



42A06NW8450 63.1407 BRISTOL

REPORT ON

MAGNETIC AND ELECTROMAGNETIC SURVEYS

ON BRISTOL TOWNSHIP CLAIMS

PREPARED FOR

FIDELITY MINING INVESTMENTS LIMITED

Fidelity Mining Investments Limited holds a group of 10 contiguous claims in Bristol Township, about seven miles west of Timmins, Ontario. Claim numbers are P68148, -49, -51, -52, -83, -85, -86, -87, -88, and 68195.

Highway 101 passes within $1\frac{1}{2}$ miles of the claim group, and access is via any of several logging roads or trails.

In December of 1964, and January, 1965 geophysical surveys were carried out over the claim group under the writer's supervision. The following is a resume of observations.

GENERAL GEOLOGY

There is no outcrop anywhere on the property. By interpolation from surrounding areas the bulk of the ground is believed underlain by northeast-striking rhyolites, with andesites in the extreme southerly part of the group. Near-by drilling indicates there are tuffs and some interbedding at the contact between these volcanics.

Numerous north-trending diabase dikes are known in the vicinity, and there is a large area of basic intrusives about three miles to the north-west.

WORK DONE

A north-south line grid was cut with lines at 300 foot interval. Lines were chained and stations established at 100 foot interval. A total of 13.8 miles of line were cut and 710 stations established.

A magnetometer survey was carried out over this grid using a Sharpe flux-gate type magnetometer with 20 gamma per scale division sensitivity. Readings were taken at all stations, corrected for diurnal variation and plotted and contoured on the accompanying 200 foot to the inch plan.

An electromagnetic survey was carried out over the same line grid using a Sharpe S.E.300 vertical coil unit. The parallel line method was used, first with 300 foot coil separation, then because of the possibility of heavy overburden, alternate lines were run with 600 foot coil separation. Where definite indications of conductivity were detected the transmitter was set up directly over the conductor and detailing done along strike. Results are plotted on a 200 foot to the inch plan, and results of detailing are appended.

A tabulation of men employed and dates worked is attached as Appendix B, for assessment purposes.

MAGNETIC RESULTS

Pronounced linear magnetic highs in the easterly part of the group and along the west boundary are interpreted as representing north-striking diabase dikes. When the effect of these dikes is removed there is a general gentle easterly gradient, with a slight suggestion of northeast-trending linear features.

The easterly gradient is contrary to that which would be expected from the northeasterly trend of the volcanics outcropping in the area, and there is no readily apparent explanation. It is suggested that the large basic intrusive area northwest of the group may extend eastward at depth resulting in this gradient, and masking the effect of near-surface rocks.

The northeast-trending linears probably represent bedding in the volcanics. There is no sharp division between rhyolites and andesites probably because of interbedding, and the contact between these rocks is drawn arbitrarily at what would appear to be the most likely location.

ELECTROMAGNETIC RESULTS

A radiograph survey performed in 1939 and published in 1957 (O.D.M., vol.66 pt.7) indicated an area of low resistivity along the rhyolite-andesite contact in what is now the easterly part of the Fidelity property. The E.M. work detected a zone of conductivity situated along or immediately south of this resistivity anomaly. This conductor is designated as anomaly A on the plan of the E.M. survey. Detailing has traced it for 1,000 - 1,200 feet within the property, and it may extend further to the west.

500 feet further south, a second anomaly - B - has been detected and traced for 800 - 1,000 feet within the property boundaries. While the strike of A conforms with what is believed to be the regional trend, B has a more east-west strike. There is some suggestion of conductivity along the north-south diabase dike, it is suspected that there is shearing and possibly some displacement along the fracture occupied by the dike, resulting in offsetting and ambiguity in location and strike of conductors A and B.

A third conductor of moderate intensity - C - has been located on the northwesterly part of the group. It has been traced for 900, and possibly 1,500 feet. The strike conforms to the known geology.

