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Marquette region, Michigan: [specimens] 21872-21999, 23501-23513. No. 140 1892

Phillips, H. F.

[s.l.]: [s.n.], 1892

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U. S. GEOLOGICAL SURVEY
FIELD SECTION BOOK

740
Marquette Region
Michigan,
H. F. Phillips.

21812-21999; 23001-23513

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 x 2½ x ¾ inches will be allowed, but in all other cases *large-sized specimens*, trimmed to a size of 3 x 4 x 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.

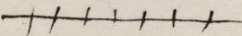
5. Forward this note book as soon as filled as registered mail matter to C. R. Van Hise, U. S. Geologist, Madison, Wis.

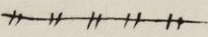
#140

Contour intervals approximately 10 ft., but ^{indicate} ~~in delicate~~ relative heights only, often only show shape of ledge.

Scale 8 inches to 1 mile unless otherwise indicated on the face of the map.

Line on map corresponding to course followed is indicated by an ^{arrow} pointing in direction of course ^{as} passed over.

Highways 

Railroads 

G. = Greenstone

Q. = Quartzite

H.S. = Hornblende schist

Gr. = Granite

G.C. = Greenstone conglomerate

Book 5

H.F. Phillips

D.C. Forbes. Comparison.

T 48-47 N-R 26 W.

Spec. Nos. 21872-999 and 23501-513

S.

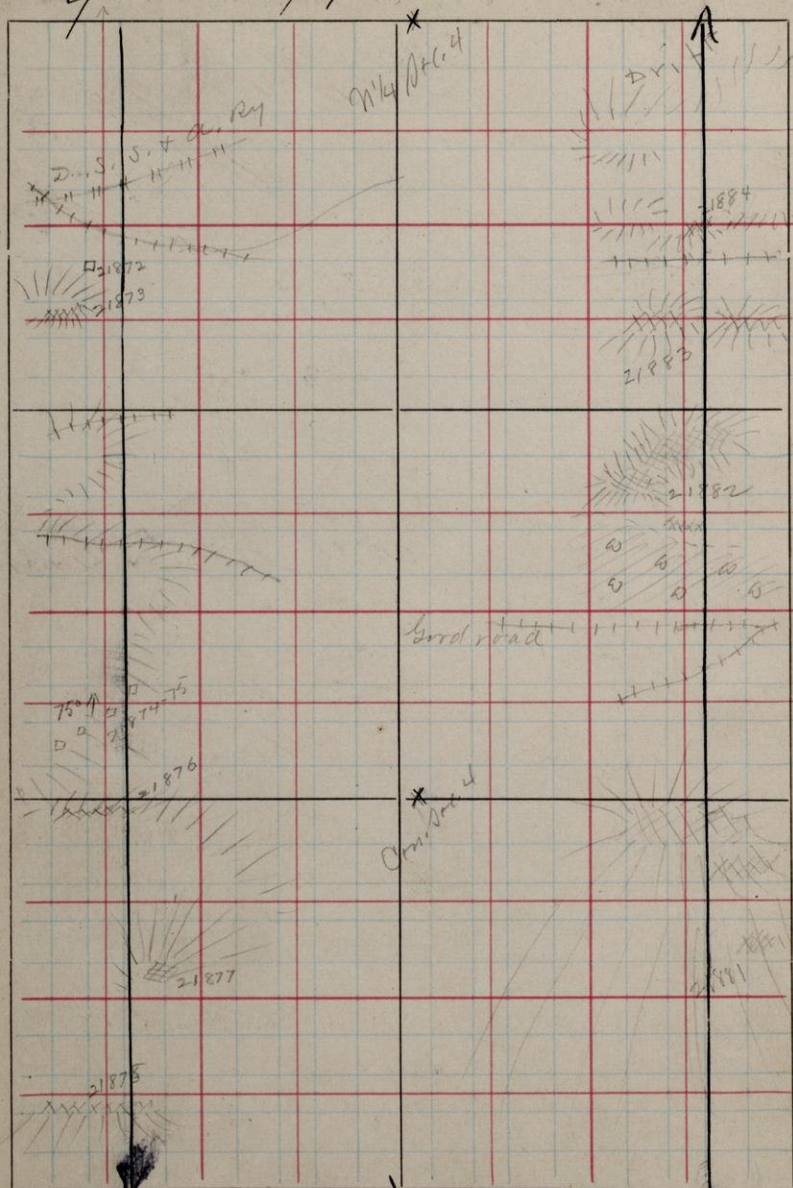
4

T.

47

R.

26



Course going S. 375° W. of N.S. $\frac{1}{4}$ line S. 4
" " N 375° E. " " " " " "

21872 1700 N 1425 W. S. 6. Cor. 4. From test pit.

Not seen in place. " Mottled quartzite

21873 1625 N 1450 W Broken and contorted.

15-20 ft face on south slope. $\frac{1}{2}$

21874 1110 N 1385 W. S. N 65° E D 75° N. 4 ft rim.

From test pits along rim. I.

21875 1110 N 1385 W. S. N 65° E D 75° N. Wall-

rock. From place in test pit.

21876 Ex W $\frac{1}{4}$ line S. 4 at 985 S, 365 W. N. S. $\frac{1}{4}$ line.

21876 995 N 1375 W. Massive. Poorly exposed
but undoubtedly in place. " Quartzite.

21877 790 N 1330 W Massive. Small sur-
face exposure.

21878 575 N 1410 W. Poorly exposed near
top of south slope. " Slate.

21881 825 N 590 W. Massive. Several ex-
posures E. W. along slope.

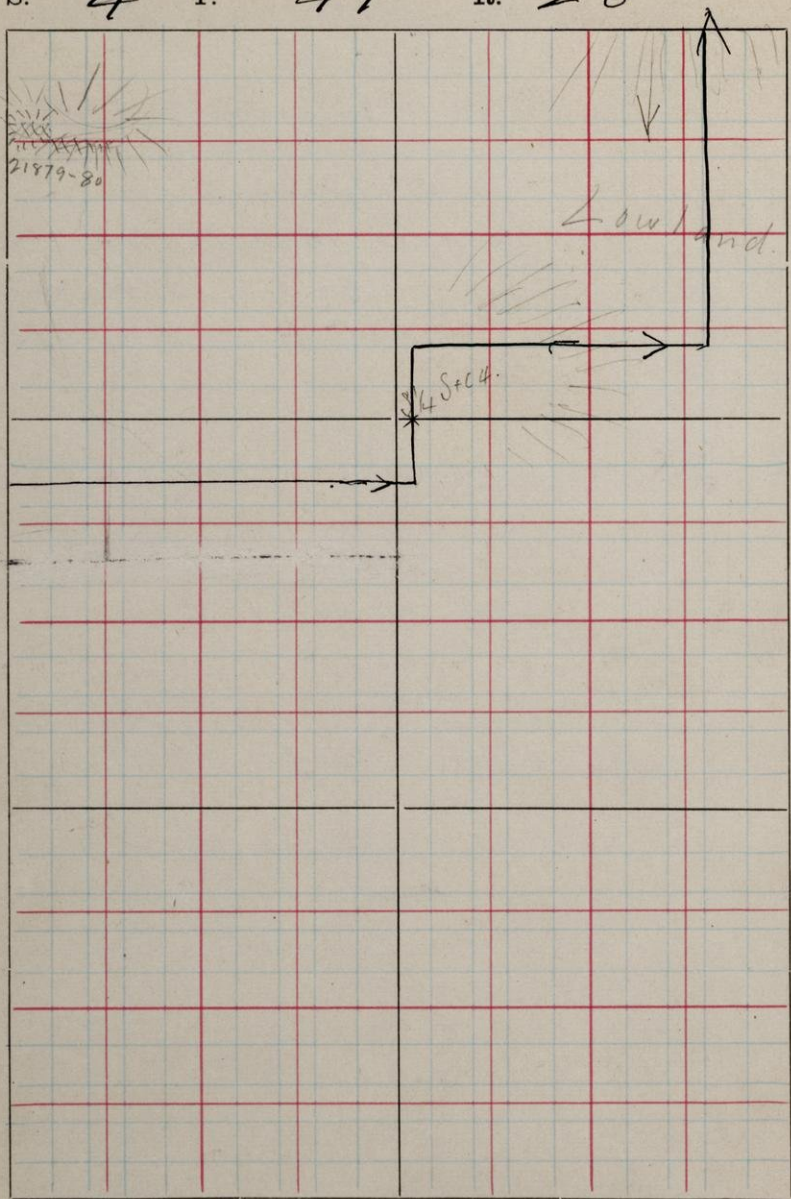
21882 1350 N 625 W Massive. Well ex-
posed ridge.

