ANCIENT MONUMENTS LABORATORY – GEOPHYSICAL SURVEY REPORT No.

SURVEY: NUNEATON PRIORY **DATE:** 23-25/9/81

1. SITE

OS grid reference: SP 356 920 **Field no.**

Location: the field to the immediate east and south of the former St. Mary's Abbey church and claustral complex.

Geology: alluvium and Lower Keuper Sandstone

Archaeological evidence: an uneven ground highly suggestive of the buried remains of further abbey buildings.

2. SURVEY

Object: to detect and plan any remaining building foundations.

(a) Magnetic Survey

Magnetometer : fluxgate
Survey : automatic
Setting : 20 gammas/cm. Scale : 1:200

(b) Resistivity Survey

Meter : Martin-Clark
Configuration : Twin Electrode
Probe spacing : 0.5 m.
Reading interval : 1.0 m.

(c) Other tests

(i) **Magnetic susceptibility –**
topsoil: 68.2 **subsoil:** **fill:** **$\times 10^{-6}$ emu/gm (ac bridge readings)**

(ii)

Survey grid measured to: field boundaries

Plans/charts enclosed:
1 - location plan (1:500)
2 - resistivity data - dot density plot and traces (1:500)
3 - magnetometer traces (1:500)
4 - interpretation of resistivity data (1:500)

cont/

3. The larger part of this rather hummocky and uneven field to the south and east of the former abbey church was surveyed both by magnetometry and resistivity (see plan 1 for location). Results from this, in combination with evidence from the CEU test excavations and earthwork survey, might throw some light on the extent and character of the ruined foundations beyond the modern churchyard and vicarage garden.

RESULTS

Areas 1 - 5 were covered with the fluxgate gradiometer, and the recorded traces are shown at a reduced scale on plan 3. As anticipated, interference from modern iron is extensive and obscures large parts of the survey area. Anomalies of probable archaeological origin can be seen in the W half of sq. 2 but are too incomplete and confused by noise to be satisfactorily interpreted. Despite a high topsoil magnetic susceptibility, there is little to comment upon elsewhere over the survey area, except the patch in the S half of sq. 3 where anomalies are markedly scarce. This area coincides, at least in part, with the interior of a 25 m. square enclosure visible on the ground, and identified as feature XII of the CEU earthwork survey. Augering here, by the CEU, showed in places an apparently natural soil profile, relatively free of rubble, and interpreted as a possible courtyard.- a suggestion that the negative magnetic evidence would seem to support.

Resistivity survey:

Areas 1 - 6 were surveyed with the twin electrode configuration with readings taken at 1.0 m. intervals with 0.5 m. spaced probes. The data has been numerically treated to enhance high resistance anomalies, and is displayed on plan 2 in both dot-density form and as graphical traces. Simplified anomalous areas are outlined and superimposed on the topographical features on plan 4.

Anomalies are widespread and complex, as one might expect where the surface of the field is itself so uneven with all the suggestion of dumps of rubble, robbing, quarrying, and miscellaneously preserved stonework. Although there is some agreement between the occurrence of both surface relief and high resistance, this is limited, and few areas of high soil resistance actually resolve themselves into satisfactory patterns or alignments. Perhaps the most suggestive anomalies are in sqs. 1 and 3. In the former, where very high readings are recorded, and only hinted at on the surface, there is a right-angle arrangement, broadly rectilinear with the abbey remains. In sq. 3 the flat ground in the interior of the square enclosure here (earthwork XII, referred to in para 2, above) appears to belie the negative evidence from the augering and magnetometer survey. There is a complex arrangement of anomalies that might easily be explained by the presence of building foundations, but in their absence might possibly result from other features such as drains, cobbling or paving. Other anomalies over the survey area may be significant (? a linear feature in the SE corner of sq. 4) but the overall impression is unhelpful. More or less preserved remains are probably widespread and perhaps more intact in the N half of the field where anomalies are more subdued, in contrast to the erratic and possibly less well preserved areas to the s.

CONCLUSIONS

Despite the evidence from the CEU survey and augering, neither of the geophysical survey methods has added much of substance to solving the medieval lay-out in this field. Resistivity has at laest pointed to a couple of sites where stone remains may be better preserved than elsewhere, but on the whole the evidence is not coherent enough to draw any more useful conclusions, and this may in part be due to the masking of <u>in situ</u> remains by magnetic and resistivity interference of a largely arbitrary character. It seems to be the case that a strongly marked surface topography such as this rarely provides clearly defined and interpretable geophysical data.

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for : CEU

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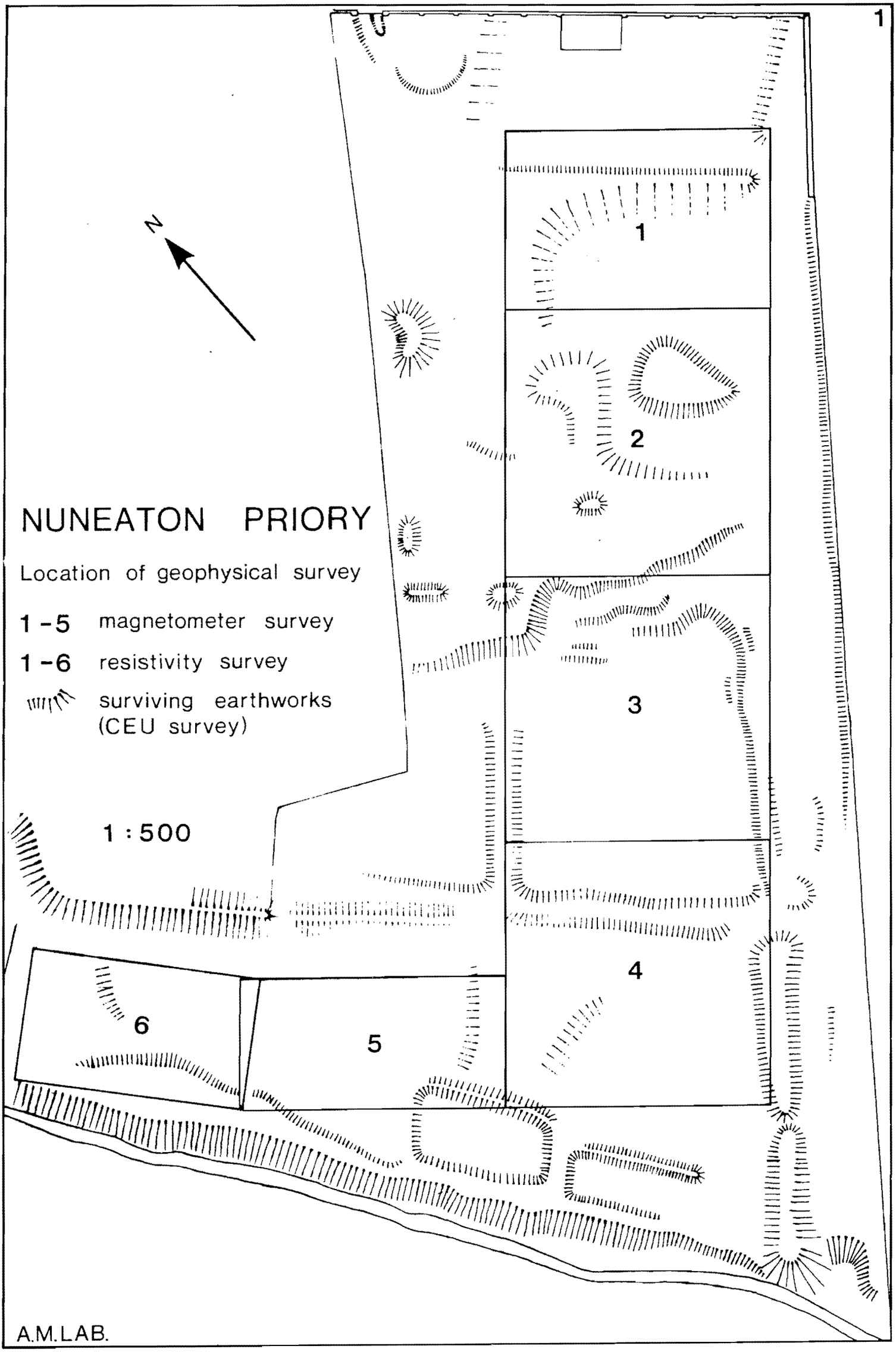

