ARCHAEOLOGICAL EVALUATION OF THE ROUTE OF THE ROTHERWAS ACCESS ROAD, HEREFORDSHIRE

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With a contribution by Northamptonshire Archaeology

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Project 2213
Report 986
HSM 31999 Non-intrusive survey
HSM 32000 Intrusive fieldwork

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Part 1 Project summary

An archaeological evaluation was undertaken along the route of the Rotherwas Access Road, Herefordshire (NGR SO 553 363 to SO 533 379: Fig 1), on behalf of Halcrow Group Limited who are acting on behalf of Herefordshire Council. Herefordshire Council intends to build an access road to the Rotherwas Industrial Estate from Grafton on the A49.

All fieldwork was undertaken within a survey corridor running the full 3.3km length of the route, approximately 50m wide. The project aimed to determine if any significant archaeological site was present and if so to indicate what its location, date and nature were. The route for the access road follows approximately the route that was selected as a component of the Hereford Bypass scheme that was proposed in the late 1980's. Archaeological work that was carried out ahead of this original proposal identified a number of areas of archaeological potential that would be effected by the construction of the road. However, further archaeological investigation was considered necessary because of the variations in alignment between the original route and the new proposed route and because of the advances in archaeological techniques in the intervening twelve 12 years, such as the increasing use of geophysics.

Existing information on known sites was gathered in preparation for an Environmental Statement, to which this report is to be appended. An initial phase of non-intrusive archaeological work, including fieldwalking, metal-detecting, geophysics and augering was carried out and identified several areas of potential archaeological interest. Two areas were selected for further detailed geophysical work and one of these areas at the eastern end of the survey corridor detected a curvilinear anomaly located close to where several worked flints had been collected during the fieldwalking.

The second phase of intrusive archaeological work followed and consisted of the excavation of ten trenches targeting the areas suggested as being of potential by the first phase of works. The only significant archaeological feature was found in a trench testing the area close to where the flint and geophysical anomaly were found. The feature was a ditch and contained 27 fragments of prehistoric pottery and a flint flake. The pottery is thought to date from sometime between the Late Neolithic and Late Bronze Age, lack of diagnostic sherds mean that more precise dating is not possible.

Part 2 Detailed report

1. Background

1.1 Reasons for the project

An archaeological evaluation was undertaken along the route of the Rotherwas Access Road, Herefordshire (NGR SO 553 363 to SO 533 379: Fig 1), on behalf of Halcrow Group Limited who are acting on behalf of Herefordshire Council. Herefordshire Council intends to build an access road to the Rotherwas Industrial Estate from Grafton on the A49. The route for the access road approximately follows a route that was selected as a component of the Hereford Bypass scheme that was proposed in the early 1990's. Archaeological work that was carried out ahead of this original proposal identified a number of areas of archaeological potential that would be effected by the construction of the road (Dinn and Hughes 1990, Hurst 1996).

1.2 Project parameters

The project conforms to *Standard and guidance for archaeological field evaluation* (IFA 1999). The project also conforms to a brief prepared by Herefordshire Archaeology, Planning Services, