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Township 43 north, ranges 30, 31, and 32 west, specimens 31654-31700, 33001-33035. No. 273 1891

Mathews, E. B.

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

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LAKE SUPERIOR SURVEY

1877-1878

Index

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 as 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° 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.

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
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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				

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				

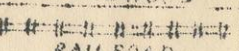
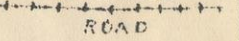
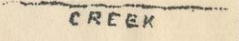
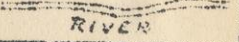
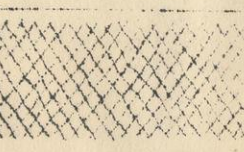
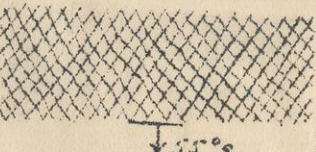
NOVEMBER.

Add to watch time.

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

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TOPOGRAPHICAL SIGNS.

 PINE OR HEMLOCK	 HARDWOOD	 PINE OR HEMLOCK AND HARDWOOD	 CEDAR SWAMP
 SPRUCE OR TAMARACK SWAMP	 MARSH	 RAILROAD  ROAD  CREEK  RIVER	 NO STRUCTURE
 ↓ 55° S. NEARLY MASSIVE	 N. 38° E. S. 62° E. SHALY OR BEDDED	 ↑ 83° SECONDARY STRUCTURE.	

1

C. B. Matthews # 9, Topographer
J. H. W. Donald, Compassman

Ameroid # 4.

SPECIMENS: 1654-1700
3001-3035

TOWNS - 43-30
43-31
43-32

NB - also a # 1654 in
Box # 64

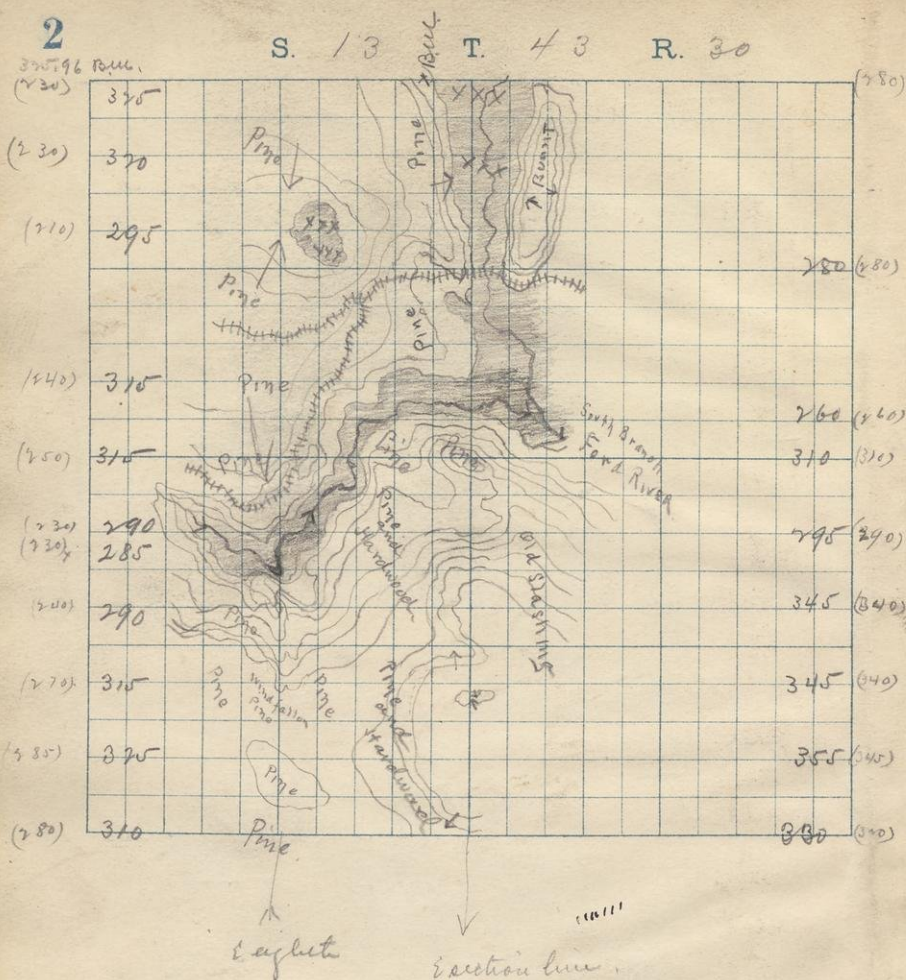
2

325.96 Bull.

S. 13

T. 43

R. 30



Oct 26, Overcast

3

Running south on east section line of
13 (43-36) (Range line)

Bel. (150 W) 296.41 Aneroid (300) $0 = 30.72$ 8.45

Mixed swamp mostly cedar. (280)

Creek 1008452 (E80)

5165 supply road. (250)

8205. Ford River.

10085 (310) Pine to west point on east.

20055 (320) struck intermediate line at corner

9.45
10.05

Running north on east eighth of 13.

Aneroid (280) 51.30 gives good line 11.30

6752 (220) crossed Ford river.

9002 (250) supply road.

10002 (200) Pine ridge

1.05

13122 supply road.

20032 (230) struck boundary at one $\frac{1}{2}$ stake
and found the Bel. side of another unmarked
stake 100 W.

Bel. 325.96

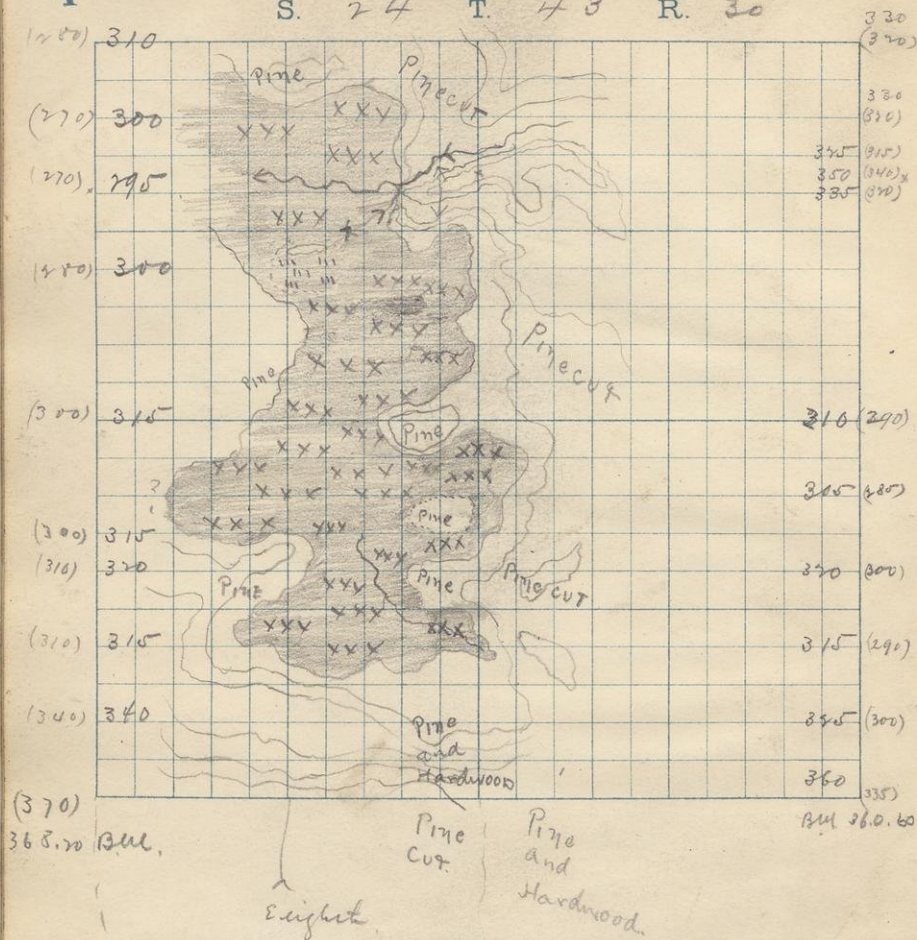
Aneroid (230)

1.40

1654 11402 across 13. low water covered outcrop of banded
slates, blue, red, grey etc. The strike (approximately)
was N 35° W dip 30° SW. The strike of the
chert was (approximately) N 20° W dip 60° SW.

4

S. 24 T. 43 R. 30



Running south on east section line
 of 24 (143-30) (Evangelium)
 Aneroid (370) Pine cut east & west of line.
 2875 (315) small creek.

10006 (290) Pine cut on east standing on west side 10³⁵

10005 (335) stumch *lenticularis* at corner.

Bill. 360.60 Aneroid (335) 11.⁰⁰

Running north on east eighth of 24.
 Bill. 368.20 Aneroid (370) 0 = 11.¹⁵

400 n (310) cedar swamp.

1000 n (300) " " 11.⁵⁰

1650 n (270) small creek flowing W.

1955 n (280) stumch intermediate line at

1/8 stake 12.³⁰

VT. 30' 2 used.

Pine first class size and quantity not quality.

6

305.25 RM

S.

14

T.

43

R.

30

RM 358.76
(340)

(340) 300

(340) 300

(340) ? 305

(340) ? 350

(350) 345

(370) 340

(380) 350

(410) 370

(390) 360

(385) 360

(340)

300

(300)

(340) ?

(380) ?

(390)

(310)

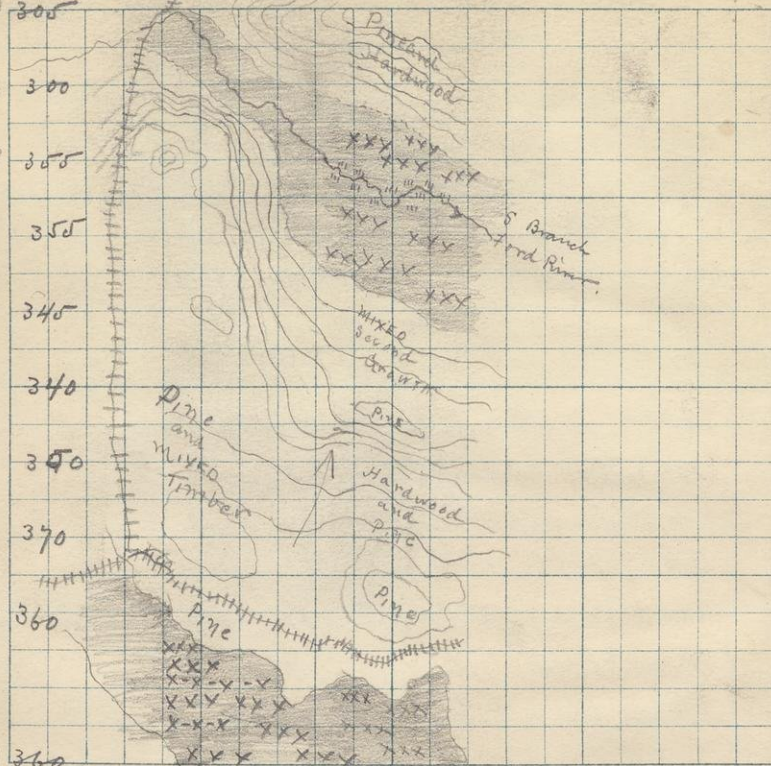
(345)

(305)

(370)

(350)

(340)



weylich

quarterh.

Oct 27, Overcast.

7

Running south on quarterline of 14.

Bill 358.76 Ameroid (360) 0 = 19.67' $\sqrt{17^{\circ} 30' E}$ 8.⁰⁰

5350 (290) crossed south branch Ford river. Greater part of the cedar is small.

10005 (310) Pine just ahead.

8.⁴⁰

17355 (350) supply road.

20005 (340) cedar swamp struck intermediate line at $\frac{1}{4}$ stake

9.¹⁵

Running north on west eighth of 14.

Ameroid. 385

12.²⁰

4632 supply road.

10002 (370) Pine and mixed growth

1.⁰⁰

19182 (340) South branch of Ford River

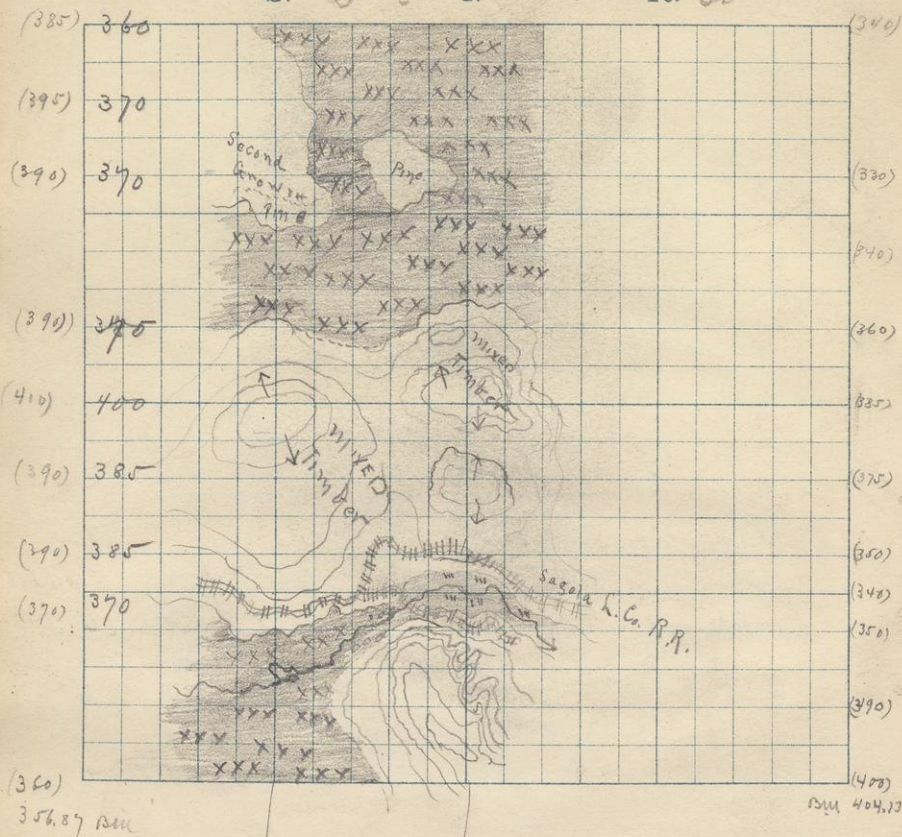
20002 struck benchline at $\frac{1}{8}$ stake

Bill 305.25 Ameroid (340)

