

REPUBLIC OF TURKEY
MINERAL RESEARCH AND EXPLORATION INSTITUTE

REPORT ON GEOLOGICAL SURVEY
OF
TRABZON AREA, NORTHEASTERN TURKEY

PHASE III

VOL. 2

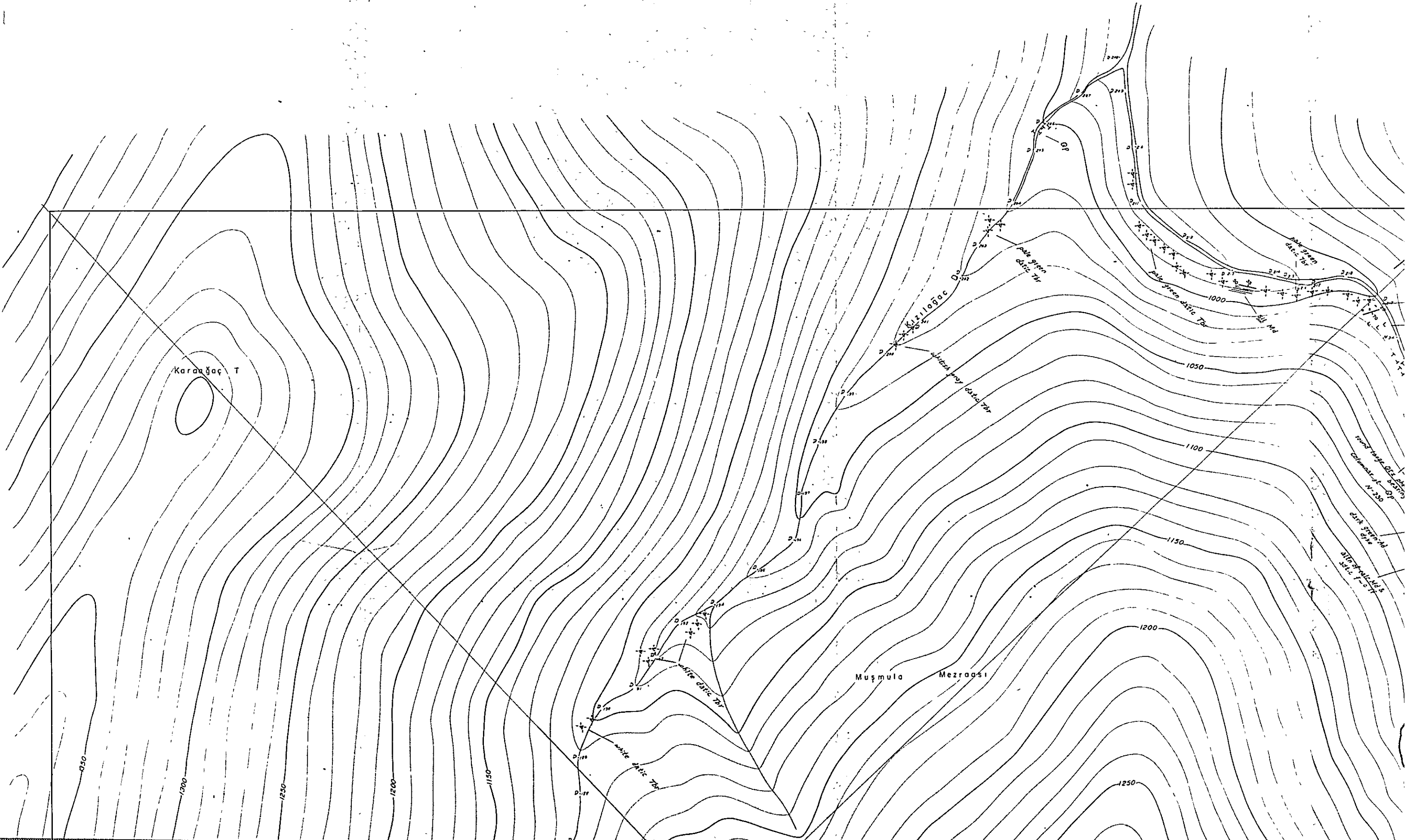
GEOLOGICAL SURVEY
GEOPHYSICAL SURVEY
DRILLING EXPLORATION

ATTACHED SHEETS

- PL.1-1 ~ 14 GEOLOGICAL MAP WITH GEOLOGICAL PROFILE,
COLUMNAR SECTION AND FUTURE RECOMMENDATION
- PL.2-1 ~ 14 ROUTE MAP WITH LOCALITIES OF ROCK SAMPLES
- PL.3-1 ~ 14 ALTERATION AND MINERALIZATION MAP
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- PL.5 LOCATION MAP OF IP SURVEY IN KEN DERE FOL DERE
- PL.6 CONTOURS OF FREQUENCY EFFECT FOR $n=1\sim 4$
- PL.7 CONTOURS OF APPARENT RESISTIVITY FOR $n=1\sim 4$
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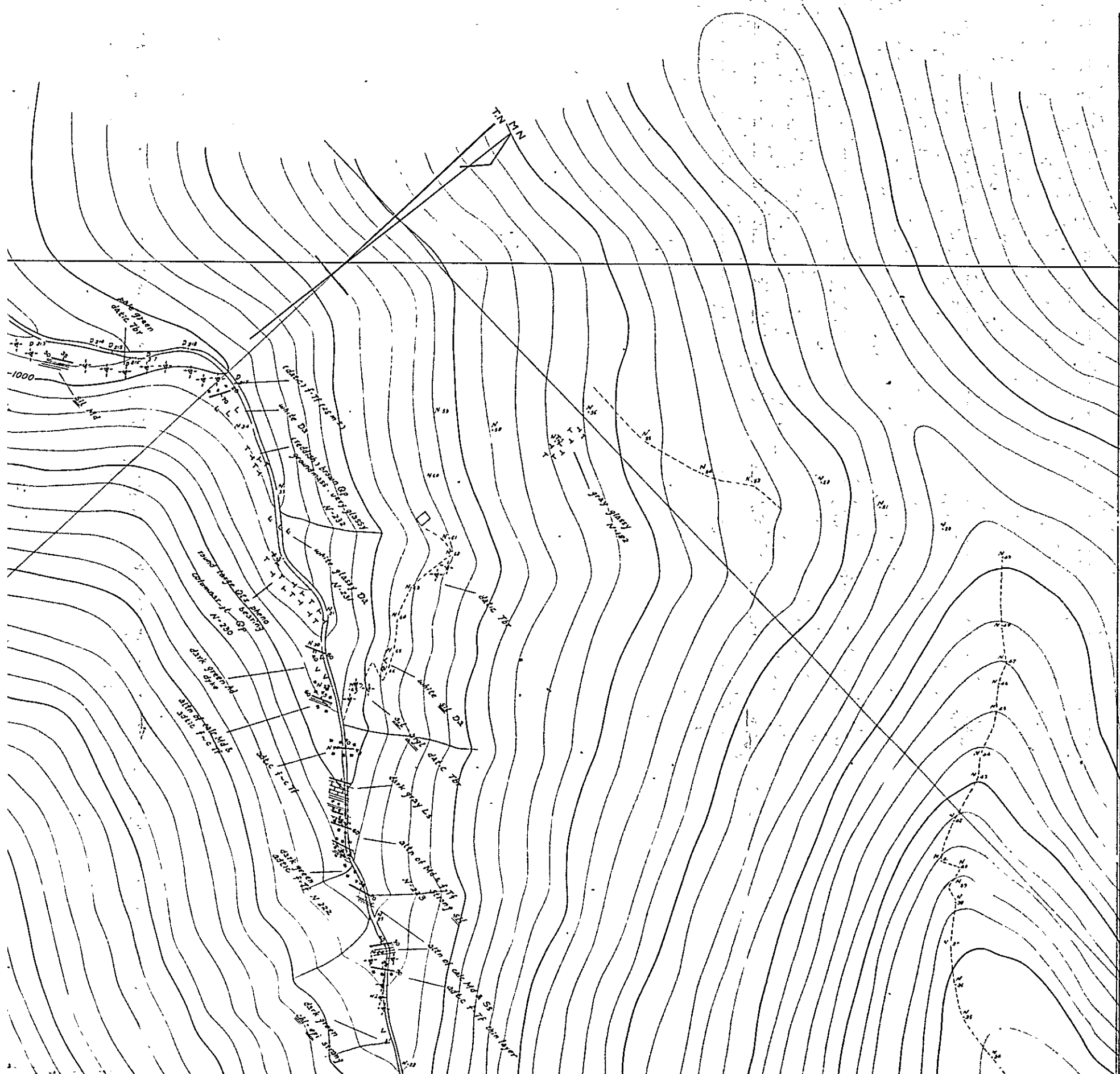


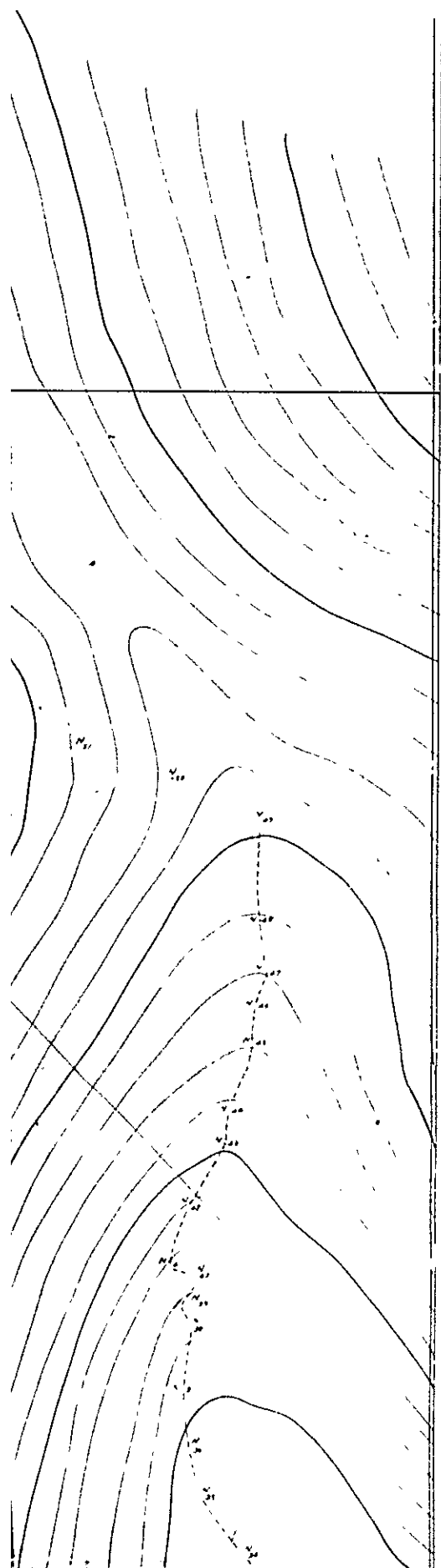
国際協力事業団	
受入 月日 '84. 5. 26	3147
登録No. 5,080,10	548 MPN



LEGEND
LEJAND

Geological symbol & abbreviation of geological term Jeolojik sembol & jeolojik terim kısaltmaları							
Symbol Sembol	Mark İşaret	Rock name Kayaç isimleri					
Sedimentary rocks Sedimanter kayalar	Ls	limestone kireçtaşı					
	Mr	marl marn					
	Md	mudstone çamurtaşı					
	St	siltstone silt taşı					
	Ss	sandstone kumtaşı					
	Cg	conglomerate konglomera					
	Bt	basalt					
	Ad	andesite andezit					
	Da	dacite dasit					
	Rh	rhyolite riyolit					
Volcanic & pyroclastic rocks Volkanik piroklastik kayalar	(basalt) (bazalt)	(andeste) (andezit)	(dacite) (dasit)	(rhyolite) (riyolit)	Tf	fine-coarse tuff ince-iri tuf	
					Lptf	lapilli tuff lapilli tuf	
					Tbr	tuff breccia tuf breş	
					Volbrc	volcanic breccia volkanik breş	
					Agg	agglomerate aglomera	
					Volcg	volcanic conglon volkanik konglo	
	Plutonic & hypabyssal rocks Derinlik hipabisal kayalar	Gr	granite granit			Gd	granodiorite granodiorit
						Dp	diorite porphyry diorit porfir
						Qd	quartz diorite kuvars diorit
						Po	porphyrite porfir
						Qp	quartz porphyry kuvars porfir
						Gp	granite porphyry granit porfir
						Qdp	quartz diorite p kuvars diorit p
						Di	diorite diorit
							Mark İşaret
							(Lithology) (Litoloji) adtic
						agtic	
						btic	





**LEGEND
LEJAND**

Geological symbol & abbreviation of geological term
Jeolojik sembol & jeolojik terim kısaltmaları

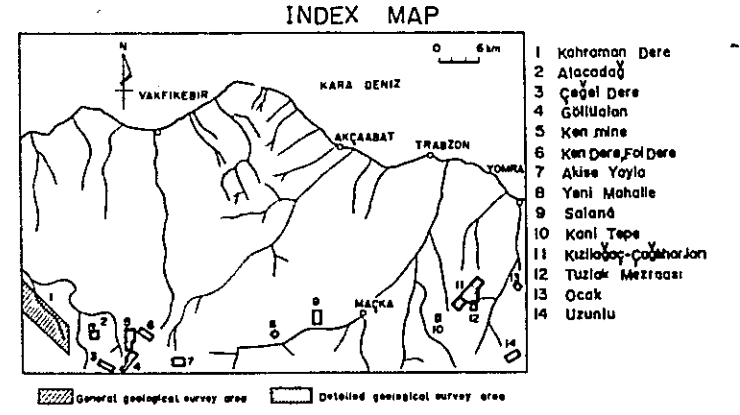
Symbol Sembol	Mark İşaret	Rock name Kayaç isimleri
	Ls	limestone kireçtaşı
	Mr	marl marn
	Md	mudstone çamurtaşı
	St	siltstone silt taşı
	Ss	sandstone kumtaşı
	Cg	conglomerate konglomera
	Bt	basalt
	Ad	andesite andezit
	Da	dacite dasit
	Rh	rhyolite riyolit
Sedimentary rocks Sedimanter kayalar		
	(basalt)	
	(andezit)	
	(dasit)	
	(riyolit)	
Volcanic & pyroclastic rocks Volkanik piroklastik kayalar		
	Tf	fine-coarse tuff ince-iri tüf
	Lptf	lapilli tuff lapilli tüf
	Tbr	tuff breccia tüf breş
	Volbrc	volcanic breccia volkanik breş
	Agg	agglomerate aglomera
	Volcg	volcanic conglomerate volkanik konglomera
	Gr	granite granit
	Gd	granodiorite granodiorit
	Dp	diorite porphyrite diorit porfir
	Qd	quartz diorite kuvars diorit
	Po	porphyrite porfir
	Qp	quartz porphyry kuvars porfiri
	Gp	granite porphyry granit porfiri
	Qdp	quartz diorite porphyrite kuvars diorit porfir
	D	diorite diorit
Plutonic & hypabyssal rocks Derinlik hipabyssal kayalar		
20 65	30 65	10
strike & dip doğrultu & eğim		
strike & dip of joint kırıkların doğrultu eğimi		
flow structure akma yapısı		
strike & dip of geological boundary dokamak doğrultu doğrultu ve eğimi		
70		
fault showing direction of dislocation		

Mark İşaret	Word Kelime	Mark İşaret	Word Kelime	Mark İşaret	Word Kelime
[Lithology]		Hb	hornblende hornblend	pillow	pillow structure yastık yapısı
aditic	andezitik	Ht	hematite hematit	portic	porphyritic porfiritik
aggtic	agglomeratik	k-Fld	potash feldspar potas feldspat	vlet	veinlet

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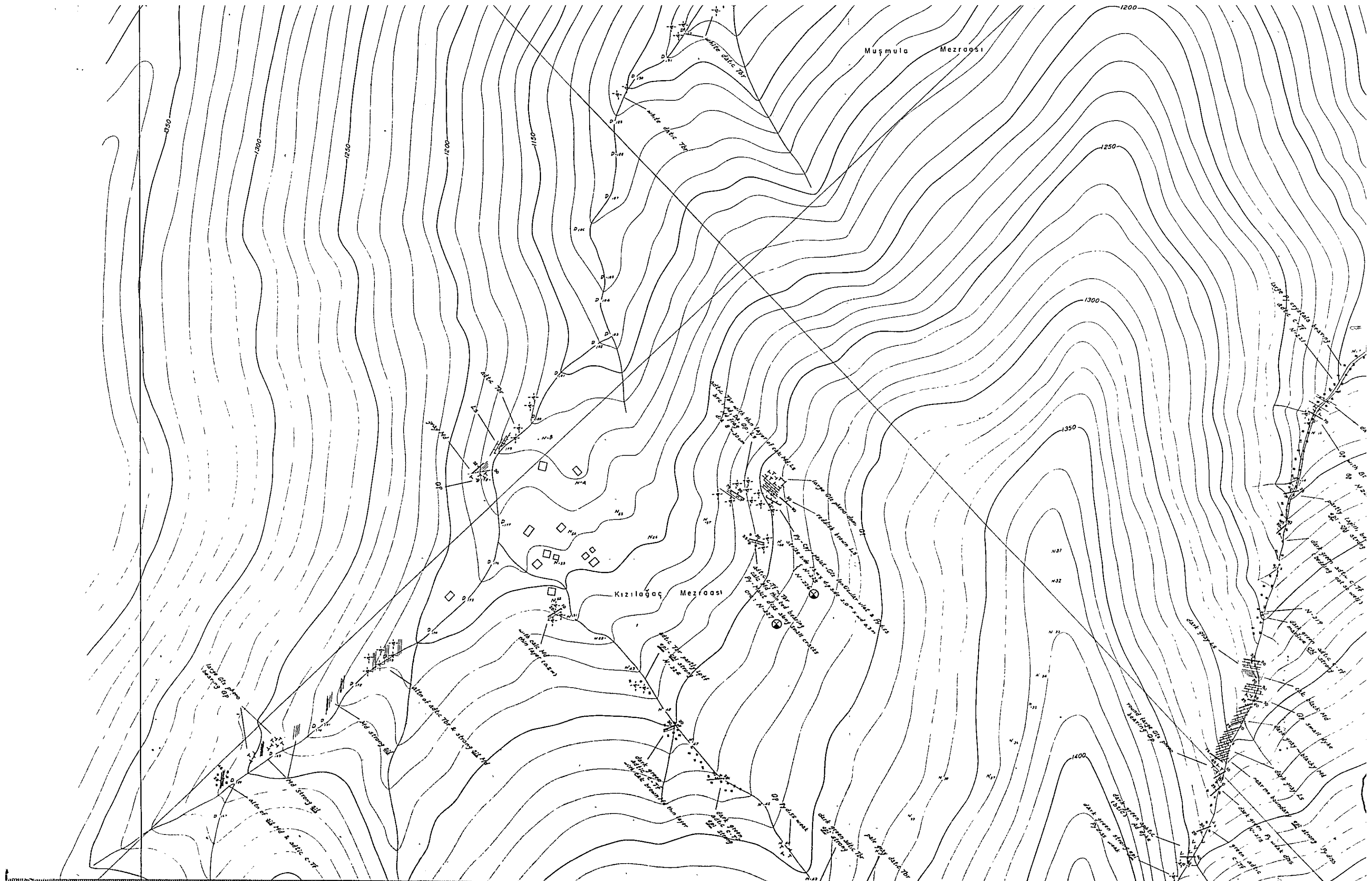
MINERAL RESEARCH AND EXPLORATION INSTITUTE
GEOLOGICAL SURVEY
OF
TRABZON AREA, NORTHEASTERN TURKEY
PHASE III

ROUTE MAP WITH LOCALITIES OF ROCK
SAMPLES AROUND KIZILAĞAÇ-ÇAĞLIHANLARI
KIZILAĞAÇ-ÇAĞLIHANLARI SAHASININ
GÜZERGAH HARİTASI VE NUMUNE YERLERİ



METAL MINING AGENCY OF JAPAN
JAPAN INTERNATIONAL COOPERATION AGENCY
FEBRUARY 1977

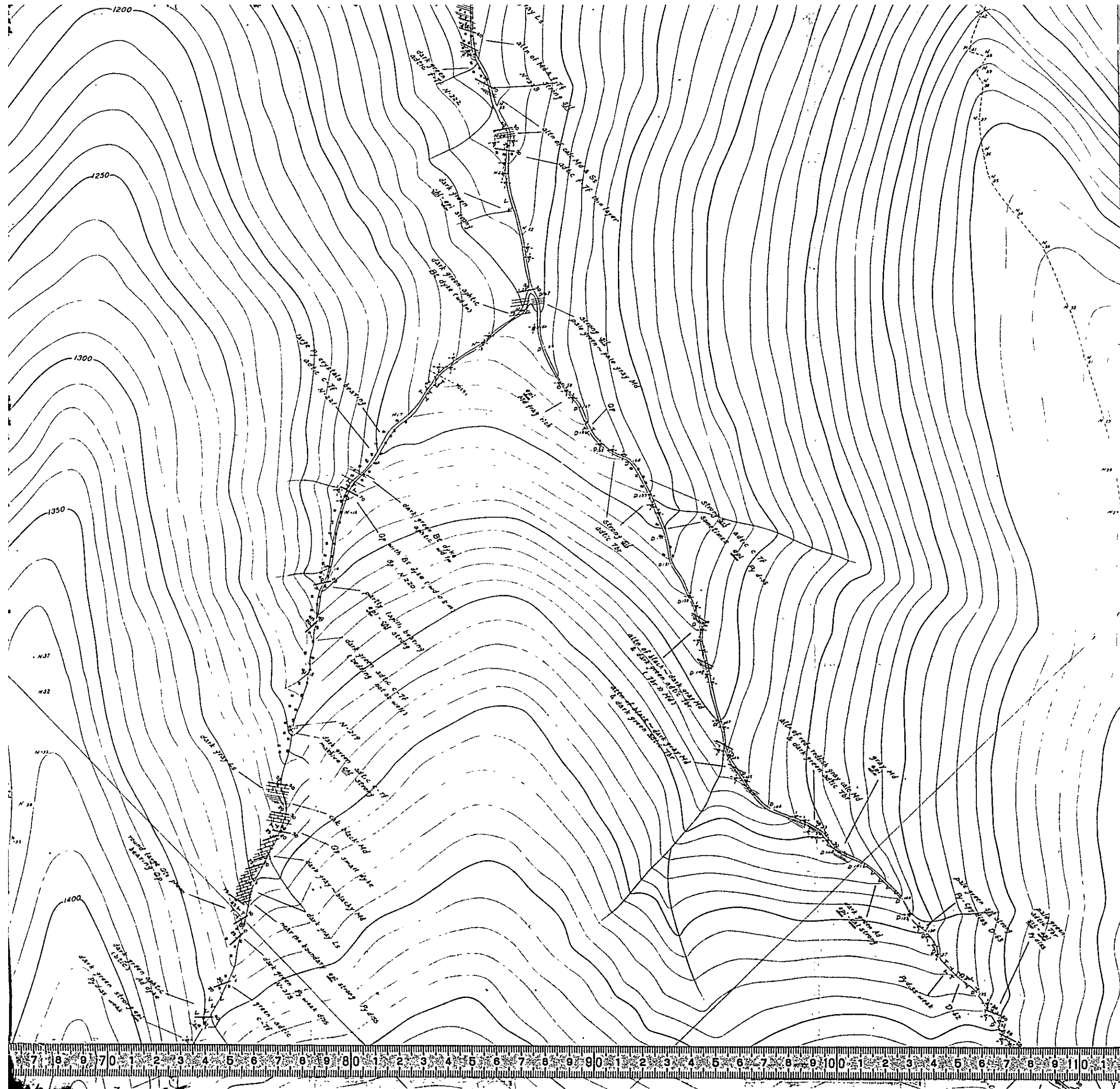
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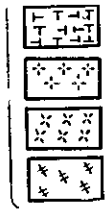
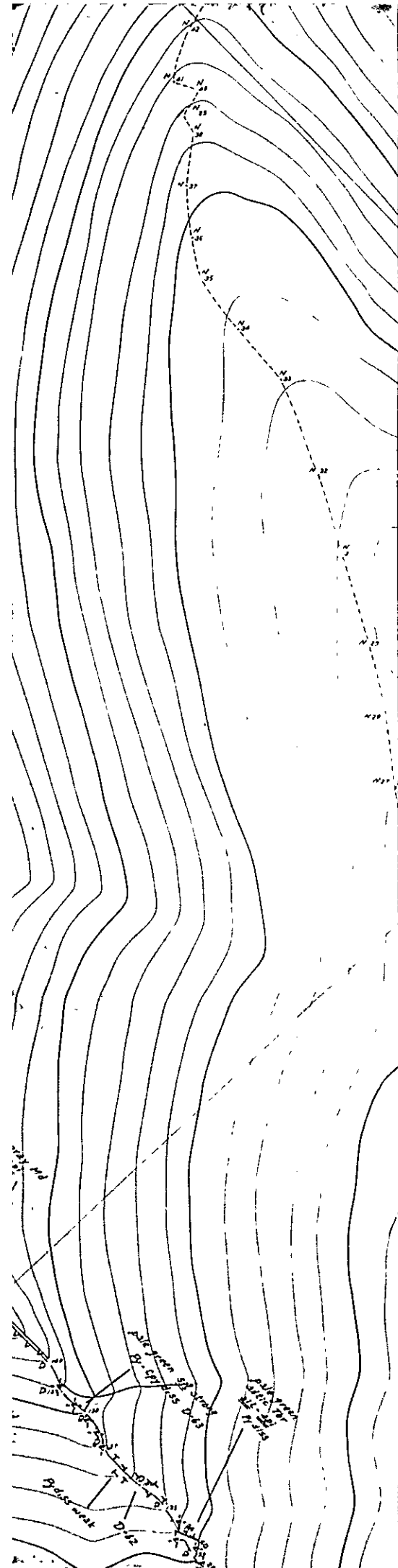
Muşmala Mezraası

Kızıllağaç Mezraası





- strike & dip
doğrultu & eğim
- strike & dip of joint
kırıkların doğrultu eğim
- flow structure
akma yapısı
- strike & dip of geology
doküman doğrultu eğim
- fault
fay
- fault showing direction
atım yönünü gösteren
- fault & sheared zone
fay & makaslama zonu
- anticline
antiklinal
- syncline
senklinal
- dissemination
diseminasyon
- veinlets
damarcıklar
- vein
damar
- massive, bedded ore
masif, tabakalı cevher
- adit
galeri
- working mine
çalışan maden
- old mine
eski maden
- float
doküman
- position of rock sample
kayaç numuneleri
- for Microscopic analysis
İnce kesit için
- for Microscopic analysis
Parlak kesit için
- for Chemical analysis
Kimyasal analiz için
- for X-ray diffraction
X-ışını difraksiyonu için

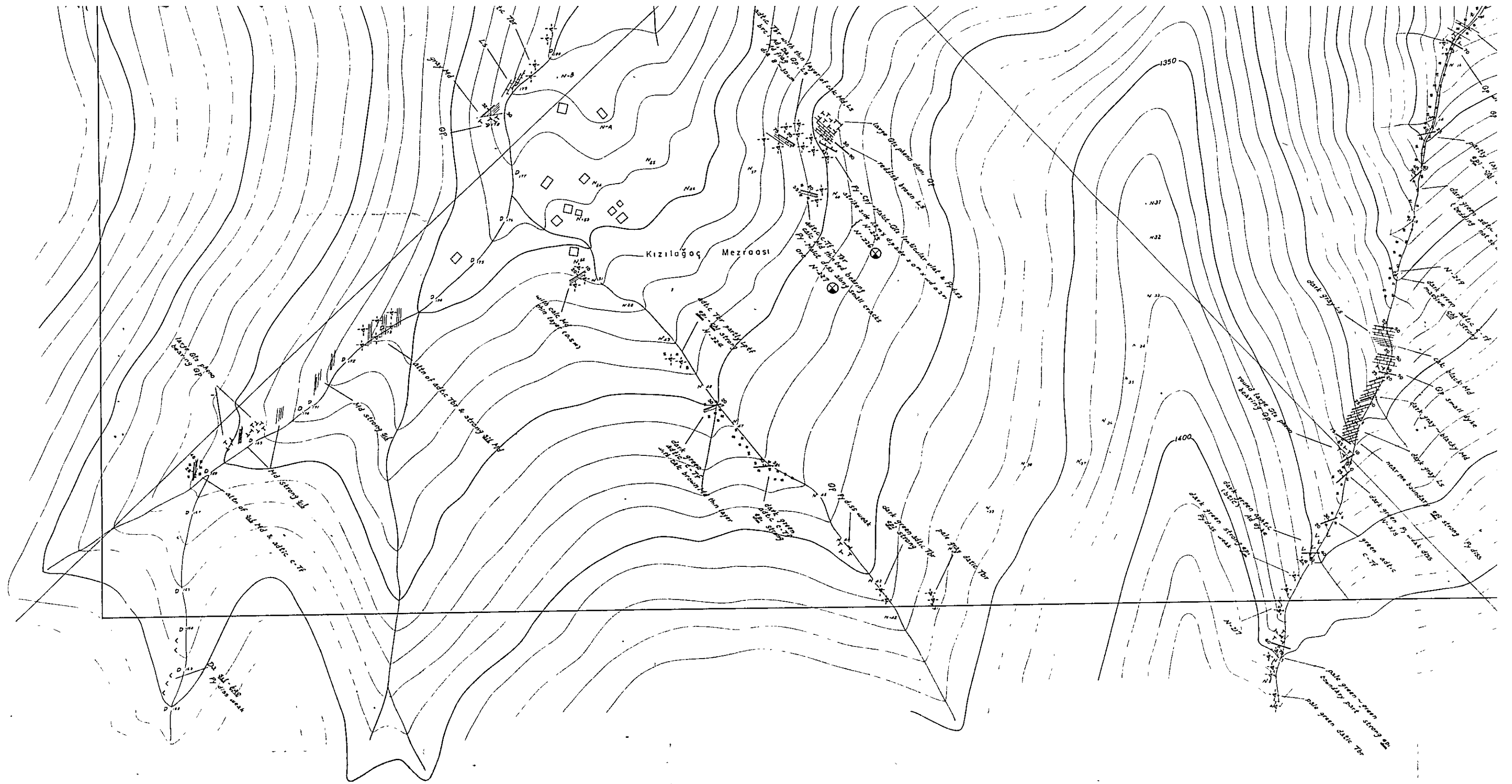


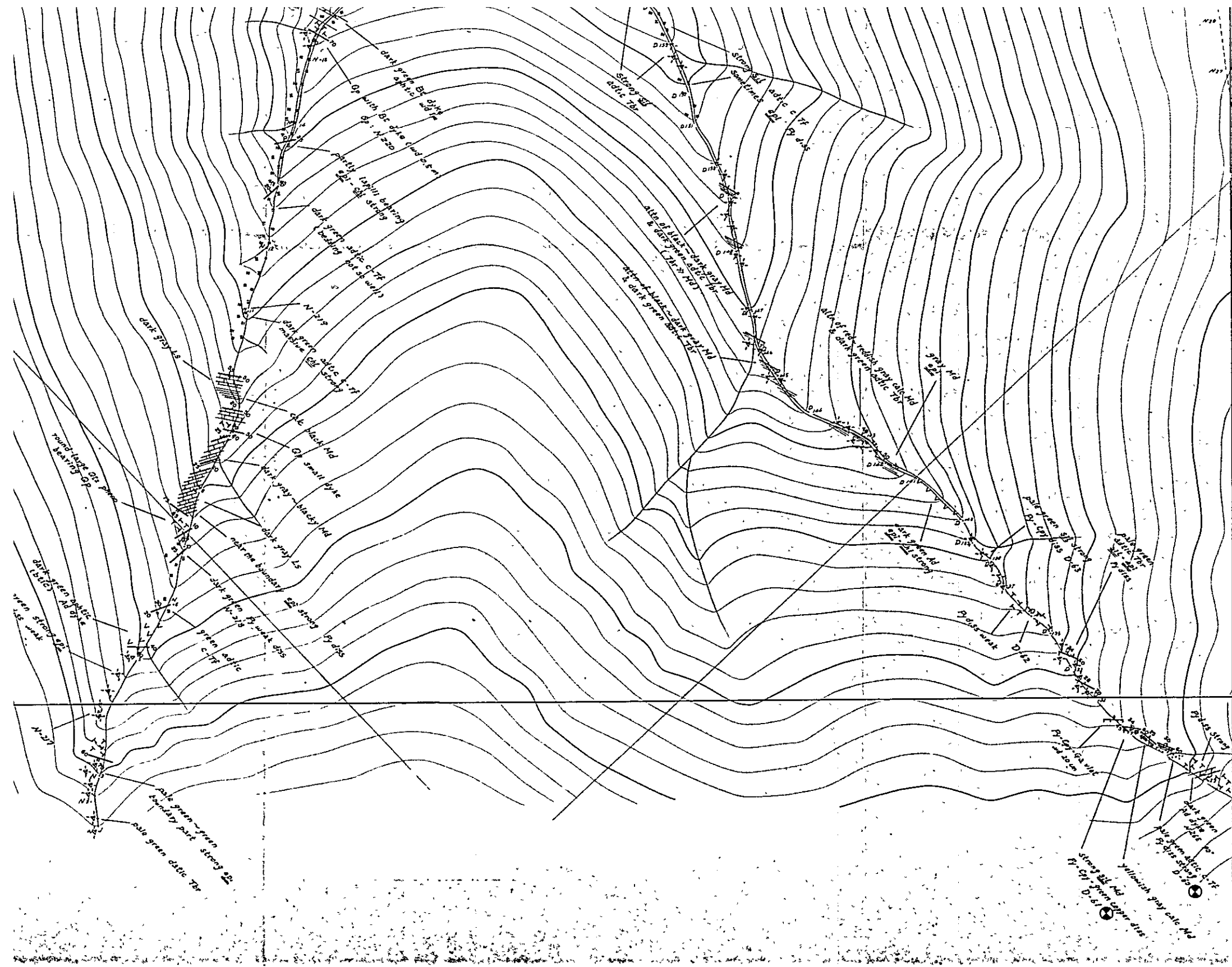
Op quartz porphyry
 Kuvars porfiri
 Gp granite porphyry
 granit porfiri
 Qdp quartz diorite porphyrite
 kuvars diorit porfirit
 Di diorite
 diorit

- 20 65 strike & dip
doğrultu & eğim
- 30 65 strike & dip of joint
kırıklarm doğrultu eğimi
- 10 flow structure
akma yapısı
- 60 strike & dip of geological boundary
dokamak doğrultu doğrultu ve eğimi
- 70 65 fault
fay
- 70 65 fault showing direction of dislocation
atım yönünü gösteren fay
- fault & sheared zone
fay & makaslama zonu
- anticline
antiklinal
- syncline
senklinal
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- adit
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- working mine
çalışan maden
- old mine
eski maden
- float
döküntü
- position of rock sample
kayaç numunelerinin durumu
- Y-1 for Microscopic observation of thin section
İnce kesit mikroskopik araştırma için
- Y-2 for Microscopic observation of polish section
Parlak kesit mikroskopik araştırma için
- Y-3 for Chemical analysis
Kimyasal analiz için
- Y-4 for X-ray diffractive analysis
X-ışını difraktif analizi için

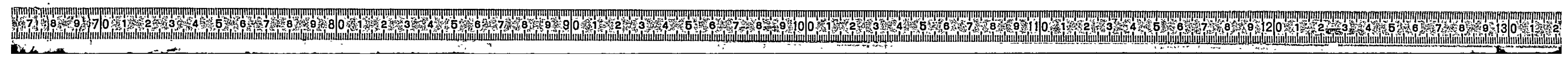
Mark Isaret	Word Kelime	Mark Isaret	Word Kelime	Mark Isaret	Word Kelime
(Lithology) (Litoloji)				pillow	pillow structure yastık yapısı
adtic	andesitic andezitik	Hb	hornblende hornblend	portic	porphyritic porfiritik
aggtic	agglomeratic agglomeratik	Ht	hematite hematit	vlet	veinlet damarcık
btic	basaltic bazaltik	k-Fld	potash-feldspar potas-feldspat	(Alteration) (Alterasyon)	
calc	calcareous kalkerli	Kaol	kaoline kaolin	altr	altered altere olmuş
datic	dacitic dasitik	Malct	malachite malakit	alb	albitized albitleşmiş
grtic	granitic granitik	Mt	magnetite magnetit	argl	argillaceous kil
mdy	mudy çamurlu	Mont	montmorillonite montmorillonit	carb	carbonitized karbonatlaşmış
pmc	pumiceous pümsü	Ol	olivine olivün	chl	chloritized kloritleşmiş
rhtic	rhyolitic rhyolitik	Pi	plagioclase plajyoklas	epi	epidotized epidotlaşmış
sdv	sandy kumlu	Py	pyrite pirit	ht	hematitized hematitleşmiş
sil	siliceous silisli	Pyr	Pyroxene pirokсен	kaol	kaolinized kaolinleşmiş
sty	silty siltli	Qtz	quartz kuvars	lim	limonitized limonitleşmiş
tfc	tuffaceous tufflu	Ser	sericite serisit	mont	montmorillonized montmorillonitleşmiş
xeno	xenolith ksenolit	Spc	Specularite Spekularit	ser	sericitized serisitleşmiş
(Minerals) (Mineraler)		Sph	sphalerite sfalerit	sil	silicified silisleşmiş
Arag	aragonite aragonit	Zeo	zeolite zeolit	(Others) (Diğerleri)	
Ba	barite barit	(Texture) (Tekstür)		aver	average ortalama
Biot	biotite biyotit	altn	alternation münavebe	dia	diameter çap
Cal	calcite kalsit	aphitic	aphanitic afanitik	diss	dissemination disseminasyon
Carb	carbonates karbonat	autbrc	autobrecciated structure otobreccileşmiş	max	maximum maksimum
Chl	chlorite klorit	brc	breccia(structure) breçik(yapı)	strong	strong, strongly kuvvetli-kuvvetlice
Cpy	Chalcopyrite kalkopirit	flow	flow structure akıntılı yapı	weak	weak, weakly zayıf-zayıfça
Epi	epidote epidot	frag.	fragment tanecik	wd	width genişlik
Fld	feldspar feldspat	grad	gradually tedrici	U	upper üst
Ga	galena galen	Intc	intercalation arakatlı	M	middle orta
		jt	joint kırık	L	lower alt
		mtx	matrix hamur	f.	fine ince
		onion	onion structure soğan yapısı	m.	medium orta
		pheno	phenocryst fenokrist	c.	coarse iri
				dom	dominant

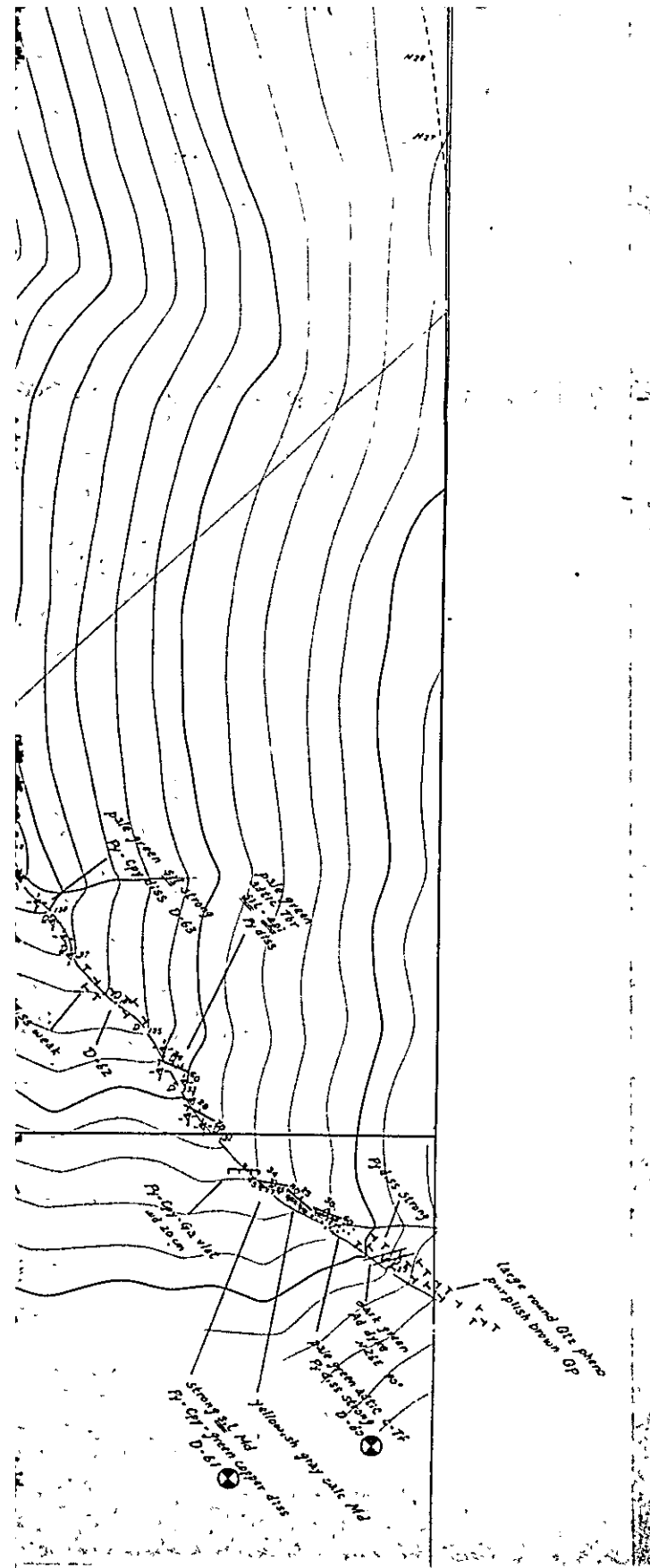






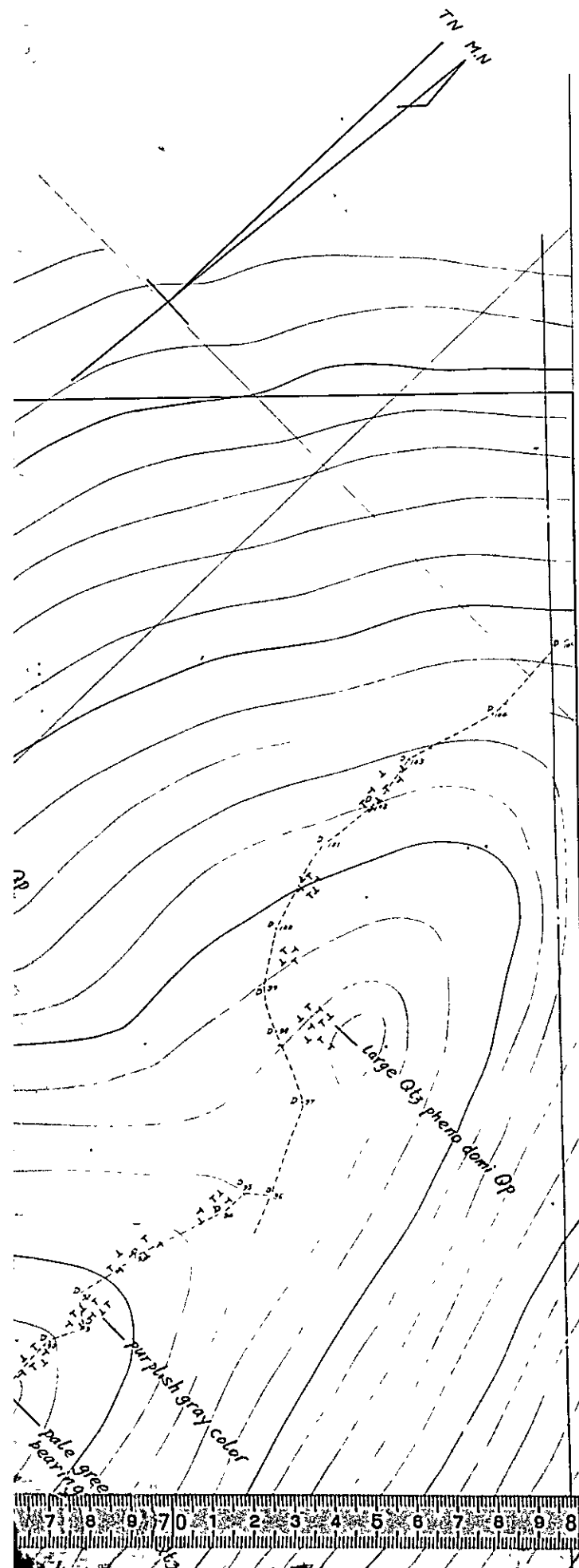
	adit galeri
	çalışan maden
	eski maden
	float döküntü
	position of rock sample
	kayaç numunelerinin durumu
	for Microscopic observation of thin section <i>İnce kesit mikroskopik araştırma için</i>
	for Microscopic observation of polish <i>Parlak kesit mikroskopik araştırma için</i>
	for Chemical analysis <i>Kimyasal analiz için</i>
	for X-ray diffractive analysis <i>X-ışını diffraktif analizi için</i>





	massive, bedded ore <i>masif, tabakalı cevher</i>	(Minerals) (Mineraler)	Arag	aragonite <i>aragonit</i>	Sph	sphalerite <i>sفالریت</i>	sil	sericitized <i>silicified</i>		
	adit <i>galeri</i>	Ba	barite <i>barit</i>	Zeo	zeolite <i>zeolit</i>	(Others) (Diğerleri)	aver	average <i>ortalama</i>		
	working mine <i>çalışan maden</i>	Biot	biotite <i>biyotit</i>	(Texture) (Teksür)	altn	alternation <i>minarebe</i>	dia	diameter <i>çap</i>		
	old mine <i>eski maden</i>	Cal	calcite <i>kalsit</i>	aphtic	aphantic <i>afanitik</i>	autbrc	autobreciated structure <i>otobreşleşmiş</i>	diss	dissemination <i>diseminasyon</i>	
	float <i>dokümtü</i>	Carb	carbonates <i>karbonat</i>	brc	breccia(structure) <i>breşik(yapı)</i>	flow	flow structure <i>akıntılı yapı</i>	max	maximum <i>maksimum</i>	
	position of rock sample <i>kayaç numunelerinin durumu</i>	Chl	chlorite <i>klorit</i>	frag.	fragment <i>tane</i>	grad	gradually <i>tedrici</i>	strong	strong, strongly <i>kuvvetli-kuvvetlice</i>	
Y-1 ⊕	for Microscopic observation of thin section <i>İnce kesit mikroskopik araştırma için</i>	Cpy	Chalcopyrite <i>kalkopirit</i>	intc	intercalation <i>arakatlı</i>	jt	joint <i>kırık</i>	weak	weak, weakly <i>zayıf-zayıfça</i>	
Y-2 ⊕	for Microscopic observation of polish section <i>Parlak kesit mikroskopik araştırma için</i>	Epi	epidote <i>epidot</i>	mtx	matrix <i>matris</i>	onion	onion structure <i>soğan yapısı</i>	wd	width <i>genişlik</i>	
Y-3 ⊕	for Chemical analysis <i>Kimyasal analiz için</i>	Fid	feldspar <i>feldspat</i>	pheno	phenocryst <i>fenokrist</i>	dom	dominant	U	upper <i>üst</i>	
Y-4 ⊕	for X-ray diffractive analysis <i>X-ışını difraktif analizi için</i>	Ga	galena <i>galen</i>					M	middle <i>orta</i>	
								L	lower <i>alt</i>	
								f-	fine <i>ince</i>	
								m-	medium <i>orta</i>	
								c-	coarse <i>iri</i>	
									dom	dominant





**LEGEND
LEJAND**

Geological symbol & abbreviation of geological term
Jeolojik sembol & jeolojik terim kısaltmaları

Symbol Sembol	Mark İşaret	Rock name Kayaç isimleri
	Ls	limestone kireçtaşı
	Mr	marl marn
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	Cg	conglomerate konglomera
	Bt	basalt
	Ad	andesite
	Da	dacite
	Rh	rhyolite riyolit
	Tf	fine coarse tuff ince-iri tüf
	Lptf	lapilli tuff lapilli tüf
	Tbr	tuff breccia tüf breş
	Volbrc	volcanic breccia volkanik breş
	Agg	agglomerate aglomera
	Volcg	volcanic conglomerate volkanik konglomera
	Gr	granite granit
	Gd	granodiorite granodiorit
	Dp	diorite porphyrite diorit porfirit
	Qd	quartz diorite kuvars diorit
	Po	porphyrite porfirit
	Qp	quartz porphyry kuvars porfir
	Gp	granite porphyry granit porfir
	Udp	quartz diorite porphyrite kuvars diorit porfir
	Di	diorite

Symbol	Description
	strike & dip doğrultu & eğim
	strike & dip of joint kırıkların doğrultu eğimi
	flow structure akma yapısı
	strike & dip of geological boundary dokunak doğrultu doğrultu ve eğimi
	fault
	fault & sheared zone

Mark İşaret	Word Kelime	Mark İşaret	Word Kelime	Mark İşaret	Word Kelime
(Lithology)		Hb	hornblende hornblend		pillow yastık yapısı
adtic	andesitic	Ht	hematite hematit		partic porfiritik
aggtic	agglomeratic	k-Flid	potash-feldspar potas-feldspat		vlet veinlet damarcık
basaltic	basaltic	Kaol	kaoline kaolin		
bazaltik	bazaltik	Lim	limonite		(Alteration)
calc	calcareous				
granitic	granitic				
marvell	marvell				
illaceous	illaceous				

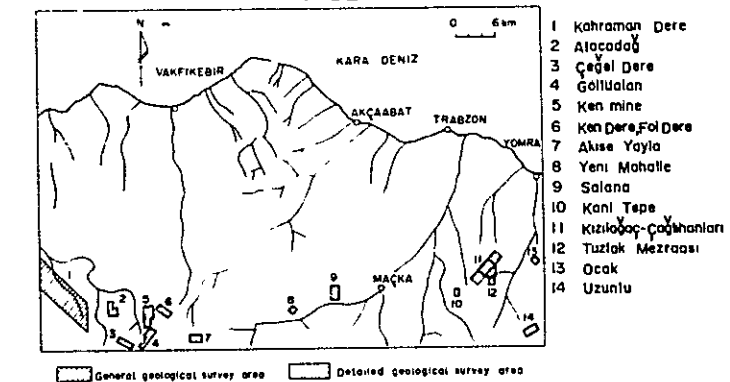
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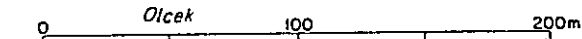
PHASE III

ROUTE MAP WITH LOCALITIES OF ROCK
SAMPLES AROUND KIZILAGAÇ-ÇAGLIHANLARI AREA
KIZILAGAÇ-ÇAGLIHANLARI SAHASININ
GÜZERGAH HARITASI VE NUMUNE YERLERİ

INDEX MAP

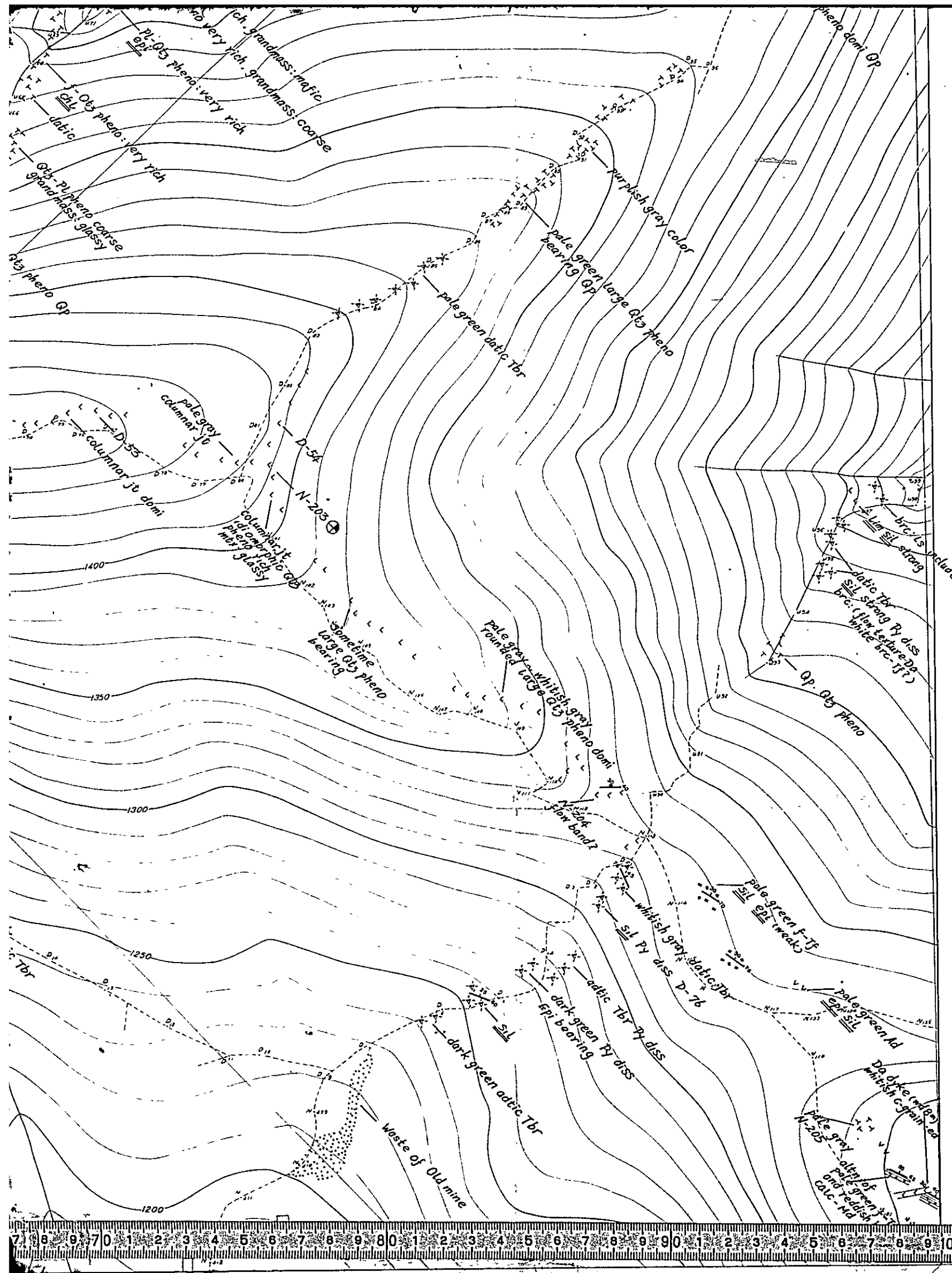


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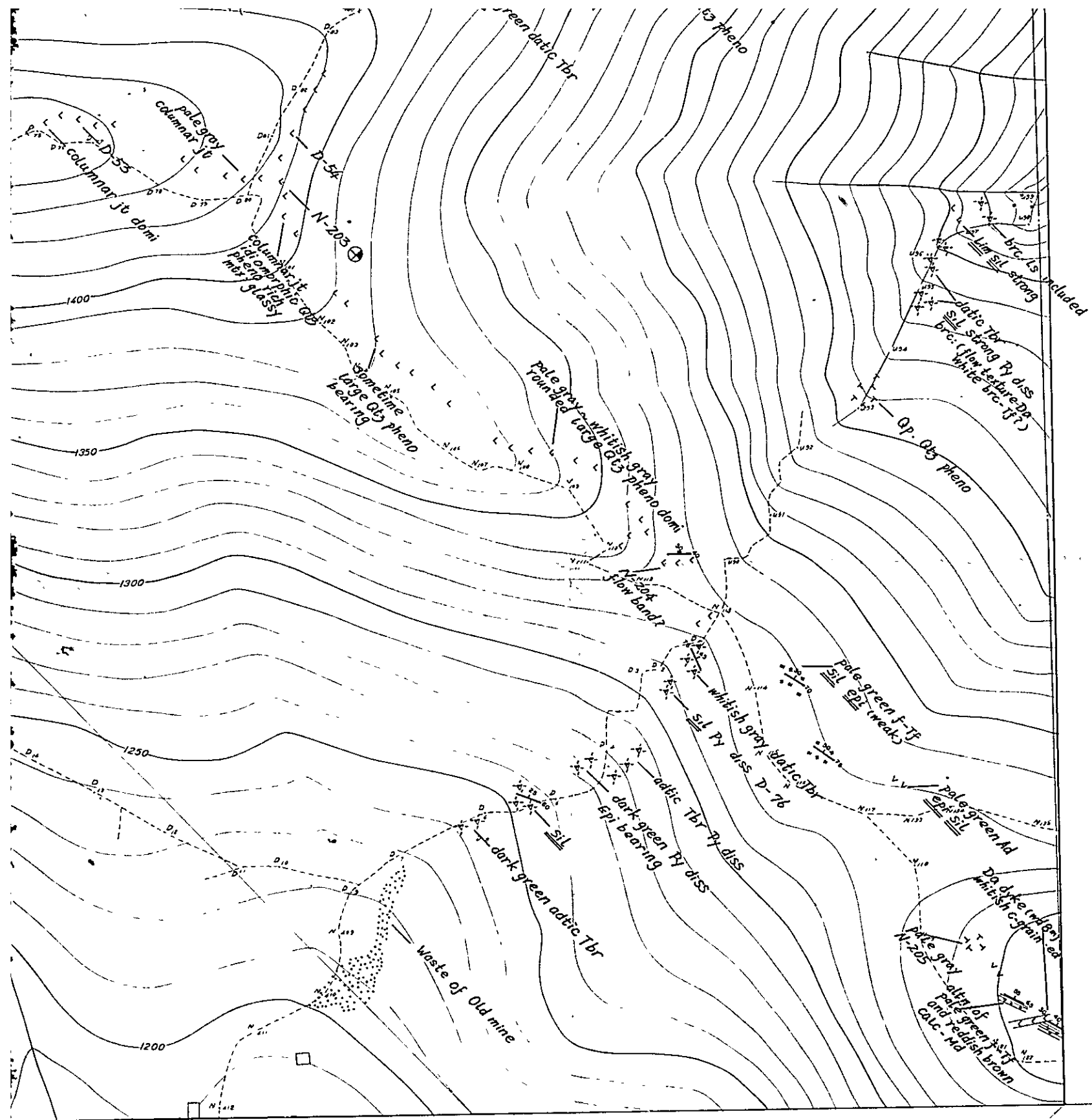
Prepared by Nikko Exploration & Development Co., Ltd



	Gp	granite porphyry granit porfir		
	Qdp	quartz diorite porphyrite kuvars diorit porfir		
	Di	diorite diorit		

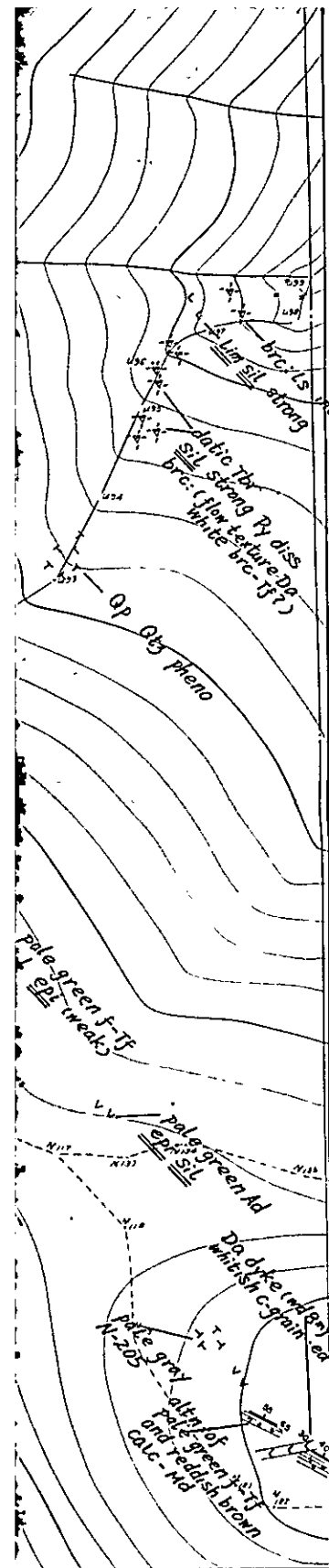
	20 65	strike & dip doğrultu & eğim		
	30 65	strike & dip of joint kırıkların doğrultu ve eğimi		
	10 60	flow structure akma yapısı		
	70 65	strike & dip of geological boundary dokamak doğuru doğrultu ve eğimi		
	70 65	fault fay		
	70 65	fault showing direction of dislocation atım yönünü gösteren fay		
		fault & sheared zone fay & makaslama zonu		
		anticline antiklinal		
		syncline senklinal		
		dissemination dağınıklık		
		veinlets damarcıklar		
		vial damar		
		massive, bedded ore masif, tabakalı cevher		
		adit galeri		
		working mine çalışan maden		
		old mine eski maden		
		float döküntü		
		position of rock sample kayaç numunelerinin durumu		
	Y-1	for Microscopic observation of thin section ince kesit mikroskopik araştırma için		
	Y-2	for Microscopic observation of polish section Parlak kesit mikroskopik araştırma için		
	Y-3	for Chemical analysis Kimyasal analiz için		
	Y-4	for X-ray diffractive analysis X-ışını diffraktif analizi için		

Mark Isaret	Word Kelime	Mark Isaret	Word Kelime
(Lithology)		Hb	hornblende
adtic	andezitik	Ht	hematit
agtic	agglomeratik	k-Fld	potas kaoli
basaltic	bazaltik	Kaol	kaoli
calc	calcareous	Lim	limonit
calcareous	kalkeelik	Malct	malakit
datic	dacitik	Mt	magnezit
grtic	granitik	Mont	monit
mud	çamurlu	Ol	olivinit
pmc	pumiceous	Ol	olivinit
pmc	pinis	Pl	plajit
rhuc	rhyolitic	Py	pirit
rdy	sandy	Pyr	pyrit
sil	siliceous	Qtz	kuvar
sty	silty	Ser	serisit
tlc	tuffaceous	Sph	sphalerit
xeno	xenolith	Zeo	zeolit
(Minerals)			
Araq	aragonite		
Ba	barite		
Biot	biotite	(Texture)	
Cal	calcite	altın	altın
Carb	carbonates		
Chi	chlorite	autbrc	autokrit
Cpy	Chalcopyrite	brc	breccia
Epi	epidote	flow	flow
Fld	feldspar	frag	fracture
Ga	galena	grad	grad
		Intc	intensity
		It	iron
		mtx	matrix
		onion	onion
		pheno	phenocryst



	fault & sheared zone fay & makaslama zonu			
	anticline	mdy	granitik mudiy camirli	Mont montmoril
	syncline	pmc	pumiceous pimis	OI olivin
	dissemination disseminasyon	rhtic	ryyalitic ryyalitik	Pl plagioclase
	veinlets damarciklar	sdv	sandy kumlu	Py pyrite
	vien damar	sil	siliceous silisli	Pyr pyroxene
	massive, bedded ore masif, tabakali cevher	sty	silty silili	Qtz quartz
	adit	tfc	tuffaceous tuftu	Ser sericite
	working mine calsan maden	xeno	xenolith ksenolit	Spc Specularite
	old mine eski maden	(Minerals) (Mineraler)		Sph sphalerite
	float dokuntu	Arag	aragonite aragont	Zeo zeolite
	position of rock sample kayaç numunelerinin durumu	Ba	barite barit	(Texture) (Tekstür)
	for Microscopic observation of thin section Ince kesit mikroskopik araştırma için	Biot	biotite biotit	altn
	for Microscopic observation of polish section Parlak kesit mikroskopik araştırma için	Cal	calcite kalsit	aphtic
	for Chemical analysis Kimyasal analiz için	Carb	carbonates karbonat	aphitic
	for X-ray diffractive analysis X-ışını difraktif analizi için	Chl	chlorite klorit	autbre
		Cpy	Chalcopyrite kalkopirit	brc
		Ep	epidote epidot	flow
		Fid	feldspar feldspat	frag
		Ga	galena galen	grad
				Intc
				It
				mtx
				onion
				pheno





fault & sheared zone fay & makaslama zonu	grtic granitic granitik	Mt magnetite manyetit	alb albitized albitleşmiş
anticline antiklinal	mdy mudys çamurlu	Mont montmorillonite montmorillonit	argl argillaceous kil
syncline senklinal	pmc pumiceous pümsü	OI olivine olivini	carb carbonatized karbonatlaşmış
dissemination diseminasyon	rhtc rhyolitic riyolitik	Pl plagioclase plajyoklas	chl chloritized kloritleşmiş
veinlets damarcıklar	sdv sandy kumlu	Py pyroxene pirokzen	epi epidotized epidotlaşmış
vien damar	sil siliceous silisli	Pyr pyroxene pirokzen	ht hematitized hematitleşmiş
massive, bedded ore massif, tabakalı cevher	stf silty silisli	Qtz quartz kuvars	kaol kaolinized kaolinleşmiş
adit galeri	tfc tufaceous tuff	Ser sericite serisit	lim limonitized limonitleşmiş
working mine çalışan maden	xeno xenolith ksenolit	Spc Specularite Spekularit	mont montmorillonized montmorillonitleşmiş
old mine eski maden	(Minerals) (Mineraller)	Sph Sphalerite Sfalerit	ser sericitized serisitleşmiş
float döküntü	Arag aragonite aragont	Zeo zeolite zeolit	sil silicified silisleşmiş
position of rock sample kayaç numunelerinin durumu	Ba barite barit	(Texture) (Tekstür)	(Others) (Diğerleri)
for Microscopic observation of thin section ince kesit mikroskopik araştırma için	Biot biotite biyotit	alt alternation münavebe	aver average ortalama
for Microscopic observation of polish section Parlak kesit mikroskopik araştırma için	Cal calcite kalsit	aph aphantic afanitik	dia diameter çap
for Chemical analysis Kimyasal analiz için	Carb carbonates karbonat	autbr autobrecciated structure otobreleşmiş	diss dissemination diseminasyon
for X-ray diffractive analysis X-ışın difraktif analizi için	Chl chlorite klorit	brc breccia structure breşik yapı	max maximum maksimum
	Cpy Chalcopyrite kalkopirit	flow flow structure akıntılı yapı	strong strong, strongly kuvvetli-kuvvetlice
	Epi epidote epidot	frag. fragment tane	weak weak, weakly zayıf-zayıfca
	Fid feldspar feldspat	grad gradually tedrici	wd width genişlik
	Ga galena galen	intc intercalation arakağı	U upper üst
		jt joint kırık	M middle orta
		mtx matrix hamur	L lower alt
		onion onion structure soğan yapısı	f- fine ince
		pheno phenocryst fenokrist	m- medium orta
			c- coarse iri
			dom dominant dominant



LEGEND
LEJAND

Geological symbol & abbreviation of geological term Jeolojik sembol & jeolojik terim kısaltmaları		Mark İşaret	Rock name Kayaç isimleri
Sedimentary rocks Sedimenter kayaçlar	Symbol Sembol		
		Ls	limestone kireçtaşı
		Mr	marl marl
		Md	mudstone çamurtaşı
		St	siltstone silt taşı
		Ss	sandstone kumtaşı
		Cg	conglomerate konglomera
		Bt	basalt bazalt
		Ad	andesite andezit
		Da	dacite dasit
		Rh	rhyolite riyolit
Volcanic & pyroclastic rocks Yolkanik piroklastik kayaçlar	(basalt)		
	(andesite)		
	(dacite)		
	(rhyolite)		
		Tf	fine-coarse tuff ince-iri tüf
		Lptf	lapilli tuff lapilli tüf
		Tbr	tuff breccia tüf breş
		Volbrc	volcanic breccia volkanik breş
		Agg	agglomerate aglomera
		Volcg	volcanic conglomerate volkanik konglomera
Plutonic & hypabyssal rocks Derinlik hypabyssal kayaçlar		Gr	granite granit
		Gd	granodiorite granodiorit
		Dp	diorite porphyrite diortit porfir
		Qd	quartz diorite kuvars diortit
		Po	porphyrite porfir
		Qp	quartz porphyry kuvars porfiri
		Gp	granite porphyry granit porfiri
		Qdp	quartz diorite porphyrite kuvars diortit porfir
		Di	diorite diortit
			strike & dip of joint kırıkların doğrultu eğimi
			flow structure akma yapısı
			strike & dip of geological boundary dokümanak doğrultu eğimi ve eğimi

PL.2-11-3

MINERAL RESEARCH AND EXPLORATION INSTITUTE
GEOLOGICAL SURVEY
OF
TRABZON AREA, NORTHEASTERN TURKEY

PHASE III

ROUTE MAP WITH LOCALITIES OF ROCK
SAMPLES AROUND KIZILAĞAÇ-ÇAĞLIHANLARI AREA
KIZILAĞAÇ-ÇAĞLIHANLARI SAHASININ
GÜZERGAH HARİTASI VE NUMUNE YERLERİ

INDEX MAP

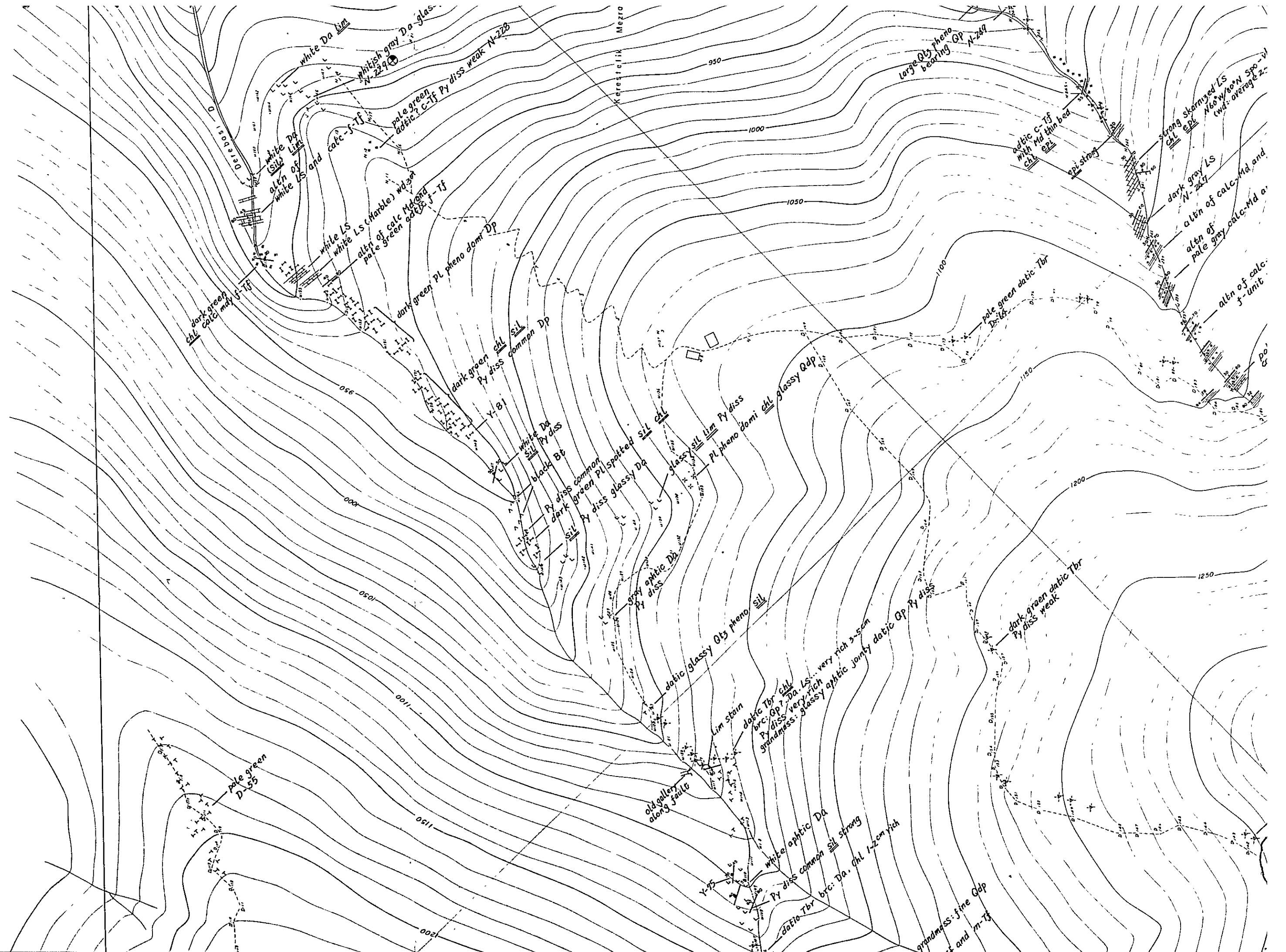
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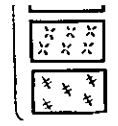
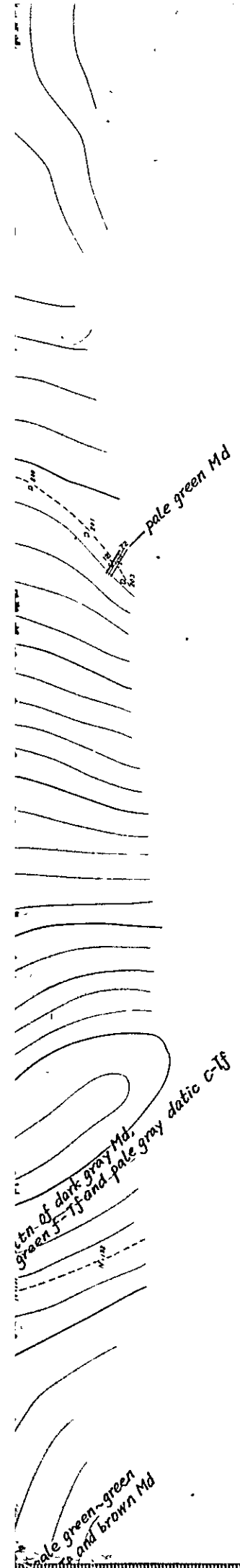
METAL MINING AGENCY OF JAPAN
JAPAN INTERNATIONAL COOPERATION AGENCY
FEBRUARY 1977

Prepared by Nikko Exploration & Development Co. Ltd

Mark İşaret	Word Kelime	Mark İşaret	Word Kelime	Mark İşaret	Word Kelime
(Lithology) Litoloji	andetic andezitik	Hb	hornblende hornblend	pillow	pillow structure
aggitic agglomeratik	agglomeratic agglomeratik	Ht	hematite hematit	poritic	porphyritic porfiritik
batic bazaltik	basaltic	k-Ftd	potash-feldspar potas-feldspat	vlet	veinlet damarcık
		Kaol	kaoline kaolin		







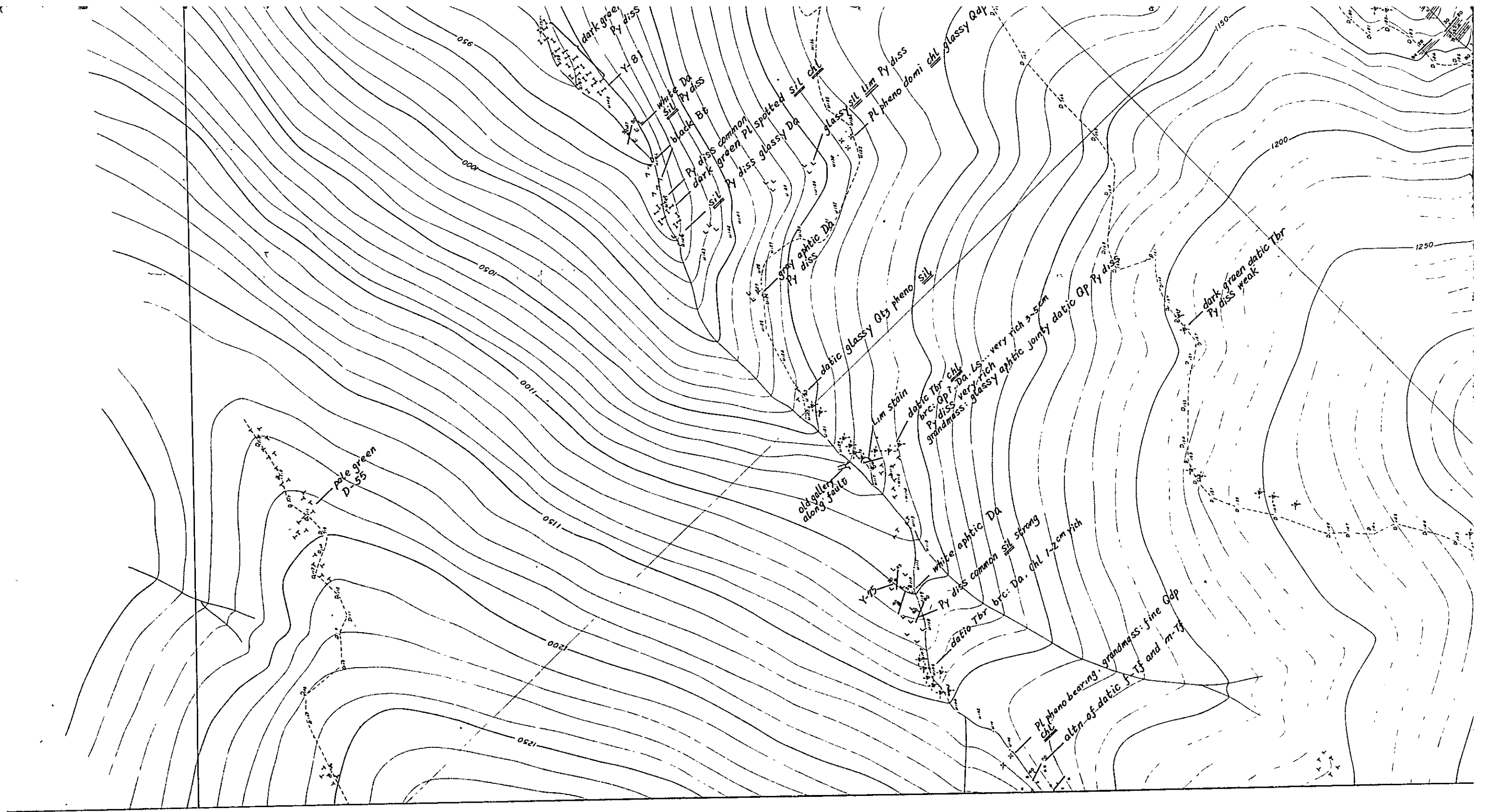
- 20 65 strike & dip
doğrultu & eğim
- 30 65 strike & dip of joint
kırıkların doğrultu eğimi
- 10 flow structure
akma yapısı
- 60 strike & dip of geological boundary
dokunak doğrultu doğrultu ve eğimi
- 70 65 fault
fay
- 70 65 fault showing direction of dislocation
atım yönünü gösteren fay
- fault & sheared zone
fay & makaslama zonu
- anticline
antiklinal
- syncline
senklinal
- dissemination
damarcıklar
- veinlets
damarcıklar
- vien
damar
- massive, bedded ore
masif, tabakalı cevher
- adit
galeri
- working mine
çalışan maden
- old mine
eski maden
- float
dokümtü
- position of rock sample
kayaç numunelerinin durumu
- y100
- Y-1 ⊕ for Microscopic observation of thin section
İnce kesit mikroskopik araştırma için
- Y-2 ⊕ for Microscopic observation of polish section
Parlak kesit mikroskopik araştırma için
- Y-3 ⊕ for Chemical analysis
Kimyasal analiz için
- Y-4 ⊕ for X-ray diffractive analysis
X-ışını difraktif analizi için

