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## Newark Hill, Peterborough An Archaeological Assessment



Cambridgeshire  
County Council  
Rural Strategy

# NEWARK HILL, PETERBOROUGH

## An Archaeological Assessment

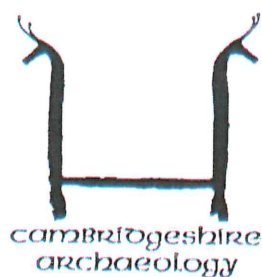
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*Report no. 62*

*Corintian silver coin dated 45-10 BC*





THE ARCHAEOLOGICAL ASSESSMENT OF LAND AT NEWARK HILL;  
PETERBOROUGH:

NGR: TF 208 008

Summary.

The evaluation was commissioned by Cambridgeshire County Council and was carried out by Ian Meadows of Peterborough Museum. The area to be assessed was about 100m x 65m and the assessment took the form of a series of machine cut trenches. The trenches revealed an extensive spread of archaeological features and potential features over the site. A spot examination of the material from the site demonstrated occupation from the Iron age and early Roman periods with some pieces from the Saxon period. Within the limitations of the brief only limited sampling of features was undertaken. The scraped surface of all the trenches was planned and scored 'Archaeological', '?Archaeological' and 'Natural'.

Introduction

The area of land involved in this assessment was approximately 0.66 of a hectare. A geophysical survey had been carried out by 'Geophysical Surveys of Bradford', (report no. 92/29), which had revealed evidence of some archaeological remains but most of the site had either appeared blank or had been shown as magnetically disturbed.

Archaeological levels were anticipated because in the area of housing to the East of this parcel of land a spread of Roman material was recorded. The material was described at the time (1927) as a substantial building (Peterborough Museum Annual Report) and adjacent to the find there was a scatter of tile and brick. These remains may indicate Romano-British occupation around which it would be reasonable to anticipate a system of land enclosure. Sadly as the remains were encountered during building works detailed records do not survive.

A search of the available maps for this area showed a series of structures at the south-east corner of the site. The function of these structures is uncertain but they only occur on the map base for 1926, nothing being present on the 1901 map.

