

(PHASE I) GEOLOGICAL SURVEY PL. 2  
 OF  
 THE ISCAYCRUZ AREA, PERU

EXPLORATION PROGRAM  
 OF THE LIMPE AREA

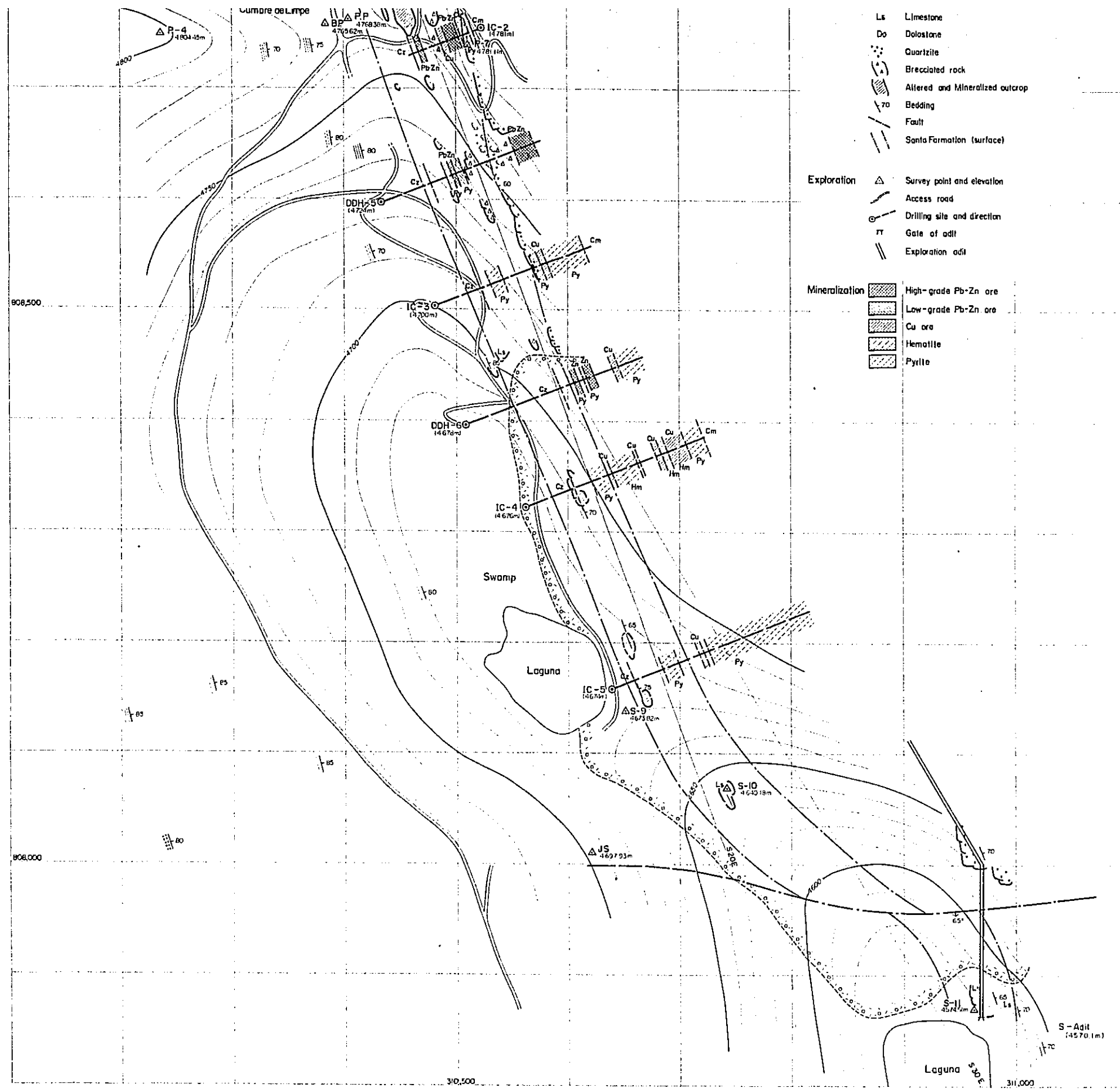
SUMMARIZED PROJECTIVE MAP  
 OF THE DRILLING RESULTS

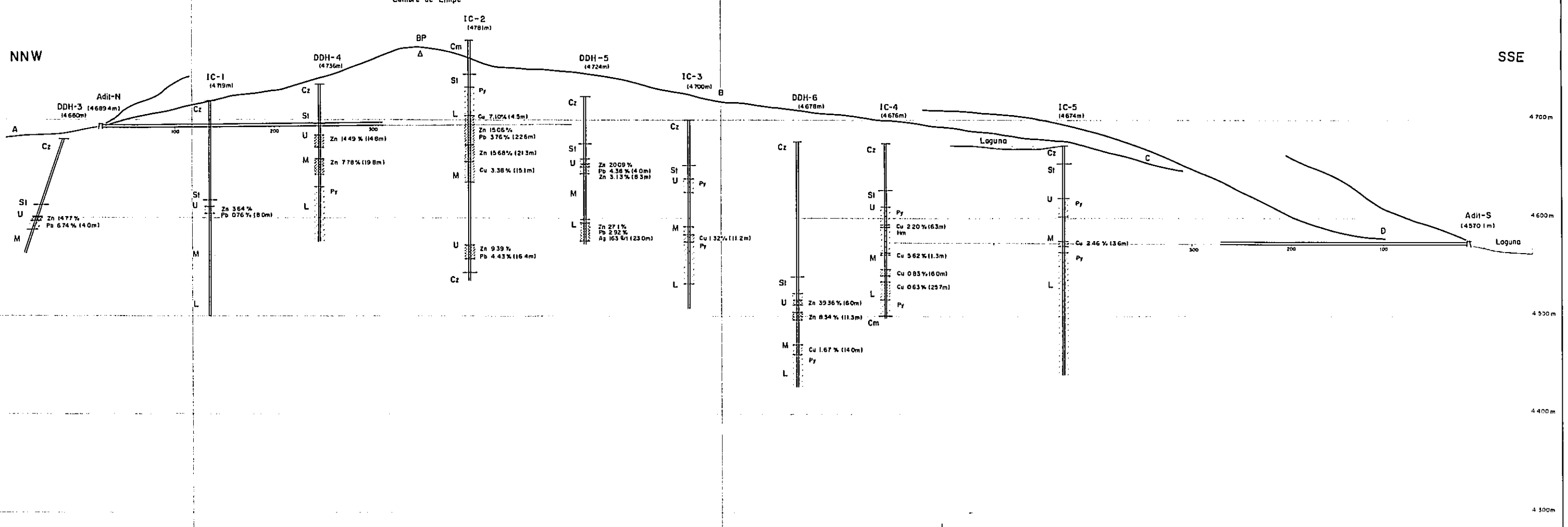
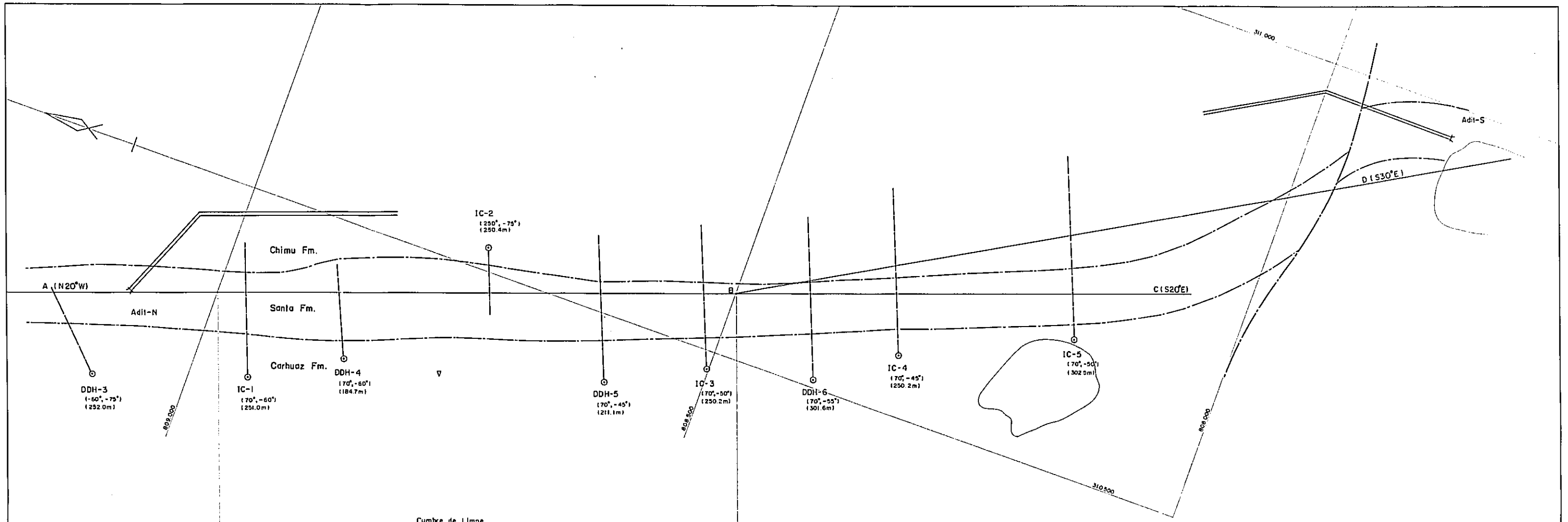
Scale 1 : 2,000

METAL MINING AGENCY OF JAPAN  
 JAPAN INTERNATIONAL COOPERATION AGENCY

JULY 1983  
 Prepared by MINDECO

- LEGEND**
- Geology**
- Talus
  - Sandstone
  - Shale
  - Ls Limestone
  - Do Dolostone
  - Quartzite
  - Brecciated rock
  - Altered and Mineralized outcrop
  - Bedding
  - Fault
  - Santa Formation (surface)
- Exploration**
- Survey point and elevation
  - Access road
  - Drilling site and direction
  - Gate of adit
  - Exploration adit
- Mineralization**
- High-grade Pb-Zn ore
  - Low-grade Pb-Zn ore
  - Cu ore
  - Hematite
  - Pyrite





(PHASE I) GEOLOGICAL SURVEY OF THE ISCAYCRUZ AREA, PERU PL. 3

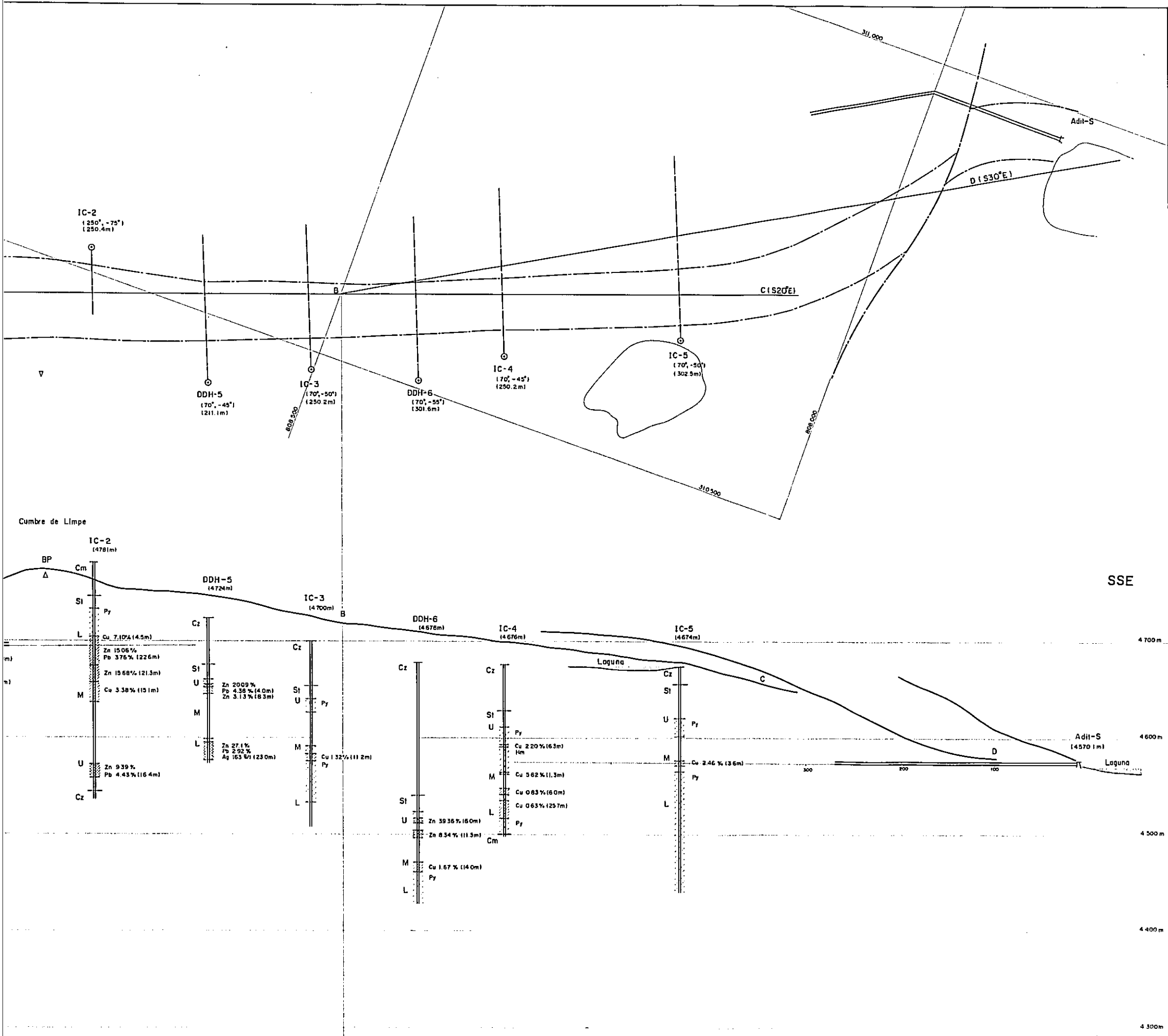
EXPLORATION PROGRAM OF THE LIMPE AREA

**SUMMARIZED PROJECTIVE SECTION OF THE DRILLING RESULTS**

Scale 1 : 2,000

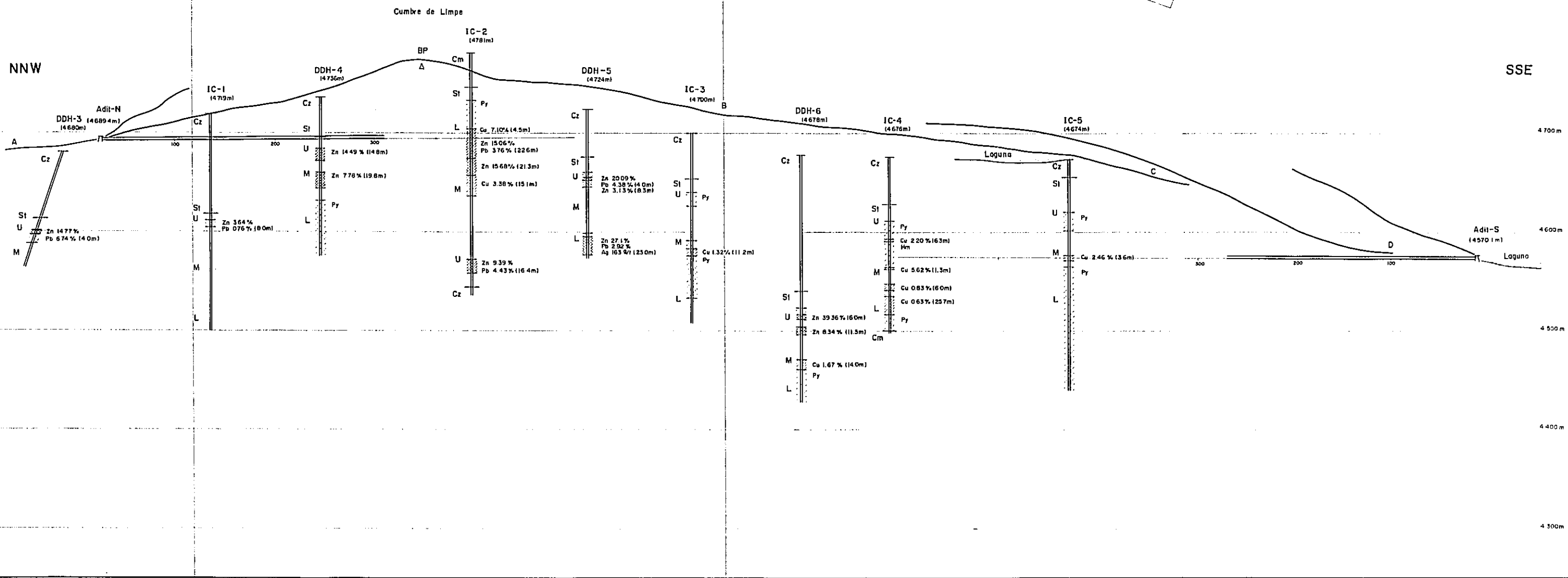
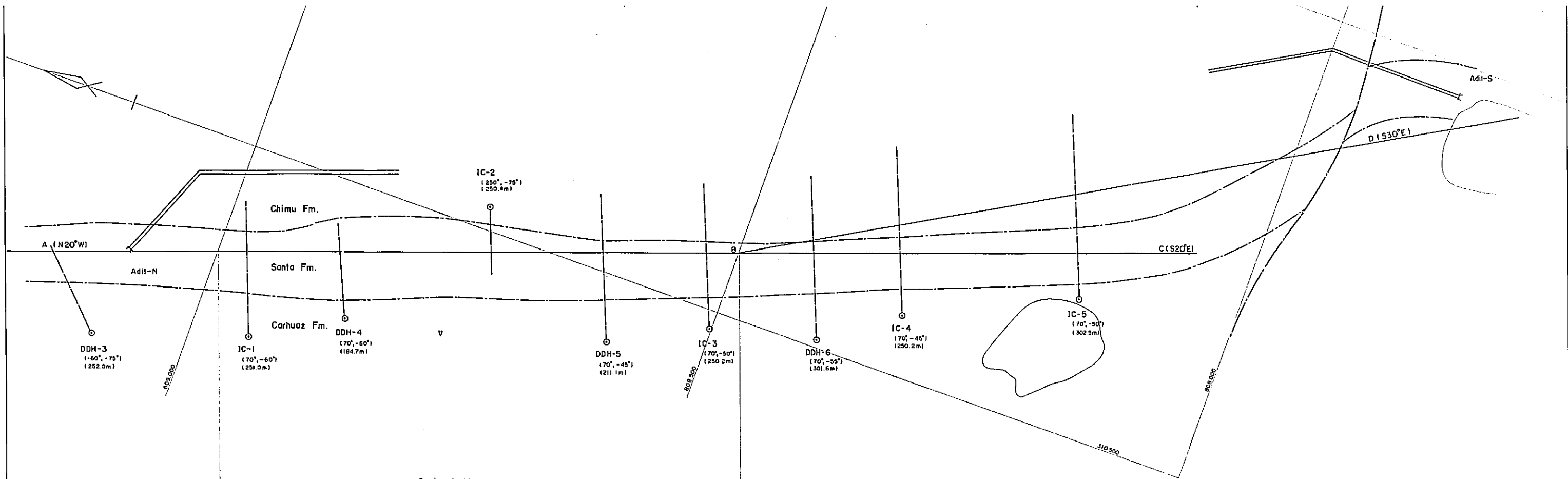
METAL MINING AGENCY OF JAPAN  
JAPAN INTERNATIONAL COOPERATION AGENCY

JULY 1983  
Prepared by MINDECO

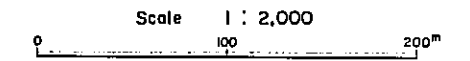


**LEGEND and ABBREVIATION**

- Pb-Zn high-grade ore
- Pb-Zn low-grade ore
- Cu ore
- Massive Pyrite ore (Py)
- Massive Hemalite ore (Hm)
- 
- Cz Carhuaz Formation
- St Santa Formation
- Cm Chimú Formation
- 
- U Upper horizon
- M Middle horizon
- L Lower horizon

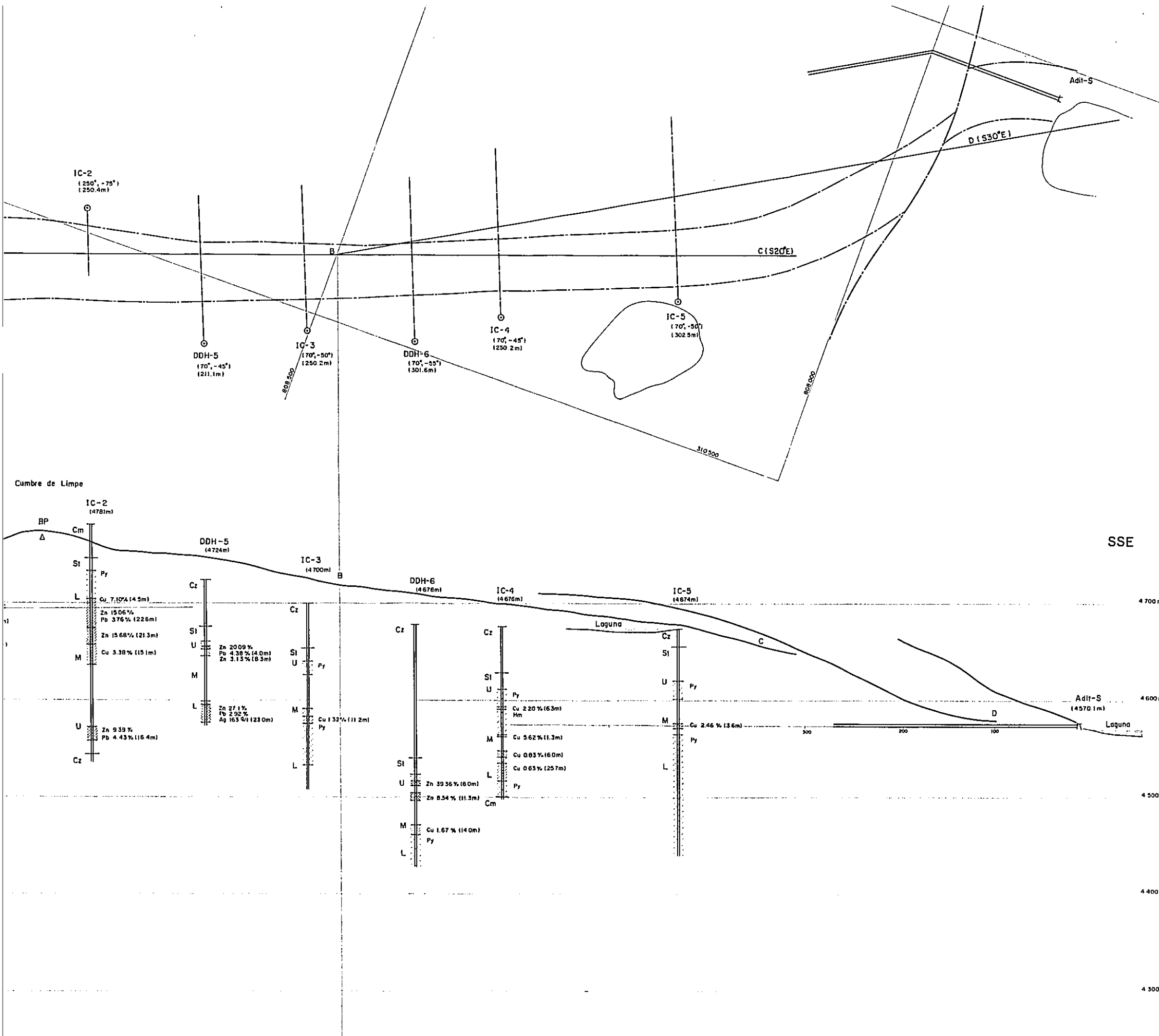


SUMMARIZED PROJECTIVE SECTION  
OF THE DRILLING RESULTS



METAL MINING AGENCY OF JAPAN  
JAPAN INTERNATIONAL COOPERATION AGENCY

JULY 1983  
Prepared by MINDECO

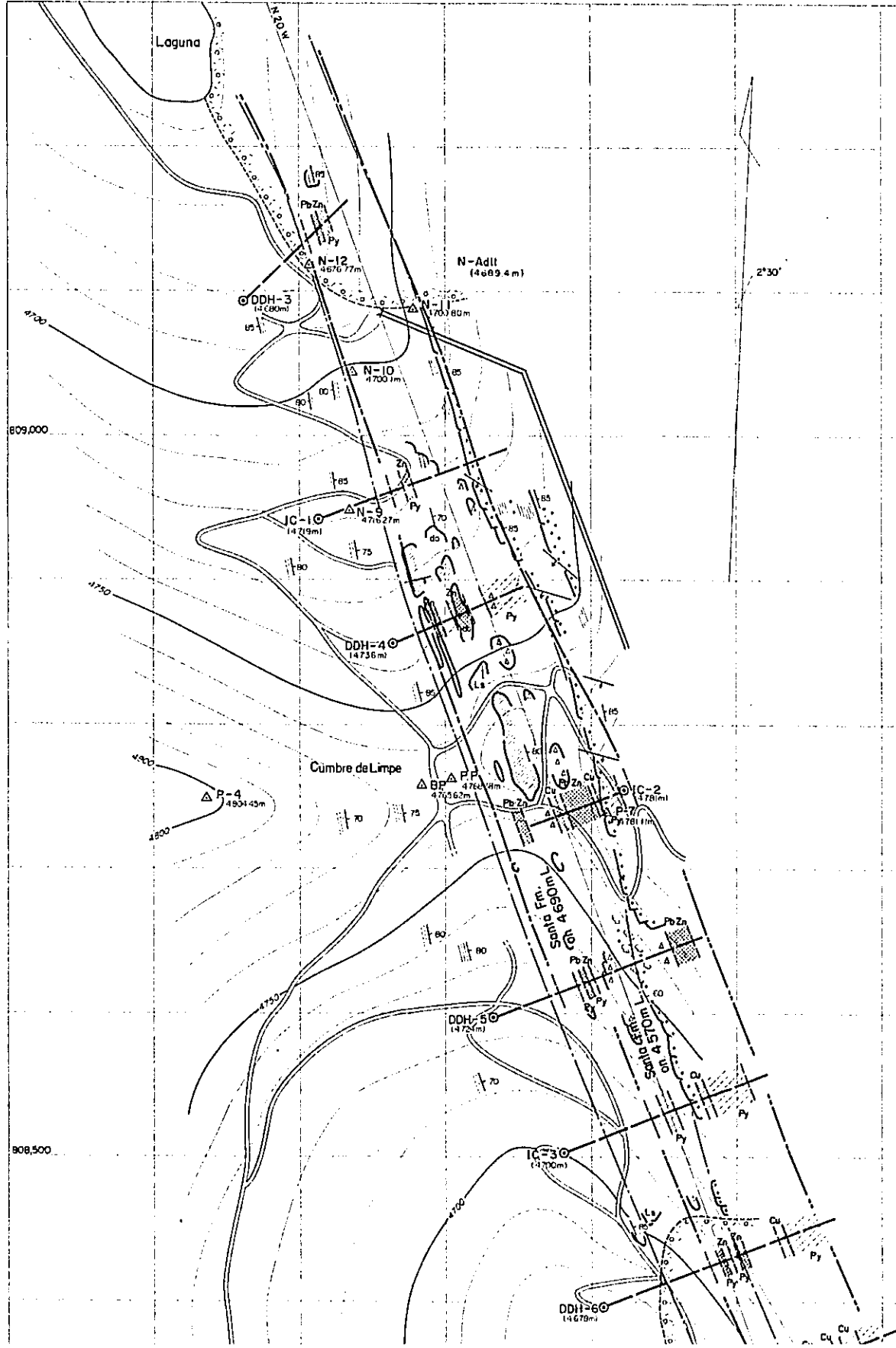


LEGEND and ABBREVIATION

- Pb-Zn high-grade ore
- Pb-Zn low-grade ore
- Cu ore
- Massive Pyrite ore (Py)
- Massive Hematite ore (Hm)

- Cz Carhuaz Formation
- St Santa Formation
- Cm Chimú Formation
- U Upper horizon
- M Middle horizon
- L Lower horizon





