Township 47 north, ranges 32, 33, and 34 west, specimens 31516-31533. No. 258 Sept. 12th, 1891

Finlay, J. R.
[s.l.]: [s.n.], Sept. 12th, 1891

58

LAKE SUPERIOR SURVEY

Finlay

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.

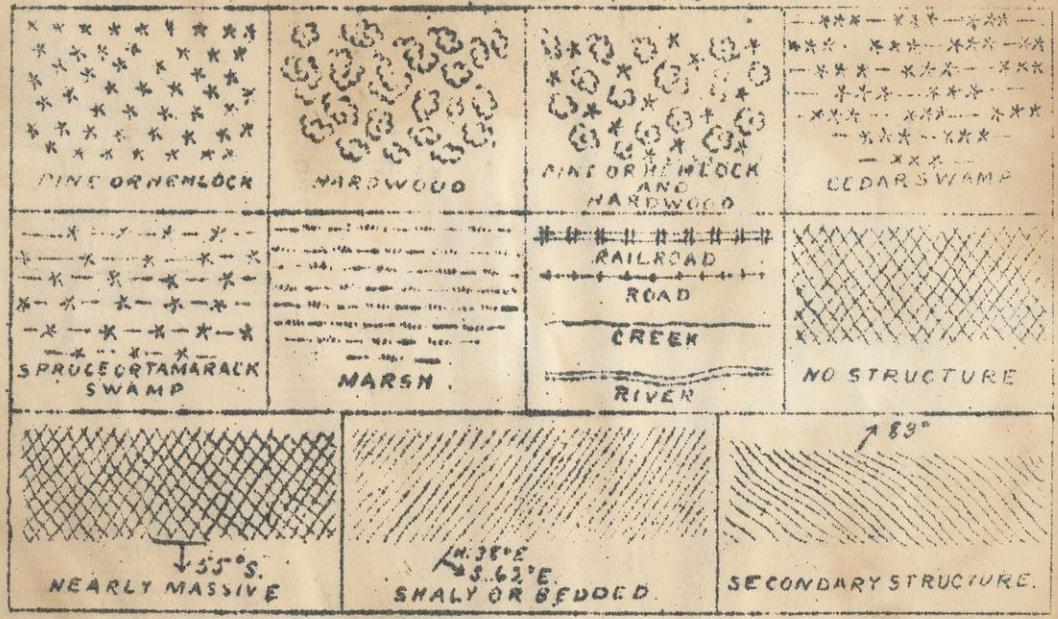
It will be the constant business of the geologist to search for outcrops. All hills within a reasonable distance of the course of travel will be examined. Oftentimes upon the steeper slopes of a hill a rock surface is covered with a coating a few inches thick of moss, leaves or vegetable mold and can be stripped with the pick. Where the exposure is small and there is the least possibility that it may be a large bowlder, 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 3x4x1 inch. In case several specimens of the same ledge are necessary, and when ledges are numerous, specimens $2x2\frac{1}{2}x\frac{3}{4}$ 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.



EQUATION OF TIME FOR 1891.

Day	Min.	Day	Min.	Day	Min.
		JUNE.			
		Add to watch time.			
1-6	2	7-11	1	12-16	0
		Subtract from watch time.			
17-21	1	22-26	2	27-31	3
		JULY.			
		Subtract from watch time.			
1-6	4	7-13	5	14-31	6
		AUGUST.			
		Subtract from watch time.			
1- 7	6	8-13	5	14-18	4
19-23	3	24-26	2	27-29	1
30-31	0				

2.

298

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

#2

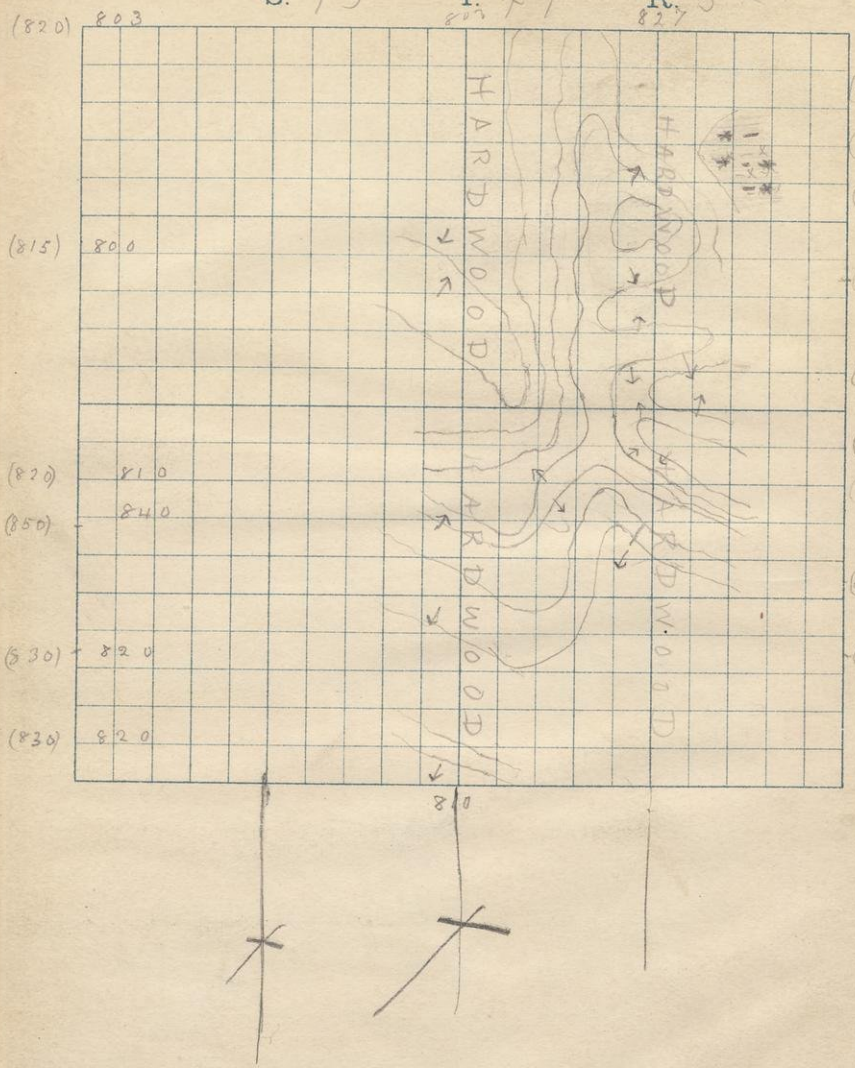
Finley

Specimens 1516–1553

Towns: 47-32
47-33
47-34

2 Sept. 12th 1891

S. 13 T. 47 R. 32



Going S on ¼ line Sec 13

B.M 827.51 28.6 = 400 ft.

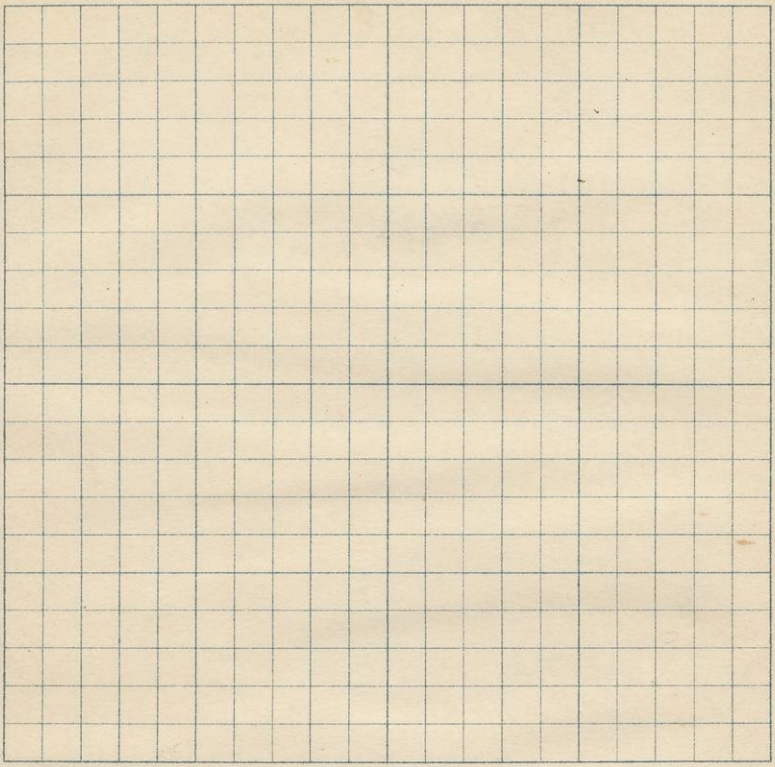
Mixed growth mostly hardwood

	184 (820)	var 9° E	Mixed growth
	300 (820)	" 13° E	Hardwood
	350 (820)	" 15° E	"
	408	" 12° E	"
X50W	408	" 11° E	"
X50E	408	" 14° E	"
X88E	408	" 16° E	
X140E	408 (840)	" 12° E	Edge of tamarack swamp
	500 (850)	" 9° E	Hardwood
	600	" 10° E	"
	650 (840)	" 10° E	"
	700	" 9° E	"
	750	" 11° E	"
	900 (840)	" 8° E	"
	1100 (850)		"
	1200 (850)	var 8° E	Mixed hurzely Hemlock Birch, maple, pine.
	1450 (820)		Hardwood
	1500 (820	var 10° E	"
	1650 (820)		Mixed. Birch, balsam maple.
	1700	var 9° E	" " "
	2000 (830)	var 10° E	Mixed " "

Going N on W ⅛ line

	164 (830)	820	Hardwood
	350 (830)	820	Balsam brush

S. T. R.



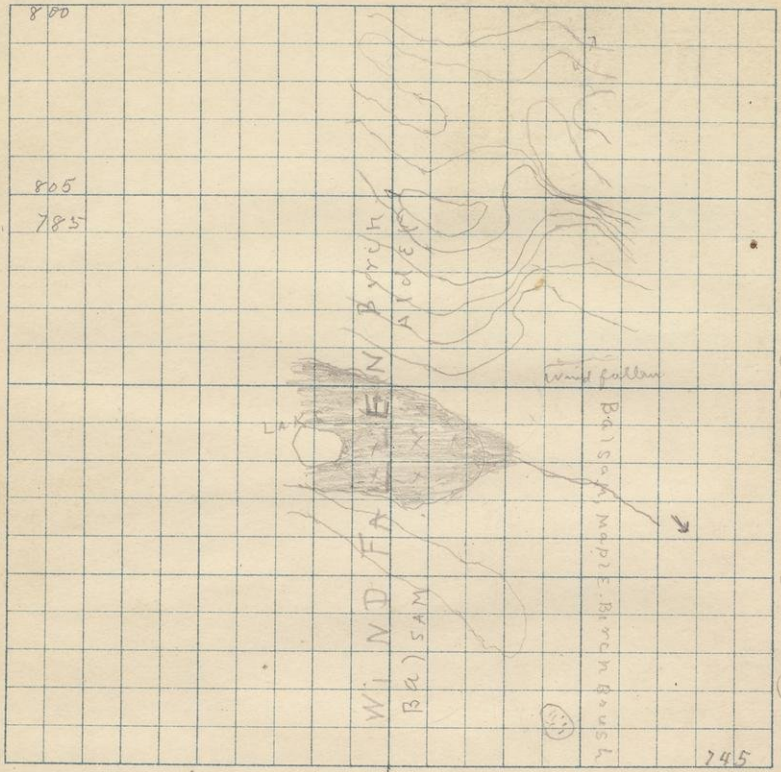
685. (850) 840 Hardwood
800 (830) 820 "
1440 (815) 800 "
2000 (820) 803 "

B. M. 803.

~~Young Nose~~ E 1/8

6

S. 24 T. 47 R. 32


WIND FALLEN
Balsam
Birch
Alders
Lake
Balsam Maple Birch Brush
745

Going S on ¼ line Sec 24

100 (800)		Poor Hardwood
200 (800)	var 5° E	Poor "
300 (790)	" 4° E	" "
425 (800)		"
500 (780)	" 4° E	"
600 (760)	" 6° E	Poor "
700 (750)	" 6° E	" "
900 (740)	" 5° E	" "
1000 (740)	" 6° E	Undergrowth Hard. Balsam
1100 (730)		Old windfall o/growth
1200 (730)	" 7° E	" " "
1250 (730)		Bed of dry stream
1300 (730)	" 7° E	Old windfall
1500 (740)		" "
1600 (750)		" "
1800 (740)	Var 3° E	" "
2000 (740)	B.M 745	Quarter Post 400 feet E of where C.M made its

Going N on W ⅛ line Section 24

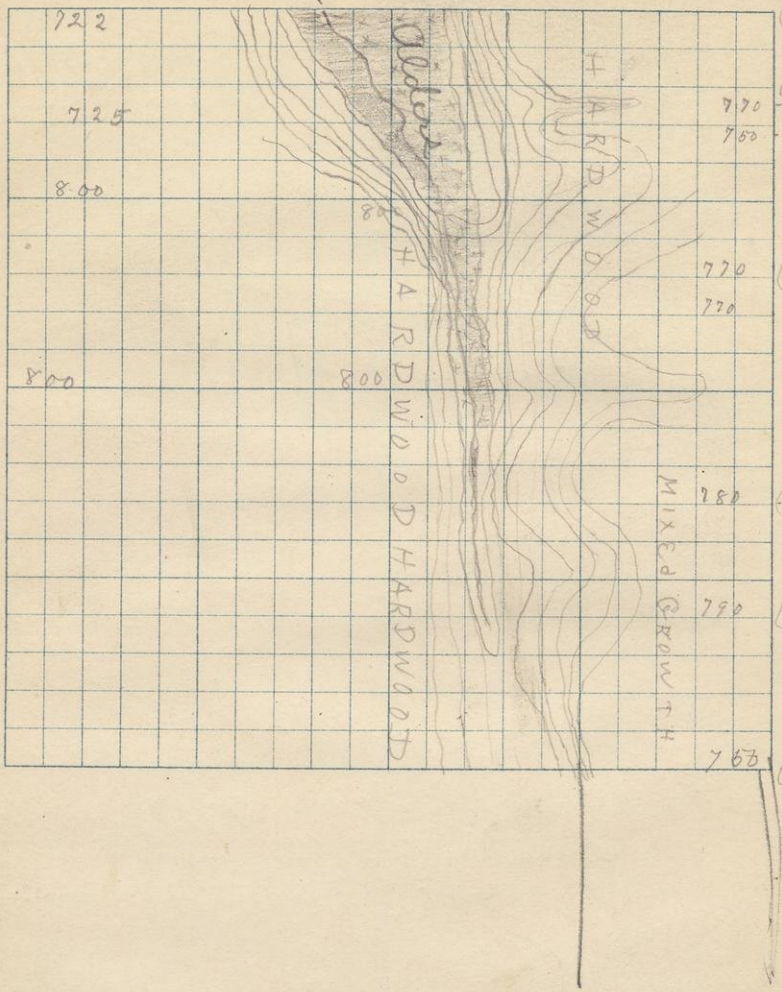
B.M. 7.5.3.81

500 ft = 2 C.H 11 li.

400 (750)	Var 4° E.	Windfall Balsam.
600 (740		
700 (750)		Tamarack swamp.
1400 (790)		
1500 (810)	810	
1900 (840)	840	Hardwood
2000 (810)	820	Hardwood & Pine

8 Sept 14th 1891

S. 14 T. 47 R. 32



Going S on E Sec line 14

B.M. 795.31 500 ft = 28.4 in

7. A.M.		Hardwood
240 (755)	Narrow gulch	"
260 (770)	770	
320 (750)	750	"
700 (775)	770	
800 (780)	770	
1300 (800)	780	"
1600 (810)	790	
2000 (780)	750	8.30 AM Cedar and Balsam

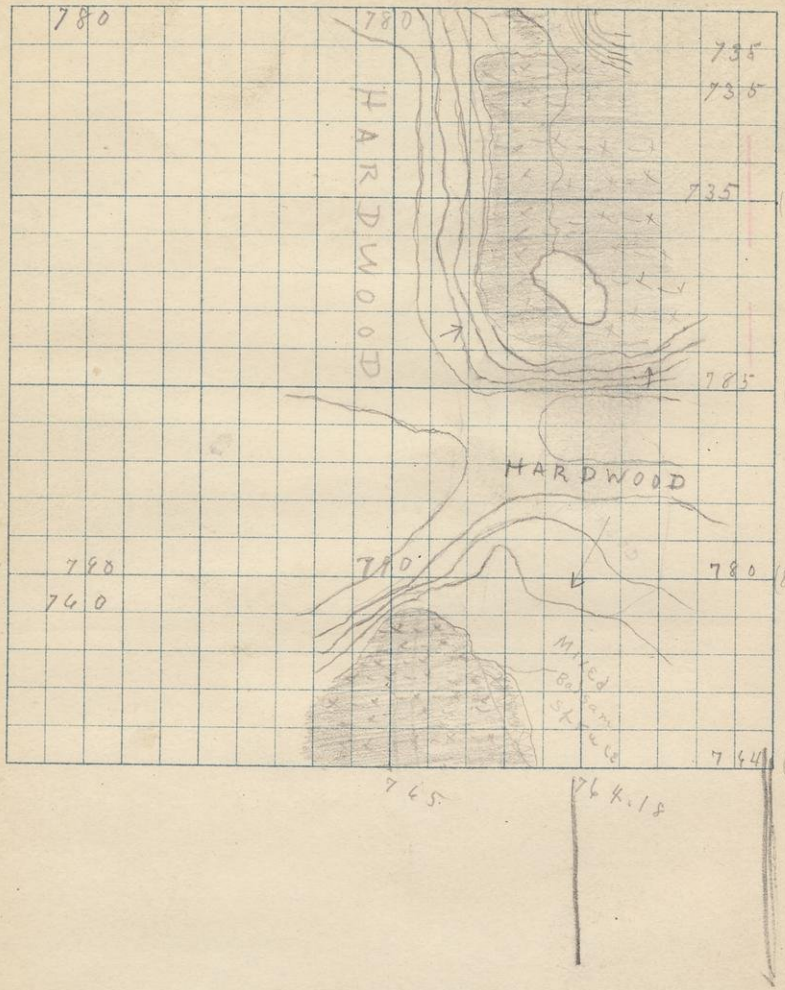
Going N on

1800 (870)	800	Hardwood
1500 (880)	800	"
1700 (840)	725	Stream alder swamp
2000 (840)	722	Alder swamp

B.M 722 Cancroid 840.

1.10 P.M.

S. 23 T. 47 R. 32



Very heavy rain.

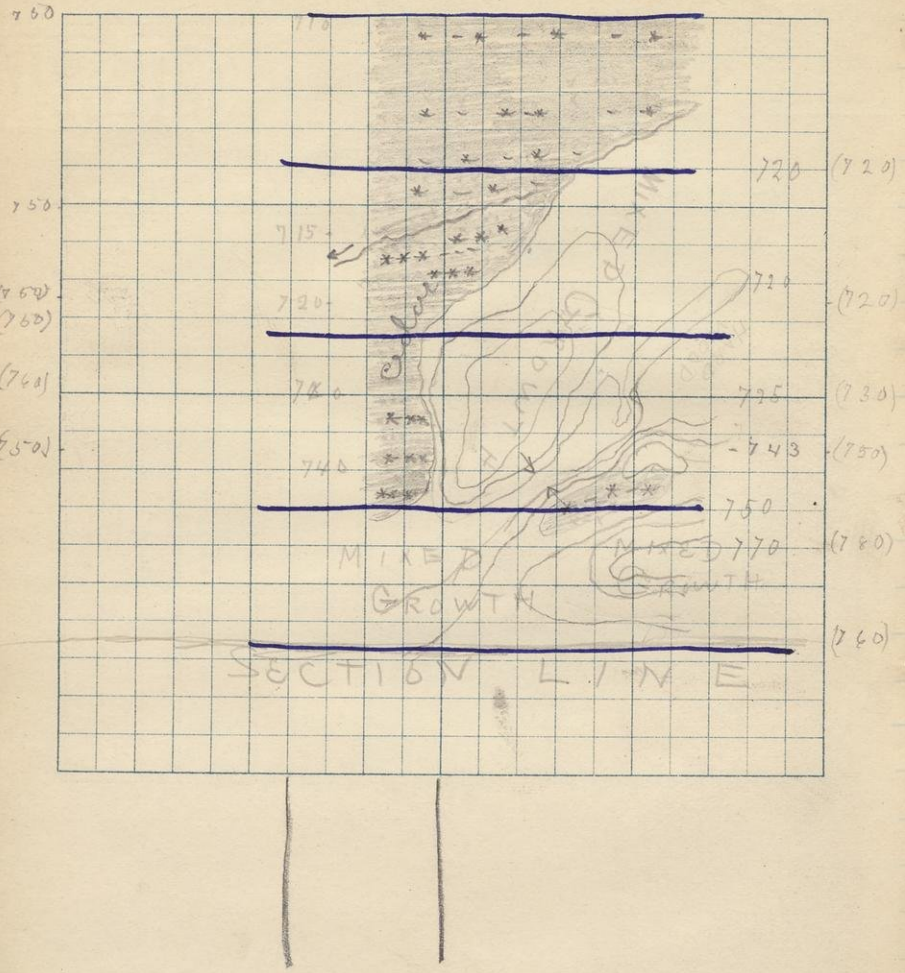
Going S on E line sec 23

100 (760) 735 Tamarack & spruce
200 (740) 735 " swamp
500 (740) 735 " "
670 Cameron Lake
1000 (830) 785 Hardwood
1500 (830) 780 Mixed growth.
2000 (820) (764) " "
B.M. 764.8 10. A.M.

— Going N on E ¼ line sec 23 12.M.
B.M. 765. Tamarack swamp
4000 (765) " "
5100 (800) 790 Hardwood
2000 (820) 780 "
Heavy rain.
12.35 P.M.

Thursday Sept 17th 1891.

S. T. R.



Going S. on ¼ line Sec. 15.

11.00 ft = 27.8 m B.M. 714.22

Cedar swamp.

1100 (720) Hardwood

1750 (720) Dry Alder swamp

1000 (730) Edge of Hardwood

1150 (750) Mixed Birch and Balsam

1300 (760) " " " "

1400 (780) " " " "

1630 (760) 750 " " " "

— Going N on W ⅛ line.

500 (750) Mixed growth.

