DAVENTRY INTERNATIONAL RAIL FREIGHT TERMINAL

Archaeological Evaluation

APPENDICES

RPS CLOUSTON
THE ENVIRONMENTAL CONSULTANCY

15/05/2000 - Geophy. No Site Nº

APPENDICES

Appendix 1 - Geophysical Survey

Appendix 1

Section 1

A Report for

RPS CLOUSTON

on a

Geophysical Survey

carried out at

DAVENTRY INTERNATIONAL
RAIL FREIGHT TERMINAL
CRICK, NORTHANTS

July - August 1993

GEOPHYSICAL & SPECIALIST SURVEY SERVICES

A Report for

RPS CLOUSTON

on a

Geophysical Survey

carried out at

DAVENTRY INTERNATIONAL
RAIL FREIGHT TERMINAL
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July - August 1993

CONTENTS

Introduction

Description of the site

Methodology

Discussion

Table 1	Statistical analysis of Magnetic Susceptibility survey	
Table 2	Laboratory magnetic susceptibility results of soil samples	
Figure 1 -	1:50 000	General Location Plan
Figure 2 -	1:5000	Detailed Location Plan
Figure 2a -	1:5000	Plan showing approximate areas of different sub-soils and positions of soil samples
Figure 3 -	1:1000	Plot of Magnetometer Survey
Figure 4 -	1:1000	Plot of Resistance Survey before processing
Figure 5 -	1:1000	Plot of Resistance Survey after processing
Figure 6 -	1:2500	Magnetic Susceptibility Survey Areas 1, 3, 4, 5
Figure 7 -	1:2500	Magnetic Susceptibility Survey Area 2
Figure 8 -	1:2500	Magnetic Susceptibility Survey Area 6, 7, 8, 9
Figure 9 -	1:2500	Magnetic Susceptibility Survey Detail of Area 4
Figure 10 -	1:1000	Abstraction of magnetometer and resistivity features

INTRODUCTION

The geophysical survey was commissioned as part of the archaeological asssment of the site for the proposed International Rail Freight Terminal.

DESCRIPTION OF THE SITES

The site lies some seven kilometres south east of Rugby and just to the south west of Junction 18 on the M1 motorway. The land is quite undulating with an overall fall of about 20m from the central area towards the west, north and south west. The land use at the time of the survey was pasture. The soils is clayey loam [Denchworth] in the lower areas, derived from the underlying Jurassic and Cretaceous clay and fine loam [Beccles 3] in the higher areas derived from chalky till. A sketch showing the approximate location of the changes in these sub-soils is included in Figure 2a.

METHODOLOGY

Three geophysical techniques were used on the site.

1. Magnetometer

   Although the changes in the magnetic field resulting from differing features in the soil are usually weak, changes as small as 0.2 nanoTesla (nT) in an overall field strength of 48,000nT, can be accurately detected using an appropriate instrument.

   The mapping of the anomaly in a systematic manner will allow an estimate of the type of material present beneath the surface. Strong magnetic anomalies will be generated by buried iron-based objects or by kilns or hearths. More subtle anomalies such as pits and ditches can be seen if they contain more humic material which is normally rich in magnetic iron oxides when compared with the subsoil.

   To illustrate this point, the cutting and subsequent silting or backfilling of a ditch may result in a larger volume of weakly magnetic material being accumulated in the trench compared to the undisturbed subsoil. A weak magnetic anomaly should therefore appear in plan along the line of the ditch.

   The magnetic survey was carried out using an FM36 Fluxgate Gradiometer manufactured by Geoscan Research. The instrument consists of two fluxgates mounted 0.5m vertically apart, and very accurately aligned to nullify the effects of the earth's magnetic field. Thus readings relate to the difference in localised magnetic anomalies compared with the general magnetic background. Readings are taken automatically with a sample trigger and held in an 'on board' data logger. The data is later downloaded into a computer for processing and presentation in the same way as the resistance meter.

Processing can emphasise various aspects contained within the data but which are often not easily seen in the raw data. Basic processing of the magnetic data involves 'flattening' the background levels with respect to adjacent traverses and adjacent grids. 'Despiking' is also performed to remove the anomalies resulting from small iron objects often found on agricultural land. Once the basic processing has flattened the background it is then possible to carry out low pass filtering to reduce 'noise' in the data and hence emphasise the archaeological or man-made anomalies. The presentation of the data for each site involves a print-out of the 'despiked and filtered' data.

Magnetic features have been identified and plotted onto the 'Abstraction of Features' drawing for each site, numbered for ease of reference and prefixed with the letter 'M'.

2. Resistance Meter

This method relies on the relative inability of soils (and objects within the soil) to conduct an electrical current which is passed through them. As resistivity is linked to moisture content, and therefore porosity, hard dense features such as rock will give a relatively high resistivity response, while features such as a ditch which retains moisture give a relatively low response.

The resistance meter used was an RM15 manufactured by Geoscan Research incorporating a mobile Twin Probe Array. The Twin Probes are separated by 0.5m and the associated remote probes were positioned approximately 15m outside of the grid. This instrument uses an automatic data logger which permits the data to be recorded on site for later downloading to a computer for processing and presentation.

The processing typically involves the 'despiking' of high contact resistance readings and the passing of the data though a high pass filter. This has the effect of removing the larger variations in the data often associated with geological features. The nett effect is to enhance the archaeological or man-made anomalies contained in the data. The presentation of the data for each site normally involves a print-out of the raw data as well as 'despiked and filtered' data.

Resistance features have been identified and plotted onto the 'Abstraction of Features' drawing for each site, numbered for ease of reference and prefixed with the letter 'R'.

Though the values being logged are actually resistances in ohms they are directly proportional to resistivity (ohm-metres) as the same probe configuration was used through-out.

3. Magnetic Susceptibility

Both the alteration of iron minerals in topsoil through biological activity and burning can enhance the magnetic susceptibility (MS) of that soil. Thus measuring the MS of a soil can give a measure of past (ie archaeological) activity and can be used to target the more intensive and higher resolution technique of Magnetometry.

Measurements of MS can be carried out in two various ways.

1/ Field coils provide rapid scanning and have the benefit of allowing "insitu" readings though problems with ground contact can be experienced.

2/ Alternatively samples can be taken out in the field for analysis back in a laboratory. This overcomes the ground contact problem, but is slower and more laborious.

In this survey the first measurement technique was used involving an MS2 Magnetic Susceptibility meter manufactured by Bartington Instruments Ltd. Field coils known as an MS2F and MS2D were used to take field samples at the nodes of a 20m x 20m grid. These assessed the top 20mm and 200mm of topsoil respectively. To overcome the problem of ground contact all readings were taken 4 or 5 times and an average taken. All obvious localised "spikes" were ignored. Where readings were taken on permanent pasture a small divot was removed to enable good contact to be made.

The readings were stored and later loaded into a computer. From this data grey scale plots have been generated which are reproduced in this report at a scale of 1:2500 and overlain onto the site plans at the same scale.

The surveys were carried out between 26th July 1993 and 6th August 1993 when the weather was changeable. The site was set out using theodolite, tape and optical square. The grid size used for all three techniques was 20m x 20m. Readings were taken at 1m centres for the resistivity and 0.5m centres for the magnetometer, along traverses 1m apart. Magnetic Susceptibility readings were taken at the corners of each 20m grid.

The presence of tall thistles in the area of magnetometer survey slowed down the rate of survey. These were strimmed prior to the survey taking place to ensure good quality data was obtained.

DISCUSSION

Magnetometer and Resistivity Survey (see Figure 10)

The main features picked up by both the magnetometer and resistivity surveys is the ridge and furrow running east to west near the southern end of the survey area. These have been collectively labelled M1 and R1 respectively.

To the north of this section of ridge and furrow, which is very obvious on the ground, are further strips running north to south and at wider centres. It is interesting that the magnetometer failed to pick this up.

The Watling Street roman road is thought to lie to the east of the ridge and furrow. No direct positive evidence for the road is "seen" by the geophysics, but the linear featureless area shaded on Figure 10 and labelled M2 and R2 is probably either the road itself or possibly a verge with the road itself being beneath the modern hedge. No evidence is seen for any drainage adjacent to the road other than a weak linear low resistance feature R3 only seen by the processed resistance data.

Several other magnetic features are also picked up by the magnetometer. The linear feature M3 has the look of an old watercourse but inspection of the site dispels this interpretation as the profile of the ground from the existing watercourse to the hedge appears unbroken. An alternative interpretation could be that this is an old track-way but this is not entirely convincing.

M4, M5, M6, M18 and M19 are a cluster of anomalies which are rather incoherent. They may be pits or other archaeological features but could also be the result of more recent bonfires associated with hedge cutting. (M12 has a similar characteristic).

M7 has a random "noisy" character which suggests that it may be a spread of brick hardcore, possibly to form hardstanding for cattle to drink in the winter months.

M10 and M11, although on either side of the watercourse, would seem to be related, but again the noisy nature of the features may mean more hardcore.

There are several stronger anomalies along the hedgerow, namely M13, M14, M15, M16 and M17 (also M8 and M9). These are probably metal associated with the hedge or other metal debris.

Magnetic Susceptibility Survey

Most of the areas surveyed with MS show relatively low levels of magnetisation as Table 1 shows. The two exceptions are Area 2 and in particular Area 4.

A study of the grey scale plot for Area 2 shows the higher levels of magnetisation to be at the northern end, ie. towards the chalky till soil and the disturbed area of the gravel pit. It is thought that the enhanced MS is likely to be due to these sources and not to underlying archaeology.

Area 4 is more interesting. The higher MS levels closely follow the field boundary which suggests that the field may have contained a settlement of some kind. However, a series of auger borings were taken within Area 4 and in the adjacent three Areas, 5, 1 and 3. This showed Area 4 to have a sandy sub-soil but the surrounding fields to have a gravelly clay sub-soil.

Six soil samples were taken from the general area as shown in Figure 2a. These were sent off to a laboratory for further tests, the results of which are shown in Table 2.

Samples 5 and 6 are both from within Area 4 and have clearly the highest untreated MS. After heating they also show % conversions consistent with human occupation, although the levels were considered rather high. Further tests were therefore carried out on Samples 5 and 6 including checking with a magnet. This found a significant number of magnetic grains with a high susceptibility within the sand. The other samples failed to yield similar material. It is therefore felt that this phenomenon is likely to be geological in origin.

It does however raise the question as to why the enhanced MS closely follows the field boundary. It may be that the fertility over the sandy sub-soil was sufficiently different that it got fenced off so that the land could be managed or cropped separately. However, a similar argument could be used to justify the establishment of a settlement over a well drained sub-soil. It has therefore been decided to survey a section of the field with magnetometer to see if any archaeology emerges. The results of this further work will form an addendum to this report.

TABLE 1

Statistical analysis of Magnetic Susceptibility Survey

Area	Mean	Standard Deviation	Min.	Max.
1	9	4	1	26
2	23	10	11	61
3	10	4	5	31
4	45	15	15	100
5	15	11	4	63
6	8	13	3	160
7	12	5	4	25
8	17	9	4	40
9	10	4	3	33

Units: 10^{-8}SI/Kg

Note:

Area 4 has the highest mean, standard deviation and minimum reading which is reflected in the grey scale plots of the survey results. This therefore targeted the area for further study.

TABLE 2

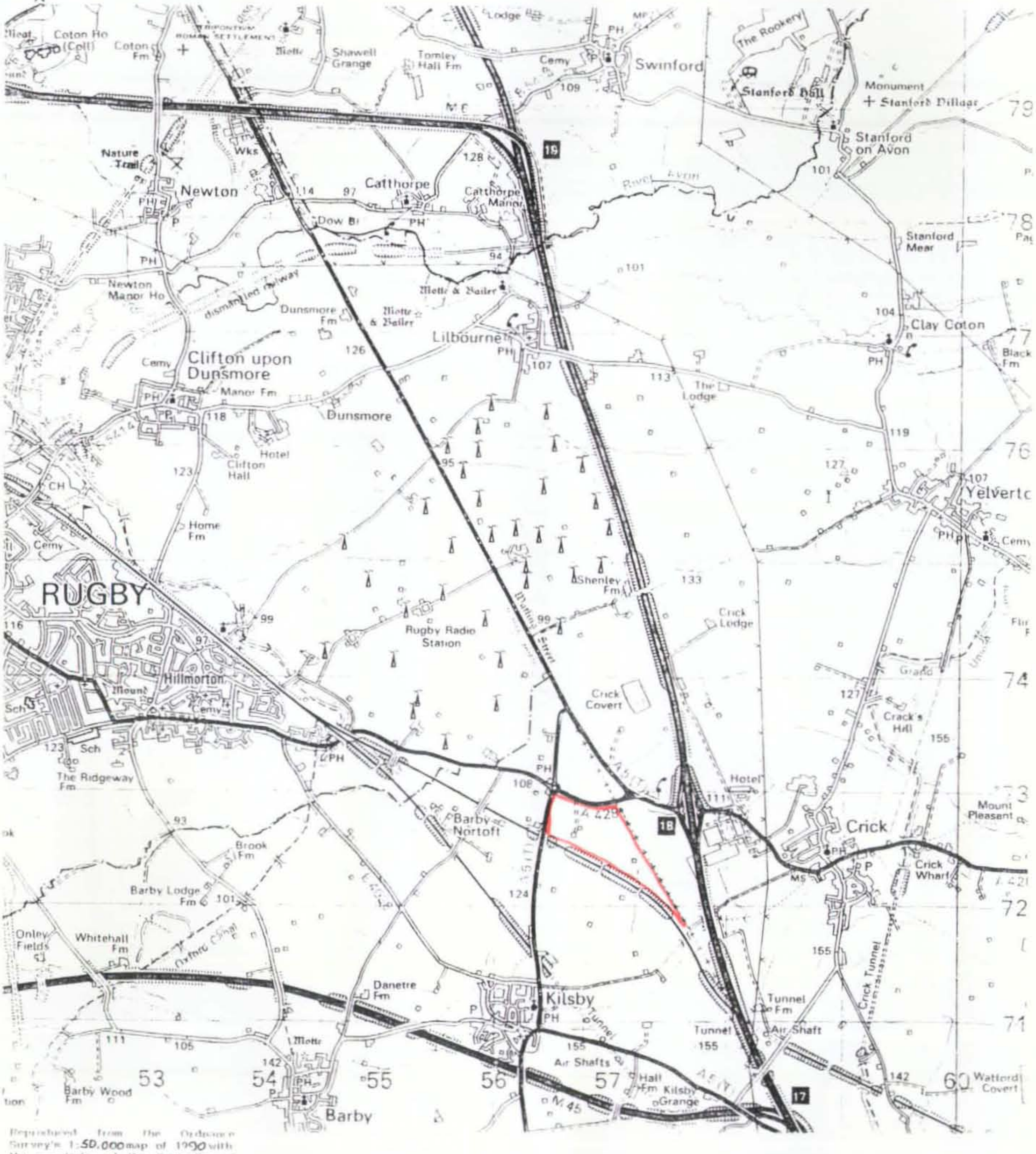
Results of Laboratory
magnetic susceptibility tests
on soil samples

Sample No	1	2	3	4	5	6
Untreated						
LF_{κ}	21.2	12.5	11.1	14.6	111.3	71.7
Dried and Sieved						
LF_{κ}	26.7	15.8	13.2	19.5	86.2	84.8
HF_{κ}	26.0	14.9	13.1	19.3	79.2	78.1
$\%_{fd}$	2.7	5.6	0.5	1.2	8.1	7.2
Heated Sample						
LF_{κ}	2116	1619	6501	3057	2195	2047
HF_{κ}	1993	1519	6097	2795	2064	1912
$\%_{fd}$	5.8	6.2	6.2	8.6	6.0	6.6
% conversion before heating	1.3	1.0	0.2	0.6	3.9	4.1

Units: 10^{-8}SI/Kg

Notes:

Auger samples at each of the sample positions showed the sub-soil at points 1 to 4 to be gravelly clay but at points 5 and 6 the sub-soil is clean sand.



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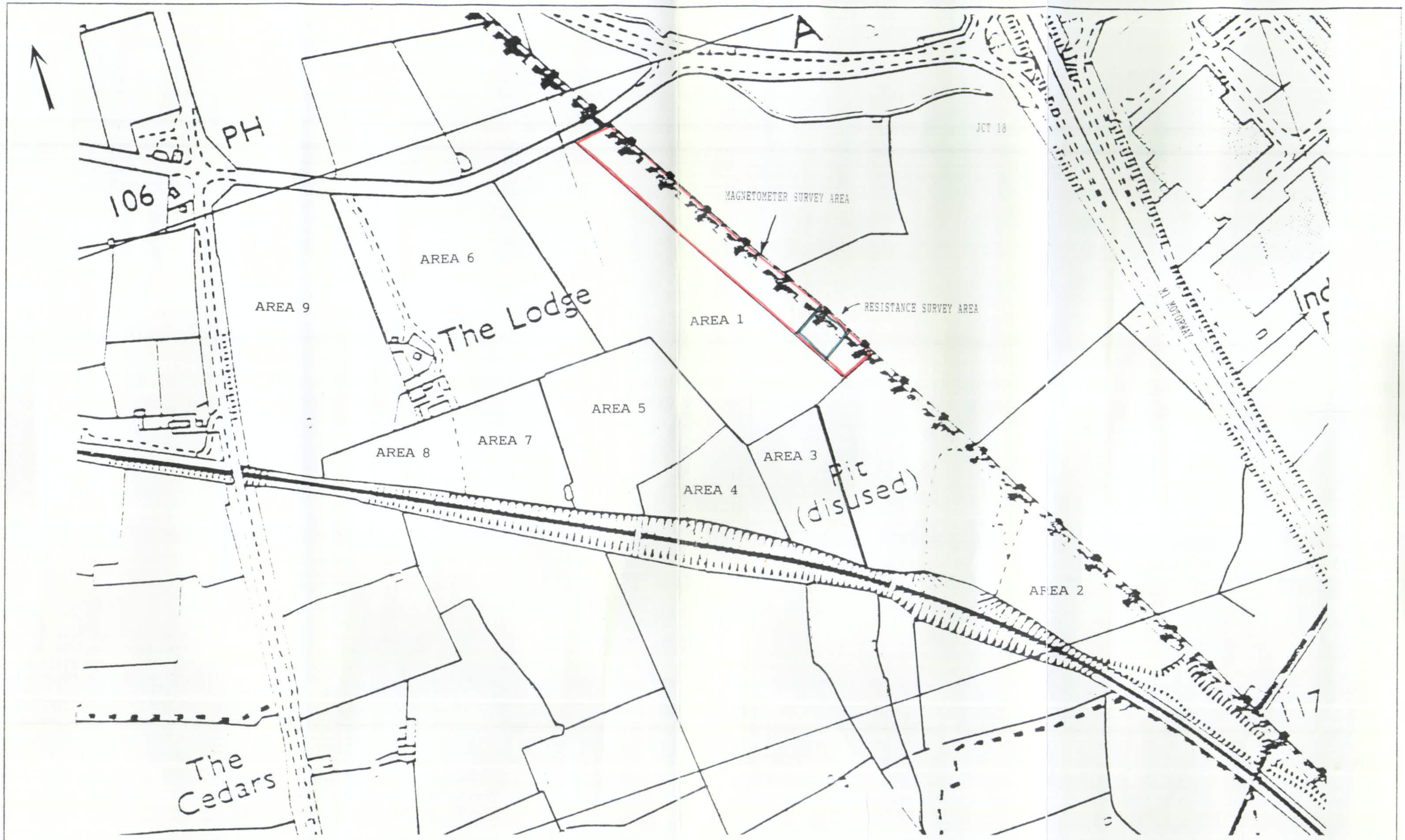
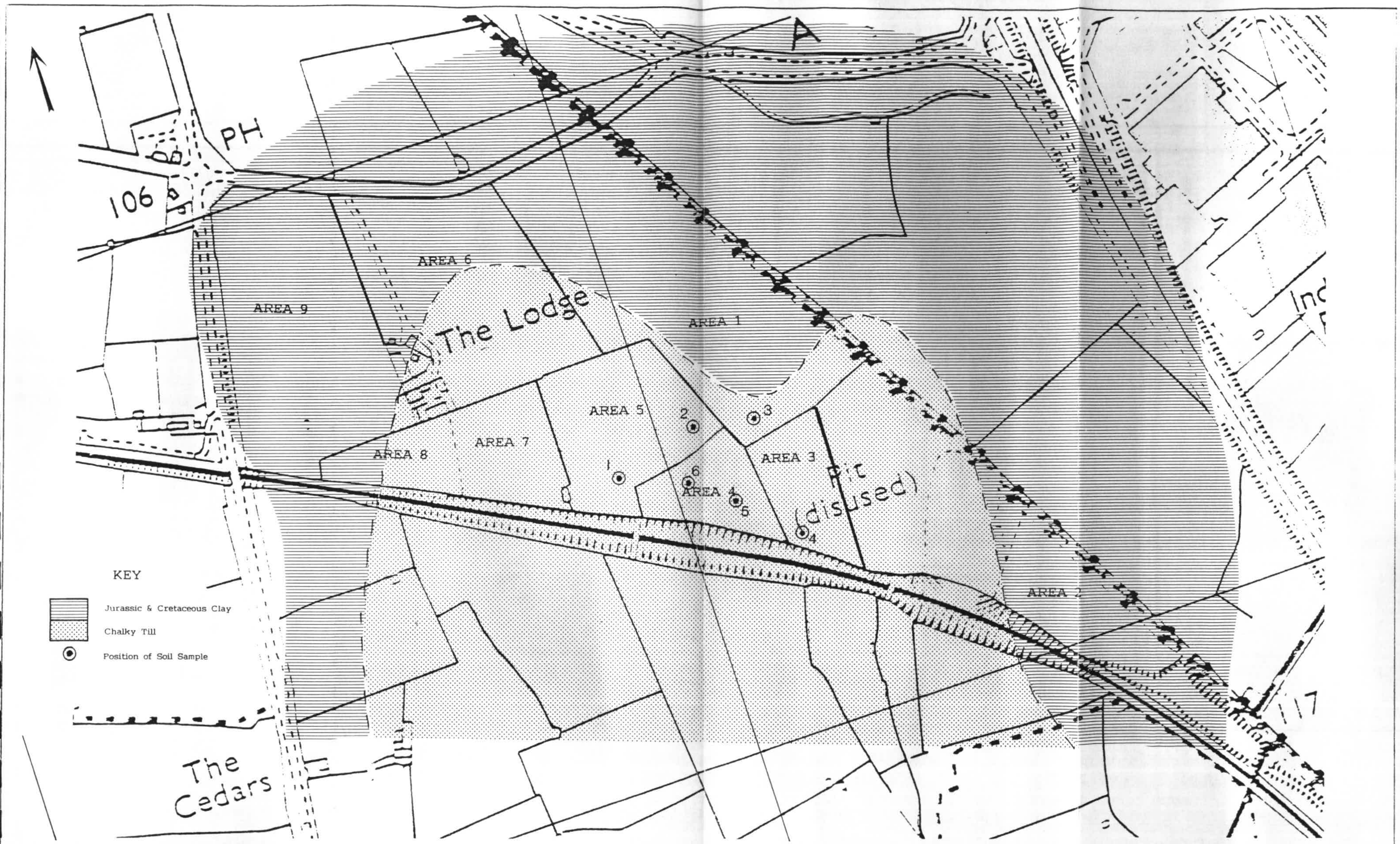
Date July – August 1993	Client RPS CLOUSTON	STRATASCAN
Scale 1:50 000	Subject Geophysical Survey Daventry International Rail Freight Terminal General Location Plan	TILTRIDGE FARM UPPER HOOK ROAD UPTON UPON SEVERN WORCESTERSHIRE WR8 0SA UK TELEPHONE (0684) 592266
Figure 1		



Date July - August 1993	Client RPS CLOUSTON	Figure 2	STRATASCAN™
Scale 1:5000	Subject Geophysical Survey Daventry International Rail Freight Terminal Detailed Location Plan		TELEPHONE (0684) 592266 FAX (0684) 594142

TILTRIDGE FARM
UPPER HOOK ROAD
UPTON UPON SEVERN
WORCESTERSHIRE WR8 0SA UK



Date July - August 1993	Client RPS CLOUSTON	Figure 2a	STRATASCAN™
Scale 1:5000	Subject Geophysical Survey - Daventry International Rail Freight Terminal Plan showing approximate areas of different sub-soils and Positions of soil samples		

STRATASCAN™
TELEPHONE (0684) 592266
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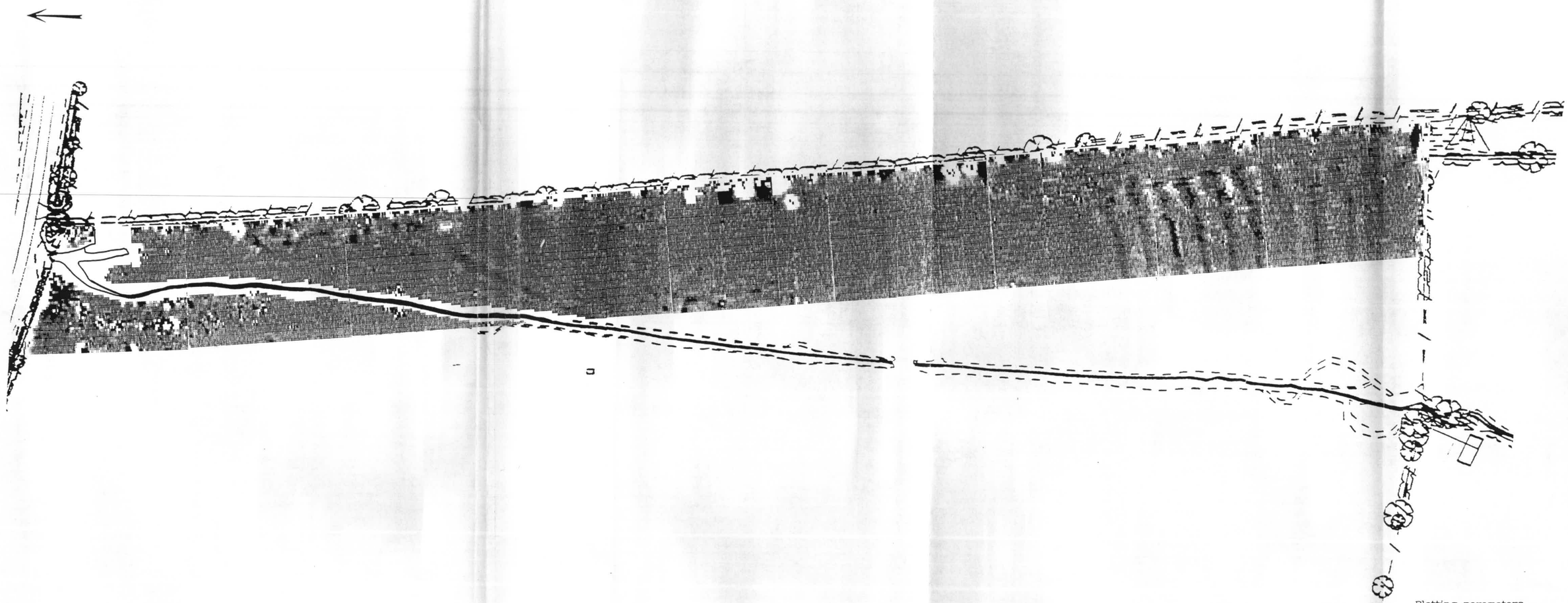
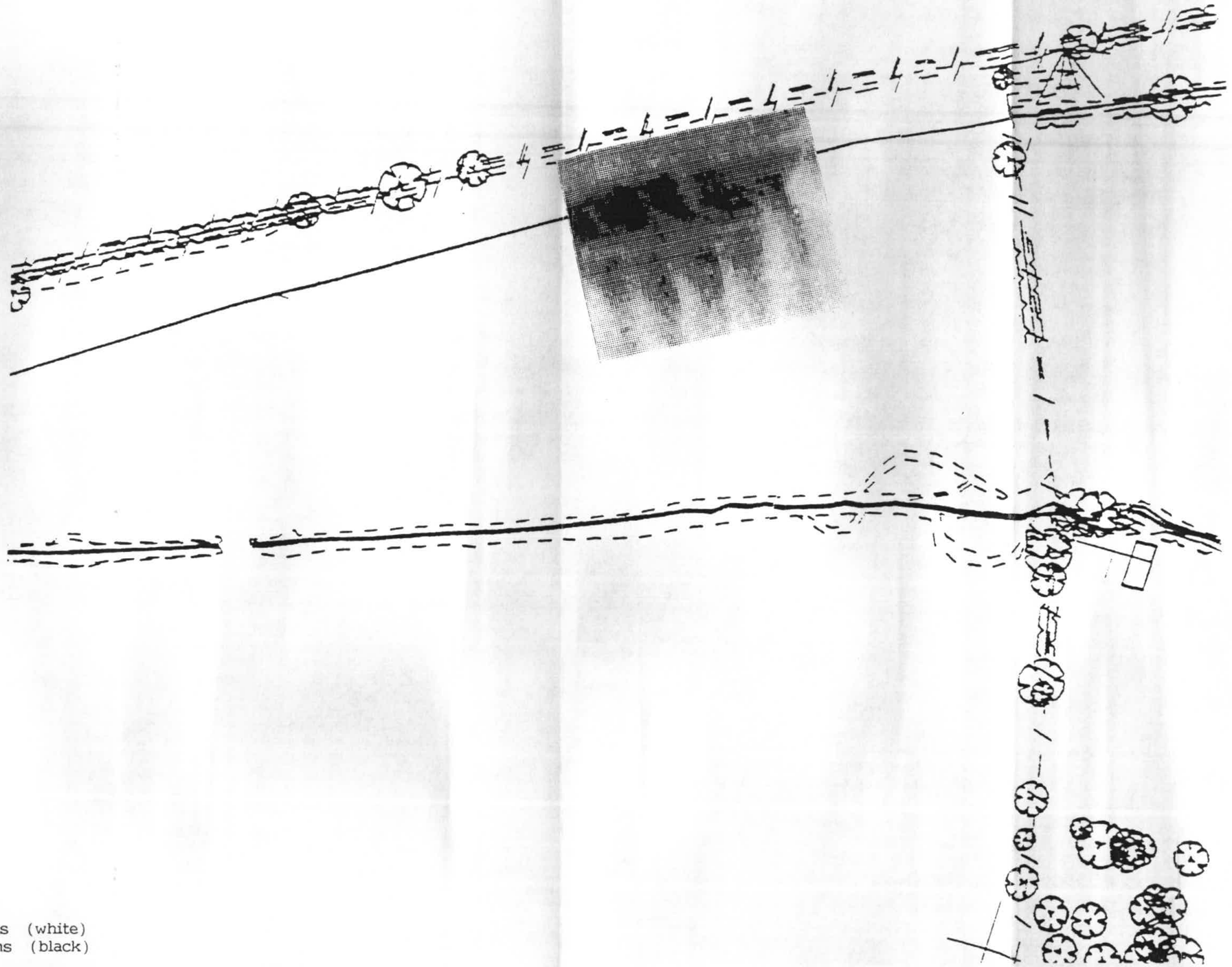
TILTRIDGE FARM
UPPER HOOK ROAD
UPTON UPON SEVERN
WORCESTERSHIRE WR8 0SA UK



Plotting parameters
Minimum -3nT (white)
Maximum +3nT (black)

Date July - August 1993	Client RPS CLOUSTON	Figure 3	STRATASCAN™
Scale 1:1000	Subject Geophysical Survey Daventry International Rail Freight Terminal Plot of Magnetometer Survey		TELEPHONE (0684) 592266 FAX (0684) 594142

