

第Ⅲ部 結論および提言

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第1章 結論

第2年次の調査は空中物理探査（空中電磁法）とボーリング調査およびこれに伴うコア物性試験よりなる。これら調査結果の考察を経て得られた結論を次に述べる。

1. Tsumeb・Kombat型の塊状硫化物パイプ状鉱床探査の目的で、第1年次の空中磁気探査異常をターゲットにしたボーリングを4孔実施し、うち1孔（MJNM-1）で低品位の鉛・亜鉛鉱染状ないし細脈状鉱微を把握した。

2. 分析に供した鉱化区間は累計9.16mで、平均Pb品位 0.23%、Zn品位 0.38%を得た。

うち 1%以上の区間は

111.58m-111.69m(0.11m)	Pb=1.45%		
112.30m-112.62m(0.32m)	Pb=4.52%	Zn=1.58%	
245.75m-246.25m(0.50m)		Zn=1.76%	
246.25m-246.65m(0.40m)		Zn=2.28%	である。

3. コアの検鏡結果と鉱石化学分析から、この鉱微はいわゆるミシシッピーバレー型鉱床と同類の成因によるものと考えられる。

4. この鉱微の成因と空中磁気探査異常との間に特に直接的関係は認められない。

5. コアによる母岩の物性試験の結果、この型の鉱化作用の空中電磁法による比抵抗応答は期待できない。

6. 周波数領域による空中電磁法探査から3周波数に対応する深度別比抵抗マップを作成した。比抵抗構造は地質構造と岩相の違いを顕著に反映している。

抽出した低比抵抗帯の中には高比抵抗帯中に地質構造に斜交するリニアメントとして分布するものがあり、これは磁気リニアメントと重複している場合は、塊状硫化物パイプ状鉱床あるいは断層規制型の高品位鉛亜鉛鉱床の探査上、重要と考えられる。

7. このような有望箇所として、MJNM-1の西、Guinab 277, Aris 283 およびVogelsang 284 地内の東西8km、南北5kmの範囲を第3年次調査対象地域として抽出した。

第2章 第3年次調査への提言

第2年次までの調査結果とその総合解析と考察によって得られた結論に基づき、次のような第3年次調査を提言する。

Ⅲ-2-1 調査箇所 (Fig. II-4-1 参照)

本年次調査地域東端のGuinab 277, Aris 283 およびVogelsang 284 地内の東西8 km、南北5 kmの範囲を対象とする。

Ⅲ-2-1 調査手法

最終年次にあたることもあり、空中物理探査異常の検証と鉱床捕捉を目的として第2年次に引き続きボーリング調査を提案したい。深度は空中物理探査の応答深度から各孔300mとする。しかし、対象地域では地表から80m以上はカルクリートで覆われるが、これは鉱床母岩となりえないこと、鉱床探査の指標と含んでないことからしてコアリングの必要性はないと考える。

以上

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5 Regional Studies, Vol. 6 Cu Zn Pb and Ag Deposits, Vol. 13 Regional Studies
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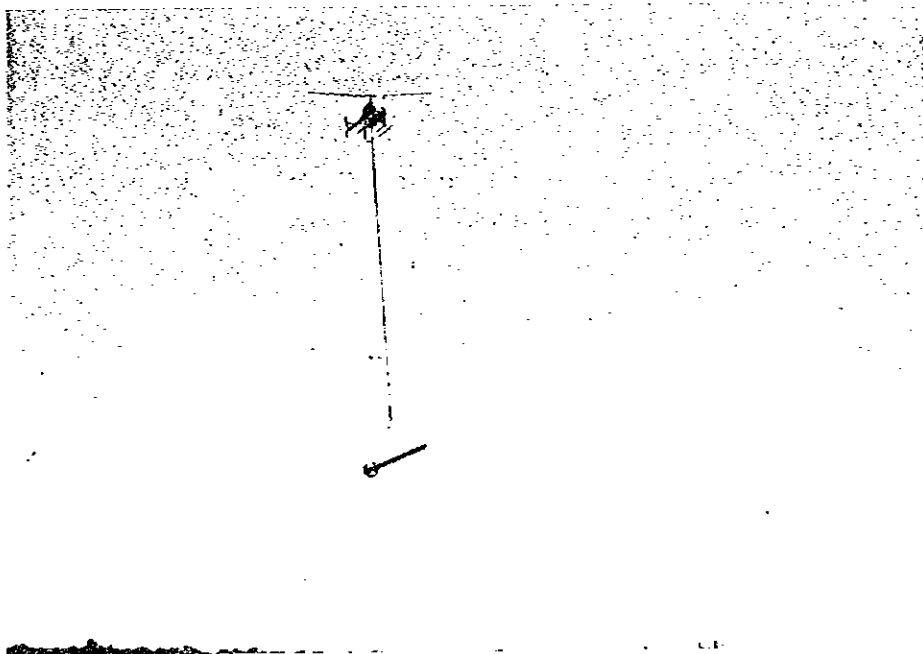
A-1

作業状況写真

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

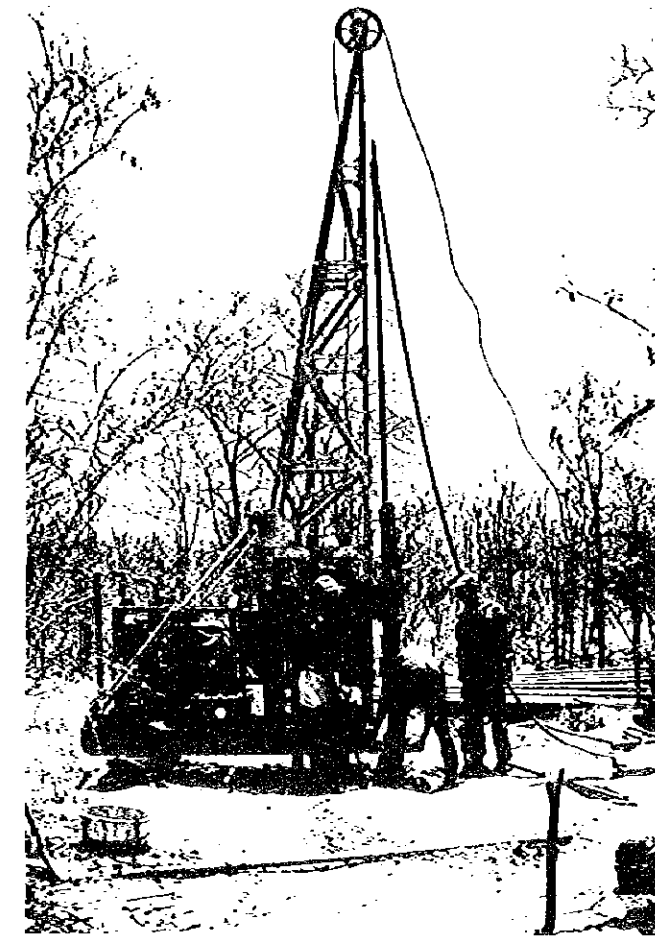


Bell Long Ranger L3-ZS-RFA Helicopter



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

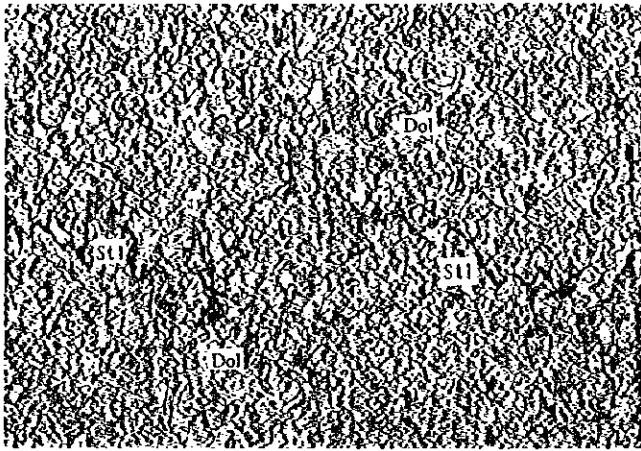
岩石顯微鏡写真

Abbreviations for minerals in photographs

Abbreviations	Mineral
Gn	Galena
Sp	Sphalerite
Ds	Descloizite
Cv	Covelline

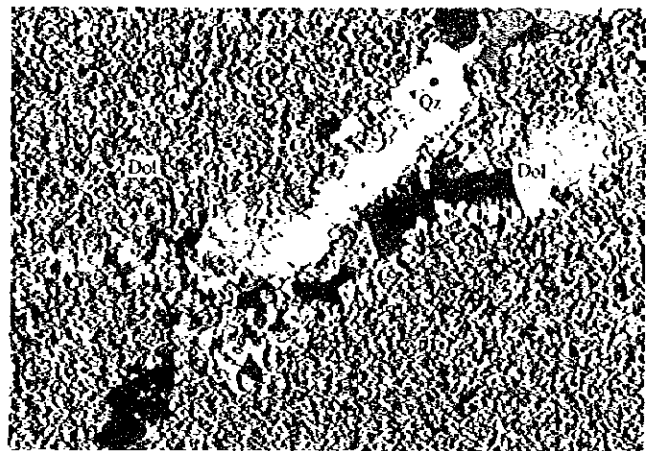
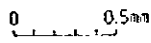
A—3

鉍石顯微鏡写真



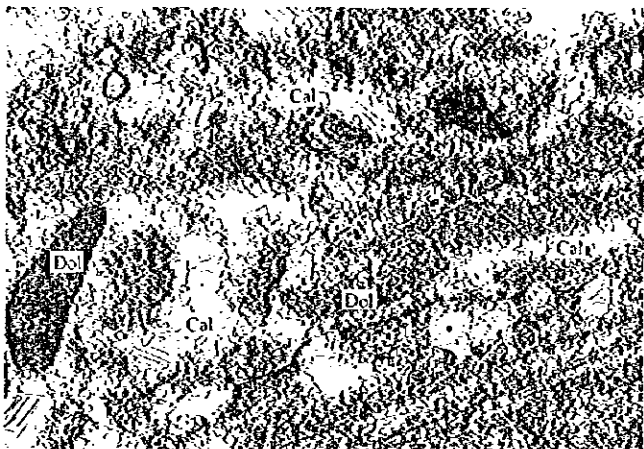
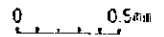
Sample No. S-01
 Hole No. & Depth MJNM-1 141.00 m
 Rock Name Dolomite with stylolite texture

