

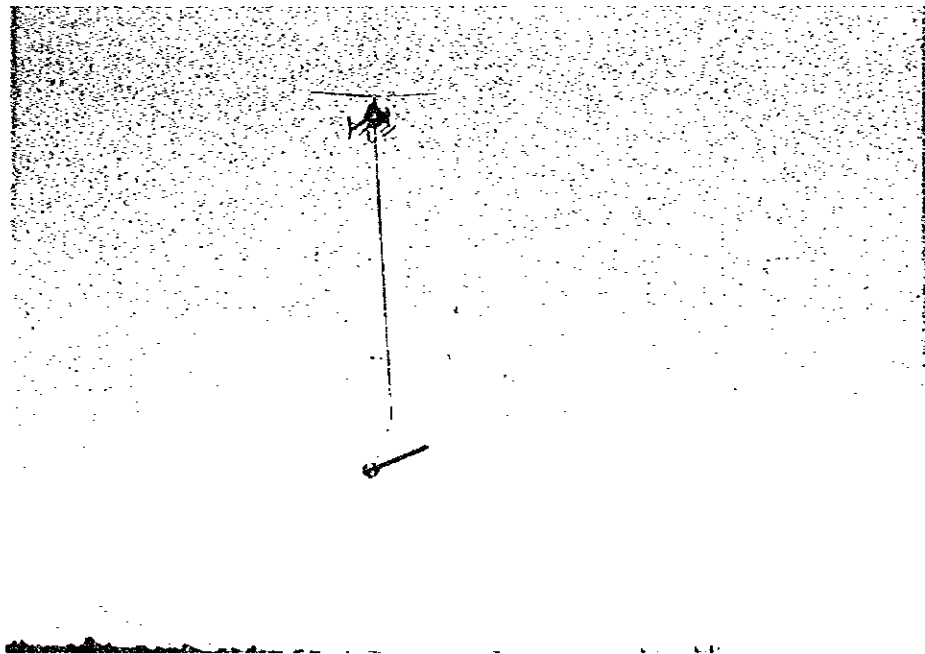
A-1

PHOTOGRAPHS OF THE SURVEY

A-1(1) Photographs of the Airborne Geophysical Survey

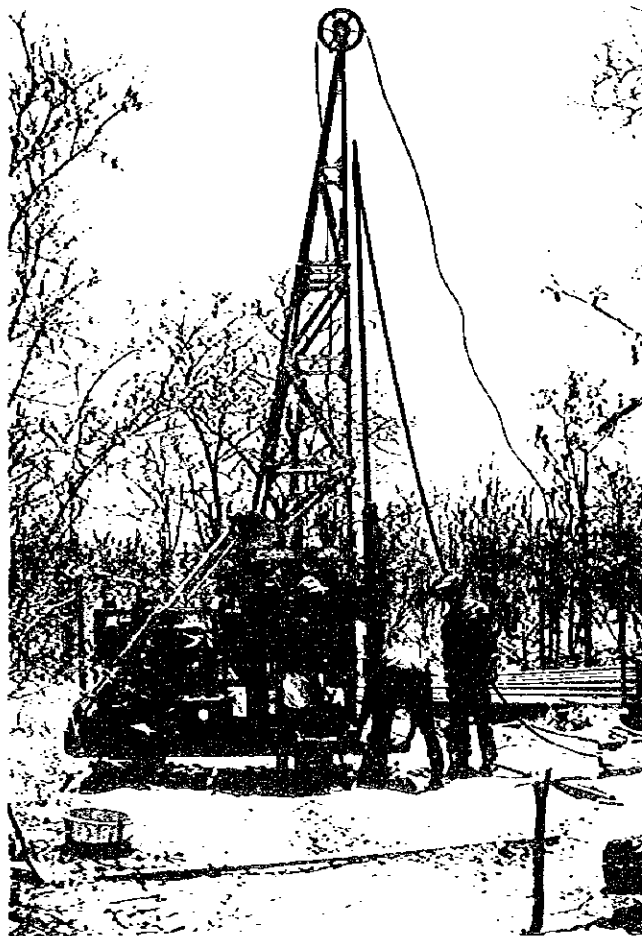


Bell Long Ranger L3-ZS-RFA Helicopter



View of Data Acquisition with the sensor "Bird"

A-1(2) Photographs of the Drilling Survey



Drilling of MJNM-4 by SECO 12



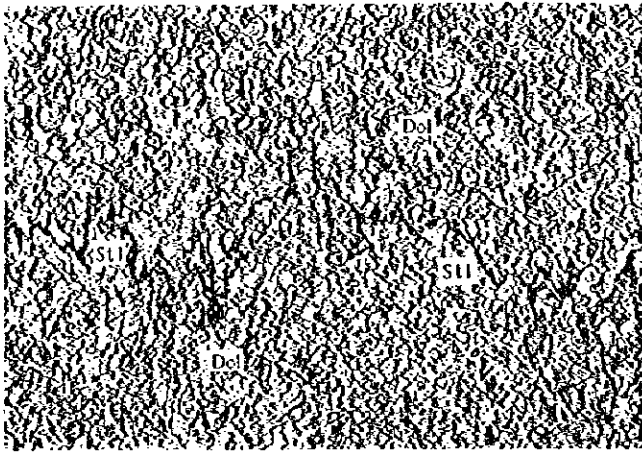
Drilling of MJNM-1 by L-38

A-2

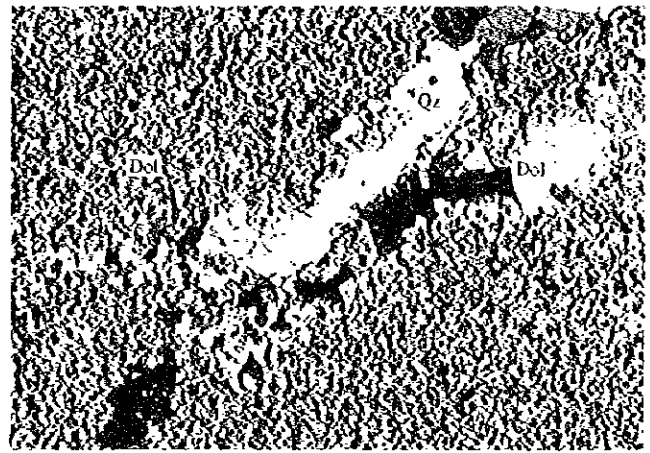
MICROPHOTOGRAPHS OF THIN SECTION

Abbreviations for minerals in photographs

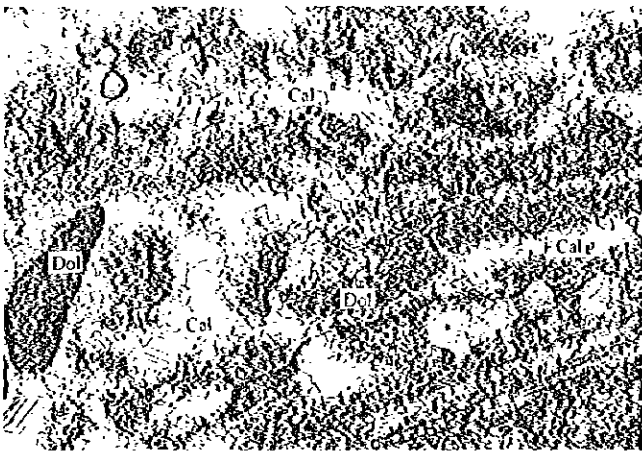
Abbreviations	Mineral
Qz	Quartz
Cal	Calcite
Dol	Dolomite
Stl	(Stylolite)



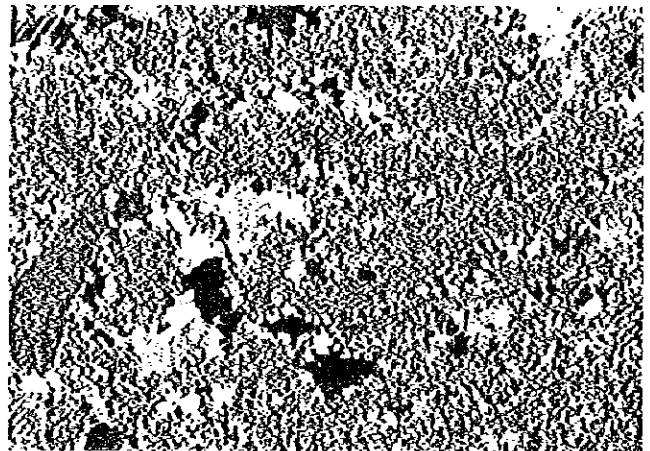
Sample No. S-01
 Hole No & Depth MJNM-1 141.00 m
 Rock Name Dolomite with stylolite texture
 Open Nicol
 0 0.5mm



Sample No. S-03
 Hole No & Depth MJNM-1 246.00 m
 Rock Name Dolomite
 Cross Nicol
 0 0.5mm



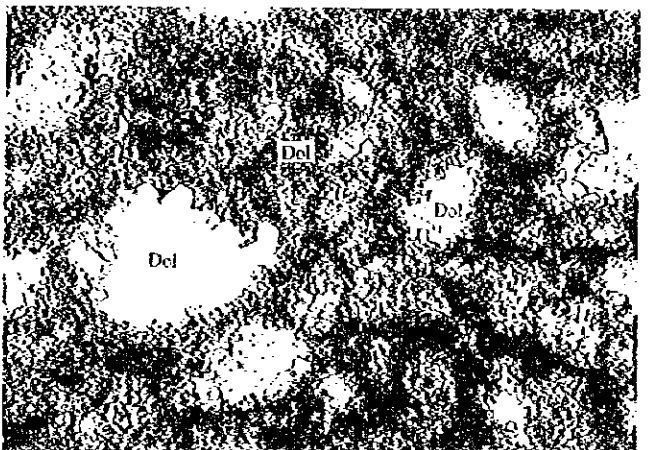
Sample No. S-04
 Hole No & Depth MJNM-1 212.00 m
 Rock Name Calcitized dolomite
 Open Nicol
 0 0.5mm



Sample No. S-04
 Hole No & Depth MJNM-1 212.00 m
 Rock Name Calcitized dolomite
 Cross Nicol
 0 0.5mm



Sample No. S-05
 Hole No & Depth MJNM-1 102.10 m
 Rock Name Algae dolomite
 Open Nicol
 0 0.5mm



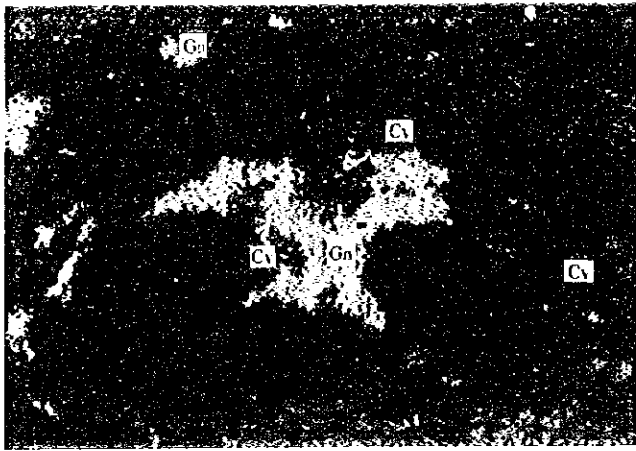
Sample No. S-09
 Hole No & Depth MJNM-2 218.40 m
 Rock Name Grainstone
 Open Nicol
 0 0.5mm

A-3

MICROPHOTOGRAPHS OF POLISHED SECTION

Abbreviations for minerals in photographs

Abbreviations	Mineral
Gn	Galena
Sp	Sphalerite
Ds	Descloizite
Cv	Covellite



Sample No. P-01
Hole No. & Depth: MJNM-1 91.60 m
Ore Name: Lead and copper oxide ore
Open Nicol
0 0.2mm



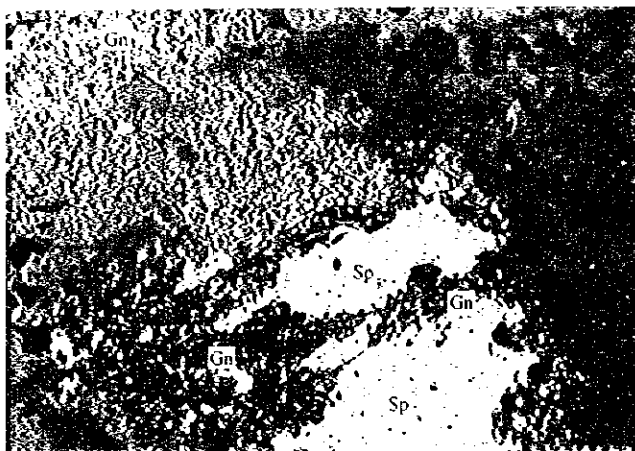
Sample No. P-02
Hole No. & Depth: MJNM-1 112.30 m
Ore Name: Lead and zinc ore
Open Nicol
0 0.2mm



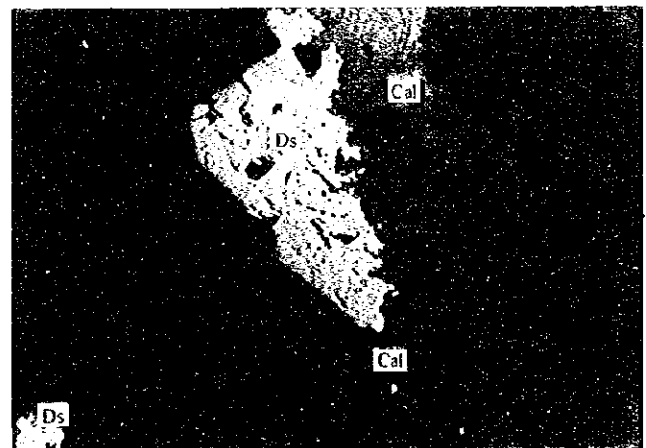
Sample No. P-03
Hole No. & Depth: MJNM-1 141.63 m
Ore Name: Zinc ore
Open Nicol
0 0.2mm



Sample No. P-04
Hole No. & Depth: MJNM-1 246.25 m
Ore Name: Lead and zinc ore
Open Nicol
0 0.2mm



Sample No. P-01
Hole No. & Depth: MJNM-1 246.25 m
Ore Name: Lead and zinc ore
Open Nicol
0 0.2mm



Sample No. P-05
Hole No. & Depth: MJNM-3 63.55 m
Ore Name: Vanadium ore
Open Nicol
0 0.2mm

LEGEND

	SYMBOL.	ROCK NAME	LITHOFACIES	
Tertiary	---	CALCRETE	Less stratified calcrete	
	•••••		Gravel bearing calcrete	
	Upper Proterozoic		DOLOMITE	Massive dolomite
				Well bedded dolomite
				Sandy dolomite
		•••••		Oolitic dolomite
		^ ^ ^		Stromatolitic dolomite
		^ ^ ^		Stylolite developed
		△ △ △		Brecciated, flexured
	Upper Proterozoic	~~~~~	CHERT	
		SHALE		
~~~~~		ARGIL	Argillaceous zone	
X X X			Fractured zone ( young and open )	
X X X			Crackled zone ( old and closed )	
Upper Proterozoic	•••	MINERALISATION	Pod, dot, speck	
	/		Veinlets	

### ABBREVIATIONS

#### COLOR AND FORM

wht : white  
 blk : black  
 ppl : purple  
 brn : brown  
 irreg : irregular

#### MINERAL

sp : sphalerite  
 hnt : hematite  
 clay : clay mineral

#### ALTERATION

cal : calcification  
 dol : dolomitization  
 arg : argillization  
 ox : oxidation  
 sil : silicification  
 sel : selicitization

#### VEIN MINERAL

Qtz : quartz  
 Cal : calcite

Fig. II - 1 - 2 (1) Geological logs for drill holes

MJNM-1

0m-75m

DEPTH (m)	GEOLOGIC COLUMN	ROCK NAME	LITHOLOGICAL DESCRIPTION	VEIN ALI.	SAMPLE			CHEMICAL ASSAYS												
					No.	From (m)	To (m)	Length (m)	Au (ppb)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Cd (ppm)	Ga (ppm)	V (ppm)				
5		CALCRETE	cream to light brown showing breccia texture, bedding in part																	
10	o o o		10.70m -typical calcrete showing brn rimmed brc 3cm $\phi$																	
15			16.15m -massive to stratified calcrete druse calcite in part																	
25																				
30		CALCRETE	28.30-28.70m pebbles cemented with powdery material																	
35	o o o		34.50m gradually sandy grains/pebbles increase																	
40			sandy calcrete																	
45	o o o		40.50m ~ 1cm $\phi$ round to angular pebble																	
50	o o o		pebble:whit-orange, grey calcrete round <5cm $\phi$																	
55			51.58m massive calcrete with horizontal vugs																	
60	o o o		55.83m sandy calcrete																	
65	o o o		57.30m pebble calcrete																	
70	o o o		57.85m massive calcrete with horizontal vugs																	
75	o o o		67.60m coarse pebbles 10cm $\phi$																	
			70.00m matrixreddish brown argillaceous pebble:grey dolomite																	

Fig. II - 1 - 2 (2) Geological logs for drill holes

MJNM-1

75m-150m

DEPTH (m)	GEOLOGIC COLUMN	ROCK NAME	LITHOLOGICAL DESCRIPTION	VEIN ALT.	SAMPLE		CHEMICAL ASSAYS																				
					No.	From (m)	To (m)	Length (m)	Au (ppb)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Cd (ppm)	Ga (ppm)	V (ppm)											
80	○ ○ ○ ○	CALCRETE	85-40m grey to dark grey dolomite																								
85	○ ○ ○ ○	DOLomite	88.60-89.50m argil sandy dol. ∠ 30° 91.35m well bedded grey dol. ∠ 20-30° 92.60m chalcocite-malachite specks 92.40-94.90m blk dol. distorted	arg hmt	X-01 89																						
90	▬ ▬ ▬ ▬		med. to crs sandy granite with irregular lenses of chert 1-2cm		P-01 91.6																						
95	▬ ▬ ▬ ▬		100.45m cracks with reddish matrix																								
100	▬ ▬ ▬ ▬	DOLomite	101.86-102.26m disseminated sphalerite mineralisation		A-01 I-01	101.86 101.86	102.26 101.90	0.40 0.04	< 1 < 1	2.18	1.1	1710	851	4	< 1	4	< 1										4
105	▬ ▬ ▬ ▬		-102.70m brnsh grey dol. with reddish argil	arg	S-05 A-02	102.10 104.01	104.41	0.40	< 1	0.50	6	154	107	< 1	< 1	49											
110	▬ ▬ ▬ ▬		103.95m yellow veinlets of vanadium 104.10-104.70m breccia dolomite 104.45-104.66m blk dots or stains of sphalerite or vanadium	sil	A-03 A-04	104.41 106.70	104.66 107.00	0.25 0.30	< 1 < 1	0.50 0.50	30 4	605 99	244 35	1	< 1	12											
115	▬ ▬ ▬ ▬	DOLomite CHERT OOLITE	110.51-110.90m cinnamon red and black veinlets V or Zn 110.10m sphalerite along stylolite plane well bedded dol. ∠ 40-45° 111.60m sphalerite 112.30-112.55m galena-sphalerite pods 113.20m sphalerite vein/specks 113.97m sphalerite dots 114.15m sphalerite veinlets		A-05 A-06 A-07 I-02 A-08 P-02 I-03 I-04 X-02 A-09	110.81 111.09 111.58 111.58 112.30 112.30 112.30 112.47 112.50 113.94	110.94 111.29 111.69 111.69 112.62 112.40 112.62 114.15	0.13 0.20 0.11 0.11 0.32 0.10 0.15 0.21	< 1 < 1 < 1 < 1 < 1 0.10 0.15 < 1	0.20 1.49 7.06 19.00	4 7 12 59	85 374 14500 45200	35 139 1420 18800	< 1 < 1 5 32	< 1 < 1 < 1 < 1	25 42 7 < 1											
120	▬ ▬ ▬ ▬		well bedded dol. ∠ chert lense ∠ 30° 123.80m open fracture with reddish argillaceous sediment		A-10	123.88	124.08	0.20	< 1	0.30	8	136	226	< 1	< 1												28
125	▬ ▬ ▬ ▬		124.00m black stripe mineral massive dol. 125.3m grey to white finely bedded dol. ∠ 20° partly sil. irreg. bands	sil																							
130	▬ ▬ ▬ ▬		129.10m dark grey dol. 129.45m green vanadium films 129.95m-131.00m dark grey sandy dol. showing distorted lamina	sil																							
135	▬ ▬ ▬ ▬		131.00m- bedded dol. chert or sil beds 134.30m calcite box work druse 135.30m dark grey dol. 135.36m crs to med sandy grey dol. 136.10m vanadium film in crack crs graphitic carbonaceous granite finely bedded ∠ 20°																								
140	▬ ▬ ▬ ▬		141.50m -creamy brn to light grey dol. with vertical cracks Zn-V massive non bedded 144.47m sphalerite speck	hmt	S-01 A-11 P-03 A-12	141.00 141.55 141.63 143.70	141.93 144.00	0.38 0.30	18 < 1	0.79 0.89	25 9	267 130	909 3500	15 12	< 1 < 1	27 13											
145	▬ ▬ ▬ ▬		146.65m dol. > chert 2-5cm thick beds																								
150	▬ ▬ ▬ ▬																										

Fig. II - 1 - 2 (3) Geological logs for drill holes

MJNM-1

150m-225m

DEPTH (m)	GEOLOGIC COLUMN	ROCK NAME	LITHOLOGICAL DESCRIPTION	VEIN ALT.	SAMPLE		CHEMICAL ASSAYS												
					No.	From (m)	To (m)	Length (m)	Au (ppb)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Cd (ppm)	Ga (ppm)	V (ppm)			
155		SHALE	152.40-.65m chert or sil. sandstone $\angle 20^\circ$ 153.25-.65m dark grey dolomitic shale 153.65-155.55m med sandy dol. 155.55m-.6m grey finely bedded dol. 157.30-158.50m fine Zn veins along steep cracks		A-13	157.25	157.88	0.65	< 1	0.07	8	128	49	< 1	< 1				
160		DOLomite	167.80m- grey dolomite $\angle 30^\circ$ brnsh grey to grey dolomite fine massive fractured locally		A-14	158.08	158.78	0.70	< 1	0.70	5	69	67	< 1	2				
175		DOLomite	174.35-178.45m cracked dolomite light grey 175.55-175.65m Vanadium mineral veinlets grey dolomite $\angle 50-60^\circ$		A-31	185.83	186.07	0.14	1	0.60	5	85	72	< 1	< 1				15
180		DOLomite	182.70m- cracked dolomite																
185		DOLomite	186.00-186.05m Zn or V																
189		DOLomite	189.90-189.95m V?																
200		DOLomite	198.85m Vanadium along stylolite HC: $\Delta$																
205		DOLomite	204.55m transparent calcite open fracture w=1cm 206.65m dark grey fine dolomite	Cal w=1cm															
210		DOLomite	208.10m light grey to brnsh grey dol. 210.20-210.26m chert bed contact irregular $\angle 10^\circ$		A-15	211.57	211.77	0.20	< 1	2.10	8	102	302	2	1				15
215		DOLomite	210.85m Vanadium film in cracks stylolite predominate 211.65m V or Zn in stylolite 211.95-212.00m sphalerite specks 212.95-213.10m black Zn ore specks sandy dolomite 216.15-216.35m chert $\angle 20^\circ$ 217.25m Cu oxide dot in breccia massive dol. stylolite	cal	A-16	211.91	212.08	0.17	< 1	1.80	11	147	998	5	< 1				27
220		DOLomite	211.65m V or Zn in stylolite 211.95-212.00m sphalerite specks 212.95-213.10m black Zn ore specks sandy dolomite 216.15-216.35m chert $\angle 20^\circ$ 217.25m Cu oxide dot in breccia massive dol. stylolite	cal	A-17	213.00	213.15	0.15	< 1	2.90	15	605	5710	21	< 1				57
225		DOLomite	222.75-222.83m Cu-Zn(?) oxide dots 223.12-223.67m Sphalerite(?) dots 224.98m green Vanadium in cavity calcite		A-18	217.15	217.30	0.15	< 1	0.80	8	86	55	< 1	< 1				15
225		DOLomite	222.75-222.83m Cu-Zn(?) oxide dots 223.12-223.67m Sphalerite(?) dots 224.98m green Vanadium in cavity calcite		A-19	222.60	222.85	0.25	< 1	2.00	32	156	2500	10	1				7
225		DOLomite	222.75-222.83m Cu-Zn(?) oxide dots 223.12-223.67m Sphalerite(?) dots 224.98m green Vanadium in cavity calcite		A-20	223.07	223.67	0.60	< 1	0.80	22	165	3160	15	< 1				9

Fig. II - 1 - 2 (4) Geological logs for drill holes

MJNM-1

225m-300m

DEPTH (m)	GEOLOGIC COLUMN	ROCK NAME	LITHOLOGICAL DESCRIPTION	VEIN ALT.	SAMPLE			CHEMICAL ASSAYS												
					No.	From (m)	To (m)	Length (m)	Au (ppb)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Cd (ppm)	Ga (ppm)	V (ppm)				
230			grey med dol. light brnish grey dol. massive 228.45-229.30m chert beds																	
235																				
240			brnish grey bedded dol. fine calcitized	cal																
245			242.90-243.00m Sphalerite pods and veinlets in druse	sil	A-21	242.76	242.97	0.21	5	16.00	4280	179	< 1						31	
			245.60-246.91m Sphalerite Galena in horizontal cracks and pods		I-05	242.76	242.97	0.21												
					A-22	245.75	246.25	0.50	4	29.00	1990	17600	46	1						8
					A-23	246.25	246.65	0.40	5	20.00	781	22800	74	< 1						13
250				sil dol	P-04	246.25														
			pale brnish grey dol. roughly bedded		A-24	246.92	247.17	0.25	2	13.00	172	6110	24	1					2	
					S-03	246.00														
255				dol	I-06	246.07	246.18	0.11												
260			258.95-259.50m Sphalerite dots and veinlets in druse	X-03 A-25	257.40 258.95	259.50	0.55	3	19.00	353	7610	29	1						30	
265				DOLOMITE	A-26	263.20	264.04	0.84	1	6.00	539	137	< 1							36
270			271.50-271.53m Galena, Sphalerite thin patches	A-27	268.10	268.20	0.10	1	4.00	114	49	< 1							20	
275				dol	A-28	271.50	271.58	0.08	7	18.00	4960	183	1	< 1						13
			274.00m Sphalerite, galena specks W=1cm		A-29 I-07	273.64 273.64	273.69	0.05 0.05	5	7.00	4570	33	< 1							13
280			275.65-275.77m chert $\angle 30^\circ$ 277.74-277.83m chert 277.98-278.08m breccias cemented with dolospor	dol																
			280.25-280.35m chert 280.58-280.64m chert 282.30-282.60m vertical cracks with Zn film																	
