ANCIENT MONUMENTS LABORATORY – GEOPHYSICAL SURVEY REPORT No.

SURVEY: DORCHESTER-ON-THAMES, BY-PASS **DATE:** 27-29/1/81
26-27/2/81

1. SITE Report no. 2/81

OS grid reference: SU 581 948 – SU 574 954 **Field no.** 2100
0003
4139

Location: in the Thames valley on the NE outskirts of Dorchester between the Thames and Thame rivers.

Geology: river gravel and alluvium

Archaeological evidence: cropmarks plotted from aerial photos.

2. SURVEY

Object: to confirm the location of cropmarks and to check for additional features not seen on the aerial photographs.

(a) Magnetic Survey
Automatic
Fluxgate gradiometer
Setting : 10 – 15 gammas/cm.
Recorder setting : 1:200

(b) Resistivity Survey
Martin-Clark meter
Wenner and Double-Dipole configuration
1 m. probe-spacing

(c) Other tests

(i) Magnetic susceptibility –
topsoil: 24 **subsoil:** **fill:** **$\times 10^{-6}$ emu/gm**
(ac bridge readings)

(ii)

Survey grid measured to: field boundaries

Plans/charts enclosed: 1 – location plan, 1:2500
2 – magnetometer traverses, with interpretation, and resistivity traverses, 1:500

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3. Both magnetic and resistivity methods were used here earlier this year to confirm the location of archaeological features seen from the air, and also to test for additional features. The survey follows the course of the proposed by-pass which for over a kilometre lies between the ditches of the Dorchester cursus. The location of the survey work can be seen on plan 1, and the results with an interpretation on plan 2.

RESULTS.

Resistivity survey:

Resistivity surveying has been used successfully at Dorchester in the past (see 'Excavations at Dorchester, Oxon., by R. J. C. Atkinson, C. M. Piggott, N. K. Sandars. Oxford. 1951., p. 4), but preliminary results on this occasion were not encouraging. A Martin-Clark meter was used to survey test traverses (A - F) at the southern end of the cursus (see plan 2). Readings were taken at 1 metre intervals using both Wenner and Double-Dipole configurations. The results are shown as graphs on the plan.

Traverse A was placed across a ring ditch, seen on aerial photographs as a crop mark, and also faintly as a magnetic anomaly. No significant changes in soil resistance can be seen over this feature.

Traverse B shows no significant anomalous values, although C, to the south has two broad peaks of high readings. Comparison with the magnetic values shows that this traverse crosses an area of pronounced metallic disturbance, and this is assumed to be a reaction to rubbish concealed in a large filled-in pit. The anomalous resistivity values, although not coinciding exactly with this disturbance, may be assumed to be non-archaeological in origin. The slighter anomalies of traverse D may again be modern.

Traverse E is the most uniform of the series, the lack of contrasts in ground resistance no doubt resulting from the uniform compactness of the soil close to the field edge. Traverse F shows more anomalous values, but again, these do not correspond directly either with crop marks or magnetic anomalies.

Magnetometer survey:

The magnetic susceptibility of the topsoil in the area surveyed is only moderate and although the subsoil value was not measured it seems unlikely that a substantial contrast exists between the two. The magnetometer traces (plan 2) are consequently very smooth and archaeological features are only faintly detectable. There is a dramatic response to iron objects in places - notably in sqs. 28,29,31 and 32 where rubbish in a filled-in pit is assumed to be responsible, and along the northern edge of sqs. 7 - 20 where a substantial pipeline has been detected. The NE corners of sqs. 23, 24 and 27 are affected by the presence of corrugated iron pig shelters.

Squares 1 - 22:

No magnetic evidence was found over this part of the route to suggest the presence of archaeological features other than those already

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indicated from crop marks. Of the latter, the most obvious are the two conjoined circular ditches in sq. 21 the anomalies for which are some 20 m. to the south of the plotted crop marks. The ditches of these two circles do not appear to overlap, and may therefore belong to a single phase, or alternatively, subsoil from the northernmost might have been used to infill (and hence mute the anomalies from) parts of the earlier southernmost feature.

There is a broad and weak magnetically enhanced area within the southern circle. Part of a ditch, also seen as a crop mark, is visible in sq. 22.