1.³⁰

8

S. 2 3 T. 4 3 R. 30

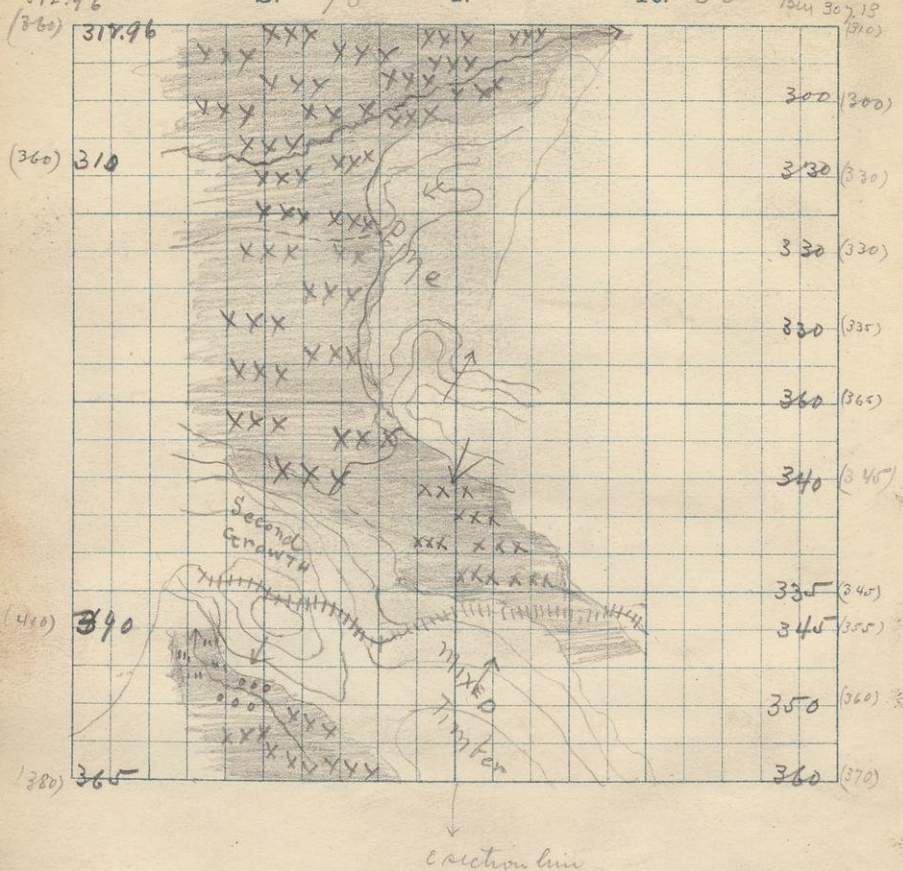


Westgate

Quarterline

Running south on quarterline of 23.
 Aneroid (340) Cedar swamp. $17^{\circ}30'E$ 9.15
 1000 S (385) mixed timber 10.00
 1400 S (350) crossed narrow gauge R.R.
 1500 S (340) creek. $E 110^{\circ}$
 1560 S (350) narrow gauge Sagola L. R.R.
 2000 S (400) struck benchmark at $1/4$ station.
 B.M., 404.11 Aneroid (400) 10.40

Running north on west eighth of 23.
 B.M., 556.87 Aneroid (360) $0-29.60'$ 10.55
 445 N. Sagola narrow gauge R.R.
 1000 N (410) mixed timber 11.30
 2000 N (385) cedar swamp struck intermediate
 line at $1/8$ station. 12.20



contours mixed on acct of swamp,

apparently on the line the swamp was continuous
the aneroid readings make it look as though
it was not. I believe they are one and the same on
the section line and the east right.

Oct 18,

11

Running south on east section line
of 45 (43-30)

B.M. 307.13. Aneroid (310) $0 = 79.32'$ 7.40

Cedar swamp.

1685 (300) S. branch Ford river

1000 S (365) white pine good size fair quality 8.15

1700 S (345) Cedar (good timber) swamp.

2510 S supply road on edge of swamp.

2004 S struck intermediate line at corner 8.45

Running north on east right of 15.
Aneroid (380) Cedar swamp. good timber.

2152 (380) creek. (270) out of swamp.

500 N (400) supply road.

1000 N (370) cedar swamp.

12.15

1620 N (300) S. branch Ford river

2000 N (300) struck benchline at 1/8 station

B.M. 312.96 Aneroid (360)

12.45

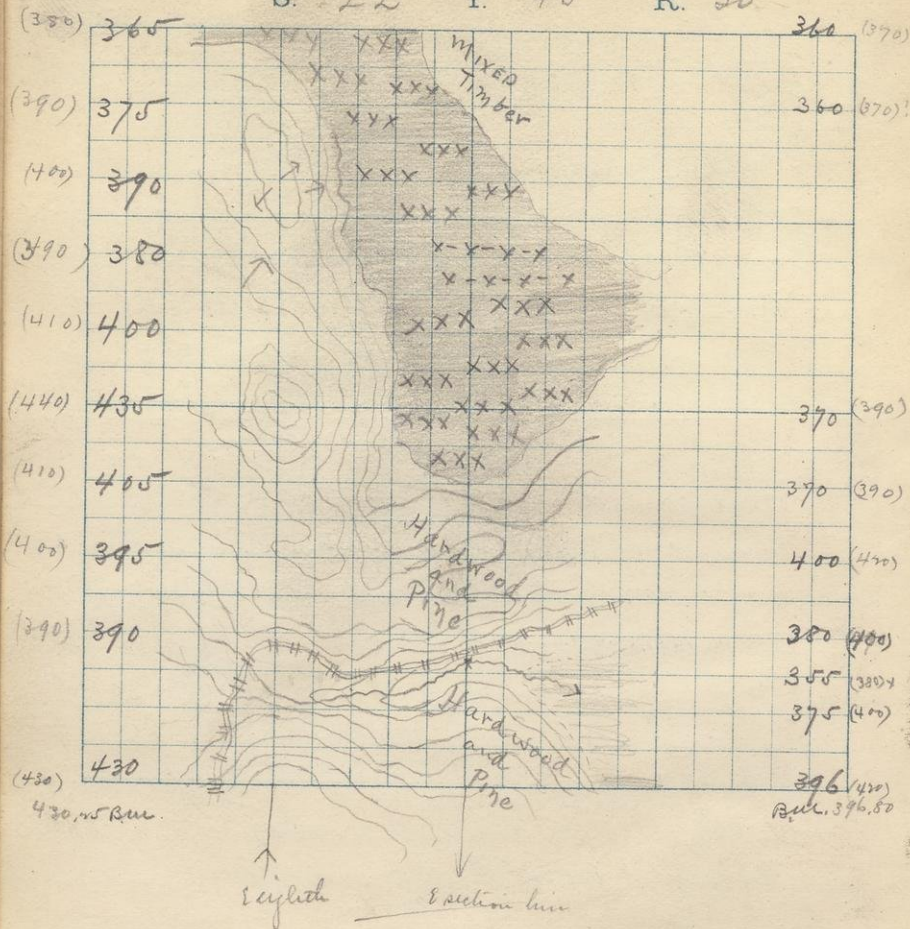
Bushy line the last half mile.

12

S. 22

T. 43

R. 30



Running south on east section line
 of 22. Aneroid (370) ∇ to 30'E med. 8.45
 1000 s (390) Cedar swamp. 9.30
 1620 s Sagola R.R. (390)
 1645 s (380) creek flow east.
 2000 s (420) stuch benchline at corner.
 B.M. 396.80 Aneroid (420) med ∇ to 30'E. 10.11

Running north on east eighth of 22.
 B.M. 430.25 Aneroid (420) 0=29.285' 10.30
 375 n (380) creek. 4062 (380) R.R.
 1000 n (440) Hardwood and pine 10.50
 2000 n (380) stuch intermediate line 11.25
 Cedar swamp.

14

S.

16

T.

43

R.

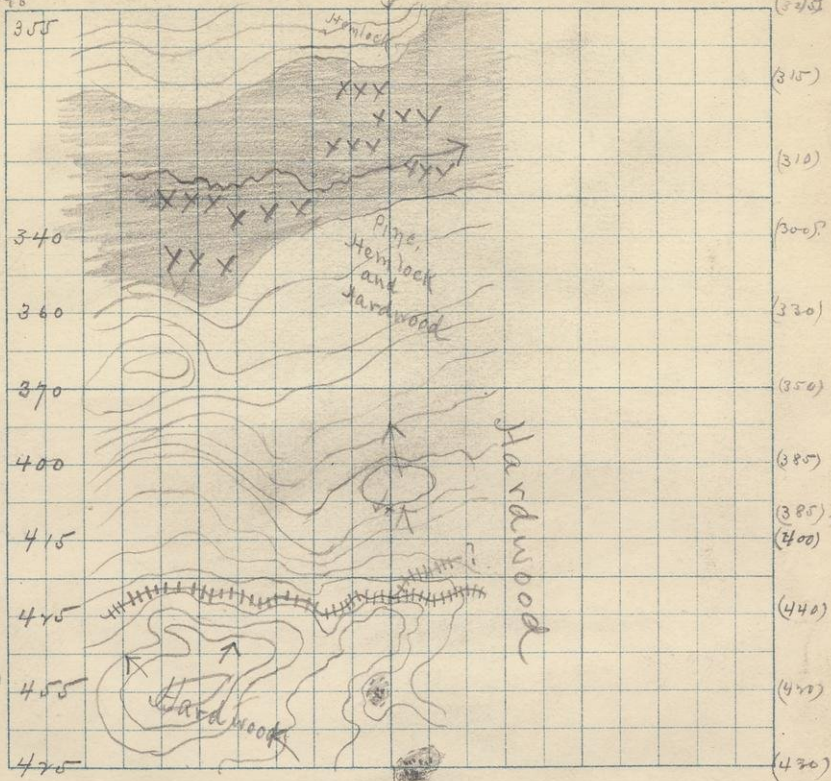
30

B.M. 345.49

(345)

357.46

(410)



Oct 19. Fair

15

Running south on quarterline
of 16-43-30.

B.M. 345.49 Anroid (345) 0=29.15' 8.⁴⁰

407 S (310) S branch Ford river

1020 S (350) mixed timber 9.⁰⁵

1550 S. supply road.

2000 S (400) struck intermediate line at 1/4 9.³⁰

Running north on west eighth of 16
Anroid (460) Hardwood. 11.⁴⁵

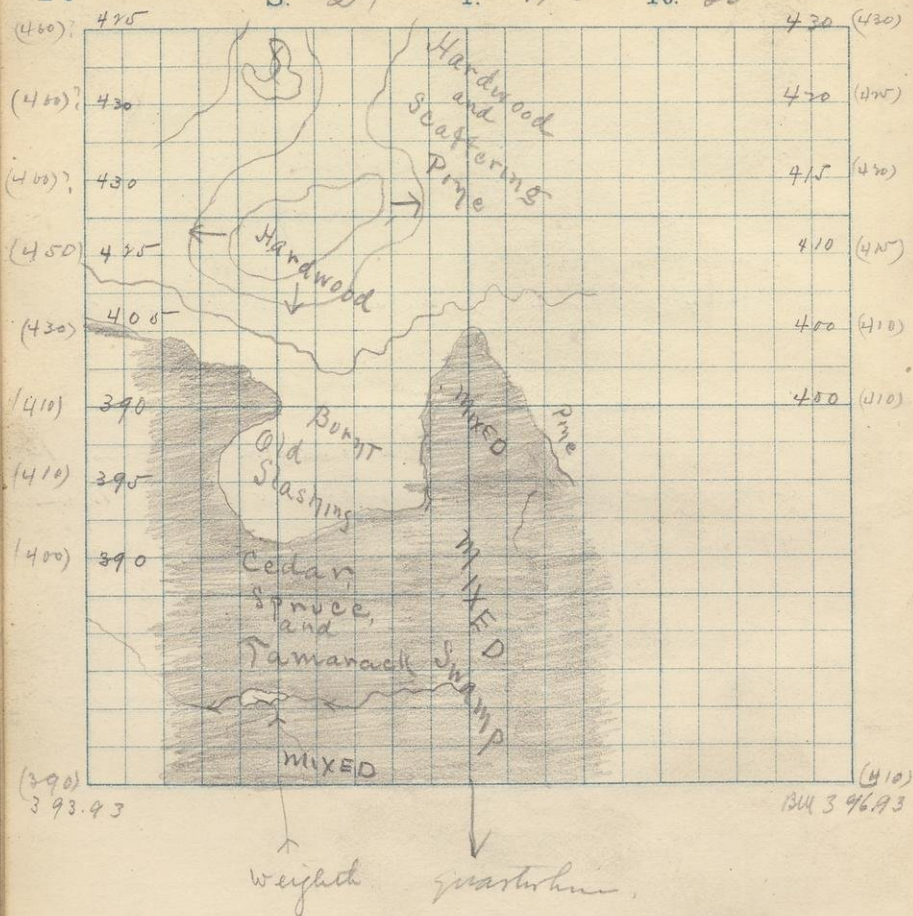
478 N supply road.

1000 N Hardwood + scattering pine 12.¹⁰

1555 N (480) S branch Ford River

2000 N (410) Hardwood, struck benchline
at 1/8 stake.

B.M. 357.46 Anroid (410) 1.⁰⁰



Running south on quarterline
of 21-43-30. Aneroid (430)

1000 mixed swamp.

10.00

1000 S(410) struck level line at $\frac{1}{4}$ stake.

Bull. 296.93 Aneroid (410) 10.15

Running north on west right of 21.

Bull. 293.93 Aneroid (290) 02 10.20

Cedar, spruce and tamarack swamp.

1000 N(410) dividing line between swampy & dry 11.15

1000 N(460)? struck intermediate line

at $\frac{1}{8}$ stake

11.45

18 404.89
(482) 400

S.

17

T.

43

R.

30

453.09

(455)

(420)

(360)

(320)

(380)

(360)

(370)

(400)

(400)

(440)

(450)

(480) 400

(470) 400

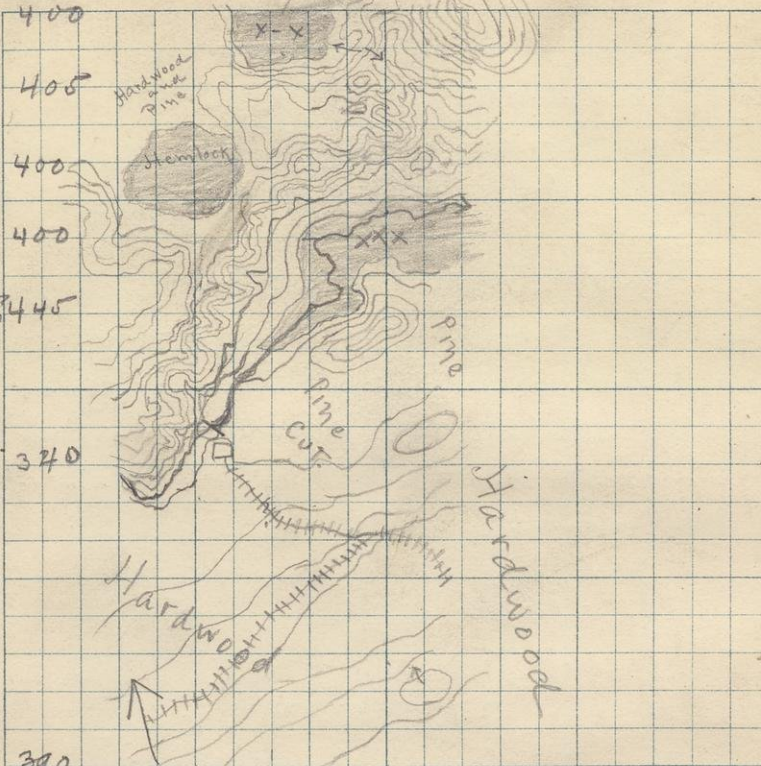
(490) 400

(500) 445

3

(390) 340

(430) 390



eighth

e section line

Oct 30. Bright.

19

Running south on east section line
of 17.

B.M. 453.09 Ameroid (455) $0 = 2897.8^{20}$

Mixed timber 500 s swamp.

54rs. S branch Ford River

1000 s. (360) pine on east stand, on west cut s.

1384. supply road.

2000 s (430) struck intermediate line at 0900

Fair hardwood, scattering pine.

Running north on east eighth
of 17.

No notes taken on acct of severe tooth
ache.