Open Nicol



Sample No. S-03
 Hole No. & Depth MJNM-1 246.00 m
 Rock Name Dolomite

Cross Nicols

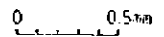


Sample No. S-04
 Hole No. & Depth MJNM-1 212.00 m
 Rock Name Calcitized dolomite

Open Nicol

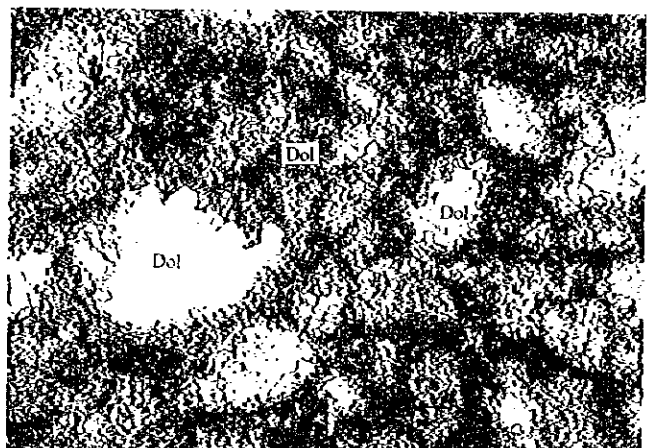


Cross Nicols



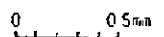
Sample No. S-05
 Hole No. & Depth MJNM-1 102.10 m
 Rock Name Algae dolomite

Open Nicol



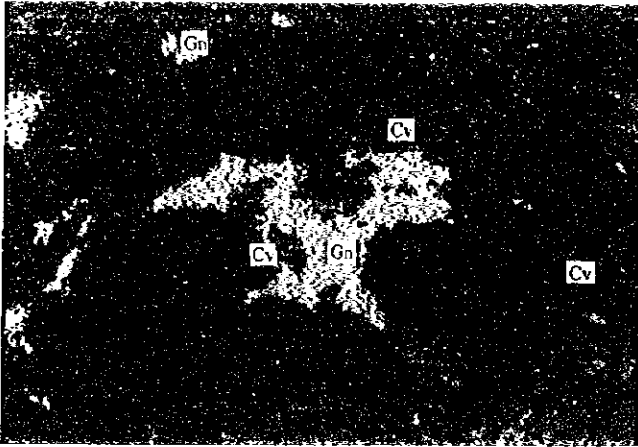
Sample No. S-09
 Hole No. & Depth MJNM-2 218.40 m
 Rock Name Grainstone

Open Nicol



Abbreviations for minerals in photographs

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



Sample No. P-01
 Hole No. & Depth MJNM-1 91.60 m
 Ore Name Lead and copper oxide ore

0 0.2mm



Sample No. P-02
 Hole No. & Depth MJNM-1 112.30 m
 Ore Name Lead and zinc ore

0 0.2mm



Sample No. P-03
 Hole No. & Depth MJNM-1 141.63 m
 Ore Name Zinc ore

0 0.2mm



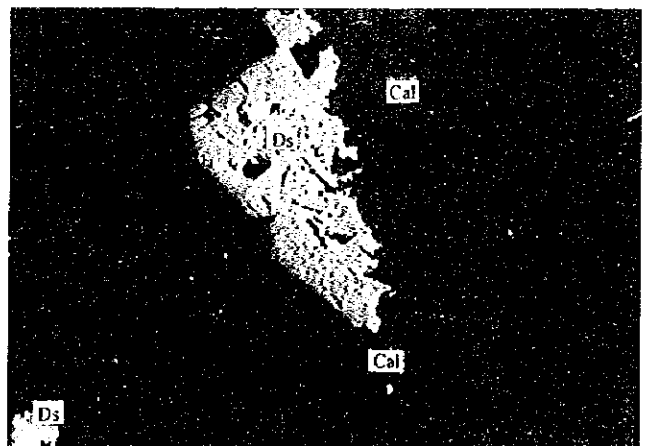
Sample No. P-04
 Hole No. & Depth MJNM-1 246.25 m
 Ore Name Lead and zinc ore

0 0.2mm



Sample No. P-04
 Hole No. & Depth MJNM-1 246.25 m
 Ore Name Lead and zinc ore

0 0.2mm



Sample No. P-05
 Hole No. & Depth MJNM-3 63.55 m
 Ore Name Vanadium ore

0 0.2mm

LEGEND

	SYMBOL	ROCK NAME	LITHOFACIES	
Tertiary	— — — —	CALCRETE	Less stratified calcrete	
	•••••		Gravel bearing calcrete	
Upper Proterozoic	[Horizontal lines]	DOLOMITE	Massive dolomite	
	[Vertical lines]		Well bedded dolomite	
	[Wavy lines]		Sandy dolomite	
	[Ovals]		Oolitic dolomite	
	[Irregular shapes]		Stromatolitic dolomite	
	[Wavy lines]		Stylolite developed	
	[Triangles]		Brecciated, flexured	
	[Wavy lines]		CHERI	
	[Horizontal lines]		SHALE	
	[Wavy lines]		ARGH.	Argillaceous zone
	[X marks]		Fractured zone (young and open)	
	[Z marks]		Cracked zone (old and closed)	
	•••	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 : selenitization