# NEWARK HILL SCHOOL

1901

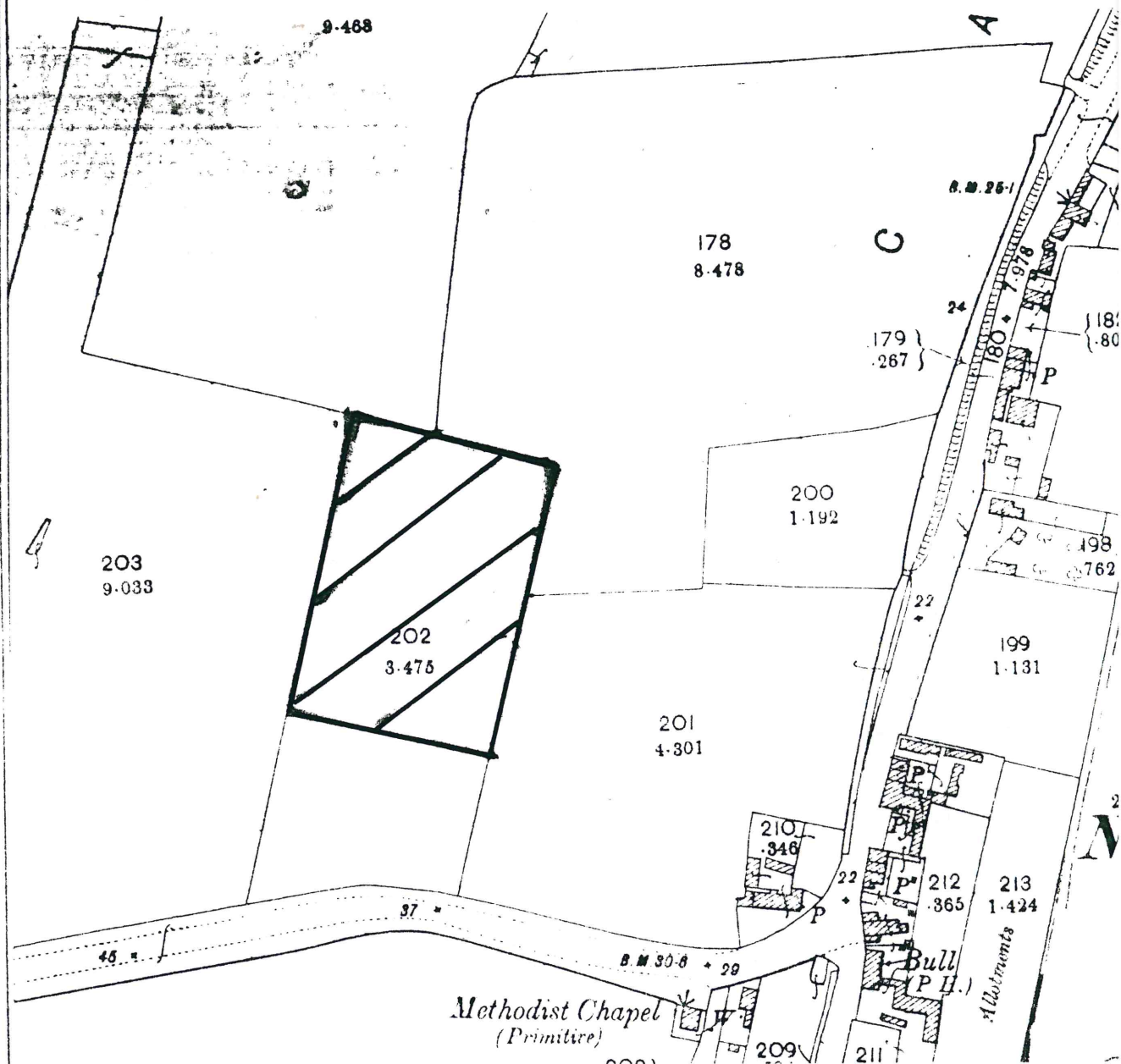


Fig. 1



BASED UPON THE ORDINANCE  
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# NEWARK HILL SCHOOL

1926

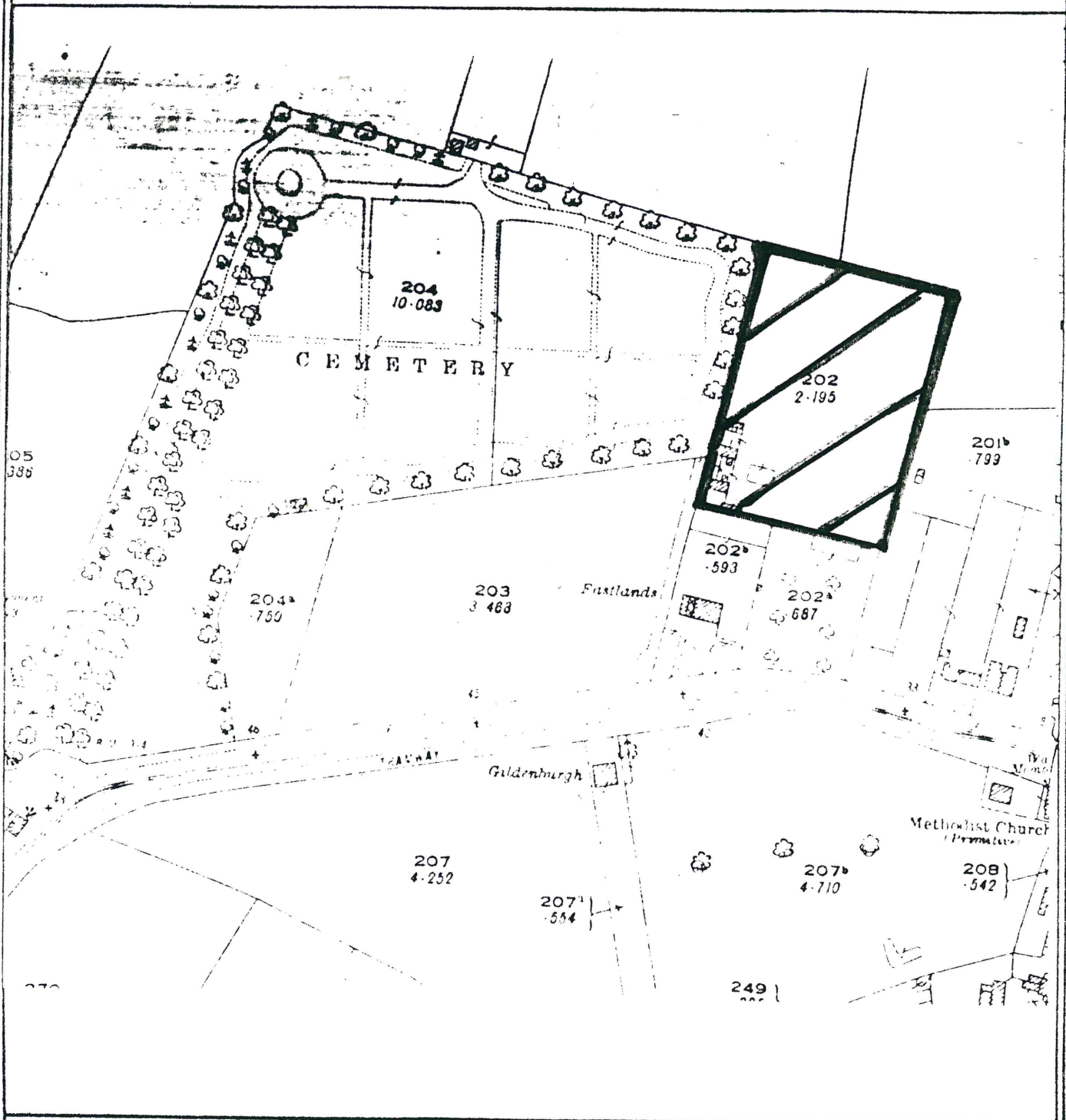


Fig. 2



BASED UPON THE ORIGINAL  
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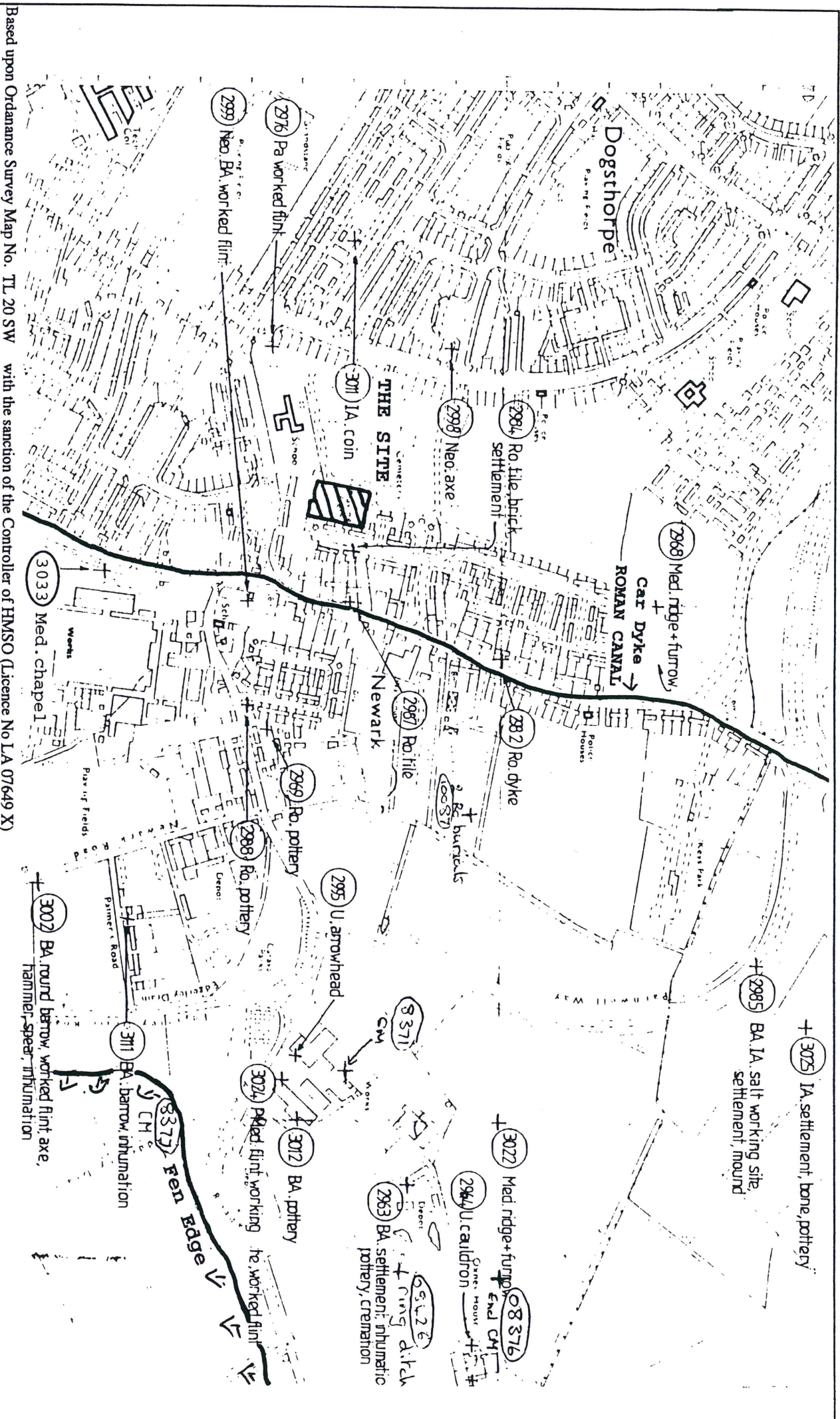
### Topography of the site.

The site was a relatively even area of mown grass but it dipped down from its north-east corner to the south and east. The drop was of the order of about 1.1m. The mown grass over the site was well tended but the local grounds staff informed us that the ground was prone to being very water retentive making routine mowing difficult after only moderate rainfalls. He also was able to tell us that the site had had a system of field drains inserted to improve the surface drainage. These were detected in our trenches.

The site of Newark hill occupies an area of land to the west of the Car Dyke, an artificial Roman watercourse. The fall off of the field to the south and east indicates the natural topography onto or into which the Dyke was inserted. A number of archaeological sites occur along the edge of this monument and the sites known from the 1927 building works are only part of a general pattern of development and occupation along the fen edge. The ground form would have formed a visible divide even before the construction of the Car Dyke probably in the early second century A.D.

The Car Dyke has in the past been claimed as both a canal and a catchwater drain in the Peterborough area. It has also been claimed as a potential property boundary between private and imperial controlled lands. The scale of the works certainly suggests Imperial involvement and as a linear monument it would have reinforced the existing topographical division between fen and upland. It has been demonstrated that it is unlikely that the dyke ever served as a canal in the Peterborough area so sites around its edge can not be seen as developing along a communications route.





Based upon Ordnance Survey Map No. TL 20 SW with the sanction of the Controller of HMSO (Licence No LA 07649 X)



Fig. 3

Archaeology Section  
Cambridgeshire County  
Council

# Sites and Monuments in the Newark Hill area

|                          |             |
|--------------------------|-------------|
| Crown Copyright Reserved |             |
| Scale                    | 1:10000     |
| Initials                 | Date        |
| I. M.                    | August 1992 |

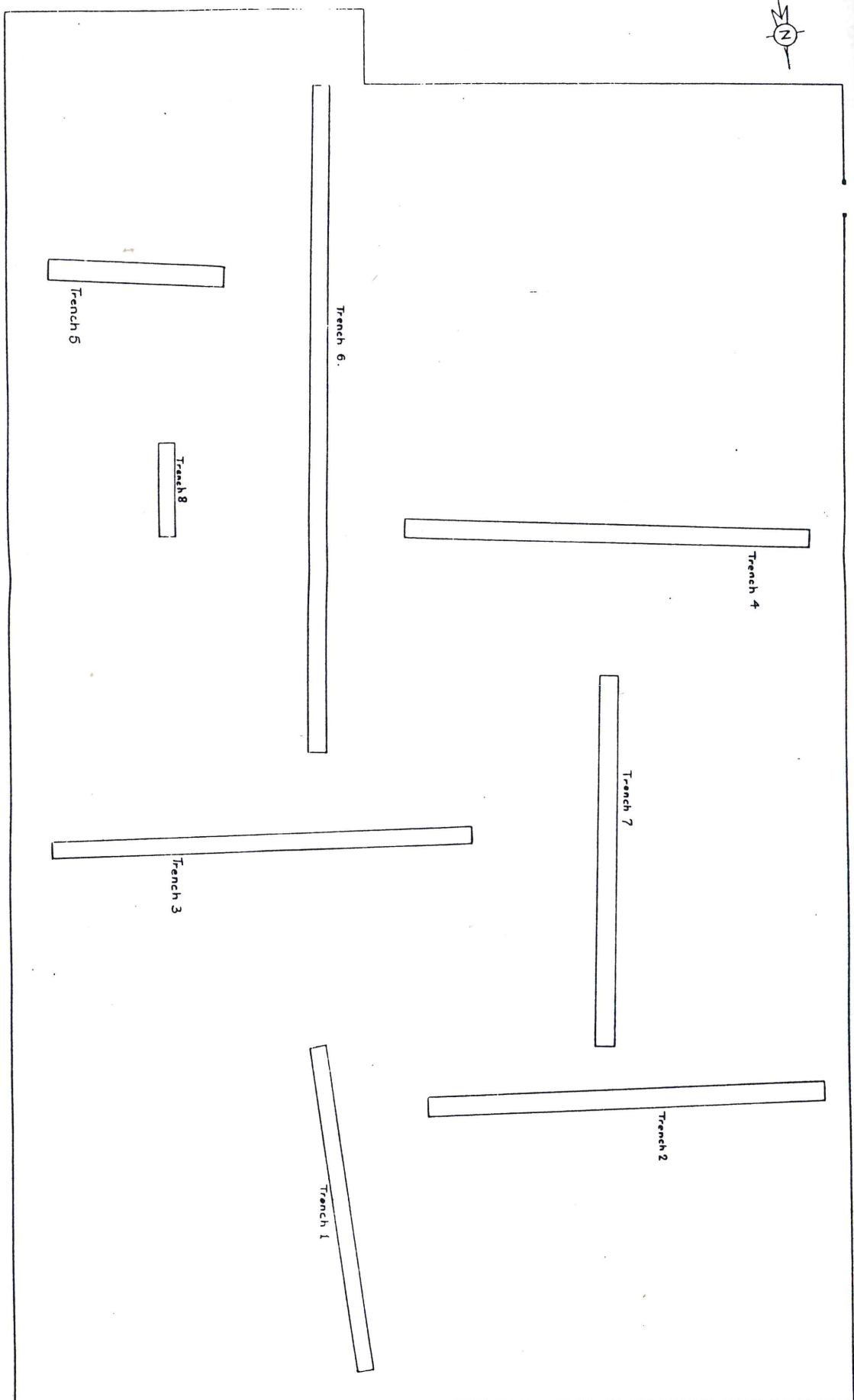


Fig. 4

Plan of Trenches  
Peterborough-Newark Hill-Evaluation  
N.H.E.92

SCALE 1 : 500





### Description of Works

On 3.7.92 a JCB was hired from Des Plant to remove the topsoil. A pattern of trenches was chosen which would maximise the extent of the sample. The machine used a c.1.6m. toothless ditching bucket. A total of more than 230m of trench c.1.6m wide was opened, giving a sample of over 4% by area.

