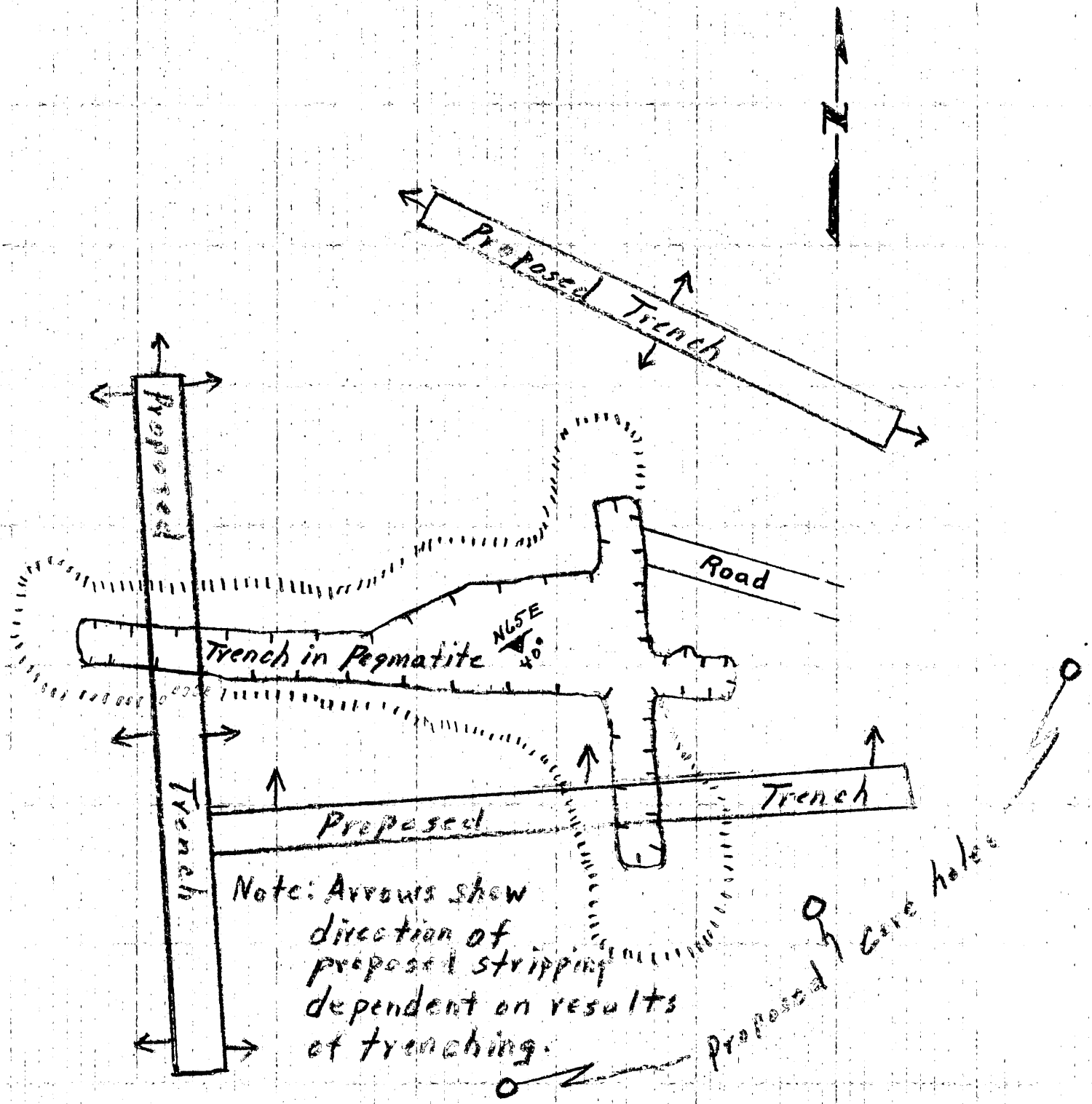


Bourne Associates
Friendship No. 2 Mica Mine
DMEA Supplement
Murphy, N.C. 6-21-52

0 40'
Scale

DmeA-2595

MRS. E. W. YORK, A Widow, MRS. MARGRET W. VERGE, a Widow, MRS. HELEN V. WALLACE, a Widow, Mrs. J. M. BAGLEY and husband, JOHN N. BAGLEY, MRS. HATTIE W. WRIGHT and husband, L. R. WRIGHT, MRS. BERTHA W. RITZMAN and husband, A. T. RITZMAN,

TO

FRANCIS CL BOURNE, SR.

LEASE AGREEMENT

The State of Alabama, Randolph County.

I hereby certify that the within .....Instrument..... was filed in this office for record .....March 20,.....19 51.... at ....9.....o'clock....A.M. and recorded in ..Deed...Record ..56.... page 302,303,304,305 .....and examined .. ..H. M. Brittain..... Judge of Probate

Fee $..6.00.....

STATE OF ALABAMA
Randolph County

I hereby certify that $..1.00..... Privilege Tax has been paid on the within law.

H. M. Brittain
.....
Judge of Probate

Bourne Associates
P.O. Box 35
Atlanta, Ga.

STATE OF ALABAMA

RANDOLPH COUNTY

THIS AGREEMENT, made and entered into on this the 1st day of February, 1951, by and between MRS. E. W. YORK, a Widow, MRS. MARGRET W. VERGE, a Widow, MRS. HELEN V. WALLACE, a Widow, MRS. J. M. BAGLEY and her husband, JOHN N. BAGLEY, MRS. HATTIE W. WRIGHT and her husband, L. R. WRIGHT, MRS. BERTHA W. RITZMAN AND her husband, A. T. RITZMAN, parties of the first part, hereinafter designated "Lessors", and FRANCIS C. BOURNE, SR., of Murphy, North Carolina, a party of the second part, hereinafter designated "Lessee";

W I T N E S S E T H :

1. That the Lessors, for and in consideration of the sum of Ten and No/100 ($10.00) Dollars and other valuable considerations to them in hand paid by said Lessee, the receipt of which is hereby acknowledged, do hereby grant, demise, and lease unto siad Lessee, his heirs, executors, administrators, and assigns, the sole and exclusive right of prospecting for, mining, refining, and removing all merchantable scrap, flake and sheet mica from the following described properties situated in Randolph County, Alabama, to-wit:

PARCEL A

Lands Owned by the Lessors in Fee Simple

The Liberty Mine	SW¼ of NE¼, Sec. 1, Tp. 18, S., R. 10, E.
Crystal Clear Mine	SE¼ of NW¼, Sec. 1, Tp. 18, S., R. 10, E.
Arnott Mine	SW¼ of NE¼, Sec. 2, Tp. 18, S., R. 10, E. NW¼ of SE¼, Sec. 2, Tp. 18, S., R. 10, E.
Friendship Mines	SW¼ and S½ of NW¼ S. 4, Tp. 18, S., R. 10 E.

PARCEL B

Lands in Which the Lessors Own Only the Minerals and Mineral Rights

Great Southern Mica Co.	SE¼ of SW¼ S. 6, Tp. 18 S, R. 11 E.
Former Edwards Lands	SW¼ of SE¼ S. 6, Tp. 18, S., R 11, E.
Weeks Mine	NW¼ of NE¼ S. 7, Tp. 18, S., R. 11 E., Except one and one-half (1½) acres to commence where the section line of Section 7 crosses the road running east 110 yards; thence south 66 yards; thence back to the road one hundred ten (110) yards, and along the road to starting-point, in Randolph County, Alabama.

2. TO HAVE AND TO HOLD all said rights, privileges, easements, estates, and interests in and to the said lands to the said Lessee, his heirs, executors, administrators and assigns, for and during the term of FIFTEEN (15) YEARS from the date hereof unless sooner terminated as herein provided, with the privilege on the part of the Lessee, his heirs, executors, administrators or assigns, to extend said term for another period of ten (10) years by giving to said Lessors, or to one of them herein designated by the Lessors to recieve notices, etc., on their behalf, not less than one (1) year's notice in writing of his or their intention to extend the same, and upon the condition that the minimum royalty for said extended period shall not be less than TWO HUNDRED FIFTY AND NO/100 ($250.00) DOLLARS per month.

