



# **Vicinity of Amasa, Michigan: [specimens]**

## **23428-23445. No. 170 1894**

Culver, G. E.  
[s.l.]: [s.n.], 1894

<https://digital.library.wisc.edu/1711.dl/CJSBBT722G7HP8T>

<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.

U. S. GEOLOGICAL SURVEY  
FIELD SECTION BOOK

9-891

# LAKE SUPERIOR DIVISION.

## INSTRUCTIONS.

1. Ordinarily at least two pages of this book will be devoted to one section. On the left-hand page, place a map of as much of the section as has *actually been seen*. Denote rivers, lakes, marshes, etc., by the usual topographical signs. 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, with dip arrow and number attached as before. 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 specimen representing it. In mapping the section count each of the spaces between the blue lines as 100 paces, and twenty of these spaces to one mile, or 2,000 paces. Usually the southeast corner will be placed at the bottom of the page, or at the first black line above the bottom of the page, and at the right-hand side. If, however, for any reason, it is desirable to show portions of an adjoining section, the southeast corner may be shifted up, or the map may be turned around and the north placed at the left-hand side of the page. The ruling of the left-hand pages is also arranged so that, if desirable, a larger or a smaller scale can be used, eight inches, two inches, one inch, or one-half inch to the mile. With the two-inch scale, the squares outlined in black represent sections, and those in red, quarter sections and "forties," while the space between the blue lines is 200 paces.

2. 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, the latter always being expressed from the north; for instance 4025, 250 *N.*, 300 *W.*, *Strike, N. 78° E., Dip 50° S.* Then follow with a full description of the ledge. When topographical maps are used for locations this paragraph applies only in part.

3. Collect a specimen from every ledge, or wherever there is a change of rock on any one ledge, taking care to get fresh material, unless for a special purpose the weathered surface is desired. In case of trips made on foot or in canoes, for long distances, neighboring ledges, unquestionably of one kind of rock, need not be specimened. The position and extent of the ledges not specimened should be marked on the map, with notes that each is of a rock identical with specimen so-and-so. Under the same conditions small-sized specimens, trimmed to a uniform size of  $2 \times 2\frac{1}{2} \times \frac{1}{4}$  inches will be allowed, but in all other cases *large-sized specimens*, trimmed to a size of  $3 \times 4 \times 1$  inches, must be selected, in accordance with section 3, chapter IV, p. 44, *Regulations of the U. S. Geological Survey*. Specimens should not be placed together without protection in the collecting bag, as the fresh surfaces, important in determining the character of rocks, are thus destroyed. They should be damaged by no temporary mark, but the numbers should be at once marked in at least two places upon the inclosing paper or cloth bags. Specimens may be permanently marked in camp by painting the numbers upon them in white upon a black background, using Silver White and Ivory Black oil tubes for color, with turpentine as a diluent.

4. On the last twenty-five pages of the book give, as may seem desirable, a general account of the examination of the region mapped in the previous pages, correlation of observations, sketches, cross sections, etc.

5. Forward this note book as soon as filled as registered mail matter to C. R. Van Hise, U. S. Geologist, Madison, Wis.

No. 23428-23445

#170

Tr 8/95 C-L.

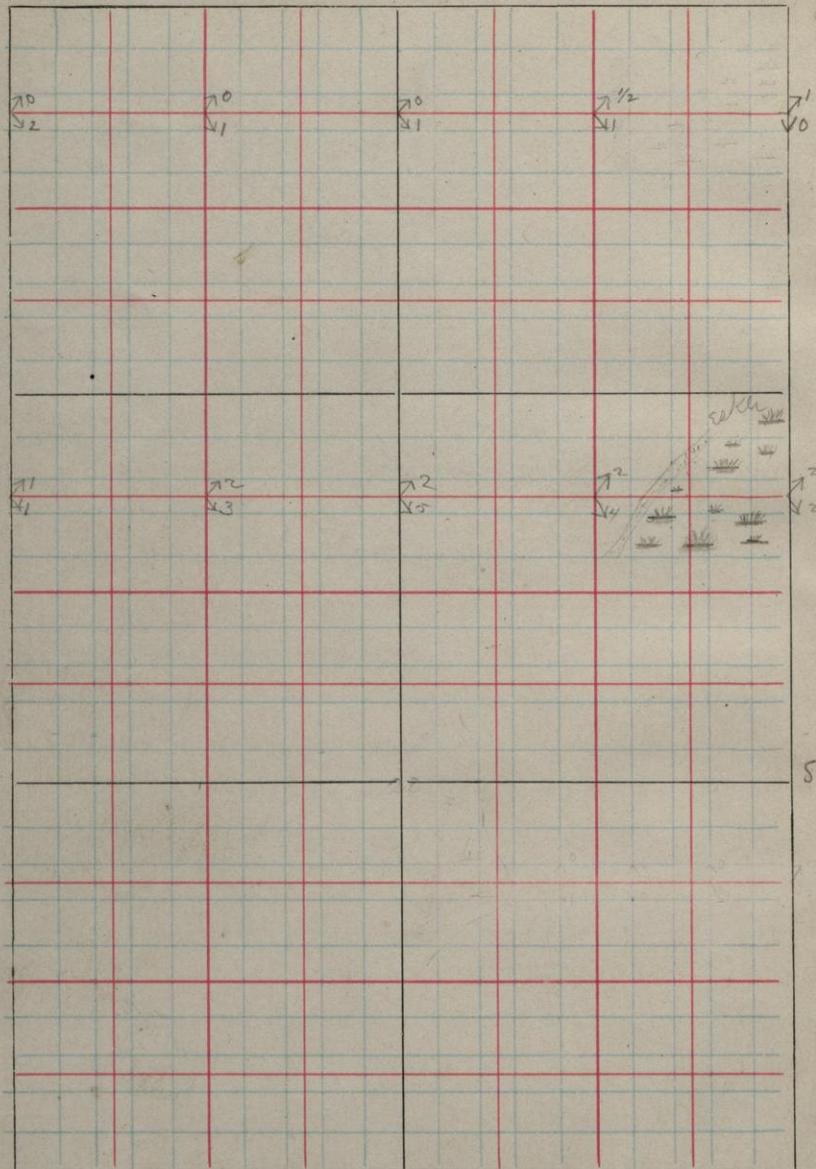
G. E. Culver

No. 2

N.W. S. 21

T. 45

R. 32





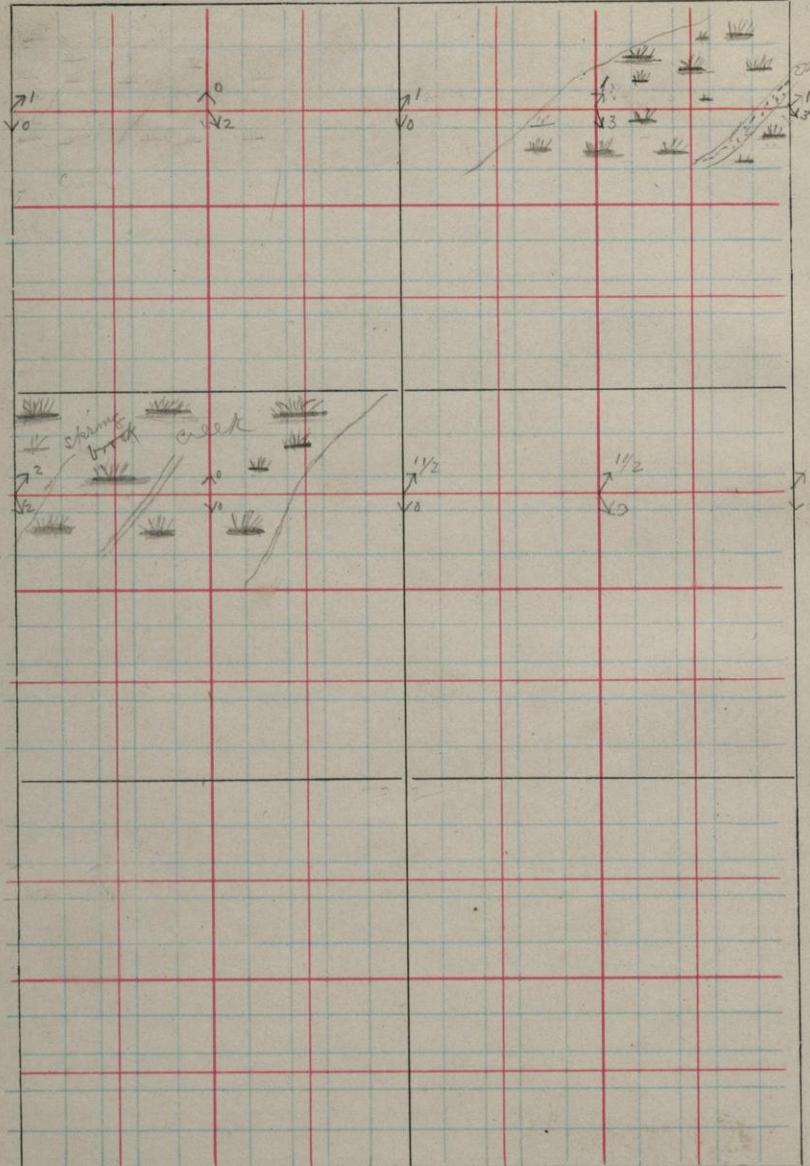
S. 2.2

T. 45-

R. 32

New  
cor

NE  
cor



A small, faint red mark in the shape of an L, positioned near the bottom right corner of the page.

