   | 16   | (422) |     |
| 408   | 18   | (418) |     |

388/2000 (398) <sup>92</sup> B.M. = 354 at 2:05 Bar = 28.576

Started S from the W-E  $\frac{1}{8}$  sec 19-44-31  
 cherry bushes, old burnt, timber, 000 to 900  
 creek elev = (394)<sup>=385</sup> at 511. E & W, 20 rods run E  
 Map of (423)<sup>=413</sup> at 631  
 Hard Maple from 900 to 1400

Pine collingwood burnings from 1400 to 2000 along  
 with cherry & poplar brush

Map of (432)<sup>=422</sup> at 1676, 820 W of line

Struck the line 1350 E of post

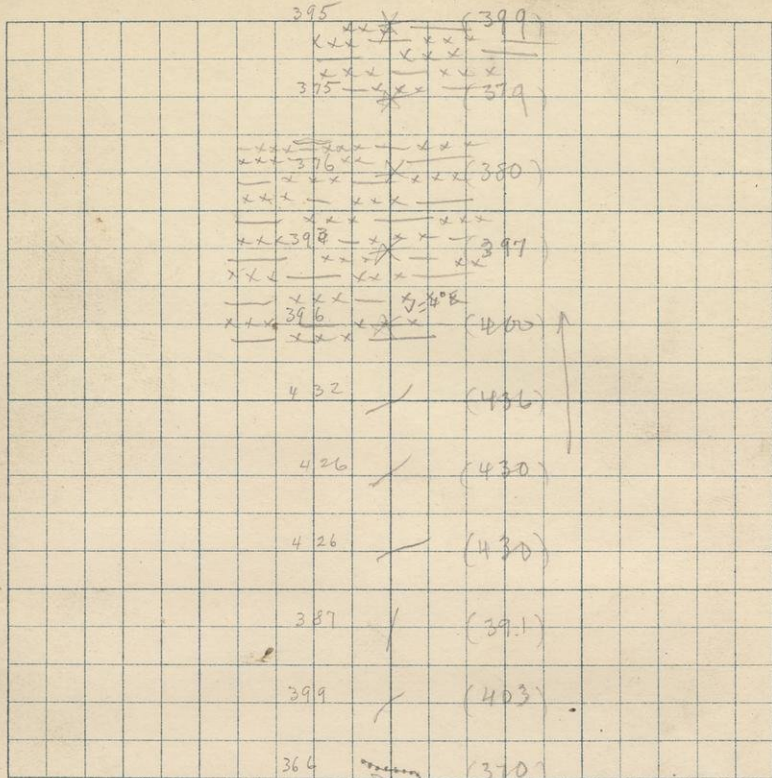


1st. June 18.

S. 24

T. 44

R. 32



395 2000 (399) at 10:30  
 375 18 (379)  
 376 16 (380)  
 393 14 (397)  
 396 12 (400) at 8:50  
 432 10 (436) on W. edge of cedar swamp  
 426 8 (430) on sloping side hill towards E  
 426 6 (430)  
 387 4 (391) Min.  
 399 2 (403) Max.  
 366 B.M. = 370 at 8:15 Bar. = 28.435

Camp = 28.478

Mm = 28.450

at 7:45 AM

1.1

Started N from the S<sup>1</sup>/<sub>4</sub> first 24-44-32.

Started in burnt timber

Creek banked with alders at Sta 35 runs E. elev. = <sup>363</sup>(367)

Max of <sup>431</sup>(434) at 620

Enter cedar swamp at 1150

Left cedar swamp at 1680 + crossed burnt hill. elev. (400) = 396

Re-entered swamp at Sta 1800

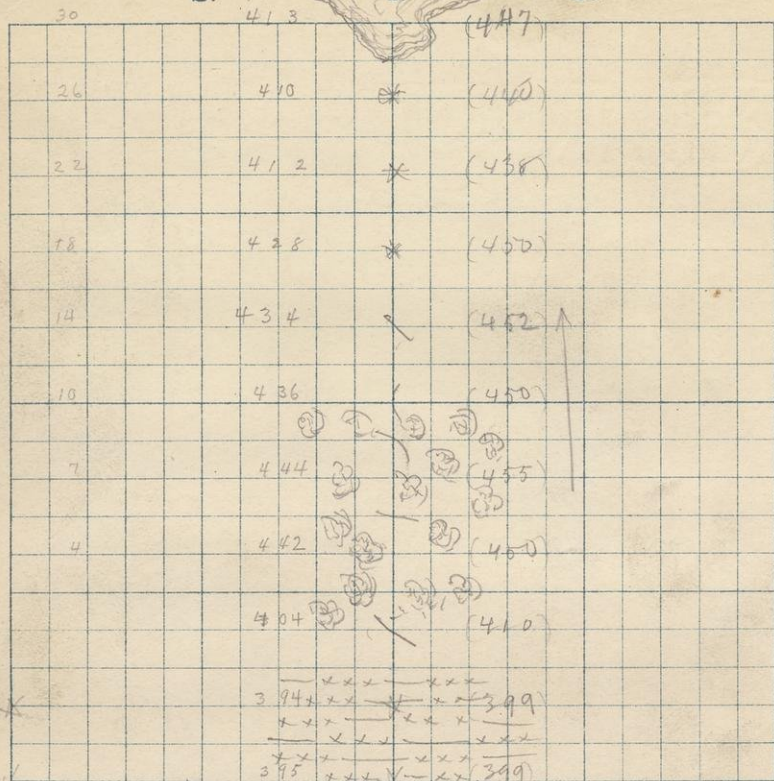


2nd. June 18.

S. 13

T. 4

R. 32



413 2000 (447) B.M. = 407 at 11:15 Bar. = 28.360  
 410 18 (440)  
 412 16 (438)  
 428 14 (450)  
 434 12 (452)  
 436 10 (450)  
 444 8 (455) at 10:25  
 442 6 (450)  
 404 4 (410)  
 394 2 (399) in open part of the cedar swamp  
 395 000 = 2000 (399)

Started N from the S $\frac{1}{4}$  post 13-44-32

Sta 290 is at foot of a small burnt hill.

360 is at top of the above hill = (436).

~~Be~~ enter <sup>hard wood, maple</sup> cedar swamp at 432, to 1000

Max. at 610, 30 P E of line of (472) = 464

Windfall + partially burned (all dead) at 1000

Lake, elev. (438)<sup>448</sup> at 1900

Was O.K. on lining + pacing!



3rd. June 18.

S. 13.

T. 44

R. 32

|  |     |                |       |
|--|-----|----------------|-------|
|  | 409 | <del>413</del> | (413) |
|  |     | <del>404</del> | (410) |
|  |     | <del>404</del> | (412) |
|  |     | <del>398</del> | (408) |
|  |     | <del>391</del> | (410) |
|  |     | <del>404</del> | (420) |
|  |     | <del>428</del> | (440) |
|  |     | <del>434</del> | (454) |
|  |     | <del>403</del> | (425) |
|  |     | <del>438</del> | (465) |
|  |     | <del>439</del> | (468) |

409 B.M. = 413 at 11:30 Bar. = 28.344 Aneroid = 458  
 404 200 (410)  
 404 4 (412)  
 398 6 (408)  
 391 8 (410)  
 404 10 (420)  
 428 12 (440)  
 434 14 (454) on side slope of W faced hill  
 403 16 (425)  
 438 18 (465) at 1 P.M. Max  
 439 20 (468) Max

Went  $\frac{1}{4}$  mile west from N  $\frac{1}{4}$  post 13-44-32 15

Started S from N-E  $\frac{1}{8}$  post 13-44-32

Started in cedar swamp.

Left swamp at 370 + entered thick  
windfall of balsam & cedar, which continued to  
630.

Tans. swamp (open) 630 to 760

Enter brush & some cedar at 760

Max of (463) <sup>=450</sup> at 1400 80° E of line

Min of (409) <sup>=396</sup> " 137° W of line

Min at 1490 of (410) <sup>=396</sup>

15' per hr.

22





Started S from N-E 1/8 just 24-44-32

Maple & birch from 000 to 500

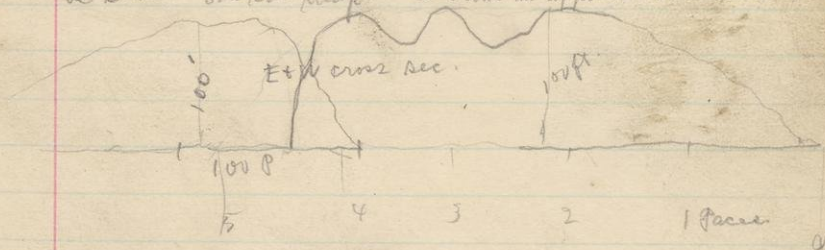
Blown down timber from 800

Immense rock precipice showing almost perpendicular faces to the south, W & S. W.

Its height is about 110 above the surrounding ground, although its sides slope gradually back <sup>down</sup> toward the N & E

It has been overgrown with timber, but that has been burned, leaving the divide surface seamed & cracked in all directions, & shattered portions lie all around.

Its general direction is N+S, with an western exposure of about 500 Paces. Its general upper surface is undulating, but large bell like masses <sup>appear</sup> ~~are~~ scattered at many places on top. Its upper exposure covers an area about as shown on the map. It shows no apparent structures.



318

Piece of the above cliff, from the N-W face, near the cot. Discrete with

319.

Think it to be distinct

320

... from the N top of the cliff where had apparently broken from the main surrounding rock

321

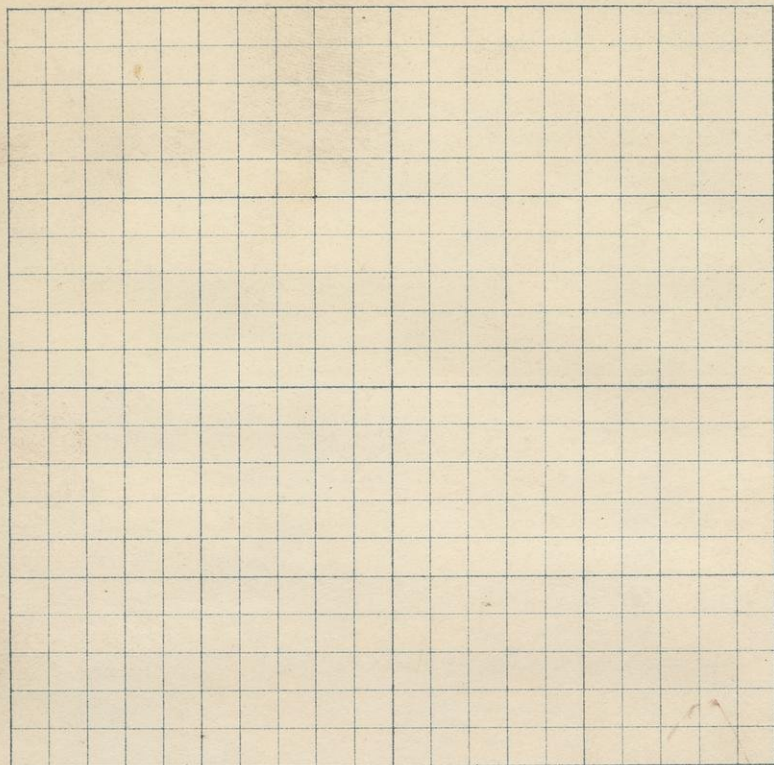
broken from the main surrounding rock



S.

T.

R.



- 322 Specimen of a large part of the mass.  
Got from the N-W. end.
323. Specimen from the top, near the center,  
showing the main mass of the cliff = diorite.
- 324 Piece from the W face, showing a large  
part of the cliff mass. = Gabbro



20

1st. June 19. '91

S. 24

T. 44

R. 32



416 2000 (420)

412 18 (416)

410 16 (414)

396 14 (400)

394 12 (398)

377 10 (381)

361 8 (365)

360 6 (364)

371 4 (375)

376 2 (390)

390 0 = 390

at 7:05

on W side slope Max (431)<sup>427</sup> 53 P.E. Min 387  
47 P.W.

at 8:

at 9:30

Bar. =

Temp = 28.360

Time = 28.332 at 6:10

21

28.275

28.290

.085

.042

Started N from S.W. cor sec 24. 1 m

Started in Mixed wood. birch

Enter ~~by~~ cedar swamp at 165

Leave Swamp at 872 + ascended side hill of mixed  
wood (maple) = 428

Max of (432) at 900, 570 W of line, Min, in  
swamp, about 350 E

Cruck(s) at 1010 Elev. (375) = 371

Mixed evergreen (cedar) at 1400.

Enter cedar swamp at 1620 1800

Mixed evergreen from 1800 to 2465





3 2000 = 0.00 (420)

Enter camp sw. at 1591  
at 10:15 Enter Hard m.  
at 9:15

Started N from S.W. cor 13-44-31

$70^{\circ}E$

W

325

Strike  $N+40^{\circ}E$  dip.  $70^{\circ}$  ( $N 20^{\circ} E$ )  
 found at 700 N of S.E. cor sec 14, on the  
 S & S.W. slope of steep hill whose min is (420)  
 & max (475) elev. of specimen = (450)  
 Outcrop shows about 100' by 17' in vertical  
 Its general direction is EdW.  
 Its extent N+S is about 1600.

Upper Tan. s.s. from 465 to 570 Elev. (405)  
 Runings from 570 to 766 (= oasid in s.s. way)

326

Tan. cor. again from 766 to 843

Strike  $N 20^{\circ} E$  dip  $35^{\circ}$  ( $N 110^{\circ} E$ ) found at 1120 E of line  
 at Sta 475, elev. of outcrop = (468) <sup>4463</sup> general trend is N-W by N. & shows  
 area (vertical) of 120' by 12' 30" Secondary structure, cleavage  
 making angle of  $70^{\circ}$  with bed, vector toward the S-W.

327

Strike  $N 18^{\circ} E$  dip  $12^{\circ}$  N the structure is very much contorted  
 a S exposure showing the foliation about as that in the drawing  
 This rock mass overlies No. 326, and is in turn overlaid by  
 the same 327 is (495) <sup>4460</sup> high, & upper 326 is (576) <sup>4511</sup> high.

