Bergvesenet

Postboks 3021, N-7441 Trondheim

Rapportarkivet

Bergvesenet rapport nr	Intern Journal nr	Internt arkiv nr	Rapport lokalisering	Gradering
5508				

Kommer fra ..arkiv	Ekstern rapport nr	Oversendt fra	Fortrolig pga	Fortrolig fra dato:
Ni&Ol		Ni&Ol		

Tittel

Ore Reserve Statment of Nikkel & Olivin Mine - Prepared using data available 31.12.1996

Forfatter	Dato	År	Bedrift (Oppdragsgiver og/eller oppdragstaker)
Ekberg, Markus Storhaug, Lisbeth	02.04	1997	Nikkel og Olivin A/S

Kommune	Fylke	Bergdistrikt	1: 50 000 kartblad	1: 250 000 kartblad
Ballangen	Nordland		13311	Narvik

Fagområde	Dokument type	Forekomster (forekomst, gruvefelt, undersøkelsesfelt)
Malmberegning		Bruvannsfeltet Råna Ostmalmen Vestmalmen Dypmalmen

Råstoffgruppe	Råstofftype
Malm/metall	Ni, Cu

Sammendrag, innholdsfortegnelse eller innholdsbeskrivelse

Beskriver kort geologisk setting med mineraliseringen og malmtyper. Lokalisering av de forskjellige malmkropper og linser. Avslutningsvis beskrives gruve og oppredningsmetoden.
Videre blir kjerneboring/slamboring, prøvetaking og kalkulasjonsmetode beskrevet. Grunnlaget for beregningene er den Australske coden.
Ved en cut-off på 0,45% ni, beregnes in situ mineralressurser å være 3,48 Mt med 0,58% Ni.
Total malmreserve er beregnet til 2,2 Mt med 0,55% Ni, når det antas en utvinning på 70% og sidebergfortynning (med 0,15% Ni) på 10%.

Vedlagt gruvesnitt, kostnader og plankart.

Nikkel og Olivin AS 24.01.98

Markus Ekberg

CUT-OFF GRADES FOR DIFFERENT DECISION MAKING SITUATIONS

COSTS	LONGHOLE-PRODUCTION	50,0	NOK/TONNE		50,0	50,0	50,0	
	DRIFTING	90,0	NOK/TONNE					
	MINE TOTAL AVG	90,1	NOK/TONNE					90,1
	MILL	41,4	NOK/TONN	15,0	15,0	41,4	41,4	41,4
	ADMIN+SAFETY+ENVIR	9,8	NOK/TONN	9,8			9,8	9,8
	TAILING DEPOSIT	7,6	NOK/TONN	7,6		7,6	7,6	7,6
	CONC. FREIGHT	6,8	NOK/TONN	6,8	6,8	6,8	6,8	6,8
	N&O TOTAL	155,7	NOK/TONN	39,2	71,8	105,8	115,6	155,7
NICKEL PRICE	(BUDJSJETT 47,5 KR/KG)	47,50	NOK/KG					
NICKEL RECOVERY WITH GRADE 0.55% NI		75	%					

NSR OF THE ORE

Ni%	Rec%	Paym%Ni in conc	Ni-price	NSR/tonne	Cu-Coextra	Right NSR	Covers cost items:
0,60	77	75	47,50	165	1,00	165	All costs
0,55	75	75	47,50	147	1,00	147	
0,50	73	75	47,50	130	1,00	130	
0,45	71	75	47,50	114	1,00	114	Long hole production + all others
0,40	69	75	47,50	98	1,00	98	Lh+mill+tailing+ conc.freight
0,35	67	75	47,50	84	1,00	84	
0,30	65	75	47,50	69	1,00	69	Lh+mill variable+conc. freight
0,25	63	75	47,50	56	1,00	56	"Flywaste"+mill variable+conc freight+ others

Nikkel og Olivin AS 06.11.1997

Markus Ekberg

CUT-OFF GEHALTER TIL ULIKE BESLUTELSESITUASJON

KOSTNADER:	LANGHULL	50	KR/T
	ORT	90	KR/T
	GRUVE GJS	85	KR/T
	VERKET	40	KR/T
	ADM	10	KR/T
	N&O TOT	140	KR/T
NIKKEL-PRIS	(BUDJSJETT 52 KR/KG)	50	KR/KG
NIKKEL-UTV.		75	%

MALMENS VERDI:

Ni%	Utv%	Bet%Ni	Ni-pris	Ni-NSR/tonn	Cu-Co-tilleg	Korrekt NSR	
0,50	75	65	50	122	1,15	140	Betaler alle kostnader
0,45	73	65	50	107	1,15	123	Betaler gruvegjs+verket
0,40	71	65	50	92	1,15	106	
0,35	69	65	50	78	1,15	90	Betaler lh+verket
0,30	65	65	50	63	1,15	73	Betaler lh+verket variabel

1

2

3

4

5

6

7

8

9

10

11

12

Undersykelsetelthet
av ulike res/resource
- klaner

Resourcer med
i melding

outokumpu

ORE RESERVE STATEMENT

of

NIKKEL OG OLIVIN MINE

Prepared using data available 31.12.1996

Nikkel og Olivin AS

02.04.1997
Markus Ekberg
Lisbeth Storhaug

Distribution: Outokumpu Mining Oy
Outokumpu Mine Technology Group
Vidkun Henriksen,Nikkel og Olivin AS
Lisbeth Storhaug, Nikkel og Olivin AS
Markus Ekberg, Nikkel og Olivin AS

outokumpu

Nikkel og Olivin AS - Ore Reserve Statement

Summary

This ore reserve statement of the Nikkel og Olivin mine has been prepared using data available 31.12.1996.

The in-situ mineral resources of all Nikkel og Olivin mine mineralisations have been calculated using conventional profile method. Diamond drill hole and sludge hole data have been used equal manner. The calculations have been made using Outokumpu's Minenet-program.

Results are as follows (cut-off grade 0.45 %Ni)

Measured Mineral Resources	1.722 Mt	0.59 % Ni
Indicated Mineral Resources	1.590 Mt	0.57 % Ni
Inferred Mineral Resources	0.171 Mt	0.51 % Ni
Total Resources	3.484 Mt	0.58 % Ni

The ore reserves were derived from the mineral resources using a mine technological recovery of 70 % and a waste rock dilution of 10 % with Ni-grade 0.15 %.

Results are as follows:

Proven Ore Reserves	1.044 Mt	0.56 % Ni
Probable Ore Reserves	1.155 Mt	0.53 % Ni
Total Reserves	2.200 Mt	0.55 % Ni

Ore reserves are derived from mineral resources and are thus a part of mineral resources.

outokumpu

Table of contents

Nikkel og Olivin AS - Ore Reserve Statement

outokumpu

1. Introduction

This ore reserve statement has been prepared by mine manager Markus Ekberg and mine geologist Lisbeth Storhaug. The document is prepared using instuctions given in Outokumpu's "Evaluation procedures manual 1996" according to the "Australasian code for reporting of identified mineral resources and ore reserves 1996".

All data available by 31.12.1996 has been used when preparing this document.

Nikkel og Olivin AS is a 70% owned subsidiary of Outokumpu Oy, with the remaining 30 % of the shares owned by Nordlandsbanken AS. Outokumpu has full economical and technical responsibility of the mine.

The mine started production in 1989 and had by 31.12.1996 produced a total of 4.612 Mt of ore with a grade of 0.53 % Ni.

Ore reserves and production plan allow mining to the end of year 1999, if nickel price will stay at a level over 7500 USD/tonn and mining costs can be kept at the present level.

2. Geology of the Deposit

The Bruvann nickel deposit is a part of the Råna mafic-ultramafic intrusion which was emplaced during the Caledonian orogeny at about 436My. The intrusion is surrounded by various types of gneisses, and the nickel mineralization occurs in ultramafic rocks close to the contact with the surrounding gneisses. The nickel mineralization is cut by the main fault zone so that the deposit is divided into the Eastern orebody and Western orebody. The Eastern orebody crops out at the surface (Boyd 1980) and the vertical distance between the orebodies varies between 130 m and 200 m, increasing towards north. The mineralized zone extends for approximately 900 m in the east-west direction and 600 m in the north-south direction.

3. Mineralisation and Ore types

The Bruvann Deposit consists of several lenses which are separated by faulting and probably by original crystallisation stages. The main lenses are Eastern and Western deposits which are separated by a scissor(hinge) fault (Boyd 1980).

The Dypmalm mineralisation is a part of the Eastern Deposit and seems to be separated from the main lense.

The main parts of the Western, Eastern and Dypmalm deposits are made up of disseminated mineralisation in peridotite (dunite). The main nickel carrier is pentlandite, other sulphide minerals are pyrrhotite and chalcopyrite. Olivine contains approximately 0.09 % Ni in its lattice. Nickel content in the sulphide phase in the disseminated mineralisation is 7 - 8 %.

Massive and semi massive ore exist near the southern contact to the gneisses. This mineralisation type has been discovered on both sides of the main fault zone. In the Eastern Deposit the Elefant-malm and the 246-inngang are of massive type. In the Western Deposit the D-ore is of massive type.

The massive mineralisation occurs in peridotite, pyroxenite, norite and calcsilicate gneiss. Nickel content in the sulphide phase in massive and semi massive ore is 4.5 %.

4. Investigations Procedures and Assaying

4.1 Diamond drilling

The Western Deposit consists of three ore bodies, D-ore, Southern-ore and Northern ore. The Western Deposit (Southern and Northern ore) was found in 1972 by NGU by diamond drilling and the D-ore was found in 1996 with diamond drilling southwards from the 100 level.

The mineral resource calculation for the Western Ore Body includes drillholes made by NGU in the 1970'ies, drillholes made from the ramp during the investigation program for the Feasibility Study of the Western Ore Deposit in 1993 and 1994 and drillholes made by Nikkel og Olivin AS from drifts in the Western Ore Body during 1995 and 1996.

The Eastern Deposit is close to exhaustion, but minor parts of the massive ore (246-inngang and Elefantmalmen) still remain to be mined. In addition there is the crown pillar between the open pit and the mine, and two more separate ore bodies in the east: Dypmalmen og SouthEast open pit.

The mineral resource calculations for the Eastern Ore Body are based on diamond drillholes by Bjørkåsen Gruber, German occupants, NGU, LKAB and Nikkel og Olivin AS.

The assay intervals of the NGU drillholes are always 2 meters irrespective of lithological changes. Most of the drill holes done by NGU have collar coordinates measured using tachymeter. Deviation measurements have been done in some of the drillholes using the Eastco method.

The assay samples from the drill holes done by Nikkel og Olivin AS are normally about 2 meters. Lithological boundaries and mineralization grade variations were used when determining drill core to the assay increments. In case of grade variation, shorter assay intervals than 2 meters were used.

Drill-hole collar coordinates and start azimuths are measured using electronic tachymeter. Survey points used in the measurements are normal mine survey points which are connected to the state survey net. Drill hole start azimuths are measured using a special drillrod with a survey prism. This rod is installed to the hole and two

points are measured. Start azimuth is later calculated by a mine survey ADP-program. Drill hole dip deviation is measured in the hole each 10 meter using electric inclinometer (Pietari Peltonen). This information is stored to the geological database and later used when drill holes are plotted to the profiles.

Drill core recovery is normally 100% and RQD-values also over 90% so these are not calculated. Core loss is reported only rarely in some drill holes. These areas as well as "weathered peridotite" are reported separately. "Weathered peridotite" is an especially weak altered peridotite, which contains a swelling clay mineral, most probably saponite.

Sampling of diamond drill holes made by other parties is not clear.

4.2 Sludge drilling

Sludge drilling has been done systematically in the Western Ore Body and in certain areas in the Eastern Ore Body, that is in all production areas. The current amount of sludge drilling per year is 11 000 meters and is done by the mine contractor. Each sample is 1.8 meters (one rod length). Sludge drilling profiles are usually at 12.5 meters spacing.

4.3 Assaying

Drill cores are split in half using a hydraulic splitter. One half is stored at the mine site. The assaying half is crushed using two crusher stages to -5 mm. The crushed sample with assay number is later delivered to the Nikkel og Olivin AS laboratory. Some assaying has been carried out in Outokumpu's Geoanalytical Laboratory, Outokumpu, Finland.

At the laboratory samples were analyzed for total-Ni (HNO_3-soluble) using normal analyzing routines.

Some 40 density determinations have been done at the Geoanalytical laboratory, Outokumpu. The density determinations were done from pieces of drill core. According to these determinations the average density of the Vestmalm-deposit is 3.39.

4.4 Geological database

Assay results, lithological abbreviations, drill hole collar coordinates, azimuths and dip deviation measurements and all assay results are fed to the Minenet-program. This program is Outokumpu's mine-CAD for geological resource and reserve estimations and mine planning.

5. Mineral Resource Calculation Methods and Results

5.1. Cut-off grade

Cut-off grade used in this mineral resource estimation is 0.45 % Ni (total-Ni). This decision is based on economical evaluation of the whole Western Deposit. In this evaluation (Ekberg and Alaniska 1994) mineral resources of the whole deposit were calculated using different cut-off grades (0.35, 0.45, 0.55 and 0.65 % Ni). Ore reserves were derived using different grades for diluting material as well as different waste rock dilution percentage for each cut-off grade.

Annual production rate and total production period were calculated for each cut-off grade tonnage. Production costs were estimated for each production rate and investments were estimated.

According to these simulations the best economical result in exploiting the Western Deposit will be achieved using a cut-off grade of 0.45 % Ni.

After this evaluation the price of Ni and production costs have not changed remarkably.

5.2. Calculation methods

The mineral resources are based on diamond drill holes and sludge drill holes. A minimum ore thickness of four meters was used in the resource estimate for disseminated ore. In massive and semi-massive ore the minimum ore thickness used was 1.5 meters. The used density of ore is 3.39 in disseminated ore, in semi-massive and massive ore a formula (density (g/l) = 467*Ni%+3145) has been used to calculate density, varying between 3.39 to 3.84. Waste rock inclusions inside the mineral resource were included into the grade and the tonnage.

The calculation method used in this mineral resource estimation was the conventional sectional method. The estimate for the Western Ore Body is based on 38 sections at 12.5 m intervals in the D-ore and Southern Ore and at 25 and 50 m intervals in the Northern Ore. The weighted distance of influence for each section is thus 6.25, 12.5 and 25 m respectively on both sides.

The mineralized area in each section was divided into subpolygons between the levels 140, 120, 100, 80, 60, 40, 20, 0 and below 0. 3-D models for mined stopes were created, and the areas of mined stopes were subtracted from the conventional estimation.

The grade of each subpolygon is the weighted average of all samples inside the subpolygon. The weighting method for samples was assay length, density was not used. The grade of each section is the weighted average of each subpolygon and the tonnage is the sum of tonnages of the incorporated subpolygons.

A conventional sectional estimate was prepared for the Western Ore Body. In this estimation the Western Deposit was divided into the following areas:

D Ore, sections x=1150 - x=1225
Southern Ore, sections x=1250 - x=1525
Northern Ore, sections x=1550 - x=1700
Northern Ore, Upper mineralisation, sections x=1550 - x=1575

The grade estimations are reliable because all assays are quite low. There is no reason for cutting high grade assays.

Similar conventional method was used in the Eastern Deposit (Elefanten, Crownpillar, Dypmalmen and SouthEast of openpit).

The in-situ mineral resources are as follows:

Measured mineral resources 31.12.1996, cut-off 0.45 % Ni

	Grade (%)	Tonnage
Eastern Deposit		
Crown pillar	0.48	125 000
Elefantmalmen	0.98	42 000
246-inngang	2.45	6 000
Western Deposit		
Southern part	0.55	1 252 300
Pilarer	0.54	156 500
D-ore	1.11	91 200
Northern part	0.51	49 200
Subtotal	0.59	1 722 200

Indicated mineral resources 31.12.96, cut-off 0.45 % Ni

	Grade (% Ni)	Tonnage
Eastern Deposit		
Dypmalmen	0.52	90 000
Western Deposit		
Northern part	0.57	1 083 700
Upper mineralisation	0.53	36 000
Southern part	0.58	380 900
Subtotal	0.57	1 590 000

Inferred mineral resources 31.12.96, cut-off 0.45 %

	Grade (% Ni)	Tonnage
Eastern Deposit		
SouthEast openpit	0.49	154 000
Western Deposit		
Southern part	0.69	17 300
Subtotal	0.51	171 300

In-situ mineral resource lists are presented in appendix 5.

6. Ore Reserve Calculation Methods and Results

The mineable ore reserves have been prepared using the previously presented in-situ mineral resource estimation as a basis.

Mining recovery has been estimated to be 70 % from the in-situ mineral resources. This estimation is based on experience from similar production situation in the Eastern Deposit and the favorable rock mechanics in the Western deposit. The mine recovery in the Eastern deposit is estimated to 85 - 90 %, but a more complex geology in the Western Deposit has resulted in decreased mining recovery.

Waste rock dilution has been estimated to be 10 % in disseminated ore. This is based on the calculated waste rock dilution during 1995 and 1996.The waste rock dilution in massive ore is estimated to be 20 %. The grade of the waste rock during 1995 and 1996 has been 0.15 % Ni, this grade has been used in the present ore reserve estimation.

Proven Ore Reserves, cut-off 0.45 % Ni, derived from measured mineral resources

	Grade (% Ni)	Tonnage	Mine rec.	Dilution	Dilution grade
Eastern Deposit					
levels 300-280	0.52	35 000	according to production plan		
Elef.malmen	0.79	35 200	70 %	20 %	0.05
246-inngang	1.50	10 000	according to production plan		
Western Deposit					
Southern part	0.51	964 200	70 %	10 %	0.15
D-malmen	0.92	109 400	100 %	20 %	0.15
Northern part	0.47	34 400	70 %	10 %	0.15
Subtotal	0.56	1 044 400			

Probable Ore Reserves, cut-off 0.45 % Ni, derived from indicated mineral resources

	Grade (% Ni)	Tonnage	Mine rec.	Dilution	Dilution grade
Western Deposit					
Northern part	0.53	834 400	70 %	10 %	0.15
Upper minr.	0.49	27 700	70 %	10 %	0.15
Southern part	0.54	293 200	70 %	10 %	0.15
Subtotal	0.53	1 155 300	70 %	10 %	0.15

Grand total ore reserves 0.55 2 199 700

7. Mining

The mining methods are normal sublevel stoping and "top slicing". In top slicing the drilling and loading drift is developed in the middle of the planned stope. The stope is opened using a transverse drive and an opening slot at one end of the stope. Ore is blasted towards this opening slot using drilling fans with a spacing 2 - 2.5 meters. The distance between levels are 20 meters and the drift size for drilling drifts is 5 x 5 m. The small distance between the levels is due to the shallow dip of the ore body.

The mucking of ore is carried out using a remote controlled LHD or a conventional wheel loader. Ground support with cable bolts is not necessary and the stopes remain open without the need of backfilling.

Mine production planning is based on 12 months rolling plan, which is updated every month. Also more detailed 4 week and weekly plans are in use. These plans are discusssed in weekly and monthly meetings with the contractor and undersigned.

A long-term plan for the remaining mine life-time is under preparation at the monent. This plan will be ready in April 1997.

8. Milling

The contractor transports the ore to the surface via decline using normal ten wheel trucks, each carrying 25 tonnes to a three-stage crushing plant. The silo capacity is about 1800 tonnes which means that ore hauling during weekends is necessary. Grinding is carried out with one ball mill (4x6 meters) in closed circuit. In the grinding circuit there are two flash flotation cells (Outokumpu Skim-Air 80), which produce concentrate with a grade of 15-20 % Ni.

The flotation is carried out in an open circuit using second-hand equipment purchased from different mines in Scandinavia. These flotation machines have partly been rebuilt using OK-mechanisms. The total flotation volume is 54 m^3 and the flow rate of the pulp is 190 m^3/h. The chemicals used during the flotation are xanthate (fed into the mill), DOW-200 (fed into the flash flotation), xanthate and waterglass (fed into the flotation) and frother MIBC (fed into the rougher and scavenger flotation).

The flotation process is controlled manually using a Courier-30 analyser.

Dewatering is done with a thickener and two vacuum filters. The moisture of the final concentrate is about 8 % and is thus suitable for shipping to Outokumpu's Harjavalta Smelter in Finland.

The final concentrate has a grade of 11 % Ni, 3.5 % Cu and 0.5 % Co. Ni-recovery is 75 % of the total nickel assay, which includes 0.09 % silicate nickel in olivine (Palosaari and Jounela 1994). This recovery and concentrate grade have been constant for the whole operation period, also when massive and semi-massive ore has been fed in production.

According to previously prepared mineralogical studies the whole Western Deposit consists of homogeneous disseminated mineralisation (Sotka and Huhtelin 1993).

9. References

Australasian code for reporting of identified mineral resources and ore reserves. 1996. Report of the joint committee of the Australasian Institute of Mining and Metallurgy, Australasian Institute of Geoscientists and Australian Mining Industry Council (JORC).

Boyd, R. 1980. Geologisk oversiktsrapport, Bruvannsfeltet, NGU Rapport 1582A; 4 bind. 45 p.

Ekberg, M. 1992. Råna deposit, Ballangen, Norway. Geological in situ mineral resource estimate. Unpublished report, Outokumpu Mining Services.

Ekberg, M. and Alaniska, H. 1994. Mineral resource estimate and evaluation of the Vestmalm-deposit. Unpublished report. Nikkel og Olivin As

Palosaari, V. and Jounela,.S. 1994. Mineral dressing study on the West Ore of Nikkel og Olivin A/S. Unpublished report 075/SJ,VIP/1994, Outokumpu reseach, Geoanalytical laboratory.

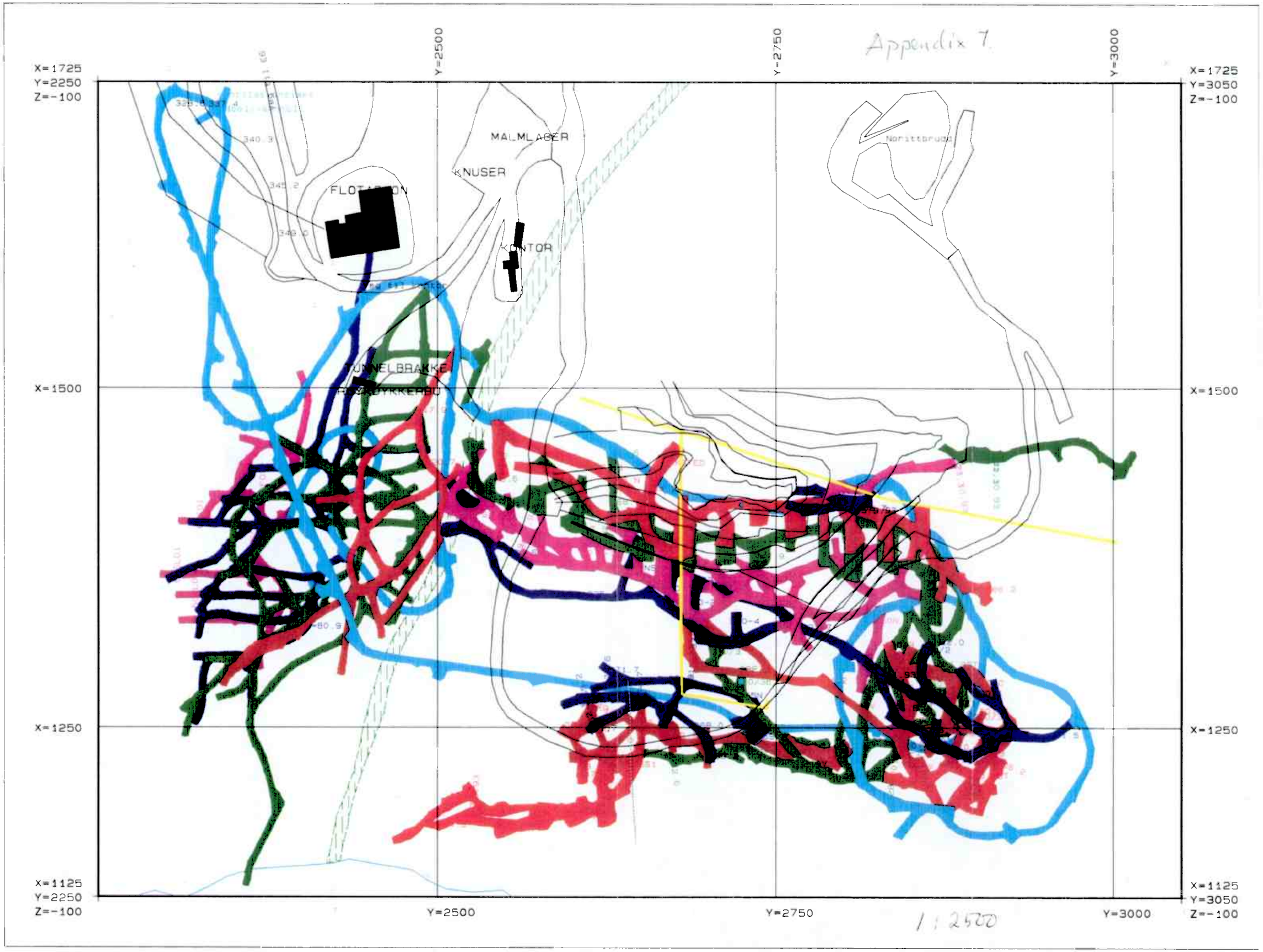
Sotka, P. and Huhtelin, T. 1993. Mineralogical and chemical study on ore samples from the West Ore Body of Nikkel og Olivin's Ni mine, Ballangen, Norway. Unpublished report 074/TAH,PMS/1993, Outokumpu Mining Services, Geoanalytical laboratory.

outokumpu

10. Appendices

1. Lay-out map of the mine
2. Outokumpu Reserve/Resource Reporting 31.12.96 - Nikkel og Olivin AS
3. Mineral Resources and Ore Reserves 31 December 1996
4. Codes for mineral Resource Estimation with cut-off 0.45 % Ni
5. In-situ mineral resource lists
    - 5.1 Eastern Deposit, SouthEast openpit
    - 5.2 Eastern Deposit, Crown pillar
    - 5.3 Eastern Deposit, Dypmalmen
    - 5.4 Eastern Deposit, Elefanten
    - 5.5 Western Deposit, D-malm
    - 5.6 Western Deposit, Southern part
    - 5.7 Western Deposit, Northern part
    - 5.8 Western Deposit, Upper mineralisation
6. Profiles
    - 6.1 Eastern Deposit, SouthEast openpit
    - 6.2 Eastern Deposit, Crown pillar
    - 6.3 Eastern Deposit, Dypmalmen
    - 6.4 Eastern Deposit, Elefanten + 246 inngang
    - 6.5 Western Deposit, D-malm
    - 6.6 Western Deposit, Southern part
    - 6.7 Western Deposit, Nordmalmen with Upper mineralisation
7. Histogram and distribution of Ni, basic statistics
8. Density measurements
9. Investigation activity 1990-1996
10. 12 month production plan
11. Principal plans for stopes in production 1997

Appendix 7.



1 : 2500

OUTOKUMPU RESERVE/RESOURCE REPORTING at 31.12.1996
ORE RESERVES

INVENTORY NAME:	Nikkel og Olivin AS
COUNTRY:	Norway
COMPANY:	Nikkel og Olivin AS
OK'S SHARE:	70%
STATUS:	In operation
DATE:	8.1.1997
PREPARED BY:	L.Storhaug/M.Ekberg
DATA GIVEN BY:	M.Ekberg/V.Henriksen

ORE RESERVES

	PROVEN TONNES	1044400	METAL TONNES
**	PROVEN Cu%	0.10	1040
	PROVEN Ni%	0.56	5850
	PROVEN Zn%		
	PROVEN Pb%		
	PROVEN S%		
	PROVEN Au g/t		
	PROVEN Ag g/t		
	PROBABLE TONNES	1155300	METAL TONNES
**	PROBABLE Cu%	0.10	1160
	PROBABLE Ni%	0.53	6120
	PROBABLE Zn%		
	PROBABLE Pb%		
	PROBABLE S%		
	PROBABLE Au g/t		
	PROBABLE Ag g/t		
	TOTAL TONNES	2199700	METAL TONNES
**	TOTAL Cu%	0.10	2200
	TOTAL Ni%	0.54	11970
	TOTAL Zn%		
	TOTAL Pb%		
	TOTAL S%		
	TOTAL Au g/t		
	TOTAL Ag g/t		

NOTE!
* Ore Reserve data at 31st December 1996
* The reported Mineral Resources are additional to the Ore Reserves
* Total tonnes in JV project
** Cu is not based on assay results but calculated from achieved production results and reserve/resource tonnage

OUTOKUMPU RESERVE/RESOURCE REPORTING at 31.12.1996
MINERAL RESOURCES

INVENTORY NAME:	Nikkel og Olivin AS
COUNTRY:	Norway
COMPANY:	Nikkel og Olivin AS
OK'S SHARE:	70%
STATUS:	In operation
DATE:	8.1.1997
PREPARED BY:	L.Storhaug/M.Ekberg
DATA GIVEN BY:	M.Ekberg/V.Henriksen

MINERAL RESOURCES

	MEASURED TONNES	281500	METAL TONNES
**	MEASURED Cu%	0.10	280
	MEASURED Ni%	0.51	1450
	MEASURED Zn%		
	MEASURED Pb%		
	MEASURED S%		
	MEASURED Mo%		
	MEASURED Au g/t		
	INDICATED TONNES	90000	METAL TONNES
**	INDICATED Cu%	0.10	90
	INDICATED Ni%	0.52	470
	INDICATED Zn%		
	INDICATED Pb%		
	INDICATED S%		
	INDICATED Mo%		
	INDICATED Au g/t		
	INFERRED TONNES	171300	METAL TONNES
**	INFERRED Cu%	0.10	170
	INFERRED Ni%	0.51	870
	INFERRED Zn%		
	INFERRED Pb%		
	INFERRED S%		
	INFERRED Mo %		
	INFERRED Au g/t		
	TOTAL TONNES	542800	METAL TONNES
**	TOTAL Cu%	0.10	540
	TOTAL Ni%	0.51	2790
	TOTAL Zn%		
	TOTAL Pb%		
	TOTAL S%		
	TOTAL Mo%		
	TOTAL Au g/t		

NOTE!
* Mineral Resource data at 31.12.1996
* Total tonnes in JV project
** Cu is not based on assay results but calculated from achieved production results and reserve/resource tonnage

Mineral resources and ore reserves 31 December 1996

Measured mineral resources 1.1.1997, cut-off 0.45% Ni

	Grade (% Ni)	Tonnage
Ostmalmen		
Kronpillar	0.48	125000
Elefantmalmen	0.98	42000
246-inngang	2.45	6000
Vestmalmen		
Sydmalmen	0.55	1252300
Pillars	0.54	156500
D-malmen	1.11	91200
Nordmalmen	0.51	49200
Subtotal	0.59	1722200

Indicated mineral resources 1.1.1997, cut-off 0.45% Ni

	Grade (%Ni)	Tonnage
Ostmalmen		
Dypmalmen	0.52	90000
Vestmalmen		
Nordmalmen	0.57	1083700
Øvre mineralisering	0.53	36000
Sydmalmen	0.58	380900
Subtotal	0.57	1590600

Inferred mineral resources 1.1.1997, cut-off 0.45 % Ni

	Grade (%Ni)	Tonnage
Ostmalmen		
Sydøst dagbrudd	0.49	154000
Vestmalmen		
Sydmalmen	0.69	17300
Subtotal	0.51	171300
Grand total mineral resources	**0.58**	**3484100**

Ore reserves are derived from measured and indicated mineral resources using mine recovery 70 % and adding dilution 10 or 20 %

Proven ore reserves 31.12.1995, cut-off 0.45 %Ni, derived from measured mineral resources

	Grade (%Ni)	Tonnage	Mine recovery	Dilution	Dilution grade (%Ni)
Ostmalmen					
levels 300-280	0.52	35000	according to production plan		
Elefantmalmen	0.79	35200	70%	20%	0.05
246-inngang	1.50	10000	according to production plan		
Vestmalmen					
Sydmalmen	0.51	964200	70%	10%	0.15
D-malmen	0.92	109400	100%	20%	0.15
Nordmalmen	0.47	34400	70%	10%	0.15
Subtotal	0.56	1044400			

Probable ore reserves 31.12.1995 cut-off 0.45 %Ni, derived from indicated mineral resources

	Grade (%Ni)	Tonnage	Mine recovery	Dilution	Dilution grade (%Ni)
Vestmalmen					
Nordmalmen	0.53	834400	70%	10%	0.15
Øvre mineralisering	0.49	27700	70%	10%	0.15
Sydmalmen	0.54	293200	70%	10%	0.15
Subtotal	0.53	1155300			
Grand total ore reserves	0.55	2199700			

cc: VH, KB, ME, HMH, FB, TK, TVæ, NS, AK, LS

outokumpu

L.Storhaug

Codes for mineral resource estimation with cut-off 0.45, Nikkel og Olivin AS

		Code
Vestmalmen		
Sydmalmen x=1250 - x=1525, profile distance 12.5 m		
above z=140	indicated	21
120 - 140	measured	22
100 - 120	measured	23
80 - 100	measured	24
60 - 80	measured	25
40 - 60	indicated	26
20 - 40	indicated	27
0 - 20	indicated	28
below 0	inferred	29
Nordmalmen main lense x=1550-1700, profile distance 25 m and 50 m		
above z=100	measured	31
80 -100	indicated	32
60 - 80	indicated	33
40 - 60	indicated	34
20 - 40	indicated	35
0 - 20	indicated	36
-20 - 0	indicated	37
-40 - -20	indicated	38
Nordmalmen, Ovre malm x=1550-1575	indicated	41
Dinosaurmalmen x=1150 - 1237.5, profile distance 12.5 m		
above z=140	measured	51
120 - 140	measured	52
100 - 120	measured	53
80 - 100	measured	54

Nikkel og Olivin A/S

N-8540 Ballangen, Norway

Tel. +47 769 28800, Fax +47 769 28177

Sydøst for dagbrudd

IN SITU ORE RESERVE ESTIMATION 29.8.1994

polygons: s_m_ni_45_sydost
profile : Y=2900 - 3000
code(s) : 1

profile	intersection length	ni	area m2	density	projection range	tons
Y=2900	84.35	0.35	356	3.390	25.0	30180
Y=2925	47.05	0.44	479	3.390	25.0	40623
Y=2950	18.60	0.63	223	3.390	25.0	18861
Y=2975	29.10	0.56	669	3.390	25.0	56721
Y=3000	4.00	0.51	97	3.390	25.0	8251
total	181.10	0.49	1825	3.3900	125.0	154636

APPENDIX 5.2
KRONPILLAR DAGBRUD

IN STIU ORE RESERVE ESTIMATION 6.1.1997

polygons: s_m_ni_45_dagrudd
profile : Y=2600 - 2775
code(s) : 0+3

profile	intersection length	ni		area m2	density	projection range	tons
Y=2600	18.50	0.46	0.00	181	3.390	25.0	15328
Y=2625	0.00	0.47		173	3.390	25.0	14639
Y=2650	36.95	0.47	0.00	227	3.390	25.0	19224
Y=2675	7.50	0.47	0.00	218	3.390	25.0	18497
Y=2700	38.60	0.45	0.00	205	3.390	25.0	17353
Y=2725	0.00			59	0.000	25.0	0
Y=2750	64.01	0.51	0.00	208	3.390	25.0	17589
Y=2775	13.05	0.56	0.00	216	3.390	25.0	18322
total	178.61	0.48	0.00	1486	3.2561	200.0	120951

APPENDIX 5.3

Dypmalmen

IN SITU ORE RESERVE ESTIMATION 4.11.1994

polygons: s_m_ni_45_dyp
profile : Y=2712 - 2762
code(s) : 1

profile	intersection length	ni	area m2	density	projection range	tons
Y=2712	62.95	0.52	516	3.390	15.3	26681
Y=2725	60.65	0.49	271	3.390	18.8	17246
Y=2737	0.00		0	0.000	0.0	0
Y=2750	35.50	0.53	287	3.390	16.3	15808
Y=2762	44.15	0.59	594	3.390	12.5	25185
total	203.25	0.54	1669	3.3900	62.8	84921

hovedlinse

IN SITU ORE RESERVE ESTIMATION 4.11.1994

polygons: s_m_ni_45_dyp
profile : Y=2712 - 2762
code(s) : 1+2+3

profile	intersection length	ni	area m2	density	projection range	tons
Y=2712	62.95	0.52	516	3.390	15.3	26681
Y=2725	68.95	0.46	360	3.246	18.8	21908
Y=2737	0.00		0	0.000	0.0	0
Y=2750	40.85	0.50	314	3.390	16.3	17276
Y=2762	63.40	0.58	821	3.390	12.5	34776
total	236.15	0.52	2010	3.3578	62.8	100642

alle linser
og forlengninger i tillegg

Dypmalmen

IN SITU ORE RESERVE ESTIMATION 4.11.1994

polygons: s_m_ni_45_dyp
profile : Y=2712 - 2762
code(s) : 1+2

profile	intersection length	ni	area m2	density	projection range	tons
Y=2712	62.95	0.52	516	3.390	15.3	26681
Y=2725	68.95	0.46	360	3.246	18.8	21908
Y=2737	0.00		0	0.000	0.0	0
Y=2750	40.85	0.50	314	3.390	15.3	17676
Y=2762	44.15	0.59	594	3.390	12.5	25185
total	216.90	0.52	1784	3.3542	62.6	91051

nordlinca og forkastninger

ELEFANTMALMEN

APPENDIX 5.4

IN SITU ORE RESERVE ESTIMATION 9.1.1996

polygons: s_m_ni_1_ras
profile : Y=2462 - 2562
code(s) : 21

profile	intersection length	ni		area m2	density	projection range	tons
Y=2462	69.70	0.98	0.00	248	3.390	12.5	10506
Y=2470	0.00			0	0.000	0.0	0
Y=2475	191.95	0.90	0.00	411	3.390	12.5	17401
Y=2487	45.30	0.87	0.00	165	3.390	12.5	6978
Y=2500	33.55	0.70	0.00	154	3.390	9.8	5098
Y=2507	27.00	1.04	0.00	158	3.390	7.5	4028
Y=2515	37.60	1.50	0.00	251	3.390	9.0	7643
Y=2525	33.70	1.13	0.00	186	3.390	11.3	7094
Y=2537	19.20	1.00	0.00	56	3.390	12.5	2357
Y=2550	38.70	0.65	0.00	120	3.390	12.5	5106
Y=2562	22.10	0.88	0.00	75	3.390	12.5	3191
total	518.80	0.98	0.00	1824	3.3900	112.5	69401

