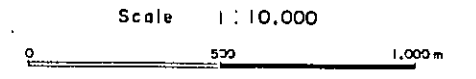


METAL MINING AGENCY OF JAPAN  
 JAPAN INTERNATIONAL COOPERATION AGENCY  
 GOVERNMENT OF JAPAN  
 FEBRUARY 1978  
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LEGEND

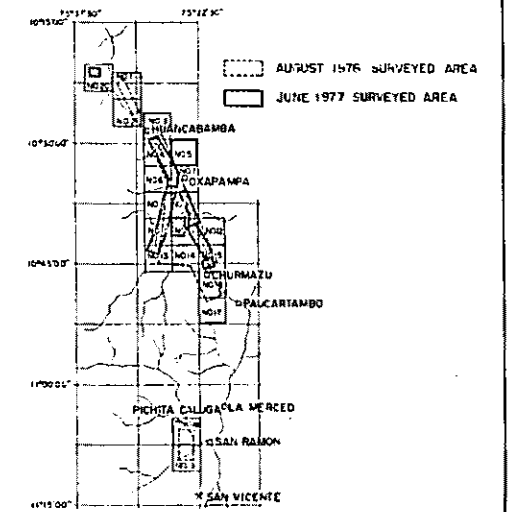
- TALUS
- LIMESTONE
- DOLOMITIC LIMESTONE
- DOLOMITE
- ZEBRA & BRECCIA DOLOMITE
- SANDSTONE
- SHALE, MUDDSTONE & SILTSTONE
- CONGLOMERATE
- TUFF, TUFF BRECCIA & AGGLOMERATE (PYROCRATIC)
- ANDESITE, RHYOLITE & DACITE (LAVA FLOW)
- QUARTZ PORPHYRY, GRANITE PORPHYRY
- DIORITE, DIORITE PORPHYRY & MICRODIORITE
- GRANITE (PINK, RED & WHITE)

- ORE INDICATION
  - GYPSUM
  - FLOAT
  - PORTAL
  - DIP & STRIKE
  - JOINT
  - FAULT
- 1,901 LOCALITY & NUMBER OF SOIL SAMPLE FOR GEOCHEMICAL ANALYSIS  
 2,342 LOCALITY & NUMBER OF ROCK SAMPLE
- NUMBER OF ROCK SAMPLE
- F-A 345 F - FOSSIL
  - M-A 344 M - MINOR ELEMENTAL ANALYSIS
  - O-A 345 O - ORE ANALYSIS
  - P-A 346 P - POLISHED SECTION
  - T-A 347 T - THIN SECTION
  - X-A 348 X - X-RAY ANALYSIS
  - G-A 349 G - GEOCHEMICAL ANALYSIS ON ROCK
  - D-A 350 D - DATING WHOLE ROCK
  - W-A 351 W - CHEMICAL ANALYSIS WHOLE ROCK

NO. 5

PL. I-1(2)

GEOLOGICAL SURVEY  
 OF  
 THE CORDILLERA ORIENTAL CENTRAL PERU  
 (JUNE 1977)  
 ROUTE MAP  
 OF  
 THE DETAILED SURVEY AREA  
 NO. 5



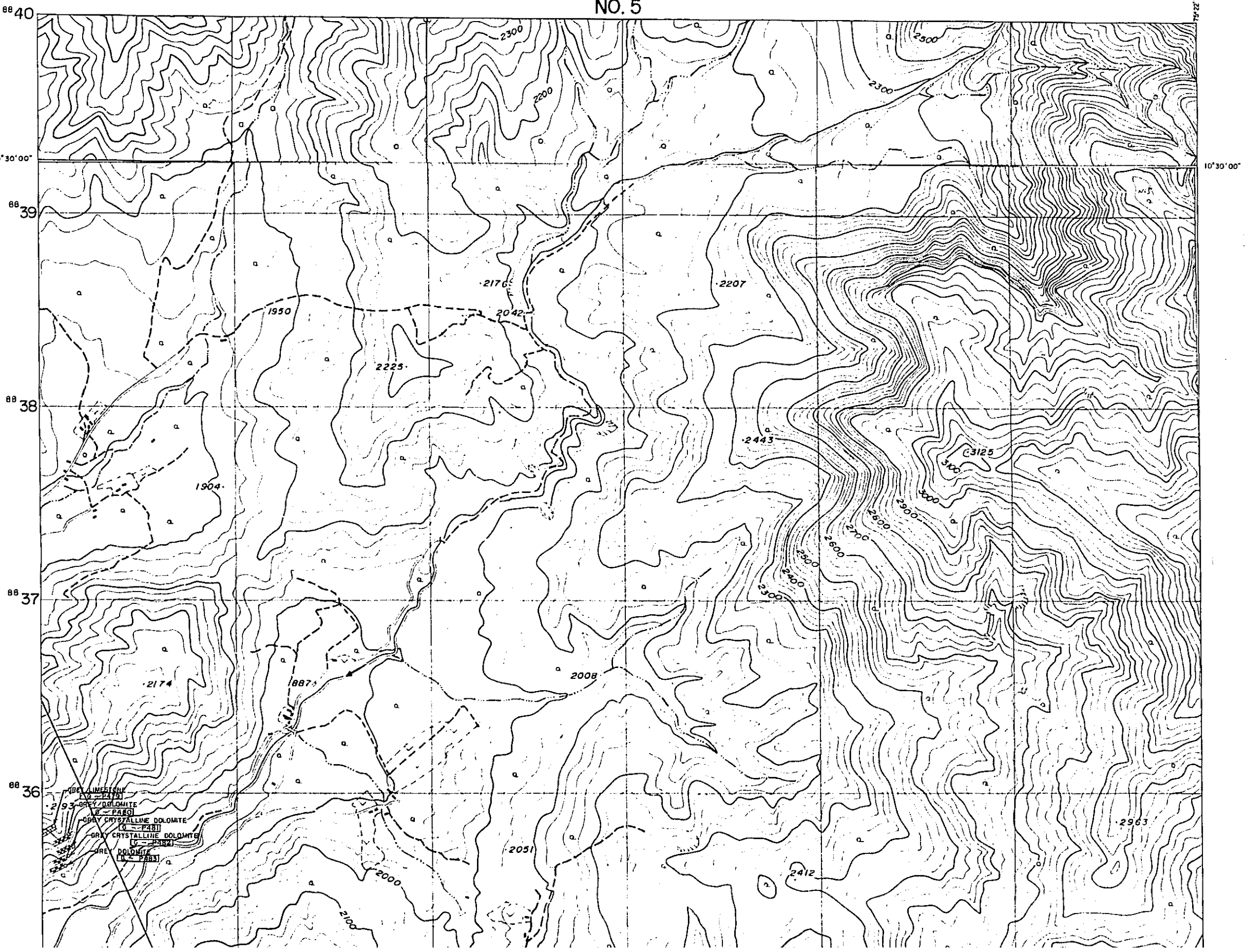
METAL MINING AGENCY OF JAPAN  
 JAPAN INTERNATIONAL COOPERATION AGENCY  
 GOVERNMENT OF JAPAN  
 FEBRUARY 1978  
 prepared by MESCO, Inc.

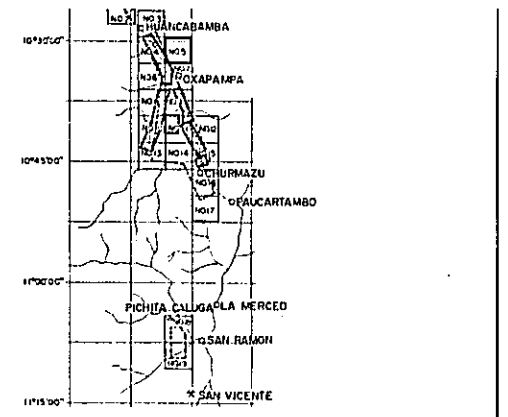
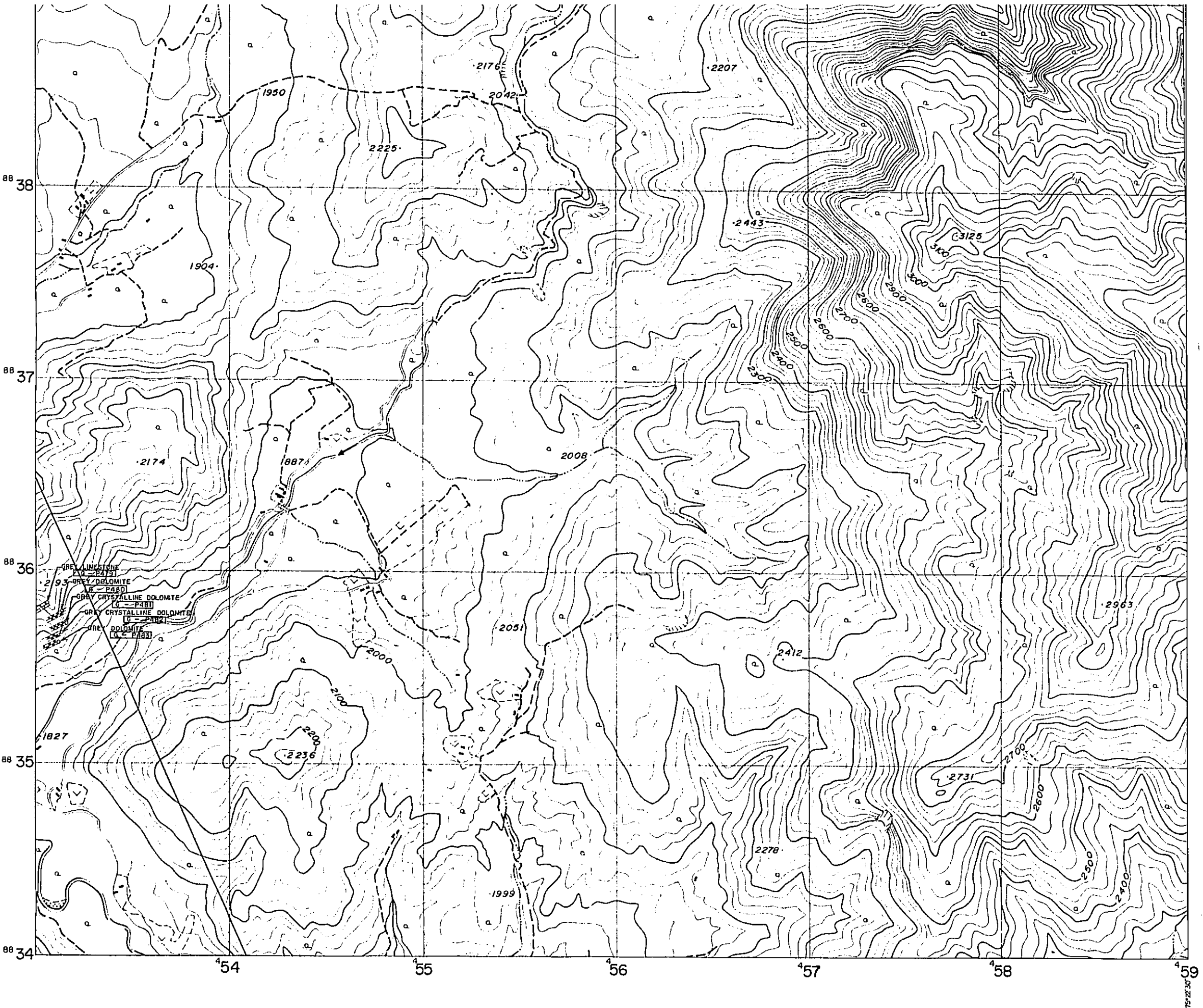
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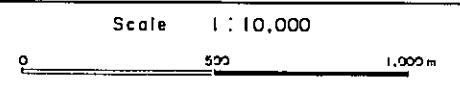
LEGEND

- TALUS
- LIMESTONE
- DOLOMITIC LIMESTONE
- DOLOMITE
- ZEBRA & BRECCIA DOLOMITE
- SANDSTONE
- SHALE, MUDSTONE & SILTSTONE
- CONGLOMERATE
- TUFF, TUFF BRECCIA & AGGLOMERATE (PYROCRASTIC)
- ANDESITE, RHYOLITE & DACITE (LAVA FLOW)
- QUARTZ PORPHYRY, GRANITE PORPHYRY
- DIORITE, DIORITE PORPHYRY & MICRODIORITE
- GRANITE (PINK, RED & WHITE)





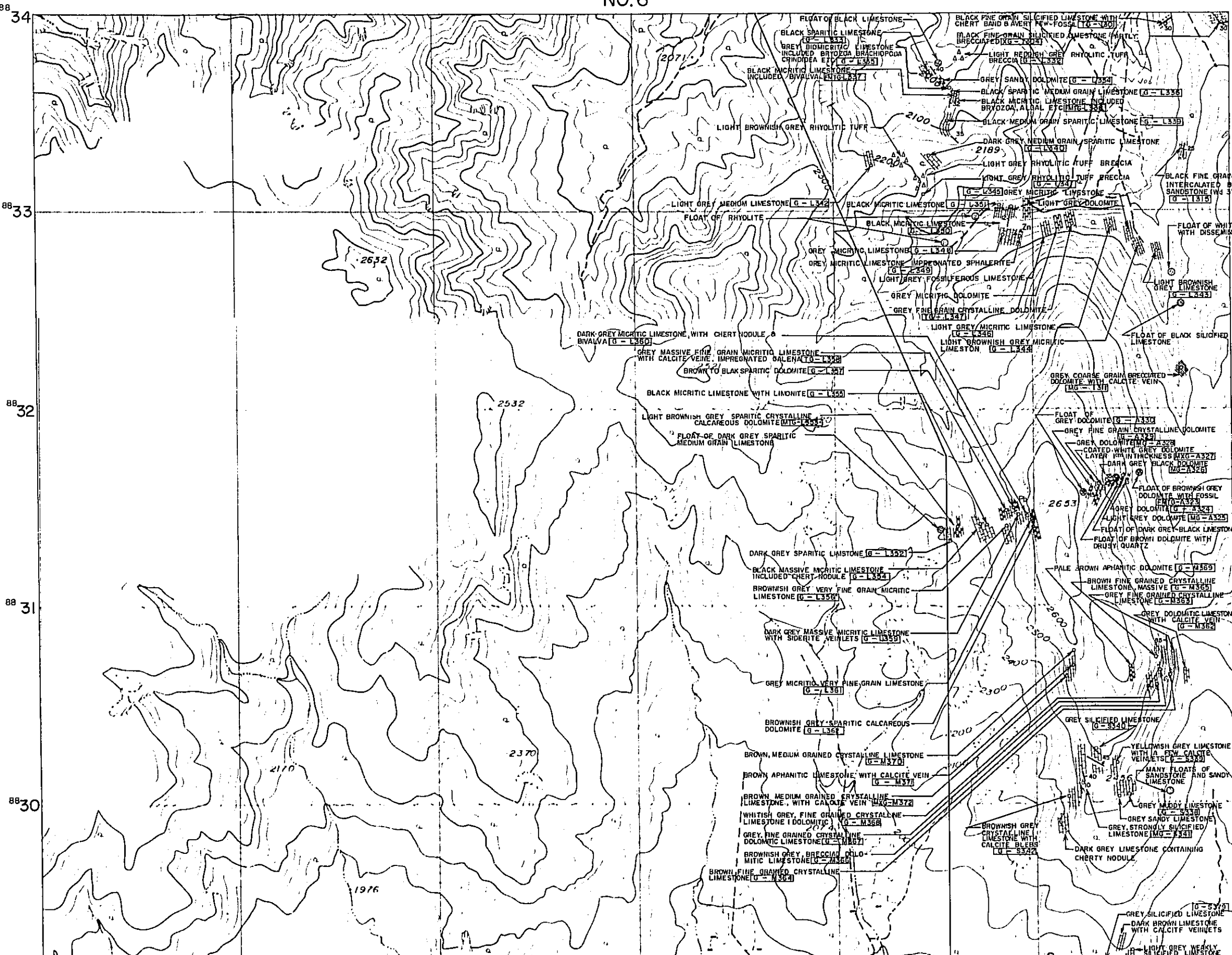
METAL MINING AGENCY OF JAPAN  
 JAPAN INTERNATIONAL COOPERATION AGENCY  
 GOVERNMENT OF JAPAN  
 FEBRUARY 1978  
 prepared by MESCO, Inc.



LEGEND

- TALUS
  - LIMESTONE
  - DOLOMITIC LIMESTONE
  - DOLOMITE
  - ZEBRA & BRECCIA DOLOMITE
  - SANDSTONE
  - SHALE, MUDSTONE & SILTSTONE
  - CONGLOMERATE
  - TUFF, TUFF BRECCIA & AGGLOMERATE (PYROCRASTIC)
  - ANDESITE, RHYOLITE & DACITE (LAVA FLOW)
  - QUARTZ PORPHYRY, GRANITE PORPHYRY
  - DIORITE, DIORITE PORPHYRY & MICRODIORITE
  - GRANITE (PINK, RED & WHITE)
- 
- ORE INDICATION
  - GYPSUM
  - FLOAT
  - PORTAL
  - DIP & STRIKE
  - JOINT
  - FAULT
- 
- LOCALITY & NUMBER OF SOIL SAMPLE FOR GEOCHEMICAL ANALYSIS
  - LOCALITY & NUMBER OF ROCK SAMPLE
- 
- NUMBER OF ROCK SAMPLE
- F - FOSSIL
  - M - MINOR ELEMENTAL ANALYSIS
  - O - ORE ANALYSIS
  - P - POLISHED SECTION
  - T - THIN SECTION
  - X - X-RAY ANALYSIS
  - G - GEOCHEMICAL ANALYSIS ON ROCK

NO. 6



PL. I - (13)

GEOLOGICAL SURVEY  
OF  
THE CORDILLERA ORIENTAL CENTRAL PERU  
(JUNE 1977)

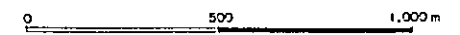
### ROUTE MAP OF THE DETAILED SURVEY AREA

NO. 6

[Dotted Line] AUGUST 1976 SURVEYED AREA  
 [Solid Line] JUNE 1977 SURVEYED AREA

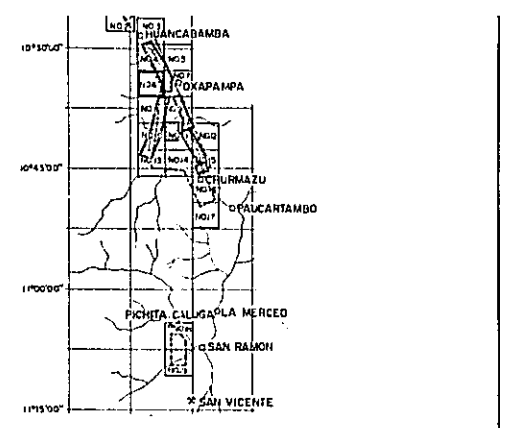
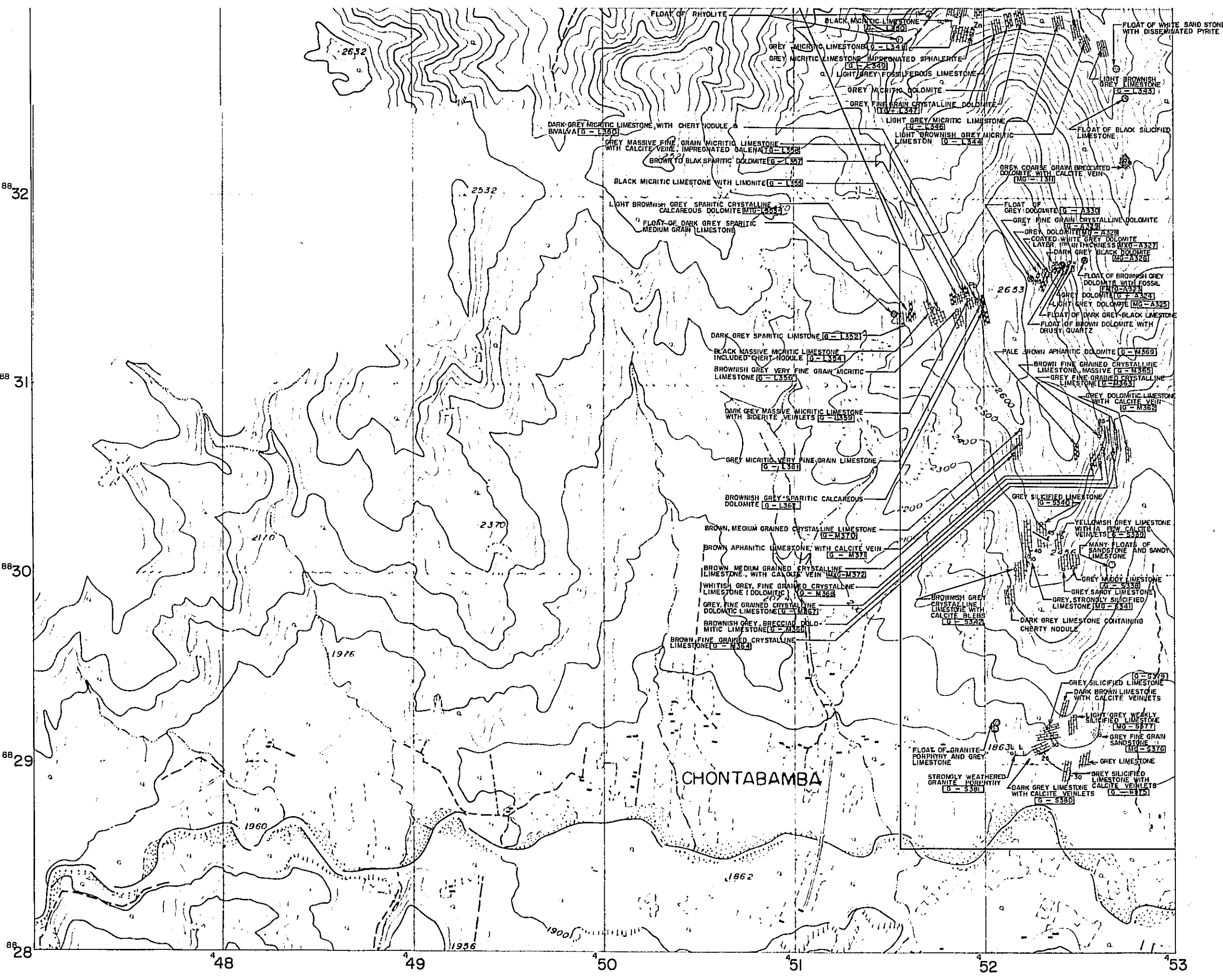
METAL MINING AGENCY OF JAPAN  
 JAPAN INTERNATIONAL COOPERATION AGENCY  
 GOVERNMENT OF JAPAN  
 FEBRUARY 1978  
 prepared by MESCO, Inc.

Scale 1:10,000

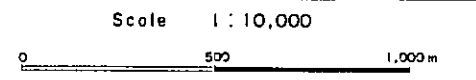


LEGEND

- [White Box] TALUS
- [Horizontal Lines] LIMESTONE
- [Vertical Lines] DOLOMITIC LIMESTONE
- [Cross-hatch] DOLOMITE
- [Diagonal Lines] ZEORA & BRECCIA DOLOMITE
- [Dotted Box] SANDSTONE
- [Horizontal Dotted] SHALE, MUDSTONE & SILTSTONE
- [Vertical Dotted] CONGLOMERATE
- [Irregular Dotted] TUFF, TUFF BRECCIA & AGGLOMERATE (PYROCRASTIC)
- [Horizontal Dotted] ANDESITE, RHYOLITE & DACITE (LAVA FLOW)
- [Vertical Dotted] QUARTZ PORPHYRY, GRANITE PORPHYRY
- [Cross-hatch] DIORITE, DIORITE PORPHYRY & MICRODIORITE
- [Dotted Box] GRANITE (PINK, RED & WHITE)



METAL MINING AGENCY OF JAPAN  
 JAPAN INTERNATIONAL COOPERATION AGENCY  
 GOVERNMENT OF JAPAN  
 FEBRUARY 1978  
 prepared by MESCO, Inc.



LEGEND

- TALUS
  - LIMESTONE
  - DOLOMITIC LIMESTONE
  - DOLOMITE
  - ZEBRA & BRECCIA DOLOMITE
  - SANDSTONE
  - SHALE, MUDSTONE & SILTSTONE
  - CONGLOMERATE
  - TUFF, TUFF BRECCIA & AGGLOMERATE (PYROCLASTIC)
  - ANDESITE, RHYOLITE & DACITE (LAVA FLOW)
  - QUARTZ PORPHYRY, GRANITE PORPHYRY
  - DIORITE, DIORITE PORPHYRY & MICRODIORITE
  - GRANITE (PINK, RED & WHITE)
- 
- ORE INDICATION
  - GYPSUM
  - FAULT
  - DIP & STRIKE
  - JOINT
  - PORTAL
  - LOCALITY & NUMBER OF SOIL SAMPLE FOR GEOCHEMICAL ANALYSIS
  - LOCALITY & NUMBER OF ROCK SAMPLE
- 
- NUMBER OF ROCK SAMPLE
- F - FOSSIL
  - M - MINOR ELEMENTAL ANALYSIS
  - O - ORE ANALYSIS
  - P - POLISHED SECTION
  - T - THIN SECTION
  - X - X-RAY ANALYSIS
  - G - GEOCHEMICAL ANALYSIS ON ROCK

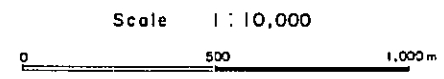
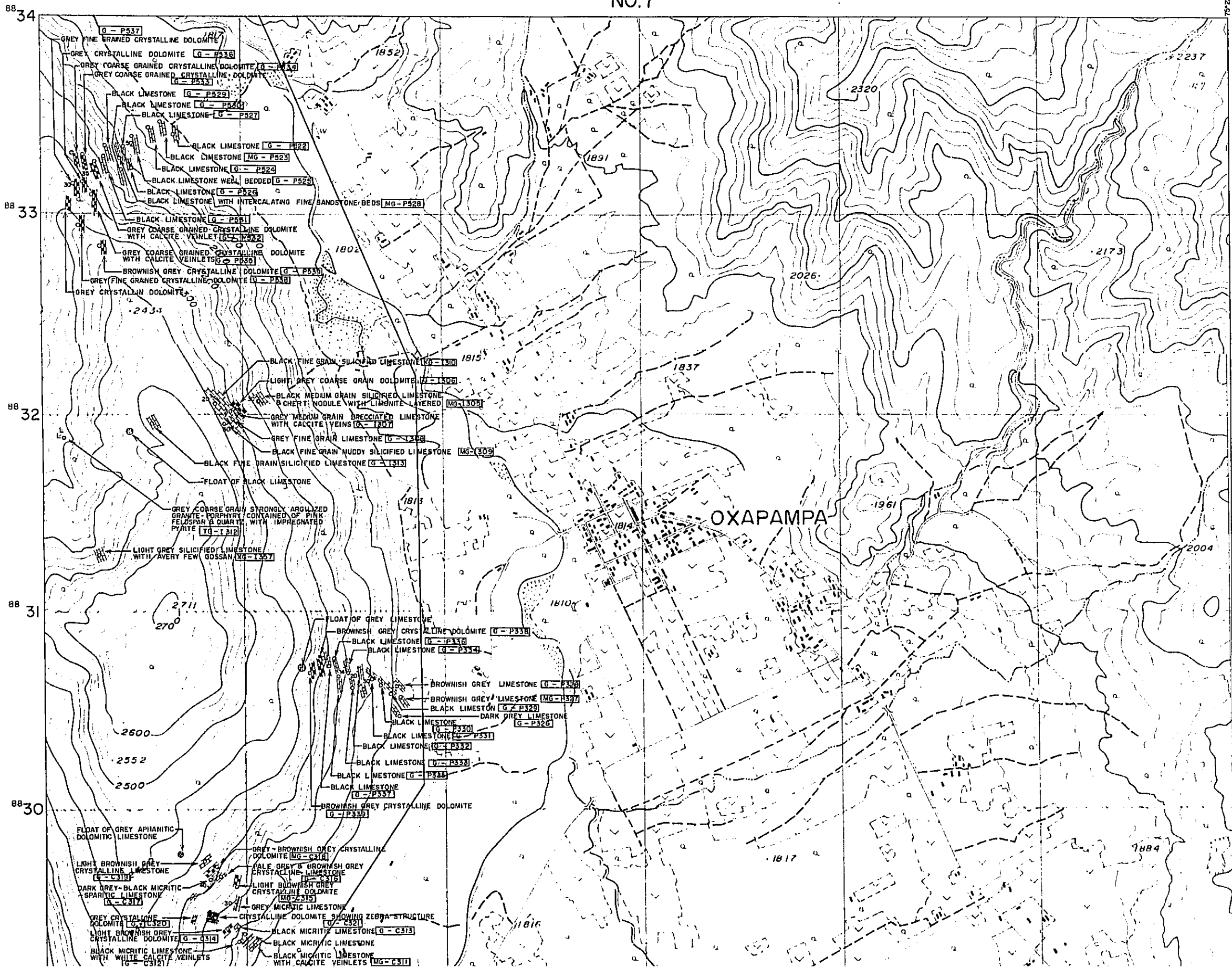
PL. I (4)  
08111

GEOLOGICAL SURVEY  
OF  
THE COROILLERA ORIENTAL CENTRAL PERU  
(JUNE 1977)

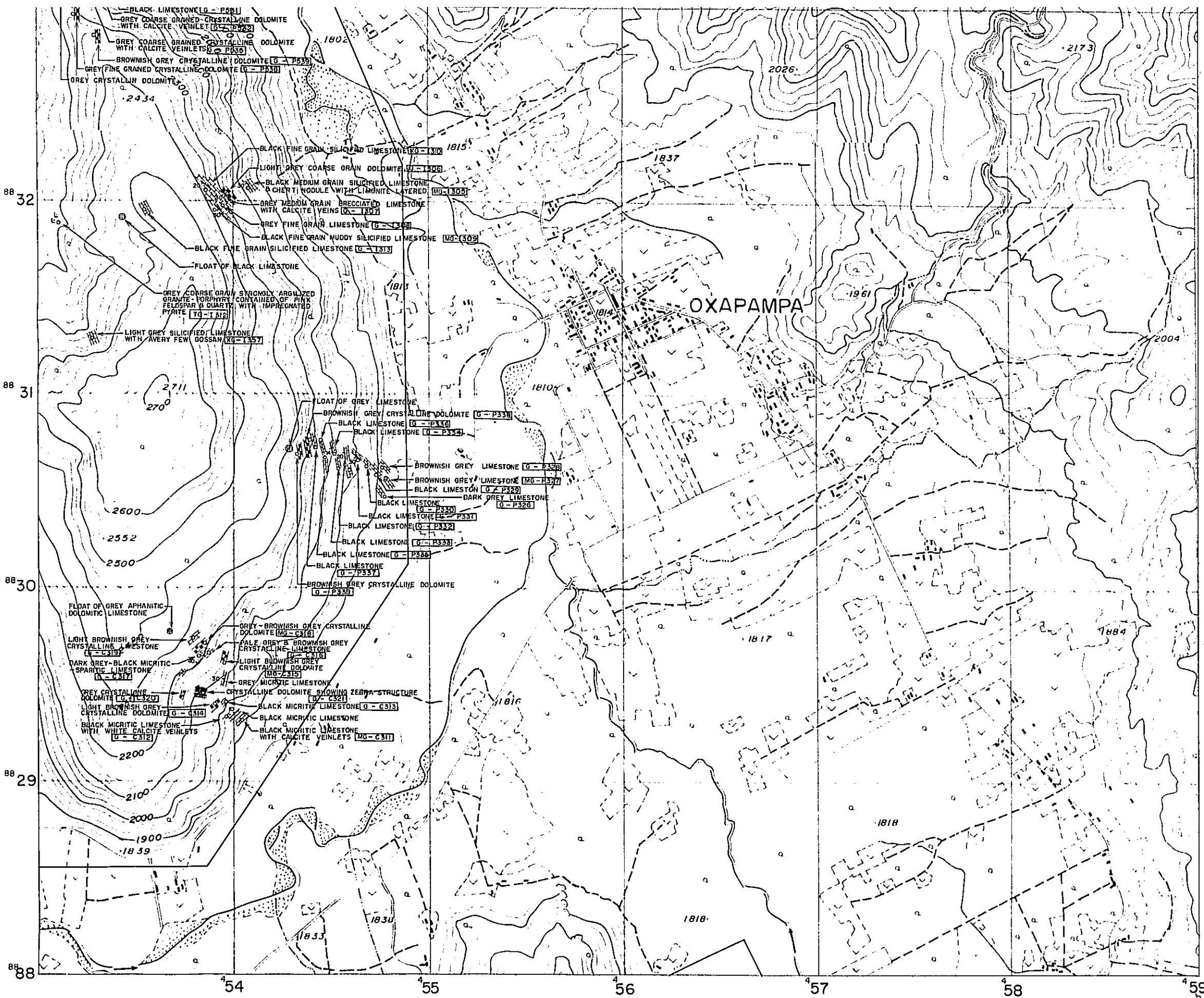
**ROUTE MAP  
OF  
THE DETAILED SURVEY AREA**

NO. 7

METAL MINING AGENCY OF JAPAN  
JAPAN INTERNATIONAL COOPERATION AGENCY  
GOVERNMENT OF JAPAN  
FEBRUARY 1978  
prepared by MESCO, Inc.



- LEGEND**
- TALUS
  - LIMESTONE
  - DOLOMITIC LIMESTONE
  - DOLOMITE
  - ZEBRA & BRECCIA DOLOMITE
  - SANDSTONE
  - SHALE, MUDSTONE & SILTSTONE
  - CONGLOMERATE
  - TUFF, TUFF BRECCIA & AGGLOMERATE (PYROCRASTIC)
  - ANDESITE, RHYOLITE & DACITE (LAVA FLOW)
  - QUARTZ PORPHYRY, GRANITE PORPHYRY
  - DIORITE, DIORITE PORPHYRY & MICRODIORITE
  - GRANITE (PINK, RED & WHITE)



JUNE 1977 SURVEYED AREA

METAL MINING AGENCY OF JAPAN  
 JAPAN INTERNATIONAL COOPERATION AGENCY  
 GOVERNMENT OF JAPAN  
 FEBRUARY 1978  
 prepared by MESCO, Inc.

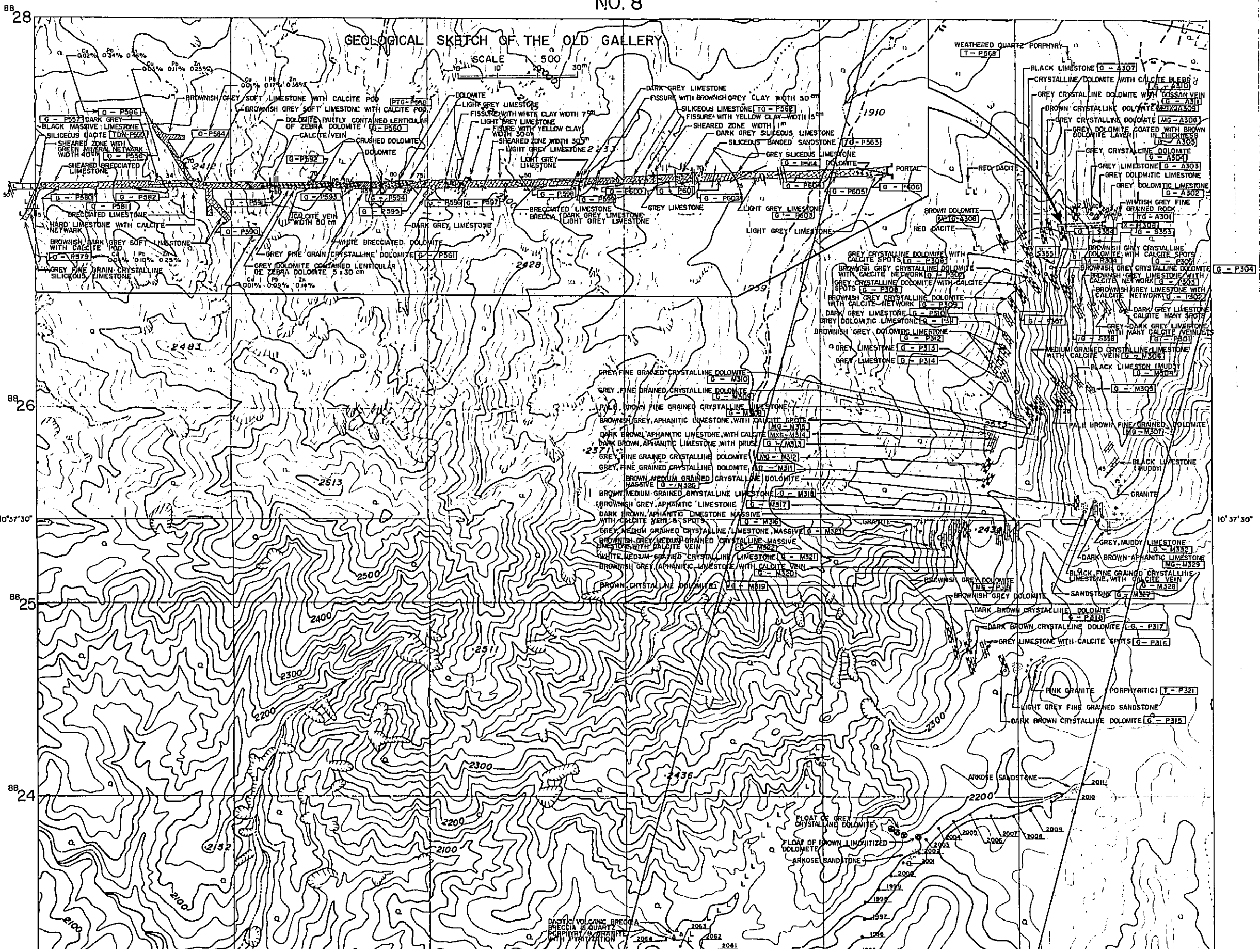
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**LEGEND**

- TALUS
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  - DOLOMITIC LIMESTONE
  - DOLOMITE
  - ZEBRA or BRECCIA DOLOMITE
  - SANDSTONE
  - SHALE, MUDSTONE & SILTSTONE
  - CONGLOMERATE
  - TUFF, TUFF BRECCIA or AGGLOMERATE (PYROCRASTIC)
  - ANDESITE, RHYOLITE or DACITE (LAVA FLOW)
  - QUARTZ PORPHYRY, GRANITE PORPHYRY
  - DIORITE, DIORITE PORPHYRY or MICRODIORITE
  - GRANITE (PINK, RED or WHITE)
- 
- ORE INDICATION
  - GYPSUM
  - FLOAT
  - PORTAL
  - DIP or STRIKE
  - JOINT
  - FAULT
- 
- LOCALITY & NUMBER OF SOIL SAMPLE FOR GEOCHEMICAL ANALYSIS
  - LOCALITY & NUMBER OF ROCK SAMPLE
- 
- NUMBER OF ROCK SAMPLE**
- F - FOSSIL
  - M - MINOR ELEMENTAL ANALYSIS
  - O - ORE ANALYSIS
  - P - POLISHED SECTION
  - T - THIN SECTION
  - X - X-RAY ANALYSIS
  - G - GEOCHEMICAL ANALYSIS ON ROCK

7-2235





PL. 1-1(5)

GEOLOGICAL SURVEY  
OF  
THE CORDILLERA ORIENTAL CENTRAL PERU  
(JUNE 1977)

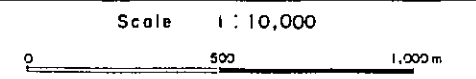
**ROUTE MAP  
OF  
THE DETAILED SURVEY AREA**

NO. 8

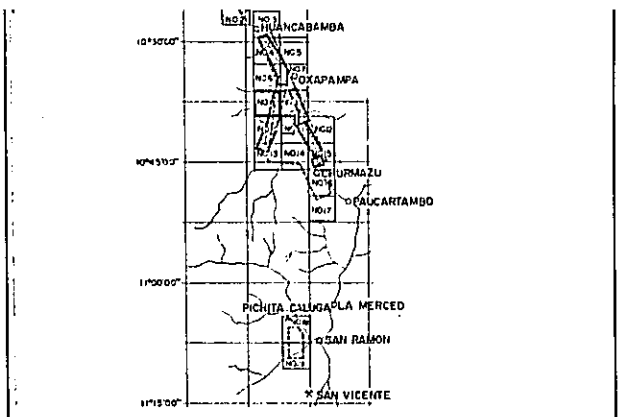
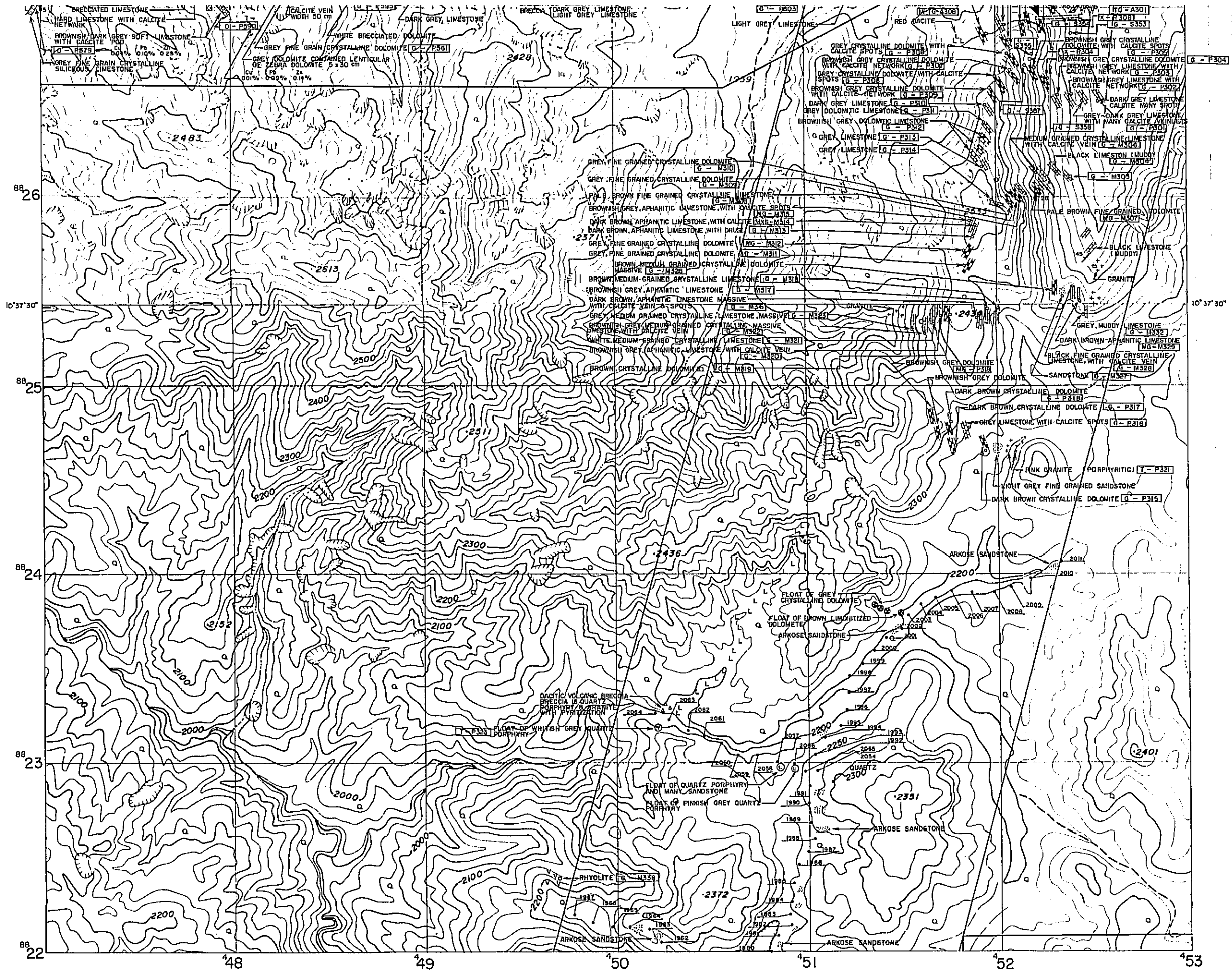
AUGUST 1976 SURVEYED AREA  
JUNE 1977 SURVEYED AREA

METAL MINING AGENCY OF JAPAN  
JAPAN INTERNATIONAL COOPERATION AGENCY  
GOVERNMENT OF JAPAN  
FEBRUARY 1978

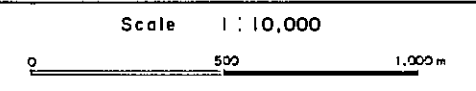
prepared by MESCO, Inc.