328

Shows the varying of 326 & 327 Exposure faces S-W.

dip  $12^{\circ}$

St. N  $18^{\circ} E$



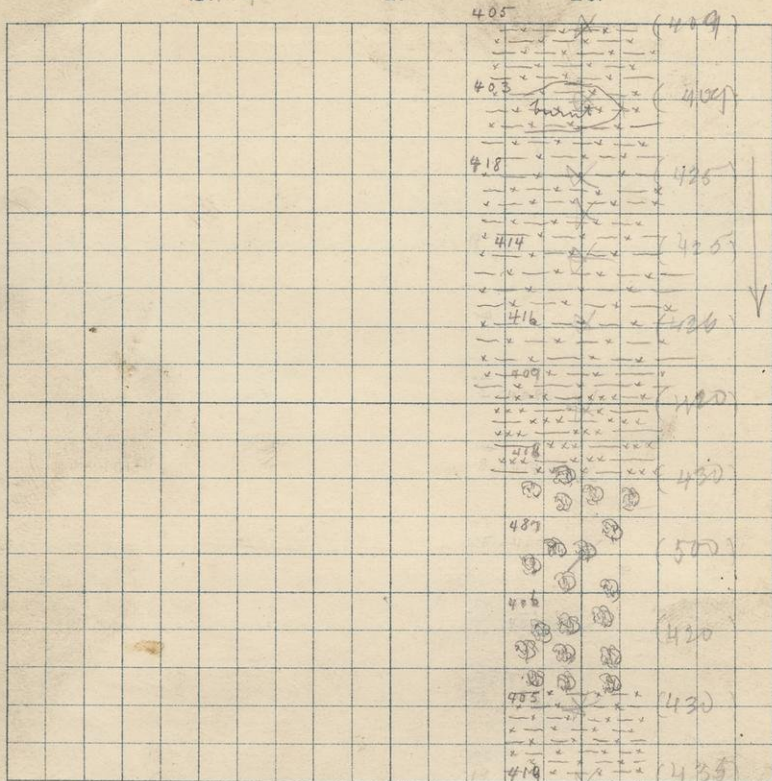


3rd. June 19.

S. 124

T. 40

R. 32



405 B.M. = 409 at 11:55 Bar. = 28.270 Anand = 415  
 403 200 (409) at 11:40  
 418 4 (425)  
 414 6 (425) at 12:05  
 416 8 (426)  
 409 10 (420) at 12:45 = Min.  
 418 12 (430)  
 487 14 (500) Max at (530); 48 P W  
 406 16 (420)  
 405 18 (420)  
 419 2000 (435)

Went W  $\frac{1}{4}$  mile from N-E cor 14-44-32

then Started S from N-E  $\frac{1}{8}$  post 14-44-32

Started in tam. <sup>dead</sup> swamp. crossed burning  
from 1600 to 2<sup>nd</sup> W. & re-entered sw.

Left tam. swamp at 990 & entered cedar sw.

" cedar sw. at 1200 & had wood

~~of~~ enter Tam sw. at 1760

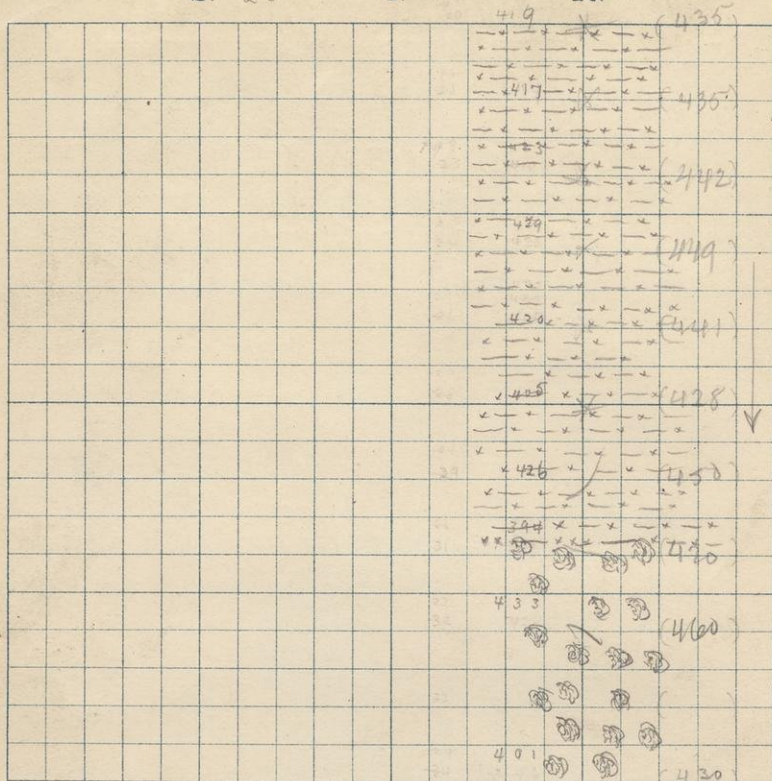


4th June 19:

S. 23

T. 44

R. 32



|     |            |       |               |
|-----|------------|-------|---------------|
| 419 | 2000 = 000 | (435) |               |
| 417 | 200        | (435) | at 12:50      |
|     | 4          | (442) |               |
| 423 | 6          | (449) |               |
| 429 | 8          | (441) |               |
| 420 | 10         | (428) |               |
| 405 | 12         | (450) |               |
| 426 | 14         | (470) |               |
| 394 | 16         | (460) |               |
| 433 | 18         | ( )   |               |
| 401 | 2000       | (430) | B.M. = 379 at |

Bar =

Started S from N-E  $\frac{1}{8}$  post 23-44-32  
begin in Tam. swamp to 1390  
Enter mixed hard wood "  
Struck the line at 1:40 300 P too soon





Camp 28.342

28.321

28.354

28.344

29

Started N from the S  $\frac{1}{4}$  23-44-32

Start in cedar swamp

Left swamp at 400 & entered dead timber  
& poplar brush which changed at 475 to cherry brush.

Entered mixed hard timber at 1100



R. 32



1000000

Started N from the S $\frac{1}{4}$  post 15-44-32  
Entered windfall & raspberry brush at 420.

329 / Mass of eruptive rock ~~at~~ 700' W of ~~at~~ 635' N of S.E. cor sec 15-44-32.

The mass is about 28' high & 60' E & W, & 100 feet N & S<sup>W</sup>. Its general direction is N-E & S-W.

The rock is all of one kind, is cracked & seamed in all directions; and has no parallelism of cleavage. There are numerous dikes of about  $\frac{1}{4}$  inch in thickness running throughout the mass in all directions.

(Entered old burnings & cherry brush at 900.  
Level country)

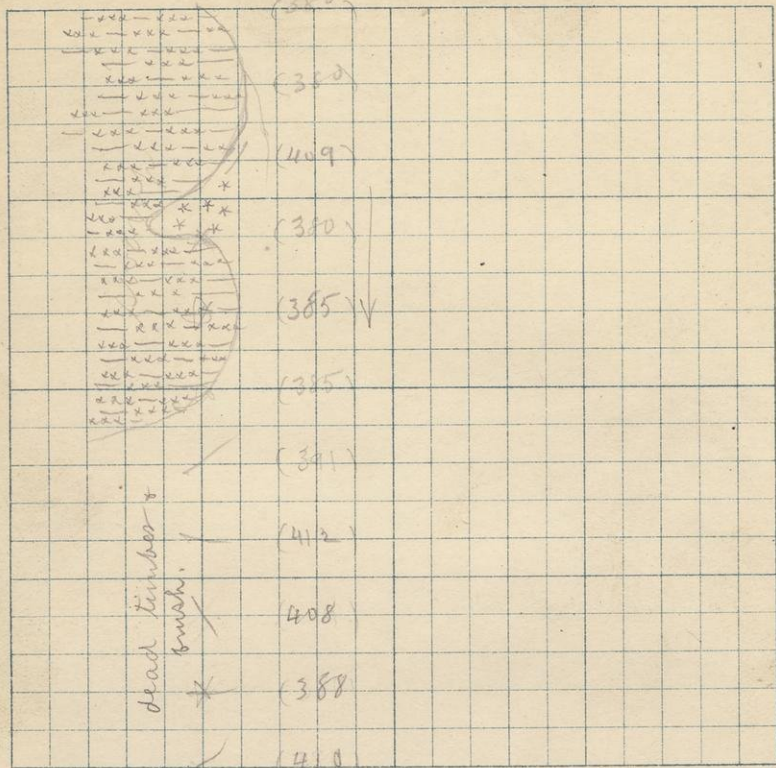


3rd. June 20.

S. 15

T. 44

R. 32



|     |       |       |          |               |                |
|-----|-------|-------|----------|---------------|----------------|
| 376 | B. M. | 380   | at 10:50 | Bar = 28.328  | Anemoid = 409. |
| 376 | 200   | (380) |          |               |                |
| 405 | 4     | (409) |          |               |                |
| 376 | 6     | (380) |          |               |                |
| 381 | 8     | (385) |          |               |                |
| 381 | 10    | (385) | at 12 m. | edge of swamp |                |
| 388 | 12    | (391) |          |               |                |
| 409 | 14    | (412) |          |               |                |
| 405 | 16    | (408) |          |               |                |
| 385 | 18    | (388) |          |               |                |
| 409 | 2000  | (410) |          |               |                |

Next W  $\frac{1}{4}$  mile from N  $\frac{1}{4}$  post 15-44-32 **33**

Started S from N-W  $\frac{1}{8}$  post 15-44-32

Started S in cedar swamp. Left it at 300 & entered old pine cuttings & burnings, now overgrown with cherry, poplar & raspberry brush.

Re-entered cedar swamp at 600. Left at 1000 & re-entered dead timber & brush.

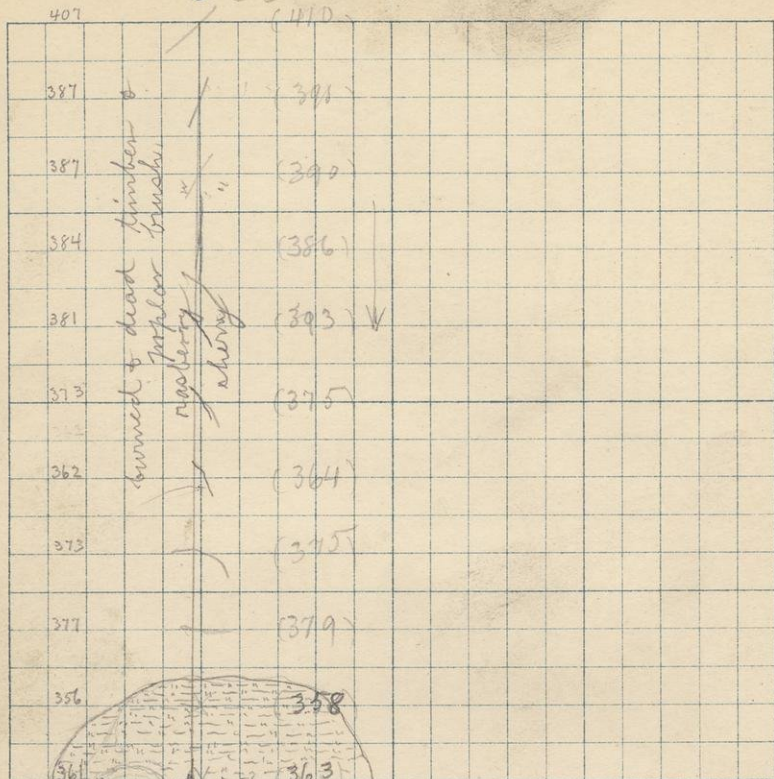


40th June 20.

S. 22

T. 44

R. 32



407 2000 (410) at 12:45

387 2 (390)

387 4 (390)

384 6 (386)

381 8 (393)

373 10 (375) at 1:15

362 12 (364) min.

373 14 (375)

377 16 (379)

356 18 (358)

361 2000 (363)

B.M. = 365 at 1:40 Bar. = 28.340

Started 3 from W  $\frac{1}{4}$  post 22-44-32

Started in dead & burned timber of  
cherry, poplar & osagey brush

Struck a cranberry marsh, at 1748.

Struck the line 250 W of post, & 1300  
short (to snow) country nearly level.



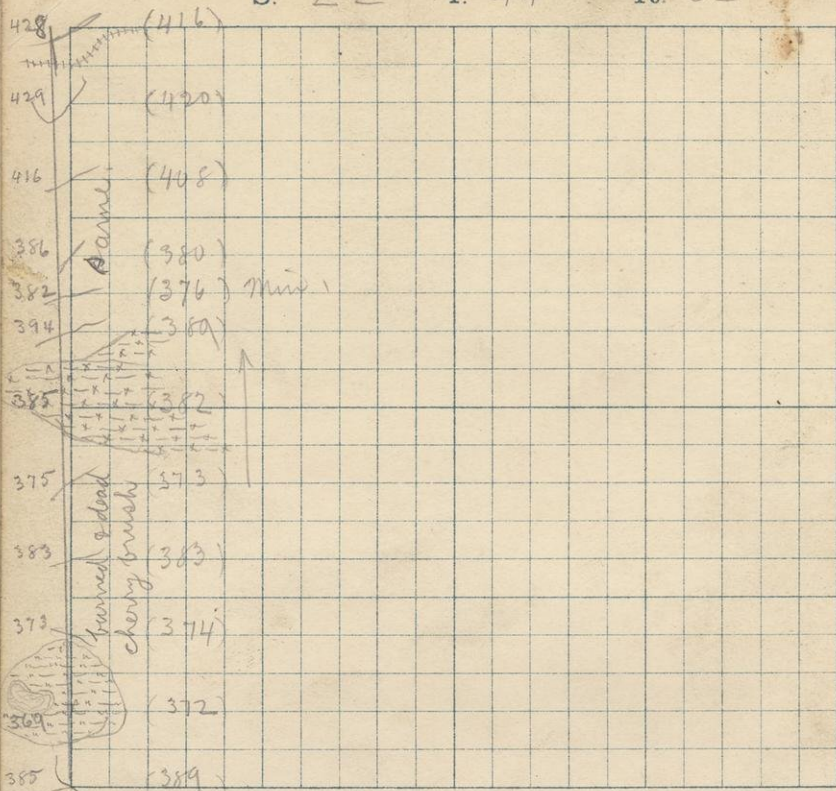
36

Lat. June 22

S. 22

T. 44

R. 32



|     |            |       |                       |
|-----|------------|-------|-----------------------|
| 428 | 2000       | (416) |                       |
| 429 | 18         | (420) |                       |
| 416 | 16         | (408) | at 8:15               |
| 386 | 14         | (380) |                       |
| 394 | 12         | (389) |                       |
| 385 | 10         | (382) |                       |
| 375 | 8          | (373) |                       |
| 383 | 6          | (383) |                       |
| 373 | 4          | (374) |                       |
| 369 | 2          | (372) |                       |
| 385 | B.M. = 389 | (389) | at 8:15 Bar. = 28.357 |

camp = 28.420 at 7:45  
 = 28.495 - 3:20  
 .075

28.391  
 28.495  
 .104

37

Started N from S.W. cor 22-44-32

Started in small hilly country, all burned: +  
 Cherry brush.

Small pond at 200, 10 P W of line

Entered marsh (cranberry) surrounding lake, at 125 P.

Left at 370 P. & re-entered burnt timber.

Entered open farm. pr. at 930 Left at 1103 &  
 re-entered burnt timber.

Grass road (good) at 1900 E to W N-E by E.

Struck the sec. line 470 W of post.

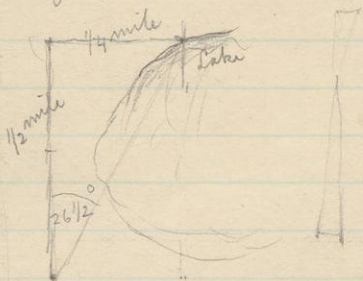


R. 32

Started N from S.W. cor sec 15-44-32

Edge of heavy windfall at 1200

Crack N-E  $\nearrow$  at 1660, 10P wide, about  
250P from its source in a small lake.



