GB 91/2

20218 - Roman

Geophysical Survey at the site of the proposed extension to the Water Treatment Works, at West Pinchbeck, Nr. Spalding, Lincolnshire

by

Heritage Lincolnshire

on behalf of **ANGLIAN WATER**
during December 1991.

CONTENTS PAGE

West Pinchbeck Water Treatment Works
Geophysical Survey

SUMMARY

During December 1991 a geophysical survey was commissioned by Anglian Water on land proposed for the construction of an extension to the water treatment works at West Pinchbeck, near Spalding, Lincolnshire. The surrounding area contains several known archaeological sites of Roman date. The purpose of the survey was to locate buried archaeological features on the proposed construction site and make recommendations concerning their preservation or examination.

Resistivity using a twin probe array was chosen as the survey method and 16, 20m x 20m grids were surveyed. Several consistent anomalies were located, some of which could be interpreted as of recent origin (infilled dykes, the results of construction work and effects of agricultural machinery) and others which may be of archaeological significance.

1. INTRODUCTION

During December 1991, a geophysical survey was commissioned by Anglian Water on land proposed for the construction of an extension to the water treatment works at West Pinchbeck, near Spalding, Lincolnshire.

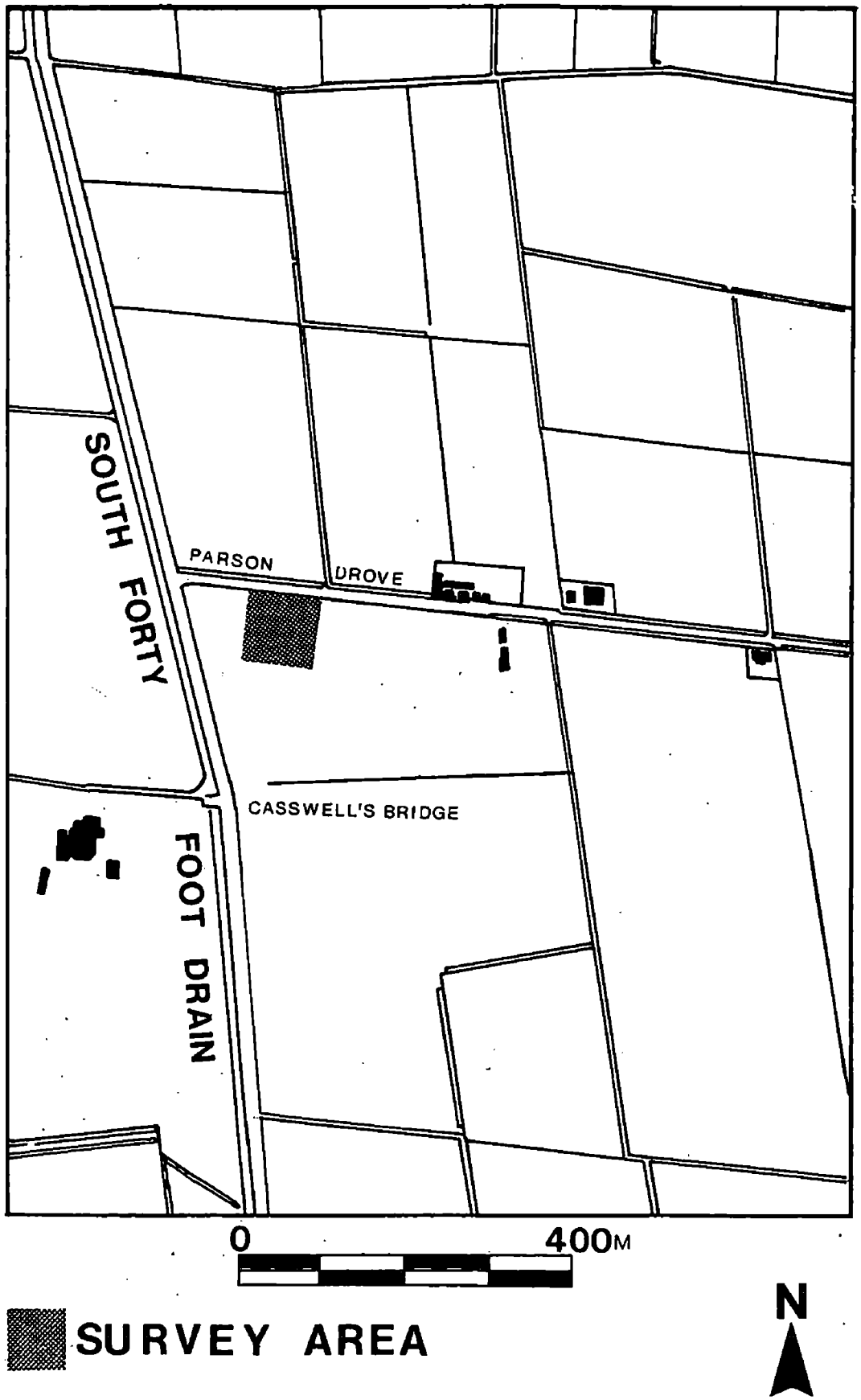
The purpose of the survey was to locate buried archaeological features on the proposed construction site and make recommendations concerning their preservation or examination.