- LEGEND**
- TALUS
  - LIMESTONE
  - DOLOMITIC LIMESTONE
  - DOLOMITE
  - ZEBRA & BRECCIA DOLOMITE
  - SANDSTONE
  - SHALE, MUDSTONE & SILTSTONE
  - CONGLOMERATE
  - TUFF, TUFF BRECCIA & AGGLOMERATE (PYROCRASTIC)
  - ANDESITE, RHYOLITE & DACITE (LAVA FLOW)
  - QUARTZ PORPHYRY, GRANITE PORPHYRY
  - DIORITE, DIORITE PORPHYRY & MICRODIORITE
  - GRANITE (PINK, RED & WHITE)



METAL MINING AGENCY OF JAPAN  
 JAPAN INTERNATIONAL COOPERATION AGENCY  
 GOVERNMENT OF JAPAN  
 FEBRUARY 1978  
 prepared by MESCO, Inc.

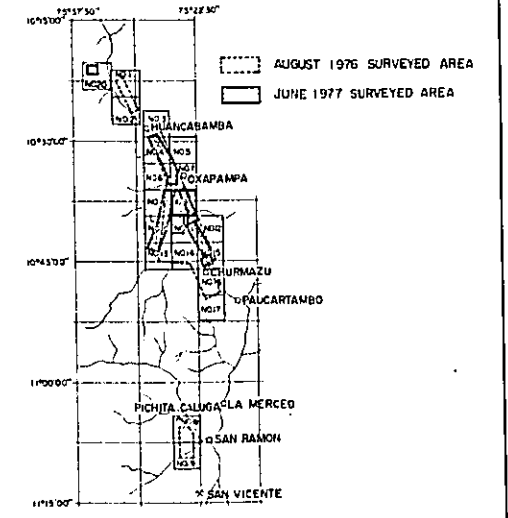


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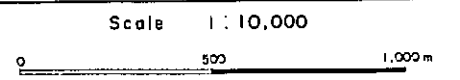
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  - LIMESTONE
  - DOLOMITIC LIMESTONE
  - DOLOMITE
  - ZEBRA & BRECCIA DOLOMITE
  - SANDSTONE
  - SHALE, MUDSTONE & SILTSTONE
  - CONGLOMERATE
  - TUFF, TUFF BRECCIA & AGGLOMERATE (PYROCRASTIC)
  - ANDESITE, RHYOLITE & DACITE (LAVA FLOW)
  - QUARTZ PORPHYRY, GRANITE PORPHYRY
  - DIORITE, DIORITE PORPHYRY & MICRODIORITE
  - GRANITE (PINK, RED & WHITE)
- 
- ORE INDICATION
  - GYPSUM
  - FLOAT
  - PORTAL
  - DIP & STRIKE
  - JOINT
  - FAULT
- 
- LOCALITY & NUMBER OF SOIL SAMPLE FOR GEOCHEMICAL ANALYSIS
  - LOCALITY & NUMBER OF ROCK SAMPLE
- 
- NUMBER OF ROCK SAMPLE**
- F - FOSSIL
  - M - MINOR ELEMENTAL ANALYSIS
  - O - ORE ANALYSIS
  - P - POLISHED SECTION
  - T - THIN SECTION
  - X - X-RAY ANALYSIS
  - G - GEOCHEMICAL ANALYSIS ON ROCK
  - D - DATING WHOLE ROCK
  - W - CHEMICAL ANALYSIS WHOLE ROCK

NO. 9

PL 1-11(6) 08444  
 GEOLOGICAL SURVEY OF THE CORDILLERA ORIENTAL CENTRAL PERU (JUNE 1977)  
 ROUTE MAP OF THE DETAILED SURVEY AREA  
 NO. 9

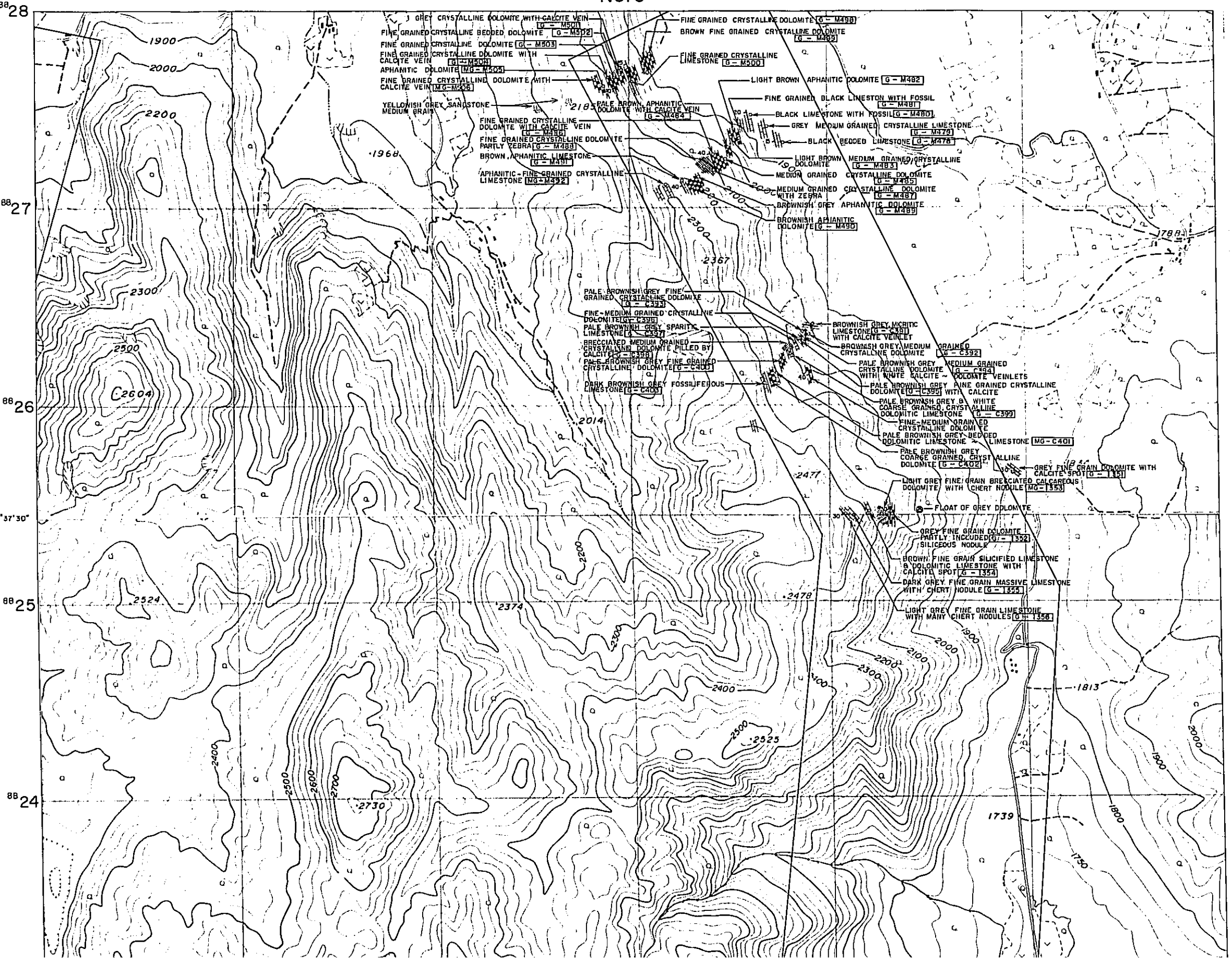


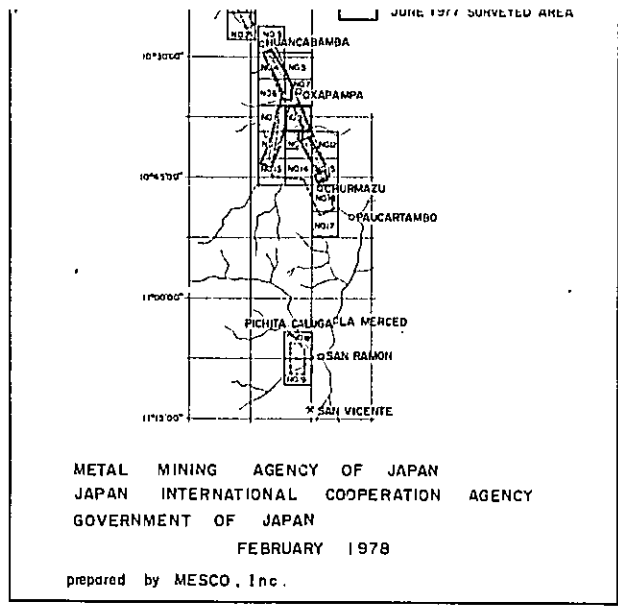
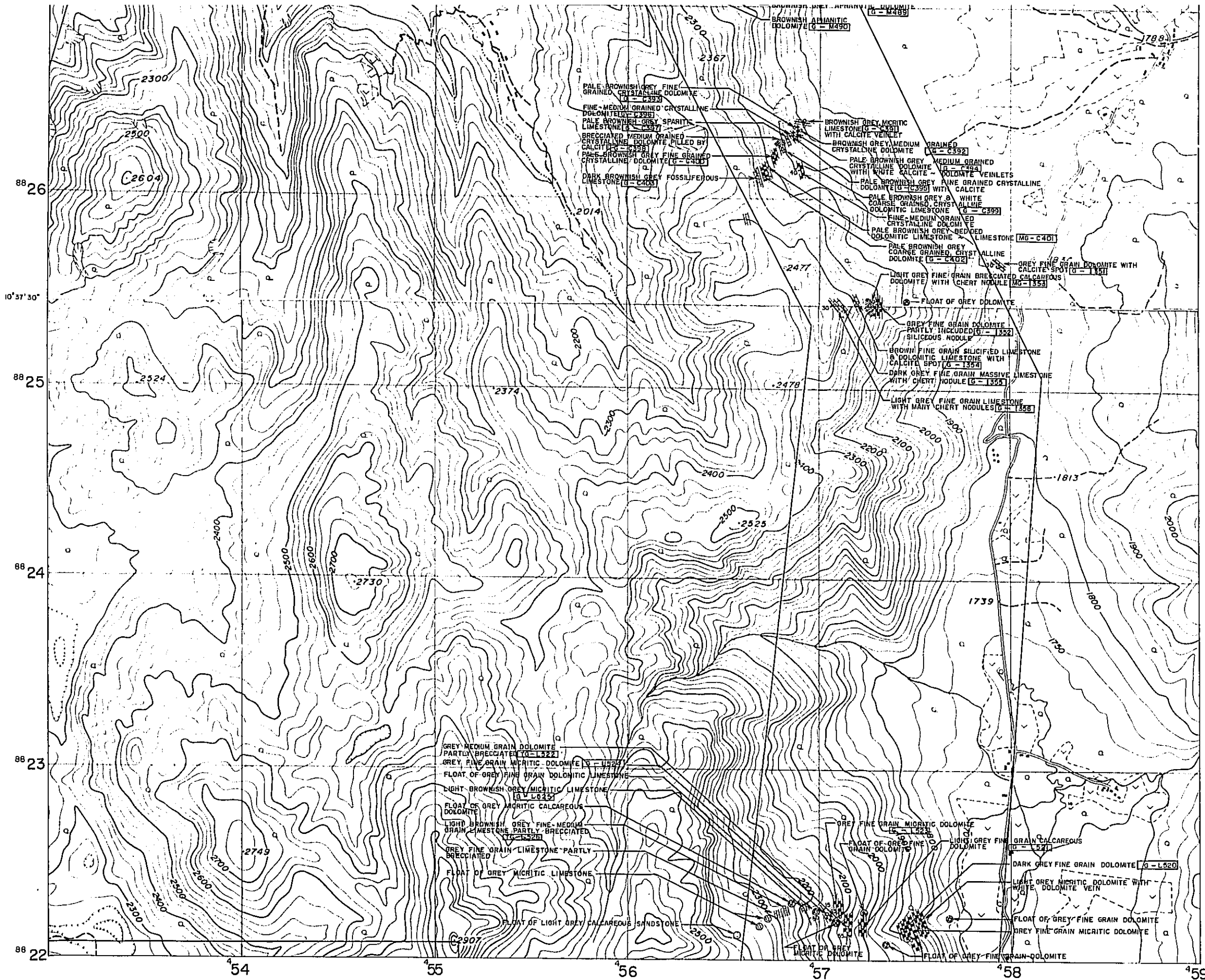
METAL MINING AGENCY OF JAPAN  
 JAPAN INTERNATIONAL COOPERATION AGENCY  
 GOVERNMENT OF JAPAN  
 FEBRUARY 1978  
 prepared by MESCO, Inc.



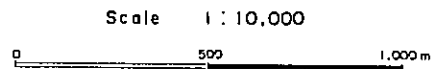
LEGEND

- TALUS
- LIMESTONE
- DOLOMITIC LIMESTONE
- DOLOMITE
- ZEBRA & BRECCIA DOLOMITE
- SANDSTONE
- SHALE, MUDSTONE & SILTSTONE
- CONGLOMERATE
- TUFF, TUFF BRECCIA & AGGLOMERATE (PYROCRASTIC)
- ANDESITE, RHYOLITE & DACITE (LAVA FLOW)
- QUARTZ PORPHYRY, GRANITE PORPHYRY
- DIORITE, DIORITE PORPHYRY & MICRODIORITE
- GRANITE (PINK, RED & WHITE)





METAL MINING AGENCY OF JAPAN  
 JAPAN INTERNATIONAL COOPERATION AGENCY  
 GOVERNMENT OF JAPAN  
 FEBRUARY 1978  
 prepared by MESCO, Inc.



- ### LEGEND
- TALUS
  - LIMESTONE
  - DOLOMITIC LIMESTONE
  - DOLOMITE
  - ZEBRA & BRECCIA DOLOMITE
  - SANDSTONE
  - SHALE, MUDSTONE & SILTSTONE
  - CONGLOMERATE
  - TUFF, TUFF BRECCIA & AGGLOMERATE (PYROCRASTIC)
  - ANDESITE, RHYOLITE & DACITE (LAVA FLOW)
  - QUARTZ PORPHYRY, GRANITE PORPHYRY
  - DIORITE, DIORITE PORPHYRY & MICRODIORITE
  - GRANITE (PINK, RED & WHITE)
- 
- ORE INDICATION
  - GYPSUM
  - FLOAT
  - PORTAL
  - DIP & STRIKE
  - JOINT
  - FAULT
- 
- LOCALITY & NUMBER OF SOIL SAMPLE FOR GEOCHEMICAL ANALYSIS
  - LOCALITY & NUMBER OF ROCK SAMPLE
- 
- NUMBER OF ROCK SAMPLE
- F - FOSSIL
  - M - MINOR ELEMENTAL ANALYSIS
  - O - ORE ANALYSIS
  - P - POLISHED SECTION
  - T - THIN SECTION
  - X - X-RAY ANALYSIS
  - G - GEOCHEMICAL ANALYSIS ON ROCK

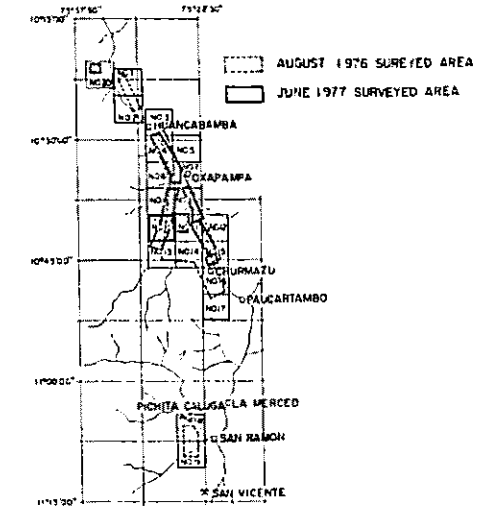
NO.10

PL. I-1(7)

GEOLOGICAL SURVEY  
OF  
THE COROLLERA ORIENTAL CENTRAL PERU  
(JUNE 1977)

ROUTE MAP  
OF  
THE DETAILED SURVEY AREA

NO.10

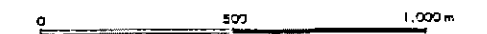


METAL MINING AGENCY OF JAPAN  
JAPAN INTERNATIONAL COOPERATION AGENCY  
GOVERNMENT OF JAPAN

FEBRUARY 1978

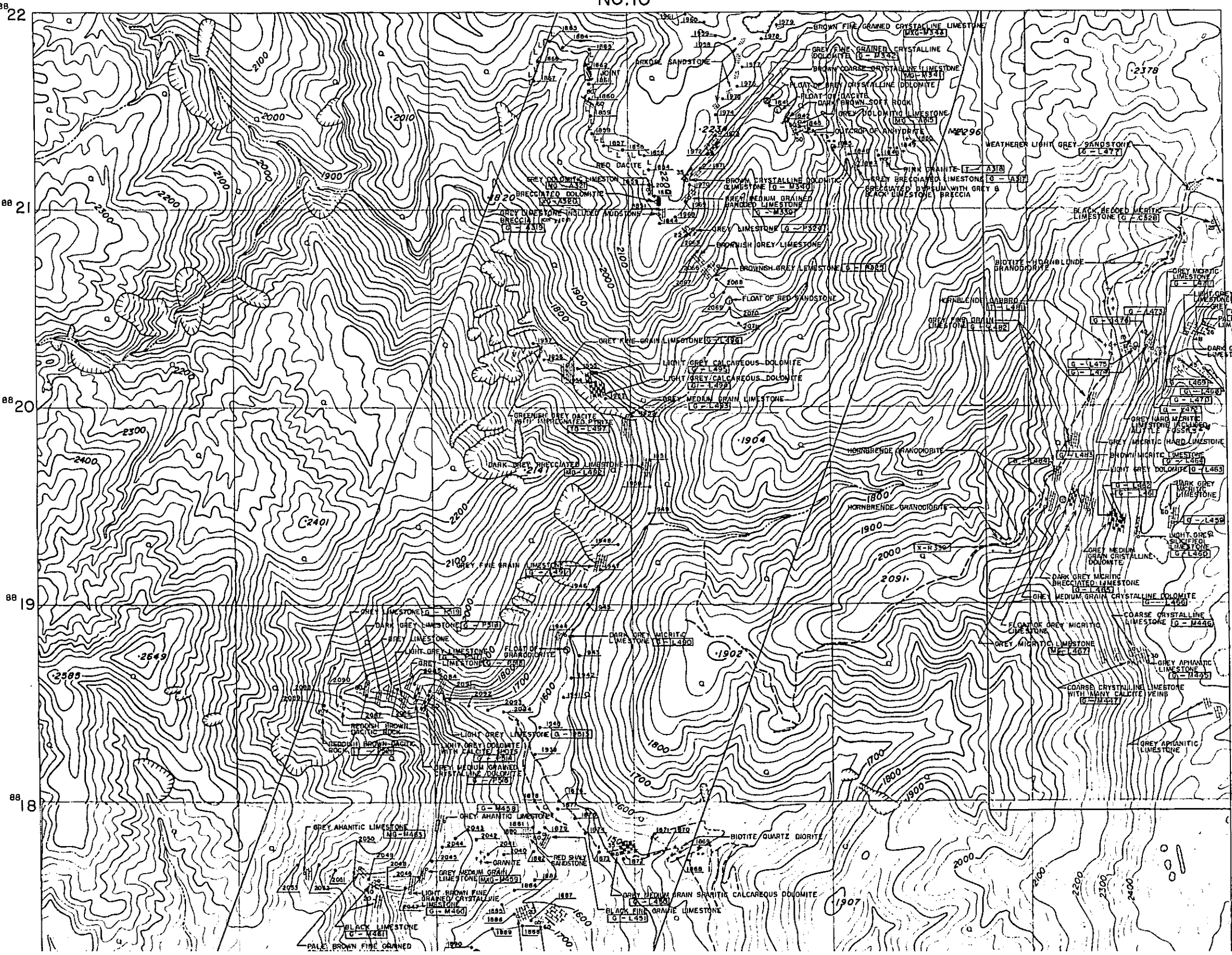
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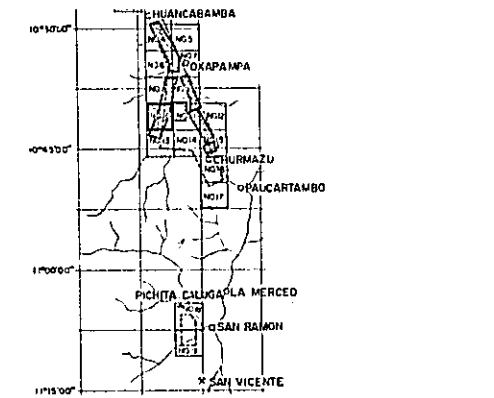
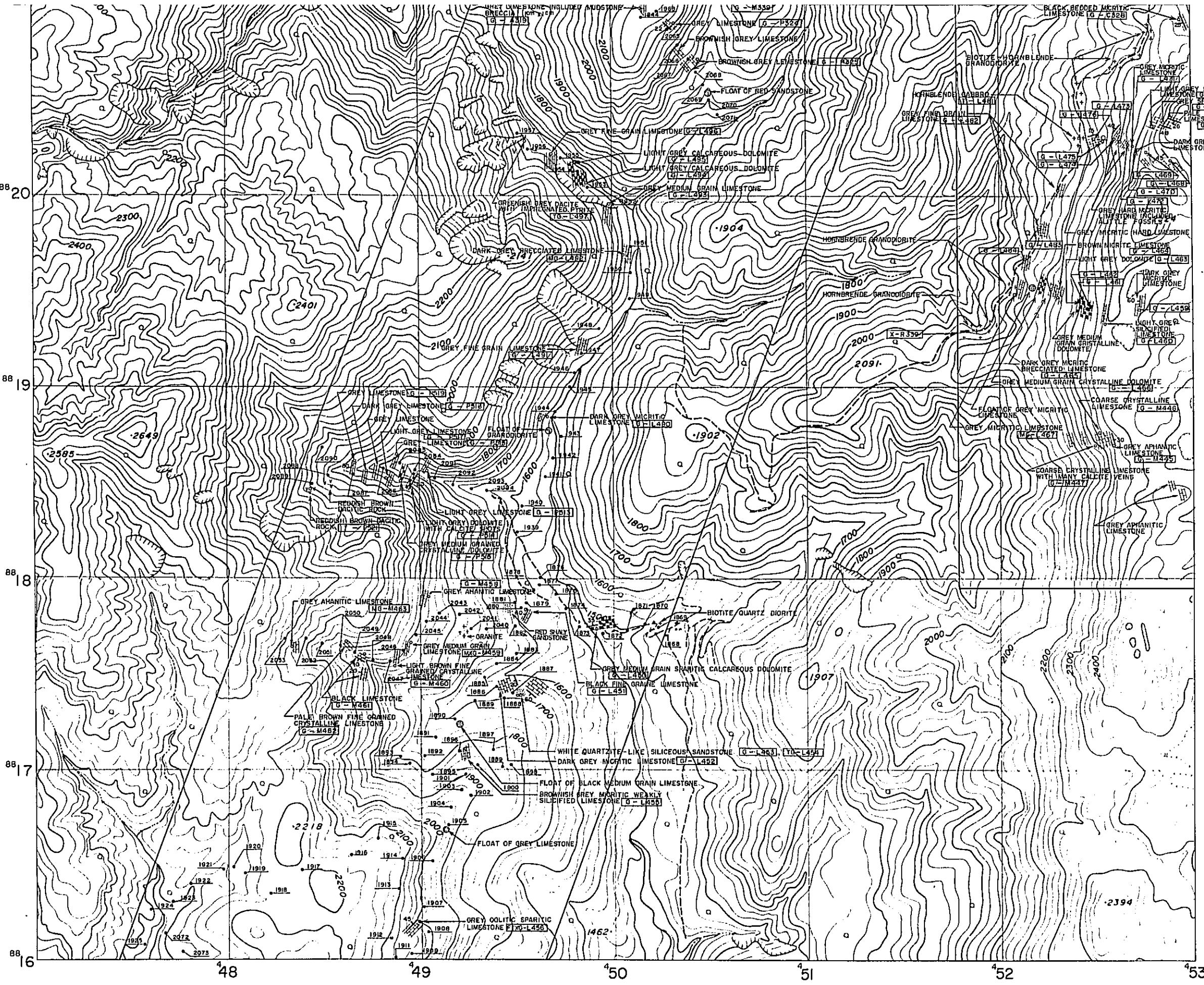
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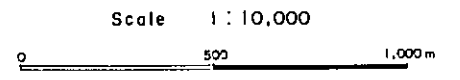
LEGEND

- TALUS
- LIMESTONE
- DOLOMITIC LIMESTONE
- DOLOMITE
- ZEBRA & BRECCIA DOLOMITE
- SANDSTONE
- SHALE, MUDSTONE & SILTSTONE
- CONGLOMERATE
- TUFF, TUFF BRECCIA & AGGLOMERATE (PYROCLASTIC)
- ANDESITE, RHYOLITE & DACITE (LAVA FLOW)
- QUARTZ PORPHYRY, GRANITE PORPHYRY
- DIORITE, DIORITE PORPHYRY & MICRODIORITE
- GRANITE (PINK, RED & WHITE)



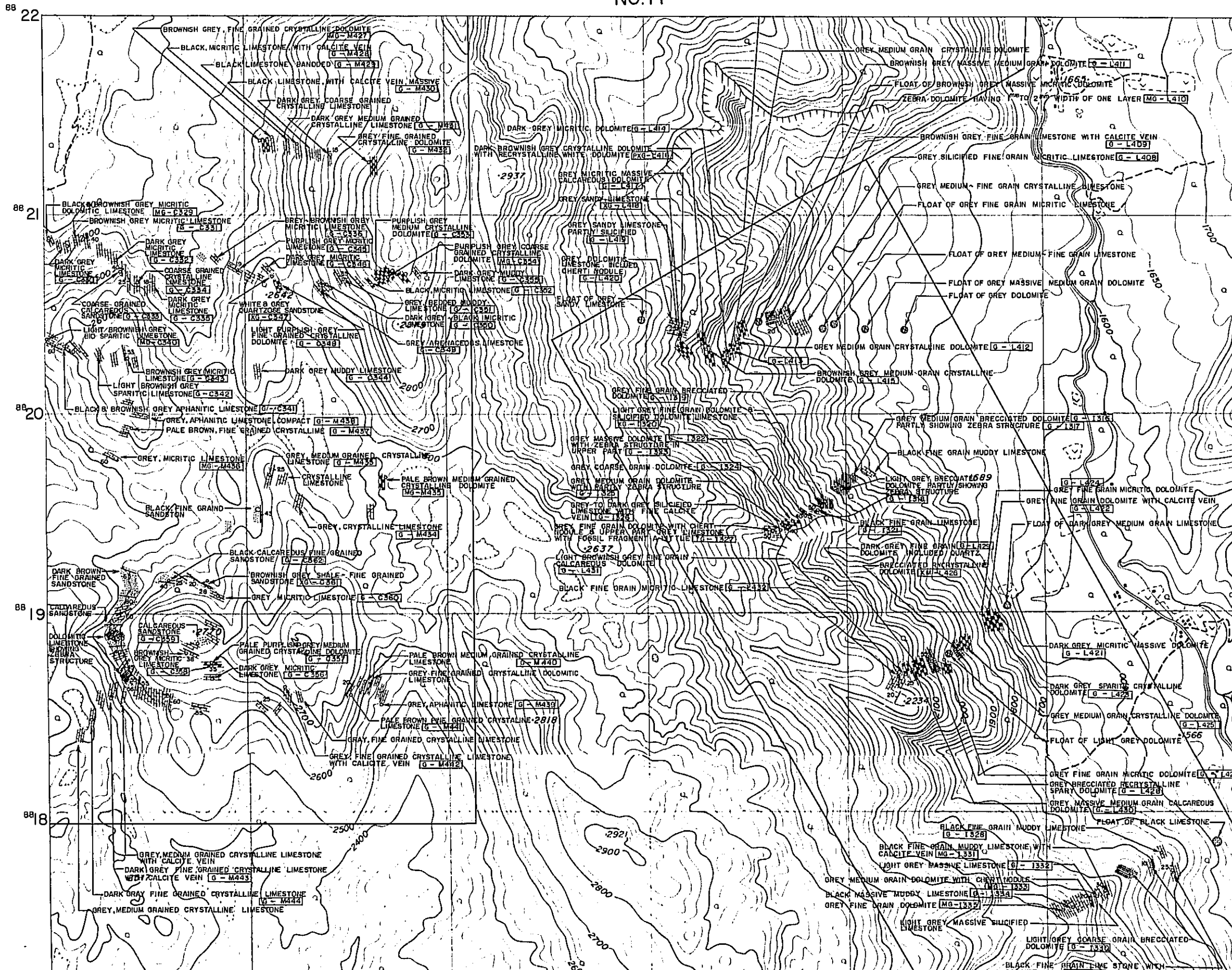


METAL MINING AGENCY OF JAPAN  
 JAPAN INTERNATIONAL COOPERATION AGENCY  
 GOVERNMENT OF JAPAN  
 FEBRUARY 1978  
 prepared by MESCO, Inc.

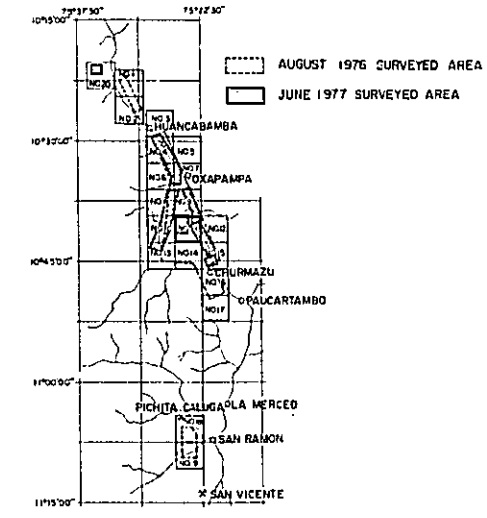


**LEGEND**

- TALUS
  - LIMESTONE
  - DOLOMITIC LIMESTONE
  - DOLOMITE
  - ZEBRA & BRECCIA DOLOMITE
  - SANDSTONE
  - SHALE, MUDSTONE & SILTSTONE
  - CONGLOMERATE
  - TUFF, TUFF BRECCIA & AGGLOMERATE (PYROCRASTIC)
  - ANDESITE, RHYOLITE & DACITE (LAVA FLOW)
  - QUARTZ PORPHYRY, GRANITE PORPHYRY
  - DIORITE, DIORITE PORPHYRY & MICRODIORITE
  - GRANITE (PINK, RED & WHITE)
- 
- ORE INDICATION
  - GYPSUM
  - FLOAT
  - PORTAL
  - DIP & STRIKE
  - JOINT
  - FAULT
- 
- LOCALITY & NUMBER OF SOIL SAMPLE FOR GEOCHEMICAL ANALYSIS
  - LOCALITY & NUMBER OF ROCK SAMPLE
- 
- NUMBER OF ROCK SAMPLE**
- F - FOSSIL
  - M - MINOR ELEMENTAL ANALYSIS
  - O - ORE ANALYSIS
  - P - POLISHED SECTION
  - T - THIN SECTION
  - X - X-RAY ANALYSIS
  - G - GEOCHEMICAL ANALYSIS ON ROCK

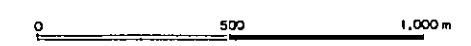


GEOLOGICAL SURVEY  
OF  
THE CORDILLERA ORIENTAL CENTRAL PERU  
(JUNE 1977)  
**ROUTE MAP  
OF  
THE DETAILED SURVEY AREA**  
NO.11



METAL MINING AGENCY OF JAPAN  
JAPAN INTERNATIONAL COOPERATION AGENCY  
GOVERNMENT OF JAPAN  
FEBRUARY 1978  
prepared by MESCO, Inc.

Scale 1 : 10,000

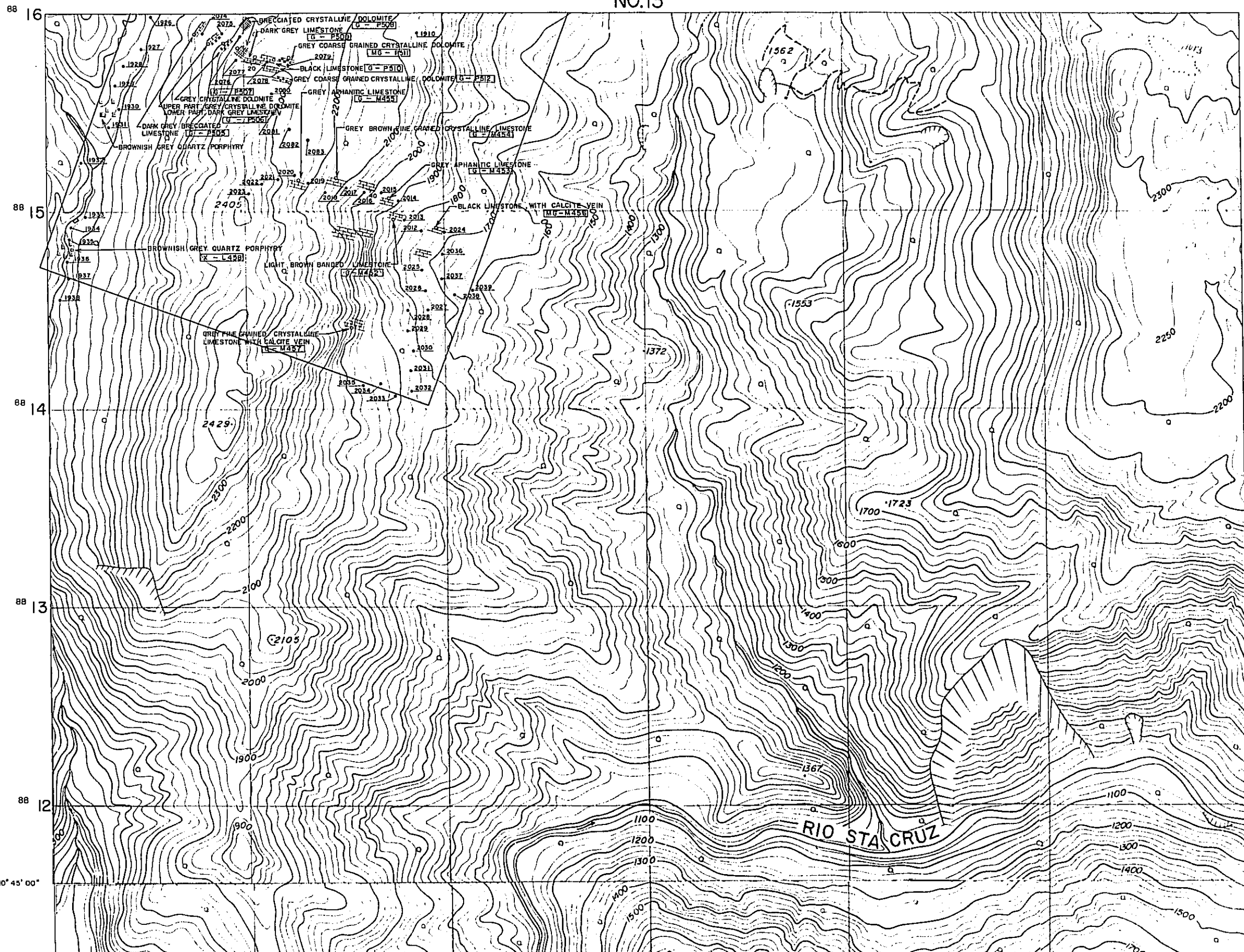


**LEGEND**

- TALUS
- LIMESTONE
- DOLOMITIC LIMESTONE
- DOLOMITE
- ZEBRA & BRECCIA DOLOMITE
- SANDSTONE
- SHALE, MUDSTONE & SILTSTONE
- CONGLOMERATE
- TUFF, TUFF BRECCIA & AGGLOMERATE (PYROCRASTIC)
- ANDESITE, RHYOLITE & DACITE (LAVA FLOW)
- QUARTZ PORPHYRY, GRANITE PORPHYRY
- DIORITE, DIORITE PORPHYRY & MICRODIORITE
- GRANITE (PINK, RED & WHITE)





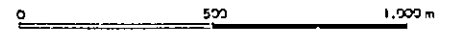


PL. I-1. (9)

GEOLOGICAL SURVEY  
OF  
THE CORDILLERA ORIENTAL CENTRAL PERU  
(JUNE 1977)  
**ROUTE MAP  
OF  
THE DETAILED SURVEY AREA**  
NO.13

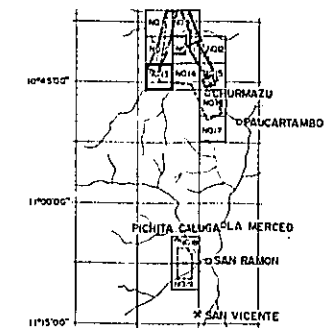
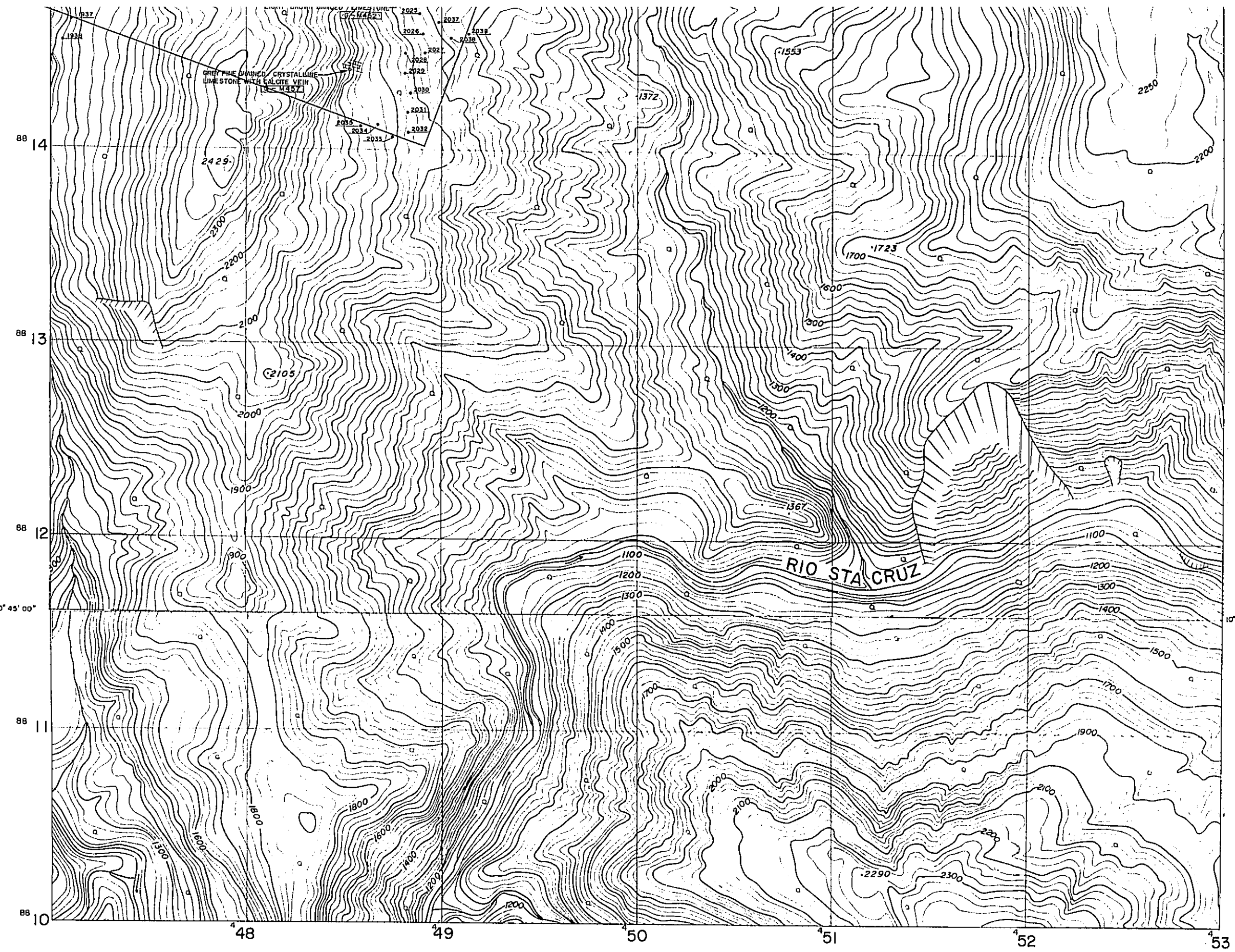
METAL MINING AGENCY OF JAPAN  
JAPAN INTERNATIONAL COOPERATION AGENCY  
GOVERNMENT OF JAPAN  
FEBRUARY 1978  
prepared by MESCO, Inc.

