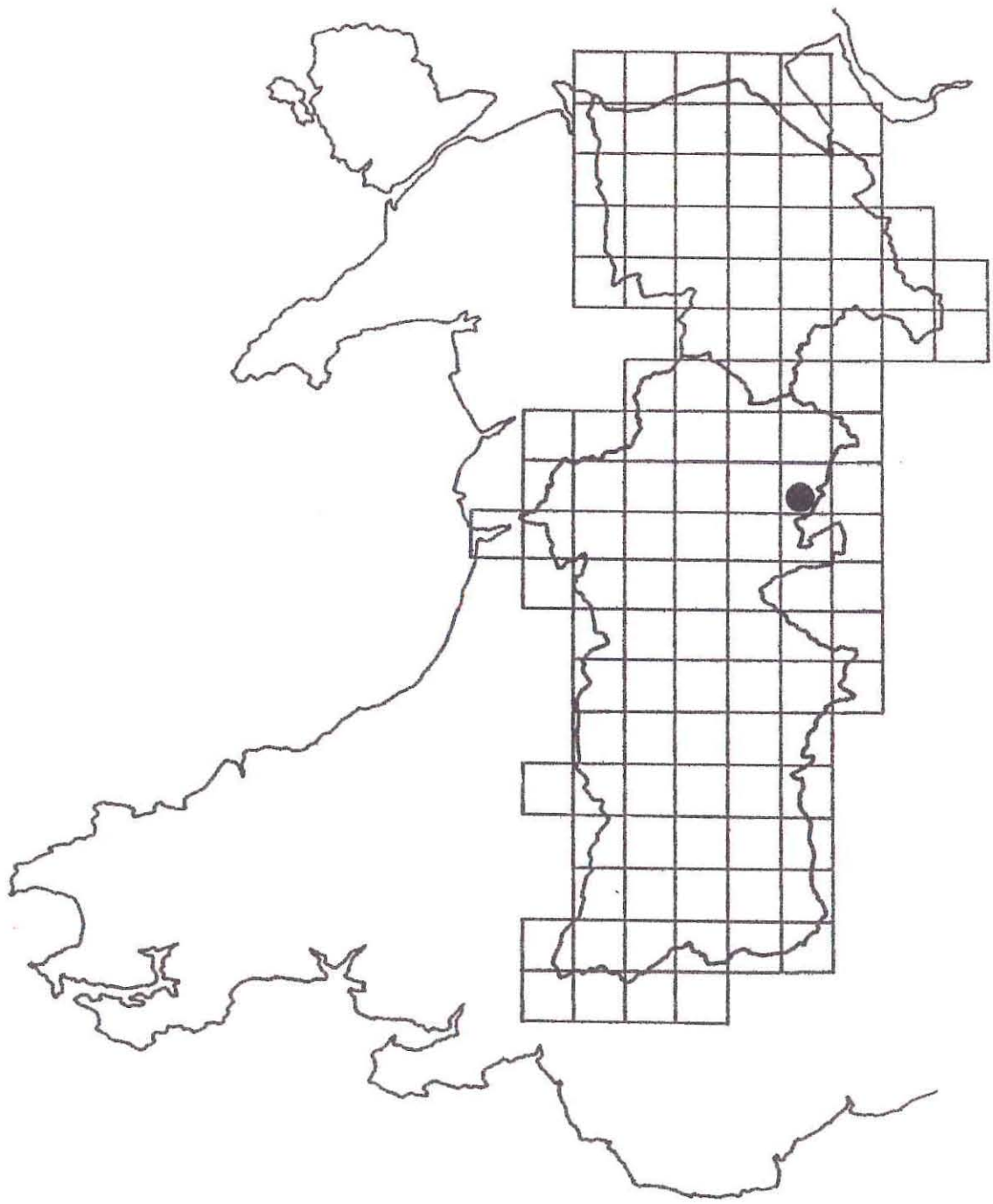
THE CLWYD-POWYS ARCHAEOLOGICAL TRUST

Walls Bridge, Llanymynech:
ARCHAEOLOGICAL ASSESSMENT



CPAT Report No 193

CPAT Report Record

Report and status

CPAT Report Title	Walls Bridge, Llanymynech: Archaeological Assessment		
CPAT Project Name	Walls Bridge		
CPAT Project No	684	CPAT Report No 193	
Confidential (Y/N)	Y	draft/final	FINAL

Internal control

	name	signature	date
prepared by	D MURPHY		08/08/96
checked by	N.J. JONES		08/08/96
approved by	A. M. GIBSON		0808/96

Revisions

no	date	made by	checked by	approved by

Internal memo

The Clwyd-Powys Archaeological Trust
7a Church Street Welshpool Powys SY21 7DL
tel (01938) 553670, fax 552179

CPAT Report No193

Walls Bridge, Llanymynech:
ARCHAEOLOGICAL ASSESSMENT

by D. Murphy
August 1996

Report prepared for Welsh Office Highways

The Clwyd-Powys Archaeological Trust
7a Church Street Welshpool Powys SY21 7DL
tel (01938) 553670, fax 552179

CONTENTS

1 INTRODUCTION

1.1 The Contracting Section of the Clwyd-Powys Archaeological Trust (hereafter CPAT Contracts) was invited by the Highways and Property Directorate, Powys County Council, to submit a quotation and specification (see Appendix 1) for an archaeological investigation at Walls Bridge, Elmtree Farm, Llanymynech, Powys, which was accepted on 12th June 1996.

1.2 The proposed development forms part of a wider scheme aimed at reopening the Montgomeryshire Canal, and involves the diversion of the canal and realignment of the adjacent road with the construction of a new road bridge over the canal. An archaeological investigation was considered necessary due to the presence of cropmarks revealed by aerial photography, thought to indicate significant Bronze Age remains. A brief (INV 162, dated 12 March 1996) was prepared by the curatorial section of the Clwyd-Powys Archaeological Trust (hereafter CPAT Curatorial), acting in their role as archaeological advisors to the local planning authority.

1.3 The Brief specified three stages to the investigation:

1.3.1 Stage 1: Desktop Study, consisting of all relevant documentary sources, including cartographic and aerial photographic sources; Geophysical Prospecting, consisting of a combination of techniques to maximise the identification and location of archaeological features; field walked survey.

1.3.2 Stage 2: Evaluation, consisting of a number of trial excavation trenches, the location and extent of which are to be agreed in advance depending on the results from Stage 1.

1.3.3 Stage 3: Excavation, consisting of total excavation and preservation by record of all archaeological features to be disturbed or destroyed by the development.

1.4 The present report deals with the results from Stage 1 only and is intended to provide a basis for determining the nature and extent for Stage 2.

2 LOCATION, TOPOGRAPHY AND SOILS

2.1 The proposed development involves an area of land on the north side of the B4398 (centred on SJ263209) and bisected by the Montgomeryshire Canal, to the west of Llanymynech (Fig. 1).

2.1 The proposed development site (Fig. 2) is currently owned by Mr Lewis of Elmtree Farm. The land to the north of the present canal is under arable cultivation. The triangle of land situated between the canal and the B4398 is under permanent pasture. The whole area consists of level ground above the floodplain of the Afon Vyrnwy.

2.2 The geology of the area consists of drift derived from Palaeozoic limestone. This is characterised by deep well-drained fine loamy soils (Rudeforth *et al.* 1984). The ground surface is generally level.

3 DESKTOP STUDY

3.1 The aim of the Desktop Study, as defined in the Brief, was to provide a basis for:
(a) compiling an outline history and land use of the development area
(b) to locate any previously unrecorded archaeological features
(c) to elucidate all archaeological and historic landscape features and buildings.

3.2 The study involved the examination of the Sites and Monuments Record (SMR), held by CPAT Curatorial Section, Welshpool; primary and secondary sources held by the National Library of Wales, Aberystwyth; aerial photographs held by the Royal Commission on Ancient and Historic Monuments in Wales, Aberystwyth and CPAT Curatorial Section, Welshpool.

3.3 The proposed development is situated in a region of considerable archaeological importance, with a large number of prehistoric monuments located in the immediate environs (Fig. 3), as well as the Montgomeryshire Canal itself.

3.4 Excavation was undertaken by CPAT at Elmtree Farm ring ditch, Llanymynech (SJ 26412073) in April 1992 (Gibson 1992). No finds were recorded; however dating by analogy gives an age-range of *c.* 3100-1500 BC (Gibson 1992, 17) which corresponds to the late Neolithic and early Bronze Age. Further north, Llanymynech Hill (centred on SJ 26301810) is one of the largest Iron Age hillforts in Britain, enclosing 57 ha (Musson & Northover 1989, 15). Excavations conducted between March and April 1981 (Musson & Northover 1989, 15-26) revealed a date prior to the late 2nd century BC for the construction of the hillfort - an earlier date than previously suggested. Cropmarks visible on aerial photographs have revealed the importance of this part of the Severn Valley regarding the buried prehistoric landscape. Excavations in the Four Crosses area (SJ 2719, Fig. 3), to the south-east of the study area, have examined a number of cropmark features including a series of ring ditches and pit alignments (Warrilow, Owen & Britnell 1986, 53-87, and Owen & Britnell 1989, 27-40).

3.4 The evidence for human activity in the proposed development area mainly comes from cropmarks revealed by aerial photographs. Rectification of these photographs has enabled plotting of the cropmark sites which have been included in Fig. 6. A series of linear pit alignments run in a north-south and in a west-east direction (Figs 4 & 6). These are similar to those already excavated at Four Crosses (Owen & Britnell 1989). To the west of the pits is a cluster of ring-ditches (Figs 5 & 6), of probable late Bronze Age date (2nd millennium BC), at least five of which will be affected by the re-routing of the existing road.

3.5 Documentary sources reveal something of the history of the Montgomeryshire Canal. As a result of the Ellesmere Canal Act, 33, 1793 the eastern branch of the canal from Llanymynech to Garthmyl was constructed by 1810 (Howell 1876, 191). Both Penson's 1835 Turnpike Map (Fig. 7) and the 1838 Tithe Map survey (Fig. 8) show a crossing where Wall's Bridge now stands. There is no known information dating the construction of Wall's Bridge. The land use of the proposed development area appears little changed since 1835 (Figs 7 & 9) and remains agricultural.

4 GEOPHYSICAL SURVEY

4.1 A geophysical survey was carried out between 17th and 21st June by Stratascan using magnetometry and resistivity techniques (Appendix 2). The results of this survey were received by CPAT Contracts on 2nd August 1996.

4.2 The survey discovered a series of linear anomalies to the north and south of the canal. Stratascan considered the northern anomalies (M1, M2, M4-M7) to be of little archaeological significance, resulting from agricultural activity of unspecified date (Appendix 2, p6). However, comparison of these results with the plotted cropmarks (Fig. 6) shows a close correlation between anomalies M2, M4 and M5 and the linear pit alignments. The southern anomalies (R3) were interpreted as sheep tracks (Appendix 2, p6).

4.3 Other anomalies include a possible pit (R1), a pipeline (M3), and the effects of a hedge on results (R2).

5 FIELD SURVEY

5.1 A rapid fieldwalked survey was carried out which revealed the affected area to be flat agricultural land with no surface indication of any archaeological sites. With the exception of Walls Bridge, no features were identified along the affected section of the Canal.