VEIN MINERAL

Qtz : quartz
 Cal : calcite

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

SHEET 191788S

19 7 25

130-c

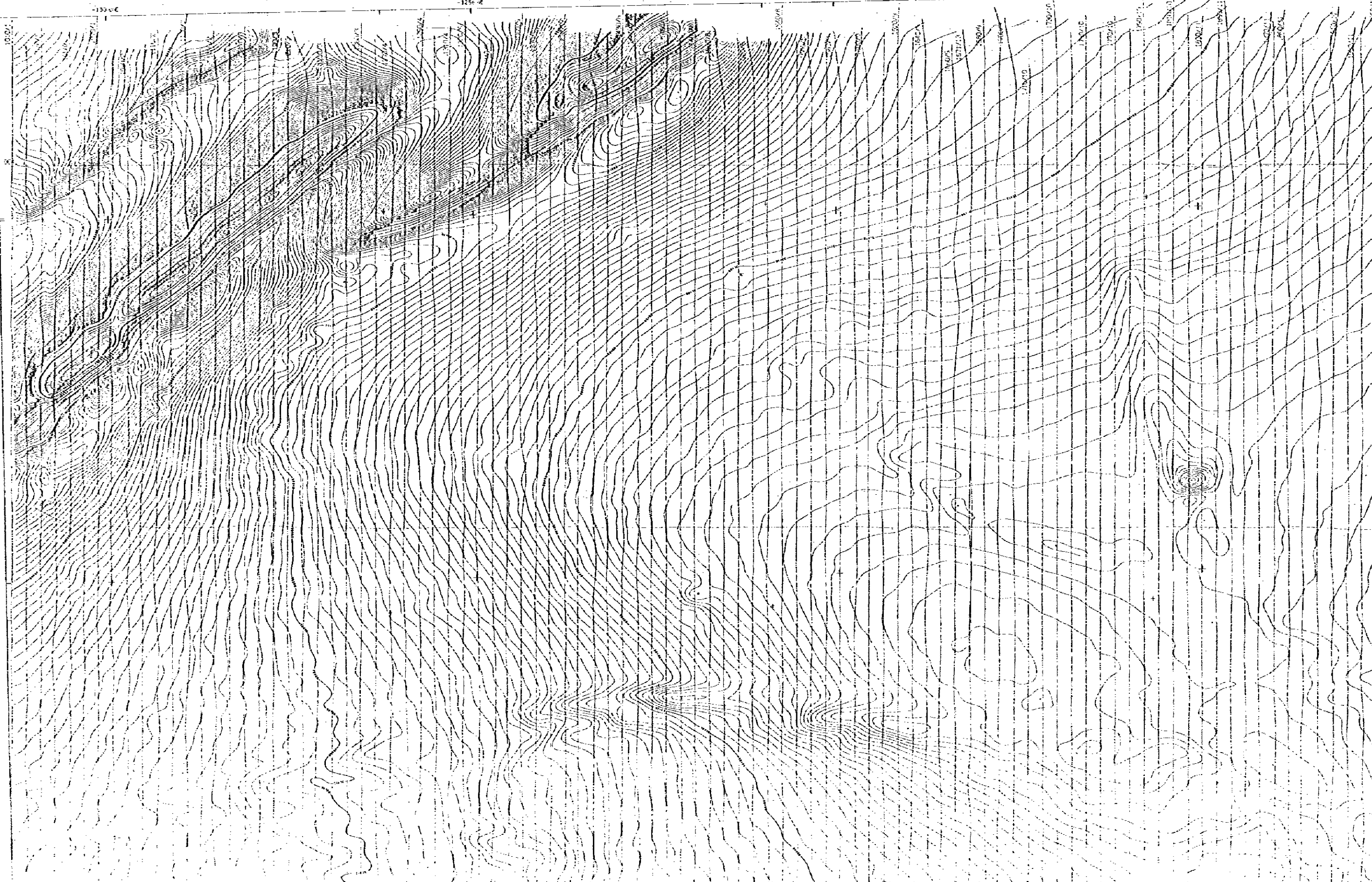
125-c

120-c

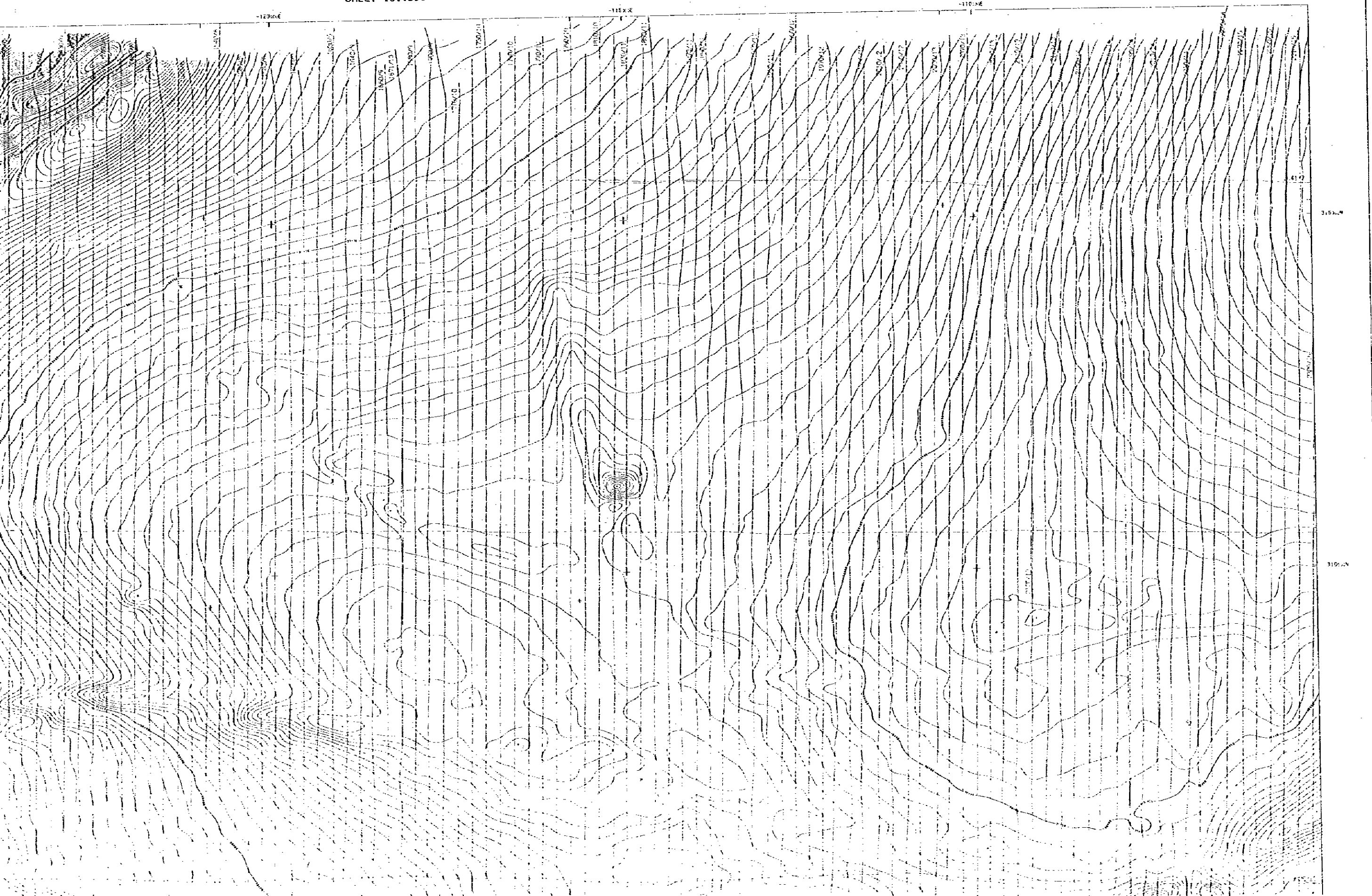
115-c

15 8 05

13 12 05



SHEET 1917BBS



19 17 05

19 18 05

17 45 0E

17 46 0E

17 47 0E

17 48 0E

SURVEY SPECIFICATIONS

DATA RELATION INTERVAL 0.1 SEC/REP/REP 5 PULSES
 SENSITIVITY TERRAIN CLEARANCE 100 50 M AGL
 SENSITIVITY TERRAIN CLEARANCE 50 25 M AGL
 FLIGHT LINE SPACING 100 METERS
 TRACKING PULSES 2000 PULSES
 FLIGHT LINE TRAIL NORTH-SOUTH
 TRACKING TRAIL EAST-WEST

NAVIGATION SPECIFICATIONS

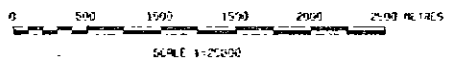
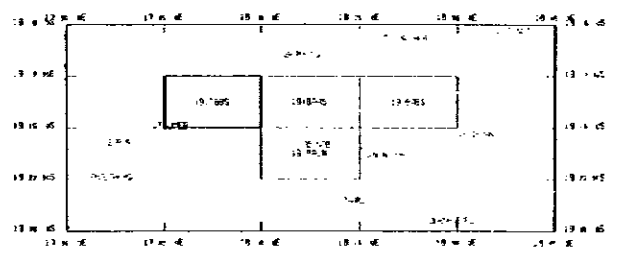
FLIGHT PATH TRACKING NATIONAL IP SHIPS COLOUR KEYS
 FLIGHT PATH NAVIGATION NAVTEL 300R
 FLIGHT PATH RECEIVING ESTIMR
 FLIGHT PATH PROCESSING KORTONE DIFFERENTIAL

PLOTTING SPECIFICATIONS

PROJECTION TRANSVERSE MERCATOR
 SPHEROID Bessel 1857 - SEASIDE METRE
 CENTRAL MERIDIAN 21 DEGREES EAST
 FALSE NORTHING 22 DEGREES SOUTH
 ELLIPSOID SEMI-MAJOR AXIS 6378137 METRES
 ELLIPSOID SEMI-MINOR AXIS 6356752 METRES
 FLATNESS 1/298
 FALSE EASTING 50 METRES
 FALSE NORTHING 50 METRES
 LIGHT SOURCE BY HELIOWEBS S.A. CC
 PLOTTER BY BELL 72E LR 25-40R
 DATA ACQUISITION BY DESSIS 87711 LIMITED AND DISHER
 DATA PROCESSING BY DESSIS 87711 LIMITED AND DISHER

EQUIPMENT SPECIFICATIONS

ER DUBBY
 PROFILES METER SCANTER AIR SEAT AIR FOUR
 DATA ACQUISITION SYSTEM PPS DBS B
 PLOTTING SYSTEM PPS 7400
 CHART READER PPS 7400 18 CHANNEL
 BALL BALANCE PPS 7400
 BALL BALANCE PPS 7400