Traversing the central part of the claim group is a cluster of one-line cross-overs - anomaly D -, no one of which has any continuity, though all fall within a zone 800 - 1,000 feet wide, conforming in trend

with the regional strike. It is suggested that these may be discontinuous graphitic tuff beds lying within the general contact area between the rhyolites and andesites.

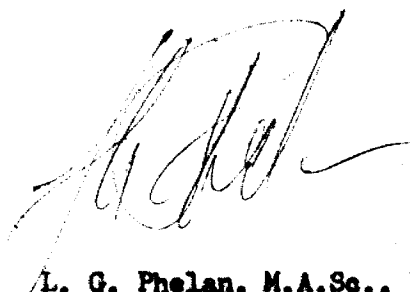
Apart from the north-south diabase dike-cutting anomalies A and B there does not appear to be any magnetic feature directly related to any of the conductors.

CONCLUSIONS AND RECOMMENDATIONS

Anomalies A and B are situated at or close to the geologically favorable rhyolite-andesite contact. They are moderately good conductors and could represent concentrations of metallic material, or beds with a high graphite content. Anomaly C is considered to be less favorably situated geologically, but also is considered worth further investigation.

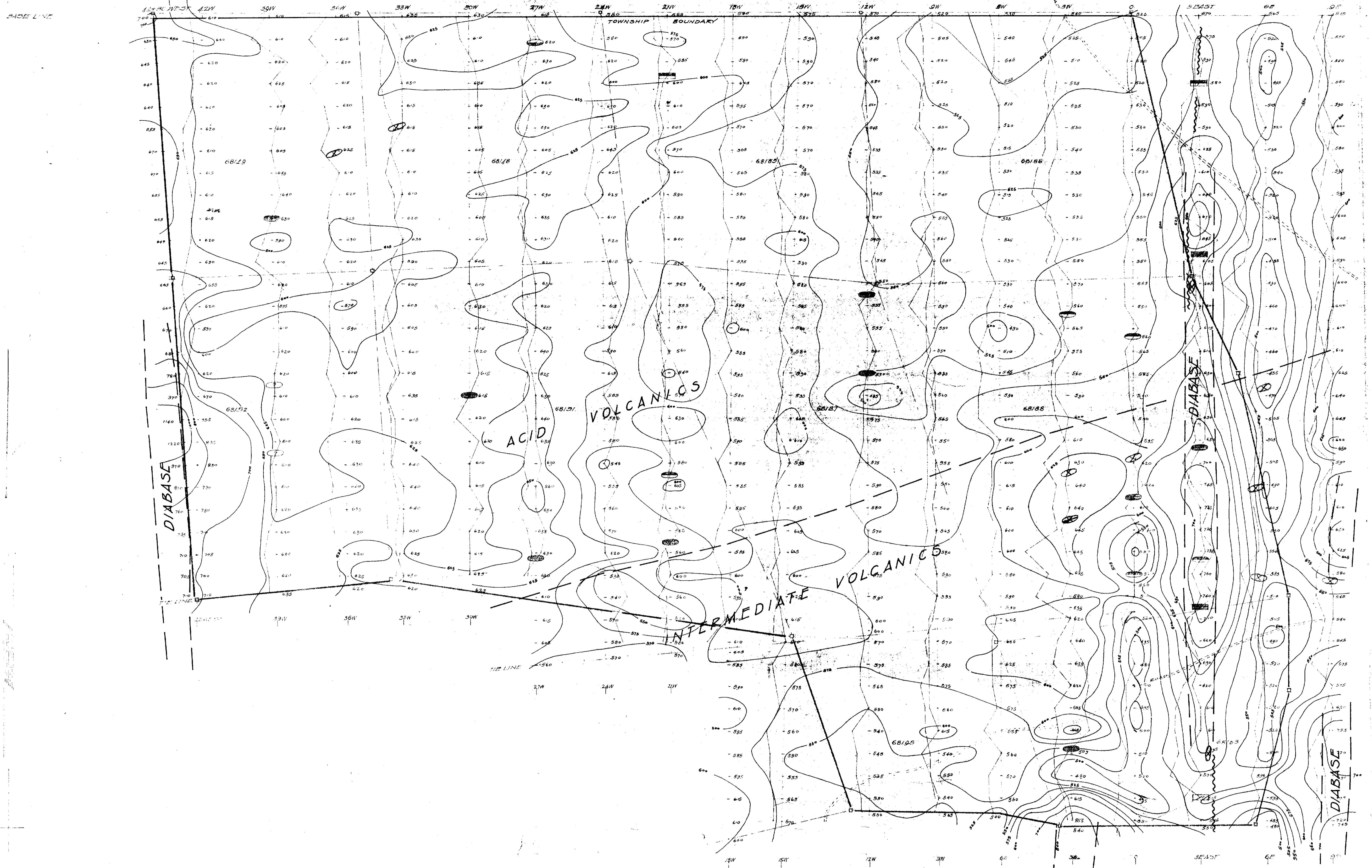
1,500 feet of diamond drilling is recommended to determine the source of these conductors. Overall cost is estimated at \$5.00 to \$6.00 per foot.