6 SITES IDENTIFIED DURING THE DESK-TOP STUDY

6.1 Known sites which appear on the County SMR are given their Primary Record Numbers (PRN). Sites identified which have not been recorded on the SMR are given numbers prefixed by WB (Walls Bridge).

6.2 The archaeological sites revealed by the desk-top study are presented below and are marked on Fig. 6, at a scale of 1:2,500. Included in the location and descriptive data for each site is a designation of the site's perceived importance. The importance assigned follows the guidelines set out in section 4.7.3 of Cadw's draft *Archaeology and the Trunk Road Programme in Wales: a Manual of Best Practice.* The criteria applied to the designation are described below:-

A Sites designated as being of national importance which meet the criteria for scheduling or listing. It is presumed that sites in this category will be preserved and protected *in situ*.

B Sites of regional or county importance which do not meet the criteria for scheduling or listing, but which are nevertheless of particular importance within the region. Preservation in situ is the preferred option for these sites, but if loss or damage is unavoidable, appropriate detailed recording or excavation will be undertaken.

C Sites of district or local importance which are not of sufficient importance to justify preservation if threatened, but which merit adequate recording in advance of loss or damage.

D Minor and damaged sites which do not merit inclusion in a higher category, for which rapid recording should be sufficient.

E Sites whose importance could not be fully determined from the desk-top assessment and field search. These sites would need to be subjected to evaluation in the following stage of work if it is envisaged that they will be disturbed by the proposed scheme of road improvements, in order that they can be assigned to Categories A-D.

Walls Bridge Pit Alignment (SJ 26222083) (PRN 2456)

6.3 A line of circular pits, regularly spaced was noted on aerial photographs (Fig. 4). Not visible on the ground. Probably a post fence or palisade associated with an enclosure to the north of possible Iron Age date. However, excavation of a similar feature concluded a post-medieval date for its use (Owen & Britnell 1989).
Category B

Walls Bridge (SJ 26262080) (WB 1)

6.4 This road bridge over the Montgomeryshire Canal is depicted on first and second edition OS maps. Now superseded by a modern bridge to the east, it remains in use as a footbridge.
Category B

Montgomeryshire Canal (SJ 26252980 - SJ 26412091) (WB 2)

6.5 The Montgomeryshire branch of the Shropshire Union Canal is depicted on first and second edition OS maps. It is still in use today.
Category C

Ring-ditch Cluster (centred on SJ 26192085) (WB 3)

6.6 A group of at least 9 ring-ditches belonging to barrows of probable Bronze Age date was noted on aerial photographs (Fig. 5) taken in 1990. Not visible on the ground. At least 6 of these barrows are crossed by the proposed road.
Category B

Pond (SJ 261020840) (WB 4)

6.7 This pond is depicted on first and second edition OS maps. Its origin is unknown. While this site lies outside the proposed development area, its presence should nevertheless be noted due to its potential value for palaeoenvironmental evidence.
Category B

7 CONCLUSIONS

7.1 Although the results of the geophysical survey were apparently inconclusive, the linear anomalies (M2, M4 & M5) correspond with the north-south and west-east linear pit alignments plotted from rectified aerial photographs (Fig. 6). These features may be part of the Bronze Age landscape that has been emerging in the surrounding area through recent research. Similarly, the remaining features (R1-R3, M1, M3 & M6) may be part of this landscape even though land use and soil conditions are such that cropmarks have not shown up in aerial photographs.

7.2 The absence of supporting evidence from the geophysical survey concerning the ring ditches does not preclude the importance of the aerial photographs which clearly indicate a group of ring-ditches likely to be associated with the wider group of Bronze Age monuments already known within the area (Fig. 5). These cropmarks have only been revealed when soil conditions, the type of crop grown and the time of year were right for aerial photography. A cluster of this number of ring-ditches (at least 9) demonstrates the importance of this area for ritual and burial during the Bronze Age and such a cemetery has a high archaeological value. Further investigation will be necessary to provide a chronological sequence for these features.

7.3 Although the pond (WB 4) lies outside the development area, if it is likely to affected by any works a suitable programme of sampling should be considered.

8 ACKNOWLEDGEMENTS

8.1 I would like to thank express my thanks to: County Sites and Monuments Record, CPAT, Welshpool; the National Library of Wales, Aberystwyth; the Royal Commission on Ancient and Historic Monuments in Wales, Aberystwyth, for all their help.

9 BIBLIOGRAPHY

Gibson, A., 1992. The excavations of a ring-ditch at Elmtree Farm, Llanymynech, Powys, *Archaeology in Wales* 32, 15-17.

Howell, A., 1876. Roads, Bridges, Canals and Railways in Montgomeryshire, part iii, *Montgomeryshire Collections* 9.

Hughes, S., 1981. The Industrial Archaeology of the Montgomeryshire Canal, *Montgomeryshire Collections* 69, 95-114.

Hughes, S., 1983. *The Archaeology of the Montgomeryshire Canal (A guide to, and study in, waterways archaeology)*, 3rd edition, Aberystwyth: Royal Commission on Ancient and Historical Monuments in Wales.

Musson, C.R., & Northover, P.J., 1989. Llanymynech Hillfort, Powys and Shropshire: Observations on construction work, 1981, *Montgomeryshire Collections* 77, 15-26.

Owen, G., & Britnell, W., 1989. Pit alignments at Four Crosses, Llandysilio, Powys, *Montgomeryshire Collections* 77, 27-40.

Rudeforth, C.C., Hartnup, R., Lea, J.W., Thompson, T.R.E., & Wright, P.S., 1984. *Soils and their uses in Wales*, Soil Survey of England and Wales Bulletin No. 11, Harpendon.

10 CARTOGRAPHIC SOURCES

1st & 2nd Edition Ordnance Survey 25" 11.5

Ordnance Survey SJ 21/31 1:25,000

Ordnance Survey 1:2,500

Penson. 1835. General Map of the several districts of Turnpike Roads in the counties of Montgomery, Merioneth, Salop and Denbigh.

Tithe Map and Apportionment

11 AERIAL PHOTOGRAPHIC SOURCES

CPAT Collection:

75/A/16-17
75/D/11
79/13/25-26
81/4/17-18
81/C/105
81/C/171-173
83/C/423-424
84/MB/8
84/MB/10
84/C/97-98
84/C/100-101
84/1/3
84/1/5
84/27/4-5
87/2/36
90/MB/341-342
95/09/10-11
95/19/2-4

APPENDIX 1

SPECIFICATION FOR AN ARCHAEOLOGICAL ASSESSMENT AT WALLS BRIDGE, LLANYMYNECH (STAGE 1) BY CLWYD-POWYS ARCHAEOLOGICAL TRUST

1 Introduction

1.1 The proposed development of a block of land at Walls bridge, Llanymynech involves the realignment of a portion of both the Montgomeryshire Canal and adjacent Highway.

1.2 This area lies at SJ26352082 in an area of archaeological sensitivity as outlined in the archaeological Brief prepared by the Curatorial section of CPAT (INV 162, 12/3/96). Known archaeological monuments in or adjacent to the area of proposed development comprise pit alignments and a possible prehistoric ring ditch.

1.3 The Curatorial Section of CPAT in their capacity as archaeological curators for the county have determined that an Archaeological Investigation is necessary to assess the implications of the proposed development on the archaeological resource. Accordingly a brief has been prepared by CPAT Curatorial (No.INV 162 dated 12th March 1996) which describes the scheme of archaeological works required.

1.4 The archaeological provisions recommended in the brief comprise a desk-top study and geophysical survey of the area (stage 1), Archaeological Evaluation (stage 2) and excavation (stage 3). The extents of stages 2 and 3 will depend on the results of stage 1 and therefore stage 1 is to be quoted for separately. Accordingly this specification covers only stage 1 of the works outlined in the brief.

2 Objectives

2.1 The objectives of the assessment are:

2.1.1 to reveal by desk-based assessment, the nature, condition, significance and, where possible, the chronology of the archaeology within the area of the proposed development in so far as these aims are possible;

2.1.2 to prepare a report outlining the results of the assessment, to identify areas where desk-top assessment alone cannot provide sufficient information and make recommendations for further work or mitigatory measures;

2.1.3 to incorporate 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 recommendations options for the management of the archaeological resource, including any further provision for that resource where it is considered necessary.

3 Methods

3.1 The assessment will be carried out according to the guidelines in the *IFA Standard and Guidance for Archaeological Desk-Based Studies* and will involve the examination of all the readily available primary and secondary records relating to this part of the town, including documentary and cartographic sources. Archives and repositories will include the County Sites and Monuments Record, the County Record Office, The National Library of Wales, the National Monuments Record held at the Royal Commission on Ancient and Historical Monuments (Wales) at Aberystwyth. Borehole and test-pit data will be requested from the developers where appropriate.

3.2 The assessment will be supported by a field visit to determine the state of the identified archaeology and the presence of other sites not identified from the documentary sources and to make a photographic record of the area.

3.3 A geophysical survey (Magnetometer and Resistivity) will be commissioned. Readings will be taken at 0.5m centres in traverses 1m apart over the entire area where conditions allow.

3.4 Following the on-site work an illustrated and bound report will be prepared according to the principles laid out in the Evaluation Brief (p3). This will be in A4 format and contain conventional sections on: Site location, Topography and Geology; Historic Background; Catalogue of sites identified with notes on their condition and significance, 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 assessment will be undertaken by a skilled and experienced archaeologist who will also be responsible for undertaking the desk-based assessment. 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 The Geophysical survey will be commissioned from Stratascan Geophysical & Specialist Survey Services of Upton on Severn, a reputable company with a proven track record in archaeological prospection.

4.3 All report preparation will be completed by the same field archaeologist who conducted the assessment.

4.4 It is anticipated that the assessment and evaluation will take no more than ten days in all and that the subsequent report would be prepared immediately thereafter, dependent on the client's instructions and the arrangement of a suitable timetable. The date of commencement, at the time of writing, has yet to be agreed with the client, and will be dependent on the state of the site and negotiated access. The archaeological curator will be informed of the detailed timetable and staffing levels when agreement has been reached with the client.