285				DOLOMITE																
			284.00m Sp(Zn) specks 284.45m local Sp(Zn) small pods or specks 285.00m upper most black shale 285.50m Cu oxide in fracture of reddish facies																	
290			287.50-287.75m shale ss.																	
295			massive dolomite intercalated with chert	DOLOMITE																
			bedded dolomite $\angle 10^\circ$																	
			295.85-296.05m stromatolite oolite																	
300				DOLOMITE																
			15cm thick chert $\angle 20^\circ$ red dots 300.08 STOP																	

Fig. II - 1 - 2 (5) Geological logs for drill holes

MJNM-2

0m-75m

DEPTH (m)	GEOLOGIC COLUMN	ROCK NAME	LITHOLOGICAL DESCRIPTION	VEIN ALT.	SAMPLE																
					No.	From (m)	To (m)	Length (m)	Au (ppb)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Cd (ppm)	Ga (ppm)	V (ppm)					
0-20		CALCRETE	wht to pale brown breccia >>matrix																		
15-20			15.10m lost circulation																		
20-37		CALCRETE	wht to brn 5cm Ø angular dol. brc  druse calcite crystals																		
37-60			37.50m - abundant breccias, reddish brn to drk gry 1-2cm Ø dominant																		
60-65			60.96m gry with white spots dol. calcrete filling gash and cavities																		
65-70		DOLomite	obscure bedding ~30° 69.80-70.00m vertical chert/dol.																		
70-75			pp1 gry with wht dolospar spots 72.20m weathered zone clay  steeply dipping stylonite	dol																	

Fig. II - 1 - 2 (6) Geological logs for drill holes

MJNM-2

75m-150m

DEPTH (m)	GEOLOGIC COLUMN	ROCK NAME	LITHOLOGICAL DESCRIPTION	VEIN ALT.	SAMPLE		CHEMICAL ASSAYS														
					No.	From (m)	To (m)	Length (m)	Au (ppb)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Cd (ppm)	Ga (ppm)	V (ppm)					
80			75.45-85m argillaceous zone 77.12m chert $\angle$ dol. chert $\angle$ 20° boundary vertical 78.00-20m clay	arg																	
85		DOLomite	85.00m - ppl. gry whit dots HCl x	dol																	
90			87.00m - chert/dol. steep but irreg.  90.86m - dol $\angle$ chert oolitic $\angle$ 80° 90.96m green malachite speck in chert 93.10m																		
95			dark grey dol./chert irreg. bands boudinage like																		
100			100.60m - blk dolomitic shale with whit dots HCl $\Delta$ or $\circ$ 102.30m spar vein druse some part chert bands intercalated																		
105																					
110			blk dolomitic shale bedding obscure $\angle$ 30-40°																		
115			111.00-111.61m fractured with reddish cream argil calcareous blk shale 116.12m wide space fracturing qtz-cal veining stylolite vertical	Qtz $\angle$ 15°																	
120			121.70m shale // chert with fossil like texture, $\angle$ 70-80°																		
125		SHALE	124.85m blk calcareous shale 126.0m bedded shale																		
130			bedding vertical blk to dark grey med. chert thin beds intercalated																		
135																					
140																					
145			142.40m - reddish oxidized shale $\angle$ 80° 143.60m 144.70-145.10m fractured zone argillaceous zone	Cal w=1cm arg																	
150																					

Fig. II - 1 - 2 (7) Geological logs for drill holes



MJNM-2

150m-225m

DEPTH (m)	GEOLOGIC COLUMN	ROCK NAME	LITHOLOGICAL DESCRIPTION	VEIN ALT.	SAMPLE		CHEMICAL ASSAYS																	
					No.	From (m)   To (m)	Length (m)	Au (ppb)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Cd (ppm)	Ga (ppm)	V (ppm)									
155	[diagram]		151.60m chert < blk shale chert beds almost vertical																					
160	[diagram]		white transparent vein minerals HCl x																					
165	[diagram]		blk shale strained	Cal w= 0.5cm																				
170	[diagram]		166.52m veining ∠ 45°																					
175	[diagram]		few beds of chert																					
180	[diagram]	SHALE	180.96m oxidized zone of shale	ox																				
185	[diagram]		qtz=clay white vein	Qtz= clay	S-12	182.39																		
190	[diagram]		184.0-186.30m fractured																					
195	[diagram]		blk shale	Qtz																				
200	[diagram]		187.97m ∠ 30° qtz=α vein																					
205	[diagram]	DOLOMITTE	192.70m oolitic chert intercalated dolomite																					
210	[diagram]		194.30m -Chert		S-07	196.00																		
215	[diagram]		198.00m - black dolomitic sandstone // shale alt.	sil cal																				
220	[diagram]		199.00-202.80m veining	Qtz= Cal																				
225	[diagram]		201.80m - dark grnsh grey dol. // chert black patched dolomite to sandy																					
	[diagram]		204.95m - blk crs dolomite to sandstone	dol	S-08	210.50																		
	[diagram]		208.10m calcere gash w=3cm cream brn HCl O																					
	[diagram]		209.76m orange film vanadium?																					
	[diagram]		blk shale//med sandy dol.alt.																					
	[diagram]		210.30m- chert thin lense/dol.																					
	[diagram]		213.36-.80m hexagonal crystal																					