21883 1630 N 630 W. Massive. Well ex-
posed E. W. ridge.

21884 1825 N 610 W Massive. Small
exposures. " Quartzite.

Ch. N. line S. 4 at 2000 N, 385° E. of N. $\frac{1}{4}$ S. 4

S. 4 T. 47 R. 26



2
Court S. 375^{ps} w. of. N. S $\frac{1}{4}$ hnt Str. 4
" N. 375^{ps} E. " " " " "

2/879 355 N. 1480 W. Contorted. Well
— Exposed. knob at this point.
Also on south slope east of hnt.
dips about vertical running
e.w.

2/880 353 N. 1480 W. Massive. local
— ~~Brilliant~~ conglomeritic development.
Small amount.

S. hnt Str. 4. at 1930 S. 375 w. of S $\frac{1}{4}$ Str. 4.

S.

33

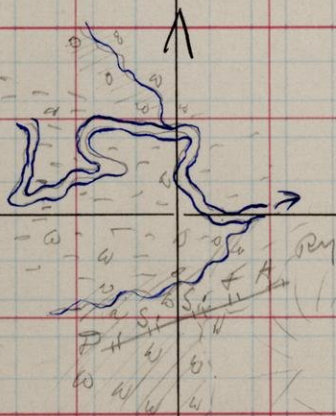
T.

48

R.

26

*
 1000 ft. 33'



n/4 D.C. 4.

3
Course north 375 p.e. of NW 1/4 line Sec. 4.

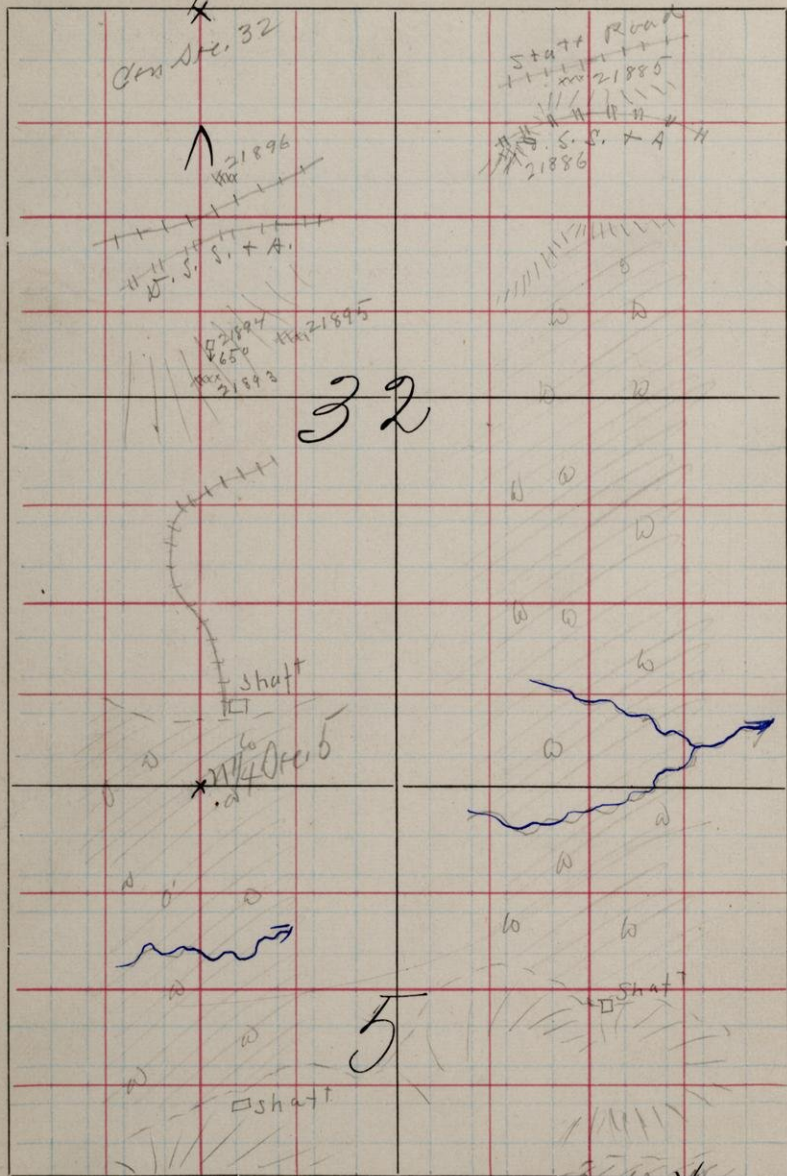
Gradual drift covered slope
to river bottom. Alder swamp
and meadow along river.

S.

T.

48

R.



Course. N. on $E\frac{1}{2}$ line St. 32 + 5

" N. on NW $\frac{1}{4}$ line " " "

21885 940 N. 510 W. S. E. Cor. 32. Small surface exposure of quartzite.

21886 830 N. 595 W. Massive. Extends west with ry cut through it.

S. line St. 32 at 1000 S. 500 W. of S. E. Cor. 32.

Abandoned shaft at 1620 N 475 W.

S. E. Cor 5. Of considerable depth but does not penetrate drift.

Similar shaft at 100 N 950 W. S. E. Cor. 32

21893 525 N 1000 W. S. E. Cor. 32. Small, surface exposure - slate.

21894 570 N 985 W. S N 80° W 265° S. From test pit. Rock 6 ft. below surface. Slate. Bedding & schistosity parallel

21895 570 N 875 W. Massive. Small exposure of quartzite.

21896 800 N 995 W. Massive. Small exposure of quartzite. Test pits in the vicinity, penetrating the drift strike - 96.

S.

