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Report on the Loftet Ore Zone, Skorovas Gruber.

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Geologi		Skorovasfeltet Skorovasforekomsten

Råstoffgruppe	Råstofftype
Malm/metall	Cu, Zn

Sammendrag, innholdsfortegnelse eller innholdsbeskrivelse

[illegible]opi av rapport som omhandler karakteren og formen av Loftsmalmen, likeså er beskrevet sideberget og strukturene i denne malmsonen.
Sonen ligger mellom kote 670 og 710 og mellom profilene 44 til 53 S.
Loftsmalmen er anriket på Cu og Zn og ligger adskilt fra Hovedmalmen.

Rapporten er vedlagt geologisk snitt og en isometrisk framstilling av Loftsmalmen.

REPORT ON THE LOFTET ORE ZONE,

SKOROVAS GRUBER.

T. L. FERRIDAY MARCH 197

INTRODUCTION.

The following report concerns the nature and form of the ore and wallrocks, together with overall structure, of the 'Loftet' orezone, 44-53s, 8ö-9v, levels 670-710.

The general form of the orezone can be seen from the isometric diagram to be of a multi-lensoid nature, tapering out and upward to the north-west around 710 level; broadening and thickening to the south east down to around 670 level, and thinning out laterally toward margins trending approximately NNW-ESE. The Loftet orezone is often no more than 6-8 meters above the main orebody, and while the physical separation is in places unclear, the ores themselves are often, in fact predominantly, quite distinct. A somewhat thinner orebody, the Kvisten zone, occurs above the Loftet zone south of profile 53, the ores apparently being quite similar to those of the upper Loftet orezone. South of pr. 57, the physical distinction between the Kvisten, Loftet and main ore lens-zones becomes unclear.

WALLROCKS

Intermediate to acid rocks predominate in the Loftet orezone.

The footwall to the zone as a whole consists of massive, predominantly amygdaloidal andesite or dacitic andesite, quartz predominating as amygdale-filling, with calcite or, less often, epidote, secondary. This rock contains thin schistose chloritic, massive chloritic or rhyo-dacitic horizons, while in the vicinity of ore contacts, silicification and chloritisation occur, producing up to 3 or more metres of sulphide-stringer impregnation and fine, evenly distributed sulphide impregnation in schistose chloritic greenstone. There is evidence that, in the footwall rocks as a whole, more acidic types increa as the orezone tapers out to the north-west, while more chloritic types increase as the orezone thickens to the south-east. This is a common

phenomena in the Skorovas orebody, it being evident that ore thicknesse have an inverse relationship to the thickness and acidity of relatively acid wallrocks. A similar relationship can be seen in the orezone itself, where the lack of continuity between lenses in sections across the orezone axis can often be found to be reflected by increased thickness of acid material and increased acidity of total acid material present. Thus, rock of rhyolite to rhyodacite composition having weak stringer impregnation occurs in the lateral separation areas between co-horizonal lenses in the north-west, and is developed to at least 8 meters in thickness. Elsewhere within the orezone itself, the wallrock forming the vertical separation between ore sheets and lenses varies from relatively acid in the north west (andesitic greenstone, andesites with very thin rhyolitic to dacitic, and thin chlor-schistose horizons) to almost universally chloritic schistose, locally containing thin andesitic horizo toward the south-east. In the south and south-east, south-west the high schistose chloritic greenstones occurring between ore lenses and sheets are commonly relatively highly impregnated with sulphide, both as a fine even dissemination and as stringers which thicken and join to form thicker, eventuall massive, sulphide lenses. Within the orezone footwall and intra-zone wallrocks, free carbonate increases toward the south, being abundant south of profile 48 as abundance of chloritic wallrock increases. Toward the extreme south-east, being in the zone of lateral (cross-axis) thinning of the Loftet orezone, the amount of acid (andesitic to dacitic andesite) material, in wallroc which are co-horizonal with the orezone, begins to increase.

The hanging wall rocks of the Loftet orezone are not well exposed, but on profile 52, 8-130', consist of andesitic to dacitic andesite approximately 8 meters above the orezone, followed by a relatively carbonate-free, quartz-amygdaloidal crudely schistose rock which appears quite acid but which has evidently been silicified. The rock is light chlorite-green in colour and contains

thin siliceous veinlets producing abundant impregnation banding on both fine (1-2 mm) and medium (to ~2 cm) scale; an evenly-distributed fine impregnation is also present. Towards the ore contact this grades with increasing chlorite into the highly schistose, impregnated chloritic greenstone which forms a matrix for the massive sulphide sheets and lenses in the south.