The trenches were positioned to test the areas of potential archaeology, areas with no obvious remains and areas of magnetic disturbance shown on the geophysical survey. The individual trenches were numbered 1 - 8.

The finds recovered during the machining of each trench were bagged by trench number as + . Further material was derived by the collection of pottery from the scraped surface. This material was numbered and plotted on the site plans. A final category of artefacts were derived from sampling of individual features or areas of archaeological potential.

A complete metal detector sweep was carried out by S.Critchley of the 'Peterborough and District Society for Historical Metal detecting'. The trench areas produced only limited objects, (largely superficial finds of small bits of lead) but two fragments of copper-alloy brooch and a silver coin were also found (see below for details).

The trenches were planned at 1:50 after surface cleaning, and areas of soil differences drawn on. The nature of the site made discrete features hard to identify but general areas of archaeological content could clearly be identified from other areas of probable archaeological significance and areas of natural.



### Description of the trenches

The soils revealed by the machining were of three main types with subtle variations in hue and intensity. The three main types of matrix were:-

i) Indisputable natural clay of light brown or light green brown hue

ii) A mid brown clay loam from whose scraped surface some pottery was occasionally recovered but in which no certain archaeological features could be discerned.

iii) A very dark grey clay loam which contained obvious archaeological material in the form of pottery and calcined bone. This material was always found as a discrete area and was regarded as a certain indicator of ancient activity.

### Trench 1

Trench 1 was 26.5m long and lay approximately north south. The topsoil had an average thickness of about 0.35/4m .

The trench was only examined at a superficial level. Only one area of dark soil was explored adjacent to where an Iron Age coin (see below) was recovered. This coin was found by metal detection at a depth of about 0.05m below the scraped surface.

A small number of other dark areas were observed but not explored (see plan) but their size indicated either small pits or post holes. In addition about half of the trench contained mid brown clay loam with undetermined archaeological potential.

### Trench 2

Trench 2 lay approximately west-east and was 33m long. This trench was designed specifically to identify the significance of the linear anomaly seen in the geophysical survey.

At the west end of the trench an area of mid brown clay loam was observed. This deposit was cut through by tree root activity but its position and apparent alignment along the edge of the land parcel may indicate that it was an infilled, pre-cemetery, field ditch.

The next 8m of the trench contained no certain archaeological remains although their presence should not be ruled out. The matrix was a mixture of areas of natural clay with areas of mid brown clay loam with variable amounts of gravel.

A zone of slightly fewer pebbles was then observed. It was slightly to the west of the geophysical plot but it appeared to

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have the potential to be the feature identified. A small sondage was dug to reveal the remains. The sondage was about 1.8m long and it demonstrated that the underlying features were masked by an intervening layer of more mixed soil material. In this instance a layer 0.2m thick overlay the well preserved archaeological levels of the ditch but no distinct break could be seen between the ditch fill, a grey clay with loam, and this masking upper layer. No attempt was made to gain a complete ditch profile but its infills were partially removed to a depth of 0.3 below the upper mixed layer.

A further 3m to the west a darker area was observed and it too was sampled. Again a masking layer of about 0.2m thickness was excavated within which a feature was visible but whose edges could not be defined. This feature was eventually half sectioned and resolved itself as a small pit/post-hole.

The most westerly 13m of the trench contained certain archaeological remains from the surface of which pottery was collected (see plan). A fragment of a 'Colchester derivative' Roman brooch and a loom weight were also recovered (see plan).

### Trench 3

Trench 3 was 35m long and lay east-west. In this trench a number of small areas of certain archaeological origin were observed and one was half sectioned. Except for these features the trench contained no clearly definable archaeological remains. The majority of the exposed surface was covered with a mid brown clay loam with areas of natural clay peaking through it. A small sounding was dug through this clay loam revealing it to be 0.08m thick at that point and showing it to be over the clay. The material at the most westerly end of the trench was very unlikely to be of archaeological origin.

### Trench 4

This trench was 33.5m long and lay north-south. In the base of this trench a number areas of natural clay and gravel were observed. At its western end two discrete dark areas were sampled, one was a small pit and the other a shallow grave containing a dog (see plan). The majority of the trench base was covered by a mid brown clay loam which had areas of darker hue perhaps indicating the presence of remains. In the absence of either artefacts from the surface or the opportunity to excavate sample sondages these areas must remain seen as '?archaeology'.

### Trench 5

This trench was 14.5m long and lay north-south. Its base was largely a mid brown clay loam which was perhaps of archaeological significance through which a linear, slightly curved feature had

been cut (see plan). The linear feature was sectioned, it had a U-shaped profile c0.2m deep. The function or date of this feature was unresolved.

#### Trench 6

Trench 6 was the longest trench on the site at 55m long. It was positioned to extend north-south through a large part of the area identified in the geophysical survey as 'magnetic disturbance'. Most of the southern end of the trench produced no clear archaeological levels, the level to which the machine excavated was a clay loam of mid-light brown hue. This soil contained a high proportion of ferric nodules about 2 or 3mm across, presumably the source of the magnetic disturbance.

The above horizon was observed over the most southerly 35m of the trench cut at three points by recent field drains of both limestone rubble and ceramic pipe types. Owing to the homogeneity of the layer two soundings were cut into the level and in each a gravel or clay natural was exposed about 0.1m further down.

To the north of this area a number of archaeological areas were identified. A ?pit and ?ditch were sampled partially, both produced archaeological material but neither had clear defined edges at the level of the machine cut. The features sampled were part of a dark band about 10m wide to the north of which the substrate again contained no clear archaeological levels, but which could not be identified as certain undisturbed natural.

#### Trench 7

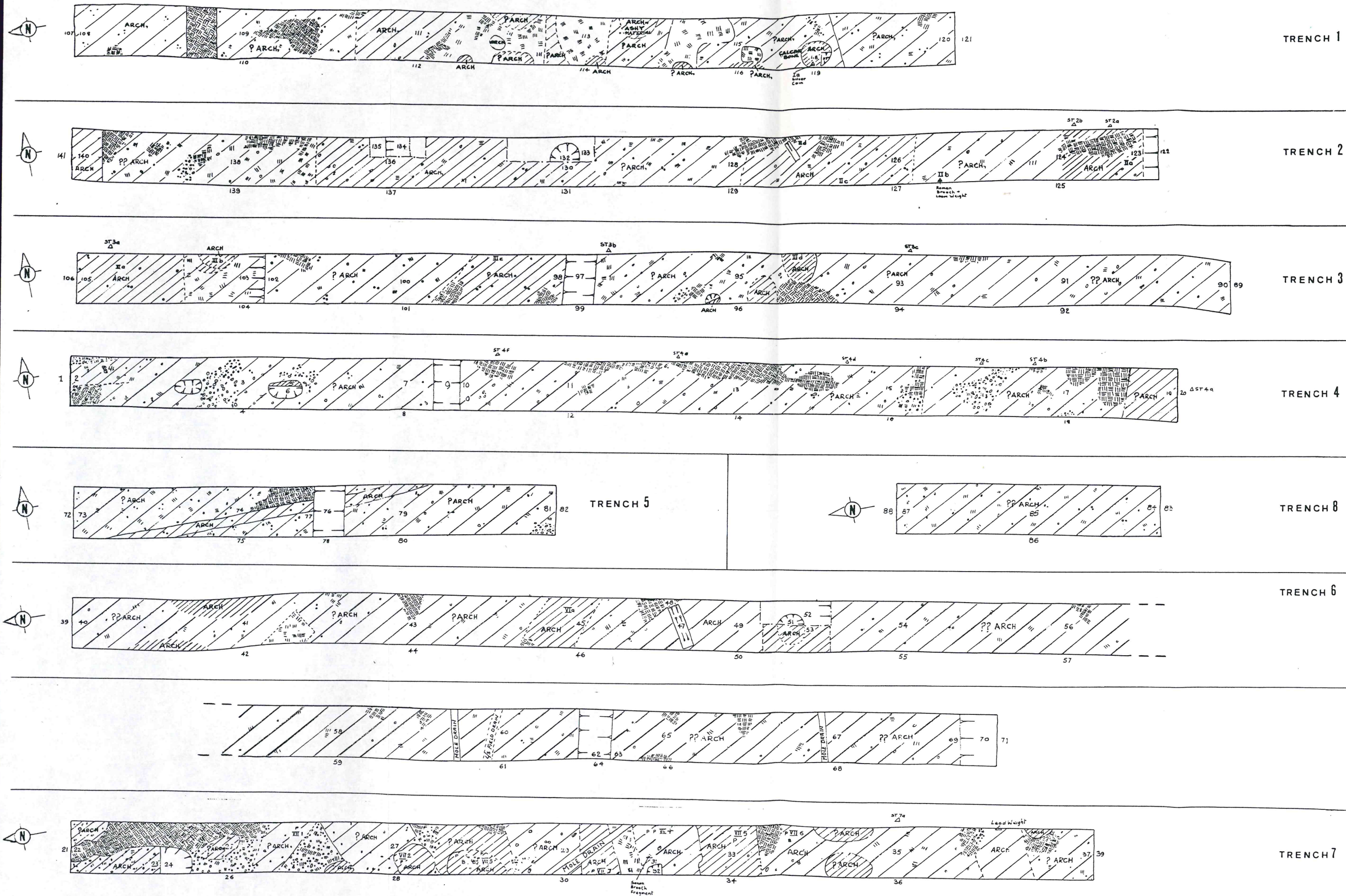
This trench was 31m and lay north-south. It contained several areas of certain archaeological interest and many areas of natural clay or gravel. Only one feature was sampled to any depth but a superficial gathering and plotting of pottery from the scraped surface showed a general distribution of finds along the length of the trench. Most of the probable features were small irregular areas suggestive of pits but a few other areas extended across the trench and were perhaps east-west ditch lines.