B.M. 401.89 Ameroid (480)

1.32

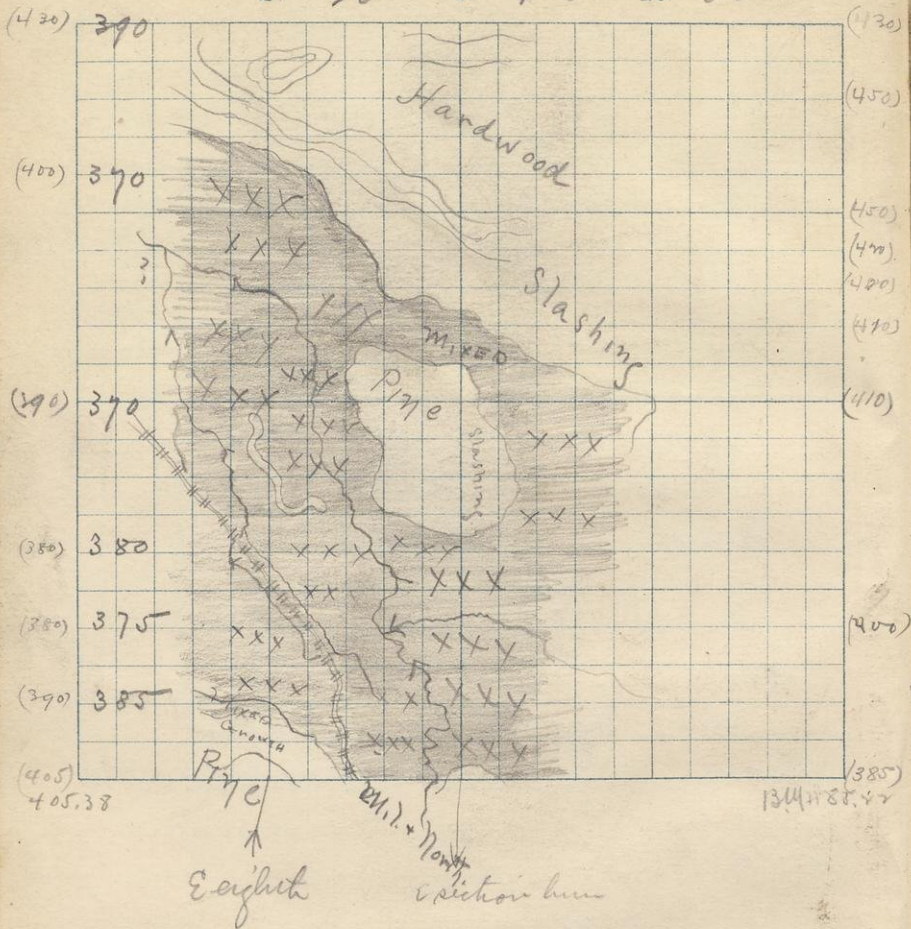
GOOD!

20

S. 20

T. 43

R. 30



Running south on east section
 line of 20. Aneroid (430) Hardwood 9.10
 1000 (410) On edge between pine & swamp 9.20
 1000 (400) Creek flowing west
 2000 (385) stuck knuckle line at corner.
 Bill. 485.22? Aneroid (385) 10.00

Running north on east eighth of 20
 Bill. 405.38 Aneroid (405) 0 = 28.88 11.20

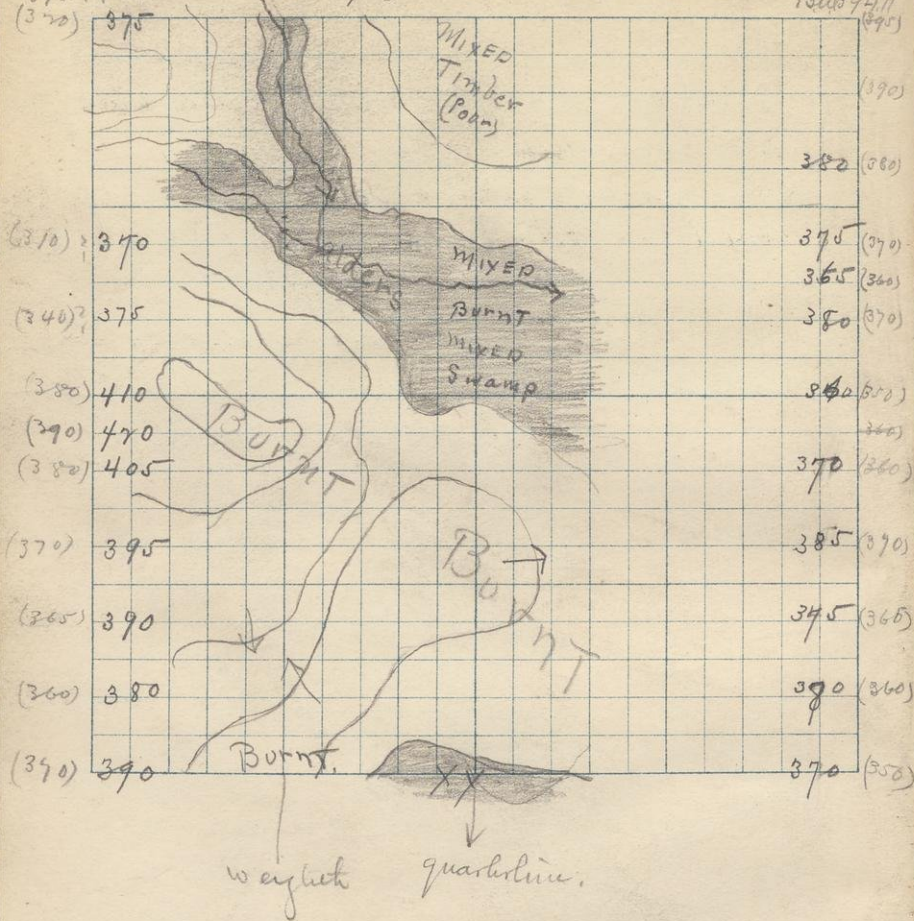
noon

12.30

22

376.74 Bm.
(370)

S. 18 T. 43 R. 30

324.94 Bm.
(390)

Oct 31. Snowy.

23

Running south on quarterline of 12.

B.M. 344.11 Aneroid (395) $\pm = 78.87$ 8.35

Poor quality mixed timber with pine cut.
715 s (350) creek flowing E.

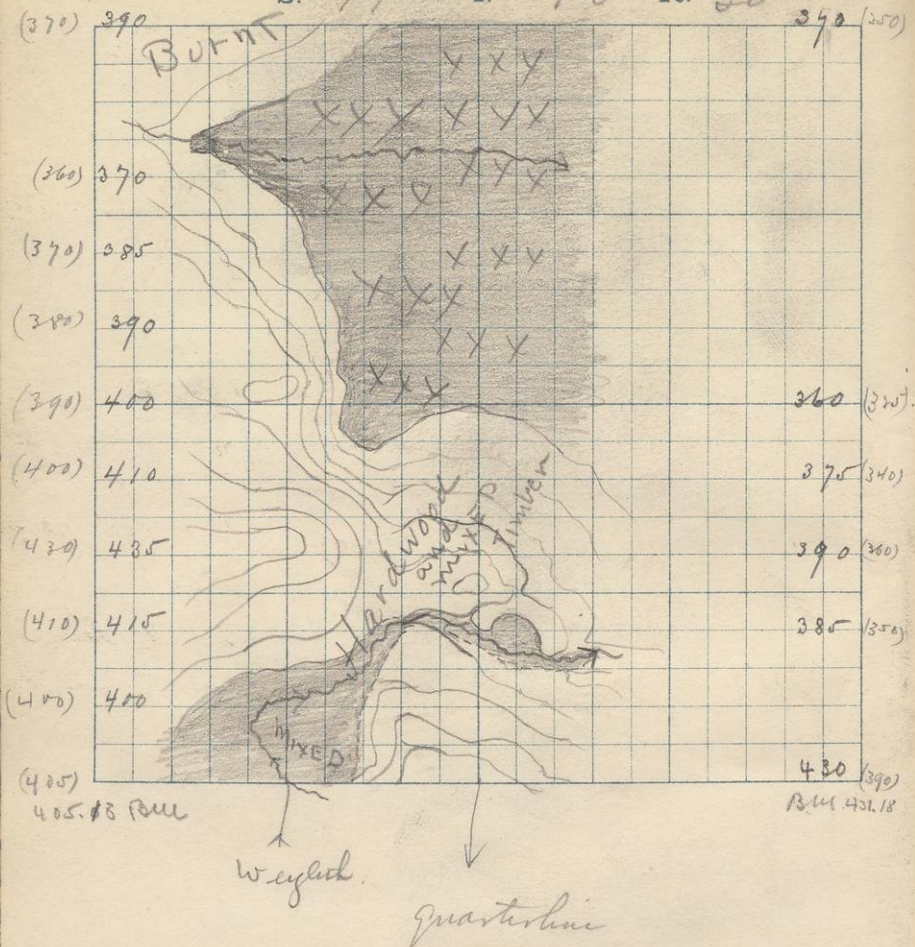
1000 s (350) just emerging from swamp 9.10

2000 s (350) edge of swamp. 9.40

Running north on west eighth of 13.

1000 N (380) burnt pine slashy 10.40

B.M. 376.74 Aneroid (320) 1.15



Running south on quarterline
19. Ameroid (350) 9.40

Lie timber cut in the quarter.

1000 S (355) just out of swamp

2000 S (390) struck benchline at $1/4$ 10.40

creeks at 3753 and at 1615 S

B.M. 431, 18. Ameroid (390.)

Running north on west eighth of 19.
B.M. 405.88 Ameroid (405.) = 78.84. 11.00

Mixed swamp.

1000 N mixed timber (390) 11.35

1675 N (360) creek.

1996 N (370) struck intermediate line

15 E of $1/8$ stake + continued north. 12.20

26

399.67
(380)

S. 13

T.

43

R.

31

405.50
(405)
400
(400)
(400)

399

405

395 (390)

415 (410)

440 (420)

410 (400)

400 (390)

425 (410)

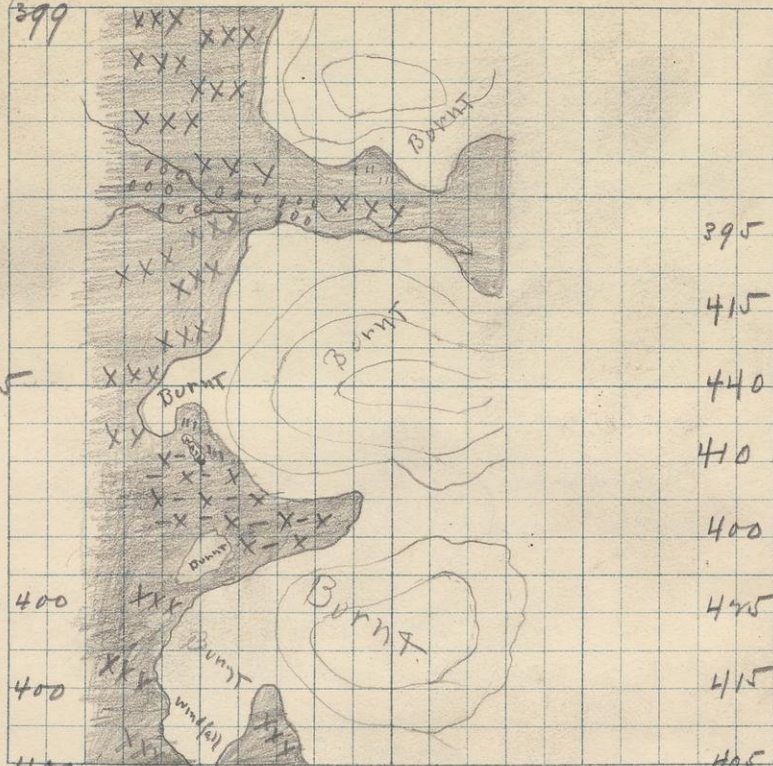
415 (400)

405 (390)

(400) 400

(400) 400

(400) 400



eighth

section line

Nov. 1. Snowing.

27

Running south on east line
of 18 (43-51) E range line.

Blk. 405.50 Amroid (405) 0 = 29.41' 8.20

Mixed timber

5938 (390) Creek.

10005 (430) burnt lands.

8.50

10008 (390) struck intermediate line at corner 9.20

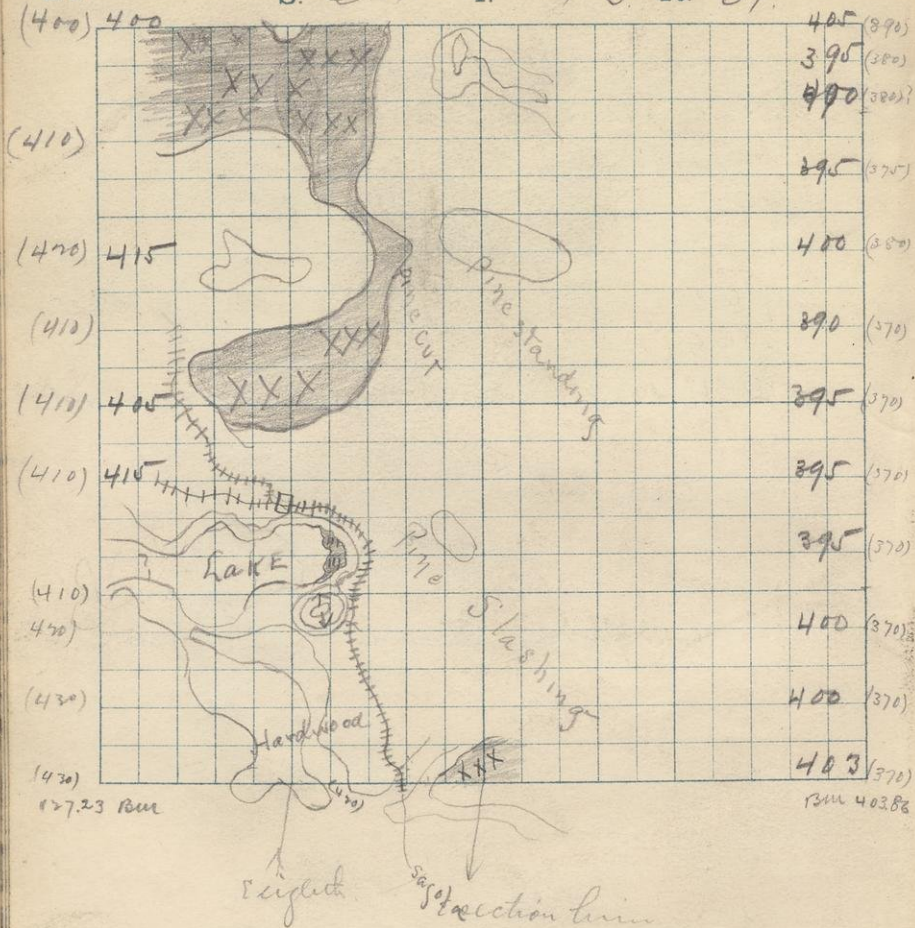
Running north on east eighth
of 13.
Cedar swamp.

Blk 399.67 Amroid (380)

1.00

28

S. 24 T. 43 R. 31



Running south on east line of 24 (43-31)
 90 S (370) creek.

1000 S (370) edge of pine slash. 9.50

2000 S (370) stretch benchline at corner 10.15

B.M. 403.88 Aneroid (370)

Running north on east eighth
 of 24 (43-31)

B.M. 427.73 Aneroid (430) $\phi = 29.47' 10.30$

Hardwood, fair.