700 (760) " "

850 (750) Edge of swamp

900 (750) Cedar Swamp

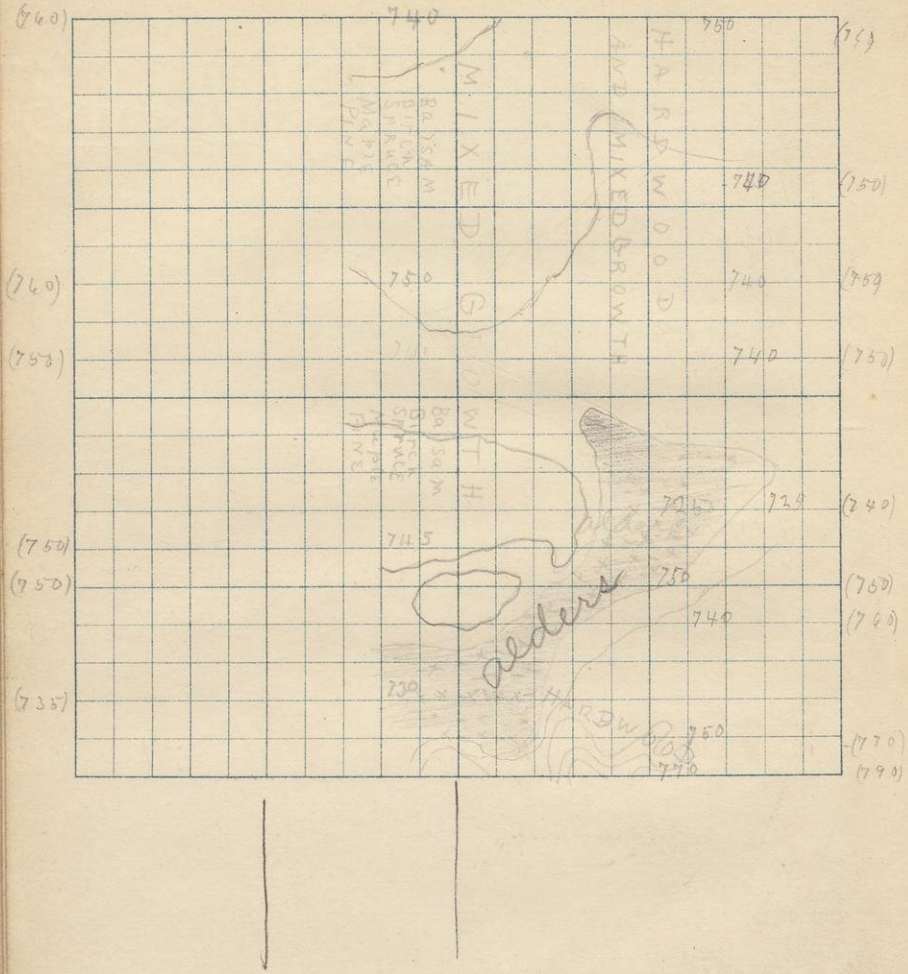
1125 (750) Stream

1638 (750) Bench line

B.M. 250 paces E. 710

14

S. 22 T. 47 R. 32

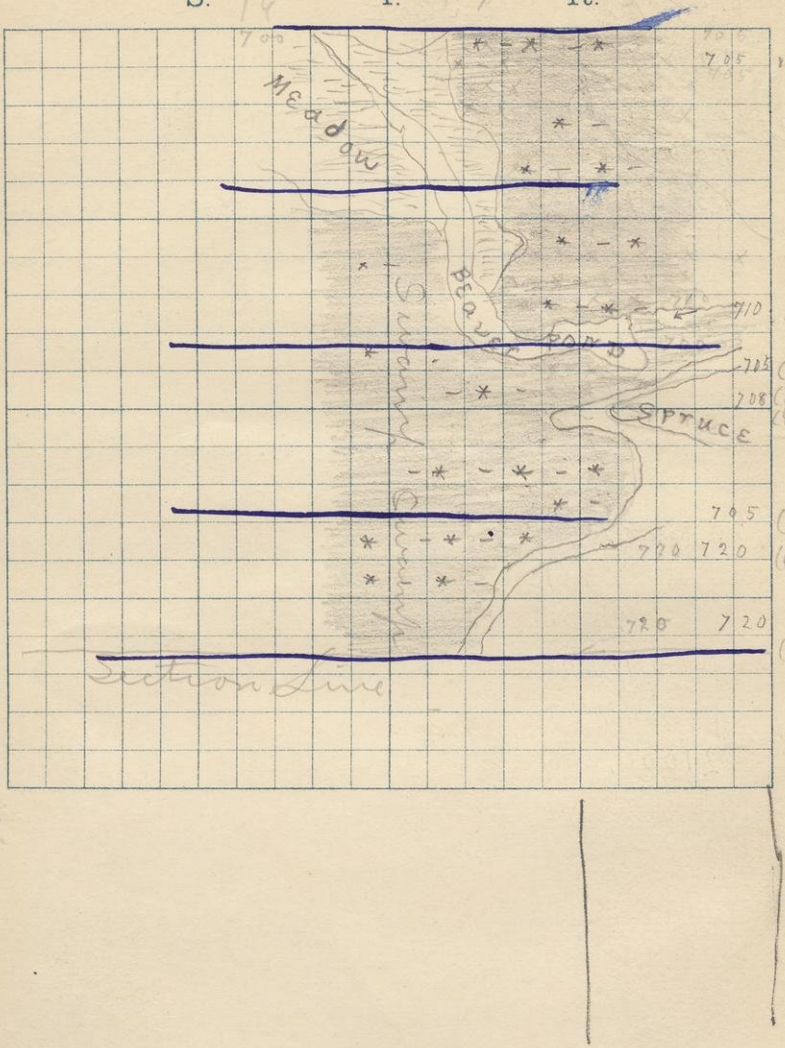


Going S on ¼ line Sec 22

50 (760) var 3° E Hardwood
450 (750) " "
700 (750) Mixed + Balsam
900 (750) " "
1300 (740) var 4° E Spruce swamp
1700 (750) Mixed growth
1600 (760) " "
1925 (770) 750 Hardwood
2000 (790) B.M. 770
— Going N. B.M. 742.94. D = 27 m.
Var. 4° E Mixed Hardwood
200 (733) Tamarack swamp
600 (750) Mixed growth
600 (750) " "
1100 (750) " "
1300 (760) " "
2100 (760) Centre line " "

Sept 18th 1891 7.10 AM

S. 14 T. 47 R.



Going S on ~~E~~ line Sec 14

B.M. 705. 700 ft = 28.3 m

100 (705) Two streams Alder swamp

770 (690) Lake

×200E 750 (670) Tamarack swamp

×200E 900 (680) " "

×200E 950 (700) Spruce

1000 (680) Balsam & spruce

1300 (670) Dense swamp mixed

1400 (680) [Two stakes, bound original corner] Balsam ridge

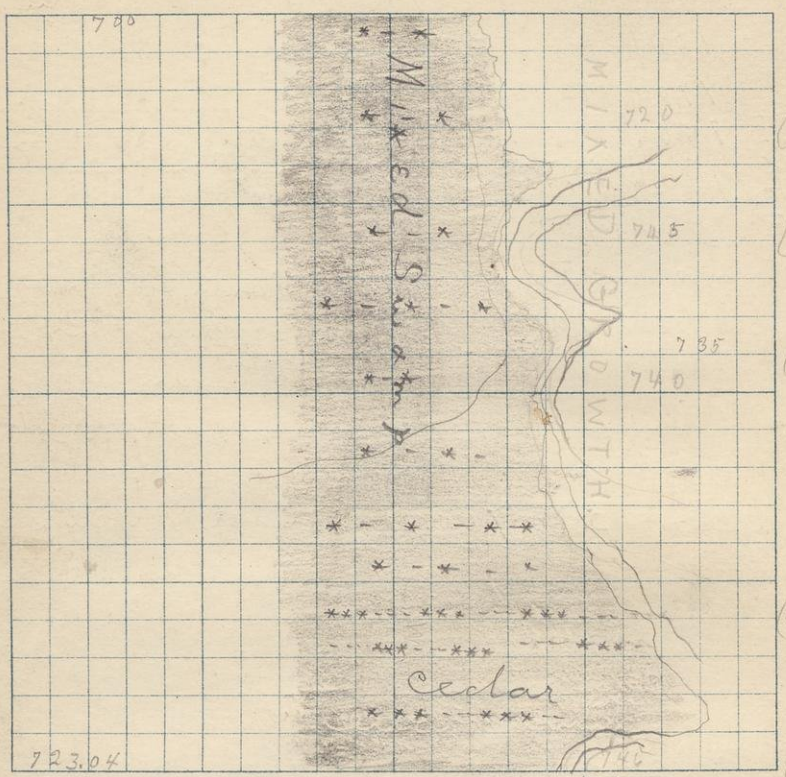
1640 (670) Section line Mixed growth

Going N on E ¼ line Sec 14

B.M. 700. All level swamp

Sept 18th 1891

S. T. R.



Where is number 1 this section?

Going S on E line Sec 21

0. Variation 5° E Mixed growth

300 (660) Dense mixed growth

600 (670) " "

900 (650) " "

1400 (640) " "

1930 Bench line - - Cedar swamp

B.M. 746.03 aneroid 435

Going N on E line Sec 21.

B.M 723.04 -700 ft = 28.4

900 (710) Mixed swamp

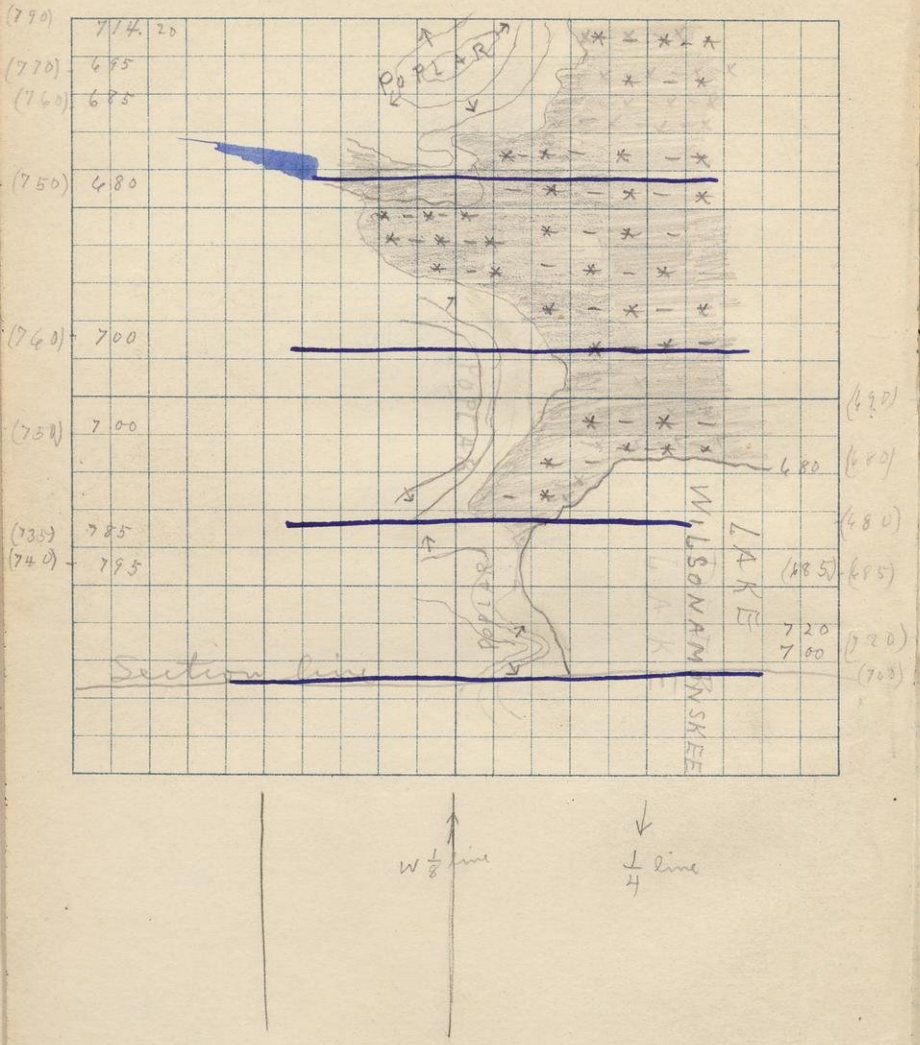
1200 (705) Tamarack swamp

1445 (705) Var 4° E " "

2046 (700) Sec line " "

20 Sept 19th 1891

S. 17 T. 47 R. 32



Going S on 1/4 line Sec 17

B.M 702 900 ft = 28.2 in

Tamarack swamp.

1000 (690) " "

1162 (680) Deer lake " "

X300W 1325 (680) " "

X325W 1467 (685) Possible outcrop of a gray metamorphic rock.

Specimen 15-11.

15-11 1680 (720) Poplar

1738 (700) Section line, Balsam

— Going N on W 1/8 line.

300 (740) Poplar knoll.

380 (735) Alder swamp

646 (750) Poplar

900 (760) "

1300 (750) Tamarack swamp

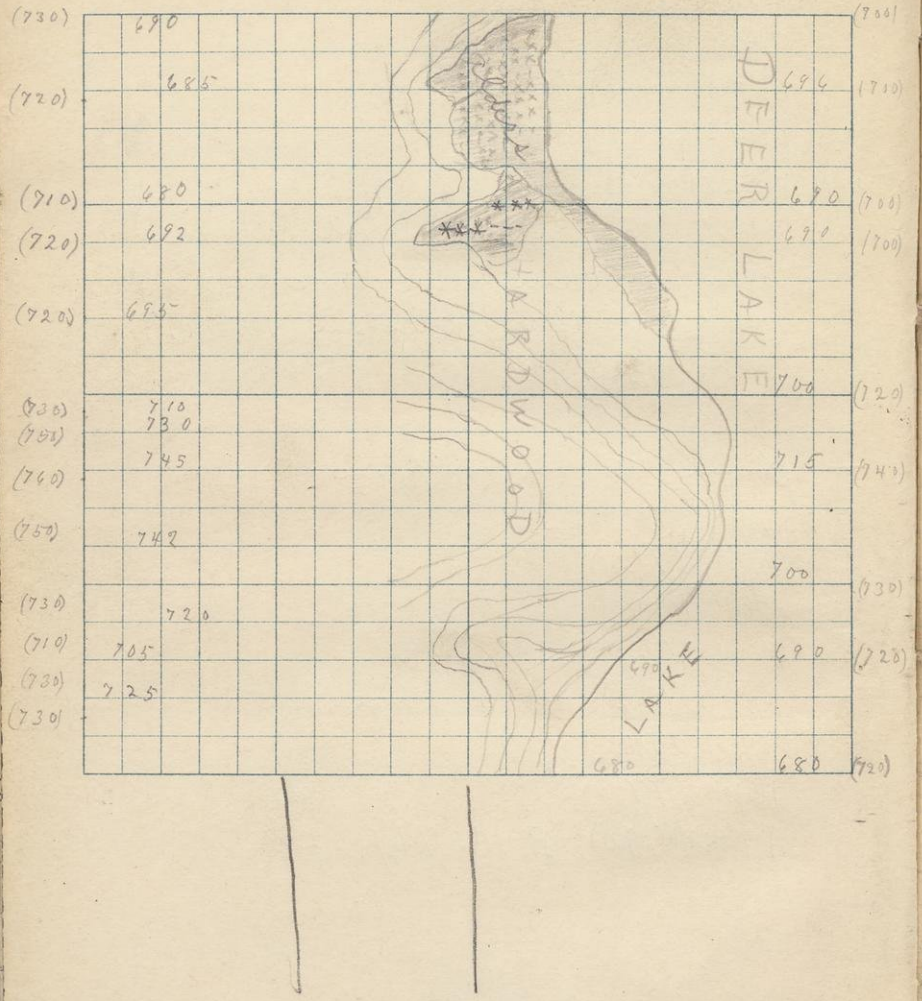
1536 (760) Alder swamp.

1600 (770) Poplar knoll

1928 (790) B.M. 714.20

22 Sept 19th 1891

S. 20 T. 47 R. 32



Going S on ¼ line Sec 20

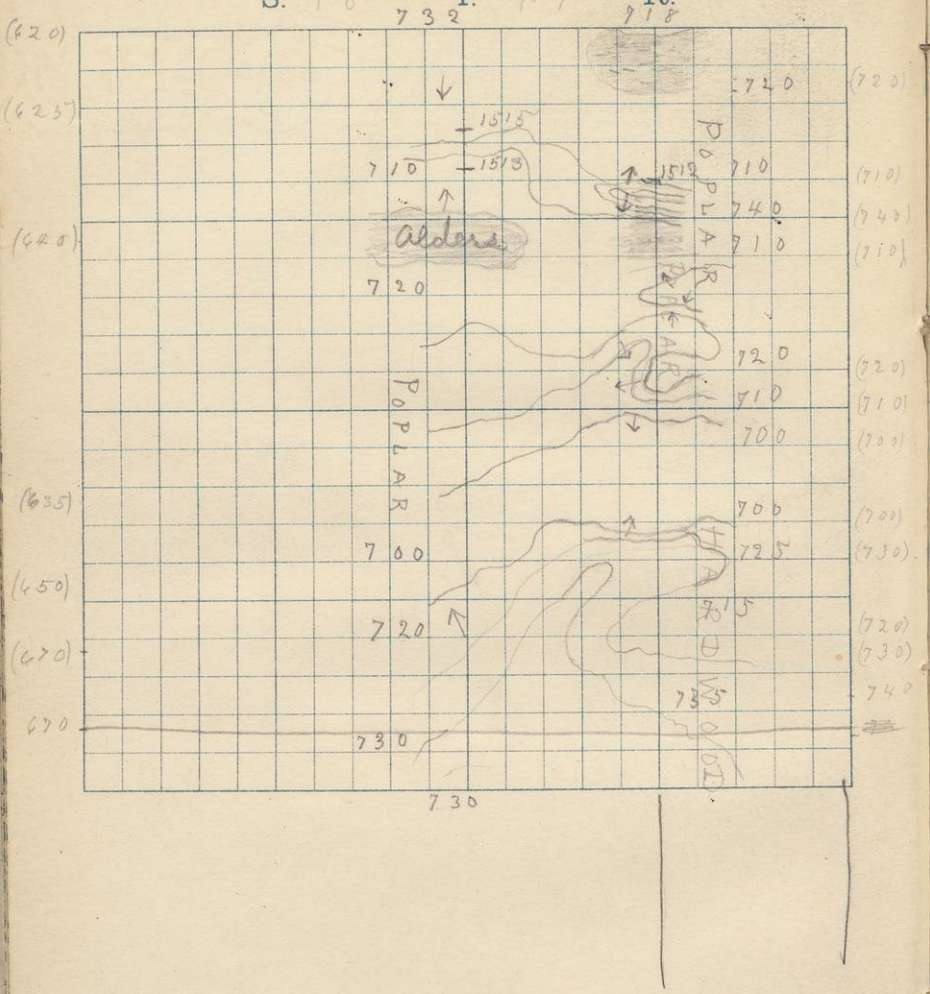
0 (700) Mixed undergrowth.
200 (700) Var 3° 30' E Alder swamp
500 (700) Cedar swamp
600 (700) Hardwood
1000 (720) "
1200 (740 "
1320 (730) "
1700 (720)
2020 (720) B. line on lake.

— Going N on W ¼ line Sec 20.

B.M. 720.70 (740) 600 ft = 28.6 in
1301730) Hardwood
250 (730) "
355 (710) "
451 (730) "
650 (750) "
780 (760) "
887 (750) "
950 (730) "
1200 (720) "
1400 (720) Cedar swamp
1500 (710) " "
1780 (720) Poplar
2000 (730) " & Alders

24 Sept 20th 1891

S. 18 T. 47 R. 32



B.M. 1855(620) B.M 732.23 Poplar

Going S on E line Sec. 18

B.M. 718.66. 1100 ft = 27.7

Poplar.

160 (720) "

400 (710) "

1512. Small outcrop of "greywacke" ?
No strike or dip ascertainable.

Spec 1512

500 (740) Poplar ridge

600 (710) Tamarack swamp

900 (720) Poplar

1000 (710) "

1100 (700) "

1300 (700) "

1400 (730) "

1600 (720) "

1650 (730) Hardwood

1789 (740) Section line "

— Going N on E ¼ line Hardwood

2000 (670) Mixed growth

400 (650) Poplar

625 (630) "

1300 (640) "

1640 (625) "

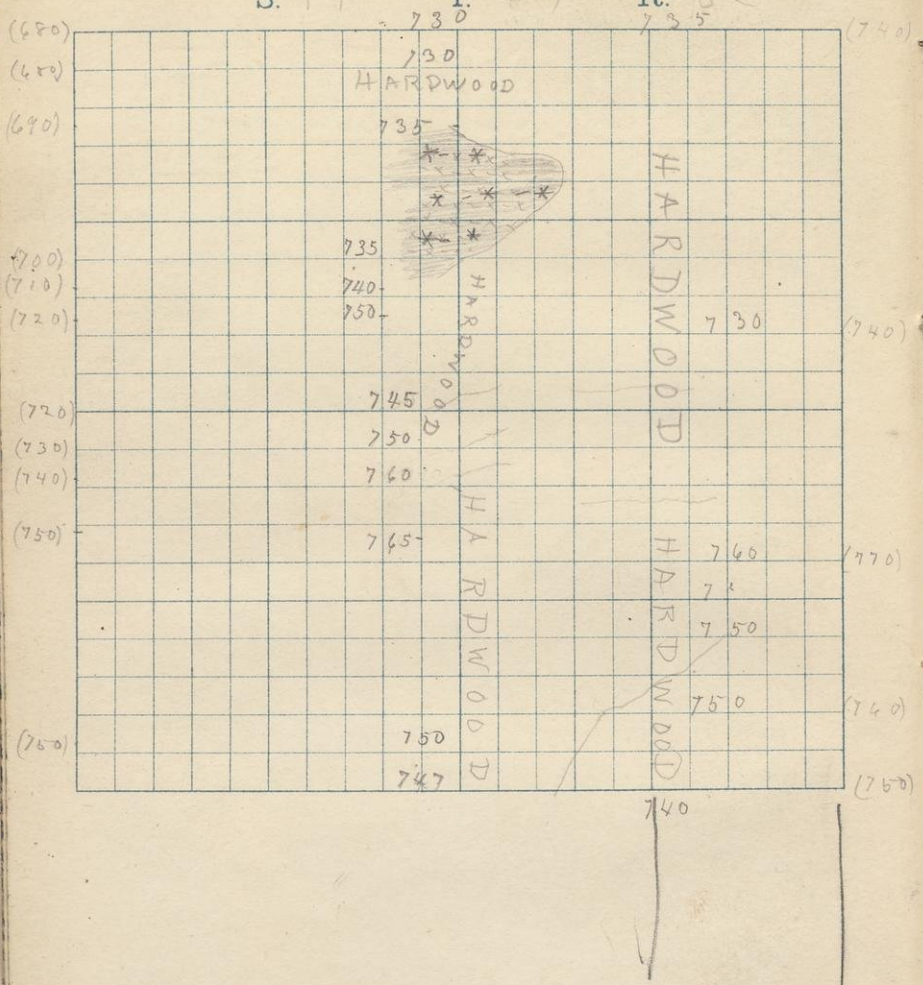
1513 1514 1515 Sedge of metamorphic slates or knotteschifer. Strike E & W dip ?

Specs. 1513. 1514

1740. Spec 1515. Strike of E & W

Sept 20th 1891

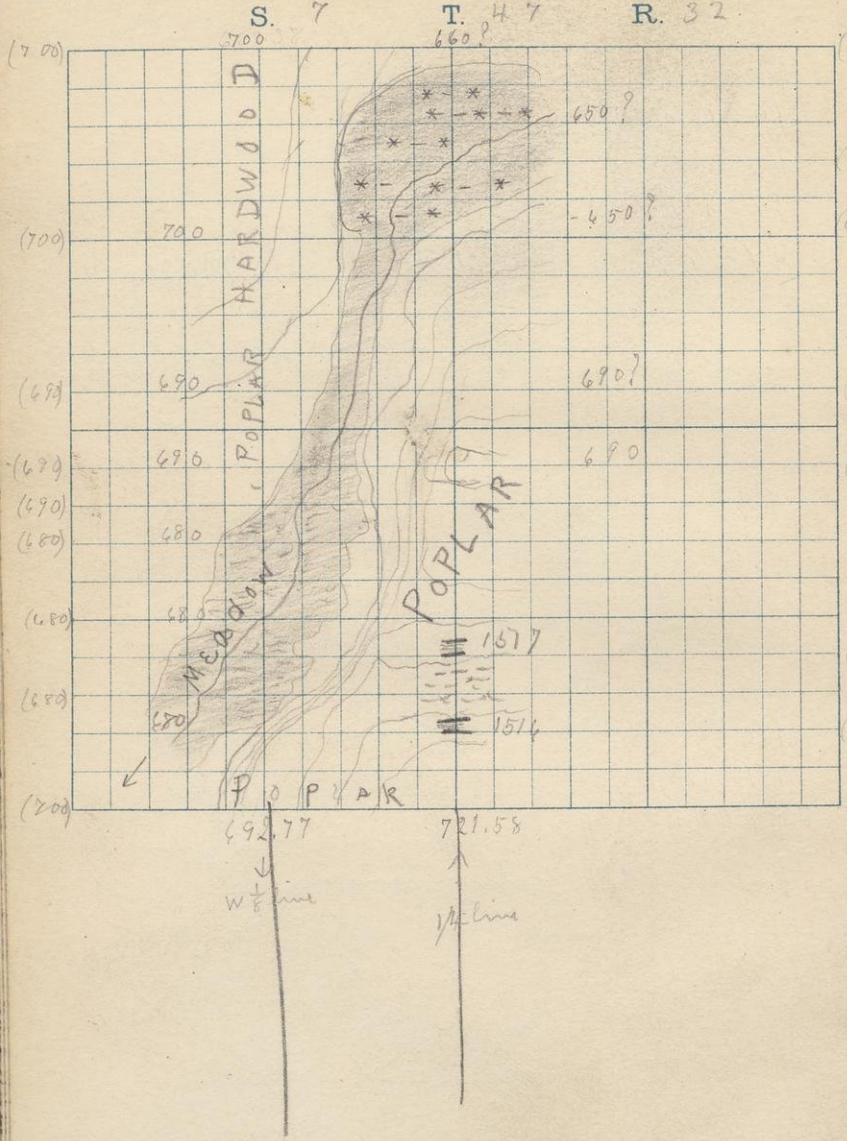
S. 19 T. 47 R. 32



Going S. on E Sec. line 19

0. (740) Hardwood
800 (740) "
1400 (770) "
1600 (760) "
1800 (760) "
1945 (750) Bench Line. B.M. 740.20. "
— Going N on E $\frac{1}{8}$ line. B.M. 747.86. $\frac{11\,00}{27.7}$
Hardwood
130 (750) "
680 (750) "
815 (740) "
900 (730) "
1020 (720) "
1236 (720) "
1310 (710) "
1400 (700) Edge of Tamarack Swamp
1750 (690) Hardwood
1900 (680) "
1940 (680) Section line "

28 Sept 21st at 1891



Going N on ¼ line Sec 7

B.M. 721.58 1200ft = 27.9 in

164. " Poplar

Large outcrop of "greywacke" or metamorphic slates.