Respectfully submitted,

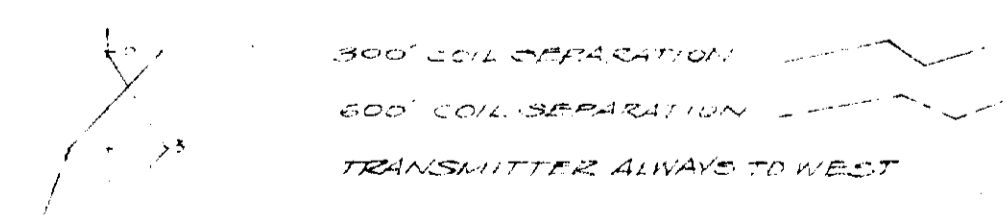


L. G. Phelan, M.A.Sc., P.Eng.
Consulting Geologist

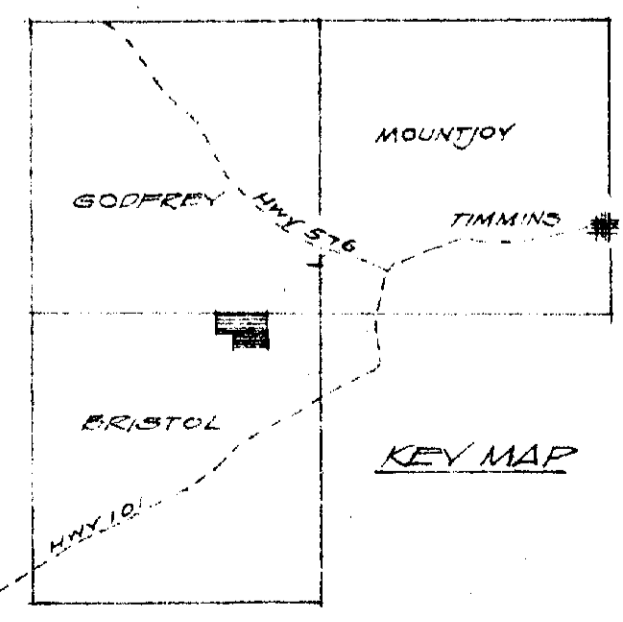
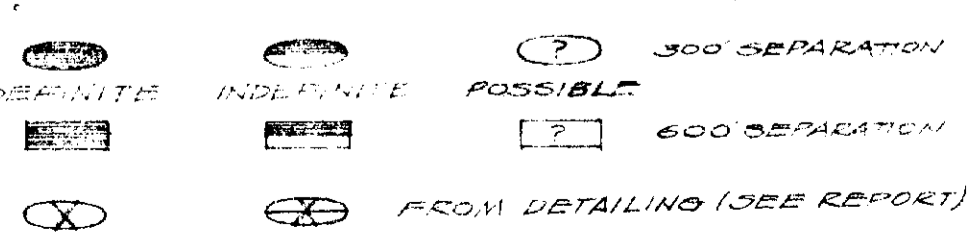
TORONTO, Ontario
1 February, 1965