IN SITU ORE RESERVE ESTIMATION 9.1.1996

polygons: s_m_mi_1_mas
profile : Y=2462
code(s) : 21

name/num	inters. length	mi	area m2	density	projection range	tons
mas/3	34.10	1.28	111	3.390	12.5	4686
mas/4	35.60	0.73	137	3.390	12.5	5820
Total	69.70	0.98	248	3.390		10506

IN SITU ORE RESERVE ESTIMATION 9.1.1996

polygons: s_m_ni_1_mas
profile : Y=2475
code(s) : 21

name/num	inters. length	ni	area m2	density	projection range	tons
mas/2	53.70	0.97	83	3.390	12.5	3531
mas/4	14.00	0.57	38	3.390	12.5	1618
mas/5	26.45	0.59	55	3.390	12.5	2324
mas/6	53.45	1.07	119	3.390	12.5	5057
mas/7	17.00	1.18	39	3.390	12.5	1646
mas/8	27.35	0.83	76	3.390	12.5	3225
Total	191.95	0.90	411	3.390		17401

IN SITU ORE RESERVE ESTIMATION 9.1.1996

polygons: s_m_mi_1_mas
profile : Y=2487
code(s) : 21

name/num	inters. length	mi	area m2	density	projection range	tons
mas/2	9.60	0.44	41	3.390	12.5	1742
mas/3	14.85	0.65	46	3.390	12.5	1968
mas/4	1.75	3.65	7	3.390	12.5	302
mas/5	16.70	1.00	59	3.390	12.5	2506
mas/6	2.40	0.92	11	3.390	12.5	460
Total	45.30	0.87	165	3.390		6978

IN SITU ORE RESERVE ESTIMATION 9.1.1996

polygons: s_m_ni_1_mas
profile : Y=2500
code(s) : 21

name/num	intercs. length	ni	area m2	density	projection range	tons
mas/2	9.25	0.48	56	3.390	9.8	1864
mas/3	18.90	0.95	53	3.390	9.8	1751
mas/4	5.40	0.66	45	3.390	9.8	1483
Total	33.55	0.70	154	3.390		5098

IN SITU ORE RESERVE ESTIMATION 9.1.1996

polygons: s_m_ni_1_mas
profile : Y=2507
code(s) : 21

name/num	intercs. length	ni	area m2	density	projection range	tons
mas/1	10.30	1.30	40	3.390	7.5	1006
mas/3	16.70	0.96	119	3.390	7.5	3022
Total	27.00	1.04	158	3.390		4028

IN SITU ORE RESERVE ESTIMATION 9.1.1996

polygons: s_m_ni_1_mas
profile : Y=2515
code(s) : 21

name/num	inters. length	ni	area m2	density	projection range	tons
mas/2	1.90	3.46	11	3.390	9.0	345
mas/3	9.50	0.93	46	3.390	9.0	1406
mas/4	8.40	2.09	86	3.390	9.0	2628
mas/5	17.80	1.07	107	3.390	9.0	3264
Total	37.60	1.50	251	3.390		7643

IN SITU ORE RESERVE ESTIMATION 9.1.1996

polygons: s_m_ri_1_mas
profile : Y=2525
code(s) : 21

name/num	inters. length	ri	area m2	density	projection range	tons
mas/3	4.25	1.39	17	3.390	11.3	649
mas/4	1.70	1.45	12	3.390	11.3	474
mas/5	8.70	1.26	46	3.390	11.3	1740
mas/6	2.05	0.51	11	3.390	11.3	406
mas/7	7.50	0.88	36	3.390	11.3	1373
mas/8	9.50	1.14	64	3.390	11.3	2451
Total	33.70	1.13	186	3.390		7094

IN SITU ORE RESERVE ESTIMATION 9.1.1996

polygons: s_m_ni_1_mas
profile : Y=2537
code(s) : 21

name/num	intercs. length	ni	area m2	density	projection range	tons
mas/2	19.20	1.00	56	3.390	12.5	2357
Total	19.20	1.00	56	3.390		2357

IN SITU ORE RESERVE ESTIMATION 9.1.1996

polygons: s_m_ni_1_mas
profile : Y=2550
code(s) : 21

name/num	inters. length	ni	area m2	density	projection range	tons
mas/2	31.70	0.63	65	3.390	12.5	2748
mas/3	0.00		32	0.000	12.5	0
mas/4	7.00	0.69	23	3.390	12.5	992
Total	38.70	0.64	120	2.484		3741

IN SITU ORE RESERVE ESTIMATION 9.1.1996

polygons: s_m_mi_1_mas
profile : Y=2562
code(s) : 21

name/num	inters. length	mi	area m2	density	projection range	tons
mas/2	9.00	1.28	33	3.390	12.5	1393
mas/3	13.10	0.57	42	3.390	12.5	1798
Total	22.10	0.88	75	3.390		3191

APPENDIX 5.5

IN SITU ORE RESERVE ESTIMATION 6.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1162 - 1225
code(s) : 51+52+53+54

profile	intersection length	ni		area m2	density	projection range	tons
x=1162	59.50	0.66	0.00	316	3.390	12.5	13387
x=1175	92.20	0.73	0.00	450	3.403	12.5	19151
x=1187	66.23	0.99	0.00	509	3.541	12.5	22536
x=1200	97.47	1.83	0.00	569	3.838	12.5	27306
x=1225	55.75	0.67	0.00	210	3.390	12.5	8906
total	371.15	1.11	0.00	2055	3.5544	62.5	91286

IN SITU ORE RESERVE ESTIMATION 2.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1162
code(s) : 53+54

name/num	inters. length	ni	area m2	density	projection range	tons
vest/1	5.80	0.82	47	3.390	12.5	1973
vest/4	18.10	0.60	86	3.390	12.5	3629
vest/6	35.60	0.69	120	3.390	12.5	5077
vest/7	0.00	0.60	64	3.390	12.5	2708
Total	59.50	0.66	316	3.390		13387

IN SITU ORE RESERVE ESTIMATION 2.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1175
code(s) : 52+53+54

name/num	intersect. length	ni	area m2	density	projection range	tons
vest/1	0.00	0.70	22	3.390	12.5	921
vest/4	86.45	0.70	401	3.390	12.5	16987
vest/5	5.75	1.19	28	3.610	12.5	1243
Total	92.20	0.73	450	3.403		19151

IN SITU ORE RESERVE ESTIMATION 2.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1187
code(s) : 51+52+53+54

name/num	inters. length	ni	area m2	density	projection range	tons
vest/2	5.10	1.03	15	3.610	12.5	671
vest/3	8.30	0.73	59	3.390	12.5	2513
vest/5	10.65	1.42	71	3.610	12.5	3216
vest/6	4.65	1.88	33	3.840	12.5	1605
vest/7	4.83	0.68	136	3.390	12.5	5747
vest/9	32.70	0.94	195	3.610	12.5	8784
Total	66.23	0.99	509	3.541		22536

IN SITU ORE RESERVE ESTIMATION 2.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1200
code(s) : 51+52+53+54

name/num	intersect. length	ni	area m2	density	projection range	tons
vest/1	25.92	0.58	112	3.390	12.5	4761
vest/3	3.80	2.93	13	4.310	12.5	679
vest/5	31.20	1.88	145	3.840	12.5	6968
vest/7	10.15	2.73	49	4.310	12.5	2656
vest/8	17.00	2.94	99	4.310	12.5	5310
vest/9	9.40	1.78	93	3.840	12.5	4464
vest/11	0.00	0.58	58	3.390	12.5	2468
Total	97.47	1.83	569	3.838		27306

IN SITU ORE RESERVE ESTIMATION 6.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1225
code(s) : 53+54

name/num	inters. length	ni	area m2	density	projection range	tons
vest/2	14.85	0.74	78	3.390	12.5	3322
vest/4	5.00	0.54	31	3.390	12.5	1327
vest/5	35.90	0.64	100	3.390	12.5	4257
Total	55.75	0.67	210	3.390		8906

IN SITU ORE RESERVE ESTIMATION 2.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1162 - 1225
code(s) : 51

profile	intersection length	ni		area m2	density	projection range	tons
x=1162	0.00			0	0.000	0.0	0
x=1175	0.00			0	0.000	0.0	0
x=1187	5.10	1.03	0.00	15	3.610	12.5	671
x=1200	10.15	2.73	0.00	49	4.310	12.5	2656
x=1225	0.00			0	0.000	0.0	0
total	15.25	2.39	0.00	64	4.1478	25.0	3326

IN SITU ORE RESERVE ESTIMATION 2.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1162 - 1225
code(s) : 52

profile	intersection length	ni		area m2	density	projection range	tons
x=1162	0.00			0	0.000	0.0	0
x=1175	5.75	1.19	0.00	28	3.610	12.5	1243
x=1187	10.65	1.42	0.00	71	3.610	12.5	3216
x=1200	20.80	2.94	0.00	111	4.310	12.5	5989
x=1225	0.00			0	0.000	0.0	0
total	37.20	2.26	0.00	210	3.9806	37.5	10449

IN SITU ORE RESERVE ESTIMATION 8.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1162 - 1225
code(s) : 53

profile	intersection length	ni		area m2	density	projection range	tons
x=1162	53.70	0.65	0.00	205	3.390	12.5	8706
x=1175	86.45	0.70	0.00	401	3.390	12.5	16987
x=1187	37.53	0.84	0.00	330	3.520	12.5	14531
x=1200	57.12	1.35	0.00	258	3.644	12.5	11729
x=1225	35.90	0.64	0.00	100	3.390	12.5	4257
total	270.70	0.86	0.00	1295	3.4735	62.5	56210

IN SITU ORE RESERVE ESTIMATION 8.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1162 - 1225
code(s) : 54

profile	intersection length	ni		area m2	density	projection range	tons
x=1162	5.80	0.69	0.00	110	3.390	12.5	4681
x=1175	0.00	0.70		22	3.390	12.5	921
x=1187	12.95	1.18	0.00	93	3.552	12.5	4118
x=1200	9.40	1.35	0.00	151	3.667	12.5	6931
x=1225	19.85	0.68	0.00	110	3.390	12.5	4649
total	48.00	1.00	0.00	486	3.5071	62.5	21301

APPENDIX 5.6

IN SITU ORE RESERVE ESTIMATION 6.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1250 - 1537
code(s) : 21+22+23+24+25+26+27+28+29

profile	intersection length	ni		area m2	density	projection range	tons
x=1250	48.45	0.61	0.00	460	3.390	12.5	19499
x=1262	84.50	0.62	0.00	729	3.390	12.5	30879
x=1275	85.20	0.68	0.00	879	3.390	12.5	37251
x=1287	171.82	0.61	0.00	1587	3.390	12.5	67260
x=1300	210.04	0.53	0.00	1590	3.390	12.5	67359
x=1312	351.45	0.53	0.00	2420	3.390	12.5	102552
x=1325	175.20	0.66	0.00	2596	3.390	12.5	110025
x=1337	265.80	0.62	0.00	3060	3.390	12.5	129670
x=1350	316.53	0.55	0.00	3598	3.390	12.5	152444
x=1362	419.00	0.57	0.00	3885	3.390	12.5	164636
x=1375	428.55	0.54	0.00	3797	3.390	12.5	160896
x=1387	216.10	0.48	0.00	1241	3.390	12.5	52601
x=1400	417.76	0.52	0.00	3815	3.390	12.5	161647
x=1412	108.17	0.50	0.00	655	3.390	12.5	27771
x=1425	133.95	0.52	0.00	1376	3.390	12.5	58313
x=1437	316.25	0.53	0.00	3097	3.390	12.5	128703
x=1450	269.95	0.56	0.00	3339	3.390	12.5	141480
x=1462	289.63	0.51	0.00	3391	3.390	12.5	143703
x=1475	87.18	0.54	0.00	728	3.390	12.5	30855
x=1487	34.46	0.52	0.00	685	3.390	12.5	29029
x=1500	75.60	0.54	0.00	565	3.390	12.5	23949
x=1512	67.45	0.56	0.00	520	3.390	12.5	22021
x=1525	125.75	0.57	0.00	1036	3.390	12.5	43879
x=1537	94.65	0.59	0.00	1045	3.390	12.5	44220
total	4793.44	0.56	0.00	46084	3.3900	300.0	1950640

MEASURED
SYDMALMEN

IN STIU ORE RESERVE ESTIMATION 6.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1162 - 1700
code(s) : 22+23+24+25

profile	intersection length	ni		area m2	density	projection range	tons
x=1162	0.00			0	0.000	0.0	0
x=1175	0.00			0	0.000	0.0	0
x=1187	0.00			0	0.000	0.0	0
x=1200	0.00			0	0.000	0.0	0
x=1225	0.00			0	0.000	0.0	0
x=1250	48.45	0.61	0.00	460	3.390	12.5	19499
x=1262	84.50	0.62	0.00	729	3.390	12.5	30879
x=1275	85.20	0.68	0.00	865	3.390	12.5	36664
x=1287	160.27	0.62	0.00	1476	3.390	12.5	62533
x=1300	208.39	0.53	0.00	1565	3.390	12.5	66305
x[illegible]2	351.45	0.52	0.00	2134	3.390	12.5	90442
x=1325	144.60	0.68	0.00	1959	3.390	12.5	82998
x=1337	207.30	0.64	0.00	2189	3.390	12.5	92740
x=1350	208.48	0.56	0.00	2770	3.390	12.5	117379
x=1362	362.65	0.54	0.00	2833	3.390	12.5	120068
x=1375	338.75	0.49	0.00	2238	3.390	12.5	94825
x=1387	216.10	0.48	0.00	1241	3.390	12.5	52601
x=1400	401.31	0.53	0.00	3472	3.390	12.5	147113
x=1412	85.47	0.51	0.00	487	3.390	12.5	20642
x=1425	97.00	0.51	0.00	1199	3.390	12.5	50816
x=1437	298.70	0.54	0.00	2729	3.390	12.5	113094
x=1450	238.30	0.52	0.00	2052	3.390	12.5	86936
x=1462	227.23	0.50	0.00	1785	3.390	12.5	75621
x=1475	87.18	0.54	0.00	728	3.390	12.5	30855
x=1487	34.46	0.53	0.00	620	3.390	12.5	26281
x=1500	75.60	0.54	0.00	565	3.390	12.5	23949
x=1512	67.45	0.56	0.00	520	3.390	12.5	22021
x=1525	125.75	0.57	0.00	1036	3.390	12.5	43879
x[illegible]37	94.65	0.59	0.00	1045	3.390	12.5	44220
x[illegible]50	0.00			0	0.000	0.0	0
x=1575	0.00			0	0.000	0.0	0
x=1600	0.00			0	0.000	0.0	0
x=1625	0.00			0	0.000	0.0	0
x=1650	0.00			0	0.000	0.0	0
x=1700	0.00			0	0.000	0.0	0
total	4249.24	0.55	0.00	36695	3.3900	300.0	1552360

INDICATED
SYDMALMEN

IN SITU ORE RESERVE ESTIMATION 6.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1162 - 1700
code(s) : 21+26+27+28

profile	intersection length	ni		area m2	density	projection range	tons
x=1162	0.00			0	0.000	0.0	0
x=1175	0.00			0	0.000	0.0	0
x=1187	0.00			0	0.000	0.0	0
x=1200	0.00			0	0.000	0.0	0
x=1225	0.00			0	0.000	0.0	0
x=1250	0.00			0	0.000	0.0	0
x=1262	0.00			0	0.000	0.0	0
x=1275	0.00	0.71		14	3.390	12.5	587
x=1287	11.55	0.52	0.00	112	3.390	12.5	4727
x=1300	1.65	0.70	0.00	25	3.390	12.5	1054
x=1312	0.00	0.62		286	3.390	12.5	12110
x=1325	30.60	0.59	0.00	638	3.390	12.5	27026
x=1337	58.50	0.58	0.00	872	3.390	12.5	36930
x=1350	108.05	0.55	0.00	827	3.390	12.5	35065
x=1362	56.35	0.66	0.00	1052	3.390	12.5	44568
x=1375	89.80	0.63	0.00	1559	3.390	12.5	66072
x=1387	0.00			0	0.000	0.0	0
x=1400	16.45	0.51	0.00	343	3.390	12.5	14534
x=1412	22.70	0.49	0.00	168	3.390	12.5	7129
x=1425	36.95	0.55	0.00	177	3.390	12.5	7497
x=1437	17.55	0.48	0.00	368	3.390	12.5	15608
x=1450	31.65	0.61	0.00	1287	3.390	12.5	54544
x=1462	46.40	0.47	0.00	1198	3.390	12.5	50758
x=1475	0.00			0	0.000	0.0	0
x=1487	0.00	0.45		65	3.390	12.5	2747
x=1500	0.00			0	0.000	0.0	0
x=1512	0.00			0	0.000	0.0	0
x=1525	0.00			0	0.000	0.0	0
x=1537	0.00			0	0.000	0.0	0
x=1550	0.00			0	0.000	0.0	0
x=1575	0.00			0	0.000	0.0	0
x=1600	0.00			0	0.000	0.0	0
x=1625	0.00			0	0.000	0.0	0
x=1650	0.00			0	0.000	0.0	0
x=1700	0.00			0	0.000	0.0	0
total	528.20	0.58	0.00	8990	3.3900	200.0	380957

INFERRED
SYDNALMEN

IN SITU ORE RESERVE ESTIMATION 6.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1162 - 1700
code(s) : 29

profile	intersection length	ni		area m2	density	projection range	tons
x=1162	0.00			0	0.000	0.0	0
x=1175	0.00			0	0.000	0.0	0
x=1187	0.00			0	0.000	0.0	0
x=1200	0.00			0	0.000	0.0	0
x=1225	0.00			0	0.000	0.0	0
x=1250	0.00			0	0.000	0.0	0
x=1262	0.00			0	0.000	0.0	0
x=1275	0.00			0	0.000	0.0	0
x=1287	0.00			0	0.000	0.0	0
x=1300	0.00			0	0.000	0.0	0
x=1312	0.00			0	0.000	0.0	0
x=1325	0.00			0	0.000	0.0	0
x=1337	0.00			0	0.000	0.0	0
x=1350	0.00			0	0.000	0.0	0
x=1362	0.00			0	0.000	0.0	0
x=1375	0.00			0	0.000	0.0	0
x=1387	0.00			0	0.000	0.0	0
x=1400	0.00			0	0.000	0.0	0
x=1412	0.00			0	0.000	0.0	0
x=1425	0.00			0	0.000	0.0	0
x=1437	0.00			0	0.000	0.0	0
x=1450	0.00			0	0.000	0.0	0
x=1462	16.00	0.69	0.00	409	3.390	12.5	17324
x=1475	0.00			0	0.000	0.0	0
x=1487	0.00			0	0.000	0.0	0
x=1500	0.00			0	0.000	0.0	0
x=1512	0.00			0	0.000	0.0	0
x=1525	0.00			0	0.000	0.0	0
x=1537	0.00			0	0.000	0.0	0
x=1550	0.00			0	0.000	0.0	0
x=1575	0.00			0	0.000	0.0	0
x=1600	0.00			0	0.000	0.0	0
x=1625	0.00			0	0.000	0.0	0
x=1650	0.00			0	0.000	0.0	0
x=1700	0.00			0	0.000	0.0	0
total	16.00	0.69	0.00	409	3.3900	12.5	17324

SYDMALMEN

IN STIU ORE RESERVE ESTIMATION 6.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1250 - 1537
code(s) : 21+22+23+24+25+26+27+28+29+96+97+99

profile	intersection length	ni		area m2	density	projection range	tons
x=1250	48.45	0.61	0.00	460	3.390	12.5	19499
x=1262	84.50	0.62	0.00	729	3.390	12.5	30879
x=1275	115.00	0.65	0.00	1048	3.390	12.5	44406
x=1287	218.67	0.60	0.00	1810	3.390	12.5	76712
x=1300	289.64	0.54	0.00	2004	3.390	12.5	84931
x=1312	432.28	0.52	0.00	2699	3.390	12.5	114367
x=1325	607.52	0.58	0.00	4483	3.390	12.5	189985
x=1337	627.30	0.59	0.00	5124	3.390	12.5	217141
x=1350	581.61	0.55	0.00	5697	3.390	12.5	241431
x=1362	630.60	0.57	0.00	5540	3.390	12.5	234776
x=1375	547.35	0.54	0.00	4934	3.390	12.5	209073
x=1387	253.05	0.48	0.00	1548	3.390	12.5	65576
x=1400	417.76	0.52	0.00	3815	3.390	12.5	161647
x=1412	342.15	0.51	0.00	2523	3.390	12.5	106893
x=1425	504.90	0.54	0.00	3877	3.390	12.5	164303
x=1437	323.45	0.53	0.00	3178	3.390	12.5	132156
x=1450	368.90	0.54	0.00	4012	3.390	12.5	169995
x=1462	428.03	0.52	0.00	4413	3.390	12.5	186997
x=1475	166.76	0.55	0.00	1390	3.390	12.5	58896
x=1487	104.66	0.55	0.00	1214	3.390	12.5	51447
x=1500	133.20	0.56	0.00	848	3.390	12.5	35923
x=1512	148.57	0.55	0.00	1176	3.390	12.5	49824
x=1525	218.60	0.56	0.00	1531	3.390	12.5	64871
x=1537	115.05	0.58	0.00	1184	3.390	12.5	50123
total	7708.00	0.55	0.00	65237	3.3900	300.0	2761853

IN SITU ORE RESERVE ESTIMATION 6.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1250 - 1537
code(s) : 96

profile	intersection length	ni		area m2	density	projection range	tons
x=1250	0.00			0	0.000	0.0	0
x=1262	0.00			0	0.000	0.0	0
x=1275	0.00			0	0.000	0.0	0
x=1287	0.00			0	0.000	0.0	0
x=1300	0.00			0	0.000	0.0	0
x=1312	0.00			0	0.000	0.0	0
x=1325	0.00			0	0.000	0.0	0
x=1337	83.60	0.50	0.00	341	3.390	12.5	14462
x=1350	92.60	0.53	0.00	644	3.390	12.5	27305
x=1362	36.00	0.55	0.00	191	3.390	12.5	8096
x=1375	0.00			0	0.000	0.0	0
x=1387	0.00			0	0.000	0.0	0
x=1400	0.00			0	0.000	0.0	0
x=1412	6.00	0.48	0.00	82	3.390	12.5	3469
x=1425	1.80	0.66	0.00	110	3.390	12.5	4672
x=1437	7.20	0.51	0.00	81	3.390	12.5	3453
x=1450	11.10	0.55	0.00	213	3.390	12.5	9012
x=1462	42.00	0.52	0.00	647	3.390	12.5	27416
x=1475	32.88	0.57	0.00	336	3.390	12.5	14233
x=1487	28.80	0.63	0.00	247	3.390	12.5	10455
x=1500	21.60	0.54	0.00	62	3.390	12.5	2623
x=1512	36.10	0.55	0.00	337	3.390	12.5	14288
x=1525	61.25	0.53	0.00	263	3.390	12.5	11146
x=1537	20.40	0.50	0.00	139	3.390	12.5	5903
total	481.33	0.54	0.00	3694	3.3900	175.0	156534

IN SITU ORE RESERVE ESTIMATION 6.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1250 - 1537
code(s) : 97

profile	intersection length	ni		area m2	density	projection range	tons
x=1250	0.00			0	0.000	0.0	0
x=1262	0.00			0	0.000	0.0	0
x=1275	0.00			0	0.000	0.0	0
x=1287	0.00			0	0.000	0.0	0
x=1300	0.00			0	0.000	0.0	0
x=1312	0.00			0	0.000	0.0	0
x=1325	41.35	0.52	0.00	166	3.390	12.5	7027
x=1337	0.00			0	0.000	0.0	0
x=1350	0.00			0	0.000	0.0	0
x=1362	0.00			0	0.000	0.0	0
x=1375	0.00			0	0.000	0.0	0
x=1387	0.00			0	0.000	0.0	0
x=1400	0.00			0	0.000	0.0	0
x=1412	0.00			0	0.000	0.0	0
x=1425	0.00			0	0.000	0.0	0
x=1437	0.00			0	0.000	0.0	0
x=1450	0.00			0	0.000	0.0	0
x=1462	0.00			0	0.000	0.0	0
x=1475	0.00			0	0.000	0.0	0
x=1487	0.00			0	0.000	0.0	0
x=1500	0.00			0	0.000	0.0	0
x=1512	19.80	0.54	0.00	128	3.390	12.5	5404
x=1525	0.00			0	0.000	0.0	0
x=1537	0.00			0	0.000	0.0	0
total	61.15	0.53	0.00	293	3.3900	25.0	12431

IN SITU ORE RESERVE ESTIMATION 6.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1250 - 1537
code(s) : 99

profile	intersection length	ni		area m2	density	projection range	tons
x=1250	0.00			0	0.000	0.0	0
x=1262	0.00			0	0.000	0.0	0
x=1275	29.80	0.48	0.00	169	3.390	12.5	7155
x=1287	46.85	0.56	0.00	223	3.390	12.5	9452
x=1300	79.60	0.56	0.00	415	3.390	12.5	17572
x=1312	80.83	0.47	0.00	279	3.390	12.5	11815
x=1325	390.97	0.47	0.00	1721	3.390	12.5	72934
x=1337	277.90	0.55	0.00	1723	3.390	12.5	73010
x=1350	172.48	0.54	0.00	1456	3.390	12.5	61682
x=1362	175.60	0.54	0.00	1464	3.390	12.5	62044
x=1375	118.80	0.54	0.00	1137	3.390	12.5	48177
x=1387	36.95	0.47	0.00	306	3.390	12.5	12976
x=1400	0.00			0	0.000	0.0	0
x=1412	227.98	0.51	0.00	1785	3.390	12.5	75654
x=1425	369.15	0.55	0.00	2391	3.390	12.5	101319
x=1437	0.00			0	0.000	0.0	0
x=1450	87.85	0.43	0.00	460	3.390	12.5	19503
x=1462	96.40	0.53	0.00	375	3.390	12.5	15878
x=1475	46.70	0.53	0.00	326	3.390	12.5	13808
x=1487	41.40	0.52	0.00	282	3.390	12.5	11963
x=1500	36.00	0.59	0.00	221	3.390	12.5	9351
x=1512	25.22	0.56	0.00	191	3.390	12.5	8112
x=1525	31.60	0.57	0.00	232	3.390	12.5	9845
x=1537	0.00			0	0.000	0.0	0
total	2372.08	0.53	0.00	15156	3.3900	237.5	642247

IN SITU ORE RESERVE ESTIMATION 6.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1250
code(s) : -1+1+23+24+25

name/num	inters. length	ni	area m2	density	projection range	tons
vest/1	10.30	0.58	127	3.390	12.5	5399
vest/3	3.80	0.00	14	3.390	12.5	605
vest/4	6.50	0.63	77	3.390	12.5	3269
vest/5	0.00	0.63	35	3.390	12.5	1466
vest/6	1.20	0.37	7	3.390	12.5	298
vest/7	2.45	0.64	26	3.390	12.5	1123
vest/11	14.90	0.63	136	3.390	12.5	5766
vest/13	14.30	0.54	58	3.390	12.5	2476
Total	53.45	0.58	481	3.390		20402

IN SITU ORE RESERVE ESTIMATION 2.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1262
code(s) : 22+23+24+25

name/num	intercs. length	ni	area m2	density	projection range	tons
vest/2	4.80	0.62	72	3.390	12.5	3054
vest/3	51.25	0.61	500	3.390	12.5	21183
vest/4	0.00	0.61	12	3.390	12.5	526
vest/6	18.40	0.60	82	3.390	12.5	3469
vest/7	10.05	0.70	53	3.390	12.5	2236
vest/9	0.00	0.61	10	3.390	12.5	411
Total	84.50	0.62	729	3.390		30879

IN SITU ORE RESERVE ESTIMATION 2.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1275
code(s) : 24+25+26+99

name/num	inters. length	ni	area m2	density	projection range	tons
vest/2	0.00	0.71	14	3.390	12.5	587
vest/3	15.00	0.71	333	3.390	12.5	14090
vest/6	70.20	0.67	533	3.390	12.5	22574
vest/10	29.80	0.48	169	3.390	12.5	7155
Total	115.00	0.65	1048	3.390		44406

IN STIU ORE RESERVE ESTIMATION 15.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1287
code(s) : 23+24+25+26+99

name/num	inters. length	ni	area m2	density	projection range	tons
vest/1	7.28	0.51	74	3.390	12.5	3141
vest/3	11.55	0.52	112	3.390	12.5	4727
vest/8	0.00	0.51	20	3.390	12.5	828
vest/14	29.24	0.50	274	3.390	12.5	11597
vest/15	41.39	0.58	179	3.390	12.5	7565
vest/16	5.46	0.48	45	3.390	12.5	1886
vest/18	97.15	0.65	678	3.390	12.5	28720
vest/19	26.60	0.65	431	3.390	12.5	18246
Total	218.67	0.60	1810	3.390		76712

IN STIU ORE RESERVE ESTIMATION 16.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1300
code(s) : 23+24+25+26+99

name/num	inters. length	ni	area m2	density	projection range	tons
vest/1	1.65	0.70	25	3.390	12.5	1054
vest/3	13.15	0.65	184	3.390	12.5	7807
vest/4	14.75	0.61	157	3.390	12.5	6658
vest/5	64.10	0.57	331	3.390	12.5	14011
vest/6	15.50	0.51	84	3.390	12.5	3560
vest/7	19.95	0.56	268	3.390	12.5	11363
vest/8	47.00	0.53	468	3.390	12.5	19823
vest/9	113.54	0.45	487	3.390	12.5	20653
Total	289.64	0.54	2004	3.390		84931

IN SITU ORE RESERVE ESTIMATION 15.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1312
code(s) : 23+24+25+26+27+99

name/num	inters. length	ni	area m2	density	projection range	tons
vest/1	0.00	0.62	35	3.390	12.5	1484
vest/4	247.80	0.48	1078	3.390	12.5	45700
vest/5	92.55	0.49	469	3.390	12.5	19856
vest/6	24.88	0.46	83	3.390	12.5	3517
vest/7	0.00	0.47	7	3.390	12.5	294
vest/9	11.10	0.62	587	3.390	12.5	24886
vest/10	0.00	0.62	251	3.390	12.5	10626
vest/12	55.95	0.47	189	3.390	12.5	8005
Total	432.28	0.52	2699	3.390		114367

IN SITU ORE RESERVE ESTIMATION 15.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1325
code(s) : 24+25+26+27+97+99

name/num	inters. length	ni	area m2	density	projection range	tons
vest/8	6.20	0.60	39	3.390	12.5	1651
vest/10	243.55	0.48	974	3.390	12.5	41266
vest/12	147.42	0.47	747	3.390	12.5	31668
vest/14	17.05	0.45	59	3.390	12.5	2511
vest/16	2.10	0.89	6	3.390	12.5	245
vest/17	22.20	0.54	101	3.390	12.5	4271
vest/20	24.00	0.76	1120	3.390	12.5	47466
vest/21	6.00	0.60	16	3.390	12.5	690
vest/22	18.40	0.59	583	3.390	12.5	24685
vest/23	120.60	0.58	839	3.390	12.5	35533
Total	607.52	0.58	4483	3.390		189985

IN SITU ORE RESERVE ESTIMATION 14.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1337
code(s) : 24+25+26+27+96+99

name/num	inters. length	ni	area m2	density	projection range	tons
vest/1	11.10	0.54	204	3.390	12.5	8660
vest/2	77.00	0.50	322	3.390	12.5	13628
vest/3	47.40	0.59	667	3.390	12.5	28270
vest/4	40.25	0.72	1023	3.390	12.5	43364
vest/5	77.67	0.59	318	3.390	12.5	13490
vest/7	88.43	0.53	641	3.390	12.5	27181
vest/9	111.80	0.56	763	3.390	12.5	32339
vest/11	167.05	0.57	1165	3.390	12.5	49376
vest/13	6.60	0.48	20	3.390	12.5	834
Total	627.30	0.59	5124	3.390		217141

IN SITU ORE RESERVE ESTIMATION 14.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1350
code(s) : 22+23+24+25+26+27+96+99

name/num	inters. length	ni	area m2	density	projection range	tons
vest/1	85.93	0.48	579	3.390	12.5	24548
vest/5	86.55	0.58	876	3.390	12.5	37134
vest/6	62.85	0.55	374	3.390	12.5	15858
vest/9	1.60	0.54	209	3.390	12.5	8870
vest/10	0.00	0.55	47	3.390	12.5	2005
vest/11	123.00	0.54	1388	3.390	12.5	58812
vest/12	63.60	0.58	1020	3.390	12.5	43226
vest/13	108.05	0.55	780	3.390	12.5	33060
vest/14	14.28	0.50	83	3.390	12.5	3496
vest/15	6.00	0.55	70	3.390	12.5	2975
vest/18	29.75	0.50	270	3.390	12.5	11447
Total	581.61	0.55	5697	3.390		241431

IN SITU ORE RESERVE ESTIMATION 14.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1362
code(s) : 21+22+23+24+25+26+27+96+99

name/num	inters. length	ni	area m2	density	projection range	tons
vest/1	12.05	0.71	294	3.390	12.5	12468
vest/3	42.50	0.65	727	3.390	12.5	30810
vest/4	5.40	0.51	54	3.390	12.5	2281
vest/9	28.85	0.56	272	3.390	12.5	11505
vest/10	19.25	0.53	132	3.390	12.5	5601
vest/11	1.80	0.51	30	3.390	12.5	1290
vest/12	135.85	0.57	1057	3.390	12.5	44794
vest/13	30.60	0.54	192	3.390	12.5	8149
vest/21	36.00	0.55	191	3.390	12.5	8096
vest/22	142.70	0.51	1127	3.390	12.5	47738
vest/23	137.80	0.57	1188	3.390	12.5	50336
vest/24	37.80	0.44	276	3.390	12.5	11708
T[redacted]1	630.60	0.57	5540	3.390		234776

IN SITU ORE RESERVE ESTIMATION 14.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1375
code(s) : 21+22+23+24+25+26+27+28+99

name/num	inters. length	ni	area m2	density	projection range	tons
vest/3	29.00	0.69	523	3.390	12.5	22179
vest/6	22.00	0.66	563	3.390	12.5	23839
vest/8	0.00	0.69	87	3.390	12.5	3680
vest/13	2.00	0.49	12	3.390	12.5	492
vest/14	38.80	0.48	386	3.390	12.5	16375
vest/15	19.00	0.52	169	3.390	12.5	7149
vest/16	83.75	0.50	603	3.390	12.5	25562
vest/18	4.00	0.59	70	3.390	12.5	2973
vest/21	50.55	0.45	269	3.390	12.5	11407
vest/22	4.00	0.52	62	3.390	12.5	2635
vest/25	25.60	0.55	278	3.390	12.5	11795
vest/29	118.80	0.54	1137	3.390	12.5	48177
vest/31	99.95	0.43	481	3.390	12.5	20385
vest/32	44.00	0.50	224	3.390	12.5	9484
vest/37	5.90	0.50	69	3.390	12.5	2944
Total	547.35	0.54	4934	3.390		209073

IN SITU ORE RESERVE ESTIMATION 14.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1387
code(s) : 22+23+24+25+99

name/num	inters. length	ni	area m2	density	projection range	tons
vest/9	23.35	0.48	219	3.390	12.5	9267
vest/12	75.70	0.44	304	3.390	12.5	12900
vest/13	62.60	0.51	394	3.390	12.5	16699
vest/20	13.60	0.44	88	3.390	12.5	3709
vest/21	37.80	0.45	276	3.390	12.5	11707
vest/22	27.40	0.53	127	3.390	12.5	5388
vest/23	12.60	0.48	139	3.390	12.5	5908
Total	253.05	0.48	1548	3.390		65576

IN SITU ORE RESERVE ESTIMATION 14.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1400
code(s) : 21+22+23+24+25+26

name/num	inters. length	ni	area m2	density	projection range	tons
vest/3	0.00	0.57	62	3.390	12.5	2629
vest/4	28.15	0.63	725	3.390	12.5	30703
vest/5	4.35	0.48	50	3.390	12.5	2139
vest/7	4.35	0.51	57	3.390	12.5	2421
vest/10	2.20	0.54	271	3.390	12.5	11488
vest/13	8.65	0.47	193	3.390	12.5	8170
vest/14	0.00	0.63	18	3.390	12.5	749
vest/16	100.00	0.56	686	3.390	12.5	29069
vest/19	34.40	0.54	227	3.390	12.5	9603
vest/22	5.55	0.45	32	3.390	12.5	1361
vest/23	39.45	0.47	277	3.390	12.5	11747
vest/25	34.17	0.47	307	3.390	12.5	13009
vest/26	25.20	0.45	112	3.390	12.5	4744
vest/27	92.59	0.44	539	3.390	12.5	22831
vest/30	0.00	0.45	29	3.390	12.5	1250
vest/31	23.60	0.48	102	3.390	12.5	4329
vest/35	4.50	0.57	45	3.390	12.5	1904
vest/36	3.45	0.52	13	3.390	12.5	565
vest/37	7.15	0.50	69	3.390	12.5	2937
Total	417.76	0.52	3815	3.390		161647

IN SITU ORE RESERVE ESTIMATION 14.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1412
code(s) : 21+22+23+26+96+99

name/num	inters. length	ni	area m2	density	projection range	tons
vest/2	6.00	0.48	82	3.390	12.5	3469
vest/23	33.00	0.55	236	3.390	12.5	10021
vest/24	221.98	0.51	1709	3.390	12.5	72428
vest/25	12.60	0.45	77	3.390	12.5	3278
vest/28	23.58	0.48	108	3.390	12.5	4582
vest/30	6.00	0.51	76	3.390	12.5	3226
vest/32	16.29	0.45	65	3.390	12.5	2760
vest/34	17.30	0.50	136	3.390	12.5	5776
vest/42	5.40	0.46	32	3.390	12.5	1353
Total	342.15	0.51	2523	3.390		106893

IN SITU ORE RESERVE ESTIMATION 14.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1425
code(s) : 21+22+23+24+25+26+96+99

name/num	inters. length	ni	area m2	density	projection range	tons
vest/1	0.00	0.56	37	3.390	12.5	1550
vest/2	11.20	0.45	46	3.390	12.5	1970
vest/4	13.20	0.43	90	3.390	12.5	3830
vest/6	8.20	0.56	287	3.390	12.5	12143
vest/8	1.80	0.66	110	3.390	12.5	4672
vest/14	1.80	0.45	341	3.390	12.5	14432
vest/17	25.75	0.59	130	3.390	12.5	5526
vest/20	369.15	0.55	2391	3.390	12.5	101319
vest/22	62.20	0.52	230	3.390	12.5	9754
vest/23	11.60	0.58	215	3.390	12.5	9107
Total	504.90	0.54	3877	3.390		164303

