ANCIENT MONUMENTS LABORATORY

RESISTIVITY SURVEY AT CARMARTHEN FRIARY: REPORT ON COMPUTER PLOTS

Report no. G 1/83

This survey was carried out by the Dyfed Archaeological Trust, and the data sent to the A.M. Laboratory for processing in December 1982. The readings were taken with Wenner and double dipole probe configurations on a 1.5m grid using a Martin-Clark meter. The probe spacing was 1.5m and the area covered by the survey was 45 x 63m (maximum).

Similar treatments were applied to the two sets of data, and plots of the results as graphs and contours are shown on the plan enclosed.

Wenner

1. Initial data

The plot of the untreated data shows all the main features detected in the survey (described below), but with some individual high readings probably caused by modern obstructions at or near the surface. There is also some background soil noise.

2. Filtered plot

Individual high readings likely to be spurious were first suppressed by substituting interpolated values for those exceeding the mean of their neighbours by an arbitrary threshold (30). The data was then smoothed to reduce the background noise, and filtered to emphasise narrow local anomalies which are likely to be archaeologically significant at the expense of larger scale variations. This reduces the anomalies to a uniform base level for contouring.

3. Contour plot

This plot is based on the data as treated in plot 2, but shows contours only from the mean to the maximum values. It therefore represents a plan of the positive anomalies which are those most likely to represent masonry or remains of wall footings.

Double dipole

Plots 4, 5 and 6 show the results of treatments equivalent to those used on the Wenner data. A lower threshold value was used for suppressing high readings (15), and the vertical scales and contour intervals were adjusted to allow for the reduced readings given by double dipole in comparison to Wenner.

Results

Very similar anomalies are visible in the plots of both the Wenner and double dipole data. There is a line of low readings across the survey from bottom left to top. (This is visible in the graphs but falls below the range of the contours.) This feature (labelled A on plan 2) could represent a silted ditch or a damp hollow.

There are localized positive anomalies of the kind to be expected from masonry or structural remains particularly at the NE corner of the survey. In the contour plot the plan of the double dipole anomalies here appears to form part of a rectangular outline (B), but in the Wenner plot a linear feature at the south side of this is more pronounced (C). There are fainter indications of another possible rectilinear feature to the south in both surveys (D). The ditch (A) appears to curve slightly to avoid the anomaly at B, but could be interpreted as cutting through that at D.

None of these suggested patterns is at all clearly defined, and the anomalies do not appear to represent any readily identifiable plan of a building. Some of the activity in the NE corner of the survey could be due to modern interference not suppressed in the processing, but structural remains might well also occur. Even if well preserved they will only be shown in limited detail by a survey at 1.5m spacing, but it could equally be the case that any masonry present is poorly preserved with substantial debris concentrated in only a few places.

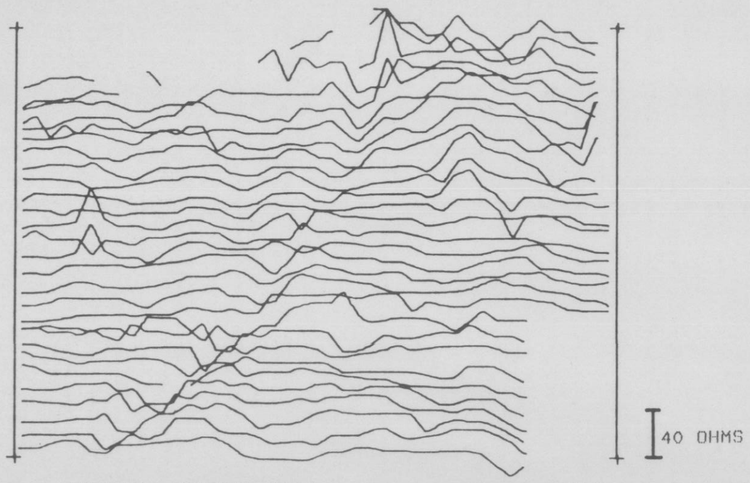
There are weak but possibly significant variations in the readings elsewhere, but if any structural or other remains occur they must be less substantial than those represented by the anomalies in the NE corner.