3. The Lessors, for themselves, their successors and assigns, covenant and agree that they are the owners in fee simple of the lands described as Parcel A, and the owners of the minerals and mineralsrights in, on, and to the lands described as Parcel B, and that their title to said parcels is

free and clear of all encumbrances, and that they have the authority to demise and lease said land and to grant the easements and privileges herein set forth for the purposes herein set out for and during the term and upon the conditions named in this lease, and do hereby warrant unto the Lessee, his heirs, executors, administrators, and assigns, the mining rights, easements, and privileges hereinabove granted, and the said Lessors, their successors and assigns, will forever warrant and defend the title to the property herein conveyed against the lawful claims of all persons whomsoever.

4. The Lessee hereby agrees to pay the Lessors upon the execution of this lease the sum of FIVE HUNDRED AND NO/100 ($500.00) DOLLARS for the privilege or option of prospecting for mica upon the properties hereinabove mentioned for a period of Six (6) MONTHS from the date hereof and to pay an additional sum of FIVE HUNDRED AND NO/100 ($500.00) DOLLARS at the expiration of six months from the date of the execution of this lease for an additional term or period of six months following the first six months period for prospecting for mica, developing the property for mining operations, constructing necessary facilities, including buildings, machinery, roads, etc. Any mica produced and sold during said twelve (12) months shall be paid for at the stated royalty rates, but there shall be no minimum royalty payments required during said twelve (12) months period. The ONE THOUSAND AND NO/100 ($1000.00) DOLLARS paid for Privileges and options just mentioned shall be credited to Lessee's account as advance royalty payments during the first (12) twleve months of Lessee's operation after the minimum monthly royalty payments go into effect. Minimum royalty payments shall begin at the end of twelve (12) months from the date

of this lease and continue until its expiration or termination. The minimum royalty payments shall be TWO HUNDRED FIFTY AND NO/100 ($250.00) DOLLARS per month, all royalty payments to be made on or before the 15th day of each month for all mica mined, sold and shipped during the preceding calendar month.

5. The Lessee hereby agrees to pay to the Lessors during the life of this lease royalties as follows: $2.00 per net ton of 2,000 pounds as royalty on all crude scrap or flake mica commonly sold by the ton; for sheet, punch, or washer mica generally sold by the pound, Lessee agrees to pay a royalty of one-eighth (12½%) of the selling price. In the event that Lessee fabricates sheet, punch, or washer mica into manufactured shapes, royalties shall be paid on the basis of the market price for the sheet mica thus used, and royalty shall not be paid on the selling price of such manufactured mica; and it is further agreed by the parties hereto that all scrap mica mined and removed hereunder shall be weighed either on scales furnished by Lessee or on railroad scales when shipment is made in car-lots, and sworn weight records shall be furnished Lessors each month, which shall be the basis of the record on which the said Lessee, his heirs, executors, administrators, and assigns, shall settle with the Lessors for all mica mined and removed from said premises.

6. If at the end of ten (10) years from the date of this lease, the market price of crude scrap and flake mica shall have increased as much as ten per cent (10%) but less than twenty per cent (20%) of the market price of crude scrap and flake mica, at the date of this lease, the royalty payments by Lessee to Lessors shall be inrecased by ten per cent (10%). If at said tiem the market price of crude scrap and flake mica shall have increased as much as twenty per cent (20%) but less than thirty per cent (30%) of the

Market price of crude scrap and flake mica at the date of this lease, royalty payments by Lessee to Lessors shall be increased by twenty per cent (20%). If at the end of the five (5) years next following said ten (10) year period, and at the end of each five (5) year period thereafter, the royalty to be paid for said crude scrap and flake mica shall be adjusted, and if the market price of crude scrap and flake mica shall have increased as much as ten per cent (10%) of the price of crude scrap and flake mica at the commencement of this lease, then the royalty payments by Lessee to Lessors shall be increased by ten per cnet (10%) for the following period or for the remaining life of this lease, as the case may be. It is the intention of the parties that any adjustment of royalty payments for crude scrap and flake mica herein provided for to be made shall be made on the basis of units of ten per cnet (10%) or multiples thereof, and not otherwise.

7. It is understood and agreed that the Lessors shall pay the taxes on the lands owned by them in fee as well as the minerals and mineral rights herein described and such buildings and other improvements thereon as the said Lessors have or may see fit to erect or make, and the Lessee, his heirs, executors, administrators and assigns, shall pay the taxes on this leasehold interest or estate in said lands, together with the taxes on all improvements, machinery, fixtures, and betterments erected, made or belonging to the said Lessee, his heirs, executors, administrators, or assigns.

8. It is understood and agreed that the Lessee, his heirs, executors, administrators and assigns, during the term of this lease, shall have the exclusive and uninterrupted right of prospecting for and mining, removing, and refining mica, together with the right of ingress, regress, and egress, to, over, and from said lands, to be exercised in a reasonable way and with due regard to the rights of the Lessors as the owners of the fee simple

title thereto; the rights and privileges, free of charge, to use water on said lands in necessary quantities for all purposes connected with Lessee's mining and milling operations, and necessary to the complete enjoyment of the rights and privileges herein granted for operating, mining, refining, and preparing the mica on said lands for the market, to be exercised in a reasonable way and with due regard to the rights of the Lessors as aforesaid; and also the right and authority to erect all necessary buildings and machinery and other mining equipment on said lands; and the right to cut and use such timber as may be necessary for timbering mines and other uses in connection with said operations, provided no merchantable timber fit for lumber, acid wood, or other commercial uses shall be taken except upon due compensation to be agreed on therefore being made to the Lessors, and all of said rights to be exercised by said Lessee, his heirs, executors, administrators, and assigns, in a reasonable way and with due regard to the rights of the Lessors as the owners in fee of the lands described as Parcel A and as the owners of the minerals and mineral rights in the lands described as Parcel B.

9. If, after conducting exploratory and prospecting operations upon said lands, the Lessee is satisfied that deposits of merchantable scrap, flake and sheet mica are discovered in sufficient quantity and quality to warrant the Lessee in so doing, the Lessee agrees to form a corporation for prospecting, mining, refining, removing and selling all merchantable scrap, flake, and sheet mica from said lands, said corporporation to have a paid up capital stock of not less than FIFTY THOUSAND AND NO/100 ($50,000.00) DOLLARS. Upon the formation of such a corporation, the Lessee agrees that he will promptly thereafter assign all his

rights under this lease to such a corporation.

10. It is agreed that if the Lessors, or any of them, leases to any other person any other property owned by the Lessors, or anyof them, situated in the Countries of Cleburne, Clay, and Randolph, in the State of Alabama, for the production of sheet mica or any other mineral, such lease to such other persons shall provide that no scrap or flake mica produced as a result of such mining operations by such other leassees can be removed or sold by the person producing the same or by any other person, except after first giving the Lessee in this lease, his heirs, executors, administrators and assigns, the option for thirty (30)days)to purchase such scrap mica at the prevailing market price. If the Lessee, his heirs, executors, administrators and assigns, fails for thirty (30) days after such offer to purchase said scrap mica, then the same may be sold to any other person.

11. The Lessee shall have the right to erect such buildings, plants, and to build roads, railroads, tramways, and aerial trams as may be needed or serviceable for carrying on mining operations and preparing mica for the markets; and the right to creat dump piles where necessary without being held liable for damage; provided, always, said rights are exercised in a reasonable way and with due regard to the rights of the Lessors as owners of said land therein described.

12. The Lessee, his heirs, executors, administrators and assigns, shall have the right to remove any machinery, tools, buildings, plants, facilities, appliances, fixtures, and any and all other equipment placed or erected upon said property by him, or them, during the period of said lease, whether permanently

attached to the land or not, within one hundred twenty (120) days after termination of this contract, by expiration or otherwise, provided, the lessee shall have paid the pro-rata part of the taxes attributable to his improvements on said property, and all obligations due by him under this contract, and not otherwise, but such as are not removed, as herein provided, shall become the property of the Lessors.

13. All rights and privileges granted on lands as to which the Lessors own only the minerals and mineral rights shall be subject to the terms of the original severence of said minerals and mineral rights from the fee simple title, and the Lessee shall exercise said rights with the proper regard to the rights of the owners of the surface rights in said lands and shall make compensation to the owners of the surface rights where and as required by law.