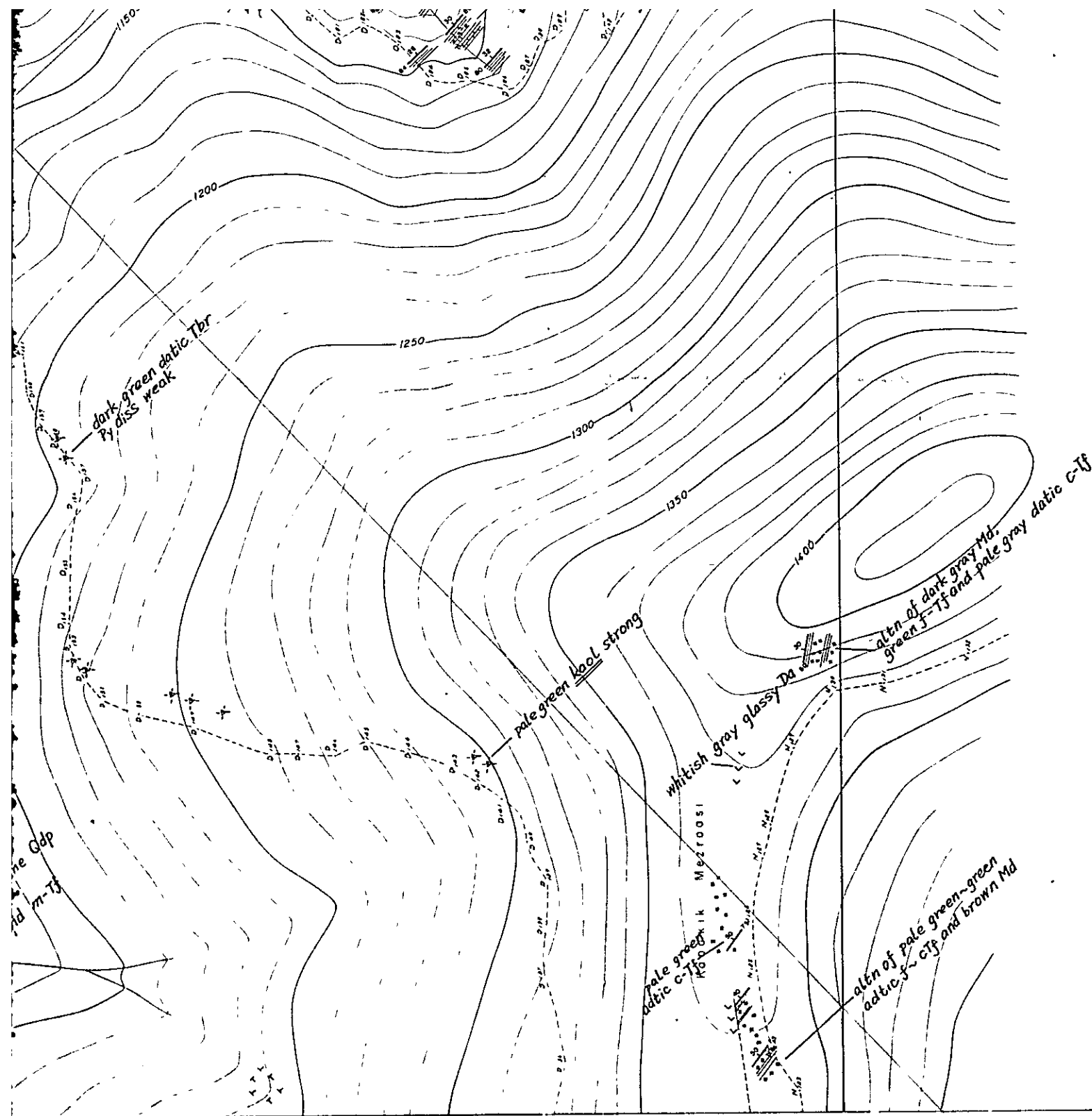
Qdp quartz diorite porphyrite
kuvarlı diorit porfir

D1 diorite
diorit

Mark Isaret	Word Kelime	Mark Isaret	Word Kelime	Mark Isaret	Word Kelime
(Lithology)		Hb	hornblende	pillow	pillow structure
adtic	andesitlik	Ht	hornblend hematite	portic	yastık yapısı
aggtic	agglomeratik	k-Fid	potash-feldspar	vlet	porphyritic
btic	basaltik	Kaol	kaoline		porfiritik
calc	calcareous	Lim	limonite	(Alteration)	
datic	kalkerli	Malct	malachite	(Alterasyon)	altır
grtic	dacitic	Mt	magnetite	alb	altere olmuş
mdy	granitic	Mont	montmorillonite	argl	albitlemiş
pmc	mudry	Oi	olivine	carb	argillaceous
rhtic	pumiceous	Pi	plagioclase	chi	ki
sdv	rhyolitic	Py	pyrite	epi	carbonitized
sil	sandy	Pyr	pyroxene	ht	karbonatlaşmış
sty	siliceous	Qtz	quartz	kaol	chloritized
tfc	siltli	Ser	sericite	lim	karbonatlaşmış
xeno	tuffaceous	Spc	specularite	mont	karbonatlaşmış
(Minerals)	tişli	Sph	sphalerite	ser	sericitized
Arög	ksenolitik	Zeo	zeolite	sil	sericitized
Ba	aragonite	(Texture)		(Others)	
Biot	barite	(Tekstür)	alternation	aver	average
Cal	biotite	altn	minavebe	ria	ortalama
Carb	calcite	aphtic	afanitik	diss	diameter
Chl	carbonates	autbrc	otobreşleşmiş	max	çap
Cpy	chlorite	brc	breccial(structure)	strong	dissimination
Epi	Chalcopyrite	flow	akıntı yapısı	wd	dissimination
Fid	kalkopirit	frag	fragment	U	maximum
Ga	feldspar	grad	gradually	M	maksimum
	galena	Intc	tedrici	L	strong, strongly
	zelen	jt	joint	f.	kuşvetli-kuvvetlice
		mtx	matrix	m.	weak, weakly
		onion	onion structure	c.	zayıf-zayıfca
		pheno	phenocryst	domi	width
			fenokrist		genişlik
					upper
					middle
					orta
					lower
					alt
					fine
					ince
					medium
					orta
					coarse
					iri
					dominant







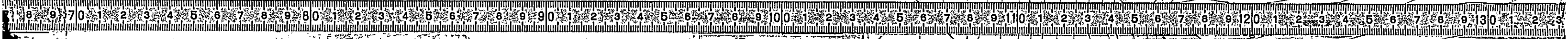
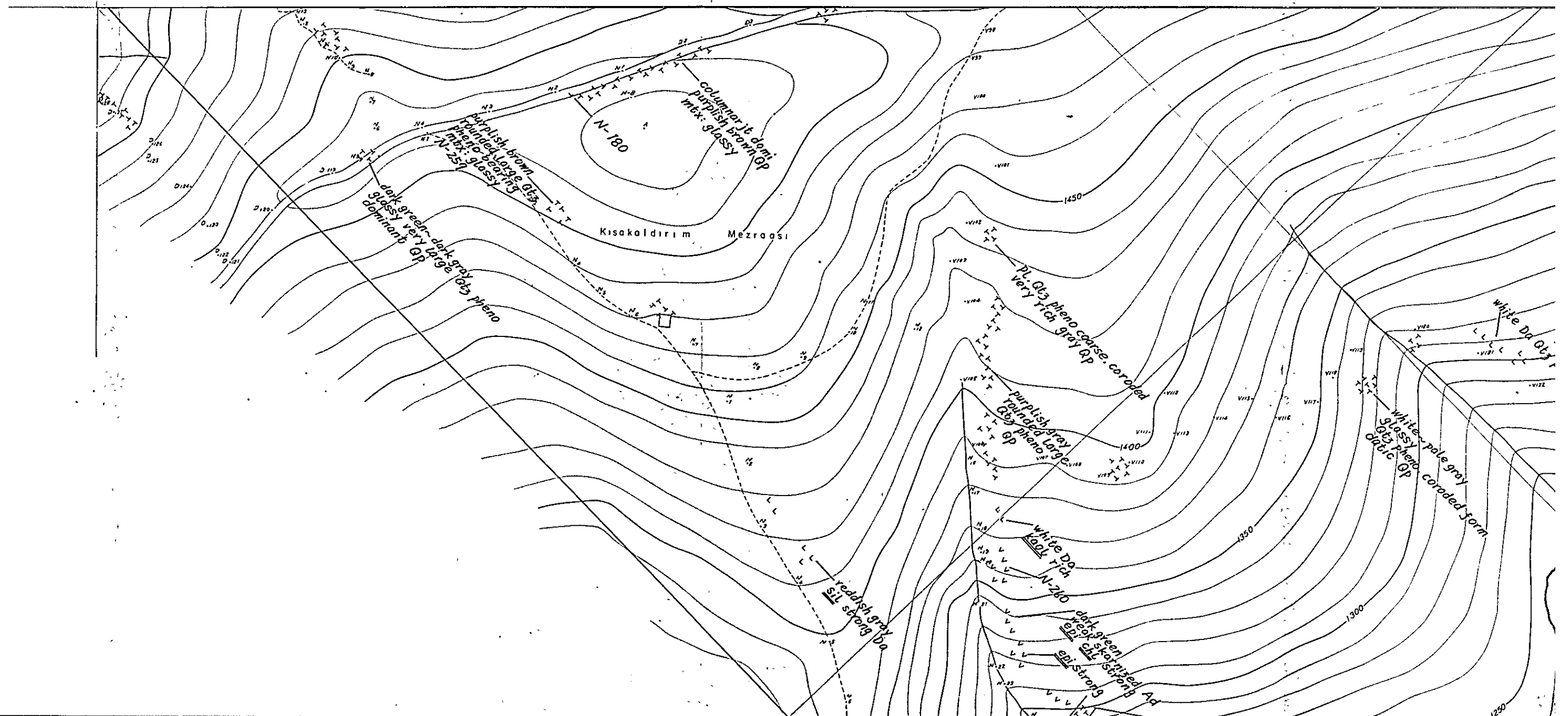
	massive, bedded ore masif, tabakalı cevher	(Minerals)	Arsenolit	SpC	Spekülar
	adit	Arag	aragonite	Sph	Spekülar
	galeri	Ba	barite	Zeo	Sphalerit
	working mine	Biot	biotite	(Texture)	Sphalerit
	çalınan maden	Cal	calcite	(Tektür)	zeolit
	old mine		kalsit	altın	alternatif
	eski maden	Carb	carbonates		munaveb
	float		karbonat	aphtu.	afantık
	dokuntu	Chl	chlorite	autbrc	otobrec
	position of rock sample	Cpy	Chalcopyrite	brc	otobrec
	kayaç numunelerinin durumu	Epi	epidote	flow	breccia
	for Microscopic observation of thin section İnce kesit mikroskopik araştırma için	Fld	feldspar	frag	breccia
	for Microscopic observation of polish section Parlak kesit mikroskopik araştırma için	Ga	galena	grad	breccia
	for Chemical analysis Kimyasal analiz için			Intc	breccia
	for X-ray diffractive analysis X-ışın difraktif analizi için			jt	breccia
				mtx	breccia
				onion	breccia
				pheno	breccia

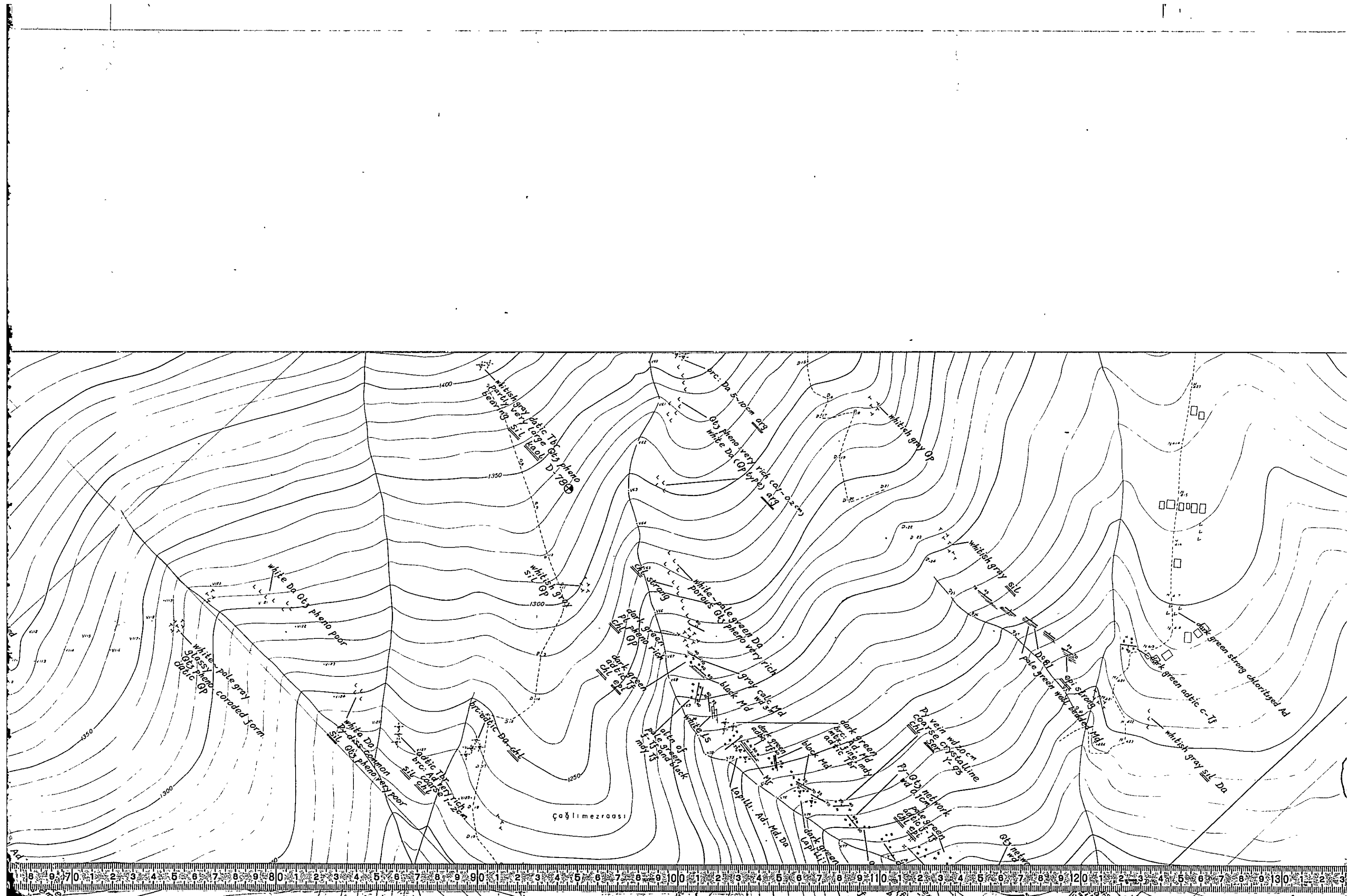


Pale grey
 and pale grey dolie C-17
 Green-green
 and brown Md

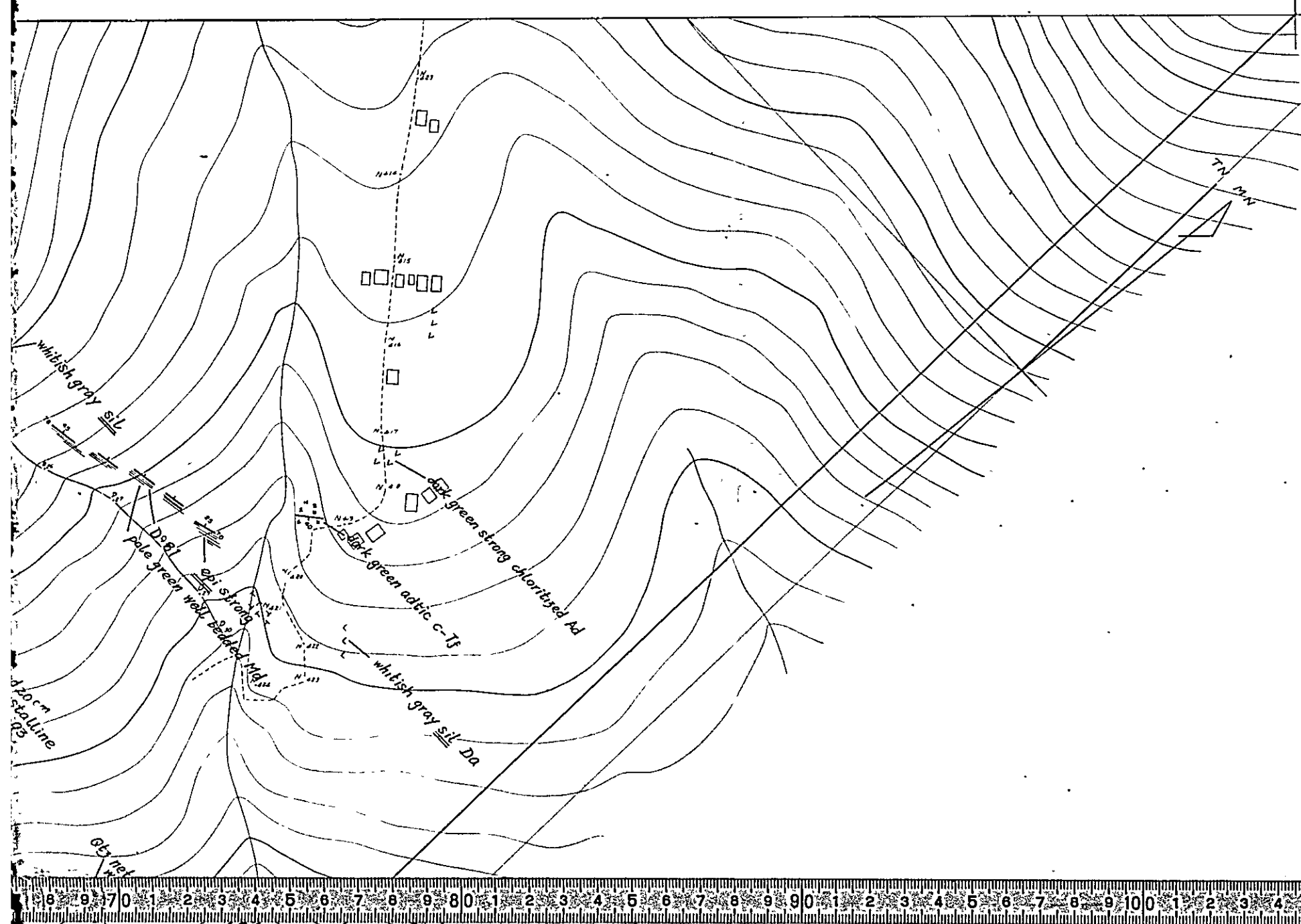
	damar massive, bedded ore masif, tabakalı cevher	(Minerals) (Mineraller)	<i>Asevelli</i> aragonite aragonit	Spc Sph Zeol (Texture) (Teksür) altın	Specularite Spekularit Sphalerite sfalerit zeolite zeolit	<u>ser</u> <u>sil</u> (Others) (Diğerleri) aver	sericitized serisitlemiş silicified silisleşmiş
	adit galeri	Ba	barite barit				average ortalama diameter çap
	working mine çalışan maden	Biot	biotite biyotit		alternation minavebe	ria	dissemination diseminasyon maximum maksimum
	old mine eski maden	Cal	calcite kalsit		aphatic afanitik	diss	strong, strongly kuvvetli-kuvvetlice
	float doküntü	Carb	carbonates karbonat	aphatic	aphatic afanitik	max	weak, weakly zayıf-zayıfca
	position of rock sample kayaç numunelerinin durumu	Chl	chlorite klorit	autbrc	autobrecciated structure otobreşleşmiş	strong	width genişlik
	for Microscopic observation of thin section Ince kesit mikroskopik araştırma için	Cpy	Chalcopyrite kalkopirit	brc	breccia(structure) breşik(yapı)	weak	upper üst
	for Microscopic observation of polish section Parlak kesit mikroskopik araştırma için	Epi	epidote epidot	flow	flow structure akıntılı yapı	wd	middle orta
	for Chemical analysis Kimyasal analiz için	Fid	feldspar feldspat	frag:	fragment tane	U	lower alt
	for X-ray diffractive analysis X-ışını difraktif analizi için	Ga	galena galen	grad	gradually tedrici	M	fine ince
				intc	intercalation arakatlı	L	medium orta
				jt	joint kırık	f.	coarse iri
				mtx	matrix hamur	m	coarse iri
				onion	onion structure soğan yapısı	c	dominant dominant
				pheno	phenocryst fenokrist	dom	







LEGEND
LEJAND



Geological symbol & abbreviation of geological term
Jeolojik simbol & jeolojik terim kısaltmaları

Symbol Sembol	Mark İşaret	Rock name Kayaç isimleri
	Ls	limestone kireçtaşı
	Mr	marl marl
	Md	mudstone çamurtaşı
	St	siltstone silt taşı
	Ss	sandstone kumtaşı
	Cg	conglomerate konglomera
	Bt	basalt
	Ad	andesite
	Da	dacite
	Rh	rhyolite riyolit
Sedimentary rocks Sedimanter kayalar		
Volcanic & pyroclastic rocks Volkanik piroklastik kayalar		
(basalt) (bazalt)	(andesite) (andezit)	(dacite) (dasit)
(rhyolite) (riyolit)		
	Tf	fine-coarse tuff ince-iri tuf
	Lptf	lapilli tuff lapilli tuf
	Tbr	tuff breccia tuf breş
	Volbrc	volcanic breccia volkanik breş
	Agg	agglomerate aglomera
	Volcg	volcanic conglomerate volkanik konglomera
Plutonic & hypabyssal rocks Derinlik hipabisal kayalar		
	Gr	granite granit
	Gd	granodiorite granodiorit
	Dp	diorite porphyrite diorit porfir
	Qd	quartz diorite kuvars diorit
	Po	porphyrite porfir
	Qp	quartz porphyry kuvars porfir
	Gp	granite porphyry granit porfir
	Udp	quartz diorite porphyrite kuvars diorit porfir
	Di	diorite diorit
	20 65	strike & dip doğrultu & eğim
	30 65	strike & dip of joint kırıkların doğrultu eğimi
	10	flow structure akma yapısı
	60	strike & dip of geological boundary doküman doğrultu ve eğimi
	70 65	fault fay
		fault & sheared zone
	Mark İşaret	Word Kelime
	(Lithology) (Litoloji)	
	adtic	andesitic andezitik
	agtic	agglomeratic aglomeratik
	btic	basaltic bazaltik
	calc	calcareous kalkareus

SAM

LEGEND
LEJAND

Geological symbol & abbreviation of geological term Jeolojik sembol & jeolojik terim kısaltmaları				
Symbol Sembol	Mark İşaret	Rock name Kayaç isimleri		
Sedimentary rocks Sedimanter kayalar	Ls	limestone kireçtaşı		
	Mr	marl marl		
	Md	mudstone çamurtaşı		
	St	siltstone silt taşı		
	Ss	sandstone kumtaşı		
	Cg	conglomerate konglomera		
	Bt	basalt		
	Ad	andesite andezit		
	Da	dacite dasit		
	Rh	rhyolite riyolit		
Volcanic & pyroclastic rocks Volkanik proklastik kayalar	(basalt)	(andezit)	(dacite)	(rhyolite)
	(bazalt)	(andezit)	(dasit)	(riyolit)
	Tf	fine-coarse tuff ince-iri tüf		
	Lptf	lapilli tuff lapilli tüf		
	Tbr	tuff breccia tüf breş		
	Volbrc	volcanic breccia volkanik breş		
	Agg	agglomerate aglomera		
	Volcg	volcanic conglomerate volkanik konglomera		
	Gr	granite granit		
	Gd	granodiorite granodiorit		
Plutonic & hypabyssal rocks Derinlik hipabisal kayalar	Dp	diorite porphyrite diorit porfir		
	Od	quartz diorite kuvars diorit		
	Po	porphyrite porfir		
	Qp	quartz porphyry kuvars porfiri		
	Gp	granite porphyry granit porfiri		
	Qdp	quartz diorite porphyrite kuvars diorit porfir		
	D1	diorite diorit		
	20 65	strike & dip doğrultu & eğim		
	30 65	strike & dip of joint kırıkların doğrultu eğimi		
	10 60	flow structure akma yapısı		
60 65	strike & dip of geological boundary dokunak doğrultu doğrultu ve eğim			
70 65	fault fay			

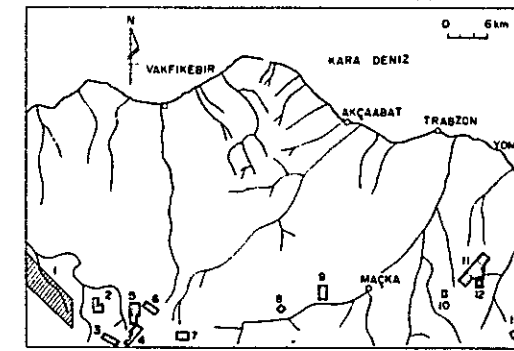
PL.2-11-4

MINERAL RESEARCH AND EXPLORATION INSTITUTE
GEOLOGICAL SURVEY
OF
TRABZON AREA, NORTHEASTERN TURKEY

PHASE III

ROUTE MAP WITH LOCALITIES OF ROCK
SAMPLES AROUND KIZILAGAÇ-ÇAĞLIHANLARI AREA
KIZILAGAÇ-ÇAĞLIHANLARI SAHASININ
GÜZERGAH HARİTASI VE NUMUNE YERLERİ

INDEX MAP



- 1 Karaman Dere
- 2 Alacadağ
- 3 Çeşel Dere
- 4 Golluolan
- 5 Ken mine
- 6 Ken Dere, Fırdere
- 7 Akise Yayla
- 8 Yeni Mahalle
- 9 Salona
- 10 Kani Tepe
- 11 Kızılağaç-Çağlıhanları
- 12 Tuzluk Mezrası
- 13 Ocak
- 14 Uzunlu

General geological survey area Detailed geological survey area

Scale 1:2,000

0 100 200m

METAL MINING AGENCY OF JAPAN
JAPAN INTERNATIONAL COOPERATION AGENCY
FEBRUARY 1977

Prepared by Nikko Exploration & Development Co., Ltd

Mark
İşaret
(Lithology)
adtic

Word
Kelime
andesitic
andezitik

Mark
İşaret
Hb

Word
Kelime
hornblende
hornblend

Mark
İşaret
Ht

Word
Kelime
hematite
hematit

agtic
basaltic
bazaltik

agglomeratic
aglomeraatik

k-Fld
Kaol

potash-feldspar
potas-feldspat
kaoline
kaolin

vlet
(Alteration)

veinlet
damarcik

calcarenous
kalkarenus

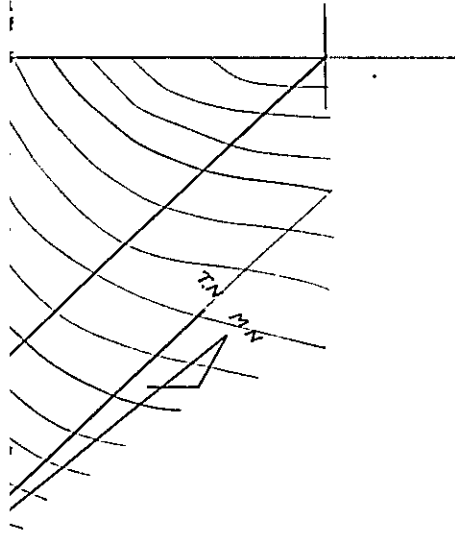
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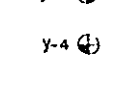
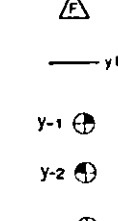
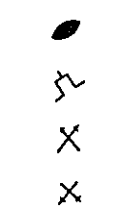
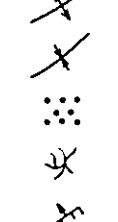
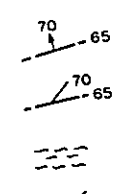
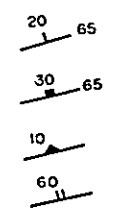
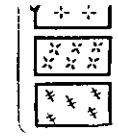
limonite

limonite

limonite

limonite





Qdp
D1

granu porfiri
quartz diorite porphyrite
kırmızı diorit porfirite

diorite
diorit

strike & dip
doğrultu & eğim

strike & dip of joint
kırıkların doğrultu eğimi

flow structure
akma yapısı

strike & dip of geological boundary
dukanak doğrultu doğrultu ve eğimi

fault
fay

fault showing direction of dislocation
atım yönünü gösteren fay

fault & sheared zone
fay & mokaslama zonu

anticline
antiklinal

syncline
senklinal

dissemination
diseminasyon

veinlets
damarcıklar

vein
damar

massive, bedded ore
masif, tabakalı cevher

adit
galeri

working mine
çalışan maden

old mine
eski maden

float
döküntü

position of rock sample
kayaç numunelerinin durumu

for Microscopic observation of thin section
İnce kesit mikroskopik araştırma için

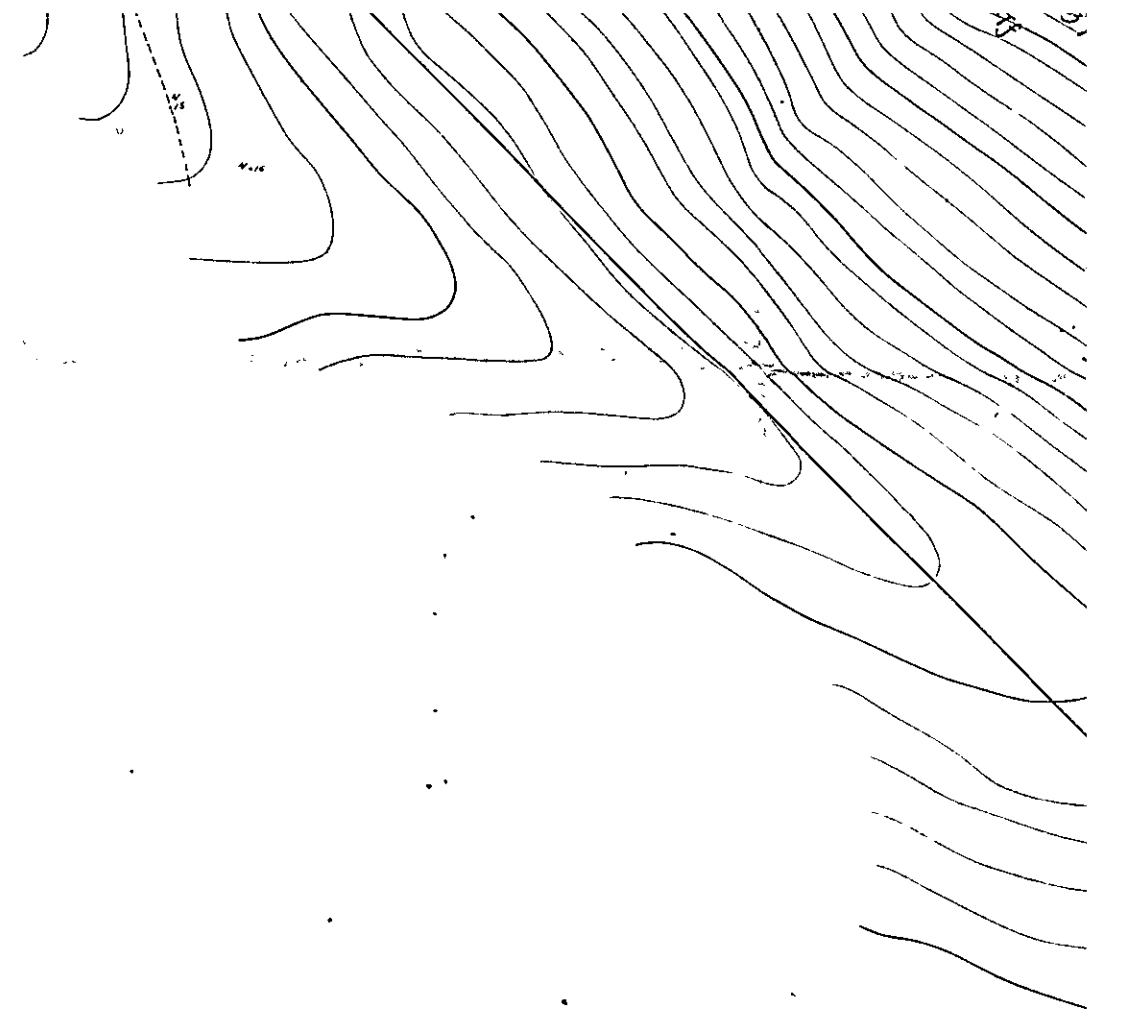
for Microscopic observation of polish section
Parlak kesit mikroskopik araştırma için

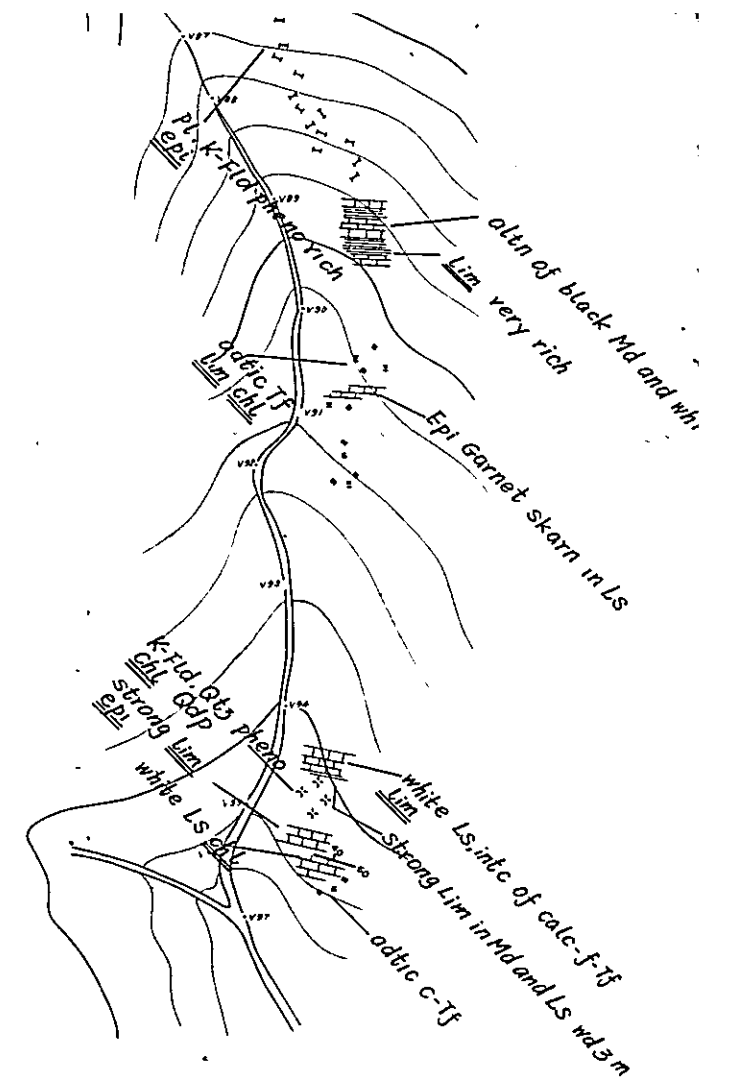
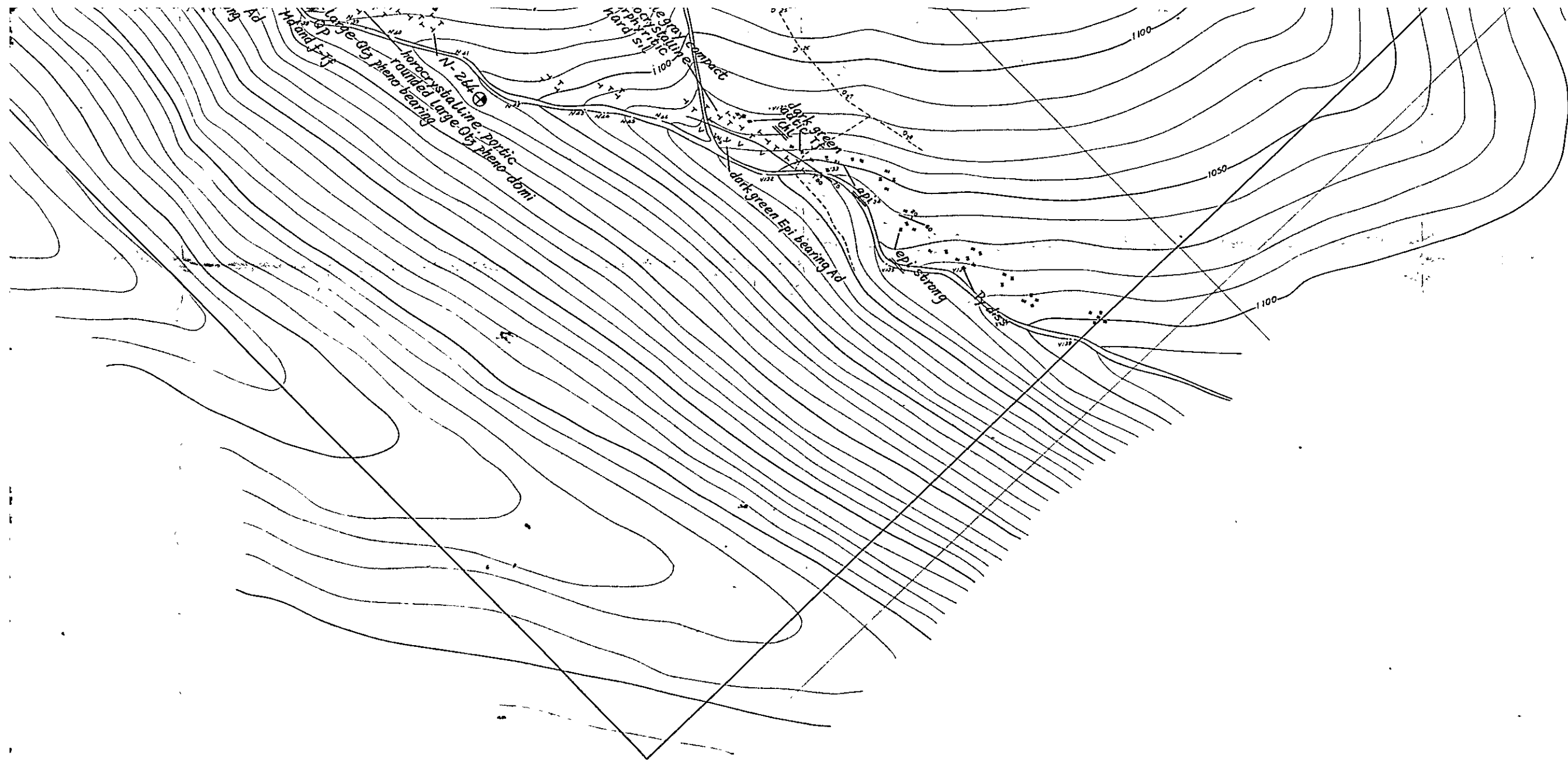
for Chemical analysis
Kımyasal analiz için

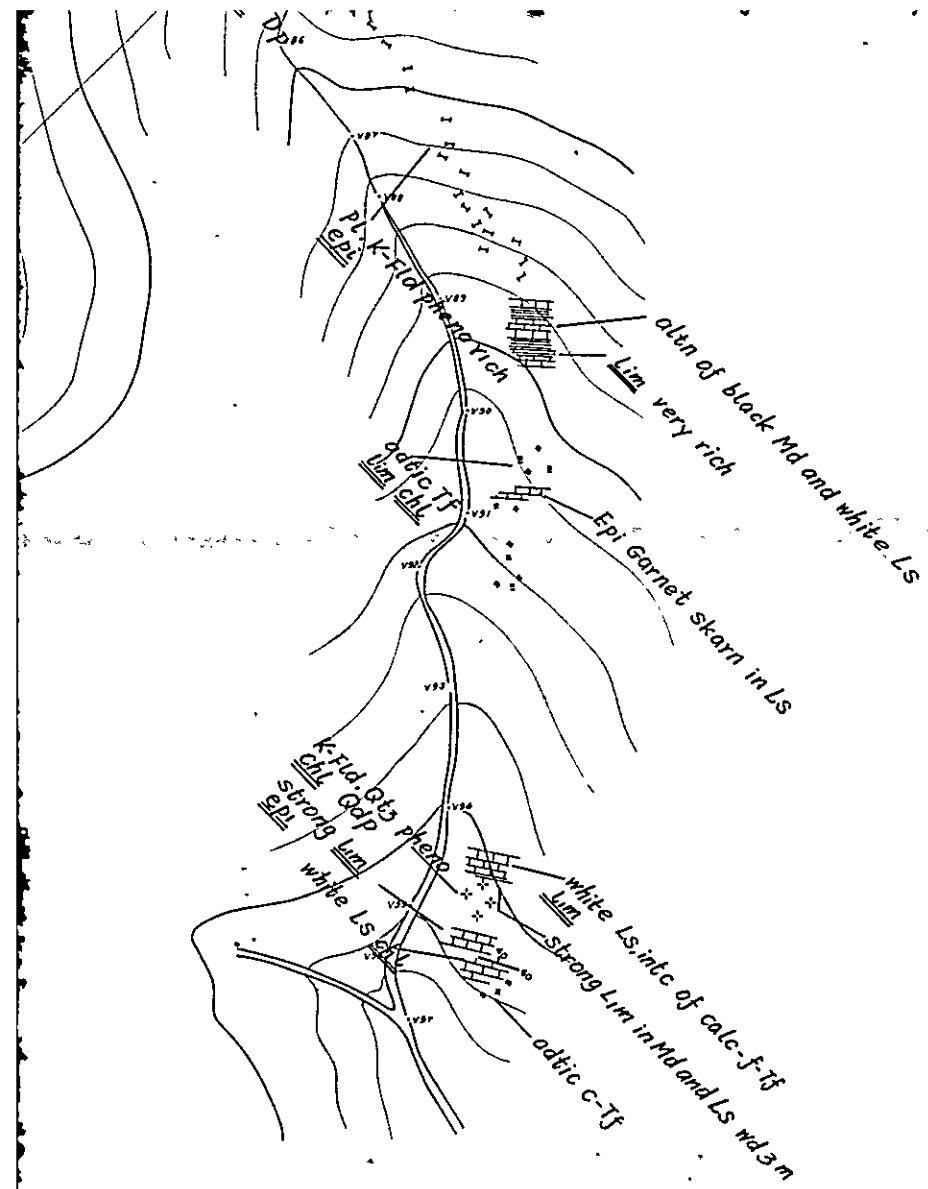
for X-ray diffractive analysis
X-ışını difraktif analizi için

Mark <i>Isaret</i>	Word <i>Kelime</i>	Mark <i>Isaret</i>	Word <i>Kelime</i>	Mark <i>Isaret</i>	Word <i>Kelime</i>
(Lithology) <i>(Litoloji)</i>				pillow	pillow structure <i>yastık yapısı</i>
adtic	andesitic <i>andezitik</i>	Hb	hornblende <i>hornblend</i>	portic	porphyritic <i>porfiritik</i>
aggitic	agglomeratic <i>aglomeratik</i>	Ht	hematite <i>hematit</i>	viet	veinlet <i>damarcık</i>
basaltic	basaltic <i>bazaltik</i>	k-Fld	potash-feldspar <i>potas-feldspat</i>	(Alteration) <i>(Alterasyon)</i>	
cal	calcareous <i>kalkereil</i>	Kaol	kaoline <i>kaolin</i>	altr	altered <i>altere olmuş</i>
calc	calcitic <i>dasitik</i>	Lim	limonite <i>limonit</i>	alb	albitized <i>albitleşmiş</i>
datc	dacitic <i>granitik</i>	Malct	malachite <i>malakit</i>	argl	argillaceous <i>kil</i>
grtic	granitic <i>granitik</i>	Mt	magnetite <i>manyetit</i>	carb	carbonized <i>karbonatlaşmış</i>
mdy	muddy <i>çamurlu</i>	Mont	montmorillonite <i>montmorillonit</i>	chl	chloritized <i>klaritleşmiş</i>
pnc	pumiceous <i>piimit</i>	OI	olivine <i>olivim</i>	epi	epidotized <i>epidotlaşmış</i>
rhtic	rhyolitic <i>riyolitik</i>	Py	pyroxene <i>piraksen</i>	ht	hematitized <i>hematitleşmiş</i>
sdv	sandy <i>kumlu</i>	Pyr	pyrite <i>pirit</i>	kaol	kaolinized <i>kaolinleşmiş</i>
sil	siliceous <i>silsil</i>	Qtz	quartz <i>kuvars</i>	lm	limonitized <i>limonitleşmiş</i>
sty	silty <i>siltli</i>	Ser	sericite <i>serizit</i>	mont	montmorillonized <i>montmorillonitleşmiş</i>
tfc	tuffaceous <i>tüflü</i>	Spc	specularite <i>Spekularit</i>	ser	sericitized <i>serizitleşmiş</i>
xeno	xenolith <i>ksenolit</i>	Sph	sphalerite <i>sfalerit</i>	sil	silicified <i>silsileşmiş</i>
(Minerals) <i>(Mineraller)</i>		Zeo	zeolite <i>zeolit</i>	(Others) <i>(Diğerleri)</i>	
Arag	aragonite <i>aragonit</i>	(Texture) <i>(Teksitür)</i>		aver	average <i>ortalama</i>
Ba	barite <i>barit</i>	altn	alternation <i>minavehe</i>	dia	diameter <i>çap</i>
Biot	biotite <i>biyot</i>	aphct	aphanitic <i>afanitik</i>	diss	dissemination <i>diseminasyon</i>
Cal	calcite <i>kalsit</i>	autbrc	autobrecciated structure <i>otobreleşmiş</i>	max	maximum <i>maksimum</i>
Carb	carbonates <i>karbonat</i>	brc	breccia(structure) <i>breşik yapı</i>	strong	strong, strongly <i>kuvvetli, kuvvetlice</i>
Chl	chlorite <i>klorit</i>	flow	flow structure <i>akıntılı yapı</i>	wd	width <i>genişlik</i>
Cpy	chalcopyrite <i>kalkopirit</i>	frag:	fragment <i>parçacık</i>	U	upper <i>üst</i>
Epi	epidote <i>epidot</i>	grad	gradually <i>tedrici</i>	M	middle <i>orta</i>
Fid	feldspar <i>feldspat</i>	Intc	intercalation <i>araktaki</i>	L	lower <i>alt</i>
Ga	galena <i>galen</i>	it	joint <i>kırık</i>	f	fine <i>ince</i>
		mtx	matrix <i>hamur</i>	m	medium <i>orta</i>
		onion	onion structure <i>soğan yapısı</i>	c-	coarse <i>iri</i>
		pheno	phenocryst <i>fenokrist</i>	domi	dominant













	muşy, sığınma yerleri	Arag	aragonite	Zeo
	adit	Ba	aragonit	(Texture)
	galeri	Biot	barite	(Textür)
	working mine	Cal	biotite	altın
	çalğan maden	Carb	calcite	
	old mine		karbit	aphtic
	eski maden	Chl	carbonates	
	float	Cpy	chlorite	autbrc
	döküntü	Epi	Chlorit	
— y100	position of rock sample	Fid	Chalcopyrite	brc
	kayaç numunelerinin durumu	Ga	kalcopyrit	flow
Y-1 ⊕	for Microscopic observation of thin section		epidote	fray
	İnce kesit mikroskopik araştırma için		epidot	
Y-2 ⊕	for Microscopic observation of polish section		feldspar	grad
	Parlak kesit mikroskopik araştırma için		feldspat	
Y-3 ⊕	for Chemical analysis		galena	Intc
	Kimyasal analiz için			
Y-4 ⊕	for X-ray diffractive analysis			It
	X-ışını diffraktif analizi için			
				mtx
				onion
				pheno



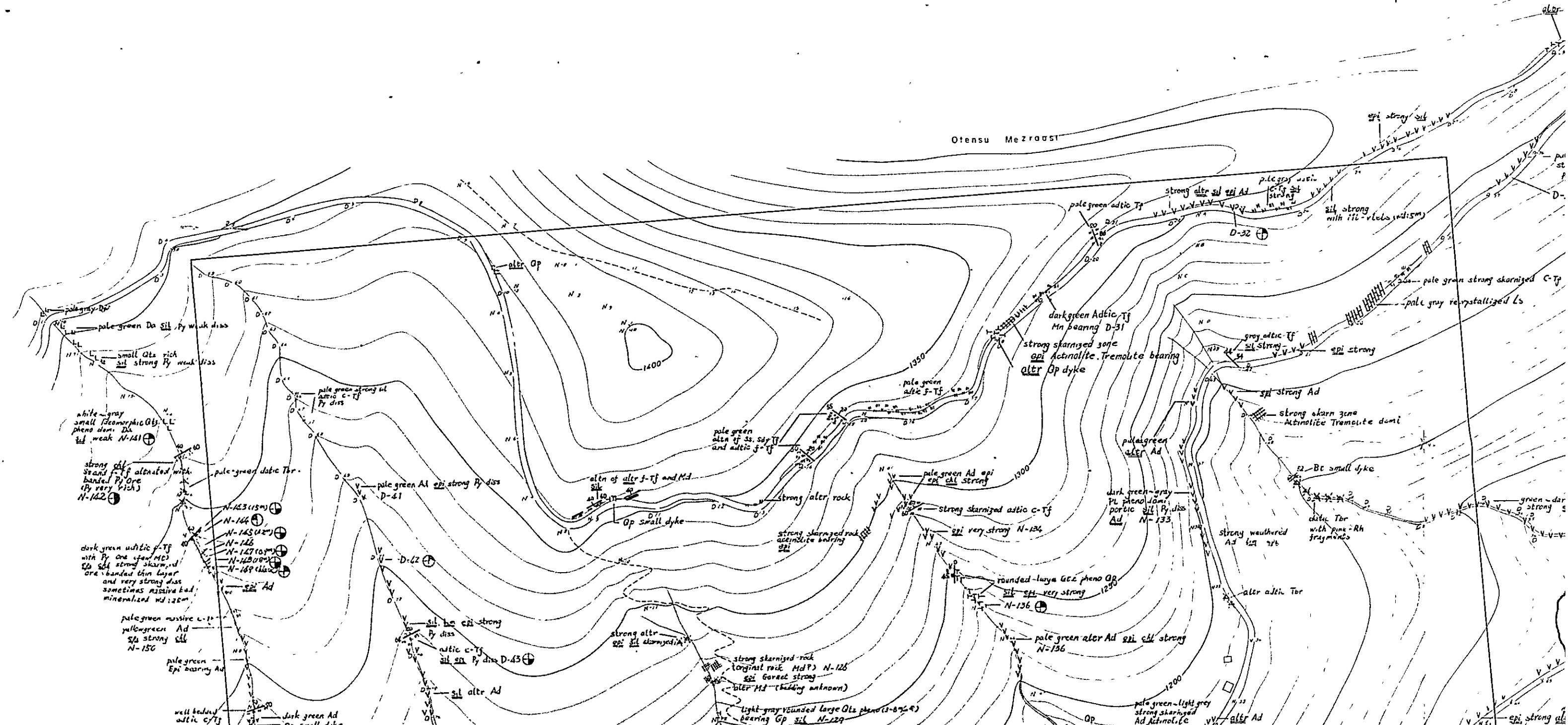
İHAZ, İMHAL VEYA							
	adit galeri	Arag	aragonite aragonit	Zeo	zeolite zeolit	sil (Others) (Diğerleri)	silicified silisleşmiş
	working mine çalışan maden	Biot	biotite biotit	(Texture) (Teksür)	altın	dia	average ortalama
	old mine eski maden	Cal	calcite kalsit	aphtic	alternation münavebe	diss	diameter çap
	float döküntü	Carb	carbonates karbonat	autbrc	aphanitic afanitik	max	dissemination diseminasyon
— y100	position of rock sample kayaç numunelerinin durumu	Chl	chlorite klorit	brc	breccia(structure) breşik(yapı)	strong	maximum maksimum
y-1 ⊕	for Microscopic observation of thin section İnce kesit mikroskopik araştırma için	Cpy	Chalcopyrite kalkopirit	flow	flow structure akıntılı yapı	weak	strong, strongly kuvvetli-kuvvetlice
y-2 ⊕	for Microscopic observation of polish section Parlak kesit mikroskopik araştırma için	Epi	epidote epidot	frag	fragment parçacık	wd	weak, weakly zayıf-zayıfca
y-3 ⊕	for Chemical analysis Kimyasal analiz için	Fid	feldspar feldspat	grad	gradually tedrici	U	width genişlik
y-4 ⊕	for X ray diffractive analysis X-ışın diffraktif analizi için	Ga	galena galen	Intc	intercalation arakatlı	M	upper üst
				jt	joint kırık	L	middle orta
				mtx	matrix hamur	f-	lower alt
				onion	onion structure soğan yapısı	m-	fine ince
				pheno	phenocryst fenokrist	c-	medium orta
						dom	coarse iri
							dominant

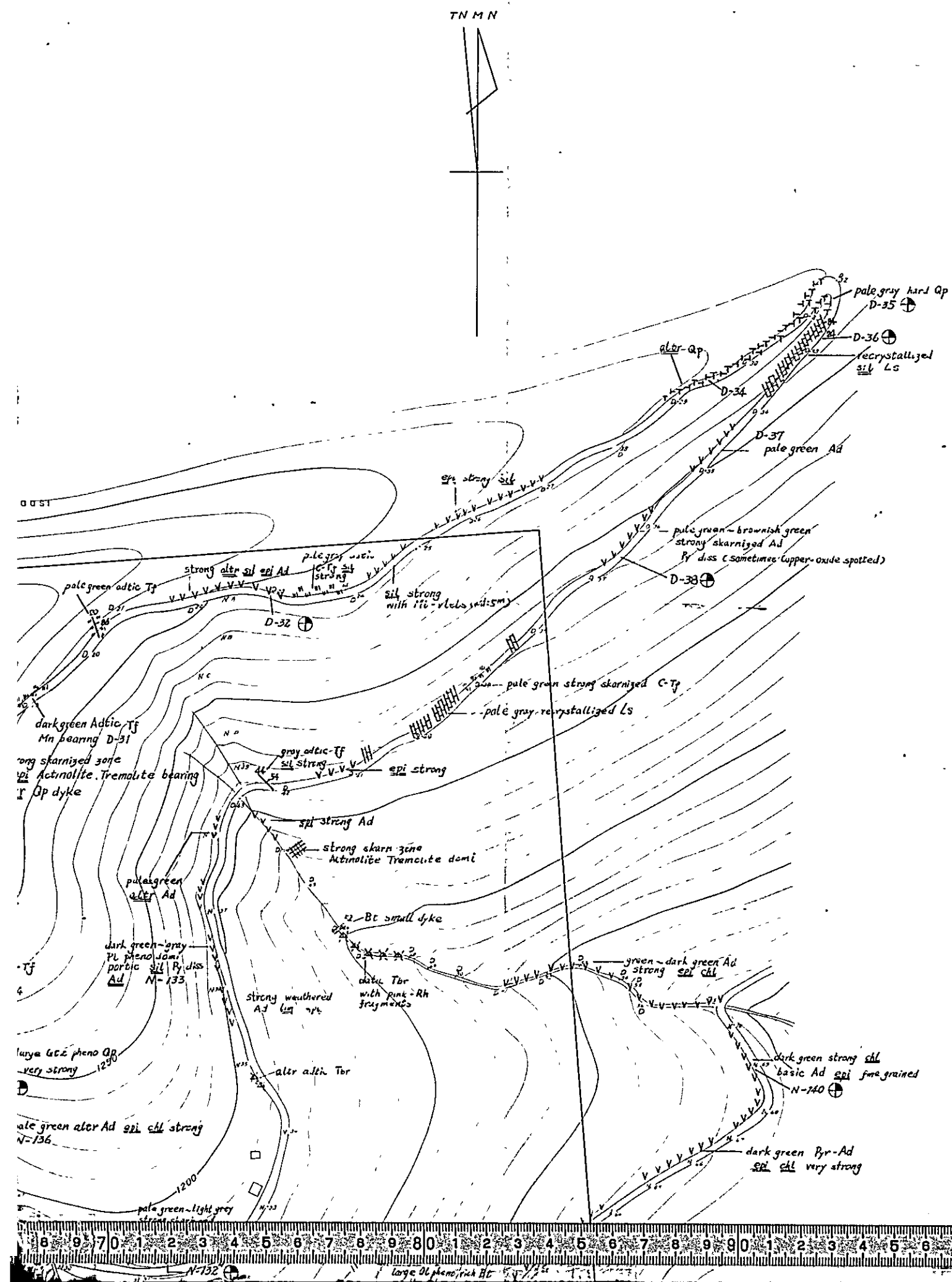


T.M.N



Otensu Me ZROOST





LEGEND LEJAND

Geological symbol & abbreviation of geological term
Jeolojik simbol & jeolojik terim kısaltmaları

Symbol Sembol	Mark İşaret	Rock name Kayaç isimleri			
	Ls	limestone kireçtaşı			
	Mr	marl marl			
	Md	mudstone çamurtaşı			
	St	siltstone silt taşı			
	Ss	sandstone kumtaşı			
	Cg	conglomerate konglomera			
	Bt	basalt			
	Ad	andesite			
	Da	dacite			
	Rh	rhyolite			
Sedimentary rocks Sedimanter kayaçlar					
Volcanic & pyroclastic rocks Vulkanik proklastik kayaçlar					
(basalt) (bazalt)	(andesite) (andezit)	(dacite) (dasit)	(rhyolite) (riyolit)	Tf	fine-coarse tuff ince-irt tuf
				Lptf	lapilli tuff lapilli tuf
				Tbr	tuff breccia tuf breş
				Volbrc	volcanic breccia vulkanik breş
				Agg	agglomerate aglomera
				Volcg	volcanic conglomerate vulkanik konglomera
				Gr	granite granit
				Gd	granodiorite granodiorit
				Dp	diorite porphyrite diort porfir
				Od	quartz diorite kuvars diort
				Po	porphyrite porfir
				Op	quartz porphyry kuvars porfir
				Gp	granite porphyry granit porfir
				Qdp	quartz diorite porphyrite kuvars diort porfir
				Dt	diorite diort

MINERAL RESEARCH
GEOLOGICAL
TRABZON AREA

ROUTE MAP WITH
SAMPLES AROUND
TUZLAK ME.
GÜZERGAH HARI

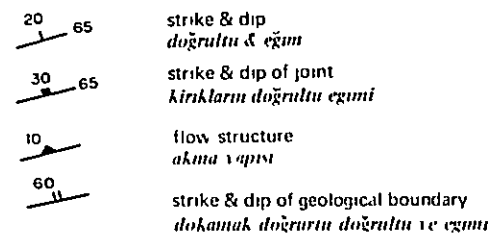
Scale
Ölçek

METAL MINING
JAPAN INTERNATIONAL
FIELD

Prepared by Nikko

LEGEND
LEJAND

Geological symbol & abbreviation of geological term Jeolojik sembol & jeolojik terim kısaltmaları			
Symbol Sembol	Mark İşaret	Rock name Kayaç isimleri	
Sedimentary rocks Sedimanter kayalar	Ls	limestone kireçtaşı	
	Mr	marl marl	
	Md	mudstone çamurtaşı	
	St	siltstone silt taşı	
	Ss	sandstone kumtaşı	
	Cg	conglomerate konglomera	
	Bt	basalt	
	Ad	andesite andezit	
	Da	dacite dasit	
	Rh	rhyolite ryolit	
Volcanic & pyroclastic rocks Volkanik piroklastik kayalar	Tf	fine-coarse tuff ince-iri tuf	
	Lptf	lapilli tuff lapilli tuf	
	Tbr	tuff breccia tuf breş	
	Volbrc	volcanic breccia volkanik breş	
	Agg	agglomerate aglomera	
	Volcg	volcanic conglomerate volkanik konglomera	
	Gr	granite granit	
	Gd	granodiorite granodiorit	
	Dp	diorite porphyrite diorit porfir	
	Qd	quartz diorite kuvar diorit	
Plutonic & hypabyssal rocks Derinlik hipabyssal kayalar	Po	porphyrite porfir	
	Qp	quartz porphyry kuvar porfiri	
	Gp	granite porphyry granit porfiri	
	Qdp	quartz diorite porphyrite kuvar diorit porfir	
	Di	diorite diorit	



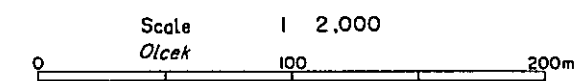
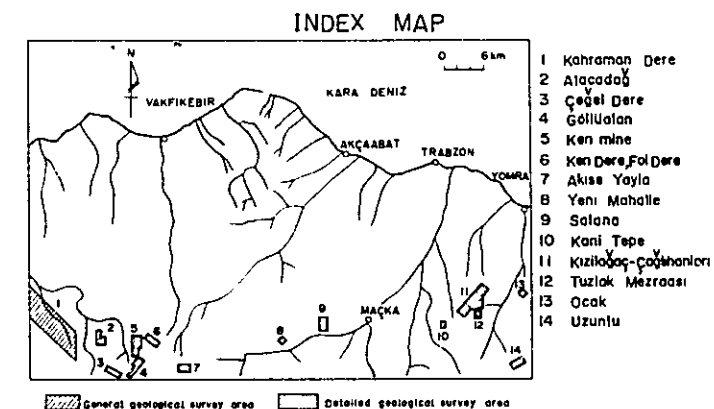
Mark İşaret	Word Kelime	Mark İşaret	Word Kelime	Mark İşaret	Word Kelime
(Lithology)		Hb	hornblende	pillow	pillow structure
adtic	andesitic	Ht	hornblend	poritic	porfiritic
aggtic	agglomeratic	k-Fld	hematite	vlet	porphyritic
			potash feldspar		vevlet
			quartz feldspar		

PL.2-12

MINERAL RESEARCH AND EXPLORATION INSTITUTE
GEOLOGICAL SURVEY
OF
TRABZON AREA, NORTHEASTERN TURKEY

PHASE III

ROUTE MAP WITH LOCALITIES OF ROCK
SAMPLES AROUND TUZLAK MEZRAASI AREA
TUZLAK MEZRAASI SAHASININ
GÜZERGAH HARİTASI VE NUMUNE YERLERİ



METAL MINING AGENCY OF JAPAN
JAPAN INTERNATIONAL COOPERATION AGENCY
FEBRUARY 1977

Prepared by Nikko Exploration & Development Co., Ltd

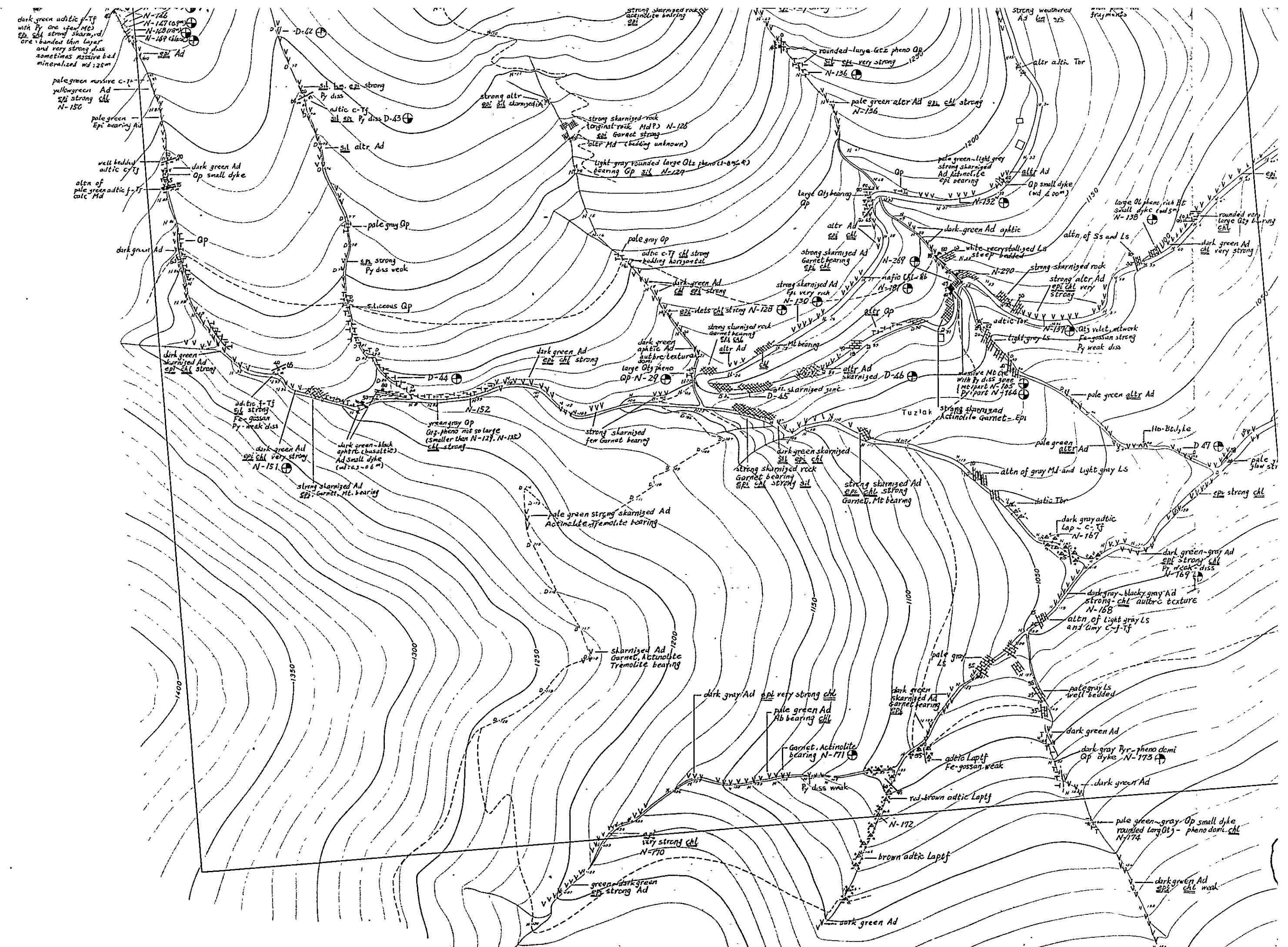
pale grey hard sp
D-35
recrystallized
silt Ls

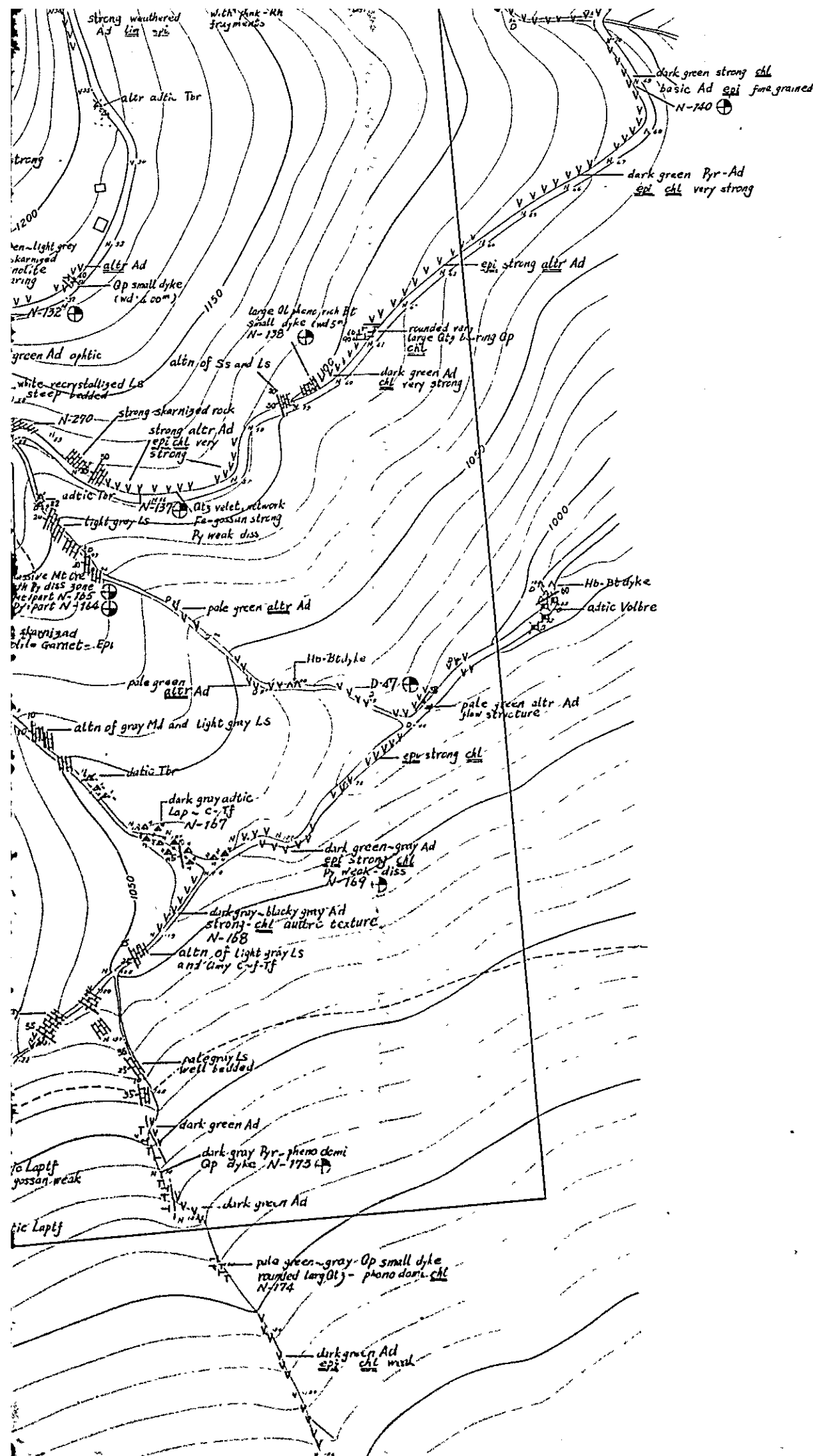
green Ad
green
copper-oxide spotted

dark green strong chl
basic Ad sp fine grained
N-140

green Py-Ad
chl very strong

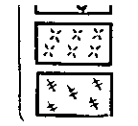






Mark Isaret	Word Kelime	Mark Isaret	Word Kelime	Mark Isaret
Di	diorite diorit			
20 65	strike & dip doğrultu & eğim			
30 65	strike & dip of joint kırıkların doğrultu eğimi			
10 60	flow structure akma yapısı			
60 65	strike & dip of geological boundary dokamak doğrultu doğrultu ve eğimi			
70 65	fault fay			
70 65	fault showing direction of dislocation atım yönünü gösteren fay			
	fault & sheared zone fay & makaslama zonu			
	anticline antiklinal			
	syncline senklinal			
	dissemination diseminasyon			
	veinlets damarcıklar			
	vien damar			
	massive, hedded ore masif, tabakalı cevher			
	adit galeri			
	working mine çalışan maden			
	old mine eski maden			
	float döküntü			
— y100	position of rock sample kayaç numunelerinin durumu			
Y-1 ⊕	for Microscopic observation of thin section İnce kesit mikroskopik araştırma için			
Y-2 ⊕	for Microscopic observation of polish section Parlak kesit mikroskopik araştırma için			
Y-3 ⊕	for Chemical analysis Kimyasal analiz için			
Y-4 ⊕	for X-ray diffractive analysis X-ışını difraktif analizi için			
		(Lithology) (Litoloji)		
		adtic		
		aggtic	an-festik agglomeratik	
		btic	bazaltic	
		calc	calcareous kalkeri	
		datic	dacitic dastik	
		grtic	granitic granitik	
		mdy	mudy çamuru	
		pmc	pumiceous pumiceus	
		rhtic	rhyolitic riyolitik	
		sdv	sandy kumlu	
		sil	siliceous silisli	
		sty	silty siltli	
		tfc	tuffaceous tufflu	
		xeno	xenolith ksenolit	
		(Minerals) (Mineraler)		
		Araq	aragonite aragonit	
		Ba	barite barit	
		Biot	biotite biyotit	
		Cal	calcite kalsit	
		Carb	carbonates karbonat	
		Chi	chlorite klorit	
		Cpy	Chalcopyrite kalkopirit	
		Epi	epidote epidit	
		Fld	feldspar feldspat	
		Ga	galena galen	
		Hb	hornblende hornblend	pillow
		Ht	hematite hematit	portic
		k-Fld	potash-feldspar potas-feldspat	vlet
		Kaol	kaoline kaolin	
		Lim	limonite limonit	(Alteration) (Alterasyon)
		Malct	malachite malakit	altr
		Mt	magnetite magnetit	alb
		Mont	montmorillonite montmorillonit	argl
		Oi	olivine oliv	carb
		Pl	plagioclase plajoklas	chl
		Py	Pyrite pirit	epi
		Pyr	Pyroxene pirksen	ht
		Qtz	quartz kuvars	kaol
		Ser	sericite serisit	lim
		Spc	Specularite Spekularit	mont
		Sph	sphalerite sfalerit	ser
		Zeo	zeolite zeolit	sil
		(Texture) (Teksür)		(Others) (Diğerleri)
		altn	alternation minarehe	aver
		aphic	aphanitic afanitik	dia
		autbrc	autobrecciated structure otobreşleşmiş	diss
		brc	breccia (structure) hırıkt yapı	max
		flow	flow structure akıntılı yapı	strong
		frag:	fragment tanecik	weak
		grad	gradually tedrici	wd
		Intc	intercalation arakatki	U
		jt	joint kirik	M
		mtx	matrix hamur	L
		onion	onion structure soğan yapısı	f
		pheno	phenocryst fenokrist	m
				c
				domi





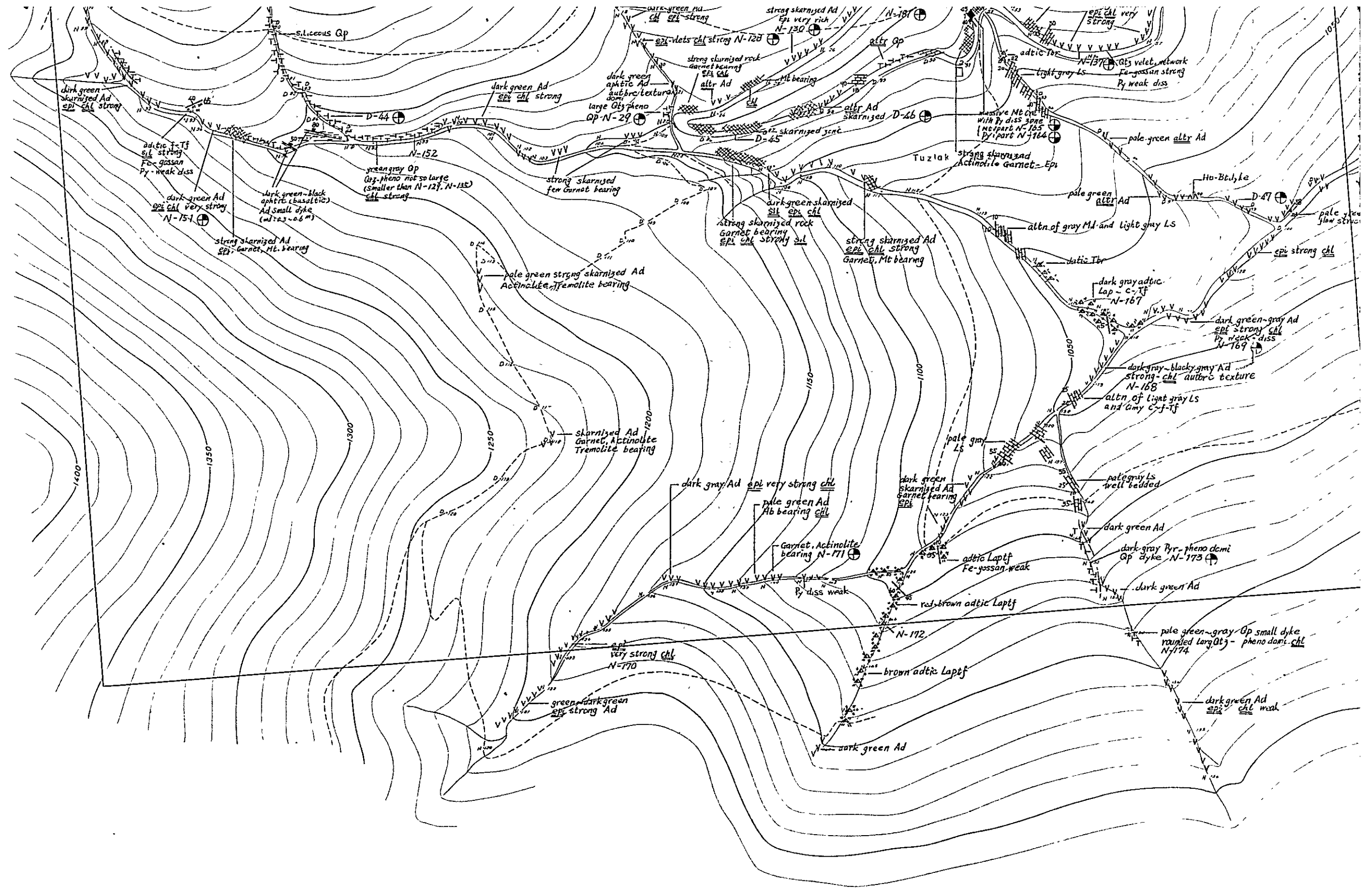
Qdp
quartz diorite porphyrite
kuvars diorit porfirli