IN SITU ORE RESERVE ESTIMATION 14.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1437
code(s) : 21+22+23+24+25+26+96

name/num	inters. length	ni	area m2	density	projection range	tons
vest/1	6.75	0.48	268	3.390	12.5	11351
vest/3	106.40	0.61	615	3.390	12.5	26075
vest/4	7.20	0.45	142	3.390	7.3	3498
vest/5	50.65	0.50	695	3.390	12.5	29441
vest/6	55.25	0.54	943	3.390	12.5	39980
vest/8	7.20	0.51	81	3.390	12.5	3453
vest/9	79.20	0.53	333	3.390	12.5	14100
vest/10	10.80	0.49	100	3.390	12.5	4258
Total	323.45	0.53	3178	3.390		132156

IN STIU ORE RESERVE ESTIMATION 14.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1450
code(s) : 21+23+24+25+26+27+28+96+99

name/num	inters. length	ni	area m2	density	projection range	tons
vest/2	52.15	0.46	510	3.390	12.5	21596
vest/3	10.25	0.58	213	3.390	12.5	9037
vest/5	11.10	0.55	213	3.390	12.5	9012
vest/7	44.05	0.53	443	3.390	12.5	18761
vest/8	9.00	0.66	350	3.390	12.5	14846
vest/10	3.80	0.60	323	3.390	12.5	13681
vest/14	8.60	0.59	401	3.390	12.5	16980
vest/15	87.85	0.43	460	3.390	12.5	19503
vest/19	64.90	0.58	413	3.390	12.5	17508
vest/20	77.20	0.52	686	3.390	12.5	29071
Total	368.90	0.54	4012	3.390		169995

IN SITU ORE RESERVE ESTIMATION 14.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1462
code(s) : 22+23+24+25+26+27+28+29+96+99

name/num	inters. length	ni	area m2	density	projection range	tons
vest/3	14.40	0.55	297	3.390	12.5	12574
vest/11	69.96	0.49	422	3.390	12.5	17882
vest/16	7.35	0.45	398	3.390	12.5	16862
vest/22	0.00	0.52	349	3.390	12.5	14775
vest/23	16.00	0.69	409	3.390	12.5	17324
vest/25	42.00	0.52	647	3.390	12.5	27416
vest/26	96.40	0.53	375	3.390	12.5	15878
vest/28	11.10	0.45	154	3.390	12.5	6546
vest/29	2.20	0.47	21	3.390	12.5	884
vest/30	27.95	0.45	297	3.390	12.5	12576
vest/33	69.37	0.54	481	3.390	12.5	20403
vest/35	50.40	0.45	378	3.390	12.5	16013
vest/36	20.90	0.45	186	3.390	12.5	7864
Total	428.03	0.52	4413	3.390		186997

IN SITU ORE RESERVE ESTIMATION 14.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1475
code(s) : 23+24+25+96+99

name/num	inters. length	ni	area m2	density	projection range	tons
vest/10	0.00	0.55	24	3.390	12.5	1011
vest/16	31.00	0.55	282	3.390	12.5	11962
vest/17	4.72	0.46	52	3.390	12.5	2217
vest/18	31.85	0.55	211	3.390	12.5	8939
vest/19	20.40	0.51	110	3.390	12.5	4654
vest/21	26.30	0.54	216	3.390	12.5	9154
vest/23	10.67	0.56	118	3.390	12.5	4985
vest/24	8.94	0.54	41	3.390	12.5	1741
vest/25	32.88	0.57	336	3.390	12.5	14233
Total	166.76	0.55	1390	3.390		58896

IN STIU ORE RESERVE ESTIMATION 14.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1487
code(s) : 23+24+25+26+96+99

name/num	inters. length	ni	area m2	density	projection range	tons
vest/1	0.00	0.45	65	3.390	12.5	2747
vest/3	0.00	0.50	168	3.390	12.5	7109
vest/4	10.80	0.57	202	3.390	12.5	8576
vest/5	0.00	0.52	101	3.390	12.5	4262
vest/6	23.66	0.52	149	3.390	12.5	6335
vest/7	19.80	0.48	182	3.390	12.5	7699
vest/12	21.60	0.60	101	3.390	12.5	4264
vest/13	28.80	0.63	247	3.390	12.5	10455
Total	104.66	0.55	1214	3.390		51447

IN SITU ORE RESERVE ESTIMATION 14.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1500
code(s) : 22+23+24+96+99

name/num	inters. length	ni	area m2	density	projection range	tons
vest/1	7.70	0.53	48	3.390	12.5	2042
vest/4	28.80	0.60	168	3.390	12.5	7107
vest/5	7.45	0.49	52	3.390	12.5	2187
vest/7	37.30	0.58	196	3.390	12.5	8309
vest/8	0.00	0.52	9	3.390	12.5	376
vest/10	7.20	0.56	53	3.390	12.5	2245
vest/11	21.60	0.54	62	3.390	12.5	2623
vest/12	23.15	0.53	260	3.390	12.5	11035
Total	133.20	0.56	848	3.390		35923

IN SITU ORE RESERVE ESTIMATION 14.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1512
code(s) : 23+24+96+97+99

name/num	inters. length	ni	area m2	density	projection range	tons
vest/6	25.22	0.56	191	3.390	12.5	8112
vest/7	19.80	0.54	128	3.390	12.5	5404
vest/10	15.25	0.63	116	3.390	12.5	4932
vest/11	52.20	0.54	403	3.390	12.5	17088
vest/13	36.10	0.55	337	3.390	12.5	14288
Total	148.57	0.55	1176	3.390		49824

IN SITU ORE RESERVE ESTIMATION 4.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1525
code(s) : 23+24+25+96+99

name/num	intercs. length	ni	area m2	density	projection range	tons
vest/2	0.00	0.60	15	3.390	12.5	647
vest/3	43.10	0.60	444	3.390	12.5	18821
vest/5	82.65	0.54	576	3.390	12.5	24412
vest/6	31.60	0.57	232	3.390	12.5	9845
vest/7	61.25	0.53	263	3.390	12.5	11146
Total	218.60	0.56	1531	3.390		64871

IN SITU ORE RESERVE ESTIMATION 4.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1537
code(s) : 23+24+25+96

name/num	inters. length	ni	area m2	density	projection range	tons
vest/1	0.00	0.60	3	3.390	6.8	62
vest/3	80.40	0.59	685	3.390	12.5	29014
vest/4	20.40	0.50	139	3.390	12.5	5903
vest/5	14.25	0.59	357	3.390	12.5	15143
Total	115.05	0.58	1184	3.390		50123

NORDMALMEN
MINERAL RESOURCES

APPENDIX 57

IN SITU ORE RESERVE ESTIMATION 5.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1550 - 1700
code(s) : 31+32+33+34+35+36+37+38

profile	intersection length	ni		area m2	density	projection range	tons
x=1550	229.25	0.50	0.00	1401	3.390	18.8	89068
x=1575	60.60	0.57	0.00	941	3.390	25.0	79758
x=1600	141.90	0.57	0.00	2173	3.390	25.0	184134
x=1625	165.85	0.55	0.00	2265	3.390	25.0	191992
x=1650	172.10	0.60	0.00	3591	3.390	37.5	456470
x=1700	48.12	0.51	0.00	776	3.390	50.0	131572
total	817.82	0.57	0.00	11147	3.3900	181.3	1132995

NORDMALMEN

MEASURED MIN. RES

IN SITU ORE RESERVE ESTIMATION 5.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1550 - 1700
code(s) : 31

profile	intersection length	ni		area m2	density	projection range	tons
x=1550	120.50	0.45	0.00	523	3.390	18.8	33256
x=1575	29.55	0.62	0.00	188	3.390	25.0	15944
x=1600	0.00			0	0.000	0.0	0
x=1625	0.00			0	0.000	0.0	0
x=1650	0.00			0	0.000	0.0	0
x=1700	0.00			0	0.000	0.0	0
total	150.05	0.51	0.00	711	3.3900	43.8	49200

NORDMALMEN
INDICATED MIN. RES.

IN SITU ORE RESERVE ESTIMATION 6.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1162 - 1700
code(s) : 32+33+34+35+36+37+38

profile	intersection length	ni		area m2	density	projection range	tons
x=1162	0.00			0	0.000	0.0	0
x=1175	0.00			0	0.000	0.0	0
x=1187	0.00			0	0.000	0.0	0
x=1200	0.00			0	0.000	0.0	0
x=1225	0.00			0	0.000	0.0	0
x=1250	0.00			0	0.000	0.0	0
x=1262	0.00			0	0.000	0.0	0
x=1275	0.00			0	0.000	0.0	0
x=1287	0.00			0	0.000	0.0	0
x=1300	0.00			0	0.000	0.0	0
x[illegible]2	0.00			0	0.000	0.0	0
x=1325	0.00			0	0.000	0.0	0
x=1337	0.00			0	0.000	0.0	0
x=1350	0.00			0	0.000	0.0	0
x=1362	0.00			0	0.000	0.0	0
x=1375	0.00			0	0.000	0.0	0
x=1387	0.00			0	0.000	0.0	0
x=1400	0.00			0	0.000	0.0	0
x=1412	0.00			0	0.000	0.0	0
x=1425	0.00			0	0.000	0.0	0
x=1437	0.00			0	0.000	0.0	0
x=1450	0.00			0	0.000	0.0	0
x=1462	0.00			0	0.000	0.0	0
x=1475	0.00			0	0.000	0.0	0
x=1487	0.00			0	0.000	0.0	0
x=1500	0.00			0	0.000	0.0	0
x=1512	0.00			0	0.000	0.0	0
x=1525	0.00			0	0.000	0.0	0
x=1537	0.00			0	0.000	0.0	0
x[illegible]50	108.75	0.53	0.00	876	3.390	18.8	55812
x=1575	31.05	0.55	0.00	753	3.390	25.0	63814
x=1600	141.90	0.57	0.00	2173	3.390	25.0	184134
x=1625	165.85	0.55	0.00	2265	3.390	25.0	191992
x=1650	172.10	0.60	0.00	3591	3.390	37.5	456470
x=1700	48.12	0.51	0.00	776	3.390	50.0	131572
total	667.77	0.57	0.00	10436	3.3900	181.3	1083795

IN SITU ORE RESERVE ESTIMATION 5.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1550
code(s) : 31+32+33+34

name/num	intersect. length	ni	area m2	density	projection range	tons
vest/4	6.00	0.59	76	3.390	18.8	4826
vest/6	25.55	0.57	395	3.390	18.8	25080
vest/7	77.20	0.48	408	3.390	18.8	25906
vest/8	16.10	0.46	34	3.390	18.8	2142
vest/10	0.00	0.45	113	3.390	18.8	7175
vest/12	104.40	0.45	377	3.390	18.8	23938
Total	229.25	0.50	1401	3.390		89068

IN STIU ORE RESERVE ESTIMATION 5.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1575
code(s) : 31+32+33+34

name/num	inters. length	ni	area m2	density	projection range	tons
vest/4	13.80	0.60	396	3.390	25.0	33525
vest/5	6.25	0.50	141	3.390	25.0	11925
vest/9	4.10	0.55	113	3.390	25.0	9549
vest/11	29.55	0.62	188	3.390	25.0	15944
vest/14	6.90	0.46	104	3.390	25.0	8815
Total	60.60	0.57	941	3.390		79758

IN SITU ORE RESERVE ESTIMATION 5.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1600
code(s) : 32+33+34+35

name/num	intercept length	ni	area m2	density	projection range	tons
vest/2	5.80	0.65	79	3.390	25.0	6672
vest/3	3.85	0.59	195	3.390	25.0	16525
vest/4	4.90	0.48	321	3.390	25.0	27242
vest/5	5.95	0.56	54	3.390	25.0	4555
vest/6	81.65	0.49	400	3.390	25.0	33865
vest/7	29.35	0.67	746	3.390	25.0	63252
vest/8	10.40	0.48	378	3.390	25.0	32023
Total	141.90	0.57	2173	3.390		184134

IN SITU ORE RESERVE ESTIMATION 5.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1625
code(s) : 32+33+34+35+36+37

name/num	inters. length	ni	area m2	density	projection range	tons
vest/1	0.00	0.45	53	3.390	25.0	4509
vest/3	15.90	0.66	180	3.390	25.0	15255
vest/5	33.05	0.52	681	3.390	25.0	57756
vest/6	5.20	0.49	75	3.390	25.0	6357
vest/7	29.65	0.60	581	3.390	25.0	49268
vest/8	4.00	0.72	205	3.390	25.0	17380
vest/9	9.80	0.51	140	3.390	25.0	11890
vest/11	68.25	0.45	349	3.390	25.0	29577
Total	165.85	0.55	2265	3.390		191992

IN SITU ORE RESERVE ESTIMATION 5.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1650
code(s) : 33+34+35+36+37+38

name/num	inters. length	ni	area m2	density	projection range	tons
vest/2	33.45	0.56	749	3.390	37.5	95230
vest/4	6.30	0.55	109	3.390	37.5	13842
vest/6	18.10	0.52	251	3.390	37.5	31945
vest/7	10.10	0.52	100	3.390	37.5	12709
vest/11	30.35	0.59	672	3.390	37.5	85377
vest/12	44.55	0.69	955	3.390	37.5	121401
vest/13	6.00	0.49	120	3.390	37.5	15293
vest/14	17.70	0.61	483	3.390	37.5	61400
vest/16	5.55	0.54	152	3.390	37.5	19271
Total	172.10	0.60	3591	3.390		456470

IN SITU ORE RESERVE ESTIMATION 5.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1700
code(s) : 32+33+34+35+36

name/num	inters. length	ni	area m2	density	projection range	tons
vest/1	11.65	0.48	133	3.390	50.0	22531
vest/3	2.00	0.54	28	3.390	50.0	4783
vest/4	0.00	0.48	60	3.390	50.0	10244
vest/5	6.82	0.48	148	3.390	50.0	25160
vest/10	3.45	0.52	167	3.390	50.0	28287
vest/11	20.90	0.54	218	3.390	50.0	37027
vest/12	3.30	0.55	21	3.390	50.0	3541
Total	48.12	0.51	776	3.390		131572

INDICATED
Zire mineralisation

APPENDIX 5.8

IN SITU ORE RESERVE ESTIMATION 6.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1162 - 1700
code(s) : 41

profile	intersection length	ni		area m2	density	projection range	tons
x=1162	0.00			0	0.000	0.0	0
x=1175	0.00			0	0.000	0.0	0
x=1187	0.00			0	0.000	0.0	0
x=1200	0.00			0	0.000	0.0	0
x=1225	0.00			0	0.000	0.0	0
x=1250	0.00			0	0.000	0.0	0
x=1262	0.00			0	0.000	0.0	0
x=1275	0.00			0	0.000	0.0	0
x=1287	0.00			0	0.000	0.0	0
x=1300	0.00			0	0.000	0.0	0
x=1312	0.00			0	0.000	0.0	0
x=1325	0.00			0	0.000	0.0	0
x=1337	0.00			0	0.000	0.0	0
x=1350	0.00			0	0.000	0.0	0
x=1362	0.00			0	0.000	0.0	0
x=1375	0.00			0	0.000	0.0	0
x=1387	0.00			0	0.000	0.0	0
x=1400	0.00			0	0.000	0.0	0
x=1412	0.00			0	0.000	0.0	0
x=1425	0.00			0	0.000	0.0	0
x=1437	0.00			0	0.000	0.0	0
x=1450	0.00			0	0.000	0.0	0
x=1462	0.00			0	0.000	0.0	0
x=1475	0.00			0	0.000	0.0	0
x=1487	0.00			0	0.000	0.0	0
x=1500	0.00			0	0.000	0.0	0
x=1512	0.00			0	0.000	0.0	0
x=1525	0.00			0	0.000	0.0	0
x=1537	0.00			0	0.000	0.0	0
x=1550	17.05	0.51	0.00	269	3.390	18.8	17101
x=1575	25.70	0.54	0.00	224	3.390	25.0	18956
x=1600	0.00			0	0.000	0.0	0
x=1625	0.00			0	0.000	0.0	0
x=1650	0.00			0	0.000	0.0	0
x=1700	0.00			0	0.000	0.0	0
total	42.75	0.53	0.00	493	3.3900	43.8	36057

IN SITU ORE RESERVE ESTIMATION 5.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1550
code(s) : 41

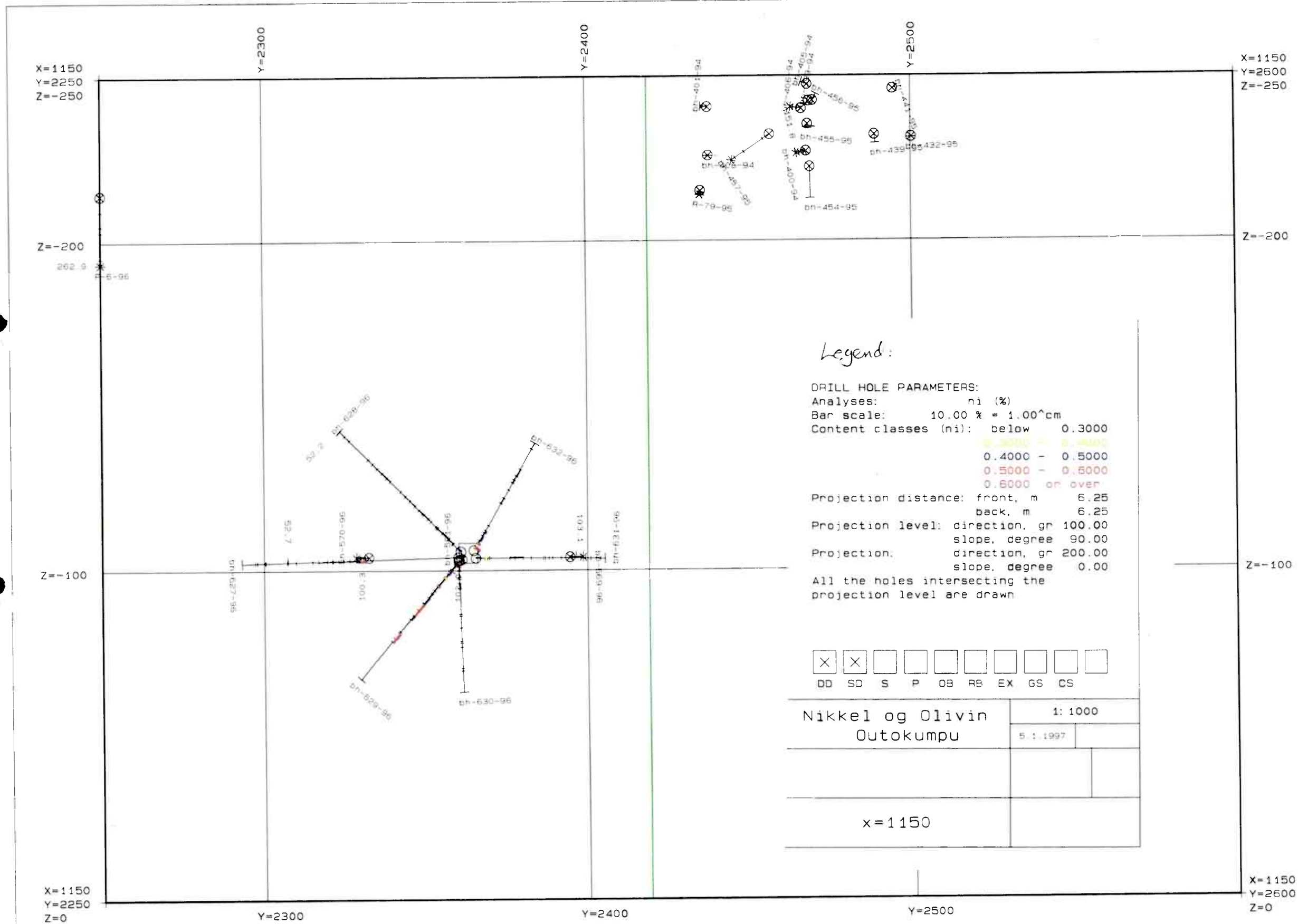
name/num	inters. length	ni	area m2	density	projection range	tons
vest/3	17.05	0.51	269	3.390	18.8	17101
Total	17.05	0.51	269	3.390		17101

IN STIU ORE RESERVE ESTIMATION 5.1.1997

polygons: s_m_ni_0.45_vest
profile : x=1575
code(s) : 41

name/num	inters. length	ni	area m2	density	projection range	tons
vest/8	25.70	0.54	224	3.390	25.0	18956
Total	25.70	0.54	224	3.390		18956

App 6.1 - 6.4
flyttet til ORS-97


X=1150
Y=2250
Z=-250
Y=2300
Y=2400
Y=2500
X=1150
Y=2600
Z=-250
Z=-200
Z=-200
262.9
R-6-96
R-79-96
bh-401-94
bh-405-94
bh-406-94
bh-407-94
bh-450-95
bh-455-95
bh-439-95
bh-432-95
bh-457-95
bh-400-94
bh-454-95
bh-628-96
52.2
bh-632-96
bh-570-95
52.7
100.1
bh-631-96
bh-627-96
bh-629-96
bh-630-96
Z=-100
Z=-100
Legend:
DRILL HOLE PARAMETERS:
Analyses: ni (%)
Bar scale: 10.00 % = 1.00^cm
Content classes (ni): below 0.3000
0.4000 - 0.5000
0.5000 - 0.6000
0.6000 or over
Projection distance: front, m 6.25
back, m 6.25
Projection level: direction, gr 100.00
slope, degree 90.00
Projection: direction, gr 200.00
slope, degree 0.00
All the holes intersecting the projection level are drawn
DD SD S P OB RB EX GS CS
Nikkel og Olivin
Outokumpu
1: 1000
5.1.1997
x=1150
X=1150
Y=2250
Z=0
Y=2300
Y=2400
Y=2500
X=1150
Y=2600
Z=0

X=1163
Y=2250
Z=-250

Y=2300

Y=2400

Y=2500

X=1163
Y=2600
Z=-250

Z=-200

Z=-200

Z=-100

Z=-100

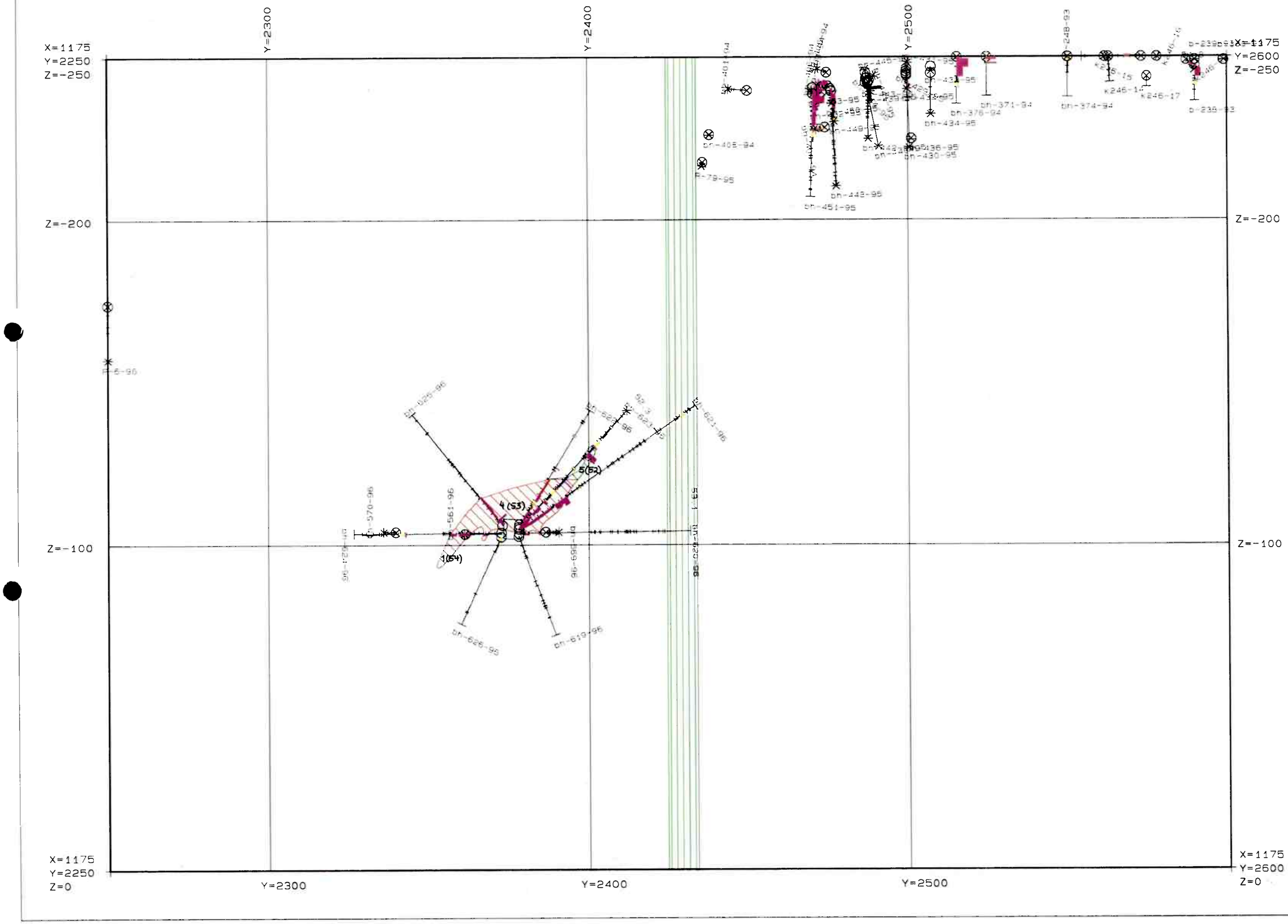
X=1163
Y=2250
Z=0

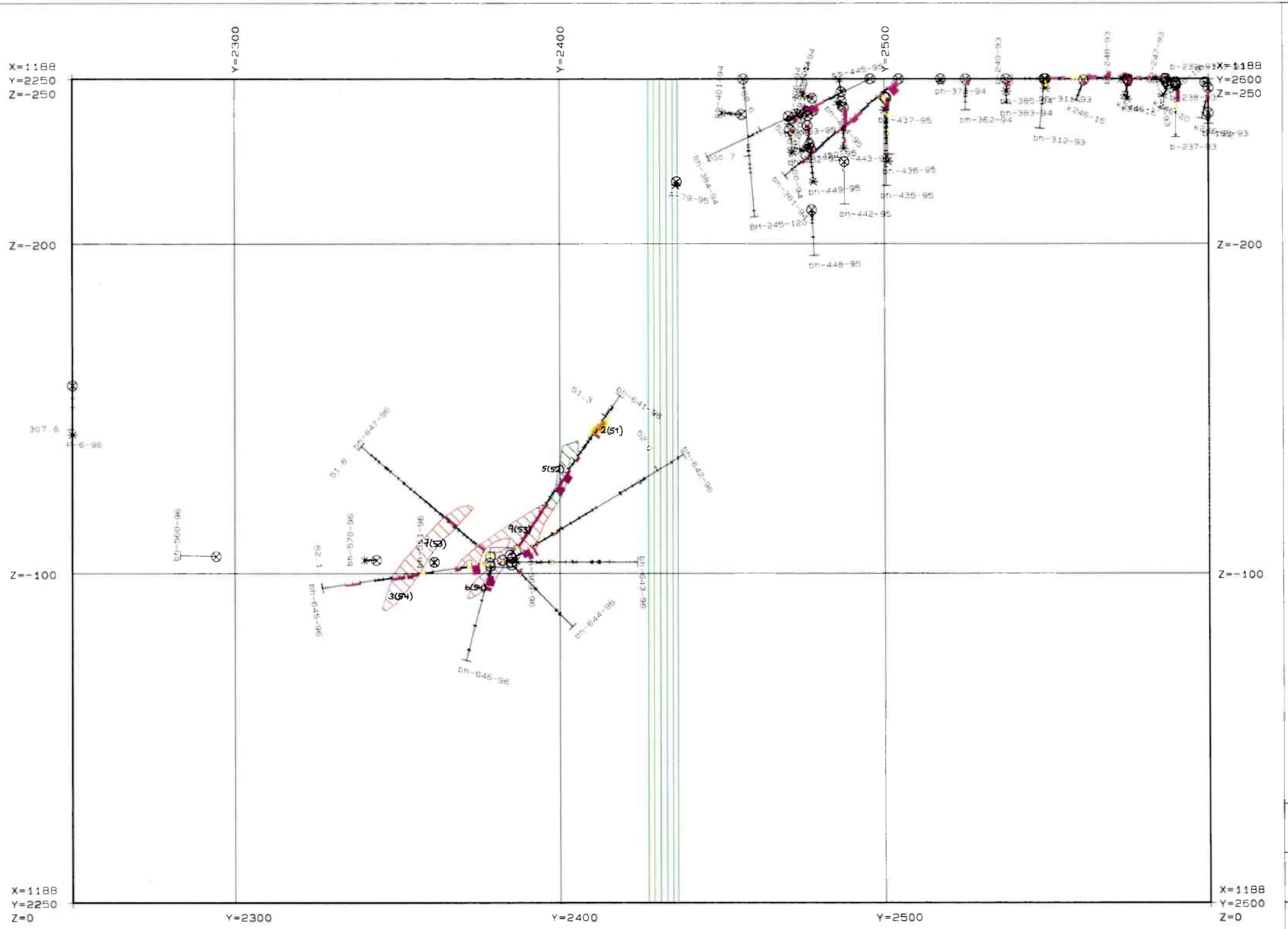
Y=2300

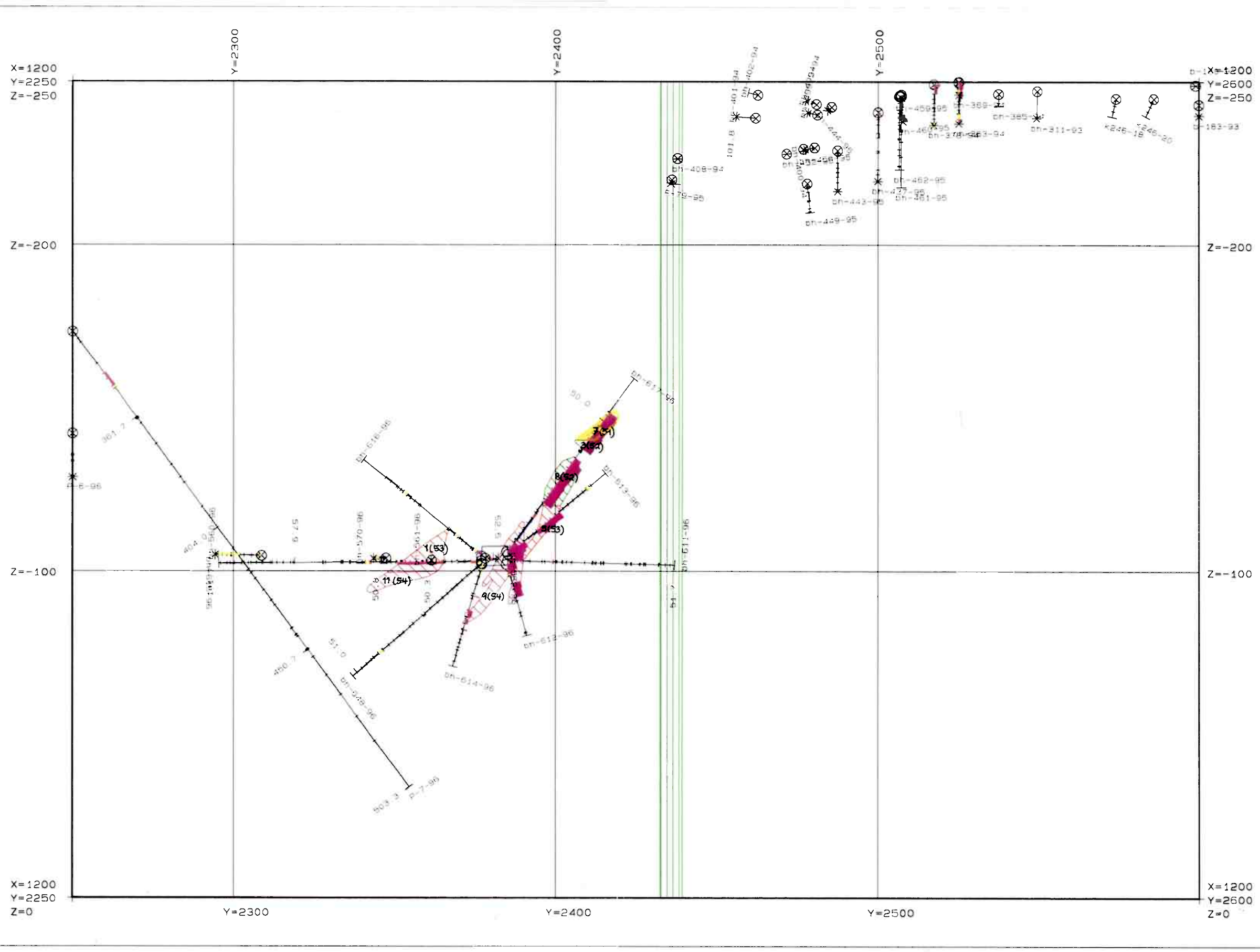
Y=2400

Y=2500

X=1163
Y=2600
Z=0


X=1175
Y=2250
Z=-250
Y=2300
Y=2400
Y=2500
X=1175
Y=2600
Z=-250
Z=-200
Z=-200
bn-405-94
R-79-95
bn-448-95
bn-451-95
bn-371-94
bn-374-94
bn-376-94
bn-434-95
bn-430-95
k246-15
k246-17
b-235-93
R-6-96
bn-625-96
bn-621-96
bn-570-96
bn-561-96
bn-619-96
5(52)
4(53)
1(54)
Z=-100
Z=-100
X=1175
Y=2250
Z=0
Y=2300
Y=2400
Y=2500
X=1175
Y=2600
Z=0


X=1188
Y=2250
Z=-250
Y=2300
Y=2400
Y=2500
X=1188
Y=2600
Z=-250
Z=-200
Z=-200
Z=-100
Z=-100
X=1188
Y=2250
Z=0
Y=2300
Y=2400
Y=2500
X=1188
Y=2600
Z=0
bn-641-96
bn-642-96
bn-643-96
bn-644-96
bn-645-96
bn-646-96
bn-647-96
bn-560-96
bn-570-96
bn-448-95
bn-442-95
bn-435-95
bn-436-95
bn-437-95
bn-449-95
bn-362-94
bn-312-93
b-237-93
2(51)
5(52)
9(53)
7(53)
3(54)
6(54)


X=1200
Y=2250
Z=-250
Y=2300
Y=2400
Y=2500
X=1200
Y=2600
Z=-250
Z=-200
Z=-200
Z=-100
Z=-100
X=1200
Y=2250
Z=0
Y=2300
Y=2400
Y=2500
X=1200
Y=2600
Z=0
bh-408-94
bh-462-95
bh-461-95
bh-449-95
bh-443-95
bh-311-93
bh-183-93
bh-611-96
bh-612-96
bh-614-96
bh-613-96
bh-570-96
bh-616-96
bh-7-96
1(53)
11(54)
9(54)
8(52)
9(53)
3(54)
7(51)