The metal detector sweep of this trench produced a lead weight and part of the foot of a Saxon small-long brooch.

#### Trench 8

This cut was 8m long and was designed simply to locate the continuation of a dark area identified in Trench 6. No such feature was found and the trench base was entirely composed of a mid brown clay loam which produced no archaeological material and in which no archaeological structures could be discerned.





NHE-92.

- = Natural Clay
- = Natural Sand
- = Query Sand
- = Dark Layer
- = Medium Layer
- = Light Layer
- = Clay Contamination
- = Gravel Contamination
- ARCH = Archaeological Feature
- ?ARCH = Query Archaeological Feature



### Discussion of the stratigraphy

The site was covered by about 0.35m of topsoil and subsoil below which potential archaeological features could be seen. The topsoil contained two distinct bands, an upper pebble free zone and a lower more gritty soil. The upper level was probably in part a soil generated by the repeated mowing of the area and consequent build up of organic materials, and the lower levels may represent the vestiges of the final plough soil.

Over most of the site potential archaeological remains were observed but these remains were noticeably less in the south and eastern part of the site. This distribution to some extent mirrors the geophysical findings. In the areas where features were not obviously present a high ferrous content was observable in the soil in the form of small presumably natural nodules.

In the areas where remains were present their infills were usually significantly darker than the surrounding parts. Some of the features that were seen as darker areas were sampled and in most cases good definition of the edges of the feature was not possible in the first 0.15 - 0.2m. This difficulty was also present in terms of identifying some of the less positive areas as features.

The mid-brown clay loam areas are potential archaeological levels and, wherever they were cut through, the natural clay was observed.

No deep stratification survives but there is the chance of extensive remains of the Iron age, Roman and Saxon periods. The shallow nature of the majority of sampled features suggests the remains are truncated presumably by medieval or more recent cultivation.

About 25% of the area exposed contained certain archaeological levels with a further 30%+ of potential archaeological levels.

### Discussion of finds

A listing of all the finds occurs in appendix 1. The finds comprised a mixture of Iron age and Roman pottery with sherds of Saxon date also. Later evidence of the post-medieval period was also well represented by the recovered pottery. Soil conditions lead to the poor preservation of some of the shell tempered wares making their identification harder.

The number of pieces of Roman tile is probably only a reflection of the lands proximity to the structure identified in the 1920's.

A number of small concentrations of calcined bone occurred but it was unclear whether these were human or animal bone.



### Interpretation of Excavation

The trenches revealed that the geophysical survey had only identified the largest features on the site and that many more shallow ones had also survived. The isolated features that were sampled frequently demonstrated a degree of 'masking' in their upper levels preventing the certain identification, even after cleaning, of all archaeological levels.

The finds from the site span most of the last 2 millennia and may indicate intermittent occupation at differing levels of intensity during that period. No clear pattern of features was recoverable from such a limited sample but the presence of finds of calcined bone may be an indication of cremations belonging to one of the periods.

The trenches were able to identify the concentration of features and possible features in the area away from the south and east parts of the site. The area around the present access point was not sampled since the 1926 map base indicated structures which would certainly have destroyed or disturbed any archaeological levels.

The shallow survival of the excavated features may reflect ploughing of this area prior to its present usage. No evidence of cultivation in the form of plough scars were observed but the quantity of medieval pottery and post medieval pottery may perhaps indicate night soiling of the fields.

Some of the areas of certain archaeology represented pits or other small features but some were possible field ditches. Systems of ditches need to be seen in larger areas than this excavation opened in order that they can be understood. Other features may represent the vestiges of a ridge and furrow system of cultivation of the area, no records of its survival could be found.

The density of the remains and the difficulty of identifying the extent of certain features means that this assessment has to be inconclusive. In order to fully understand this area of remains more extensive scheme of excavation is to be desired.

### ACKNOWLEDGMENTS

I would like to thank S.Critchley for conducting the metal detector survey of the site by means of which the Iron age coin and the both the Roman and Saxon brooch fragments were found. I would also like to thank R.Mckenna, without whose help I would not have been able to conduct this excavation.

## APPENDIX 1

### The Finds

#### Metal objects

The metal detector sweep produced a series of finds from the spoil heaps and from within the trenches. Spoil heap finds were recorded on the plan to give an idea of the distribution of such material in the plough soils. Identifiable metal finds from within the trenches were plotted on the plans also.

#### Spoil heap finds

##### Spoil heap trench 2 (ST2)

ST2A Clinker fragment  
ST2B Unidentified lead scrap  
ST2C Iron nail and copper alloy wire

##### Spoil heap trench 3 (ST3)

ST3A Iron nail  
ST3B 1917 Id coin  
ST3C Lead flashing fragment

##### Spoil heap trench 4 (ST4)

ST4A Post medieval button  
ST4B Iron nail  
ST4C Copper alloy button dome, post medieval  
ST4D Copper alloy pipe fixing (modern)  
ST4E Copper alloy bi-conical button, post-medieval  
ST4F Lead flashing

##### Spoil heap trench 7 (ST7)

ST7A Lead shot

Other metallic finds included 5 small pieces of lead flashing or shot and a single fragment of copper alloy. A visual check of the spoil heaps also produced a 'Viners' stainless steel egg spoon.

The three other metallic objects were :-

The foot of a small long brooch dating to the sixth century,



unfortunately the object was in a poor state and its original surface was very corroded. The break appeared old, perhaps resulting from cultivation.

The catch plate of a Colchester derivative brooch belonging to the second half of the first century A.D. (pers. comm. D.F.Mackreth). A single triangular perforation was present through the catch plate.

A Coritanian silver half unit of a South Ferriby type dating to the period 45-10 B.C. The piece bore the image of a horse surmounted by a rosette of pellets on one side and was plain on the other.

### Pottery and other finds

The pottery has only been spot dated, no detailed study having been possible on such a small sample. The pottery has been derived from the machined soil, by collection from the scraped surface and by the very limited exploration of features.

#### Material from the machined soil

##### Trench 1

- 6 x tin glazed earthenware sherds
- 2 x clay pipe fragments
- 1 x brick splinter
- 1 x sherd of red earthenware
- 1 x medieval + tile fragment
- 1 x baked clay tile fragment

##### Trench 2

- 1 x lump of concrete
- 1 x post medieval tile fragment
- 1 x clay pipe fragment
- 1 x brick splinter
- 3 x tin glazed earthenware sherds
- 2 x glazed red earthenware sherds
- 1 x fine sandy ware
- 1 x possible medieval shell gritted sherd

##### Trench 3

- 1 x brick fragment
- 1 x black glazed red earthenware
- 3 x fine sandy wares

#### Trench 4

- 1 x post medieval roof tile
- 1 x Roman tile (tegula) fragment
- 4 x tin glazed earthenware
- 1 x salt glazed sherd
- 2 x brick chips
- 1 x black glazed earthenware
- 1 x 1917 1/2d
- 1 x clay pipe fragment
- 1 x Nene Valley grey ware
- 1 x fine sandy ware

#### Trench 5

- 2 x clay pipe fragments
- 1 x black glazed earthenware
- 1 x tin glazed earthenware
- 1 x anchor stamped tin glazed earthenware
- 1 x glazed red earthenware

#### Trench 6

- 1 x C18/C19 glass wine bottle base
- 2 x brick fragments
- 1 x tin glazed earthenware
- 1 x black glazed earthenware
- 1 x clear bottle glass sherd
- 1 x cream glazed red earthenware
- 1 x shell gritted sherd
- 1 x Nene Valley grey ware

#### Trench 7

- 1 x ?Roman tile
- 1 x tin glazed earthenware
- 1 x ??Saxon gritted sherd
- 1 x glazed red earthenware



Material from recognised features

Trench 1

Feature by the Iron age coin

2 sherds Iron age pottery

1 fragment calcined bone

5 x pottery splinters

Material from the surface cleaning of above feature

4 x calcined bone fragments

1 x sand tempered sherd

2 x sherds small Romano-British jar

Trench 2

Possible field ditch at west end of trench 1 sherd of post medieval earthenware

Infill of ditch indicated as geophysical anomaly

Misc animal bones and teeth

13 x sherds Romano-British shell tempered sherds

3 x Grey ware sherds

1 x sherd samian (?form 18/31)

Cleaning in area of above feature

18 x mixed Romano-British and ?medieval sherds.