CONTOUR INTERVAL
 10 METRE
 50 METRE
 250 METRE
 500 METRE

SHEET 1918AAS

19 05

19 05

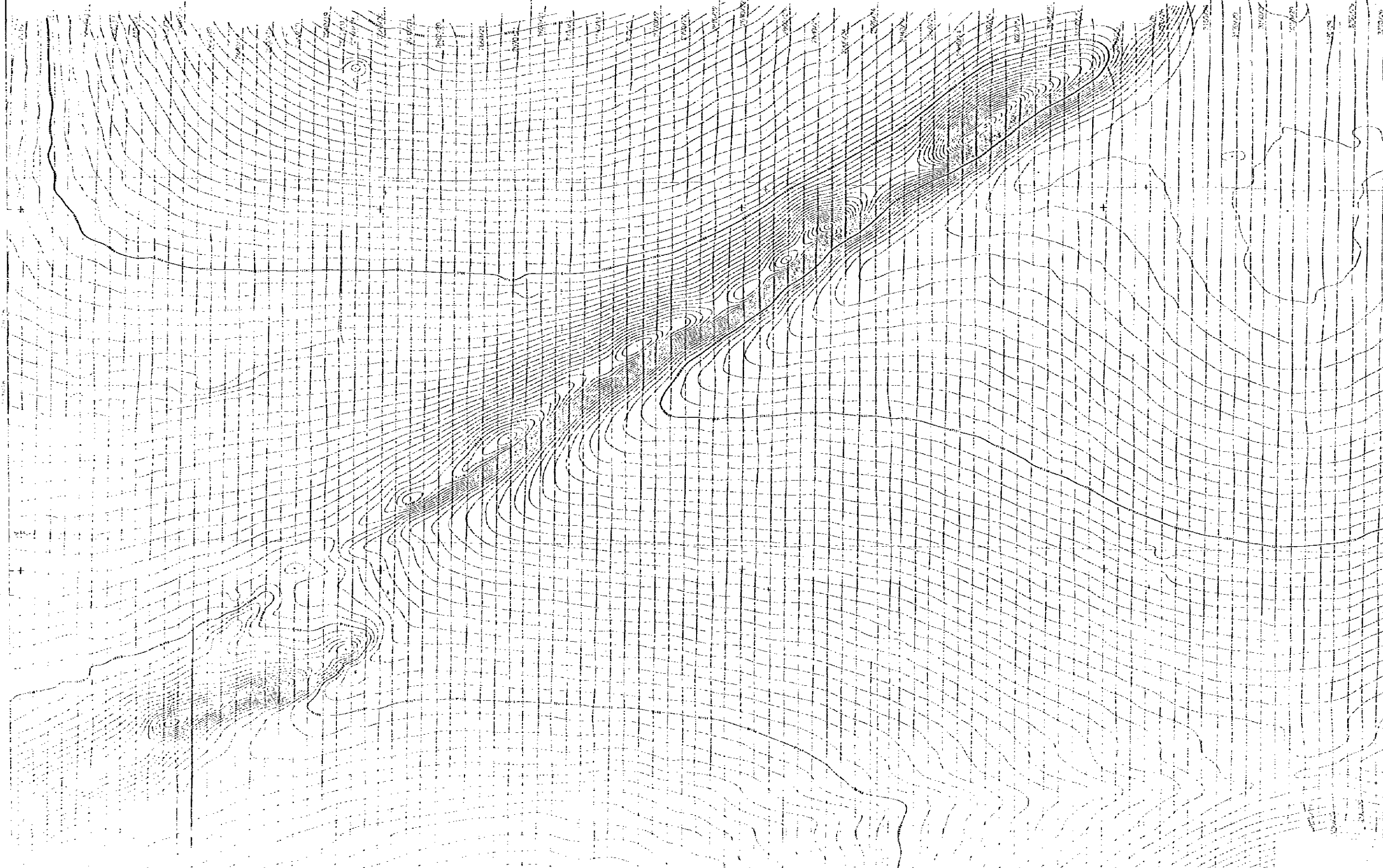
19 05

135000

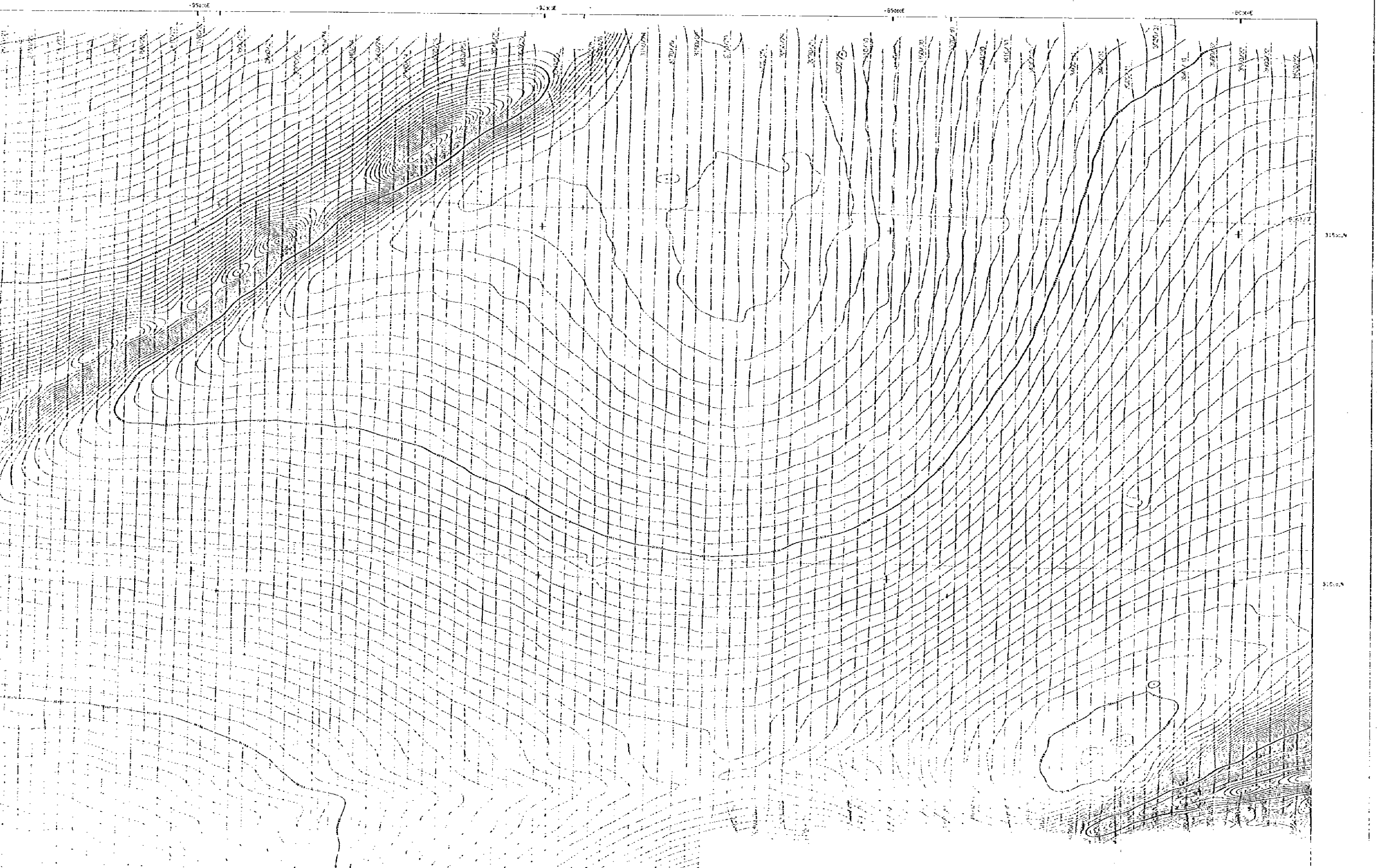
135000

135000

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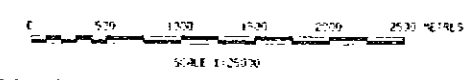
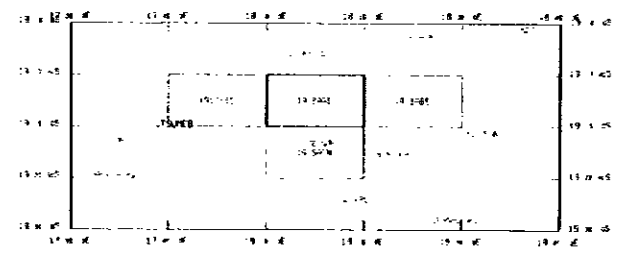
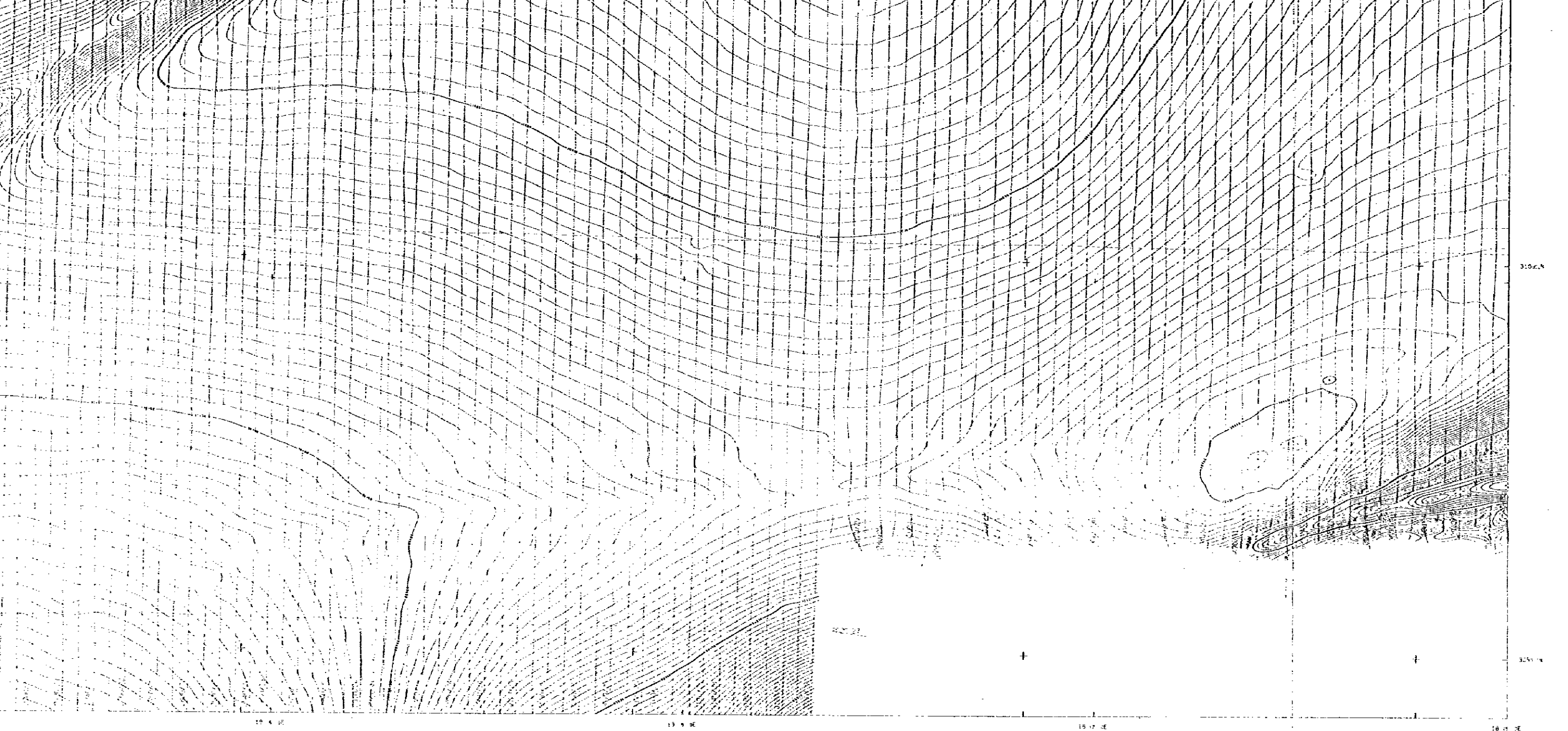