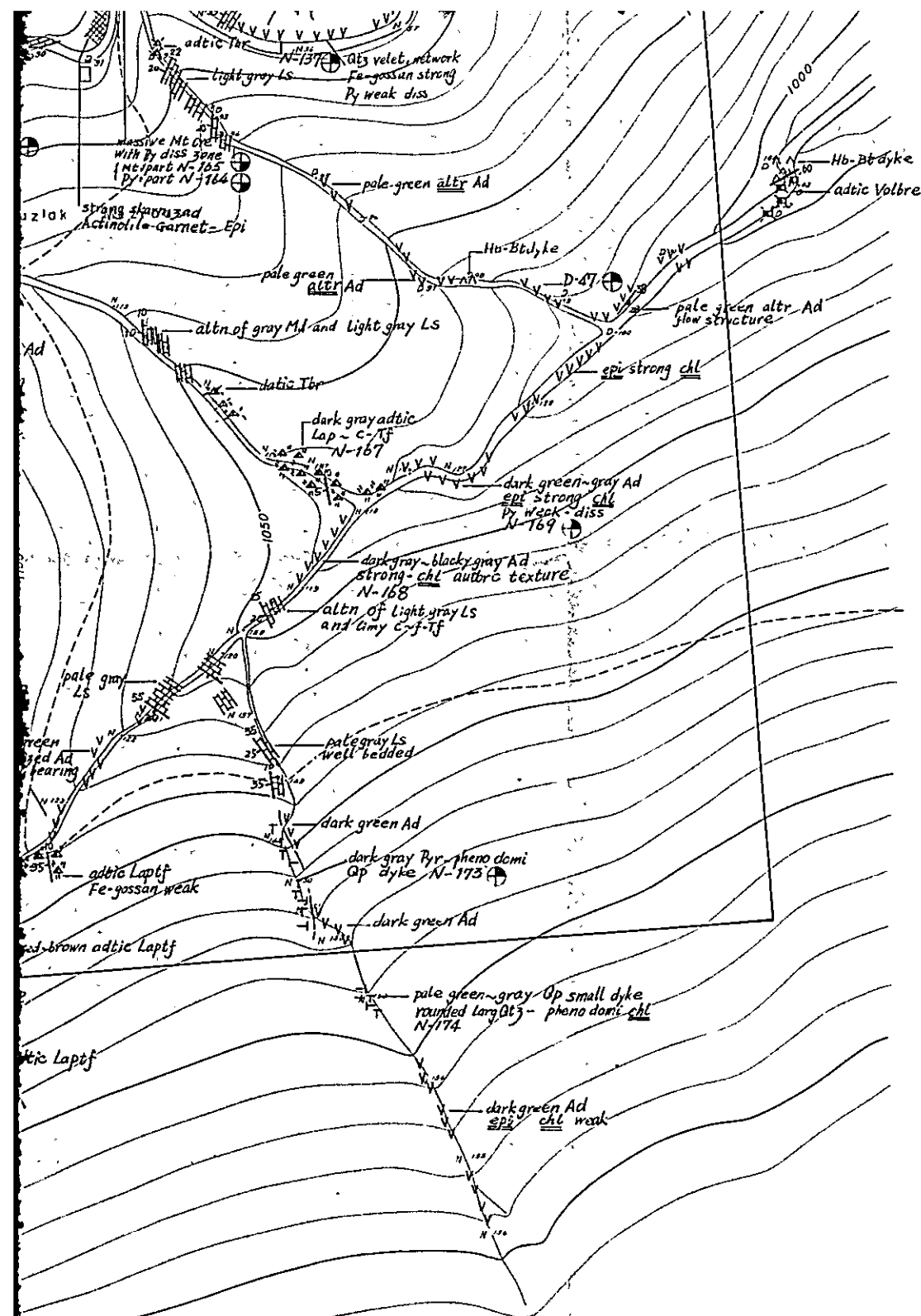
Di
diorite
diorit

- strike & dip
doğrultu & eğim
- strike & dip of joint
kırıkların doğrultu eğimi
- flow structure
akma yapısı
- strike & dip of geological boundary
dokumanak doğrultu eğim
- fault
fay
- fault showing direction of dislocation
atım yönünü gösteren fay
- fault & sheared zone
fay & makaslama zonu
- anticline
antiklinal
- syncline
senklinal
- dissemination
diseminasyon
- veinlets
damarcıklar
- vien
damar
- massive, bedded ore
masif, tabakalı cevher
- adit
galeri
- working mine
çalışan maden
- old mine
eski maden
- float
dokuntü
- position of rock sample
kayaç numunelerinin durumu
- for Microscopic observation of thin section
İnce kesit mikroskopik araştırma için
- for Microscopic observation of polish section
Parlak kesit mikroskopik araştırma için
- for Chemical analysis
Kimyasal analiz için
- for X ray diffractive analysis
X-ışını difraktif analizi için

Mark Isaret	Word Kelime	Mark Isaret	Word Kelime	Mark Isaret	Word Kelime
(Lithology) (Litoloji)		Hb	hornblende hornblend	pillow	pillow structure yastık yapısı
adtc	andesitic andezitik	Ht	hematite hematit	portic	porphyritic porfiritik
aggtic	agglomeratic aglomeratik	k-Fid	potash-feldspar potas-feldspat	vlet	veinlet damarcık
btic	basaltic bazaltik	Kaol	kaoline kaolin	(Alteration) (Alterasyon)	
calc	calcareous kalkerli	Lim	limonite limonit	altr	altered altere olmuş
datc	dacitic dasitik	Maict	malachite malakit	alb	albitized albitleşmiş
grtic	granitic granitik	Mt	magnetite manyetit	argl	argillaceous kil
mdy	muddy çamurlu	Mont	montmorillonite montmorillonit	carb	carbonitized karbonatlanmış
pmc	pumiceous pumis	Oi	olivine olivin	chl	chloritized kloritleşmiş
rhtic	rhyolitic ryolitik	Pi	plagioclase plajoklas	epi	epidotized epidotlaşmış
sdv	sandy kumlu	Py	pyroxene pyroksen	ht	hematitized hematitleşmiş
sil	siliceous silisli	Qtz	quartz kuvars	kaol	kaolinized kaolinleşmiş
stv	silty siltli	Ser	sericite serisit	lim	limonitized limonitleşmiş
tfc	tuffaceous tıfşlı	Spc	specularite Spekularit	mont	montmorillonized montmorillonitleşmiş
xeno	xenolith ksenolit	Sph	sphalerite sfalerit	ser	sericitized serisitleşmiş
(Minerals) (Mineraler)		Zeo	zeolite zeolit	sil	silicified silisleşmiş
Arag	aragonite aragonit	(Texture) (Tekstür)		(Others) (Diğerleri)	
Ba	barite barit	altn	alternation munavebe	dia	average ortalama
Biot	biotite biotit	aphtic	aphanitic afanitik	diss	diameter çap
Cal	calcite kalsit	autbrc	autobrecciated structure otobresleşmiş	max	dissemination diseminasyon
Carb	carbonates karbonat	brc	breccia(structure) breşik(yapı)	strong	maximum maksimum
Chl	chlorite klorit	flow	flow structure akıntılı yapı	weak	strong, strongly kuvvetli, kuvvetlice
Cpy	Chalcopyrite kalkopirit	frag	fragment tanecik	wd	width genişlik
Epi	epidote epidot	grad	gradually tedrici	U	upper üst
Fid	feldspar feldspat	Intc	intercalation arakahtı	M	middle orta
Ga	galena galen	jt	joint kırık	L	lower alt
		mtx	matrix hamur	f	fine ince
		onion	onion structure sünger yapısı	m	medium orta
		pheno	phenocryst fenokrist	c	coarse iri
				dom	dominant

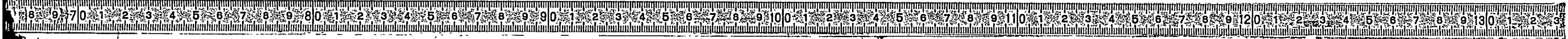


























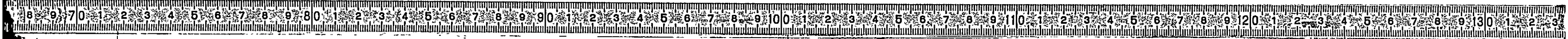


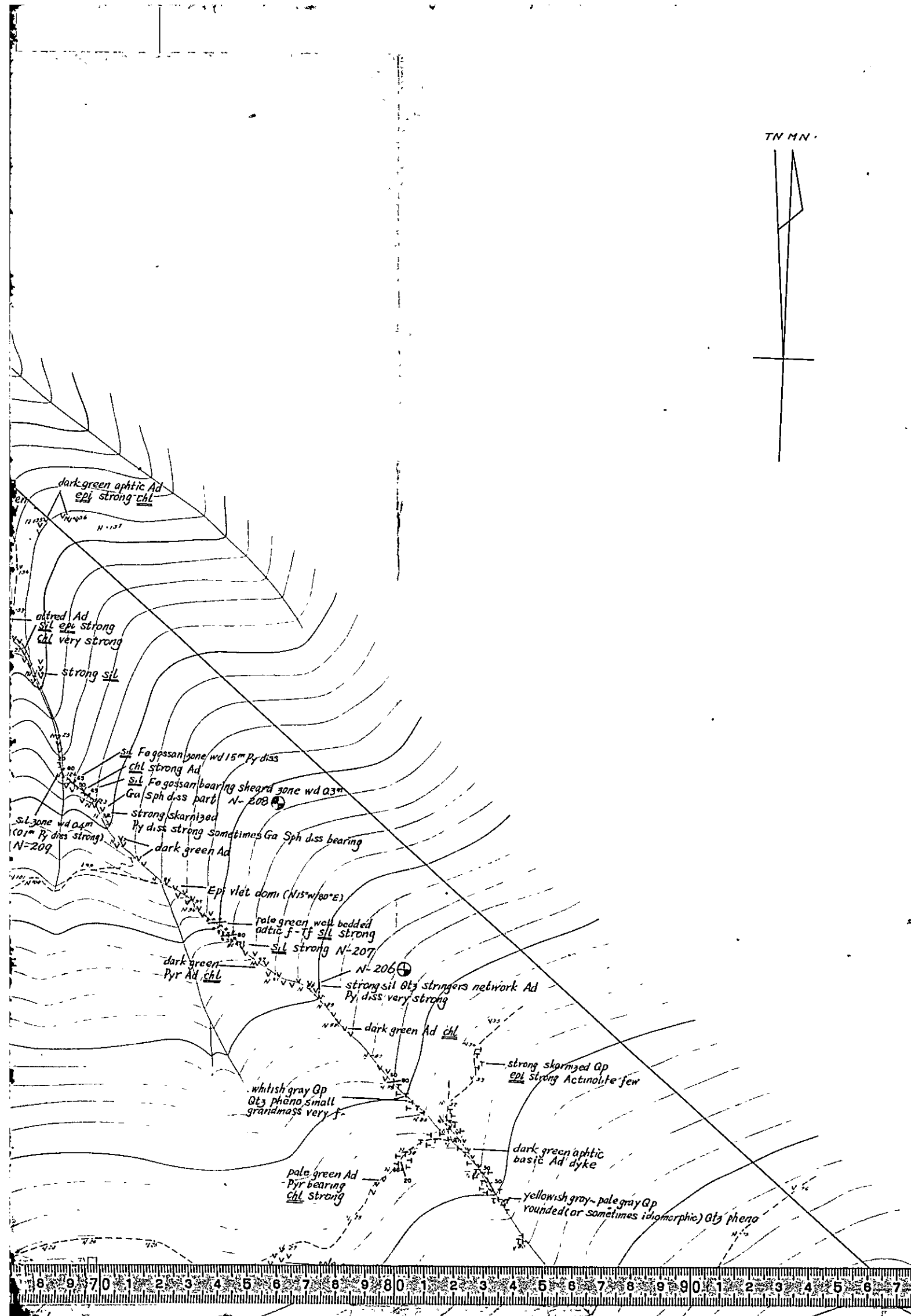
diseminasyon	st	silili	Pyr	Pyroxene
veinlets	sty	siltli	Qtz	piroksen
damareciklar	tfc	tuffaceous	Ser	kuvars
vien	xeno	tiifli	Spc	sericite
damar		xenolith		Specularite
massive, hedded ore	(Minerals)	ksenolit		Sphalerite
masif, tabakali cevher	Arag		Sph	sphalerit
adit	Ba	aragonite	Zeo	zeolite
galeri		aragonit	(Texture)	zeolit
working mine	Biot	barit	altn	alternation
çalisan maden	Cal	biotite		munavebe
old mine		calcite		
eski maden	Carb	karbit	aphitic	afanitik
float		karbunat		
döküntü	Chl	chlorite	autbrc	autobrecciated structure
position of rock sample		chlorit		otobreşleşmiş
kayaç numunelerinin durumu	Cpy	Chalcopyrite	brc	breccia(structure)
	Epi	epidote	flow	breşik(yapı)
for Microscopic observation of thin section		epidot		flow structure
Ince kesit mikroskopik araştırma için	Fld	feldspar	frag	akıntılı yapı
	Ga	feldspat	grad	fragment
for Microscopic observation of polish section		galena		tauz
Parlak kesit mikroskopik araştırma için			Intc	gradually
				tedrici
for Chemical analysis			jt	intercalation
Kımyasal analiz için				arakatı
for X-ray diffractive analysis			mtx	joint
X-ışını difraktif analizi için			onion	matrix
				hamur
			pheno	onion structure
				soğan yapısı
				phenocryst
				jenakristi

(10
(1)



	veinlets	sty	silty	Qtz	quartz	kaol	kaolinized
	damarekilar	tfc	silty	Ser	kuvars	lim	limonitized
	vien	xeno	tuffaceous	Spc	sericite	mont	limonitized
	damar	(Minerals)	tufted	Sph	sericit	ser	montmorillonized
	massive, bedded ore	Arag	xenolith	Zeo	Specularite	sil	montmorillonized
	masif, tabakali cevher	Ba	ksenolit	(Texture)	Sphalerite	aver	sericitized
	adit galeri	Biot	aragonite	(Textür)	Sphalerite	dia	sericitized
	working mine	Cal	aragonit	altin	Sphalerite	diss	sericitized
	calisan maden	Carb	barite	aphtic	Zeolite	max	silicified
	old mine	Chi	biotite	autbrc	zeolit	strong	silicified
	eski maden	Cpy	biotit	brc	alternation	weak	silicified
	float doküntü	Epi	calcite	flow	minarebe	U	silicified
	position of rock sample	Fld	kalsit	frag:	alternation	M	silicified
	kayaç numunelerinin durumu	Ga	karbonat	grad	minarebe	L	silicified
	for Microscopic observation of thin section		chlorite	Intc	alternation	f	silicified
	ince kesit mikroskopik araştırma için		chlorit	jt	minarebe	m	silicified
	for Microscopic observation of polish section		Chalcopyrite	mtx	alternation	c	silicified
	Parlak kesit mikroskopik araştırma için		kalkopirit	onion	minarebe	dom	silicified
	for Chemical analysis		epidote	pheno	minarebe		silicified
	Kimyasal analiz için		feldspar		minarebe		silicified
	for X-ray diffractive analysis		galena		minarebe		silicified
	X-ışını difraktif analizi için				minarebe		silicified





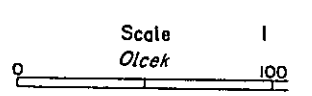
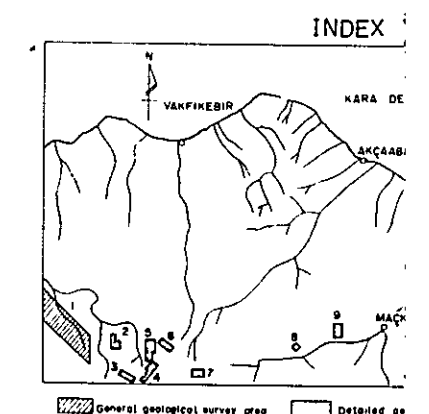
LEGEND
LEJAND

Geological symbol & abbreviation of geological term
Jeolojik simbol & jeolojik terim kısaltmaları

Symbol Sembol	Mark İşaret	Rock name Kayaç isimleri
	Ls	limestone kireçtaşı
	Mr	marl marl
	Md	mudstone çamurtaşı
	St	siltstone silt taşı
	Ss	sandstone kumtaşı
	Cg	conglomerate kanglomera
	Bt	basalt bazalt
	Ad	andesite andezit
	Da	dacite dasit
	Rh	rhyolite riyolit
Sedimentary rocks Sedümanter kayaçlar		
Volcanic & pyroclastic rocks Volkanik piroklastik kayaçlar		
	Tf	fine-coarse tuff ince-iri tüf
	Lptf	lapilli tuff lapilli tüf
	Tbr	tuff breccia tüf breş
	Volbrc	volcanic breccia volkanik breş
	Agg	agglomerate aglomera
	Volcg	volcanic conglomerate volkanik konglomera
	Gr	granite granit
	Gd	granodiorite granodiorit
	Dp	diorite porphyrite diorit porfir
	Qd	quartz diorite kuvars diorit
	Po	porphyrite porfir
	Qp	quartz porphyry kuvars porfir
	Gp	granite porphyry granit porfiri
	Udp	quartz diorite porphyrite kuvars diorit porfir
	Di	diorite diorit
Plutonic & hypabyssal rocks Derinlik hipabisal kayaçlar		
	20 65	strike & dip doğrultu & eğim
	30 65	strike & dip of joint kırıkların doğrultu eğimi
	10	flow structure akma yapısı
	60	strike & dip of geological boundary doküman doğrultu doğrultu ve eğimi
	70 65	fault

MINERAL RESEARCH AND
GEOLOGICAL
OF
TRABZON AREA, NOR
PHAS

ROUTE MAP WITH L
SAMPLES AROUND
OCAK SA
GÜZERGAH HARİTASI



METAL MINING AGE
JAPAN INTERNATIONAL
FEBRUARY

Prepared by Nikko Exploratio

Mark İşaret	Word Kelime	Mark İşaret	Word Kelime
(Lithology) (Litoloji)		Hb	hornblende hornblend
adtc	andesitic andezitik	Ht	hematite hematit
aggtic	agglomeratic agglomeratik	k-Fld	potash feldspar potas-feldspat
btic	basaltic	Kaol	kaoline

TN MN

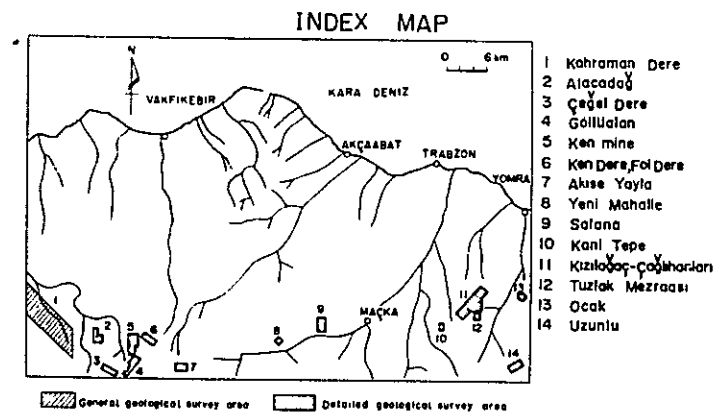
LEGEND
LEJAND

Geological symbol & abbreviation of geological term
Jeolojik sembol & jeolojik terim kısaltmaları

Symbol <i>Sembol</i>	Mark <i>İşaret</i>	Rock name <i>Kayaç isimleri</i>
	Ls	limestone <i>kireçtaşı</i>
	Mr	marl <i>marl</i>
	Md	mudstone <i>çamurtaşı</i>
	St	siltstone <i>silt taşı</i>
	Ss	sandstone <i>kumtaşı</i>
	Cg	conglomerate <i>konglomeza</i>
	Bt	basalt <i>bazalt</i>
	Ad	andesite <i>andezit</i>
	Da	dacite <i>dasit</i>
	Rh	rhyolite <i>riyolit</i>
Sedimentary rocks <i>Sedimenter kayalar</i>		
Volcanic & pyroclastic rocks <i>Volkanik piroklastik kayalar</i>		
	(basalt) <i>(bazalt)</i>	
	(andesite) <i>(andezit)</i>	
	(dacite) <i>(dasit)</i>	
	(rhyolite) <i>(riyolit)</i>	
	Tf	fine-coarse tuff <i>ince-iri tuf</i>
	Lptf	lapilli tuff <i>lapilli tuf</i>
	Tbr	tuff breccia <i>tuf breş</i>
	Volbrc	volcanic breccia <i>volkanik breş</i>
	Agg	agglomerate <i>aglomera</i>
	Volcg	volcanic conglomerate <i>volkanik konglomera</i>
	Gr	granite <i>granit</i>
	Gd	granodiorite <i>granodiorit</i>
	Dp	diorite porphyrite <i>diorit porfir</i>
	Qd	quartz diorite <i>kuvars diorit</i>
	Po	porphyrite <i>porfir</i>
	Qp	quartz porphyry <i>kuvars porfiri</i>
	Gp	granite porphyry <i>granit porfir</i>
	Qdp	quartz diorite porphyrite <i>kuvars diorit porfir</i>
	D1	diorite <i>diorit</i>
Plutonic & hypabyssal rocks <i>Derinlik hipabisal kayalar</i>		
	20 65	strike & dip <i>doğrultu & eğim</i>
	30 65	strike & dip of joint <i>kırıkların doğrultu eğimi</i>
	10	flow structure <i>akma yapısı</i>
	60	strike & dip of geological boundary <i>dokümanın doğrultu ve eğimi</i>
	70 65	fault

MINERAL RESEARCH AND EXPLORATION INSTITUTE
GEOLOGICAL SURVEY
OF
TRABZON AREA, NORTHEASTERN TURKEY
PHASE III

ROUTE MAP WITH LOCALITIES OF ROCK
SAMPLES AROUND OCAK AREA
OCAK SAHASININ
GÜZERGAH HARİTASI VE NUMUNE YERLERİ



Scale 1:2,000
0 100 200m

METAL MINING AGENCY OF JAPAN
JAPAN INTERNATIONAL COOPERATION AGENCY
FEBRUARY 1977

Prepared by Nikko Exploration & Development Co., Ltd

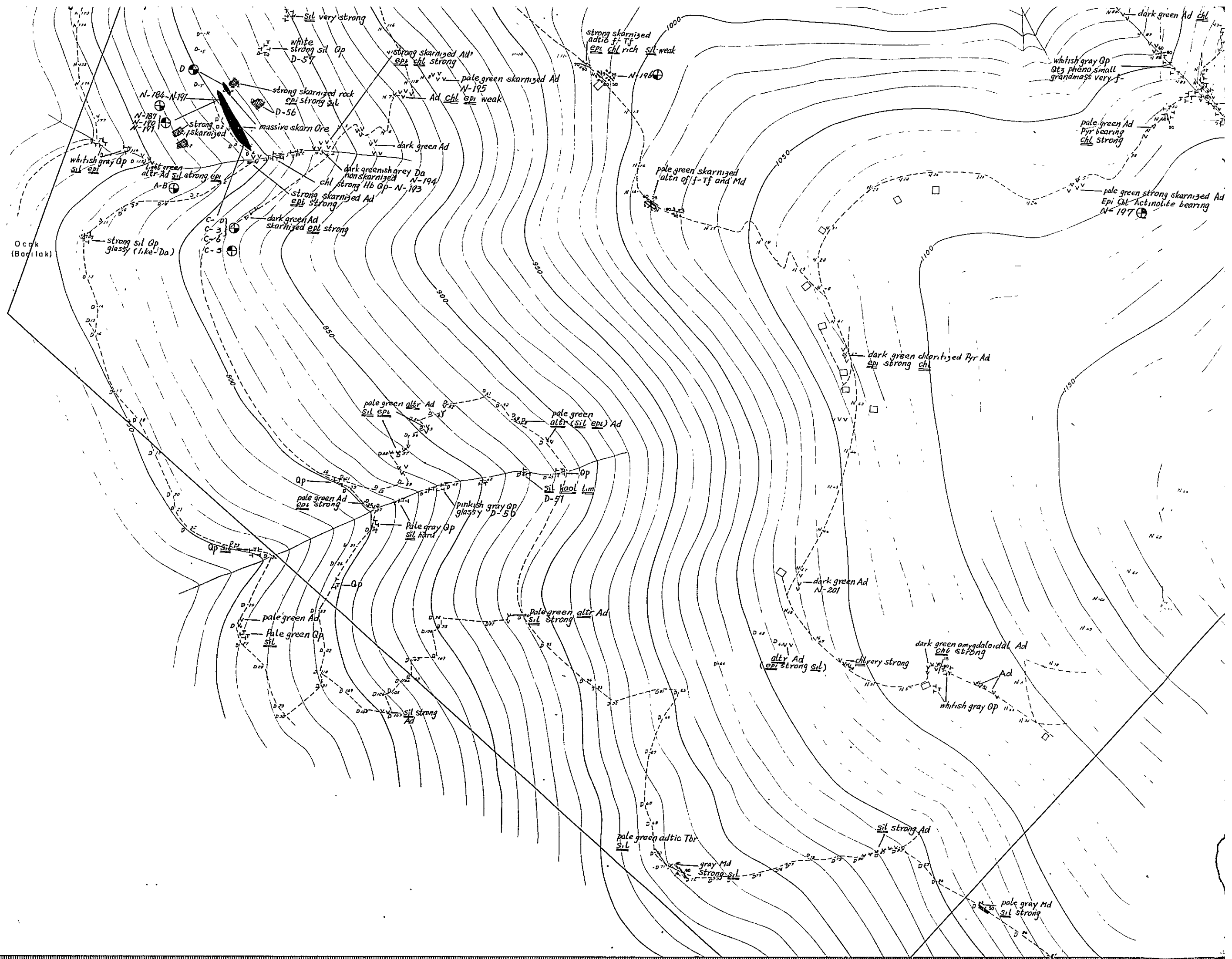
Mark <i>İşaret</i>	Word <i>Kelime</i>	Mark <i>İşaret</i>	Word <i>Kelime</i>	Mark <i>İşaret</i>	Word <i>Kelime</i>
(Lithology) <i>(Litoloji)</i>		Hb	hornblende <i>hornblend</i>	pillow	pillow structure <i>yastık yapısı</i>
adtic	andezitic <i>andezitik</i>	Ht	hematite <i>hematit</i>	poritic	porphyritic <i>porfiritik</i>
aggtic	agglomeratic <i>aglomeratik</i>	k-Fld	potash-feldspar <i>potas-feldspat</i>	vlet	veinlet <i>damarcık</i>
btic	basaltic <i>bazaltik</i>	Kaol	kaoline		

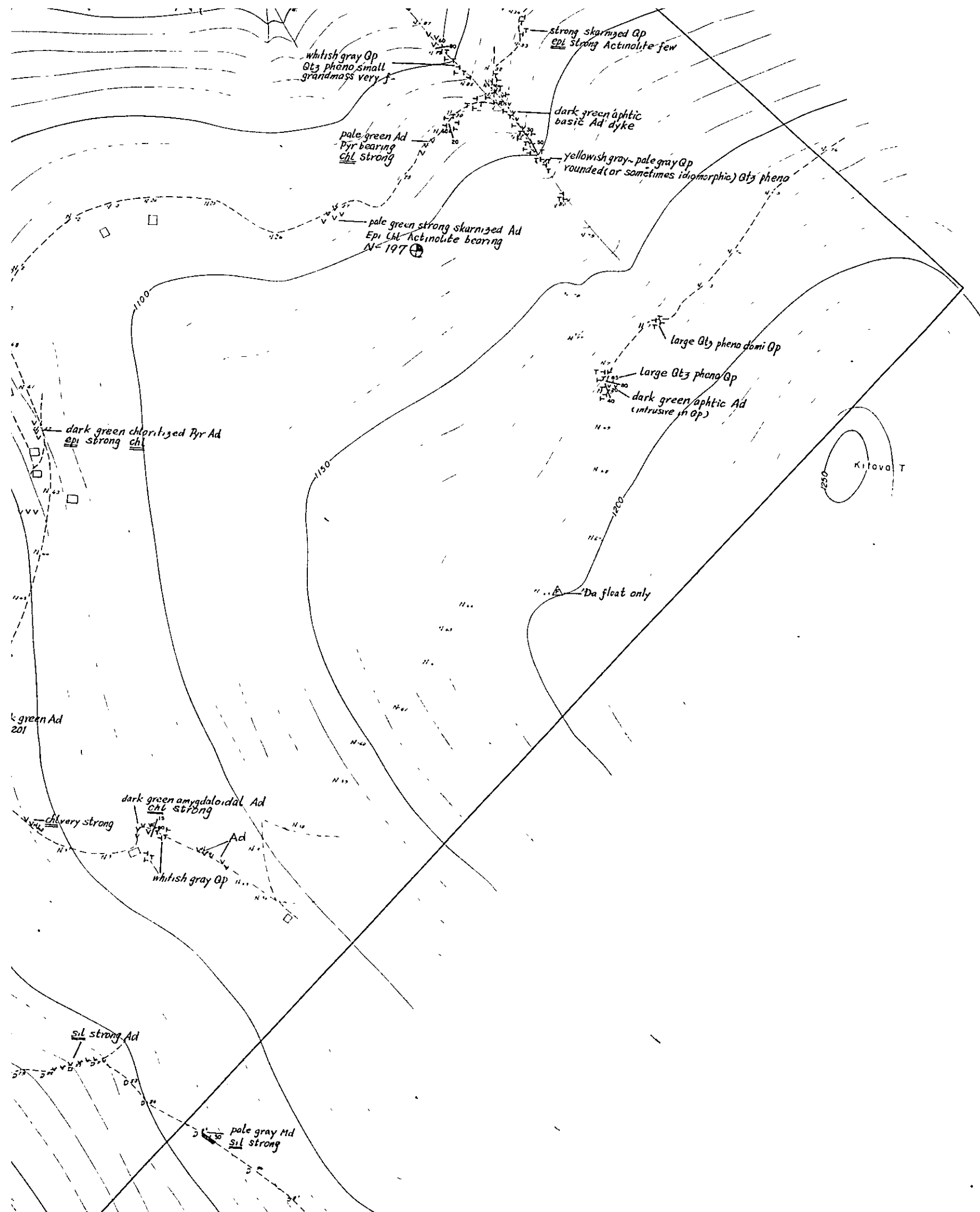
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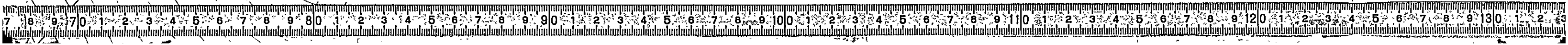


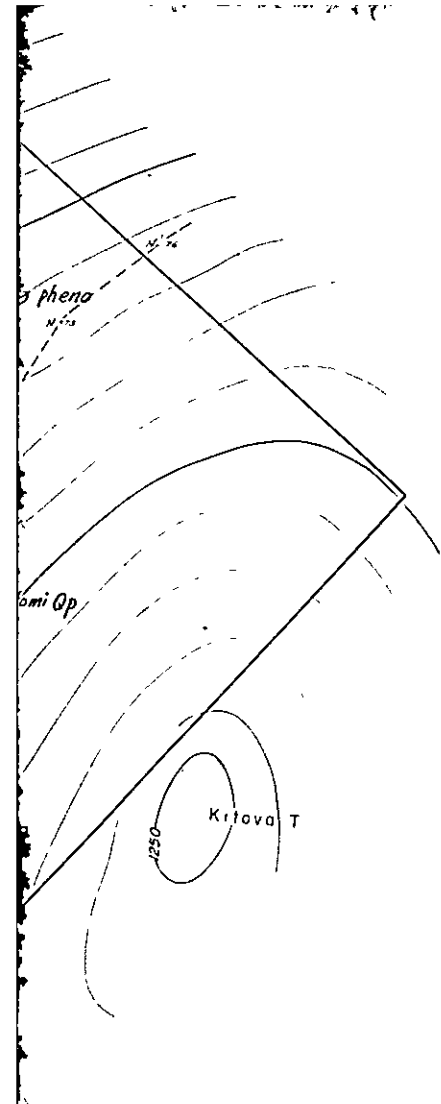




- 20 65 strike & dip
doğrultu & eğim
- 30 65 strike & dip of joint
kırıkları doğrultu eğimi
- 10 65 flow structure
akma yapısı
- 60 65 strike & dip of geological boundary
dokümanak doğrultu eğimi
- 70 65 fault
fay
- 70 65 fault showing direction of dislocation
atım yönünü gösteren fay
- fault & sheared zone
fay & makaslama zonu
- anticline
antiklinal
- syncline
senklinal
- dissemination
diseminasyon
- veinlets
damarcıklar
- vien
damar
- massive, bedded ore
masif, tabakalı cevher
- adit
galeri
- working mine
çalışan maden
- old mine
eski maden
- float
dokümanı
- position of rock sample
kayaç numunelerinin durumu
- for Microscopic observation of thin section
ince kesit mikroskopik araştırma için
- for Microscopic observation of polish section
Parlak kesit mikroskopik araştırma için
- for Chemical analysis
kimyasal analiz için
- for X ray diffractive analysis
X ışını difraktif analizi için

Mark Isaret	Word Kelime	Mark Isaret	Word Kelime
(Lithology)		Hb	hornblende
adtic	andestitic	Ht	hematite
aggtic	agglomeratic	k-Fld	potash feldspar
btic	basaltic	Kaol	kaoline
calc	calcareous	Lim	limonite
datc	dacitic	Malct	malachite
grtic	granitic	Mt	magnetite
mdv	mudy	Mont	montmorillonite
pmc	pumiceous	Oi	olivine
rhtic	rhyolitic	Pl	plagioclase
sdv	sandy	Py	pyrite
sil	siliceous	Pyr	Pyroxene
sty	stilly	Qtz	quartz
tfc	tuffaceous	Ser	sericite
xeno	xenolith	Spc	Specularite
(Minerals)		Sph	sphalerite
Arz	aragonite	Zeo	zeolite
Ba	barite	(Texture)	
Biot	biotite	altn	alternation
Cal	calcite		minavebe
Carb	carbonates	aphic	aphanitic
Chl	chlorite	autbrc	autobrecciated st
Cpy	Chalcopyrite	brc	breccia structure
Epi	epidote	flow	flow structure
Fld	feldspar	frag	fragment
Ga	galena	grad	gradually
		Intc	intercalation
		jt	joint
		mtx	matrix
		onion	onion structure
		pheno	phenocryst



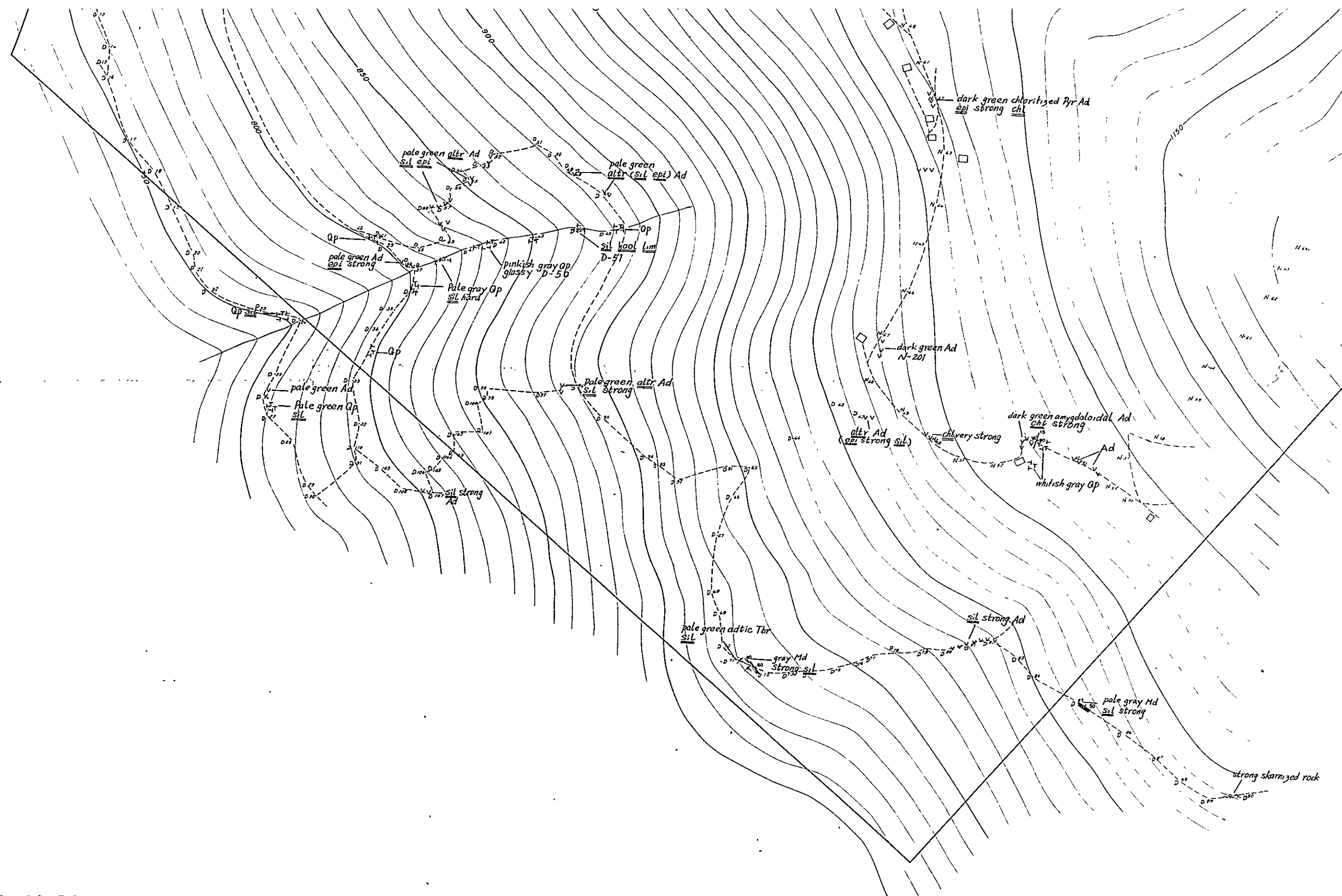


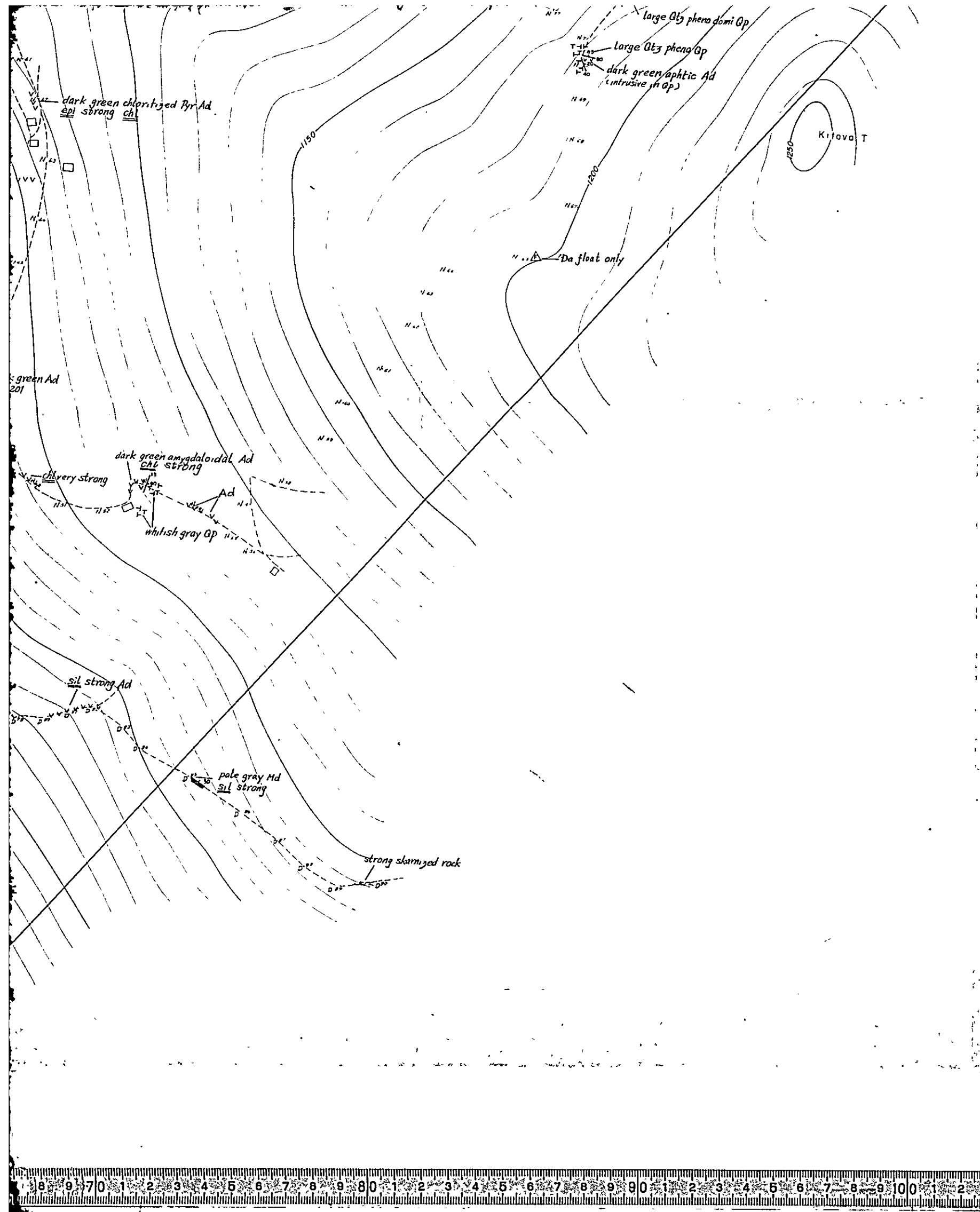
- strike & dip
doğrultu & eğim
- strike & dip of joint
kırıkların doğrultu eğim
- flow structure
akma yapısı
- strike & dip of geological boundary
doküman doğrultu eğim
- fault
fay
- fault showing direction of dislocation
atım yönünü gösteren fay
- fault & sheared zone
fay & makaslama zonu
- anticline
antiklinal
- syncline
senklinal
- dissemination
disseminasyon
- veinlets
damarcıklar
- vein
damar
- massive, bedded ore
masif, tabakalı cevher
- adit
galeri
- working mine
çalışan maden
- old mine
eski maden
- float
doküntü
- position of rock sample
kayaç numunelerinin durumu
- for Microscopic observation of thin section
İnce kesit mikroskopik araştırma için
- for Microscopic observation of polish section
Parlak kesit mikroskopik araştırma için
- for Chemical analysis
Kimyasal analiz için
- for X-ray diffractive analysis
X-ışını diffraktif analizi için

D1
diorite
diorit

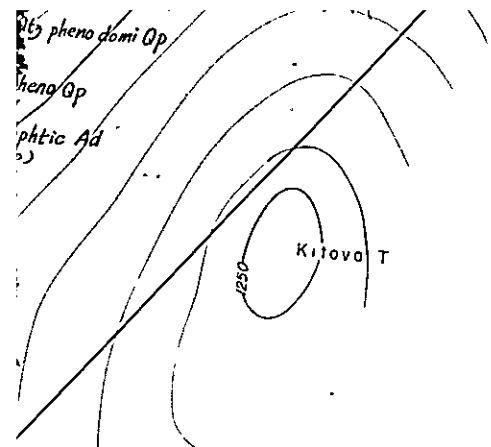
Mark Isaret	Word Kelime	Mark Isaret	Word Kelime	Mark Isaret	Word Kelime
(Lithology) (Litoloji)					
adtic	andesitic andezitik	Hb	hornblende hornblend	pillow	pillow structure yastık yapısı
aggtic	agglomeratic aglomeratik	Ht	hematite hematit	portic	porphyritic porfiritik
btic	basaltic bazaltik	K-Fld	potash-feldspar potas-feldspat	vlet	veinlet damarcık
calc	calcareous kalkerli	Kaol	kaoline kaolin		
datc	dacitic dasitik	Lim	limonite limonit	(Alterasyon) (Alerasyon)	
grtic	granitic granitik	Malct	malachite malakit	alt	altered altere olmuş
mdv	mudry çamurlu	Mt	magnetite magnetit	alb	albitized albitleşmiş
pmc	pumiceous pümsü	Mont	montmorillonite montmorillonit	argl	argillaceous kil
rhtic	rhyolitic ryolitik	OI	olivine olivün	carb	carbonitized karbonatlaşmış
sdv	sandy kumlu	Pl	plagioclase plajoklas	chl	chloritized kloritleşmiş
sil	siliceous silisli	Py	pyrite pirit	epi	epidotized epidotlaşmış
sty	silty silili	Pyx	pyroxene piroksen	ht	hematitized hematitleşmiş
tfc	tuffaceous tuflü	Otz	quartz kuvars	kaol	kaolinized kaolinleşmiş
xeno	xenolith ksenolit	Ser	sericite serisit	lim	limonitized limonitleşmiş
(Minerals) (Mineraler)		Spc	Specularite Spekularit	mont	montmorillonitized montmorillonitleşmiş
Arag	aragonite aragonit	Sph	sphalerite sfalerit	ser	sericitized serisitleşmiş
Ba	barite barit	Zeo	zeolite zeolit	sil	silicified silisleşmiş
Biot	biotite biyotit	(Texture) (Tekstür)		aver	average ortalama
Cal	calcite kalsit	alt	alternation münavebe	dia	diameter çap
Carb	carbonates karbonat	aphc	aphanitic afanitik	diss	dissemination disseminasyon
Chl	chlorite klorit	autbrc	autobrecciated structure otobreleşmiş	max	maximum maksimum
Cpy	Chalcopyrite kalkopirit	brc	breccia (structure) breşik yapı	strong	strong, strongly kuvvetli-kuvvetlice
Epi	epidote epidot	flow	flow structure akıntılı yapı	weak	weak, weakly zayıf-zayıfca
Fld	feldspar feldspat	frag	fragment tane	wd	width genişlik
Ga	galena galen	grad	gradually tedric	U	upper üst
		Intc	intercalation araktaki	M	middle orta
		jt	joint kırık	L	lower alt
		mtx	matrix hamur	f	fine ince
		onion	onion structure soğan yapısı	m	medium orta
		pheno	phenocryst fenokrist	c	coarse iri
				dom	dominant





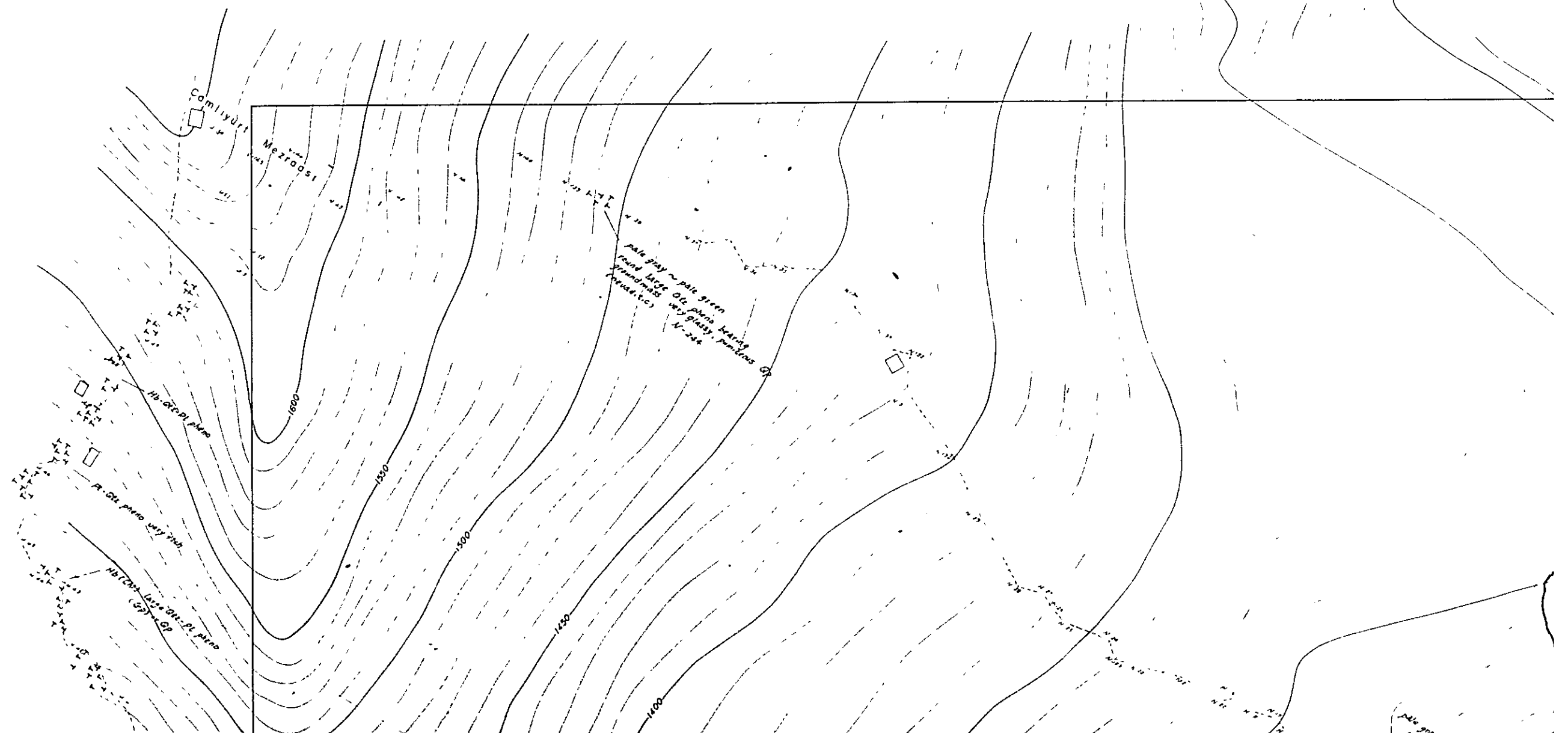


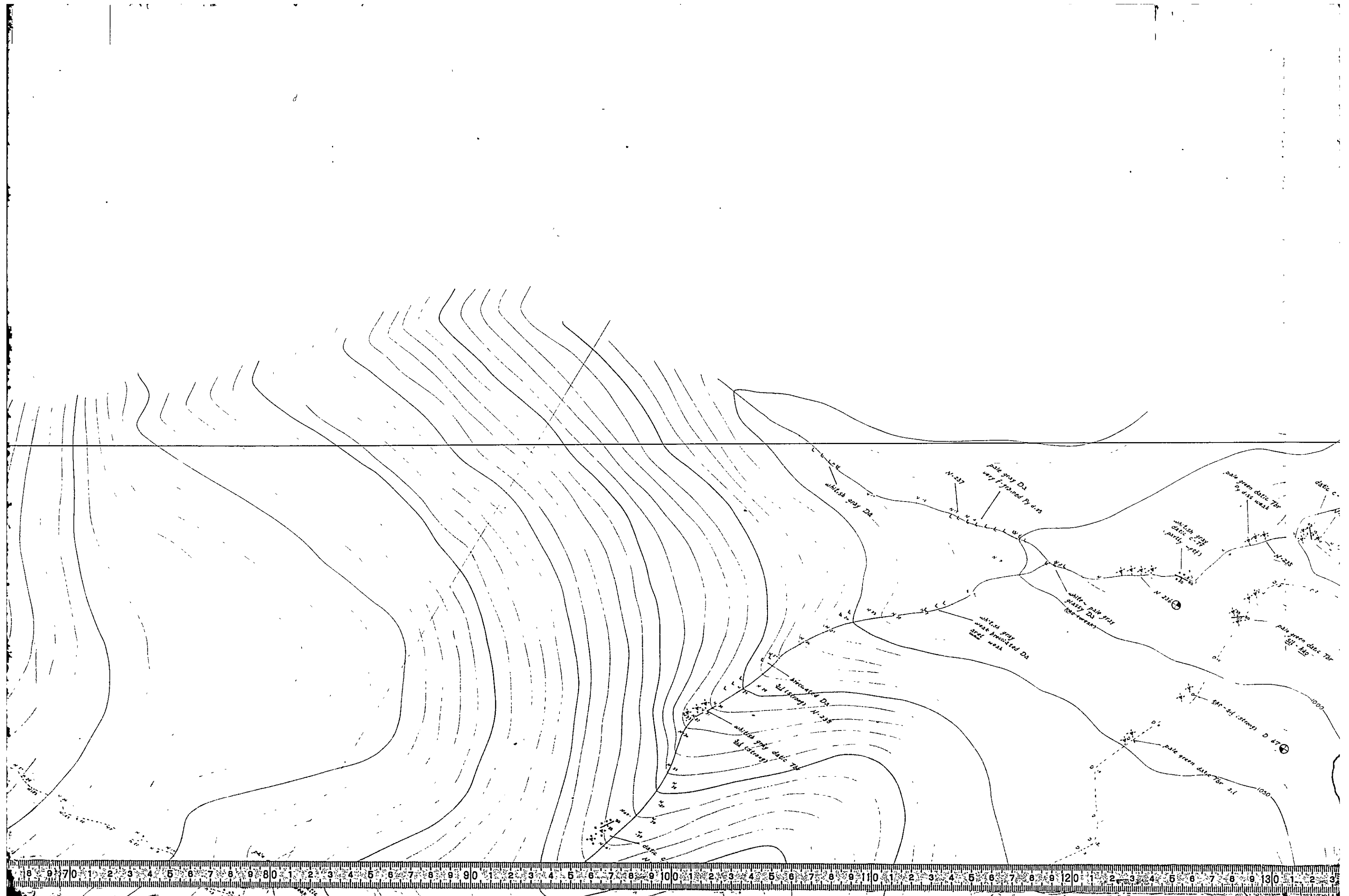
	syncline	rhtic	rhyolitic	Pl	plagioclase
	senklinal	sdly	sandy	Py	pyroxene
	dissemination	sil	siliceous	Pyx	pyroxene
	damarcıklar	sty	silty	Qtz	quartz
	veinlets	tfc	tuffaceous	Ser	sericite
	damar	xeno	xenolith	Spc	specularite
	massive, bedded ore	(Minerals)		Sph	sphalerite
	masif, tabakalı cevher	Arag	aragonite	Zeo	zeolite
	adit	Ba	barite	(Texture)	
	galeri	Biot	biotite	altm	alternation
	working mine	Cal	calcite		
	çalşan maden	Carb	carbonates	aphtic	aphanitic
	old mine	Chl	chlorite	autbrc	autobrecciated str.
	eski maden	Cpy	chalcopyrite	brc	breccia (structure)
	float	Ep1	epidote	flow	flow structure
	döküntü	Fid	feldspar	frag	fragment
	position of rock sample	Ga	galena	grad	gradually
	kayaç numunelerinin durumu			intc	intercalation
	for Microscopic observation of thin section			jt	joint
	ince kesit mikroskopik araştırma için			mtx	matrix
	for Microscopic observation of polish section			onion	onion structure
	parlak kesit mikroskopik araştırma için			pheno	phenocryst
	for Chemical analysis				phenocryst
	kimyasal analiz için				
	for X ray diffractive analysis				
	X ışını difraktif analizi için				



	syncline senklinal	rhtc	pumic rhyolitic riyolitik	Pl	olivin plagioclase plagioklas	chl	karbonatlaşmış chloritized
	dissemination diseminasyon	sdv	sandy kumlu	Py	pyrite pirit	epi	epidotlaşmış epidotized
	veinlets damarcıklar	sil	siliceous silisli	Pyr	pyroxene pirokсен	ht	hematitləşmiş hematitized
	vien damar	sty	silty siltili	Qtz	quartz kvarz	kaol	kaolinləşmiş kaolinized
	massive, bedded ore masif, tabakalı cevher	tfc	tuffaceous tufflu	Ser	sericite serisit	lum	limonitləşmiş limonitized
	adit galeri	xeno	xenolith ksenolit	Spc	specularite spekularit	mont	montmorillonitləşmiş montmorillonitized
	working mine çalışan maden	(Minerals) (Mineraler)		Sph	sphalerite sfalerit	ser	sericitləşmiş sericitized
	old mine eski maden	Arag	aragonite aragonit	Zeo	zeolite zeolit	sil	silicified silisleşmiş
	float doküntü	Ba	barite barit	(Texture) (Teksür)		(Others) (Diğerleri)	
	position of rock sample kayaç numunelerinin durumu	Biot	biotite biyotit	altn	alternation münavebe	aver	average ortalama
	for Microscopic observation of thin section İnce kesit mikroskopik araştırma için	Cal	calcite kalsit	aphitic	aphanitic afanitik	dia	diameter çap
	for Microscopic observation of polish section Parlak kesit mikroskopik araştırma için	Carb	carbonates karbonat	autbrc	autobrecciated structure otobreccleşmiş	diss	dissemination diseminasyon
	for Chemical analysis Kimyasal analiz için	Chl	chlorite klorit	brc	breccia(structure) breşik(yapı)	max	maximum maksimum
	for X ray diffractive analysis X-ışını difraktif analizi için	Cpy	chalcopyrite kalkopirit	flow	flow structure akıntılı yapı	strong	strong, strongly kuvvetli-kuvvetlice
		Epi	epidote epidot	frag:	fragment tanecik	weak	weak, weakly zayıf-zayıfca
		Fld	feldspar feldspat	grad	gradually tedrici	wd	width genişlik
		Ga	galena galen	Intc	intercalation arakatlı	U	upper üst
				jt	joint kırık	M	middle orta
				mtx	matrix hamur	L	lower alt
				onion	onion structure soğan yapısı	f-	fine ince
				pheno	phenocryst fenokrist	m-	medium orta
						c-	coarse iri
						domi	dominant







LEGEND
LEJAND

Geological symbol & abbreviation of geological term <i>Jeolojik sembol & jeolojik terim kısaltmaları</i>			
Symbol <i>Sembol</i>	Mark <i>İşaret</i>	Rock name <i>Kayaç isimleri</i>	
Sedimentary rocks <i>Sedimantar kayalar</i>			
	Ls	limestone <i>kireçtaşı</i>	
	Mr	marl <i>marl</i>	
	Md	mudstone <i>çamurtaşı</i>	
	St	siltstone <i>silt taşı</i>	
	Ss	sandstone <i>kumtaşı</i>	
	Cg	conglomerate <i>konglomera</i>	
	Bt	basalt	
	Ad	andesite <i>andezit</i>	
	Da	diorite <i>dasit</i>	
	Rh	rhyolite <i>riyolit</i>	
Volcanic & pyroclastic rocks <i>Volkanik piroklastik kayalar</i>			
	(basalt) <i>(bazalt)</i>		
	(andesite) <i>(andezit)</i>		
	(diorite) <i>(dasit)</i>		
	(rhyolite) <i>(riyolit)</i>		
	Tf	fine-coarse tuff <i>ince-iri tuf</i>	
	Lptf	laminated tuff <i>lapilli tuf</i>	
	Tbr	tuff breccia <i>tuf breş</i>	
	Volbrc	volcanic breccia <i>volkanik breş</i>	
	Agg	agglomerate <i>aglomera</i>	
	Volcg	volcanic conglomerate <i>volkanik konglomera</i>	
Plutonic & hypabyssal rocks <i>Derinlik hipabyssal kayalar</i>			
	Gr	granite <i>granit</i>	
	Gd	granodiorite <i>granodiorit</i>	
	Dp	diorite porphyry <i>diorit porfir</i>	
	Qd	quartz diorite <i>kırmızı diorit</i>	
	Po	porphyry <i>porfir</i>	
	Qp	quartz porphyry <i>kuvars porfir</i>	
	Gp	granite porphyry <i>granit porfir</i>	
	Qdp	quartz diorite porphyry <i>kırmızı diorit porfir</i>	
	Di	diorite <i>diorit</i>	
		strike & dip <i>doğrultu & eğim</i>	
		strike & dip of joint <i>kırıkların doğrultu eğimi</i>	
		flow structure <i>akma yapısı</i>	
		strike & dip of geological boundary <i>dukanak doğrultu doğrultu ve eğimi</i>	
		fault showing direction of dislocation <i>çukurluk</i>	

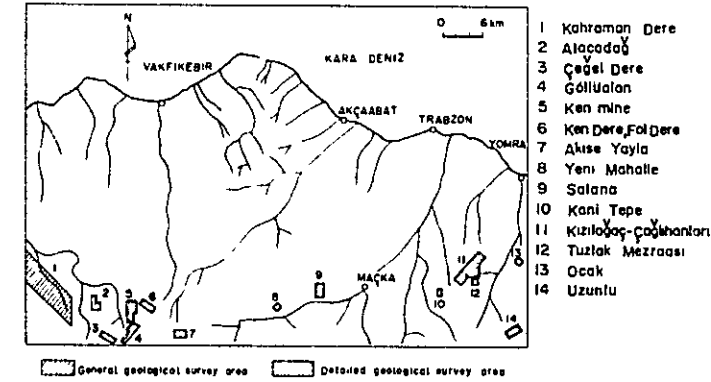
PL.2-14

MINERAL RESEARCH AND EXPLORATION INSTITUTE
GEOLOGICAL SURVEY
OF
TRABZON AREA, NORTHEASTERN TURKEY

PHASE III

ROUTE MAP WITH LOCALITIES OF ROCK
SAMPLES AROUND UZUNLU AREA
*UZUNLU SAHASININ
GÜZERGAH HARİTASI VE NUMUNE YERLERİ*

INDEX MAP



Scale 1:2,000
Ölçek 1/2000

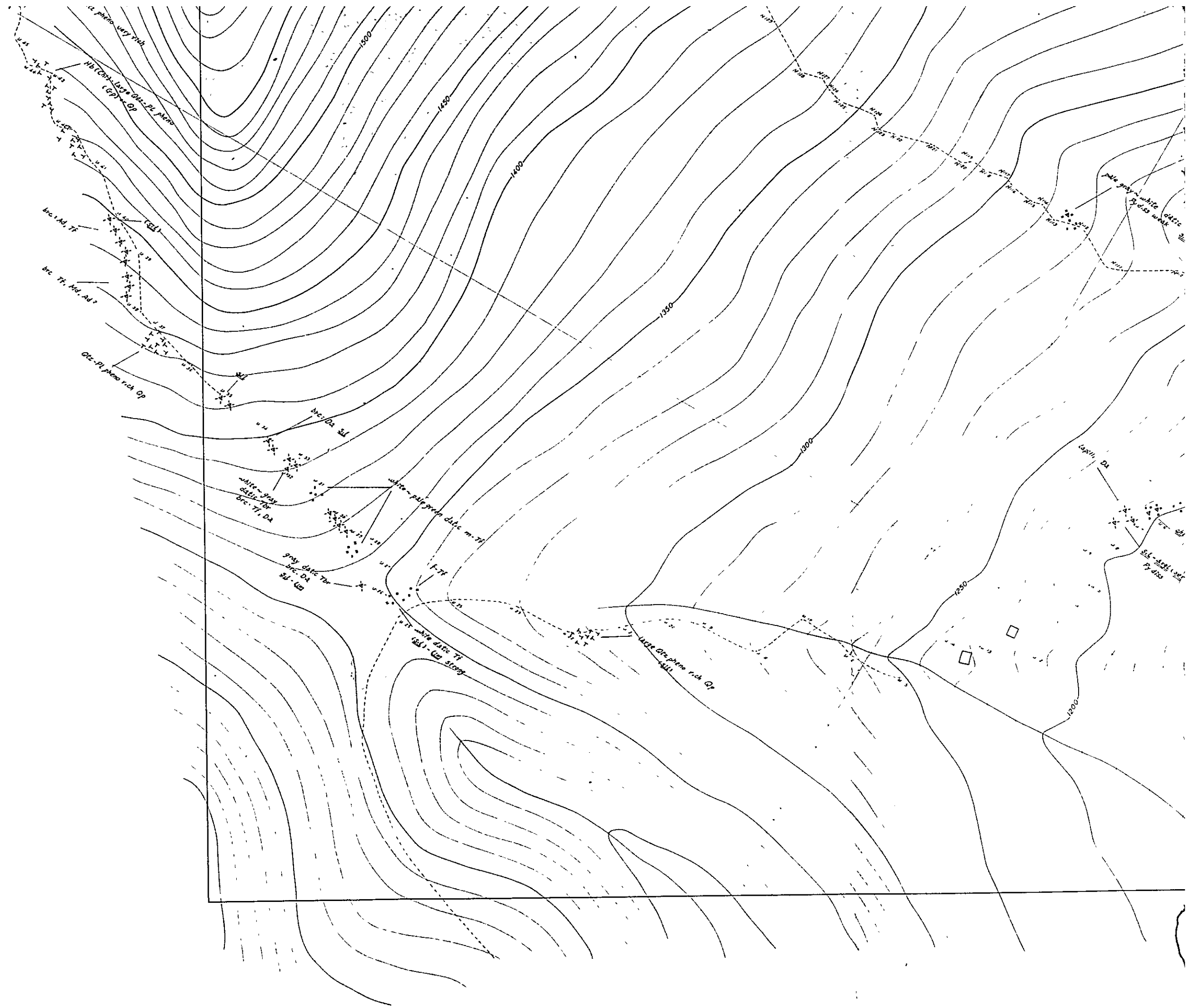
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JAPAN INTERNATIONAL COOPERATION AGENCY
FEBRUARY 1977

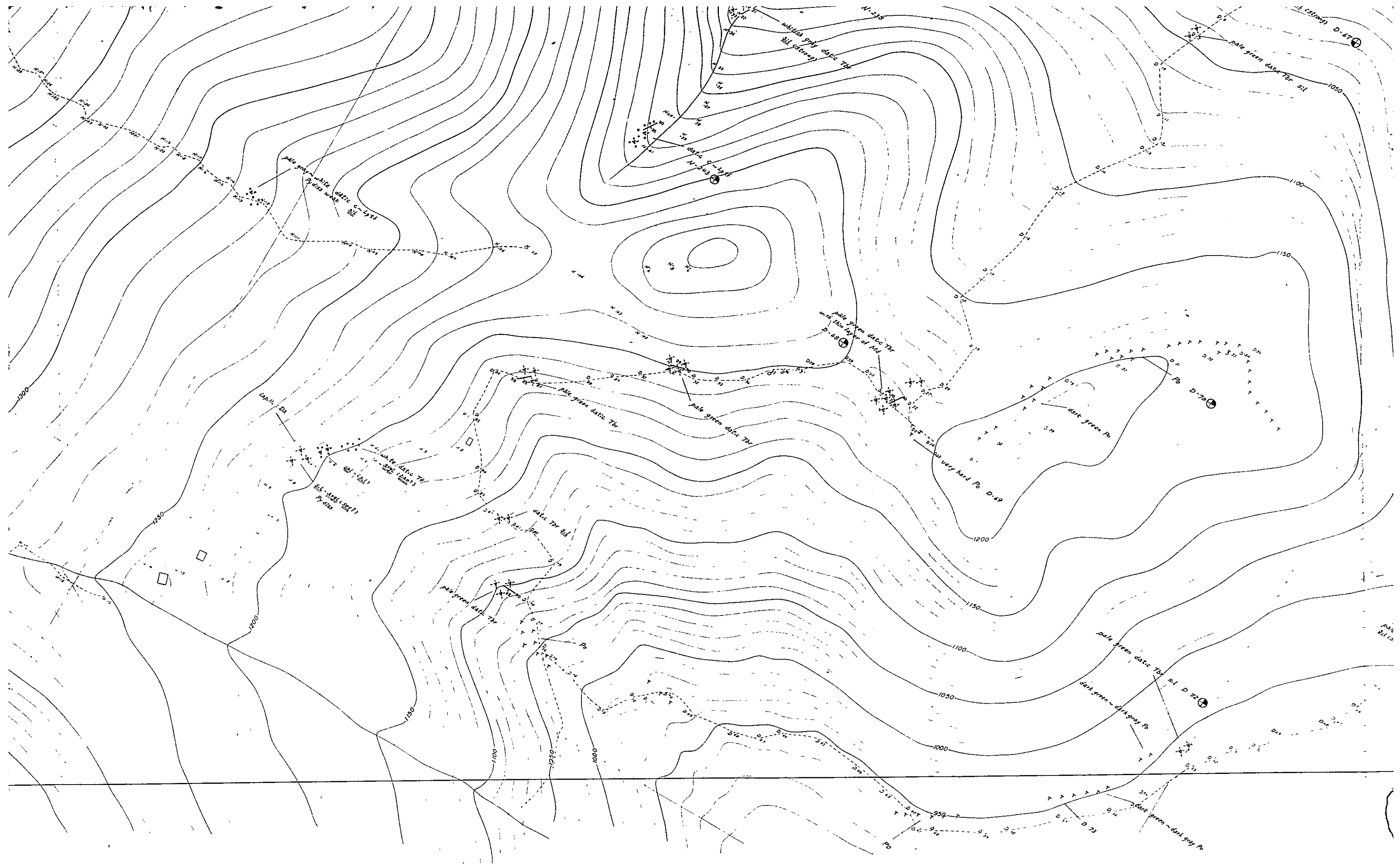
Prepared by Nikko Exploration & Development Co., Ltd

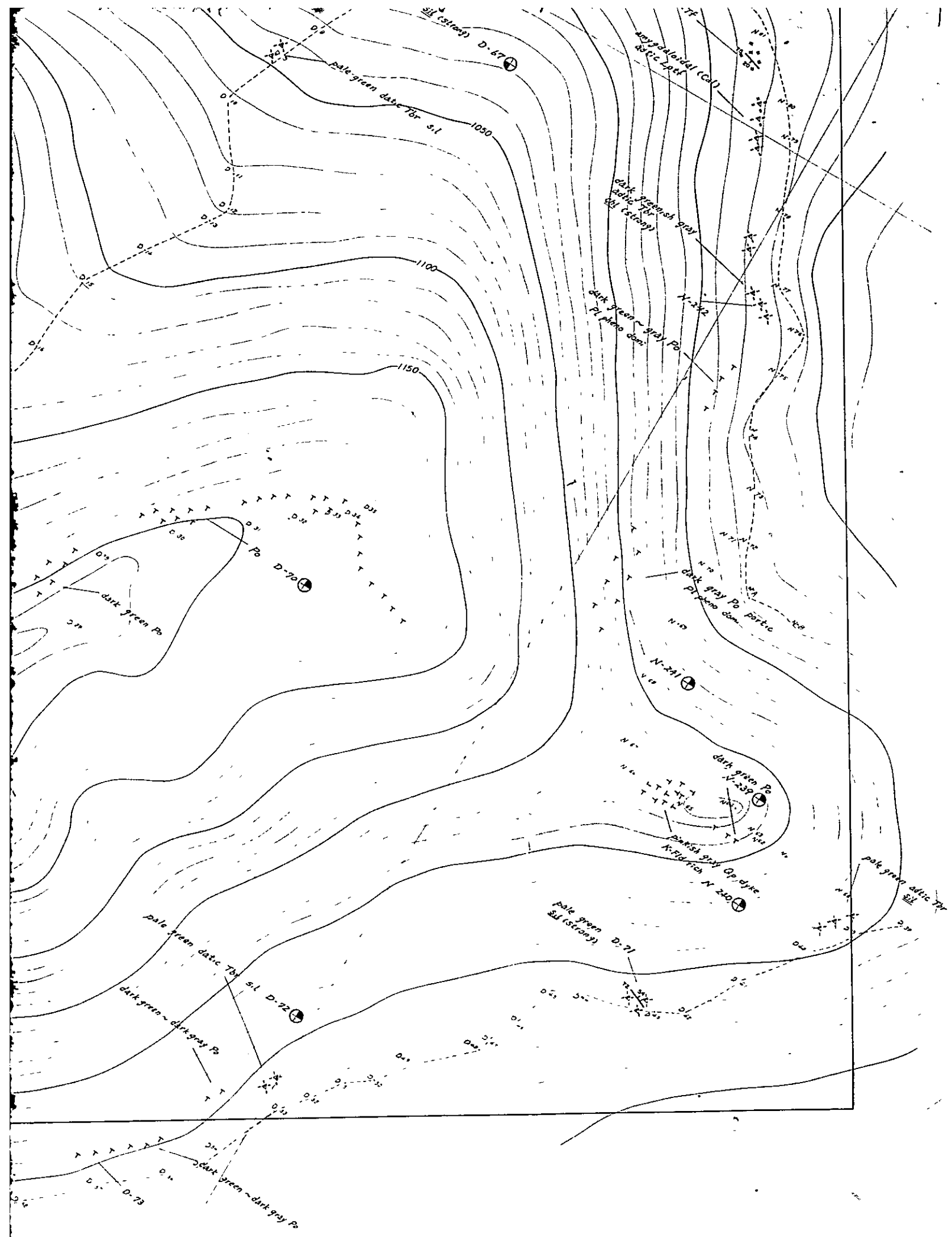
Mark <i>İşaret</i>	Word <i>Kelime</i>	Mark <i>İşaret</i>	Word <i>Kelime</i>	Mark <i>İşaret</i>	Word <i>Kelime</i>
(Lithology) <i>(Litoloji)</i>	aggitic	Hb	hornblende <i>hornblend</i>	pillow	pillow structure <i>yastık yapısı</i>
andezitic <i>andezitik</i>	agglomeratic	Ht	hematite <i>hematit</i>	portic	porphyritic <i>porfiritik</i>
aggitic	andezitic <i>andezitik</i>	k-Fld	potash-feldspar <i>potas-feldspar</i>	vlet	veçlet

ak. griye - pale green
dalic. 70%





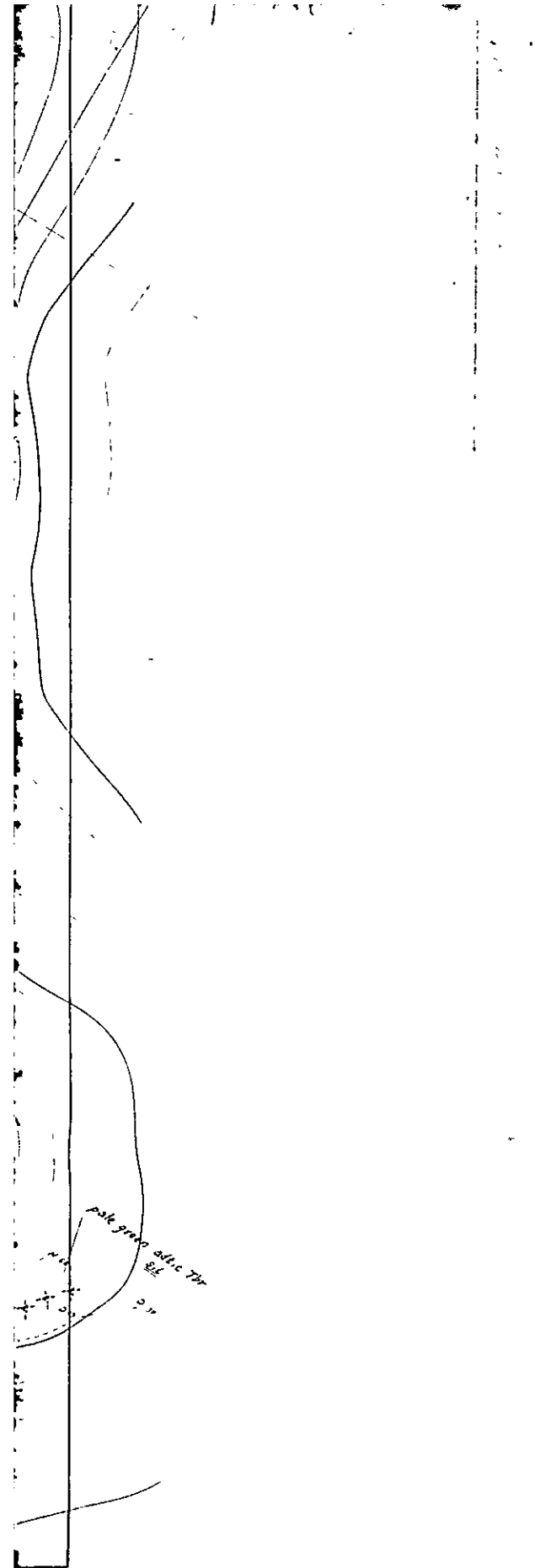




- strike & dip
doğrultu & eğim
- strike & dip of joint
kırıkların doğrultu eğimi
- flow structure
akma yapısı
- strike & dip of geological boundary
dukamak doğrultu doğrultu ve eğim
- fault
fay
- fault showing direction of dislocation
atım yönünü gösteren fay
- fault & sheared zone
fay & makaslama zonu
- anticline
antiklinal
- syncline
senklinal
- dissemination
diseminasyon
- veinlets
damarcıklar
- vein
damar
- massive, bedded ore
masif, tabakalı cevher
- adit
galeri
- working mine
çalışan maden
- old mine
eski maden
- float
doküntü
- position of rock sample
kayaç numunelerinin durumu
- for Microscopic observation of thin section
İnce kesit mikroskopik araştırma için
- for Microscopic observation of polish section
Parlak kesit mikroskopik araştırma için
- for Chemical analysis
Kimyasal analiz için
- for X-ray diffractive analysis
X-ışını difraktif analizi için