A. Bartlett

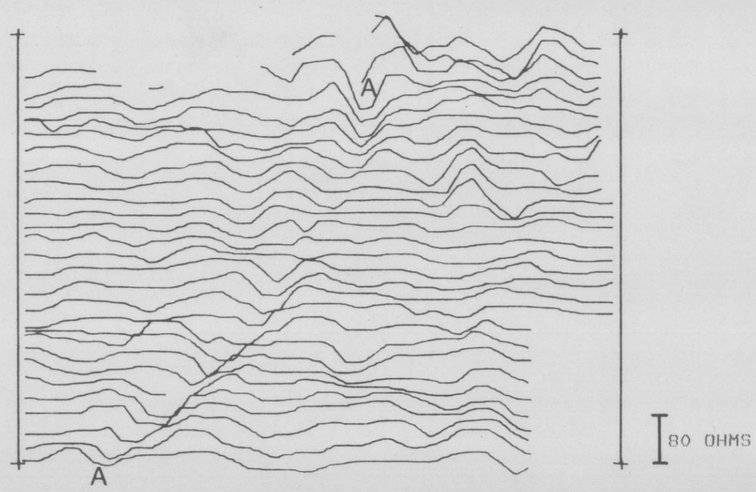
Date of report: 31 Jan 1983

Ancient Monuments Laboratory Geophysics Section
Department of the Environment
Fortress House
23 Savile Row
London W1X 2HE