	[diagram]		214.00m dolomitic shale med to crs sandy		S-09	218.40																		
	[diagram]		fine grey dol.//ss.	arg hmt																				
	[diagram]		218.50-219.12m crs ss to conglomerate argil layer w=1cm																					
	[diagram]		dolomite//argil intense white veining																					
	[diagram]	DOLOMITTE																						

Fig. II - 1 - 2 (8) Geological logs for drill holes

MINM-2

225m-300m

DEPTH (m)	GEOLOGIC COLUMN	ROCK NAME	LITHOLOGICAL DESCRIPTION	VEIN ALT.	SAMPLE			CHEMICAL ASSAYS												
					No.	From (m)	To (m)	Length (m)	Au (ppb)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Cd (ppm)	Ga (ppm)	V (ppm)				
226.50-227.50m			226.50-227.50m clay	arg																
229.20m		SANDSTONE	229.20m																	
235			sporadic chert lens																	
240			blk sandy shale to ss dol./chert beds																	
245			blk sandstone																	
250		DOLomite	246.50m- dolomite intercalated with argil layers																	
255			255.40-254.00m white veining $\angle 20^\circ$	dol																
260		DOLomite // SS.	257.00-257.60m argil 257.60m dol/sandy to sandstone with argil beds	arg																
265		CHERT/DOL SHALE	263.60-264.95m chert/dol.shale																	
270		DOLomite	267.70-271.90m brecciated dol.>>chert cracked argil X-try matrix reddish brown-spar, quartz?																	
275			grey massive dol. with horizontal white veining-white spots styfolite vertical																	
280			277.85-285.25m cracked dolomite																	
285		DOLomite	massive dolomite																	
290			285.00-286.53m dol/chert vertical bedding																	
295			massive dolomite																	
300			294.07m chert/ers quartz sandstone grey dol.alt. 296.50m grey msy dolomite 299.50m greenish grey dk grey dolomite 300.30m stop																	

Fig. II - 1 - 2 (9) Geological logs for drill holes

MJNM-3

0m-75m

DEPTH (m)	GEOLOGIC COLUMN	ROCK NAME	LITHOLOGICAL DESCRIPTION	VEIN ALT.	SAMPLE		CHEMICAL ASSAYS																
					No.	From (m)	To (m)	Length (m)	Au (ppb)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Cd (ppm)	Ga (ppm)	V (ppm)							
0-2.5	Soil	Soil	Non core																				
2.5-11.5		CALCRETE	grey to purple brown, partly argillaceous, gravel to bedded texture some vuggy																				
11.5-12.0			grey roughly bedded showing stromatolitic texture																				
12.0-16.4			flat lying bedded dol. reddish gry to purplish																				
16.4-17.3			angular bits dol.																				
17.3-23.3		DOLomite	massive dol. partly argillaceous (fibrous) vuggy																				
23.3-23.6			partly thin bedded																				
23.6-32.2			cracks filled with calcite and quartz sylvite layers and thinly bedded dol. $\angle 5-10^\circ$																				
32.2-39.3			Grey sandy dol. $\angle 20-30^\circ$ bedding undulated																				
39.3-40.6			32.20-32.90m fractured steeply $\angle 70^\circ$																				
40.6-43.0			36.64m calcite gash with malachite speck 36.60-40.85m vertical fractures filled with calcite 39.35-45m 10cm thick chert bed $\angle 5^\circ$																				
43.0-46.4			40.60m hematite bed 1-2cm thick $\angle 15^\circ$																				
46.4-48.6			43.00-45.00m massive dol. dark gry dolospar dol																				
48.6-50.3			46.45-65m wht mineral veining cavities magnesite? HCl X																				
50.3-57.1			48.60-50.38m light gry dol. stromatolitic texture 50.38m argillaceous green brown mineral massive to flat lying dol. massive to roughly bedded in part																				
57.1-58.0			57.10-20m hematite fracture 58.00m $\angle 60^\circ$ cavity hmt																				
58.0-62.0			light gry to reddish dol. 62.00-62.50m wht spots dolomite doi																				
62.0-63.5			63.10m sphalerite grains with wht vein 63.55-60m green vanadium film in cracks P-05 63.55																				
63.5-66.0			66.00-70.60m vertical to steep cracks $\angle 60^\circ$																				
70.6-73.5			black stains (vanadium?) in crack 73.55-60m chert bed $\angle 15^\circ$																				
73.5-73.5			73.25m vanadium mineral in crack																				
73.5-74.6		SANDSTONE	73.50-60m chert bed																				
74.6-75.0			74.60-76.45m calcareous sandstone																				

Fig. II - 1 - 2 (10) Geological logs for drill holes

MJNM-3

75m-150m

DEPTH (m)	GEOLOGIC COLUMN	ROCK NAME	LITHOLOGICAL DESCRIPTION	VEIN ALT.	SAMPLE		CHEMICAL ASSAYS													
					No.	From (m) To (m) Length (m)	Au (ppb)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Cd (ppm)	Ga (ppm)	V (ppm)						
77.20m		CHERT	med to fin $\angle 10^\circ$ chert																	
77.70m			crystalline dolomite partly thin beds of chert intercalated																	
78.3-78.45m		DOLOMITE	light fry fin dol. $\angle 30^\circ$																	
88.15-89.25m			CHERT	88.15-.25m chert 10cm thick																
89.05m		CHERT	argillaceous matter-hmt 3cm thick																	