NUNEATON PRIORY

Location of geophysical survey

1 - 5 magnetometer survey

1 - 6 resistivity survey

surviving earthworks (CEU survey)

1 : 500

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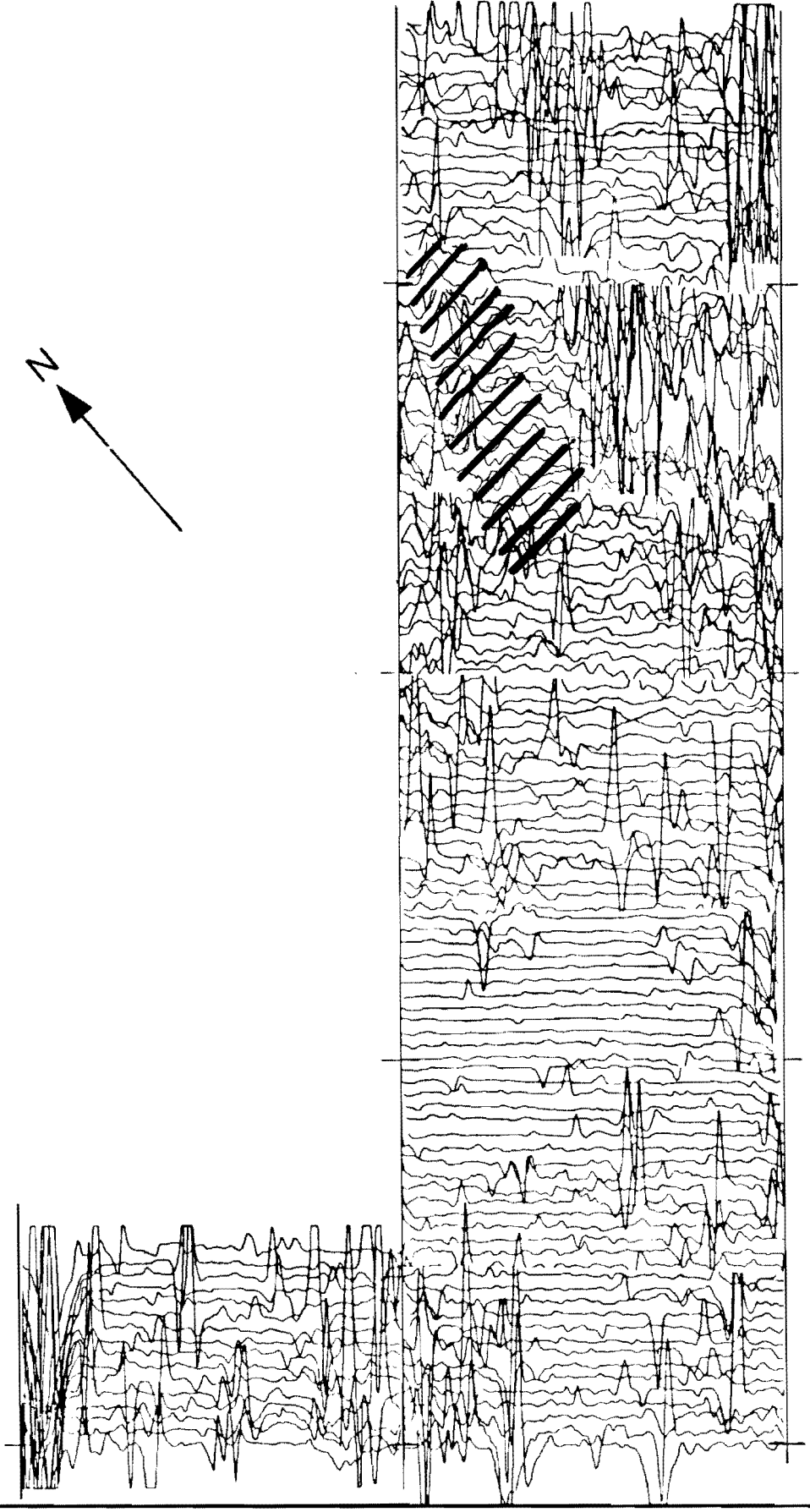