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

4.6 CPAT is covered by appropriate Public and Employer's Liability insurance.

A.M. Gibson
3rd April 1996

APPENDIX 2

A Report for

CLWYD-POWYS ARCHAEOLOGICAL TRUST

on a

Geophysical Survey

carried out at

WALLS BRIDGE, LLANYMYNECH

June 1996

Author P P Barker C.Eng MICE MIWEM AIFA

Fig. 1 Location 1: 25,000

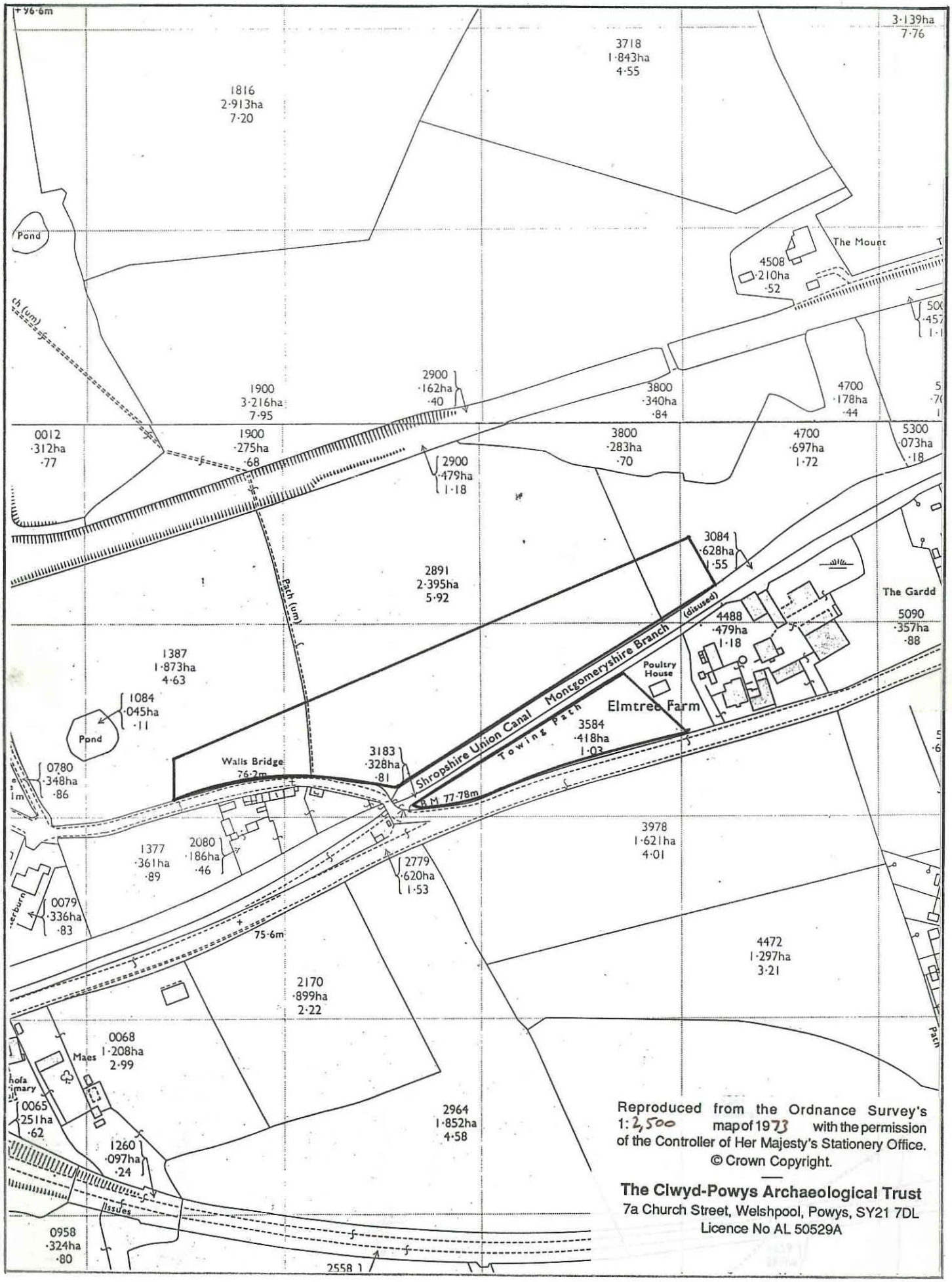


Fig. 2 Location of proposed development 1: 2,500

Fig. 3 Sites of known archaeological importance 1: 25,000

Fig. 4 Aerial photograph of linear pit alignment looking northeast

Fig. 5 Aerial photograph of cluster of ring-ditches looking east

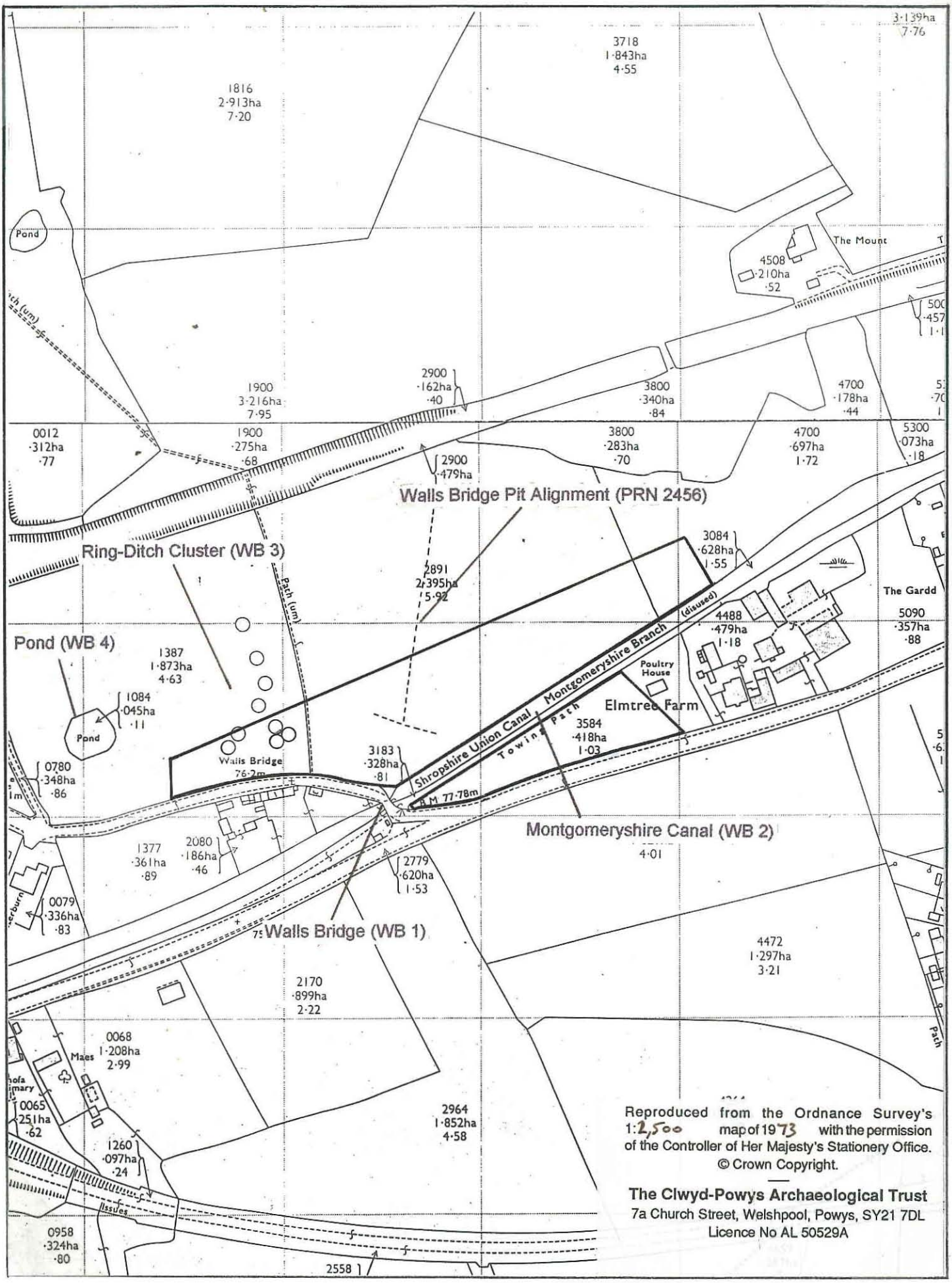


Fig. 6 The impact of proposed development on archaeological sites 1: 2,500

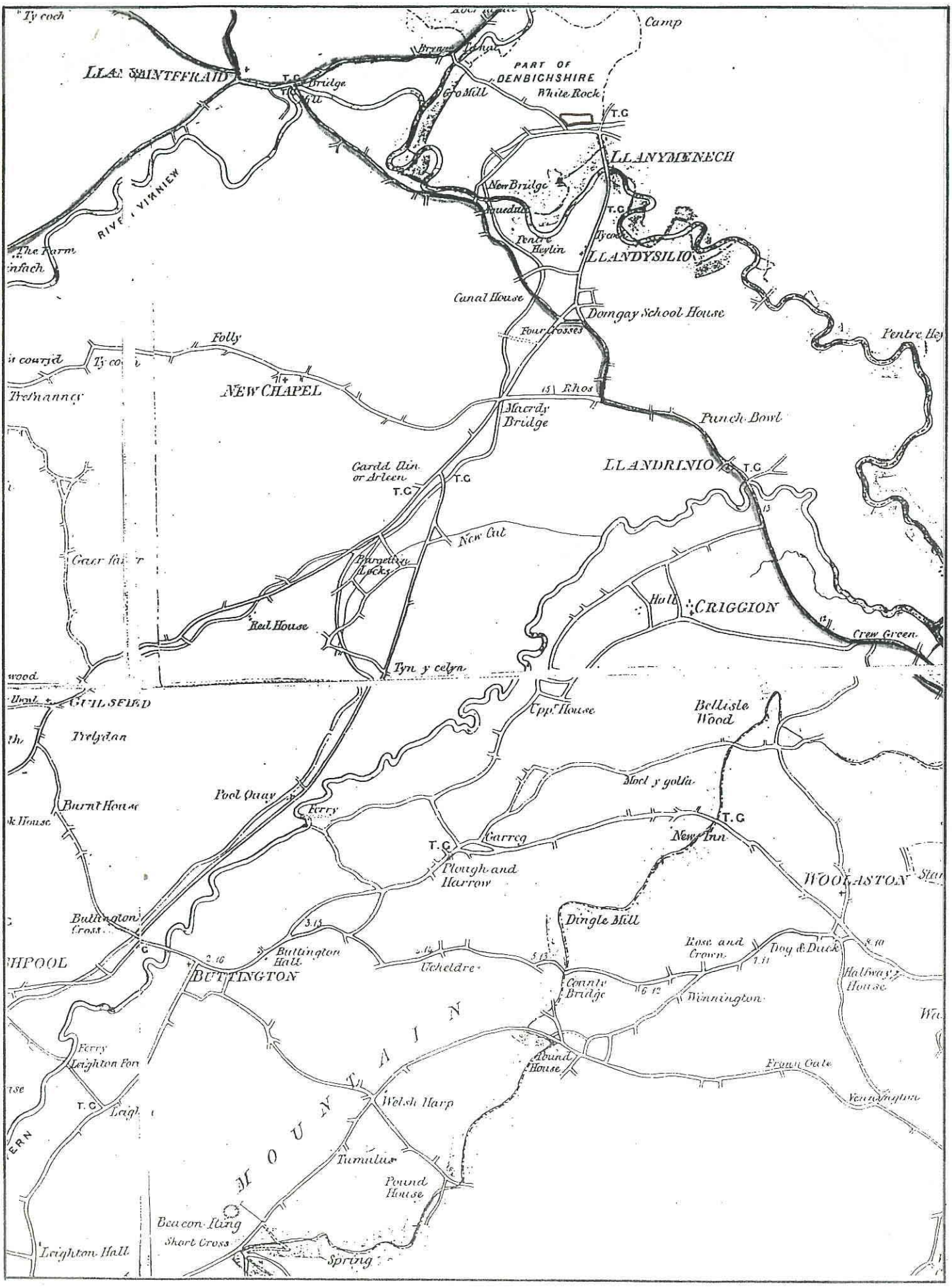


Fig. 7 Penson's 1835 Turnpike Map

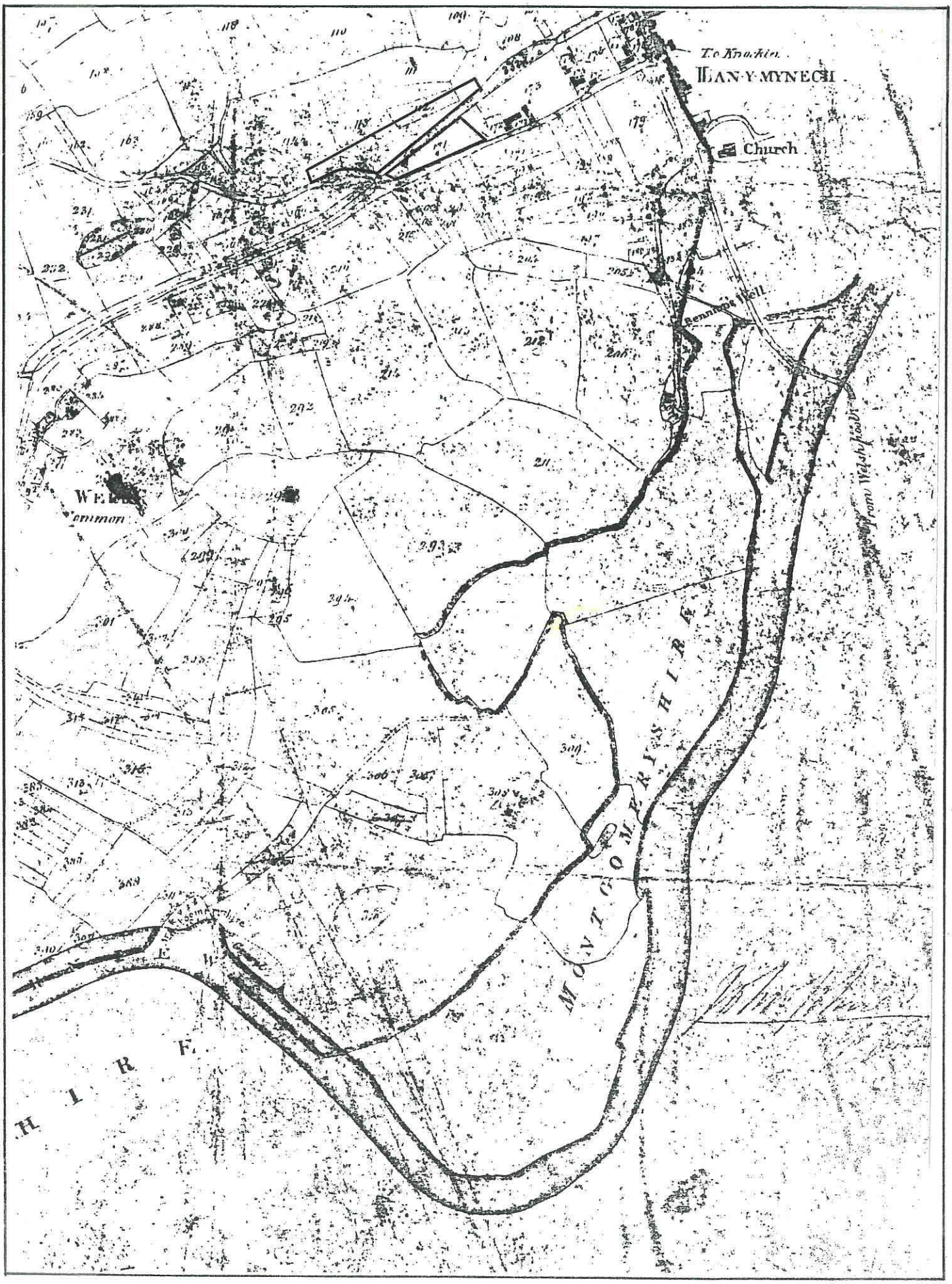


Fig. 8 1838 Tithe Map Survey

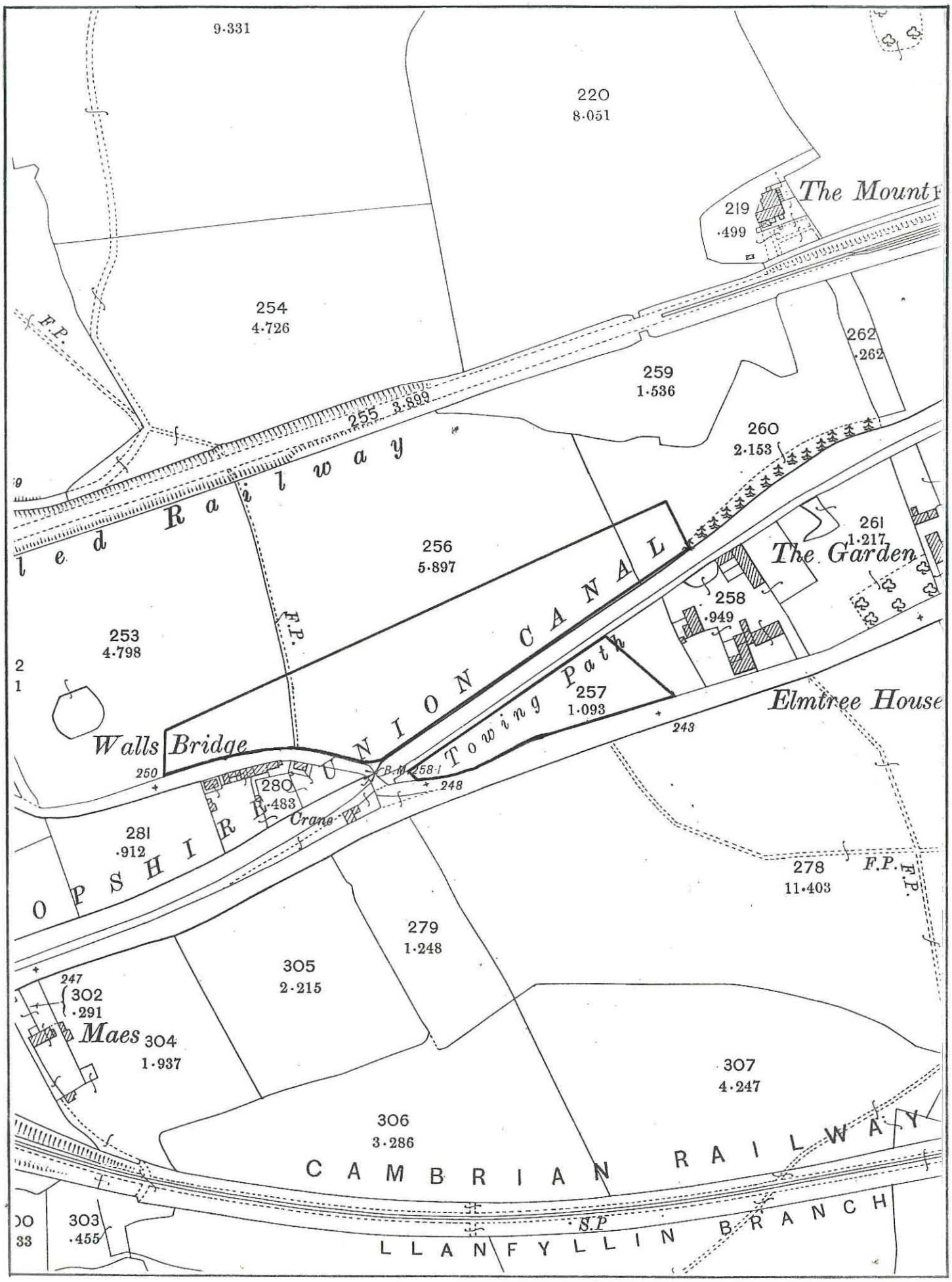


Fig. 9 2nd Edition Ordnance Survey 1: 2,500

A Report for

CLWYD-POWYS ARCHAEOLOGICAL TRUST

on a

Geophysical Survey

carried out at

WALLS BRIDGE, LLANYMYNECH

June 1996

Author P P Barker C.Eng MICE MIWEM AIFA

A Report for

CLWYD-POWYS ARCHAEOLOGICAL TRUST

on a

Geophysical Survey

carried out at

WALLS BRIDGE, LLANYMYNECH

June 1996

Author P P Barker C.Eng MICE MIWEM AIFA

CONTENTS

1 SUMMARY OF RESULTS

Each of the techniques used for survey found a number of linear anomalies but none is thought to be of any archaeological interest with the possible exception of a series of resistance anomalies to the south of the canal.

2 INTRODUCTION

2.1 Site location

The site is situated 400m west of the centre of Llanymynech at OS Ref SJ 263 208 and straddles the Montgomery Branch of the Shropshire Union Canal

2.2 Site description and history

The site covers an area of some 1.35 ha split into two sections of 1.09 and 0.26 ha. The larger section on the northern side of the canal is sub-divided into three by two field boundaries. The larger, central area was planted with maize at the time of the survey. The rest of the area was pasture.

The ground surface is generally level with deep well drained fine loamy soils based on drift derived from Palaeozoic sandstone and shale.

Apart from the construction of the canal through the site nothing is known about the history of the site.

2.3 Survey objectives

The objective of the survey was to investigate the area using two geophysical techniques in order to assess its archaeological potential.

2.4 Survey methods

The two complimentary techniques chosen for the survey were resistivity and magnetometry and are described below.

3 METHODOLOGY

3.1 Dates of fieldwork

The survey was carried out between 17th and 21st June 1996

3.2 Grid locations

Figure 3 shows the areas surveyed and referencing for the grids used. The grids to the south of the canal are on a different baseline to those to the north.

3.3 Description of techniques and equipment configurations

3.3.1 *Magnetometer*