Scale 1:10,000



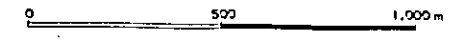
LEGEND

- TALUS
- LIMESTONE
- DOLOMITIC LIMESTONE
- DOLOMITE
- ZEBRA & BRECCIA DOLOMITE
- SANDSTONE
- SHALE, MUDSTONE & SILTSTONE
- CONGLOMERATE
- TUFF, TUFF BRECCIA & AGGLOMERATE (PYROCRASTIC)
- ANDESITE, RHYOLITE & DACITE (LAVA FLOW)
- QUARTZ PORPHYRY, GRANITE PORPHYRY
- DIORITE, DIORITE PORPHYRY & MICRODIORITE
- GRANITE (PINK, RED & WHITE)



METAL MINING AGENCY OF JAPAN  
 JAPAN INTERNATIONAL COOPERATION AGENCY  
 GOVERNMENT OF JAPAN  
 FEBRUARY 1978  
 prepared by MESCO, Inc.

Scale 1 : 10,000



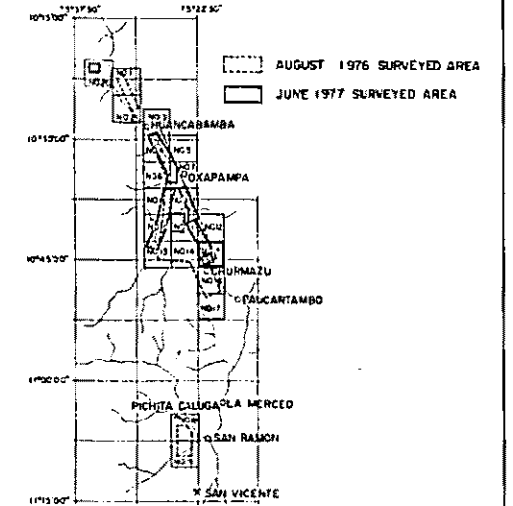
LEGEND

- TALUS
- LIMESTONE
- DOLOMITIC LIMESTONE
- DOLOMITE
- ZEBRA & BRECCIA DOLOMITE
- SANDSTONE
- SHALE, MUDSTONE & SILTSTONE
- CONGLOMERATE
- TUFF, TUFF BRECCIA & AGGLOMERATE (PYROCLASTIC)
- ANDESITE, RHYOLITE & DACITE (LAVA FLOW)
- QUARTZ PORPHYRY, GRANITE PORPHYRY
- DIORITE, DIORITE PORPHYRY & MICRODIORITE
- GRANITE (PINK, RED & WHITE)

- ORE INDICATION
  - GYPSUM
  - FLOAT
  - PORTAL
  - DIP & STRIKE
  - JOINT
  - FAULT
- 1,501 LOCALITY & NUMBER OF SOIL SAMPLE FOR GEOCHEMICAL ANALYSIS  
 2,342 LOCALITY & NUMBER OF ROCK SAMPLE  
 NUMBER OF ROCK SAMPLE  
 (F-A 345) F - FOSSIL  
 (M-A 344) M - MINOR ELEMENTAL ANALYSIS  
 (O-A 345) O - ORE ANALYSIS  
 (P-A 346) P - POLISHED SECTION  
 (T-A 347) T - THIN SECTION  
 (X-A 348) X - X-RAY ANALYSIS  
 (G-A 349) G - GEOCHEMICAL ANALYSIS ON ROCK

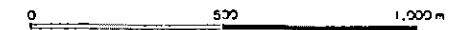
PL. I - (NO. 15)

GEOLOGICAL SURVEY OF THE CORDILLERA ORIENTAL CENTRAL PERU (JUNE 1977) ROUTE MAP OF THE DETAILED SURVEY AREA NO. 15



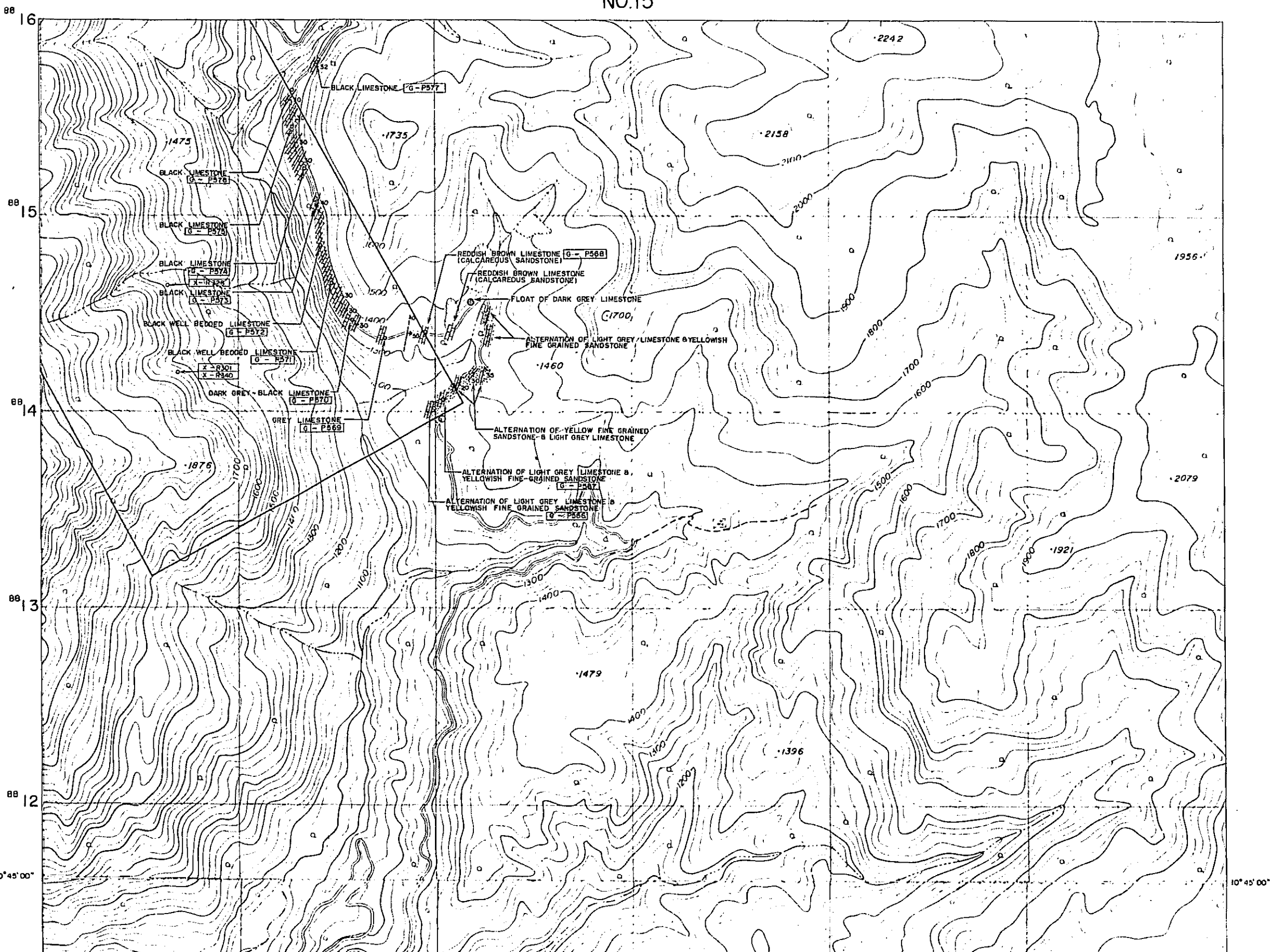
METAL MINING AGENCY OF JAPAN JAPAN INTERNATIONAL COOPERATION AGENCY GOVERNMENT OF JAPAN FEBRUARY 1978 prepared by MESCO, Inc.

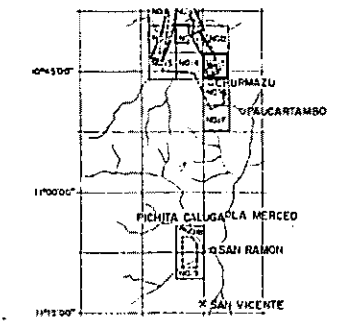
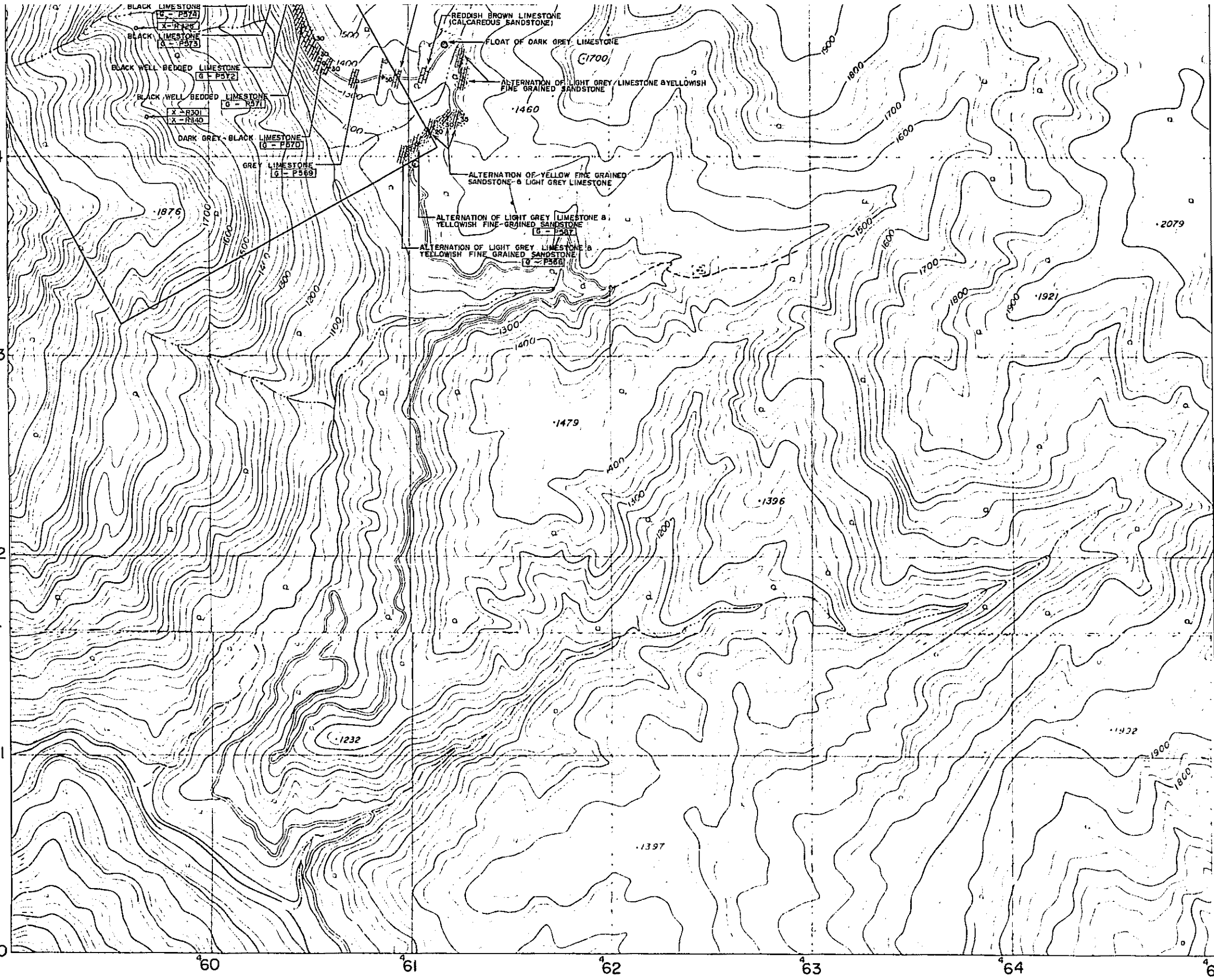
Scale 1:10,000



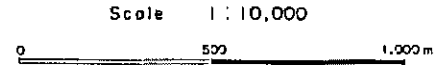
LEGEND

- Talus
Limestone
Dolomitic limestone
Dolomite
Zebra & Breccia Dolomite
Sandstone
Shale, mudstone & siltstone
Conglomerate
Tuff, tuff breccia & agglomerate (pyroclastic)
Andesite, rhyolite & dacite (lava flow)
Quartz porphyry, granite porphyry
Diorite, diorite porphyry & microdiorite
Granite (pink, red & white)





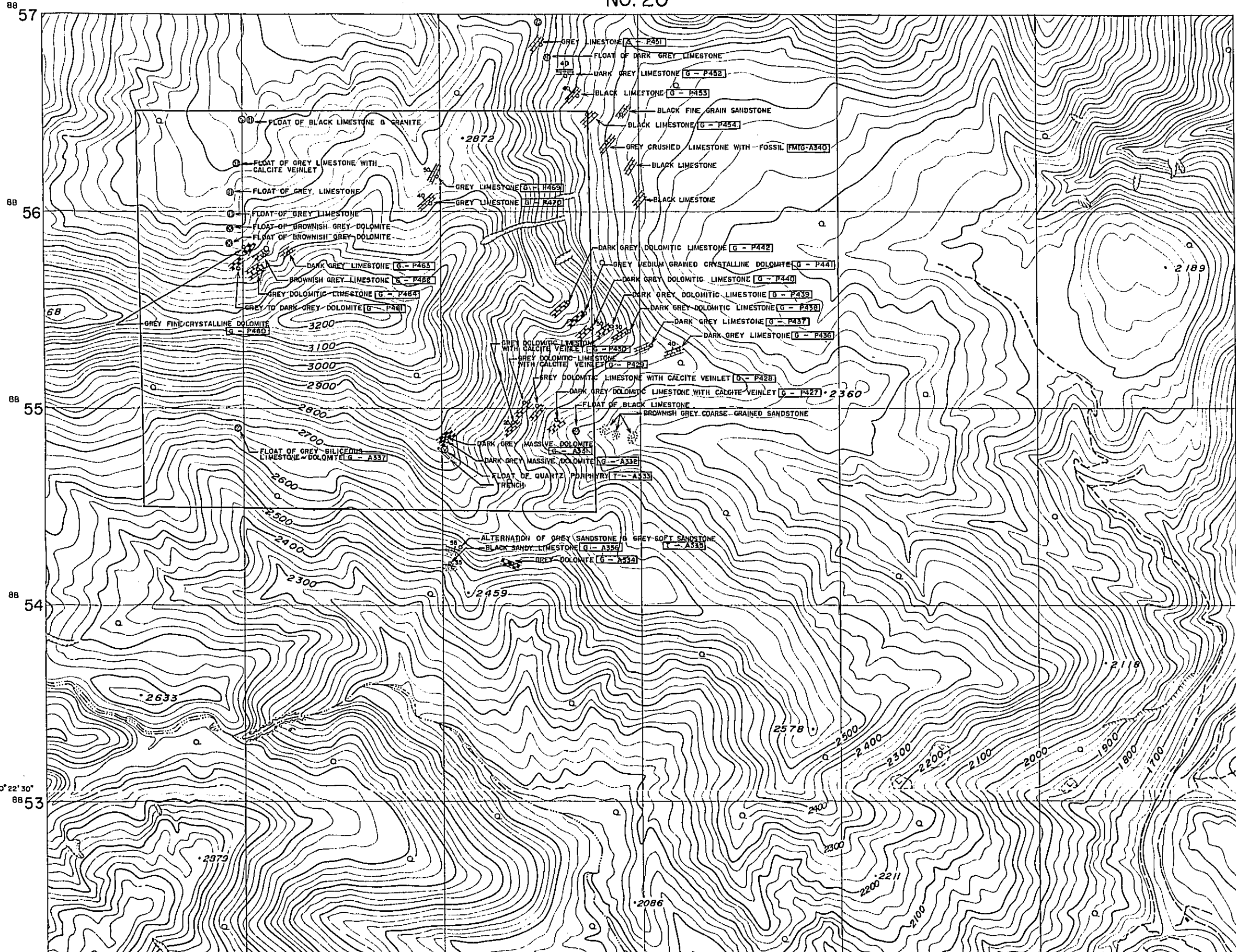
METAL MINING AGENCY OF JAPAN  
 JAPAN INTERNATIONAL COOPERATION AGENCY  
 GOVERNMENT OF JAPAN  
 FEBRUARY 1978  
 prepared by MESCO, Inc.



**LEGEND**

- TALUS
- LIMESTONE
- DOLOMITIC LIMESTONE
- DOLOMITE
- ZEBRA & BRECCIA DOLOMITE
- SANDSTONE
- SHALE, MUDSTONE & SILTSTONE
- CONGLOMERATE
- TUFF, TUFF BRECCIA & AGGLOMERATE (PYROCRASTIC)
- ANDESITE, RHYOLITE & DACITE (LAVA FLOW)
- QUARTZ PORPHYRY, GRANITE PORPHYRY
- DIORITE, DIORITE PORPHYRY & MICRODIORITE
- GRANITE (PINK, RED & WHITE)

- ORE INDICATION
  - GYPSUM
  - FLOAT
  - PORTAL
  - DIP & STRIKE
  - JOINT
  - FAULT
- 1904 LOCALITY & NUMBER OF SOIL SAMPLE FOR GEOCHEMICAL ANALYSIS  
 1323 LOCALITY & NUMBER OF ROCK SAMPLE  
 NUMBER OF ROCK SAMPLE  
 F-A 345 F - FOSSIL  
 M-A 347 M - MINOR ELEMENTAL ANALYSIS  
 O-A 345 O - ORE ANALYSIS  
 P-A 346 P - POLISHED SECTION  
 T-A 347 T - THIN SECTION  
 X-A 348 X - X-RAY ANALYSIS  
 G-A 345 G - GEOCHEMICAL ANALYSIS ON ROCK



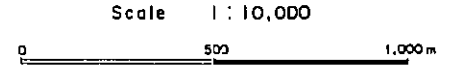
GEOLOGICAL SURVEY  
OF  
THE CORDILLERA ORIENTAL CENTRAL PERU  
(JUNE 1977)  
**ROUTE MAP  
OF  
THE DETAILED SURVEY AREA**  
NO. 20

PL. I - 1.11

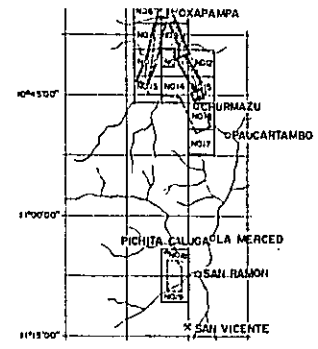
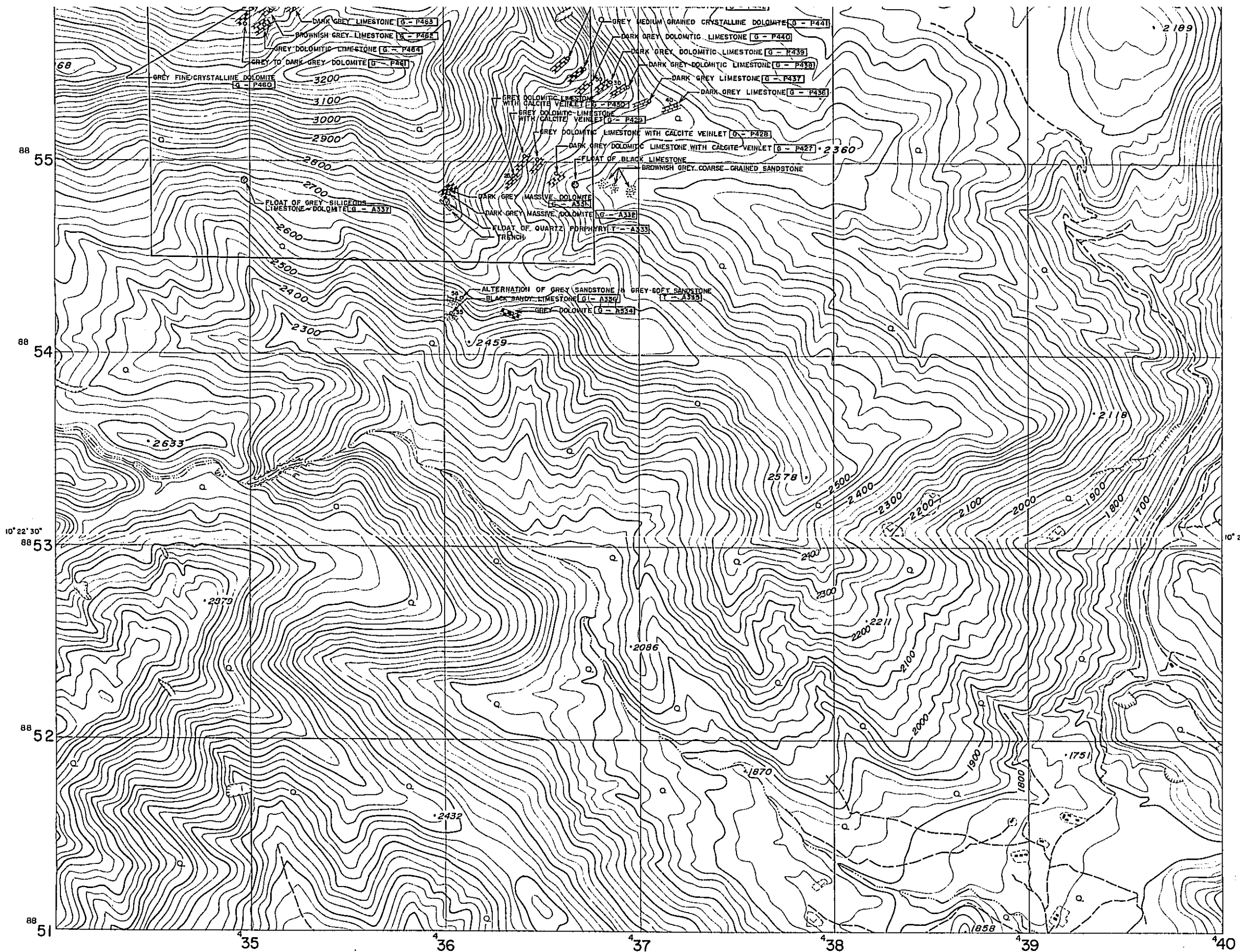
08114

AUGUST 1976 SURVEYED AREA  
JUNE 1977 SURVEYED AREA

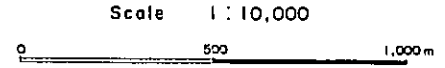
METAL MINING AGENCY OF JAPAN  
JAPAN INTERNATIONAL COOPERATION AGENCY  
GOVERNMENT OF JAPAN  
FEBRUARY 1978  
prepared by MESCO, Inc.



- LEGEND**
- TALUS
  - LIMESTONE
  - DOLOMITIC LIMESTONE
  - DOLOMITE
  - ZEBRA & BRECCIA DOLOMITE
  - SANDSTONE
  - SHALE, MUDSTONE & SILTSTONE
  - CONGLOMERATE
  - TUFF, TUFF BRECCIA & AGGLOMERATE (PYROCRASTIC)
  - ANDESITE, RHYOLITE & DACITE (LAVA FLOW)
  - QUARTZ PORPHYRY, GRANITE PORPHYRY
  - DIORITE, DIORITE PORPHYRY & MICRODIORITE
  - GRANITE (PINK, RED & WHITE)



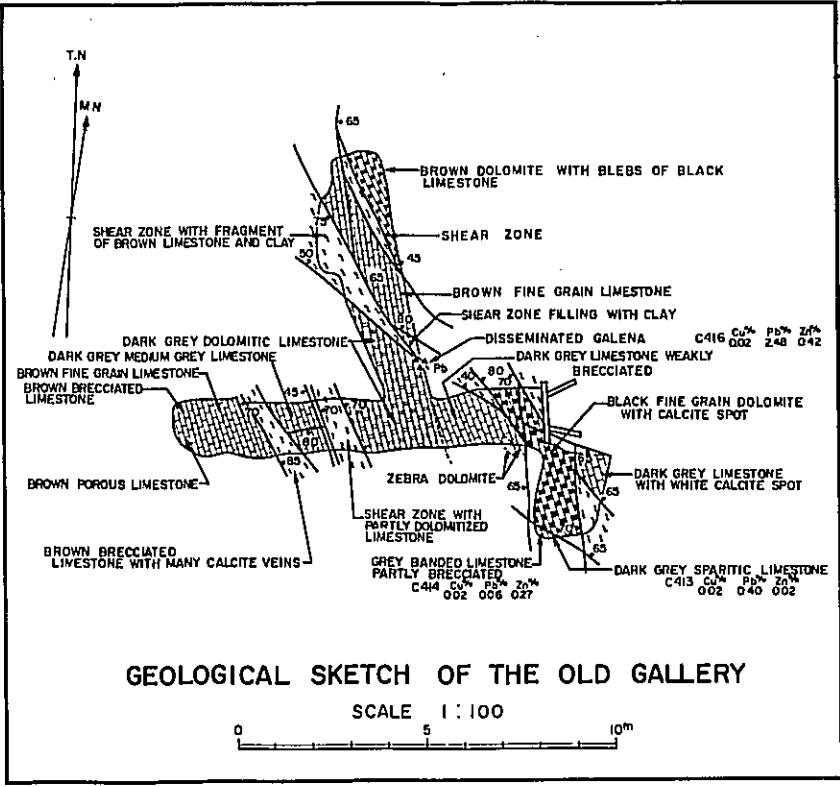
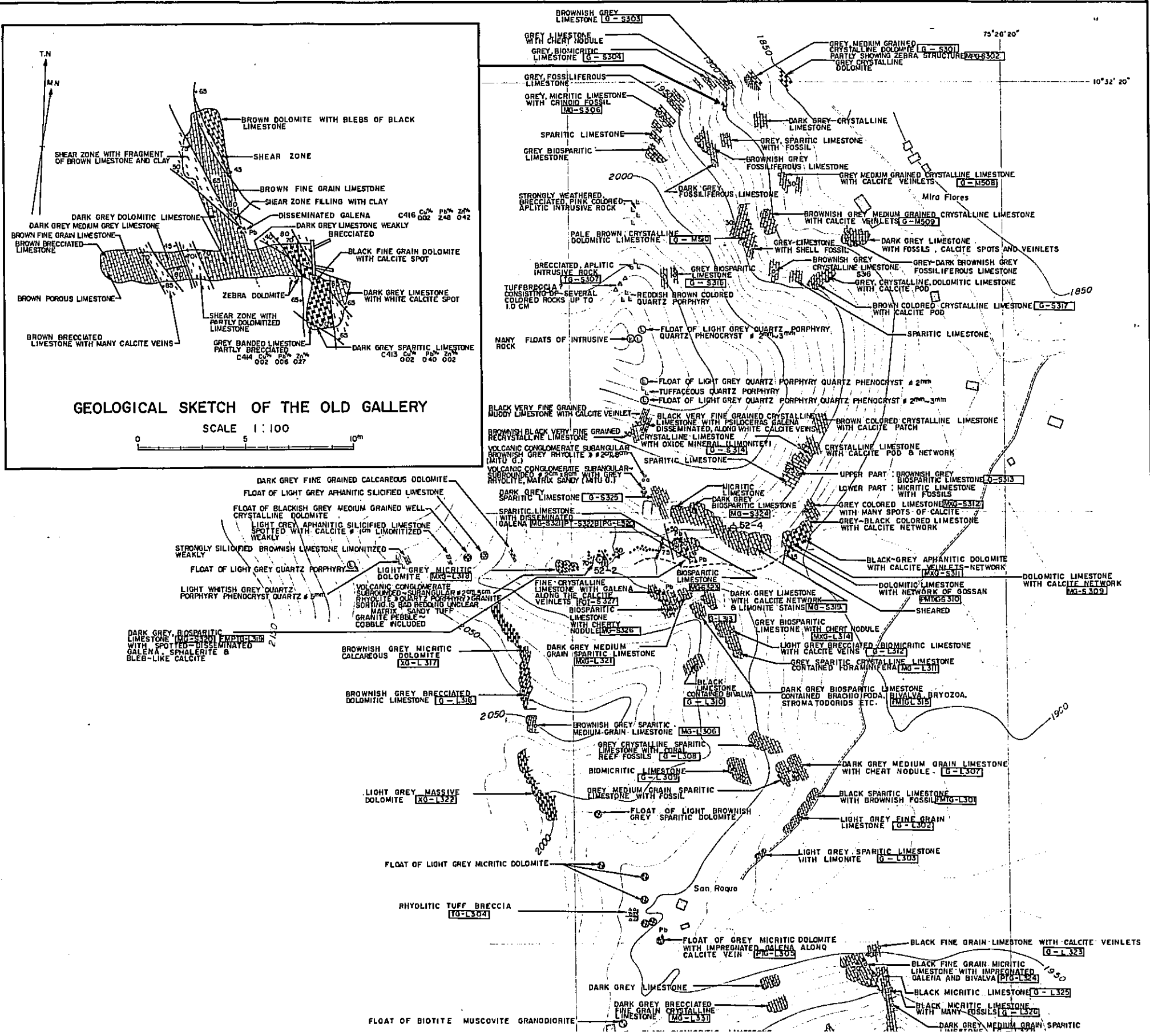
METAL MINING AGENCY OF JAPAN  
 JAPAN INTERNATIONAL COOPERATION AGENCY  
 GOVERNMENT OF JAPAN  
 FEBRUARY 1978  
 prepared by MESCO, Inc.



LEGEND

- TALUS
- LIMESTONE
- DOLOMITIC LIMESTONE
- DOLomite
- ZEBRA & BRECCIA DOLomite
- SANDSTONE
- SHALE, MUDSTONE & SILTSTONE
- CONGLOMERATE
- TUFF, TUFF BRECCIA & AGGLOMERATE (PYROCLASTIC)
- ANDESITE, RHYOLITE & DACITE (LAVA FLOW)
- QUARTZ PORPHYRY, GRANITE PORPHYRY
- DIORITE, DIORITE PORPHYRY & MICRODIORITE
- GRANITE (PINK, RED & WHITE)

- ORE INDICATION
  - GYPSUM
  - FLOAT
  - PORTAL
  - DIP & STRIKE
  - JOINT
  - FAULT
- 1,001 LOCALITY & NUMBER OF SOIL SAMPLE FOR GEOCHEMICAL ANALYSIS
- LOCALITY & NUMBER OF ROCK SAMPLE
- NUMBER OF ROCK SAMPLE
- F-A 345 \* F - FOSSIL
  - M-A 344 \* M - MINOR ELEMENTAL ANALYSIS
  - O-A 345 \* O - ORE ANALYSIS
  - P-A 346 \* P - POLISHED SECTION
  - T-A 347 \* T - THIN SECTION
  - X-A 348 \* X - X-RAY ANALYSIS
  - G-A 349 \* G - GEOCHEMICAL ANALYSIS ON ROCK



PL. I-2.(1)

GEOLOGICAL SURVEY  
OF  
THE CORDILLERA ORIENTAL CENTRAL-PERU  
(JUNE 1977)

ROUTE MAP  
OF  
THE SPECIALLY DETAILED SURVEY AREA  
NO.21(SAN ROQUE)

08111

METAL MINING AGENCY OF JAPAN  
JAPAN INTERNATIONAL COOPERATION AGENCY  
GOVERNMENT OF JAPAN  
FEBRUARY 1978  
prepared by MESCO, Inc.

Scale 1 : 2,500

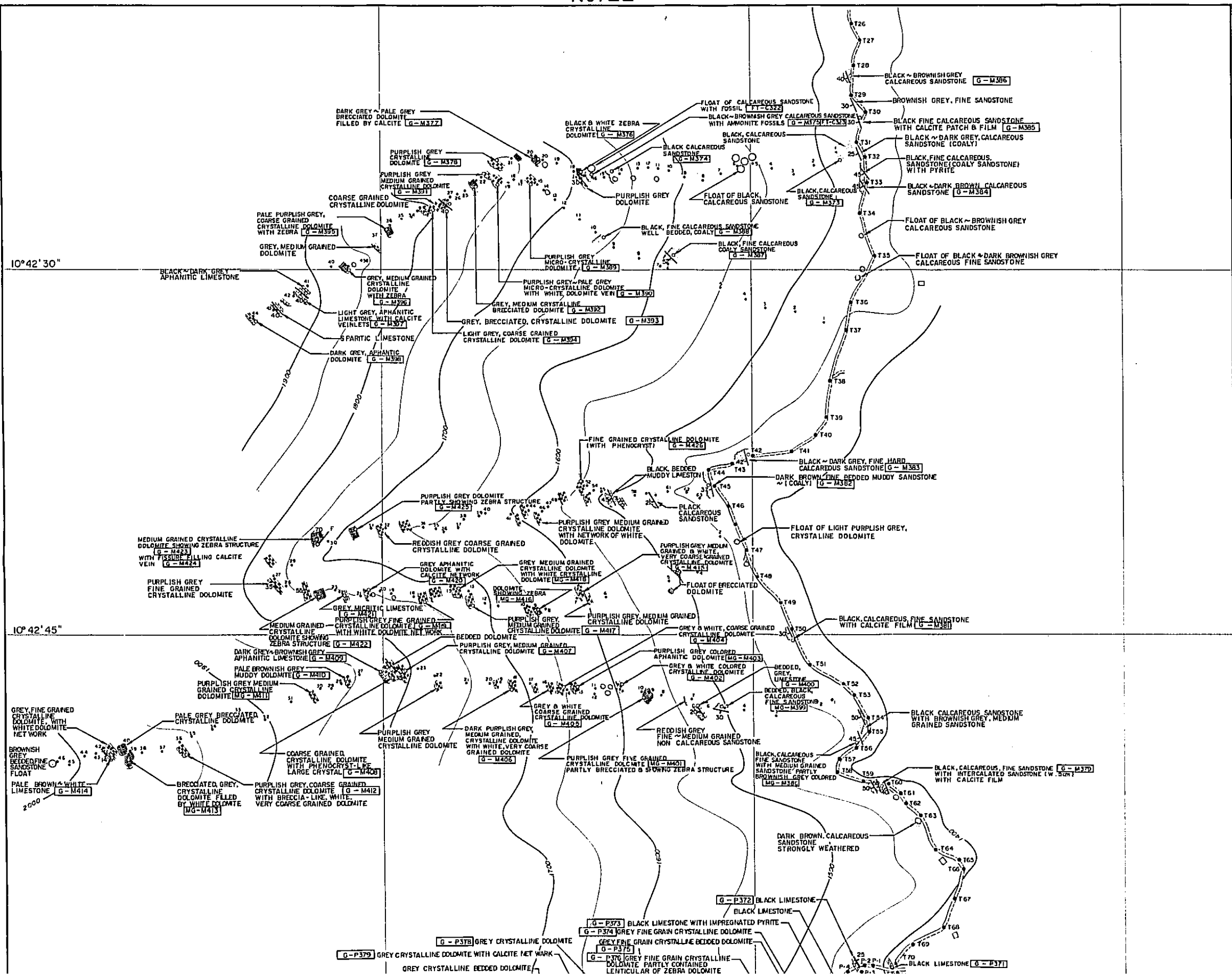
**LEGEND**

	LIMESTONE
	DOLOMITIC LIMESTONE
	DOLOMITE
	ZEBRA & BRECCIA DOLOMITE
	SANDSTONE
	SHALE, MUDSTONE & SILTSTONE
	TUFF, TUFF BRECCIA & AGGLOMERATE (PYROCRASTIC)
	ANDESITE, RHYOLITE & DACITE (LAVA FLOW)
	QUARTZ PORPHYRY & GRANITE PORPHYRY
	GRANITE (PINK, RED & WHITE)

	ORE INDICATION		LOCALITY & NUMBER OF ROCK SAMPLE
	FLOAT		LOCALITY OF FOSSIL
	PARTIAL		NUMBER OF ROCK SAMPLE







PL. 1-2(2)

GEOLOGICAL SURVEY  
OF  
THE CORDILLERA ORIENTAL CENTRAL  
(JUNE 1977)

ROUTE MAP  
OF  
THE SPECIALLY DETAILED SURVEY AREA  
NO.22 (TAMBO MARIA)

SEPTEMBER 1976 SURVEYED AREA

JUNE 1977 SURVEYED AREA

METAL MINING AGENCY OF JAPAN  
JAPAN INTERNATIONAL COOPERATION AGENCY  
GOVERNMENT OF JAPAN  
FEBRUARY 1978  
prepared by MESCO, Inc.