(PHASE I) GEOLOGICAL SURVEY PL. 4  
 OF  
 THE ISCAYCRUZ AREA, PERU

EXPLORATION PROGRAM  
 OF THE LIMPE AREA

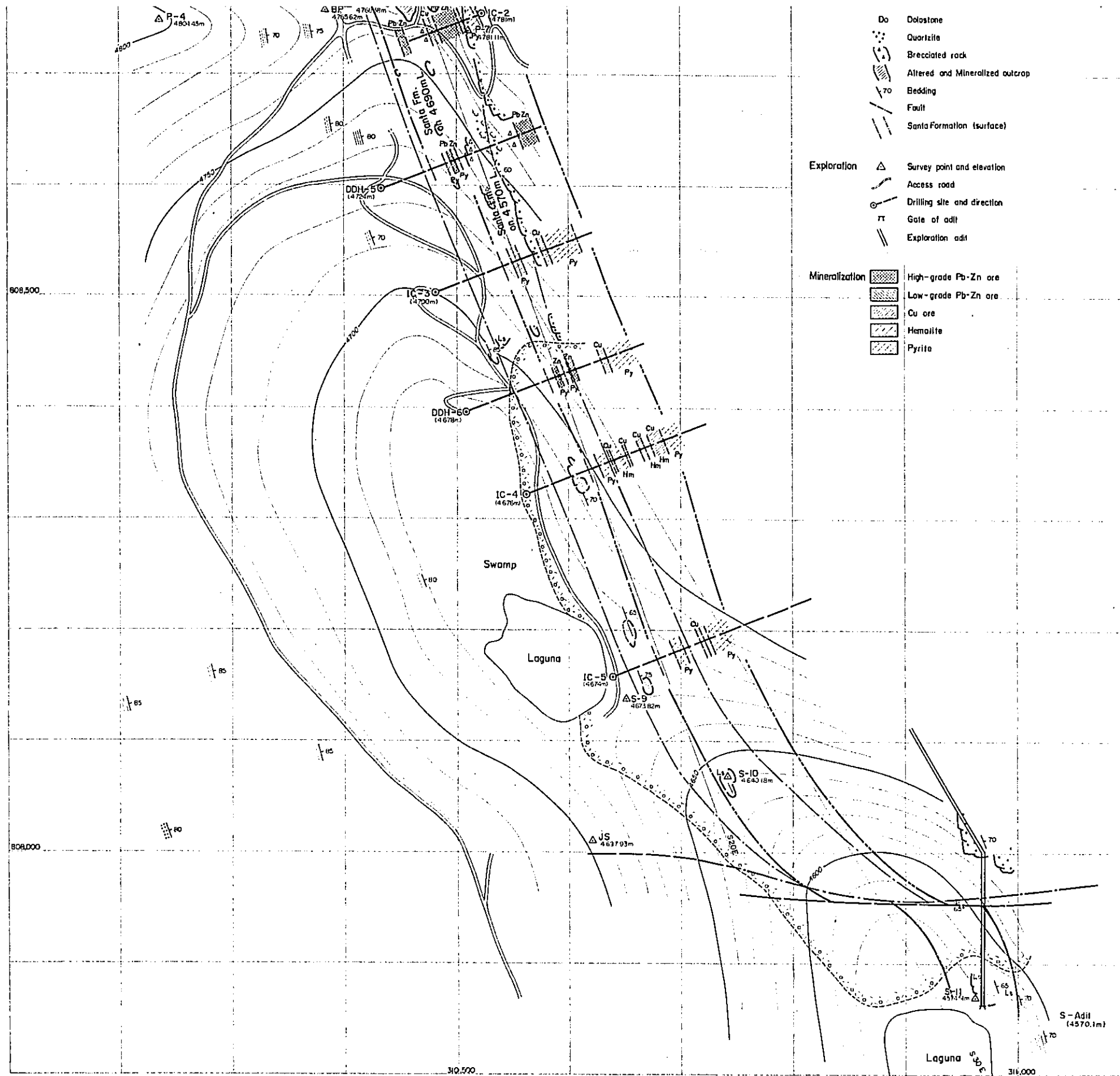
INFERRED GEOLOGICAL MAP  
 ON 4,690m AND 4,570m LEVELS

Scale 1 : 2,000

METAL MINING AGENCY OF JAPAN  
 JAPAN INTERNATIONAL COOPERATION AGENCY

JULY 1983  
 Prepared by MINDECO

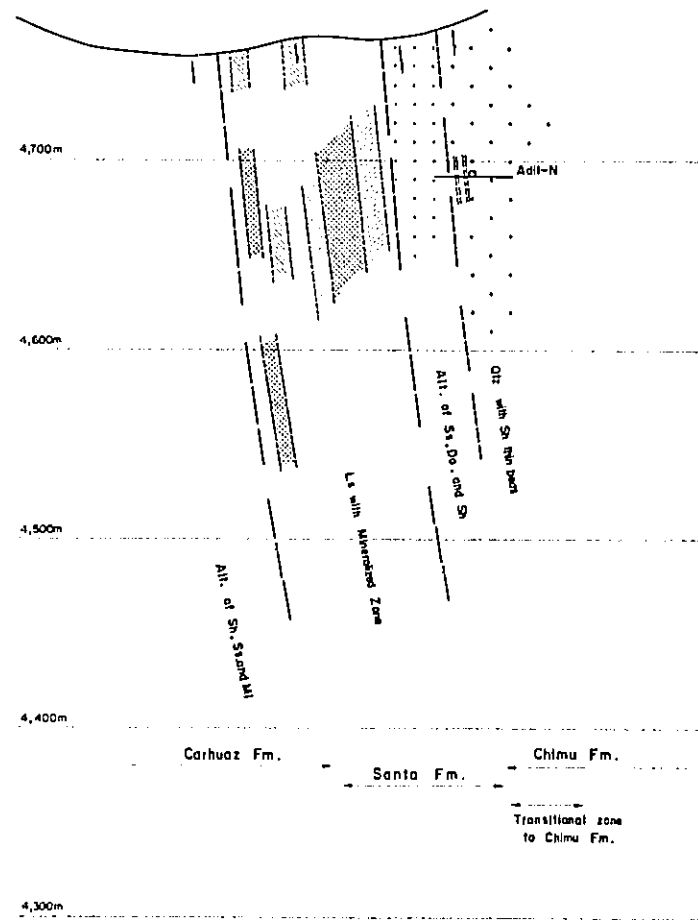
- LEGEND**
- Geology**
- Talus
  - Sandstone
  - Shale
  - Ls Limestone
  - Do Dolostone
  - Quartzite
  - Brecciated rock
  - Altered and Mineralized outcrop
  - Bedding
  - Fault
  - Santa Formation (surface)
- Exploration**
- Survey point and elevation
  - Access road
  - Drilling site and direction
  - Gate of adit
  - Exploration adit
- Mineralization**
- High-grade Pb-Zn ore
  - Low-grade Pb-Zn ore
  - Cu ore
  - Hematite
  - Pyrite



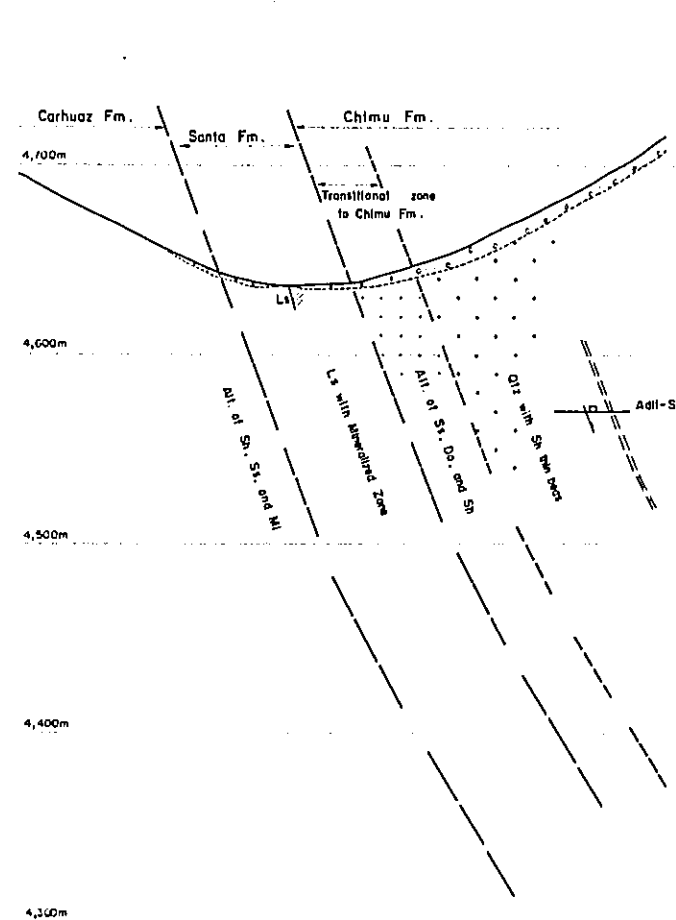
30,500

315,000

WSW - ENE Section (S 70°W - N 70°E)  
at 310m Point of Adit-N

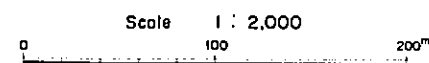


WSW - ENE Section (S 70°W - N 70°E)  
at 270m Point of Adit-S



(PHASE I) GEOLOGICAL SURVEY PL. 5  
OF  
THE ISCAYCRUZ AREA, PERU  
EXPLORATION PROGRAM  
OF THE LIMPE AREA

INFERRED GEOLOGICAL SECTION



METAL MINING AGENCY OF JAPAN  
JAPAN INTERNATIONAL COOPERATION AGENCY

JULY 1983  
Prepared by MINDECO

LEGEND

- High-grade Pb-Zn ore
- Low-grade Pb-Zn ore
- Cu ore
- Hematite
- Pyrite

**GEOLOGIC DRILL LOG  
ISCAYCRUZ PROJECT**

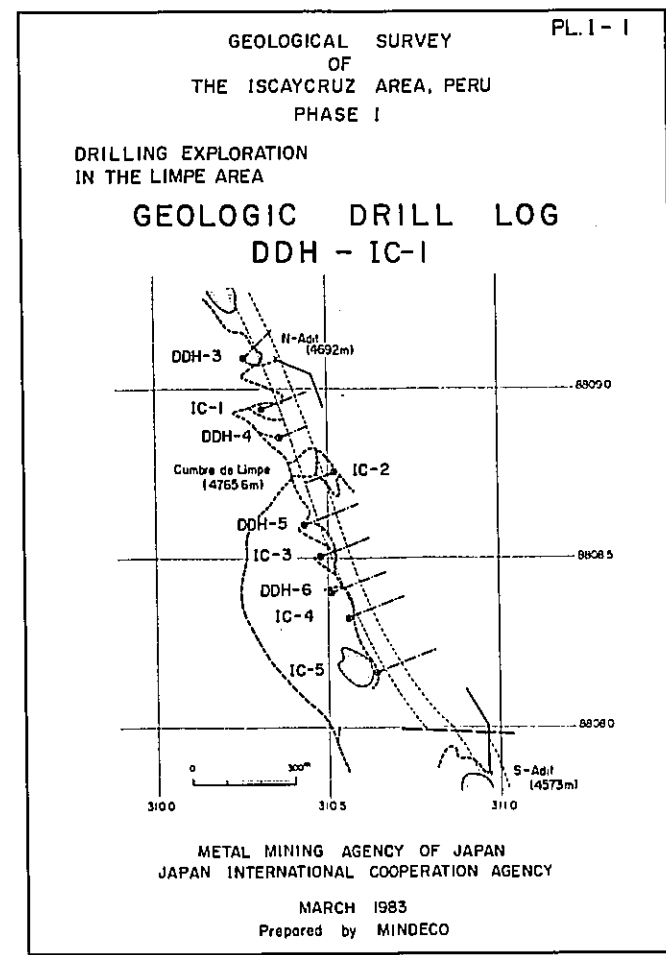
Coordinate N 808.942 Direction 70°  
 E 310.313 Inclination -60°  
 Elevation 4.719m Total Depth 251.0m

**DDH No. IC-1**

Assays					Depth		Occurrence					Observations	
Lang (m)	Cu (%)	Pb (%)	Zn (%)	Ag (g/t)	Dep (m)	Str. (m)	Rock	Oxd.	Alt.	Min.	Color		Fract.
					10	110	Sh	Lim		Py	blk	shd	16
					143	160	Do-Ls	Lim	do	d-gry	shd	Contains calcareous parts	
					200	200	Sh	Lim	do	d-gry			Cal-Sid vs
					240	240	Sh		do	d-gry			Intercalated with MI
					280	280	MI		do	Py	p-gry		Dolomitized
					300	300	Sh	Lim	do	Py	d-gry		Massive, lamella str.
					300	300	MI		do	Py	p-gry		
					350	350	Sh		do	Py	d-gry		Alt. of Sh-MI dolomitized generally
					350	350	MI		do	Py	d-gry		
					400	400	Sh		do	Py	d-gry		Dolomitized
					425	425	Sh		do	Py	d-gry		
					450	450	Sh		do	Py	d-gry		Phyllitic
					480	480	Do		do	p-gry			
					500	500	Do		do	p-gry			Sludge
					520	520	Sh		do	Py	d-gry	shd	
					560	560	Sh		do	Py	d-gry	shd	Contains dolomitized MI
					600	600	Do		do	Py	d-gry		
					636	636	Sh		do	Py	blk	crd	Do-Sid vs ore developed
					660	660	Cal-Ss		do	Py	d-gry	shd	
					675	675	Cal-Ss		do	Py	d-gry	shd	Crystalline, fine-grained Ls Lamella str. is developed
					700	700	Sh		do	Py	d-gry	shd	
					750	750	Sh		do	Py	blk	crd	Cal vs abundant
					800	800	Sh		do	Py	d-gry		
					816	816	Ss		do	Py	d-gry	shd	Massive, fine-grained Ss dolomitized partly
					816	816	Ss		do	Py	gry		

Assays					Depth		Occurrence					Observations		
Lang (m)	Cu (%)	Pb (%)	Zn (%)	Ag (g/t)	Dep (m)	Str. (m)	Rock	Oxd.	Alt.	Min.	Color		Fract.	
					100.3	100.3	Sh				blk	shd	Phyllitic Sh	
					102.8	102.8	Do-M		sil	Py	p-gry			Do partly Sid vs
					110	110	Sh			Py	blk	crd	shd	Phyllitic Sh 106-107m; Py vs
					111.9	111.9	Do		do	sid	p-gry		Sid network	
					114.2	114.2	Do-Sh		do	d-gry				1142-1144m; cavity intercalated with MI-Do
					116.0	116.0	Sh		do	d-gry				
					118.0	118.0	Sh		do	d-gry				Larg. Cu Pb Zn Ag (m) (%) (%) (%) (g/t) 80 007 076 364 4
					120	120	Do		do	sid	Py	d-gry		
20.008	0.24	5.75	12		121.0	121.0	Sh		do	d-gry	blk	shd		
20.006	0.33	1.65	4		129.0	129.0	Zn-Ore			Zn-Py	d-gry			
20.006	0.91	2.95	fr		130	130	Sh			Py	blk	crd		
20.006	1.55	4.20	fr		135.8	135.8	Sh		do	sid	Py	d-gry		Partly Sid
					136.9	136.9	Ls			d-gry	brk			
					138.5	138.5	Do		do	sid	Py	d-gry	brk	
					140	140	Do		do	d-gry				1444-1447m; Sh
					142.4	142.4	MI		do	d-gry	shd			
					143.4	143.4	Do-Ls		do	d-gry				
					146.1	146.1	Sh							Ls
					147.1	147.1	Sh							
					150	150	Ls							Whl Cal (partly Sid) vs
					152.9	152.9	Do-Ls		do	d-gry				
					155.8	155.8	Ls							Cal vs dev
					160	160	Ls							
					161.8	161.8	Do							Do
					165.6	165.6	Do							
					168	168	Do-Ls		do	d-gry				Do-Ls
					170	170	Do-Ls		do	d-gry				
					172	172	Ls							Ls
					180	180	Ls							
					180	180	Do							Cal vs Partly Do
					180	180	Ls							

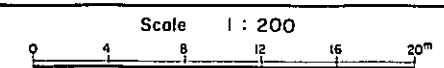
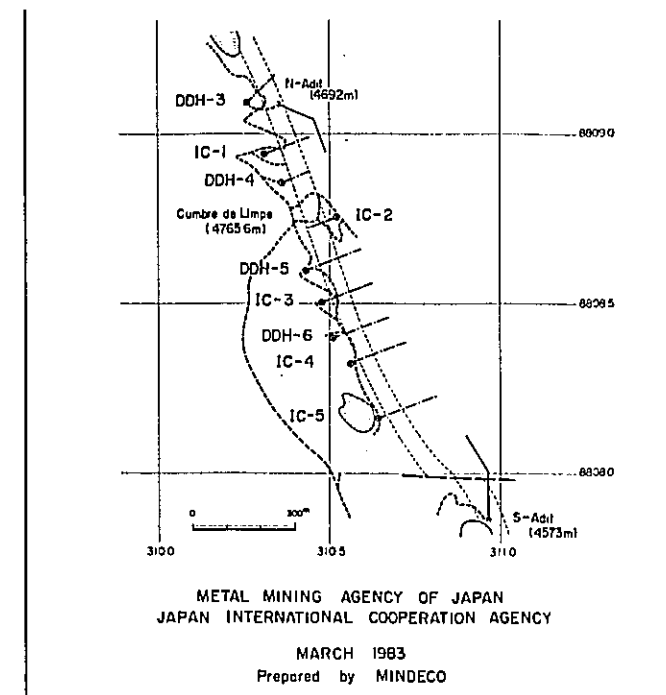
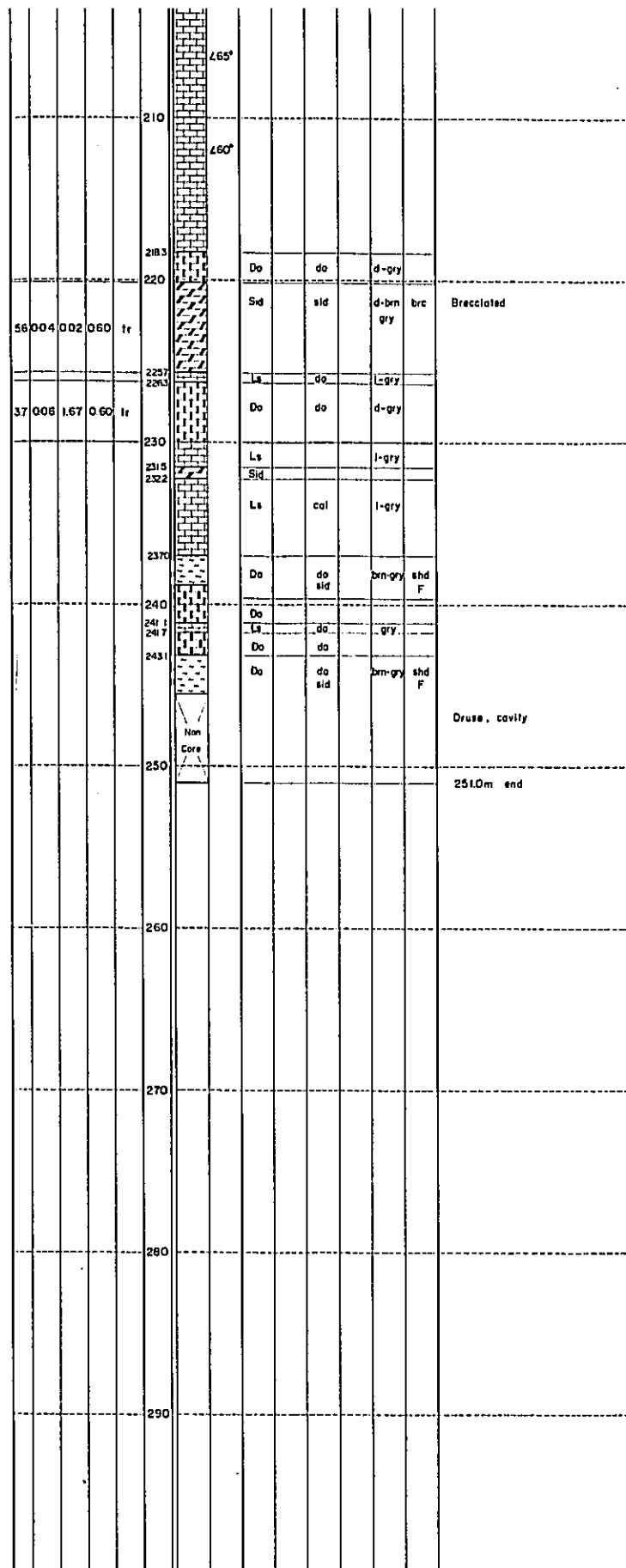
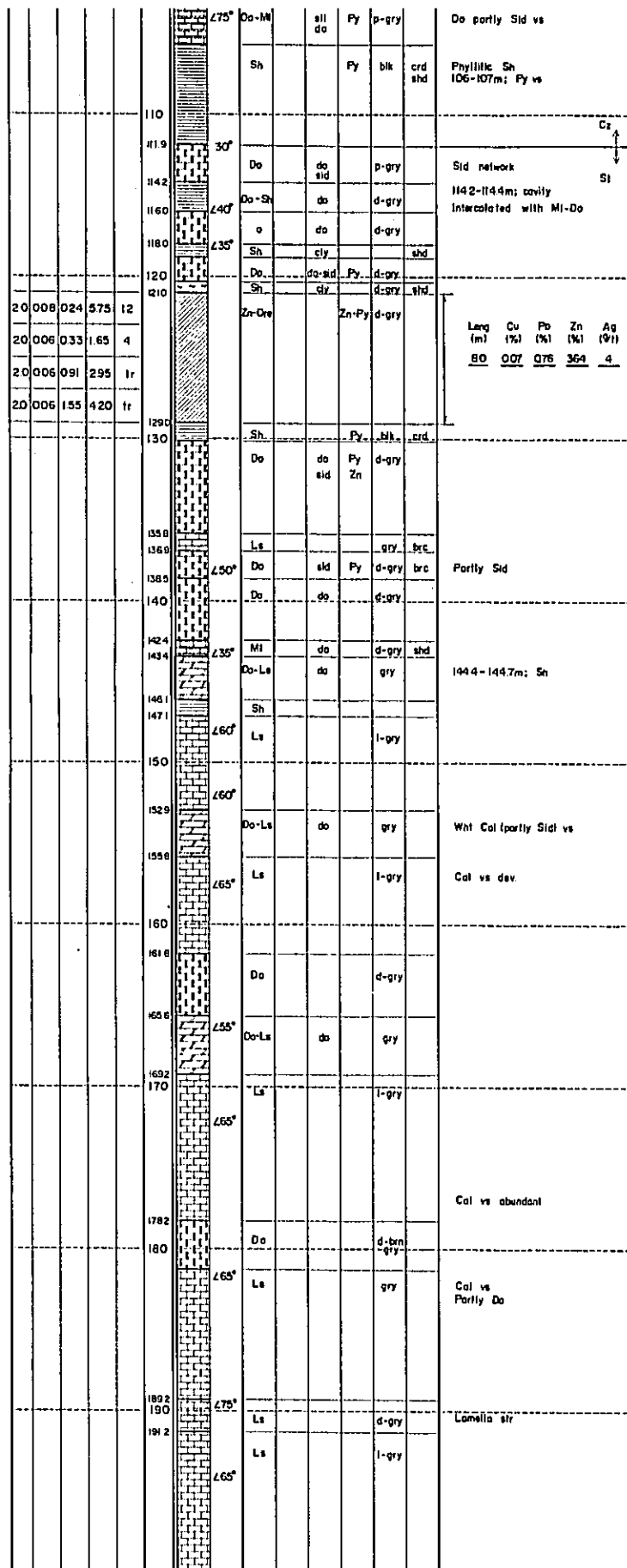
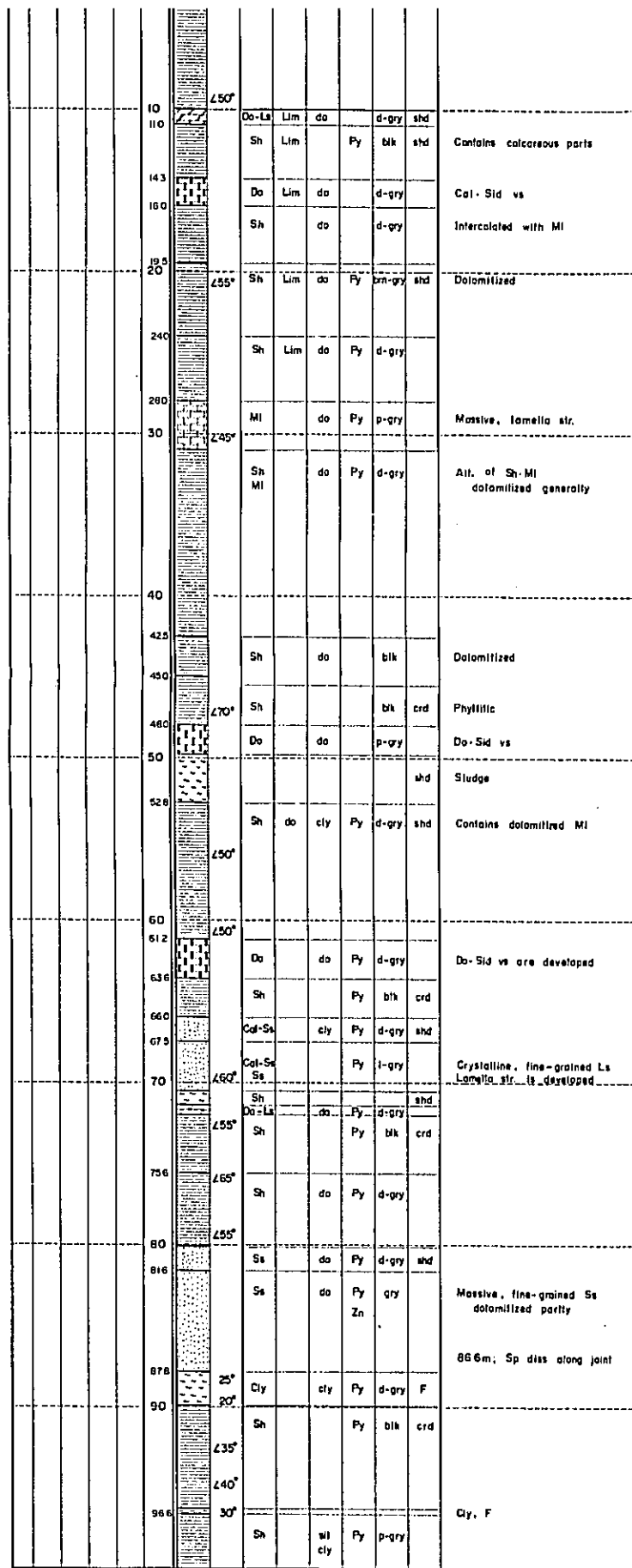
Assays					Depth		Occurrence					Observations		
Lang (m)	Cu (%)	Pb (%)	Zn (%)	Ag (g/t)	Dep (m)	Str. (m)	Rock	Oxd.	Alt.	Min.	Color		Fract.	
					210	210	Ls							Cal vs
					210	210	Ls							
					210	210	Do		do	d-gry				Brecciated
					220	220	Do		do	d-gry				
56.004	0.02	0.60	fr		225	225	Ls		do	d-gry				Brecciated
37.006	1.67	0.60	fr		230	230	Do		do	d-gry				
					230	230	Ls		do	d-gry				Druse, cavity
					232	232	Ls		col	d-gry				
					237	237	Do		do	sid	brn-gry	shd	F	2510m end
					240	240	Do		do	sid	brn-gry	shd	F	
					241	241	Ls		do	d-gry				2510m end
					243	243	Do		do	sid	brn-gry	shd	F	
					250	250	Do		do	sid	brn-gry	shd	F	2510m end
					250	250	Do		do	sid	brn-gry	shd	F	
					270	270	Ls							Cal vs abundant
					280	280	Do							
					280	280	Ls							Cal vs Partly Do
					280	280	Ls							