At the N-E sec. cor 16, an angle of  $28^{\circ}$  ( $1\frac{1}{2}^{\circ} = V.$ )  
was turned off W from the S pt. of middle, & sight  
was taken on opposite shore of lake, where the lake  
shore intersects the  $\frac{1}{16}$  line N & S, & the  $\frac{1}{2}$  mile line E & W,  
thus fixing a point  $\frac{1}{2}$  mile<sup>S</sup> from the N-E  $\frac{1}{8}$  pt sec. 16.

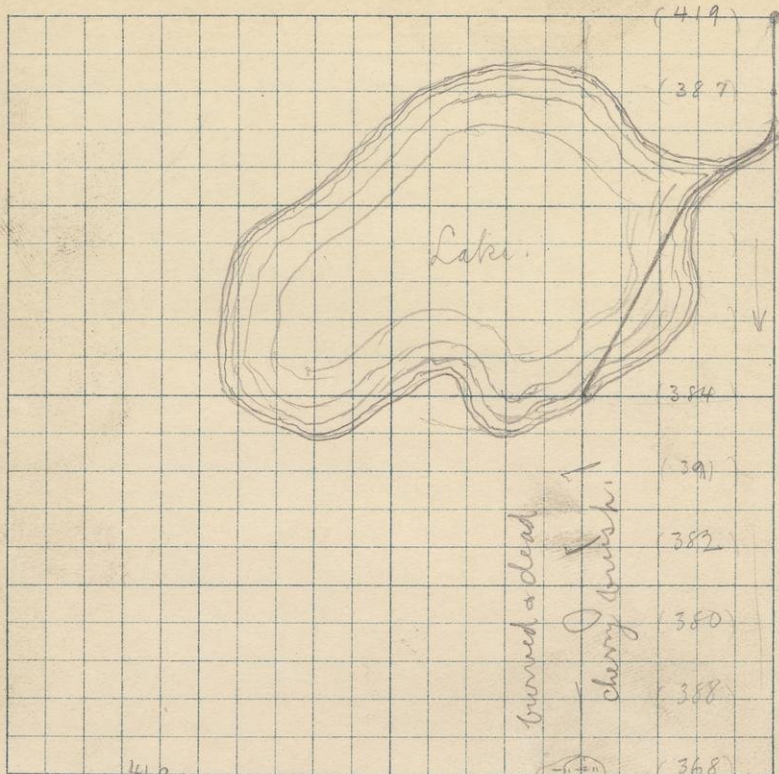


3rd. June 22

S. 16

T. 44

R. 32



|     |     |              |                              |                        |         |
|-----|-----|--------------|------------------------------|------------------------|---------|
| 415 | 419 | B.M. = (381) | at 11:30                     | Bar. = 28.360          | Anemone |
| 381 | 210 | ( )          |                              |                        |         |
| 368 | 4   | ( )          | 8 ft                         |                        |         |
| 364 | 6   | (Lake)       |                              |                        |         |
| 360 | 8   | ( )          |                              |                        |         |
| 358 | 10  | (384)        | at 12:35                     | = Water level of lake. |         |
| 351 | 12  | (391)        | at 12:55                     | 2'                     |         |
| 341 | 14  | (382)        |                              | 3'                     |         |
| 340 | 16  | (380)        | min                          |                        |         |
| 338 | 18  | (388)        |                              |                        |         |
| 329 | 200 | (368)        | min, in a small grass marsh. |                        |         |

Went N  $\frac{1}{4}$  mile from N-E cor 16-44-32

41

Started S from N-E  $\frac{1}{8}$  post 16-44-32

Lake banks are about 7' high, sandy edges but  
tops heavily wooded

Entered ~~heavily~~ burned timber & cherry brush at 11:00  
11:00.

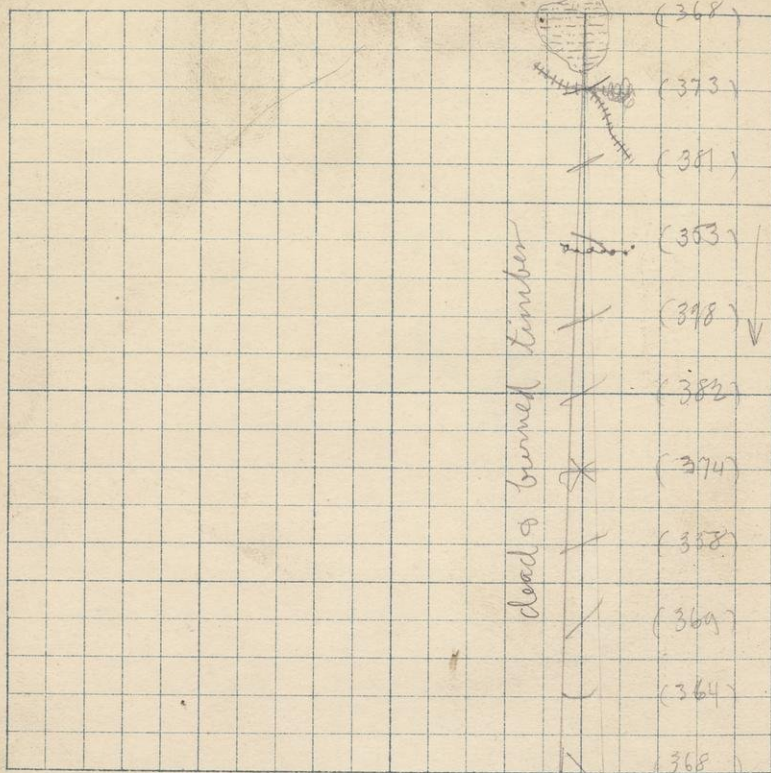


4th June 22.

S. 21

T. 44

R. 32



377 200 (368) at 1:20

382 200 (373)

391 4 (381)

364 6 (353)

410 8 (398)

395 10 (382)

388 12 V (374)

374 14 (358) at 2:05

384 16 (369)

380 18 (364)

384 200 (368) B.m. = 388. at 2:15 Bar. = 28.430

Started S from N-E 1/8 post 21-44-32  
 200. Good tote node at 200.

640. Min. <sup>N(350)</sup> & very small creek E.

848. Max of (406)

To days run was through very level country.  
 Struck the line 510 W of post.

All specimens up to 330  
 have been sent away to-day

510

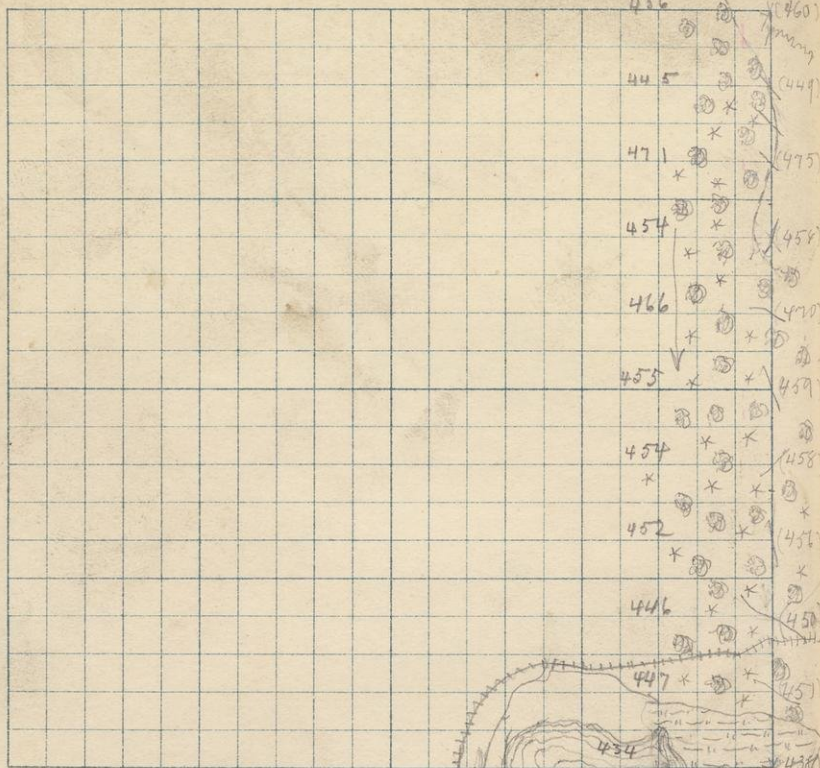


1st July 2.

S. 27

T. 44

R. 33



|     |            |               |               |
|-----|------------|---------------|---------------|
| 456 | B.M. = 460 | at 7:35       | Bar. = 28.518 |
| 445 | 200        | (449) at 7:50 |               |
| 471 | 4          | (475) max.    |               |
| 454 | 6          | (458)         |               |
| 466 | 8          | (470)         |               |
| 455 | 10         | (459)         |               |
| 454 | 12         | (458) at 8:15 |               |
| 452 | 14         | (456)         |               |
| 446 | 16         | (450) min.    |               |
| 447 | 18         | (451)         |               |
| 434 | 2000       | (438) at 8:45 |               |

Temp = 28.562

Wind = 28.567 at 1:2 A.M.

" = 28.527

" = 28.545 - 12:30

45

Started S from N-W cor 27-44-33

000 Hard Maple. Burned on E for about 1/4 mile  
dense on W side of line. Level country.

110 Hard maple with a few cedar.

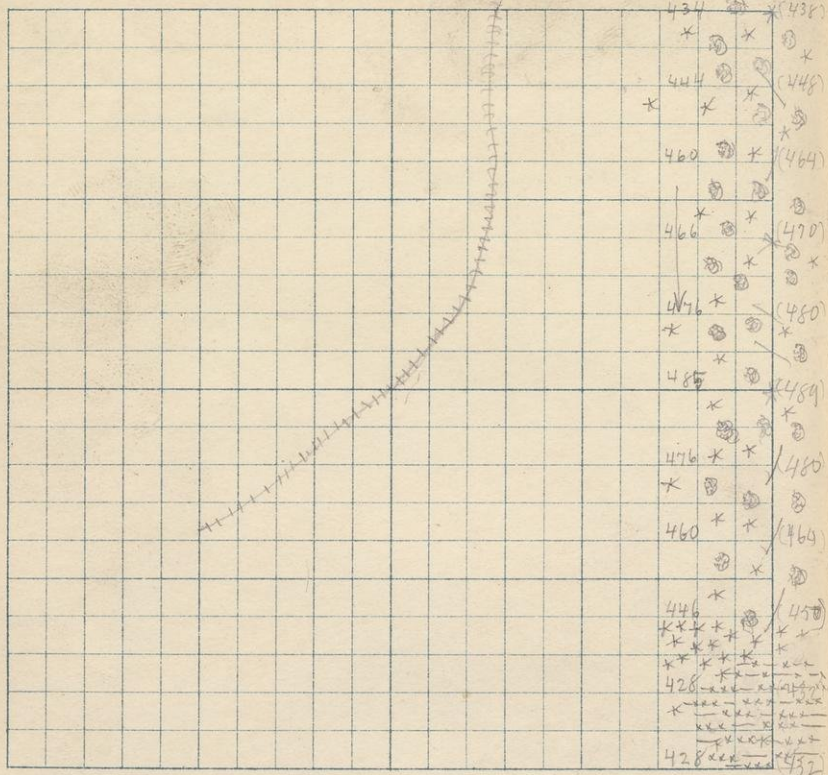
190 Burned timber with Hard M. close on right.

1664 Road to road E & W.

1990 Open grass marsh with small lake about  
300 S.W. Elev. (438.) at 8:40

Ended the 1st. mile O.K.





|     |      |       |                                   |
|-----|------|-------|-----------------------------------|
| 434 | 2000 | (438) | at 8:45                           |
| 444 | 200  | (448) |                                   |
| 460 | 4    | (464) |                                   |
| 466 | 6    | (470) |                                   |
| 476 | 8    | (480) |                                   |
| 485 | 10   | (489) | at 9:15                           |
| 476 | 12   | (480) |                                   |
| 460 | 14   | (464) |                                   |
| 446 | 16   | (450) |                                   |
| 428 | 18   | (432) |                                   |
| 428 | 2000 | (432) | B.M. = 432. at 9:40 Bar. = 28.543 |

Started S from N-W cor. 34-44-33

000 is in marsh of previous mapping.

134 Tanks about 8' high, burned timber.

220 Hardwood & Hem. & dense undergrowth of  
rasberry.

400 H & H.

1571. Hardwood began thinning into Balsam.

1600 Balsam.

1700 Tan. swamp

1750 cedar swamp.

Struck the corner O. K.

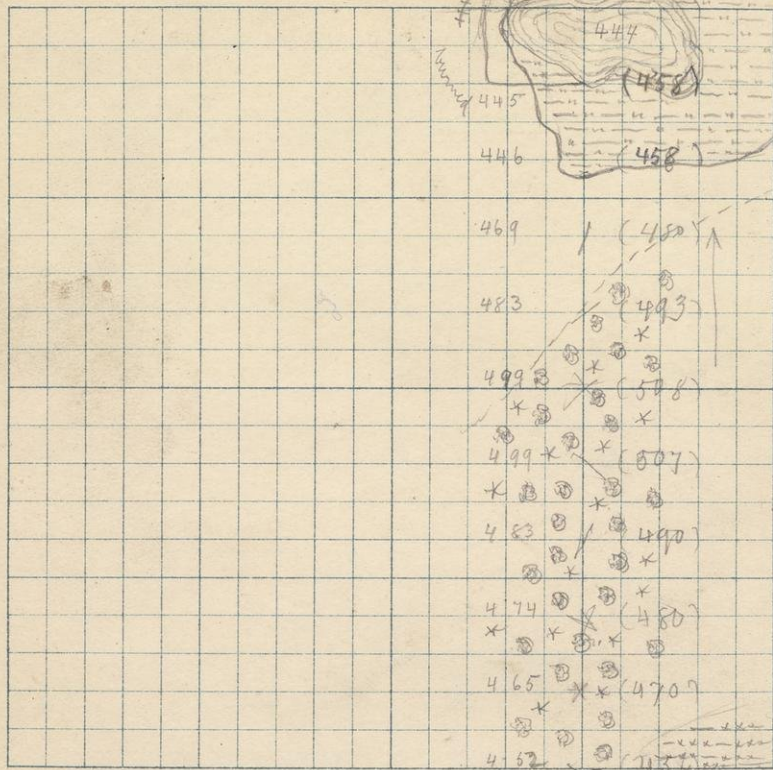


3rd, July 2.

S. 34

T. 44

R. 33



444 2000 (458) = Level of Lake.

445 18 (458)

446 16 (458)

469 14 (480)

483 12 (493) at 10:50.

499 10 (508)

499 8 (507)

483 6 (490)

474 4 (480)

465 2 (470)

452 B.M. = 456

at 10:15 A.M. Bar. = 28.516 Aneroid = (460)

Went W  $\frac{1}{4}$  mile from S.W. cor 34-44-33

Started N from S-E  $\frac{1}{8}$  post 34-44-33

000 Hardwood with few mixed evergreen.

1500 = edge of open marsh.

1800 took an offset to W of 2500 P. then

ran 4650 N, then 2500 E to the  $\frac{1}{8}$  line, then N

2000, at 2500 W. Old burned out logging camp

good tote road N+S at 2000, 3100 W of line.

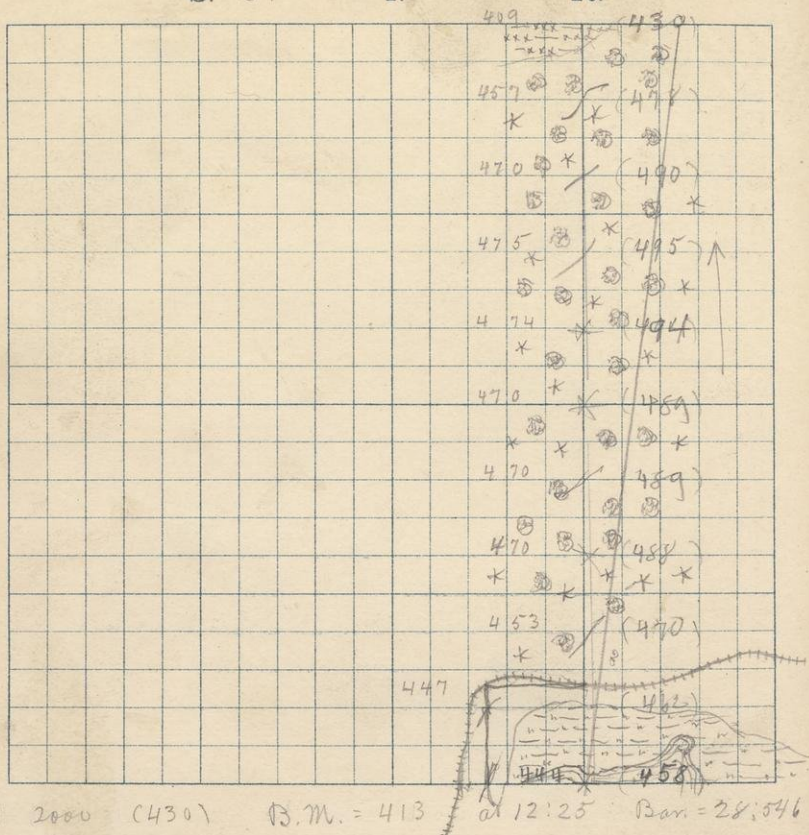


4th July 2

S. 27

T. 44

R. 33



Started N from S.E.  $\frac{1}{8}$  post 27-44-33

260 Struck the previous mentioned tote road running E & W.

All the run in hardwood, with a few mixed evergreen here & there.

Very level country.

Burnt stumps quite frequent

1830 Small ravine 16' deep 100' wide E & W.

running ~~to~~ for only 600, where the bottom reaches the level of the surrounding country. The other end runs to the creek just W.

1940 Cedar swamp.

Struck the line 250 E of post, but

O.K. as to faces

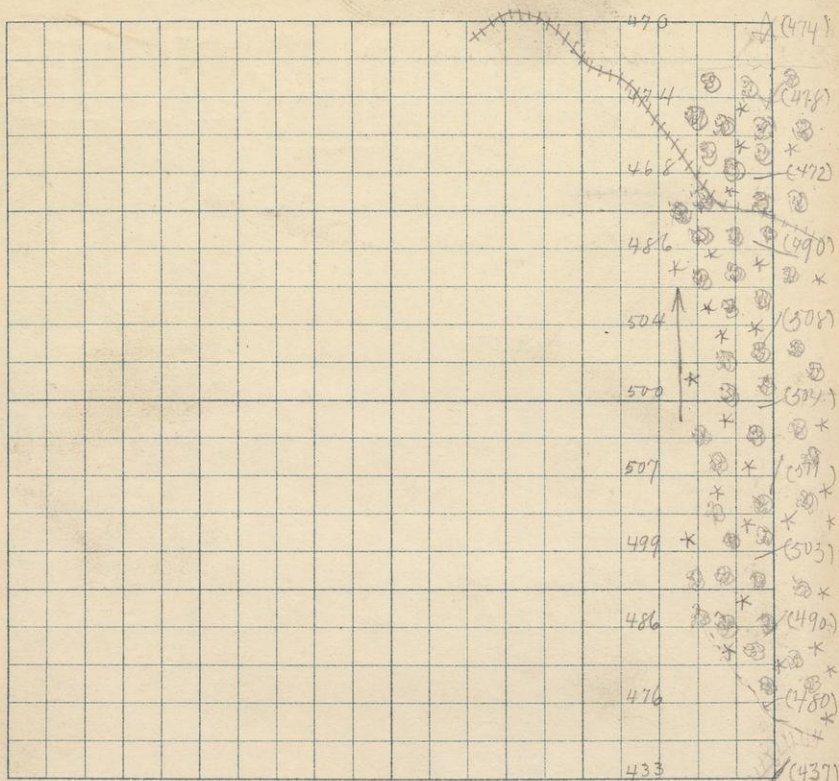


1st July 3.

S. 21

T. 44

R. 33



470 2000 (474) at 8:40

474 18 (478)

468 16 (472)

III  $\uparrow$  (490)

|     |    |       |
|-----|----|-------|
| 486 | 14 |       |
| 504 | 12 | (508) |

500 10 ( 504 ) at 8.00

507 8 (571)

499 6 (503)

486 4 (490)

476 200 (480)

433 B.M. = 437 at 7:25 Bar. = 28.520

leamp = 28.530 Mine = 28.532 at 7. A.M.  
" = 28.530 " = 28.531 " 12:40

53

Started N from S.E. cor 21-44-33

000 Burnt timber with dead poplar. underground

40 Foot of steep ridge N-E of 20' high.

Slope faces S-E composed of drift.

190 Enter Hard Maple & birch A few dead cedar.

300 Max of 495.

1496 Road to road E & W.

1880 Burnt country.

200 Struck the sec. line 200 short, but line O.K.

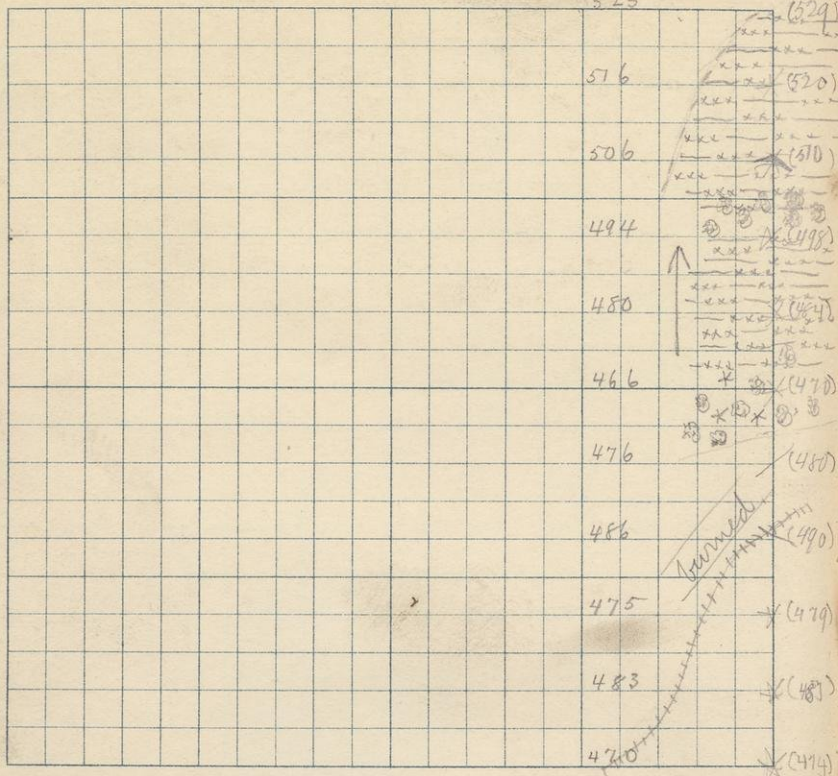


2nd July 3rd.

S. 16

T. 44

R. 33



525 2000 (529) B.M. = 529 at 9.40 Bar. = 281408

518 18 (520)

506 16 (510)

494 14 ↑ (498)

480 12 (484)

466 10 (470) at 9.05

476 8 (480)

486 6 (490)

475 4 (479)

483 200 (487)

470 2000 (474)

at 8.40

Started N from S.E. cor. 16-44-33.

628 Fair tote road N-E

880 Re-entered Hard M.

1500 Enter cedar swamp.

1400 Re-enter Hardwood.

1490 Re-enter swamp.

2000 Struck the line D.K. Paces & lining.

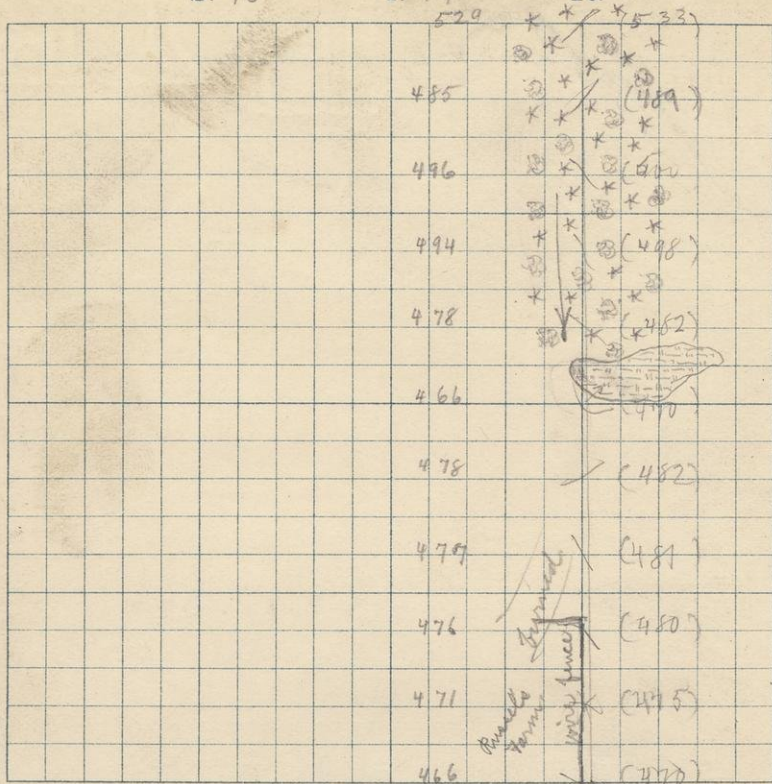


3rd July 3.

S. 16

T. 44

R. 33



529 B.M. = 533 at 9:50 Bar. = 28.40 Amirid = (534)

485 200 (489)

496 4 (500)

494 6 (498)

478 8 (482)

466 10 (470) at 10:20

478 12 (482)

477 14 (481)

476 16 (480)

471 18 (475)

466 2000 (470) at 10:50

Russell's Farm, 6 houses (log)  
179 acres estimated.

Went W  $\frac{1}{4}$  mile from N-E cor. 16-44-33

Started S from N-E  $\frac{1}{8}$  post 16-44-33

000 Hardwood with birch & a few good pine.

888 Beaver meadow. followed by burned timber

The  $\frac{1}{8}$  line runs along the E side of 188 acre farm  
the sec. line bet sec's 16 & 21. running through its center.

Small lake 120 P W & 100 P S of  $\frac{1}{8}$  post. not on map.

Elev. = (445).

Struck the Sec. line 20 P E of post.



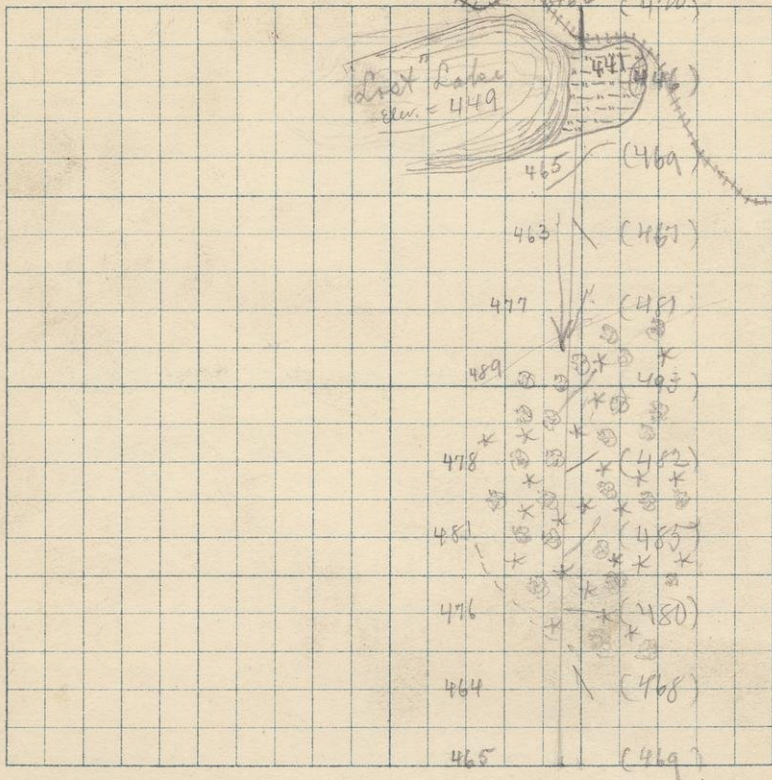
4th July 3rd.

S. 21

T. 44

R. 33

Pussie Farm.



466 2000 (470)

442 200 (446)

465 4 (469)

463 6 (467)

477 8 (481)

489 10 (493) at 11:25

478 12 (482)

481 14 (485)

476 16 (480)

464 18 (468)

465 2000 (469) B.M. = 469 at 11:50 Bar. = 28.75

Started S. from N-E  $\frac{1}{8}$  post 21-44 -33.

Started in burned timber.

811 Re-enter Hardwood & pine.

1600 Burned timber

Struck the sec. line 480 W of post. face 0.

All four miles of to-day's run was over ground that consisted of light soil covering numerous boulders of all kinds & sizes, but mostly conglomeritic.

Barometer stationary all day.