2. LOCATION AND GEOLOGY (Fig. 1).

The survey site lies approximately 3 miles north west of West Pinchbeck on the south side of Parson Drove (N.G.R. TF 175274), (see Fig 1.). The survey site is currently arable land and, at the time of the survey, had recently been ploughed.

The underlying geology consists of a complex sequence of silts and clays associated with former river channels.

FIG.1


SOUTH FORTY
PARSON
DROVE
CASSWELL'S BRIDGE
FOOT DRAIN
0
400M
N
SURVEY AREA

3. ARCHAEOLOGICAL SETTING

Aerial photography has revealed the presence of cropmarks indicating enclosures, field systems and extinct river channels in the vicinity of the proposed construction site. A concentration of cropmarks occurs at Dunsby Fen Farm approximately 200m to the south west of the site. Previous archaeological fieldwork has ascertained that the features are of Roman date.

Concentrations of Roman pottery and occupation debris, which may indicate a settlement area, have been located 230m to the south of the site.

4. METHODOLOGY

Resistivity, using a twin probe array, was chosen as the survey method and 16, 20m x 20m grids were surveyed. The survey instrument was a Geoscan RM4 resistivity meter. Resistivity readings were taken at 1 metre stations (400 per survey grid). The survey area covered all the area of the proposed construction site.

The survey results were processed by computer with Geoplot software, and are displayed in Figs 2 and 3 on a grey scale format.

5. RESULTS (Fig. 2 and overlay).

Several consistent anomalies were located, some of which could be interpreted as of recent origin, some as geological interference, and others which may be of archaeological significance.

The major anomalies are shown on the overlay.

1. A low resistivity linear anomaly probably associated with the construction of the modern fence running north-south to the west of the survey area.
2. A high resistivity linear anomaly. The Ordnance Survey 1:10,560 map (TF12NE) of 1958, shows a dyke running along the northern edge of the field. The results suggest that it has been backfilled with rubble.
3. A low resistivity linear anomaly. Possibly a dyke backfilled with soil.
4. A low resistivity linear anomaly parallel to (3) and presumably associated with it. Possibly also a dyke backfilled with soil. (3) and (4) may represent an old field boundary.
5. A high resistivity linear anomaly. Possibly an in-filled dyke.
6. The anomaly at (6) may be part of a bank associated with (5) or may just represent a wider part of feature (5).