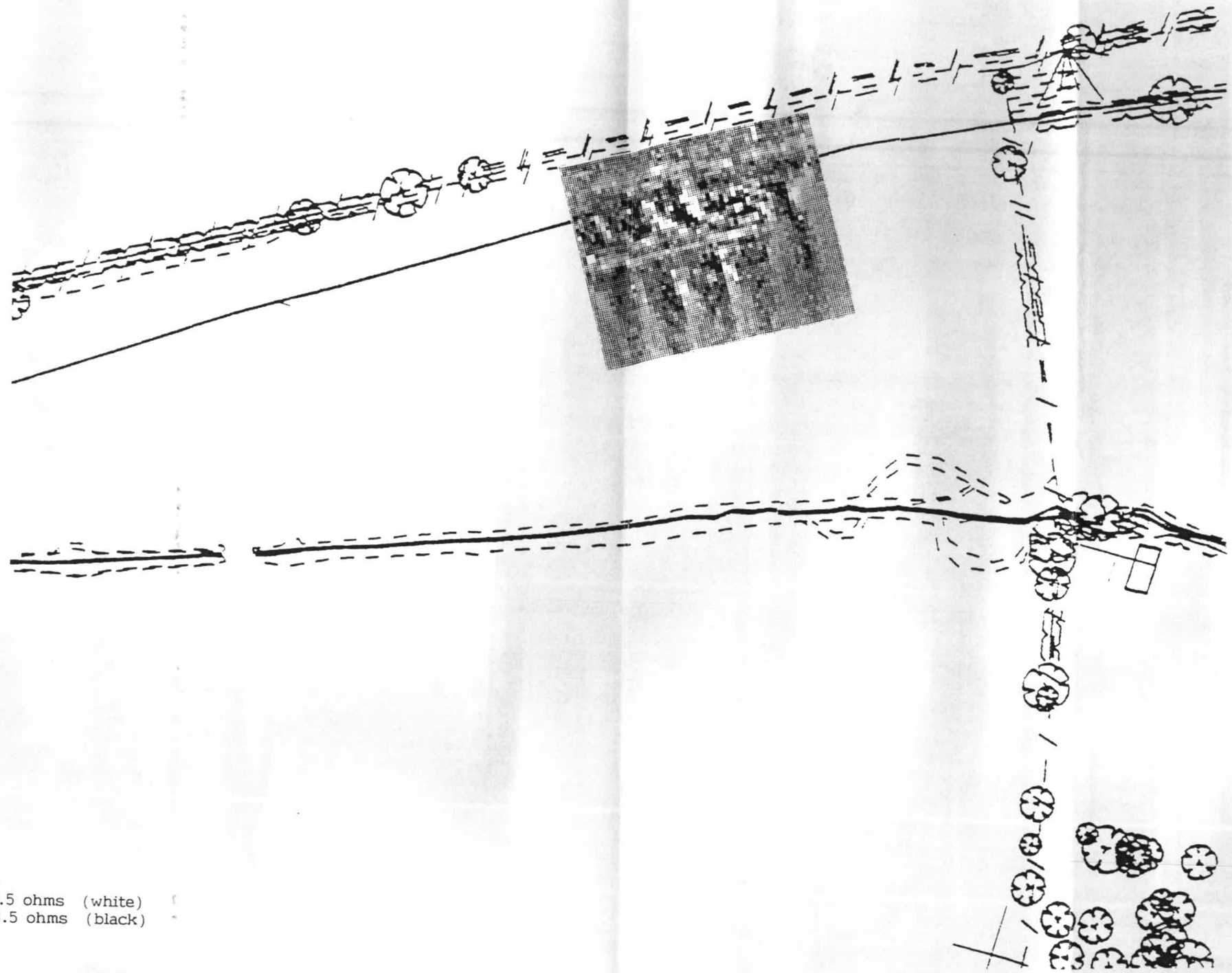
TILTRIDGE FARM
UPPER HOOK ROAD
UPTON UPON SEVERN
WORCESTERSHIRE WR8 0SA UK



Plotting parameters
Minimum - 2 ohms (white)
Maximum +106 ohms (black)

Date July - August 1993	Client RPS CLOUSTON	Figure 4	STRATASCAN™
Scale 1:1000	Subject Geophysical Survey Daventry International Rail Freight Terminal Plot of Resistance Survey before processing		TELEPHONE (0684) 592266 FAX (0684) 594142

TILTRIDGE FARM
UPPER HOOK ROAD
UPTON UPON SEVERN
WORCESTERSHIRE WR8 0SA UK



Plotting parameters
Minimum -18.5 ohms (white)
Maximum +18.5 ohms (black)

Date July - August 1993	Client RPS CLOUSTON	Figure 5	STRATASCAN™
Scale 1:1000	Subject Geophysical Survey Daventry International Rail Freight Terminal Plot of Resistance Survey after processing		TELEPHONE (0684) 592266 FAX (0684) 594142

TILTRIDGE FARM
UPPER HOOK ROAD
UPTON UPON SEVERN
WORCESTERSHIRE WR8 0SA UK

Date July - August 1993	Client RPS CLOUSTON	Figure 6	STRATASCAN™
Scale 1:2500	Subject Geophysical Survey Daventry International Rail Freight Terminal Magnetic Susceptibility Survey - Fields 1, 3, 4, 5		TELEPHONE (0684) 592266 FAX (0684) 594142

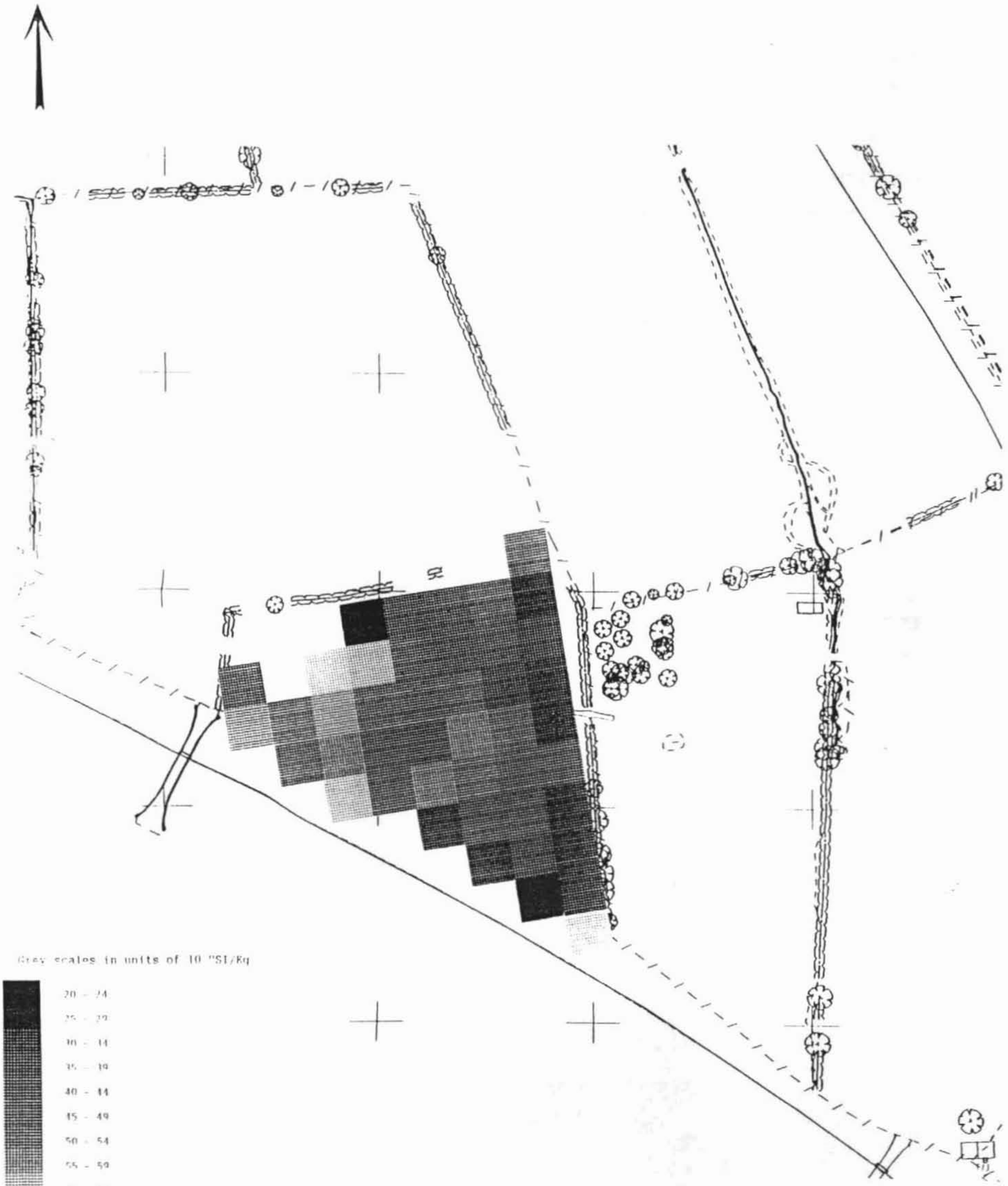
TILTRIDGE FARM
UPPER HOOK ROAD
UPTON UPON SEVERN
WORCESTERSHIRE WR8 0SA UK

Date July - August 1993	Client RPS CLOUSTON	Figure 7	STRATASCAN™
Scale 1:2500	Subject Geophysical Survey Daventry International Rail Freight Terminal Magnetic Susceptibility Survey - Field 2		TELEPHONE (0684) 592266 FAX (0684) 594142

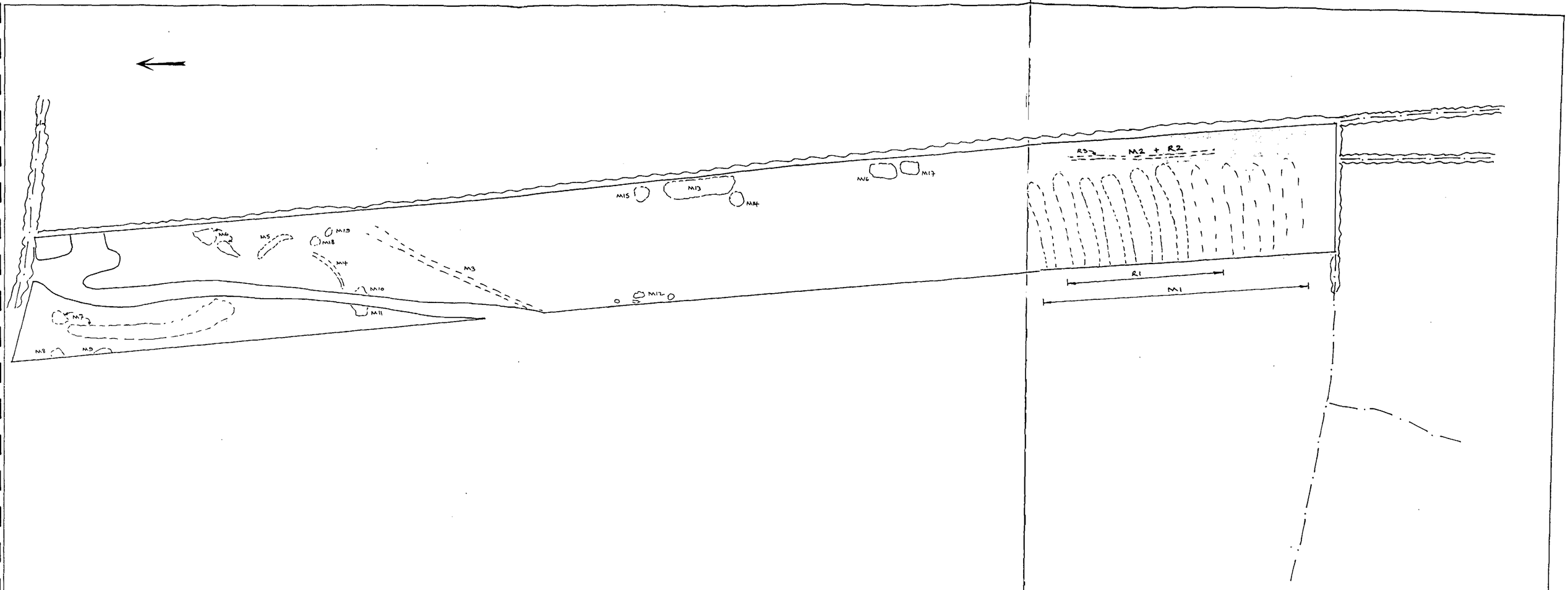
TILTRIDGE FARM
UPPER HOOK ROAD
UPTON UPON SEVERN
WORCESTERSHIRE WR8 0SA UK

Date July - August 1993	Client RPS CLOUSTON	Figure 8	STRATASCAN™
Scale 1:2500	Subject Geophysical Survey Daventry International Rail Freight Terminal Magnetic Susceptibility Survey - Fields 6, 7, 8, 9		TELEPHONE (0684) 592266 FAX (0684) 594142

TILTRIDGE FARM
UPPER HOOK ROAD
UPTON UPON SEVERN
WORCESTERSHIRE WR8 0SA UK



Date July - August 1993	Client RPS CLOUSTON	GEOPHYSICAL SURVEY SPECIALISTS	
Scale 1:2,500	Subject Geophysical Survey - DIRFT Magnetic Susceptibility Survey Detail of Area 4	TILTRIDGE FARM UPPER HOOK ROAD UPTON UPON SEVERN WORCESTERSHIRE WR8 0SA UK TELEPHONE (0684) 592266	
Figure 9			



Date July/August 1993	Client RPS CLOUSTON	Figure 10	STRATASCAN™
Scale 1:1000	Subject Geophysical Survey Daventry International Rail Freight Terminal Abstraction of magnetometer and resistivity features		

TELEPHONE (0684) 592266
FAX (0684) 594142

TILTRIDGE FARM
UPPER HOOK ROAD
UPTON UPON SEVERN
WORCESTERSHIRE WR8 0SA UK

Appendix 1

Section 2

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Section 2

Addendum No. 1

to the report for

RPS CLOUSTON

on a

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DAVENTRY INTERNATIONAL

RAIL FREIGHT TERMINAL

September 1993

GEOPHYSICAL & SPECIALIST SURVEY SERVICES

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RAIL FREIGHT TERMINAL

September 1993

CONTENTS

Introduction

Description of the site

Methodology

Discussion

Figure 1 -	1:50 000	General Location Plan
Figure 2 -	1:5000	Detailed Location Plan
Figure 3 -	1:2500	Magnetic Susceptibility survey - Areas 4 and 5
Figure 4 -	1:1000	Standard plot of Magnetometer survey - Areas 4 and 5
Figure 5 -	1:1000	Biased high contrast plot of Magnetometer survey - Areas 4 and 5
Figure 6 -	1:1000	Plot of positive features only Magnetometer survey - Areas 4 and 5
Figure 7 -	1:1000	Plot of negative features only Magnetometer survey - Areas 4 and 5
Figure 8 -	1:1000	Plot of higher value positive features only Magnetometer survey - Areas 4 and 5
Figure 9 -	1:1000	Interpretation of Magnetometer survey - Areas 4 and 5
Figure 10 -	1:1000	Black and white Interpretation plot of Magnetometer survey - Areas 4 and 5

INTRODUCTION

This supplementary geophysical survey was commissioned as part of the comprehensive archaeological evaluation of the proposed site at the Daventry International Rail Freight Terminal.

DESCRIPTION OF THE SITE AND HISTORY OF THE INVESTIGATION

The site lies approximately seven kilometres south-east of Rugby and just to the south-west of Junction 18 on the M1 motorway. Area 4 of the survey site dips gently to the east and Area 5 drops away to the north. The whole of Area 5 also has considerable ridge and furrow, reversed-S in shape, which is, in places, over 1 metre vertically from the top of the ridge to the bottom of the furrow. The sub-soil of Area 4 is sand but the surrounding fields have a gravelly clay sub-soil.

An earlier magnetic susceptibility survey (see Methodology) over most of the terminal site identified Area 4 and part of Area 5 as having archaeological potential. As a result they were surveyed with the more intensive magnetic technique of magnetometry. It is this magnetometer survey that is the subject of this report. Initially only an area of 3200m^2 was surveyed in Area 4 but as this revealed many linear features, the survey was extended to the rest of Area 4 and half of Area 5.

METHODOLOGY

Magnetic Susceptibility (MS) [Though not forming part of this survey it was felt worthwhile including a description of this technique as it was MS which first identified the site.]

Alteration of iron minerals in topsoil through biological activity can enhance the magnetic susceptibility (MS) of that soil. Thus measuring the MS of a soil can give a measure of past (ie archaeological) activity and can be used to target the more intensive and higher resolution technique of Magnetometry.

Measurements of MS can be carried out in two various ways.

1/ Field coils provide rapid scanning and have the benefit of allowing "insitu" readings though problems with ground contact can be experienced.

2/ Alternatively samples can be taken out in the field for analysis back in a laboratory. This overcomes the ground contact problem, but is slower and more laborious.

The equipment used on the earlier contract was an MS2 Magnetic Susceptibility meter manufactured by Bartington Instruments Ltd. Field coils known as MS2F and MS2D were used to take field samples at the nodes of a 20m x 20m grid. This assessed the top 20mm and 200mm of topsoil respectively. To overcome the problem of ground contact all readings were taken 4 or 5 times and an average taken. All obvious localised "spikes" were ignored. Where readings were taken on permanent pasture or regenerated set-aside a small divot was removed to enable good contact to be made.

The readings were stored and later loaded into a computer. From this data grey scale plots have been generated which are reproduced in this report at a scale of 1:2500 and overlain onto the site plans at the same scale.

Magnetometer

Although the changes in the magnetic field resulting from differing features in the soil are usually weak, changes as small as 0.2 nanoTesla (nT) in an overall field strength of 48,000nT, can be accurately detected using an appropriate instrument.

The mapping of the anomaly in a systematic manner will allow an estimate of the type of material present beneath the surface. Strong magnetic anomalies will be generated by buried iron-based objects or by kilns or hearths. More subtle anomalies such as pits and ditches can be seen if they contain more humic material which is normally rich in magnetic iron oxides when compared with the subsoil.

To illustrate this point, the cutting and subsequent silting or backfilling of a ditch may result in a larger volume of weakly magnetic material being accumulated in the trench compared to the undisturbed subsoil. A weak magnetic anomaly should therefore appear in plan along the line of the ditch.

The magnetic survey was carried out using an FM36 Fluxgate Gradiometer, manufactured by Geoscan Research. The instrument consists of two fluxgates mounted 0.5m vertically apart, and very accurately aligned to nullify the effects of the earth's magnetic field. Thus readings relate to the difference in localised magnetic anomalies compared with the general magnetic background. Readings are taken automatically with a sample trigger and held in an 'on board' data logger. The data is later downloaded into a computer for processing and presentation in the same way as the resistance meter.

Processing can emphasise various aspects contained within the data but which are often not easily seen in the raw data. Basic processing of the magnetic data involves 'flattening' the background levels with respect to adjacent traverses and adjacent grids. 'Despiking' is also performed to remove the anomalies resulting from small iron objects often found on agricultural land. Once the basic processing has flattened the background it is then possible to carry out low pass filtering to reduce 'noise' in the data and hence

emphasise the archaeological or man-made anomalies. The presentation of the data for each site involves a print-out of the 'despiked and filtered' data.

Magnetic features have been identified and plotted onto the coloured Interpretation drawing (see Figure 9). Numbers for ease of reference have been added to the black and white plot of the interpretation (see Figure 10).

DISCUSSION

The features/anomalies found by the magnetometer survey have been split into five categories.

1. Ridge and Furrow

   (N.B. The ridge and furrow has not been plotted on the Interpretation - Figures 9 and 10.)

   Over the whole site there is evidence of ridge and furrow of typical medieval form, which cuts across the linear and circular features which are thus demonstrably earlier. In Area 5, which is on gravelly clay, the ridging survives as earthworks, but in Area 4, which is on sand, there is no visible evidence of ridging on the ground. The landowner says that Area 4 has not been ploughed within living memory, so that it is possible that the ridge and furrow had been removed either by post-medieval ploughing or erosion.

2. Animal burials

   It is known that animals have been buried in Area 4 for several decades, presumably because the ground is easy to dig. On Figure 8 the smaller, but stronger, more discrete features have been interpreted as these burials and are marked in blue on Figure 9.

3. Modern field drainage

   Four linear features have been identified as modern field drains. It is possible that they are contemporary with the construction of the railway as they are parallel with the railway cutting and it would have been prudent to drain surface water away from the cutting, particularly in sandy soils. (See FD1-4 in Figure 10.)

4. Enclosures

Within Area 4 is a considerable number of linear and rectilinear features which have been interpreted as enclosure boundaries and trackways. The complexity of the features suggests more than one phase of occupation. For example, features E5 and E6 which intersect appear to be of different phases.

Some of the features are stronger and longer than others. E1E3, E2/E4 and E5 are examples of this. E3 and E4 form a double bank , and it is probable that a roadway runs between them. This suggests that one of the phases had large enclosures with well defined boundaries with access from substantial tracks.

Many of the other small enclosures form quite complex shapes suggesting several phases and perhaps the sites of houses.

The area of the strongest features and the smaller enclosures (and perhaps therefore intensity of use) seems to be in the area marked "Enclosure Zone 1" on Figure 10. If any settlement existed on the site it would most probably have been within this zone.

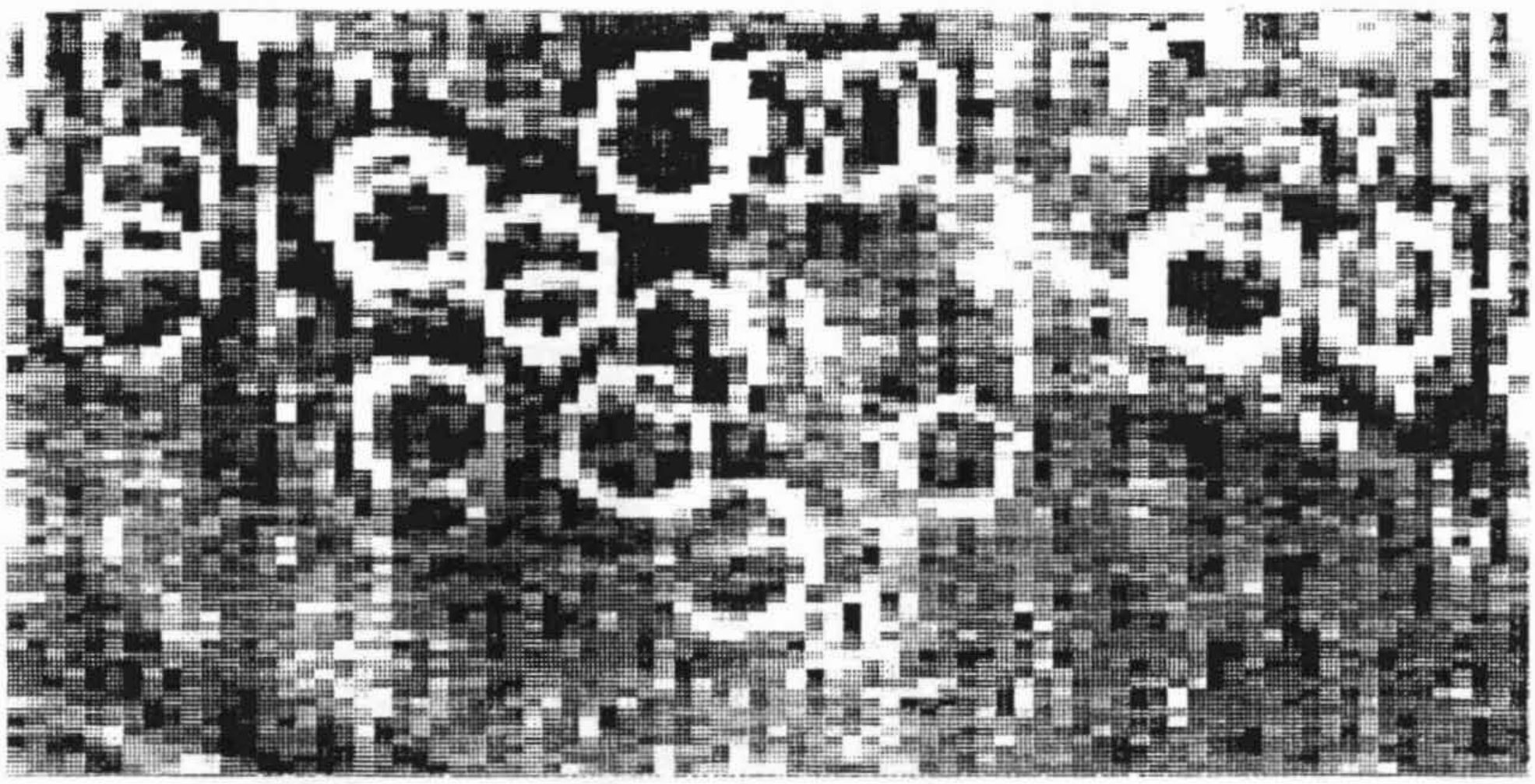
5. Ring Ditches

The ring ditch features in Area 5 are marked in red on Figure 9. There are 22 of them, some of which are rather tentative but nonetheless identifiable. As some cut across others the ring ditches must have been in use for a period of time long enough for earlier ditches to become eroded and therefore unrecognisable, indeed, one ring ditch would seem to have been constructed wholly within another earthwork (ie. B1 and B2 in Figure 10).

As the ring ditches and the enclosure area are mutually exclusive it is not possible to give a relative date for them. Indeed it is possible that the ring ditches and enclosures are contemporary.

Finally, several of the ring ditches have features at their centres suggesting that the ditches are those of eroded barrows whose burial pits may still be intact.

It is interesting to compare the plot of the ring ditches at Crick with a plot shown below of a magnetometer survey in County Limerick in Ireland, where a series of similar ring ditches have been interpreted as barrows, collectively forming a cemetery.



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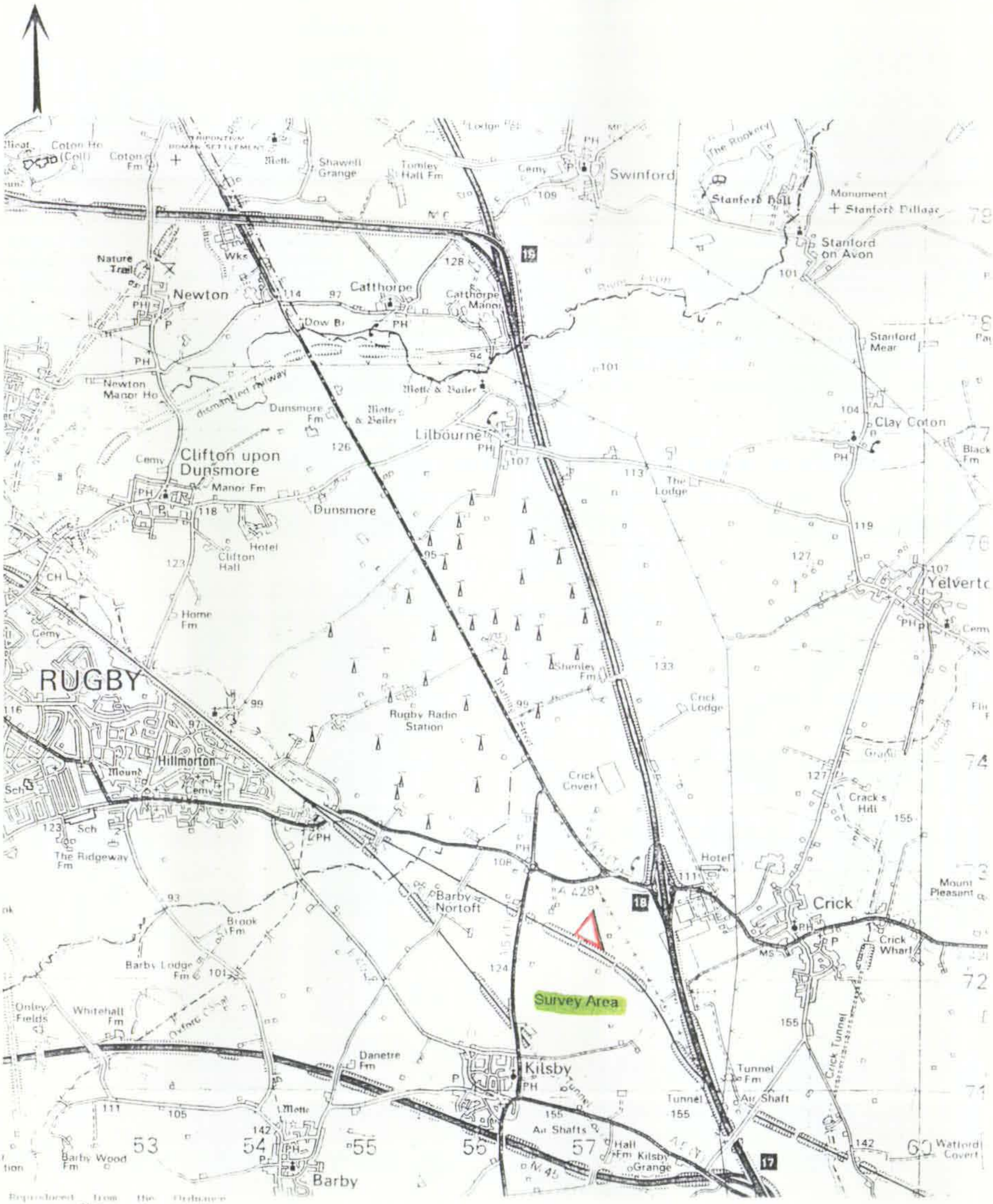
Maximum 5.5nT (black)

Scale 1:1000



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Scale 1:50 000	Subject Geophysical Survey Daventry International Rail Freight Terminal General Location Plan	TILTRIDGE FARM UPPER HOOK ROAD UPTON UPON SEVERN WORCESTERSHIRE WR8 0SA UK TELEPHONE (0684) 592266
Figure 1		

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Scale 1:5000	Subject Geophysical Survey Daventry International Rail Freight Terminal Detailed Location Plan		TELEPHONE (0684) 592266 FAX (0684) 594142

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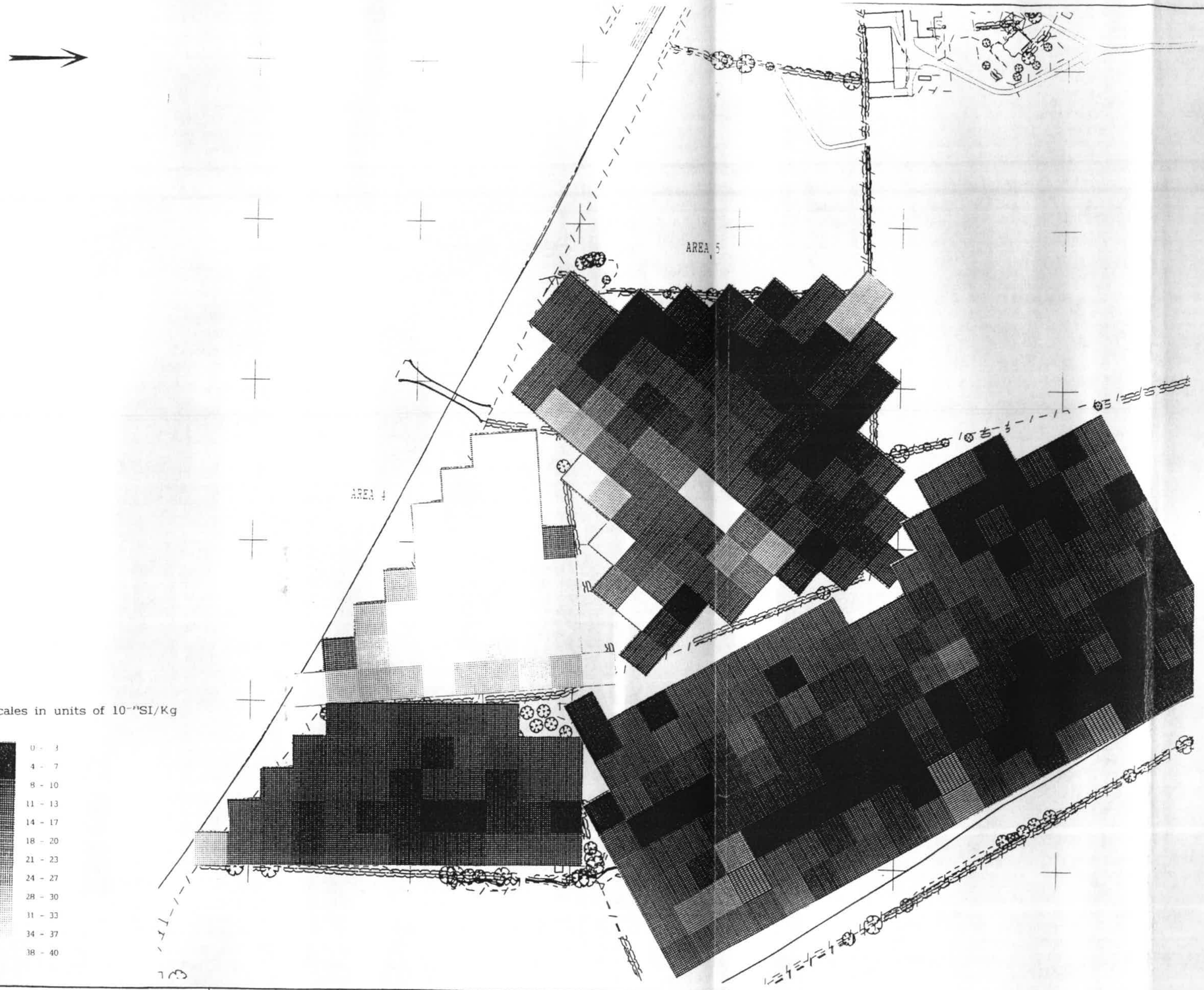

Date Sept. 1993	Client RPS CLOUSTON	Figure 3	STRATASCAN™ GEOPHYSICAL & SPECIALIST SURVEY SERVICES
Scale 1:2500	Subject Geophysical Survey Daventry International Rail Freight Terminal Magnetic Susceptibility Survey - Areas 4 and 5		

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Plotting parameters
Minimum -6nT (white)
Maximum +6nT (black)

Date Sept. 1993	Client RPS CLOUSTON	Figure 4	STRATASCAN™ GEOPHYSICAL & SPECIALIST SURVEY SERVICES
Scale 1:1000	Subject Geophysical Survey Daventry International Rail Freight Terminal Standard plot of Magnetometer survey - Areas 4 and 5		TILTRIDGE FARM UPPER HOOK ROAD UPTON UPON SEVERN WORCESTERSHIRE WR8 0SA UK TELEPHONE (0684) 592266 FAX (0684) 594142

Plotting parameters
Minimum -1nT (white)
Maximum +3nT (black)

Date Sept. 1993	Client RPS CLOUSTON	Figure 5	SPECTRASCAN™ GEOPHYSICAL & SPECIALIST SURVEY SERVICES
Scale 1:1000	Subject Geophysical Survey Daventry International Rail Freight Terminal Biased high contrast plot of Magnetometer survey - Areas 4 and 5		TILTRIDGE FARM UPPER HOOK ROAD UPTON UPON SEVERN WORCESTERSHIRE WR8 0SA UK TELEPHONE (0684) 592266 FAX (0684) 594142

Date Sept. 1993	Client RPS CLOUSTON	Figure 6	STRATASCAN™ GEOPHYSICAL & SPECIALIST SURVEY SERVICES
Scale 1:1000	Subject Geophysical Survey Daventry International Rail Freight Terminal Plot of positive features only - Magnetometer survey Areas 4 and 5		TILTRIDGE FARM UPPER HOOK ROAD UPTON UPON SEVERN WORCESTERSHIRE WR8 0SA UK TELEPHONE (0684) 592266 FAX (0684) 594142

Date Sept. 1993	Client RPS CLOUSTON	Figure 7	STRATASCAN™ GEOPHYSICAL & SPECIALIST SURVEY SERVICES
Scale 1:1000	Subject Geophysical Survey Daventry International Rail Freight Terminal Plot of negative features only - Magnetometer survey Areas 4 and 5		TILTRIDGE FARM UPPER HOOK ROAD UPTON UPON SEVERN WORCESTERSHIRE WR8 0SA UK TELEPHONE (0684) 592266 FAX (0684) 594142

Plotting parameters
Minimum 0nT (white)
Maximum +10nT (black)

Date Sept. 1993	Client RPS CLOUSTON	Figure 8	STRATASCAN™ GEOPHYSICAL & SPECIALIST SURVEY SERVICES
Scale 1:1000	Subject Geophysical Survey Daventry International Rail Freight Terminal Plot of higher value positive features only - Magnetometer survey Areas 4 and 5		TILTRIDGE FARM UPPER HOOK ROAD UPTON UPON SEVERN WORCESTERSHIRE WR8 0SA UK TELEPHONE (0684) 592266 FAX (0684) 594142

DIRFT.PLT DIRFT.DIG
ST0000000000 (1000.) DIRFT

Date Sept. 1993	Client RPS CLOUSTON	Figure 9	
Scale 1:1000	Subject Geophysical Survey Daventry International Rail Freight Terminal Interpretation of Magnetometer Survey - Areas 4 and 5		

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DIRFT.PLT ST0000000000 (1000.) DIRFT.DIG DIRFT	Date Sept. 1993	Client RPS CLOUSTON	Figure 10
	Scale 1:1000	Subject Geophysical Survey Daventry International Rail Freight Terminal Interpretation of Magnetometer Survey - Areas 4 and 5	

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Appendix 1

Section 3

Addendum No. 2

to the report for

RPS CLOUSTON

on a

Geophysical Survey

carried out at

DAVENTRY INTERNATIONAL

RAIL FREIGHT TERMINAL

DIRFT - B - Triangle

(Site 2)

September 1993

GSB GEOPHYSICAL & SPECIALIST SURVEY SERVICES

Addendum No. 2

to the report for

RPS CLOUSTON

on a

Geophysical Survey

carried out at

DAVENTRY INTERNATIONAL

RAIL FREIGHT TERMINAL

DIRFT - B - Triangle

(Site 2)

September 1993

CONTENTS

Introduction

Description of the site

Methodology

Discussion

Figure 1 -	1:50 000	General Location Plan
Figure 2 -	1:5000	Detailed Location Plan
Figure 3 -	1:2500	Plot of Magnetic Susceptibility survey DIRFT B (Triangle)

INTRODUCTION

This geophysical survey was commissioned as part of the archaeological evaluation of the proposed site at the Daventry International Rail Freight Terminal.

