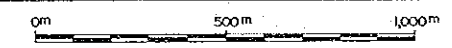
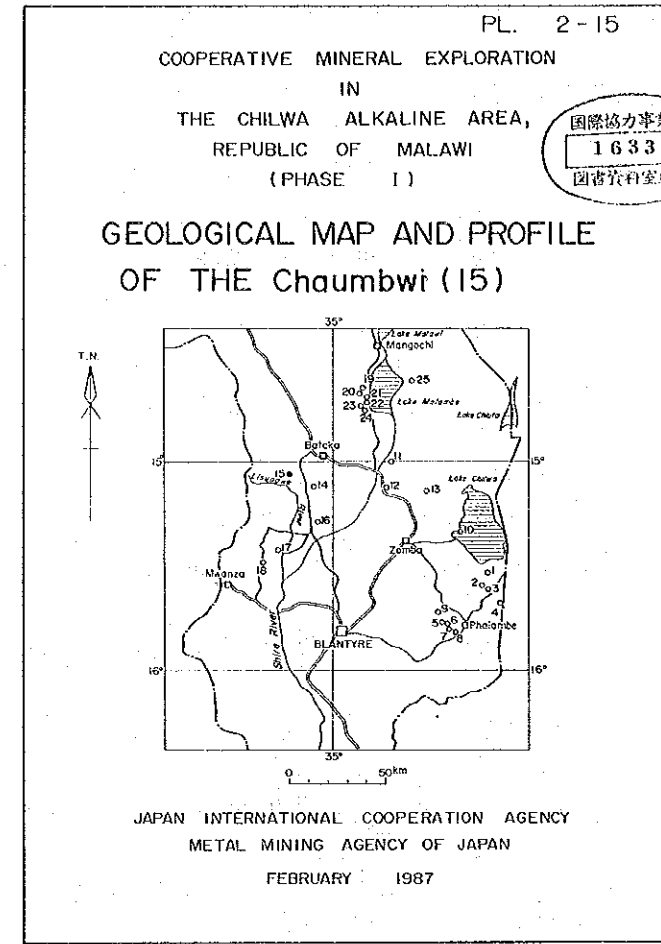
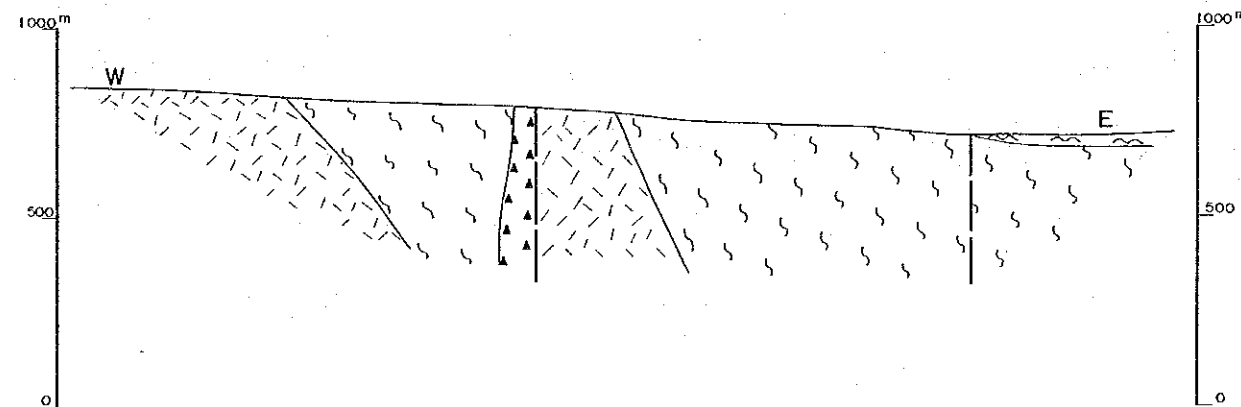


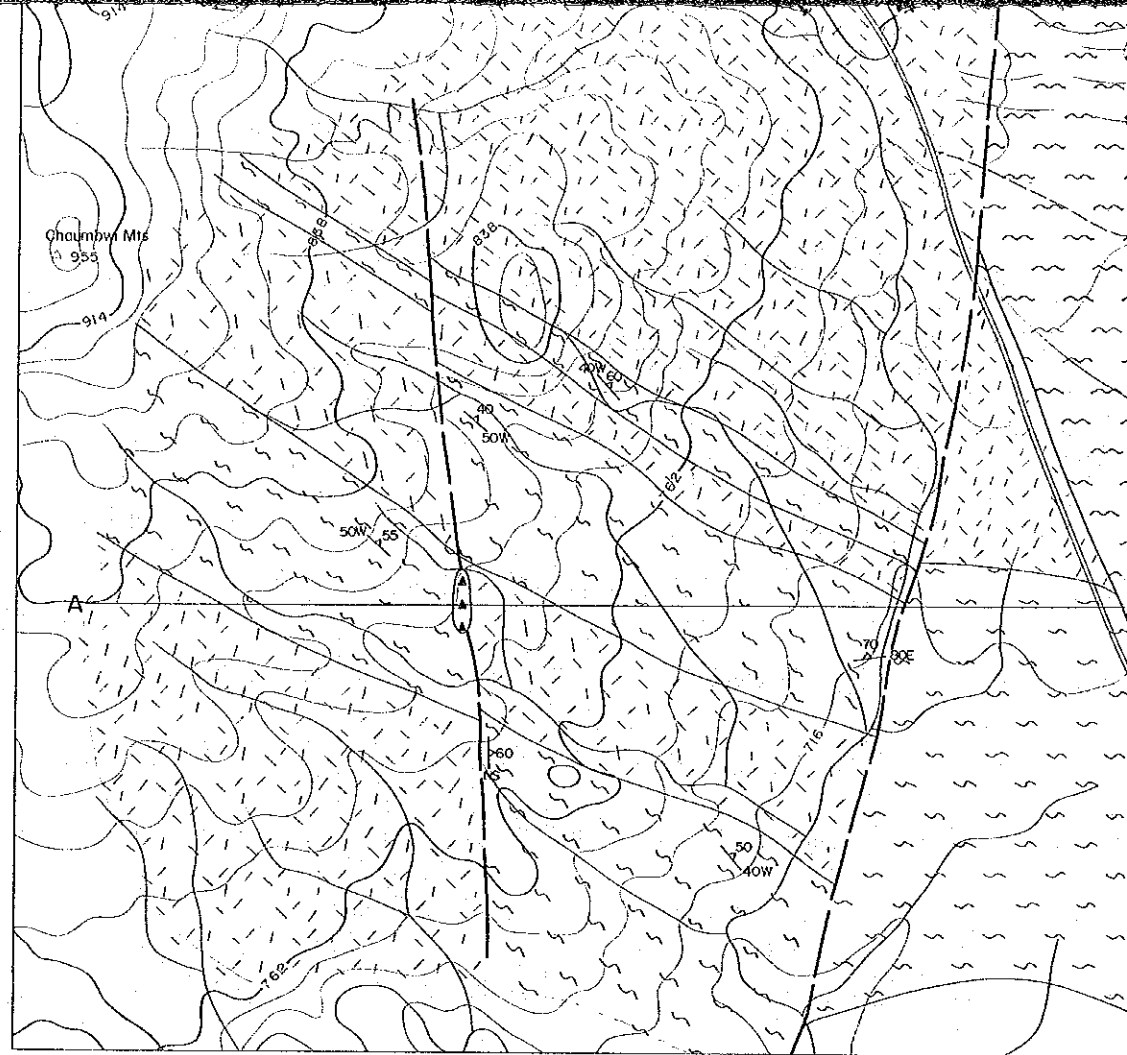
A - A Section  
(W - E)



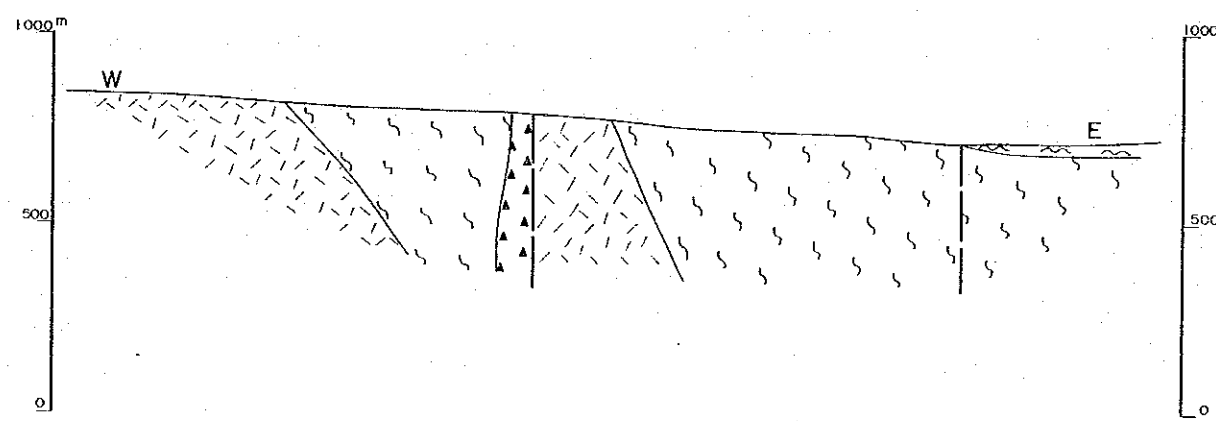
Scale 1 : 10,000

LEGEND

- Drift
  - Sideritic carbonatite
  - Ankeritic sövite
  - Sövite
  - Carbonate-Silicate rock
  - Feldspathic breccia, agglomerate
  - Phonolitic breccia
  - Fenitized gneiss
  - Trachyte
  - Phonolite
  - Nephelinite
  - Syenite (Pulaskite)
  - Nepheline syenite (Foyaitite)
  - Hornblende biotite-gneiss
  - Granulite and gneissose granite
  - Dolomitic marble
  - Dolerite
  - Granite
  - Perthosite
  - Biotite-metapyroxenite, metagabbro & biotite
  - Meta conglomerate
  - Green pyroxene skarn
  - Dykes and plugs
- T - Trachyte  
P - Phonolite  
N - Nephelinite  
MF - Microfoyoite  
S - Sölvbergite  
I - Ijolite  
D - Dolerite  
M - Monchiquite  
A - Aplite



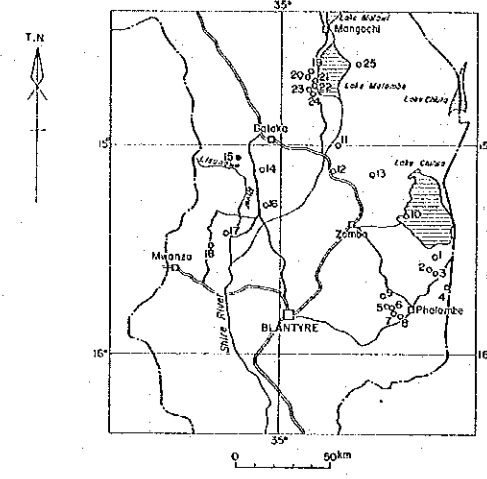
A - A Section  
(W-E)



THE CHILWA ALKALINE AREA,  
REPUBLIC OF MALAWI  
(PHASE I)

国際協力事業団  
16331  
国書資料室蔵

GEOLOGICAL MAP AND PROFILE  
OF THE Chaumbwi (15)

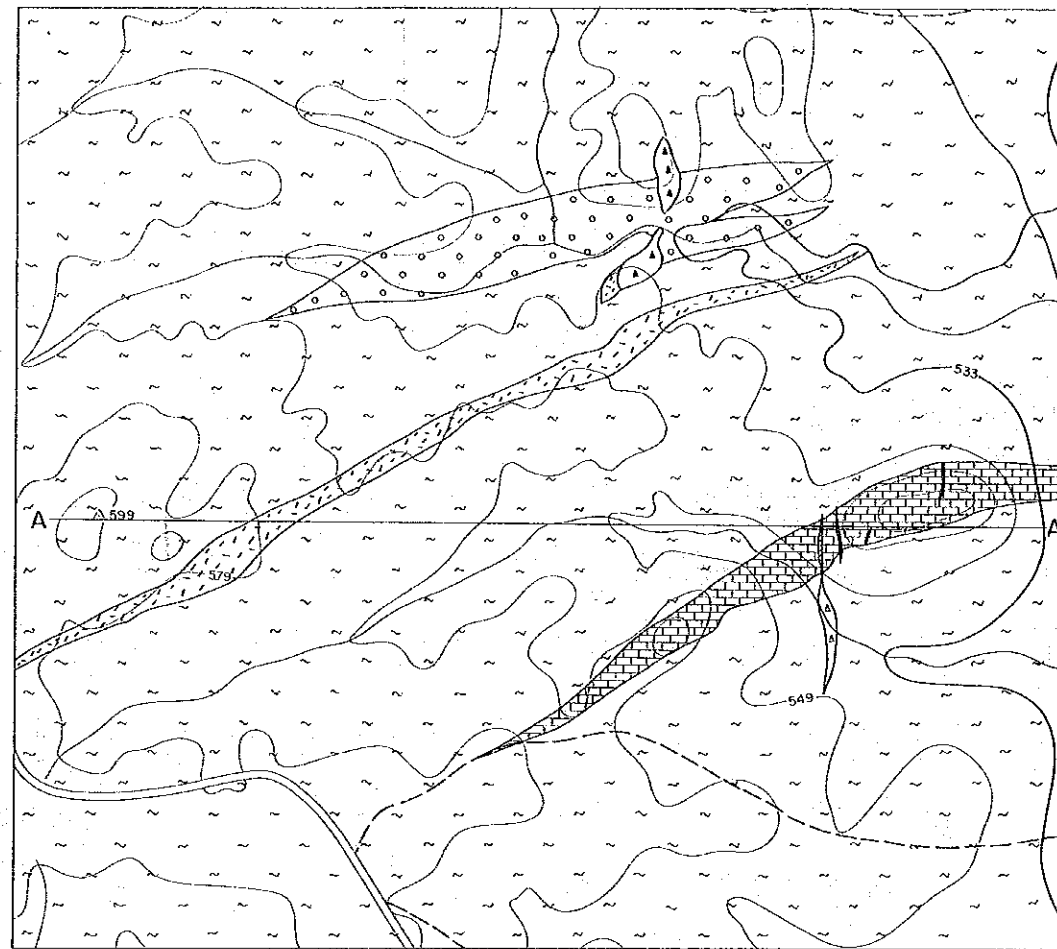


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FEBRUARY 1987

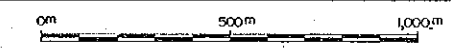
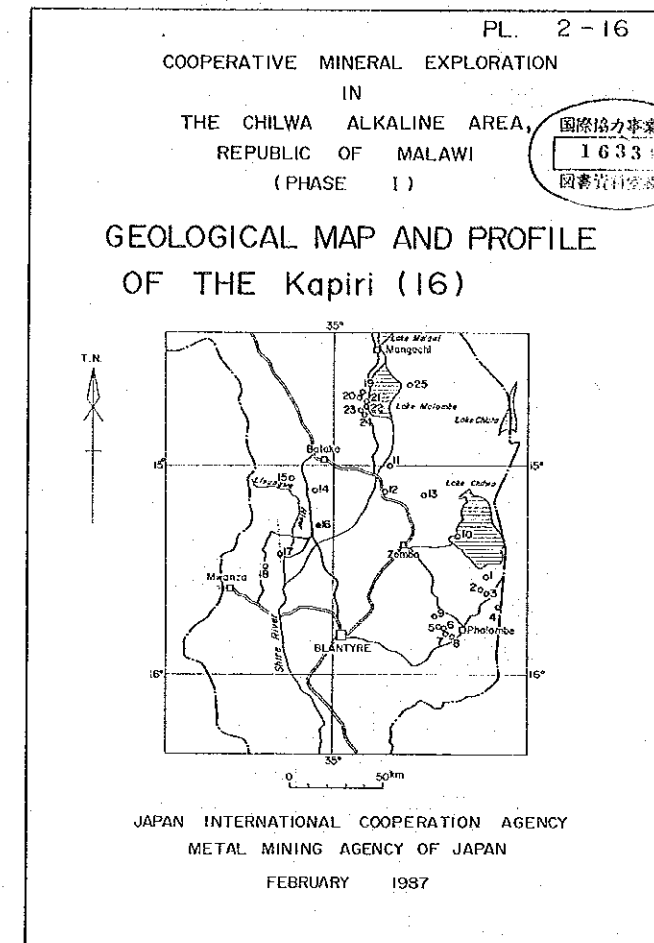
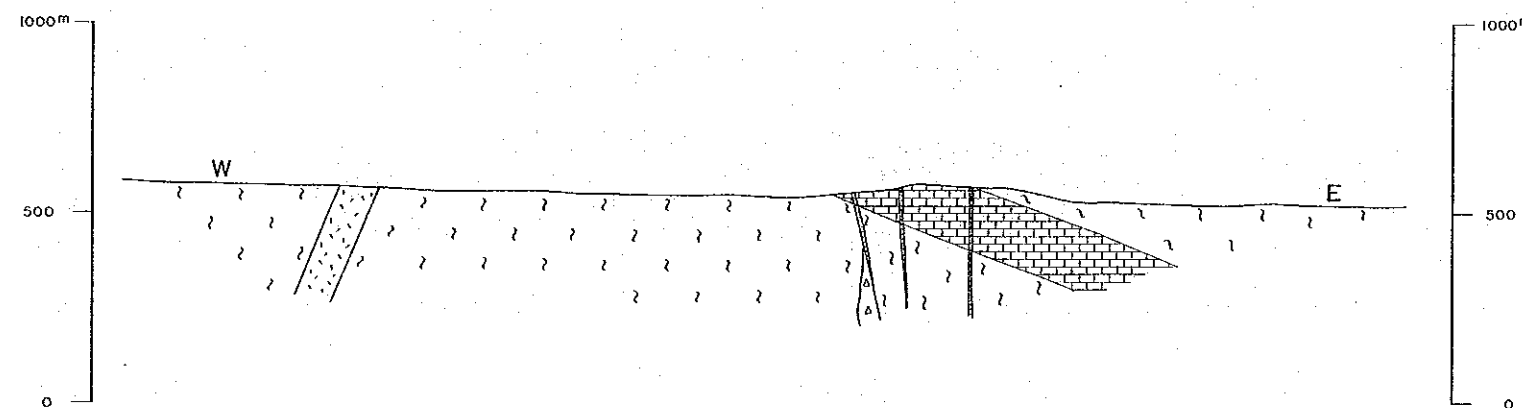
Scale 1 : 10,000

LEGEND

- Drift
  - Sideritic carbonatite
  - Ankeritic sövite
  - Sövite
  - Carbonate-Silicate rock
  - Feldspathic breccia, agglomerate
  - Phonolitic breccia
  - Fertilized gneiss
  - Trachyte
  - Phonolite
  - Nephelinite
  - Syenite (Fulaskite)
  - Nepheline syenite (Foyaité)
  - Hornblende biotite-gneiss
  - Granulite and gneissose granite
  - Dolomitic marble
  - Dolerite
  - Granite
  - Perthosite
  - Biotite-metapyroxenite, metagabbro & biotite
  - Meta conglomerate
  - Green pyroxene skarn
  - Dykes and plugs
- T - Trachyte  
P - Phonolite  
N - Nephelinite  
MF - Microfoyaite  
S - Sölvbergite  
I - Ijolite  
D - Dolerite  
M - Monchiquite  
A - Aplitite
- Fault  
--- Dip of foliation of gneiss



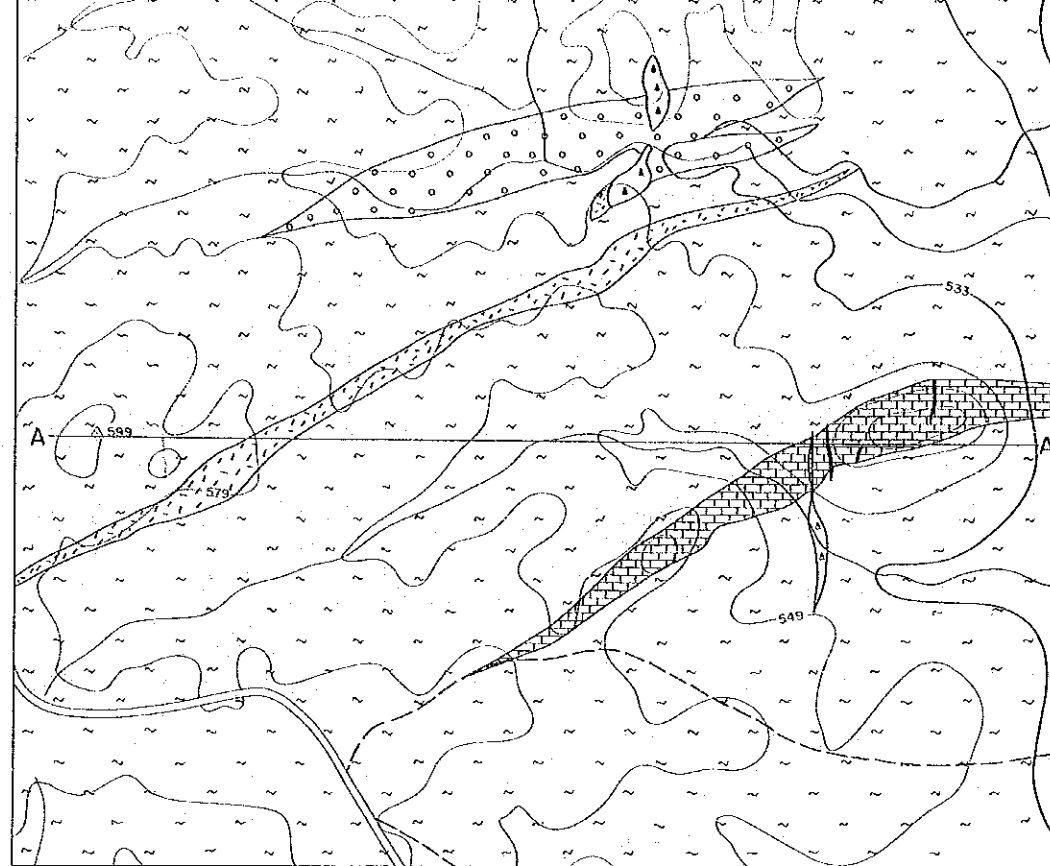
A-A' Section  
(W-E)



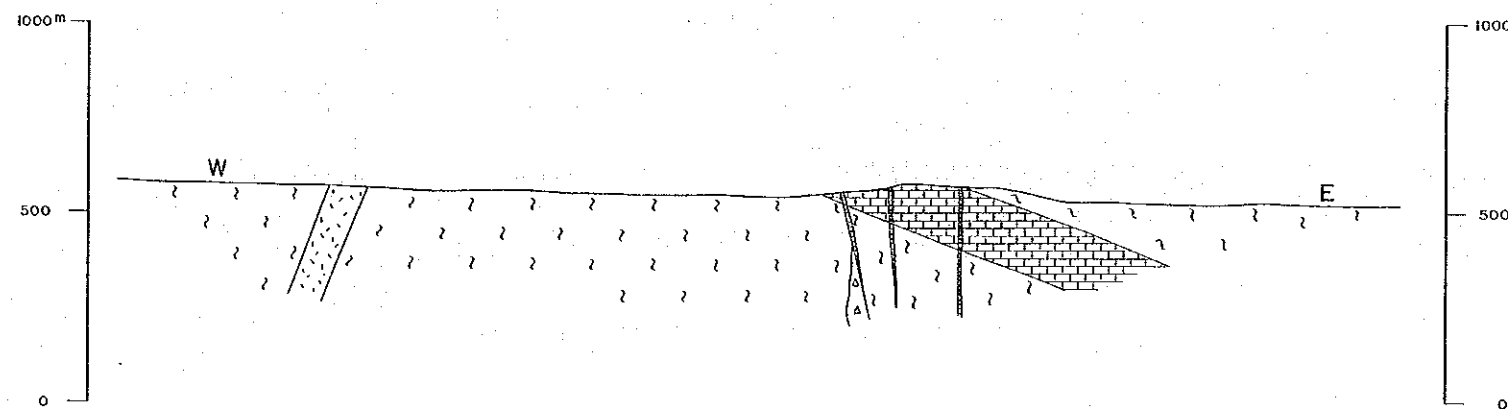
Scale 1 : 10,000

LEGEND

- Drift
  - Sideritic carbonatite
  - Ankeritic sövite
  - Sövite
  - Carbonate-Silicate rock
  - Feldspathic breccia, agglomerate
  - Phonolitic breccia
  - Fenitized gneiss
  - Trachyte
  - Phonolite
  - Nephelinite
  - Syenite (Pulaskite)
  - Nepheline syenite (Foyaite)
  - Hornblende biotite-gneiss
  - Granulite and gneissose granite
  - Dolomitic marble
  - Dolerite
  - Granite
  - Perthosite
  - Biotite-metapyroxenite, metagabbro & biotite
  - Meta conglomerate
  - Green pyroxene skarn
  - Dykes and plugs
- T-Trachyte  
 P-Phonolite  
 N-Nephelinite  
 MF-Microfoyaite  
 S-Sövsbergite  
 I-Ijolite  
 D-Dolerite  
 M-Monchiquite  
 A-Aplite



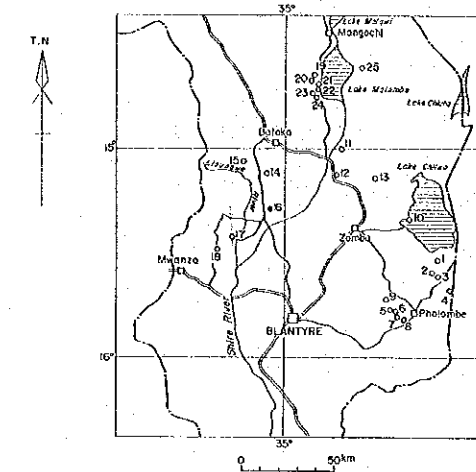
A-A' Section  
(W-E)



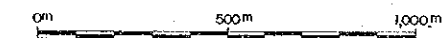
IN  
THE CHILWA ALKALINE AREA,  
REPUBLIC OF MALAWI  
(PHASE I)

国際協力事業団  
1633  
調査報告書

GEOLOGICAL MAP AND PROFILE  
OF THE Kapiri (16)



JAPAN INTERNATIONAL COOPERATION AGENCY  
METAL MINING AGENCY OF JAPAN  
FEBRUARY 1987

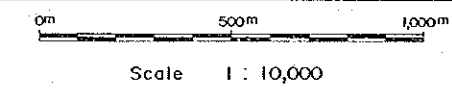
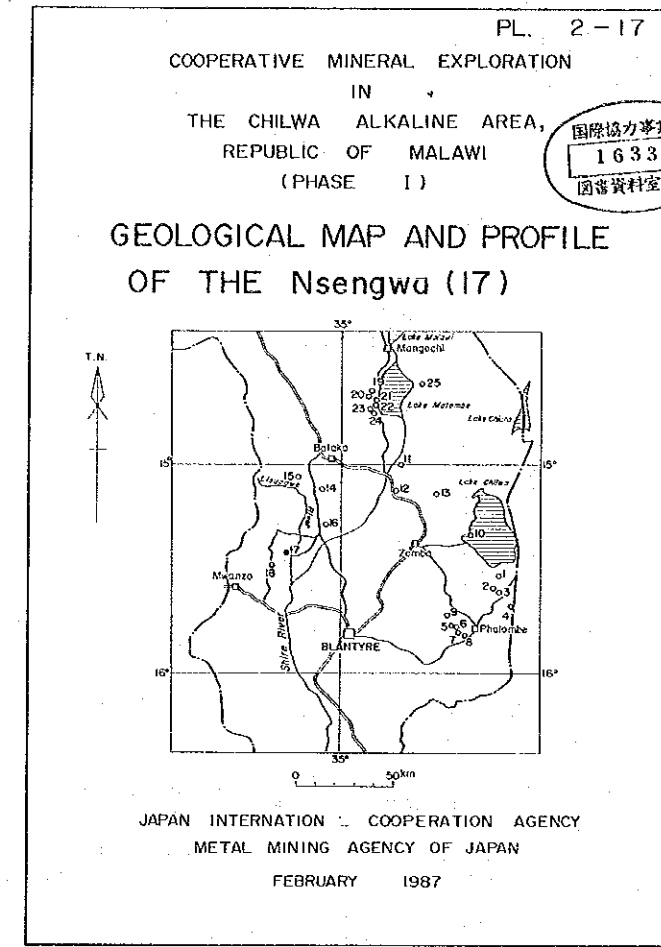
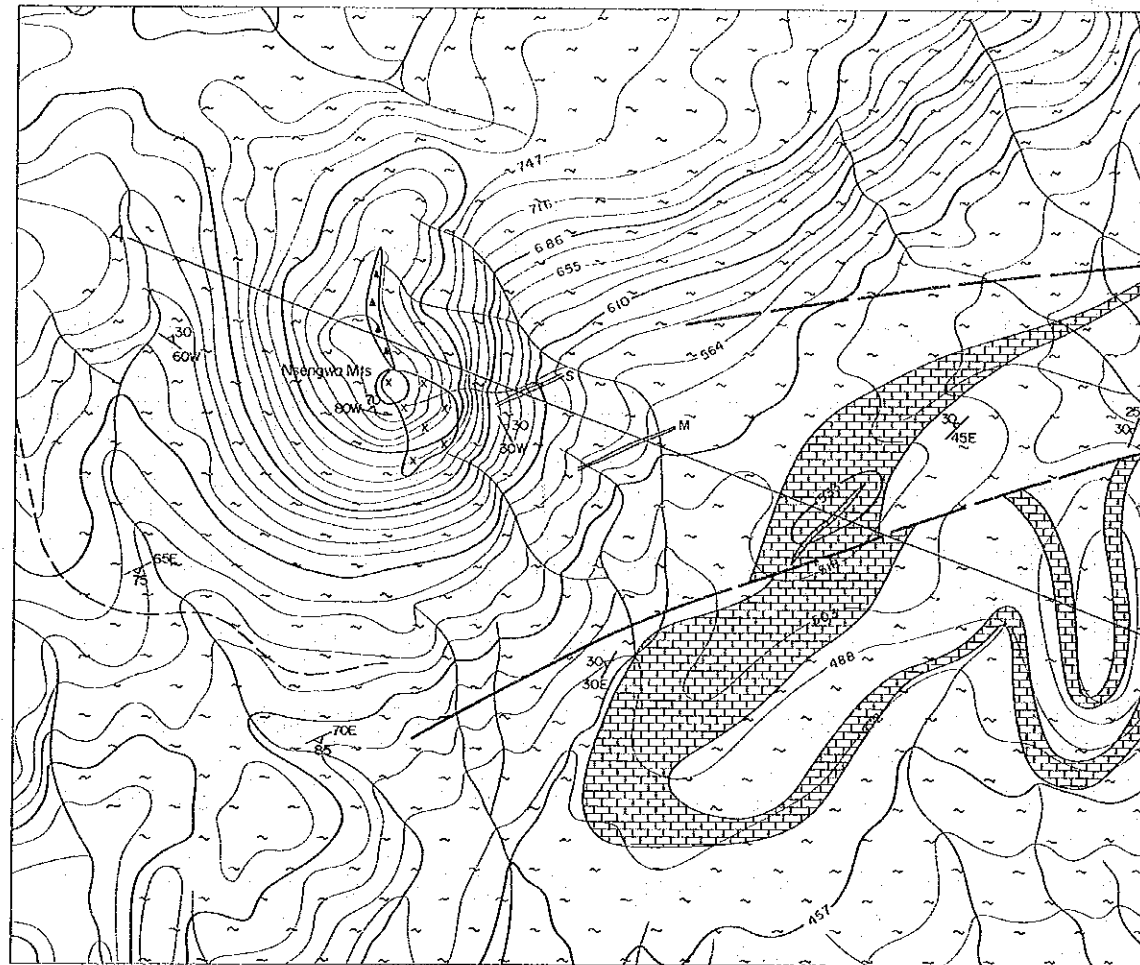


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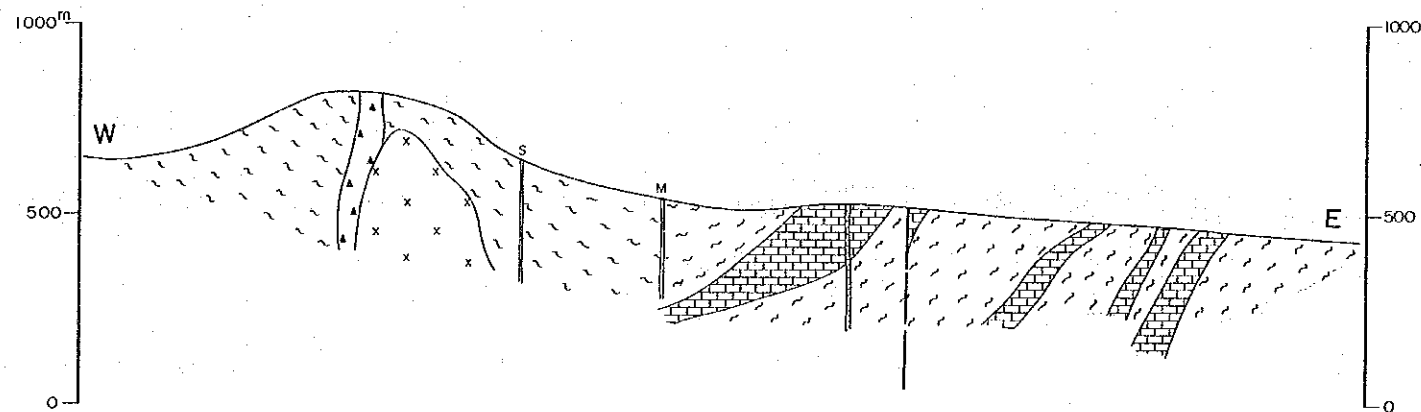
LEGEND

- Drift
- Sideritic carbonatite
- Ankeritic sövite
- Sövite
- Carbonate-Silicote rock
- Feldspathic breccia, agglomerate
- Phonolitic breccia
- Fertilized gneiss
- Trachyte
- Phonolite
- Nephelinite
- Syenite (Pulaskite)
- Nepheline syenite (Foyaite)
- Hornblende biotite-gneiss
- Granulite and gneissose granite
- Dolomitic marble
- Dolerite
- Granite
- Perthosite
- Biotite-metapyroxene, metagabbro & biotite
- Meta conglomerate
- Green pyroxene skarn
- Dykes and plugs T-Trachyte  
P-Phonolite  
N-Nephelinite  
MF-Microfoyaite  
S-Sülsbergite  
I-Ijolite  
D-Dolerite  
M-Monchiquite  
A-Aplite