X=1213
Y=2250
Z=-250

Y=2300

Y=2400

Y=2500

X=1213
Y=2600
Z=-250

Z=-200

Z=-200

206.0

252.0

101.4

103.9

BH-409-94

R-79-95

BH-437-95

BH-363-94

BH-313-93

BH-183-93

BH-311-93

BH-459-95

BH-634-96

R-6-95

100-201

100-202

100-200

300.0

BH-560-96

52.0

BH-570-96

BH-561-96

50.0

BH-563-96

BH-569-96

BH-235-120

350.0

BH-538-96

Z=-100

Z=-100

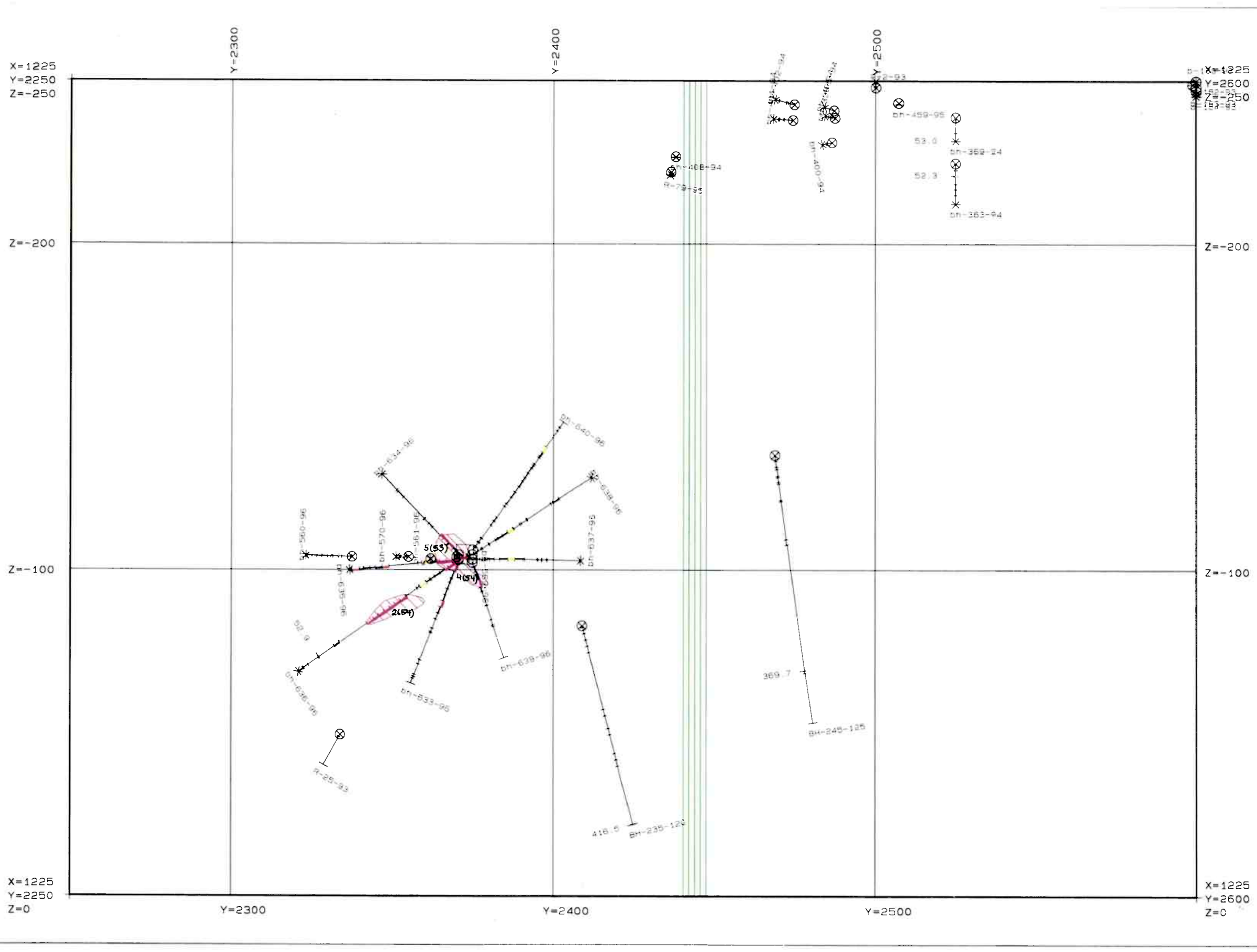
X=1213
Y=2250
Z=0

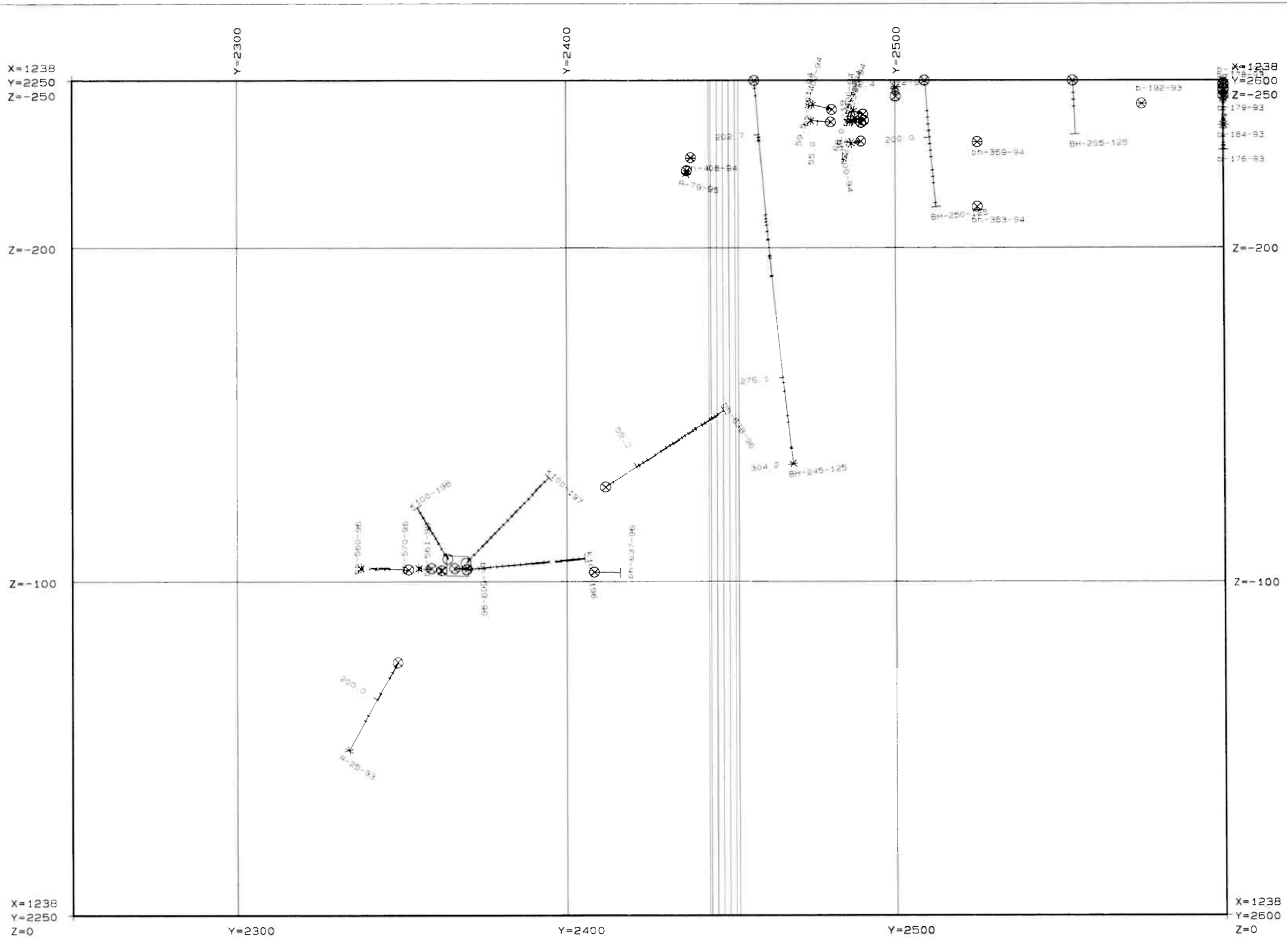
Y=2300

Y=2400

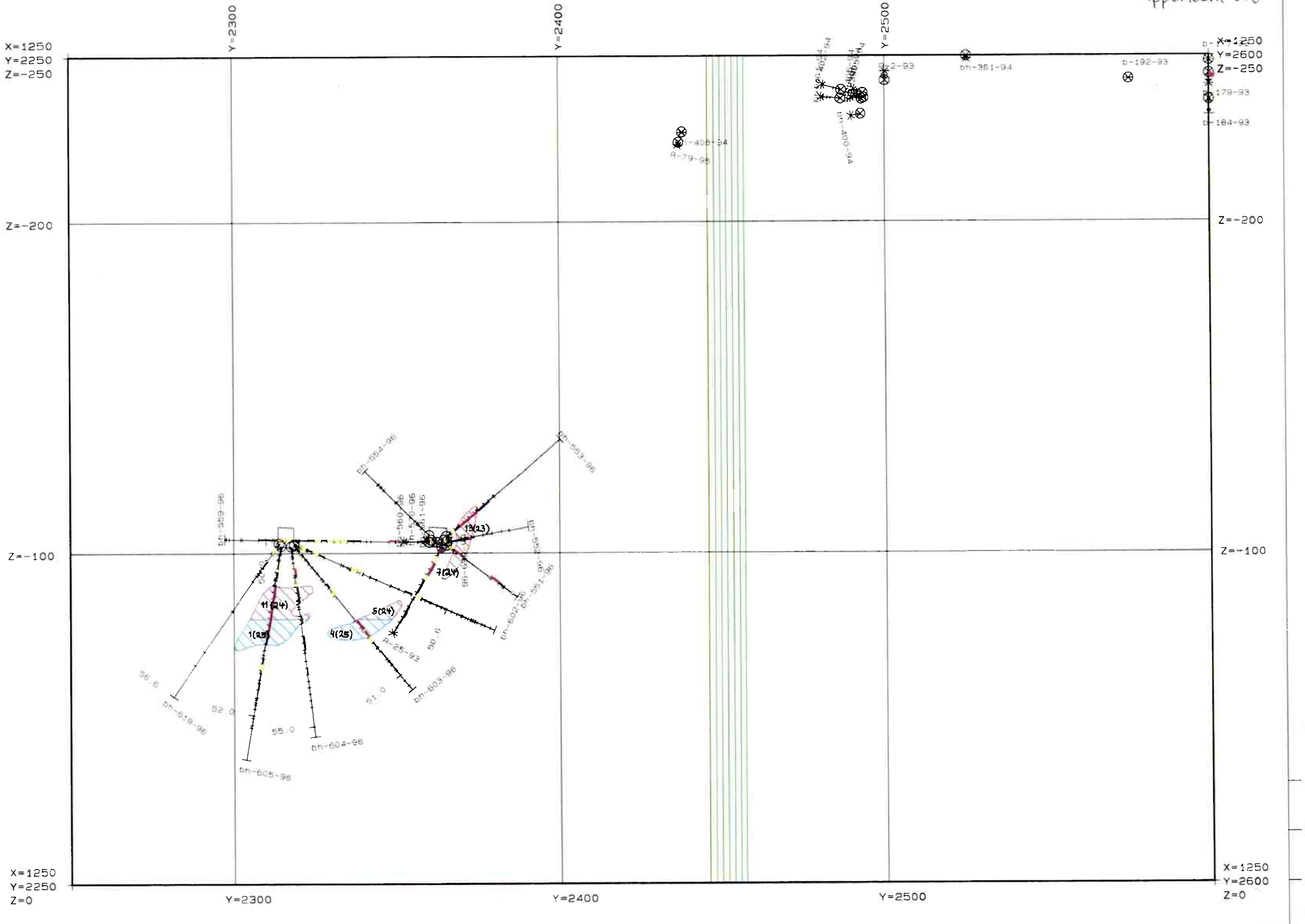
Y=2500

X=1213
Y=2600
Z=0


X=1225
Y=2250
Z=-250
Y=2300
Y=2400
Y=2500
X=1225
Y=2600
Z=-250
Z=-200
Z=-200
bh-408-94
R-79-93
bh-459-95
53.0
bh-359-94
52.3
bh-363-94
bh-634-96
bh-640-96
bh-638-96
bh-560-96
bh-570-96
bh-561-96
bh-637-96
5(53)
4(54)
2(54)
52.9
bh-639-96
bh-636-96
bh-633-96
bh-639-96
R-25-93
416.5
BH-235-125
369.7
BH-245-125
Z=-100
Z=-100
X=1225
Y=2250
Z=0
Y=2300
Y=2400
Y=2500
X=1225
Y=2600
Z=0


X=1238
Y=2250
Z=-250
Y=2300
Y=2400
Y=2500
X=1238
Y=2600
Z=-250
Z=-200
Z=-200
Z=-100
Z=-100
X=1238
Y=2250
Z=0
Y=2300
Y=2400
Y=2500
X=1238
Y=2600
Z=0
202.7
200.0
275.1
304.2
200.0
B-192-93
BH-255-125
BH-369-94
BH-250-125
BH-363-94
B-408-94
B-79-94
B-179-93
B-184-93
B-176-93
BH-245-125
B-538-96
B-560-96
B-570-96
B-561-96
B-637-96
B-25-93

Appendix 6.6



X=1250
Y=2250
Z=-250
Y=2300
Y=2400
Y=2500
X=1250
Y=2600
Z=-250
Z=-200
Z=-100
X=1250
Y=2250
Z=0
X=1250
Y=2600
Z=0
bn-351-94
b-192-93
179-93
184-93
R-79-96
bn-400-94
bn-553-96
bn-554-96
bn-559-96
bn-618-96
bn-605-96
bn-604-96
bn-603-96
bn-602-96
R-25-93
13(23)
7(24)
11(24)
1(25)
5(24)
4(25)
56.6
52.0
55.0
51.0
50.6

X=1263
Y=2250
Z=-250

Y=2300

Y=2400

Y=2500

X=1263
Y=2600
Z=-250

Z=-200

Z=-200

Z=-100

Z=-100

X=1263
Y=2250
Z=0

Y=2300

Y=2400

Y=2500

X=1263
Y=2600
Z=0

bh-192-93

bh-361-94

bh-179-93

53.7

bh-408-94

bh-400-94

K100-155

bh-557-96

bh-526-96

7(22)

6(23)

4(33)

9(29)

3(24)

2(25)

bh-586-96

bh-599-96

53.6

bh-583-96

384.9

51.7

50.2

400.0

bh-600-96

451.0

BH-225-130

X=1275
Y=2250
Z=-250

Y=2300

Y=2400

Y=2500

X=1275
Y=2600
Z=-250

Z=-200

Z=-200

BH-225-130

300.0

BH-506-95

51.0

BH-505-95

51.4

56.8

bh-408-94

R-79-95

bh-400-94

bh-361-94

B-192-93

bh-517-95

bh-582-96

bh-508-95

bh-584-96

bh-581-96

10(99)

6(24)

3(25)

2(26)

Info i Y=2300 →

X=1275
Y=2250
Z=0

Y=2300

Y=2400

Y=2500

X=1275
Y=2600
Z=0

X=1288
Y=2250
Z=-250

Y=2300

Y=2400

Y=2500

X=1288
Y=2600
Z=-250

Z=-200

Z=-200

BH-225-130

BH-255-130

Z=--100

Z=--100

Info i Y=2300 →

X=1288
Y=2250
Z=0

Y=2300

Y=2400

Y=2500

X=1288
Y=2600
Z=0

X=1300
Y=2250
Z=-250

Y=2300

Y=2400

Y=2500

X=1300
Y=2600
Z=-250

Z=-200

Z=-200

200.0

BH-255-130

262.0

BH-260-130

Z=-100

Z=-100

X=1300
Y=2250
Z=0

Y=2300

Y=2400

Y=2500

X=1300
Y=2600
Z=0

X=1313
Y=2250
Z=-250

Y=2300

Y=2400

Y=2500

X=1313
Y=2600
Z=-250

Z=-200

Z=-200

Z=-100

Z=-100

X=1313
Y=2250
Z=0

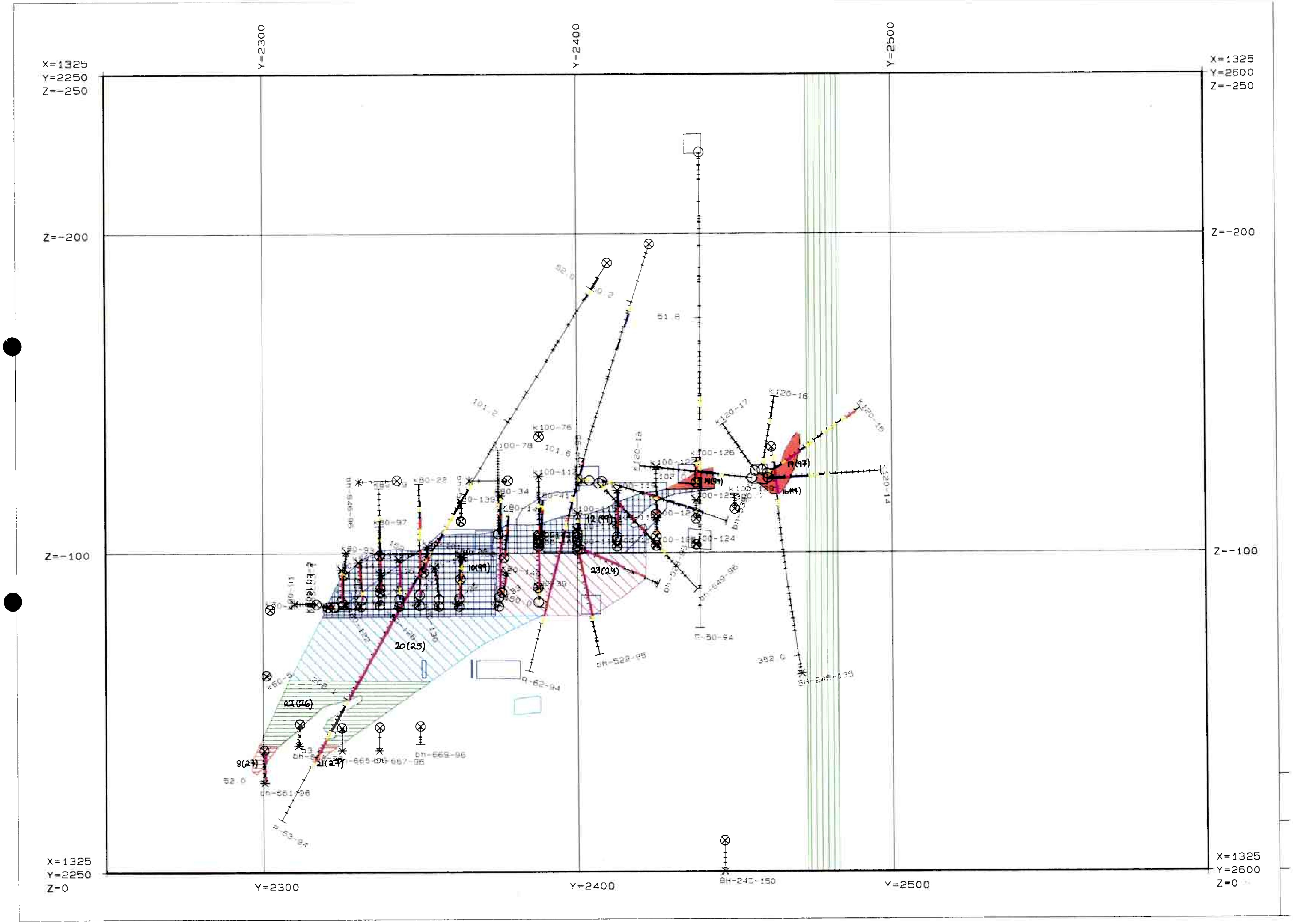
Y=2300

Y=2400

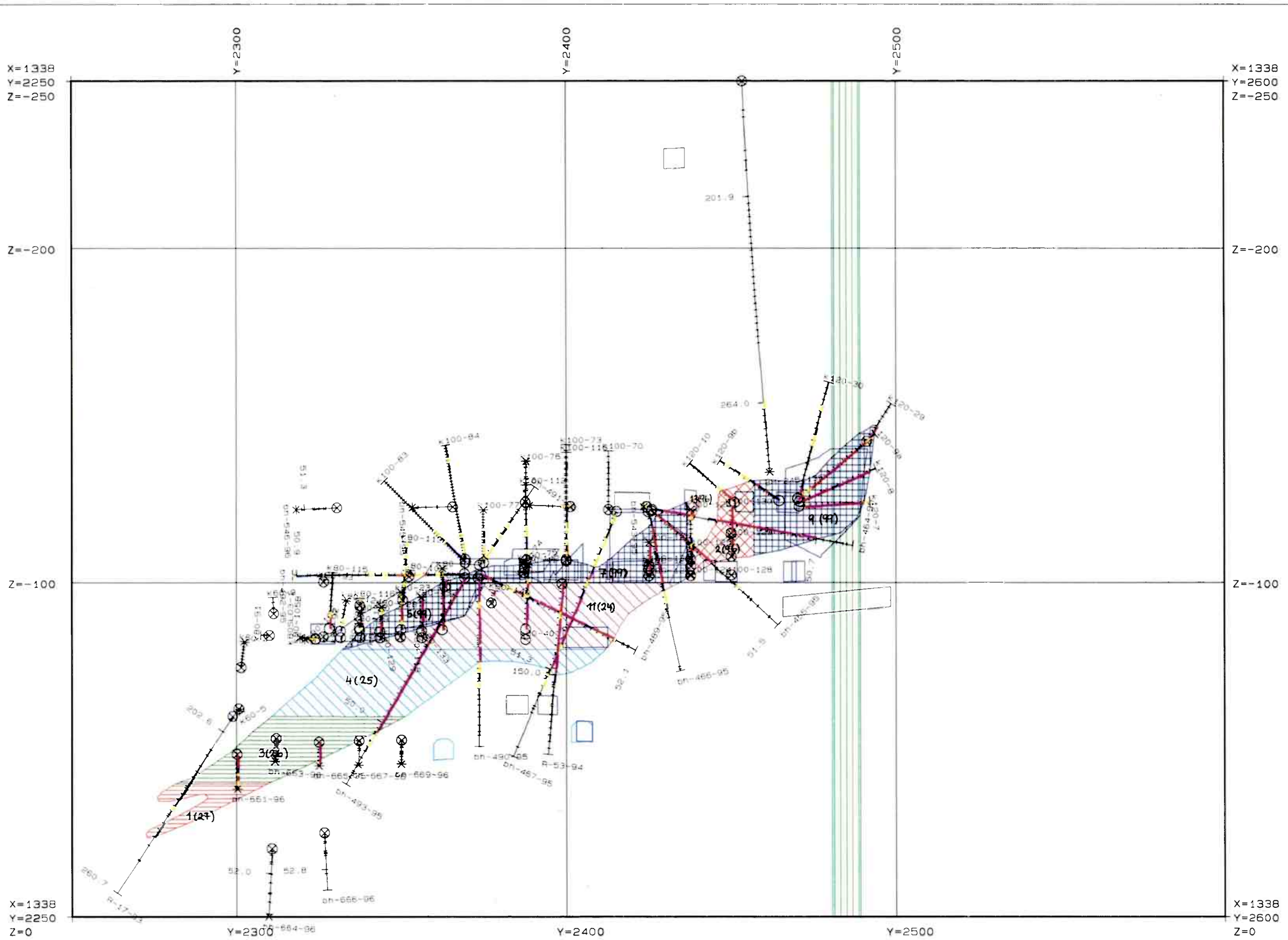
Y=2500

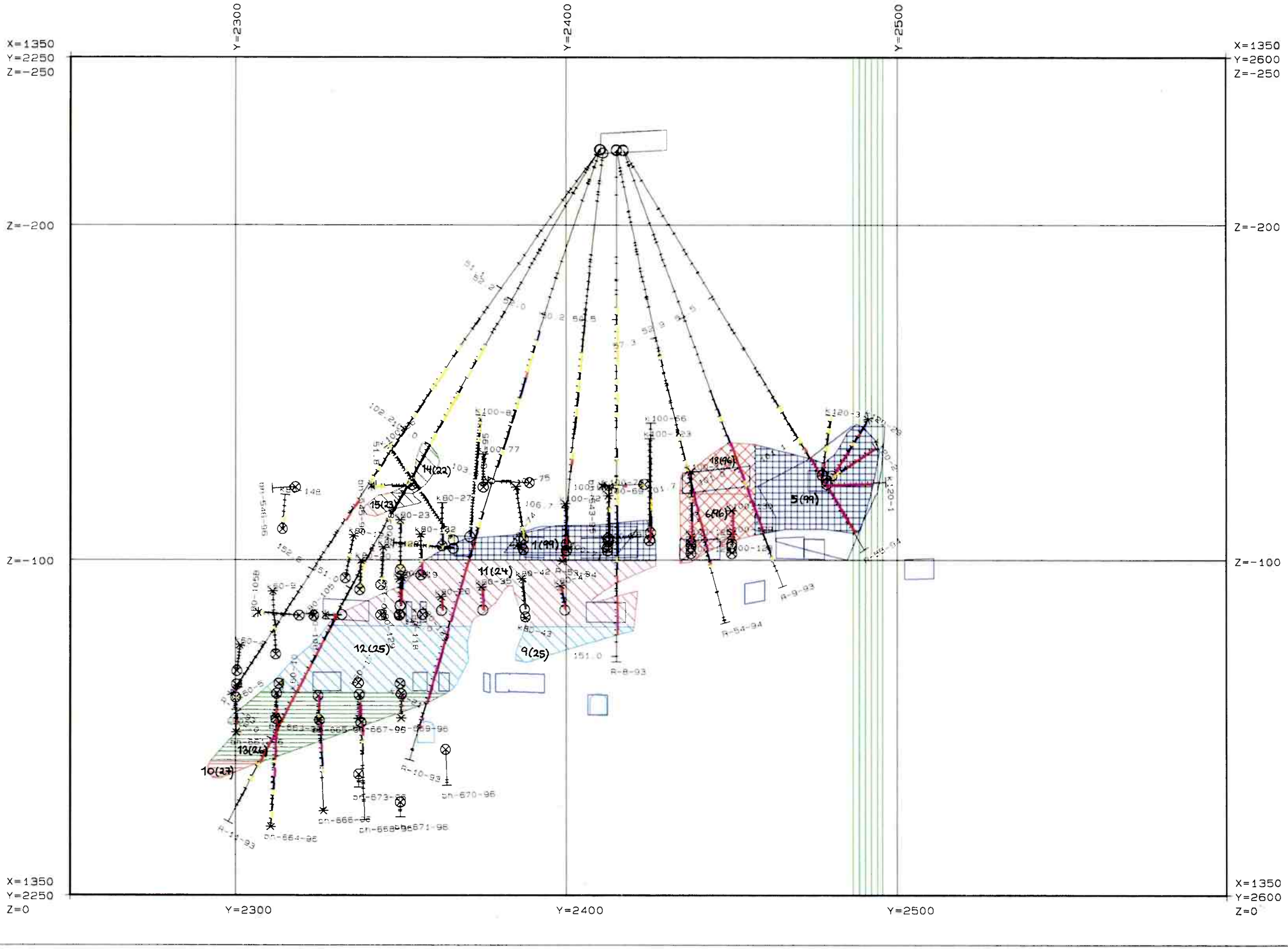
X=1313
Y=2600
Z=0

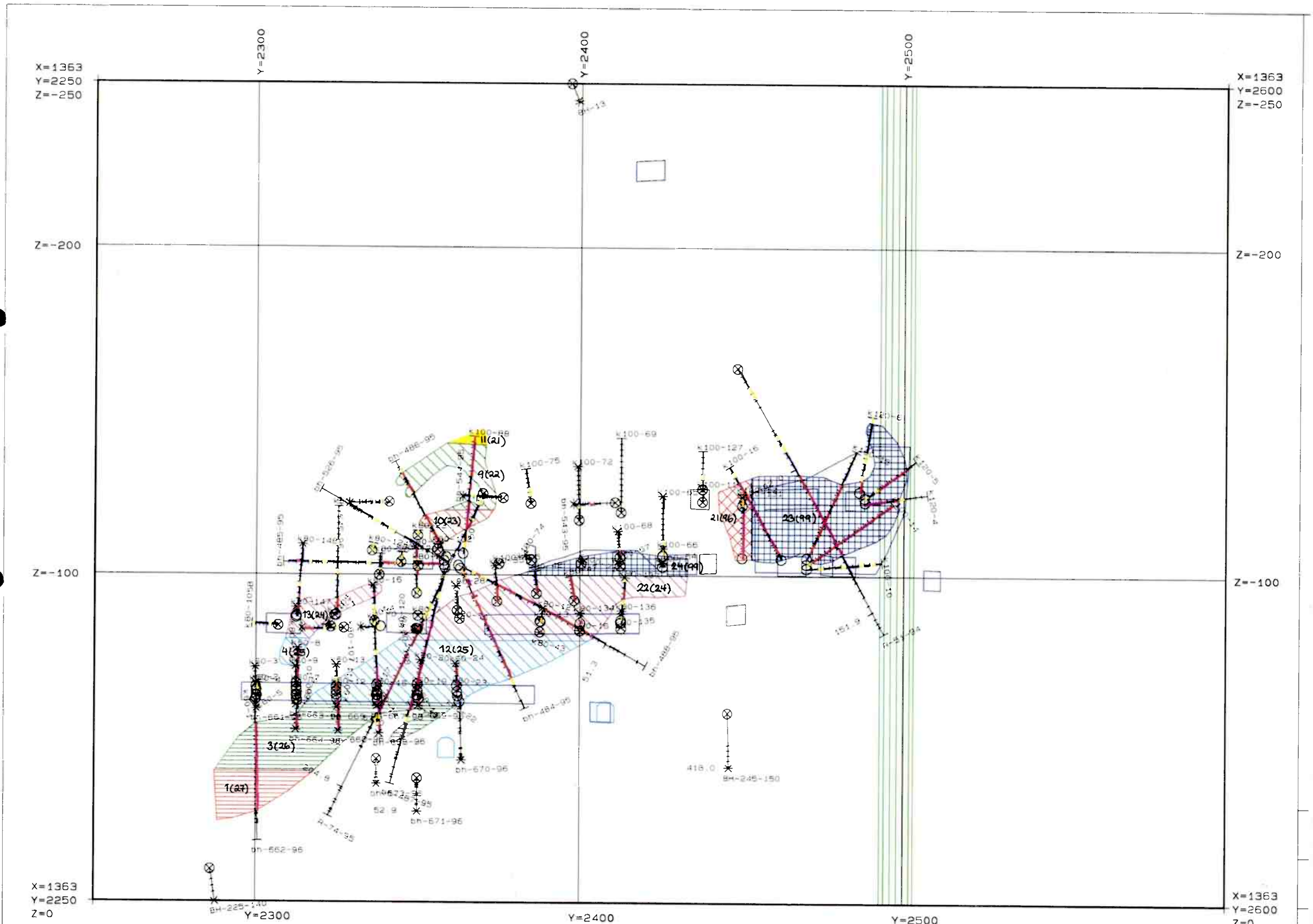
Info i Y=2300

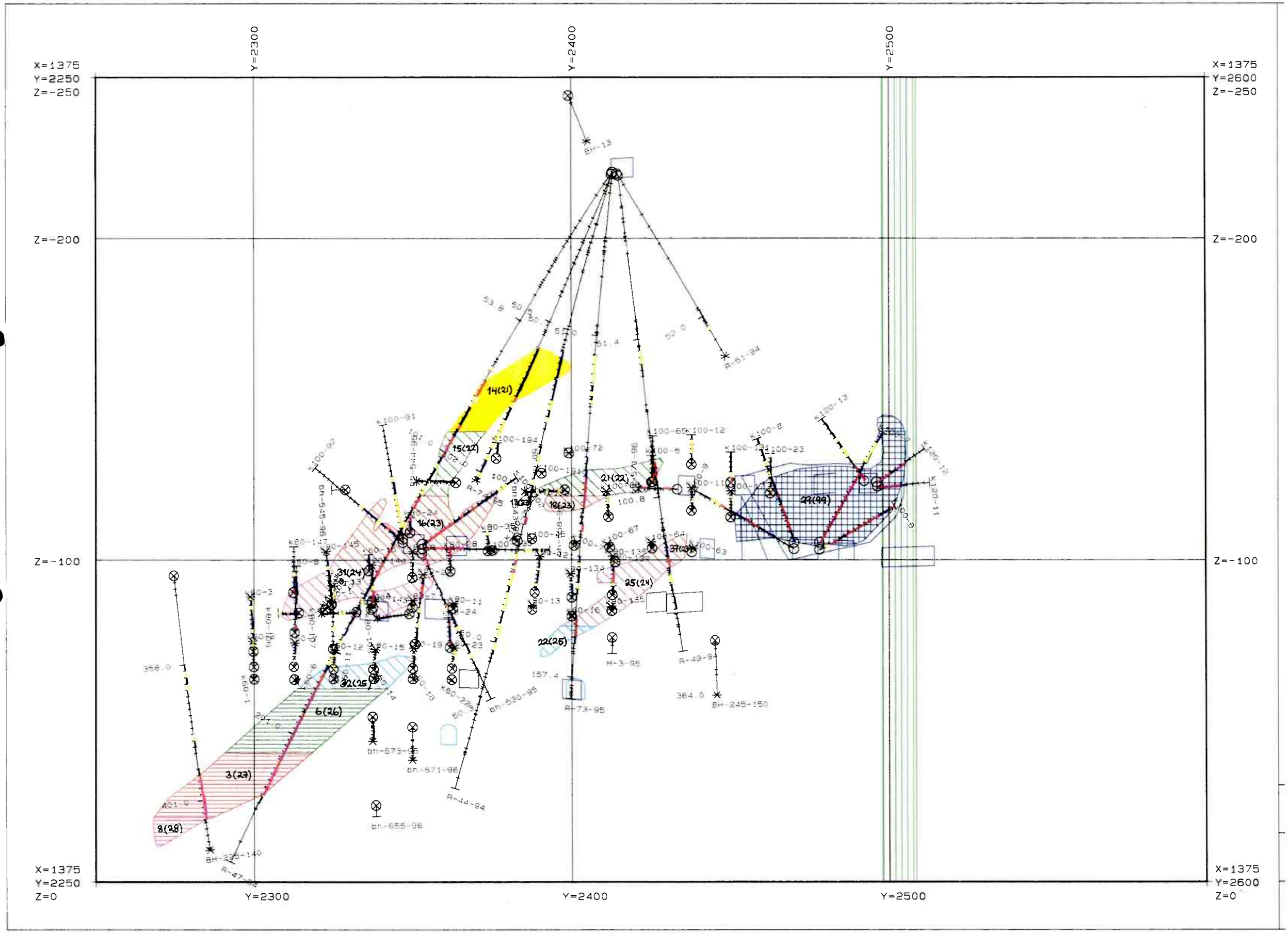


X=1325
Y=2250
Z=-250
Y=2300
Y=2400
Y=2500
X=1325
Y=2600
Z=-250
Z=-200
Z=-200
Z=-100
Z=-100
X=1325
Y=2250
Z=0
Y=2300
Y=2400
Y=2500
X=1325
Y=2600
Z=0
BH-245-150
BH-245-135
bn-522-95
R-62-94
R-50-94
bn-669-96
bn-661-96
20(25)
23(24)
12(99)
10(99)
22(26)
8(27)


X=1338
Y=2250
Z=-250
Y=2300
Y=2400
Y=2500
X=1338
Y=2600
Z=-250
Z=-200
Z=-200
Z=-100
Z=-100
X=1338
Y=2250
Z=0
Y=2300
Y=2400
Y=2500
X=1338
Y=2600
Z=0
201.9
264.0
150.0
1(27)
2(96)
3(96)
4(25)
5(99)
7(99)
9(99)
11(24)
13(96)
bh-561-96
bh-664-96
bh-666-96
bh-490-95
bh-487-95
bh-493-95
bh-466-95
R-53-94


X=1350
Y=2250
Z=-250
Y=2300
Y=2400
Y=2500
X=1350
Y=2600
Z=-250
Z=-200
Z=-200
Z=-100
Z=-100
X=1350
Y=2250
Z=0
Y=2300
Y=2400
Y=2500
X=1350
Y=2600
Z=0
14(22)
15(23)
1(99)
11(24)
12(25)
9(25)
13(24)
10(27)
18(96)
6(96)
5(99)
R-8-93
R-9-93
R-54-94
R-10-93
R-11-93
dh-664-96
dh-668-96
dh-673-96
dh-670-96
dh-671-96


X=1363
Y=2250
Z=-250
Y=2300
Y=2400
Y=2500
X=1363
Y=2600
Z=-250
Z=-200
Z=-200
Z=-100
Z=-100
X=1363
Y=2250
Z=0
Y=2300
Y=2400
Y=2500
X=1363
Y=2600
Z=0
11(21)
9(22)
10(23)
21(96)
23(99)
24(99)
22(24)
13(24)
4(25)
12(25)
3(26)
1(27)
bh-486-95
bh-526-95
bh-485-95
bh-543-95
bh-484-95
bh-670-96
bh-671-96
bh-662-96
bh-225-140
BH-74-95
BH-245-150
k100-88
k100-69
k100-75
k100-72
k100-68
k100-127
k100-16
k120-5
k120-4
k80-146
k80-105
k80-136
k80-135
k80-43
k80-16
k80-15
k80-14
k80-13
k80-12
k80-11
k80-10
k80-9
k80-8
k80-7
k80-6
k80-5
k80-4
k80-3
k80-2
k80-1
k80-24
k80-23
k80-22
k80-21
k80-20
k80-19
k80-18
k80-17
k80-16
k80-15
k80-14
k80-13
k80-12
k80-11
k80-10
k80-9
k80-8
k80-7
k80-6
k80-5
k80-4
k80-3
k80-2
k80-1
51.3
52.9
418.0
151.9


