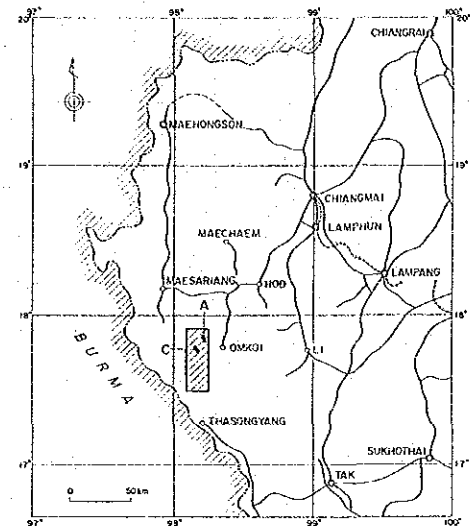


MINERAL EXPLORATION
OF
THE YANG KIANG AREA, THAILAND
PHASE II
MINERAL INDICATION MAP
(AREA A)

Scale 1 : 5,000
0 100 200 300 400 500m



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FEB 1988

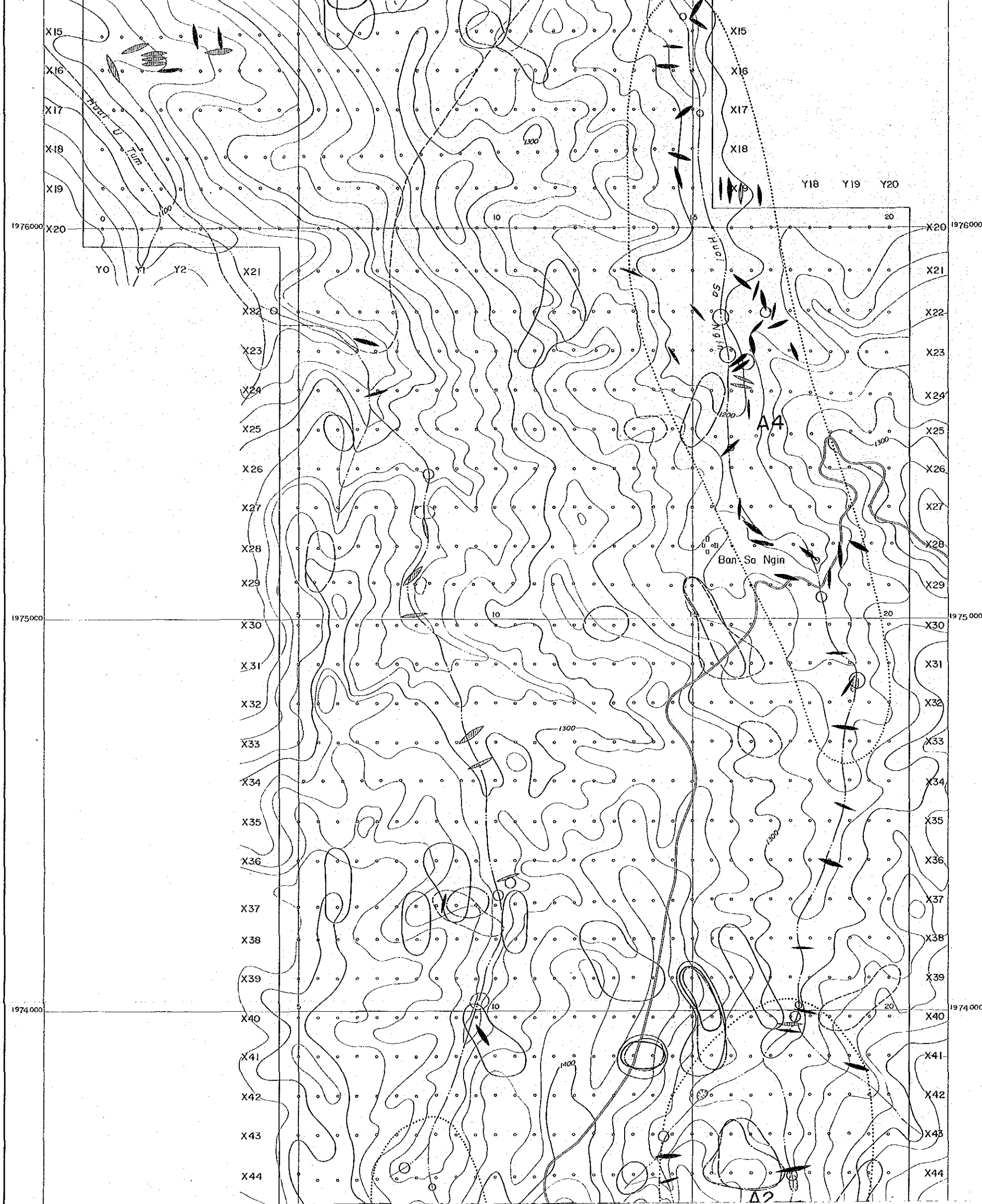
LEGEND

Geologic Indication

- pegmatite vein
- quartz vein
- geologic boundary
- mine workings (inactive)
- panning samples (cassiterite)
- abundant
- common
- rare
- indication zone

Geochemical Indication

| Element | Symbol | Class | Range (ppm) |
|---------|--------|----------|--------------|
| Nb | | high | 49 ≧ Nb |
| | | moderate | 37 ≧ Nb < 49 |
| Ta | | high | 27 ≧ Ta |
| | | moderate | 16 ≧ Ta < 27 |
| Sn | | high | 79 ≧ Sn |
| | | moderate | 61 ≧ Sn < 79 |
| W | | high | 77 ≧ W |
| | | moderate | 46 ≧ W < 77 |



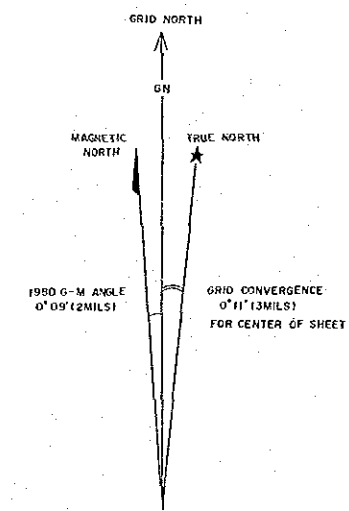
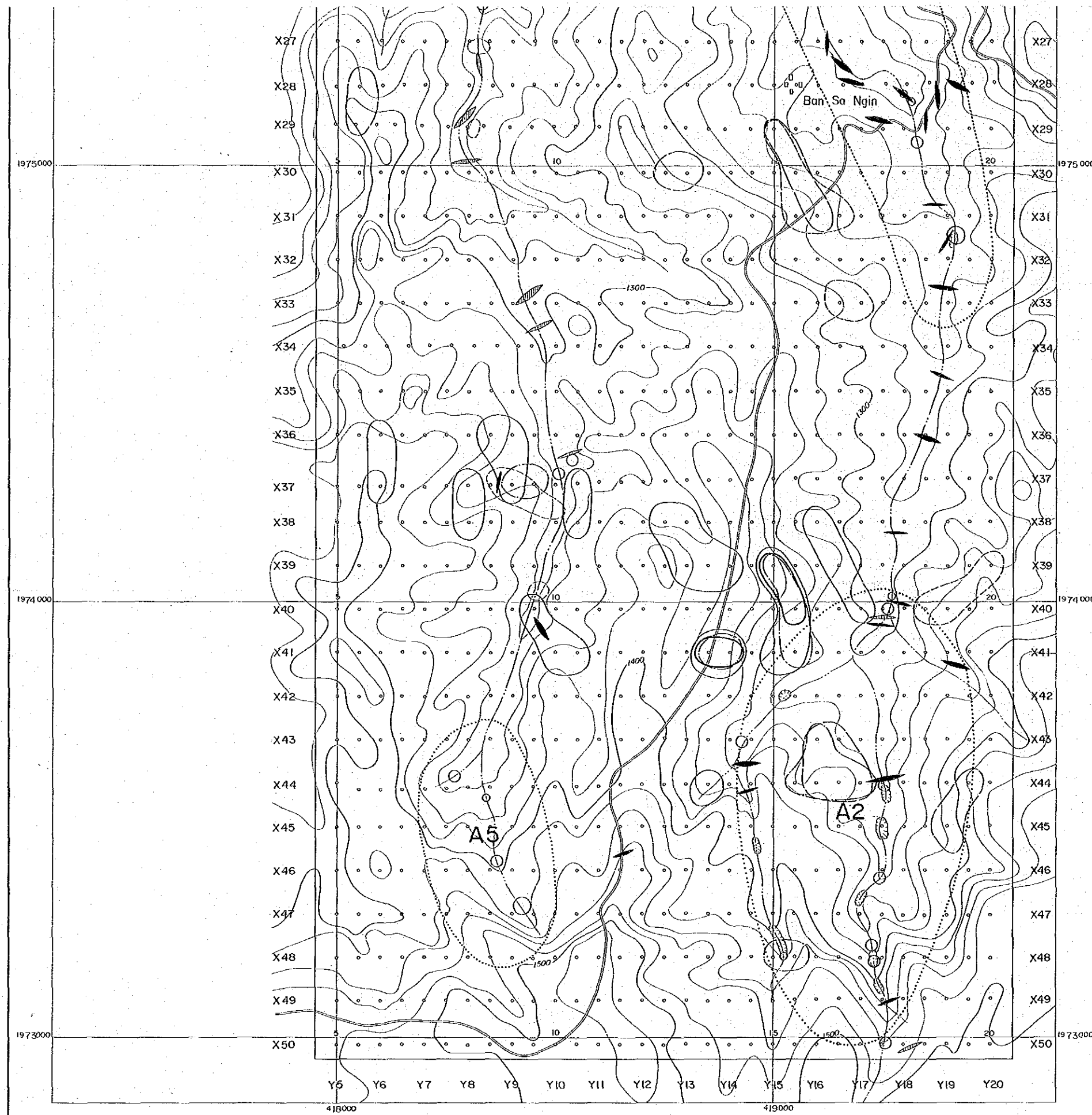
- pegmatite vein
- quartz vein
- geologic boundary
- mine works (inactive)
- panning samples (cassiterite)
- abundant
- common
- rare
- indication zone

Geochemical Indication

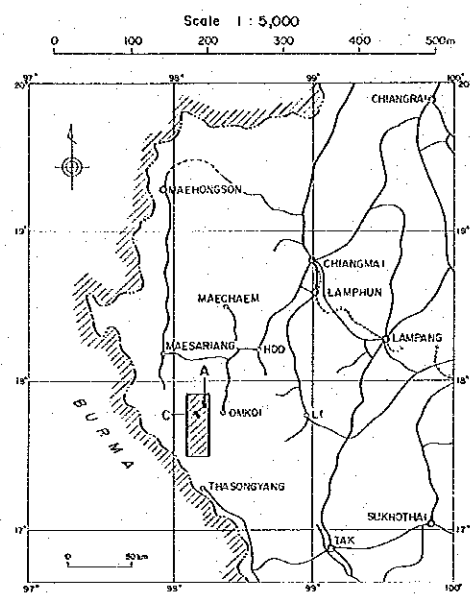
| Element | Symbol | Class | Range (ppm) |
|---------|--------|----------|-------------------|
| Nb | | high | 49 \geq Nb |
| | | moderate | 37 \geq Nb < 49 |
| Ta | | high | 27 \geq Ta |
| | | moderate | 16 \geq Ta < 27 |
| Sn | | high | 79 \geq Sn |
| | | moderate | 61 \geq Sn < 79 |
| W | | high | 77 \geq W |
| | | moderate | 46 \geq W < 77 |

GRID NORTH

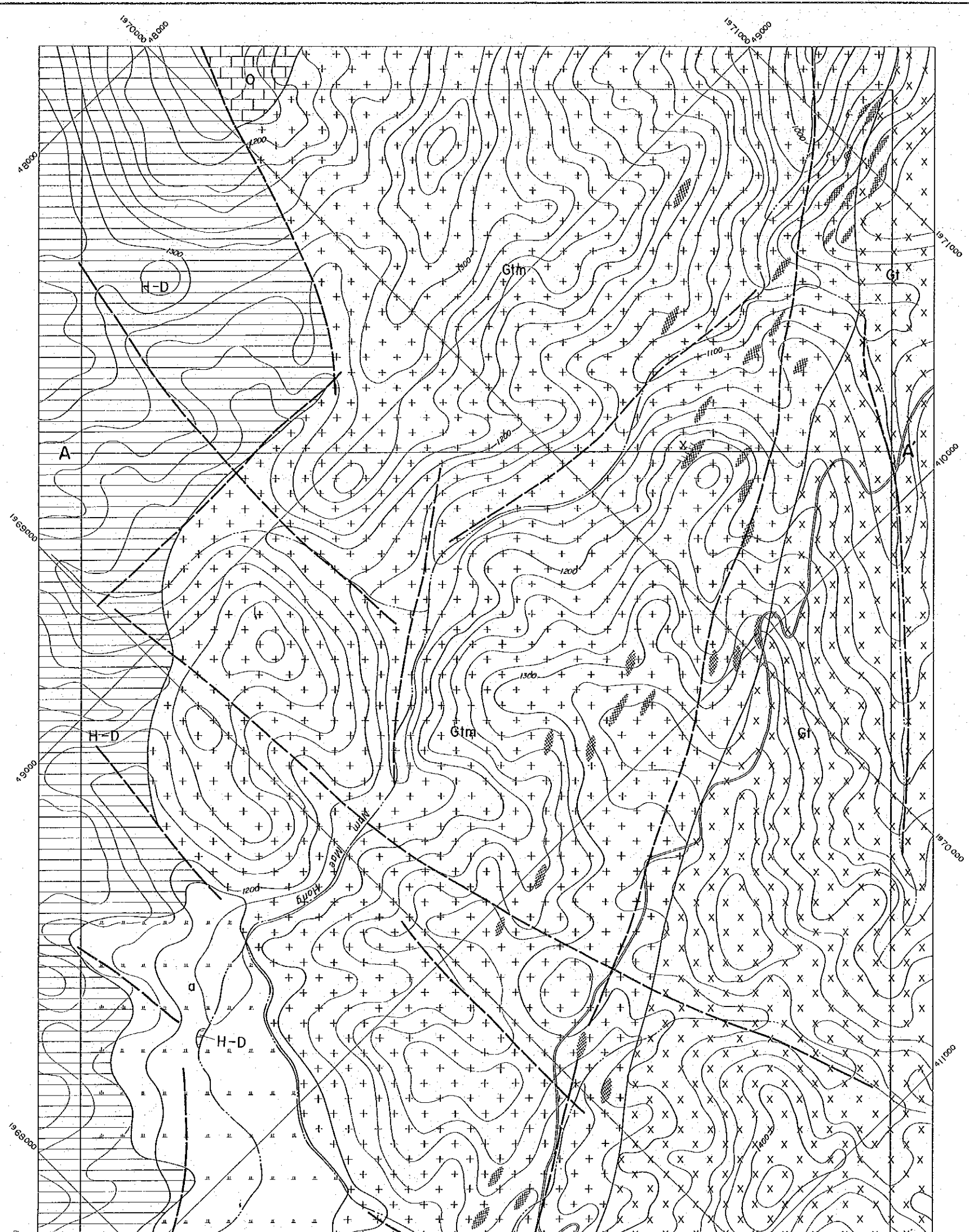
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MINERAL EXPLORATION
OF
THE YANG KIANG AREA, THAILAND
PHASE II
GEOLOGIC MAP AND PROFILE
(AREA C)