SHEET 1918AAS



315000

315000



CONTOUR INTERVAL = 10 mT

10 mT CONTOUR ————

50 mT CONTOUR - - - - -

150 mT CONTOUR ————

500 mT CONTOUR ————

METAL MINING AGENCY
OF JAPAN

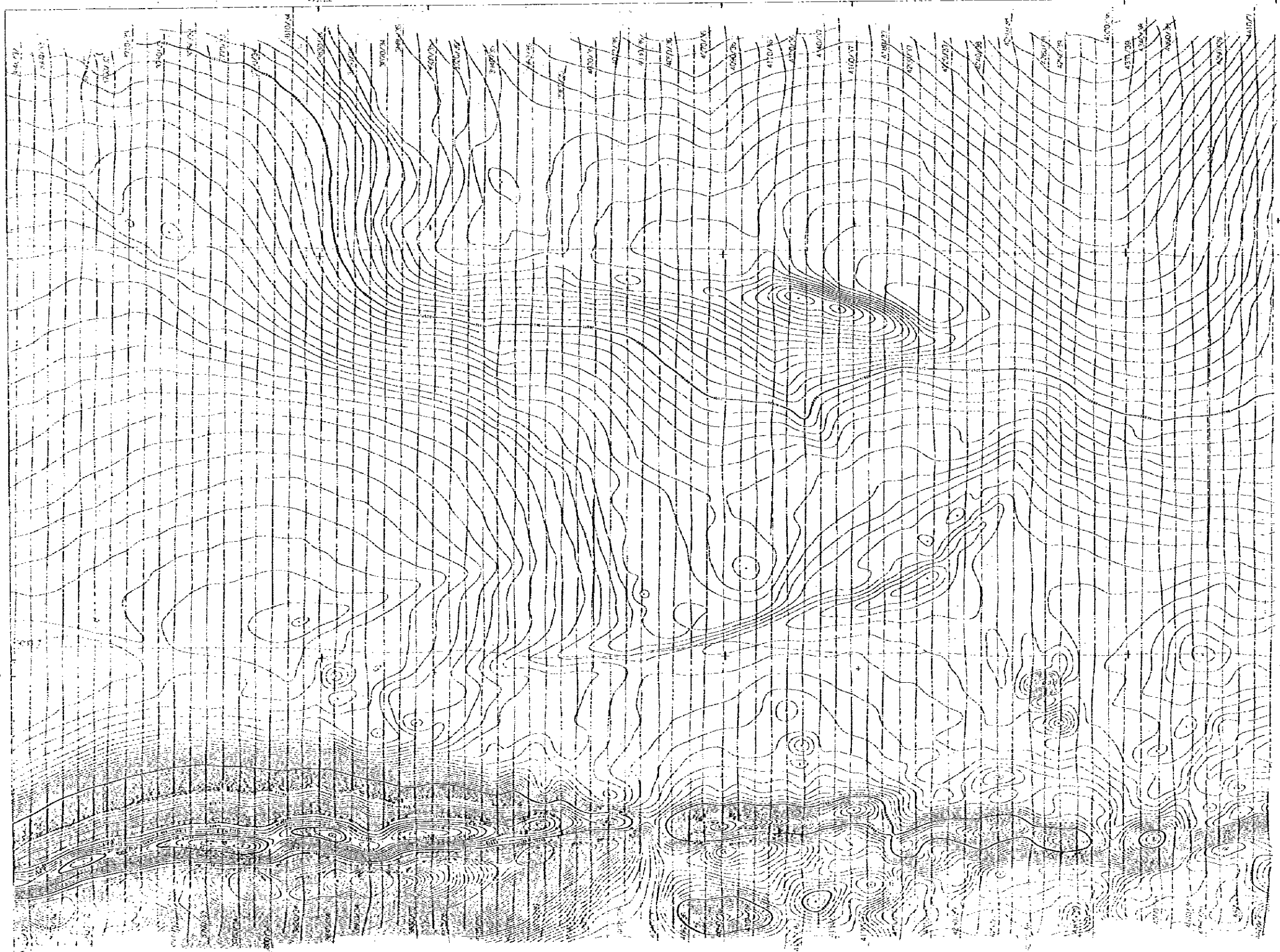
OTAVI MOUNTAINLAND HER
SURVEY, NAMIBIA

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

19 1 365

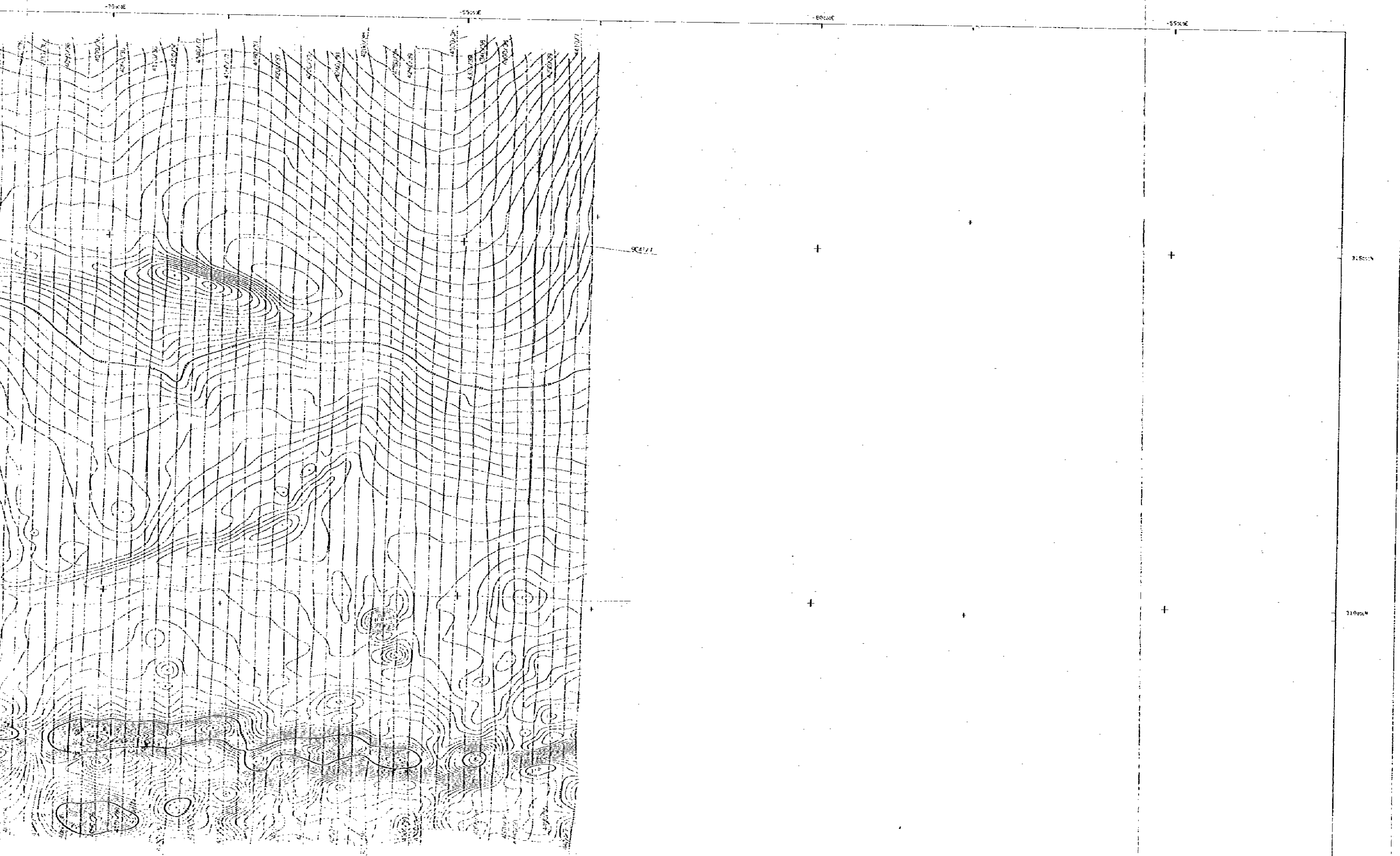
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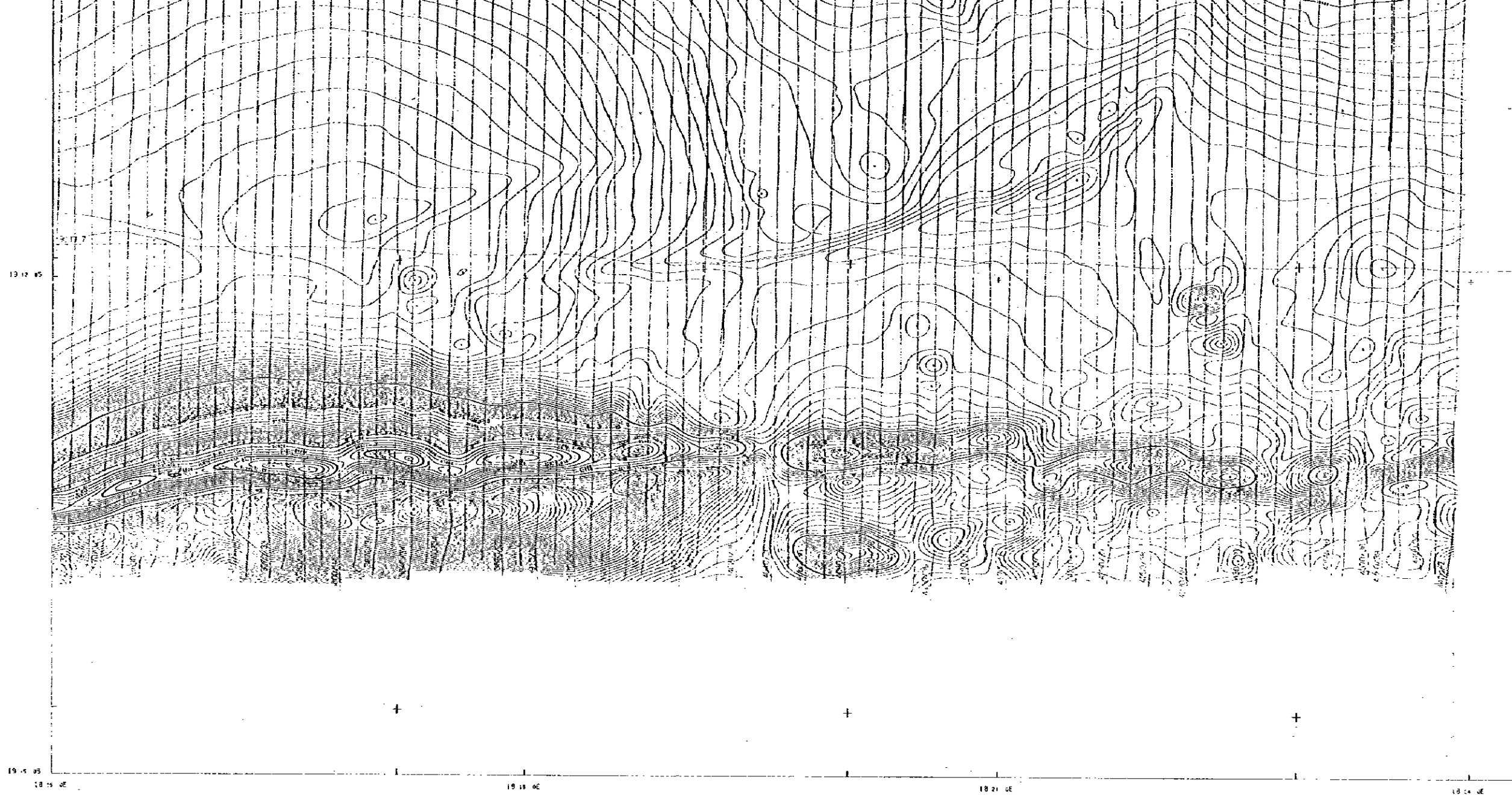
19 11 35



SC.41/1

SHEET 1918AB8





SURVEY SPECIFICATIONS

DATA RECORDING SYSTEM: D-11200
 SENSOR: RAYSON TERRAIN CLIPPING PRO
 SENS. AREA: TERRAIN CLIPPING PRO
 FLIGHT LINE SPACING: 200 METRES
 FLIGHT LINE TREND: NORTH-SOUTH
 FLIGHT LINE TEND: EAST-WEST