Masking horizon above the positive cut for above feature

2 x Romano-British grey wares

14 x assorted Romano-British gritted sherds

1 x samian splinter

1 x baked clay fragment

Misc. animal bone

Sherds from area containing Colchester derivative brooch fragment comprised a mixture of Romano-British and ?medieval sherdage

Pit type feature to East of the ditch anomaly contained 6 assorted pieces of Romano-British sherdage.

Trench 4

The dog burial pit contained no pottery

Half sectioned pit to east of dog pit contained 7 sherds of shell tempered pottery along with 12+ fragments of at least 3 other vessels of ?Iron age date.

Trench 6

Half sectioned pit

1 sherd Romano-British grey ware

5 shell gritted sherds

The level above the identifiable pit  
31 x gritted sherds  
4 x fragments of bone (1 calcined)  
1 x sherd ??Roman glass  
6 x Roman grey ware  
4 x misc Romano-british

Trench 7

Half sectioned feature  
1 x Bone fragment  
1 x Iron nail  
2 x Nene Valley grey ware  
1 x samian splinter  
4 x indet. splinters  
1 x ?Saxon/Iron age

Material recovered from the scraped surface recorded on plan

Trench 2

IIA 1 x Baked clay fragment  
IIB 5 x Splinters calcined bone  
1 x Grey ware sherd  
IIC 1 x Pottery splinter  
1 x Grey ware sherd  
1 x Grey ware splinter  
1 x Saxon quartz gritted  
1 x Sand tempered sherd  
2 x Shell tempered  
IID 4x ??Saxon sherds  
1 x Bone fragment

Trench 3

IIIA 2 x Gritted sherds (1?Saxon)  
IIIB 1 x Nene Valley Grey ware  
IIIC 1 x ?medieval Fine sandy ware  
IIID 1 x Roman tile fragment

Trench 6

VIA 3 x Pottery splinters

Trench 7

VIIA 1 x ?Medieval fine sandy ware  
VIIB 1 x Shell tempered rim (?Roman or Iron age)  
VIIC 7 x Animal bone fragments  
2 x Baked clay fragments  
2 x Sand tempered ?Saxon  
1 x Shell tempered



VIID 1 x Sand tempered ware  
VIIE 1 x ?Grey ware  
VIIF 1 x Shell tempered sherd  
1 x Bone splinter  
VIIG 1 x Shell tempered



Fig.6 A Coritanian Silver Half Unit of a South Ferriby Type  
Dating to the period 45-10 BC

## APPENDIX 2

### Table of Corrected Levels Shown on Plan.

#### Trench 4

|    |          |    |          |
|----|----------|----|----------|
| 1  | 12.75mod | 11 | 12.05mod |
| 2  | 12.35mod | 12 | 12.53mod |
| 3  | 12.25mod | 13 | 11.99mod |
| 4  | 12.60mod | 14 | 12.03mod |
| 5  | 12.24mod | 15 | 11.85mod |
| 6  | 12.06mod | 16 | 12.34mod |
| 7  | 12.03mod | 17 | 11.73mod |
| 8  | 12.56mod | 18 | 12.19mod |
| 9  | 12.09mod | 19 | 11.67mod |
| 10 | 11.82mod | 20 | 12.09mod |

#### Trench 7

|    |          |    |          |
|----|----------|----|----------|
| 21 | 12.19mod | 30 | 12.36mod |
| 22 | 11.85mod | 31 | 12.03mod |
| 23 | 11.84mod | 32 | 11.95mod |
| 24 | 11.72mod | 33 | 12.02mod |
| 25 | 11.79mod | 34 | 12.39mod |
| 26 | 12.25mod | 35 | 12.06mod |
| 27 | 11.96mod | 36 | 12.43mod |
| 28 | 12.28mod | 37 | 12.08mod |
| 29 | 11.94mod | 38 | 12.44mod |

#### Trench 6

|    |          |    |          |
|----|----------|----|----------|
| 39 | 11.96mod | 56 | 11.54mod |
| 40 | 11.53mod | 57 | 11.98mod |
| 41 | 11.53mod | 58 | 11.50mod |
| 42 | 11.98mod | 59 | 12.00mod |
| 43 | 11.58mod | 60 | 11.57mod |
| 44 | 11.97mod | 61 | 12.02mod |
| 45 | 11.53mod | 62 | 11.21mod |
| 46 | 11.98mod | 63 | 11.55mod |
| 47 | 11.27mod | 64 | 12.00mod |
| 48 | 11.53mod | 65 | 11.51mod |
| 49 | 11.53mod | 66 | 11.97mod |
| 50 | 11.99mod | 67 | 11.45mod |
| 51 | 11.12mod | 68 | 11.94mod |
| 52 | 11.22mod | 69 | 11.43mod |
| 53 | 11.53mod | 70 | 11.21mod |
| 54 | 11.50mod | 71 | 11.90mod |
| 55 | 12.00mod |    |          |



### Trench 5

|    |          |    |          |
|----|----------|----|----------|
| 72 | 11.78mod | 78 | 11.63mod |
| 73 | 11.27mod | 79 | 11.11mod |
| 74 | 11.21mod | 80 | 11.53mod |
| 75 | 11.68mod | 81 | 11.01mod |
| 76 | 10.91mod | 82 | 11.41mod |
| 77 | 11.18mod |    |          |

### Trench 8

|    |          |    |          |
|----|----------|----|----------|
| 83 | 11.69mod | 86 | 11.68mod |
| 84 | 11.33mod | 87 | 11.26mod |
| 85 | 11.31mod | 88 | 11.67mod |

### Trench 3

|    |          |     |          |
|----|----------|-----|----------|
| 89 | 11.41mod | 98  | 11.53mod |
| 90 | 11.06mod | 99  | 11.85mod |
| 91 | 11.09mod | 100 | 11.67mod |
| 92 | 11.51mod | 101 | 11.98mod |
| 93 | 11.23mod | 102 | 11.75mod |
| 94 | 11.64mod | 103 | 11.53mod |
| 95 | 11.37mod | 104 | 12.07mod |
| 96 | 11.75mod | 105 | 11.71mod |
| 97 | 11.21mod | 106 | 12.12mod |

### Trench 1

|     |          |     |          |
|-----|----------|-----|----------|
| 107 | 11.75mod | 115 | 11.46mod |
| 108 | 11.38mod | 116 | 11.79mod |
| 109 | 11.48mod | 117 | 11.28mod |
| 110 | 11.77mod | 118 | 11.41mod |
| 111 | 11.43mod | 119 | 11.79mod |
| 112 | 11.77mod | 120 | 11.37mod |
| 113 | 11.41mod | 121 | 11.83mod |
| 114 | 11.78mod |     |          |

### Trench 2

|     |          |     |          |
|-----|----------|-----|----------|
| 122 | 12.06mod | 132 | 11.70mod |
| 123 | 11.76mod | 133 | 11.77mod |
| 124 | 11.81mod | 134 | 11.58mod |
| 125 | 12.11mod | 135 | 11.83mod |
| 126 | 11.87mod | 136 | 12.04mod |
| 127 | 12.24mod | 137 | 12.40mod |
| 128 | 11.96mod | 138 | 12.14mod |
| 129 | 12.23mod | 139 | 12.45mod |
| 130 | 11.98mod | 140 | 12.19mod |
| 131 | 12.24mod | 141 | 12.56mod |

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## **SITE SUMMARY SHEET**

**92 / 29 Newark Hill School Peterborough  
Cambridgeshire**

---

**NGR: TF 208 008**

### **Location and topography**

The site lies immediately to the north east of Newark Hill CP school, approximately 3 km north-east of the centre of Peterborough. The survey was carried out on a flat playing field covered by short grass.

### **Archaeology**

Construction work for a housing development uncovered archaeological remains suggesting Roman settlement to the east of the survey area.

### **Aim of Survey**

The aim of the survey was to locate possible archaeological features associated with the Roman settlement in advance of a proposed development application.

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### **Summary of Results \***

A number of possible archaeological anomalies that may relate to the nearby Roman settlement were detected in the northern half of the survey. The area suffered from intense magnetic interference from field boundaries and accumulated debris. As a result the majority of the area responded very poorly to magnetometry.