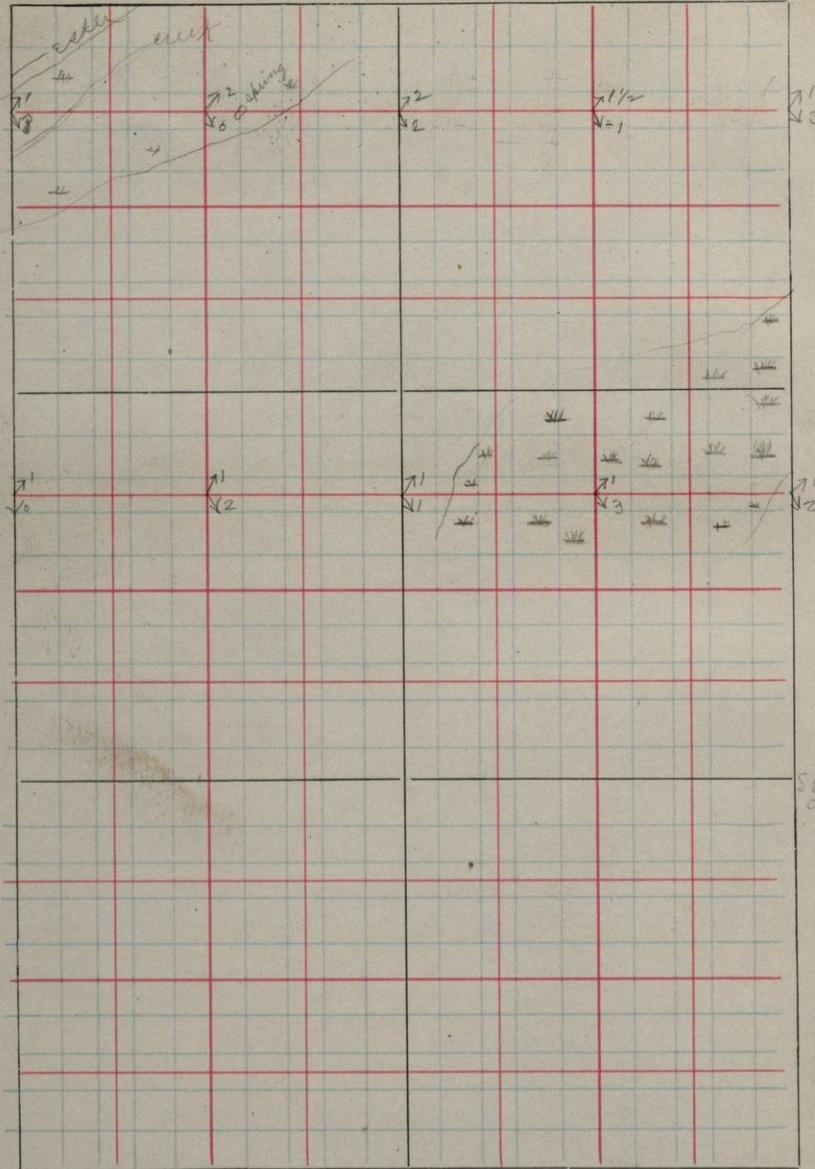
2

S. 23

T. 45

R. 32

NEC





W S. 31  
Cn

T. 45

R. 32

NE  
cor

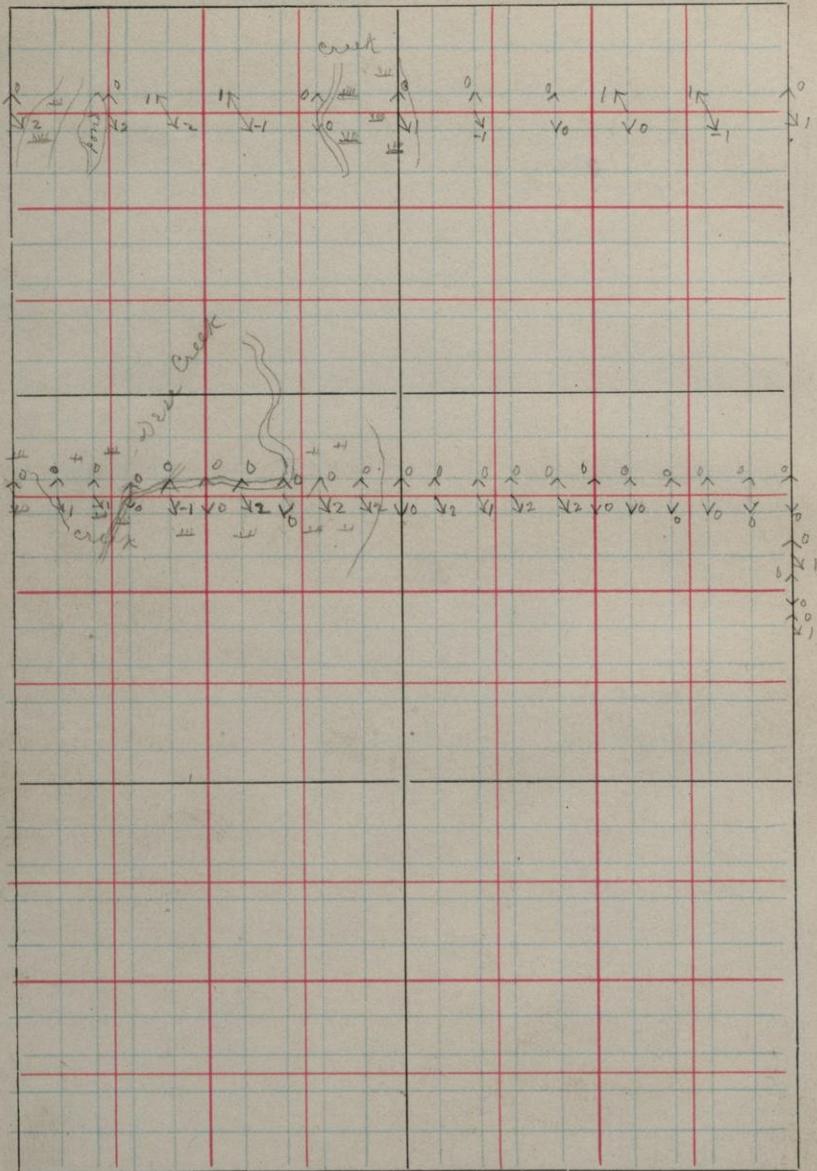
like 23422 1720 w 1750 N. Granetone like  
No. 23422

N.W. S. 5  
C.R.

T. 44

R. 32

N.E.



S.W.  
C.R.

S.E.