1000 paces west and 164 paces N of S.E Cor. Sec 7 T. 47. R. 32.

Spec 1516 These rocks are nearly homogeneous. Part of them are soft, part gritty. They all have a multiple jointing or cleavage which dips about 70° N. This may or may not indicate bedding planes. The strike of the cleavage is almost exactly that of the strata. In some places large nodules of a peculiarly crystalline rock appear.

Spec 1517 Strike N 85° W Dip (?) 80° N.

200(700) Alder Swamp.

400(700) Poplar

Small outcrop of basaltic looking schist or shale.

Strike? Nearly E & W.

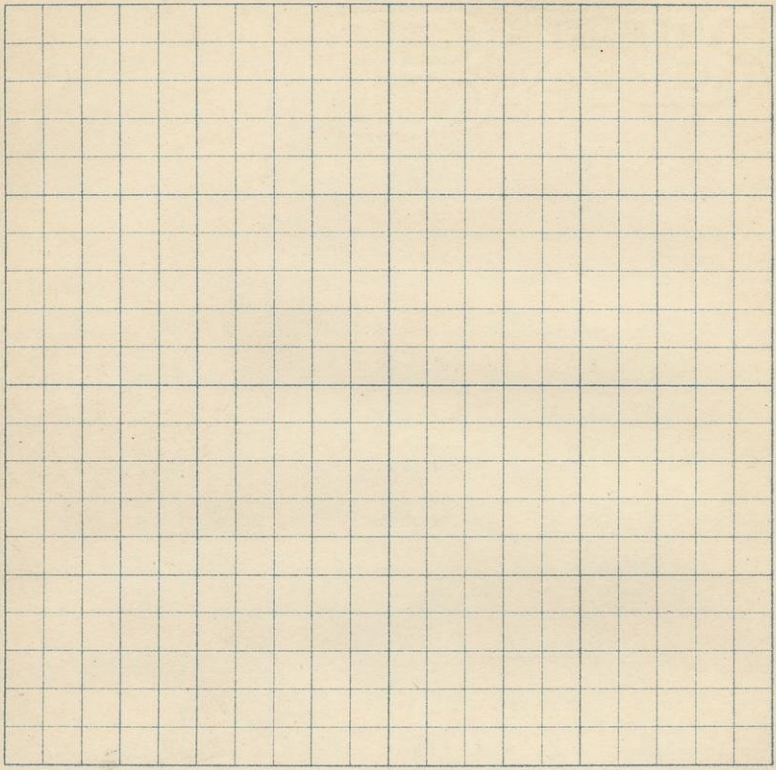
Dip not ascertained

900(690) Poplar

1100(690) "

1540(640) Edge of Swamp "

S. T. R.



1700(600) Stream, bed water Tamarack swamp

2000(640) Mixed swamp

– Going S on W 1/8 line

0(700) Hardwood

500(700) "

900(690) "

1100(690) Poplar Edge of alder swamp

1200(670) Poplar

1300(680) alder swamp

1493(680) creek open alder "

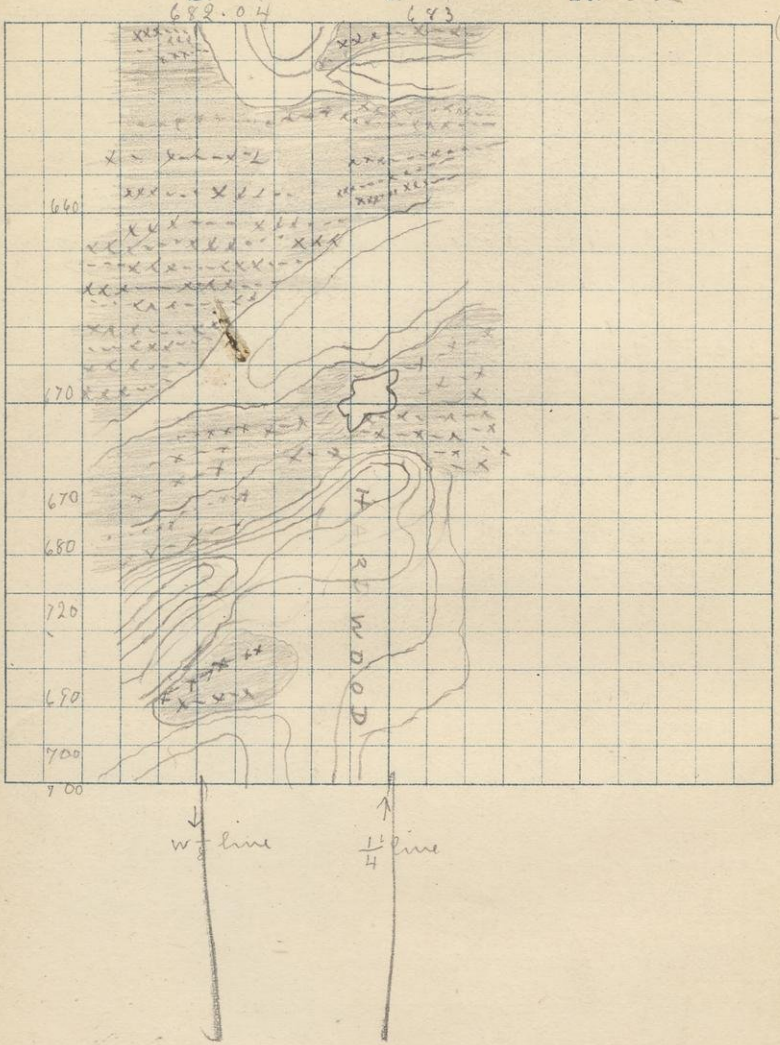
1717(680) alder "

2040(700) Bench line. Poplar

B. M. 692.77

32 Sept 21st 1891

S. 4 T. 47 R. 32



Going N on ¼ line Sec 6

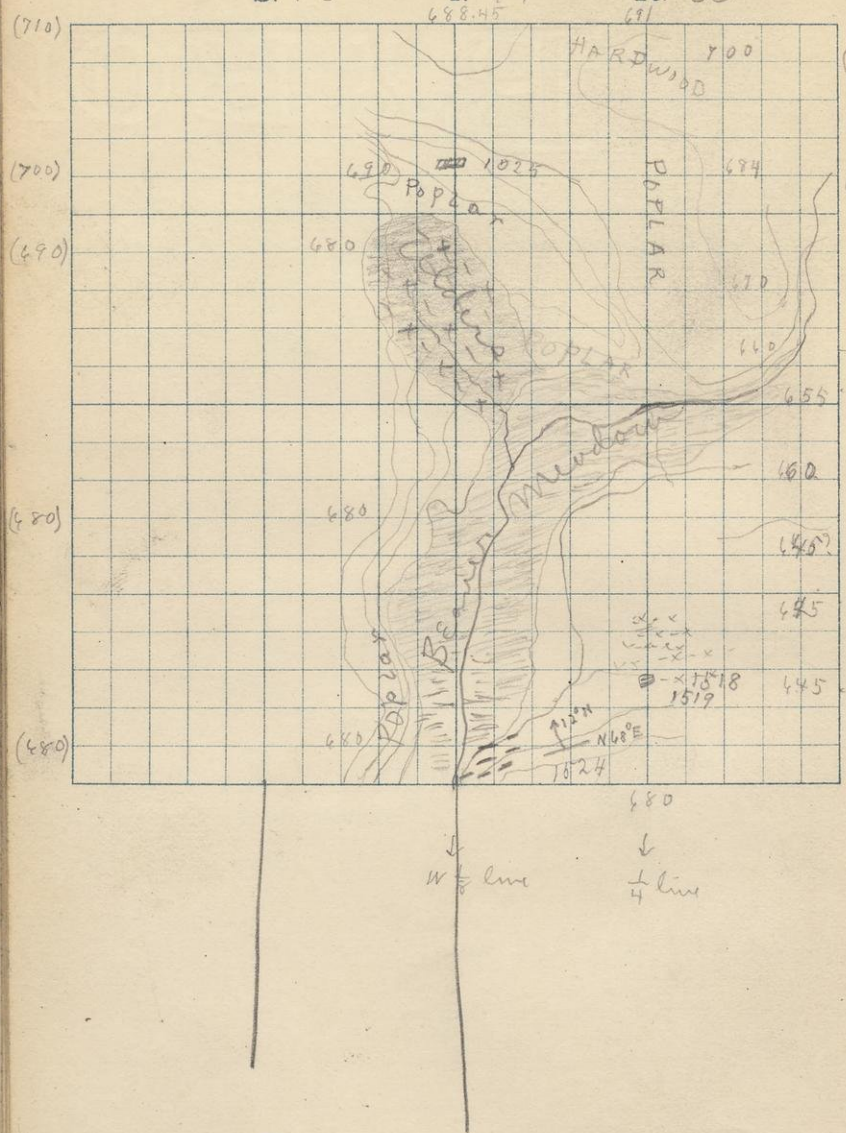
200 (470) Mixed growth.
500 (480) Hardwood
600 (690) "
800 (700) "
850 (680) Mixed swamp
968 (480) Lake Tamarack swamp
1100 (690) Hardwood & Pine
1400 (690) Pine, Hardwood
1550 (670) Cedar swamp
1700 (670) Edge of Hardwood
2040 (690) B.M. 683.38 Tamarack swamp

Going S on W ⅛ line B.M 482.04 900 bf / 28.2 in

500 (660) Cedar Swamp.
1000 (670) Mixed growth
1250 (690) stream. " Swamp
1400 (680) mixed growth
1550 (720) " "
1650 (700) Tamarack swamp
1800 (690) Hardwood
1964 (700) "
2002 (700) See line "

34 Sept 22nd 1891

S. 13 T. 47 R. 33



Going S on $\frac{1}{4}$ line Sec 13

B. M. 681.93 3000 ft = 29.9 in

100(700) Hardwood
400(690) Poplar
700(680) "
850(670) "
950(660) Open meadow by stream
1000(660) Stream stagnant
1200(670) Poplar
1400(660) Spruce
1541(660) Var 2° E Poplar
1700(640) Alders
1740(670) Mixed swamp

Outcrop of greenish gray homogeneous schist.

Spec 1518 dip & strike unascertained.

1780 South end of same ledge.

Spec 1519 No strike or dip can be made out. Rock massive. Almost a quartzite

— Going N on W $\frac{1}{8}$ line

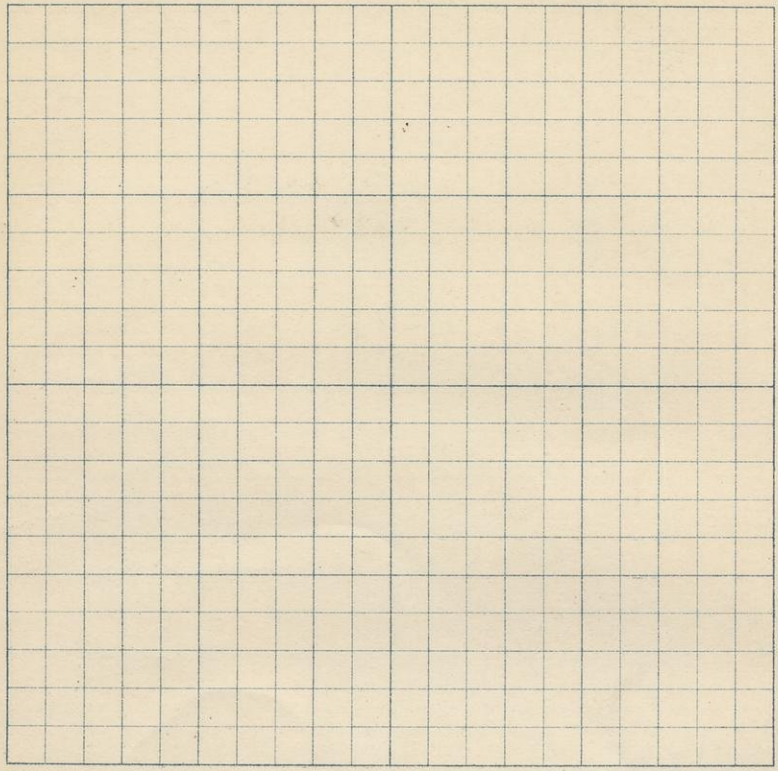
100(680) Beaver meadow

Very large outcrop of metamorphic rocks.

Spec 1524 Strike N 68° E
dip 12° N

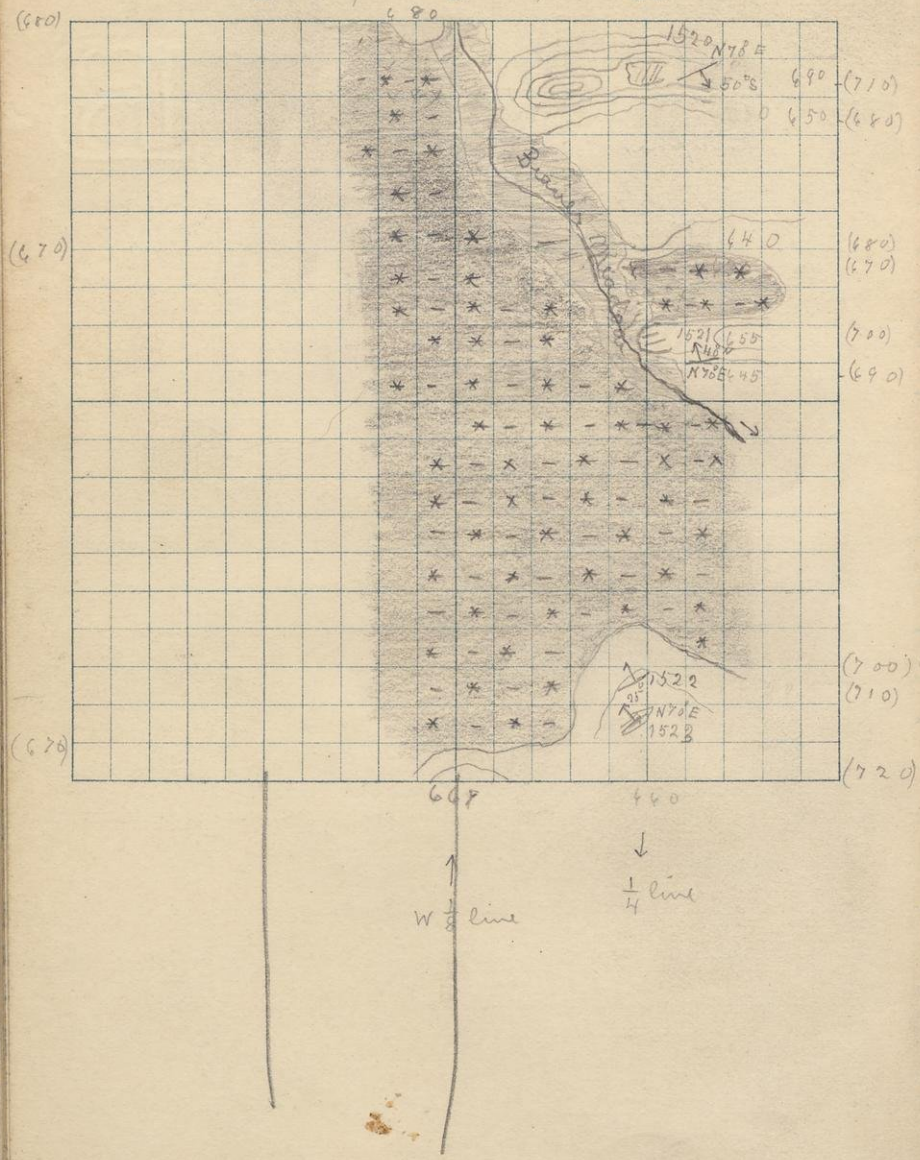
700(680) Poplar

S. T. R.



1400 (490) Poplar
1619 (700) Mixed growth
Spec 1525 Small outcrop of dark metamorphic schist.
No strike or dip.
2004 (710) B.M. 688.45. Poplar

S. 24 T. 47 R. 33


(680)
680
1529 N78E
50°S
690
(710)
650
(640)
Brown Ditch
(670)
640
(680)
(670)
1521
655
48°
N78E
45
(700)
(690)
(700)
(710)
1522
N78E
1528
(670)
(720)
667
440
1/4 line
W 1/8 line

Young S on $\frac{1}{4}$ line Sec 24

170(710) Poplar

Large outcrop of greywacke. A close examination shows the rock to be thoroughly stratified.

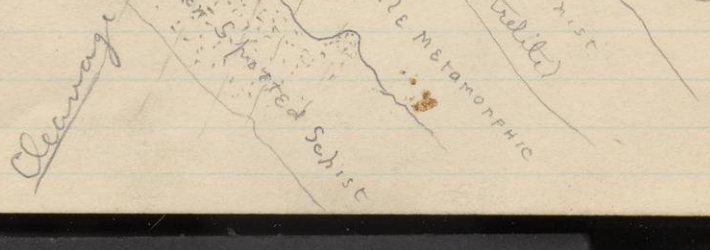
1520 Strike N 70° E
Dip 50° S

These determinations are very exact. Specimen 1520 shows the contact between a greenish spotted schist and a gray quartzite looking rock.

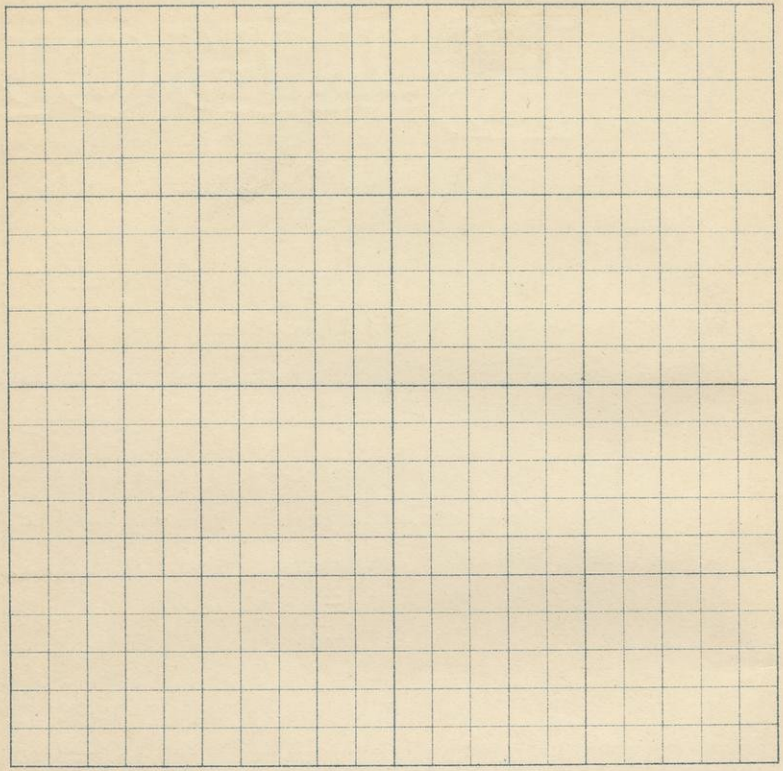
A cleavage has been developed in these rocks which has a

Strike N 80° E
Dip 60° N

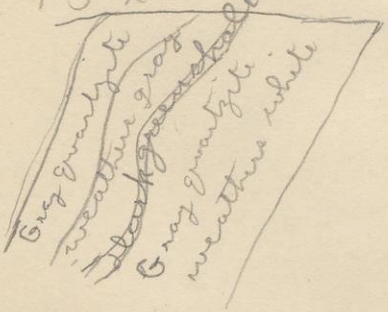
The beds are about 3 ft thick. In some the contacts are mathematically straight in others slight crumplings can be seen.



S. T. R.



Spec 1521



Sp
152

240 (480) Mixed timber.
600 (480) " growth.

630 (670) " swamp
840 (700) Ledge 20 ft. high "

This outcrop is badly moss covered, but the western edge shows a banded structure. Most of the ledge is a metamorphic rock almost like quartzite, but one band of shale about 6" thick shows a dip of 40° - 70° N.

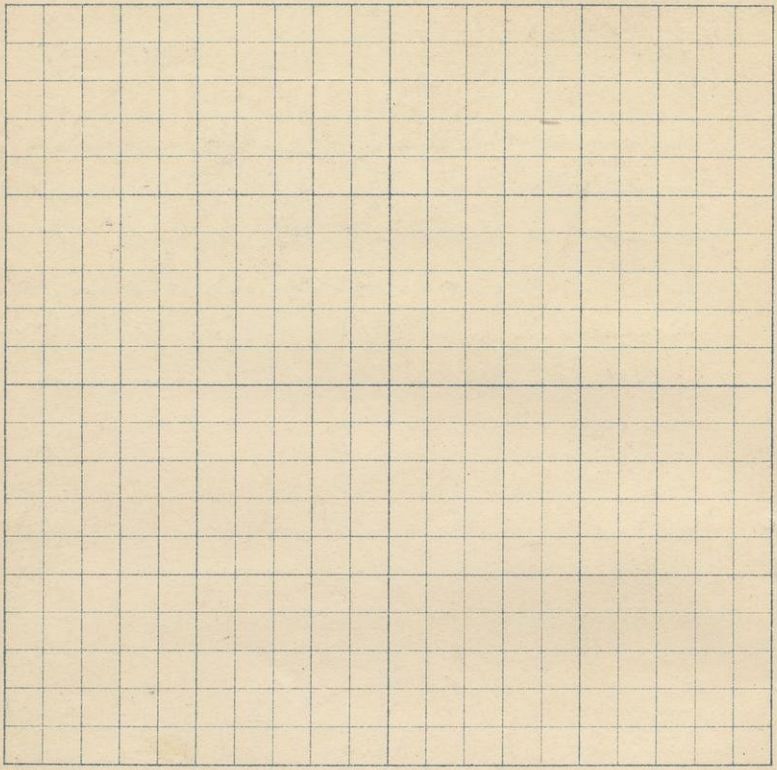
Strike probably N 70° E.

Spec 1521 It is possible that this band of shale may be due simply to a faulting of the quartzite. I think this is hardly probable, because the shale has a pretty well defined structure of its own and the quartzite on one side appears to weather differently and be slightly coarser than that on the other side. It is difficult to obtain good specimens. Spec 1521 contains small samples of all three rocks.

Dip 40° - 70° N

920 (490) Good sized stream

S. T. R.



1700(700) Mixed growth

1745(710) Ledge of quartzite and spotted schist: Strike and dip accurately made out

Spec 1522
Strike N 70° E
Dip 25° N

1820. Large outcrop of schists Somewhat crumpled. Dip and strike can be made out very easily but owing to crumpling are rather irregular

Spec 1523
Strike N 70°-80° E
Dip 20°-30° N.

