



LIBRARIES

UNIVERSITY OF WISCONSIN-MADISON

Township 44 north, ranges 31 and 32 west, specimens 31212-31270. No. 217 [1891]

Sanford, Samuel, 1865-1927

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

<https://digital.library.wisc.edu/1711.dl/BNQXLA5WH5Y3D83>

<http://rightsstatements.org/vocab/InC/1.0/>

For information on re-use see:

<http://digital.library.wisc.edu/1711.dl/Copyright>

The libraries provide public access to a wide range of material, including online exhibits, digitized collections, archival finding aids, our catalog, online articles, and a growing range of materials in many media.

When possible, we provide rights information in catalog records, finding aids, and other metadata that accompanies collections or items. However, it is always the user's obligation to evaluate copyright and rights issues in light of their own use.

217

LAKE SUPERIOR SURVEY

Sanford

Indet

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.




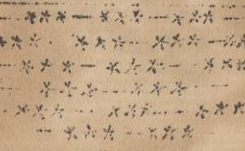


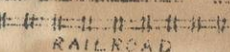
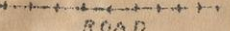
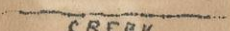
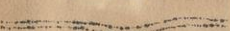




It will be the constant business of the geologist to search for outcrops. All hills within a reasonable distance of the course of travel will be examined. Oftentimes upon the steeper slopes of a hill a rock surface is covered with a coating a few inches thick of moss, leaves or vegetable mold and can 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° E., *Dip*, 68° 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>PINE OR HEMLOCK AND HARDWOOD</p>	 <p>CEDAR SWAMP</p>
 <p>SPRUCE OR TAMARACK SWAMP</p>	 <p>MARSH</p>	 <p>RAILROAD</p>  <p>ROAD</p>  <p>CREEK</p>  <p>RIVER</p>	 <p>NO STRUCTURE</p>
 <p>↓ 55° S. NEARLY MASSIVE</p>	 <p>N 35° E 55 62° E SHALY OR BEDDED</p>	 <p>783° 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				

217

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

P. Sanford 1
Note Book 2

Geologist

P. Sanford
Compassman

Steve Louney

SPECIMENS 1212-1270

TOWNS 44-31
44-32

2

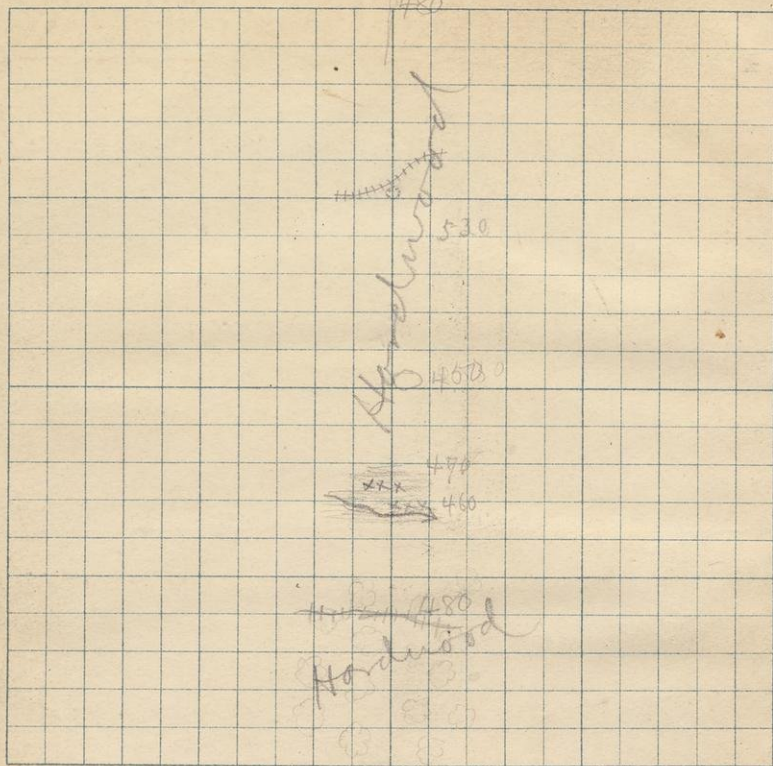
S. 3

T.

44N

R.

31W



Rarely seen 500
700 cloudy to use dial

W 1/8 of 3

[Signature]

E sec 9 B M on cor 37 8.10³
1/8 5 in pole 307 ft E 405.83

June 16, took up old line (See book 1)

400 mixed timber
400 mixed timber, some 28.525

good hardwood

470 edge of a N slope 28.53

660 small creek 4 ft flows E

660 28.548

660 - 790 cedar swamp

800 28.535

900 thick pine hard
wood, chiefly maple

1030 small pond, 60 ft wide 28.495

1070 tote road - in air shape 10 ft high

1200 28.47

1300

1400

28.57

1500

Struck line at 1520 paces

125 paces E of 1/8 stake

1540 tote road, good, runs
N + S.

S.

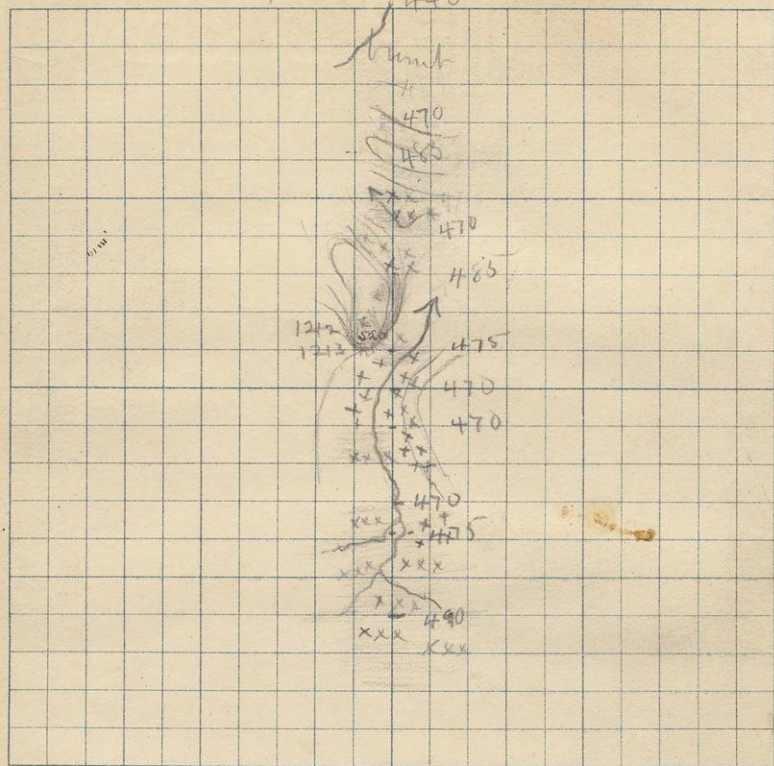
4

T.

44N

R.

31W



On section line of 4

June 16

Top is South

L. R. cloudy

then clear

9:30 Am found 539

B. M. 484.25

Aneroid 7 28.52
1600 ft - 28.4 8.20 am

Going S running 5° E

B. M. on section line 500.81

830: Am aneroid 7 500,

good mixed timber, some fine
hardwood

200 Edge of swamp

400 Cedar Swamp (490)

500 creek, 2 ft wide, flows E

550 creek 4 ft flows SW

600 a few good pine

625 creek 2 ft wide flows SW (475)

700 dryer ground, Spruce mixed
timber (470)

710 creek 4 ft wide flows SW

715 same creek flows SE, then SW

750 same flows SE, then SW

800 edge of swamp

840 some fine pine, running

20° variation

950 mixed timber, fine pine 470

950 9.27 1 hr

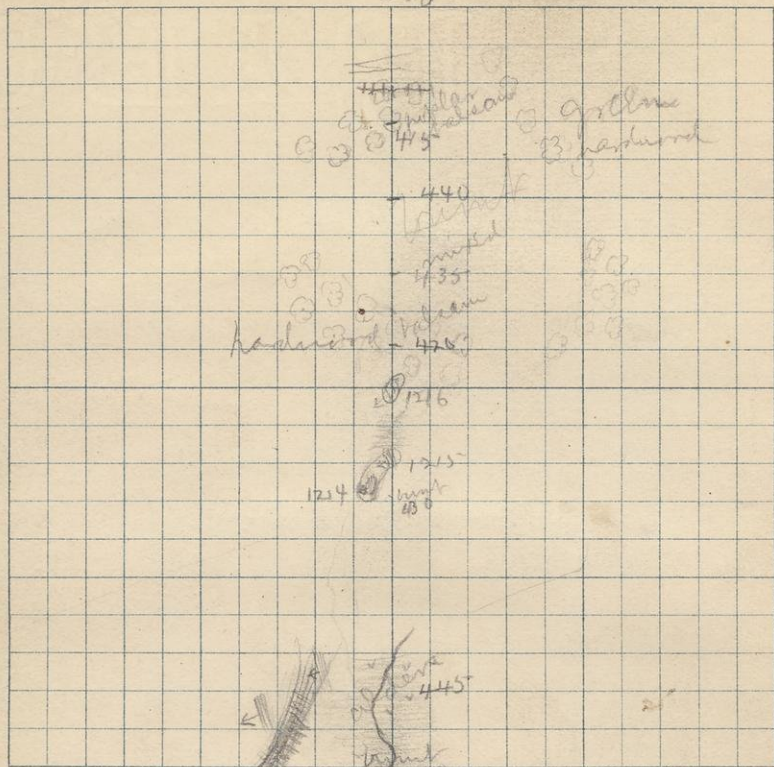
1000 wet ground, cedar, spruce

pine, aspen, and pine cedar 470

S. 9

T. 44

R. 31



Section line of 99

1212 is from N. E. end of ridge
1213 is from S. W. "

1850 paces 11, 18 Am 120 E

2000 " 11, 26 12, 30 E

1000 running S. 3° E variation 7

10 1020 creek 5 ft wide SW, + SE

1070 area 25 acres W of line 8 5470

1100 Splendid thick pine 475

1175 - 1200 outcrop, covered with

1212 moss + leaves, timber growing on

1213 It. may be 300 ft long + 15 ft high
breadth hard to say, hill forms
edge of hill - over 50 ft

r. Overrid at N end 520

Steep slope - little cliff - then dis
appears under ground

No 1212 A 900 W 1950; see 10, No 1213

N 800, No. rec 9

at end strike N 10 W (about) dip

nearly vertical 65-75

strike N 10 - 20 W

at N end N 15 E; dip 62 E

looked at outcrop 40 minutes

1300 10.55 am thick pine 483

1400 older swamp 470

1400 11 am 40 E

1410 creek 2 ft wide 85 SE

1450 cedar swamp

1600 mixed timber, good hardwood 485

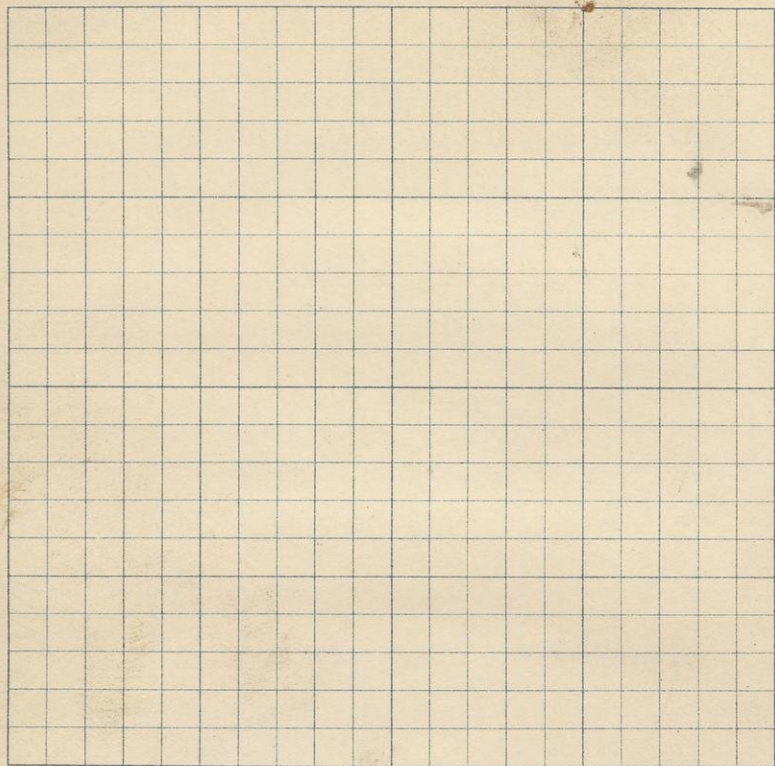
1700 edge of lake, brush timber 470

1815 struck line at 2018, 125 paces W
N corner.

S.

T.

R.



Strike N 20-25 E
 dip about 80 E
 Sometimes
 broken



- 4 3 2 1
1. blue gray quartzite
 2. light + greenish epidote, with in
 3. blue + greenish quartz

creek 6 ft wide 10 ft E of corner 9
11.34 Am E flows SW (H40)
12.03 corner (K50)

1016 Creek; 1050 Laine Creek

100 Open, burnt swamp

100, 12.10 Run

✓ 10.15 E

200 alders (H45)

1400, alder swamp - creek

200 paces E of 1200 is SW end
of large outcrop seen yesterday
Strike and dip

100 paces N.E. fine exposure

15 ft across 40 ft high, runs

N to where seen yesterday

Layer contorted, containing in
regular veins & inclusions of
quartz & jasper, (see dep. page)

710 burnt

430

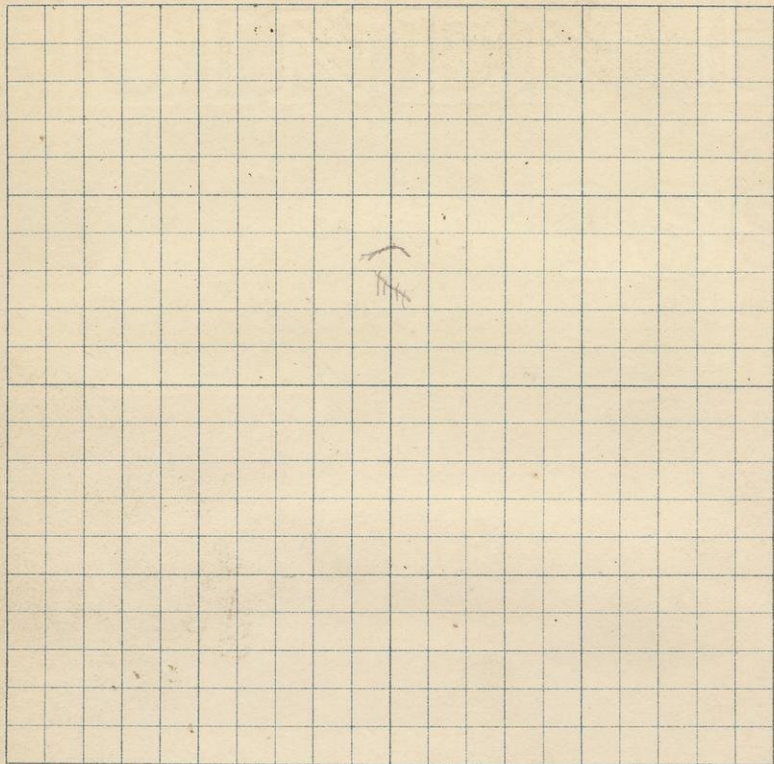
710 1.04 P.M. variation ✓ 100°

N 1214 N 1240, W 1950 E 10. outcrop
greenish grey quartzite (?) 20 paces

1214
lost

road 50 long 15 ft high, ab
partly continuation of one above
Strike N 10° 15° E, or N 10° W; dip about 80°

3 darker grey with parallel veins of quartz
4 greenish grey quartzite with contorted
thin seams of quartz



Bench mark at corner 378, 10
Aneroid no 7 380, 0

1215 No 1215, N 1240, W 1960 sec 10, outcrop
 20 paces long, 10 broad, 6 ft high
 1.39 PM, vination 12.05
 870 open marsh

1216 No 1216 N 1035-960, W 0, sec 9
 100 ft broad, 15 high

1216 greenish grey quartzite strike
 + dip hard to tell, strike
 strike may be N 35, E + dip
 about 80 E