DESCRIPTION OF THE SITE

The site lies some seven kilometres south-east of Rugby between the A5 and A428 highways to the west of Junction 18 on the M1 motorway. The survey area was limited to the lower lying land in the northern half of Site 2 where the sub-soil is alluvial deposits from a tributary of the Clifton Brook. The site was ploughed, harrowed and drilled at the time of the survey.

METHODOLOGY

The object of the survey was to investigate the area of interest, some 10ha, with a rapid scanning technique. Magnetic Susceptibility was thought to be the appropriate technique as it had worked well on Site 1.

Magnetic Susceptibility

Alteration of iron minerals in topsoil through biological activity can enhance the magnetic susceptibility (MS) of that soil. Thus measuring the MS of a soil can give a measure of past (ie archaeological) activity and can be used to target the more intensive and higher resolution technique of Magnetometry.

Measurements of MS can be carried out in two various ways.

1/ Field coils provide rapid scanning and have the benefit of allowing "insitu" readings though problems with ground contact can be experienced.

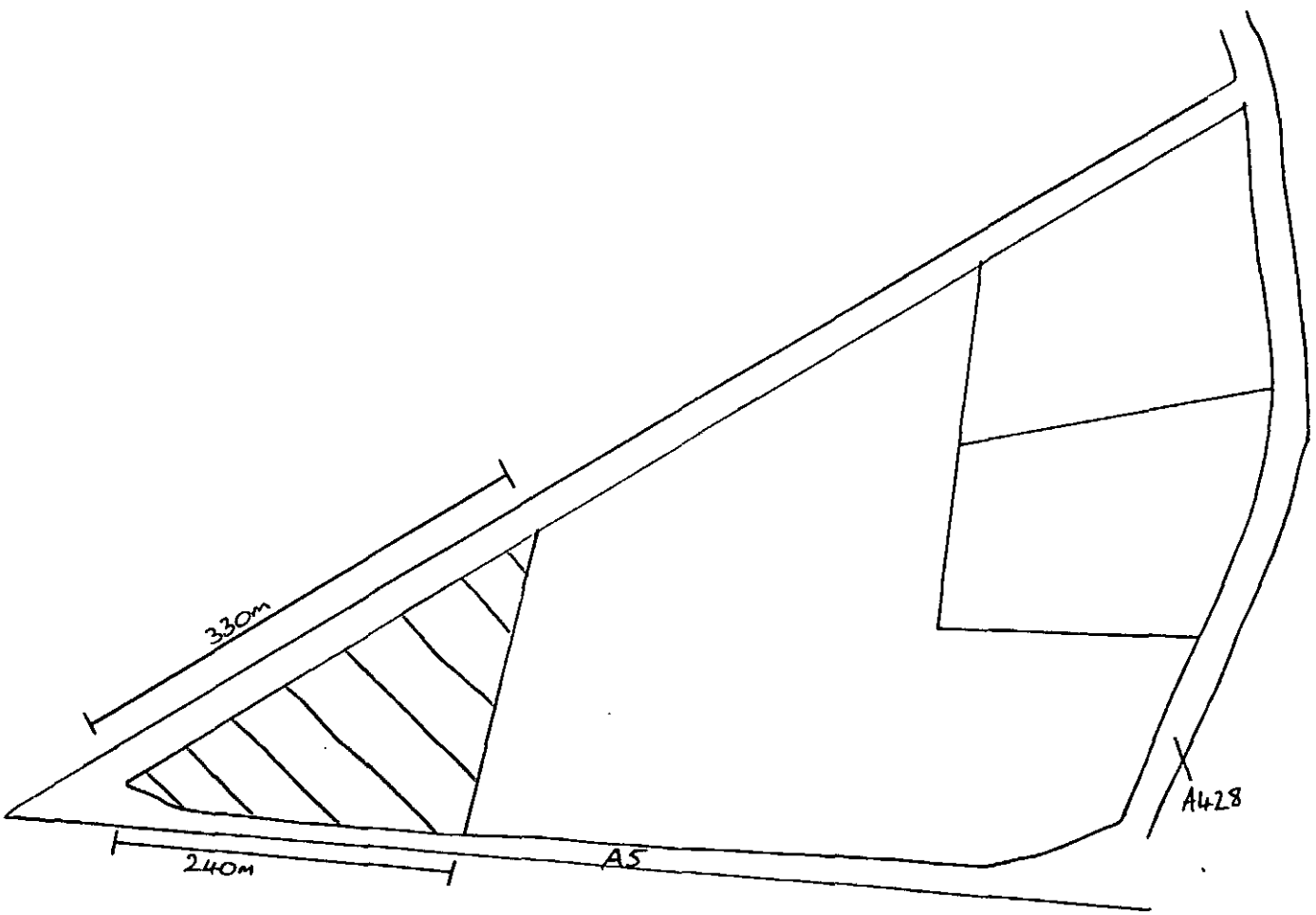
2/ Alternatively samples can be taken out in the field for analysis back in a laboratory. This overcomes the ground contact problem, but is slower and more laborious.

The equipment used on this contract was an MS2 Magnetic Susceptibility meter manufactured by Bartington Instruments Ltd. A field coil known as an MS2D was used to take field samples at the nodes of a 20m x 20m grid. This assessed the top 200mm or so of topsoil. To overcome the problem of ground contact all readings were taken 4 or 5 times and an average taken. All obvious localised "spikes" were ignored. Where readings were taken on permanent pasture or regenerated set-aside a small divot was removed to enable good contact to be made.

The readings were stored and later loaded into a computer. From this data a grey scale plot has been generated which is reproduced in this report at a scale of 1:2500 and overlain onto the site plan at the same scale.

DISCUSSION

An area towards the northern end of the site shows a marked magnetic enhancement compared to the rest of the survey site. It is felt that this area, amounting to some 2.6ha would benefit from further investigation with the higher resolution technique of magnetometry to identify any areas of archaeological potential.



Area recommended for
further investigation

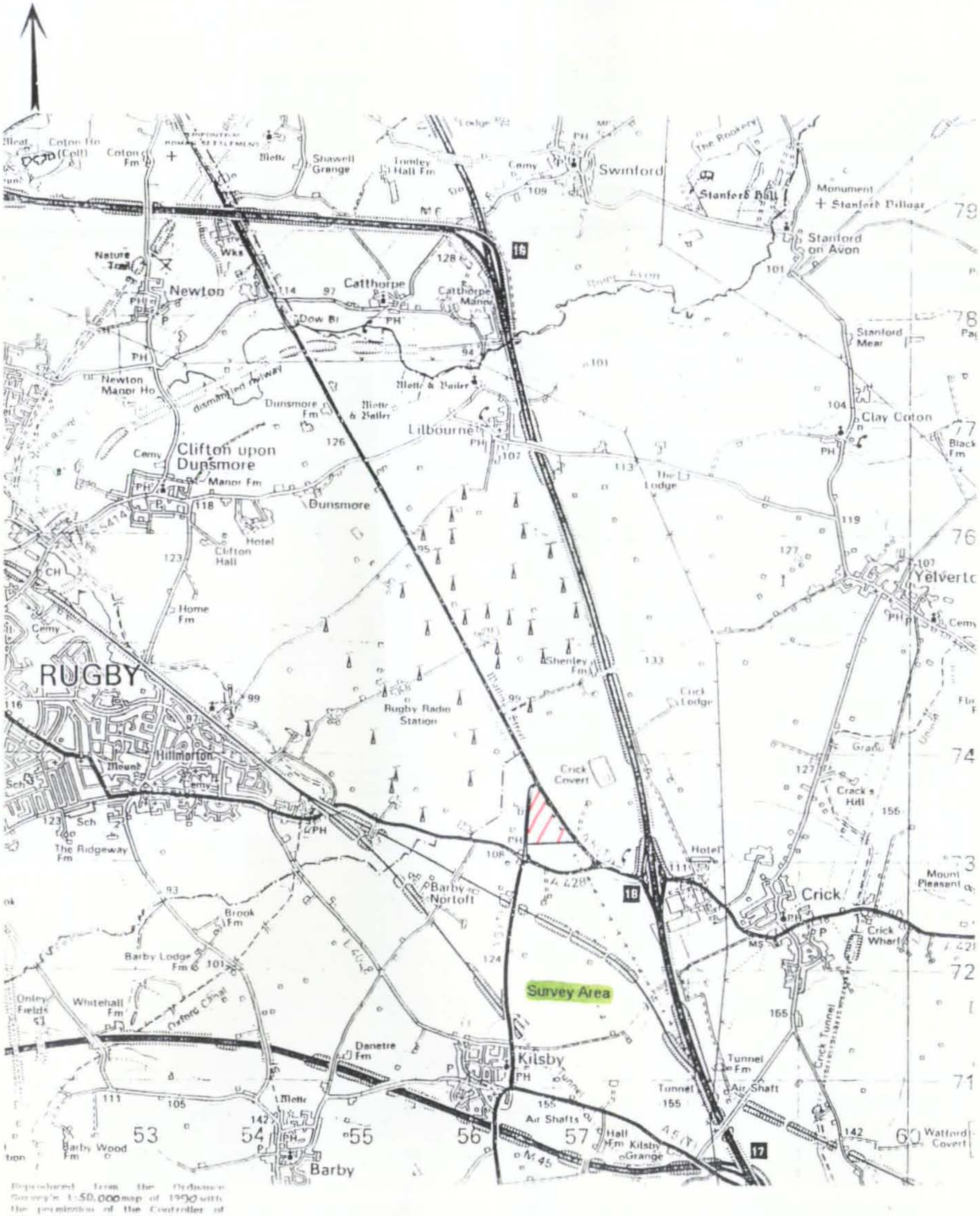


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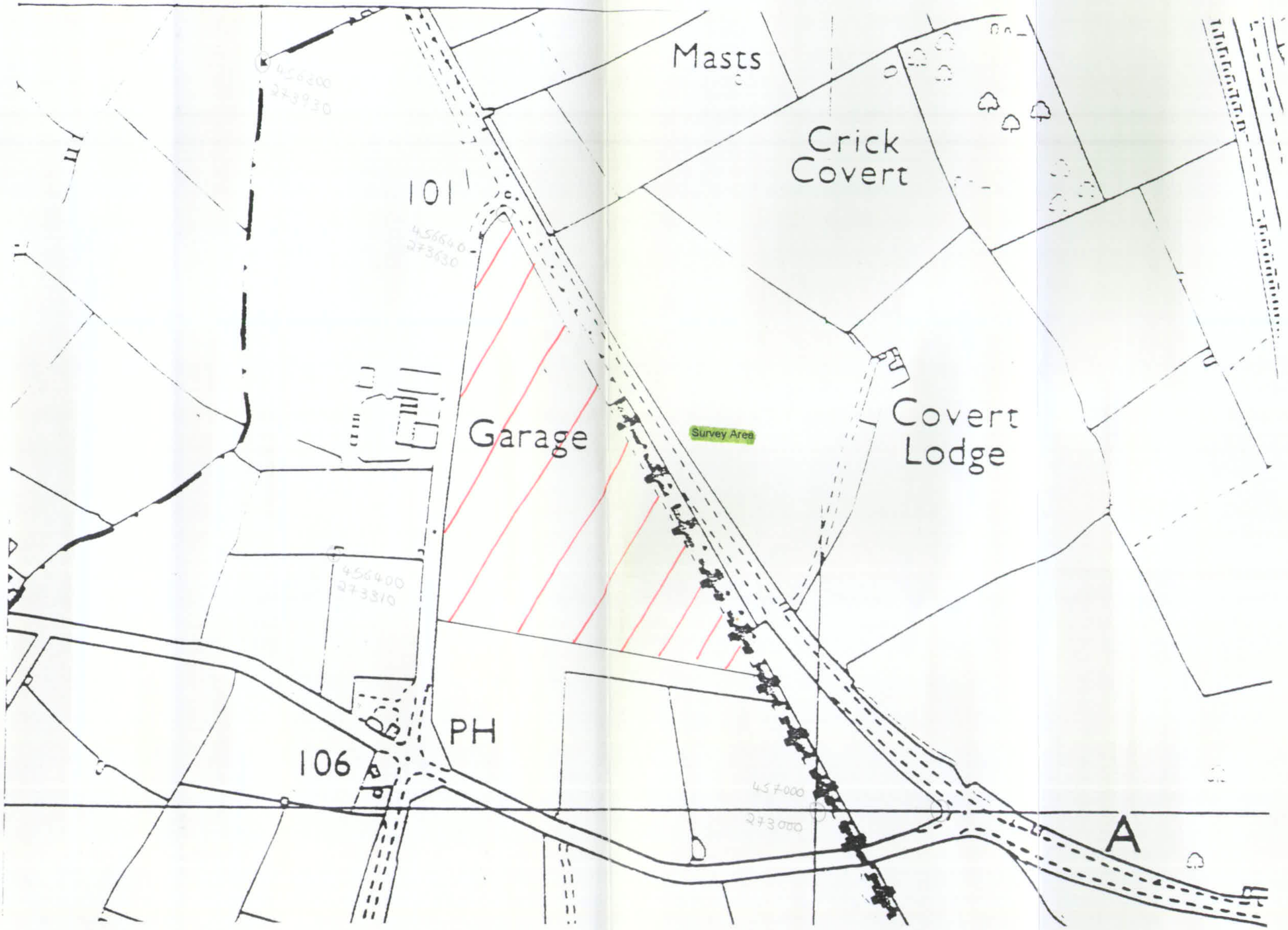
Figure 1		



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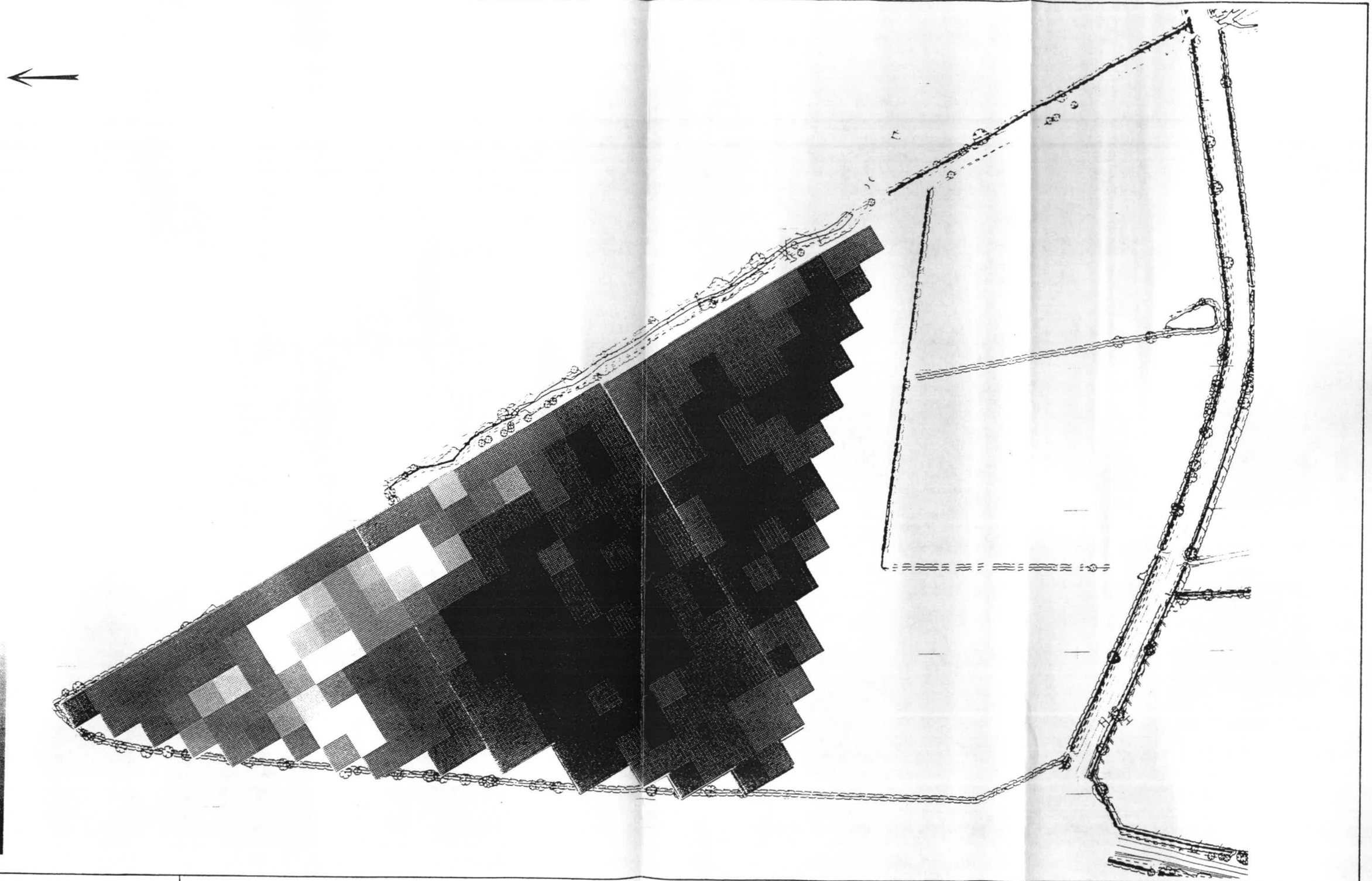
Scale 1:5000	Subject Geophysical Survey Daventry International Rail Freight Terminal Detailed Location Plan		TILTRIDGE FARM UPPER HOOK ROAD UPTON UPON SEVERN WORCESTERSHIRE WR8 0SA UK TELEPHONE (0684) 592266 FAX (0684) 594142



Date October 1993	Client RPS CLOUSTON	Figure 3	STRATASCAN™ GEOPHYSICAL & SPECIALIST SURVEY SERVICES
Scale 1:2500	Subject Geophysical Survey - DIRFT B Plot of Magnetic Susceptibility Survey		

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Appendix 1

Section 4

Addendum No. 3

to the report for

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on a

Geophysical Survey

carried out at

DAVENTRY INTERNATIONAL

RAIL FREIGHT TERMINAL

DIRFT - B - TRIANGLE

(Site 2)

December 1993

SCAN
GEOPHYSICAL & SPECIALIST SURVEY SERVICES

Addendum No. 3

to the report for

RPS CLOUSTON

on a

Geophysical Survey

carried out at

DAVENTRY INTERNATIONAL

RAIL FREIGHT TERMINAL

DIRFT - B - TRIANGLE

(Site 2)

December 1993

CONTENTS

Introduction

Description of the site

Methodology

Discussion

Figure 1 -	1:50 000	General Location Plan
Figure 2 -	1:5000	Detailed Location Plan
Figure 3 -	1:2500	Plot of Magnetic Susceptibility survey
Figure 4 -	1:1000	Plot of magnetometer data
Figure 5 -	1:1000	Plot of magnetometer data with biased plotting parameters
Figure 6 -	1:1000	Abstraction of Features

INTRODUCTION

This geophysical survey was commissioned to investigate, in more detail, part of the site of the Daventry International Rail Freight Terminal which showed archaeological potential in an earlier geophysical survey.

DESCRIPTION OF THE SITE

The site lies some seven kilometres south-east of Rugby between the A5 and A428 highways to the west of Junction 18 of the M1 motorway (OS Ref SP 566 736). The Watling Street runs along the eastern boundary of the site. The survey area is on the lower lying land in the northern half of Site 2 where the subsoil is alluvial deposits from a tributary of the Clifton Brook. The site was ploughed, harrowed and drilled at the time of the survey.

METHODOLOGY

An earlier Magnetic Susceptibility (MS) survey of part of Site 2 (see Addendum 2 of the original report) indicated that the northern part of that area contained archaeological remains. A grey scale plot of the MS survey is also reproduced in Figure 3 of this report. The lighter shades of grey and white in this plot indicate enhanced magnetisation and hence increased archaeological potential. This survey was therefore targeted on these areas of archaeological potential using the higher resolution technique of magnetometry.

Magnetometer

Although the changes in the magnetic field resulting from differing features in the soil are usually weak, changes as small as 0.2 nanoTesla (nT) in an overall field strength of 48,000nT, can be accurately detected using an appropriate instrument.

The mapping of the anomaly in a systematic manner will allow an estimate of the type of material present beneath the surface. Strong magnetic anomalies will be generated by buried iron-based objects or by kilns or hearths. More subtle anomalies such as pits and ditches can be seen if they contain more humic material which is normally rich in magnetic iron oxides when compared with the subsoil.

To illustrate this point, the cutting and subsequent silting or backfilling of a ditch may result in a larger volume of weakly magnetic material being accumulated in the trench compared to the undisturbed subsoil. A weak magnetic anomaly should therefore appear in plan along the line of the ditch.

The magnetic survey was carried out using an FM36 Fluxgate Gradiometer, manufactured by Geoscan Research. The instrument consists of two fluxgates mounted 0.5m vertically apart, and very accurately aligned to nullify the effects of the earth's magnetic field. Thus readings relate to the difference in localised magnetic anomalies compared with the general magnetic background. Readings are taken automatically with a sample trigger and held in an 'on board' data logger. The data is later

downloaded into a computer for processing and presentation in the same way as the resistance meter.

Processing can emphasise various aspects contained within the data but which are often not easily seen in the raw data. Basic processing of the magnetic data involves 'flattening' the background levels with respect to adjacent traverses and adjacent grids. 'Despiking' is also performed to remove the anomalies resulting from small iron objects often found on agricultural land. Once the basic processing has flattened the background it is then possible to carry out low pass filtering to reduce 'noise' in the data and hence emphasise the archaeological or man-made anomalies. The presentation of the data for each site involves a print-out of the 'despiked and flattened' data.

Magnetic features have been identified and plotted onto the 'Abstraction of Features' drawing of the site, numbered for ease of reference and prefixed with the letter 'M'.

DISCUSSION

As with the magnetometer survey carried out to the south-east of "The Lodge" farm, (the "southern" site), this survey has been most productive in revealing many archaeological features. Figure 6 gives an indication of the complexity of these features. Many are circles of about 15m diameter, suggesting enclosures containing several small buildings as shown by excavation on the southern site. Some of the circular enclosures are separated by linear features such as M1 or, as with M2, enclosed by the "concentric" rectilinear features M4, M5, M6, M7 and M8.

Many of the circles intercept or are interrupted by other circles suggesting the site was occupied for some period of time during which rebuilding or redevelopment of the structures was undertaken.

M3 and perhaps M6 would appear to be tracks or hollow ways. The eastern half of M3 is less clearly defined. This may be as a result of greater depths of overlying alluvium. Indeed it is possible that the northern 140m of the site may also contain further features which are buried under this alluvium. The MS survey does show an area of enhanced magnetism within the zone (marked A on Figure 3).

The indications are that this may be an Iron Age or Romano-British village developed adjacent to the Watling Street.

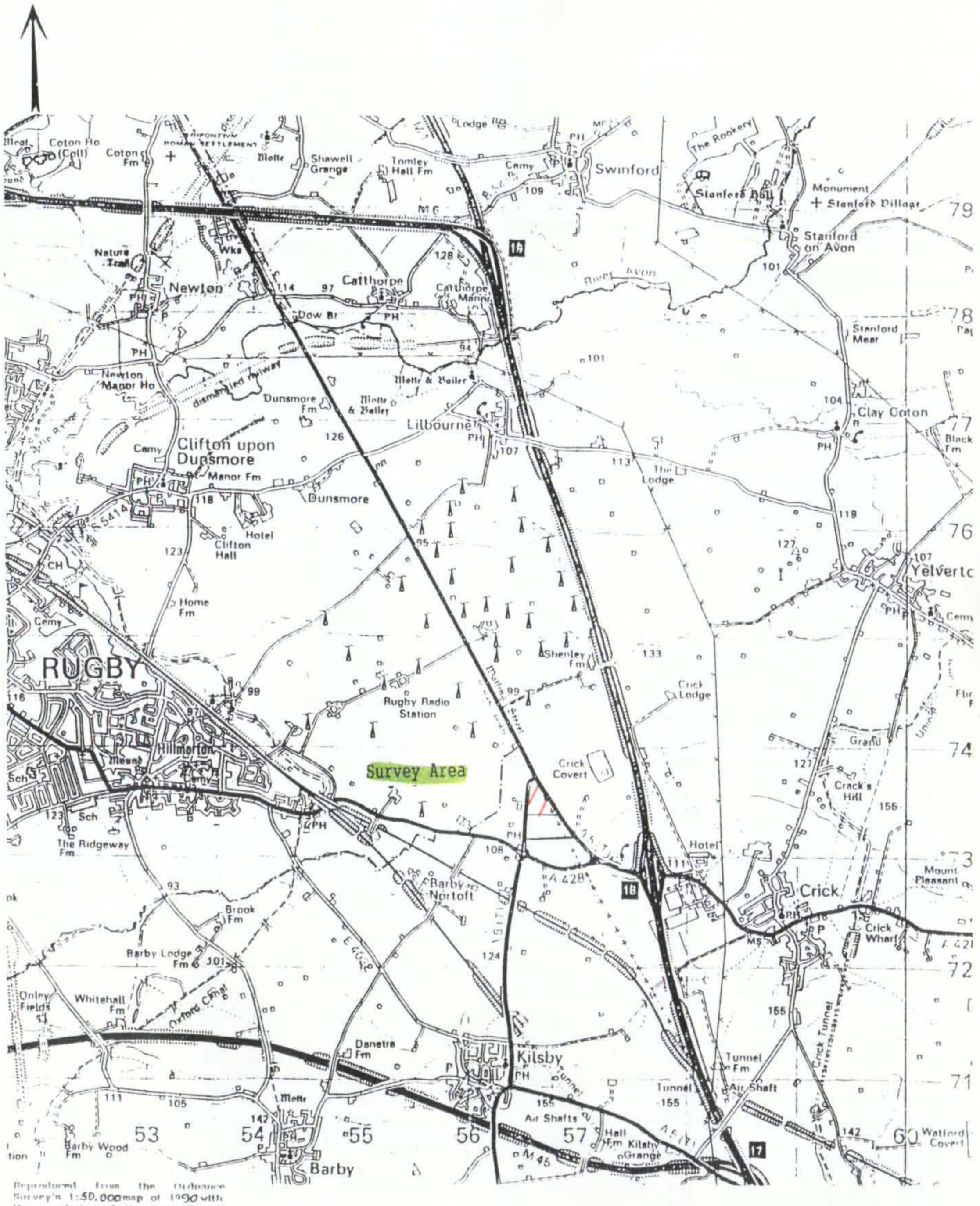

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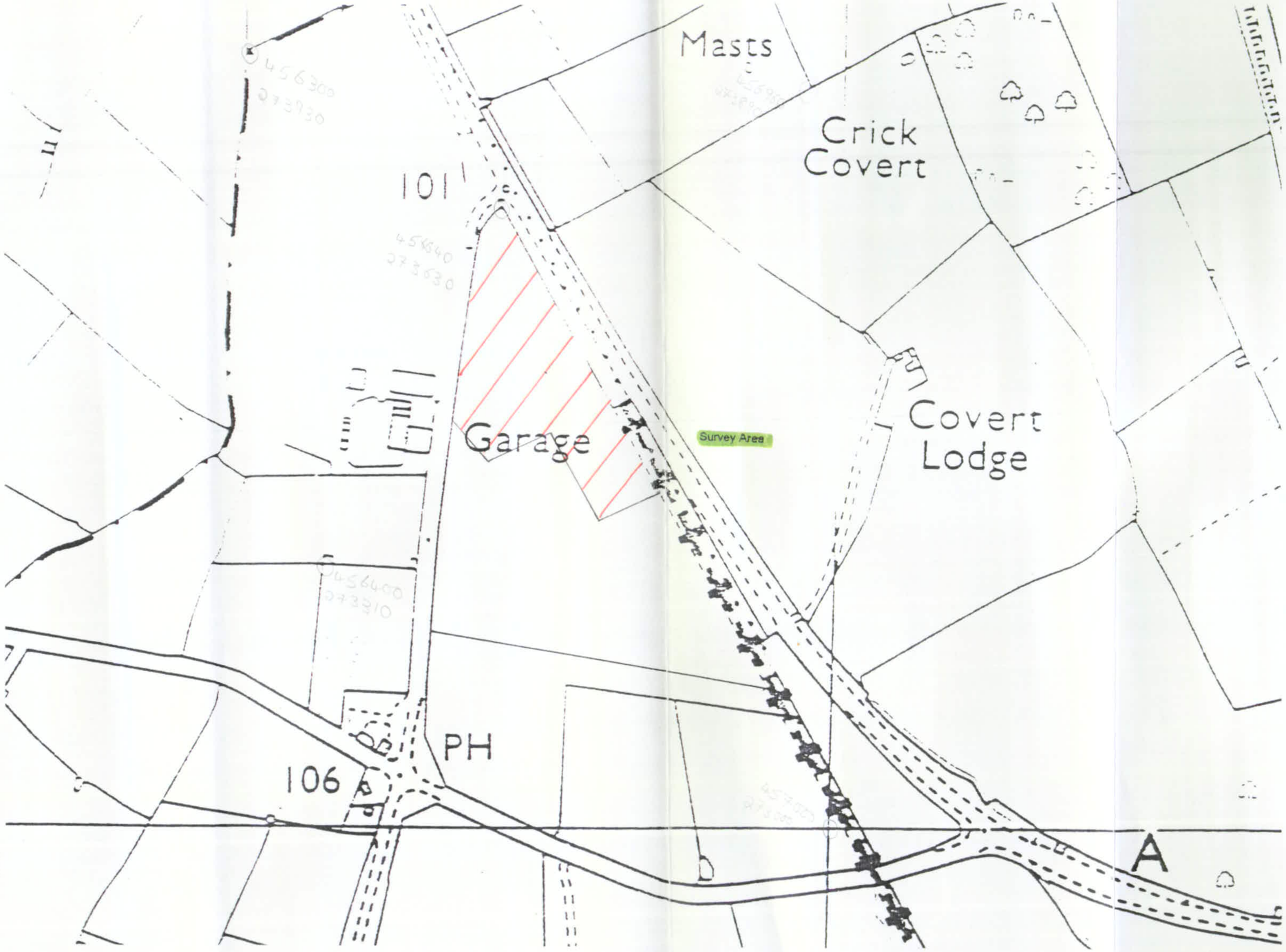
Figure 1		