- Fault
- Dip of foliation of gneiss

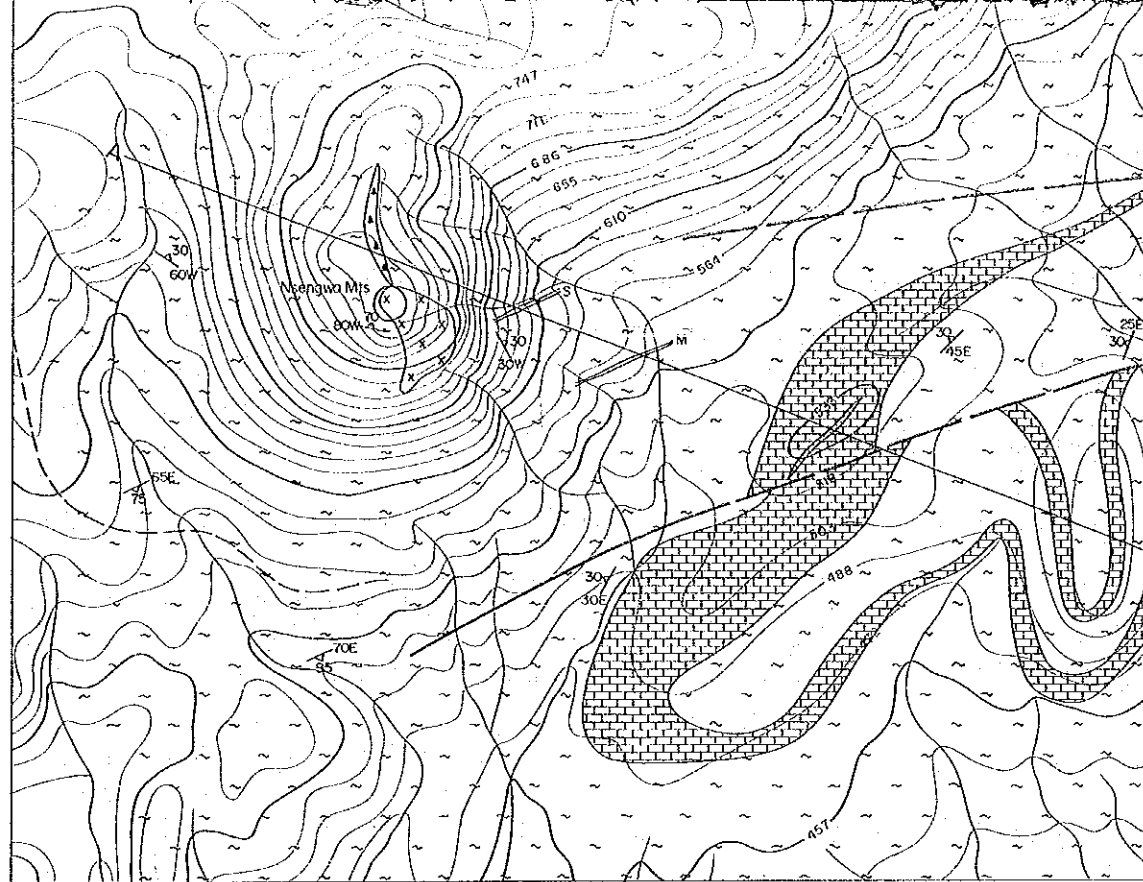


**A-A' Section  
(N70W)**



**LEGEND**

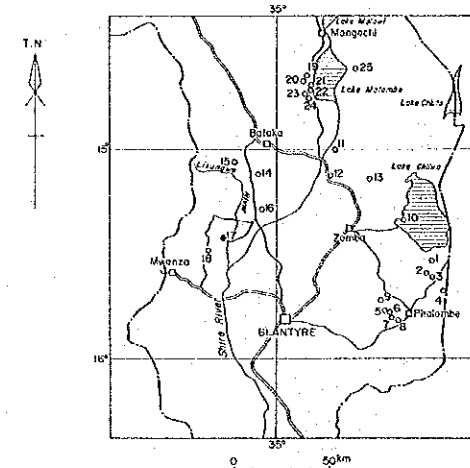
- |  |   |
|--|---|
|  | Drift   |
|  | Sideritic carbonatite                         |
|  | Ankeritic sövite                              |
|  | Sövite  |
|  | Carbonate-silicate rock                       |
|  | Feldspathic breccia, agglomerate              |
|  | Phonolitic breccia                            |
|  | Fenitized gneiss                              |
|  | Trachyte                                      |
|  | Phonolite                                     |
|  | Nephelinite                                   |
|  | Syenite (Pulaskite)                           |
|  | Nepheline syenite (Foyaité)                   |
|  | Hornblende biotite-gneiss                     |
|  | Granulite and gneissose granite               |
|  | Dolomitic marble                              |
|  | Dolerite                                      |
|  | Granite                                       |
|  | Perthosite                                    |
|  | Biotite-metaproxenite, metagabbro & biotitite |
|  | Meta conglomerate                             |
|  | Green pyroxene skarn                          |
|  | Dykes and plugs                               |
- 
- |    |              |
|----|--------------|
| T  | Trachyte     |
| P  | Phonolite    |
| N  | Nephelinite  |
| MF | Microfoyaite |
| S  | Sölvbergite  |
| I  | Ijolite      |
| D  | Dolerite     |
| M  | Monchiquite  |
| A  | Aplite       |



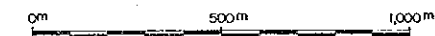
THE CHILWA ALKALINE AREA,  
REPUBLIC OF MALAWI  
(PHASE I)

国際協力事業団  
16331  
図書資料室蔵書

GEOLOGICAL MAP AND PROFILE  
OF THE Nsengwa (17)



JAPAN INTERNATIONAL COOPERATION AGENCY  
METAL MINING AGENCY OF JAPAN  
FEBRUARY 1987

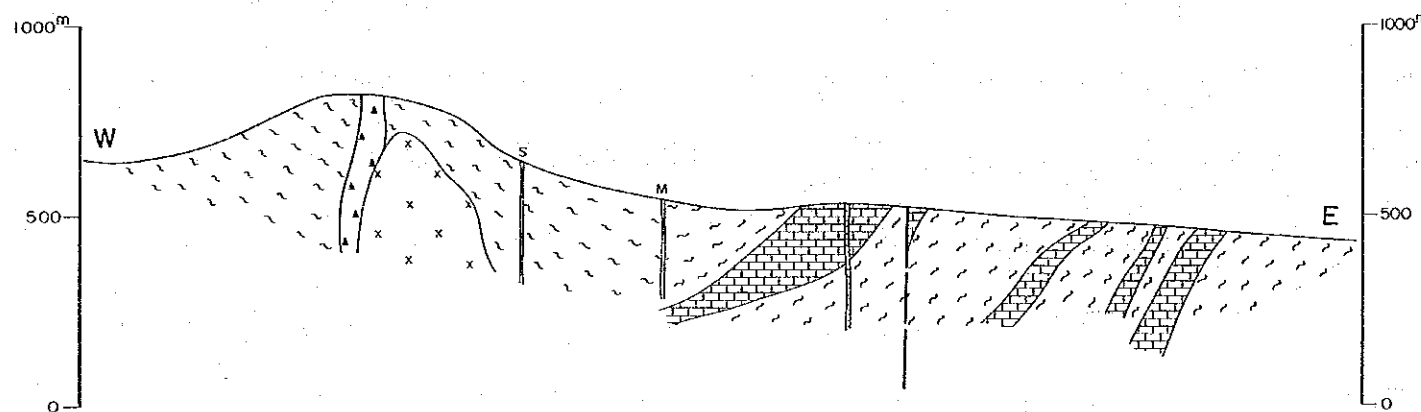


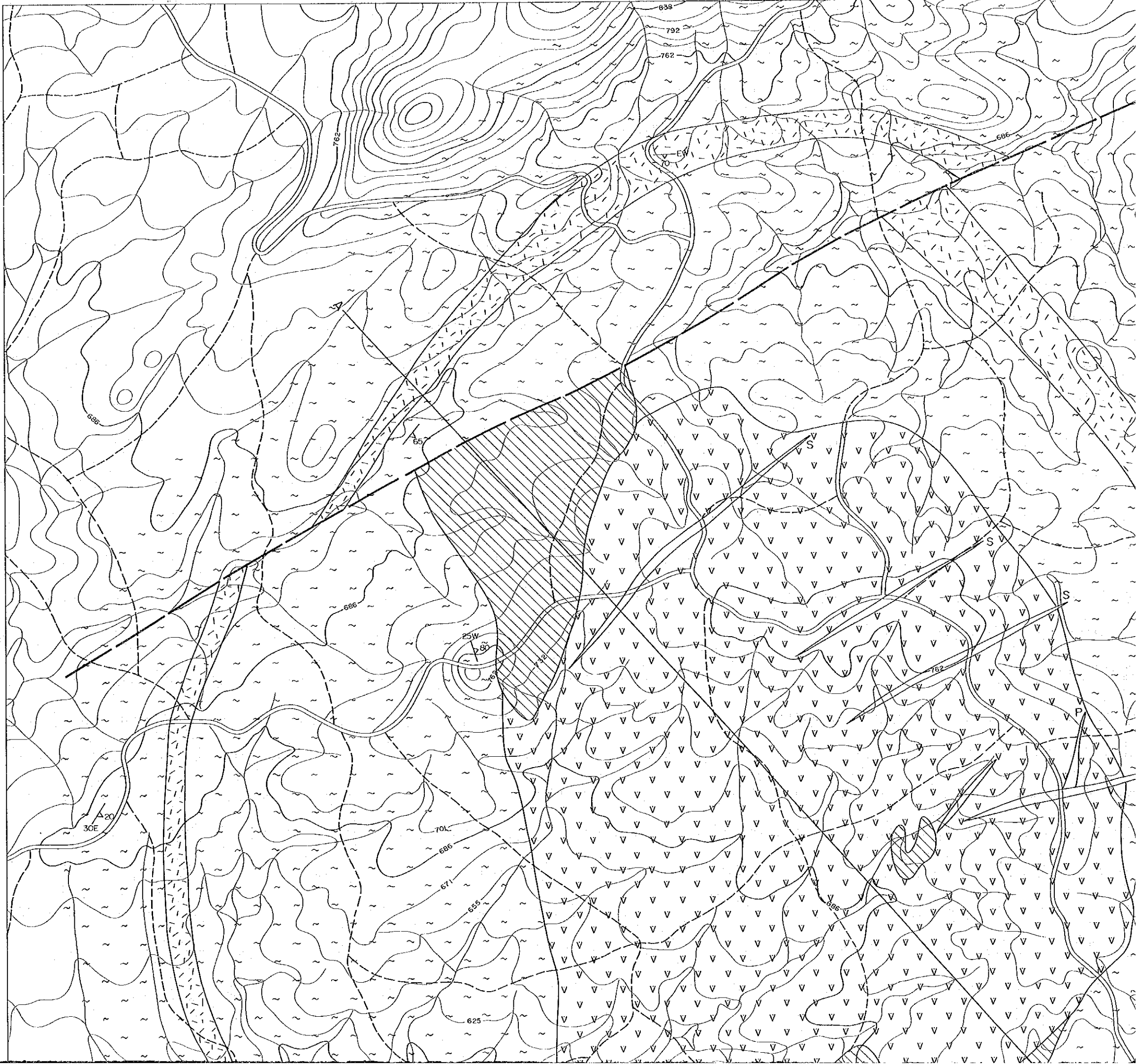
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LEGEND

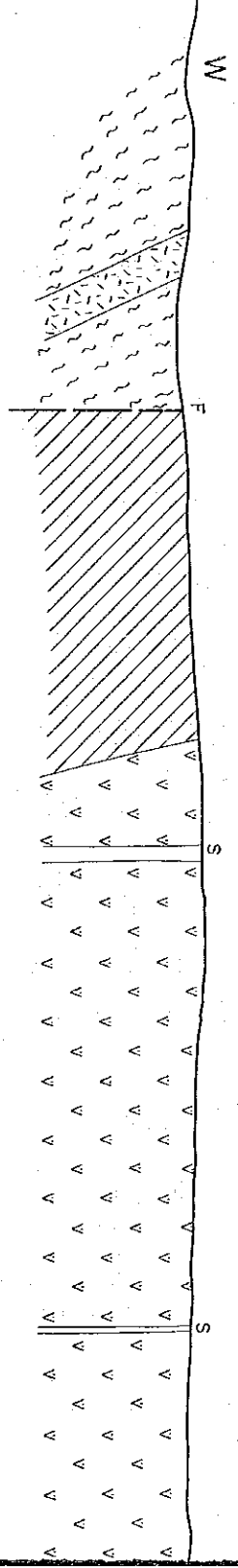
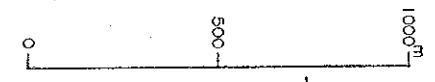
- Drift
  - Sideritic carbonatite
  - Ankeritic sövite
  - Sövite
  - Carbonate-Silicate rock
  - Feldspathic breccia, agglomerate
  - Phonolitic breccia
  - Fenitized gneiss
  - Trochyte
  - Phonolite
  - Nephelinite
  - Syenite (Pulaskite)
  - Nepheline syenite (Foyaite)
  - Hornblende biotite-gneiss
  - Granulite and gneissose granite
  - Dolomitic marble
  - Dolerite
  - Granite
  - Perthosite
  - Biotite-metopyroxenite, metagabbro & biotilite
  - Meta conglomerate
  - Green pyroxene skarn
  - Dykes and plugs
- T - Trochyte
  - P - Phonolite
  - N - Nephelinite
  - MF - Microfoyaite
  - S - Sölvbergite
  - I - Ijolite
  - D - Dolerite
  - M - Monchiquite
  - A - Aplite
- Fault
  - Dip of foliation of gneiss

A-A' Section  
(N70W)

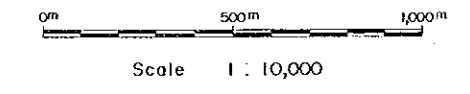
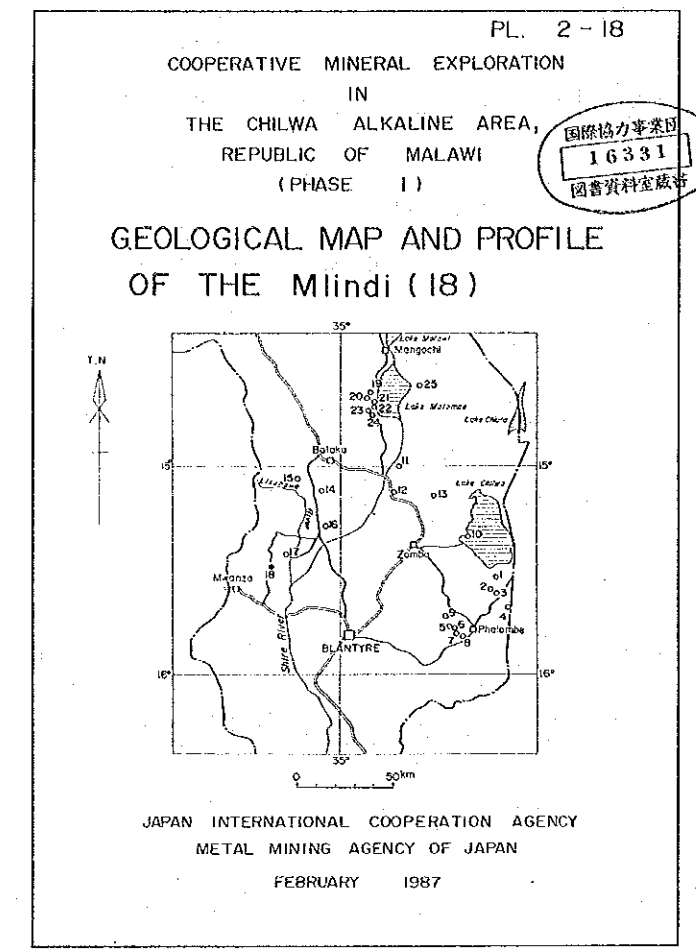
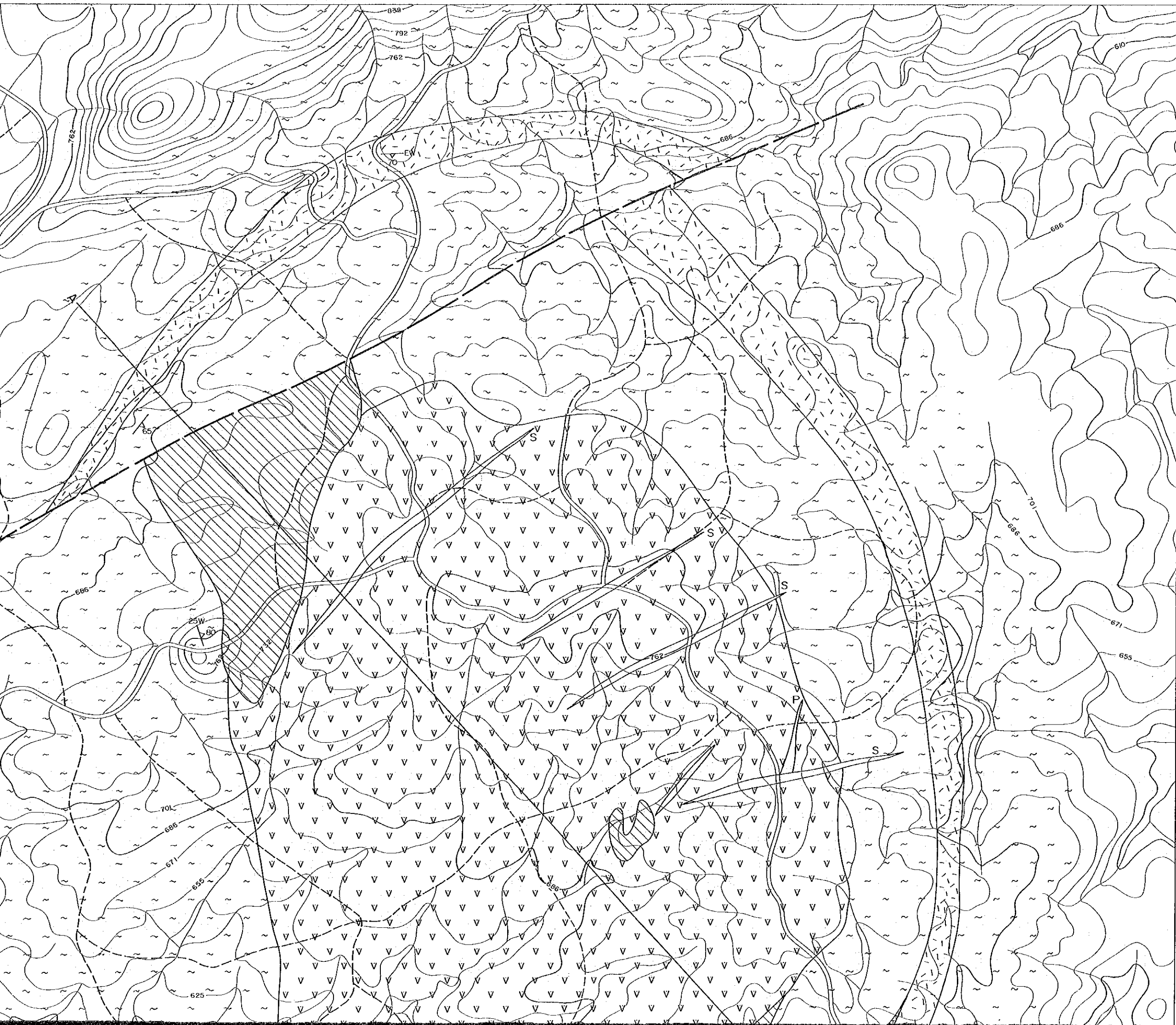




A-A' Section  
(N45W)



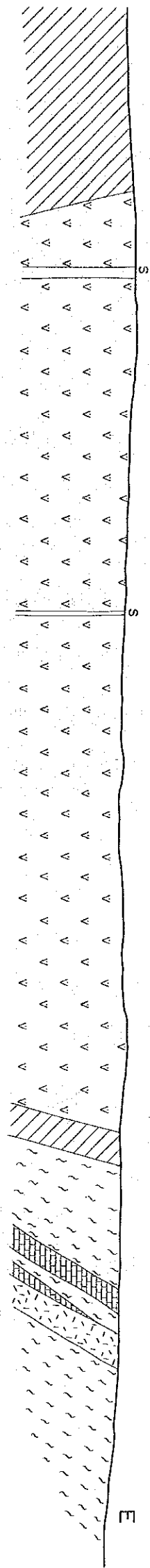




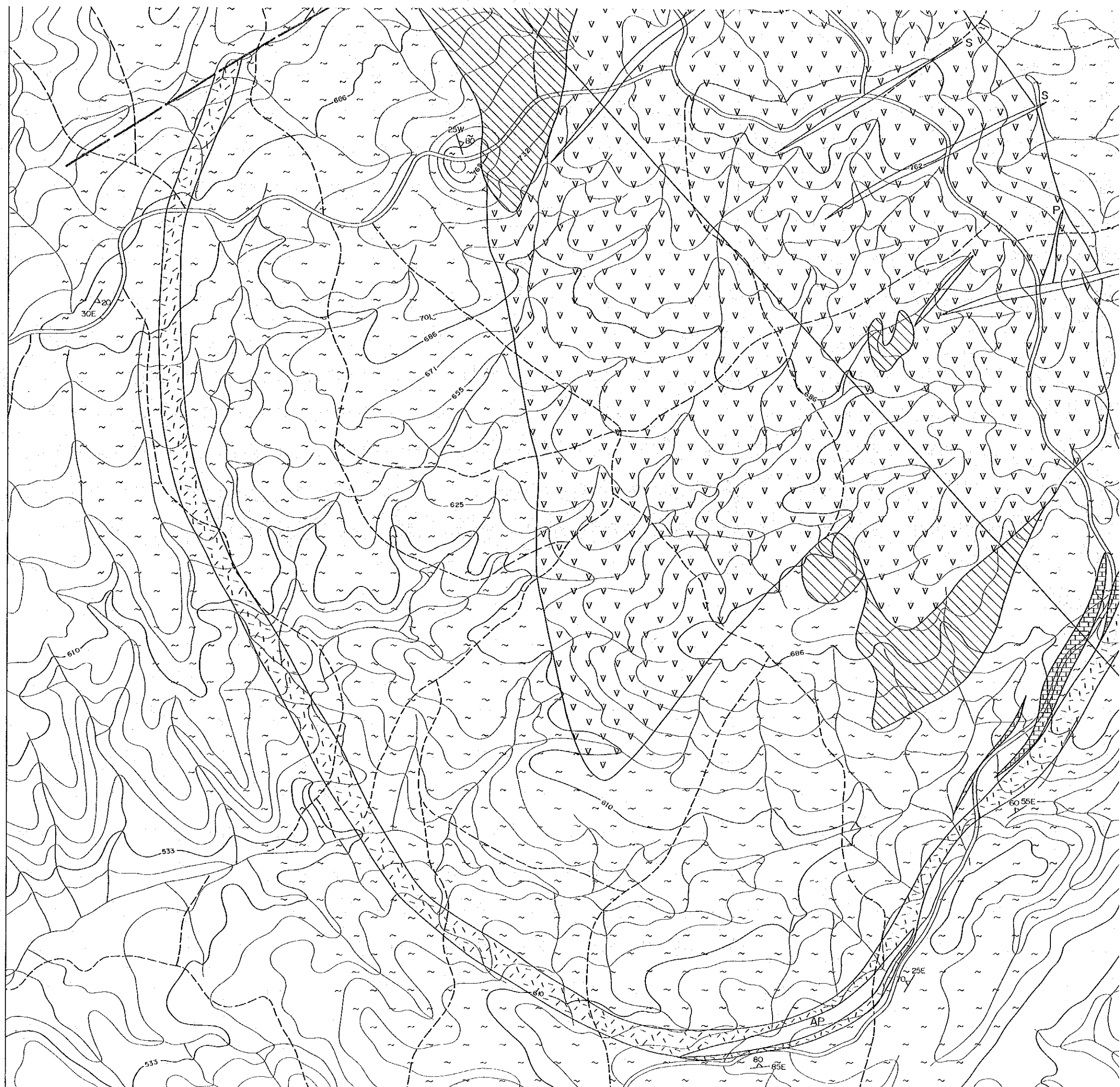
**LEGEND**

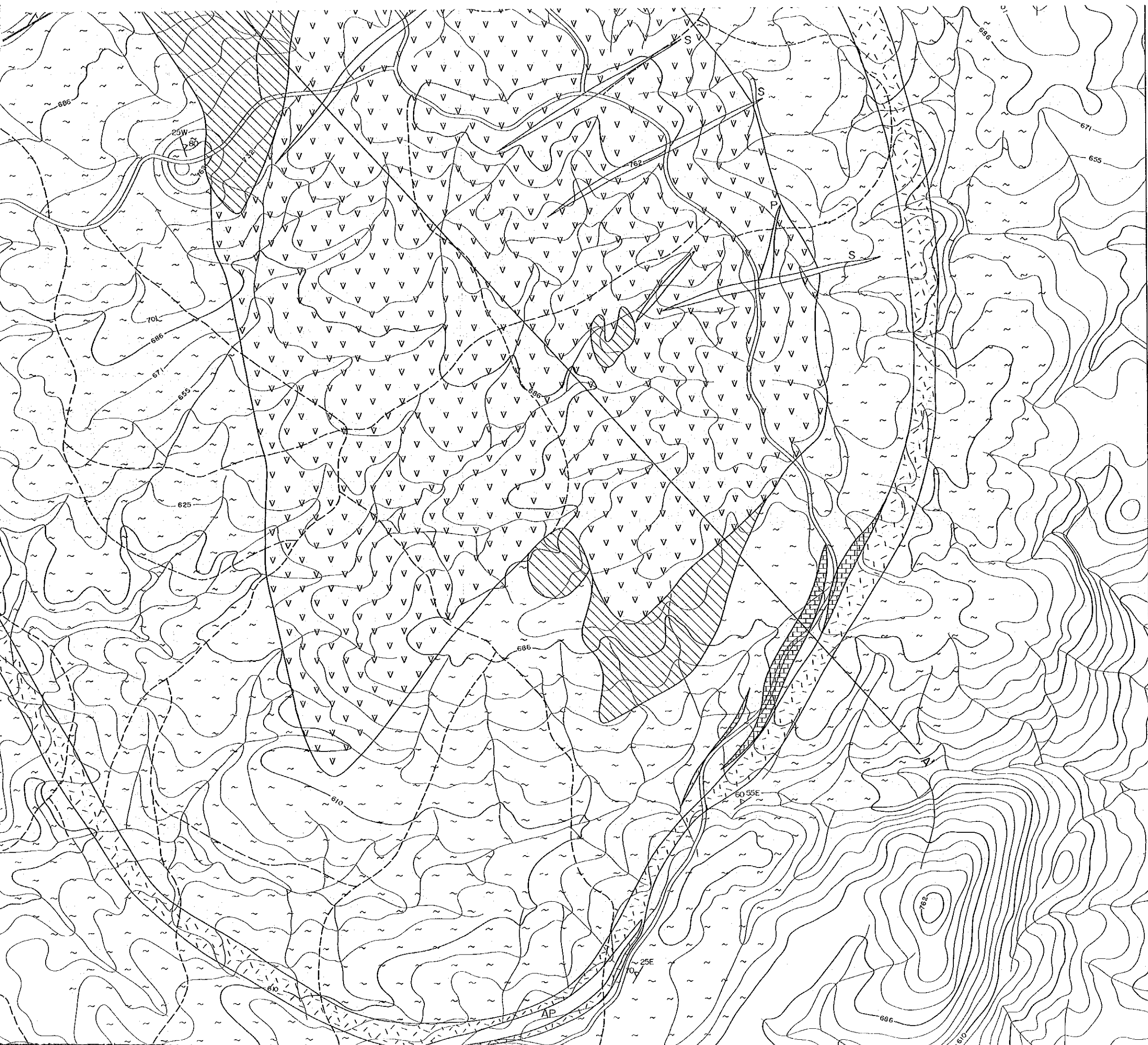
- |  |   |
|--|---|
|  | Drift                                       |
|  | Sideritic carbonatite                       |
|  | Ankeritic sövite                            |
|  | Sövite                                      |
|  | Carbonate-Silicate rock                     |
|  | Feldspathic breccia, agglomerate            |
|  | Phonolitic breccia                          |
|  | Fenitized gneiss                            |
|  | Trochyte                                    |
|  | Phonolite                                   |
|  | Nephelinite                                 |
|  | Syenite (Pulaskite)                         |
|  | Nepheline syenite (Foyaitite)               |
|  | Hornblende biotite-gneiss                   |
|  | Granulite and gneissose granite             |
|  | Dolomitic marble                            |
|  | Dolerite                                    |
|  | Granite                                     |
|  | Perthosite                                  |
|  | Biotite-metaproxenite, megagabbro & biotite |
|  | Meta conglomerate                           |
|  | Green pyroxene skarn                        |
|  | Dykes and plugs                             |
- 
- |    |              |
|----|--------------|
| T  | Trachyte     |
| P  | Phonolite    |
| N  | Nephelinite  |
| MF | Microfoyaite |
| S  | Sölvbergite  |
| I  | Ijolite      |
| D  | Dolerite     |
| M  | Monchiquite  |
| A  | Aplite       |
- 
- |  |                            |
|--|----------------------------|
|  | Fault                      |
|  | Dip of foliation of gneiss |





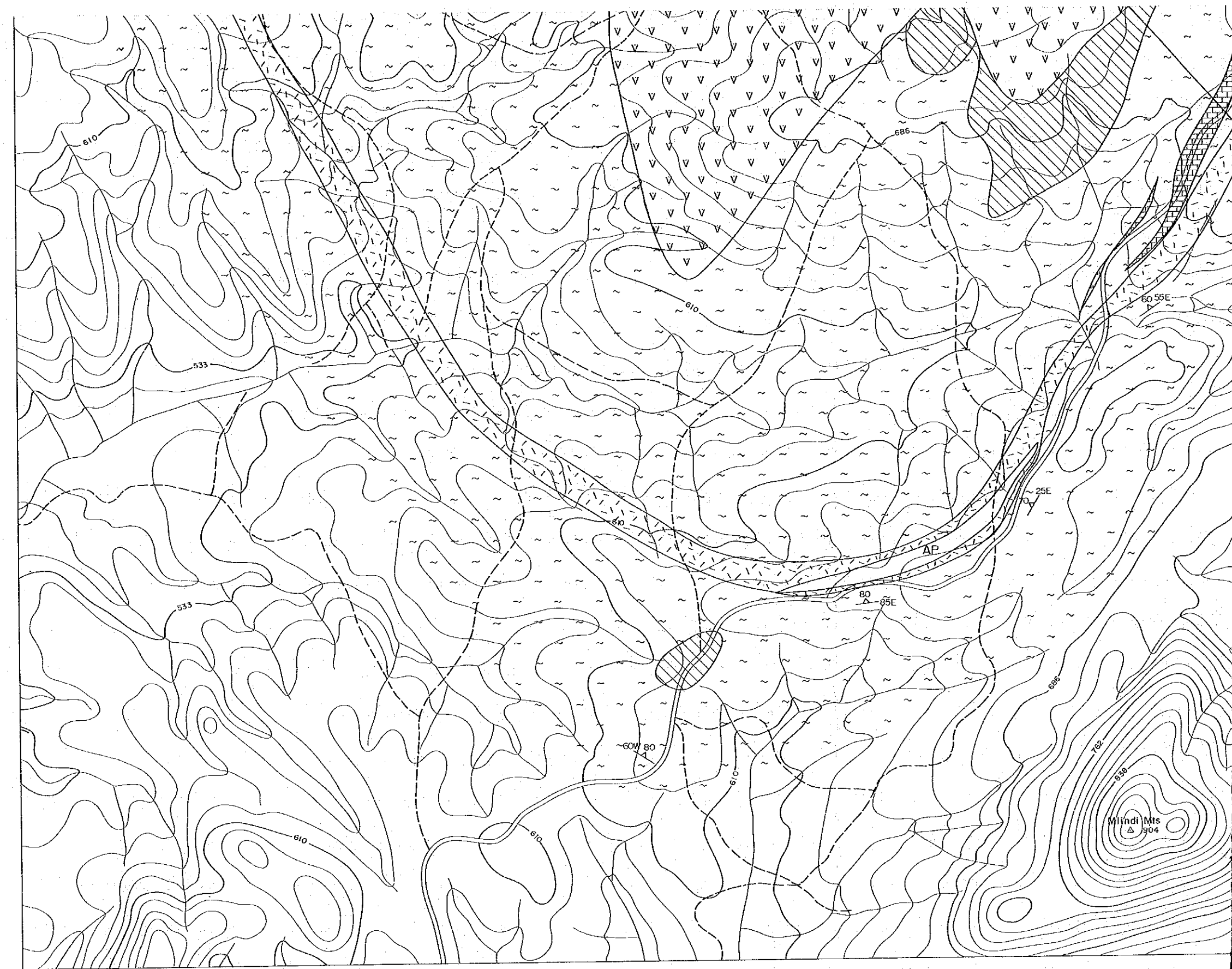
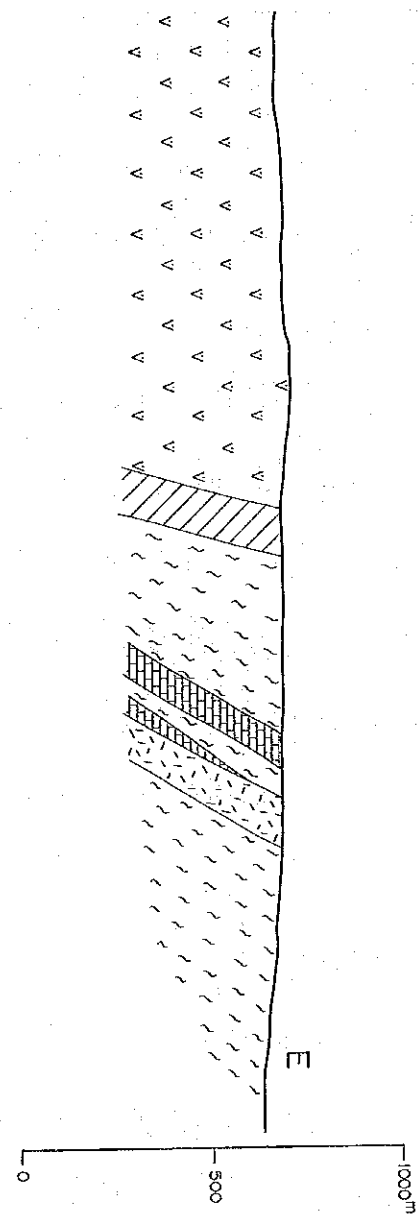
A-A' Section  
(N45W)

