THE CLWYD-POWYS ARCHAEOLOGICAL TRUST

Perry Farm, Whittington, Shropshire

ARCHAEOLOGICAL ASSESSMENT

CPAT Report No 206

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Report for Mr J. Ward

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1 INTRODUCTION

1.1 The Contracting Section of the Clwyd-Powys Archaeological Trust (hereafter CPAT) was invited to submit a quotation and specification for an archaeological assessment at Perry Farm, Whittington Shropshire, based on a Brief prepared by Archaeology Service, Shropshire County Council. The quotation was accepted and CPAT were invited to undertake the assessment.

1.2 An assessment was considered necessary prior to the consideration of a planning application to develop a block of land to the rear of Perry Farm, involving the construction of four poultry houses (Planning Application No. 96/9458), which lies within a known Roman marching camp (PRN 935) with crop mark evidence for earlier prehistoric activity on the same site.

1.3 The Archaeology Service, Shropshire County Council have determined that an archaeological assessment is necessary to assess the implications of the proposed development on the archaeological resource. Accordingly, a brief was prepared which described the scheme of archaeological works required. This detailed three stages to the assessment: a desk-based study of available aerial photographic evidence; a geophysical survey of the whole area; trial excavation to determine the condition, nature and extent of surviving archaeological deposits.

2 LOCATION, TOPOGRAPHY AND SOILS

2.1 Perry Farm is located *c.* 5km east of Oswestry (SJ 350 303, fig. 1) on low lying land at approximately 85m OD. The proposed development site occupies *c.* 1.1ha to the rear of Perry Farm, which is currently under arable cultivation. The site lies on the north-east side of the valley of the River Perry, a tributary of the Severn. The site has been recorded (Swan and Welfare 1995, 166) as occupying a slight rise, which may have been surrounded by marshland.

2.2 The site is located on the western edge of the North Shropshire plain within the Permo-Triassic synclinal basin. The sands and gravels are derived from the meltwaters of the Divensian glaciation *c.* 18,000 years ago. The soils comprise of brown loamy silts and sandstones, generally well-drained and suitable for use as permanent grass or cereal crops (Soil Survey 1982 and 1983).

3 ARCHAEOLOGICAL BACKGROUND

Documentary Sources

3.1 A desk-top study revealed considerable information regarding known archaeological sites within the immediate area (fig. 2; Appendix 1). The study involved consultation of all readily available sources at the following repositories: Shropshire County SMR (Shirehall, Shrewsbury), Shropshire Records and Research Office and the University of Wolverhampton.

3.2 The SMR shows the development site to be located within a Roman Marching Camp (PRN 935) which has been recorded by aerial photography since 1969 (Baker 1969). The camp measures *c.* 460 x 330m, enclosing an area of around 15.3ha (Welfare and Swan 1995, 166). Although marching camps vary in size from as little as 2ha up to 25ha, they are more commonly around 16ha within Wales and the Marches (Jones and Mattingly 1990, 79-81). It has been suggested that one legion might require a camp of about 8ha (Jarrett 1969, 124), although the evidence does not appear entirely satisfactory. Marching camps were erected as temporary defences by the Roman army during campaigns, and were of basic construction consisting of a ditch with an internal bank and palisade. Although marching camps were temporary, possibly only used for overnight stops, some may have been in use for an entire campaign season, as has been suggested by recent excavations at Bromfield in South Shropshire. Although no dating evidence was recovered, it is thought likely that the camp belongs to one of the numerous campaigns in Wales between AD 48 and AD 75 (Watson and Musson 1993, 41).

3.3 The significance of marching camps lies perhaps not so much in their physical survival, but rather in their location: since, at least in theory, each Roman Campaign should have an associated trail of camps of a fairly standard size, it should eventually be possible to place these camps in a specific historical context (Jones and Mattingly 1990, 77). However, the reality is somewhat different since

successive campaigns often followed a similar route and such excavations as have been undertaken have generally resulted in few artefacts, none of which can be securely dated. There are 59 known marching camps in Wales, the Marches and West Midlands and it has been tentatively suggested on the basis of size that the Perry Farm camp might be associated with camps at Uffington 28km to the south-east and Penrhos 35km to the north-west, as part of the same campaign (Jones and Mattingly 1990, 80).

3.4 In 1971 four trenches were excavated by the Offa Antiquarian Society in an unsuccessful attempt to locate the marching camp ditches. Further investigations were conducted in 1972 on the north and west sides of the camp near the north-west corner, in the field located on the north-west side of Berghill Lane (Day 1969-74). The small areas of excavation included trenches near the hedged boundary with the road on the ditch alignment suggested by Baker (1969-74, 30). On the north side, a V-shaped ditch *c.* 1.4m wide by 0.8m deep was recorded cut into sands and gravels. On the west side the section of ditch revealed appeared to have possible recutting. A total of ten trenches were cut, none of which produced any dating evidence.

3.5 Aerial photography has also revealed evidence for several prehistoric enclosures and an extensive field system within the immediate area, the latter apparently extending within the development area. It would appear that the cropmarks (fig. 2) define two enclosures together with trackways, field boundaries and paddocks likely to belong to the later prehistoric and Romano-British periods. The series of interconnecting boundaries define an irregular pattern often referred to as 'Celtic Fields'. Although much of the evidence for enclosures and field systems of this type comes from cropmark evidence, there are some examples which survive as earthworks in upland areas such as the Long Mynd. Field systems of this type form part of a crucially important archaeological resource within the region as a whole (Watson and Musson 1993, 23 and 34).

3.6 The Berghill area was the focus of an M.Phil undertaken by M. Roberts and an unpublished report was made available for appraisal. While concentrating mainly on the sites to the north of PRN 935, the report makes general comments about the locality but provides no additional evidence for the development area.

Cartographic Sources

3.7 The 1859 Tithe Map and Schedule for Berghill Township in the Parish of Whittington records the site as apportionment No.19, Horse meadow pasture. The fields to the south (20-21) are first and second Perry meadow in use as pasture and the fields to the west arable land (22-26). The present field boundaries have changed little since 1859, although Keeper's Cottage does not appear on the Tithe Map.

3.8 The 1st edition Ordnance Survey map (1879) records Perry Farm as Upper Berghill. A structure marked as a Kennel appears on the site of Keeper's Cottage, but the continuation of the track is no longer evident. The present field boundaries appear unchanged since this period.

4 AERIAL PHOTOGRAPHIC EVIDENCE

4.1 The aerial photographic collections at CPAT, Welshpool, Shropshire SMR, Shrewsbury (including photographs by Baker and CUCAP) and Wolverhampton University were examined for cropmark evidence relating to the development site and the immediate environs. The latter included aerial reconnaissance undertaken by Dr Gill Barrett and Martin Roberts of Wolverhampton University as part of a survey of the Shropshire area between 1989 and 1993, as well as photographs from the NMR collection.

4.2 The photographs were rectified using AutoCAD12 to produce a series of plots of cropmarks from which a composite plan was produced depicting the extent and nature of the cropmark evidence in the general area (fig. 2) and the development site in particular (figs 3 and 4). A full catalogue of the photographs examined is contained in Appendix 2, although the main sources for the development area itself were as follows: CPAT 86-14-26, 86-MB-807; NMR SJ 3530/37. The plot has been augmented by information from a plot by the Royal Commission on Ancient and Historic Monuments (Swan and Welfare 1995, 167) which was produced using NMR photographs (SJ 3530/37) from 1986, copies of which were viewed at Wolverhampton University during the present study. A comparison of the two plots revealed certain discrepancies which are largely due to the use of different techniques

and differing interpretations of the evidence. The plot by RCAHM appears to have included a number of slight and irregular cropmarks which were considered to be of natural origin when the original photographs were viewed by CPAT. Both plots employed digital rectification and discrepancies in the location of features is likely to be due to differing degrees of accuracy in the respective techniques employed.

4.3 Fig. 3 clearly shows the outline of the Marching Camp (PRN 935), which is defined by a single ditch. An entrance is visible roughly mid-way along the eastern side (fig. 5). The cropmarks revealed no clear evidence for the internal layout of the camp and thus no associated detail within the development area.

4.4 It would appear from the cropmark evidence that the general area is one of considerable archaeological potential of which the Marching camp forms only a part. Of equal significance is the concentration of cropmarks which define several enclosures and an extensive field system noted above. Although the cropmarks indicate intercutting of the marching camp defences and field system ditches, it is not possible to determine a relationship between them from the cropmark evidence alone. That the majority of the evidence is concentrated to the north of the development area may be due to the varying susceptibility of the different fields to the production of cropmarks (fig. 6). From the evidence examined, it would seem that the development area has rarely been photographed under suitable conditions, either due to the nature of the crop or the time of year, whereas the adjacent areas have been recorded under more favourable circumstances.

4.5 In fig 4 the geophysical survey results have been used in preference where the cropmark evidence is comparable, with additional information from the plot of cropmarks by CPAT and RCAHM, the differing techniques being clearly distinguished. Within the development area the cropmark evidence suggests a continuation of the field systems. This takes the form of a series of linear features which may be best interpreted as ditches (C1, C2 and C3) demarcating a series of fields. It is possible that not all the cropmarks identified are of archaeological significance, particularly the less distinct and more random cropmarks, which may be of natural origin (Swan and Welfare 1995, 168). Two of the linear features identified were subsequently found to be modern water pipes (fig. 4).

5 GEOPHYSICAL SURVEY

5.1 A geophysical survey was conducted by Stratascan on 1st November 1996 using a fluxgate magnetometer. The survey was based on a series of 20 x 20m grids with readings at 0.5m centres along traverses 1m apart (i.e. 800 readings per grid). The full results of the survey are presented in Appendix 3, while the following provides a summary of the evidence revealed (fig. 4). The original intention was to survey the entire development area, as specified in the Brief. However, the when the survey commenced, the area had been roughly marked by the client and the surrounding area ploughed and seeded. When this was subsequently compared to the area of the development, it was found that an area *c.* 30 wide had been omitted along the eastern edge. Following consultation with the Head of Archaeology, it was decided that the evaluation should proceed as specified.

5.2 The survey revealed a series of linear anomalies, some of which appear to be intercutting. The best interpretation is that they represent a series of ditches probably associated with enclosures and old field boundaries. The feature identified as M4 appeared to have evidence for a bank along the eastern side. A comparison with the aerial photographic evidence produces a generally good correlation, although there is some discrepancy regarding the precise location of anomalies, which may in some part be due to inaccuracies in the base maps and the aerial photographic plotting.

5.3 It would seem most likely that the linear features revealed during the survey represent part of the field system which has been mapped in some detail further to the north, while the nature of the remaining anomalies is uncertain.

6 TRIAL EXCAVATION

6.1 Following the completion of the aerial photographic study and the geophysical survey a programme of limited trial excavation was undertaken based on their results. Seven trenches were excavated, the size and location of which were determined by the Head of Archaeology, Shropshire Archaeology Service. Excavation of each of the trenches consisted of the removal by machine of modern topsoil and overburden, followed by cleaning, excavation and recording by hand. Each trench was recorded in plan and section as well as by photographic record, details of which appear in the Site Archive (Appendix 4). Numbers in brackets in the following text refer to individual context numbers in the site archive and accompanying illustrations.

Trench A (30 x 1.5m)

6.2 The removal by machine of up to 0.40m of ploughsoil (1) revealed the natural subsoil along the length of the trench. This varied from gritty sand at the west end to sandy silts and gritty gravel at the east end. Two features were identified at the western end of the trench, a modern pipe trench (2) and the edge of a large pit (4) identified by the client as a burial pit for diseased animals.

6.3 The geophysical survey had identified two anomalies crossing the line of the trench. Further investigation revealed irregular clay banding within the natural subsoil which coincided with the position of the anomalies. It would therefore appear that the geophysics was responding to variations in the natural, possibly due to geological features such as ice-wedges or shallow fluvio-glacial channels.

6.4 The geophysical survey and cropmarks had also suggested an irregular, discontinuous linear feature (Fig. 4 M8, M13 and C3), the line of which crossed Trench A. However, no evidence was found for any archaeological or geological feature at this location.