510 N (410) Lake.

1000 N (410) cedar swamp. 11.15

2000 N stretch intermediate line

but no stake. Continued north 12.20

30

477.0004

(470)

S.

14

T.

43

R.

31

478.004

(490)

(470)

(470)

(465)

(465)

(460)

(455)

(450)

(450)

Fair Hardwood

Hemlock
and
MIXED
GROWTHMIXED
Timber

Hardwood

Weigelt

quadrant

470

480 (480)

475 (490)

455 (470)

450 (450)

450 (450)

445 (460)

470 (480)

480 (490)

460 (470)

455 (460)

Running south on West edge of 14 (42-31)
 B.M. 476r. 50 Anroid (470) $\phi = 29.64'$ $\sqrt{45} 2.8, \underline{20}$
 326 S $\sqrt{45}$ W. 765 S. $\sqrt{50}$

Fair - Fine Hardwood.

1000 S (460) mixed timber $\sqrt{10}$ E 9. 20

1400 S (450) cedar swamp $\sqrt{10}$ E

1845 S $\sqrt{3}$ E. 1900 S $\sqrt{30}$ E.

2016 S stunch immediate line 23 W $\sqrt{8}$ 10. 20
 $\sqrt{50}$ E.

Running north on quarter line 7
 14. $\sqrt{10}$ E. Anroid (460) Hardwood. $\sqrt{100}$

700 N $\sqrt{20}$ E. 735 N $\sqrt{50}$ E

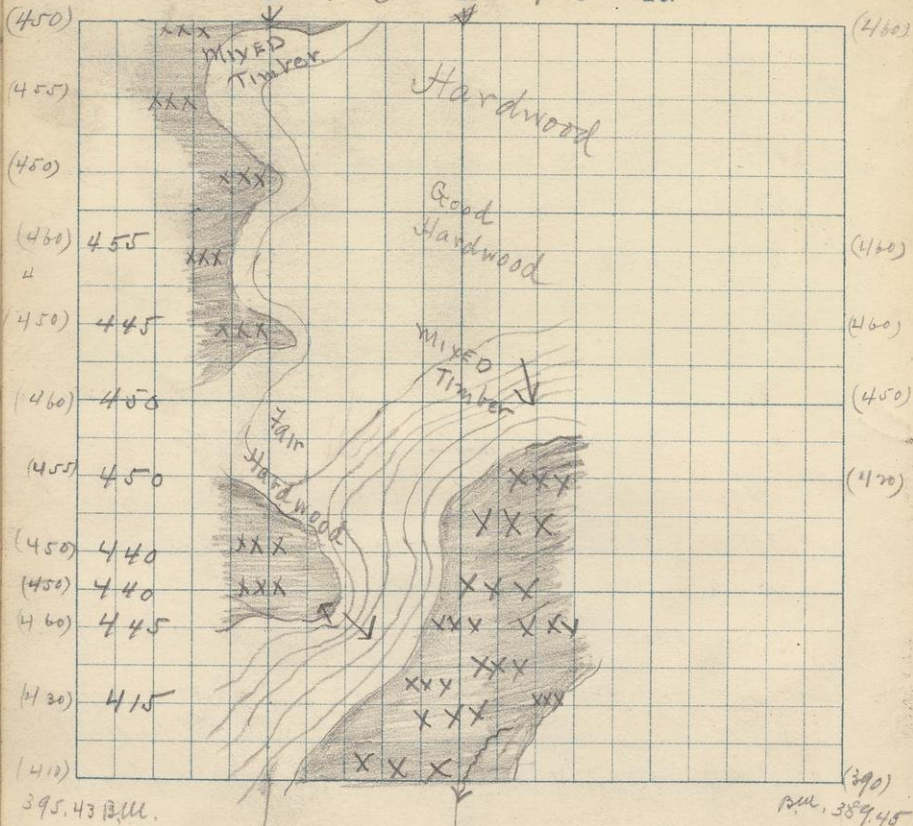
1000 N (460) swamp $\sqrt{50}$ E 1. 35

1816 N $\sqrt{20}$ W.

2000 (490) stunch bench line at $\frac{1}{4}$ station

B.M. 470.04 Anroid (490) $\sqrt{45}$ E 2. 15

S. 23 T. 43 R. 31



weight, quarter in

Running south on west eighth of 23
mixed timber 55°E. Ameroid (450) 10.20

600 S. 56°E

1000 S (460) Fair hardwood 56°30'E. 10.50

2033 S (410) stuck benchline at 1/4 stake

Bill. 395.43 Ameroid (410) 5 11.20

Running north on quartering of 23

Bill. 389.45 Ameroid (390) $\phi = 29.61'$ 56°E 11.40

800 N (420) Out of swamp 55°30'E.

1000 N (450) mixed timber 12.25

1600 N (460) Good hardwood 53°E.

2000 N (460) stuck intermediate line at
1/4 stake. 1.00

A few angular boulders, in benches,
have been found on this section.
They were in every case granite.

34

464.04

S. 15 T. 43 R. 31

472.47

(320) 465

480 (480)

480 (480)

490 (490)

(490) 455

470 (475)

455 (460)

(470) 440

(450) (460)

MIXED
spruce
firCedar
and
Spruce

Spruce

(450) 430

MIXED

430 (460)

section line.

Nov 3. Bright.

35

Running south on east line of 15

BML 478.47 Ameroid (480) $\sqrt{5}^{\circ} 50' E = 19.50^{\circ}$ 8.45

2008 (480) Fair hardwood. $\sqrt{5}^{\circ} 15' E$

4008 (490) " " $\sqrt{5}^{\circ} 0' E$ 4508 $\sqrt{5}^{\circ} 0' E$

6008 (475) " " $\sqrt{5}^{\circ} 30' E$

10008 (460) mixed swampy growth $\sqrt{5}^{\circ} 4' E$ 9.20

12008 $\sqrt{5}^{\circ} 45' E$ 14008 $\sqrt{5}^{\circ} 50' 15' E$ 16008 $\sqrt{5}^{\circ} 55' E$

20008 (460) spruce swamp, stunch state 1000

Running north on east eighth of 15
Ameroid (450) mixed timber $\sqrt{5}^{\circ} 30' E$ 12.50

1000 (470) cedar and spruce swamp.

$\sqrt{5}^{\circ} 30' E$ 1.50

13500 (490) just emerging from swamp $\sqrt{5}^{\circ} 0' E$

2000 stunch bunchberry at Katake.

BML 464.04 Ameroid (500) $\sqrt{5}^{\circ} 30' E$

2.50

1656

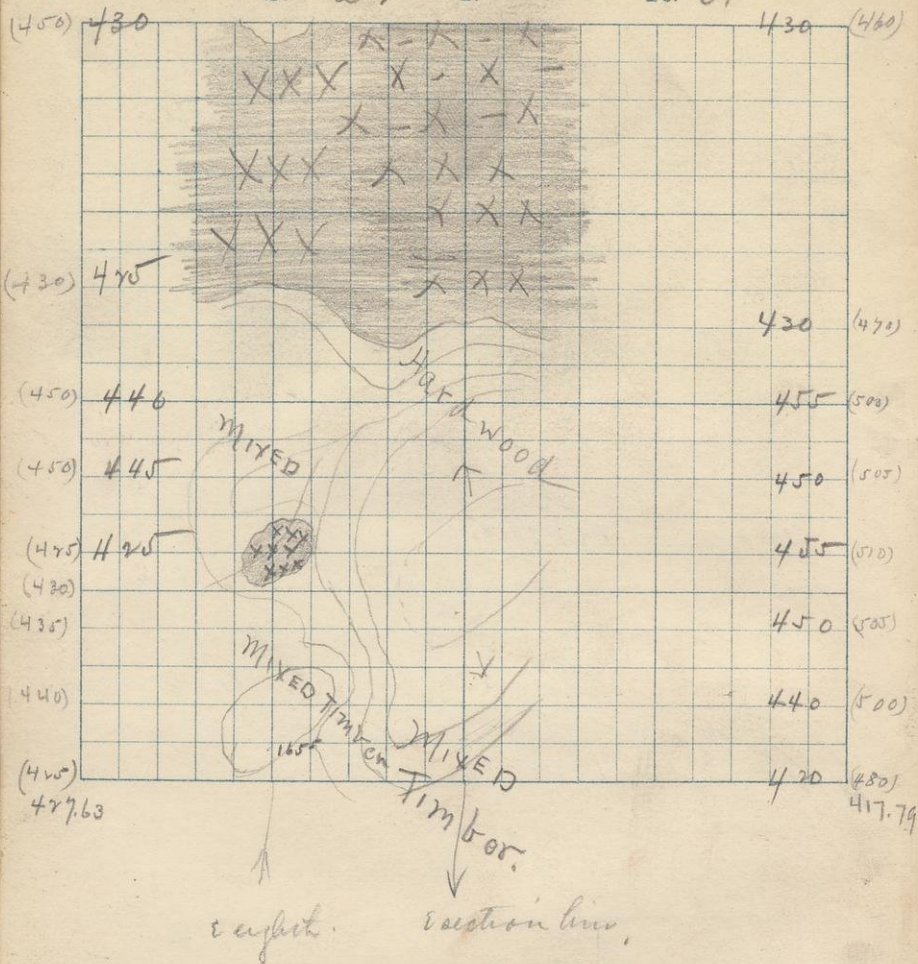
400 W 80 cor 10 (on bunchberry) series of test pits

1658

which show up 1656 which appears to be a much altered granite or porphyry dike. This dike has been altered on one side of it to the slaty looking rock 1657 while on the other is a segregation of the fossil? silica in an impure chert. 1658

36

S. 22 T. 43 R. 31



Running south on east rim of
22 Amphid (460) spine swamp $\sqrt{7^2 900}$
1000 $\sqrt{6^2 45^2}$ 400 $\sqrt{6^2}$ 600 $\sqrt{6^2}$ 800 $\sqrt{7^2 5^2}$
1000 $\sqrt{5^2}$ Hardwood $\sqrt{6^2}$ 10,45
1600 $\sqrt{5^2}$ $\sqrt{5^2}$

woods (480) stretch benchline at corner
Bull. 417.79. Amroid (480) 11.10

Running north on east eighth & rr.
B.M. 427.63 Ameroid (485) $\phi = 29.48 \sqrt{4^{10} \text{ E } 11^{20}}$
1000 u (450) mixed timber - hardwood $54^{\circ} 20' \text{ E } 12^{00}$
1600 u $\sqrt{5^{\circ} 20' \text{ E}}$.

road n (450) struck intermediate line (but
not stake) and continued north. 14.50

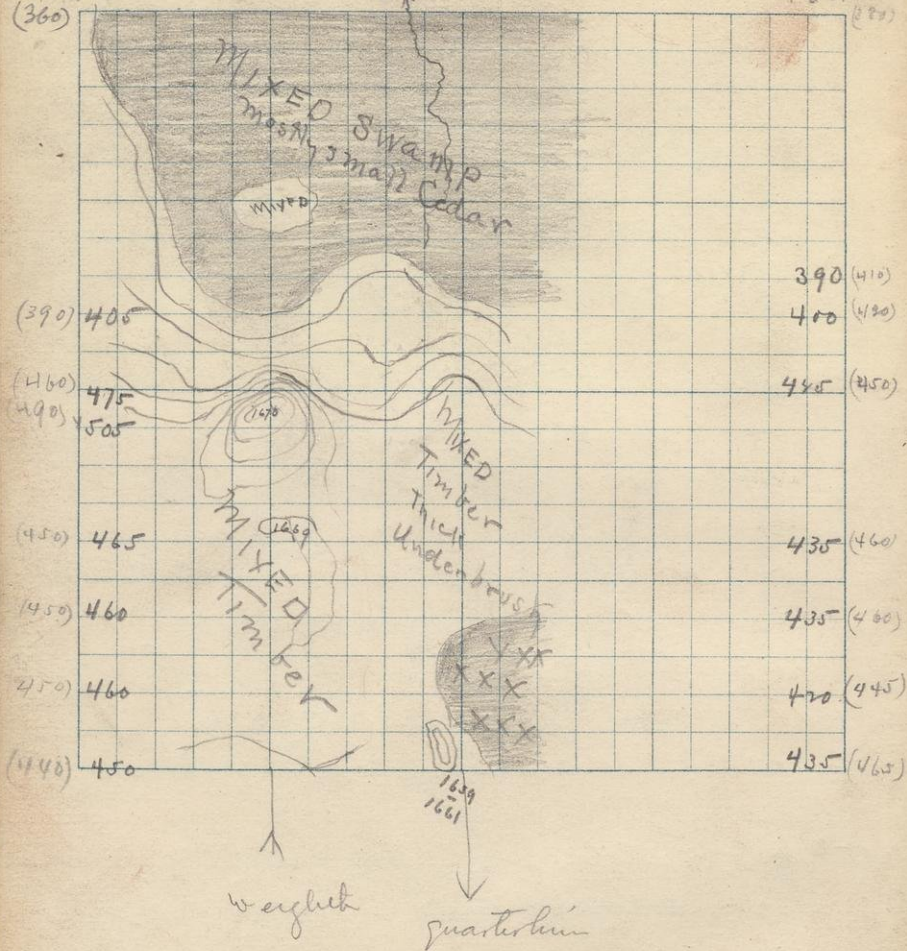
Just at this point out of swamp. Station
75 E of our position. V5030' E.

1655 on low sec. r. r. low outcrop of coarse
grained greenstone

38

380.28
(360)

S. 16 T. 43 R. 31

RM 373.05
(380)

Running south on quarterline of 16.
 BM 378.05 Aneroid (300) = 1908 8.00

Mixed swamp. $\sqrt{4}^{\circ} 2$.

1000 s (450) mixed timber thick underbrush. 8.55

1990 s (465) stunch intermediate in 6

west of $\frac{1}{4}$ stake $\sqrt{4}^{\circ} 2$.

9.55

Running north on west eighth of 16.
 Raining + snowing.

1000 n (400) on north slope of hill. 7.00

2000 n (360) stunch benchline. Eight

paces E of point 500 W of $\frac{1}{4}$ and yet

we came out 47 E of L.S.S. $\frac{1}{8}$ stake

BM 380.28 Aneroid (300)

7.45

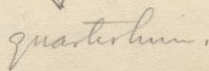
$\sqrt{3}^{\circ} 2$ used the entire mile.

1659 100 n 1000 W sec 16. large outcrop of granite

1661 1659 represents its north face from which it
 grades into 1660 in 15-20 paces S. 1661 shows
 one of its weathering products.

1669 600 n 1500 W sec 16 low outcrop of granite

1670 950 n



Running south on quartzite of 21.
 Aneroid (465) mixed timber 10.⁰⁰
 1000s (450) spruce swamp. 10.⁴⁰
 1550s supply road (under construction)
 from Sagola - Mansfield
 1285s (400) Strich Kuchline at stake
 Bill 411.24 Aneroid (460) 11.¹⁰
 1300s - 1000s. 1300 - 1700 1400s - Kuchline

Running north on west eighth of 21.
 Bill 394.25 Aneroid 395 = 78.98 11.³⁰
 500n supply (town) road.
 1000n (400) mixed timber - hardwood 12.³⁰
 2000n no line found. It may have been
 back on top of hill but doubt it. 1.²⁰

1662. 1890n 1020w secor 21 large outcrop of greenstone
 1663 1700n 1020w sec 21 " " " "
 1664 145n 1525w sec 21 " " " "
 1665 700n 1500w sec 21 low " " "
 1666 500n 1500w sec 21 " " " "
 1667 1200n 1500w sec 21 " " " "
 1668 1650n 1500w sec 21 " " " "
 Outcrop of greenstone 2000n 1500w



(435)

(390)

(380)

(450)

440,

(410)

(410)

(390)

(380)

(340)

(440)

(470)4

(420)

(460)

400 (405)

485 (490)

4245 (450)

440 (450)

430 (440)

405 (420)

445 (460)

40.5 (4%)

↑
2 eighth
(notes on page 49)

section line

Nov 7th. Fair.