Mark İsaret	Word Kelime	Mark İsaret	Word Kelime
(Lithology) (Litoloji)			
adtc	andestitic andezitik	Hb	hornblende hornblend
aggtic	agglomeratic aglomeraatik	Ht	hematite hematit
btic	basaltic bazaltik	k-Fld	potash feldspar potas-feldsp
calc	calcareous kalkerli	Kaol	kaoline kaolin
datc	dacitic dastik	Lim	limonite limonit
grtc	granitic granitik	Malct	malachite malakit
mdy	muzy çamurlu	Mt	magnetite magnetit
pmc	pumiceous pumis	Mont	montmorillonite montmorillonit
rhtc	rhyolitic riyolitik	Ol	olivine oliv
sdv	sandy kumlu	Pl	plagioclase plajoklas
sil	siliceous silisli	Py	pyrite pirit
sty	silty siltili	Pyr	pyroxene piroksen
tfc	tuffaceous tıftil	Qtz	quartz kuvars
xeno	xenolith ksenolit	Ser	sericite serisit
(Minerals) (Mineraller)			
Arag	aragonite aragont	Sph	sphalerite sfalerit
Ba	barite barit	Zeo	zeolite zeolit
Biot	biotite biotit	(Texture) (Teksstür)	
Cal	calcite kalsit	altn	alternation minavebe
Carb	carbonates karbonat	aphitic	aphanitic afanitik
Chl	chlorite klorit	autbrc	autobreccia otobreccia
Cpy	Chalcopyrite kalkopirit	brc	breccia (str) breccik yapı
Epi	epidote epidot	flow	flow structure akıntılı yapı
Fld	feldspar feldspat	frag.	fragment parçacık
Ga	galena galen	frag.	fragment parçacık
		grad	gradually tedrici
		Intc	intercalated arakatlı
		jt	joint kırık
		mtx	matrix hamur
		onion	onion structure soğan yapı
		pheno	phenocryst fenokrist





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- for Chemical analysis
Kimyasal analiz için
- for X ray diffractive analysis
λ-ışın diffraktif analizi için

D1 diorite
diorit

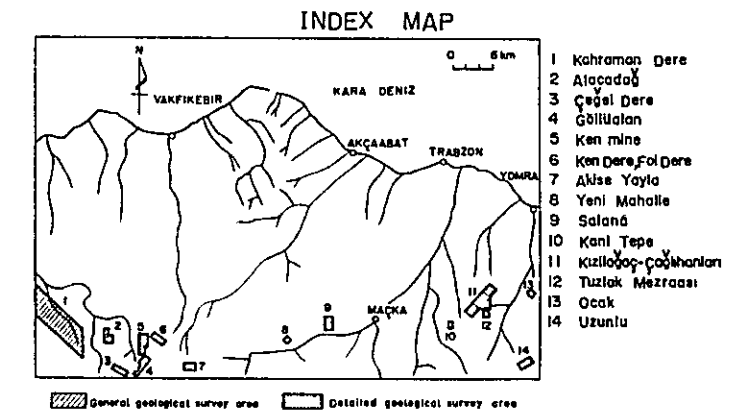
Mark Isaret	Word Kelime	Mark Isaret	Word Kelime	Mark Isaret	Word Kelime
(Lithology)		Hb	hornblende <i>hornblend</i>	pillow	pillow structure <i>yastık yapısı</i>
adtic	andesitik	Ht	hematite <i>hematit</i>	portic	porphyritic <i>porfiritik</i>
aggtic	agglomeratic <i>agglomeratik</i>	k-Fld	potash-feldspar <i>potas-feldspat</i>	vlet	veinlet <i>damarcık</i>
btuc	basaltic <i>bazaltik</i>	Kaol	kaoline <i>kaolin</i>	(Alteration)	
calc	calcareous <i>kalkçerli</i>	Lim	limonite <i>limonit</i>	(Alteration)	
datc	dacitic <i>dacitik</i>	Malct	malachite <i>malakit</i>	alt	altered <i>altere olmuş</i>
grtic	granitic <i>granitik</i>	Mt	magnetite <i>magnetit</i>	alb	albitized <i>albitleşmiş</i>
mdy	mudy <i>çamurlu</i>	Mont	montmorillonite <i>montmorillonit</i>	argl	argillaceous <i>kil</i>
pmc	pumiceous <i>püms</i>	Ol	olivine <i>olivin</i>	carb	carbonitized <i>karbonatlaşmış</i>
rhtic	thuyitic <i>tiyütlük</i>	Pl	plagioclase <i>plajoklas</i>	chl	chloritized <i>kloritleşmiş</i>
sdv	sandy <i>kumlu</i>	Py	pyrite <i>pirit</i>	epi	epidotized <i>epidottlaşmış</i>
sil	siliceous <i>süslü</i>	Pyr	pyroxene <i>pirokzen</i>	ht	hematitized <i>hematitleşmiş</i>
sty	silty <i>sütlü</i>	Qtz	quartz <i>küvars</i>	kaol	kaolinized <i>kaolinleşmiş</i>
tfc	tuffaceous <i>tiiftü</i>	Ser	sericite <i>serisit</i>	lim	limonitized <i>limonitleşmiş</i>
xeno	xenolith <i>ksenolit</i>	Spc	specularite <i>spekularit</i>	mont	montmorillonized <i>montmorillonitleşmiş</i>
(Minerals)		Sph	sphalerite <i>sfalerit</i>	ser	sericitized <i>serisitleşmiş</i>
Arag	aragonite <i>aragonit</i>	Zeol	zeolite <i>zeolit</i>	sil	silicified <i>süslüşmüş</i>
Ba	barite <i>barit</i>	(Texture)		(Others)	
Biot	biotite <i>biyotit</i>	altn	alternation <i>muayene</i>	aver	average <i>ortalama</i>
Cal	calcite <i>kalsit</i>	aphntc	aphanitic <i>afanitik</i>	dia	diameter <i>çap</i>
Carb	carbonates <i>karbonat</i>	autbrc	autobrecciated structure <i>otobreleşmiş</i>	diss	dissemination <i>diseminasyon</i>
Chl	chlorite <i>klorit</i>	brc	breccia(structure) <i>breşik yapı</i>	max	maximum <i>maksimum</i>
Cpy	Chalcopyrite <i>kalkopirit</i>	flow	flow structure <i>akıntılı yapı</i>	strong	strong, strongly <i>kuvvetli-kuvvetlice</i>
Epi	epidote <i>epidot</i>	frag	fragment <i>tane</i>	weak	weak, weakly <i>zayıf-zayıfca</i>
Fld	feldspar <i>feldspat</i>	grad	gradually <i>tedrici</i>	wd	width <i>genşlik</i>
Ga	galena <i>galen</i>	Intc	intercalation <i>arakatlı</i>	U	upper <i>üst</i>
		jt	joint <i>kirik</i>	M	middle <i>orta</i>
		mtx	matrix <i>hamur</i>	L	lower <i>alt</i>
		onion	onion structure <i>soğan yapısı</i>	f-	fine <i>ince</i>
		pheno	phenocryst <i>fenokrist</i>	m	medium <i>orta</i>
				c-	coarse <i>iri</i>
				domi	dominant <i>dominant</i>



MINERAL RESEARCH AND EXPLORATION INSTITUTE
 GEOLOGICAL SURVEY
 OF
 TRABZON AREA, NORTHEASTERN TURKEY
 PHASE III
 ALTERATION AND MINERALIZATION MAP
 OF KAHRAMAN DERE AREA
 KAHRAMAN DERE SAHASININ
 ALTERASYON VE MINERALİZASYON HARİTASI

Sample No.	Index No.	Kind of ore mineral	Mode of occurrence	Width or thickness (cm)	Strike & dip		Sampling width (cm)	Sampling method	Cu %	Pb %	Zn %	Fe %	S %
D-3	10	Cpy-Ga-Spy	vein	max 5	N45W	70SW	5	G*	3.63	11.07	20.00		
D-5	8	Ga-Sph(-Cpy)	vein	max 10	N75W	75SW	10	G	3.00	15.94	22.50		
D-6	7	Cpy-Ga-Sph	vein	max 80 av 30	EW	55S	30	G	3.00	0.89	14.00		
D-8	9	Cpy-Ga-Sph	swarm of vein	180	N85W	70SW	30	G	2.31	12.68	27.50		
D-41	6	Cpy-Ga	vein	max 20	N70W	60SW	20	G	2.25	0.95	3.50		
K-11	-	Cpy	diss						6.75	0.04	0.05		
K-12/1	-	Cpy	diss						5.00	0.58	0.19		
K-64	1	Ga-Sph-Py	vein	max 20	N23W	90			0.41	4.57	24.00		
K-67	2	Spc-Ht	skarn						0.007	0.0015	tr	31.68	
Y-47	14	Py	vein		N50W	80S			0.04	0.001	0.07		34.27
Y-48	14	Py	vein						0.15	0.007	1.0		33.91
Y-49	14	Py	vein						0.15	0.2	1.53		
Y-53	16	Py							0.07	0.001	tr.		24.85
Y-56	13	Py	vein		N45W	70W			0.03	0.03	0.2		4.73
Y-57	13	Py	vein						0.15	0.07	2.55		30.75

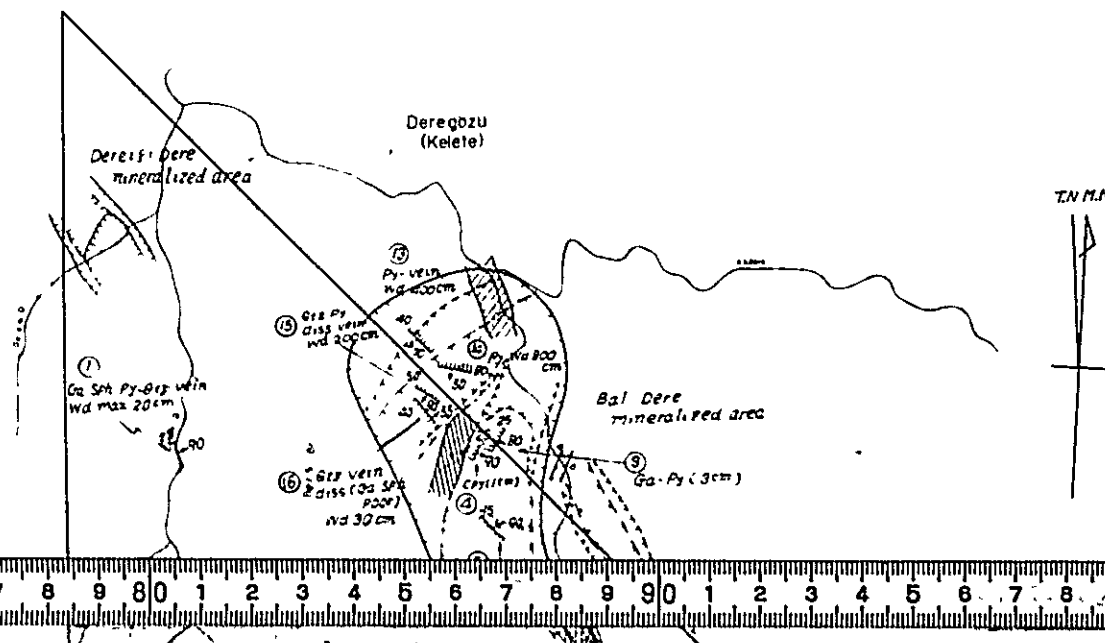
* R : random sampling L : line cutting sampling G : gravel sampling of high grade ore



Scale 1 : 25 000
 Ölçek 1 : 25 000

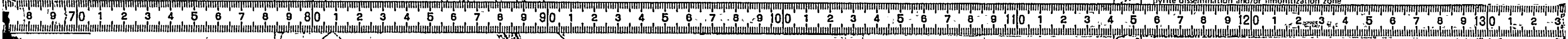
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 FEBRUARY 1977

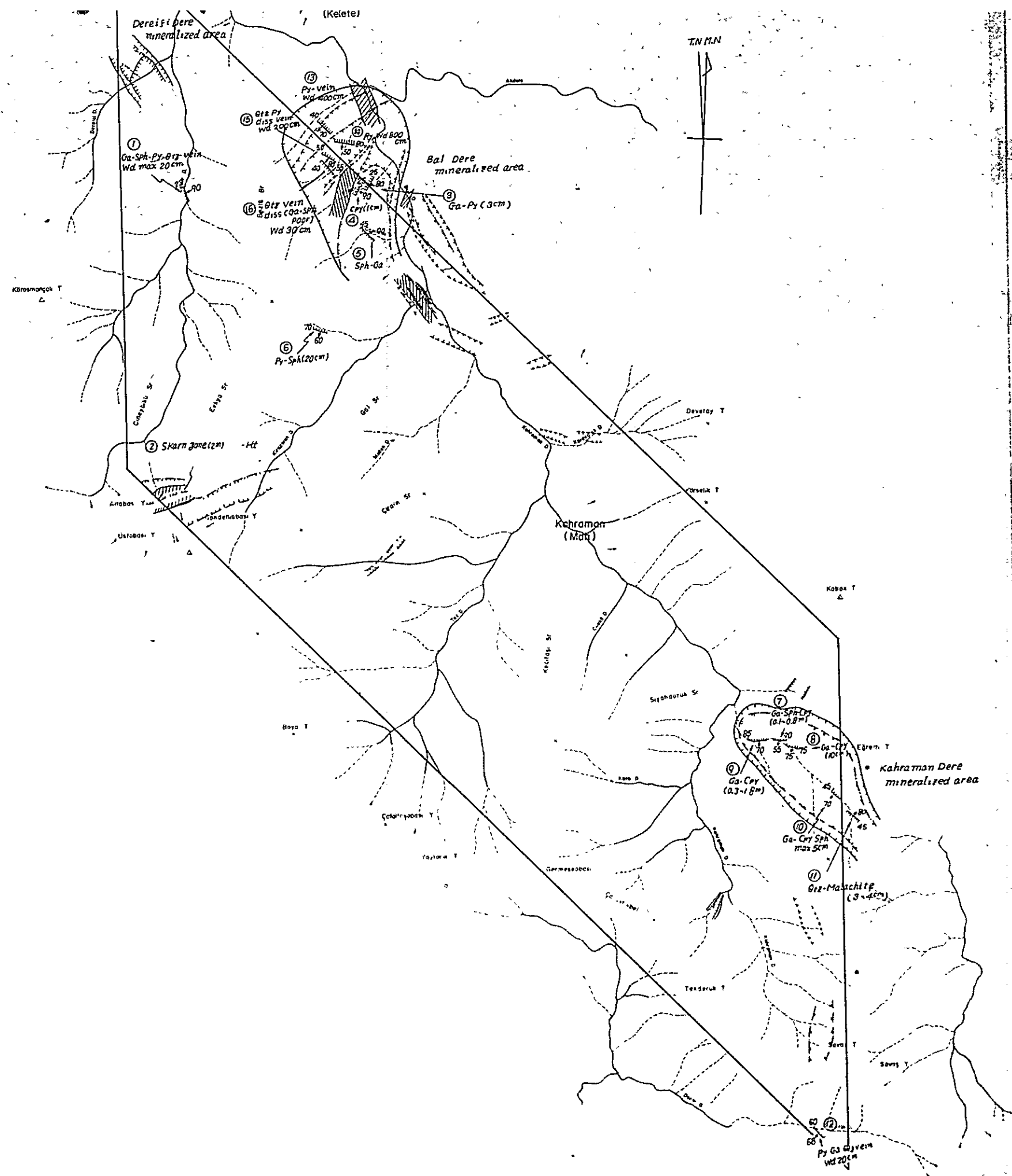
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LEGEND

- old mine, working mine, waste & slag
eskî maden çalın maden
- mineralization zone
mineralizasyon zonu
- vein, veinlet network, stratiform damar damarcıklar network tabakalı
- dissemination dissemince
- pyrite dissemination and/or limonitization zone





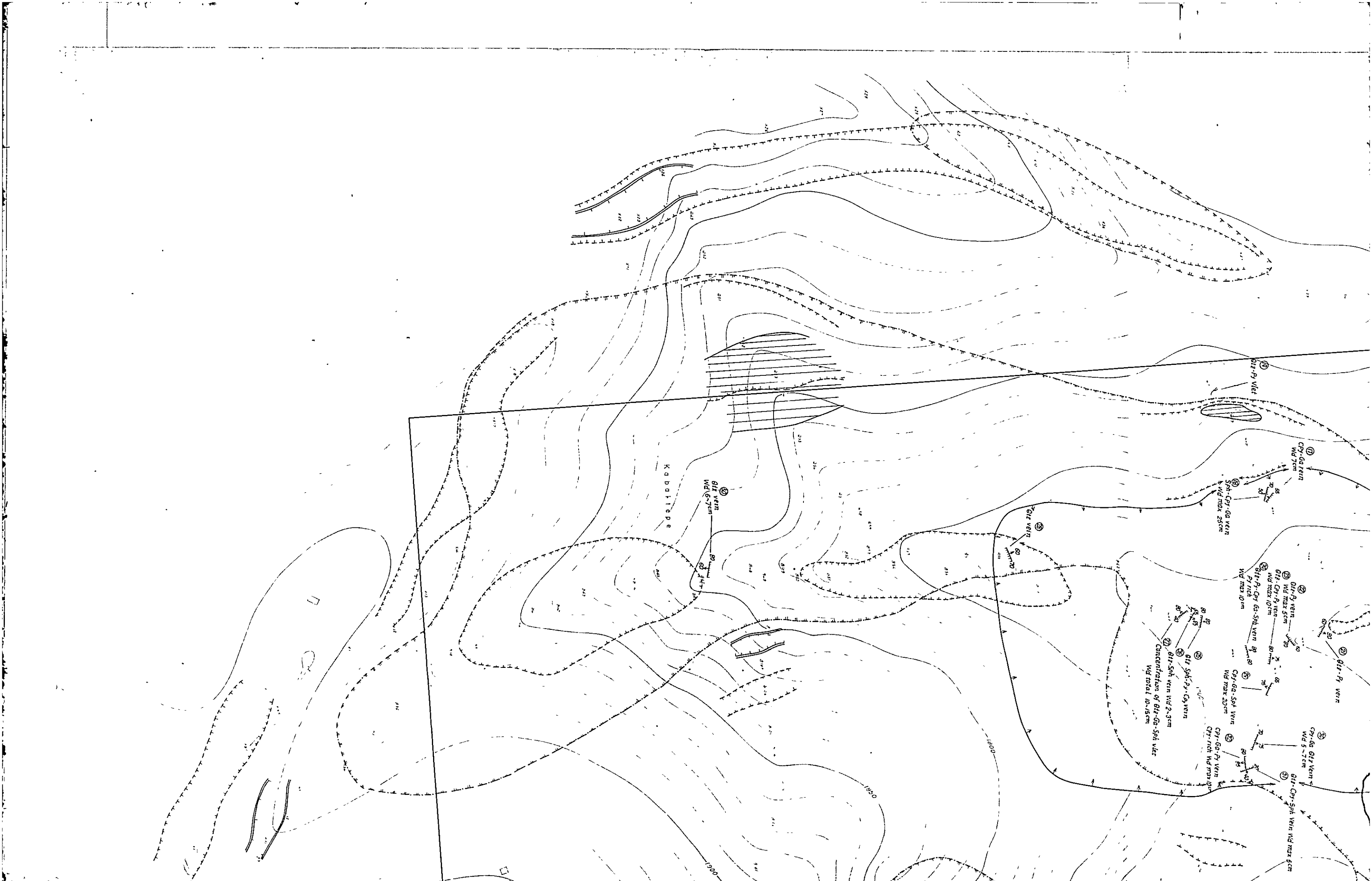
LEGEND
LEJAND

- old mine, working mine, waste & slag
eski maden, çalisan maden
- mineralization zone
mineralizasyon zonu
- vein, veinlet network, stratiform
damar, damarcıklar network, tabakalı
- disseminate
dissemine
- pyrite dissemination and/or limonitization zone
pirit dissemine ve/veya limonitleme zonu
- silicification zone
silikleme zonu
- kaolinization zone
kaolinleşme zonu
- carbonatization zone
karbonatlaşma zonu
- sericitization zone
serisitleşme zonu
- montmorillonitization zone
montmorillonitleşme zonu
- epidotization zone
epidotlaşma zonu
- skarnitization zone
skarnleşme zonu

Abbreviation
Acıltmalar

Ba	barite	Lim	limonite
Cal	calcite	Mt	magnetite
Chl	chlorite	Py	pyrite
Cpy	chalcopyrite	Qtz	quartz
Epi	epidote	Spc	specularite
Ga	galena	Sph	sphalerite
Kaol	kaolinite		





② *Git vein*
Wd 6-7cm

③ *Git vein*
Wd 1cm

④ *Cy-Ga vein*
Wd 7cm

⑤ *Sph-Cy-Ga vein*
Wd max 25cm

⑥ *Git-P vein*
Wd max 5cm

⑦ *Git-Cy-P vein*
Wd max 10cm

⑧ *Git-P-Cy-Ga-Sph vein*
Wd max 10cm

⑨ *Cy-Ga-Sph vein*
Wd max 20cm

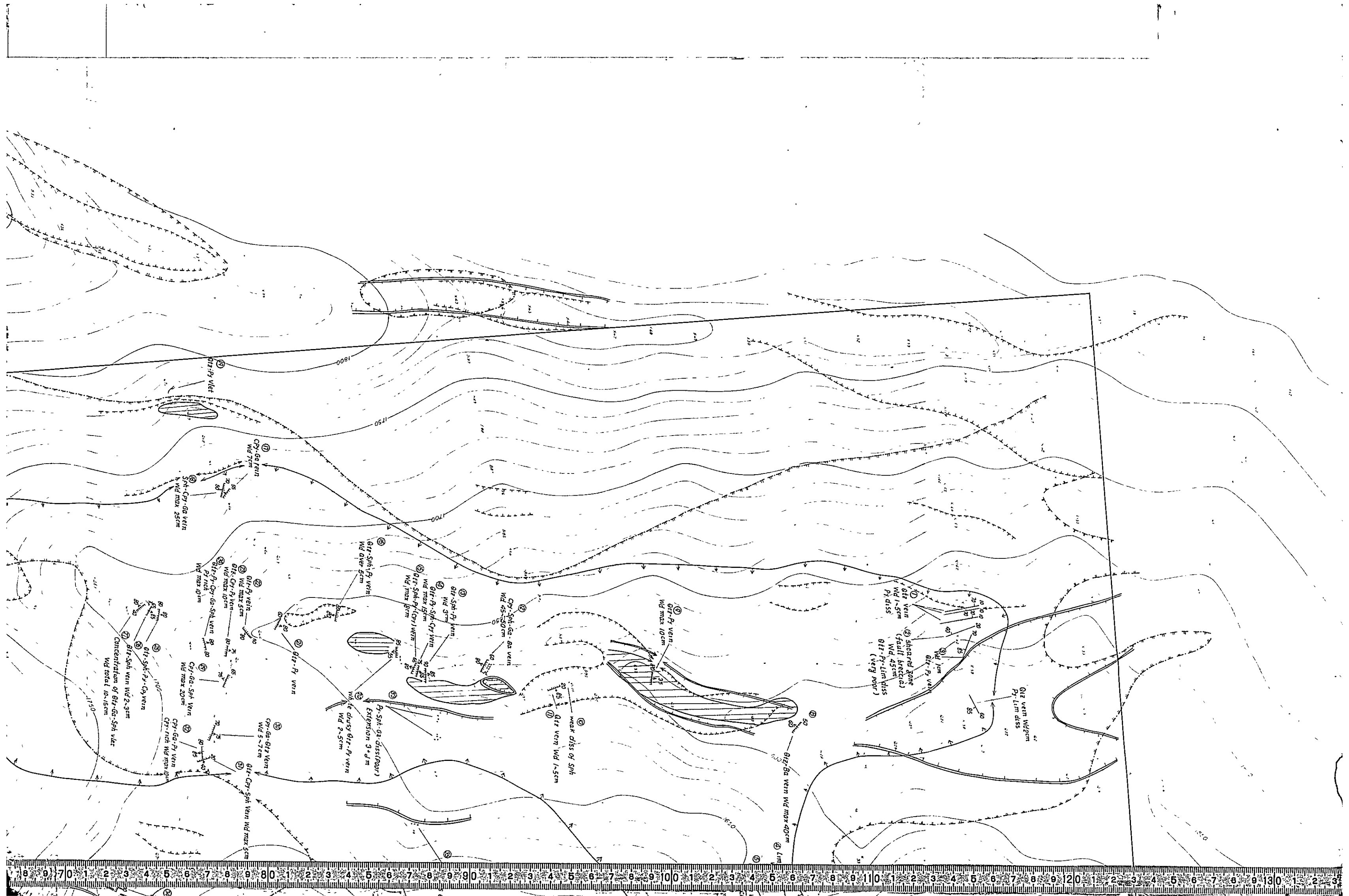
⑩ *Cy-Ga-P vein*
Cy-rich Wd max 10cm

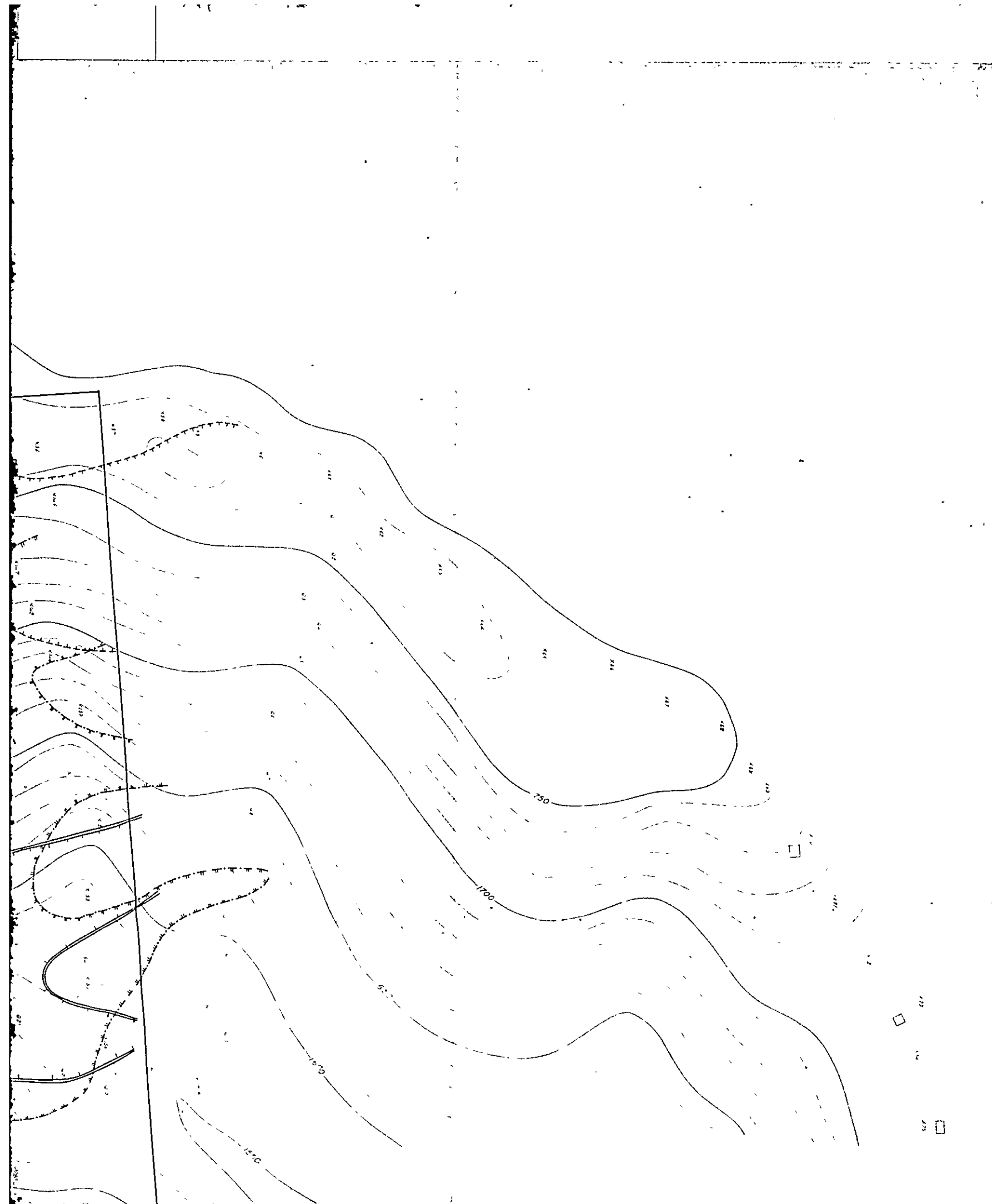
⑪ *Git-Cy-Sph vein*
Wd max 5cm

⑫ *Git-Sph vein*
Wd 2-3cm

⑬ *Concentration of Git-Ga-Sph vein*
Wd total 10-15cm



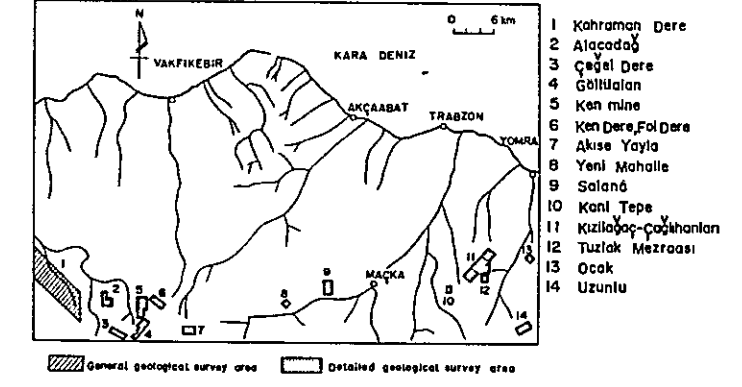




PL.3-2

MINERAL RESEARCH AND EXPLORATION INSTITUTE
 GEOLOGICAL SURVEY
 OF
 TRABZON AREA, NORTHEASTERN TURKEY
 PHASE III
 ALTERATION AND MINERALIZATION
 OF ALACADAĞ AREA
 ALACADAĞ SAHASININ
 ALTERASYON VE MINERALİZASYON HARITASI

INDEX MAP







Scale 1 : 2,000
 Ölçek 100 200m

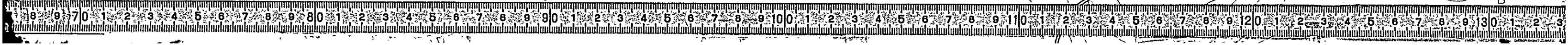
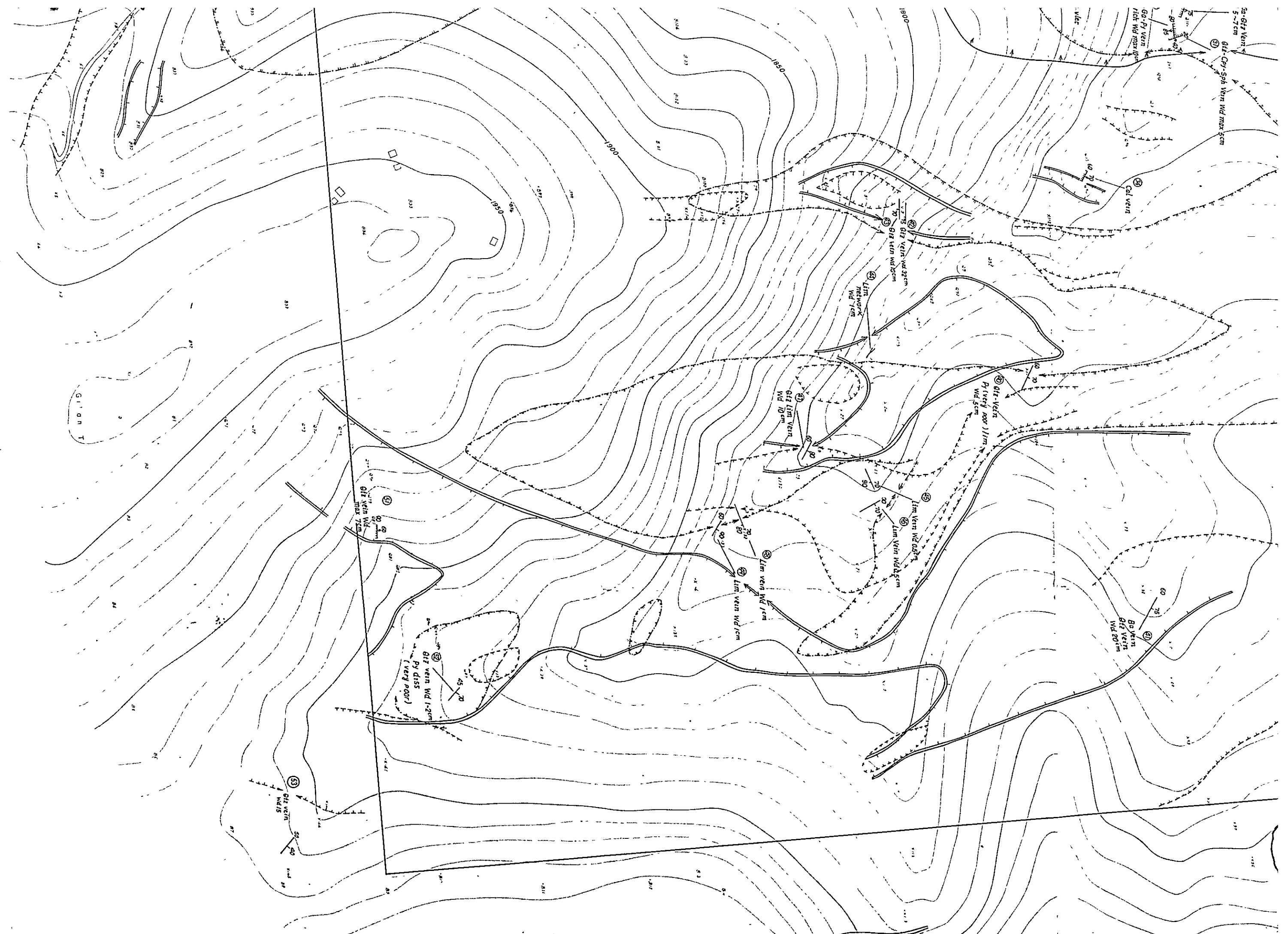
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 FEBRUARY 1977

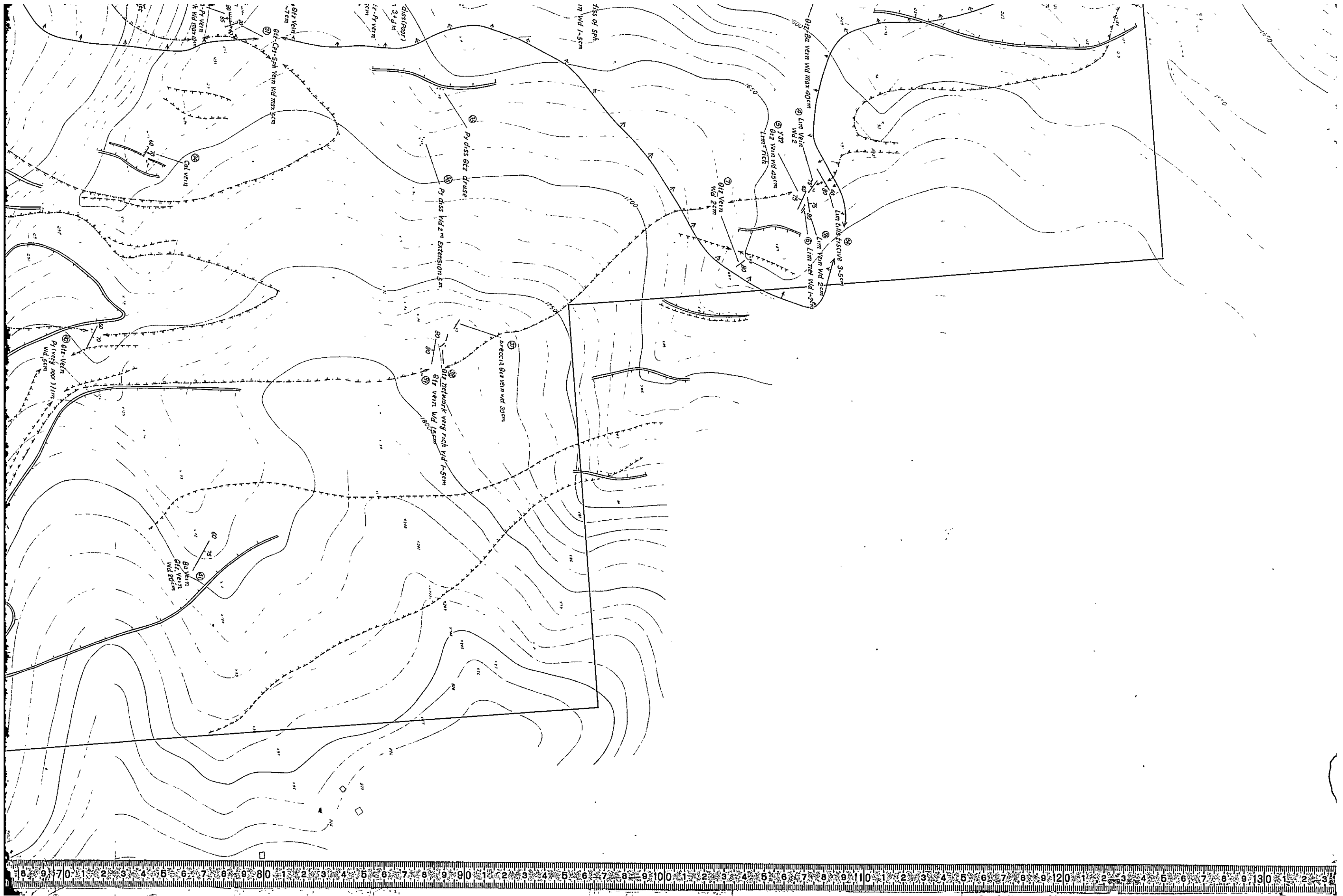
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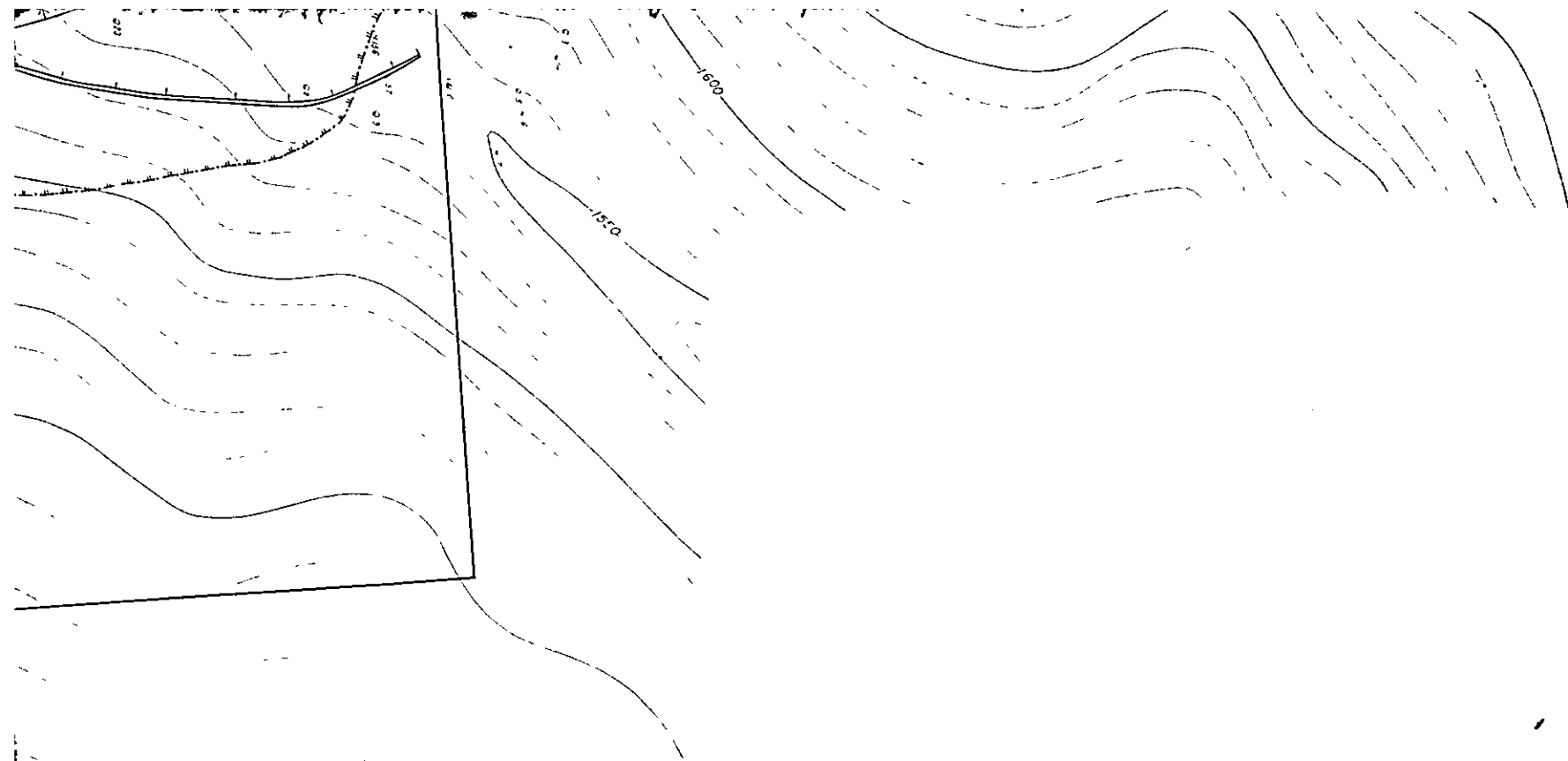
LEGEND

-  old mine, working mine, waste & slag
eski maden, çalışan maden
-  mineralization zone
mineralizasyon zonu
-  vein, veinlet network, stratiform
damar, damarcıklar network, tabakalı
-  dissemination
diseminat





















LEGEND
LEJİND

-  old mine, working mine, waste & slag
eski maden, çalışan maden
-  mineralization zone
mineralizasyon zonu
-  vein, veinlet network, stratiform
damar, damarcıklar network, tabakalı
-  dissemination
diseminasyon
-  pyrite dissemination and/or limonitization zone
pirit diseminasyon ve/veya limonitasyon zonu
-  silicification zone
silisleşme zonu
-  kaolinization zone
kaolinleşme zonu
-  carbonatization zone
karbonatlaşma zonu
-  sericitization zone
serisitleşme zonu
-  montmorillonitization zone
montmorillonitleşme zonu
-  epidotization zone
epidotlaşma zonu
-  skarnitization zone
skarnleşme zonu

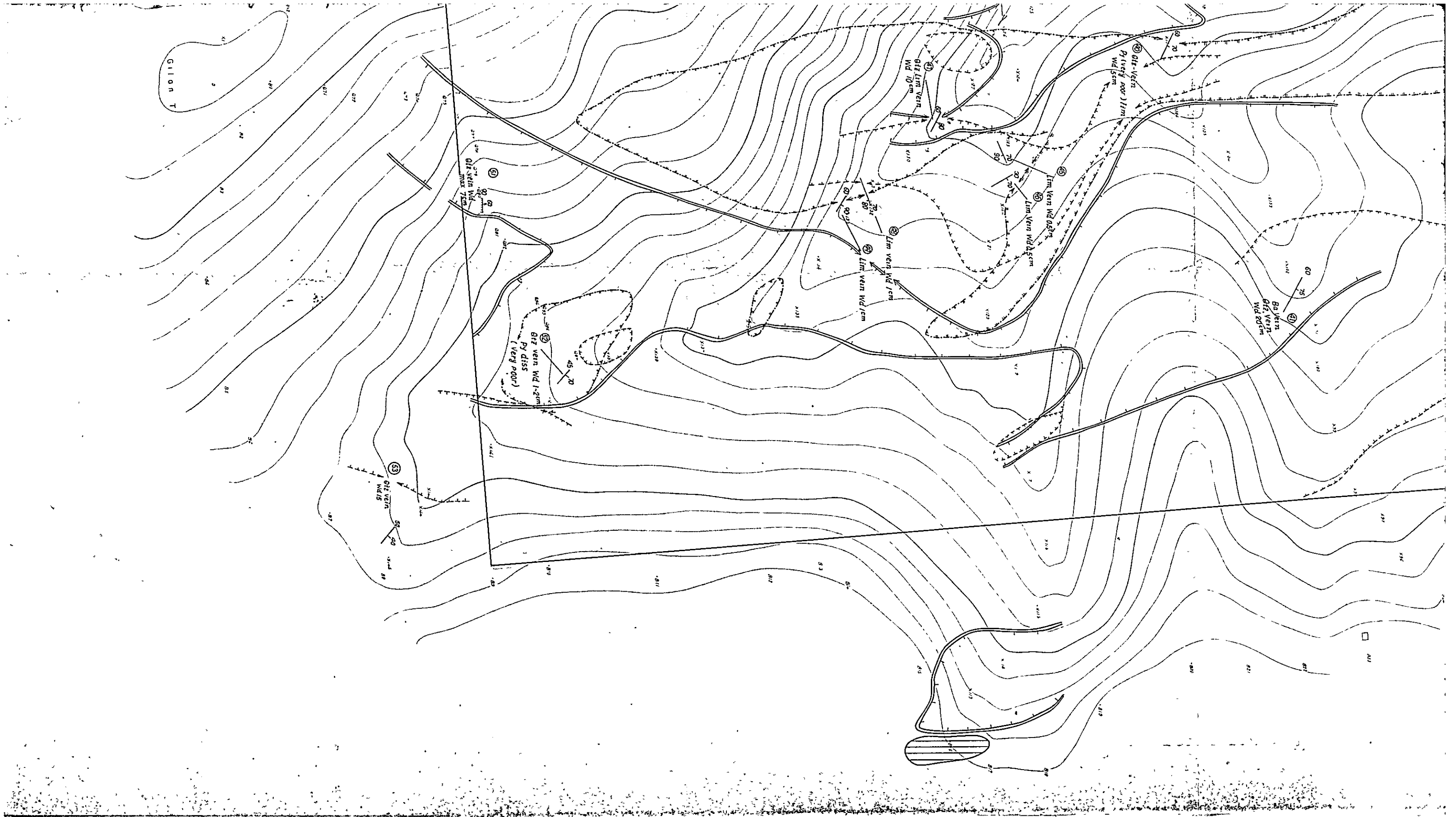
Abbreviation
Kısaltmalar

- | | | | |
|------|--------------|-----|-------------|
| Ba | barite | Lim | limonite |
| Cal | calcite | Mt | magnetite |
| Chl | chlorite | Py | pyrite |
| Cpy | chalcopyrite | Qtz | quartz |
| Epi | epidote | Spc | specularite |
| Ga | galena | Sph | sphalerite |
| Kaol | kaolinite | | |
| | kaolin | | |

Sample No.	Index No.	Kind of ore mineral	Mode of occurrence	Width or thickness (cm)	Sampling width (cm)	Sampling method	Cu (%)	Pb (%)	Zn (%)
C-67	12	Cpy-Sph(-Ba)	vein	50	45	L	3.25	3.66	15.50
C-74	14	Cpy-Sph	vein	max 15	15	G	0.49	3.02	6.25
C-75	15	Cpy-Sph	vein	max 8	8	G	1.69	1.60	33.50
C-77	16	Ga-Sph	vein	max 11 av 5	5	G	0.69	4.71	13.50
C-81	18	Cpy-Ga-Sph	vein	max 25	20	G	1.81	8.79	15.00
C-82	17	Cpy	vein	7	7	G	1.13	13.55	21.00
C-86	31	Cpy(-Sph)	vein	max 5	5	G	16.88	6.60	0.93
C-87	32	Cpy-Sph	vein	max 10	10	G	3.63	9.76	13.25
C-88	29	Cpy-Sph	vein	max 20	20	G	5.63	9.11	5.00
C-89	27	Cpy-Ga-Sph	swarm of veinlet	10 - 15	10	G	0.58	5.61	1.13


* R : random sampling L : line cutting sampling G : gravel sampling of high grade ore





 montmorillonitization zone
montmorillonitlenme zonu

 epidotization zone
epidotlaşma zonu

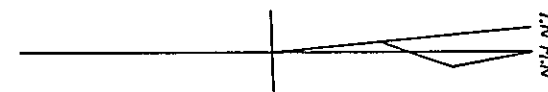
 skarnitization zone
skarnleşme zonu

Abbreviation
Kısaltmalar

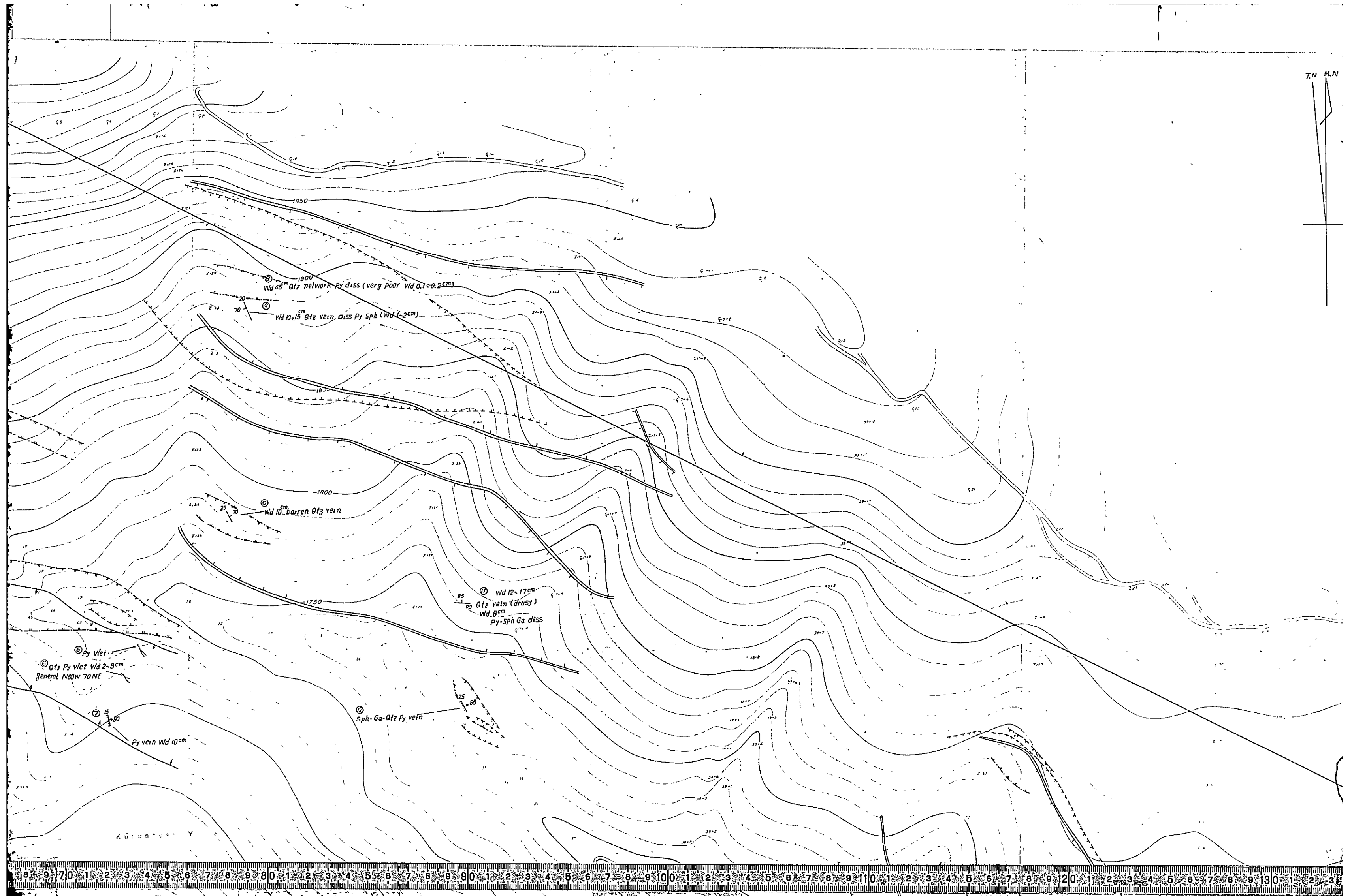
Ba	barite barit	Lim	limonite limonit
Cal	calcite kalsit	Mt	magnetite magnetit
Chl	chlorite klorit	Py	pyrite pirit
Cpy	chalcopyrite kalkopirit	Qtz	quartz kuvar
Epi	epidote epidot	Spc	specularite spekularit
Ga	galena galen	Sph	sphalerite sfalerit
Kaol	kaolinite kaolin		

Sample No.	Index No.	Kind of ore mineral	Mode of occurrence	Width or thickness (cm)	Sampling width (cm)	Sampling method	Cu (%)	Pb (%)	Zn (%)
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C-82	17	Cpy	vein	7	7	G	1.13	13.55	21.00
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C-88	29	Cpy-Sph	vein	max 20	20	G	5.63	9.11	5.00
C-89	27	Cpy-Ga-Sph	swarm of veinlet	10 - 15	10	G	0.58	5.61	1.13

R : random sampling L : line cutting sampling G : gravel sampling of high grade ore







T.M. M.N.



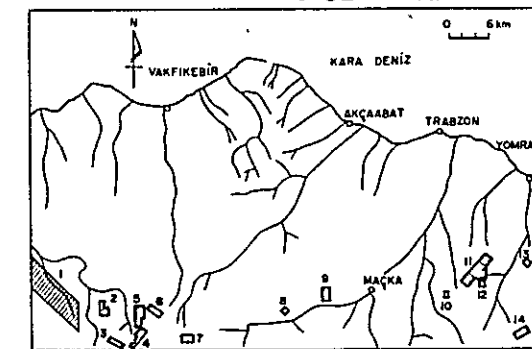
PL. 3-3

MINERAL RESEARCH AND EXPLORATION INSTITUTE
GEOLOGICAL SURVEY
OF
TRABZON AREA, NORTHEASTERN TURKEY

PHASE III

ALTERATION AND MINERALIZATION
MAP OF ÇEĞEL DERE AREA
ÇEĞEL DERE SAHASININ
ALTERASYON VE MİNERALİZASYON HARİTASI

INDEX MAP



- 1 Kahrman Dere
- 2 Alacadağ
- 3 Çeğel Dere
- 4 Gölbulan
- 5 Ken mine
- 6 Ken Dere, Fol Dere
- 7 Akise Yayla
- 8 Yeni Mahalle
- 9 Saland
- 10 Kani Tepe
- 11 Kızılcık-Çağhanlar
- 12 Tuzlak Mezraası
- 13 Ocak
- 14 Uzunlu

General geological survey area Detailed geological survey area

Scale 1:2,000

Ölçek 1:2000

METAL MINING AGENCY OF JAPAN
JAPAN INTERNATIONAL COOPERATION AGENCY
FEBRUARY 1977

Prepared by Nikko Exploration & Development Co., Ltd.

LEGEND
LEJAND

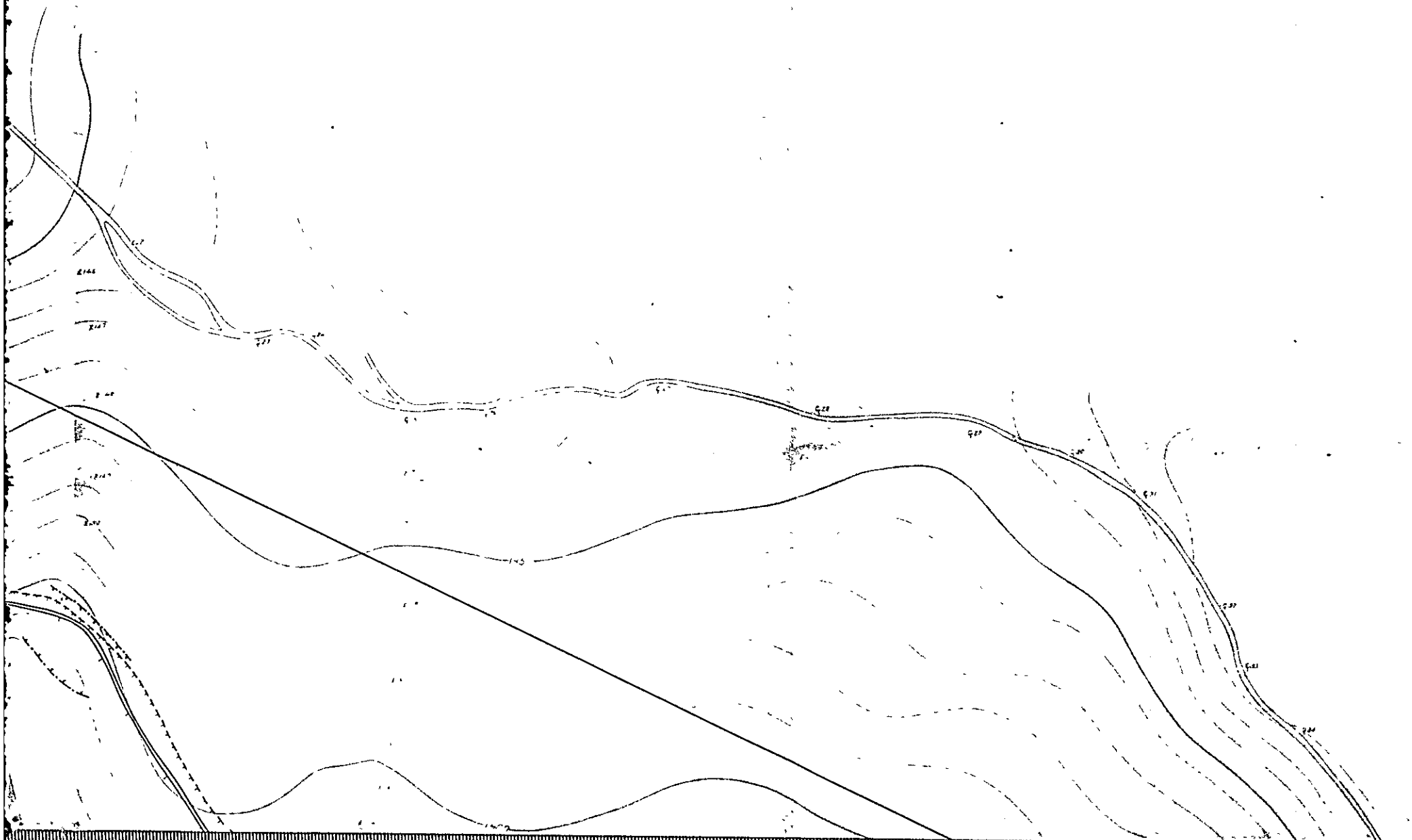
old mine, working mine, waste & slag
eski maden, çalışan maden

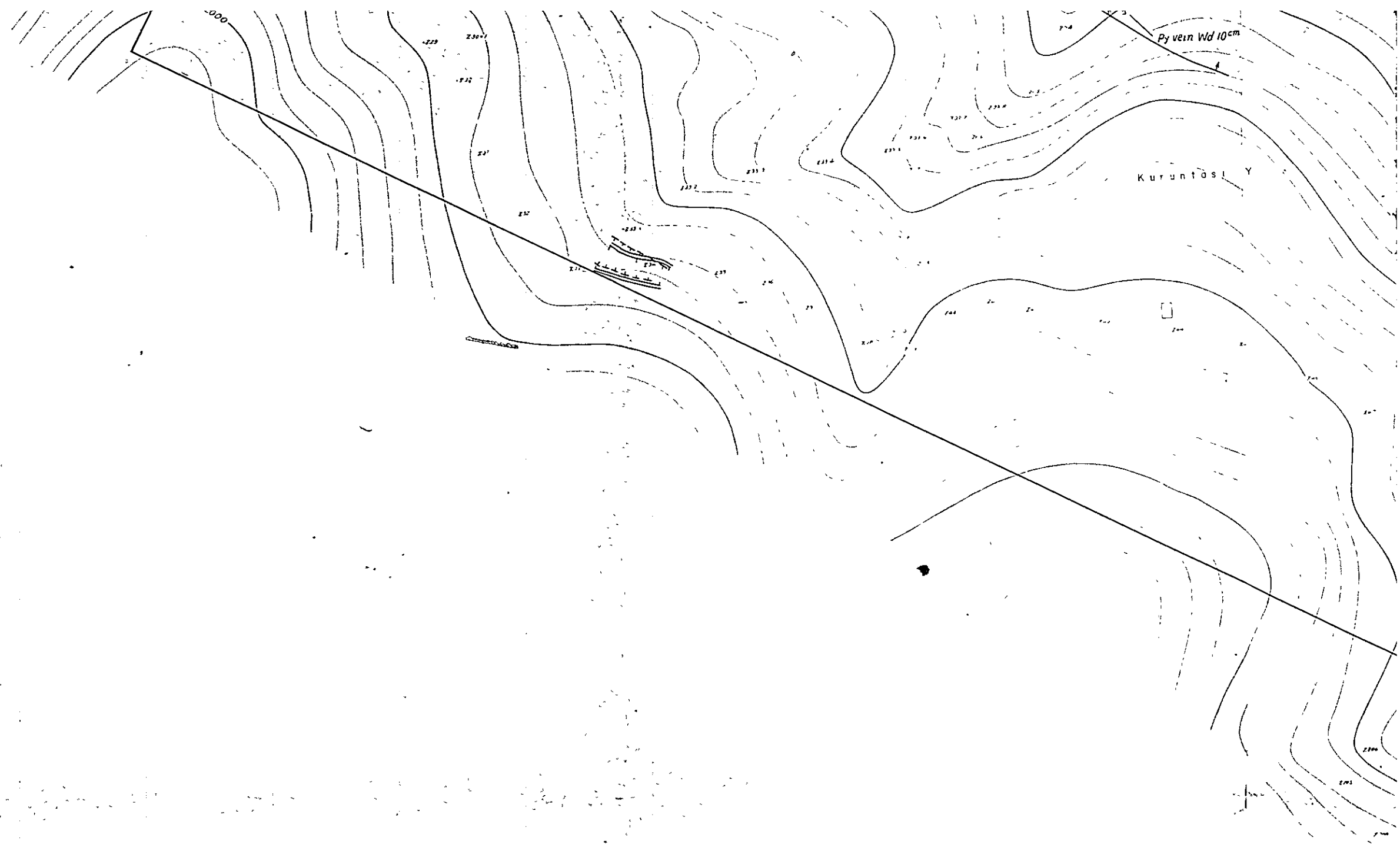
mineralization zone
mineralezyon zonu

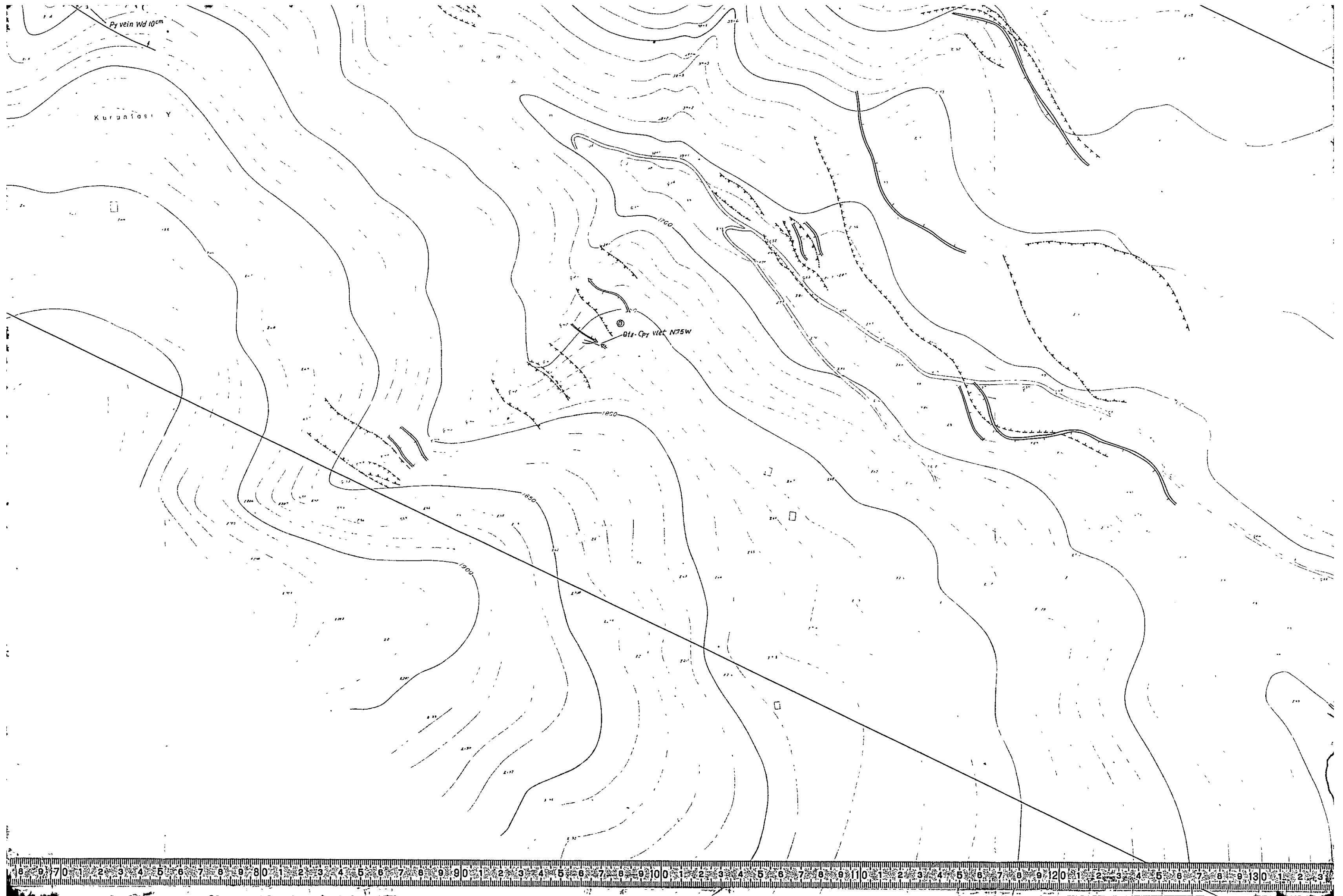
vein, veinlet network, stratiform damar, damarcıklar network tabakalı

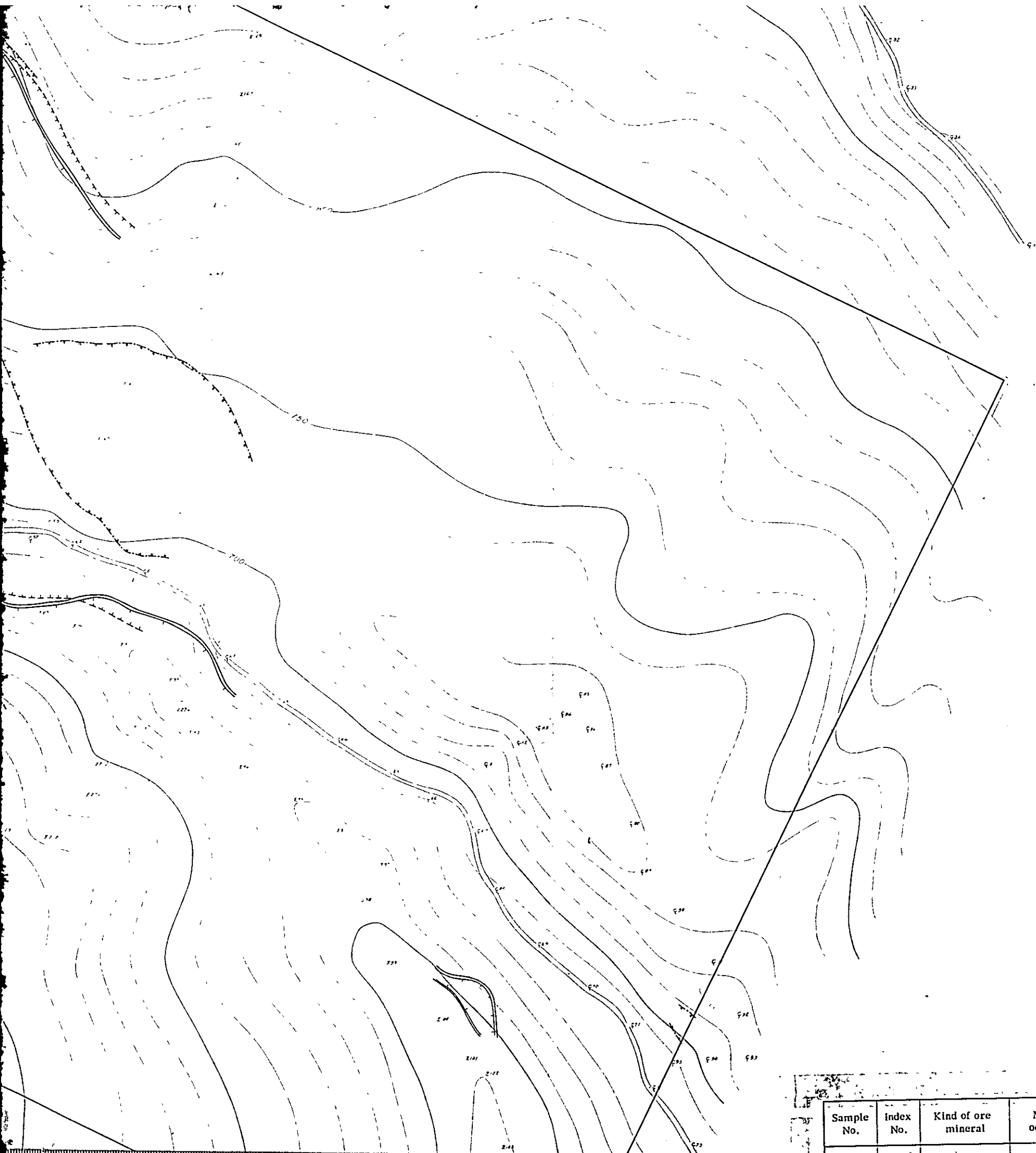
dissemination disseminat

pyrite dissemination and/or limonitization zone
pirit disseminat ve/veya limonitizasyon zonu





















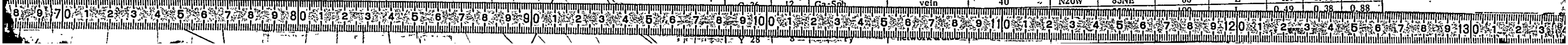
LEGEND
LEJAND

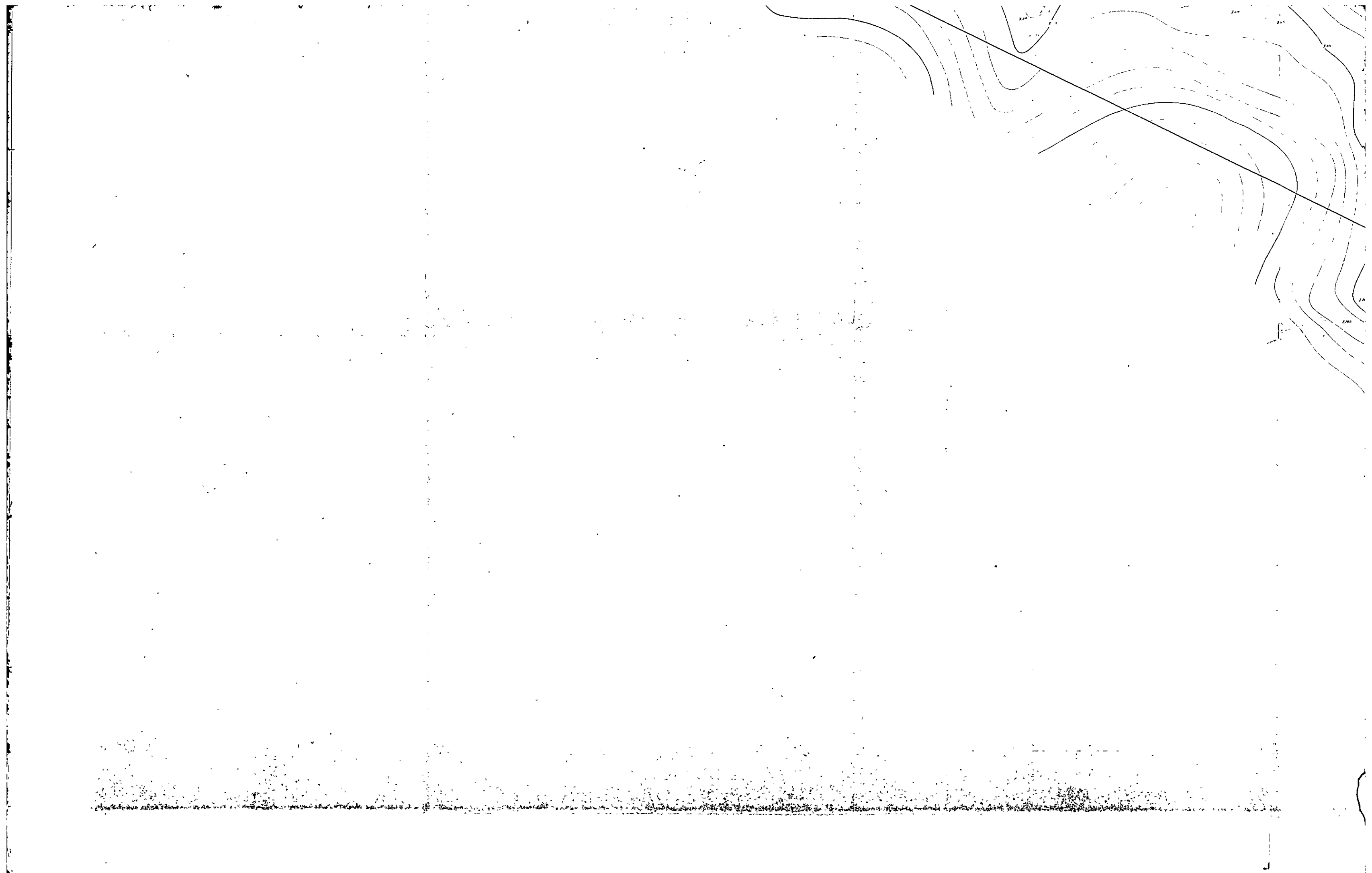
-  old mine, working mine, waste & slag
eskî maden, çalîşan maden
-  mineralization zone
mineralizasyon zonu
-  vein, veinlet network, stratiform
damar, damarîklar network tabakalı
-  dissemination
diseminasyon
-  pyrite dissemination and/or limonitization zone
pirit diseminasyon ve/veya limonitasyon zonu
-  silicification zone
silileşme zonu
-  kaolinization zone
kaolinleşme zonu
-  carbonatization zone
karbonatlaşma zonu
-  sericitization zone
serisitleşme zonu
-  montmorillonitization zone
montmorillonitleşme zonu
-  epidotization zone
epidotlaşma zonu
-  skarnitization zone
skaritleşme zonu