Trench B (30 x 1.5m)

6.5 Removal of up to 0.35m of ploughsoil (6) revealed a layer of mixed gravely loam (7) up to 0.12m thick which was also removed by machine onto the surface of the natural subsoil which varied from gravely silts at the west end to sandy silts at the east end. Cleaning of the trench revealed no evidence for any archaeological features. Cropmark evidence had suggested the presence of an irregular linear feature crossing the trench, but no evidence for such was found within the area investigated.

Trench C (30 x 1.5m)

6.6 Removal of up to 0.30m of ploughsoil (8) revealed the surface of the natural subsoil which varied from gritty sand at the west end to gravely silts at the east end. The cropmark and geophysical survey evidence suggested two linear features crossing the trench. Cleaning and further excavation by hand revealed no evidence for the western anomaly, while the eastern feature was found to be a substantial ditch (9) crossing the trench from north to south (fig. 7). The ditch, which was up to 2.10m wide and 0.65m deep, was cut into the natural gravels. The profile of the ditch presented a steep western edge with rounded base and shallower eastern side. The fills suggest a period of natural silting before the feature was subject to a shallow recut (21) following the western edge of the feature, the fill of which produced a single small sherd of undated pottery in a very sandy fabric. An earlier recut may be suggested by the profile of layer 10. An irregular subcircular feature (11) on the eastern side of the recut may be the base of a posthole, or possibly animal disturbance. The feature, which was up to 0.28m across and survived to 0.19m below the surface of the natural, was partly cut into the fill of the earlier ditch. A small flint flake was recovered from the fill.

6.7 The geophysical survey had identified this feature (M4) as having a possible bank along the eastern side. It would seem likely that this pattern was reflecting the difference between the recut, which appeared as the linear anomaly, and the original fills, which were interpreted as the bank.

Trench D (30 x 1.5m)

6.8 Up to 0.35m of ploughsoil (13) and an underlying layer of gravely loam (14) up to 0.10m thick were removed by machine onto the surface of the natural sands and gravels. The geophysical survey had identified two linear anomalies crossing the trench. Further investigation revealed the western anomaly to be a band of natural clay within the surrounding gravel subsoil. The eastern anomaly was found to be an irregular band of natural silty-clay, possibly filling a fluvio-glacial channel. No evidence was found for any archaeological features

Trench E (30 x 1.5m)

6.9 Removal of up to 0.35m of ploughsoil (15) revealed a layer of mixed gravely loam (19) up to 0.14m thick which was also removed by machine onto the surface of the natural subsoil which varied from gravel to sandy silts and gritty sand. No archaeological features were identified although a band of fine sandy grit was investigated and box-sectioned, after which it was determined to be natural.

Trench F (30 x 1.5m)

6.10 Up to 0.35m of ploughsoil (16) was removed by machine onto the surface of the natural, which varied from sandy silts and clays to fine grit and gravel. Following cleaning by hand, no evidence was revealed for any archaeological features within the trench.

Trench G (30 x 1.5m)

6.11 Removal of up to 0.35m of ploughsoil (17) revealed a layer of mixed gravely loam (18) up to 0.12m thick which was also removed by machine onto the surface of the natural subsoil which varied from sandy silts to gravel and gritty sand. The geophysical survey and cropmark evidence had suggested an anomaly towards the western end of the trench. Further investigation revealed this to be a band of natural silty-clay. Two other possible features were box-sectioned, but subsequently revealed to be variations in the natural. The eastern box section was excavated across a possible feature indicated by a band of fine grit. When compared to the cropmark evidence (Fig. 4), this would appear to coincide with a projection of the line of cropmark feature C1, and may therefore indicate that this feature too is of natural origin. No evidence was found for any archaeological features within the trench.

7 THE FINDS

7.1 The excavations produced a very small assemblage of artefacts, most of which came from either ploughsoil or disturbed subsoil. The only stratified finds consisted of a single sherd of undated pottery from the fill of the ditch recut (21) and a flint flake from an adjacent possible posthole (11), both in Trench C.

7.2 A small burnt flint flake was recovered from Trench G, while a further unburnt fragment came from Trench E. Two sherds of a possible Roman flagon in a sandy buff fabric were recovered from Trench E, while Trench A produced a single undiagnostic sherd of possible Roman date.

7.3 A total of five sherds of likely medieval pottery were recovered, none of which proved particularly diagnostic. Three sherds of post-medieval pottery were recovered from Trenches C and G.

8 CONCLUSIONS

8.1 The development site lies within the Roman Marching Camp PRN 935 (Fig. 8), in an area generally rich in cropmark features which appear to represent a series of enclosures and field systems.

8.2 The Marching Camp is one of 130 such temporary camps now identified in England (Swan and Welfare 1995), with a further 26 examples known in Wales (Ordnance Survey 1991). The covers 15.3ha, with the development site occupying 1.3ha within the interior (8.5% of the area). The line of the defences shows well from cropmark evidence and is not affected by the proposed development. While the camp is clearly of archaeological significance, it is considered that the proposed development would have only a limited impact on the archaeological resource due to its position within the interior. The temporary nature of such camps and the strict arable regime which has been employed during recent times obviously affects the degree of survival for any features associated with the camp. The evaluation indicated ground disturbance up to a depth of *c.* 0.50m, and produced no physical evidence for any features associated with the camp.

8.3 The evaluation has produced varying evidence for the field systems within the development area. While the existence of one linear ditch (context 9, M4, C2), which may best be interpreted as a field boundary, has been confirmed, other features identified both as cropmarks and by the geophysical survey have been found to be of natural origin. The ditch fits into the general pattern of north-south linear features previously identified as cropmarks and may include two other parallel features within

the development area not directly tested by excavation (figs 4 and 8). A linear cropmark 50m to the north-east (C1) may be part of the same system, as may a second feature 53m to the south-west (M8, M13 and C3), although this is slightly irregular and discontinuous, with no evidence for a continuation in Trenches A. A feature investigated in Trench G coincided with a projected extension of C1, but was found to be of natural origin.

8.4 The dating of these features remains uncertain as the evaluation only produced a single undiagnostic sherd from a recut of the ditch. Although it has been generally assumed that these features are part of a prehistoric or Romano-British field system, no direct comparisons could be found. Their apparently regular linear form is not typical of the 'Celtic fields', which are mostly of irregular size and shape, which may suggest a second possibility, that they may be part of a medieval strip field system. Further excavation would be needed to determine their likely dating.

9 RECOMMENDATIONS

9.1 The evaluation produced evidence that modern cultivation has disturbed the ground up to a depth of *c.* 0.50m, below which any archaeological features might be expected to survive. Depending on the nature of groundworks associated with the development, there may therefore be no significant implication for the archaeological resource.

9.2 Although the cropmark and geophysical survey evidence appeared to indicate considerable archaeological potential within the area of the proposed development the subsequent excavations have indicated that the majority of the anomalies appear to be of natural origin. Within the areas investigated, no evidence was found for features associated with the marching camp and only a single ditched feature of uncertain date was identified which might be associated with the field system.

9.3 Should groundworks exceed the depth of cultivation, it is therefore recommended that the future management of the archaeological resource should ensure the preservation of the ditched feature by record. This should be achieved by further excavation of a representative sample of the feature in order to provide a clearer indication of its likely dating, function and form. A section across the parallel cropmark features C1 and C3 may also be considered to confirm their nature and ascertain any likely association with the supposed field system, although negative evidence from Trenches A and G might be considered to argue against their being of archaeological significance. It should be considered preferable to conduct this work prior to other groundworks commencing.

10 ACKNOWLEDGEMENTS

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CARTOGRAPHIC SOURCES

1859 Tithe Map and Schedule. Berghill Township in the Parish of Whittington (SRRC 32)

1879 (survey) Ordnance Survey First Edition 1:2500 map. Shropshire Sheet XII.16

APPENDIX 1

GAZETTEER OF BERGHILL CROPMARKS IN CLOSE PROXIMITY TO THE DEVELOPMENT SITE: (SOURCE SHROPSHIRE SMR)

PRN 935 Perry Farm Marching Camp SJ 3525 3025

Roman Marching Camp included in RCHME list of Roman Camps in England. Identified as cropmark on APs; partially excavated 1972. Crossed by linear features.

PRN 934 Berghill Cottages N Rectangular Enclosure SJ 3520 3090

Single ditched rectangular enclosure with south-east entrance with slightly oval shaped enclosure ditched enclosure adjoining its north-west corner. Suggested Iron Age date. Located on APs with possible field systems.

PRN 1297 Rectangular Enclosure SJ 348 305

Small ditched rectangular enclosure identified on APs in close proximity to the excavated north-west corner of PRN 9035. Suggested Iron Age date.

PRN 2113 Berghill Cottages NE Enclosures/Field System SJ 353 312

Circular enclosure and Celtic field system lying east of a rectangular enclosure. Suggested Iron Age or Romano-British date for enclosure. Identified as cropmarks.

PRN 2114 Enclosure SJ 358 303

Cropmark of sub-rectangular enclosure of suggested Iron-Age or Romano-British date.

PRN 2157 Enclosure/Linear feature SJ 3430 3072

Cropmarks of rectangular enclosure with south-west entrance and a linear feature to the west of it. Suggested Iron Age or Romano-British date.

PRN 2164 Berghill Cottages Enclosures and Field System SJ 3510 3060

Cropmarks of field system of unknown date with square enclosure on the east side and polygonal enclosure on the west of possible Iron Age or Romano-British date.

PRN 2165 Rectangular Enclosure ? SJ 3560 3080

Rectangular ditched enclosure of unknown date, identified as cropmarks of two ditches at right angles to each other.

PRN 4007 Field System SJ 3495 3110

Identified on APs. Of unknown date.

APPENDIX 2

AERIAL PHOTOGRAPHS

BAKER, A.	14/137, 18/137, 19/137, 24/137, 25/137
BARRETT, G.	GB/90/1/B06 GB/90/2/C15-30 GB/90/3/G1, 3, 5 GB/90/4/14-23 GB/93/1/35-37 GB/14791/26-31 GB/20/11/88
CPAT	CPAT 79/CE/29-33 CPAT 79/6/8-13 CPAT 79/21/32-3 CPAT 82/C/24-30, 35, 100, 202-209, 122-124, 126 CPAT 83/C/336-7 CPAT 84/28/8, 10 CPAT 85/14/23 CPAT 86/14/23-29, 31 CPAT 86/MB/801- 811 CPAT 88/C/26-27, 61-64 CPAT 88/20/15-18 CPAT 88/MB/339 CPAT 87/MB/736 CPAT 90/MB/762-764, 794-798, 800-804, 967-8, 1183 CPAT 90/C/123, 126-130, 141-4, 152-3, 309-312 CPAT 92/C/526
CUCAP	AZO8, AZO14, AZO20, BTV055, BTV057, BTV060, BQX070
NMR	SJ3530/37/1071, 1074-5, 1077, 1081, 1098
ROBERTS, M.	MR/90/1/10-12, 90/12/19, 24-27 MR90/03BW/39-43 MR90/12/19-31 JUL 88-1

APPENDIX 4

SITE ARCHIVE

Site Data
23 Context Record Forms
1 A1 site plan
3 A4 site plans/sections
EDM survey including trench locations, plans and levels
3 negative films, prints and contacts
2 slide films
Photographic catalogue
Geophysical Survey Report
Aerial Photographic Archive
SMR printout
Correspondence

Finds
Trench A
1 sherd ? Roman redware in sandy fabric, 12g. Context 1

Trench B
1 sherd undated pottery in sandy fabric, 1g, Context 7

Trench C
1 sherd undated pottery in sandy fabric, 1g. Context 22
1 sherd undated pottery in sandy fabric, 4g. Context 8
1 sherd Stoneware, 18g. Context 8
1 flint flake. Context 12

Trench D
2 sherds ?medieval pottery in sandy fabric, 10g. Context 14
1 rim sherd medieval pottery in sandy fabric, 2g. Context 14

Trench E
2 sherds of ?Roman flagon in sandy buff fabric, 6g. Context 19
1 sherd of ?medieval pottery in reduced fabric, 4g. Context 19
1 sherd of slipware, 3g. Context 19

Trench G
1 burnt flint flake. Context 18
2 sherds post-medieval Buckley type ware, 38g. Context 18

APPENDIX 5

PERRY FARM, WHITTINGTON, SHROPSHIRE
SPECIFICATION FOR AN ARCHAEOLOGICAL ASSESSMENT
BY CLWYD-POWYS ARCHAEOLOGICAL TRUST

1 Introduction

1.1 The proposed development of a block of land at Perry Farm, Whittington, Shropshire, involves the construction of four poultry houses on land which is currently in use as arable (Planning Application No. 96/9458).