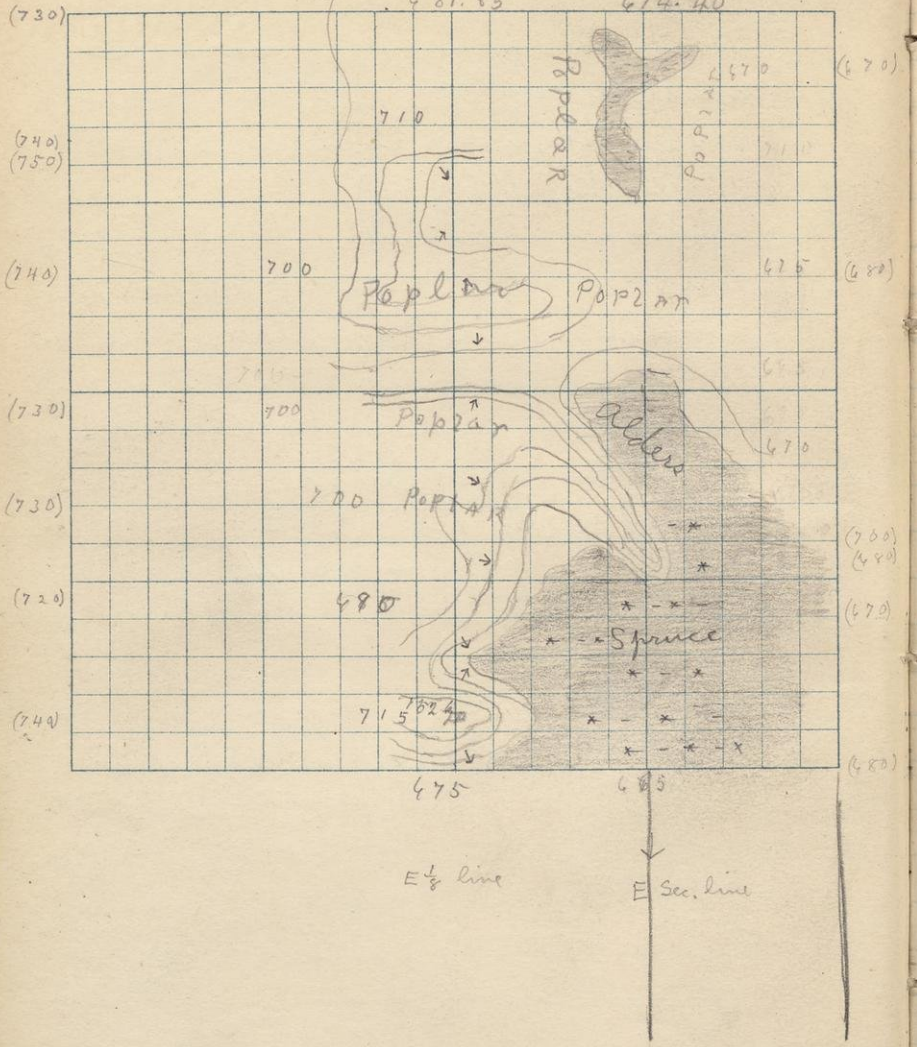
1975(720) Bench line. Mixed growth
B.M. 660

— Going N on W 1/8 line Sec 2-4
B.M. 649. 600 ft = 28.5 in

100(670) Tamarack swamp
140 0(670) Spruce "
2000(680) Poplar knoll

44 Sept 23d 1891

S. 14 T. 47 R. 33



Going S on E line Sec. 14

B.M. 674.40 2000 ft / 28.1 m

150(470) Beaver meadow Poplars.
700(680) "
1400(700) "
1450(680) Alders swamp
1600(670) Spruce swamp
1945(680) Sec. line " "

Going N on E 1/8 line Sec 1/4

135(740) Mixed growth

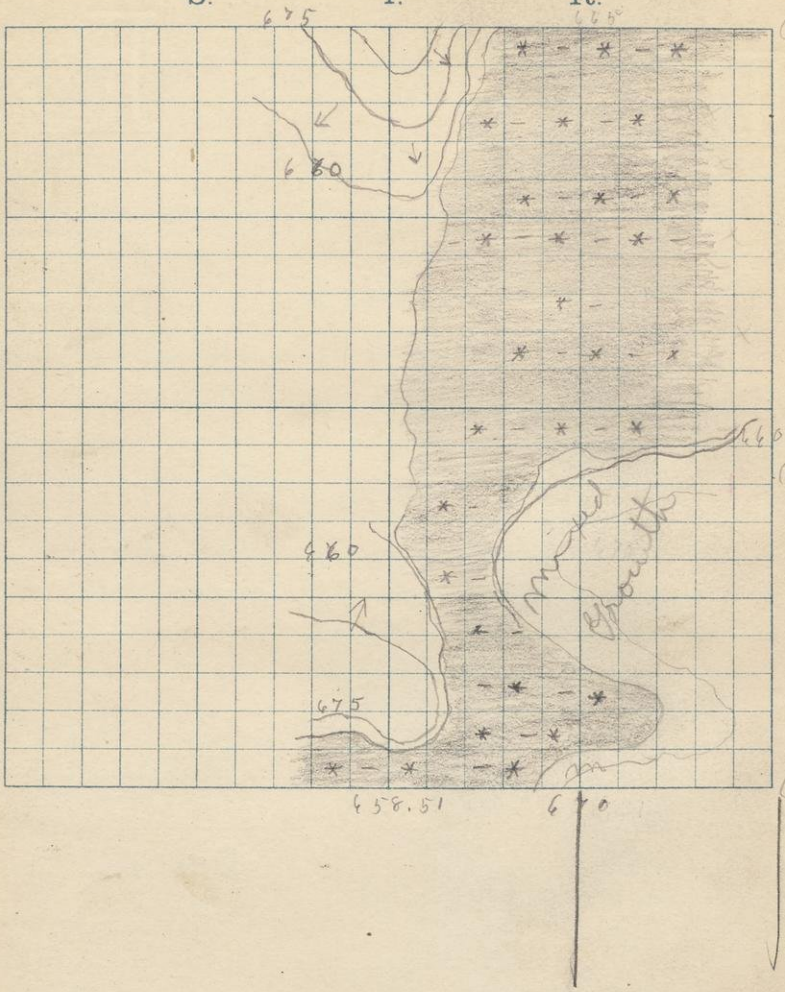
Spec 1524 Small outcrop
Section 14. ~~500~~ 100 feet W
135 " N
of S.E Corner

Strike N 70° E
dip 29° N.
Specimen shows two kinds of rock and contact.

450(720) Mixed growth
700(730) Poplar
950(730) "
1300(740) "
1600(760) "
1650(740) "
1975(730) "

B.M. 681.85.

S. T. R.



Going S on E line Sec 23

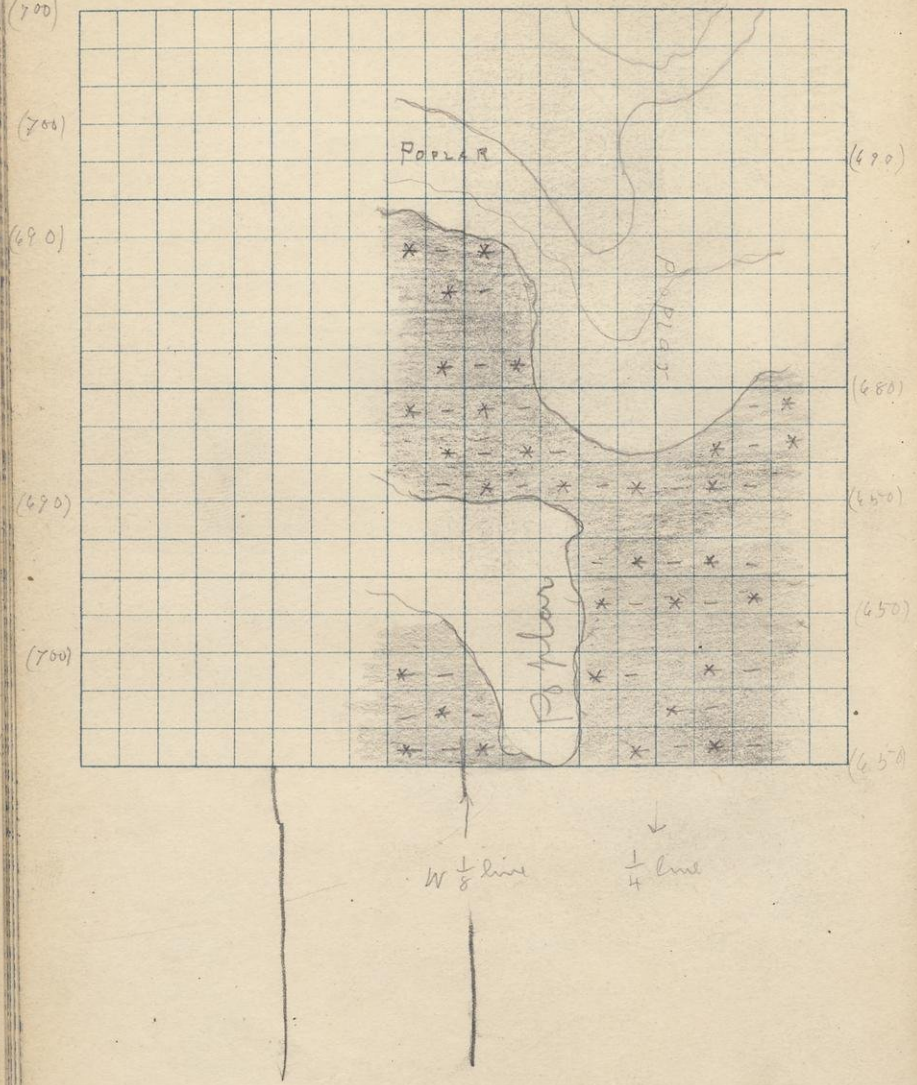
0.(680) Spruce swamp
1174(680) Mixed growth
2000(700) B.M. 670.82 " "

Going N on E ¼ line Sec 23
B.M. 658.51 1300 ft = 27.9 in

Spruce swamp
300 (680) Pine, balsam, hardwood
600(670) Tamarack swamp
1600(680) Mixed growth
2000(700) Pine & " "

48 Sept 24th 1891

S. 15 T. 47 R. 33



Going S on $\frac{1}{4}$ line Sec 15

B.M. 711.42 0 ft = 29 in

Mixed timber

400 (690) Mixed growth

1000 (680) Poplar

1300 (650) "

1600 (650) Tamarack Swamp.

2000 (650) " "

Going N on W $\frac{1}{8}$ line

300 (700) poplar

700 (690) Mixed swamp

1400 (690) Poplar

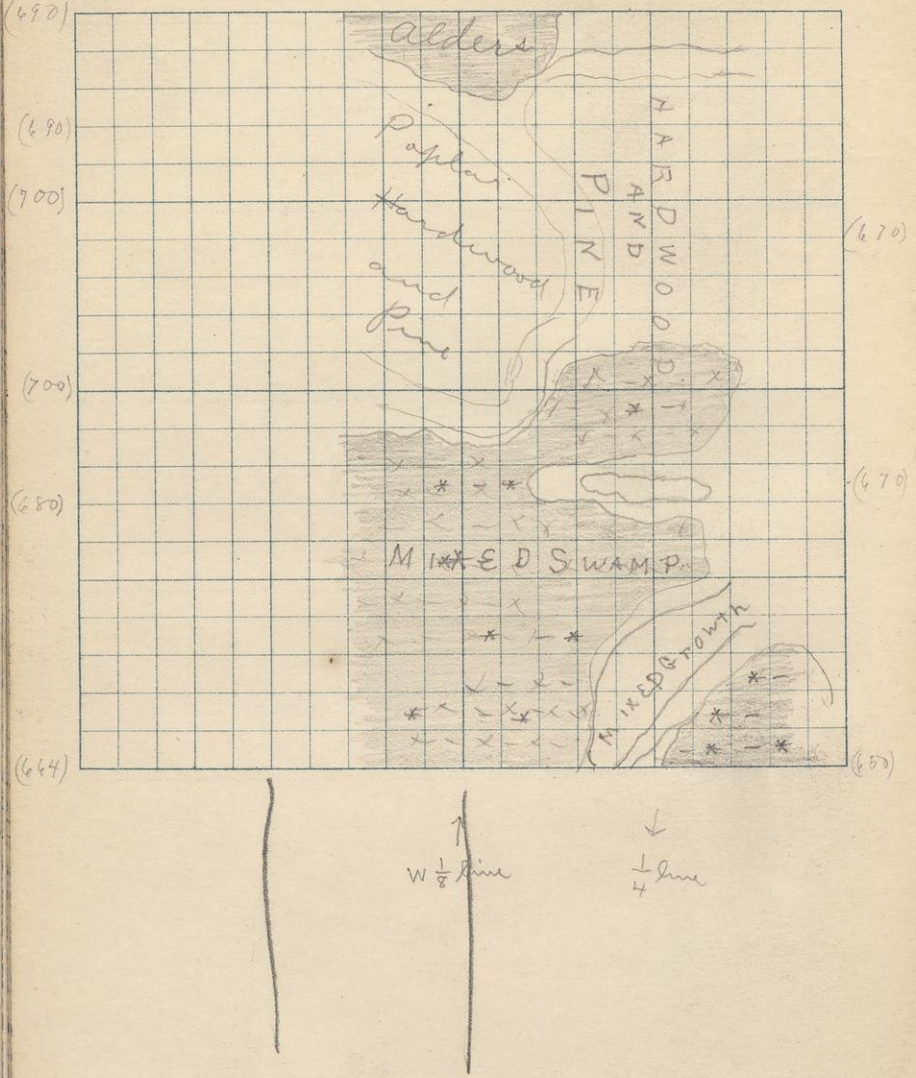
1700 (700) "

1995 (700) Sec line. "

B. M. 681.97.

50 Sept 24th 1891.

S. 22 T. 47 R. 32



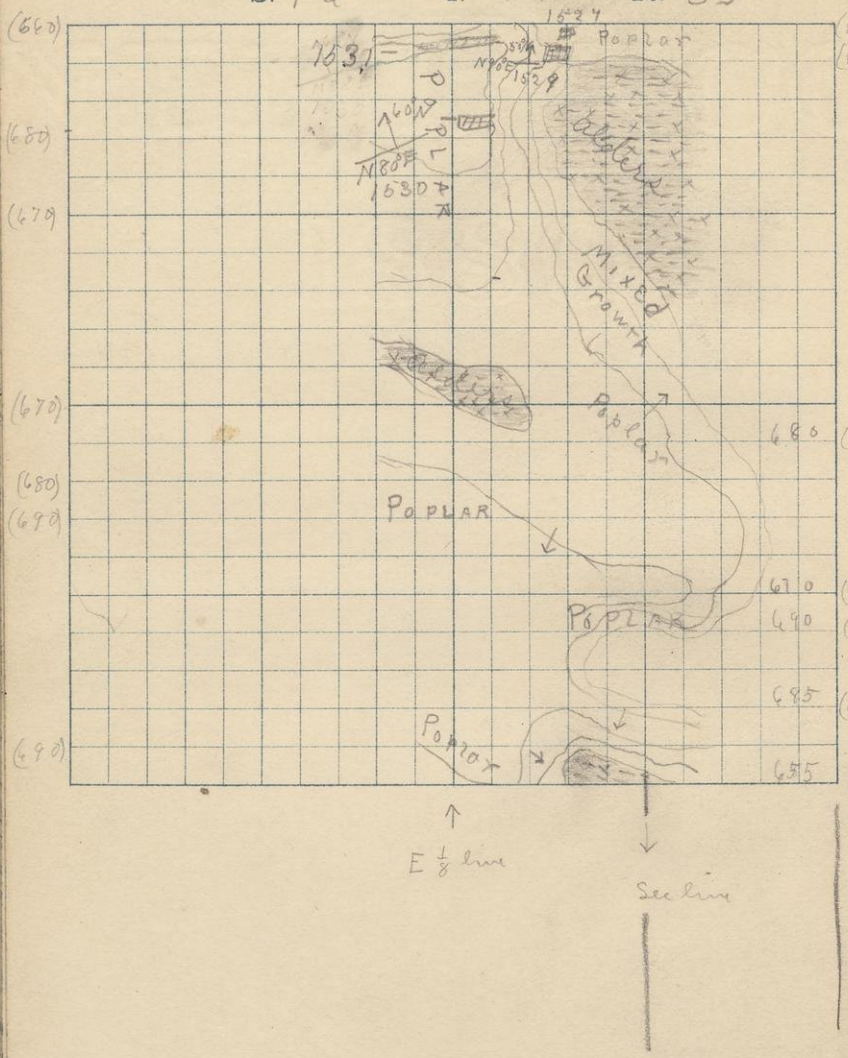
Going S on ¼ line Sec 22

600 (470) Hardwood & Pine
1250 (470) Evergreen ridge
1997 (450) Mixed growth.
B.M. 663, " "

Going N on W ⅛ line.
0. B.M. 464.55 D = 29 in Tam. Swamp
700 (680) Mixed swamp
1000 (700) Hardwood and pine
1500 (700) Mixed growth
1700 (490) Poplar
1900 (490) Alder swamp
2000 (490) Sec line. " "

52 Sept 25th 1891

S. 16 T. 47 R. 33

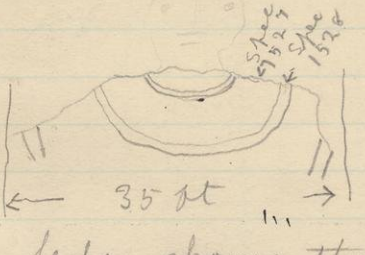


Going S on E line Sec 16

B.M. 645.94.700 = 28.4 in. Poplar Ledge on bench line 200 paces W and 2000 paces N of S.E. Cor of Sec 16 T. 47. R. 33.

Spec. 1527.

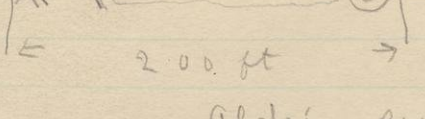
1528



The ledge shows the above structure. The syncline plunges toward the west. The outcrop gives one the impression that the formation through this region is in the form ensemble not far from horizontal, but there are in it many gentle folds and much crumpling.

50 paces S. is another large ledge.

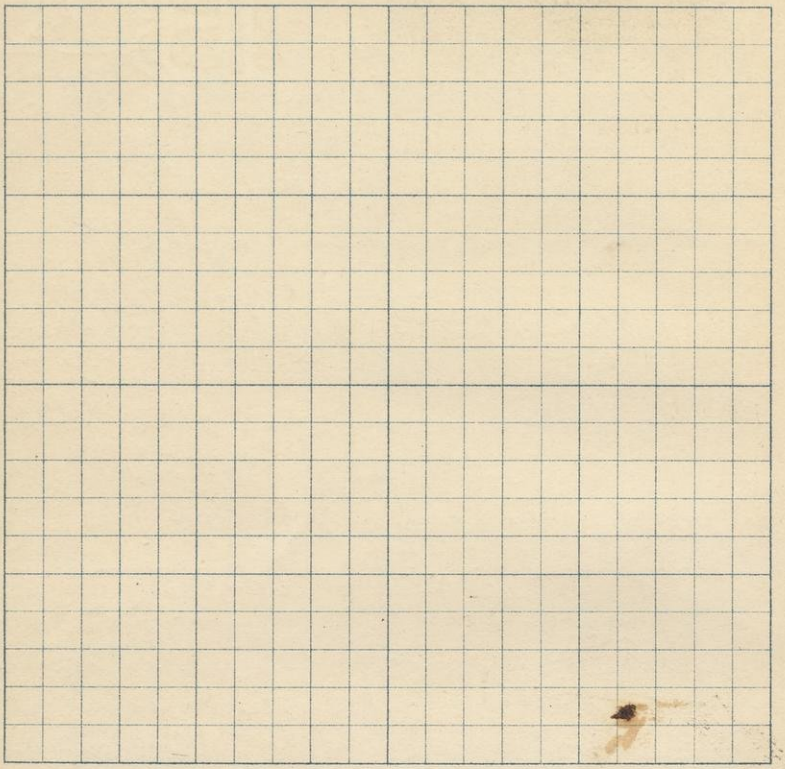
1529 Strike E & W. dip 50° N



100(640) Alder swamp

1100(670) Poplar

S. T. R.

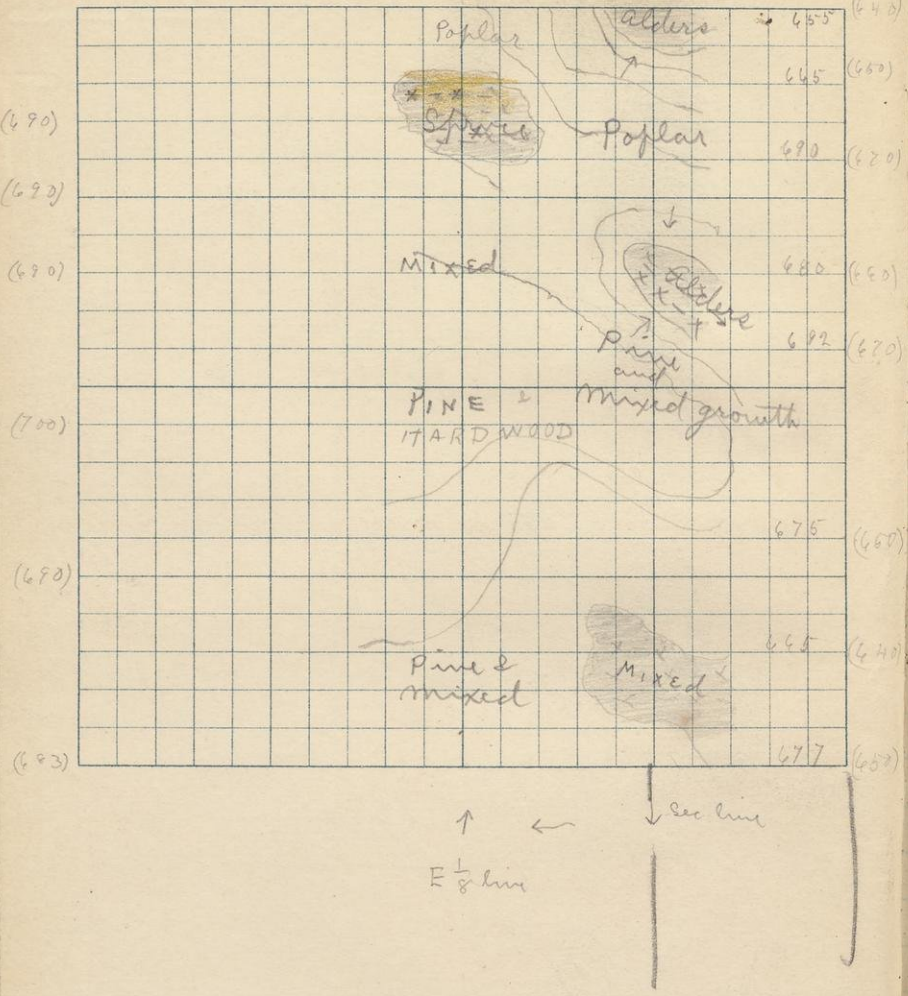


1500 (660) poplar
1600 (680) "
1800 (670) "
2000 (640) Alder swamp
— Boring N on E $\frac{1}{8}$ line Sec 14
1000 (690) Poplar
700 (690) "
800 (680) "
1000 (670) Edge of alder swamp
1500 (670) Poplar
1734 (680) "
Large outcrop of schist.
Spec Strike N 80° E
1330 Dip 60° N
Sec 14. W 500 N 1734 paces
1920. Another ledge, large. Exposure only on N side.
1531 Strike E & W
Dip [N 50°?]

Sec 14 W 500 N 1920 paces
1970 (660) Poplar
B.M. 643.54

56 Sept 25th 1891

S. 21 T. 47 R. 32



Going S on E line Sec 21

0 (640) Alder swamp
150 (650) Poplar
400 (670) "
700 (640) Mixed swamp
900 (670) Pine and mixed growth
1400 (650) " " " "
1700 (640) Mixed swamp
1960 (650) " "

B. M. 677. 85

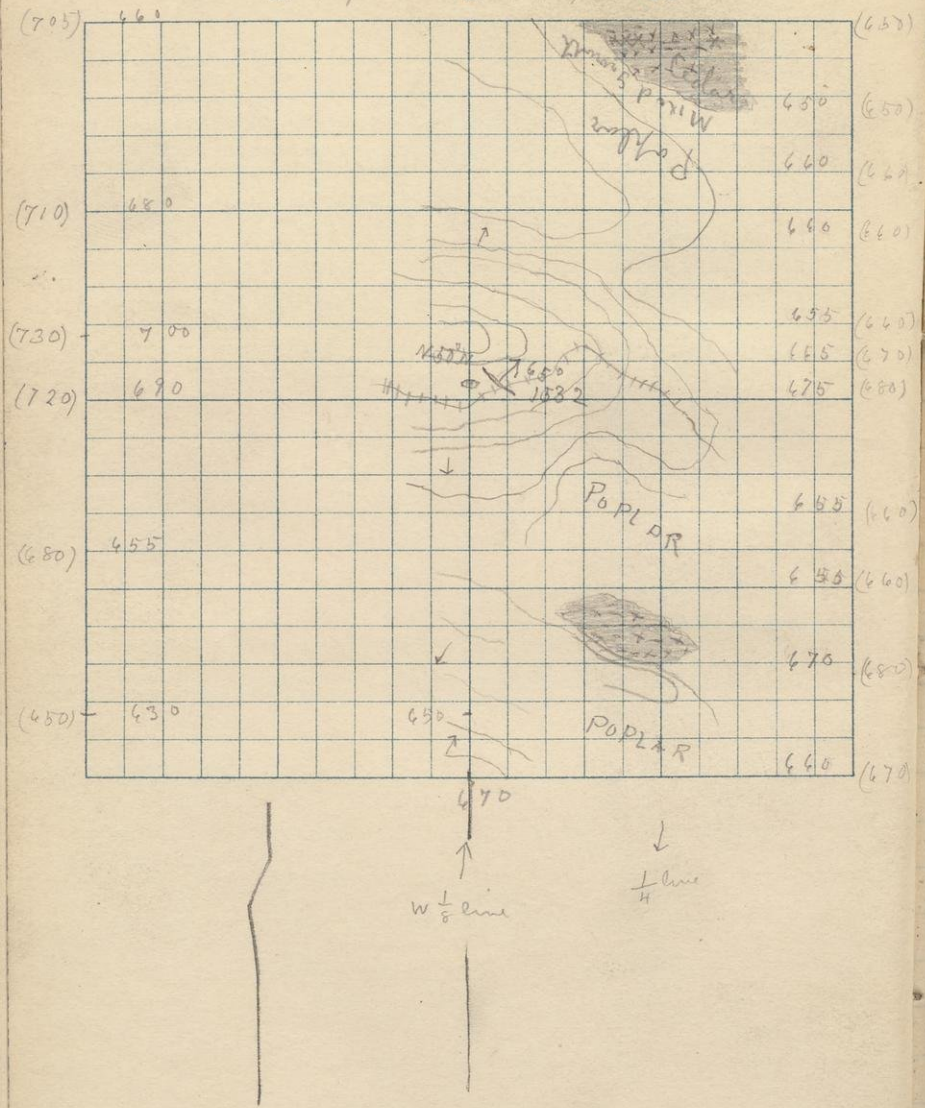
Going N on E ¼ line.