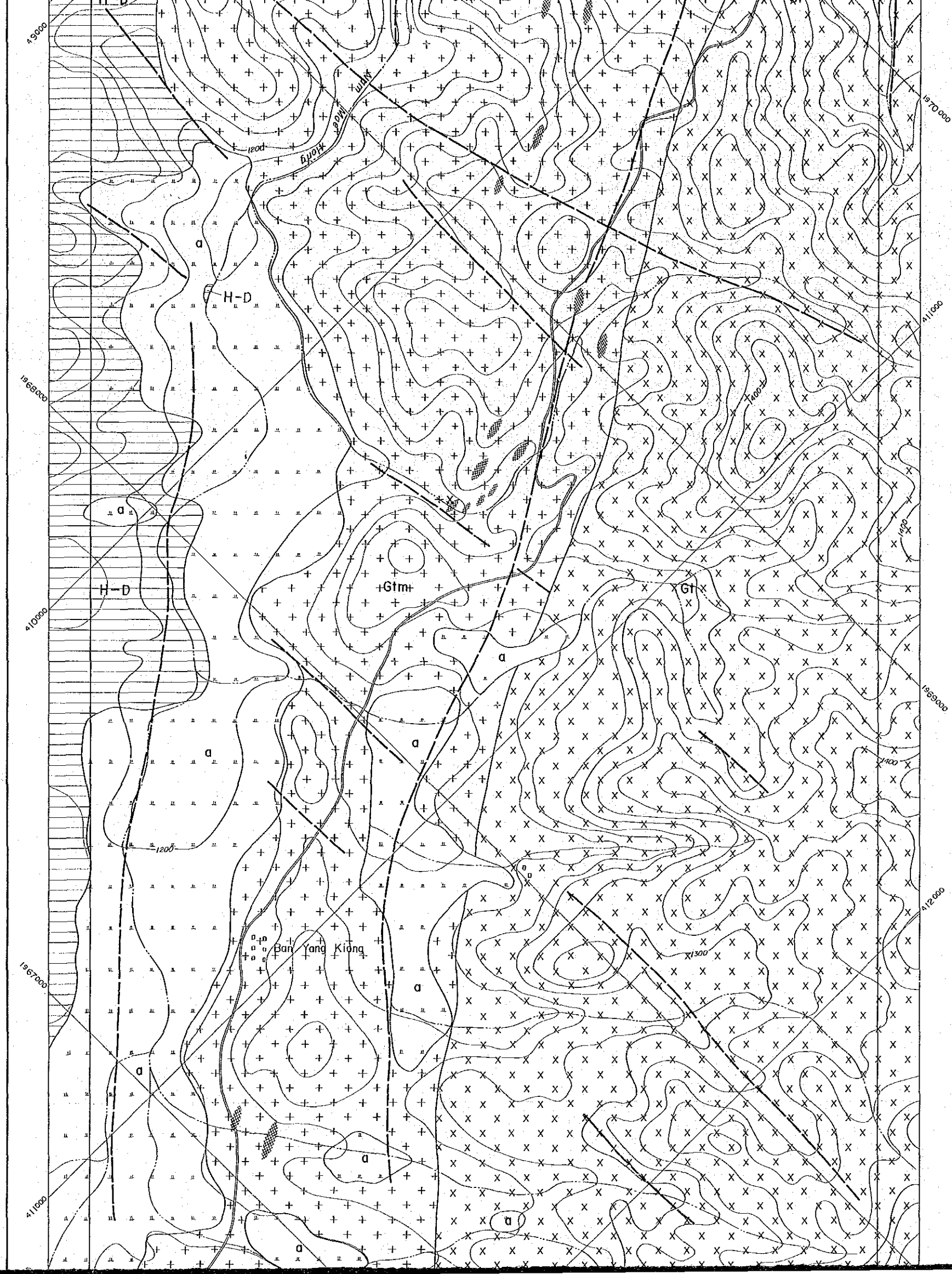


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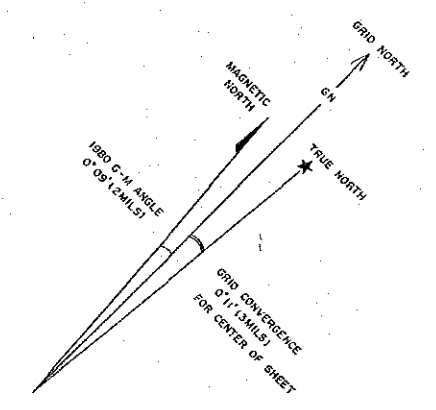
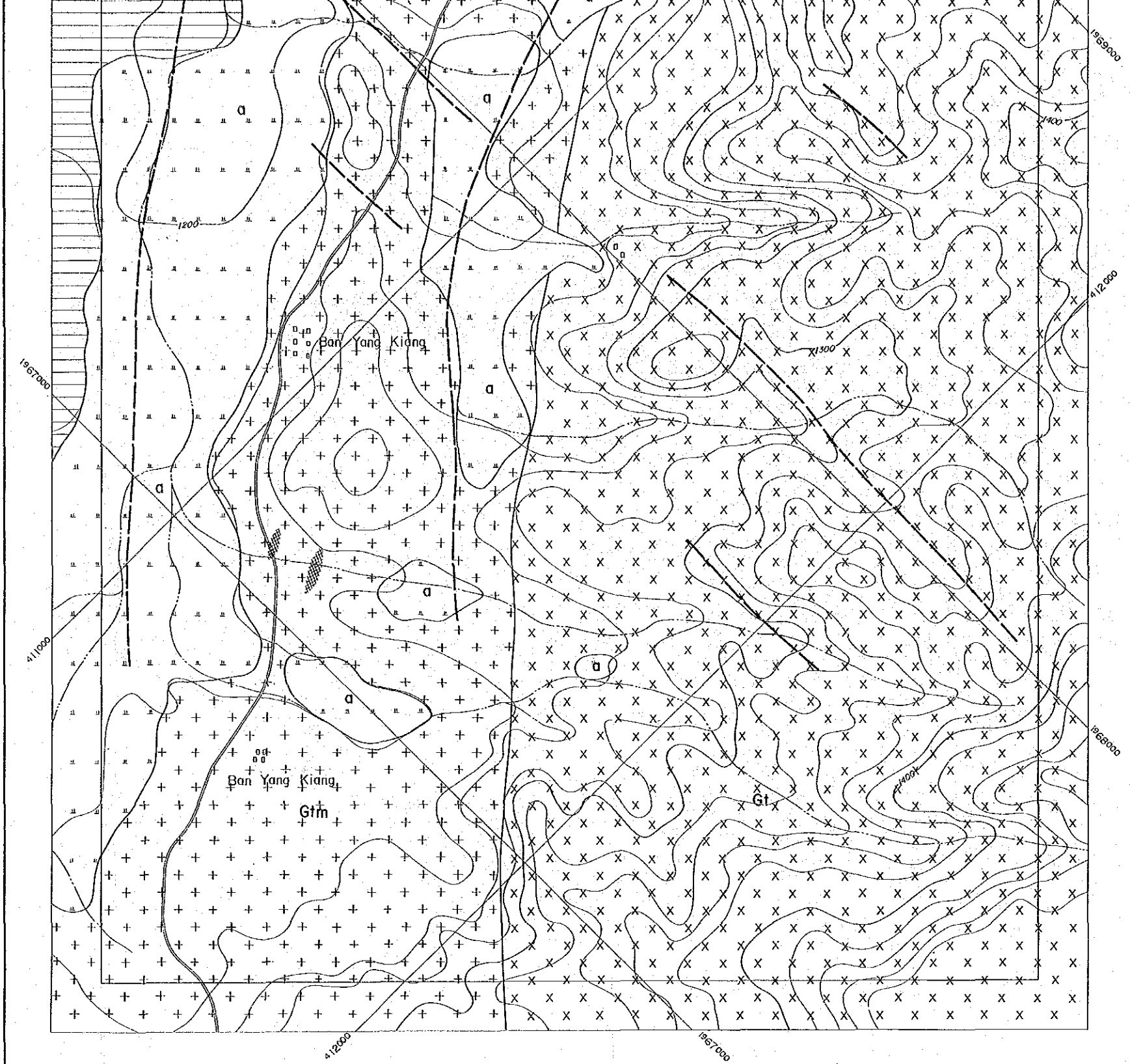


LEGEND

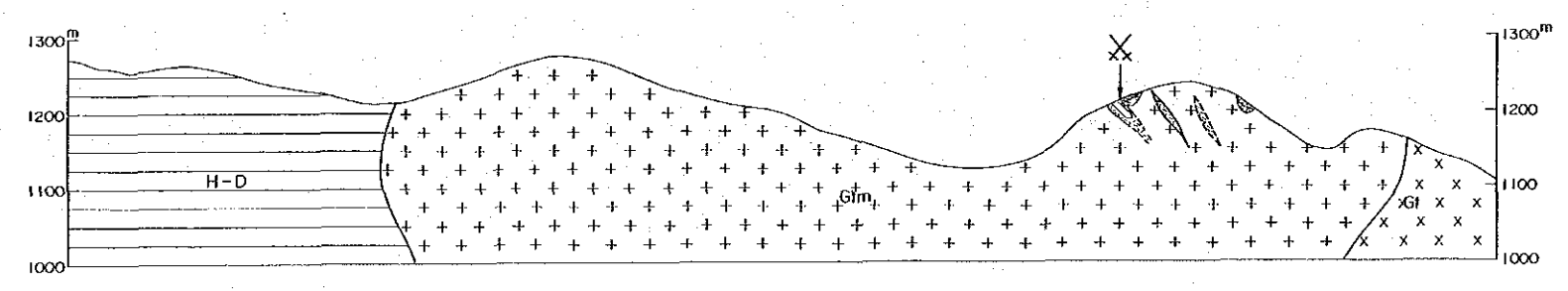
| Age | Symbol | Rock facies |
|-----------------------------|--------|--|
| 1. Sedimentary rocks | | |
| Quaternary | | a alluvium |
| Carboniferous ~ Devonian | | H-D shale and sandstone |
| Ordovician | | O limestone |
| 2. Granitic rocks | | |
| Triassic | | Gtm fine to medium-grained two mica granite |
| | | Gi medium to coarse-grained biotite granite |
| 3. Geologic symbols | | |
| | | gossan |
| | | skarn |
| | | silicified rock |
| | | lineament |
| | | mine works (inactive) |

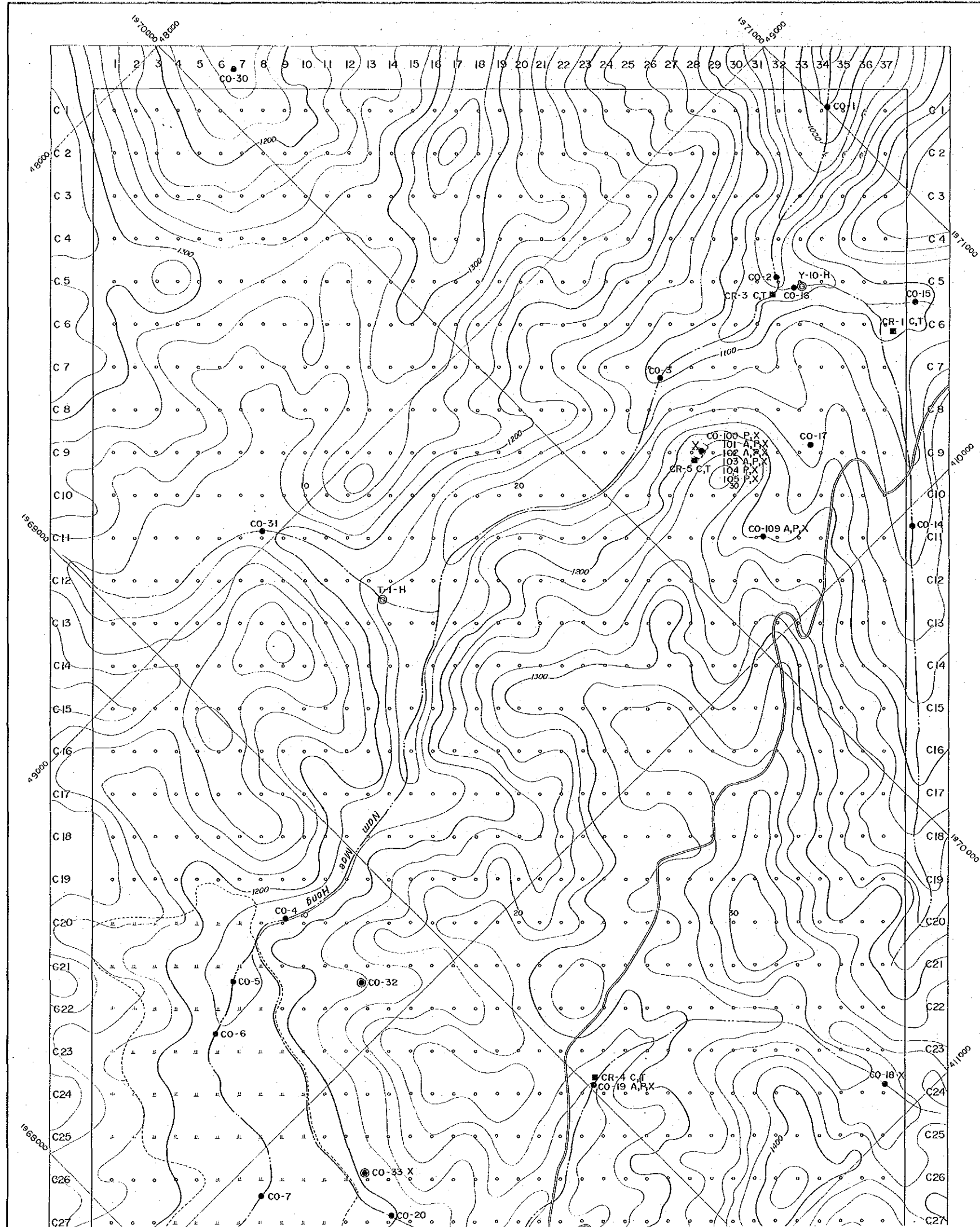


| Age | Symbol | Rock facies |
|-----------------------------|--------|---|
| 1. Sedimentary rocks | | |
| Quaternary | | a alluvium |
| Carboniferous ~ Devonian | | H-D shale and sandstone |
| Ordovician | | O limestone |
| 2. Granitic rocks | | |
| Triassic | | G1m fine to medium-grained two mica granite |
| | | G1 medium to coarse-grained biotite granite |
| 3. Geologic symbols | | |
| | | gossan |
| | | skarn |
| | | silicified rock |
| | | lineament |
| | | mine works (inactive) |
| | A—A' | profile line |



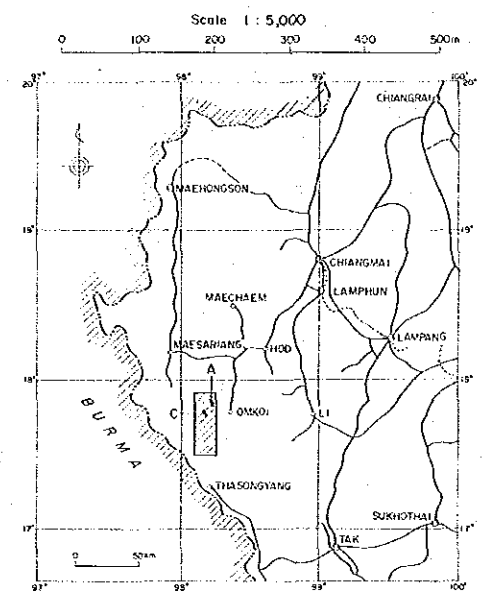
A - A'





MINERAL EXPLORATION
OF
THE YANG KIANG AREA, THAILAND
PHASE II

LOCATION MAP OF SAMPLES FOR LABORATORY EXAMINATION
(AREA C)



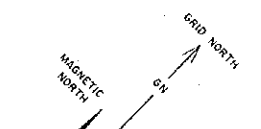
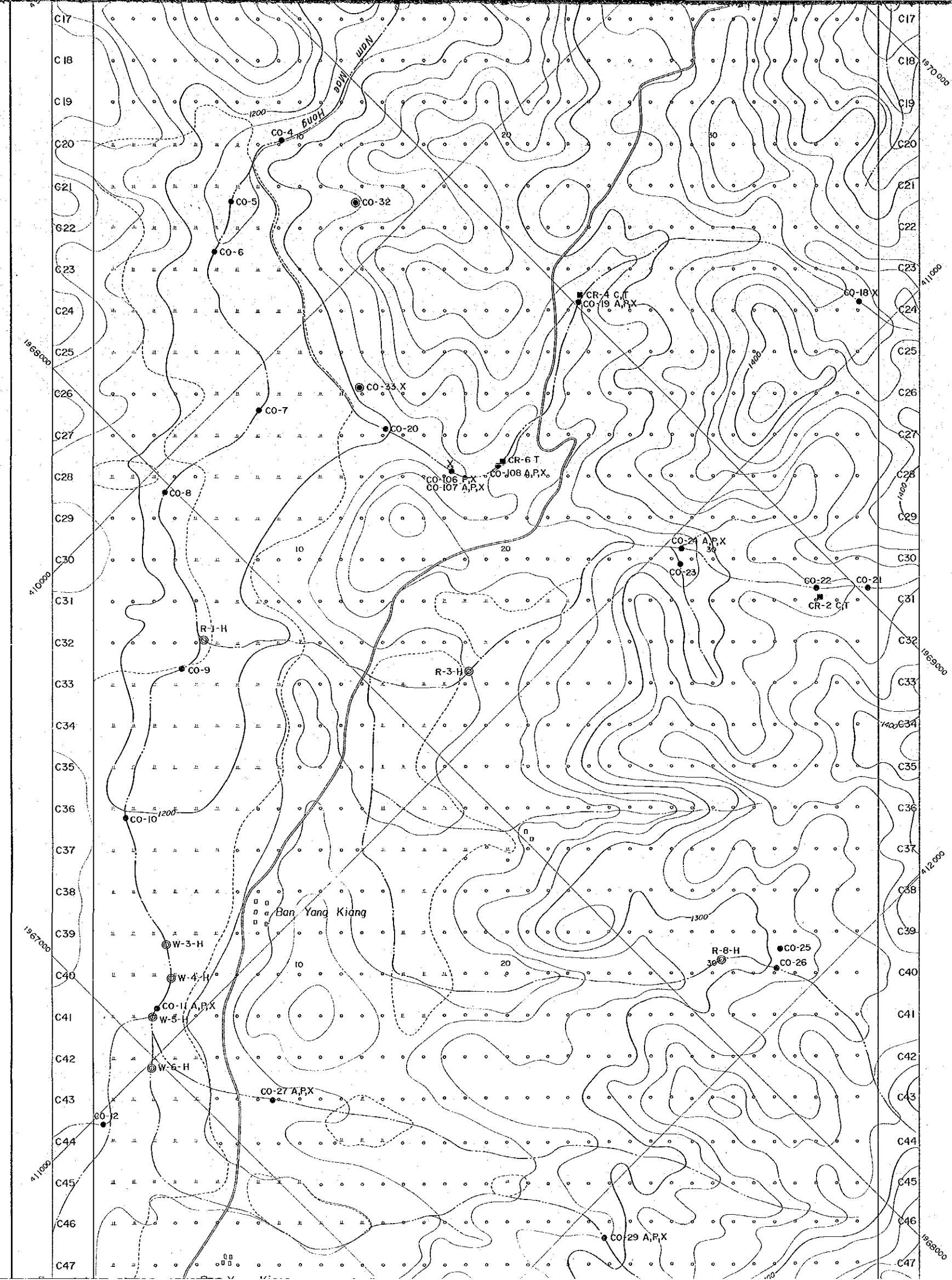
JAPAN INTERNATIONAL COOPERATION AGENCY
METAL MINING AGENCY OF JAPAN
FEB 1988