1.2 The development area lies within a known Roman marching camp (SA935) with crop mark evidence for earlier prehistoric activity on the same site.

1.3 The Shropshire Archaeology Service in their capacity as advisors to the county Planning Dept have determined that an archaeological evaluation is necessary to assess the implications of the proposed development on the archaeological resource. Accordingly, a brief has been prepared by Shropshire Archaeology Service which describes the scheme of archaeological works required.

2 Objectives

2.1 The objectives of the assessment are:

2.1.1 To locate any archaeological features and deposits within the study area.

2.1.2 to assess the survival, quality, condition, and significance of the archaeology within the area of the proposed development in so far as these aims are possible;

2.1.3 to prepare a report outlining the results of the evaluation and incorporating sufficient information on the archaeological resource for a reasonable planning decision to be taken regarding the archaeological provision for the area affected by the proposed development;

2.1.4 to identify and recommend options for the management of the archaeological resource, including any further archaeological provision where necessary

3 Methods

3.1 The Assessment will comprise two stages, the latter being dependent on the results from the first.

3.1.1 Stage One of the assessment will involve a desk-based examination of all the readily available aerial photographic sources, which will be used to produce a composite plan of the archaeological features within the study area. Rectification of the photographs will be undertaken using AutoCAD12. Where considered appropriate, a documentary search will be undertaken to provide further background to the study and assist in the undertaking of the other objectives.

3.1.2 Following on from the aerial photographic study, a geophysical survey will be conducted of the whole development area. This will be undertaken by Stratascan, an experienced firm of geophysical surveyors. A magnetometer survey will be employed to provide details of subsurface archaeological remains, which, together with information from aerial photographic sources will be used to compile a detailed plan of the known archaeological resource.

3.1.3 The results from the aerial photographic study will be assessed by the Head of Archaeology, Shropshire Archaeology Service, and if they are considered to provide sufficient information on

which to base further decisions regarding the assessment then a decision may be taken to withdraw the geophysical survey element from the assessment. Any such decision will be the sole responsibility of the Head of Archaeology, following appropriate consultation with CPAT and the client.

3.2 Following on from Stage 1, and dependent on its results, a programme of limited excavation will be undertaken to further evaluate the archaeological resource. The number, size and location of any excavation trenches will be agreed in advance with the Head of Archaeology, Shropshire Archaeology Service, but will not exceed 5% of the total study area. Where required these will be taken to a maximum depth of 1.2m below the existing ground surface. Consultation with the client and the curator will be necessary before this depth is exceeded.

3.3 The evaluation will be limited to the top of significant archaeological deposits, and will be undertaken using standard evaluation procedures:

3.3.1 removal of modern overburden by machine;

3.3.2 evaluation of the archaeological deposits by hand trowelling to establish their importance and integrity, but avoiding any unnecessary disturbance of the deposits. All features encountered will be examined as fully as appropriate to fulfil the requirements of the evaluation and within the constraints imposed by time and safety considerations.

3.3.3 all archaeological contexts recorded using the standard numbered context system employed by CPAT. All significant contexts to be planned and/or drawn in section at appropriate scales (as defined in the Curatorial Brief), and photographed in monochrome and colour. All drawn records will be related to control points depicted on modern maps.

3.3.4 all archaeological artefacts and environmental samples recorded and processed in a manner appropriate to the material involved. Those requiring conservation or other specialist treatment will be stored in a stable environment until such times as they can examined by a specialist. All finds, except those deemed to be Treasure Trove, are the property of the landowner. It is anticipated that they will be donated to the appropriate local or regional museum, subject to agreement being reached with the landowner and the museum curator.

3.4 Following the on-site work an illustrated and bound report will be prepared according to the principles laid out in the Curatorial Brief (section 4). This will be in A4 format and contain conventional sections on: Site location, Topography and Geology; Historic Background; Excavation; Conclusions and Recommendations and References, together with appropriate appendices on archives and finds.

3.5 The site archive will be prepared to specifications laid out in Appendix 3 in the Management of Archaeological Projects (English Heritage, 1991).

4 Resources and Programming

4.1 The desk-based study will be undertaken by a member of CPAT's staff experienced in the techniques required. Any excavation will be undertaken by a small team of skilled archaeologists under the direct supervision of an experienced field archaeologist, who will also be responsible for producing the final report. Overall supervision will be by Dr A Gibson, a senior member of CPAT's staff who is also a member of the Institute of Field Archaeologists.

4.2 All report preparation will be completed by the same field archaeologist who conducted the evaluation.

4.3 It is anticipated that the desk-based study will take no more than 4 days to complete, while the geophysical survey should be completed within one day. Any subsequent excavation may take up to 10 days. The subsequent report would be prepared immediately thereafter, dependent on the client's instructions and the arrangement of a suitable timetable. At the time of writing the earliest

start date would be 24th October for the desk-based assessment and 1st November for the geophysical survey. However, the date of commencement has yet to be agreed with the client. The archaeological curator will be informed of the detailed timetable and staffing levels when agreement has been reached with the client.

4.4 Requirements relating to Health and Safety regulations will be adhered to by CPAT and its staff.

4.5 CPAT is covered by appropriate Public and Employer's Liability insurance, as well as Professional Indemnity Insurance.

N.W.Jones
22nd October 1996

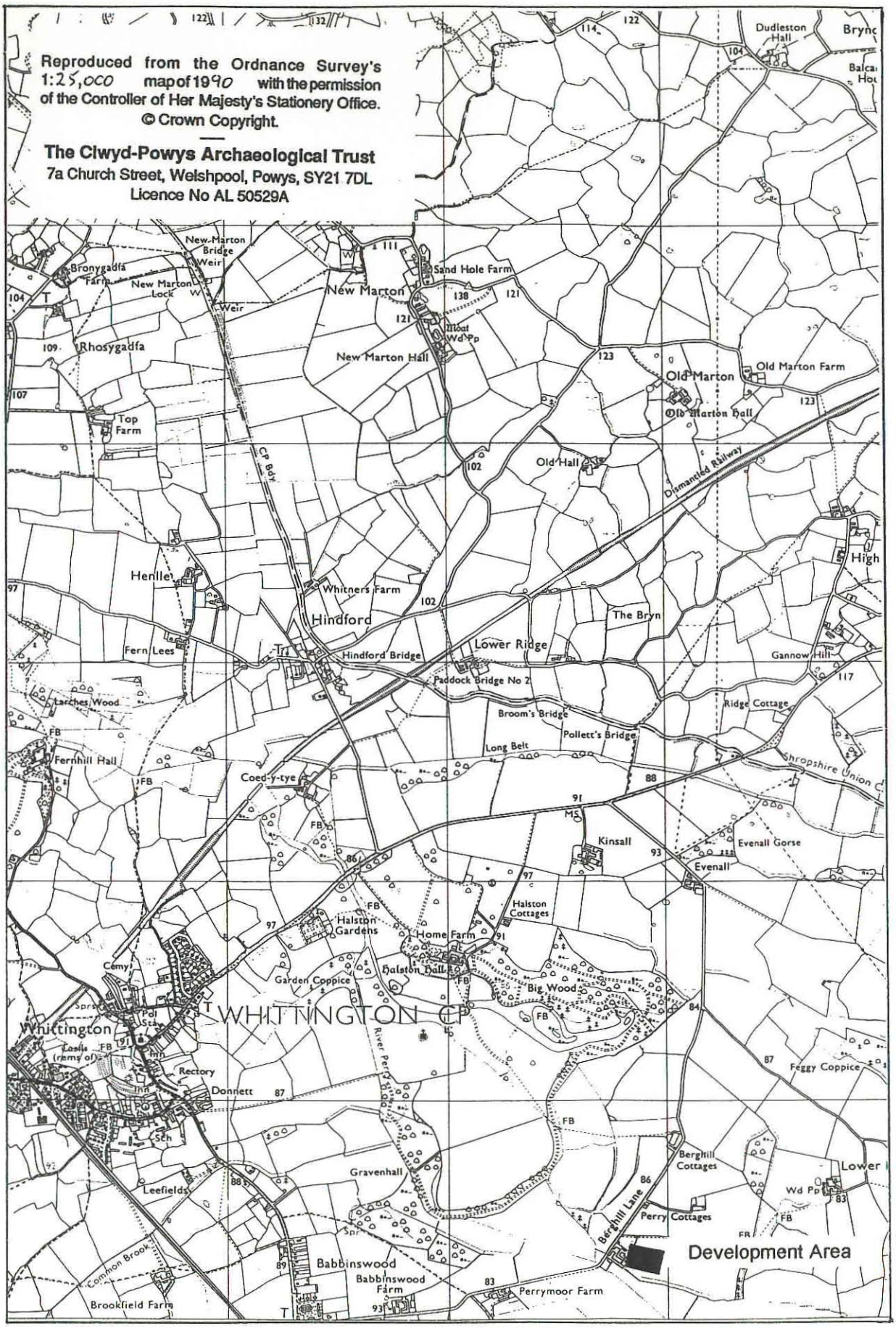


Fig. 1 Location 1:25,000

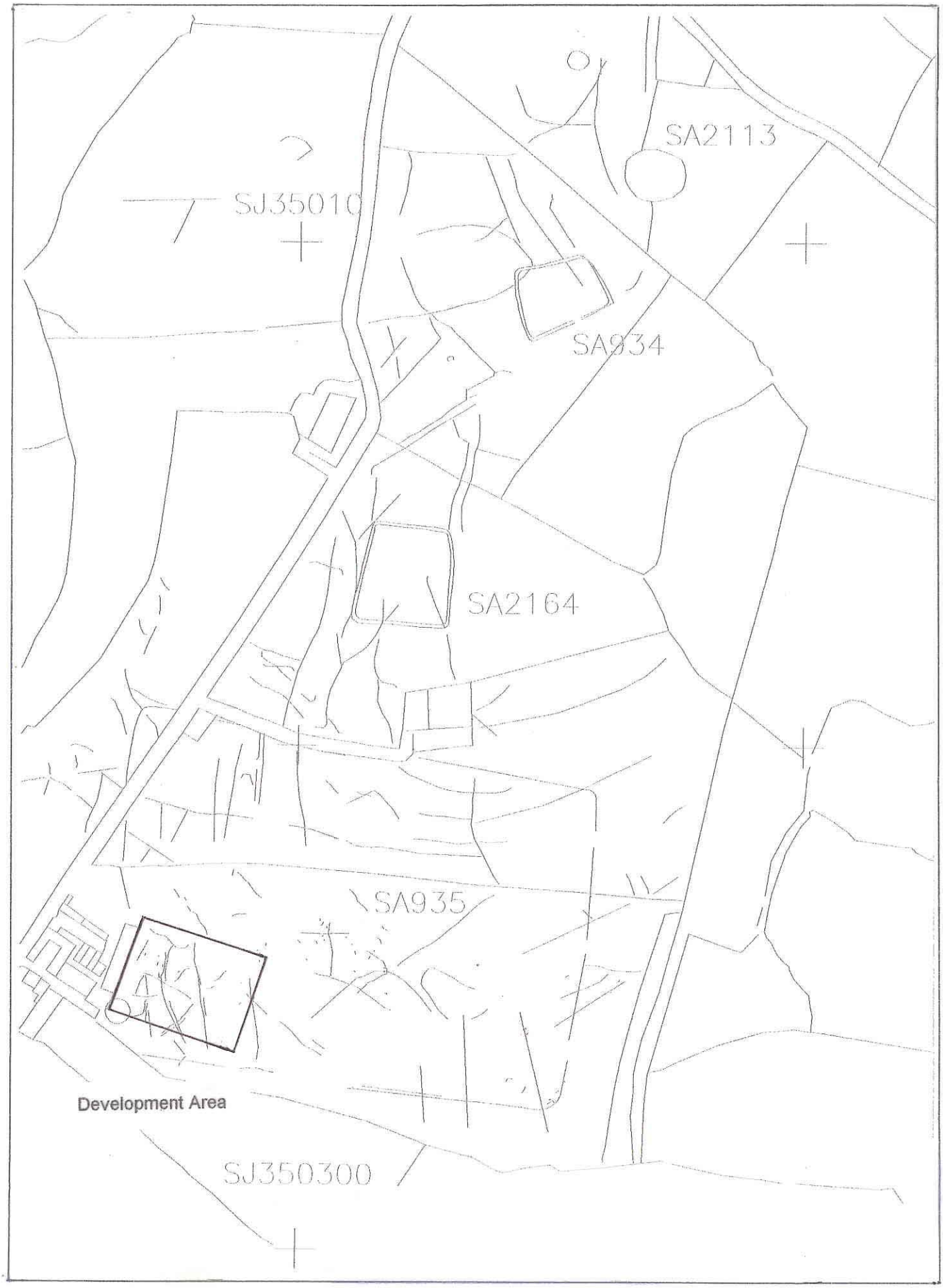


Fig. 2 Cropmark evidence within the general area 1:5,000

Fig. 3 Roman Marching Camp and other cropmark features within the immediate area 1:2,500