1125 1.45 PM vination 230 E

1125 balsam thicket 420

1200

1200

1400 2.08 PM

1500 mixed timber

1508 2.15

1600

1700 young poplar shemlock 465

1772 tote road, good

1772 2.27 PM vination 22.30

1800 young hemlocks + birch, thick
 brush, progress slow

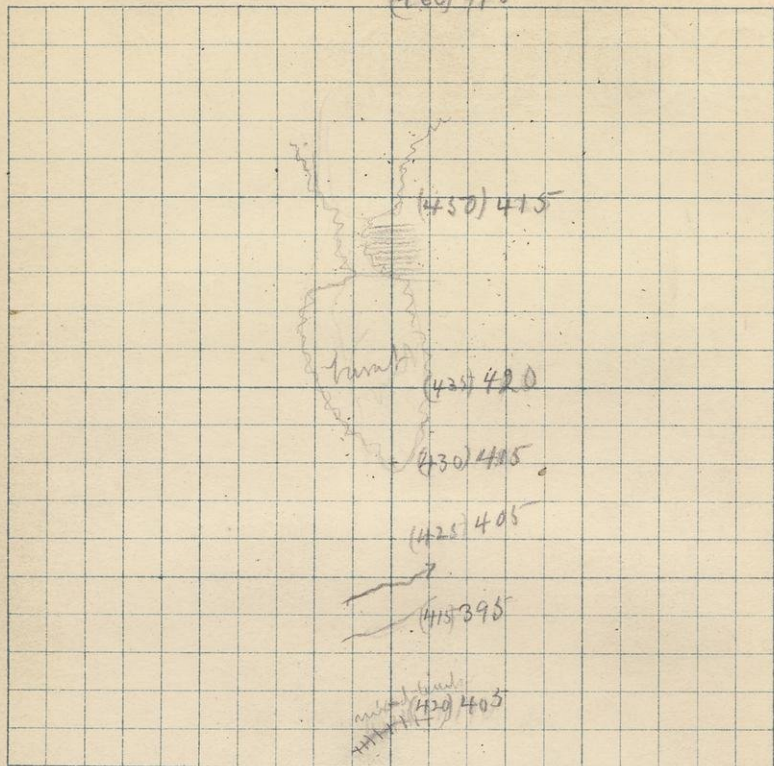
1870 edge of slope

Struck line at 1900 paces
 50 paces E of corner

S. 9

T. 44
(460) 415

R. 31



R 1/5 of 9

going North

3-6 = 3 h = 11-30

60

15 high
72 high

Bench mark 403.83

Anroid 7

420

Time 3.17 variation 5°E

70 to road - good

167 mixed timber chiefly hemlock, ^{low}

good timber

420

241 pine cut 3.27

8°E

400 spruce bent + poplar

415

3.30 PM

90°E

480 creek, 2 ft wide flows W

600 young spruce & poplar

425

3.37 PM

8.30°E

700 thick young balsam, - pro-
gress slow

800 humb. spruce

432

880 3.45

8.3°E

1000 humb. poplar, + green, very (435)

had trailing spruce

1100 humb. white spruce

(430)

1200

humb. spruce

1250

4 PM

8

80°E

1300

green spruce

1500

1480 humb. spruce

1575

8.36°E

1575

8.452

1700

S.

4

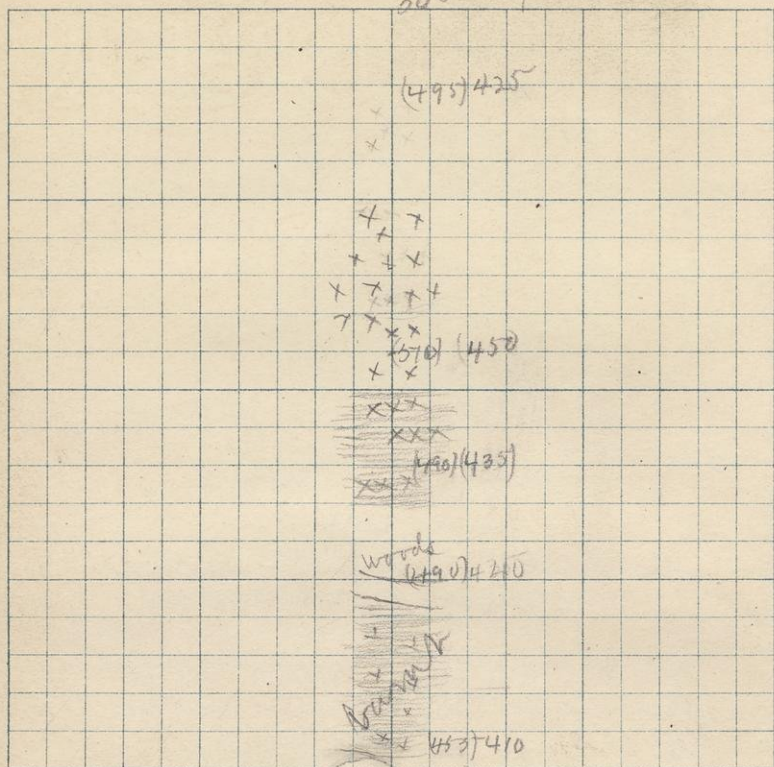
T.

300

48

R.

31



Bench mark 488.52

2.000 7 31

Struck line at 226 paces
15 paces N of $1/8$ stake

$1/8$ stake

4, 36 PM x

460

8° E

30 cedar if burnt spruce & tamarack
swamp

(453)

226 burnt 4, 45

80 L

430 slope up burnt

450 500 edge of wood

440

700 cedar swamp

800 cedar swamp

(490)

900 swamp

1000 swamp

1100 mixed timber some pine (510)

pine

1370 Fine thick heavy pine

1500

1600 mixing with 7° 75° E

1700

1800 cedar swamp 443

1900 thick heavy pine cedar

1900 limit cedar & pine

2000 st

Struck line at 2040 paces
53 paces E of Bench mark

530 bench mark
and 700

498.02
670

June 18

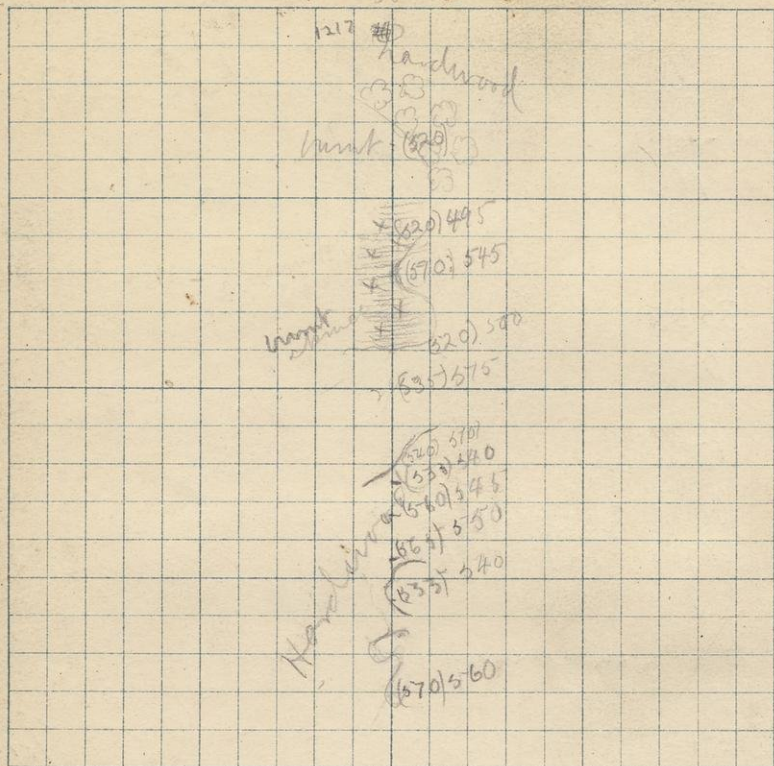
17

Bench mark $\frac{1}{4}$ stake	576.28
Avoid no 7	28.35
8.18 Am variation	78.30
11.05 = 28.18	5.01
116 8.25	5.30
Left timber - Spruce & hemlock or balsam - pine cut recently	(576)
200	(530)
350	(520)
500 in swamp	
1400 edge of swamp, burnt spruce & tamarack	
800 edge of swamp	508
850 top of knoll	515
900 edge of knoll	
1100 in swamp 8.55 AM	308
12-1300 edge of swamp 9.05 AM	5.45
14 1512 9.08 AM	9.45
1512	520
16 56 burnt timber	525
16 56 9.13 AM	906
1700 narrow strip of swamp	540
18 1740	520
2110 Struck line at 2010: 100 paces E of $\frac{1}{4}$ stake	

S. 8

T. 44

R. 31



10 (570) 520

144 line of 8

Top is South !!

114

8° 45' - 19

1/4 stake fine maple birch
pine all cut 530

200 fine thick maple 570

235 9.48 AM 7.30

302 pine all cut 570

338 946 AM 7.30

335 575

400 fine thick heavy maple

435 10.01 AM 7.30

435 5.53

535 10.04 7.30

575 565

676 10.10 7.30

660 fine maple 360

700 numerous boulders of coarse granite 540

800 10.19 7.30

granite (other close trees) + boulders
prenching 12-01/2 1208-1220.

1000 535

1100 1031 AM 8.30

1100 edge of burnt spruce ^{volcanic} cedar ^{cleaning} 520

1100 570

1300 /

1400 1048 AM ^{dark} burnt spruce ^{volcanic} cedar 800

1400 numerous boulders of granite 520

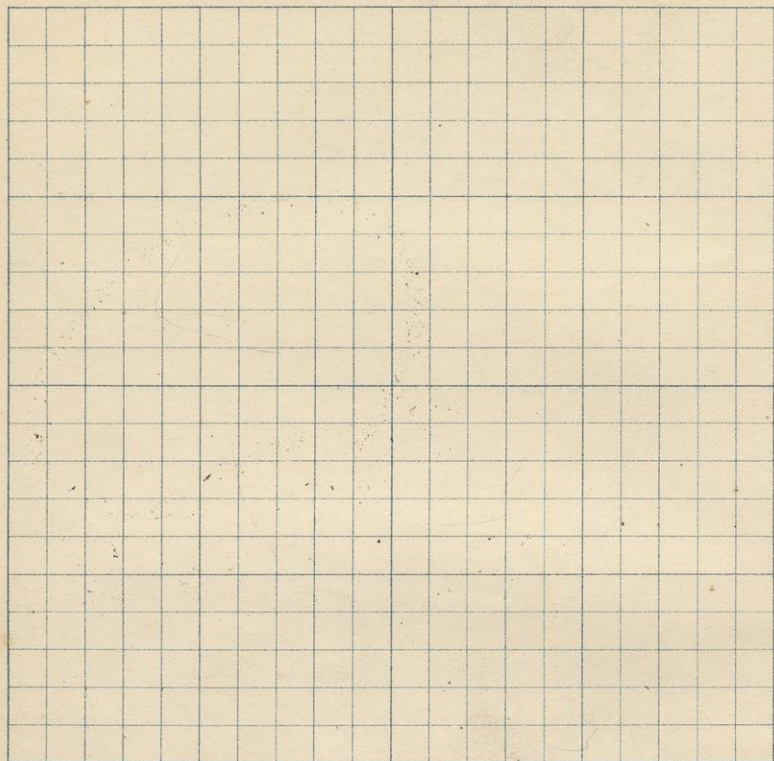
Refuge - 500

Heard - 500

S.

T.

R.



12

12

121

1500 ~~head~~ ^{head} edge marks 21
 1650 11.08 8.30
 1650 head timber 520

1700 Edge of hardwood
 10 No 1217 A 60, W 970.

Struck line 2020, 60E of stake

1217 Outcrop coarse grained granite
 may be boulder - in side of hill
 covered over with moss + leaves of

1217 except vertical face 6 ft high by
 15 long. By stripping

1217 got exposure of same rock + pre-
 sumably same mass. 85 ft
 (about) long by 60. broad

12.45 Outcrop strike at 1930, 330 places
 E of line

11.50 A 1/4 stake 7.0E

Bench mark 512.64

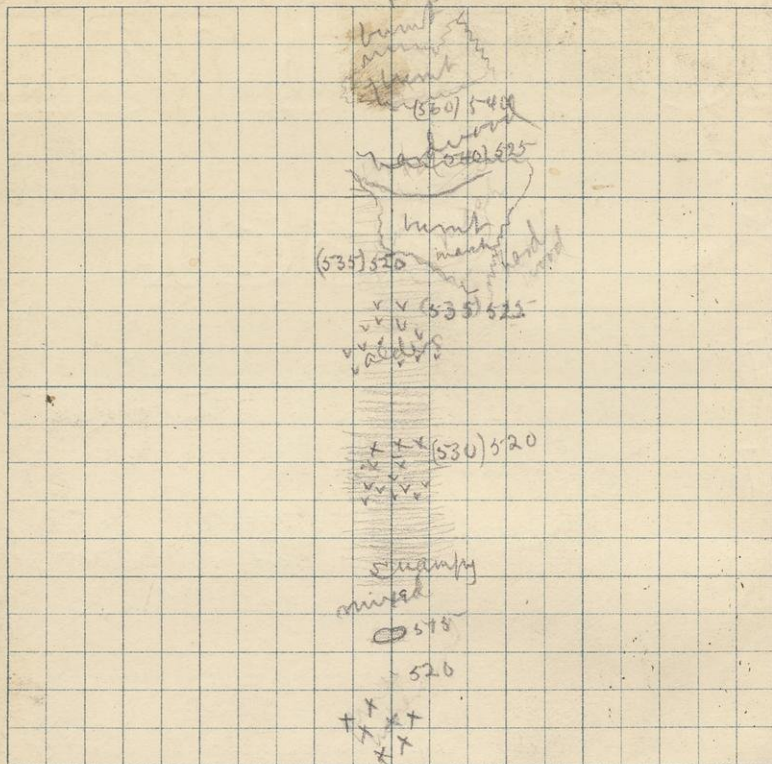
aneroid no 7 545

S.

T

(560) 540

R.



Nr 1/8 of 8

170 Crossing from 1/4 to 1/8 285-408 **23**
170 dar swamp 325 creek 2 ft wide
flow 5

1/4 stake 12.54 70E

1/4 stake Bench mark 504.11

aneroid No 7 28.208

1700 ft = 28.1

Some good birch & pine

255 1.05 60E

255 mixed timber softwood 520

320 small swamp 20 pages and 515

500 swampy, pine all up

Standing timber, best mixed, had
wood, cedar, hemlock 520

1.20 PM 6.45

600 Swampy

700 1.27 PM Swampy 91E

numerous boulders, some of

granite, coarse grained 1203

120 alder swampy

820 swampy, spicetamarack alder
birch 530

140 PM 100E

900 Swampy

9700 alder swamp, many boulders

spicular shale, coarse granite 100

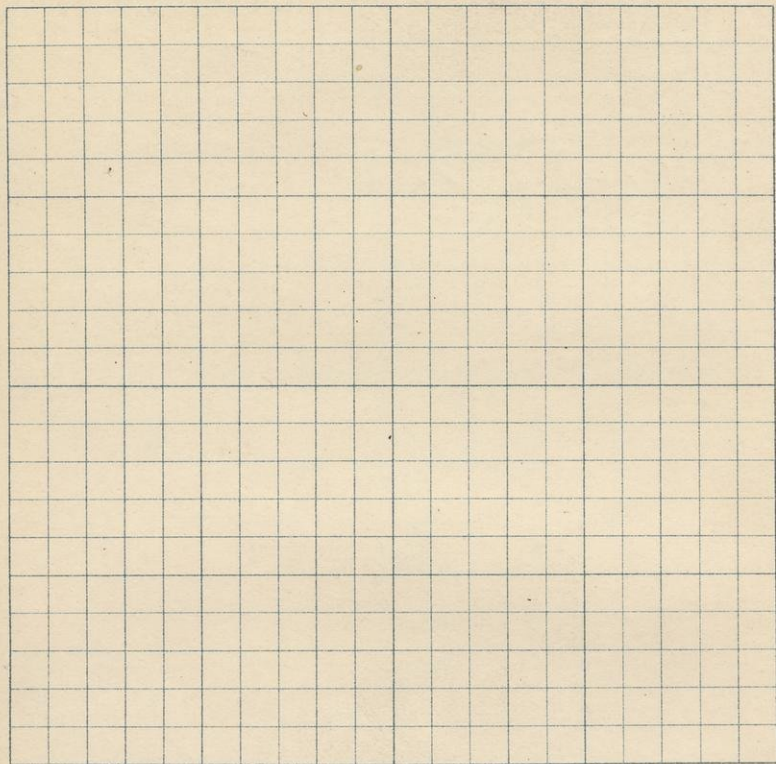
1200 alder & white birch 535

1300 edge of swamp 535

S.

T.

R.



1600 edge of hardwood 54025
1350-1500 brush
1800 maple primarily, pretty
good, not very thick, fairly heavy, 530
1750 560

140
1850 brush opening
2000 (560)

Struck line at 2030, 70 paces to N
of stake

S.