About 230 m. further to the NW there is crop mark evidence of another circular feature, the perimeter of which might perhaps be composed of pits. There are very weak anomalies on the southern edge of sq. 14 and these would appear to relate to this arrangement, although a complete pattern is not discernible. It may be possible that less distinct features along this part of the route have been missed - one or two speculative anomalies have been indicated on the plan, but these are very tentative where aerial photographic evidence is negative.

Squares 23 - 34:

This area includes the eastern end of the cursus.

The most satisfactory, although again very weakly defined, feature is the ring ditch in sq. 23, corresponding to the crop mark about 6 m. to the north. This circle is encompassed by the ditch terminating the cursus which is almost completely undetectable with the exception of a short section, 10 m. in length, to the south of the circle. Magnetometer traverses over cursus sites elsewhere in the country (Dorset, Maxey) have similarly been disappointing, perhaps in part as a result of the lack of enhancement processes associated specifically with settlement activities.

Elsewhere in this field there are what appear to be additional fragments of ditches and pits but these are on the whole partial or too weak to be satisfactorily accounted for. Both crop marks and anomalies suggests that a large part of the area consists of a back-filled gravel pit containing, at least in part, quantities of iron rubbish.

4. CONCLUSIONS

Although the anomalies are very faint, it has been possible to confirm and locate some of the most important crop marks on the by-pass route. It seems unlikely that other substantial features have been missed, and there does not appear to be strong evidence for occupation activity.

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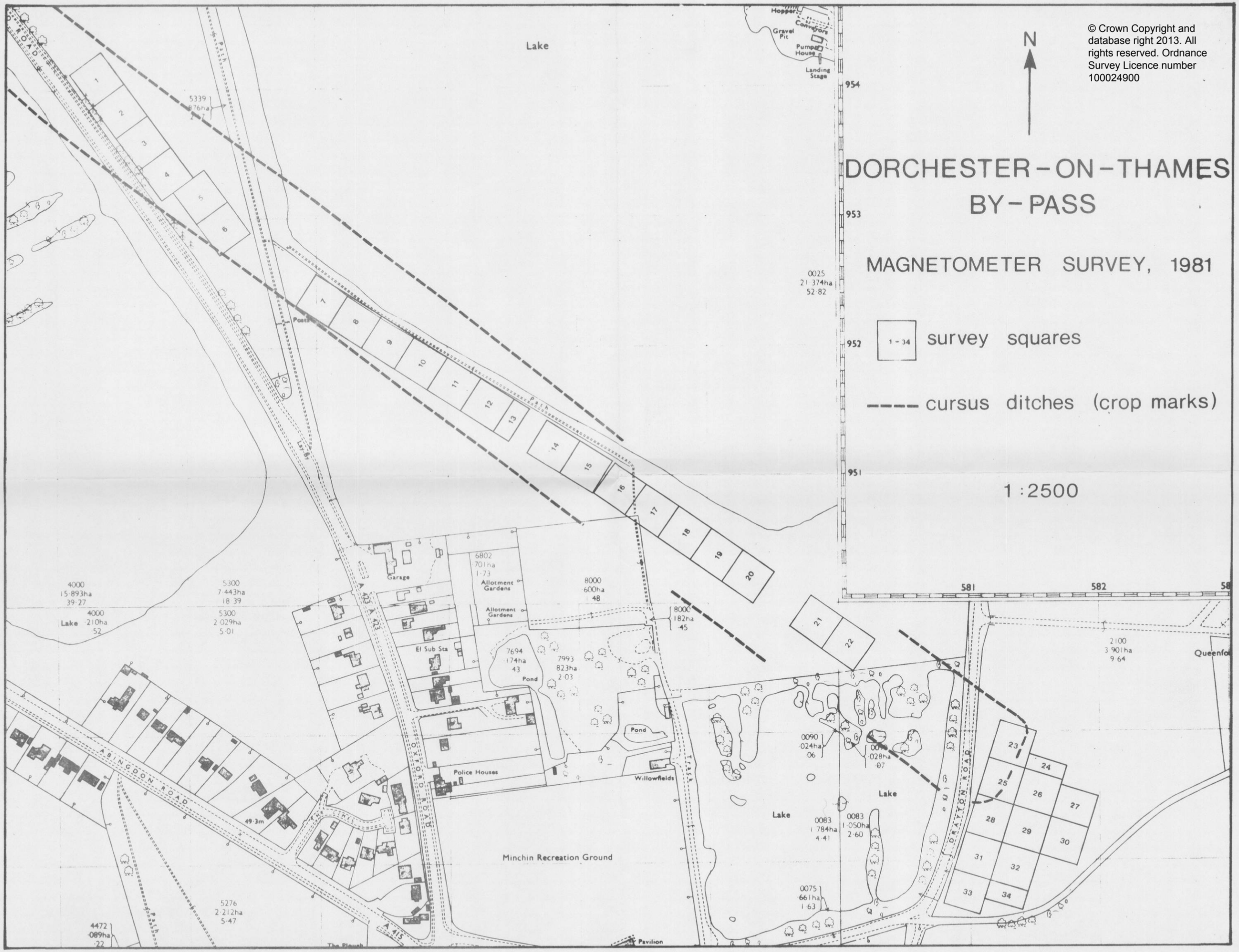
DORCHESTER-ON-THAMES BY-PASS