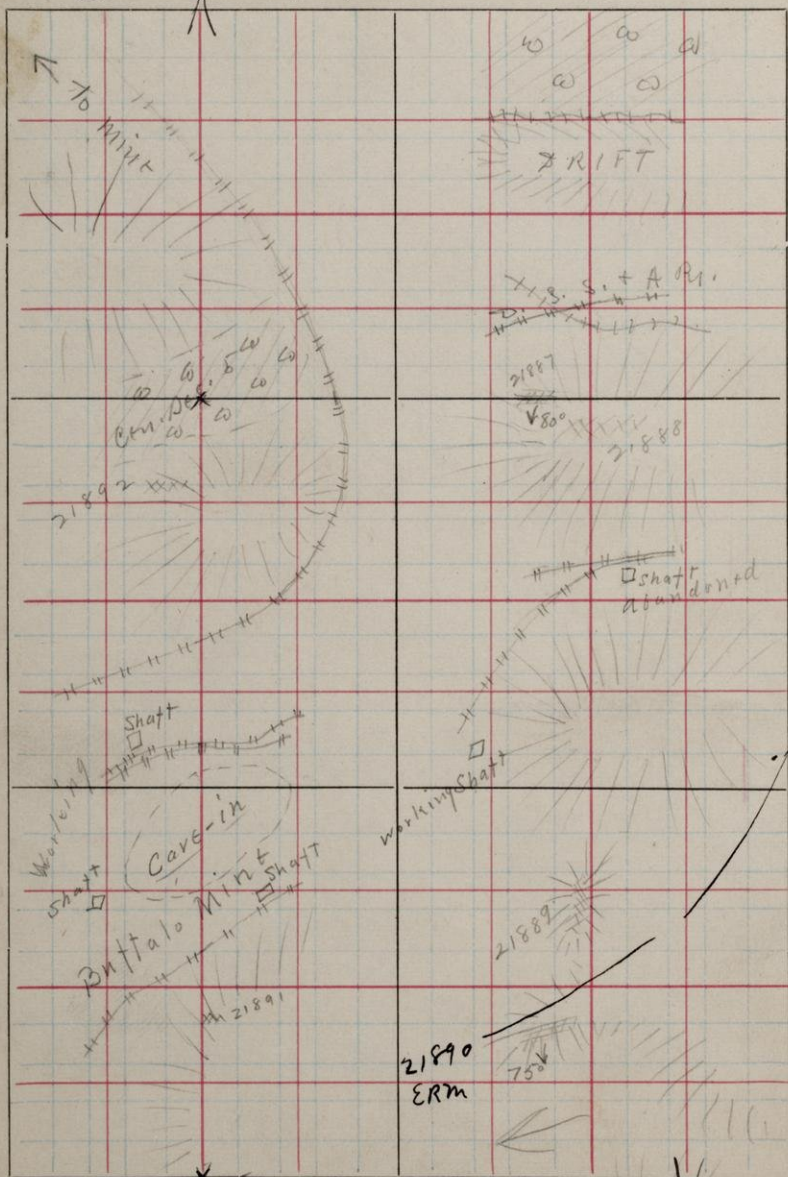
5

T.

47

R.

26



6-747

S 1/4 Sec. 5

Course A. E $\frac{1}{8}$ Unit Sec. 5
" N. W $\frac{1}{4}$ Unit Sec. 5.

21887 1000 N 515 W. S. E. Cor. 5. S $N 90^{\circ} E D 80^{\circ} S$.

E & W Surface exposure on west
point of ridge. Bedding and
this too is agt.

21888 975 N 500 W. Massive. Small
surface exposures on top of ridge.

* Quartzite grading to greywacke

21889 365 N 515 W. Massive. Well exposed
mass of quartzite.

21890 200 N 560 W. Bedding not made out
This too + plane S $N 90^{\circ} E D 75^{\circ} S$.

21891 200 N 985 W. Contorted surface ex-
posure. This too gets rusty (?)

21892 900 N 1040 W. Bedding not made
out. * Slate.

E & W $\frac{1}{4}$ Unit Sec. 5 at 1000 N 985 East
of E $\frac{1}{4}$ Sec. 5.

S. 5+32 T. 48+47 R. 26

N. 1/4 Sec. 32

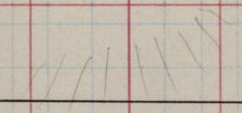
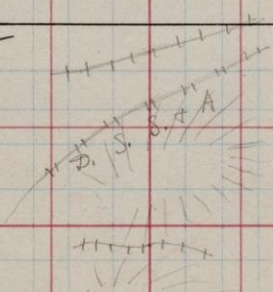
32



STREET
N.W. Cor. 6
CEMETERY
D. S. S. & A. RY.

5

STREET
□ □ □ □



D. S. S. & A. RY.
WORKING
SHOP



Course S. W/8 line Sec 32 & 5

" N. W. Sec. line Sec 32 & 5

21897 1760 N. 1460 W. S. E. Cor. 5. From dump
heap. Ferruginous gneiss slate
Mining & shipping here.

Country mostly cleared and
portions cultivated. Cuts and
test pits show drift.

S.

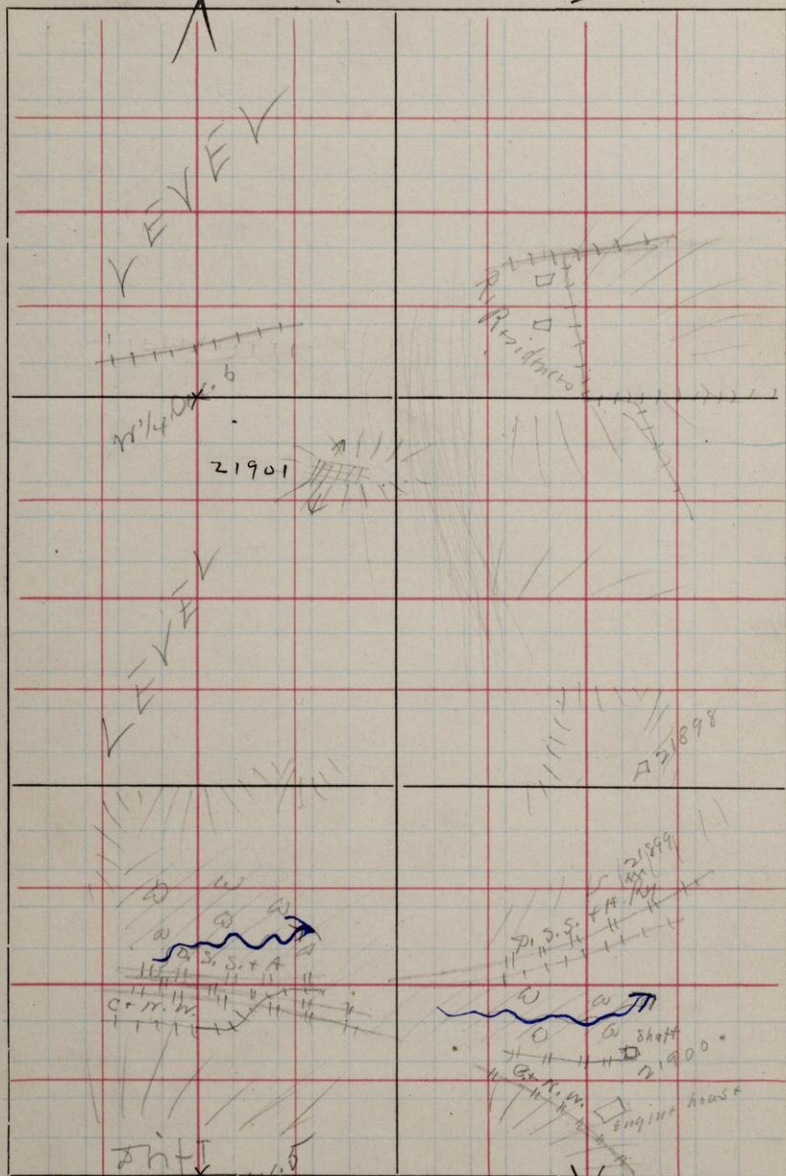
5

T.