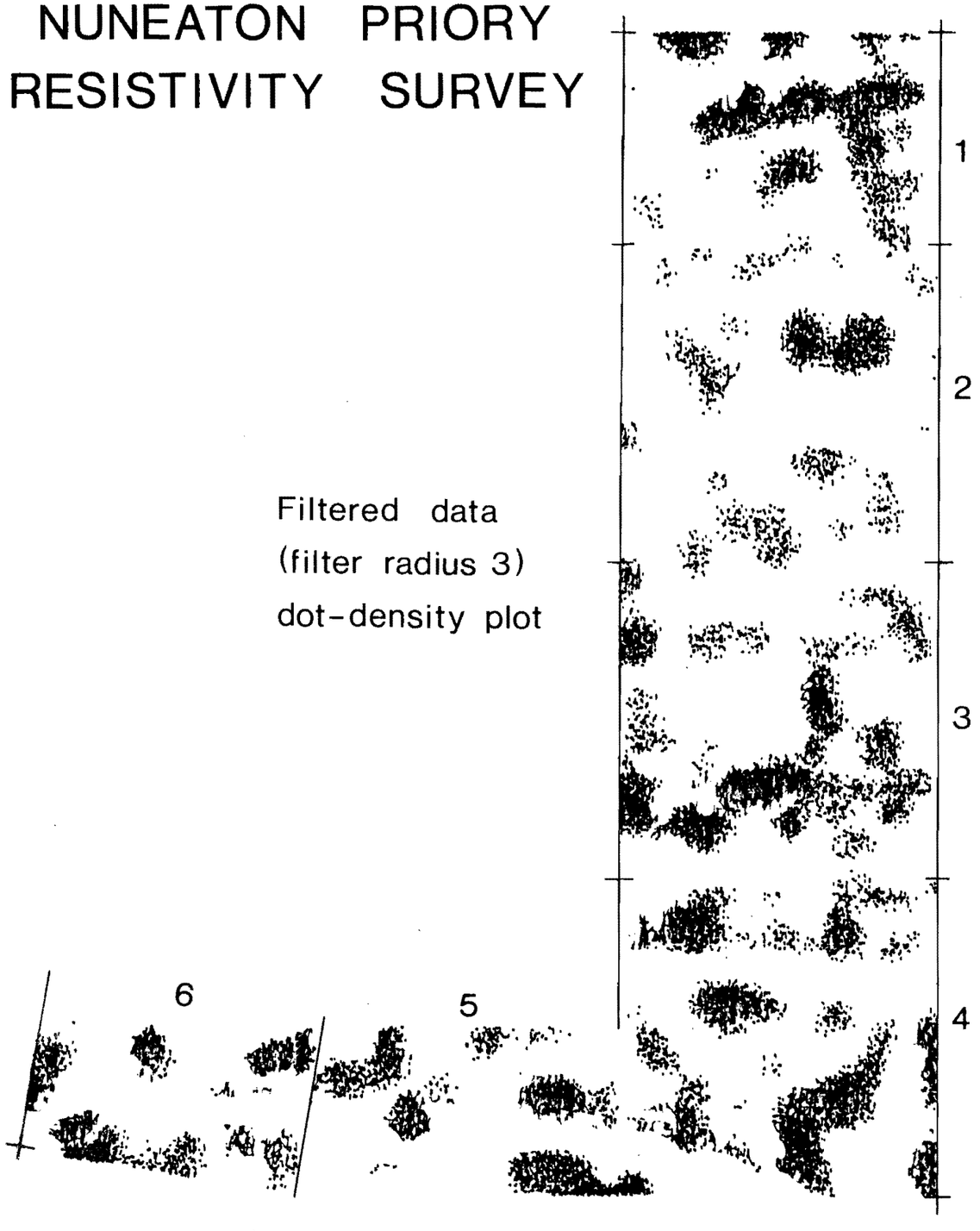
NUNEATON PRIORY

MAGNETOMETER SURVEY

NG ref. SP 356 920	magnetic anomalies	Survey no. 15/81 Plan no. 3 of 4
1: 500	DoE A.M. Laboratory Geophysics Section	