CPAT APs

RCAHM APs

GEOPHYSICS

TRENCHES

Development Area

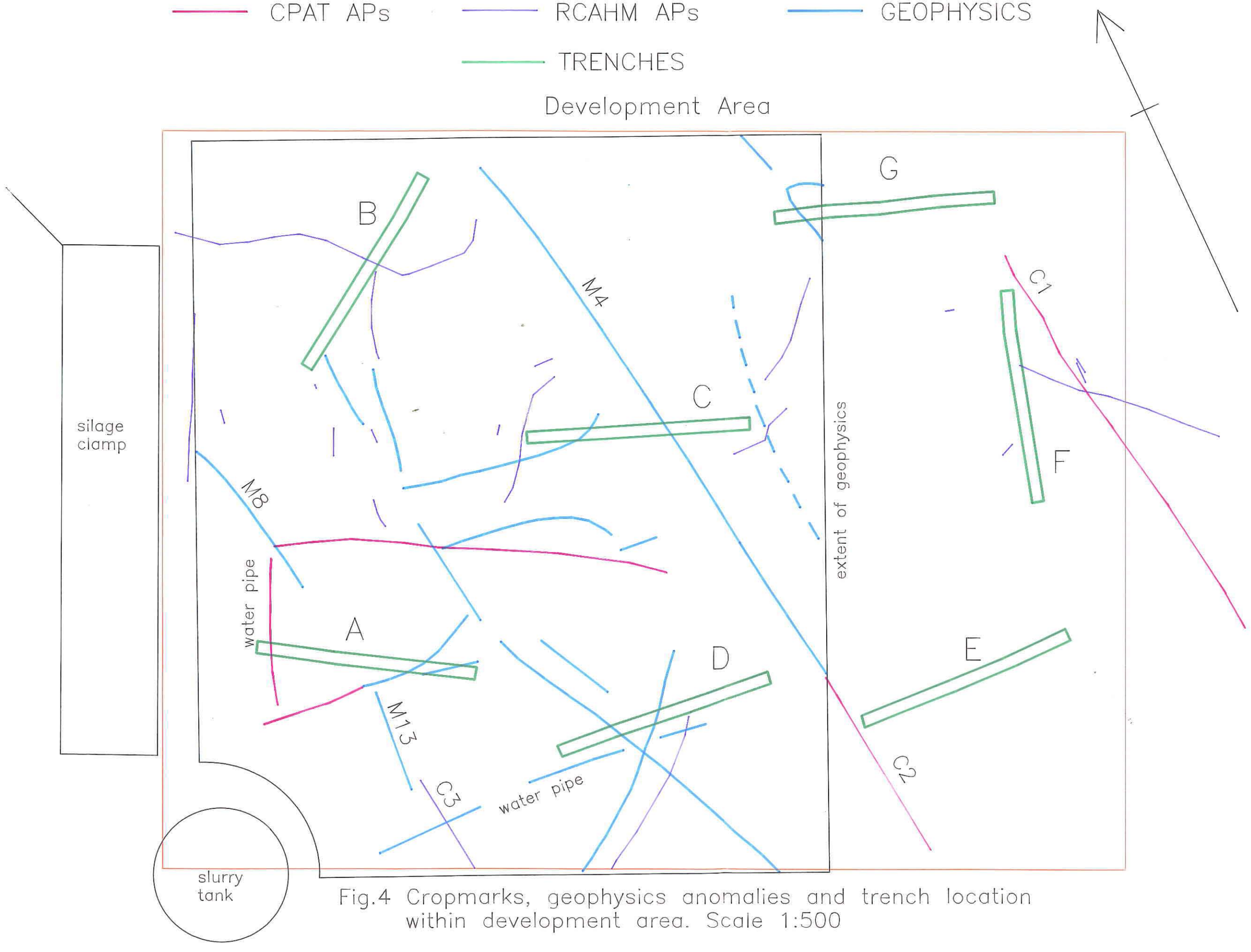


Fig.4 Cropmarks, geophysics anomalies and trench location within development area. Scale 1:500