FIG 2

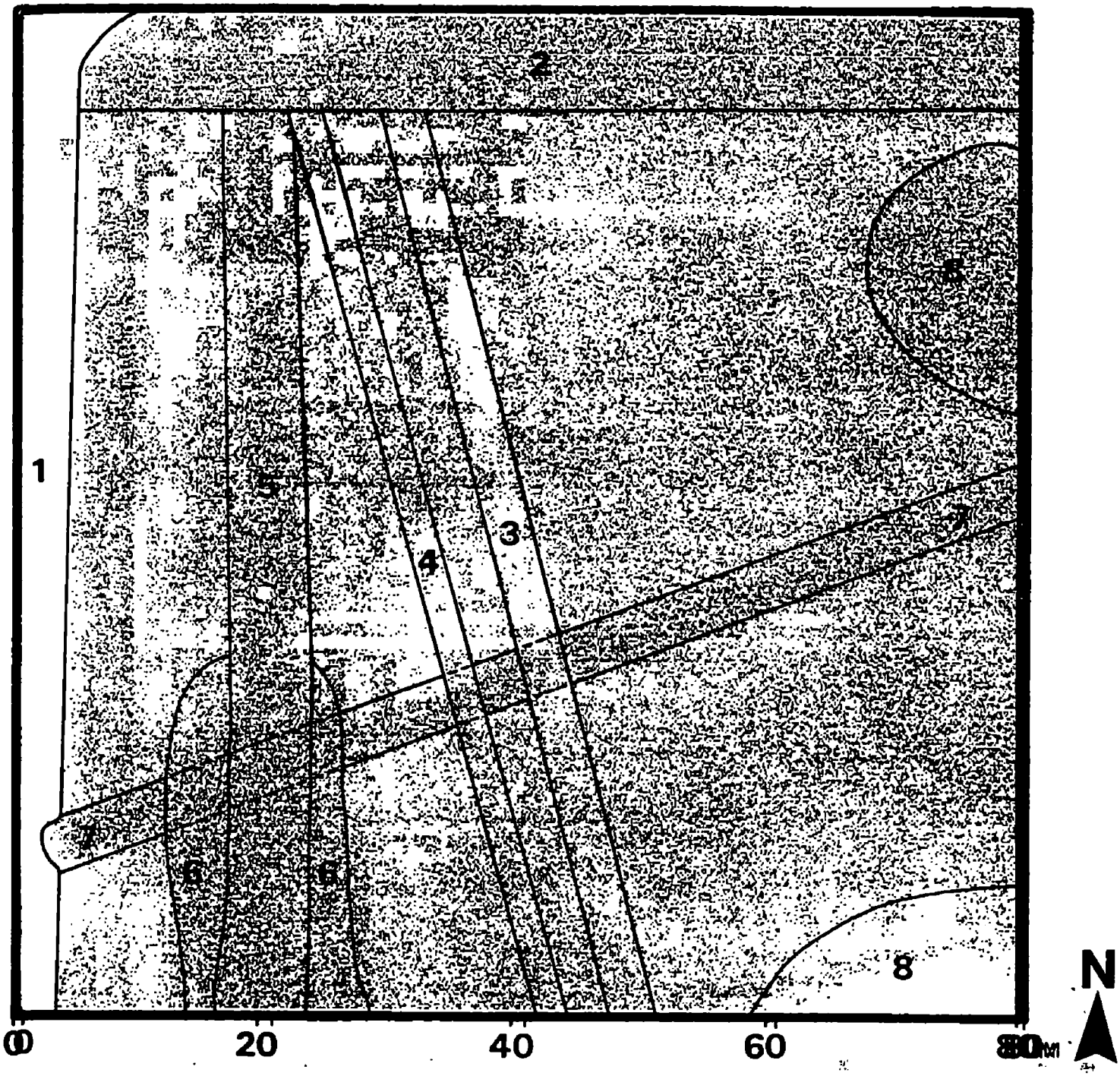
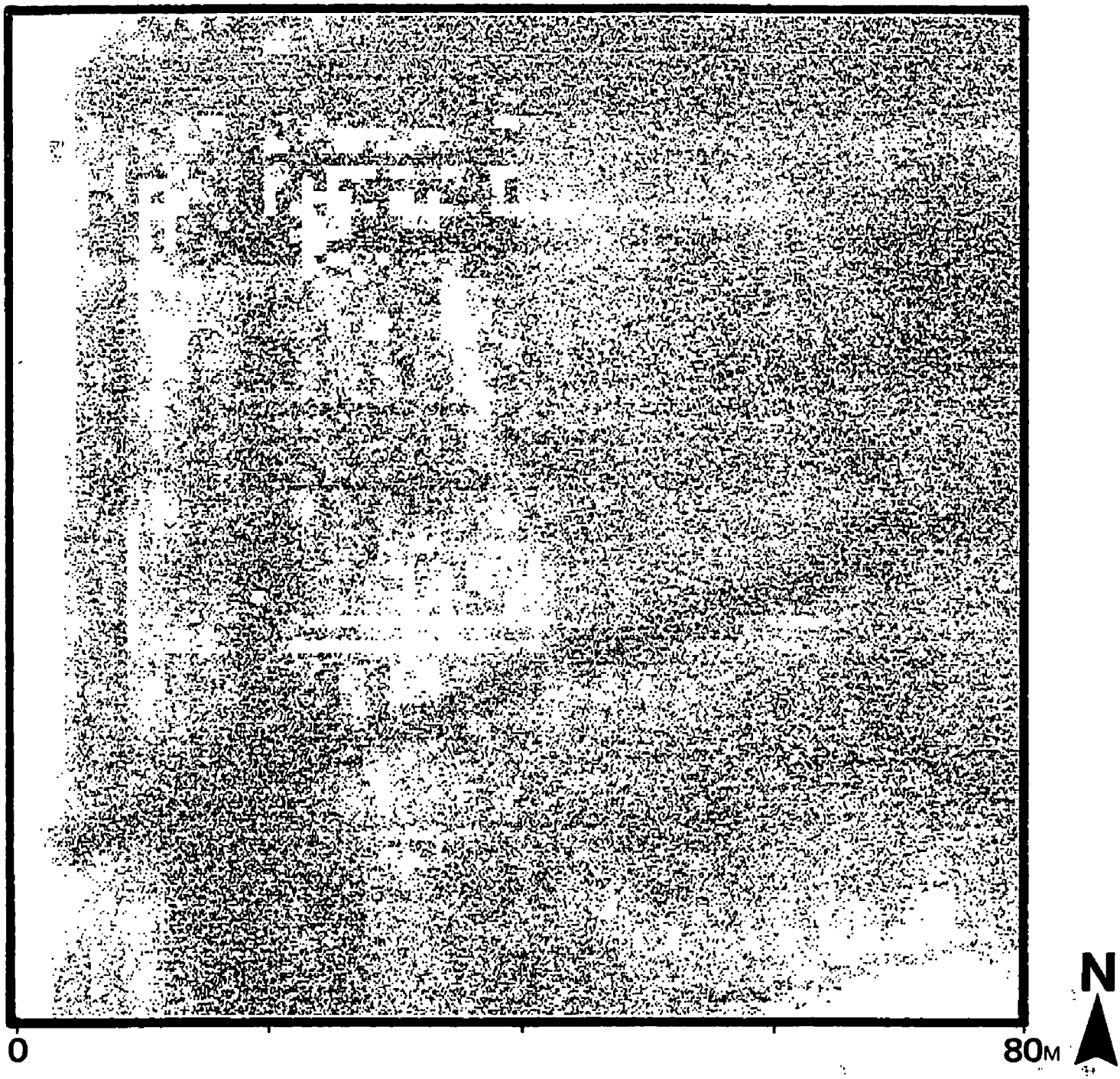