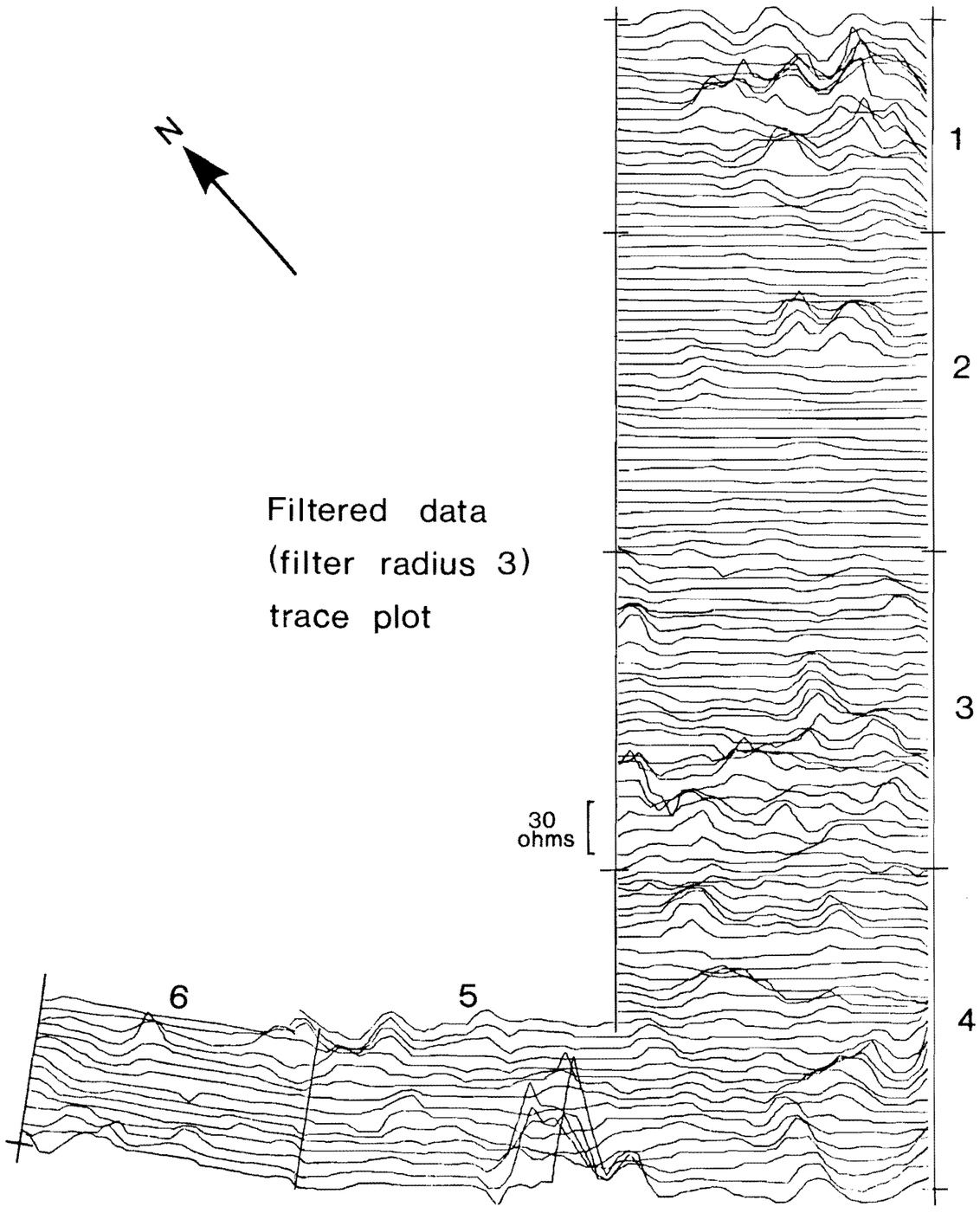
NUNEATON PRIORY
RESISTIVITY SURVEY

Filtered data
(filter radius 3)
dot-density plot



N

Filtered data
(filter radius 3)
trace plot



1 : 500