47

R.

26



Course S. W. 1/8 line Sec. 5.

" N. W. Sec. line Sec. 5.

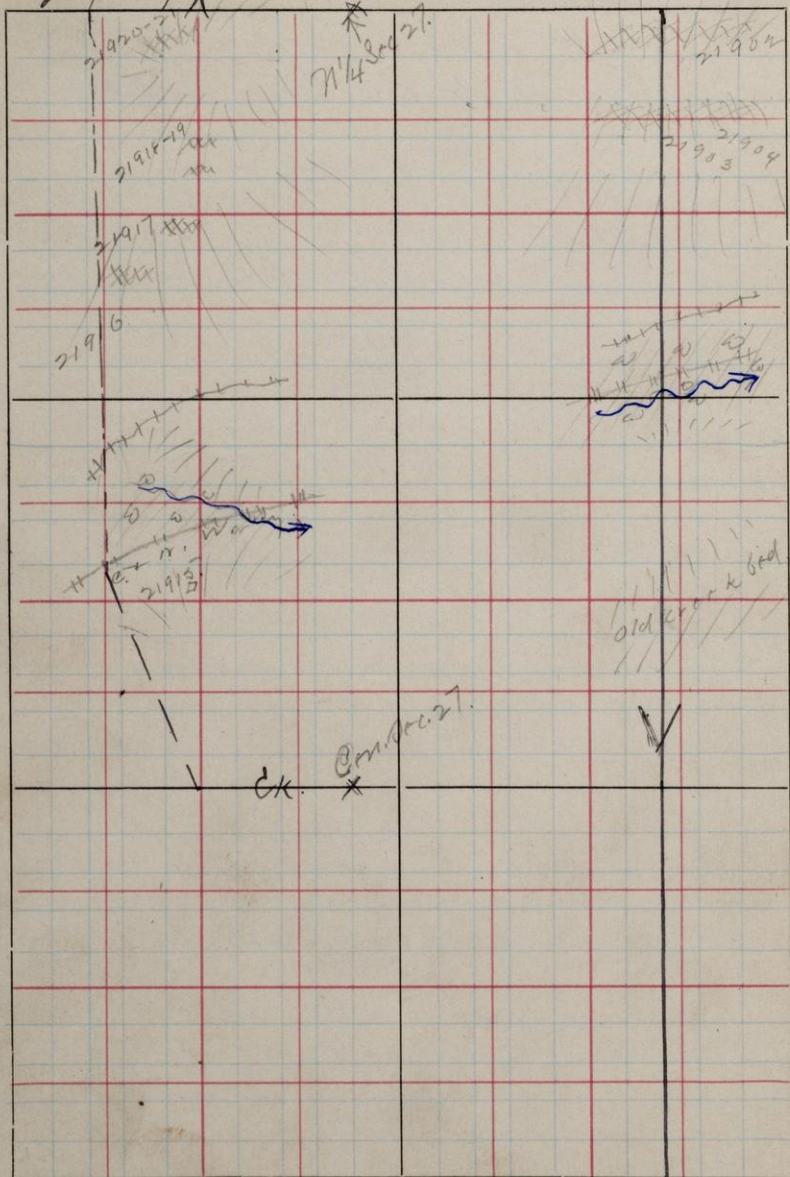
ck. Ev 1/4 line Sec. 5 at 960 S., 500 ps E. of 80 1/4 S. 5.
 21898. 530 N. 1430 W. S. T. Cor. 5. From deep
 test pit. Specimen from dump
 trap Fe. Jasper slate.

21899 390 N 1450 W. From place in test
 pit. Contorted.

21900 150 N 1450 W. From 250 ft shaft
 about to be operated

21901 900 N 1810 W. Evidently a sharp
 fold. Surface exposures
 on a small knob. On north
 slope has a northern dip
 and on south slope dips
 southerly. Contorted on top.
 Strike about N 50° W. Dip on
 slopes 30° to 40°.

S. 27 T. 47 R. 26



Course to 600 ft. w. of E. line Sec. 27

" N 200 " " " N $\frac{1}{4}$ line Sec. 27.

21902 1980 N 510 W. Massive grey wacke.
10-25 ft. face to the north.

21903 1890 N 575 W. Broken in appearance.
From south slope. Fe., quartzite.

21904 1895 N 550 W. From south slope.
Same as — 03 with higher percentage.

21915 1770 N 1205 W. From test pit, not seen
in place. Iron formation

21916 1660 N 1255 W. Massive. From
south slope of ridge. # Quartzite

21917 1740 N 1340 W. Massive. From
south slope. Barroisite

21918 1840 N 1340 W. Massive.
Quartzite

21919 1845 N 1340 W. Massive. Near
top of slope. Dyke like.

21920 1910 N 1370 W. From face to the
west

21921 1915 N 1370 W. Dyke like.
Shistose!

N. line Sec. 27 reached at a point 140
ft. west of correct position. Most of
the error probably made south of the Dy track

S. 27-34 T. 47

R. 26

27

5140-627.
x

Drift

21905-06-07

21914

21913

34

21912

21908

21909

21910

xxx

xxx

xxx

xxx

9 miles from 24

21911

Course S. 600 ps w. of E. line Secs 27 & 34.

" N 200 ps w. of $\frac{1}{4}$ line " " "

21905 1790 N. 700 W. S. E. cor 34. Massive.

Forms knob of quartzite.

21906 1793 N 700 W. Dyke like. Apparently local.

sharded & eruptive.

21907 1795 N 700 W. Small, local development. Shistose. Phast of 21906.

21908 1610 N 610 W. Massive. Forms mass of ridge.

21909 1495 N 555 W. Massive. Forms mass of ridge. ^{Red} Granite (?)

21910 1435 N 600 W. Massive. Large amount on south slope. Scoriae.

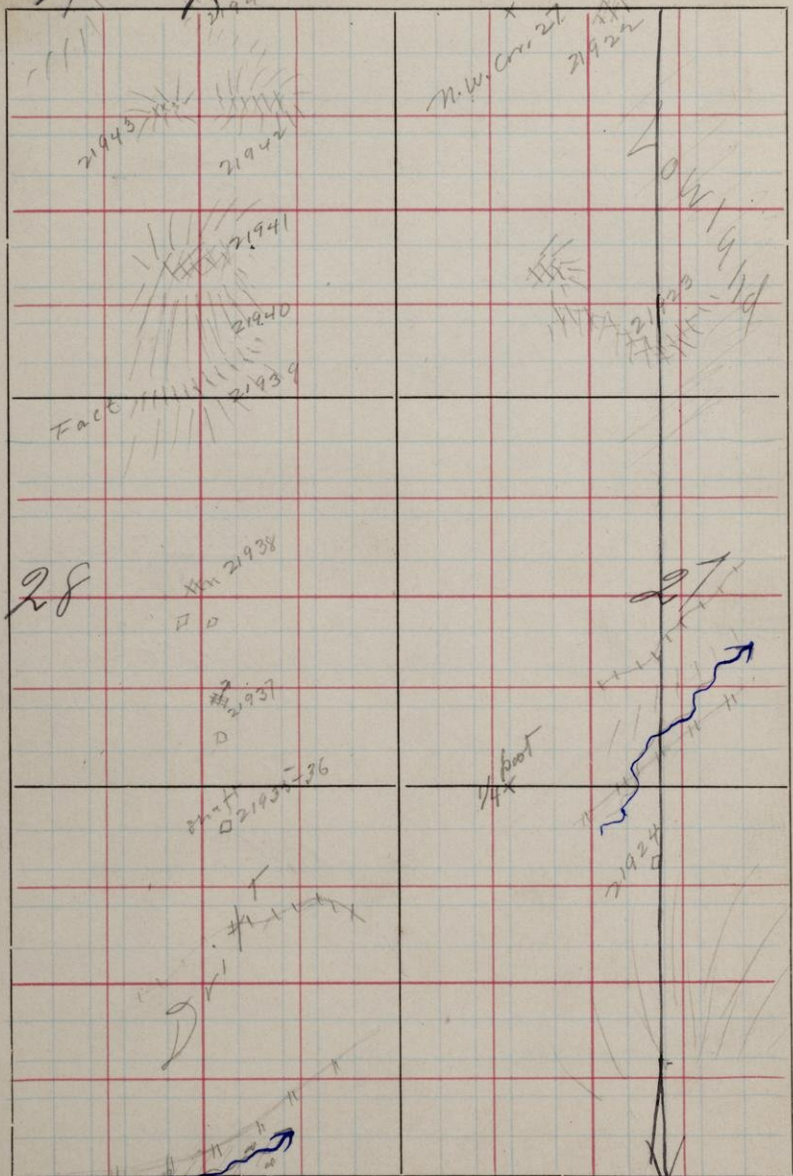
21911 1100 N 630 W. Massive. # Granite, E. line 34 at 9855, 640 ps w. of E. $\frac{1}{4}$ 34.