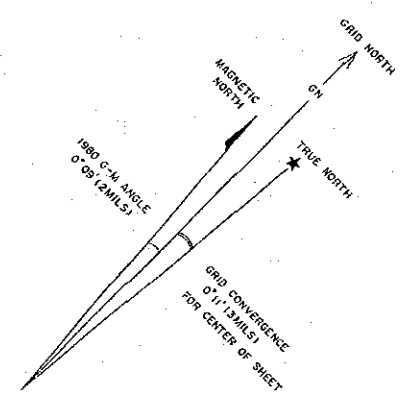
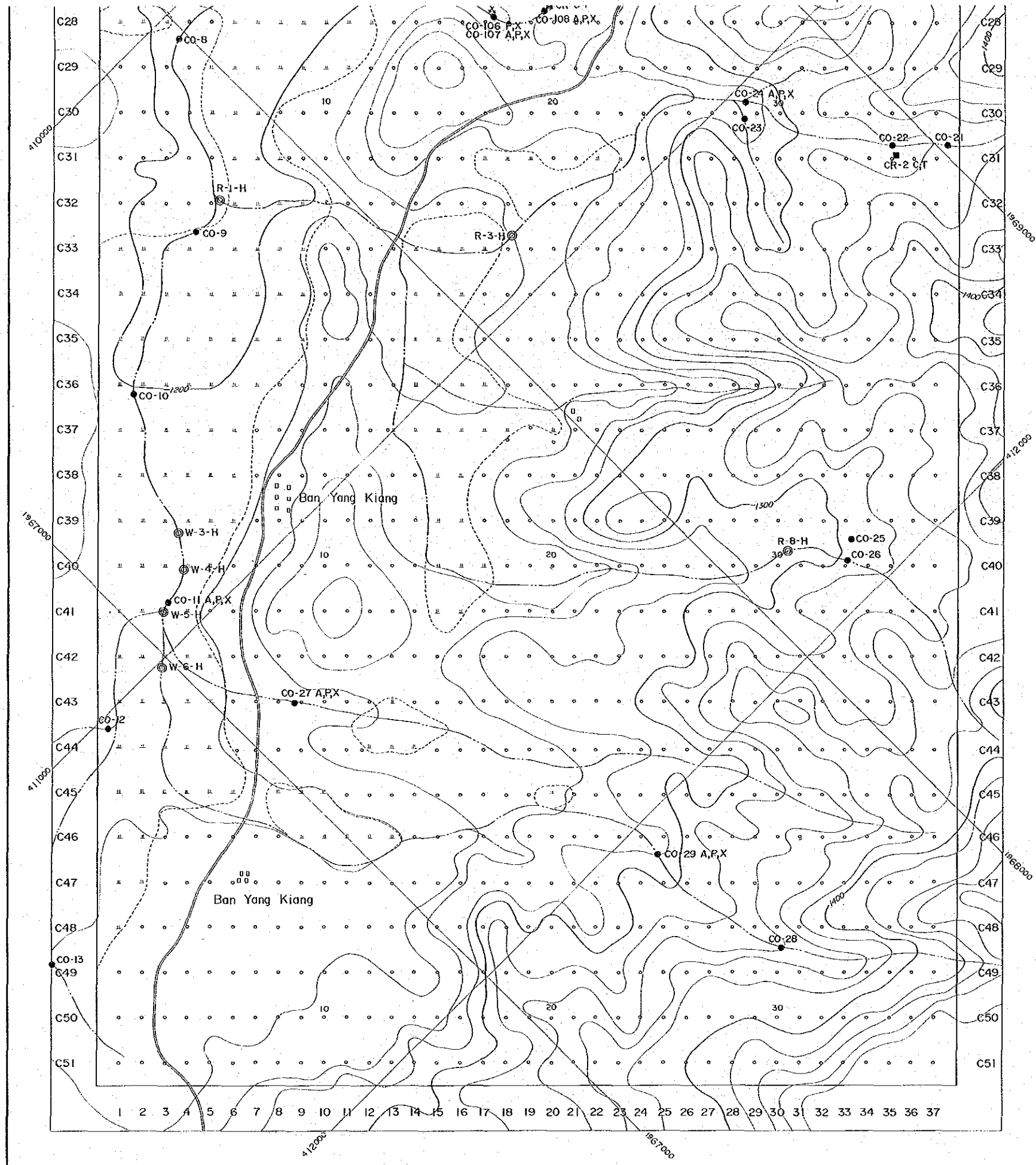
LEGEND

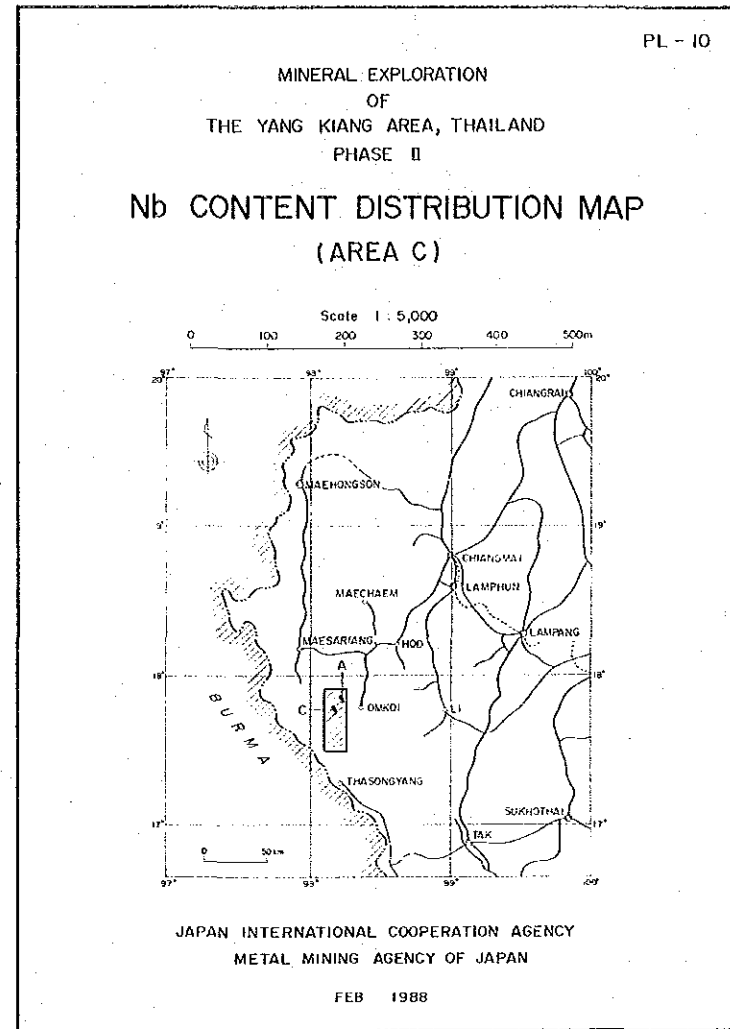
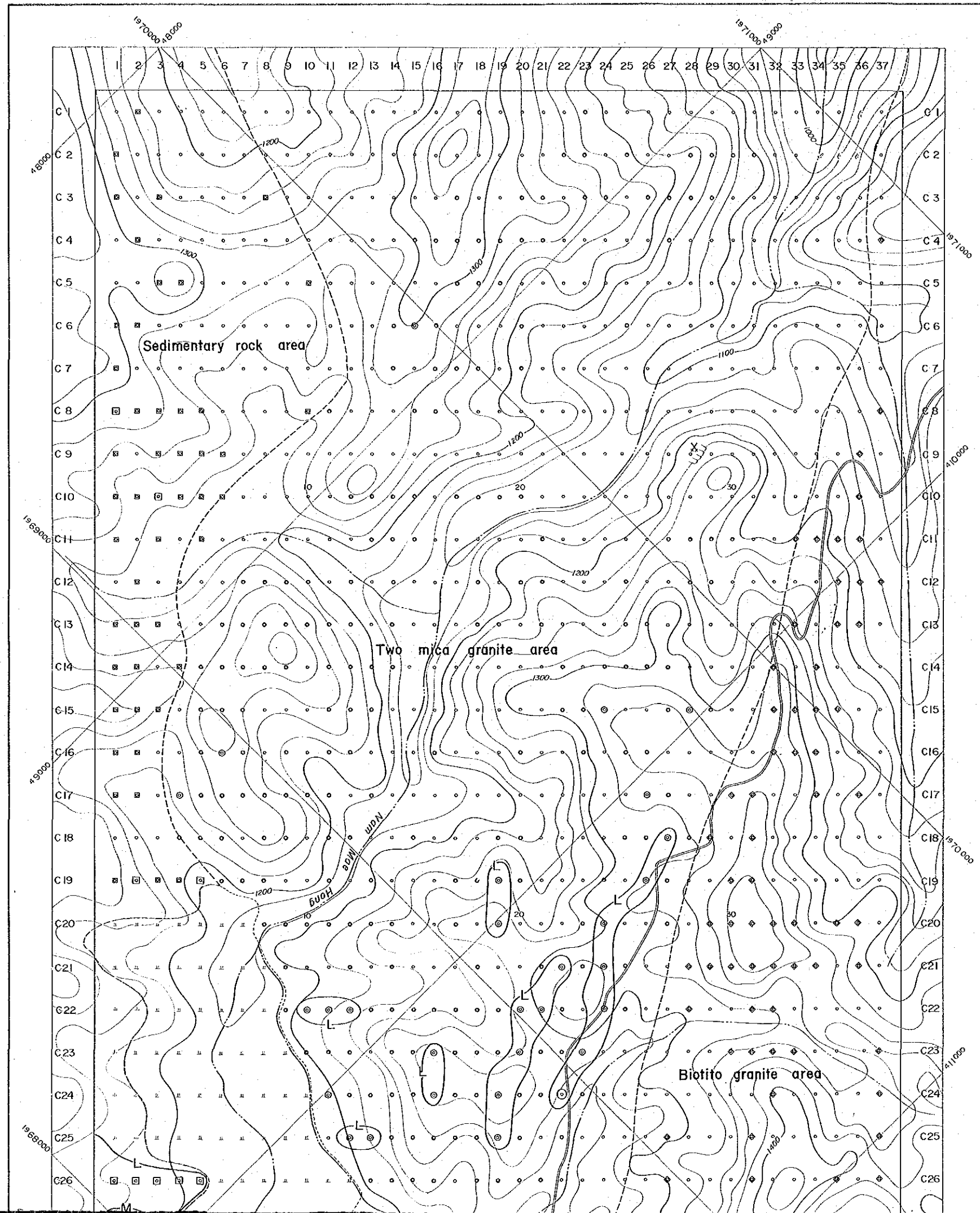
- Sample
- Geochemical soil sample
 - CO-1 Panning sample (placer)
 - CO-100 Ore sample
 - ⊙ W-3-H Panning sample (placer) (phase I, 1987)
 - ⊙ CO-32 Panning sample (granite)
 - CR-1 Rock sample
- Numbering system :
C8 - 15
(Line no.) (Point no.)
- Examination
- A ; Ore chemical analysis
 - C ; Whole-rock chemical analysis
 - P ; Polished thin section
 - T ; Thin section
 - X ; X-ray diffraction analysis

- CO-1 Panning sample (placer)
- CO-100 Ore sample
- ⊙ W-3-H Panning sample (placer) (phase I, 1987)
- ⊙ CO-32 Panning sample (granite)
- CR-1 Rock sample

Examination
 A ; Ore chemical analysis
 C ; Whole-rock chemical analysis
 P ; Polished thin section
 T ; Thin section
 X ; X-ray diffraction analysis





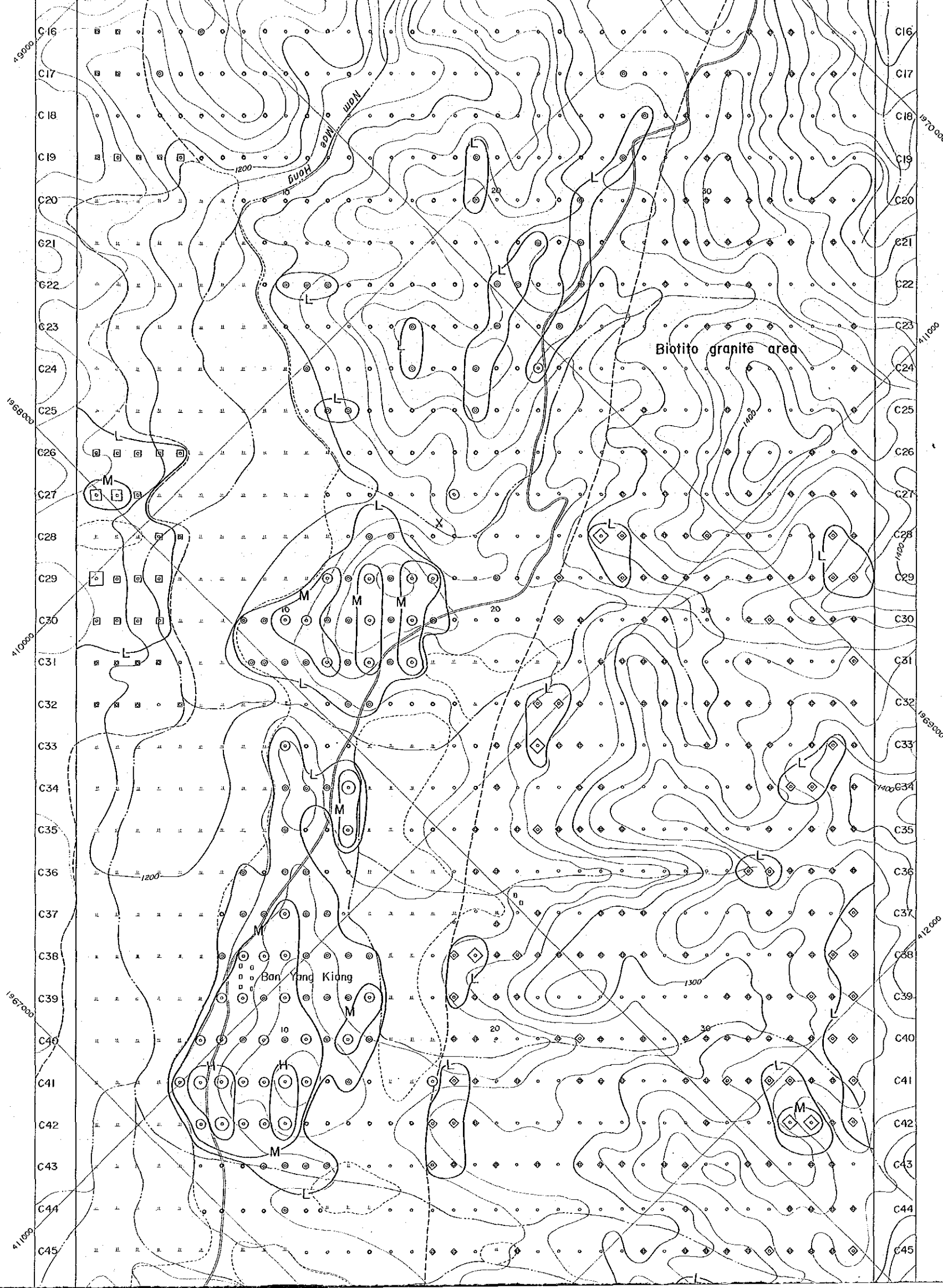


LEGEND

| Sedimentary rock area | | | |
|-----------------------|----------|--------|-------------------|
| | Class | Symbol | Range (ppm) |
| Anomaly | High | | $43 \leq Nb$ |
| | Moderate | | $37 \leq Nb < 43$ |
| | Low | | $32 \leq Nb < 37$ |
| Background | High | | $27 \leq Nb < 32$ |
| | Low | | $Nb < 27$ |

| Two mica granite area | | | |
|-----------------------|----------|--------|-------------------|
| | Class | Symbol | Range (ppm) |
| Anomaly | High | | $81 \leq Nb$ |
| | Moderate | | $60 \leq Nb < 81$ |
| | Low | | $44 \leq Nb < 60$ |
| Background | High | | $33 \leq Nb < 44$ |
| | Low | | $Nb < 33$ |

| Biotite granite area | | | |
|----------------------|----------|--------|-------------------|
| | Class | Symbol | Range (ppm) |
| Anomaly | High | | $45 \leq Nb$ |
| | Moderate | | $38 \leq Nb < 45$ |
| | Low | | $32 \leq Nb < 38$ |