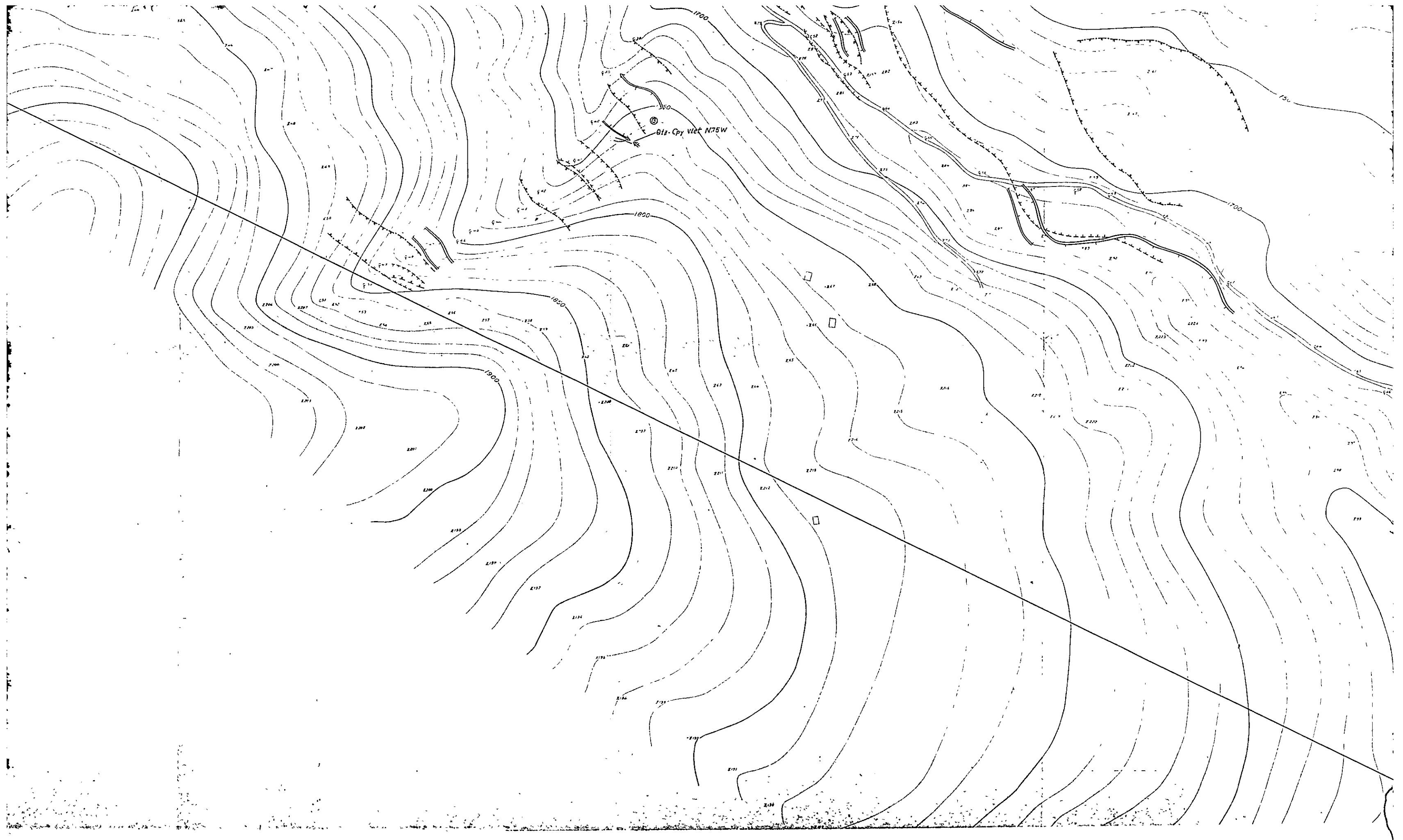
Abbreviation
Kesaltmalar

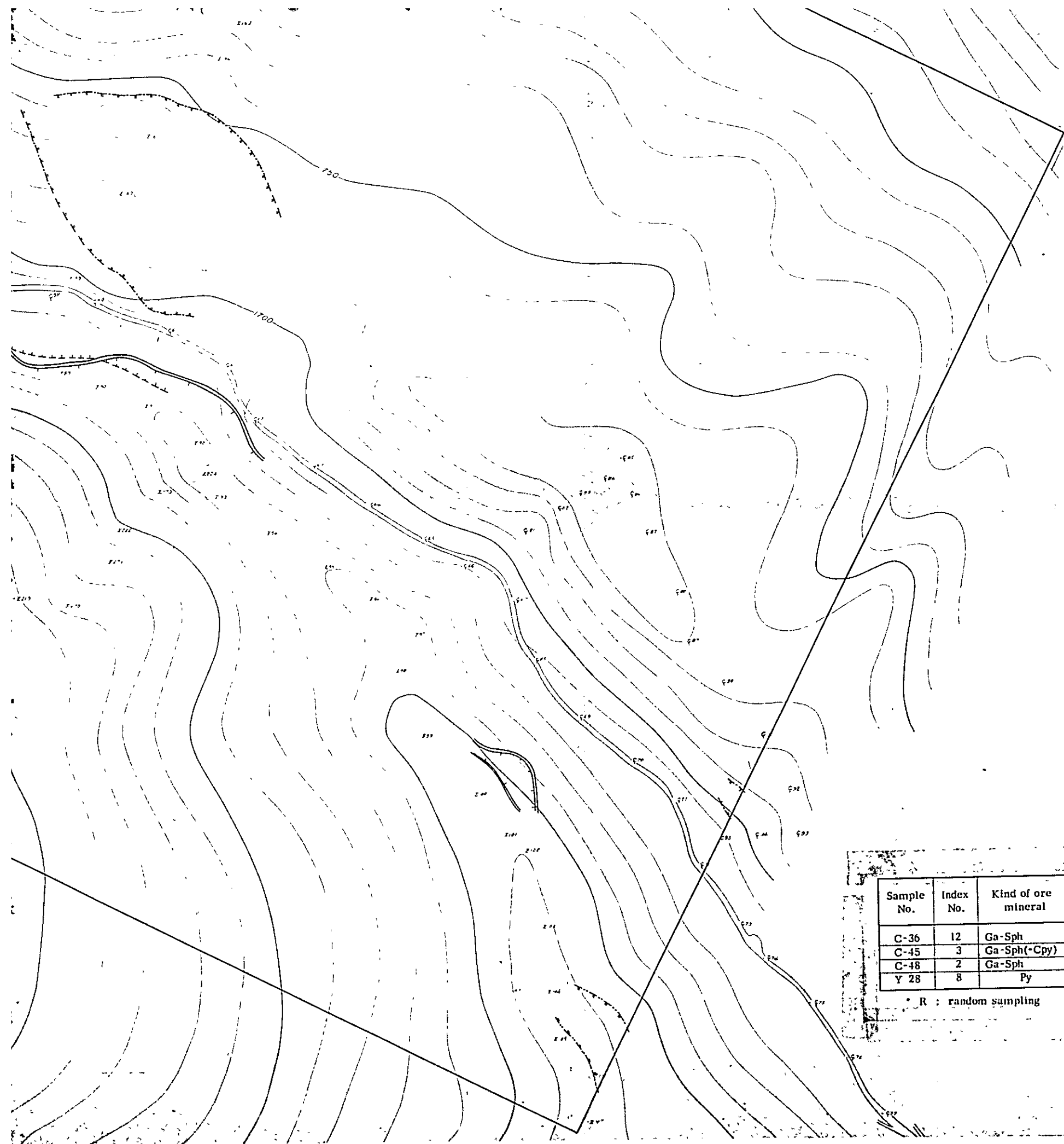
- | | | | |
|------|--------------|-----|-------------|
| Ba | barite | Lim | limonite |
| Cal | calcite | Mt | magnetite |
| Chl | chlorite | Py | pyrite |
| Cpy | chalcopyrite | Qtz | quartz |
| Ep | epidote | Spc | specularite |
| Ga | galena | Sph | sphalerite |
| Kaol | kaolinite | | sfalerit |








Sample No.	index No.	Kind of ore mineral	Mode of occurrence	Width or thickness (cm)	Strike & dip	Sampling width (cm)	Sampling method	Cu (%)	Pb (%)	Zn (%)
12		Galena	vein	40	N20W 85NE	80	L	tr.	0.43	0.53









-  silicification zone
silikleşme zonu
-  kaolinization zone
kaolinleşme zonu
-  carbonatization zone
karbonatlaşma zonu
-  sericitization zone
serisitleşme zonu
-  montmorillonization zone
montmorillonitleşme zonu
-  epidotization zone
epidotlaşma zonu
-  skarnization zone
skarleşme zonu

Abbreviation
Kısaltmalar

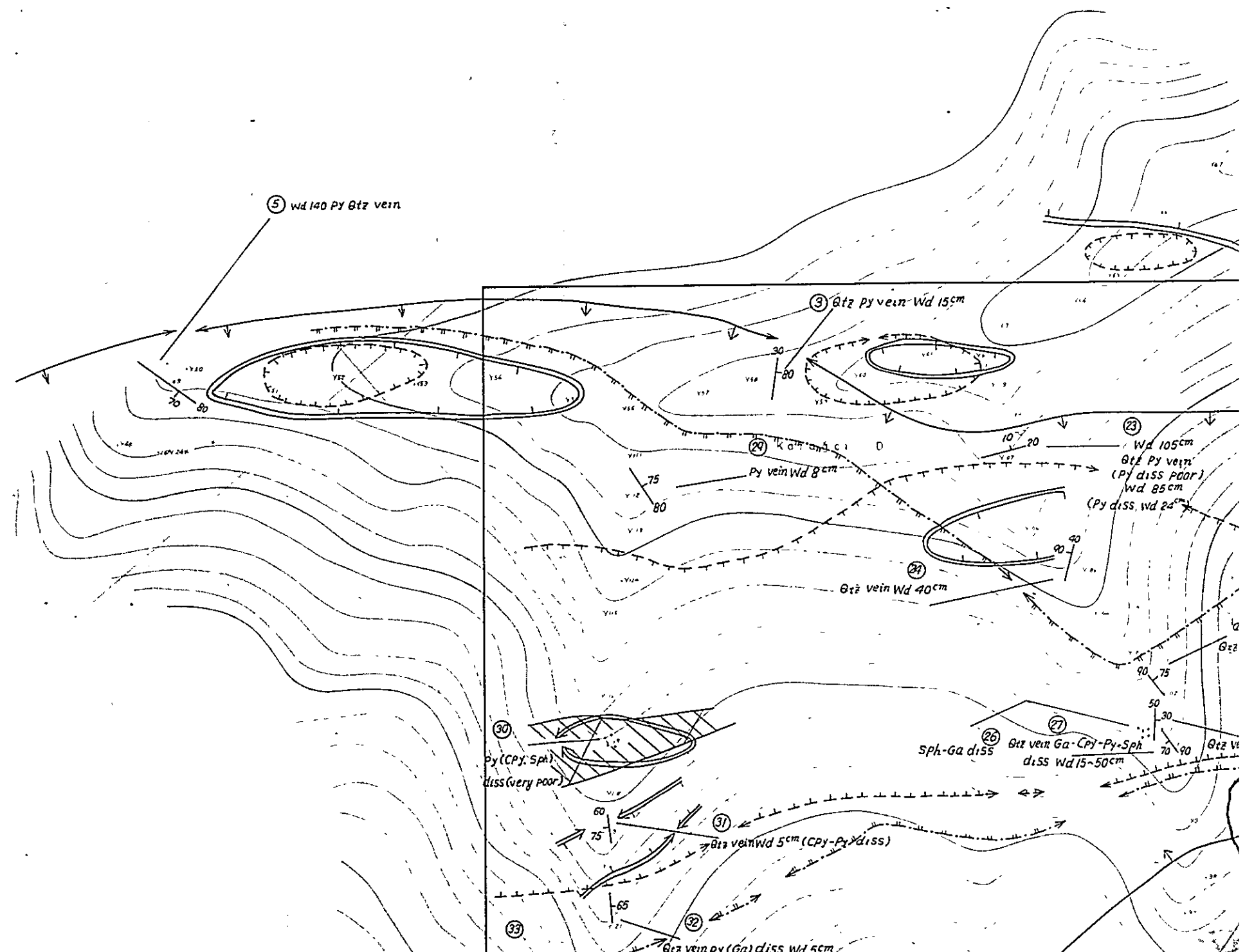
- | | | | |
|------|--------------------------|-----|---------------------------|
| Ba | barite
barit | Lim | limonite
limonit |
| Cal | calcite
kalsit | Mt | magnetite
manyetit |
| Chl | chlorite
klorit | Py | pyrite
pirit |
| Cpy | chlopyrite
kalkopirit | Qtz | quartz
kuvarz |
| Epi | epidote
epidot | Spc | specularite
spekularit |
| Ga | galena
galen | Sph | sphalerite
sfalerit |
| Kaol | kaolinite
kaolin | | |

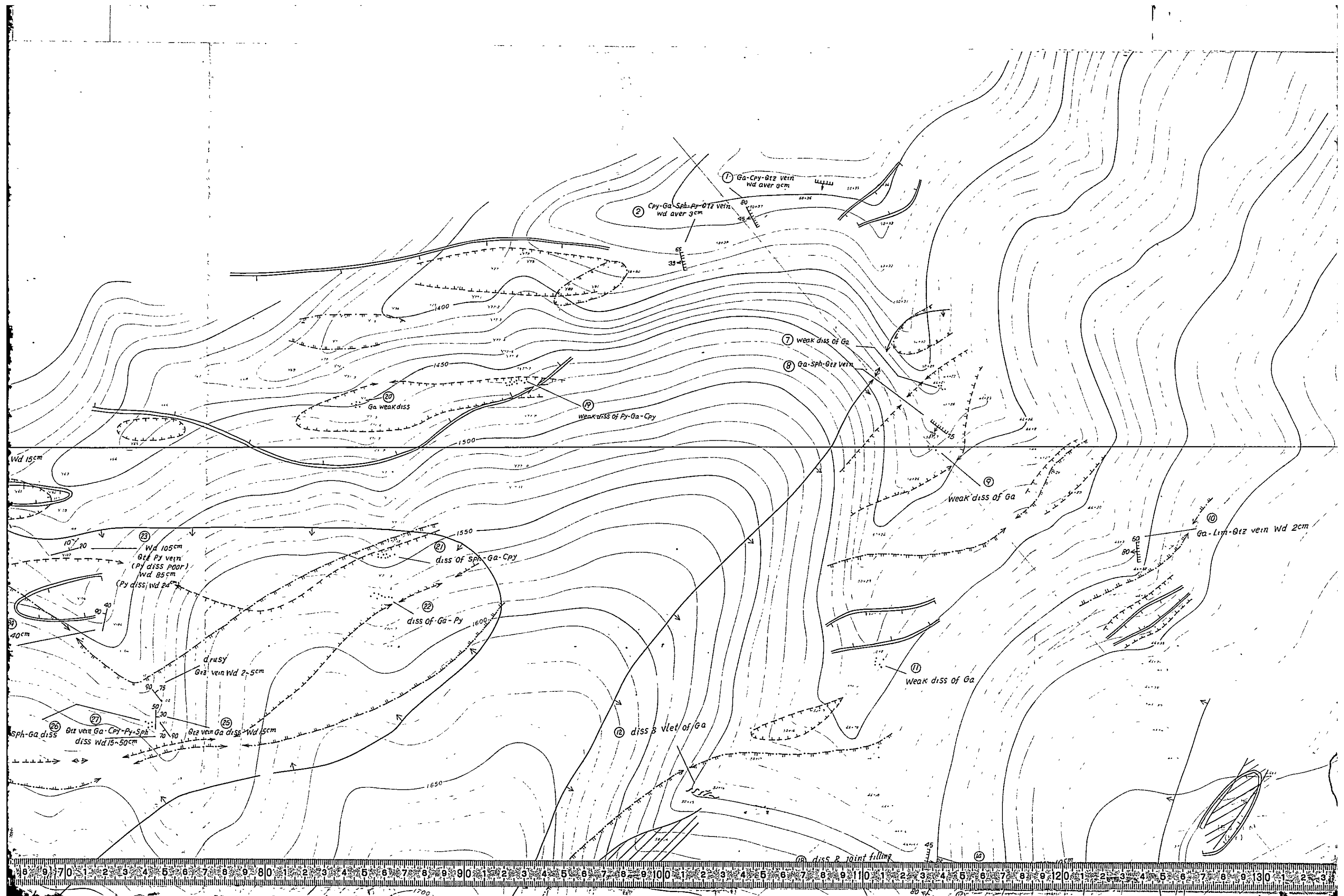
Sample No.	Index No.	Kind of ore mineral	Mode of occurrence	Width or thickness (cm)	Strike & dip		Sampling width (cm)	Sampling method	Cu (%)	Pb (%)	Zn (%)
C-36	12	Ga-Sph	vein	40	N20W	85NE	80	L	tr.	0.43	0.53
C-45	3	Ga-Sph(-Cpy)	vein	max 80	N50W	55SW	100	L	0.49	0.38	0.88
C-48	2	Ga-Sph	vein	max 80	N45W	55-60SW	80	L	tr.	0.76	3.20
Y 28	8	Py	network & diss	45					0.007	0.01	tr.

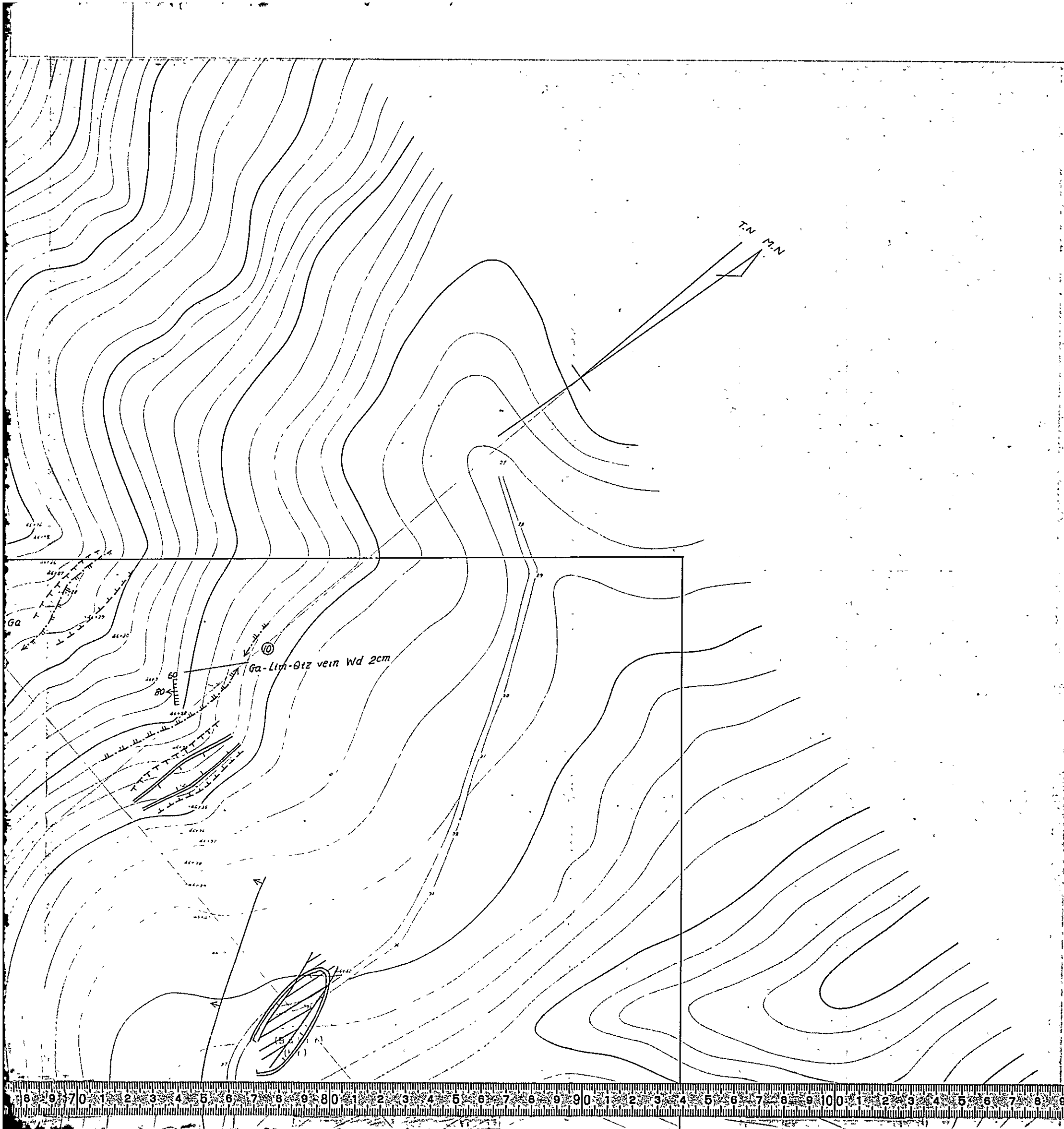
R : random sampling L : line cutting sampling G : gravel sampling of high grade ore











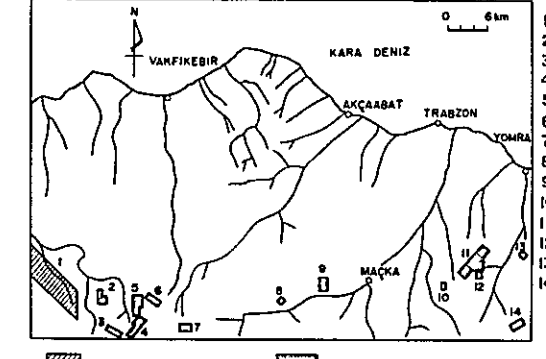
PL.3-4-1

MINERAL RESEARCH AND EXPLORATION INSTITUTE
 GEOLOGICAL SURVEY
 OF
 TRABZON AREA, NORTHEASTERN TURKEY

PHASE III

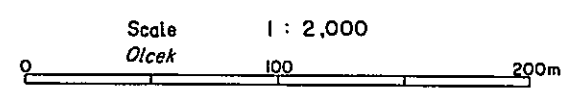
ALTERATION AND MINERALIZATION
 MAP OF GÖLLÜALAN AREA
 GÖLLÜALAN SAHASININ
 ALTERASYON VE MİNERALİZASYON HARİTASI

INDEX MAP



- 1 Kahraman Dere
- 2 Alaçadağ
- 3 Çeşel Dere
- 4 Göllüalan
- 5 Ken mine
- 6 Ken Dere, Fol Dere
- 7 Akise Yayla
- 8 Yeni Mahalle
- 9 Salandı
- 10 Kani Tepe
- 11 Kızıldağ-Çağbantarı
- 12 Tuzlak Mevraası
- 13 Ocak
- 14 Uzunlu

General geological survey area Detailed geological survey area



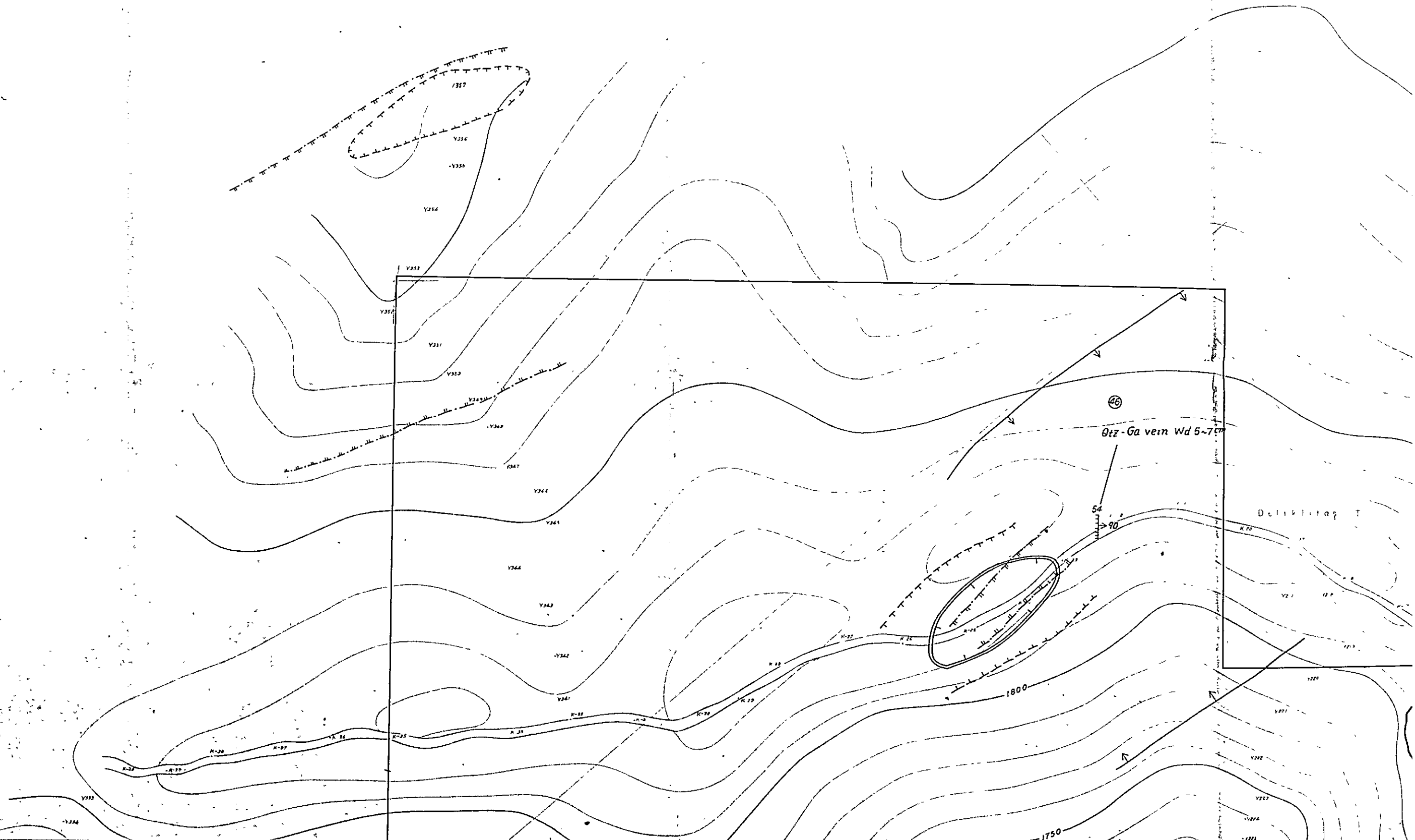
METAL MINING AGENCY OF JAPAN
 JAPAN INTERNATIONAL COOPERATION AGENCY
 FEBRUARY 1977

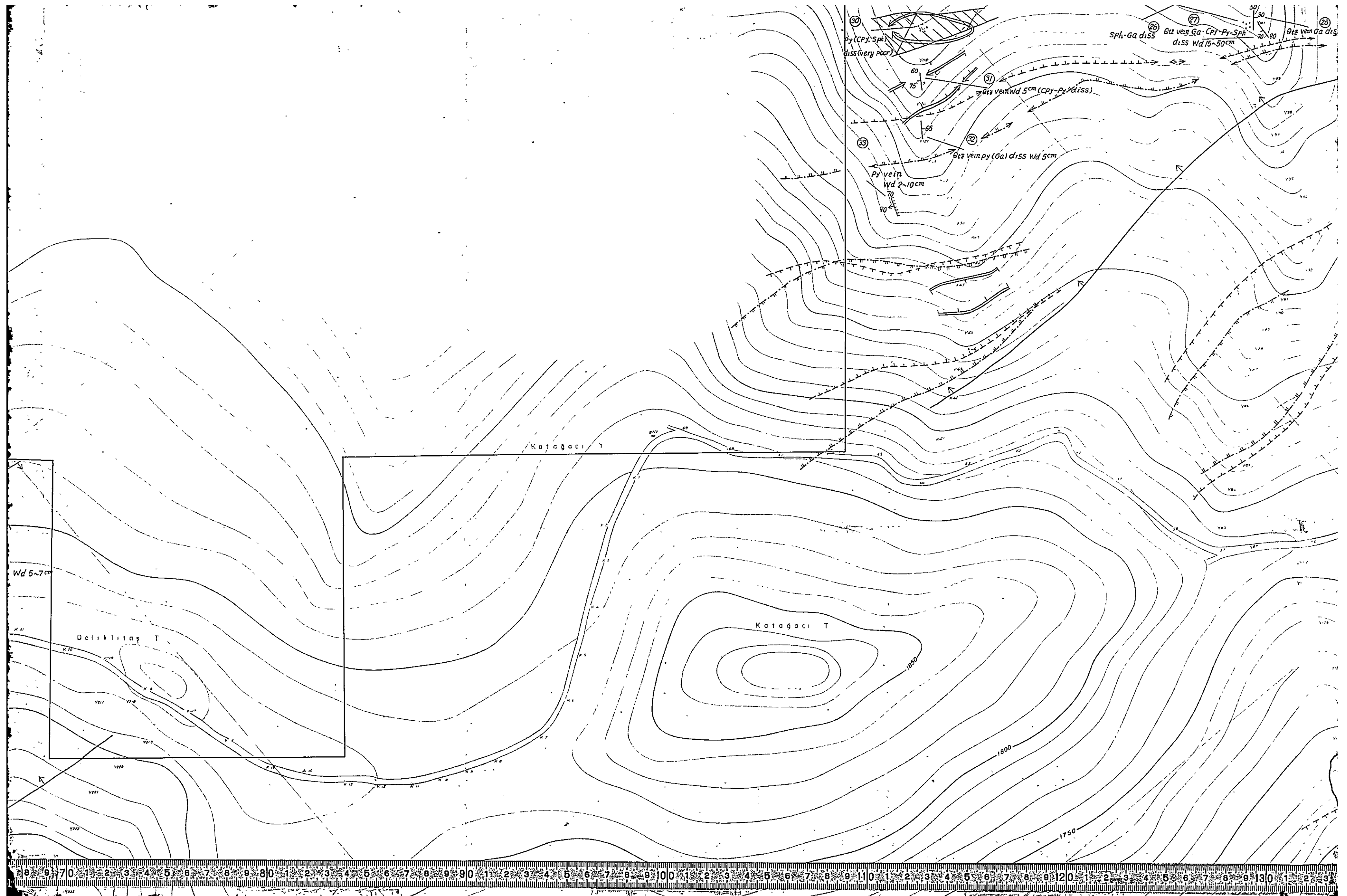
Prepared by Nikko Exploration & Development Co., Ltd

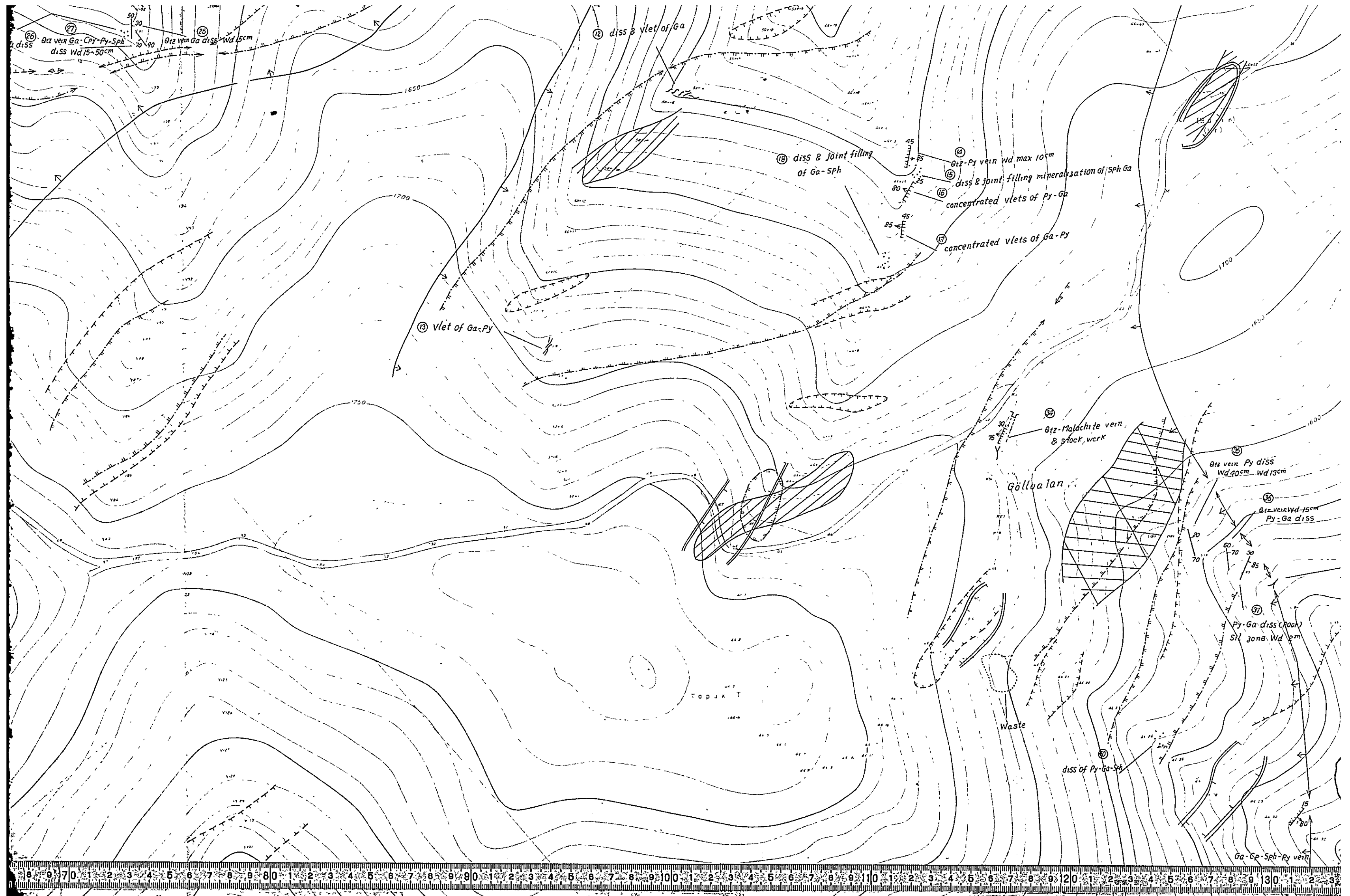
LEGEND

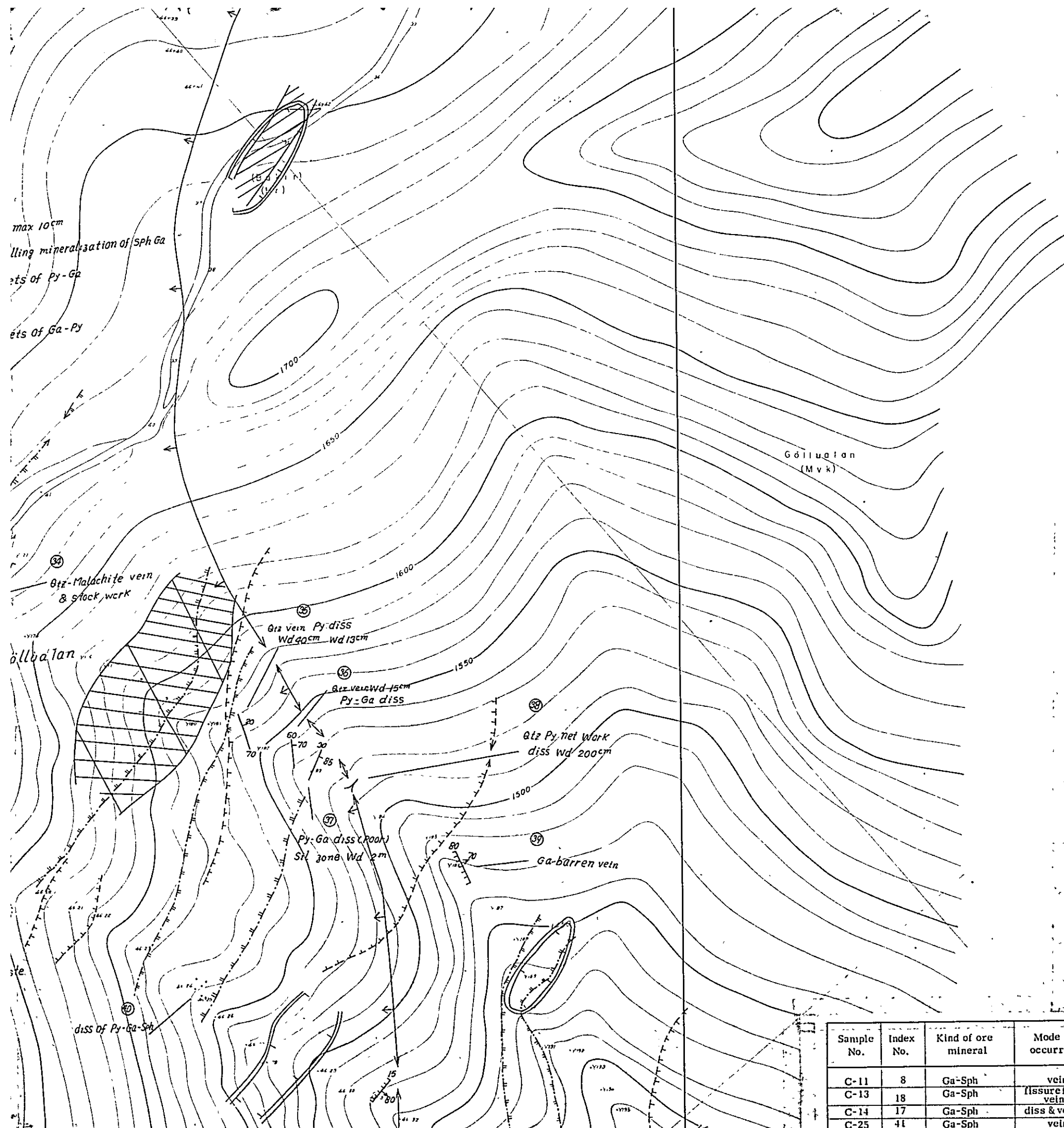
- old mine, working mine, waste & slag
eskî maden, çalıñan maden
- mineralization zone
minerelizasyon zonu
- vein, veinlet network, stratiform daniar, damarekilar network, tabakali
- dissemination dissemine























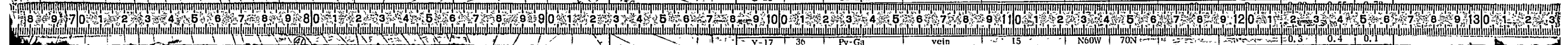
LEGEND
LEJAND

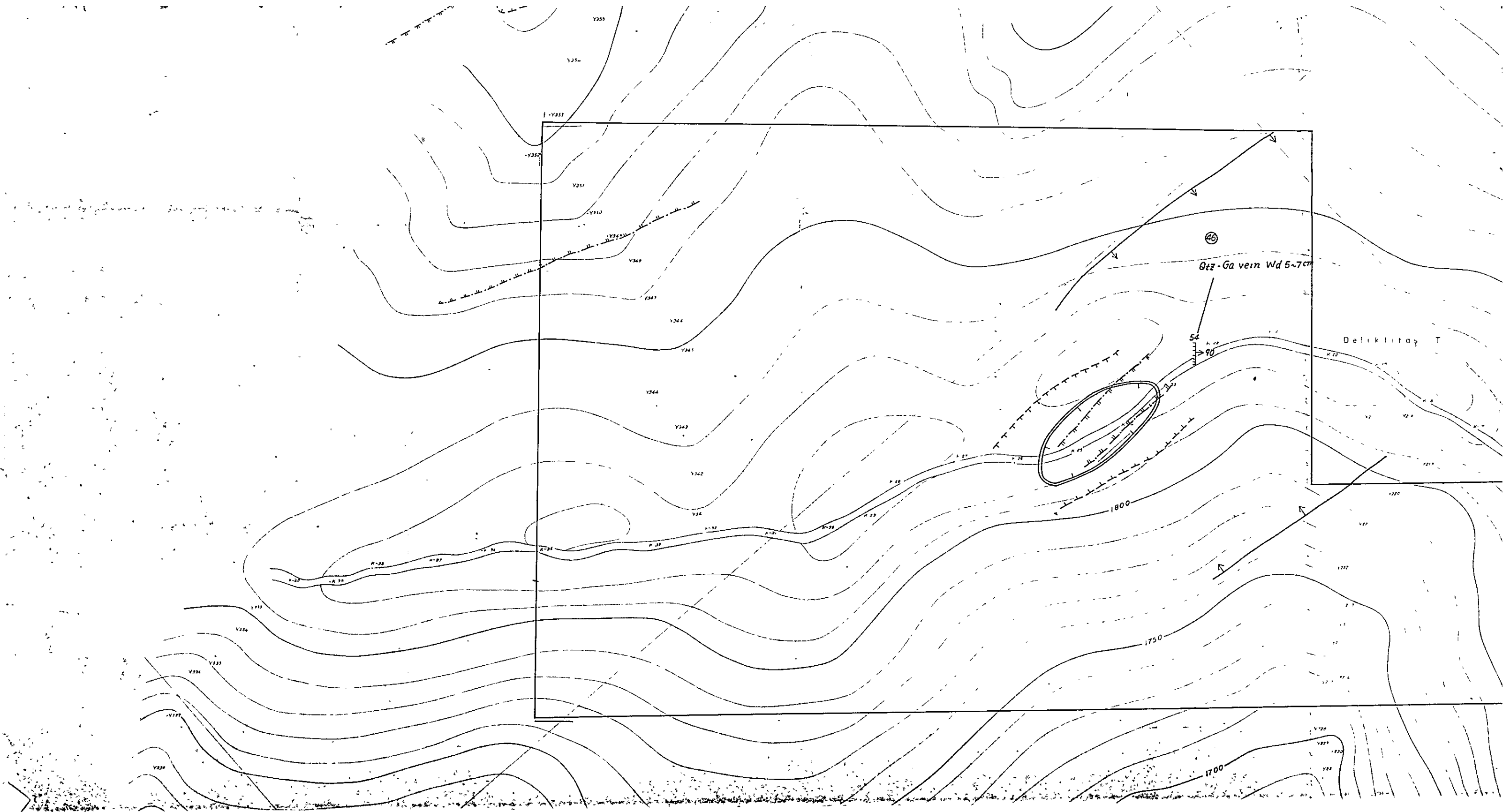
-  old mine, working mine, waste & slag
eski maden, çalisan maden
-  mineralization zone
mineraleleşme zonu
-  vein, veinlet network, stratiform
damar, damarcıklar network tubakalı
-  dissemination
diseminasyon
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pirit diseminasyon ve/ya limonitleşme zonu
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karbonatlaşma zonu
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sericitleşme zonu
-  montmorillonitization zone
montmorillonitleşme zonu
-  epidotization zone
epidotlaşma zonu
-  skarnitization zone
skarınleşme zonu

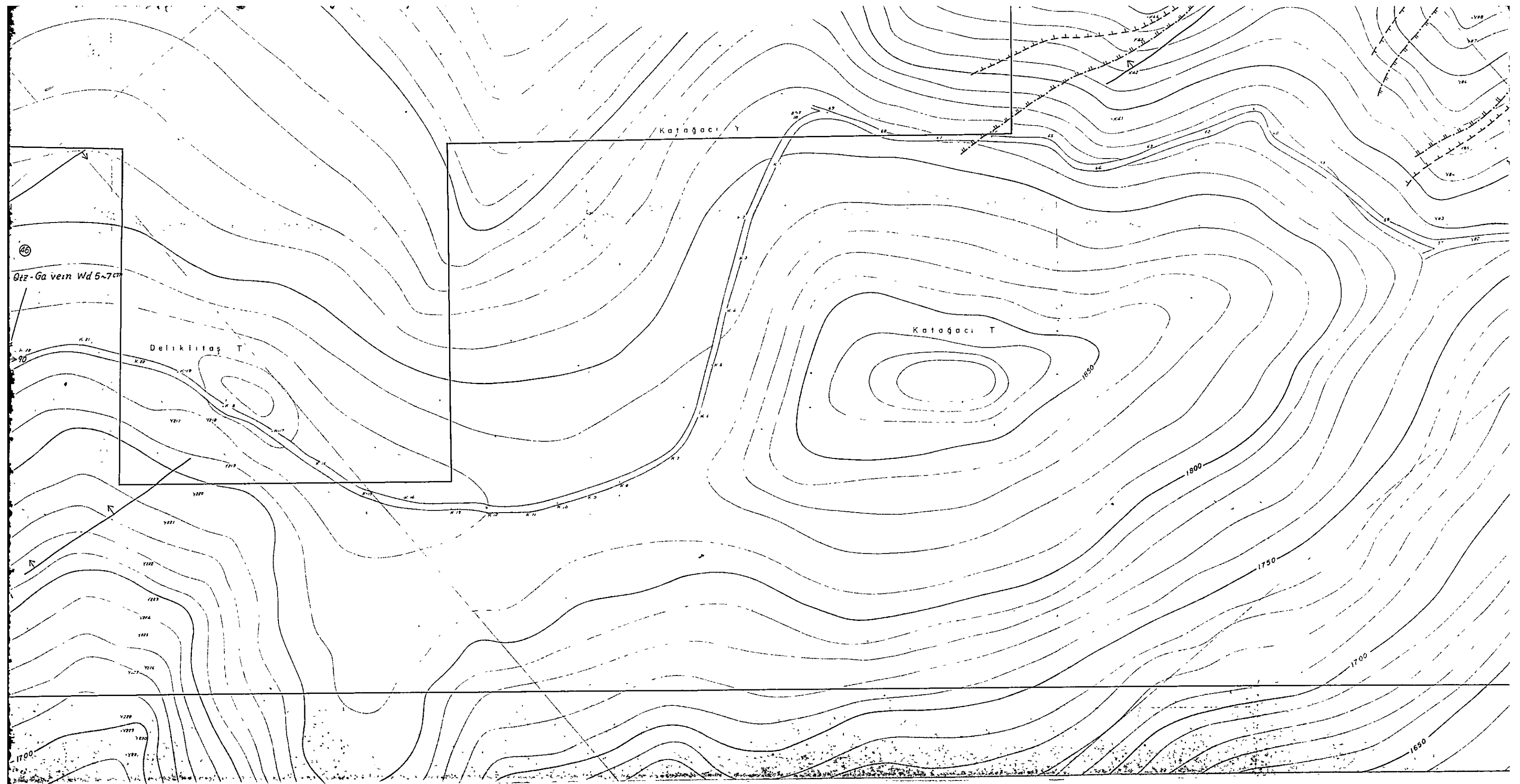
Abbreviation
Kısaltmalar

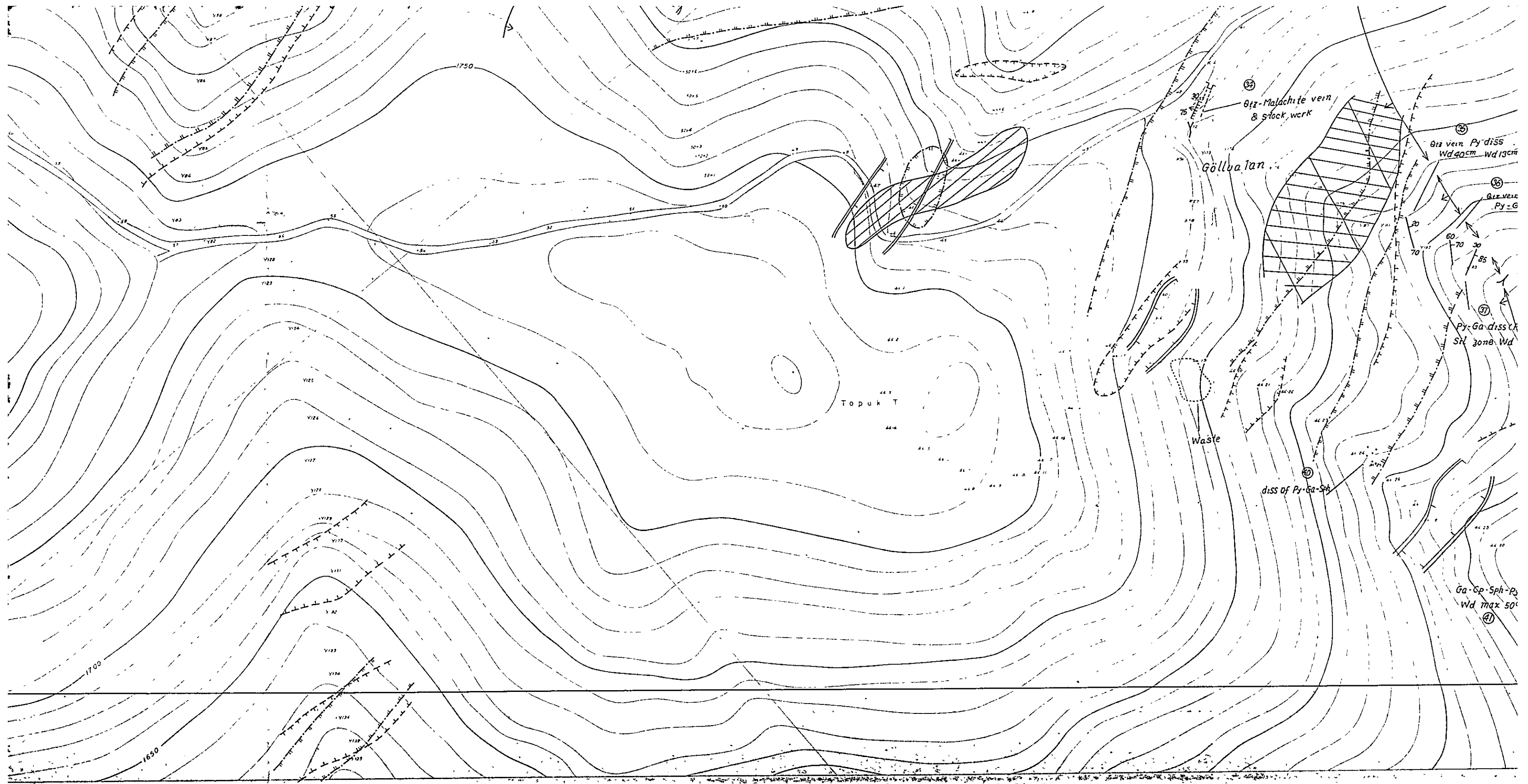
- | | | | |
|------|--------------|-----|-------------|
| Ba | barite | Lim | limonite |
| Cal | calcite | Mt | magnetite |
| Chl | chlorite | Py | pyrite |
| Cpy | chalcopyrite | Qtz | quartz |
| Epi | epidote | Spc | specularite |
| Ga | galena | Sph | sphalerite |
| Kaol | kaolinite | | |

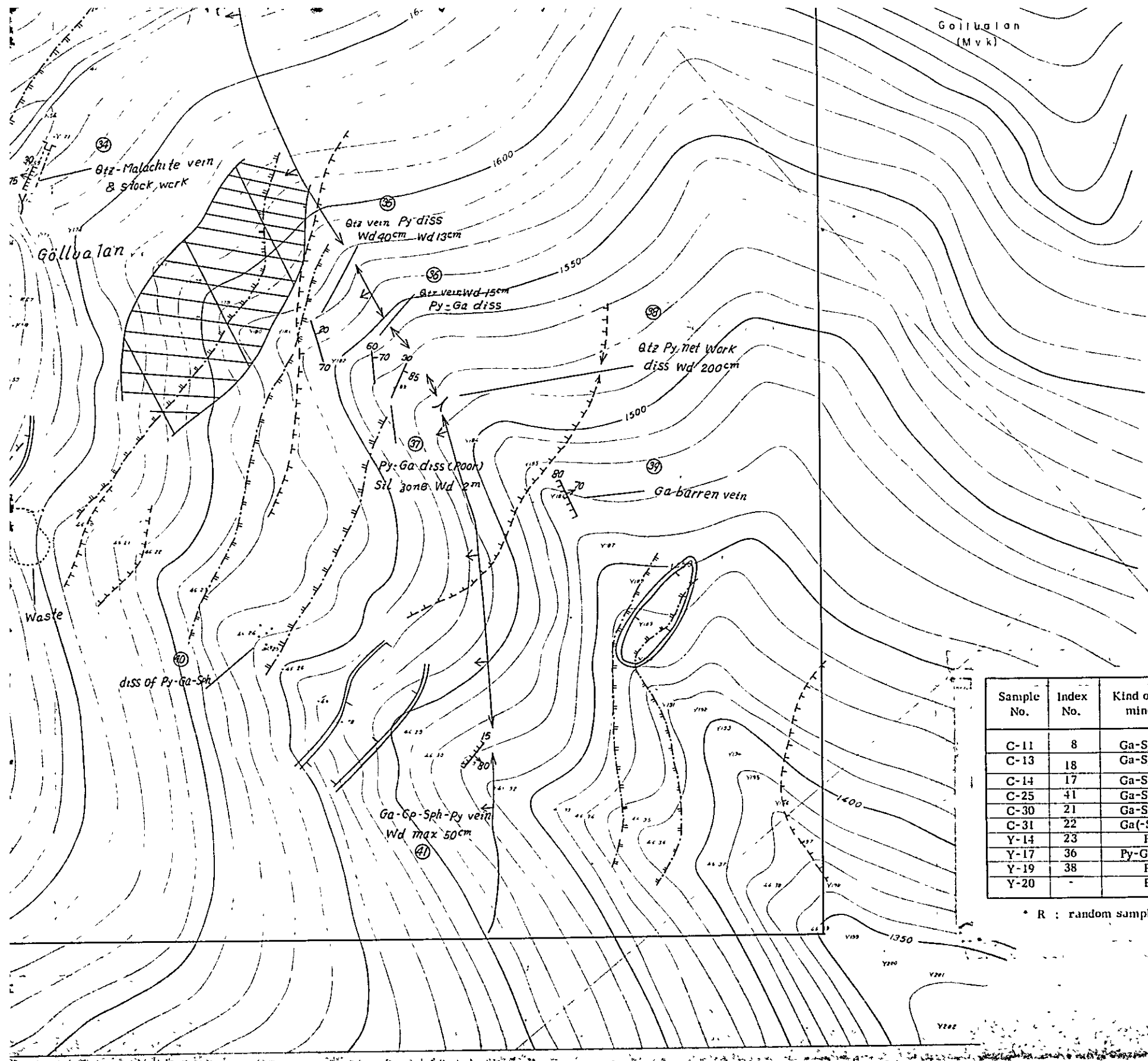
Sample No.	Index No.	Kind of ore mineral	Mode of occurrence	Width or thickness (cm)	Strike & dip	Sampling width (cm)	Sampling method	Cu (%)	Pb (%)	Zn (%)
C-11	8	Ga-Sph	vein	40	N80E 70SE	40	L	0.30	0.98	0.58
C-13	18	Ga-Sph	fracture filling veinlet				R	0.05	0.80	1.23
C-14	17	Ga-Sph	diss & veinlet		N40W 85SW	150	L	0.03	0.54	0.88
C-25	41	Ga-Sph	vein	max 50	N10W 80NE	50	L	1.50	0.45	0.02













-  epidotization zone
epidotlayma zonu
-  skarnitization zone
skarnitlayma zonu

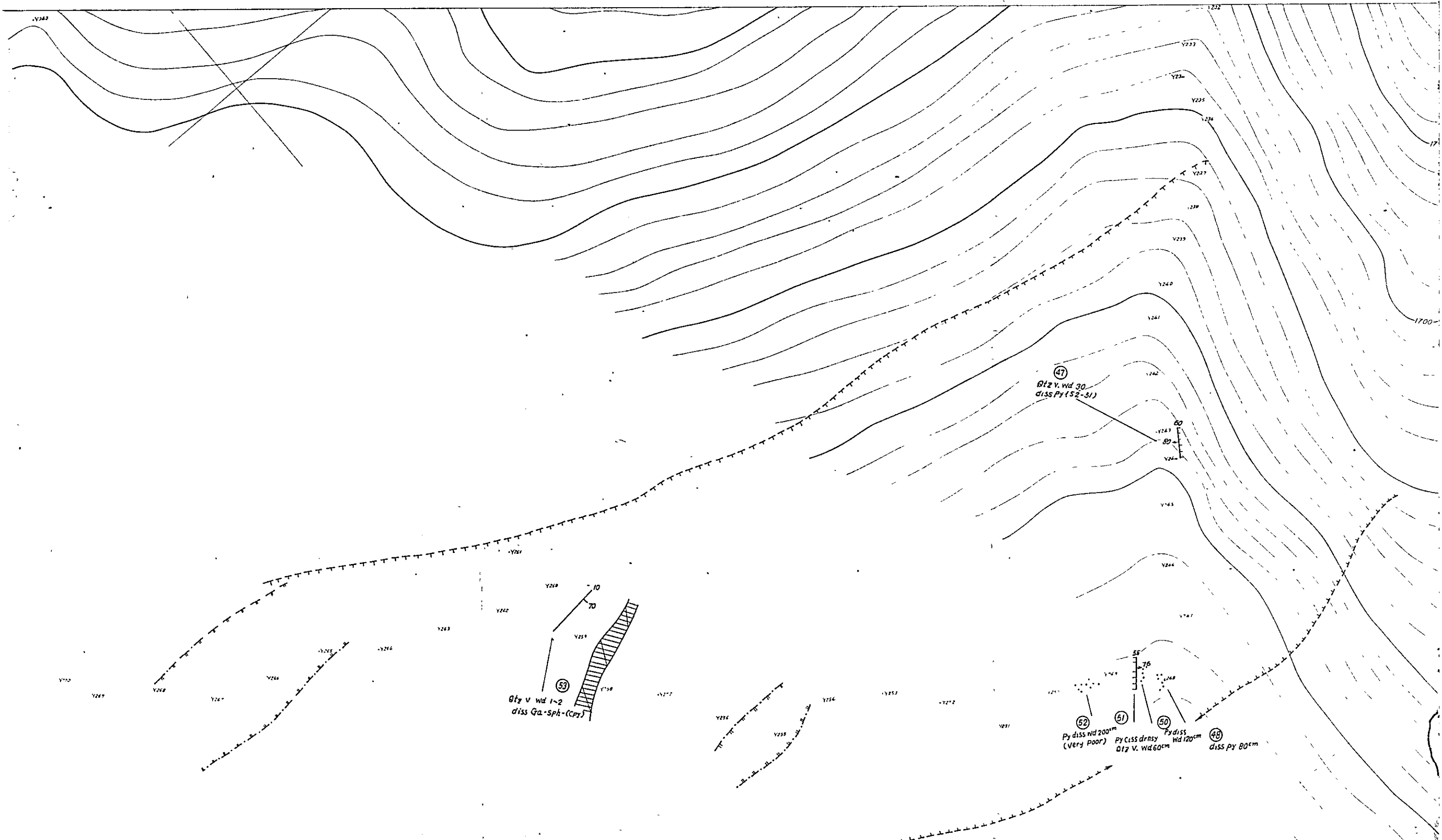
Abbreviation
Kısaltmalar

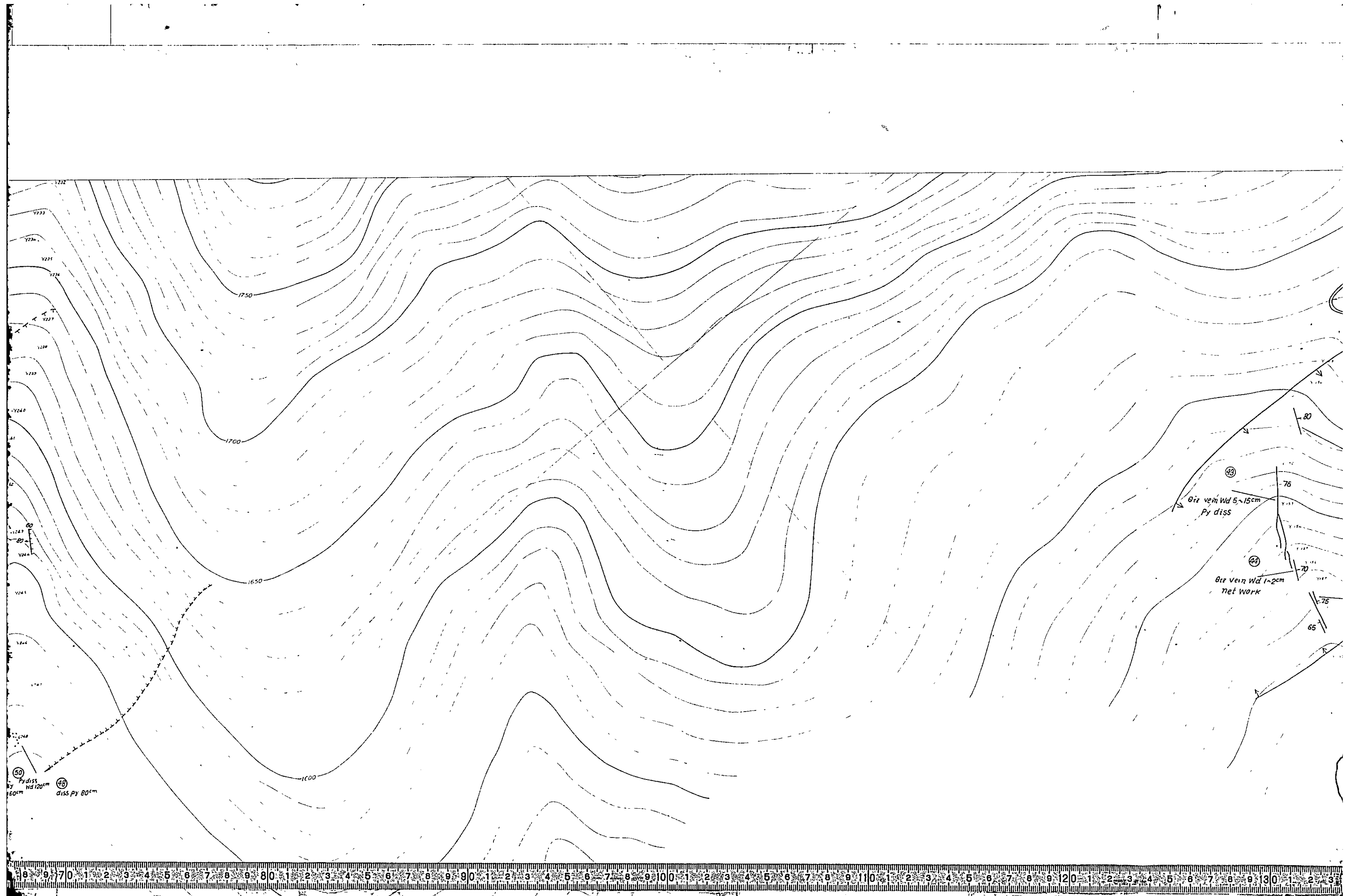
- | | | | |
|-------|----------------------------|-----|---------------------------|
| Ba | barite
barit | Lim | limonite
limonit |
| Cal | calcite
kalsit | Mt | magnetite
magnetit |
| Chl | chlorite
klorit | Py | pyrite
pirit |
| Cpy | chalcopyrite
kalkopirit | Qtz | quartz
kuvars |
| Epi | epidote
epidot | Spc | specularite
spekularit |
| Ga | galena
galen | Sph | sphalerite
sfalerit |
| Kaol. | kaolinite
kaolin | | |

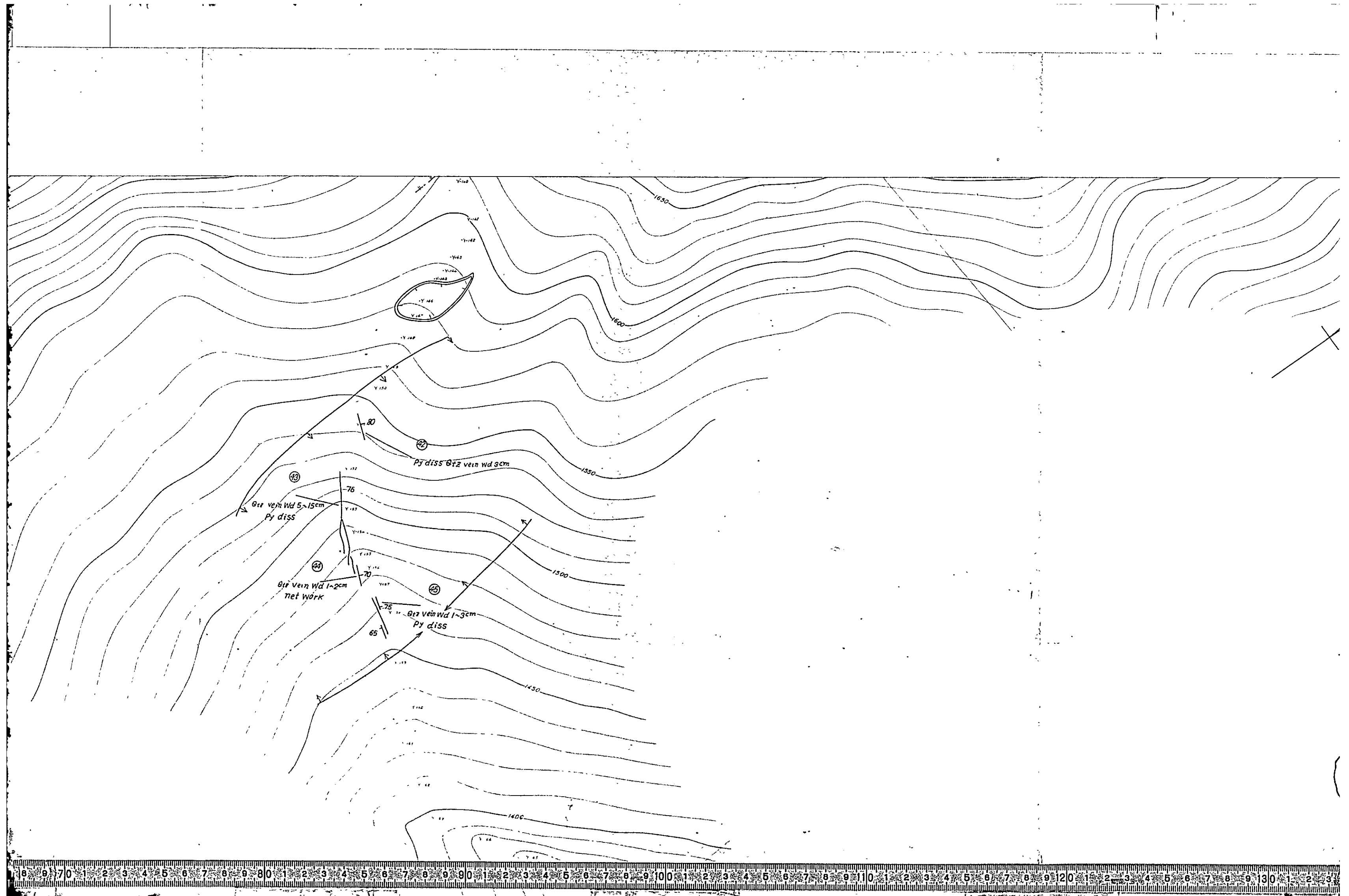
Sample No.	Index No.	Kind of ore mineral	Mode of occurrence	Width or thickness (cm)	Strike & dip	Sampling width (cm)	Sampling method	Cu (%)	Pb (%)	Zn (%)
C-11	8	Ga-Sph	vein	40	N80E 70SE	40	L	0.30	0.98	0.58
C-13	18	Ga-Sph	fissure filling veinlet				R	0.05	0.80	1.23
C-14	17	Ga-Sph	diss & veinlet		N40W 85SW	150	L	0.03	0.54	0.88
C-25	41	Ga-Sph	vein	max 50	N10W 80NE	50	L	1.50	0.45	0.02
C-30	21	Ga-Sph	diss	30		30	R	0.09	0.55	0.78
C-31	22	Ga(-Sph)	diss	10		10	R	0.01	0.24	0.36
Y-14	23	Py	vein	105	N20E 70W			0.07	1.93	0.04
Y-17	36	Py-Ga	vein	15	N60W 70N			0.3	0.4	0.1
Y-19	38	Py	network & diss	200				0.07	0.04	tr
Y-20		Py	diss					0.4	0.01	tr

* R : random sampling L : line cutting sampling G : gravel sampling of high grade ore





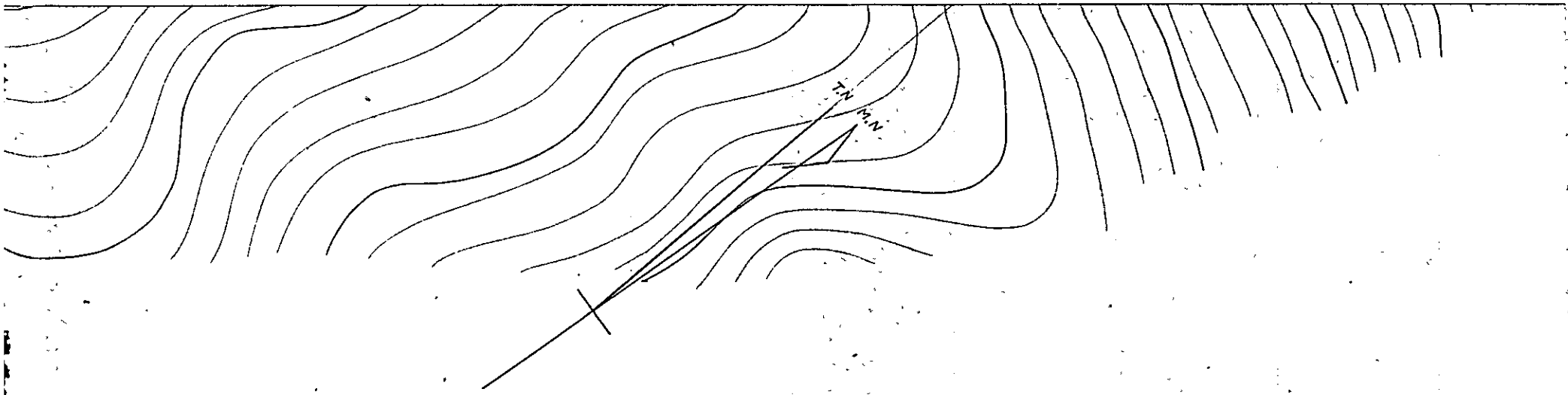




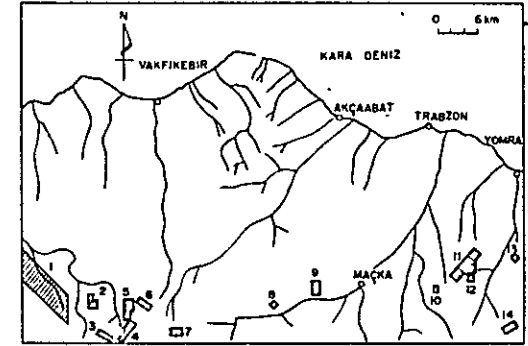
MINERAL RESEARCH AND EXPLORATION INSTITUTE
GEOLOGICAL SURVEY
OF
TRABZON AREA, NORTHEASTERN TURKEY

PHASE III

ALTERATION AND MINERALIZATION
MAP OF GÖLLÜALAN AREA
GÖLLÜALAN SAHASININ
ALTERASYON VE MİNERALİZASYON HARİTASI



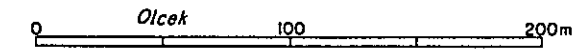
INDEX MAP



- 1 Kahraman Dere
- 2 Alaçadağ
- 3 Çeşel Dere
- 4 Göllüalan
- 5 Ken mine
- 6 Ken Dere, Faldere
- 7 Akise Yayla
- 8 Yeni Mahalle
- 9 Solana
- 10 Kanlı Tepe
- 11 Kızılcık Çayhanları
- 12 Tuzluk Mezraası
- 13 Ocak
- 14 Uzunlu

General geological survey area Detailed geological survey area

Scale 1 : 2,000



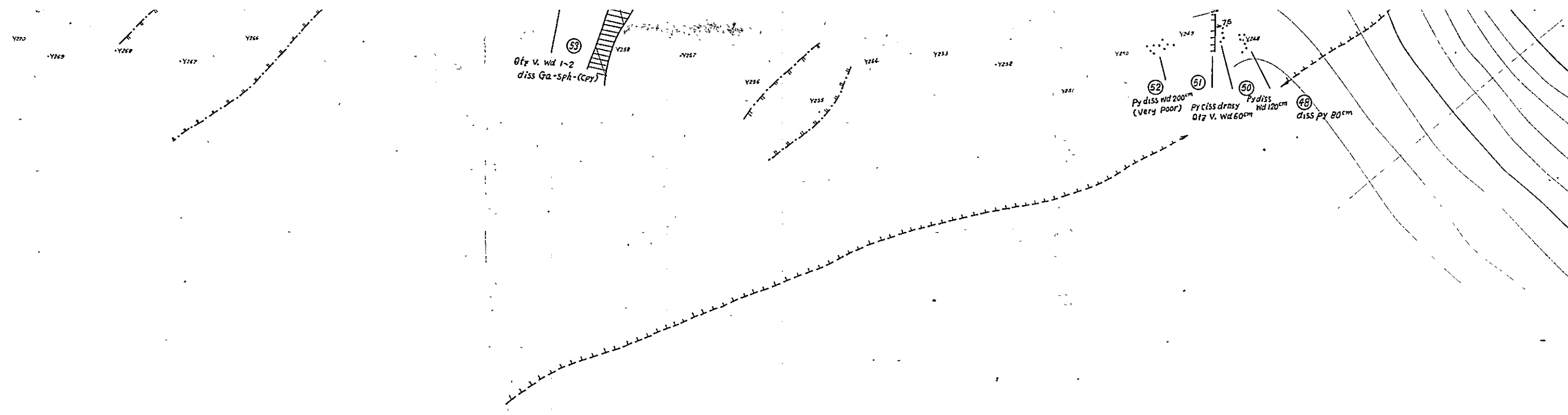
METAL MINING AGENCY OF JAPAN
JAPAN INTERNATIONAL COOPERATION AGENCY
FEBRUARY 1977

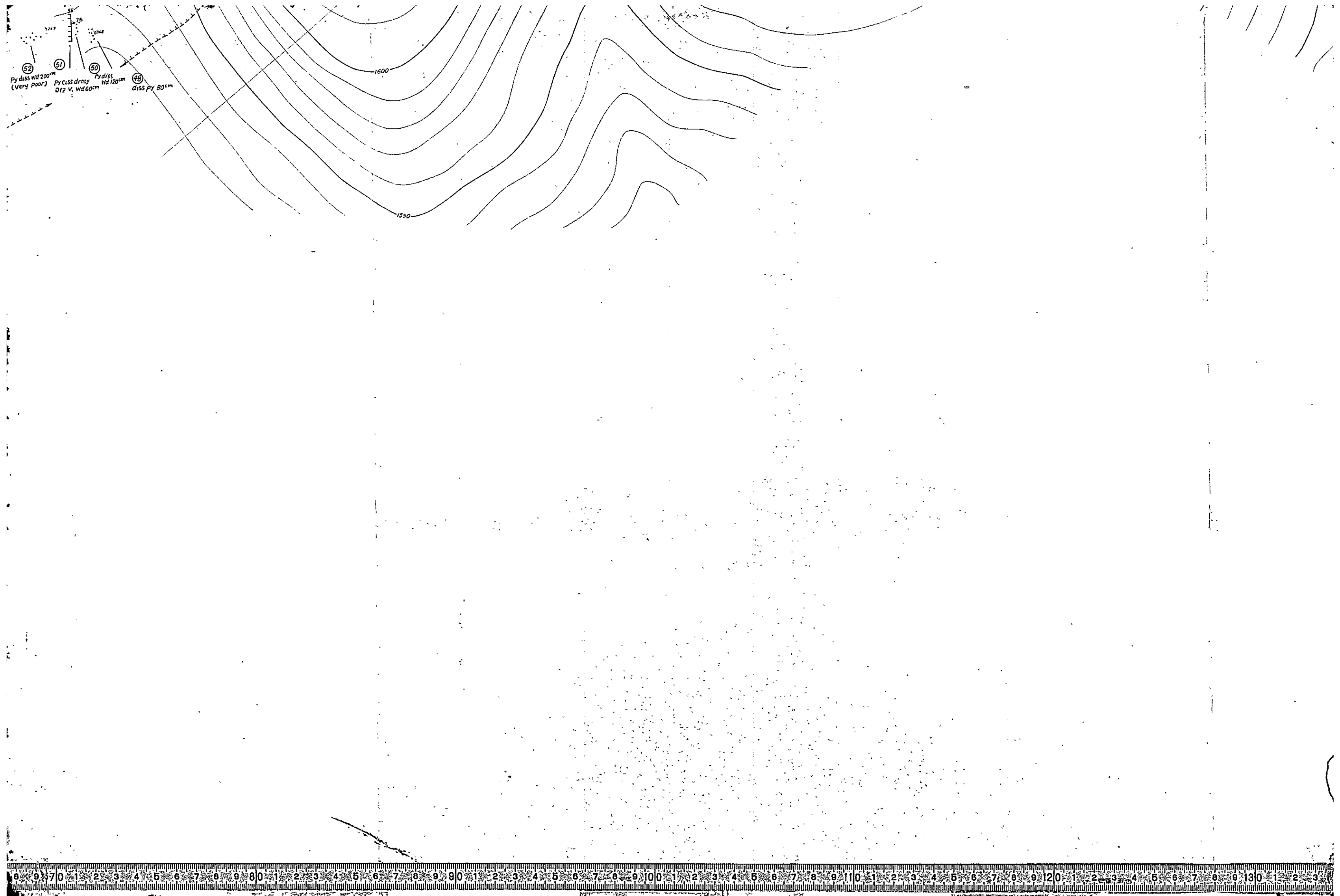
Prepared by Nikko Exploration & Development Co., Ltd

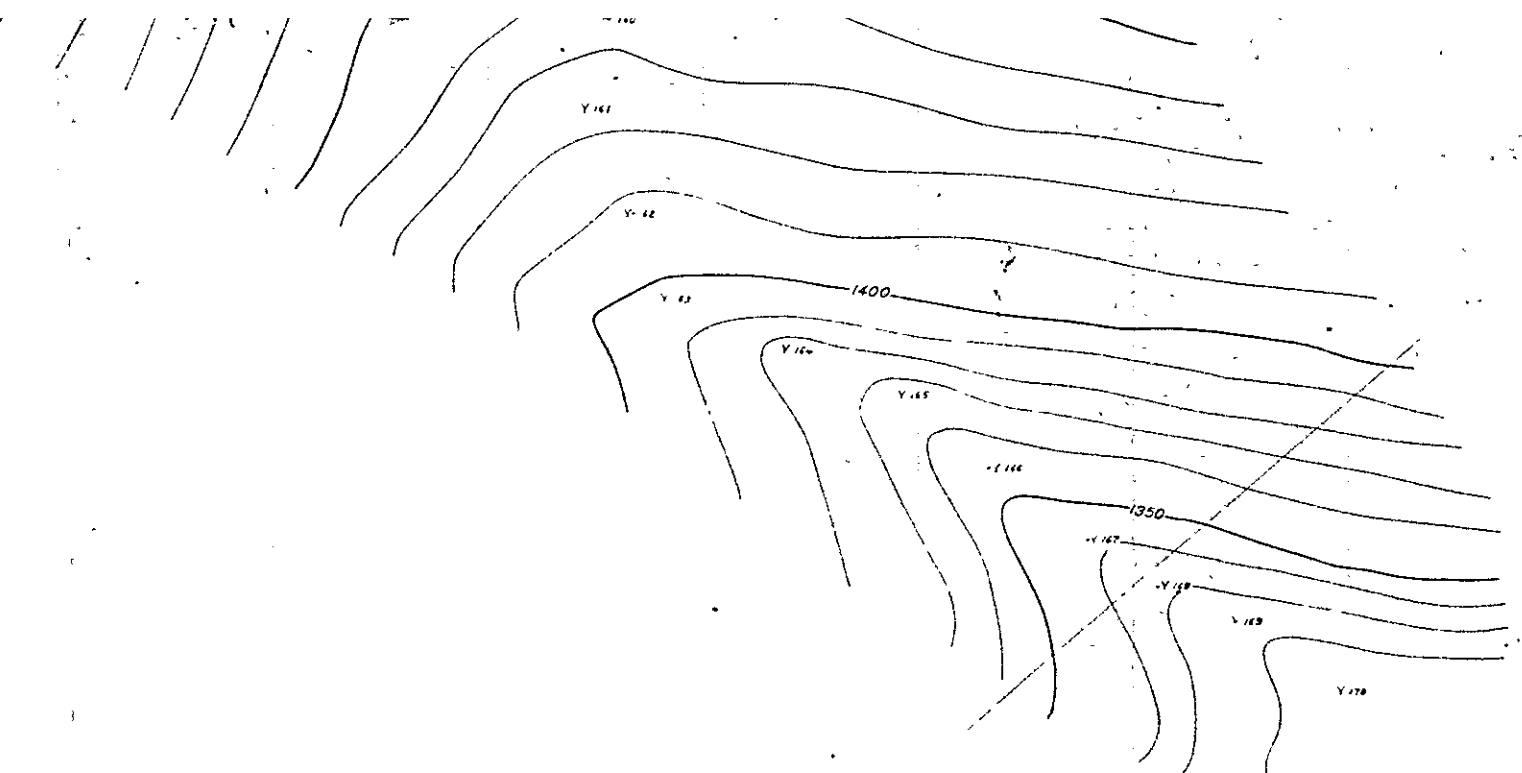
LEGEND

- old mine, working mine, waste & slag
eskî maden, çalınan maden
- mineralization zone
minerallizasyon zonu
- vein, veinlet network, stratiform
damar, damarcıklar network, tabakalt
- dissemination
diseminasyon
- pyrite dissemination and/or limonitization zone
pirit diseminasyonu ve/veya limonitizasyon zonu





