Scale 1 : 2,500

LEGEND

	LIMESTONE
	DOLOMITIC LIMESTONE
	DOLOMITE
	ZEBRA & BRECCIA DOLOMITE
	SANDSTONE
	SHALE, MUDSTONE & SILTSTONE

	LOC. & NO. OF ROCK SAMPLE

	NUMBER OF ROCK SAMPLE
	F - FOSSIL
	M - MINOR ELEMENTAL ANALYSIS
	O - ORE ANALYSIS
	P - POLISHED SECTION
	T - THIN SECTION
	X - X-RAY ANALYSIS
	G - GEOCHEMICAL ANALYSIS ON ROCK



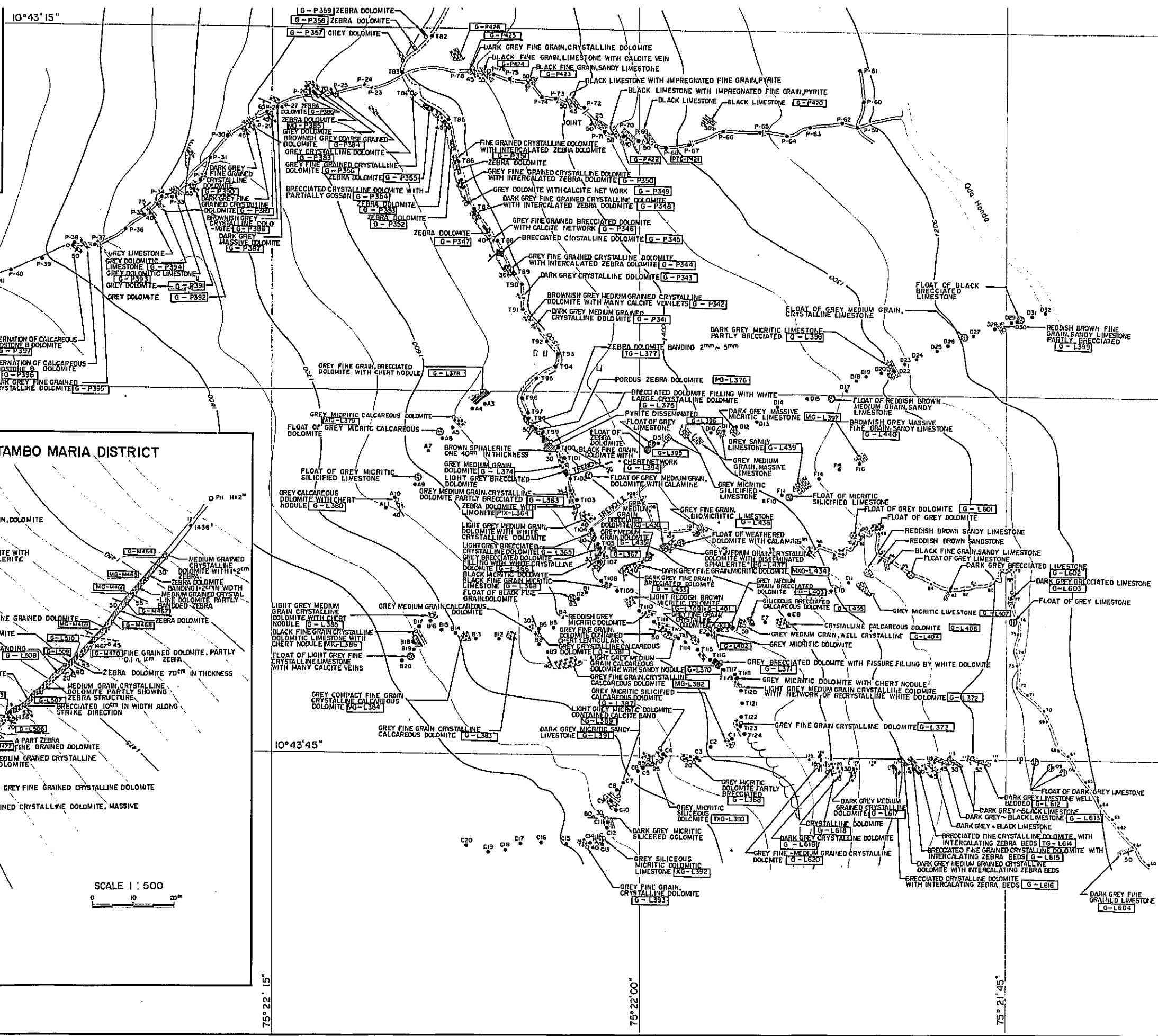
**LEGEND**

- FINE GRAIN CRYSTALLINE DOLOMITE
- MEDIUM GRAIN CRYSTALLINE DOLOMITE
- COARSE GRAIN CRYSTALLINE DOLOMITE
- GOSSAN
- 140E/30S DIP & STRIKE
- FISSURE

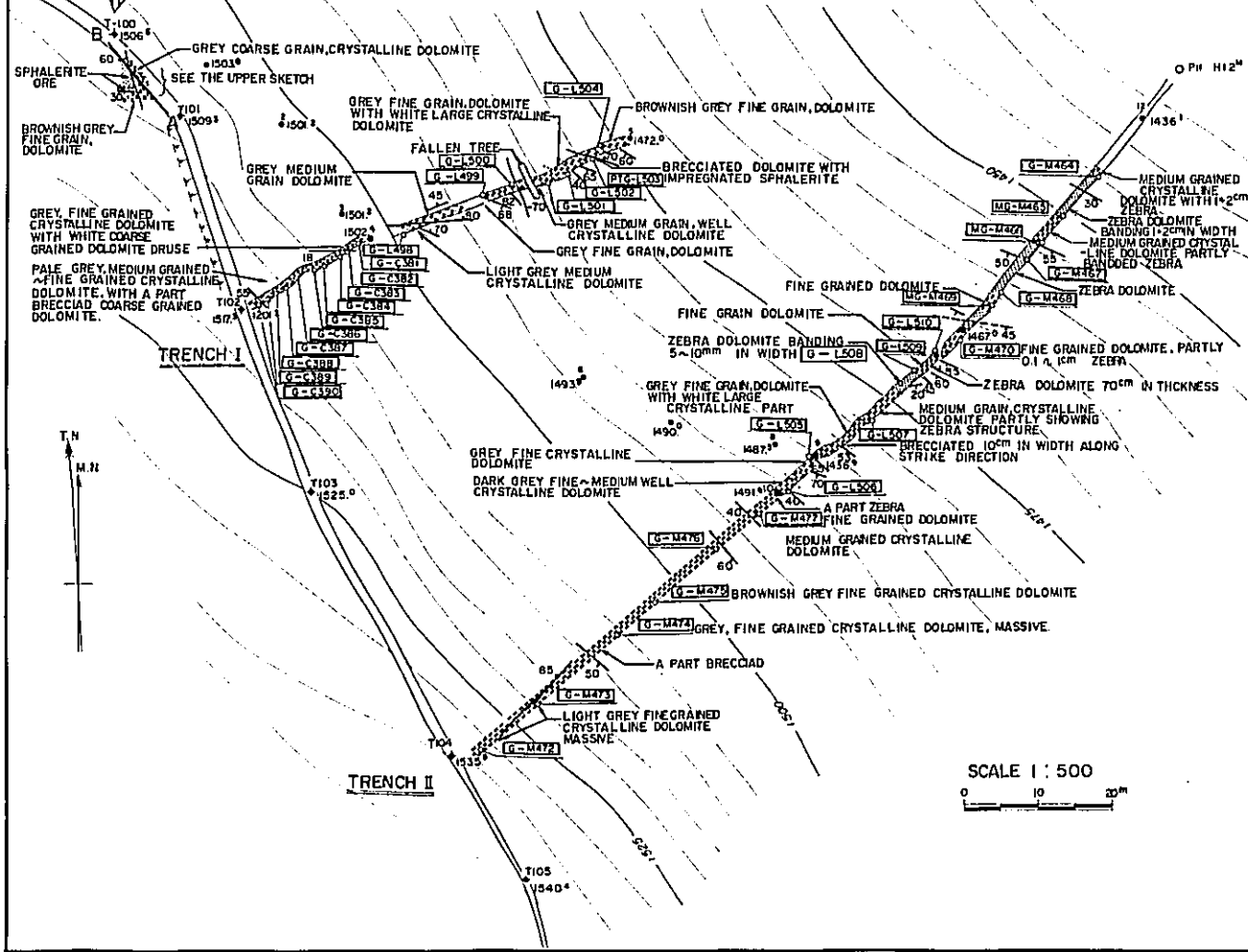
**CHEMICAL ANALYSIS OF ORES**

Sample No	Width (m)	Cu %	Pb %	T-Zn %	X Zn
S 345	0.50	0.02	0.006	0.029	0.023
S 346	0.30	0.02	0.022	25.90	25.25
S 347	0.50	0.02	0.012	3.05	3.02
S 348	0.60	0.01	0.010	0.108	0.079
S 349	0.40	0.01	0.010	0.043	0.020
S 350	0.30	0.03	0.016	3.00	1.90
S 351	0.30	0.01	0.014	9.60	2.47
S 352	0.30	0.03	0.022	0.040	0.0155

\* NON SULPHIDE Zn



**GEOLOGICAL SKETCH OF TWO TRENCHES IN THE TAMBO MARIA DISTRICT**

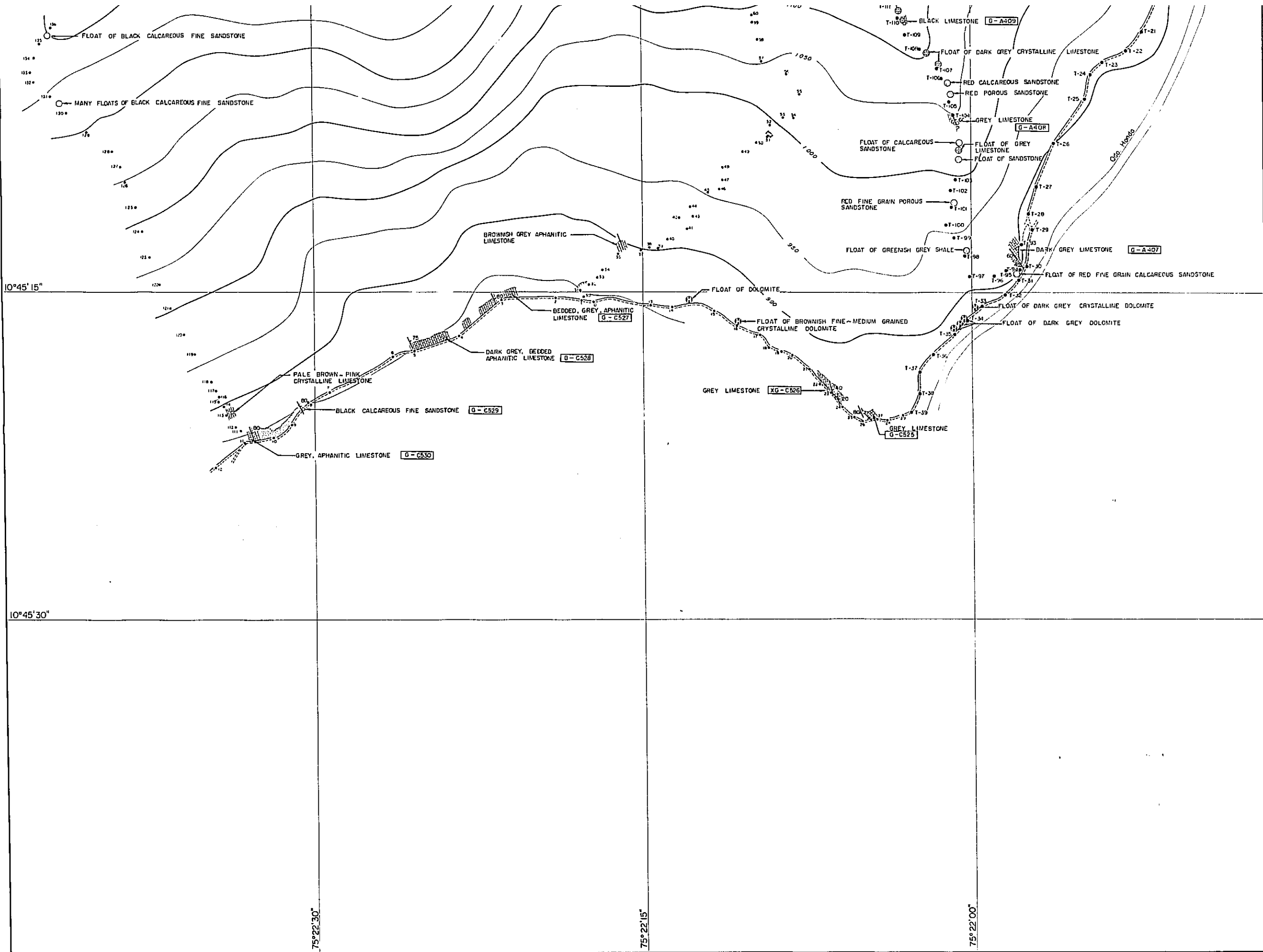






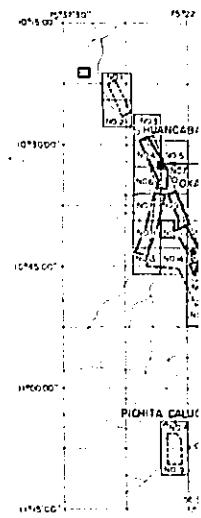






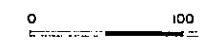
THE SPECIALLY DETAIL

NO.23



METAL MINING AGENCY  
JAPAN INTERNATIONAL  
GOVERNMENT OF JAPAN  
FEBRUARY  
prepared by MESCO, Inc.

Scale 1:100

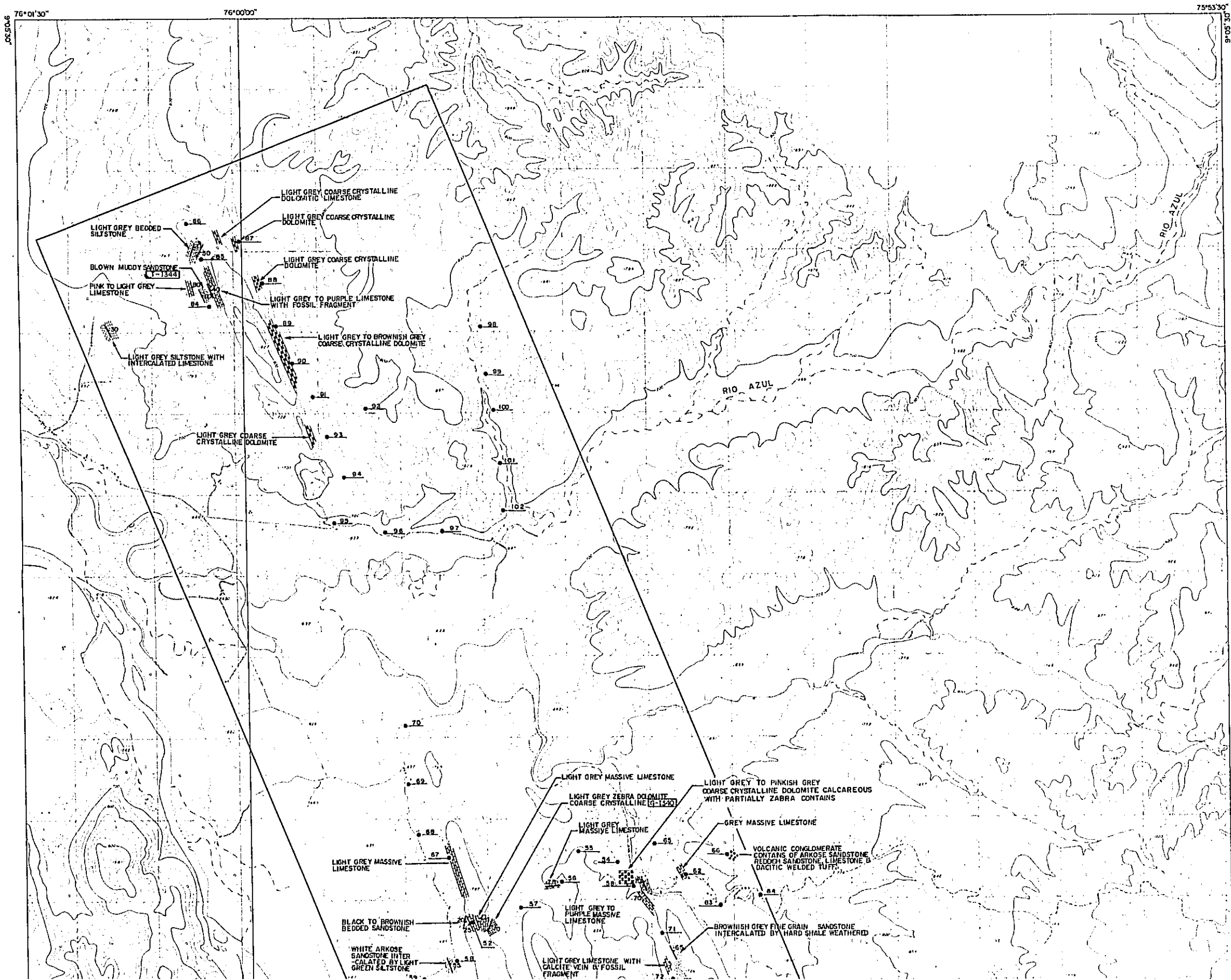


LEGEND

- Limestone
- DOLOMITIC LIMESTONE
- DOLOMITE
- ZEBRA & BRECCIA DOL.
- SANDSTONE
- SHALE, MUDSTONE & S.
- FLOAT
- DIP & STRIKE
- JOINT
- FAULT
- SURVEYED POINT







PL. I-3(1)

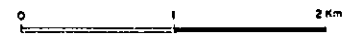
GEOLOGICAL SURVEY  
OF  
THE CORDILLERA ORIENTAL CENTRAL PERU  
(JUNE 1977)

**ROUTE MAP  
OF  
THE SEMI-DETAILED SURVEY AREA**  
(TINGO MARIA)

METAL MINING AGENCY OF JAPAN  
JAPAN INTERNATIONAL COOPERATION AGENCY  
GOVERNMENT OF JAPAN  
FEBRUARY 1978

prepared by MESCO, Inc.

Scale 1:25,000

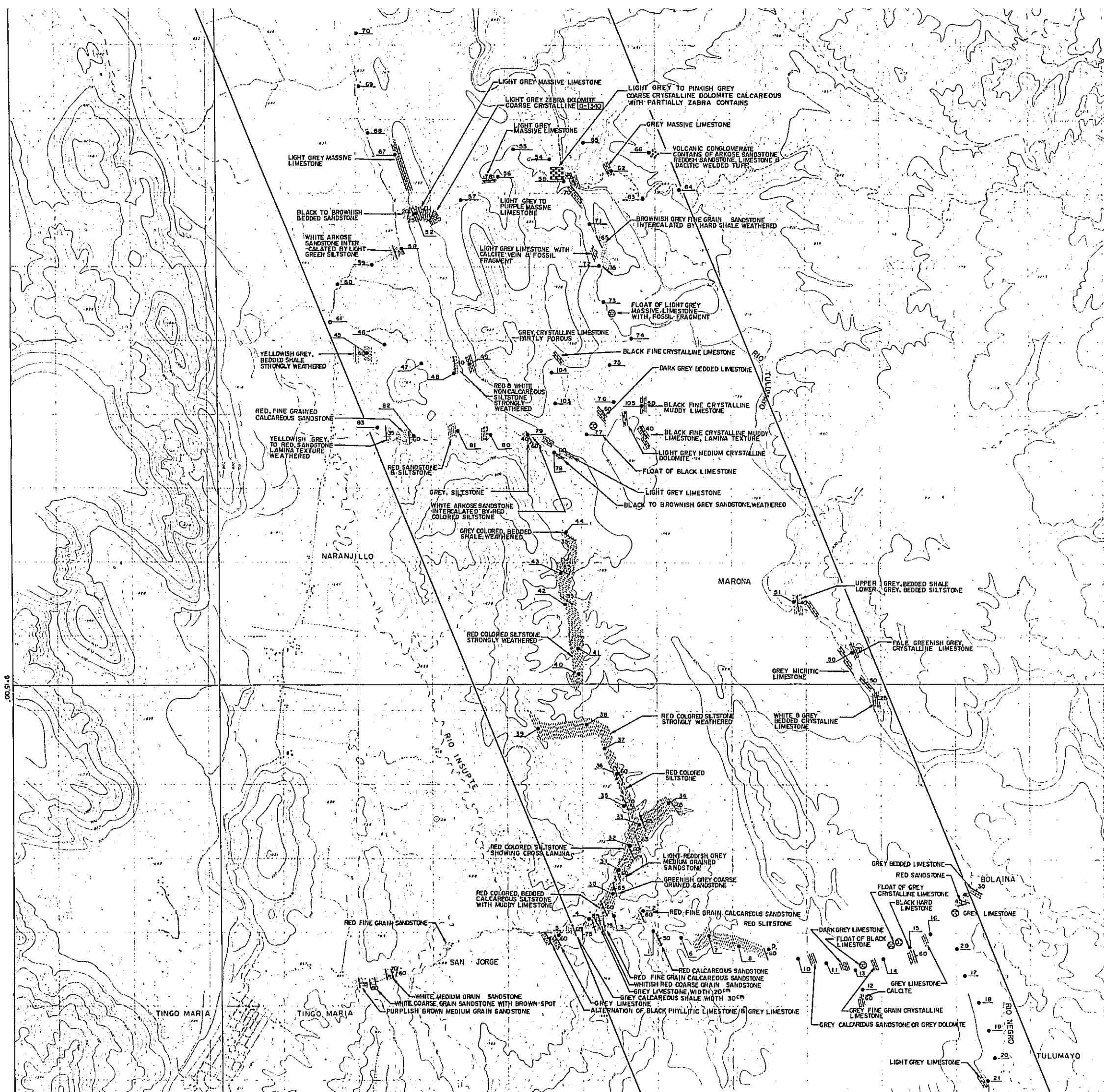


**LEGEND**

- Limestone
- DOLOMITIC LIMESTONE
- DOLOMITE
- ZEBRA & BRECCIA DOLOMITE
- SANDSTONE
- SHALE, MUDSTONE & SILTSTONE
- CONGLOMERATE

- FLOAT
- LOCALITY & NUMBER OF SOIL SAMPLE
- FOSSIL LOCALITY
- NUMBER OF ROCK SAMPLE**
- F - FOSSIL
- M - MINOR ELEMENTAL ANALYSIS
- O - ORE ANALYSIS
- P - POLISHED SECTION

- DIP & STRIKE
- FOLIATION



	DOLOMITIC LIMESTONE
	DOLOMITE
	ZEBRA & BRECCIA DOLOMITE
	SANDSTONE
	SHALE, MUDSTONE & SILTSTONE
	CONGLOMERATE

	FLOAT
	DIP & STRIKE
	FOLIATION
	JOINT
	FAULT

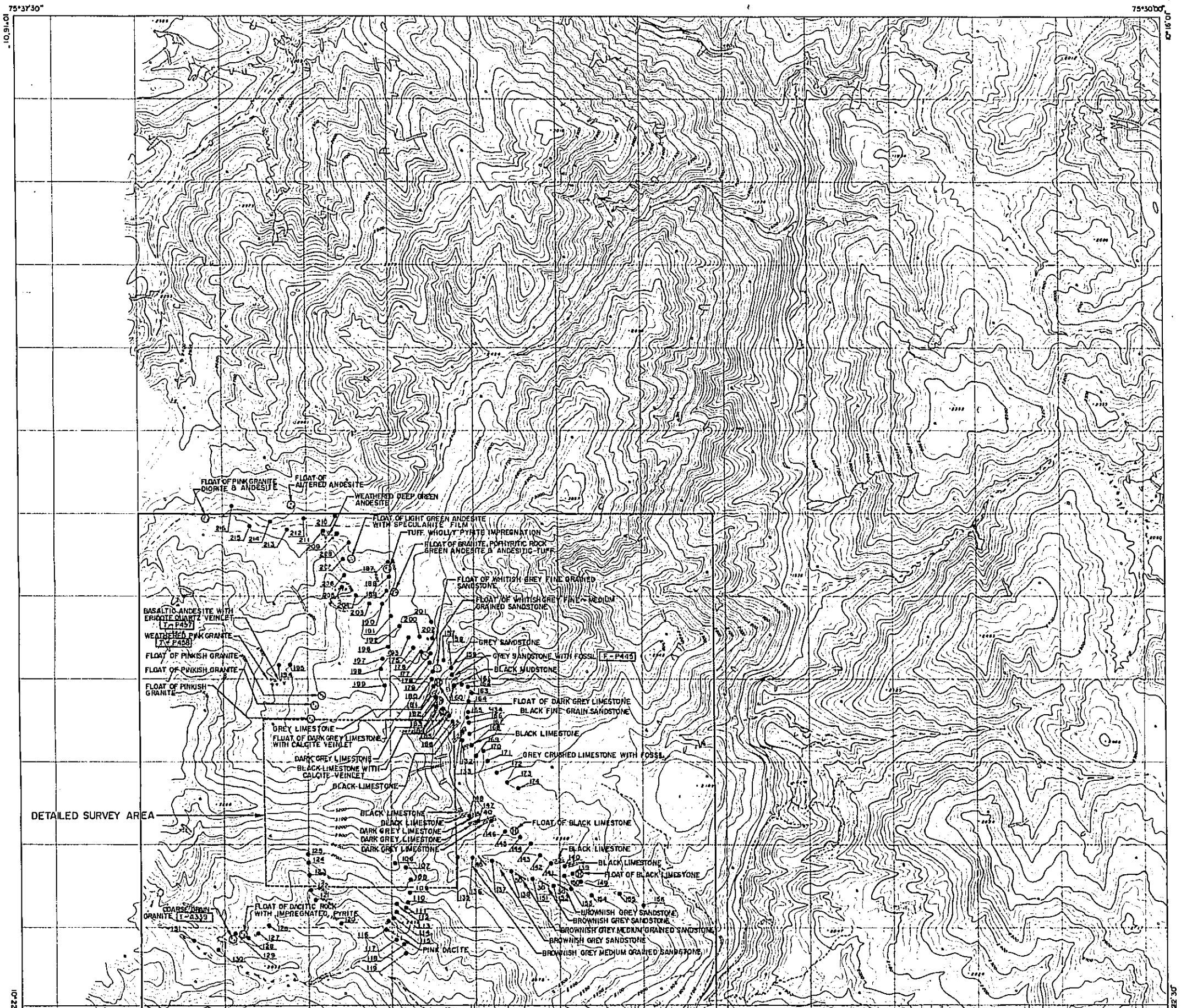
  

	LOCALITY & NUMBER OF SOIL SAMPLE
	FOSSIL LOCALITY

NUMBER OF ROCK SAMPLE	
	F - FOSSIL
	M - MINOR ELEMENTAL ANALYSIS
	O - ORE ANALYSIS
	P - POLISHED SECTION
	T - THIN SECTION
	X - X-RAY ANALYSIS
	G - GEOCHEMICAL ANALYSIS ON ROCK





PL. I-3(2)

GEOLOGICAL SURVEY  
OF  
THE CORDILLERA ORIENTAL CENTRAL PERU  
(JUNE 1977)

**ROUTE MAP  
OF  
THE SEMI-DETAILED SURVEY AREA  
(HUANCABAMBA)**

METAL MINING AGENCY OF JAPAN  
JAPAN INTERNATIONAL COOPERATION AGENCY  
GOVERNMENT OF JAPAN  
FEBRUARY 1978  
prepared by MESCO, Inc.

Scale 1:25,000  
0 1 2 Km






















**LEGEND**

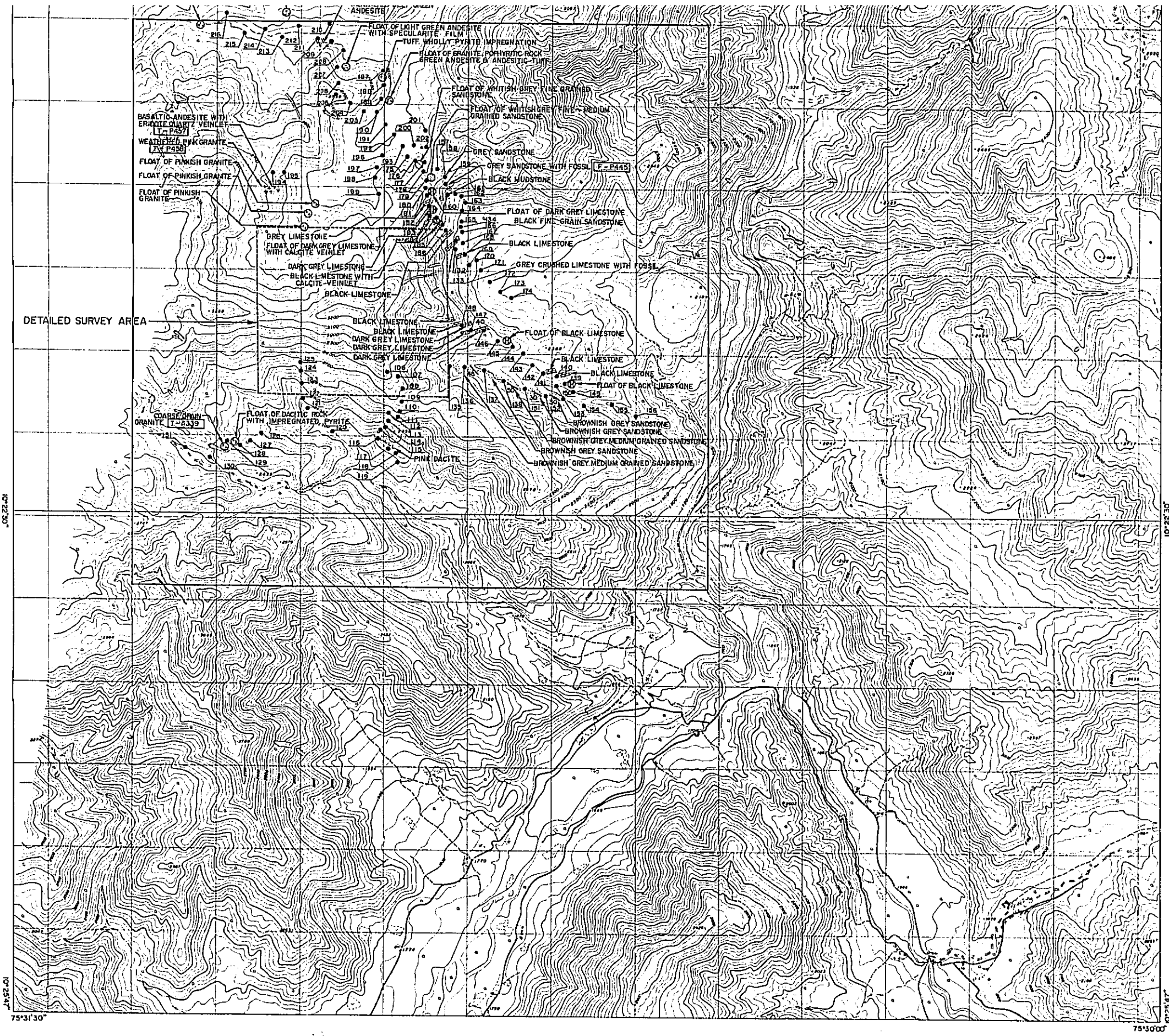
- LIMESTONE
- DOLOMITIC LIMESTONE
- DOLOMITE
- ZEBRA & BRECCIA DOLOMITE
- SANDSTONE
- SHALE, MUDSTONE & SILTSTONE
- CONGLOMERATE
- ANDESITE, RHYOLITE & DACITE (LAVA FLOW)
- GRANITE (PINK, RED & WHITE)
- FLOAT
- LOCALITY & NUMBER OF SOIL SAMPLE
- FOSSIL LOCALITY
- NUMBER OF ROCK SAMPLE
- FOSSIL

Scale 1:25,000



LEGEND

-  LIMESTONE
  -  DOLOMITIC LIMESTONE
  -  DOLOMITE
  -  ZEBRA & BRECCIA DOLOMITE
  -  SANDSTONE
  -  SHALE, MUDSTONE & SILTSTONE
  -  CONGLOMERATE
  -  ANDESITE, RHYOLITE & DACITE (LAVA FLOW)
  -  GRANITE (PINK, RED & WHITE)
- 
-  FLOAT
  -  DIP & STRIKE
  -  FOLIATION
  -  JOINT
  -  FAULT
- 
-  LOCALITY B NUMBER OF SOIL SAMPLE & FOSSIL LOCALITY
- 
- NUMBER OF ROCK SAMPLE
-  F - FOSSIL
  -  M - MINOR ELEMENTAL ANALYSIS
  -  O - ORE ANALYSIS
  -  P - POLISHED SECTION
  -  T - THIN SECTION
  -  X - X-RAY ANALYSIS



10°22'00"

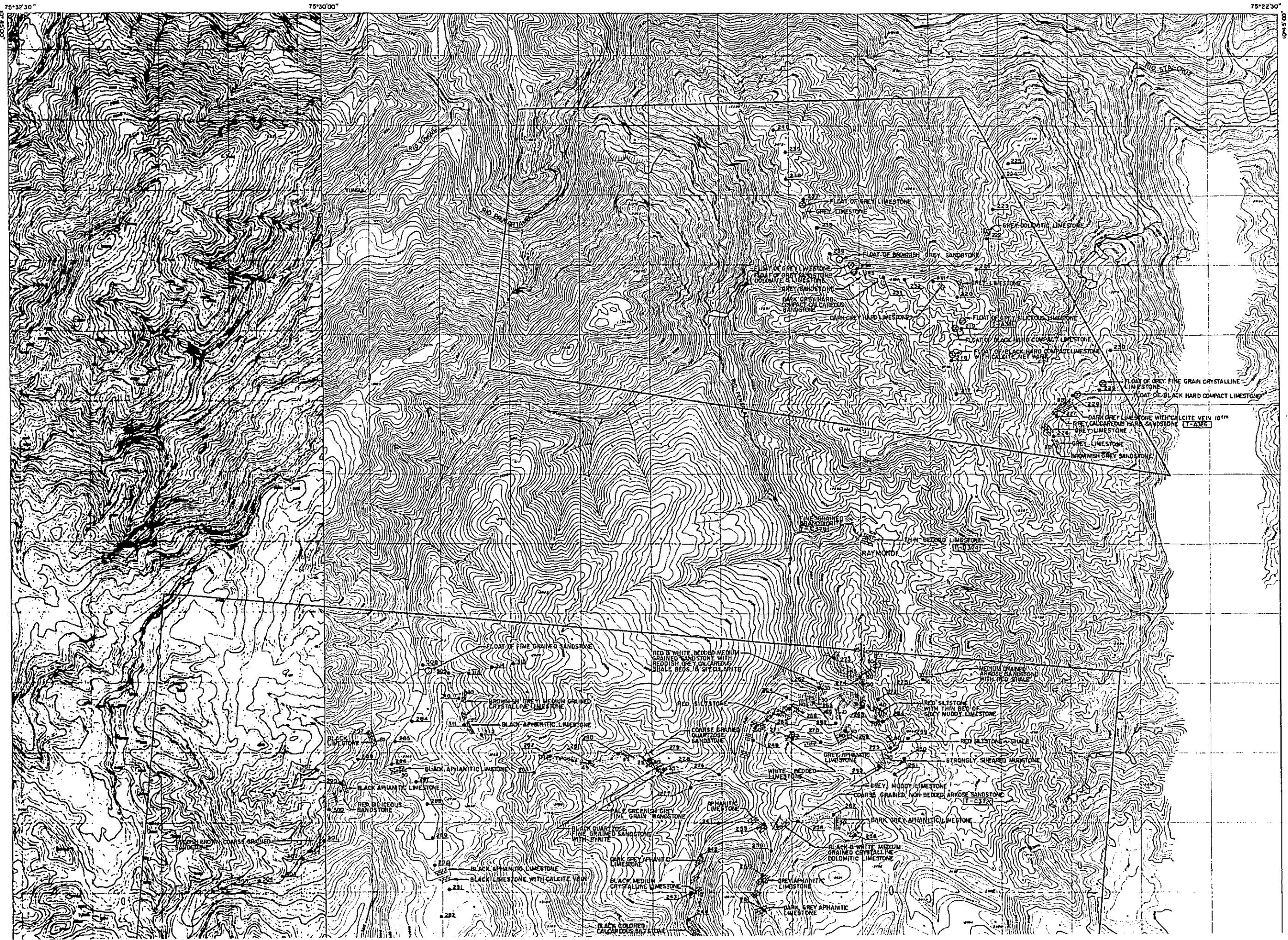
10°22'00"

75°31'30"













10°22'30"

10°22'30"

75°30'00"



GEOLOGICAL  
 THE CORD  
 THE SEMI  
 (RID S  
 METAL MINING  
 JAPAN INTERN  
 GOVERNMENT I  
 prepared by MI

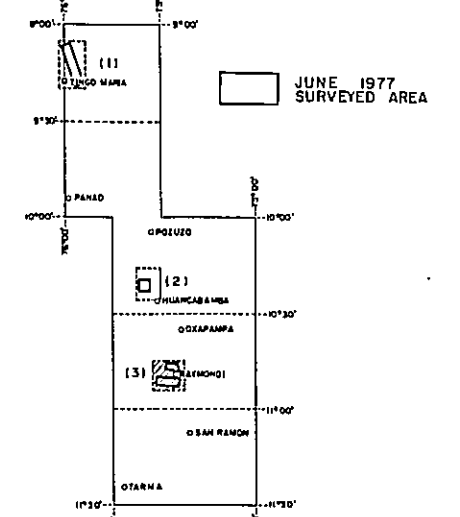
-  LIMESTONE
-  DOLOMITI
-  DOLOMITI
-  ZEBRA B
-  SANDSTON
-  SHALE M
-  CONGLOME
-  FLOAT
-  DIP & STR
-  FOLIATION
-  JOINT
-  FAULT

75°30'00"

75°22'30"

PL. 173(13) 08114

GEOLOGICAL SURVEY  
OF  
THE COROILLERA ORIENTAL CENTRAL PERU  
(JUNE 1977)  
**ROUTE MAP  
OF  
THE SEMI-DETAILED SURVEY AREA**  
(RIO SANTA CRUZ - RAYMONDI)



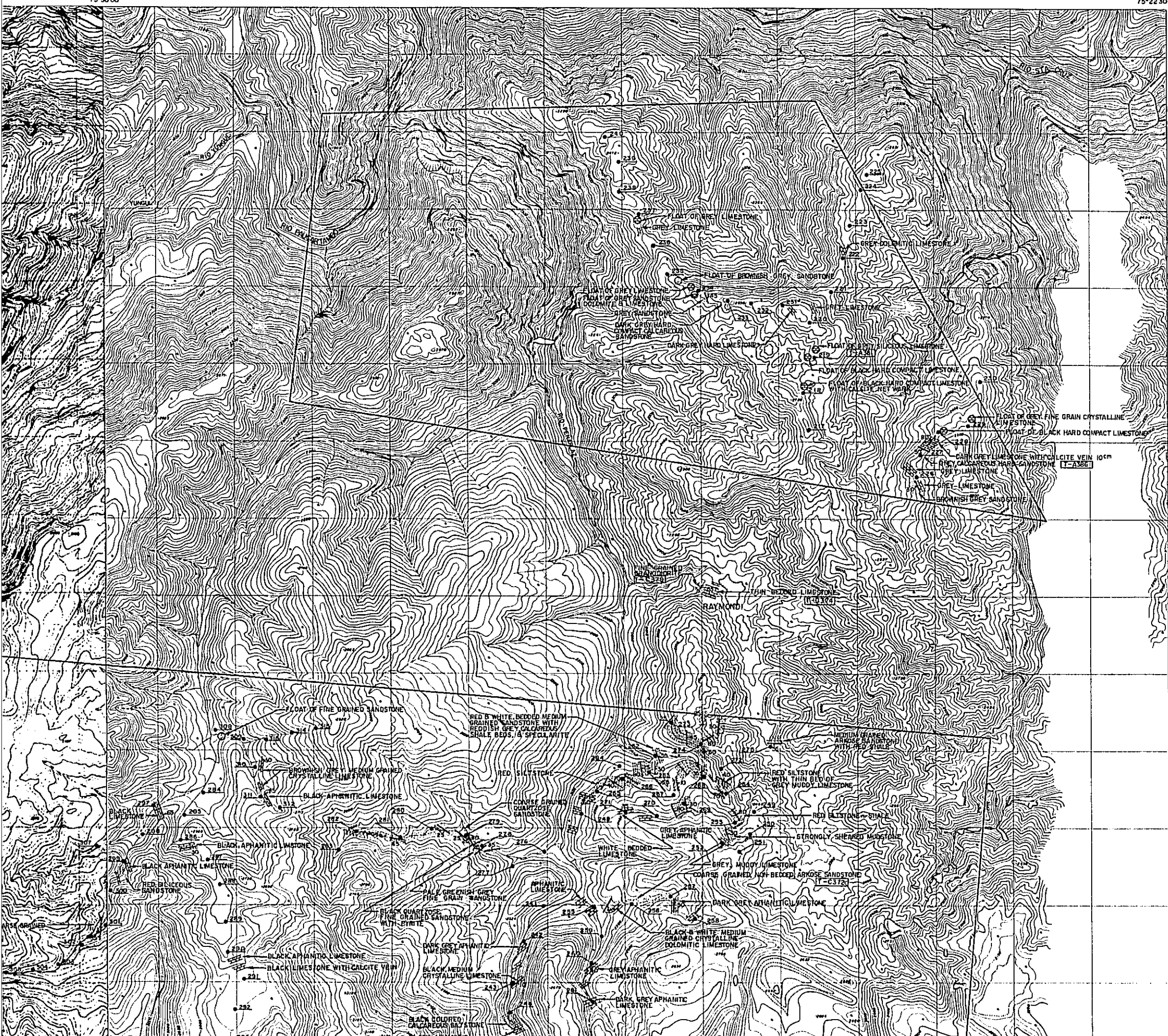
METAL MINING AGENCY OF JAPAN  
JAPAN INTERNATIONAL COOPERATION AGENCY  
GOVERNMENT OF JAPAN  
FEBRUARY 1978  
prepared by MESCO, Inc.