86-14-26

Fig. 5 Aerialview of Perry Farm from east. Photo CPAT 86-14-26

Fig. 6 Aerial view of Perry Farm from south-west. Photo CPAT 86-MB-807

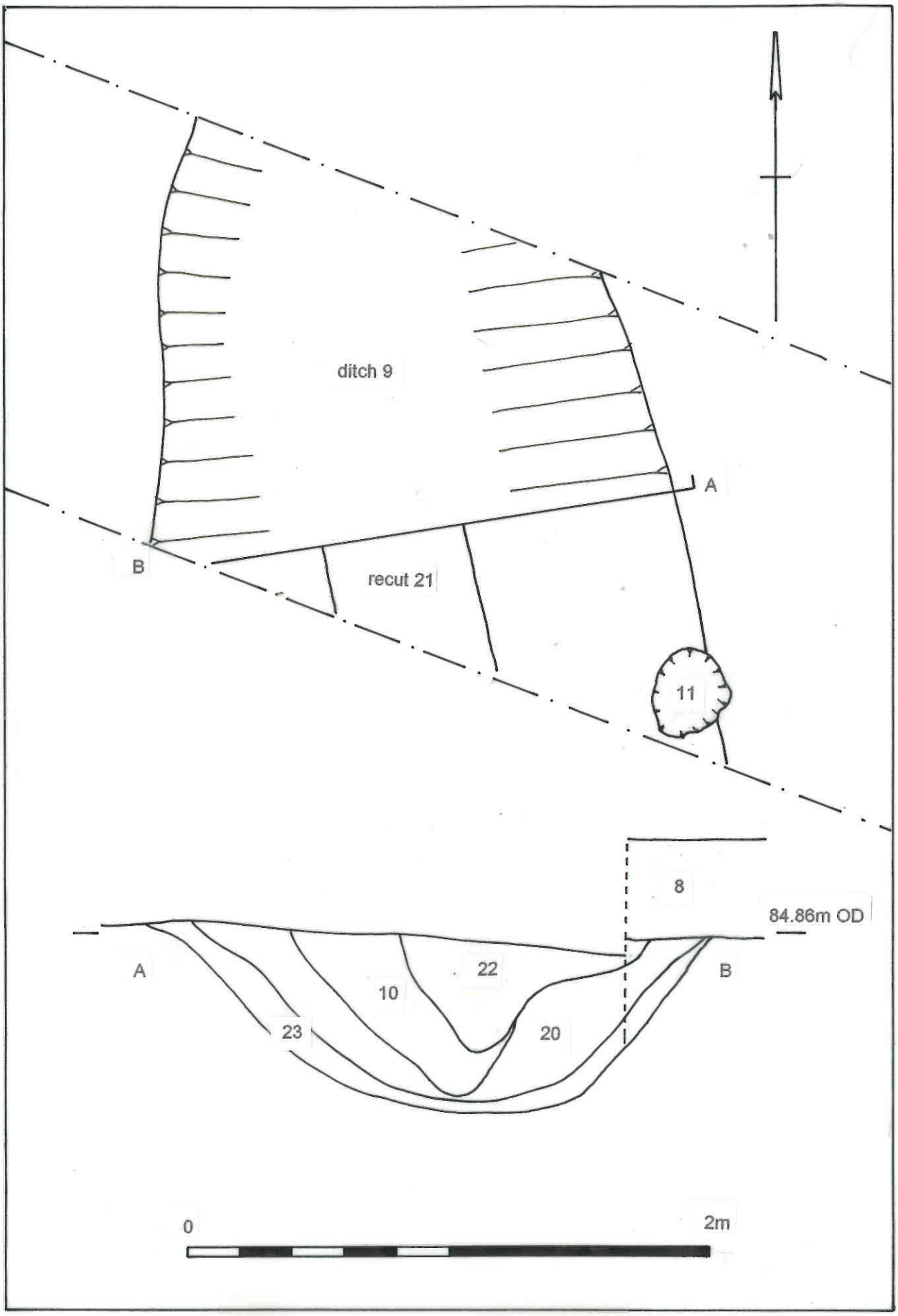


Fig. 7 Ditch 9 plan and section, 1:20

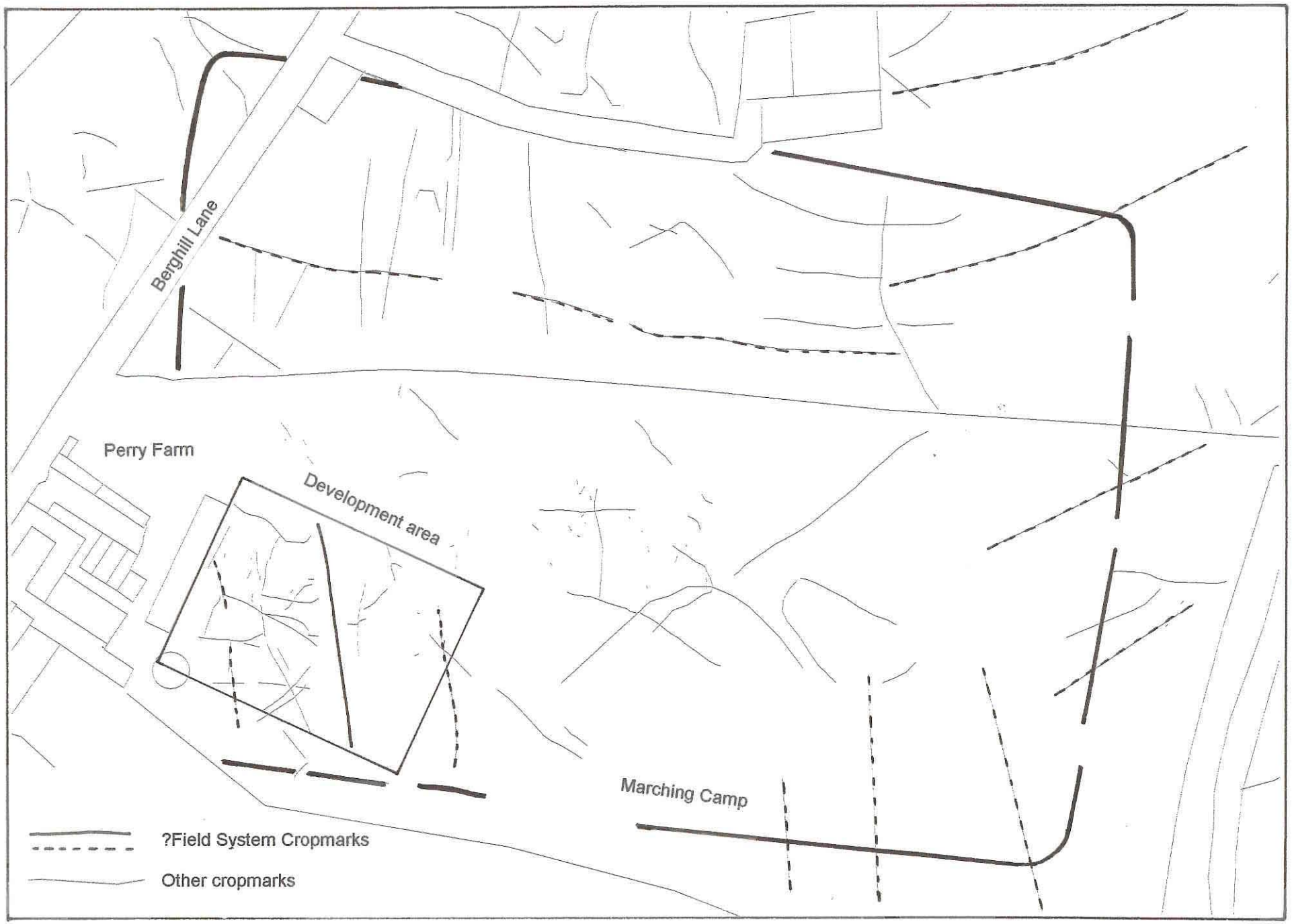


Fig. 8 The Archaeological Resource within the immediate area 1:2,500

A Report for

CLWYD-POWYS ARCHAEOLOGICAL TRUST

on a

Geophysical Survey

carried out at

PERRY FARM, WHITTINGTON

November 1996

Author P P Barker C.Eng MICE MIWEM AIFA

CONTENTS

1 SUMMARY OF RESULTS

The survey has found a series of rectilinear and curvilinear features all of which have the appearance of ditches associated with enclosures and old field boundaries. Some correlate with the crop marks identified from aerial photographs, however, there appears to be a discrepancy between the two plots both rotational and in translation. Several crop mark features were not seen by the geophysics and, in addition, some linear features have been found by the survey which are not apparent in the crop mark plots.

2 INTRODUCTION

2.1 Site location

The site is centred on OS Ref. SJ 348 303, approximately 5.5km east of Oswestry.

2.2 Site description and history

The site is level and the land use at the time of the survey was set-aside. The field around the survey area had been recently ploughed. There is a proposal to develop the site for poultry houses.

The soils are deep well drained sandy and coarse loamy soils derived from Glaciofluvial drift. However, immediately to the south of the survey area the soils change to deep stoneless fine silty and clayey soils derived from River alluvium.

Aerial photographs have identified various crop marks within and around the survey area, which have been interpreted as a marching camp and a prehistoric field system. These have been reproduced in Figures 4 and 5. The development area lies within the south west corner of the marching camp.

2.3 Survey objectives

The objective of the survey was to investigate the site for features associated with both the field system and the interior of the marching camp.

2.4 Survey methods

The technique of magnetometer was used for this survey, and is described in more detail below.

3 METHODOLOGY

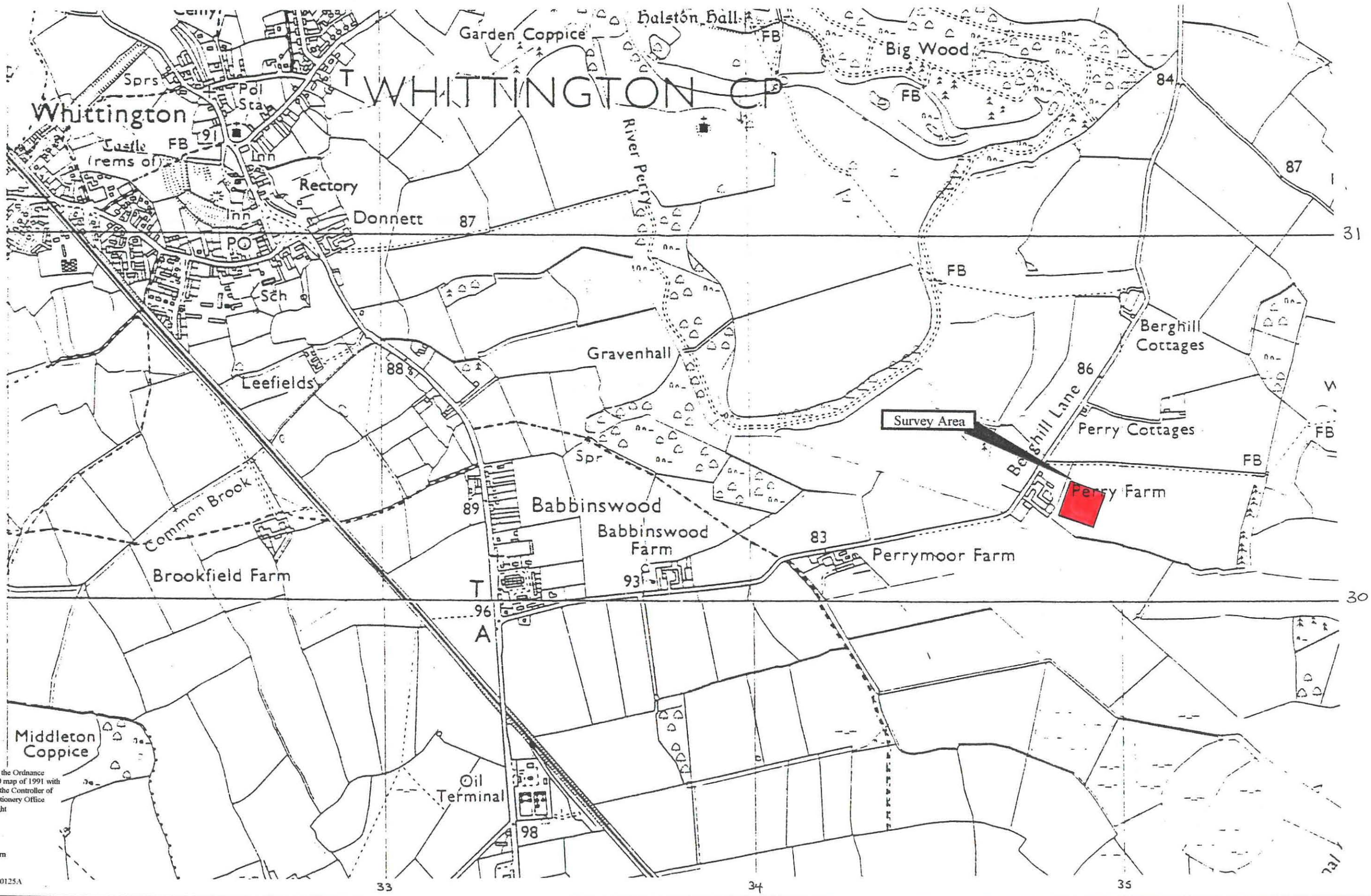
3.1 Dates of fieldwork

The site work was carried out on Friday 1st November 1996.

3.2 Grid locations

The referencing for the survey grids has been plotted onto Figure 3.

Date November 1996	Client CLWYD-POWYS ARCHAEOLOGICAL TRUST	STRATASCAN
Scale 1:50 000	Subject Geophysical Survey Perry Farm, Whittington General Location Plan	TILTRIDGE FARM UPPER HOOK ROAD UPTON UPON SEVERN WORCESTERSHIRE WR8 0SA UK TELEPHONE (01684) 592266 FAX (01684) 594142
Figure 1		



Date November 1996	Client CLWYD-POWYS ARCHAEOLOGICAL TRUST	Figure 2	
Scale 1:10 000	Subject Geophysical Survey - Perry Farm, Whittington Detailed Location Plan		

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3.3 Description of techniques and equipment configurations

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. Readings relate to the difference in localised magnetic anomalies compared with the general magnetic background.

3.4 Sampling interval, depth of scan, resolution and data capture

3.4.1 *Sampling interval*

Readings were taken at 0.5m centres along traverses 1m apart. This equates to 800 sampling points in a full 20m x 20m grid. All traverses are surveyed in a "parallel" rather than "zigzag" mode.

p

3.4.2 *Depth of scan and resolution*

The FM36 has a typical depth of penetration of 0.5m to 1.0m. This would be increased if strongly magnetic objects have been buried in the site. The collection of data at 0.5m centres provides an optimum resolution for the technique.

3.4.3 *Data capture*

The readings are logged consecutively into the data logger which in turn is daily down-loaded into a portable computer whilst on site. At the end of each job, data is transferred to the office for processing and presentation.

3.5 Processing, presentation of results and interpretation

3.5.1 *Processing*

Processing is performed using specialist software known as *Geoplot 2.* This 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 further processing which may include low pass filtering to reduce 'noise' in the data and hence emphasise the archaeological or man-made anomalies..

The following schedule shows the basic processing carried out on all processed magnetometer data used in this report:

Zero mean grid	*Threshold = 0.25 std. dev.*
Zero mean traverse	*Last mean square fit = off*
Despike	*X radius = 1 Y radius = 1*
	Threshold = 3 std. dev.
	Spike replacement = mean

3.5.2 *Presentation of results and interpretation*

The presentation of the data for each site involves a print-out of the raw data both as grey scale and trace plots, together with grey scale plots of the processed data, and, if appropriate, after further processing to emphasise various aspects within the data. Magnetic anomalies have been identified and plotted onto the 'Abstraction of Magnetic Anomalies' drawing for the site (Figure 11), numbered for ease of reference and prefixed with the letter 'M'.

4 RESULTS

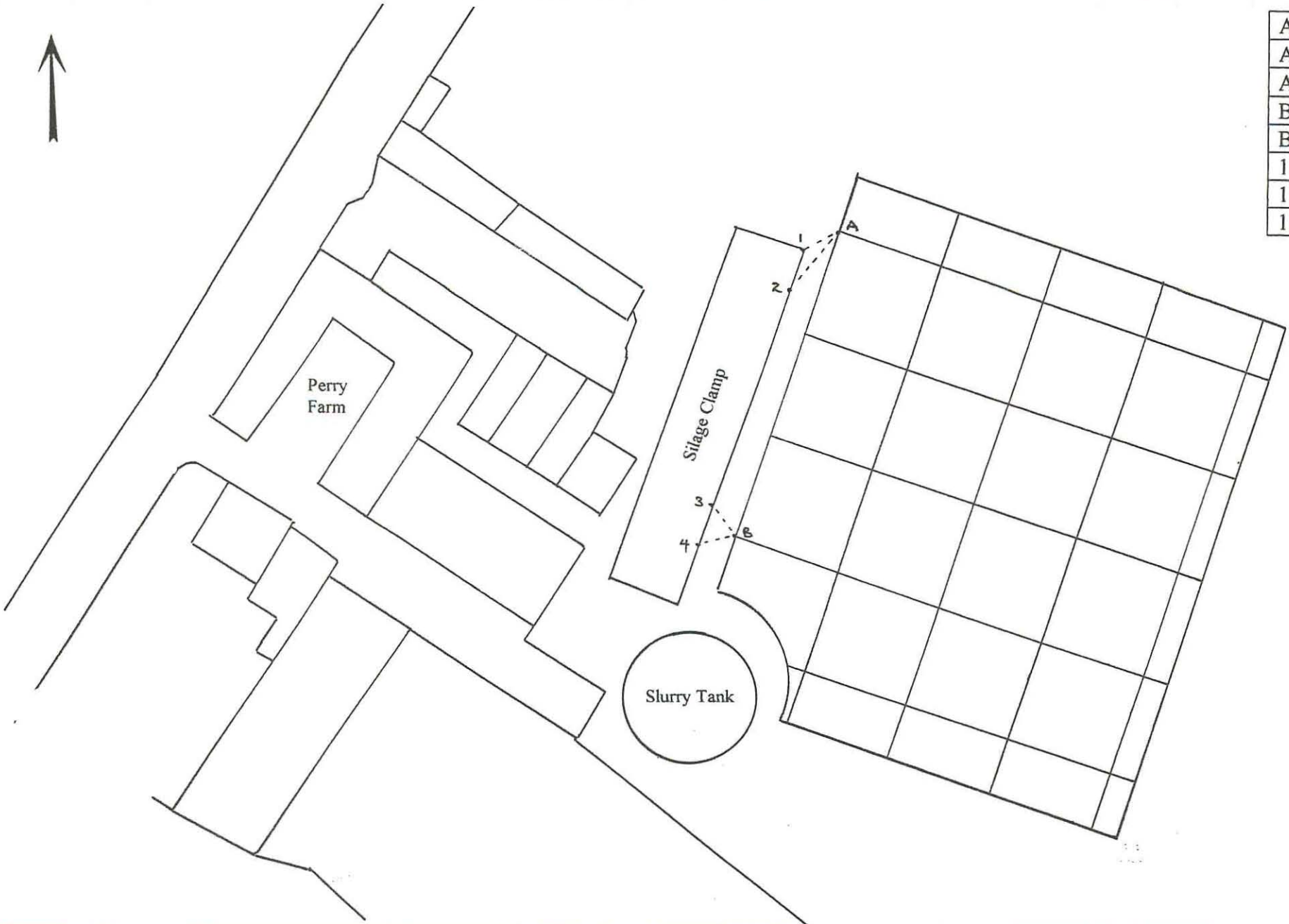
The survey has found a number of magnetic anomalies both rectilinear and curvilinear in form. In particular, M2, M4, M10, M15 (with M9 and M6) and M17 show up very clearly. Across the site, running east to west, are a series of parallel rectilinear anomalies which are interpreted as being ploughlines from modern cultivation.