B. M. 683. 40 x ft = 28. 8 in
Pine and mixed growth

500 (690) " " " "
900 (700) " " Hardwood
1300 (690) Swampy mixed growth
1500 (690) " "
1700 (690) Spruce swamp

58 Sept 24th 1891

S. 17 T. 47 R. 33



Going S on ¼ line Sec 17

B. M. 649.33 500 = 28.7

220 (650) Mixed growth.
400 (660) Poplar
550 (660) "
800 (660) "
900 (670) Mixed growth
990 (680) Supply road
1300 (660) Poplar
1500 (660) "
1600 (655) Alder swamp
1740 (680) Poplar
2000 (670) "

Going N on W ½ line Sec 17.

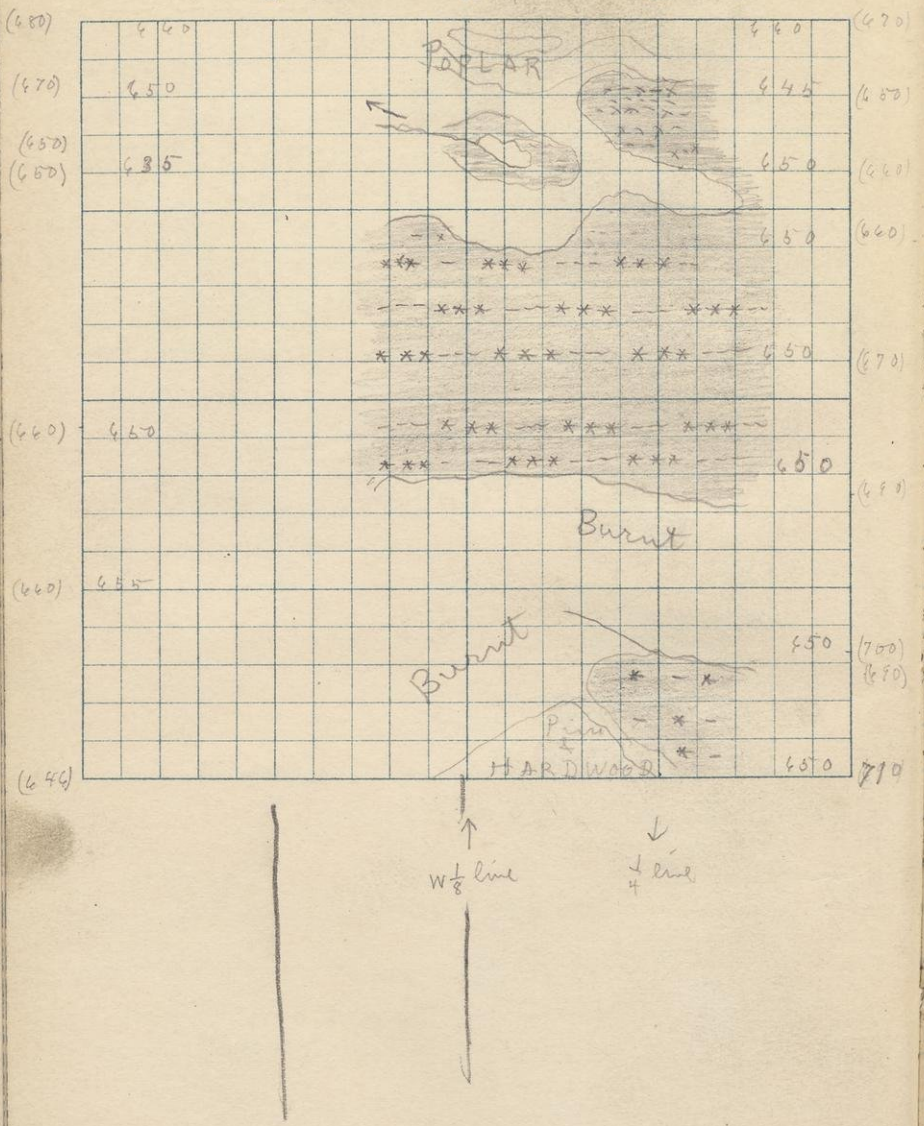
184 (650) Poplar
600 (680) "
994 (720) Supply road "
1010 (720) Outcrop of spotted schists

Spec Strike N 50° W
Dip 65° N

1532 Sec 17 1500 W and 1010 N of SE Cor
1180 (730) poplar
1500 (710) "
1940 (705) Bench line Hardwood
B. M. 660.01

60 Sept 24th 1891

S. 20 T. 47 R. 33



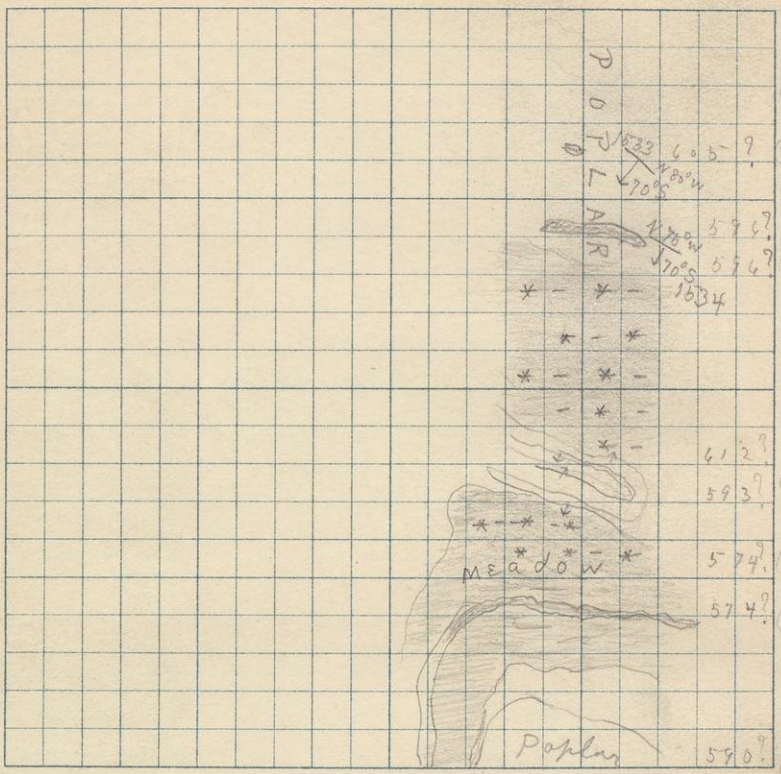
Going S on 1/4 line Sec 20

0. (670) Poplar
200 (650) Alder swamp
400 (640) Mixed undergrowth
550 (660) Cedar swamp
900 (670) Mixed swamp
1250 (690) Edge of swamp
1477 (700) Burnt
1760 (690) "
2000 (710) Mixed growth
B.M. 650

Going N on W 1/8 line
B.M. 644.25 600 ft = 28.5 in
500 (660) Burnt
920 (660) Cedar swamp
1660 (650) Beaver clearing in poplar
1670 (650) Beaver pond
1840 (670) Poplar
1956 (680) Sec. line "

62 Sept 29th 1891

S. 13 T. 47 R. 34



↓
1/4 line

Going S on 1/4 line Sec 13

B.M. 627.27.0 = 29.2 m

200(600) Poplar

373(600) "

Small outcrop showing contact between a dark slate and a gritty shale.

Spec 1533 Strike N 80° W

Dip 70° S

The contact is too much obscured to make three determinations decisive.

538(600) Large outcrop showing same contact. Here it is very well defined indeed.

Spec 1534 Strike N 75° W

Dip 70° S

660(570) Poplar

650(576) Tamarack swamp

1200(600) Poplar ridge

1225(580) " hollow

1300(580) Alder swamp

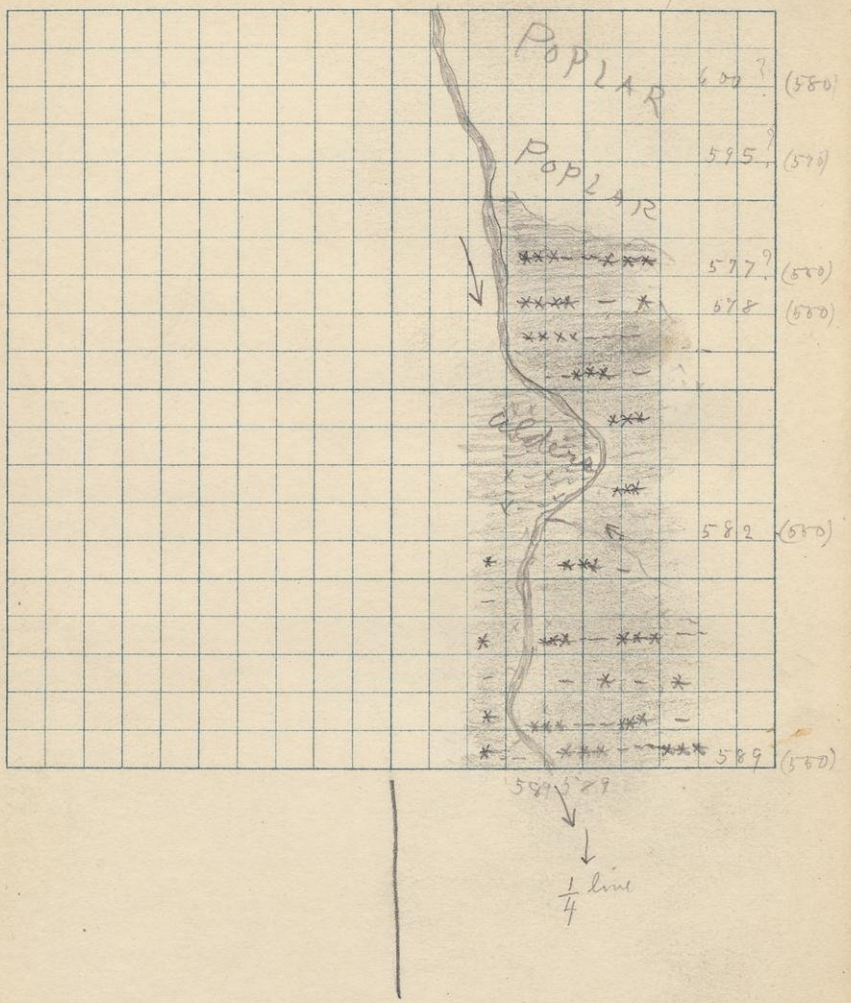
1450(560) Tamarack "

1580(570) Sluggish stream

2000(570) Poplar ridge

64 Sept 29th 1891

S. 24 T. 47 R. 34



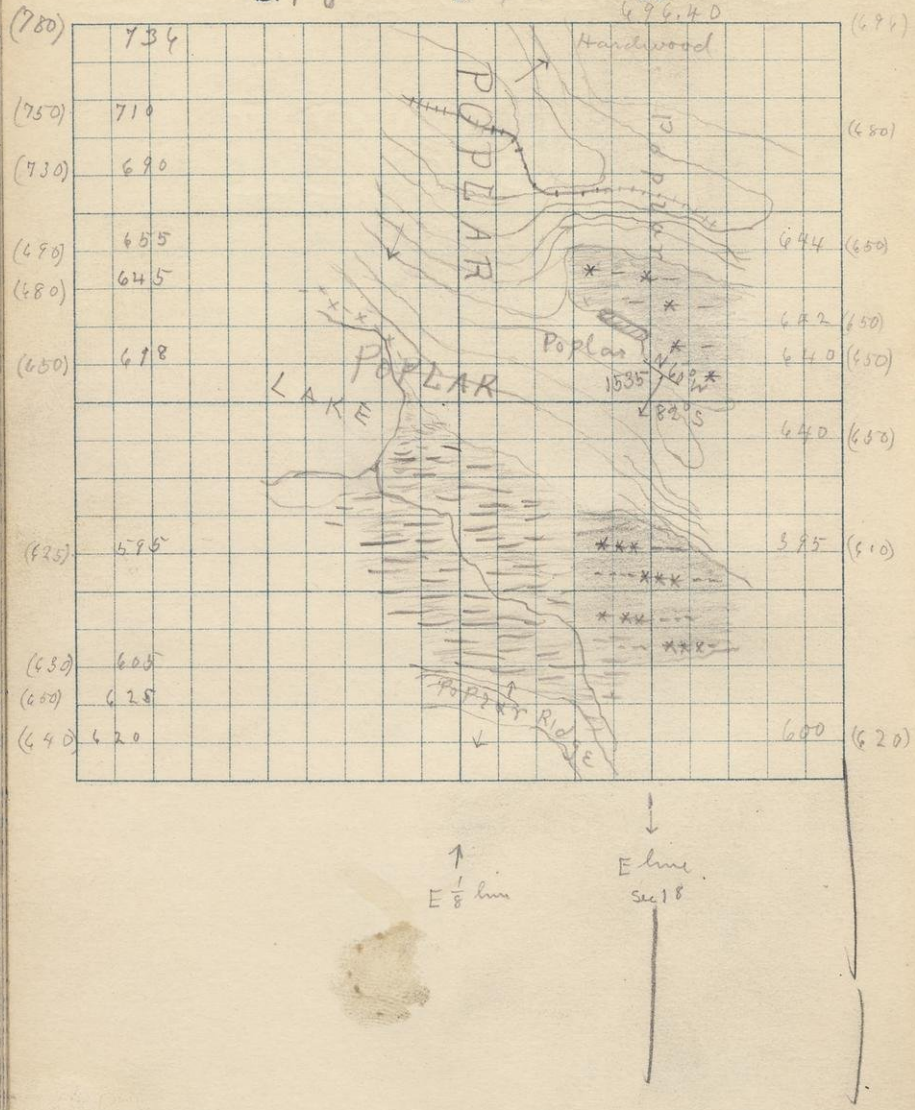
Going S on 1/4 line Sec 24

200 (580) Poplar
400 (570) "
700 (550) Alders
800 (550) Cedar swamp
1374 (550) Small stump Cedar "
1922 (550) Bench line Cedar swamp

B.M. 589.00

66 Sept 30th 1891

S. 18 T. 47 R. 33



Going S on E line Sec 18

B.M. 696.40 ~~Sec~~ oft = 28.3 m

Hardwood

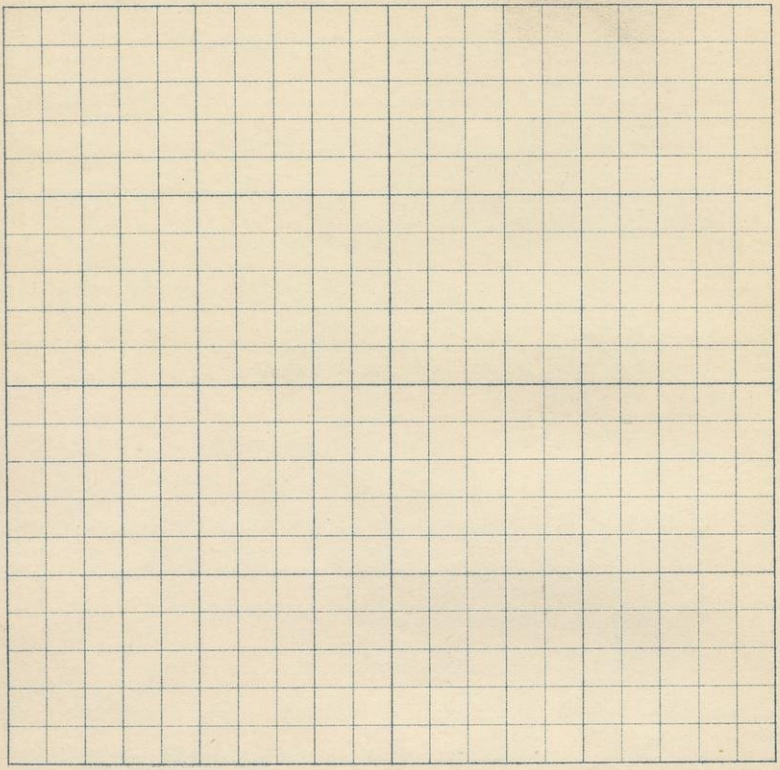
300 (680) Poplar
443 (680) Supply road "
600 (650) Poplar
800 (650) "

Large ledge of interbedded slates and gritty shales.

1535 Strike N 60° W
Dip 82° S.

The beds are rarely over a foot thick and the stratification is very regular. The rocks are not much disturbed or highly metamorphosed. A number of quartz veins are interlaminated with the slates. Some of the grits are quite coarse and might almost be called sandstone. Some of the quartz has red hematite stains in it. One vein (from 4" to 1' wide) follows a bed of soft slate. In this vein the quartz is very soft and sugary and has been worn out from one to two feet below the other rocks

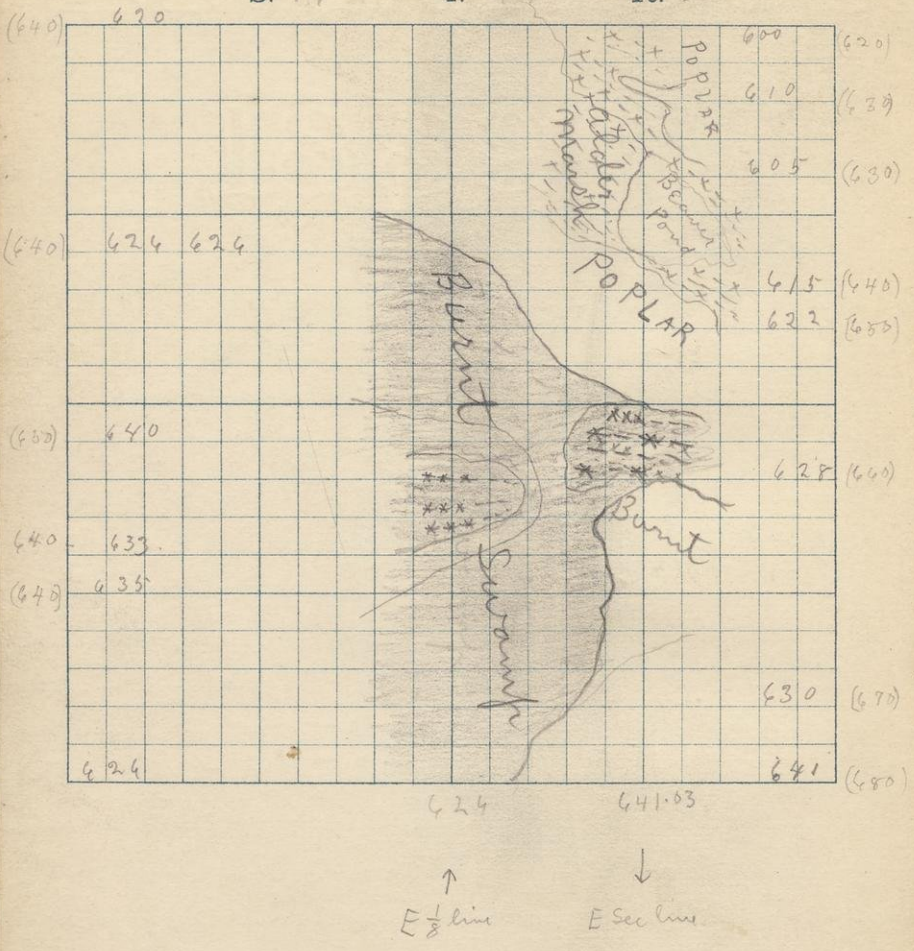
S. T. R.



900 (650) Long Poplar ridge
1100 (650) Poplar.
1400 (610) alders
1600 (660) "
1900 (620) "
Going N on E ⅛ line
100 (640) Poplar
225 (650) Poplar ridge
300 (630) Beaver marsh
400 (625) Small stream flowing W.
1100 (650) Poplar
1300 (680) "
1400 (690) "
1600 (730) "
1742 (750) Supply road
2004 (780) Bench line Poplar
B.M. 736.50

70 Sept 30th 1891

S. 19 T. 47 R. 33

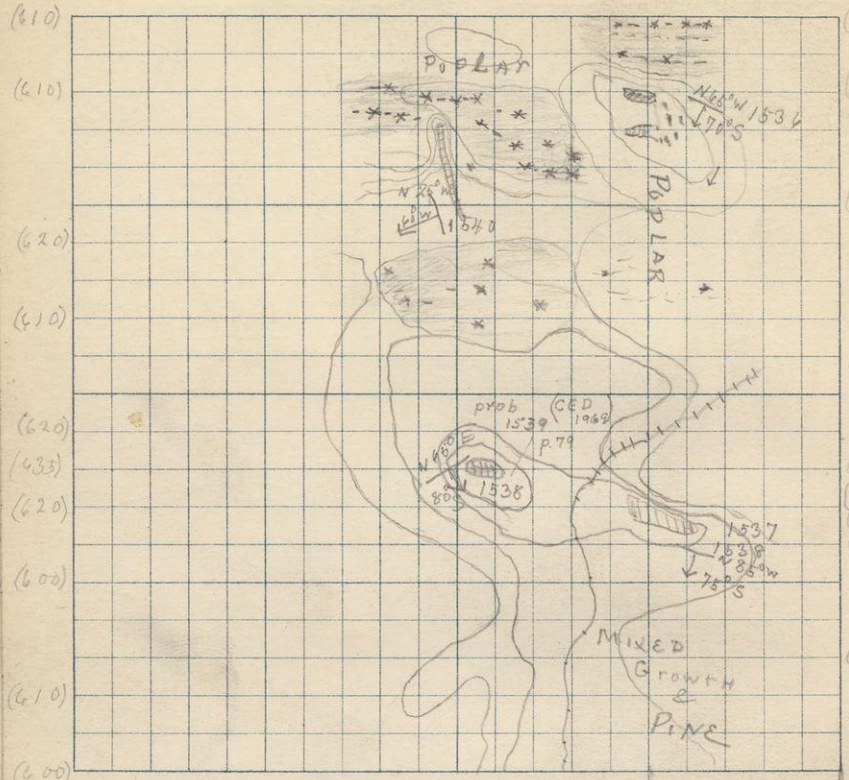


Going S on E line Sec 19

40 (620) Small creek
200 (630) Beaver clearing
400 (630) Extensive beaver dam
700 (640) Mixed timber.
800 (650) Poplar
1200 (660) Burnt
1800 (670) " "
2075 (680) B.M. 641.03 "
Going N on E ⅛ 300 ft = 28.9 m
B.M. 624.81 Burnt.
500 (640) "
630 (640) Edge of cedar swamp.
700 (650) Burnt
1400 (640) Edge of poplar
2000 (640) Poplar

72 October 1st 1891

S. 14 T. 47 R. 34



Going N on E ⅛ line, 1600

Tamarack

1800 (610)

1996 (610)

B.M. 608.92

Poplar

Going S on E line Sec 14

B.M. 608.81 1400 = 27.9

Spruce swamp.

200(630) Poplar

Large ledge of black slate mixed with a soft gritty shale

Strike N 45° W

Dip 70° S

The beds are for the most part thin especially those of soft slate. The softer beds are much contorted and squeezed out of place between the harder layers. The cleavage agrees quite closely with the direction of the planes of bedding. The formation here is more homogeneous and more distinctly slaty than any ledge I have seen yet.