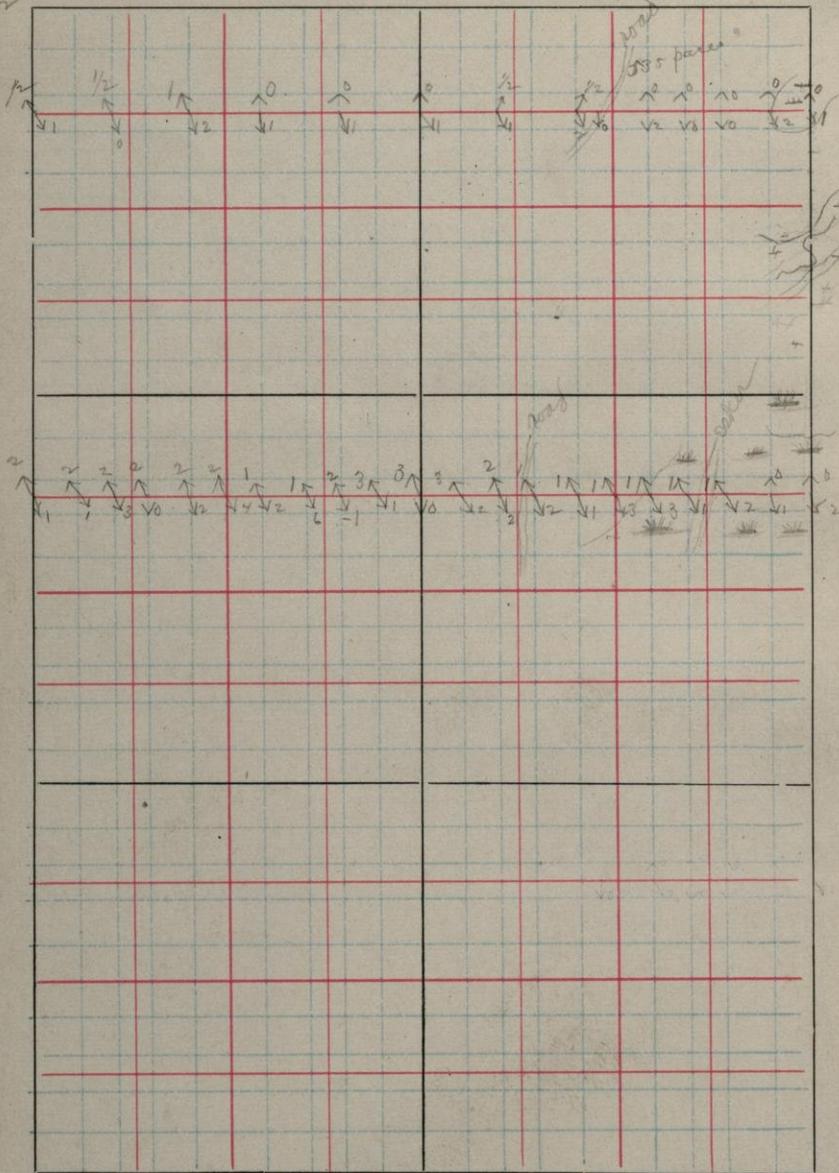


Mr S. 6  
or

T. 44

R. 32

NE  
co





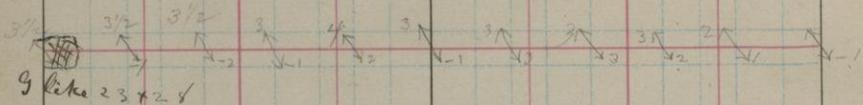
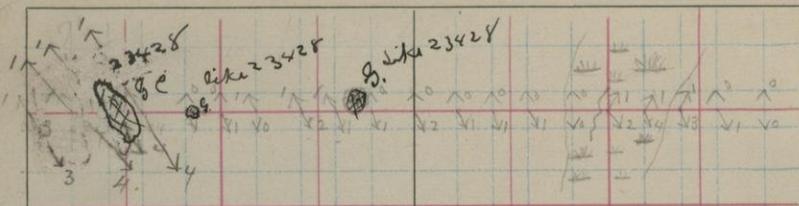
Mr S. 80

T. 45

R. 32

NE  
Cor

Cor



SW  
Cor

SE  
Cor

Like 23428 1100 W 1785 N Greendone, small ledge  
" 23428 1600 " 1750 " " breccia (small)  
1740 W 1710 N " " big outcrop  
Part brecciated, part compact schistose  
Glacial striæ NE-SW  
vesicular character marked throughout  
23428 From this large exposure a weathered  
specimen showing brecciated or  
ash-tray structure  
23429 Chert included in greendone Mass  
two feet long 6 to 8 in. wide.

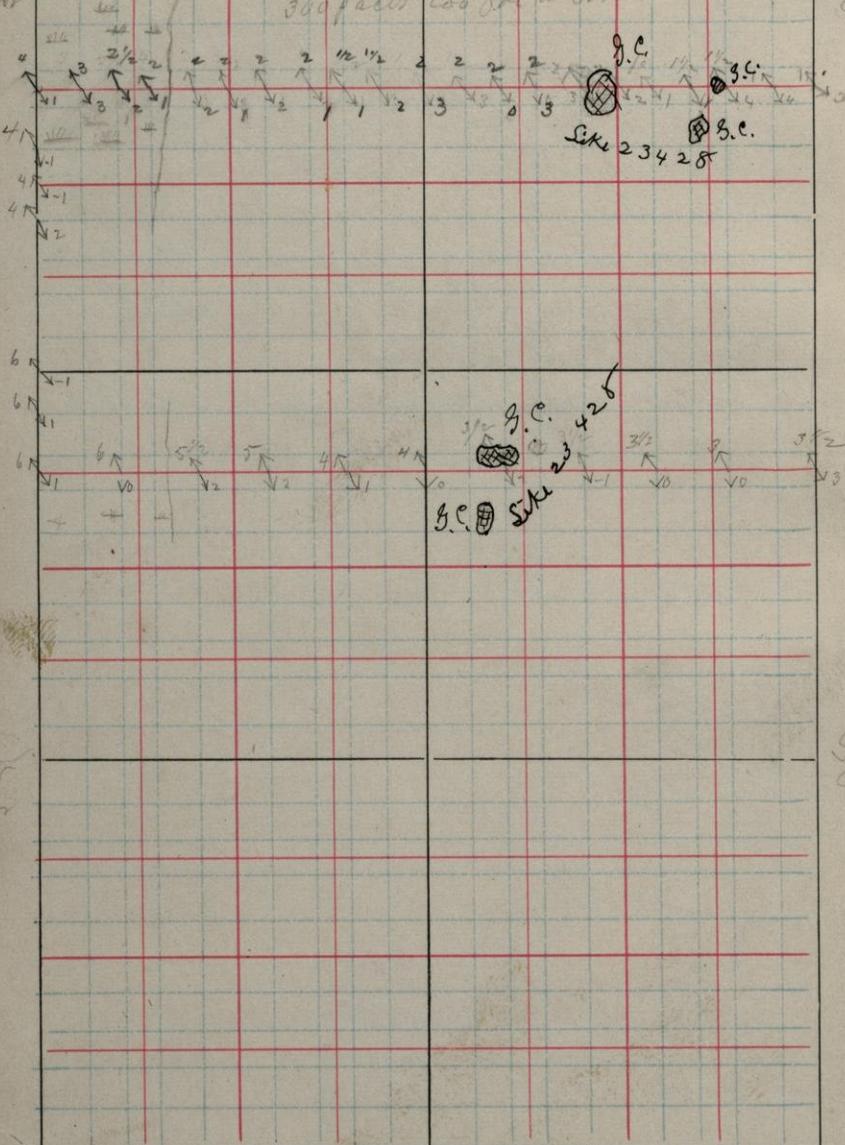
Like 23428 2000 W 750 N same rock

NW S. 25

T. 45

R. 33

Cor



like 23428 230 w 1750 n greenstone

" 23428 275 " 1665 " "

" 23428 300 " 1750 " "

" 23428 820 " 800 " "

" 23428 850 " 650 " "

The above outcrops are all similar  
to the exposures in sec 30. (23428)

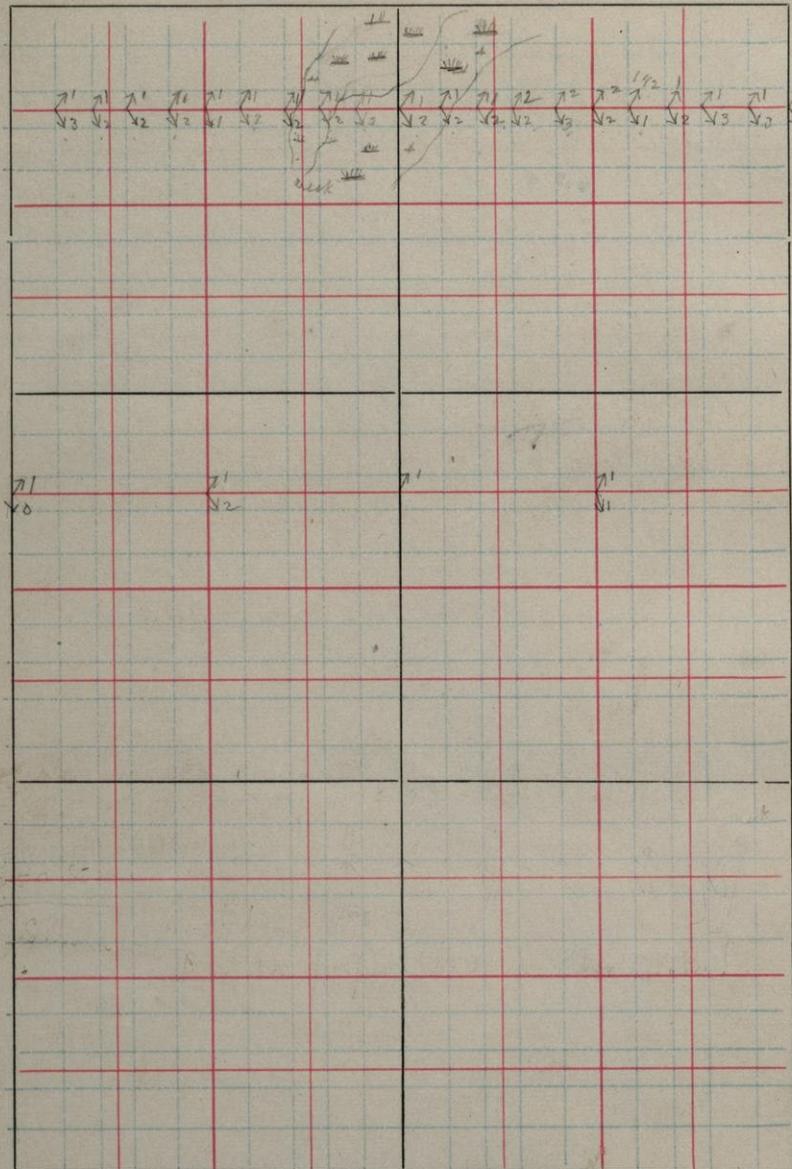
S. 2.8

T. 45°

R. 32

N.W.  
Cor.