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Scale 1:5000	Subject Geophysical Survey - DIRFT B - Triangle Detailed Location Plan		

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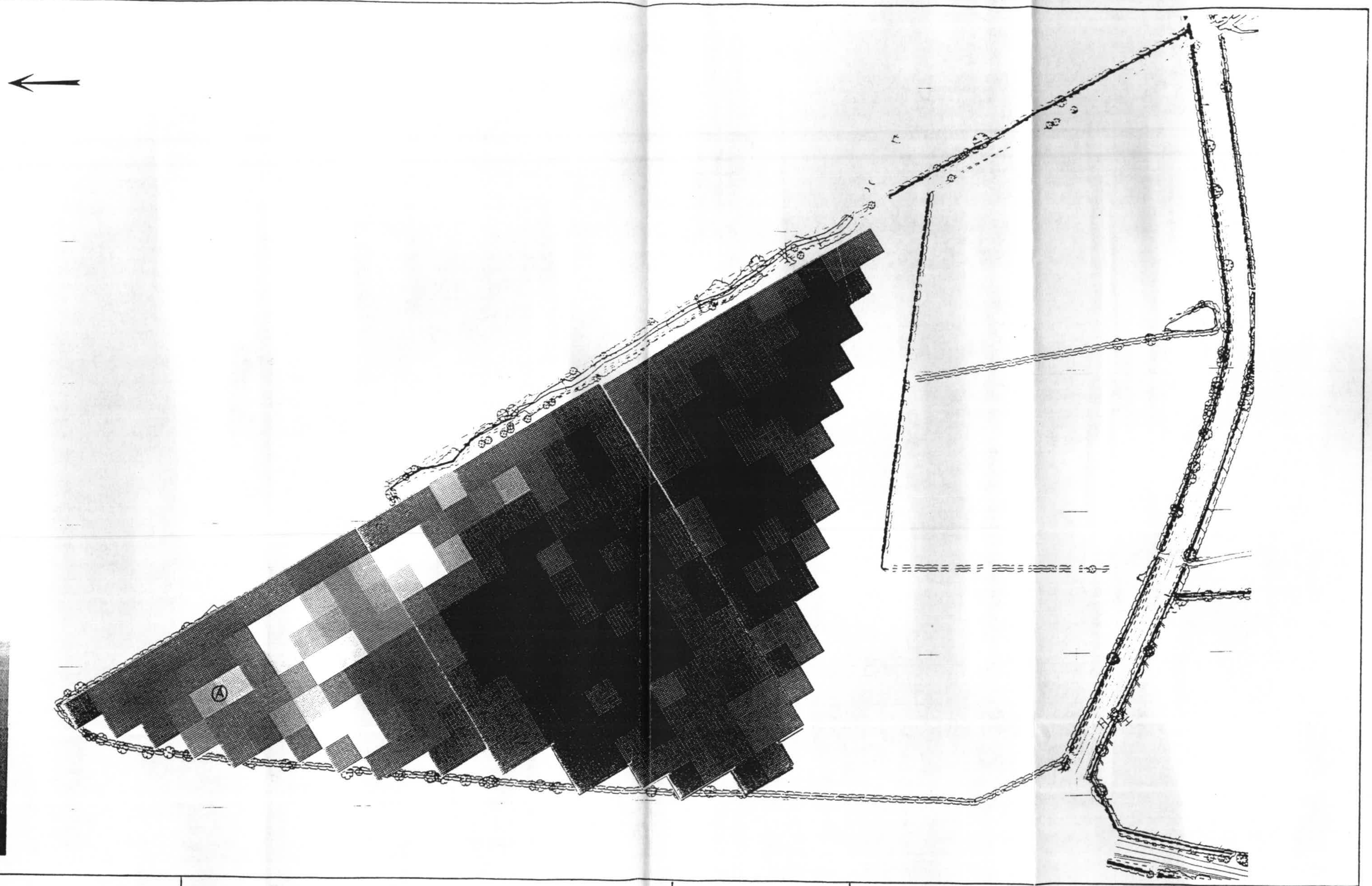

Date October 1993	Client RPS CLOUSTON	Figure 3	STRATASCAN™ GEOPHYSICAL & SPECIALIST SURVEY SERVICES
Scale 1:2500	Subject Geophysical Survey - DIRFT B Plot of Magnetic Susceptibility Survey		

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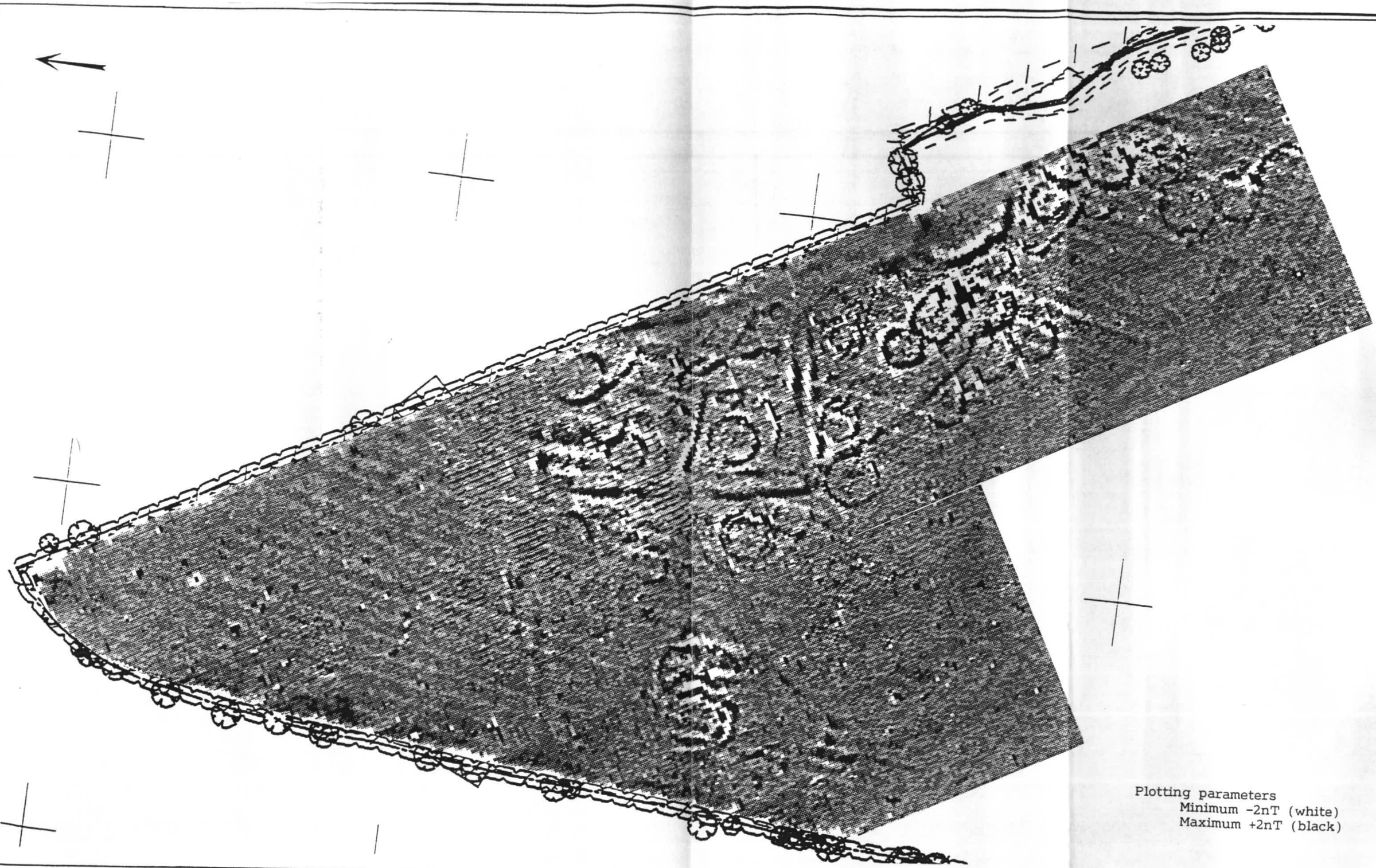

Plotting parameters
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Maximum +2nT (black)

Date November 1993	Client RPS CLOUSTON	Figure 4	STRATASCAN™ GEOPHYSICAL & SPECIALIST SURVEY SERVICES
Scale 1:1000	Subject Geophysical Survey - DIRFT B - Triangle Plot of magnetometer data		

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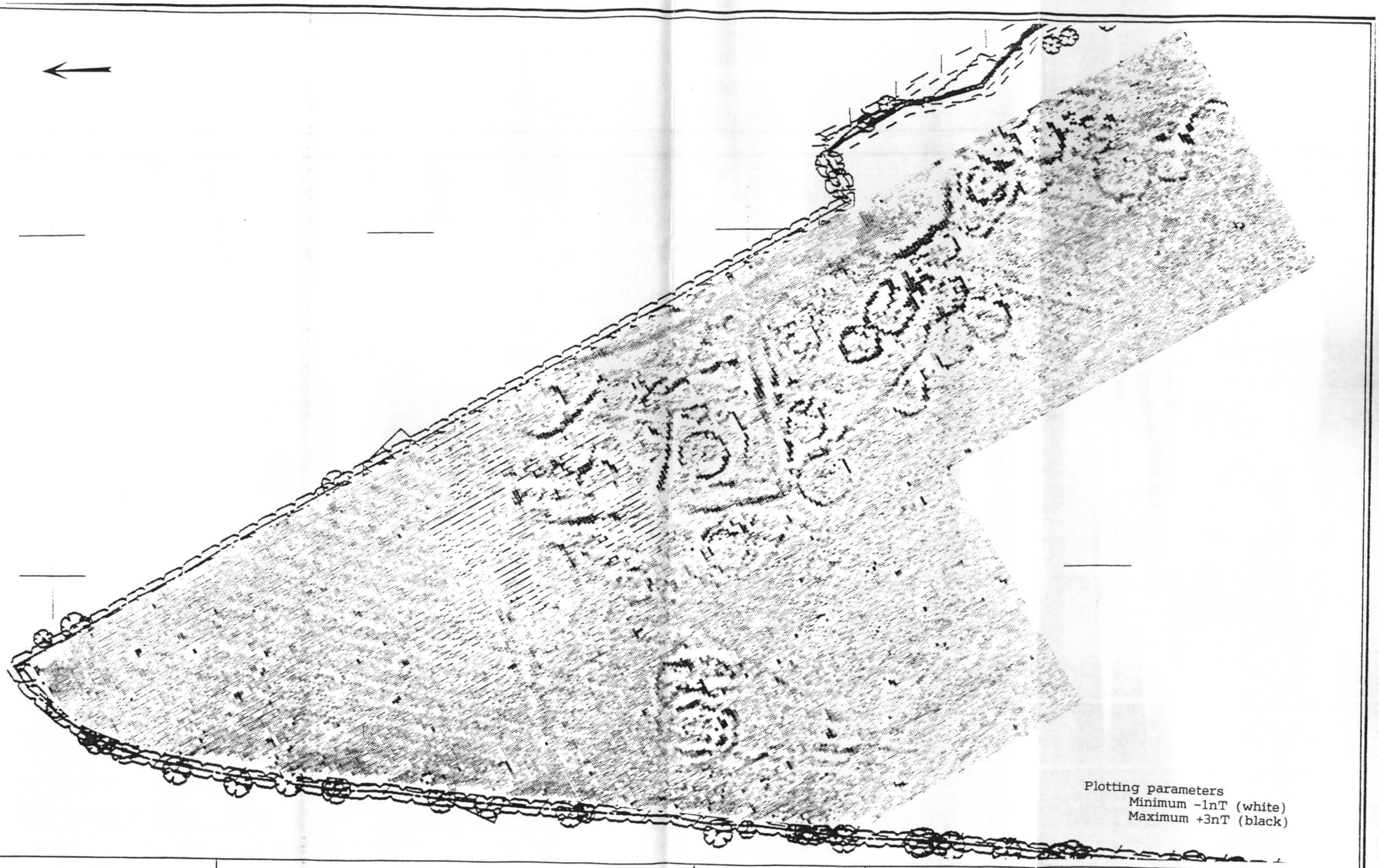

Plotting parameters
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Maximum +3nT (black)

Date November 1993	Client RPS CLOUSTON	Figure 5	STRATASCAN™ GEOPHYSICAL & SPECIALIST SURVEY SERVICES
Scale 1:1000	Subject Geophysical Survey - DIRFT B - Triangle Plot of magnetometer data with biased plotting parameters		

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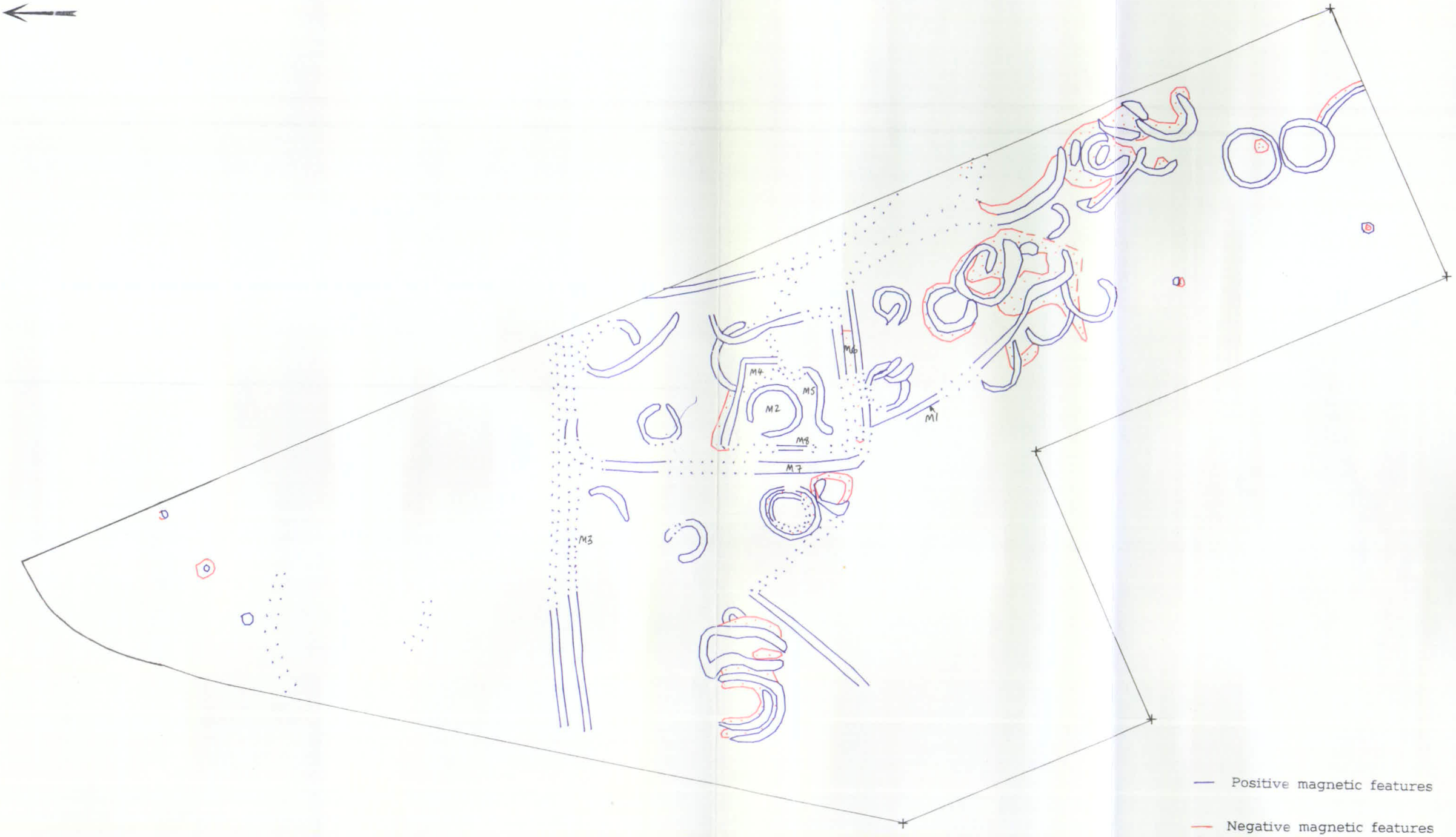

— Positive magnetic features

— Negative magnetic features

Date November 1993	Client RPS CLOUSTON	Figure 6	STRATASCAN™ GEOPHYSICAL & SPECIALIST SURVEY SERVICES
Scale 1:1000	Subject Geophysical Survey - DIRFT B - Triangle Abstraction of Features		

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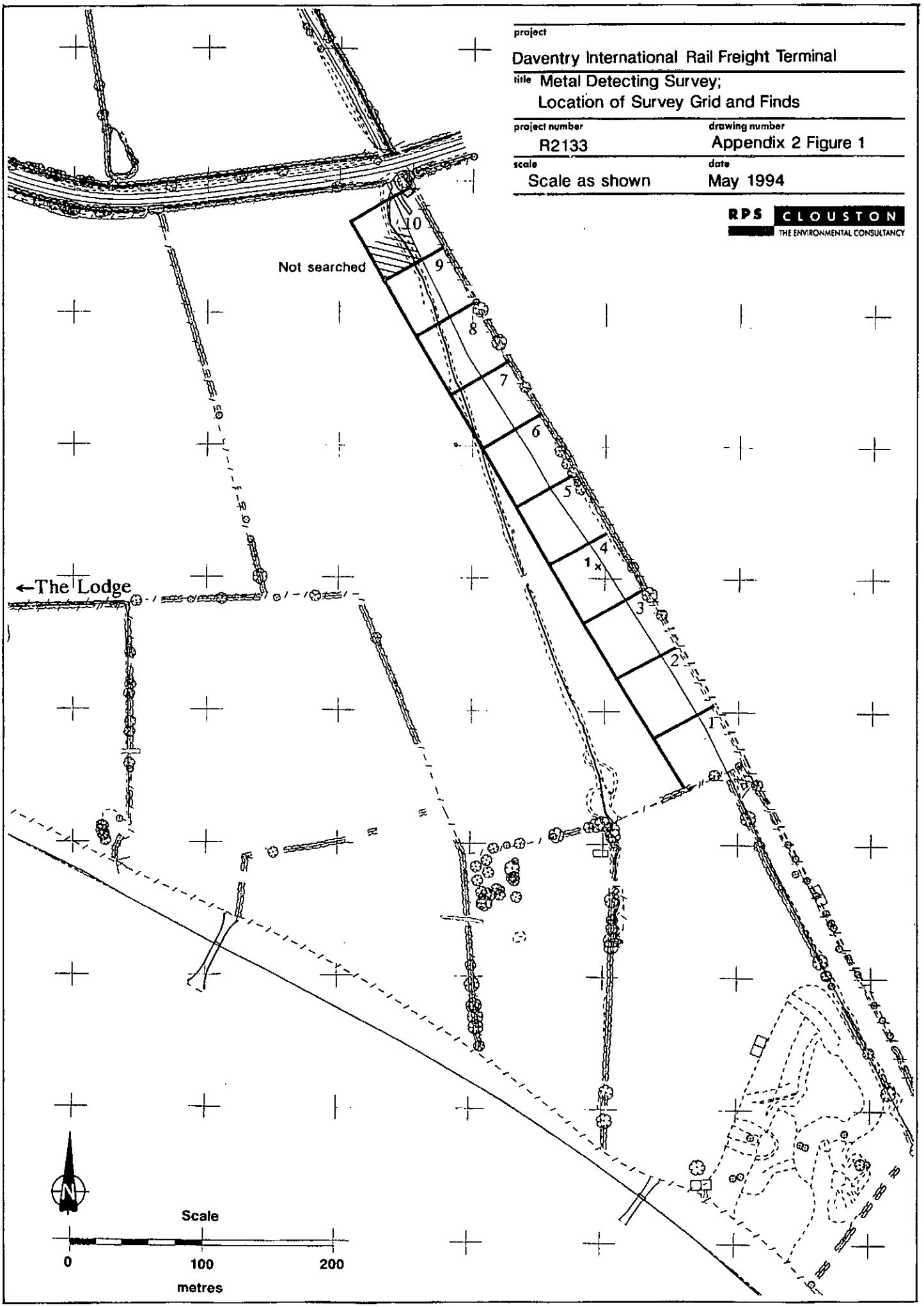
Appendix 2 - Metal Detecting Survey

Appendix 2

Figures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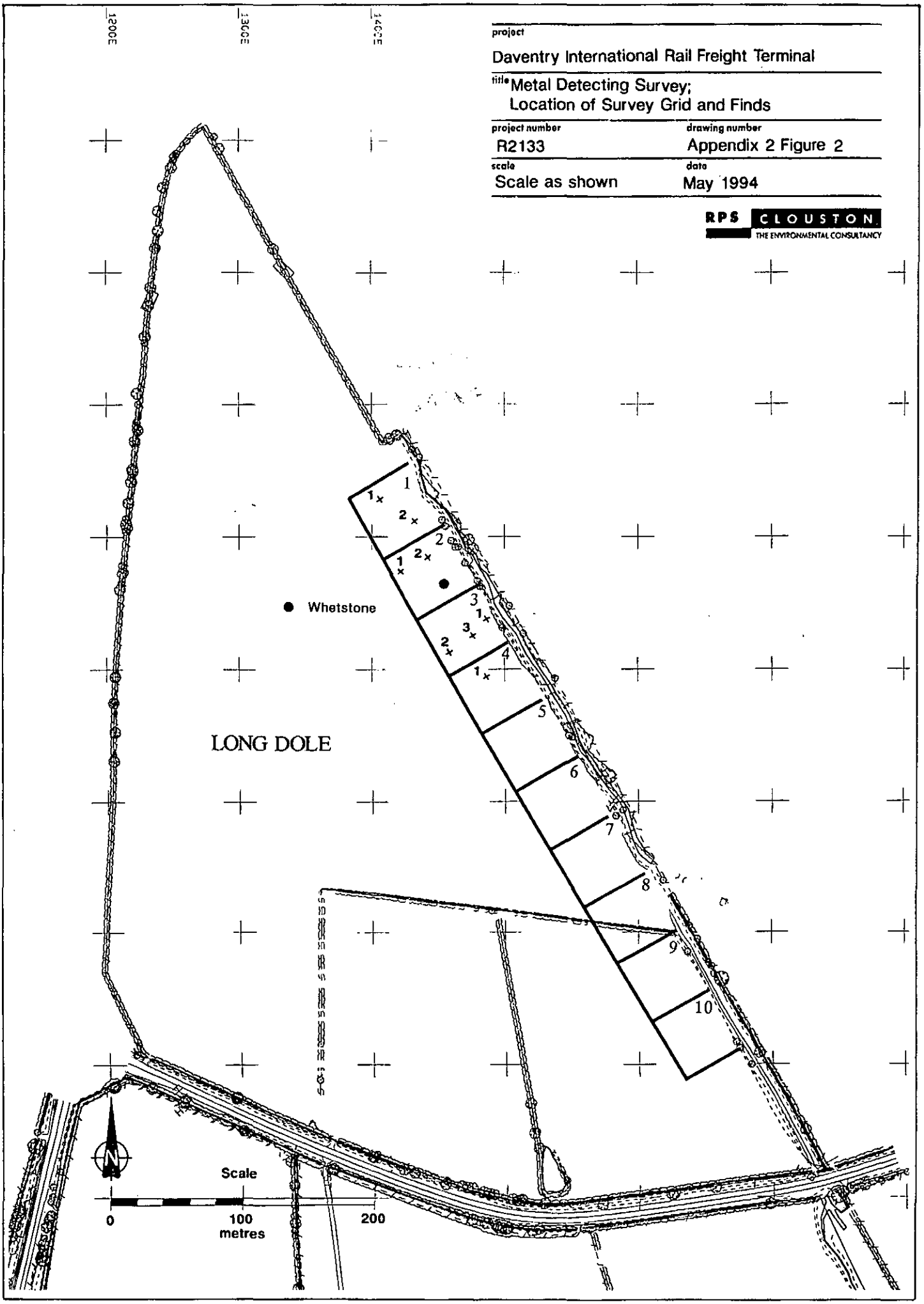
Daventry International Rail Freight Terminal
title Metal Detecting Survey;
Location of Survey Grid and Finds
project number
R2133
drawing number
Appendix 2 Figure 1
scale
Scale as shown
date
May 1994
RPS CLOUSTON
THE ENVIRONMENTAL CONSULTANCY
Not searched
10
9
8
7
6
5
4
3
2
1
1x
←The Lodge
N
Scale
0
100
200
metres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title
Metal Detecting Survey;
Location of Survey Grid and Finds
project number
R2133
drawing number
Appendix 2 Figure 2
scale
Scale as shown
date
May 1994
RPS CLOUSTON
THE ENVIRONMENTAL CONSULTANCY
1200E
1300E
1400E
Whetstone
LONG DOLE
1
2
3
4
5
6
7
8
9
10
N
Scale
0
100
metres
200

Appendix 2

Table

Daventry International Rail Freight Terminal

Appendix 2, Table 1

FINDS FROM METAL DETECTING SURVEY

The Lodge

Grid square 4, find 1	severely abraded coin - ?Roman

Long Dole

Grid square 1, find 1 (AD 138 - AD 161)	silver denarius of Antoninus Pius
Grid square 1, find 2 (83 BC - 30 BC)	silver denarius of Mark Anthony
Grid square 2, find 1 15th/16th century	Copper alloy dress fastener,
Grid square 2, find 2	alloy clip, modern
Grid square 3, find 1	lead weight (loom weight or spindle whorl)
Grid square 3, find 2	unidentified Roman denarius
Grid square 3, find 3	copper alloy flower-like sexfoil domed mount defined by radiating lines, with integral tapering shank ending in point, possibly decoration for wooden furnishings rather than leather, 14th - 15th century
Grid square 4, find 1	iron posy ring with internal inscription "**I LOUE V REALY TRUE**". 19th century, possibly for a man or to wear over a gloved finger

Also recovered from **Long Dole**, square 2, during the metal detecting survey was part of a whetstone. This has been purposefully shaped from a slate-like sedimentary stone, possibly Norwegian in origin. The stone has been broken at both ends and the remaining length is c. 50mm. It tapers from 14mm to 11mm in width and 5mm to 6mm in thickness. The break at the narrower end is through an hourglass-shaped perforation which presumably once held a cord. The perforation has been drilled from both sides, perhaps because an obstruction (a fault in the stone) was encountered. The whetstone would fit either a medieval or Anglo-Saxon date.

Appendix 3 - Topographical Survey

Appendix 3

Section 1

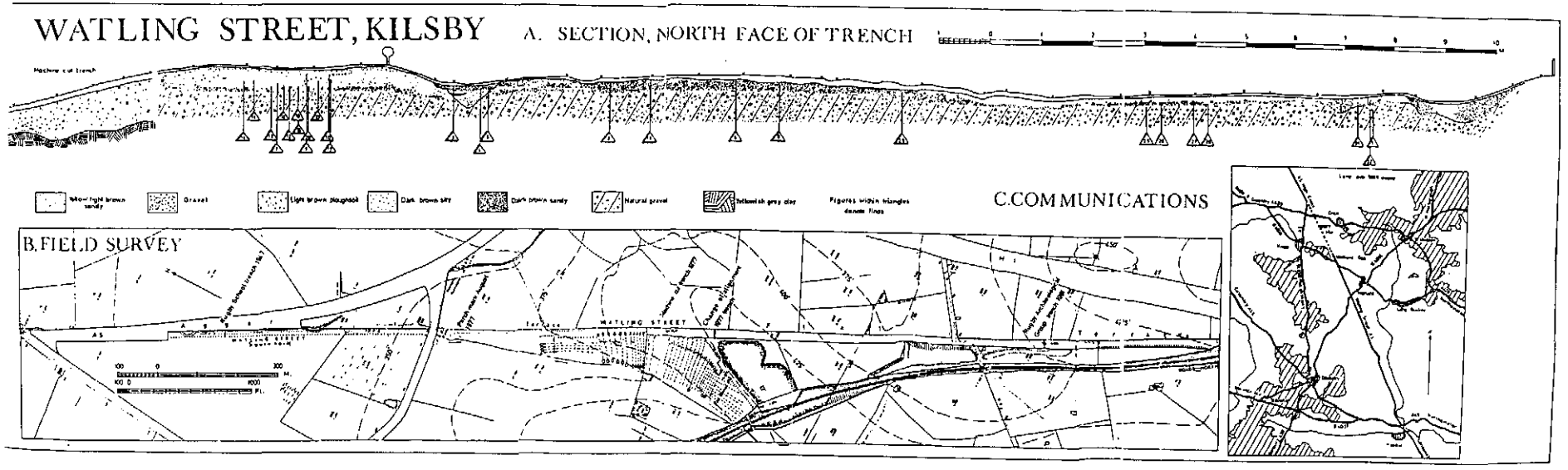

Fig 1 Watling Street, Kilsby; section across road, field survey (with acknowledgements to the Ordnance Survey) and local communication pattern.

from NORTHAMPTONSHIRE ARCHAEOLOGY No. 13

Watling Street and the Gartree Road: some work on two Roman roads in Northamptonshire

1. WATLING STREET AT KILSBY

by A E BROWN

This is a record of a cutting made across the line of Watling Street in Kilsby parish in August 1977, during an excavation organised as part of a training scheme by the Adult Education Department of Leicester University. The location chosen lay in a zone potentially under threat by a renewal of gravel working; grateful thanks are due to the owner of the land, Mrs M Morris of Lodge Farm, Kilsby for allowing the work to take place, and also to Northamptonshire County Council and Northampton Development Corporation for assistance with the provision of a site hut and fencing and for transport.

FIELD SURVEY (FIG 1b)

The stretch of Watling Street (Margary 1f) which runs northwards from the tunnel on the Northampton-Rugby railway line into the A5 about a mile NW of Crick has often been commented on (eg Knowles 1936, Margary 1976, 185), because this is one of the few lengths which has never been followed by a modern paved road, although now the building of the M1 motorway and a consequent extension of the A5 have reduced the length of green lane available for study from 3.7km to 2.6km.

Today this length of Watling Street begins on the edge of the railway cutting at SP 57967125. It runs close to the foot of a north-westward projecting spur of Middle Lias silt as a terrace 7m wide between the hedges, with a drop of up to 3m on the westward side; there is no trace of a built up agger. At *c* SP 578714 it starts to descend into a valley composed of Upper Lias clay, still as a terraceway; at SP 57777163 a section dug across the lane between the hedges by the Rugby Archaeological Group in 1961 disclosed a road surface of cobbles 4 to 6in in diameter one stone thick resting on a layer of smaller stones 6in thick which lay directly on the natural clay (Foster and Cameron 1961). This surface was only 14ft wide and lay towards the eastern half of the excavated trench. From *c* SP 576720 the lane begins to rise as its ascends another, eastward projecting spur, which carries a thick deposit of glacial sand and gravel. The road is here simply a cart track 20m wide between the hedges, with no agger or terraceway; the spoil tips created by the construction of the Northampton to Rugby railway have diverted the natural drainage onto it, creating marshy conditions. At the top of the spur, close to the excavated trench, Watling Street changes direction by two degrees towards the west. As it descends the north western edge of the spur it appears again as a terrace but the topography has meant that the steepness of the western, Kilsby side has been exaggerated by ridge and furrow ploughing; initially the ridges ran at right angles to the line of the road, piling up substantial mounded heads against it, then lower down the ploughing ran

NOTES

parallel to the road, causing the road to stand up more sharply through the process of casting earth away from it. From about SP 572728 a band of brown parched grass 4m wide could be seen at the time of the excavation running along the centre of the grass track and doubtless denoting road metalling.