1536

S 00(630)

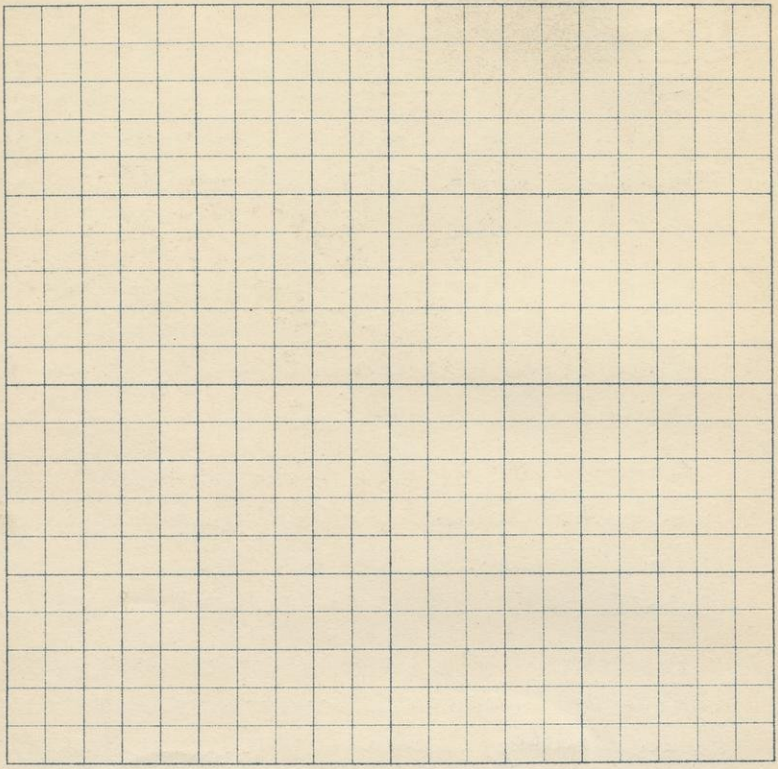
Large masses of rock here are grits with thin bands of soft black slate.

Strike ?

Dip 40° S

At another exposure a beautiful contact of slate and shale

S. T. R.



can be seen

Strike N 30° W

Dip Easterly

Contact of slate and gray shale

Further examination enables me to determine the

Strike N 35° W

Dip 40° S.W.

These great masses of slate are totally different in appearance from the spotted schists and gray grits encountered so abundantly in 47-33-82.

500 (620) Poplar

700 (610) Poplar

900 (420) "

1000 (630) "

1125 (620) Old supply road

1200 (410) New " "

S. T. R.

see next page

1258 (430) Poplar

1537 Large mass of eruptive rock probably a diabase (perhaps diorite) Whether this is a dike or an intrusion parallel to the bedding is hard to determine. It is probably an intrusion.

1300 (430)

1538 Just south of the diabase a large mass of slate appears.

Strike N 85° W
Dip 75° S.

1539 A more extended examination of exposures at the east end of this great ledge, failed to show any contact between the eruptive and sedimentary rocks But a rather coarse quartzite (weathering reddish and containing small lenses of iron ore) comes in between the slate and the diabase. Strike and dip are here accurately determined

Strike N 85° W
Dip 75° S.

Not on E line see p. 72, + p. 79 (CED 1969)

1400 (420) Var 3° 30' Edge of Pine

S. T. R.

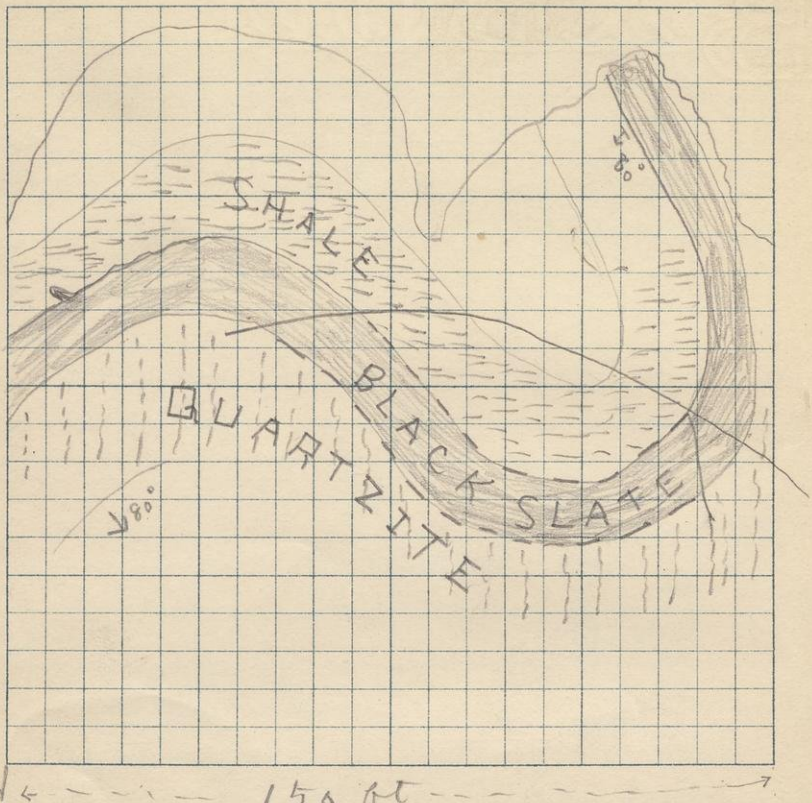


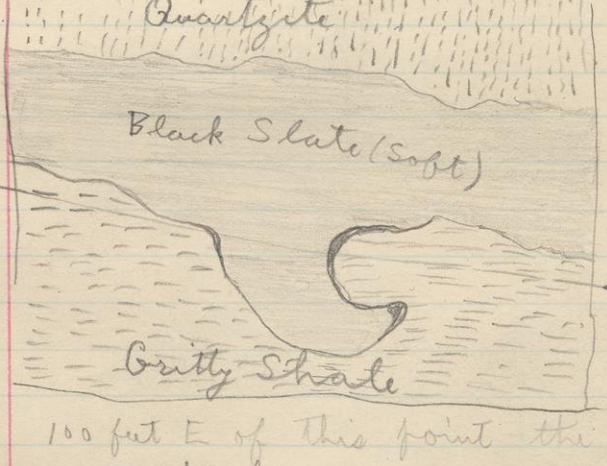
Diagram showing the strike of rocks in Sec 14, 800 N and 550 W of SE Cor.

1700 (410) Pine & Mixed growth.
2000 (420) " " " "
– Going N on E ⅛ line. Sec 14
0.600. Poplar
200 (410) Hardwood
500 (600) "
700 (420) Poplar
800 (635) "

See p. 72 (CED 1969)

Spec 1538 1539

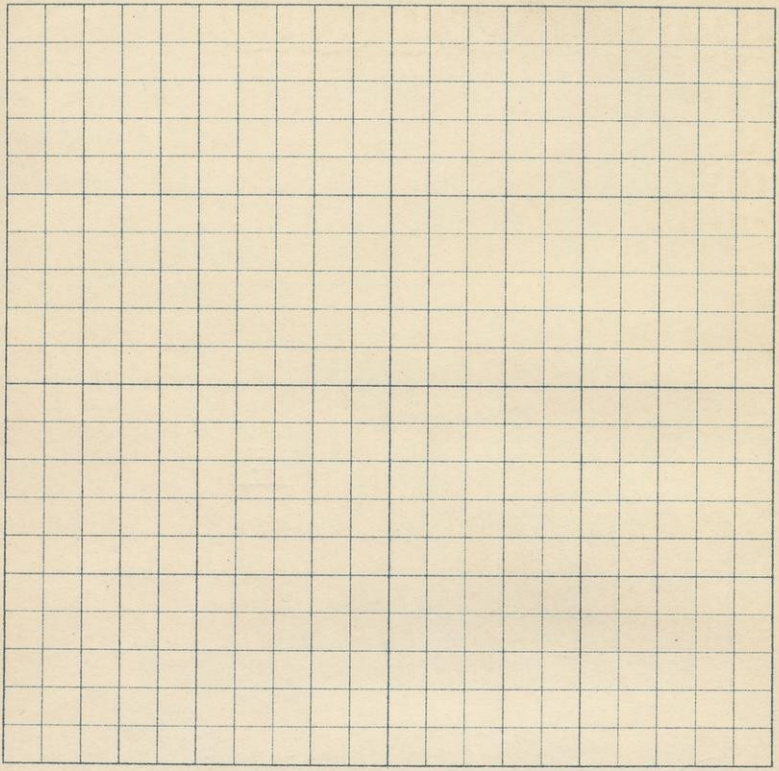
Large ledge of slate and quartzite.
Strike N 45° E.
Slip 80° S.



Outcrop c. 7.5

100 feet E of this point the same contact has a
Strike N 25° W
Slip 80° W

S. T. R.



In all outcrops seen to-day I have observed a cleavage (Strike N 70° E to N 70° W, dip N 60° to S 60°)
At this great outcrop it has a strike of N 70° E. dip 70° S.

The rocks at this outcrop are very much crumpled as seen in the above diagrams. The dip is nearly vertical and the strike probably averages nearly E. & W.

900 (620) Poplar

1200 (610) Tamarack Swamp

1400 (620) Poplar

1440 (620) Small grass covered ledge of quartzite with small ferruginous

1540 concretions

50 paces E of this joint is an extensive exposure of slate

Strike N 25° W

Dip 60° W.

Sec 14 N 4500 W 450

Although the rocks are much crumpled a strong contact can be followed in almost a straight line for 100 ft

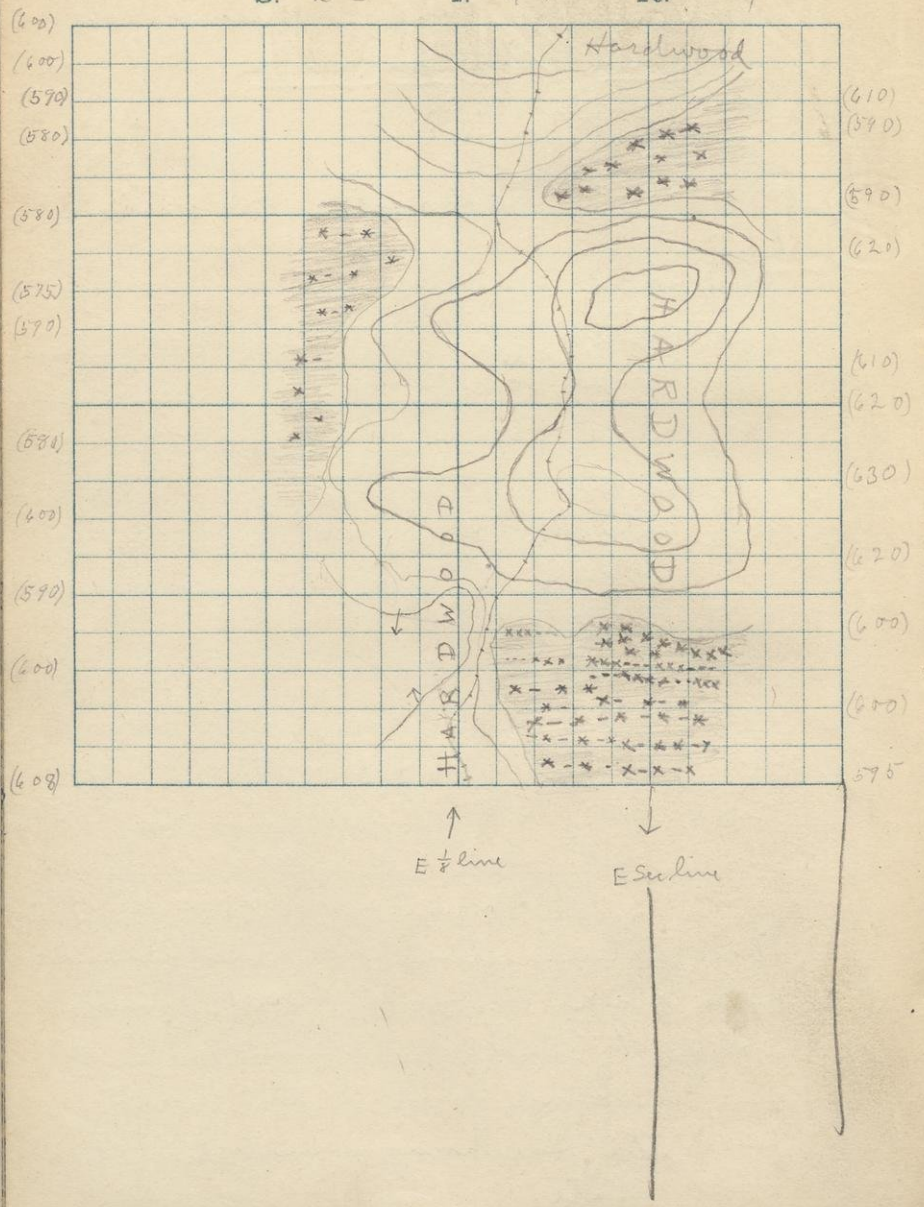
Strike N. 25° W

Dip 50° - 60° W.

These determinations are conformed by a strong ridge of hard quartzite further N. This ridge trends N 25° W and overhangs toward the east. Under the overhang quartzite is soft slate.

82 Oct 1st 1891

S. 23 T. 47 R. 34



Going S on E line Sec 23

200 (610) Pine & Hardwood
250 (590) Tamarack swamp
450 (590) Edge of Hardwood
600 (620) "
900 (610) Good Hardwood
1000 (620) " "
1200 (630) " "
1400 (628) " "
1600 (600) Tam. & Cedar Swamp
1800 (600) Spruce & Tam. Swamp
1980 (595) " " "

B.M. 589.7

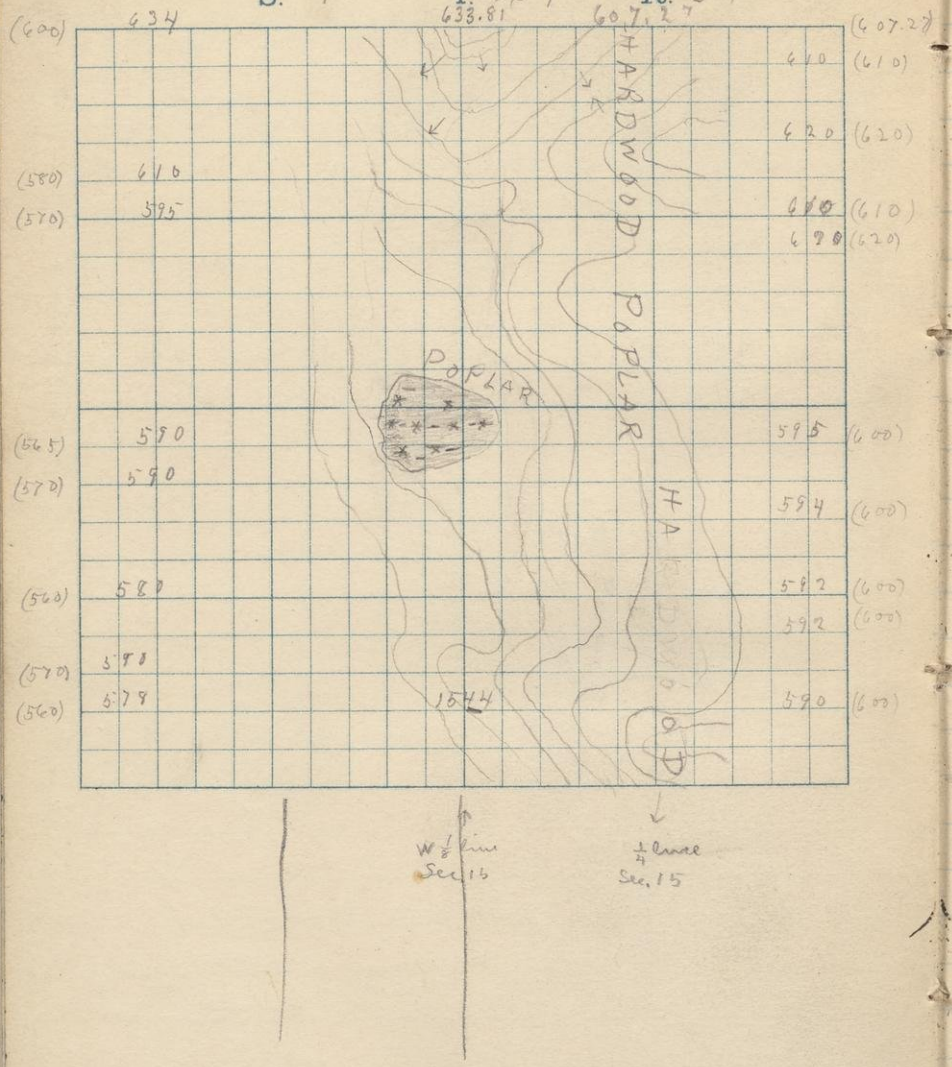
Going N on E ¼ line Sec 23

B.M. 608, 15 200 ft = 28.7 in. Hardwood
300 (600) Hardwood
500 (590) Some swampy hardwood
700 (600) Hardwood
900 (580) "
1200 (590) "
1300 (575) Poplar coming in
1500 (580) Old burning Mixed underwth.
1700 (580) Hardwood
1800 (590) "
1900 (600) "
2010 (600) See line Edge of Poplar.

(H. Cameron Compaseman)

84 Oct 2nd 1891

S. 15 T. 47 R. 34

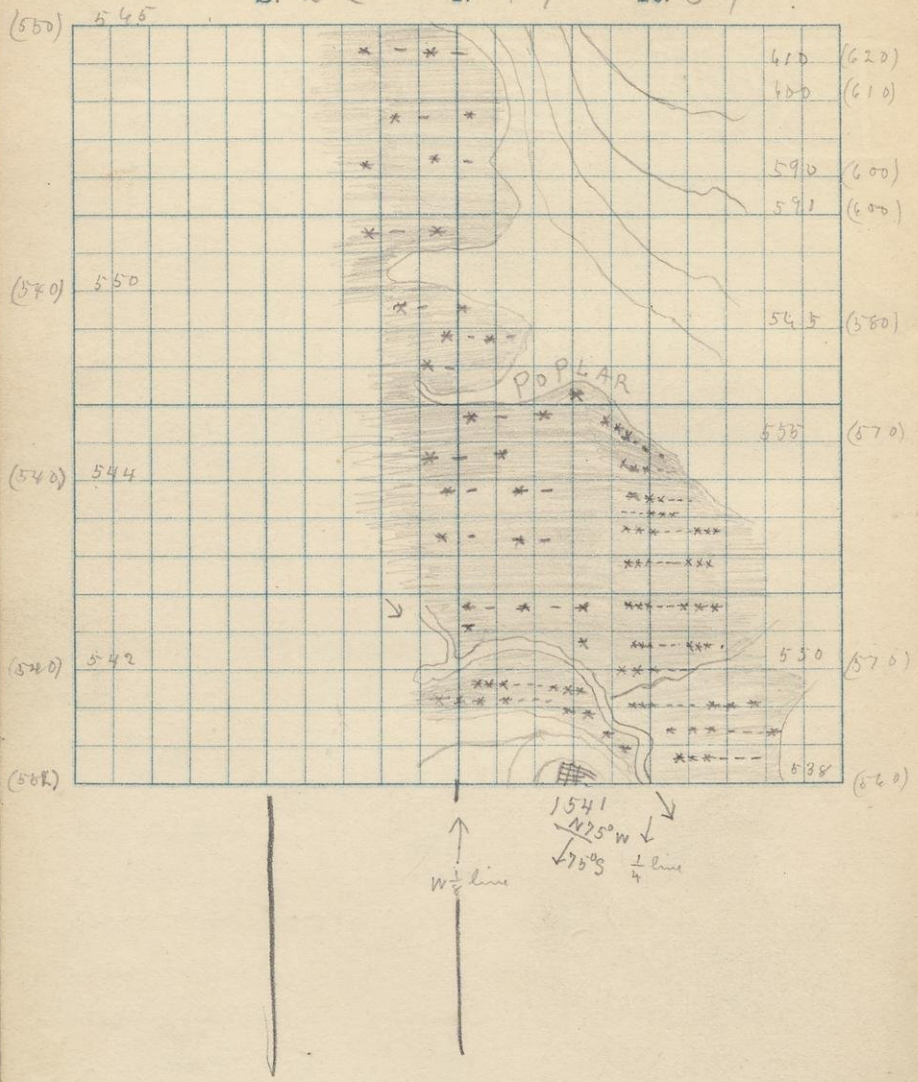


Begun at ¼ stake Sec 15. Going S

B.M. 607.27 Dbt = 29 in
100 (410) Pine & mixed growth
300 (420) Pine Hardwood with good scattering Pines
500 (610) Pine & mixed growth
650 (620) Poplar
1100 (600) "
1300 (600) Poplar and alder undergrowth
1500 (600) " " " "
1550 (600) Hardwood
1800 (600) Hardwood & Pine.
1900 (610) " "
— Going N on W⅛ line
200 (560) Small ledge. Probable
1544 Strike N 75° E
Dip 60° S
300 (570) Poplar
500 (540) Hardwood
800 (570) Poplar
900 (565) Fam. Swamp
1500 (570) Poplar
1600 (580) Hardwood
2140 (400) Bench Pine "
B.M. 633.01

86 Oct 2nd 1891

S. 22 T. 47 R. 34



Going S on 1/4 line Sec 22

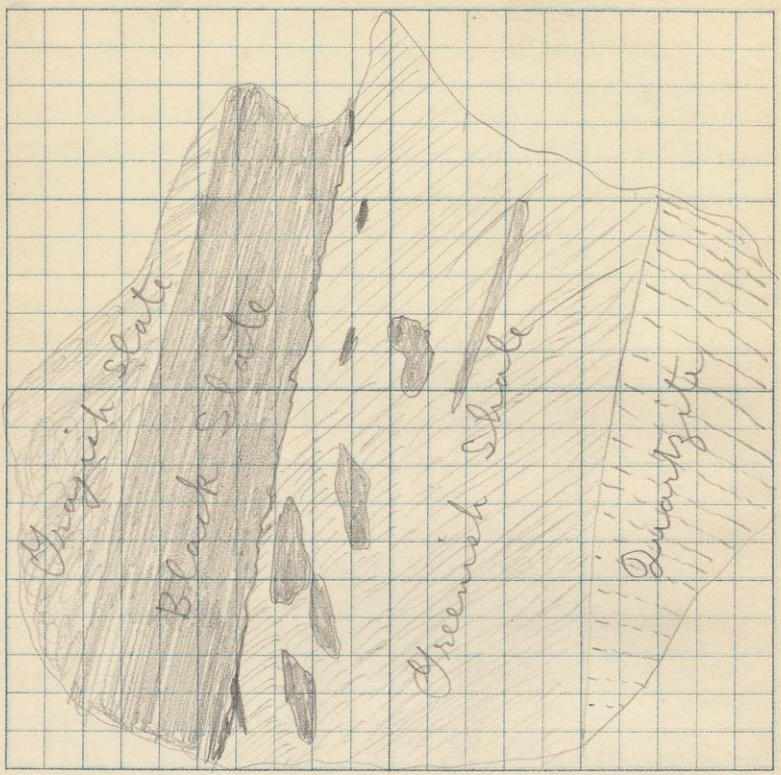
100(620) Hardwood
200(440) "
400(400) "
500(600) Good Pine and Hardwood
800(580) Poplar
1100(570) Poplar and Alder undergrowth.
1700(570) Cedar Swamp.
2000(560) " "

B.M. 537.84

Spec
~~1540~~
1541
1542
1543

Sec 27. 2000 paces N and 1120 west of S.E Cor.
Large exposure of slate
Strike N 75° W
dip 75° S.
A very peculiar appearance of the rock is worthy of notice The rock consists of a gray quartzite on the N side, then a greenish gritty shale, then a black slate, then a grayish black slate. The greenish shale seems to contain inclusions of the black slate. This appearance may indicate an unconformity or it may mean that thin seams of the soft slate in the

S. T. R.



harder rock became segregated into lumps by pressure and contortion.