LEGEND FOR EM SURVEY



CONDUCTOR - DEFINITE
CONDUCTOR - INDEFINITE
CONDUCTOR - POSSIBLE



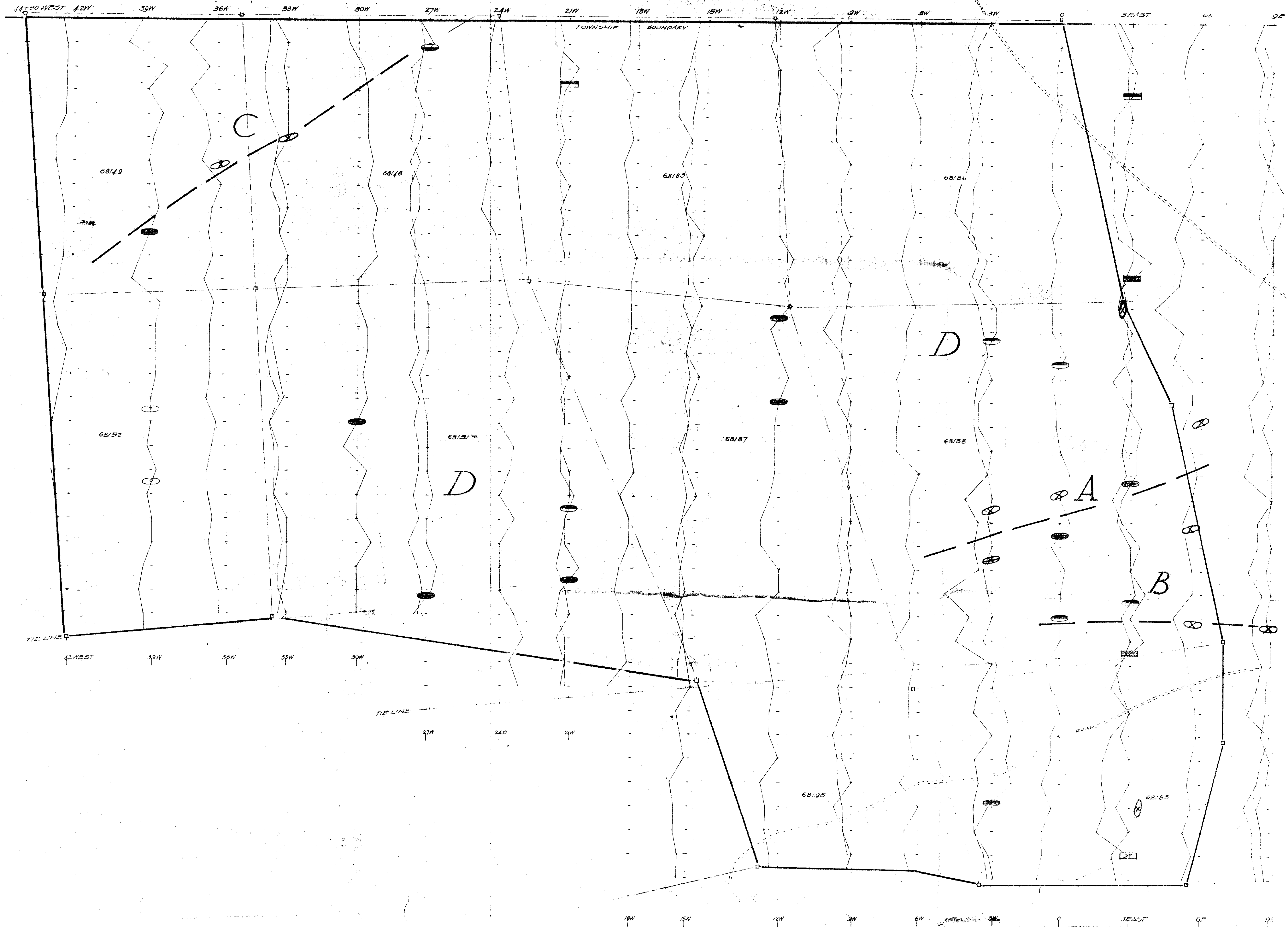
LEGEND FOR MAGNETOMETER SURVEY

- 500g
- 500-550
- 550-600
- 600-650
- 650-700
- 700-800
- 800-1000
- 1000+

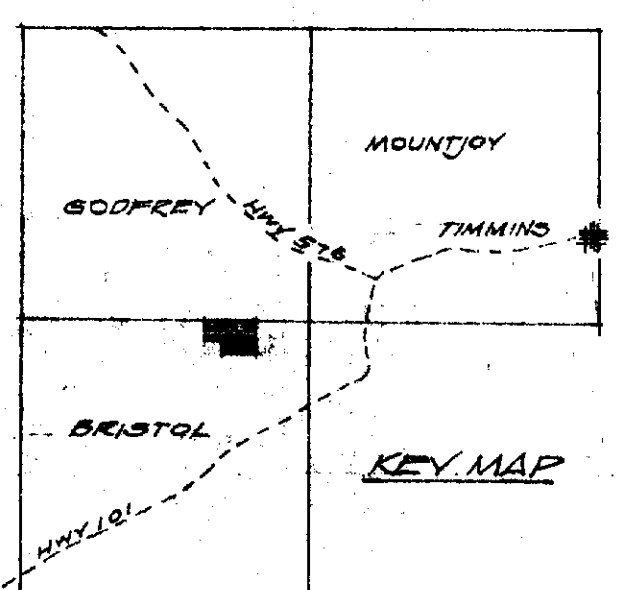
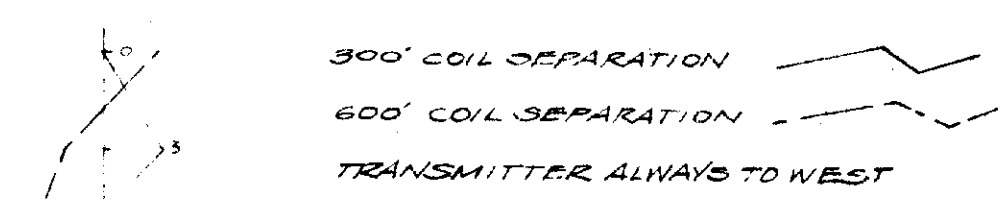
PROPERTY OWNERS: MOUNTJOY, TIMMINS, GOOPKEY, BRISTOL
PROJECT: IN SANDOZ TOWNSHIP, S. 74 W. 12
MAGNETOMETER & ELECTROVARIATION SURVEY OF
SCALE 1 INCH = 200 FEET

JANUARY 1964
[Signature]

BASE LINE



LEGEND FOR EM SURVEY



- CONDUCTOR - DEFINITE
- CONDUCTOR - INDEFINITE
- CONDUCTOR - POSSIBLE
- 300' SEPARATION
- 600' SEPARATION
- FROM DETAILING (SEE REPORT)