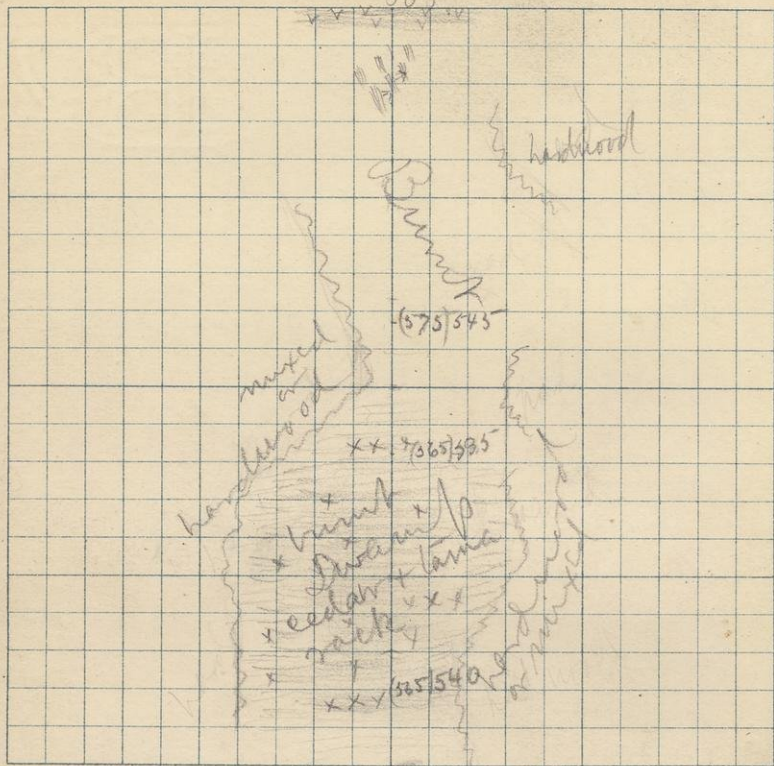
5

T.

44

R.

31



running N $\frac{1}{8}$ strike

1221 - no specimen

1220 Schist

1219 gneiss

1218 diabase & hornblende rock

1/8 stake in winter hunt + cat
 1/8 stake
 150 edge of ^{cedar} ~~spruce~~ tamarack
 Swamp - Hunt - marsh
 200 in swamp
 300 in swamp 280 PM
 700 in swamp
 825 edge of marsh (565)
 1000 cedar tamarack

1665 Hunt ~~trunk~~ 3:20 PM (575)

Nos 1218-1224, N 1775-1875, 1430-1520 W

Strike about NW. dip 70-90°

Granite mass schist
 contact lens strike N.

20-50 W dip 75° E

31218
 1218
 1220
 1221
 1222
 1223
 1224
 Diabase contains veins of granite
 as does schist, some much
 contorted

1800 outcrop granite, 50 X 30
 corner of ~~fig~~ layer - strike
 N 5-30° W dip 75° E

31222 granite, also at N corner and
 exposure contorted schist. 10 ft
 5 ft broad. Contact line 11 ft
 with contacts, 15 ft E granite
 again

S.

T.

R.

51218

Diabase (?)
intergranitic dikes

Schist 5/220

S¹ 2 1 9

Granite

Soul S 1221

4.45 pm

Bench mark 505.47
Meroid, no 7 530

30 ft North of N end of 29

W 2, Exposure of granite, continuation of granite E of 2 exposure is 120 ft long, 40 ft wide

Cut by faulted N W + S E

S1224 dyke or vein of quartz feldspar rock, dipping vertically or nearly so, faulting is // to the lamination of granite. Dyke is 18 in wide

30 ft E Exposure of granite
30 x 10, same kind
10 ft E, more granite
40 x 20

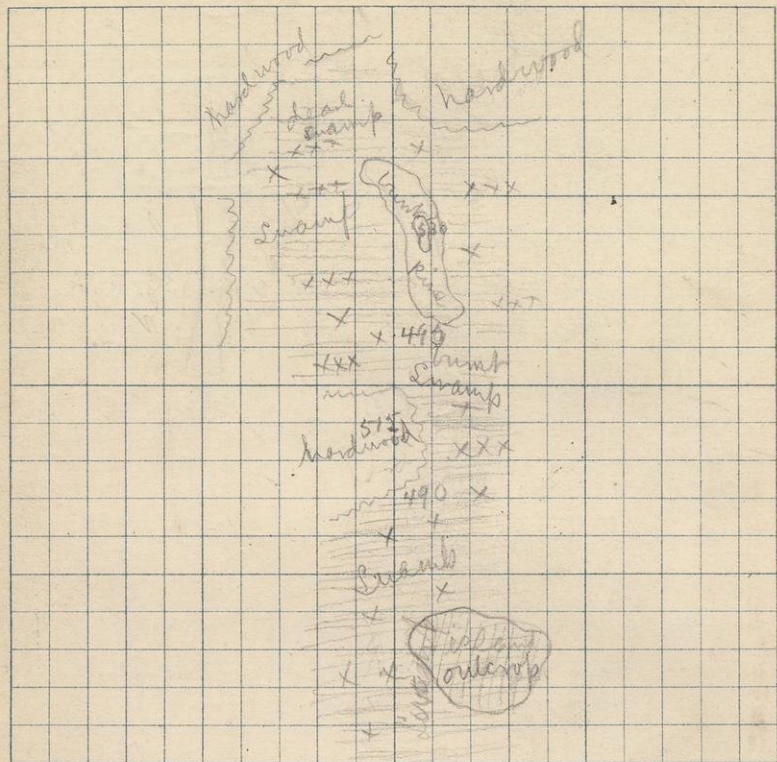
80 ft E, another exposure
30 x 50 granite, with dyke of feldspar + quartz rock

50 paces W of 3rd exposure, 30 x 30
green granite Contact N
40-50 W dip nearly vertical, E

30 paces N of 4 exposure

8 x 20 interrupted by coating of calc
but presumably same 50 ft square
strike line at 2020, 35
N of W of corner

S. 576 T. 44 R. 31



Spring Son E line of 6
 Section line

Top is South !!

June 19

31

July 2 Beach mark

Beach mark 503.34

Averid 2 28, 85-

1740 ft = 28 in

Swamp Spruce + tamarack

810 AM variation 5.30'E

220, 820 ft, 1225-1226, 12780, 1220, 5° E

20 paces W of 250 outcrop of
granite + hornblende rock -
possibly also gneiss

Outcrop is 60-200 paces
long N + S + in an E +

W direction over 200 paces
apparent strike + dip ^{may be}
N. few degrees W. dip E

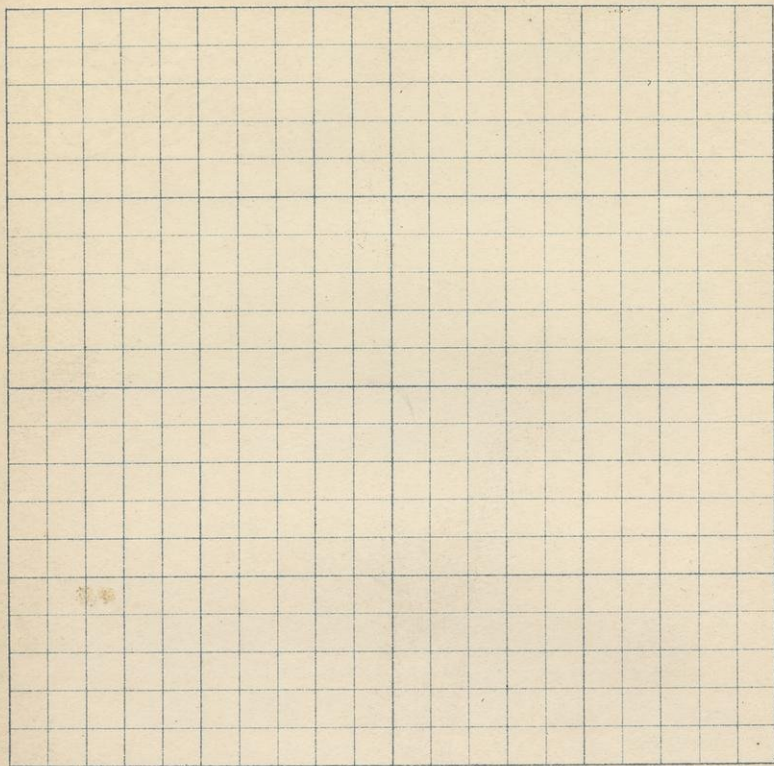
S1225- Hornblende rock is exposed
for width of more than 100
paces. is cut by granite
dikes. At N end of out-
crop is large dike of gran-
ite running E + W 20 paces
then suddenly bending +
running S. Dyke is 3 ft ft
thick + dikes nearly vertically
hornblende rock panes in

S1226
granite

S.

T.

R.



character but little. Did not determine any broad beds of granite. The outcrop is an island 15 ft high in midst of swamp. ~~Woodcut~~ Has been burnt & timber has been burnt & rock is exposed in many places. Did not have time enough to do posed to determine many points about outcrop by stoppage.

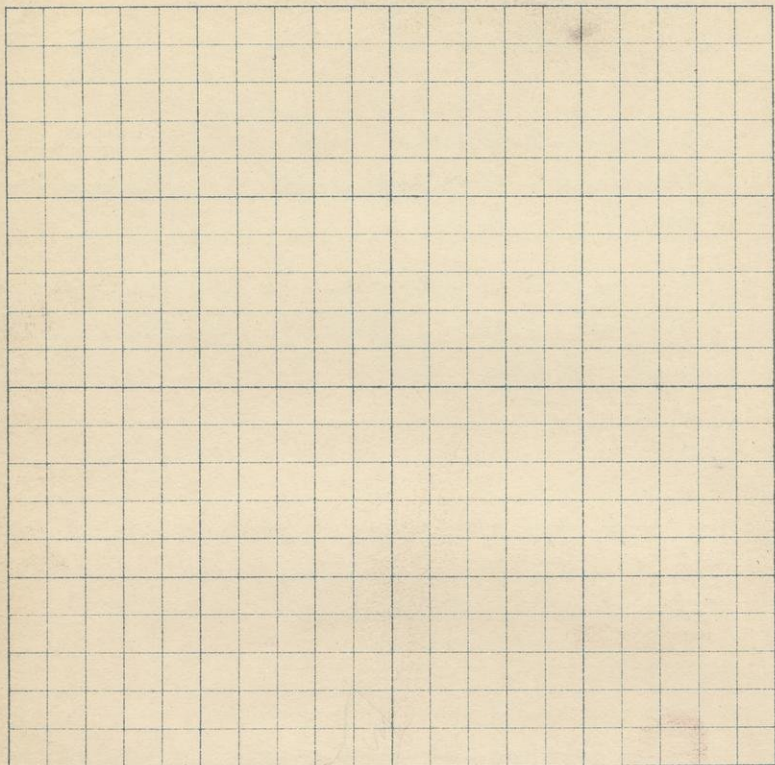
I think gneiss occurs in or near it from irregular fragments found on outcrop.

- 500 cedar swamp
 700 edge of swamp (490)
 780 9:10 PM hardwood 40E
 Some of it burnt, mixed timber
 780 (575)
 950 burnt opening many
 boulders W of line - quartzite
 boulders rock etc. but I saw
 no outcrop.
 1000 edge of dead cedar swamp

S.

T.

R.



1160 dead cedar stamach

Swamp, 9.30 AM

40E

1160

495

1200 - 1500, 80 paces, N of line, hill
or knoll, covered with cut stumps
Pine

1580 9.45 AM edge of tamarack
Swamp 1500 50E

1600

1733 dead cedar stamach Swamp

9.53 A.M.

4.30'E

Shuck quater post at 1953 paces
at edge of swamp

10.03

40E

350 paces	10.15 AM	hunt	5.30E
350	hunt timber		
400	hunt timber		(520)
500	hunt + poplar brush		(539)
600	10.30. same		4.0E
700	poplar brush + hunt timber		(510)
816	10.45 AM		(5.30)
840	cedar swamp		(570)
1000	900	10.57 Cedar swamps	50E
1100			
1140	cedar + alder 11.08		4.03E
1250	edge of alder + open swamps		
1300	open meadow swamps, dead		
cedar	stamach 11.45		4.30
1300	edge of wood + end of swamp		(495)
1800	halsam		
1650	cedar swamp		
1700	alder, edge of meadow		
1700	11.10 AM	43	4.30
Struck line at 1900, prob-			
ably 2000; mistake at 2000, as			
struck line at corner, followed			
line partway down			
11.42 AM			525
			5.30E
Bench mark			512.61

S.

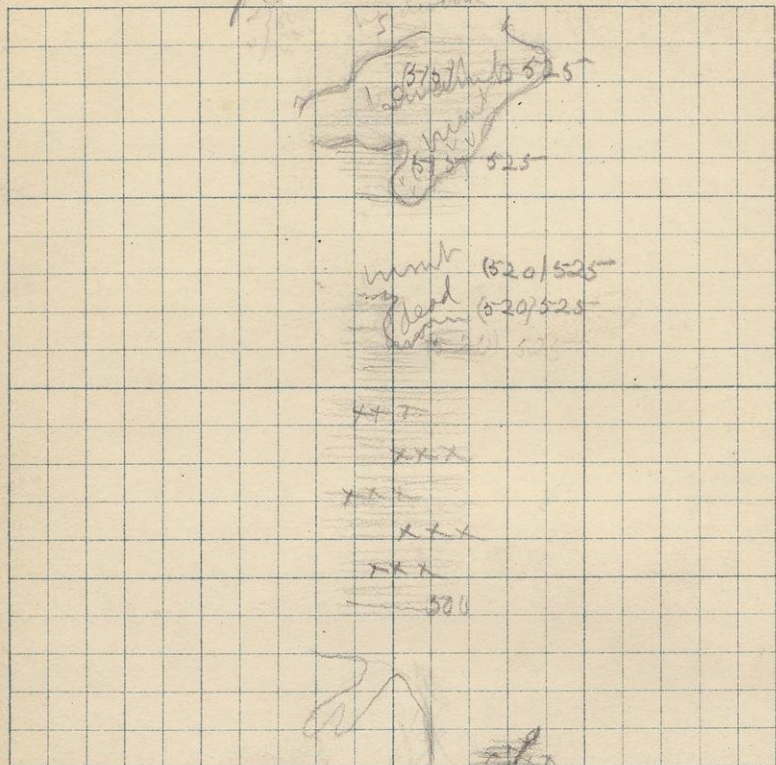
7

T.

44 N

R.

31 W



Left - 2 1/8 line 1017
 from N.

Crossing over ¹⁰⁻³⁰⁰ 70 paces cedar 39
Swamp
180 paces creek 2 ft wide flow 8.
180 500

250 11.53 3.30E

going N on ^{Lunch} 2 1/8 line

Bench mark 514.06

Aneroid 7 28.228

28 in = 1720 ft.