Figure 12 is a composite plot showing the results of the geophysical survey overlain onto the crop mark plots using the referencing of the silage clamp as shown in Figure 3. This shows a reasonable correlation between the two but there is an apparent positional problem. By rotating the crop marks 5^0 anticlockwise and shifting them 5m south a much better fit is achieved (see Figure 13). Notably M4, M10, M17, M6 (with M9 and M15), M12 and M13 match well with the crop mark positions. Also of interest are M1, M2, M3, M7 and M8 which are not seen as crop marks.

Several features have been picked out in Figure 11 which may be archaeological or which may be no more than the ploughlines mentioned above. These features include M8 (with M19), M20, M11, M14 and M5. There is evidence for a weak bank on the eastern side of the rectilinear ditch M4.

5 CONCLUSIONS

Most of the features found by the geophysics look like cut ditches probably associated with enclosures and old field boundaries. Some of the east to west features may have been confused with the cultivation marks on the site and it is suggested that these are tested by excavation.



A - B	60m
A - 1	7.22m
A - 2	13.92m
B - 3	7m
B - 4	6.52m
1 - 2	7.85m
1 - 3	50.43m
1 - 4	58.35m

Date November 1996	Client CLWYD POWYS ARCHAEOLOGICAL TRUST	Figure 3	
Scale 1:1000	Subject Geophysical survey - Perry Farm Whittington Plan showing survey grids and their referencing		

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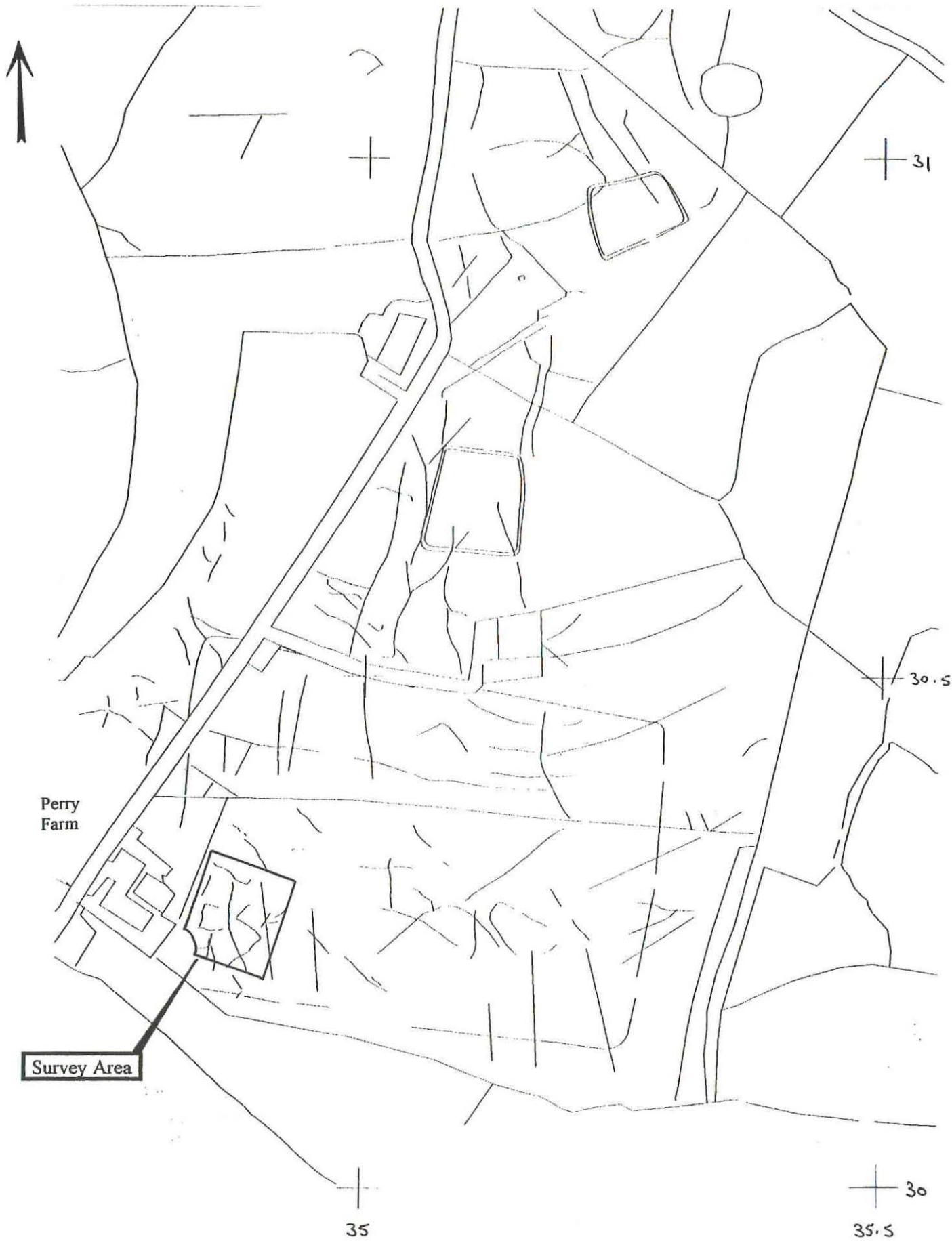
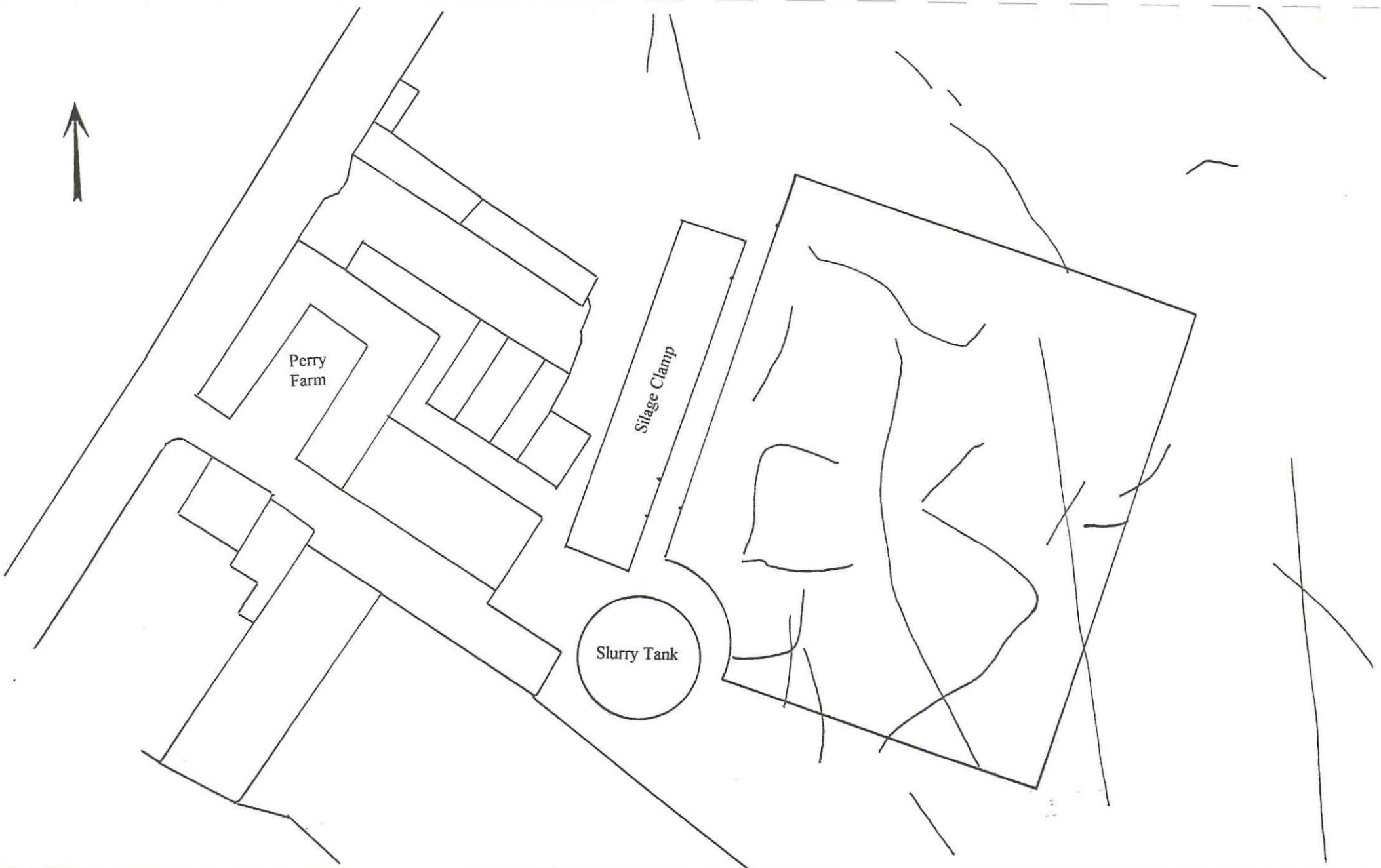


Date November 1996	Client CLWYD POWYS ARCHAEOLOGICAL TRUST	STRATASCAN
Scale 1:5000	Subject Geophysical survey Perry Farm Whittington Plan showing crop mark features identified from aerial photographs	TILTRIDGE FARM UPPER HOOK ROAD UPTON UPON SEVERN WORCESTERSHIRE WR8 0SA UK TELEPHONE (01684) 592266 FAX (01684) 594142
Figure 4		



Date November 1996	Client CLWYD POWYS ARCHAEOLOGICAL TRUST	Figure 5	
Scale 1:1000	Subject Geophysical survey - Perry Farm Whittington Plan showing survey grids in relation to crop marks		