Scale 1:25,000



**LEGEND**

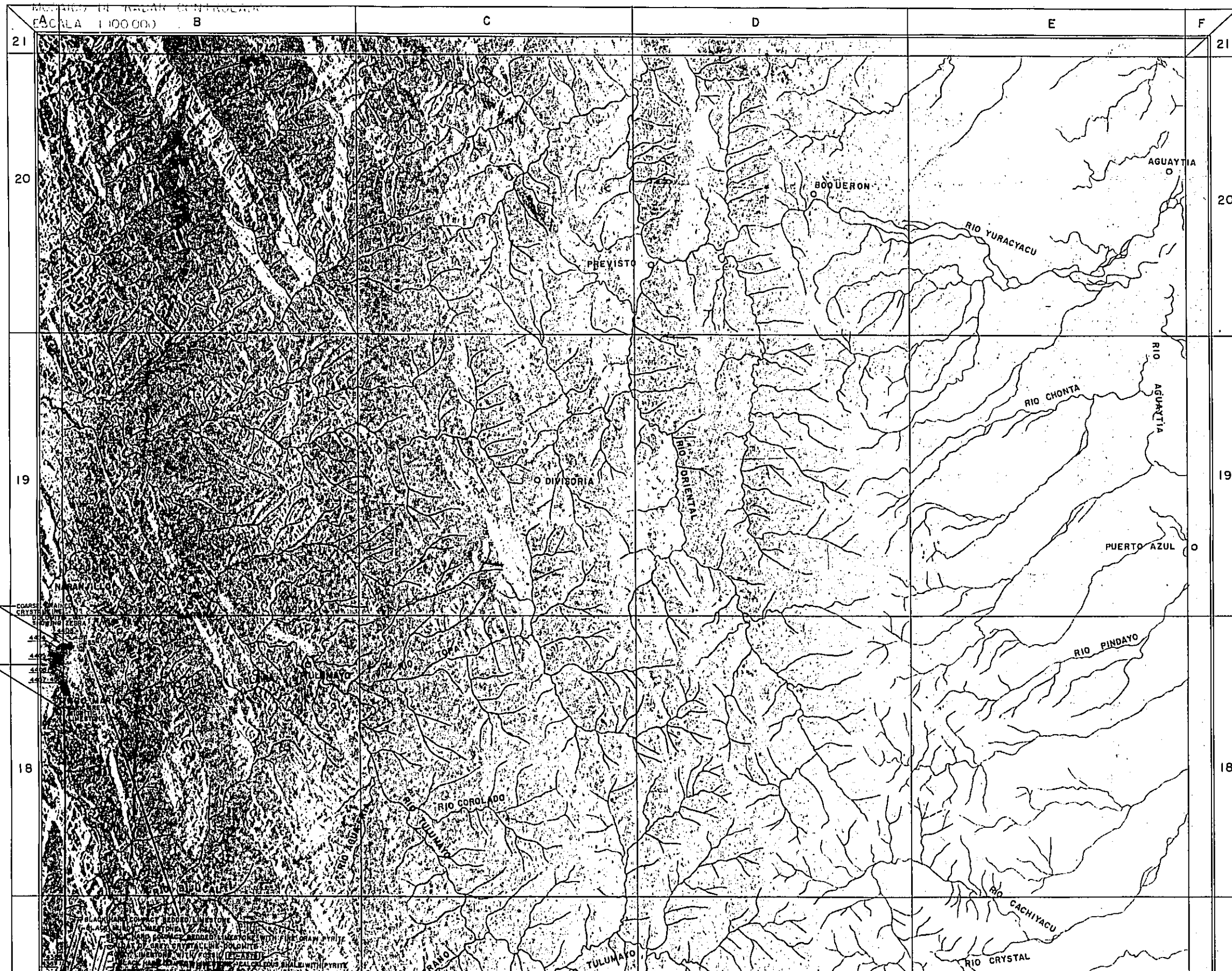
- LIMESTONE
- DOLOMITIC LIMESTONE
- DOLOMITE
- ZEBRA & BRECCIA DOLOMITE
- SANDSTONE
- SHALE, MUDSTONE & SILTSTONE
- CONGLOMERATE
- FLOAT
- DIP & STRIKE
- FOLIATION
- JOINT
- FAULT
- LOCALITY & NUMBER OF SOIL SAMPLE
- NUMBER OF ROCK SAMPLE**
- F - FOSSIL
- M - MINOR ELEMENTAL ANALYSIS
- O - ORE ANALYSIS
- P - POLISHED SECTION
- T - THIN SECTION
- X - X-RAY ANALYSIS









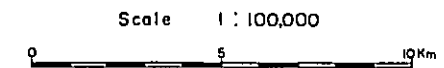


PL 4(1)

GEOLOGICAL SURVEY OF THE CORDILLERA ORIENTAL CENTRAL PERU (JUNE 1977)

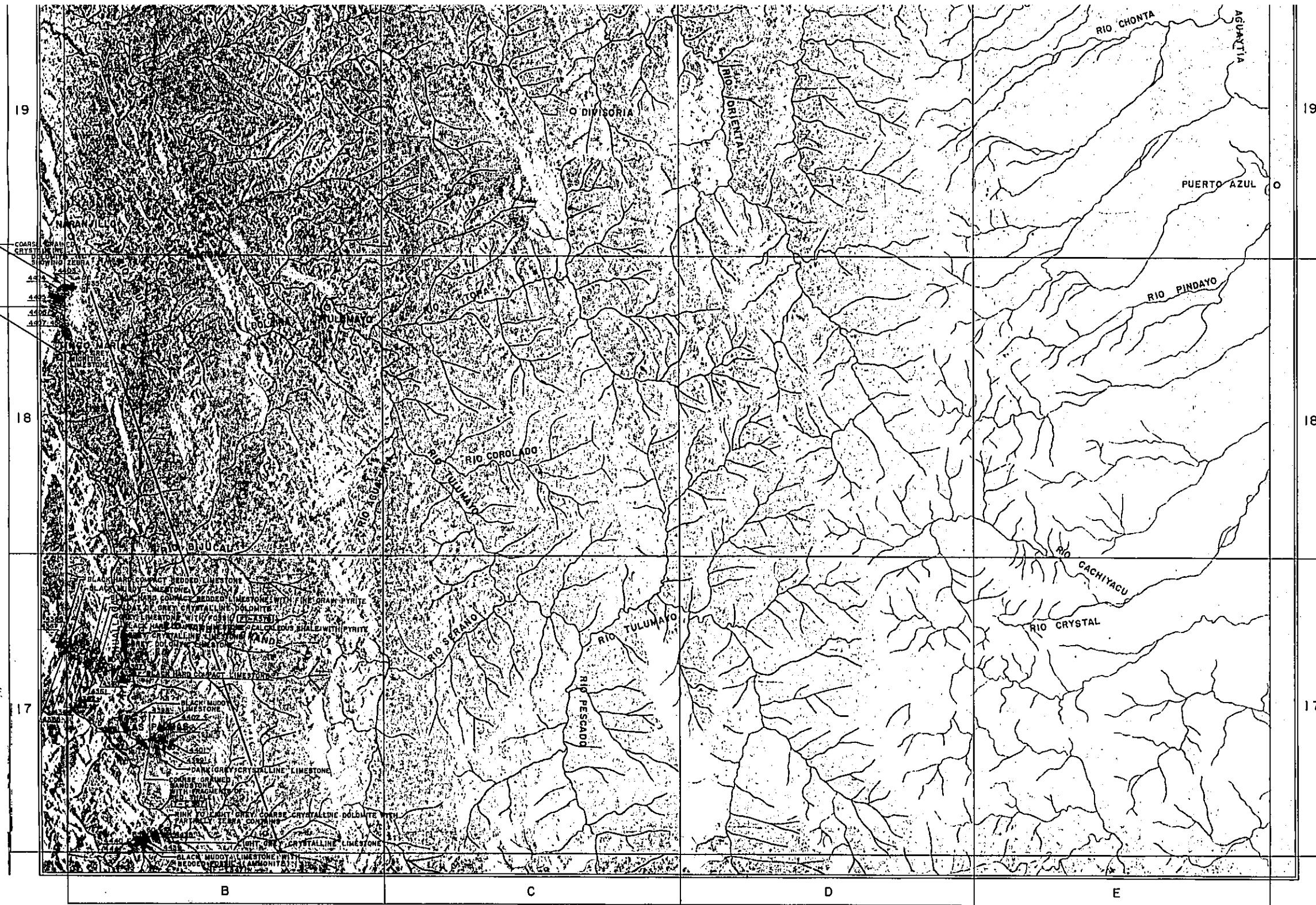
### ROUTE MAP OF THE RECONNAISSANCE AREA (TINGO MARIA)

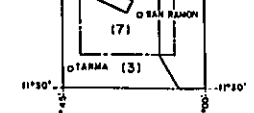
METAL MINING AGENCY OF JAPAN  
JAPAN INTERNATIONAL COOPERATION AGENCY  
GOVERNMENT OF JAPAN  
FEBRUARY 1978  
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#### LEGEND






























SEDIMENTARY ROCK		IGNEOUS ROCK	
	shale		volcanic breccia
	sandstone		rhyolite & dacite
	conglomerate		aplite
	limestone		microdiorite
	dolomite		andesite & andesitic tuff
	zebra dolomite		granite & granodiorite
<b>METAMORPHIC ROCK</b>			altered granitic rock
	schist		
	dip & strike		fossil locality
	fissure or joint		locality & number of soil sample
	schistosity		T - A350 sample for thin section
	dyke or vein		X - A351 sample for X-ray analysis
	fault		F - A352 sample of fossil
			O - A353 sample for chemical analysis
			P - A354 sample for polished section



  
 METAL MINING AGENCY OF JAPAN  
 JAPAN INTERNATIONAL COOPERATION AGENCY  
 GOVERNMENT OF JAPAN  
 FEBRUARY 1978  
 prepared by MESCO, Inc.

Scale 1 : 100,000  


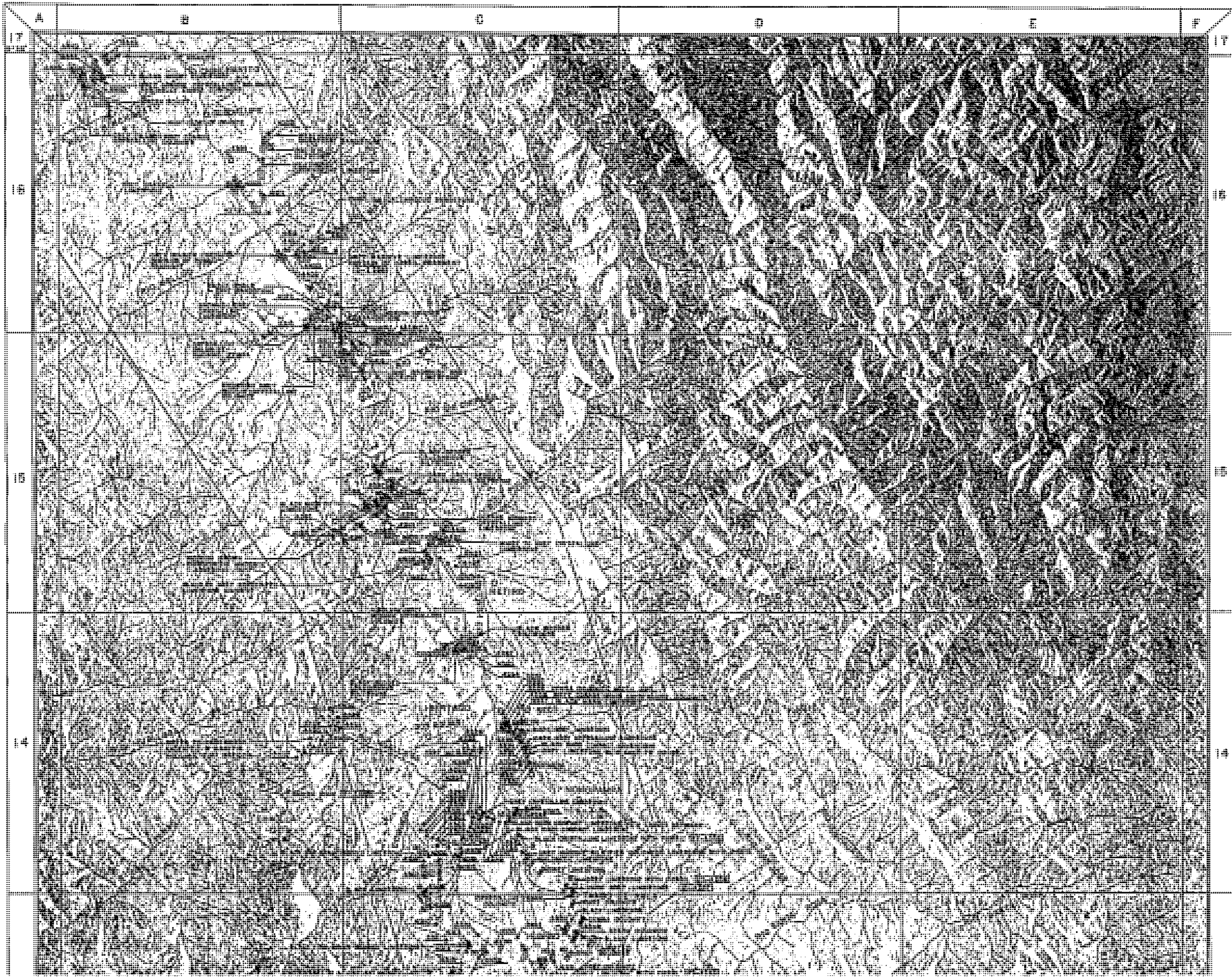
**LEGEND**

- |  |  |
|--|--|
| <p><b>SEDIMENTARY ROCK</b></p> <ul style="list-style-type: none"> <li> shale</li> <li> sandstone</li> <li> conglomerate</li> <li> limestone</li> <li> dolomite</li> <li> zebra dolomite</li> </ul> <p><b>METAMORPHIC ROCK</b></p> <ul style="list-style-type: none"> <li> schist</li> </ul> | <p><b>IGNEOUS ROCK</b></p> <ul style="list-style-type: none"> <li> volcanic breccia</li> <li> rhyolite &amp; dacite</li> <li> aplite</li> <li> microdiorite</li> <li> andesite &amp; andesitic tuff</li> <li> granite &amp; granodiorite</li> <li> altered granitic rock</li> </ul> |
|--|--|
- 
- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li> dip &amp; strike</li> <li> fissure or joint</li> <li> schistosity</li> <li> dyke or vein</li> <li> fault</li> </ul> | <ul style="list-style-type: none"> <li> fossil locality</li> <li> locality &amp; number of soil sample</li> <li> sample for thin section</li> <li> sample for X-ray analysis</li> <li> sample of fossil</li> <li> sample for chemical analysis</li> <li> sample for polished section</li> <li> sample for dating whole rock</li> <li> sample for chemical analysis whole rock</li> <li> sample for geochemical analysis rock</li> </ul> |
|--|---|

ES 1100 1041 D1 1100

**GOODYEAR**

**AERO SERVICE**



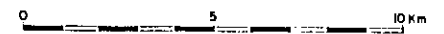
PL-4(2)

GEOLOGICAL SURVEY  
OF  
THE CORDILLERA ORIENTAL CENTRAL PERU  
(JUNE 1977)

**ROUTE MAP  
OF  
THE RECONNAISSANCE AREA**  
(RIO HUALLAGA - POZUZO)

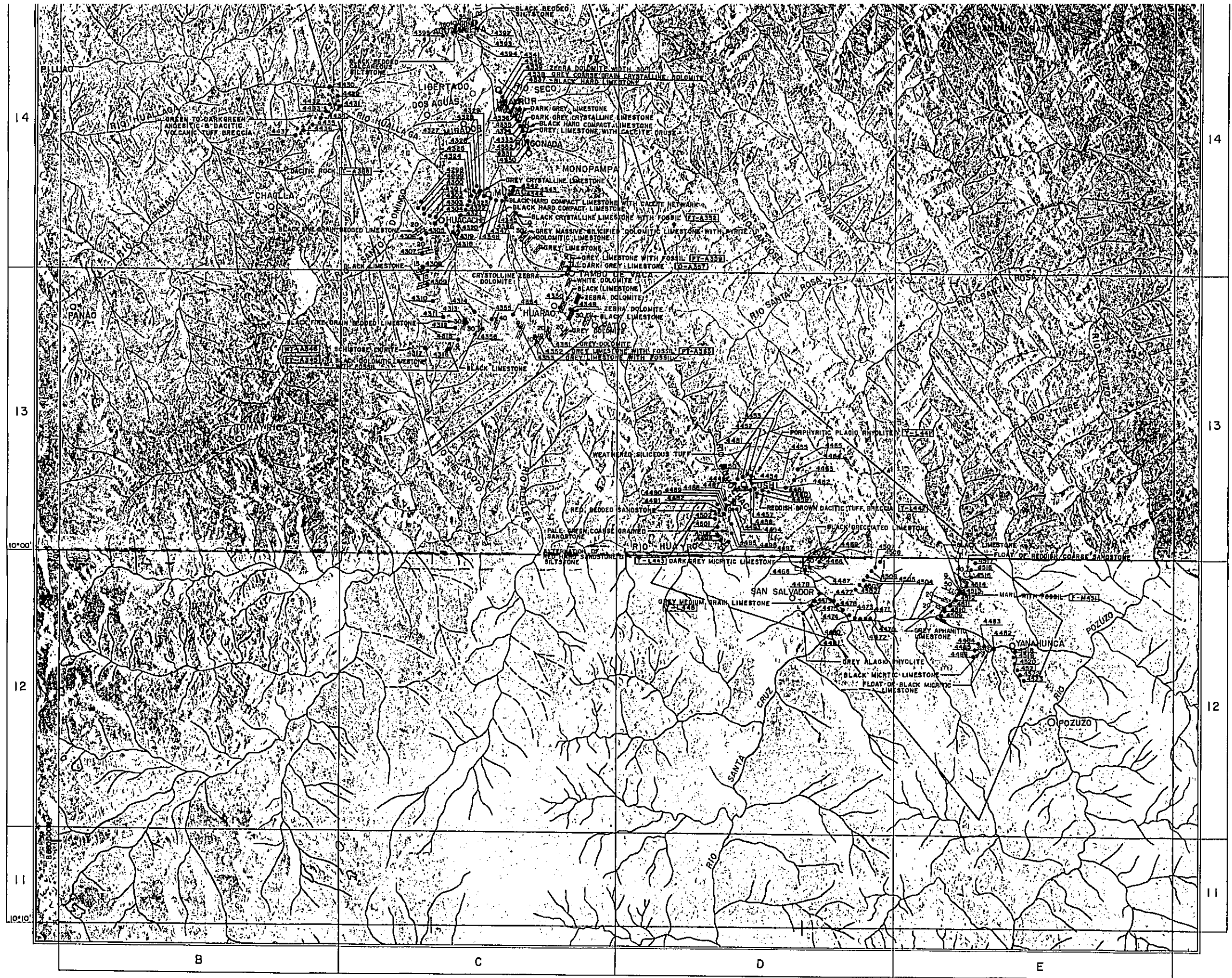
METAL MINING AGENCY OF JAPAN  
JAPAN INTERNATIONAL COOPERATION AGENCY  
GOVERNMENT OF JAPAN  
FEBRUARY 1978  
prepared by MESCO, Inc.

Scale 1 : 100,000



**LEGEND**

- |                         |                |                     |                           |
|-------------------------|----------------|---------------------|---------------------------|
| <b>SEDIMENTARY ROCK</b> |                | <b>IGNEOUS ROCK</b> |                           |
|                         | shale          |                     | volcanic breccia          |
|                         | sandstone      |                     | rhyolite & dacite         |
|                         | conglomerate   |                     | aplite                    |
|                         | limestone      |                     | microdiarite              |
|                         | dolomite       |                     | andesite & andesitic tuff |
|                         | zebra dolomite |                     | granite & granodiorite    |
| <b>METAMORPHIC ROCK</b> |                |                     | altered granitic rock     |
|                         | schist         |                     |                           |
- 
- |  |                  |  |                                  |
|--|------------------|--|----------------------------------|
|  | dip & strike     |  | fossil locality                  |
|  | fissure or joint |  | locality & number of soil sample |
|  | schistosity      |  | sample for thin section          |
|  | dyke or vein     |  | sample for X-ray analysis        |
|  | fault            |  | sample of fossil                 |
|  |                  |  | sample for chemical analysis     |
|  |                  |  | sample for polished section      |

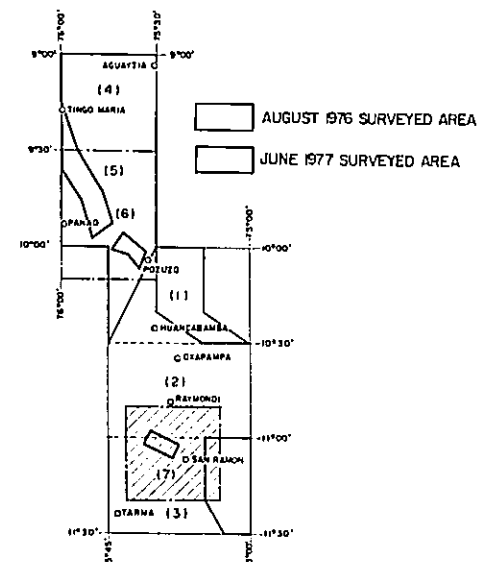


**LEGEND**

SEDIMENTARY ROCK		IGNEOUS ROCK	
	shale		volcanic breccia
	sandstone		rhyolite & dacite
	conglomerate		aplite
	limestone		microdiorite
	dolomite		andesite & andesitic tuff
	zebra dolomite		granite & granodiorite
<b>METAMORPHIC ROCK</b>			altered granitic rock
	schist		
	dip & strike		fossil locality
	fissure or joint		locality & number of soil sample
	schistosity		sample for thin section
	dyke or vein		sample for X-ray analysis
	fault		sample of fossil
			sample for chemical analysis
			sample for polished section
			sample for dating whole rock
			sample for chemical analysis whole rock
			sample for geochemical analysis rock

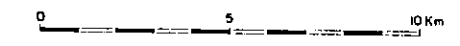
PL. I-4 (3)

GEOLOGICAL SURVEY  
OF  
THE CORDILLERA ORIENTAL CENTRAL PERU  
(JUNE 1977)  
ROUTE MAP  
OF  
THE RECONNAISSANCE AREA  
(RIO OXABAMBA)



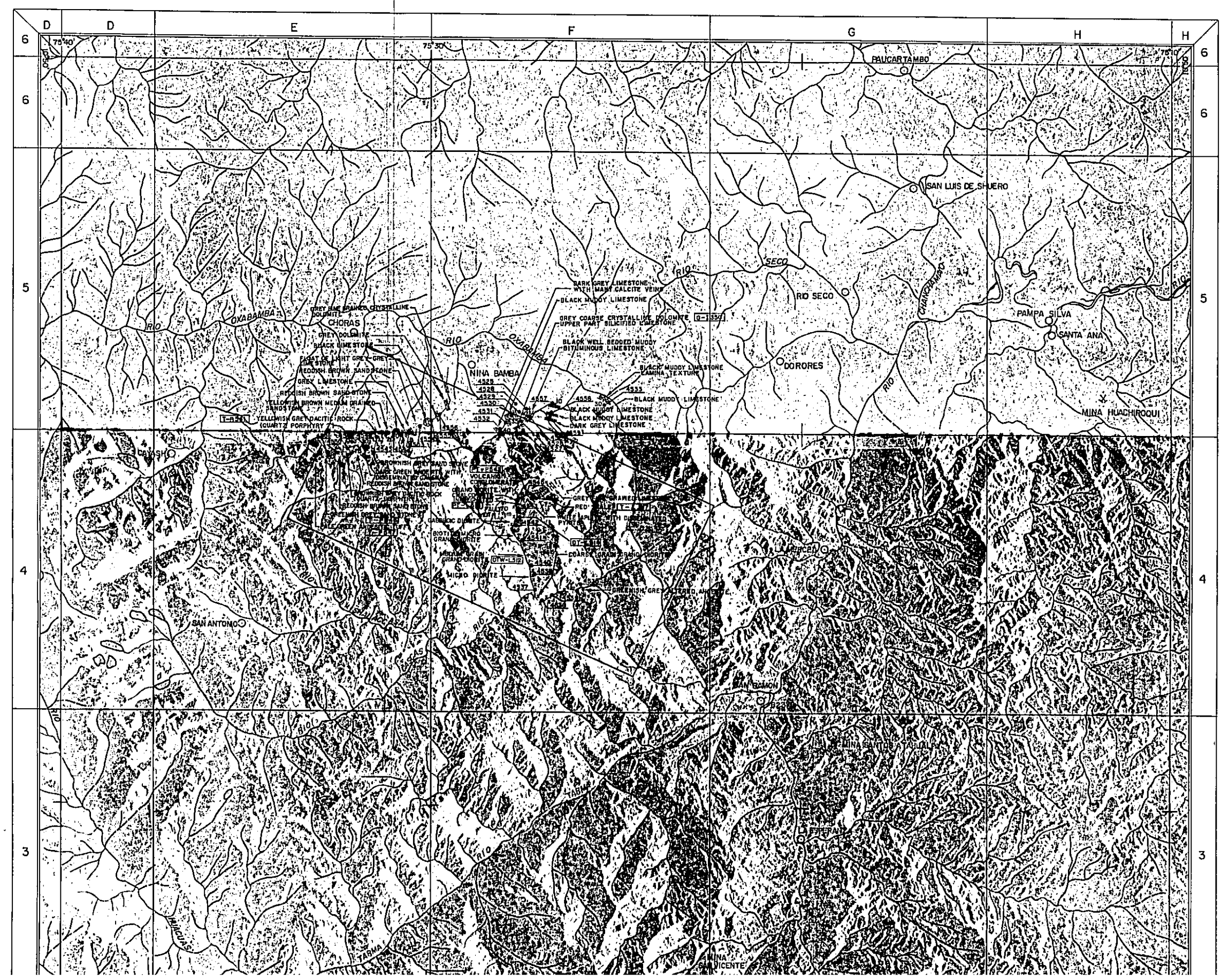
METAL MINING AGENCY OF JAPAN  
JAPAN INTERNATIONAL COOPERATION AGENCY  
GOVERNMENT OF JAPAN  
FEBRUARY 1978  
prepared by MESCO, Inc.

Scale 1:100,000



LEGEND

- |                         |                  |                     |                                  |
|-------------------------|------------------|---------------------|----------------------------------|
| <b>SEDIMENTARY ROCK</b> |                  | <b>IGNEOUS ROCK</b> |                                  |
|                         | shale            |                     | volcanic breccia                 |
|                         | sandstone        |                     | rhyolite & dacite                |
|                         | conglomerate     |                     | aplite                           |
|                         | limestone        |                     | microdiorite                     |
|                         | dolomite         |                     | andesite & andesitic tuff        |
|                         | zebra dolomite   |                     | granite & granodiorite           |
| <b>METAMORPHIC ROCK</b> |                  |                     | altered granitic rock            |
|                         | schist           |                     |                                  |
|                         | dip & strike     |                     | fossil locality                  |
|                         | fissure or joint |                     | locality & number of soil sample |
|                         | schistosity      |                     | sample for thin section          |
|                         | dyke or vein     |                     | sample for X-ray analysis        |
|                         | fault            |                     | sample of fossil                 |
|                         |                  |                     | sample for chemical analysis     |
|                         |                  |                     | sample for polished section      |



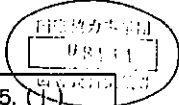




JUNIN 1:25,000

# HUANCABAMBA

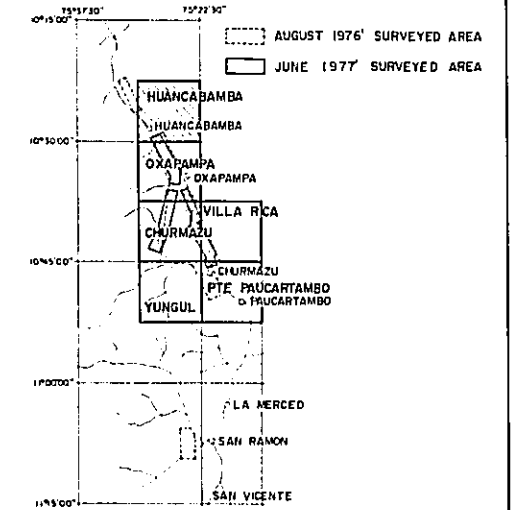
HOJA 21M-III-S0



PL. I - 5. (N)

GEOLOGICAL SURVEY  
OF  
THE CORDILLERA ORIENTAL CENTRAL PERU  
(JUNE 1977)

## GEOLOGICAL MAP OF THE DETAILED SURVEY AREA



METAL MINING AGENCY OF JAPAN  
JAPAN INTERNATIONAL COOPERATION AGENCY  
GOVERNMENT OF JAPAN  
FEBRUARY 1978  
prepared by MESCO, Inc.

Scale 1 : 25,000



### LEGEND

#### SEDIMENTARY

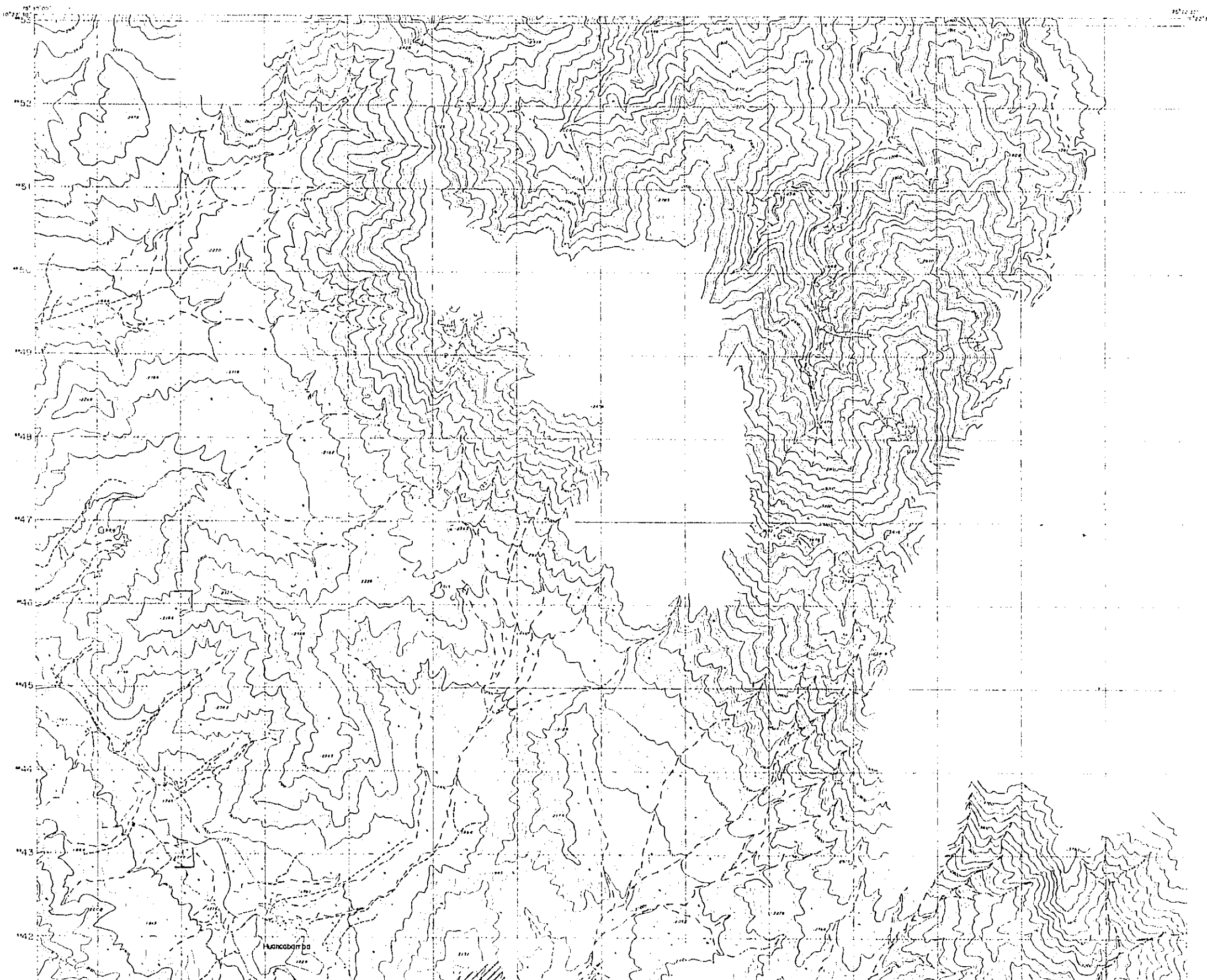
[Symbol]	Gravel & Sand	Quaternary
[Symbol]	Merced F	Tertiary
[Symbol]	Chonta G	Cretaceous
[Symbol]	Oriente G	
[Symbol]	Sarayacuillo F	Jurassic
[Symbol]	limestone Sandstone	
[Symbol]	Mitu G	Triassic

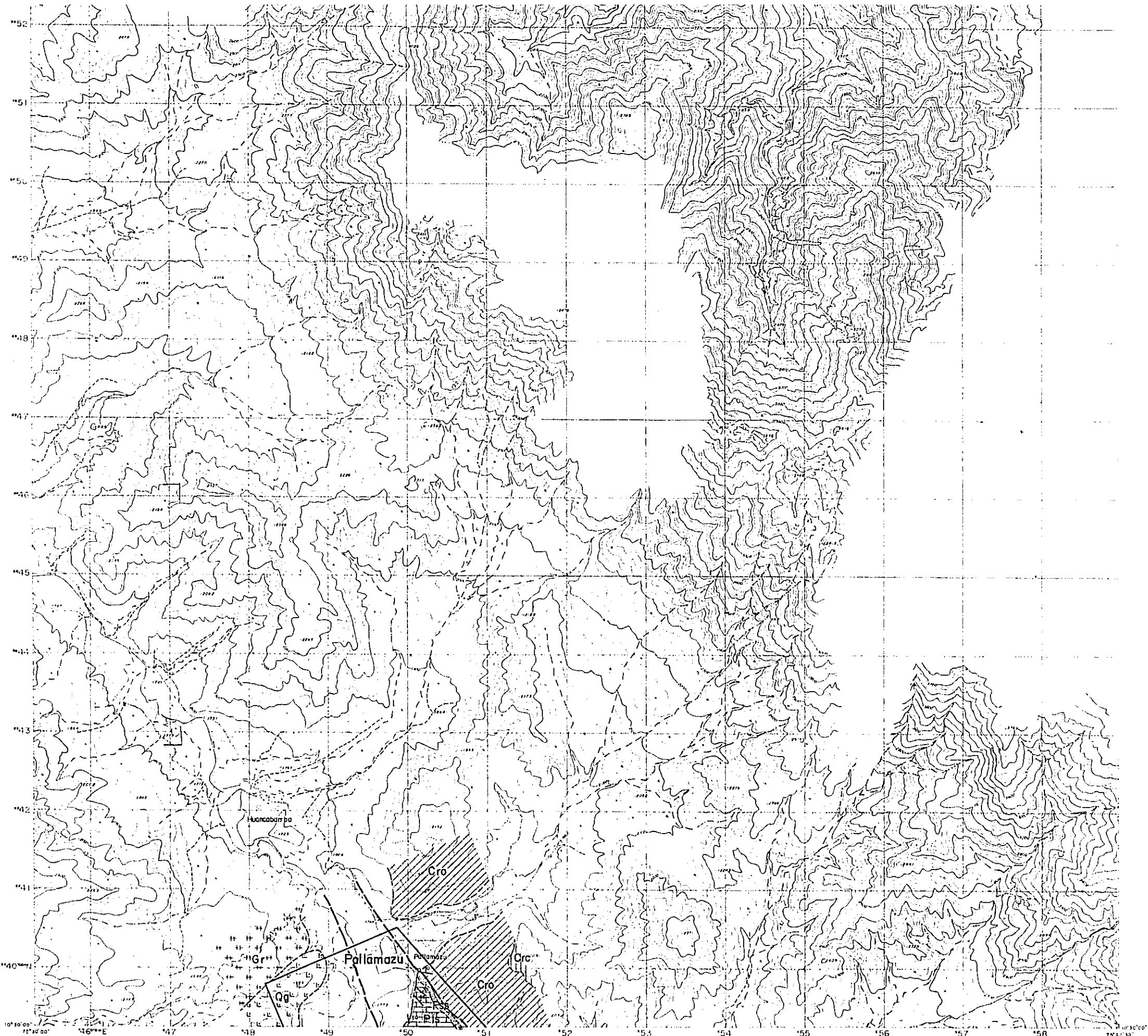
#### IGNEOUS

[Symbol]	Monzonite Porphyry
[Symbol]	Rhyolite & Dacite
[Symbol]	Quartzporphyry & Granite porphyry
[Symbol]	Granite
[Symbol]	Diorite complex

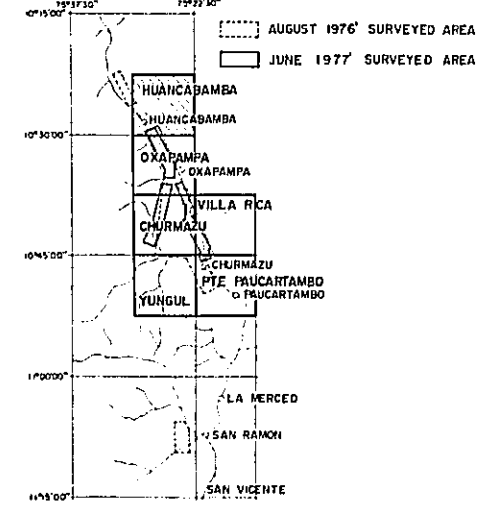
bedding plane

structural folding zone

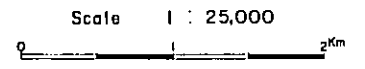




# GEOLOGICAL MAP OF THE DETAILED SURVEY AREA



METAL MINING AGENCY OF JAPAN  
 JAPAN INTERNATIONAL COOPERATION AGENCY  
 GOVERNMENT OF JAPAN  
 FEBRUARY 1978  
 prepared by MESCO, Inc.