01-734 6010 ext 531

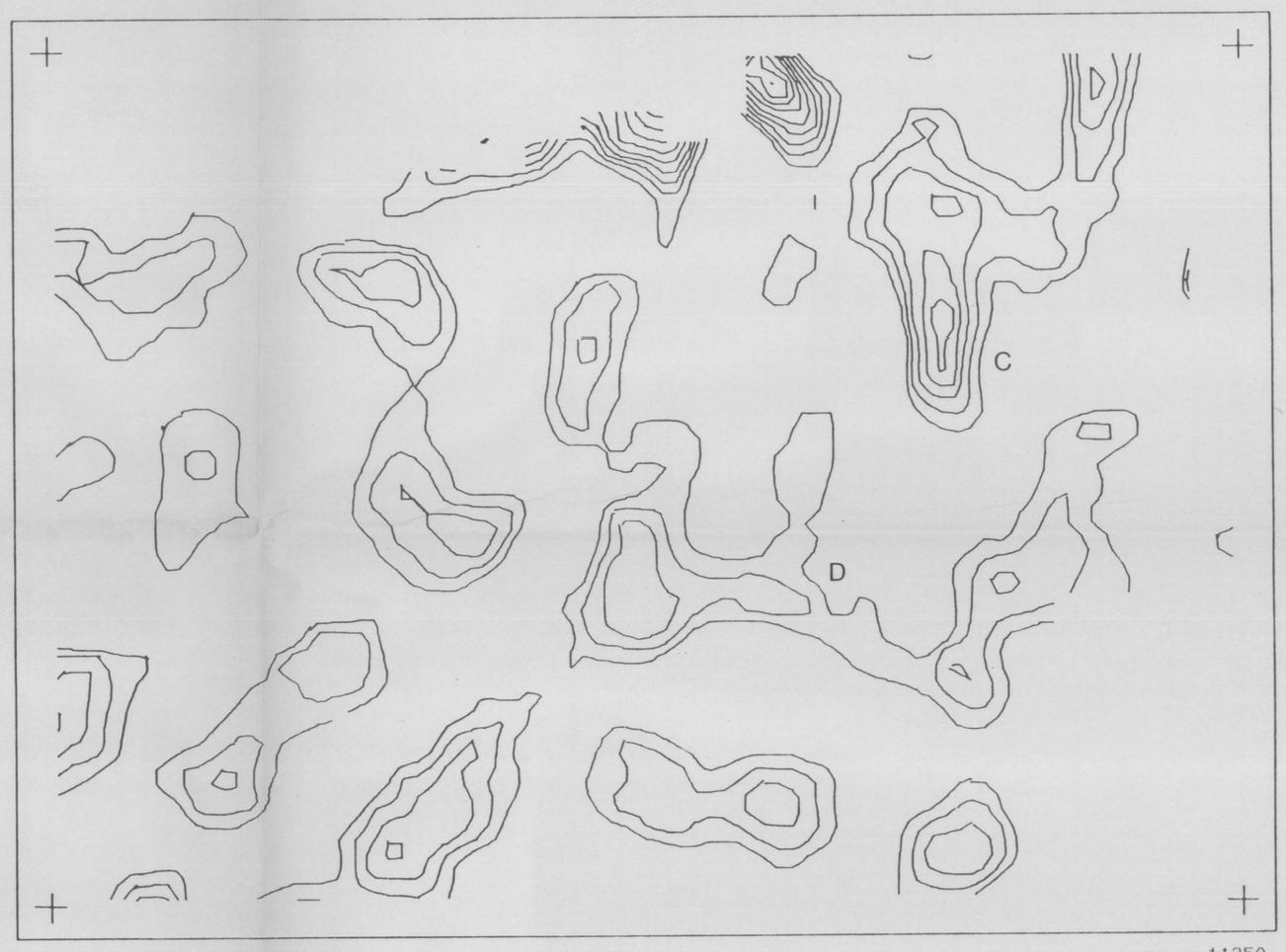


1. WENNER; INITIAL DATA 1:500



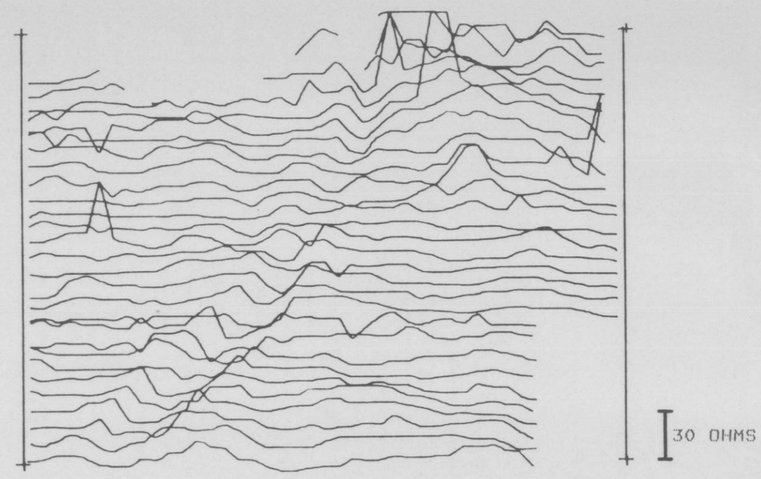
2. WENNER; DATA DE-SPIKED (CUT-OFF = 30);
SMOOTHED (FILTER RADIUS 1);
FILTERED (FILTER RADIUS 2 & 3).

1:500

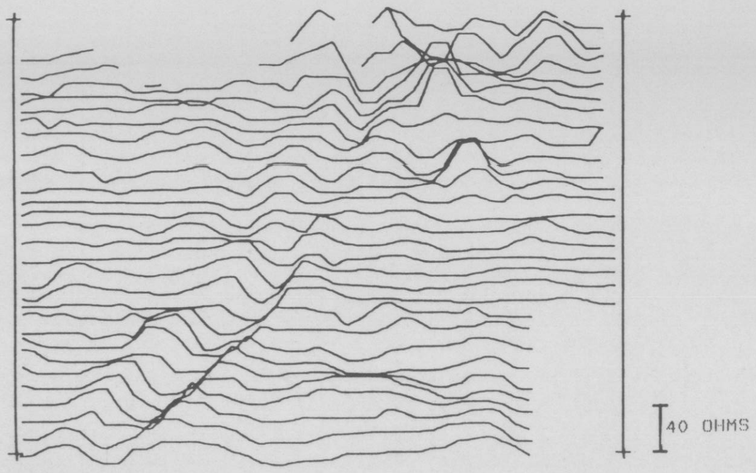


1:250

3. WENNER; CONTOUR PLOT (DATA AS FOR 2);
RANGE APPROX MEAN TO MAXIMUM, CONTOUR INTERVAL 0.5 ST. DEV.
(IE 4 TO 74; INTERVAL = 7)