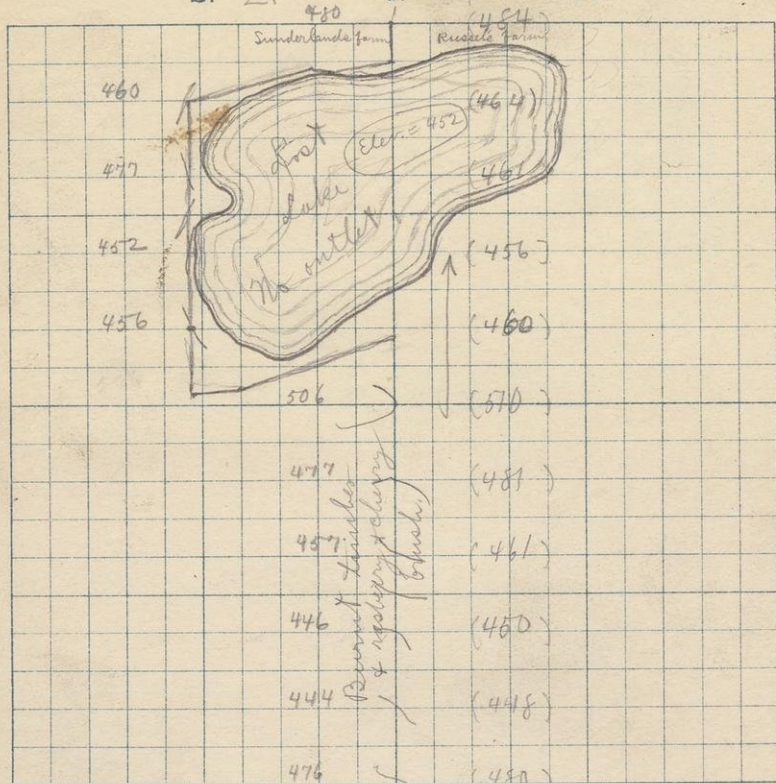


1st. July 6.

S. 21

T. 44

R. 33



|     |            |         |                |
|-----|------------|---------|----------------|
| 480 | 2000       | (484)   | at 10:10.      |
| 460 | 18         | (464)   |                |
| 477 | 16         | (467)   |                |
| 452 | 14         | (456)   | Level of Lake. |
| 456 | 12         | (460)   | at 9:25        |
| 506 | 10         | (570)   | Max. at 8:35   |
| 477 | 8          | (481)   |                |
| 457 | 6          | (461)   |                |
| 446 | 4          | (450)   |                |
| 444 | 2          | (448)   |                |
| 476 | B.M. = 480 | at 8:20 | Bar. = 28.551  |

N from S  $\frac{1}{4}$  post 21-44-33

000. In burnt timber, pop. + cherry and. growth  
Undulating country.

261. Min. of (439) = 435

Wire fence N7S from lake to sec. line

(I carried a table of natural sines + cosines)  
thus being able to make any angled offset.

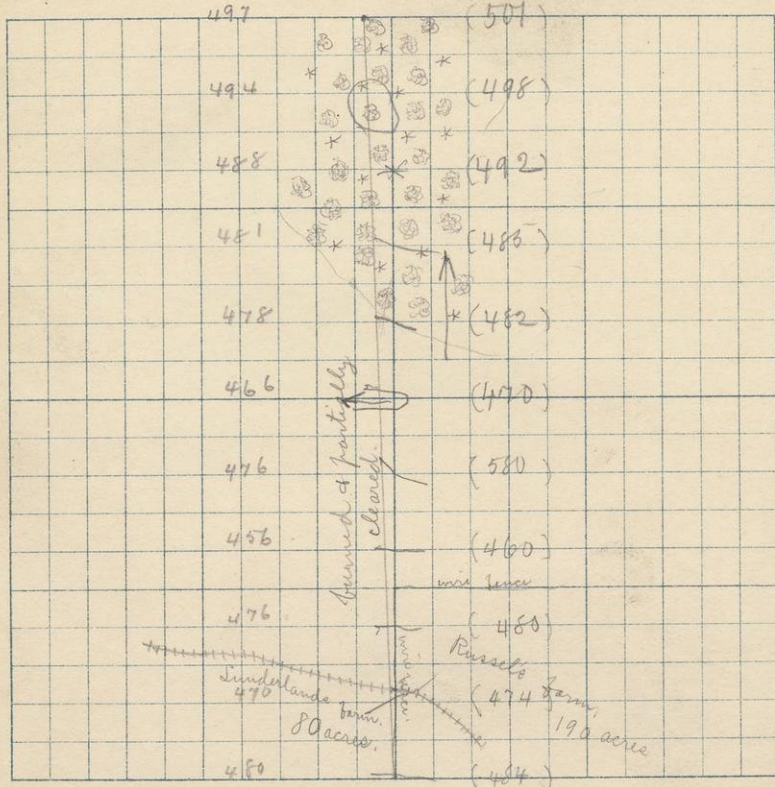


2nd. July 6.

S. 16

T. 44

R. 33



|     |      |       |            |          |               |
|-----|------|-------|------------|----------|---------------|
| 497 | 2000 | (501) | B.M. = 501 | at 11:10 | Bar. = 28.521 |
| 494 | 18   | (498) |            |          |               |
| 488 | 16   | (492) |            |          |               |
| 481 | 14   | (485) |            |          |               |
| 478 | 12   | (482) |            |          |               |
| 466 | 10   | (470) |            |          |               |
| 476 | 8    | (480) | max.       |          |               |
| 456 | 6    | (460) |            |          |               |
| 476 | 4    | (480) |            |          |               |
| 470 | 2    | (474) |            |          |               |
| 450 | 2000 | (484) |            |          |               |

N from S  $\frac{1}{4}$  plot 16-44-33

001 = { S.E. cor Sunderland's farm, of 80 acres,  
 { 35 of which are cultivated.

235 = tote road E & W.

Wire fence from sec. line, N to 500

585 = min. of (457) = 447

1200 Enter green hard wood.

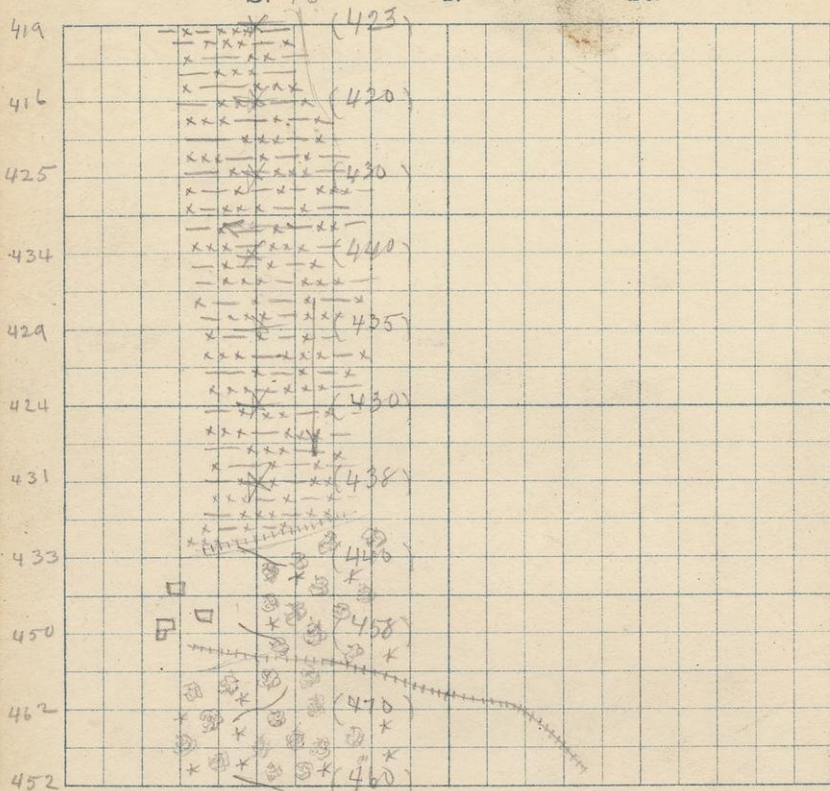
Struck the sec. line at 1997, 780 W, <sub>cor.</sub>



S. 16

T. 44

R. 33



419 B. m. = 423 at 11:20 Bar. = 28,585 Aneroid = 425

416      200      (420)

425 . 4 ( 430 )

434      6      (440)

429 8 | (435)

424 10 N (430) at 12:05

431 12 (438)

433 14 (440) = Edge of swamp

450 16 (458

462 18 (470)

452 2000 (460) at 12:45

Went  $W \frac{1}{4}$  mile from  $N \frac{1}{4}$  post 16-44-33, then,  
S from  $N-W \frac{1}{8}$  post 16-44-33

Started in dead cedar & tamar swamp

195 Log road N-W.

539 small creek E & W.

1400 Log road N-W & S-E also the N  
side of a small clearing with 3 log houses  
in it, including about 40 acres.

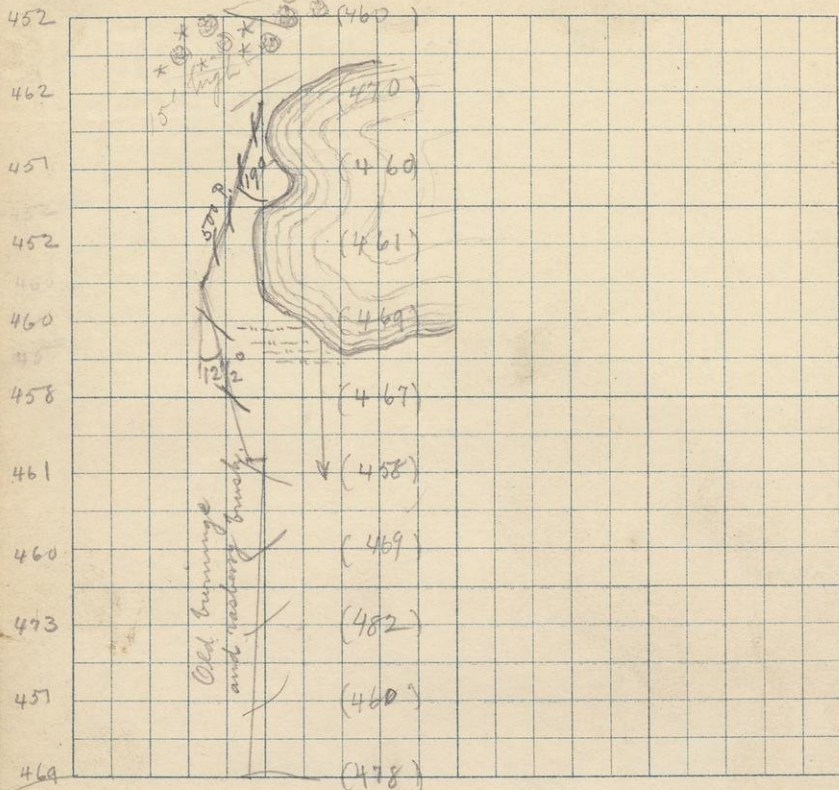
1661 Pike road E & W. + edge of Hardwood.



S. 21

T. 44

R. 33



|     |      |       |            |
|-----|------|-------|------------|
| 452 | 2000 | (460) | at 12:45   |
| 462 | 200  | (470) |            |
| 451 | 4    | (460) |            |
| 452 | 6    | (461) |            |
| 460 | 8    | (469) |            |
| 458 | 10   | (467) |            |
| 461 | 12   | (458) | at 1:20    |
| 460 | 14   | (469) |            |
| 473 | 16   | (482) |            |
| 451 | 18   | (460) |            |
| 469 | 2000 | (478) | B.M. = 473 |

B.M. = 473 at 11.40

Bar. = 28.560

S from N-W  $\frac{1}{8}$  post 21-44-33

100. Left Hardwood & entered entirely  
burned timber with raspberry bushes.

Struck the line O.K. as to faces, but  
400 W of  $\frac{1}{8}$  post.

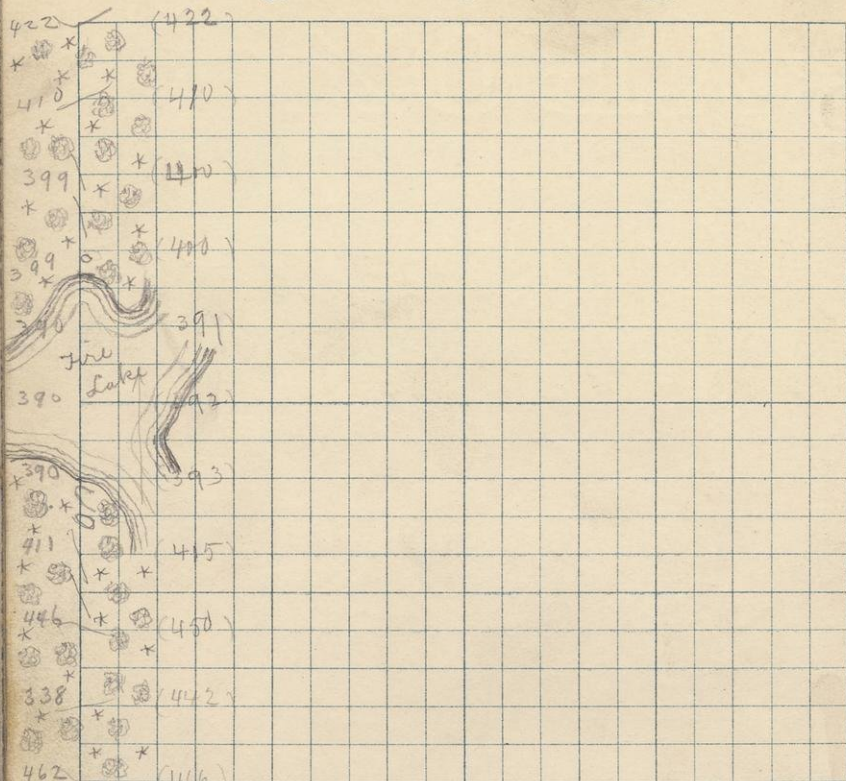


ht. July 7.

S. 20

T. 44

R. 33



|     |      |       |                            |
|-----|------|-------|----------------------------|
| 422 | 2000 | (422) |                            |
| 410 | 18   | (410) |                            |
| 399 | 16   | (400) |                            |
| 399 | 14   | (400) | at 8:15                    |
| 390 | 12   | (391) |                            |
| 390 | 10   | (392) |                            |
| 390 | 8    | (393) | Lake level. at 7:10        |
| 411 | 6    | (415) | gradual fall on side slope |
| 446 | 4    | (450) |                            |
| 338 | 200  | (442) |                            |

462 B.M. = 466. at 6:50 Bar. = 28.632

N from S.W. cor 20-44-33

400 Hardwood with few evergreens.

690 Min. of (405) = 401

760 Max of (420) = 417

1380 Max. of (429)<sup>=428</sup> 20 P.E of line.

1431 Min of (390) = 389

1600 Max of (410)<sup>=409</sup> 20 P.W of line

1810 Max of (419) = 419

Struck the sec. cor. O.K.