N.E.  
Cor





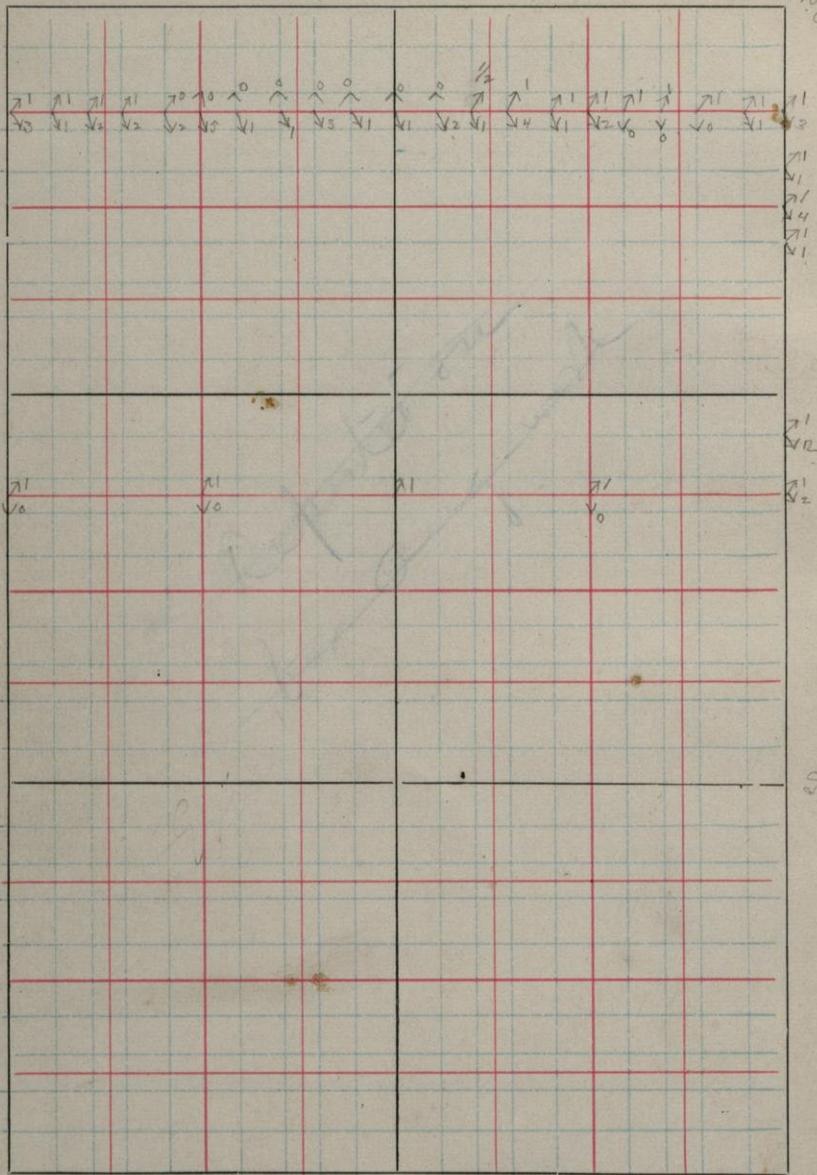
S. 27

T. 45-

R. 32

71 w  
cor

NE  
C. 19

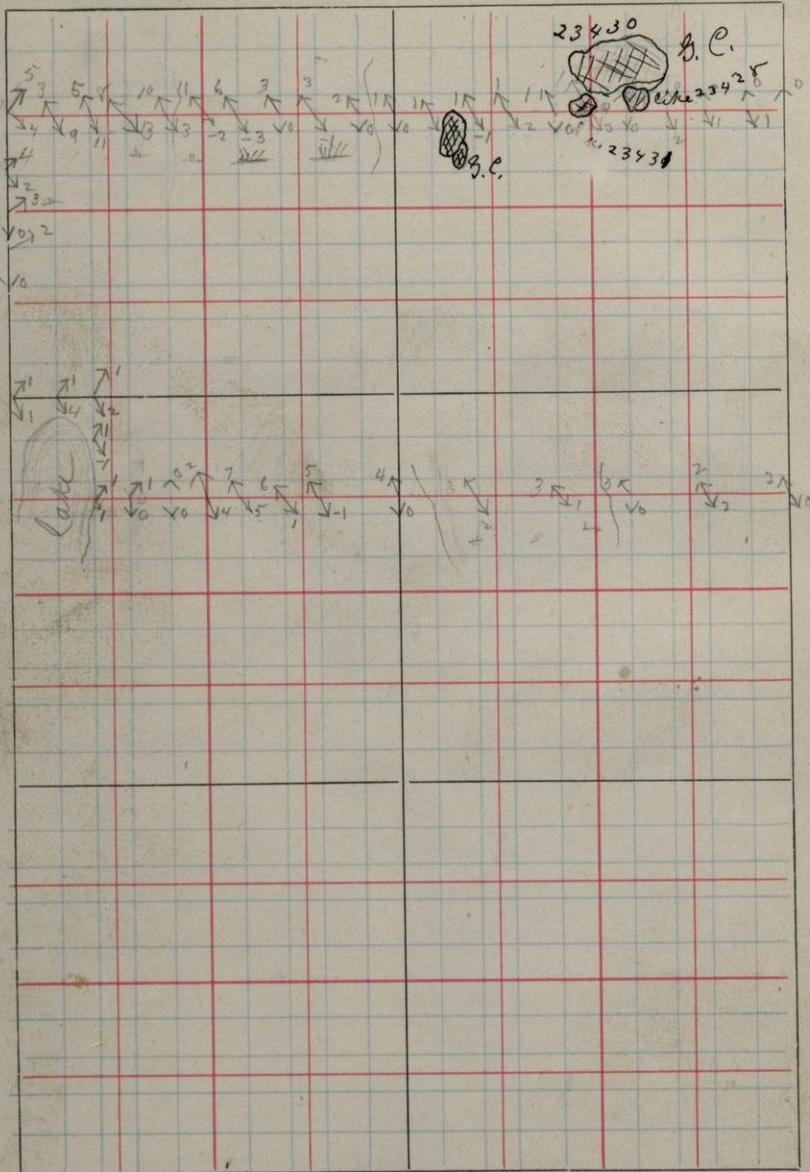




S. 36

T. 45

R. 32



Pike 23428 3600 w 1750 n greenstone (compact) 11  
" 23430 5000 w 1750 " " ashbed type

23430 510 w 1810 n from large bed of breccia  
with layers of finer fragment-  
Huge blocks have been split off by  
frost exposing smooth faces. The  
specimen is from the edge of one of  
these fresh blocks from one of the  
finer layers

23431 570 w 1785 n. breccia from the same  
exposure. The whole of this hill is a mass  
of breccia with ash bed layers

like 23431 800 w 1730 6 1650 n. brecciated greenstone a  
fine exposure. Elephant back  
runs east and west

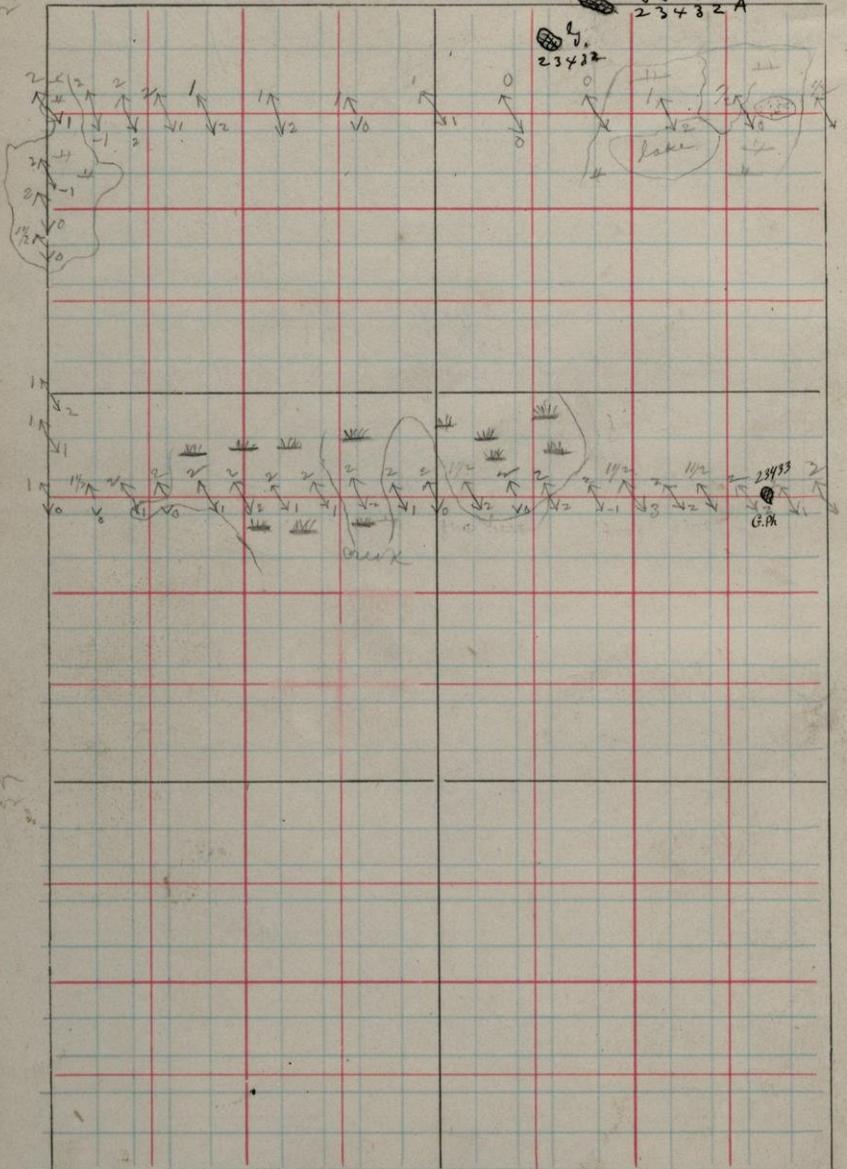
NW S. 1  
cov

T. 44

R. 35

Ly. C.  
23422 A

NE  
cov



255  
23432A  
23432

23432A

12

Poephyritic breccia 600W 2000N  
Granulite with basaltic cleavage. Brittle and  
probably siliceous.