Form of the Ores and Structure within the Wallrocks.

The form of the ores is best seen in the isometric diagram, details of contacts appearing in the profiles mapped.

The ore sheets and lenses and their contacts have, in a macro respect, the same orientation as f_1 cleavage, that is predominantly east to east-south-east at angles of 15°-39° (averaging ~24°), locally variable due to f_2 folding. The contacts of a sheared nature are common (parallel to f_1 cleavage), this being in part due to f_2 folding, while shearing within a few original folded lenses has produced the multi-sheeted ores (profile 53) having matrices of highly schistose chloritic greenstone, often strongly crenulated, and abundant carbonate veining along contacts and within ore and schist.

Original f_1 folds are visible however e.g. Pr.51 20, Pr. 50 4V – both relatively medium scale folds, the latter being somewhat refolded, while small scale f_1 folds, relatively little disturbed have axes trending ~164°, plunging south-east at low angles (e.g. 49,25S ; 4V)

f_2 folding and the occurrence of fracturing and some local stratigraphic shear-contacts are intimately associated. In the north-west (47 LNV, FL 48) broad f_2 folding occurs on axes from 120° to 150°, that is, almost co-axial with f_1, locally producing shearing along ore contact zones to form thin breccias.

Other post-schistosity folding, trending 000°-290° is related to high angle fracturing. Four relatively important fractures, trending 177°, 000°, 000°, 164° occur in the volume. The fractures are discontinuous, as can be seen from

the area plan, while displacements are no greater than ~2 meters. The easternmost of these fractures is interesting in that, as a high angle fracture at 675 level, the easterly dip decreases until it appears, within 6-7 meters laterally, as a stratiform fracture. The fracture along 0,5 W also shows this tendency. The most westerly fracture terminates ore from 52 s to at least 50 s, and probably terminates before 48,5 s.

ORE TEXTURES AND DISTRIBUTION OF Cu, Zn.

The Loftet ores are distinct from the underlying 'main' ore (e.g. outcropping in Rena Strosse) in being relatively enriched in copper and zinc, with lower sulphur content. From profile 49 it can be seen that the ore grade distinction can occur sharply beneath the Loftet, while, further south where multiple dislocation of original folded lenses evidently becomes stronger, the distinction is not as clear. While the Loftet ores as a whole are relatively enriched in Cu, Zn, a zoning of the Loftet orezone itself is apparent with respect to Cu and Zn content.

Cu appears to be concentrated in the regions around the orezone axis, and in the lowermost horizons with respect to thickness along this trend. Cu values thus tend to fall as the orezone thins out toward its NNW-ESE trending margins, and highest Cu values tend to occur from the orezone tapering in the north-west (~710) down along the ore axis to the lower levels of the orezone in the south and south-east (675-680 on profiles 51-53 o-v). Drillcore analyses from profile 50, sampling the topmost ores appear to indicate at least local Cu enrichment on the topmost (0,5-1 m.) ore horizons in the region of the ore axis. Typical Cu values for the Cu 'high' zone are 1,2-3,2 %, the 'low' margins being generally less than 0,5%

Zn appears to become concentrated toward the uppermost levels of the orezone, as Cu content falls and magnetite content of ores and wallrocks increases. Although sufficient analytical results are not yet available, it does not appear that zinc becomes relatively depleted as the margins of the orezone are approached, at

least, to a far lesser degree than Cu becomes depleted.

Thus, in the north-west, where the orezone tapers out, both high Cu and Zn values occur, this area being in the vicinity of the orezone axis and yet al stratigraphically high e.g (a) Cu: 2,22; Zn: 1,9 (b) Cu: 1,14; Zn: 6,4. With respect to th continuity of the ore lenses in this area, exposure is lacking. For instance, the ore lens intersected only once (ventilation shaft, 47s 6-7v 705m) is possibly continuous with the ores outcropping to the north in 47 LNV at 705-710. This ore is also continuous for an unknown distance to the south.