NAVIGATION SPECIFICATIONS

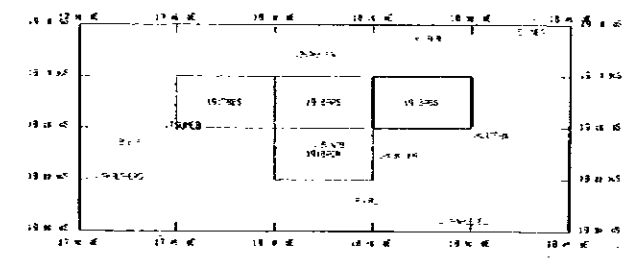
FLIGHT PATH TRACKING: NATIONAL SP-5 HAS GROUND WALK
 FLIGHT PATH NAVIGATION: NAVITEL 3.55R
 FLIGHT PATH RECORD: D-DATA
 FLIGHT PATH PROCESSING: RELATIVE DIFFERENTIAL

EQUIPMENT SPECIFICATIONS

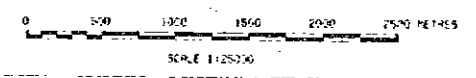
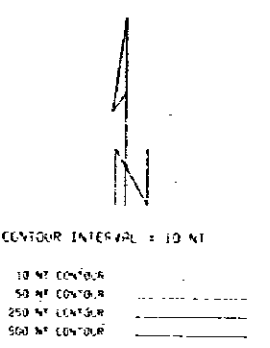
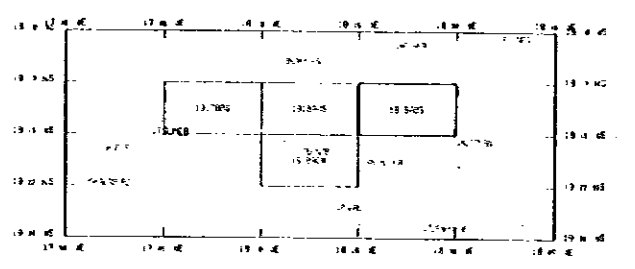
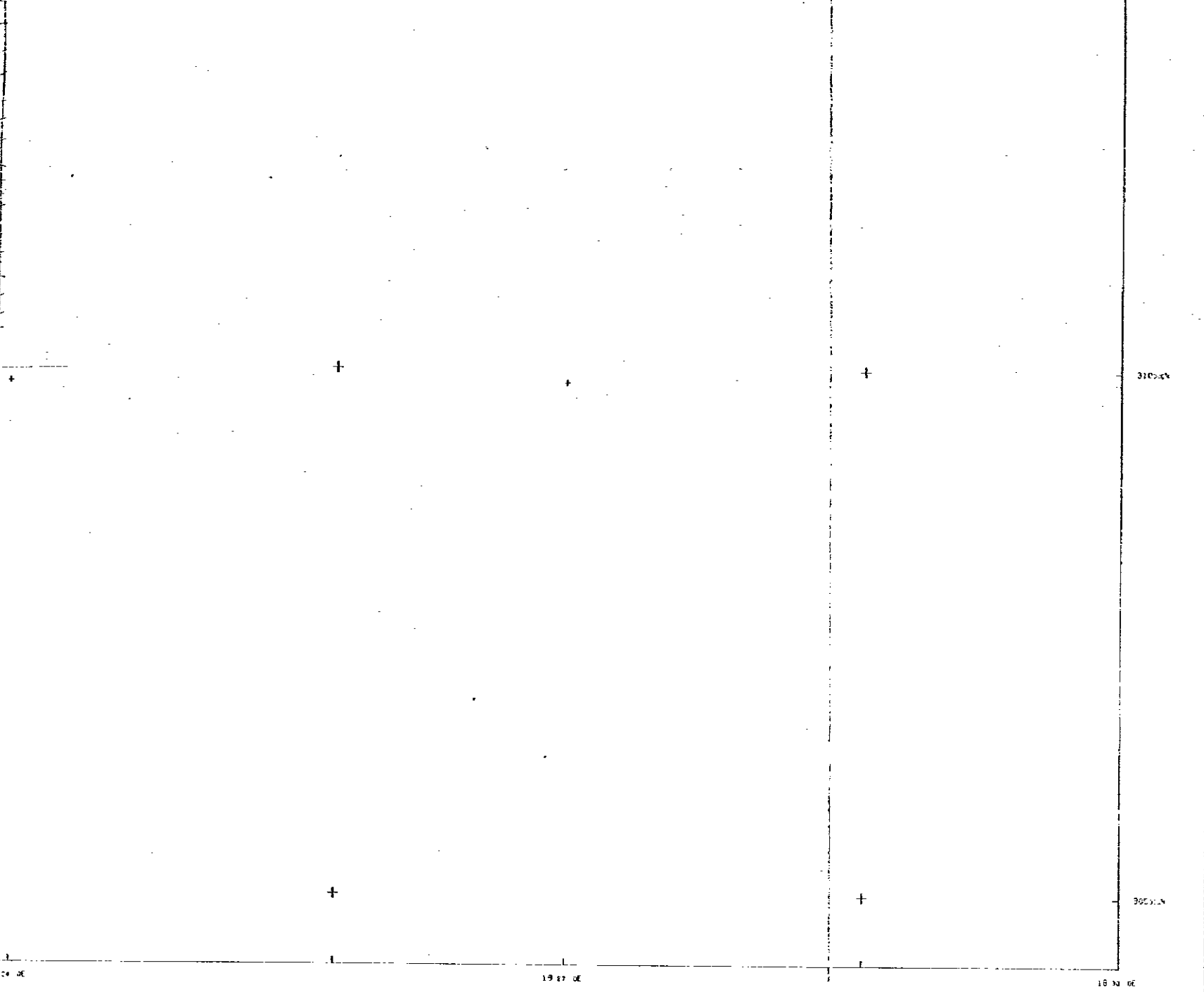
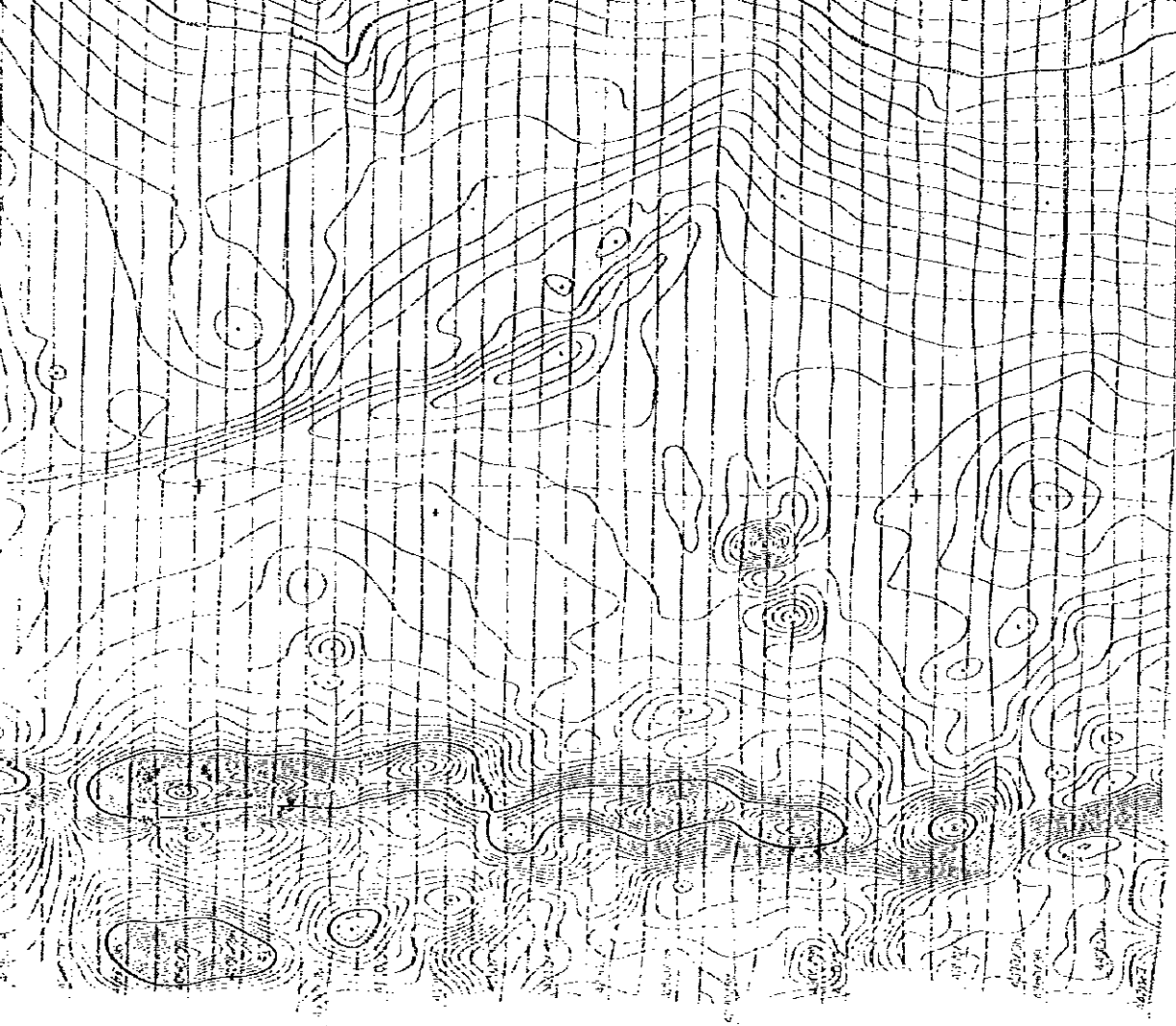
IM: ETHER
 MAGNETOMETER: SCIENTIFIC WILCOX W-30A
 DATA ACQUISITION SYSTEM: RAS 215 B
 MAGNETIC COMPASS: RAS 215 B
 CHART PLOTTER: RAS 215 B
 MAG. DEVIATION: RAS 215 B
 BAROMETRIC ALTITUDE: RAS 215 B