Going N on W ⅛ line Sec 22

B.M. 551.59 400 = 28.5 Hardwood

300 (540) Net River Tamarack Swamp

600 (540) " "

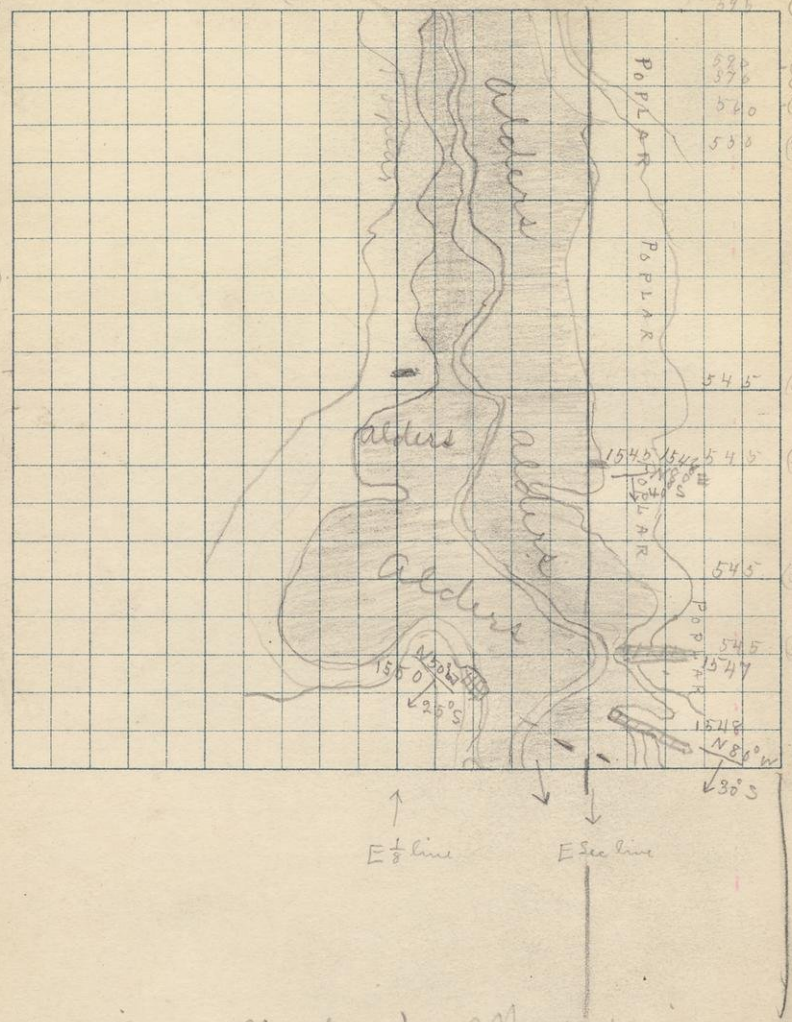
1000 (540) Edge of Swamp

1300 (540) Poplar

2000 (550) Poplar with balsams. Hardwood begins 50 paces E

90 Oct 4th 1891

S. 14 T. 47 R. 34



Hustling Mathews Mountain
40 ft high.

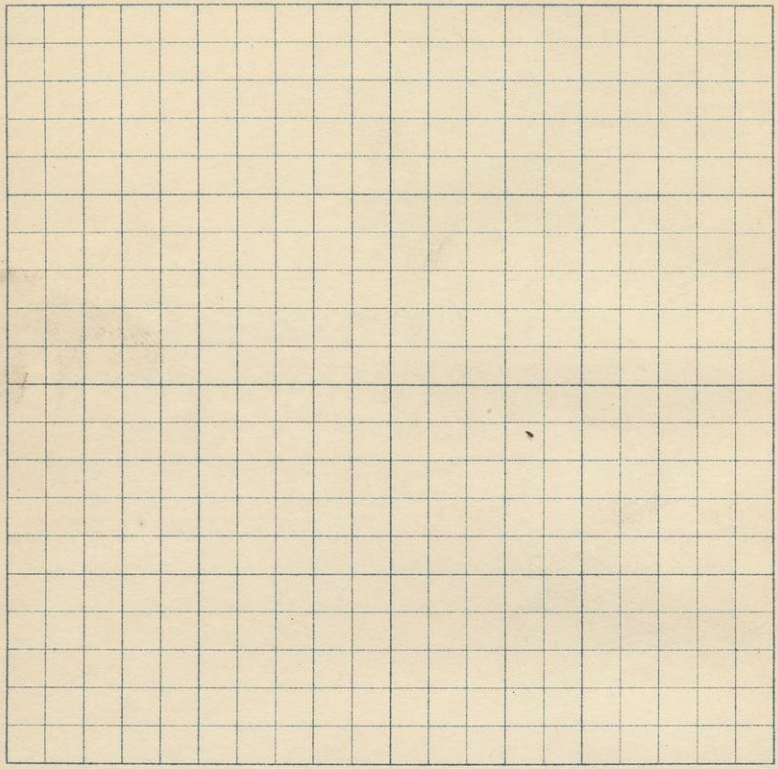
Going S on E line sec 6

8. AM B.M. 594.68 600 = 28± Poplar
150 (590) "
170 (570) "
250 (560)
350 (550) Alder swamp
1000 (550) 8.38 AM. Poplar and Alder
1200 (550) Mass of loose rock.
Spec 1545 No actual outcrop, but it is probably very near one. A little further south is a good outcrop with a plain contact between slate and quartzite

1546 Strike N 80° E
Dip 40° S

1500 (540) Cedar & Tam. Swamp
1700 (560) Large outcrop of gritty shale. Strong cleavage dips S about 60°. Trend of ledge E & W. Very homogeneous. No strike or dip ascertained
1547
1548 1775. A large ledge of slates and grits.
1549 Strike N 80° W Dip
Dip 30° S.
Spec shows contact
Bearding

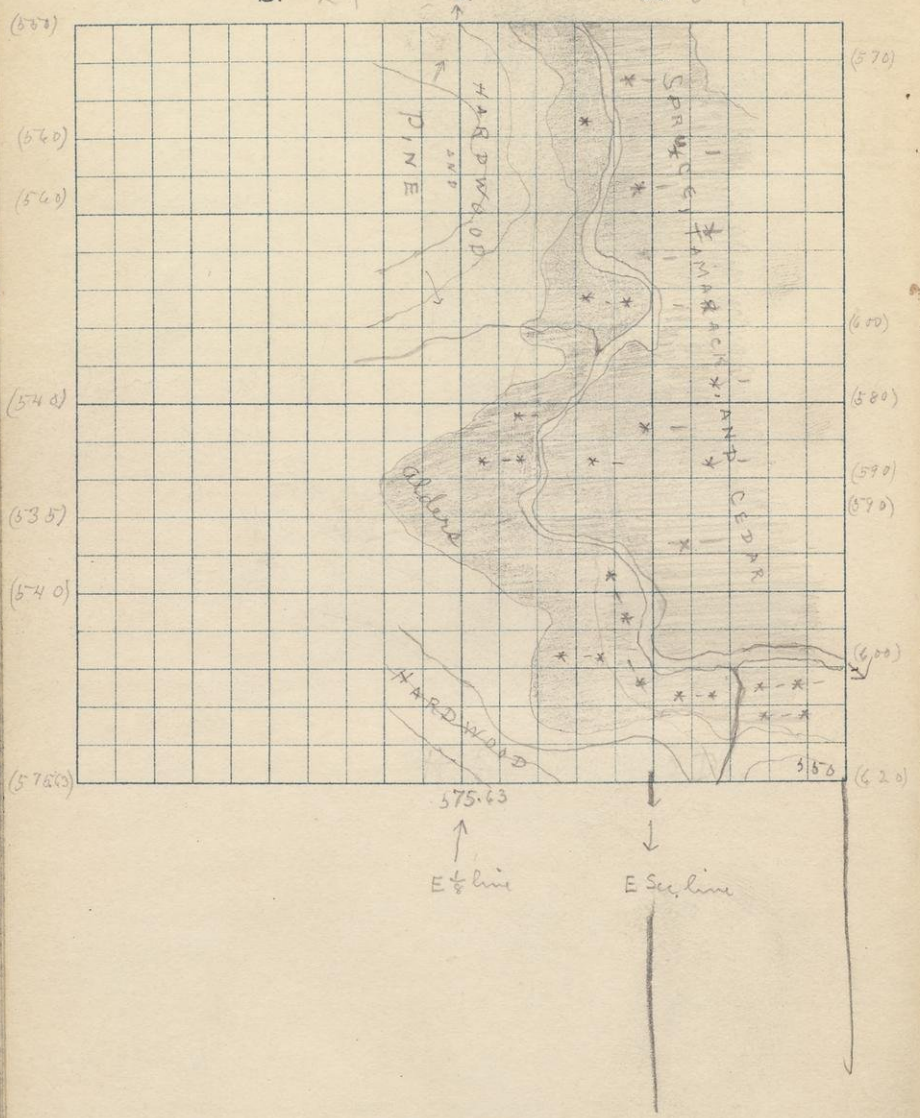
S. T. R.



2000 10.25 A M
Effect 275. Cold rain
— Going N on E ⅛ line Sec 16
2000 (540) Hardwood & Pine.
3000 (555) Edge of swamp
7000 (570) Poplar. Edge of swamp
9500 (570) 3 P.M. "
10360 (570) Poplar
1552 Large outcrop of slate and grits. Very fine bedding
Strike N 50° E
Dip 38° N.
13000 (570) Poplar
18000 (570) "
20030 (560)
B.M. 3547.50 3.40 P.M.

94 Oct 4th 18[illegible]

S. 21 T. 47 R. 34



Sec 16 300 paces W 240 N of S.E. Cor.

×300 W 100 (570) Pine + Hardwood

Great ledge of slate

1650 Strike N 50° W

1551 Dip 25° S.W.

Going S on E line Sec 21

1000 (580) 12.15 P.M. " " "

1200 (590) " " "

1275 (590) Small stream.

1700 (600) Hardwood + Pine

2000 (620) 1.15 P.M. Pine Hardwood

Going N on E ⅛ line

B.M. 575.63 0 = 29 in

1.25 P.M. Hardwood

500 (540) "

700 (535) Alder thicket

1000 (540) 1.45 P.M. Hardwood + Pine

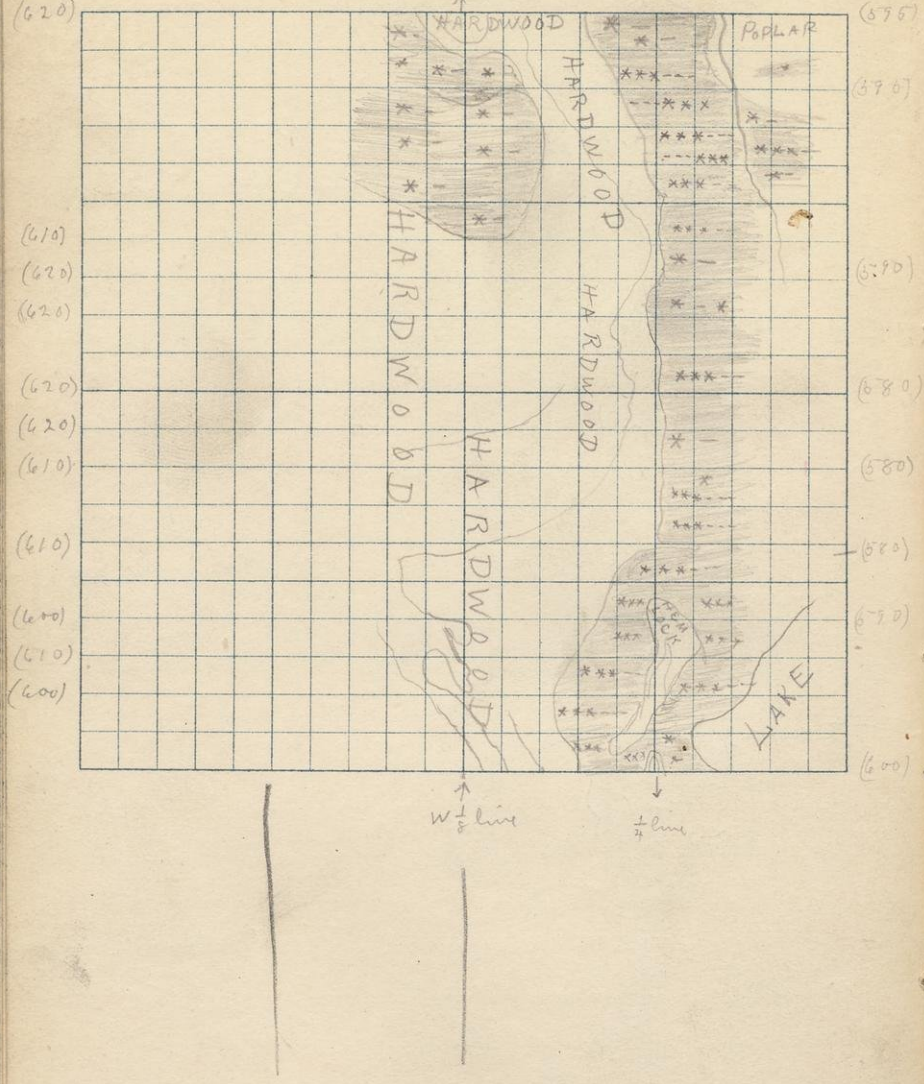
1540 (560) " " "

1700 (560) " " "

2000 (550) 2.20 P.M. " " "

96 Oct 5th 1891

S. 17 T. 47 R. 34



Going S on 1/4 line Sec 7

B.M. 595.84 1800 ft = 31 m

Tamarack swamp

200 (595) Fine cedar swamp

700 (590) Edge of swamp

1000 (580) 9.45 A.M. Edge of swamp

1200 (580) " " "

1425 (580) Small ridge in swamp E & W.

1600 (590) Hemlock ridge

1700 (590) Hemlock, spruce, hardwood ridge

2000 (600) Hemlock ridge (Serpent Kame 10.40 AM.

Going N on W 1/4 line

200 (600) Hardwood

300 (610) "

400 (600) Fine Birch "

600 (610) " " & "

800 (610) " " " "

900 (620) Hardwood

1000 (620) 2.05 P.M "

1200 (620) Poplar

1300 (620) Hardwood

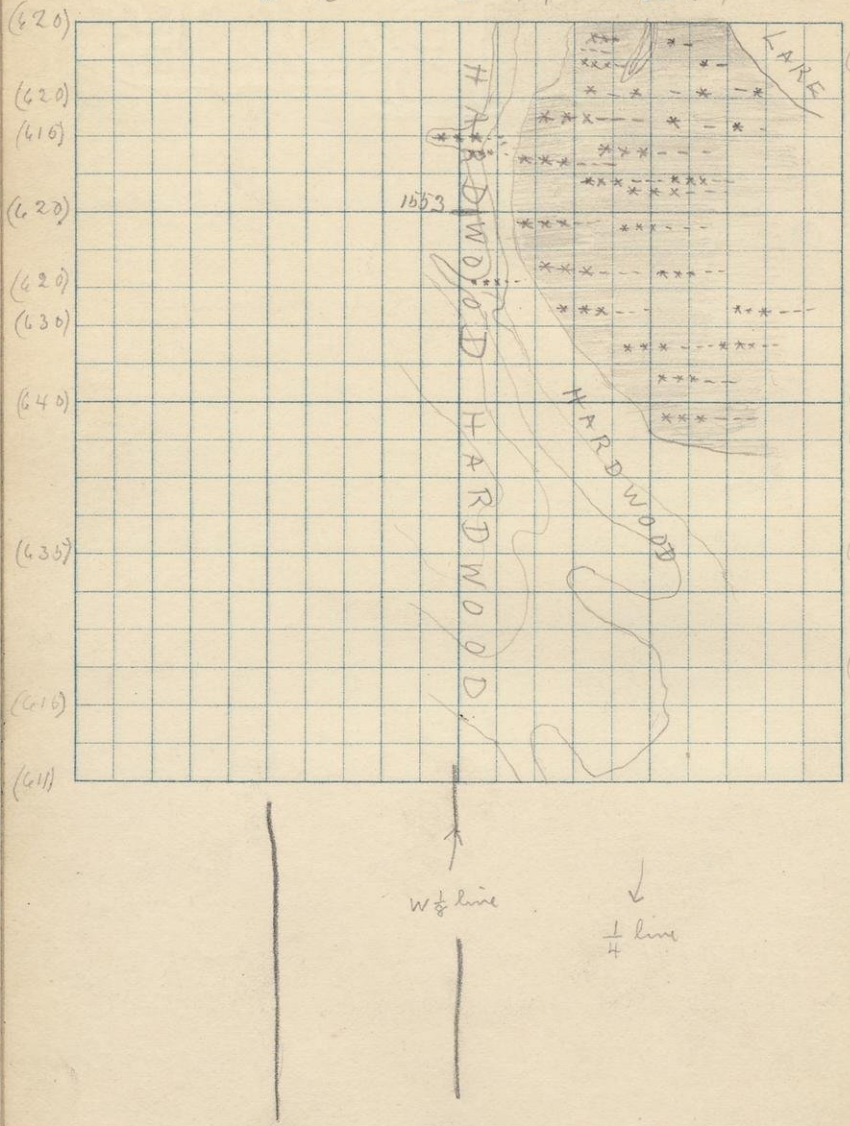
1400 (610) Spruce Tam. Swamp.

1935 (620) B.M. 628.78. 2.30 P.M

Hardwood

98 Oct 5th 1891

S. 20 T. 47 R. 34



W ½ line

¼ line

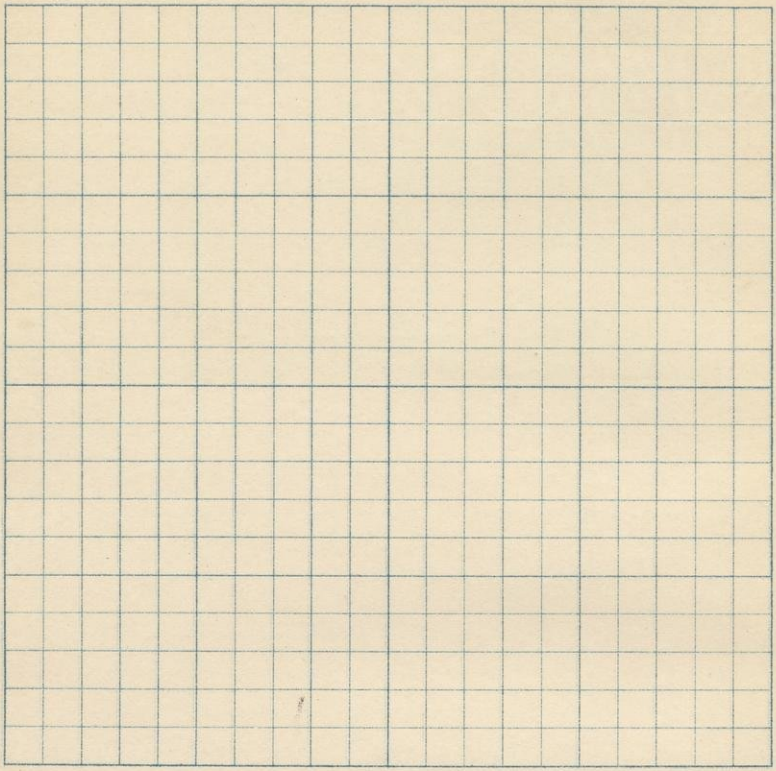
Going S on ¼ line Sec. 20

100 (580) Open Tam swamp
500 (585) Cedar swamp
900 (580) " "
1000 (580) 11.20 AM. " "
1100 (585) Fine Hemlock, cedar & Birch
1400 (600) Very fine Hardwood
1700 (600) " " "
2010 (595) B.M. 603.70. " "

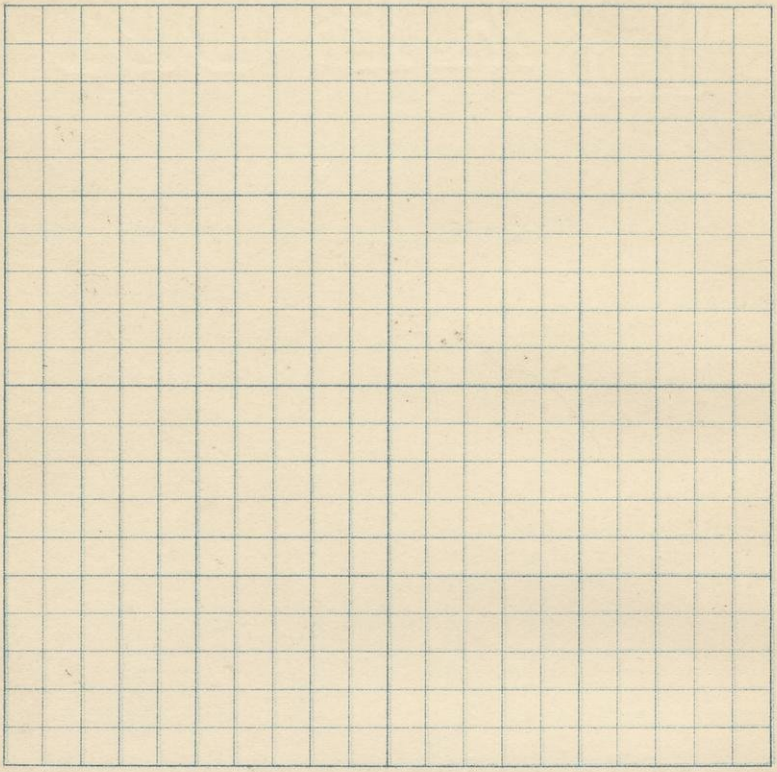
Going N on W⅛ line Sec 20

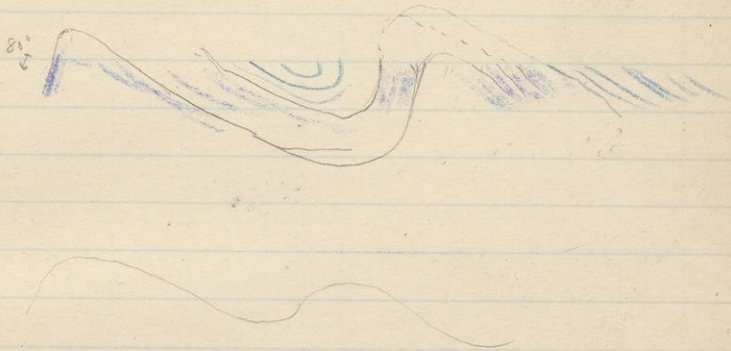
B.M. 610.90-.8 = 29.1. 12.30 P.M. Hardwood
200 (615) Fine Hardwood
600 (635) " "
1000 (640) " " 12.55 P.M.
1200 (630) " "
1300 (620) " "
1500 (620) " "
1553 Greywacke. No actual outcrop
1700 (615) Hardwood and cedar
1800 (620) Fine Hardwood
2000 (620) " " 1.30 P.M.

S. T. R.

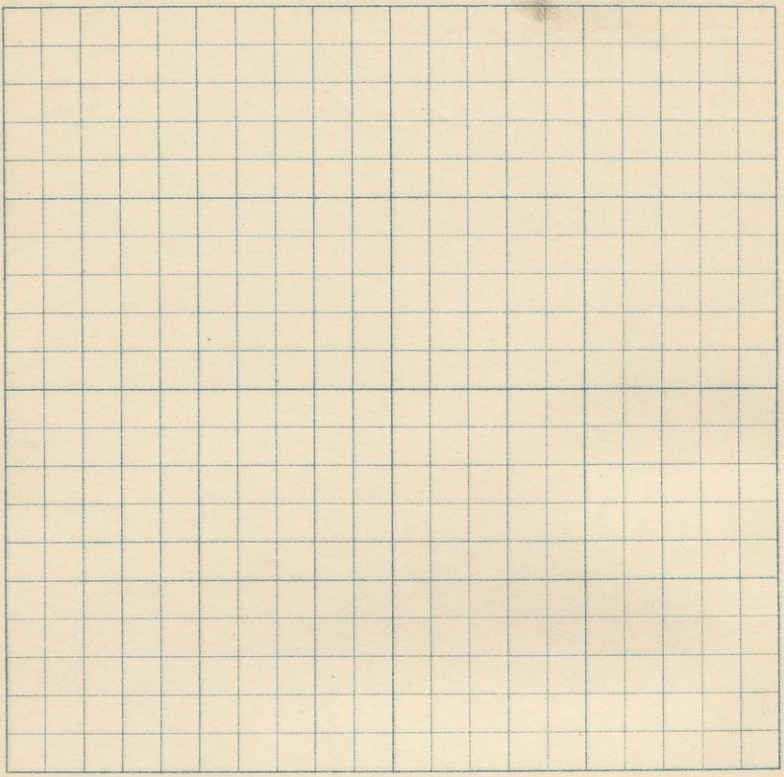


S. T. R.





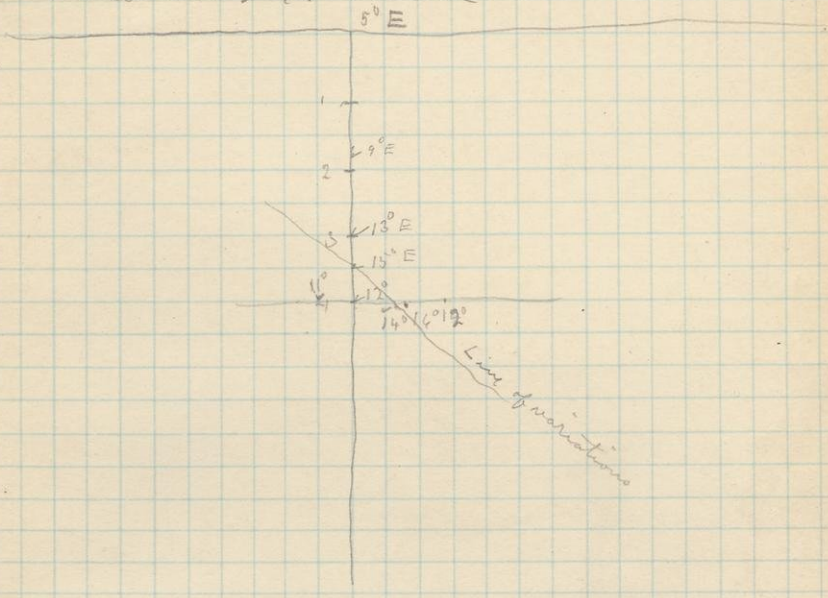
S. T. R.