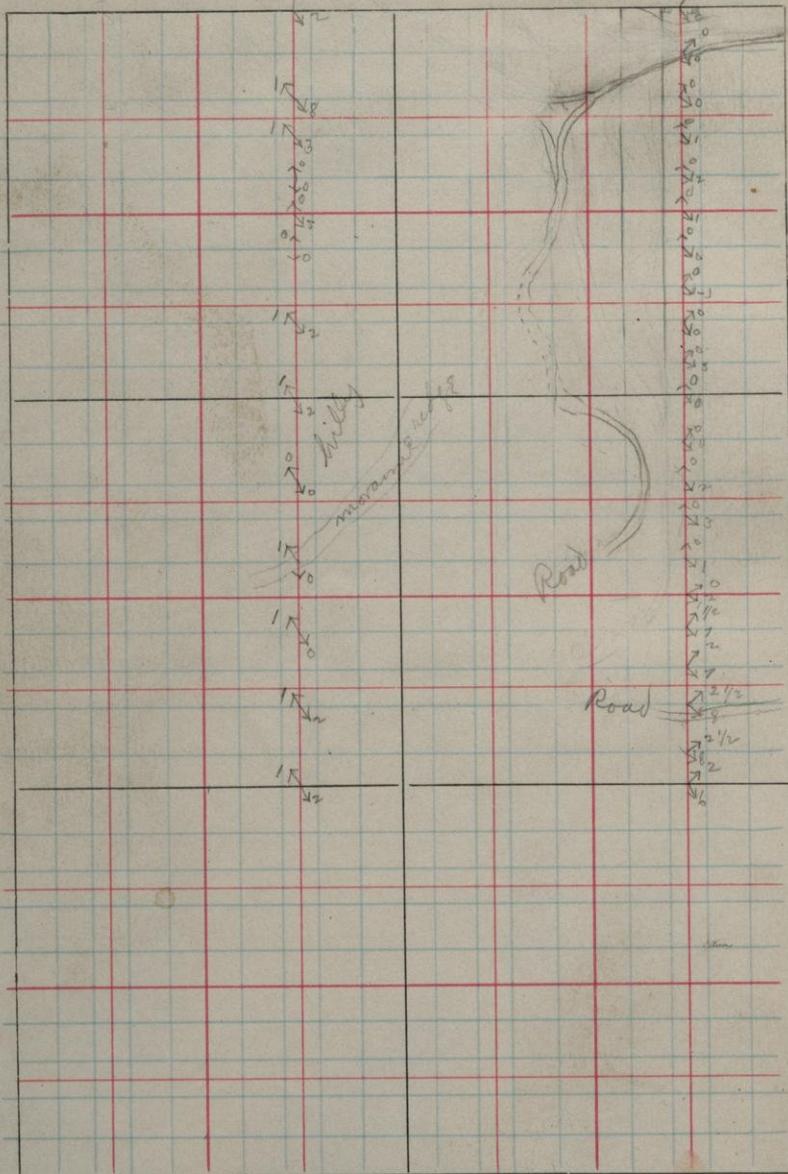
1910 N 700W

23433 porphyritic granulite 700N 180W.  
basaltic cleavage, but little  
breccia

S. 7

T. 44°

R. 32 move. 125 w

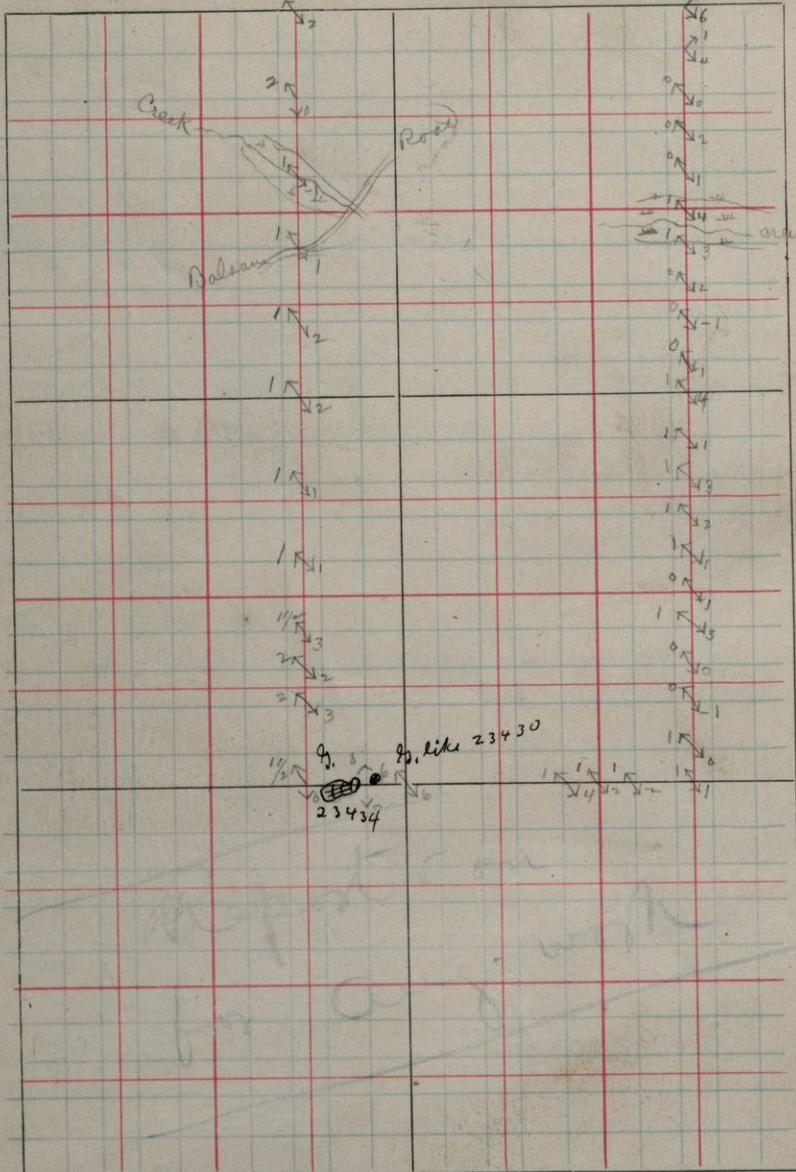




81

T. 44.

R. 32



23434 on 1200 w <sup>14</sup> Porphyritic gneiss (gabbro)