14. The Lessee, his heirs, executors, administrators and assigns, agrees to same the Lessors harmless from all claims as a result of the mining operations carried on by him on said lands during the time this lease is in force.

15. Should the Lessee discover any other minerals upon said land in commercial quantities, he shall forthwith disclose the same to the Lessors, and the Lessors shall then be obligated to give him an option to mine said minerals upon the usual terms.

16. It is further agreed that, in the event the Lessors, or any of them, employ an attorney because of any default of the Lessee in the performance of any of his obligations under this lease, the Lessee will pay a reasonable attorney's fee for the enforcement of any liability of his because of such default and

for the collection of any sum due them because thereof.

17. It is further understood and agreed by the parties hereto that should the Lessee, his heirs, executors, administrators, or assigns, fail to pay the minimum royalty hereinbefore provided for ans as hereinbefore set out, or breach any other obligations accrued herein by him then and in that event it is expressly understood that such failure on the part of the Lessee, his heirs, executors, administrators, or assigns, shall work a forfeiture after ten (10) days' written notice from the Lessors to the Lessee, his heir, executors, administrators, or assigns, of all rights granted hereunder, rendering this lease null and void, provided such default is not made good with said ten (10) days; and the said Lessors shall have the right and privilege to re-enter upon said property and take possession thereof, which possession shall be surrendered peaceably and quietly by said Lessee, his heirs, executors, administrators, and assigns; provided further, that if mica cannot be found on any of said properties hereinabove mentioned in such quantities and of such quality, or if, as the result of mining operations upon said lands the deposits of mica therein become so depleted as to render the operation thereof unprofitable, then, and in either of such events, the Lessee, his heirs, executors, administrators, or assigns, shall have the right and privilege of terminating this lease upon giving sixty (60) days' notice of intention so to do in writing to the Lessors or their agent, and at the end of said sixty (60) days' shall be forever released and discharged from all further obligations, liabilities, and duties hereunder.

18. The Lessors hereby designated and appoint

MARGRET W. VERGE of HEFLIN, ALABAMA

to be their agent to whom all payments of money provided in this lease to be paid by the Lessee, his heirs, executors, administrators, or assigns, to the Lessors, may be made, and the person as the agent for Lessors to receive and upon whom all notices herein provided to be served upon the Lessors may be made, without requiring the Lessee to make payment to and serve notices upon all the Lessors.

IN WITNESS WHEREOF, the parties hereto have hereunto set their hands and seals, in duplicate, this the day and year first above written.

Mrs. E. W. York (SEAL)

Mrs. Margaret W. Verge (SEAL)

Mrs. Helen V. Wallace (SEAL)

Mrs. J. M. Bagley (SEAL)

John N. Bagley (SEAL)

Mrs. Hattie W. Wright (SEAL

L. R. Wright (SEAL)

Mrs. Bertha W. Ritzman (SEAL)

A. T. Ritzman (SEAL)

LESSORS

Francis C. Bourne, Sr. (SEAL)

LESSEE

STATE OF ALABAMA

CLEBURNE COUNTY

I, Lewis Boyd, a Notary Public in and for said State and County, hereby certify thet MRS. E. W. YORK, a widow, MRS. MARGRET W. VERGE, a widow, and MRS. HATTIE W. WRIGHT and her husband, L. R. WRIGHT, whose names are signed to the foregoing conveyance, and who are known to me, acknowledged before me on this day that, being informed of the contents of this instrument, they executed the same voluntarily on the day the same bears date.

IN WITNESS WHEREOF, I hereunto set my hand and seal on this the 1st day of February, 1951.

My commission expires
February 4, 1952

Lewis Boyd
Notary Public

- - - - - - - - - - - - -

STATE OF ALABAMA

COUNTY OF CALHOUN

I, Ella Hall, a Notary Public in and for said State and County, hereby certify that MRS. J. M. BAGLEY and her husband, JOHN N. BAGLEY, whose names are signed to the foregoing conveyance, and who are known to me, acknowledged before me on this day that, being informed of the contents of this instrument, they executed the same voluntarily on the day the same bears date.

IN WITNESS WHEREOF, I hereunto set my hand and seal on this the 1st. day of February, 1951.

My commission expires:
Jan. 15, 1952

Ella Hall
Notary Public

* - - - - - - - - - - - -

STATE OF WISCONSIN

DOUGLAS COUNTY

I, Irja Young, a Notary Public in and for said State and County, hereby certify that MRS. BERTHA W. RITZMAN and her husband, A. T. RITZMAN, whose names are signed to the foregoing conveyance, and who are known to me, acknowledged before me on this day that, being informed of the contents of this instrument, they executed the same voluntarily on the day the same bears date.

IN WITNESS WHEREOF, I hereunto set my hand and seal on this the 9th day of February, 1951.

My commission expires;
May 3, 1953

Irja Young
Notary Public

- - - - - - - - - - -

STATE OF MINNESOTA

HENNEPIN COUNTY

I, Deane R. Scouille, a Notary Public in and for said State and County, hereby certify that MRS. HELEN V. WALLACE, a widow, whose name is signed to the foregoing conveyance, and who is known to me, acknowledged before me on this day that, being informed of the contents of this instrument, she executed the same voluntarily on the day the same bears date.

IN WITNESS WHEREOF, I hereunto set my hand and seal on this the 7th day of Eebruary, 1951

My commission expires;
Oct. 16, 1957

Deane R. Scouille
Notary Public

- - - - - - - - - - -

STATE OF NORTH CAROLINA

CHEROKEE COUNTY

I, Charles E. Johnson, a Notary Public in and for said State and County, hereby certify that FRANCIS C BOURNE, SR., whose name is signed to the foregoing conveyance, and who is known to me, acknowledged before me on this day that, being informed of the contents of this instrument, he executed the same voluntarily on the day the same bears date.

IN WITNESS WHEREOF, I hereunto set my hand and seal on this the 20th day of February, 1951.

My commission expires:
Aug. 28, 1952

Charles E. Johnson
Notary Public

- - - - - - - - - - -

Dmea-2595

LANDLORD'S SUBORDINATION AGREEMENT

KNOW ALL MEN BY THESE PRESENTS:

WHEREAS, the undersigned is the owner in fee simple of that certain parcels of ground in the county of Randolph, State of Alabama, described in a certain Exploration Project Contract dated _____, 1952, between Bourne Associates the Lessee of said property, and the United States of America;

NOW, THEREFORE, the undersigned, as Lessor of said property under lease dated February 1, 1951, does by these presents subordinate all of his right, title, and interest under the provisions of said lease to the right, title, and interest of the United States of America under the provisions of said Exploration Project Contract, and agrees that the lien and claim of the United States of America under the provisions of said contract shall be prior to the undersigned's rights to rentals or royalties under the terms of said lease; and

The undersigned further agrees that if said leasehold interest should be surrendered or if said lease should terminate at any time prior to the expiration of the rights of the United States of America under said Exploration Project Contract, the undersigned shall assume and does hereby assume all of the obligations of the Lessee under said Exploration Project Contract to make repayment to the United States of America according to the terms of said contract; and

The undersigned agrees to commit no act, nor assert any claim under judicial process or otherwise that may contravene or conflict with the prior lien and claim of the United States of America under the provisions of said Exploration Project Contract.

This undertaking and covenant shall be binding upon the heirs, successors, and assigns of the undersigned.

Dated this 21st day of June, 1952

Mrs. E. W. York — Mrs. E. W. York
Mrs. Margret W. Verge — Mrs. Margret W. Verge
Mrs. Helen V. Wallace — Mrs. Helen V. Wallace
Mrs. J. M. Bagley — Mrs. J. M. Bagley
Mr. John N. Bagley — Mr. John N. Bagley
Mrs. Hattie W. Wright — Mrs. Hattie W. Wright
Mr. L. R. Wright — Mr. L. R. Wright
Mrs. Bertha W. Ritzman — Mrs. Bertha W. Ritzman
Mr. A. T. Ritzman — Mr. A. T. Ritzman

By

Margret W. Verge, Agent

Margret W. Verge, Agent

Bourne Associates
Box 36
Murphy, North Carolina

FRANK E. JOHNSON
CHAIRMAN, OPERATING COMMITTEE
DEFENSE MINERALS EXPLORATION ADMINISTRATION
DEPT. OF THE INTERIOR
WASHINGTON 25, D. C.