FIG 2



7. A very clear high resistivity anomaly which appears to be cut by (i.e. pre-dates) features (1), (3) and (4). This anomaly may represent a feature of archaeological significance.

8. General areas of low and high resistivity shown as (8) are thought to be the result of geological variations.

6. GENERAL OBSERVATIONS

The resistivity readings recorded during the survey were generally low due to the nature of the geology and the water table. Two grids in the north west corner of the survey area show irregular background readings which, in part, obscure the resistivity anomalies. These irregular background readings are due to problems encountered with frozen ground and subsequent waterlogging during thawing. They do not prejudice the results of the survey.

A series of parallel linear anomalies may be observed running east-west across the survey area at regularly spaced intervals. These are the result of localised compaction of the ground by tractor wheels.

Some of the anomalies detected [namely features (1) and (2)] are caused by buried features which are known from old Ordnance Survey maps of the area. These features have no archaeological significance.

7. CONCLUSIONS AND RECOMMENDATIONS

The linear anomaly shown as (7) on Fig 4 appears to be earlier than the other features and may be archaeological in origin. It is recommended that feature (7) be evaluated in order to determine its nature and date, in advance of the proposed extension to the water treatment works.

The archaeological evaluation would involve a small programme of trial excavation trenching to investigate feature (7) and establish its relationship with features (3), (4) and (5).