like 23430 10m 1040 w breciated " small outcrop

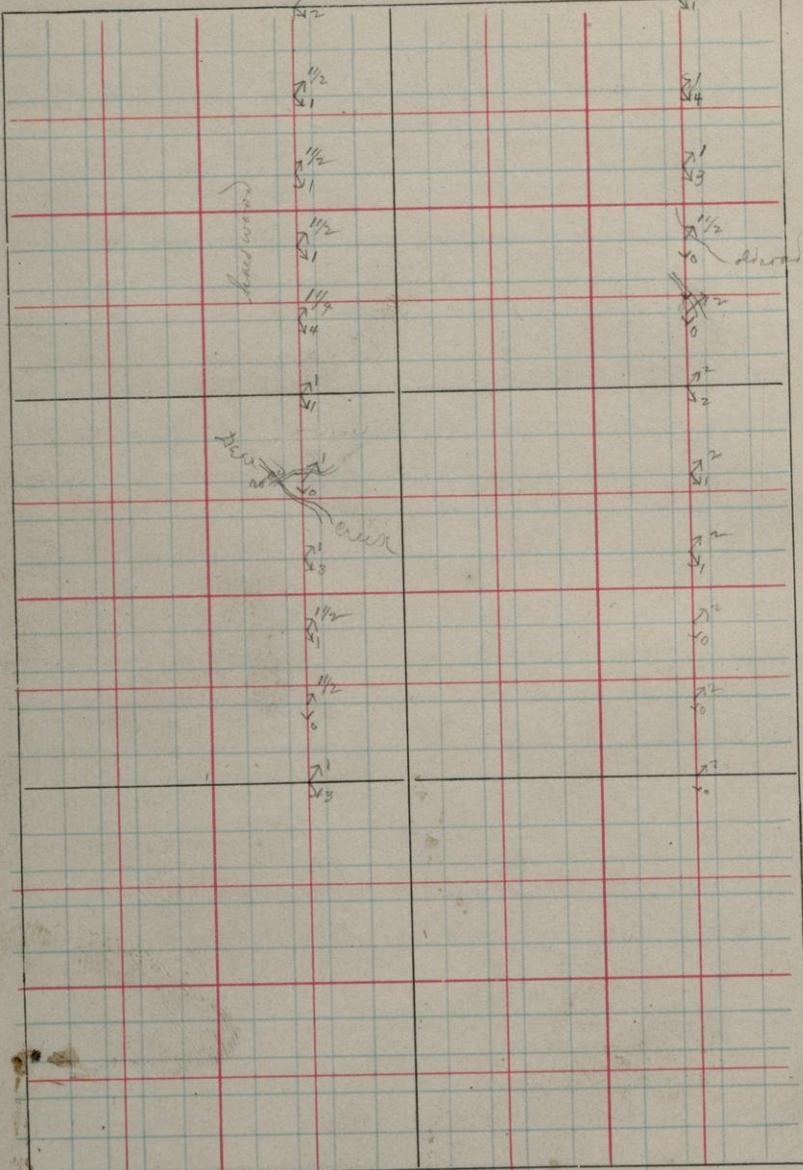
NW  
corner

S. 8

T. 44

R. 32

NE  
corner

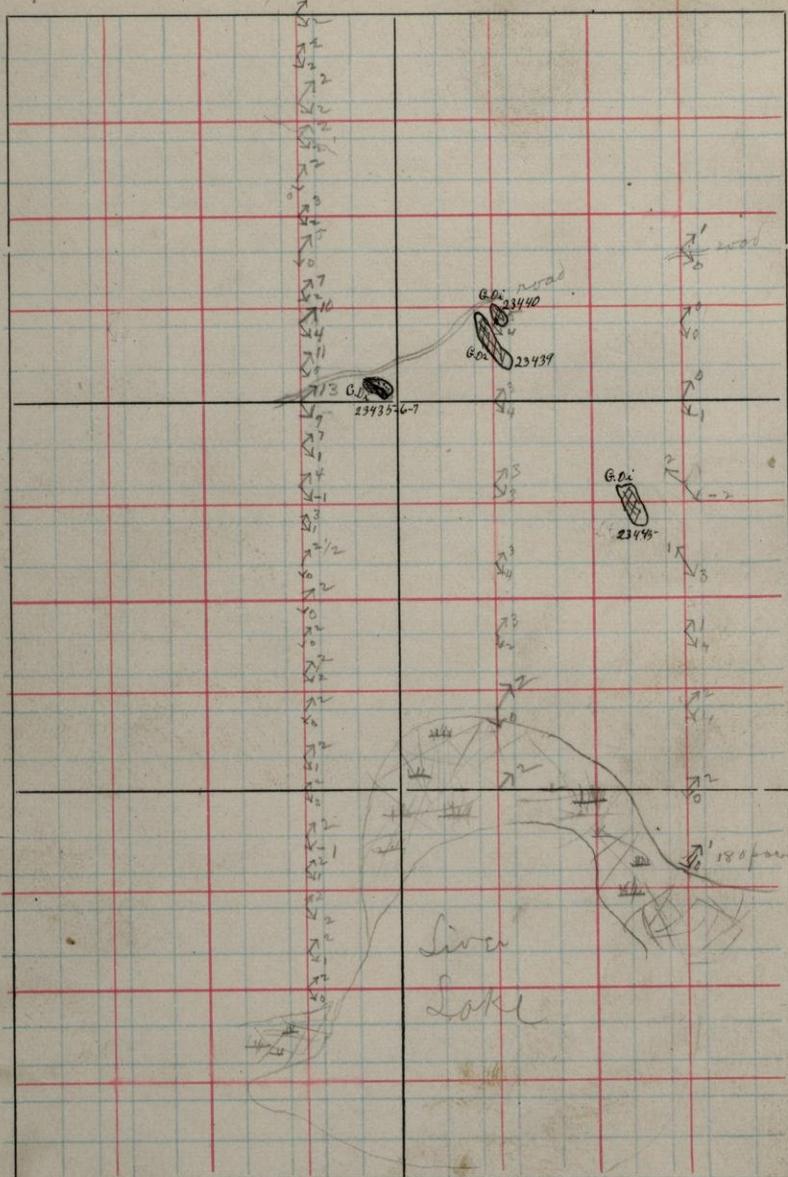




S.9

T. 44

R. 32



23435

16

Gabbro - 1045n 1085w. 85 paces long  
a rather coarse grained rock. Contains  
very coarse grained portions which shade  
off abruptly into the ordinary type  
lying around the gabbro on the  
north and east to another basic  
eruption somewhat decomposed  
and mixed with asbestos

23436

coarse grained phase of above

23437

From the decomposing bed  
adjoining the gabbro

23439

1135n 750w Gabbro

23440

1220n 770w. Coarse gabbro

23445

400w 800n Gabbro ridge

S. 4

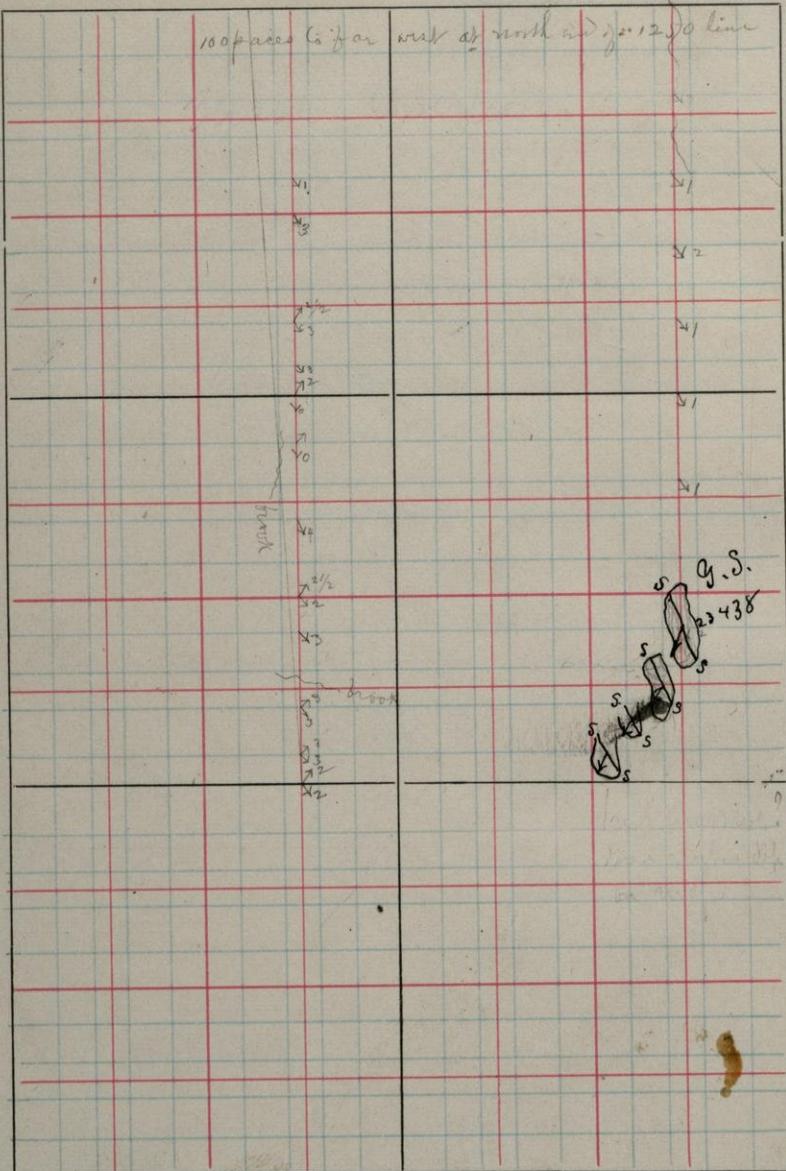
T. 44

R. 32

N.W.

n.e.