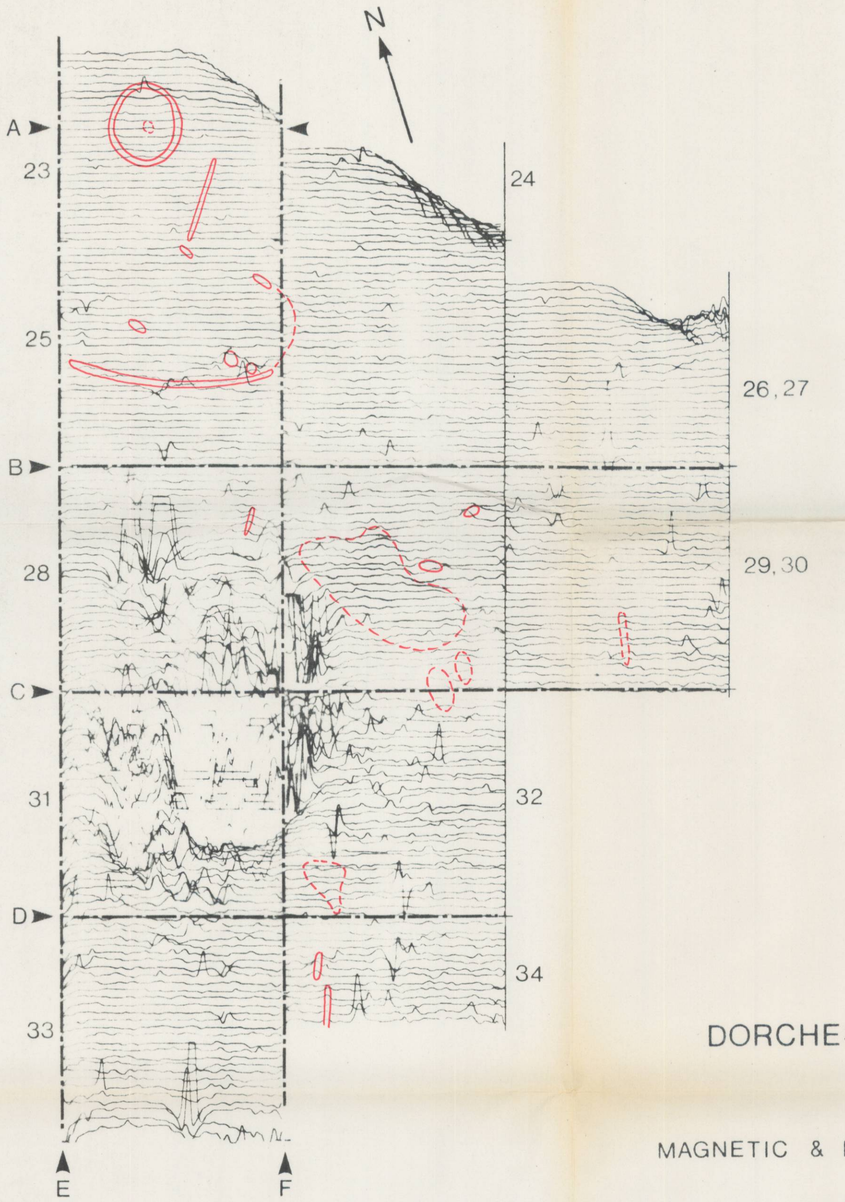
MAGNETOMETER SURVEY, 1981

1-34 survey squares

cursus ditches (crop marks)