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

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

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

The magnetic survey was carried out using an FM36 Fluxgate Gradiometer, manufactured by Geoscan Research. The instrument consists of two fluxgates mounted 0.5m vertically apart, and very accurately aligned to nullify the effects of the earth's magnetic field. Readings relate to the difference in localised magnetic anomalies compared with the general magnetic background.

3.3.2 *Resistance Meter*

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

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

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

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

3.4.1 *Sampling interval*

Magnetometer

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.

Resistivity

Readings were taken at 1.0m centres along traverses 1.0m apart. This equates to 400 sampling points in a full 20m x 20 grid. All traverses were surveyed in a "zigzag" mode.

3.4.2 *Depth of scan and resolution*

Magnetometer

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.

Resistivity

The 0.5m probe spacing of a twin probe array has a typical depth of penetration of 0.5m to 1.0m The collection of data at 1m centres with a 0.5m probe spacing provides an optimum resolution for the technique.

3.4.3 *Data capture*

Magnetometer

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 then transferred to the office for processing and presentation.

Resistivity

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*

Magnetometer

Processing is performed using *Geoplot 2* and 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

Resistivity
The processing was carried out using *Geoplot 2* and involved the 'despiking' of high contact resistance readings and the passing of the data though a high pass filter. This has the effect of removing the larger variations in the data often associated with geological features. The nett effect is aimed at enhancing the archaeological or man-made anomalies contained in the data.

The following schedule shows the processing carried out on the processed resistance plots.

Despike	*X radius = 1*
	Y radius = 1
	Spike replacement
High pass filter	*X radius = 10*
	Y radius = 10
	Weighting = Gaussian

3.5.2 *Presentation of results and interpretation*

Magnetometer
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 'Interpretative' drawing for the site (Figure 11), numbered for ease of reference and prefixed with the letter 'M'.

Resistivity
The presentation of the data for the site involves a print-out of the raw data as a grey scale plot, together with grey scale plots of adjusted raw data to bring the mean and standard deviations of the different areas to approximately the same levels and also the processed data. Anomalies have been identified and plotted onto the 'Interpretative' drawing (Figure 11), numbered for ease of reference and prefixed with the letter 'R'.