## LEGEND

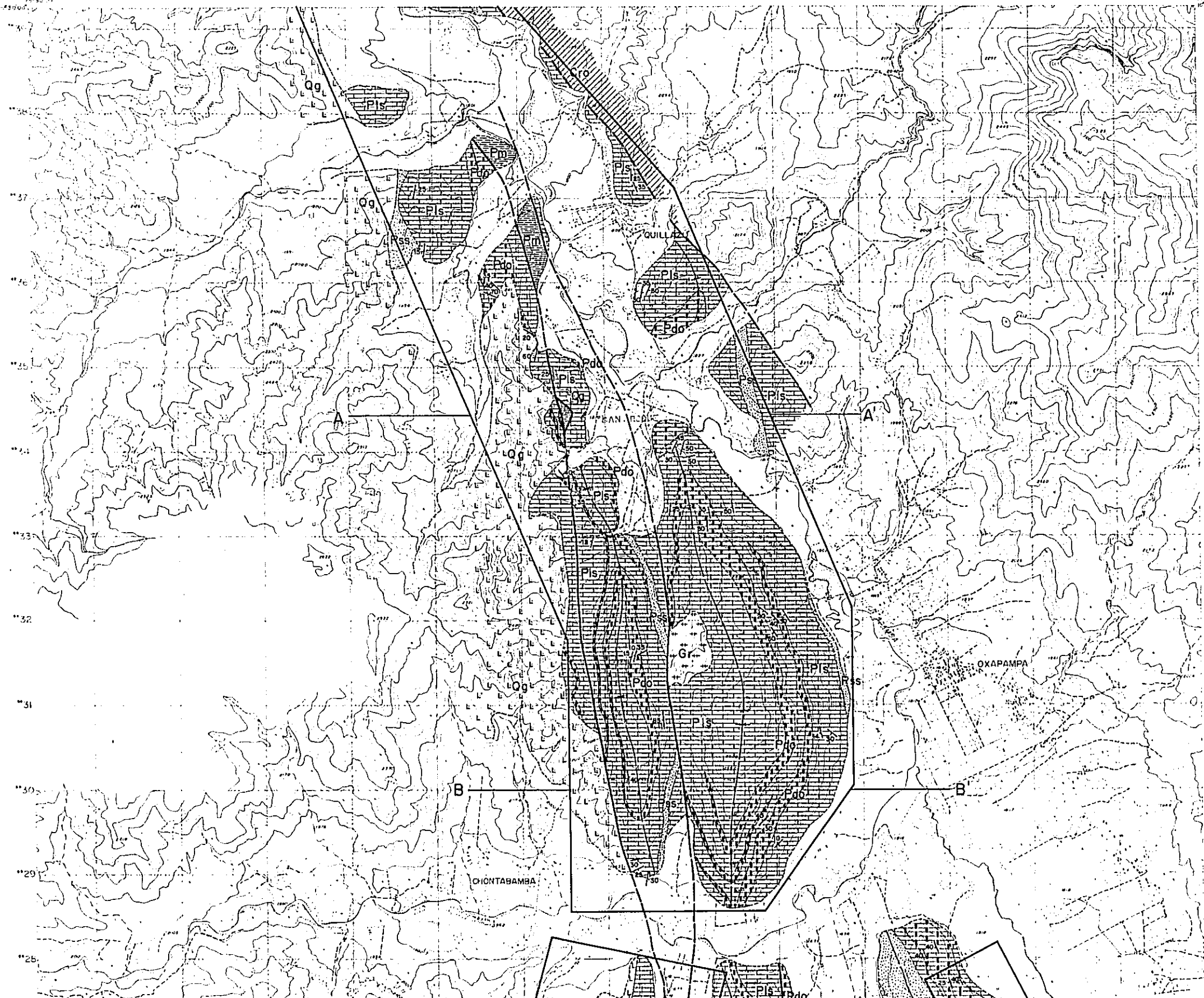
### SEDIMENTARY

	Gravel & Sand Quaternary	
	Merced F Tertiary	
	Chonta G Cretaceous	Cretaceous
	Oriente G Cretaceous	
	Sarayquillo F Jurassic	Jurassic
	Pucara G Jurassic	
	Mitu G Triassic	Triassic

### IGNEOUS

	Monzonite Porphyry
	Rhyolite & Dacite
	Quartzporphyry & Granite porphyry
	Granite
	Diorite complex

- bedding plane
- synclinal folding axis
- anticlinal folding axis
- confirmed fault
- estimated fault
- geological boundary



PL. I 5 (2)

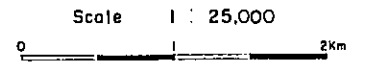
GEOLOGICAL SURVEY  
OF  
THE CORDILLERA ORIENTAL CENTRAL PERU  
(JUNE 1977)

**GEOLOGICAL MAP  
OF  
THE DETAILED SURVEY AREA**

○ AUGUST 1976 SURVEYED AREA

□ JUNE 1977 SURVEYED AREA

METAL MINING AGENCY OF JAPAN  
JAPAN INTERNATIONAL COOPERATION AGENCY  
GOVERNMENT OF JAPAN  
FEBRUARY 1978  
prepared by MESCO, Inc.



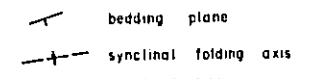
**LEGEND**

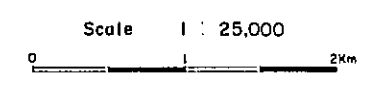
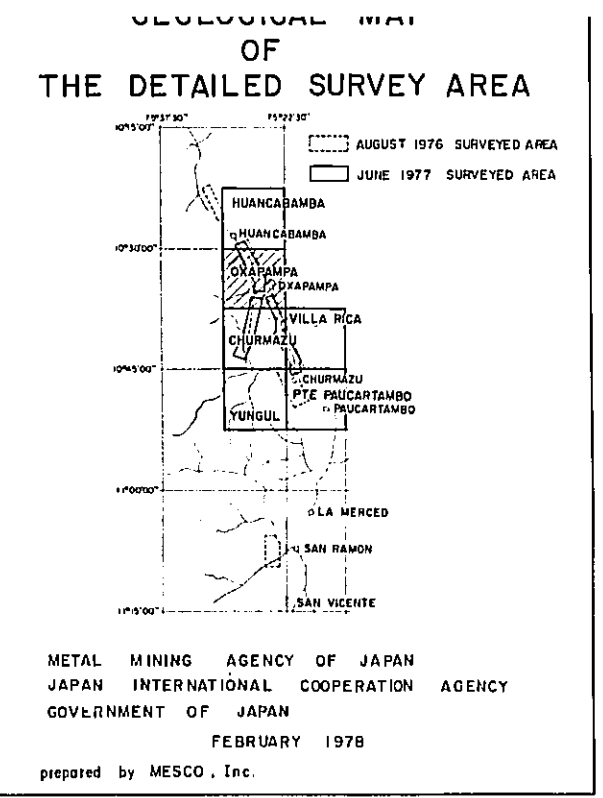
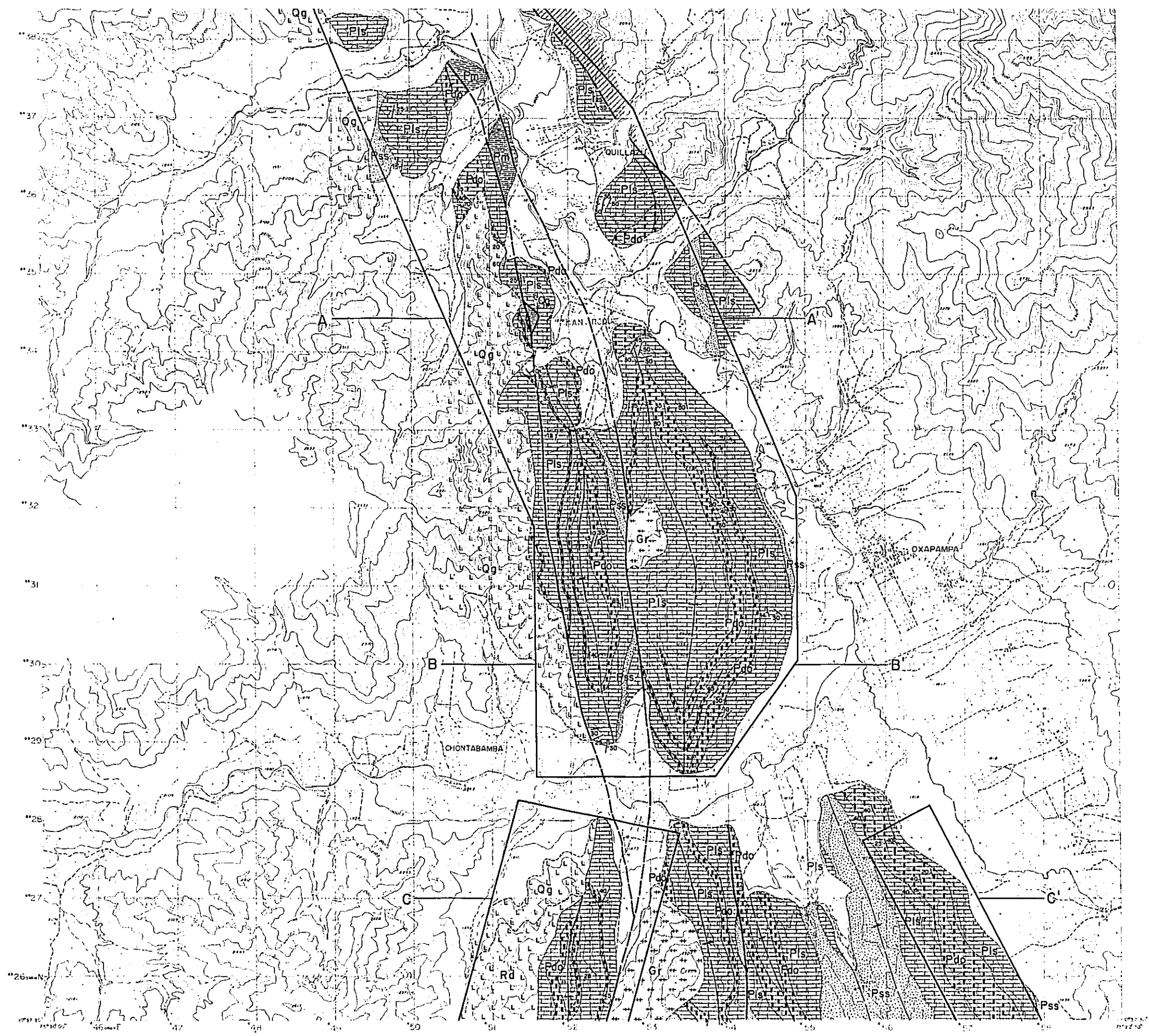
**SEDIMENTARY**

	Gravel & Sand	Quaternary
	Merced F.	Tertiary
	Chonta G.	Cretaceous
	Oriente G.	
	Sarayaquillo F.	Jurassic
	Pucara G.	
	Mitu G.	Triassic

**IGNEOUS**

	Monzonite porphyry
	Rhyolite & Dacite
	Quartz porphyry & Granite porphyry
	Granite
	Diorite complex





#### LEGEND

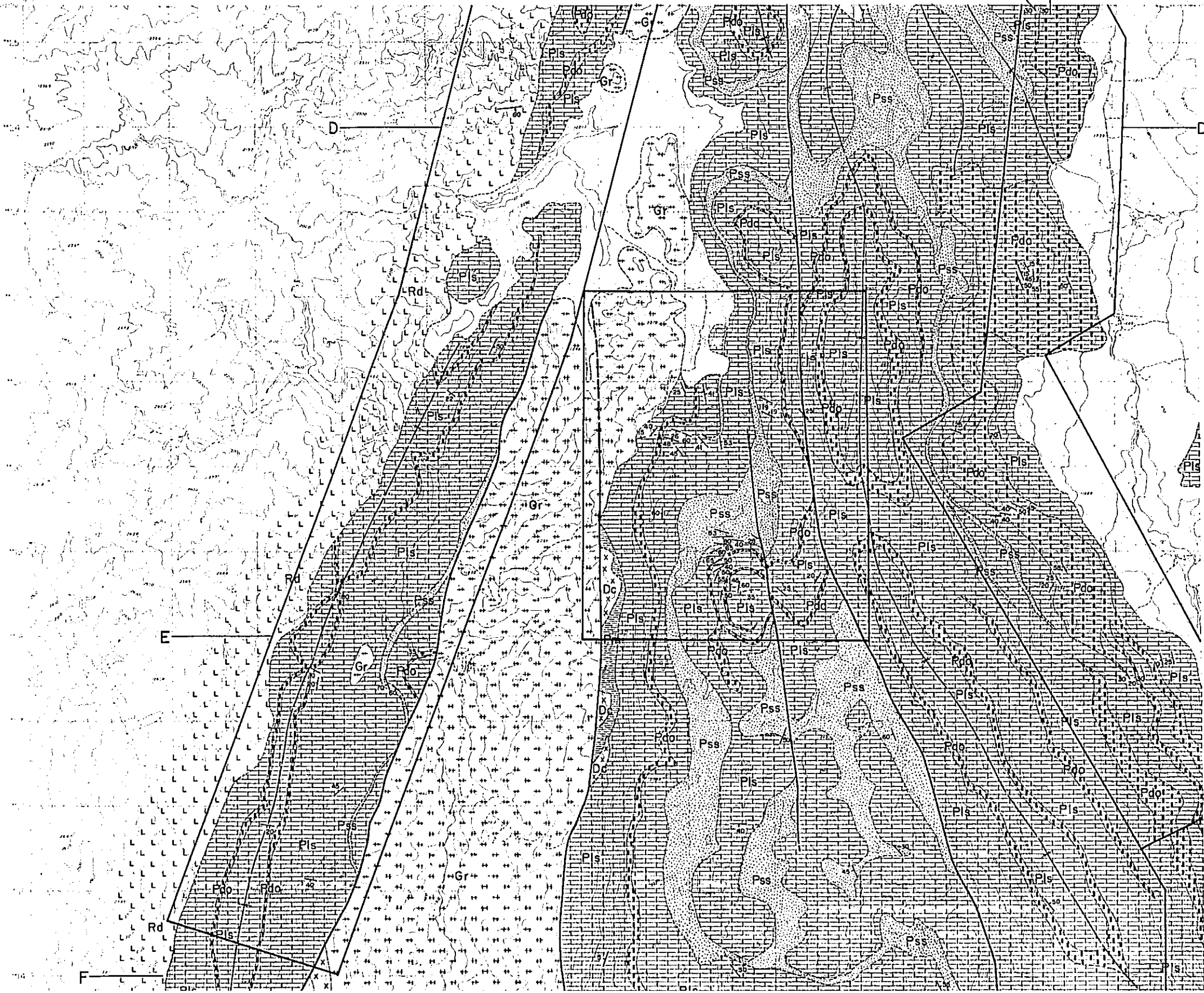
SEDIMENTARY		
	Gravel & Sand	Quaternary
	Mercad F.	Tertiary
	Chonta G.	Cretaceous
	Oriente G.	
	Sarayaquilla F.	Jurassic
	Limestone Sandstone	
	Pucara G.	Triassic
	Mitu G.	

IGNEOUS	
	Monzonite porphyry
	Rhyolite & Dacite
	Quartz porphyry & Granite porphyry
	Granite
	Diorite complex

	bedding plane
	synclinal folding axis
	anticlinal folding axis
	fault confirmed
	fault estimated
	geological boundary



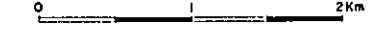
PL. I - 5 (3)

GEOLOGICAL SURVEY  
OF  
THE CORDILLERA ORIENTAL CENTRAL PERU  
(JUNE 1977)

**GEOLOGICAL MAP  
OF  
THE DETAILED SURVEY AREA**

METAL MINING AGENCY OF JAPAN  
JAPAN INTERNATIONAL COOPERATION AGENCY  
GOVERNMENT OF JAPAN  
FEBRUARY 1978  
prepared by MESCO, Inc.

Scale 1 : 25,000



**LEGEND**

**SEDIMENTARY**

- |  |                 |            |
|--|-----------------|------------|
|  | Gravel & Sand   | Quaternary |
|  | Merced F.       | Tertiary   |
|  | Chonta G.       | Cretaceous |
|  | Oriente G.      |            |
|  | Sarayaquillo F. | Jurassic   |
|  | Pucara G.       |            |
|  | Mitu G.         | Triassic   |

**IGNEOUS**

- |  |                                    |
|--|------------------------------------|
|  | Monzonite porphyry                 |
|  | Rhyolite & Dacite                  |
|  | Quartz porphyry & Granite porphyry |
|  | Granite                            |
|  | Diorite complex                    |

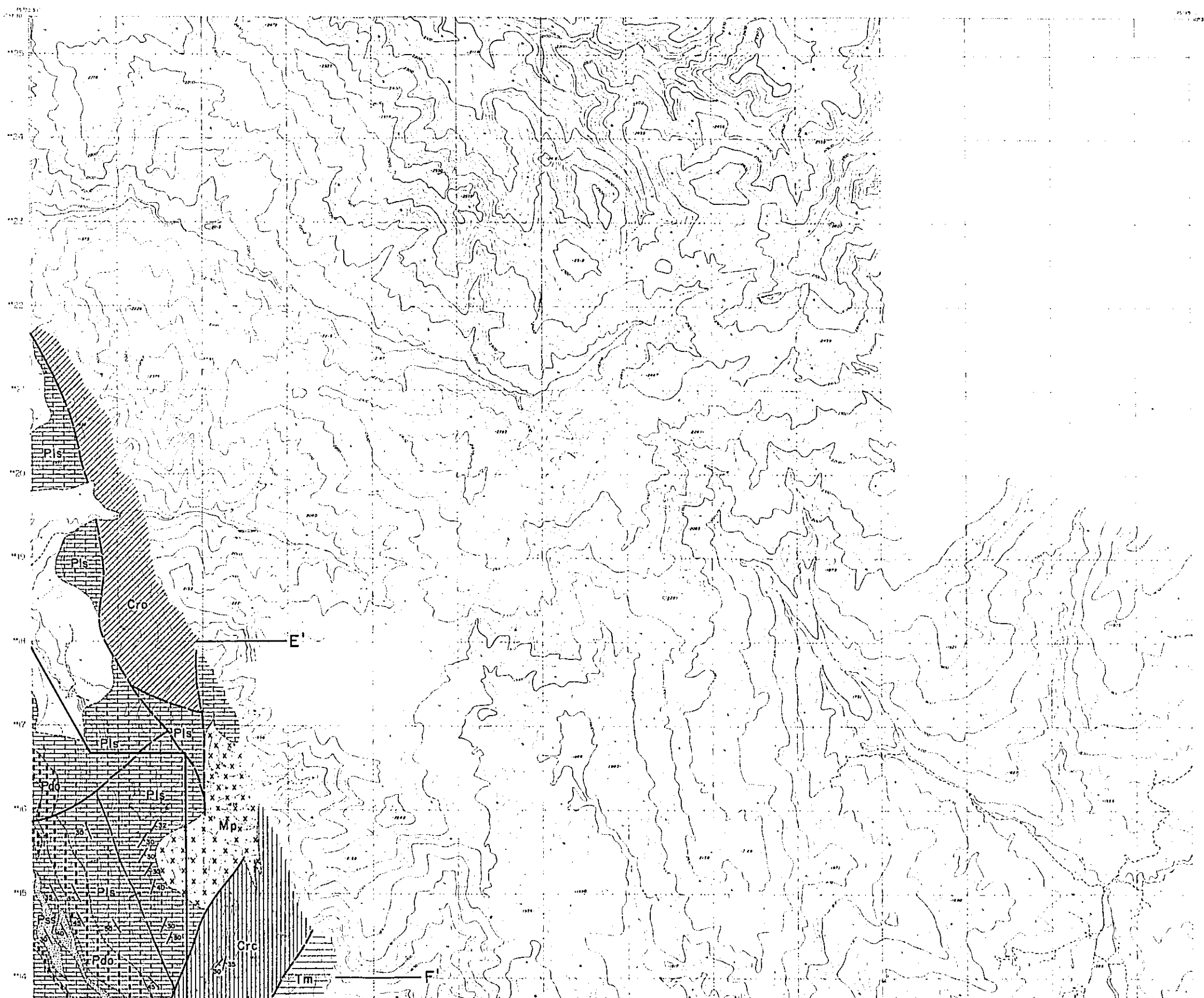
- bedding plane
- synclinal folding axis



JUNIN 1:25,000

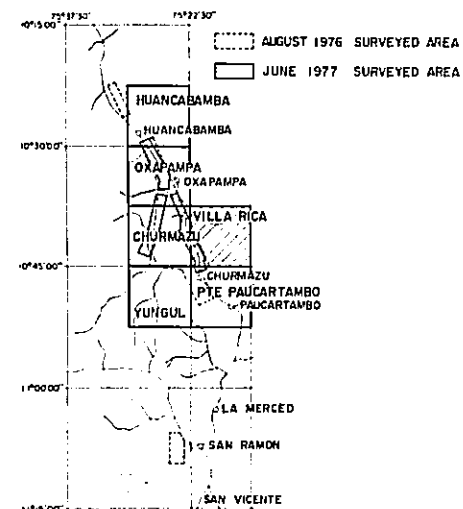
VILLA RICA

HOJA 22M-IV-SE

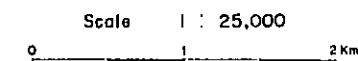


PL. I - 5141  
 08111  
 GEOLOGICAL SURVEY  
 OF  
 THE CORDILLERA ORIENTAL CENTRAL PERU  
 (JUNE 1977)

GEOLOGICAL MAP  
 OF  
 THE DETAILED SURVEY AREA



METAL MINING AGENCY OF JAPAN  
 JAPAN INTERNATIONAL COOPERATION AGENCY  
 GOVERNMENT OF JAPAN  
 FEBRUARY 1978  
 prepared by MESCO, Inc.



LEGEND

SEDIMENTARY

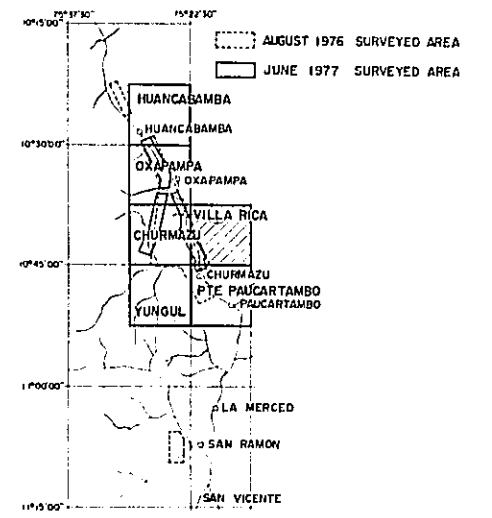
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[Symbol]	Merced F	Tertiary	
[Symbol]	Chonta G	Cretaceous	
[Symbol]	Oriente G		
[Symbol]	Sarayacuillo F.	Jurassic	
[Symbol]	Limestone Bolomita Sanctaria		Pucara G
[Symbol]	Mitu G	Triassic	

IGNEOUS

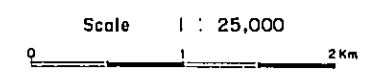
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[Symbol]	Rhyolite & Dacite
[Symbol]	Quartz porphyry & Granite porphyry
[Symbol]	Granite
[Symbol]	Diorite complex

[Symbol] bedding plane  
 [Symbol] synclinal folding axis

# GEOLOGICAL MAP OF THE DETAILED SURVEY AREA



METAL MINING AGENCY OF JAPAN  
JAPAN INTERNATIONAL COOPERATION AGENCY  
GOVERNMENT OF JAPAN  
FEBRUARY 1978  
prepared by MESCO, Inc.



## LEGEND

### SEDIMENTARY

	Gravel & Sand	Quaternary	
	Merced F.	Tertiary	
	Chonta G.	Cretaceous	
	Oriente G.		
	Sarayaquillo F.	Jurassic	
	Pucara G.		
	Mito G.	Triassic	

### IGNEOUS

	Monzonite porphyry
	Rhyolite & Dacite
	Quartz porphyry & Granite porphyry
	Granite
	Diorite complex

	bedding plane
	synclinal folding axis
	anticlinal folding axis
	fault
	geological boundary





JUNIN 1:25,000

YUNGUL

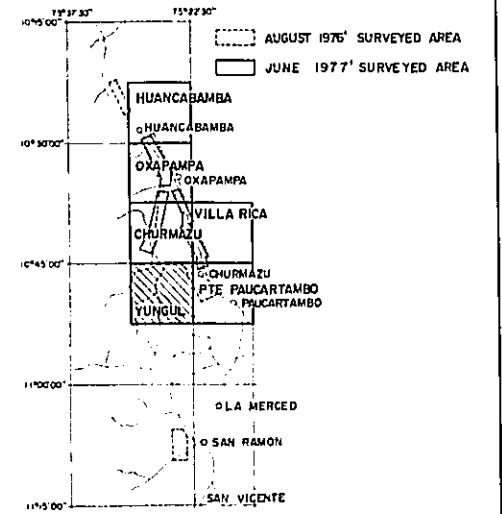
HOJA 22M-III-NO

010111  
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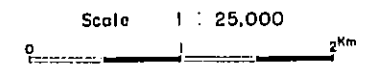
PL. I - 5. (5)

GEOLOGICAL SURVEY  
OF  
THE CORDILLERA ORIENTAL CENTRAL PERU  
(JUNE 1977)

GEOLOGICAL MAP  
OF  
THE DETAILED SURVEY AREA



METAL MINING AGENCY OF JAPAN  
JAPAN INTERNATIONAL COOPERATION AGENCY  
GOVERNMENT OF JAPAN  
FEBRUARY 1978  
prepared by MESCO, Inc.



LEGEND

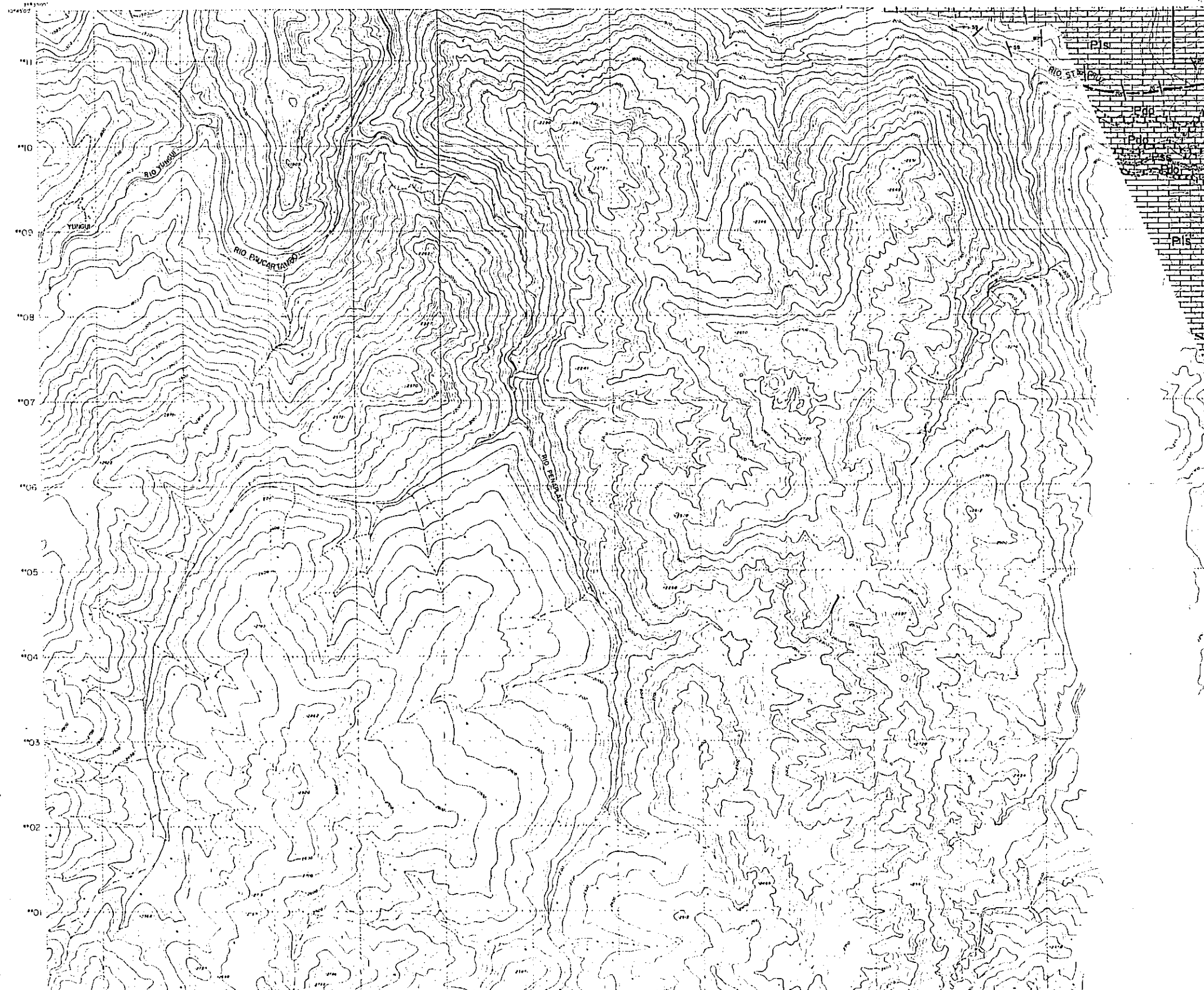
SEDIMENTARY

[Symbol]	Gravel & Sand	Quaternary
[Symbol]	Merced F.	Tertiary
[Symbol]	Chonta G.	Cretaceous
[Symbol]	Oriente G.	
[Symbol]	Sanyaquilla F.	Jurassic
[Symbol]	Limestone Sandstone Pucara G.	
[Symbol]	Mitu G.	Triassic

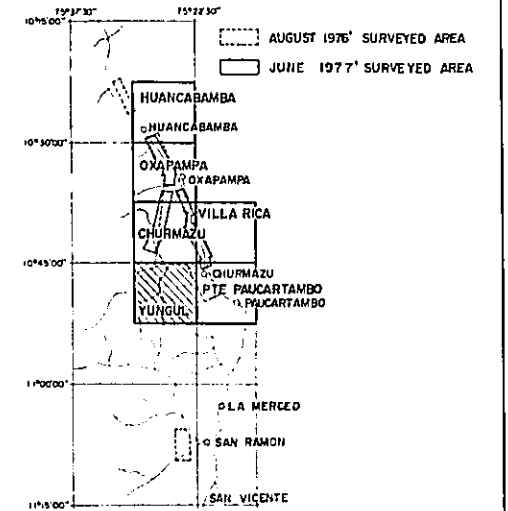
IGNEOUS

[Symbol]	Monzonite Porphyry
[Symbol]	Rhyolite & Dacite
[Symbol]	Quartz porphyry & Granite porphyry
[Symbol]	Granite
[Symbol]	Diorite complex

bedding plane  
synclinal folding axis



# GEOLOGICAL MAP OF THE DETAILED SURVEY AREA



METAL MINING AGENCY OF JAPAN  
 JAPAN INTERNATIONAL COOPERATION AGENCY  
 GOVERNMENT OF JAPAN  
 FEBRUARY 1978

prepared by MESCO, Inc.

Scale 1 : 25,000



## LEGEND

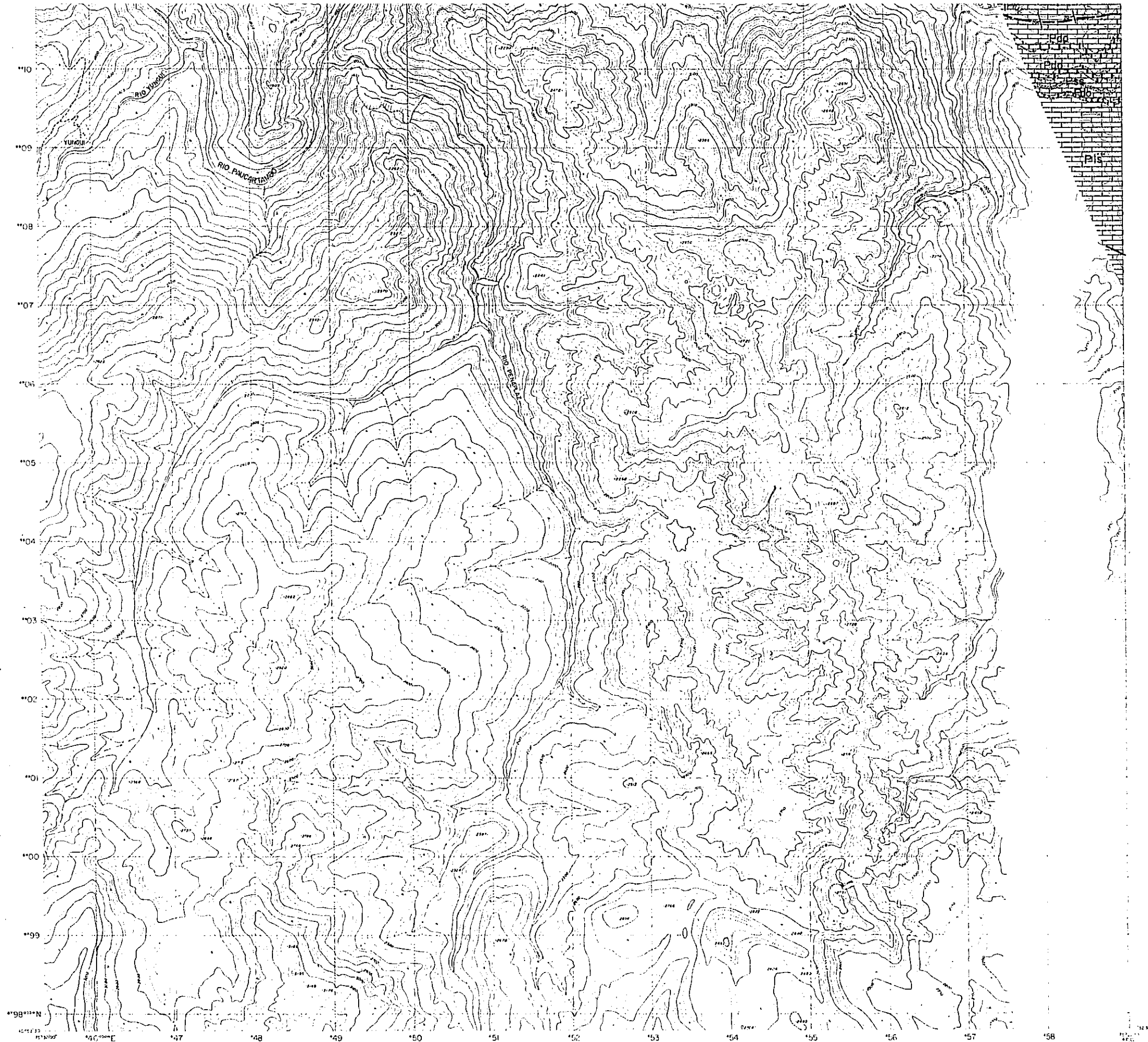
### SEDIMENTARY

	Gravel & Sand	Quaternary	
	Merced F.	Tertiary	
	Chonta G.	Cretaceous	
	Oriente G.		
	Sarayocullo F.	Jurassic	
	Pucara G.		
	Mitu G.	Triassic	

### IGNEOUS

	Monzonite Porphyry
	Rhyolite & Dacite
	Quartz porphyry & Granite porphyry
	Granite
	Diorite complex

	bedding plane
	synclinal folding axis
	anticlinal folding axis
	fault
	geological boundary



JUNIN 1:25,000

# PTE PAUCARTAMBO

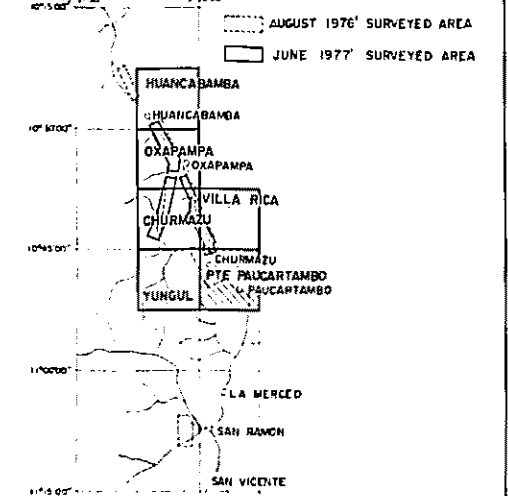
HOJA 22M-III-NE

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PL. I - 5. (6.)

GEOLOGICAL SURVEY  
OF  
THE CORDILLERA ORIENTAL CENTRAL PERU  
(JUNE 1977)

**GEOLOGICAL MAP  
OF  
THE DETAILED SURVEY AREA**



METAL MINING AGENCY OF JAPAN  
JAPAN INTERNATIONAL COOPERATION AGENCY  
GOVERNMENT OF JAPAN

FEBRUARY 1978

prepared by MESCO, Inc

Scale 1 : 25,000



## LEGEND

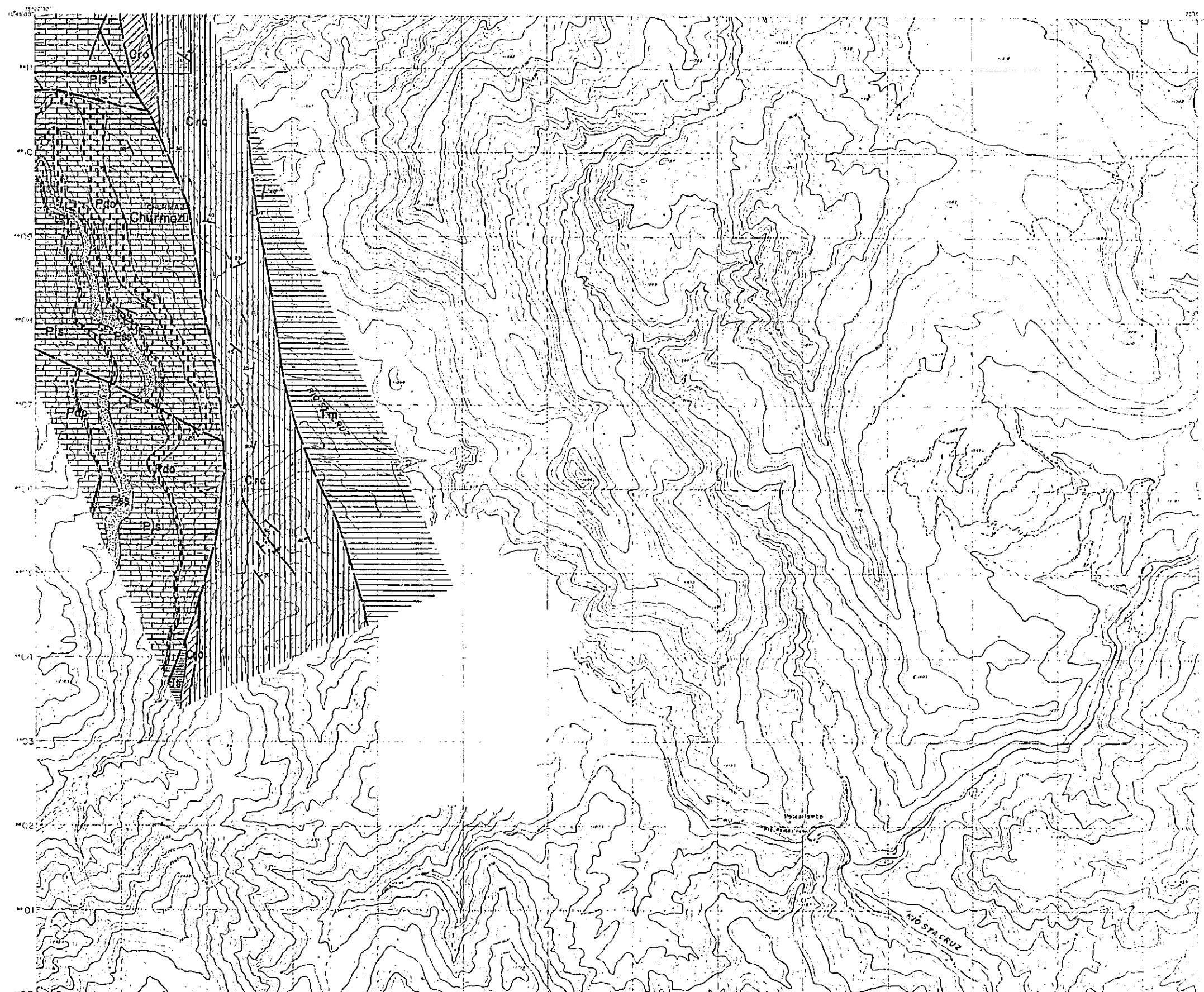
### SEDIMENTARY

- [Symbol] Gravel & Sand Quaternary
- [Symbol] Merced F Tertiary
- [Symbol] Chonta G Cretaceous
- [Symbol] Oriente G Cretaceous
- [Symbol] Sarayaquillo F Jurassic
- [Symbol] Pucara G Jurassic
- [Symbol] Milu G Triassic

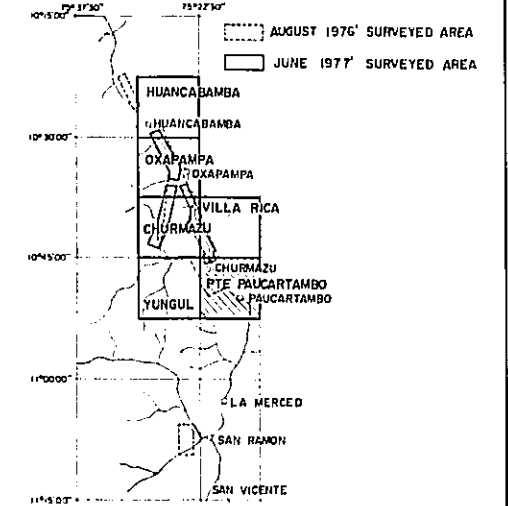
### IGNEOUS

- [Symbol] Manzonite Porphyry
- [Symbol] Rhyolite & Dacite
- [Symbol] Quartz porphyry & Granite porphyry
- [Symbol] Granite
- [Symbol] Diorite complex

bedding plane



# GEOLOGICAL MAP OF THE DETAILED SURVEY AREA



METAL MINING AGENCY OF JAPAN  
 JAPAN INTERNATIONAL COOPERATION AGENCY  
 GOVERNMENT OF JAPAN  
 FEBRUARY 1978  
 prepared by MESCO, Inc.