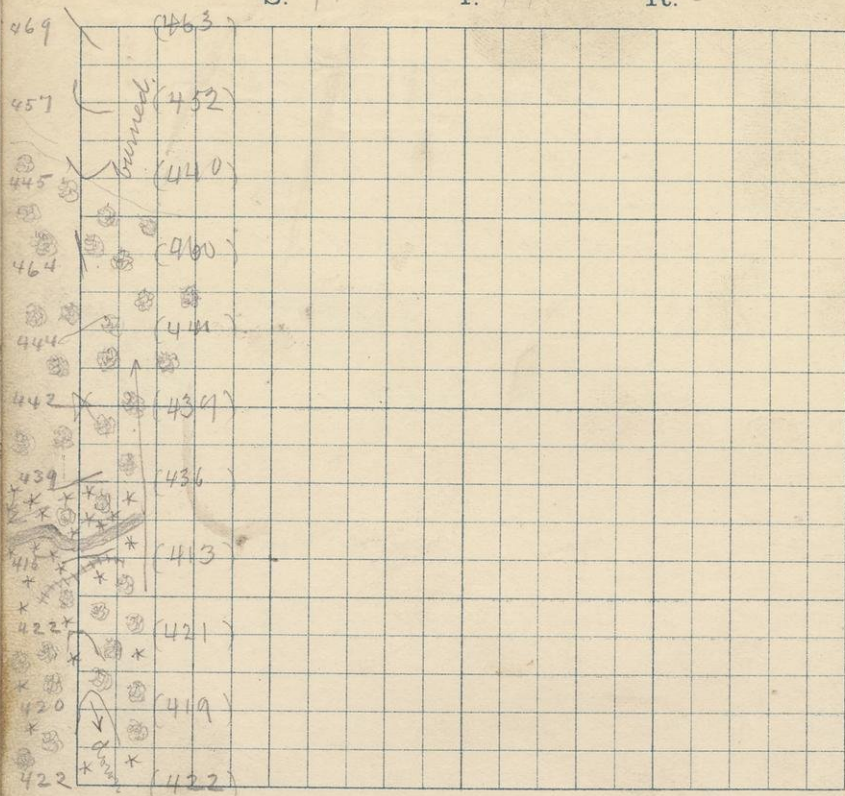


2nd July 7.

S. 17

T. 44

R. 33



469 2000 (463) B.M. = 473 at 9:50 Bar. = 28.629

457 18 (452)

445 16 (440)

464 14 (460)

444 12 (440)

442 10 (439) at 9:20

439 8 (436)

415 6 (413) at 9:00.

422 4 (421)

420 200 (419)

422 2000 (422)

Went N from S.W. cor. 17-44-33

In Hardwood.

- 415 Max of (438)<sup>=439</sup> 360 E of line  
 449 Cross ridge N-E & S-W, at elev. of (430)<sup>=431</sup>  
 560 Good tote road E & W. (450)  
 610 Struck a river, elev. (398)<sup>=400</sup> 400 wide  
 Water 2' deep, rapid current, lots of boulders  
 and saw logs. Banks low, ground over  
 with alder & mixed evergreens, then H. wood.  
 722 foot of steep incline, at elev. of (406)<sup>=409</sup>  
 831 Max of (454)<sup>457</sup>  
 1260, 400 W of line, Max of (452)<sup>=455</sup>  
 1600 Enter burned country  
 • Struck the Sec. cor. O.K.

Numerous small kettles & moraines scattered  
 all over this run, the moraines having a  
 general trend of N-E & S-W.

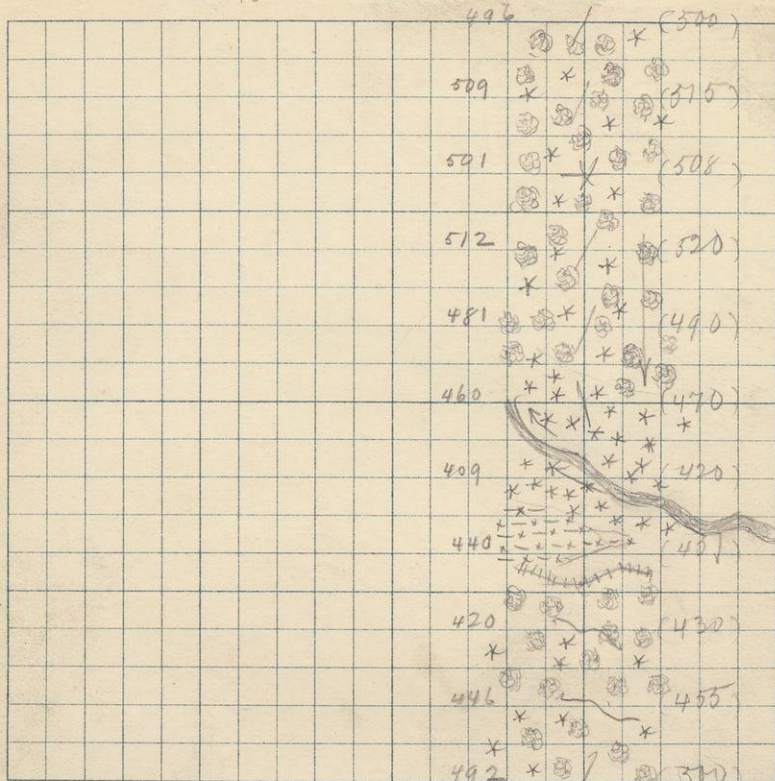


3rd. July 7.

S. 18

T. 44

R. 33



496 B.M. = 500 at 10: A.M. Bar. = 28.592

509 200 (515)

501 4 (508)

512 6 (520)

481 8 (490)

460 10 (470)

409 12 (420)

440 14 (450)

420 16 (430)

446 18 (455)

492 2000 (500) at 11:05

Max. at 10:30

Note — I know that there is a barometric change during the run of 2 miles, but, there being no camp enroute, I am unable to show it; but the road can't run uphill.

Went W  $\frac{1}{4}$  mile from N-E cor 18-44-33,  
then Went S.

Started S in green Hardwood, with a few  
evergreen.

920. Mixed evergreen, mostly pine <sup>3398</sup>

1150. Struck the river. at elev. of (409) at 10:35

Width = 300 paces. S bank low, but

N bank has big rise, as shown by readings

1322. Tall swamp elev. = (440)

1394. Enter burnings - leave & enter Hardwood at 1490.

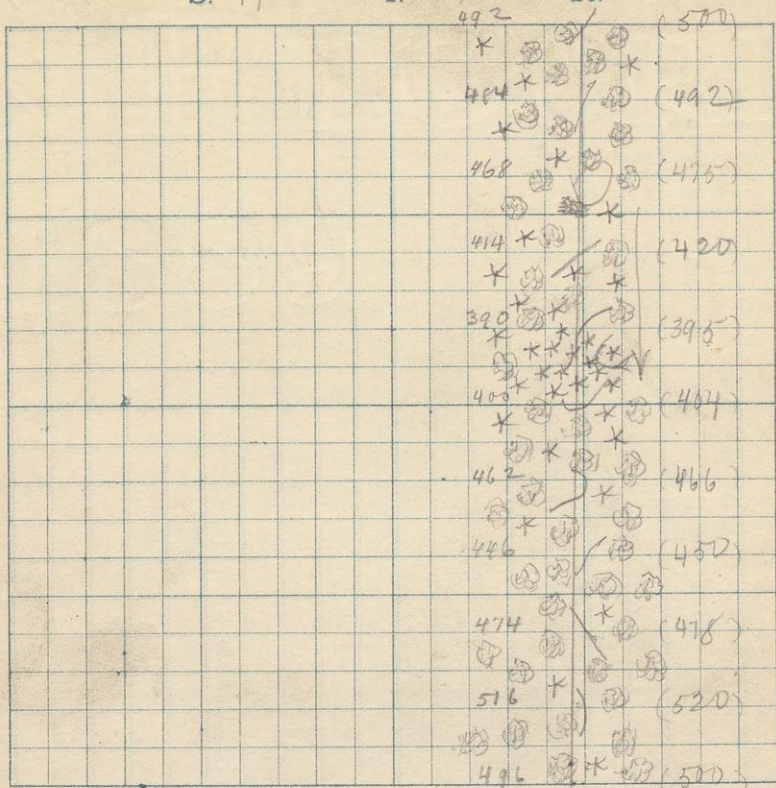
1486. Good tote road E & W. = 415

1500. 680 E of line. Min of (426), with elev. of  
(453) = <sup>442</sup> on line at same place.

1630. Max of (470) = <sup>460</sup>

2000. 1120 W of line, Max of (486) = <sup>478</sup>





|     |      |       |                                  |
|-----|------|-------|----------------------------------|
| 492 | 2000 | (500) | at 11:05 A.M.                    |
| 484 | 200  | (492) |                                  |
| 468 | 4    | (475) | min                              |
| 414 | 6    | (420) | at 11:35                         |
| 390 | 8    | (395) |                                  |
| 400 | 10   | (404) |                                  |
| 462 | 12   | (466) |                                  |
| 446 | 14   | (450) |                                  |
| 474 | 16   | (478) |                                  |
| 516 | 18   | (520) |                                  |
| 496 | 2000 | (500) | B.M. = 499 at 12:10 Bar. = 28.60 |

Went S from N-E  $\frac{1}{8}$  pt 19-44-33.  
In hardwood

476 Max of (500) = 493

330

Strike N 25° W Dip 30° N 65° E

Found with a S exposure of about 20 sq. ft.  
at Sta 500. at elev. of (488) = 482

The face was split into small pieces by  
the forest fires over it

The slope on which the outcrop is exposed  
has a rise of 57 ft. & faces S.

894. 398 E. of line is the lake

880 clump of pine & hemlocks, succeeded by H. woods

1150 Max of (485) = 481

1241 Min. of (411) = 407

1580. 85 P. E of line min. of (460) = 456

1620 36 P W of line. Max of (497) = 493

Struck the sec line 50 P short 2 SP  
W. of pt.

No-CED 7/15/71  
Lodge (?)

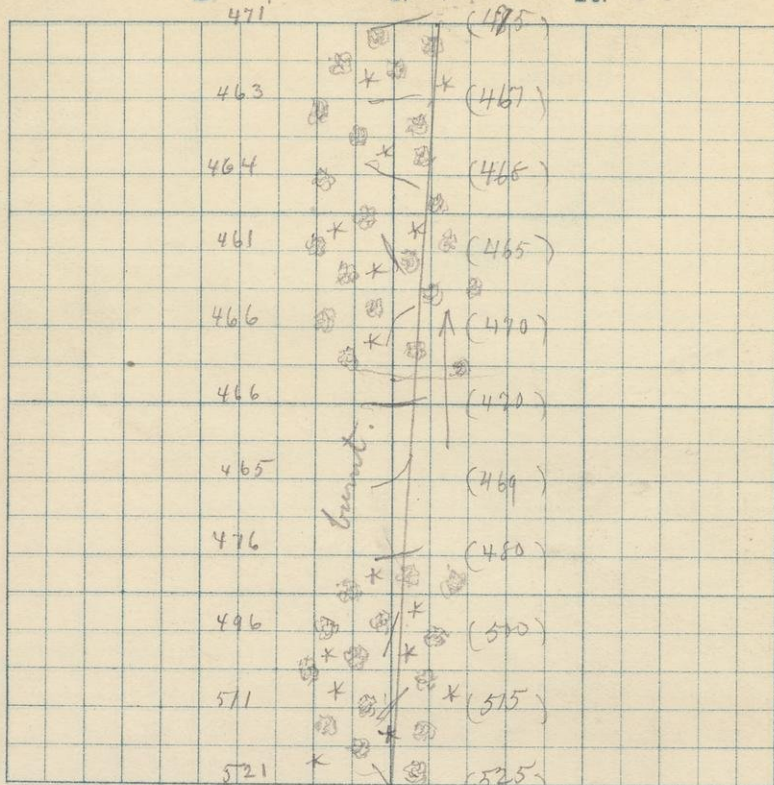


1st. July 81

S. 19

T. 44

R. 33



|     |      |       |         |
|-----|------|-------|---------|
| 471 | 2000 | (475) |         |
| 463 | 18   | (467) |         |
| 464 | 16   | (466) | at 8:40 |
| 461 | 14   | (465) |         |
| 466 | 12   | (470) |         |
| 466 | 10   | (470) | at 8:05 |
| 465 | 8    | (469) |         |
| 476 | 6    | (480) |         |
| 496 | 4    | (500) |         |
| 571 | 2    | (515) |         |
| 521 |      | (525) |         |

B.M. = 525 at 7:30

Bar. = 28.73

Went N from S 1/4 post 19-44-33

Started in Hardwood.

600 Burnt timber.

1060 Enter Hardwood.

Struck the sec line 200 short + 102 PE of 1/4 sec

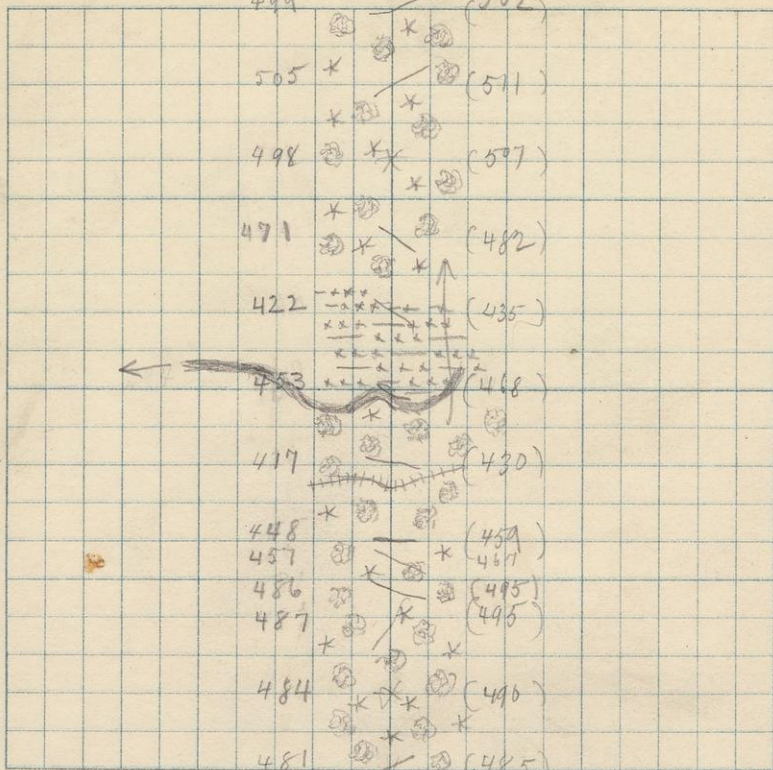


2nd. July 8.

S. 18

T. 44

R. 33



499 2000 (502) B.M. 403 at 10:05 Bar = 28.750  
 505 18 (511)  
 498 16 (507)  
 471 14  $\wedge$  (482)  
 422 12 (435)  
 453 10 (468) at 9:25  
 417 8 (430)  
 448 6 (459)  
 457 4 (495)  
 484 200 (496)  
 481 2000 (485) at 8:50

Went N from S 1/4 just 18-44-33

480 Max of (495)<sup>=486</sup> & sharp descent from  
there to 550 where elev. = (467)<sup>=457</sup>

947 Good tote road E + W.

962 River, 300 wide, 1 1/2' deep. at elev.  
of (410)<sup>=394</sup> at 915

Low banks overgrown with alder  
bushes.