43

Running south on east line of 17.

B.M. 393.90. Aneroid (395) 0 = 18.94 $\sqrt{145} \text{ E. } 2.50$

The hardwood was poor, the mixed timber has a little good hemlock mixed with it.

1000 s. mixed timber (450) $\sqrt{30} \text{ E.}$ 8.50

1233 s. $\sqrt{45} \text{ E.}$ 1270 s. $\sqrt{60} \text{ W.}$ 1300 s. $\sqrt{15} \text{ W.}$ 1360 s. $\sqrt{20} \text{ E.}$

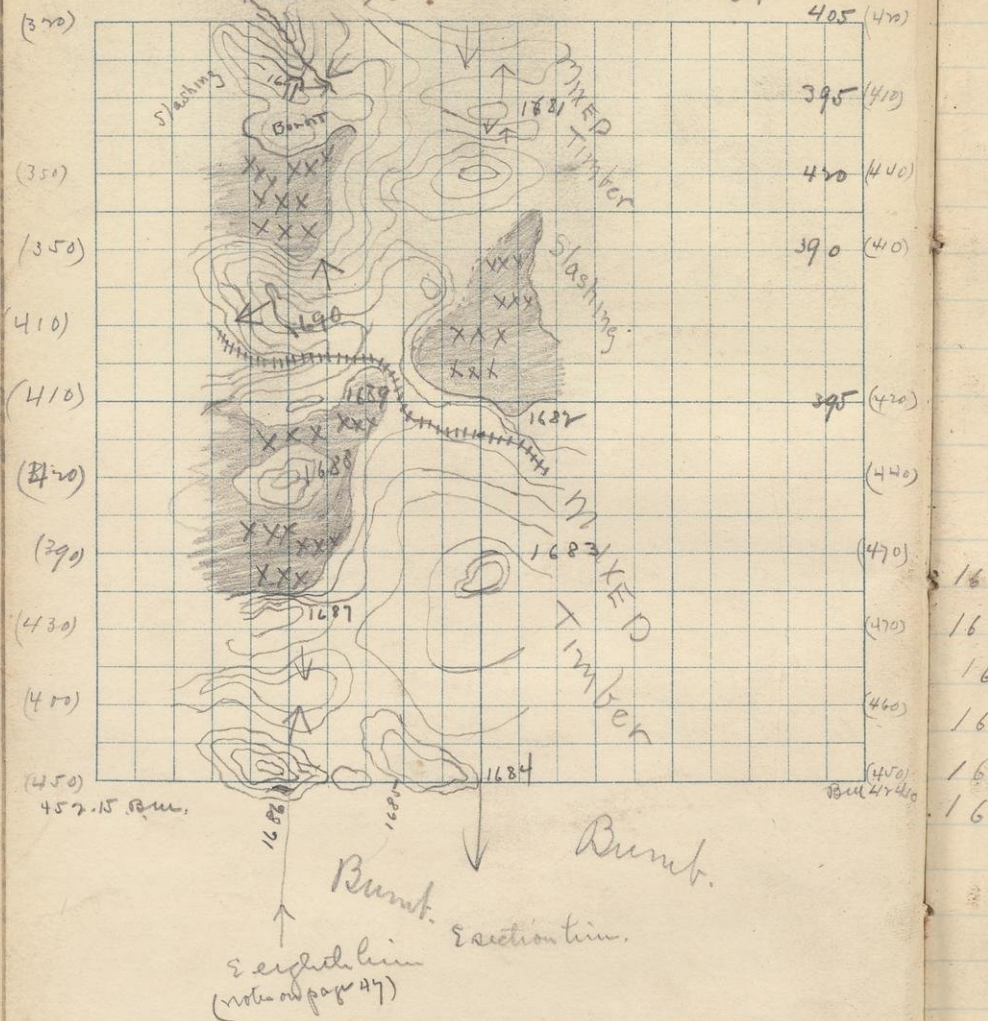
1450 s. $\sqrt{30} 45' \text{ E.}$ 1540 s. $\sqrt{20} \text{ E.}$ 1710 s. $\sqrt{30} 15' \text{ E.}$

1986 s. Stuck intermediate line at corner

9.45

- | | | | | | | | |
|------|-------------------|----------------------------------|------|---|---|---------------------------|---|
| 1671 | 1000 W sec cor 8. | high outcrop of greenstone. | | | | | |
| 1672 | 1730 N sec cor 17 | " | " | " | " | coarse grained greenstone | |
| 1673 | 1360 N sec cor 17 | " | " | " | " | " | " |
| 1674 | 1180 N sec cor 17 | " | " | " | " | " | " |
| 1675 | 875 N sec cor 17 | low | " | " | " | " | " |
| 1676 | 730 N sec cor 17 | " | " | " | " | " | " |
| 1677 | 600 N sec cor 17 | " | " | " | " | " | " |
| 1678 | 460 N sec cor 17 | } more inclined to
horizontal | " | " | " | " | " |
| 1679 | 360 N sec cor 17 | | " | " | " | " | " |
| 1680 | 200 N sec cor 17 | | high | " | " | " | " |

S. 20. T. 43 R. 31



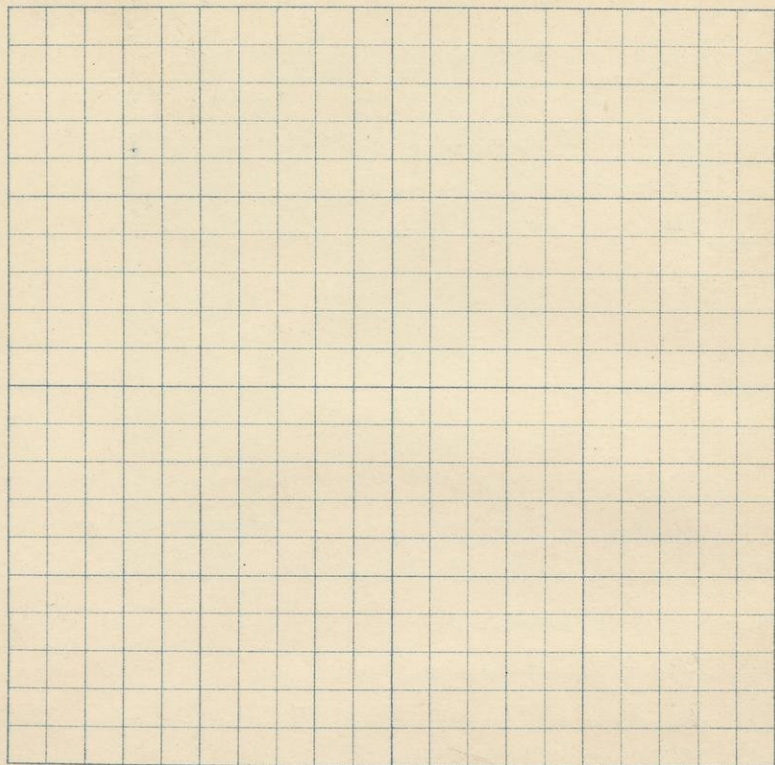
Running south on east line 730
(420) mixed growth - $\sqrt{30}^{\circ} E$ 9.50

600 S $\sqrt{1015}^{\circ} E$,

1000 S $\sqrt{5020}^{\circ} E$ (470) just out of swamp into slashy
& mixed timber. 10.50

1996 S struck knobbles at corner 11.15

1681	1730 N Secor 20	outcrop of coarse grained granite					
1682	1000 N Secor 20	"	"	"	"	"	"
1683	600 N Secor 20	"	"	"	"	"	"
1684	at SE corner	"	"	"	"	"	"
1685	200 W Secor 20	"	"	"	"	"	"
1686	500 W Secor 20	"	"	"	"	"	"



16

16

16

16

16

Running north on east eighth of 20
(plotting on page 44) $\sqrt{10} \approx$

Bull 452.15 Aneroid (450) $\phi = 14.85'$ 12.50

Burnt & mixed growth, no good,

1000 ft (410) mixed growth poor, 12.50

1400 ft (350) very fair cedar growth

1650 ft (250) $\sqrt{10} \approx$

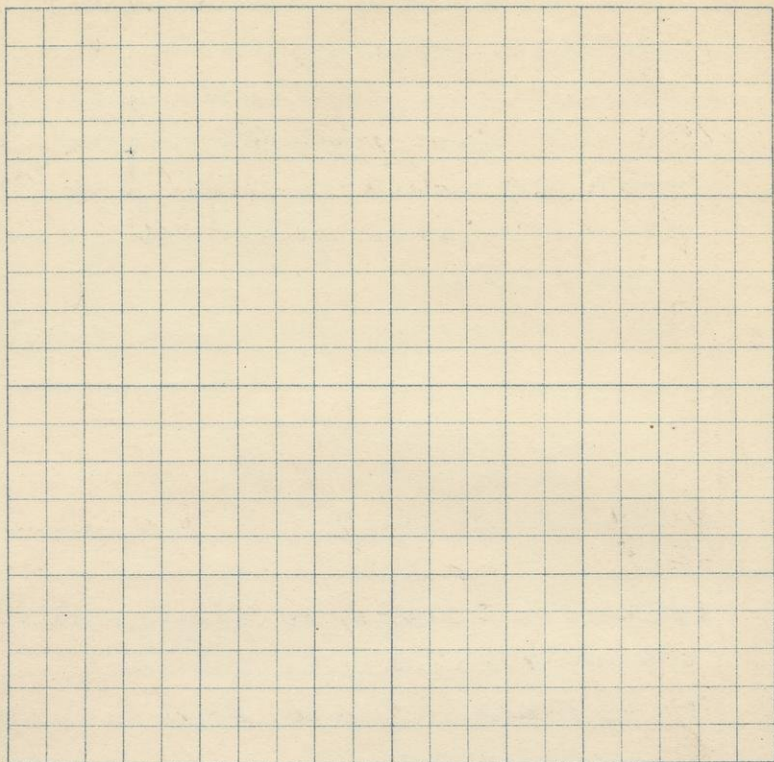
500 ft stretch intermediate line at $1/8 \times 1/40$

- 1687 450 ft 500 W sec cor 20 high outcrop of
coarse grained greenstone.
- 1688 720 ft 500 W sec cor 20 large outcrop of greenstone
- 1689 970 ft 485 W sec cor 20 outcrop of greenstone
- 1690 1125 ft 500 W sec cor 20 " " "
- 1691 1800 ft 500 W sec cor 20 " " "

S.

T.

R.



16

1/6

16

18

16

76

1.6

169

Running north on east eight 217.
(plotting on page 47)

741 N $N 80^{\circ} 30' E$

1000 N (440) mixed timber 2.40

2003 N (410) stuch benchline at 1/8th stake

(B.M. 421.16 Aneroid (410) 3.30

- 1692 240 N 500 W SE cor 17 outcrop of greenstone
with small amt of quartz
- 1693 470 N 500 W SE cor 17 outcrop of greenstone.
- 1694 800 N 500 W SE cor 17 " " "
very coarse grained with much
hornblende.
- 1695 Fine grained hornblende (915 N 500 W)
- 1696 1135 N 490 W outcrop of exceedingly
coarse greenstone.
- 1697 1340 N 500 W - greenstone.
- 1698 1640 N 500 W - coarse grained greenstone.
- 1699 1800 N 500 W - greenstone.

50

S.

T.

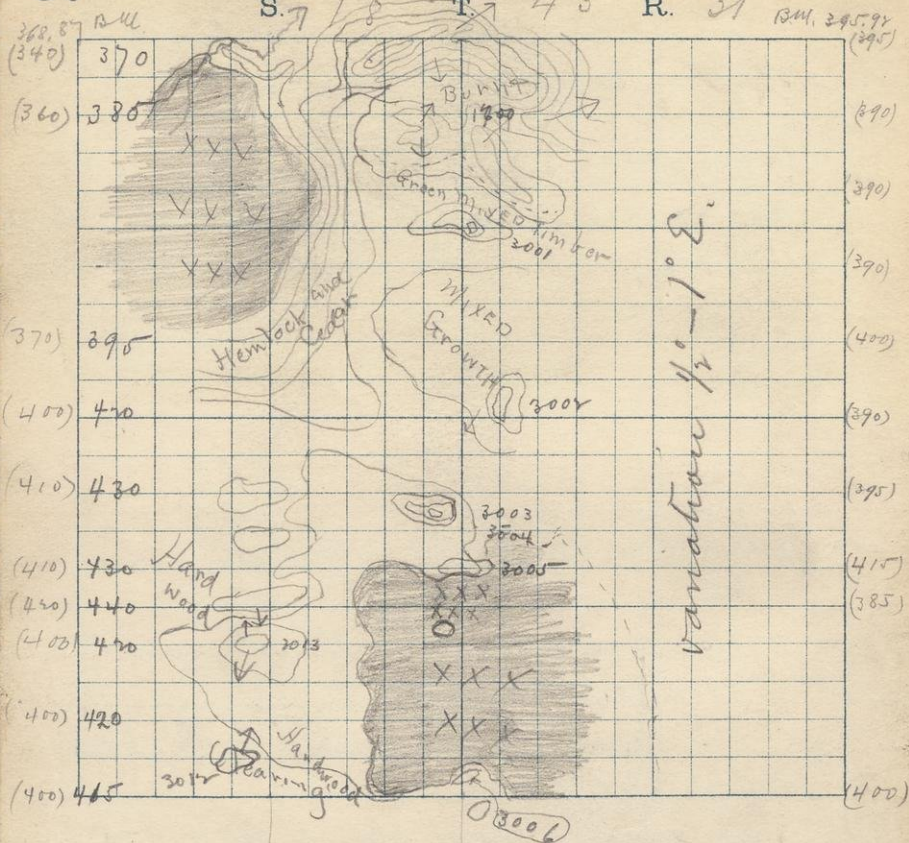
43

R.

31

B.M. 295.91

(395)



Wierth.
(not on page 54)

Quarter line.

variation 1/2-1/3

Nov 8 Cloudy.

51

Running south on quarterline of 18.

B.M. 1240: 92 Anroid (395) 0 = 48.855' 7' ⁴⁵

Mixed burnt timber.

1000s (390) mixed timber almost swamp. 8' ³⁰

1996s stretch intermediate line at
1/4 stake 9' ¹⁵

1700 1800 N 1000 W secor 18 outcrop of greenstone.

3001 1530 N 1100 W secor 18 outcrop of nodular greenstone.

3002 1100 N 900 W secor 18 " " amygdaloidal g.

3003 } 760 N 1030 W secor 18 outcrop of amygdaloidal greenstone.