21912 1420 N 1200 W. Massive. At top of north slope. Apparently a dyke. Granite & other south.

21913 1485 N 1200 W. Fact exposed to the south. Contorted in appearance & gneiss.

S. 27-28 T. 47

R. 26



Course S. 200° E. of W. Unit Sec. 27.

" N 400° W. " " "

21922 2000 N 1860 W. S.E. Cor. 27. Massint. Small

Exposure of quartzite

21923 1565 N 1850 W. Massint.

Quartzite.

21924 905 N 1800 W. From test pits. Not seen
in place. Iron formation

21935 { 950 N 375 W. ^{S.E. cor. 28} From shaft. Jasper.

21936 { " " " Hematitic

No 36 E & W $\frac{1}{4}$ Unit Sec. 28 at 1000 N 415 W. of E $\frac{1}{4}$ 28.

21937 1110 N 395 W. Strike N 40° W. with steep
northern dip. Contorted. # Banded jasp. & slate.

21938 1260 N 400 W. Surface exposure of
quartzite.

21939 1510 N 400 W. From 30 ft face on south
side of quartzite ridge.

21940 1610 N 380 W. Quartzite breccia from
south slope, approaching the top.

21941 1720 N 400 W. Quartzite breccia
from northern face.

21942 1850 N 350 W. Quartzite breccia,
forming knob.

21943 1900 N 450 W. Quartzite knob
with quartzite breccia.

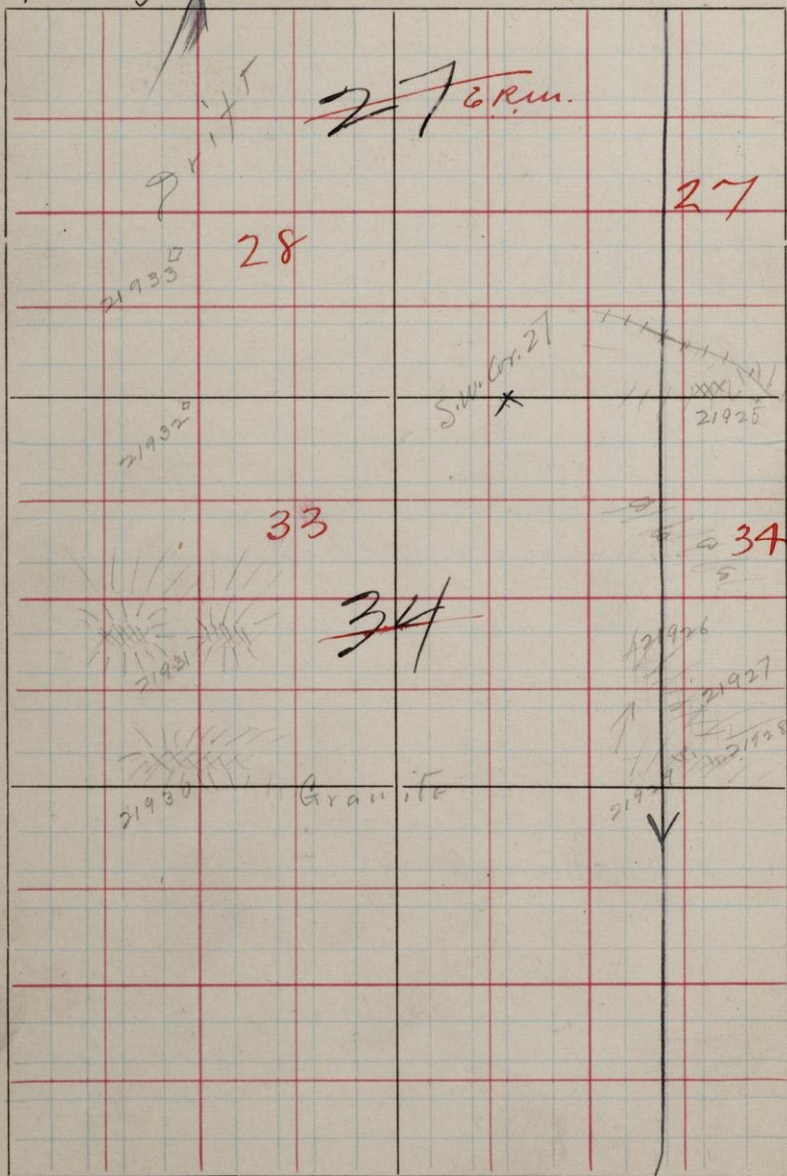
21944 1990 N 400 W. This loc.

S. 28-33 T.

47

R.