4 RESULTS

Magnetometer

The strong rectilinear anomaly M3 crossing the site from north to south is interpreted as a modern large pipeline.

There are a number of weak and very weak parallel rectilinear anomalies (M1, M2, M5 and M6) crossing the site from north-west to south-east which are thought more likely to be modern plough lines or possibly land-drains. M4 is a broader, less well defined, rectilinear anomaly which runs orthogonally to the plough lines mentioned. This may also be associated with modern cultivation.

The general area of magnetic disturbance M7 to the east of the site is thought to be associated with the nearby hedge.

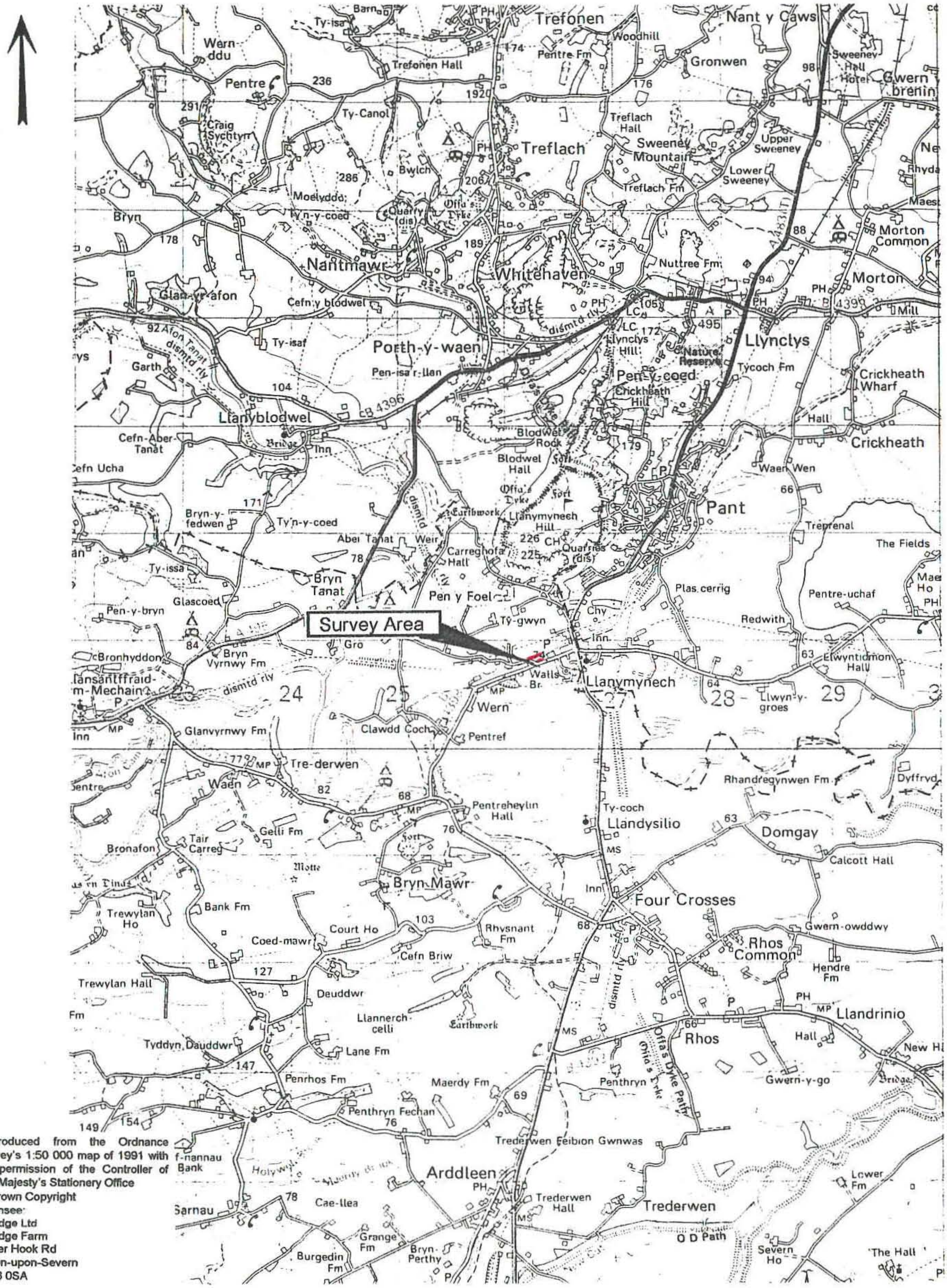
Resistivity

The most interesting features found are the resistance anomalies in the field to the south of the canal (R3). Being of lower resistance would suggest they are shallow ditches but their curious shape does not help with interpretation. A tentative interpretation that they may be sheep tracks has been suggested but the possibility that they are old enclosure ditches of different periods should not be ignored.

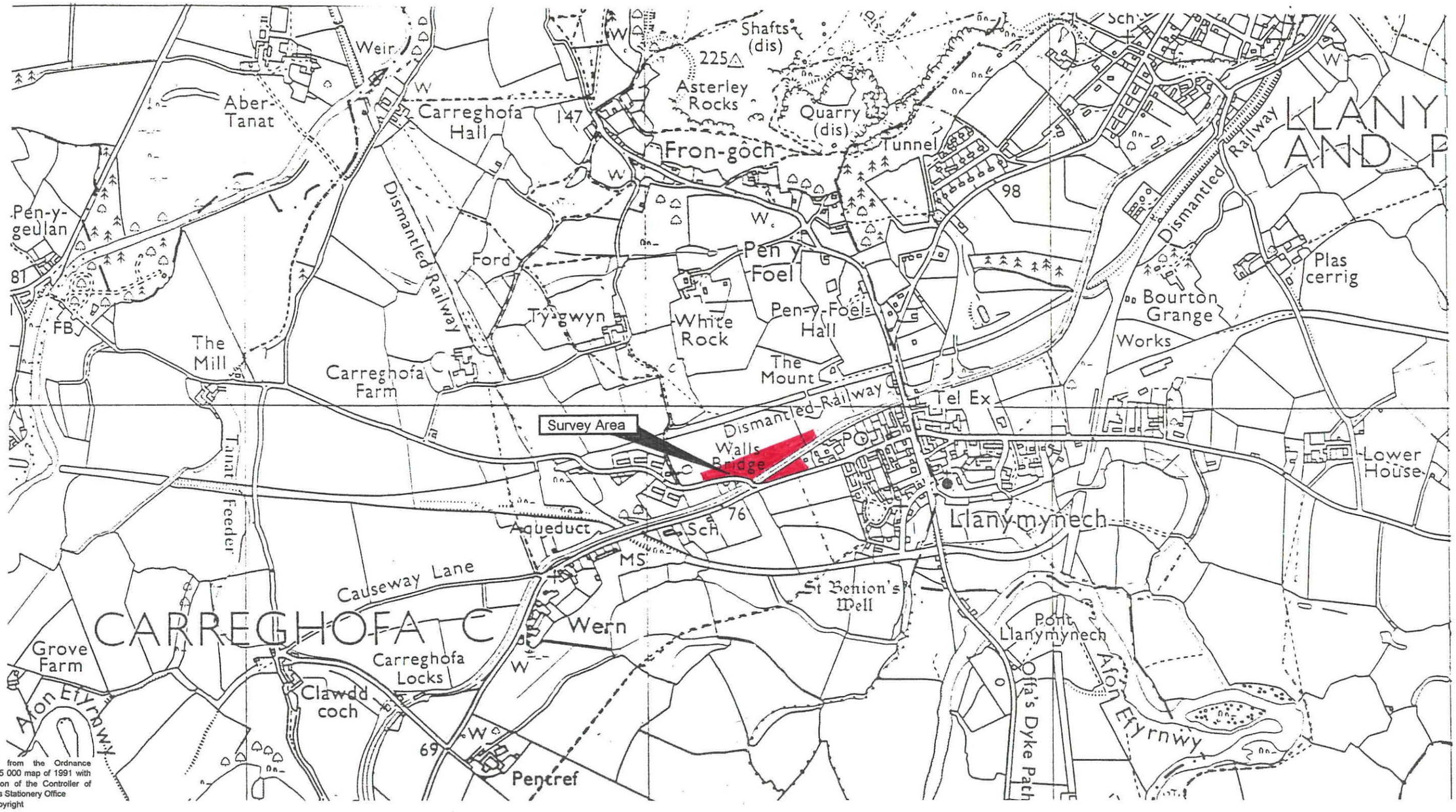
There are also two discrete lower resistance areas R1 and R2 which may be large pits.

5 CONCLUSIONS AND RECOMMENDATIONS

Nothing with any obvious archaeological potential was found by the surveys. However, it would be prudent to test by trial trenching the various anomaly types found to confirm (or otherwise) this interpretation.



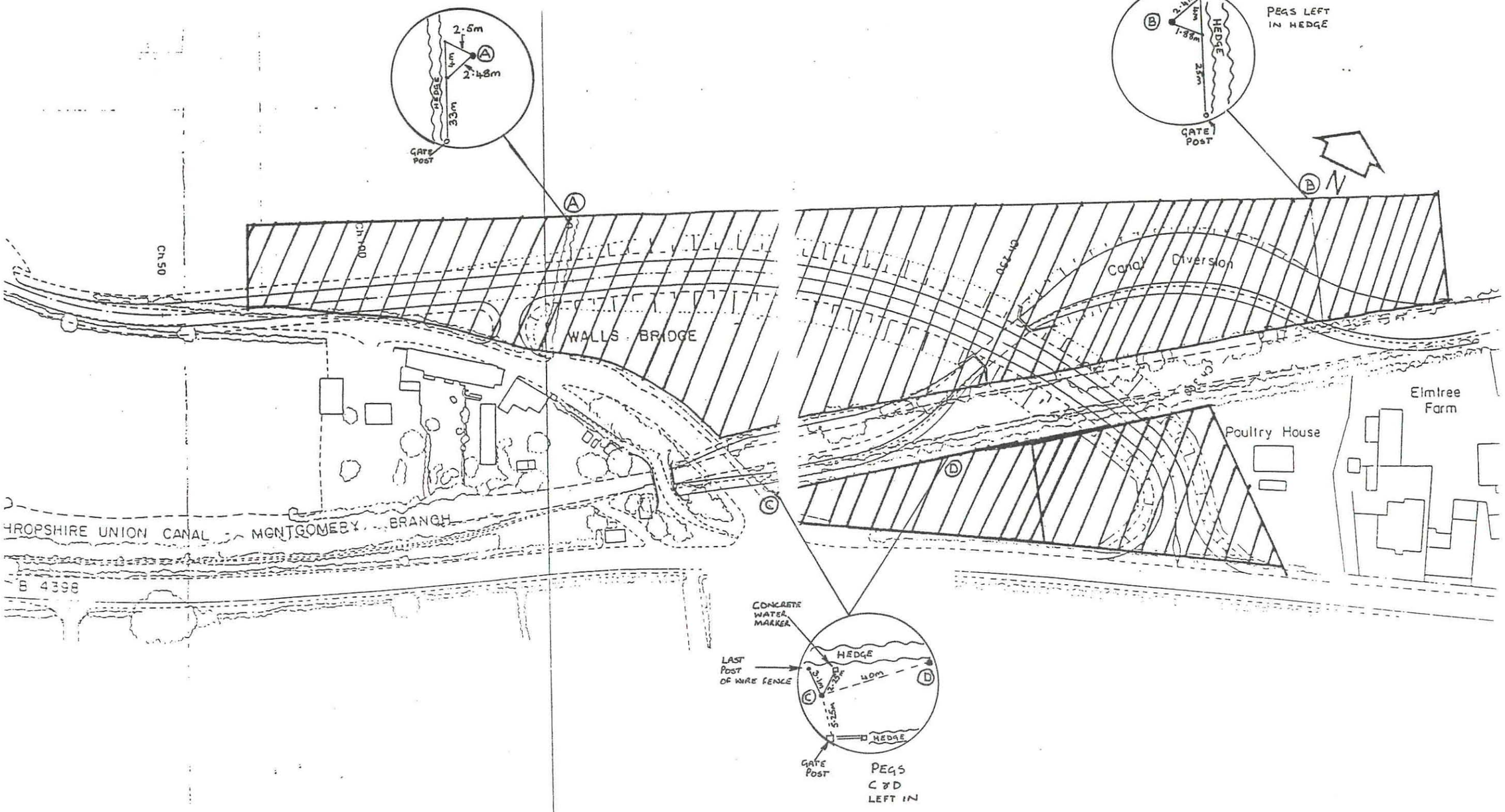
Date June 1996	Client CLWYD-POWYS ARCHAEOLOGICAL TRUST	STRATASCAN™
Scale 1:50 000	Subject Geophysical Survey Walls Bridge, Llanymynech General Location Plan	TILTRIDGE FARM UPPER HOOK ROAD UPTON UPON SEVERN WORCESTERSHIRE WR8 0SA UK TELEPHONE (01684) 592266 FAX (01684) 594142
Figure 1		