LEGEND
LEJAND

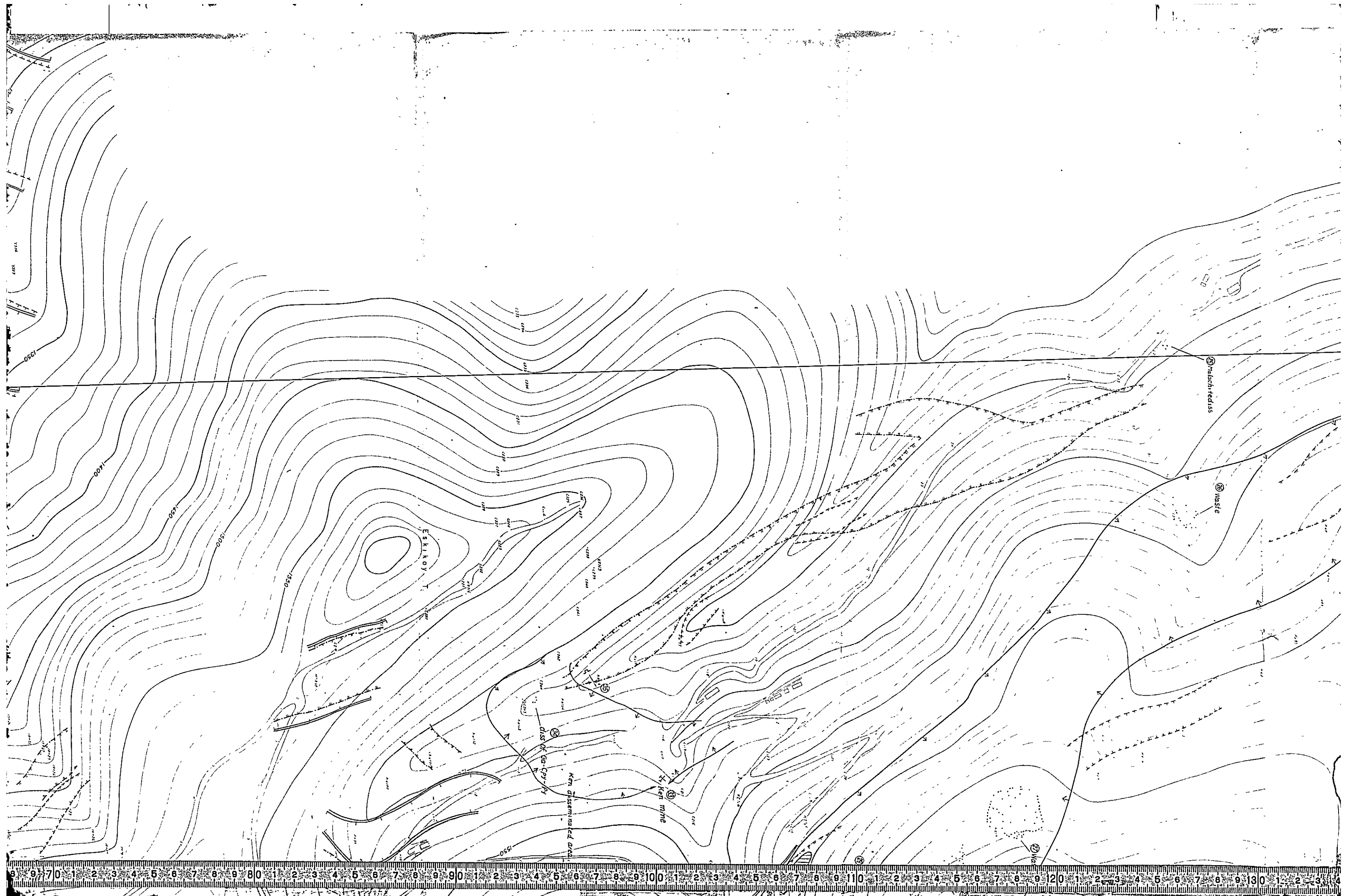
-  old mine, working mine, waste & slag
eski maden, çalisan maden
-  mineralization zone
mineralizasyon zonu
-  vein, veinlet network, stratiform
damar, damarcıklar network, tabakalı
-  dissemination
diseminasyon
-  pyrite dissemination and/or limonitization zone
pirit diseminasyonu ve/veya limonitlenme zonu
-  silicification zone
silislenme zonu
-  kaolinization zone
kaolinleşme zonu
-  carbonatization zone
karbonatlaşma zonu
-  sericitization zone
serisitlenme zonu
-  montmorillonitization zone
montmorillonitleşme zonu
-  epidotization zone
epidotlaşma zonu
-  skarnitization zone
skarınleşme zonu

Abbreviation
Kısaltmalar

Ba :	barite <i>barit</i>	Lim :	limonite <i>limonit</i>
Cal :	calcite <i>kalsit</i>	Mt :	magnetite <i>magnetit</i>
Chl :	chlorite <i>klorit</i>	Py :	pyrite <i>pirit</i>
Cpy :	chlocoopyrite <i>kalkopirit</i>	Qtz :	quartz <i>kuvars</i>
Epi :	epidote <i>epidot</i>	Spc :	specularite <i>spekularit</i>
Ga :	galena <i>galen</i>	Sph :	sphalerite <i>sfalerit</i>
Kaol :	kaolinite <i>kaolin</i>		

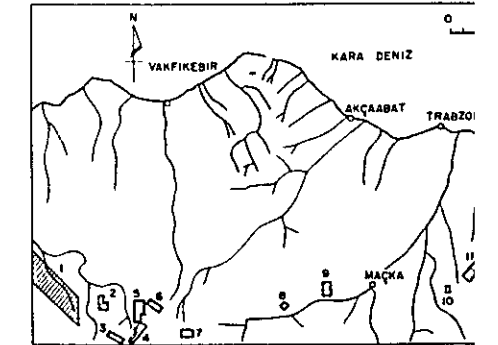






MINERAL RESEARCH AND EXPLORATION
 GEOLOGICAL SURVEY
 OF
 TRABZON AREA, NORTHEAST
 PHASE III
 ALTERATION AND MINERALIZATION
 OF KEN MINE AREA
 KEN MINE SAHAASININ
 ALTERASYON VE MINERALİZASYONU

INDEX MAP

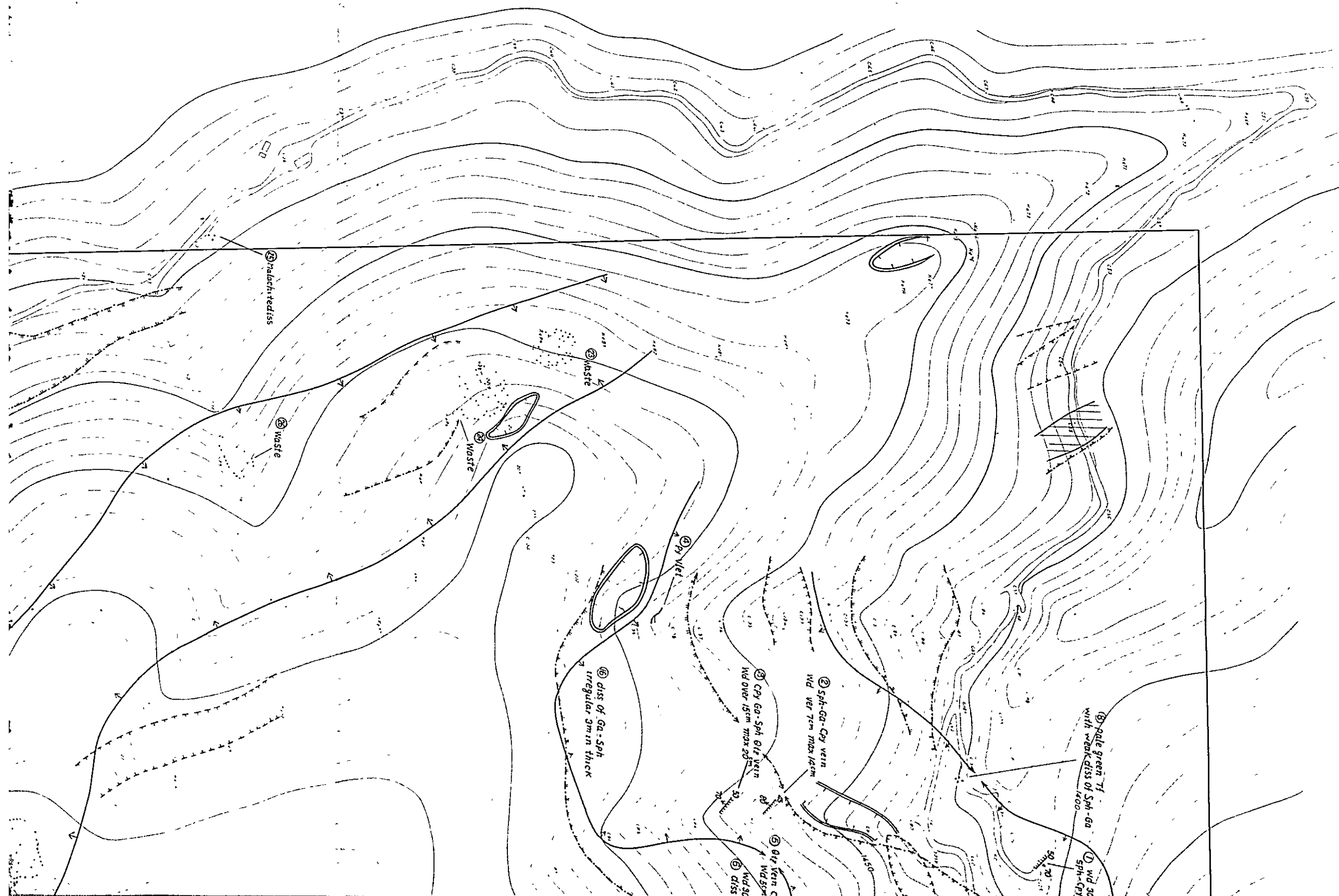


General geological survey area Detailed geological survey area

Scale 1:2,000
 Ölçek 1:2000

METAL MINING AGENCY
 JAPAN INTERNATIONAL COOPERATION
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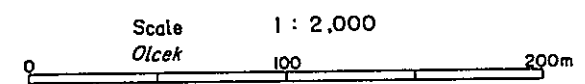
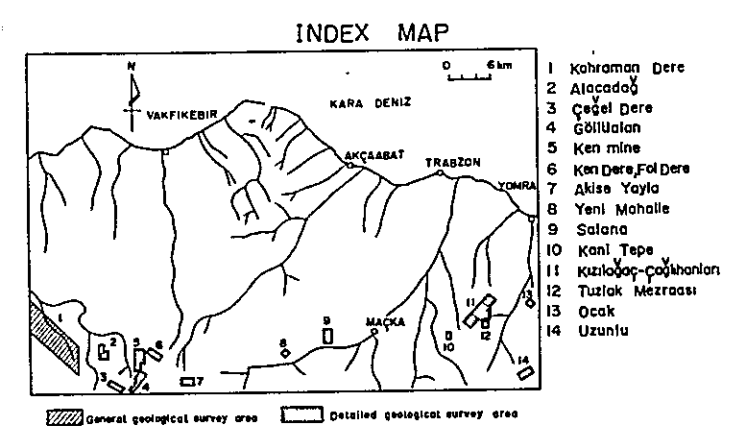
Prepared by Nikko Exploration 8



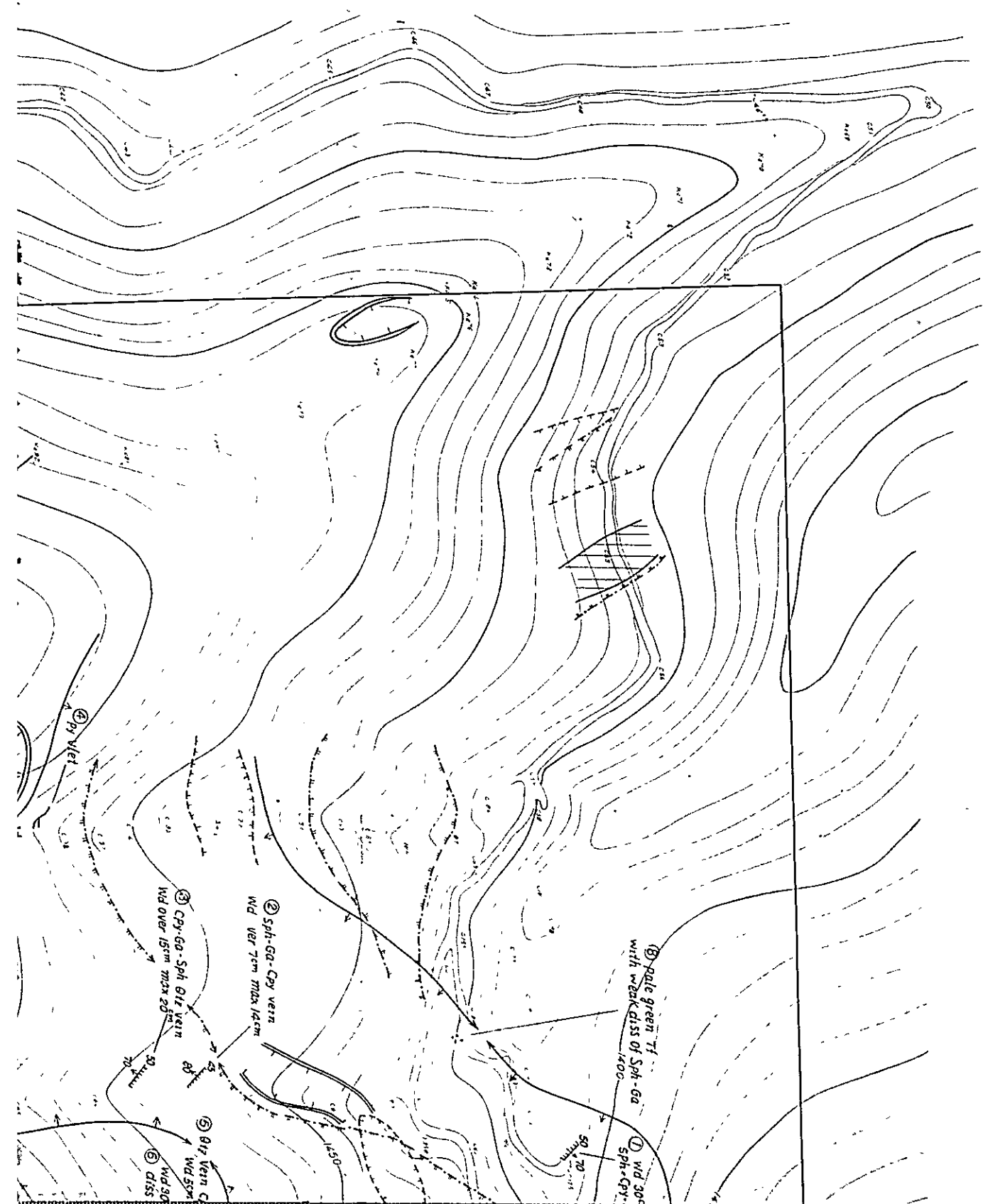
LEGEND

- old mine, working mine, waste
eski maden, çalışan maden
- mineralization zone
mineralizasyon zonu
- vein, veinlet network, stratiform
damar damarlıklar network
- dissemination
diseminasyon

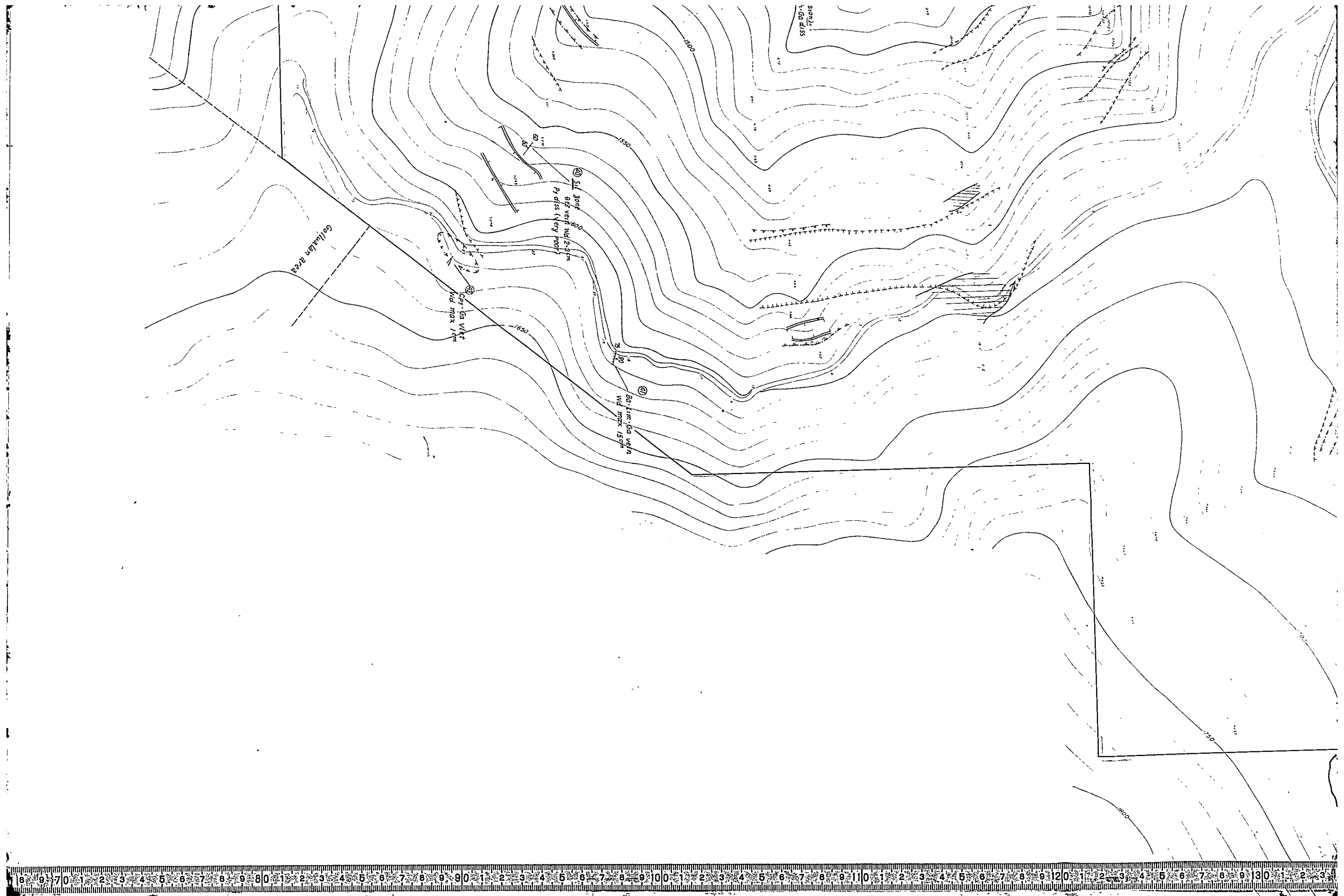
MINERAL RESEARCH AND EXPLORATION INSTITUTE
 GEOLOGICAL SURVEY
 OF
 TRABZON AREA, NORTHEASTERN TURKEY
 PHASE III
 ALTERATION AND MINERALIZATION MAP
 OF KEN MINE AREA
 KEN MINE SAHASININ
 ALTERASYON VE MINERALİZASYON HARITASI

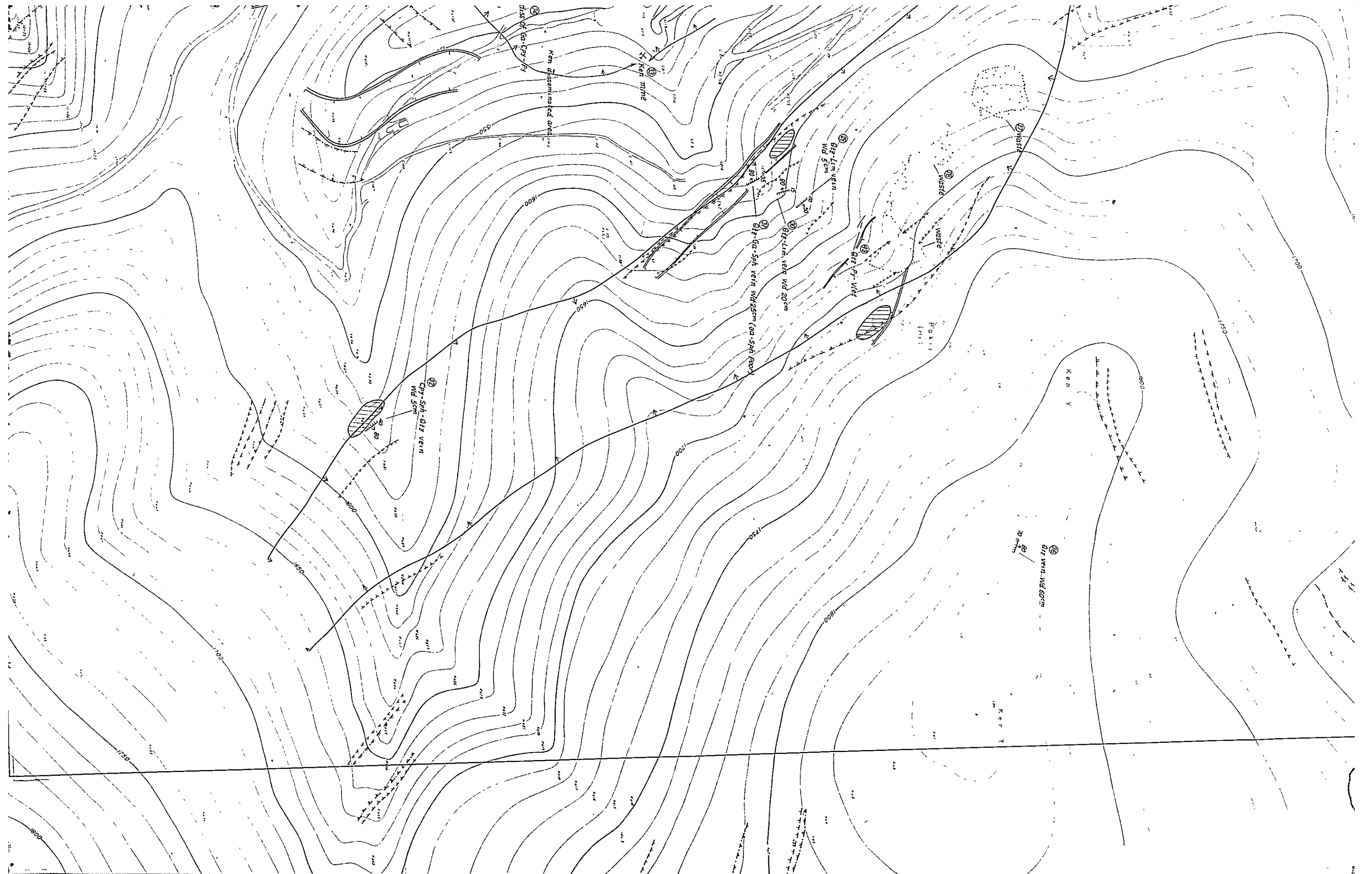


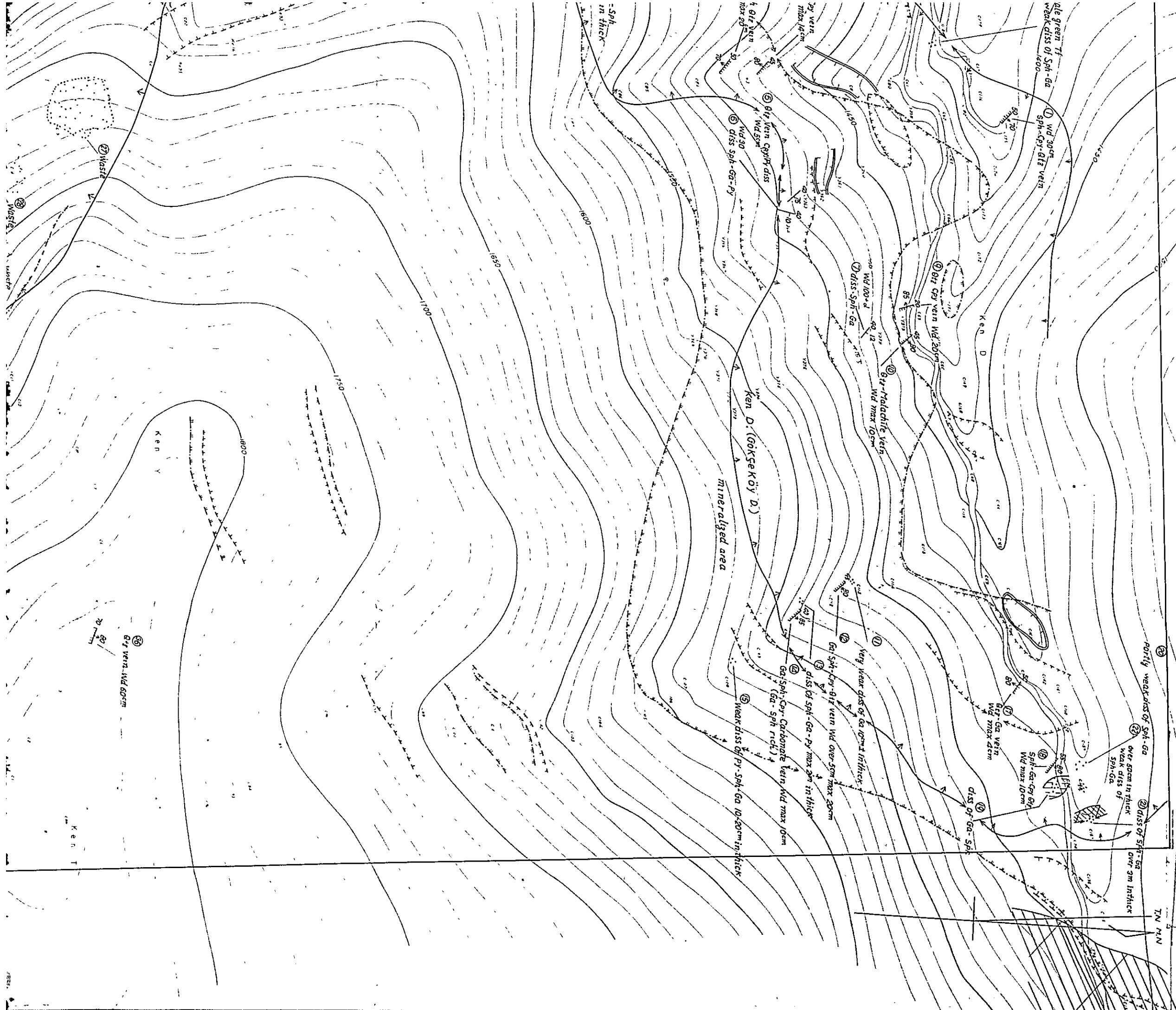
METAL MINING AGENCY OF JAPAN
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 FEBRUARY 1977
 Prepared by Nikko Exploration & Development Co., Ltd



- LEGEND
- old mine, working mine, waste & slag
eski maden, çalışan maden
 - mineralization zone
mineralizasyon zonu
 - vein, veinlet network, stratiform damar, damarekler network, tabakalı
 - dissemination
diseminasyon







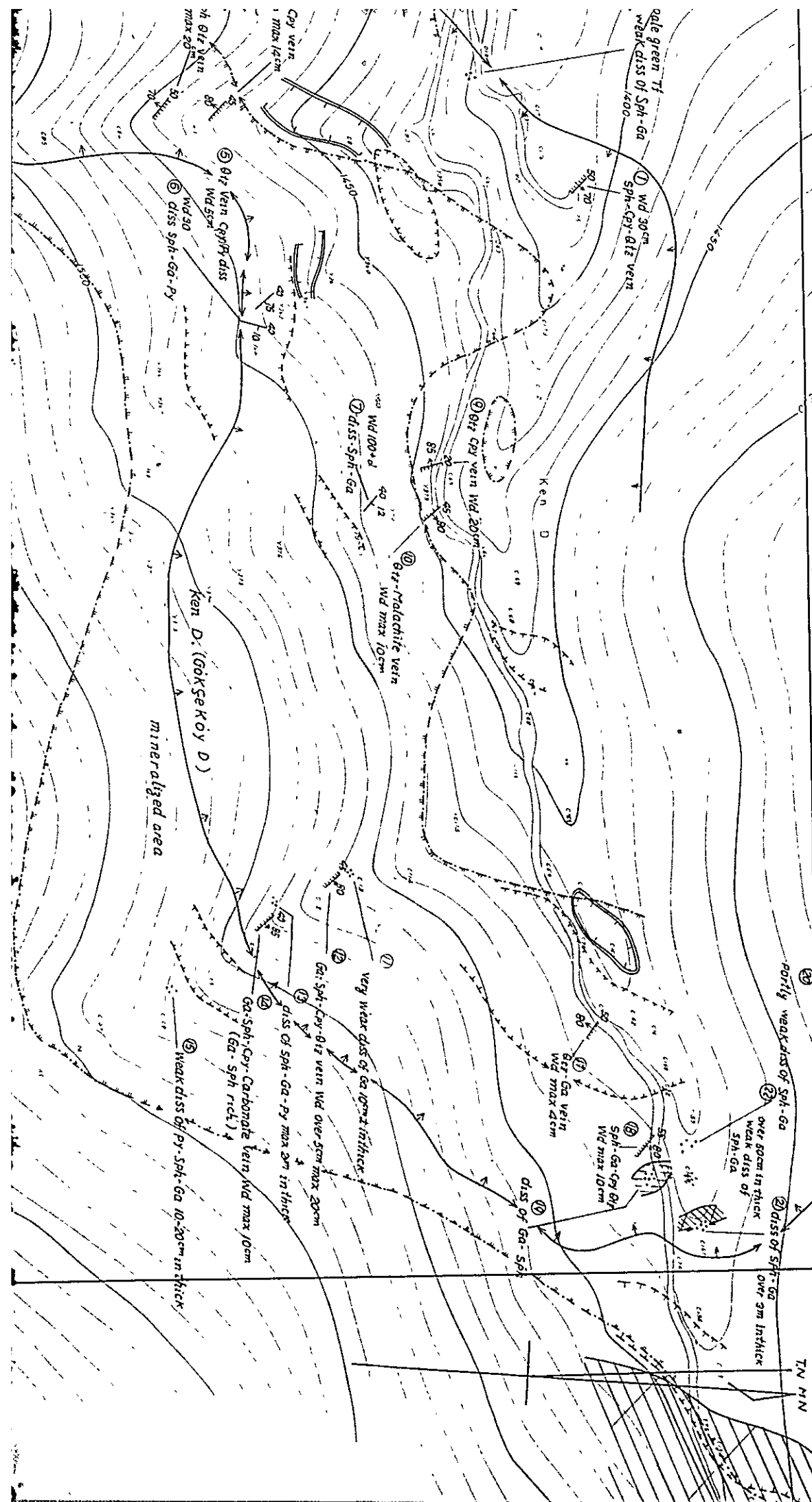
- old mine, weak mineralization
- mineralization
- vein, damar, and
- disseminated
- pyrite dissemination
- silicification
- kaolinization
- carbonatization
- sericitization
- montmorillonite
- epidotization
- skarnization

- Abbreviation Kesaltmalar
- Ba barite
 - Cal calcite
 - Chl chlorite
 - Cpy chlorite
 - Epi epidote
 - Ga galena
 - Kaol kaolin

Sample No	Index No	Kind of ore mineral	Mode of occurrence	Width or thickness (cm)	Strike & dip
C-42	38	Cpy-Ga-Sph	diss	50	N70W
C-96	19	Ga-Sph	diss	150	
C-97	16	Ga-Sph(-Cpy)	diss	300	N20W
C-98	3	Cpy-Sph	vein	max 20 av 15	N45W
C-99	2	Cpy-Sph	vein	max 14 av 6-7	N40W
C-100	15	Sph	diss	10 - 20	
C-101	13	Ga-Sph	diss	200	
C-102	14	Ga-Sph(-Cpy)	vein	max 10	N45W
C-103	12	Ga-Sph(-Cpy)	vein	max 20 av 5	N40W
C-104	11	Ga	diss	10	
C-122	21	Ga-Sph	diss	200	
C-124	20	Ga-Sph	diss	50	
C-127	8	Ga-Sph	diss		
C-132	31	Ga-Sph	vein	25	N30W
Y-24	39	Py-Sph-Ga	network	30	
Y-37	5	Cpy-Py	vein	5	N40W
Y-38	6	Sph-Ga-Py	diss	30	
Y-39	7	Sph-Ga	diss	100 + α	

* R : random sampling L : line cutting sampling G : gravel





- old mine, working mine, waste & slag
eski maden, çalisan maden
- mineralization zone
minerelleşme zonu
- vein, veinlet network, stratiform
damar, damarcıklar network, tabakalı
- dissemination
diseminasyon
- pyrite dissemination and/or limonitization zone
pirit diseminasyonu ve/veya limonitlenme zonu
- silicification zone
silislenme zonu
- kaolinization zone
kaolinleşme zonu
- carbonatization zone
karbonatlaşma zonu
- sericitization zone
serisitlenme zonu
- montmorillonitization zone
montmorillonitlenme zonu
- epidotization zone
epidotlaşma zonu
- skarnitization zone
skarınleşme zonu

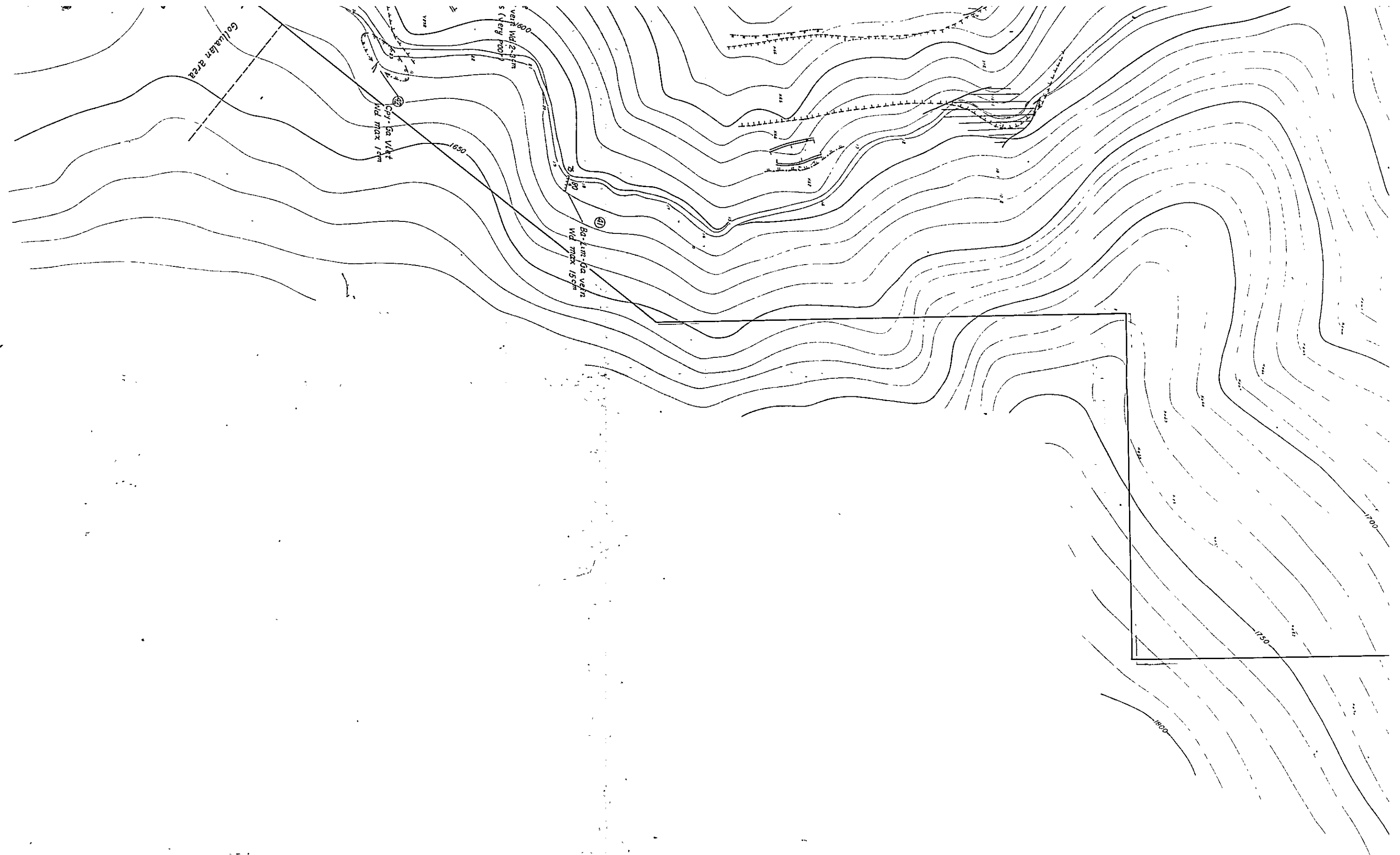
Abbreviation
Kısaltmalar

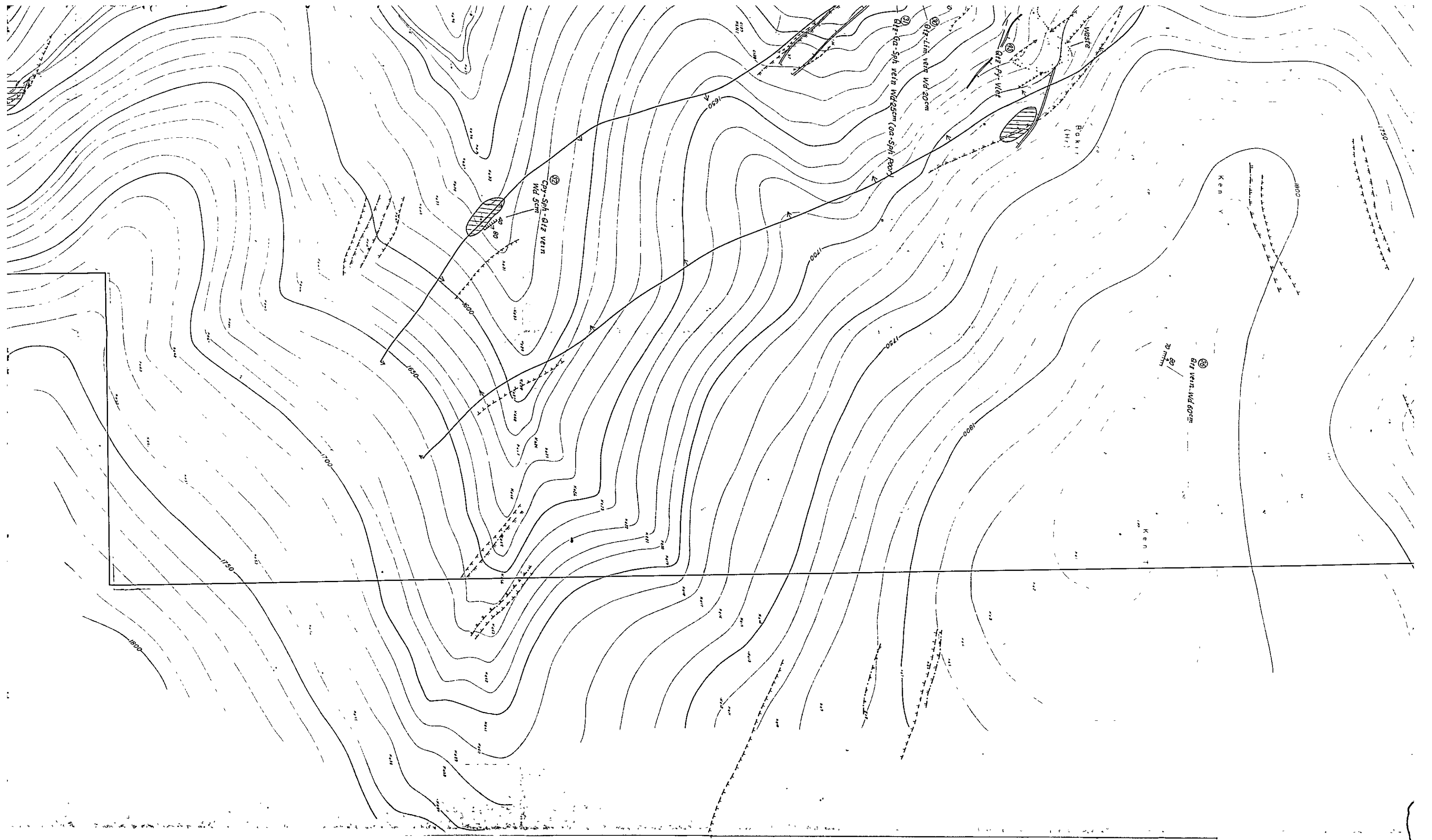
- Ba : barite
barit
- Cal : calcite
kalsit
- Chl : chlorite
klorit
- Cpy : chalcopyrite
kalkopirit
- Epi : epidote
epidot
- Ga : galena
galen
- Kaol : kaolinite
kaolin
- Lim : limonite
limonit
- Mt : magnetite
magnetit
- Py : pyrite
pirit
- Qtz : quartz
kuvarz
- Spc : specularite
spekularit
- Sph : sphalerite
sfalerit

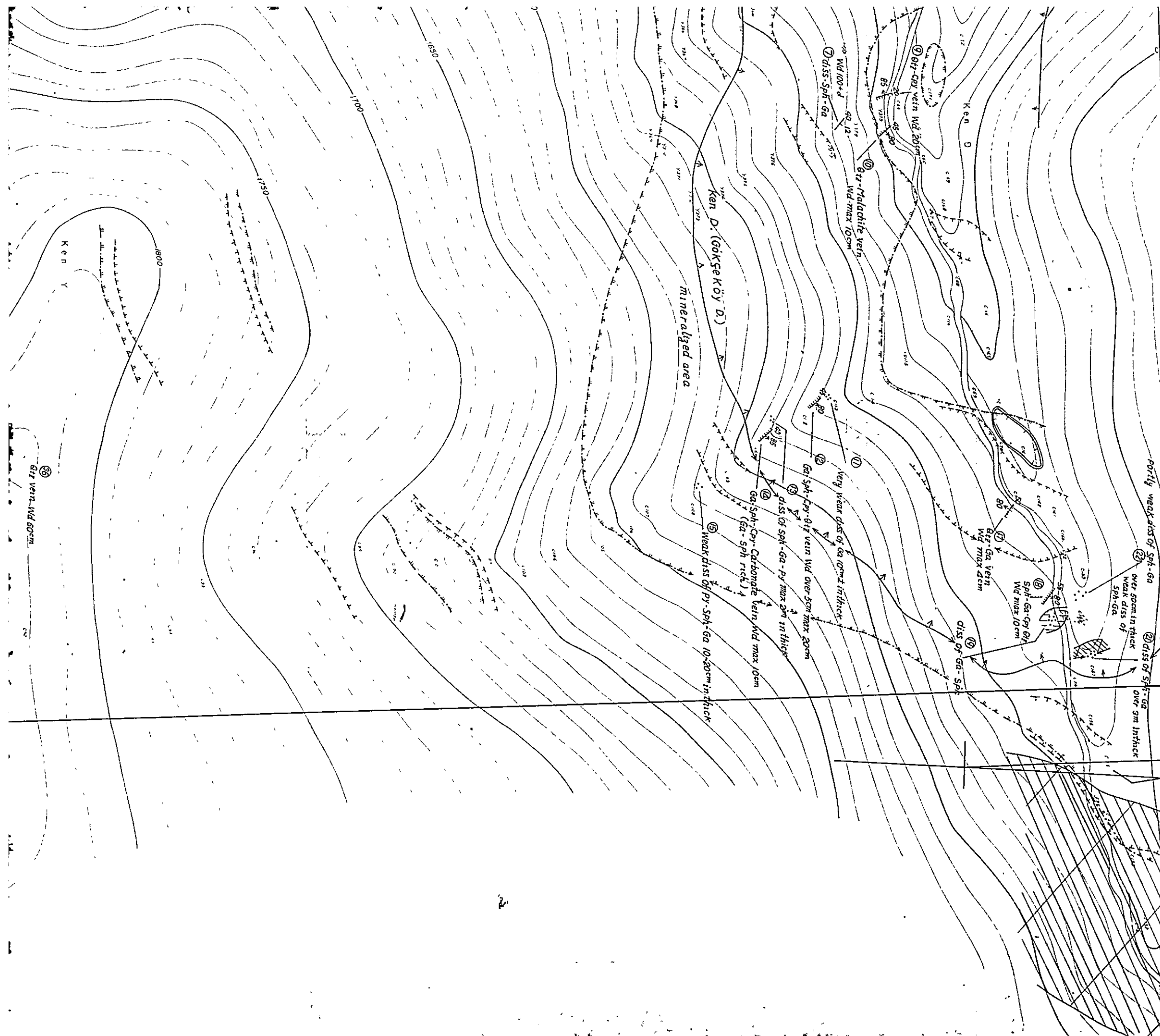
Sample No.	Index No.	Kind of ore mineral	Mode of occurrence	Width or thickness (cm)	Strike & dip	Sampling width (cm)	Sampling method	Cu (%)	Pb (%)	Zn (%)
C-42	38	Cpy-Ga-Sph	diss	50	N70W 10NE	50	G	0.14	0.55	0.38
C-96	19	Ga-Sph	diss	150		150	R	0.16	1.21	2.30
C-97	16	Ga-Sph(-Cpy)	diss	300	N20W 15NE	200	R	0.08	2.33	2.75
C-98	3	Cpy-Sph	vein	max 20 av 15	N45W 70SW	20	G	0.89	1.73	2.00
C-99	2	Cpy-Sph	vein	max 14 av 6-7	N40W 80SW	10	G	0.96	19.05	26.50
C-100	15	Sph	diss	10 - 20		10	G	0.08	0.13	0.25
C-101	13	Ga-Sph	diss	200		150	R	0.01	0.53	1.28
C-102	14	Ga-Sph(-Cpy)	vein	max 10	N45W 85SW	10	G	2.44	4.57	39.00
C-103	12	Ga-Sph(-Cpy)	vein	max 20 av 5	N40W 80NE	20	G	0.20	3.48	0.11
C-104	11	Ga	diss	10		10	G	0.01	0.15	0.05
C-122	21	Ga-Sph	diss	200		200	R	0.24	0.98	1.43
C-124	20	Ga-Sph	diss	50		20	G	0.03	0.60	1.15
C-127	8	Ga-Sph	diss				G	0.01	0.24	0.26
C-132	31	Ga-Sph	vein	25	N30W 80SW	25	G	0.74	0.56	0.46
Y-24	39	Py-Sph-Ga	network	30				0.15	0.07	0.4
Y-37	5	Cpy-Py	vein	5	N40W 75E			2.10	0.04	0.15
Y-38	6	Sph-Ga-Py	diss	30				0.3	0.03	0.1
Y-39	7	Sph-Ga	diss	100 + α				0.02	0.4	1.0

• R : random sampling L : line cutting sampling G : gravel sampling of high grade ore









- kaolinitization zone
kaolinitleşme zonu
- carbonatization zone
karbonatlaşma zonu
- sericitization zone
serisitleşme zonu
- montmorillonitization zone
montmorillonitleşme zonu
- epidotization zone
epidotlaşma zonu
- skarnitization zone
skarnitleşme zonu

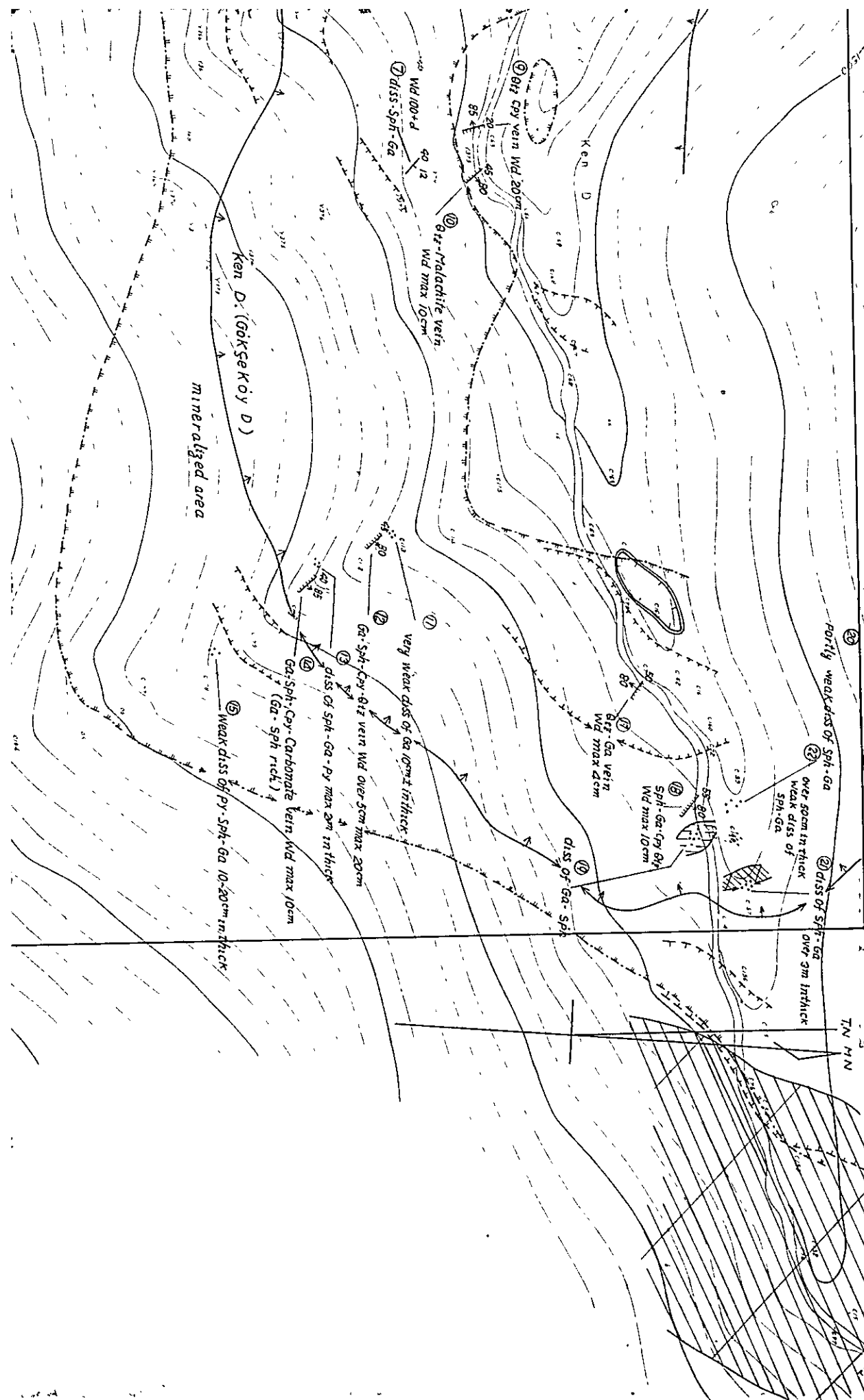
Abbreviation
Kısaltmalar

Ba	barite barit	Lir
Cal	calcite kalsit	Mt
Chl	chlorite klorit	Py
Cpy	chalcopyrite kalkopirit	Ot
Epi	epidote epidot	Sp
Ga	galena galen	Spl
Kaol	kaolinite kaolin	

Sample No.	Index No.	Kind of ore mineral	Mode of occurrence	Width or thickness (cm)	Strike & dip	Sampling width (cm)
C-42	38	Cpy-Ga-Sph	diss	50	N70W 10NE	50
C-96	19	Ga-Sph	diss	150		150
C-97	16	Ga-Sph(-Cpy)	diss	300	N20W 15NE	200
C-98	3	Cpy-Sph	vein	max 20 av 15	N45W 70SW	20
C-99	2	Cpy-Sph	vein	max 14 av 6-7	N40W 80SW	10
C-100	15	Sph	diss	10 - 20		10
C-101	13	Ga-Sph	diss	200		150
C-102	14	Ga-Sph(-Cpy)	vein	max 10	N45W 85SW	10
C-103	12	Ga-Sph(-Cpy)	vein	max 20 av 5	N40W 80NE	20
C-104	11	Ga	diss	10		10
C-122	21	Ga-Sph	diss	200		200
C-124	20	Ga-Sph	diss	50		20
C-127	8	Ga-Sph	diss	25	N30W 80SW	25
C-132	31	Ga-Sph	vein	25		
Y-24	39	Py-Sph-Ga	network	30		
Y-37	5	Cpy-Py	vein	5	N40W 75E	
Y-38	6	Sph-Ga-Py	diss	30		
Y-39	7	Sph-Ga	diss	100 + α		

* R : random sampling L : line cutting sampling G : gravel sampling of high grade





- kaolinization zone
kaolinleşme zonu
- carbonatization zone
karbonatlaşma zonu
- sericitization zone
serisitleşme zonu
- montmorillonitization zone
montmorillonitleşme zonu
- epidotization zone
epidotlaşma zonu
- skarnitization zone
skarınleşme zonu

Abbreviation
Kısaltmalar

- | | | | |
|------|---------------|-----|-------------|
| Ba | barite | Lim | limonite |
| Cal | calcite | Mt | magnetite |
| Chl | chlorite | Py | pyrite |
| Cpy | chlocoopyrite | Qtz | quartz |
| Epi | epidote | Spc | specularite |
| Ga | galena | Sph | sphalerite |
| Kaol | kaolinite | | |

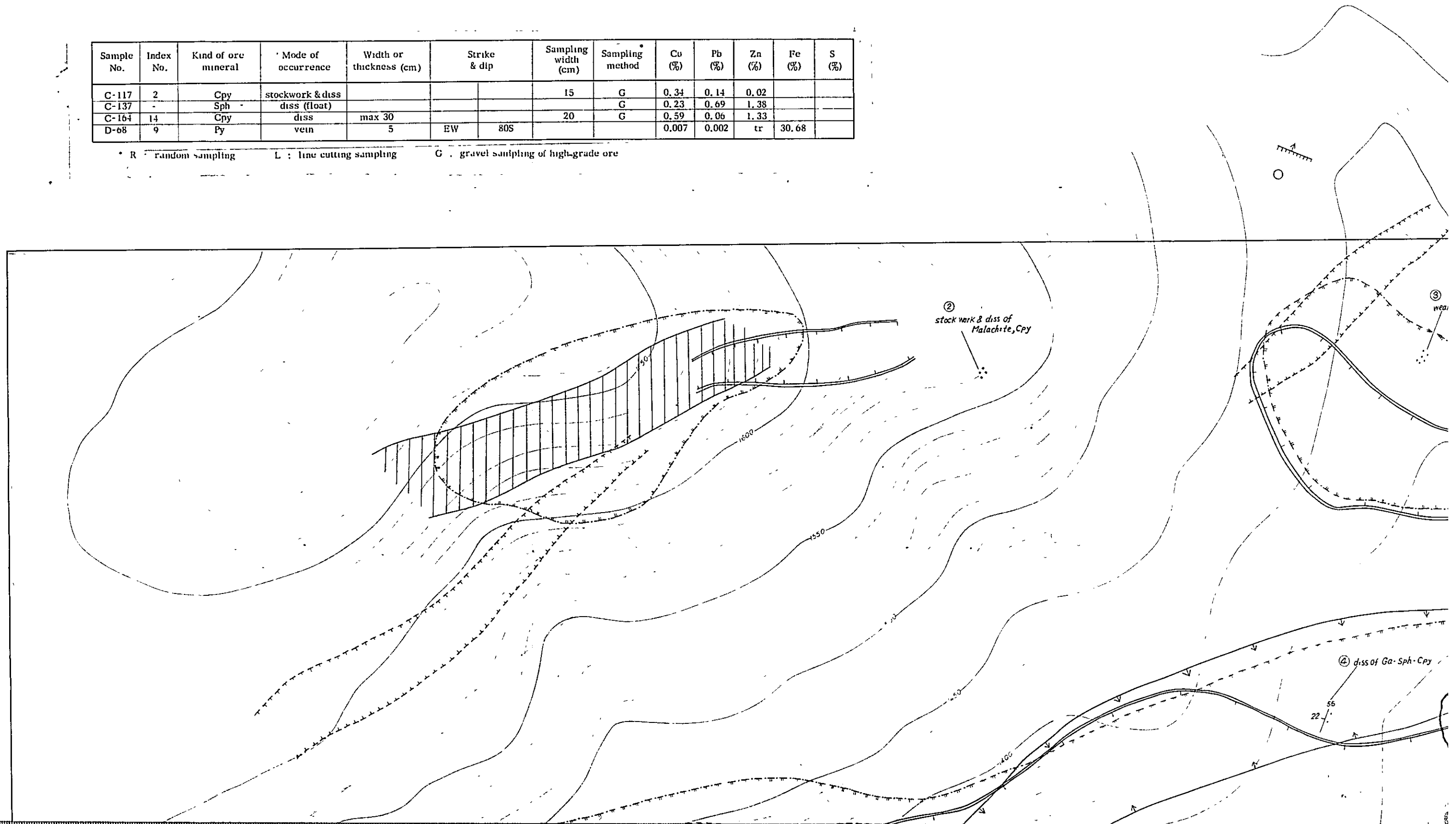
Sample No.	Index No.	Kind of ore mineral	Mode of occurrence	Width or thickness (cm)	Strike & dip	Sampling width (cm)	Sampling method	Cu (%)	Pb (%)	Zn (%)
C-42	38	Cpy-Ga-Sph	diss	50	N70W 10NE	50	G	0.14	0.55	0.38
C-96	19	Ga-Sph	diss	150		150	R	0.16	1.21	2.30
C-97	16	Ga-Sph(-Cpy)	diss	300	N20W 15NE	200	R	0.08	2.33	2.75
C-98	3	Cpy-Sph	vein	max 20 av 15	N45W 70SW	20	G	0.89	1.73	2.00
C-99	2	Cpy-Sph	vein	max 14 av 6-7	N40W 80SW	10	G	0.96	19.05	26.50
C-100	15	Sph	diss	10 - 20		10	G	0.08	0.13	0.25
C-101	13	Ga-Sph	diss	200		150	R	0.01	0.53	1.28
C-102	14	Ga-Sph(-Cpy)	vein	max 10	N45W 85SW	10	G	2.44	4.57	39.00
C-103	12	Ga-Sph(-Cpy)	vein	max 20 av 5	N40W 80NE	20	G	0.20	3.48	0.11
C-104	11	Ga	diss	10		10	G	0.01	0.15	0.05
C-122	21	Ga-Sph	diss	200		200	R	0.24	0.98	1.43
C-124	20	Ga-Sph	diss	50		20	G	0.03	0.60	1.15
C-127	8	Ga-Sph	diss				G	0.01	0.24	0.26
C-132	31	Ga-Sph	vein	25	N30W 80SW	25	G	0.74	0.56	0.46
Y-24	39	Py-Sph-Ga	network	30				0.15	0.07	0.4
Y-37	5	Cpy-Py	vein	5	N40W 75E			2.10	0.04	0.15
Y-38	6	Sph-Ga-Py	diss	30				0.3	0.03	0.1
Y-39	7	Sph-Ga	diss	100 + α				0.02	0.4	1.0

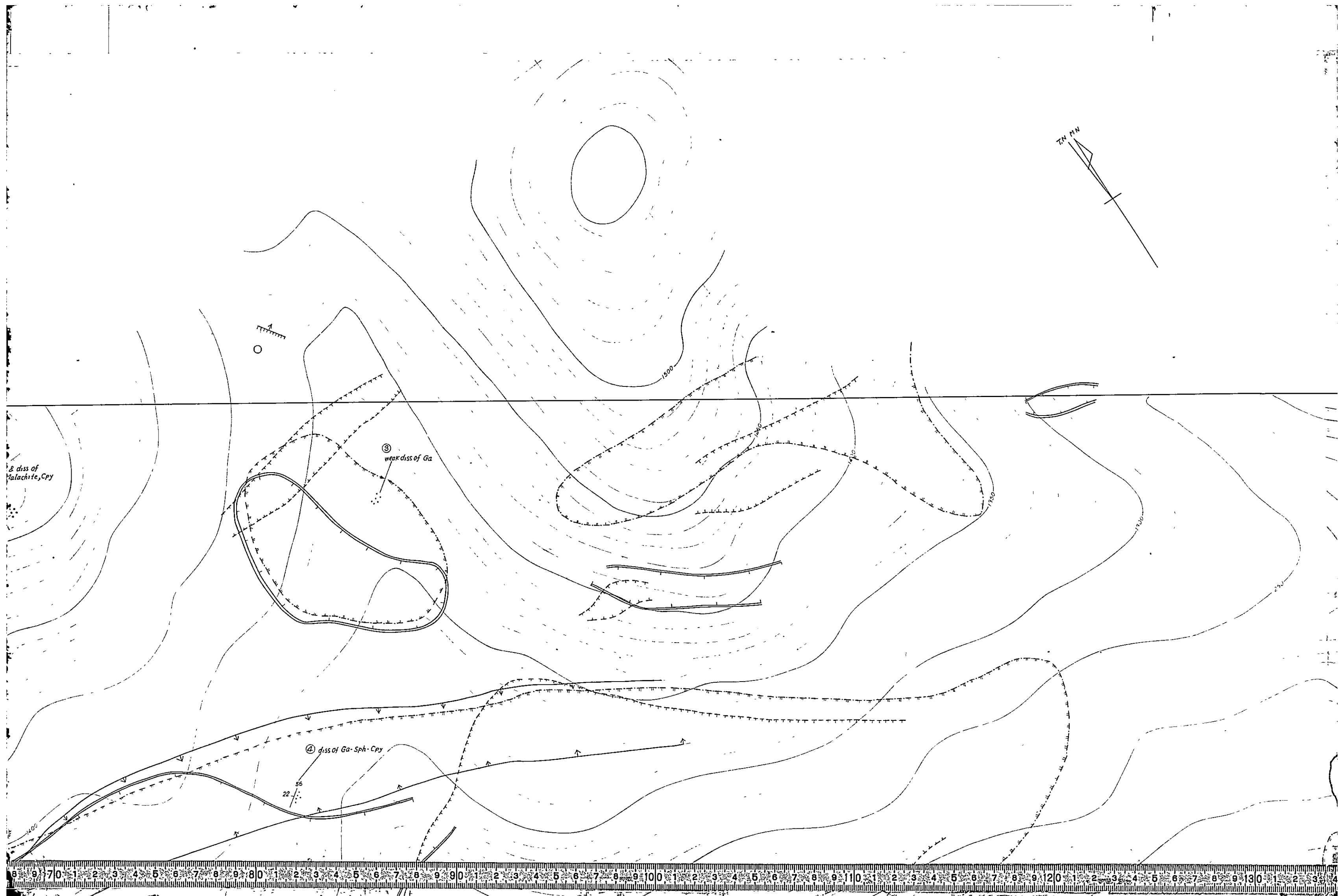
* R : random sampling L : line cutting sampling G : gravel sampling of high grade ore



Sample No.	Index No.	Kind of ore mineral	Mode of occurrence	Width or thickness (cm)	Strike & dip	Sampling width (cm)	Sampling method	Cu (%)	Pb (%)	Zn (%)	Fe (%)	S (%)
C-117	2	Cpy	stockwork & diss			15	G	0.34	0.14	0.02		
C-137	-	Sph	diss (float)				G	0.23	0.69	1.38		
C-164	14	Cpy	diss	max 30		20	G	0.59	0.06	1.33		
D-68	9	Py	vein	5	EW 80S			0.007	0.002	tr	30.68	

* R : random sampling L : line cutting sampling G : gravel sampling of high-grade ore

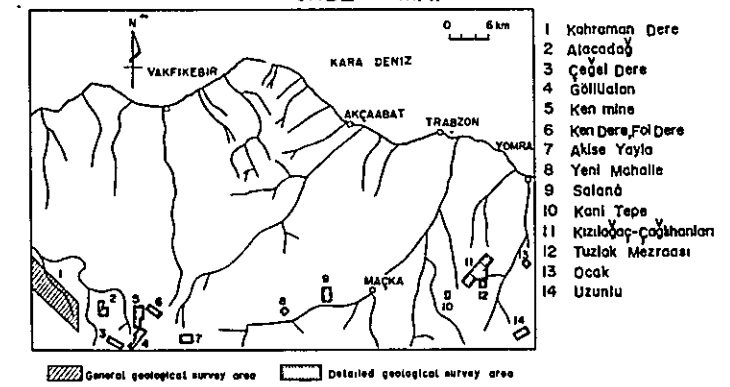




MINERAL RESEARCH AND EXPLORATION INSTITUTE
GEOLOGICAL SURVEY
OF
TRABZON AREA, NORTHEASTERN TURKEY
PHASE III

ALTERATION AND MINERALIZATION MAP
OF KEN DERE-FOL DERE AREA
KEN DERE-FOL DERE SAHASININ
ALTERASYON VE MINERALİZASYON HARİTASI

INDEX MAP







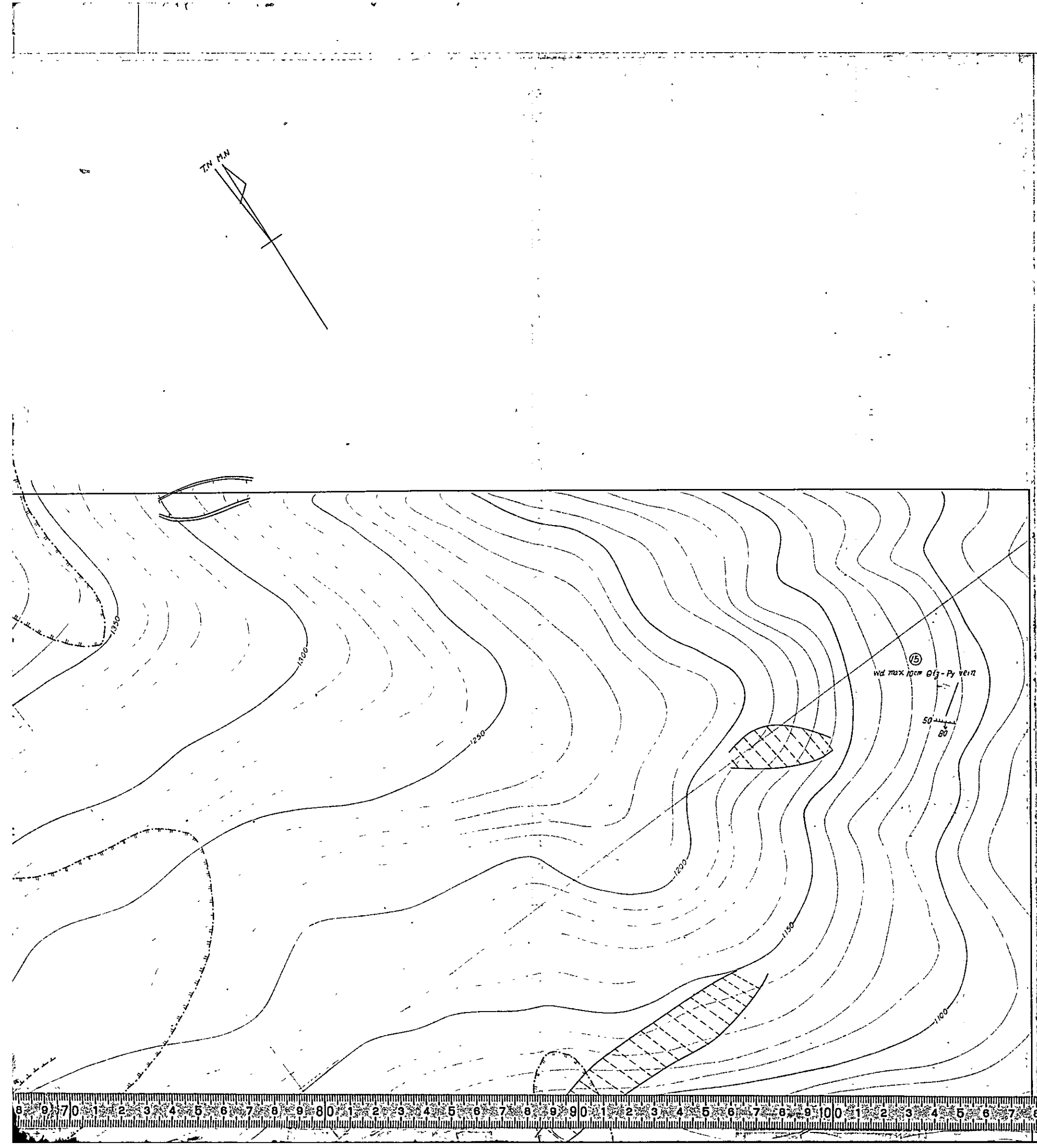
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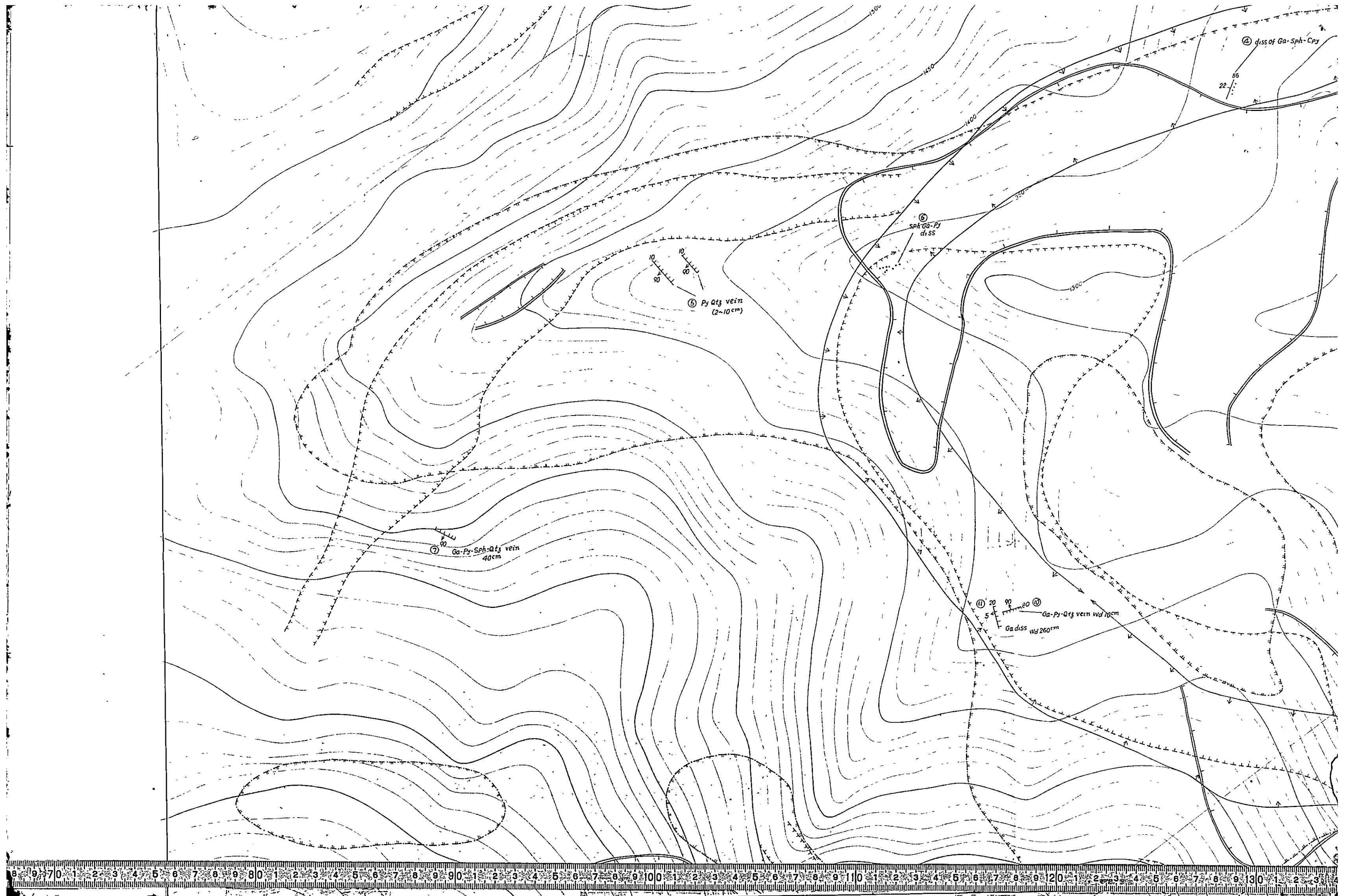
METAL MINING AGENCY OF JAPAN
JAPAN INTERNATIONAL COOPERATION AGENCY
FEBRUARY 1977

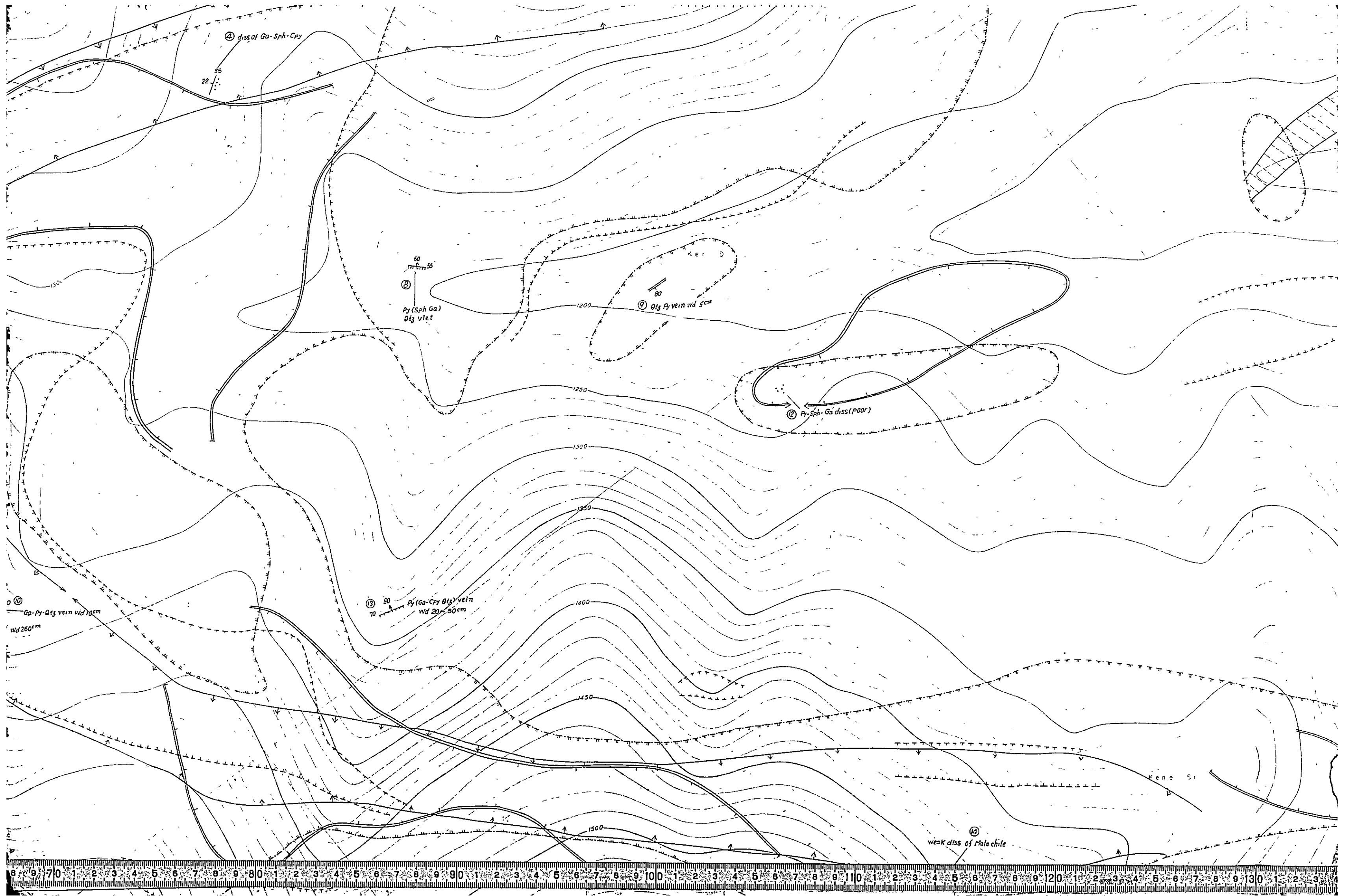
Prepared by Nikko Exploration & Development Co., Ltd