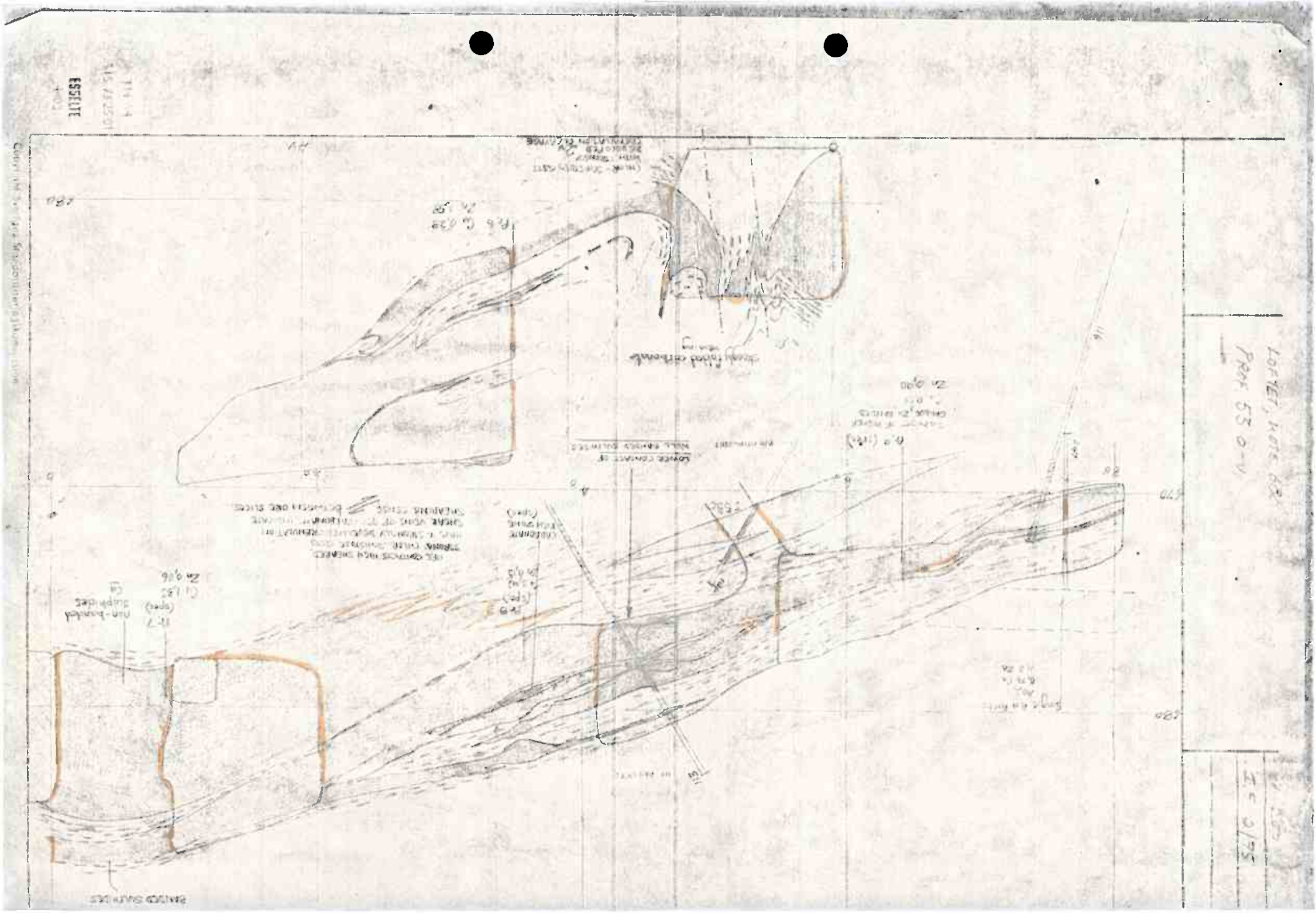
Thus the following boreholes are suggested:-