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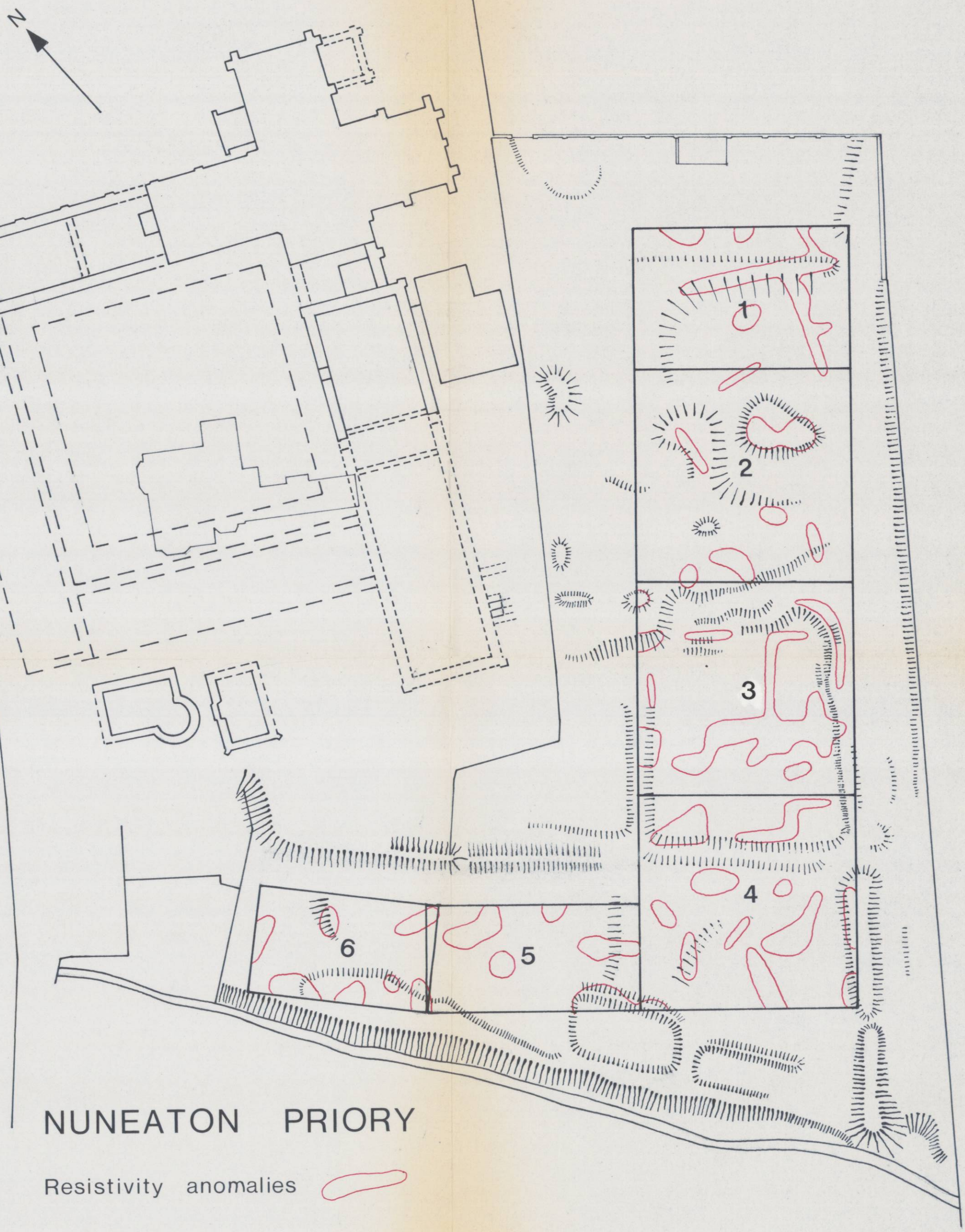

NUNEATON PRIORY

Resistivity anomalies

1:500

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