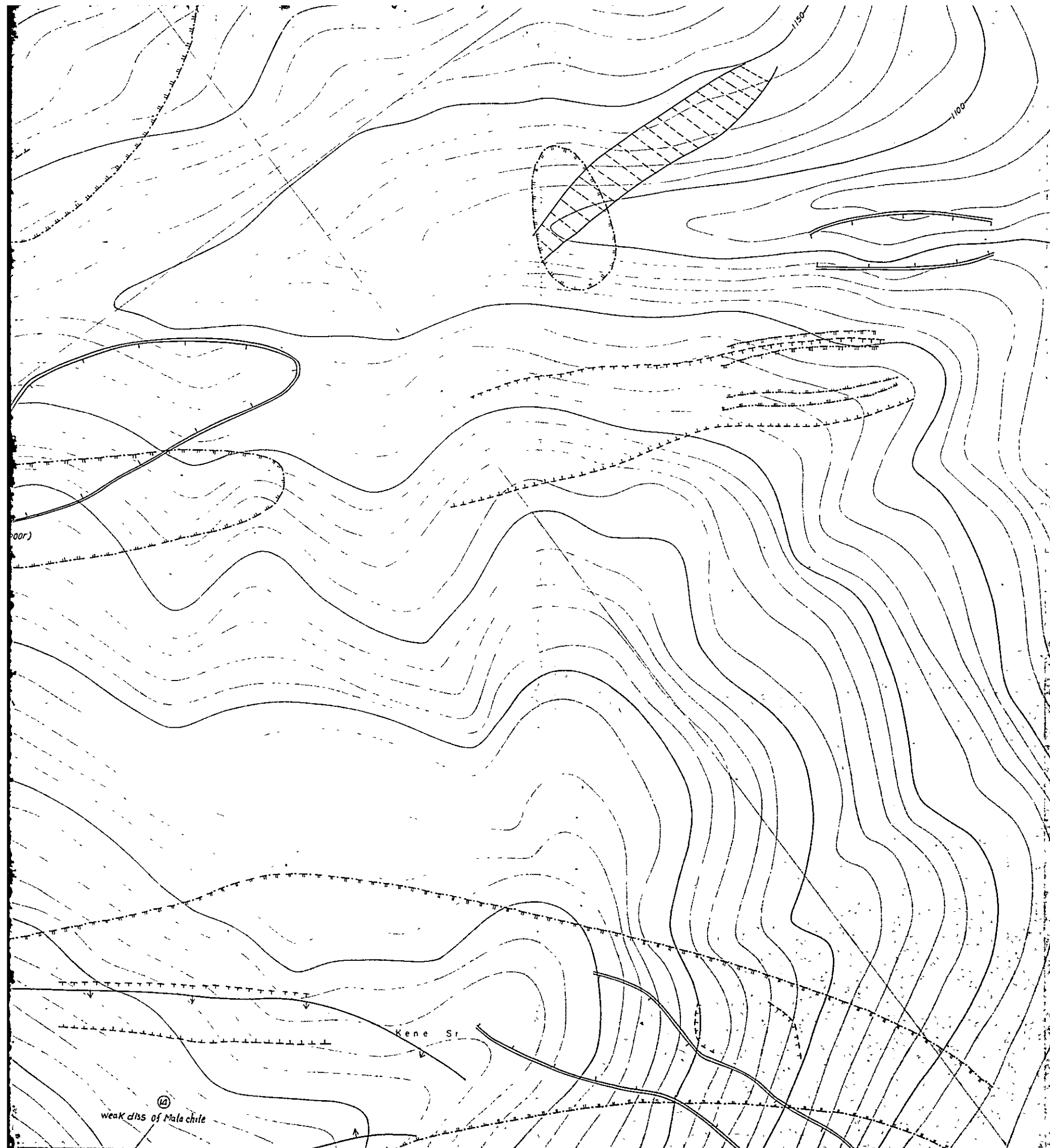
LEGEND
LEJAND

-  old mine, working mine, waste & slag
eski maden, çalısan maden
-  mineralization zone
mineralizasyon zonu
-  vein, veinlet network, stratiform
damar, damarcıklar network, tabakalı
-  dissemination
diseminasyon





















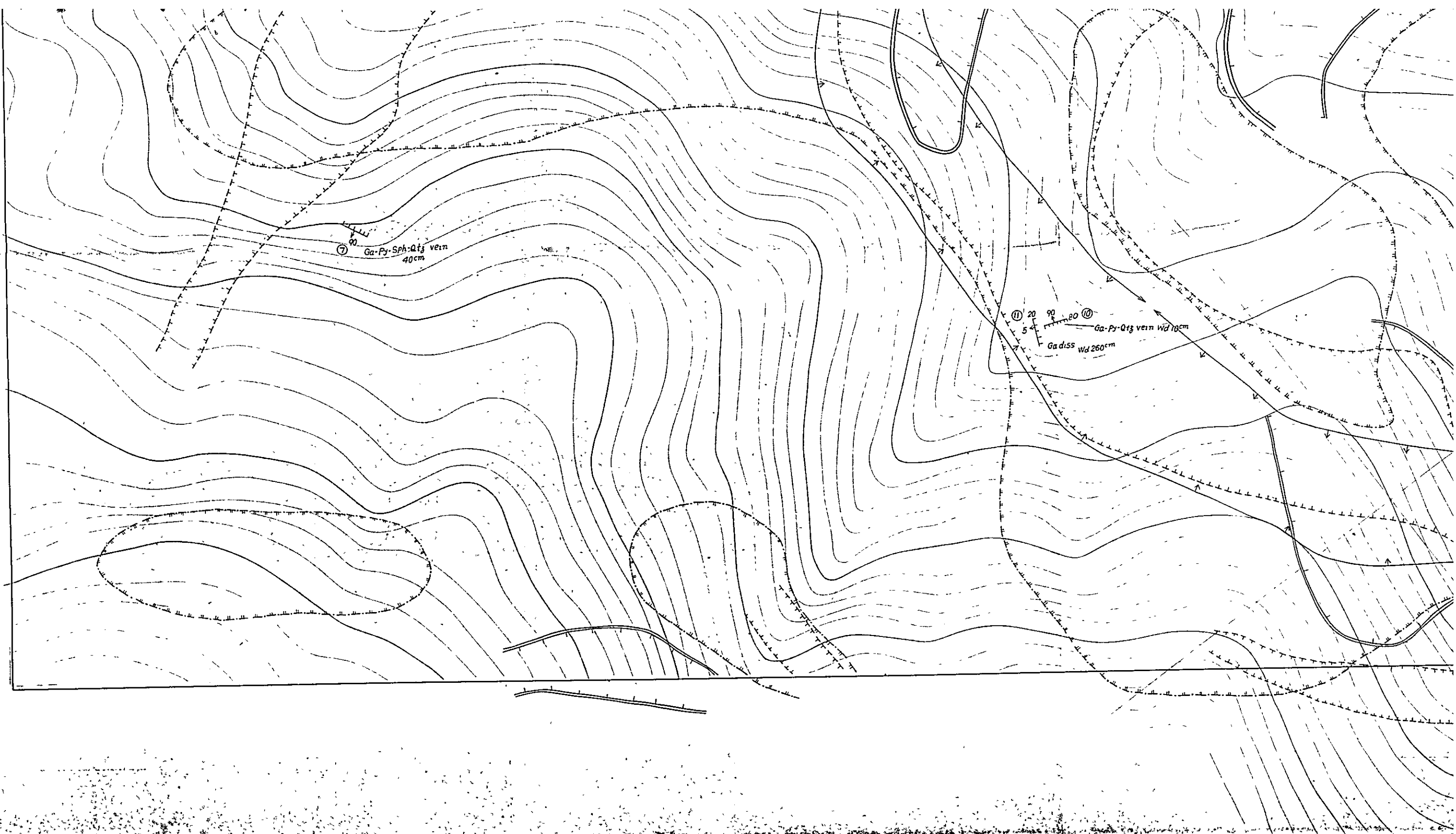
LEJAND

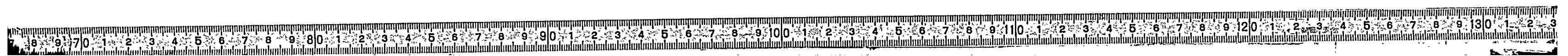
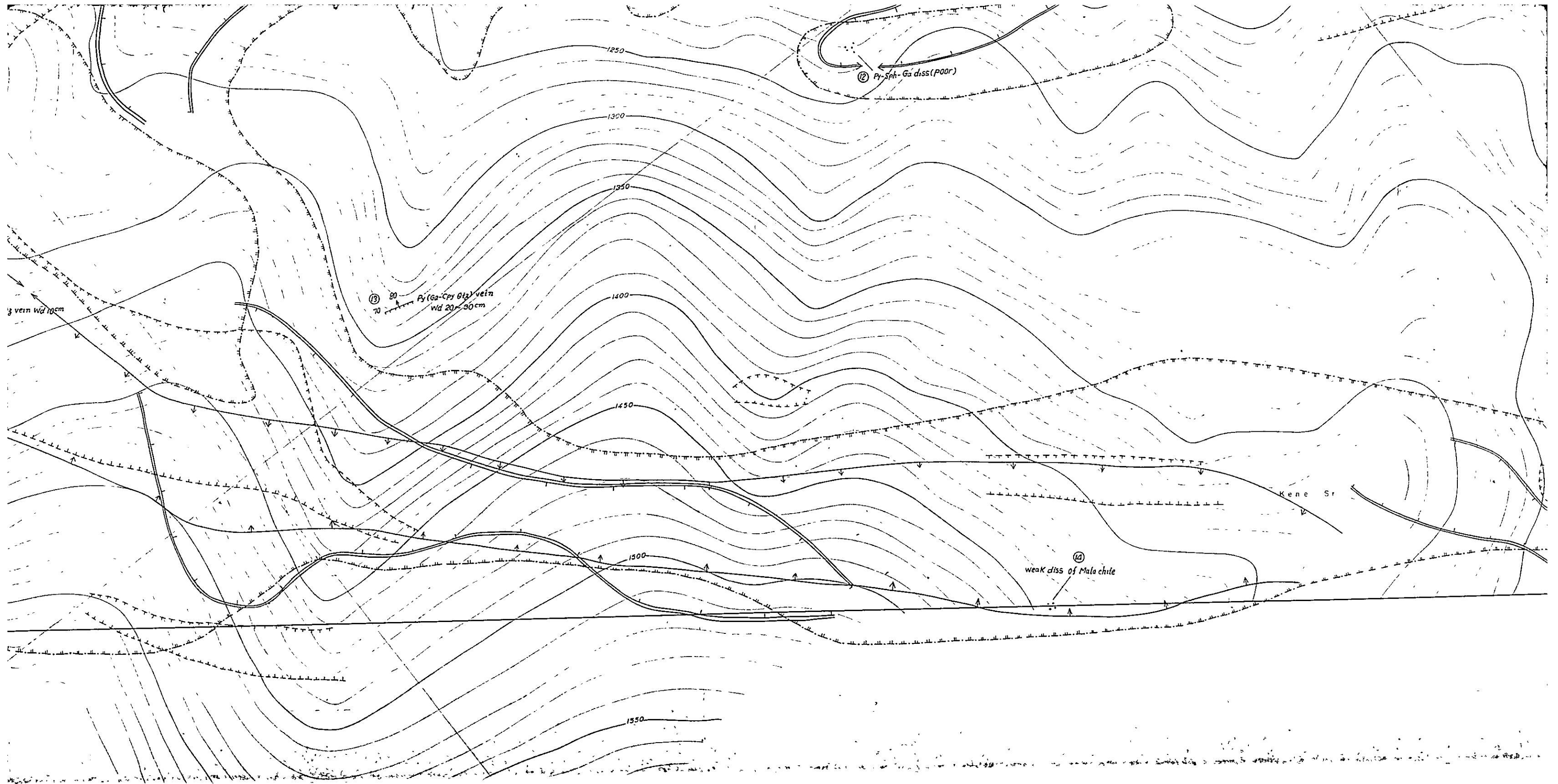
-  old mine, working mine, waste & slag
eskî maden, çalıŝan maden
-  mineralization zone
mineralizasyon zonu
-  vein, veinlet network, stratiform
damar, damarcıklar network, tabakalı
-  dissemination
diseminasyon
-  pyrite dissemination and/or limonitization zone
pirit diseminasyon ve/veya limonitlenme zonu
-  silicification zone
silislenme zonu
-  kaolinization zone
kaolinlenme zonu
-  carbonatization zone
karbonatlaşma zonu
-  sericitization zone
serisitlenme zonu
-  montmorillonitization zone
montmorillonitlenme zonu
-  epidotization zone
epidotlaşma zonu
-  skarnitization zone
skarnlenme zonu

Abbreviation
Kısaltmalar

Ba	barite	Lim	limonite
Cal	calcite	Mt	magnetite
Chl	chlorite	Py	pyrite
Cpy	chalcopyrite	Qtz	quartz
Epi	epidote	Spc	specularite
Ga	galena	Sph	sphalerite
Kaol	kaolinite		









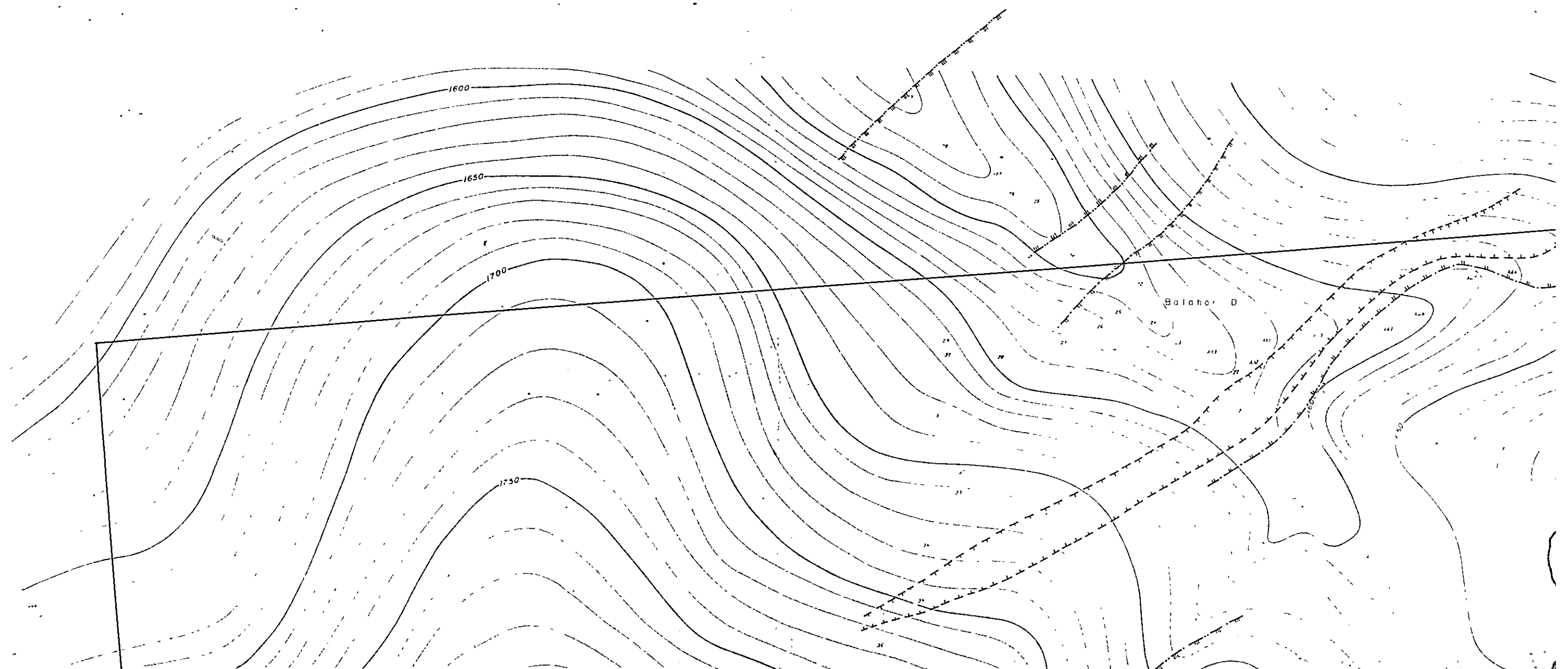
skarnization zone
 skarnite zone

Abbreviation
Kısaltmalar

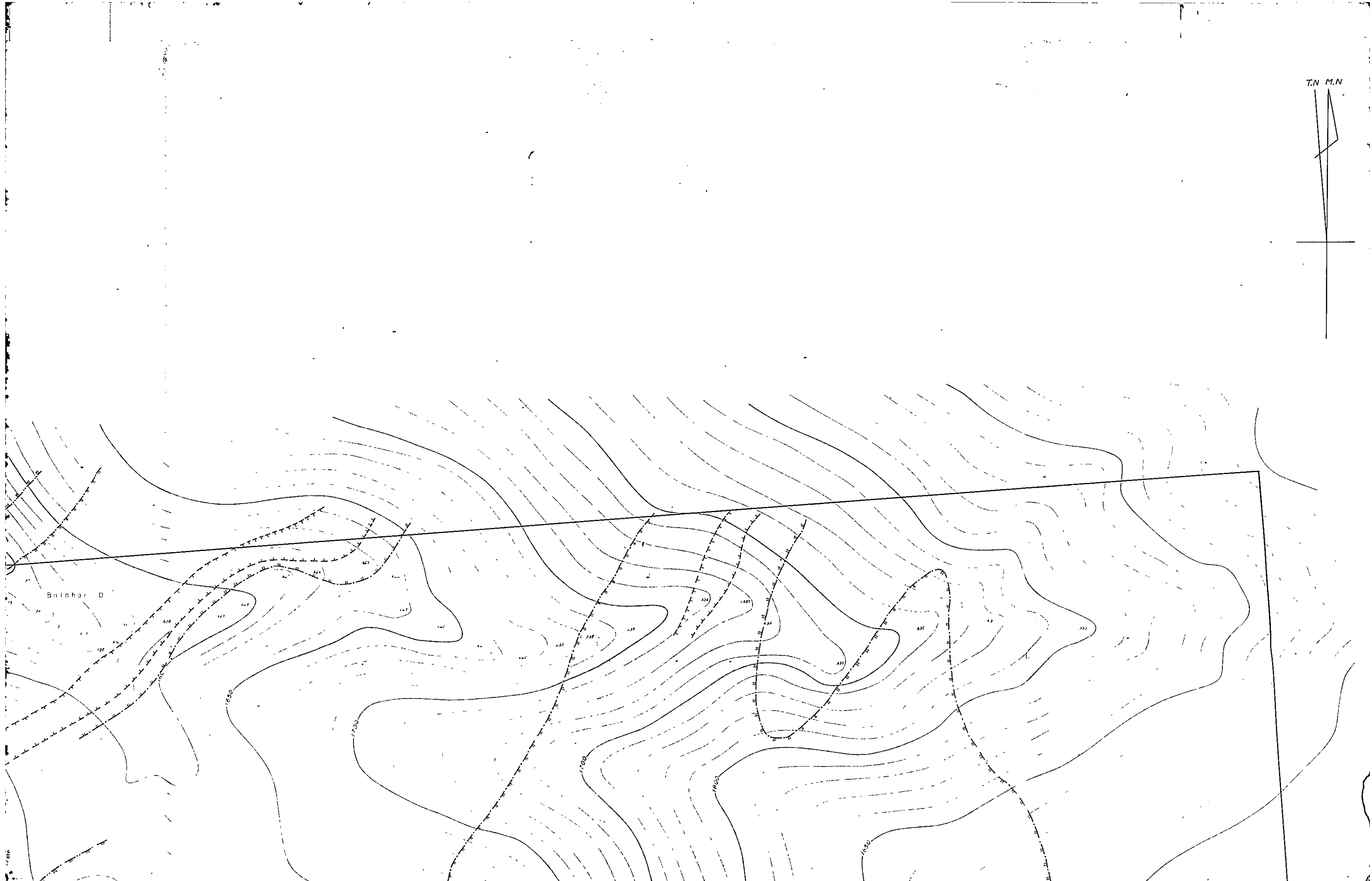
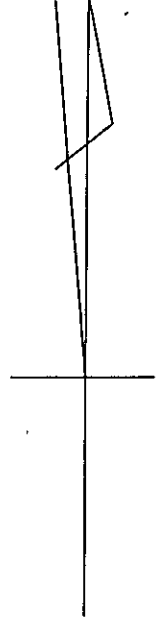
Ba - barite
 barit
 Cal - calcite
 kalsit
 Chl - chlorite
 klorit
 CPY - chloropyrite
 kloropirit
 Epi - epidote
 epidot
 Ga - galena
 galen
 Kaol - kaolinite
 kaolin

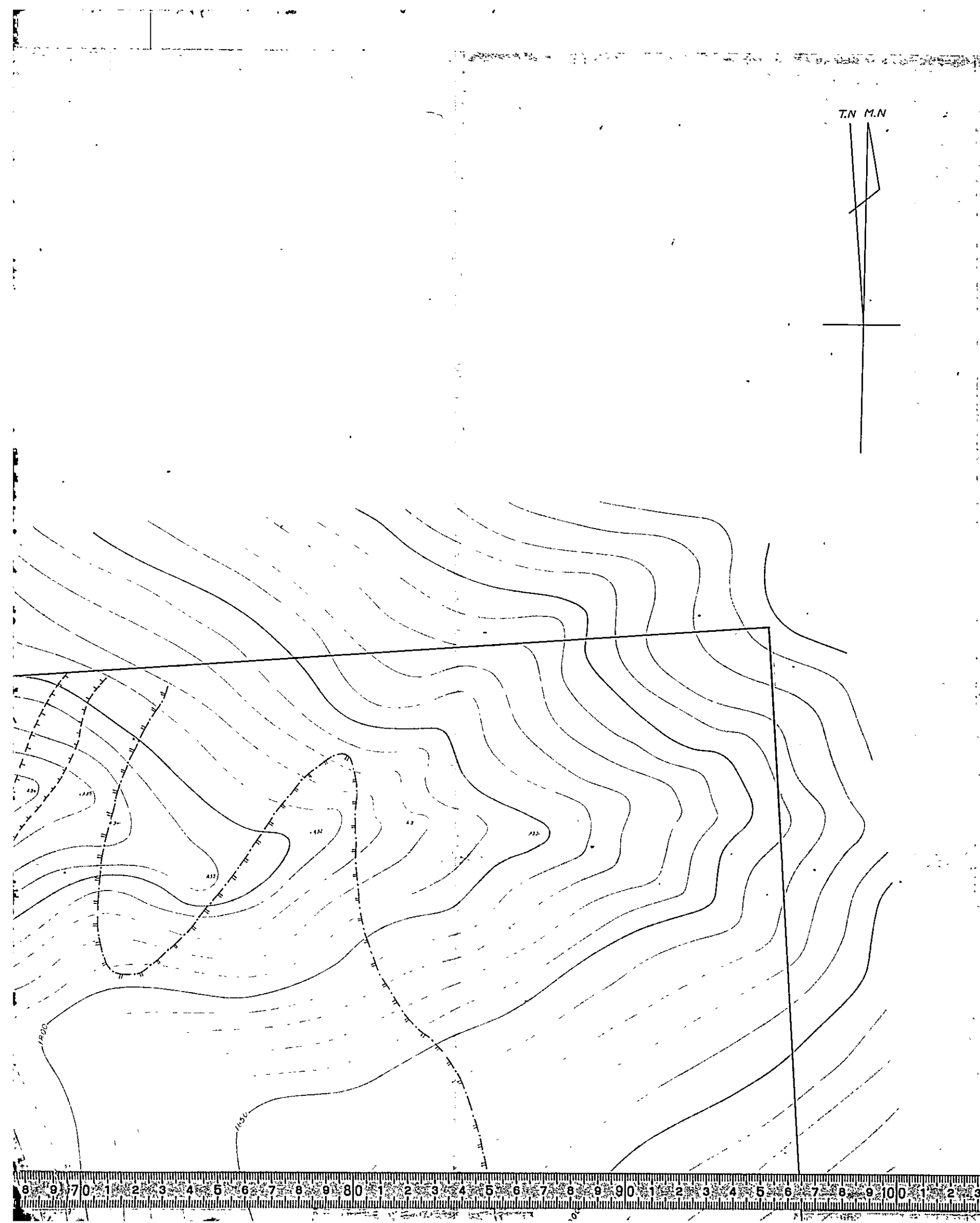
Lim : limonite
 limonit
 Mt : magnetite
 manyetit
 Py : pyrite
 pirit
 Qtz : quartz
 kuvar
 Spc : specularite
 spekularit
 Sph : sphalerite
 sfalerit





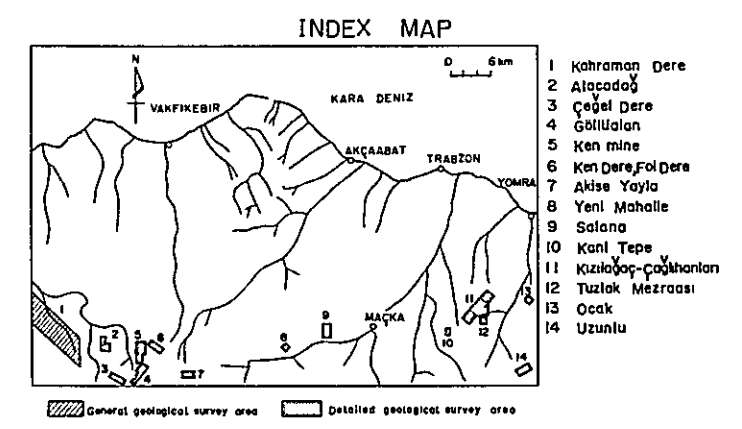
T.N M.N





PL. 3-7

MINERAL RESEARCH AND EXPLORATION INSTITUTE
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 OF
 TRABZON AREA , NORTHEASTERN TURKEY
 PHASE III
 ALTERATION AND MINERALIZATION MAP
 OF AKİSE YAYLA AREA
 AKİSE YAYLA SAHASININ
 ALTERASYON VE MINERALİZASYON HARİTASI

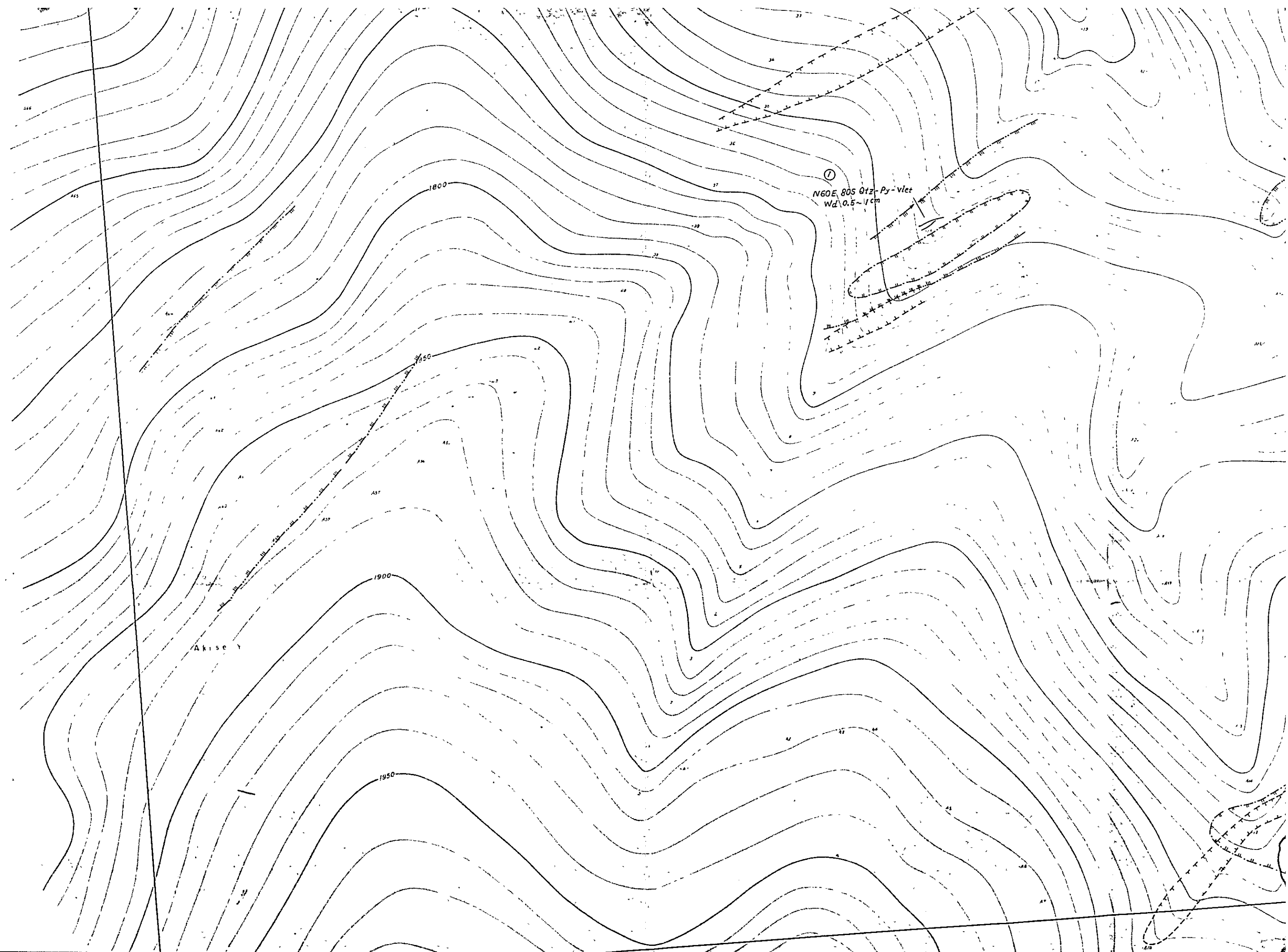


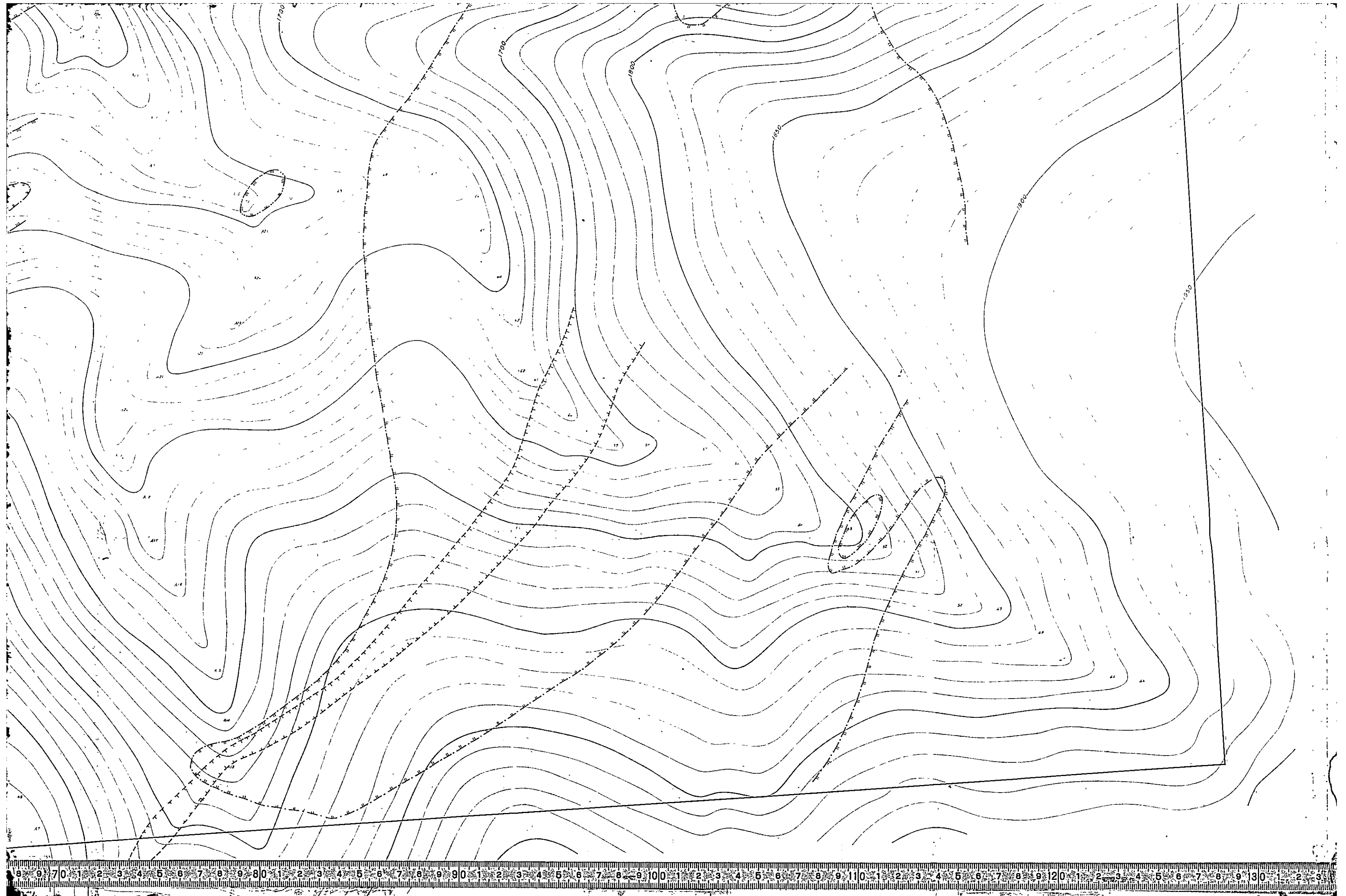
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 Ölçek 1 : 2000
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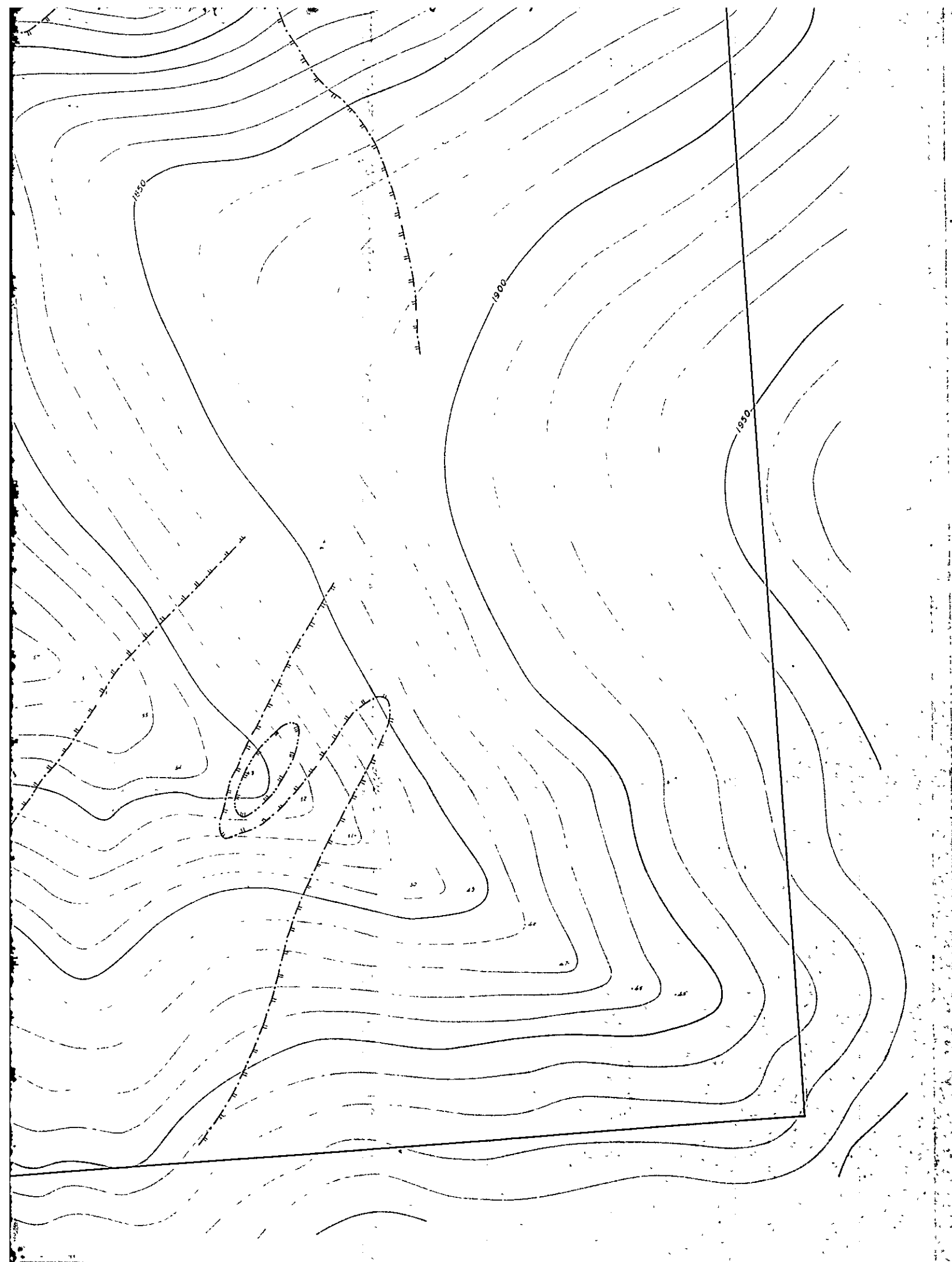
METAL MINING AGENCY OF JAPAN
 JAPAN INTERNATIONAL COOPERATION AGENCY
 FEBRUARY 1977
 Prepared by Nikko Exploration & Development Co., Ltd.

- LEGEND
 LEJAND
- old mine, working mine, waste & slag
eski maden, çalınan maden
 - mineralization zone
mineralizasyon zonu
 - vein, veinlet network, stratiform damar, damareciklar network, tabakalı
 - dissemination
dissemine
 - quartz dissemination and/or limonitization zone
silicification zone





















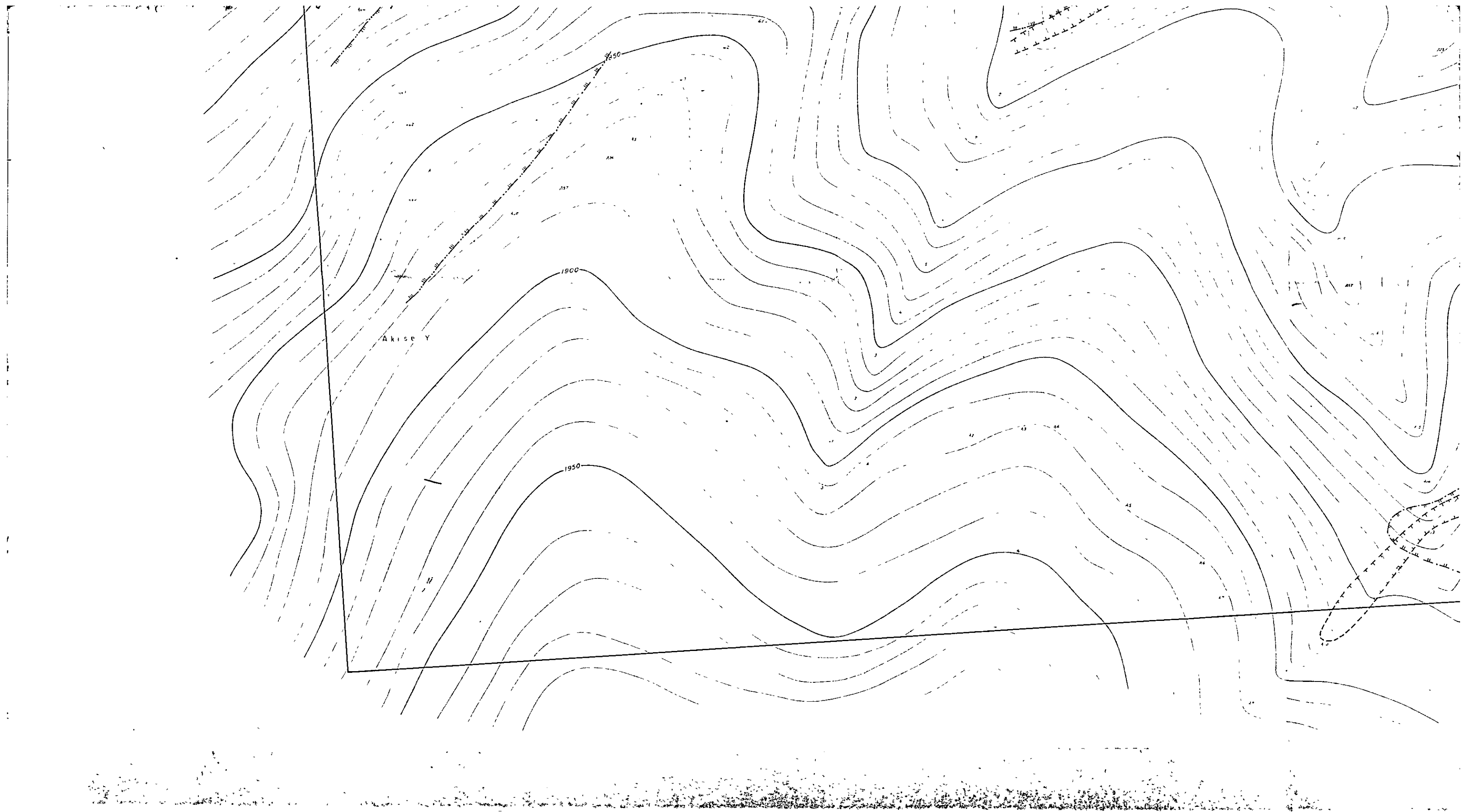
LEGEND
LEJAND

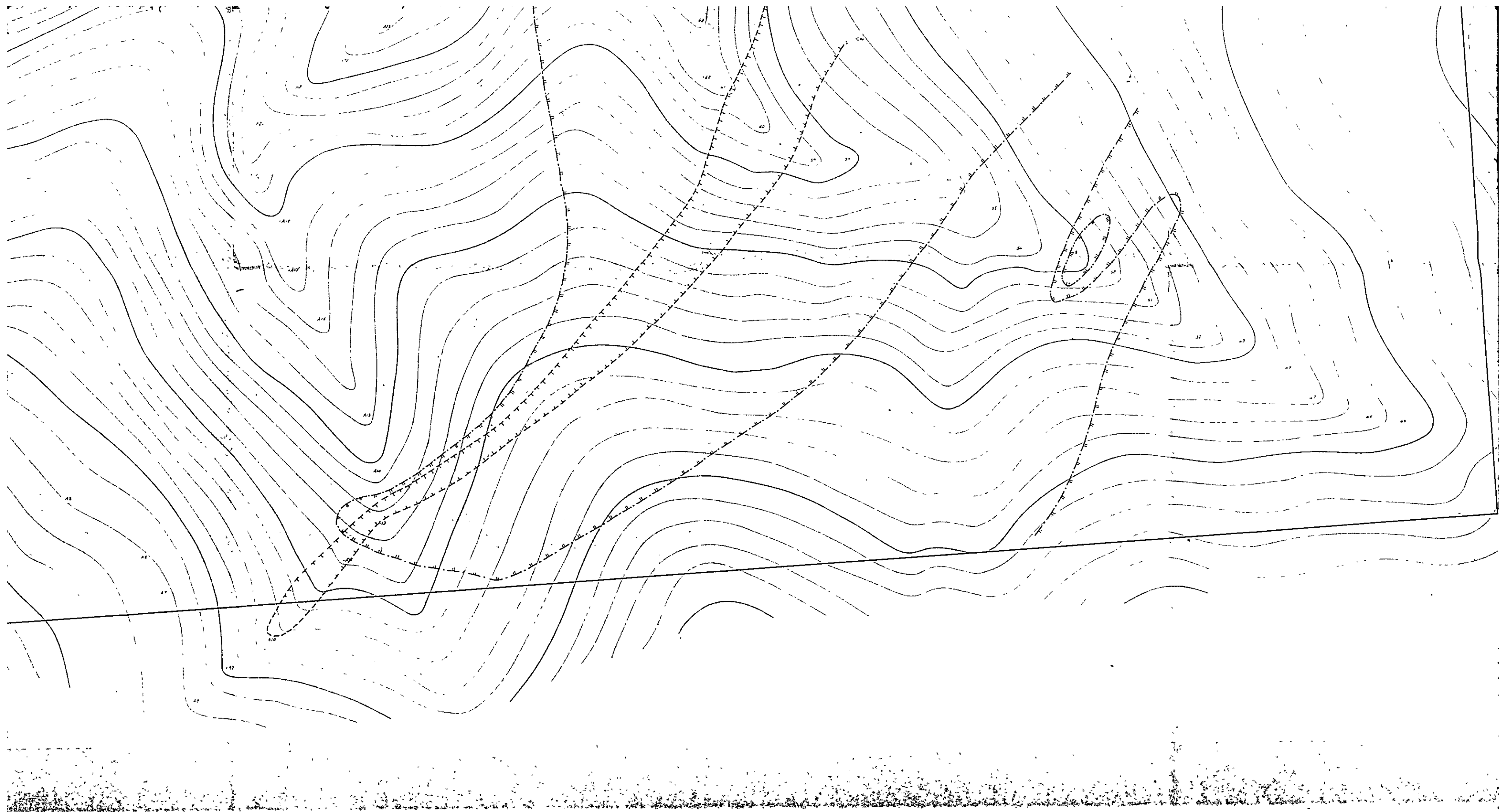
-  old mine, working mine, waste & slag
eskî maden, çalıyan maden
-  mineralization zone
mineralizasyon zonu
-  vein, veinlet network, stratiform
damar, damarçıklar network, tabakalı
-  dissemination
diseminasyon
-  pyrite dissemination and/or limonitization zone
pirit diseminasyon ve/veya limonitlenme zonu
-  silicification zone
silislenme zonu
-  kaolinization zone
kaolinlenme zonu
-  carbonatization zone
karbonatlaşma zonu
-  sericitization zone
serisitlenme zonu
-  montmorillonitization zone
montmorillonitlenme zonu
-  epidotization zone
epidotlaşma zonu
-  skarnitization zone
skarnitlenme zonu

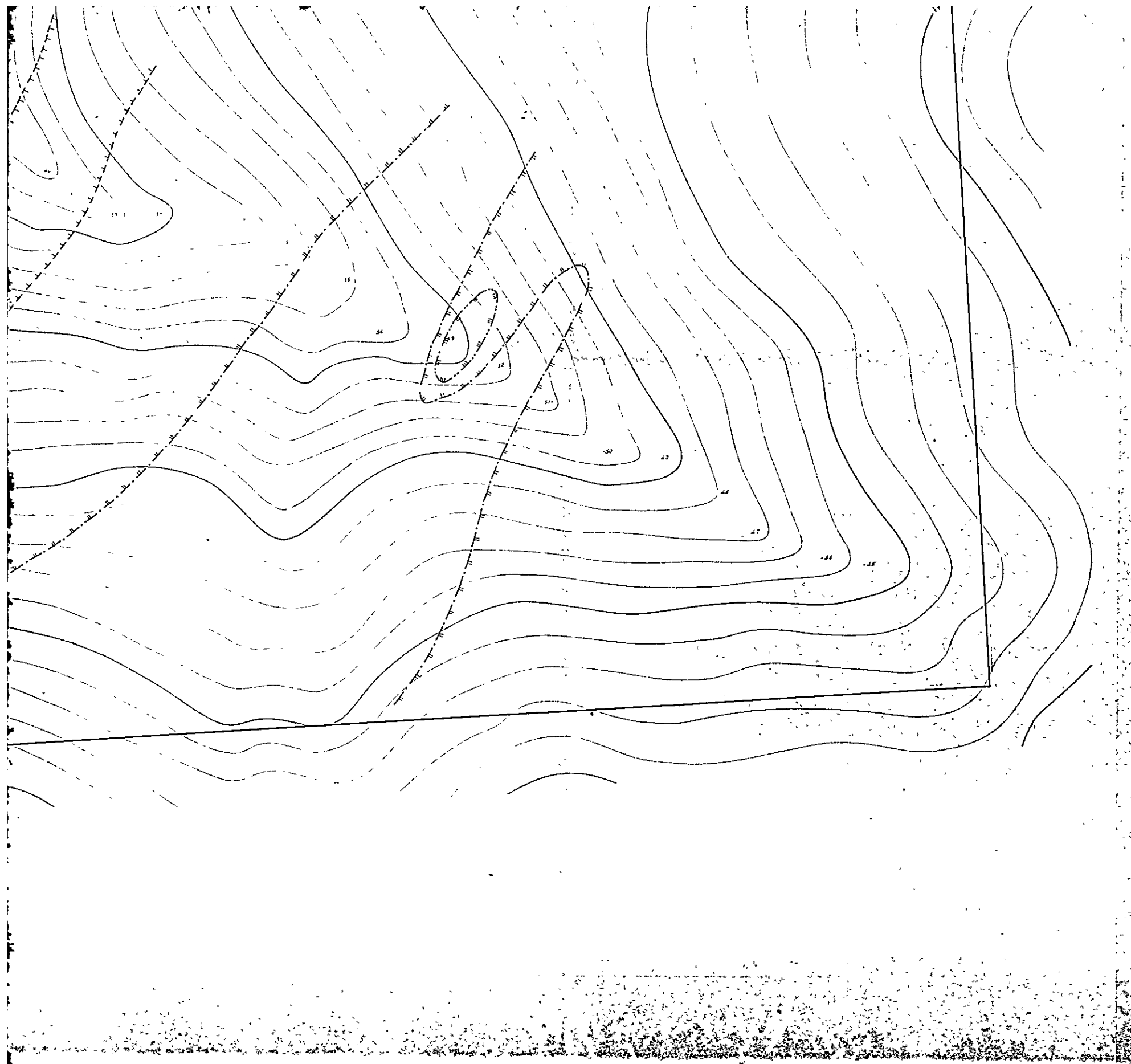
Abbreviation
Kesaltmalar




Ba : barite <i>barit</i>	Lim : limonite <i>limonit</i>
Cal : calcite <i>kalzit</i>	Mt : magnetite <i>magnetit</i>
Chl : chlorite <i>klorit</i>	Py : pyrite <i>pirit</i>
Cpy : chalcopyrite <i>kalkopirit</i>	Qtz : quartz <i>kuvart</i>
Epi : epidote <i>epidot</i>	Spc : specularite <i>spekularit</i>
Ga : galena <i>galen</i>	Sph : sphalerite <i>sفالریت</i>
Kaol : kaolinite <i>kaolin</i>	







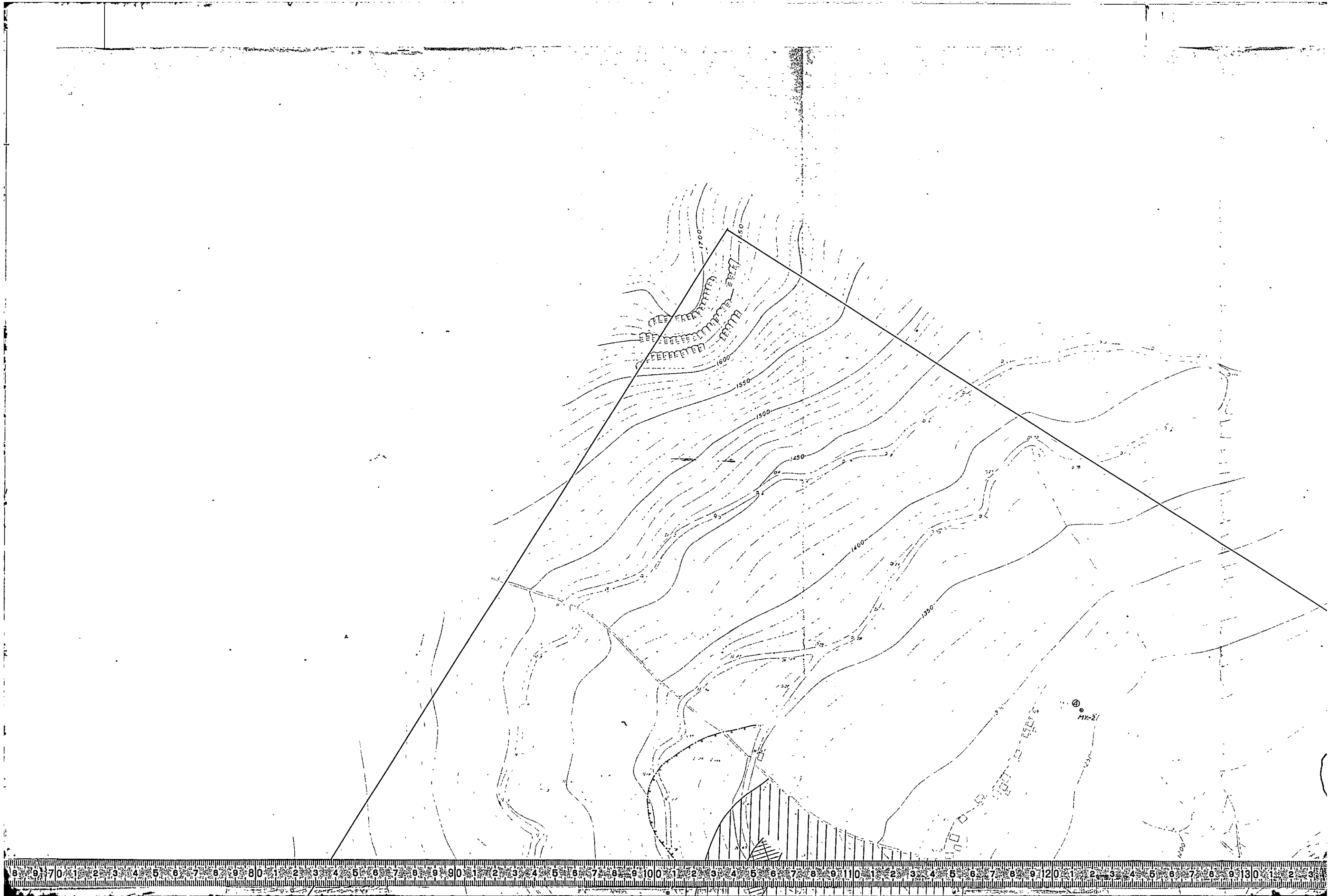


-  montmorillonitization zone
moutmoullonitleşme zonu
-  epidotization zone
epidotlaşma zonu
-  skarnitization zone
skaritleşme zonu

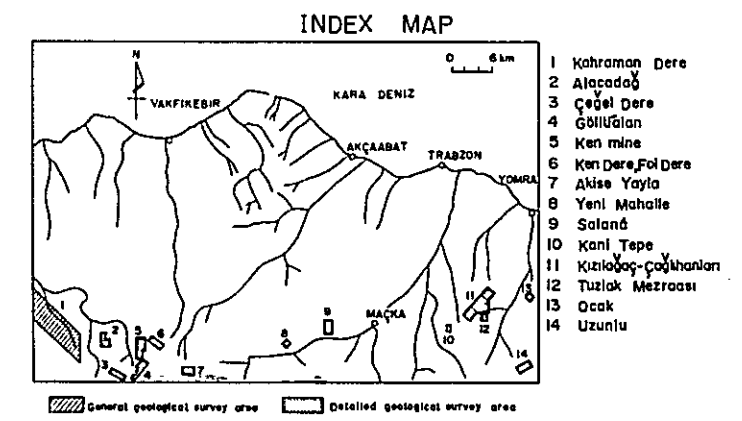
Abbreviation
Kısaltmalar

Ba	barite barit	Lim	limonite limonit
Cal	calcite kalsit	Mt	magnetite manyetit
Chl	chlorite klorit	Py	pyrite pirit
Cpy	chalcopyrite kalkopirit	Qtz	quartz kuvar
Epi	epidote epidot	Spc	specularite spekularit
Ga	galena galen	Sph	sphalerite sfalerit
Kaol	kaolinite kaolin		





MINERAL RESEARCH AND EXPLORATION INSTITUTE
 GEOLOGICAL SURVEY
 OF
 TRABZON AREA, NORTHEASTERN TURKEY
 PHASE III
 ALTERATION AND MINERALIZATION MAP
 OF YENİ MAHALLE AREA
 YENİ MAHALLE SAHASININ
 ALTERASYON VE MINERALİZASYON HARİTASI



Scale 1 : 2,000
 Ölçek 100 200m

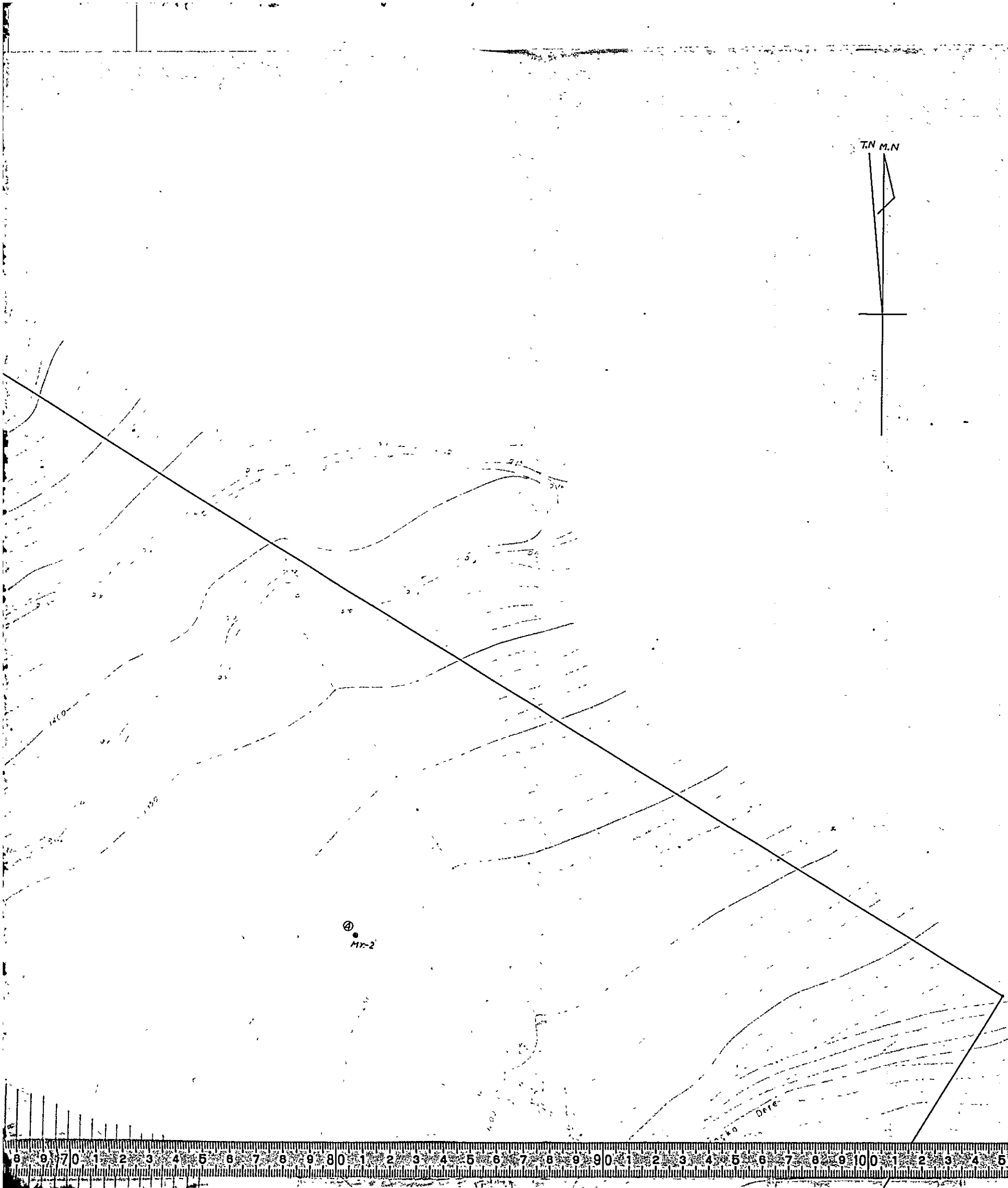
METAL MINING AGENCY OF JAPAN
 JAPAN INTERNATIONAL COOPERATION AGENCY
 FEBRUARY 1977

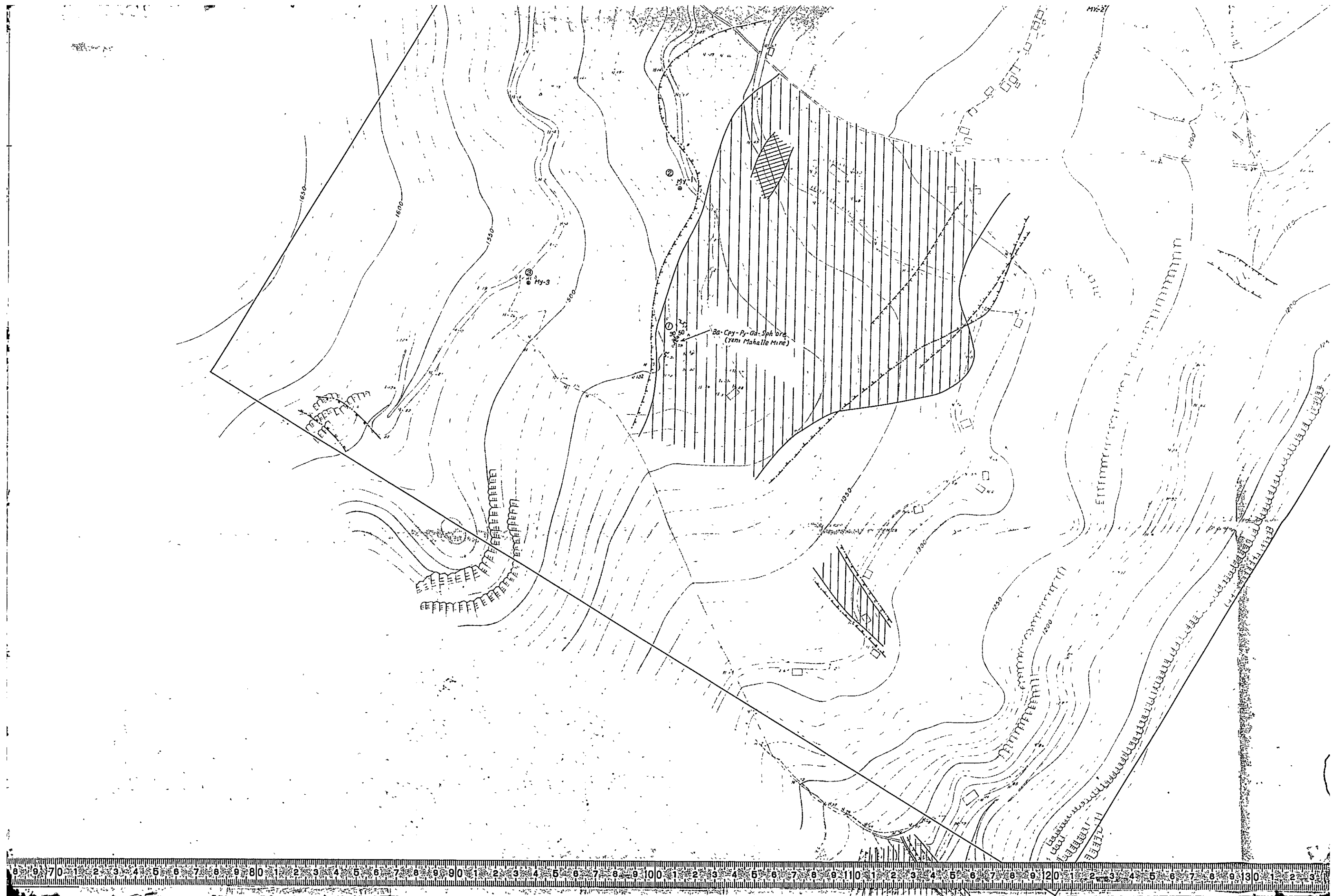
Prepared by Nikko Exploration & Development Co., Ltd.

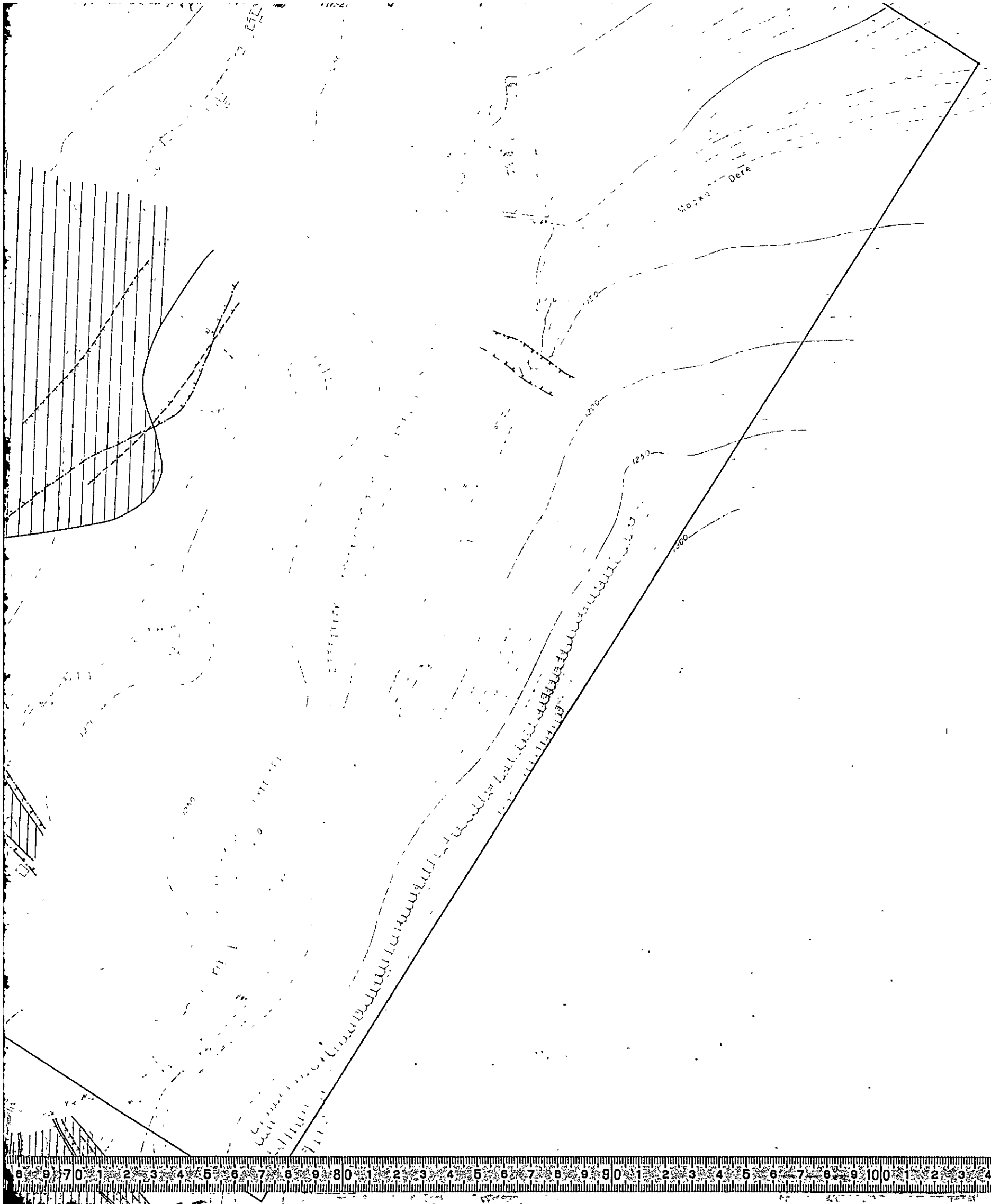
LEGEND

- LEJAN
- old mine, working mine, waste & slag
eski maden, çalınan maden
 - mineralization zone
mineralezyon zonu
 - vein, veinlet network, stratiform
damar, damarcıklar network, tabakalı
 - dissemination
diseminasyon













disseminated mineralization zone
dağınık mineralizasyon zonu







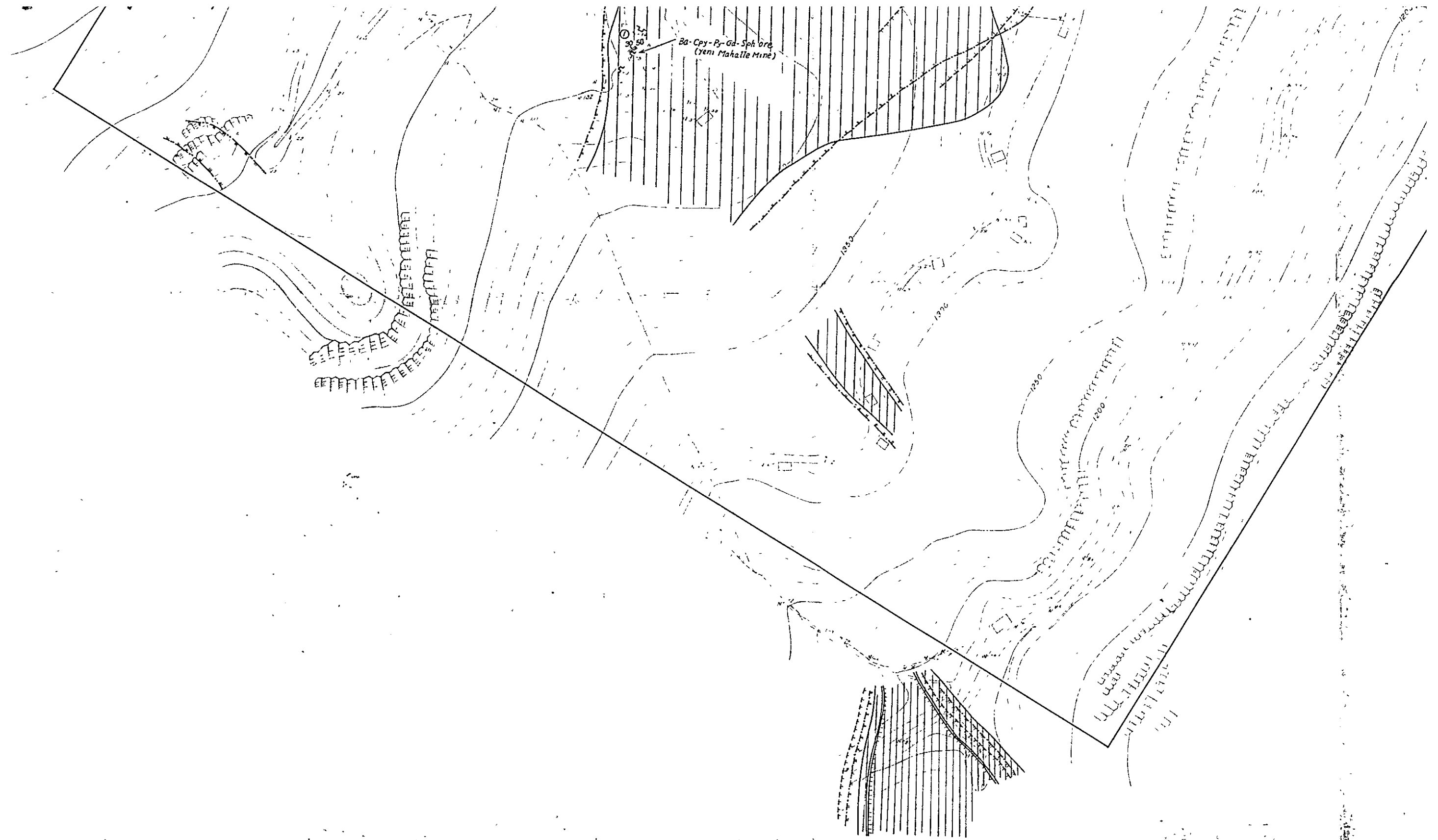
LEGEND
LEJAND

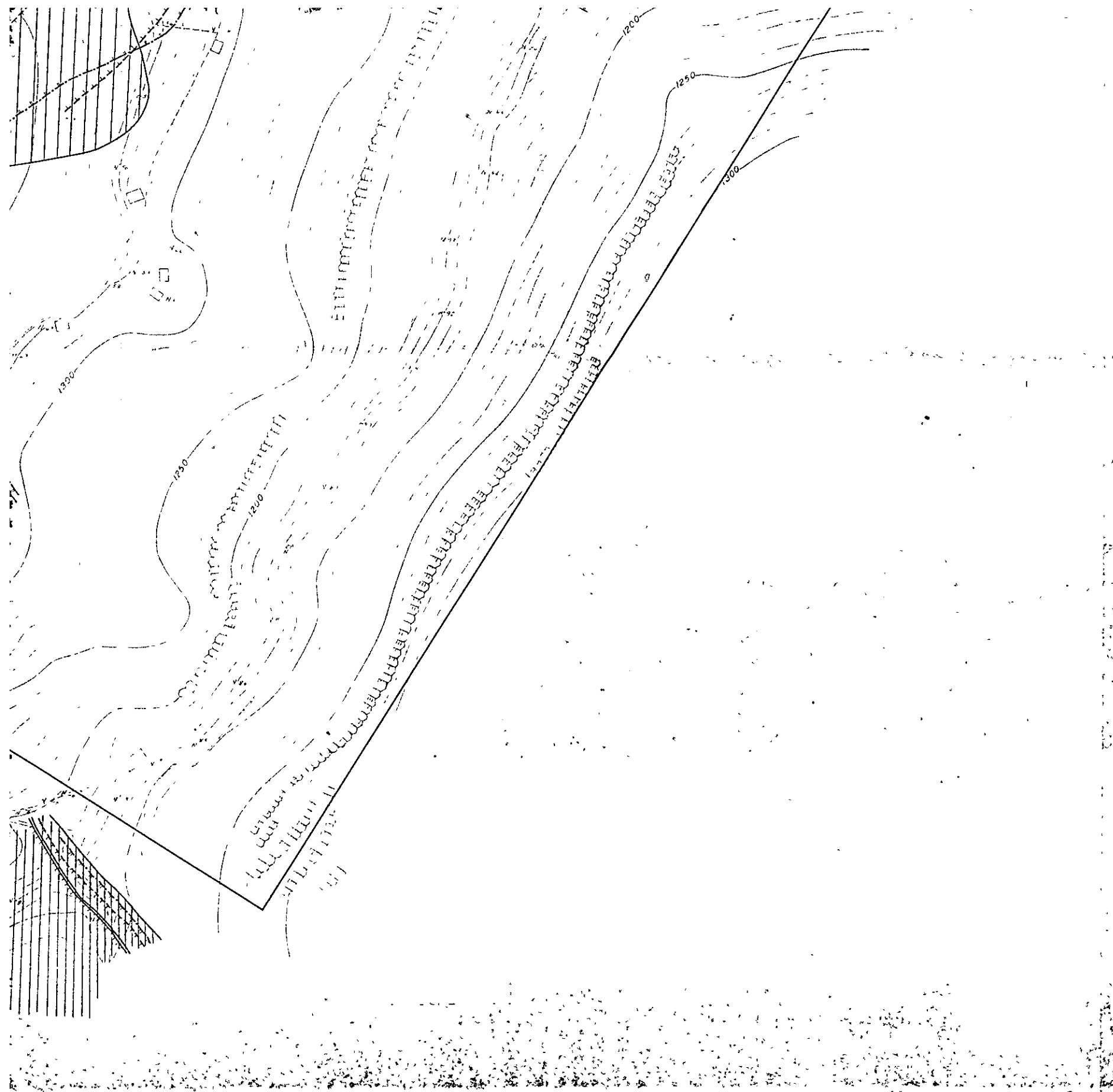
-  old mine, working mine, waste & slag
eskî maden, çalıyan maden
-  mineralization zone
mineralizasyon zonu
-  vein, veinlet network, stratiform
damar, damarcıklar network tabakalı
-  dissemination
diseminasyon
-  pyrite dissemination and/or limonitization zone
pirit diseminasyon ve/veya limonitlenme zonu
-  silicification zone
silikasyon zonu
-  kaolinization zone
kaolinleşme zonu
-  carbonatization zone
karbonatlaşma zonu
-  sericitization zone
serisitlenme zonu
-  montmorillonitization zone
montmorillonitlenme zonu
-  epidotization zone
epidotlaşma zonu
-  skarnitization zone
skarnleşme zonu

Abbreviation
Kısaltmalar

Ba	barite <i>barit</i>	Lim	limonite <i>limonit</i>
Cal	calcite <i>kalsit</i>	Mt	magnetite <i>magnetit</i>
Chl	chlorite <i>klorit</i>	Py	pyrite <i>pirit</i>
Cpy	chlopyrite <i>kalkopirit</i>	Qtz	quartz <i>kvarz</i>
Epi	epidote <i>epidot</i>	Spc	specularite <i>spekularit</i>
Ga	galena <i>galen</i>	Sph	sphalerite <i>sfalerit</i>
Kaol	kaolinite <i>kaolin</i>		







montmorillonization zone
montmorillonitləşmə zonu

epidotization zone
epidotlaşma zonu

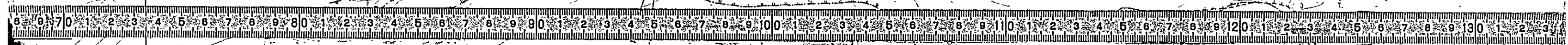
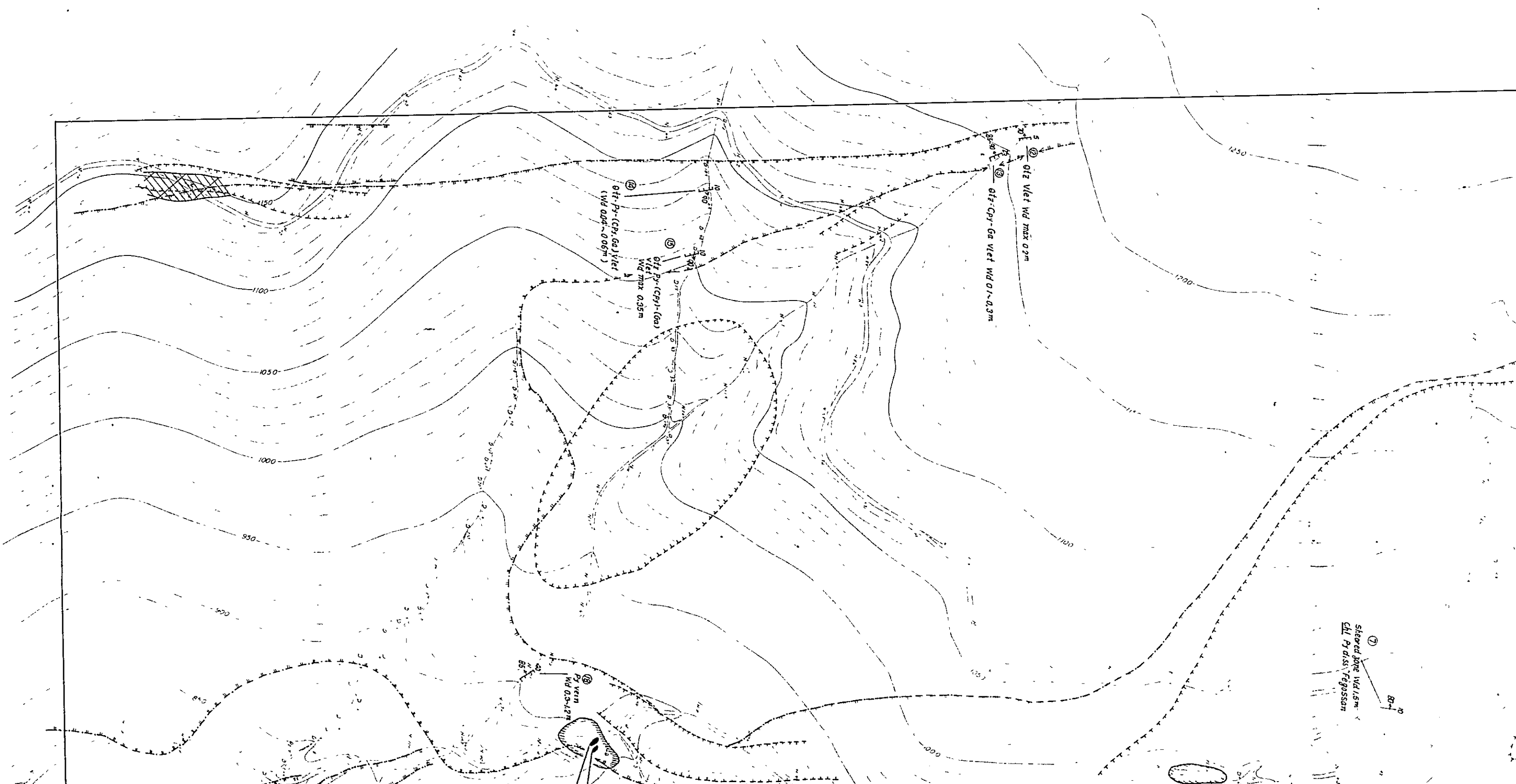
skarnitization zone
skarlaşma zonu