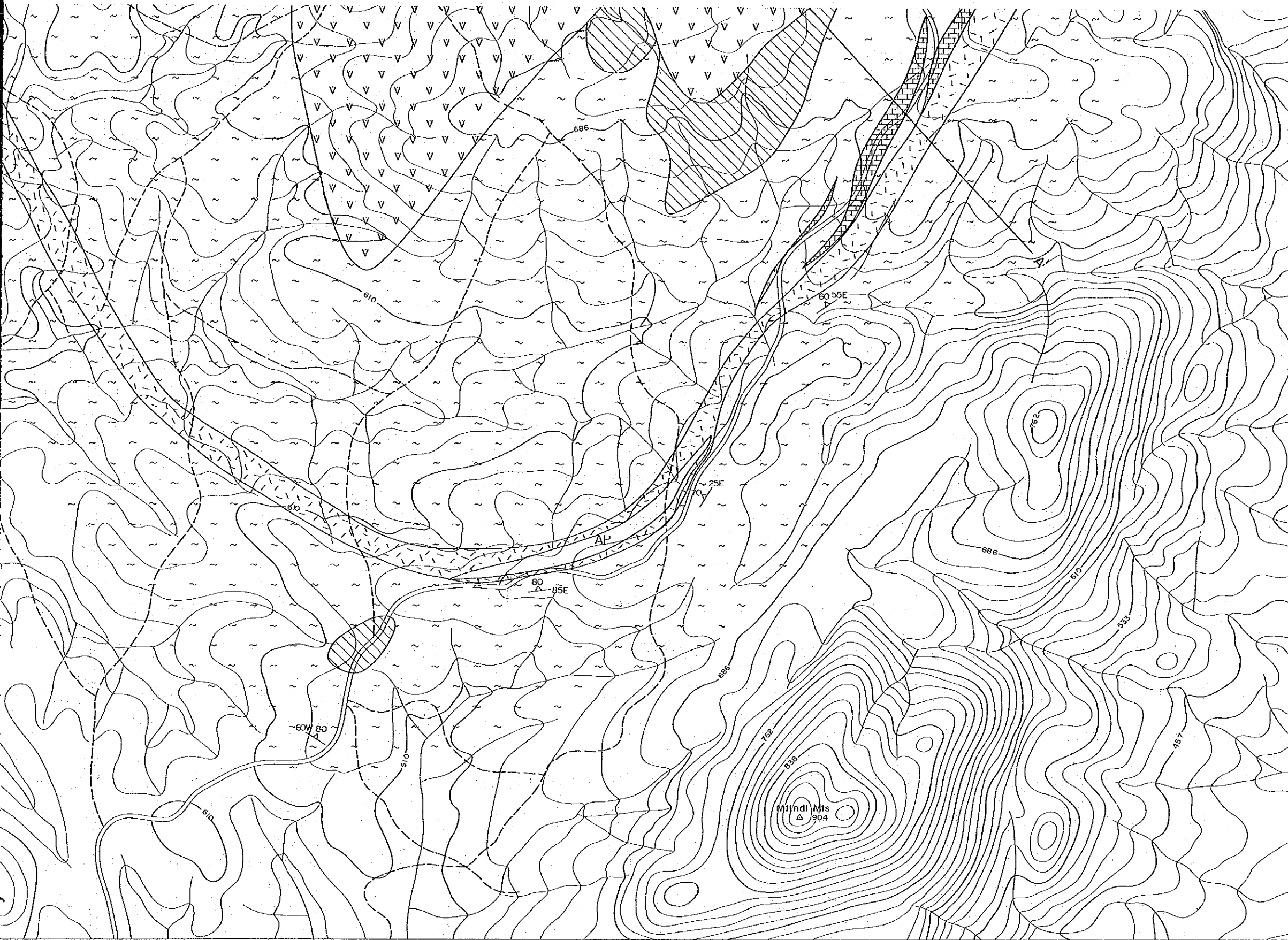




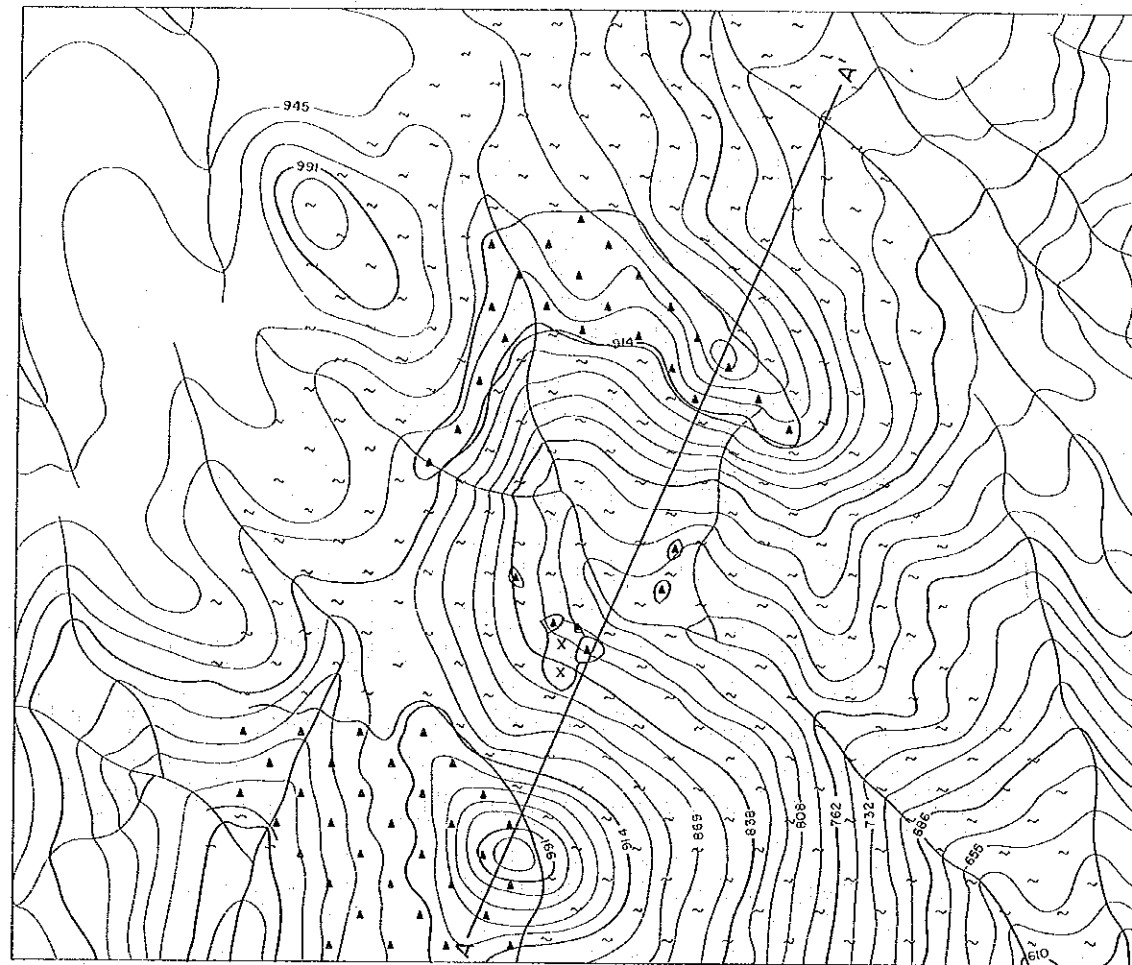
LEGEND

- Drift
  - Sideritic carbonatite
  - Ankeritic sövite
  - Sövite
  - Carbonate-Silicate rock
  - Feldspathic breccia, agglomerate
  - Phonolitic breccia
  - Fenitized gneiss
  - Trachyte
  - Phonolite
  - Nephelinite
  - Syenite (Fulaskite)
  - Nepheline syenite (Foyaitite)
  - Hornblende biotite-gneiss
  - Granulite and gneissose granite
  - Dolomitic marble
  - Dolerite
  - Granite
  - Perthosite
  - Biotite-metaproxenite, metagabbro & biotite
  - Meta conglomerate
  - Green pyroxene skarn
  - Dykes and plugs
- T - Trachyte  
 P - Phonolite  
 N - Nephelinite  
 MF - Microfoyalite  
 S - Sövsbergite  
 I - Ijolite  
 D - Dolerite  
 M - Monchiquite  
 A - Aplite
- Fault  
 Dip of foliation of gneiss

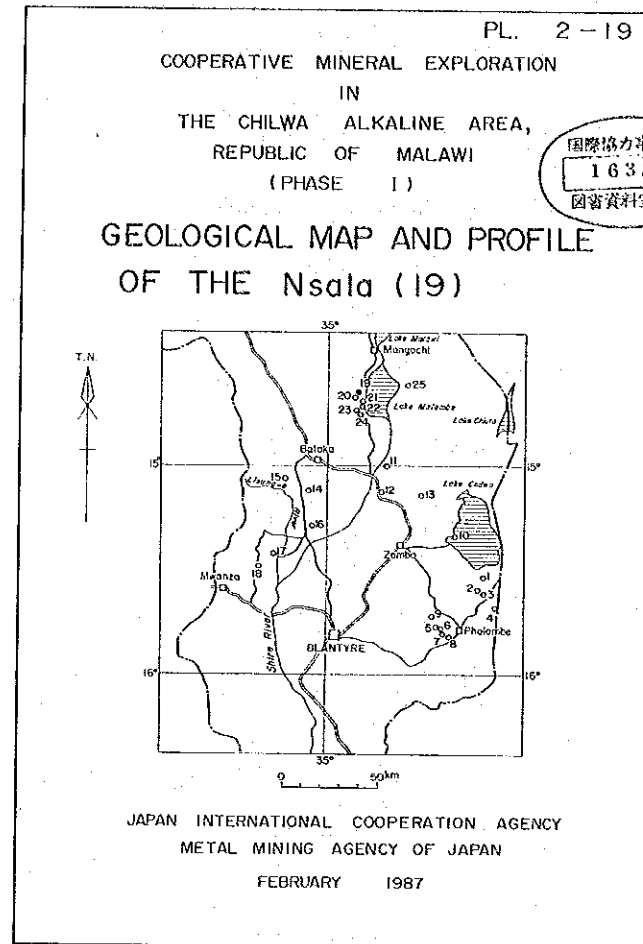
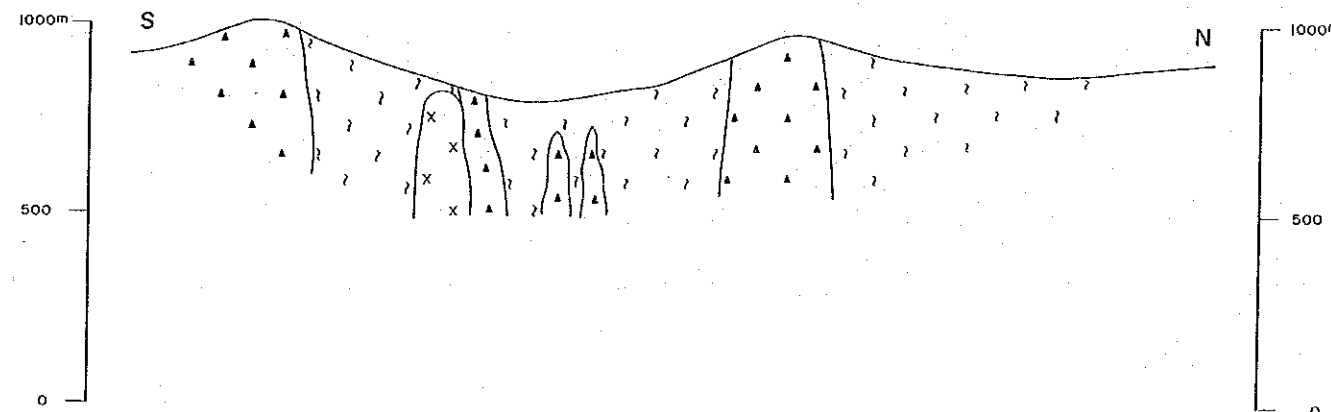








A-A' Section  
(N25°E)



0m 500m 1000m

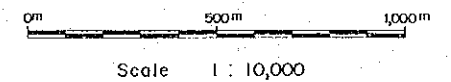
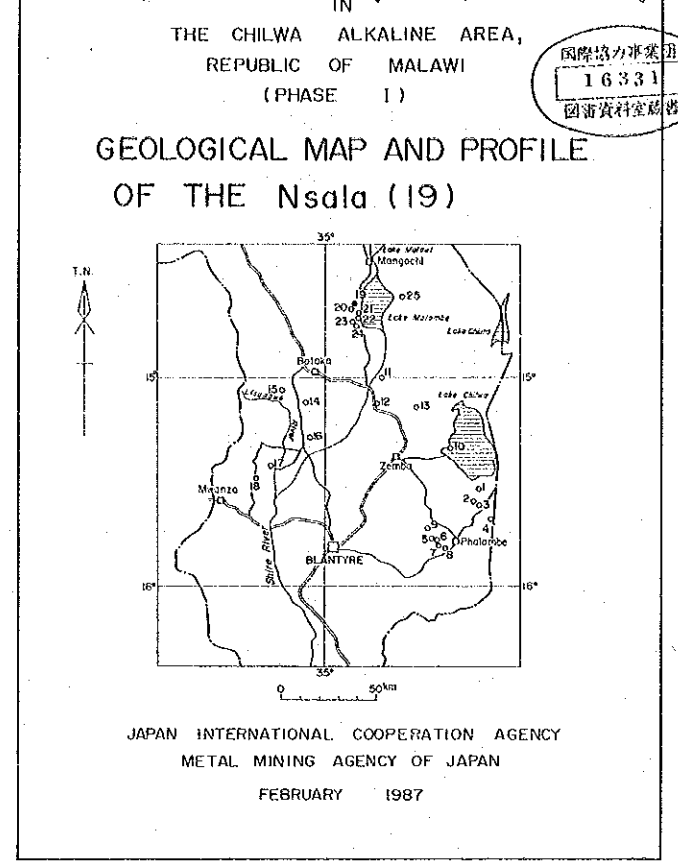
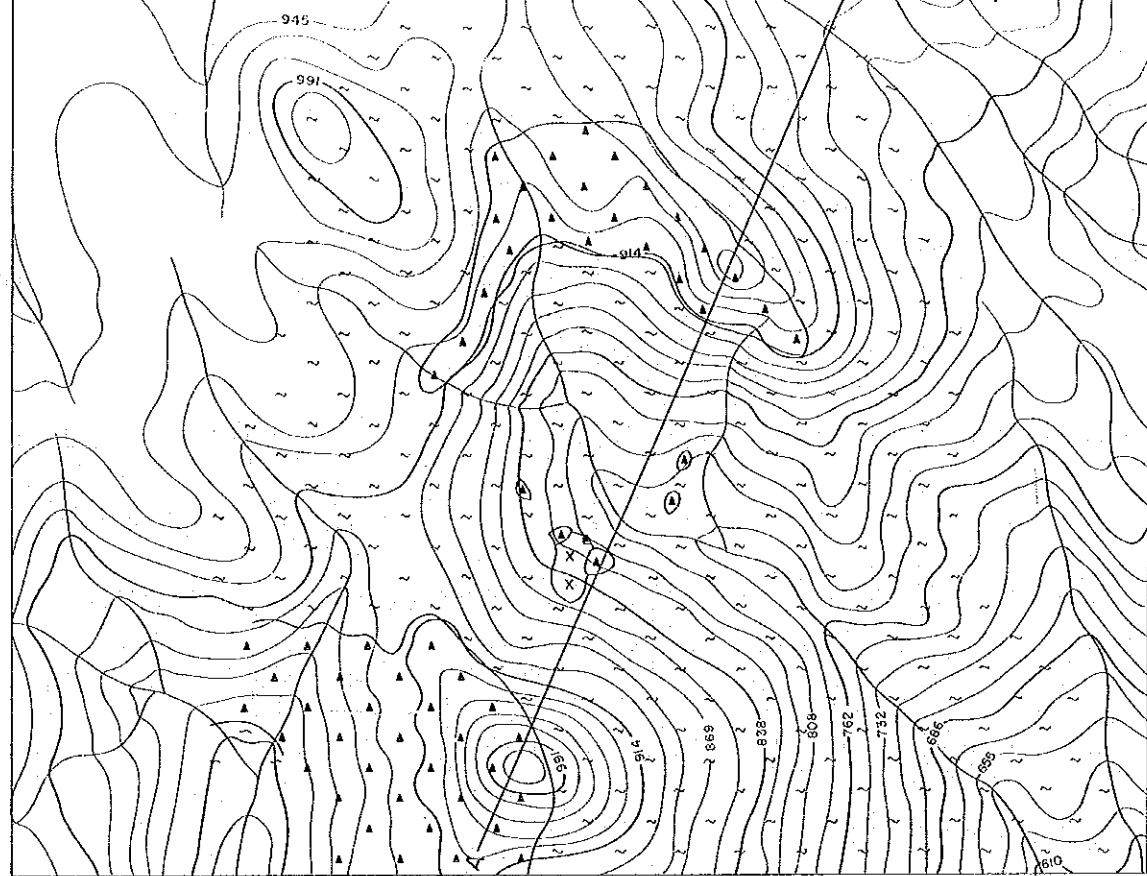
Scale 1 : 10,000

LEGEND

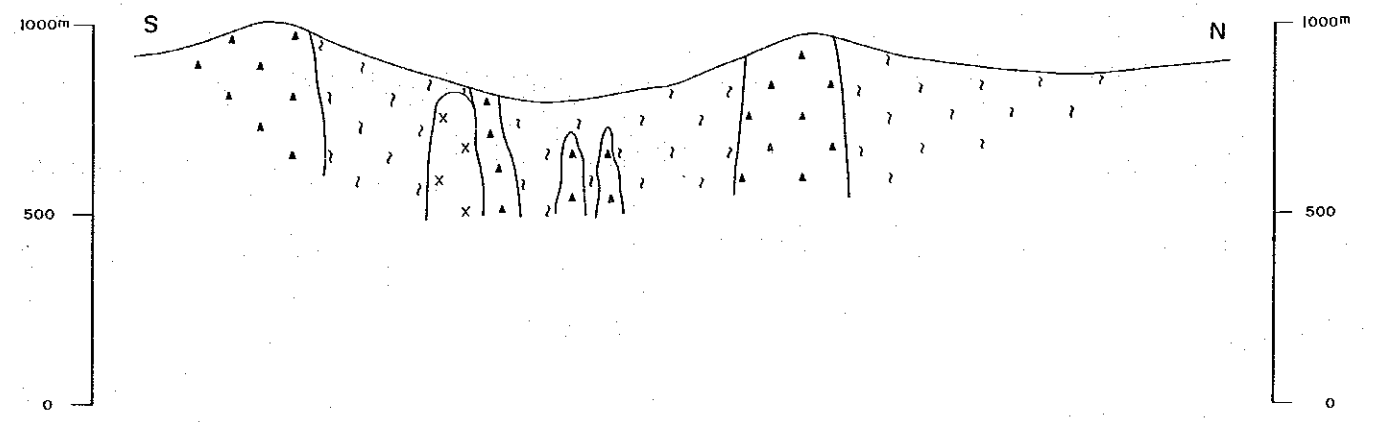
- Drift
  - Sideritic carbonatite
  - Ankeritic sövite
  - Sövite
  - Carbonate-silicate rock
  - Feldspathic breccia, agglomerate
  - Phonolitic breccia
  - Fenitized gneiss
  - Trachyte
  - Phonolite
  - Nephelinite
  - Syenite (Fulaskite)
  - Nepheline syenite (Foyaite)
  - Hornblende biotite-gneiss
  - Granulite and gneissose granite
  - Dolomitic marble
  - Dolerite
  - Granite
  - Perthosite
  - Biotite-metapyroxenite, metagabbro & biotite
  - Meta conglomerate
  - Green pyroxene skarn
  - Dykes and plugs
- T - Trachyte  
P - Phonolite  
N - Nephelinite  
MF - Microfoyaite  
S - Sölvbergite  
I - Ijolite  
D - Dolerite  
M - Monchiquite  
A - Aplite

Fault

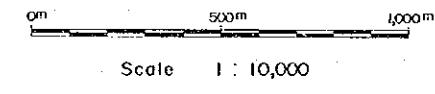
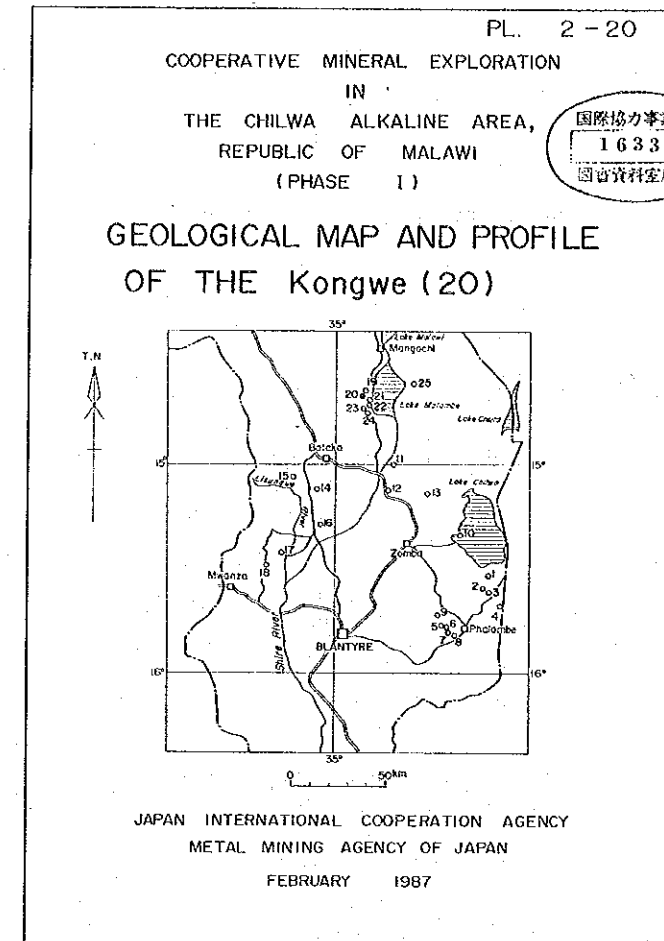
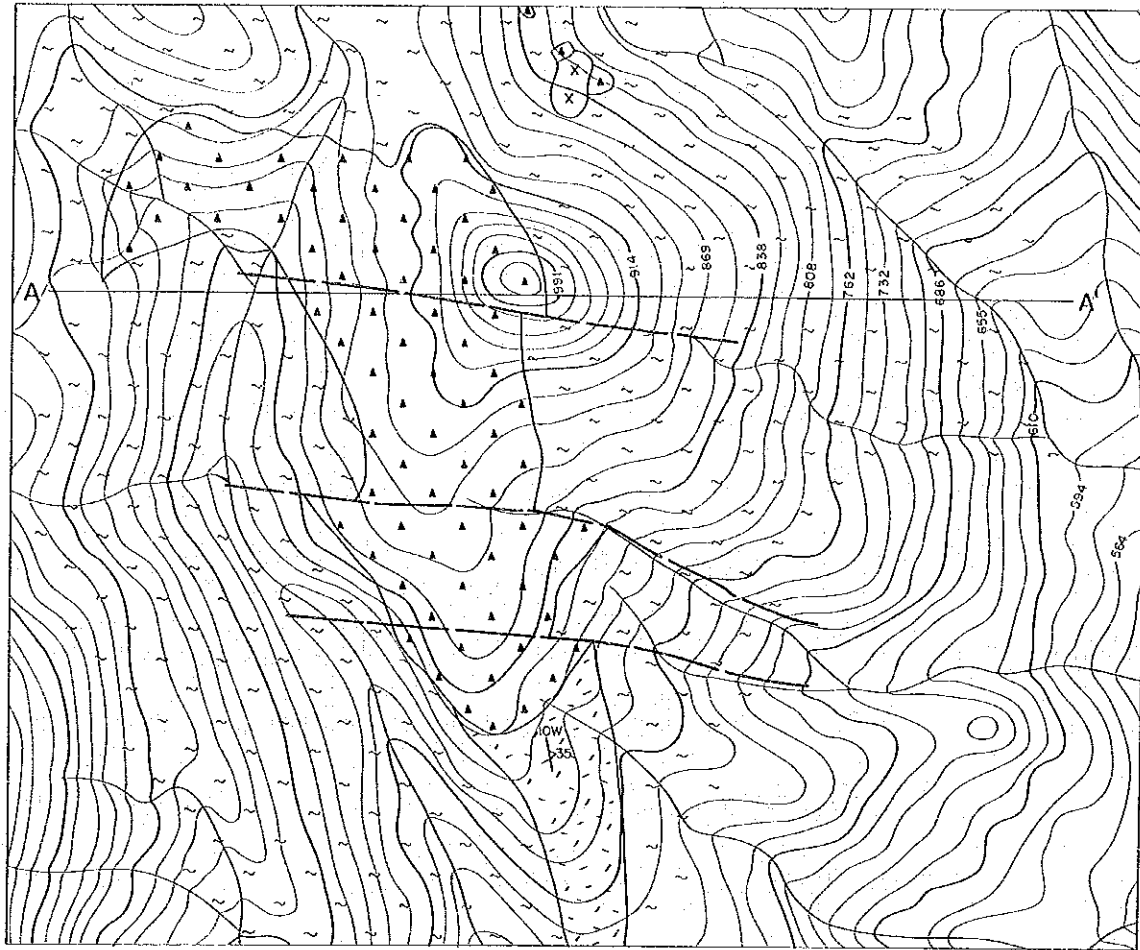
Dip of foliation of gneiss



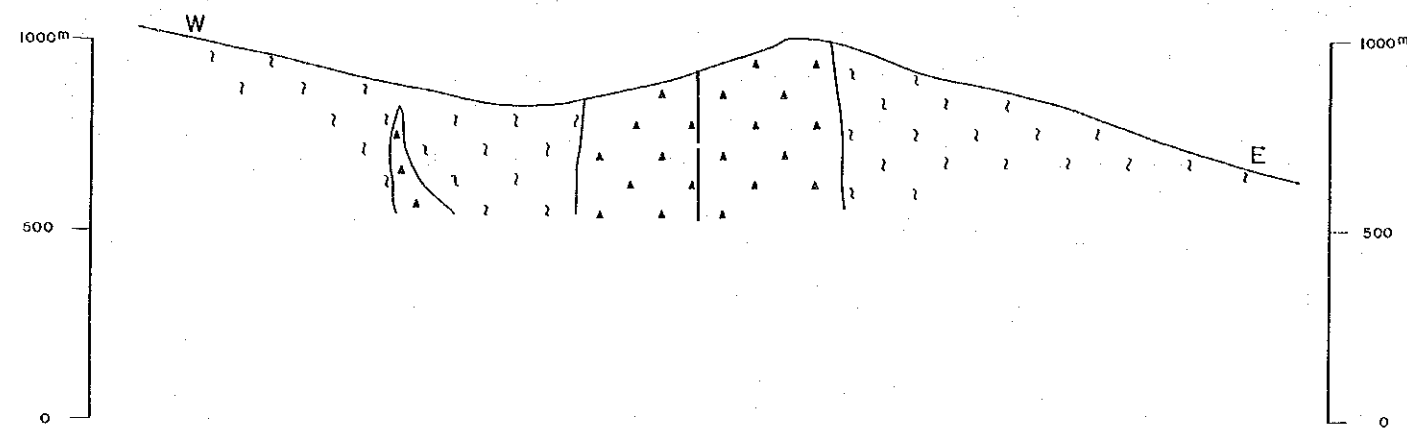
**A-A' Section  
(N25°E)**



- #### LEGEND
- |  |  |
|--|--|
|  | Drift  |
|  | Sideritic carbonatite                          |
|  | Ankeritic sövite                               |
|  | Sövite   |
|  | Carbonate-Silicate rock                        |
|  | Feldspathic breccia, agglomerate               |
|  | Phonolitic breccia                             |
|  | Fertilized gneiss                              |
|  | Trachyte                                       |
|  | Phonolite                                      |
|  | Nephelinite                                    |
|  | Syenite (Pulaskite)                            |
|  | Nepheline syenite (Foyaitite)                  |
|  | Hornblende biotite-gneiss                      |
|  | Granulite and gneissose granite                |
|  | Dolomitic marble                               |
|  | Dolerite                                       |
|  | Granite  |
|  | Perthosite                                     |
|  | Biotite-metapyroxenite, metagabbro & biotitite |
|  | Meta conglomerate                              |
|  | Green pyroxene skarn                           |
|  | Dykes and plugs                                |
- T - Trachyte  
 P - Phonolite  
 N - Nephelinite  
 MF - Microfoyoite  
 S - Sölvbergite  
 I - Ijolite  
 O - Dolerite  
 M - Monchiquite  
 A - Aplite
- Fault  
 Dip of foliation of gneiss

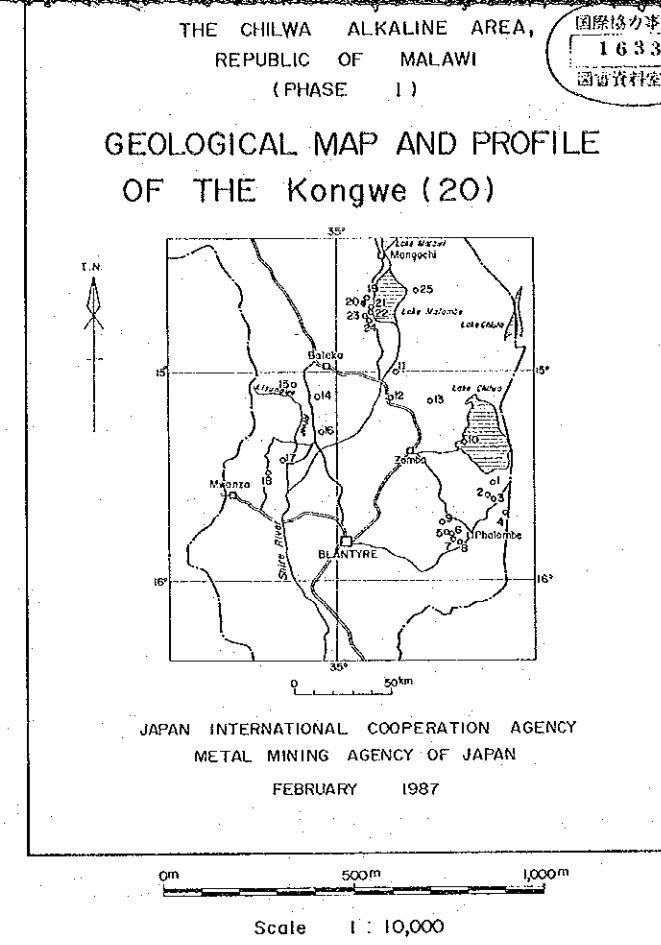
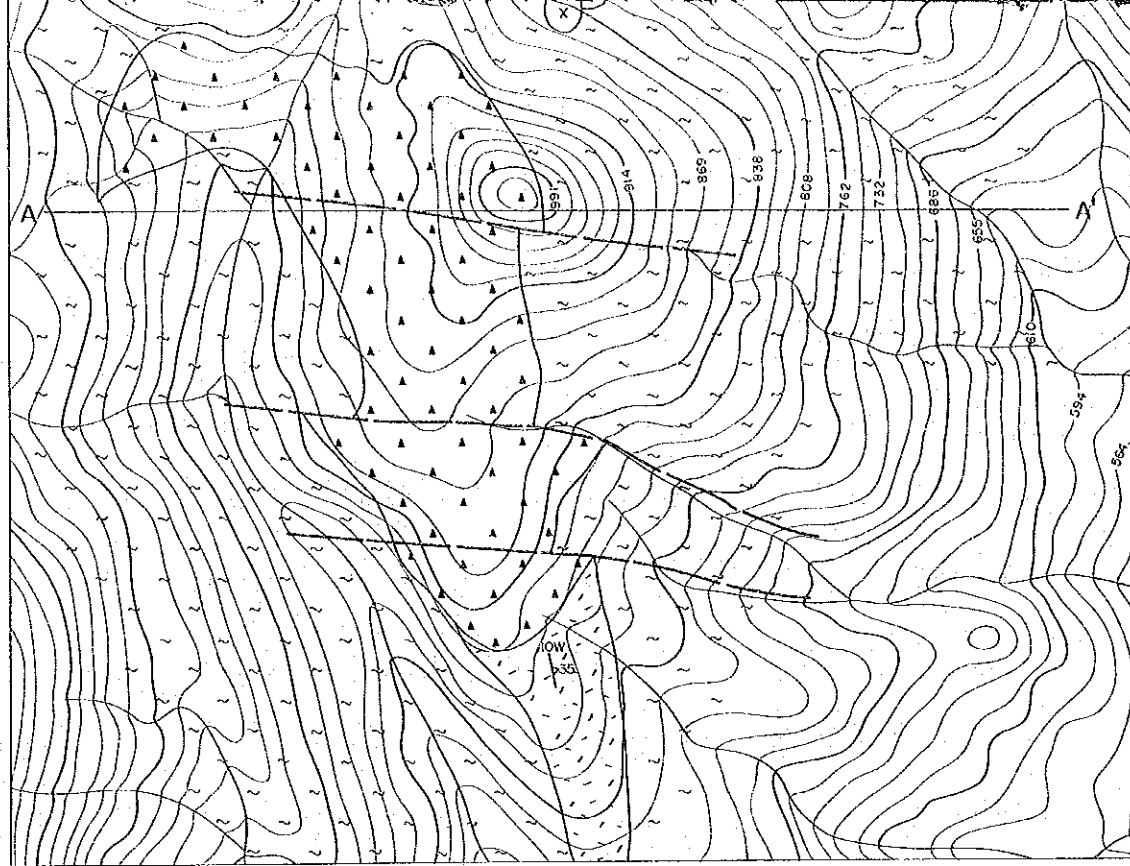


**A-A' Section  
(W-E)**

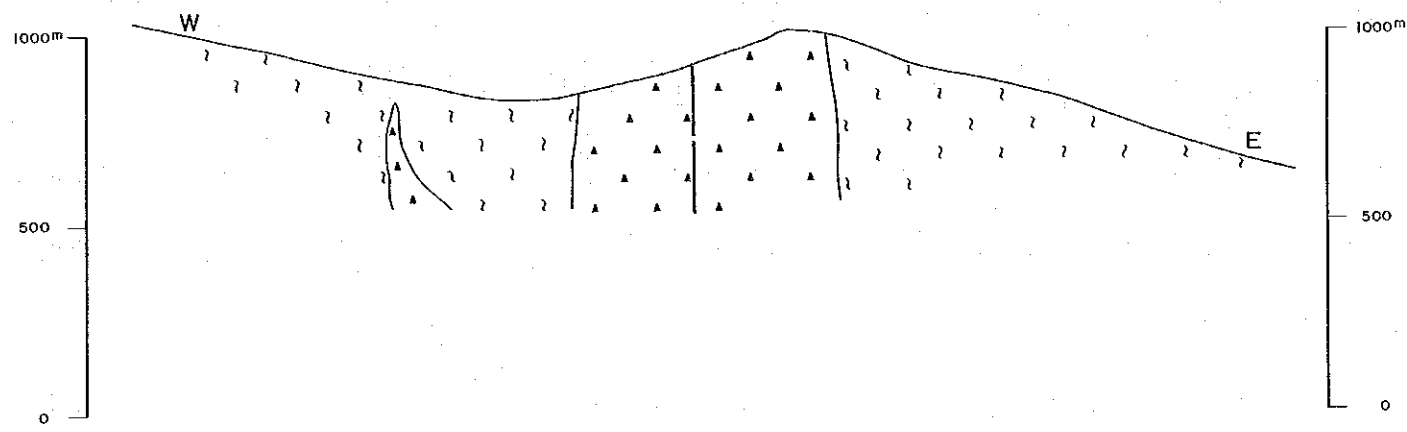


- LEGEND**
- |  |  |  |                   |
|--|--|--|-------------------|
|  | Drift  |  | T - Trachyte      |
|  | Sideritic carbonatite                          |  | P - Phonolite     |
|  | Ankeritic sövite                               |  | N - Nephelinite   |
|  | Sövite   |  | MF - Microfoyaite |
|  | Carbonate-Silicate rock                        |  | S - Sölvbergite   |
|  | Feldspathic breccia, agglomerate               |  | I - Ijolite       |
|  | Phonolitic breccia                             |  | D - Dolerite      |
|  | Fenitized gneiss                               |  | M - Monchiquite   |
|  | Trachyte                                       |  | A - Aplite        |
|  | Phonolite                                      |  |                   |
|  | Nephelinite                                    |  |                   |
|  | Syenite (Pulaskite)                            |  |                   |
|  | Nepheline syenite (Foyaite)                    |  |                   |
|  | Hornblende biotite-gneiss                      |  |                   |
|  | Granulite and gneissose granite                |  |                   |
|  | Dolomitic marble                               |  |                   |
|  | Dolerite                                       |  |                   |
|  | Granite  |  |                   |
|  | Perthosite                                     |  |                   |
|  | Biotite-metapyroxenite, metagabbro & biotitite |  |                   |
|  | Meta conglomerate                              |  |                   |
|  | Green pyroxene skarn                           |  |                   |
|  | Dykes and plugs                                |  |                   |