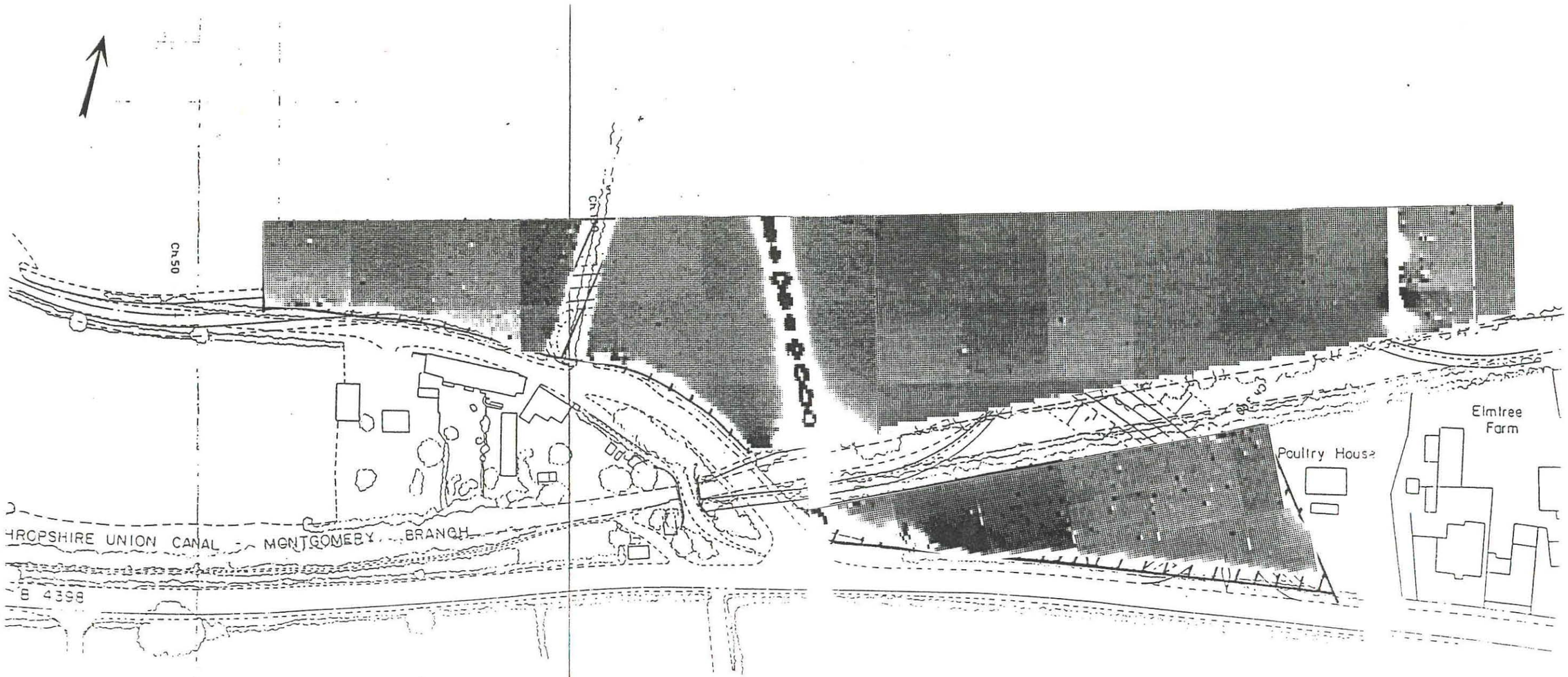
Date June 1996	Client CLWYD-POWYS ARCHAEOLOGICAL TRUST	Figure 2	
Scale 1:10 000	Subject Geophysical Survey - Walls Bridge, Llanymynech Detailed Location Plan		

GEOPHYSICAL & SPECIALIST SURVEY SERVICES

TILTRIDGE FARM
UPPER HOOK ROAD
UPTON UPON SEVERN
WORCESTERSHIRE WR8 0SA UK
TELEPHONE (01684) 592266
FAX (01684) 594142



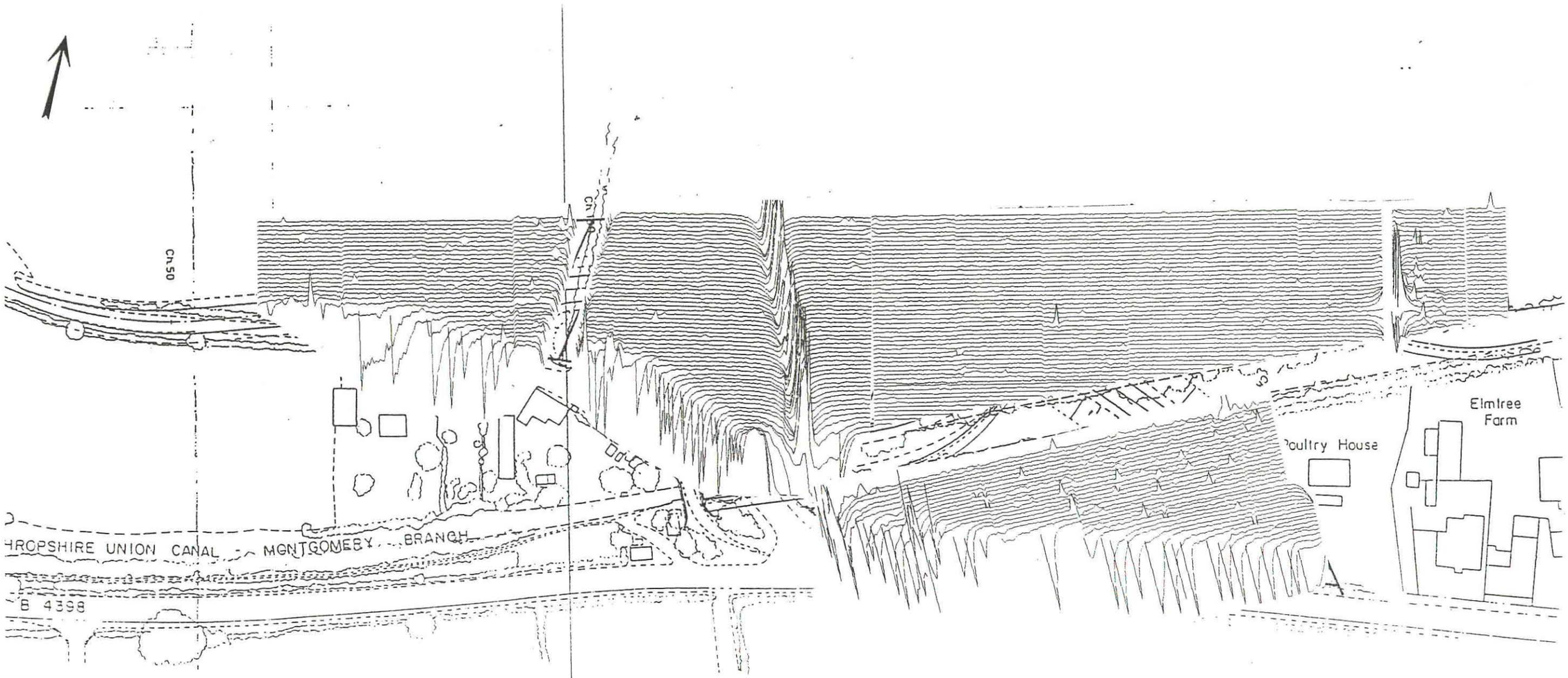
Date June 1996	Client CLWYD-POWYS ARCHAEOLOGICAL TRUST	Figure 3	STRATASCAN™ GEOPHYSICAL & SPECIALIST SURVEY SERVICES
Scale 1:1000	Subject Geophysical Survey - Walls Bridge, Llanymynech Site plan showing survey area and referencing of grids		TILTRIDGE FARM UPPER HOOK ROAD UPTON UPON SEVERN WORCESTERSHIRE WR8 0SA UK TELEPHONE (01684) 592266 FAX (01684) 594142



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

Date June 1996	Client CLWYD-POWYS ARCHAEOLOGICAL TRUST	Figure 4	STRATASCAN™ GEOPHYSICAL & SPECIALIST SURVEY SERVICES
Scale 1:1000	Subject Geophysical Survey - Walls Bridge, Llanymynech Plot of raw magnetometer data		