118 of hardwood fairly heavy, soft
chick

1.27 PM 60E

300 575

400 mixed timber, soft wood,
jack pine

440 Swampy, cedar, alder 500

500 1.37 Swamp Cedar 500

650 Swamp 1.46 500

785 2.53 PM Cedar swamp 500

1100 dead opening

1200 other side of it, land rise 520

1200 2.09 500

1300 burnt timber 520

1500 ^{Swamp} low ground, burnt, cedar

mixed timber 2.20 530

1600 alder swamp 575

1620 other side

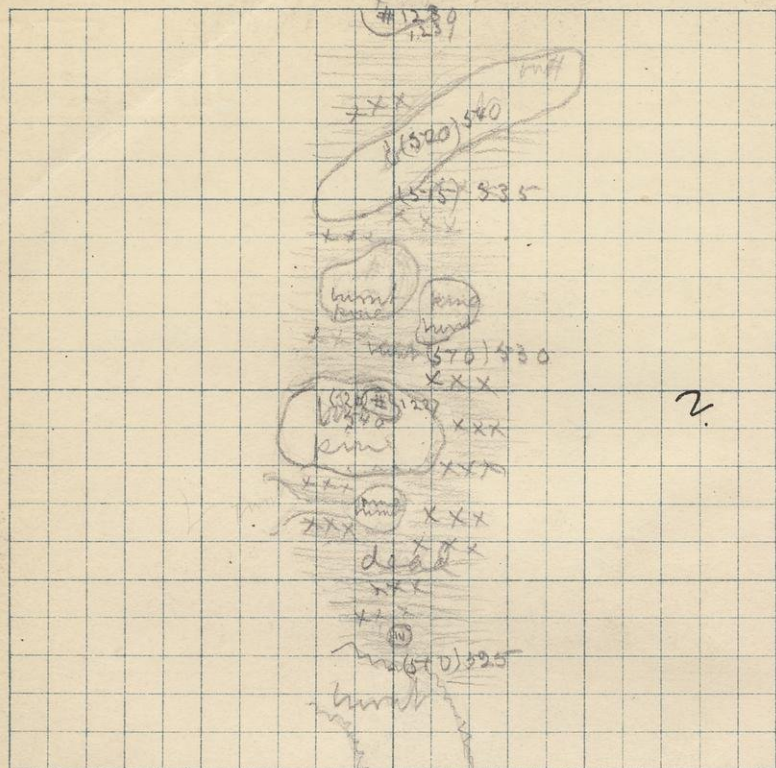
1830 3.37 PM 5, 30E

1900 narrow slat cedar swamp 515

S. 6

T. 44

R. 32



2 1/8 : line of 6

1227. Rock is of varying texture. The different parts grade into each other. The specimens show about the amount of variation

1930 dead + burnt timber

41

Struck line at 1910, 30 paces
W of 1/2 stake

1/2" (stake is not marked)

570

248 PM

2° 30'

to 275

246

570

300 3.07 PM

570

300 Alder cedar

300 burnt

570

400 Soft mixed burnt cedar + burnt
500 cedar + burnt

520 dead cedar

to 500 3.32

400

1100 paces, 70 paces W of line, ex-
posed of granite 80 ft long, 7 ft
high, may be 50 wide. Middle
uncertain. Surface is covered
with burnt moss + timber +
West slope is probably overlaid
by boulders. Many boulders
of granite + gneiss in
immediate vicinity of outcrop.
Some large boulders in outline

1100 burnt strike + + +

570

(227)

N 01227, N 1000, W 1530

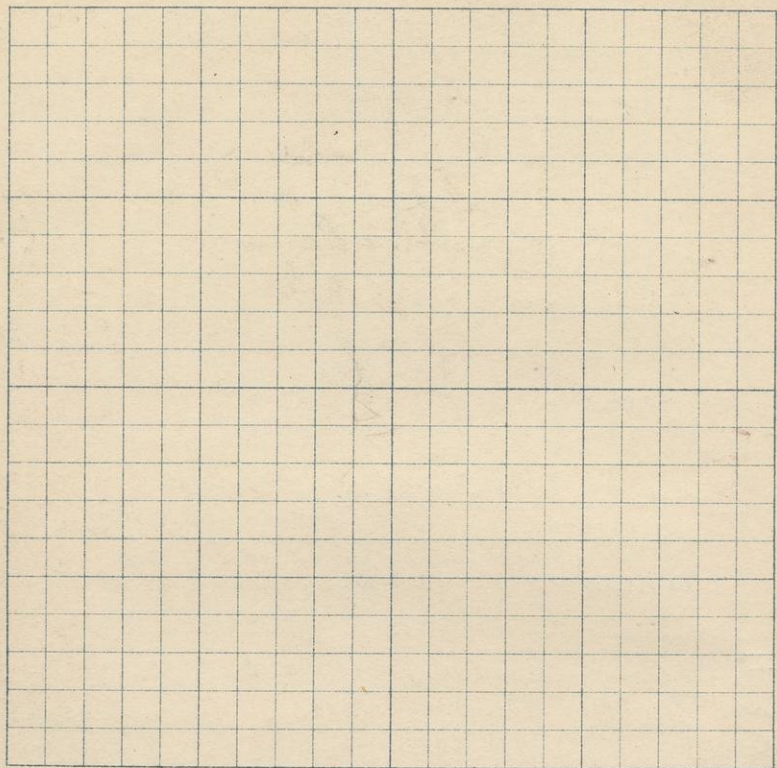
1300 burnt opening, on N. 2 side
of opening, an outcrop of

7227
gravel
into

S.

T.

R.



122

122

123
123

102/228-29, N

43

1228

coarse grained granite, 100 N+8
by 300 E+W. feldspar ortho
clase in large crystals well
developed. longer axis of crystals
about N+8. N+8, also granite is
cut by a dike(?) or layer of "green
stone", hornblende rock, which
runs N+8+SW. about. Here as
yesterday at interp 1219-21 longer
axis of feldspar crystals is
parallel to apparent bedding
1350-1500 all cedar swamp
1500 edge of another burnt island 515
top of island & 520

1229

Beuch mark

521.09

Amoroid >

490

Beuch mark & stake at 1/8 on N line
are both burnt away by recent fires. Com
pared amoroid on way to camp

Just S of 1/8 on edge of burnt island
is an exposure of granite about 25-
ft square. Most of it is like
1231. Some it, (may be a boulder)
is like 1230

1231

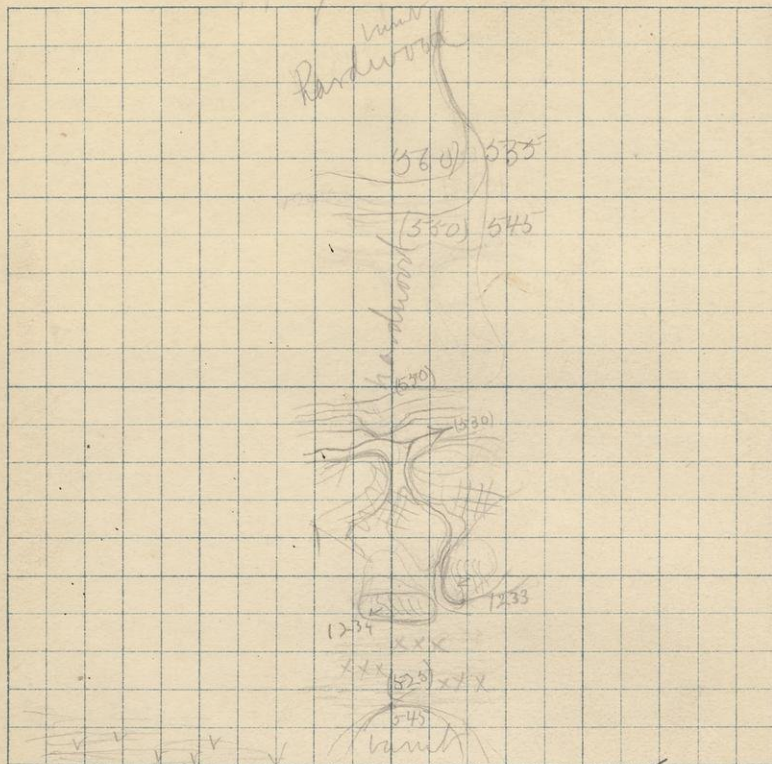
1230

N 1230.31; N 1990, W 1500

S.

T. 44

R. 32 W



Running S on 1/4 line
 June 20 1891 ~~Top is S.~~
 top is S

~~original~~

Left camp 7.10 AM. 45
Walking, swamp mostly, reached
1/4 post of section 1 at about
9.15 AM. Bench mark 550.76.
Anemoid no 7 28.26 in

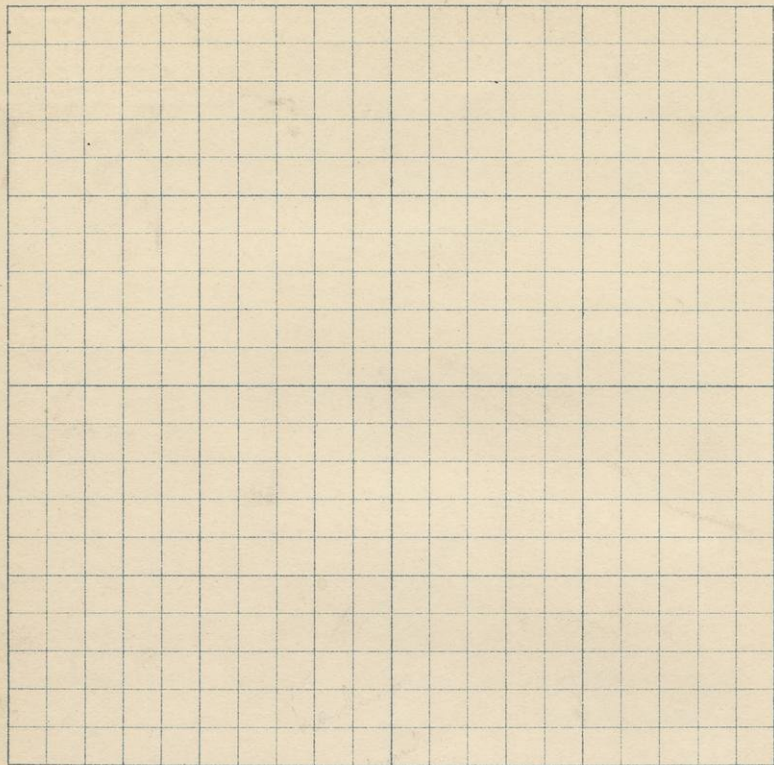
29.2 = 700

9.25 AM 8.45 E
corner of the in thick hardwood
160 burnt (545)

200 cedar swamp, edge burnt

9.35 AM H. or 8 E
200 (525)

400 outcrop. line runs thro' center, & extends 100 paces each side of line & South 1000 paces. Ridge runs somewhat occupies fully 100 acres & at North end, & at least 40 acres taking in southerly extension of it. At N E end of N W end rocks show a succession of layers of granite, & granite masses, gneissoid & schistose bands. Formation in general may resemble that seen at 1218-1221. The Southern tier



12355 forms a belt about 10 ft
wide & running about N.W. it
dipping almost if not quite
perpendicularly.
x 1233 granite apparently grades
into this rock

trial part of the outcrop is
 almost entirely so far as seen
 coarse grained granite. The
 feldspar crystals have their
 long axes parallel as far
 + this gives the rock masses
 a gneissoid look. ⁽¹²¹⁸⁻²¹⁾

These feldspar crystals as at
 1221 are frequently over two in-
 ches inches long though averaging
 about an inch. The long axes are
 parallel to approximately to the
 the apparent bedding, of the
 layer of gneiss + schist.
 The strike is about N N
 dip about 70° E

At ~~Base~~ ^{Base} the coarse granite is frequently finer
 grained

1235 1235 is from the N N cor-
 ner of the outcrop, a gneiss?

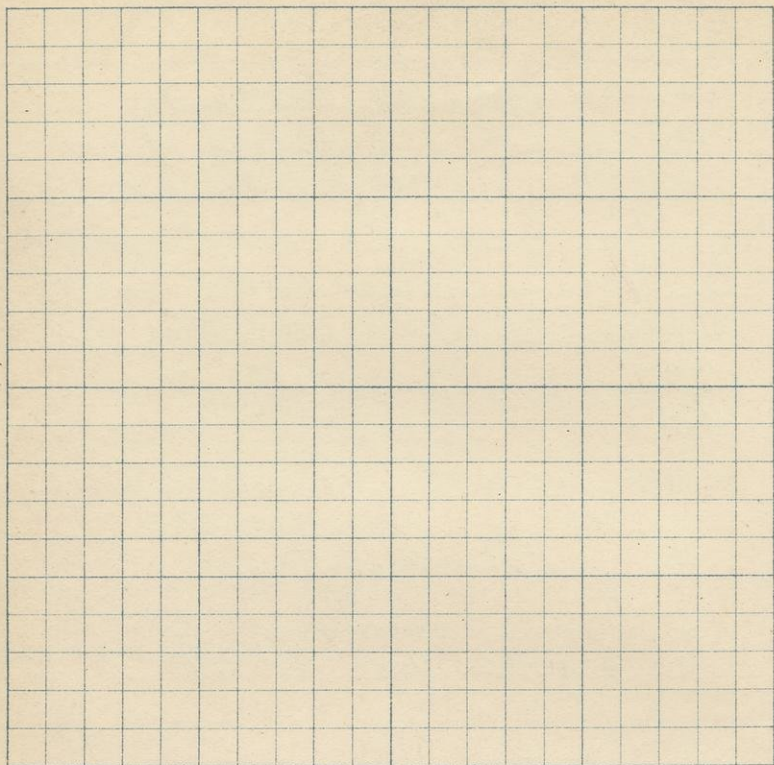
§ 1234 1234 is from the N, E corner of it.
 When weathered the surface
 has a schistose or gneissoid look.

1232 1232 is good average of coarse granite

S.

T.

R.



1/20

The highest point of the outcrop is perhaps 20-25 ft above the level of the cedar swamp surrounding it. The surface was once covered with pine. This is now all cut, & present pine have laid large ~~exposed~~ surfaces of rock. This broad exposure runs at least $1\frac{1}{4}$ mile E & W of line 860 paces. creek flows W. 8 ft wide.

This creek flows in a shallow gorge. this gorge once occupied by a dike of greenstone? 50-75 ft wide. Glacial erosion has removed it to depth of 30 ft or so. Dike is vertical, N 65° E \pm 85° W.

1244 is specimen of this rock. Granite on either side of dike. Mostly coarse-grained like 1232; but some like 1233

(530)

1000 paces 12 M

S. 45° E

1420

B 30'

1400

thick sparsely heavy maple

(530)

1600

"

"

560

S.

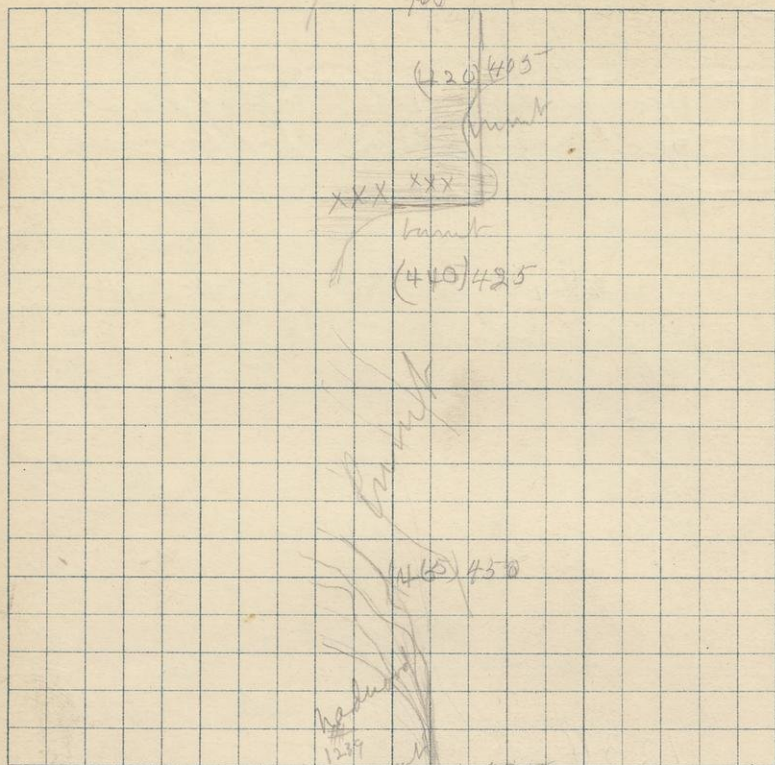
17

T.

405

R.

32 W



South on $\frac{1}{4}$ line of 12

top is S

Top is S.

Struck line at 2015 paces **51**
201 paces E of stake
12.45 Lunch

100 paces W of stake is
an outcrop, it forms a bluff 40 ft
high. Rock is banded.

^{granite} S 1236 Granite, gneiss or gneissoid
S 1237 rock. Strike of bands is
N 13° - 35° W; dip is nearly
vertical to 70° W.

1238 ^{granite} Same outcrop apparently is
to be seen at about 100 paces
W of 1800 paces

2 PM. Starting S again (330)
Timber about stake is burnt. E of it
for several hundred yards at least
is good hardwood

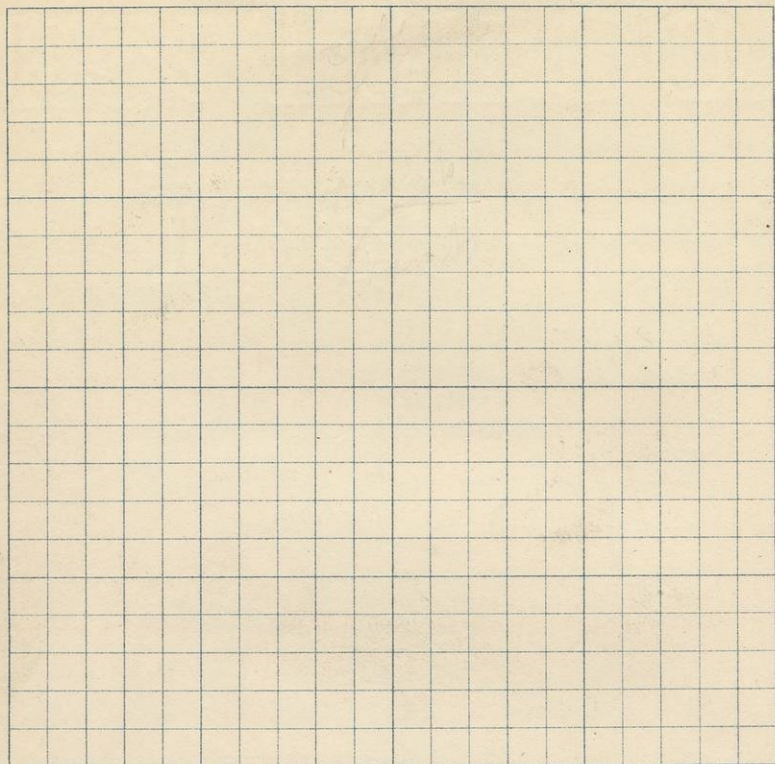
No. 1239, 1900 N, E 850 paces
1239 Outcrop of granite, 100 ft
long, 60 broad 15 or 20 high.