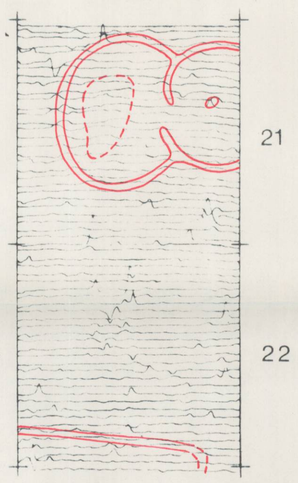
1:2500

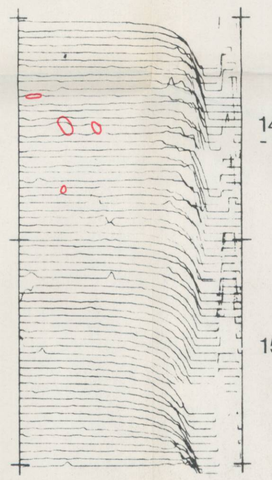


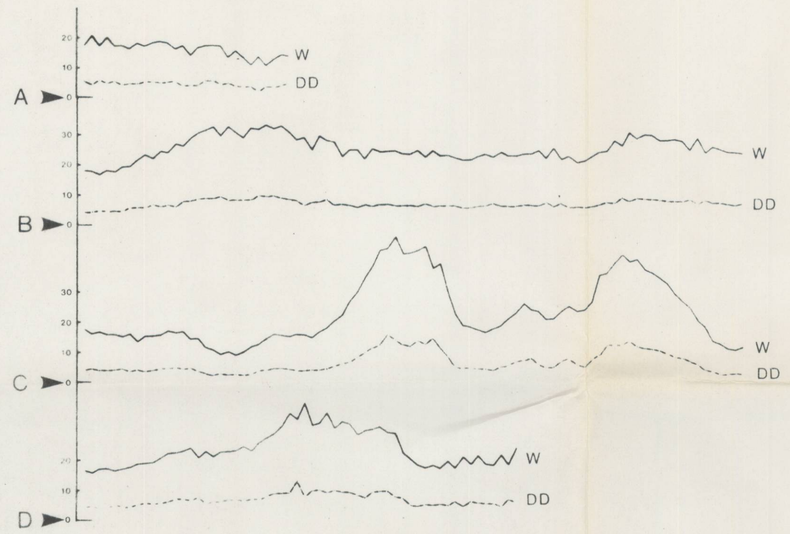


DORCHESTER-ON-THAMES BY-PASS

MAGNETIC & RESISTIVITY SURVEYS, 1981





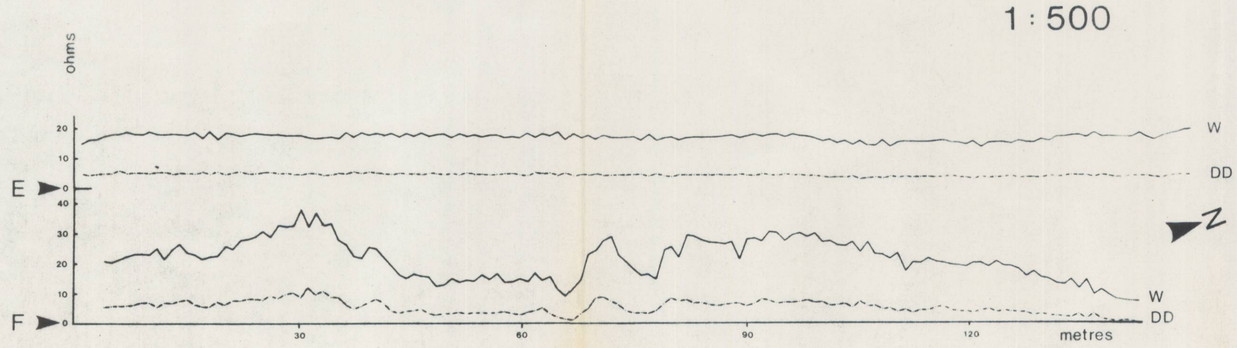


resistivity traverse

W Wenner

DD Double Dipole

1 : 500



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