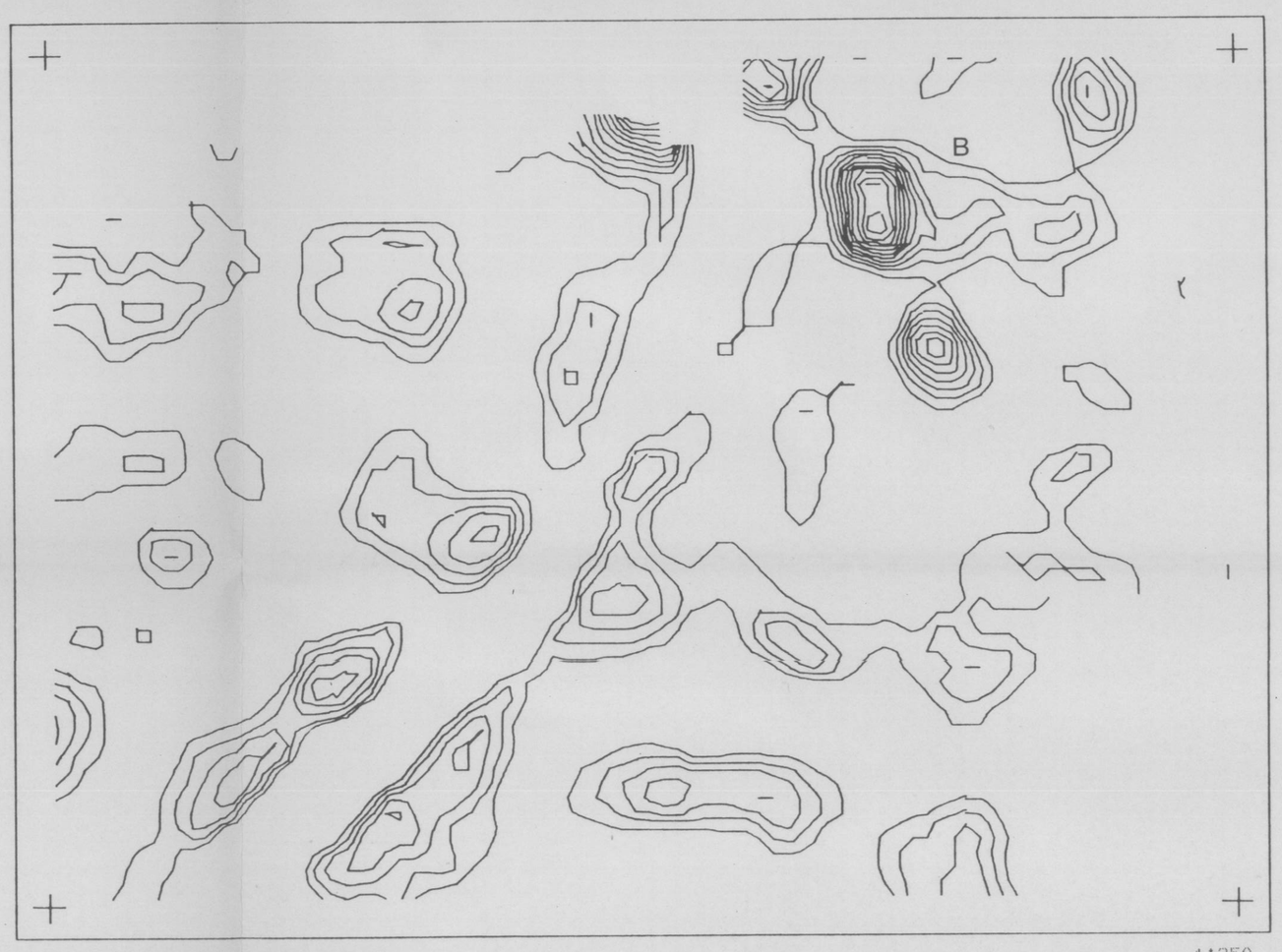


4. DOUBLE DIPOLE; INITIAL DATA 1:500



5. DOUBLE DIPOLE; DATA DE-SPIKED (CUT-OFF = 30);
SMOOTHED AND FILTERED (AS FOR PLOT 2).

1:500



1:250

6. DOUBLE DIPOLE; CONTOUR PLOT (DATA AS FOR 5);
RANGE APPROX MEAN TO MAXIMUM, CONTOUR INTERVAL 0.5 ST. DEV.
(IE 2 TO 32; INTERVAL = 3).

CARMARTHEN FRIARY, RESISTIVITY SURVEY, 1982

RESISTIVITY SURVEY DATA SUPPLIED BY DYFED ARCHAEOLOGICAL TRUST.

A.M. Lab. A.D.