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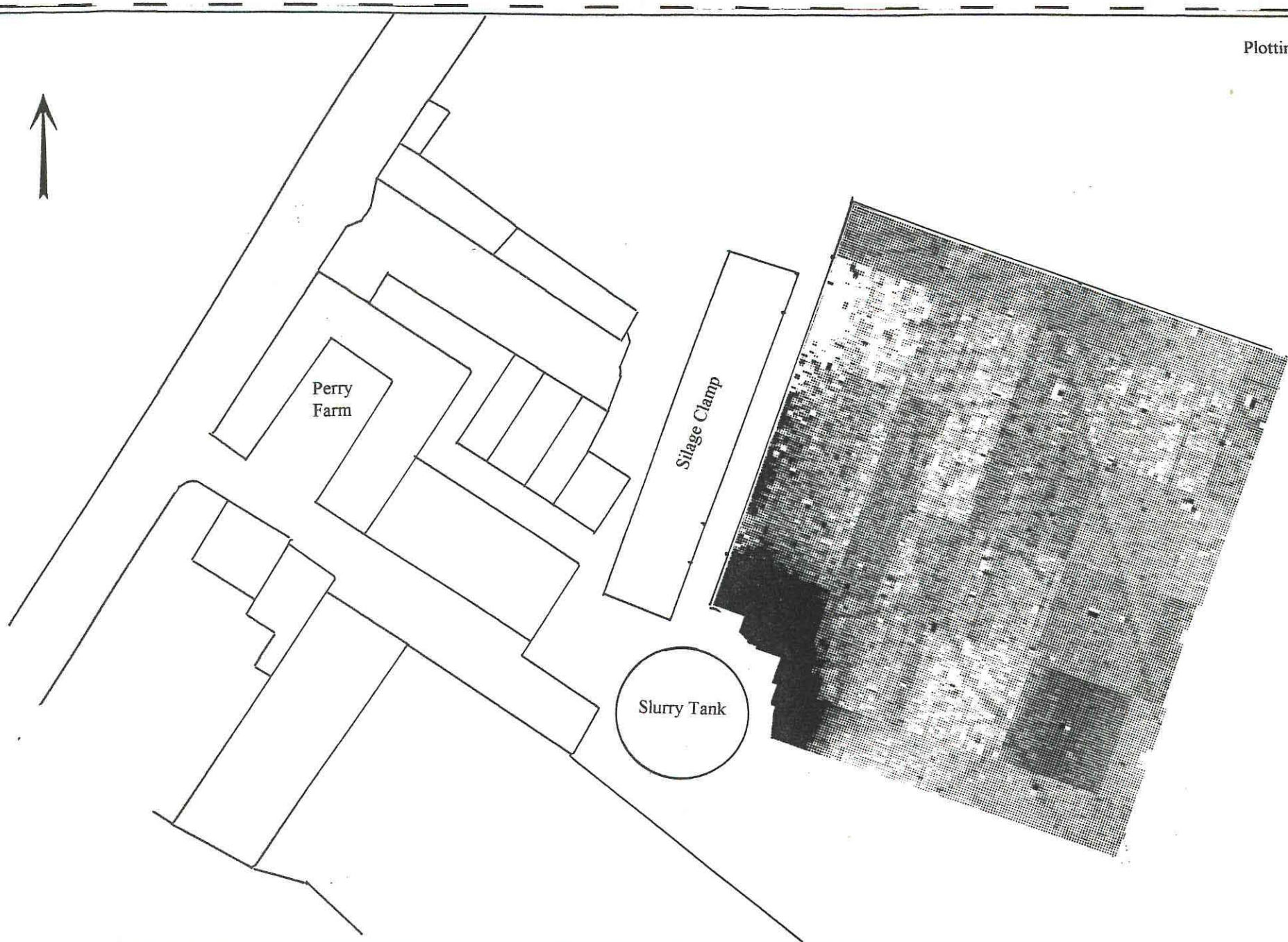

Date November 1996	Client CLWYD POWYS ARCHAEOLOGICAL TRUST	Figure 6	
Scale 1:1000	Subject Geophysical survey - Perry Farm Whittington Plot of raw magnetometer data		

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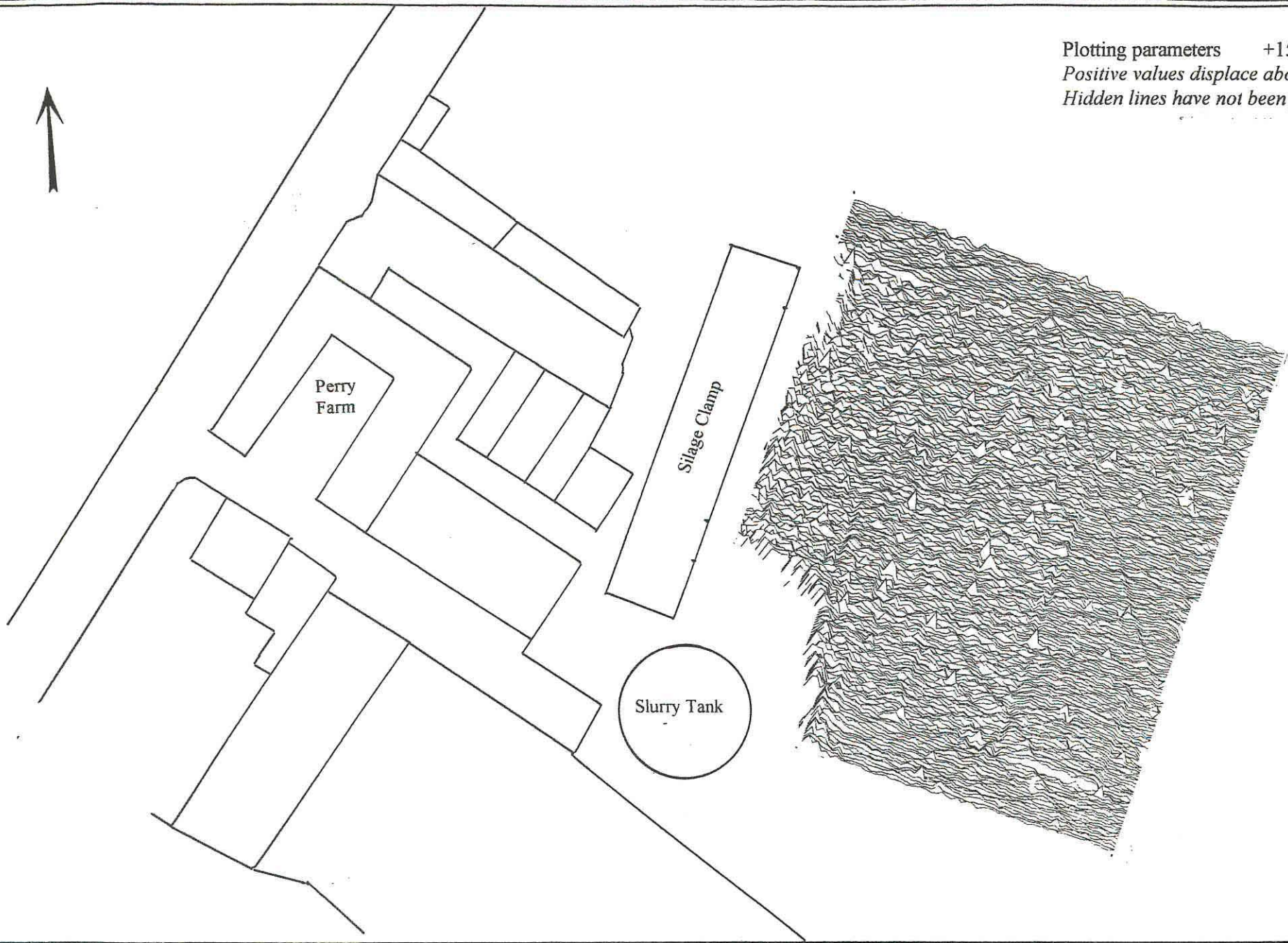
Plotting parameters +15.8nT/cm
Positive values displace above the trace line
Hidden lines have not been plotted



Date November 1996	Client CLWYD POWYS ARCHAEOLOGICAL TRUST	Figure 7	
Scale 1:1000	Subject Geophysical survey - Perry Farm Whittington Trace plot of raw magnetometer data (positive values only)		

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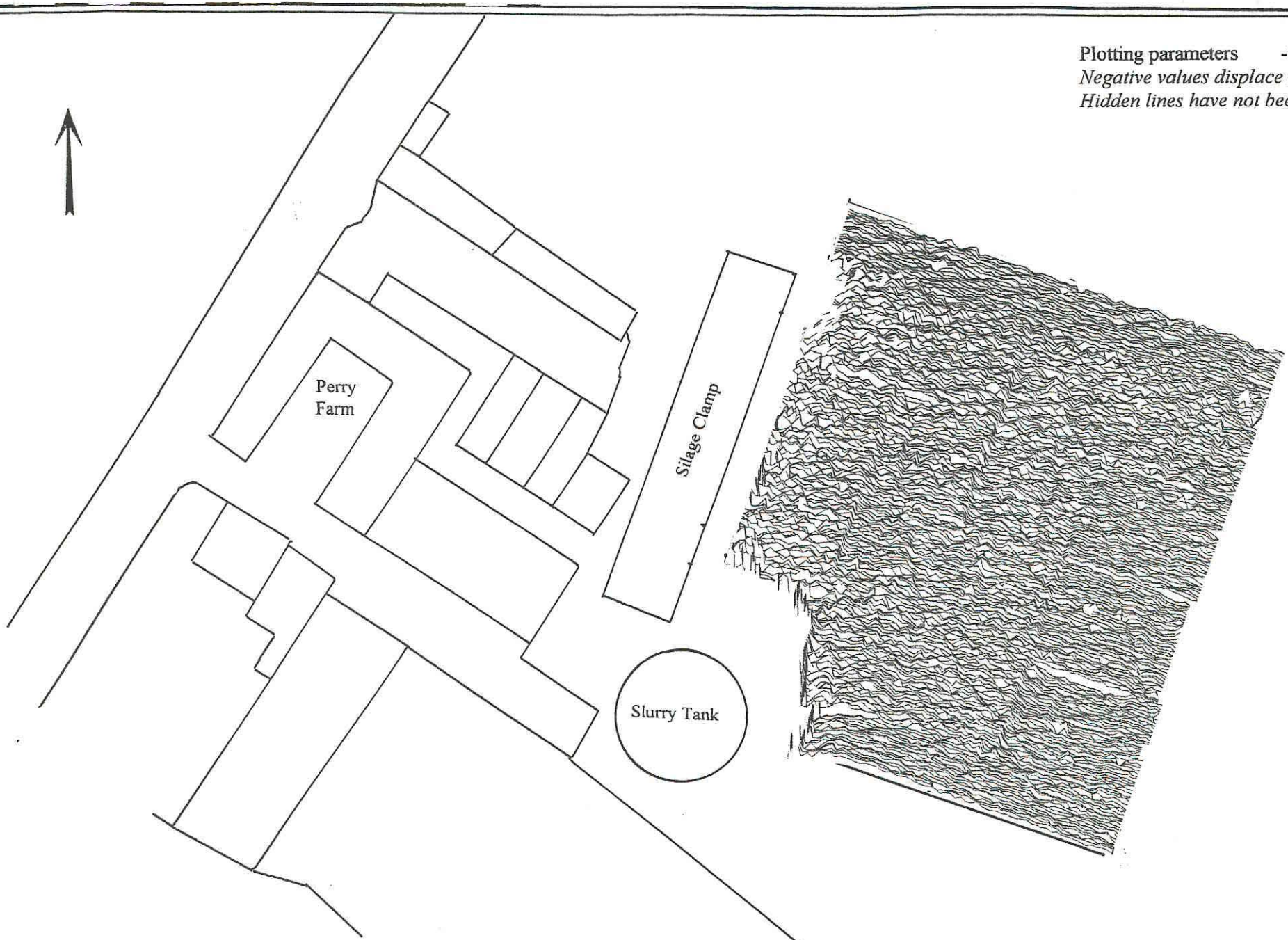
Plotting parameters -15.8nT/cm
Negative values displace above the trace line
Hidden lines have not been plotted



Date November 1996	Client CLWYD POWYS ARCHAEOLOGICAL TRUST	Figure 8	
Scale 1:1000	Subject Geophysical survey - Perry Farm Whittington Trace plot of raw magnetometer data (negative values only)		