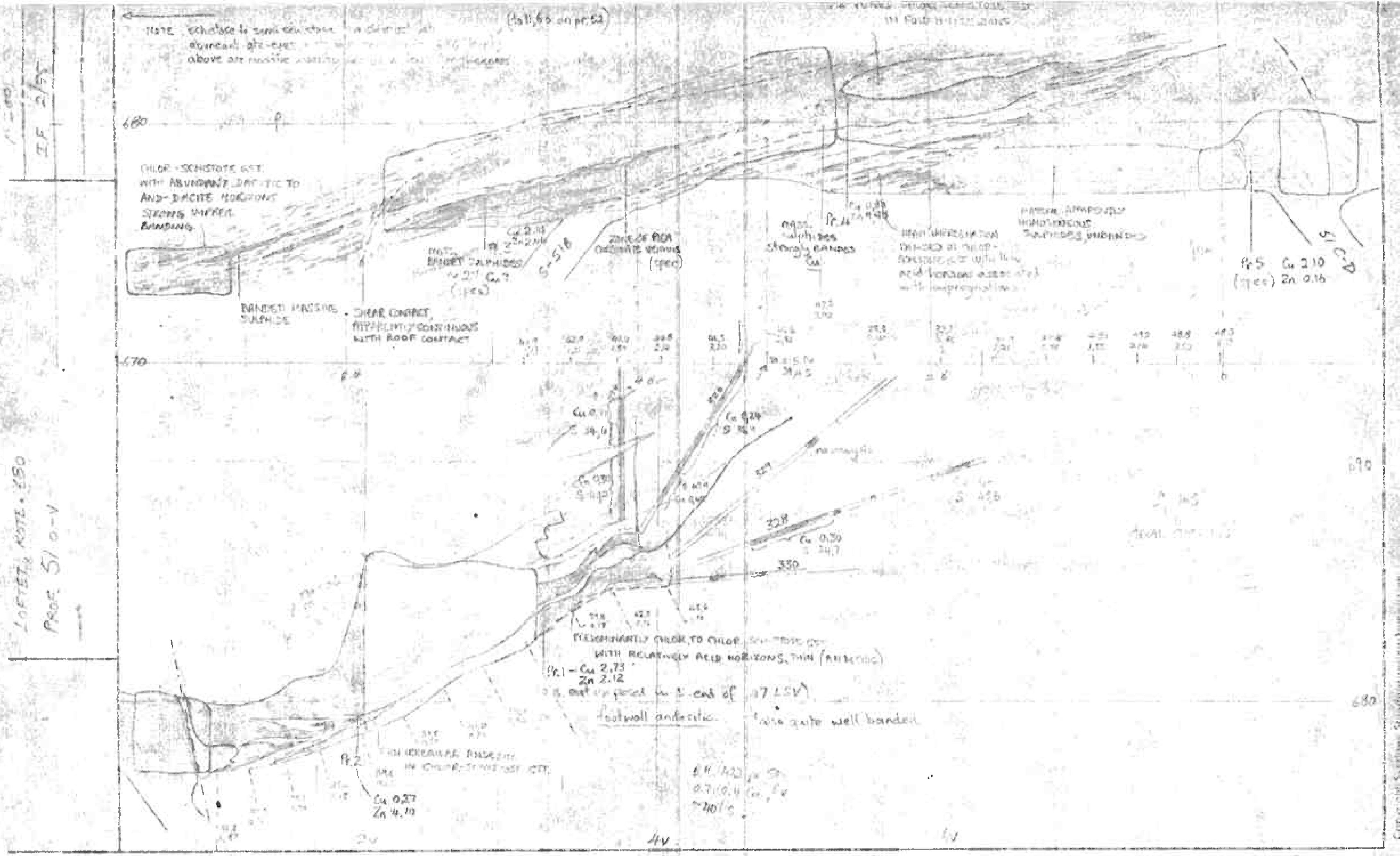
1) 49s 5,5v 692m (47 LSV) ~ 15 m⁺ vertical (to determine likely southerly extension of the lens)
2) 46s 6,9v 700m (47 LNV) ~ 15 m bearing 000° at 60°
3) " " " " ~ 10m " 250° at 60°