Scale 1 : 200

**LEGEND and ABBREVIATION**

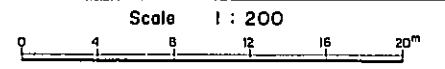
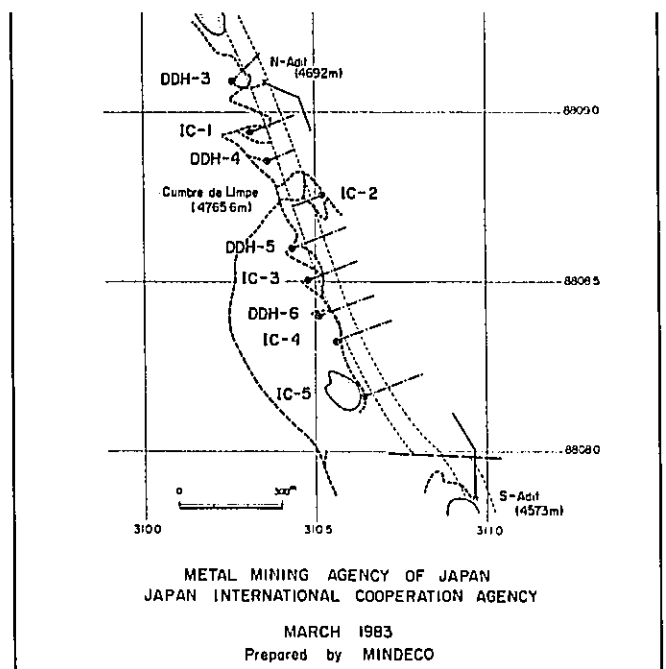
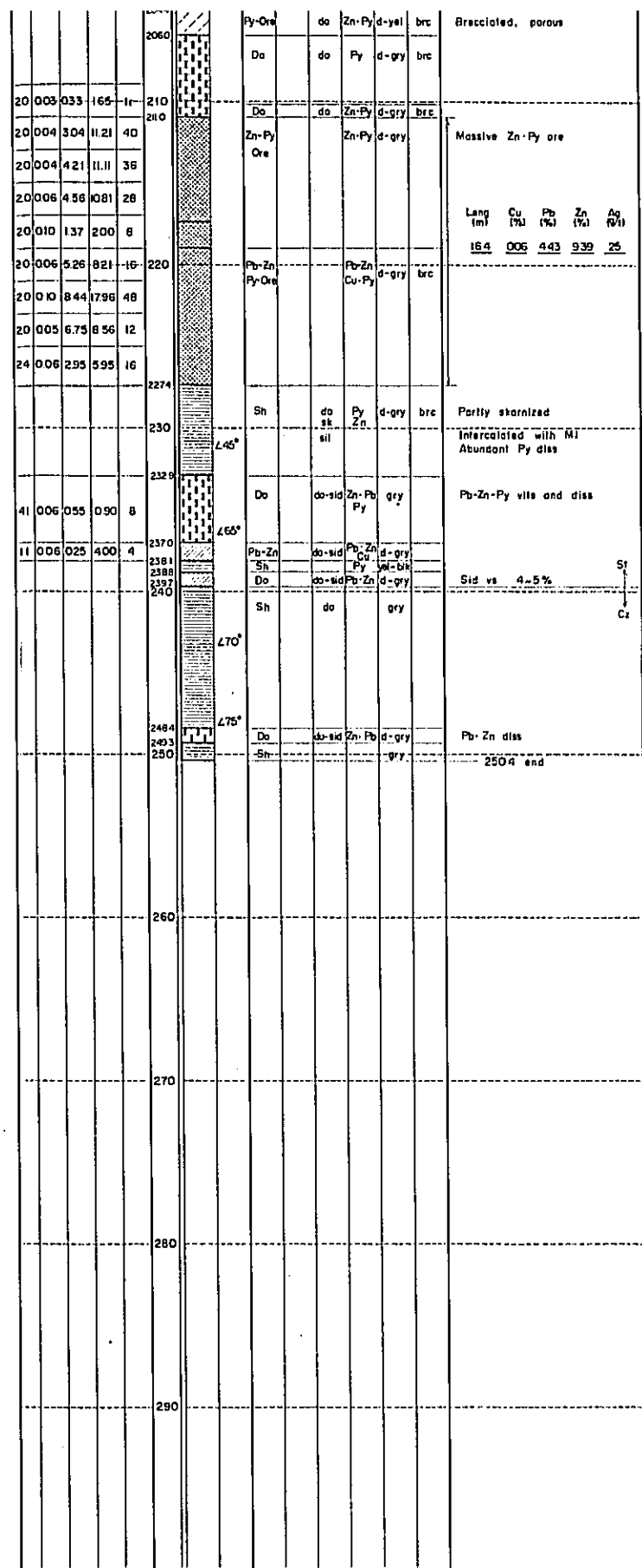
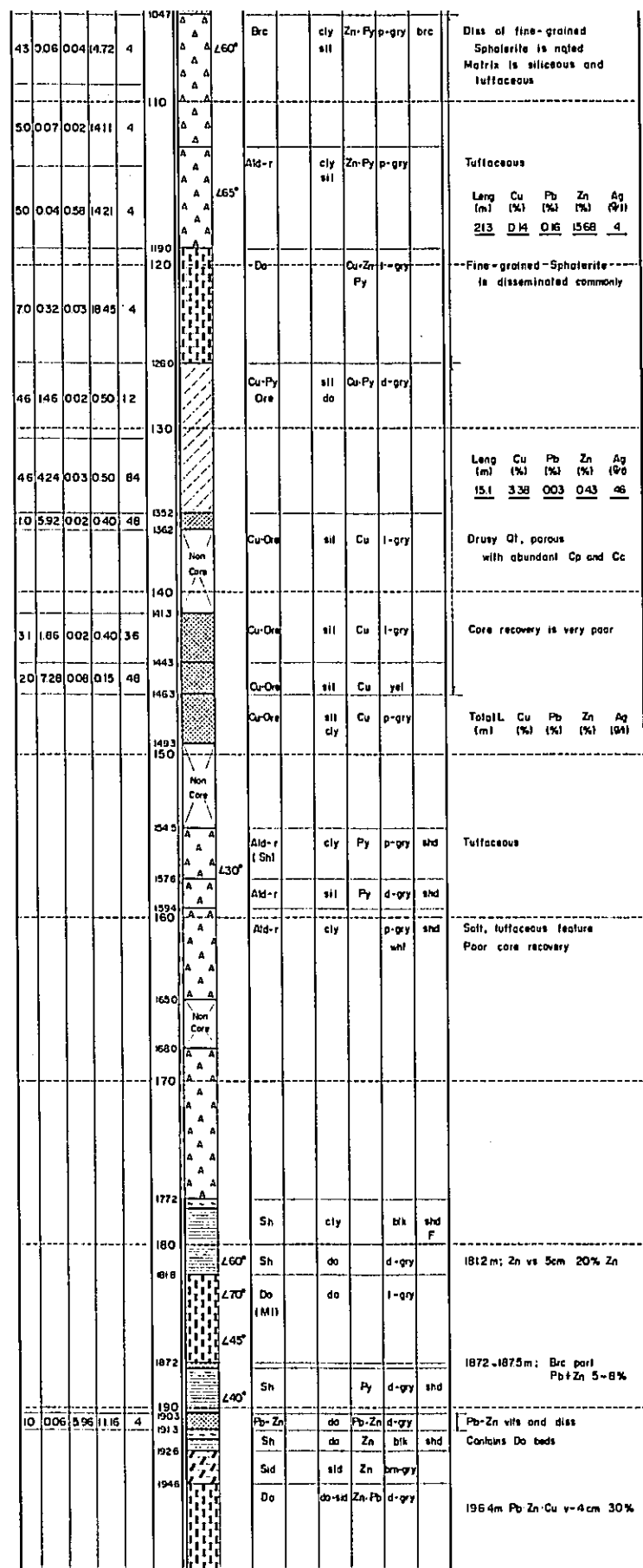
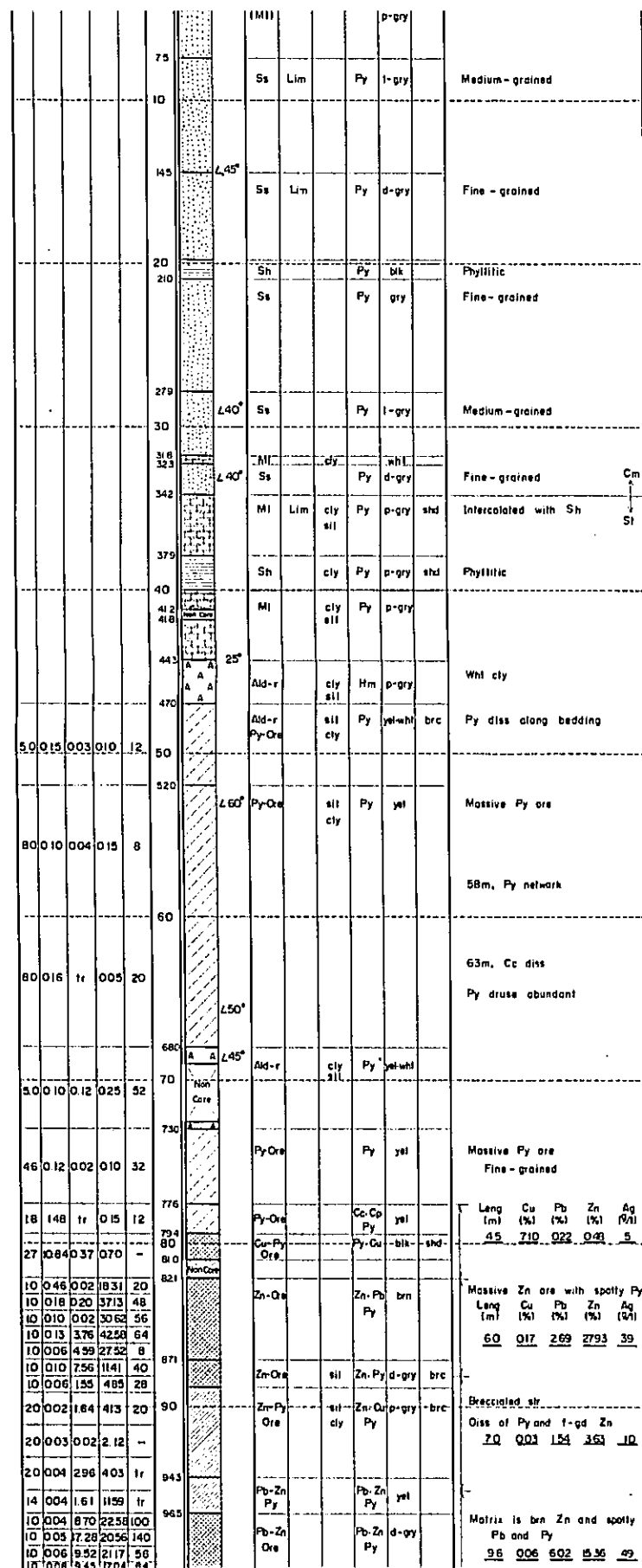
10. Rock:	Pebble, sand, clay	Peb	
	Sandstone	Ss	
	Shale	Sh	
	Marl	MI	
	Limestone	Ls	
	Dolomitic limestone	Do-Ls	
	Dolostone	Do	
	Siderite	Sid	
	Quartzite	Qtz	
	Ore, high grade		
	Ore, low grade		
	Pyrite ore	Py	
	Hematite ore	Hm	
	Skarn	Sk	
	Brecciated rock	Brk	
	Altered rock	A	
	Fault, fracture	F	
11. Oxidation:	oxidized	oxd	
	limonitized	lim	
12. Alteration:	dolomitization	do	
	calcification	cal	
	argillification	cly	
	silicification	sil	
	sericitization	ser	
13. Mineralization:	Pyrite	Py	
	Pb-minerals	Pb	
	Zn-minerals	Zn	
	Oxide minerals	Oxd	
	Chalcopyrite	Cp	
	Chalcocite	Cc	
	Hematite	Hm	
	Magnetite	Mt	



LEGEND and ABBREVIATION

10. Rock:	Pebble, sand, clay Sandstone Shale Marl Limestone Dolomitic limestone Dolostone Siderite Quartzite Ore, high grade Ore, low grade Pyrite ore Hematite ore Skarn Brecciated rock Altered rock Fault, fracture	Peb Ss Sh MI Ls Do-Ls Do Sid Qtz Py Hm Sk Brc A F	
11. Oxidation:	oxidized limonitized	oxd lim	
12. Alteration:	dolomitization calcification argillization silicification sericitization	do cal cly sil ser	
13. Mineralization:	Pyrite Pb-minerals Zn-minerals Oxide minerals	Py Pb Zn Oxd	Chalcopyrite Chalcosite Hematite Magnetite Cp Cc Hm Ml
14. Color:	light dark grey	l- d- gr	black white brown blk wht brn
15. Fracture:	Fault sheared brecciated	F shd brc	
16. Observations:	dissemination veins veinlets	diss vs vis	





LEGEND and ABBREVIATION

- 10. Rock:
  - Pebble, sand, clay: Peb
  - Sandstone: Ss
  - Shale: Sh
  - Marl: MI
  - Limestone: Ls
  - Dolomitic limestone: Do-Ls
  - Dolomite: Do
  - Siderite: Sid
  - Quartzite: Qtz
  - Ore, high grade: Ora
  - Ore, low grade: Ora
  - Pyrite ore: Py
  - Hematite ore: Hm
  - Skar: Sk
  - Bracciated rock: Brc
  - Altered rock: A
  - Fault, fracture: F
- 11. Oxidation:
  - oxidized: oxd
  - limonitized: lim
- 12. Alteration:
  - dolomitization: do
  - calcification: cal
  - argillization: cly
  - silicification: sil
  - sericitization: ser
- 13. Mineralization:
  - Pyrite: Py
  - Pb-minerals: Pb
  - Zn-minerals: Zn
  - Oxide minerals: Oxd
  - Chalcopyrite: Cp
  - Chalcoite: Cc
  - Hematite: Hm
  - Magnetite: MI
- 14. Color:
  - light: l
  - dark: d
  - gray: gry
  - black: blk
  - white: wht
  - brown: brn
- 15. Fracture:
  - Fault: F
  - sheared: shd
  - brecciated: brc
- 16. Observations:
  - dissimination: diss
  - vains: vs
  - veintais: vis

**GEOLOGIC DRILL LOG  
ISCAYCRUZ PROJECT**

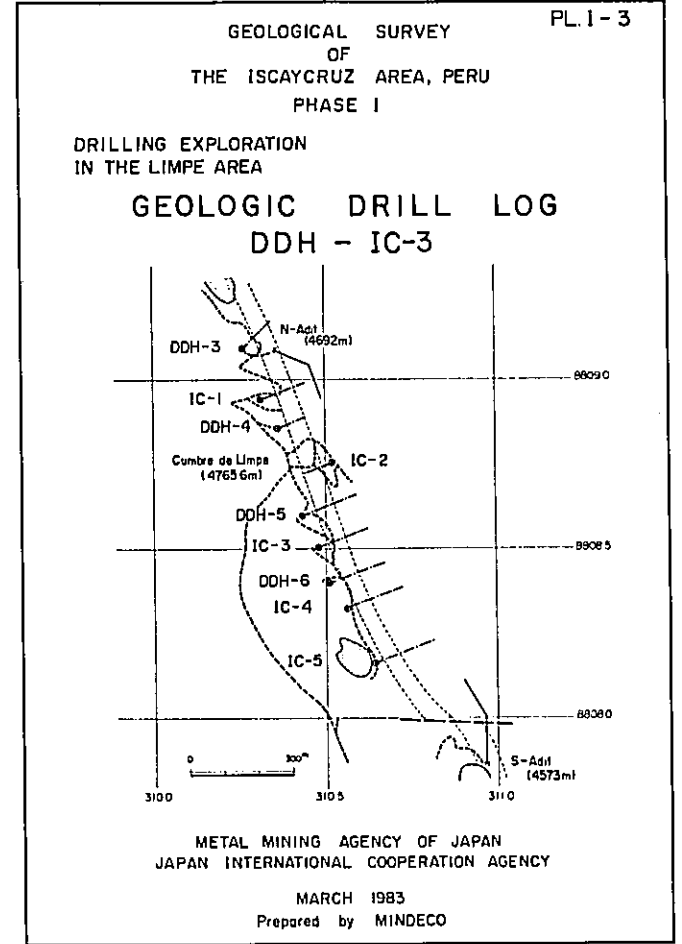
Coordinate N 808.503 Direction 70°  
E 310.481 Incline -50°  
Elevation 4,700m Total Depth 250.2m

**DDH No. IC-3**

Assays					Depth Symbol		Occurrence					Observations	
Dep. (m)	Cu (%)	Pb (%)	Zn (%)	Ag (g/t)	Dep. (m)	Str. (m)	Rock	Oxd.	Alt.	Min.	Color		Fract.
20					20	007	Sh				blk	crd	
71					71	064	MI				brn-gry	crd	
95					95	087	Sh				blk		Phyllitic
110					110	106	Ls				gry		
165					165	112	Sh				blk		Phyllitic
20					20	120	MI				gry		
233					233	132	Sh			Py	blk		Py diss, patch-like
285					285	130	Ss				gry		233-245m; calcareous Fine-grained Ss
30					30	130	Sh				blk		
309					309	130	MI				gry		
320					320	130	MI				d-gry		
360					360	156	Ls				gry		
381					381	140	MI				gry		
40					40	140	MI				gry		
413					413	140	Sh				blk		Phyllitic
474					474	140	MI				d-gry l-gry		Banding wr Fine alteration of MI-Sh-Ls
50					50	150	MI				d-gry l-gry		
541					541	157	Sh			Py	blk		Phyllitic Py diss - vs along bedding
560					560	152	Ls				l-gry		Cal vils
60					60	160	Do			Py Zn	brn	shd	
609					609	160	Ls				gry	shd	
616					616	160	Ls				l-gry		
624					624	160	MI				gry		Fine alteration of MI-Sh-Ls
650					650	170	MI				gry		
70					70	170	MI				d-gry		
702					702	170	Sh				d-gry	brc	
715					715	170	MI			clt chl sk	Py Cp	d-gry brc	Brecciated, soft and argillic 739m; Cp patch, 2x6cm
746					746	180	Py-Ore			sil koo ser	Py Cp	yel brc	
80					80	180	Py-Ore						
44					44	028	002	000	1r				

Assays					Depth Symbol		Occurrence					Observations	
Dep. (m)	Cu (%)	Pb (%)	Zn (%)	Ag (g/t)	Dep. (m)	Str. (m)	Rock	Oxd.	Alt.	Min.	Color		Fract.
103.4					103.4	007	Sh				blk		
106.4					106.4	064	Ls				gry		Contains MI thin beds
107.9					107.9	087	Sh				blk		Contains Cal wht spots
110.6					110.6	106	MI				d-gry		
112.3					112.3	112	Sh				blk		
113.2					113.2	112	MI				d-gry		
119.5					119.5	120	Ls			do	Py	d-gry	Dolomitic Ls
121.9					121.9	132	Ls				gry		Cal vs
129.9					129.9	130	Sh				blk		
132.0					132.0	130	Ls				l-gry		
156.0					156.0	156	Ald (MI)			sil do	d-gry		
140					140	140	Ald (Ls)			sil clt	Py whl brc		Sil, koo and ser are strong
40					40	016	002	000	4		sil clt	Py Lim whl	141.2 - 143m; Psa-m is included 145.8 m;
40					40	016	002	000	-				
40					40	016	002	000	-				
16					16	146	001	025	8		clt	Cu whl	Ald Sh
31					31	082	002	005	8		Spc Cu	blk	Lang Cu Pb Zn Ag (m) (%) (%) (%) (%) 4.7 1.04 0.02 0.12 5
45					45	024	001	005	-		sil clt	Py yel	Massive Py ore
20					20	446	002	005	-		sil clt	Cu Py yel	Cp-Cc diss
40					40	048	002	005	4				
170					170	170	Py-Ore			sil clt	Py yel brc		Py druses abundant Brc of old host r.

Assays					Depth Symbol		Occurrence					Observations	
Dep. (m)	Cu (%)	Pb (%)	Zn (%)	Ag (g/t)	Dep. (m)	Str. (m)	Rock	Oxd.	Alt.	Min.	Color		Fract.
210					210	210	Py-Ore			sil	Py (Cp)	yel brc	
215					215	215	Py-Ore			Koo sil	Py Cu	yel whl	
63					63	058	006	010	4				
7					7	030	009	015	8		Ald (Sh)	clt	Py d-gry
39					39	030	009	015	8		Ald (Sh)	sil clt	Py d-gry
221.4					221.4	221.4	Ald (MI)			sil chl clt	Hm Py	l-grn gry	
224.6					224.6	224.6	Ald (MI)			sil chl clt	Hm	d-gry	1266-1268m; Spc
226.8					226.8	226.8	Do			do	Hm	d-gry	
229.9					229.9	229.9	Do			do		l-gry	Fine-med-grained
230					230	230	Do			do		gry	Fine-grained Dolomitic Ls
240					240	240	Sh				blk		
241.9					241.9	241.9	Do			do	Py	l-gry	Fine-grained, crystalline
242.4					242.4	242.4	Do			do	Py	d-gry	Fine-grained, crystalline
247.6					247.6	247.6	Do			do	Py	d-gry	
250					250	250							250.2m end



**LEGEND and ABBREVIATION**

10. Rock:	Pebble, sand, clay	Peb		
	Sandstone	Ss		
	Shale	Sh		
	Marl	MI		
	Limestone	Ls		
	Dolomitic limestone	Do-Ls		
	Dolomite	Do		
	Siderite	Sid		
	Quartzite	Qtz		
	Ore, high grade			
	Ore, low grade			
	Pyrite ore	Py		
	Hematite ore	Hm		
	Skarn	Sk		
	Brecciated rock	Brc		
	Altered rock	A		
	Fault, fracture	F		
11. Oxidation:	oxidized	oxd		
	limonitized	lim		
12. Alteration:	dolomitization	do		
	calcification	cal		
	argillization	clt		
	silicification	sil		
	sericitization	ser		
13. Mineralization:	Pyrite	Py	Chalcopyrite	Cp
	Pb-minerals	Pb	Chalcocite	Cc
	Zn-minerals	Zn	Hematite	Hm
	Oxide minerals	Oxd	Magnetite	MI





**GEOLOGIC DRILL LOG  
ISCAYCRUZ PROJECT**

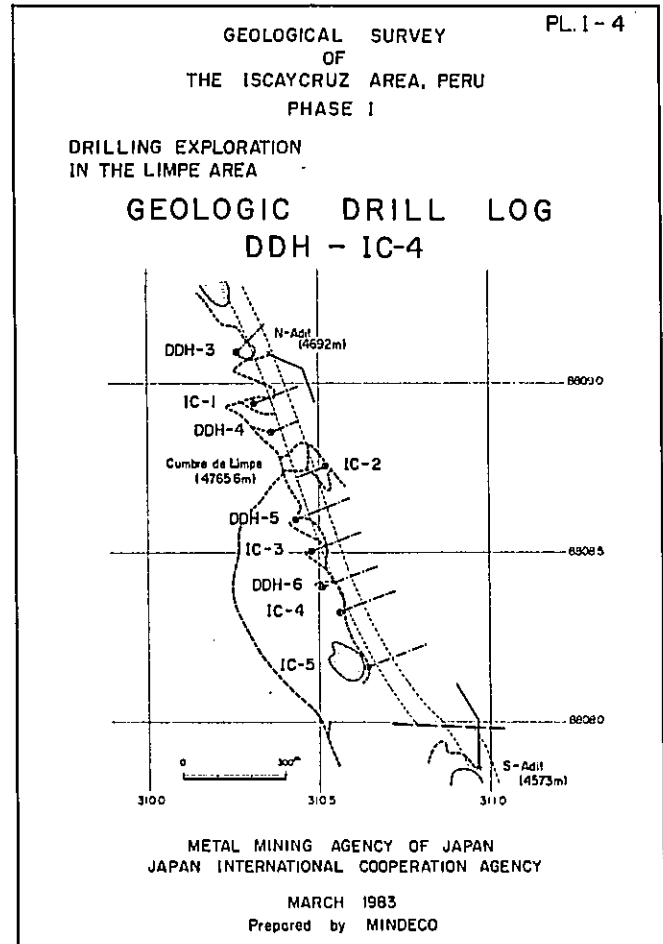
Coordinate N 808.322 Direction 70°  
E 310.582 Inclination -45°  
Elevation 4,676m Total Depth 2502m

**DDH No. IC-4**

Assays					Depth Symbol					Occurrence					Observations	
Ag (g/t)	Zn (%)	Pb (%)	Cu (%)	Lang (m)	6	7	8	9	10	11	12	13	14	15		
					80											Soil or Talus deposit
					100											
					132											
					148											
					173											
					20											
					216											
					239											
					262											
					296											
					30											
					330											
					342											
					390											
					40											
					44.4											
					50											
					53.1											
					58.8											
					60											
					63.7											
					66.4											
					70											
					80											
					84.1											

Assays					Depth Symbol					Occurrence					Observations	
Ag (g/t)	Zn (%)	Pb (%)	Cu (%)	Lang (m)	6	7	8	9	10	11	12	13	14	15		
					110											
					114.0											
					115.5											
					117.4											
					119.0											
					120											
					125.6											
					128.9											
					130											
					130.7											
					132.5											
					140											
					145.0											
					148.1											
					149.4											
					151.1											
					157.4											
					158.7											
					160											
					161.4											
					165.2											
					167.3											
					170											
					170.5											
					175.5											
					180											
					180.8											
					185											