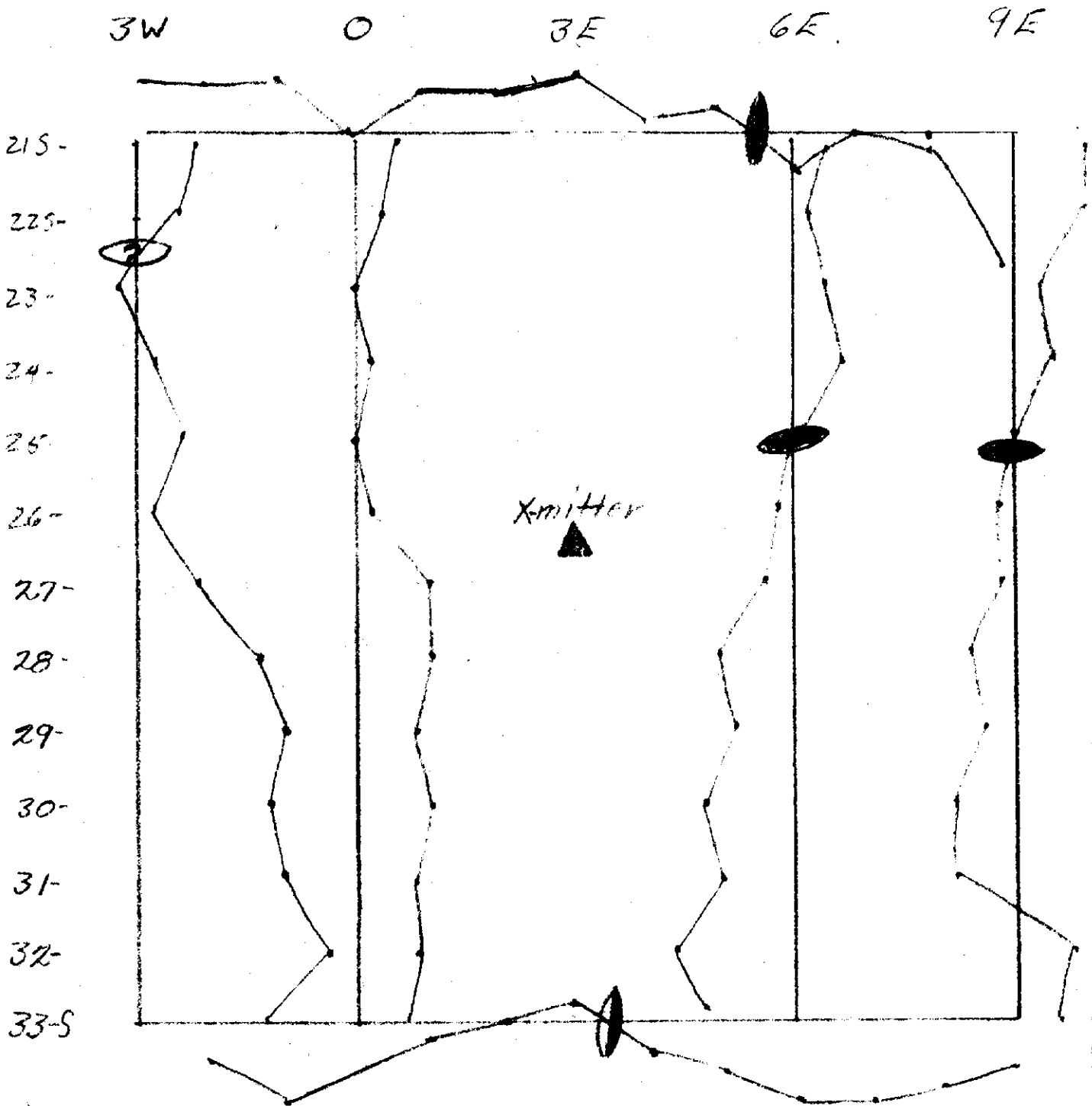
FIDELITY MINING CORPORATION
 PROPERTY IN BRISTOL TOWNSHIP ONTARIO
 ELECTROMAGNETIC SURVEY