Enter cedar swamp after leaving river

1208 Leave swamp & enter hardwood

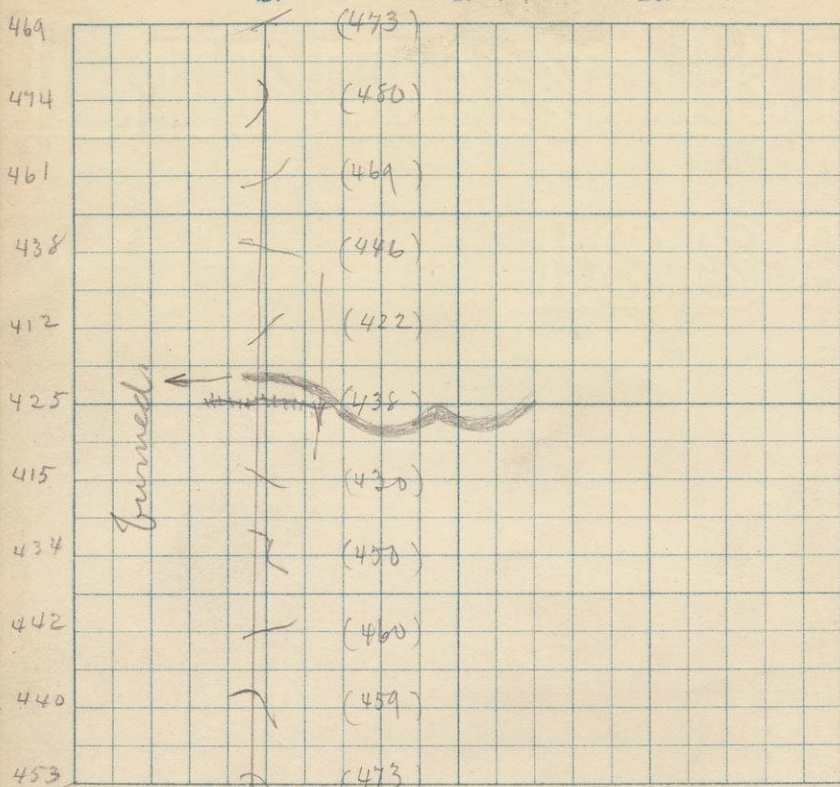


3rd. July 8.

S. 18

T. 44

R. 33



469 B.M. = 473 at 10:15 Bar. = 28.760

474 200 (480)

461 4 (469)

438 6 (446)

412 8 (422)

425 10 (438) at 11:20

415 12 (430)

434 14 (450)

442 16 (460)

440 18 (459)

453 2000 (473) 11:40

Went W  $\frac{1}{4}$  mile from N  $\frac{1}{4}$  post 18-44-33  
then S.

Started in burned country & poplar brush.  
838) Struck the river, elev. = (409) <sup>396</sup> at 10:45  
River about 2' deep, 33' wide, low banks  
mud & gravel bottom, with alders along  
shore, burned country further back.

1000 Good tote road E & W.

Country beyond river burned  
Struck the Sec. line 290 W  $\frac{1}{8}$  post, but fence Ok.



T. 44

R. 33



|     |      |       |                               |
|-----|------|-------|-------------------------------|
| 453 | 2000 | (473) | at 11140                      |
| 445 | 200  | (466) |                               |
| 436 | 4    | (458) |                               |
| 427 | 6    | (450) |                               |
| 466 | 8    | (490) | max.                          |
| 465 | 10   | (490) |                               |
| 444 | 12   | (470) |                               |
| 462 | 14   | (490) |                               |
| 500 | 16   | (530) |                               |
| 489 | 18   | (521) |                               |
| 514 | 2000 | (548) | B.M. = 578 at 30 Bar. = 28682 |

Went S from N-E  $\frac{1}{2}$  post 19-44-33

Started in burned country

Hardwood at 1200

Country very level & regular over all  
four miles of run.

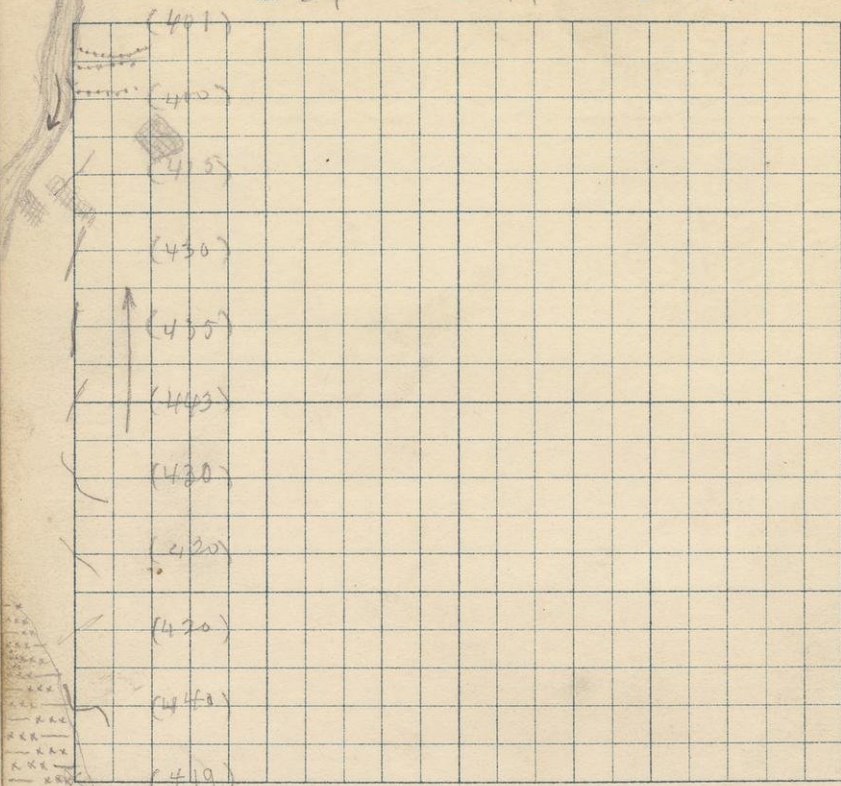


1st July 9.

S. 24

T. 44

R. 34



|     |                    |       |         |
|-----|--------------------|-------|---------|
| 379 | 2000               | (411) | at 9:40 |
| 381 | 18                 | (400) |         |
| 397 | 16                 | (415) | at 9:30 |
| 419 | 14                 | (430) | 8:55    |
| 425 | 12                 | (435) |         |
| 434 | 10                 | (443) | at 8:45 |
| 422 | 8                  | (430) |         |
| 413 | 6                  | (420) |         |
| 414 | 4                  | (420) |         |
| 435 | 2                  | (440) |         |
| 415 | B.M. = 419 at 8:15 |       |         |

1890 = Creek E. W. Creek  
1910 = Big creek E. W.

Very level

Country

Bar. = 28.86

Went N from S. W. cor. 24-44-34

Started in cedar swamp.

140 Enter Burned timber.

1440 { Note (?) road running <sup>toward</sup> the river  
E & W.

331

Strike - N 50° W or N 130° E } At Sta  
Dip 70° (N 40° E) } 1520

The ledge has a general trend of N 60° W.  
at an elev. of (422) = 404

It shows an exposure toward the S-W of  
about 1500 sq. ft., the face of the slope being  
about 45° to the horiz.

Another outcrop of the same ledge appears  
about 160° N-E of this one, and from boulders  
of the same sticking out of the ground, I  
should say that it just underlies the surface  
of the ground for an area of 30 or more acres.

332

{ A bed of clay slate underlies  
the bed of quartzite, & the above  
description applies also to this.

There also outcrop in the river, in a direct line from  
where I got the specimen at 230 ft toward the W. It  
crosses again at that point.

1700 Enter alder grove on river bot. = 379

1780 edge of river. elev. = (398) low banks 100 ft wide

1820 creek E & W.

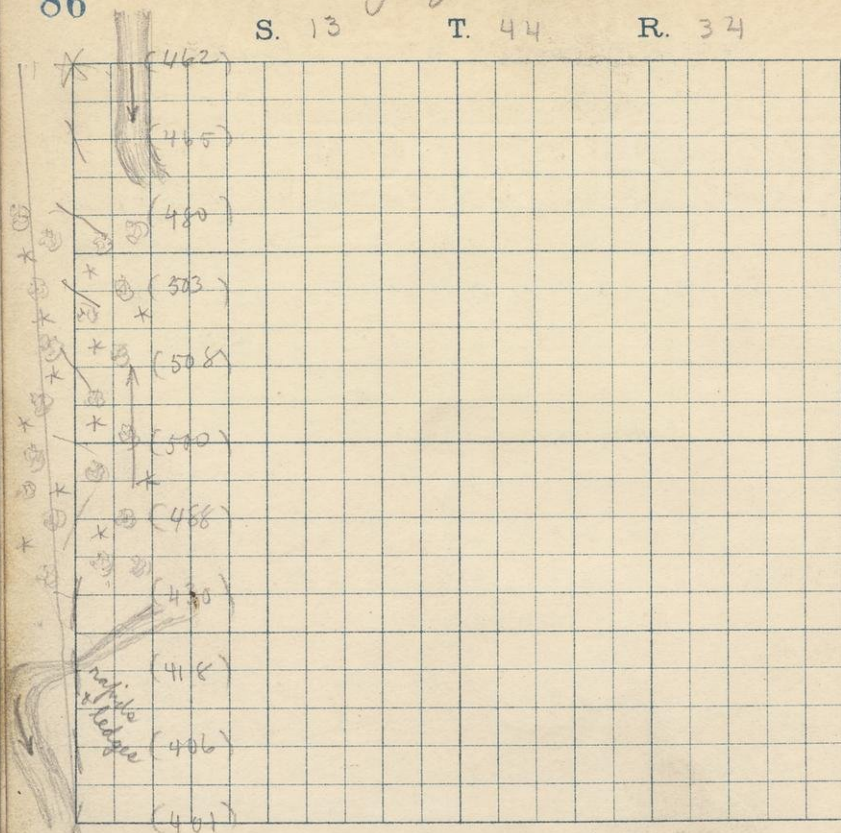


2nd. July 9.

S. 13

T. 44

R. 34



418 2000 E 462) B.M. = 420 at 11:50 Bar =  
 422 43 18 (465)  
 438 42 16 (480)  
 462 41 14 (503)  
 468 40 12 (508)  
 461 39 10 (500)  
 450 38 8 (488)  
 396 34 6 (430)  
 388 30 4 (418)  
 484 22 2 (406)  
 379 20 2000 (401)

Max. for all around.  
 at 11:15  
 at 11:10  
 10:30  
 9:45  
 at 9:45

Went N from S.W. cor. 13-44-34

The quartzite & slate mentioned last page occurs in immense ledges (as to area) along the hemlock, about 400 ft above its mouth, causing numerous rapids & rising in big outcrops all along.

dip  $70^{\circ}$  or  $68^{\circ}$ , strike, N  $30^{\circ}$  or  $40^{\circ}$  W.

410 Burned country & raspberry bushes

600 Hardwood & thick alder bushes.

1600 Burned country & poplar with few raspberry & alders.

Struck the sec. line 1400 W of first, and 40 paces to some

Long, but even hills in this mile.

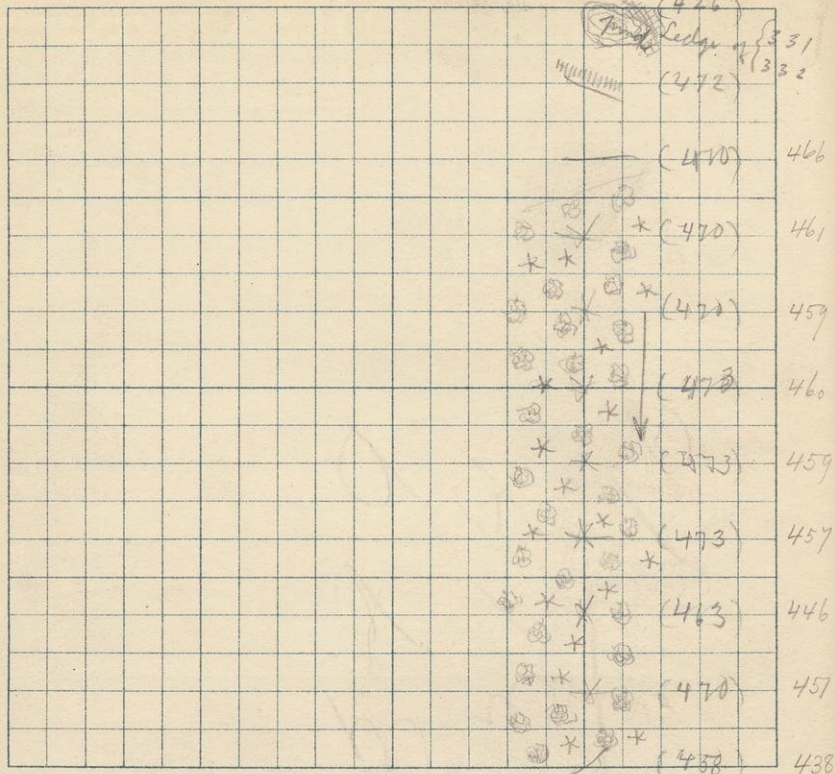


3rd. July 9.

S. 14-

T. 44

R. 34



4 422 B. M. = 426 at 12:25 Baris = 28.782

4 466 200 (472)

4 466 4 (470)

4 461 6 (470)

4 459 8 (470)

4 460 10 (473) 12:00 16

4 459 12 (473)

4 457 14 (473)

4 446 16 (463)

4 457 18 (470)

4 438 2000 (458) at 1:30

Went W 1/4 mile from N-E cor. 14-44-34

then went S. Started in burning grassbery.

24 Min. in pond (411) = 407

182 Marc (420) = 464

500 Hardwood



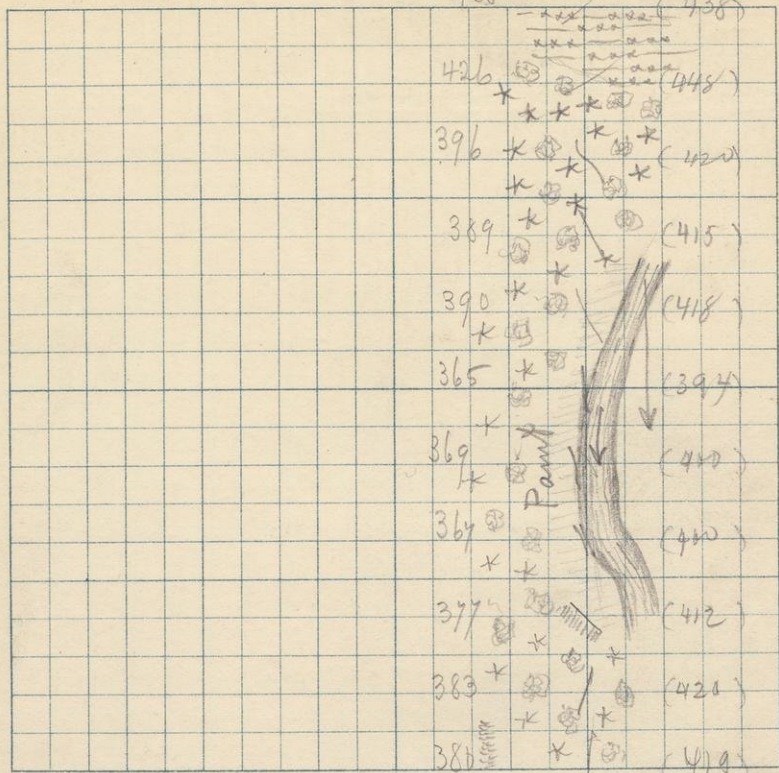
4<sup>th</sup>. July 9.