4.50 100 E of line, out-
crop of granite in side of

S.

T.

R.



valley. This outcrop is a
possibly a continuation of that
at 1239. Granite outcrops along
the side of the valley between
the two points.

350 bottom or near bottom of valley
timber swamp. 4265

Sides of valley in places are per-
pendicular, in general however
slope is not abrupt

500 - 1300 burnt timber no
great irregularities of surface
1300 440

1490 bank above cedar swamp
(see opp page) met first round granite
offset 230 paces. 1500 Swamp
1700 320 PM burnt 2030

1800 420

Swamp 1500 - 1600

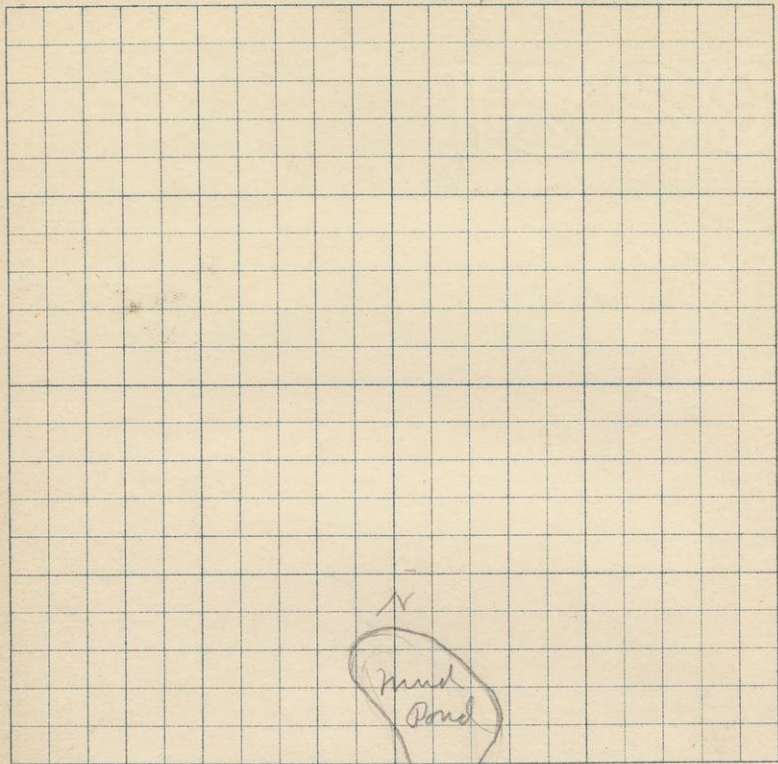
1860 Swamp

Struck line at 1993 paces 104230
paces W of flake. flake on edge

S. 12

T. 44

R. 32 W



of most beautiful edge, 55
Lake is 36 acres (425)
Mud Pond

1/4 stake is set down as
being 60. paces W of ~~and~~ its
true position Bench 407.32

Bench mark 413.20 57

Aneroid > 425 4PM

Going N from 1/4 stake on E 1/8 line
2900 ft = 830 ft

variation 2° 15' E

about 200 edge of cedar swamp

300 N edge of it (410)

580 cedar swamp

610 same burnt as before

800 N edge of burnt

935 4400 sp. m. 3° E

935 cedar swamp 420

1150 450 PM cedar sp. m.

Swamp

1200 cedar + sp. m. swamp (420)

1225 5 PM cedar swamp (3° E)

1400 burnt between swamp + road

Wood

1600 mixed timber (453)

1900 480

1850 - 1930 outcrop, of horizontal

1240 schist? exposure is about 30-50

thick line at ft. road. + 10 high

lamination of schist. strikes about

NW + dip is nearly vertical.

Rock is unlike any I have

yet seen; exposure is in a

58

S. 1

T. 44

R. 32 W

← 460
~~(440)~~

450

(460)

1245

(450)

(445) HLB

HB

1242

1240

(435)

Sample on W 1/8

hint opening, on N. side of it, 59
1/8 stake in bent timber (4367)

300. 300 paces E of line a
large outcrop of reddish rock
Think it is same one I saw
going S. outcrop is 40 ft high.
Did not recognize it, on acct.
of lack of time.

W. 400 paces burnt timber almost
all way

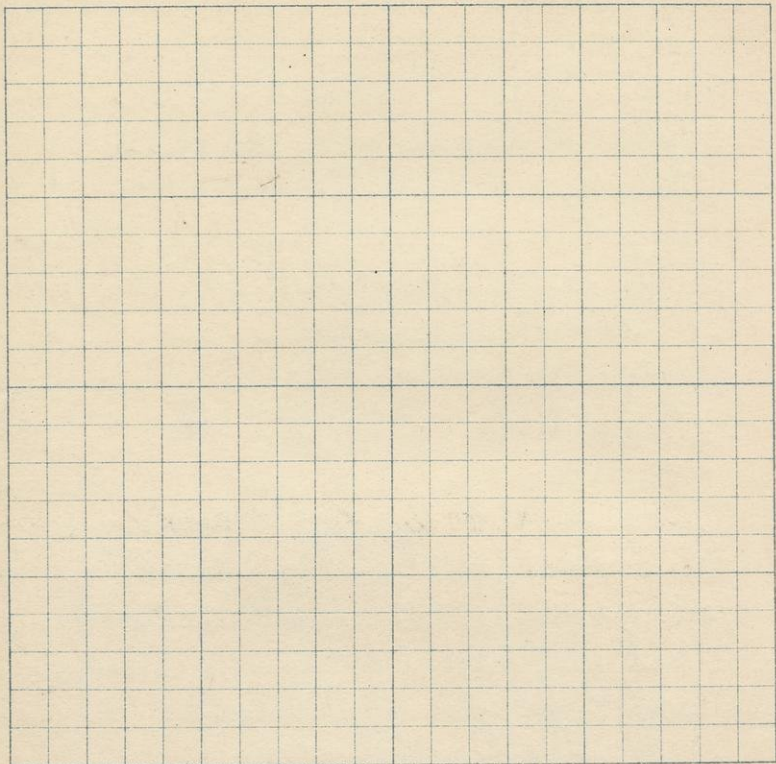
4241, N 400 - W 1510
S1241 an outcrop of pinkish green
ish quartzite (?) intersected by
veins of milky quartz. Quartz
veins strike N. about 40 ft
dip nearly vertically. Rock is
unlike any I have yet seen.
Outcrop forms an oval knobby
knob. Moss & decayed mold, if
all gone from surface owing to
fires. Outcrop is about 100 x 80
x 20 ft

From 300 - 500 are outcrops
forming more or less

S.

T.

R.



1245 spotted

Lamination of gneiss ^{strikes} ~~is~~ about
N 20 W: dip about vertical

of a bluff, to E of line. 61

1242

##

1242, N 500, N 1350-1400. 30
feet of line. rock is a
part of hornblende gneiss or ~~schist~~
outcrop is 20-30 ft high. Did
not examine closely from lack
of time.

5:30, 6:30 PM

(445)

900

(425)

900. Crossed creek crossed
this morning. Creek flows
in same general line
to exposure of hornblende
dike. on either side of creek
are immense exposures of
gneiss & granite rocks which
I could not stop to examine
on acct of time. 7 P.M.

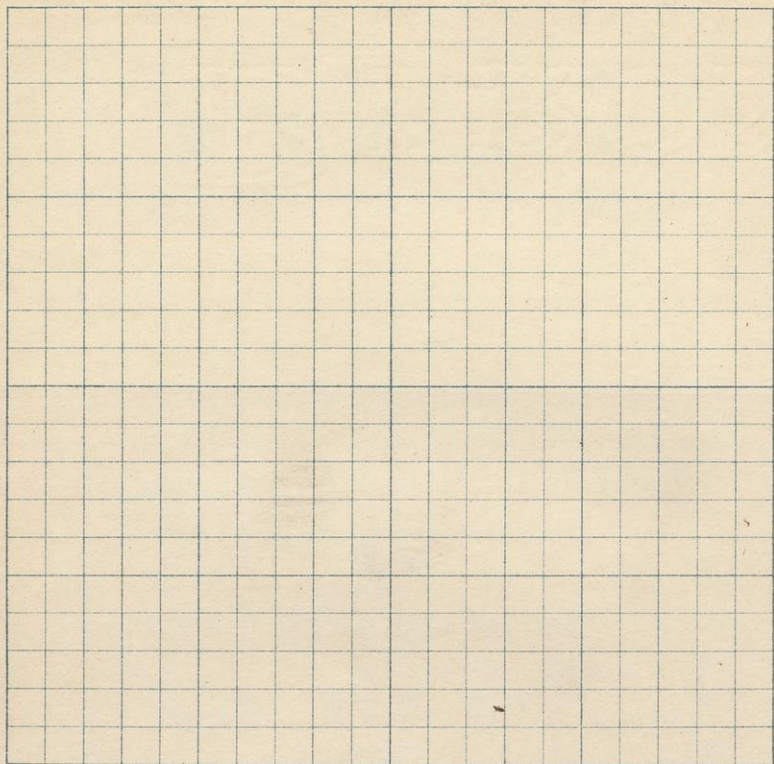
1245 Re dike rock seems slightly
different in character here

1243 is a specimen of one
of the many forms of gneisses.
The granites grade & blend
into each other apparently.
Red granites like 1236
occur as well as fine-
grained kinds.

S.

T.

R.



foo.

925 1000

(450)
450?

Went to the top of hill is
a very steep slope that is
very rough that is on the
top of the hill.

15-40

(450)

1600 little creek flows W

460

Struck line 2008, 107 ft
N of stake.

Bench mark

511.73

Reached camp about 730 PM

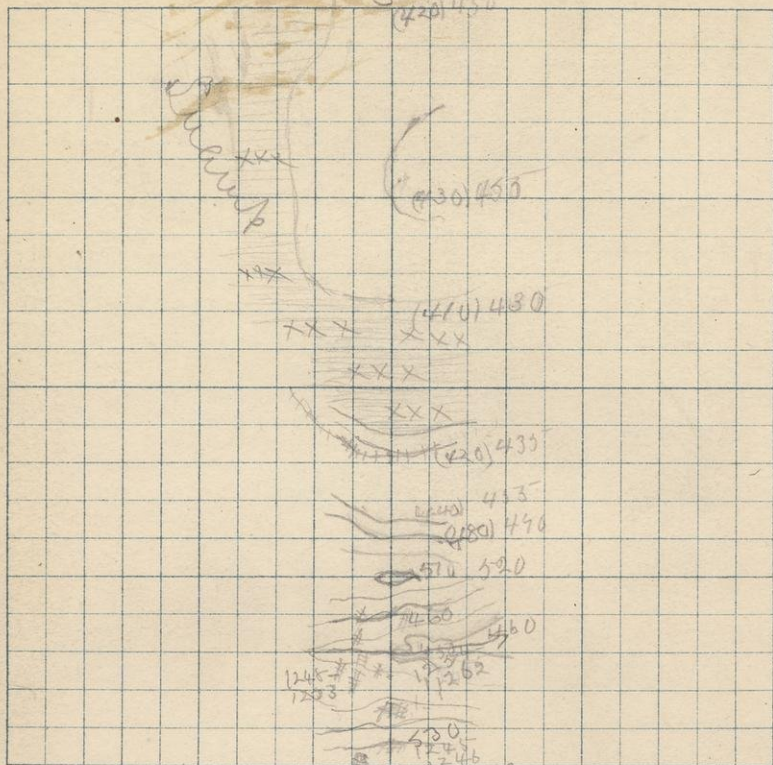
525.22

530.

S. 1+2

T. 44

R. 32W



Running S in section line 1+2
 Sky overcast
 Running with 2° E variation

Top is South

BM 52 5.22
Anecd 7.

65

28,275

1400 = 28.4

15 paces E of corner outcrop
of granite, rather crumpled
rocks. outcrop is 40 ft square
Mr Matthews collected specimens

50 paces

(530)

N 124647. N 50: W 0. massin

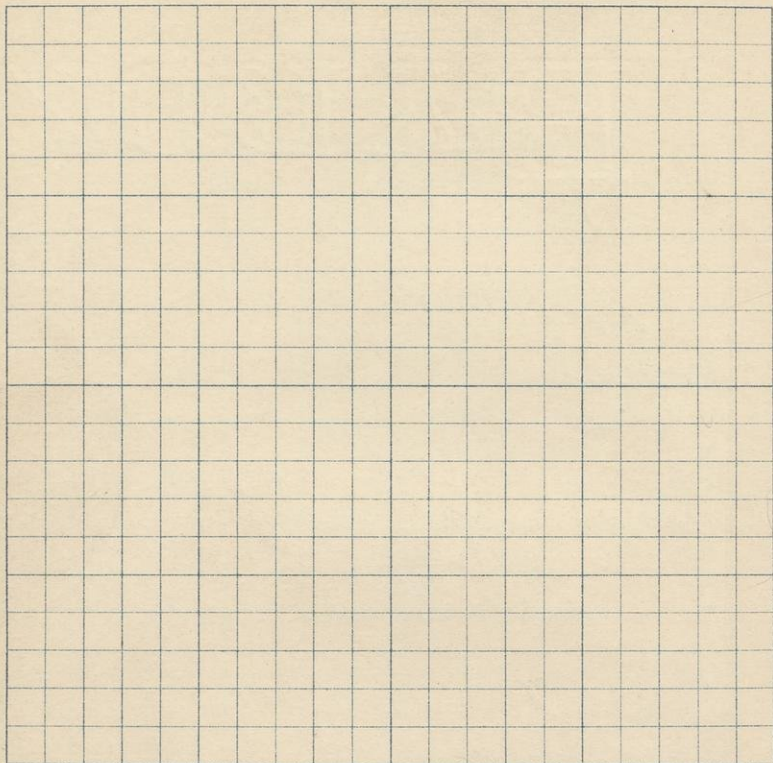
50 paces. on line outcrop 40 ft

1246 Wood, 80 long of granite & horn
blende rock. Granite appears
1247 to be intrusive in the latter.
as hornblende rock is cut by many
granite dykes

Did not determine exact
line of contact: apparently
it is ~~about~~ between N & NW.

1246 is specimen of hornblende rock
1247 is specimen of granite

200 - 300 paces
150-300 near here are several
outcrops of gneissoid rocks very



*Specimen - 1254 outcrop crosses creek almost on line, 50 wide - 100 long, strike + dip of laminations are parallel to apparent bedding, strike N 14 W - dip 65 E. Rock varies in ^{little} different narrow bands, few inches thick parallel to strike + dip.

*1256 is such a band or strata, these strike are not I think persistent for any great distance.

*1258, about 20 ft wide + 40 long contact with 1254 is hidden by soil, or 20 ft rock.

24
124
125
125
125
125
6/20

*125
*1/2
*12

6/20

248

1249

1250

1251

1252

1253

E. R. M.

near the line. 1248 &
 1249, 1250, 1251, 1252, ¹²⁵³ are samples
 The strike between the bands
 corresponds with the lamination
 of the gneiss. It is about N.
 Dip is about 70 E. Also
 a band of granite. Bands
 of granite lenses are on
 average about 25 ft wide &
 grade into each other a little.
 1248 is nearest line, 1253 far-
 thest east

*1254

*1253

*1256

Similar? outcrops are on the side
 of the valley.

1257 is narrow band 5 ft wide
 parallel ⁱⁿ to contact with 1254.