SCALE 1 INCH = 200 FEET

JANUARY 1966

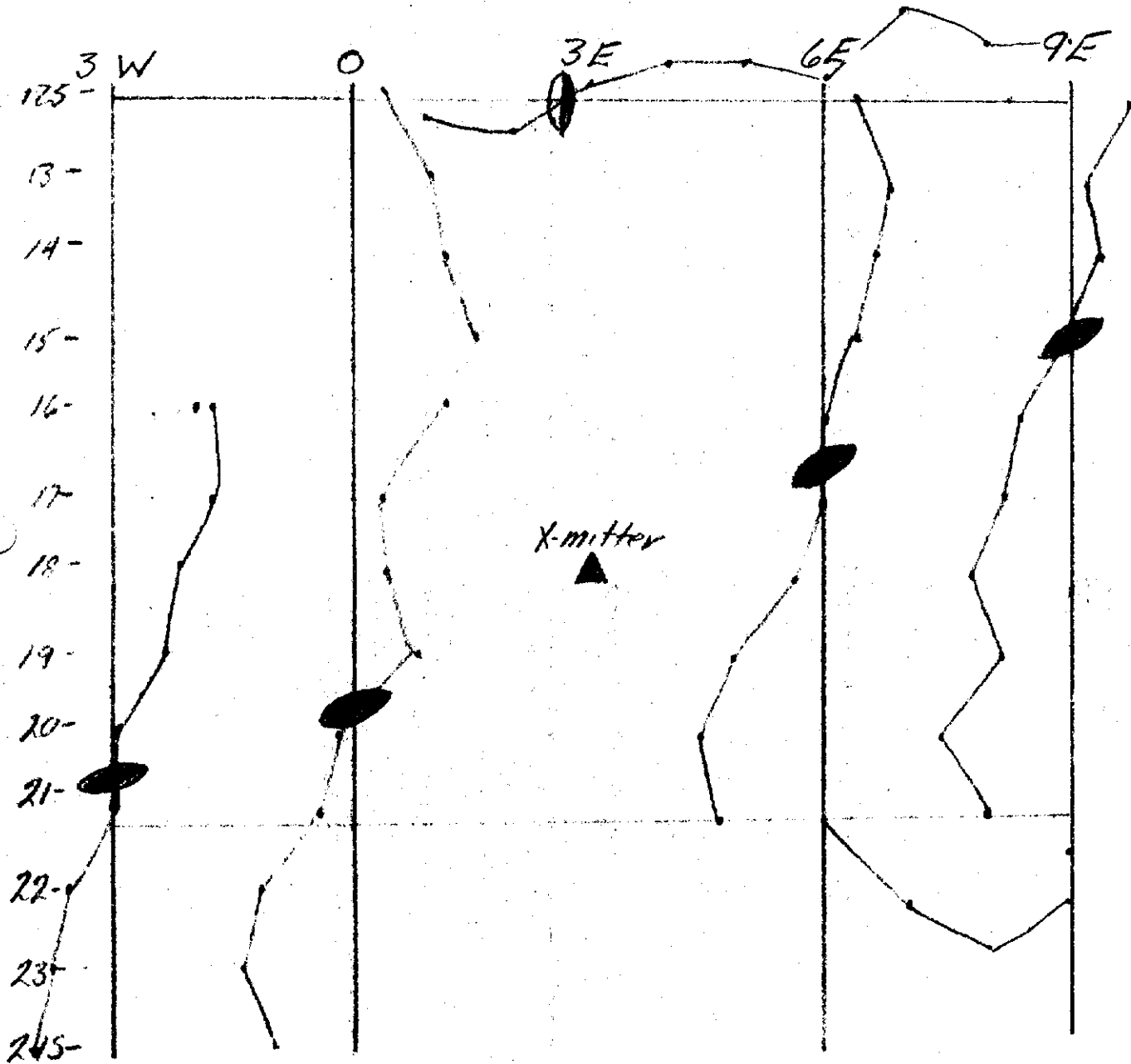


FIDELITY - BRISTOL
DETAIL - AREA #1



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FIDELITY - BRISTOL
DETAIL - AREA #2