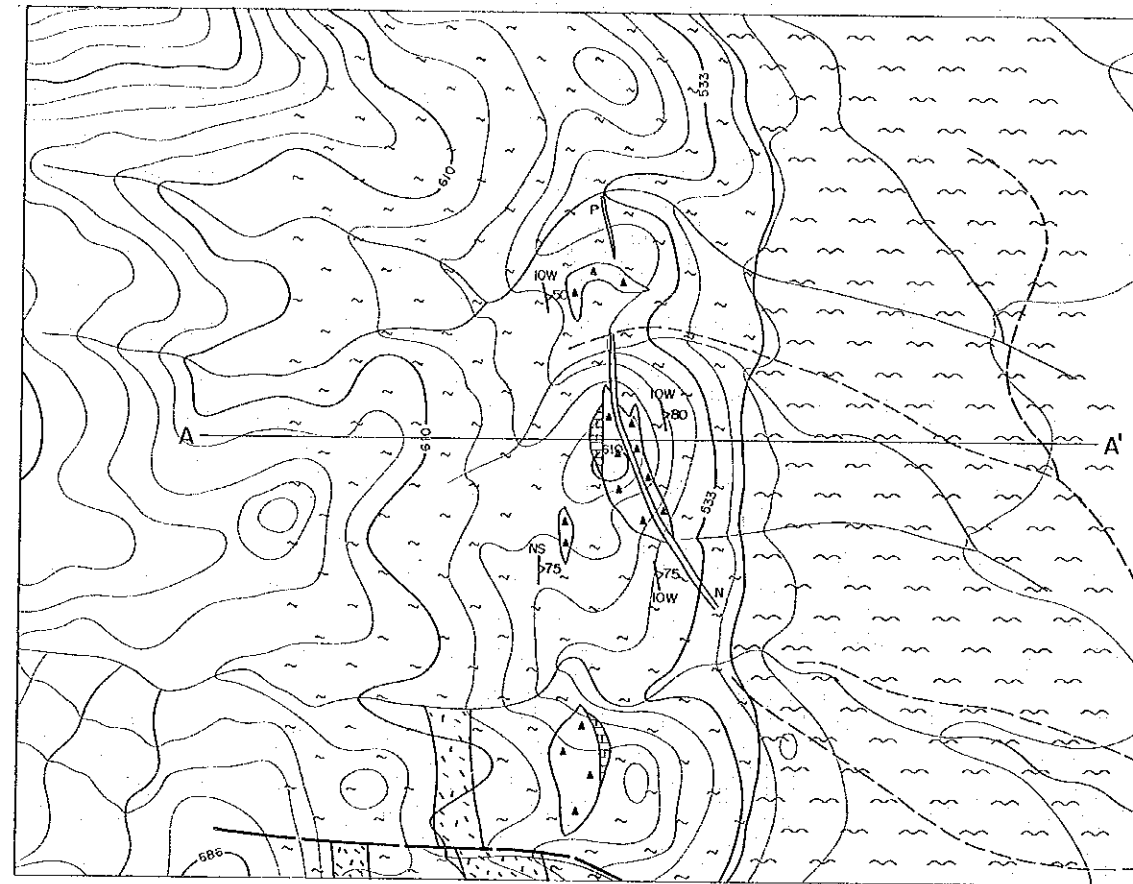




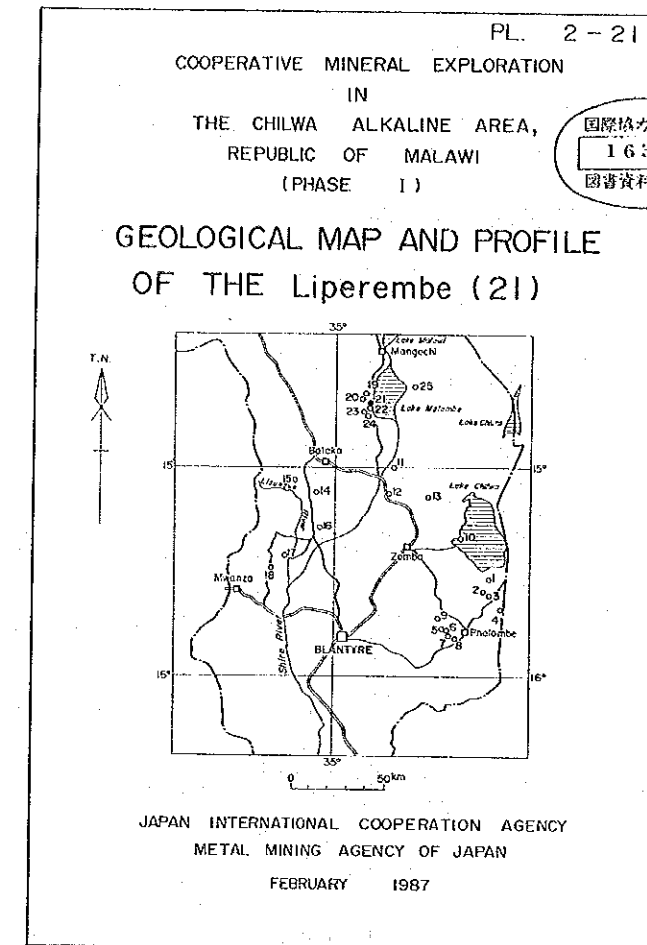
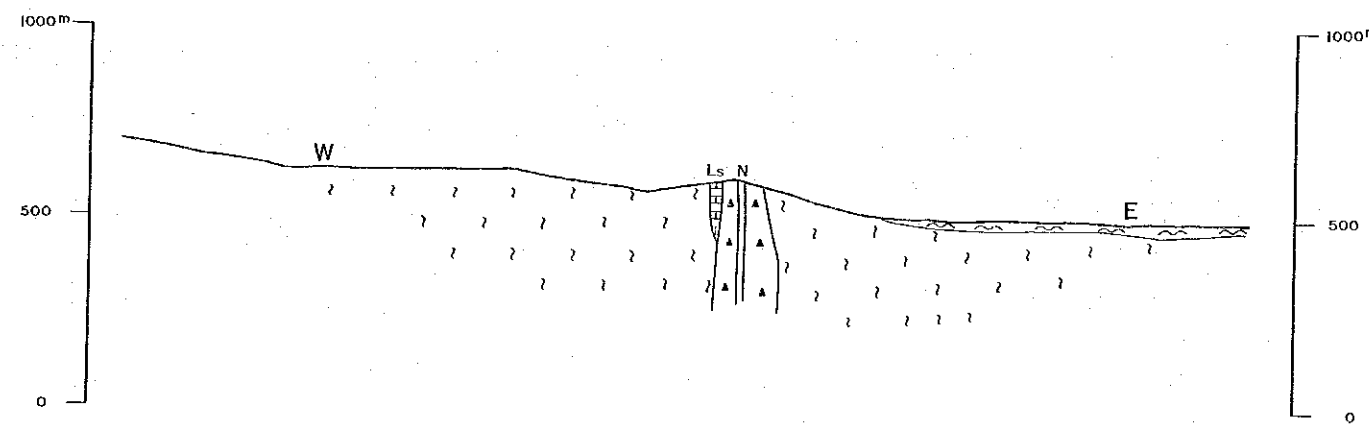
A-A' Section  
(W-E)



- LEGEND
- Drift
  - Sideritic carbonatite
  - Ankeritic sövite
  - Sövite
  - Carbonate-silicate rock
  - Feldspathic breccia, agglomerate
  - Phonolitic breccia
  - Fentized gneiss
  - Trachyte
  - Phonolite
  - Nephelinite
  - Syenite (Putaskite)
  - Nepheline syenite (Foyaitite)
  - Hornblende biotite-gneiss
  - Granulite, and gneissose granite
  - Dolomitic marble
  - Dolerite
  - Granite
  - Perthosite
  - Biotite-metapyroxenite, metagabbro & biotite
  - Meta conglomerate
  - Green pyroxene skarn
  - Dykes and plugs
- T-Trachyte  
P-Phonolite  
N-Nephelinite  
MF-Microfoyaite  
S-Sölvbergite  
I-Ijolite  
D-Dolerite  
M-Monchiquite  
A-Aplite
- Fault  
--- Dip of foliation of gneiss



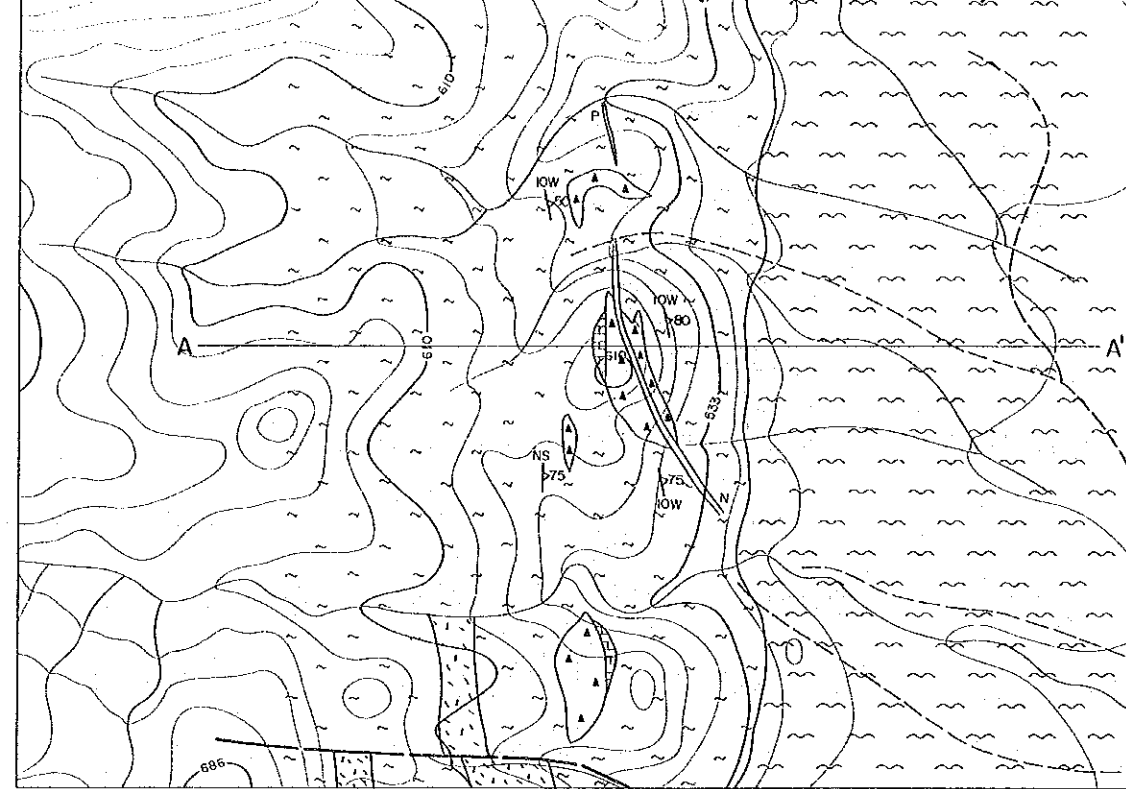
A-A' Section  
(W-E)



0m 500m 1000m  
Scale 1 : 10,000

LEGEND

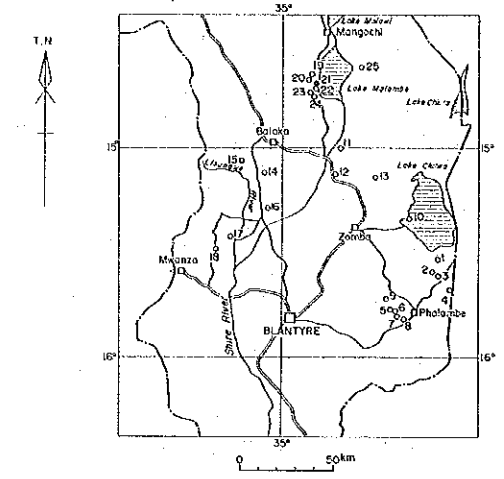
- Drift
  - Sideritic carbonatite
  - Ankeritic sövite
  - Sövite
  - Carbonate-silicate rock
  - Feldspathic breccia, agglomerate
  - Phonolitic breccia
  - Fenitized gneiss
  - Trachyte
  - Phonolite
  - Nephelinite
  - Syenite (Pulaskite)
  - Nepheline syenite (Foyaitite)
  - Hornblende biotite-gneiss
  - Granulite and gneissose granite
  - Dolomitic marble
  - Dolerite
  - Granite
  - Perthosite
  - Biotite-metapyroxenite, metagabbro & biotite
  - Meta conglomerate
  - Green pyroxene skarn
  - Dykes and plugs
- T - Trachyte
  - P - Phonolite
  - N - Nephelinite
  - MF - Microfoyaite
  - S - Sölvbergite
  - I - Ijolite
  - D - Dolerite
  - M - Monchiquite
  - A - Aplite



THE CHILWA ALKALINE AREA,  
REPUBLIC OF MALAWI  
(PHASE I)

国際協力事業団  
1633  
国書資料センター

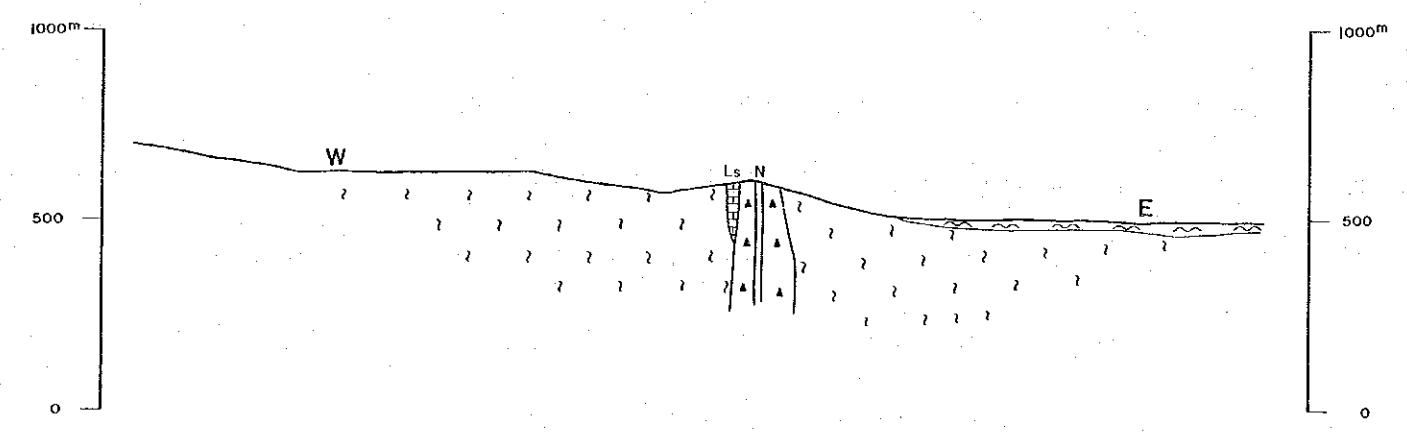
GEOLOGICAL MAP AND PROFILE  
OF THE Liperembe (21)



JAPAN INTERNATIONAL COOPERATION AGENCY  
METAL MINING AGENCY OF JAPAN  
FEBRUARY 1987

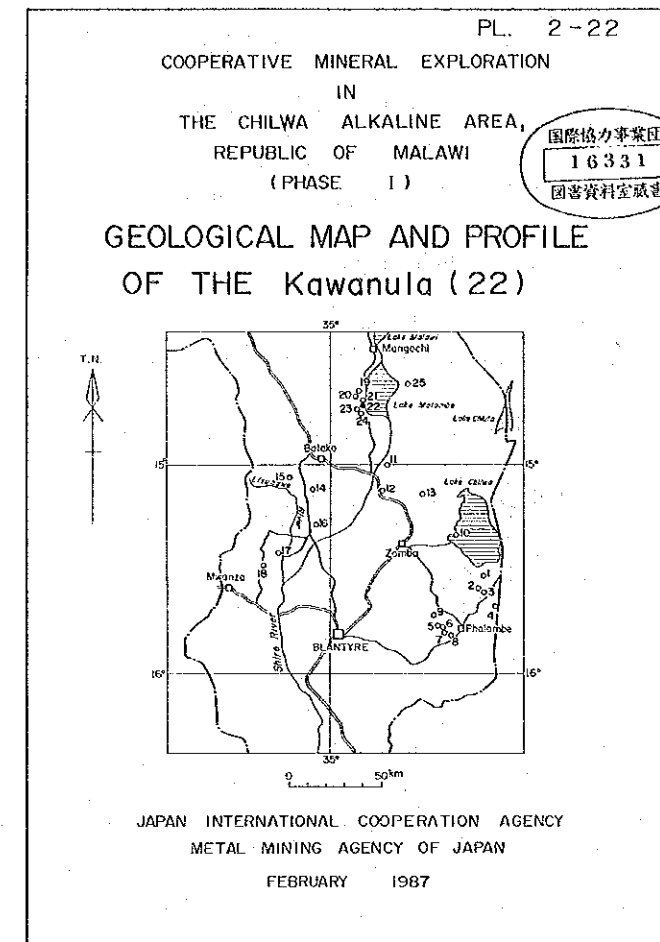
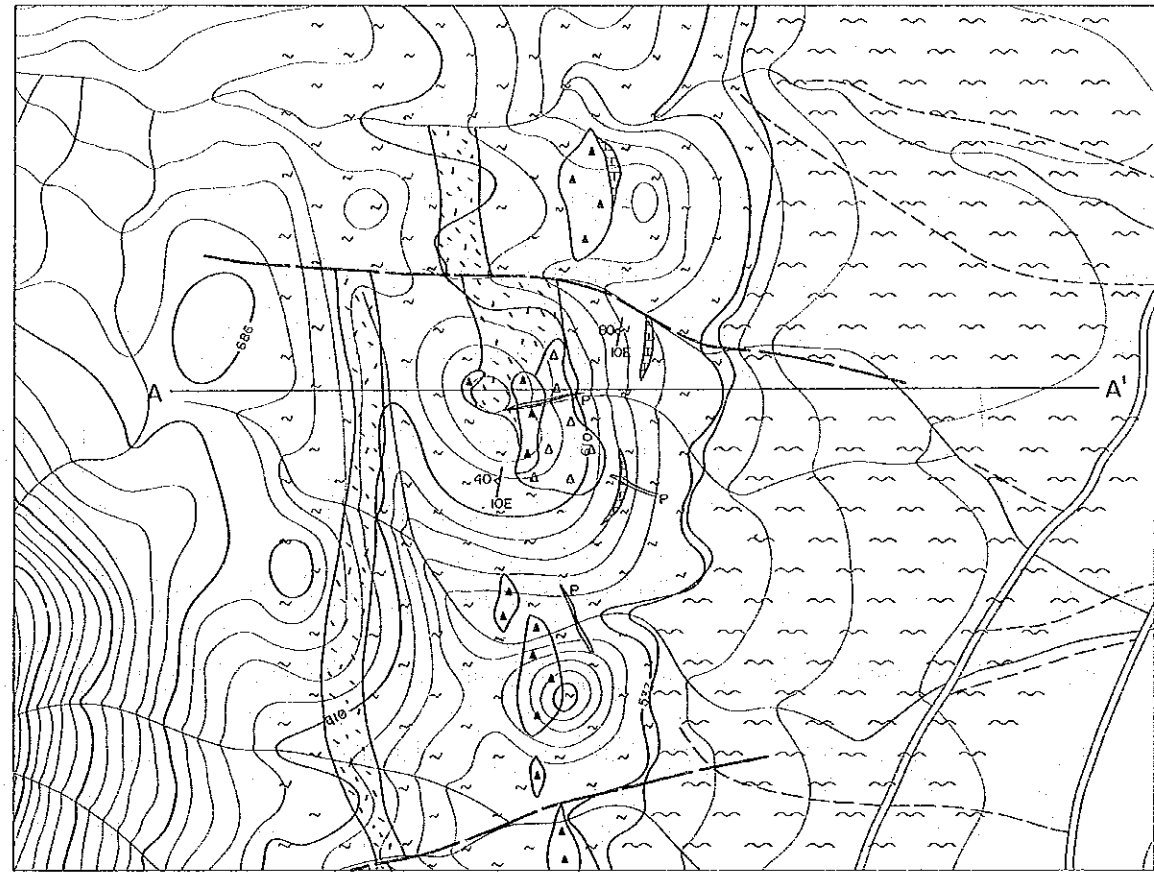
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A-A' Section  
(W-E)

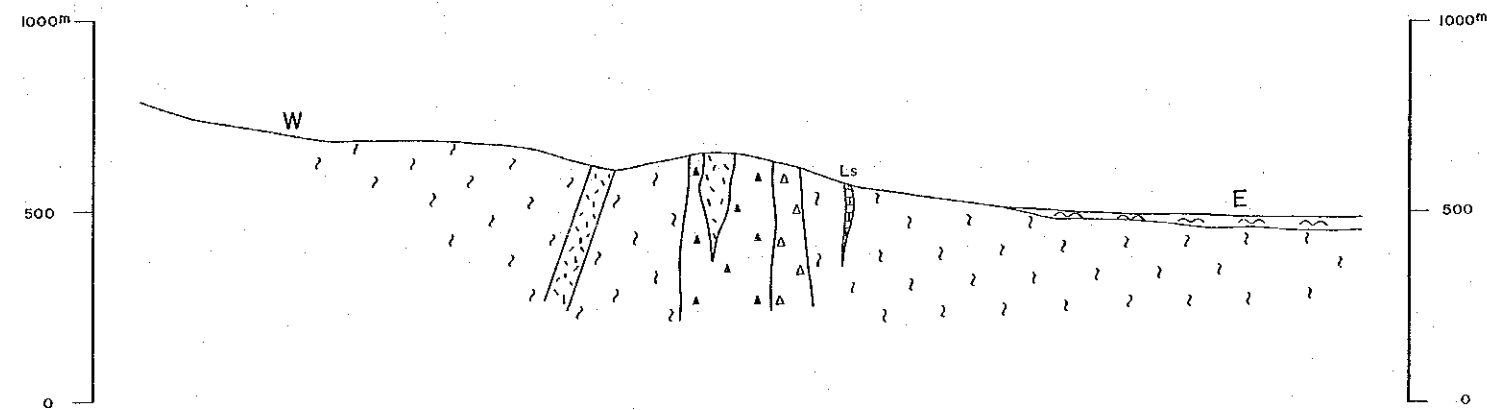


LEGEND

- Drift
  - Sideritic carbonatite
  - Ankeritic sövite
  - Sövite
  - Carbonate-Silicate rock
  - Feldspathic breccia, agglomerate
  - Phonolitic breccia
  - Fenitized gneiss
  - Trachyte
  - Phonolite
  - Nephelinite
  - Syenite (Pulaskite)
  - Nepheline syenite (Foyaite)
  - Hornblende biotite-gneiss
  - Granulite and gneissose granite
  - Dolomitic marble
  - Dolerite
  - Granite
  - Perthosite
  - Biotite-metapyroxenite, metagabbro & biotite
  - Meta conglomerate
  - Green pyroxene skarn
  - Dykes and plugs
- T - Trachyte  
P - Phonolite  
N - Nephelinite  
MF - Microfoyaite  
S - Sölvbergite  
I - Ijolite  
D - Dolerite  
M - Monchiquite  
A - Aplite
- Fault  
50° Dip of foliation of gneiss

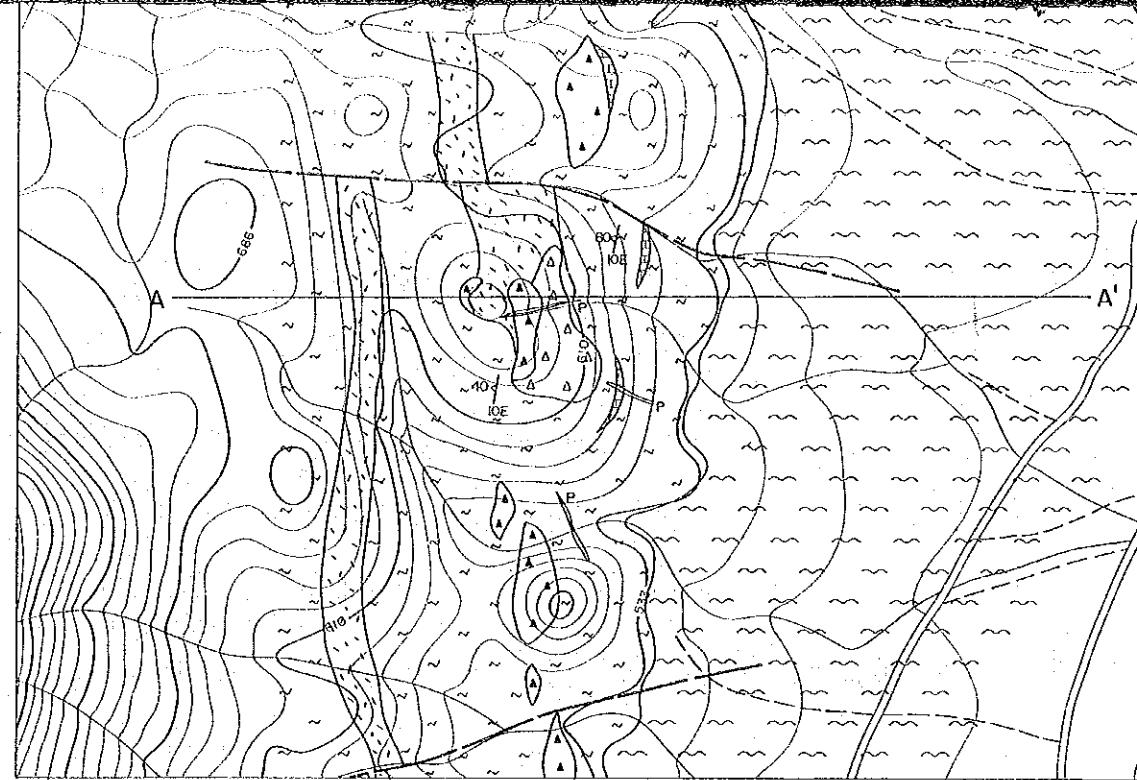


A-A' Section  
(W-E)



LEGEND

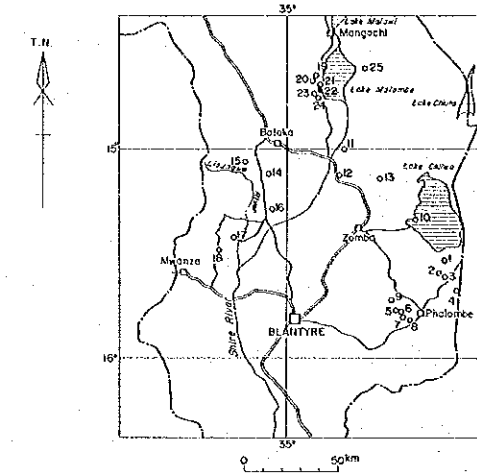
- |  |  |
|--|--|
|  | Drift  |
|  | Sideritic carbonatite                          |
|  | Ankeritic sövite                               |
|  | Sövite   |
|  | Carbonate-Silicate rock                        |
|  | Feldspathic breccia, agglomerate               |
|  | Phonolitic breccia                             |
|  | Fenitized gneiss                               |
|  | Trachyte                                       |
|  | Phonolite                                      |
|  | Nephelinite                                    |
|  | Syenite (Pieloskite)                           |
|  | Nepheline syenite (Foyaite)                    |
|  | Hornblende biotite-gneiss                      |
|  | Granulite and gneissose granite                |
|  | Dolomitic marble                               |
|  | Dolerite                                       |
|  | Granite  |
|  | Perthosite                                     |
|  | Biotite-metapyroxenite, metagabbro & biotitite |
|  | Meta conglomerate                              |
|  | Green pyroxene skarn                           |
|  | Dykes and plugs                                |
- |    |              |
|----|--------------|
| T  | Trachyte     |
| P  | Phonolite    |
| N  | Nephelinite  |
| MF | Microfoyaite |
| S  | Sälvbergite  |
| I  | Ijoite       |
| D  | Dolerite     |
| M  | Monchiquite  |



THE CHILWA ALKALINE AREA,  
REPUBLIC OF MALAWI  
(PHASE I)

国際協力事業団  
16331  
国書資料室蔵

GEOLOGICAL MAP AND PROFILE  
OF THE Kawanula (22)

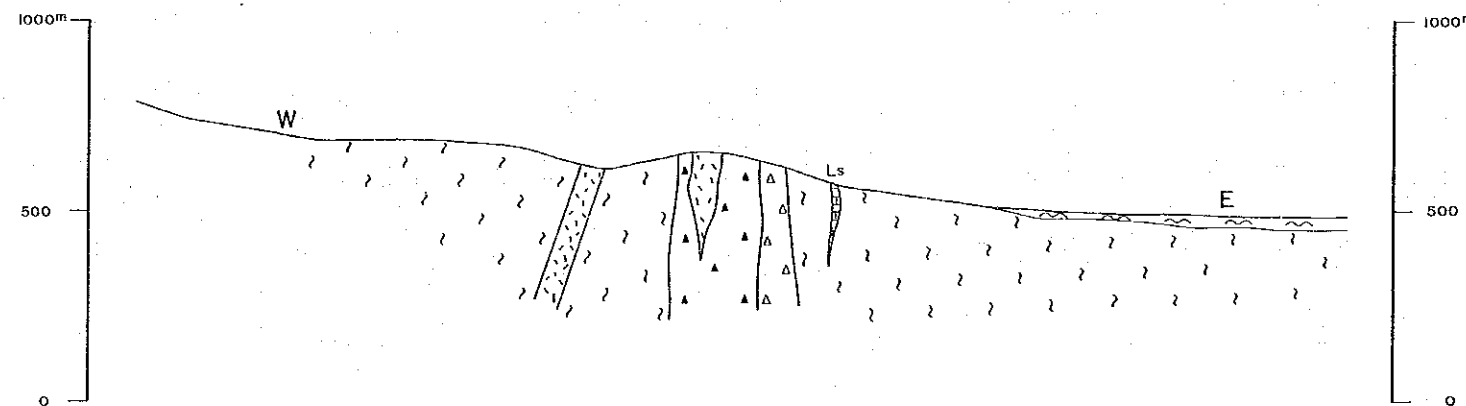


JAPAN INTERNATIONAL COOPERATION AGENCY  
METAL MINING AGENCY OF JAPAN  
FEBRUARY 1987

0m 500m 1000m

Scale 1 : 10,000

A-A' Section  
(W-E)

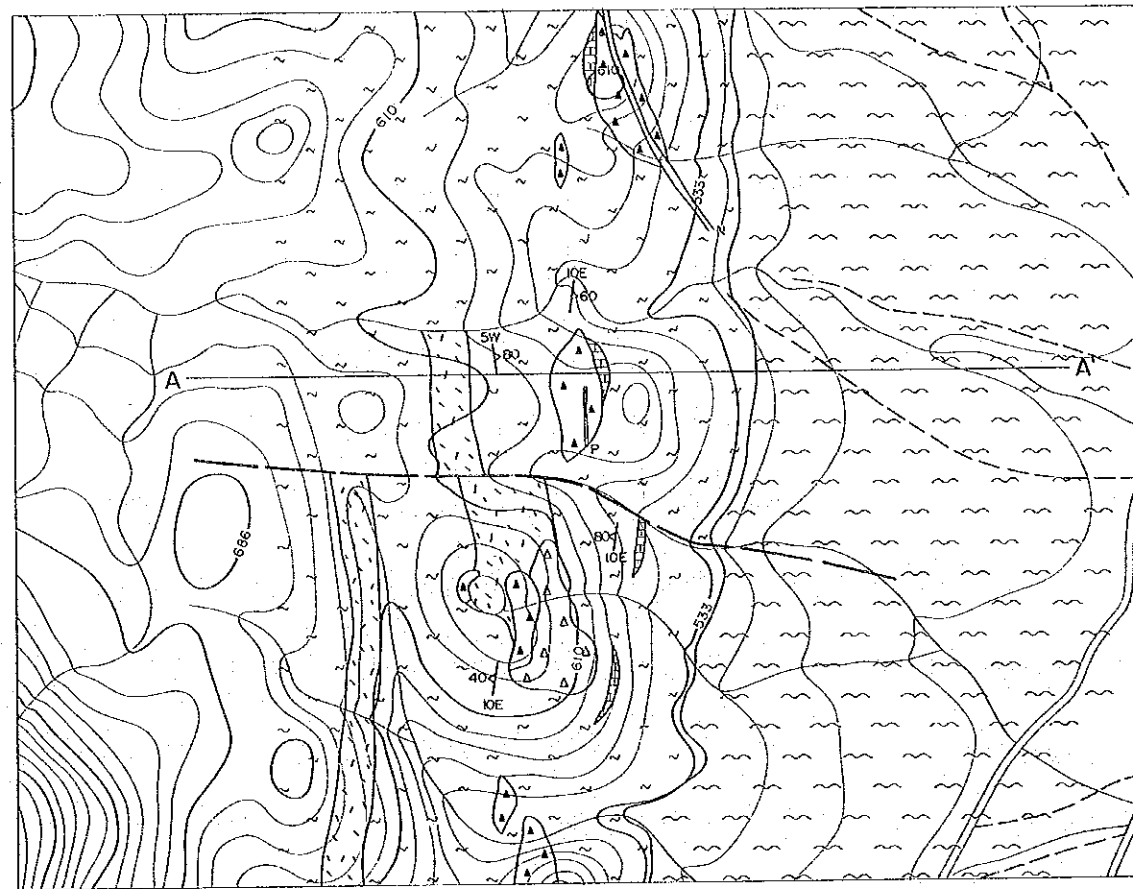


LEGEND

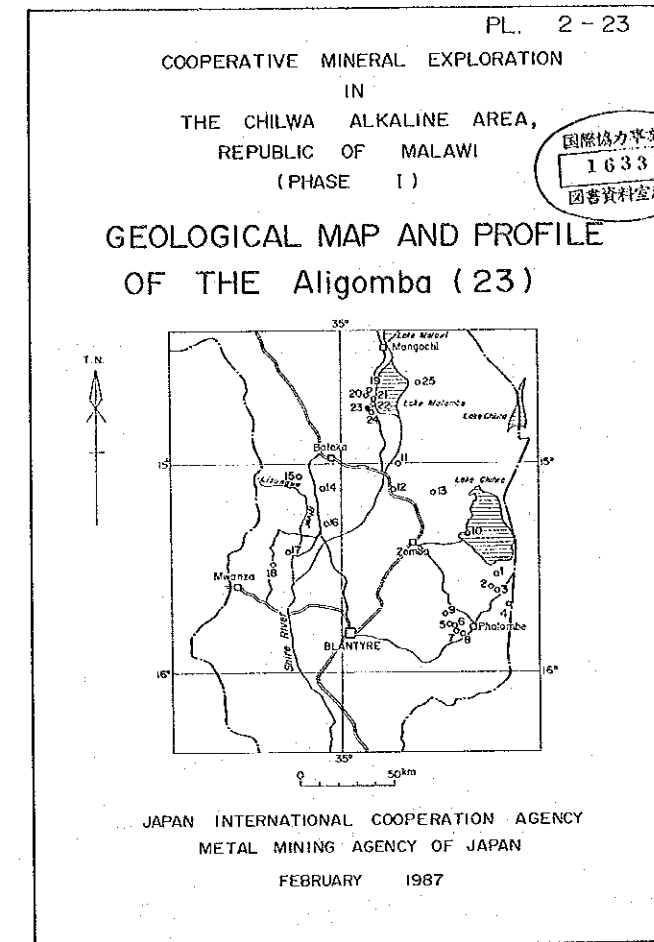
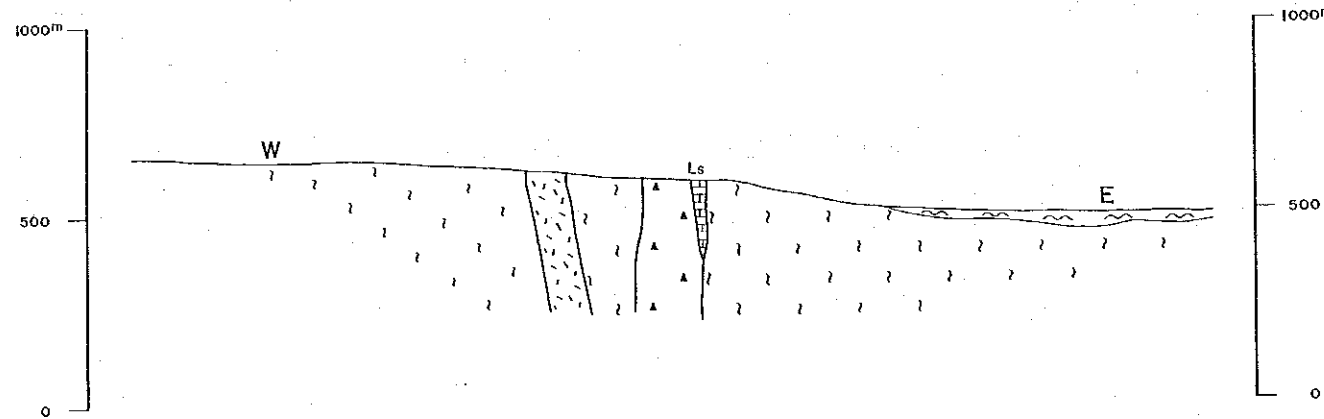
- Drift
- Sideritic carbonatite
- Ankeritic sövite
- Sövite
- Carbonate-Silicate rock
- Feldspathic breccia, agglomerate
- Phonolitic breccia
- Fenitized gneiss
- Trachyte
- Phonolite
- Nephelinite
- Syenite (Pulaskite)
- Nepheline syenite (Foyaite)
- Hornblende biotite-gneiss
- Granulite and gneissose granite
- Dolomitic marble
- Dolerite
- Granite
- Perthosite
- Biotite-metapyroxenite, metagabbro & biotite
- Meta conglomerate
- Green pyroxene skarn
- Dykes and plugs

- T - Trachyte
- P - Phonolite
- N - Nephelinite
- MF - Microfoyaite
- S - Sölvbergite
- I - Ijolite
- D - Dolerite
- M - Monchiquite
- A - Aplitite