1538 small outcrop 30 paces W
 of line at 300 - two kinds grade into each
 other, strike N 37-32 W, dip 80 E

300 Slopes of this valley very ir-
 regular owing to outcrops, but in
 general slope is not steep

300 creek 5 ft wide

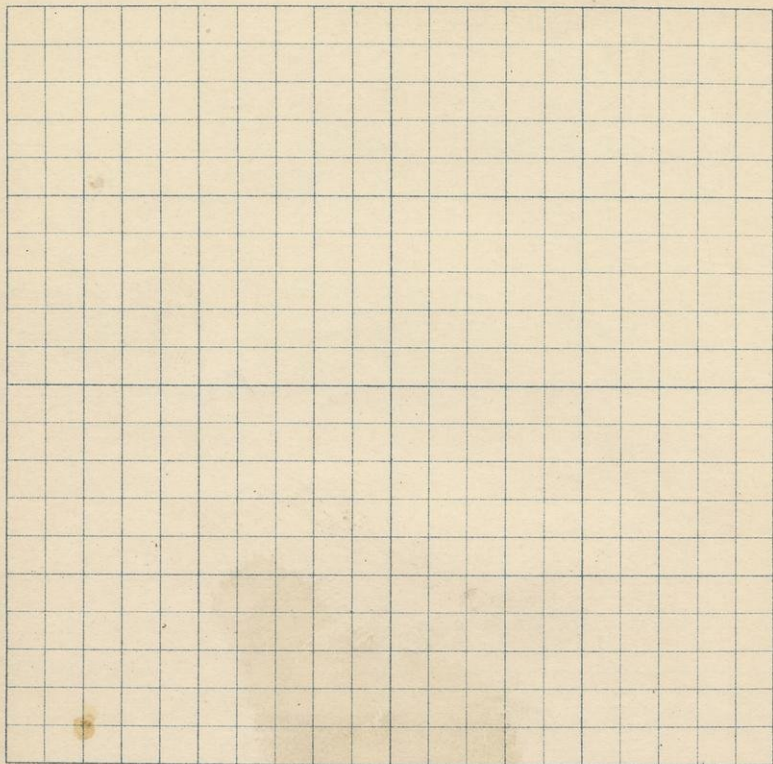
400

500

(450)

(460)

(370)



1259 is 13-200 paces N of
 280 outcrop is small 30 ft by 15 ft
 may be boulder. Strike of laminations
 on weathered surface is 27 N. dip 80 E

1260 } - 20 ft thick - gneiss

1261 } 6 ft thick - green schist

Strike is N about 27 W

Clips

70

W

1262 is 100 paces W of line

about 1100 paces ~~of~~ creek bed?

69

600

480

653

(440)

812, 818 m to road, old one, ^{but possible}

(420)

830 cedar swamp

1200

(410)

1250 edge of it then burnt opening

1500

burnt timber

(430)

1500-2000 ^{slightly} undulating country, but no great changes of level

Chuck line at 2008, 5 paces
W of corner, followed blazed line
part way down.

2

2000

2000

burnt timber

(420)

S.

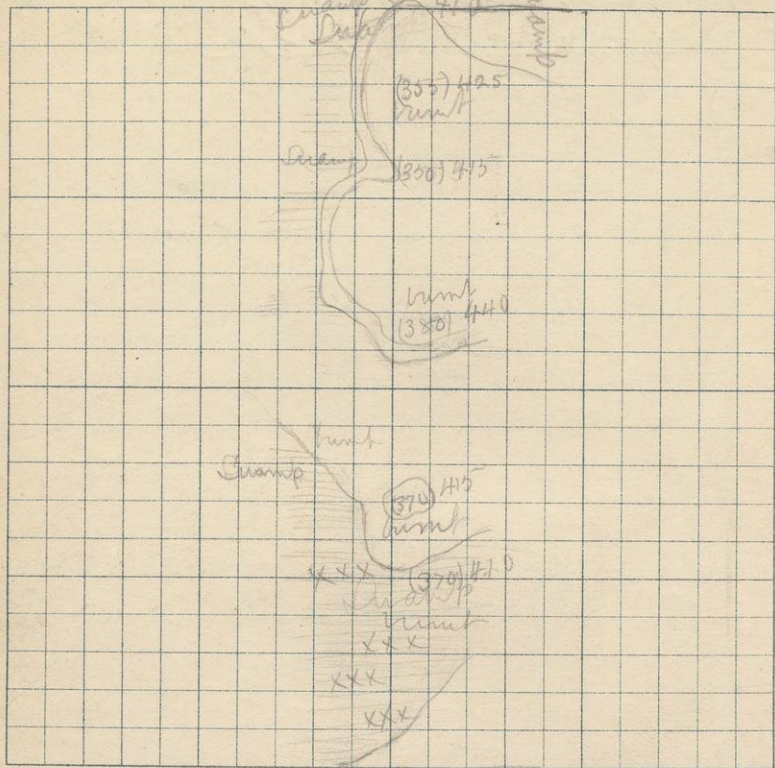
11+12

T.

44

R.

32W



Section line 11+12^N 30' T 44 N. R 32W
 going S, on 2° E variation or 1° 30' E
 Tap is South

500 paces 10.05 AM

370 71

915 220 AM

Spence Swamp

390

300 cedar swamp dead, burnt & mud
fallen, bird walking

700

Swamp

370

1800 small strip 30 paces wide of
green cedar Spence Swamp

1000

1020 post

1030

1030 burnt opening -

1150

burnt

(380)

1570

edge of swamp

(350)

1600/1800

burnt hardwood

(355)

Struck corner (?) at 1980 paces,
30 paces W of line? This corner
has been recently burnt, but ancient
lines of old fence remains. This
corner was not located by the
levelling party I think

Bench mark burnt aneroid 390?
From 1300 ran on about 3' E variation

crossing over - struck swamp
about 95 paces from corner

Bench mark S.L. cor 11

411.04

Aneroid

390?

Bench mark 409.29 73
Anemoid 7 330.

Corn 1/8 stake in ~~open~~ spruce
tamarack marsh 1230? PM

2805 - 1800

200 edge of swamp

425 burnt

(415)

630 Swamp

780 Swamp

(410)

800 burnt

957 burnt

(415)

1000

1100 on narrow strip of swamp, 75 paces

1120 creek few ft wide flow SW

1120

(410)

1120-1200 dead wind fallen swamp
then burnt pine land; swamp cedar reference

1400, ground undulating - nearly level 420

1500 on edge of partly dead spruce
tamarack swamp

(415)

1.15 PM

1680 other side of it then burnt
timber.

1800 burnt softwood

1950

"

"

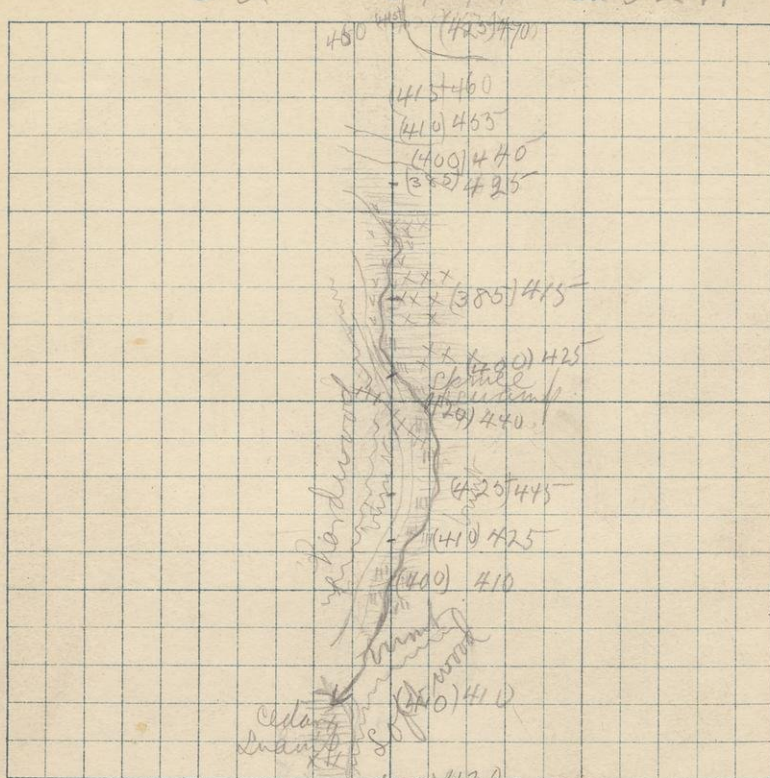
(420)

Struck line at 1995, 5 paces from
E of corner

S. 2

T. 44 N

R. 32 W



E 1/8 line of 2. (415) 420
Going N.

At Bench station 2.35 Pm 2030 E

Sky clear, 1/8 lake 75
variation 1:30 PM 40 E

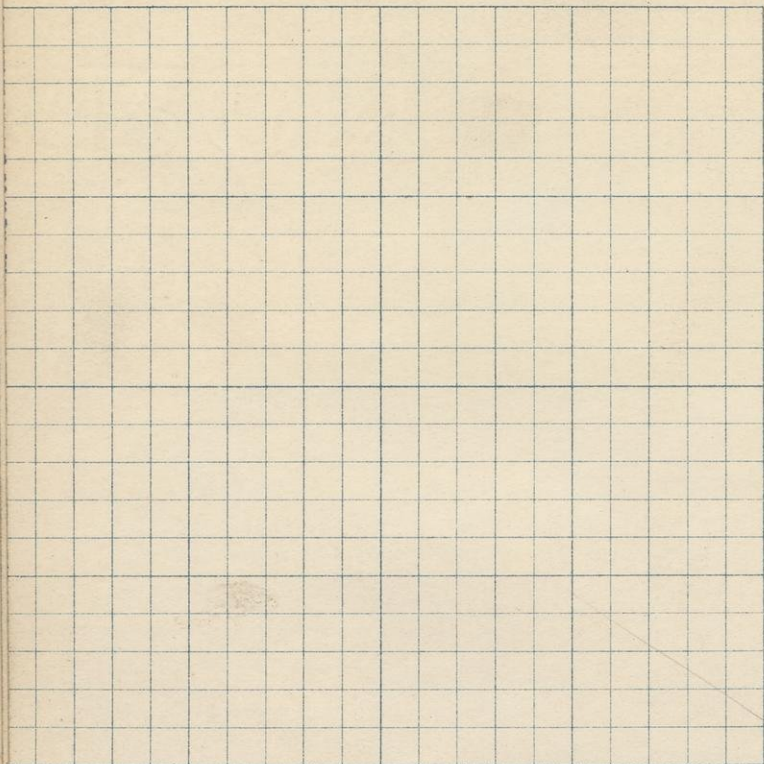
1/8 lake (415)
200 soft wood, thin, light (410)
300 burnt opening (440)
530 creek 10ft wide flows S (400)
690 edge of marsh (400)
720 (410)
850 (425)
975 b/c road old one, passable.
1000 (420)
1080 foot of bank (400)
1100 creek 10ft wide, flows SE
690-1275 burnt timber
1275 cedar swamp 2.25 PM (383)
1375 same creek
1375 alder swamp 50 paces
wide E & W
1435 same creek 3 E
1475 3.45 (2.45?) 30 E
1575 oth. side of swamp, 35 paces (383)
1630 400
1800 (410)
1800

Struck line at 20.50 paces (415)
(1/8 lake gone) 35 paces W of Bench mark
Bench mark # 473.36
2:30 PM Arrived 7 425

S.

T.

R.



2. 1/2 inch is a 230 1/2 2.30

S.

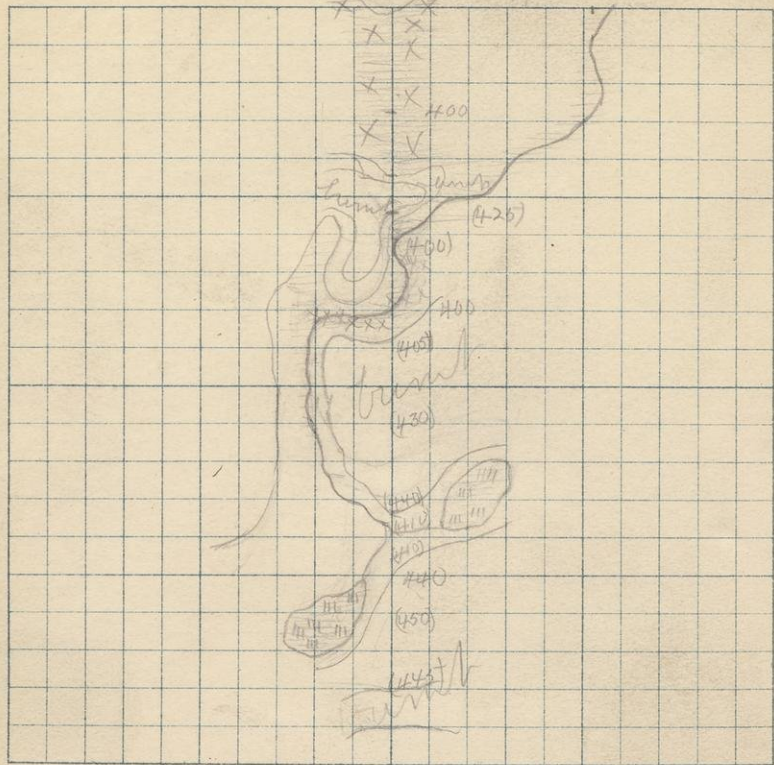
3

T.

4

R.

32



Goring Son 1/4^N line sec 3,
T44 N:R 32 W

J Bench M Section 10 $\frac{1}{4}$ 79

" " 20E cor 408.96

20SW $\frac{1}{8}$ 380.19

N $\frac{1}{4}$ 34 63 ft E of cor
 $\frac{1}{8}$ 34 at cor

Running on $\frac{1}{2}$ line
Bench marks 440.06

aneroid 7 28.66

2000 ft - 28.05

Left camp 7.20 AM. Left post 8.40
Bear walking variation 1.30E

200 burnt timber 20. E. (445)

400 " " (450)

500 " " 20E

500 " " 440

540 bottom of hill (410)

600 creek 8 ft wide along S 410

625 top of opposite side of valley (440)

600 variation 9.00 AM 2°E

900 burnt timber (430)

900 " " ~~430~~

1100.0 " (405)

1100 " 9.15 AM 1.30E

1156 dead cedar swamp

1200 creek 12 ft wide SW (400)

1300 swamps as above 2.30E

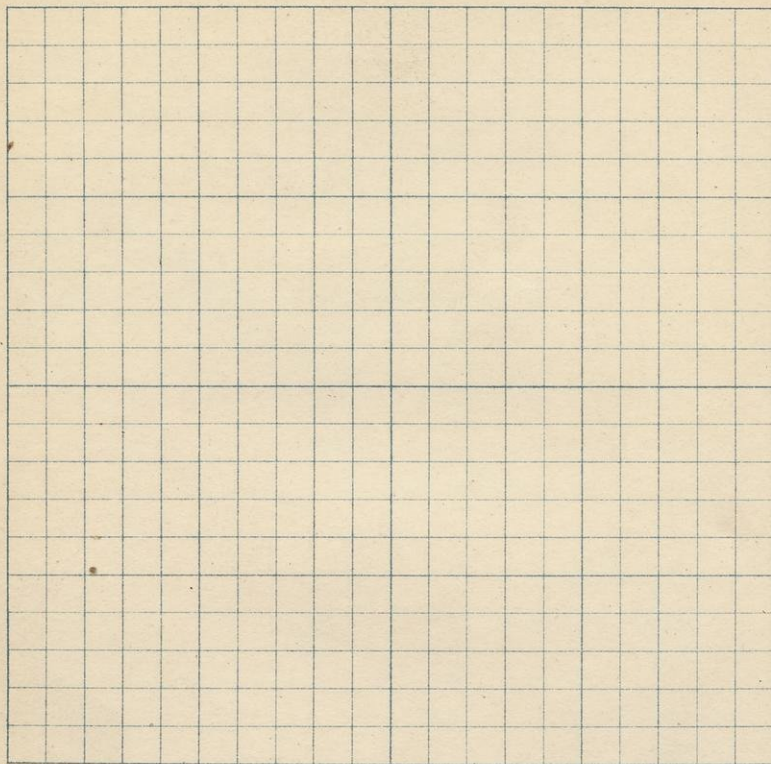
1370 creek - 12 ft wide SW 400

1400

S.

T.

R.