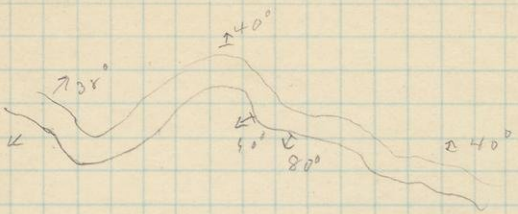


Sept 12th 1891

Chart of variations

Sec. 23. T 47 R. 32




↑40°
↗30°
↙
↙50°
80°
↑40°

Section across outcrops, sections 7 & 18. T. 47. R. 32. W. E ½ and ¼ lines.

S

Slip ? ——— Grit

Strike as E & W Slip ? Knotted Schist

Slip ? ——— Knotted Schist

Strike N 70° E Slip 50°-75° N ——— Schists & Grits

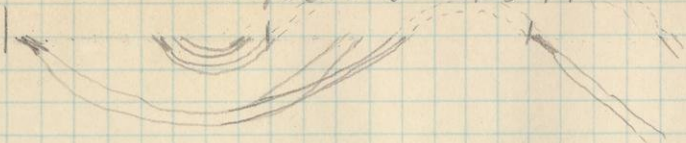
Strike N 85° W Slip 80° N ——— Black Slates Grits Speckled Schists

Dark green schist or shale.

Sept 21st 1891

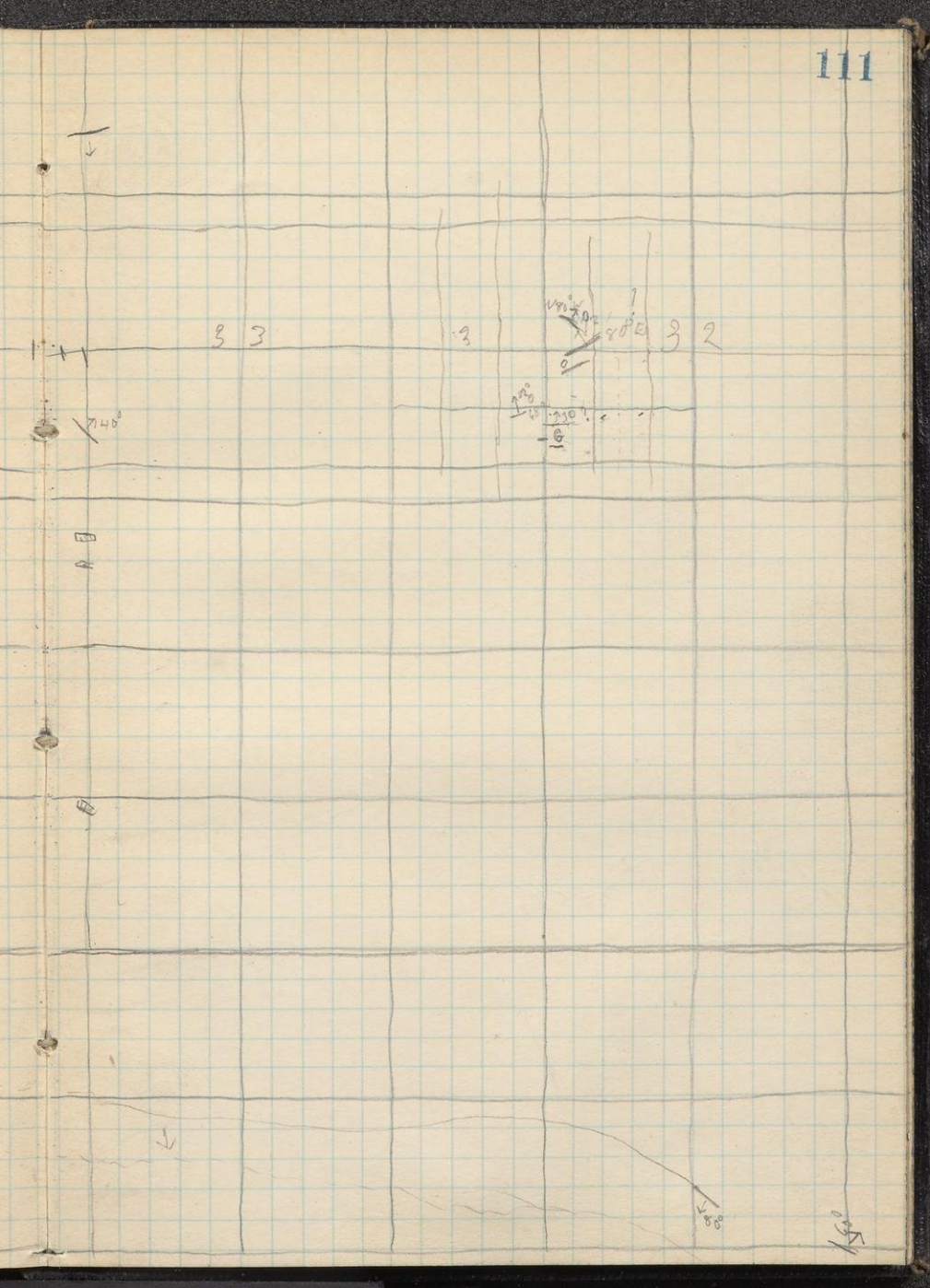
N

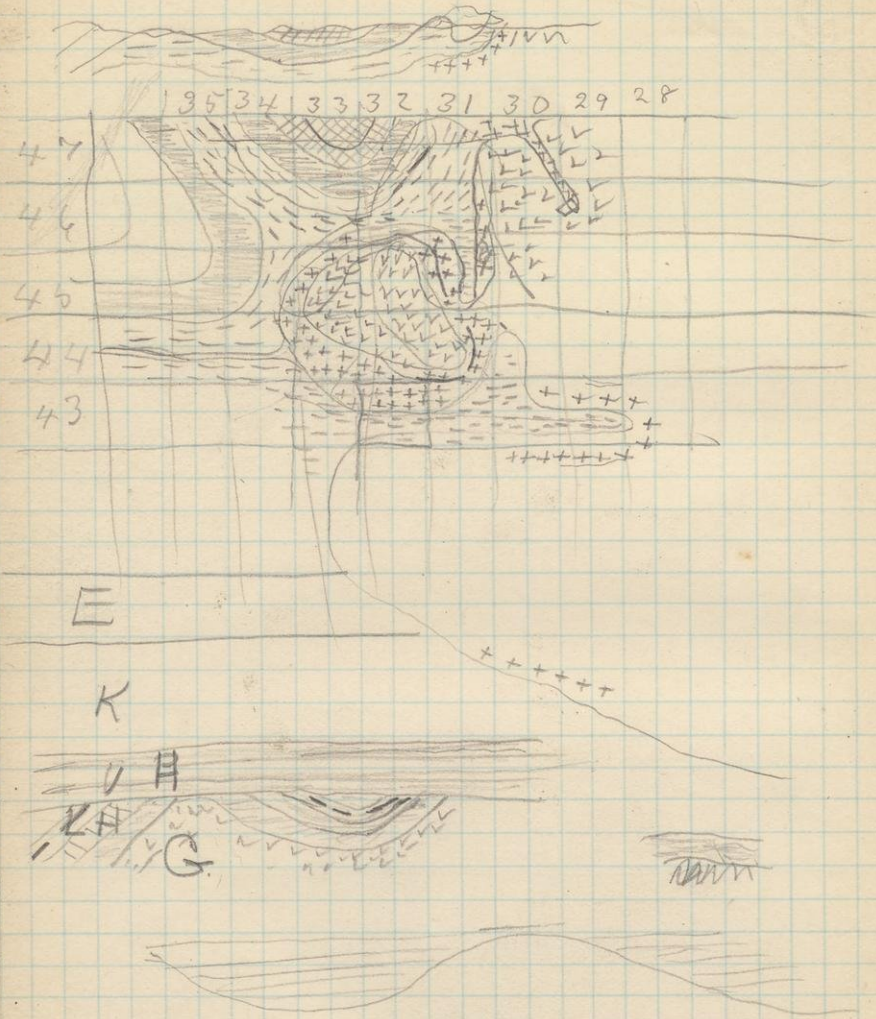
Sept 22nd 1891



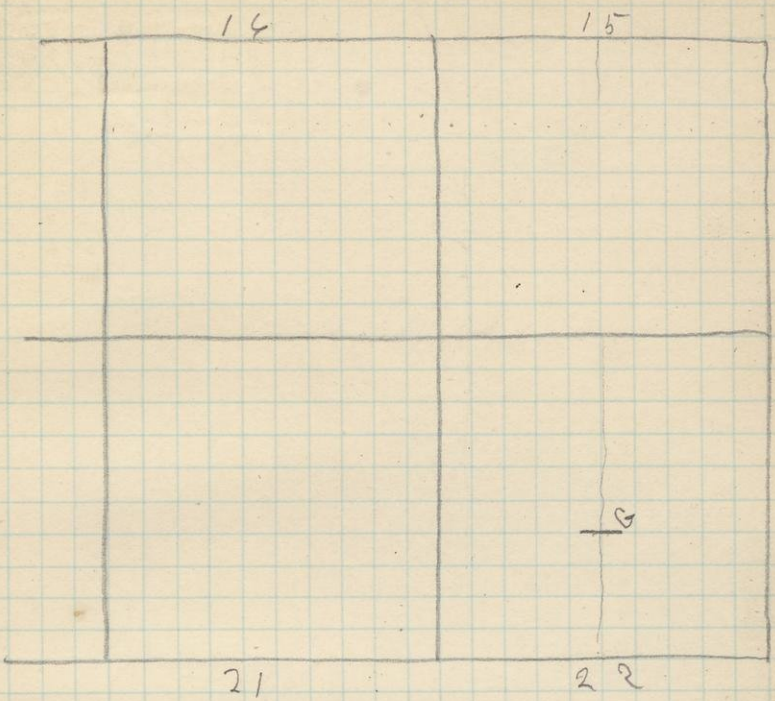
Sect. Between S and Sects. 24 and 19 T 47 R 32.33
and Township line 47-48

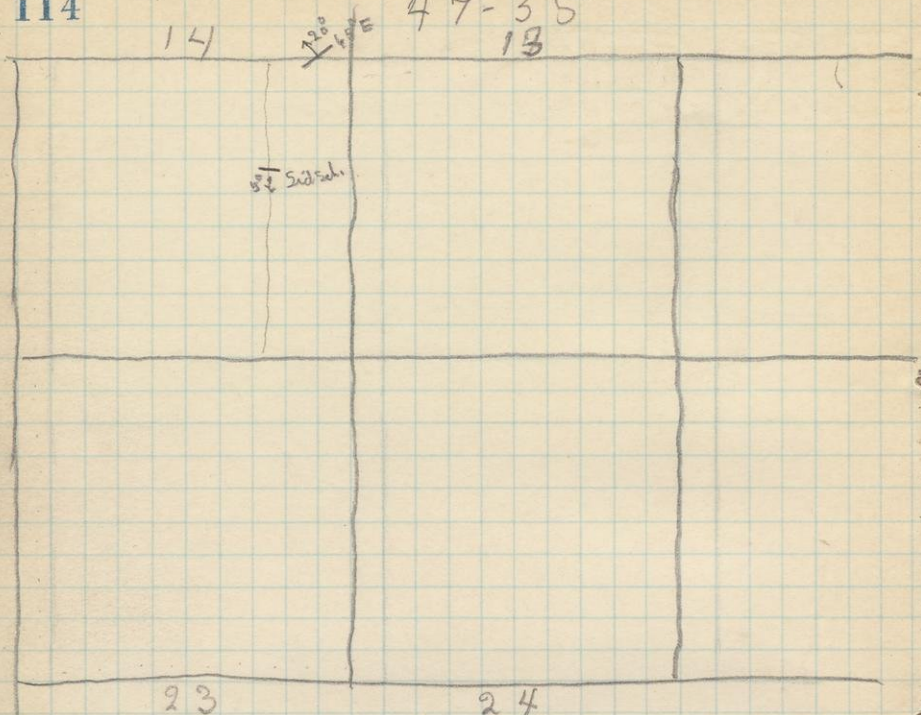
47 37 35 34


S 3
S 3
S 2
N 40°
N 70° E
330?
G

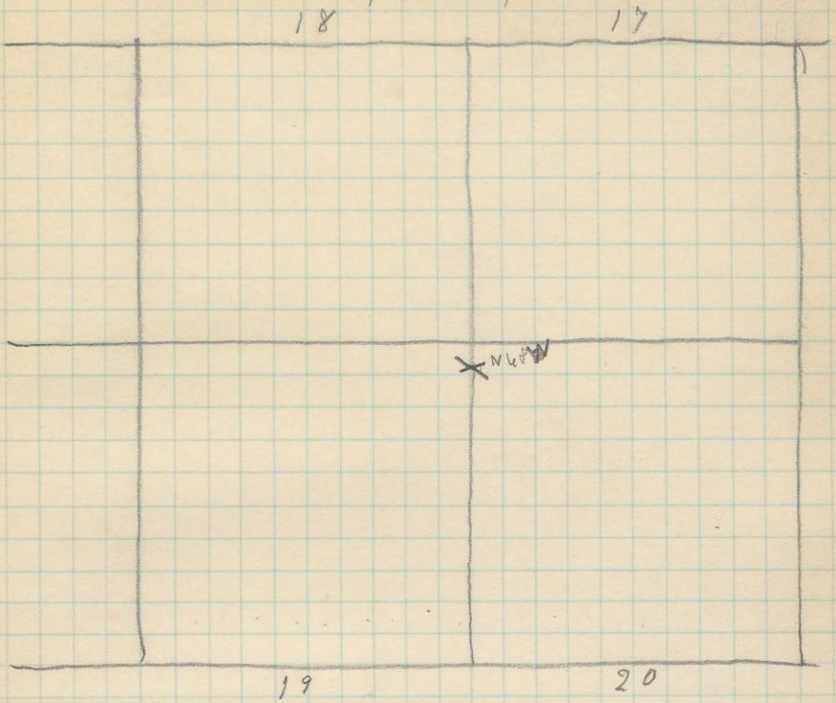

35 34 33 32 31 30 29 28
47
46
45
44
43
E
K
H
A
G

47-35

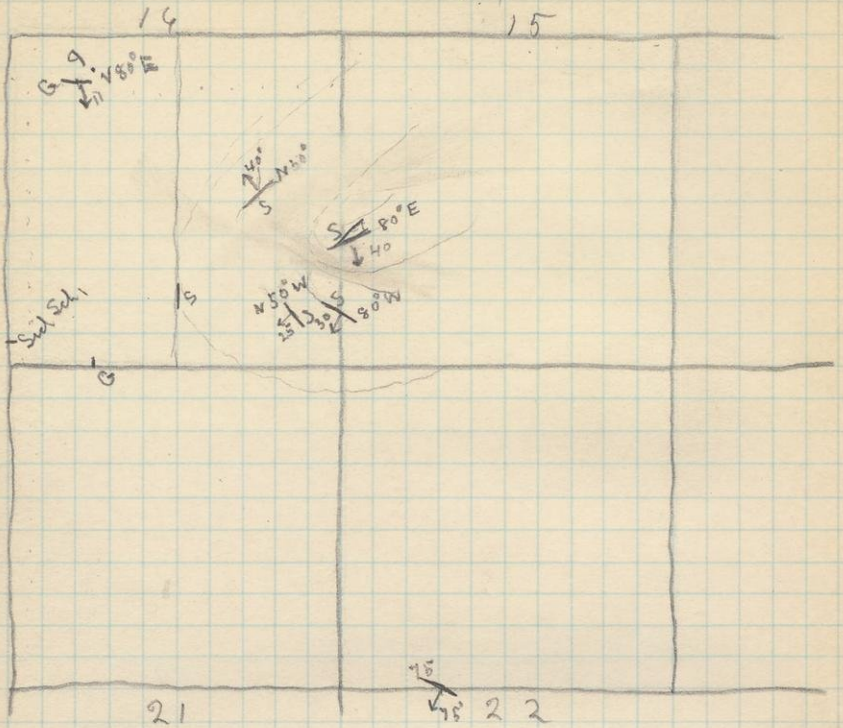


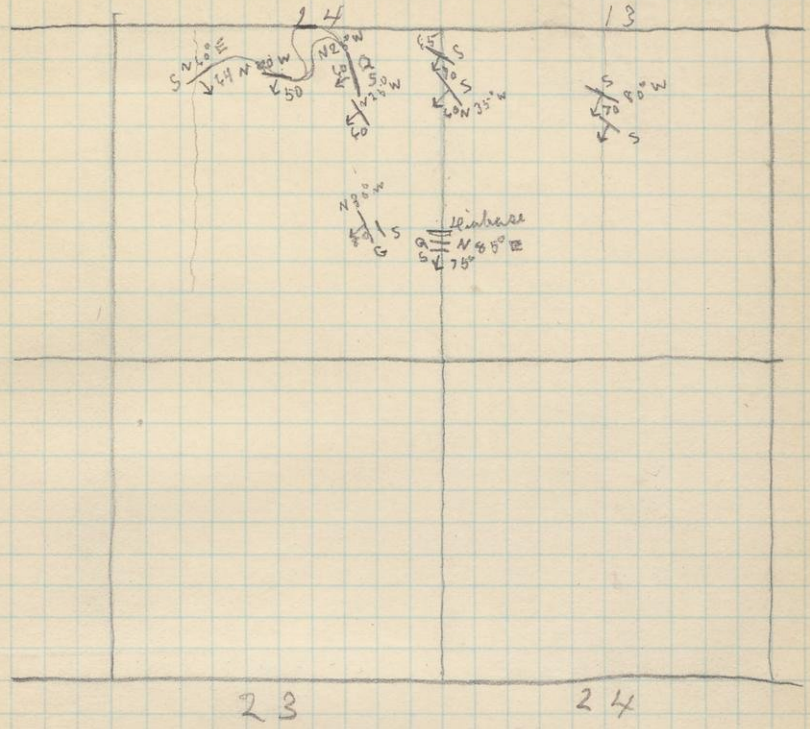

14
13
47-35
23
24

47-34

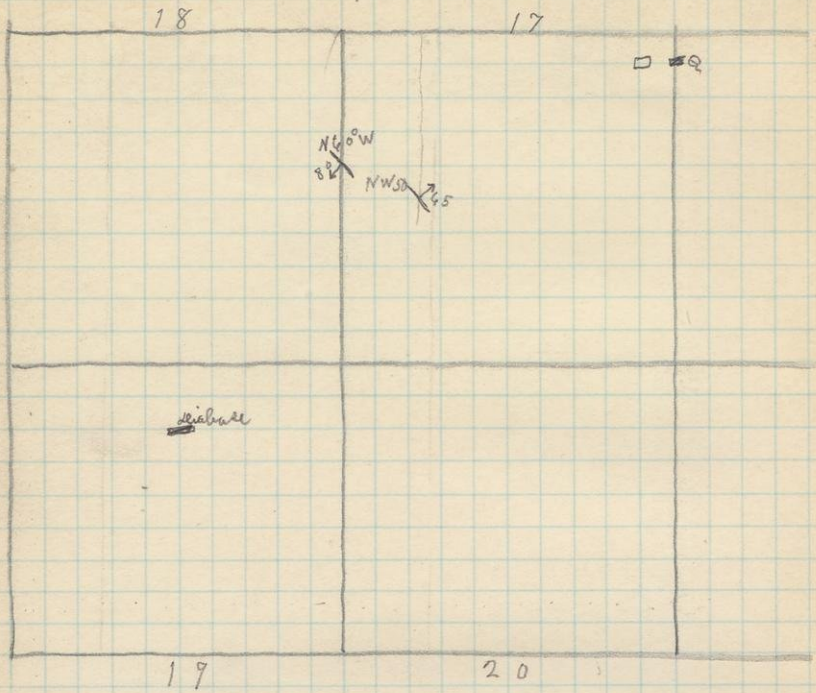


47-34

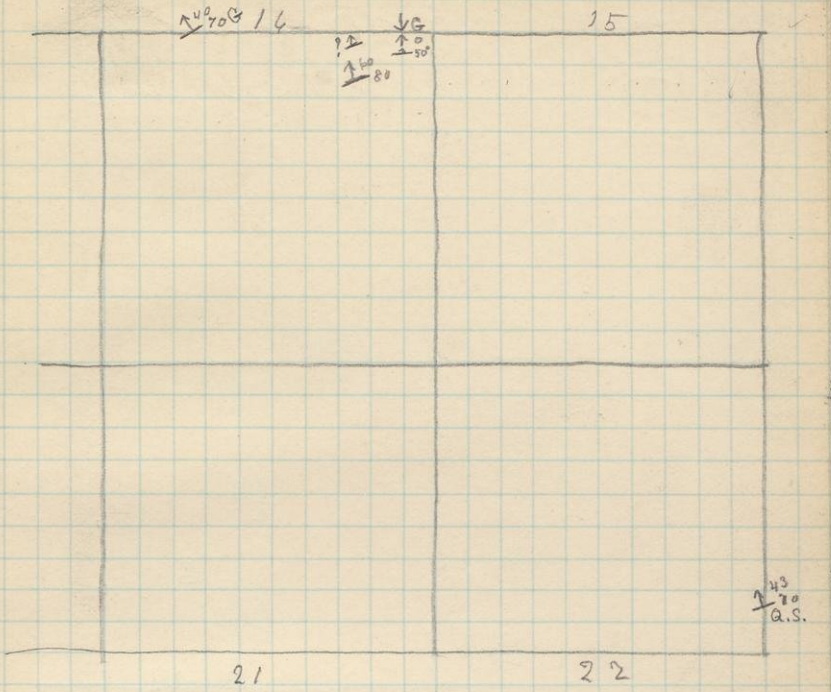



14
13
S 42° E
42 N 80 W
N 2° W
S 50° W
S 50° W
S 35° W
S 70° W
S
S
N 30° W
S
limestone
N 45° E
75°
23
24

47-33

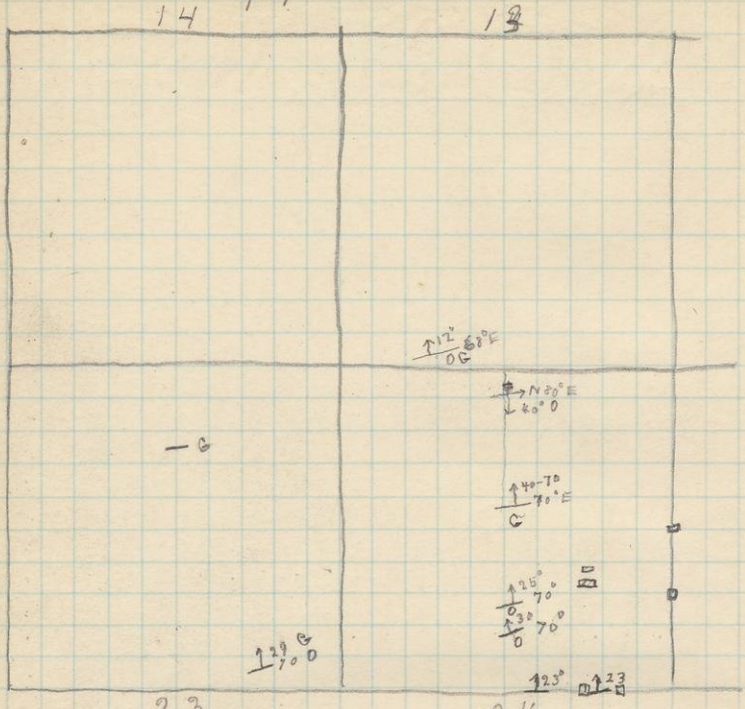


47-33



120

47-33



209 ft. 3'
33
627
627
1897

1320

4) 5280

1320

$X : 13.20 :: \sqrt{33.3} : \sqrt{40}$

$6 \times 6 = 36$

$\sqrt{36} = 6$

$\frac{X}{1320} = \frac{5.771}{6.32}$

5,771
1320
9240
9240
6600
7617.72 (1205
6.32
1297
1264
3372

1205
1205
6025
24100
1205
33.31 | 1452025.00 (43590
33324
11962
9993
19695

40 | 4.32
34
123 | 400
369
1324 | 3100

33.31 | 5.771
25
1007 | 831
749
1147 | 8200
8029
1154 | 17100
11525
5575

1320 | 45
1320
2235
1800
2025
2405

25
4
29 | 5800
25
33 | 3000
2900
1000
475
75
400

1060

46.5

24,125 | 4.92
16
89 | 825
801
2400

982