After crossing a stream at SP 57067294 Watling Street takes on a different aspect altogether, since on the low ground it becomes an agger 12m wide at the base, 6m wide at the top, and 1.7m high. This declines in height to .6m at SP 56977313. From SP56937319 the agger is eaten into by a stream on the eastern side, which narrows it considerably and reveals in places a construction of gravel with some large stones near the top of the agger some 230mm across. At SP 56827339 a section dug by the Archaeological Section of Rugby School in 1947 showed that the road surface consisted of 20in of hard flinty gravel on a layer of large smooth stones up to a foot in diameter; this rested on sandy gravel and clay. The width of the road was 11½-12ft and in its surface here had been dug two graves containing a female human skeleton, the bones of a dog and a human skull (Rugby School 1947; also Northampton Museum records).

THE EXCAVATION (FIG 1a)

A trench 23.77m long and 3m wide was dug by hand across the line of Watling Street at SP 57397234. At the end of the excavation natural was tested by a JCB to a depth of 1.5m and slight test extensions were dug with the machine at both ends of the trench.

The excavation disclosed that Watling Street at this point had a main carriageway 10.4m wide (34ft) composed of gravel mixed with a sandy yellow/light brown earth which rose to a maximum thickness of .3m in the centre. This surface had been penetrated to a depth of .15m by wheel ruts, but these could be seen to extend from the overlying topsoil and were clearly modern. A patch of compacted lighter gravel 2.4m from the west side containing two large stones 200 x 180mm and 150 x 140mm could have represented the repair of an ancient rut. The subsoil here consisted of flinty gravel mixed with a light brown/yellowish sandy earth, lighter in overall appearance than the road surface.

To the east of the central carriageway lay another of identical construction 5.4m (17ft 9in) wide and .1m high.

This had to the east of it a small gully 1.25m wide and .3m deep filled with a soft, darker brown sandy earth. This produced a small sherd of Roman grey ware, a flint flake and a small piece of corroded iron. A little charcoal was also present.

To the east of this again was a modern hedge ditch 2m wide, .4m deep with a similar fill.

On the western side of the central carriageway and separated from it by a recent hedge ditch 1.3m wide was a discontinuous layer of gravel pebbles, .1m thick and 5m (16ft 5in) wide. These stones (up to 80mm across with one large stone 160 x 180 x 220mm) were larger than the general run of pebbles from the natural gravel and seemed to represent an artificial concentration, although the point cannot be taken to be conclusively proved. This layer lay under .6m of reddish brown earth, generally stoneless except for a small concentration of flinty pebbles within the upper .1m. This layer represented the ploughsoil of the former open fields of Kilsby, with the flinty band perhaps indicating activity to be associated with the operation of the large abandoned gravel pit lying to the

NOTES

west of the trench. This gravel pit is cut by the Rugby-Northampton railway, authorized in 1875 (Appleton 1960, 222), and so pre-dates it. The excavation of the pit has had the effect of obliterating the ridge and furrow in its immediate environs but further north the surviving ridge and furrow extended right up to the existing hedge without a break for a headland, showing that during open field ploughing the ploughs had been turned on the centre portion of the Roman road.

No side ditch of any kind was found on the western side of the excavated section. Since a farm track prevented its extension, a trial trench, angled slightly to Watling Street because of a fallen tree, was dug by machine 147m to the north. This revealed, below .6m of light yellowish brown ploughsoil a shallow depression in the greyish yellow clay subsoil, filled with orange sandy earth and gravel. Although conclusive proof is absent once more, this could represent the bottom of a side ditch, the upper portion of which had been removed by open field ploughing.

THE FINDS

These were plotted three dimensionally and their find spots are indicated on the section (FIG 1a). The most interesting are the Mesolithic flints (nos 6, 8, 16, 21, 26, 27, 28) incorporated in the road surfaces and from the gully on the east. The majority of the other finds are of recent date and mostly came from the ploughsoil beyond the hedge on the west of the trench.

1. Fragment of Roman grey ware
2. Piece of post medieval horseshoe
3. Fragment of green bottle glass
4, 11, 14, 23. Fragments of black glazed earthenware probably 19th century
5, 13, 17. Fragments of recent brick
9, 20. Pieces of clay pipe stem
7, 10, 15, 18, 19. Fragments of china
12. Piece of salt glazed stoneware, 18th or 19th century
22, 25, 29. Small fragments of iron; two are of nails.

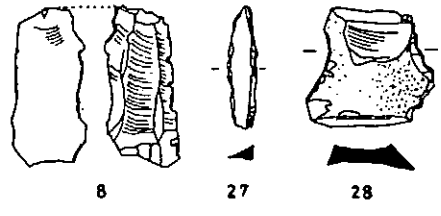

Fig 3 Mesolithic flints, Kilsby ($^1/_1$)

THE FLINT (FIG 3) *by* Elizabeth Healey

The seven worked flints recovered during the excavation comprise 4 flakes (2 retouched — one with a short scraper-like edge), a truncated blade, a microlith and retouched blade fragment, possibly resulting from the manufacture of microliths. Four of the flints are patinated and three have areas of cortex on them.

NOTES

The truncated blade, 8, is small (length 20 mm, width 9.5 mm and thickness 2 mm). It has been transversely truncated by flattish flaking forming a slightly concave edge. There is steep nibbling retouch on the right edge at the butt end and near the distal end. Both edges show signs of utilization (inverse). The microlith, 27, is of narrow rod-like form, blunted all down one edge and along part of the other. It is a late Mesolithic type (Mellars 1974, 87 and Jacobi 1976, 71-75).

It is not clear whether the blade fragment, 28, truncated across a steeply retouched notch, is the product of a deliberate technique used in microlith production or accidental damage. It may be similar to blade butts with traces of notches from Wawcott (Froom 1976, 125). These three are of Mesolithic character and as mentioned above the microlith is typical of the later industries; it is likely that all the flint represents activity in the immediate vicinity in later Mesolithic times. No other Mesolithic activity has been recorded in the area (Wymer 1977, 172-3 and 216-7).

THE CONSTRUCTION OF THE ROAD

Because of disturbance caused by ploughing on the Kilsby side of the trench and because the trench could not be extended across the Crick parish boundary, some doubt must remain about the exact significance of what was found, but a few general points are worth making. First, the extremely simple construction of the road is noteworthy, merely consisting essentially of a rearrangement of the gravel subsoil. Presumably this provided a sufficiently tough well drained surface for traffic purposes and taken with the information from the earlier trenches across this length of Watling Street illustrates how the Roman road engineers were prepared to vary their construction techniques to match the local terrain and road building materials available.

Of greater interest perhaps is that if the western gravel spread is accepted as part of it, the road can be seen to be divided into three carriageways, the central thicker one being twice as wide as the two flanking ones. This means that this part of Watling Street can now tentatively be regarded as a three lane highway similar to some other important roads in Roman Britain: for example Stane Street at Gumber Farm and near Chichester (Curwen 1915 and Lowther 1942), the London - Colchester road at Old Ford and outside Colchester (Sheldon 1971, 43-6 and Hall 1942) and Ackling Dyke near Woodyates (Pitt Rivers 1892, 74) and near Salisbury (Wilson 1966, 213-4).

It is also worth noting that the distance between the bottoms of the possible side ditch on the west of the road and the small gully on the east is 25 m (83.3 ft). This is matched by the distances where known between the side ditches of the roads mentioned above which have lightly metalled side tracks in addition to a central agger and also by the space between the ditches of some other roads such as the Port Way between Silchester and Old Sarum where there is a central agger but no metalling in the spaces between this and the ditches (Wright 1936). The consistency of this measurement has been discussed by Margary (1939 and 1943), who considers that a zone of this width marked off by relatively small ditches was a regular feature of the layout of principal highways in Roman Britain. As such it would be expected in the case of Watling Street.

NOTES

WATLING STREET AT KILSBY: GENERAL (FIG 1c)

The question remains to be answered why this particular stretch of Watling Street has remained a simple cart track and carries no modern traffic. The answer lies in the evolution of the pattern of communications in the locality. As is indicated on the mid 14th century Gough map, one of the most important main roads of medieval England was the one which ran from London to Coventry, via Dunstable and Towcester along Watling Street as far as Weedon (FIG 1c). There it turned aside from the Roman road to go towards the north west, running through Daventry, a course which Anglo Saxon charters suggest was probably already a fact of economic geography before the Norman Conquest (Brown *et al* 1977, 171). North of Weedon Watling Street led nowhere from the point of view of the general run of long distance medieval traffic and later topographical writers frequently comment on its little used condition. Stukeley (1776, 113-4), inverting cause and effect, described the road just north of Weedon in these terms: 'Hereabouts the road is overgrown with grass and trefoil, being well nigh neglected for badness and the trade wholly turned another way, to Coventry, for that reason.' Morton (1712, 507) speaks of it in the vicinity of Dow Bridge near Lilbourne as 'not such a publick and frequented Highway as it was formerly; 'Tis now little more than a private Road'. Codrington (1903, 65) stated that the stretch of Watling Street south of High Cross was a little used, unimportant road which wandered about between widely separated hedges some 20 or more yards apart.

That this part of Watling Street was of little importance during the earlier Anglo Saxon period is suggested by the burials actually in the road found by the Rugby School excavation in 1947, to which can be added the six skeletons recorded by Sir Henry Dryden found in 1845 at Welton on the side of or within Watling Street when it was being dug away for gravel; one skeleton had what might have been a spearhead with it (note in the Dryden Collection, Central Library, Northampton; the writer is indebted to Mr C C Taylor for this reference). These Northamptonshire burials which probably belong to the Anglo Saxon period, find a parallel in the large cemetery at Churchover in Warwickshire where a large number of inhumation burials with grave goods were found on or along the sides of Watling Street in 1824; some of the burials might have been covered by a mound which impeded traffic (Meaney 1964, 259). This phenomenon of Anglo-Saxon burial in Roman roads has been noticed elsewhere in Northamptonshire (at Aldwincle, Jackson 1976, 47) and in Sussex at South Malling *(Sussex Notes and Queries,* 14, 1954-7, 214) and would imply that as routes for traffic these particular roads had then fallen out of use for at least part of their length, thereby providing a convenient space for burial. Their function as boundaries, as is well known in the case of Watling Street, continued and the burials could also have borne some relationship to this.

The main roads which developed subsequently ran from east to west across the line of Watling Street. The road from Northampton to Warwick (now the A45, then the B4037 and after Staverton the A425) cut Watling Street at Weedon; it is mentioned in an Anglo Saxon charter of 1021-22 (Brown *et al* 1977, 171). The B4036 from Market Harborough to Daventry cuts Watling Street at Watford and continues the line of the A361 from Daventry to Banbury and Oxford. Ogilby's road book (Ogilby 1675, PL 61; also Bowen 1720, 159) shows the road from Cambridge to Coventry as running through Long Buckby, Watford and Kilsby,

NOTES

crossing Watling Street at Watford Gap; this was replaced in the 18th century as the main route by the turnpike through West Haddon and Crick, the present A428 (Cary 1806).

That some traffic was carried along certain stretches of the Roman road is however suggested by the fact that the road which runs northwards from Daventry, now the B4038, was known in the 13th century as Leicester Way (Brown, forthcoming). With the development of Daventry as a minor market centre this road rather than Watling Street north of Weedon met the need for a north-south route; it ran into Watling Street north west of Crick, and northbound traffic presumably went along the Roman road for 5 miles, leaving it at Gibbet Hill to proceed via Lutterworth to Leicester.

All this helps to explain the survival of the stretch of Watling Street between Kilsby and Crick as a green lane. Watling Street north of Weedon remained essentially a local road and did not become a trunk road, designated the A5, until 1946 (Sanders 1956, 10). When the improvements which created the present main road were carried out, it was no doubt considered cheaper and just as effective to put them into effect only as far north as Watford Gap, and thereafter to use the line of the old road from Cambridge to Coventry as far as Kilsby as local traffic had been doing. The improved road then met and took up the line of the old Leicester Way from Daventry and so ran into Watling Street again north west of Crick, leaving the ancient green way undisturbed.

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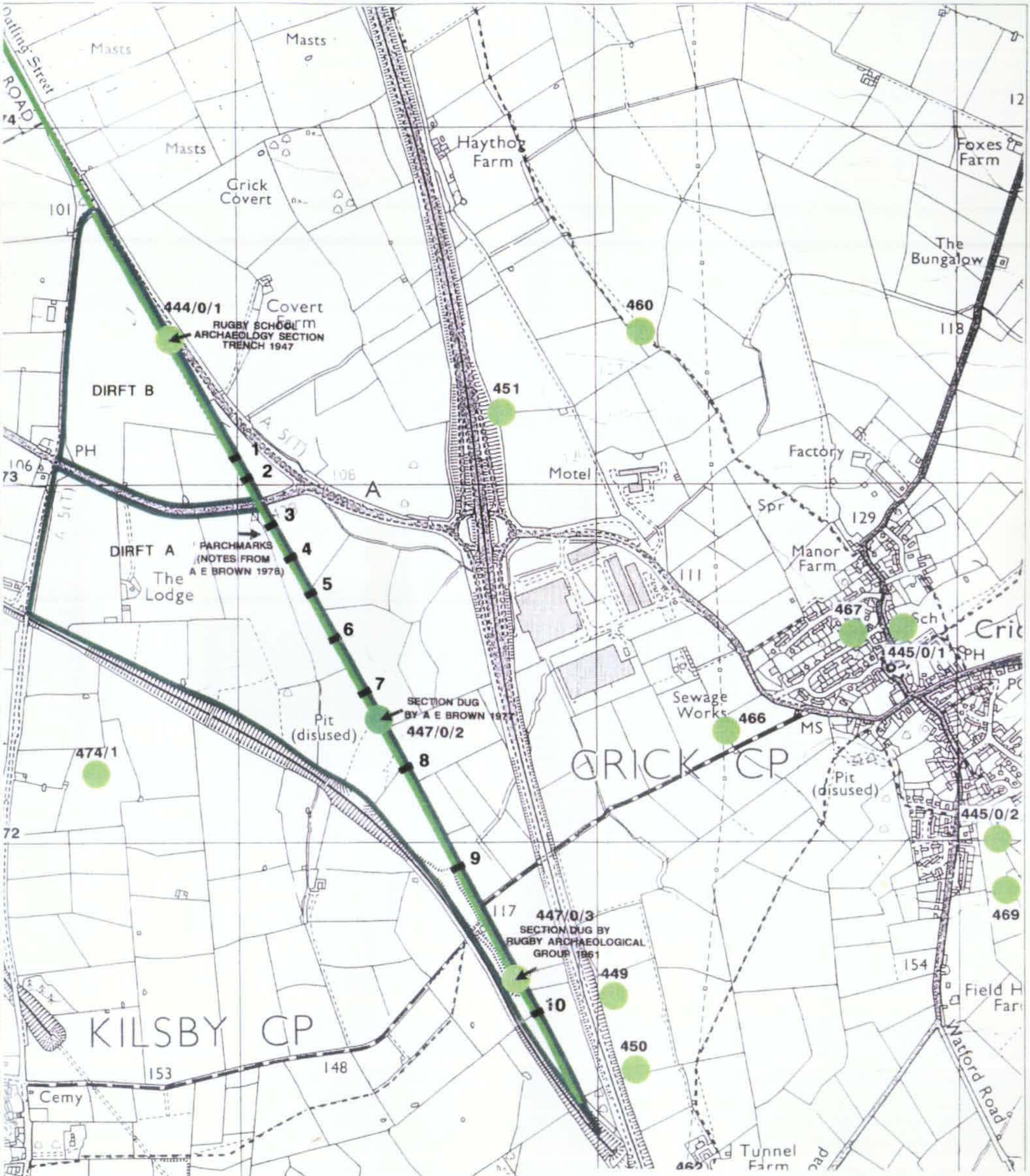
Appendix 3

Figures



Site Boundary

SMR Entries

Line of Roman road

Profiles can be seen on Figure 2

project Daventry International Rail Freight Terminal

title Position of Profiles across Watling Street

project number	drawing number
R2133	Appendix 3 Figure 1
scale	date
NTS	May 1994

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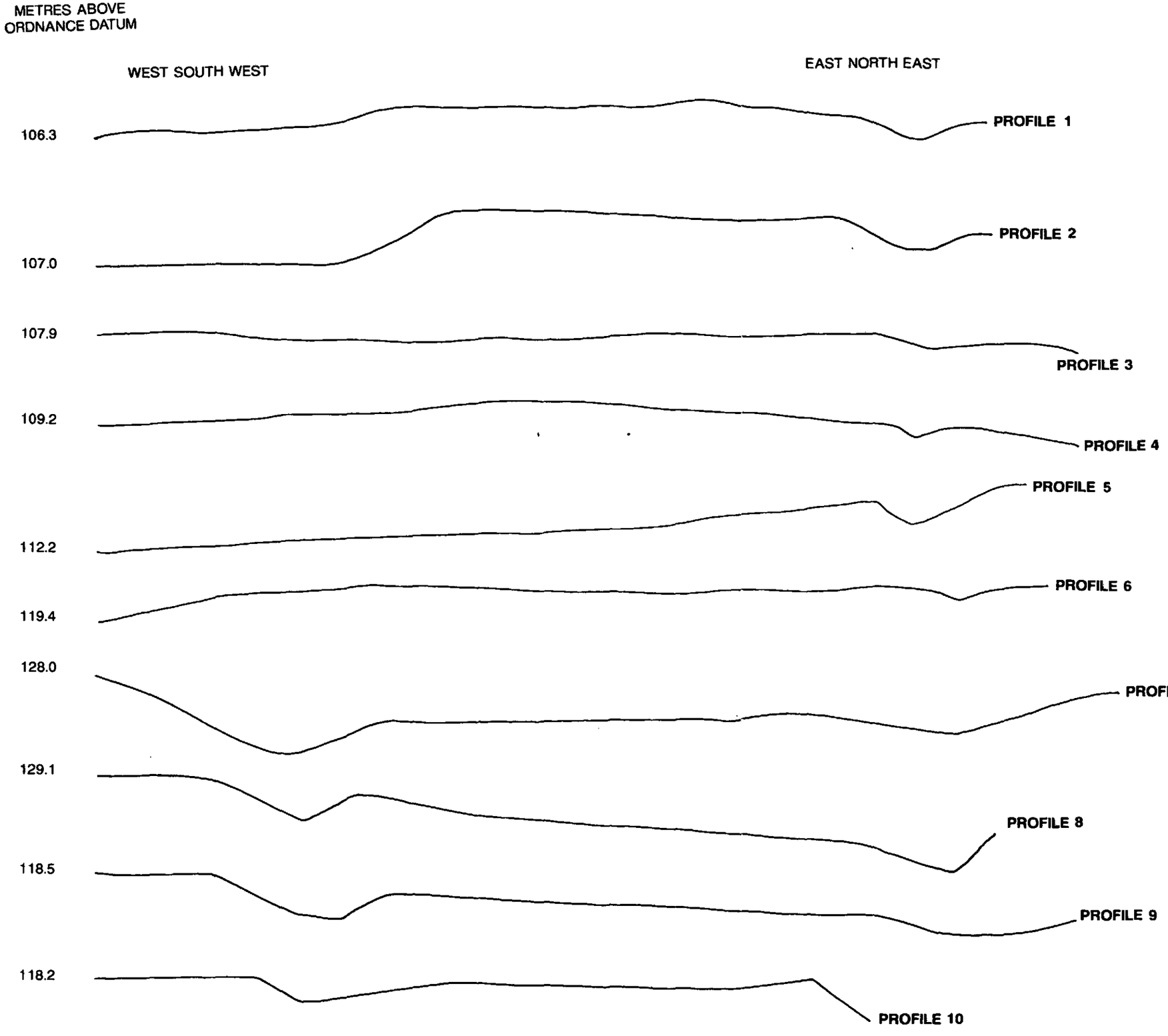

Location of Profiles can be seen on Appendix 3 Figure

project	Daventry International Rail Freight Terminal
title	PROFILES ACROSS WATLING STREET
project number	R2133
drawing number	Appendix 3 Figure 2
scale	1:100
date	May 1994

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Key:

Conjectural Roman road

Roman road corridor

0 100 200

metres

project
Daventry International Rail Freight Terminal

title
Watling Street

project number
R2133

drawing number
Appendix 3 Figure 3

scale
1:2500

date
May 1994

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Key:

Conjectural Roman road

Roman road corridor

0 100 200

metres

project
Daventry International Rail Freight Terminal

title
Watling Street

project number
R2133

drawing number
Appendix 3 Figure 4

scale
1:2500

date
May 1994

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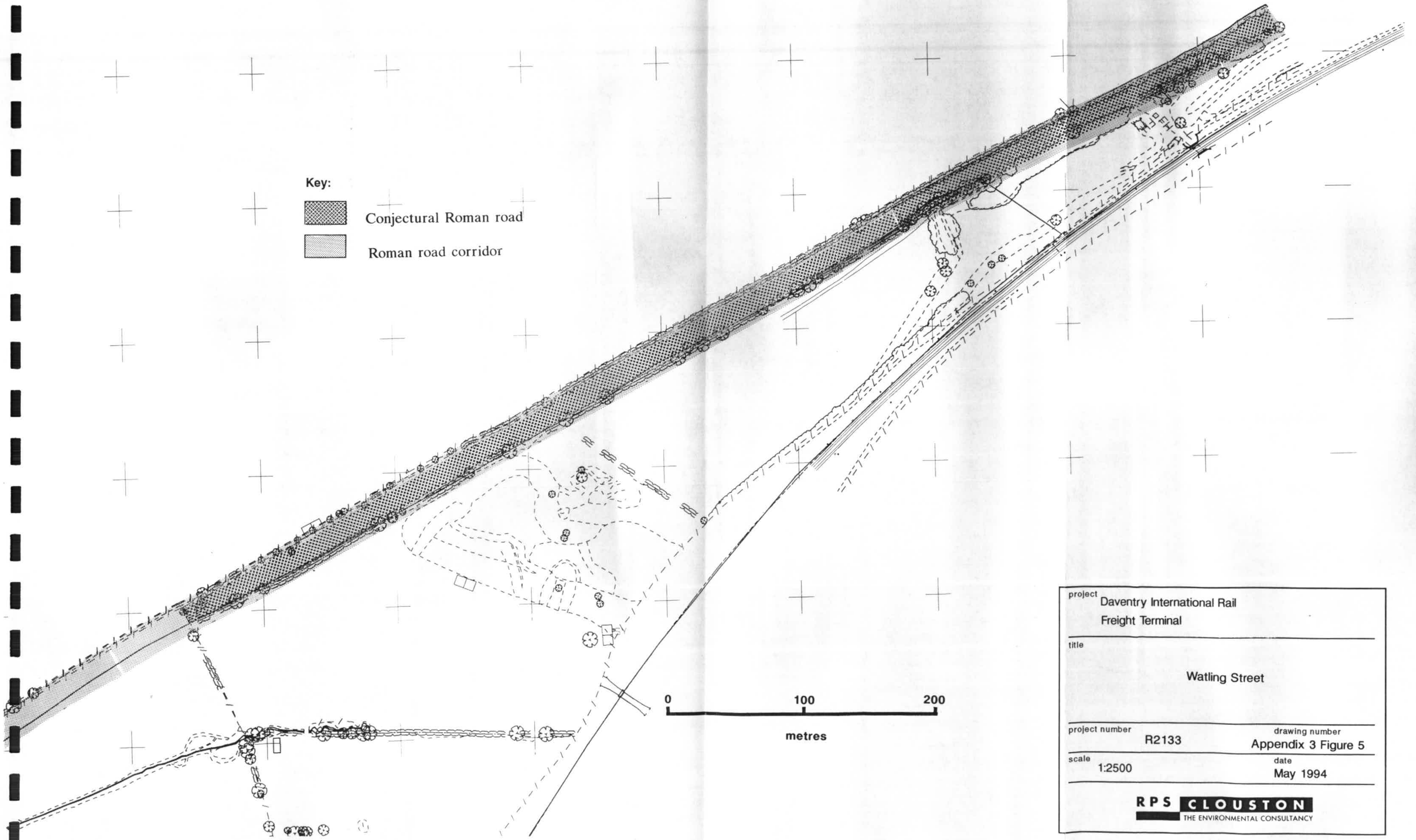

project
Daventry International Rail Freight Terminal

title
Watling Street

project number
R2133

drawing number
Appendix 3 Figure 5

scale
1:2500

date
May 1994

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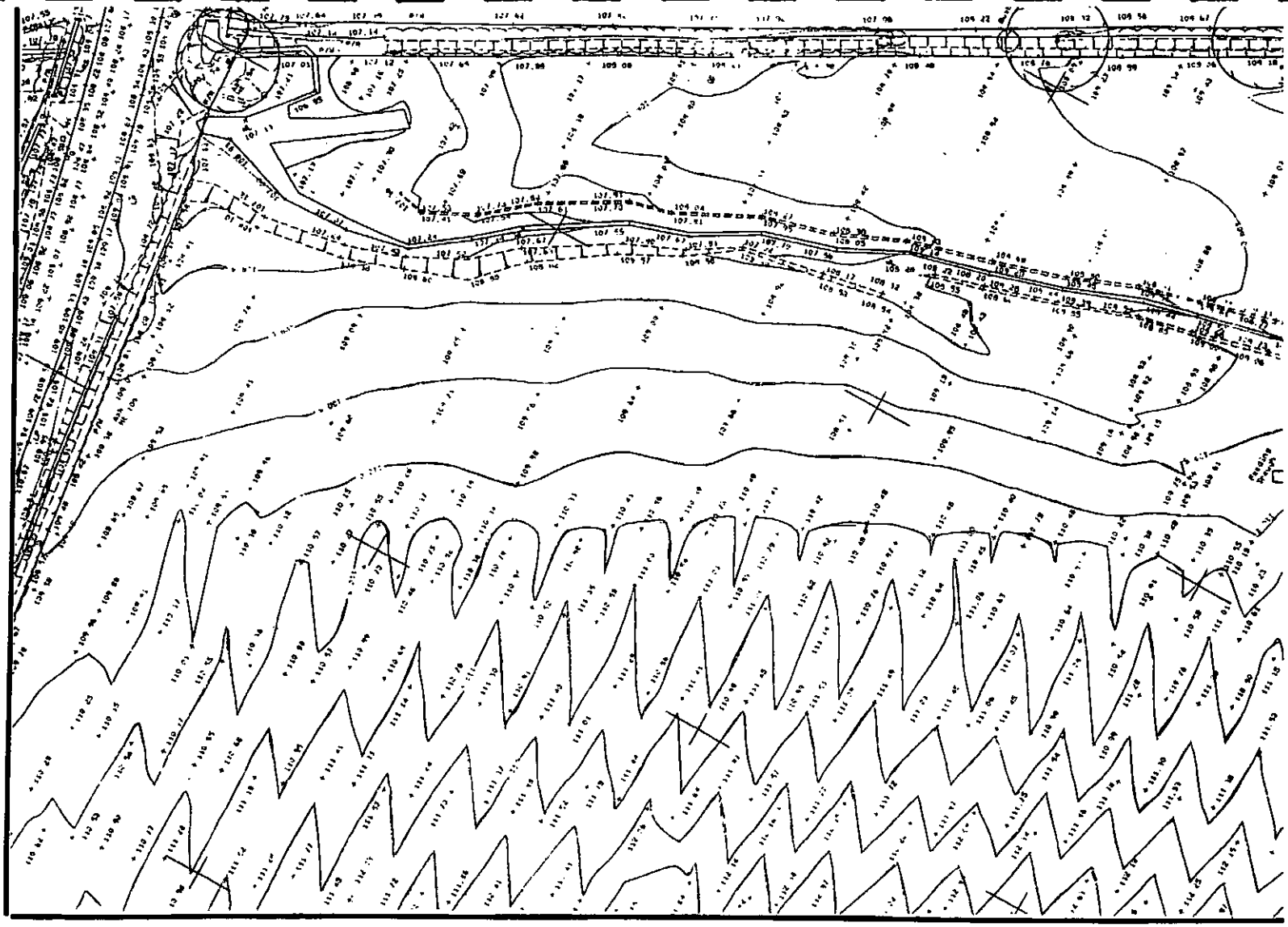

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Appendix 3 Figure 7

0 25 50

METRES

project Daventry International Rail Freight Terminal

title RIDGE AND FURROW AT NORTH EAST OF DIRFT SITE A

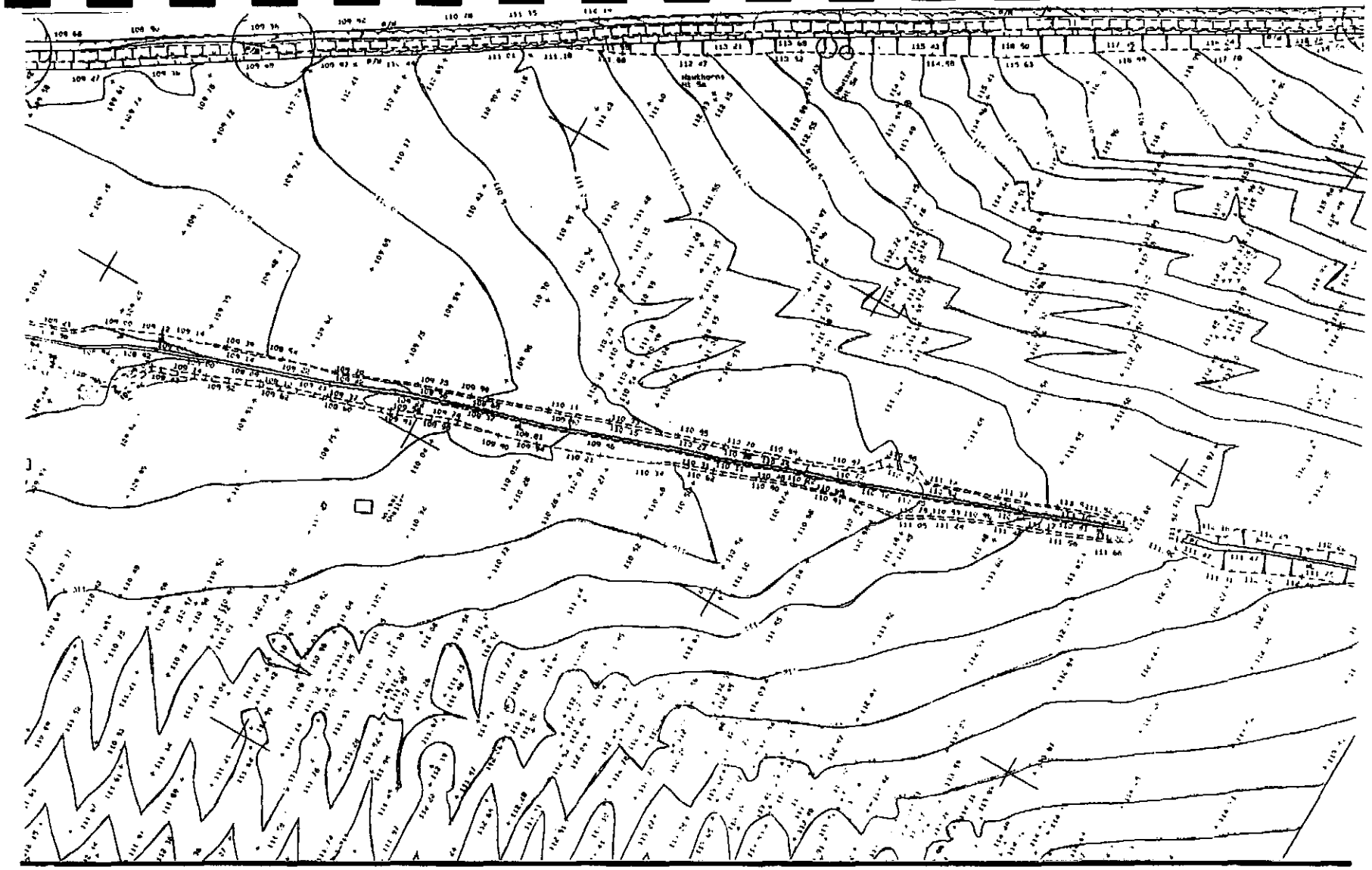
project number R2133

drawing number APPENDIX 3 FIGURE 6

scale AS SHOWN

date May 1994

RPS CLOUSTON
THE ENVIRONMENTAL CONSULTANCY



Continues on Appendix 3 Figure 6

Continues on Appendix 3 Figure 8

0 25 50

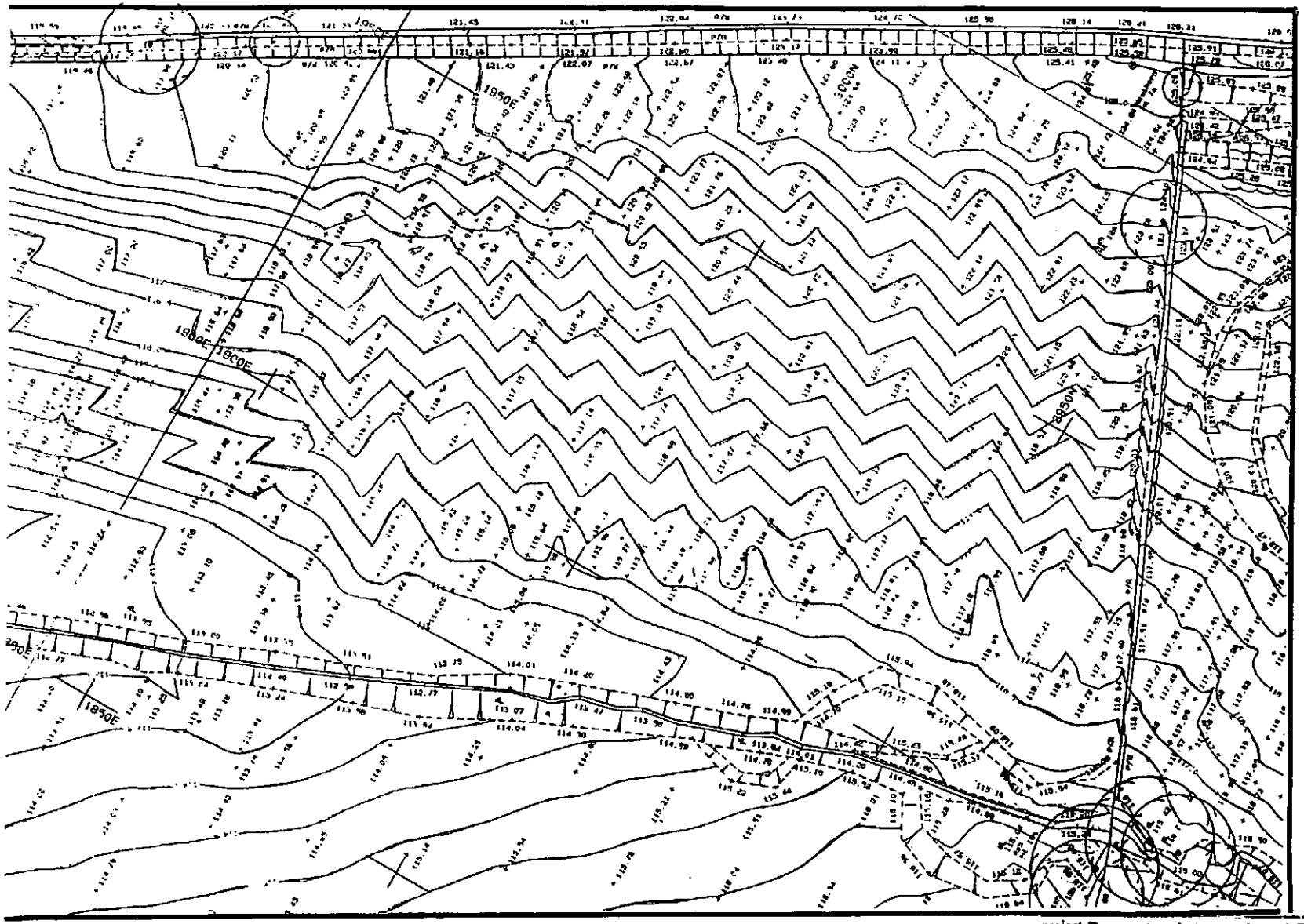
METRES

project Daventry International Rail Freight Terminal

title RIDGE AND FURROW AT NORTH EAST OF DIRFT SITE A

project number	drawing number
R2133	APPENDIX 3 FIGURE 7
scale	date
AS SHOWN	May 1994

RPS CLOUSTON
THE ENVIRONMENTAL CONSULTANCY



Continues on
Appendix 3
Figure 7

0 25 50

METRES

project Daventry International Rail Freight Terminal

title RIDGE AND FURROW AT NORTH EAST OF DIRFT SITE A

project number R2133

drawing number APPENDIX 3 FIGURE 8

scale AS SHOWN

date May 1994

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THE ENVIRONMENTAL CONSULTANCY

Appendix 4 - Fieldwalking Survey

Appendix 4

Section 1

Daventry International Rail Freight Terminal
Fieldwalking Survey
Appendix 4 Section 1

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1 SUMMARY OF RESULTS

1.1 Density of finds recovered from this site during fieldwalking was low. Only 12 sherds of pottery from 22 hectares are recorded, two of which are general finds.