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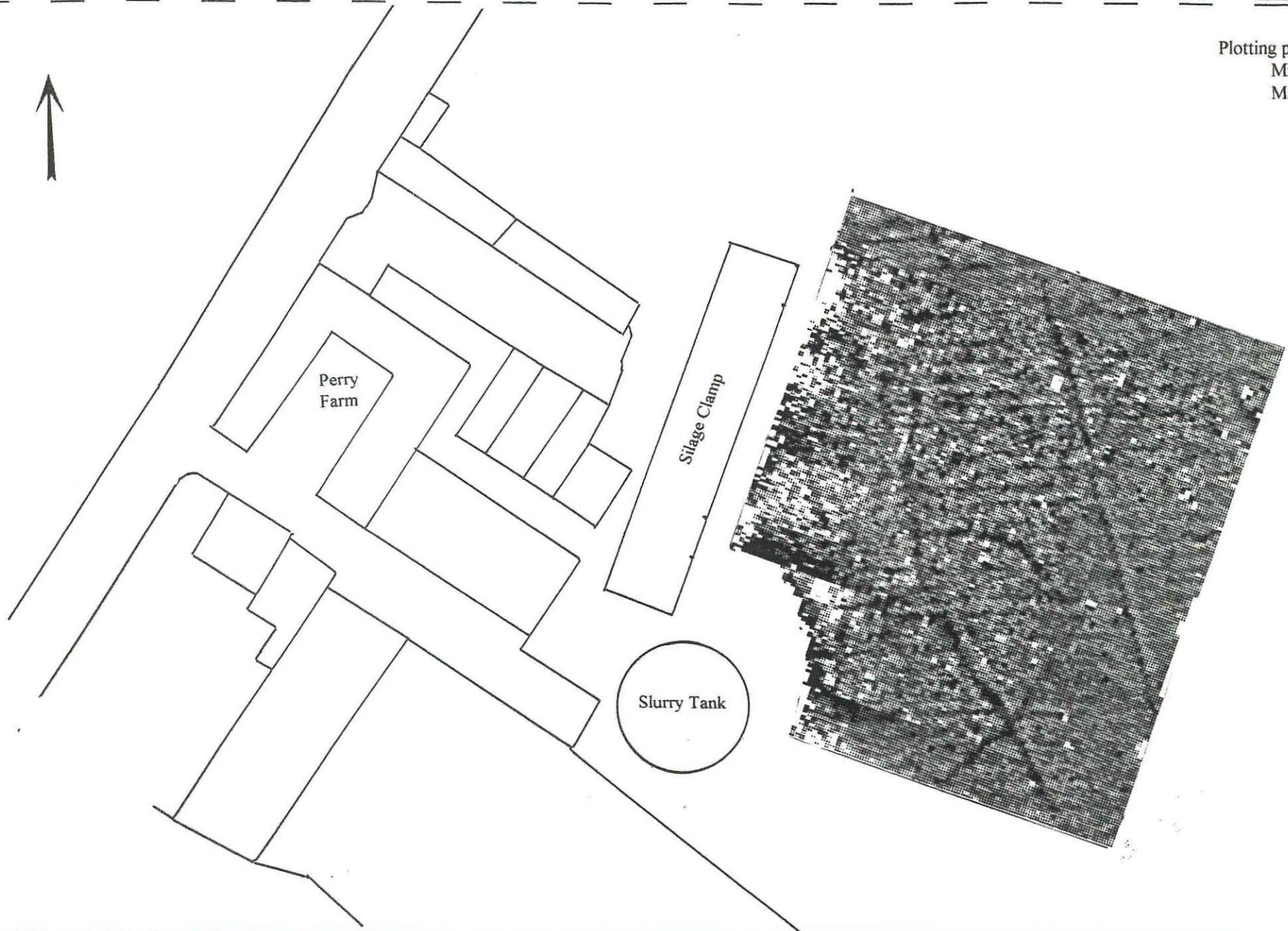
Plotting parameters
Min -1.5nT (white)
Max +1.5nT (black)



Date November 1996	Client CLWYD POWYS ARCHAEOLOGICAL TRUST	Figure 9	
Scale 1:1000	Subject Geophysical survey - Perry Farm Whittington Plot of processed magnetometer data		

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Plotting parameters
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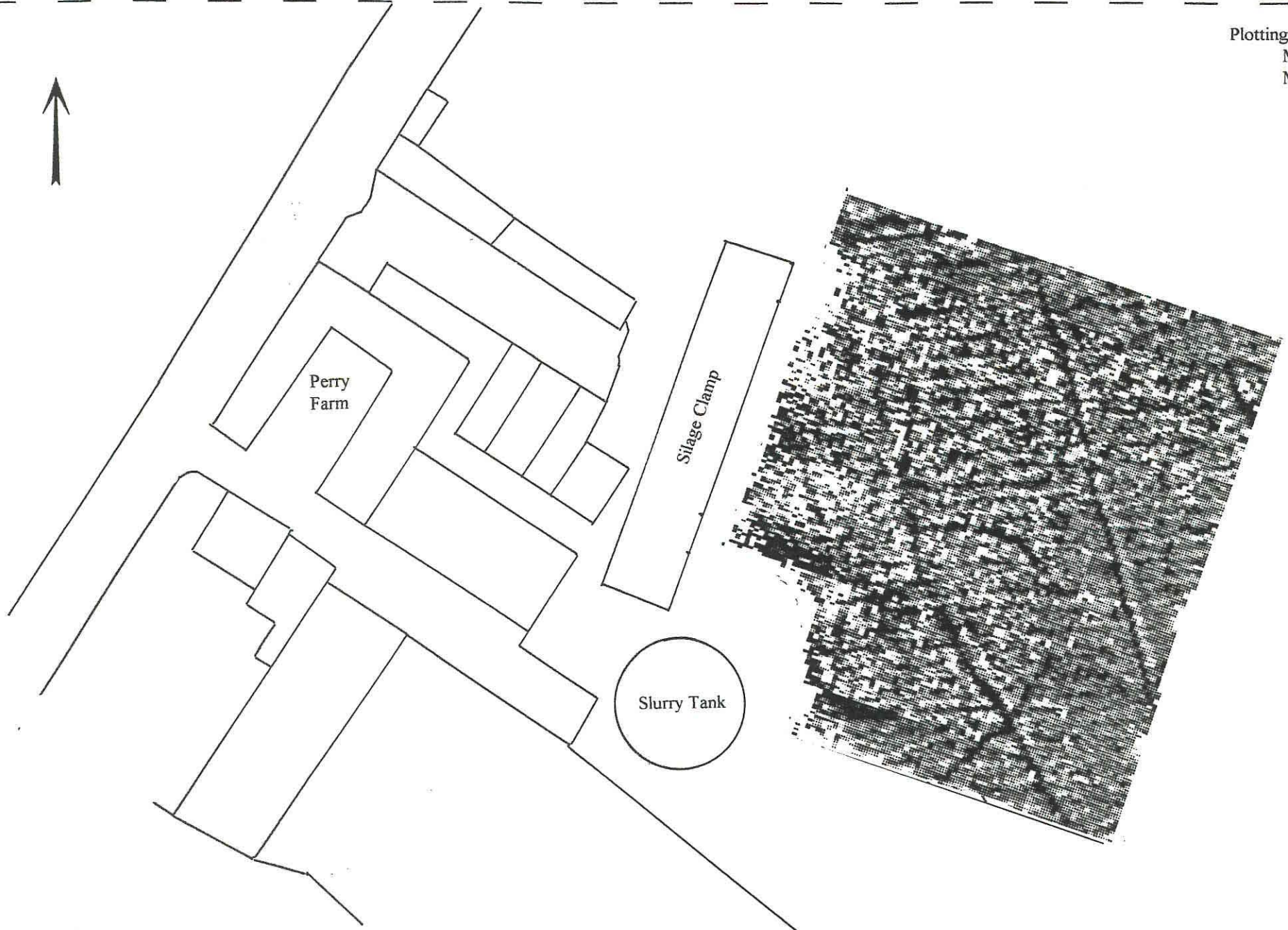

Date November 1996	Client CLWYD POWYS ARCHAEOLOGICAL TRUST	Figure 10	
Scale 1:1000	Subject Geophysical survey - Perry Farm Whittington Plot of magnetometer data after further processing		

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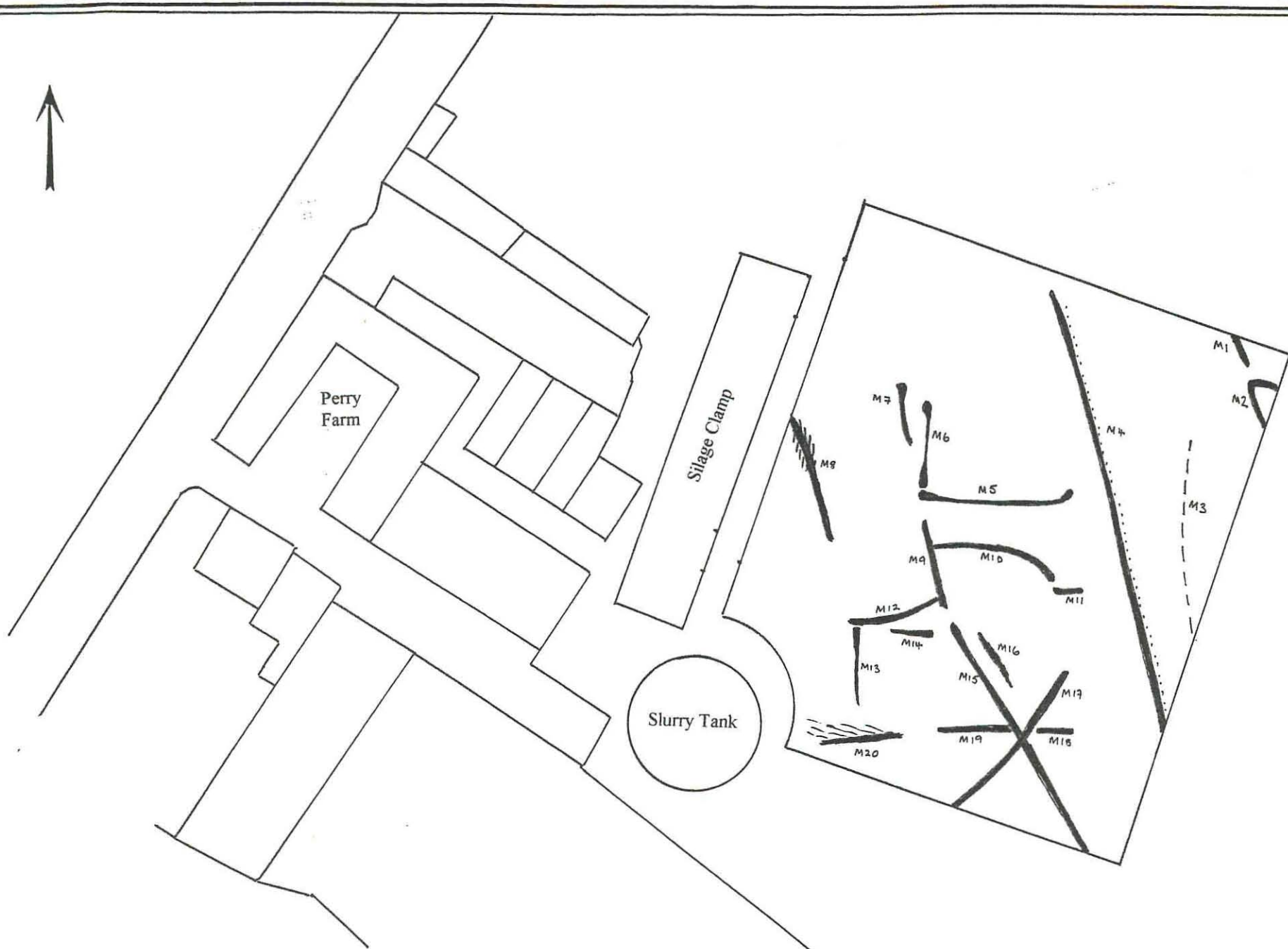

Date November 1996	Client CLWYD POWYS ARCHAEOLOGICAL TRUST	Figure 11	
Scale 1:1000	Subject Geophysical survey - Perry Farm Whittington Abstraction of magnetic anomalies		

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Date November 1996	Client CLWYD POWYS ARCHAEOLOGICAL TRUST	Figure 12	
Scale 1:1000	Subject Geophysical survey - Perry Farm Whittington Geophysical anomalies overlain onto crop mark features		

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Date November 1996	Client CLWYD POWYS ARCHAEOLOGICAL TRUST	Figure 13	
Scale 1:1000	Subject Geophysical survey - Perry Farm Whittington Geophysical anomalies overlain onto crop mark features after adjustment		

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