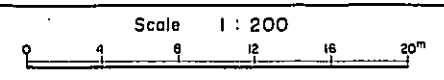
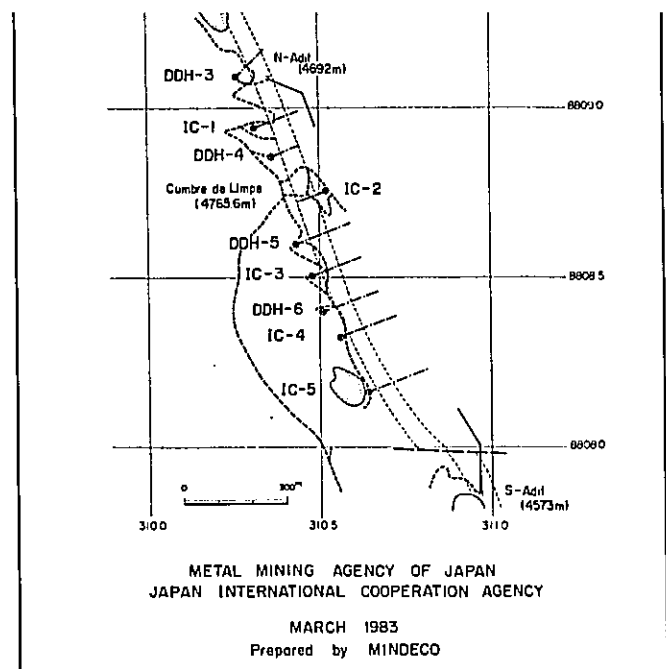
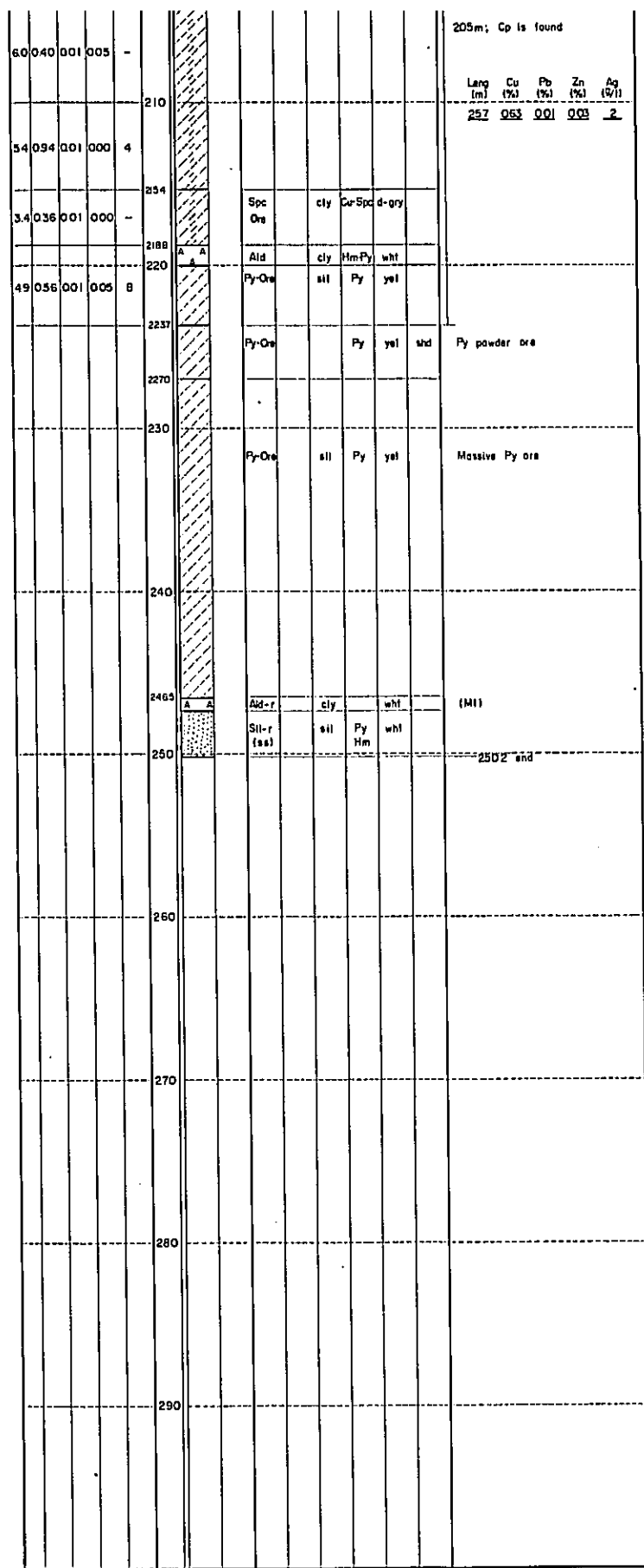
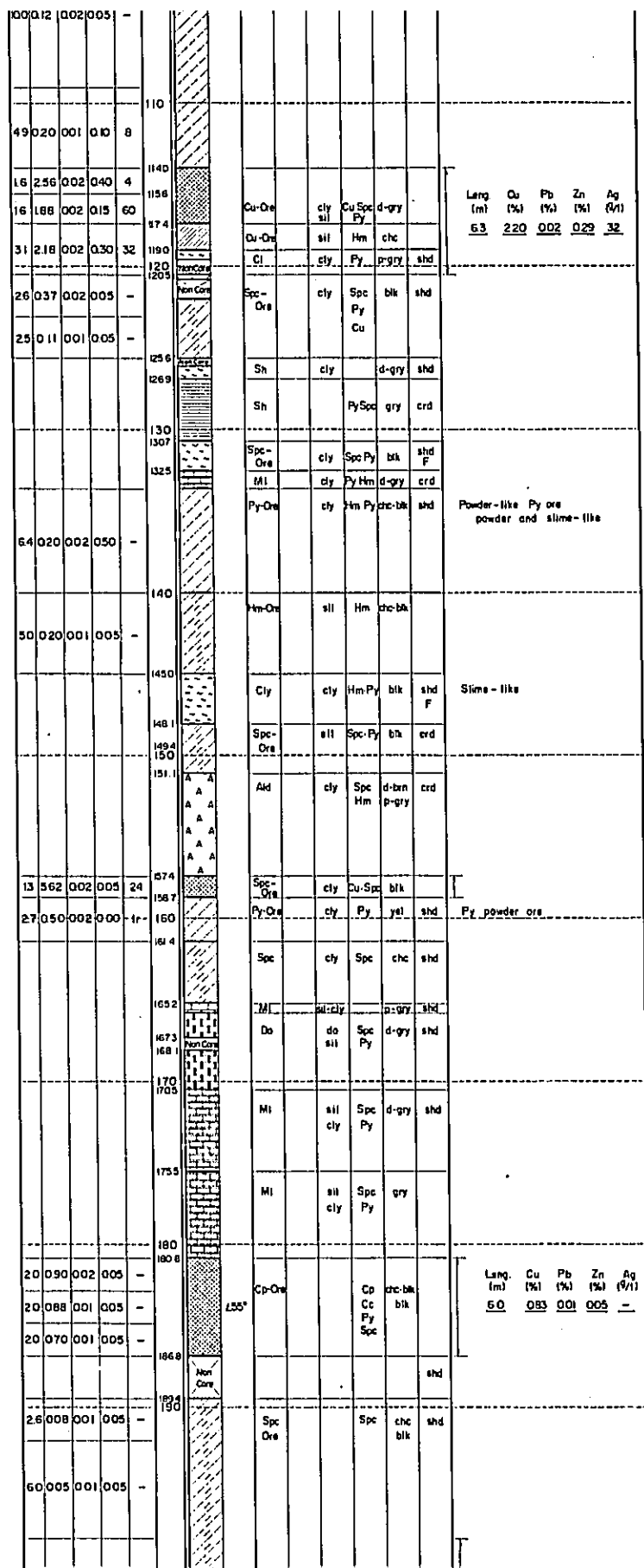
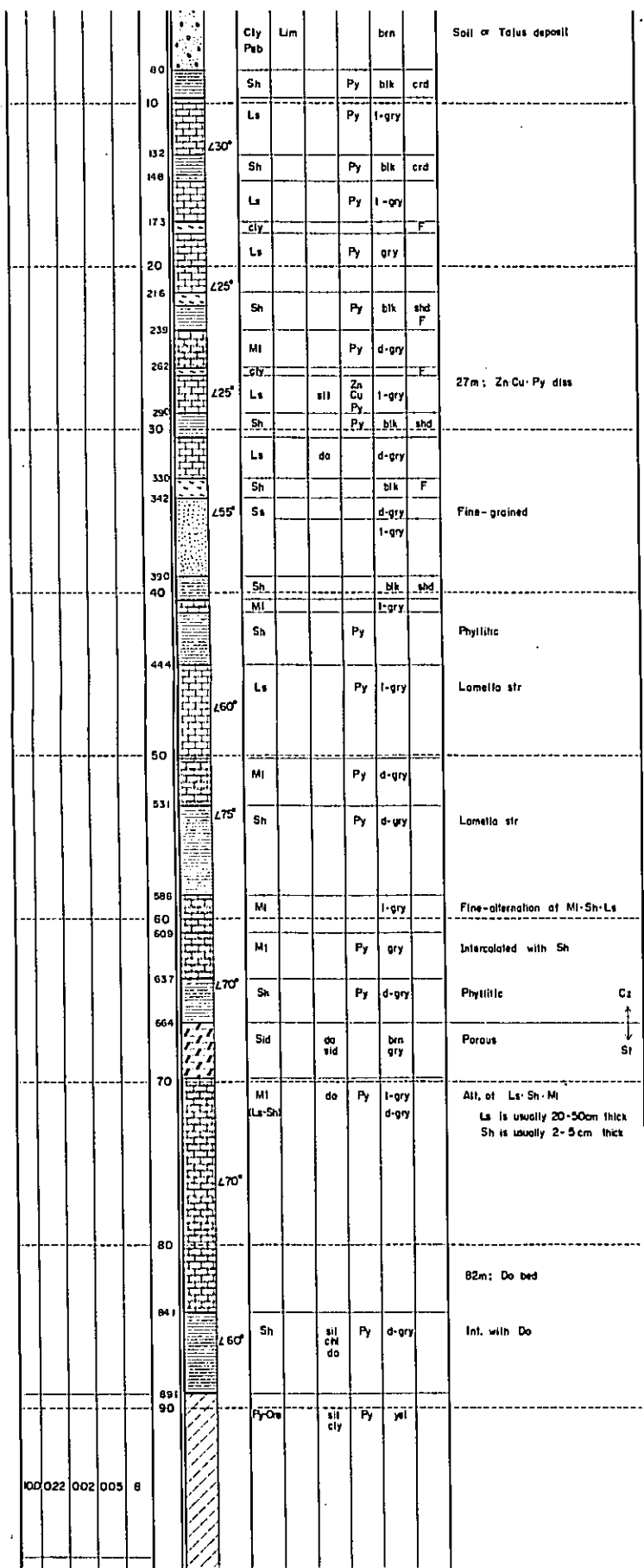
Assays					Depth Symbol					Occurrence					Observations	
Ag (g/t)	Zn (%)	Pb (%)	Cu (%)	Lang (m)	6	7	8	9	10	11	12	13	14	15		
					205m											205m: Cp is found
					210											
					254											
					2188											
					220											
					2237											
					2270											
					230											
					240											
					2465											
					250											
					250.2											
					270											
					280											



Scale 1 : 200

**LEGEND and ABBREVIATION**

10. Rock:	Pebble, sand, clay	Peb	
	Sandstone	Ss	
	Shale	Sh	
	Marl	Ml	
	Limestone	Ls	
	Dolomitic limestone	Do-Ls	
	Dolostone	Do	
	Siderite	Sid	
	Quartzite	Qtz	
	Ore, high grade		
	Ore, low grade		
	Pyrite ore	Py	
	Hematite ore	Hm	
	Skarn	Sk	
	Brecciated rock	Brc	
	Altered rock	A	
	Fault, fracture	F	
11. Oxidation:	oxidized	oxd	
	limonitized	lim	
12. Alteration:	dolomitization	do	
	calcification	cal	
	argillization	arg	
	silicification	sil	
	sericitization	ser	
13. Mineralization:	Pyrite	Py	Chalcopyrite Cp
	Pb-minerals	Pb	Chalcocite Cc
	Zn-minerals	Zn	Hematite Hm
	Oxide minerals	Oxd	Magnetite Mt



LEGEND and ABBREVIATION

- 10. Rock:
  - Pebble, sand, clay Peb
  - Sandstone Ss
  - Shale Sh
  - Mari Ml
  - Limestone Ls
  - Dolomitic limestone Do-Ls
  - Dolostone Do
  - Siderite Sid
  - Quartzite Qtz
  - Ore, high grade
  - Ore, low grade
  - Pyrite ore Py
  - Hematite ore Hm
  - Skarn Sk
  - Brecciated rock Brc
  - Altered rock A
  - Fault, fracture F
- 11. Oxidation:
  - oxidized oxd
  - limonitized lim
- 12. Alteration:
  - dolomitization do
  - calcification cal
  - argillization cly
  - silicification sil
  - sericitization ser
- 13. Mineralization:
  - Pyrite Py
  - Pb-minerals Pb
  - Zn-minerals Zn
  - Oxide minerals Ord
  - Chalcopyrite Cp
  - Chalcosite Cc
  - Hematite Hm
  - Magnetite Mt
- 14. Color:
  - light l
  - dark d
  - grey gry
  - black blk
  - white wht
  - brown brn
- 15. Fracture:
  - Fault shd
  - sheared shd
  - brecciated brc
- 16. Observations:
  - dissemination diss
  - veins vs
  - veinlets vis

**GEOLOGIC DRILL LOG  
ISCAYCRUZ PROJECT**

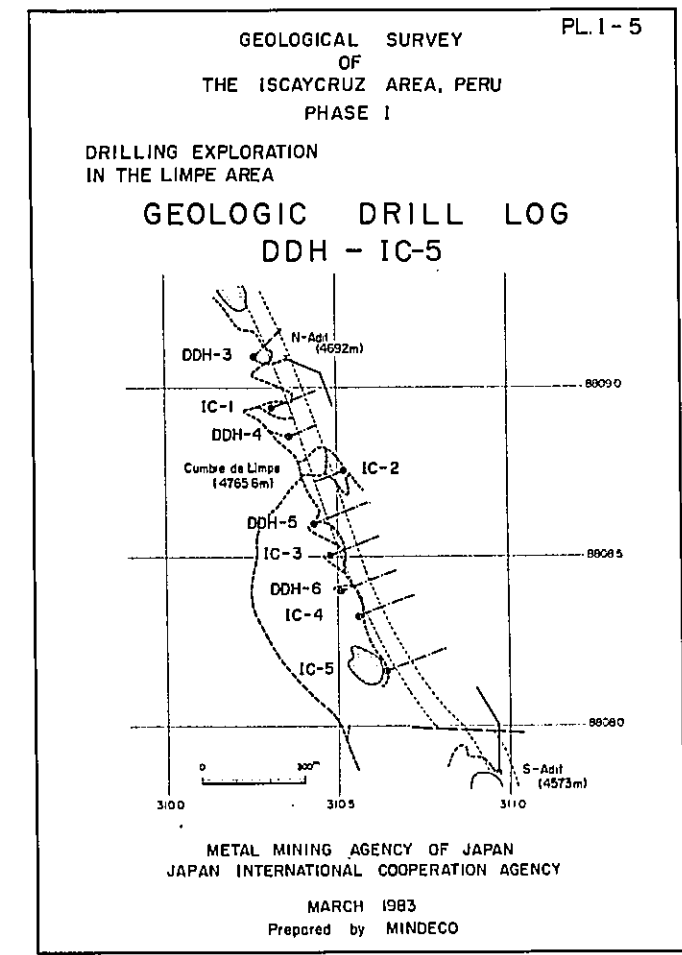
Coordinate N 808.158 Direction 70°  
E 310.639 Inclination -50°  
Elevation 4674m Total Depth 302.5m

DDH No. IC-5

Assays					Depth		Occurrence					Observations	
Dep. (m)	Cu (%)	Pb (%)	Zn (%)	Ag (g/t)	Core	Str.	Rock	Oxd.	Alt.	Min.	Color		Fract.
10						7	Qtz Brc				whl		Talus deposit
10						8	Sh				blk		
10						9	Ls				l-gry		
10						10	MI				d-gry		Fine-alternation of MI-Ls-Sh
20						11	Sh				blk		Phyllitic
20						12	Ls				l-gry		Cal vs dev abundantly
30						13	Do-Ls	do			d-gry	fr	Frc. of 75° dip
30	0.06	0.02	3.83	16		14	Sh				d-gry	fr	30.4-40.7m; Zn vils
30						15	Do-Ls	do			gr	fr	Do vs. vils
40						16	MI	do			d-gry	shd	Alteration of Sh-MI-Ls mainly Sh Fault zone parallel to bedding
50						17	Ls				l-gry		
60						18	Ls				l-gry	shd	Intercalated with Sh (10-50cm int)
70						19	Do-Ls	do			d-gry		Dolomitic Ls
80						20	Brc	do			d-gry	brc	Brecciated r. Hgt. fr. gr. MI-Sh and Do
90						21	Py-Ore	sil	Zn	Cu	yel		Sid druses
100						22	Py-Ore	sil	Zn	Py	yel		
110						23	Ald	cl	do	Py	p-gry	shd	

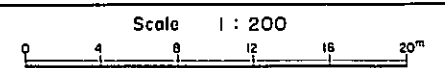
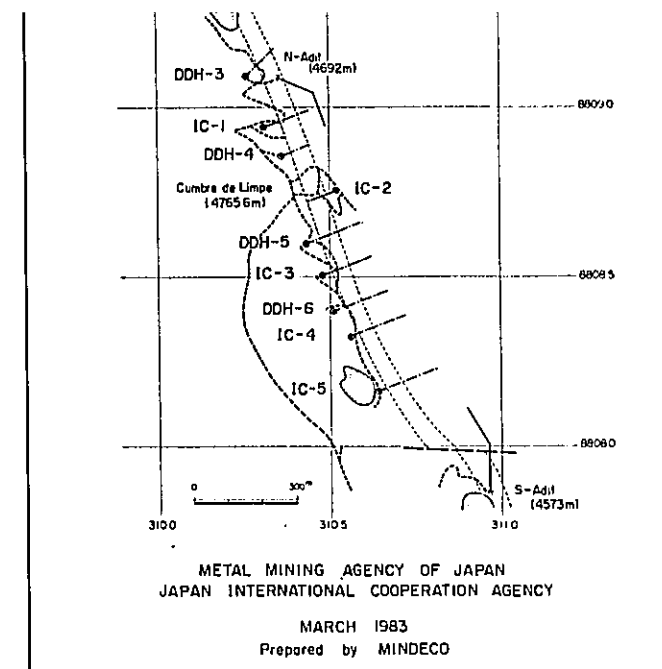
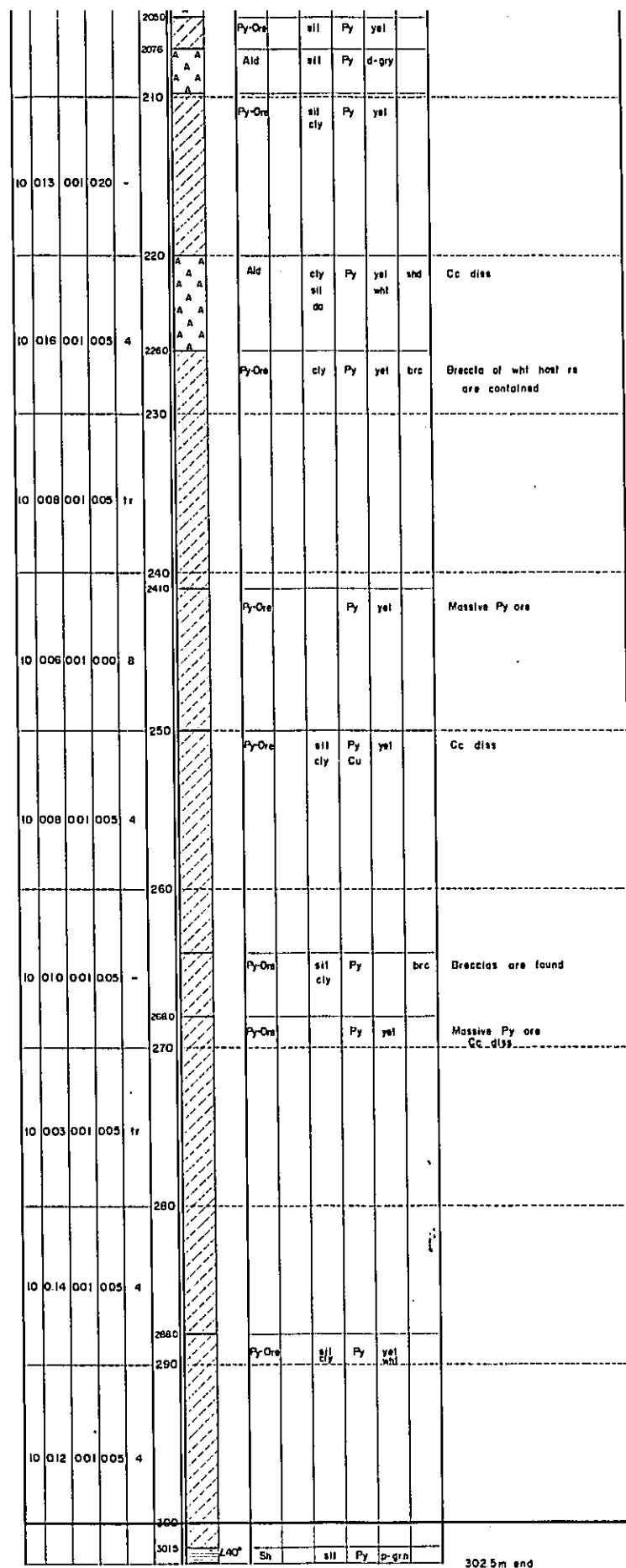
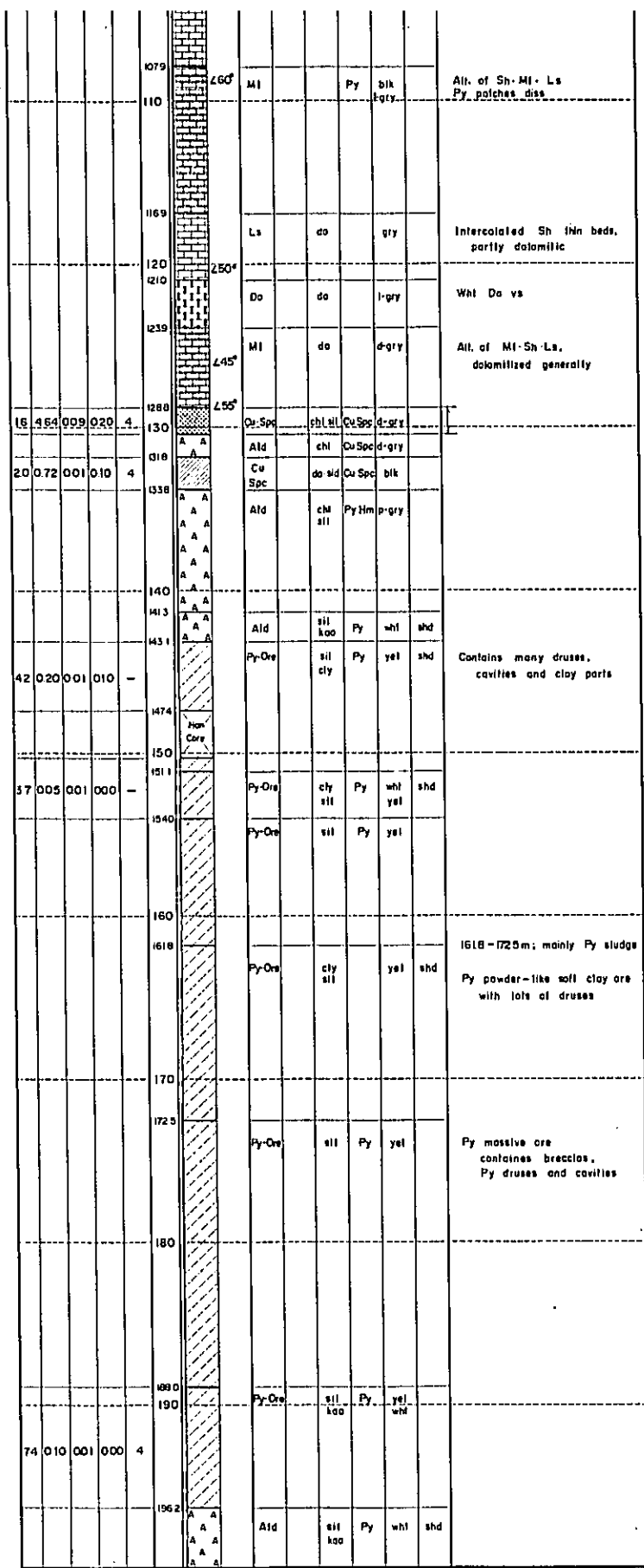
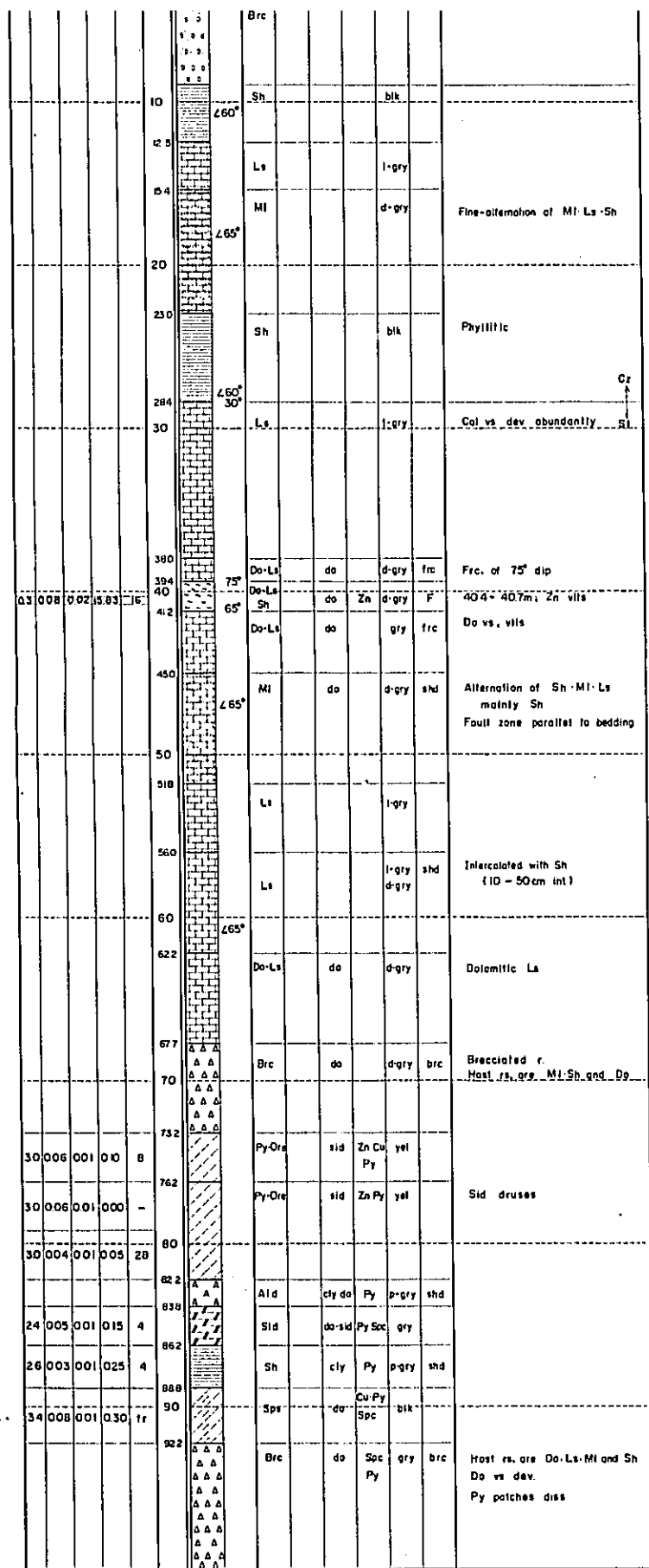
Assays					Depth		Occurrence					Observations	
Dep. (m)	Cu (%)	Pb (%)	Zn (%)	Ag (g/t)	Core	Str.	Rock	Oxd.	Alt.	Min.	Color		Fract.
108						7	Ls				py	gr	Dolomitic partly
110						8	MI				blk	l-gry	Alt. of Sh-MI-Ls Py patches diss
118						9	Ls	do			gr		Intercalated Sh thin beds, partly dolomitic
120						10	Do	do			l-gry		Whl Do vs
120						11	MI	do			d-gry		Alt. of MI-Sh-Ls, dolomitized generally
128	16.46	0.09	0.20	4		12	Do-Spc	chl	MI	Cu	Sp	d-gry	
130						13	Ald	chl		Cu	Sp	d-gry	
138	20.07	0.01	0.10	4		14	Cu	do	sd	Cu	Sp	blk	
138						15	Ald	chl	sil	Py	Hm	p-gry	
140						16	Non Core						
140						17	Py-Ore	cl	sil	Py	whl	shd	
143						18	Py-Ore	sil	cl	Py	yel	shd	Contains many druses, cavities and clay parts
143						19	Py-Ore	sil	cl	Py	yel	shd	
147						20	Py-Ore	sil	cl	Py	yel	shd	
150						21	Py-Ore	sil	cl	Py	yel	shd	
154						22	Py-Ore	sil	cl	Py	yel	shd	
160						23	Py-Ore	cl	sil	Py	yel	shd	1618-1725m; mainly Py studge Py powder-like soft clay ore with lots of druses
170						24	Py-Ore	sil	cl	Py	yel	shd	
172						25	Py-Ore	sil	cl	Py	yel	shd	Py massive ore contains breccias, Py druses and cavities
180						26	Py-Ore	sil	cl	Py	yel	shd	

Assays					Depth		Occurrence					Observations				
Dep. (m)	Cu (%)	Pb (%)	Zn (%)	Ag (g/t)	Core	Str.	Rock	Oxd.	Alt.	Min.	Color		Fract.			
2050						7	Ald				sil	kan	Py	whl	shd	
2078						8	Py-Ore	sil			Py	yel				
210						9	Ald				sil	py	d-gry			
210	10.013	0.01	0.20	-		10	Py-Ore	sil			cl	py	yel			
220						11	Ald				cl	sil	py	yel	shd	Cc diss
220						12	Py-Ore	cl			py	yel	brc	Breccia of whl host rs are contained		
2260	10.016	0.01	0.05	4		13	Py-Ore	cl			py	yel	brc			
230						14	Py-Ore	cl			py	yel	brc			
230	10.008	0.01	0.05	1r		15	Py-Ore	cl			py	yel	brc			
240						16	Py-Ore	cl			py	yel	brc	Massive Py ore		
240						17	Py-Ore	cl			py	yel	brc			
240	10.006	0.01	0.00	8		18	Py-Ore	cl			py	yel	brc			
250						19	Py-Ore	cl			py	yel	brc	Cc diss		
250	10.008	0.01	0.05	4		20	Py-Ore	cl			py	yel	brc			
260						21	Py-Ore	cl			py	yel	brc	Breccias are found		
270	10.010	0.01	0.05	1r		22	Py-Ore	cl			py	yel	brc			
270						23	Py-Ore	cl			py	yel	brc	Massive Py ore Cc diss		
280	10.003	0.01	0.05	1r		24	Py-Ore	cl			py	yel	brc			