26



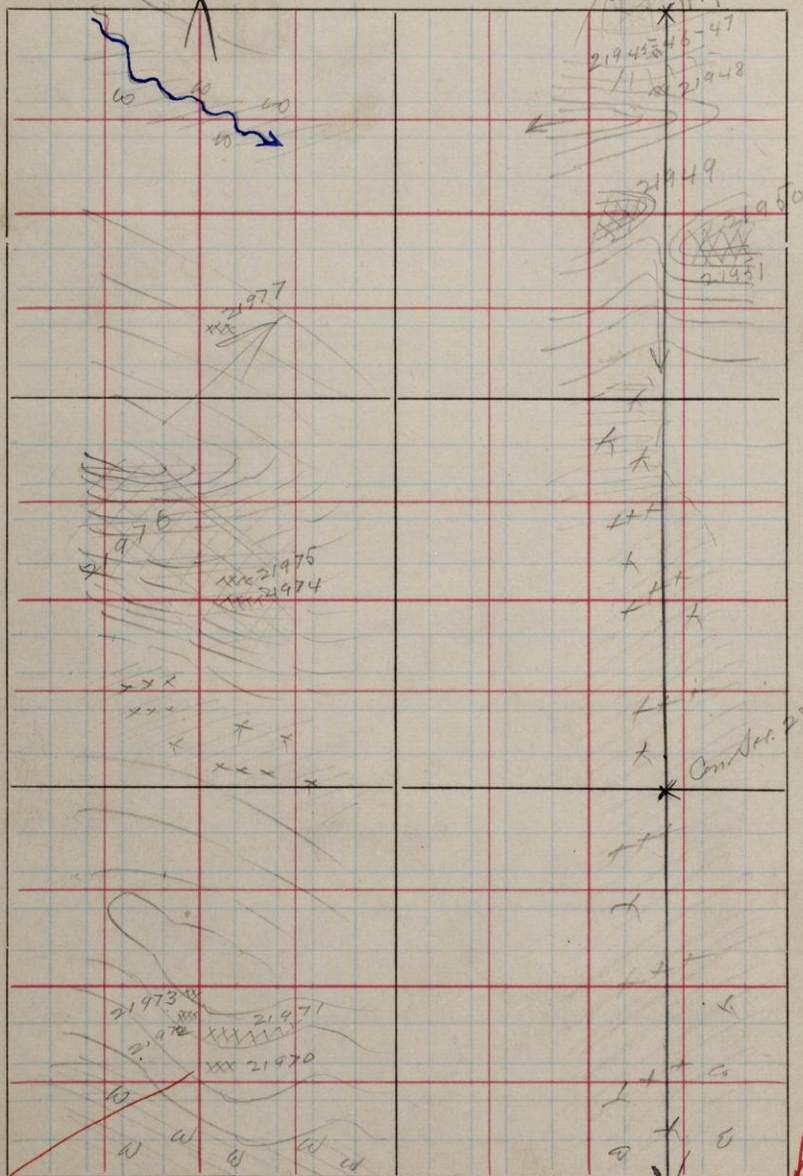
S. 28

T.

47

R. 26

Q.B. 1/4 Sec. 28



6-747

also a 21970 in following plot even

Course S, NS $\frac{1}{4}$ line Sec 28.

" N. 600 p.s.w. NS $\frac{1}{4}$ line Sec 28

- 21945 } 1955 N. 1024 W. S.E. Cor. 28. 1 ft bbls
21946 } from conglomerate. Quartzite,
porphyritic and chloritic pebbles in
an apparent ground mass of dark
red quartzite. Pebbles of quartzite
breccia also observed. Exposure
is on south slope of quartzite
ridge and was not fractured east
or west.

21947 1955 N 1020 W Groundmass or
neighboring rock to abrv. "Q.

21948 1915 N. 1000 W. Small exposure
south of conglomerate. Q

21949 1775 N 1040 W. Quartzite knob,
well exposed.

21950 1695 N. 975 W. Quartzite ridge.
Portions brecciated.

21951 1675 N. 975 W. Quartzite stream
on south slope.

21970 645 N. 1590 W. S. N 70° W. D 565° N.
Small exposure. Cherty slate.

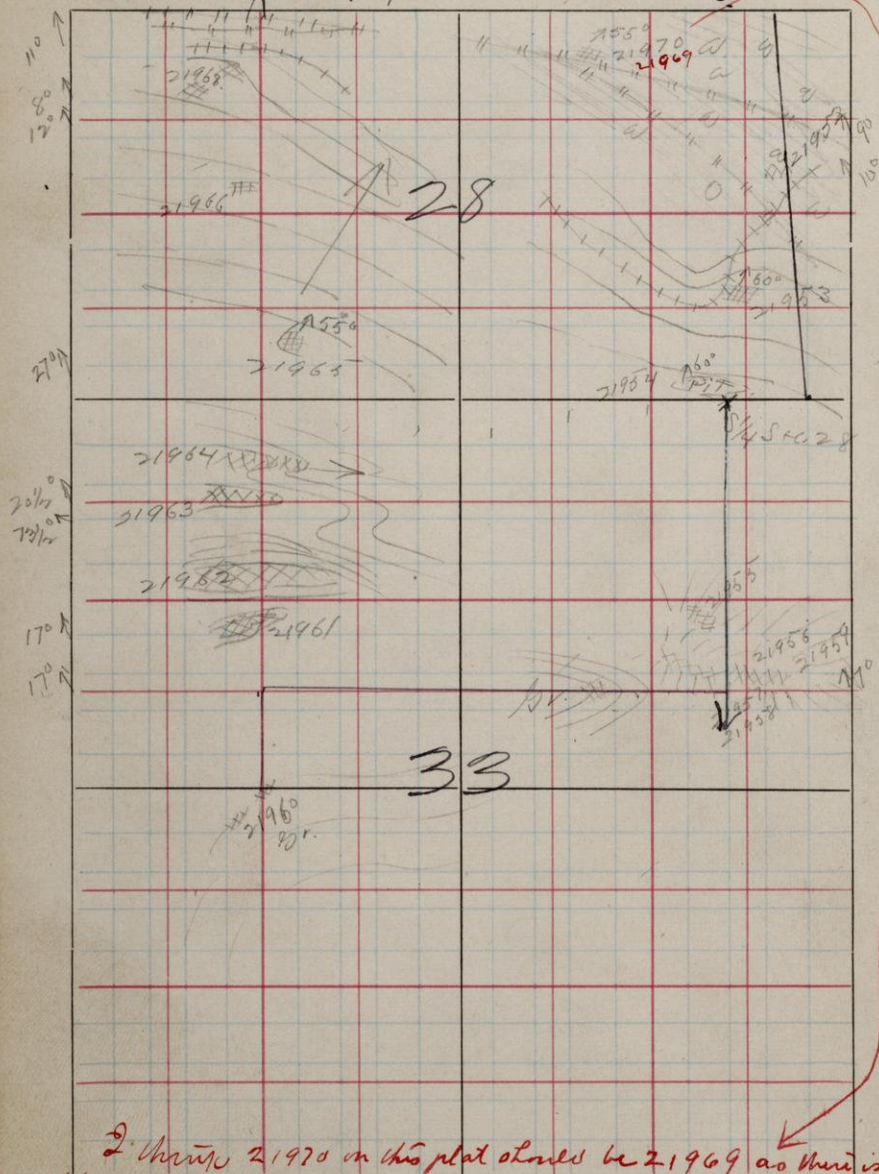
21971 660 N 1550 W. Quartzite from ridge
portions ferruginous.

(21972-73 conglomerate
see a following page.)

S28-33 T. 47

R.

262



2. think 21970 on this plat should be 21969 as there is no 69

also a 21970 on preceding plat & rem

Court S. $N 81/4$ line St. 28 & 33

" N. 600 ft W. $N 81/4$ line 28 & 33.

21952 300 N 950 W. S.E. Cor. 28. Small sur-
face exposure. Iron formation

21953 150 N 990 W. S. $N 50^{\circ}$ W. D 660 N.

Small exposure running east.

21954 30 N 1055 W. S. $N 90^{\circ}$ E D 60 N. Contorted

Somewhat. Flats on south side
of pit. Iron formation.

21955 1730 N 1040 W S.E. Cor. 33. From
S. line of 28 at 1020 S. 900 N. of S.E. Cor. 28
with slope.

21956 1650 N 1000 W. Top of granite ridge.
Running about E.W.

21957 1640 1005. From 2 ft. stream running
about S.E. and N.W. exposed on
S. slope granite ridge. Gr. breccia (?)

21958 1635 N 1000 W. Both sides of ch-
about stream. Gneiss.

21959 1650 N 990 W. Gr. + next to dyke
in granite.

21960 1470 N. 1625 W. Small exposure
of granite

21961 1710 N 1600 W. Probably a dyke
in granite.

ck S. line 28 at 2000 N, 625 W. of S $1/4$ 28.