Sedimentary rock area

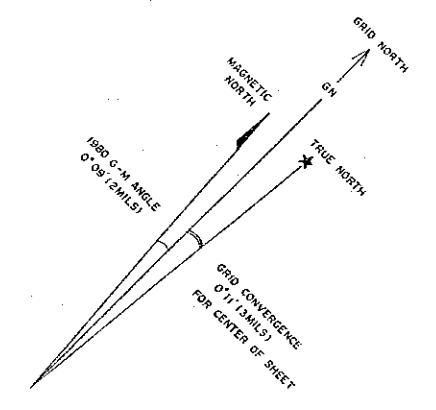
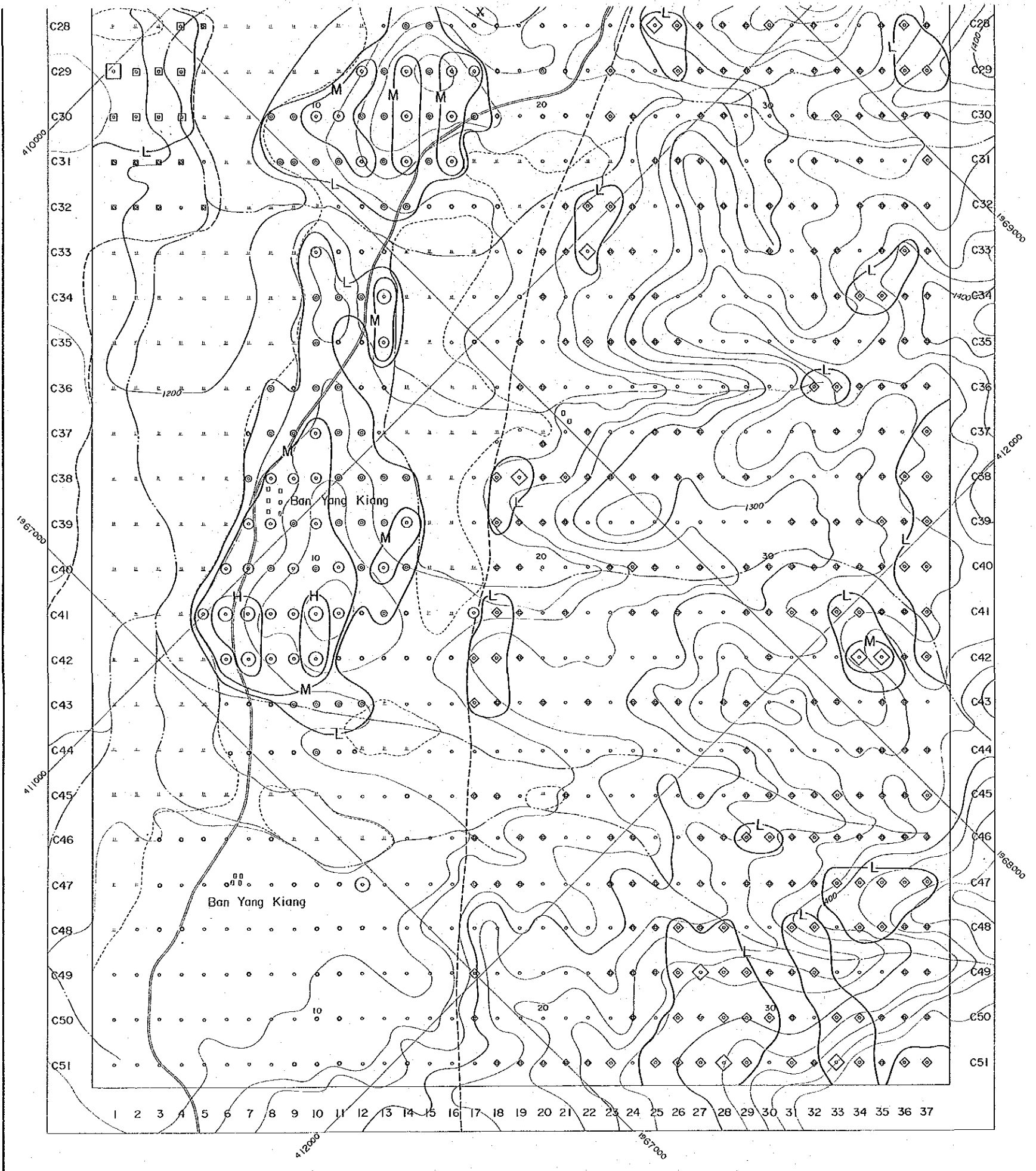
| Class | Symbol | Range (ppm) |
|------------|--------------|--------------|
| Anomaly | High (H) | 43 ≤ Nb |
| | Moderate (M) | 37 ≤ Nb < 43 |
| | Low (L) | 32 ≤ Nb < 37 |
| Background | High | 27 ≤ Nb < 32 |
| | Low | Nb < 27 |

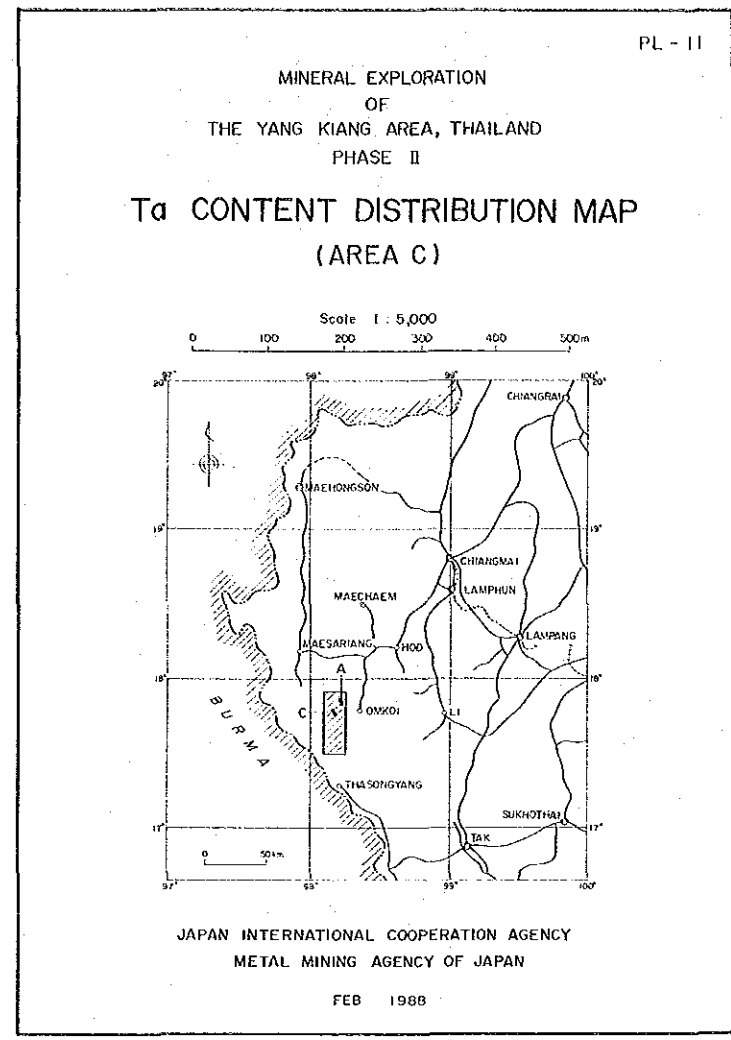
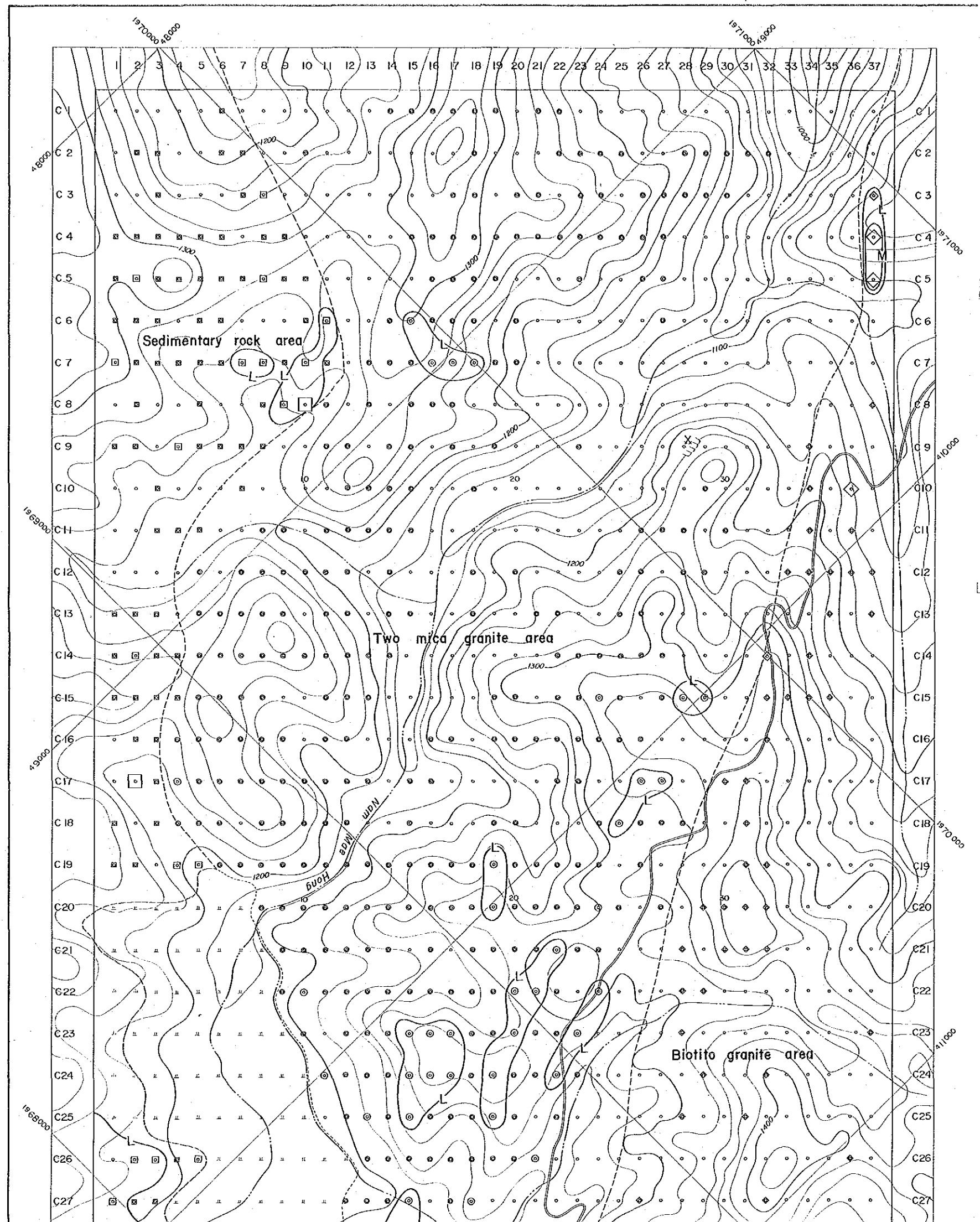
Two mica granite area

| Class | Symbol | Range (ppm) |
|------------|--------------|--------------|
| Anomaly | High (H) | 81 ≤ Nb |
| | Moderate (M) | 60 ≤ Nb < 81 |
| | Low (L) | 44 ≤ Nb < 60 |
| Background | High | 33 ≤ Nb < 44 |
| | Low | Nb < 33 |

Biotite granite area

| Class | Symbol | Range (ppm) |
|------------|--------------|--------------|
| Anomaly | High (H) | 45 ≤ Nb |
| | Moderate (M) | 38 ≤ Nb < 45 |
| | Low (L) | 32 ≤ Nb < 38 |
| Background | High | 26 ≤ Nb < 32 |
| | Low | Nb < 26 |



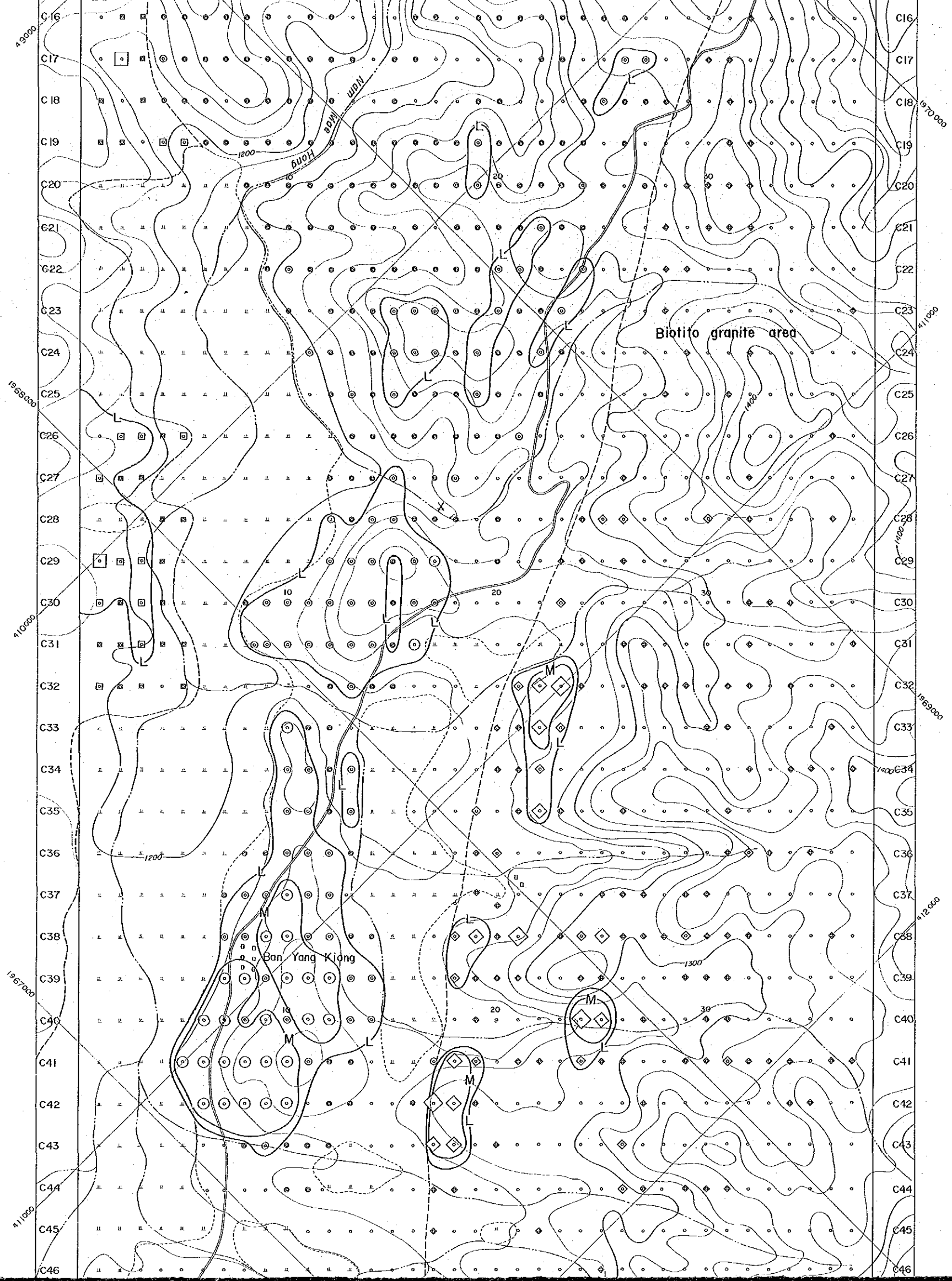


LEGEND

| Sedimentary rock area | | | |
|-----------------------|----------|--------|-----------------|
| | Class | Symbol | Range (ppm) |
| Anomaly | High | ⊕ | $8 \leq Ta$ |
| | Moderate | ⊙ | $6 \leq Ta < 8$ |
| | Low | ⊖ | $4 \leq Ta < 6$ |
| Background | High | ○ | $3 \leq Ta < 4$ |
| | Low | • | $Ta < 3$ |

| Two mica granite area | | | |
|-----------------------|----------|--------|-------------------|
| | Class | Symbol | Range (ppm) |
| Anomaly | High | ⊕ | $22 \leq Ta$ |
| | Moderate | ⊙ | $14 \leq Ta < 22$ |
| | Low | ⊖ | $9 \leq Ta < 14$ |
| Background | High | ○ | $9 \leq Ta < 14$ |
| | Low | • | $Ta < 9$ |

| Biotite granite area | | | |
|----------------------|----------|--------|-----------------|
| | Class | Symbol | Range (ppm) |
| Anomaly | High | ⊕ | $8 \leq Ta$ |
| | Moderate | ⊙ | $7 \leq Ta < 8$ |
| | Low | ⊖ | $6 \leq Ta < 7$ |
| Background | High | ○ | $5 \leq Ta < 6$ |
| | Low | • | $Ta < 5$ |