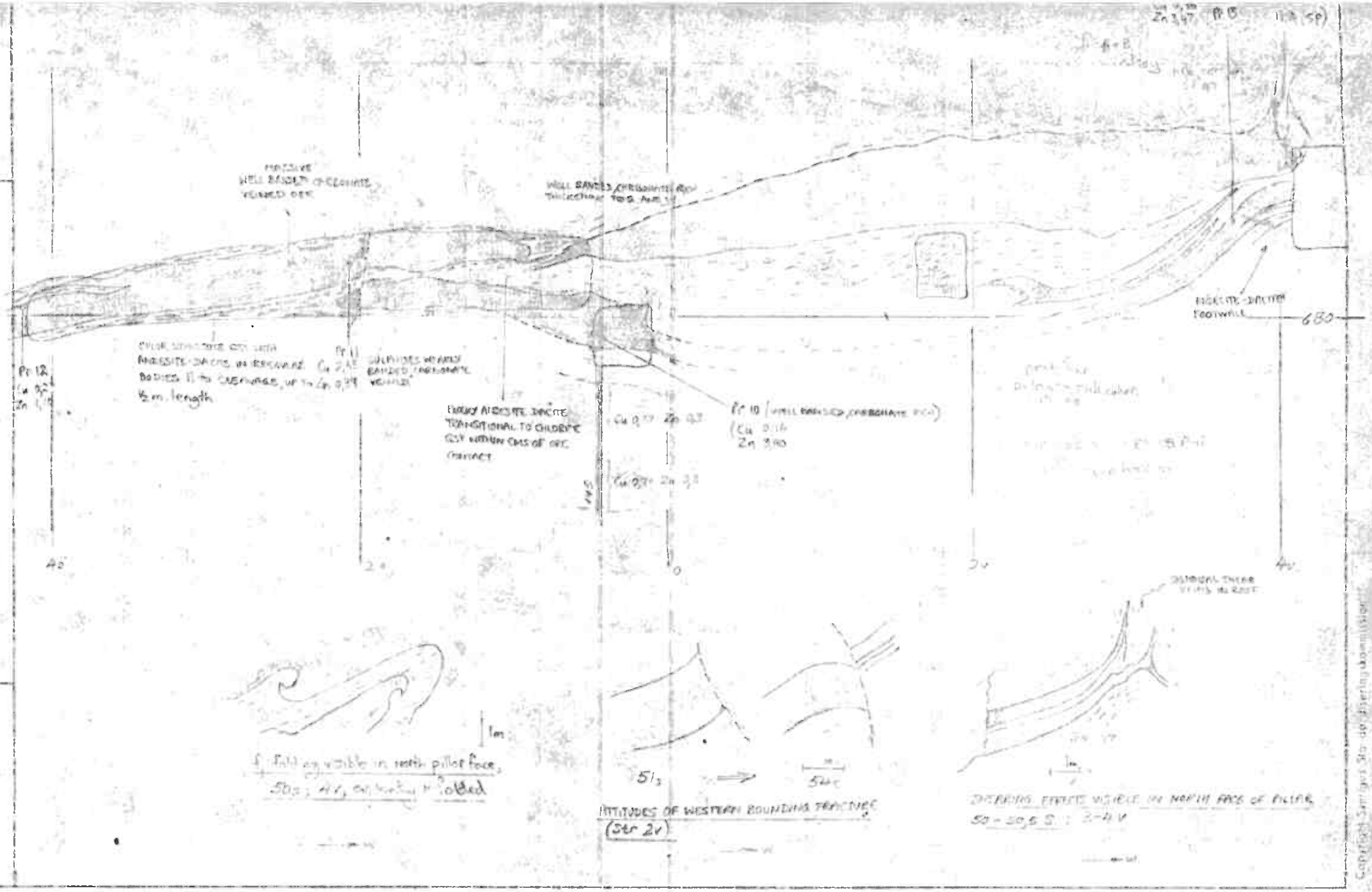
(Both 2,3 to determine any continuity between the ores of 47 LNV and that in the ventilation shaft.)

The Loftet ores may be macroscopically homogeneous or may be strongly banded, and while one texture may tend toward the other in a single lens, south of profile 50 it can be seen that banded and non-banded ores keep to certain stratigraphic levels. There does not appear to be any systematic variation of Cu content with degree of banding or otherwise, but Zn content appears to increase as banding and carbonate/ore banding becomes stronger.

One other point concerning the lateral continuity of the Loftet ore lenses is significant, this being in the north-west, where lack of exposure by workings or boreholes results in a lack of information as to how far the ore lenses extend to the west. From the isometric diagram it is apparent that the western margin of the orezone should extend north-westward in a coherent trend as does the eastern margin, yet in the northwest there is a lack of information west of 5,5 v on 46s and west of 7v on 45s. It is reasonable to assume that the orezone tapers out north-westward by 44,5s, while the western margin is difficult to assess with accuracy. For profile 46s, a maximum probable westward extension is ~ 8v, while for profile 45s this would be ~ 7,5 v.