MICA SAMPLES

KAROLTON KLASP—9 x 12
MADE BY
THE AMERICAN ENVELOPE CO.
WEST CARROLLTON, OHIO

Miscellaneous materials $500.00

Erect & use scaffolding machinery @ $300.00 300.00

Allow 90 shifts for 180'

Per Shift

1-Foreman $14.00

2-Miners @ 1.25 20.00

8-Miners @ 1.00 8.00

~~1-Timber foreman @ 1.15 9.20~~

1-Drillman @ 0.95 7.60

1-Hoistman @ $1.15 9.20

1-Mechanic @ $1.15 9.20

Labor per shift $68.00 Total Labor 7,668.00

500 ft. 5/8 rope 800.00

6.65

No 5796

[illegible] 2.5' completed per shift
10 shifts per wk.

Headframe Matrials	6 [illegible]
Erection and [illegible] machinery @ $30.00 10 days	300.00
Labor @ $38.00 per shift for 62 shifts	$4,216.00
500' (3/8") rope	175.00
520 6"x8' poles @ 50¢	260.00
800 B.F. 2x6 lagging @ $60/M	48.00
1200 B.F. 1" casing @ $60/M	72.00
Drill Steel	100.00
" Bits	300.00
Sinay Tools	[illegible]
Explosives	[illegible]
1-10KW Generator, 45 days @ $30.00	1350.00
1-315 cfm compressor, 45 days @ $25.00	[illegible]
1-Hoist, 45 days @ $35.00	[illegible]
2-Drills 45 days @ $1.00	90.00
2-Pumps 45 days @ $2.25	[illegible]
Insurance & payroll taxes @ 10% of P.R.	451.60
Accounting, 5 days @ $10.00	50.00
Contingencies @ 10%	998.76
Total	$10,986.36
Per Ft.	$61.03

$37.00 drilling for 4.5'

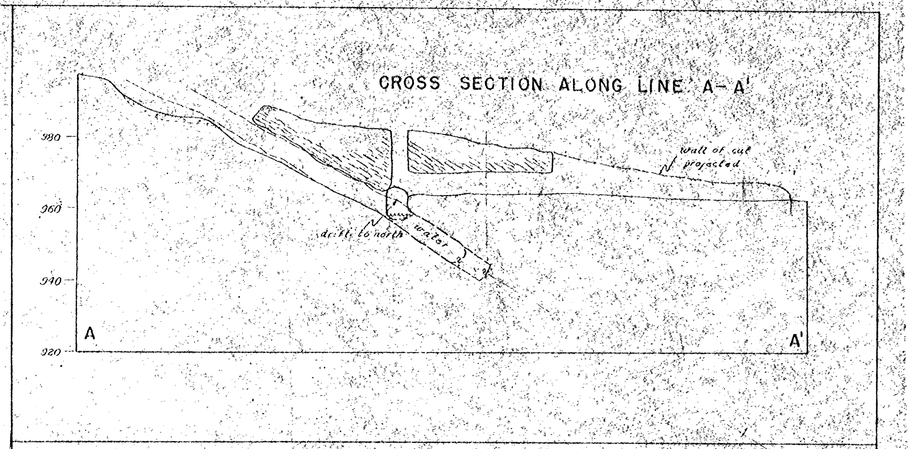
Total Equipt $1,440.00

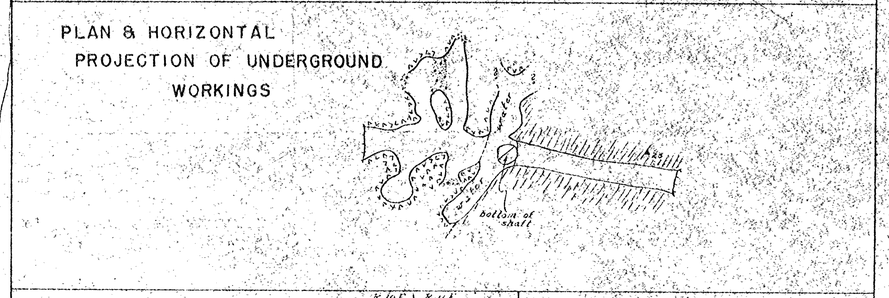
Total Equipt $3,015

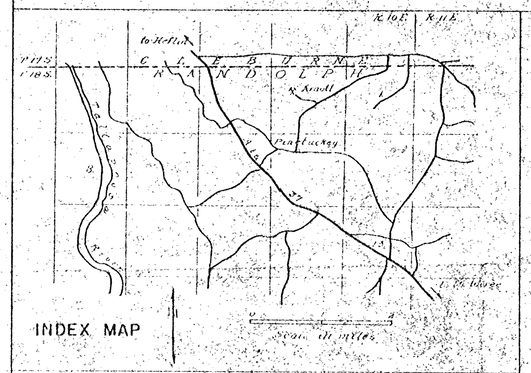
Without Contingencies Total $9,988.00
Per Ft. $55.48

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STRATEGIC MINERALS INVESTIGATIONS
PRELIMINARY MAP







Geology and topography by J. C. Olson,
and
W. H. Heinrich
June 26 and 27, 1944

EXPLANATION

- Dump and muck
- Fine grained pegmatite border
- Quartz - feldspar pegmatite
- Mica schist
- Contact, location accurate, showing dip
- Contact, location approximate
- Attitude of schistosity
- Limit of exposure
- Outer margin of dump
- Rim of open cut
- Shaft
- Projected outline of inaccessible underground workings
- Projected outline of accessible underground workings

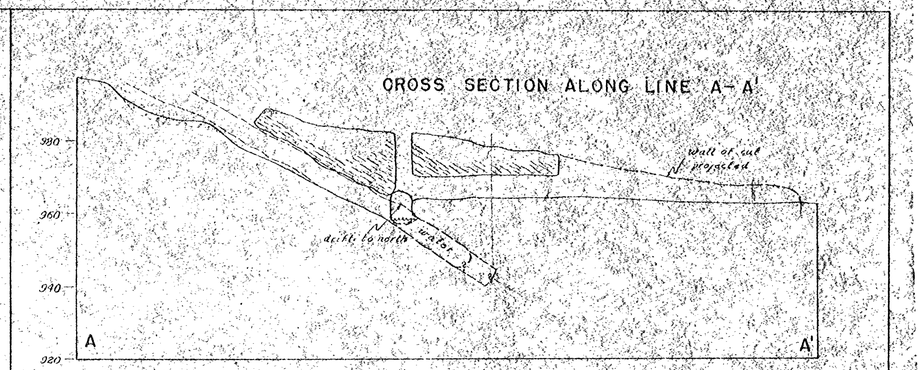
Plane table survey
Contour interval 5 feet
Datum assumed

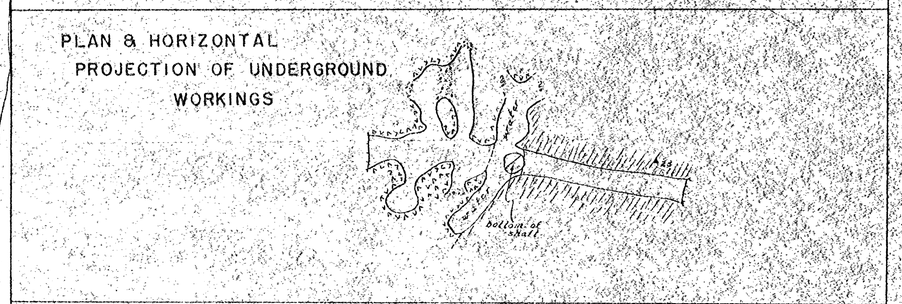
ARNOTT MICA MINE, RANDOLPH COUNTY, ALABAMA