Sedimentary rock area

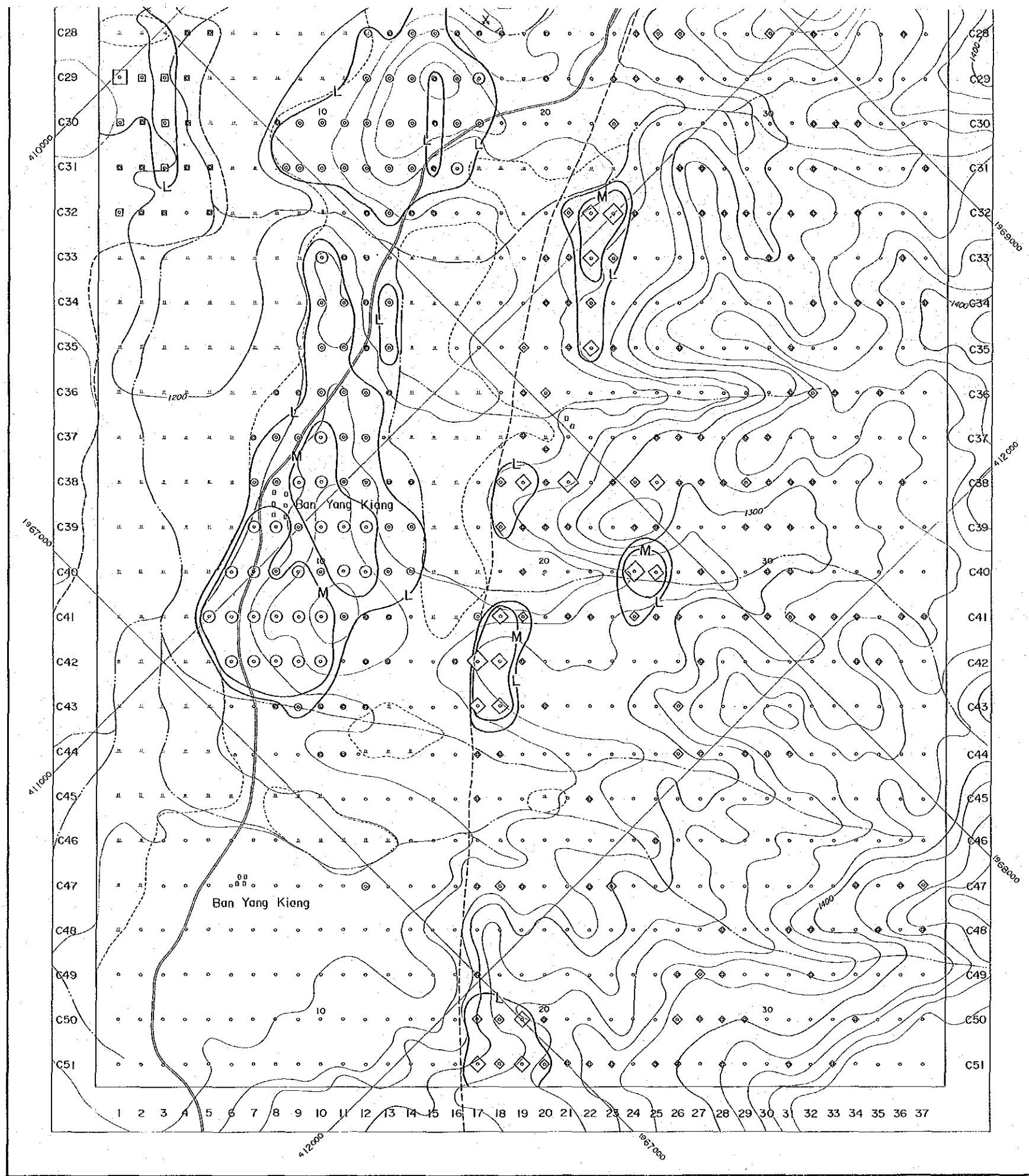
| Class | Symbol | Range (ppm) |
|------------|--------------------------|-----------------|
| Anomaly | High (Square with H) | $8 \leq Ta$ |
| | Moderate (Square with M) | $6 \leq Ta < 8$ |
| | Low (Square with L) | $4 \leq Ta < 6$ |
| Background | High (Square) | $3 \leq Ta < 4$ |
| | Low (Small square) | $Ta < 3$ |

Two mica granite area

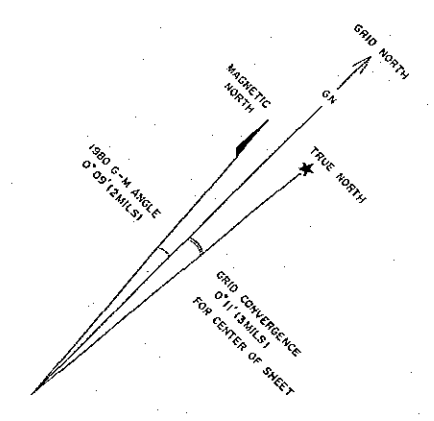
| Class | Symbol | Range (ppm) |
|------------|--------------------------|-------------------|
| Anomaly | High (Circle with H) | $22 \leq Ta$ |
| | Moderate (Circle with M) | $14 \leq Ta < 22$ |
| | Low (Circle with L) | $9 \leq Ta < 14$ |
| Background | High (Circle) | $9 \leq Ta < 14$ |
| | Low (Small circle) | $Ta < 9$ |

Biotite granite area

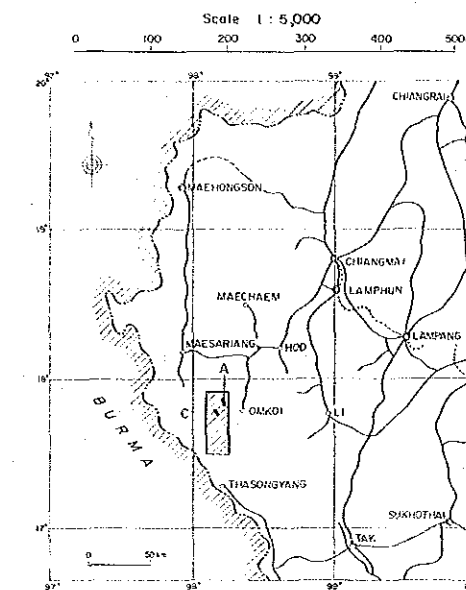
| Class | Symbol | Range (ppm) |
|------------|---------------------------|-----------------|
| Anomaly | High (Diamond with H) | $8 \leq Ta$ |
| | Moderate (Diamond with M) | $7 \leq Ta < 8$ |
| | Low (Diamond with L) | $6 \leq Ta < 7$ |
| Background | High (Diamond) | $5 \leq Ta < 6$ |
| | Low (Small diamond) | $Ta < 5$ |



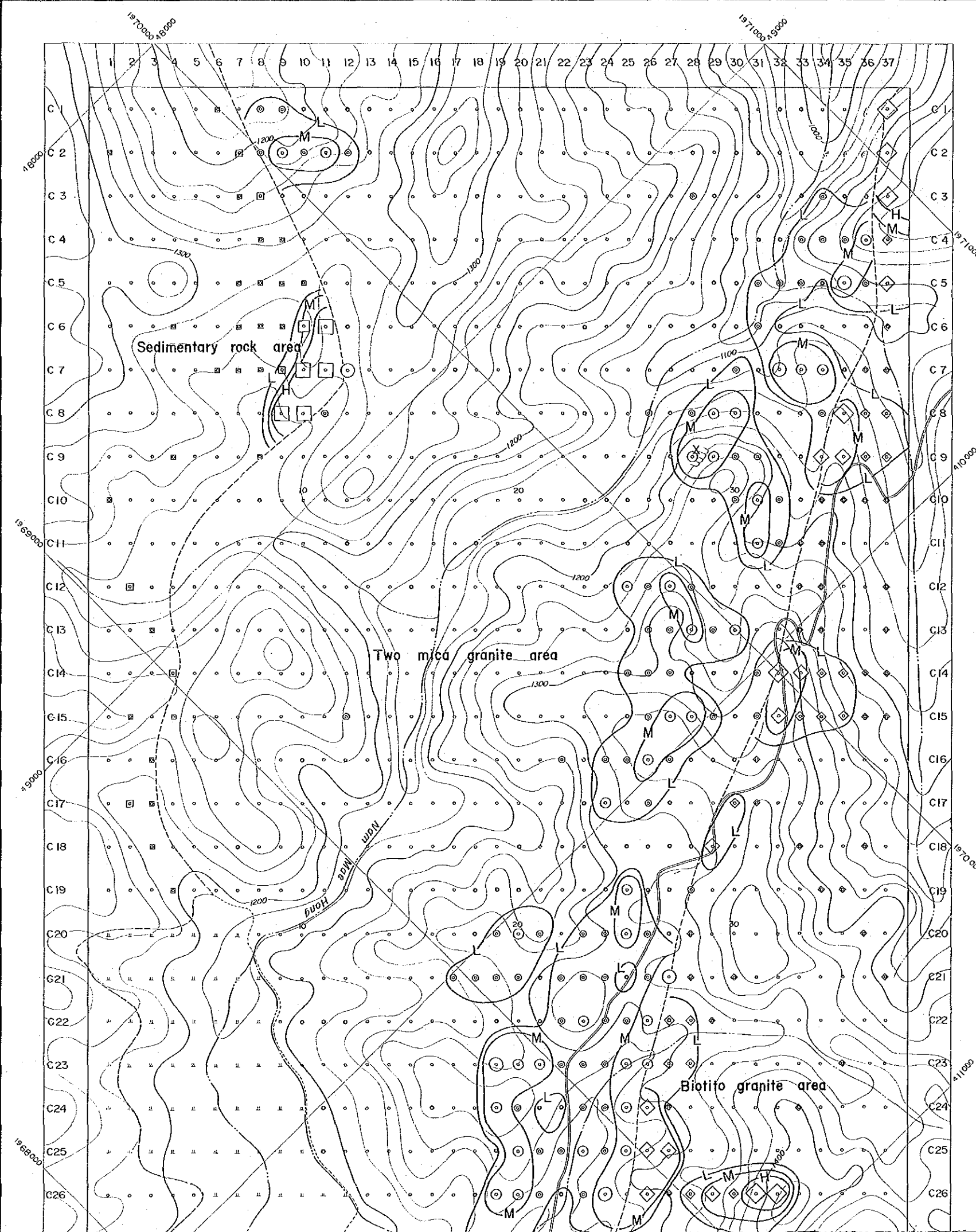
background Low To < 5



MINERAL EXPLORATION
OF
THE YANG KIANG AREA, THAILAND
PHASE II
W CONTENT DISTRIBUTION MAP
(AREA C)



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METAL MINING AGENCY OF JAPAN
FEB 1988



LEGEND

Sedimentary rock area

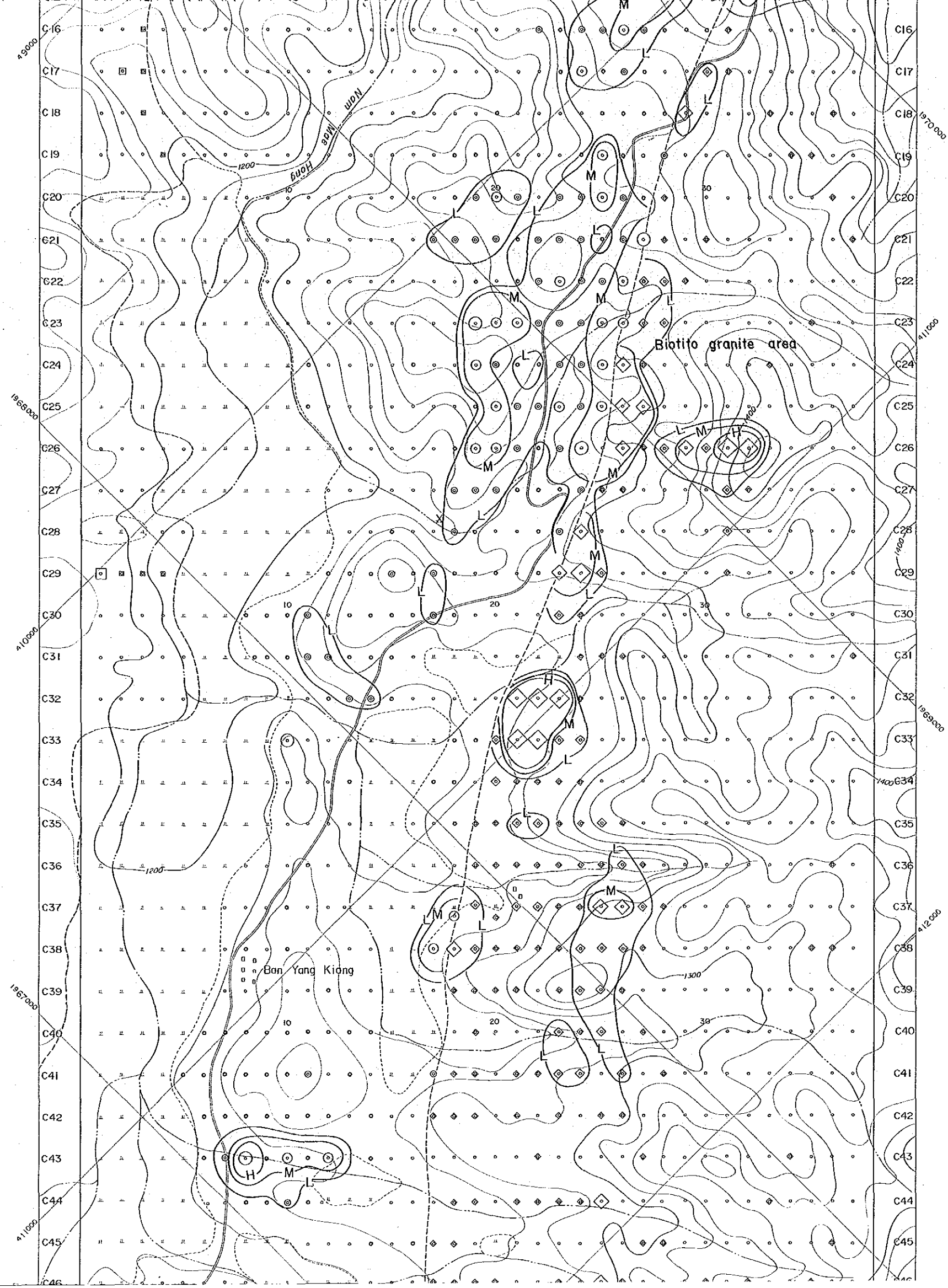
| | Class | Symbol | Range (ppm) |
|------------|----------|--------|-------------------|
| Anomaly | High | ⊙ | $104 \leq W$ |
| | Moderate | ⊙ | $46 \leq W < 104$ |
| | Low | ⊙ | $20 \leq W < 46$ |
| Background | High | □ | $9 \leq W < 20$ |
| | Low | • | $W < 9$ |

Two mica granite area

| | Class | Symbol | Range (ppm) |
|------------|----------|--------|--------------------|
| Anomaly | High | ⊙ | $946 \leq W$ |
| | Moderate | ⊙ | $360 \leq W < 946$ |
| | Low | ⊙ | $138 \leq W < 360$ |
| Background | High | • | $53 \leq W < 138$ |
| | Low | • | $W < 53$ |

Biotite granite area

| | Class | Symbol | Range (ppm) |
|---------|----------|--------|--------------------|
| Anomaly | High | ⊙ | $315 \leq W$ |
| | Moderate | ⊙ | $131 \leq W < 315$ |
| | Low | ⊙ | $55 \leq W < 131$ |