100 paces to far west at north end of 1200 line



23438

400 ft 250 w 225 paces long 60 wide  
alters volcanics of various types  
some breccia bds, some porphyry  
with incipient schistosity  
300 ft 300 w another similar outcrop contains  
a small gabbro intrusion

A series of these volcanics  
lies along the face of the hill  
Strike South  $30^{\circ}$  East  
Dip  $60^{\circ}$  to  $90^{\circ}$  W  $30^{\circ}$  S

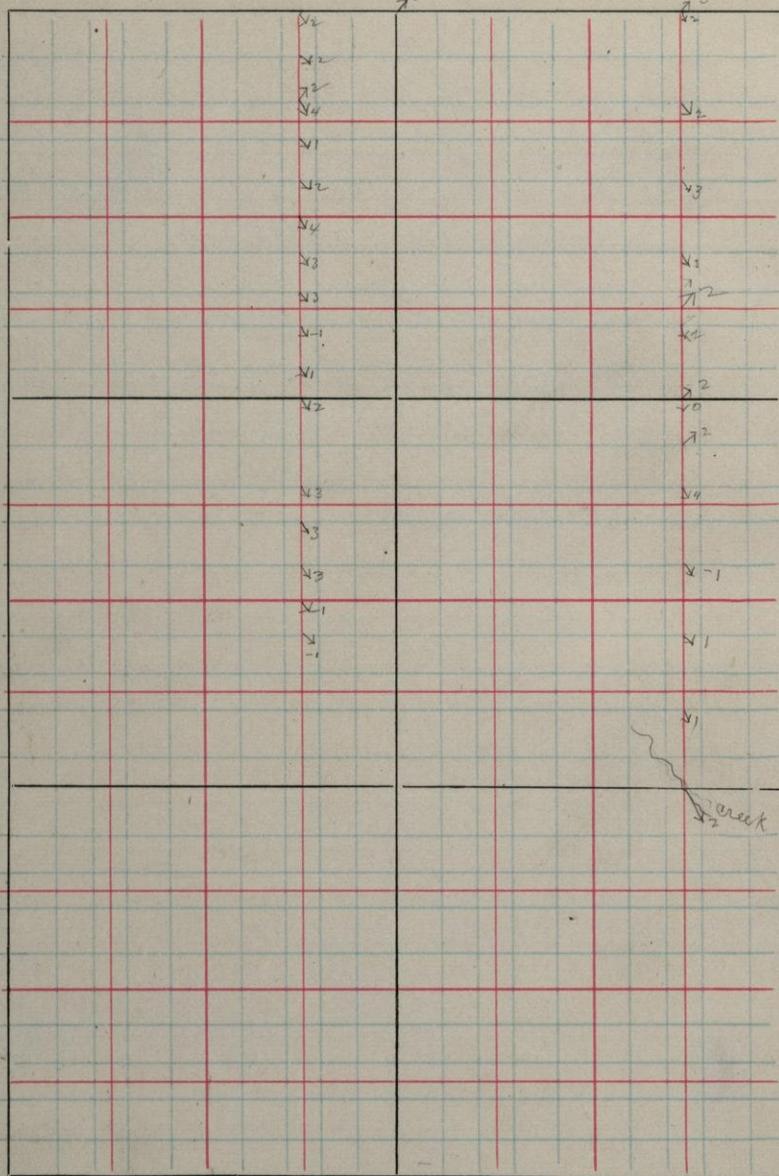
22 w

2. 33

T. 45-

R. 32

218

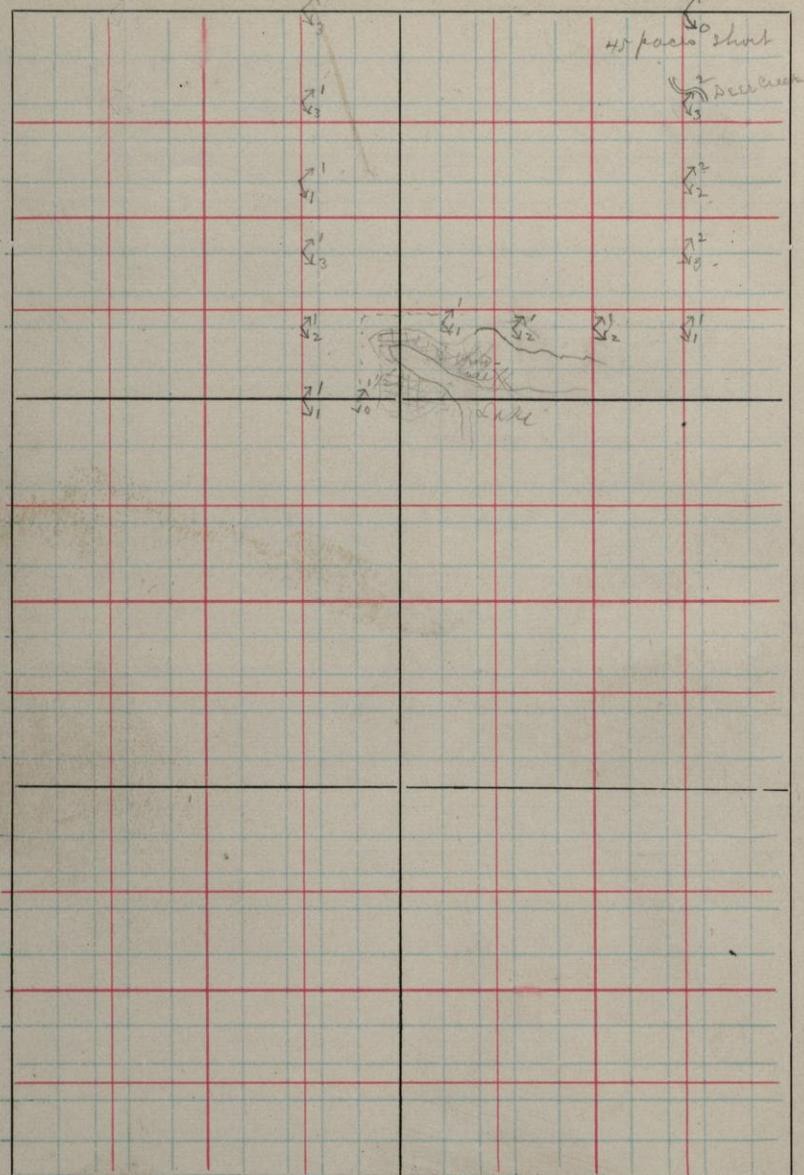




S. 17

T. 44

R. 32

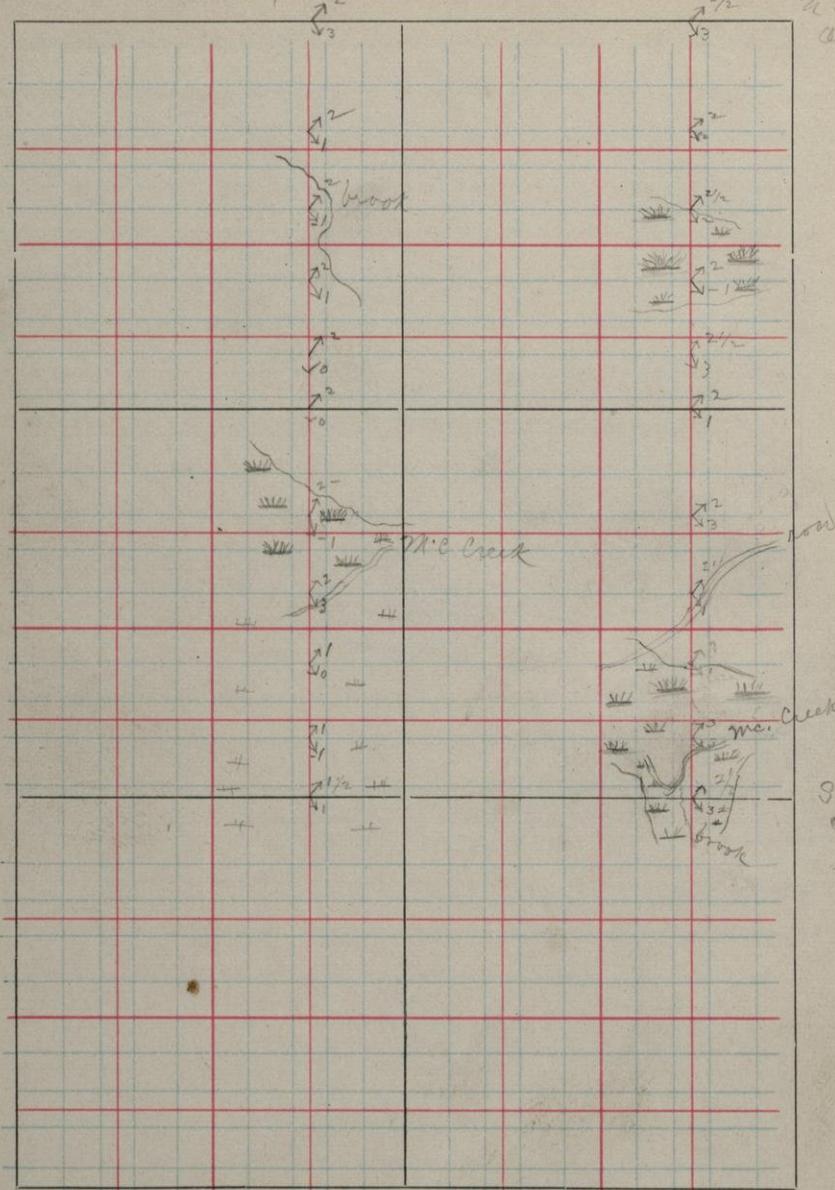




216 S. 3  
26

T. 44

R. 32



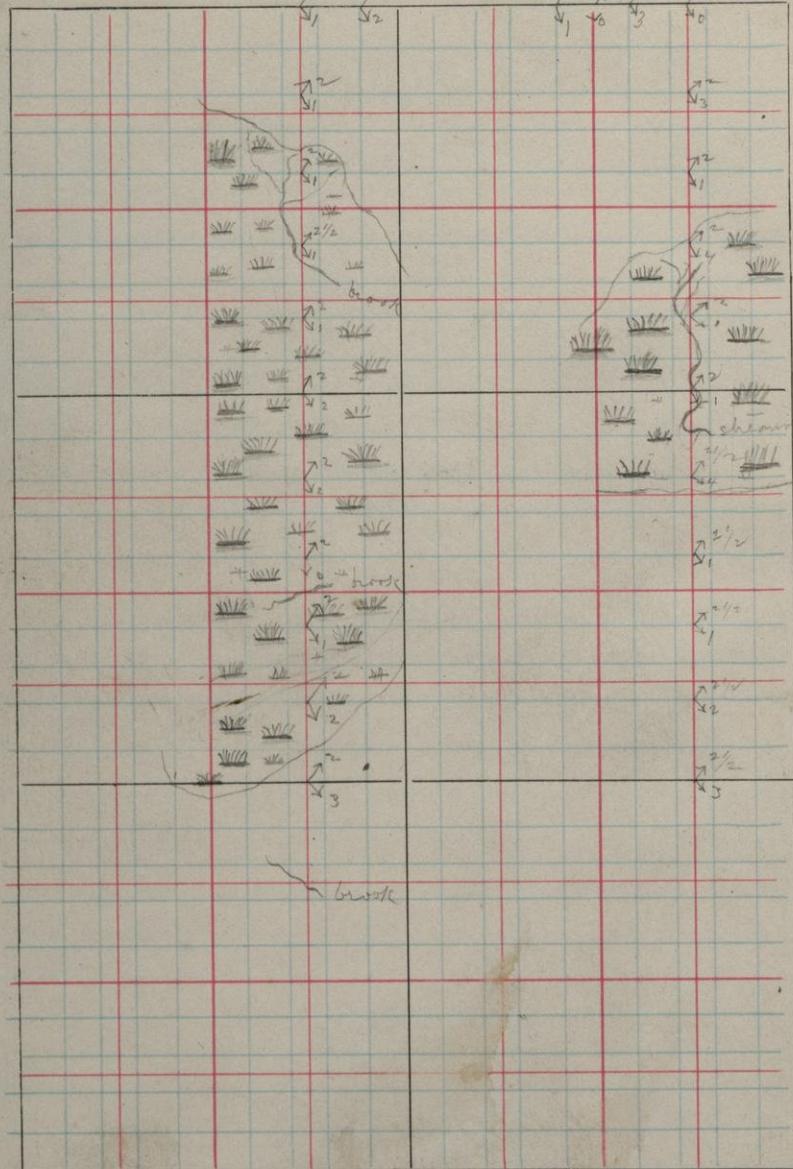


N.W. S. 34  
Cor

T. 45-

R. 3

NE  
Co



21

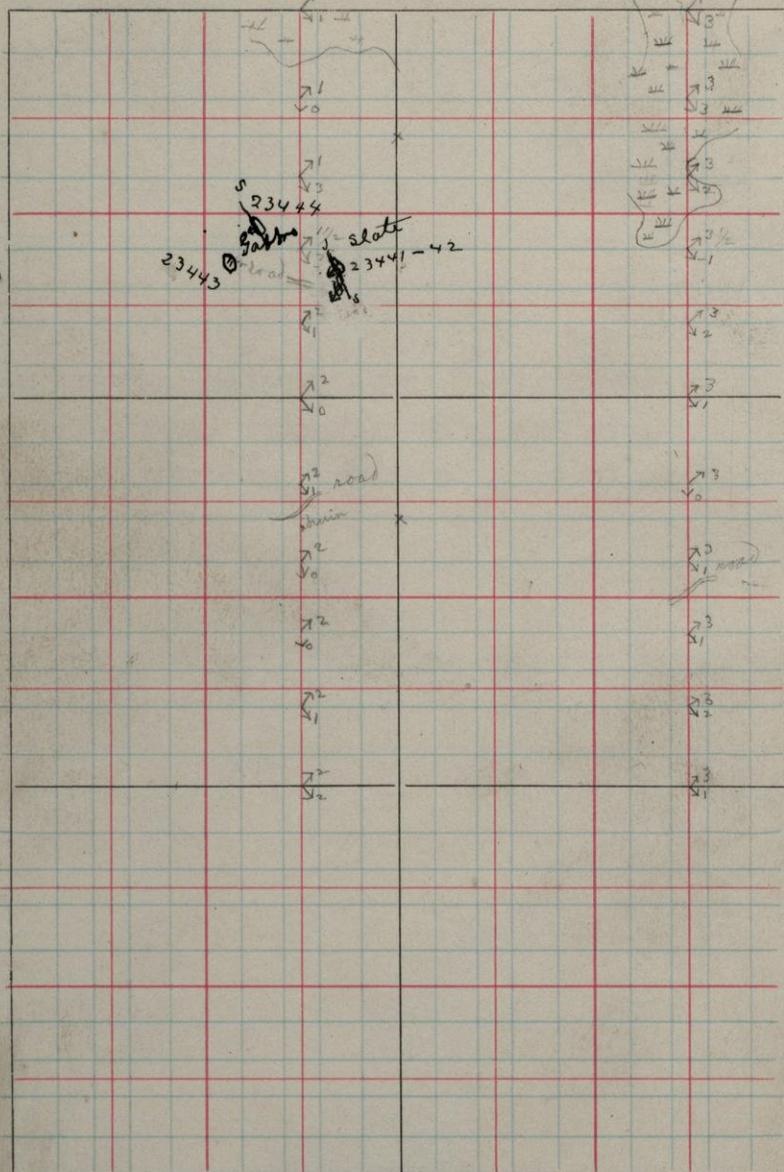