PLOTTING SPECIFICATIONS

PLOT SECTION: PROGRESSIVE VECTOR
 SPHEROID: Bessel 1841 - SEATAN MERE
 CENTRAL MERIDIAN: 23 DEGREES EAST
 FALSE NORTHING: 23 DEGREES SOUTH
 CENTRAL SCALING FACTOR: 1.00
 X UNIT: 0 METRES
 Y UNIT: 0 METRES
 GRID MESH SIZE: 50 METRES
 PLOTTER SUPPLIED BY: METEOROLOGICAL SERVICE
 PLOTTER: SELL 240 L B 23-PTA
 DATA ACQUISITION BY: DEGRAS 1974 LIMITED PHOTO
 DATA PROCESSING BY: DEGRAS 1974 LIMITED PHOTO



CONTOUR
 10 METRES
 50 METRES
 250 METRES
 500 METRES



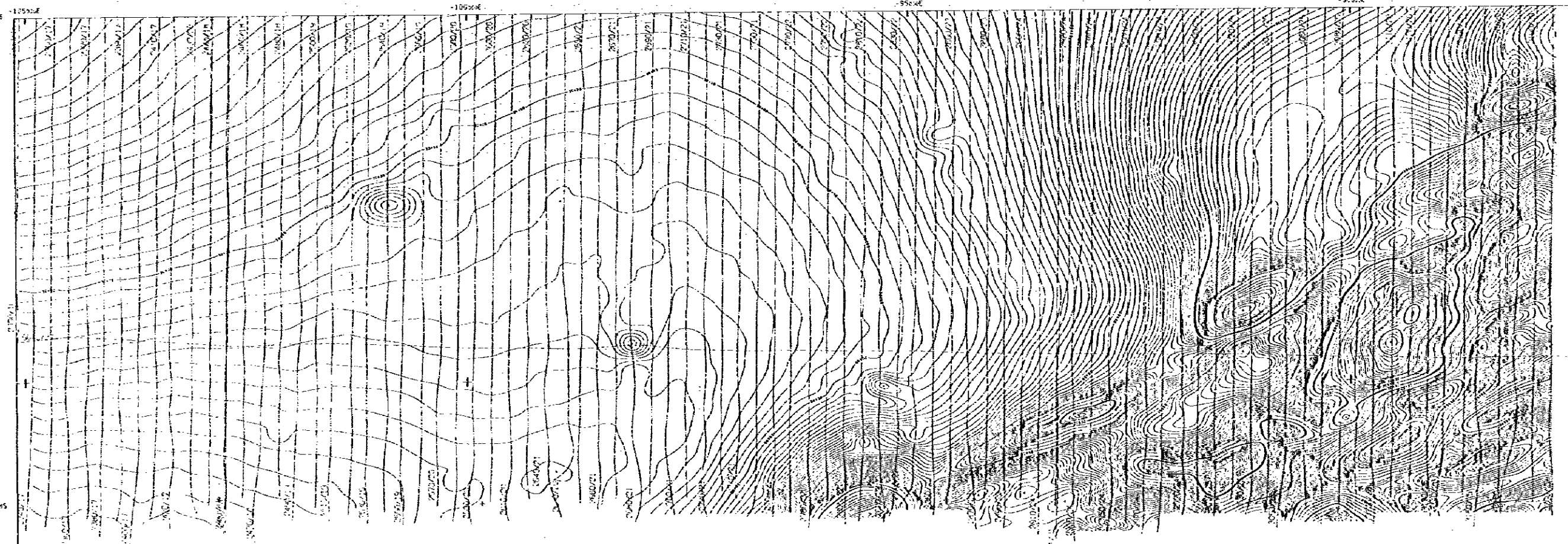
METAL MINING AGENCY
OF JAPAN

OTAVI MOUNTAINLAND HEM
SURVEY, NAMIBIA

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

SHEET 1918ACN

19 18 05

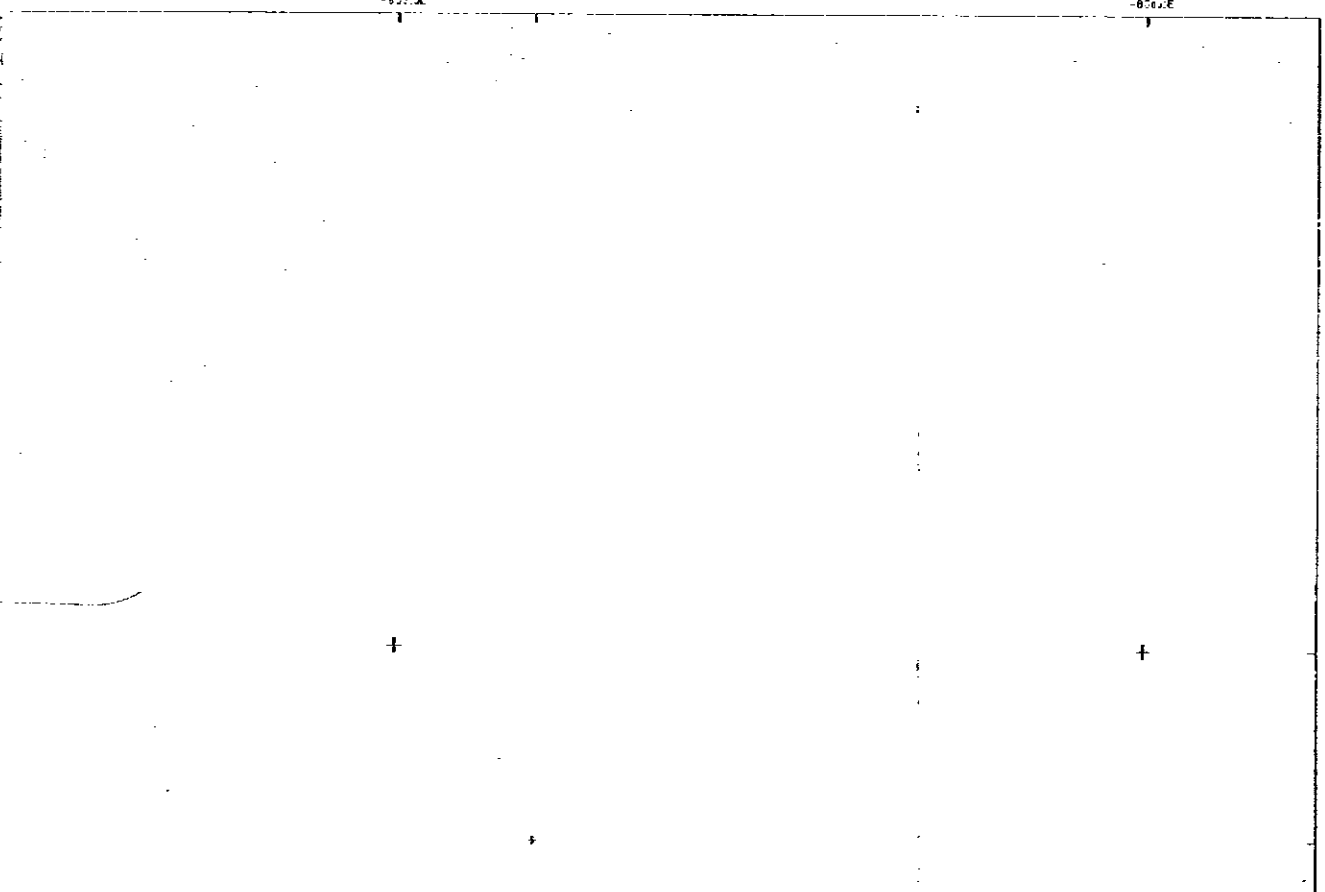
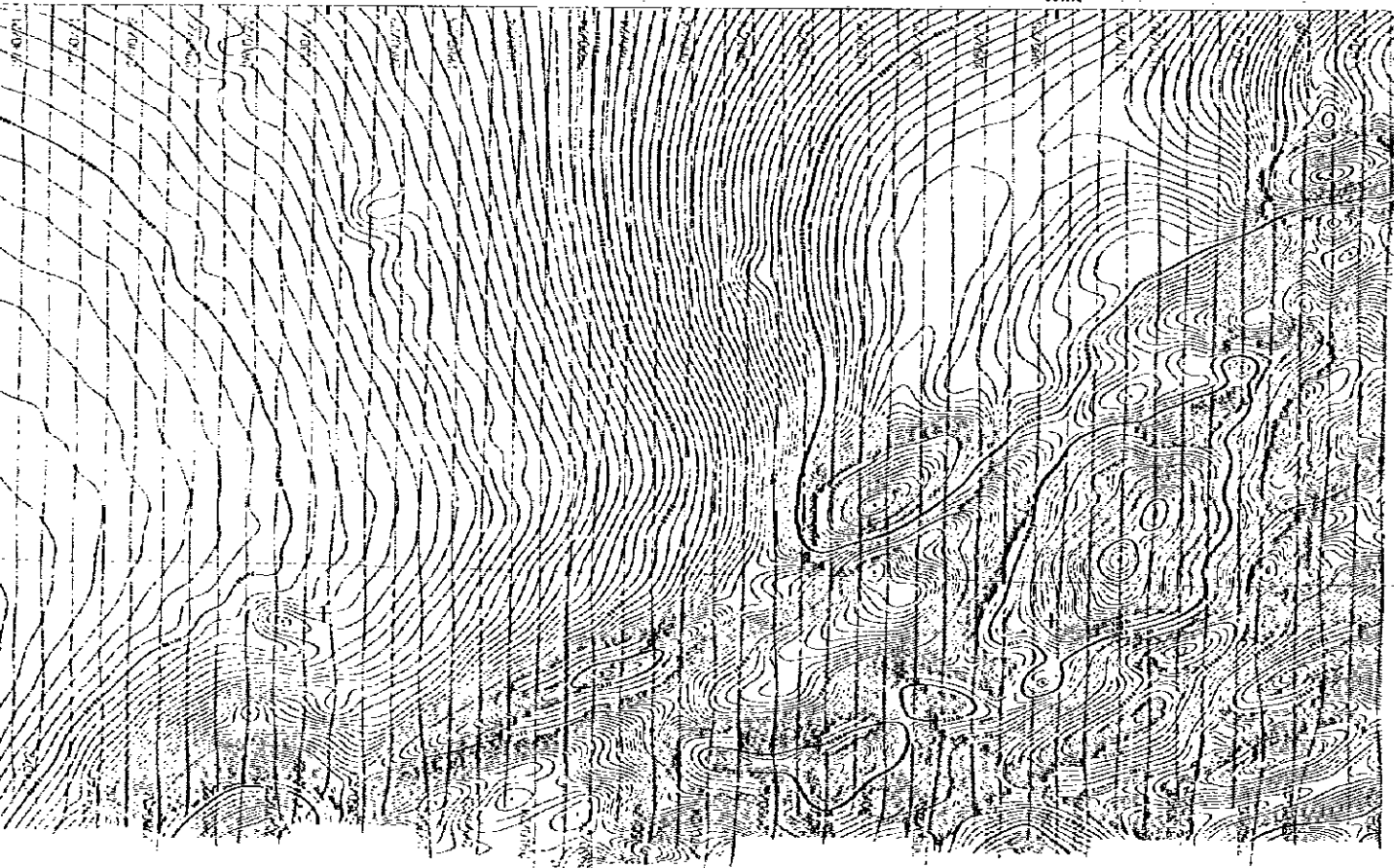