1462 hunt timber (2125) 81
1462 edge of swamp valley 2045

1650 edge of ^{longer} ~~edge~~ ^{swamp} ~~swamp~~

1725 in swamp (400)

1725 2000

1900 10.02 fm 10.45

Struck line at 2005, 23 paces

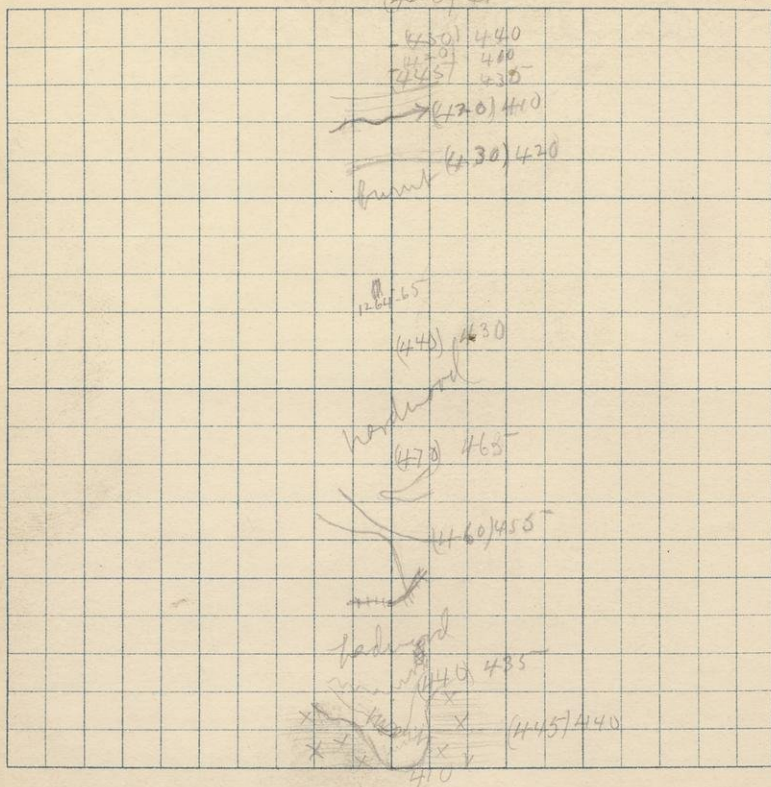
W of 1/4 lake

1/4 lake on other edge of swamp

S. 10

T. 44

R. 32



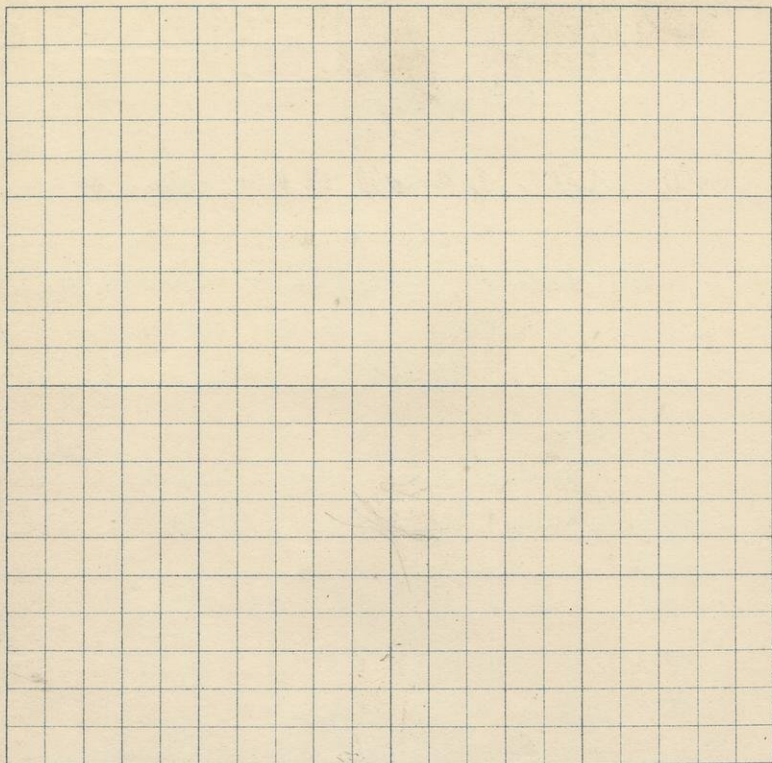
1/4 stake edge of swamp	10.11 AM	83
1/4 " burnt timber "		20E
90 top of bank of swamp		(410)
145 burnt		445
200 hardwood poor		20E
No 1263, N 300; N 425		(440)
Outcrop, forms knoll in the low timber land, outcrop runs North, a little (10°) West. Is a greenish granite(?). Outcrop 60 ft long, 30 wide 20 high		
400 hardwood + softwood, thin & generally light	10.40	20E
400		(460)
600 more hardwood, little hemlock		(460)
600	10.55	2030
690 the road, very poor		
800 mostly hardwood, some beech, 11.05		2300
800 " " "		(470)
1000 " " "		2030
1100 some " "		(440)
1100	11.15	2030
1200		(440)

1264 31220 North; 470 West
 small outcrop 2125 ft long 20
 broad, greenish quartzite, strike
 N. dip about bedding is about
 N 10 W dip about vertical

S.

T.

R.



2h

on NW side a small Ex-85
1265 position of ~~rock~~ crumpled mica
schist - strike + dip parallel
to that of quartzite

1500 burnt timber

1600 edge of small gully - burnt (436)

1700 in it - dead ~~cedar~~ ^{shrub} trunk (420)

1710 small creek, 4 ft wide, flows W

1775 12 M 305

1775 other edge of gully (443)

1825 420

1900 450

Struck line at 2605, all
most exactly on post

202 Bench mark 408.96

Anemoid 7 420

variation 12.18 PM 305

S.

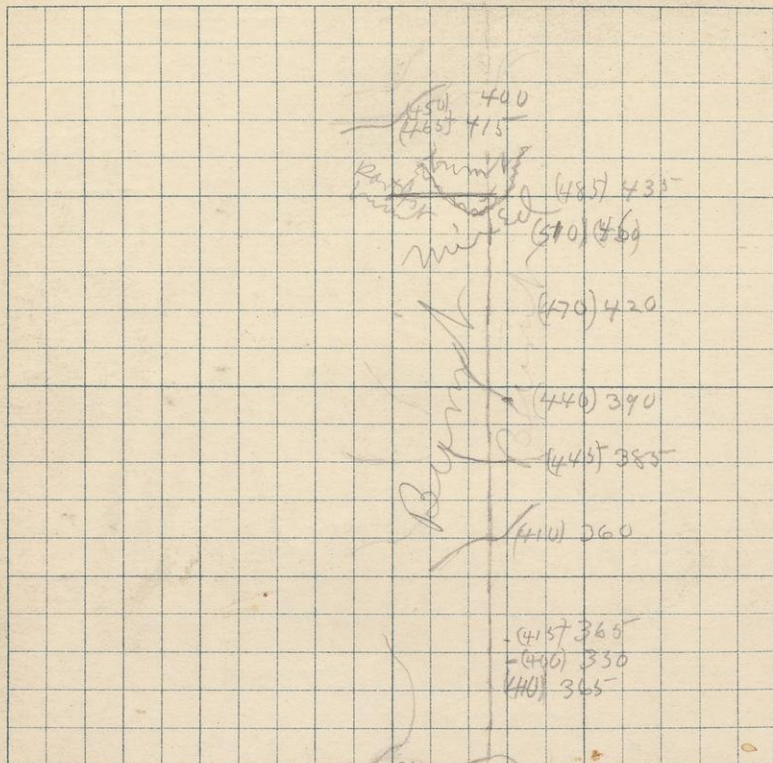
10

T.

T. 44 W R. 32 W

R.

32 W



Going N on W 1/8 line

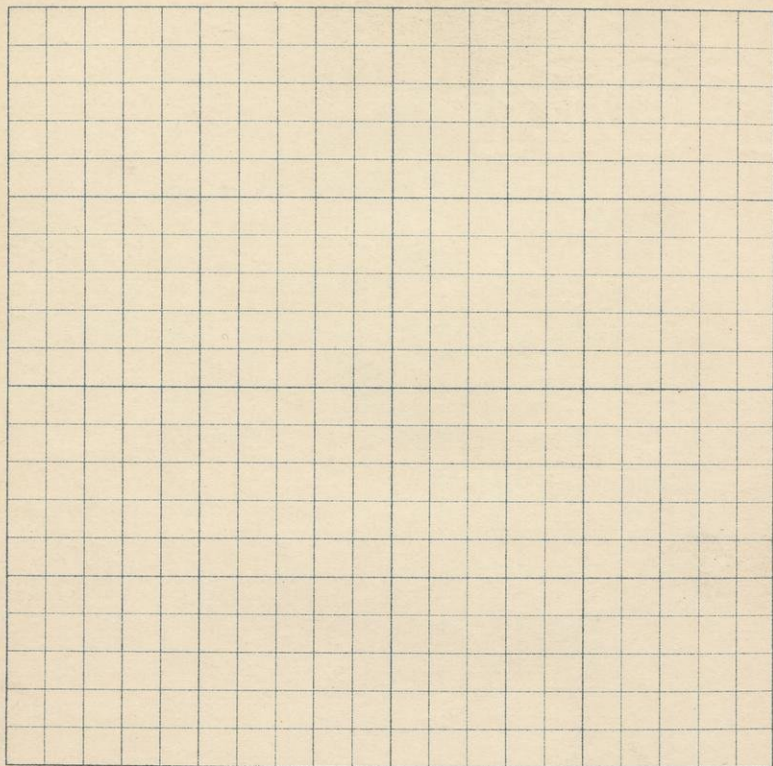
Sky slightly cloudy

	Bench mark		380.19
	Aneroid 7	12.32	425
	1450 m	rotation	30 E
415	Aneroid 7		380.19
	Bench mark		
	1600 ft - 28.45 m		
	Offset 250 paces E together		
	End of creek + Swamp		
	Creek 30 ft wide, 50 paces W of station		
	flms SW		
	N from offset end of offset in		
	Cedar Swamp.	(407)	
	22 paces edge of bank of it	(410)	
	burnt timber		
	270 creek 4 ft wide, flms SW	400	
	450	415	
	200 burnt timber	440	
	270	400	
	320	415	
	450	415	
	450	30 E	
	625	230 E	
	625	410	
	690 Gate road - very low		
	800 narrow strip green timber	445	
	850 burnt timber		
	970 3.45 PM		
145	970	230 E	
200	1025	440	
		30 E	

S.

T.

R.



1200 mixed timber a little Long Hardwood 89
 1400 " " " " " " 470
 1500 large off set 250 paces W (483)
 1550 on line, partly burnt (470)
 1675 (465)
 1700 (450)
 1700 320 PM 2. 4.15
 1865 edge of cedar + spruce Swamp
 1945 in Swamp 2. 3.30

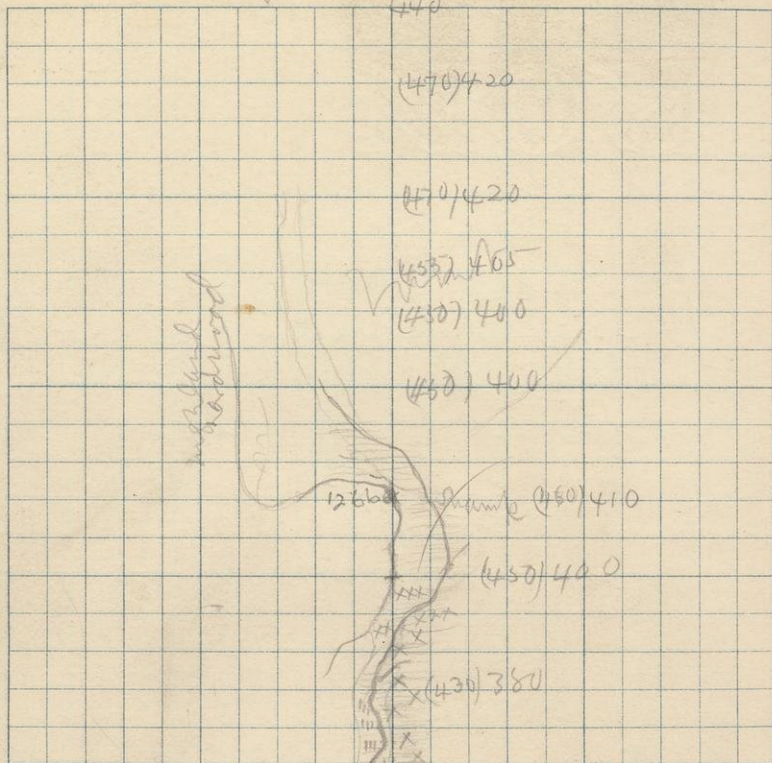
Struck line at 1999 paces, 17
 paces E of $\frac{1}{8}$ stake

S. 2

3

T. 44N

R. 32W



1/8 stake in spruce + tamarack swamp

1/8 "

435

1/8 "

345 PM

208

80 paces, 15 paces to line, creek
flows S.W. 20 ft wide at least - creek
on edge of open marsh, 50 paces into
good thick heavy cedar (430)

200 paces, tamarack + spruce, ^{swamp} same good
spruce 4 PM 208

250

branch of creek

300

same creek 25 ft wide

400

cedar spruce + tamarack swamp

some good cedar

430

dead cedar

475

edge of swamp (430)

500

4 PM

1.36

500

4.50

No 1266, N 760, N 1500

1266 of greenish rock gabbro - similar
far to outcrop as in

found that care forms top of a
knoll, outcrop is of spruce + tamarack

is 31 above swamp - no change in direction

700

4.80

830

creek 4 ft wide flows E (445)

1000

(450)

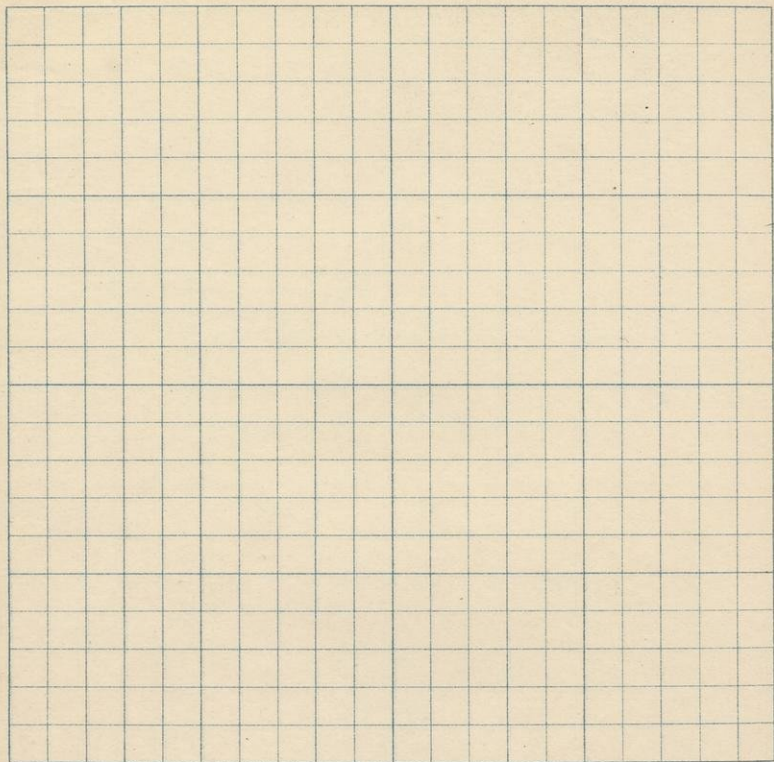
1200

(450)

S.

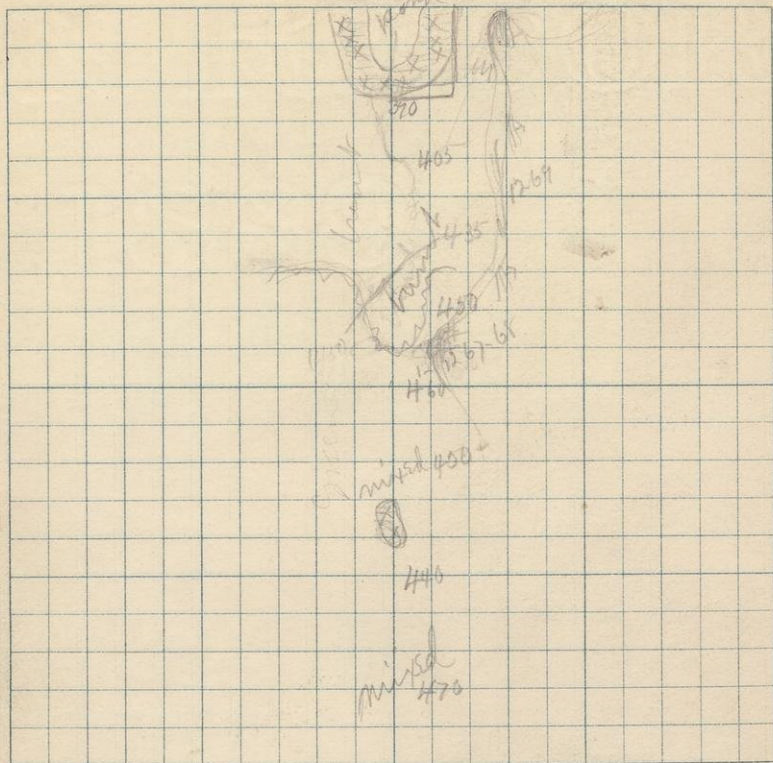
T.