Sedimentary rock area

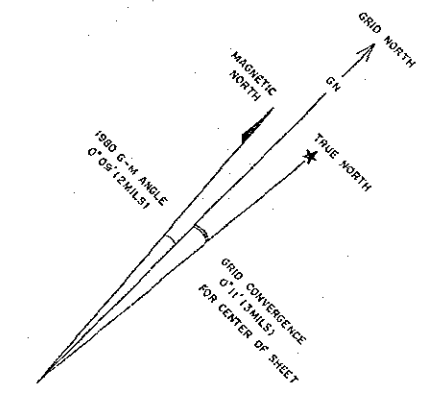
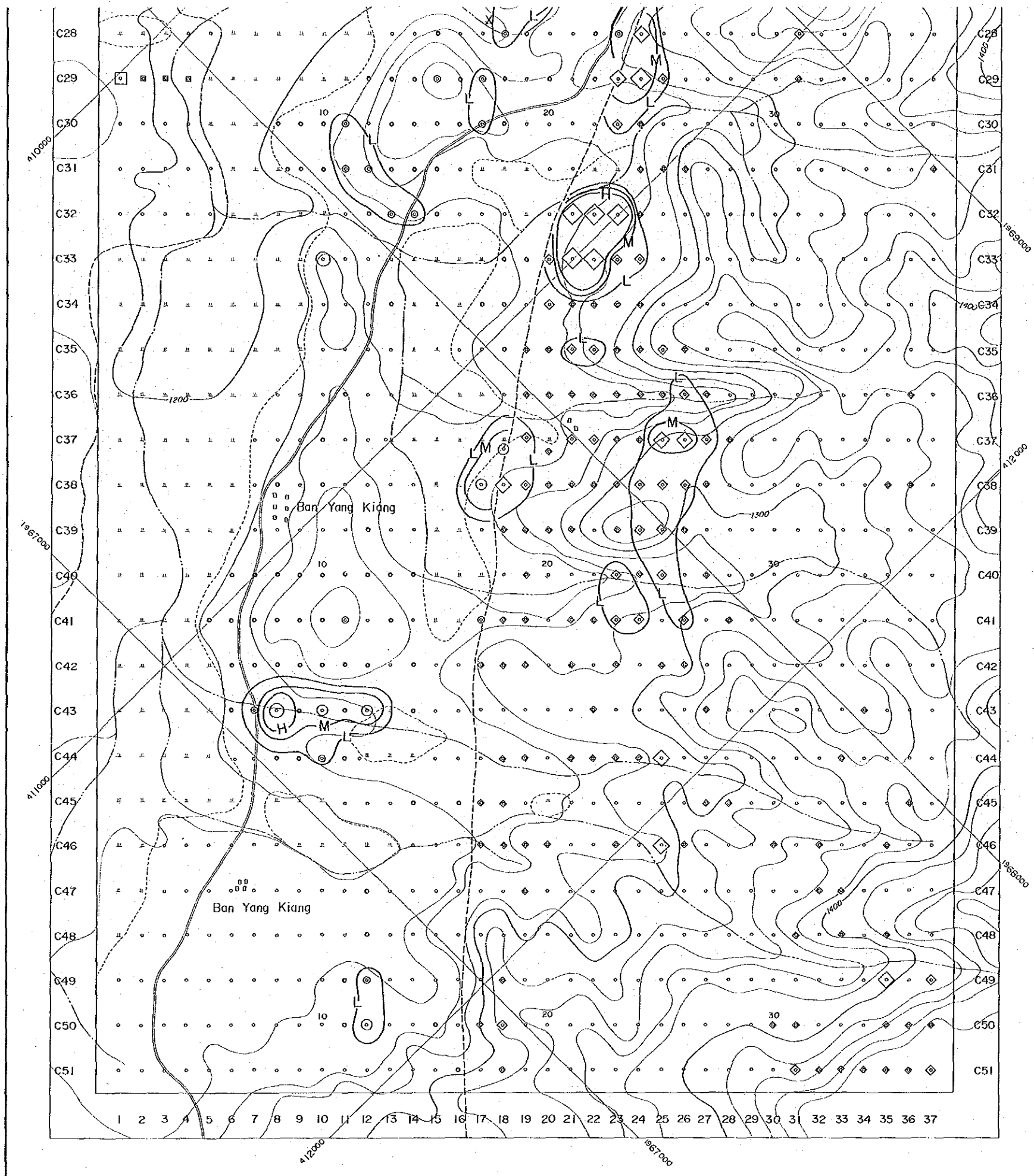
| Class | Symbol | Range (ppm) |
|------------|------------------------|-------------------|
| Anomaly | High (H in square) | 104 \leq W |
| | Moderate (M in square) | 46 \leq W < 104 |
| | Low (L in square) | 20 \leq W < 46 |
| Background | High (square) | 9 \leq W < 20 |
| | Low (dot) | W < 9 |

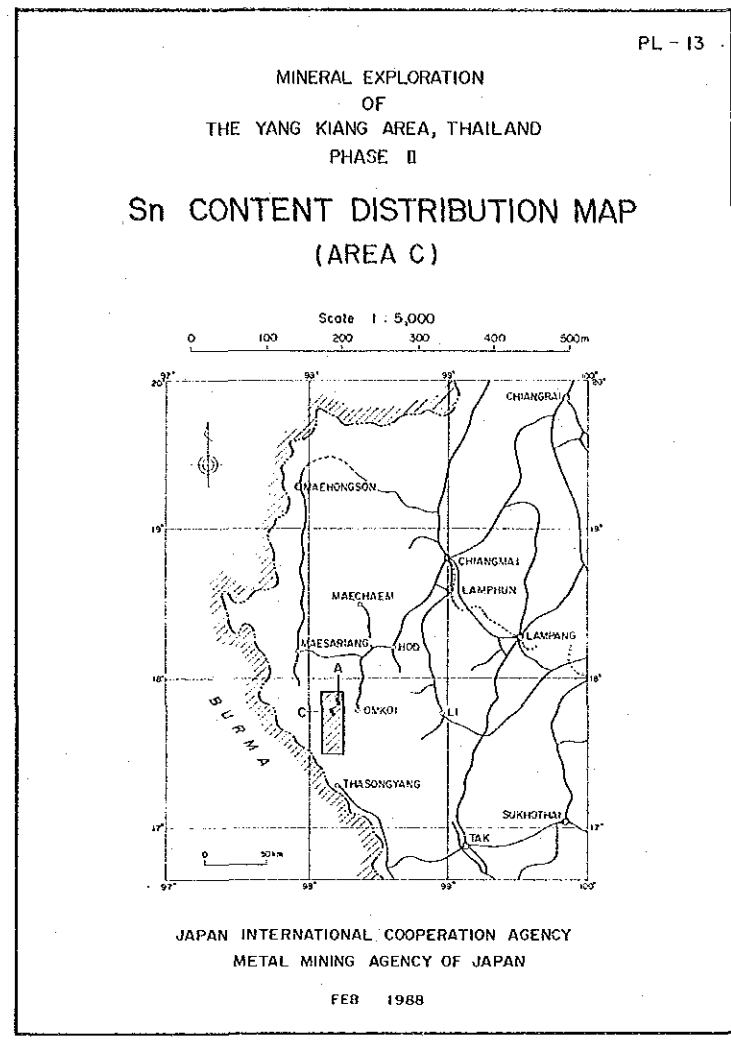
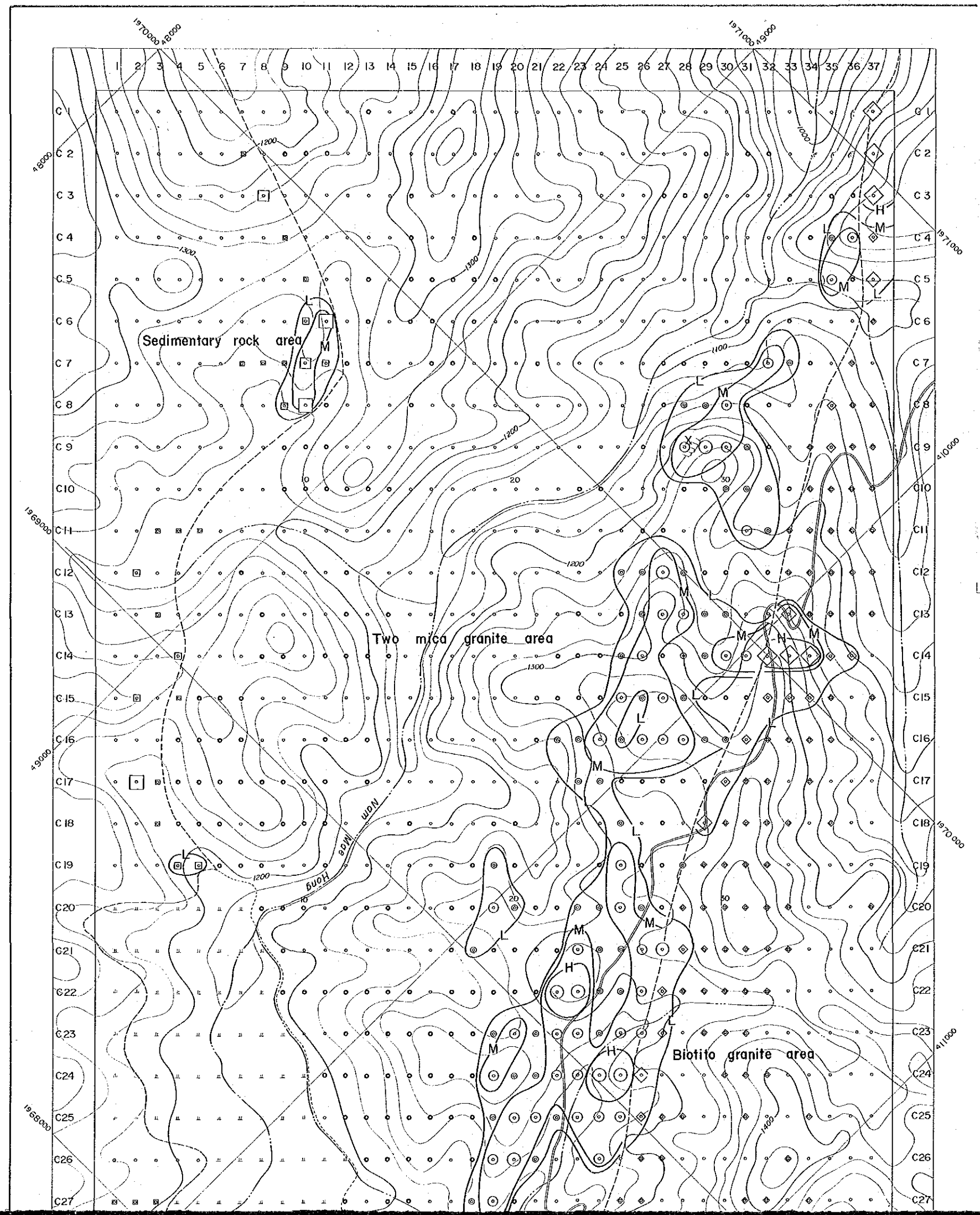
Two mica granite area

| Class | Symbol | Range (ppm) |
|------------|------------------------|--------------------|
| Anomaly | High (H in circle) | 946 \leq W |
| | Moderate (M in circle) | 360 \leq W < 946 |
| | Low (L in circle) | 138 \leq W < 360 |
| Background | High (circle) | 53 \leq W < 138 |
| | Low (dot) | W < 53 |

Biotite granite area

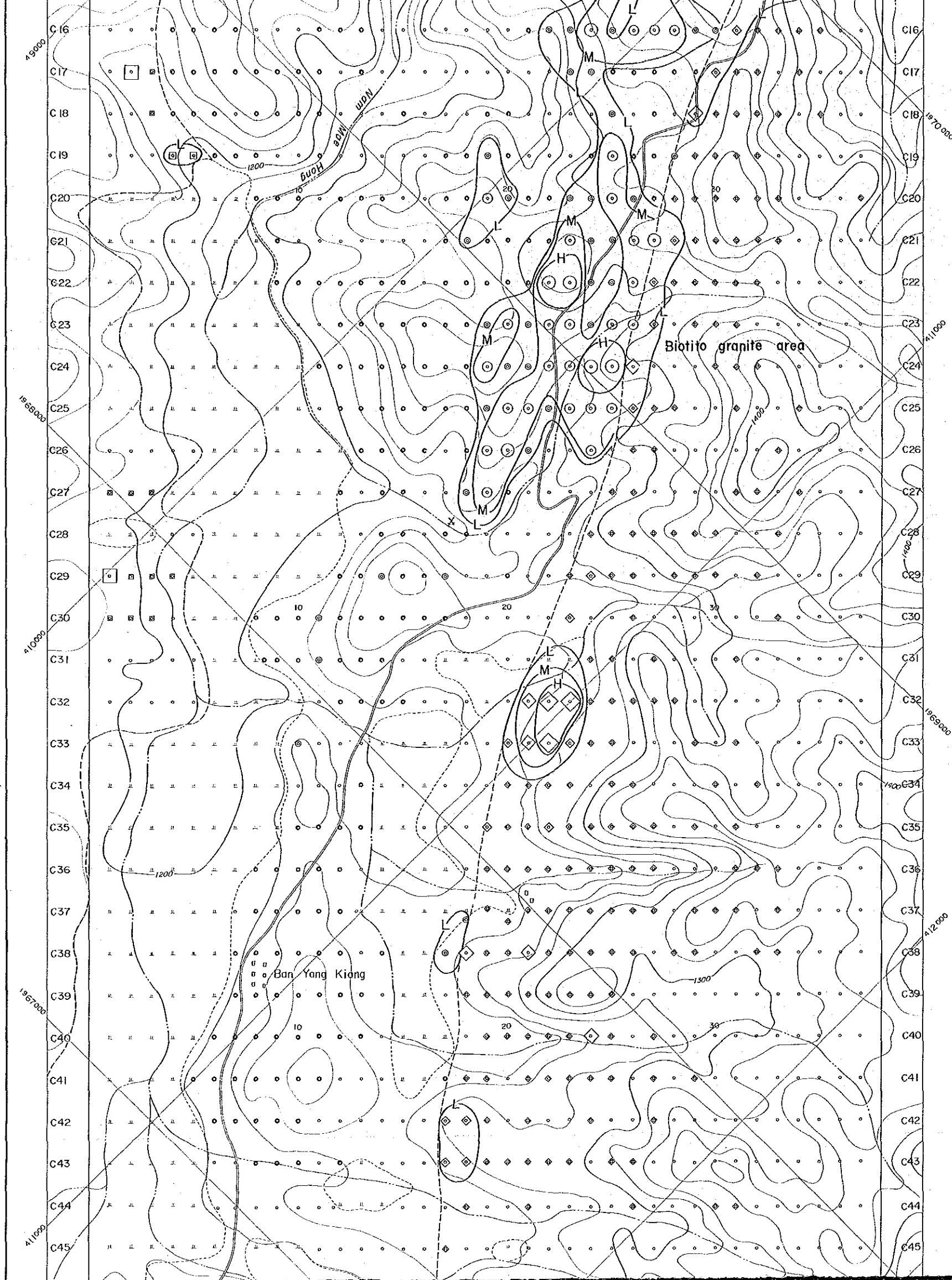
| Class | Symbol | Range (ppm) |
|------------|-------------------------|--------------------|
| Anomaly | High (H in diamond) | 315 \leq W |
| | Moderate (M in diamond) | 131 \leq W < 315 |
| | Low (L in diamond) | 55 \leq W < 131 |
| Background | High (diamond) | 23 \leq W < 55 |
| | Low (dot) | W < 23 |





LEGEND

| | | | |
|------------------------------|----------|--------|----------------|
| Sedimentary rock area | | | |
| | Class | Symbol | Range (ppm) |
| Anomaly | High | | 52 ≤ Sn |
| | Moderate | | 30 ≤ Sn < 52 |
| | Low | | 18 ≤ Sn < 30 |
| Background | High | | 11 ≤ Sn < 18 |
| | Low | | Sn < 11 |
| Two mica granite area | | | |
| | Class | Symbol | Range (ppm) |
| Anomaly | High | | 958 ≤ Sn |
| | Moderate | | 429 ≤ Sn < 958 |
| | Low | | 193 ≤ Sn < 429 |
| Background | High | | 87 ≤ Sn < 193 |
| | Low | | Sn < 87 |
| Biotite granite area | | | |
| | Class | Symbol | Range (ppm) |
| Anomaly | High | | 150 ≤ Sn |
| | Moderate | | 90 ≤ Sn < 150 |
| | Low | | 54 ≤ Sn < 90 |
| Background | High | | 33 ≤ Sn < 54 |



Sedimentary rock area

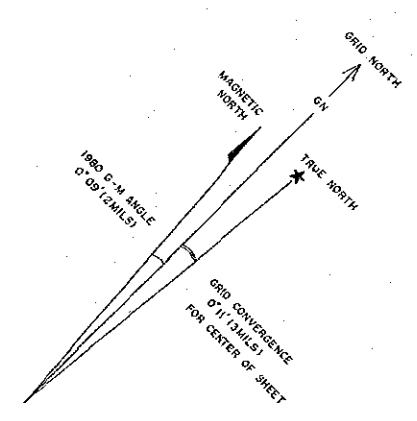
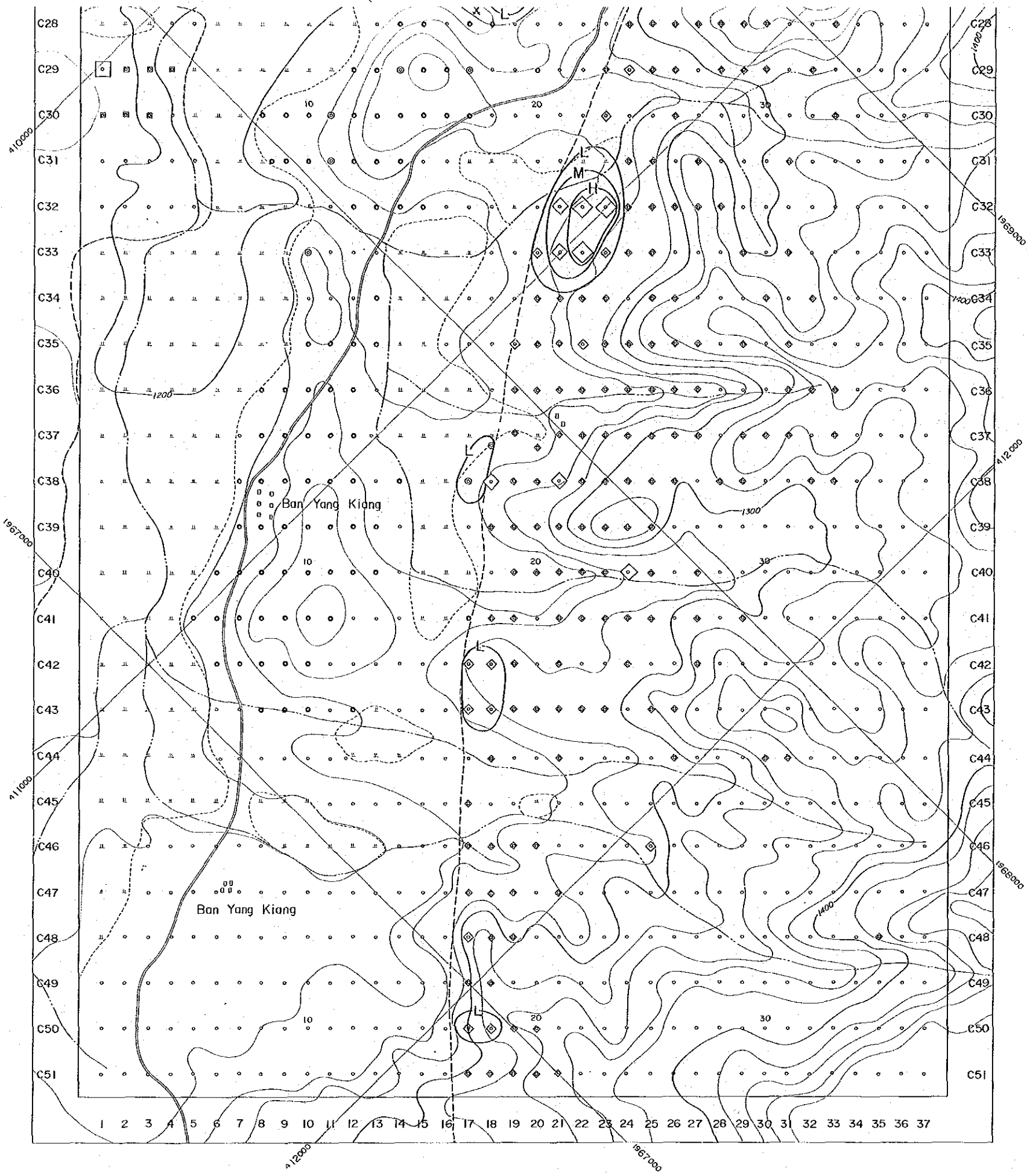
| Class | Symbol | Range (ppm) |
|------------|------------------------|--------------|
| Anomaly | High (H in circle) | 52 ≤ Sn |
| | Moderate (M in circle) | 30 ≤ Sn < 52 |
| | Low (L in circle) | 18 ≤ Sn < 30 |
| Background | High (square) | 11 ≤ Sn < 18 |
| | Low (dot) | Sn < 11 |