- Fault
- Dip of foliation of gneiss

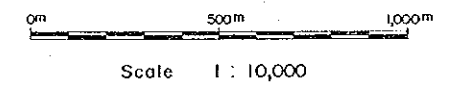
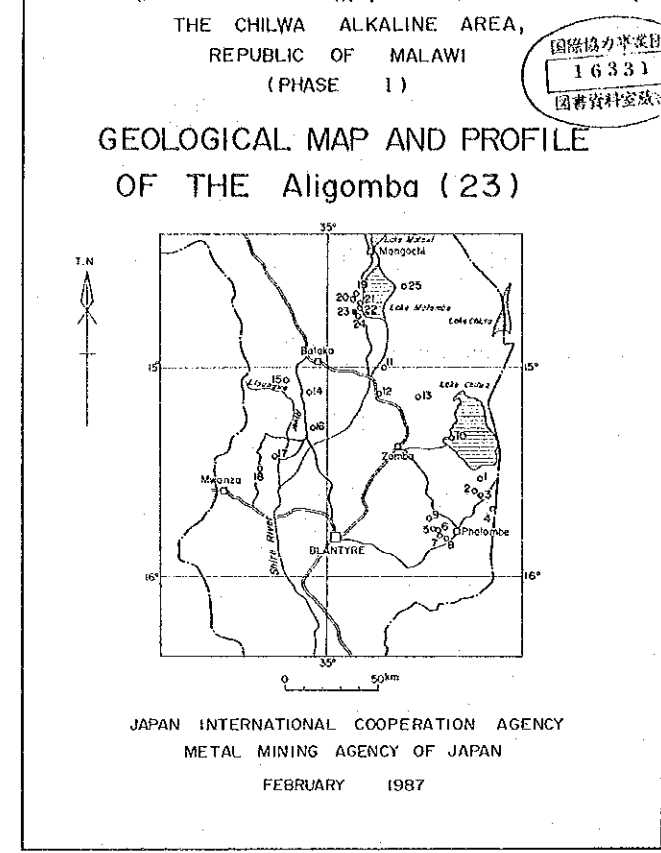
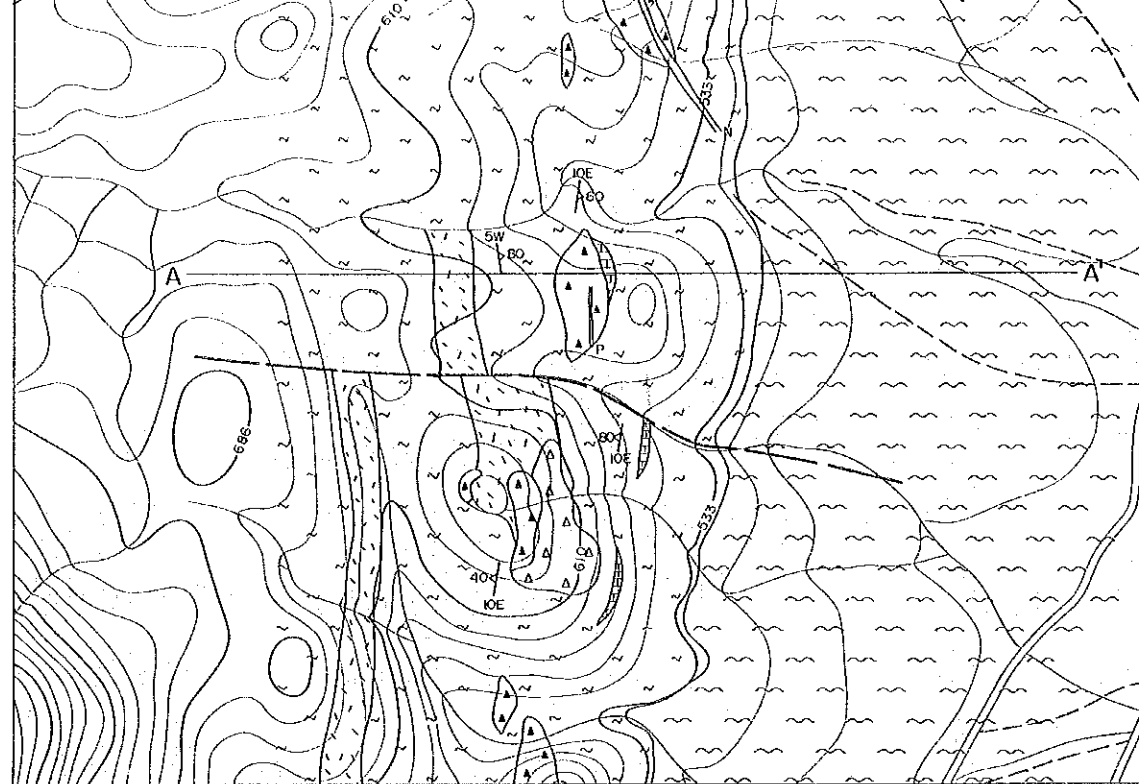


A-A' Section  
(W-E)

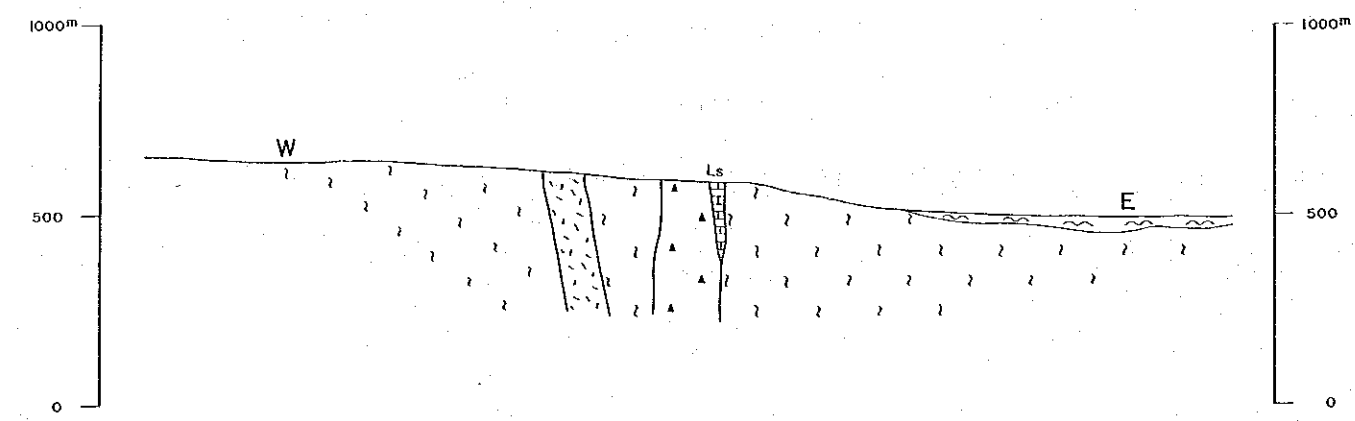


LEGEND

- |  |   |
|--|---|
|  | Drift                                       |
|  | Sideritic carbonatite                       |
|  | Ankeritic sövite                            |
|  | Sövite                                      |
|  | Carbonate-silicate rock                     |
|  | Feldspathic breccia, agglomerate            |
|  | Phonolitic breccia                          |
|  | Fenitized gneiss                            |
|  | Trachyte                                    |
|  | Phonolite                                   |
|  | Nephelinite                                 |
|  | Syenite (Palaskite)                         |
|  | Nepheline syenite (Foyaite)                 |
|  | Hornblende biotite-gneiss                   |
|  | Granulite and gneissose granite             |
|  | Dolomitic marble                            |
|  | Dolerite                                    |
|  | Granite                                     |
|  | Perthosite                                  |
|  | Biotite-metaproxenite, metagabbro & biotite |
|  | Meta conglomerate                           |
|  | Green pyroxene skarn                        |
|  | Dykes and plugs                             |
- T - Trachyte  
P - Phonolite  
N - Nephelinite  
MF - Microfoyaite  
S - Sölvbergite  
I - Ijolite  
D - Dolerite  
M - Monchiquite

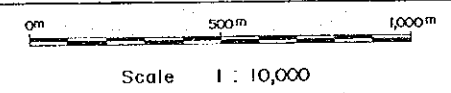
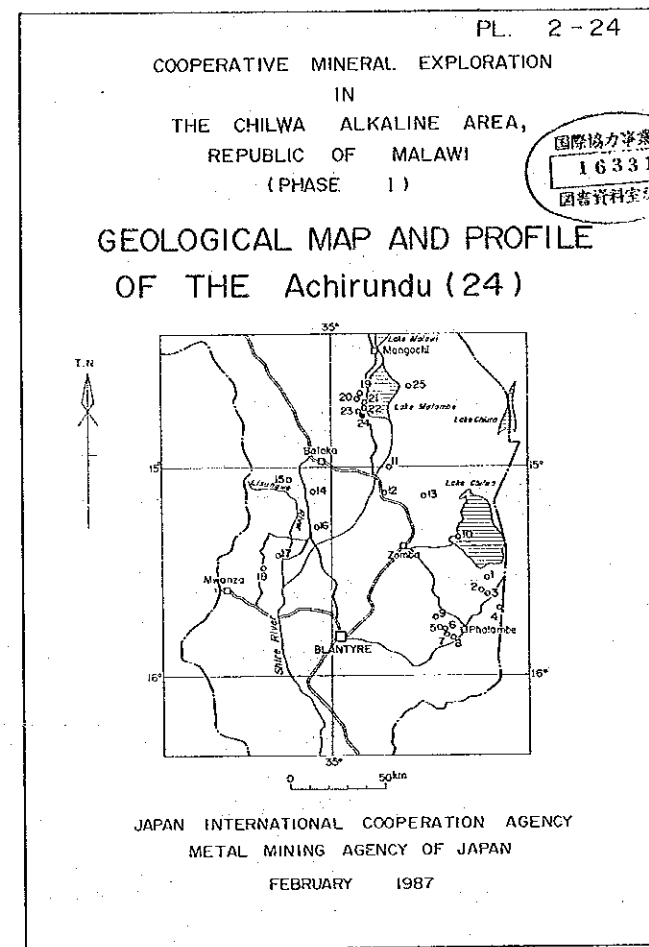
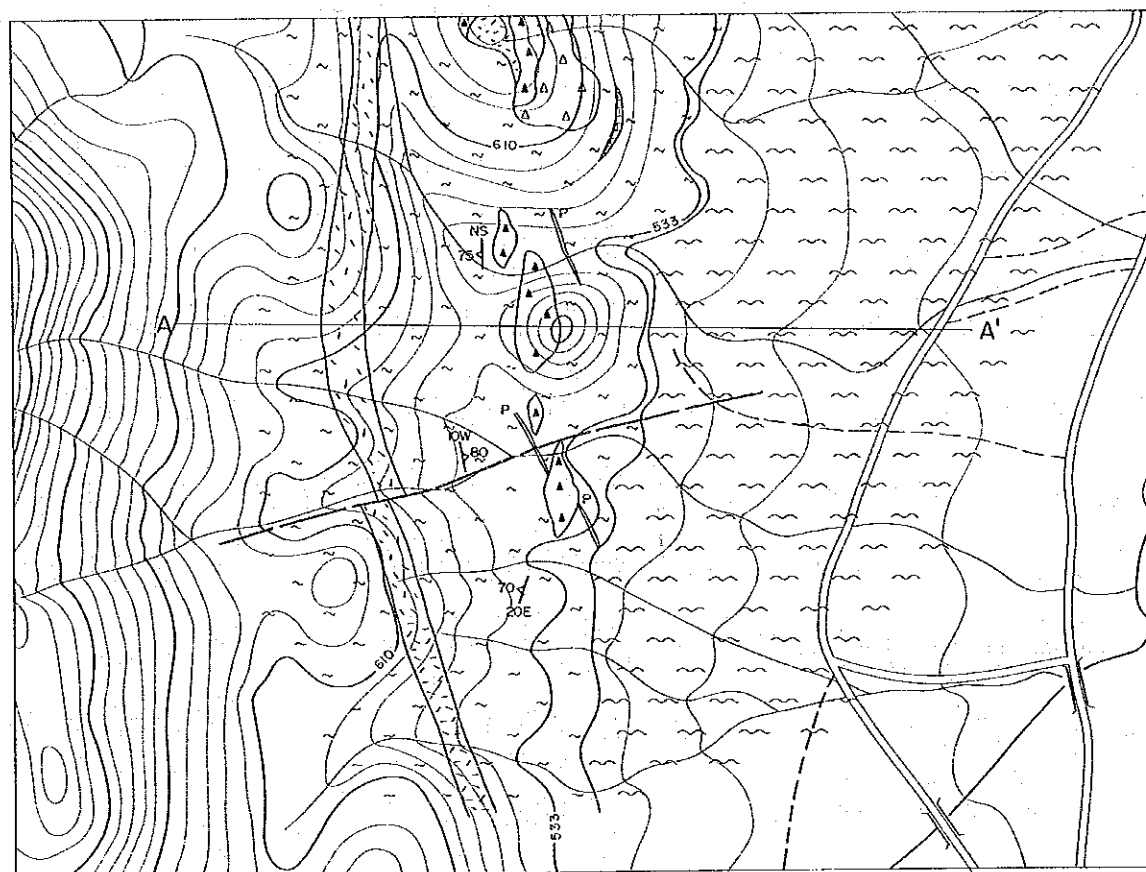


**A-A' Section  
(W-E)**

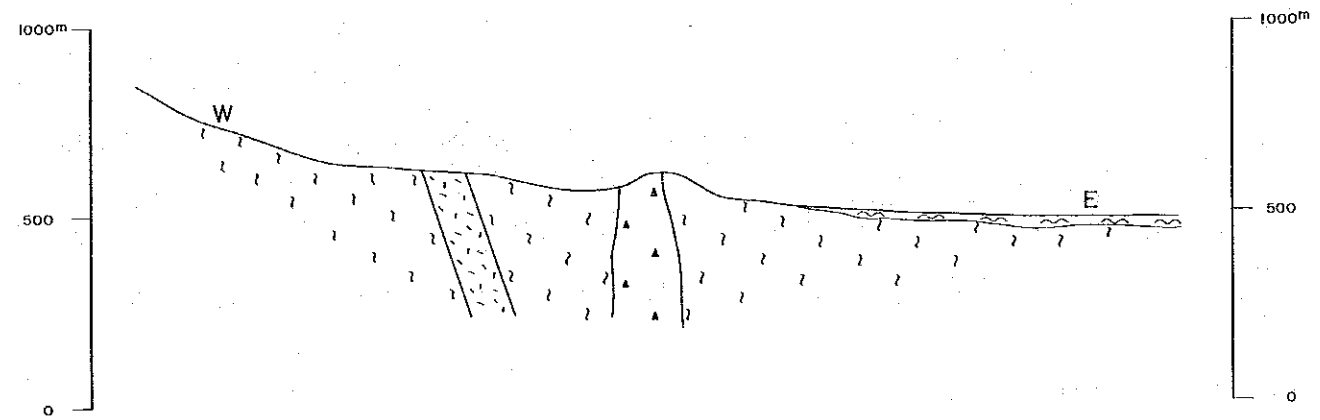


- LEGEND**
- Drift
  - Sideritic carbonatite
  - Ankeritic sövite
  - Sövite
  - Carbonate-Silicate rock
  - Feldspathic breccia, agglomerate
  - Phonolitic breccia
  - Fenitized gneiss
  - Trachyte
  - Phonolite
  - Nephelinite
  - Syenite (Pulaskite)
  - Nepheline syenite (Foyoite)
  - Hornblende biotite-gneiss
  - Granulite and gneissose granite
  - Dolomitic marble
  - Dolerite
  - Granite
  - Perthosite
  - Biotite-metapyroxene, metagabbro & biotite
  - Meta conglomerate
  - Green pyroxene skarn
  - Dykes and plugs
- T--Trachyte  
 P--Phonolite  
 N--Nephelinite  
 MF--Microfyoite  
 S--Sölvbergite  
 I--Ijolite  
 D--Dolerite  
 M--Monchiquite  
 A--Aplite
- Fault  
 Dip of foliation of gneiss



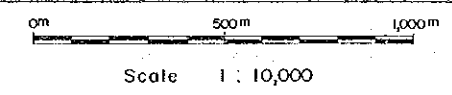
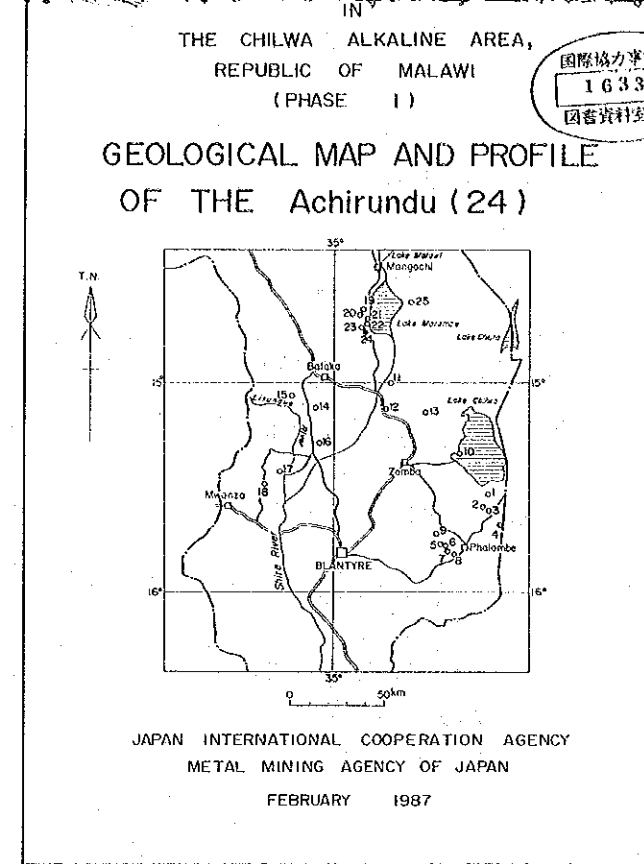
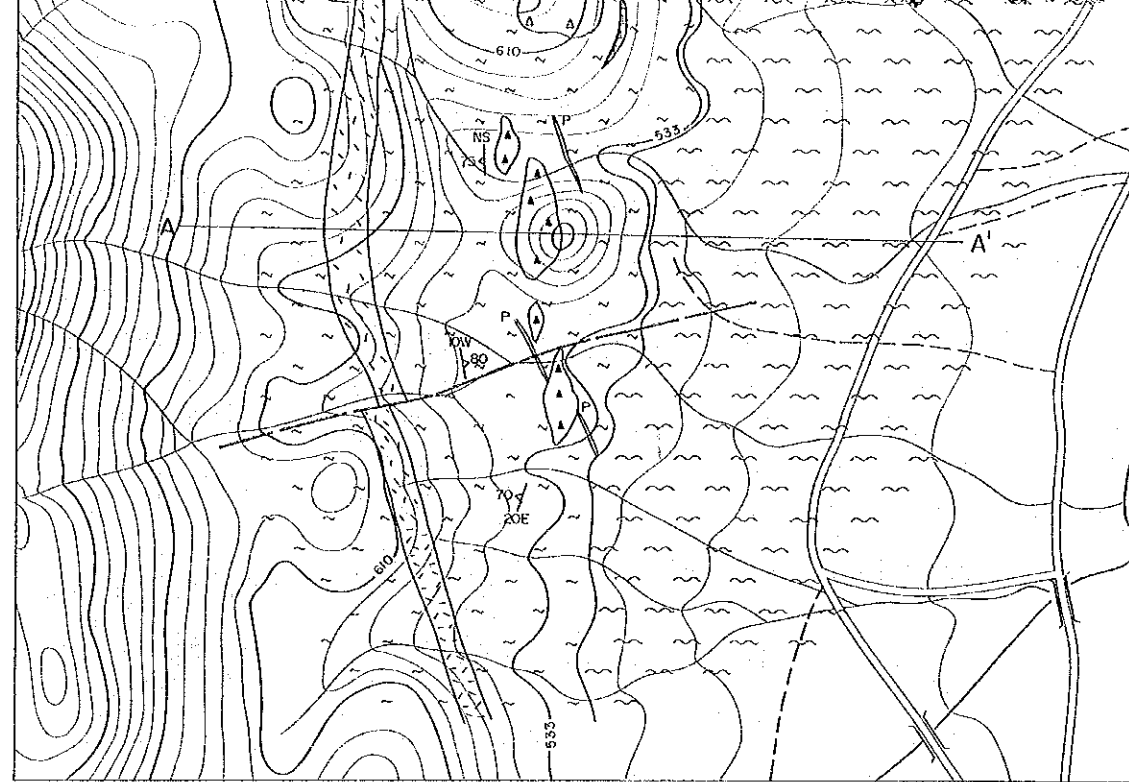


A-A' Section  
 (W-E)

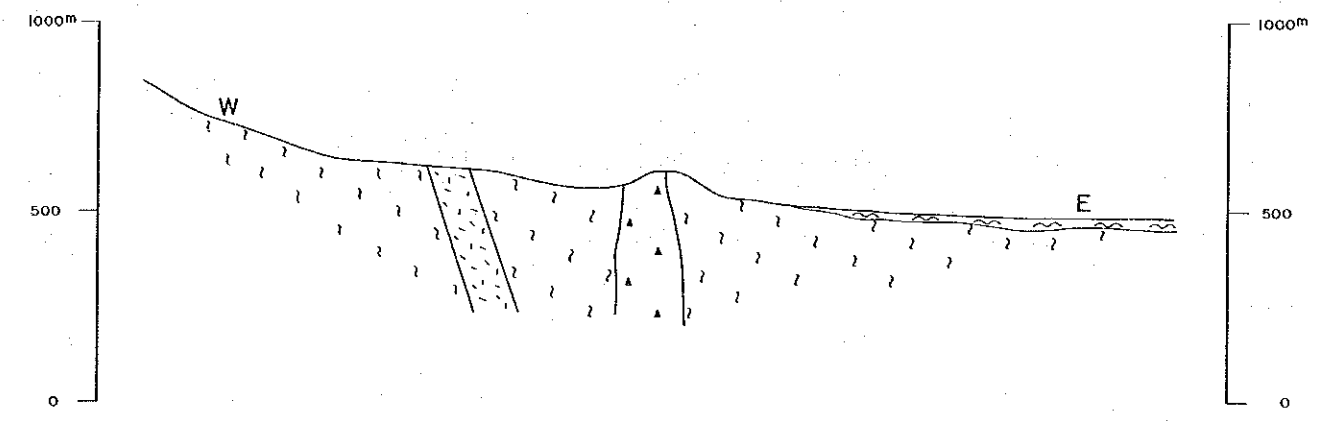


LEGEND

- Drift
  - Sideritic carbonatite
  - Ankeritic sövite
  - Sövite
  - Carbonate-Silicate rock
  - Feldspathic breccia, agglomerate
  - Phonolitic breccia
  - Fenitized gneiss
  - Trachyte
  - Phonolite
  - Nephelinite
  - Syenite (Pulaskite)
  - Nepheline syenite (Foyaitite)
  - Hornblende biotite-gneiss
  - Granulite and gneissose granite
  - Dolomitic marble
  - Dolerite
  - Granite
  - Perthosite
  - Biotite-metopyroxenite, metagabbro & biotite
  - Meta conglomerate
  - Green pyroxene skarn
  - Dykes and plugs
- T—Trachyte  
 P—Phonolite  
 N—Nephelinite  
 MF—Microfoyaite  
 S—Sölvbergite  
 I—Ijalite

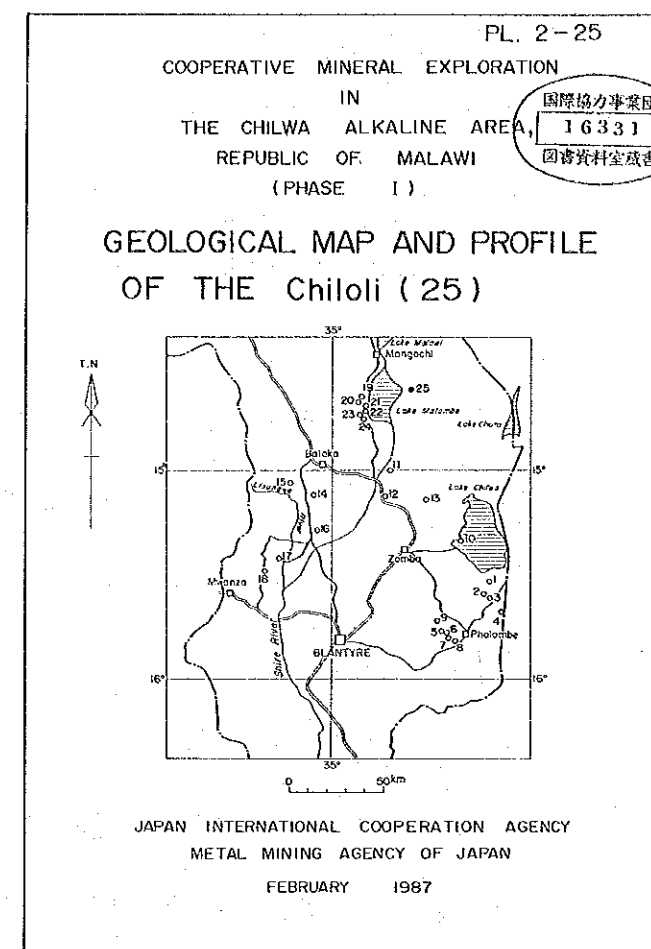
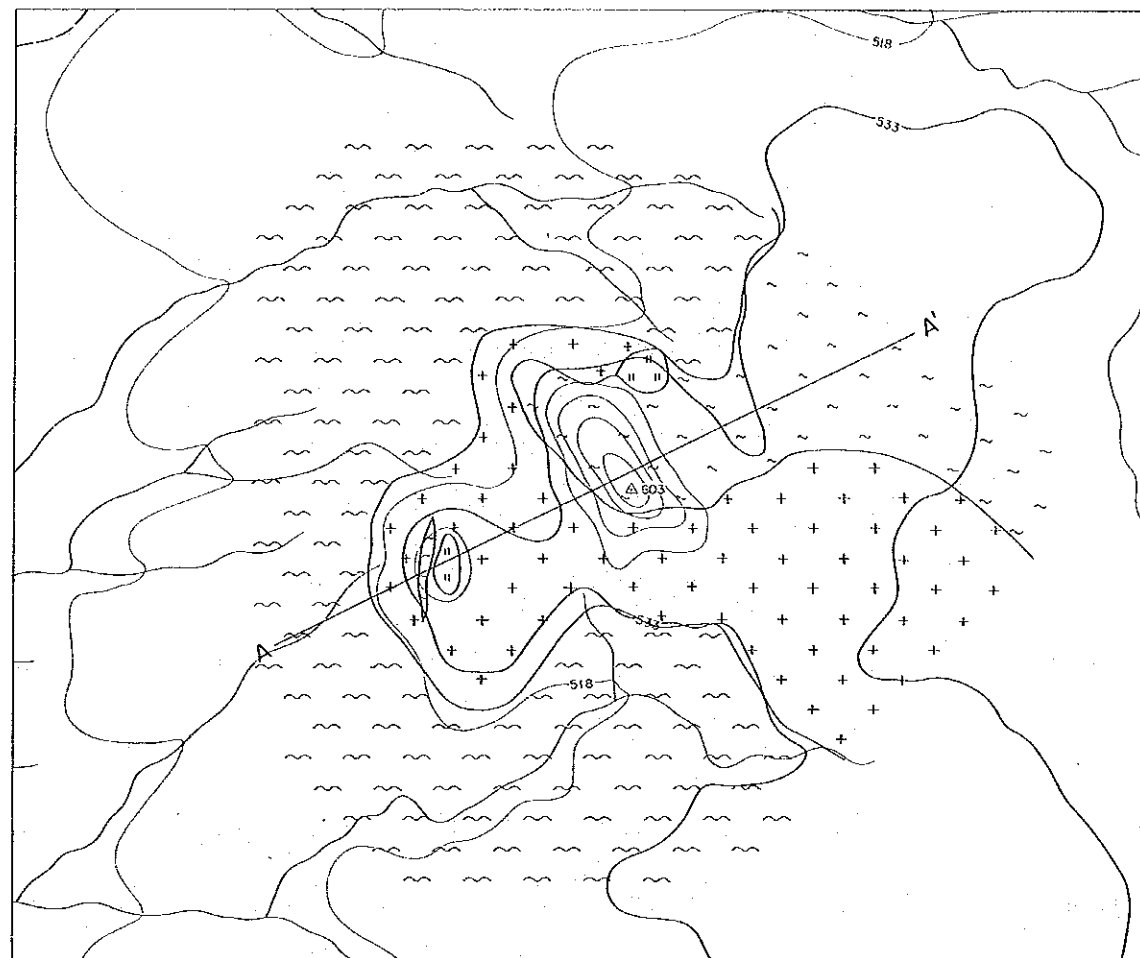


A-A' Section  
(W-E)



LEGEND

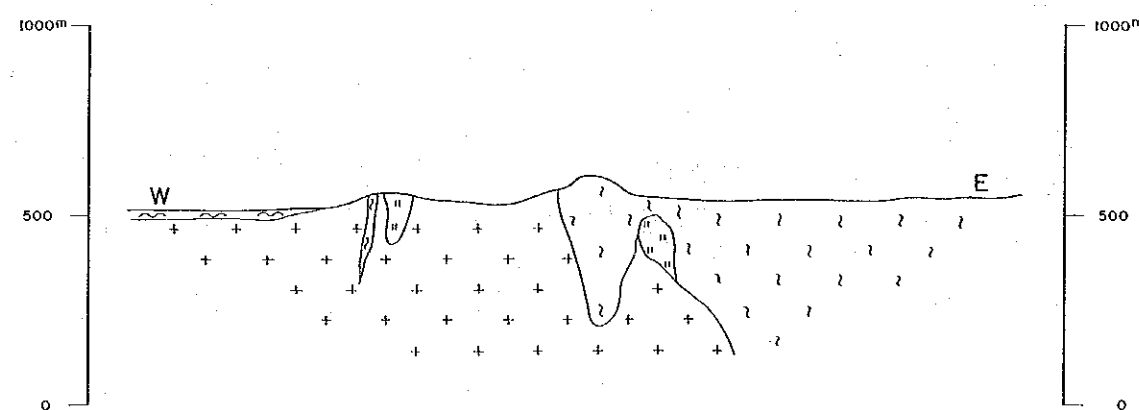
- Drift
  - Sideritic carbonatite
  - Ankeritic sövite
  - Sövite
  - Carbonate-Silicate rock
  - Feldspathic breccia, agglomerate
  - Phonolitic breccia
  - Fenitized gneiss
  - Trachyte
  - Phonolite
  - Nephelinite
  - Syenite (Pulaskite)
  - Nepheline syenite (Foyoite)
  - Hornblende biotite-gneiss
  - Granulite and gneissose granite
  - Dolomitic marble
  - Dolerite
  - Granite
  - Perthosite
  - Biotite-metaproxenite, metagabbro & biotite
  - Meta conglomerate
  - Green pyroxene skarn
  - Dykes and plugs
- T—Trachyte  
P—Phonolite  
N—Nephelinite  
MF—Microfoyoite  
S—Sölvbergite  
I—Ijolite  
D—Dolerite  
M—Monchiquite  
A—Aplite
- Fault  
--- Dip of foliation of gneiss



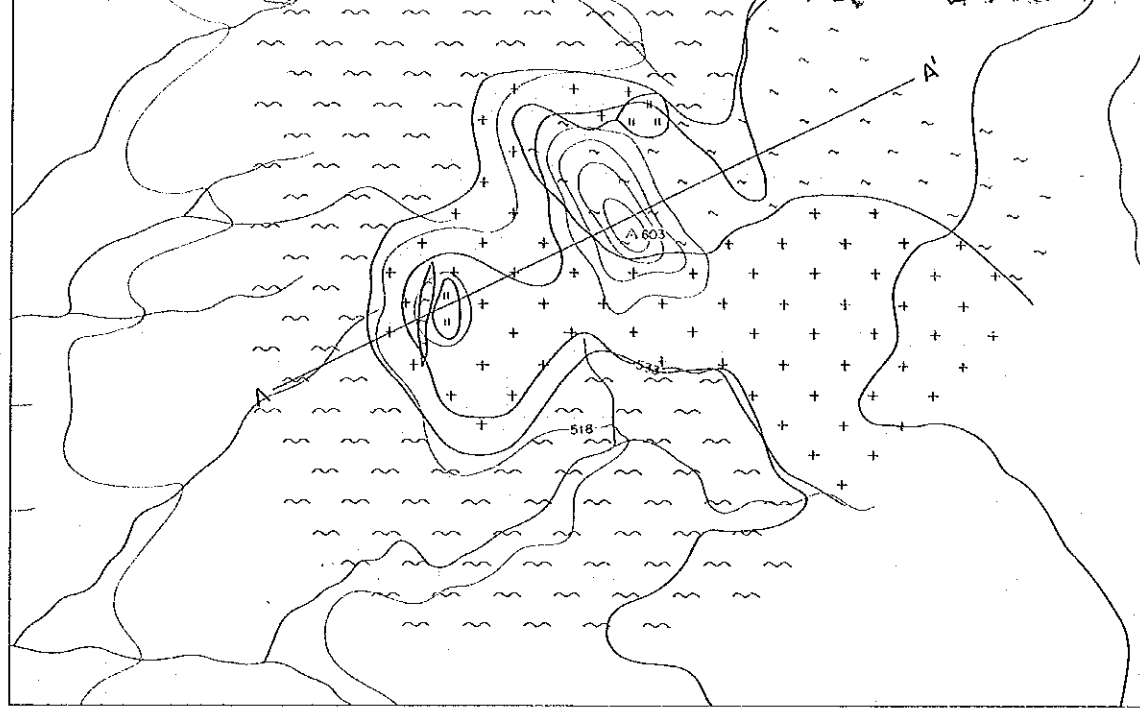
0m      500m      1,000m

Scale 1 : 10,000

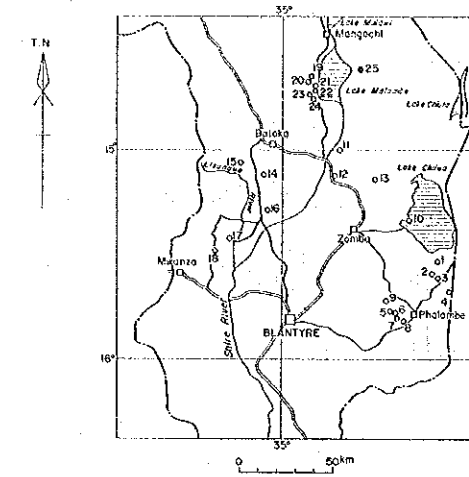
**A-A' Section  
(N65E)**



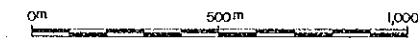
- LEGEND**
- Drift
  - Sideritic carbonatite
  - Ankeritic sövite
  - Sövite
  - Carbonate-Silicate rock
  - Feldspathic breccia, agglomerate
  - Phonolitic breccia
  - Fenitized gneiss
  - Trachyte
  - Phonolite
  - Nephelinite
  - Syenite (Pulaskite)
  - Nepheline syenite (Foyaite)
  - Hornblende biotite-gneiss
  - Granulite and gneissose granite
  - Dolomitic marble
  - Dolerite
  - Granite
  - Perthosite
  - Biotite-metopyroxenite, metagabbro & biotite
  - Meta conglomerate
  - Green pyroxene skarn
  - Dykes and plugs
- T—Trochyte  
 P—Phonolite  
 N—Nephelinite  
 MF—Microfoyaite  
 S—Sölvbergite  
 I—Ijofite  
 D—Dolerite  
 M—Monchiquite  
 A—Aplite
- Fault



OF THE Chiloli (25)