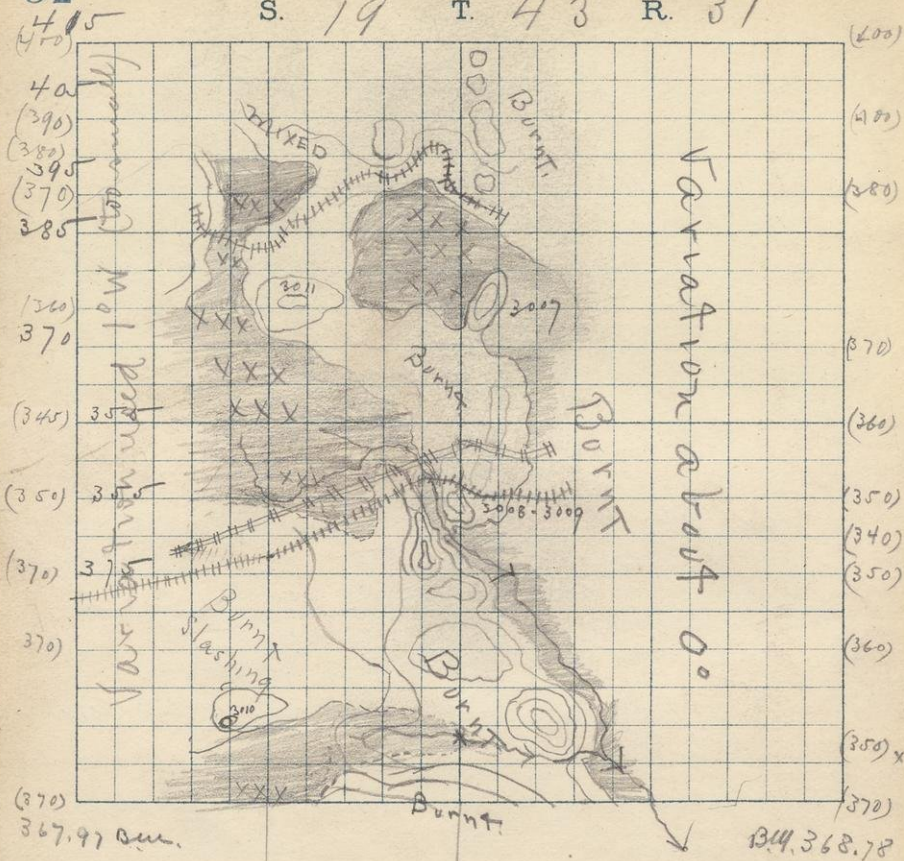
3004 } one schistose + the other massive. They
lie side by side and apparently pass
one into the other.

3005 600 N 1000 W secor 18 outcrop of amygdaloidal
greenstone.

3006 45 N 800 W secor 18. Outcrop of banded
amygdaloidal greenstone.

52

S. 19 T. 43 R. 31



Running south on quarterline of 19.
 Aneroid (400) 365-400s supply road.

1050s. R.R. track. (360) 10²⁰

1175s. Town road,

1987s. stucc benchline at 1/4 state.

R.M. 368, 78. Aneroid (371) 11⁵⁰

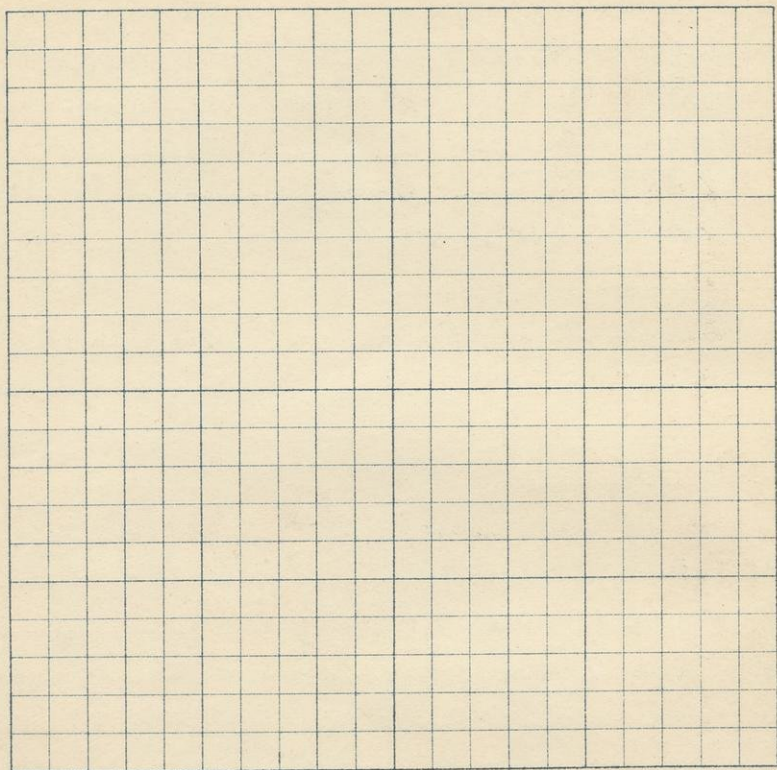
3007 1300N 1000W Sec 19, banded greenstone
 strike of bands N-S dip 76° W.

3008 770N 1000W Sec 19, greenstone, amygdaloidal
 and brecciated? with large secretions or
 bodies of cherty quartzite.

S.

T.

R.



30

30

Running north west eighth of 19.
(plotting page 52)

B.M. 367.97 Aneroid (370) $\phi = 78.86'$ 11.20

Cedar Swamp.

630 n Town road, (370) 745 n R.R.

1000 n cedar spruce + tamarack swamp 11.20

1447 n supply road

2026 n (400) stretch intermediate line

95 W of $\frac{1}{8}$ stake

1.00

3010

200 n 16 n w S E cor 19. outcrop of granitic breccia.

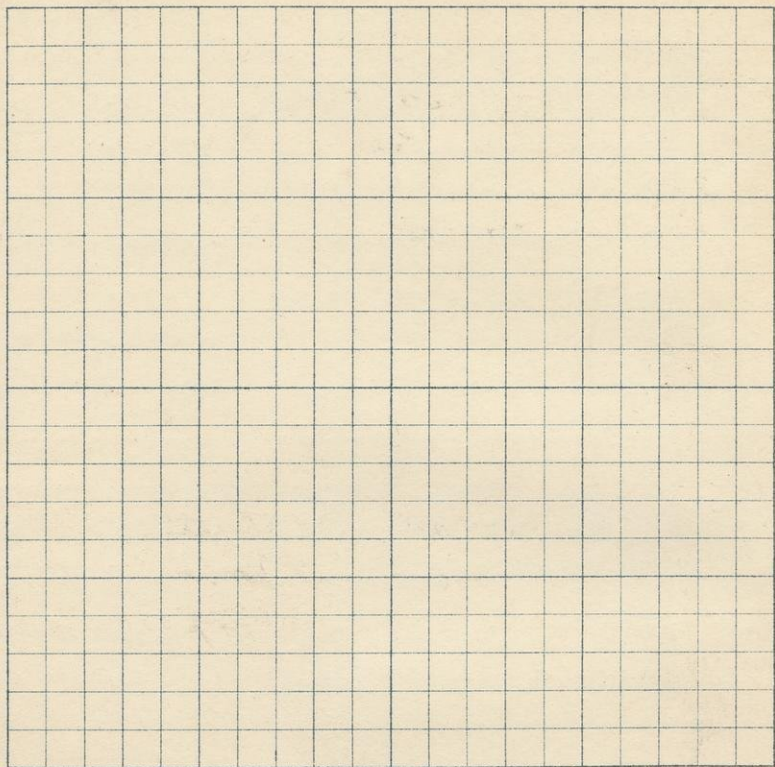
3011

1275 n 15 n w S E cor 19 " " "

S.

T.

R.



301

3013

3014

Running north on west eighth of 1 P.
 Anuroid (400) homesteads clearing
 (plotting on page 50)

1000 u (400) fair-good hardwood 1.35

2007 u (340)

Bill. 268.87 Anuroid (340)

7.15

- 3012 130 u 150 w secor 18. Outcrop of greenstone
 (pseudo-conglomerate) or breccia
 3013 400 u 1500 w secor 18. outcrop of greenstone
 3014 1900 u 1500 w secor 18 " " "

58

384.32 Bul

S. 13 T. 43 R. 32

383.13
(380)

(400)

385

(400)

385

(400)

405

(410)

395

(400)

390

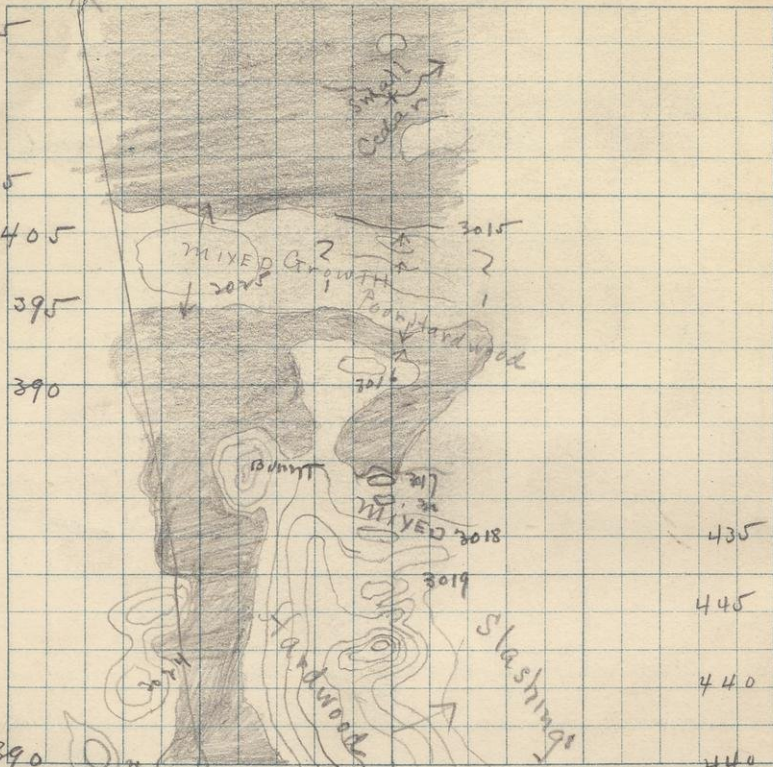
(400)

390

302

e-eight

e section line



(370)x

(380)

(400)

(410)

(420)

435 (440)

445 (450)

440 (440)

440 (450)

30

30

30

30

30

30

30

30

30

30

Nov 9th Cloudy,

59

Running south on east line of 13
(43-32) East range line

B.M. 383.13 Anceid (380) = 29.05' 8.45

Cedar swamp. large variations local,

1000 (420) fair hemlock growth 9.40

2000 (450) found intermediate line at corner 10

Running north on east eighth of 13, (43-32)

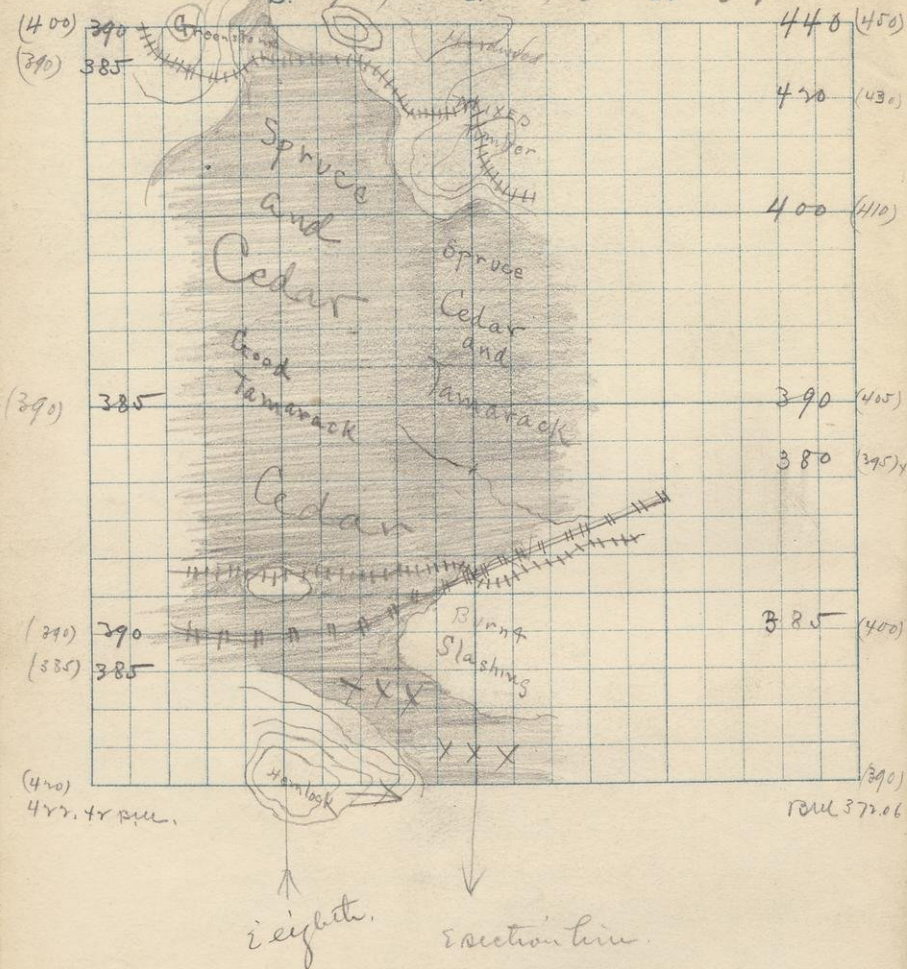
2039 n stuck benchline 213 W of 1/8

B.M. 384.82 Anceid (400) 3.10

3015	1420 n secor 13 outcrop of greenstone.			
3016	1050 n secor 13	"	"	pseudo con
3017	770 n secor 13	"	"	"
3018	400 n secor 13	"	"	"
3019	500 n secor 13	"	"	"
3020	200 n secor 13 high	"	"	"
3023	750 W secor 13	"	"	"
3024	250 n 700 W secor 13	"	"	"
3025	1270 n 500 W secor 13.			
3026				

The wild class result from following
the direction to run even through
variation country whether fair or cloudy.

S. 24 T. 43 R. 32



Running south on east line of r4
(43-82) East range line,
Hardwood, 10. 25

10005 (405) Spruce cedar + tamarack swamp. 11. 10

14858 R.R. + Town road crossing.

20048 (390) stink benchline at corner.