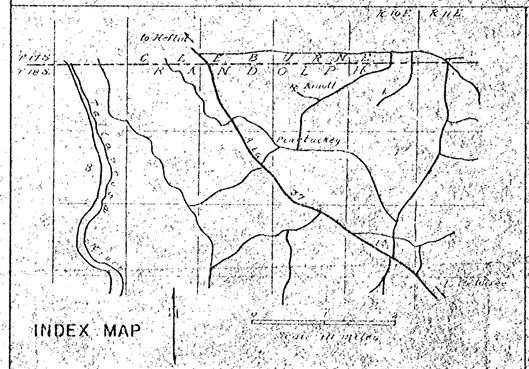
20 10 0 20 40 60
Scale in feet

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STRATEGIC MINERALS INVESTIGATIONS
PRELIMINARY MAP







INDEX MAP

Geology and topography by J. C. Olson and Wm Heinrich
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Plane table survey
Contour interval 5 feet
Datum assumed

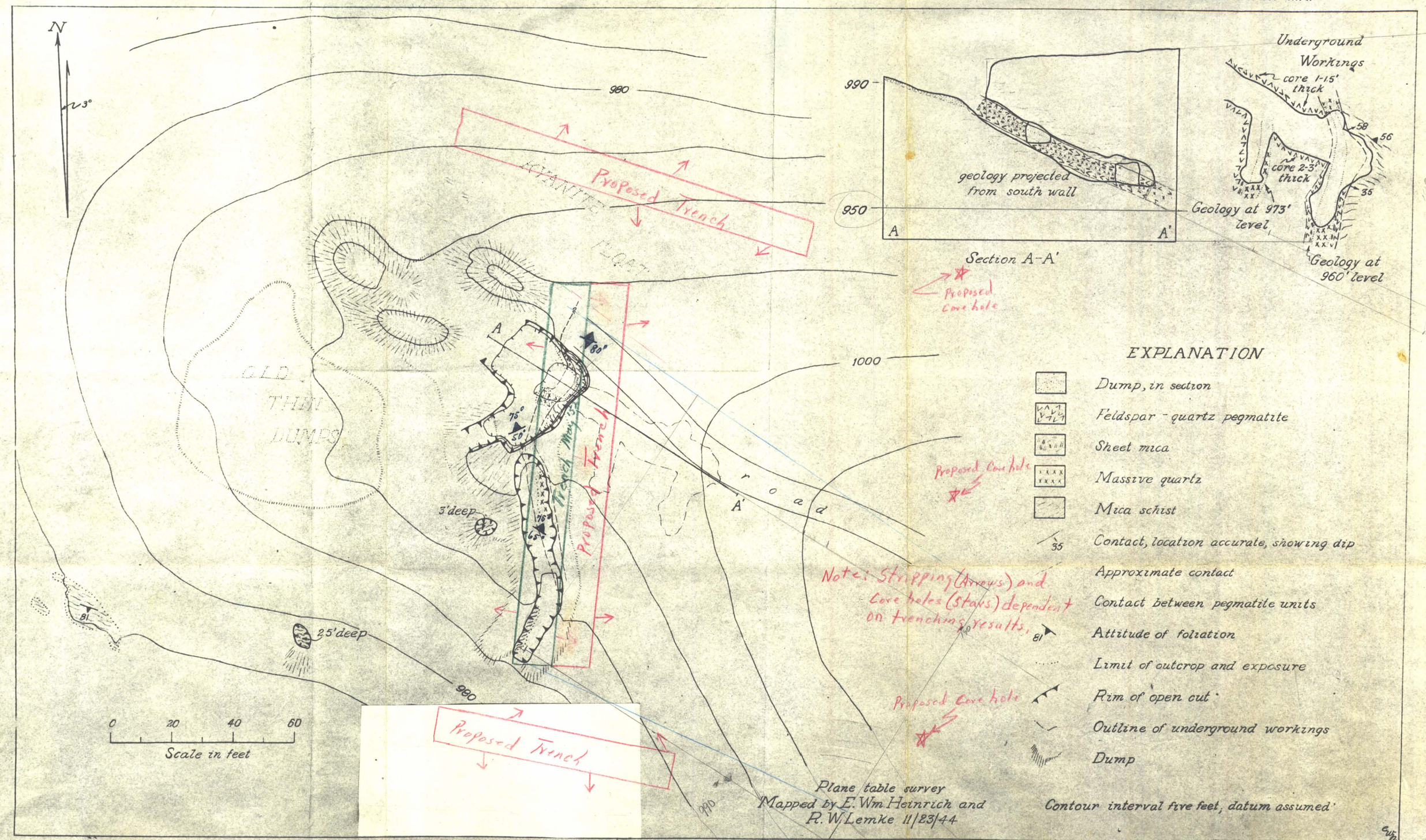
ARNOTT MICA MINE, RANDOLPH COUNTY, ALABAMA

Bourne Associates
Box 35
Murphy N.C.

Supplement to Form MF-103

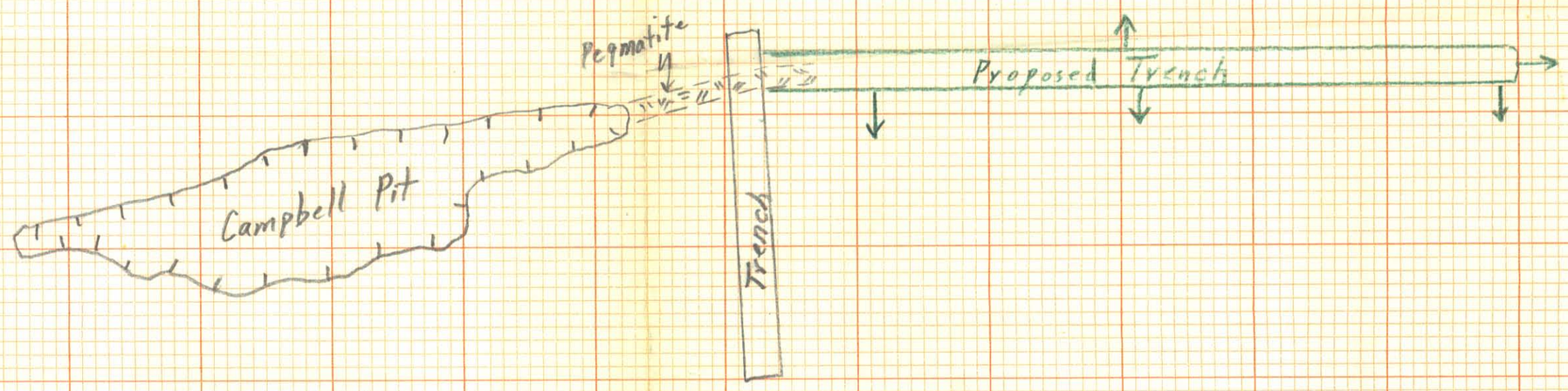
UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