R.



1300	mint timber	458
1520		470
1600		470
1800	Edge of cedar swamp	420
Struck line at 1993		
11 paces E	Bench mark	
	Bench mark	445.52
	One rod 7	490.

S. 8 line 4 T. 44 N R. 32 W

E line sec. 4 ⁴⁵⁰, young P

Spy overcast

1267 is the quartzite

1268 is the gneiss near the quartzite

1269 is a quartzite from near the middle of the outcrop.

1270 is a gneiss from near the center of the outcrop

XBM Sec 406, 70 at cor
1/8 mile 38 E of cor
SE cor 7 35 ft N of cor
1/8 50 paces N of cor

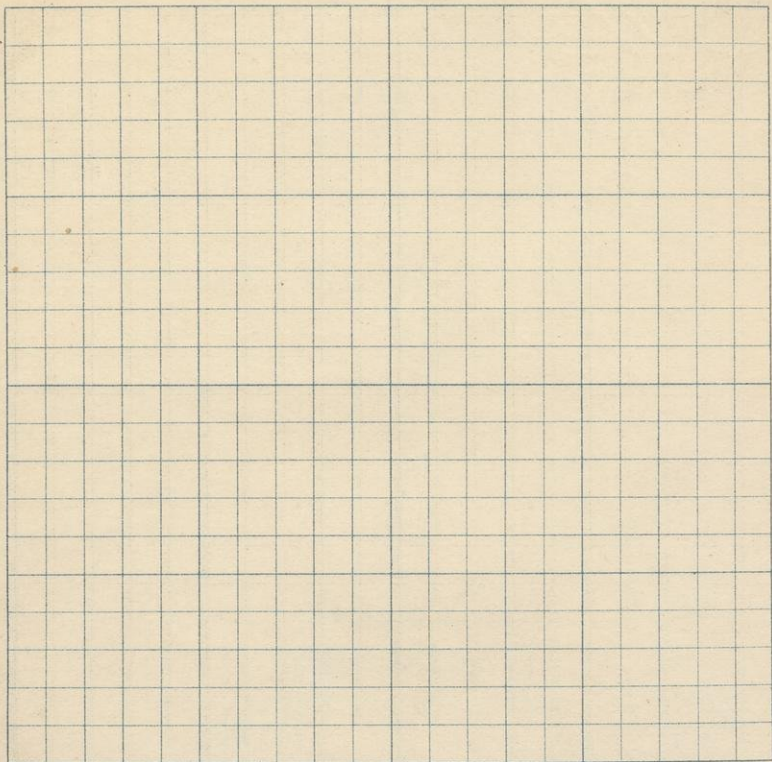
95

418.82
380.96

Bench mark 436.70
1500 = 28.60

200, mixed timber, a little heavy maple (470)
500 ~~450~~ " " thicker " (440)
600 small dead spruce swamp (440)
700 other side of it
800 mixed timber, mostly soft wood (450)
1000 (460)
1100 burnt timber
1200 450
1400 435
1600 8.25 AM 405

1267-70; N 1600 + N 80-120 of line a
large outcrop, 500 by 75 ft of
1267 quartzite & gneiss. The strike of
the quartzite is N 100 W, dip
1268 nearly vertical, at sometimes looks E &
sometimes W. The contact of the gneiss
1269 + quartzite is not regular. At first
I thought gneiss the ~~red~~ dike
1270 with a NW strike. I think it is
a metamorphosed intrusive
rock from the contact + the look of
the rock. The laminations of the
gneiss are parallel to those of the



1271 is near the S end, a
gneiss containing iron.

1272 is a gneiss very near
the Sand. 1750 W, 50 N of
S.E. cor

The top of the outcrop (480)
 these rocks outcrop in a S W
 direction along the side of the
 hill near its top for nearly 250
 yards. 180 paces (about) S W of
 is the highest point of this outcrop (479)
 Rocks are all essentially the same
 quartzites & gneisses, principally the
 latter, though different layers
 vary in appearance, as indeed
 do the same layers. The strike
 is about the same
 but the dip is much more clearly
 W. Taves great somewhat.
 the rocks come up thus)))
 should call it from 60-90 W

1760 swamp cedar

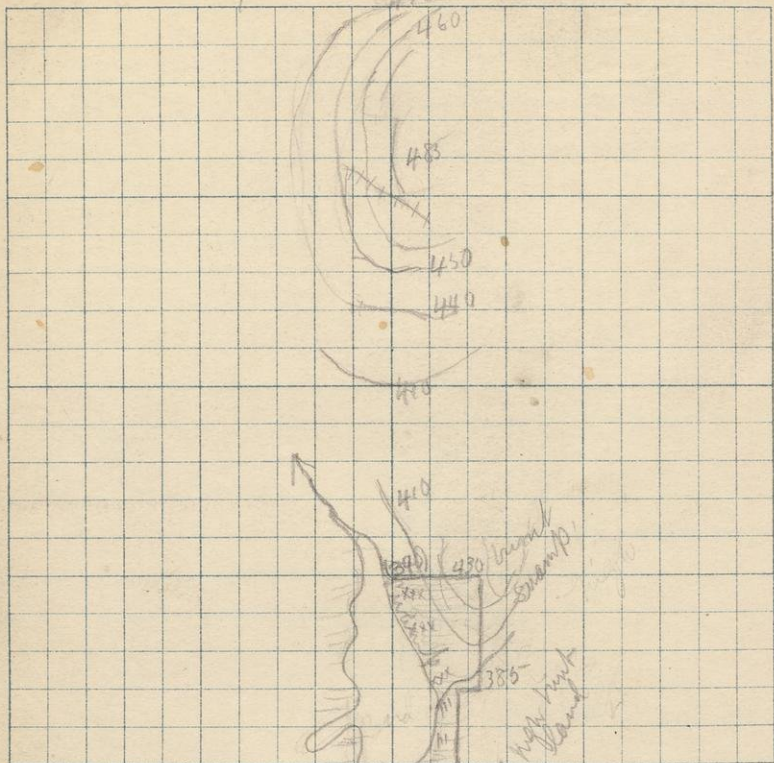
1870 edge of cedar swamp ^{pond} (390)

offset 110 paces W, strike line
 at just about 2000, corner
 is in pond.

S. 9

T

R



Spring Sun E. 100° 100° 9,

Offset W. 128 paces.

Then at line offset West 102 paces
making whole offset 280 paces ~~250~~

Then 200 paces down, offset
West 45 paces more

250 paces S in this line creek

4 ft wide, near NE (385)

500 paces hunt opening (430)

Then offset East toward line 325
paces. going E at 275 paces.

swamp about pond, pond 390

600 paces, (on section line) (390)

700 (410)

1000 partly hunt (410)

1200 (440)

1300 (450)

1500 thick heavy hardwood 470

1600 " " " (485)

1800 (475)

1900 (460)

2000 edge of partly hunt timber (440)

Struck line at 2090 on stake

Bench mark 420

line rod 7 418

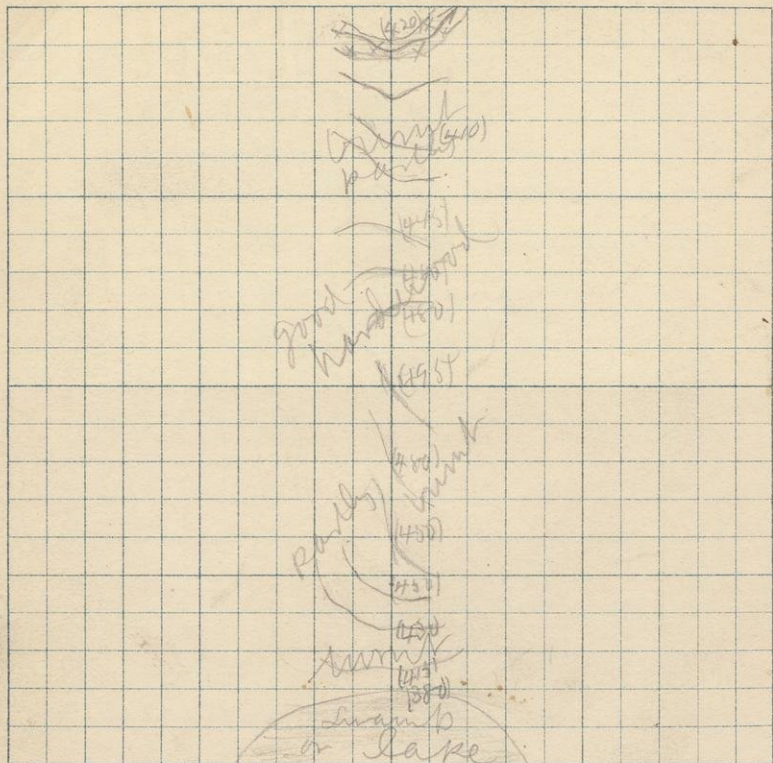
Bench mark in hunt timber

12.28 PM 205

S. 9

T. 44

R. 32 W



Going to on E $\frac{1}{8}$ line of action 9.
 Sky clear forecast by terms

Bench mark

380.96101

One vid st edge of lake

28.71

1400 = 2869

145 PM

Corner mark is in swamp, muffled in part. The leveling party located it, offset 250 paces from previous Ben Bench mark, (32. cor 9), & ran straight line to $\frac{1}{4}$ line of 8 without locating the point from which a 250 pace offset must be made to get to corner. I did not find the bench mark but took a reading near the water edge.

170

edge of Swamp & lake

253

corner

1.50 PM

3.15

255

(415)

360

Barley growth, thick underbrush

(430)

475

(430)

600

mixed timber, perr

(450)

800

thick brush

480

900

2.20 PM

3.30

1000

mixed timber, good heavy maple

(495)

1100

good heavy maple

(480)

1200

good heavy maple

(465)

1300

good heavy maple

(450)

1400

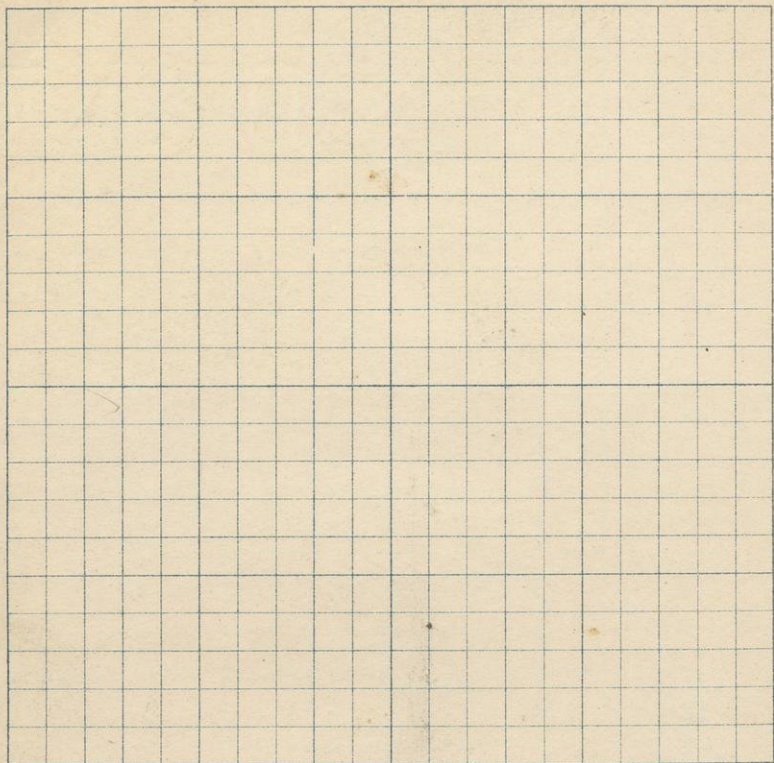
good heavy maple

(450)

S.

T.

R.



160
170

1530 burnt timber

1540 spruce tamarack white birch, light, H10
fairly burnt

16 or 17 1780 edge of swamp, spruce (420)

North 1800 on a 5 ft wide, flow N.E.

1840 burnt timber

1900

(420)

Struck line at 2120 Could
not find post - Person who set stake did
not square a tree. Fire has burnt
off leaves.

Outcrop seen this morning is 250 paces
N.W.

Outcrop seen this morning is about
250 paces W.E. of probable stake
+ 20 N of line. This end is fully
100 ft broad.

Strike N 16 W dip 70 W

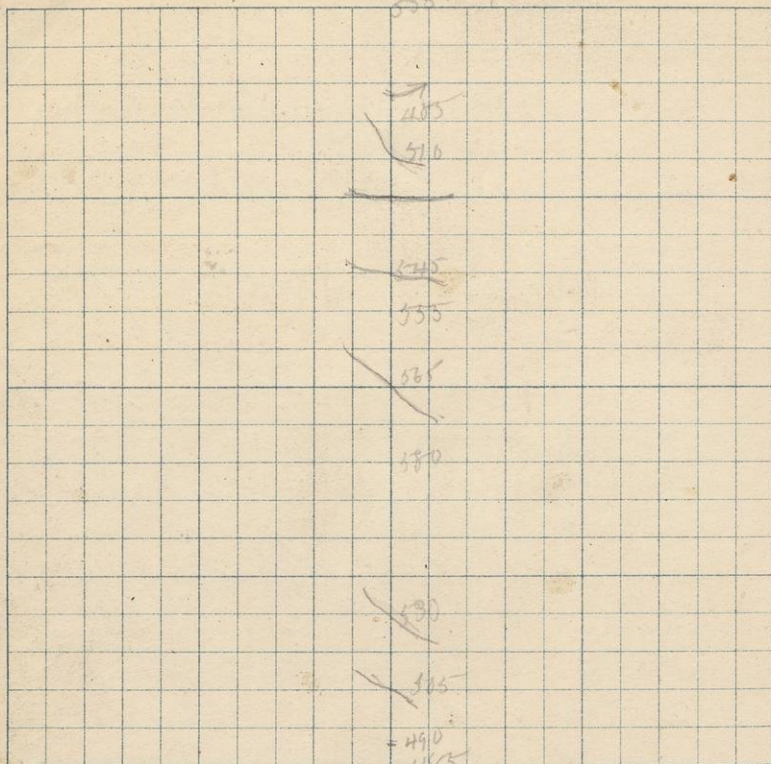
S. 4

T.

44

R.

32



Running from E 1/2 line of
 Section 4
 Too late for clouds to get
 variation

Running N from section line 105
line ~~from~~ 4.15 455
50 paces 470

150 good heavy maple 500

400 " 530
600 Hardwood maple & hemlock
hemlock is thin in fork

800 good heavy maple 580

900 ~~some~~ splendid heavy maple 565

1000 a little Norway pine 535

1200 1275 ground falls away

1300 a few splendid pine 545

1400 a very fine maple

1500 570

1700 cedar, hemlock, softwood

1740 opening, white flowers (485)

320 PM

Bench Mark 538.8

Aneroid 530

Struck line at 1720 paces, 80 paces

N of 1/4 stake

Spring 18 on 1/4 line of 33

July 20

8.05 Anasord 138

2533

Bench mark on edge of tamarack swamp 602.74
 200 mixed timber mostly softwood 605
 400 hardwood - Elm, Hardwood, good maple 610
 600 " " same good tamarack swamp 620
 836 barrow - fir one
 1070 800 mixed 610
 400 300 1500 mixed - good Hemlock - but
 scattering 610
 1900 of ground falls 615
 1200 600
 540 pm 400 hardwood & good maple 610
 4300 1500 " 600
 1600 " 600
 1800 mixed partly burnt 615
 1900 cedar tamarack
 200 in burnt spruce swamp
 2211/2 Clinchline
 burnt cedar tamarack 600
 found no lake, 9.15 PM

15 paces barrow compass 500
 100 burnt cedar swamp 590
 200 in green cedar swamp 590
 compass 500 with 5300
 change time from on 41300
 250 tamarack swamp
 300 2000 mixed " 590
 400 spruce & tamarack swamp
 500 partly burnt sp & tamarack 590
 600 burnt barrow 590
 980 edge of swamp 10 9.48 PM 590
 1100 burnt softwood 590
 1300 " " 610
 1400 " " 620
 1600 " " 615
 1678 total noted

Blank Pages

107-115

Skipped

116

1200 good hemlock, some very good pine 2740
 1240 ~~2300~~ same old swamp
 1410 balsam cedar not swamp 111
 1500 good hemlock - mixed 2750
 1600 " " " 2760 2750
 1800 " " " 2750
 1800 " " " 2750

thick line at 2425, 22
 bases of bench mark
 Bench mark 643.02
 2,35 PM Aneroid 138 2750

11. From Iowa

11. From Iowa
11. From Iowa