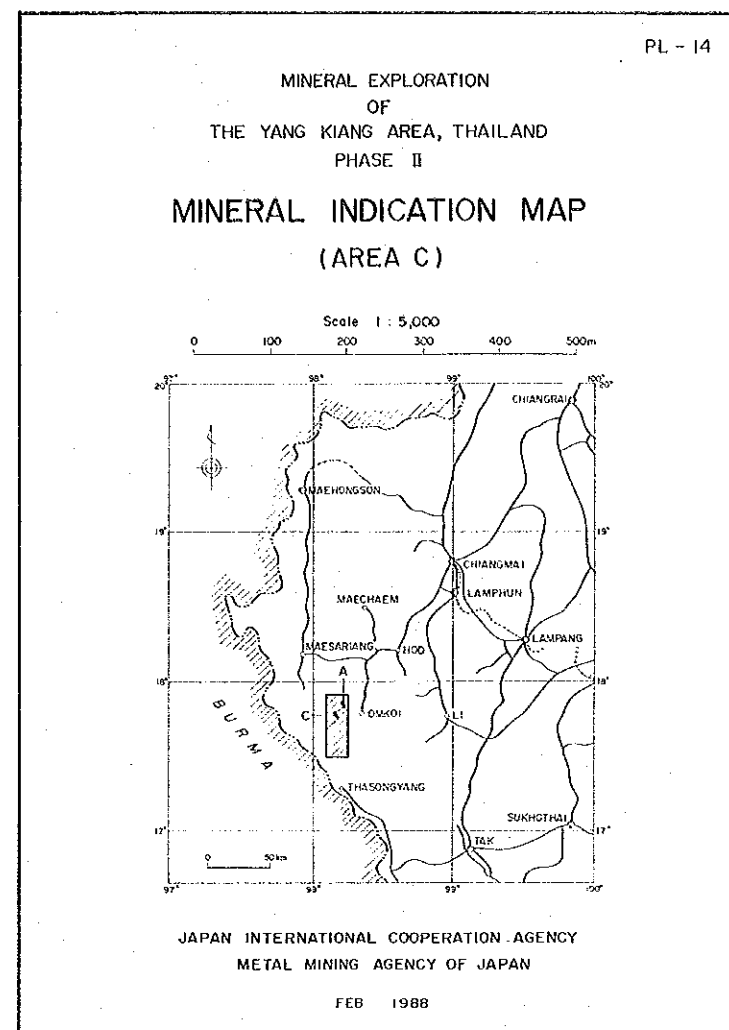
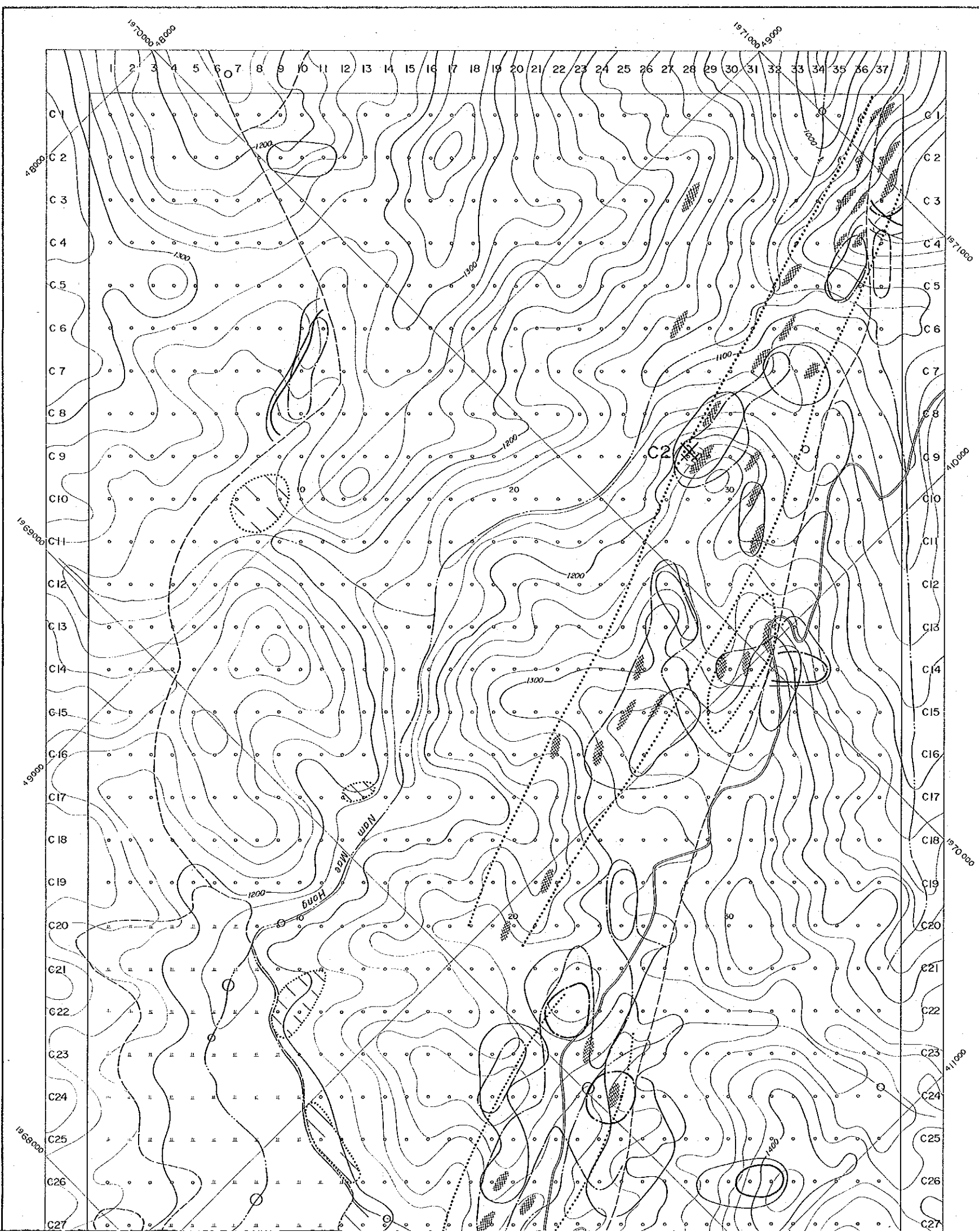
Two mica granite area

| Class | Symbol | Range (ppm) |
|------------|------------------------|----------------|
| Anomaly | High (H in circle) | 958 ≤ Sn |
| | Moderate (M in circle) | 429 ≤ Sn < 958 |
| | Low (L in circle) | 193 ≤ Sn < 429 |
| Background | High (square) | 87 ≤ Sn < 193 |
| | Low (dot) | Sn < 87 |

Biotite granite area

| Class | Symbol | Range (ppm) |
|------------|-------------------------|---------------|
| Anomaly | High (H in diamond) | 150 ≤ Sn |
| | Moderate (M in diamond) | 90 ≤ Sn < 150 |
| | Low (L in diamond) | 54 ≤ Sn < 90 |
| Background | High (square) | 33 ≤ Sn < 54 |
| | Low (dot) | Sn < 33 |





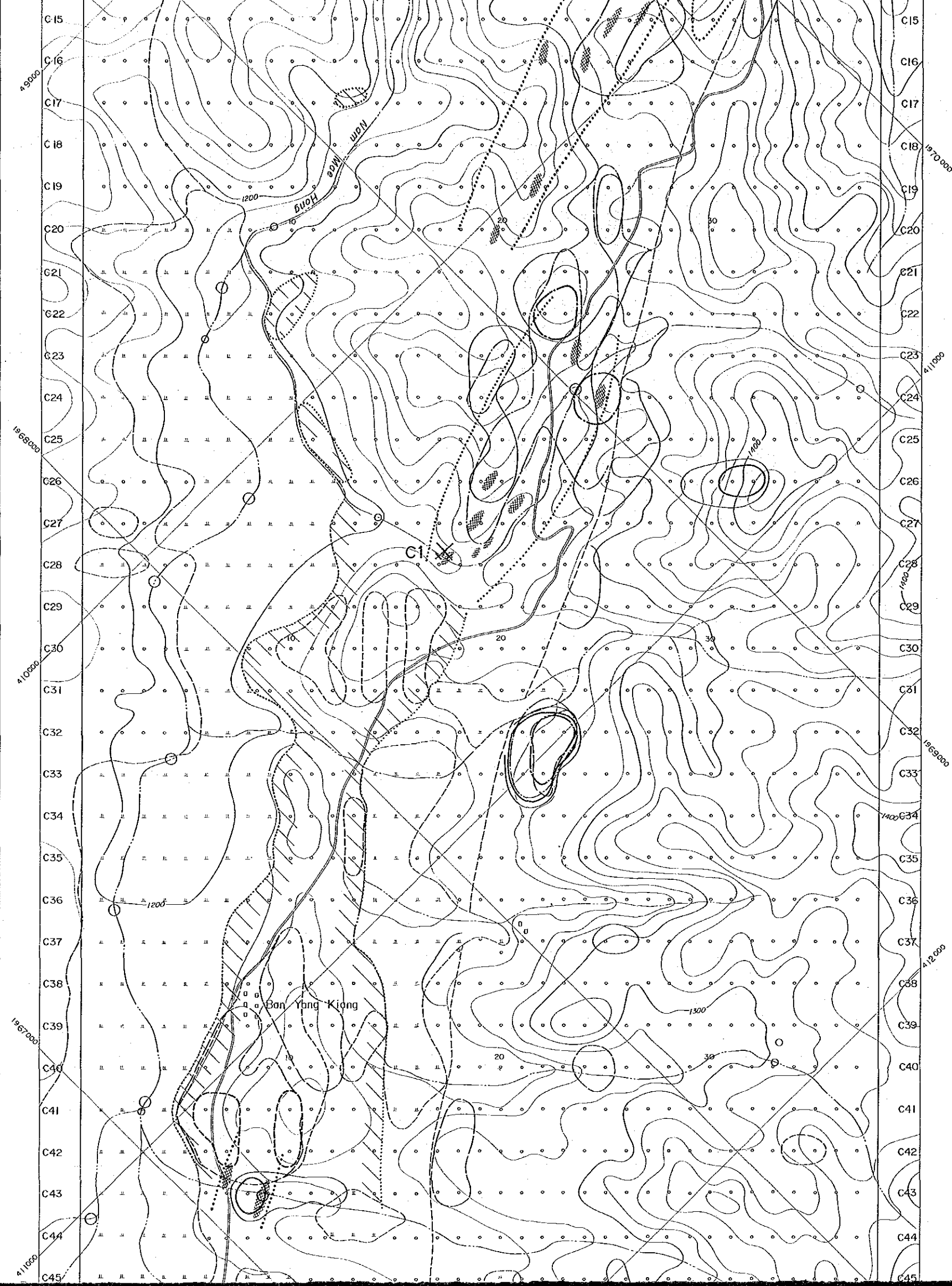
LEGEND

- Geologic indication**
- gossan
 - gossan zone
 - kaolin zone
 - geologic boundary
 - mine works (inactive)
- panning samples (cassiterite)**
- abundant
 - common
 - rare

Geochemical indication

| Element | Symbol | Class | Range (ppm) |
|---------|--------|----------|-------------------------|
| Nb | | high | S 43 T 81 B 45 |
| | | moderate | S 37 T 60 B 38 |
| Ta | | high | S 8 T 1 B 8 |
| | | moderate | S 6 T 22 B 7 |
| Sn | | high | S 52 T 958 B 150 |
| | | moderate | S 30 T 429 B 90 |
| W | | high | S 104 T 946 B 315 |
| | | moderate | S 46 T 360 B 131 |

S: Sedimentary rock area
T: Two mica granit area



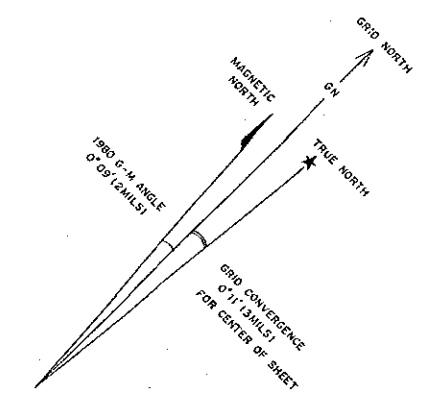
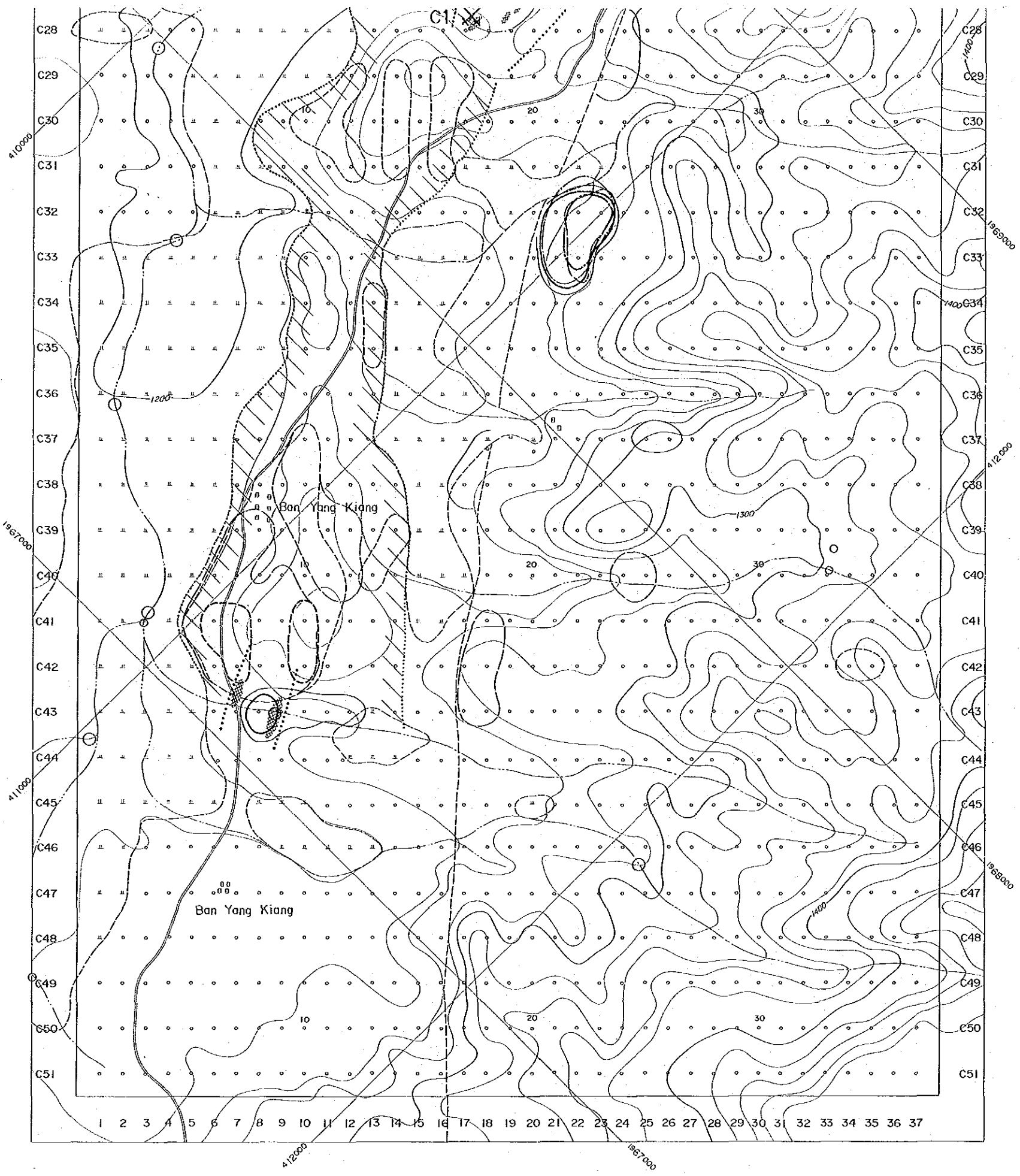
Geologic indication