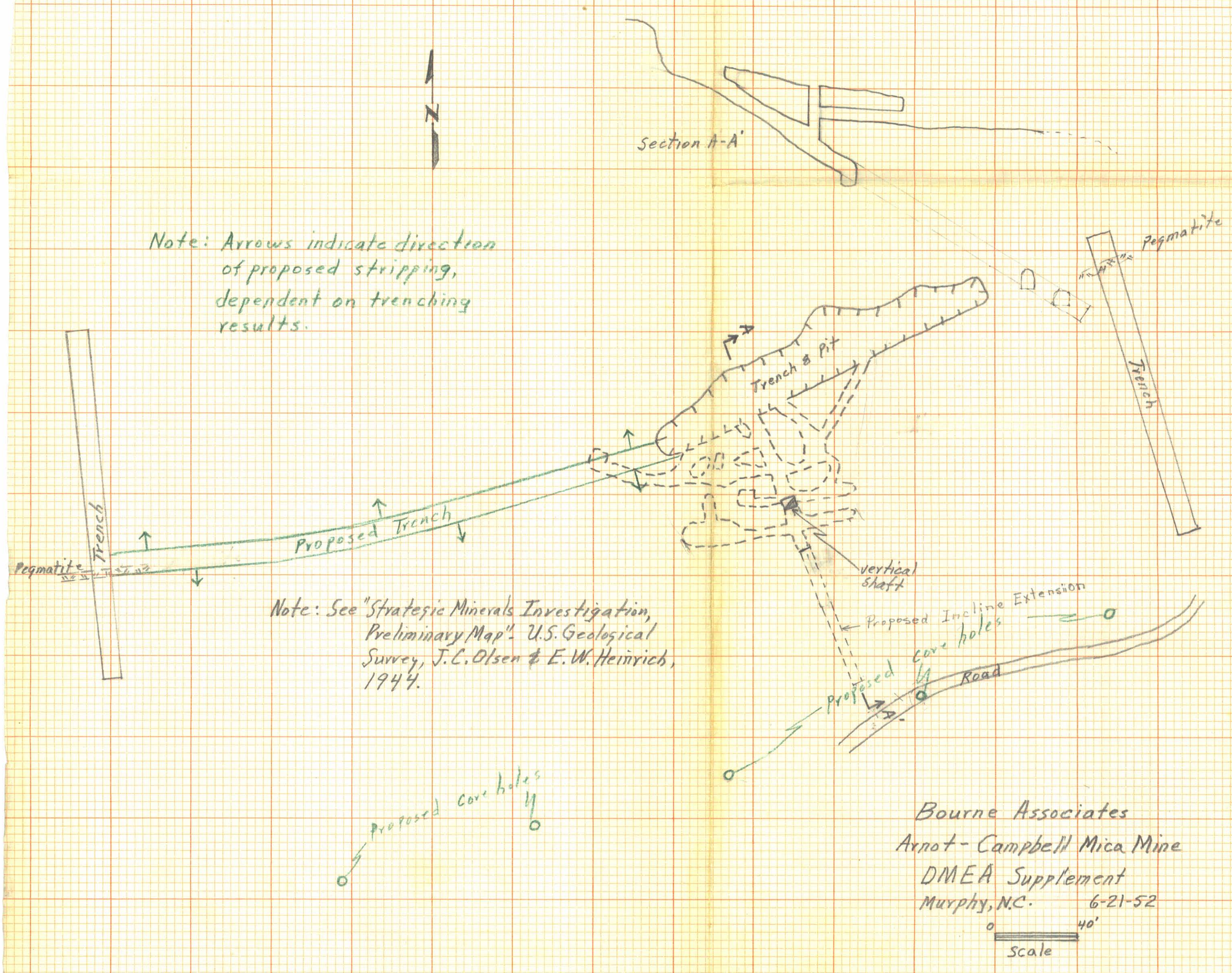
STRATEGIC MINERALS INVESTIGATIONS
PRELIMINARY MAP



FRIENDSHIP NO. 1 MICA MINE, RANDOLPH COUNTY, ALABAMA

Open file


Pegmatite
Campbell Pit
Trench
Proposed Trench

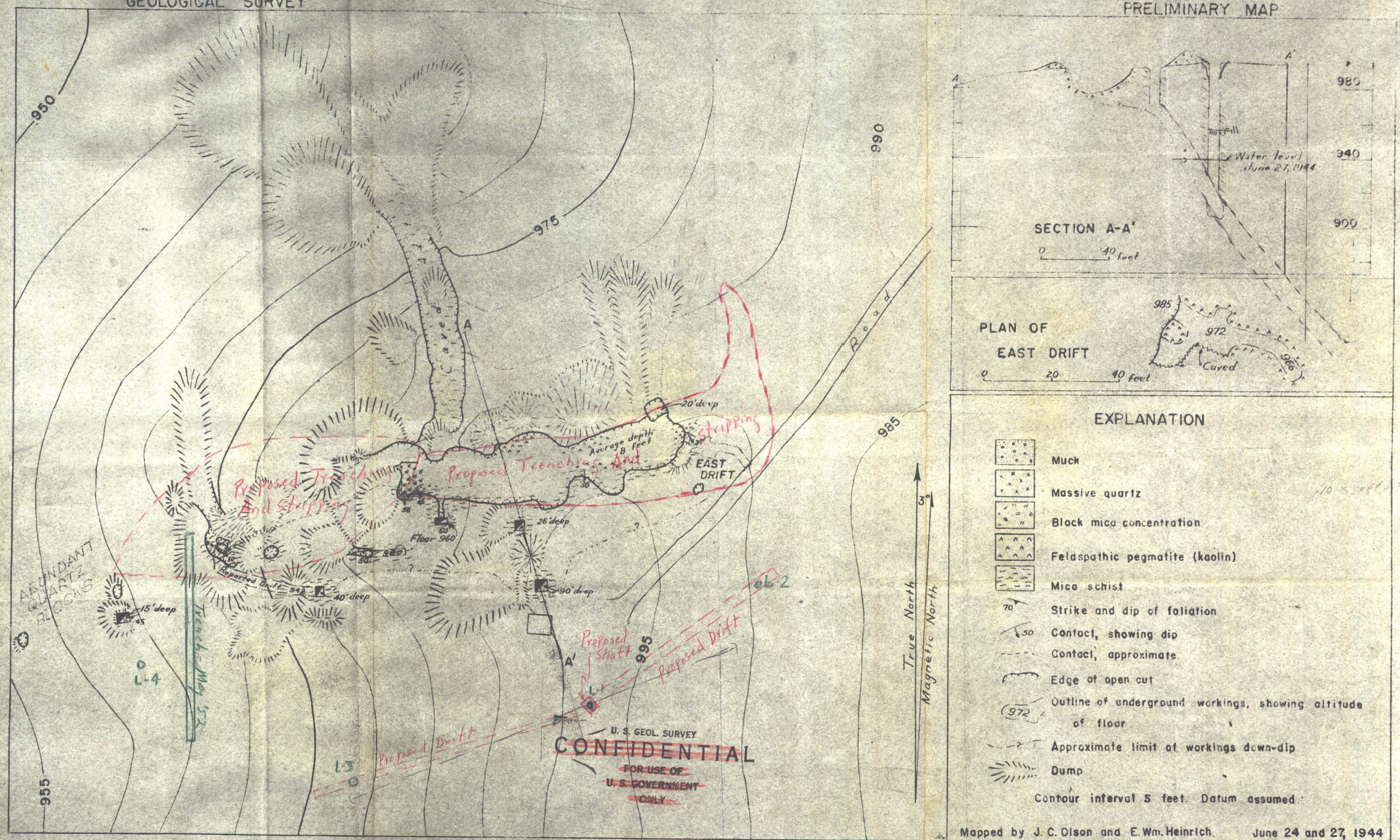

N
Section A-A'
Note: Arrows indicate direction of proposed stripping, dependent on trenching results.
Pegmatite
Trench
Trench & Pit
Trench
Pegmatite
Proposed Trench
vertical shaft
Note: See "Strategic Minerals Investigation, Preliminary Map". U.S. Geological Survey, J.C. Olsen & E.W. Heinrich, 1944.
Proposed Incline Extension
Proposed core holes
Road
Proposed core holes
Bourne Associates
Arnot-Campbell Mica Mine
DMEA Supplement
Murphy, N.C.
6-21-52
0
40'
Scale

Bourne Associates
Box 35
Murphy, N.C.