B.M. 372.06 Ameroid (390) 11. 45

Running north on eighth of r4 (43-82). B.M. 492.42. 12. 15

10002 (390) 1. 00

" stink intermediate line.

of 1/8 stake 1. 50

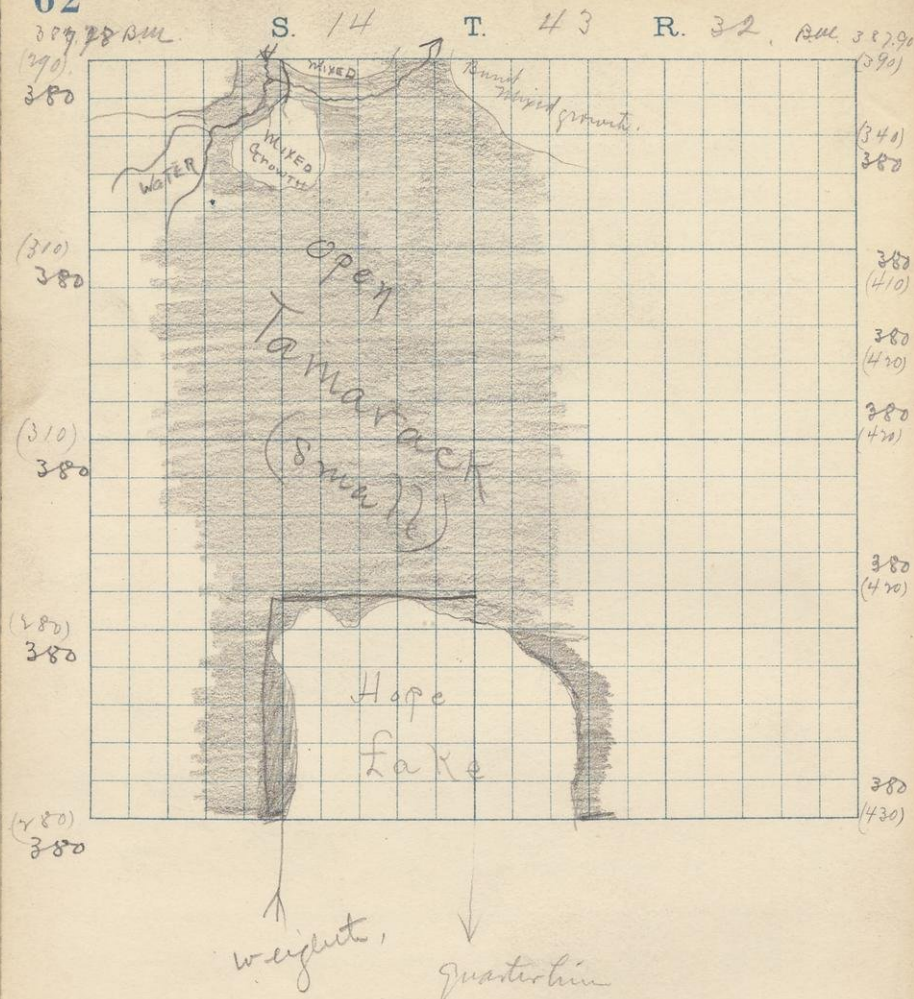
3021 1560 N Secor r4 outcrop of greenstone breccia

3022 160 W Secor r4 " " "

309. 28 B.M.

T. 43

R. 32 B.M. 7820



Nov. 10th Cloudy.

63

Running south on quarterline of 14.
B.M. 387.90 Ameroid (390) = 18.82. 8.10

Burnt mixed second growth.

10005 (420) open tamarack. 9.20

20038 (430) " " 9.30

Running north on west eighth of 14.
Open tamarack all the way,
closed at 1.50

B.M. 387.48 Ameroid (280)

I have interpolated according to my
judgment. Ameroid #9 was used.

64

S. 23 T. 43 R. 32

380
(430)(380)
380

Hope Lake

380
(360)380
(300)Open
Tamarack
(small)380
(340)380
(330)380
(340)390
(350)MIXED
small
Growth380
(340)383
(380)

382.7 r b u

open
Tamarack380
(340)

383.50

weight Guadalupe

Run south on quarterline of 14.

Open tamarack swamp all the way.

19768 (340) stink hunklin 87 W of 1/4 stake.

Bull. 383.50 Ameroid (340)

11.10

Run north on west right of r3

Bull. 383.77 Ameroid (300)

11.15

Open tamarack almost all the way
soon (no line)

12.15

7.30

66

396.54 Bul
(400)

S.

15

T.

43

R.

34

399.95
(400)

(380)

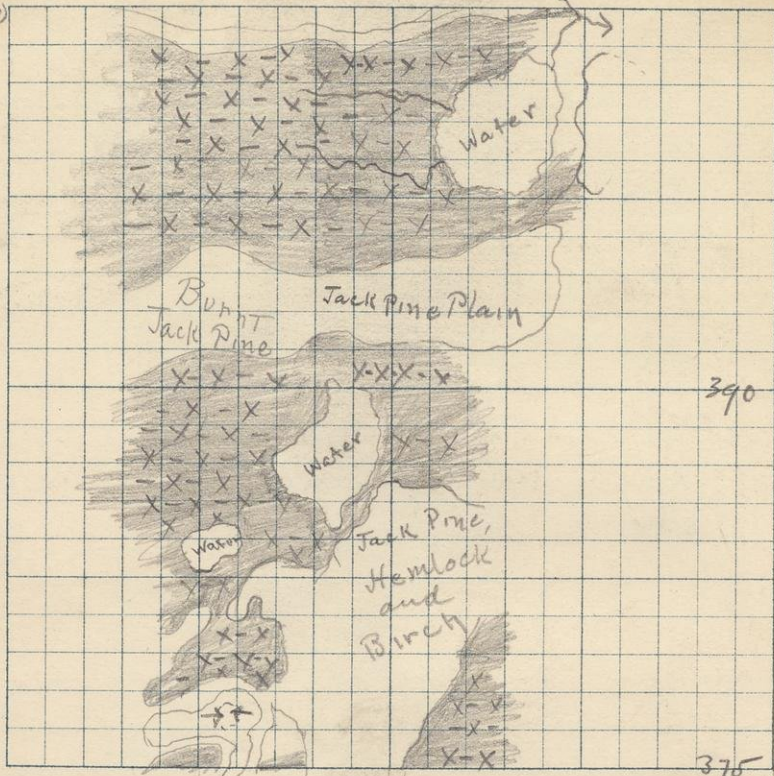
390 (400)

375 (400)

(380)

(385)

(380)



elevation

section line

Nov. 10th. Cloudy.

67

Running south on east section line
of 15 (43-34).

B.M. 399.95 Aneroid (400) 7.40

1000 s (400) open tamarack 8.25

2001 s (400) mixed low-land growth 8.20

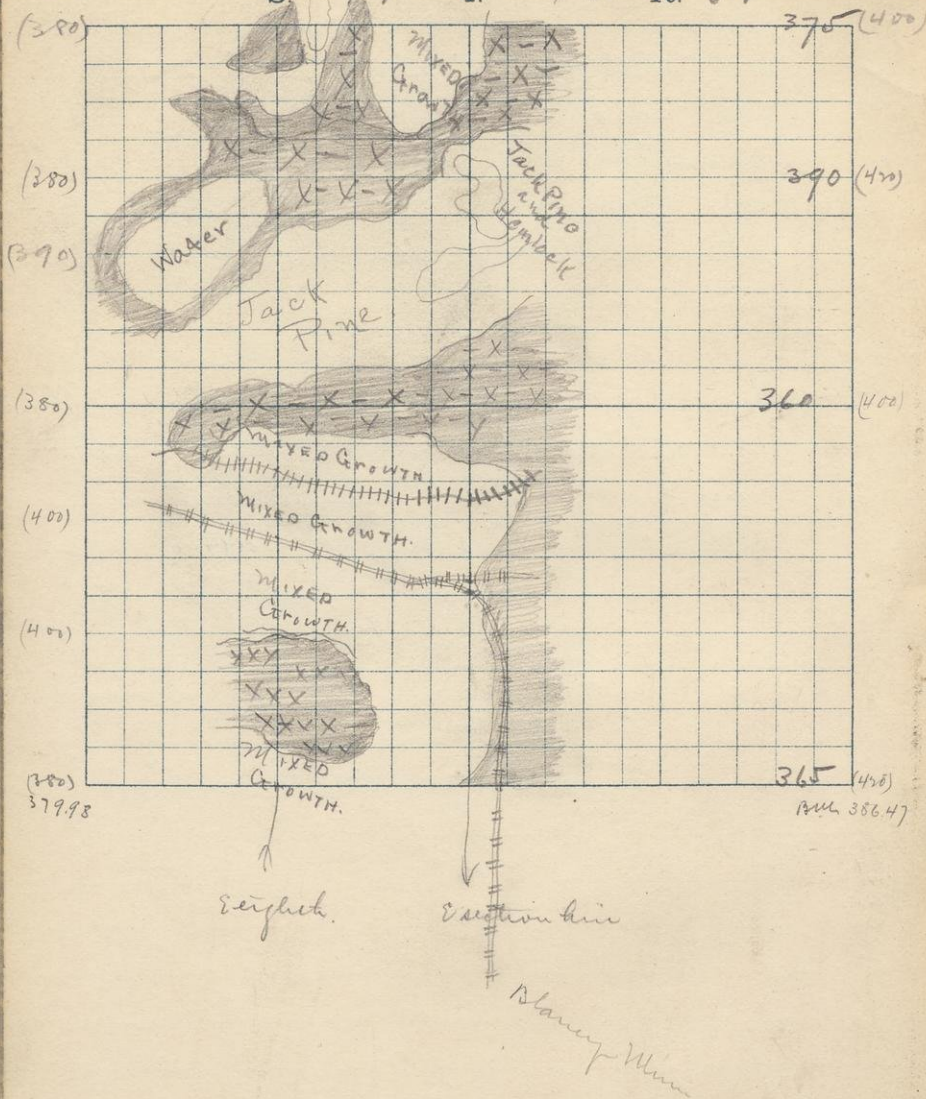
struck intermediate line at corner

Running north on east eighth of 15. 11.15

1000 n tamarack swamp 11.30

2000 n burnt jack pine plants

B.M. 396.74 Aneroid (400) 12.15



Running south on east section
line of r/r (43-34)

1000s. (400) open tamarack 8.55

1255s town road, R.R. 1475+1500s.

2040s struck benchline so W of corner.

Bell 386.47 Ameroid (420) 9.20

Running north on east eighth of r/r.

Bell 379.98 Ameroid (380) 0-28.92 9.50

Mixed growth.

660n (400) R.R. 810n. town road.

1000n (380) open tamarack swamp. 10.45

2000n (380) found no line so continued north 11.20

70

380.75 Bul
(380)

S.

6

T.

43

R.

32

399.74
(400)

(380)

Jack Pine.

x x

Mixed
Cedar
and
SpruceO₂₃Pine
and
Hemlock370
(340)

385

(380)

(370)

Wright.

Quarterlin.

Nov. 11. Snowing.

71

Running south on quarter line
16 (40-32)

B.M. 299.74 Aneroid (400) = 48.74 8.20

Tack pine claim.

10000 cedar + tamarack ~~stump~~ 9.00

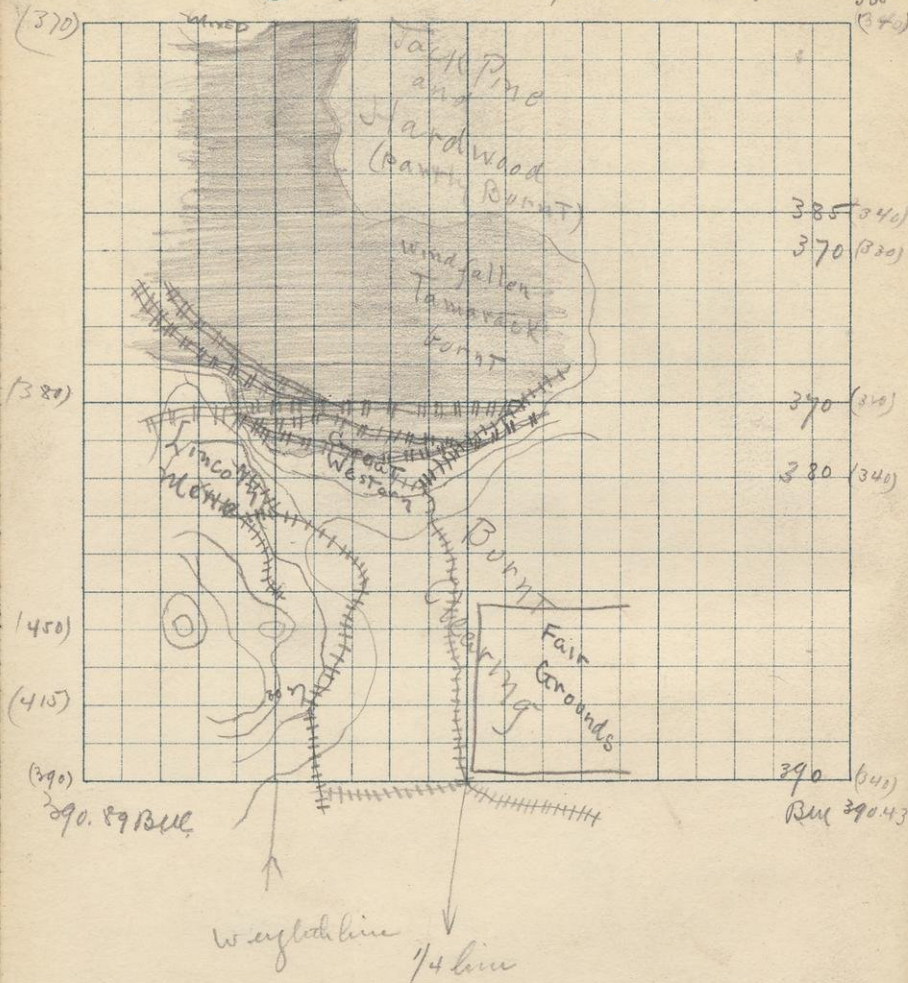
20018 stuch lumbermans stake 9.40

No line.

Running north on west eighth of 16.

3086 1500 1000 W sec cor 16. outcrop of greenstone

3088 3500 1500 W sec cor 16 " " "



Running south on quarterline of 21.
Partially burnt jack pine & hardwood.
1000s windfallen tamarack partly
burnt. 40.10

2000s struck benchline at 1/4.

Bill. 390.43 Aneroid (340)

10.30

Running north on west eighth of 21

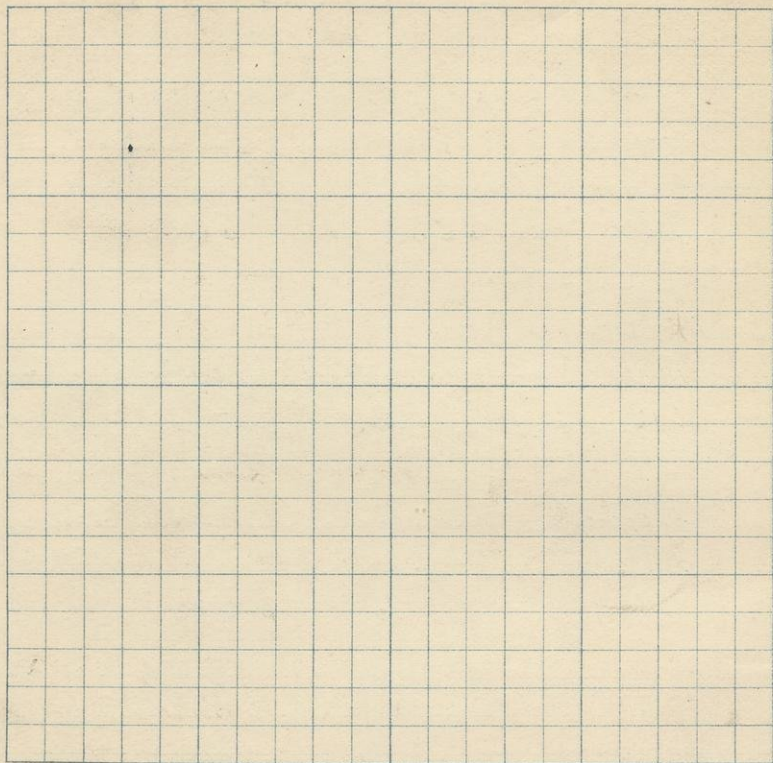
Bill. 390.89. Aneroid (390) = 298.805'

Bunk clearing.

2000 n no line so continued on
our line. (found miners stake) 100

3027

245 n 1520w outcrop of slate no bedding
made out.



from page 75

From what I could pick up I should
judge the visitors report to have a
fair flavor of truth.