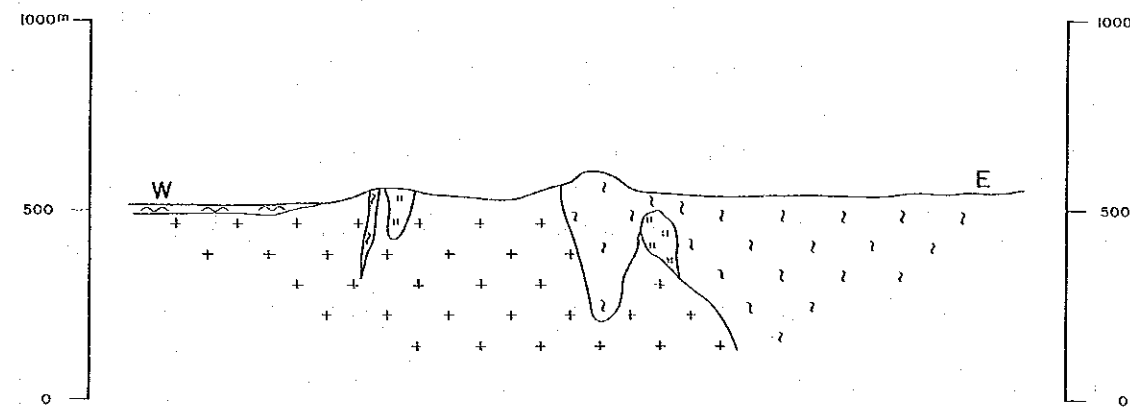


JAPAN INTERNATIONAL COOPERATION AGENCY  
METAL MINING AGENCY OF JAPAN  
FEBRUARY 1987



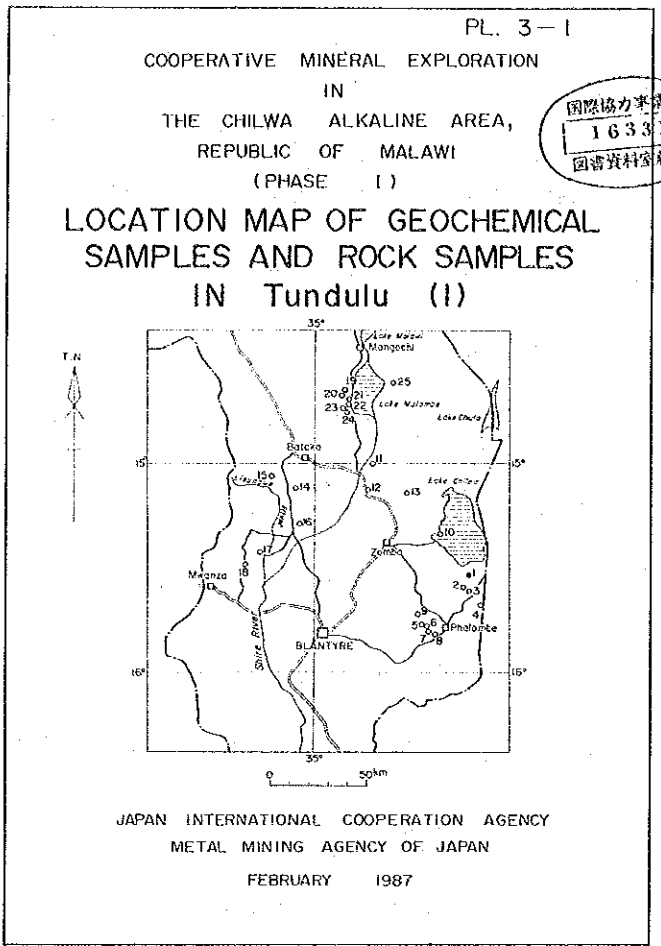
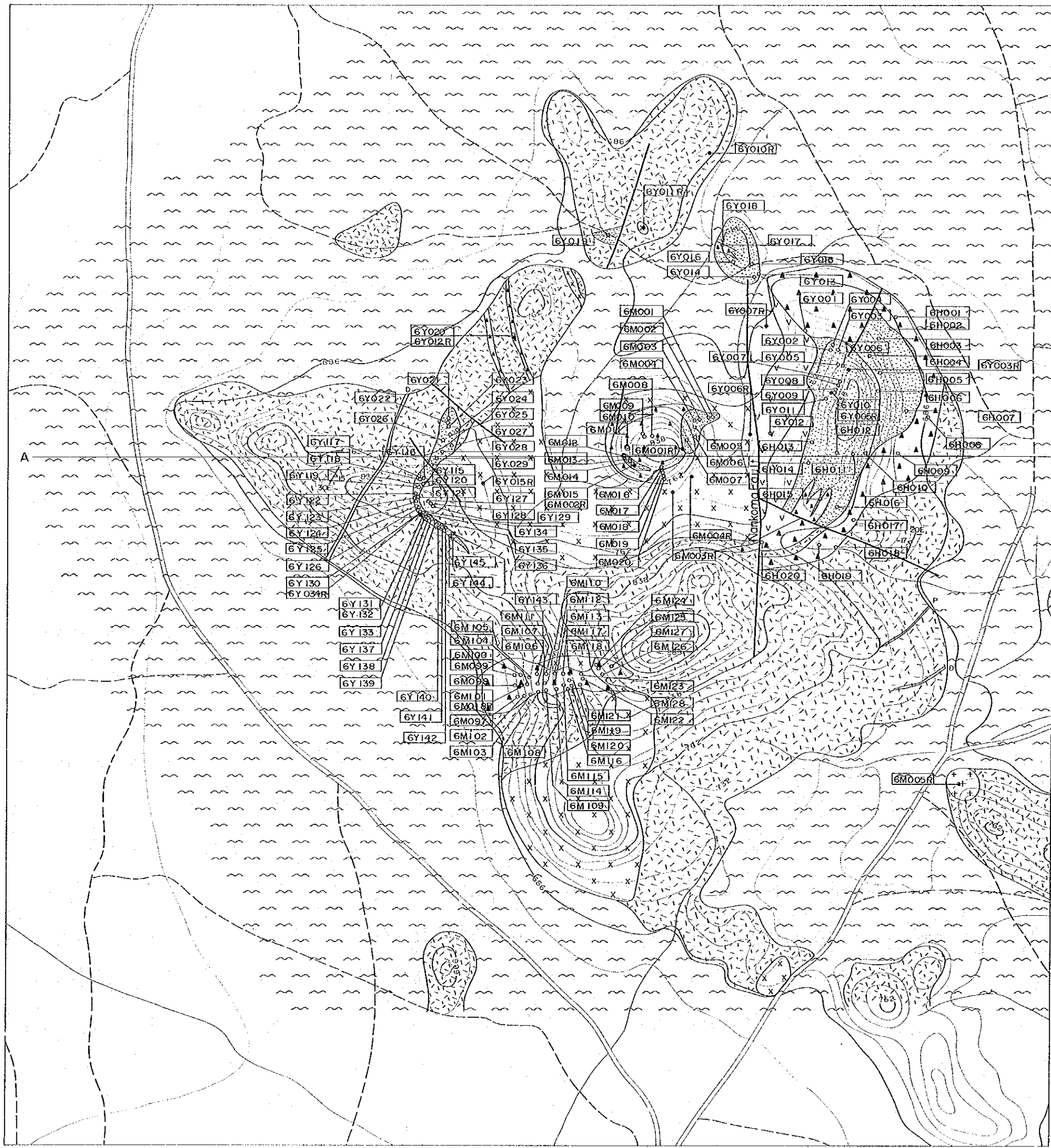
Scale 1 : 10,000

A-A' Section  
(N65E)



LEGEND

- Drift
  - Sideritic carbonatite
  - Ankeritic sövite
  - Sövite
  - Carbonate-Silicate rock
  - Feldspathic breccia, agglomerate
  - Phonolitic breccia
  - Fenitized gneiss
  - Trachyte
  - Phonolite
  - Nephelinite
  - Syenite (Pulaskite)
  - Nepheline syenite (Foyaitite)
  - Hornblende biotite-gneiss
  - Granulite and gneissose granite
  - Dolomitic marble
  - Dolerite
  - Granite
  - Perthosite
  - Biotite-metaproxenite, metagabbro & biotrite
  - Meta conglomerate
  - Green pyroxene skarn
  - Dykes and plugs
- T--Trachyte  
 P--Phonolite  
 N--Nephelinite  
 MF--Microfoyaite  
 S--Sölvbergite  
 I--Ijolite  
 D--Dolerite  
 M--Monchiquite  
 A--Aplite
- Fault  
 Dip of foliation of gneiss

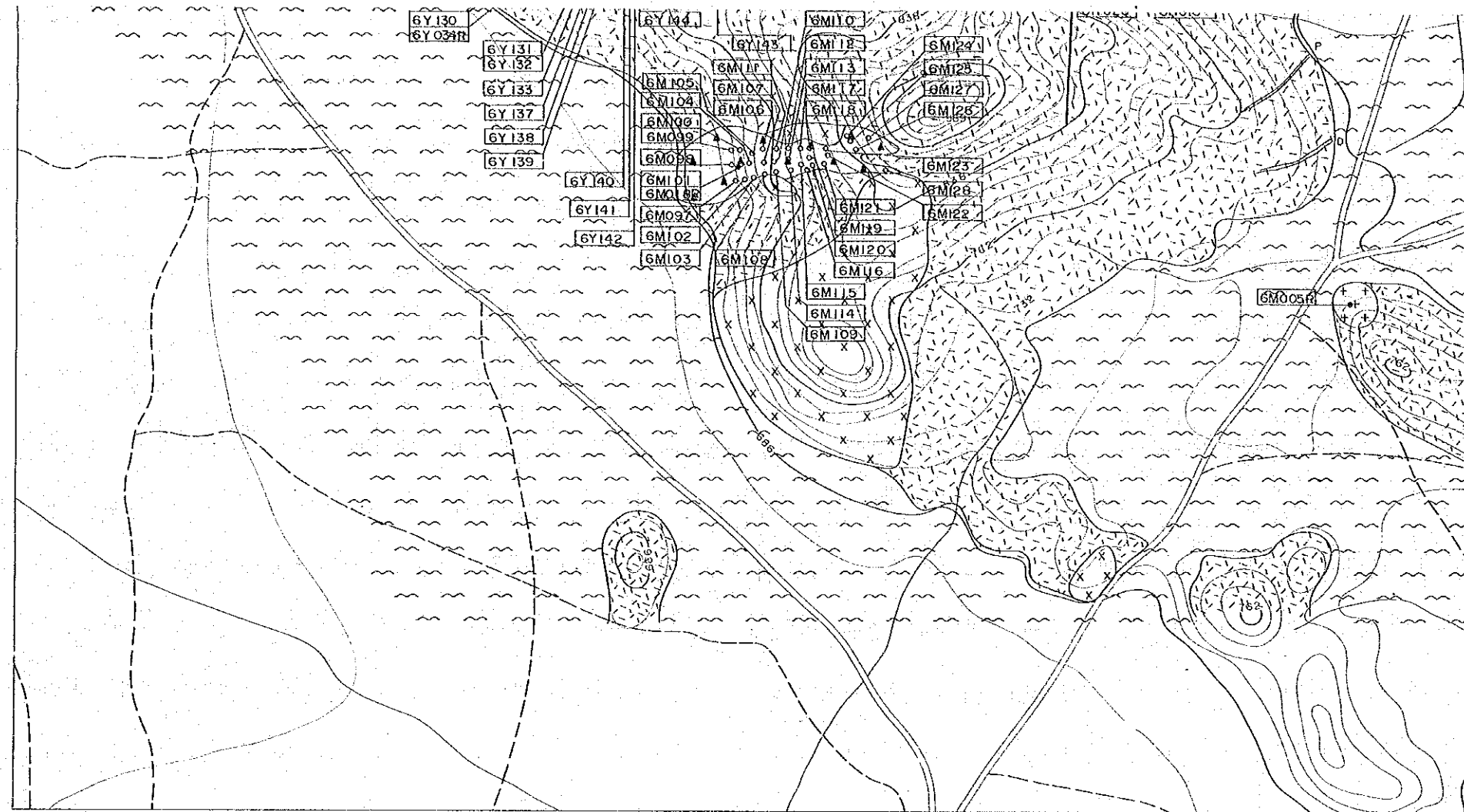


Scale 1 : 10,000

LEGEND

- |  |   |                 |
|--|---|-----------------|
|  | Drift   | T-Trachyte      |
|  | Sideritic carbonatite                         | P-Phonolite     |
|  | Ankeritic sövite                              | N-Nephelinite   |
|  | Sövite  | MF-Microfoyaite |
|  | Carbonate-Silicate rock                       | S-Sölvbergite   |
|  | Feldspathic breccia, agglomerate              | I-Ijolite       |
|  | Phonolitic breccia                            | D-Dolerite      |
|  | Fertilized gneiss                             | M-Monchiquite   |
|  | Trachyte                                      | A-Aplite        |
|  | Phonolite                                     |                 |
|  | Nephelinite                                   |                 |
|  | Syenite (Pulaskite)                           |                 |
|  | Nepheline syenite (Foyaite)                   |                 |
|  | Hornblende biotite-gneiss                     |                 |
|  | Granulite and gneissose granite               |                 |
|  | Dolomitic marble                              |                 |
|  | Dolerite                                      |                 |
|  | Granite                                       |                 |
|  | Perthosite                                    |                 |
|  | Biotite-metaproxenite, metagabbro & biotitite |                 |
|  | Mela conglomerate                             |                 |
|  | Green pyroxene skarn                          |                 |
|  | Dykes and plugs                               |                 |
|  | Fault   |                 |
|  | Dip of foliation of gneiss                    |                 |

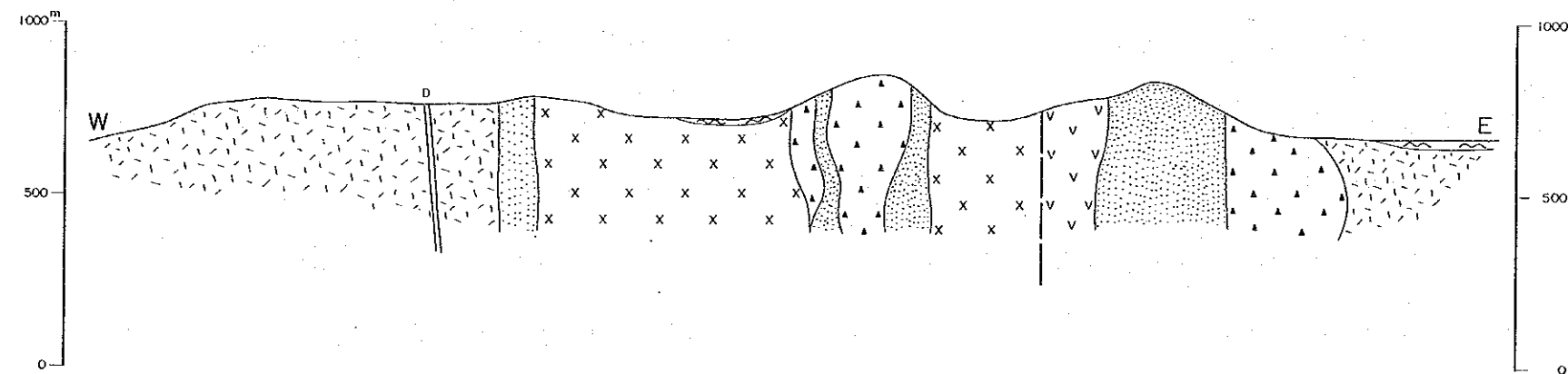
國際協力事業団  
16331  
図書資料部蔵書

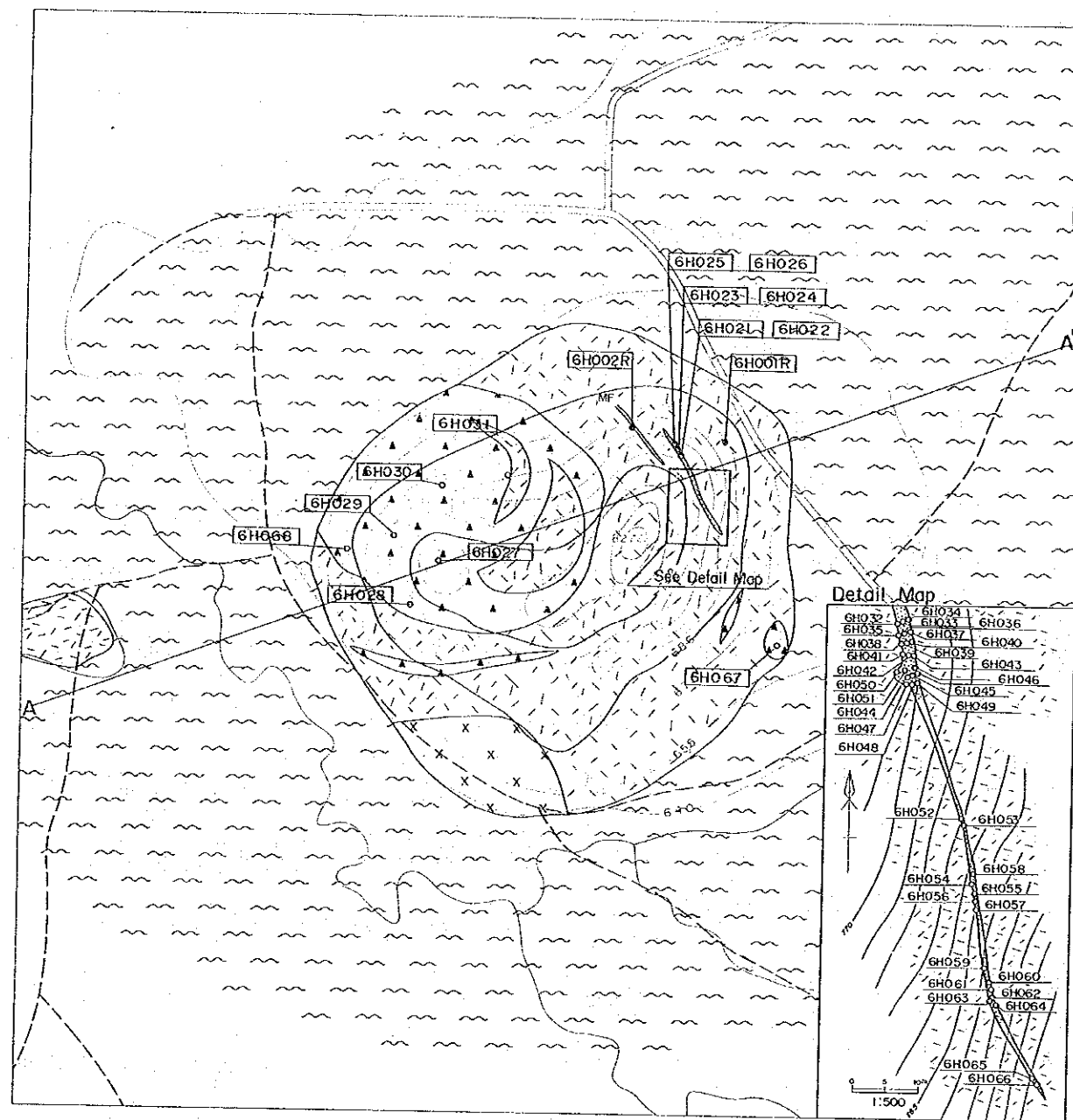


LEGEND

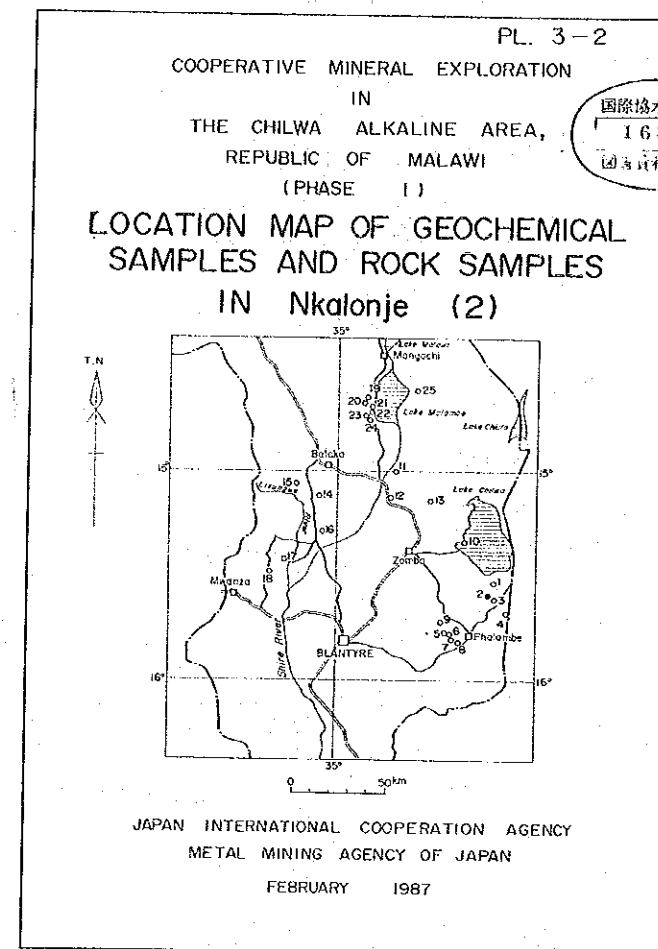
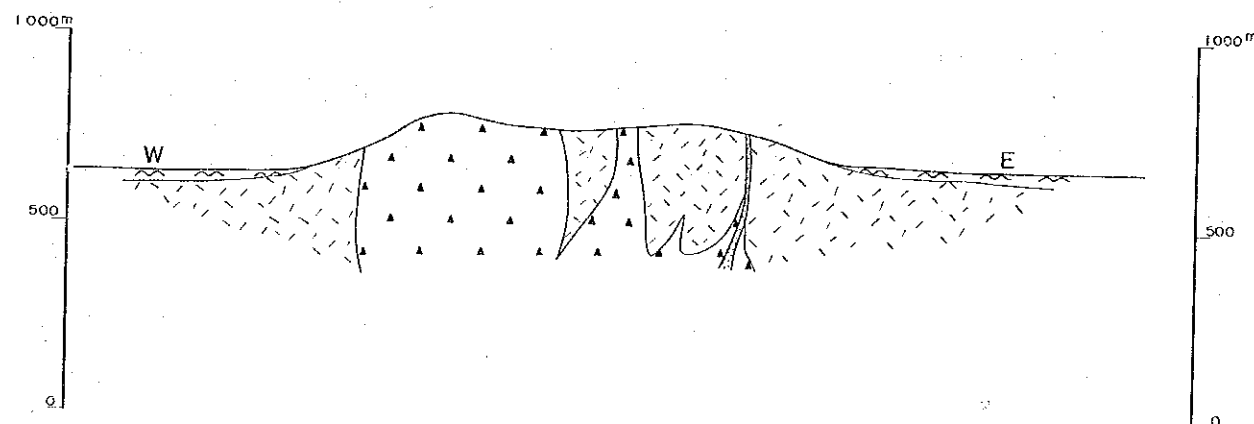
- Drift
  - Sideritic carbonatite
  - Ankeritic sövite
  - Sövite
  - Carbonate-Silicate rock
  - Feldspathic breccia, agglomerate
  - Phonolitic breccia
  - Fenitized gneiss
  - Trachyte
  - Phonolite
  - Nephelinite
  - Syenite (Fulaskite)
  - Nepheline syenite (Foyoite)
  - Hornblende biotite-gneiss
  - Granulite and gneissose granite
  - Dolomitic marble
  - Dolerite
  - Granite
  - Perthosite
  - Biotite-metapyroxenite, metagabbro & biotite
  - Meta conglomerate
  - Green pyroxene skarn
  - Dykes and plugs
- T - Trachyte  
P - Phonolite  
N - Nephelinite  
MF - Microfyoite  
S - Sölvbergite  
I - Ijolite  
D - Dolerite  
M - Monchiquite  
A - Aplit
- Fault  
 Dip of foliation of gneiss
- GEOCHEMICAL SAMPLES  
 ROCK SAMPLES

A-A' Section  
(W-E)





A-A' Section  
(N70E)

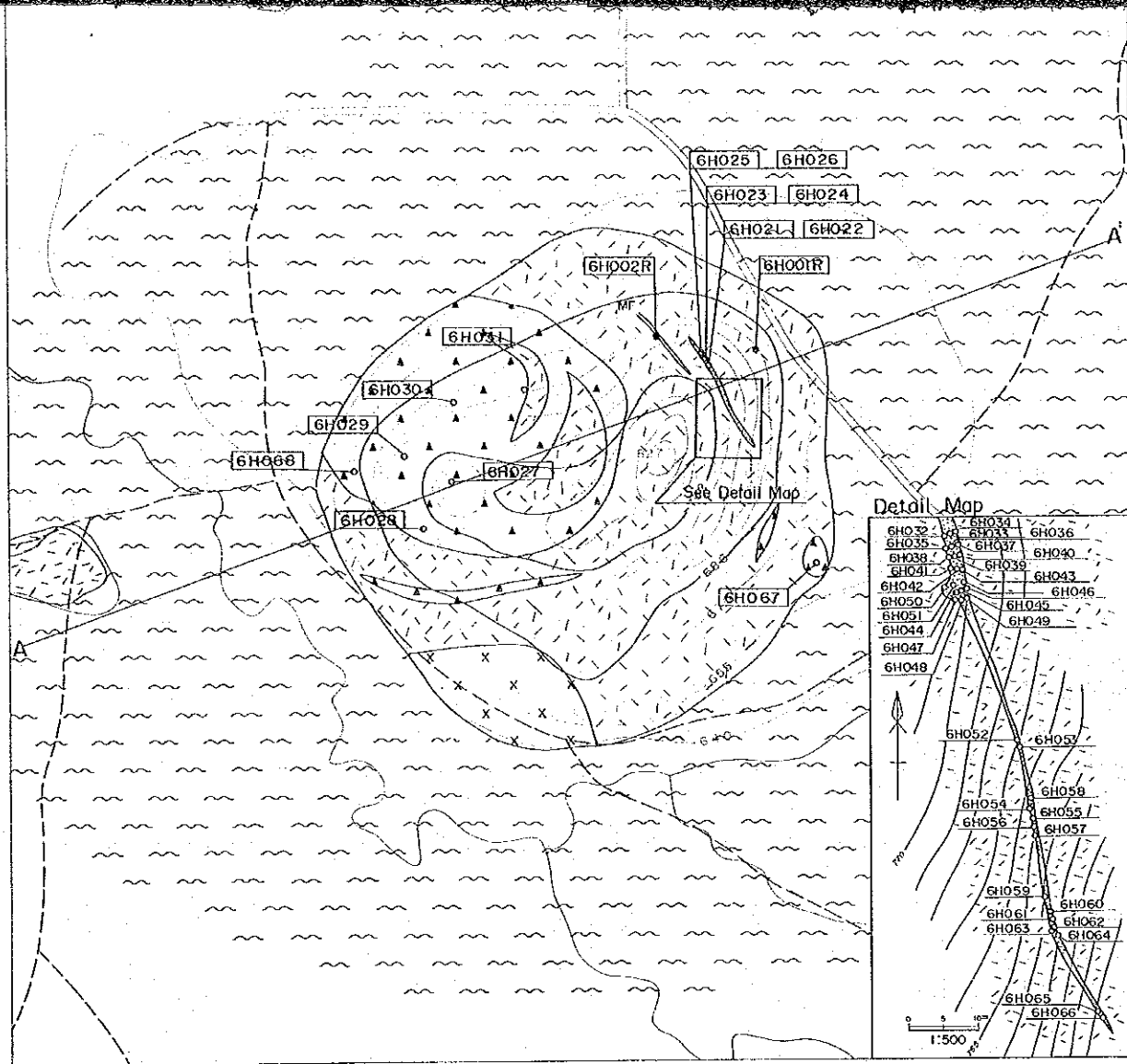


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Scale 1:10,000

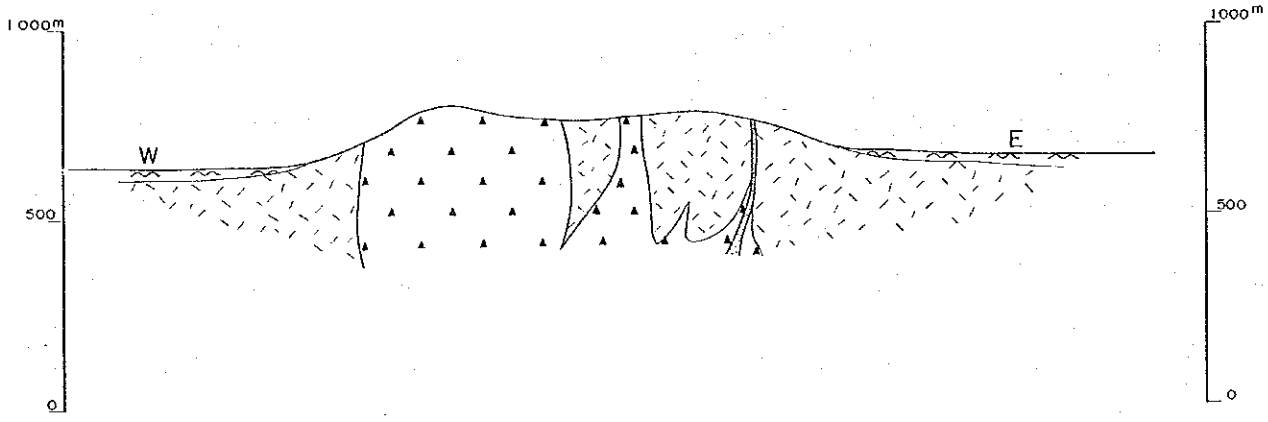
LEGEND

- Drift
  - Sideritic carbonatite
  - Ankeritic sövite
  - Sövite
  - Carbonate-Silicate rock
  - Feldspathic breccia, agglomerate
  - Phonolitic breccia
  - Fertilized gneiss
  - Trachyte
  - Phonolite
  - Nephelinite
  - Syenite (Fayalite)
  - Nepheline syenite (Foyaitite)
  - Hornblende biotite-gneiss
  - Granulite and gneissose granite
  - Dolomitic marble
  - Dolerite
  - Granite
  - Perthosite
  - Biotite-metapyroxenite, metagabbro & biotite
  - Meta conglomerate
  - Green pyroxene skarn
  - Dykes and plugs
- T-Trachyte
  - P-Phonolite
  - N-Nephelinite
  - MF-Microfayalite
  - S-Sävsbergite
  - I-Ijolite
  - D-Dolerite
  - M-Monchiquite
  - A-Aplite

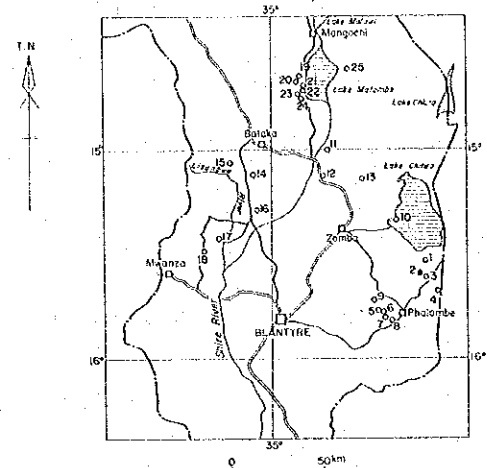




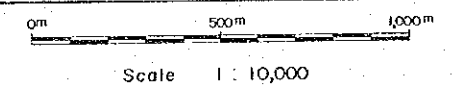
A-A' Section  
(N70E)



REPUBLIC OF MALAWI  
(PHASE 1)  
LOCATION MAP OF GEOCHEMICAL  
SAMPLES AND ROCK SAMPLES  
IN Nkalonje (2)



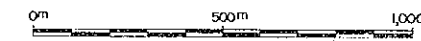
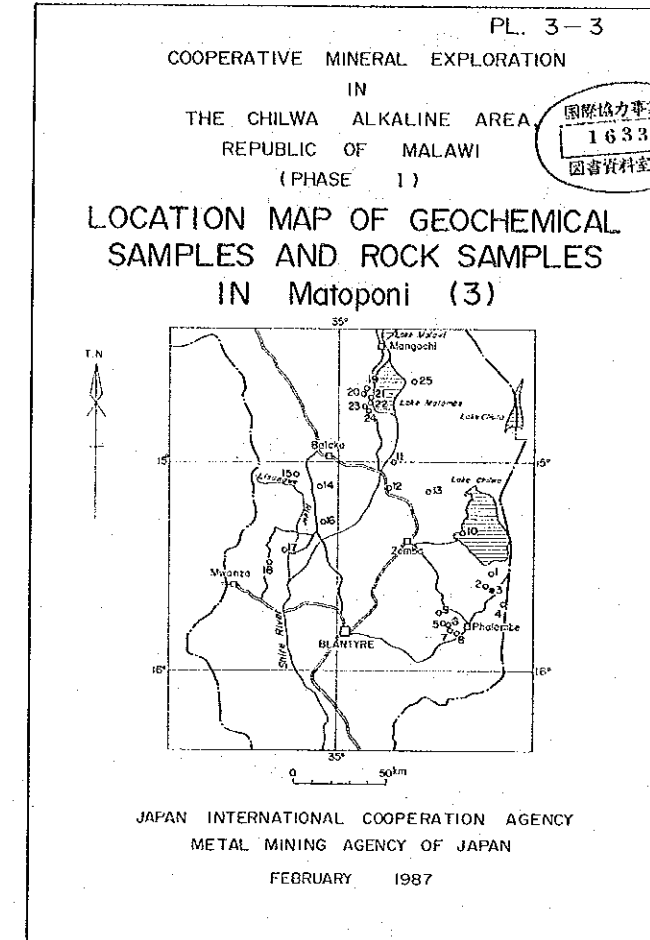
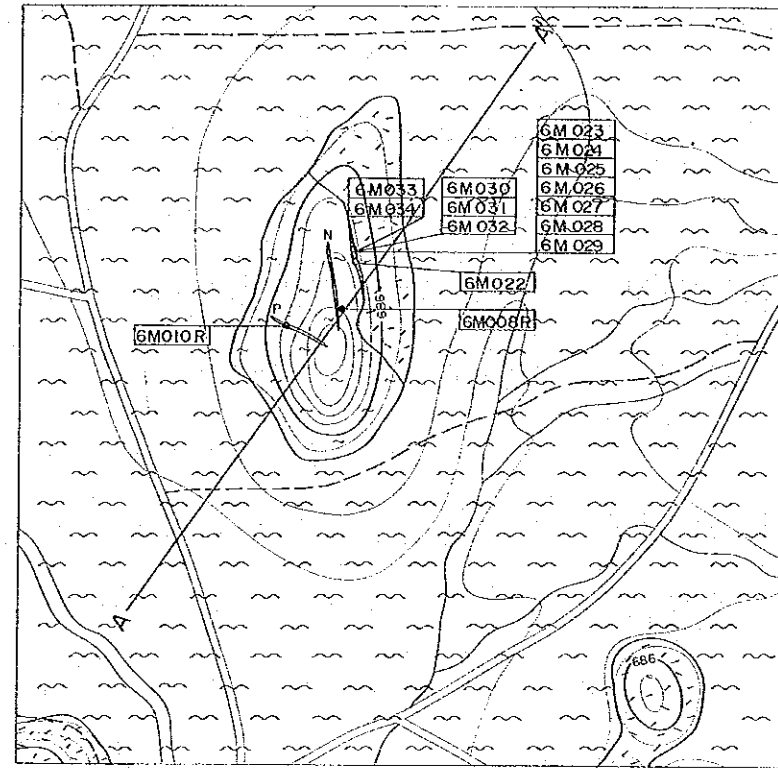
JAPAN INTERNATIONAL COOPERATION AGENCY  
METAL MINING AGENCY OF JAPAN  
FEBRUARY 1987



LEGEND

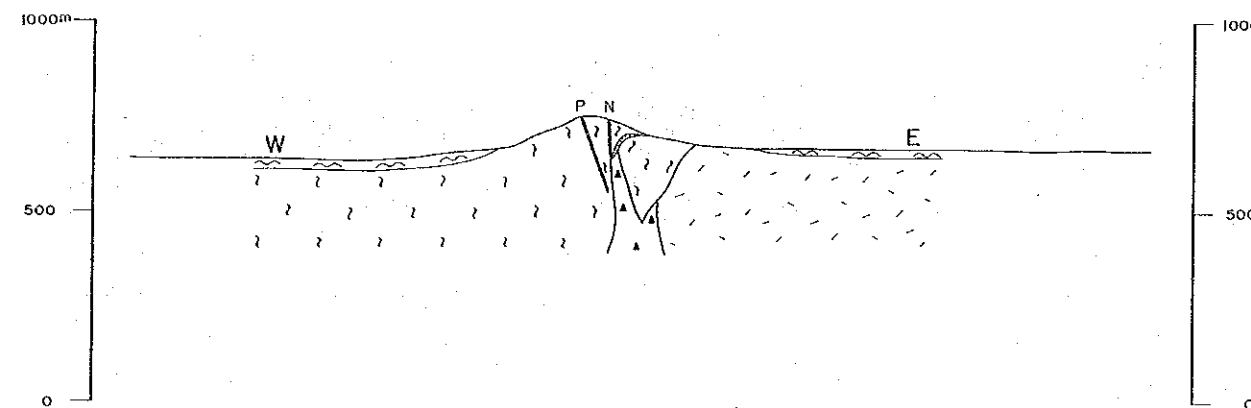
- Drift
- Sideritic carbonalite
- Ankeritic sövite
- Sövite
- Carbonate-Silicate rock
- Feldspathic breccia, agglomerate
- Phonolitic breccia
- Fertilized gneiss
- Trachyte
- Phonolite
- Nephelinite
- Syenite (Fulaskite)
- Nepheline syenite (Foyaitite)
- Hornblende biotite-gneiss
- Granulite and gneissose granite
- Dolomitic marble
- Dolerite
- Granite
- Perthosite
- Biotite-metaproxenite, metagabbro & biotite
- Meta conglomerate
- Green pyroxene skarn
- Dykes and plugs
  - T - Trachyte
  - P - Phonolite
  - N - Nephelinite
  - MF - Microfoyaite
  - S - Sölvbergite
  - I - Ijolite
  - D - Dolerite
  - M - Monchiquite
  - A - Aplite
- Fault
- Dip of foliation of gneiss