1.2 The distribution of building material shows clustering at the southern edge of the field, where dumping of hardcore was evident. Quantities of building material were also collected towards the centre of the field.

1.3 Post-medieval pottery was sparsely distributed over the site, with only 3 post-medieval sherds recovered and one post medieval or late medieval sherd. One sherd of possible late medieval date was recovered, one sherd of medieval pottery and one sherd of possible early Anglo-Saxon pottery. Three sherds of Romano-British pottery were collected.

1.4 Other material observed during the fieldwalking include the following: tile, brick, and roofing slate fragments, clay pigeon fragments, 1 possible stone tessera, slag, sandstone, Bovril jars, and modern glass. The most obvious spread of material was that of Bovril jars in the south western corner of the field. Apparently this originates from the jack-knifing of a lorry carrying these on the adjacent road. (pers. comm. the publican, The Halfway House). The distribution of this modern material has not been recorded as it was of no significance to the archaeological assessment. Distribution plots of artefacts can be seen in Figures 2 and 3.

1.5 The pottery collected from fieldwalking at this site has been subjected to visual examination only. None of the sherds were particularly diagnostic and as such it was impossible to date any of the pottery closely although general period divisions have been assigned. Of the 12 sherds collected, 4 are of definite or probable Romano-British date, 1 is possibly early Anglo-Saxon, 2 medieval and 5 of late-medieval or post-medieval date. Post medieval fabrics are not described in detail.

2 COMMENT

2.1 No significant concentrations or distributions of pottery or other material were located. The presence of artefacts of varying periods, however, may not be representative of contemporary activity in the immediate vicinity as agricultural practices, such as the spreading of farmyard manure (mixed with domestic refuse) were common during the medieval and post medieval periods.

2.2 This information will be submitted to Northampton Heritage for inclusion in the SMR and the finds and archive deposited in an appropriate museum.

3 THE POTTERY (P Charlton BA)

3.1 Fabric 1

Romano-British, wheel thrown. Externally, fabric 1 is variable from mid grey-brown to a pinkish colour. It appears to have an oxidised core in section, but this is not present in fresh breaks and so is likely to be the result of post-depositional changes. Other than the pale orange-red colouration of the core, the grey-brown colour is quite consistent throughout. It is a hard fabric, and cannot be scratched with the fingernail and has a rough feel. A freshly broken section appears 'hackly' to the naked eye. There are inclusion of white mica (moderate), moderate sub-rounded light grains which may be dolomite and occasional dark sub-rounded grains. One sherd has voids which may be indicative of a grass or straw temper. 2 sherds.

3.2 Fabric 2

Romano-British, probably hand-made. Externally, pale to mid pinkish-red in colour, paler in freshly broken sections. Traces of a dark brown colour coat are extant on the external face of the one sherd in this fabric. The surface can be scratched with the fingernail and the less abraded parts of the sherd have a soapy feel. A fresh break is laminated. There are moderate inclusions of white mica, and very occasional sub-angular grains, which may be dolomite. 1 sherd.

3.3 Fabric 3

Possibly early Anglo-Saxon, hand-made. Externally mid to dark red-brown in colour, this is consistent throughout the sherd. It is hard with a soapy feel and breaks irregularly. There are inclusions of white clay pellets. 1 sherd.

3.4 Fabric 4

Medieval. The external surface varies from dark red-brown to pink, whilst the core is a consistent pinkish-red. Traces of a green splash glaze are visible on one surface. It is a hard fabric, feels harsh to the touch and breaks irregularly. There are frequent, heterogeneous inclusions, which were not identified but may be stone. Occasional specks of mica are visible. 1 sherd.

3.5 Fabric 5

Wheel thrown. Externally the surface is a pale, creamy-pink, with a slightly darker slip. The surface can be scratched with the fingernail, has a rough feel and breaks irregularly. The inclusion are very similar to those in fabric 4, and this is probably of late medieval date.

3.6 **Fabric 6**

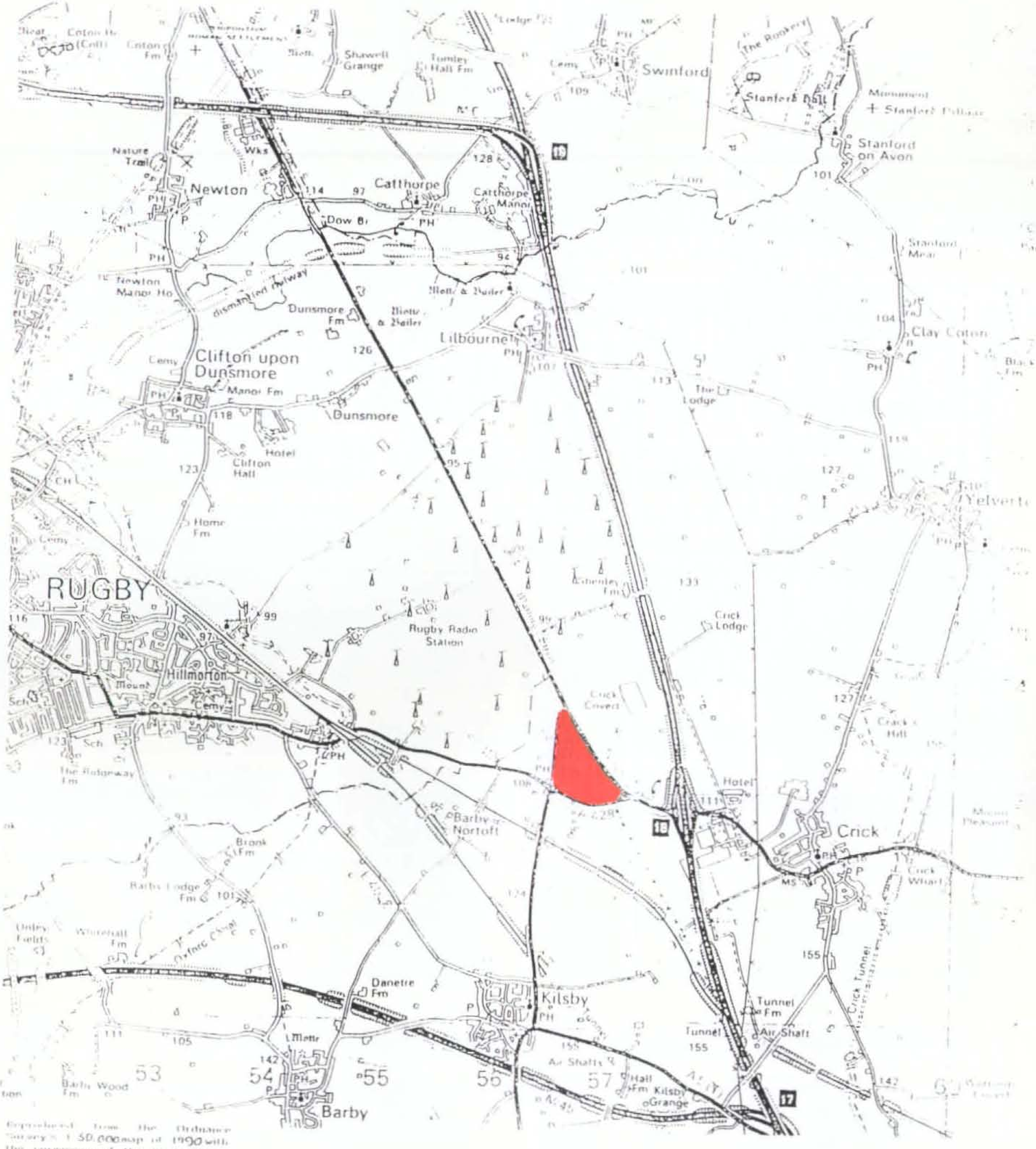
Probably Romano-British, wheel thrown. External surface a pale creamy-pink with a light red-brown slip or colour coat. It is a hard fabric, has a smooth feel and breaks irregularly. Occasional sub-angular inclusions of ironstone(?) and numerous other inclusions which are much smaller and could not be identified. 1 sherd.

3.7	General Collection	2 sherds. Fabric 2, base of (?) bowl. Post medieval body sherd, wheel thrown, slightly gritty fabric.
	A240-260	Single sherd, fabric 1. Body sherd.
	C440-460	Single sherd, fabric 6. Body sherd.
	C600-620	Single sherd, fabric 3. Rim sherd from a thin walled vessel with a simple bead rim.
	D340-360	Single sherd, post medieval body sherd. Wheel thrown, slightly coarse fabric with dark brown glaze.
	E500-520	Single sherd, post medieval or late medieval. Wheel thrown, gritty fabric with reduced core and light red-brown colour-coat.
	F300-320	Single sherd, fabric 1. Body sherd.
	F380-400	Single sherd, post medieval body sherd. Wheel thrown, slightly gritty fabric.
	F520-540	Single sherd, fabric 4. Body sherd.
	G280-300	Single sherd, post medieval body sherd. Wheel thrown, slightly gritty fabric.
	J280-300	Single sherd, fabric 5. Simple bead rim.

TOTAL: 12 sherds, 10 of which were located by fieldwalking

Appendix 4

Figures



project

Daventry International Rail Freight Terminal

title

Fieldwalking at Dirft B

project number	drawing number
R2133	Appendix 4 Figure 1
scale	date
1:50,000	May 1994

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LEGEND:

Set aside area

1 sherd of probable Romano-British pottery (fabrics 1, 2 and 6)

1 sherd of ? Anglo Saxon pottery (fabric 3)

1 sherd of medieval pottery (fabric 4)

1 sherd of ? late medieval pottery (fabric 5)

1 sherd of post-medieval pottery (various fabrics)

project
Daventry International Rail Freight Terminal

title
Fieldwalking at Dirft B
Distribution of Pottery

project number	drawing number
R2133	Appendix 4 Figure 2
scale	date
1:2500	May 1994

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LEGEND:

- Set aside area
- 1 fragment of slate
- 2 or more fragments of slate
- 1 fragment of brick or tile
- 2 or more fragments of brick or tile
- 1 tessera

project
Daventry International Rail Freight Terminal

title
Fieldwalking at Dirft B
Distribution of Building Materials

project number	drawing number
R2133	Appendix 4 Figure 3
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Appendix 5 - Excavation Data (Plans and Figures 1-29 bound separately)

Appendix 5

Section 1

Daventry International Rail Freight Terminal

Appendix 5 - Section 1

Detailed Description of Features

Locations of trenches can be seen in Figures 3 and 4. Distribution of features can be found on Figures 5, 6 and 7.

Plans and section drawings can be found in Figures 6 - 29 which are bound separately in an accompanying A3 volume. Plans and sections of any features not illustrated may be inspected in the archive.

THE LODGE (see Figure 3 for trench locations)

UPPER FIELD (see Figure 5 for distribution of features)

The underlying geology of this field is sand with a central band which is particularly soft and loose-textured running north-south. Slight traces of earlier ridge and furrow can be detected visually and can be seen well on the geophysical survey plots. There has been some modern disturbance caused by drainage, probably for the railway, and burial of farm animals over a period of time.

Trench 1 This trench was positioned to cut the most easterly linear feature shown on the geophysical traces and was 9m by 2m. Feature 103 was uncovered in the north-western corner of the trench. Only part of the feature, which was 0.40m in diameter and 0.25m deep was visible within the trench (see Figure 8). The profile suggested that the feature reached its greatest depth outside the trench. The feature contained fill 104 and numerous animal bones. Two Romano-British (RB) sherds were recovered from the upper layers of 104 during cleaning. Recent animal burials are present in this field but the condition of the bones from layer 104 suggest that they are not modern.

Trench 2 This trench, west of Trench 1 and on higher ground, was 26.50m by c.2m and was positioned to cut four linear features shown on the geophysical survey plot (see Figure 3). It located five features (two closely adjacent) and a modern horse burial (see Figures 9 and 10). The recent date for the burial was confirmed by the present farmer who was a child at the time of the animal's death.

Feature 203 at the southern end of the trench is a substantial but indistinct ditch 2.20m wide and 0.55m deep with a curved profile. This was easier to see in section than in plan, the natural sand in this trench being very soft and similar in consistency and colour to the fill. The ditch contained one sherd of Belgic/early RB pottery within a single fill (204) which was possibly a water-borne deposit.

Feature 205 (1.10m by 0.35m) has a wide v-shaped profile which slopes more gradually on the northern side. It contained one fill, 206, which produced two RB sherds and was sealed by layer 202 (see Figures 9and 10). It crosses the trench at right angles and is interpreted as a ditch.

Feature 215 (fill 216) is 0.30m by 0.08m. Its profile is a shallow curve. This feature is indeterminate, cutting the natural sand only slightly but visible in section in the baulk. It contained no finds.

Feature 209 is the modern horse burial mentioned above, 2.60m wide by 0.65m into the natural, but cut in from the topsoil.

Features 211 and 213 also run at right angles to the trench and are separated by 0.25m only (see Figures 9 and 10). Feature 211 (1.20m by 0.40m at its deepest point) has a flattened v-shaped profile which gradually narrows towards the southern side. It contains a single fill 212 which produced one sherd of RB pottery.

Feature 213, beside feature 211, (0.90m by 0.25m) has a shallow curved profile and contained numerous sherds of RB pottery (76) of possibly 2nd or 3rd century date (see finds report, Appendix 5, Section 2). Some of these sherds were contained within fill 214 excavated by hand and some were removed by machine during stripping. Also present in fill 214 was a large fragment of granite, possibly part of a saddle quern with a worn, dished, grinding surface. A portion of the edge had rubbed against some other substance or fitment.

All the linear features in this trench run on the same alignment and all, except Feature 205, are cut in from high in the section. Because of the consistency of the soft natural sand and the fact that it is discoloured in its upper levels, it was not easy to distinguish features in plan during machining. The concentration of pottery in Feature 213 was observed also in the baulk section.

Trench 3 This trench, in the south west of the upper field, was 22m by 2m. It was located to cut three intersecting linear features, another linear feature and a feature indicated only by a broken line on the geophysical survey plot (see Figure 3). Seven (or eight) linear features or ditches were uncovered and possibly three pits, or two pits and a ditch terminal. A fragmentary linear feature was also recorded at the southern end of the trench.

Feature 319, at the northern end, ran into the trench from the eastern section but did not continue to the opposite side. The western boundary was unclear but it appeared to terminate. A section showed, what was also obvious in plan, that it had very stony fills (see Figure 11). The feature is 1.40m wide by 0.30m deep with four fills, 337, 320, 338 and 339. The only find was a struck flint from fill 320. The feature was sectioned a second time when it became apparent that it might terminate and was seen to deepen as it approached the eastern side of the trench. The profile is a shallow curve. Its purpose is uncertain but it may possibly have acted as a soakaway.

Features 317 and 315 are linear and both on the same alignment crossing the trench. They are separated by only 0.15m on the east (see Figure 12) but, in the section it can be seen that 317 cuts the larger feature 315.

Ditch 317, which is 0.45m wide by 0.50m deep, has an acute V-shaped profile and one fill, 318. It is cut from very high in the section through layer 302. The fill contained 19 animal bone fragments and a tooth.

Feature 315 is 1.20m wide at the east, narrowing to 0.70m at the west and is 0.50m deep. It contained fills 316, 330, 332, 331 and 333 but no finds.

Features 308 and 306 also run side by side on the same alignment to each other and the features 317 and 315. Feature 308 is 0.28m wide and 0.30m deep with a rounded profile. One RB sherd was found in its fill, 309.

Feature 306, which widened as it approached the west (see Figure 13) is 0.60m wide and 0.45m deep with a flat bottomed profile. Fill 307 contained four RB sherds.

Visible only in the western trench section was a pit, 303, 1.10m wide and 0.30m deep. The two fills, 304 and 305, contained burnt clay and burnt stone.

Linear feature 313 ran at a slight diagonal angle across the trench (see Figure 11). It is 0.60m wide and 0.20m deep with a flat bottomed profile with straight sides and everted edges. Fill 314 produced one RB sherd.

Feature 311 also ran diagonally across the trench (see Figure 14) but at a slightly different angle from feature 313. It is 0.40m wide by 0.18m deep and fill 312 contained one RB sherd. The profile is rounded.

At the eastern trench section, ditch 311 is cut by feature 325, probably a pit. This is 0.50m wide by 0.30m deep as it cuts the natural sand but could be seen in the section to widen and continue throughout layer 302. It contained fills 329, 328, 327 and 326 with no finds.

The southern end of the trench was difficult to define during machining and was cut fairly deeply to define a possible linear feature running parallel with the trench. Features 321 and 334, initially thought to be one ditch, were seen only in the section (see Figure 13). They bore some of the characteristics of features found in Trench 2 and Trench 4 in that the fills were not easy to distinguish from the natural sand. The twin V-shaped ditches are separated by an area of degraded natural sand which makes their relationship difficult to determine. Fills 322, 323, 324, 336 and 335 contained only one sherd, possibly Anglo-Saxon, from 323.

Below the level of the bottom of ditches 321/334 ran the truncated remains of a linear feature, 340, of an earlier phase. This ran from the southern end of the trench parallel with the long section for 3.40m, narrowing after 1.50m to a fluctuating width on average 0.80m wide. It then turned and disappeared beneath the western section. The remnants of a small feature also showed at the side of the opposing side (feature 342). A cross section showed 342 as 0.50m wide by 0.08m deep and feature 340 as 0.80m wide by 0.25m deep. The irregular shape of this feature in plan suggests that it was some form of watercourse or drainage channel in use before the larger ditches above it were cut. One fragment of bone was retrieved from fill 341 in cut 340.

Trench 4 This trench was positioned to cut three linear features shown on the geophysical plot. The trench was 26.50m by 2m and, as in Trench 2, the natural sand was very loose in consistency and presented problems in the recognition of features during machining. This trench was north of Trench 2 and on slightly lower ground (see Figure

3). It located four features interpreted as ditches and one modern pit. Two of the ditches were cut by the modern pit at the point where they intersected and would have been recorded as one feature in the magnetometer survey (see Figure 15).

Feature 409, at the northern end of the trench (see Figure 5) and Feature 413, about 3 metres south of it, were difficult to define in plan as the consistency and colour of the fills (410 and 414) were similar to the natural sand but their dimensions were confirmed in the section. At 5.20m by 0.65m (409) and 4.70m by 0.50m (413) these appear to be very wide ditches. The trench crossed the features obliquely, however, giving a misleading impression of their widths as seen in the trench sections. Fill 410 contained three late 1st/early 2nd century RB sherds. Fill 414 contained two similar sherds.

Trench 5 This trench was 24m by 2m. It was located in the north-west of the upper field and was designed to cut what appeared, from the geophysical survey, to be a trackway in the centre of the trench. At the eastern end a linear feature, perhaps an enclosure ditch, was shown and at the western end small features of an indeterminate nature were indicated (see Figure 3). All these features were located by the excavation. The magnometer had not, however, been able to show the complexity and extent of the deposits (see Figure 16).

At the western end of the trench a shallow flat bottomed linear feature (503) ran parallel with the northern section for a distance of 3.20m before turning towards the southern section. It was 0.60m wide and 0.14m deep. Fill 504 contained three RB sherds, two fragments of bone and a fragment of copper alloy.

As it turned towards the southern section it appeared to meet linear feature 529 which ran north-south across the trench. The relationship between these two features has been lost however because of extensive disturbance caused by a comparatively recent sheep burial.

Linear feature 529 is 1.05m wide and 0.40m deep. It contained two fills, 530 and 532. The upper fill, 530, produced four RB sherds and two animal bones.

Adjacent to 529, just east of it and in the southern section, pit 505 was sampled. This irregularly shaped pit, approximately 1m in diameter and 0.40m deep may possibly be either a root hole or a small pit later disturbed by root damage. There were four fills, 531, 519, 518 and 506. Only the upper fill, 506, contained finds and these were small fragments of animal bone.

About 3.5m to the east of these features a complex of re-cut ditches was uncovered continuing along the trench for nearly 10 metres (see Figure 16).

The eastern ditch, has gradually moved eastwards, through successive re-cuts, earliest cut 521, cut 524 being cut again by 554 and finally by 556. During excavation gully 525 was seen running across the trench. The overall width of these cuts is 3.20m and the depth from the ground surface is 1.20m. There were few finds amounting to two RB sherds from fill 527 and a struck flint and a number of fragments of animal bone from fill 522. There were occasional dumps of clay seen in plan.

The complex of ditches to the west covered a width of approximately 6.90m and were 1.30m deep from the top of the section. Re-cuts have occasionally obscured the sequence of the stratigraphy but there appear to be two sets of ditches starting with cut 507 in the west and 551 (or possibly 549) in the east with the sequences concluding with 537 and 512. Measurements suggest that the magnetometer picked out ditches 556 and 512 here and 537 in the eastern ditch as giving the highest magnetic responses.

Between the two sets of ditches in the western complex is a ridged area of small cuts at a slightly lower level. These might tentatively be interpreted as ruts.

Considering the density of the build up of deposits there were few finds and the majority of these were found fairly high in the fills where there was considerable disturbance from small runnels (seen in plan) and dumping. Context 536 produced one RB sherd and there were three from 514, a lense seen only in plan. Iron age sherds were retrieved from 536 (one), 538 (four) and 513 (16 and six fragments).

Trench 6 The circular traces shown by geophysical survey in the lower field (see Figure 3) appeared to be, mainly, three separate groups of intersecting features. Trench 6 was positioned to cut two linked circles and a separate circle or arc to their south. It was initially thought that the small central feature inside one of the circles might be a burial within a bronze age barrow. A shallow feature (605) was sampled in the vicinity of the possible burial. An extension to the trench (4.70m by 2m) excavated to the west to expose this feature more fully, revealed another feature (607/615) and established, as was being found in other trenches, that pottery retrieved was consistently iron-age in date and the central feature was therefore unlikely to be a burial.

Feature 605 (see Figure 18), partly exposed before extension of the trench, proved to be less significant than was expected. It is amorphous in shape, roughly 1.60m in diameter and 0.20m deep. The profile is shallow and irregular and the homogeneous nature of the fill makes it possible that it is a water-filled hollow rather than a cut feature.

Feature 607/615 which was revealed in the extension to the trench (see Figure 18) is 1.40m wide by 0.48m deep (607) and 0.35m deep (615). It is the terminal of a ditch with two cuts. Feature 607, probably originally 0.70m wide, is cut by feature 615, 0.80m wide. Both cuts contain three fills (617, 609 and 616; 613, 612 and 614) which are capped by a layer 608. This contained one struck flake, fragments of animal tooth and a large sherd of iron age pottery layer. 609 contained six sherds and 2 fragments of iron age pottery and fragments of animal tooth.

Feature 610 at the southern end of the trench contained an curved linear feature thought to be part of the arc shown by geophysical survey (see Figure 17). It narrowed slightly as it approached the western edge of the trench and is, on average, 0.90m wide and 0.20m deep with a shallow curved profile. The single fill, 611, contained two iron age sherds and fragments of animal tooth.

Feature 603/618 is a wide (2.30m) re-cut ditch crossing the trench at approximately 10m distance from feature 610. It was not possible to discern in the fill which cut was later but it can be generally noted that the southern cut is about 1.30m wide by 0.35m deep and the northern section (603) is about 1m wide by 0.40m deep. Feature 603 has a

rounded profile whilst 618 has a flattened bottom. Feature 604, the fill of 603, produced no finds. Layer 619, the fill of 618 produced eight sherds and three fragments of iron age pottery and a fragment of unidentified slag.

Trench 7 This trench, 10m by 2m, was excavated in an area seemingly without geophysical traces, but a small curved ditch, 0.40m by 0.20m was located running at the eastern end. One abraded greyware (RB) sherd was found during surface cleaning of the feature.

Trench 8 The geophysical survey plot showed an apparent continuation of a possible trackway running from the south-western boundary of the upper, sandy, field and out through the north-eastern boundary of the lower field (see Figure 3). Trench 8, which was 20m by 2m, was positioned to locate the two side ditches of the trackway. These were finally identified after additional machining to remove a 0.2m thick layer of a continuous buried land surface (see Figure 21). Conditions for excavation were not favourable in this low-lying area of the site but it was possible to record the features before they flooded.

Feature 804, the western ditch, is 1.60m by 0.70m with a rounded profile. It contained a primary and secondary fill (806 and 805). There were no finds.

The eastern ditch feature 807, has been recut, with a shallow rounded profile probably originally 1.80m wide and 0.60m deep containing fills 810 (primary), 809 and 808, all with no finds.

Feature 807 is cut at its eastern end (see Figure 21) by Feature 811, 2.15m by 0.70m, containing fills 813, 814 and 812. There were no finds.

Trench 9 (see Figure 23) This trench was originally designed to test a seemingly blank area as well as one side of a circular feature. During monitoring by the Archaeological Planning Officer it was agreed that the trench should be extended to the south-western side of the circle.

A large (2.35m wide) curved triple ditch was uncovered in the predicted location (see Figures 22 and 23). It appeared that the shallow cut 903 (0.35m deep) at the eastern end of the feature and the rounded cut 916, 0.40m deep, at the western end had been both cut by the v-shaped central section 915 (0.60m deep) but the interfaces between fills were unclear. 903 contained fill 911 with two iron age sherds and two fragments of daub. Cut 916 contained fills 914 and 913 with six and 22 iron age sherds respectively. Fill 913 also contained six fragments of pottery, a small animal bone and a struck flint. Cut 915 contained fills 912, 910 and 904 which may also have capped 916 (see Figure 23). 912, the primary fill, contained one iron age sherd and seven fragments of animal bone. Fill 910 contained four iron age sherds and six fragments of bone and fill 904 contained 19 sherds and 35 fragments of iron age pottery, four fragments of daub and seven fragments of bone and tooth.

To the north-east of this triple ditch a small pit or terminal (905) protruded into the trench from the northern baulk. This was 0.35m in diameter and 0.25m deep with a sloped profile (see Figures 22 and 23). It contained fill 906 with one iron age sherd and a fragment of daub.

Feature 917/919, which was found on the opposing side of the circle was dissimilar in character to 903/915/916. It was 1.60m wide with a shallow cut 919 (0.15m) at the farthest end and a later deeper cut 917 (0.40m) which has a gently sloping rounded profile. Fill 920 within 919 contained no finds. Fill 921, the primary fill of 917, contained five fragments of daub. Fill 922, within feature 917, contained one iron age sherd, one fragment of daub and 16 fragments of animal bone. Fill 918, the upper fill which covered both cuts, contained five iron age sherds, seven fragments of daub and two fragments of bone.

Trench 10 This was cut in an area where no magnetic anomalies had been traced by geophysical survey. It was 17m long by 2m wide. No features were discovered and, although medieval ridge and furrow is pronounced in this part of the field, no buried land surface could be discerned(see Figure 24). One 19th-century pottery sherd was recovered during machining.

Trench 11 This trench was 9.40m by 2m and was the most northerly trench cut in the lower field. It was located to sample a group of small, intercutting circular features (see Figure 3). At the eastern end of the trench a small feature or terminal, 1114, disappeared under the northern edge of the trench (see Figure 25). It appeared very truncated, being only 0.10m in depth (see Figure 26). It contained, however, numerous small sherds (19 sherds and 20 fragments) in fill 1115.

About three metres to the west feature 1103, a small, slightly curved ditch, 0.45m wide and 0.20m deep, crosses the trench. It contained two iron age sherds, two fragments of daub and two fragments of animal teeth in fill 1104.

Two small pits or terminals were sampled in the southern side of the trench towards the western end. Feature 1105 was 0.45m in diameter and 0.25m deep and is rounded both in profile and in plan (see Figure 26). It contained three fills, 1108, 1107 and 1106. Fill 1107, which contained a high proportion of carbon, produced one sherd and eight fragments of pottery and two fragments of burnt bone. The upper fill, 1106, produced one sherd, four fragments of daub and four fragments of animal tooth. The lowest fill, 1108, produced no finds.

Feature 1109, 0.55m in diameter by 0.40m deep, contained four fills. The profile has sloping sides but in plan the feature is angled and may be part of a square pit. The latest fill, 1110, contained nine sherds and 15 fragments of pottery and four fragments of daub. Fill 1112, above the primary fill, contained 12 fragments of animal bone.

Trench 12 (see Figure 24). This trench was added to the programme during the course of the evaluation in order to test the quality of geophysical traces which were shown as broken or indistinct lines. It was just north of the division between the upper and lower fields and was 17.50m by 2m. No features were found. One RB and one post-medieval sherd were recovered during machine stripping.