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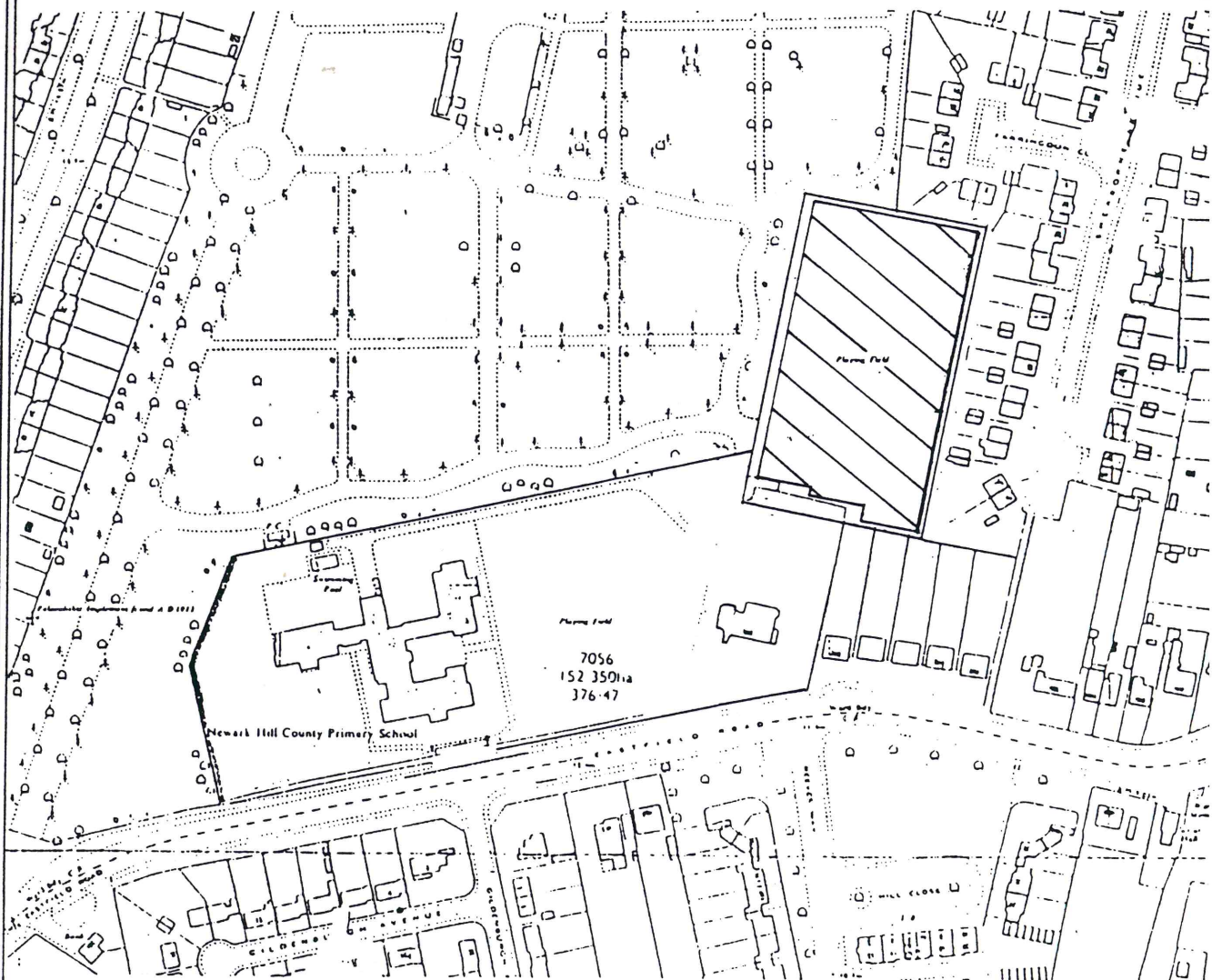
\* It is essential that this summary is read in conjunction with the detailed results of the survey.

---



# NEWARK HILL SCHOOL

## Grid Location Diagram



BASED UPON THE ORDNANCE  
SURVEY MAP WITH THE PERMISSION  
OF THE CONTROLLER OF HMSO  
CROWN COPYRIGHT



1:2500

Figure 1

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## **SURVEY RESULTS**

**92 / 29 Newark Hill School Peterborough  
Cambridgeshire**

---

### **1. Survey Areas**

The aim of the magnetometer survey was to cover as much of the playing field as was possible. However, given the difficulties of prospecting near strongly magnetic field boundaries the survey was limited to the area shown in Figure 1 (at a scale of 1:2500).

---

### **2. Display (Figures 2 to 5)**

2.1 The results are displayed in three formats:- dot density plot, X-Y trace and grey scale image. These display formats are discussed in the *Technical Information section*, at the end of the text.

2.2 All of the data diagrams are produced at a scale of 1:500 (Figures 2 to 4). In Figures 3 and 4 the data are displayed after smoothing to reduce the effects from strong magnetic fields.

2.3 A simplified interpretation diagram, at 1:500 (Figure 5), is also included.

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### **3. General Considerations - Complicating factors**

3.1 In general the conditions for survey were good, the ground being both flat and free of obstruction. However, much of the data are disturbed by strong magnetic interference from iron railings, chain link fencing and ferrous debris.

3.2 Due to the disturbed nature of the data, some extra processing was required to suppress the effects of railings and fencing along the perimeter of the survey area.

---

### **4. Results (Figures 1 to 5)**

4.1 The survey plots clearly show the disturbed nature of the data. Apart from the effects of field boundaries (see section 3), a considerable quantity of ferrous debris has accumulated in this field over time.



4.2 The disturbed magnetic responses in the southern half of the survey are probably due to ferrous debris, building rubble and ballast, possibly used to level the playing field. It is unlikely that these responses are from archaeological features. If there are archaeological features in this part of the survey, their responses would be masked by the anomalies generated by the debris.

4.3 A number of possible archaeological features were detected in the northern part of the survey (see interpretation diagram). The most promising of these is a linear anomaly running across the north-western part of the site. This may be a response from a buried ditch.

4.4 In the centre of the northern half of the survey there are a group of pit-like anomalies that may be archaeologically significant. However, it may be that they represent responses from more deeply buried ferrous debris.

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## **5. Conclusions**

Much of the site was found to be extremely disturbed by an accumulation of ferrous debris, which will have masked any responses from archaeological remains. The ferrous debris is unlikely to be of archaeological significance, but rather material used for modern levelling. However, a number of anomalies of possible archaeological potential were detected in the quieter northern half of the survey.

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**Project Co-ordinator: D Shiel**  
**Project Assistant: D Redhouse**

23rd April 1992  
**Geophysical Surveys of Bradford**

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## TECHNICAL INFORMATION

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The following is a description of the equipment and display formats used in **GEOPHYSICAL SURVEYS OF BRADFORD** reports. It should be emphasised that whilst all of the display options are regularly used, the diagrams produced in the final reports are the most suitable to illustrate the data from each site. The choice of diagrams results from the experience and knowledge of the staff of **GEOPHYSICAL SURVEYS OF BRADFORD**.

**All survey reports are prepared and submitted on the basis that whilst they are based on a thorough survey of the site, no responsibility is accepted for any errors or omissions**

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Magnetic readings are logged at 0.5m intervals along one axis in 1m traverses giving 800 readings per 20m x 20m grid, unless otherwise stated. Resistance readings are logged at one metre intervals giving 400 readings per 20m x 20m grid. The data are then transferred to a Compaq SLT/286 and stored on 3.5" floppy discs. Field plots are produced on a portable Hewlett Packard Thinkjet. Further processing is carried out back at base on a Mission or Dell 386 computer linked to appropriate printers and plotters.

### Instrumentation

#### (a) Fluxgate Gradiometer - Geoscan FM36

This instrument comprises two fluxgates mounted vertically apart, at a distance of 500mm. The gradiometer is carried by hand, with the bottom sensor approximately 100-300mm from the ground surface. At each survey station, the difference in the magnetic field between the two fluxgates is conventionally measured in nanoTesla (nT) or gamma. The fluxgate gradiometer suppresses any diurnal or regional effects. Generally features up to one metre deep may be detected by this method.

#### (b) Resistance Meter - Geoscan RM4 or RM15

This measures the electrical resistance of the earth, using a system of four electrodes (two current and two potential). Depending on the arrangement of these electrodes, an exact measurement of a similar volume of earth may be acquired. In such a case the amount measured may be used to calculate the earth resistivity. Using a 'Twin Probe' arrangement the terms 'resistance' and 'resistivity' may be interchanged. This arrangement involves the pairing of electrodes (one current and one potential), with one pair remaining in a fixed position whilst the other measures the resistivity variations across a fixed grid. Resistance is measured in ohms, while resistivity is measured in ohm-metres. The resistance method has a depth resolution of approximately 0.75m, although the nature of the overburden and underlying geology will cause variations in this generality.

#### (c) Magnetic Susceptibility

Variations in the magnetic susceptibility of subsoils and topsoils can provide valuable information about the 'level of archaeological activity' associated with a site. This phenomenon can also be used in a predictive manner to ascertain the suitability of a site for a magnetic survey. The instrument employed for measuring this culturally enhanced phenomenon is a laboratory based susceptibility bridge. Standard 50g soil samples are collected in the field.