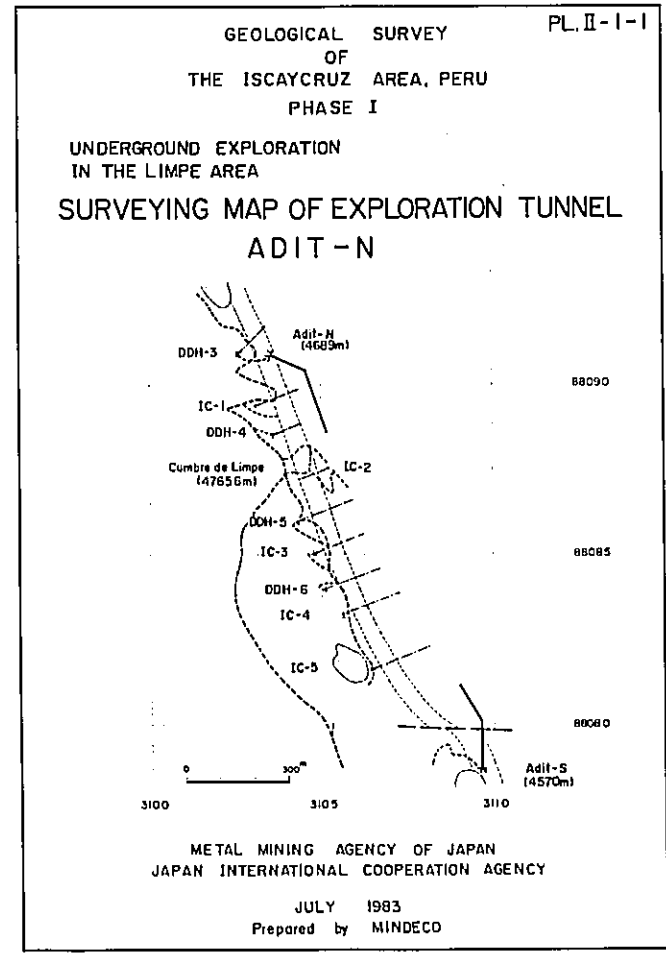
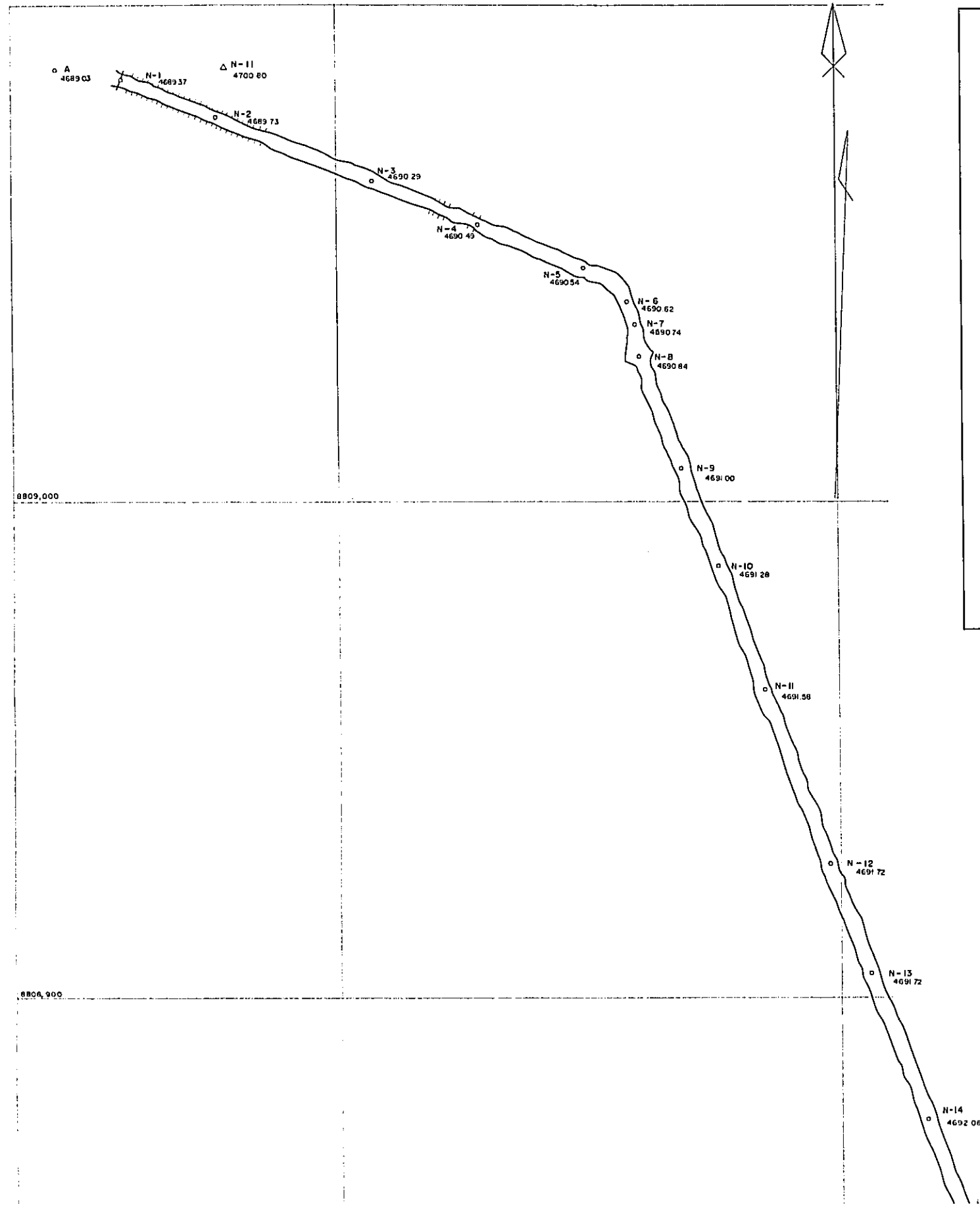
**LEGEND and ABBREVIATION**

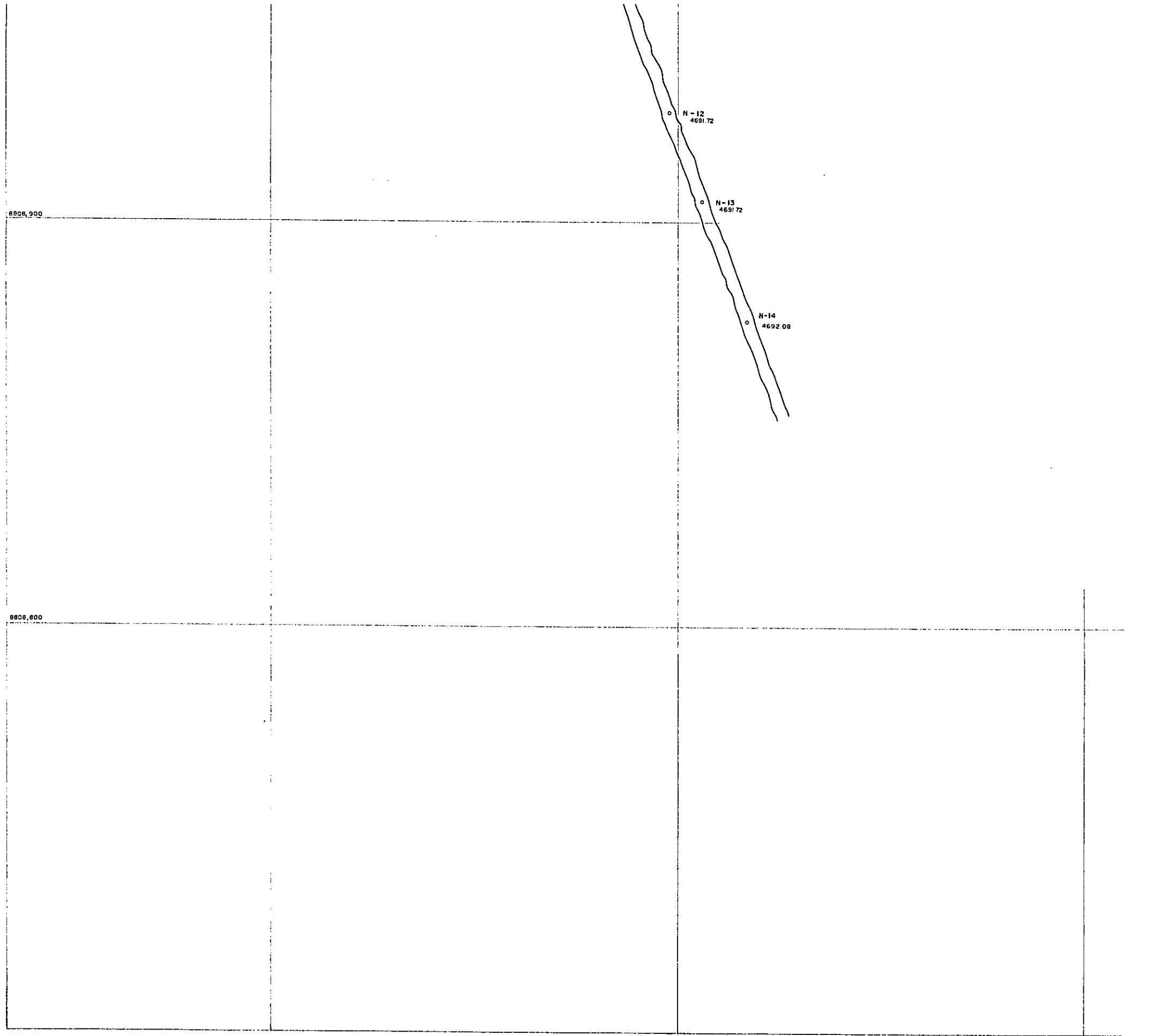
10. Rock:	Pebble, sand, clay	Peb	
	Sandstone	Ss	
	Shale	Sh	
	Marl	MI	
	Limestone	Ls	
	Dolomitic limestone	Do-Ls	
	Dolostone	Do	
	Siderite	Sid	
	Quartzite	Qtz	
	Ore, high grade		
	Ore, low grade		
	Pyrite ore	Py	
	Hematite ore	Hm	
	Skarn	Sk	
	Brecciated rock	Brc	
	Altered rock	A	
	Fault, fracture	F	
11. Oxidation:	oxidized	oxd	
	limonitized	lim	
12. Alteration:	dolomitization	do	
	calcification	cal	
	argillization	cl	
	silicification	sil	
	sericitization	ser	
13. Mineralization:	Pyrite	Py	
	Pb-minerals	Pb	
	Zn-minerals	Zn	
	Oxide minerals	Oxd	
	Chalcopyrite	Cp	
	Chalcoite	Cc	
	Hematite	Hm	
	Magnetite	MI	

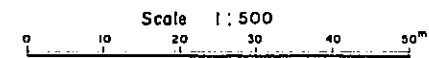
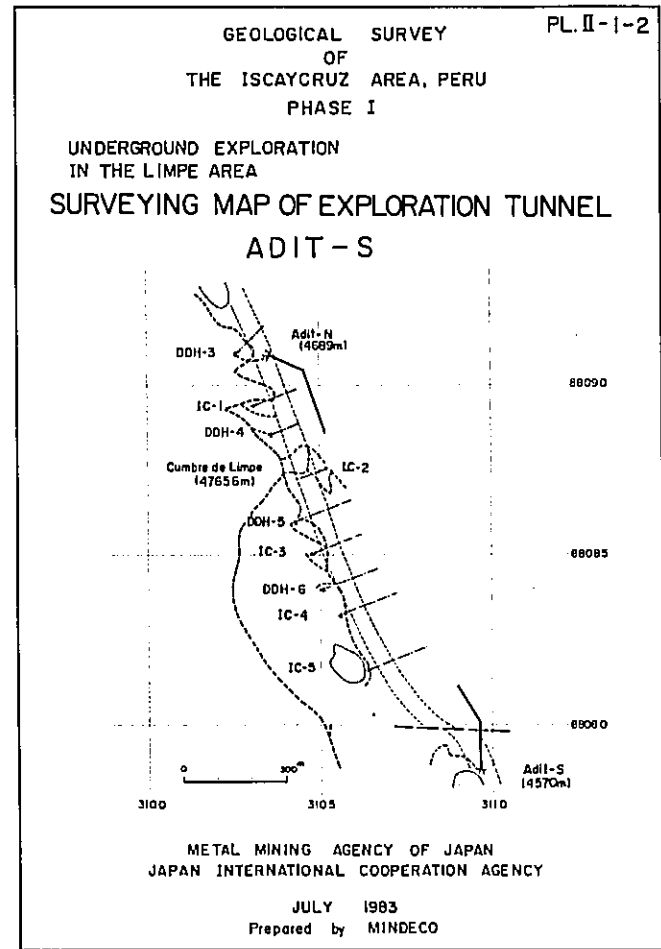


### LEGEND and ABBREVIATION

10. Rock:	Pebble, sand, clay	Peb	
	Sandstone	Ss	
	Shale	Sh	
	Marl	Ml	
	Limestone	Ls	
	Dolomitic limestone	Do-Ls	
	Oolostone	Do	
	Siderite	Sid	
	Quartzite	Qtz	
	Ore, high grade		
	Ore, low grade		
	Pyrite ore	Py	
	Hematite ore	Hm	
	Skarn	Sk	
	Brecciated rock	Brc	
	Altered rock	A	
	Fault, fracture	F	
11. Oxidation:	oxidized	oxd	
	limonitized	lim	
12. Alteration:	dolomitization	do	
	calcification	cal	
	argillization	arg	
	silicification	sil	
	sericitization	ser	
13. Mineralization:	Pyrite	Py	
	Pb-minerals	Pb	
	Zn-minerals	Zn	
	Oxide minerals	Oxd	
	Chalcopyrite	Cp	
	Chalcosite	Cc	
	Hematite	Hm	
	Magnetite	Ml	
14. Color:	light	l	
	dark	d	
	grey	gry	
	black	blk	
	white	whl	
	brown	brn	
15. Fracture:	Fault	F	
	sheared	shd	
	brecciated	brc	
16. Observations:	dissimination veins	diss vs	
	veinlets	vis	







8808,200

8808,100

Δ S-10  
4640.18

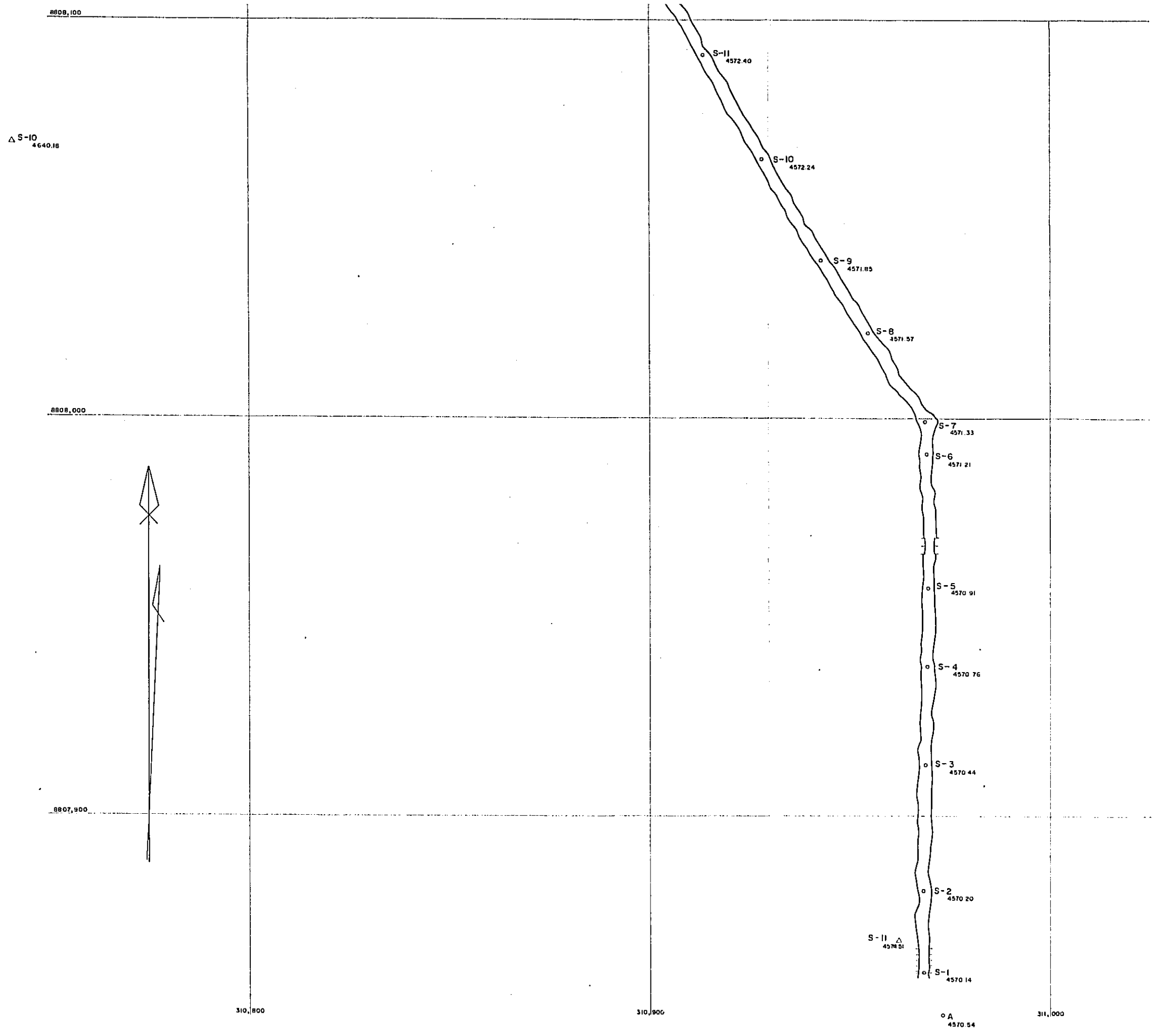
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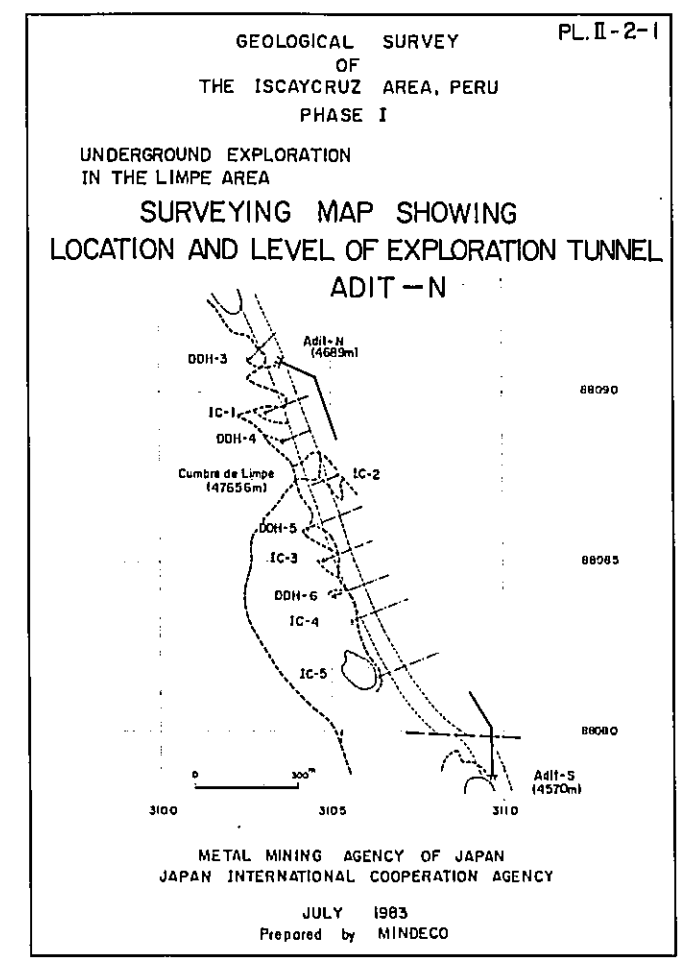
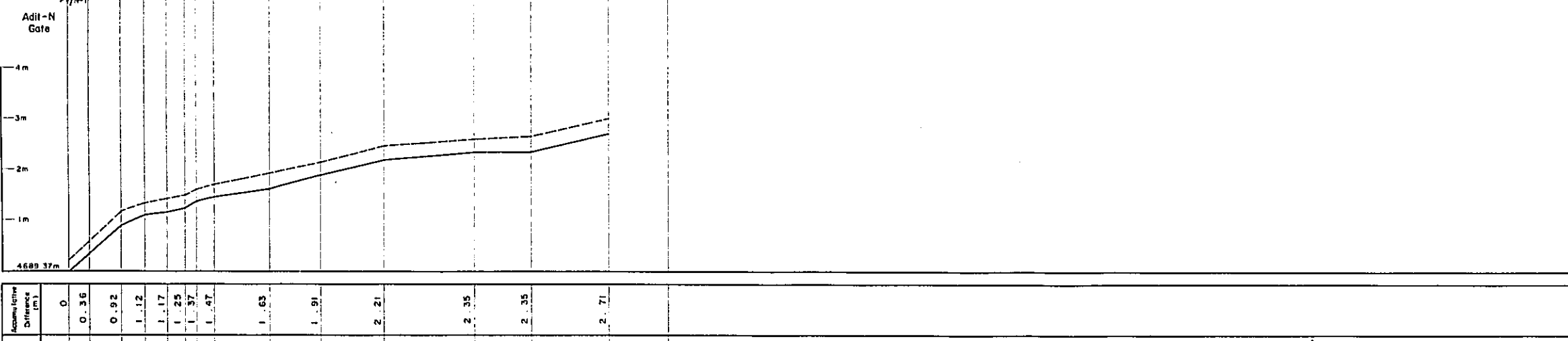
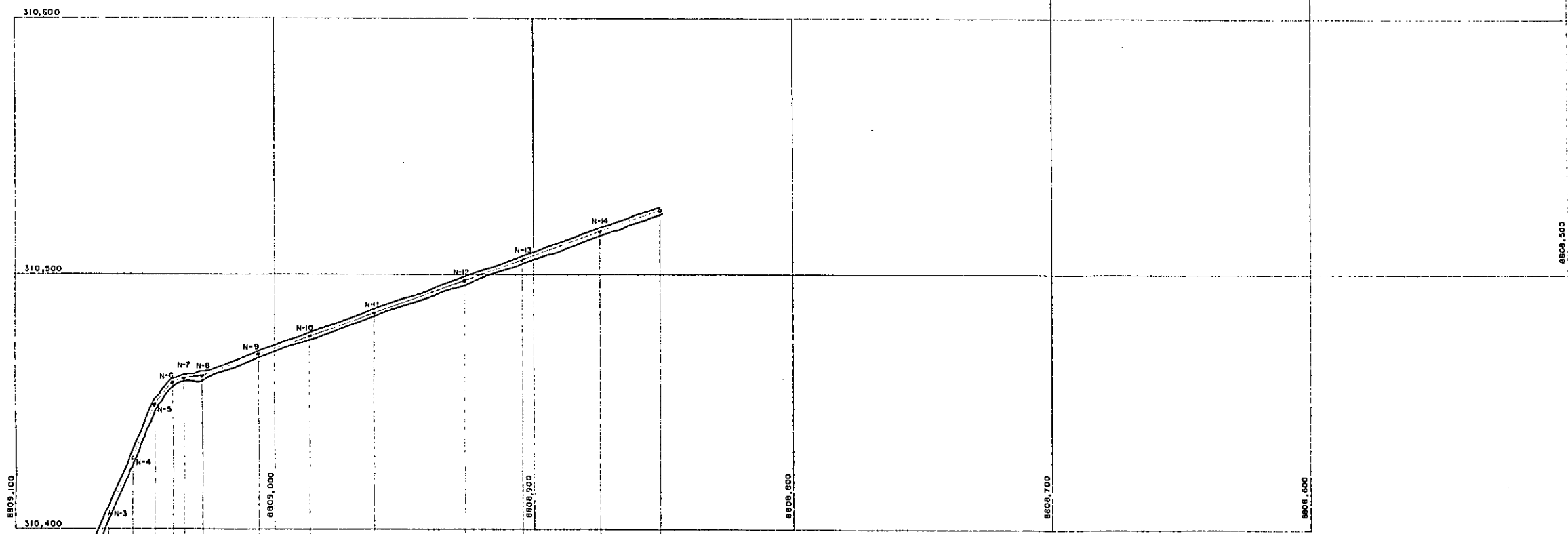
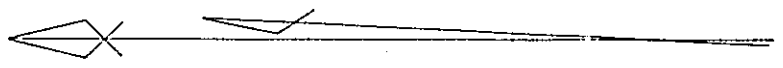
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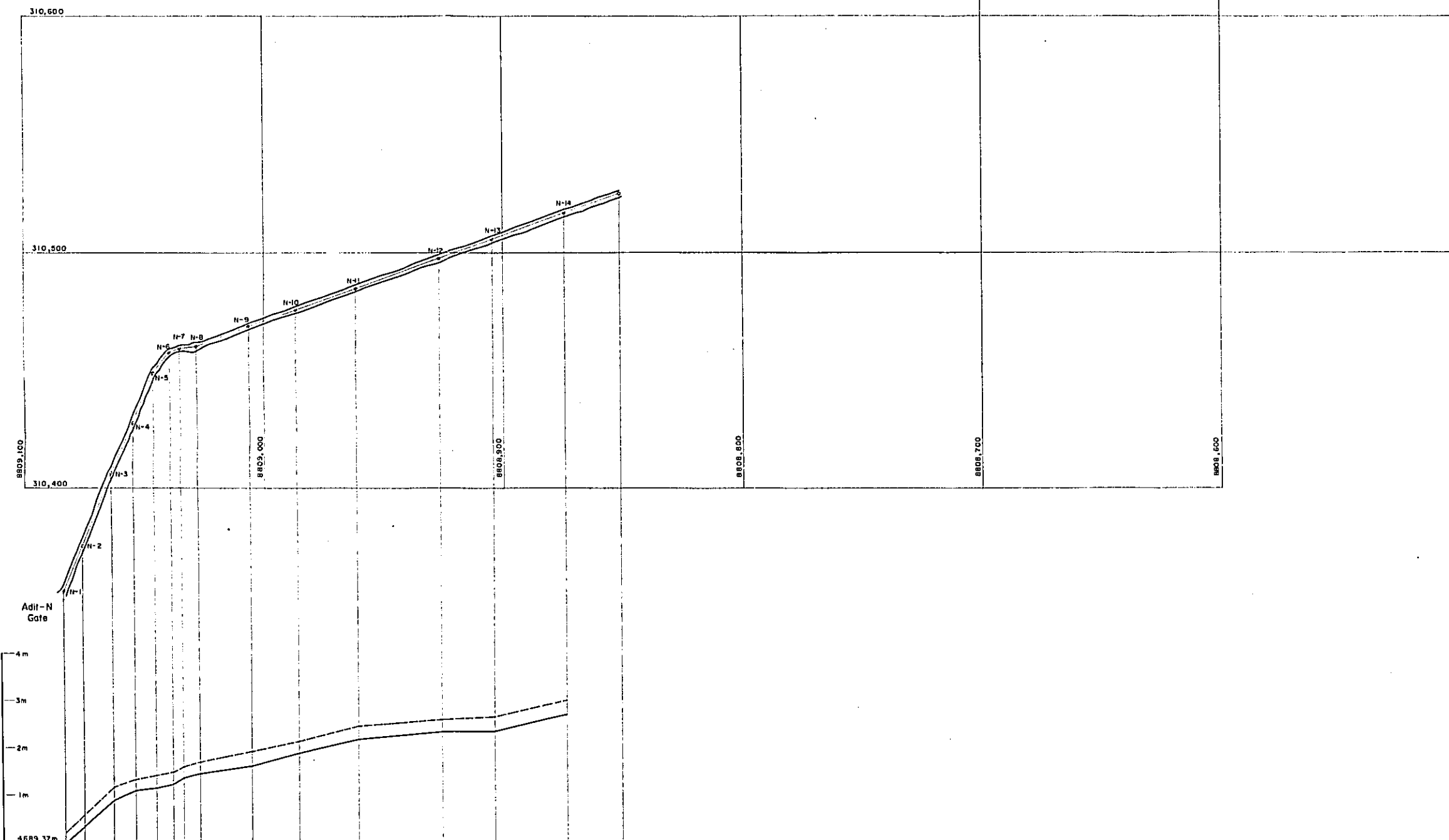
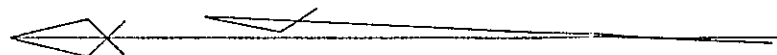
○ S-9  
4571.85