91.60m			DOLOMITE	fractured over 60cm magnesie vug	dol															
92.50m		DOLOMITE	irreg. wht to pink chert in dol.																	
93.38m			CHERT	light gry med. sandy dol. bedding flat																
94.20m		DOLOMITE	dk grey dol. veinings crystal-line calcite	Cal																
95.60m			DOLOMITE	bedded $\angle 5-10^\circ$ fine dol.																
100.60-101.33m		DOLOMITE	sandy party chert horizontal beds 10cm thick																	
105.00m			DOLOMITE	fine light grey dol.																
115.20m		DOLOMITE	fractured with wht minerals(dolospars?) $\angle 60-70^\circ$ <math>< 5mm</math>	dol																
118.00-118.15m			DOLOMITE	med dol. sandy $\angle 20^\circ$																
118.70-119.50m		DOLOMITE	irreg. chert beds laminae stromatolitic																	
120.75m			DOLOMITE	pale brn grey crs sandy																
122.85-123.70m		DOLOMITE	green/red/blk clay mineral? massive med crystallized dol. $\angle 20^\circ$ crs graded dol.																	
127.45-127.80m			DOLOMITE	hematite layer mottled crs dolomite																
131.20m-132.86m		DOLOMITE	fine grey dol. steeply or vertical fractured																	
136.0m			DOLOMITE	fine to med dol. fracture with wht vein wht to greenish brn																
140.0m		DOLOMITE	wht spots dol.	dol																
145.0m			DOLOMITE	med to fine gry dol.																
150.30m			150.30m stop																	

Fig. II - 1 - 2 (11) Geological logs for drill holes

MJNM-4

0m-75m

DEPTH (m)	GEOLOGIC COLUMN	ROCK NAME	LITHOLOGICAL DESCRIPTION	VEIN ALT.	SAMPLE		CHEMICAL ASSAYS															
					No.	From (m) To (m)	Length (m)	Au (ppb)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Cd (ppm)	Ga (ppm)	V (ppm)							
5		CALCRETE	wht clay/dolomitic frag. blocks																			
5.58		DOLOMITE	5.58m gry bedded dol. sandy in part black grains																			
10			dark grey/wht banded dol. $\angle 60^\circ$ still vuggy porous																			
12.50			12.50m thinly bedded dark gry dol.																			
14.20-40			SHALE	14.20-40m black shale frag.																		
19.00-20.36		SHALE	black stripes of argillaceous dol. 19.00m open fracture/ calcite, quartz 20.36m cavity																			
21.46-22.00			black calcareous shale bedding $\angle 30^\circ$																			
22.00-24.00		SHALE	orange Vanadium mineral?																			
24.00-24.57		SHALE	24.00-24.57m blk shale	Qtz - Cal																		
27.45-28.55		DOLOMITE	27.45-28.55m cave?																			
30			intercalated with 5-20cm thick chert bands $\angle 30^\circ$																			
30			reddish to gry fine dol.																			
35.00		CHERT	35.00m- wht chert $\angle 45^\circ$																			
35.40-60.00			Percussion drill chip logging (brownish grey dolomite-chert)																			
40		DOLOMITE	(brownish grey dolomite)																			
45			(grey dolomite)																			
55			(dark grey argillaceous dolomite or shale)																			
55			(black shale > dolomite)																			
60		SHALE DOLOMITE	blk sandy shale 60.80m grey well bedded DOLOMITE thin chert beds $\angle 40-45^\circ$																			
64.50-65.80			fractured core brittle																			
66.80		SHALE	66.80m vein $\angle 45^\circ$ stylolite and bedding																			
66.80			calclized? but HCl x																			
71.30		DOLOMITE	71.30m chert clasts sediment dol/chert beds $\angle 45^\circ$																			
74.30			fractured over 20cm																			

Fig. II - 1 - 2 (12) Geological logs for drill holes

MJNM-4

75m-150m

DEPTH (m)	GEOLOGIC COLUMN	ROCK NAME	LITHOLOGICAL DESCRIPTION	VEIN ALT.	SAMPLE		CHEMICAL ASSAYS															
					No.	From (m)	To (m)	Length (m)	Au (ppb)	Ag (ppm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Cd (ppm)	Ga (ppm)	V (ppm)						
76.06-78.00m			black shale																			
79.50-80.00m			fractured cavity crystal HCl O	cal																		
80.00-80.30m			good fracture for mineralisation																			
82.06-83.50m			crvity																			
85.00-88.55m			well bedded dol//ppi chert $\angle 45^\circ$																			
88.55-89.00m			brittle fractured zone dol. with cavities																			
89.00-90.60m			grey dol. with thin chert beds	cal																		
90.60-92.90m			dk grey to wht sandy dol/dol. alt																			
93.60m			well bedded dol.																			
93.60-94.00m			cream limestone HCl O																			
94.00-96.12m			dark grey dol. with druse																			
96.12-99.10m		SHALE	well bedded shale stripes																			
99.10-101.65m			black shale																			
101.65m			dol. with black and white stripe																			
101.65-104.70m		DOLOMITE	oolitic beds 1.0cm thick $\angle 30^\circ$																			
104.70-105.00m			grey sandy dol//dolomitic blk shale																			
105.00-109.25m			well bedded dol/sandy dol. $\angle 20-30^\circ$																			
109.25-109.65m			calcified to small druse																			