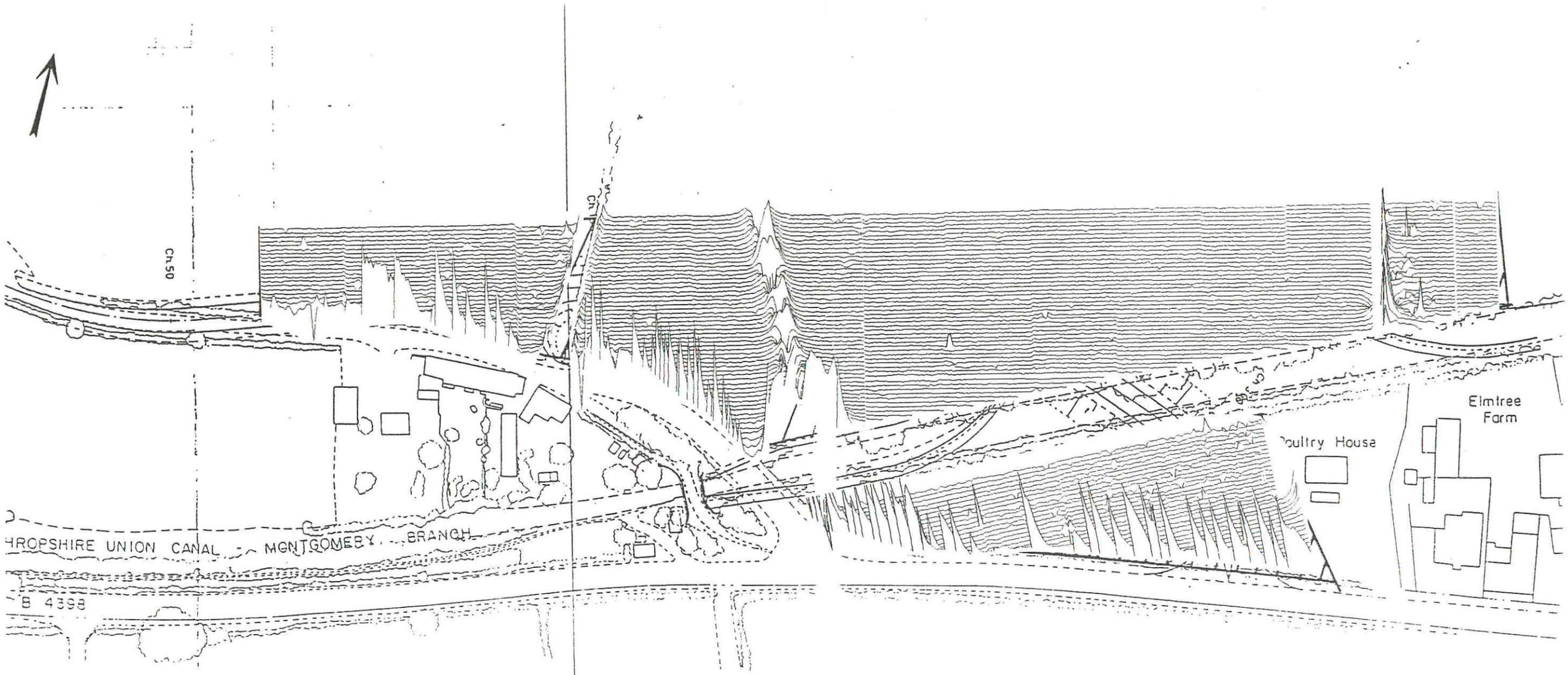
TILTRIDGE FARM
UPPER HOOK ROAD
UPTON UPON SEVERN
WORCESTERSHIRE WR8 0SA UK
TELEPHONE (01684) 592266
FAX (01684) 594142



Plotting parameters 79nT/cm
Positive values displace above the trace line
Hidden lines have not been plotted

Date June 1996	Client CLWYD-POWYS ARCHAEOLOGICAL TRUST	Figure 5	TIMESCAN™ GEOPHYSICAL & SPECIALIST SURVEY SERVICES
Scale 1:1000	Subject Geophysical Survey - Walls Bridge, Llanymynech Trace plot of raw magnetometer data showing positive values only		

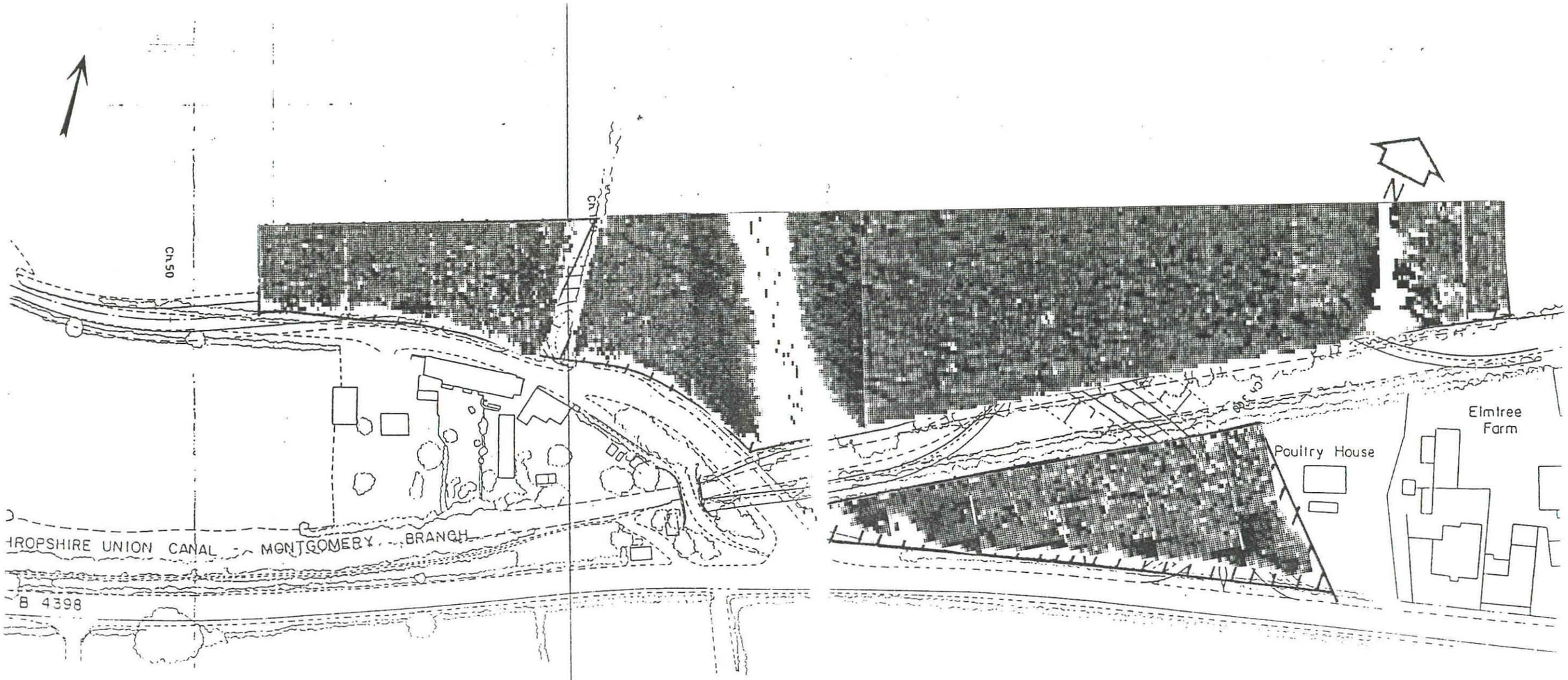
TILTRIDGE FARM
UPPER HOOK ROAD
UPTON UPON SEVERN
WORCESTERSHIRE WR8 0SA UK
TELEPHONE (01684) 592266
FAX (01684) 594142



Plotting parameters -79nT/cm
Negative values displace above the trace line
Hidden lines have not been plotted

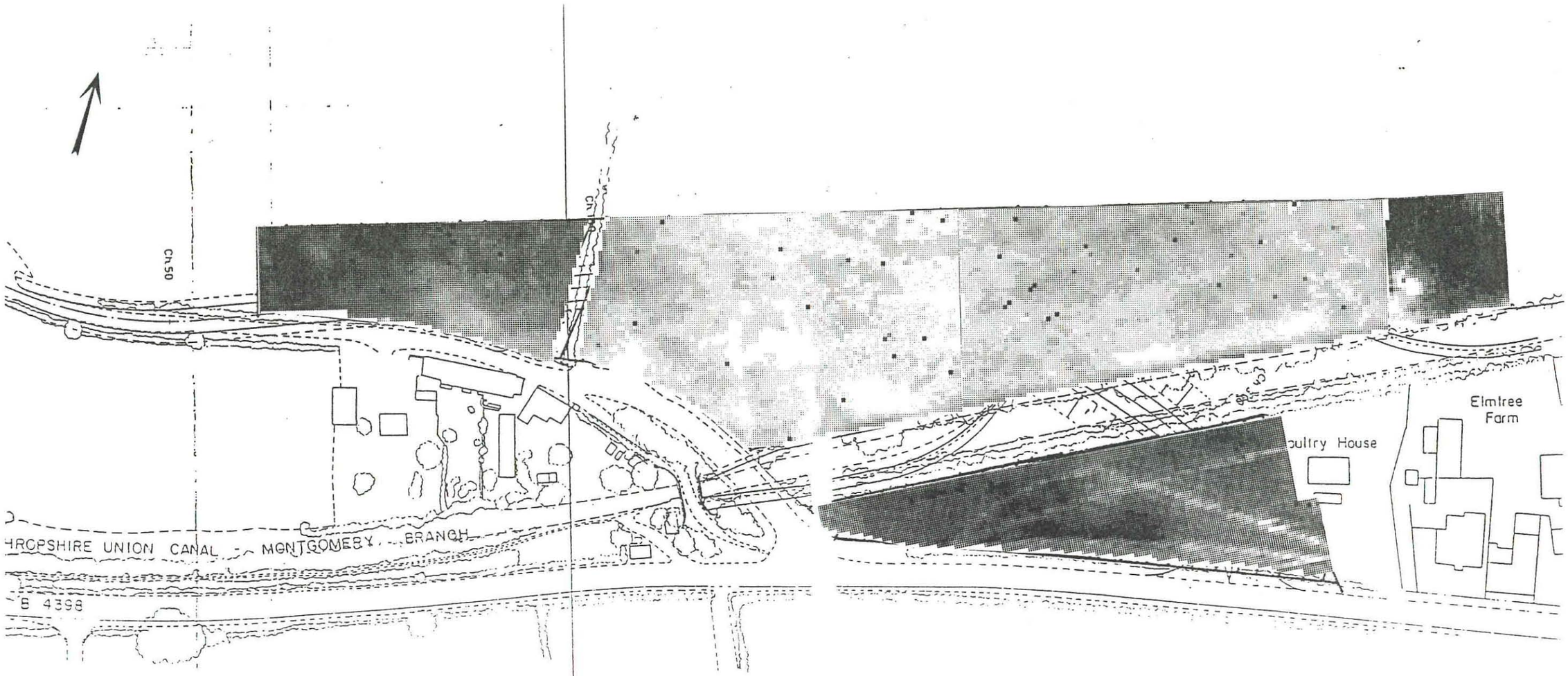
Date June 1996	Client CLWYD-POWYS ARCHAEOLOGICAL TRUST	Figure 6	STRATASCAN™ GEOPHYSICAL & SPECIALIST SURVEY SERVICES
Scale 1:1000	Subject Geophysical Survey - Walls Bridge, Llanymynech Trace plot of raw magnetometer data showing negative values only		