X=1375
Y=2250
Z=-250
Y=2300
Y=2400
Y=2500
X=1375
Y=2600
Z=-250
Z=-200
Z=-200
Z=-100
Z=-100
X=1375
Y=2250
Z=0
Y=2300
Y=2400
Y=2500
X=1375
Y=2600
Z=0
14(21)
15(22)
21(22)
16(23)
18(23)
31(24)
25(24)
22(25)
32(25)
6(26)
3(27)
8(28)
27(99)
37(99)
BH-13
R-51-94
R-73-95
R-49-9
BH-245-150
R-44-94
BH-235-140
R-47-94
bh-545-96
bh-630-95
bh-673-96
bh-671-96
bh-655-96
R-3-95
100-91
100-194
100-72
100-65
100-12
100-5
100-8
100-23
120-13
120-12
120-11
100-67
100-64
100-63
100-134
100-135
100-136
100-24
100-28
100-35
100-145
100-146
100-147
100-148
100-149
100-150
100-151
100-152
100-153
100-154
100-155
100-156
100-157
100-158
100-159
100-160
100-161
100-162
100-163
100-164
100-165
100-166
100-167
100-168
100-169
100-170
100-171
100-172
100-173
100-174
100-175
100-176
100-177
100-178
100-179
100-180
100-181
100-182
100-183
100-184
100-185
100-186
100-187
100-188
100-189
100-190
100-191
100-192
100-193
100-194
100-195
100-196
100-197
100-198
100-199
100-200
100-201
100-202
100-203
100-204
100-205
100-206
100-207
100-208
100-209
100-210
100-211
100-212
100-213
100-214
100-215
100-216
100-217
100-218
100-219
100-220
100-221
100-222
100-223
100-224
100-225
100-226
100-227
100-228
100-229
100-230
100-231
100-232
100-233
100-234
100-235
100-236
100-237
100-238
100-239
100-240
100-241
100-242
100-243
100-244
100-245
100-246
100-247
100-248
100-249
100-250
100-251
100-252
100-253
100-254
100-255
100-256
100-257
100-258
100-259
100-260
100-261
100-262
100-263
100-264
100-265
100-266
100-267
100-268
100-269
100-270
100-271
100-272
100-273
100-274
100-275
100-276
100-277
100-278
100-279
100-280
100-281
100-282
100-283
100-284
100-285
100-286
100-287
100-288
100-289
100-290
100-291
100-292
100-293
100-294
100-295
100-296
100-297
100-298
100-299
100-300
100-301
100-302
100-303
100-304
100-305
100-306
100-307
100-308
100-309
100-310
100-311
100-312
100-313
100-314
100-315
100-316
100-317
100-318
100-319
100-320
100-321
100-322
100-323
100-324
100-325
100-326
100-327
100-328
100-329
100-330
100-331
100-332
100-333
100-334
100-335
100-336
100-337
100-338
100-339
100-340
100-341
100-342
100-343
100-344
100-345
100-346
100-347
100-348
100-349
100-350
100-351
100-352
100-353
100-354
100-355
100-356
100-357
100-358
100-359
100-360
100-361
100-362
100-363
100-364
100-365
100-366
100-367
100-368
100-369
100-370
100-371
100-372
100-373
100-374
100-375
100-376
100-377
100-378
100-379
100-380
100-381
100-382
100-383
100-384
100-385
100-386
100-387
100-388
100-389
100-390
100-391
100-392
100-393
100-394
100-395
100-396
100-397
100-398
100-399
100-400
100-401
100-402
100-403
100-404
100-405
100-406
100-407
100-408
100-409
100-410
100-411
100-412
100-413
100-414
100-415
100-416
100-417
100-418
100-419
100-420
100-421
100-422
100-423
100-424
100-425
100-426
100-427
100-428
100-429
100-430
100-431
100-432
100-433
100-434
100-435
100-436
100-437
100-438
100-439
100-440
100-441
100-442
100-443
100-444
100-445
100-446
100-447
100-448
100-449
100-450
100-451
100-452
100-453
100-454
100-455
100-456
100-457
100-458
100-459
100-460
100-461
100-462
100-463
100-464
100-465
100-466
100-467
100-468
100-469
100-470
100-471
100-472
100-473
100-474
100-475
100-476
100-477
100-478
100-479
100-480
100-481
100-482
100-483
100-484
100-485
100-486
100-487
100-488
100-489
100-490
100-491
100-492
100-493
100-494
100-495
100-496
100-497
100-498
100-499
100-500
100-501
100-502
100-503
100-504
100-505
100-506
100-507
100-508
100-509
100-510
100-511
100-512
100-513
100-514
100-515
100-516
100-517
100-518
100-519
100-520
100-521
100-522
100-523
100-524
100-525
100-526
100-527
100-528
100-529
100-530
100-531
100-532
100-533
100-534
100-535
100-536
100-537
100-538
100-539
100-540
100-541
100-542
100-543
100-544
100-545
100-546
100-547
100-548
100-549
100-550
100-551
100-552
100-553
100-554
100-555
100-556
100-557
100-558
100-559
100-560
100-561
100-562
100-563
100-564
100-565
100-566
100-567
100-568
100-569
100-570
100-571
100-572
100-573
100-574
100-575
100-576
100-577
100-578
100-579
100-580
100-581
100-582
100-583
100-584
100-585
100-586
100-587
100-588
100-589
100-590
100-591
100-592
100-593
100-594
100-595
100-596
100-597
100-598
100-599
100-600
100-601
100-602
100-603
100-604
100-605
100-606
100-607
100-608
100-609
100-610
100-611
100-612
100-613
100-614
100-615
100-616
100-617
100-618
100-619
100-620
100-621
100-622
100-623
100-624
100-625
100-626
100-627
100-628
100-629
100-630
100-631
100-632
100-633
100-634
100-635
100-636
100-637
100-638
100-639
100-640
100-641
100-642
100-643
100-644
100-645
100-646
100-647
100-648
100-649
100-650
100-651
100-652
100-653
100-654
100-655
100-656
100-657
100-658
100-659
100-660
100-661
100-662
100-663
100-664
100-665
100-666
100-667
100-668
100-669
100-670
100-671
100-672
100-673
100-674
100-675
100-676
100-677
100-678
100-679
100-680
100-681
100-682
100-683
100-684
100-685
100-686
100-687
100-688
100-689
100-690
100-691
100-692
100-693
100-694
100-695
100-696
100-697
100-698
100-699
100-700
100-701
100-702
100-703
100-704
100-705
100-706
100-707
100-708
100-709
100-710
100-711
100-712
100-713
100-714
100-715
100-716
100-717
100-718
100-719
100-720
100-721
100-722
100-723
100-724
100-725
100-726
100-727
100-728
100-729
100-730
100-731
100-732
100-733
100-734
100-735
100-736
100-737
100-738
100-739
100-740
100-741
100-742
100-743
100-744
100-745
100-746
100-747
100-748
100-749
100-750
100-751
100-752
100-753
100-754
100-755
100-756
100-757
100-758
100-759
100-760
100-761
100-762
100-763
100-764
100-765
100-766
100-767
100-768
100-769
100-770
100-771
100-772
100-773
100-774
100-775
100-776
100-777
100-778
100-779
100-780
100-781
100-782
100-783
100-784
100-785
100-786
100-787
100-788
100-789
100-790
100-791
100-792
100-793
100-794
100-795
100-796
100-797
100-798
100-799
100-800
100-801
100-802
100-803
100-804
100-805
100-806
100-807
100-808
100-809
100-810
100-811
100-812
100-813
100-814
100-815
100-816
100-817
100-818
100-819
100-820
100-821
100-822
100-823
100-824
100-825
100-826
100-827
100-828
100-829
100-830
100-831
100-832
100-833
100-834
100-835
100-836
100-837
100-838
100-839
100-840
100-841
100-842
100-843
100-844
100-845
100-846
100-847
100-848
100-849
100-850
100-851
100-852
100-853
100-854
100-855
100-856
100-857
100-858
100-859
100-860
100-861
100-862
100-863
100-864
100-865
100-866
100-867
100-868
100-869
100-870
100-871
100-872
100-873
100-874
100-875
100-876
100-877
100-878
100-879
100-880
100-881
100-882
100-883
100-884
100-885
100-886
100-887
100-888
100-889
100-890
100-891
100-892
100-893
100-894
100-895
100-896
100-897
100-898
100-899
100-900
100-901
100-902
100-903
100-904
100-905
100-906
100-907
100-908
100-909
100-910
100-911
100-912
100-913
100-914
100-915
100-916
100-917
100-918
100-919
100-920
100-921
100-922
100-923
100-924
100-925
100-926
100-927
100-928
100-929
100-930
100-931
100-932
100-933
100-934
100-935
100-936
100-937
100-938
100-939
100-940
100-941
100-942
100-943
100-944
100-945
100-946
100-947
100-948
100-949
100-950
100-951
100-952
100-953
100-954
100-955
100-956
100-957
100-958
100-959
100-960
100-961
100-962
100-963
100-964
100-965
100-966
100-967
100-968
100-969
100-970
100-971
100-972
100-973
100-974
100-975
100-976
100-977
100-978
100-979
100-980
100-981
100-982
100-983
100-984
100-985
100-986
100-987
100-988
100-989
100-990
100-991
100-992
100-993
100-994
100-995
100-996
100-997
100-998
100-999
100-1000

X=1388
Y=2250
Z=-250

Y=2300

Y=2400

Y=2500

X=1388
Y=2600
Z=-250

Z=-200

Z=-200

Z=-100

Z=-100

X=1388
Y=2250
Z=0

Y=2300

Y=2400

Y=2500

X=1388
Y=2600
Z=0

X=1400
Y=2250
Z=-250

Y=2300

Y=2400

Y=2500

X=1400
Y=2600
Z=-250

Z=-200

Z=-100

X=1400
Y=2250
Z=0

Y=2300

Y=2400

Y=2500

X=1400
Y=2600
Z=0

BH-225-140

BH-235-140

BH-245-150

BH-250-145

BH-250-140

bh-659-96

bh-657-96

bh-655-96

R-16-93

R-15-93

R-38-94

R-12-93

R-13-93

H-1-95

7(21)

3(21)

35(22)

36(21)

37(22)

26(22)

31(22)

25(23)

R(23)

22(23)

23(23)

23(24)

5(24)

30(24)

16(24)

4(25)

10(25)

14(26)

13(26)

X=1413
Y=2250
Z=-250

Y=2300

Y=2400

Y=2500

X=1413
Y=2600
Z=-250

Z=-200

Z=-200

BH-13

42(21)

23(22)

32(22)

28(23)

25(23)

2(96)

30(99)

24(99)

31(96)

BH-250-145

Z=-100

Z=-100

X=1413
Y=2250
Z=0

Y=2300

Y=2400

Y=2500

X=1413
Y=2600
Z=0

X=1425
Y=2250
Z=-250

Y=2300

Y=2400

Y=2500

X=1425
Y=2600
Z=-250

Z=-200

Z=-200

Z=-100

Z=-100

X=1425
Y=2250
Z=0

Y=2300

Y=2400

Y=2500

X=1425
Y=2600
Z=0

X=1438
Y=2250
Z=-250

Y=2300

Y=2400

Y=2500

X=1438
Y=2600
Z=-250

Z=-200

Z=-200

202.0

BH-250-145

56.9

BH-245-150

K100-51

K100-58

K100-43

K100-26

K100-184

K100-34

K100-50

K100-22

K100-21

K100-182

K120-57

10(21)

K120-3

K120-56

9(22)

K120-55

K120-54

K80-51

K80-38

K80-52

K80-49

K80-55

K80-38

K80-112

102.0

5(23)

4(23)

K80-39

K80-36

6(24)

K80-46

K80-113

M-2-95

103.3

150.8

R-54-94

K80-5

K80-34

K80-47

K80-48

3(25)

K80-37

K80-12

54.0

1(26)

bh-519-95

bh-679-95

bh-656-95

bh-658-95

bh-660-96

209.0

R-75-95

151.1

R-18-93

Z=-100

Z=-100

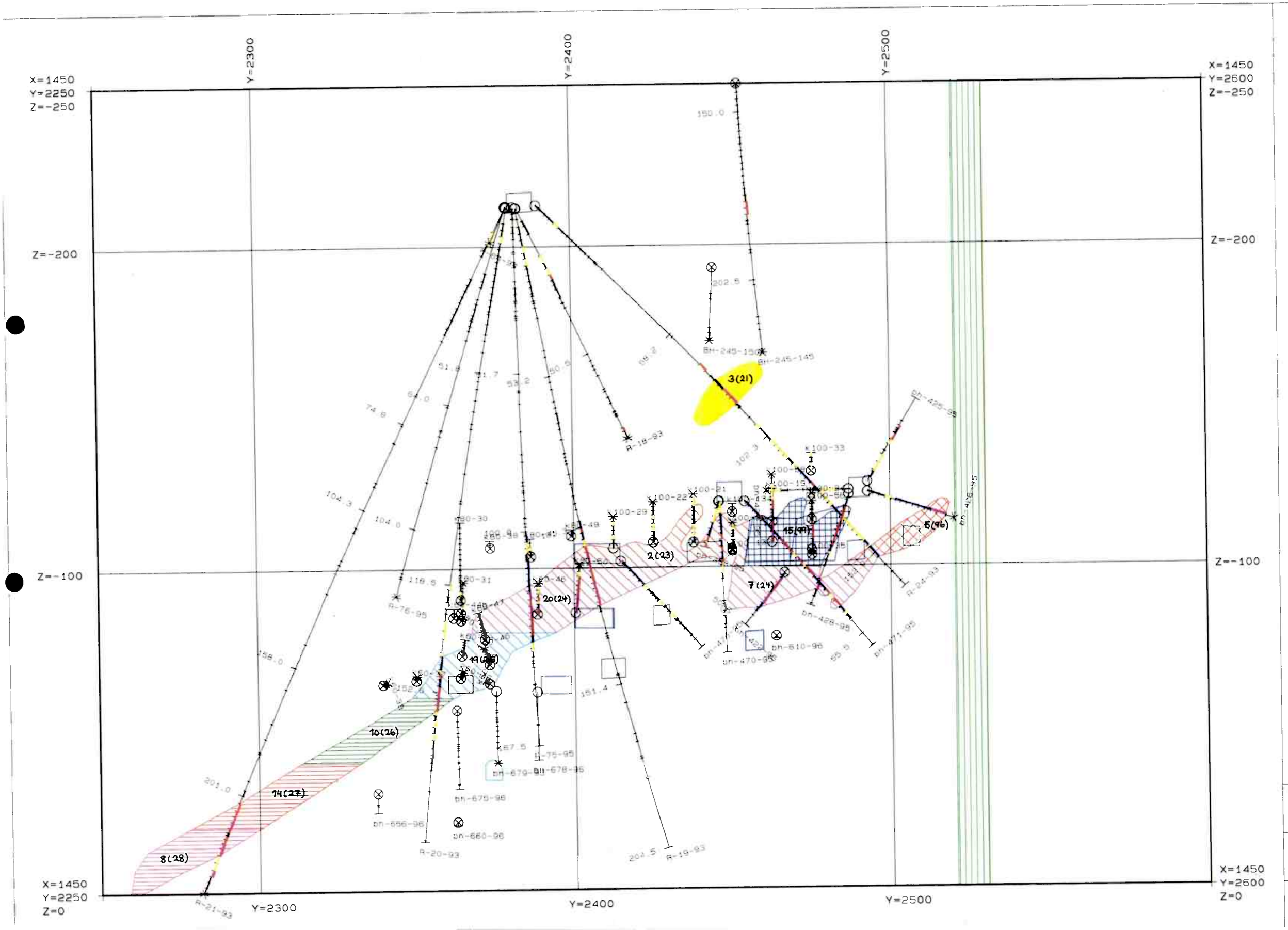
X=1438
Y=2250
Z=0

Y=2300

Y=2400

Y=2500

X=1438
Y=2600
Z=0


X=1450
Y=2250
Z=-250
Y=2300
Y=2400
Y=2500
X=1450
Y=2600
Z=-250
Z=-200
Z=-200
Z=-100
Z=-100
X=1450
Y=2250
Z=0
Y=2300
Y=2400
Y=2500
X=1450
Y=2600
Z=0
3(21)
2(23)
15(97)
5(96)
7(24)
20(24)
10(26)
14(27)
8(28)
BH-245-150
BH-245-145
R-18-93
R-76-95
R-75-95
R-20-93
R-21-93
R-19-93
R-24-93
bh-678-96
bh-679-96
bh-675-96
bh-656-96
bh-660-96
bh-610-96
bh-470-96
bh-428-96
bh-471-96
bh-425-95
bh-426-95
150.0
202.5
74.8
64.0
51.8
51.7
55.2
50.5
68.2
104.3
104.0
118.5
158.0
151.4
201.0
204.5
102.9
55.5
57.5

X=1463
Y=2250
Z=-200

Y=2300

Y=2400

Y=2500

X=1463
Y=2600
Z=-200

Z=-100

Z=-100

Z=0

Z=0

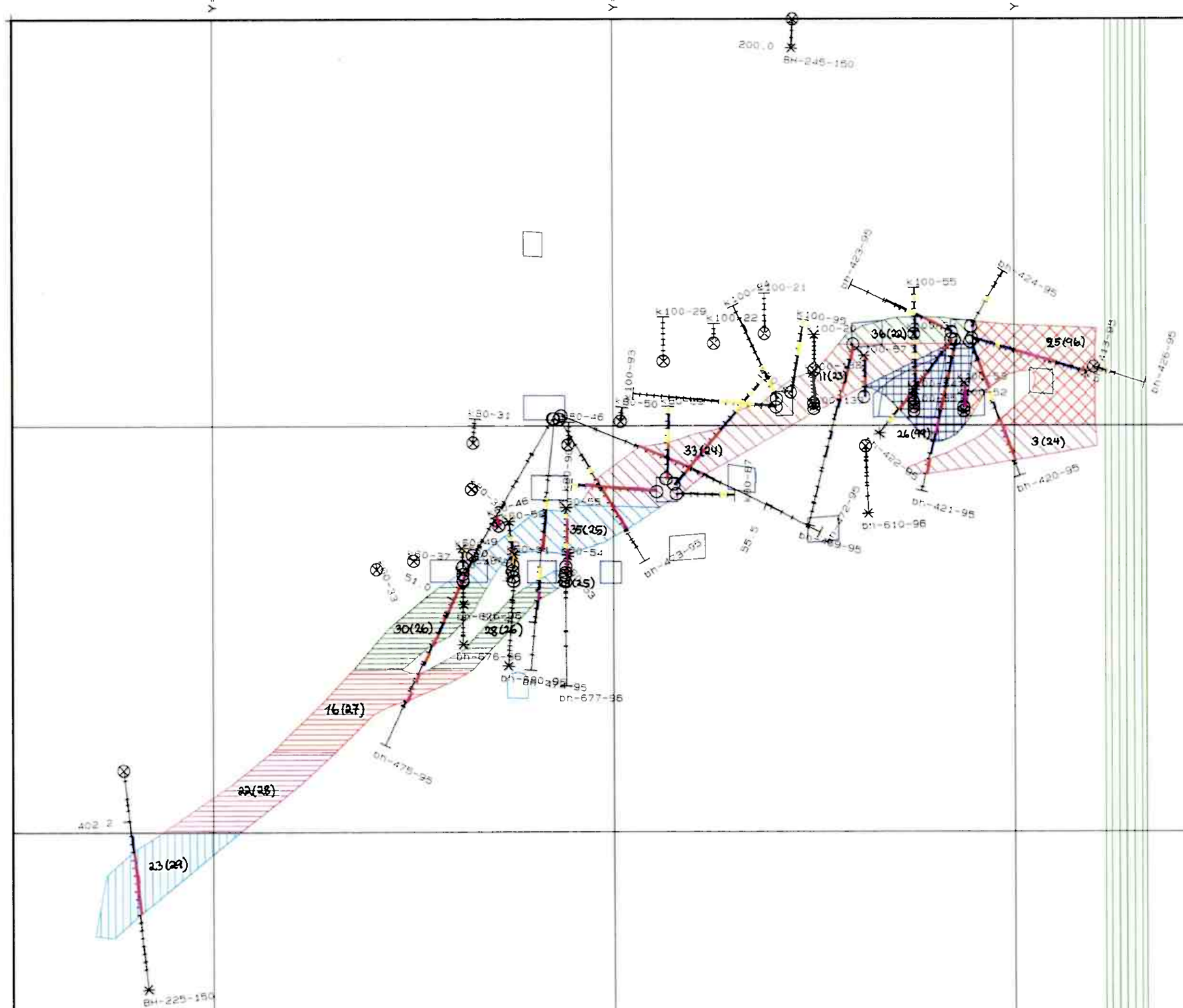
X=1463
Y=2250
Z=50

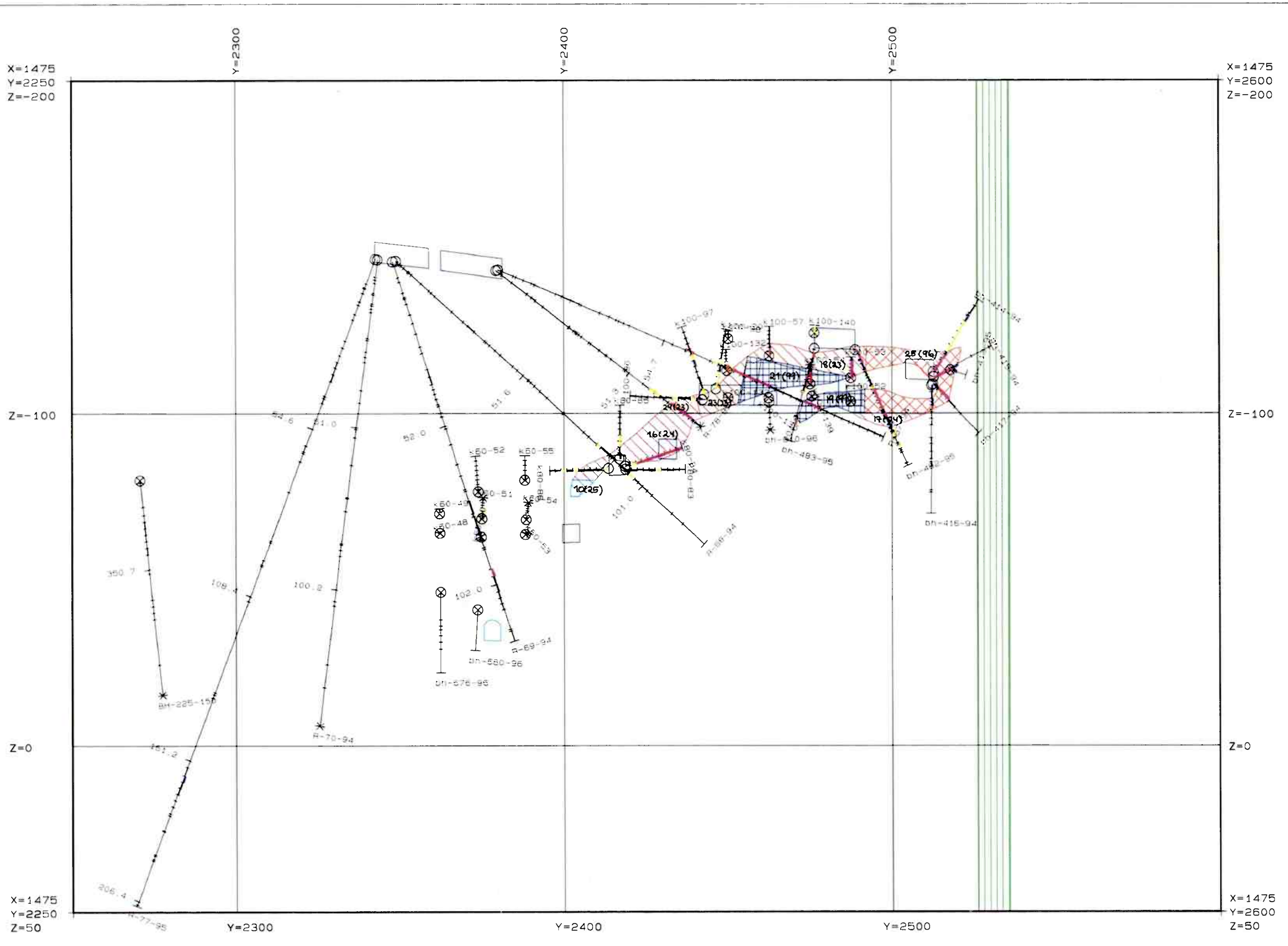
Y=2300

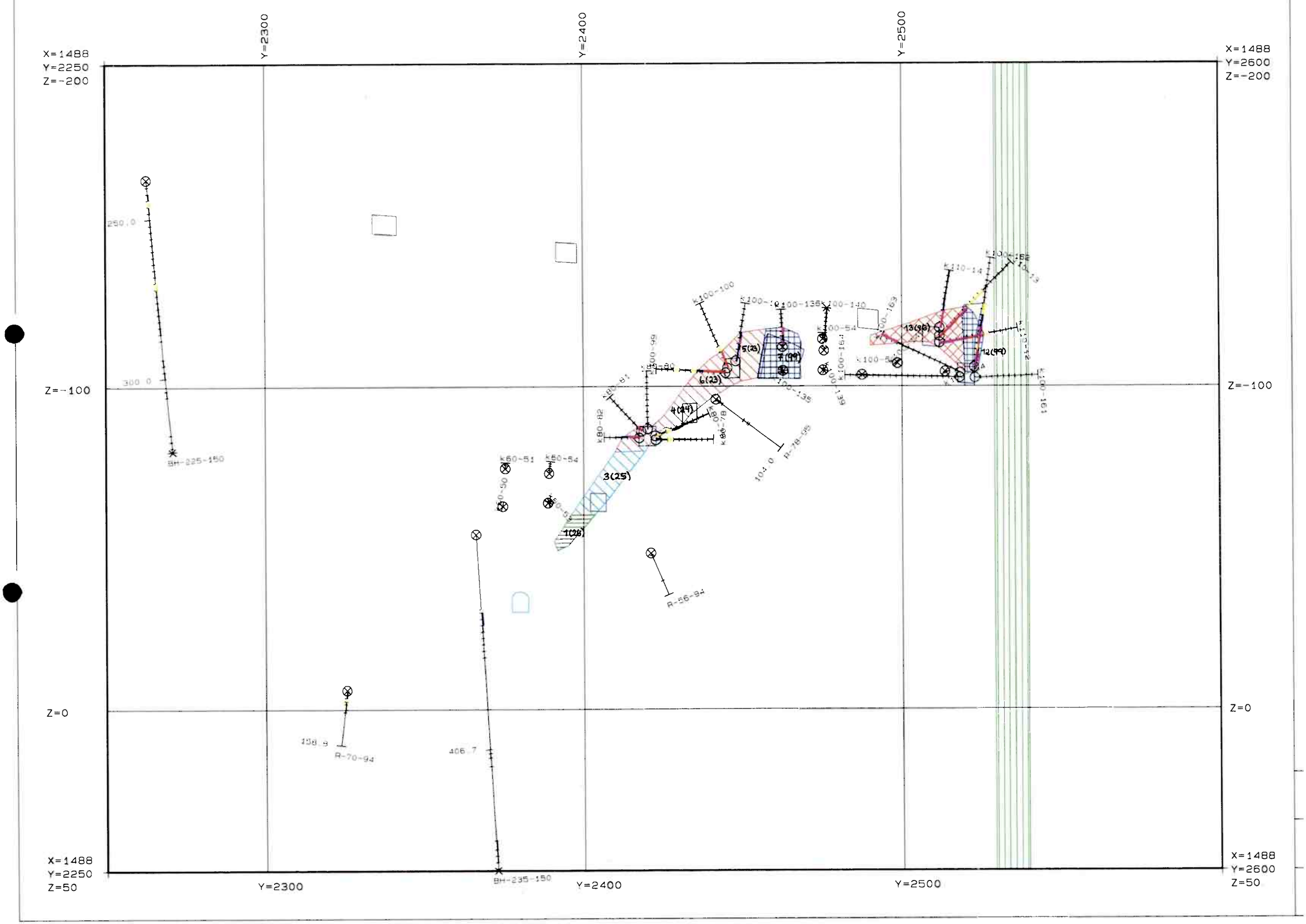
Y=2400

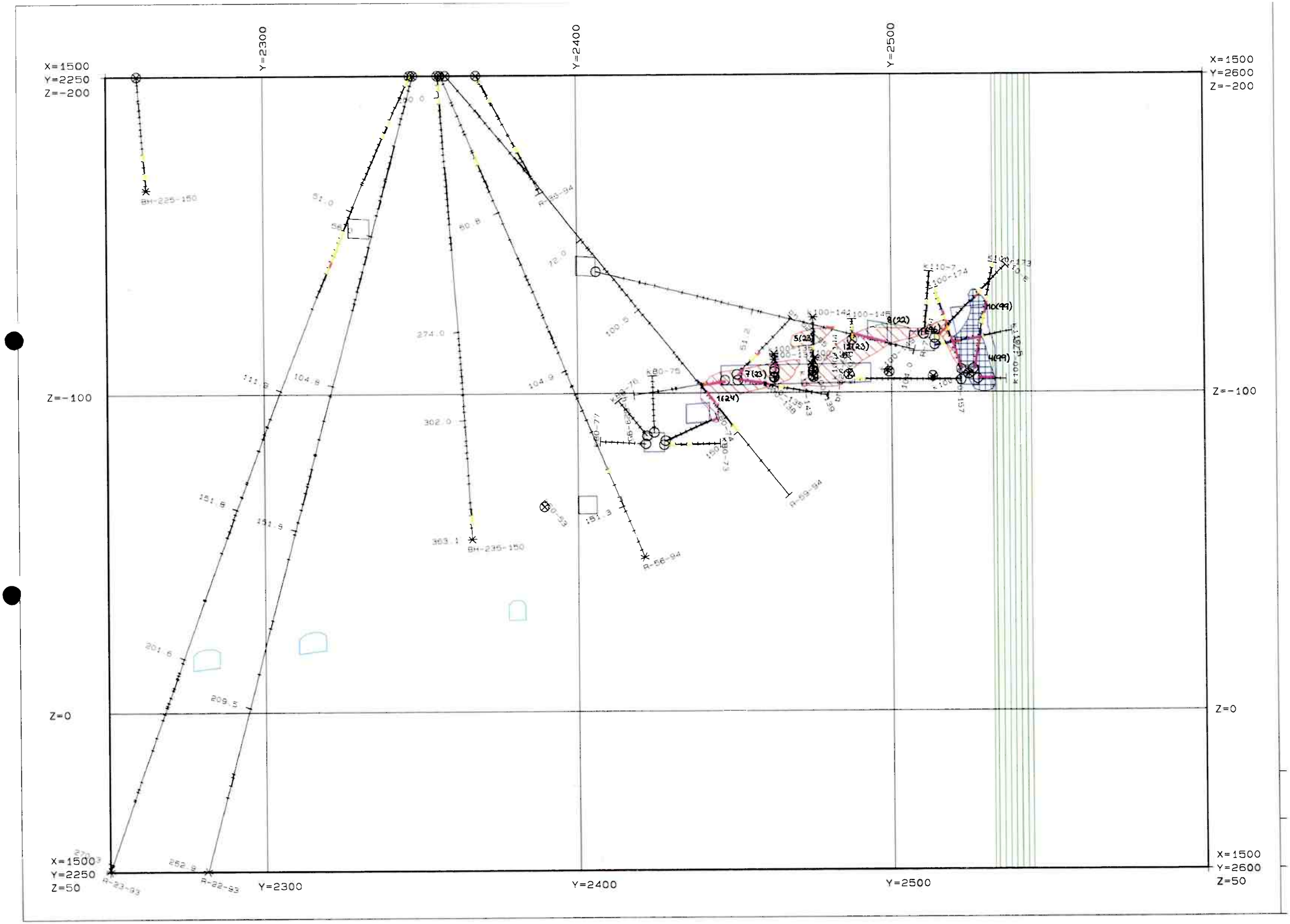
Y=2500

X=1463
Y=2600
Z=50




X=1475
Y=2250
Z=-200
Y=2300
Y=2400
Y=2500
X=1475
Y=2600
Z=-200
Z=-100
Z=-100
Z=0
Z=0
X=1475
Y=2250
Z=50
Y=2300
Y=2400
Y=2500
X=1475
Y=2600
Z=50
16(24)
10(25)
21(97)
18(23)
25(96)
19(94)
24(23)
23(22)
BH-225-150
R-70-94
R-77-95
BH-578-96
BH-580-96
R-69-94
R-56-94
BH-415-94
BH-483-95
BH-580-96
R-78-94
R-69-94
R-70-94
R-56-94
BH-415-94
BH-483-95
BH-580-96
BH-578-96
R-77-95
BH-225-150
K100-97
K100-57
K100-140
K100-132
K100-88
K60-52
K60-55
K60-51
K60-54
K60-49
K60-48
K60-53
K60-83
K60-84
K100-139
K100-152
K100-141
K100-142
K100-143
K100-144
K100-145
K100-146
K100-147
K100-148
K100-149
K100-150
K100-151
K100-153
K100-154
K100-155
K100-156
K100-157
K100-158
K100-159
K100-160
K100-161
K100-162
K100-163
K100-164
K100-165
K100-166
K100-167
K100-168
K100-169
K100-170
K100-171
K100-172
K100-173
K100-174
K100-175
K100-176
K100-177
K100-178
K100-179
K100-180
K100-181
K100-182
K100-183
K100-184
K100-185
K100-186
K100-187
K100-188
K100-189
K100-190
K100-191
K100-192
K100-193
K100-194
K100-195
K100-196
K100-197
K100-198
K100-199
K100-200
K100-201
K100-202
K100-203
K100-204
K100-205
K100-206
K100-207
K100-208
K100-209
K100-210
K100-211
K100-212
K100-213
K100-214
K100-215
K100-216
K100-217
K100-218
K100-219
K100-220
K100-221
K100-222
K100-223
K100-224
K100-225
K100-226
K100-227
K100-228
K100-229
K100-230
K100-231
K100-232
K100-233
K100-234
K100-235
K100-236
K100-237
K100-238
K100-239
K100-240
K100-241
K100-242
K100-243
K100-244
K100-245
K100-246
K100-247
K100-248
K100-249
K100-250
K100-251
K100-252
K100-253
K100-254
K100-255
K100-256
K100-257
K100-258
K100-259
K100-260
K100-261
K100-262
K100-263
K100-264
K100-265
K100-266
K100-267
K100-268
K100-269
K100-270
K100-271
K100-272
K100-273
K100-274
K100-275
K100-276
K100-277
K100-278
K100-279
K100-280
K100-281
K100-282
K100-283
K100-284
K100-285
K100-286
K100-287
K100-288
K100-289
K100-290
K100-291
K100-292
K100-293
K100-294
K100-295
K100-296
K100-297
K100-298
K100-299
K100-300
K100-301
K100-302
K100-303
K100-304
K100-305
K100-306
K100-307
K100-308
K100-309
K100-310
K100-311
K100-312
K100-313
K100-314
K100-315
K100-316
K100-317
K100-318
K100-319
K100-320
K100-321
K100-322
K100-323
K100-324
K100-325
K100-326
K100-327
K100-328
K100-329
K100-330
K100-331
K100-332
K100-333
K100-334
K100-335
K100-336
K100-337
K100-338
K100-339
K100-340
K100-341
K100-342
K100-343
K100-344
K100-345
K100-346
K100-347
K100-348
K100-349
K100-350
K100-351
K100-352
K100-353
K100-354
K100-355
K100-356
K100-357
K100-358
K100-359
K100-360
K100-361
K100-362
K100-363
K100-364
K100-365
K100-366
K100-367
K100-368
K100-369
K100-370
K100-371
K100-372
K100-373
K100-374
K100-375
K100-376
K100-377
K100-378
K100-379
K100-380
K100-381
K100-382
K100-383
K100-384
K100-385
K100-386
K100-387
K100-388
K100-389
K100-390
K100-391
K100-392
K100-393
K100-394
K100-395
K100-396
K100-397
K100-398
K100-399
K100-400
K100-401
K100-402
K100-403
K100-404
K100-405
K100-406
K100-407
K100-408
K100-409
K100-410
K100-411
K100-412
K100-413
K100-414
K100-415
K100-416
K100-417
K100-418
K100-419
K100-420
K100-421
K100-422
K100-423
K100-424
K100-425
K100-426
K100-427
K100-428
K100-429
K100-430
K100-431
K100-432
K100-433
K100-434
K100-435
K100-436
K100-437
K100-438
K100-439
K100-440
K100-441
K100-442
K100-443
K100-444
K100-445
K100-446
K100-447
K100-448
K100-449
K100-450
K100-451
K100-452
K100-453
K100-454
K100-455
K100-456
K100-457
K100-458
K100-459
K100-460
K100-461
K100-462
K100-463
K100-464
K100-465
K100-466
K100-467
K100-468
K100-469
K100-470
K100-471
K100-472
K100-473
K100-474
K100-475
K100-476
K100-477
K100-478
K100-479
K100-480
K100-481
K100-482
K100-483
K100-484
K100-485
K100-486
K100-487
K100-488
K100-489
K100-490
K100-491
K100-492
K100-493
K100-494
K100-495
K100-496
K100-497
K100-498
K100-499
K100-500
K100-501
K100-502
K100-503
K100-504
K100-505
K100-506
K100-507
K100-508
K100-509
K100-510
K100-511
K100-512
K100-513
K100-514
K100-515
K100-516
K100-517
K100-518
K100-519
K100-520
K100-521
K100-522
K100-523
K100-524
K100-525
K100-526
K100-527
K100-528
K100-529
K100-530
K100-531
K100-532
K100-533
K100-534
K100-535
K100-536
K100-537
K100-538
K100-539
K100-540
K100-541
K100-542
K100-543
K100-544
K100-545
K100-546
K100-547
K100-548
K100-549
K100-550
K100-551
K100-552
K100-553
K100-554
K100-555
K100-556
K100-557
K100-558
K100-559
K100-560
K100-561
K100-562
K100-563
K100-564
K100-565
K100-566
K100-567
K100-568
K100-569
K100-570
K100-571
K100-572
K100-573
K100-574
K100-575
K100-576
K100-577
K100-578
K100-579
K100-580
K100-581
K100-582
K100-583
K100-584
K100-585
K100-586
K100-587
K100-588
K100-589
K100-590
K100-591
K100-592
K100-593
K100-594
K100-595
K100-596
K100-597
K100-598
K100-599
K100-600
K100-601
K100-602
K100-603
K100-604
K100-605
K100-606
K100-607
K100-608
K100-609
K100-610
K100-611
K100-612
K100-613
K100-614
K100-615
K100-616
K100-617
K100-618
K100-619
K100-620
K100-621
K100-622
K100-623
K100-624
K100-625
K100-626
K100-627
K100-628
K100-629
K100-630
K100-631
K100-632
K100-633
K100-634
K100-635
K100-636
K100-637
K100-638
K100-639
K100-640
K100-641
K100-642
K100-643
K100-644
K100-645
K100-646
K100-647
K100-648
K100-649
K100-650
K100-651
K100-652
K100-653
K100-654
K100-655
K100-656
K100-657
K100-658
K100-659
K100-660
K100-661
K100-662
K100-663
K100-664
K100-665
K100-666
K100-667
K100-668
K100-669
K100-670
K100-671
K100-672
K100-673
K100-674
K100-675
K100-676
K100-677
K100-678
K100-679
K100-680
K100-681
K100-682
K100-683
K100-684
K100-685
K100-686
K100-687
K100-688
K100-689
K100-690
K100-691
K100-692
K100-693
K100-694
K100-695
K100-696
K100-697
K100-698
K100-699
K100-700
K100-701
K100-702
K100-703
K100-704
K100-705
K100-706
K100-707
K100-708
K100-709
K100-710
K100-711
K100-712
K100-713
K100-714
K100-715
K100-716
K100-717
K100-718
K100-719
K100-720
K100-721
K100-722
K100-723
K100-724
K100-725
K100-726
K100-727
K100-728
K100-729
K100-730
K100-731
K100-732
K100-733
K100-734
K100-735
K100-736
K100-737
K100-738
K100-739
K100-740
K100-741
K100-742
K100-743
K100-744
K100-745
K100-746
K100-747
K100-748
K100-749
K100-750
K100-751
K100-752
K100-753
K100-754
K100-755
K100-756
K100-757
K100-758
K100-759
K100-760
K100-761
K100-762
K100-763
K100-764
K100-765
K100-766
K100-767
K100-768
K100-769
K100-770
K100-771
K100-772
K100-773
K100-774
K100-775
K100-776
K100-777
K100-778
K100-779
K100-780
K100-781
K100-782
K100-783
K100-784
K100-785
K100-786
K100-787
K100-788
K100-789
K100-790
K100-791
K100-792
K100-793
K100-794
K100-795
K100-796
K100-797
K100-798
K100-799
K100-800
K100-801
K100-802
K100-803
K100-804
K100-805
K100-806
K100-807
K100-808
K100-809
K100-810
K100-811
K100-812
K100-813
K100-814
K100-815
K100-816
K100-817
K100-818
K100-819
K100-820
K100-821
K100-822
K100-823
K100-824
K100-825
K100-826
K100-827
K100-828
K100-829
K100-830
K100-831
K100-832
K100-833
K100-834
K100-835
K100-836
K100-837
K100-838
K100-839
K100-840
K100-841
K100-842
K100-843
K100-844
K100-845
K100-846
K100-847
K100-848
K100-849
K100-850
K100-851
K100-852
K100-853
K100-854
K100-855
K100-856
K100-857
K100-858
K100-859
K100-860
K100-861
K100-862
K100-863
K100-864
K100-865
K100-866
K100-867
K100-868
K100-869
K100-870
K100-871
K100-872
K100-873
K100-874
K100-875
K100-876
K100-877
K100-878
K100-879
K100-880
K100-881
K100-882
K100-883
K100-884
K100-885
K100-886
K100-887
K100-888
K100-889
K100-890
K100-891
K100-892
K100-893
K100-894
K100-895
K100-896
K100-897
K100-898
K100-899
K100-900
K100-901
K100-902
K100-903
K100-904
K100-905
K100-906
K100-907
K100-908
K100-909
K100-910
K100-911
K100-912
K100-913
K100-914
K100-915
K100-916
K100-917
K100-918
K100-919
K100-920
K100-921
K100-922
K100-923
K100-924
K100-925
K100-926
K100-927
K100-928
K100-929
K100-930
K100-931
K100-932
K100-933
K100-934
K100-935
K100-936
K100-937
K100-938
K100-939
K100-940
K100-941
K100-942
K100-943
K100-944
K100-945
K100-946
K100-947
K100-948
K100-949
K100-950
K100-951
K100-952
K100-953
K100-954
K100-955
K100-956
K100-957
K100-958
K100-959
K100-960
K100-961
K100-962
K100-963
K100-964
K100-965
K100-966
K100-967
K100-968
K100-969
K100-970
K100-971
K100-972
K100-973
K100-974
K100-975
K100-976
K100-977
K100-978
K100-979
K100-980
K100-981
K100-982
K100-983
K100-984
K100-985
K100-986
K100-987
K100-988
K100-989
K100-990
K100-991
K100-992
K100-993
K100-994
K100-995
K100-996
K100-997
K100-998
K100-999
K100-1000