- 6Y001 GEOCHEMICAL SAMPLES
- 6Y00IR ROCK SAMPLES



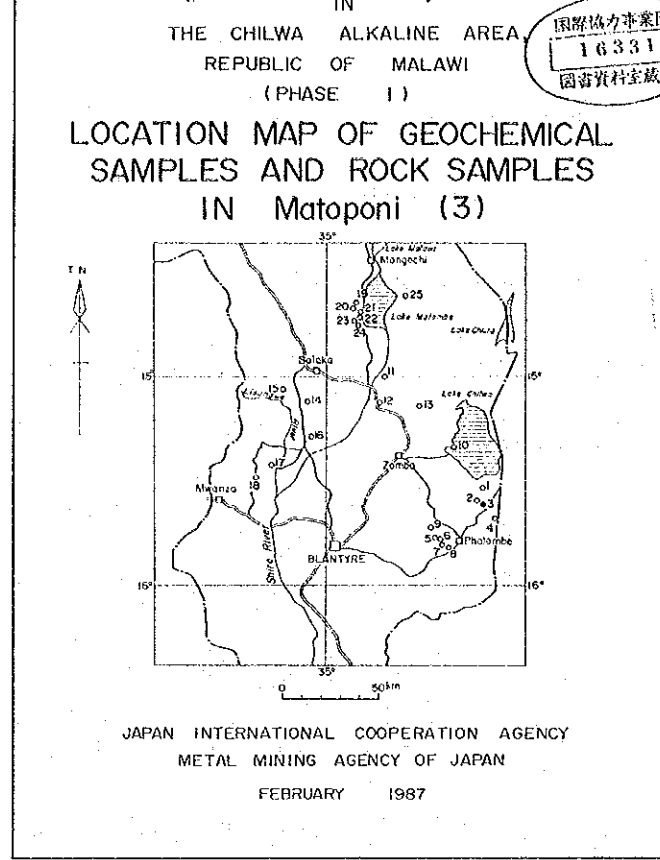
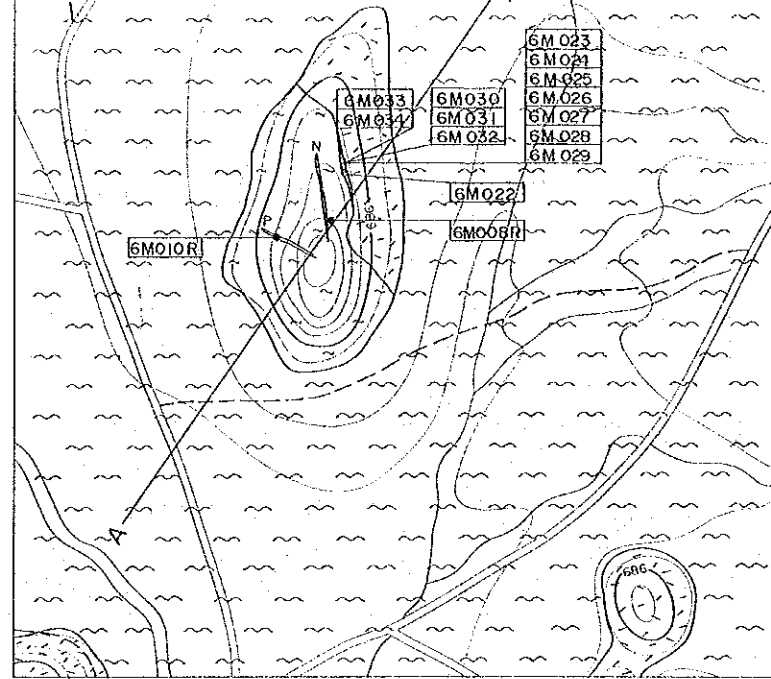
Scale 1 : 10,000

A-A' Section  
 (N35E)



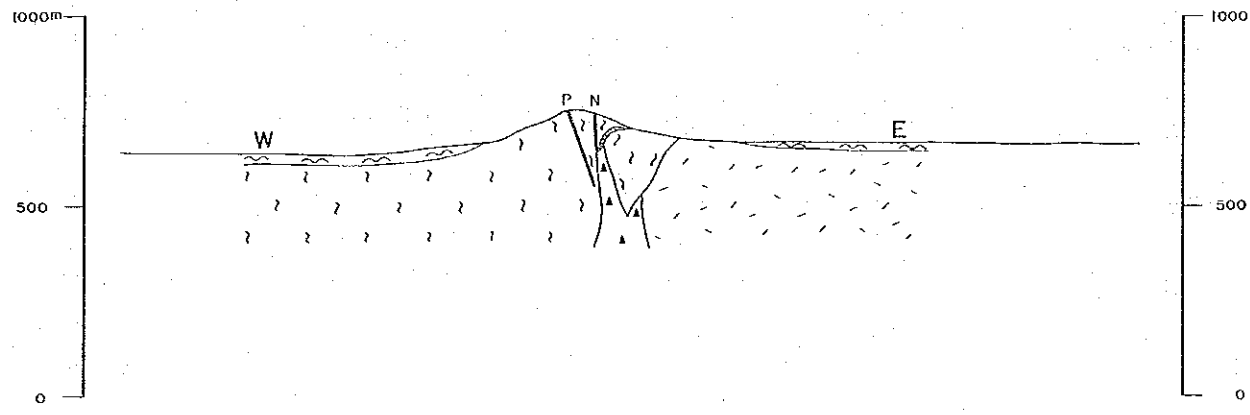
LEGEND

- Drift
  - Sideritic carbonatite
  - Ankeritic sövite
  - Sövite
  - Carbonate-Silicate rock
  - Feldspathic breccia, agglomerate
  - Phonolitic breccia
  - Fenitized gneiss
  - Trachyte
  - Phonolite
  - Nephelinite
  - Syenite (Pulaskite)
  - Nepheline syenite (Foyaitite)
  - Hornblende biotite-gneiss
  - Granulite and gneissose granite
  - Dolomitic marble
  - Dolerite
  - Granite
  - Perthosite
  - Biotite-metapyroxenite, metagabbro & biotlite
  - Meta conglomerate
  - Green pyroxene skarn
  - Dykes and plugs
- T - Trachyte  
 P - Phonolite  
 N - Nephelinite  
 MF - Microfoyaite  
 S - Sövitebergite  
 I - ijolite  
 D - Dolerite  
 M - Monchiquite



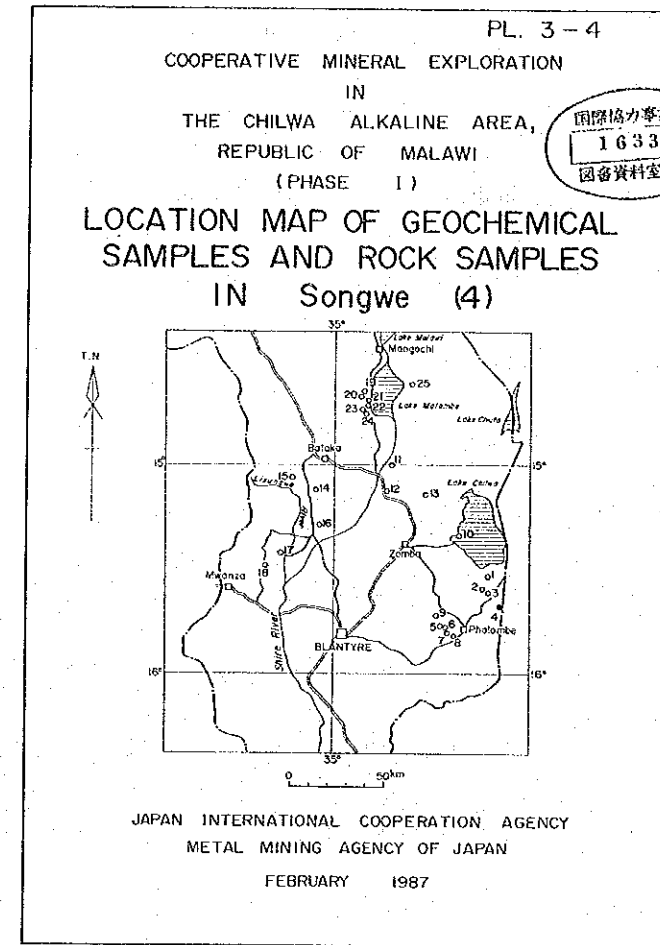
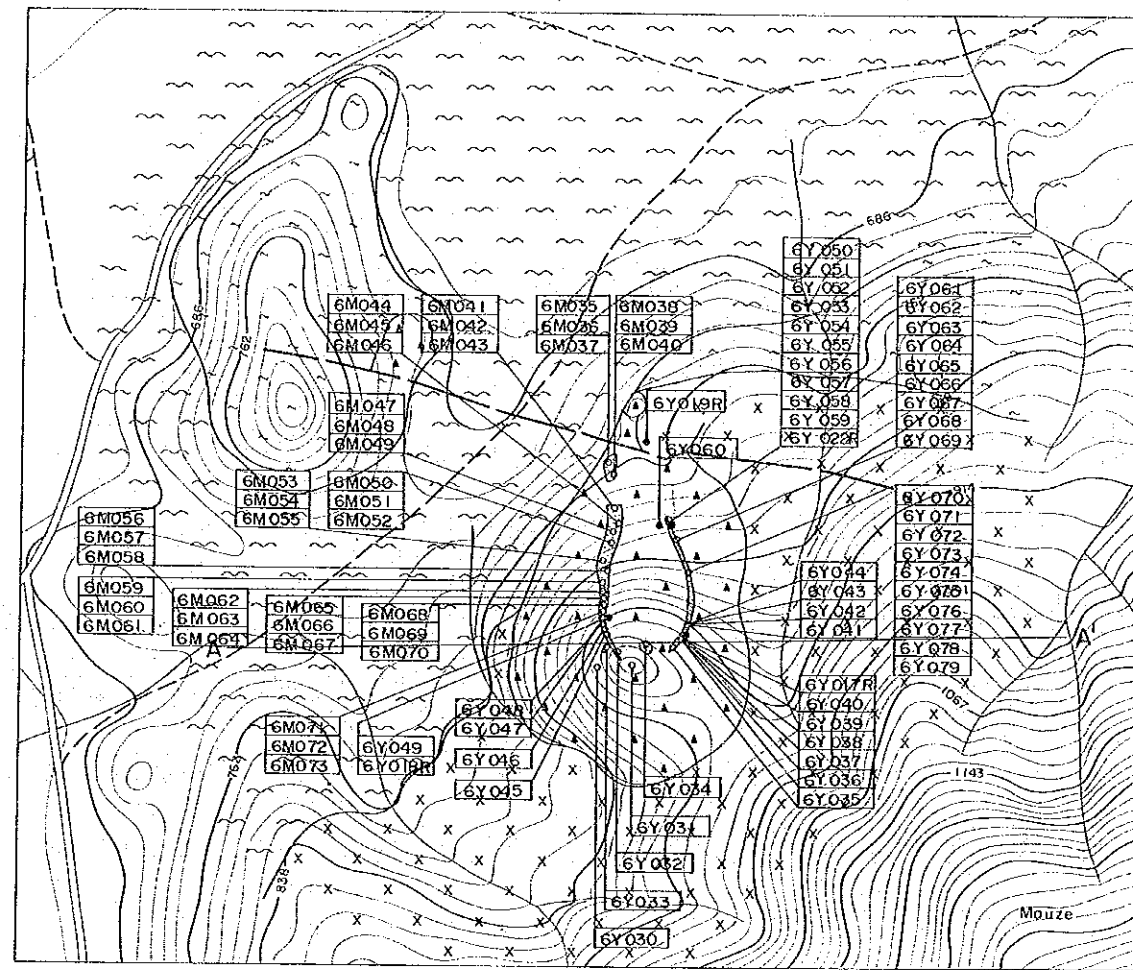
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Scale 1 : 10,000

A-A' Section  
(N35E)

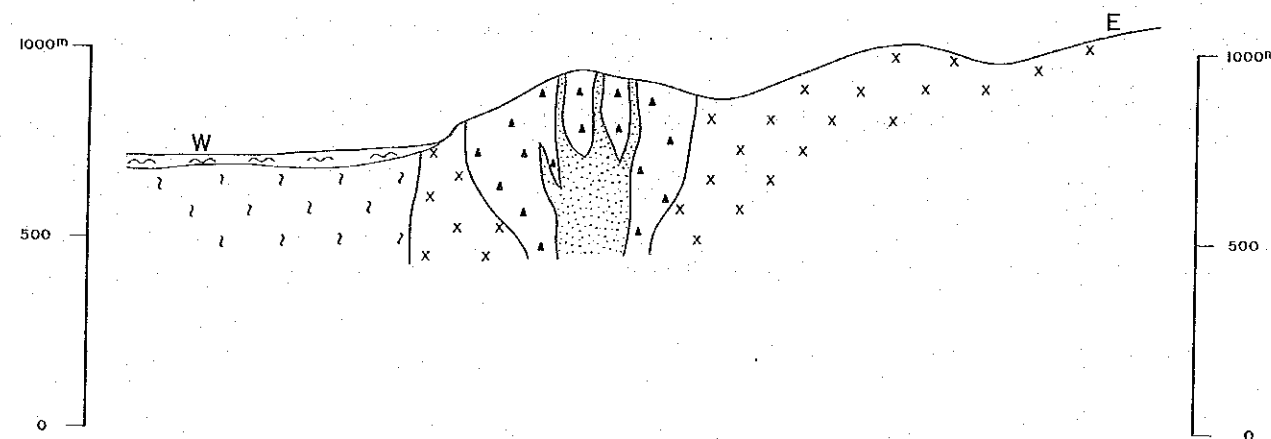


LEGEND

- Drift
  - Sideritic carbonatite
  - Ankeritic sövite
  - Sövite
  - Carbonate-Silicate rock
  - Feldspathic breccia, agglomerate
  - Phonolitic breccia
  - Fertilized gneiss
  - Trachyte
  - Phonolite
  - Nephelinite
  - Syenite (Pulaskite)
  - Nepheline syenite (Foyaité)
  - Hornblende biotite-gneiss
  - Granulite and gneissose granite
  - Dolomitic marble
  - Dolerite
  - Granite
  - Perthosite
  - Biotite-metapyroxenite, metagabbro & biotitite
  - Meta conglomerate
  - Green pyroxene skarn
  - Dykes and plugs
- T - Trachyte
  - P - Phonolite
  - N - Nephelinite
  - MF - Microfayaité
  - S - Sövsbergite
  - I - Ijalite
  - D - Dolerite
  - M - Monchiquite
  - A - Aplité
- Fault
  - Dip of foliation of gneiss
- 6Y001 GEOCHEMICAL SAMPLES
  - 6Y001R ROCK SAMPLES

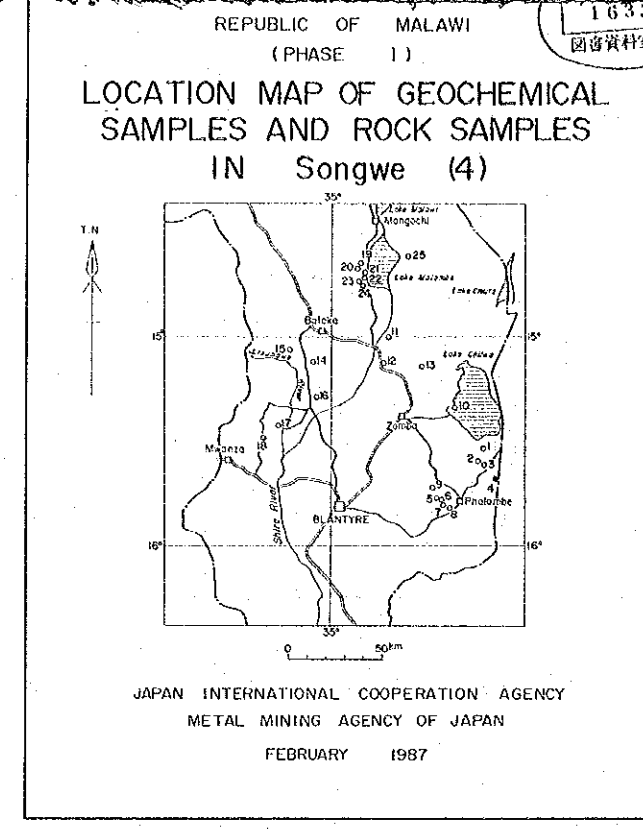
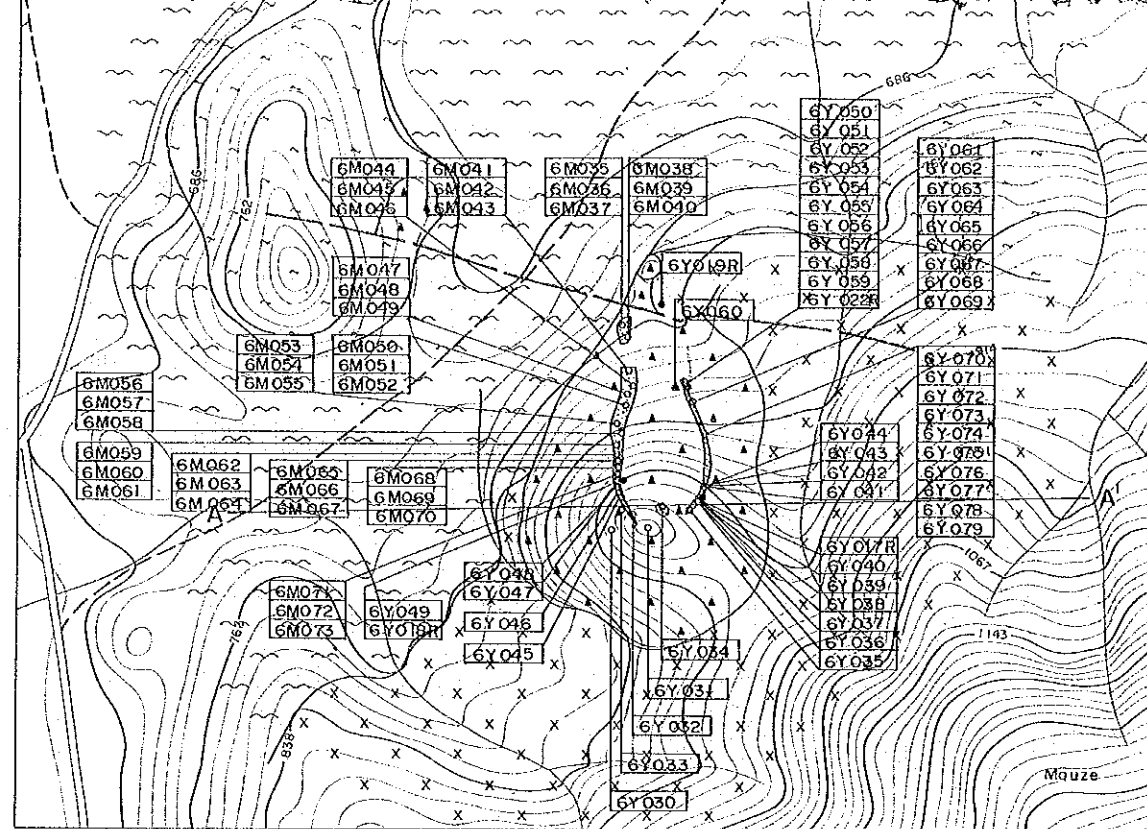


A-A' Section  
 (W-E)

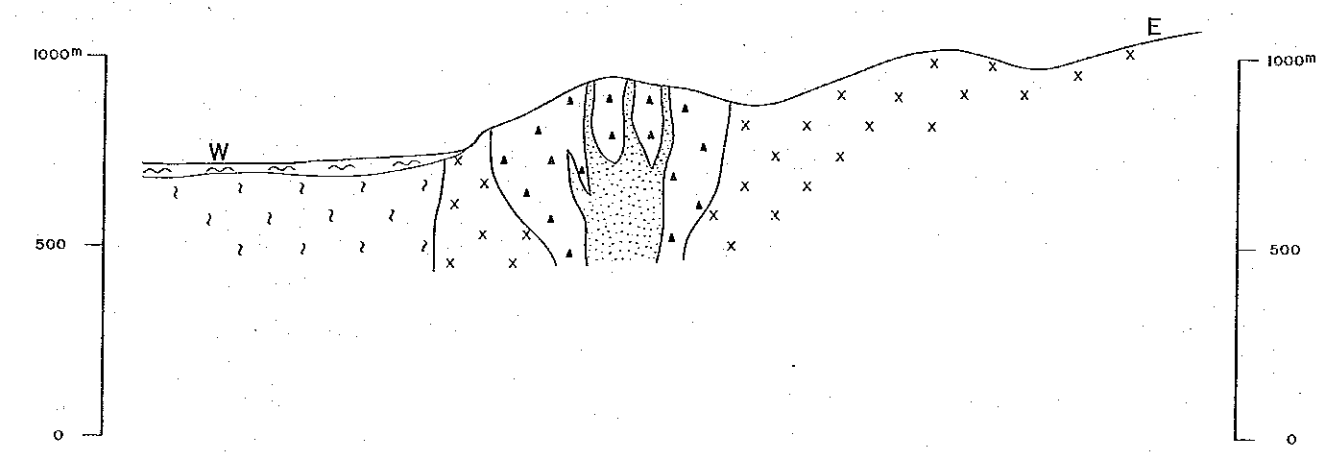


LEGEND

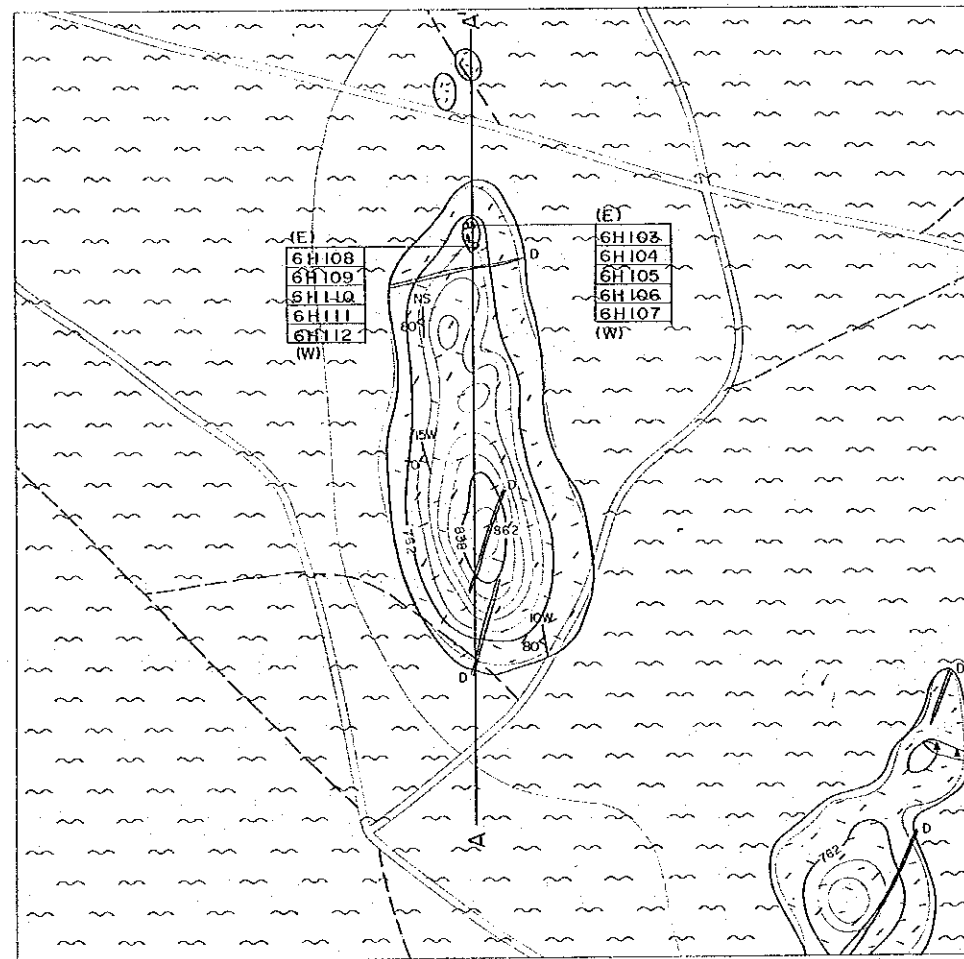
- Drift
- Sideritic carbonatite
- Ankeritic siltite
- Sövite
- Carbonate-silicate rock
- Feldspathic breccia, agglomerate
- Phonolitic breccia
- Fenitized gneiss
- Trachyte
- Phonolite
- Nephelinite
- Syenite (Pulaskite)
- Nepheline syenite (Foyaite)
- Hornblende biotite-gneiss
- Granulite and gneissose granite
- Dolomitic marble
- Dolerite
- Granite
- Perthosite
- Biotite-metapyroxenite, metagabbro & biotite
- Meta conglomerate
- Green pyroxene skarn
- Dykes and plugs
- T - Trachyte
- P - Phonolite
- N - Nephelinite
- MF - Microfoyaite
- S - Sölvbergite
- I - Ijolite
- D - Dolerite
- M - Monchiquite



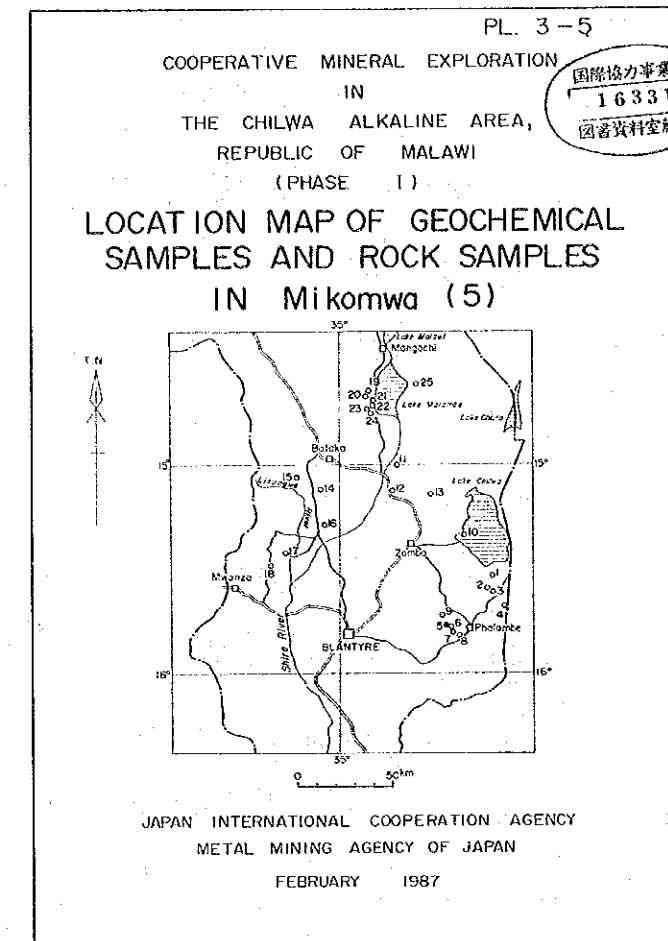
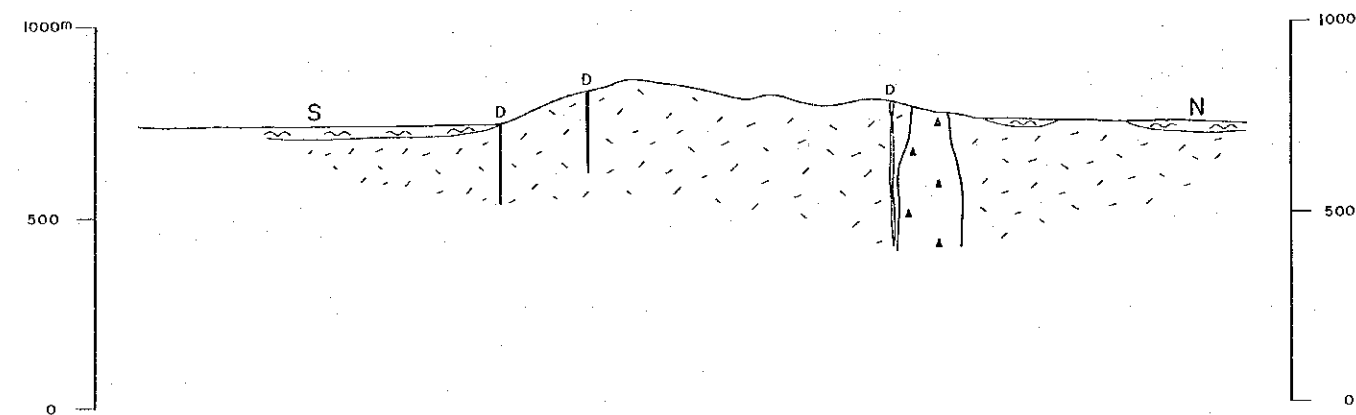
A-A' Section  
(W-E)



- LEGEND
- Drift
  - Sideritic carbonite
  - Ankeritic sövite
  - Sövite
  - Carbonate-Silicate rock
  - Feldspathic breccia, agglomerate
  - Phonolitic breccia
  - Fenitized gneiss
  - Trachyte
  - Phonolite
  - Nephelinite
  - Syenite (Pulaskite)
  - Nepheline syenite (Foyaite)
  - Hornblende biotite-gneiss
  - Granulite and gneissose granite
  - Dolomitic marble
  - Dolerite
  - Granite
  - Perthosite
  - Biotite-metapyroxenite, metagabbro & biotitite
  - Meta conglomerate
  - Green pyroxene skarn
  - Dykes and plugs
- T - Trachyte  
P - Phonolite  
N - Nephelinite  
MF - Microfoyaite  
S - Sölvbergite  
I - Ijalite  
D - Dolerite  
M - Monchiquite  
A - Aplite
- Fault
- Dip of foliation of gneiss
- GEOCHEMICAL SAMPLES
- ROCK SAMPLES



A-A' Section  
(S-N)

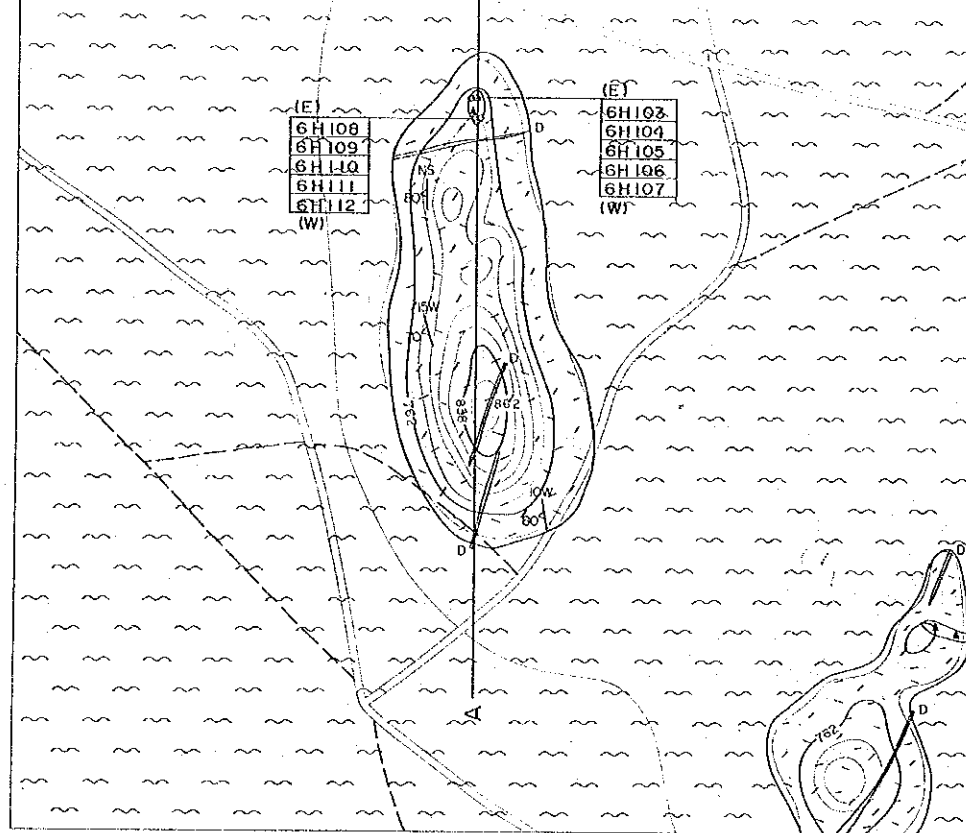


0m 500m 1000m

Scale 1:10,000

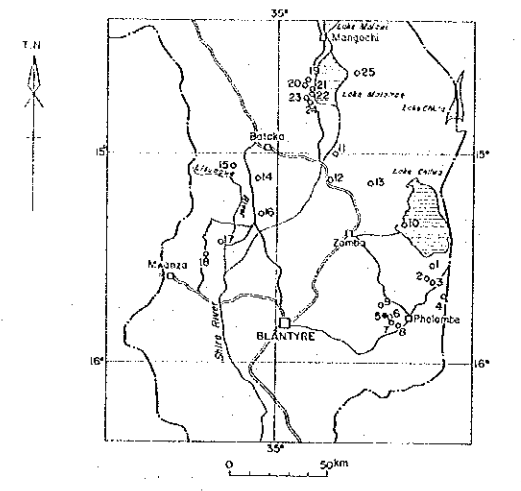
LEGEND

- |  |   |
|--|---|
|  | Drift                                       |
|  | Sideritic carbonatite                       |
|  | Ankeritic sövite                            |
|  | Sövite                                      |
|  | Carbonate-Silicate rock                     |
|  | Feldspathic breccia, agglomerate            |
|  | Phonolitic breccia                          |
|  | Fenitized gneiss                            |
|  | Trachyte                                    |
|  | Phonolite                                   |
|  | Nephellinite                                |
|  | Syenite (Faluskite)                         |
|  | Nepheline syenite (Foyalite)                |
|  | Hornblende biotite-gneiss                   |
|  | Granulite and gneissose granite             |
|  | Dolomitic marble                            |
|  | Dolerite                                    |
|  | Granite                                     |
|  | Perthosite                                  |
|  | Biotite-metaproxenite, metagabbro & biotite |
|  | Meta conglomerate                           |
|  | Green pyroxene skarn                        |
|  | Dykes and plugs                             |
- T - Trachyte  
P - Phonolite  
N - Nephellinite  
MF - Microfoyalite  
S - Sölvbergite  
I - Ijolite  
D - Dolerite

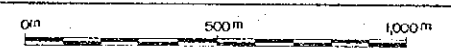


THE CHILWA ALKALINE AREA,  
 REPUBLIC OF MALAWI  
 (PHASE I)

LOCATION MAP OF GEOCHEMICAL  
 SAMPLES AND ROCK SAMPLES  
 IN Mikomwa (5)

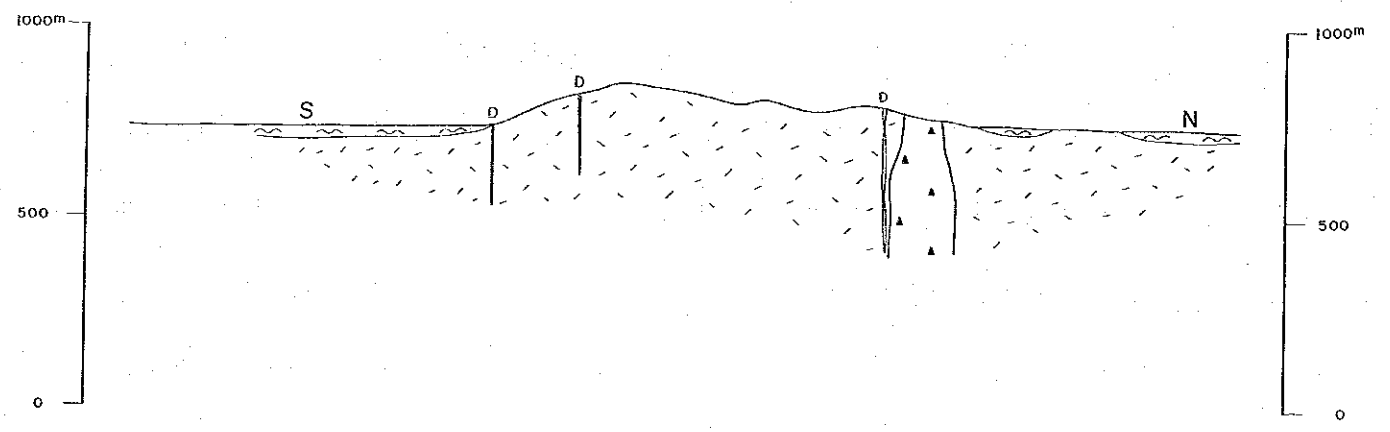


JAPAN INTERNATIONAL COOPERATION AGENCY  
 METAL MINING AGENCY OF JAPAN  
 FEBRUARY 1987



Scale 1 : 10,000

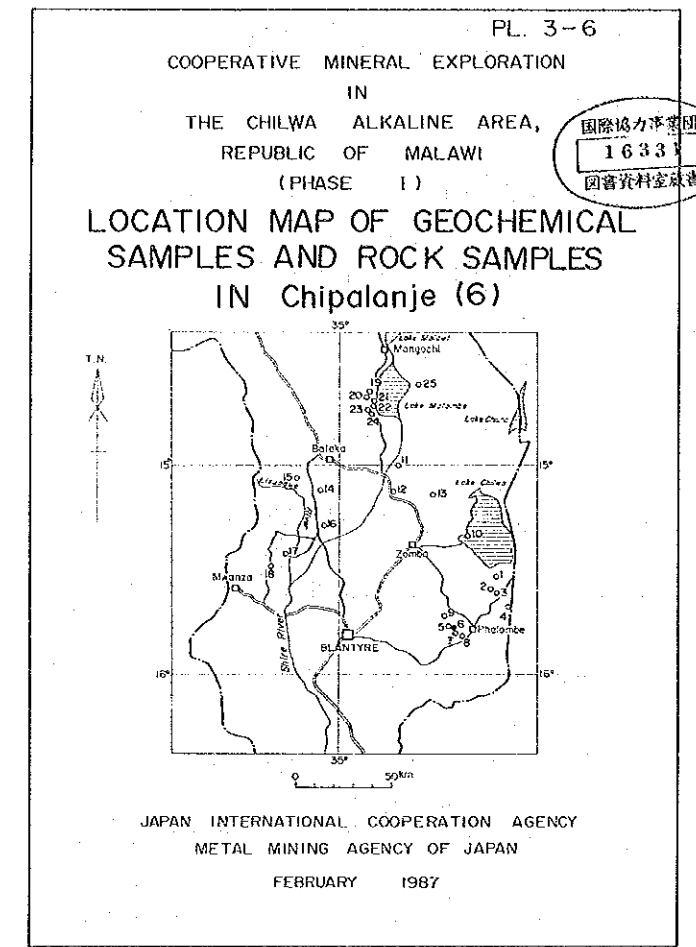
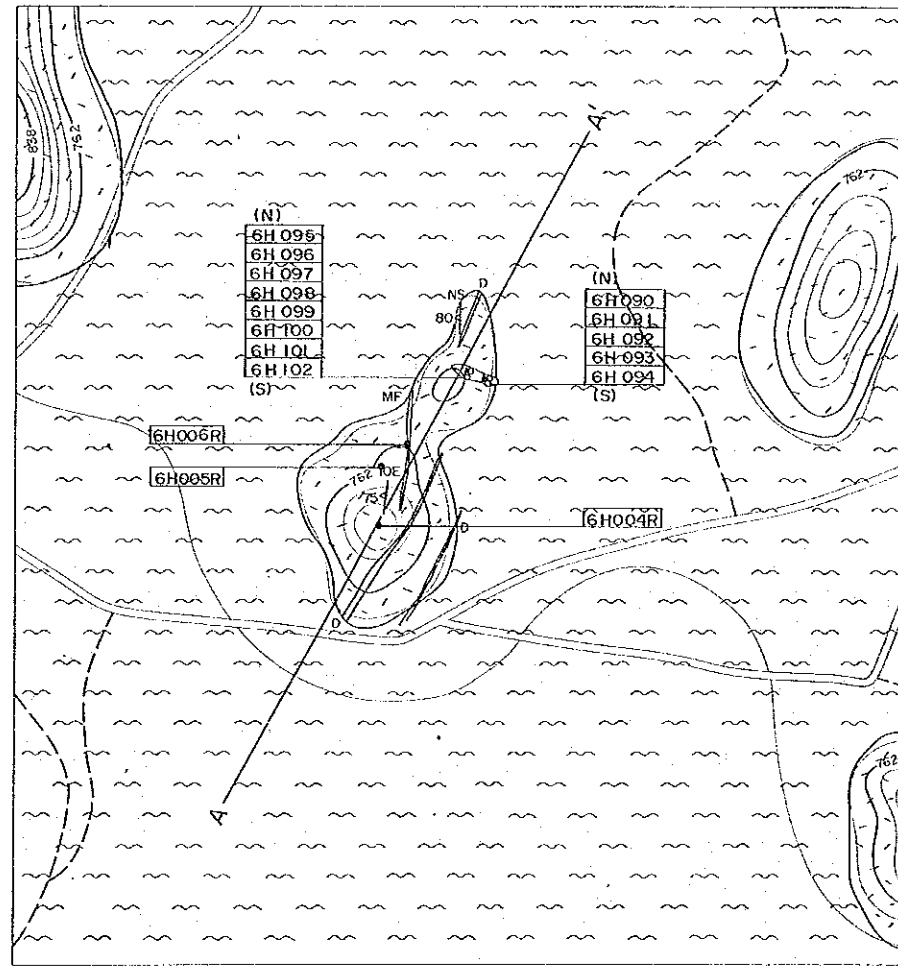
A-A' Section  
 (S-N)