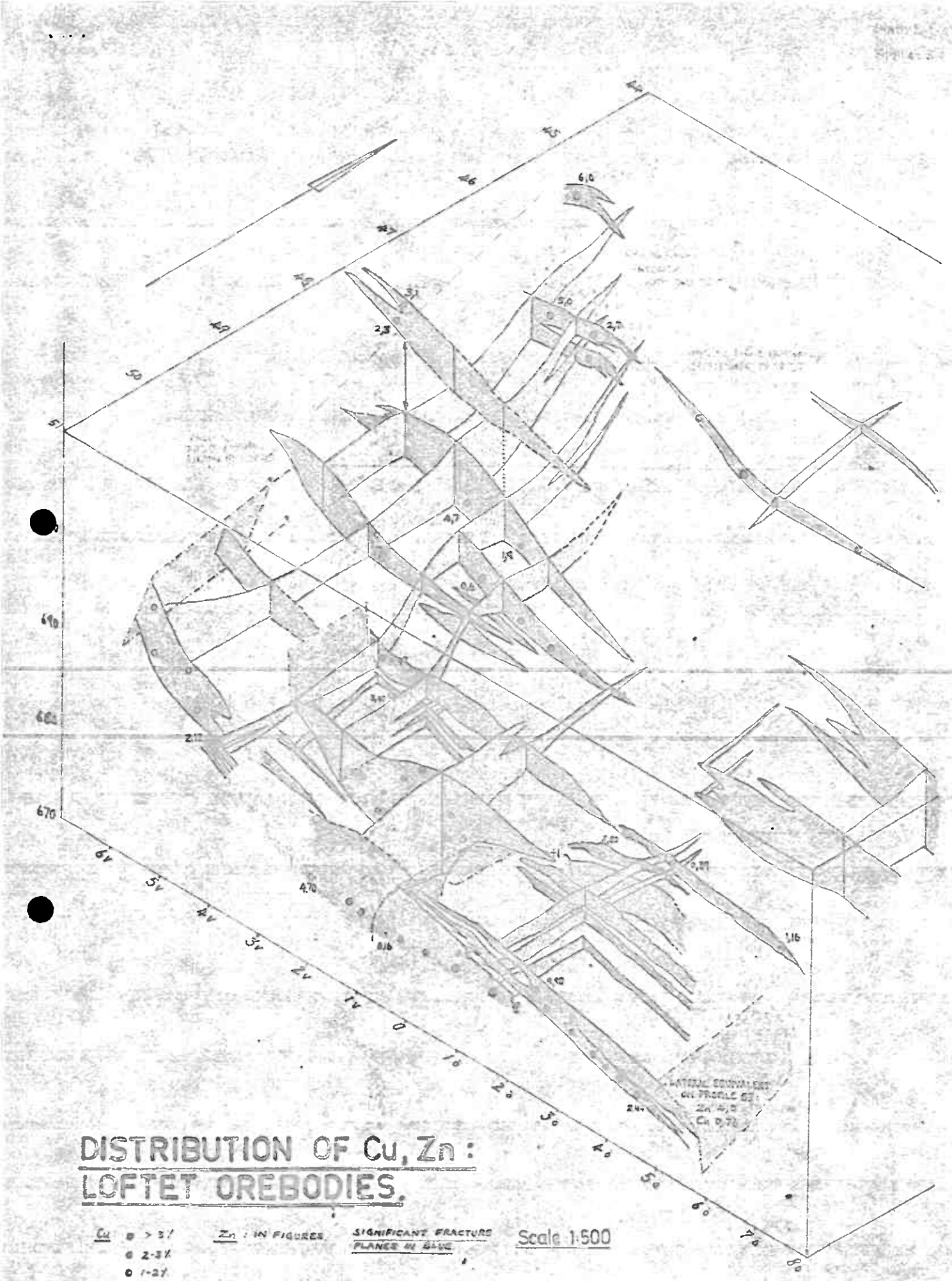






LOFTET
Pr 49 0-V

ESSELTE



DISTRIBUTION OF Cu, Zn : LOFTET OREBODIES.

Cu ● > 3 %
◐ 2-3 %
○ 1-2 %
◉ 0.5-1 %
◌ < 0.5 %

Zn : IN FIGURES.