X=1488
Y=2250
Z=-200
Y=2300
Y=2400
Y=2500
X=1488
Y=2600
Z=-200
Z=-100
Z=-100
250.0
300.0
BH-225-150
K100-100
K100-135
K100-140
K100-54
K100-163
K110-14
13(98)
12(99)
5(28)
7(99)
6(23)
4(44)
K80-82
K80-78
3(25)
K60-51
K60-54
K60-50
K60-53
102.6
R-56-94
Z=0
Z=0
138.9
R-70-94
406.7
BH-235-150
X=1488
Y=2250
Z=50
Y=2300
Y=2400
Y=2500
X=1488
Y=2600
Z=50


X=1500
Y=2250
Z=-200
Y=2300
Y=2400
Y=2500
X=1500
Y=2600
Z=-200
Z=-100
Z=-100
Z=0
Z=0
X=1500
Y=2250
Z=50
Y=2300
Y=2400
Y=2500
X=1500
Y=2600
Z=50
BH-225-150
BH-235-150
R-56-94
R-59-94
R-23-93
R-22-93
1(24)
5(23)
7(23)
8(22)
10(99)
4(99)
51.0
80.8
72.0
100.5
274.0
111.8
104.8
104.9
77.9
151.8
151.8
151.3
363.1
201.6
209.5
282.9
270.3

X=1513
Y=2250
Z=-200

Y=2300

Y=2400

Y=2500

X=1513
Y=2600
Z=-200

Z=-100

Z=-100

Z=0

Z=0

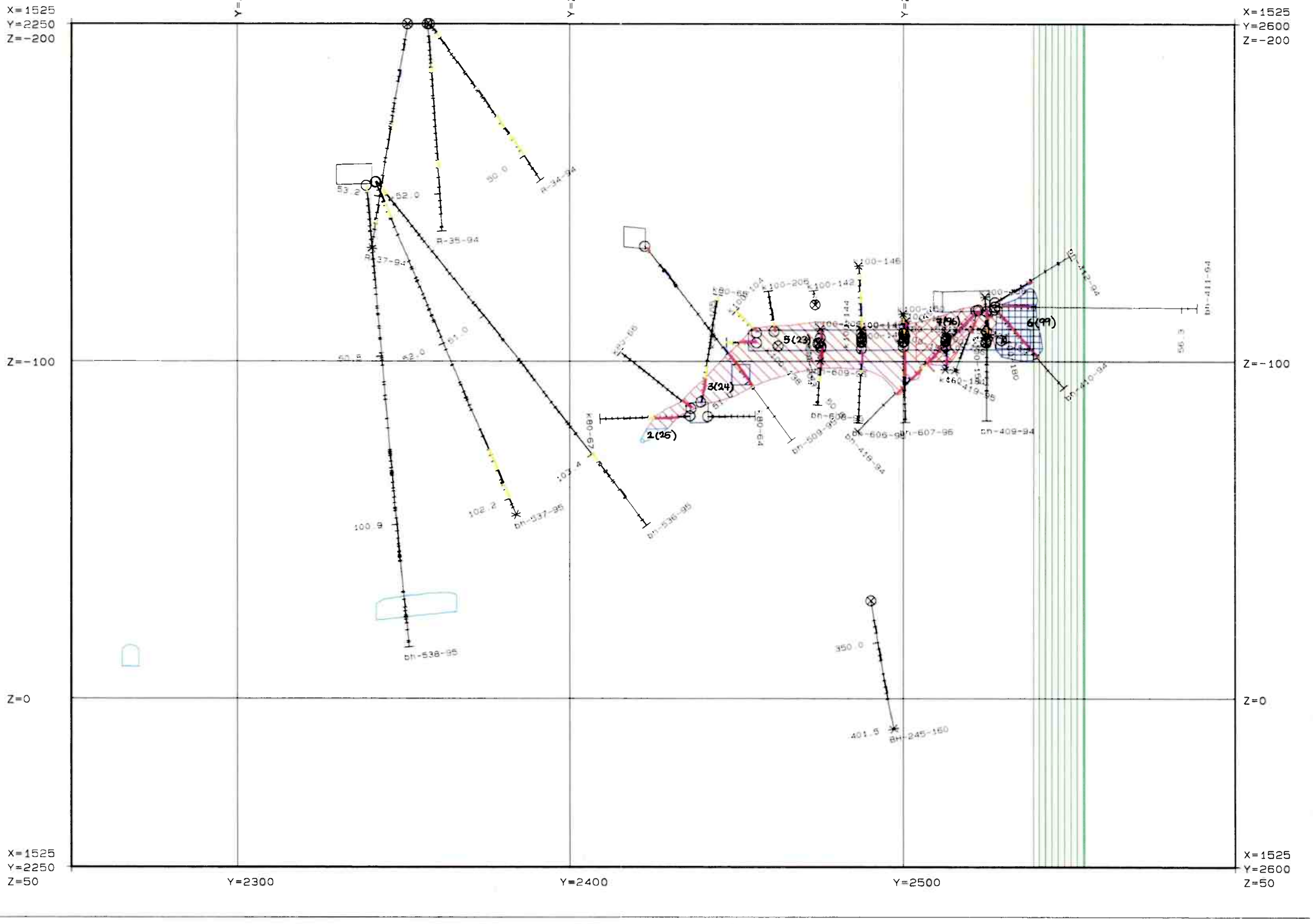
X=1513
Y=2250
Z=50

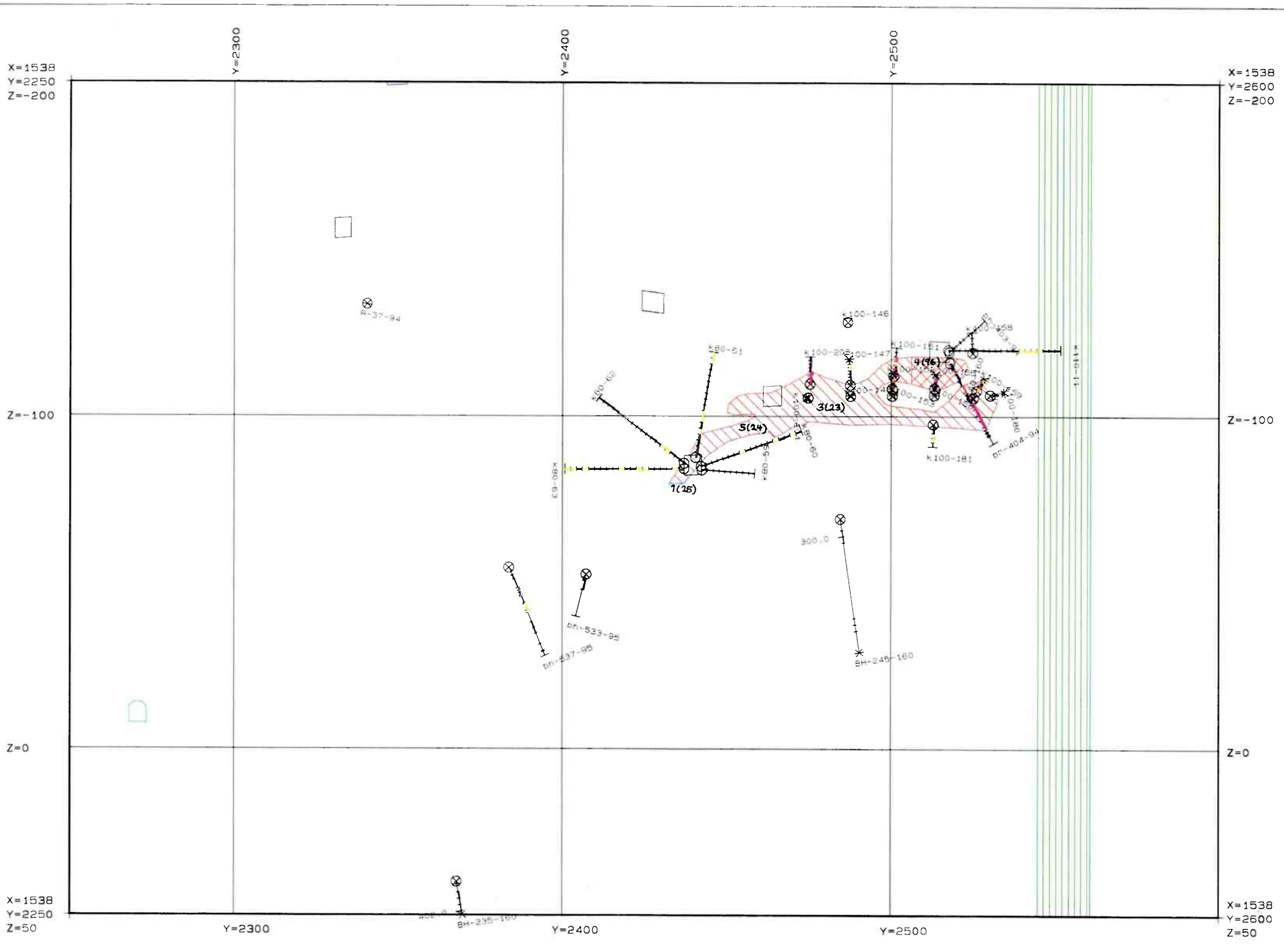
Y=2300

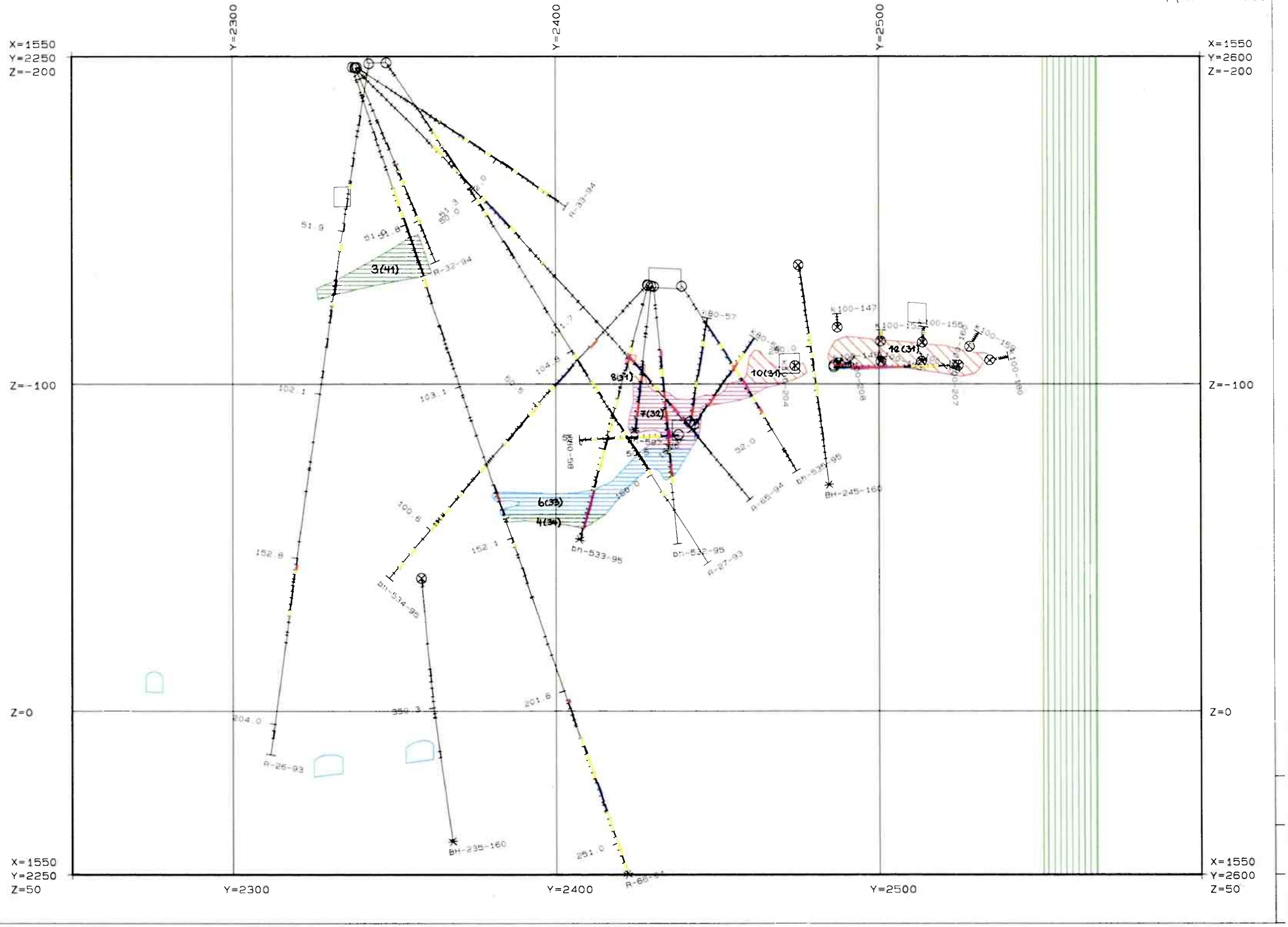
Y=2400

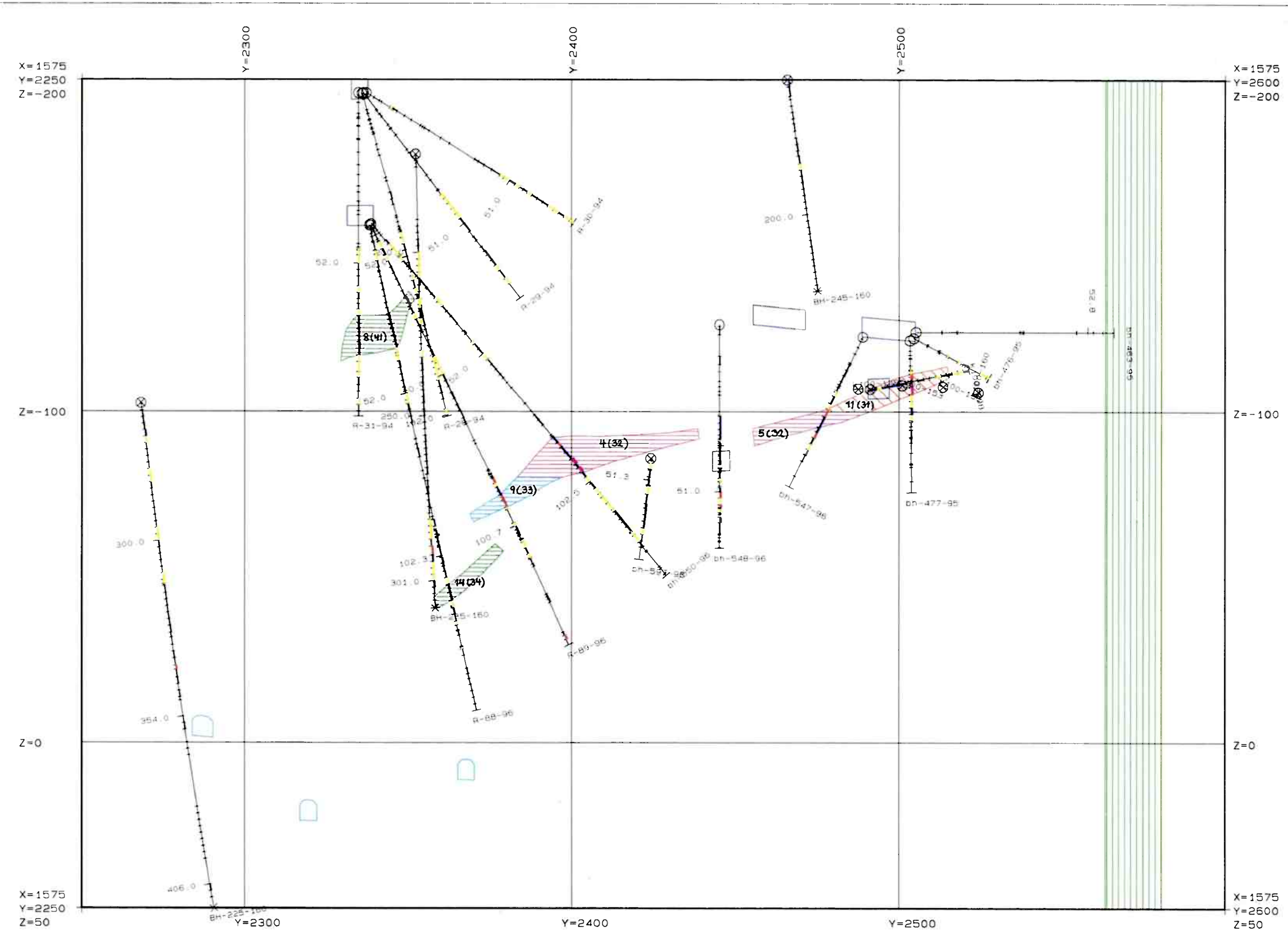
Y=2500

X=1513
Y=2600
Z=50


X=1525
Y=2250
Z=-200
Y=2300
Y=2400
Y=2500
X=1525
Y=2600
Z=-200
Z=-100
Z=-100
Z=0
Z=0
X=1525
Y=2250
Z=50
Y=2300
Y=2400
Y=2500
X=1525
Y=2600
Z=50
53.2
52.0
50.0
R-34-94
R-35-94
R-37-94
51.0
62.0
100.9
102.2
bh-537-95
103.4
bh-536-95
bh-538-95
5(23)
3(24)
2(25)
9(96)
6(97)
bh-606-95
bh-607-95
bh-409-94
bh-410-94
bh-411-94
bh-412-94
bh-608-95
bh-509-95
bh-415-94
350.0
401.5
BH-245-150


X=1538
Y=2250
Z=-200
Y=2300
Y=2400
Y=2500
X=1538
Y=2600
Z=-200
Z=-100
Z=-100
Z=0
Z=0
X=1538
Y=2250
Z=50
Y=2300
Y=2400
Y=2500
X=1538
Y=2600
Z=50
A-37-84
K80-61
K80-62
K80-63
K80-64
K80-65
K100-146
K100-147
K100-148
K100-149
K100-151
K100-181
K100-205
K100-158
K100-159
K100-160
K100-180
BH-404-84
1
3(23)
4(24)
5(24)
7(25)
300.0
BH-533-95
BH-537-95
BH-245-150
BH-235-150


X=1550
Y=2250
Z=-200
Y=2300
Y=2400
Y=2500
X=1550
Y=2600
Z=-200
Z=-100
Z=-100
Z=0
Z=0
X=1550
Y=2250
Z=50
Y=2300
Y=2400
Y=2500
X=1550
Y=2600
Z=50
3(41)
8(31)
7(32)
10(31)
12(31)
6(33)
4(34)
R-32-94
R-33-94
R-65-94
R-27-93
R-26-93
R-65-94
BH-245-160
BH-235-160
BH-534-95
BH-533-95
BH-532-95
BH-536-95
51.9
51.8
51.3
50.0
102.1
103.1
104.8
180-57
180.0
202.0
202.0
100-147
100-150
100-180
BG-010
52.0
100.6
152.8
152.1
150.0
204.0
350.3
201.8
251.0


X=1575
Y=2250
Z=-200
Y=2300
Y=2400
Y=2500
X=1575
Y=2600
Z=-200
Z=-100
Z=-100
Z=0
Z=0
X=1575
Y=2250
Z=50
Y=2300
Y=2400
Y=2500
X=1575
Y=2600
Z=50
8(41)
4(32)
9(33)
11(34)
5(32)
11(31)
BH-245-150
BH-225-150
bh-477-95
bh-548-96
R-30-94
R-29-94
R-31-94
R-28-94
R-89-96
R-88-96
51.0
52.0
102.0
100.7
102.3
200.0
300.0
301.0
354.0
406.0
250.0

X=1600
Y=2250
Z=-200

Y=2300

Y=2400

Y=2500

X=1600
Y=2600
Z=-200

BH-235-160

204.0

250.2

BH-235-160

Z=-100

52.1

53.7

52.0

101.0

100.0

101.0

100.8

BD-591-96

BD-592-96

BD-590-96

BD-594-96

BD-595-96

BD-593-96

6(32)

5(32)

7(33)

4(33)

8(34)

3(34)

152.0

152.5

2(35)

201.0

R-72-94

200.0

R-52-94

350.0

200.6

R-60-94

412.0

BH-232-

Z=0

Z=0

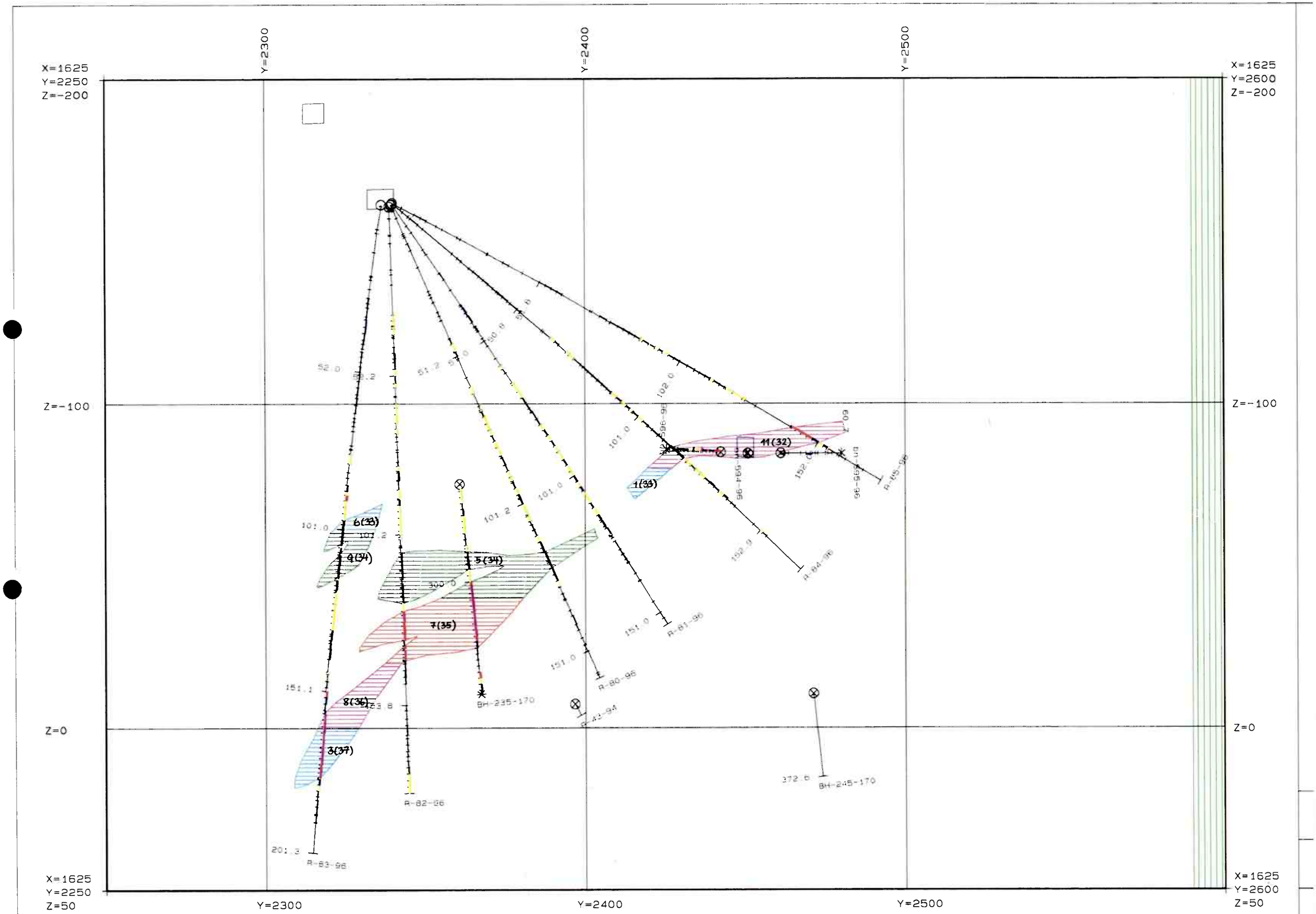
X=1600
Y=2250
Z=50

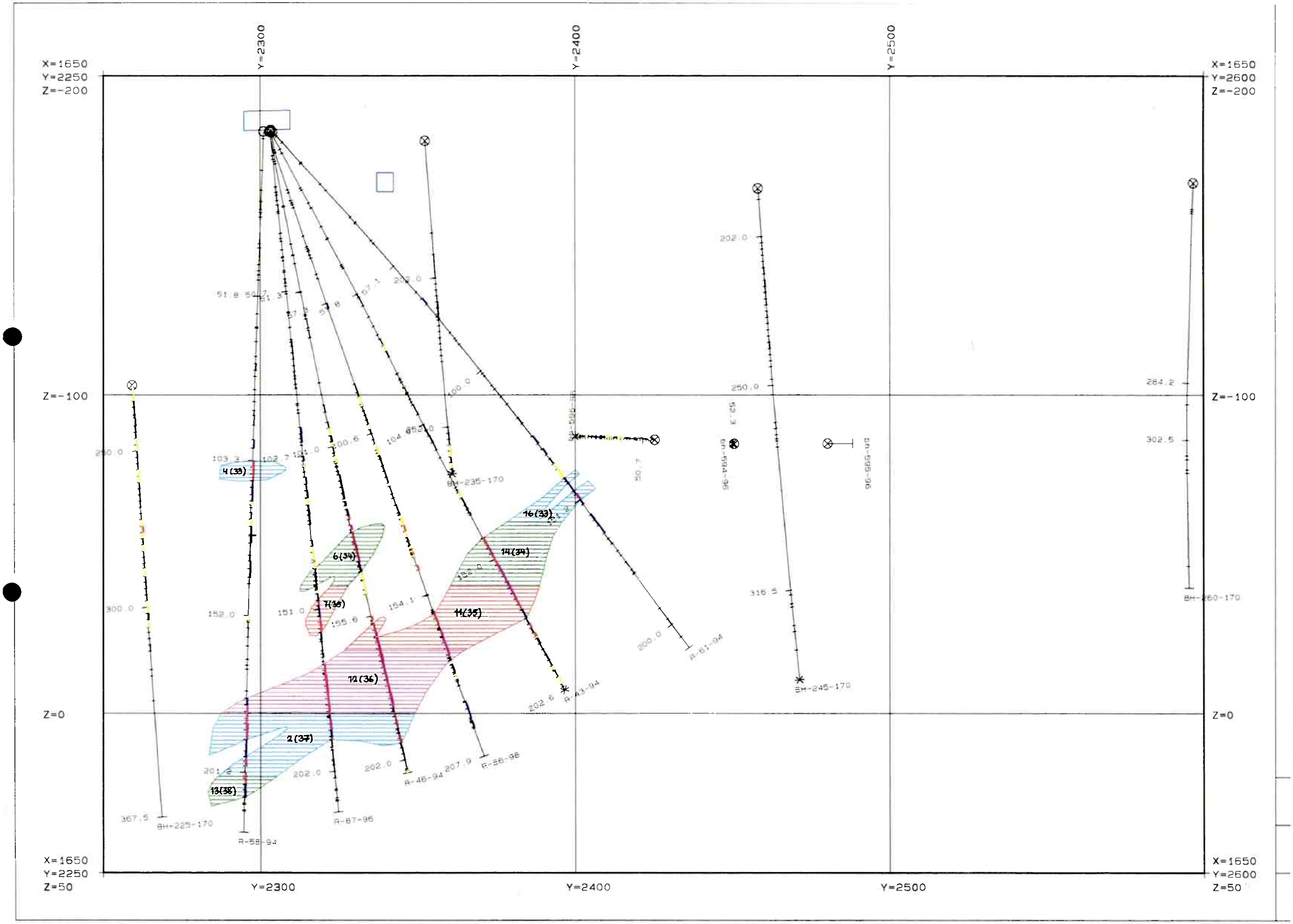
Y=2300

Y=2400

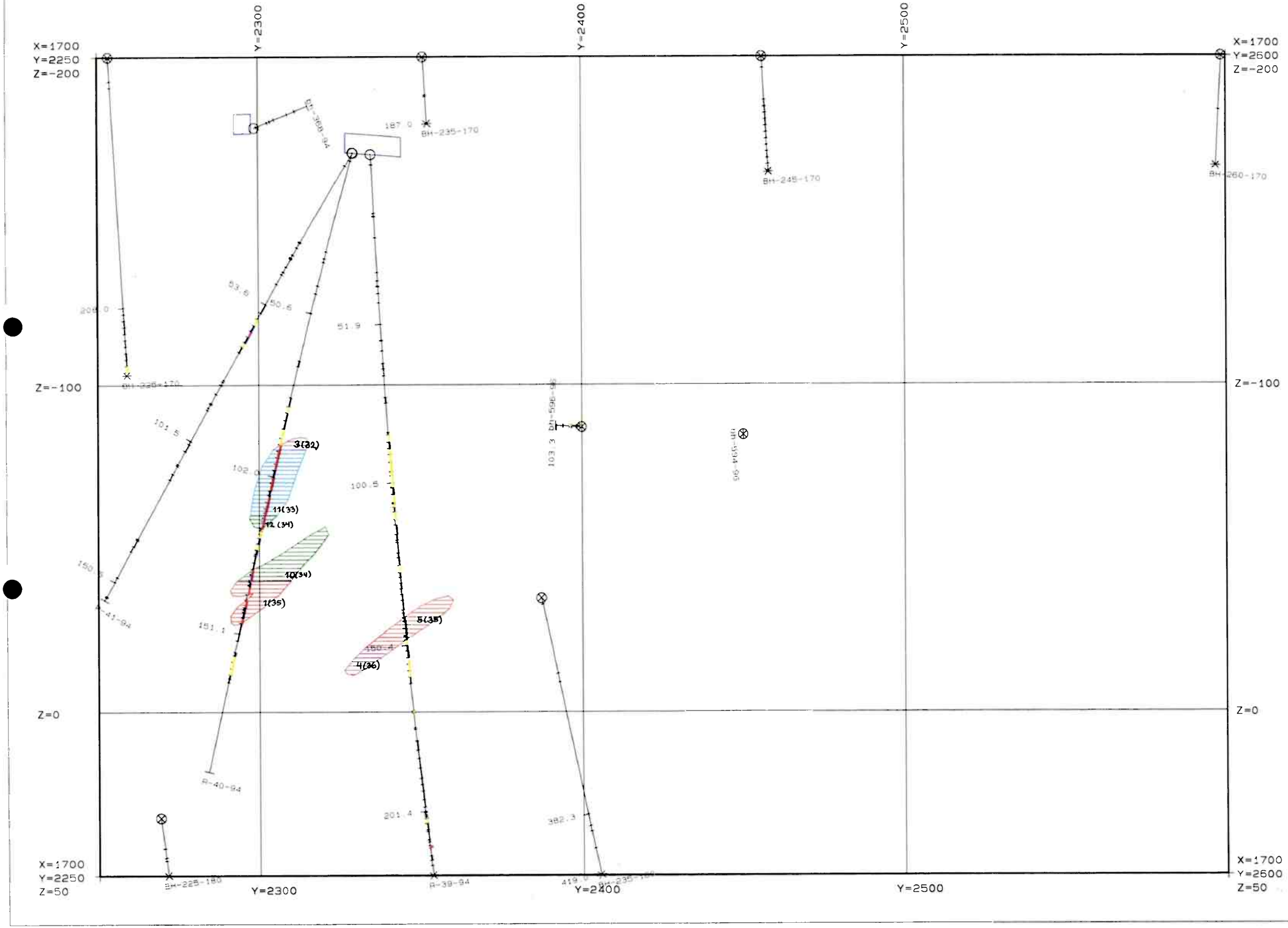
Y=2500

X=1600
Y=2600
Z=50


X=1625
Y=2250
Z=-200
Y=2300
Y=2400
Y=2500
X=1625
Y=2600
Z=-200
Z=-100
Z=-100
Z=0
Z=0
X=1625
Y=2250
Z=50
Y=2300
Y=2400
Y=2500
X=1625
Y=2600
Z=50
1(33)
2(33)
3(37)
4(34)
5(34)
6(33)
7(35)
8(36)
11(32)
R-83-96
R-82-96
R-80-96
R-81-96
R-84-96
R-85-96
R-43-94
BH-235-170
BH-245-170
372.6
20.3
151.1
151.0
152.9
300.0
101.0
101.2
102.0

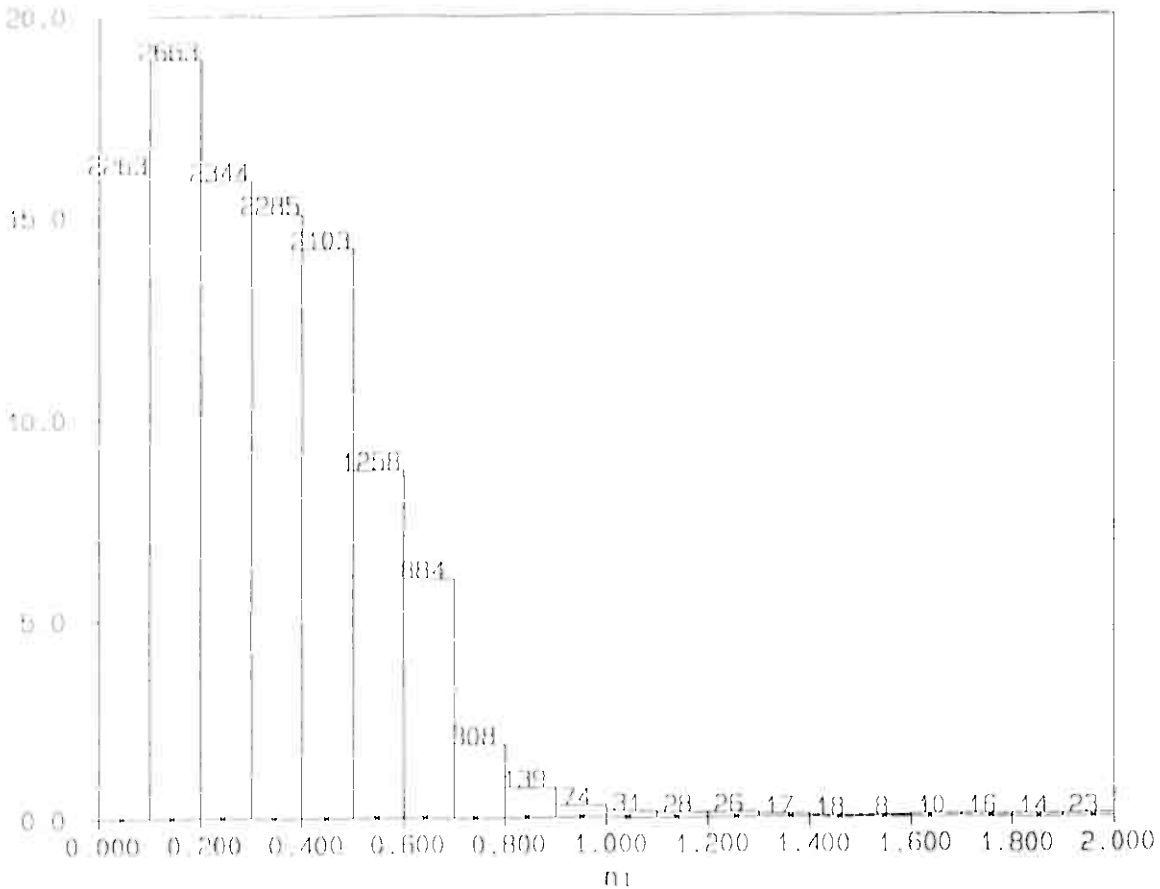


X=1650
Y=2250
Z=-200
Y=2300
Y=2400
Y=2500
X=1650
Y=2600
Z=-200
Z=-100
Z=0
X=1650
Y=2250
Z=50
Y=2300
Y=2400
Y=2500
X=1650
Y=2600
Z=50
4(33)
16(33)
14(34)
6(34)
7(38)
11(35)
12(36)
2(37)
13(38)
BH-235-170
BH-245-170
BH-260-170
BH-225-170
R-58-94
R-87-95
R-46-94
R-56-95
R-43-94
R-61-94
BH-594-95
BH-595-95


X=1700
Y=2250
Z=-200
Y=2300
Y=2400
Y=2500
X=1700
Y=2600
Z=-200
BH-235-170
BH-245-170
BH-260-170
BH-226-170
R-41-94
53.6
50.6
51.9
Z=-100
Z=-100
101.5
3(32)
102.0
11(33)
12(34)
10(34)
1(35)
151.1
5(35)
4(36)
R-40-94
201.4
103.3
382.3
R-39-94
BH-225-180
BH-235-180
Z=0
Z=0
X=1700
Y=2250
Z=50
Y=2300
Y=2400
Y=2500
X=1700
Y=2600
Z=50

Histogram of ni

(Total 27661.33/27969.16 m)



SELECTION OF DRILL CORE SAMPLES BY all.stl

Rock types: all

Drill hole	from	to
P-5-96	0.00	456.25
P-3-96	0.00	207.15
bh-627-96	0.00	67.00
bh-628-96	0.00	52.30
bh-629-96	0.00	47.25
bh-630-96	0.00	40.00
bh-631-96	0.00	40.00
bh-632-96	0.00	37.60
bh-692-97	0.00	49.15
bh-619-96	0.00	32.40
bh-620-96	0.00	53.10
bh-622-96	0.00	41.40
bh-621-96	0.00	66.55
bh-623-96	0.00	60.30
bh-624-96	0.00	46.00
bh-625-96	0.00	44.25
bh-626-96	0.00	29.60
bh-694-97	0.00	47.55
P-7-96	0.00	503.33
bh-611-96	0.00	51.67
bh-612-96	0.00	22.65
bh-613-96	0.00	38.85
bh-615-96	0.00	81.60
bh-614-96	0.00	32.55
bh-616-96	0.00	46.85
bh-617-96	0.00	66.10
bh-648-96	0.00	52.70
bh-696-97	0.00	71.35
bh-633-96	0.00	41.10
bh-634-96	0.00	39.50
bh-637-96	0.00	41.55
bh-636-96	0.00	68.80
bh-635-96	0.00	58.10
bh-639-96	0.00	30.85
bh-640-96	0.00	48.45
bh-638-96	0.00	86.90
R-25-93	0.00	230.50
BH-225-130	0.00	451.00
bh-555-96	0.00	62.70
bh-554-96	0.00	27.55