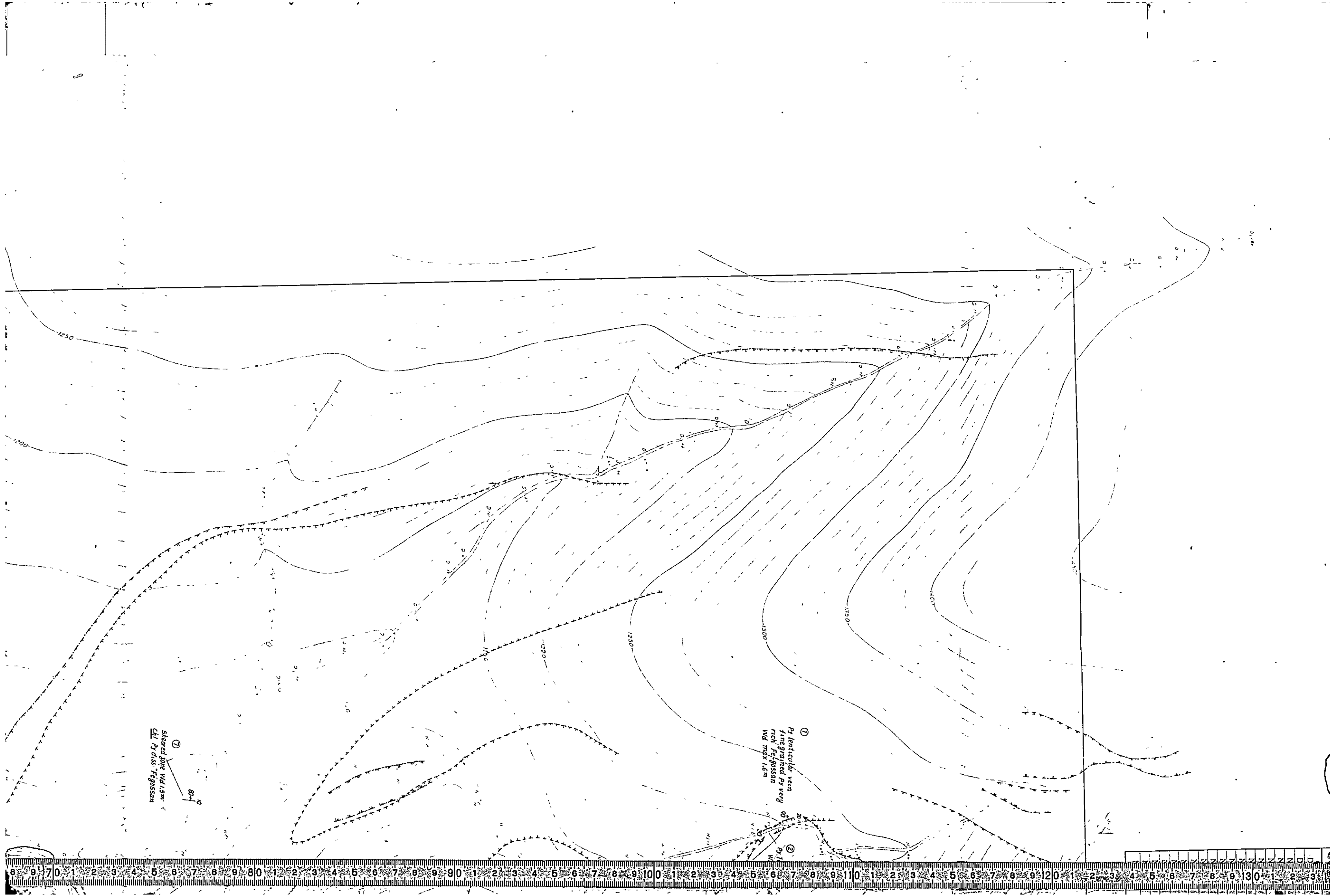
Abbreviation
Kısaltmalar

Ba : barite
barit
Cal : calcite
kalsit
Chi : chlorite
klorit
Cpy : chalcopyrite
kalkopirit
Epi : epidote
epidot
Ga : galena
galen
Kaol : kaolinite
kaolin

Lim : limonite
limonit
Mt : magnetite
magnetit
Py : pyrite
pirit
Qtz : quartz
kvarz
Spc : specularite
spekularit
Sph : sphalerite
sfalerit



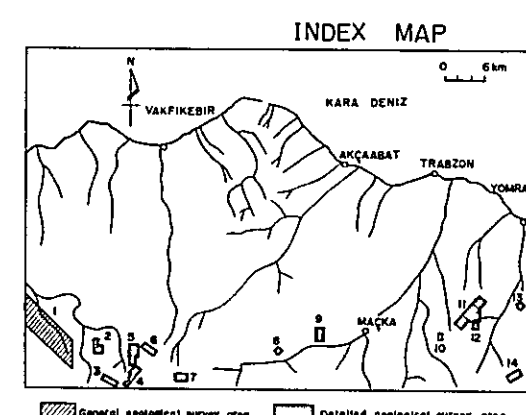
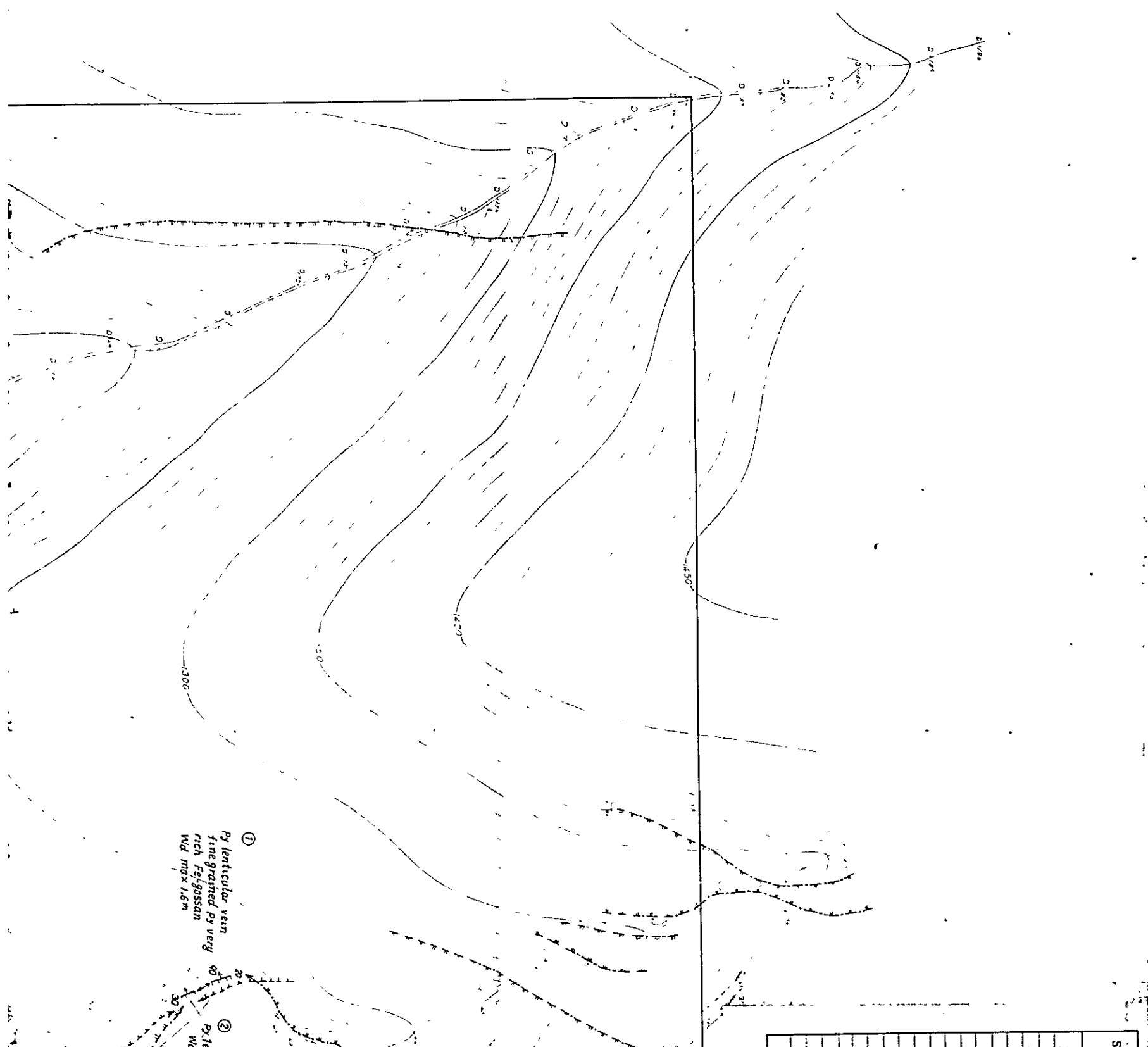




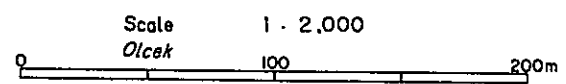
① Shear zone
Chl. Py axis "Fogasson"
80'

② Py lenticular vein
fine grained Py very
rich Fe-oxides
Wd. max 1.6m

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 GEOLOGICAL SURVEY
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 PHASE III
 ALTERATION AND MINERALIZATION MAP
 OF SALANA AREA
 SALANA SAHASININ
 ALTERASYON VE MINERALİZASYON HARİTASI



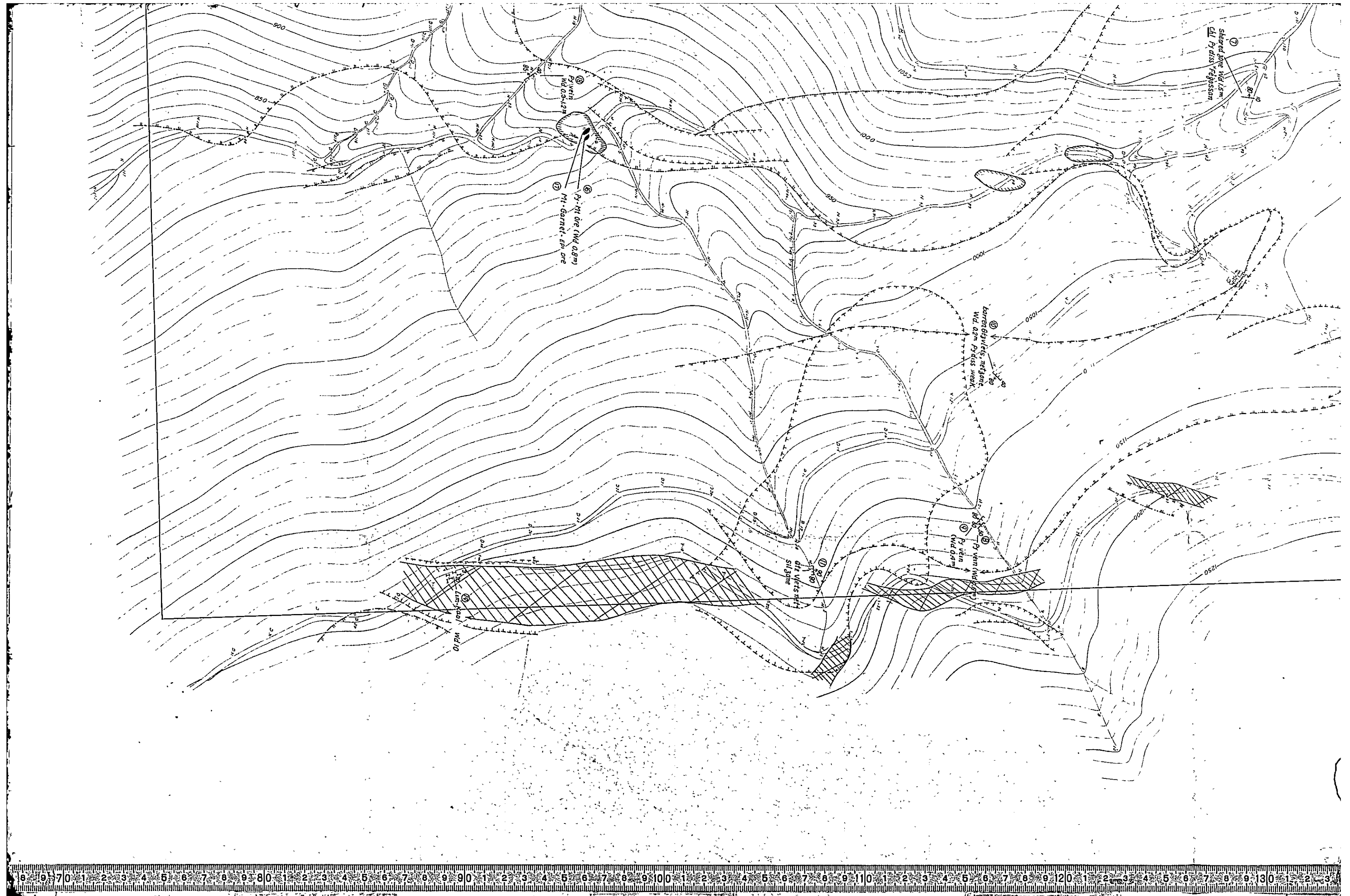
- 1 Kahrman Dere
- 2 Alaçadı
- 3 Çeşel Dere
- 4 Gölüalan
- 5 Ken mine
- 6 Ken Dere, Fol Dere
- 7 Akise Yayla
- 8 Yeni Mahalle
- 9 Salana
- 10 Kani Tepe
- 11 Kızılcık-Çuhaneli
- 12 Tuzluk Mezraası
- 13 Ocak
- 14 Uzunlu

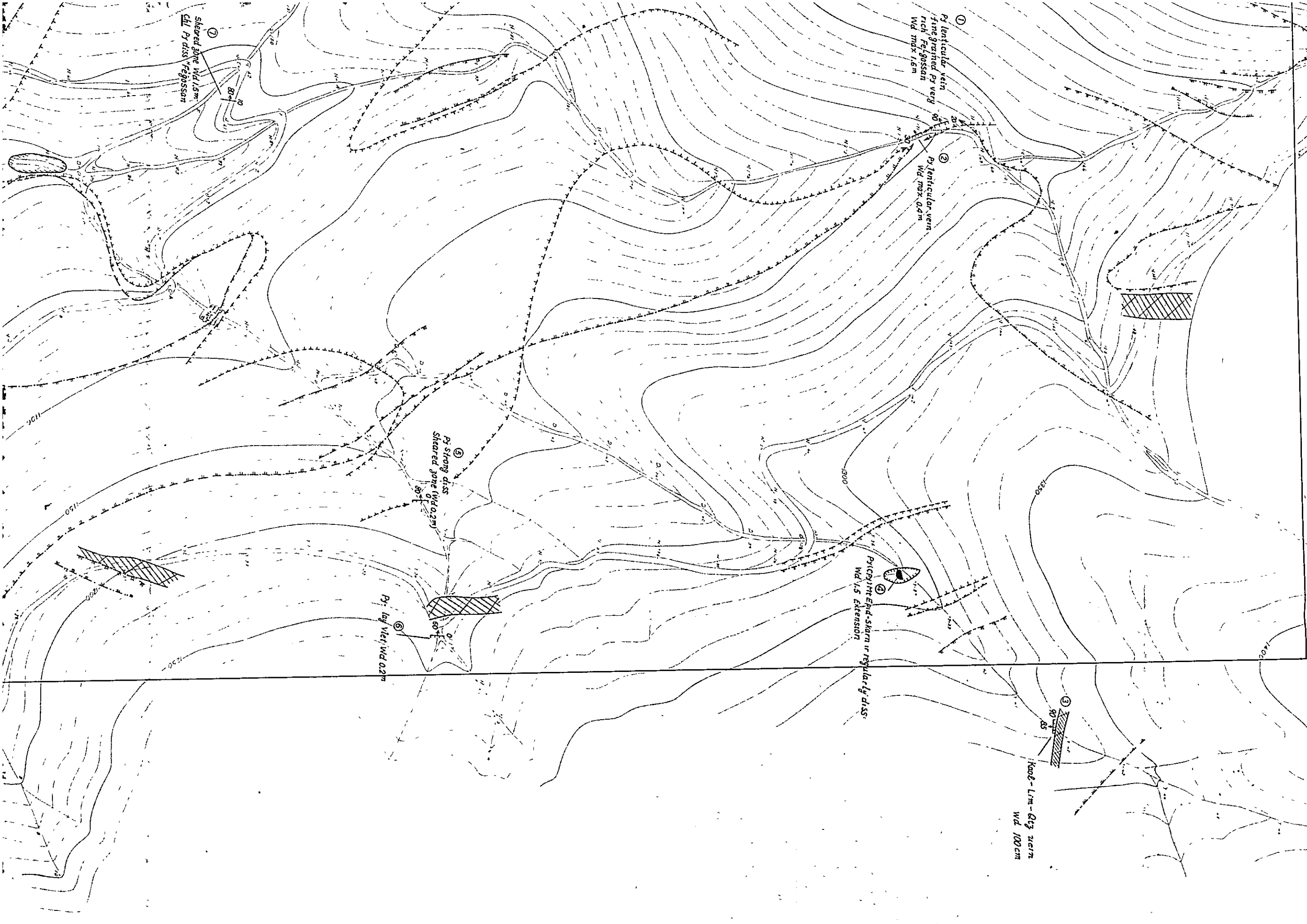


METAL MINING AGENCY OF JAPAN
 JAPAN INTERNATIONAL COOPERATION AGENCY
 FEBRUARY 1977
 Prepared by Nikko Exploration & Development Co. Ltd.

LEGEND
 IJ.J.A.D

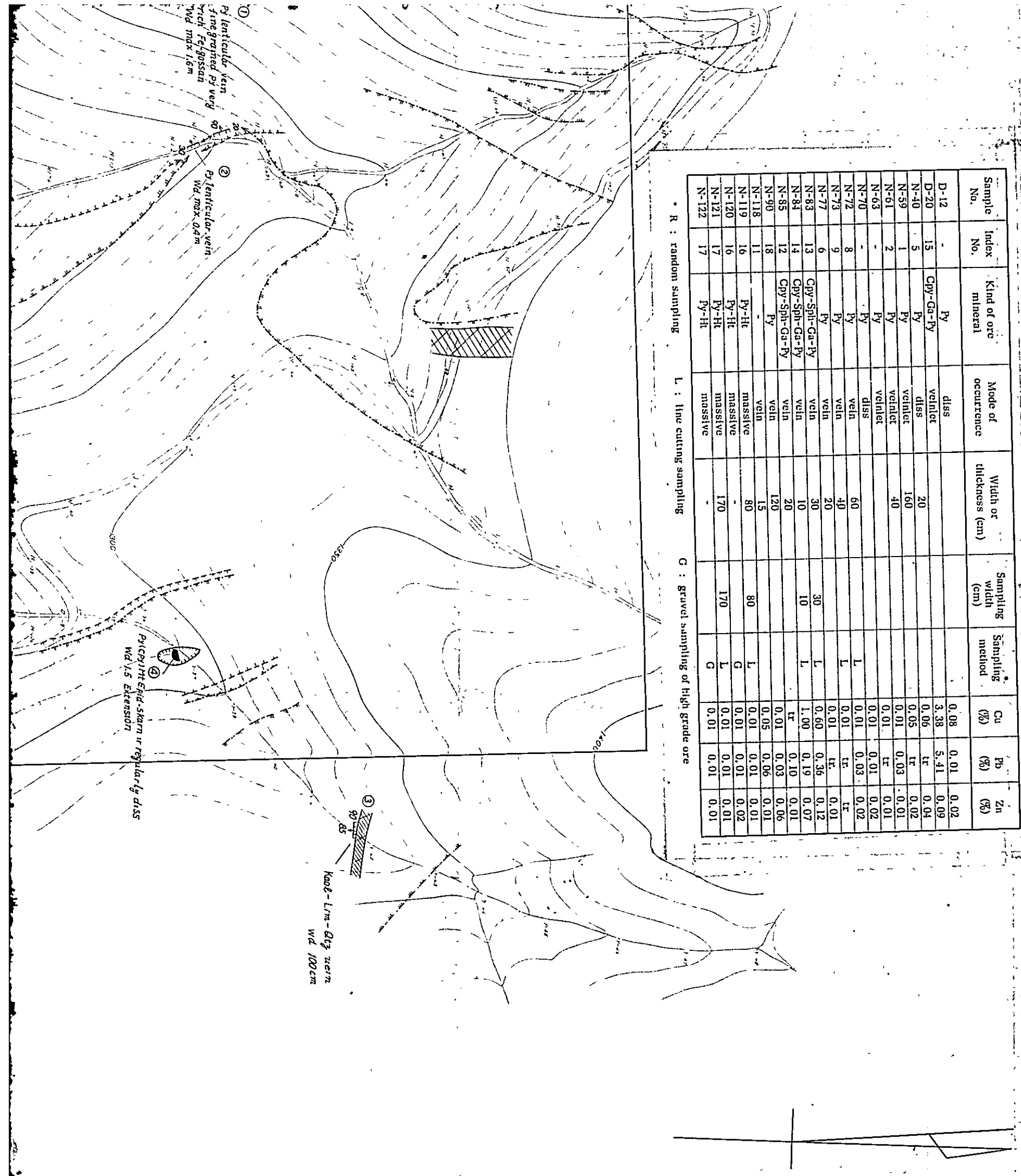
- old mine, working mine, waste & slag
eski maden, çalışan maden
- mineralization zone
mineralizasyon zonu
- vein, veinlet network, stratiform damor, damareçlikler network, tabakalı
- dissemination
diseminasyon





Sample ID	Sample Type	Vein Type	Width (cm)	Grade (%)	Grade (%)	Grade (%)	Grade (%)	Grade (%)	Grade (%)
D-12	Py	disse		0.08	0.01	0.02			
D-20	Gpy-Ga-Py	veinlet	20	3.38	5.41	0.09			
N-40	Py	disse		0.06	tr	0.04			
N-59	Py	veinlet	160	0.05	tr	0.02			
N-61	Py	veinlet	40	0.01	0.03	0.01			
N-63	Py	veinlet		0.01	tr	0.01			
N-70	Py	disse	60	0.01	0.01	0.02			
N-72	Py	vein	60	0.01	0.03	0.02			
N-73	Py	vein	40	0.01	tr	tr			
N-77	Py	vein	20	0.01	tr	0.01			
N-83	Gpy-Sph-Ga-Py	vein	30	0.60	0.36	0.12			
N-84	Gpy-Sph-Ga-Py	vein	30	1.00	0.19	0.07			
N-85	Gpy-Sph-Ga-Py	vein	20	tr	0.10	0.01			
N-90	Gpy-Sph-Ga-Py	vein	120	0.01	0.03	0.06			
N-118	Py	vein	15	0.05	0.06	0.01			
N-119	Py-Ht	massive	80	0.01	0.01	0.01			
N-120	Py-Ht	massive		0.01	0.01	0.02			
N-121	Py-Ht	massive	170	0.01	0.01	0.01			
N-122	Py-Ht	massive	170	0.01	0.01	0.01			

R : random sampling L : line cutting sampling G : gravel sampling of high grade ore



Sample No.	Index No.	Kind of ore mineral	Mode of occurrence	Width or thickness (cm)	Sampling width (cm)	Sampling method	Cu (%)	Pb (%)	Zn (%)
D-12	-	Py	dis				0.08	0.01	0.02
D-20	15	Cpy-Ga-Py	veinlet	20			3.38	5.41	0.09
N-40	5	Py	dis				0.09	0.05	0.04
N-59	1	Py	veinlet	160			0.01	0.03	0.02
N-61	2	Py	veinlet	40			0.01	0.01	0.01
N-63	-	Py	veinlet				0.01	0.01	0.01
N-70	-	Py	dis	60		L	0.01	0.03	0.02
N-72	8	Py	vein	40		L	0.01	0.01	0.01
N-73	9	Py	vein	20		L	0.01	0.01	0.01
N-77	6	Py	vein	30		L	0.60	0.36	0.12
N-83	13	Cpy-Sph-Ga-Py	vein	30		L	1.00	0.19	0.07
N-84	14	Cpy-Sph-Ga-Py	vein	10		L	tr	0.10	0.01
N-85	12	Cpy-Sph-Ga-Py	vein	20		L	0.01	0.03	0.06
N-90	18	Py	vein	120		L	0.01	0.06	0.01
N-118	11	Py	massive	15		L	0.01	0.01	0.01
N-119	16	Py-Hl	massive	80		G	0.01	0.01	0.02
N-120	16	Py-Hl	massive	170		L	0.01	0.01	0.01
N-121	17	Py-Hl	massive	170		L	0.01	0.01	0.01
N-122	17	Py-Hl	massive	-		G	0.01	0.01	0.01

R : random sampling L : line cutting sampling G : gravel sampling of high grade ore

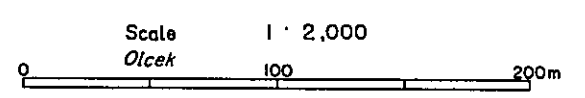
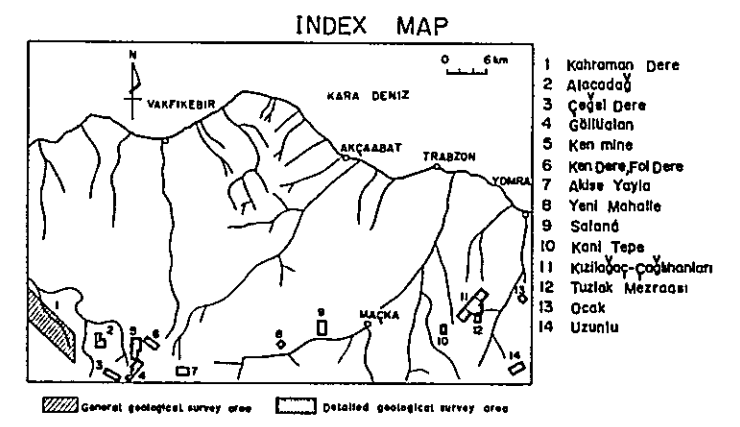
- LEGEND**
L/IND
- old mine, working mine, waste & slag
eski maden, calgan maden
 - mineralization zone
minerallasion zonu
 - vein, veinlet network, stratiform damar, damarciklar network, tabakali
 - dissemination dissemin
 - pyrite dissemination and/or limonitization zone
pirit dissemin ve fevca limonitlenme zonu
 - silicification zone
silislenme zonu
 - kaolinization zone
kaolinlenme zonu
 - carbonatization zone
karbonatlaşma zonu
 - sericitization zone
serisitlenme zonu
 - montmorillonitization zone
montmorillonitlenme zonu
 - epidotization zone
epidotlaşma zonu
 - skarnitization zone
skarnlenme zonu

Abbreviation
Kısalmalar

Ba : barite	Lim : limonite
Cal : calcite	Mt : magnetite
Chl : chlorite	Py : pyritez
Cpy : chalcopyrite	Qtz : quartz
Epi : epidote	Kuv : kuarz
Ga : galena	Spc : specularite
Kaol : kaolinite	Sph : sphalerite
	Yel : yeları

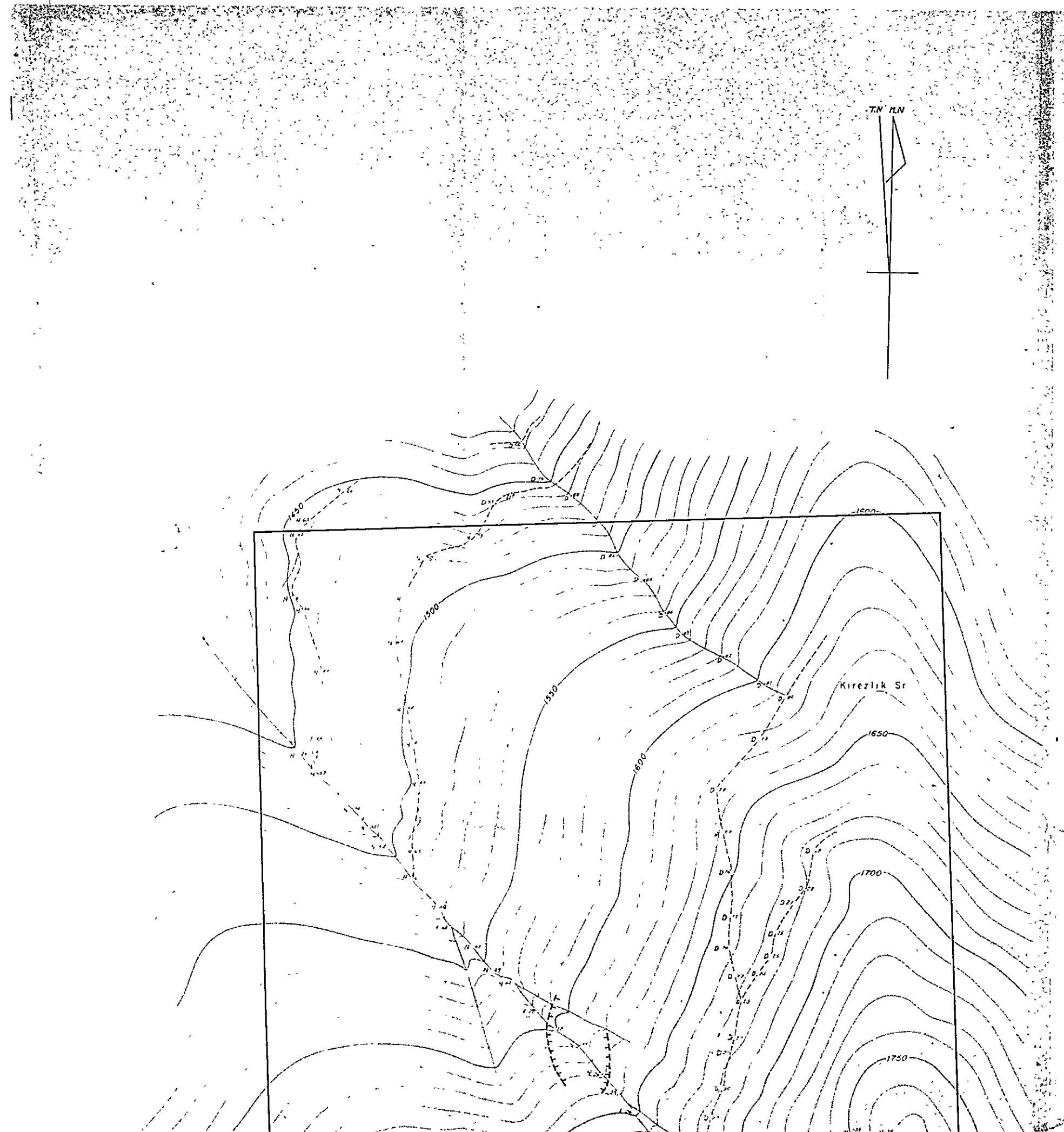


MINERAL RESEARCH AND EXPLORATION INSTITUTE
 GEOLOGICAL SURVEY
 OF
 TRABZON AREA , NORTHEASTERN TURKEY
 PHASE III
 ALTERATION AND MINERALIZATION MAP
 OF KANI TEPE AREA
 KANI TEPE SAHASININ
 ALTERASYON VE MINERALİZASYON HARİTASI



METAL MINING AGENCY OF JAPAN
 JAPAN INTERNATIONAL COOPERATION AGENCY
 FEBRUARY 1977

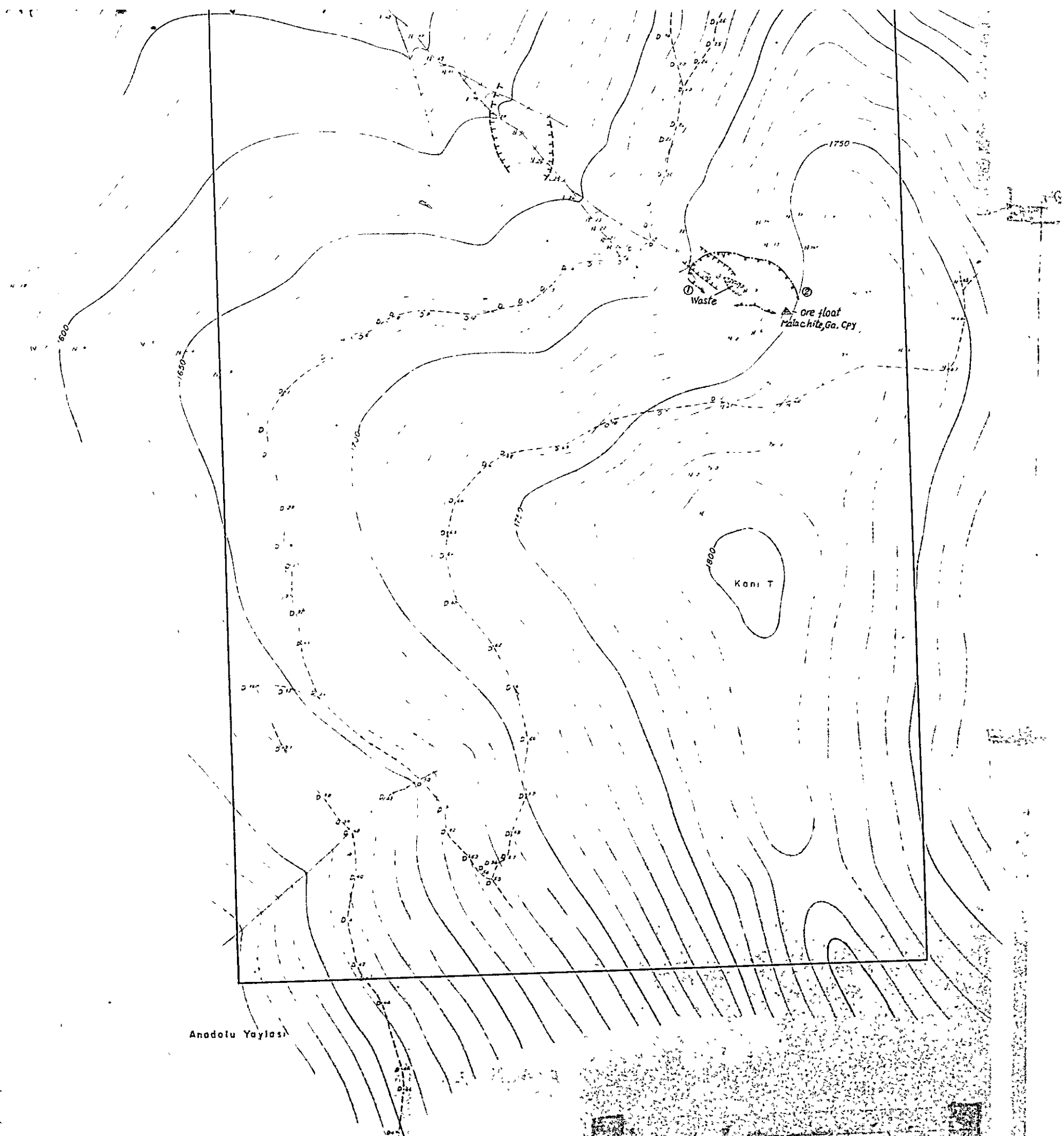
Prepared by Nikko Exploration & Development Co., Ltd















LEGEND

- old mine, working mine, waste & slag
eski maden, çalışan maden
- mineralization zone
mineralizasyon zonu
- vein, veinlet network, stratiform
damar, damarcıklar network, tabakalı
- dissemination
diseminle





LEGEND
LEJAND

-  old mine, working mine, waste & slag
eski maden, çalisan maden
-  mineralization zone
mineralizasyon zonu
-  vein, veinlet network, stratiform
damar, damarecikler network, tabakali
-  dissemination
diseminne
-  pyrite dissemination and/or limonitization zone
pirit diseminne veyveya limonitlesme zonu
-  silicification zone
silislesme zonu
-  kaolinization zone
kaolinlesme zonu
-  carbonatization zone
karbonatlayma zonu
-  sericitization zone
serisitlesme zonu
-  montmorillonitization zone
montmorillonitlesme zonu
-  epidotization zone
epidotlayma zonu
-  skarnitization zone
skarnlesme zonu




Abbreviation
Kısaltmalar

- | | |
|---|--|
| Ba : barite
<i>barit</i> | Lim : limonite
<i>limonit</i> |
| Cal : calcite
<i>kalsit</i> | Mt : magnetite
<i>magnetit</i> |
| Chl : chlorite
<i>klorit</i> | Py : pyrite
<i>pirit</i> |
| Cpy : chalcopyrite
<i>kalkopirit</i> | Qtz : quartz
<i>kuvars</i> |
| Epi : epidote
<i>epidot</i> | Spc : specularite
<i>spekularit</i> |
| Ga : galena
<i>galen</i> | Sph : sphalerite
<i>sfalerit</i> |
| Kaol : kaolinite
<i>kaolin</i> | |

Anadolu Yaylasi

Sample	Index	Kind of ore	Cu (%)	Pb (%)	Zn (%)
1	1				
2	2				
3	3				
4	4				
5	5				
6	6				
7	7				
8	8				
9	9				
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130	130				

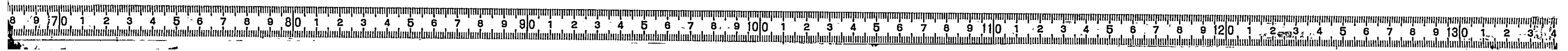


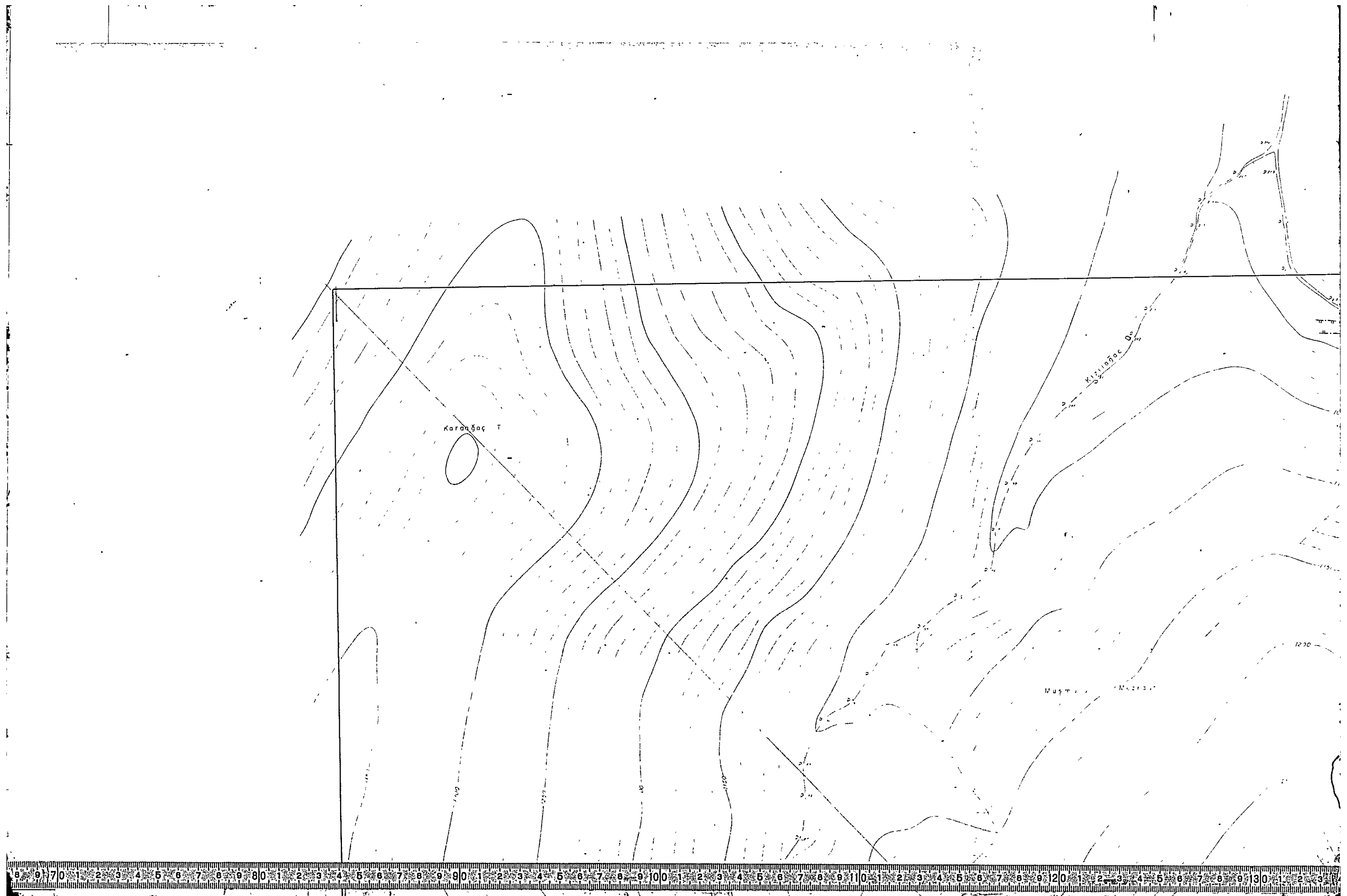
-  montmorillonitization zone
montmorillonitlenme zonu
-  epidotization zone
epidotlaşma zonu
-  skarnitization zone
skarınleşme zonu

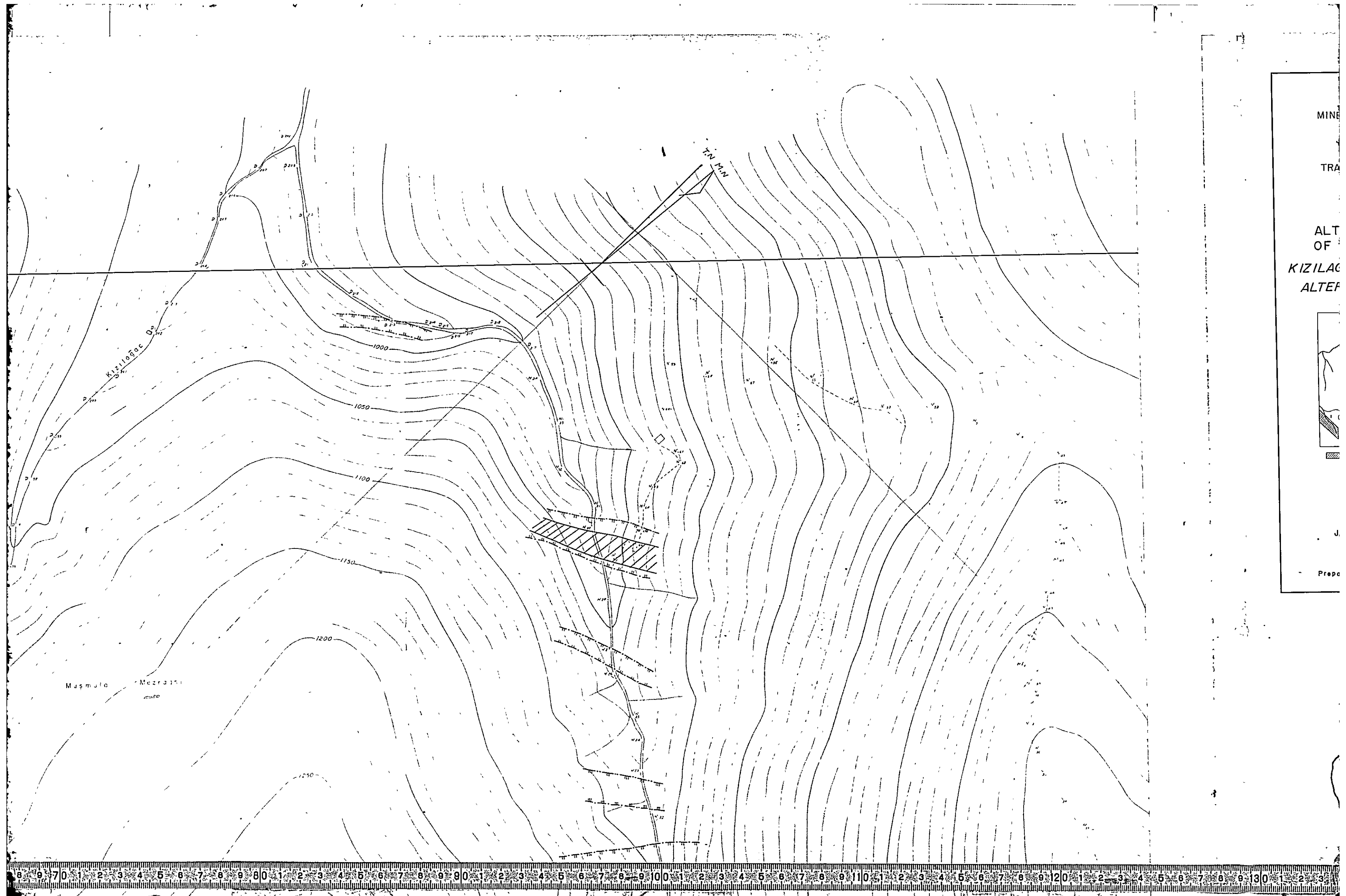
Abbreviation
Kısaltmalar

- | | |
|--------------------|-------------------|
| Ba : barite | Lim : limonite |
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| Epi : epidote | Spc : specularite |
| Ga : galena | Sph : sphalerite |
| Kaol : kaolinite | |

Sample No.	Index No.	Kind of ore mineral	Cu (%)	Pb (%)	Zn (%)
N-101	2	Malachite-Ga-Cpy	4.38	29.34	0.32

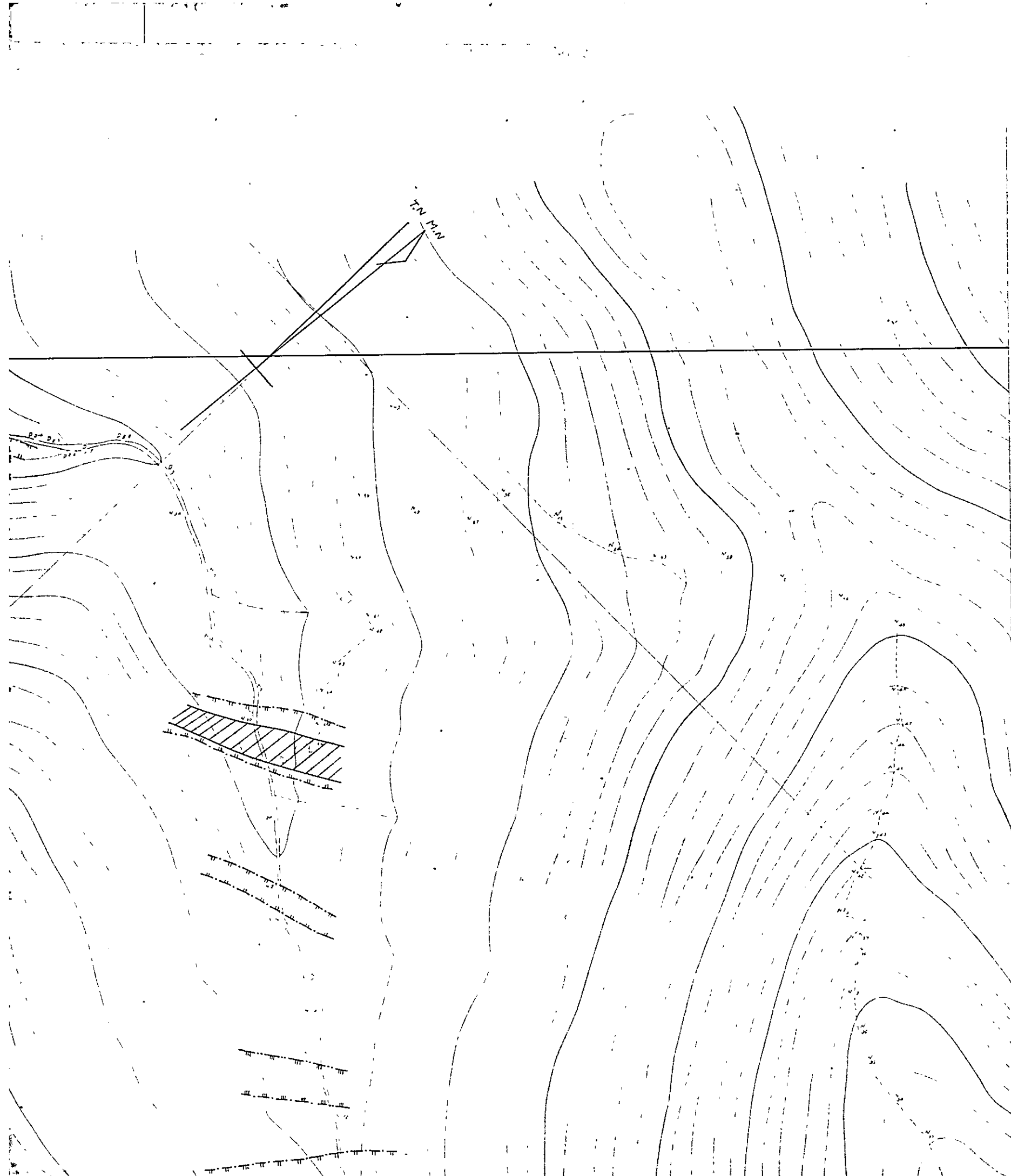






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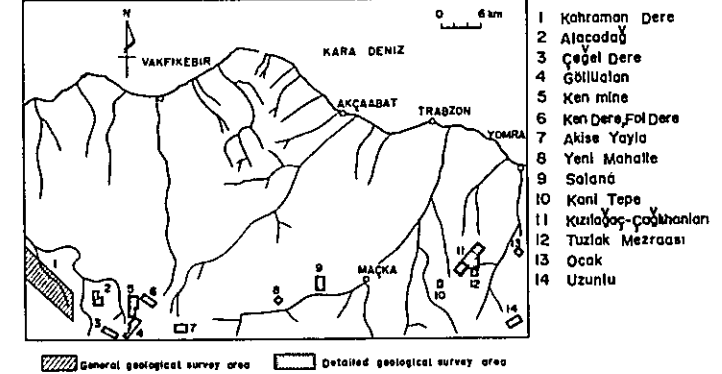


PL. 3-11-1

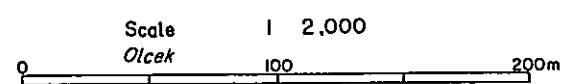
MINERAL RESEARCH AND EXPLORATION INSTITUTE
 GEOLOGICAL SURVEY
 OF
 TRABZON AREA , NORTHEASTERN TURKEY
 PHASE III

ALTERATION AND MINERALIZATION MAP
 OF KIZILAĞAÇ-ÇAĞLIHANLARI AREA
 KIZILAĞAÇ-ÇAĞLIHANLARI SAHASININ
 ALTERASYON VE MİNERALİZASYON HARİTASI

INDEX MAP



- 1 Kahraman Dere
- 2 Alaçadağ
- 3 Çeşel Dere
- 4 Gölüçan
- 5 Ken mine
- 6 Ken Dere, Pol Dere
- 7 Akışa Yayla
- 8 Yeni Mahalle
- 9 Saland
- 10 Karlı Tepe
- 11 Kızılağaç-Çağlıhanlı
- 12 Tuzlak Mezraası
- 13 Ocak
- 14 Uzuntu

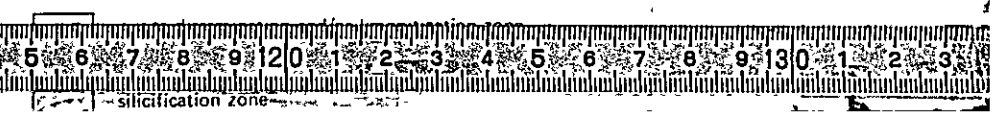


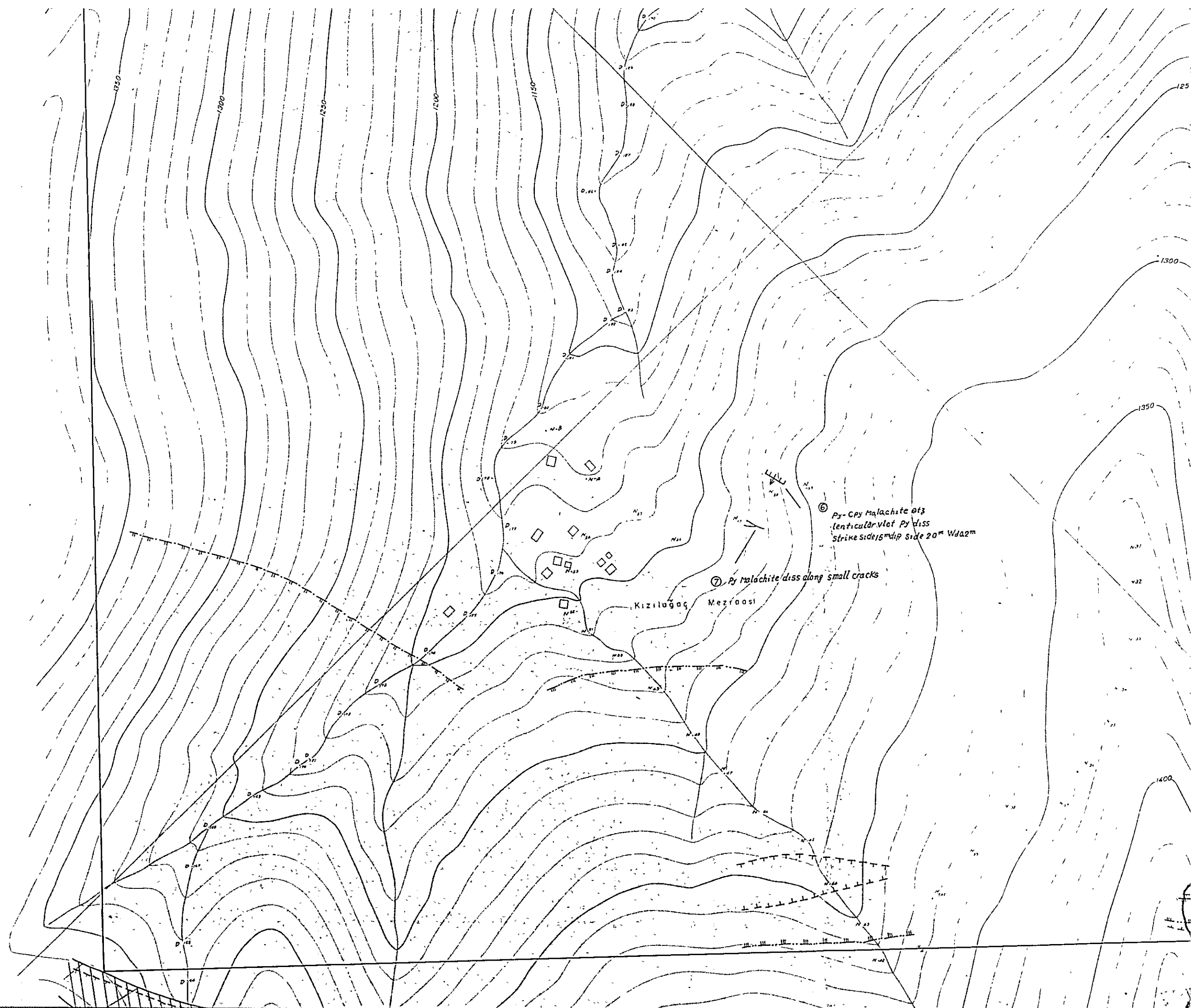
Scale 1 : 2.000
 METAL MINING AGENCY OF JAPAN
 JAPAN INTERNATIONAL COOPERATION AGENCY
 FEBRUARY 1977

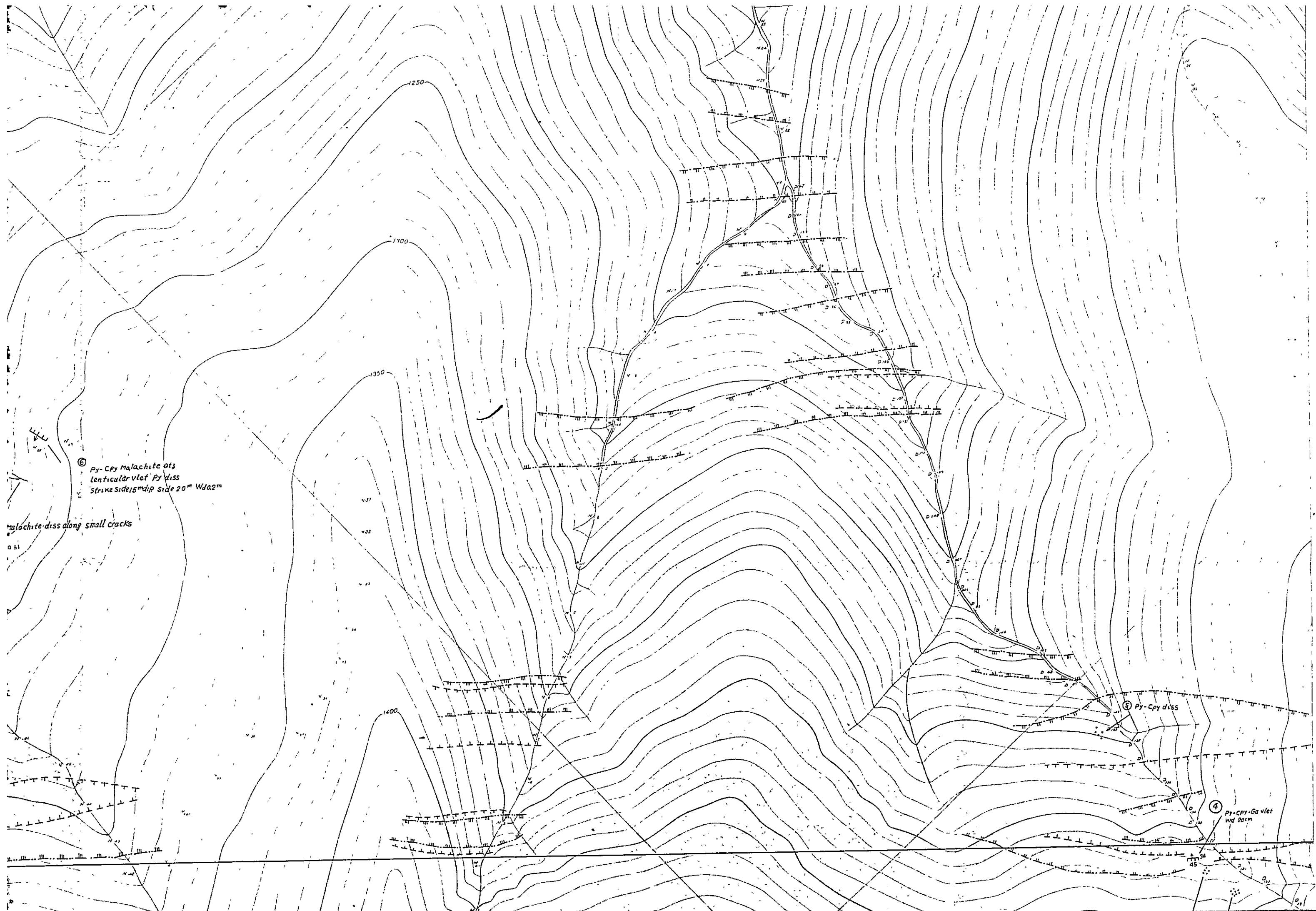
Prepared by Nikko Exploration & Development Co., Ltd

LEGEND

- old mine, working mine, waste & slag
eski maden, çalışan maden
- mineralization zone
mineralezyon zonu
- vein, veinlet network, stratiform
damar, damarcıklar network, tabakalı
- dissemination
diseminasyon

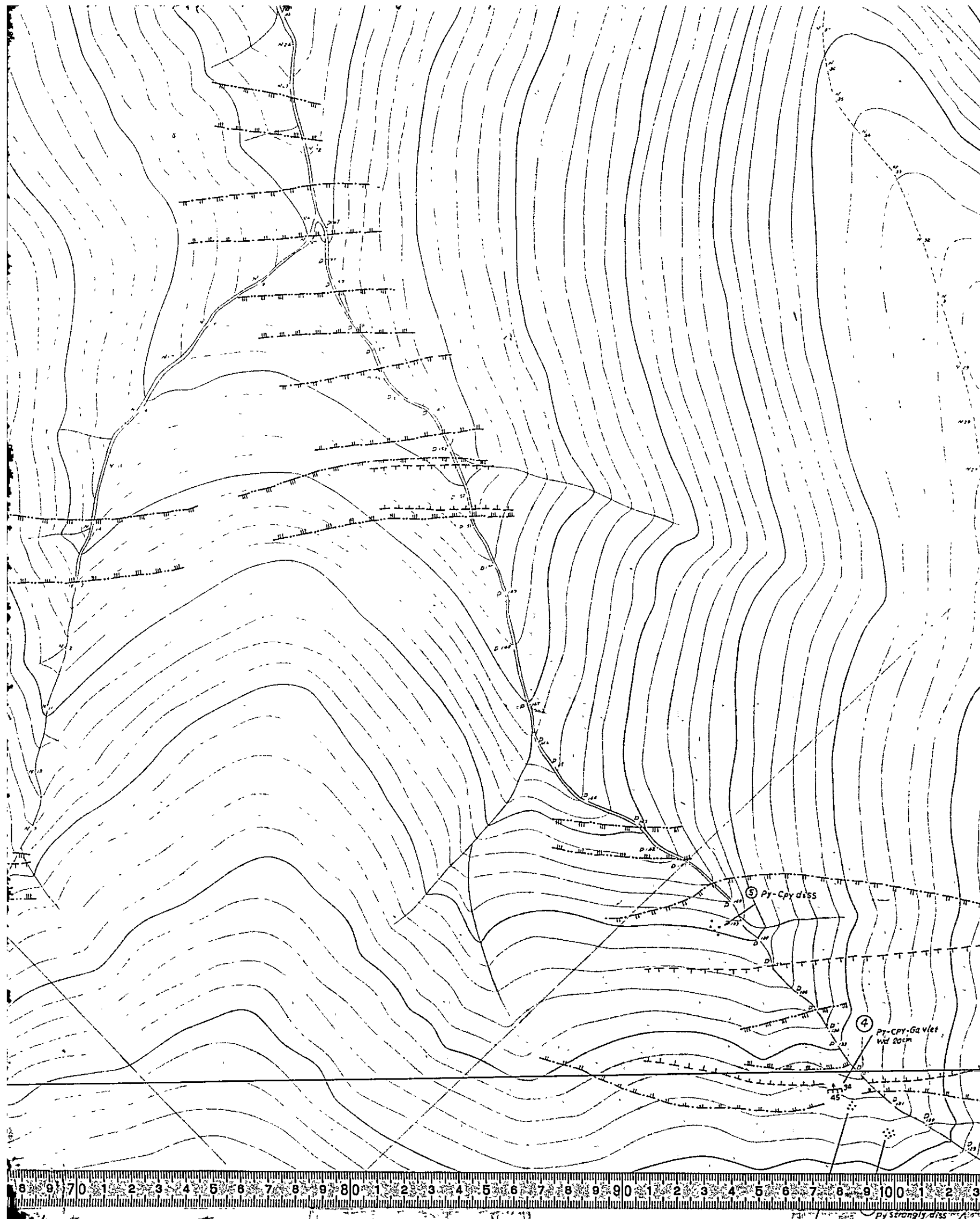


















Sample No.
D-60
D-61
N-226
N-227

R



LEGEND
L.J.A.N.D

-  old mine, working mine, waste & slag
eski maden, çalişan maden
-  mineralization zone
mineralizasyon zonu
-  vein, veinlet network, stratiform
damar, damareciklar network, tabakali
-  dissemination
diseminat
-  pyrite dissemination and/or limonitization zone
pirit diseminat ve/veya limonitleşme zonu
-  silicification zone
silileşme zonu
-  kaolinization zone
kaolinleşme zonu
-  carbonatization zone
karbonatlaşma zonu
-  sericitization zone
sericitleşme zonu
-  montmorillonitization zone
montmorillonitleşme zonu
-  epidotization zone
epidotlaşma zonu
-  skarnitization zone
skarnleşme zonu

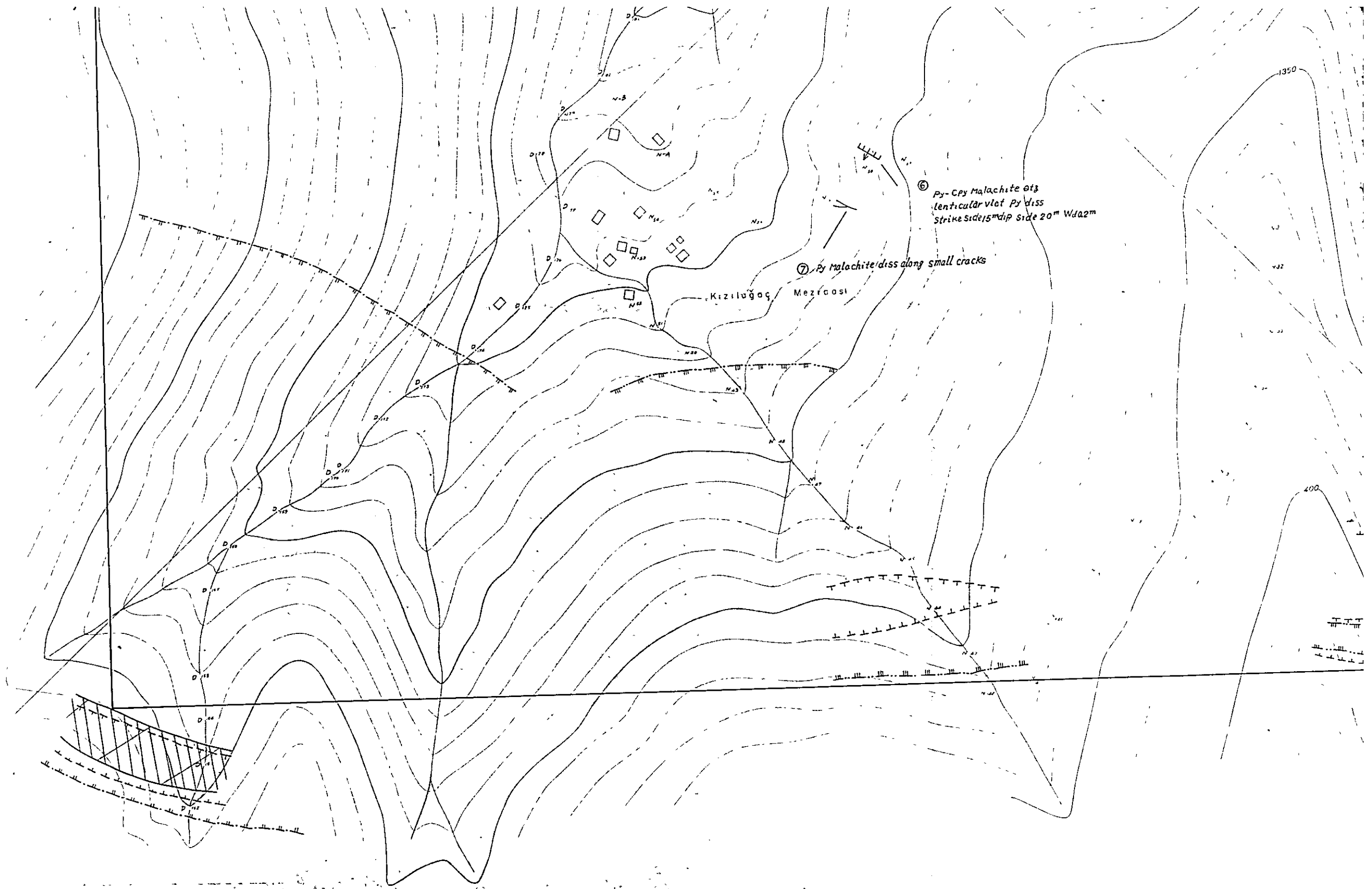
Abbreviation
Kısaltmalar

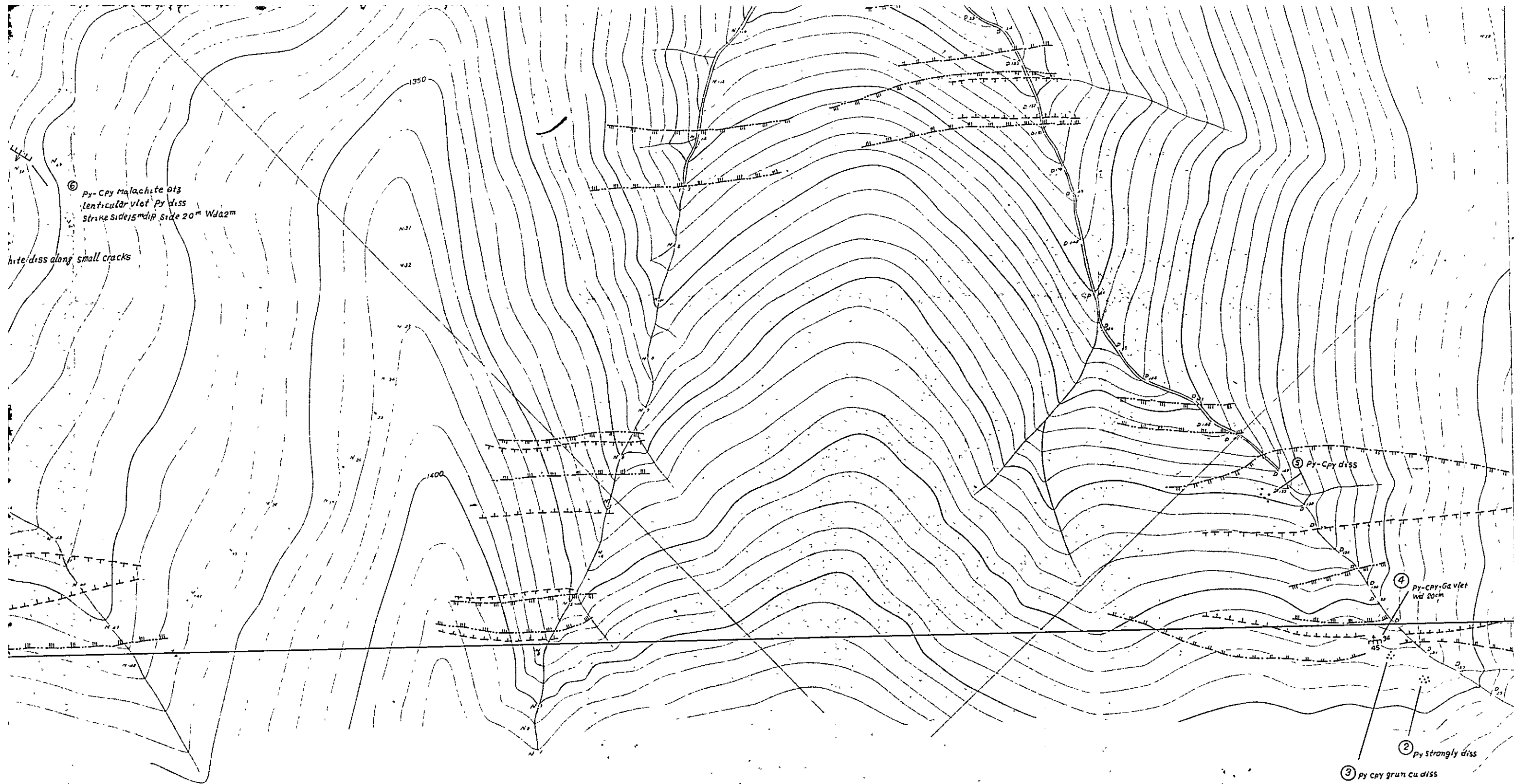
- | | |
|--------------------|-------------------|
| Ba : barite | Lm : limonite |
| Cal : calcite | Mt : magnetite |
| Chl : chlorite | Py : pyrite |
| Cpy : chalcopyrite | Qtz : quartz |
| Epi : epidote | Spc : specularite |
| Ga : galena | Sph : sphalerite |
| Kaol : kaolinite | |

Sample No.	Index No.	Kind of ore mineral	Mode of occurrence	Width or thickness	Cu (%)	Pb (%)	Zn (%)
D-60	2	Py	diss		0.18	tr.	0.01
D-61	3	Cpy-(Ga-)Spy	vein	6	4.50	0.10	9.00
N-226	6	Py	vein	20	2.50	0.77	1.95
N-227	7	Cu-oxide	diss		3.50	0.03	0.03

R : random sampling L : line cutting sampling G : gravel sampling of high grade ore



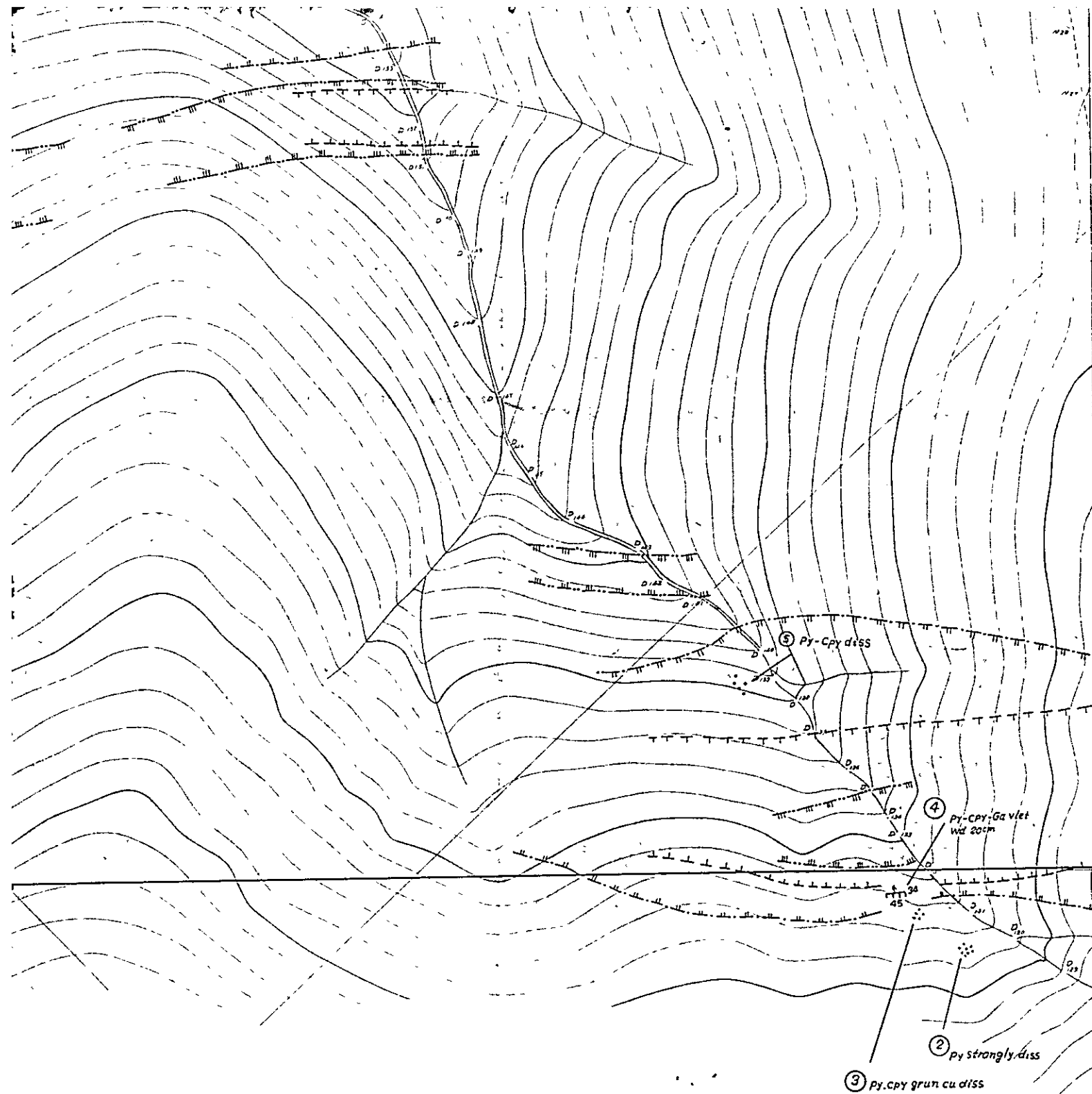




Sample No.	Index No
D-60	2
D-61	3
N-226	6
N-227	7

* R : rardon





montmorillonitization zone
montmorillonitləşmə zonası

epidotization zone
epidotlaşma zonası

skarnitization zone
skarntləşmə zonası

Abbreviation
Kısaltmalar

Ba : barite
Cal : calcite
Chl : chlorite
Cpy : chloropyrite
Epi : epidote
Ga : galena
Kaol : kaolinite

Lim : limonite
Mt : magnetite
Py : pyrite
Qtz : quartz
Spc : specularite
Sph : sphalerite

Sample No.	Index No.	Kind of ore mineral	Mode of occurrence	Width or thickness	Cu (%)	Pb (%)	Zn (%)
D-60	2	Py	diss		0.18	tr.	0.01
D-61	3	Cpy-(Ga-)Spy	vein	6	4.50	0.10	9.00
N-226	6	Py	vein	20	2.50	0.77	1.95
N-227	7	Cu-oxide	diss		3.50	0.03	0.03

* R : random sampling L : line cutting sampling G : gravel sampling of high grade ore