○ S-8  
4571.57

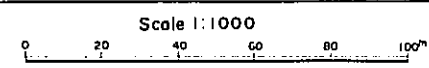
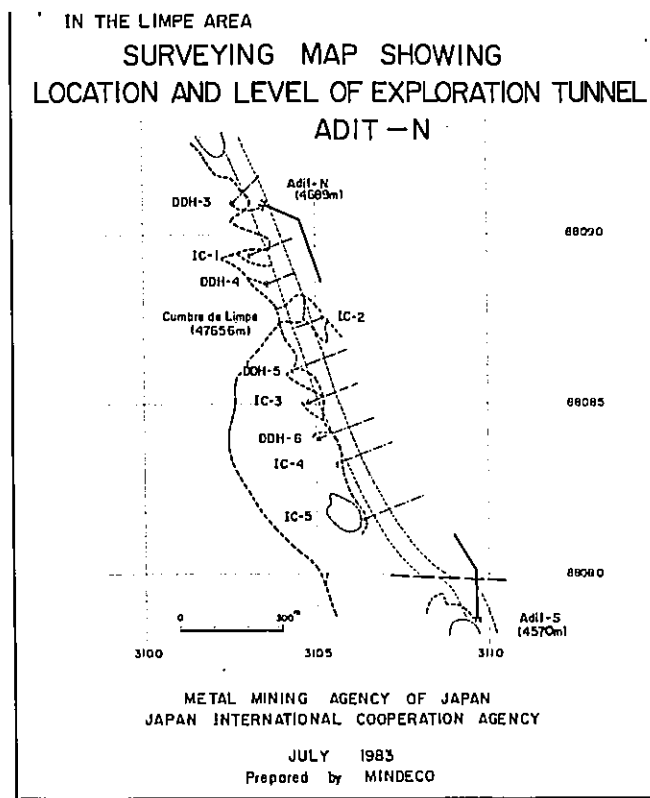


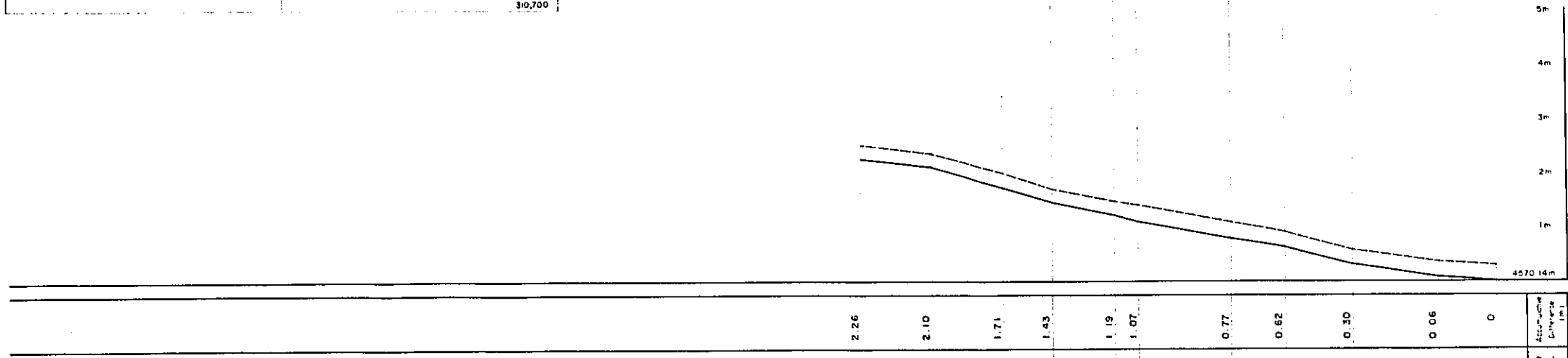
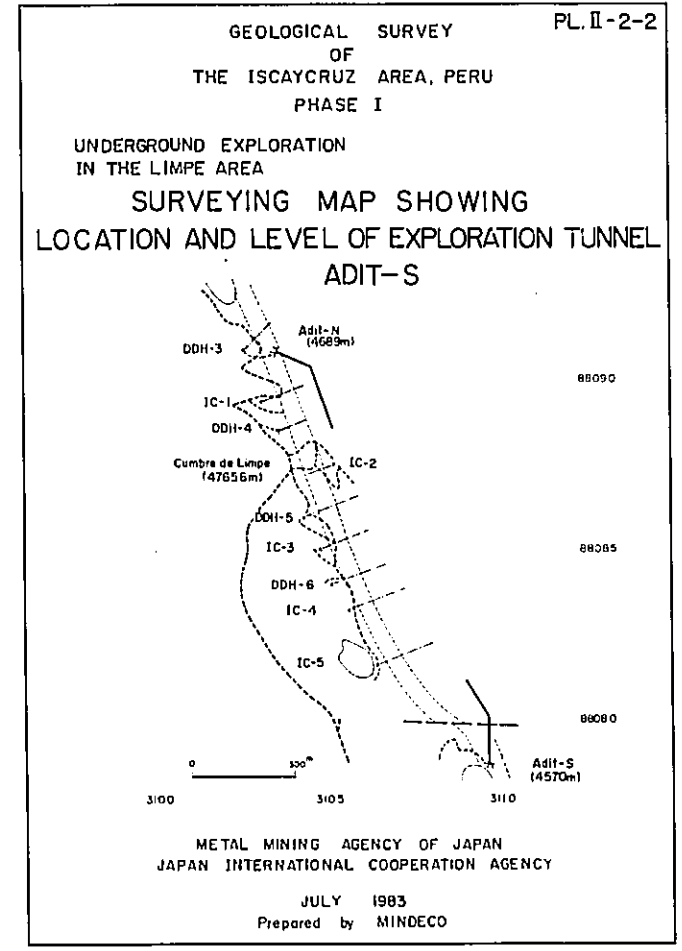
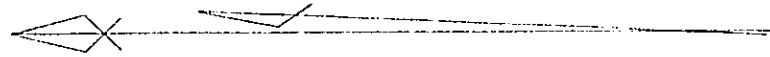
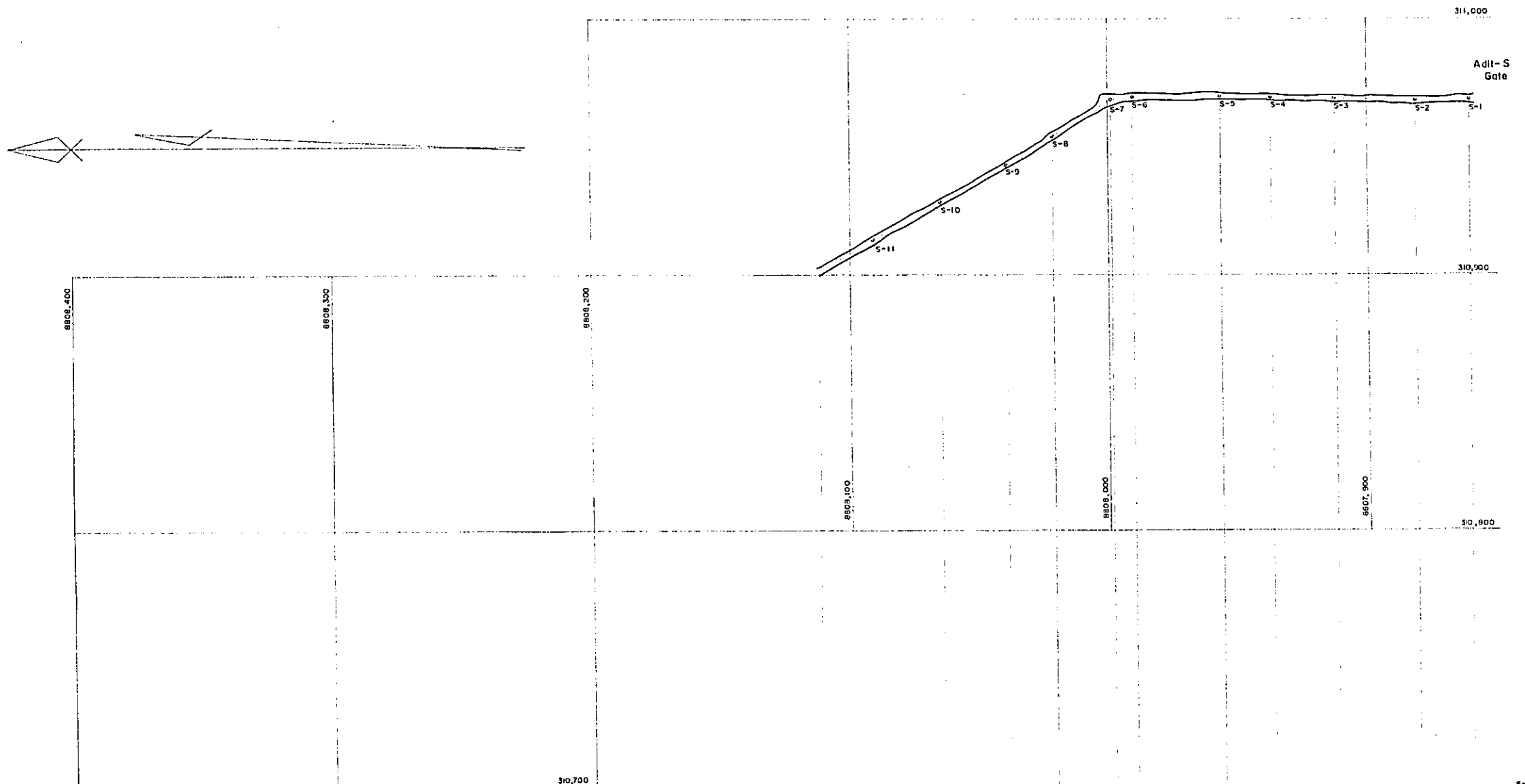


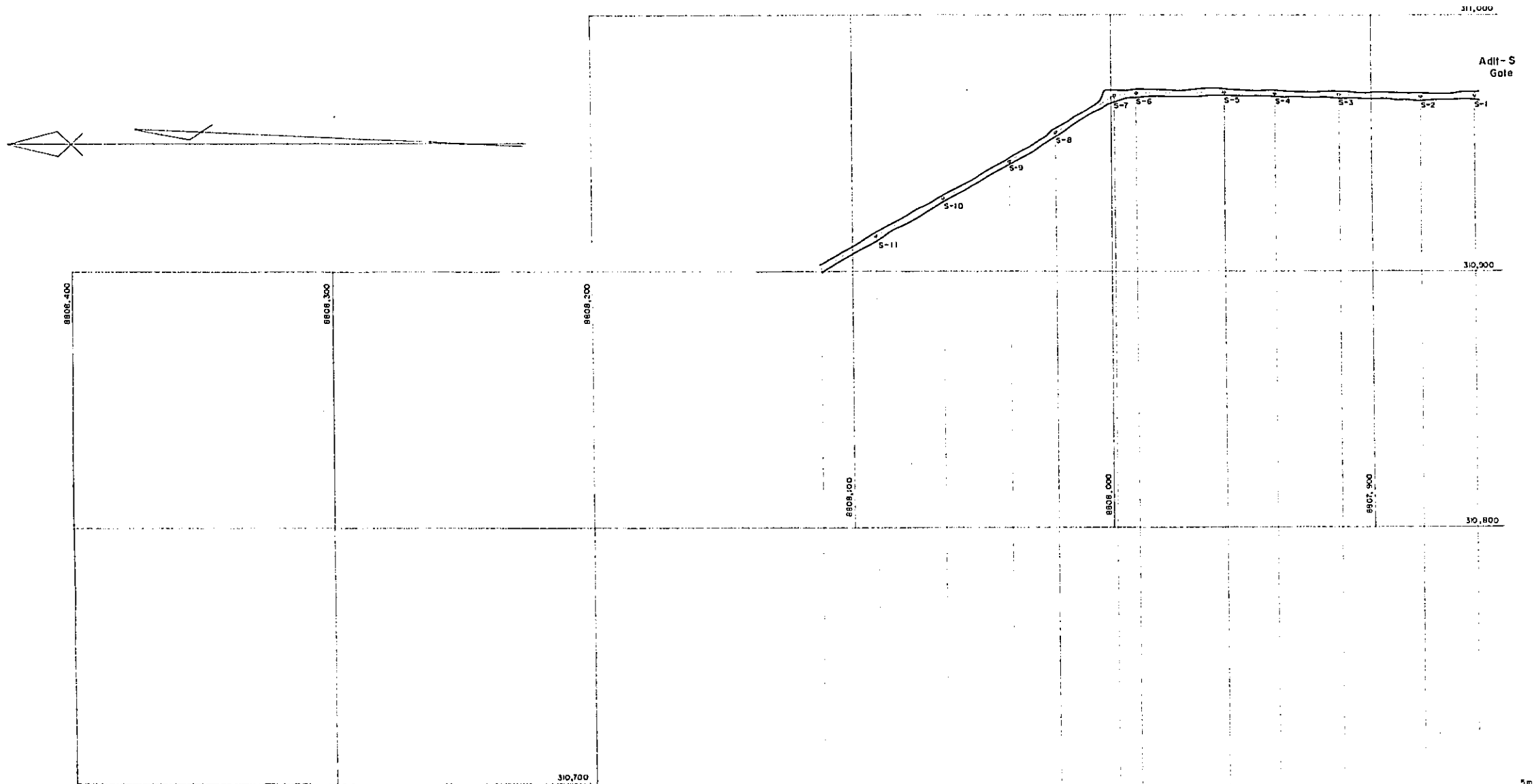




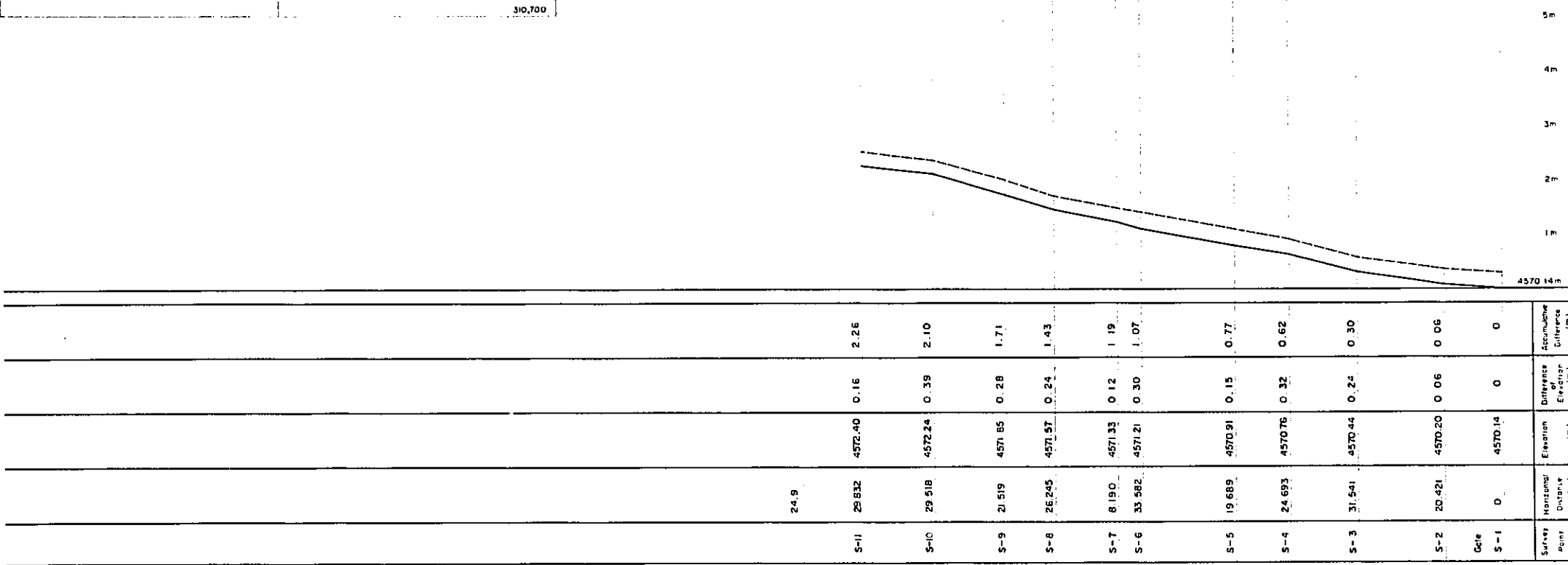
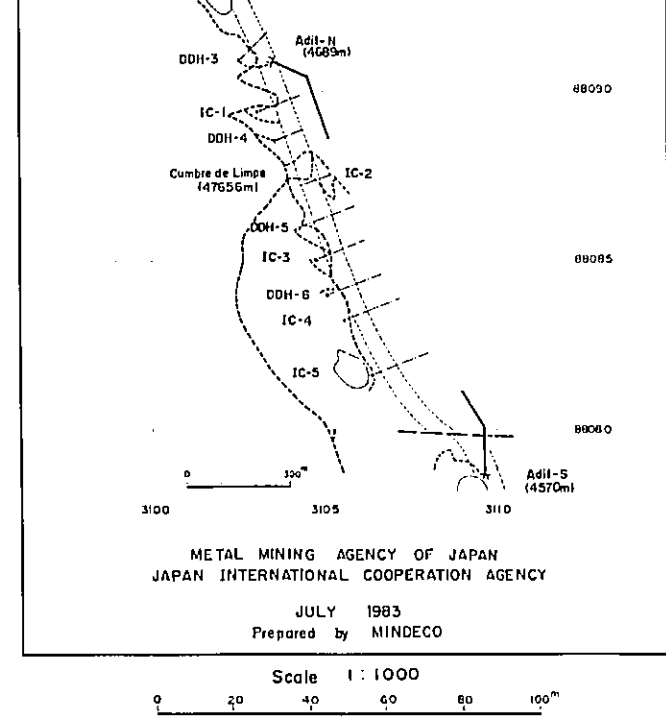
Survey Point	Horizontal Distance (m)	Elevation (m)	Difference Elevation (m)	Accumulative Difference (m)
Gate	0	4839.37	0	0
N-2	20.329	4893.73	0.36	0.36
N-3	33.641	4890.29	0.56	0.92
N-4	22.983	4890.49	0.20	1.12
N-5	22.632	4890.54	0.05	1.17
N-6	10.849	4890.62	0.08	1.25
N-7	4.961	4890.74	0.12	1.37
N-8	6.526	4890.84	0.10	1.47
N-9	23.839	4891.00	0.16	1.63
N-10	21.000	4891.28	0.28	1.91
N-11	26.255	4891.58	0.30	2.21
N-12	37.265	4891.72	0.14	2.35
N-13	23.576	4891.72	0.00	2.35
N-14	31.690	4892.08	0.36	2.71
	24.900			

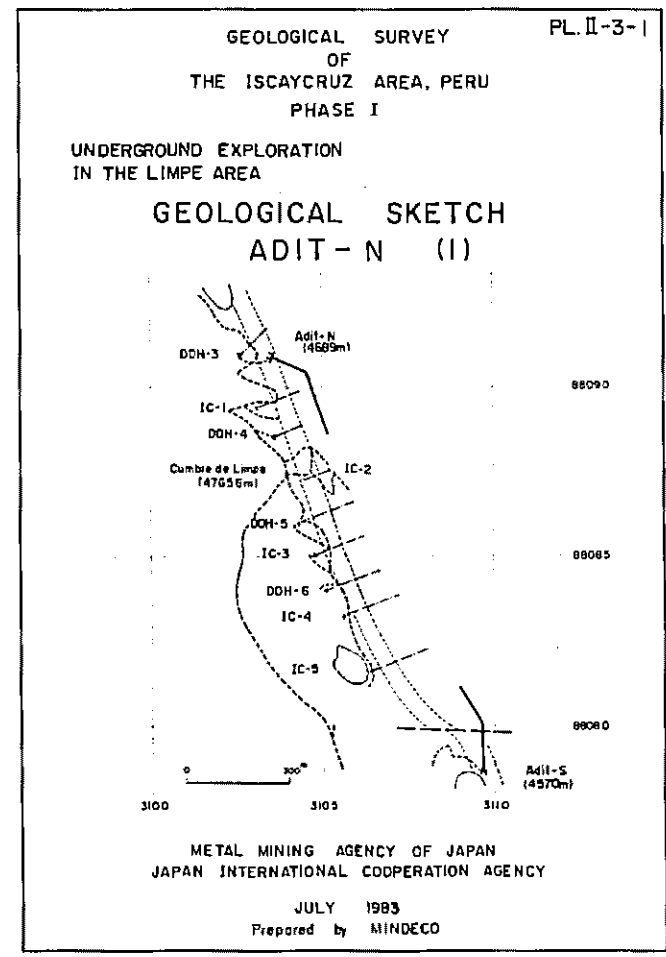
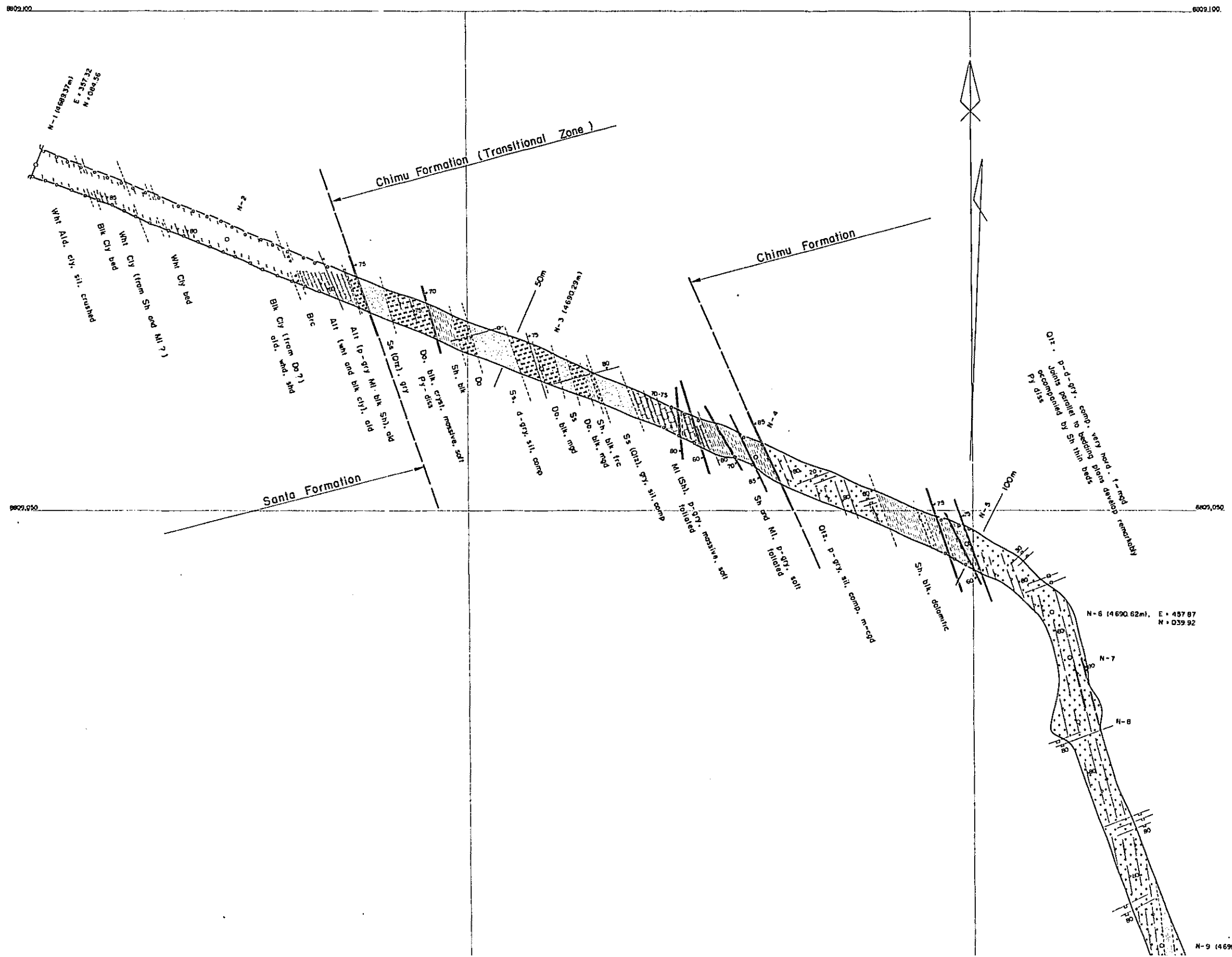






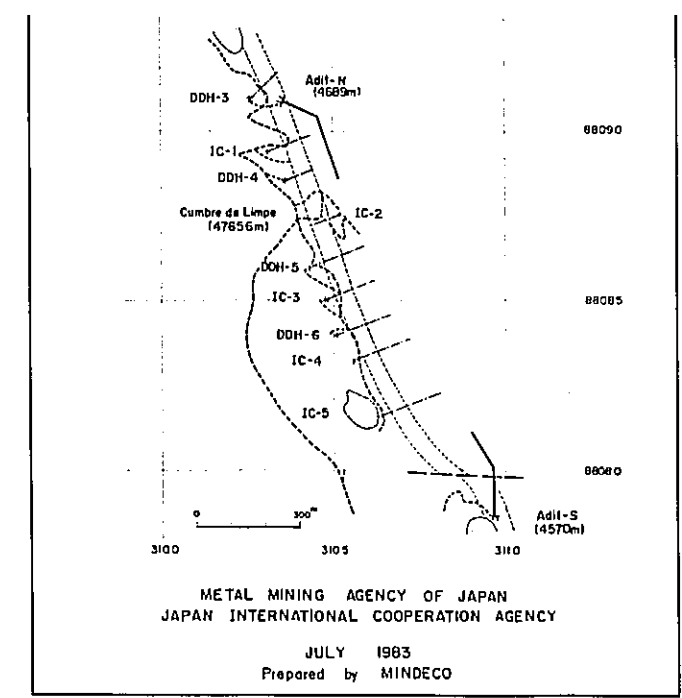
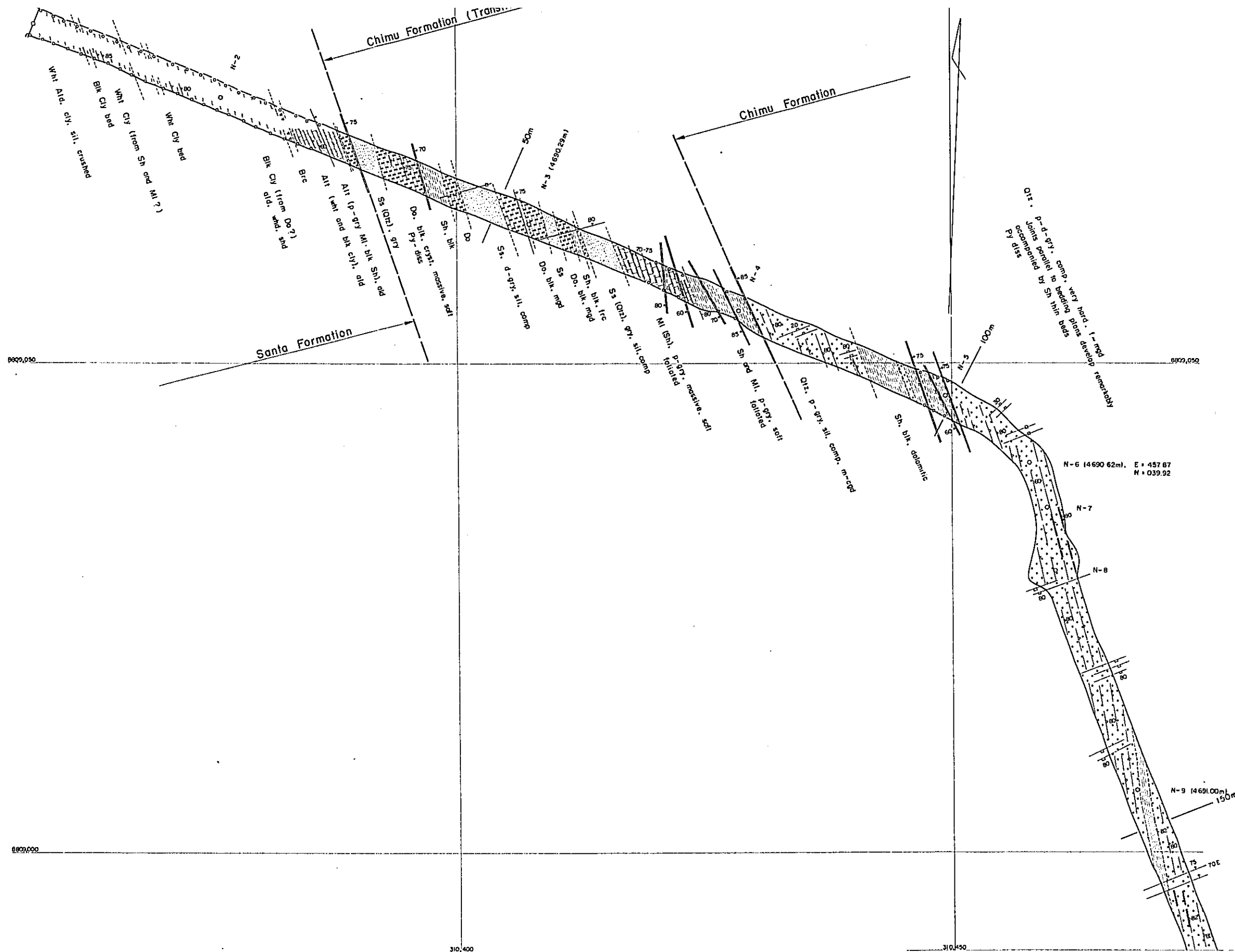
SURVEYING MAP SHOWING LOCATION AND LEVEL OF EXPLORATION TUNNEL ADIT-S