Scale 1 : 25,000



## LEGEND

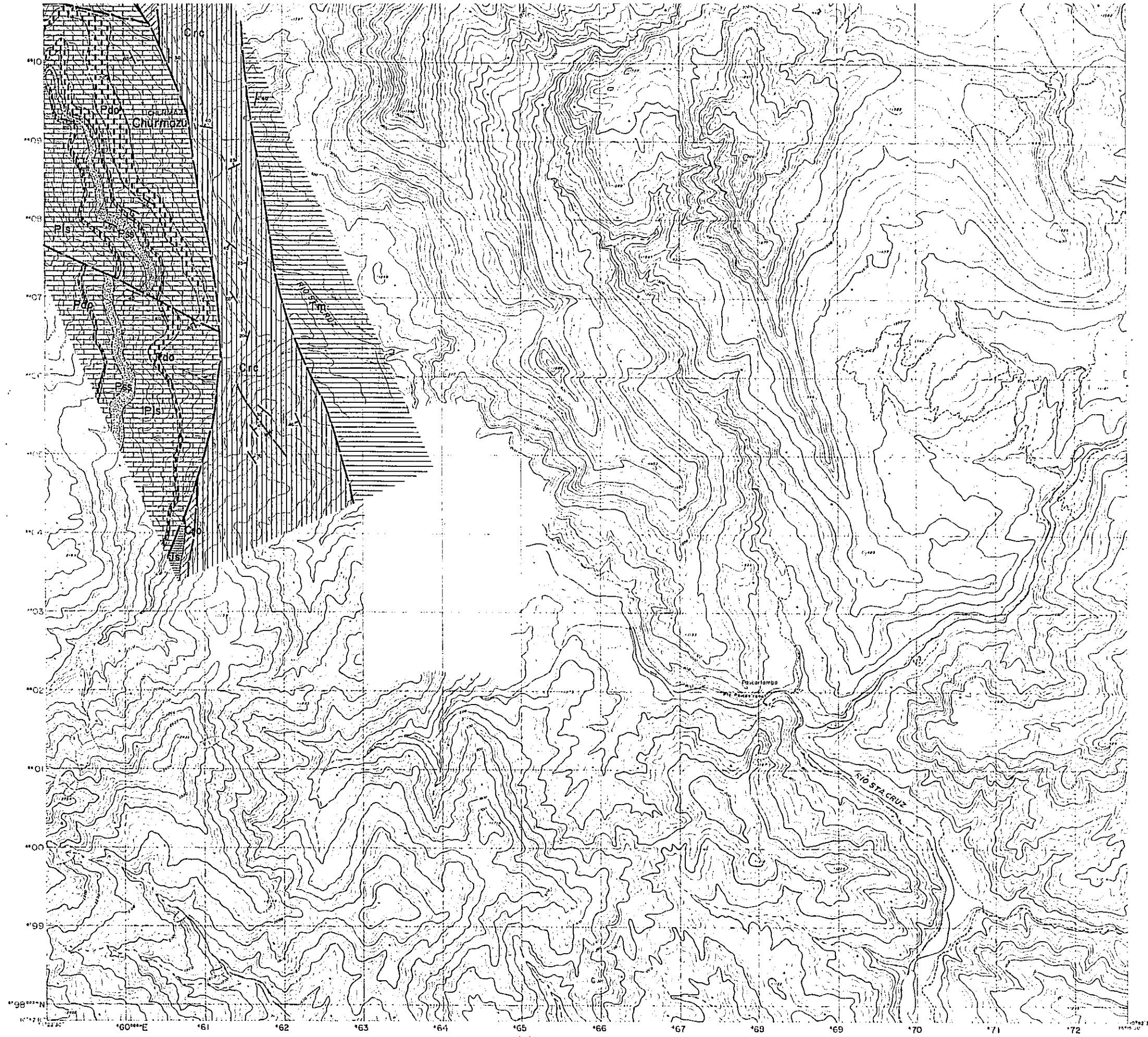
### SEDIMENTARY

[Blank]	Gravel & Sand	Quaternary
[Tm]	Merced F.	Tertiary
[Crc]	Chonta G.	Cretaceous
[Cro]	Oriente G.	
[Js]	Sarayaquillo F.	Jurassic
[Pm]	Mitu G.	
[Puc]	Pucara G.	Triassic
[Lm]	Limestone	
[Sd]	Sandstone	

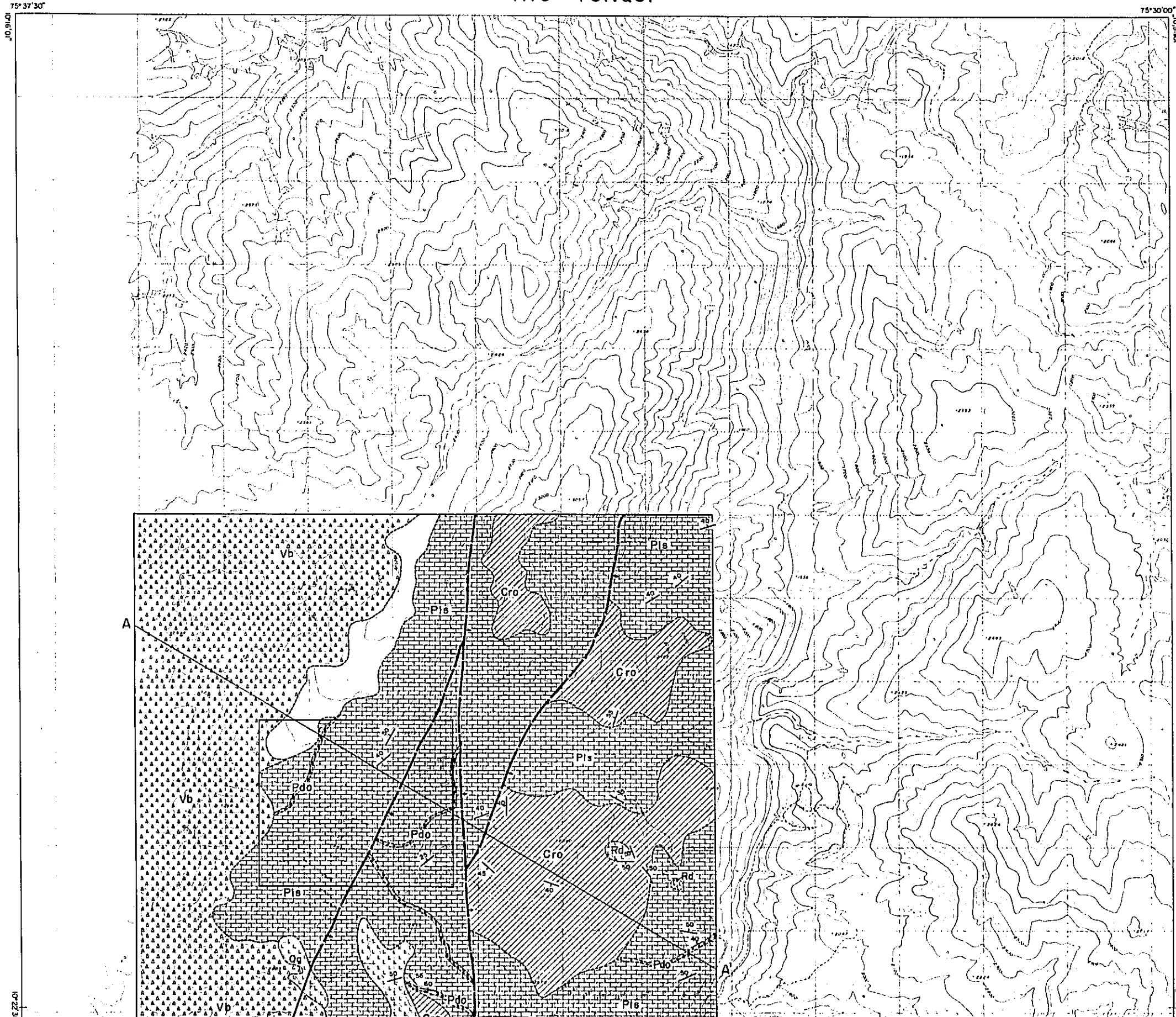
### IGNEOUS

[Mp]	Monzonite Porphyry
[Rd]	Rhyolite & Dacite
[Qg]	Quartz porphyry & Granite porphyry
[Gr]	Granite
[Dc]	Diorite complex

[Symbol]	bedding plane
[Symbol]	synclinal folding axis
[Symbol]	anticlinal folding axis
[Symbol]	fault
[Symbol]	
[Symbol]	estimated
[Symbol]	geological boundary

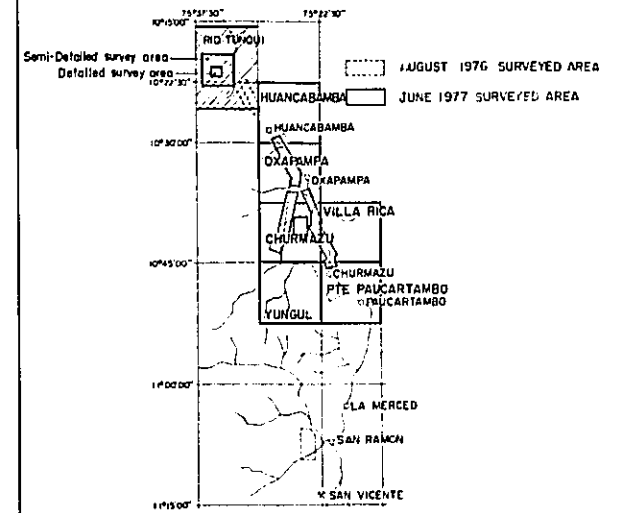


# RIO TUNQUI



PL. 1-5(7)  
PL. 1-7(2)

GEOLOGICAL SURVEY  
OF  
THE CORDILLERA ORIENTAL CENTRAL PERU  
(JUNE 1977)  
**GEOLOGICAL MAP AND PROFILE  
OF  
THE DETAILED SURVEY AREA  
(INCLUDING THE SEMI-DETAILED SURVEY AREA)**



METAL MINING AGENCY OF JAPAN  
JAPAN INTERNATIONAL COOPERATION AGENCY  
GOVERNMENT OF JAPAN

FEBRUARY 1978

prepared by MESCO, Inc.

Scale : 1 : 25,000



## LEGEND

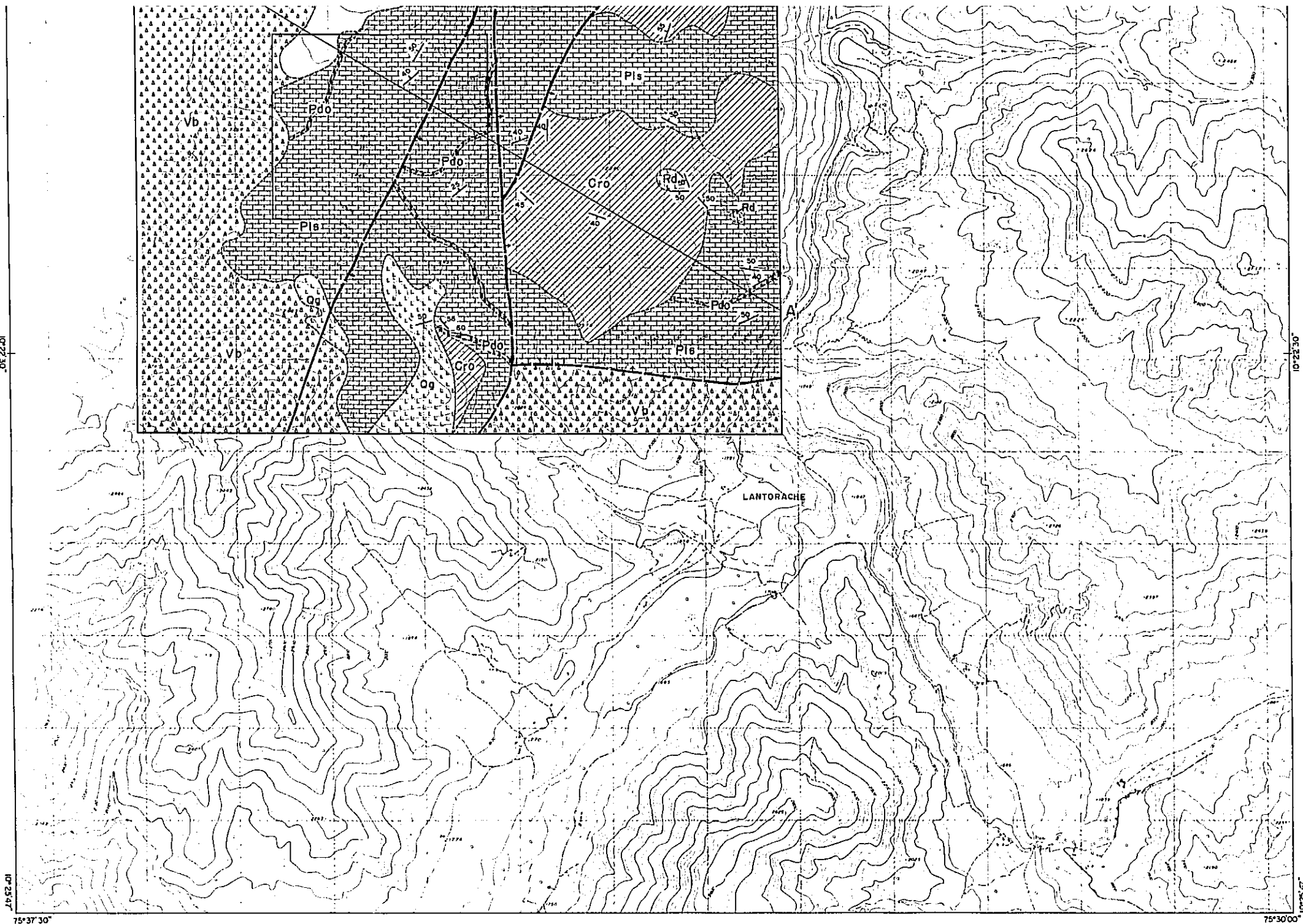
### SEDIMENTARY

	Gravel & Sand	Quaternary
	Merced F.	Tertiary
	Chonta G.	Cretaceous
	Oriente G.	
	Sarayaquilla F.	Jurassic
	Limestone Dolomite Sandstone	Pucara G.
	Mitu G.	Triassic

### IGNEOUS

	Volcanic breccia
	Monzonite porphyry
	Rhyolite & Dacite
	Quartz porphyry & Granite porphyry
	Granite
	Diorite complex

bedding plane



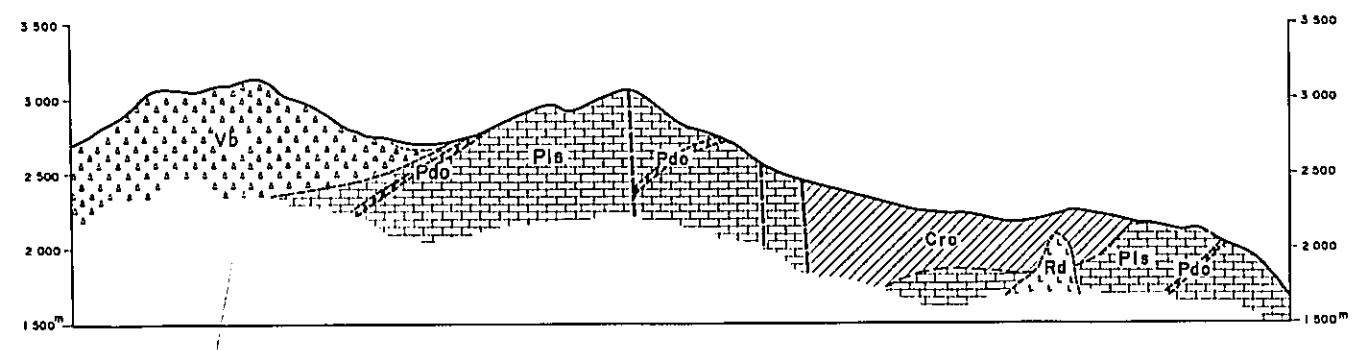
	Merced F.	Tertiary
	Chonta G.	Cretaceous
	Oriente G.	
	Sarayaquillo F.	Jurassic
	Limestone	Pucara G.
	Dolomite	
	Sandstone	Triassic
	Mitu G.	

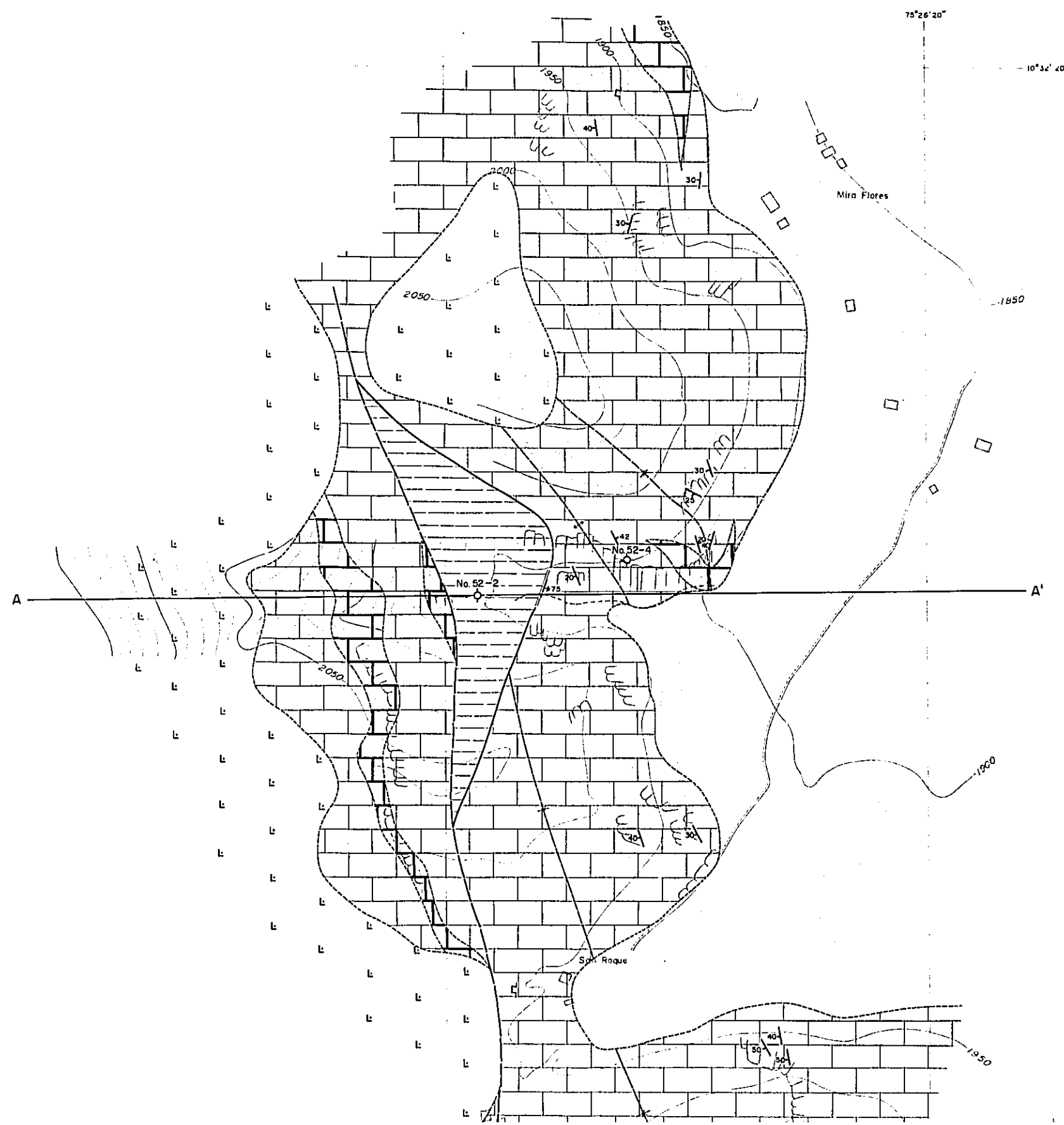
**IGNEOUS**

	Volcanic breccia
	Monzonite porphyry
	Rhyolite & Dacite
	Quartz porphyry & Granite porphyry
	Granite
	Diorite complex

- bedding plane
- synclinal folding axis
- anticlinal folding axis
- fault
  - confirmed
  - estimated
- geological boundary

SECTION A — A'





PL. I-6

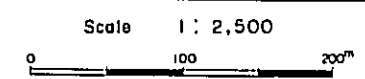
GEOLOGICAL SURVEY  
OF  
THE CORDILLERA ORIENTAL CENTRAL PERU  
(JUNE 1977)

**GEOLOGICAL MAP AND PROFILE  
OF  
THE SPECIALLY DETAILED SURVEY AREA  
(SAN ROQUE)**

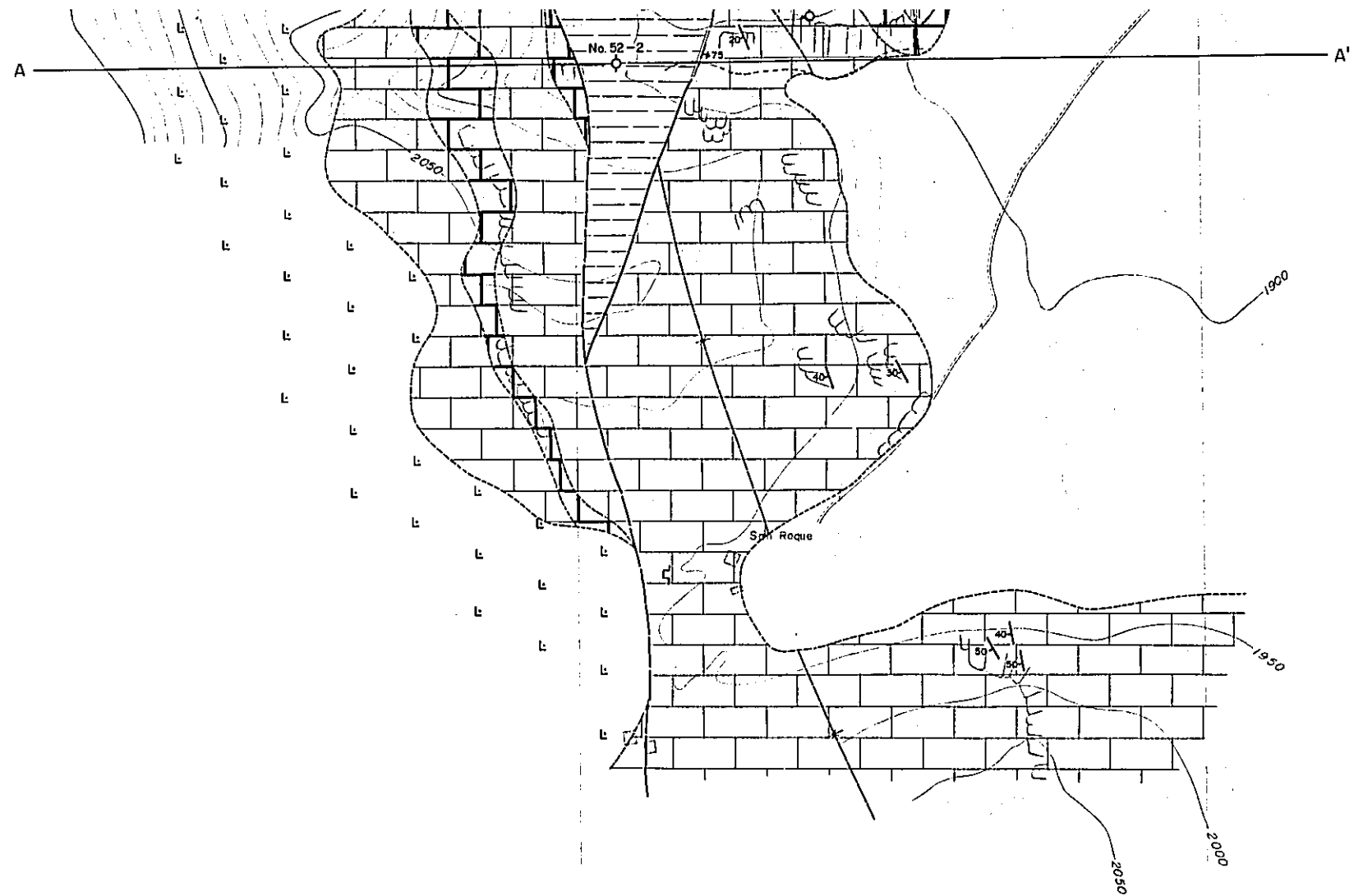
METAL MINING AGENCY OF JAPAN,  
JAPAN INTERNATIONAL COOPERATION AGENCY  
GOVERNMENT OF JAPAN

FEBRUARY 1978

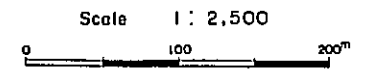
prepared by MESCO, Inc.



- LEGEND**
- Limestone
  - Dolomite
  - MITU G.
  - QUARTZ PORPHYRY & GRANITE PORPHYRY
  - FAULT { CONFIRMED
  - { ESTIMATED
  - SYNCLINAL AXIS
  - ANTICLINAL AXIS
  - BEDDING PLANE



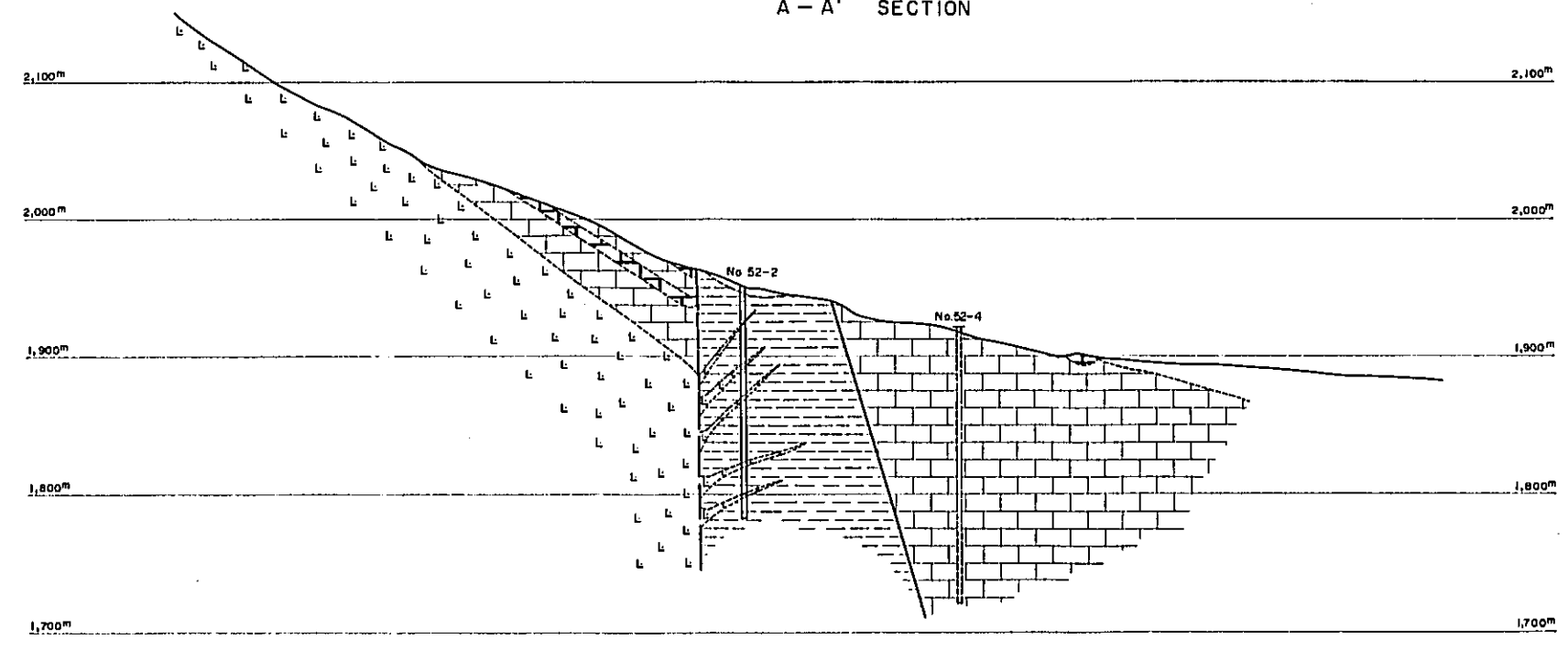
prepared by MESCO, Inc.



LEGEND

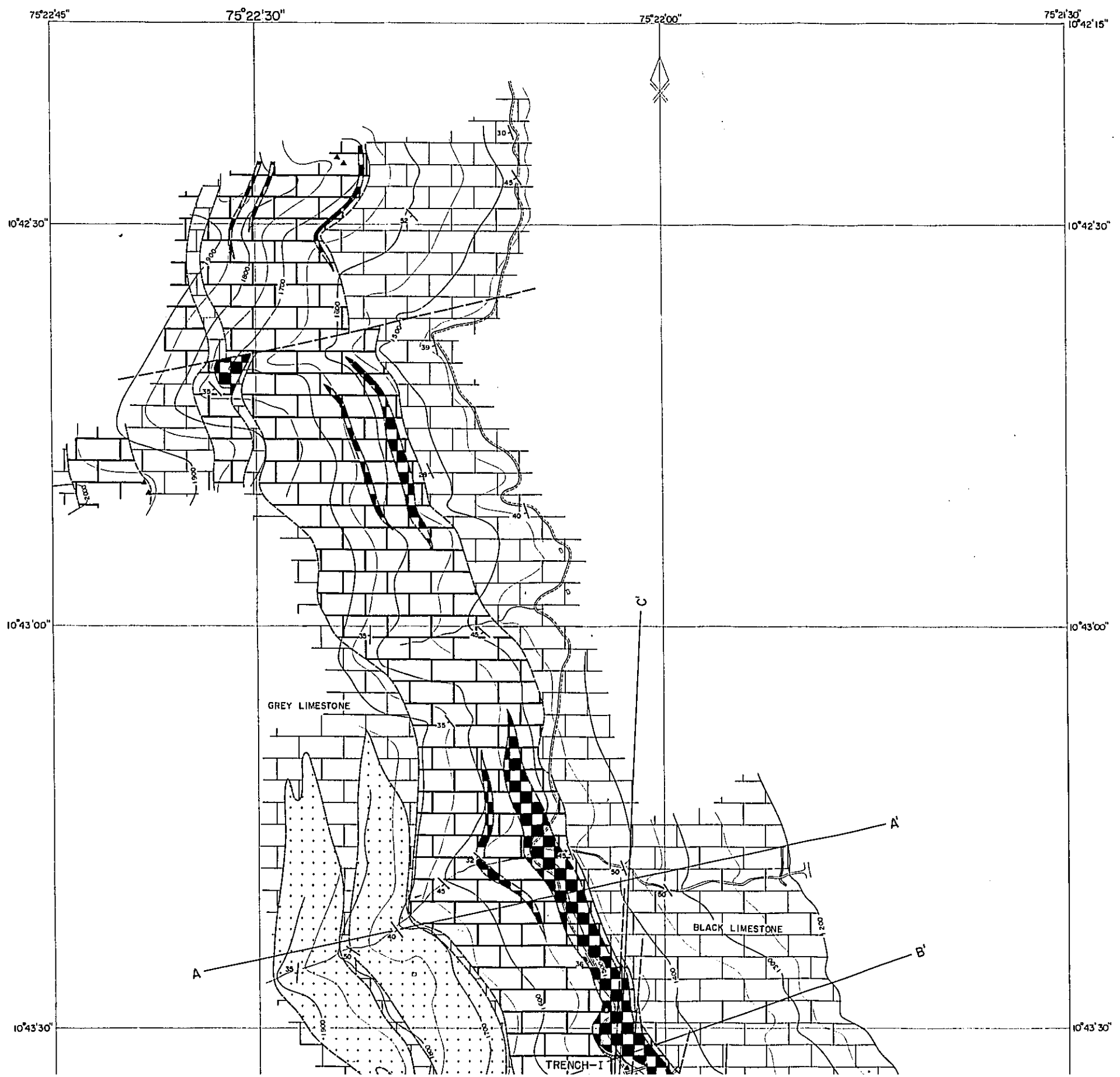
- LIMESTONE
- DOLOMITE
- MITU G.
- QUARTZ PORPHYRY & GRANITE PORPHYRY
- FAULT { CONFIRMED
- { ESTIMATED
- SYNCLINAL AXIS
- ANTICLINAL AXIS
- BEDDING PLANE
- DRILL HOLE

A - A' SECTION





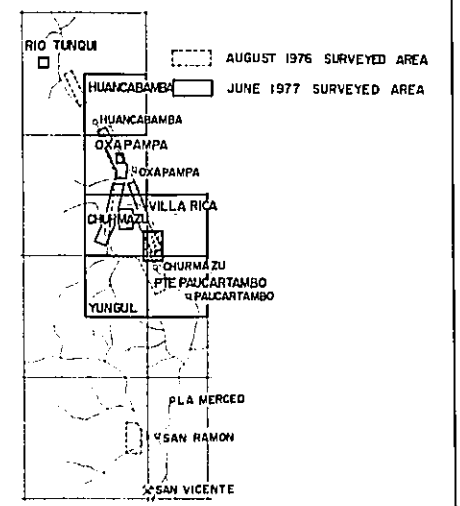
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PL. I - 6 (2)

GEOLOGICAL SURVEY  
 OF  
 THE CORDILLERA ORIENTAL CENTRAL PERU  
 (JUNE 1977)

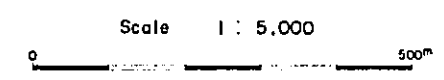
**GEOLOGICAL MAP AND PROFILES  
 OF  
 THE SPECIALLY DETAILED SURVEY AREA  
 (TAMBO MARIA)**



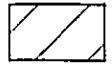

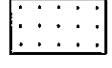



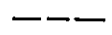
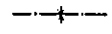
METAL MINING AGENCY OF JAPAN  
 JAPAN INTERNATIONAL COOPERATION AGENCY  
 GOVERNMENT OF JAPAN

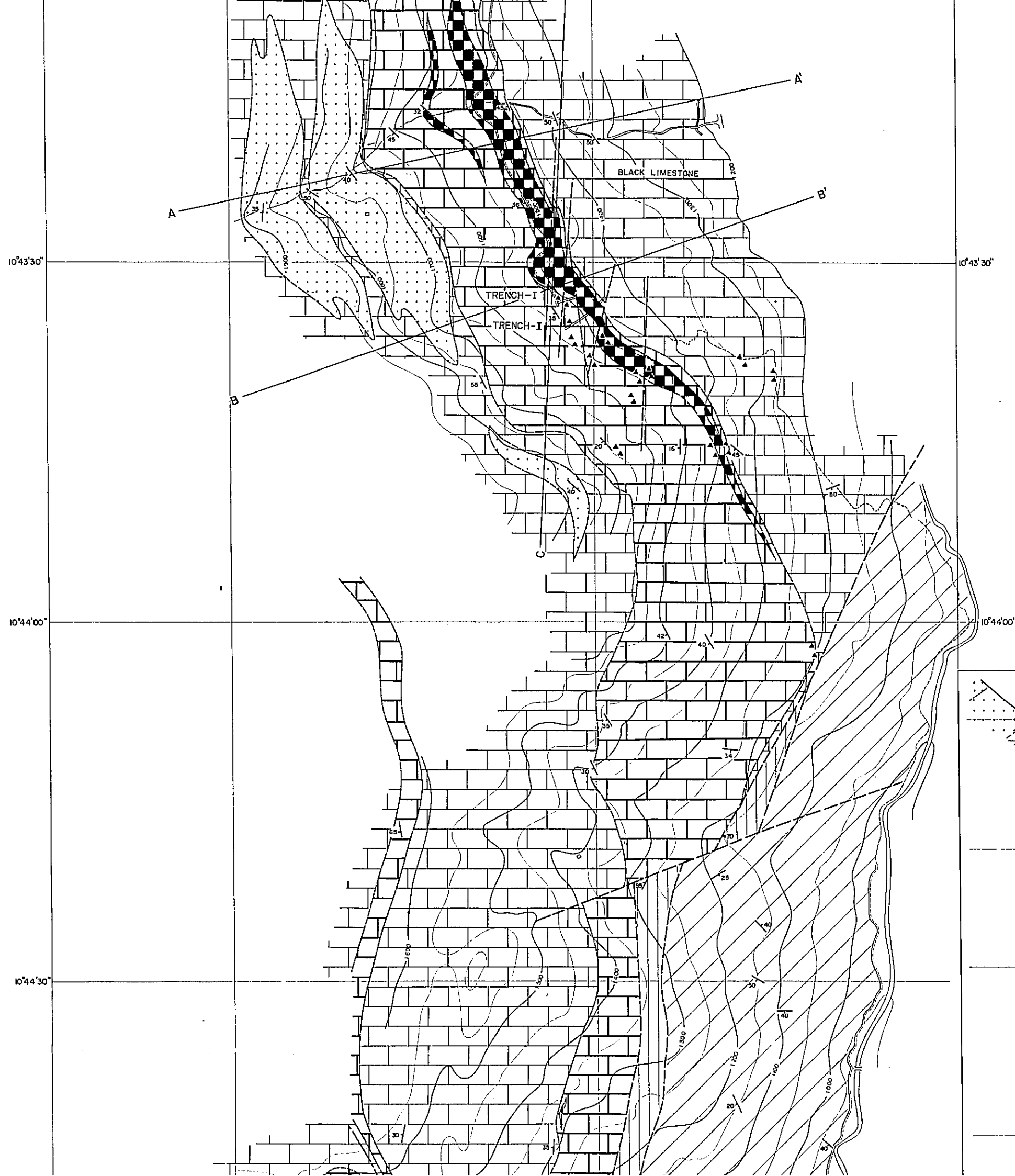
FEBRUARY 1978



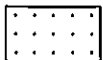
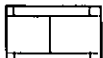
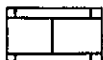



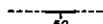

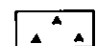
prepared by MESCO, Inc.