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## Display Options

The following is a description of the display options used. Unless specifically mentioned in the text, it may be assumed that no filtering or smoothing has been used to enhance the data. For any particular report a limited number of display modes may be used.

### (a) X-Y Plot

This involves a line representation of the data. Each successive row of data is equally incremented in the Y axis, to produce a 'stacked' profile effect. This display may incorporate a 'hidden-line' removal algorithm, which blocks out lines behind the major peaks and can aid interpretation. Advantages of this type of display are that it allows the full range of the data to be viewed and shows the shape of the individual anomalies. Results are normally produced on a flatbed plotter.

### (b) Dot-Density

In this display, minimum and maximum cut-off levels are chosen. Any value that is below the minimum cut-off value will appear 'white', whilst any value above the maximum cut-off value will appear 'black'. Any value that lies between these two cut-off levels will have a specified number of dots depending on the relative position between the two levels. The focus of the display may be changed using different levels and a contrast factor (C.F.). When the contrast is equal to 1, then the scale between the two cut-off levels is linear. A C.F. > 1 helps to enhance the higher readings, although a C.F. greater than 2 is rarely required. To assess lower than normal readings involves the use of an inverse plot. This plot simply reverses the minimum and maximum values, resulting in the lower values being represented by more dots. In either representation, each reading is allocated a unique area dependant on its position on the survey grid, within which numbers of dots are randomly placed. The main limitation of this display method is that multiple plots have to be produced in order to view the whole range of the data. It is also difficult to gauge the true strength of any anomaly without looking at the raw data values. This display is much favoured for producing plans of sites, where positioning of the anomalies and features is important.

### (c) Contour

This display joins data points of an equal value by a contour line. Displays are generated on the computer screen or plotted directly on a flat bed plotter / inkjet printer. The former will generate either colour or black and white copies depending on the printer used.

### (d) 3-D Mesh

This display joins the data values in both the X and Y axis. The display may be changed by altering the horizontal viewing angle and the angle above the plane. Again, the output may be either colour or black and white. A hidden line option is occasionally used (see (a) above).

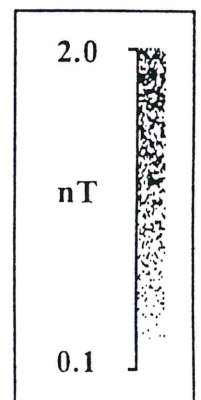
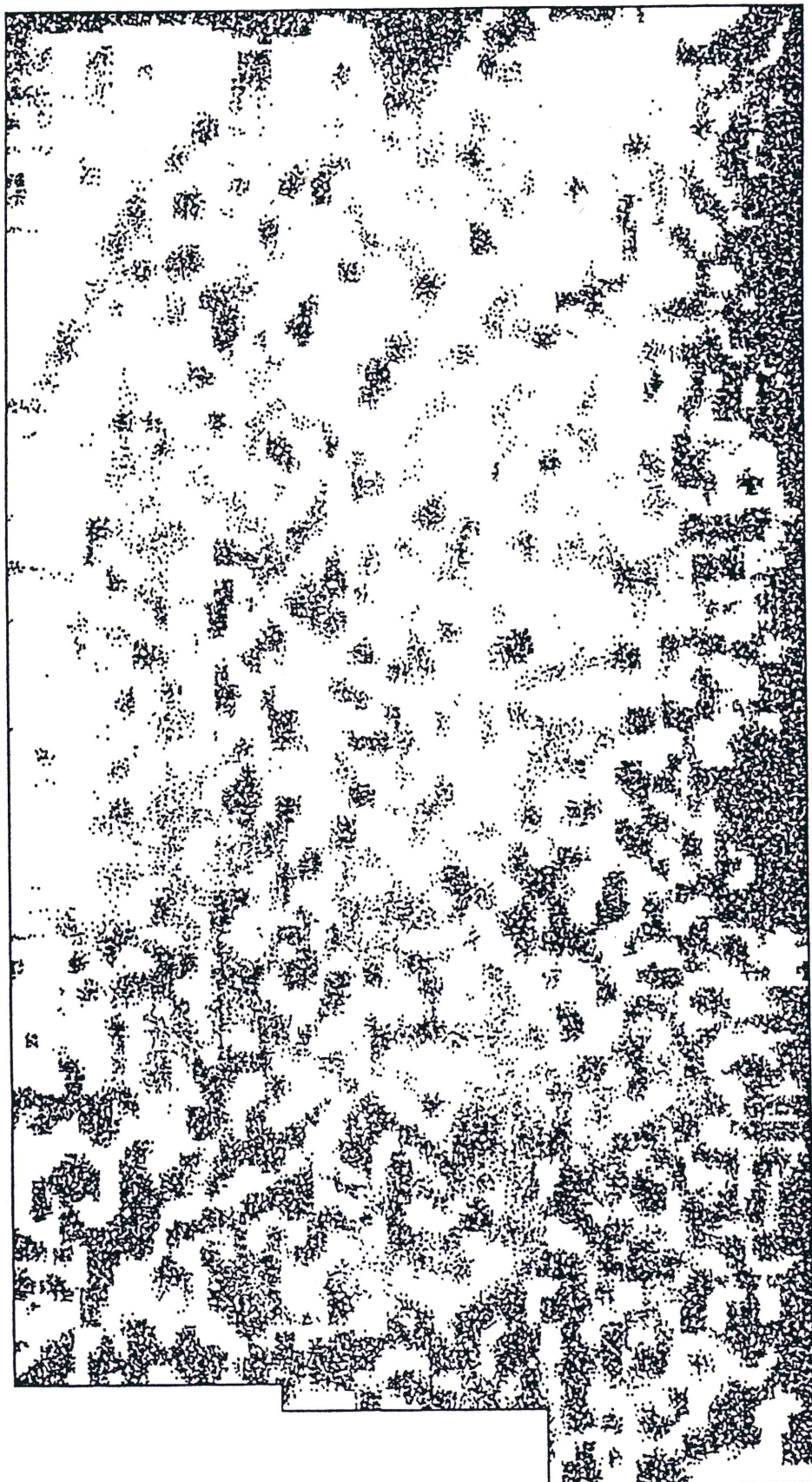
### (e) Grey-Scale

This format divides a given range of readings into a set number of classes. These classes have a predefined arrangement of dots, the intensity increasing with value. This gives an appearance of a toned or grey scale.

Similar plots can be produced in colour, either using a wide range of colours or by selecting two or three colours to represent positive and negative values. While colour plots can look impressive and can be used to highlight certain anomalies, grey-scales tend to be more informative.

---

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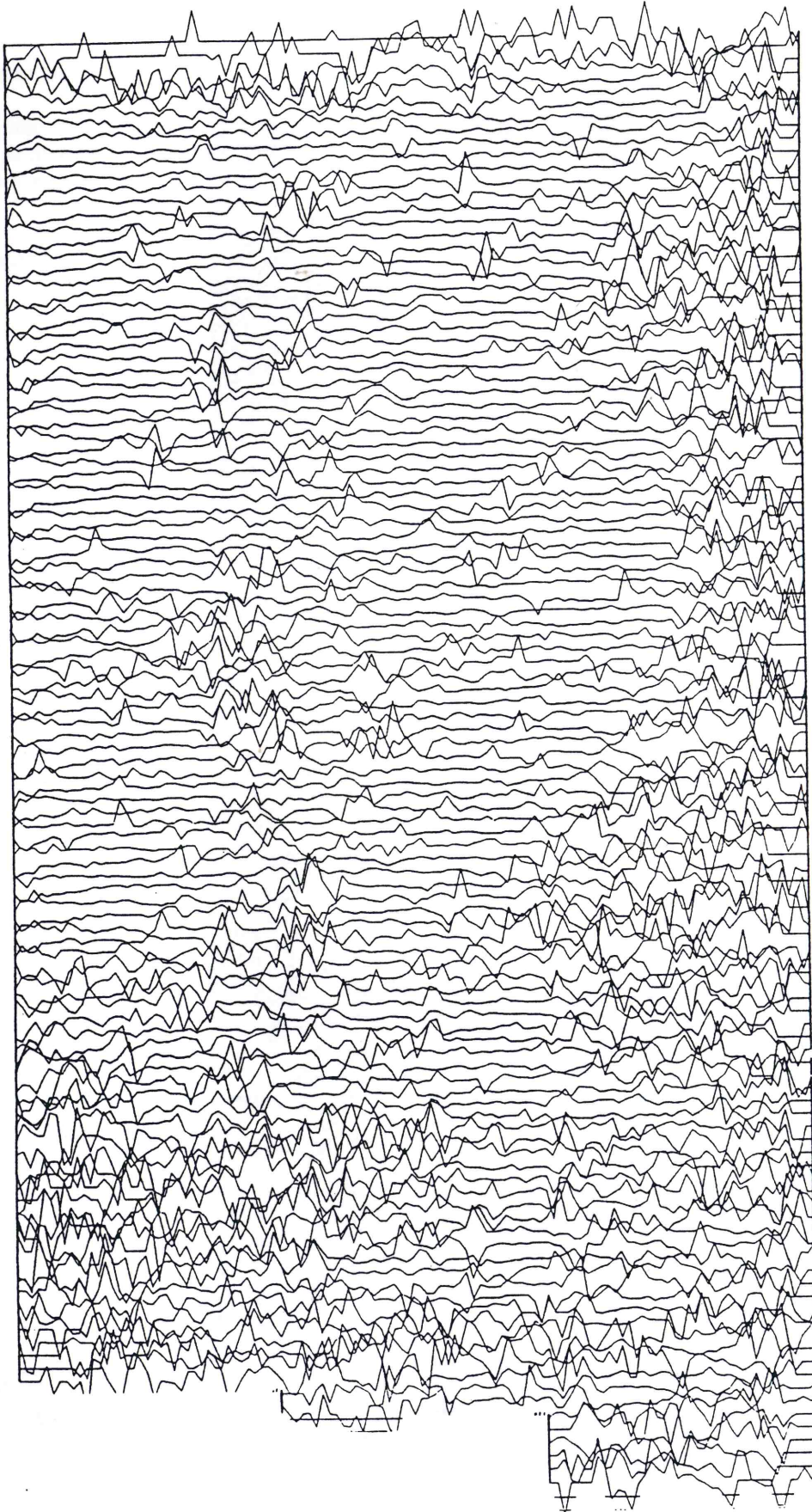