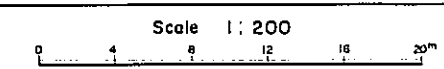
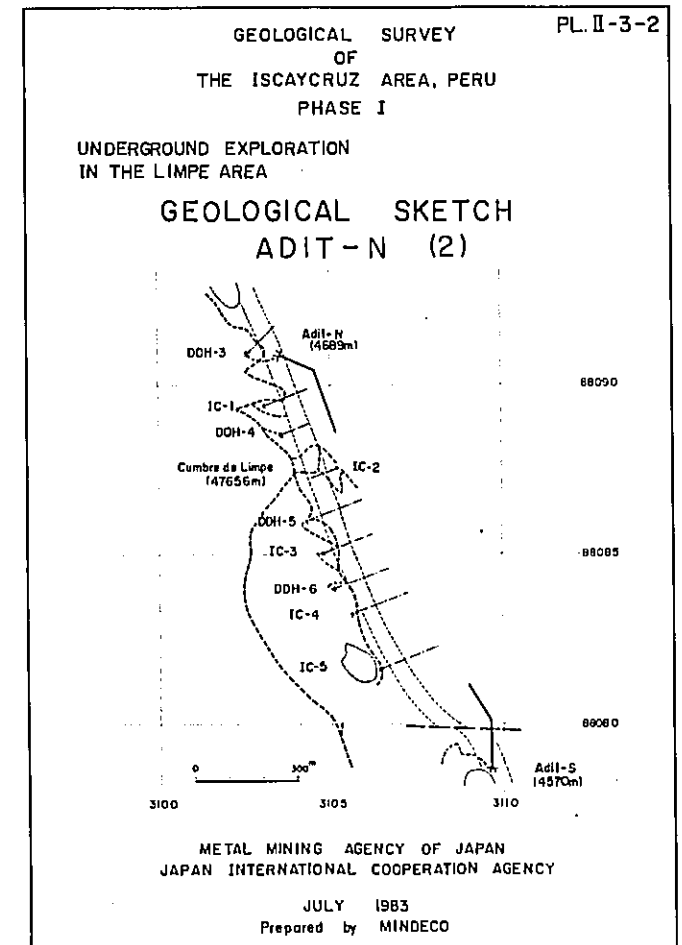
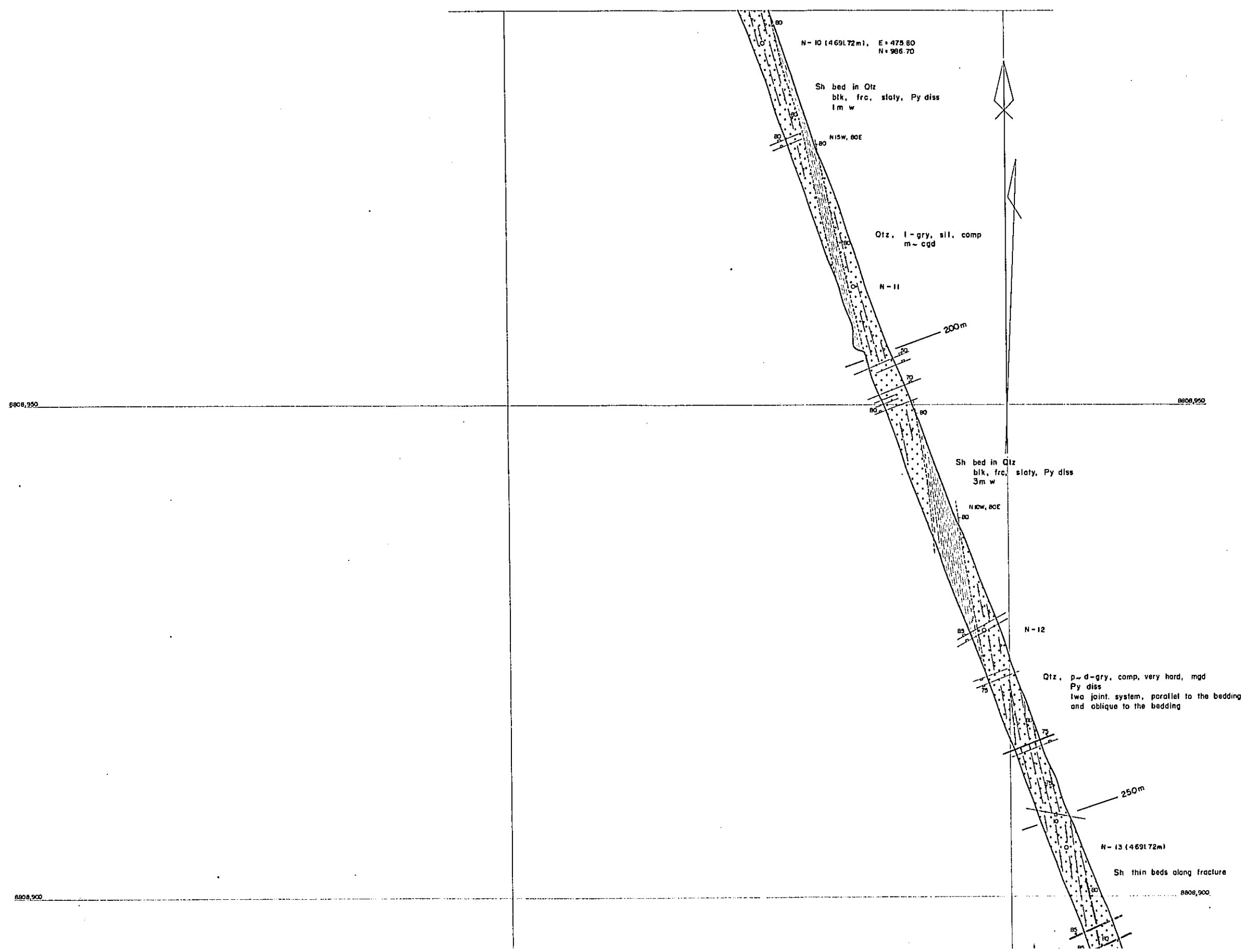
**LEGEND and ABBREVIATION**

Rock :	Pebble, sand, clay	Peb		
	Sandstone	Ss		
	Shale	Sh		
	Marl	Ml		
	Limestone	Ls		
	Dolomitic limestone	Do-Ls		
	Dolostone	Do		
	Siderite	Sid		
	Quartzite	Qtz		
	Ore, high grade			
	Ore, low grade			
	Pyrite ore	Py		
	Hematite ore	Hm		
	Skarn	Sk		
	Brecciated rock	Brc		
Altered rock	A(ald)			
Sheared zone	Shd			
Fault	F			
Fracture and joint	J			
Bedding				
Alteration :	dolomitization	do		
	calcification	cal		
	argillization	cl		
	silicification	sil		
Mineralization :	sericitization	ser		
	Pyrite	Py	Magnetite	Mt
	Galena	Gl	Hematite	Hm Spc
	Sphalerite	Sp	Chalcocite	Cc



**LEGEND and ABBREVIATION**

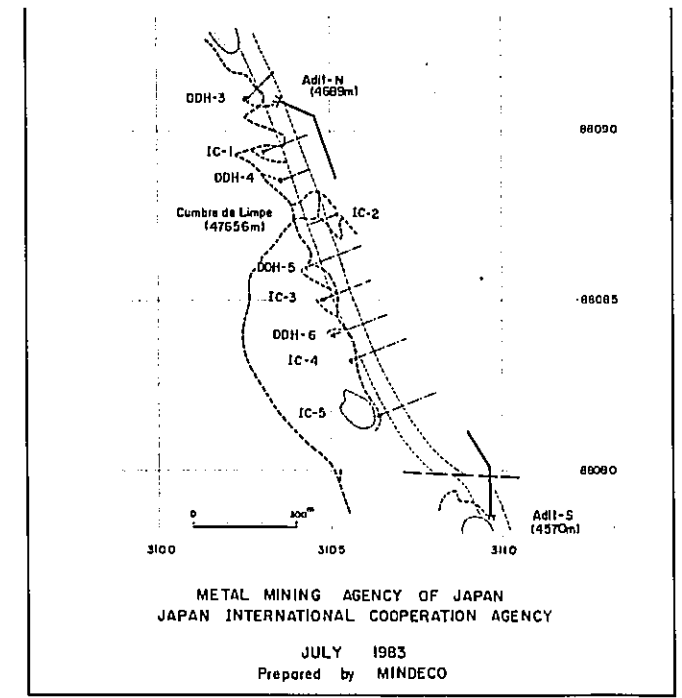
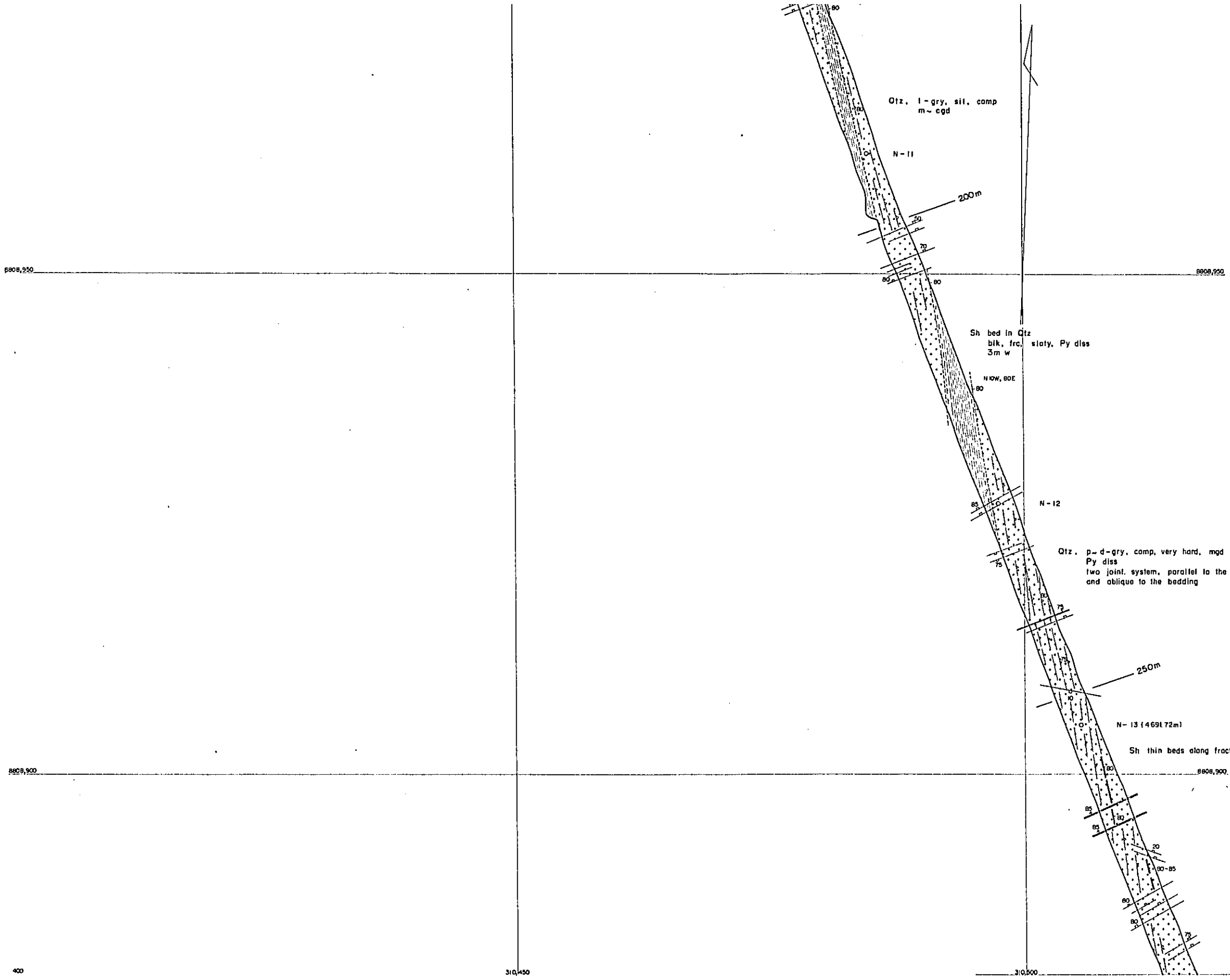
<b>Rock:</b>	Pebble, sand, clay	Peb		
	Sandstone	Ss		
	Shale	Sh		
	Marl	Ml		
	Limestone	Ls		
	Dolomitic limestone	Do-Ls		
	Dolostone	Do		
	Siderite	Sid		
	Quartzite	Qtz		
	Ore, high grade			
	Ore, low grade			
	Pyrite ore	Py		
	Hematite ore	Hm		
	Skarn	Sk		
	Brecciated rock	Brc		
	Altered rock	A(al)		
	Sheared zone	Shd		
	Fault	F		
	Fracture and joint	J		
	Bedding			
<b>Alteration:</b>	dolomitization	do		
	calcitization	cal		
	argillization	cly		
	silicification	sil		
	sericitization	ser		
<b>Mineralization:</b>	Pyrite	Py	Magnetite	Mt
	Galena	Gt	Hematite	Hm-Spc
	Sphalerite	Sp	Chalcocite	Cc
	Chalcopyrite	Cp	Limonite	Lim
	Quartz	Qt	Oxide minerals	Oxd
	Calcite	Cal		
<b>Color:</b>	light	l-	black	blk
	dark	d-	white	whl
	grey	gry	brown	brn
<b>Other:</b>	fine-grained	fgd	vain	v
	medium-grained	mgd	veinlet	vlt
	coarse-grained	cgd	dissemination	diss
	intercalated	inc	Alteration	Alt
<b>Sampling location and assay result</b>				NI-OI



LEGEND and ABBREVIATION

Rock:	Pebble, sand, clay Sandstone Shale Marl Limestone Dolomitic limestone Dolostone Siderite Quartzite Ore, high grade Ore, low grade Pyrite ore Hematite ore Skarn Brecciated rock Altered rock Sheared zone Fault Fracture and joint Bedding	Peb Ss Sh Ml Ls Do-Ls Do Sid Qtz Ore, high grade Ore, low grade Py Hm Sk Brc A(ald) Shd F J		
Alteration:	dolomitization calcification argillization silicification sericitization	do cal arg sil ser		
Mineralization:	Pyrite Galena Sphalerite Chalcocopyrite	Py Gl Sp Cp	Magnetite Hematite Chalcocite Limonite	Ml Hm-Spc Cc Lim



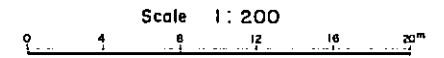
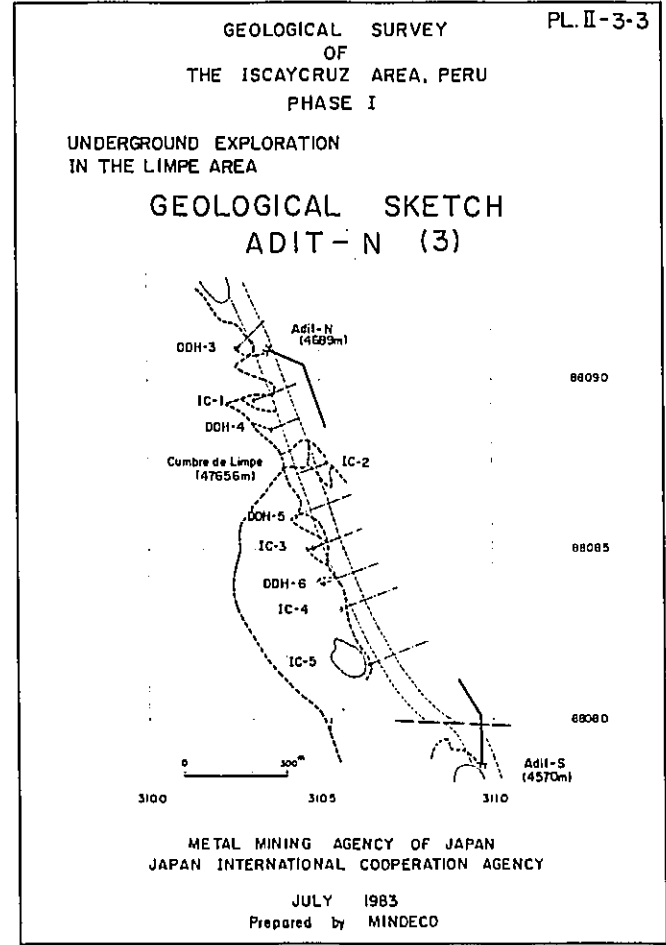
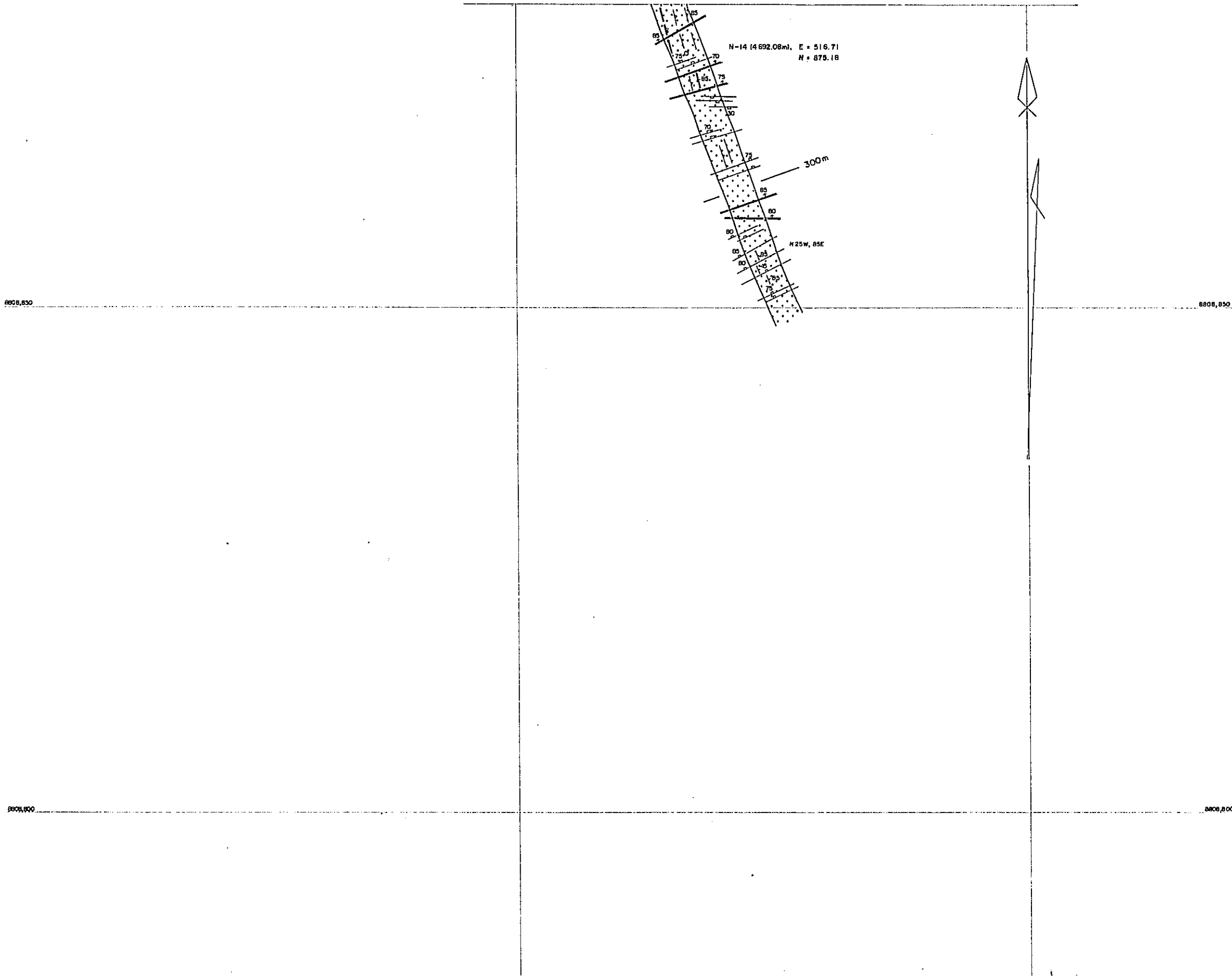


METAL MINING AGENCY OF JAPAN  
 JAPAN INTERNATIONAL COOPERATION AGENCY  
 JULY 1983  
 Prepared by MINDECO

Scale 1:200  
 0 4 8 12 16 20m

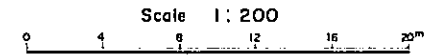
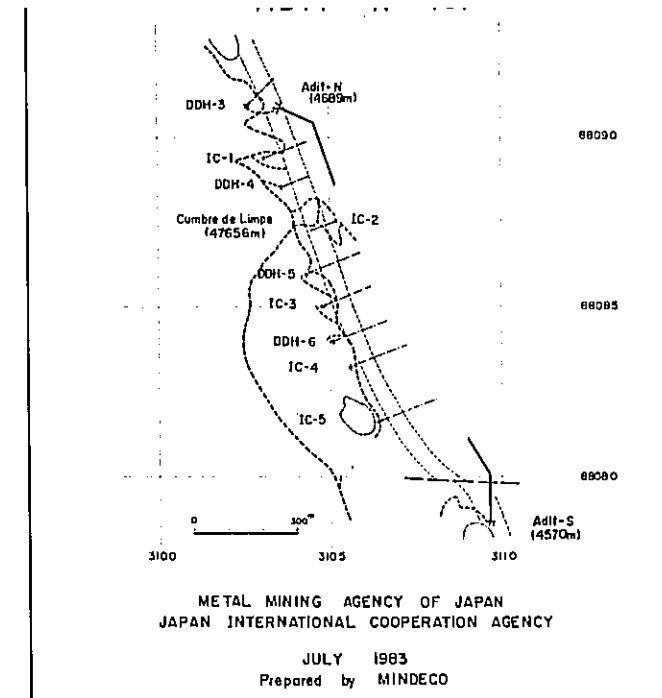
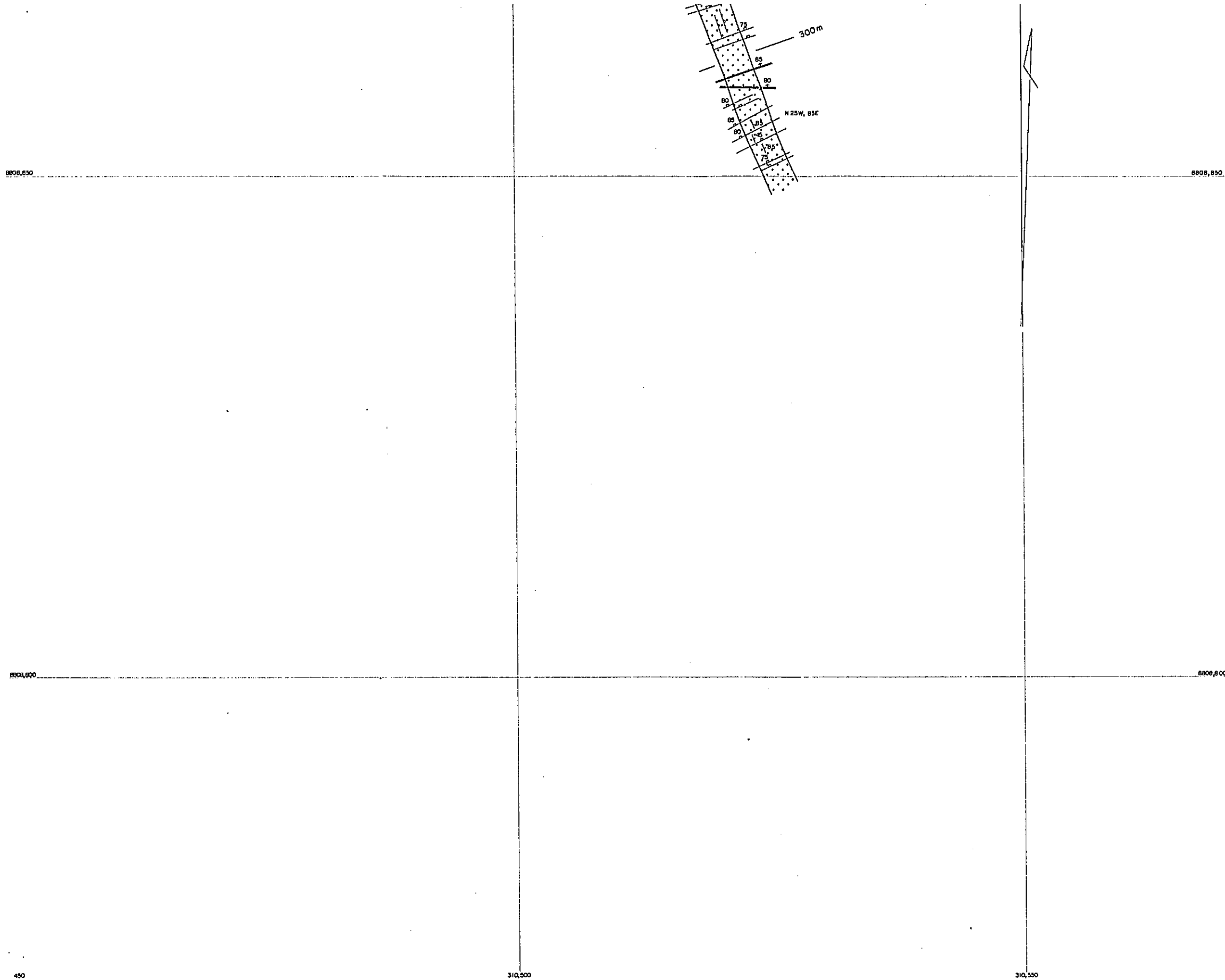
LEGEND and ABBREVIATION