Number of samples is 14734
Number of samples in plot is 14512

12.3.1997

Appendix 1

Appendix T

DISTRIBUTION OF ni WEIGHTED BY length , 12.3.1997/all.stl

class		no of samples	freq	cumul freq.	freq %	cumul %	class mean
0.0000 -	0.1000	2263	4504.68	4504.68	16.11	16.11	0.0455
0.1000 -	0.2000	2663	5296.64	9801.32	18.94	35.04	0.1446
0.2000 -	0.3000	2344	4442.93	14244.25	15.89	50.93	0.2443
0.3000 -	0.4000	2285	4215.37	18459.62	15.07	66.00	0.3447
0.4000 -	0.5000	2103	3975.52	22435.14	14.21	80.21	0.4488
0.5000 -	0.6000	1258	2449.22	24884.36	8.76	88.97	0.5470
0.6000 -	0.7000	884	1692.12	26576.48	6.05	95.02	0.6421
0.7000 -	0.8000	308	531.46	27107.94	1.90	96.92	0.7419
0.8000 -	0.9000	139	215.54	27323.48	0.77	97.69	0.8436
0.9000 -	1.0000	74	87.38	27410.86	0.31	98.00	0.9520
1.0000 -	1.1000	31	43.05	27453.91	0.15	98.16	1.0428
1.1000 -	1.2000	28	36.12	27490.03	0.13	98.29	1.1391
1.2000 -	1.3000	26	36.55	27526.58	0.13	98.42	1.2563
1.3000 -	1.4000	17	22.65	27549.23	0.08	98.50	1.3638
1.4000 -	1.5000	18	15.30	27564.53	0.05	98.55	1.4603
[illegible]000 -	1.6000	8	14.05	27578.58	0.05	98.60	1.5480
1.6000 -	1.7000	10	19.40	27597.98	0.07	98.67	1.6373
1.7000 -	1.8000	16	18.80	27616.78	0.07	98.74	1.7578
1.8000 -	1.9000	14	22.15	27638.93	0.08	98.82	1.8523
1.9000 -	2.0000	23	22.40	27661.33	0.08	98.90	1.9598
2.0000 -	5.8700	202	307.97	27969.30	1.10	100.00	3.1824
totals		14714	27969.30	27969.30	100.00	100.00	0.3474

minimum.....	0.0000
maximum.....	5.8700
range.....	5.8700
arithmetic mean...	0.3474
geometric mean....	0.2475
median.....	0.2900
variance.....	0.1457
std. deviation....	0.3817
std. error.....	0.0023
relative deviation	1.0989
[illegible]ness.....	5.4800
kurtosis.....	42.8872
percentile of 25..	0.1400
percentile of 75..	0.4600

BASIC STATISTICS, WEIGHTED BY length , 12.3.1997/all.stl

var	samples	w sum	min	max	mean
ni	14714	27969.16	0.000000	5.870000	0.347355
var	variance	skewness	kurtosis	std.dev.	std.error
ni	0.145696	5.480009	42.887165	0.381702	0.002282
var	geom.mean	f25	f50	f75	rel.dev.
ni	0.247544	0.140000	0.290000	0.460000	1.098880

Nikkel og Olivin AS
Markus Ekberg

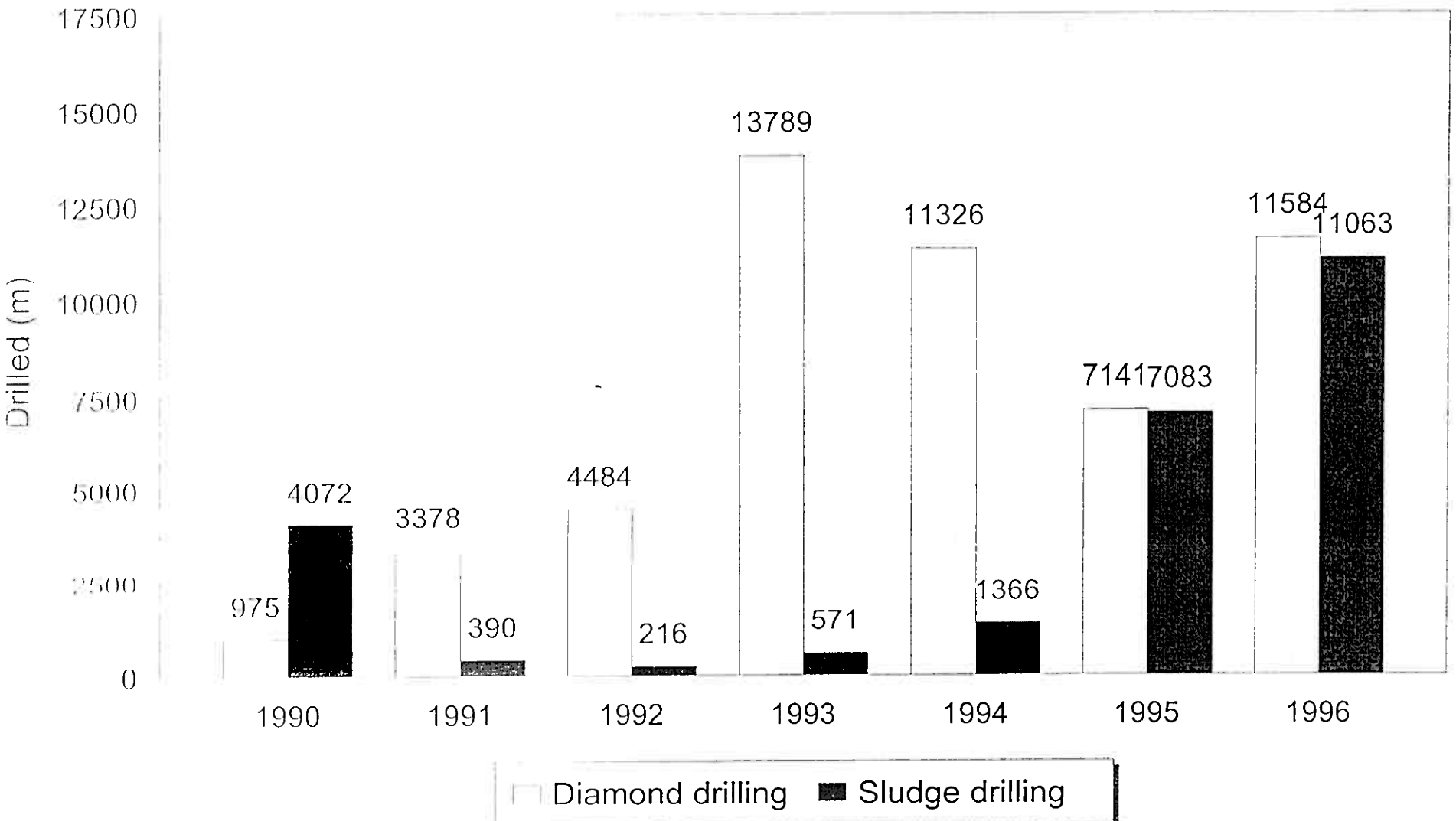
28/10/94

DENSITIES OF THE SAMPLES, WESTERN ORE BODY

Drill hole	Depth	Pol.section	Core sampl	Ni HNO3	Density	Sample
R-7-93	142.5	X		0.58	3.41	93-31045
R-7-93	155.0	X		0.68	3.42	93-31052
R-7-93	169.0		X	0.61	3.44	93-31059
R-8-93	137.0	X		0.54	3.39	93-31114
R-8-93	143.2	X		0.54	3.41	93-31118
R-8-93	138.0		X	0.60	3.39	93-31115
R-9-93	95.0	X		0.64	3.40	93-31127
R-9-93	101.5	X		0.67	3.41	93-31131
R-9-93	106.5		X	0.42	err (2.85)	93-31133
R-9-93	117.6	X		0.66	3.38	93-31138
R-10-93	125.0		X	0.50	3.44	93-31176
R-10-93	126.3	X		0.48	3.44	93-31177
R-10-93	141.0		X	0.52	3.41	93-31184
R-10-93	150.5	X		0.62	3.38	93-31189
R-10-93	163.0		X	0.78	3.41	93-31195
R-10-93	164.5	X		0.69	3.43	93-31196
R-11-93	169.0		X	0.56	3.29	93-31259
R-11-93	183.0		X	0.64	err (3.12)	93-31266
R-11-93	207.0		X	0.59	3.38	93-31278
R-12-93	103.0		X	0.55	3.32	93-31300
R-12-93	109.0		X	0.71	3.42	93-31303
R-13-93	105.0		X	0.54	3.31	93-31330
R-13-93	113.0		X	0.58	3.32	93-31334
R-13-93	127.0		X	0.56	3.41	93-31341
R-14-93	57.6		X	0.39	3.44	93-31348
R-14-93	94.0		X	0.45	3.39	93-31360
R-14-93	110.0		X	0.59	3.47	93-31364
R-15-93	112.0		X	0.67	3.41	93-31394
R-15-93	120.0		X	0.38	3.29	93-31398
R-15-93	132.0		X	0.56	3.40	93-31404
R-15-93	142.0		X	0.65	3.43	93-31409
R-16-93	120.0		X	0.44	3.39	93-31433
R-16-93	148.0		X	0.63	3.42	93-31477
R-16-93	157.0		X	0.58	3.40	93-31451
R-18-93	114.0		X	0.55	3.34	93-31493
R-18-93	126.0		X	0.56	3.36	93-31499
R-19-93	106.0		X	0.39	3.37	93-31591
R-19-93	118.0		X	0.54	3.38	93-31597
R-20-93	142.0		X	0.48	3.34	93-31630
R-20-93	151.0		X	0.56	3.37	93-31635
40				0.567	3.390	

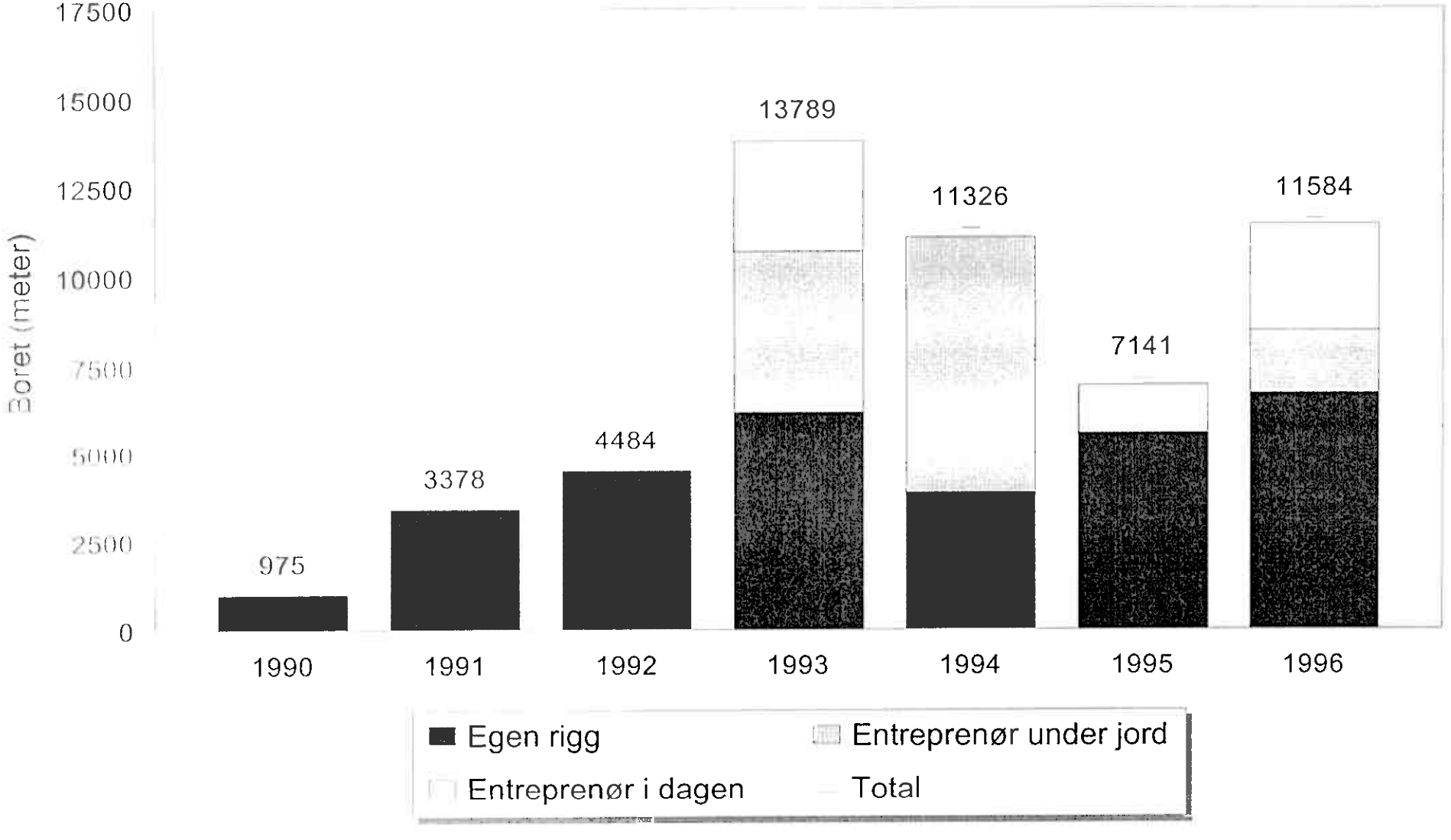
Investigations 1990-96

Nikkel og Olivin AS



Diamantboring 1990 - 96

Nikkel og Olivin AS



NIKKEL OG OLIVIN AS

03.01.97 N Steen

PRODUKSJONPLAN 12 MÅNEDER / ØSTMALM + VESTMALM (1000 t, påmating verket)

	1997 JAN Malm 1000 t	Ni-%	Gråbe 1000 t	FEB Malm 1000 t	Ni-%	Gråbe 1000 t	MAR Malm 1000 t	Ni-%	Gråbe 1000 t	APR Malm	Gråbe	MAI Malm	Gråbe	JUN Malm	Gråbe	JUL Malm	Gråbe	AUG Malm	Gråbe	SEP Malm	Gråbe	OKT Malm	Gråbe	NOV Malm	Gråbe	DES Malm	Gråbe	TOTALT 12 MÅNED Malm 1000t	Ni-%	Ort i gb 1000t	
RAMPE																															RAMPE
-ort			1.5			1.5			1.5		1.5		1.5		1.5		1.5		1.5		1.5		1.5		1.5				18.00	-ort
Sum rampe	0.0		1.5	0.0		1.5	0.0		1.5		1.5		1.5		1.5		1.5		1.5		1.5		1.5		1.5				18.00	Sum rampe
OPPFARING ØSTMALM																															OPPFARING ØSTMALM
Oppfaring til Elefant						(5.0)			(5.0)		(5.0)	(5.0)																			Oppfaring til Elefant
OPPFARING VESTMALM																															OPPFARING VESTMALM
120-nivå	2.0	0.48	1.0	2.0	0.48	1.0	2.0	0.48	1.0	2.0	1.0	2.0	1.0															10.0	0.48	5.00	120-nivå
100-nivå	1.0	0.50	1.0	1.0	0.50	1.0	1.0	0.50	1.0	1.0	1.0	1.0	1.0	1.0	1.0													6.0	0.50	6.00	100-nivå
90-nivå	2.0	0.50		1.0	0.50		1.0	0.50																				4.0	0.50		90-nivå
80-nivå	3.0	0.50	1.0	3.0	0.50	1.5	4.0	0.50	1.0	4.0	1.5	4.0	1.0	4.0	1.5	4.0	1.0	4.0	1.0	4.0	1.0	4.0	1.0	4.0	1.0	4.0	1.0	46.0	0.50	13.50	80-nivå
60-nivå	7.0	0.50	2.0	6.0	0.50	2.0	6.0	0.50	2.0	8.0	2.0	8.0	2.0	10.0	2.0	10.0	2.0	10.0	2.0	10.0	2.0	10.0	2.0	10.0	2.0	10.0	2.0	105.0	0.50	24.00	60-nivå
40-nivå																1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	6.0	0.50	6.00	40-nivå
Sum oppfaring	15.0	0.50	5.0	13.0	0.50	5.5	14.0	0.50	5.0	15.0	5.5	15.0	5.0	15.0	4.5	15.0	4.0	15.0	4.0	15.0	4.0	15.0	4.0	15.0	4.0	15.0	4.0	177.0	0.50	54.50	Sum oppfaring
ØSTMALM																															ØSTMALM
280pelar1og2	10.0	0.60		4.0	0.60																							14.0	0.60		280pelar1og2
246SV	5.0	0.80																										5.0	0.80		246SV
VESTMALM																															VESTMALM
120N2	5.0	0.50																										5.0	0.50		120N2
120S8	(Oppfaring mangler)			10.0	0.50																							10.0	0.50		120S8
120 DINO																12.0												12.0	0.65		120 DINO
100N6										21.0																		21.0	0.50		100N6
100N5 pilar																				10.0								10.0	0.50		100N5 pilar
100N7/rampeW	10.0	0.52		10.0	0.52																							20.0	0.52		100N7/rampeW
100N9				(Oppfaring mangler)			10.0	0.50																				10.0	0.50		100N9
100S8				(Oppfaring mangler)			10.0	0.50																				10.0	0.50		100S8
100S1										10.0																		10.0	0.50		100S1
100 DINO																		10.0		11.0								21.0	0.65		100 DINO
90N2				8.0	0.50		22.0	0.50																				30.0	0.50		90N2
90N7							8.0	0.50		5.0																		10.0	0.50		90N7
90N8														6.0		10.0		10.0		5.0								31.0	0.50		90N8
80N2																		6.0		14.0								20.0	0.50		80N2
80N9										10.0		20.0		10.0														40.0	0.50		80N9
80S1																															80S1
80S2	11.0	0.50		12.0	0.50					(4.5)																10.0		33.0	0.50		80S2
80S7												15.0		10.0		14.0		11.0										50.0	0.50		80S7
80S8																						11.0						11.0	0.50		80S8
60N1	5.0	0.50																										5.0	0.50		60N1
60N2																						15.0						15.0	0.50		60N2
60S1																								27.0		13.0		40.0	0.50		60S1
60S2																															60S2
60S3																				6.0		20.0		19.0				45.0	0.50		60S3
60S7												11.0		20.0		10.0		9.0										50.0	0.50		60S7
40N1																										20.0		20.0	0.50		40N1
Sum lhb	46.0	0.56		44.0	0.51		47.0	0.50		46.0		46.0		46.0		46.0		46.0		46.0		46.0		46.0		43.0		548.0	0.52		Sum lhb
	malm	ni %	ort tot	malm	ni %	ort tot	malm	ni %	ort tot	malm	ort tot	malm	ort tot	malm	ort tot	malm	ort tot	malm	ort tot	malm	ort tot	malm	ort tot	malm	ort tot	malm	ort tot	malm	Ni-%	ort tot	
SUM	61.00	0.54	21.50	57.00	0.51	20.00	61.00	0.50	20.50	61.00	22.00	61.00	21.50	61.00	21.00	61.00	20.50	61.00	20.50	61.00	20.50	61.00	20.50	61.00	20.50	58.00	20.50	725.0	0.511	249.5	
	JAN			FEB			MAR			APR		MAI		JUN		JUL		AUG		SEP		OKT		NOV		DES					

NB: Dagnproduksjon 2270 tonn hver produksjondøgn
Tonnasjen i parentes usikker, med i beytingsplanen
men ikke i påmating-tonnasje
Entreprenoren aksepterer rampedrivings-tidstabellen slik
at rampen er på 48-nivå 1.7.1997

Leonhard Nilsen & Sønners representant aksepterer denne produksjonplanen,
som er bindende for JAN måned og veiledende for andre måneder.

Hanssen Hans Markus Ekberg

Hans Hansen, anleggsleder LNS Markus Ekberg, gruvesjef N&O

Prod-prog 12 måned	Ni-%	0.511
utvinning 75%	Ni-t	2779
Ni-kons 11%	Kons-t	25265

12M01F97.WK4

LANGHULLSBRYTING NIVÅ 120-NIVÅ60

Nivå 120:

Strosse	Malmtonn	Stigort	Oppfaring	Merknad:
120N3	25.000	23		
120N2	5.000	5		
100S8	20.000	40	110	Mulig styrtsjakt til nivå 100
TOTAL	50.000	68	110	

Nivå 100:

Strosse	Malmtonn	Stigort	Oppfaring	Merknad:
100N7/W	15.000			Strossing av såle 25m 1:5
100N6	12.000			Strossing av såle 20m 1:5
100S1	5.000		18	Malmgrenser usikre
100S5	12.000			
100S8	13.000	15	18	
TOTAL	57.000	15	36	

Nivå 90:

Strosse	Malmtonn	Stigort	Oppfaring	Merknad:
90N2	24.000	9	28	
TOTAL	24.000	9	28	

Nivå 80:

Strosse	Malmtonn	Stigort	Oppfaring	Merknad:
80S1	30.000			
80S5	15.000		10	Brytes etter 100S5
80S7	51.000	15	18	
80S8	5.000			
TOTAL	101.000	15	28	

Nivå 60:

Strosse	Malmtonn	Stigort	Oppfaring	Merknad:
60N2	15.000			
60S1	38.000		14	I tillegg må det drives
60S2	43.000	15	14	en hengort langs hele
60S3	47.000		14	feltetet (se kartskisse)
60S7	46.000	15	18	
TOTAL	189.000	30	60	

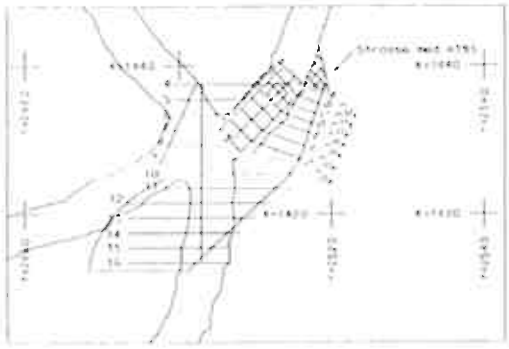
Alle strosser nivå 120 - nivå 60:

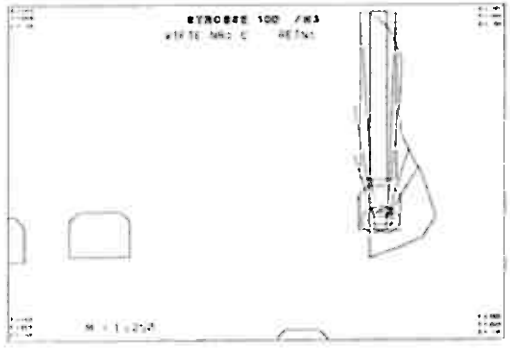
Malm	421000 tonn
Stigort	137 m
Oppfaring	262 m

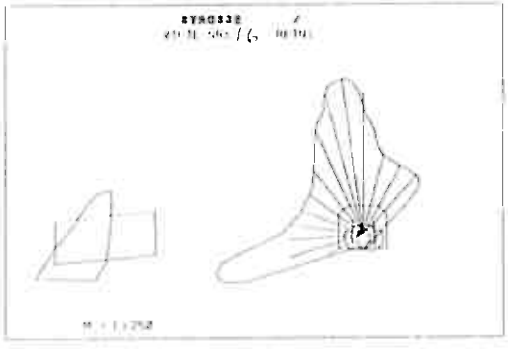
MERK:
I overstående tonnasjer er følgende strosser ikke tatt med:
- 120dino,100dino,80dino
- 100 N9,90N9,80N9 (Avventer resultater fra siste kaksboring)
- 100 N4, 90N4,80N4 (Ved åpning ødelegges adkomsten mot nord)
- Pilarer mot 100FO6 (stosse 100N7,100N6,100N5,100N2-3)
- Pilar mellom 100N5 og 100N2-3 (under 120FO1)
- 100 80N3,60N3 (Malm som står rundt ventilasjonssjakta)

Appendix 11

PRINSIPPSKISSE strosse:120N3



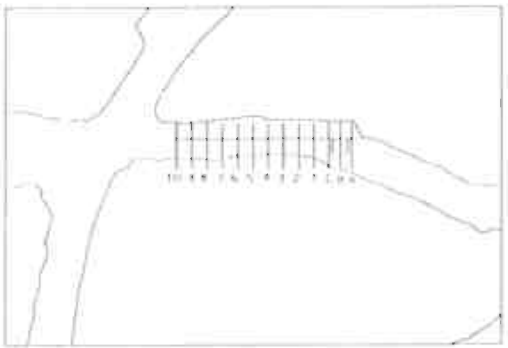


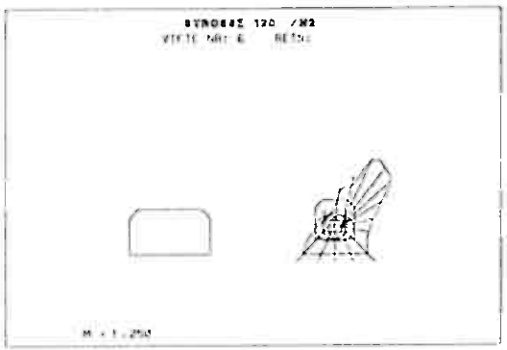


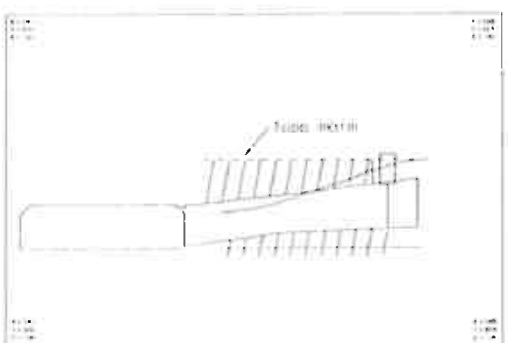
Kopi : III II , I on mann , R I , M , I S , AK , II , N3

M 1:1000

PRINSIPPSKISSE strosse:120N2





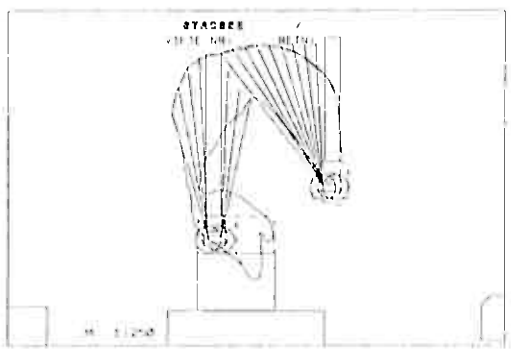


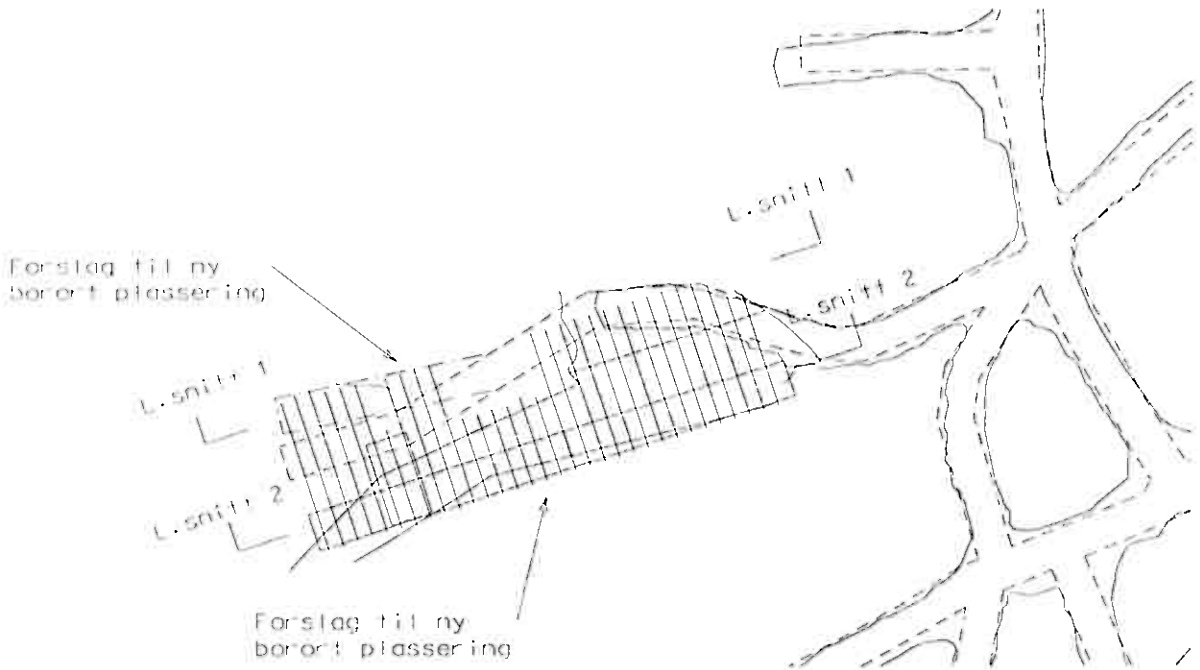
kopi: HFH, Fornemann, RT, MF, LS, AK, IF, NS

M=1:1000

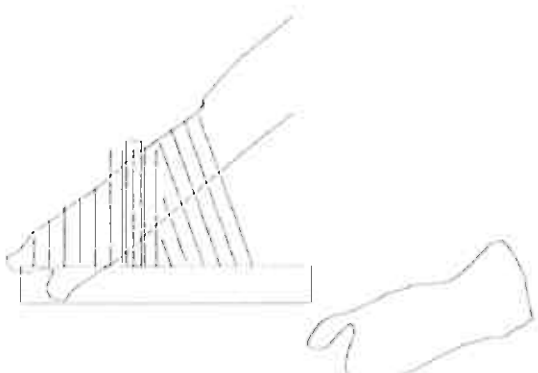
PRINSIPPSKISSE strosse:1208

Vertikalsnitt spalte

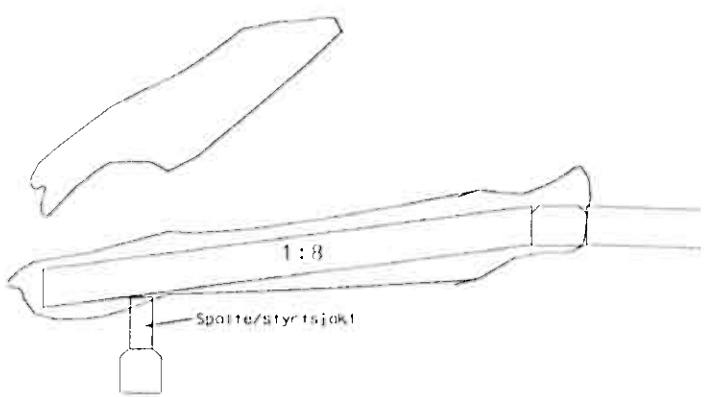




Lengdesnitt 1



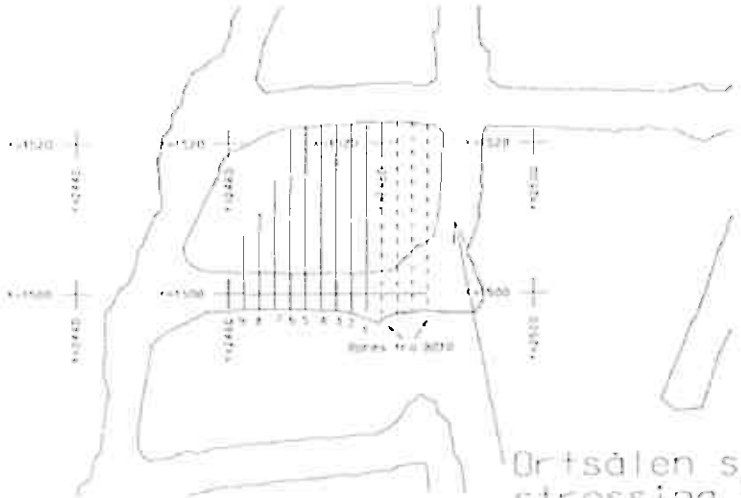
Lengdesnitt 2



kopi: HTT, Formann, RT, MF, LS, AK, IE, NS

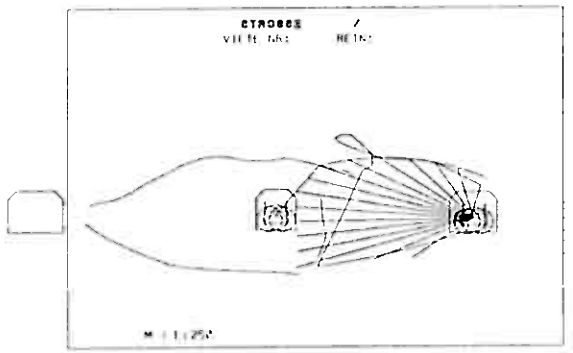
M=1:1000

PRINSIPPSKISSE strosse:100N6

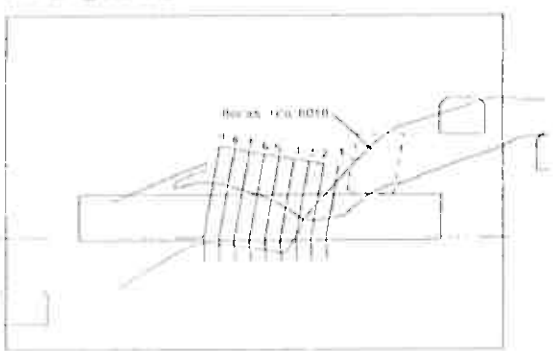


Ortsålen senkes ved strossing til fall 1:5

VIFTE NR 1



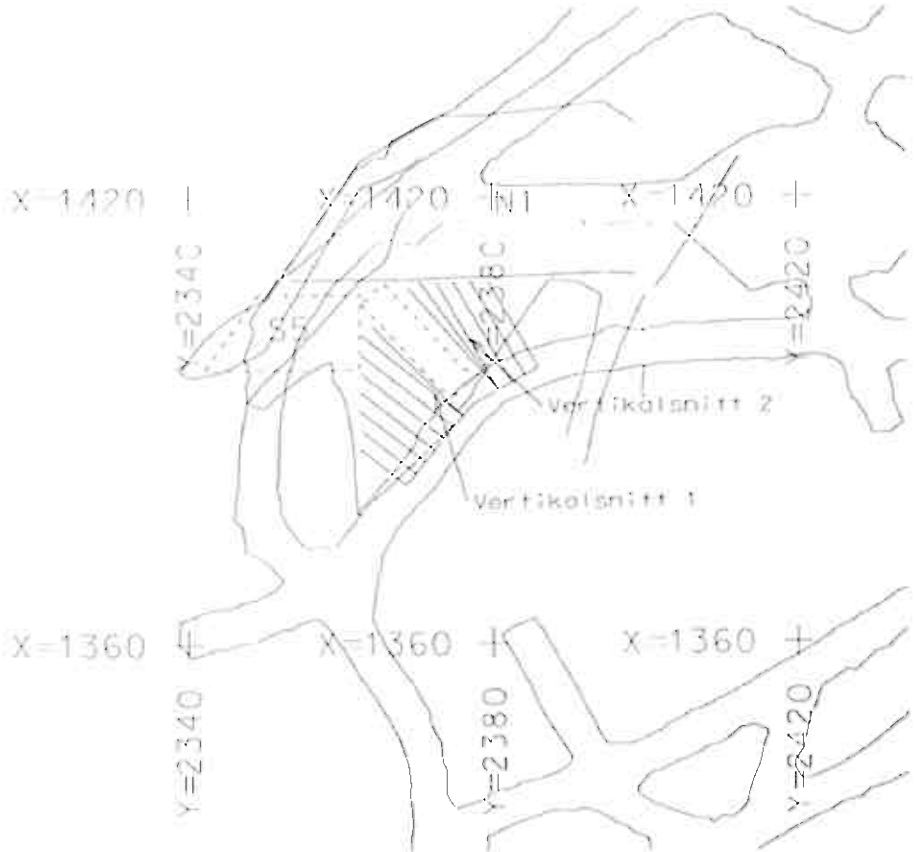
Lengdesnitt



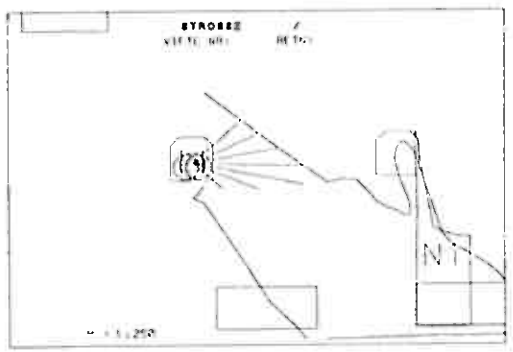
Kopi: HFH, Formann, RI, MF, LS, AK, IF, NS

M=1:1000

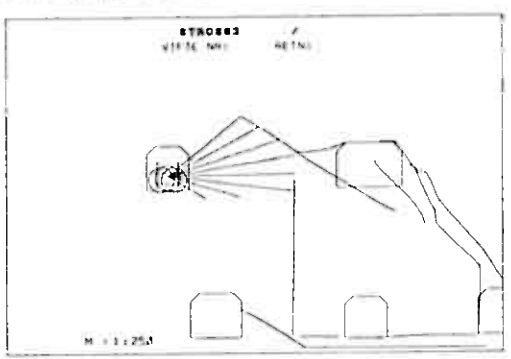
PRINSIPPSKISSE strosse:100s1



Vertikalsnitt 1



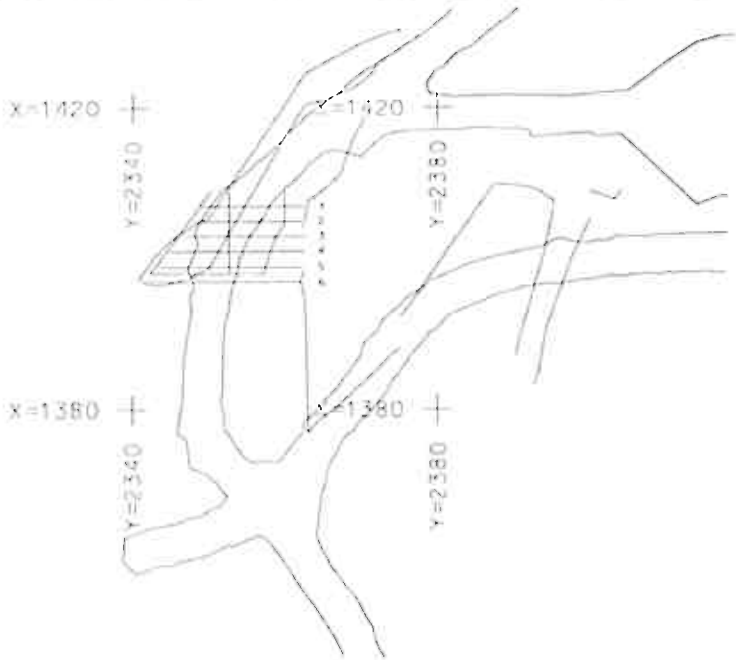
Vertikalsnitt 2



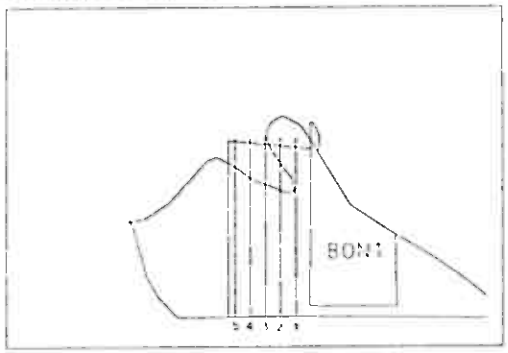
Kopi: HEH, Formann, RT, ME, LS, AK, IF, NS