TILTRIDGE FARM
UPPER HOOK ROAD
UPTON UPON SEVERN
WORCESTERSHIRE WR8 0SA UK
TELEPHONE (01684) 592266
FAX (01684) 594142



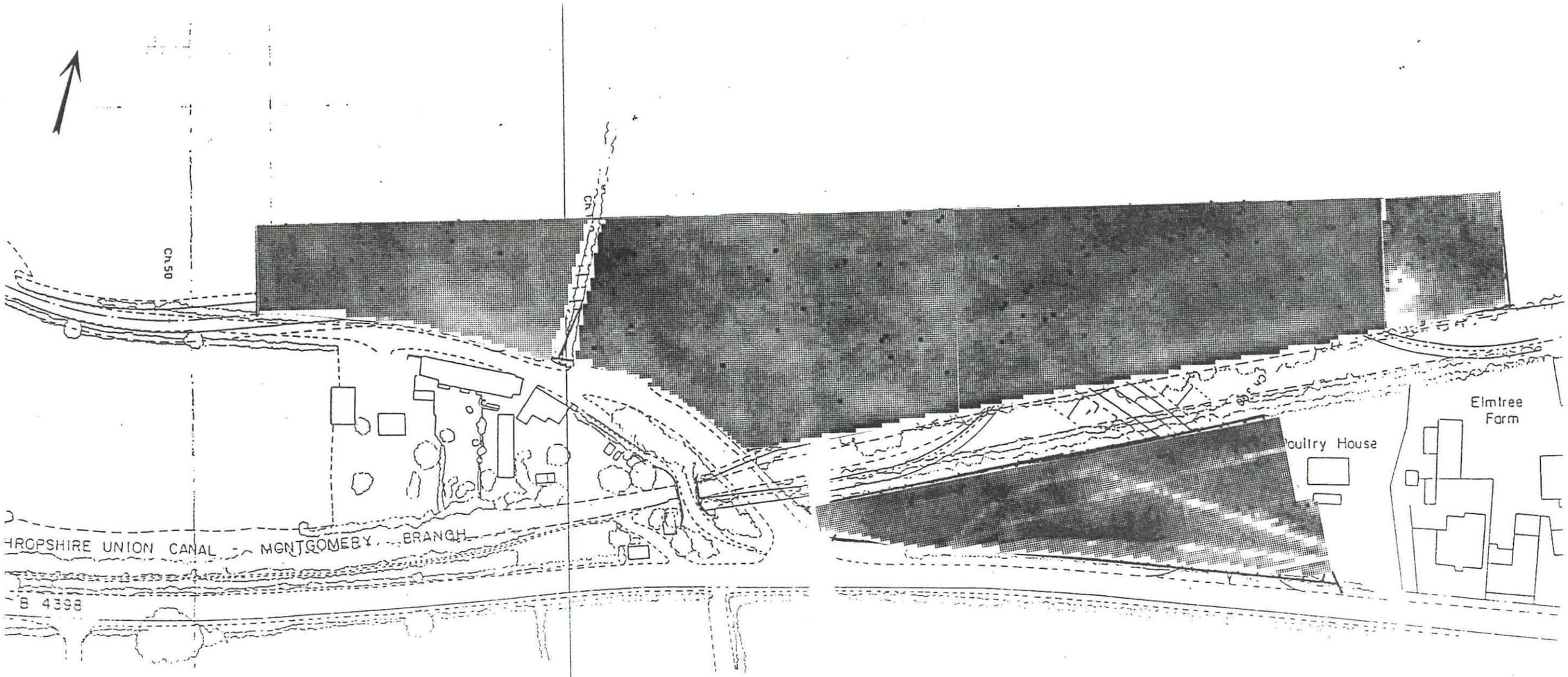
Plotting parameters
Minimum -2nT (white)
Maximum +2nT (black)

Date June 1996	Client CLWYD-POWYS ARCHAEOLOGICAL TRUST	Figure 7	SPATASCAN™ GEOPHYSICAL & SPECIALIST SURVEY SERVICES TILTRIDGE FARM UPPER HOOK ROAD UPTON UPON SEVERN WORCESTERSHIRE WR8 0SA UK TELEPHONE (01684) 592266 FAX (01684) 594142
Scale 1:1000	Subject Geophysical Survey - Walls Bridge, Llanymynech Plot of processed magnetometer data		



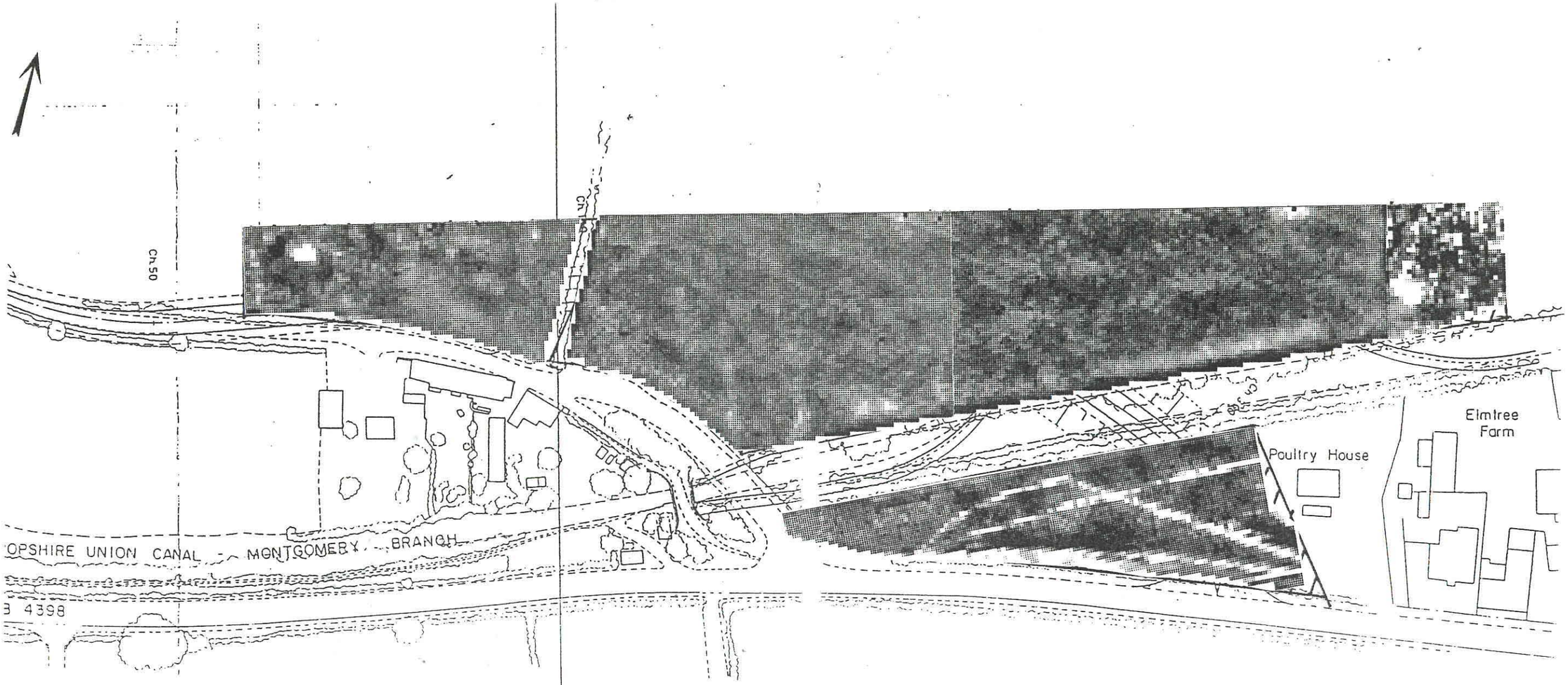
Plotting parameters
Minimum 40Ω (white)
Maximum 150Ω (black)

Date June 1996	Client CLWYD-POWYS ARCHAEOLOGICAL TRUST	Figure 8	SPARKSCAN™ GEOPHYSICAL & SPECIALIST SURVEY SERVICES
Scale 1:1000	Subject Geophysical Survey - Walls Bridge, Llanymynech Plot of raw resistivity data		TILTRIDGE FARM UPPER HOOK ROAD UPTON UPON SEVERN WORCESTERSHIRE WR8 0SA UK TELEPHONE (01684) 592266 FAX (01684) 594142



Plotting parameters
Minimum 30Ω (white)
Maximum 70Ω (black)

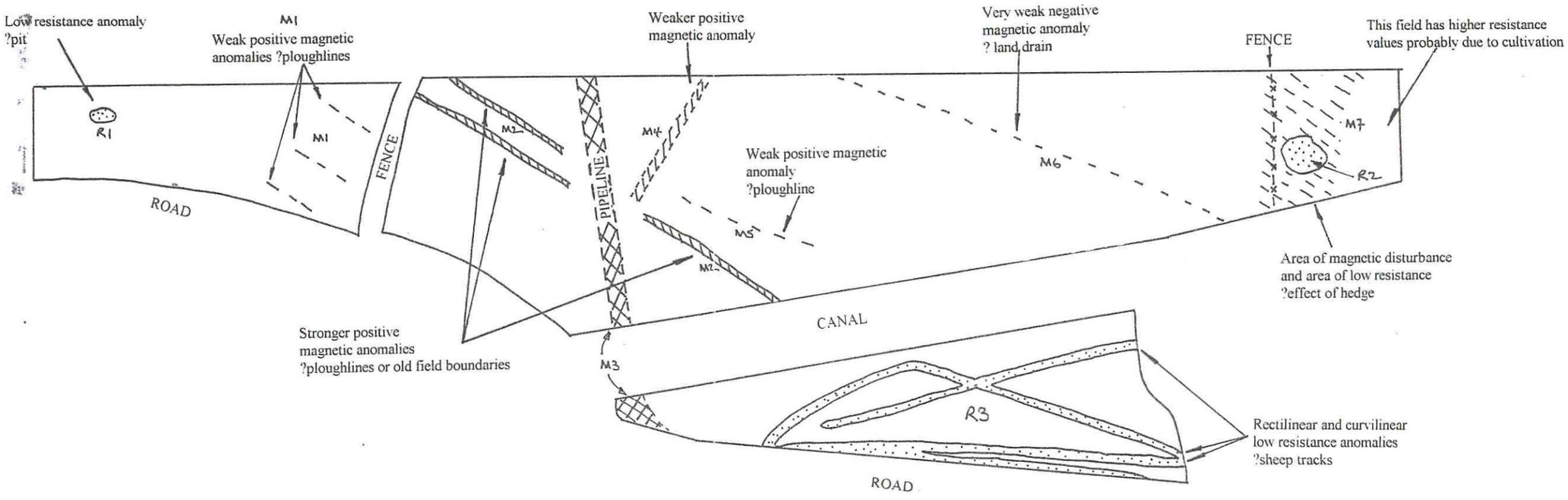
Date June 1996	Client CLWYD-POWYS ARCHAEOLOGICAL TRUST	Figure 9	STRATASCAN™ GEOPHYSICAL & SPECIALIST SURVEY SERVICES
Scale 1:1000	Subject Geophysical Survey - Walls Bridge, Llanymynech Plot of modified raw resistivity data		TILTRIDGE FARM UPPER HOOK ROAD UPTON UPON SEVERN WORCESTERSHIRE WR8 0SA UK TELEPHONE (01684) 592266 FAX (01684) 594142



Plotting parameters
Minimum -20Ω (white)
Maximum +20Ω (black)

Date June 1996	Client CLWYD-POWYS ARCHAEOLOGICAL TRUST	Figure 10	STRATASCAN™ GEOPHYSICAL & SPECIALIST SURVEY SERVICES
Scale 1:1000	Subject Geophysical Survey - Walls Bridge, Llanymynech Plot of processed resistivity data		

TILTRIDGE FARM
UPPER HOOK ROAD
UPTON UPON SEVERN
WORCESTERSHIRE WR8 0SA UK
TELEPHONE (01684) 592266
FAX (01684) 594142



Date June 1996	Client CLWYD-POWYS ARCHAEOLOGICAL TRUST	Figure 11	STRATASCAN™ GEOPHYSICAL & SPECIALIST SURVEY SERVICES
Scale 1:1000	Subject Geophysical Survey - Walls Bridge, Llanymynech Interpretative drawing		TILTRIDGE FARM UPPER HOOK ROAD UPTON UPON SEVERN WORCESTERSHIRE WR8 0SA UK TELEPHONE (01684) 592266 FAX (01684) 594142