LEGEND

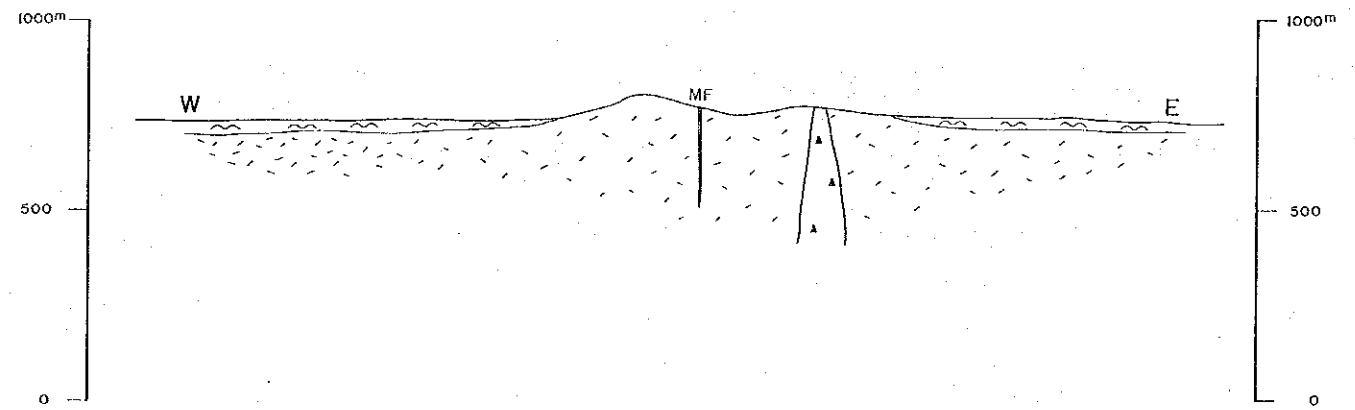
- Drift
  - Sideritic carbonatite
  - Ankeritic sövite
  - Sövite
  - Carbonate-silicate rock
  - Feldspathic breccia, agglomerate
  - Phonolitic breccia
  - Fenitized gneiss
  - Trachyte
  - Phonolite
  - Nephelinite
  - Syenite (Pulaskite)
  - Nepheline syenite (Foyaitite)
  - Hornblende biotite-gneiss
  - Granulite and gneissose granite
  - Dolomitic marble
  - Dolerite
  - Granite
  - Perthosite
  - Biotite-metapyroxenite, metagabbro & biotitite
  - Meta conglomerate
  - Green pyroxene skarn
  - Dykes and plugs
- T-Trachyte  
 P-Phonolite  
 N-Nephelinite  
 MF-Microfoyaite  
 S-Sölvbergite  
 I-Ijolite  
 D-Dolerite  
 M-Monchiquite  
 A-Aplitite
- Fault  
 Dip of foliation of gneiss
- GEOCHEMICAL SAMPLES  
 ROCK SAMPLES





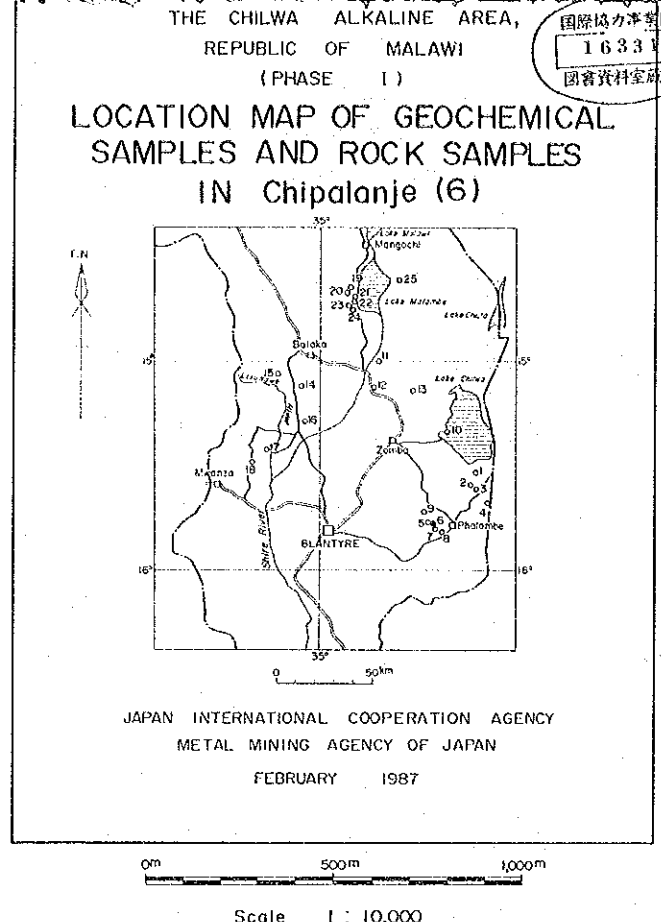
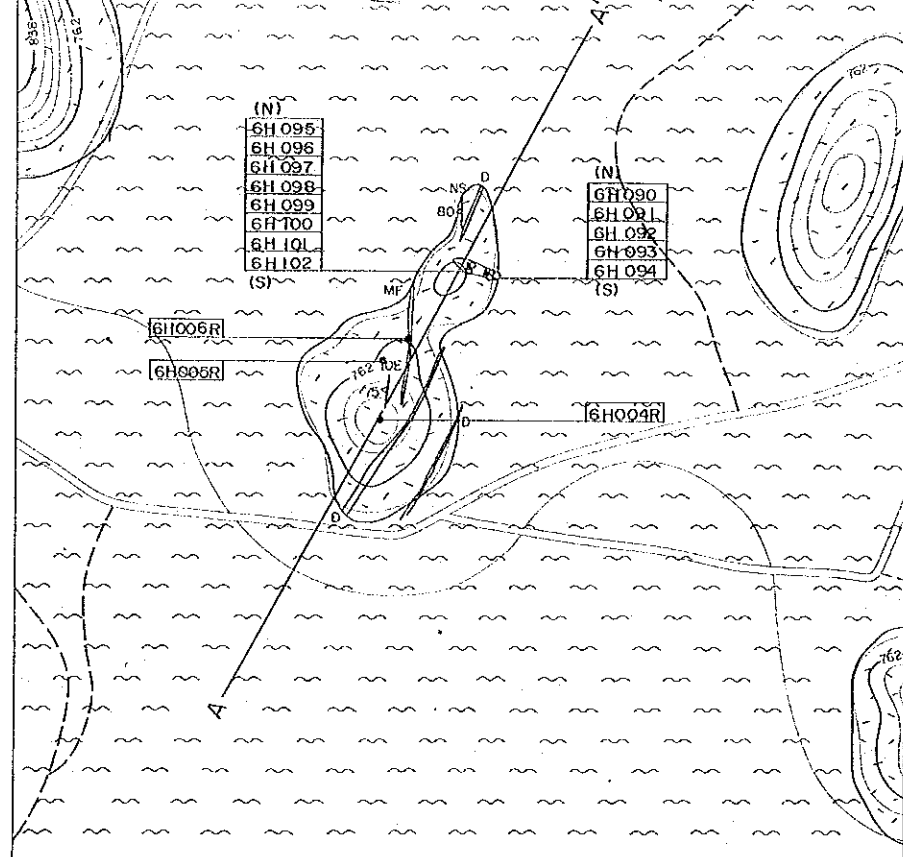
Scale 1 : 10,000

A-A' Section  
(N30E)

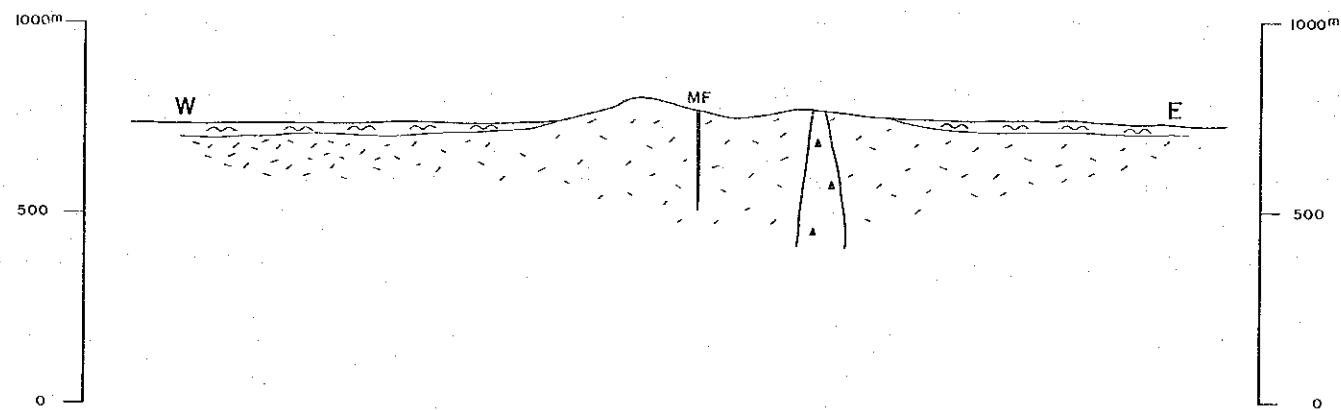


LEGEND

- Drift
  - Sideritic carbonatite
  - Ankeritic sövite
  - Sövite
  - Carbonate-Silicate rock
  - Feldspathic breccia, agglomerate
  - Phonolitic breccia
  - Fenitized gneiss
  - Trachyte
  - Phonolite
  - Nephelinite
  - Syenite (Pitaskite)
  - Nepheline syenite (Foyaite)
  - Hornblende biotite-gneiss
  - Granulite and gneissose granite
  - Dolomitic marble
  - Dolerite
  - Granite
  - Perthosite
  - Biotite-metapyroxenite, metagabbro & biotite
  - Meta conglomerate
  - Green pyroxene skarn
  - Dykes and plugs
- T - Trachyte  
 P - Phonolite  
 N - Nephelinite  
 MF - Microfoyaite  
 S - Sölvbergite  
 I - Ijolite  
 D - Dolerite

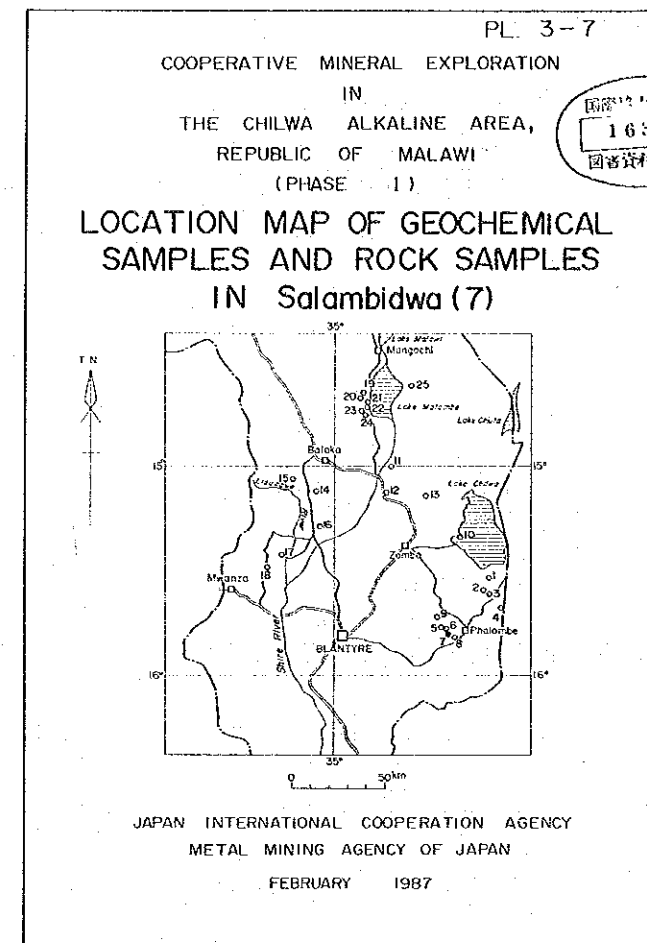
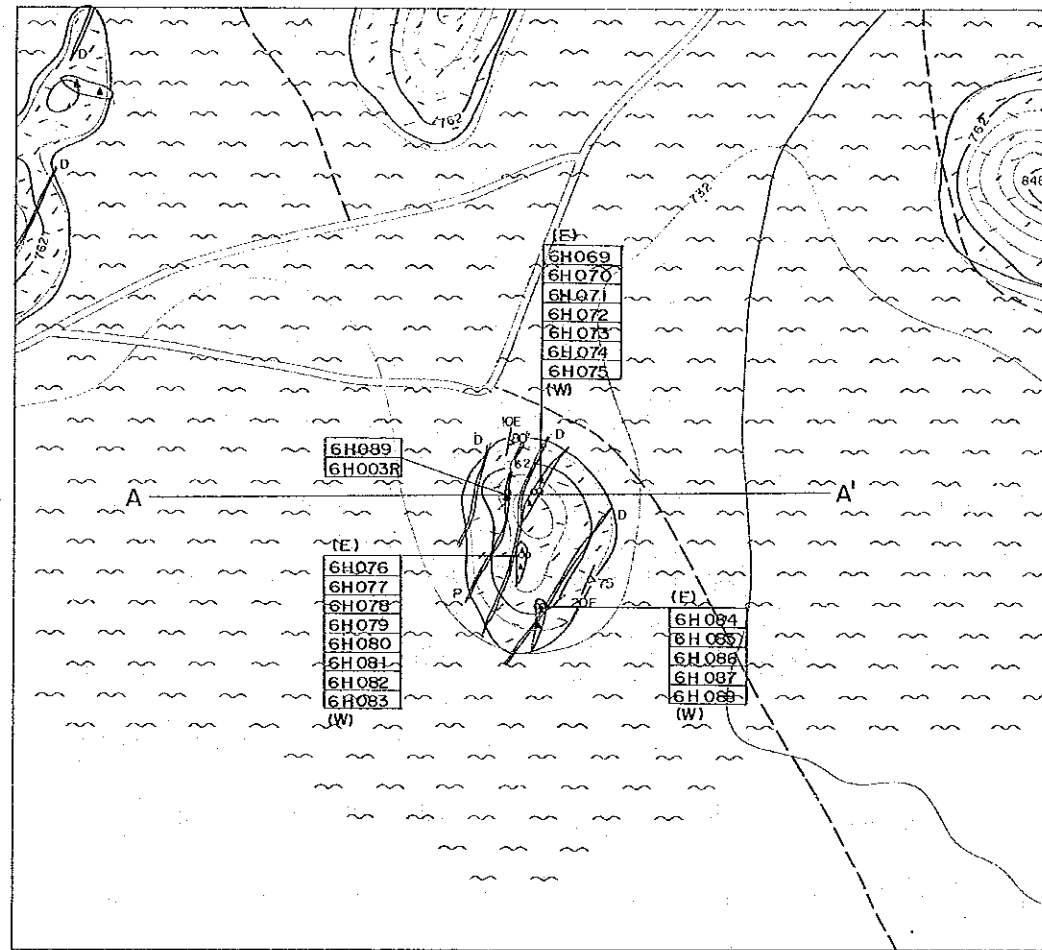


A-A' Section  
(N30E)



LEGEND

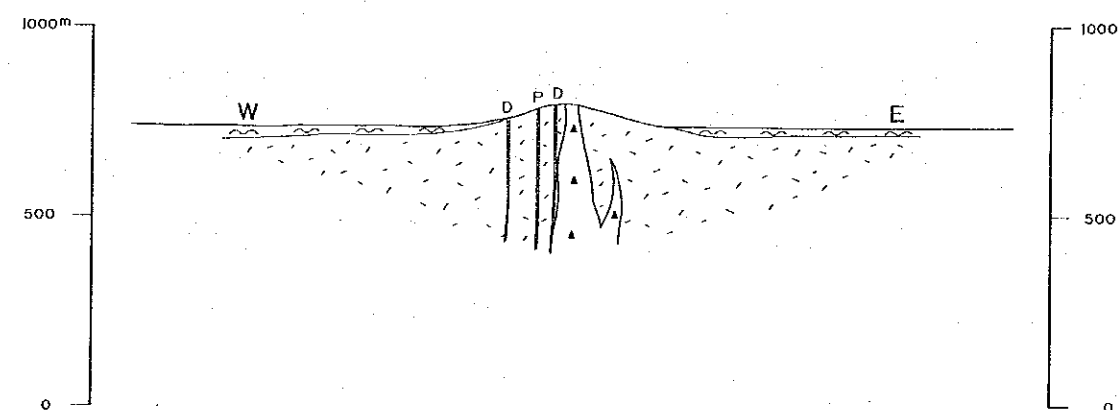
- Drift
  - Sideritic carbonatite
  - Ankeritic sövite
  - Sövite
  - Carbonate-Silicate rock
  - Feldspathic breccia, agglomerate
  - Phonolitic breccia
  - Fenitized gneiss
  - Trachyte
  - Phonolite
  - Nephelinite
  - Syenite (Pulaskite)
  - Nepheline syenite (Foyaitite)
  - Hornblende biotite-gneiss
  - Granulite and gneissose granite
  - Dolomitic marble
  - Dolerite
  - Granite
  - Perthosite
  - Biotite-metapyroxenite, metagabbro & biotite
  - Meta conglomerate
  - Green pyroxene skarn
  - Dykes and plugs
- T-Trachyte  
P-Phonolite  
N-Nephelinite  
MF-Microfoyaite  
S-Sölvbergite  
I-Ijolite  
D-Dolerite  
M-Menchiquite  
A-Aplite
- Fault  
Dip of foliation of gneiss
- GY001 GEOCHEMICAL SAMPLES  
 GY001R ROCK SAMPLES



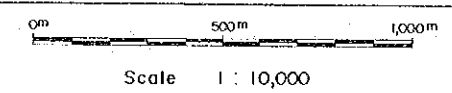
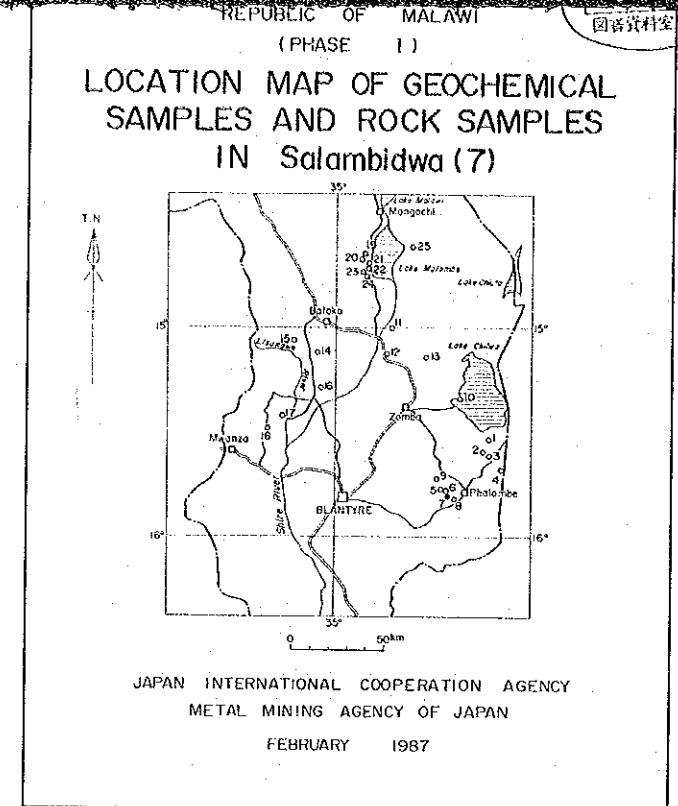
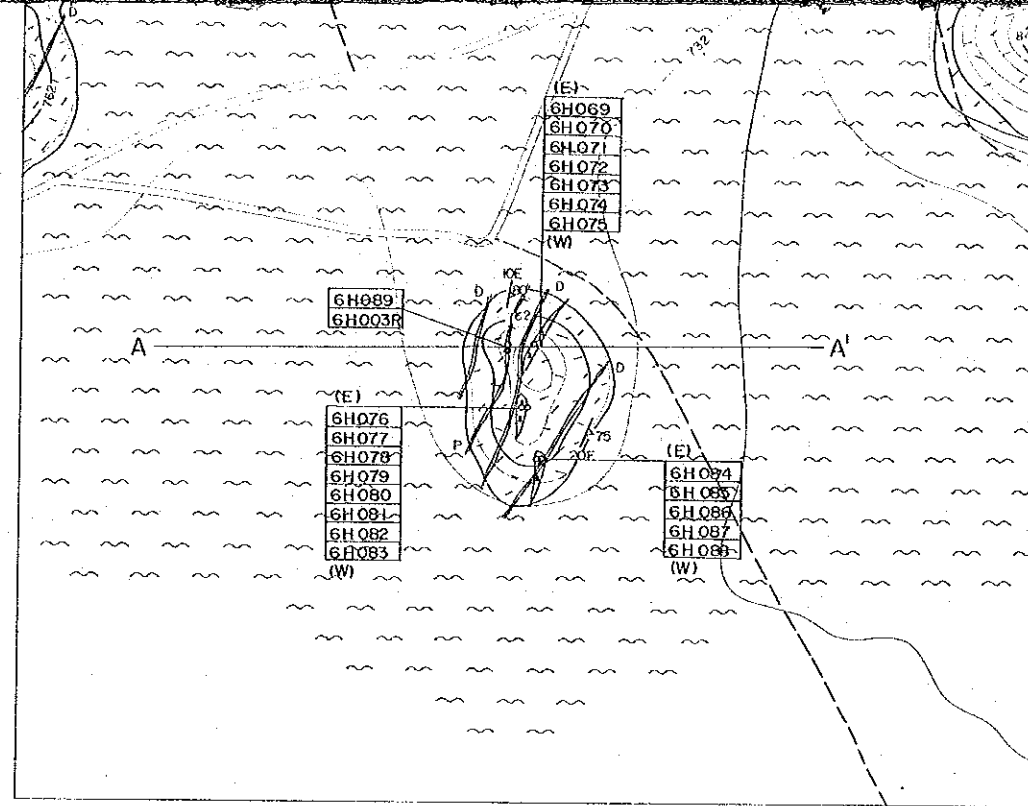
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Scale 1 : 10,000

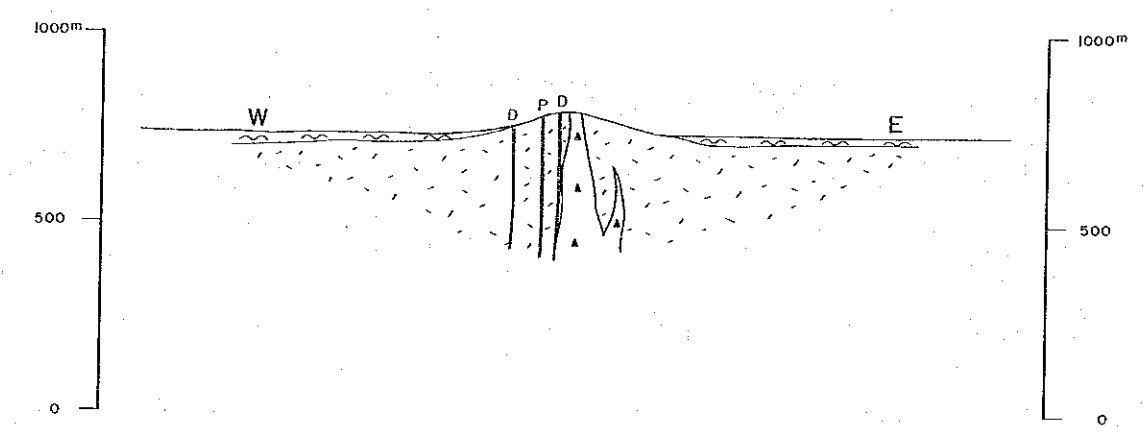
A-A' Section  
(W-E)



- LEGEND
- |  |  |
|--|--|
|  | Drift  |
|  | Sideritic carbonatite                        |
|  | Ankeritic sövite                             |
|  | Sövite                                       |
|  | Carbonate-Silicate rock                      |
|  | Feldspathic breccia, agglomerate             |
|  | Phonolitic breccia                           |
|  | Fenitized gneiss                             |
|  | Trachyte                                     |
|  | Phonolite                                    |
|  | Nephelinite                                  |
|  | Syenite (Fulaskite)                          |
|  | Nepheline syenite (Foyaitite)                |
|  | Hornblende biotite-gneiss                    |
|  | Granulite and gneissose granite              |
|  | Dolomitic marble                             |
|  | Dolerite                                     |
|  | Granite                                      |
|  | Perthosite                                   |
|  | Biotite-metapyroxenite, metagabbro & biotite |
|  | Meta conglomerate                            |
|  | Green pyroxene skarn                         |
|  | Dykes and plugs                              |
- T - Trachyte  
P - Phonolite  
N - Nephelinite  
MF - Microfoyaite  
S - Sölvbergite  
I - Ijolite  
D - Dolerite

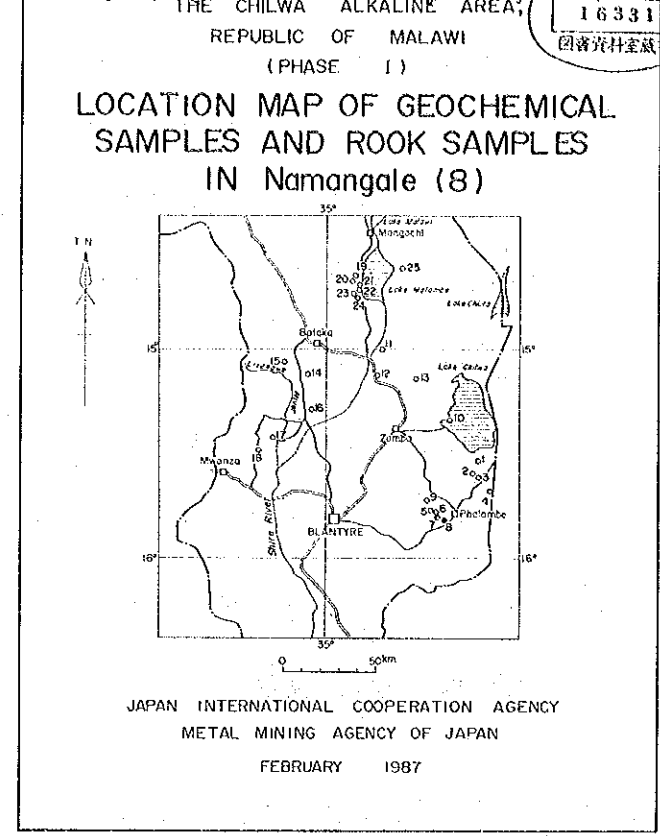
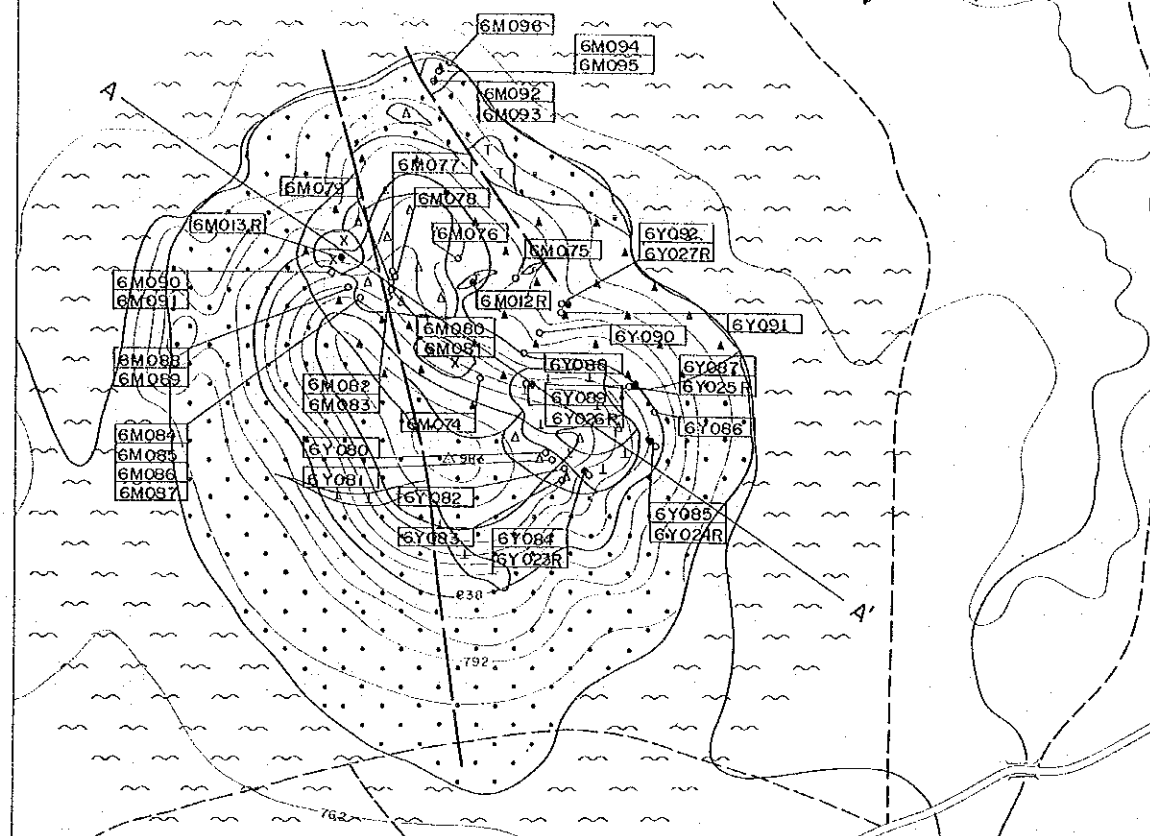


A-A' Section  
(W-E)

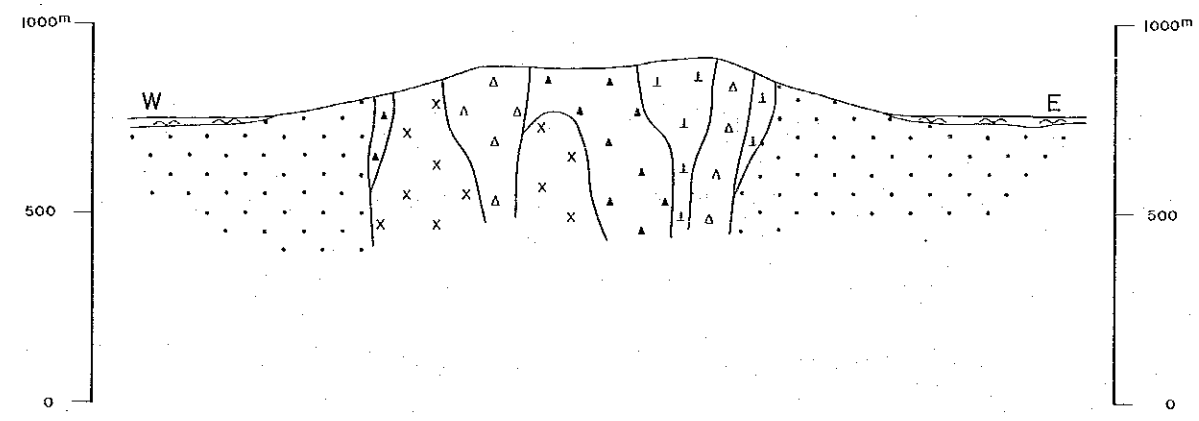


- #### LEGEND
- Drift
  - Sideritic carbonatite
  - Ankeritic sövite
  - Sövite
  - Carbonate-Silicate rock
  - Feldspathic breccia, agglomerate
  - Phonolitic breccia
  - Fertilized gneiss
  - Trachyte
  - Phonolite
  - Nephelinite
  - Syenite (Fulaskite)
  - Nepheline syenite (Foyaitite)
  - Hornblende biotite-gneiss
  - Granulite and gneissose granite
  - Dolomitic marble
  - Dolerite
  - Granite
  - Perthosite
  - Biotite-metapyroxenite, metagabbro & biotite
  - Meta conglomerate
  - Green pyroxene skarn
  - Dykes and plugs
- T—Trachyte  
P—Phonolite  
N—Nephelinite  
MF—Microfoyaite  
S—Sölvbergite  
I—Ijolite  
D—Dolerite  
M—Manchiquite  
A—Aplite
- Fault  
 Dip of foliation of gneiss
- GEOCHEMICAL SAMPLES  
 ROCK SAMPLES





A-A' Section (N55W)



- LEGEND
- Drift
  - Sideritic carbonatite
  - Ankeritic sövite
  - Sövite
  - Carbonate-Silicate rock
  - Feldspathic breccia, agglomerate
  - Phonolitic breccia
  - Fenitized gneiss
  - Trachyte
  - Phonolite
  - Nephelinite
  - Syenite (Pulaskite)
  - Nepheline syenite (Foyaitic)
  - Hornblende biotite-gneiss
  - Granulite and gneissose granite
  - Dolomitic marble
  - Dolerite
  - Granite
  - Perthosite
  - Biotite-metapyroxenite, metagabbro & biotite
  - Meta conglomerate
  - Green pyroxene skarn
  - Dykes and plugs T-Trachyte, P-Phonolite, N-Nephelinite, MF-Microfoyaite, S-Sölvbergite, I-Ijolite, D-Dolerite, M-Monchiquite, A-Aplite
  - Fault
  - Dip of foliation of gneiss
  - GEOCHEMICAL SAMPLES
  - ROCK SAMPLES