S. 23

T.

44  
438

R. 34

438 <sup>20</sup> 2000 (458) at 1:30426 <sup>22</sup> 200 (448)396 <sup>24</sup> 4 (420)389 <sup>26</sup> 6 (415)390 <sup>28</sup> 8 (418)365 <sup>29</sup> 10 (394) at 2:10369 <sup>31</sup> 12 (400)367 <sup>33</sup> 14 (400)377 <sup>35</sup> 16 (412)383 <sup>37</sup> 18 (420)380 <sup>39</sup> 2000 (419) B.M. = 386 at 2:50 Bar = 28.290

- Went S from N-E  $\frac{1}{8}$  pt 23-44-34
000. Enter cedar swamp
- 165 Enter Hardwood + pine cuttings.
- 250 Min. of (408) <sup>383</sup> <sub>376</sub> <sup>300</sup> <sub>291</sub> E + W.
- 400 { on E slope of steep hill  
       { Min. of (400) <sup>376</sup> <sub>300</sub> E  
       { Max. of (475) <sup>531</sup> <sub>120</sub> W.
- 810 { Enter cedar swamp + alder on river  
       { bottom
- 1000 { at W edge of Paint river, which is  
       { about 150' wide, 2 or 3' deep, mud + gravel  
       { bottom, low banks slow current, with  
       { rapids about 400' further down elev. = 389 = 360
- 1600 Going up, diagonally, a steep hill.  
       Min. at river max 120' W. of (486) = 421

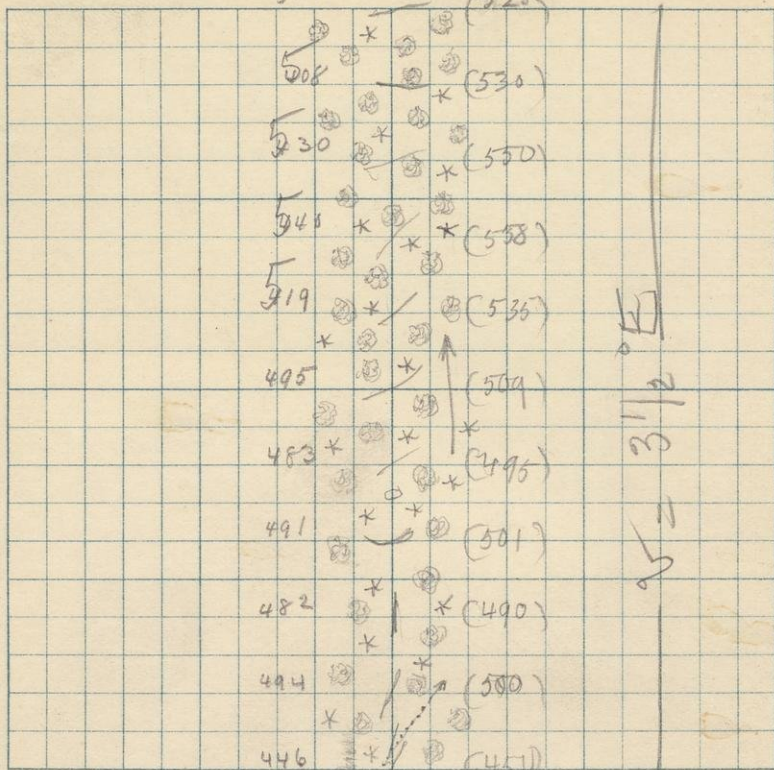


1st July 10.

S. 23

T. 44

R. 34



|                                  |      |       |         |
|----------------------------------|------|-------|---------|
| 501                              | 2000 | (525) | at 8:20 |
| 508                              | 18   | (531) |         |
| 530                              | 16   | (550) |         |
| 540                              | 14   | (558) |         |
| 519                              | 12   | (535) |         |
| 495                              | 10   | (509) | at 7:55 |
| 483                              | 8    | (495) |         |
| 491                              | 6    | (501) |         |
| 482                              | 4    | (490) |         |
| 494                              | 200  | (500) |         |
| 446                              |      | (450) |         |
| B.M. = 450 at 7:25 Bar. = 28.719 |      |       |         |

Went N from S  $\frac{1}{4}$  post 23-44-34

Started in Hard wood <sup>(maple)</sup>, & alder shrubbery in  
a ravine which runs N-E by N.

30 Creek & foot of ravine = min =  $(440) = 336$

99 = upper edge of ravine =  $(481) = 476$

200 Max of  $(510) = 504$  1150  $\frac{1}{4}$  of line

710 Min of  $(485) = 473$

Even country from 710 to sec. line

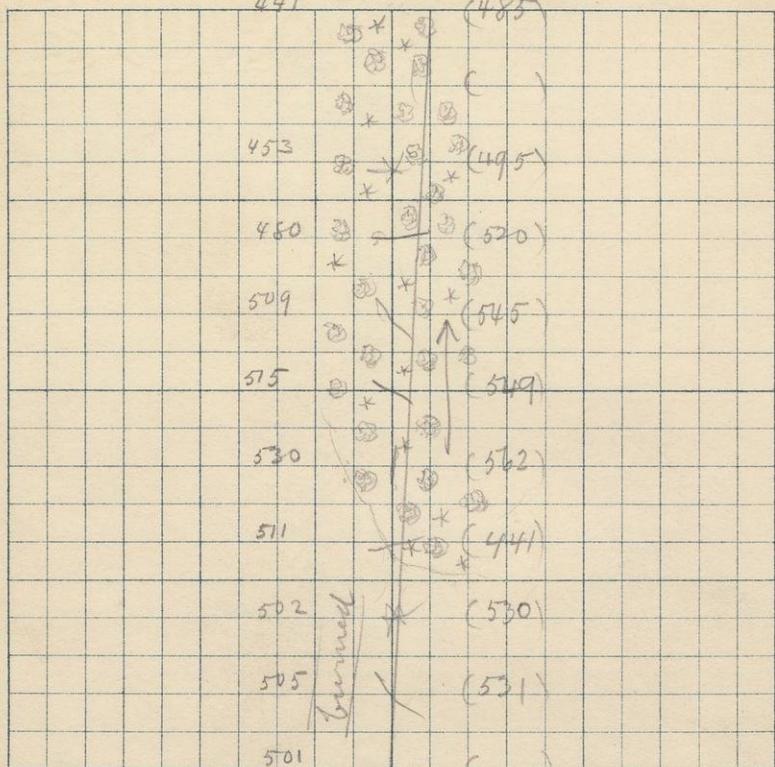


2nd July 10.

S. 14

T. 44

R. 34



441 2000 (485) B.M. 2 445 at 9:05 (B.M. 28680)  
 18 ( )  
 453 16 (495)  
 480 14 ↑ (520)  
 509 12 (545)  
 515 10 (549) at 8:40  
 530 8 (562)  
 511 6 (441)  
 502 4 (530)  
 505 200 (531)  
 501 2000 (525) at 8:20

Went N from S  $\frac{1}{4}$  post 14-44-34

Started in Hardwood

1440 enter burned (old) timber with  
poplar, cherry & raspberry brush

Struck the sec. line 250 P to some,  
and 100 P E of post.

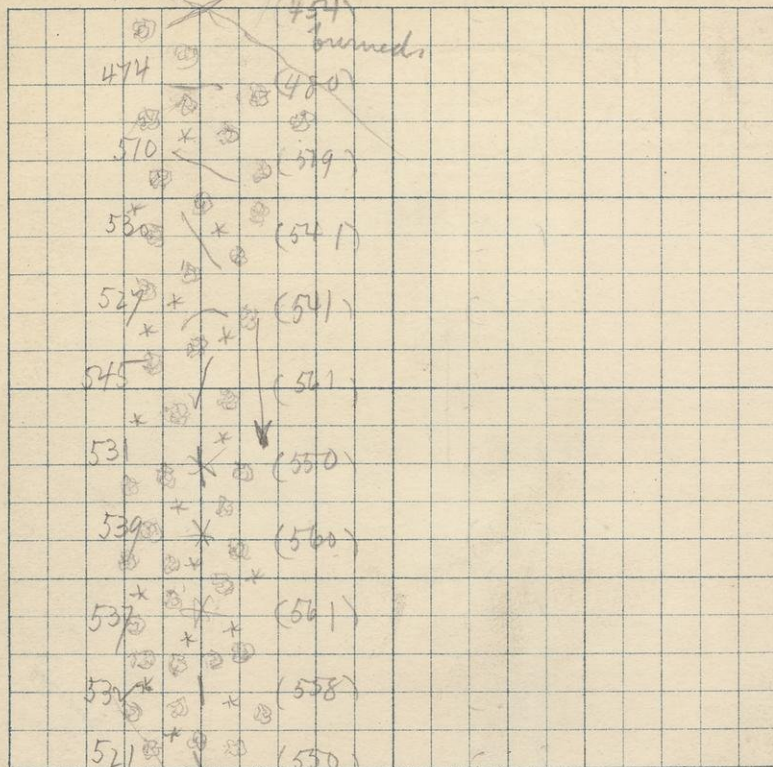


3rd July 10.

452 S. 14

T. 44

R. 34



452 B.M. = 454 at 9:15 Baric = 28.670

474 200 (481)

510 4 (519)

530 6 (541)

527 8 (541)

545 10 (561) at 9:45

531 12 (550)

539 14 (560)

537 16 (561)

532 18 (558)

521 20 (550) at 10:05

Went W. from N  $\frac{1}{4}$  just 14-44-34.

Then went S

{ Started in partially burned hardwood,  
with a few dead windfalls of poplar, cherry  
and raspberry brush

200 clear hardwood



98

4th July 10.

S. 23

T. 44

R. 34

521

509

495

497

485

497

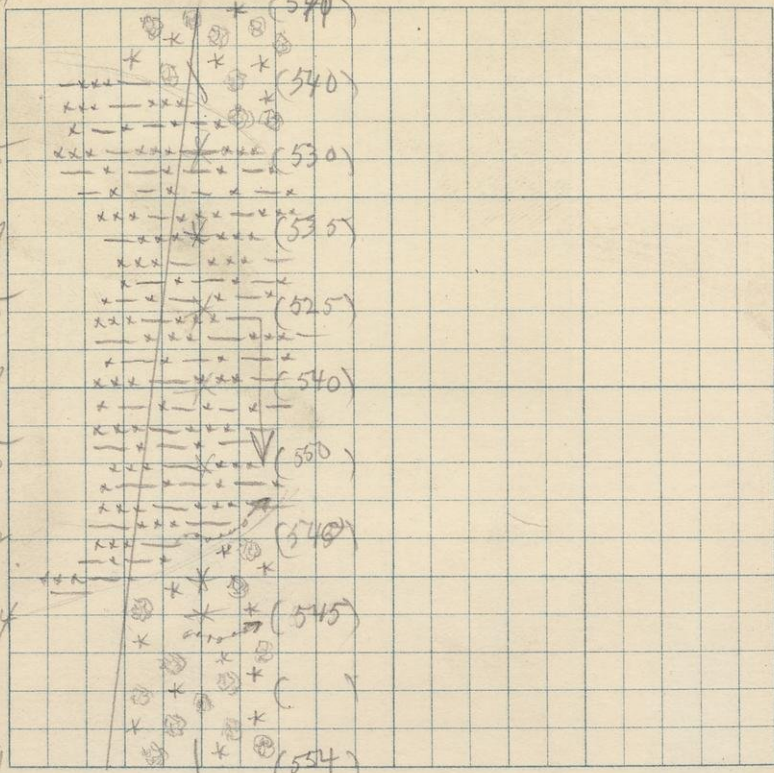
505

492

494

499

|     |    |      |   |
|-----|----|------|---|
| 521 | 29 | 2000 | (530)                                   |
| 509 | 32 | 200  | (541)                                   |
| 495 | 35 | 400  | (530)                                   |
| 497 | 38 | 6    | (535)                                   |
| 485 | 40 | 8    | (525)                                   |
| 497 | 43 | 10   | (540) at 10:30                          |
| 505 | 45 | 12   | (550)                                   |
| 492 | 48 | 14   | (540)                                   |
| 494 | 51 | 16   | (545)                                   |
|     |    | 18   | ( )                                     |
| 499 | 54 | 2000 | (554) B.M. = 503 at 10:55 Bar. = 28.560 |



Went S 4 miles from NW  $\frac{1}{8}$  pt 14-44-34

Started S in Hardwood.

245 Enter cedar swamp & farm also.

1400 Dried up creek in swamp, banks overgrown with alders E & W.

1420 Enter hardwood & alders

1644 Creek E & W (dry) elev =  $(544)^{493}$

Struck the line 2400 to soon, and 2320 W of B.M.

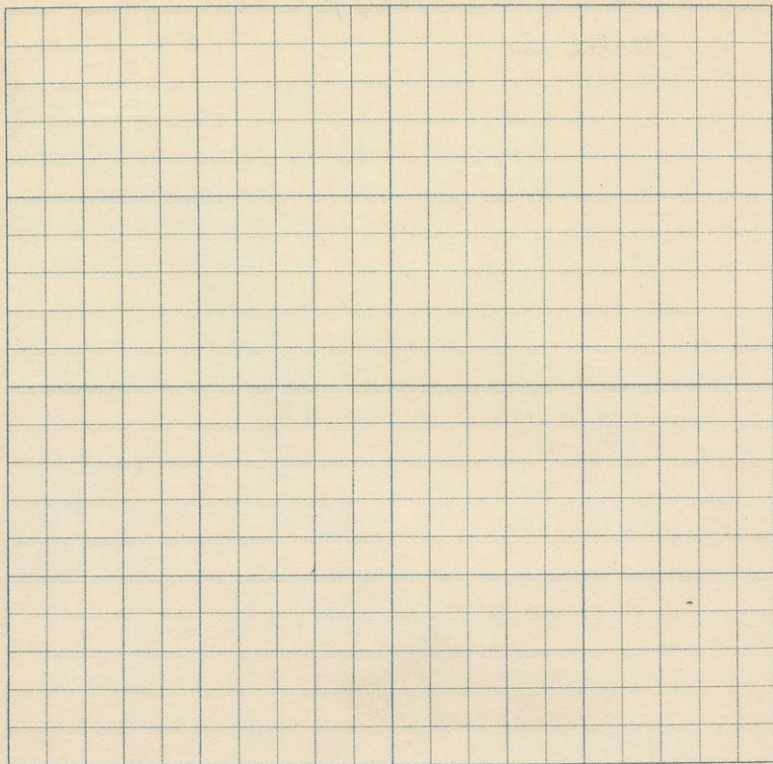
Even country all 4 miles.



S.

T.

R.



Went S from N-W  $\frac{1}{8}$  lot 23-44-34

Started in