0 m 2

Figure 2



# NEWARK HILL SCHOOL



10 n'



0 m



# NEWARK HILL SCHOOL

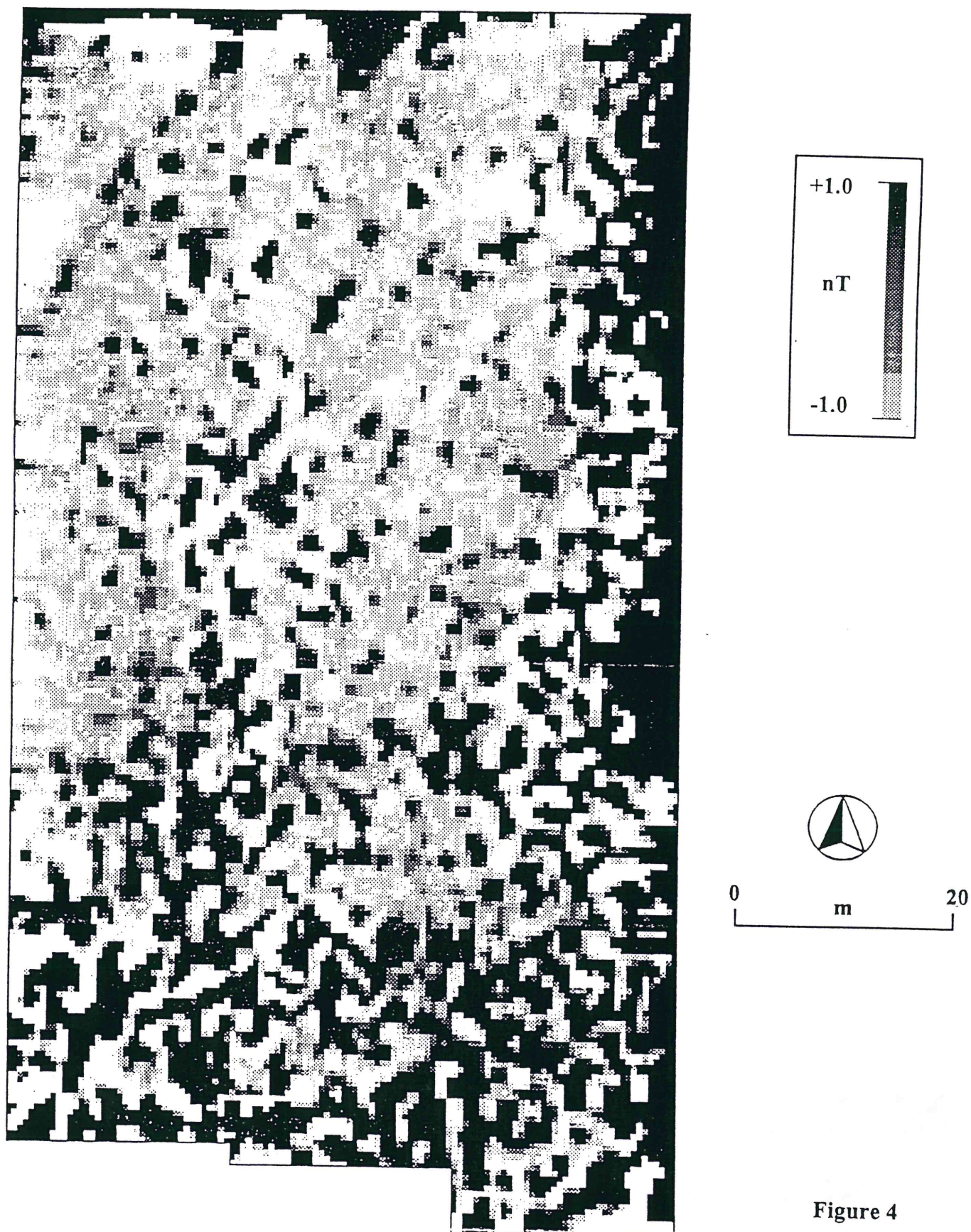
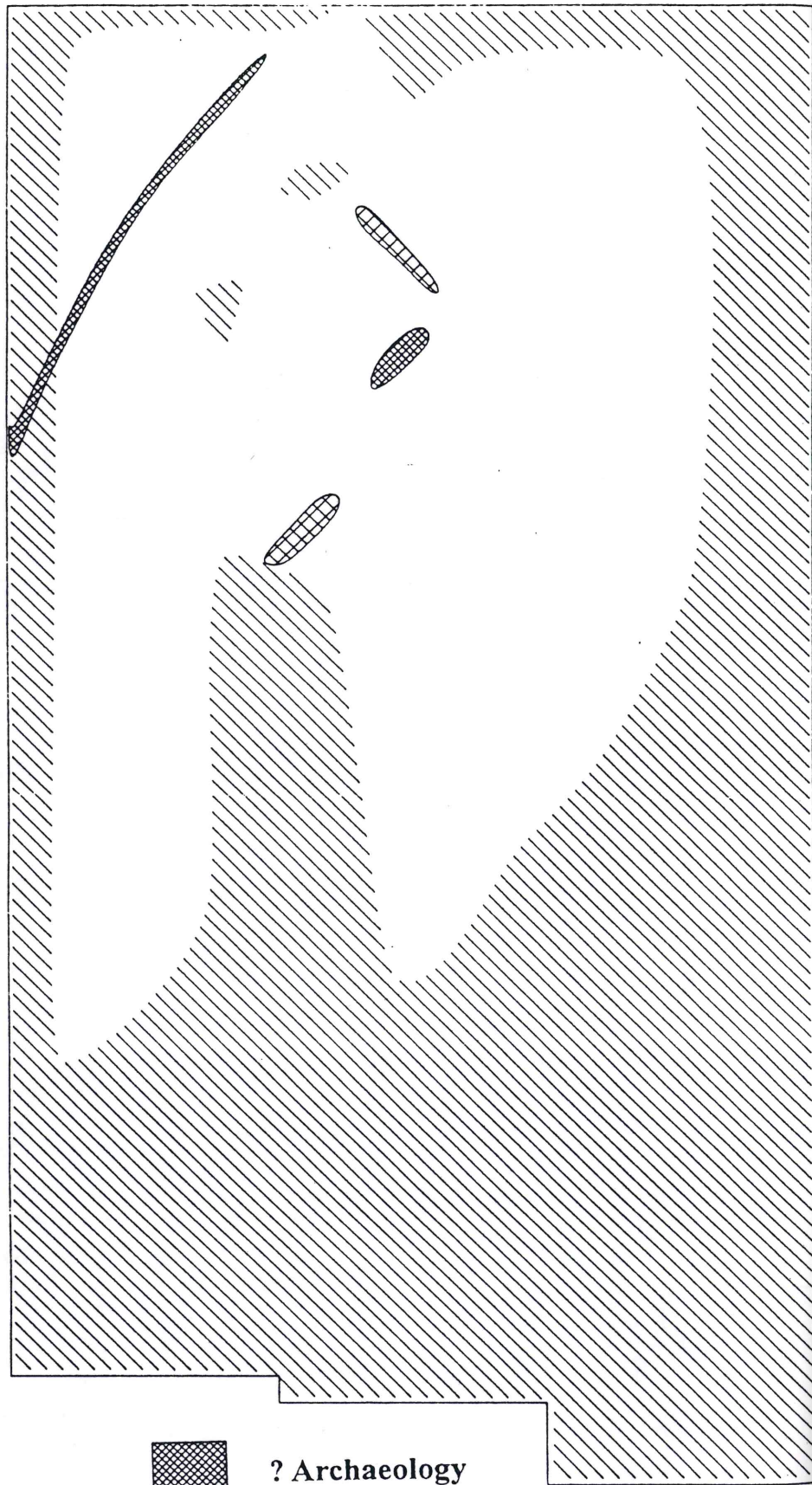


Figure 4





# NEWARK HILL SCHOOL

Interpretation



? Archaeology



?? Archaeology



Magnetic Disturbance



0 m

Figure 5



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