Rock :	Pebble, sand, clay	Peb	
	Sandstone	Ss	
	Shale	Sh	
	Marl	Ml	
	Limstone	Ls	
	Dolomitic limestone	Do-Ls	
	Dolostone	Do	
	Siderite	Sid	
	Quartzite	Qtz	
	Ore, high grade		
	Ore, low grade		
	Pyrite ore	Py	
	Hematite ore	Hm	
	Skarn	Sk	
	Brecciated rock	Brc	
Altered rock	A(ald)		
Sheared zone	Shd		
Fault	F		
Fracture and joint	J		
Bedding			
Alteration :	dolomitization	do	
	calcitization	cal	
	argillization	arg	
	silicification	sil	
	sericitization	ser	
Mineralization :	Pyrite	Py	
	Galena	Gl	
	Sphalerite	Sp	
	Chalcopyrite	Cp	
	Quartz	Qt	
	Calcite	Cal	
	Magnetite	Mt	
Hematite	Hm		
Chalcocite	Cc		
Limonite	Lim		
Oxide minerals	Oxd		
Color :	light	l-	
	dark	d-	
	grey	gry	
	black	blk	
white	whl		
brown	brn		
Other :	fine-grained	fgd	
	medium-grained	mgd	
	coarse-grained	cgd	
	intercalated	inc	
vein	v		
veinlet	vl		
dissemination	dis		
Alteration	Alt		
Sampling location and assay result			
		NI-OI	



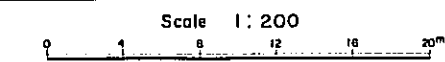
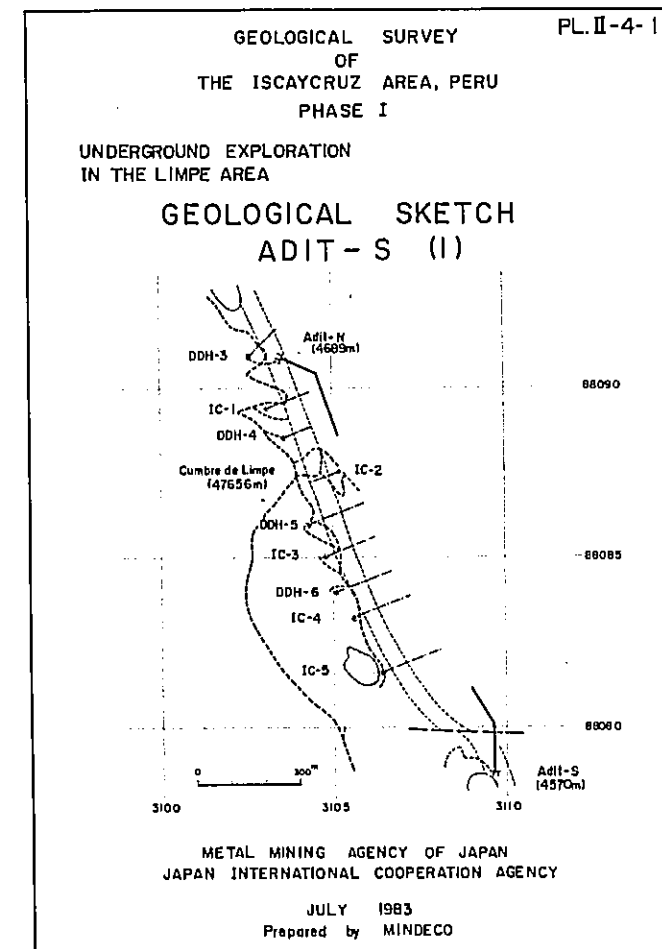
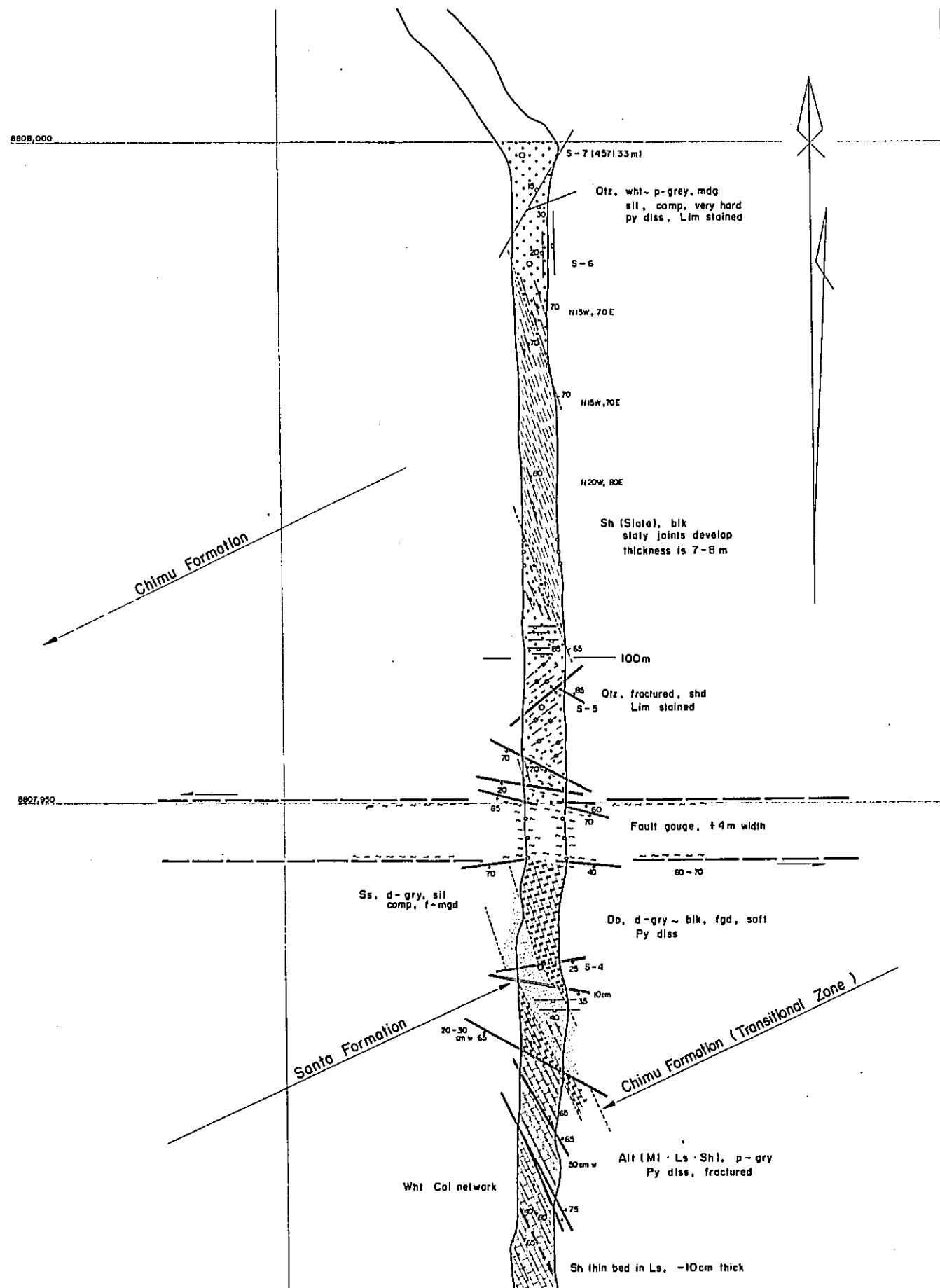
LEGEND and ABBREVIATION

Rock :	Pebble, sand, clay	Peb		
	Sandstone	Ss		
	Shale	Sh		
	Marl	Ml		
	Limestone	Ls		
	Dolomitic limestone	Do-Ls		
	Dolostone	Do		
	Siderite	Sid		
	Quartzite	Qtz		
	Ore, high grade			
	Ore, low grade			
	Pyrite ore	Py		
	Hematite ore	Hm		
	Skarn	Sk		
	Brecciated rock	Brc		
Altered rock	A(ald)			
Sheared zone	Shd			
Fault	F			
Fracture and joint	J			
Bedding				
Alteration :	dolomitization	do		
	calcitization	cal		
	argillization	clt		
	silicification	sil		
	sericitization	ser		
Mineralization :	Pyrite	Py	Magnetite	Mt
	Galena	Gt	Hematite	Hm-Spc
	Sphalerite	Sp	Chalcocite	Cc
	Chalcopyrite	Cp	Limonite	Lim
	Quartz	Qt	Oxide minerals	Oxd



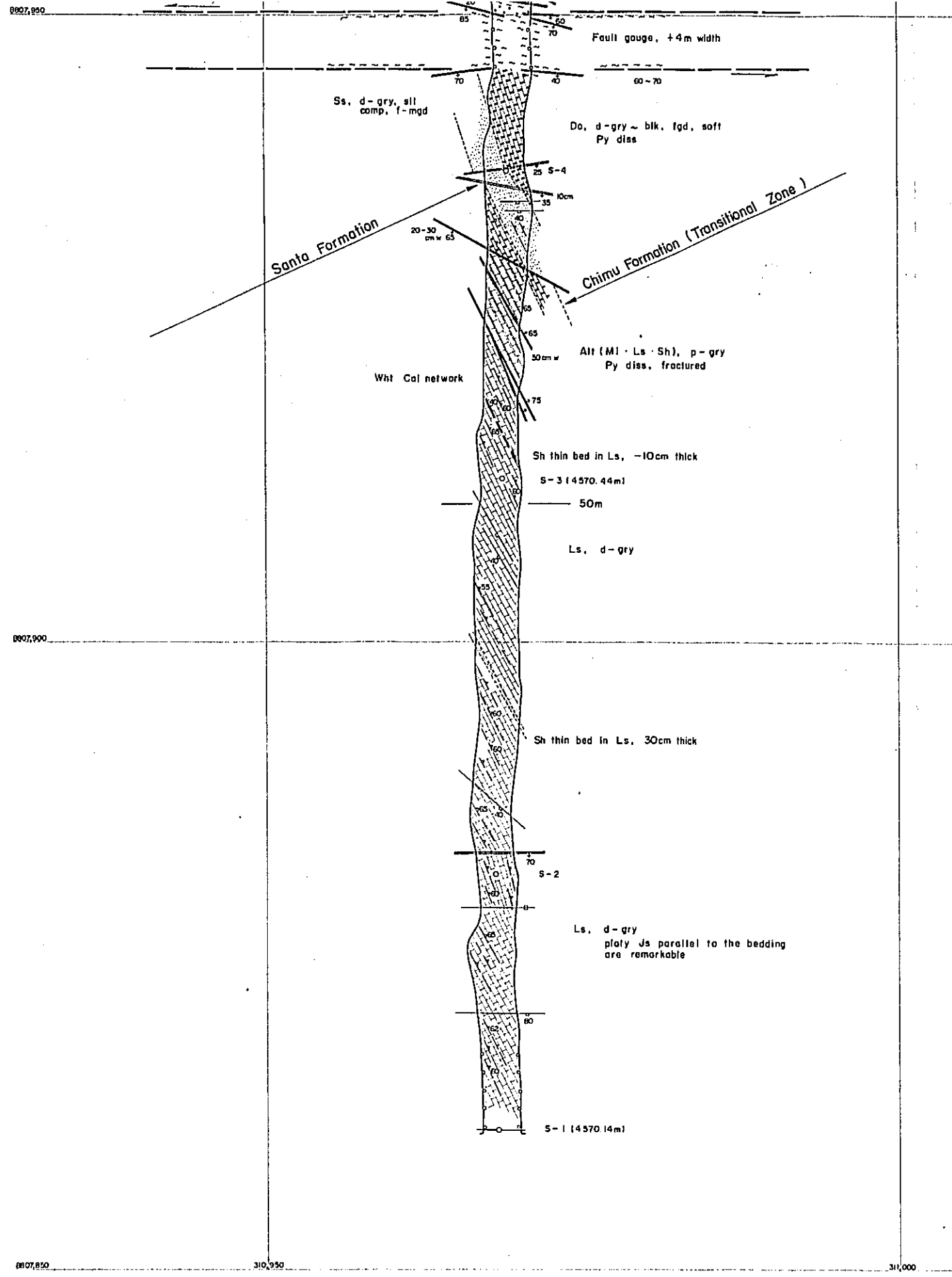
**LEGEND and ABBREVIATION**

<b>Rock :</b>	Pebble, sand, clay	Peb		
	Sandstone	Ss		
	Shale	Sh		
	Marl	Ml		
	Limestone	Ls		
	Dolomitic limestone	Do-Ls		
	Dolostone	Do		
	Siderite	Sid		
	Quartzite	Qtz		
	Ore, high grade			
	Ore, low grade			
	Pyrite ore	Py		
	Hematite ore	Hm		
	Skarn	Sk		
	Brecciated rock	Brc		
	Altered rock	Altd		
	Sheared zone	Shd		
	Fault	F		
	Fracture and joint	J		
	Bedding			
<b>Alteration :</b>	dolomitization	do		
	calcification	cal		
	argillization	cl		
	silicification	sil		
	sericitization	ser		
<b>Mineralization :</b>	Pyrite	Py	Magnetite	Mt
	Galena	Gl	Hematite	Hm-Spc
	Sphalerite	Sp	Chalcocite	Cc
	Chalcopyrite	Cp	Limonite	Lim
	Quartz	Qt	Oxide minerals	Oxd
	Calcite	Cal		
<b>Color :</b>	light	l-	black	blk
	dark	d-	white	whl
	grey	gry	brown	brn
<b>Other :</b>	fine-grained	fgd	vein	v
	medium-grained	mgd	veinlet	vlt
	coarse-grained	cgd	dissemination	diss
	intercalated	intc	Alteration	Alt
<b>Sampling location and assay result</b>				NI-OI

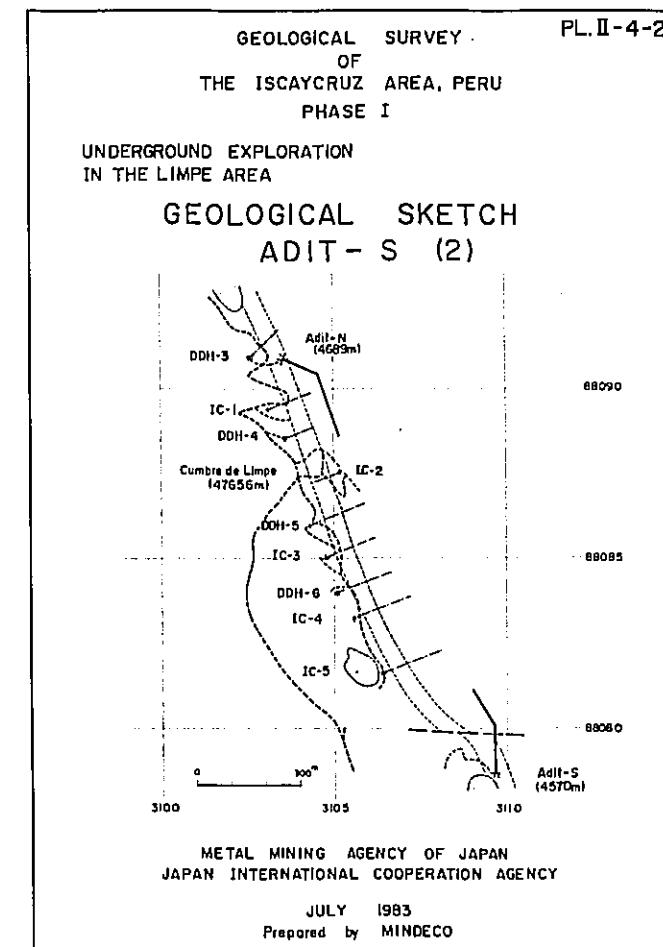
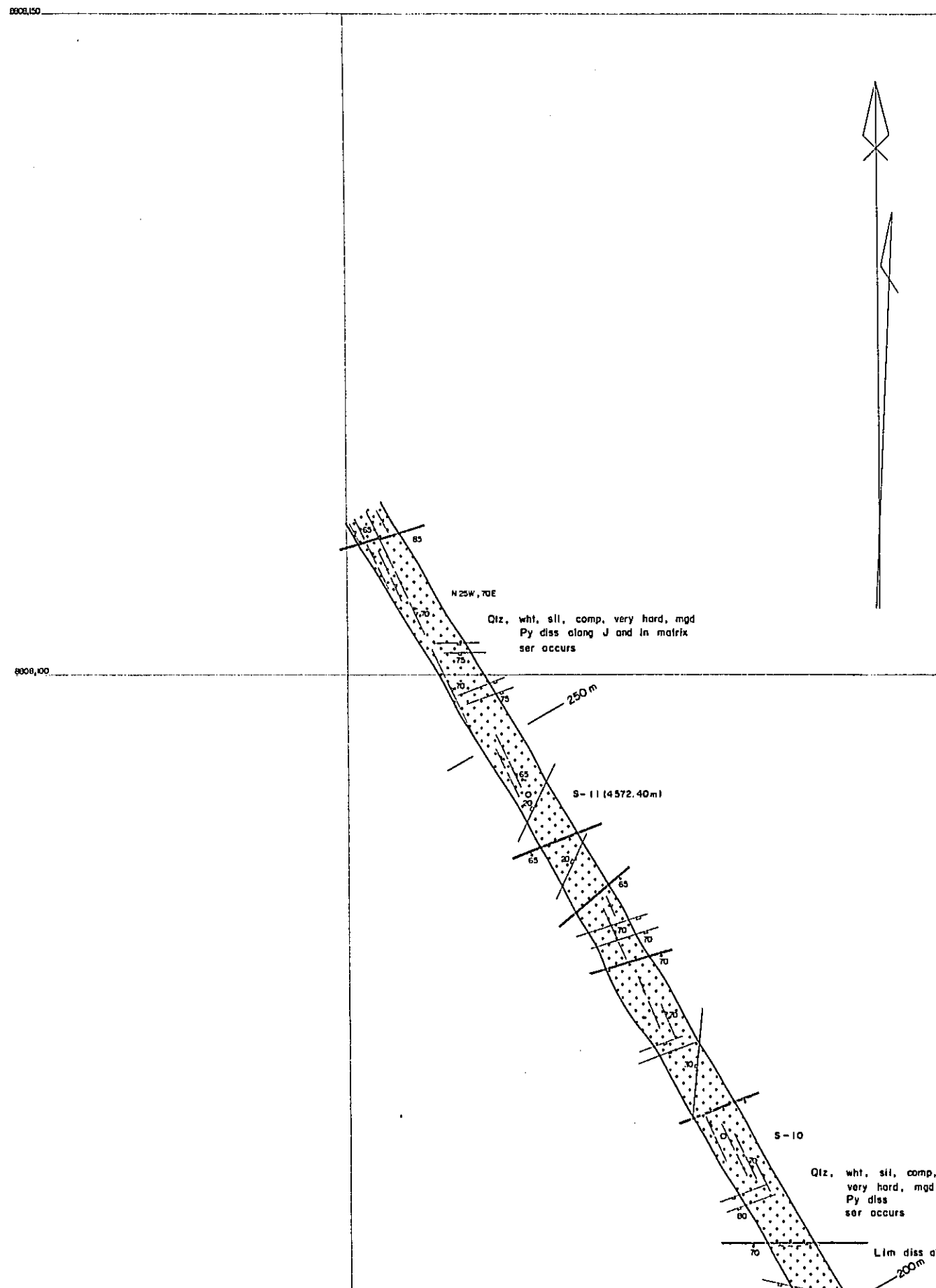


**LEGEND and ABBREVIATION**

<b>Rock:</b>	Pebble, sand, clay	Peb		
	Sandstone	Ss		
	Shale	Sh		
	Mari	Ml		
	Limestone	Ls		
	Dolomitic limestone	Do-Ls		
	Dolostone	Do		
	Siderite	Sid		
	Quartzite	Qtz		
	Ore, high grade			
	Ore, low grade			
	Pyrite ore	Py		
	Hematite ore	Hm		
	Skarn	Sk		
	Brecciated rock	Brc		
	Altered rock	A(ald)		
	Sheared zone	Shd		
	Fault	F		
	Fracture and joint	J		
	Bedding			
<b>Alteration:</b>	dolomitization	do		
	calcification	cal		
	argillization	cl		
	silicification	sil		
	sericitization	ser		
<b>Mineralization:</b>	Pyrite	Py	Magnetite	Mt
	Galena	Gl	Hematite	Hm · Spc
	Sphalerite	Sp	Chalcocite	Cc
	Chalcopyrite	Cp	Limonite	Lim
	Quartz	Qtz	Oxide minerals	Oxd

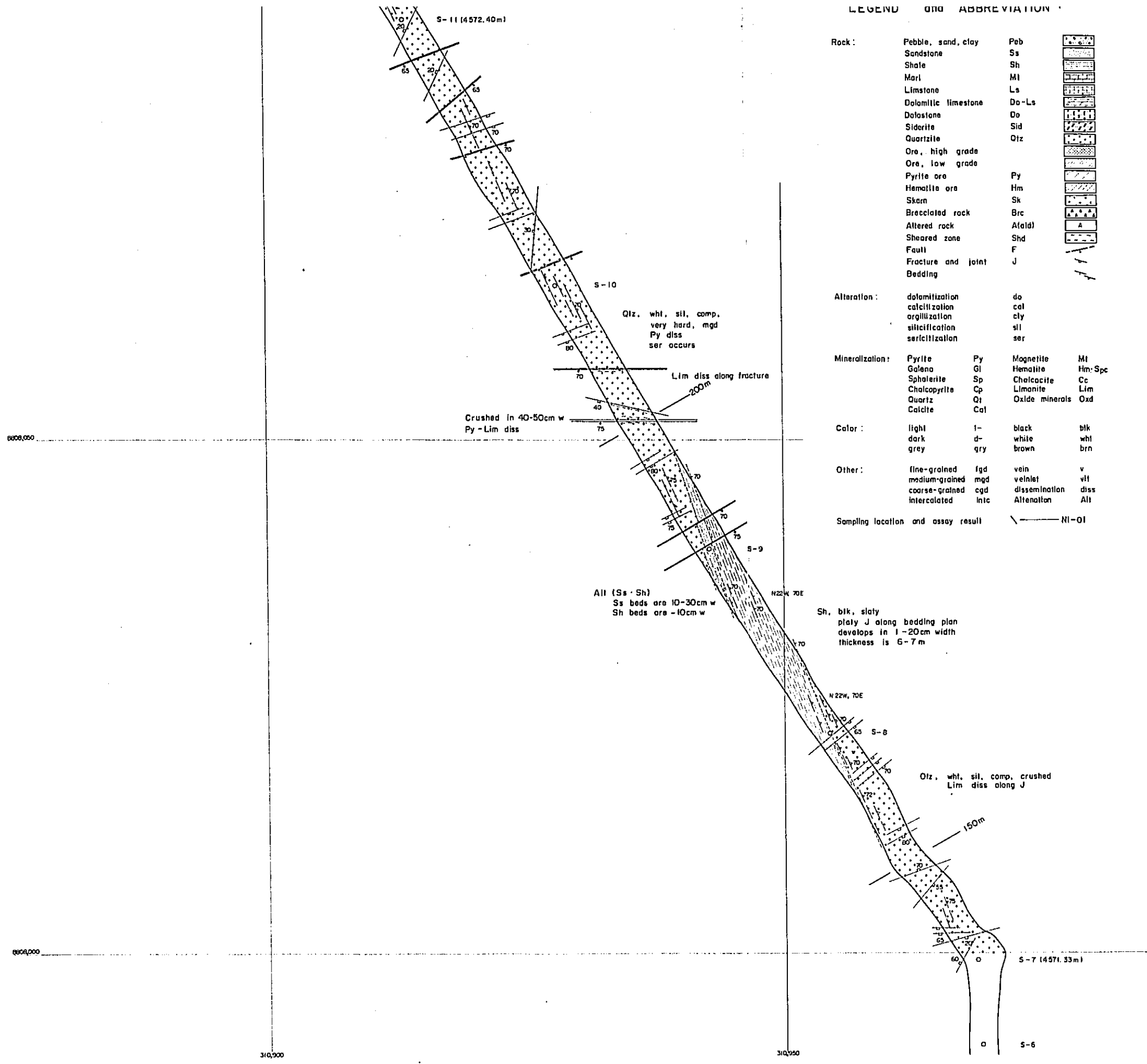


Rock :	Pebble, sand, clay	Peb		
	Sandstone	Ss		
	Shale	Sh		
	Marl	Ml		
	Limestone	Ls		
	Dolomitic limestone	Do-La		
	Dolostone	Do		
	Siderite	Sid		
	Quartzite	Qtz		
	Ore, high grade			
	Ore, low grade			
	Pyrite ore	Py		
	Hematite ore	Hm		
	Skarn	Sk		
	Brecciated rock	Brc		
	Altered rock	A(ald)		
	Sheared zone	Shd		
Fault	F			
Fracture and joint	J			
Bedding				
Alteration :	dolomitization	do		
	calcification	cal		
	argillization	clay		
	silicification	sll		
	sericitization	ser		
Mineralization :	Pyrite	Py	Magnetite	Mt
	Galena	Gl	Hematite	Hm·Spc
	Sphalerite	Sp	Chalcocite	Cc
	Chalcopyrite	Cp	Limonite	Lim
	Quartz	Qt	Oxide minerals	Oxd
	Calcite	Cal		
Color :	light	l-	black	blk
	dark	d-	white	wht
	grey	gry	brown	brn
Other :	fine-grained	fgd	vein	v
	medium-grained	mgd	veinlet	vlt
	coarse-grained	cgd	dissemination	diss
	intercalated	inc	Alteration	Alt
Sampling location and assay result	NI-OI			



LEGEND and ABBREVIATION

Rock :	Pebble, sand, clay	Peb		
	Sandstone	Ss		
	Shale	Sh		
	Marl	Ml		
	Limestone	Ls		
	Dolomitic limestone	Do-Ls		
	Dolostone	Do		
	Siderite	Sid		
	Quartzite	Qtz		
	Ore, high grade			
	Ore, low grade			
	Pyrite ore	Py		
	Hematite ore	Hm		
	Skarn	Sk		
	Brecciated rock	Brc		
	Altered rock	A(ald)		
	Sheared zone	Shd		
	Fault	F		
	Fracture and joint	J		
	Bedding			
Alteration :	dolomitization	do		
	calcification	cal		
	argillization	arg		
	silicification	sil		
	sericitization	ser		
Mineralization :	Pyrite	Py	Magnetite	Mt
	Galena	Gl	Hematite	Hm-Spc
	Sphalerite	Sp	Chalcocite	Cc
	Chalcopyrite	Cp	Limonite	Lim
	Quartz	Qt	Oxide minerals	Oxd



LEGEND AND ABBREVIATION

Rock:	Pebble, sand, clay	Peb	[Symbol]	
	Sandstone	Ss	[Symbol]	
	Shale	Sh	[Symbol]	
	Marl	Ml	[Symbol]	
	Limestone	Ls	[Symbol]	
	Dolomitic limestone	Do-Ls	[Symbol]	
	Dolomite	Do	[Symbol]	
	Siderite	Sid	[Symbol]	
	Quartzite	Qtz	[Symbol]	
	Ore, high grade		[Symbol]	
	Ore, low grade		[Symbol]	
	Pyrite ore	Py	[Symbol]	
	Hematite ore	Hm	[Symbol]	
	Skan	Sk	[Symbol]	
	Brecciated rock	Brc	[Symbol]	
	Altered rock	A(ald)	[Symbol]	
	Sheared zone	Shd	[Symbol]	
	Fault	F	[Symbol]	
	Fracture and joint	J	[Symbol]	
	Bedding		[Symbol]	
Alteration:	dolomitization	do		
	calcification	cal		
	argillization	arg		
	silicification	sil		
	sericitization	ser		
Mineralization:	Pyrite	Py	Magnetite	Mt
	Galena	Gl	Hematite	Hm: Spc
	Sphalerite	Sp	Chalcocite	Cc
	Chalcopyrite	Cp	Limonite	Lim
	Quartz	Qt	Oxide minerals	Oxd
	Calcite	Cal		
Color:	light	l-	black	blk
	dark	d-	white	whl
	grey	gry	brown	brn
Other:	fine-grained	fgd	vein	v
	medium-grained	mgd	veinlet	vlt
	coarse-grained	cgd	dissemination	diss
	intercalated	intc	Alteration	Alt
Sampling location and assay result				NI-OI

S-11 (4572.40m)

S-10

Qtz, wht, sil, comp.  
very hard, mgd  
Py diss  
ser occurs

Lim diss along fracture

Crushed in 40-50cm w  
Py-Lim diss

All (Ss · Sh)  
Ss beds are 10-30cm w  
Sh beds are 10cm w

Sh, blk, slaty  
platy J along bedding plan  
develops in 1-20cm width  
thickness is 6-7 m

Qtz, wht, sil, comp, crushed  
Lim diss along J

S-7 (4571.33m)

S-6

8806,000

8806,000

310,000

310,900