Supplement to Form MF-103
6-21-52

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STRATEGIC MINERALS INVESTIGATIONS
PRELIMINARY MAP

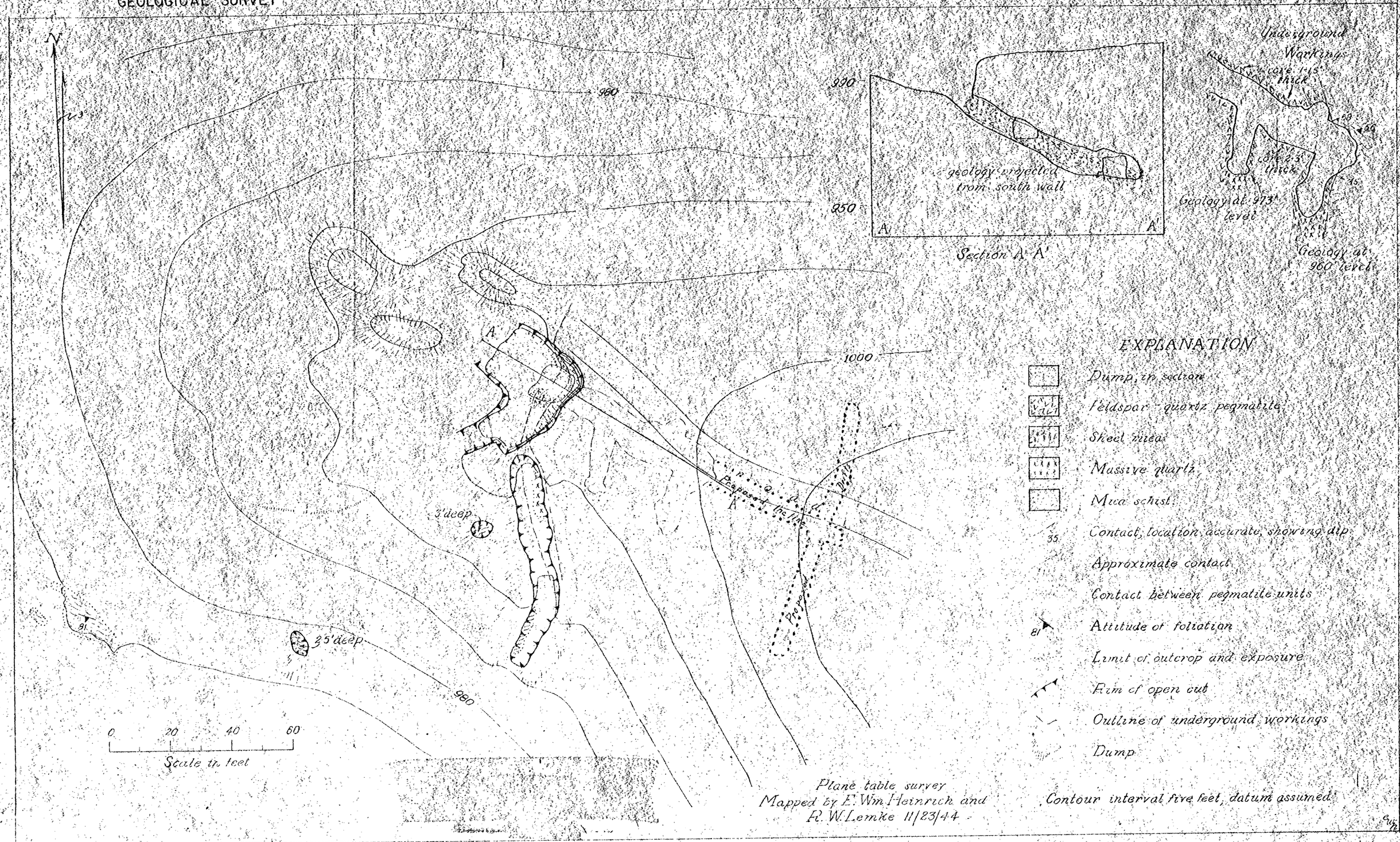


LIBERTY MICA MINE, RANDOLPH COUNTY, ALABAMA

0 40 80 120 160
Scale in feet

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

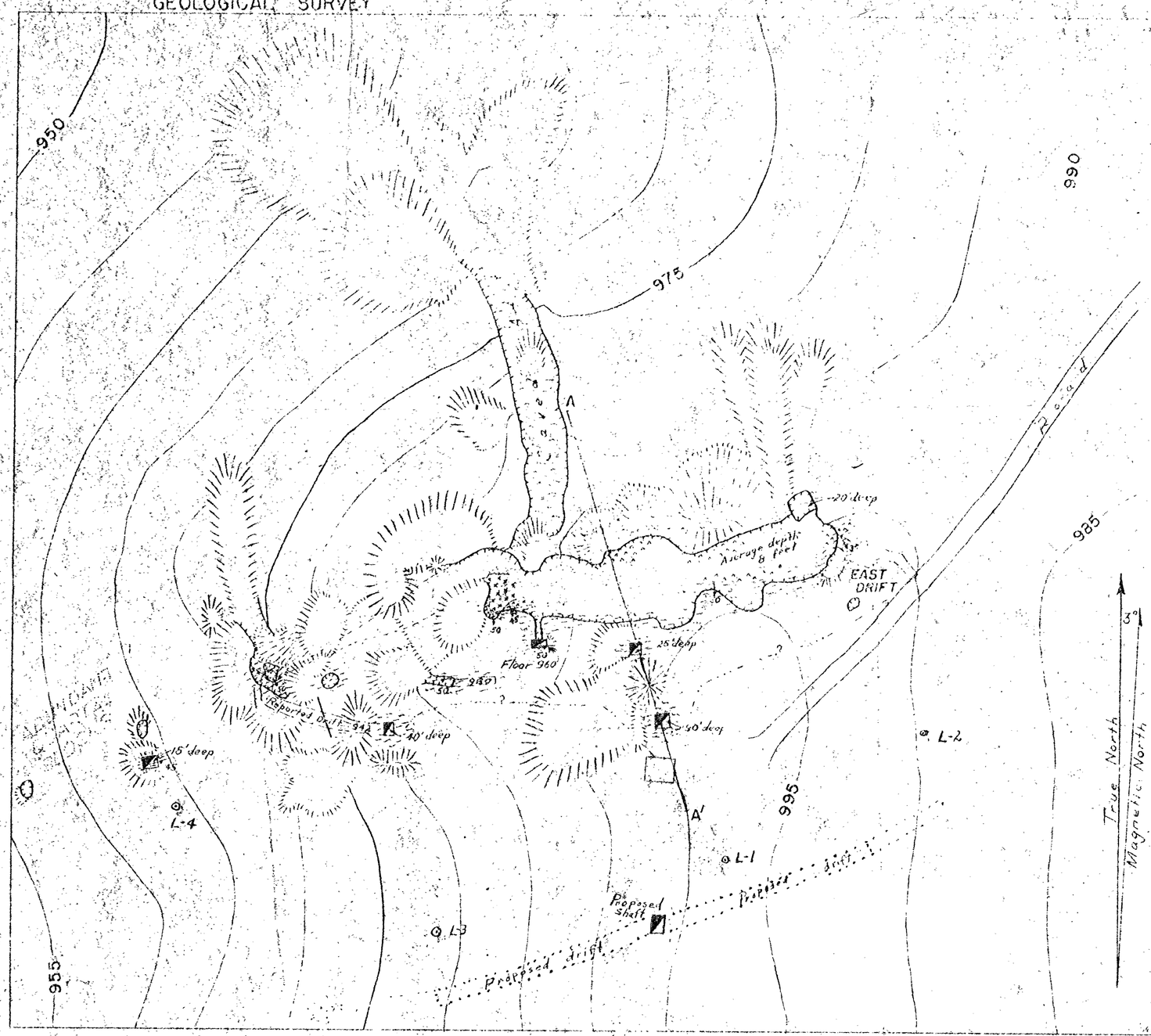
STRATEGIC MINERALS INVESTIGATIONS
PRELIMINARY MAP

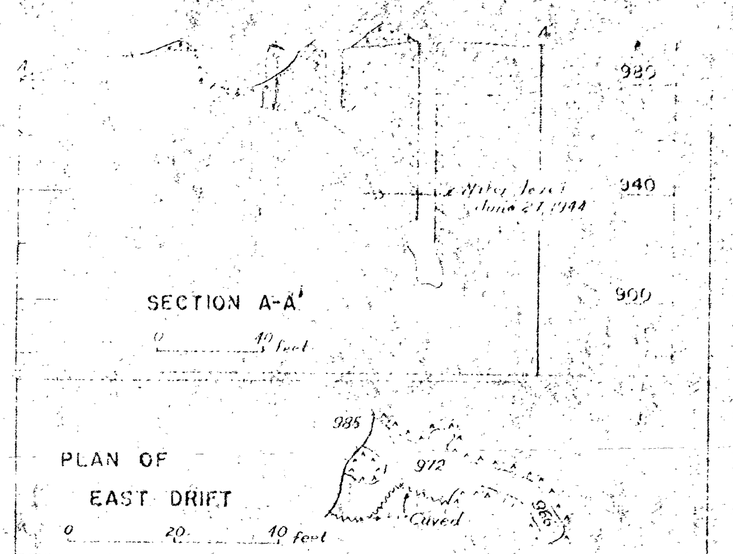


FRIENDSHIP NO. 1 MICA MINE, RANDOLPH COUNTY, ALABAMA

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STRATEGIC MINERALS INVESTIGATIONS
PRELIMINARY MAP





EXPLANATION

- Muck
- Massive quartz
- Black mica concentration
- Feldspathic pegmatite (kaolin)
- Mica schist
- 70 Strike and dip of foliation
- 50 Contact, showing dip
- Contact, approximate
- Edge of open cut
- 972 Outline of underground workings, showing altitude of floor
- Approximate limit of workings down-dip
- Dump

Contour interval 5 feet. Datum assumed.