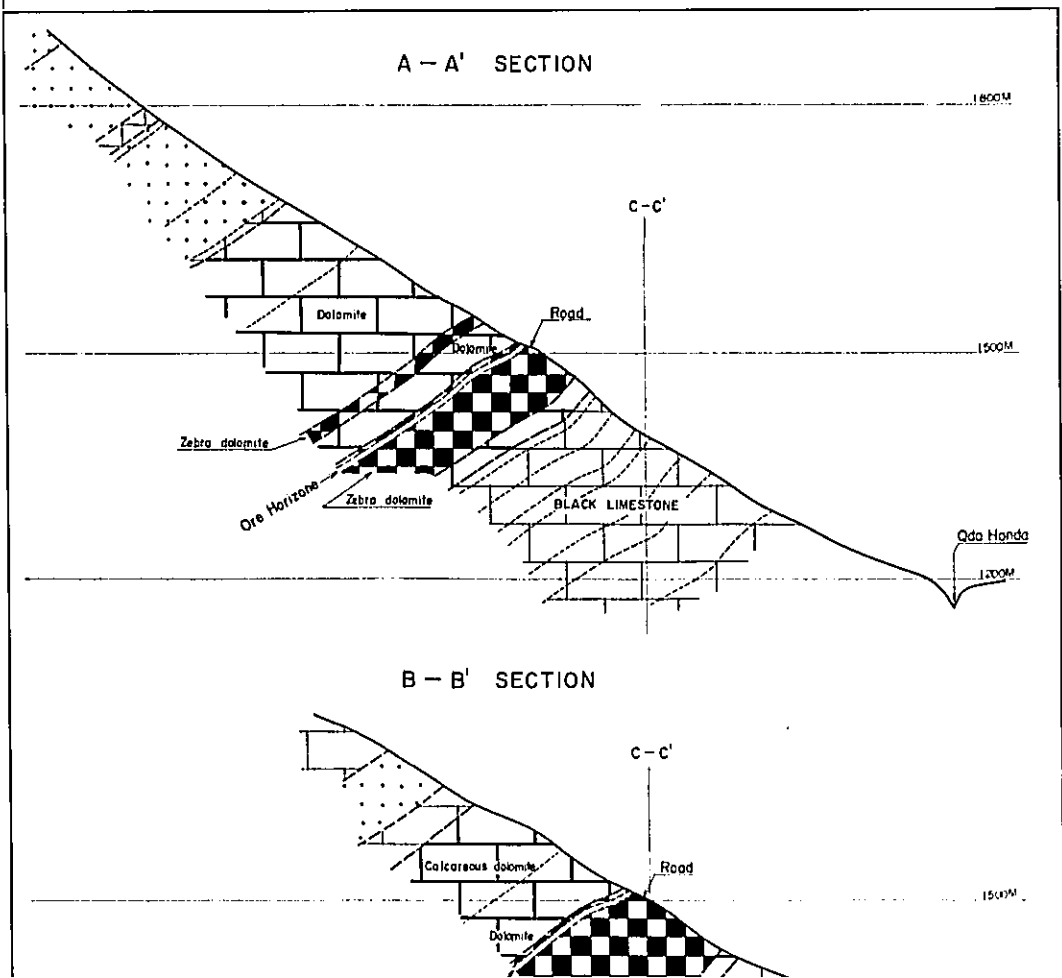


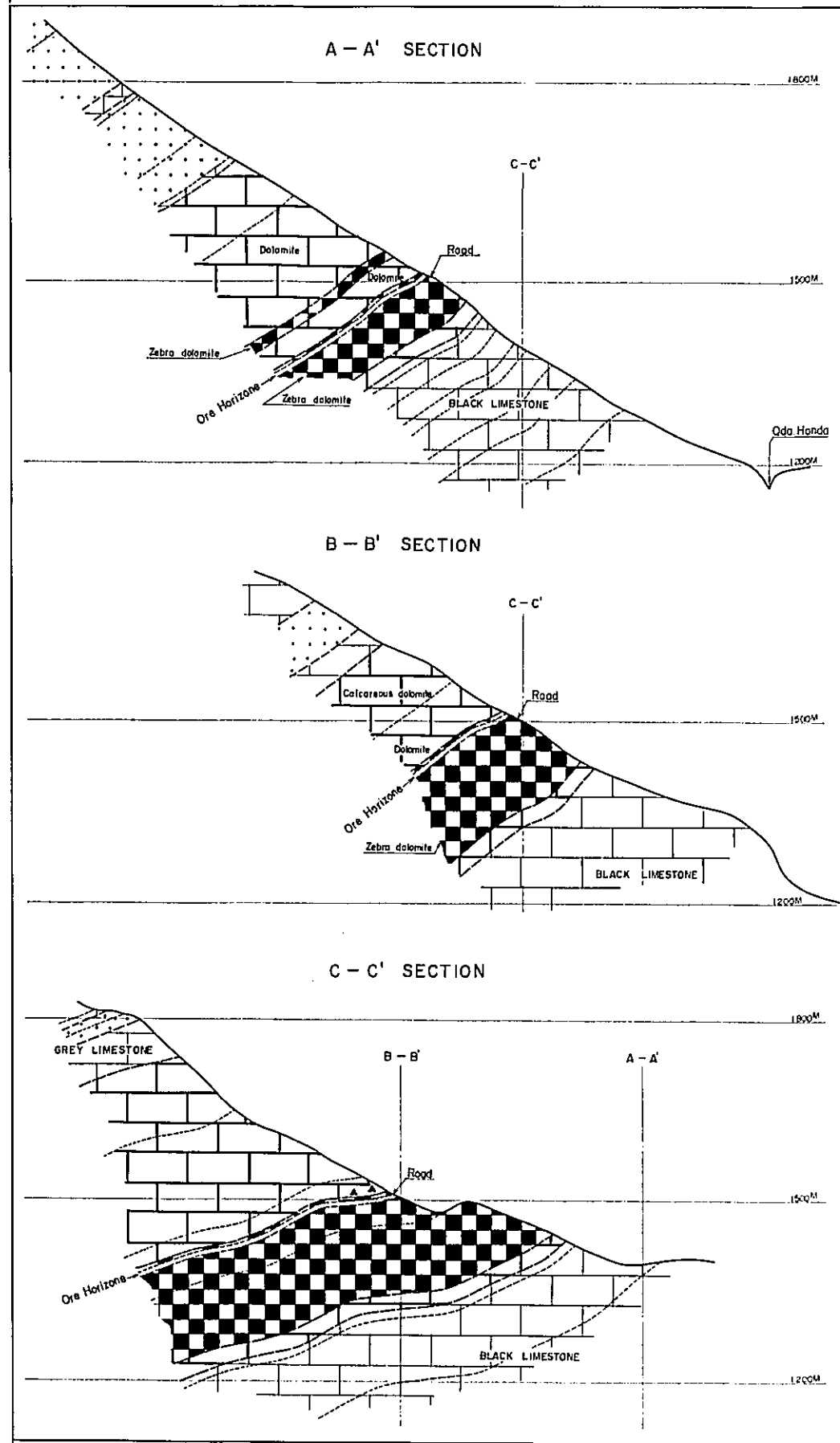
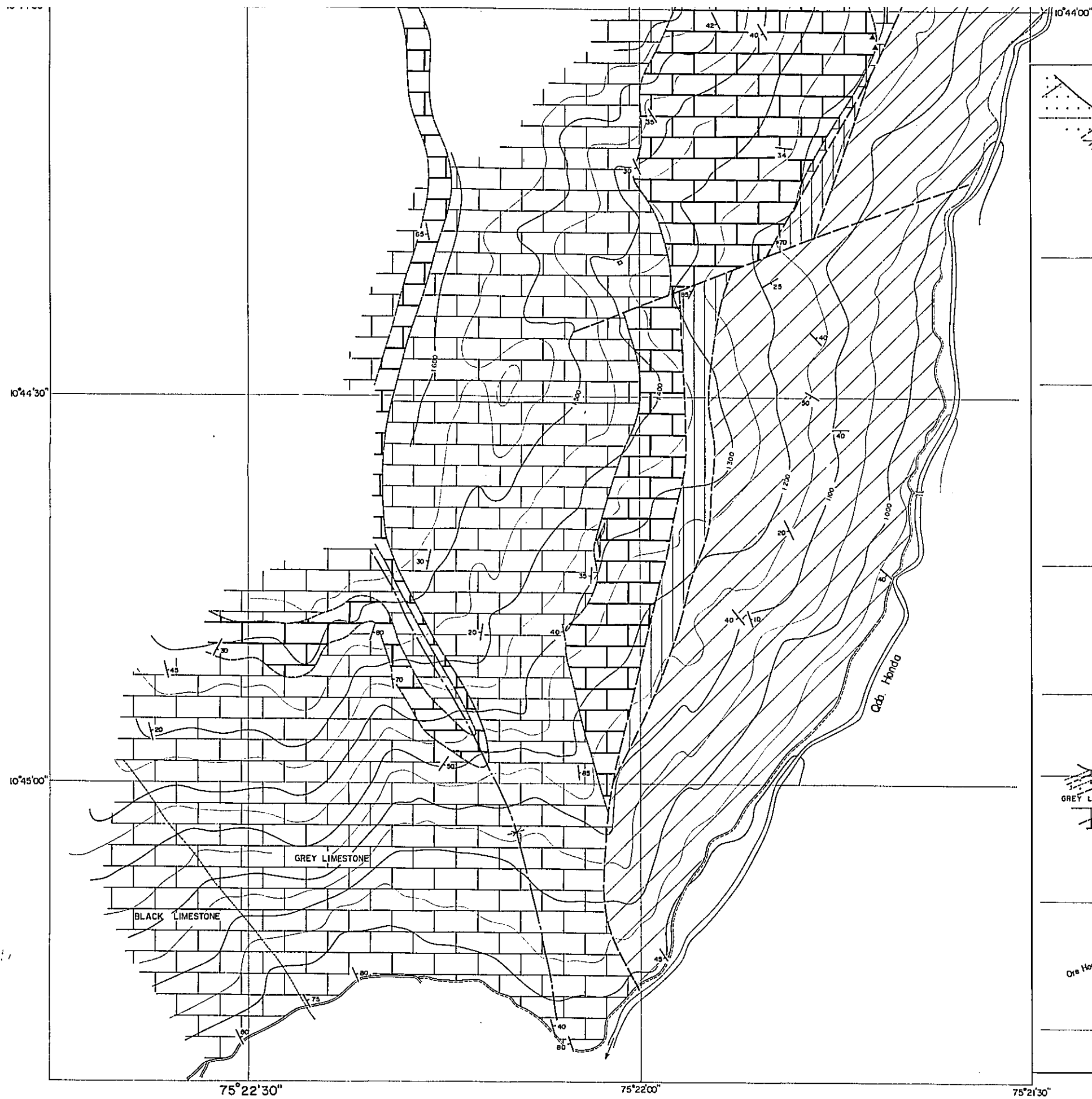
LEGEND

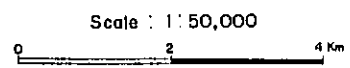
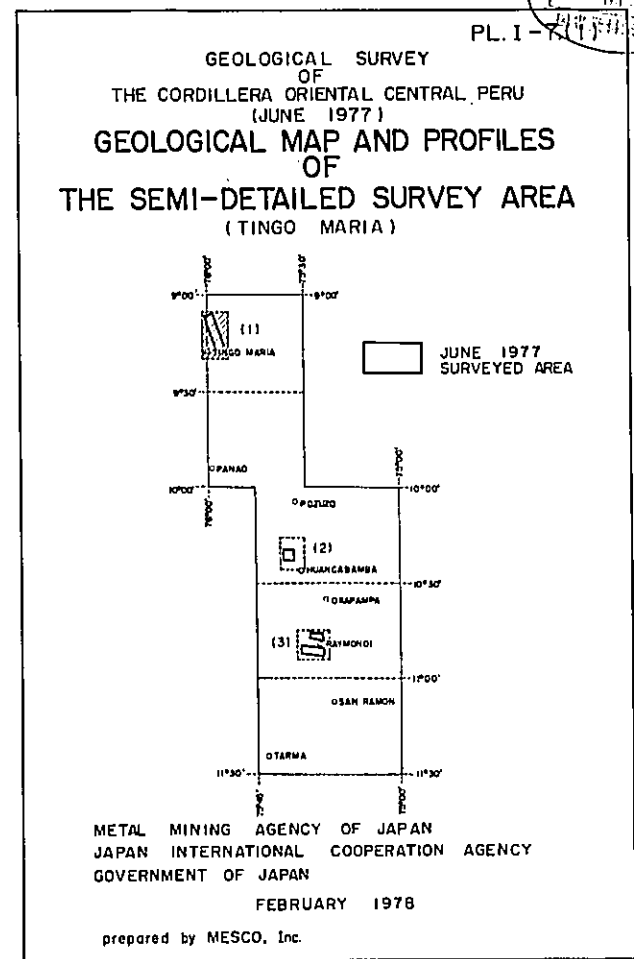
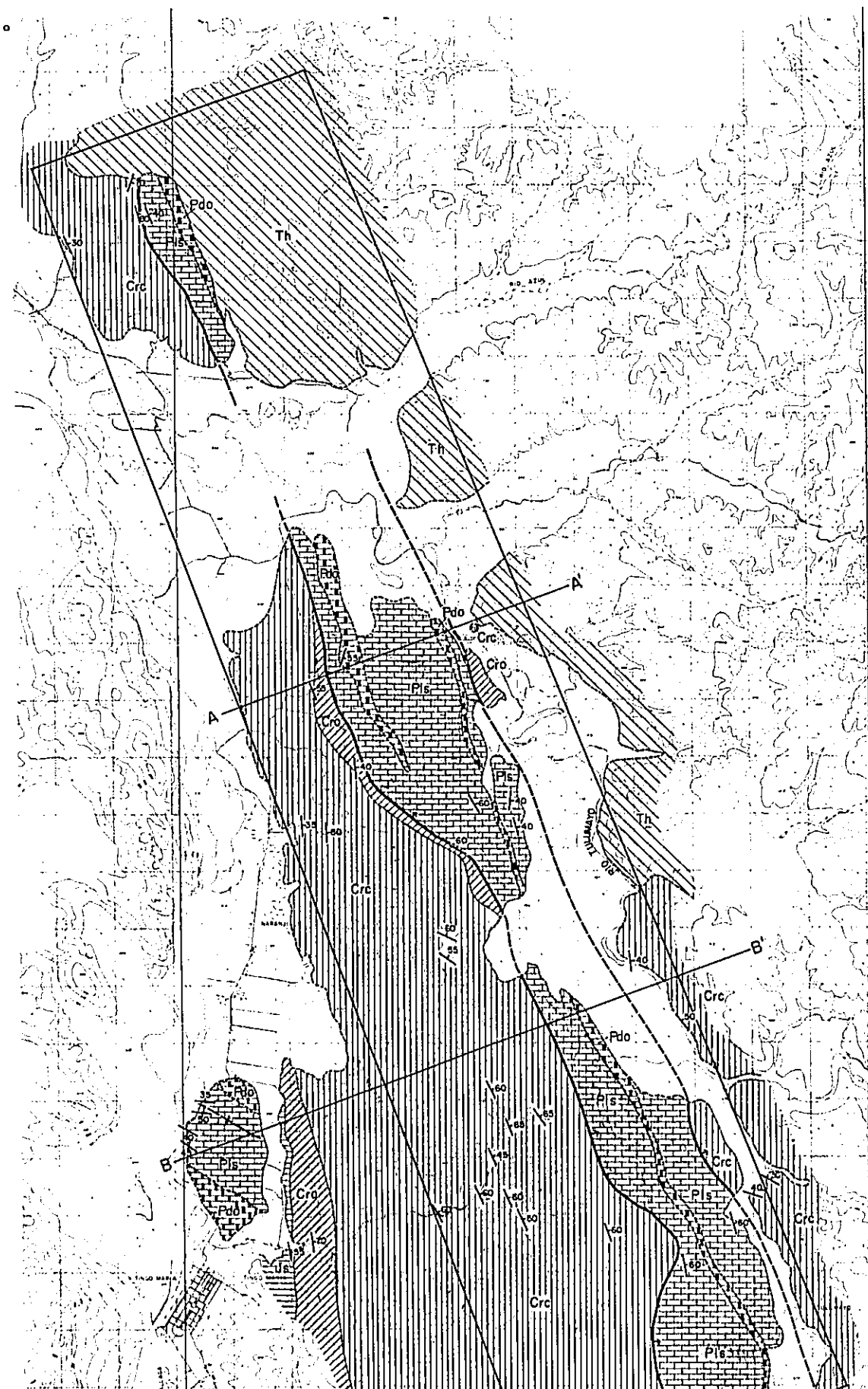
-  CHONTA G.
  -  ORIENTE G.
  -  SANDSTONE
  -  LIMESTONE
  -  OOLOMITE
  -  ZEBRA DOLOMITE
  -  FAULT
  -  SYNCLINAL AXIS
- } PUCARA G.
















-  CHONTA G.
  -  ORIENTE G.
  -  SANDSTONE
  -  LIMESTONE
  -  DOLOMITE
  -  ZEBRA DOLOMITE
  -  FAULT
  -  SYNCLINAL AXIS
  -  BEDDING PLANE
  -  ZINC ORE
  -  BRECCIATION IN DOLOMITE
- } PUCARA G.

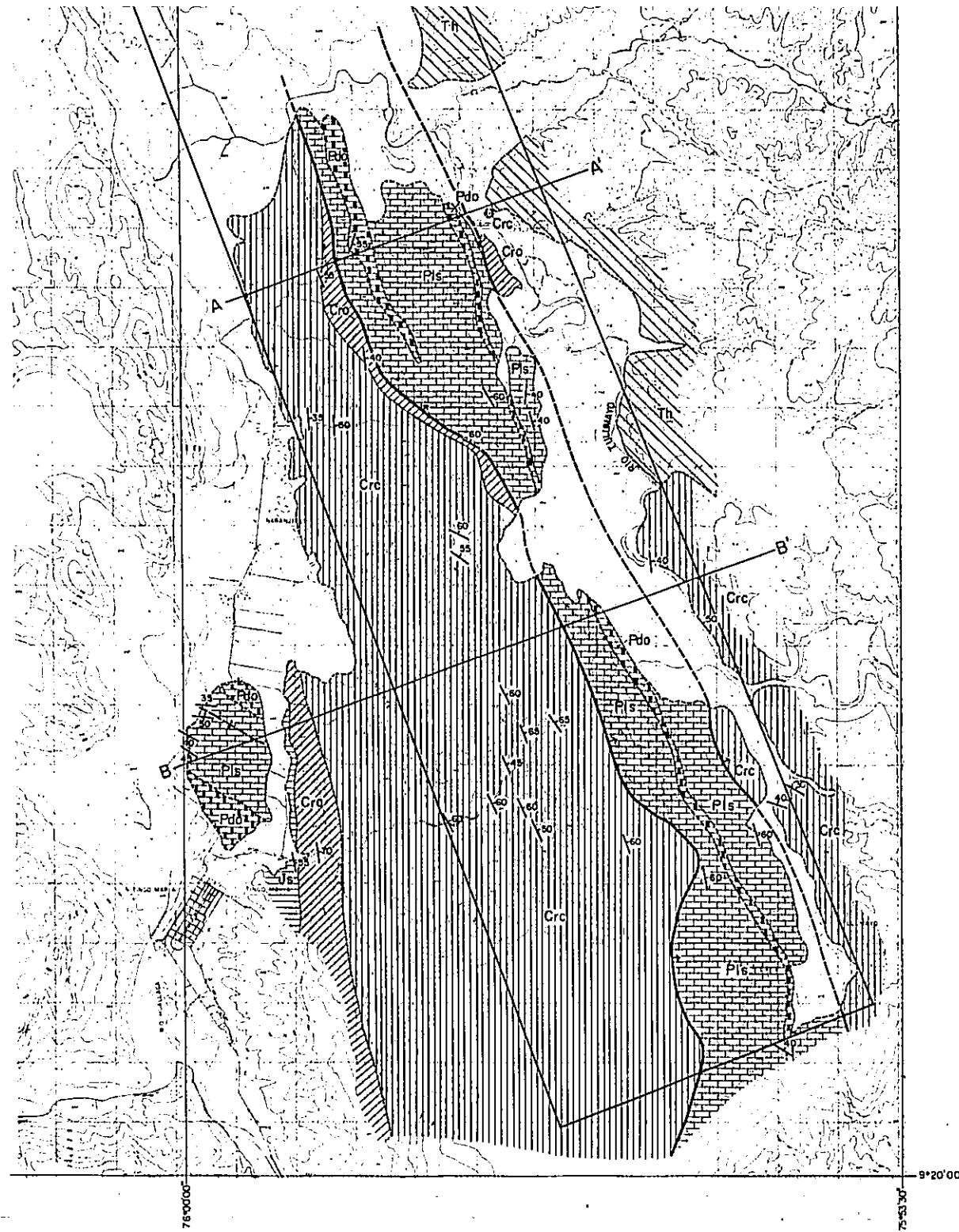




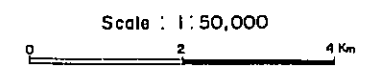


**LEGEND**

- |   |                                 |                     |
|---|---------------------------------|---------------------|
|  | Gravel & Sand                   | Quaternary          |
|  | Huayabamba F.                   | Tertiary            |
|  | Chonta G.                       | Cretaceous          |
|  | Oriente G.                      |                     |
|  | Sarayakuilla F.                 | Jurassic ~ Triassic |
|  | Limestone<br>Dolomite Pucara G. |                     |
- 
- |   |                         |
|---|-------------------------|
|  | bedding plane           |
|  | synclinal folding axis  |
|  | anticlinal folding axis |
|  | fault                   |
|  |                         |
|  | estimated               |
|  | geological boundary     |



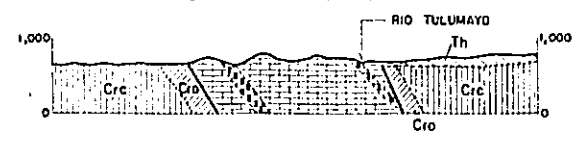
METAL MINING AGENCY OF JAPAN  
 JAPAN INTERNATIONAL COOPERATION AGENCY  
 GOVERNMENT OF JAPAN  
 FEBRUARY 1978  
 prepared by MESCO, Inc.



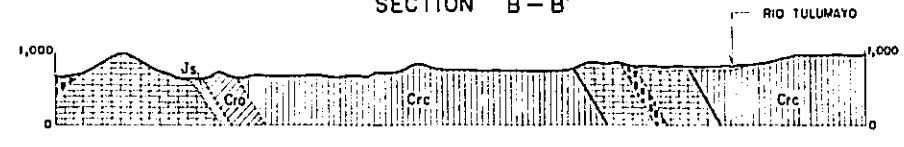
LEGEND

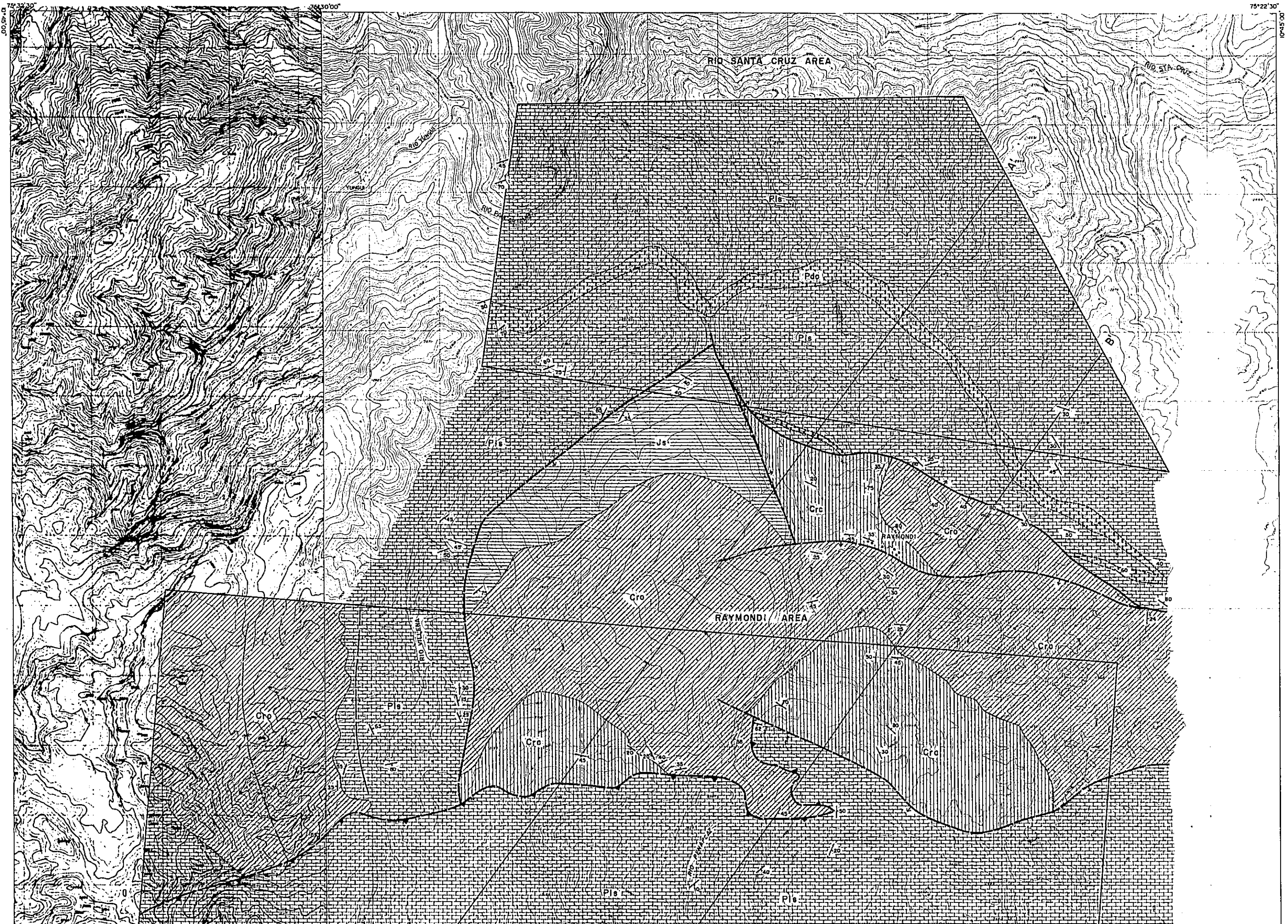
- |  |                       |                     |
|--|-----------------------|---------------------|
|  | Gravel & Sand         | Quaternary          |
|  | Huayabamba F.         | Tertiary            |
|  | Chonfa G.             | Cretaceous          |
|  | Oriente G.            |                     |
|  | Serayaquite F.        | Jurassic ~ Triassic |
|  | Limestone<br>Dolomite |                     |
- 
- |  |                         |
|--|-------------------------|
|  | bedding plane           |
|  | synclinal folding axis  |
|  | anticlinal folding axis |
|  | fault                   |
|  |                         |
|  | estimated               |
|  | geological boundary     |

SECTION A - A'



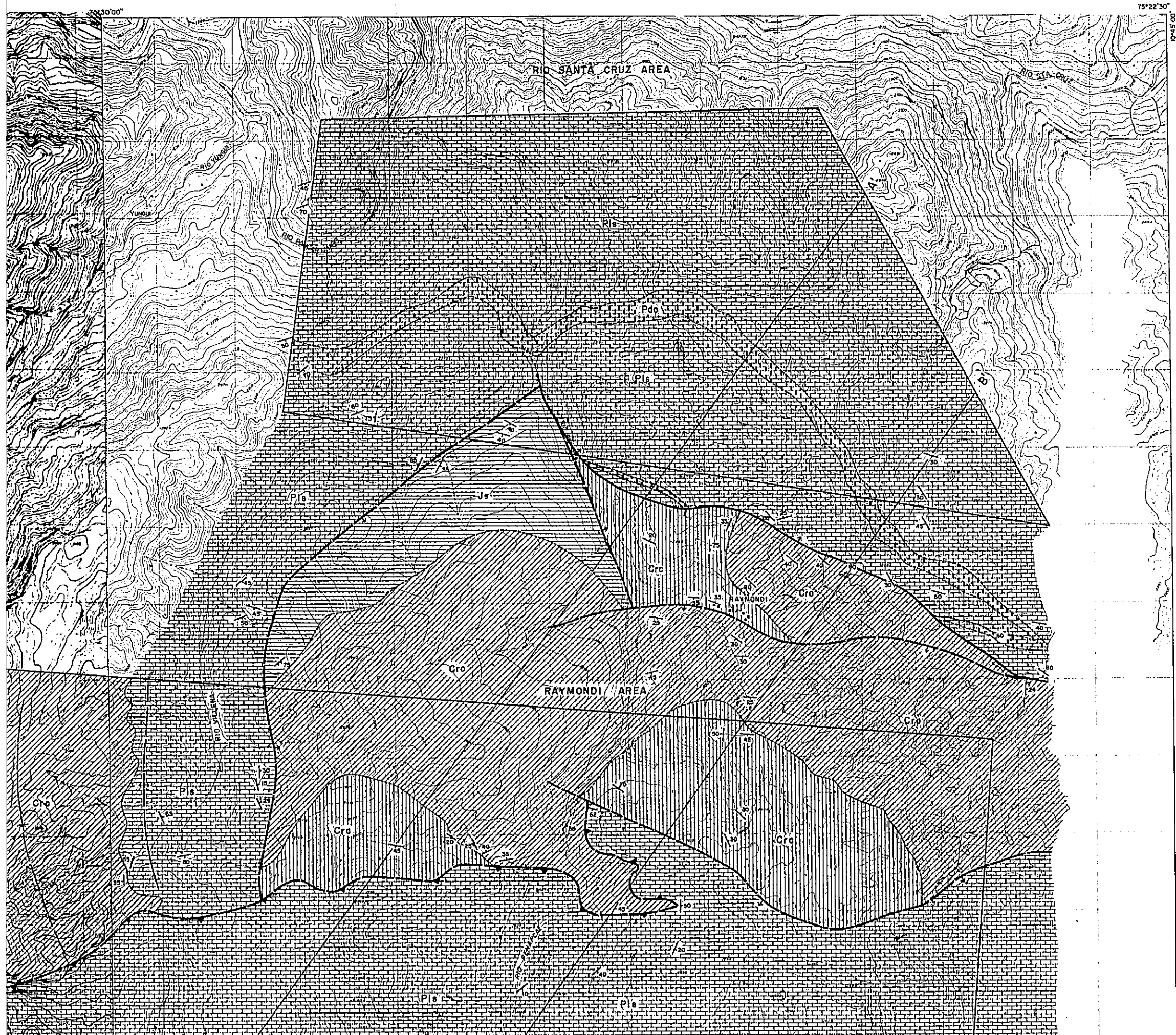
SECTION B - B'





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 7550  
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 GOVERNMENT  
 prepared by

- SEDIMENT:
- Chonta
  - Oriente
  - Sarayacu
  - Llaneros  
Columbino
- bedding  
 syncline  
 anticline  
 fault  
 thrust  
 geological



PL 1-7(3)

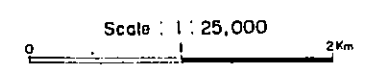
GEOLOGICAL SURVEY  
OF  
THE CORDILLERA ORIENTAL CENTRAL PERU  
(JUNE 1977)

**GEOLOGICAL MAP AND PROFILES  
OF  
THE SEMI-DETAILED SURVEY AREA  
(RIO SANTA CRUZ - RAYMONDI)**

JUNE 1977  
SURVEYED AREA

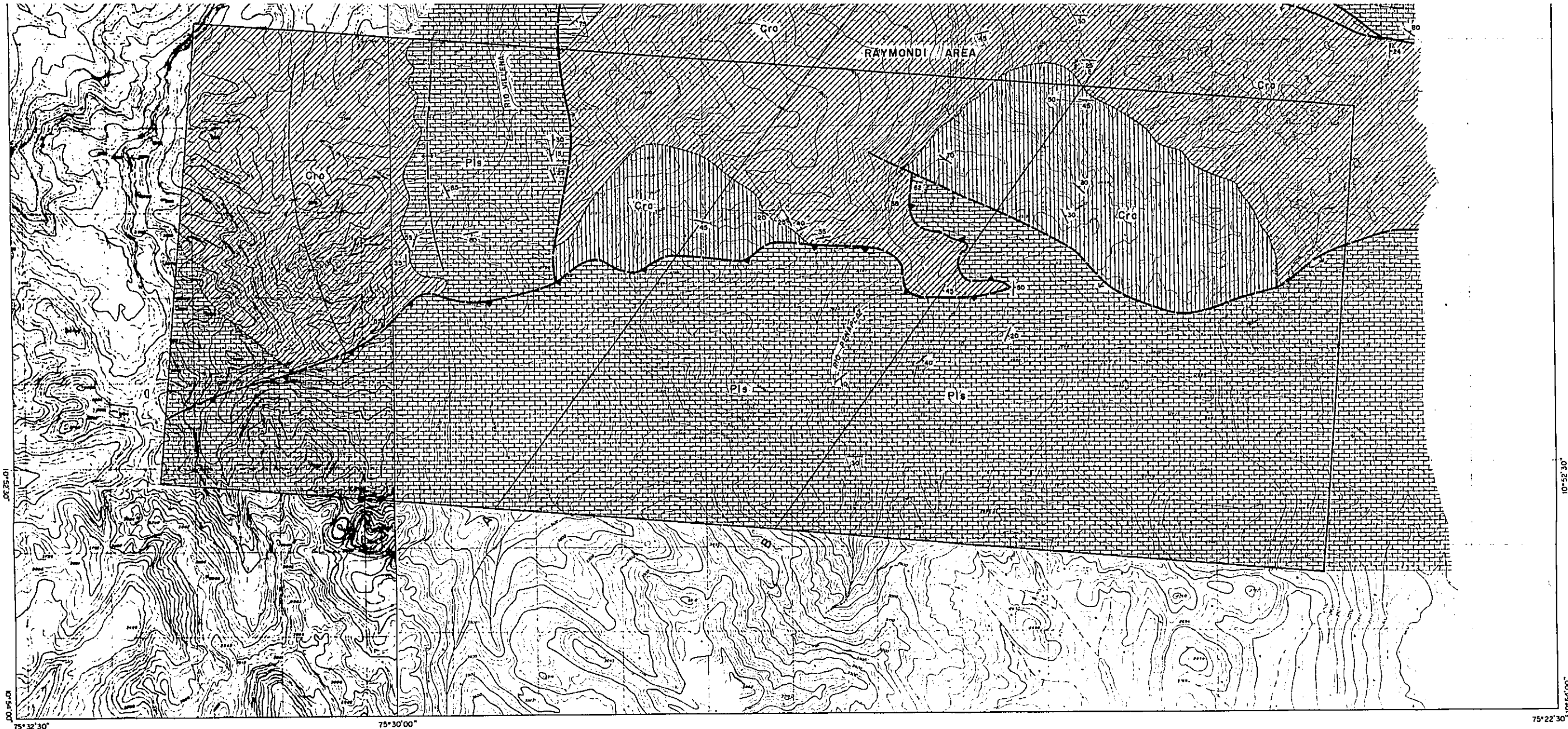
METAL MINING AGENCY OF JAPAN  
JAPAN INTERNATIONAL COOPERATION AGENCY  
GOVERNMENT OF JAPAN












FEBRUARY 1978  
prepared by MESCO, Inc.

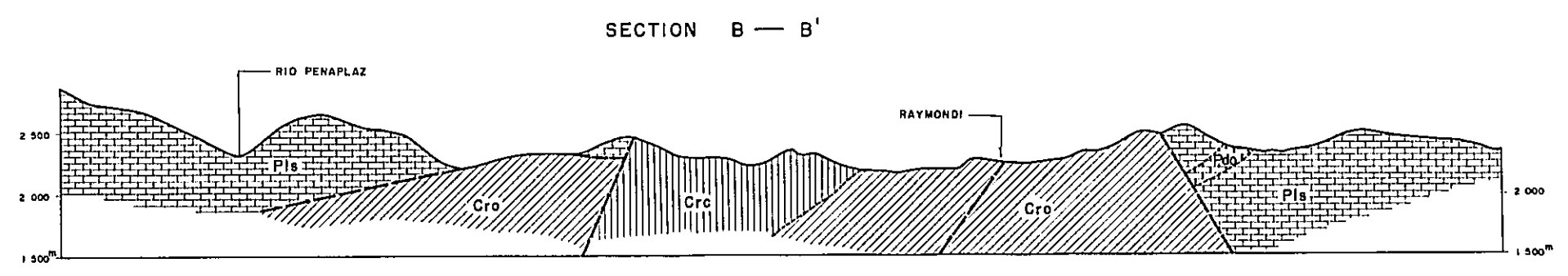
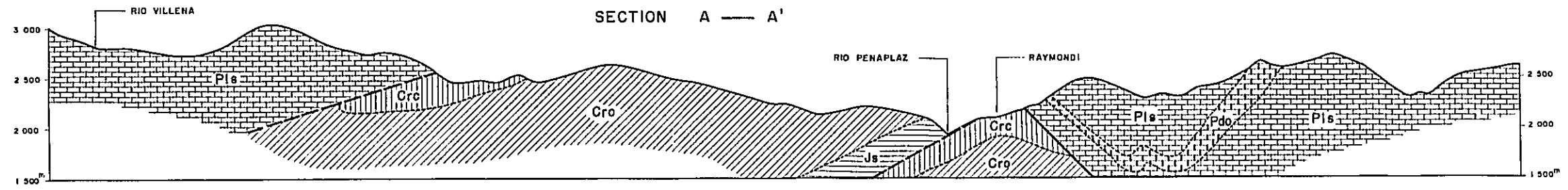


**LEGEND**

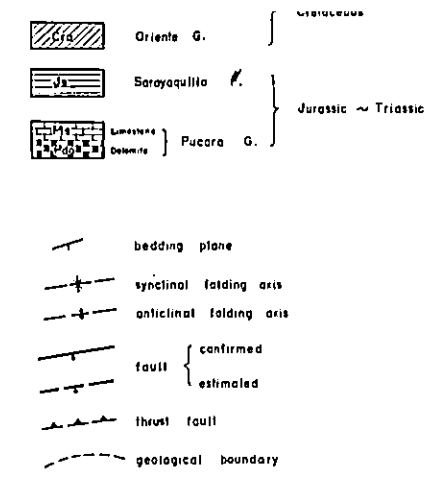
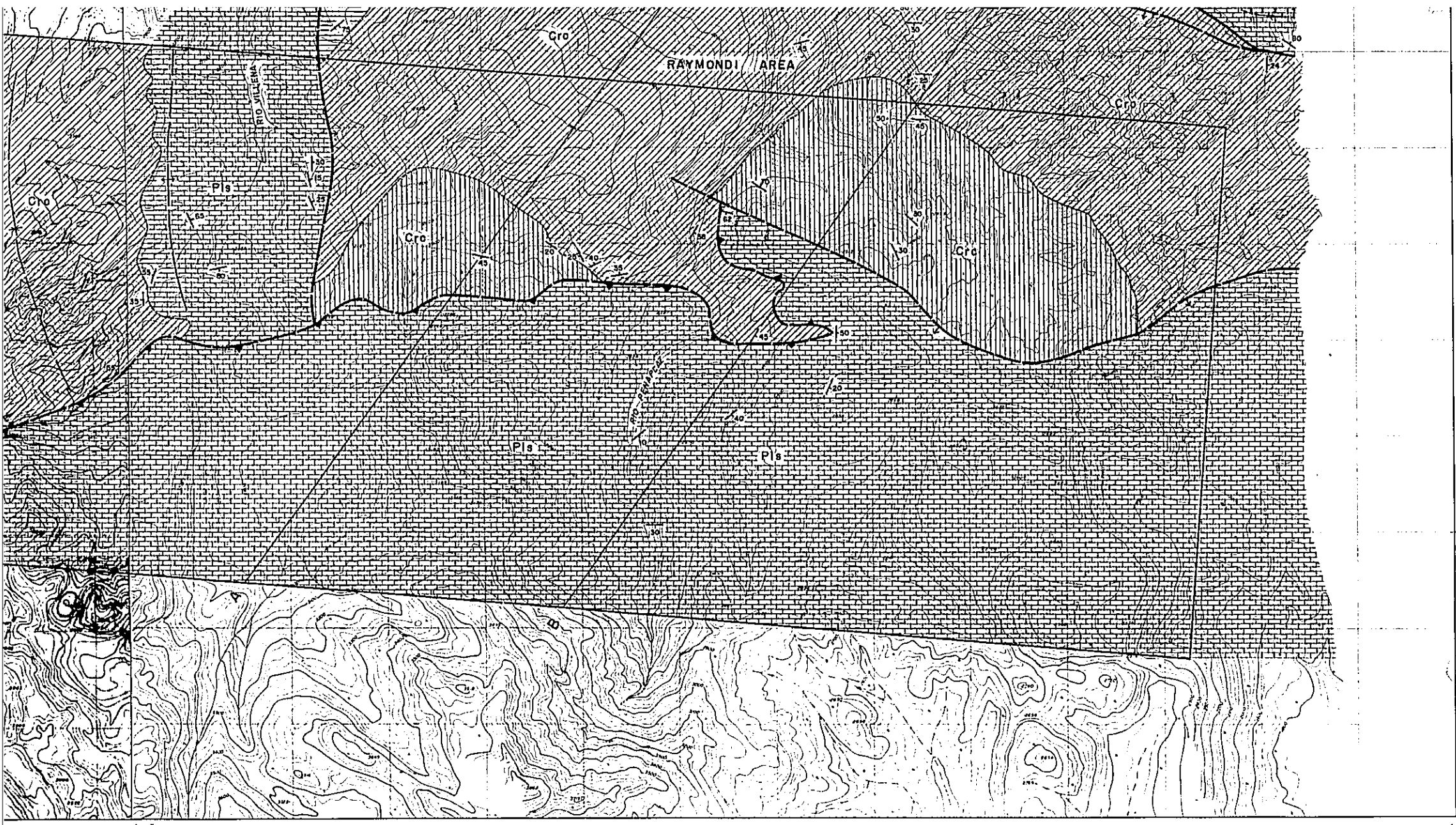
- SEDIMENTARY**
- |  |              |                       |
|--|--------------|-----------------------|
|  | Chonta G.    | } Cretaceous          |
|  | Oriente G.   |                       |
|  | Sarayacuilla | } Jurassic ~ Triassic |
|  | Pucara G.    |                       |
- 
- bedding plane
  - synclinal folding axis
  - anticlinal folding axis
  - fault { confirmed
  - fault { estimated
  - thrust fault
  - geological boundary



-  Oriente G
-  Sarayaquillo
-  Llaneros } Pucara
-  Dalmata }
-  bedding plane
-  synclinal fold
-  anticlinal fold
-  fault
-  con. ast.
-  thrust fault
-  geological boundary







75°30'00" 75°22'30"