Trench 13 This trench, 21m x 2m (see Figure 3) was positioned beyond the limit of the magnetometery survey to establish whether the circular features shown on the plot continued into the next field. This field, known as Holloway, is on very heavy clay where the ground falls towards the valley of a small stream. Deep ridge and furrow ploughing has been employed here in the past to improve the drainage of the soil, and earthwork remains of it are still prominent. The evaluation trench revealed no features (except for two small drainage gullies) in this area. Evidence of the buried land surface could be identified in the section (see Figure 21).

LONG DOLE (see Figure 4 for location of trenches and Figure 7 for distribution of features)

Trench 14 was located in the area where possible Saxon graves had been discovered in 1947. It was 20m by 2m. The trench was excavated by machine down to clay through the alluvial cover. At 11m.from the north of the trench there was a change in the character of the soil. The depth of the overburden decreased and the underlying geology was seen to be Lias Clay as in the lower field at The Lodge. No features were observed in plan or section and no artefacts were visible in the spoil or stripped surface.

Trench 15 At the time of the evaluation excavations, heavy rain had raised the water table at Long Dole, which is lowlying. A slight hollow, perhaps formed by an earlier prehistoric water course, runs across the site from east to west and standing water in the area of the proposed Trench 15 prevented the machine from operating. The purpose of Trench 15 was to define the parameters of the Anglo-Saxon cemetery presumed to be in the vicinity of Trench 14. As no evidence for Anglo-Saxon activity was found there during fieldwalking, metal detecting or excavation it seems likely that the burials were isolated occurrences and the loss of information from Trench 15 is not judged to be critical.

Trench 16 This trench was 25m by 2m but was slightly extended at both ends during excavation to become 32m in length. It was located to cut a penannular feature which appeared to have a north-west facing entrance, flanked by a curved feature on the south and a possible enclosure ditch to the north (see Figure 4). These features were located although it seems that the trench encountered the curved ditches slightly to the west of where it was intended (see Figure 27). This had the benefit of exposing a much larger area of ditches than anticipated and revealing the intricacies of the successive recuts.

At the northern end of the trench Feature 1603 (fills 1604, 1620) was sampled. This is 1.40m wide by 0.20m deep but could be seen to be cut deeper and wider in the section (see Figure 28). Fill 1604 contained five fragments of daub.

The central area of the trench from about 13.50m to 23.50m contains what are possibly parts of four ring ditches and a terminal: 1605, 1625, 1623, 1613 and 1615 (see Figure 27). These have been cut by a modern piped land drain and scored by deep mole ploughing.

A section across this complex at the northern end showed 1623 to be a shallow (0.10m) flat-bottomed feature, at present 0.45m wide but truncated by 1625. There were no finds.

Feature 1625, which is 0.24m deep and also flat bottomed, is 0.50m wide. Its relationship with 1605 is not clear however and if it cuts 1605, as seems likely, it is nearer 0.80m in width. It contained no finds.

Feature 1615 is 1m wide by 0.40m deep with a rounded profile. It contained two fills, 1616 and 1617. The lower fill, 1617, contained decayed organic material. Fill 1616 produced three iron age sherds and 12 fragments of animal bone.

Feature 1605 is 0.45m wide and 0.50m deep. It contains two fills, 1621 and 1606. The lower fill, 1621, contained one iron age sherd and 16 animal bones. Although its appearance in plan suggests a ditch terminal at the time of excavation it seemed to be a functioning drain, with water flowing through it.

At the southern end of the trench linear feature 1611 is 0.95m wide and 0.40m deep with a rounded profile. Fill 1612 contained eight fragments of animal bone.

A section through 1613, which may also incorporate 1623 and 1625 (see Figure 27) revealed a slightly flattened rounded profile, 0.70m wide and 0.30m deep. Fill 1614/1624 is cut by the mole plough groove. This context produced 29 iron age sherds and 20 fragments of pottery. These were not all collected from the sampled section but were also retrieved from cleaning and defining the surface of the feature.

Trench 17 This trench, which was positioned to sample a circular feature, was, like Trench 15, under standing water and was abandoned.

Trench 18 which was 20m by 2m, was placed in an area where no magnetic responses had been recorded by the geophysical survey. Below the alluvium some dark organic-stained lenses amongst the mixed clays and gravels were interpreted as old water channels, flowing across the site in the same direction as the slight hollow or valley.

Trench 19 This trench, which was 10m by 2m, was located to cut a large curved feature shown on the geophysical survey near the field boundary, near the existing stream which runs beside the A5 (T) at this point. A wide (4m) dark stain was seen on the natural clay below the alluvium, consistent with gleying or waterlogging. In section an area of carbon rich soil overlying? and? mixed with? gravels one metre deep and cut from just below the ploughsoil, suggested that this was an old stream bed. It is known that the present stream has been moved and contained during road works. The trench filled rapidly with water during recording. There were no finds.

Trench 20 which was 30m by 2m, was sited where one semi-circular and one irregular shaped feature were shown (see Figure 4). One small amorphous root hole (0.40m by 0.25m) with decayed organic material in the fill was sampled. Continued machining and cleaning could not locate any other features although, at a low level where the blue clay was reached, there were spreads and lenses of iron-rich clay and gravels. It was concluded that the geophysics image, which has a meandering appearance, may have been created by these waterborne natural deposits.

Trench 21 (20m by 2m) was positioned to test a seemingly "blank" area. One small (0.50m by 0.35m) sub-oval feature, an isolated post hole or root hole, was located. There were no finds except for some pieces of natural ironstone.

Trench 22 This trench was added at the suggestion of RPSC during a monitoring visit by the Archaeological Planning Officer. This was partly to compensate for the inability to excavate Trench 17 and partly to demonstrate that, whilst some features shown by geophysical survey (for example, in Trench 20) might be natural, a high level of confidence could be felt in those with particularly good definition and high magnetic

responses. The area selected for Trench 22 is one of these areas (see Appendix 1, Geophysical Survey Reports).

A trench 20m by 2m was excavated and the features uncovered were quickly defined and recorded. Sumps were cut at each end of the trench to facilitate drainage during this process. Two linear features (2203 and 2209) crossing the trench were recorded. They were seen in the section to be approximately 1.30m and 1.20m in width (see Figure 29) and were a little over 10 metres apart as expected from the magnetic plot. Two features protruding from the baulks were noted, 2205 and 2207. Iron age pottery was retrieved from the fill of 2205 (2206) during cleaning but the fill (2208) of the other feature indicated that it is possibly modern. As the purpose of this trench was to confirm the geophysical survey results, the linear features were not sampled as this was considered to be destructive given the weather conditions.

Appendix 5

Section 2

Daventry International Rail Freight Terminal
Pottery Reports
Appendix 5 Section 2

Roman pottery (The Lodge) by E H MacRobert

Context	Comment
104	1 sherd of first century grogged ware and 1 undiagnostic grey ware sherd.
205	2 undiagnostic sherds.
212	1 undiagnostic sherd.
214	A group of pottery including several sherds of an oxidised everted rim beaker with white painted decoration; channelled rim jars in hard grogged ware; a BB1 everted rim jar; an oxidised bowl with bead rim and red painted decoration; a carinated grey ware base of a bowl or dish; a number of grey ware necked jars of which one has a fairly strongly everted rim; a samian Drag. 18/31; a grey 4 ware bowl, possibly a pie dish; and a sherd of soft pink grogged ware. The TPQ of this group must be at least second century and could the third century.
307	This group includes a channelled rim jar in hard grogged ware and undiagnostic grey ware. The hard grogged ware has a date range of late first to early second century.
309	Undiagnostic grey ware.
314	Undiagnostic grey ware.
404	This group includes a grey ware platter of a terra nigra type, but in a coarse fabric; sherds of hard grogged ware; several sherds of the base and body of a grey ware jar with cross-hatched burnished pattern on the shoulder; and other grey and grey/oxidised wares which are not particularly diagnostic. The TPQ of the group is at least second century.
407	This group includes a BB1 jar base and incipient flanged bowl and a grey ware necked jar and bowl. The TPQ of the group is third century.
410	This group includes a hard grogged bowl and undiagnostic greyware. The hard grogged ware has a date range of late first to early second century.

414 This group includes a hard grogged channelled rim jar and undiagnostic grey ware. The hard grogged ware has a date range of late first to early second century.

504 This group includes a BB1 dish/bowl, a grey ware flange/pie dish rim and undiagnostic grey ware. The TPQ must be at least second century and if the grey ware sherd is a flange rather than a pie dish it could be late third/fourth century.

510 Undiagnostic shelly ware.

513 Undiagnostic sandy sherd.

527 This group includes a possible sherd of soft pink grogged ware and a fine oxidised lid or bead rim bowl (possibly Drag. 18/31-type). The soft pink grogged fabric has a date range of second to fourth century.

530 This group includes a grey ware wide-mouthed necked jar, a sherd of hard grogged ware and a sherd of Oxfordshire colour-coated ware with white painted decoration. The latter sherd provides the TPQ for the group of late third to fourth century.

U/S

TR2 This includes a mica-dusted sherd; hard grogged ware; a BB1 simple rim dish and undiagnostic grey and oxidised wares.

TR3 Undiagnostic.

TR5 This includes a third century BB1 jar and undiagnostic grey ware.

TR6 Undiagnostic oxidised ware.

Comment

Most of the groups are too small to date with confidence and any dates given should be treated very much as TPQs. The range of pottery is typical for west Northamptonshire and spans the first to fourth centuries although with an emphasis on late first/early second to third century.

Iron age pottery (The Lodge) by D Jackson

A total of 221 sherds (189gm) of iron age pottery was found during the evaluation at Crick, but 88 of these were tiny and not diagnostic.

Pottery that is clearly pre-Roman in date was found in only four of the trenches (trenches 5, 6, 9 and 11). Three of the trenches (trenches 6, 9 and 11), were positioned in an area where ring gullies or house sites have been identified, and the fourth (trench 5) was sited where ditches or enclosures are located.

A quantity of Anglo-Saxon pottery was found during the evaluation, but it largely came from one vessel and in one context.

Contexts

Trench 2 Contexts 204 and 208 each produced a sherd of Belgic, or early Roman, combed ware.

Trench 5 A total of 31 sherds (610gm) came from five contexts in this trench. (not less than 12 vessels) 21 of the sherds came from context 513.

Trench 6 17 sherds (320gm) from four contexts. (6 vessels)

Trench 9 96 sherds (690gm) came from nine contexts (not less than 32 vessels)

Trench 11 77 sherds (270gm) from five contexts. (not less than 9 vessels)

Fabric and inclusions

Trench 6, 9 and 11 There is little variation in the pottery from the area of the ring gullies and it seems likely a single fabric medium is represented. Ironstone, in the form of grit, is present in most of the sherds and shell appears to be absent. Other stone grits and occasional grog can be recognised in around 30% of the sherds.

Trench 5 The predominant inclusion in the pottery from this trench is ironstone but the fabrics are more varied that the material from trenches 6, 9 and 11. Shell is present in five sherds from context 513 and others contain quartz and stone grits. Some of the pottery containing quartz was hard or very hard but equally soft wares are present. Two sherds of fine dark ware came from context 512.

Form

No complete or near complete profiles can be reconstructed. The rim forms in the assemblage appear to largely derive from thick walled jars with external scored surfaces, but there are no obvious examples of the fine globular bowls or jars which are commonly found on other late iron age sites in the county.

Decoration and surface treatment

The pottery is generally coarse and there are no examples of decorated fine ware. The rim-tip of a sherd from context 513 is decorated with finger tip and finger nail impressions, but this is the only example of decoration that occurs on the vessels apart from scoring.There are two examples of shallow grooved tooling which bears superficial resemblance to decoration in the La Tene style.

Scoring There are 22 sherds of scored ware amongst the pottery but 12 of these are small and come from one vessel. The maximum number of scored sherds is therefore around 10% of the total, a percentage which is low in comparison with similar assemblages from the north of the county where the average proportion of scored ware is 25% or more. It is possible that the site at Crick is on the fringe of the distribution area for this style of pottery.

Date

The iron age pottery from Crick appears to date mainly to the late pre-Belgic period (2nd or 1st centuries BC). There are no earlier forms in the material but the nature of several small sherds suggest that slightly earlier activity on the site is possible.

Anglo-Saxon (The Lodge)

Approximately 40 sherds of pottery from a round-bottomed bowl, or jar, was found in context 404 (trench 4). Two small sherds from different vessels were also found in this context, and single sherds came from contexts 407 and 323. The pottery had been shown to Mr Paul Blinkhorn who has confirmed that it dates to the early-middle Saxon period.

Discussion

The assemblage of iron age pottery from Crick is relatively small and this is a factor when discussing its composition and the date of the site. The site is also located in a part of county where no comparable groups of pottery of this date are known, or have been published.

Many iron age sites in Northamptonshire are situated close to Jurassic outcrops, and the predominant inclusion in the pottery is fossil shell derived from this strata. In contrast the pottery from Crick contains little shell and is mainly tempered with ironstone, often in the form of small rounded grits. This material could have been obtained from outcrops of Northampton Sand and Ironstone, but was perhaps more easily available in the local deposits of glacial sand.

The few diagnostic forms can be paralleled in the late iron age assemblage from the Hunsbury hillfort, Northampton, some 13 miles to the S.S.E (Fell 1936 and unpublished in Northampton Museum). The virtual absence of fine ware at Crick is of note, and in particular the lack of plain or decorated globular vessels. The reasons for this are uncertain, but it could be either regional or chronological, or perhaps a question of status.

Reference

Fell C I 1936 The Hunsbury hill-fort, Northants. A new survey of the material. Archaeol J, 93, 57-100..

Iron age pottery (Long Dole)

The evaluation of a site adjacent to the Roman Watling Street produced a further small assemblage of iron age pottery. A total of 62 sherds were recovered in the trial trenches but 26 of these were tiny and not diagnostic. The other 36 sherds (coming from not less than 21 vessels) were found in the following seven contexts:

Context 1614;	22 sherds from 8 vessels	} separate deposits
Context 1614;	7 sherds from 6 vessels	}
Context 1616;	3 sherds from 3 vessels	

Contexts 1608, 1610, 1621 and 2206 each produced one sherd.

Fabric

The pottery from the site is weathered and all hand-made. Only two fabric types are apparent:

Fabric 1 The bulk of the pottery appears to be of one general fabric type and is probably made from local clays. The inclusions in the matrix had largely dissolved leaving an outer surface, in particular, which was soft and pitted. A small amount of grog and/or ironstone occurs in some sherds, but there is no shell surviving.

Fabric 2 Two sherds containing quartz and grog are harder and differ from the rest. The sherds were found in different contexts (1608 and 1621), but probably come from the same vessel.

Form

It is not possible to reconstruct any vessel forms although many of the sherds probably derive from large thin-walled storage jars. The one rim sherd in the assemblage is small and flat topped, and appears to be part of a bowl, or perhaps a lid. The form is not diagnostic for dating within the iron age period.

Decoration and scoring

Sherds from three vessels have surfaces that appear to have originally been scored, combed, or wiped in a regular way. It is not possible to be definite about any surface treatment however as the sherds are very weathered and the patterning barely survives. No decoration or scoring occurs on any of the other sherds in the assemblage.

Discussion

The assemblage of pottery is small and indeterminate. The material is superficially similar to that of coarse wares normally found on sites dating to the end of the iron age period, but there is no wheel-turned "Belgic" pottery in the group, and no forms or fabrics which are clearly diagnostic for dating. The possible combing on the surfaces of some vessels would support a date for the assemblage in the late 1st century BC or the 1st century AD, but equally if it is not combing, a date in the early-middle iron age cannot be discounted.

THE LODGE 1993

IRON AGE POTTERY

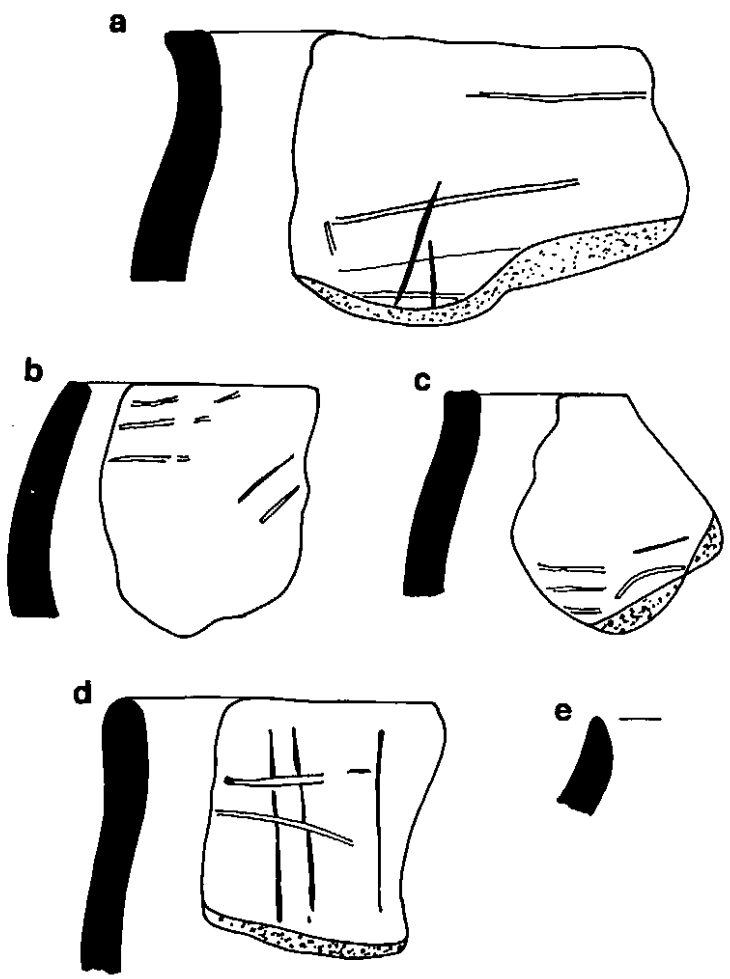
a Context 513

b Context 513

c Context 911

d Context 918

e Context 609



project	Daventry International Rail Freight Terminal
title	Archaeological Evaluation
project number	R2133
drawing number	Appendix 5 Figure 1
scale	1:2
date	May 1994

RPS CLOUSTON
THE ENVIRONMENTAL CONSULTANCY

Appendix 5

Section 3

Daventry International Rail Freight Terminal
Appendix 5 Section 3

Archaeological Field Evaluation Methods Statement

This statement sets out the methods and approaches considered most appropriate for the archaeological recording of most sites. Specifications of work for such investigations (as prepared by an archaeological consultant or contractor), should therefore stipulate that all works will be carried out in full accordance with the guidance set out herein. Alternative approaches and methodologies may be acceptable, but should not be employed without the written approval of the local planning authority.

1 Site Methodology

1.1 All undifferentiated topsoil or overburden of recent origin within the trenches will be removed down to the first significant archaeological horizon. If a mechanical excavator is to be employed in the removal of topsoil this should employ a toothless bucket and normally remove spits of no more than 0.20m depth or less, moving along the length of the trench. Successive spits may be similarly removed until the first significant horizon is reached. That level will be cleaned in plan using a wide blade ditching bucket or similar, with no teeth. If the machine has to re-enter the trench care will be taken to ensure that it does not damage underlying remains. All machine work must be under archaeological supervision and should cease immediately if significant evidence is revealed. The machine must not be used to cut arbitrary trial trenches down to natural deposits without regard to the archaeological stratification.

1.2 The machine used will be powerful enough for a clean job of work and able to mound spoil neatly, a safe distance from trench edges. Mini garden excavators and bulldozers are not generally suitable.

1.3 Following machine clearance, all faces of the trench that require examination or recording will be cleaned using appropriate hand tools. Mattocks will not be employed except for trimming the baulk or, where machines are not used, for removing topsoil. All investigation of archaeological levels will be by hand, with cleaning, examination and recording both in plan and section. The recovery of dating evidence, sampling, collection of artefacts and the recording of the archaeological features will be carried out to the level appropriate to the significance of the remains. This will generally involve sampling 50% of discrete features such as pits and post holes and 30% of linear features such as ditches.

1.4 Whilst investigation will not be at the expense of any structures, features or finds which might reasonably be considered to merit preservation in situ, it is important that a sufficient sample is studied to allow the resolution of the principal questions outlined in the project design.

1.5 Archaeological excavation may require work by pick and shovel or occasionally further use of the machine. Such techniques are only appropriate for the removal of homogeneous and low-grade layers where it can reasonably be argued that more detailed attention would not produce information of value, and where their removal may give a 'window' onto underlying levels. They must not be used on complex stratigraphy and the deposits to be removed must have been properly recorded first.

1.6 Some features, such as pits and wells may need to be excavated to a greater depth than the proposed structures would warrant in order to recover sufficient information for their elucidation. This should be carried out to cause the minimum disturbance of deposits which would otherwise remain undisturbed. Modern cut features should be used to provide a 'window' onto these earlier levels where possible.

1.7 In addition to the excavation of man-made deposits some assessment of "naturally" deposited levels will be necessary, especially when these are organically preserved and laid down within archaeological timescales.

1.8 Where archaeological remains are to be preserved in situ they will be adequately protected from deterioration.

1.9 Any finds of human remains will also be left in situ, covered and protected. If removal is essential it can only take place under appropriate Home Office and environmental health regulations, and if appropriate in compliance with the Disused Burial Grounds (Amendment) Act 1981. Prior written notice will also be given to the local planning authority.

1.10 All finds of gold and silver will be removed to a safe place and reported to the local Coroner according to the procedures relating to Treasure Trove. Where removal can not be effected on the same working day as the discovery suitable security measures will be taken to protect the finds from theft.

2 Access and safety

2.1 Access to the site should be granted to the representatives of the local authority who may wish to be satisfied, through site inspections, that the archaeological works are being conducted to proper professional standards and in accordance with the agreements made.

2.2 All relevant health and safety legislation, regulations and codes of practice will be respected. This requirement constitutes one of the non-archaeological constraints on the evaluation layout.

2.3 All archaeological trenches will be backfilled upon completion (for safety reasons and to protect exposed archaeological deposits), unless the applicant or developer has given written instructions to the contrary.

3 Recording Systems

3.1 A unique number site code will be agreed with the agreed recipient Museum.

3.2 The recording systems adopted during the investigations will be fully compatible with those most widely used elsewhere in the region.

3.3 The site archive will be so organised as to be compatible with other archaeological archives produced in the region. Individual descriptions of all archaeological strata and features excavated or exposed will be entered onto prepared pro-forma recording sheets. Sample recording sheets, sample registers, finds recording sheets, accession catalogues, and photo' record cards will also follow regional equivalents. This requirement for archival compatibility extends to the use of computerised databases.

3.4 A site location plan, indicating site north and based on the current Ordnance Survey 1:1250 map (reproduced with the permission of the Controller of HMS), will be prepared. This will be supplemented by a trench plan at 1:250 (or 1:10,000), which will show the location of the areas investigated in relationship to the investigation area, OS grid and site grid (if any). Individual trench plans and long sections of trenches will be prepared at 1:50 whilst sections and plans of features will be at 1:20, or 1:10 if more appropriate. The locations of the OS bench marks used and site TBM will also be indicated.

3.5 Some record of the full extent in plan of all archaeological deposits encountered will be made; these plans should be on polyester based drawing film, will be related to the site or OS grid and be at a scale of 1:10 or 1:20. Single context planning is preferred on deeply stratified sites.

3.6 Upon completion of each trench at least one long section will be drawn, including a profile of the top of natural deposits (extrapolated from cut features, etc. if the trench has not been fully excavated). Other sections, including the half-sections of individual layers or features will be drawn as appropriate.

3.7 The OD height of all principal strata and features will be calculated and indicated on the appropriate plans and sections.

3.8 If the site complexity is such as to justify its use the Harris matrix stratification diagram will be employed to record stratigraphic relationships. This record will be compiled and fully checked during the course of the excavations.

3.9 An adequate photographic record of the investigations will be prepared. This will include black and white prints and colour transparencies (on 35mm film), illustrating in both detail and general context the principal features and finds discovered. The photographic record will also include working shots to illustrate more generally the nature of the archaeological operation mounted. The transparencies will be mounted in suitable frames.

3.10 Where appropriate a photogrammetric record will be made of complex structures, features and horizons liable to be damaged in the course of the evaluation.

4 Treatment of Finds and samples

4.1 Different sampling strategies may be employed according to established research targets and the perceived importance of the strata under investigation. Close attention will be given to sampling for date, structure and environment. Sample size should take into account the frequency with which material is likely to occur. Bulk sieving is likely to be necessary where there is a low incidence of artefacts.

4.2 A strategy for sampling archaeological and environmental deposits and structures (which can include soils, timbers, animal bone and human burials) should be developed. Subsequent on-site work and analysis of the processed samples and remains will be undertaken either by or in consultation with the appropriate Environmental Service.

4.3 A high priority will be given to the sampling of river and other anaerobic deposits (such as peat) where organic materials may be preserved.

4.4 Organic samples will be subject to appropriate specialist analysis. There may well be a requirement to submit timbers to dendrochronological analysis and to process some samples to provide C14 dating. Other forms of specialist analysis may also be appropriate (the project design and specification of works should specify the likely need for such analysis).

4.5 All identified finds and artefacts will be retained, although certain classes of building material can sometimes be discarded after recording if an appropriate sample is retained. No finds will, however, be discarded without the prior approval of the nominated representative of the local authority.

4.6 All finds and samples will be treated in a proper manner and to standards agreed in advance with the approved recipient museum (see 5.1). They will be exposed, lifted, cleaned, conserved, marked, bagged and boxed in accordance with the guidelines set out in the United Kingdom Institute for Conservation's 'Conservation Guidelines No. 2'.

4.7 The programme of ceramic dating and analysis will be undertaken in consultation with the appropriate specialists. Local museums may hold important comparative collections of material and these should be consulted as appropriate.

4.8 Before commencing the investigation, the archaeological organisation responsible for the works will confirm in writing to the local authority that arrangements are in hand to cover all necessary processing, conservation and specialist analysis and storage of finds and samples.

5 Reports and archives

5.1 The integrity of the site archive should be maintained. All finds and records should properly be curated by a single organisation, and be available for public consultation. The finds from excavations and evaluations provide an immensely valuable research archive, but the bulk of the material is of little or no financial worth. The owners of any finds must be urged to donate these to the appropriate Museum. The guidance set out in the Museums and Galleries Commission's Standards in the Museum Care of Archaeological Collections (1992), and the Society of Museum Archaeologist's draft Selection, retention and dispersal of archaeological collections (1992), will be followed.

5.2 If the finds are not to be donated to the appropriate Museum, arrangements will be made for a comprehensive record of all materials (including detailed drawings, photographs and descriptions of individual finds), which can instead constitute the archaeological archive.

5.3 The minimum acceptable standard for the archival report is defined in the Management of Archaeological Projects 5.4 and Appendix 3. It will include all materials recovered (or the comprehensive record of such materials as referred to above) and all written, drawn and photographic records relating directly to the investigations undertaken. It will be quantified, ordered, indexed and internally consistent before transfer to the recipient Museum. It will also contain a site matrix, a site summary and brief written observations on the artefactual and environmental data. Copyright of the written archive will be vested in the recipient Museum.

5.4 A full and comprehensive report of the evaluation will be prepared for the client who will submit it (or multiple copies if requested) with the planning application. This report will be deposited with the archive.

5.5 The recipient Museum's guidance on the needs of digital storage and archival compatibility will be sought and followed.

5.6 United Kingdom Institute for Conservation guidelines for the preparation of excavation archives for long term storage (1990) will be followed. Arrangements for the curation of the site archive will be agreed in writing with the recipient Museum and details of such arrangements will be copied to the County Council and the local planning authority before site works commence.

5.7 Pursuant to these agreements the archive will be presented to the archive officer or appropriate curator of the recipient Museum within 12 months of the completion of fieldwork (unless alternative arrangements have been agreed in writing with the local planning authority).

5.8 A short summary of the results of the work, even if negative, will be submitted to the appropriate County Council SMR and for publication in the relevant academic journals. Such publication will meet the minimum requirements set out in Appendix 7 of the Management of Archaeological Projects 1991, and derive from a phase 2 review as defined in the same document.

5.9 Where the above mentioned phase 2 review indicates the need for further assessment and analysis the recommendations set out in the Management of Archaeological Projects 1991 will be followed.

5.10 The review process may indicate that significant archaeological remains uncovered in the course of an investigation require full academic publication in an appropriate monograph or journal. It is possible that the review process will conclude that such publications must include descriptions and interpretations of the remains uncovered as well as specialist reports on the finds and samples recovered. Contingency arrangements to provide for this possible element of the work will be made before field-work commences. Site works will not commence until the local planning authority has expressed itself satisfied that suitable arrangements have been made.