Mapped by J. C. Olson and E. Wm. Heinrich. June 24 and 27, 1944

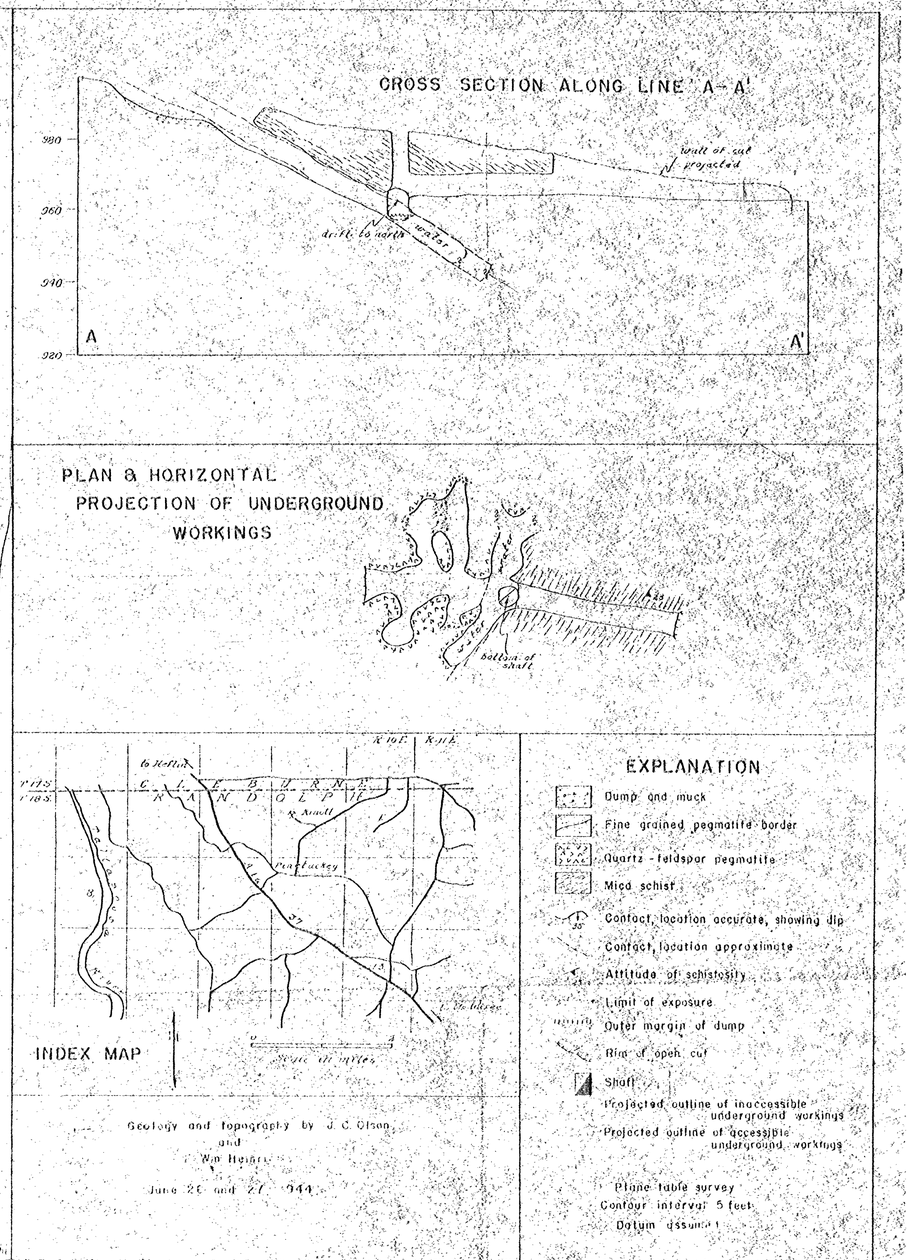
LIBERTY MICA MINE, RANDOLPH COUNTY, ALABAMA

0 40 80 120 160
Scale in feet

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

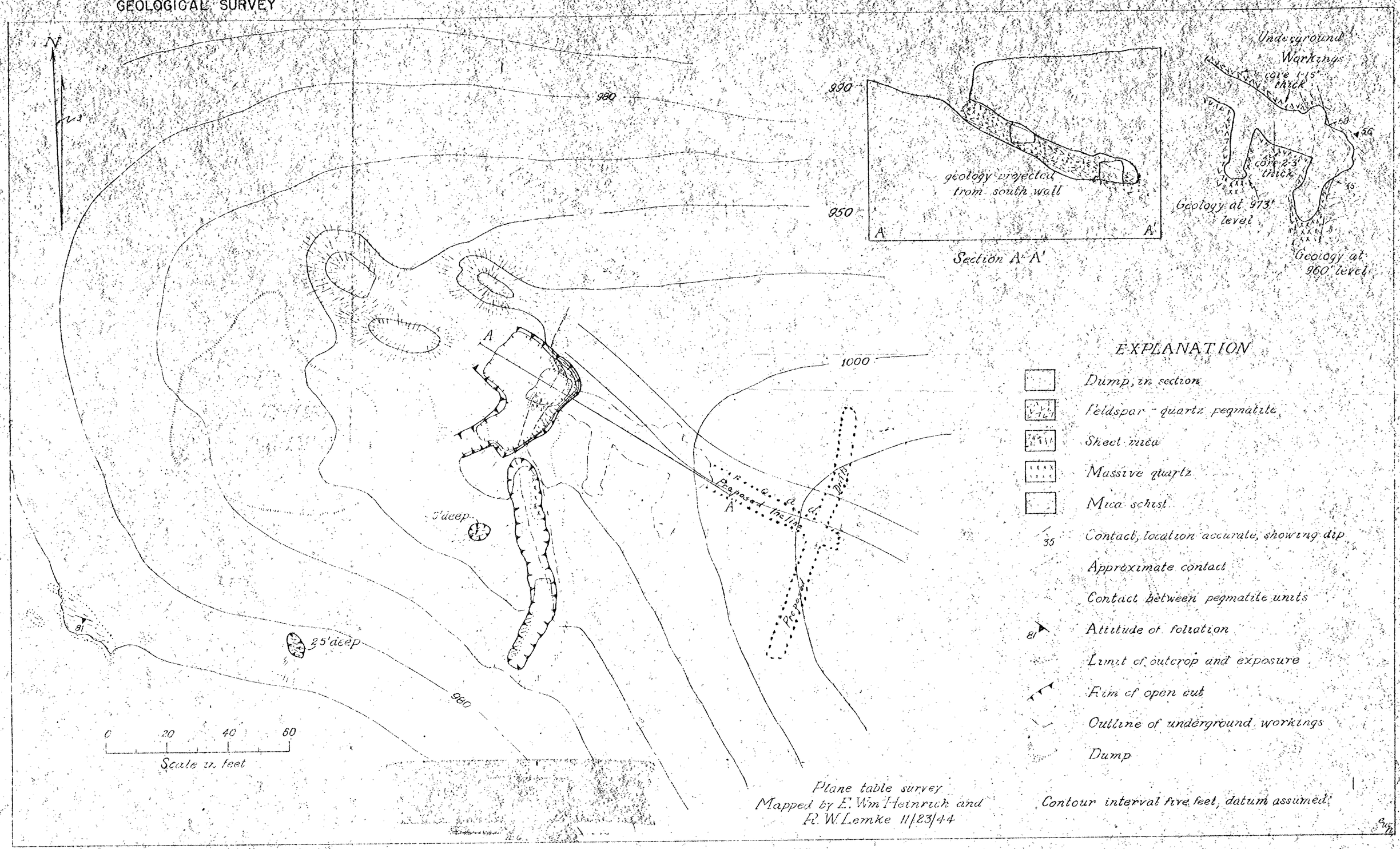
STRATEGIC MINERALS INVESTIGATIONS
PRELIMINARY MAP

ARNOTT MICA MINE, RANDOLPH COUNTY, ALABAMA



UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STRATEGIC MINERALS INVESTIGATIONS
PRELIMINARY MAP



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