109.65-112.45m			black shale																			
112.45-117.00m			calcareous shale with spot druses																			
117.00-118.80m		SHALE	fine stripes HCl O $\angle 20^\circ$																			
118.80-121.00m			massive dol. light grey to cream																			
121.00m			bedded dol. $\angle 45^\circ$																			
121.00-125.50m			druse abundant dol/s $\angle 45^\circ$ filled with calcite																			
125.50m			well bedded dol. with chert lenses partly distorted																			
125.50-125.75m		DOLOMITE	druse rich dol. black and																			
125.75-132.50m			well bedded dol. $\angle 30^\circ$																			
132.50-133.45m			$\angle 45^\circ$																			
133.45-134.40m			$\angle 60^\circ$																			
134.40-136.70m			druse rich dol.																			
136.70-138.00m			well bedded dol. pink/ grey alt. $\angle 45^\circ$ argillaceous																			
138.00-143.65m			druse dol.																			
143.65-144.00m			partly druse calcite																			
144.00-145.20m			light cream brownish grey dolomite	dol																		
145.20-145.55m			fractured filled wht dolospar																			
145.55-148.15m		SHALE	black shale																			
148.15-150.60m			dol. with small druses																			
150.60-150.60m			bedded dol. $\angle 30^\circ$	ser																		
150.60-150.60m			cavity																			
150.60-150.60m			bedded dol. with sericitic layers																			
150.60-150.60m			chert intercalated dol. with sericitic layers																			
150.60-150.60m			STOP																			

Fig. II - 1 - 2 (13) Geological logs for drill holes

SHEET 191788S

13 1 05

13 1 05

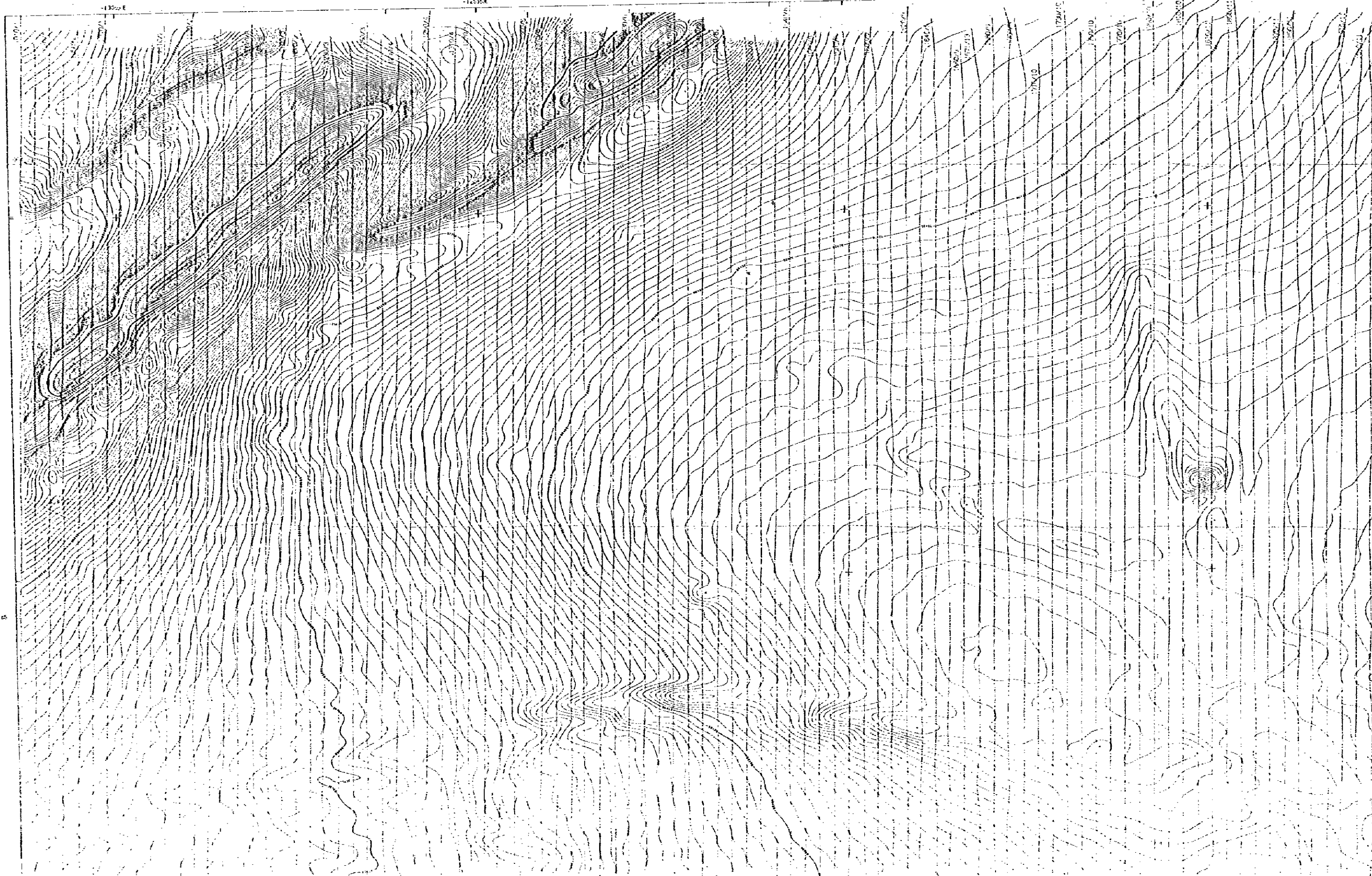
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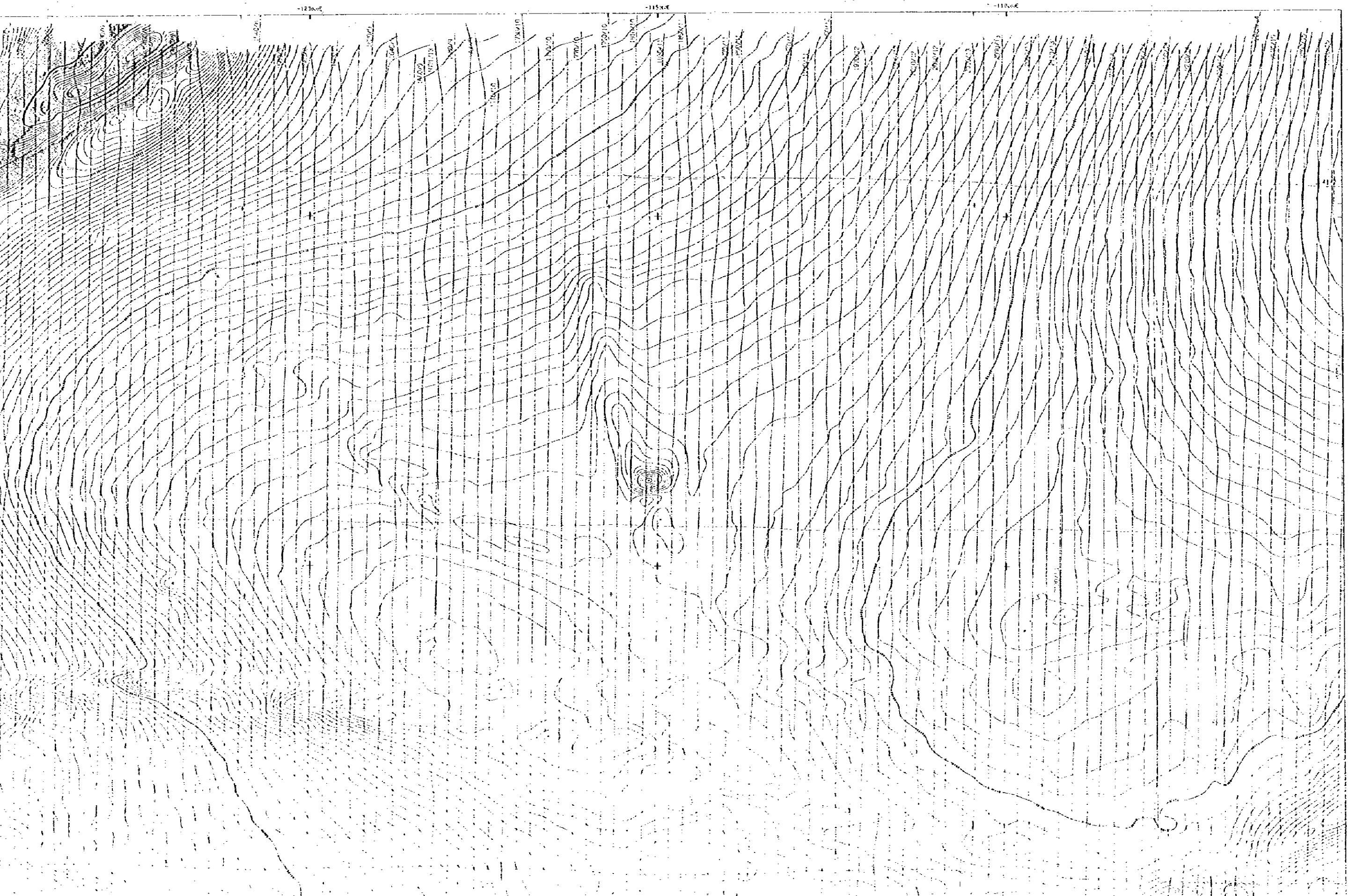
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-120°E

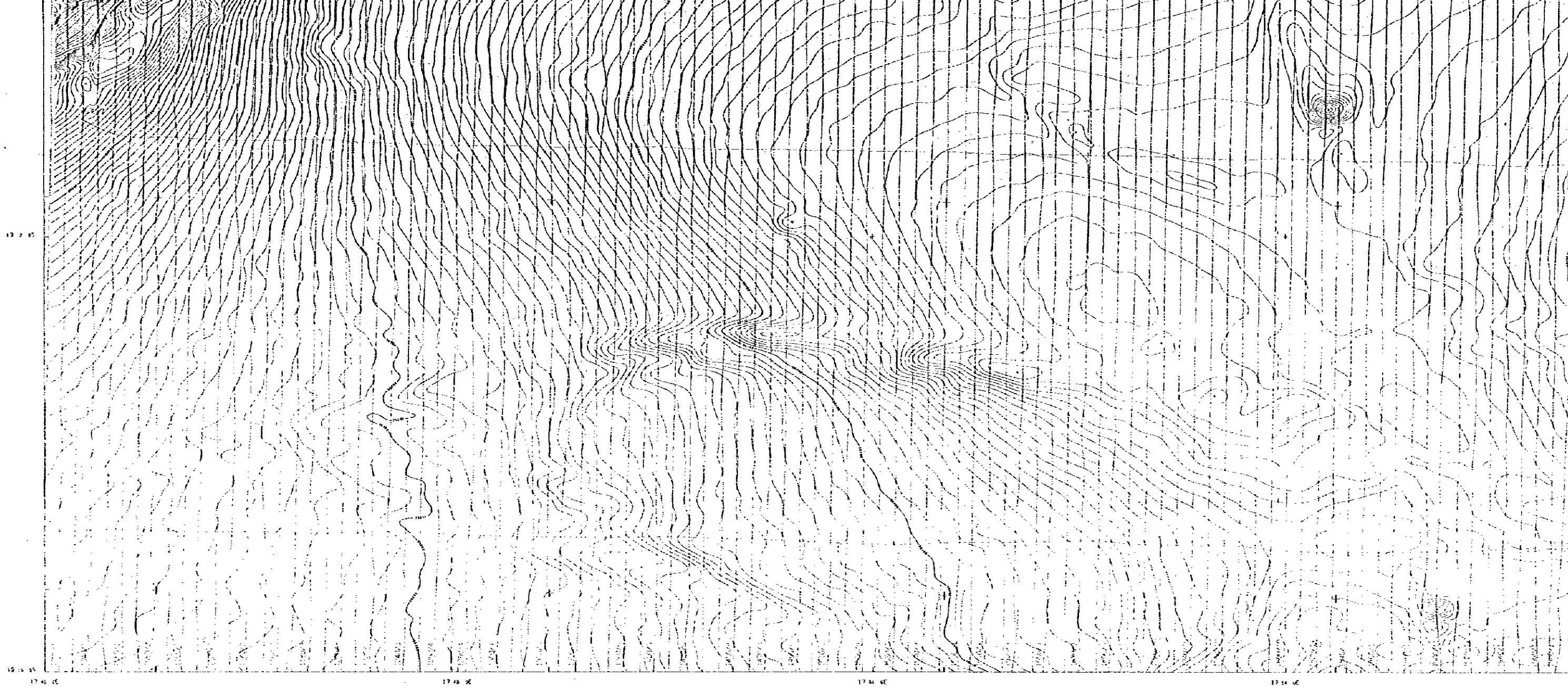
-115°E



SHEET 1917BBS







**SURVEY SPECIFICATIONS**

DATA REDUCTION INTERVAL: 0.1 SECONDS/10.5 METRES  
 SENSOR HEAVY TERRAIN CLEARANCE: 100 METRES  
 SENSOR HEAVY TERRAIN CLEARANCE: 100 METRES  
 FLIGHT LINE SPACING: 200 METRES  
 FLIGHT LINE SPACING: 200 METRES  
 FLIGHT LINE SPACING: 200 METRES  
 FLIGHT LINE SPACING: 200 METRES  
 FLIGHT LINE SPACING: 200 METRES

**NAVIGATION SPECIFICATIONS**

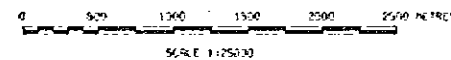
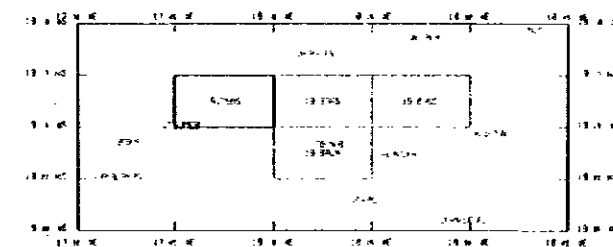
FLIGHT PATH TRACKING: NATIONAL TRIPPLS COLOUR VIDEO  
 FLIGHT PATH NAVIGATION: NAVSTAR GPS/R  
 FLIGHT PATH RETURN: COASTAL  
 FLIGHT PATH TRACKING: RELATIVE DIFFERENTIAL

**EQUIPMENT SPECIFICATIONS**

TRANSMITTER: 2 WATT  
 MONITORING DISPLAY: 4000  
 DATA COLLECTION SYSTEM: PDS DPT 3  
 HARDWARE: PDS DPT 3  
 SOFTWARE: PDS DPT 3  
 HARDWARE: PDS DPT 3  
 SOFTWARE: PDS DPT 3

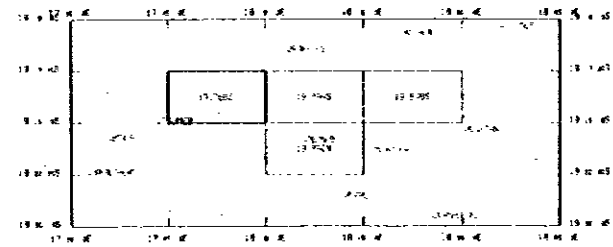
**PLOTTING SPECIFICATIONS**

PROJECTION: TRANSVERSE MERCATOR  
 SPHEROID: WGS 84 - 6378137 METRE  
 CENTRAL MERIDIAN: 17 46 00 EAST  
 FALSE NORTING: 1000000 METRES  
 CENTRAL SCALING FACTOR: 1.00  
 FALSE EASTING: 500000 METRES  
 FALSE NORTHING: 500000 METRES  
 GRID RESOLUTION: 1 METRE  
 DATA ACQUISITION BY: HELICOPTERS S/P 100  
 DATA REDUCTION BY: DEU 216 LB 83 PFA  
 DATA PROCESSING BY: GEORGS TRIPPLS LIMITED AND OTHERS



CONTOUR INTERVAL

- 10 METRE CONTOUR
- 50 METRE CONTOUR
- 250 METRE CONTOUR
- 500 METRE CONTOUR



0 500 1000 1500 2000 2500 METRES  
SCALE 1:25000

N  
↑  
N

CONTOUR INTERVAL : 10 NT

10 NT CONTOUR    - - - - -  
50 NT CONTOUR    - - - - -  
250 NT CONTOUR    - - - - -  
500 NT CONTOUR    - - - - -

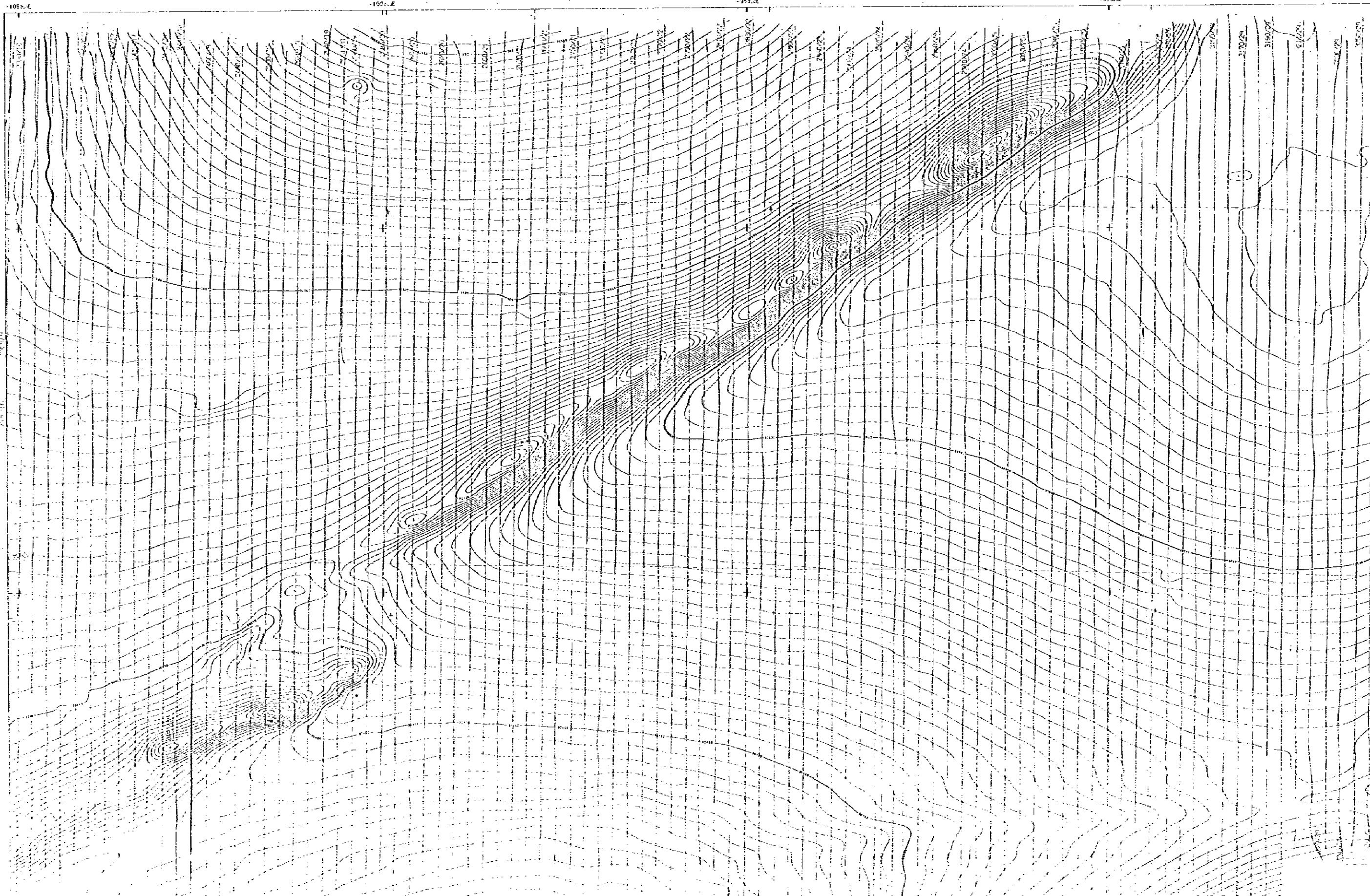
METAL MINING AGENCY  
OF JAPAN

OTAVI MOUNTAINLAND HER  
SURVEY, NAMIBIA

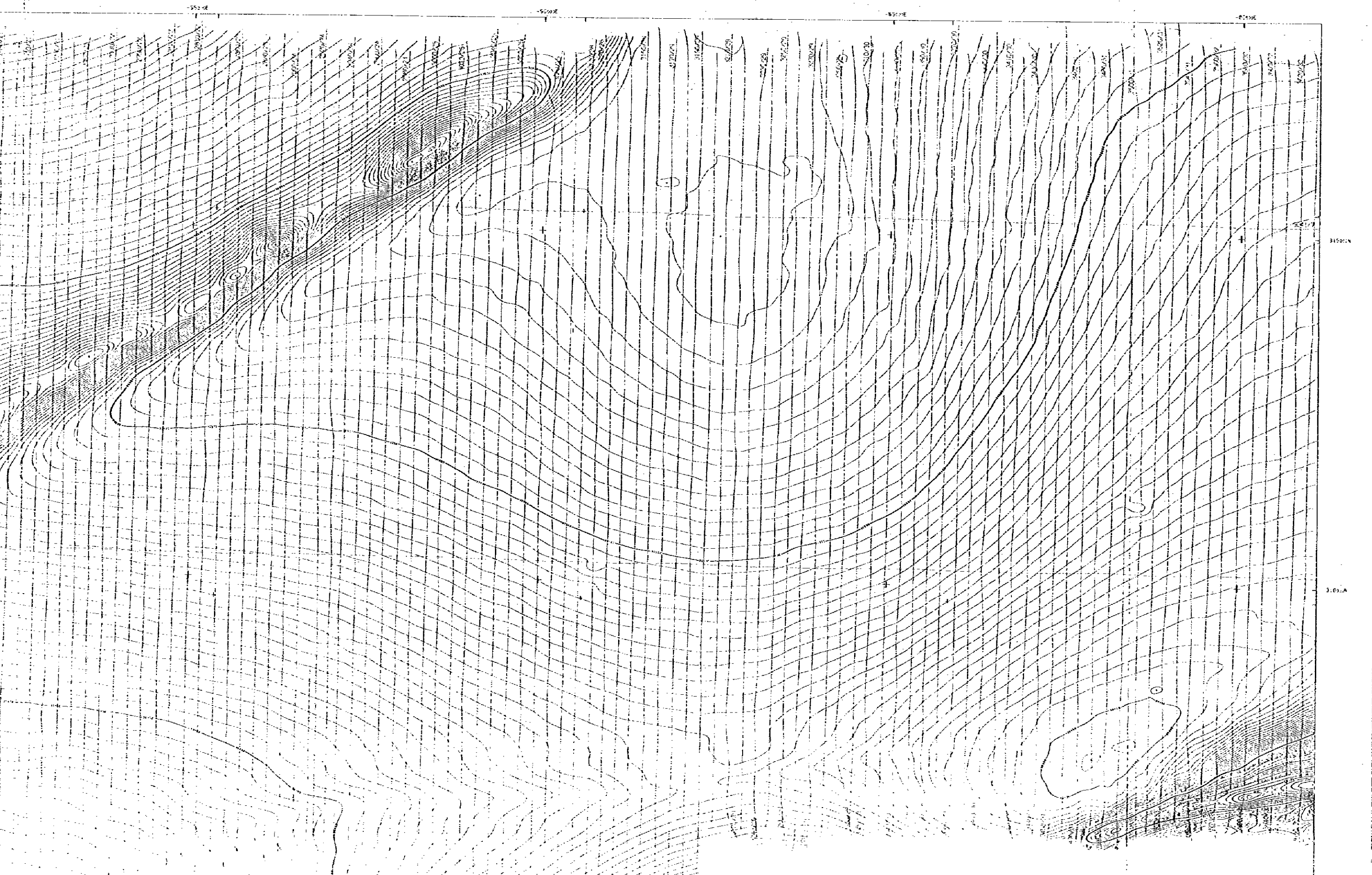
Fig II - 3 - 3 (1) Flight path map  
& Total magnetic intensity contour map

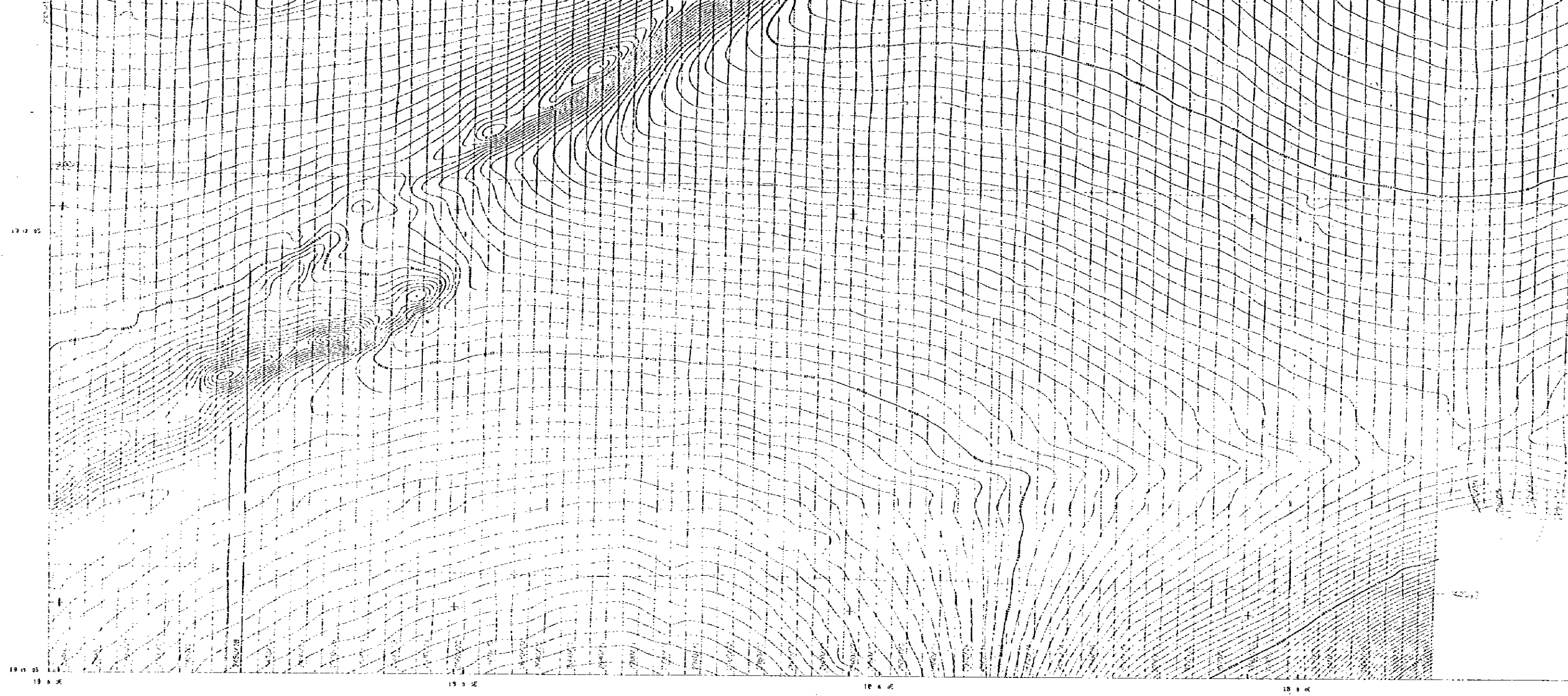
SHEET 1918AAS

19 1 45  
19 2 45  
19 3 45



SHEET 1918AAS





**SURVEY SPECIFICATIONS**

DATA RECORDING INTERVAL 0.1 SEC. INTERVAL 5 METRES  
 SENSOR HEAD CLEARANCE AHD 50 METRES  
 SENSOR HEAD CLEARANCE EN 45 METRES  
 FLIGHT LINE DRAG 200 METRES  
 FLIGHT LINE SPACING 1000 METRES  
 FLIGHT LINE TEND NORTH - SOUTH  
 TIE LINE TEND EAST - WEST

**NAVIGATION SPECIFICATIONS**

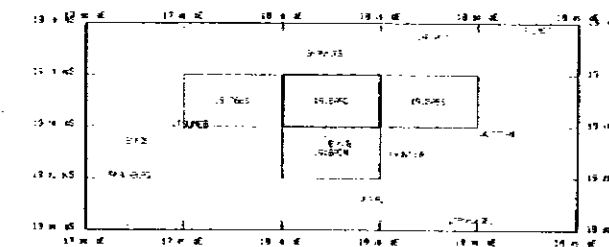
FLIGHT PATH TRACKING NATIONAL 1P 8-INS COLOR VIDEO  
 FLIGHT PATH ACQUISITION NAVTEL 3.5P  
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 FLIGHT PATH PROCESSING PERLINE DIFFERENTIAL

**EQUIPMENT SPECIFICATIONS**

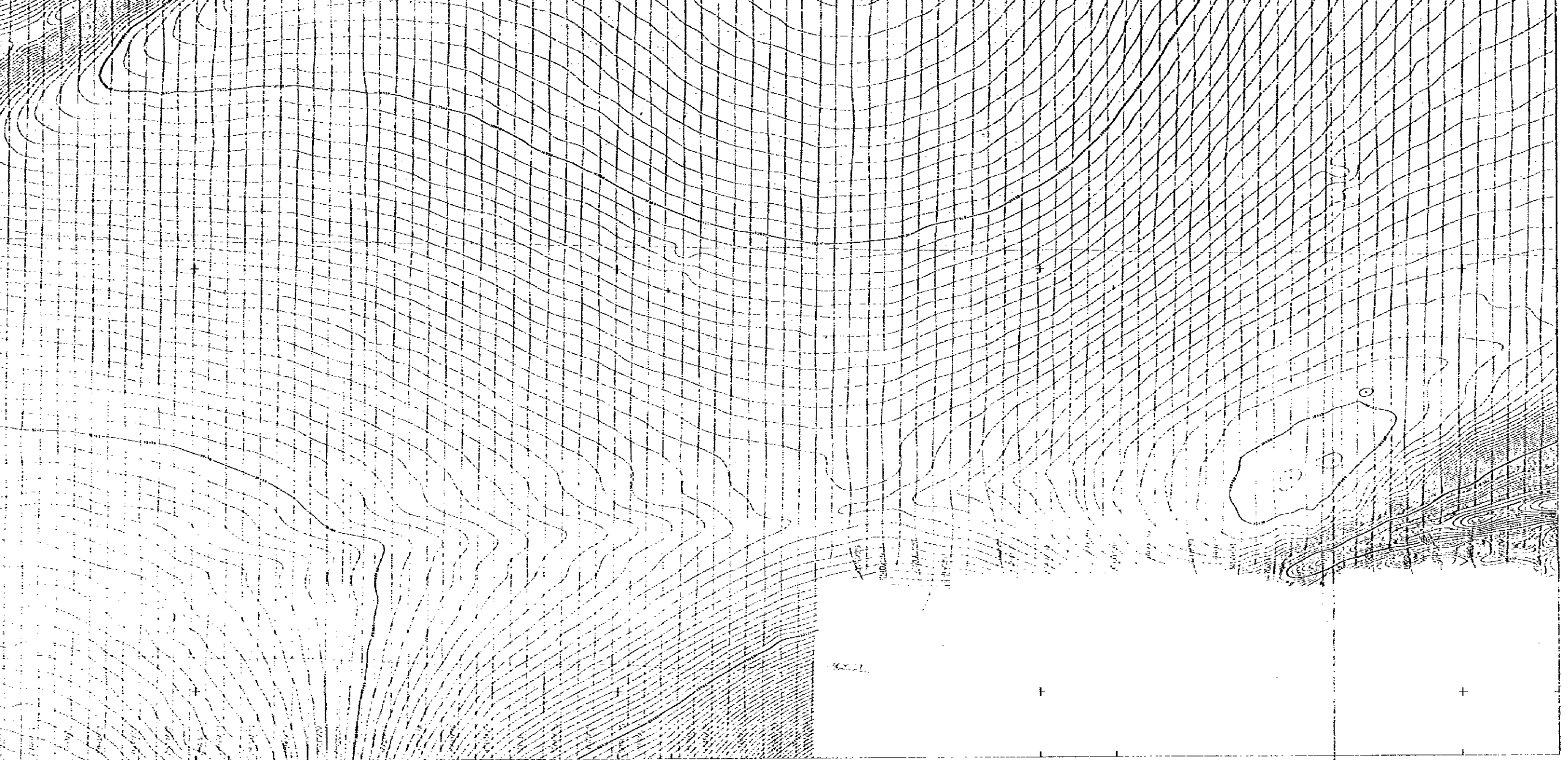
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 SONAR/EMETER SCANTOP HD VESUP 4000 R  
 DATA ACQUISITION SYSTEM SPS 035 B  
 HYDRAEC EDITOR RHE 8000  
 CHART RECORDER RHE 8000 15 CHANNEL  
 PHOTO RECORDER RHE 8000  
 BRIDGE/RTU/FEMER RHE 8000

**PLOTTING SPECIFICATIONS**

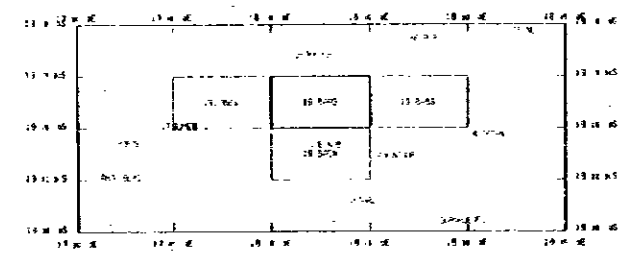
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 SPHEROID Spheroid  