21962 1790N 1600W S. E. side 33
Granite.

21963 1870N 1600W. Magnetic.
Exposure.

21964 1430N 1600W. Eruptive (?) Relations
to (-63) can not be seen.

21965 80N 1575W S. E. Cor. 28. SN 80°W D 55°N.
From open pit. Contacted. Siliceous ore.

21966 295N 1620W. Small surface
exposure. Iron formation.

21967 370N 1585W. Surface exposure.
Banded jasper slate.

21968 450N 1640W Surface exposure
Banded jasper slate.

21969² 460N 1170W. S. 48°W. D 50°-55°N.
Sediment of apparent bedding
and not same as history. By cut.

21972 710N 1605W. From conglomerate
stream in quartz, etc. Pebbles
from 1 to 6 inches in diameter.
Upper conglomerate.

21973 730N 1610W. Pebbles from the
conglomerate.

- 21974 1255N 1550W. From foot of south
slope. Quartzite breccia.
- 21975 1260N 1570W. From foot of south
slope. Local conglomerate(!)
- 21976 1350N 1600W From foot of south
face of quartzite ridge.
- 21977 1540N 1590W. Small exposure
of quartzite on north slope
of ridge. Slope mostly drift
covered.

S.

29

T.

47

R.

26

Int. 1/4 Cor. 29.
*NE cor 29
E. 1/421978
R. 1/4

21979-80

21981

21982-83

E. 1/4 Sec. 29
*21984
65°

D H T W A H H

Course S. 200 ft. w. of E. Str. line - 29.

2
21978 1430N 235W S.E. Cr. 29. Massive
S slope ridge.

21979 1390N 180W Massive Flow
structure. Apparently eruptive.

21980 1340N 180W. Intermixed
with 21979.

21981 1360N 195W. On south slope,
below the above rocks. [#]Quartz
ite breccia.

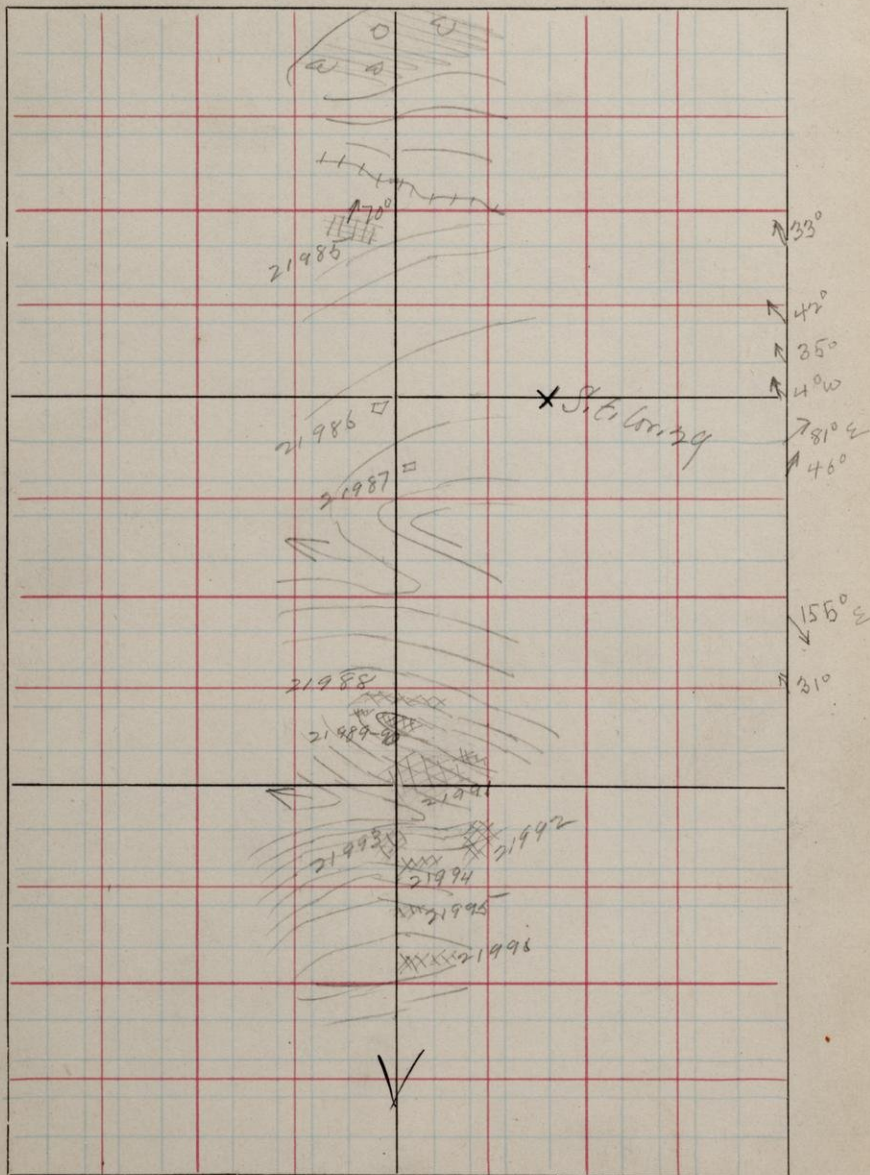
21982 1325 190W } Foot of slope.

21983 1320N 195W } [#]Quartzite

21984 720N 220W. S N 65° W D 65° S.
Sintered concretion.
[#]Banded jasper slate.

S. 29+32 T. 47

R. 26



Course D. 200 ft. w. of E. line of 29+32

21985 210 N 240 W S.E. Cor. 29. S N 70° W D 70° N.

From Exposed pit. Banded Jasper slate.

21986 1990 N 270 W S.E. Cor. 32. From test pit

From formation

21987 1925 N 180 W From test pit.

From formation

21988 1605 N 240. From n. slope of ridge.

Magnetic. Flanks 21989.

21989 1600 N 200 W Exposed on top and south slope of ridge. Conglomeratic in appearance.

21990 1580 N 200 W Flanks 21989. From near irregular contact of the two.

21991 1475 N 130 W. Composed mass of south face. Quarzite.

21992 1450 N 225 W. On north slope, p only Exposed. ^{29. 250. (X)}

21993 1410 N 210 W. On south slope west of 92. Small exposure.

21994 1380 N 200 W. Exposed.