Great Western Mine, N 27 S W 775

Footwall is a banded slaty quartzite,
vertical shaft, general
8 levels, 400 ft lowest, holding the
same ore.

I was not allowed to go into this mine
and the impression received was that
the less I knew about the mine the
better it pleased the captain. He
told me, however that there was
no regular formation i.e. neither
foot or hanging wall and no large
deposit of ore. What ore there is
occurs in small pockets in "quartz
or quartzite" or in a banded slaty quartzite.

The shaft is vertical and is sunk
in the centre of the mass of pockets
and therefore the succession of rocks is
unknown. (Arcimston was found by me $\frac{1}{2}$
mile north + 300 ft of mine also 1400 paces
due north of mine.) Slaty outcrops between
Great Western + Parib River Mine also
back of G.W. (i.e. south). The mine is
considered to be a very wet mine.

The refusal to allow my visiting the
drifts arose from the fact that some
visitors had said the ore was giving out.

76

375.20 Bul.
(380)

S.

17

T.

43

R.

32

382.82
(380)

(360)

(380)

(360)

(370)

(370)

(355)?

(390)

(390)

(450)

(490)

(460)

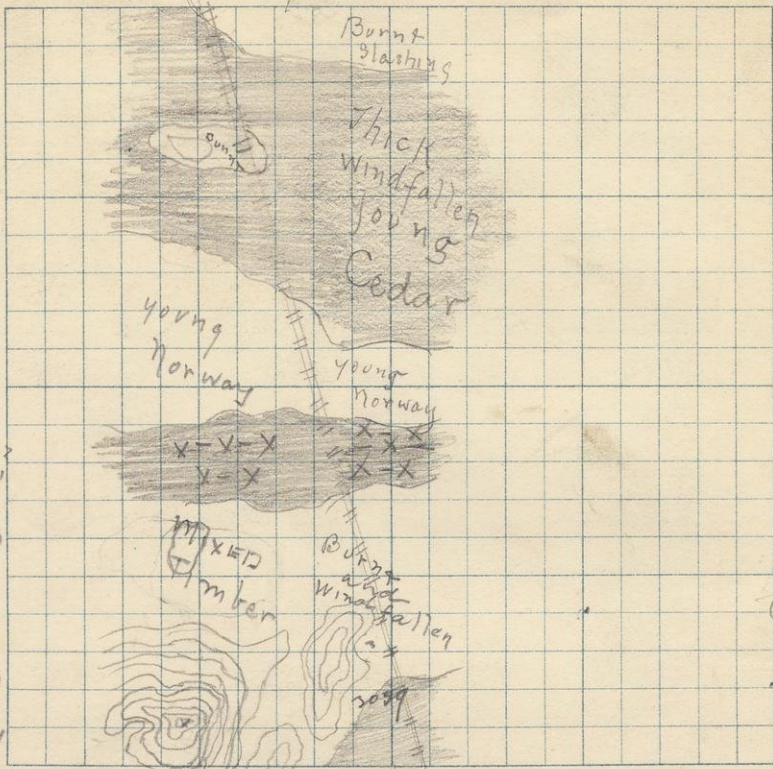
(370)

(380)

(370)

(380)

(370)



Elev 7 17

Running south on east line of 17 (43-38)

B.M. 387.87 Aneroid (380) $\delta = 7.91$ 7.40

Barren slashy.

200-900s very stuch young cedar swamp.
windfallen (good time on acct. of logging road on line)

1000s young norway (380) 8.50

1875s stuch intermediate line 20 W of
corner. (must have dropped a hundred in
last half mile (C.B.M. many line) 8.30

Running south on east right of 17.

B.M. 375.30 Aneroid (380) 8.30

mixed swamp

1000s. young norway (370) 9.00

2000s stuch lumbermans stake 10.00

3029.	(150) 300N 25W S2E cor 17	outcrop of greenstone
3030	670N 500W S2E cor 17	" " slate.
3031	300N 500W S2E cor 17	" " greenstone
3032	500W S2E cor 2E cor 17	" " "

78

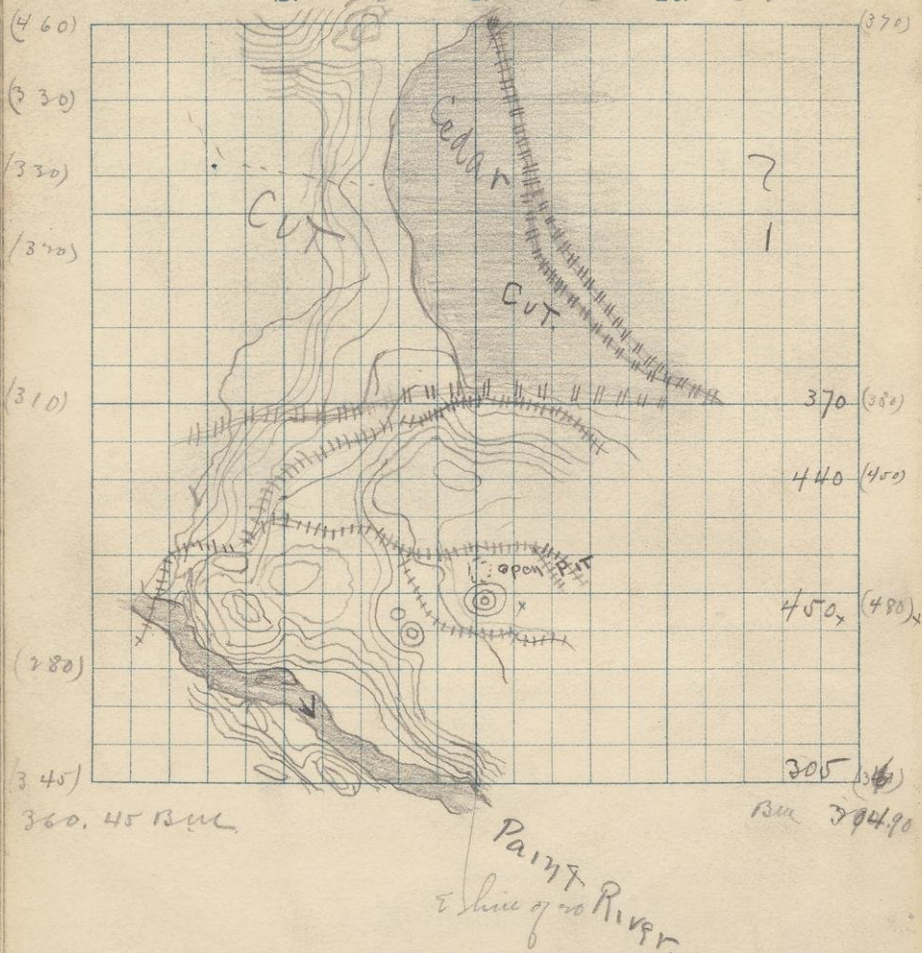
S.

T.

43

R.

37



Running south on east line of 20 (43-32)
 975 S. R.R. (380)
 10000 (380) cleared land. 9. 15

1970 S. (360) Paint River. Bluff on other side
 B.M. 304.90 Aneroid (360)

Running south on east edge of 20.
 Aneroid (460) mixed timber.

1026 S (310)

1600 S (280) struck the Paint River.

2014 S (345) struck bench mark at $\frac{1}{8}$.

B.M. 360.45 aneroid (345) 11.45

2033 1675 N 500 W S.E. cor 20 outcrop of greenstone

I can't contour the eighth line so
 as to have the county surface &
 the aneroid read the same
 in the back.

80

S. 18 T. 43 R. 3

Area 367.09

391.49

(380)

390

Cleared

X-Y

(380)

(370)

(380)

380

360

Cross
Lake

X-Y

(370)

(390)

(400)

(385)

390

X-Y

2054

Old Bunning

(391)

(370)

(370)

(380)

380

Old Bunning

Old Bunning

Quarterline

Nov. 13th Cloudy.

81

Running south on quarterline of 18
B.M. 367.09 Aneroid (370) = 2934' 7.²⁰

Burnt clearing.

1000 s tamarack swamp 7.⁵⁵

2000 s (370) Old burning + young growth 8.²⁰

Running north on west eighth of 18.
Aneroid (380) Burnt pine stands 10.²⁰

835 N Lake (380) 10.⁴⁵

2000 N stunted birchbark at 1/8 mile 11.²⁵

B.M. 391.49 Aneroid (380)

3034

1050 N 850 W 8200 18 miles top of granite

82

S.

19

T.

43

R.

32

(380)

(370)

(360)

(375)

(380)

(370)

(375)

(345)

(350)

(360)

(360)

(380)

(440)

(450)

(460)

(440)

(485)

(450)

(500)

(460)

(505)

(470)

Old Burning

Burnt
Pine
Plains

Hardwood

Cint
Cut
Hardwood

504.73 Bu

Bu. 475.03

weight.

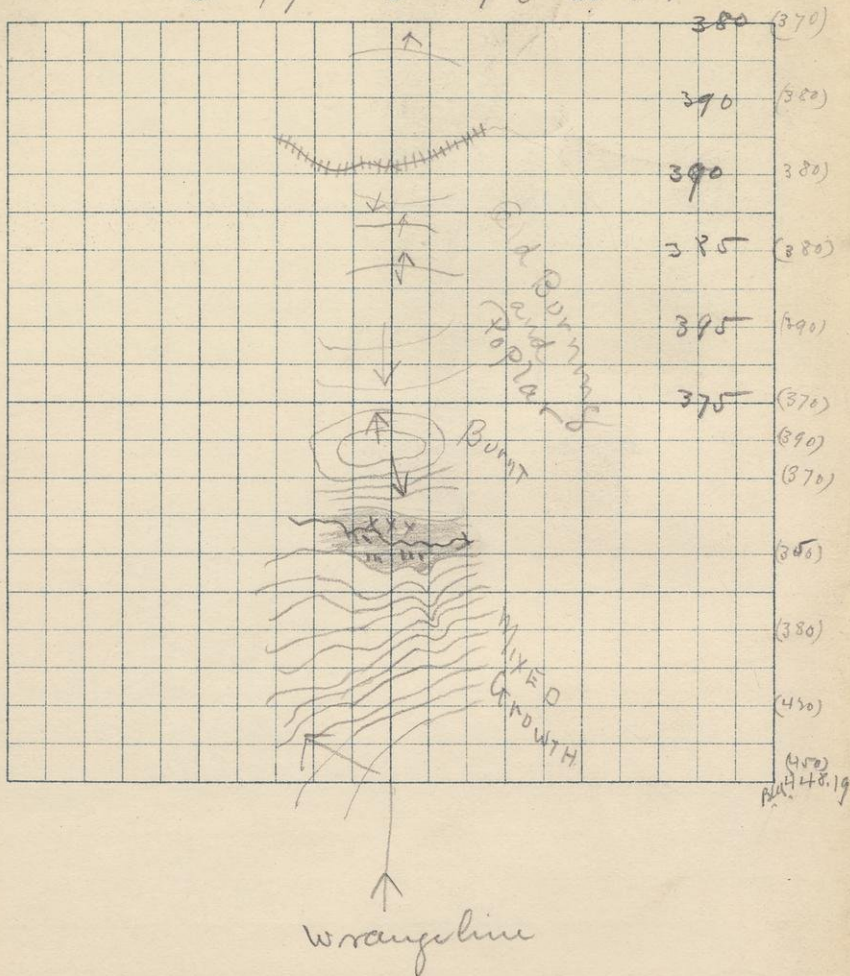
quarter.

Running south on quarterline of 19.
 Aneroid (370) Old burning 8.²⁰
 1000 s (370) Old burnt slashings 8.⁴⁵
 1995 (470) stench beneath rd w of 1/4 state
 Bull. 475.03 Aneroid (470) 9.¹⁰

Running north on east eighth of 19.
 Bull. 004.73 Aneroid (505) 0 = 19.30 9.³⁰
 1000 n (380) burnt pine plains 9.⁵⁰
 5000 n (380) burnt pine plains 10.²⁰

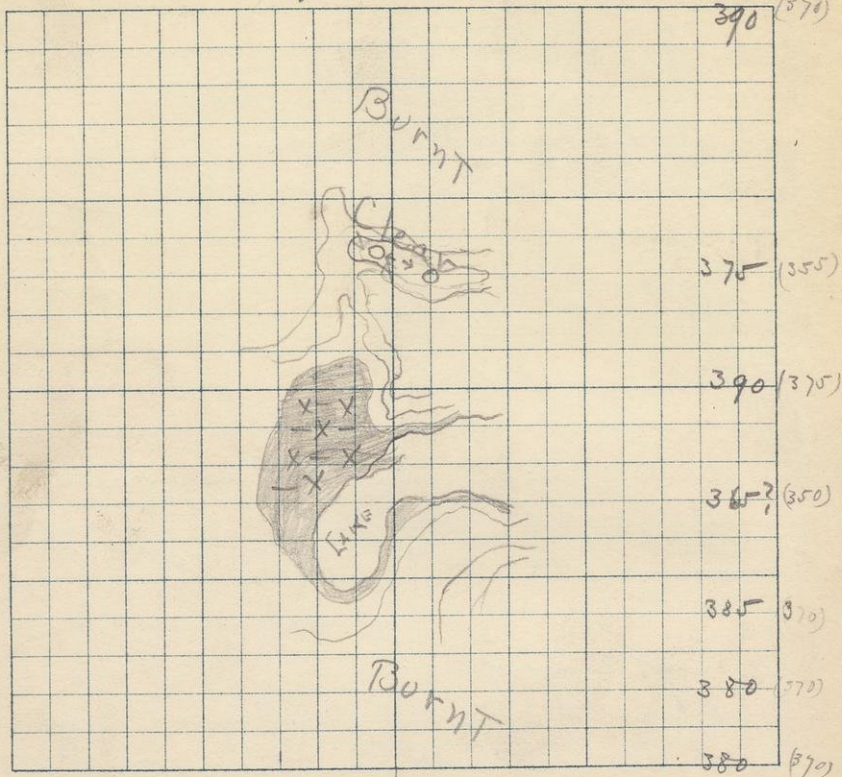
7035- 1370 w secor 19 outcrop of slate trending
 N 75 W. no bedding made out.

S. 19 T. 43 R. 32



Running north. on west line 719
 43-82 West range line.
 B.M. 448.19 Aneroid (450) 13.50
 Mixed growth.
 1000 ft (370) Hunt mixed growth 1.15
 2000 ft (370) " " " 1.50

S. 18 T. 48 R. 32



Wanganine

Running north on west line of 18
43-32 (west range line).

Ameroid (370)

1000 u (375)

2.35

1908 u (370) struck benchline 202 of L.S.S.
corner.

Bill 392.72 Ameroid (370) 3.00

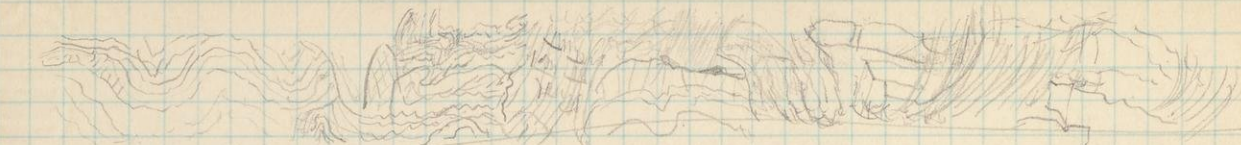
Found beany tree (gort) at 1990
north on our own line.

Finis 1891

Blank Pages

88-117

Skipped



50 paces E + W