 CENTRE MERIDIAN 21 DEGREES EAST  
 FALSE NORTHING 22 DEGREES SOUTH  
 CENTRE SURVEY POINT 6100  
 E.B. 30 0 METRES  
 E.B. 35 0 METRES  
 GRID MESH SIZE 50 METRES  
 PLANNET SUPPLIED BY HELIXOPTERS S.A. CO  
 ABL 5011 SCALE 200 000 75 374  
 DATA ACQUISITION BY GEODAS (PVT) LIMITED AND OTHER  
 DATA PROCESSING BY GEODAS (PVT) LIMITED AND OTHER



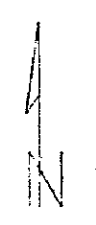
CONTOUR INTERVAL  
 10 METRE  
 50 METRE  
 100 METRE  
 500 METRE



18 00 E      18 05 E      18 10 E      18 15 E



0 500 1000 1500 2000 2500 METRES  
SCALE 1:25000



CONTOUR INTERVAL = 10 M  
 10 M CONTOUR      ———  
 50 M CONTOUR      - - - -  
 100 M CONTOUR      - - - -  
 500 M CONTOUR      ———

METAL MINING AGENCY  
OF JAPAN

OTAVI MOUNTAINLAND REM  
SURVEY, NAMIBIA

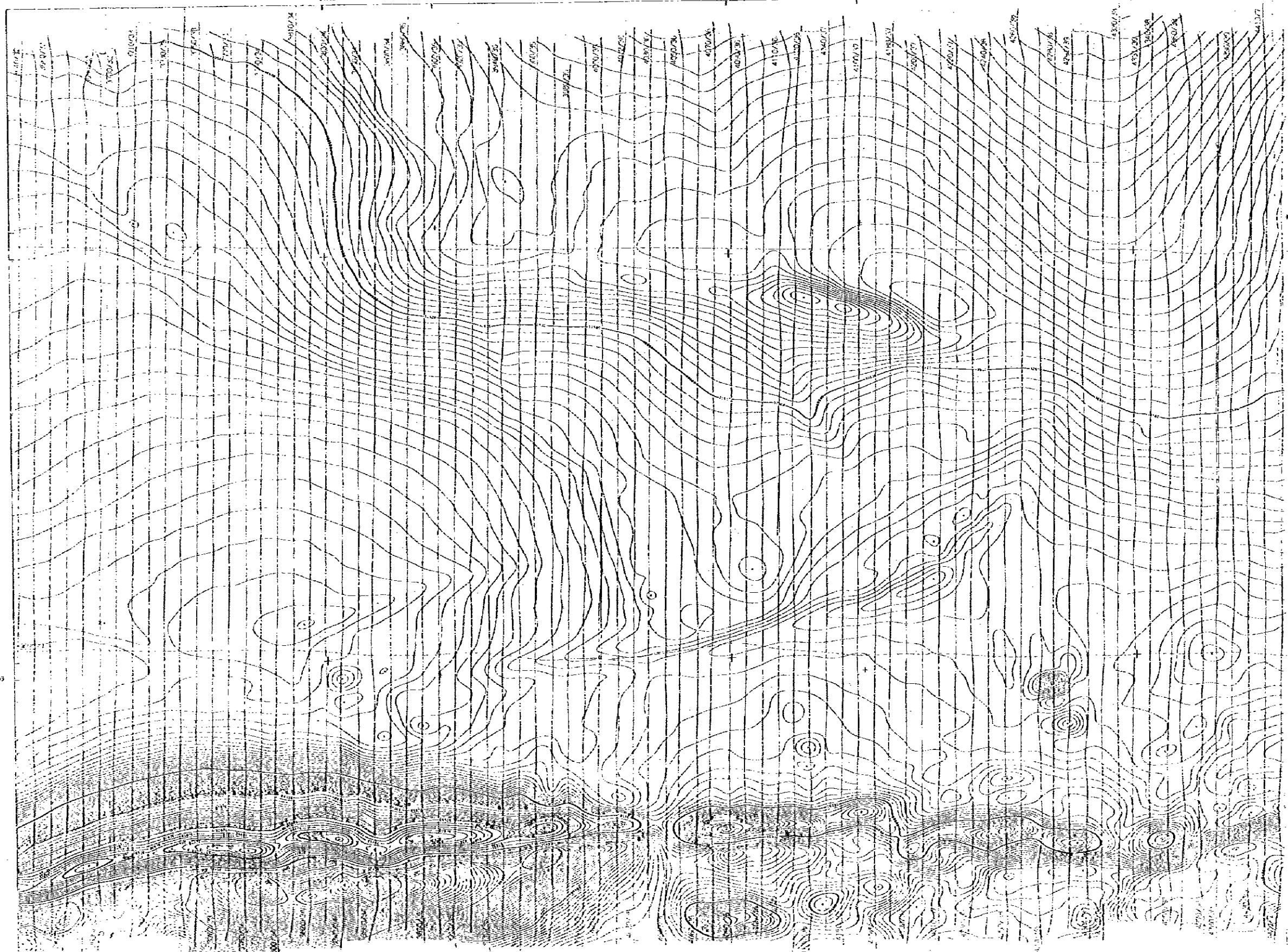
Fig II - 3 - 3 (2) Flight path map  
& Total magnetic intensity contour map

GEODAS REF. 52.036      DATE: OCTOBER 1952

19 1 43

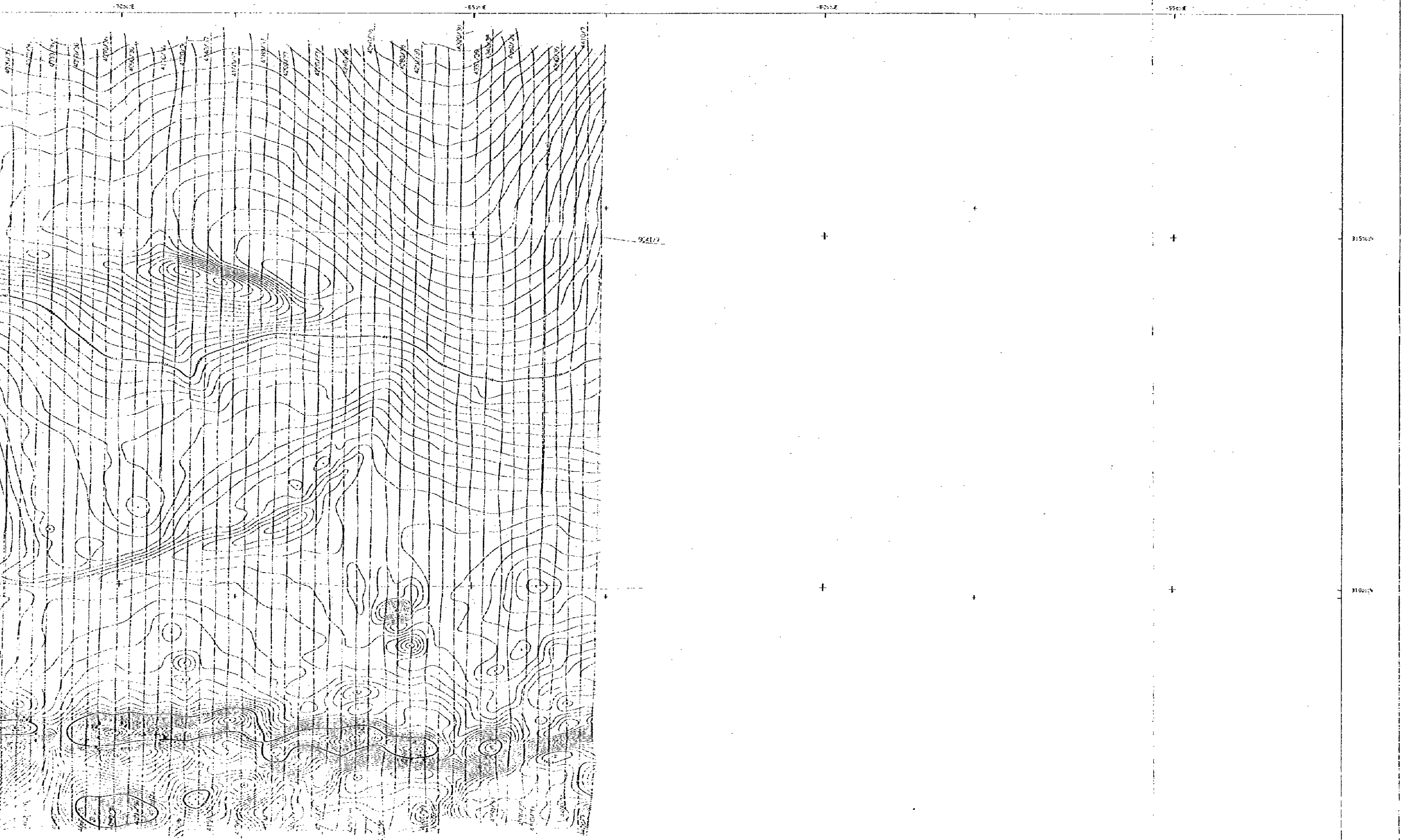
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19 1 43

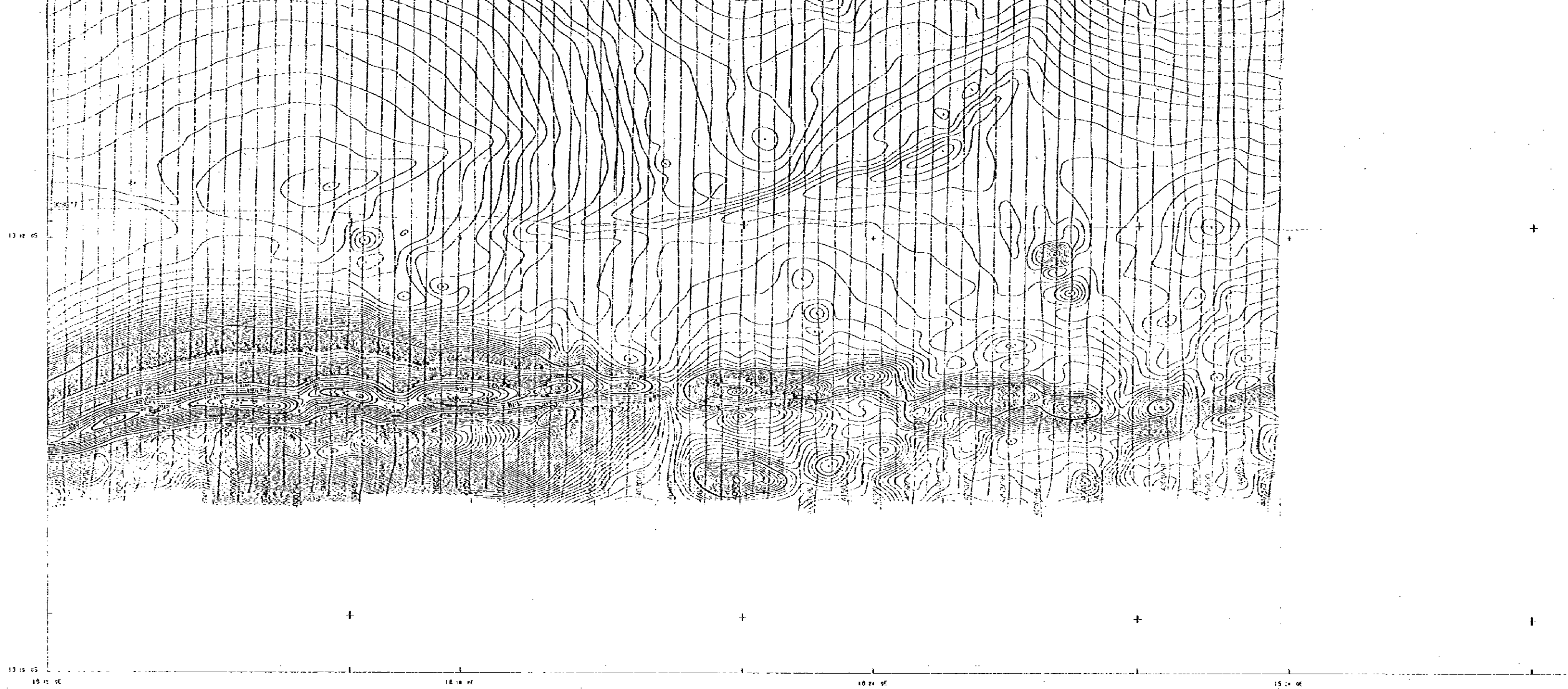


3527

SHEET 1918AB5







**SURVEY SPECIFICATIONS**

DATA RECORDING INTERVAL: 0.1 SECONDS  
 SENSITIVE RANGE: 50 METERS  
 SENSITIVE RANGE: 10 METERS  
 FLIGHT LINE SPACING: 200 METERS  
 TRACKLINE SPACING: 200 METERS  
 FLIGHT LINE TURNS: NORTH-SOUTH  
 TRACKLINE TURNS: EAST-WEST

**NAVIGATION SPECIFICATIONS**

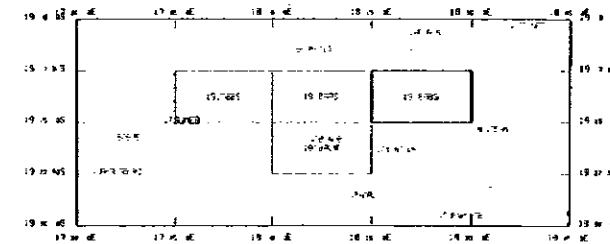
FLIGHT PATH TRACKING: AUTOMATIC  
 FLIGHT PATH NAVIGATION: AUTOMATIC  
 FLIGHT PATH RECORDING: AUTOMATIC  
 FLIGHT PATH PROCESSING: AUTOMATIC

**EQUIPMENT SPECIFICATIONS**

EM: 1000000  
 SONAR: 1000000  
 SONAR SYSTEM: 1000000  
 SONAR SYSTEM: 1000000  
 SONAR SYSTEM: 1000000  
 SONAR SYSTEM: 1000000  
 SONAR SYSTEM: 1000000

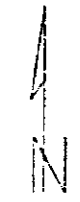
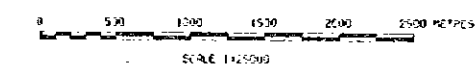
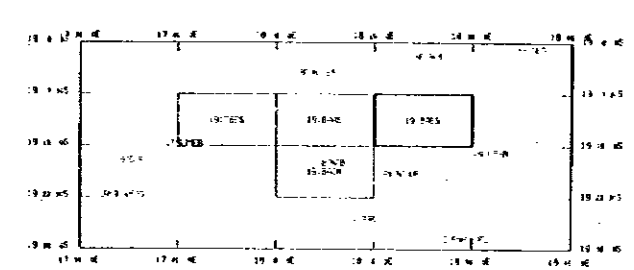
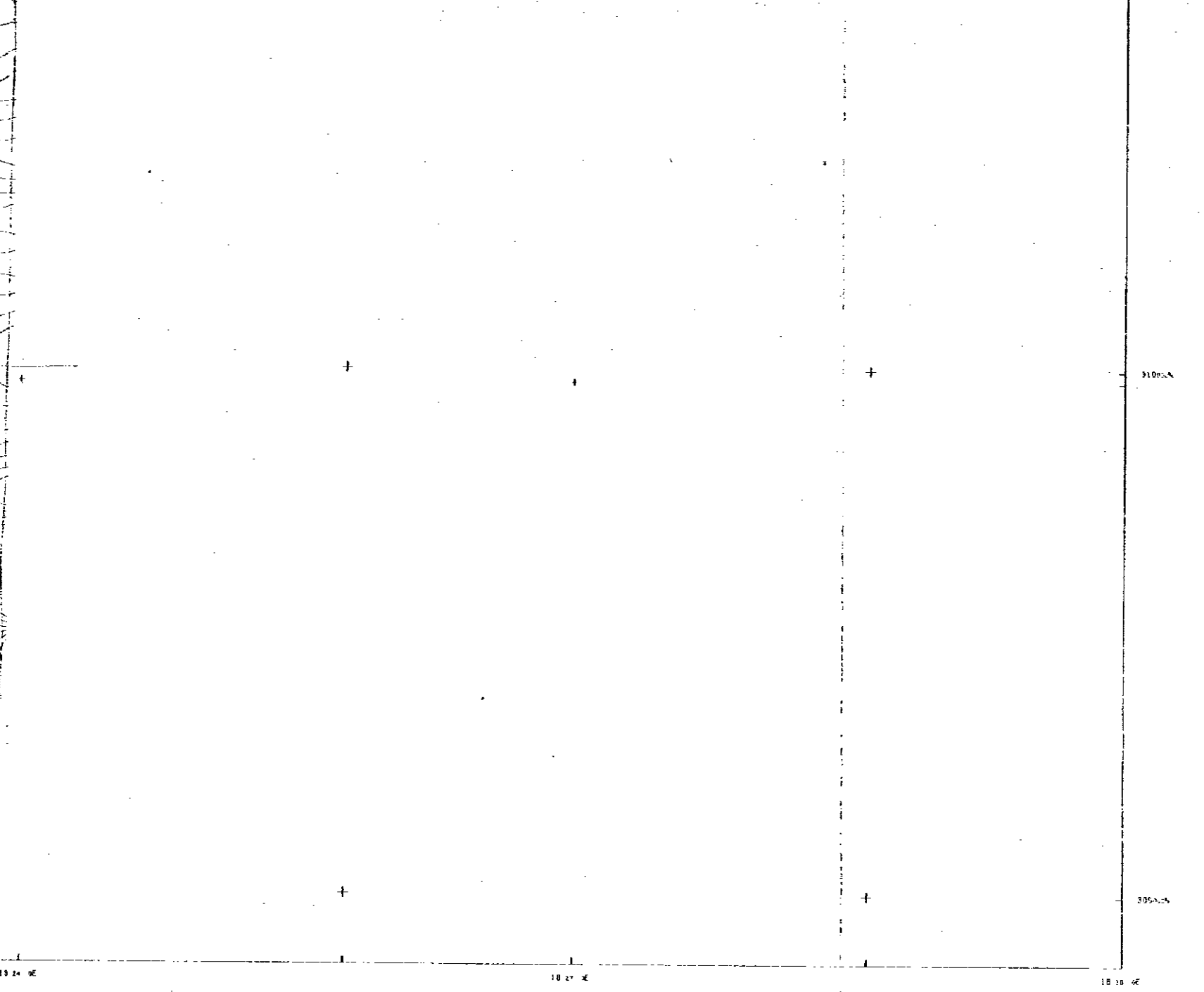
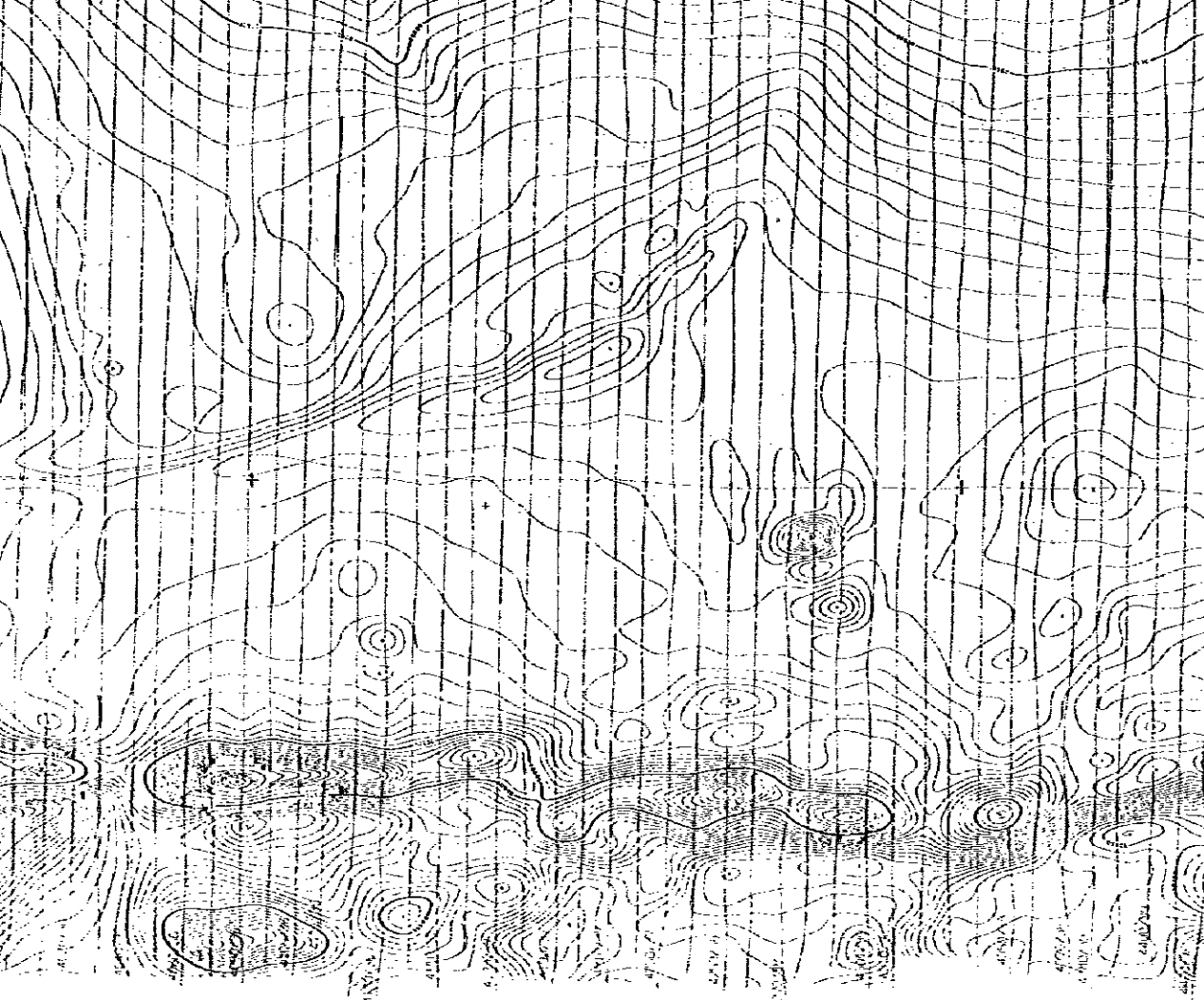
**PLOTTING SPECIFICATIONS**

PROJECTION: UTM  
 SPHEROID: WGS 84  
 CENTRAL MERIDIAN: 105 DEGREES EAST  
 FALSE NORTHING: 1000000 METERS  
 CENTRAL SCALING FACTOR: 1.00  
 X BIAS: 500000 METERS  
 Y BIAS: 1000000 METERS  
 GRID NORTH BIAS: 0 METERS  
 GRID EAST BIAS: 500000 METERS  
 ALGORITHM: AUTOMATIC  
 DATA ACQUISITION: AUTOMATIC  
 DATA PROCESSING: AUTOMATIC



0 500 1000 1500 2000 2500 METERS  
 SCALE 1:25000

CONTOUR INTERVAL  
 10 M CONTOUR  
 50 M CONTOUR  
 250 M CONTOUR  
 500 M CONTOUR



CONTOUR INTERVAL : 10 NT

10 NT CONTOUR    ————

50 NT CONTOUR    - - - - -

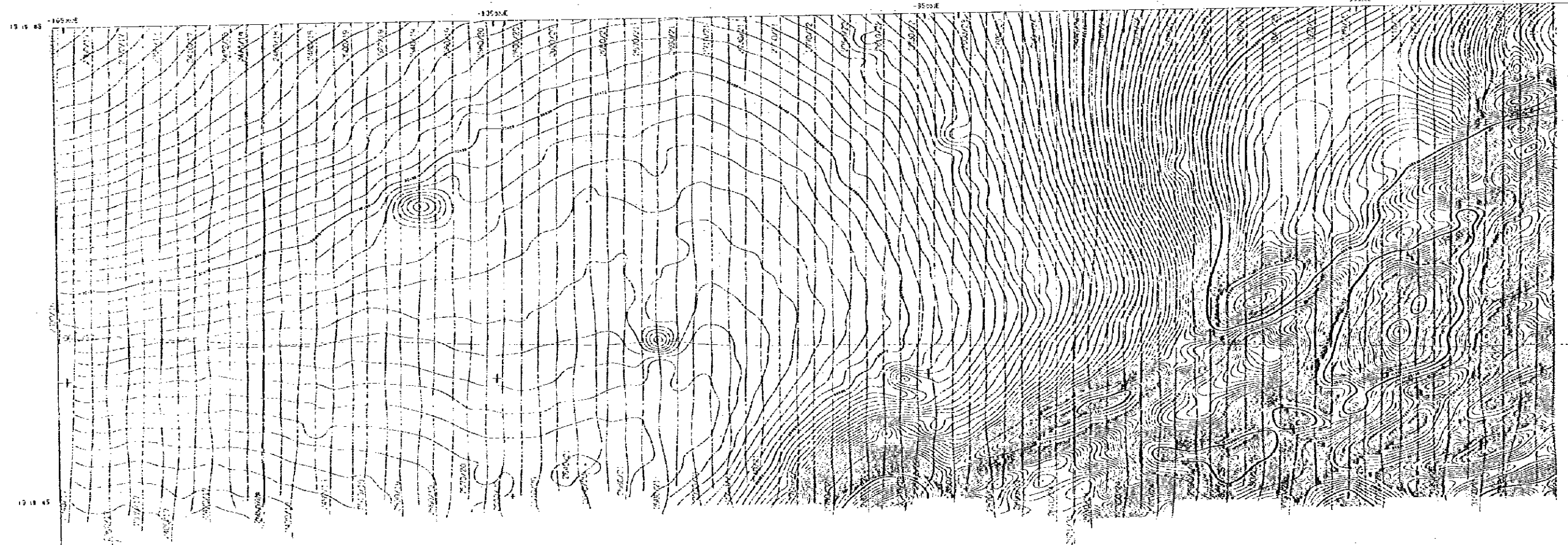
250 NT CONTOUR    — · — · —

500 NT CONTOUR    — · — · —

METAL MINING AGENCY  
OF JAPAN

OTAVI MOUNTAINLAND HEM  
SURVEY, NAMIBIA

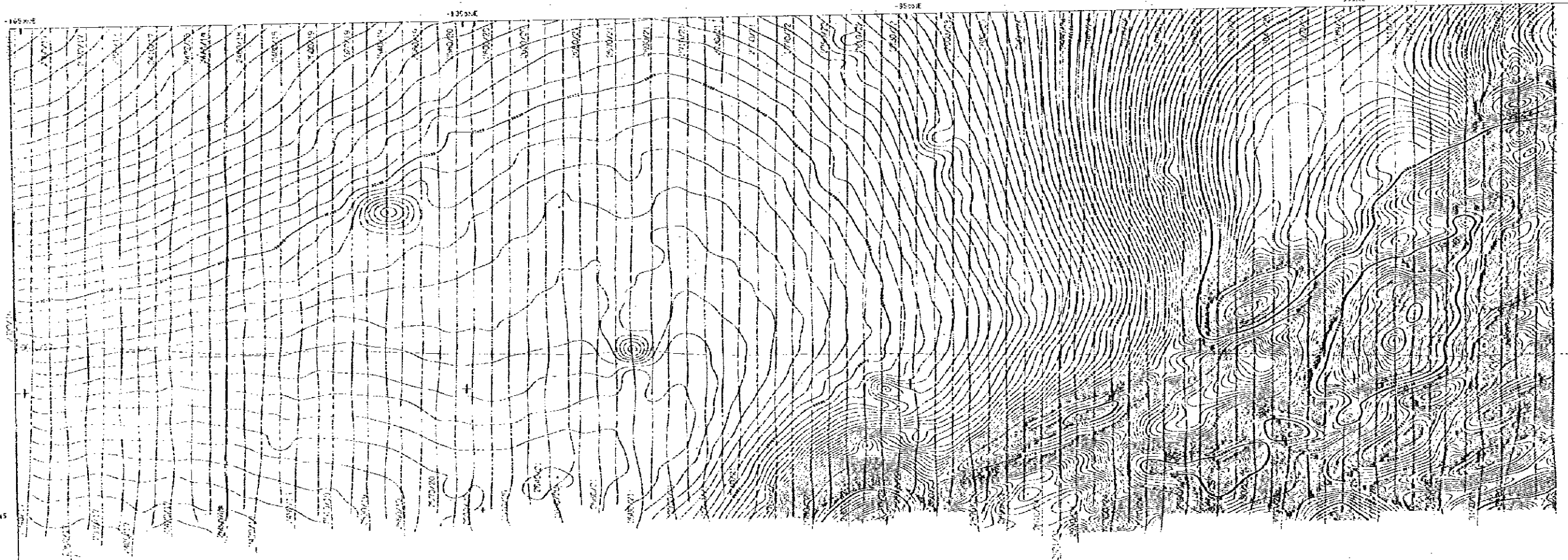
Fig II - 3 - 3 (3) Flight path map  
& Total magnetic intensity contour map



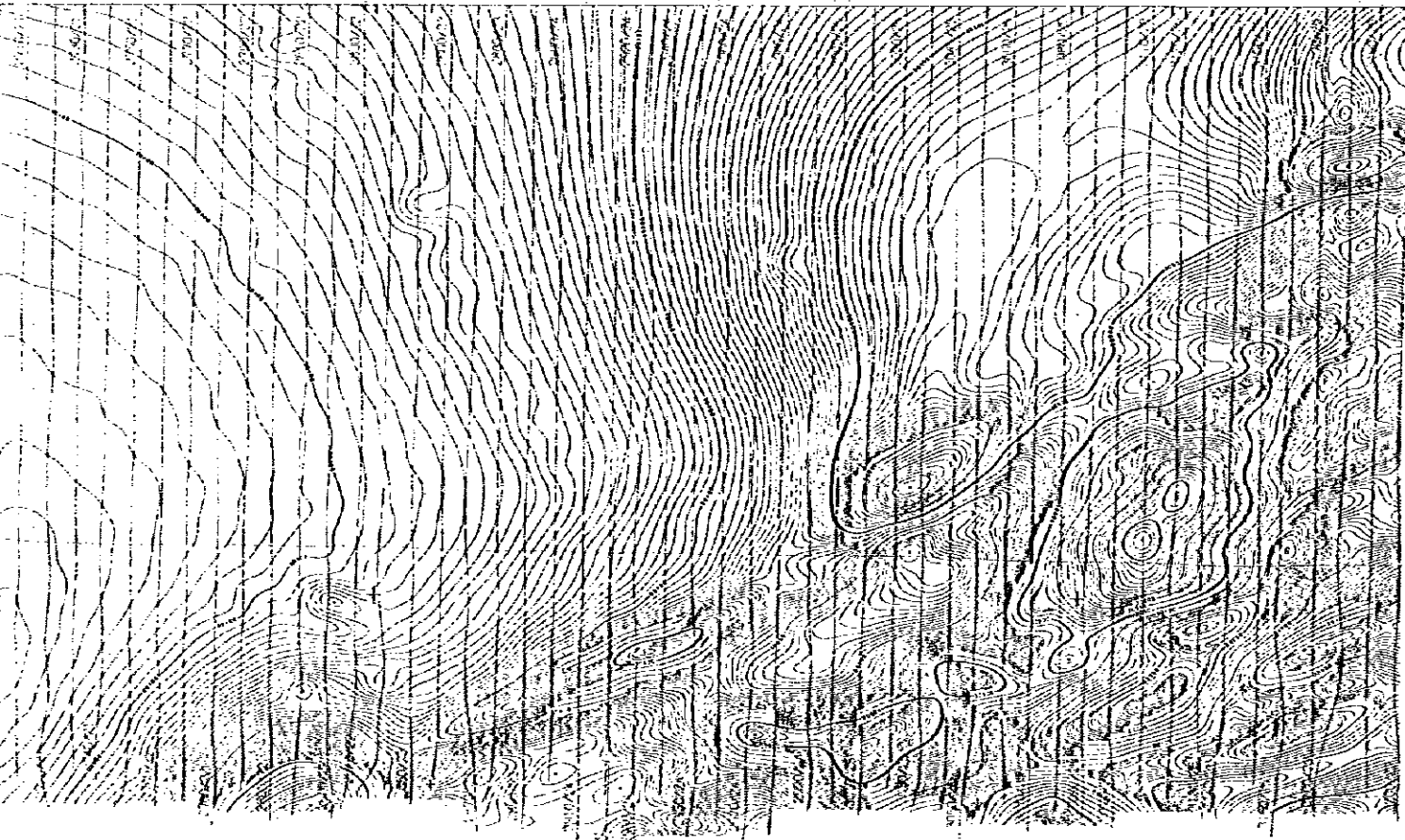
1918 45

1918 45

1921 05



SHEET 1918ACN



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295000

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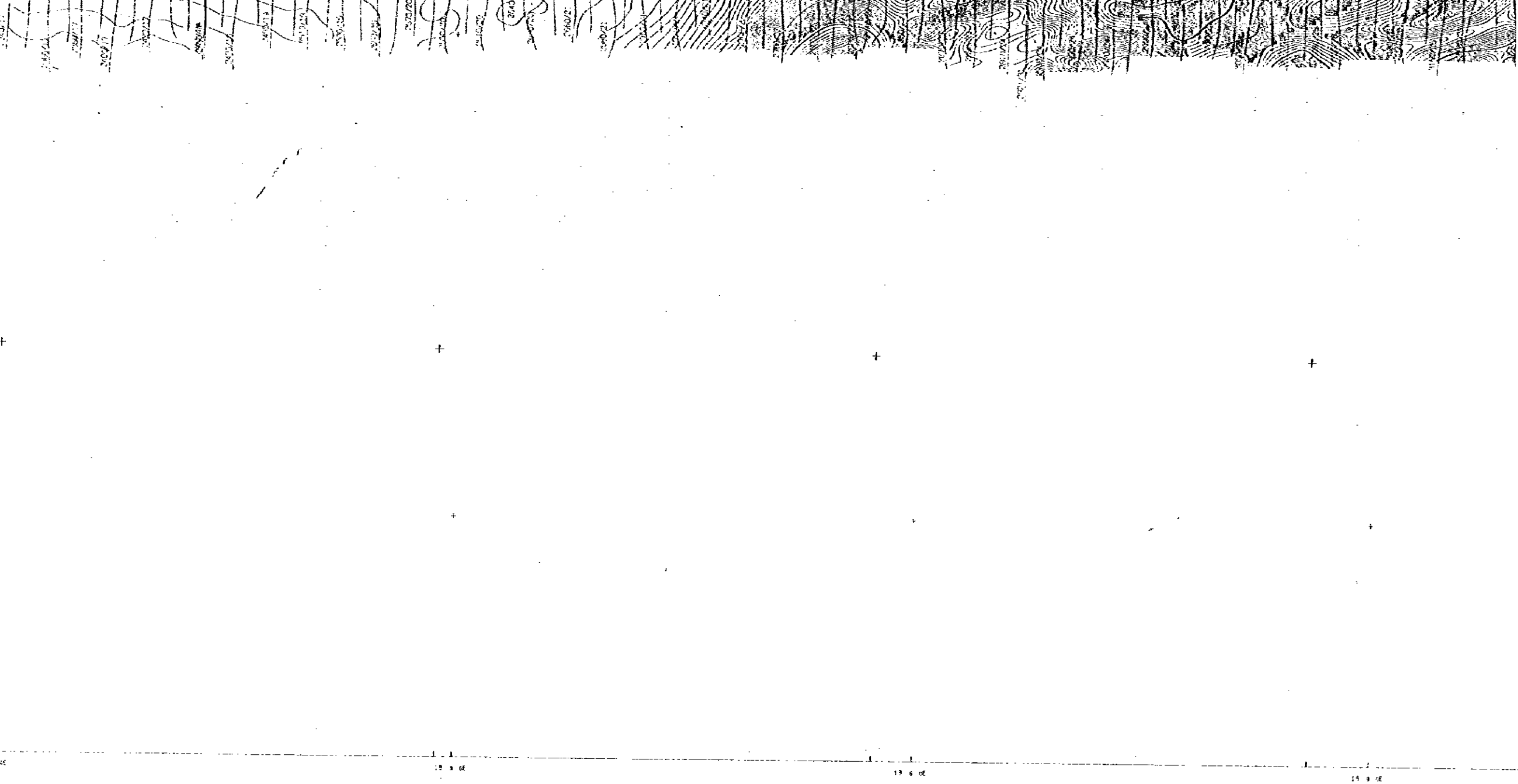
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+

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295000

19 20 05  
19 21 05  
19 22 05



**SURVEY SPECIFICATIONS**

DATA RECORDING INTERVAL 2.0 SECONDS  
 HORIZONTAL TERRAIN CLEARANCE 50 METRES  
 DATA RECORDING RATE 100 METRES  
 FLIGHT LINE SPACING 2.0 METRES  
 TERRAIN SPACING 2.00 METRES  
 FLIGHT LINE BAND WIDTH 1.0 METRE  
 TERRAIN BAND WIDTH 1.0 METRE

**NAVIGATION SPECIFICATIONS**

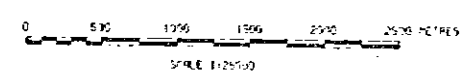
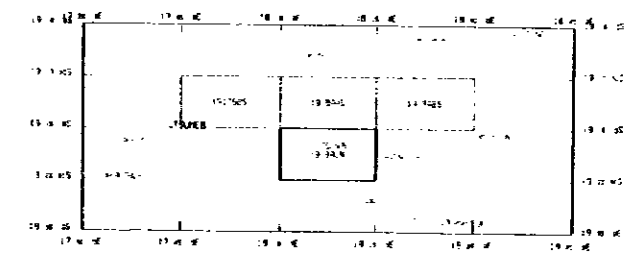
FLIGHT PATH TRACKING WIDTH OF 5 METRES  
 FLIGHT PATH NAVIGATION QUARTZ SURFACE  
 FLIGHT PATH RECORDING ERROR  
 FLIGHT PATH FOLLOWING HEIGHT DIFFERENCE

**EQUIPMENT SPECIFICATIONS**

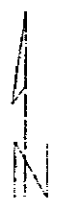
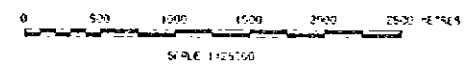
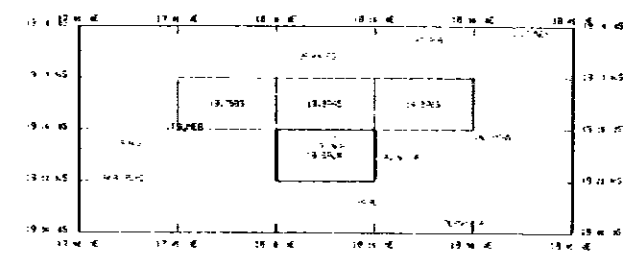
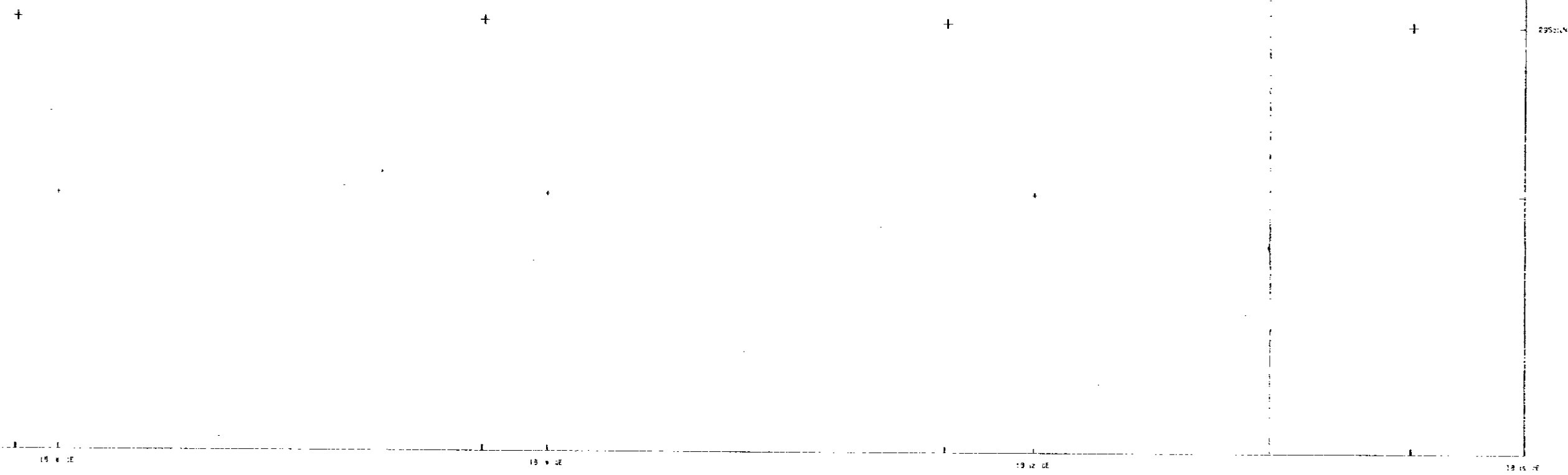
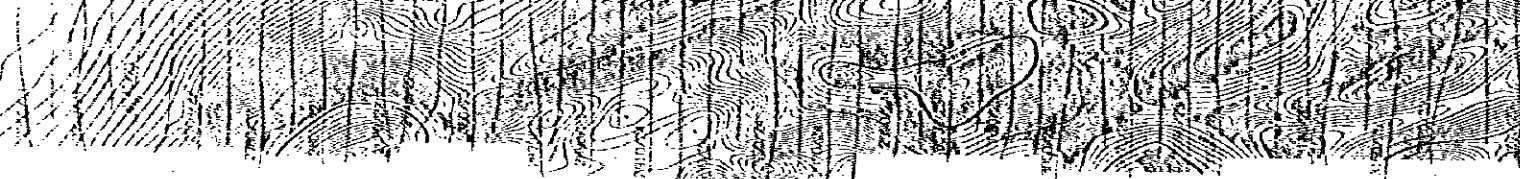
ST. 1.0 METRE  
 TRANSMITTER 1.0 METRE  
 DATA RECORDING SYSTEM 1.0 METRE  
 FLIGHT LINE CENTER 1.0 METRE  
 CHART RECORDER 1.0 METRE  
 PHOTO ALBUM 1.0 METRE  
 PHOTOGRAPHIC 1.0 METRE

**PLOTTING SPECIFICATIONS**

PROJECTION TRANSVERSE MERCATOR  
 SPHEROID Bessel 1841 - 4000 METRE  
 CENTRAL MERIDIAN 21 DEGREES EAST  
 FALSE NORTING 20 METRES SOUTH  
 FALSE SOUTHING 1.0 METRE  
 SCALE 1:50,000  
 DATA RECORDING SYSTEM 1.0 METRE  
 DATA RECORDING SYSTEM 1.0 METRE  
 DATA RECORDING SYSTEM 1.0 METRE



CONTOUR INTERVAL  
 10 METRES  
 50 METRES  
 100 METRES  
 500 METRES



CONTOUR INTERVAL : 10 M  
 10 M CONTOUR  
 50 M CONTOUR  
 250 M CONTOUR  
 500 M CONTOUR

METAL MINING AGENCY  
 OF JAPAN

OTAVI MOUNTAINLAND HEM  
 SURVEY, NAMIBIA

Fig II - 3 - 3 (4) Flight path map  
 & Total magnetic intensity contour map

JICA