SIGNIFICANT FRACTURE PLANES IN BLUE.

Scale 1:500

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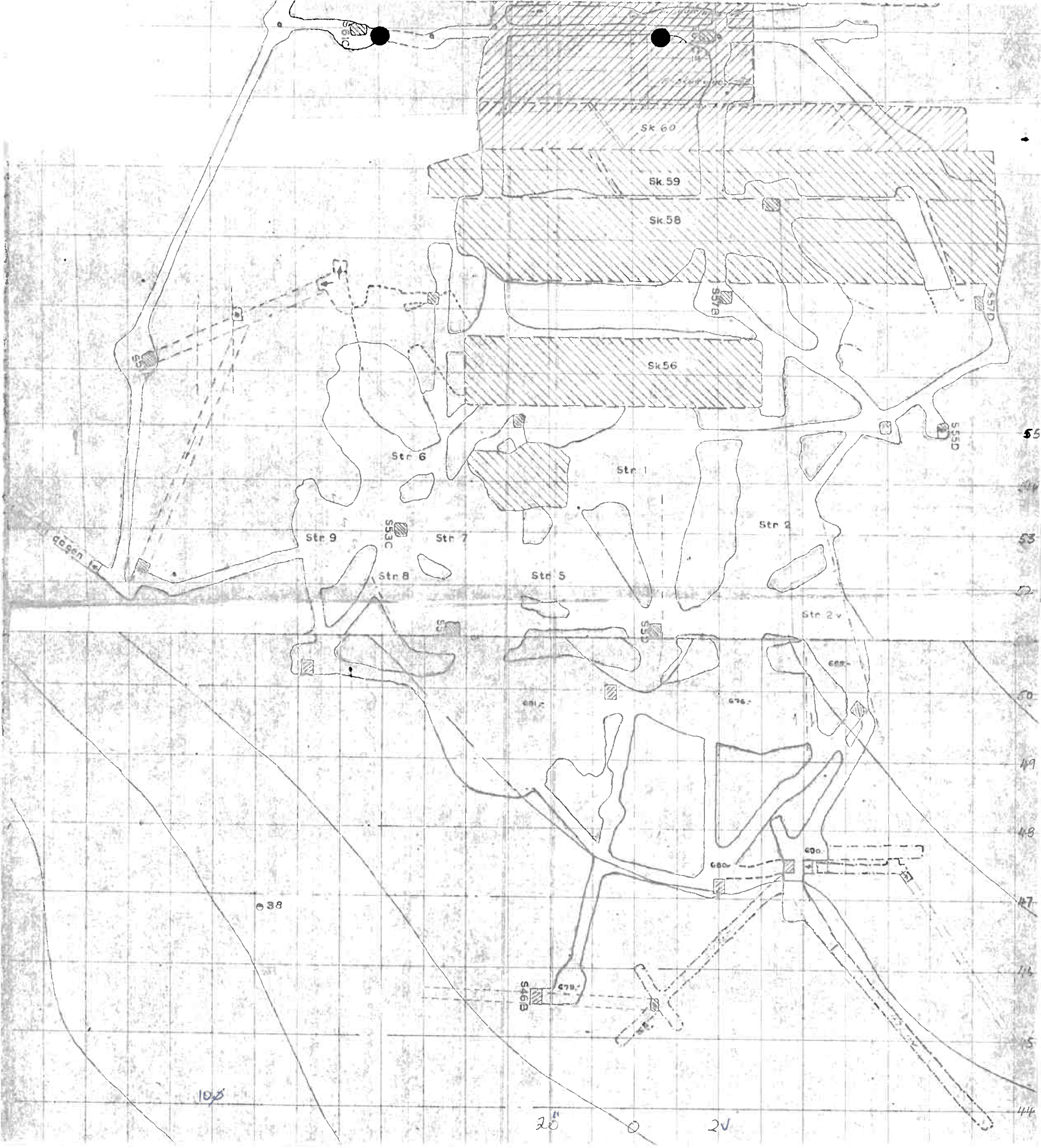
Sk 60
Sk.59
Sk.58
Sk.56
S57B
S57D
S55D
Str 6
Str 1
Str 2
Str 9
S53C
Str 7
Str 8
Str 5
Str 2 v
dagen
38
S46B
55
53
52
50
49
48
47
44
100
20
0
2V