21995 1340 N 200 W Near top of ridge. ^{dyke?}

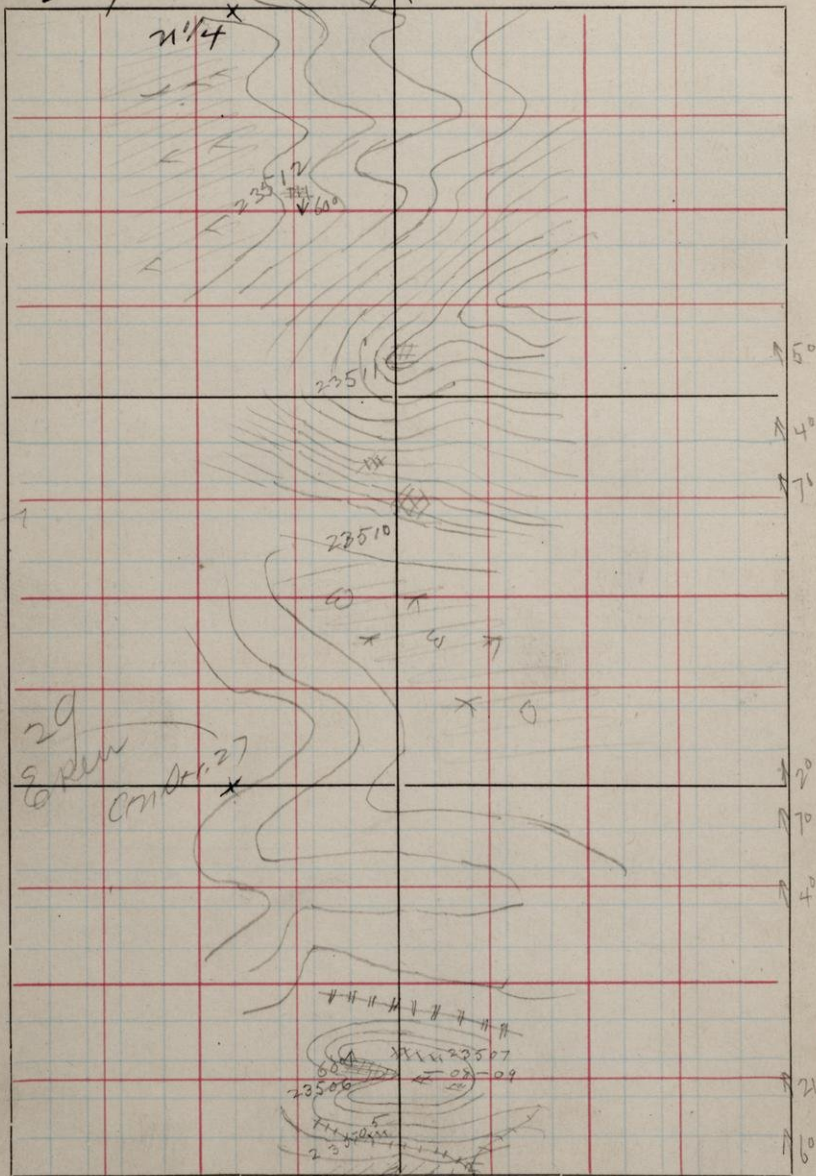
21996 1275 N 175 W. Top of slope to the south. ^{Granite}

21996a de. Doubtful, but probably in connection with — 96

Course + N. 200° E. of $\frac{1}{4}$ line Sec. 32 + 29.

- 21997 1280 N 755 W. St. Cor. 32. On north
? slope. Greenstone dyke along
? top of ridge.
- 21998 1375 N 810 W Massiv. Exposed
? mass of quartzite?
- 21999 1485 N 785 W. Small exposure.
? quartzite?
- 23501 1560 N 815 W. Flanks the quartzite
Hematite (!).
- 23502 1600 N 815 W. From deep that pit.
Hematite
- 23503 1675 N 775 W. S N 90° E δ 40° N.
Will be exposed on north slope. In greenstone.
St. Cor. 29 at 1965 N, 210 E of $\frac{1}{4}$ Sec. 29.
- 23504 460 N 815 W. S.E. Cor. 29. S 80° W δ - N.
Exposed in Ry cut. Cherty slate.

S. 29 T. 47 R. 26



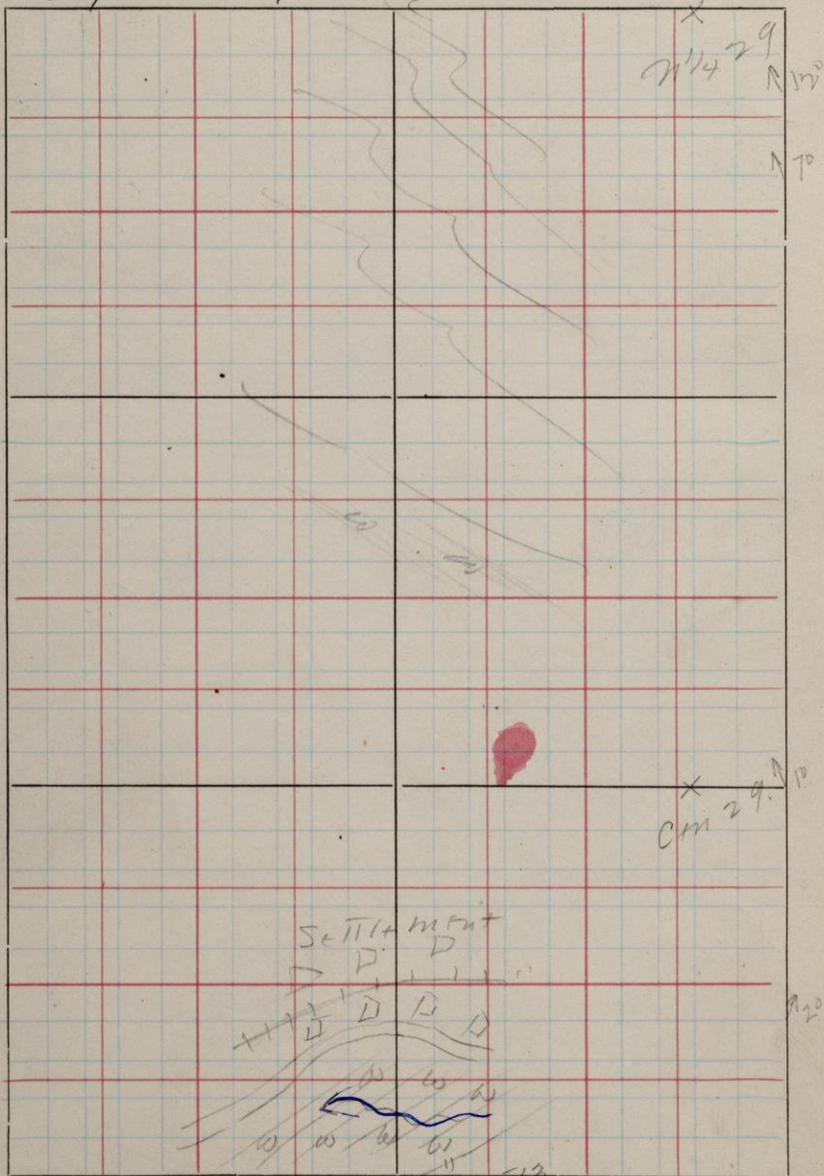
Course N. 200° E. of $\frac{1}{4}$ line Sec. 29,

- 23505 540N 835W. S. t. cor. 29. Entertained exposure
in test pit. S. N 80° W. with steep dip N.
- 23506 630N 830W. S. N 80° W. D 55-60° N
From exw pit, well reported.
Banded Jasper & chert.!
- 23507 650N 800W. Massive quartzite
at top of ridge. Mottled.
- 23508 650N 800W. From exw, conglomeratic
stain in quartzite, 2-3 ft wide
= upper conglomerate.
- 23509 650N - Boulders from the cong.
- ex. N $\frac{1}{4}$ line 29 at 180° N, 215° E. of cor. 29.
- 23510 1350N 790W Foot of quartzite ridge
Slope mostly drift covered.
- 23511 1525N 800W. Exposure of quartzite
at top of ridge.
- 23512 1780N 905W. N 75° E D 80° S
(?) Small exposure, possibly at shoulder.
- ex N line 29 at 990N 210° E of N $\frac{1}{4}$ 29.

S. 24

T. 47

R. 26



Course D. 400 p w. of NW $\frac{1}{4}$ line 29.

23513 450 N 340 W S.E. Cor. 29.

Surface exposure. Transformation

Country drift covered.