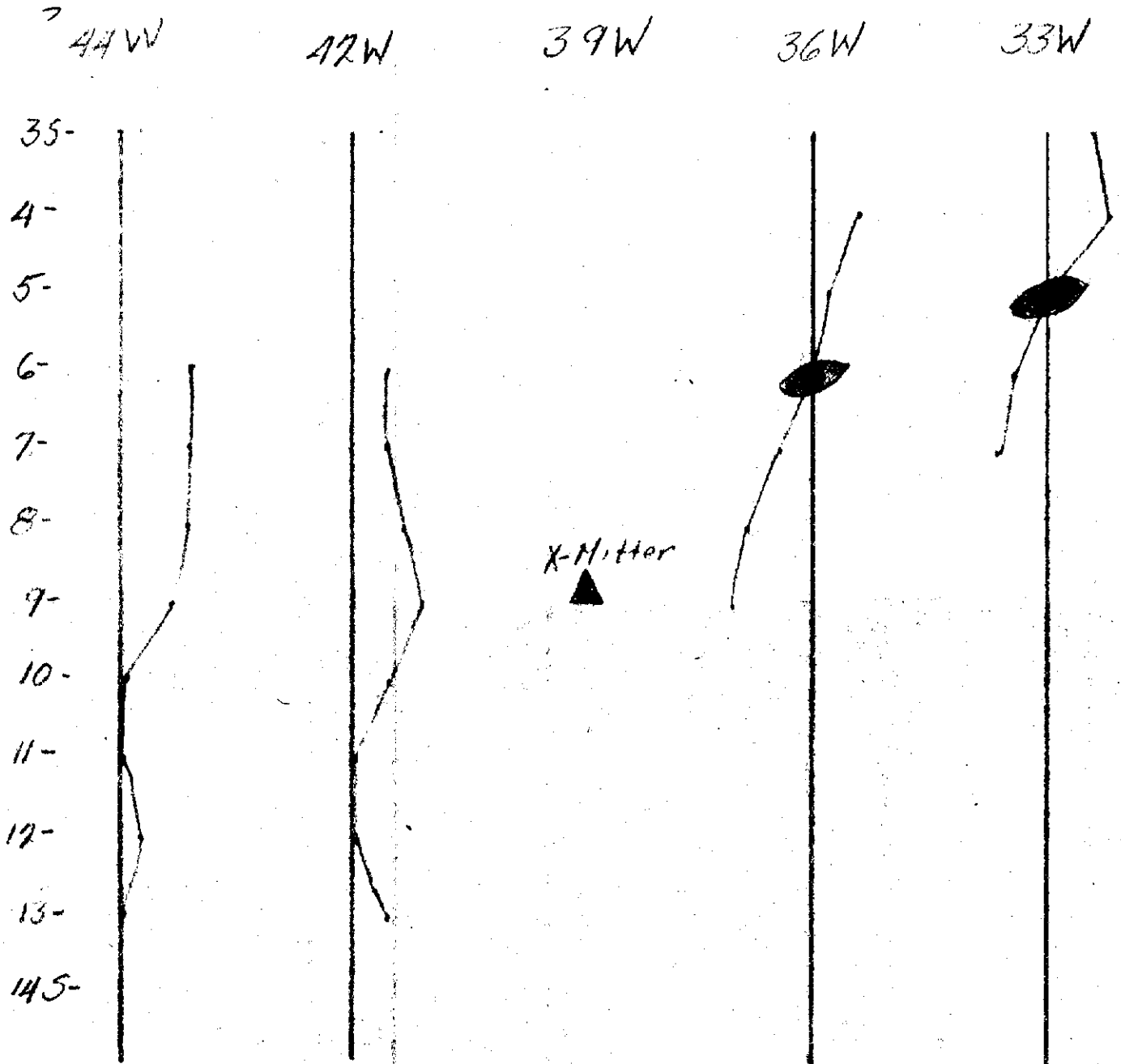


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230

1" = 200'

FIDELITY BRISTOL
DETAIL AREA #3



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