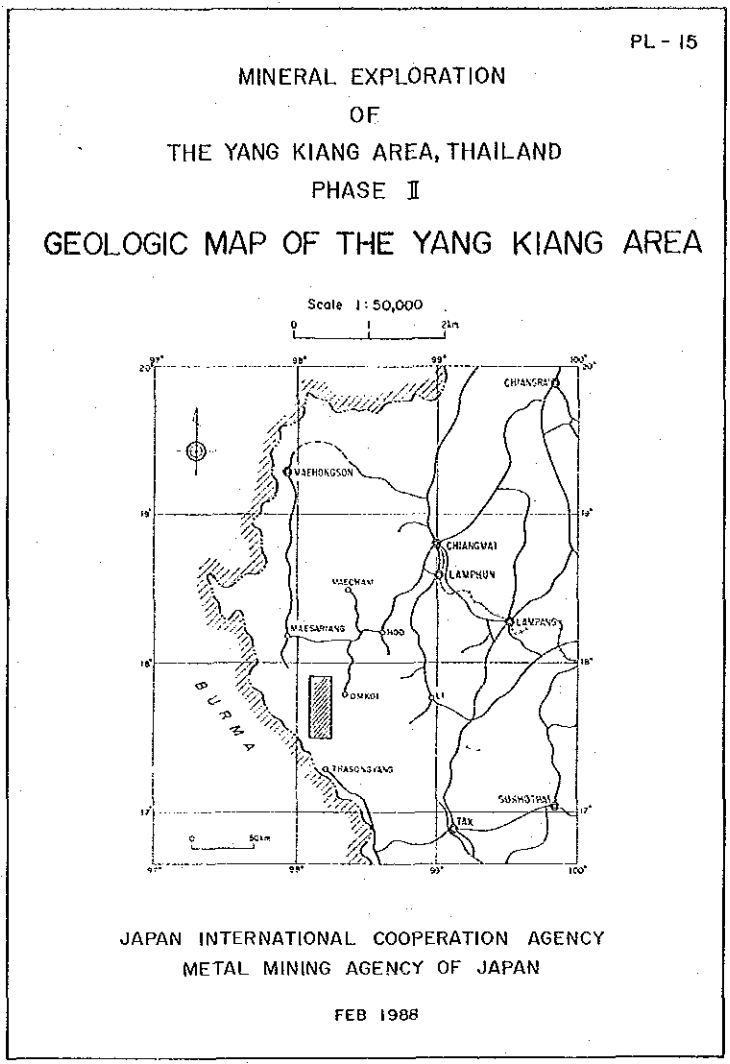
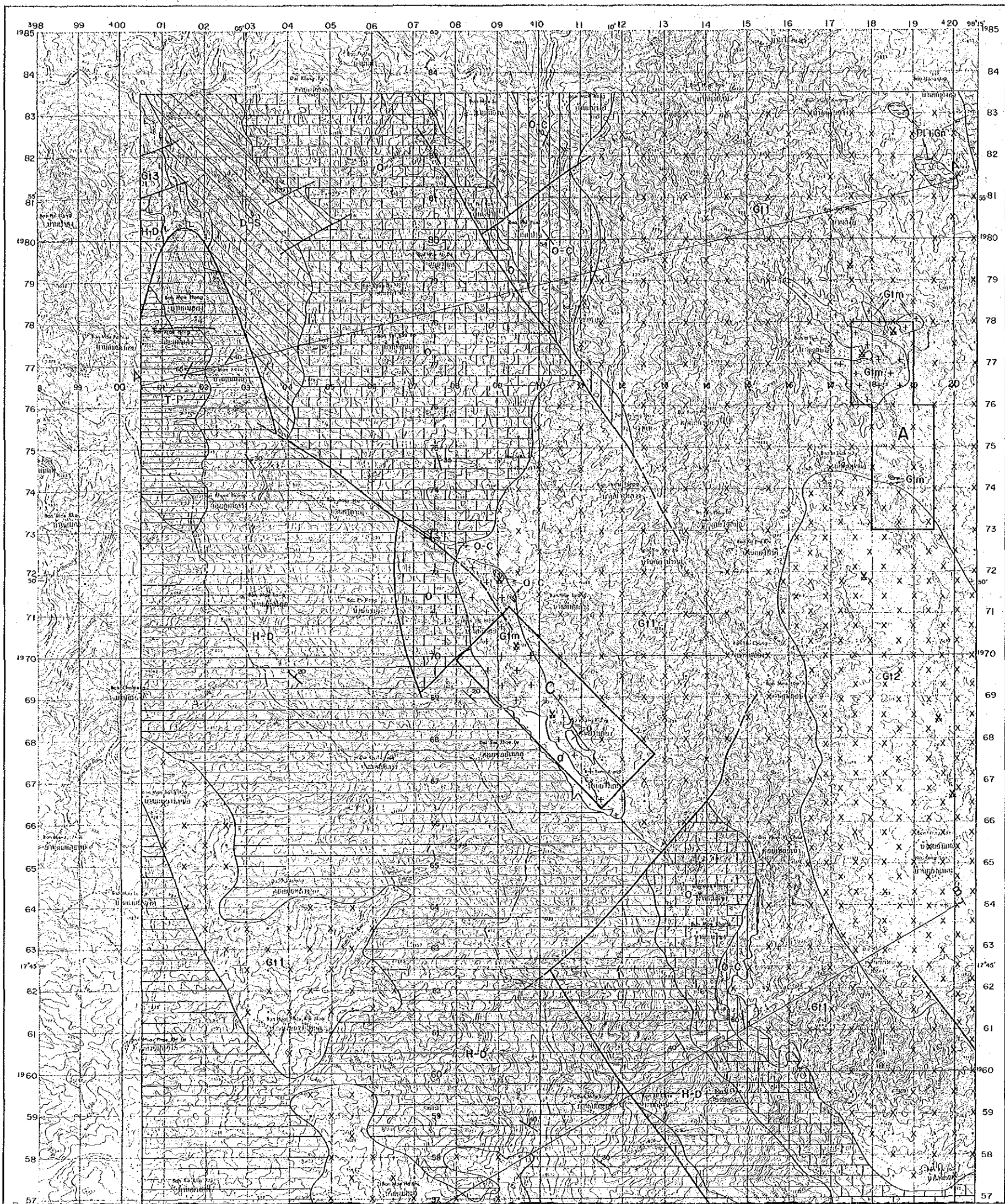
- gossan
- gossan zone
- kaolin zone
- geologic boundary
- mine works (inactive)
- panning samples (cassiterite)
- abundant
- common
- rare

Geochemical Indication

| Element | Symbol | Class | Range (ppm) |
|---------|--------|----------|-------------------------|
| Nb | | high | S 43 T 81 B 45 |
| | | moderate | S 37 T 60 B 38 |
| Ta | | high | S 8 T 1 B 8 |
| | | moderate | S 22 T 2 B 7 |
| Sn | | high | S 52 T 958 B 150 |
| | | moderate | S 30 T 429 B 90 |
| W | | high | S 104 T 946 B 315 |
| | | moderate | S 46 T 360 B 131 |

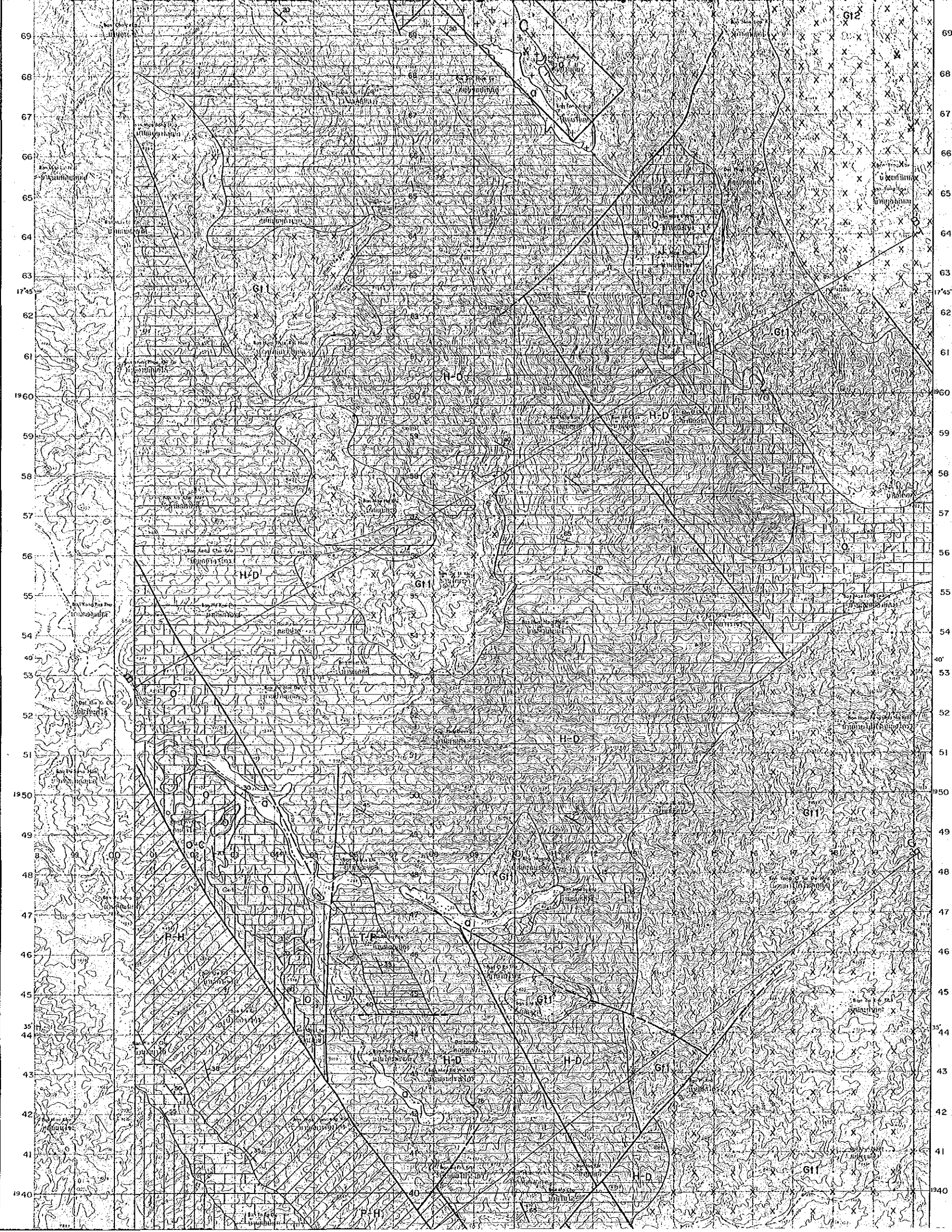
S: Sedimentary rock area
 T: Two mica granit area
 B: Biotite granite area





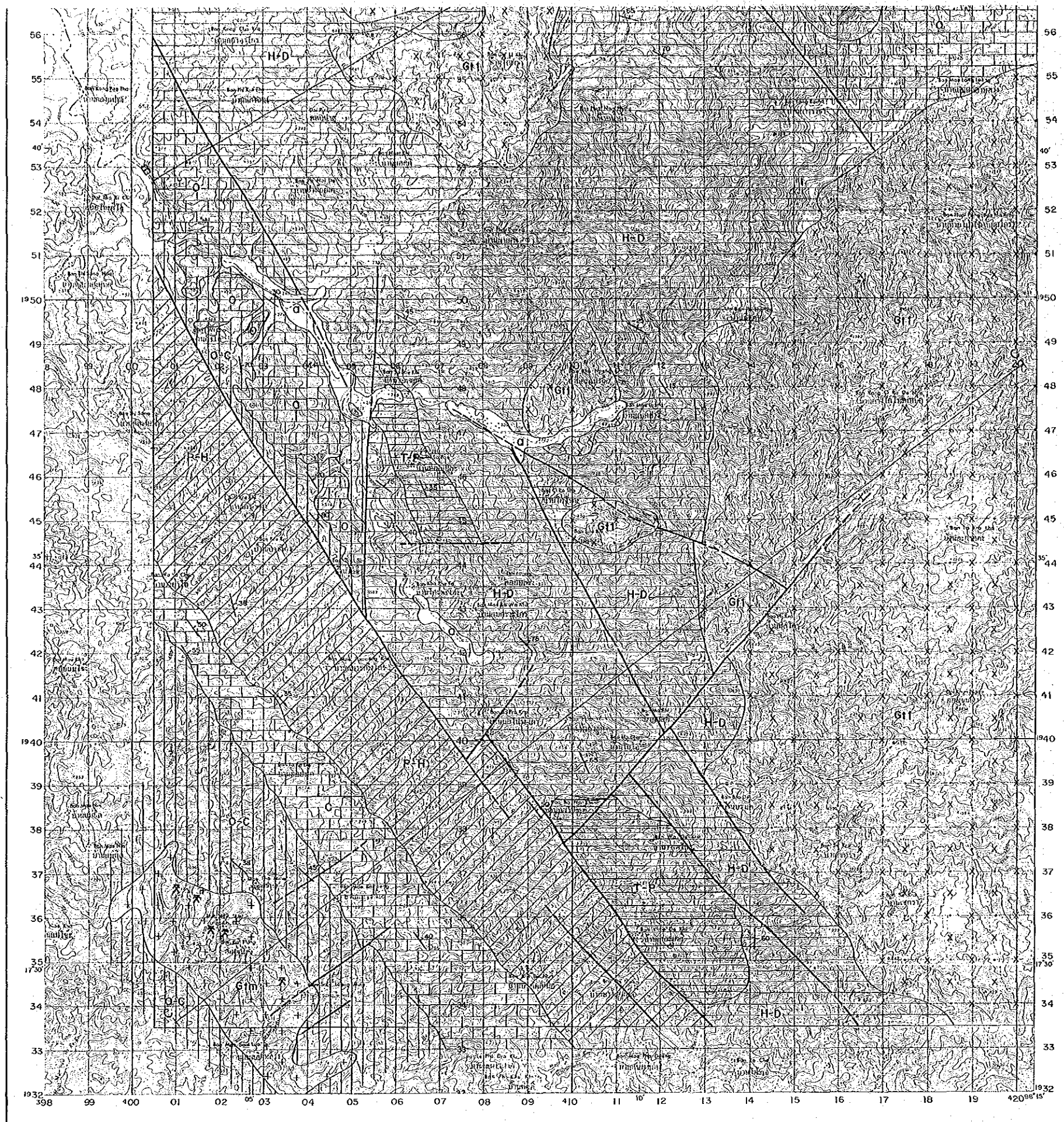
LEGEND

- 1 Sedimentary rocks**
- Quaternary a gravel and sand
 - Triassic ~ Permian T-P shale, sandstone and limestone
 - Permian ~ Carboniferous P-H shale, sandstone and clayish tuff
 - Carboniferous ~ Devonian H-D shale, sandstone, limestone and chert
 - Devonian ~ Silurian D-S shale, sandstone and limestone
 - Ordovician O limestone (and shale)
 - Ordovician ~ Cambrian O-C sandstone, shale, chert and limestone
- 2 Granitic rocks**
- G1m medium-grained two mica granite
 - G12 medium to coarse-grained biotite granite (massive)
 - G11 medium to coarse-grained biotite granite (foliated)
 - G13 coarse-grained amphibole biotite granite
- 3 Metamorphic rocks**
- Pre-Carboniferous Pl+Gn paragneiss
- 4 Geologic symbols**
- fault
 - strike and dip
 - mines (active)



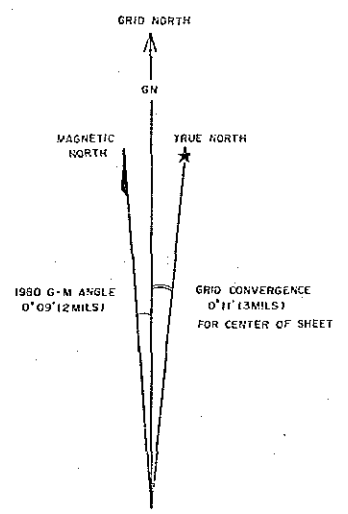
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- Pre-Carboniferous Pl+Gn paragneiss
- 4 Geologic symbols**
- fault
 - strike and dip
 - mines (active)
 - mines (inactive)
- 5 Survey area**
- phase I survey area
 - phase II survey area (A & C)

modified from phase I (1987)



- X mines (inactive)
- 5 Survey area
- phase I survey area
- phase II survey area (A & C)

modified from phase I (1987)



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