E  
con

E  
con

S. 10

T. 44 1/2

R. 32



22

23441 1180 w 1310 n slate, perhaps graywacke  
strike of apparent beds S 30° E. Dip vertical  
Weathered specimens show squeezing in two  
directions

23442 Weathered specimen from above.

1180 w 1260 n slate well defined, also  
some like preceding, of doubtful character  
strike S 30° E dip nearly vertical

23444 1440 n 1350 w slate, Strike S 40° E dip 58° to 90° to  
the S-W.

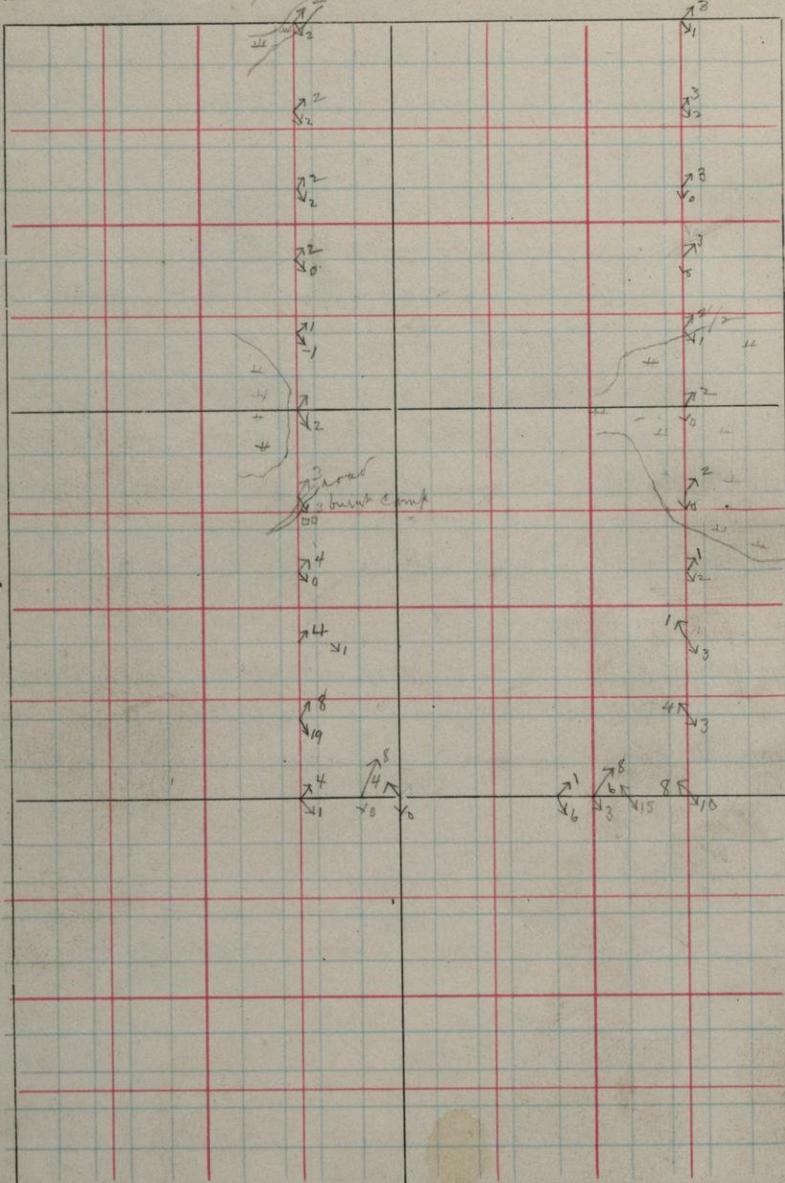
1375 w 1360 n slate strike S 15° E  
dip 70° to 88° S.W.

23443 1430 w 1360 n Gabbro (?)

S. 15

T. 44

R. 32





S. 22

T. 44

R. 32

23438

23433

33 435  
23 440

22964

22957+9

22961

23432 8 MU 955 31319

23432

23444

22943-4

23807

22993

22999

22982

327 13-14-15-16