M=1:1000

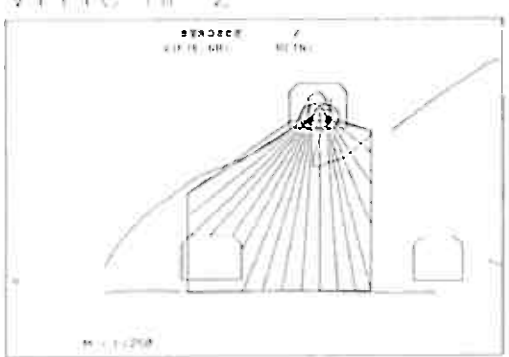
PRINSIPPSKISSE strosse:100S5



Lengdesnitt



Ville nr 2

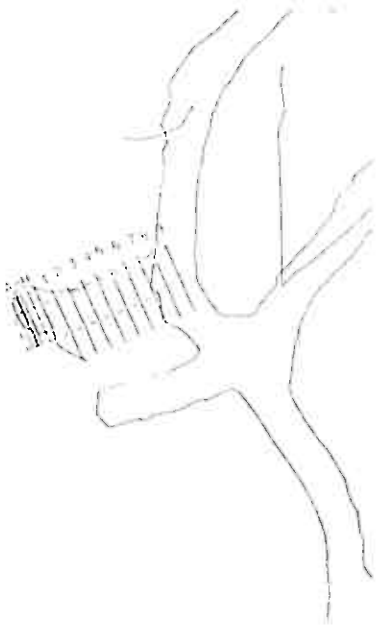


kopi: rll ll, Formann, RT, M, J S, AK, JT, NS

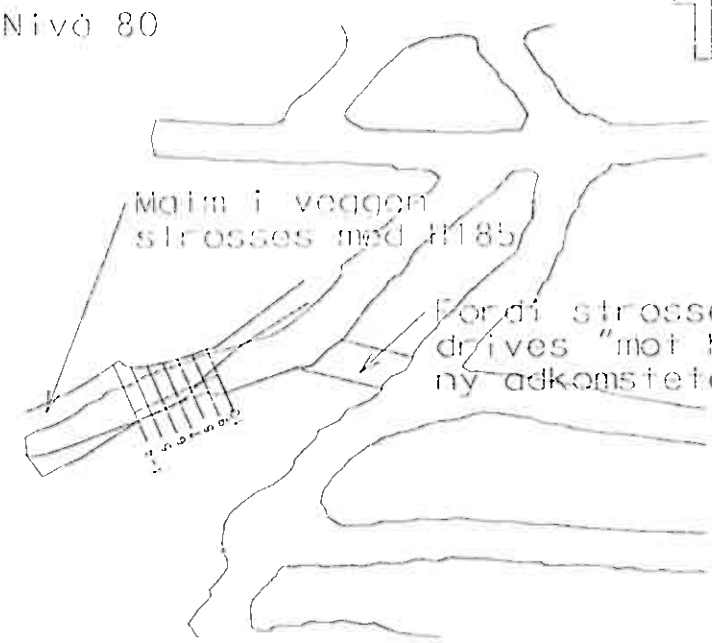
M=1:1000

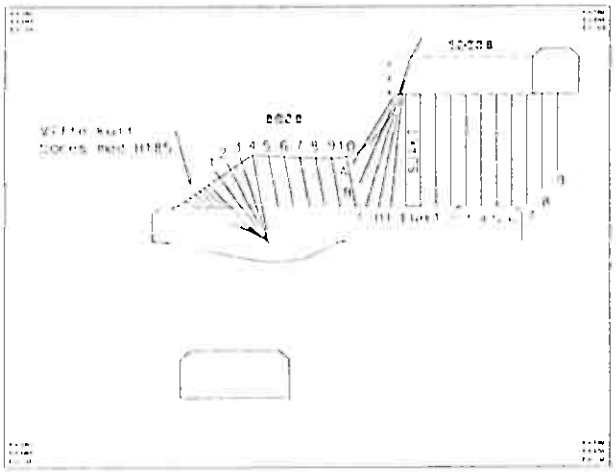
PRINSIPPSKISSE strosse: 80S8 100S8

Nivå 100



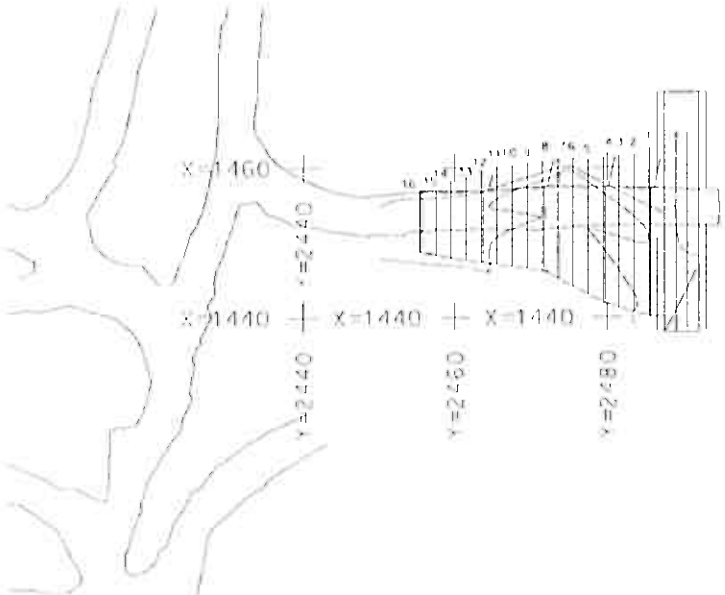
Nivå 80

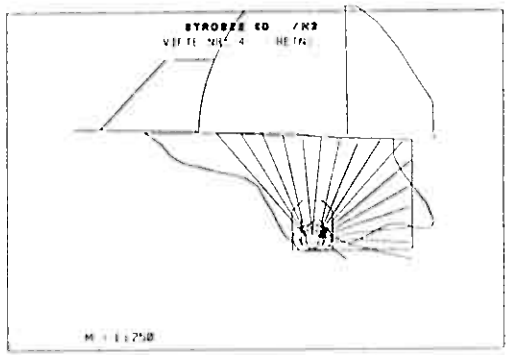


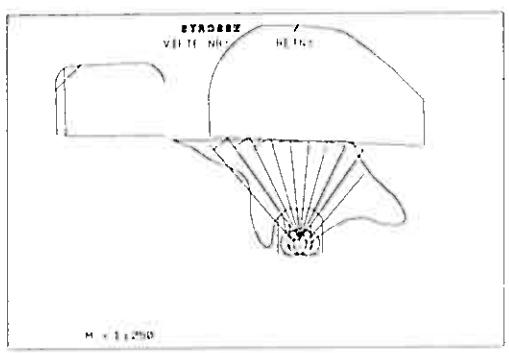


Kopi: [illegible]

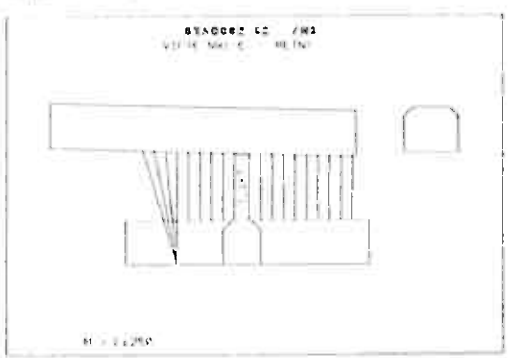
PRINSIPPSKISSE strosse:90N2

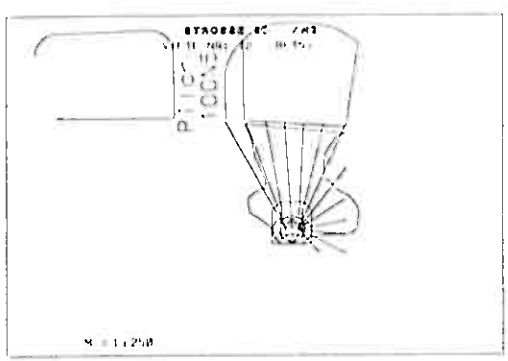






Spatten

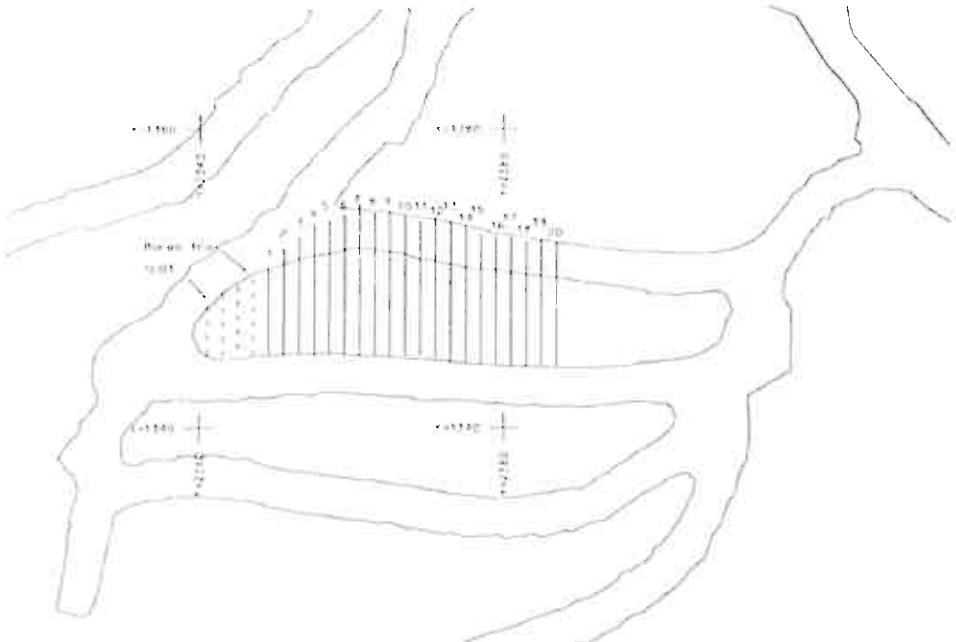


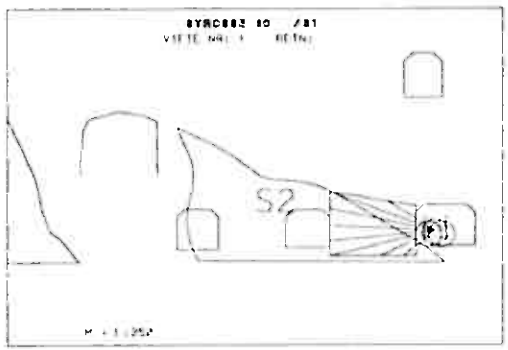


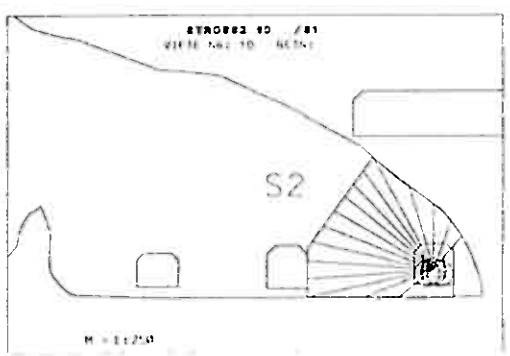
Kopi: HH, Lacroix, RJ, ME, LS, AK, IT, NS

M=1:1000

PRINSIPPSKISSE strosse:80S1



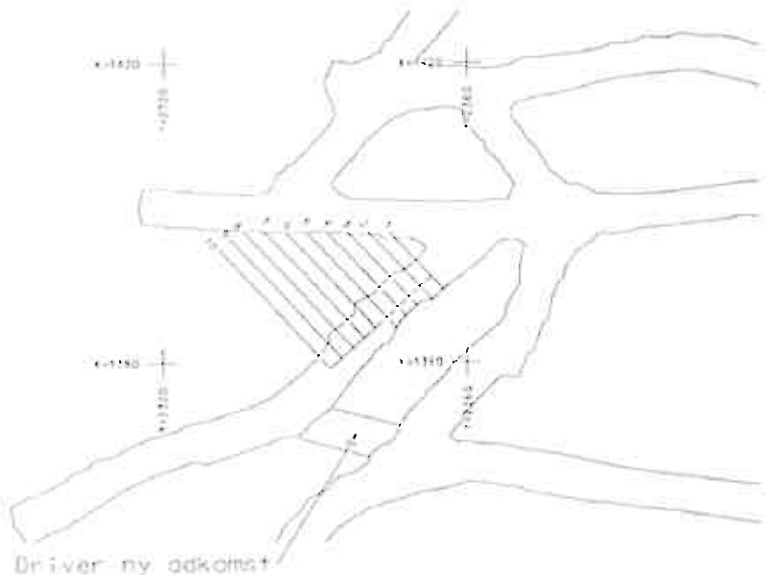




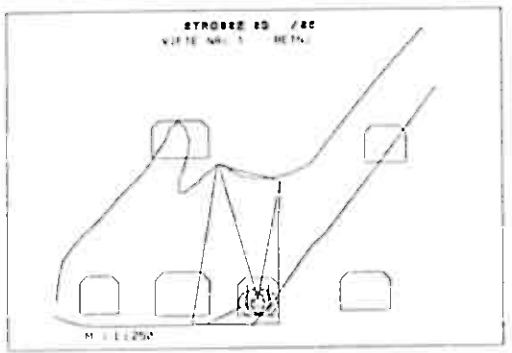
kopi : [illegible]

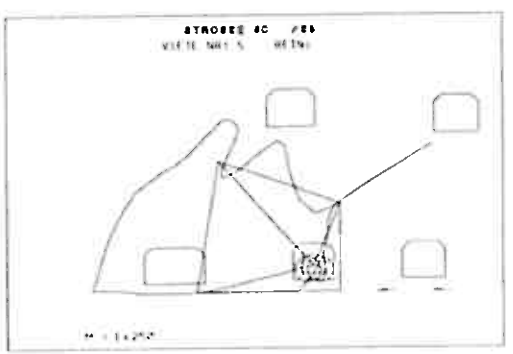
M=1:1000

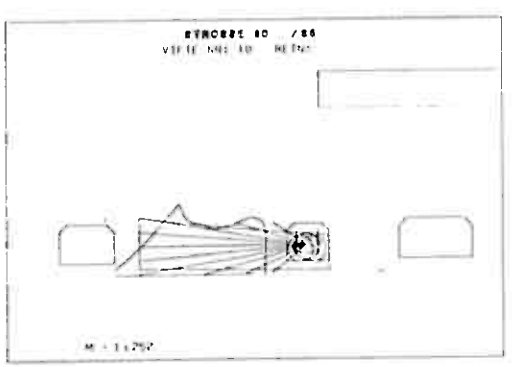
PRINSIPPSKISSE strosse:80S5



Driver ny adkomst
fra 80 syd





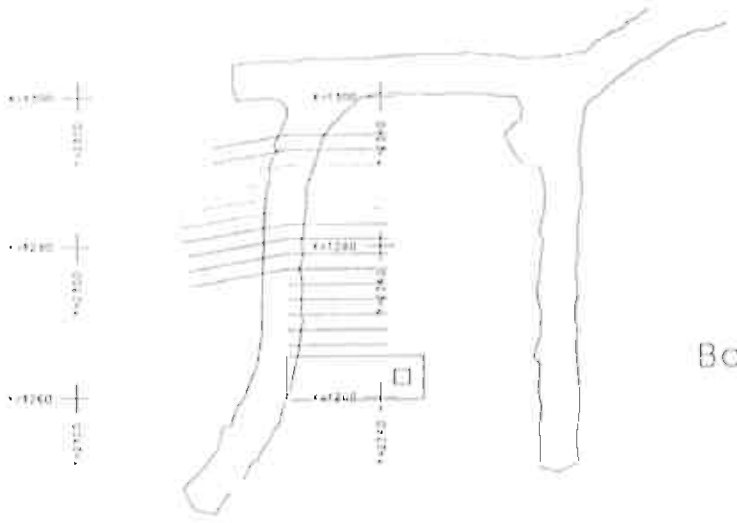


kopi: HEH, Lorentzen, RT, MF, LS, AK, IF, NS

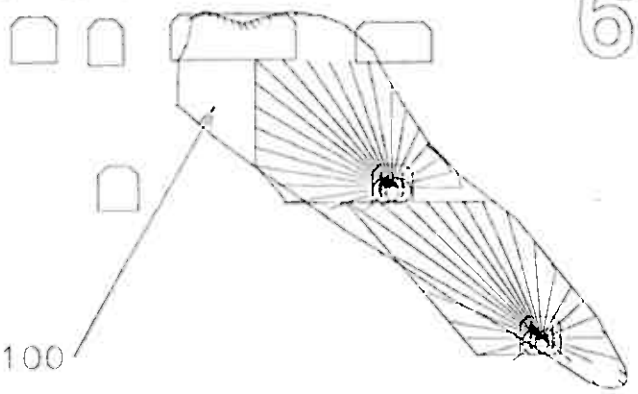
M=1:1000

PRINSIPPSKISSE strosse: 80s7

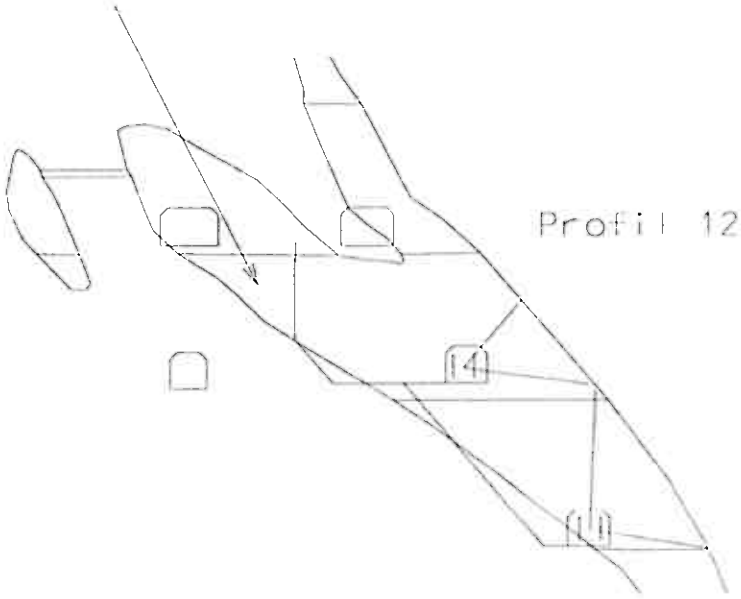
60s7



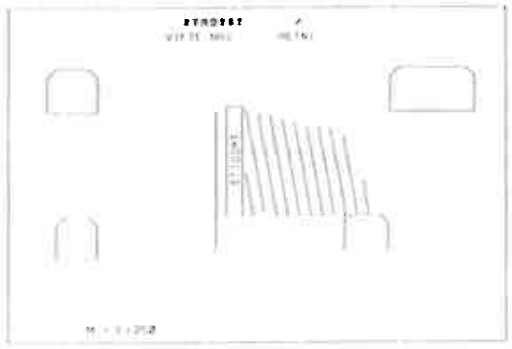
Profil 1275N



Bores fra nivå 100



Profil 1287.5N

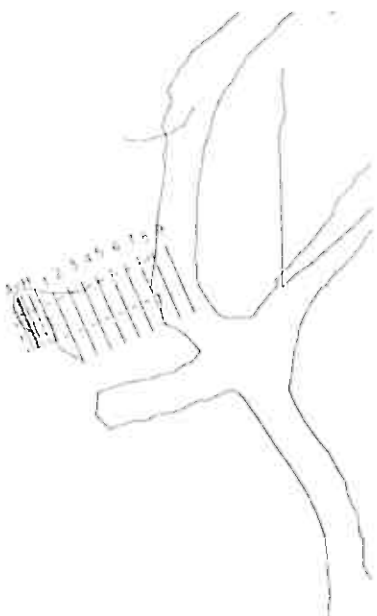


Kopi: [illegible]

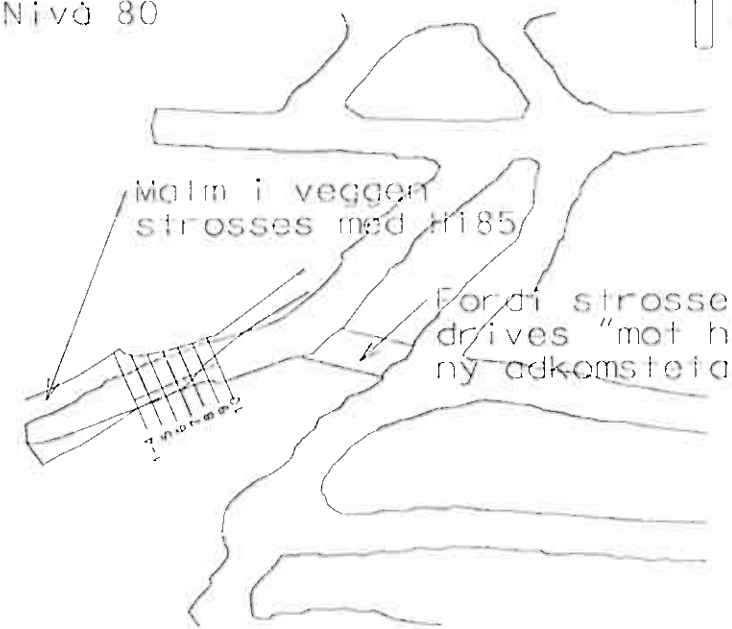
M=1:1000

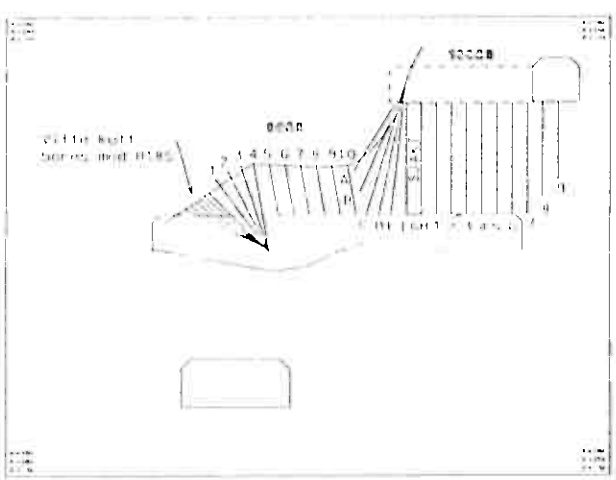
PRINSIPPSKISSE strosse: 80S8 100S8

Nivå 100



Nivå 80

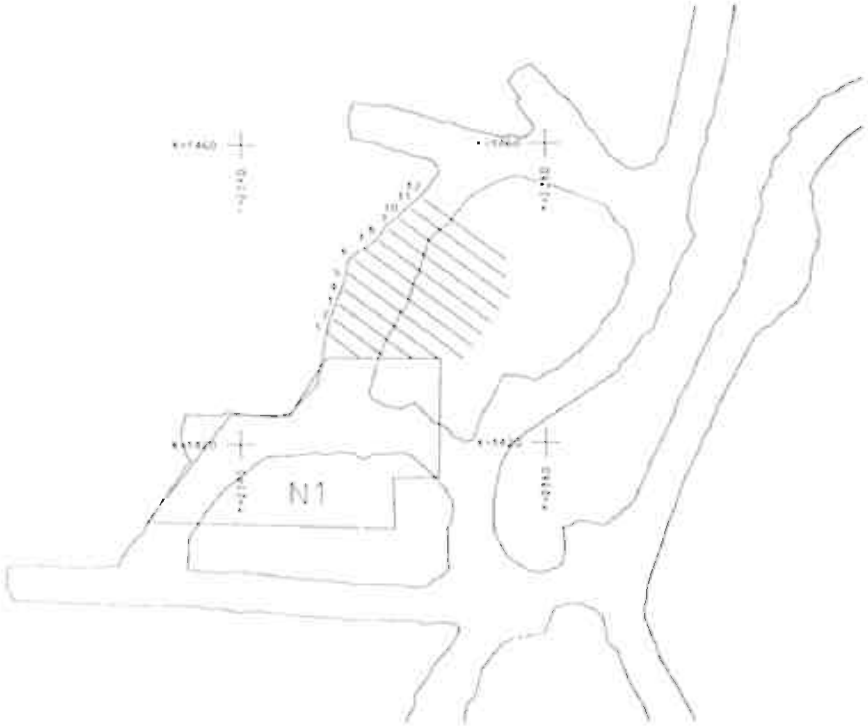


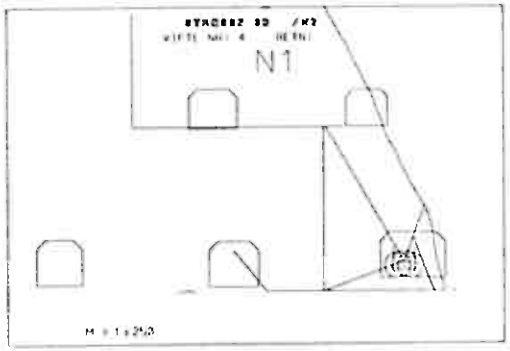


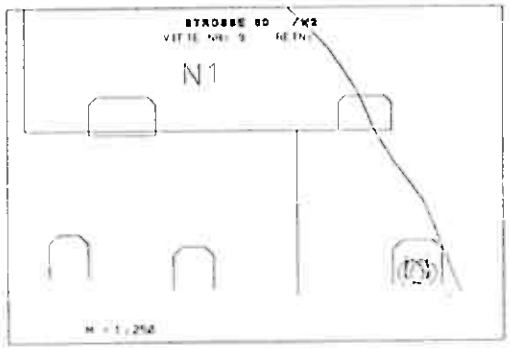
kopi: JH, Tormenn, RT, MF, LS, AK, IF, NS

M=1:1000

PRINSIPPSKISSE strosse:60N2



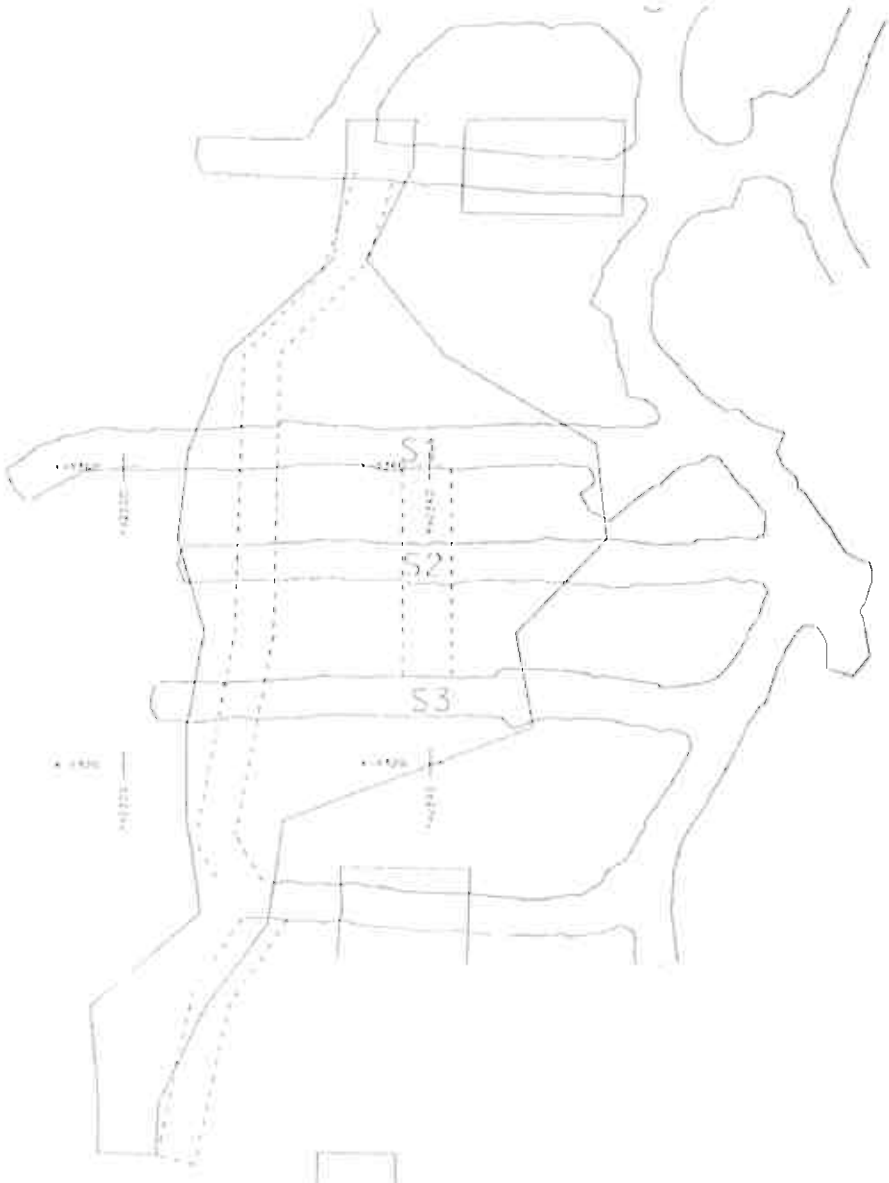


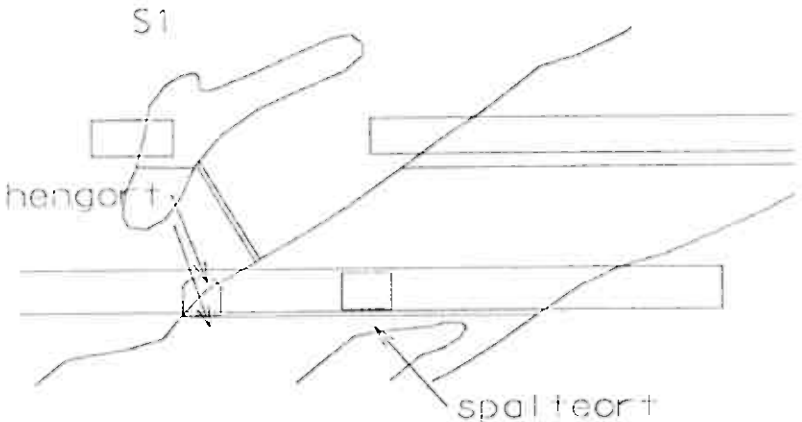


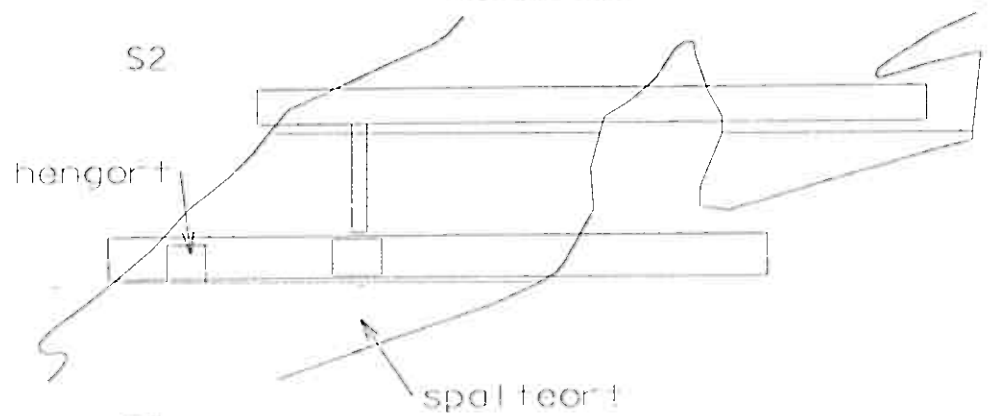
kopi: HEH, Formann, RT, MF, IS, AK, IF, NS

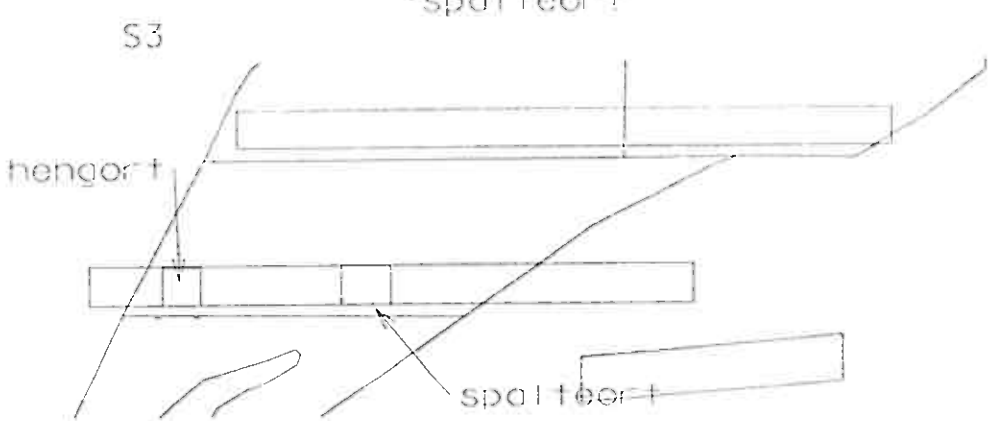
M=1:1000

PRINSIPPSKISSE strosse:60SYD





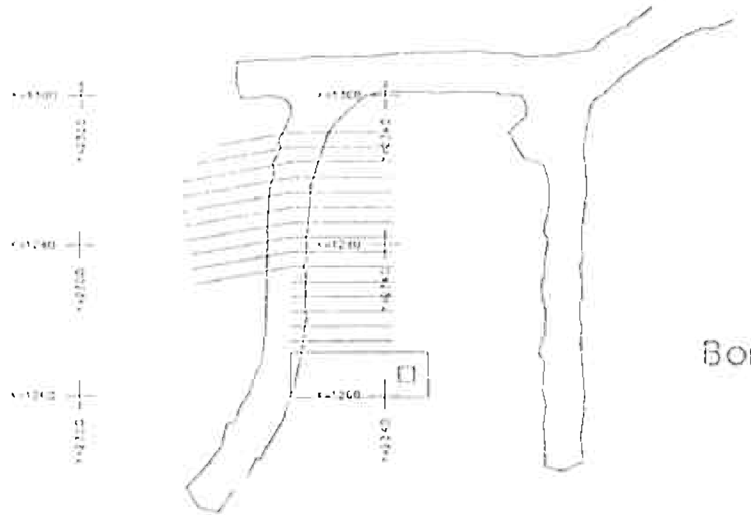


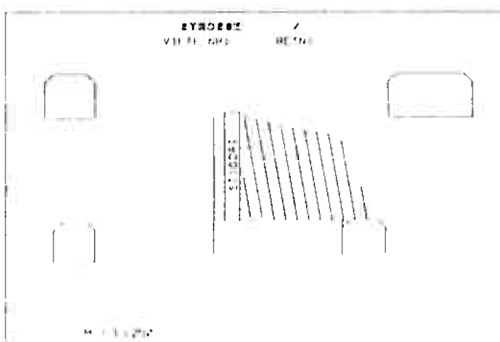


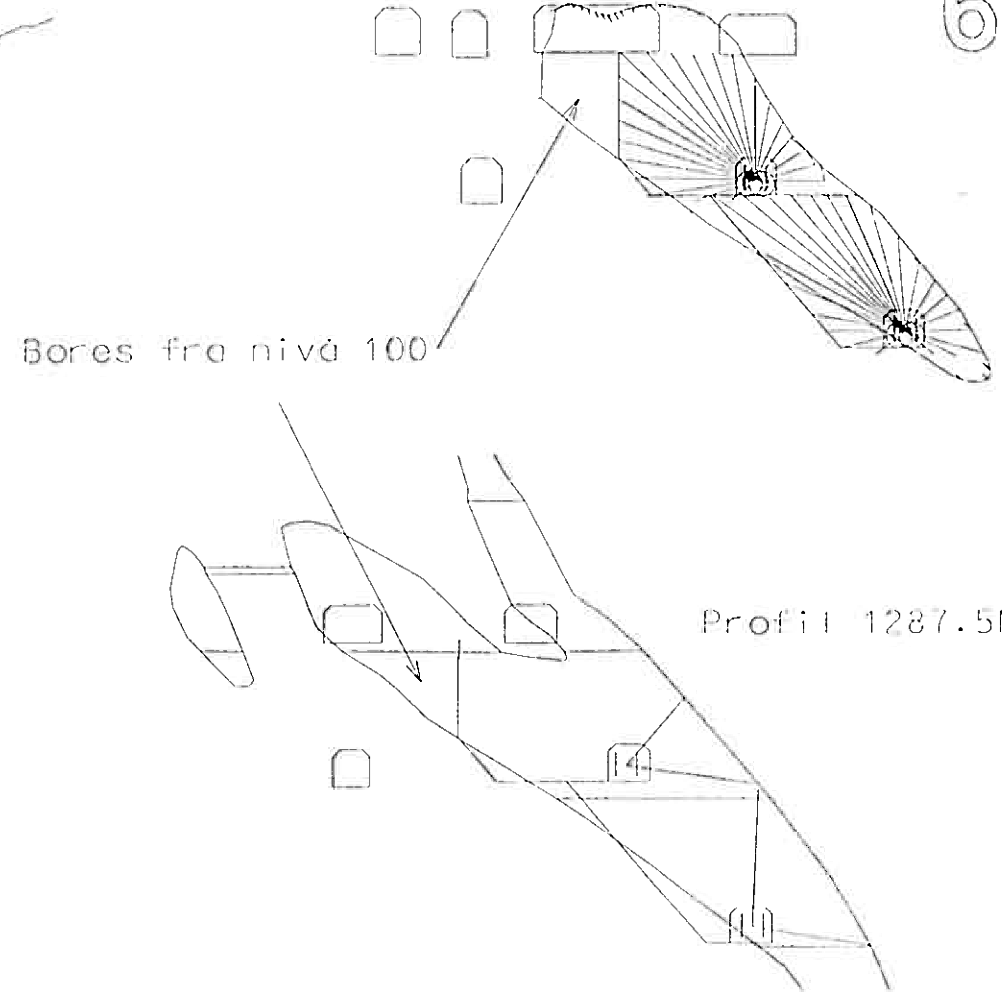
Kopi: [illegible]

M=1:1000

PRINSIPPSKISSE strosse: 80s/ 60s7







, RI , AE , FS , AK , NS