Appendix 5

Tables

Daventry International Rail Freight Terminal
Appendix 5 Table 1

Northamptonshire County Council SMR Entries within Study Area

SMR No.	NGR (SP)	Type	Period	Evidence
444/0/1	5680 7340	Burials	EM	finds, excavation
445/0/1	5890 7260	village	MD/PM	AP ew
445/0/2	5910 7200	fishpond	MD/PM	ew R & F
447/0/2	5740 7235	Roman road	RB	ew excavation
447/0/1	565 743-580 713	Roman road	RB	ew
447/0/3	5777 7163	Roman road	RB	metalled area (excavation)
449	5802 7158	settlement	IA	pottery, dark soil, f.w
450	5809 7137	settlement	IA	pottery, dark soil, f.w
451	5770 7330	settlement	RB	pottery, stone, f-w
460	5810 7340	settlement	RB	pottery, f-w
462	5830 7100	enclosure	UD	AP cropmark
466	5830 7240	sewage works	MOD	AP ew
467	5870 7260	possible settlement	RB	pottery, f-w
469	5915 7188	mill mound	PM	ew
470/0/1	5570 7270	DMV (hamlet)	MD	AP ew
470/0/2	5590 7280	DMV	MD	pot
474/1	5660 7220	warren	MD/PM	documentary

Key

IA	-	iron age	UD	-	undated
RB	-	Romano-British	ew	-	earthwork
EM	-	early medieval (Saxon)	AP	-	air photograph
MD	-	medieval	f-w	-	field walking
PM	-	post-medieval	R & F	-	ridge & furrow

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Daventry International Rail Freight Terminal
Appendix 5 Table 2

Aerial Photographic Search at RCHM(E), Swindon

Photograph	Date flown	Comment
SP 5771/1-12	12.05.80	Ridge and furrow
SP 5871/1 and 2	21.07.69	Ridge and furrow
SP 5871/3 and 4	07.07.76	Out of study area
SP 5872/1-26	31.01.74	Ridge and furrow

Searched, but no traces seen:

SP 5670-5674
SP 5770-5774
SP 5870-5874

Daventry International Rail Freight Terminal
Finds Trench Summary
Appendix 5 Table 3

	Pottery								
Trench	Number of sherds	Periods represented	Worked flint	Animal Bone	Burnt clay daub	Stone	Metal	Other	Comments
1	2	IA/RB, RB					1 lead		
2	95	IA/RB, RB				3	2 Fe		
3	10	RB, A-S	2	5	1		6 Fe		
4	111	RB, A-S	1	3		2	13 Fe		
5	42	IA, RB	1	36	9	1	7 Fe 2 Cu alloy		
6	12	IA, RB, PM	4	14	1		7 Fe	charcoal	
7	1	RB							
8	1	PM					2 Fe		
9	97	IA	1	39	20				
10	1	PM/MOD							
11	75	IA, RB		20	10				
12	1	RB							

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	Pottery								
Trench	Number of sherds	Periods represented	Worked flint	Animal Bone	Burnt clay daub	Stone	Metal	Other	Comments
13							1 Fe		
14									no finds
16	61	IA		43	5				
18									no finds
19									no finds
20									no finds
21									no finds
22	1	IA							

Daventry International Rail Freight Terminal
Finds Table
Appendix 5 Table 4

	Pottery								
Context Number	Number of sherds	Periods represented	Worked flint	Animal Bone	Burnt clay daub	Stone	Metal	Other	Comments
Trench 1 General							cylindrical solid lead object		
104	2	RB							
Trench 2 General	14	RB					2 Fe nails		
204	1	IA/RB							Belgic/early Roman combed ware
206	2	RB							
208	1	IA/RB							Belgic/early Roman combed ware
210				horse bones					modern - discarded
212	1	RB							

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	Pottery								
Context Number	Number of sherds	Periods represented	Worked flint	Animal Bone	Burnt clay daub	Stone	Metal	Other	Comments
214	76	RB				schist frag. stone frag. slate frag.			TPQ at least C2nd possibly C3rd ? quern
Trench 3 General	3	RB				4 Fe nails 1 Fe object 1 Fe object			arched
307	4	RB							Late C1st to early C2nd
309	1	RB							Greyware
312	1	RB		1 small frag worked bone					
314	1	RB			1 large fragment				Greyware

	Pottery								
Context Number	Number of sherds	Periods represented	Worked flint	Animal Bone	Burnt clay daub	Stone	Metal	Other	Comments
318				19 frags including 1 scapula, 1 bovine longbone, 1 molar					
320			1						
323	1	A-S							
341			1	1 longbone					
Trench 4 General							11 Fe nails 2 Fe rods		
401				1 scapula					modern
402				small frag					
404	14 44 32 frags	RB A-S	1			1 water rounded marble stone, 1 water rounded gritstone			stones possibly contained within pot

	Pottery								
Context Number	Number of sherds	Periods represented	Worked flint	Animal Bone	Burnt clay daub	Stone	Metal	Other	Comments
407	9	RB, A-S							TPQ C3rd
410	3	RB							Late 1st/early 2nd
414	2	RB							Greyware and late C1st to early C2nd
Trench 5 General	3	RB	3				5 Fe nails 1 Fe object 1 modern object		Incl. C3rd jar and greyware
502	1	AS							
504	3	RB		2 frags, burnt		Ironstone	1 flat strap Cu alloy		TPQ at least C2nd or late C3rd (C4th)
506				15 small unidentified frag					
508	1	u/d							

	Pottery								
Context Number	Number of sherds	Periods represented	Worked flint	Animal Bone	Burnt clay daub	Stone	Metal	Other	Comments
510	1	RB		1 bovine/ equine incisor	6 fragments				
512	4	IA		4 large longbones, 1 large joint bone, 3 unidentified frags	1 frag		frag Cu alloy		
513	16 6 frags	IA							
514	3								
520				1 ovi-caprid skull	3				modern
522			1	6 large joining frags of unidentified bone, 13 other frags					
527	2	RB							C2nd-C4th

	Pottery								
Context Number	Number of sherds	Periods represented	Worked flint	Animal Bone	Burnt clay daub	Stone	Metal	Other	Comments
530	4	RB		2 large longbones					late C3rd to C4th
Trench 6 General	2	PM, RB	1				2 Fe nails 5 Fe objects		
608	1	IA	1 flake	tooth frag					
609	6 2 frags	IA		12 frags large mammal tooth					
611	1 1 frag	IA	2 flakes	6 frags tooth	1 frag			2 frags charcoal	
619	8 3 frags			1 unidentified frag					
Trench 7									
704	1	RB							Greyware
Trench 8	1	PM					2 iron nails		

	Pottery								
Context Number	Number of sherds	Periods represented	Worked flint	Animal Bone	Burnt clay daub	Stone	Metal	Other	Comments
Trench 9									
904	19 35 frags	IA		7 frags unidentified tooth/bone	4 frags				
906	1	IA			1 frag				
910	4	IA		6 frags unidentified					
911	2	IA			2 frags				
912	1	IA		7 frags unidentified					
913	15 6 frags	IA	1	1 small longbone					
914	6	IA							
918	5	IA		2 frags unidentified	7 frags				
921					5 frags				
922	1	IA		16 frags unidentified	1 frag				

	Pottery								
Context Number	Number of sherds	Periods represented	Worked flint	Animal Bone	Burnt clay daub	Stone	Metal	Other	Comments
Trench 10 General	1	PM/MOD							
Trench 11									
1102					1 frag				
1104	2	IA		2 frags ?equine teeth	2 frags				
1106	1	IA		4 frags tooth	4 frags				
1107	1 8 frags	IA		2 frags bone burnt					
1110	9 15 frags	IA			4 frags				
1112				12 frags unidentified					
1115	19 20 frags	IA							
Trench 12 General	2	RB, PM							Greyware
Trench 16									

	Pottery								
Context Number	Number of sherds	Periods represented	Worked flint	Animal Bone	Burnt clay daub	Stone	Metal	Other	Comments
1604					5 daub				possibly pot
1608	1	IA		1 bovine/ equine tooth, 4 unidentified frags					
1610	1	IA							
1612				1 frag unidentified longbone, 7 unidentified frags					
1614	29 20 frags	IA IA		1 bovine/ equine tooth frag					
1616	3	IA		1 bovine tooth, 11 frags flat bone, one charred					

	Pottery								
Context Number	Number of sherds	Periods represented	Worked flint	Animal Bone	Burnt clay daub	Stone	Metal	Other	Comments
1621	1.	IA		3 bovine longbones, 2 flat bones, 11 other bone frags					
Trench 22									
2206	1	IA							from section cleaning

Daventry International Rail Freight Terminal
Context Summary
Appendix 5 Table 5

TRENCH 1

Context number	Category	Colour	Texture	Description	Interpretation
101	layer	10YR 4/3 brown	silty clay loam	organic rich	topsoil
102	layer	10YR 5/4 yellowish brown	silty clay loam	lies below 101 and above natural clay	subsoil
103	cut			only partially exposed and excavated, filled by 104, cuts natural clay	ditch
104	fill	10YR 4/4 dark yellowish brown	sandy clay	fill of 103	ditch fill

TRENCH 2

Context number	Category	Colour	Texture	Description	Interpretation
201	layer	10YR 4/6 dark yellowish brown	sandy clay	organic rich layer	topsoil
202	layer	10YR 5/6 yellowish brown	sandy clay	below 201, lies above natural	subsoil
203	cut			filled by 204, cuts natural	ditch

204	fill	10YR 5/4 yellowish brown	sandy clay	fill of 203	ditch fill
205	cut			filled by 206, cuts natural	ditch
206	fill	10YR 5/4 dark yellowish brown	sandy clay	fill of 205	ditch fill
207	cut			cuts natural, filled by 208	indeterminate feature
208	fill	10YR 4/4 dark yellowish brown	sandy clay	fill of 207	fill of possible feature
209	cut			large modern looking cut filled with mixed sands (210)	pit for modern horse burial
210	fill	10YR 6/6 or 6/8, brownish yellow	sand	mixed sands and animal (horse) bones	modern horse burial
211	cut			filled by 212	ditch
212	fill	10YR 5/6 yellowish brown	sandy clay	fill of 211	ditch fill
213	cut			filled by 214	ditch
214	fill	10YR 4/4 dark yellowish brown	clayey sand	fill of 213	ditch fill
215	cut			filled by 216	ditch

216	fill	10YR 5/4 dark yellowish brown	sandy clay	fill of 215	ditch fill

TRENCH 3

Context number	Category	Colour	Texture	Description	Interpretation
301	layer	10YR 4/3 brown	sandy clay	organic rich layer	topsoil
302	layer	10YR 5/4 yellowish brown	sandy clay	below 301, above natural sand.	subsoil
303	cut			cuts natural sand and features 306 and 308.	?shallow pit only visible in western baulk
304	fill	10YR 6/4 light yellowish brown	sandy clay	fill of 303, contains c.50% lumps of pure clay. above 305.	clay inclusions are local lias clay which is the natural head geology within the NE sector of the assessment area.
305	fill	10YR 2/2 very dark brown	sandy clay	below 304,carbon rich layer at the base of 303, above natural	basal fill of 303
306	cut			linear, U shaped, filled by 307, cut by 303, cuts natural sand and gravel head	ditch
307	fill	10YR 3/3 dark brown	sandy clay	homogenous fill of 306	ditch fill

308	cut			feature only visible in trench side, filled by 309, cut by 303, cuts natural sand.	ditch
309	fill	10YR 4/2 dark greyish brown	sandy clay	fill of 308	ditch fill
310					context not used
311	cut			linear feature, U shaped, cuts natural sand, cut by 325.	ditch
312	fill	10YR 4/3 brown	sandy clay	fill of 311	ditch fill
313	cut			linear feature, filled by 314, cuts natural	ditch
314	fill	10YR 4/3	clayey sand	fill of 313	ditch fill
315	cut			shallow, wide linear feature that may taper towards the west. filled by 316, 330, 331, 332, 333. Cut by 317	possible irregular shaped ditch or pit with "tail"
316	fill	10YR 4/4 dark yellowish brown	clayey sand	fill of 315 containing water rounded pebbles.	fill of ditch or pit
317	cut			V shaped linear feature, filled by 318, cuts 315 and natural	ditch

318	fill	10YR 4/3 brown	sandy clay	fill of 317	ditch fill
319	cut			end of broad linear feature, filled by 320, 337, 338, 339.	ditch/pit. Limits unclear. May be stone filled soakaway
320	fill	10YR 4/3 brown	clayey sand	uppermost remaining fill of 319, above 337.	stony fill of ditch/pit
321	cut			cuts natural sand, filled by 322, 323, 324.	pit/ditch
322	fill	10YR 4/4 dark yellowish brown	sand	stony fill of 321, below 323.	pit/ditch fill
323	fill	10YR 4/6 dark yellowiw sh brown	clayey sand	similar to 335, above 324, 322 and natural, fill of 321	pit/ditch fill
324	fill	10YR 4/6 dark yellowish brown	clayey sand	fill of 321, below 323.	basal fill of ditch
325	cut			only partially exposed, filled by 326, 327, 328, 329. cuts natural sand	possibly circular pit
326	fill	10YR 4/2 very dark greyish brown	sandy clay	uppermost remaining fill of 325, contains pebbles. Top fill removed by machine excavation. Above 327.	fill of possibly circular pit

327	fill	10YR 4/2 very dark greyish brown	sandy clay	like 326 but with no coarse components, below 326, above 328	fill of possibly circular pit
328	fill	10YR 5/4 yellowish brown	sand	sand lens, above 329	possibly redeposited natural sand
329	fill	10YR 4/4 dark yellowish brown	clayey sand	below 328, above natural	basal fill of 325
330	fill	10YR 5/4 yellowish brown	clayey sand	below 316/302, above 332, fill of 315	fill of pit/ditch
331	fill	10YR 3/4 yellowish brown	clayey sand	fill of 315, below 316, above 333, contains water rounded pebbles and gritstone block.	fill of pit/ditch
332	fill	10YR 3/4, yellowish brown	sand	contains water rounded pebbles, fill of 315	fill of pit/ditch
333	fill	10YR 5/4 yellowish brown	sand	fill of 315, no coarse components	fill of ditch/pit, possibly redeposited natural.
334	cut			similar to cut 321. filled by 335, 336	pit/ditch
335	fill	10YR 4/6 dark yellowish brown	clayey sand	similar to 323, above 336.	fill of ditch/pit

336	fill	10YR 4/4 dark yellowish brown	clayey sand	contains water rounded pebbles, fill of 334	basal fill of ditch/pit.
337	fill	10YR 4/4 dark yellowish brown	clayey sand	contains water rounded pebbles, fill of 319, below 320.	fill of ditch/pit
338	fill	10YR 4/4 dark yellowish brown	clayey sand	contains water rounded pebbles, below 302,309, fill of 319, above 320.	fill of ditch/pit
339	fill	10YR 4/4 dark yellowish brown	clayey sand	contains flint nodule and gravel, fill of 319	ditch/pit fill
340	cut			filled by 341	ditch
341	fill	10YR 3/3 dark brown	clayey sand	contains water rounded pebbles, fill of 340	ditch fill
342	cut			section and truncated plan exposed during machining, not excavated by hand, filled by 343.	possible pit
343	fill	10YR 3/3 dark brown	clayey sand	fill of 342	fill of possible pit

TRENCH 4

Context number	Category	Colour	Texture	Description	Interpretation
401	layer	dark orange brown	clayey sand	organic rich homogenous layer	topsoil

402	layer	mid orange brown	loamy sand	below 401,above natural	subsoil
403	cut			contains 404, cuts natural and 413, cut by 411	ditch
404	fill	dark orange brown	sandy clay	fill of 403, contains pottery	ditch fill
405	fill	5YR 6/8 reddish yellow	sand	this fill is very similar to natural but with the addition of lenses of clayey sand	fill of straight-sided feature 411
406	cut			filled by 407,408,412	ditch
407	fill	10YR 5/4 yellow brown	clayey sand	fill of 406	ditch fill
408	fill	10YR 5/4 yellowish brown	clayey sand	contains water rounded pebbles, fill of 406.	ditch fill
409	cut			filled by 410	
410	fill	10YR 5/4 yellowish brown	clayey sand	fill of 409, contains water rounded pebbles	
411	cut			straight-sided containing 405	possibly modern
412	fill	10YR 5/4 yellowish brown	clayey sand	fill of 406, below 408	
413	cut			cut by 403 filled by 414	

414	fill	10YR 5/6 yellowish brown	clayey sand	fill of 413	

TRENCH 5

Context number	Category	Colour	Texture	Description	Interpretation
501	layer	10YR 3/2 very dark greyish brown	sandy clay	organic rich homogenous layer	topsoil
502	layer	10YR 4/4 dark yellowish brown	sandy clay	below 501, above natural sand	subsoil
503	cut			filled by 504, cuts natural	(truncated) ditch relationship with 529 masked by sheep burial
504	fill	10YR 3/2 very dark greyish brown	sandy clay	fill of 503	only remaining fill of ditch 503
505	cut			filled by 506, 518, 519, 531; pit or possible root hole	possibly subsequently disturbed pit
506	fill	10YR 4/4 dark yellowish brown	sandy silt	fill of 505, above 518	fill of possible pit
507	cut			linear feature running across trench, filled by 508	ditch
508	fill	10YR 4/4 dark yellowish brown	loamy sand	fill of 507	ditch fill

509	cut			filled by 510, cuts natural. cut by 511 same as 535	ditch seen only in plan
510	fill	10YR 4/4 yellowish brown	loamy' sand	fill of 509, cut by 511. same as 536	ditch fill
511	cut			filled by 512 same as 537	ditch seen only in plan
512	fill			same as 538	ditch fill
513	fill	2.5Y 3/2 very dark greyish brown	clayey sand	fill of ditch 515, below 520; contains charcoal	ditch fill
514	layer	10YR 5/4 yellowish brown	clayey sand	seen in plan only during excavation	layer or lense
515	cut			below 502, filled by 513, 520; cuts 549, 551.	ditch seen in plan only
516	cut			filled by 517, cuts 551.	ditch
517	fill	10YR 3/2 very dark greyish brown	silty sand	fill of 516, contains flecks of charcoal	ditch fill
518	fill	10YR 4/4 dark yellowish brown	sandy clay	fill of 505, below 506, above 519.	fill of possible pit
519	fill	10YR 4/3 brown	sandy silt	fill of 505, below 528.	basal fill of possible pit
520	fill	2.5Y 3/2 very dark greyish brown	clayey sand	fill of 515, above 513	ditch fill
521	cut			filled by 522,523; cut by 524	ditch

522	fill	2.5Y 3/3 dark olive brown	silty sand	fill of 521, below 523, cut by 524	ditch fill
523	fill	10YR 5/6 yellowish brown	sand	fill of 521, above 522, cut by 524.	ditch fill
524	cut			filled by 527, cut by 528; cuts 521, 522,523	ditch
525	cut			narrow channel, 20cm wide, 10cm deep, filled by 526; cuts 553, 554	gully
526	fill	2.5Y 3/2 very dark greyish brown	sandy silt	fill of 525	fill of gully
527	fill	2.5 Y 4/3 olive brown	sandy silt	fill of 524, cut by 528.	dith fill
528	cut			filled by 553, cuts 524	ditch
529	cut			filled by 530, 532 relationship with 503 masked by sheep burial	ditch
530	fill	10YR 3/2 very dark greyish brown	sandy silt	fill of 529, above 532	ditch fill
531	fill	10YR 4/4	sandy silt	fill of 505, below 519	fill of possible pit
532	fill	10YR 5/3 brown	sandy silt	fill of 529	ditch fill
533	cut			filled by 534, cut by 535, 537	truncated ditch/ rut/ gully
534	fill	10YR 5/4 yellowish brown	silty sand	fill of 533	fill of ditch/ rut/ gully

535	cut			filled by 536, cut by 537, uncertain relationship with cut 508	ditch
536	fill	10YR 4/2 dark greyish brown	sandy silt	fill of 535, cut by 535	ditch fill
537	cut			filled by 538, cuts 533, 535, 539, 541. terminates mid-trench	rounded/flat bottomed ditch
538	fill	10YR 3/2 very dary greyish brown	sandy silt	fill of 537 cuts 542.	ditch fill
539	cut			filled by 540, cut by 537	ditch
540	fill	10YR 4/4 dark yellowish brown	sand	fill of 539	ditch fill
541	cut			filled by 542,cut by 537, cuts 540,539.	ditch/ gully/ rut
542	fill	10YR 4/4 dark yellowish brown	silty sand	fill of 541	fill of ditch/ gully/ rut
543	cut			filled by 544, cut by 545, cuts 541	ditch/ gully/ rut
544	fill	10YR 4/4 dark yellowish brown	sandy silt	fill of ditch 543	fill of ditch/ gully/ rut
545	cut			filled by 546, cut by 547, cuts 543	ditch

546	fill	2.5Y 4/2 dark greyish brown	silty sand	fill of 545	ditch fill
547	cut			filled by 548, cut by 549, cuts 545	ditch
548	fill	10YR 4/4 dark yellowish brown	silty sand	fill of 547	ditch fill
549	cut			filled by 550, cut by 515, cuts 547	ditch
550	fill	2.5Y 3/2 very dark greyish brown	sandy silt	fill of 549	ditch fill
551	cut			filled by 522, cut by 516, 515	ditch
552	fill	10YR 4/4 dark yellowish brown	sandy silt	fill of 551	ditch fill
553	fill	10YR 4/6 dark yellowish brown brown	silty sand	fill of 528	ditch fill
554	cut			filled by 555, cut by 525,556, cuts 528	ditch
555	fill	10YR 4/3 brown	silty sand	fill of 554	ditch fill
556	cut			filled by 557, cuts 555	ditch
557	fill	10YR 3/2 very dark greyish brown	silty sand	fill of 556	ditch fill

Context number	Category	Colour	Texture	Description	Interpretation
601	layer	10YR 4/2 dark greyish brown	loamy sand	carbon rich	topsoil
602	layer	10YR 4/3 brown	sandy silt	contains water rounded pebbles, below 601	subsoil
603	cut			V shaped linear feature, running in an arc, filled by 604	ditch relationship with 618 unclear ?recut
604	fill	10YR 4/3 brown	sandy clay	contains water rounded pebbles, fill of 603	ditch fill
605	cut			irregular shaped feature, filled by 606	?pit ?pond
606	fill	10YR 6/4 light yellowish grey	silty sand	contains water rounded pebbles, fill of 605.	fill of ?pit/pond
607	cut			one of two intercutting features,filled by 609, 616, 617,part of 608 and cut by 615.	?terminal of ditch
608	fill	10YR 5/2 greyish brown	sandy clay	topmost remaining fill of both cuts 607 and 615; above 609, 614, 612, 616.	topmost remaining fill of 607 and 615, probably truncated.
609	fill	10YR 1/2 dark greyish brown	sandy clay	fill of 607, below 616 and 618, above 617	fill of 607

610	cut			linear feature running at approximately 80 degrees to trench	ditch
611	fill	10YR 4/3	loamy sand	stoney fill of 610	fill of 610
612	fill	10YR 3/2 very dark greyish brown	sandy silty clay	fill of one of two intercutting features, 615, below 608 and above 614	ditch fill
613	fill	10YR 3/2 very dark greyish brown	sandy silt	organic rich primary fill of 615, below 614 and 612	ditch fill
614	fill	10YR 4/2 dark greyish brown	sandy silty clay	stony fill of 615, below 608 and above 612 and 613	ditch fill
615	cut			the latest of two intercutting features, cuts fills of 607, filled by 612, 613 and 614, sealed by 608 and appears to be terminal of flat bottomed ditch cutting natural sand	possibly ditch terminal recut
616	fill	10YR 4/2 dark greyish brown	sandy silt	latest fill of 607, cut by 615, sealed by 608 and overlying 609 and 617	ditch fill
617	fill	10YR 4/2 dark greyish brown	sandy silty clay	basal fill of 607, below 609 and 616	ditch fill

618	cut			cut for broad linear feature running in an arc	ditch relationship with 603 unclear ?recut
619	fill	10YR 4/3 brown	sandy clay	contains water rounded pebbles, fill of 618	ditch fill

TRENCH 7

Context number	Category	Colour	Texture	Description	Interpretation
701	layer	10YR dark yellowish brown	loamy sand	organic rich	topsoil
702	layer	10YR 4/4 dark yellowish brown	clayey sand	below 701 and above natural orange sand	subsoil
703	cut			truncated small v-shaped ditch or gulley below 702, cutting natural sand and filled by 704 and 705	ditch or gulley
704	fill	2.5Y 4.3 olive brown	loamy sand	contains water rounded pebbles, fill of 703, above 705	later fill of 703
705	fill	2.5Y light olive brown	sand	fill of 703, below 704	earlier fill of 703

TRENCH 8

Context number	Category	Colour	Texture	Description	Interpretation
801	layer	10YR 4/4 dark yellowish brown	silty clay loam	firm organic rich layer	topsoil
802	layer	10YR 5/4 yellowish brown	silty clay	below 801, above 803	subsoil

803	layer	10YR 4/4 dark yellowish brown	silty clay loam	stoney at bottom of layer, below 802 and above natural	buried topsoil
804	cut			cut of flat bottomed linear feature sealed by 803 and filled by 805 and 806	ditch
805	fill	10YR 4/4 dark yellowish brown	sandy clay	fill of 804, above and very similar to 806, sealed by 803	
806	fill	10YR 4/4 dark yellowish brown	silty clay	slightly gravelly fill of 804, below 805	ditch fill
807	cut			shallow cut feature sealed by 803, cut by 811 and filled by 808, 809 and 810	ditch
808	fill	2.5Y 5/6 light olive brown	silty clay	fill of 807 above 809 and 810, cut by 811	ditch fill
809	fill	2.5Y 6/8 olive yellow	silty clay	fill of 807 below 808 and above 810, cut by 811	ditch fill
810	fill	10YR 4/6 dark yellowish brown	silty clay	basal fill of 807, below 809 and relatively stoneless, cut by 811	ditch fill

811	cut			cut for broad flat bottomed linear feature, cutting fills of 807 and natural and filled by 812,813 and 814. Sealed by 803	ditch
812	fill	10YR 5/6 yellowish brown	silty clay	slightly gravelly upper fill of 807, above 813 and 815	ditch fill
813	fill	10YR 5/6 yellowish brown	silty clay	gravelly basal fill of 807 below 812 and 814	ditch fill
814	fill	10YR 5/4 yellowish brown	silty clay	fill of 811 below 812 and above 814	ditch fill
815	lens	10YR 7/8 yellow	sandy clay	lens of sandy clay below 802 and above 803	lens

TRENCH 9

Context number	Category	Colour	Texture	Description	Interpretation
901	layer	10YR 5/4 yellowish brown	sandy clay	clean friable layer, overlying 902	topsoil
902	layer	10YR 5/6 yellowish brown	sandy clay	firm layer with occassional pebbles underneath 901 and above natural	subsoil

903	cut			cut for northernmost of 3 ditches, filled by 911,sealed by 902	ditch cut
904	fill	10YR 5/4 yellowish brown	sandy clay	thin layer above 910	capping of 915
905	cut			cut for oval round bottomed feature filled by 906 sealed by 902	?pit or terminal
906	fill	10YR 4/4 dark yellowish brown	sandy clay	contains flecks of charcoal and burnt clay, fill of 905	pit fill
907					context not used
908					context not used
909					context not used
910	fill	10YR 6/6 Brownish yellow	sandy clay	stoney fill of 915, above 912	ditch fill
911	fill	10YR 6/4 light brownish yellow	silty clay	fill of 903	ditch fill
912	fill	10YR 6/8 brownish yellow	silty clay	basal fill of 915, underneath 910	ditch fill
913	fill	10YR 5/6 yellowish brown	sandy clay	fill of 916, overlying 914	ditch fill

914	fill	10YR 5/4 yellowish brown	silty clay	basal fill of 916, below 913	ditch fill
915	cut			cut for middle of 3 ditches containing 904 910 and 912	ditch cut
916	cut			southernmost cut of 3 ditches containing 913 and 914	ditch cut possibly previously capped by 904
917	cut			cut of broad, flat bottomed linear feature cutting 919 and filled by 918, 921 and 922	ditch possible recut of 919
918	fill	10YR 3/2 very dark greyish brown	silty sand	top fill of 917, above 921 and 922	ditch fill
919	cut			cut for shallow ditch or gulley cut by 917, filled by 920	ditch/gulley/ earlier cut of ditch
920	fill	10YR 5/2 greyish brown	silty sand	fill of gulley 919	fill of ditch
921	fill	10YR 4/2 dark greyish brown	silty sand	primary fill of 917, overlain by 918 and 922	primary ditch fill
922	fill	10YR 4/2 dark greyish brown	silty sand	stoney mixed fill of 917, below 918 and overlying 921	ditch fill

TRENCH 10

Context number	Category	Colour	Texture	Description	Interpretation
1001	layer	10YR 4/2 dark greyish brown	silty clay	topsoil with grass rootlets	topsoil
1002	layer	10YR 4/4 dark yellowish brown	silty clay	subsoil with water rounded gravels	subsoil

TRENCH 11

Context number	Category	Colour	Texture	Description	Interpretation
1101	layer	10YR 5/4 yellowish brown	silty clay	turf/topsoil layer	topsoil
1102	layer	10YR 5/6 yellowish brown	silty clay	subsoil below 1101 and above natural	subsoil
1103	cut			cut of shallow arcing feature filled by 1104	truncated ditch
1104	fill	10YR 4/4 dark yellowish brown	silty clay	stoney basal fill of 1103	ditch fill
1105	cut			semi-circular area of oval feature exposed,continues under baulk and filled by 1106, 1107 and 1108	possible pit

1106	fill	10YR 3/4 dark yellowish brown	silty clay	uppermost remaining fill of 1105, overlying 1107 and 1108	pit fill
1107	lens	10YR 2/1 black		thin charcoal lens, below 1106 and above 1108	pit fill
1108	fill	10YR 5/3 brown	clay	basal fill of 1105 containing lumps of natural clay, below 1106 and 1107	pit fill
1109	cut			possibly rectangular cut feature filled by 1110, 1111, 1112 and 1113	pit
1110	fill	5YR 4/2 dark olive grey	silty clay loam	uppermost fill of 1109 above 1111	pit fill
1111	fill	5YR 4/2 dark olive grey	silty clay loam	homogenous fill of 1109 below 1110 and above 1112	pit fill
1112	fill	10YR 3/3 dark brown	silty clay loam	fill of 1109 below 1111 and above 1113	pit fill
1113	fill	10YR 4/4 dark yellowish brown	clay	basal fill of 1109 below 1112	pit fill

1114	cut			elongated shallow feature with rounded terminal running under baulk filled by 1115	possible ditch terminal
1115	fill	10YR 3/2 very dark greyish brown	silty clay	fill of 1114	ditch fill

TRENCH 12

Context number	Category	Colour	Texture	Description	Interpretation
1201	layer	10YR 4/4 dark yellowish brown	sandy clay loam	topsoil	topsoil
1202	layer	10YR 3/4 dark yellowish brown	sandy clay	subsoil	subsoil

TRENCH 13

Context number	Category	Colour	Texture	Description	Interpretation
1301	layer	10YR 4/3 brown	silty clay loam	layer of topsoil above 1302	topsoil
1302	layer	10YR 4/4 dark yellowish brown	silty clay loam	fairly stone-free subsoil above natural and 1303	subsoil

1303	layer	10YR 4/3 brown	silty clay	intermittent layer present only on plough ridges	former topsoil buried by ridge and furrow
1304	cut			shallow narrow feature running downhill at lowest point of furrow containing 1305	plough groove
1305	fill	10YR 3/3 brown with iron staining	clay	fill of 1304	fill of plough groove
1306	cut			thin linear cut running parallel to 1304 filled by 1307	plough groove
1307	fill	10YR 3/3 brown	clay	fill of 1304	fill of plough groove

TRENCH 14

Context number	Category	Colour	Texture	Description	Interpretation
1401	layer	10YR 4/4 dark yellowish brown	silty clay	topsoil, above 1402	topsoil
1402	layer	10YR5/6 yellowish brown	clay	homogenous clay with unsorted gravel and pebble inclusions	alluvium

TRENCH 15 was not excavated

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TRENCH 16

Context number	Category	Colour	Texture	Description	Interpretation
1601	layer	10YR 4/4 dark yellowish brown	silty clay	topsoil	topsoil
1602	layer	10YR 5/6 yellowish brown	clay	subsoil	subsoil
1603	cut			contains 1604, 1620	ditch
1604	fill	10YR3/2 very dark greyish brown	silty clay	fill of 1603, below 1620	primary fill of of ditch
1605	cut			cut of terminating linear feature	ditch with terminal
1606	fill	7.5YR3/4 dark brown	sandy clay	fill of (1605), above (1621)	fill of ditch 1605
1607	cut			narrow linear feature running parallel to 1609. U shaped in profile.	subsoiler plough groove (drainage)
1608	fill	7.5YR4/6 strong brown	sandy silt	fill of 1607	fill of drainage groove
1609	cut			similar to and running parallel to 1607	subsoiler plough groove (drainage)
1610	fill	7.5YR4/6	sandy silt	fill of 1609, similar to 1608	fill of drainage groove

1611	cut			linear feature, 0.9m wide, filled 1612.	ditch
1612	fill	10YR 5/4 brown	sandy clay	fill of 1611	ditch fill
1613	cut			inner arc-ed ditch, filled 1614	arc-ed ditch
1614	fill	10YR 5/4 brown	sandy clay	fill of 1613	fill of arc-ed ditch
1615	cut			contains 1616, 1617	arc-ed ditch
1616	fill	7.5 YR 3/4 dark brown	sandy silty clay	fill of 1615	ditch fill
1617	fill	7.5YR 3/3 dark brown	sandy clay	fill of 1615, below 1616	ditch fill
1619					not allocated
1620	fill	7.5YR 6/1 grey	clay loam	fill of 1603, above 1604	upper fill of ditch
1621	fill	7.5YR3/4 dark brown	sandy clay	fill of 1605, below 1606	ditch fill
1622					not allocated
1623	cut			linear cut running north/south (re-context-originally 1613)	inner ditch
1624	fill	10YR 5/4 brown	sandy clay	re-context was originally 1614	ditch fill
1625	cut			central linear cut, re-context of 1615	ditch
1626	fill	7.5YR3/4 dark brown	sandy silty clay	fill of 1625	ditch fill

TRENCHY 17 was not excavated

TRENCH 18

Context number	Category	Colour	Texture	Description	Interpretation
1801	layer	7.5 YR 4/4 brown	silty clay loam	topsoil	topsoil
1802	layer	7.5YR strong brown	clayey silt	subsoil	subsoil-alluvium
1803	lens	7.5YR3/2 dark brown	silt	clear dark lens sealed by subsoil	line of underground watercourse

TRENCH 19

Context number	Category	Colour	Texture	Description	Interpretation
1901	layer	10YR4/4 dark yellowish brown	silty clay	topsoil	ploughsoil
1902	layer	10YR5/6 yellowish brown	clay	subsoil	subsoil-alluvium
1903	cut			filled by 1904	previous meander of stream
1904	fill	10YR3/2 very dark greyish brown	clay loam	fill of 1903	fill of old stream bed

TRENCH 20

Context number	Category	Colour	Texture	Description	Interpretation
2001	layer	10YR4/4 dark yellowish brown	silty clay	topsoil	topsil/plough soil
2002	layer	7.5YR 4/3 brown	silty clay	subsoil	subsoil alluvium

2003	cut			cut for narrow irregular feature. sealed by alluvium	tree root hole
2004	fill	5YR4/2 dark reddish grey to very dark grey/black	clayey silt	slightly gravelly fill with very high oprganic content	fill of 2003, tree hole root
2005	lense	2.5Y4/4 olive brown	clay	bluish grey iron rich clay which appears anaeorobic, sealed by alluvium.	natural feature

TRENCH 21

Context number	Category	Colour	Texture	Description	Interpretation
2101	layer	10YR4/4 dark yellowish brown	silty clay loam	topsoil	topsoil/plough soil
2102	layer	7.5YR4/4 brown to 7.5 YR4/6 strong brown	silty clay	subsoil	subsoil alluvium
2103	cut			cut of sub oval feature, filled with 2104.	possile post hole or root hole
2104	fill	5YR 3/1 very dark grey to 5YR 2.5/1 black	silty clay	fill of 2103 organic debris and gravels	fill of possible posthole or root hole

TRENCH 22

Context number	Category	Colour	Texture	Description	Interpretation
2201	layer	10YRdark yellow brown	silty clay loam	topsoil	topsoil/ploughsoil
2202	layer	7.5YR4/3 brown	silty clay	subsoil	subsoil alluvium
2203	cut			cut filled by 2204	not excavated
2204	fill	7.5YR 4/3 brown	silty clay	fill of 2203	not excavated
2205	cut			filled by 2206	not excavated
2206	fill	7.5YR 4/3 brown	silty clay	fill of 2205	not excavated
2207	cut			shallow V shaped linear feature	land drain/ root hole
2208	fill	2.5YR 3/1 very dark grey	silty clay	mixed fill of shallow feature with high organic content with a modern brick in the fill, with much gravel.	

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