19 18 05

19 18 05

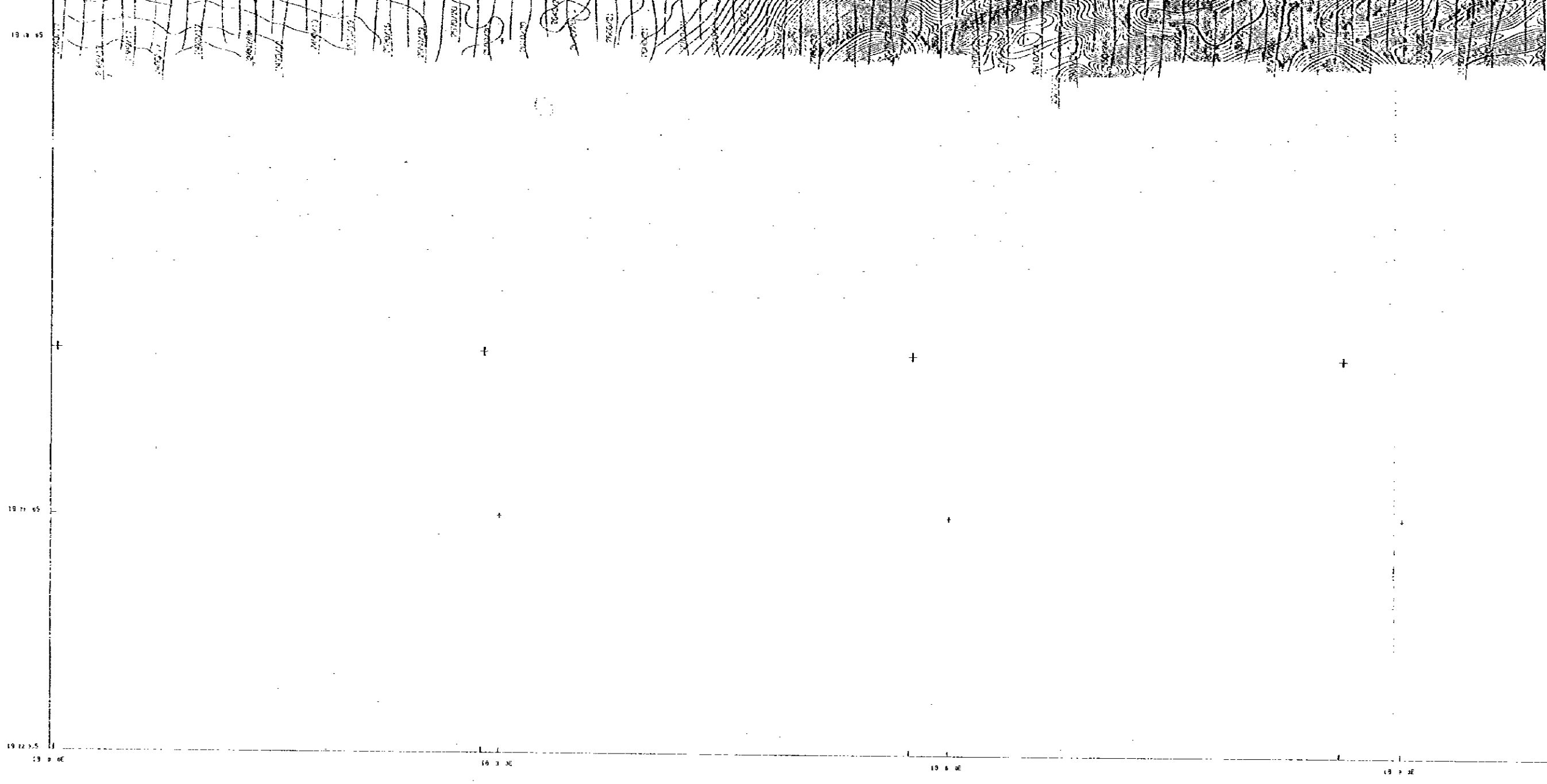


SHEET 1918ACN



35000N

23500N



SURVEY SPECIFICATIONS

DATA RECORDING INTERVAL: 0.1 SECONDS
 SENSOR HEIGHT ABOVE TERRAIN: 50 METRES
 FLIGHT LINE SPACING: 200 METRES
 FLIGHT LINE TRENDS: NORTH-SOUTH

NAVIGATION SPECIFICATIONS

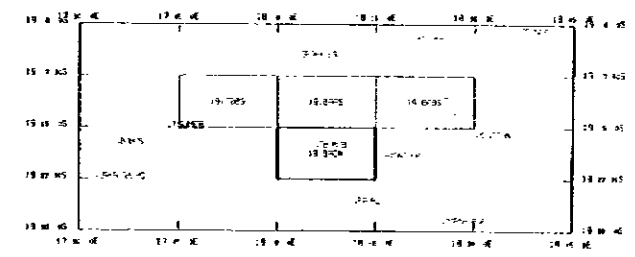
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 FLIGHT PATH NAVIGATION: NAVTEC
 FLIGHT PATH RELAYING: DIF
 FLIGHT PATH PROCESSING: REAL TIME DIFFERENTIAL

EQUIPMENT SPECIFICATIONS

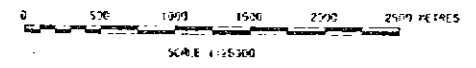
IMAGING: SPOTCAM
 DATA ACQUISITION SYSTEM: RPS
 CHART RECORDER: RPS
 PHOTO METER: RPS

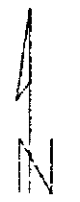
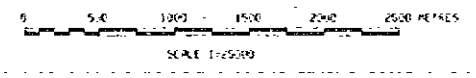
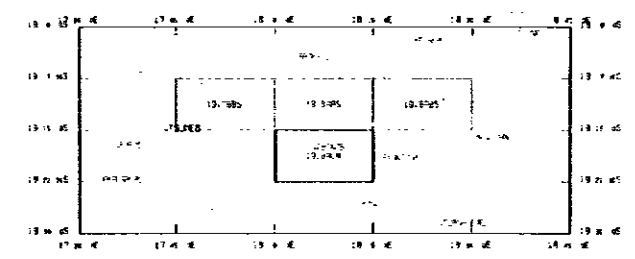
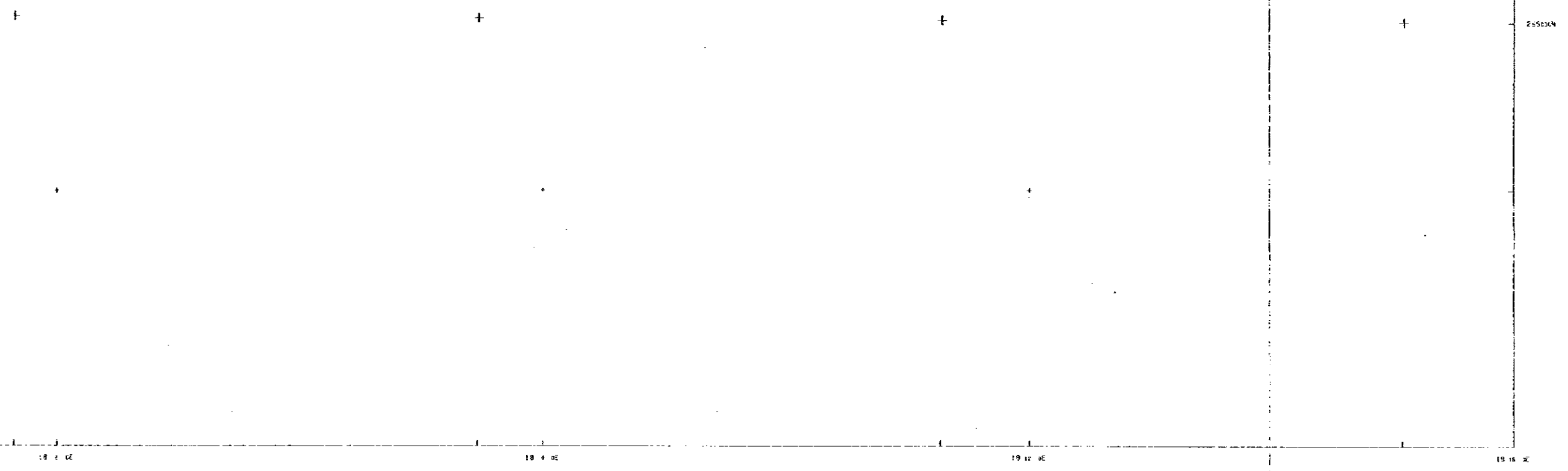
PLOTTING SPECIFICATIONS

PROJECTION: TRANSVERSE MERCATOR
 CENTRAL MERIDIAN: 21 DEGREES EAST
 FALSE NORTHING: 20 METRES SOUTH
 CENTRAL SCALE FACTOR: 1.00
 FALSE EASTING: 0 METRES
 FALSE WESTING: 0 METRES
 GRID MESH SIZE: 50 METRES
 AIRCRAFT SUPPLIED BY: HELICOPTERS R.P. CO.
 DATA ACQUISITION BY: DELTA ZONE LTD
 DATA PROCESSING BY: TERRASPEC LTD



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 REM
 SURVEY, NAMIBIA

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

JICA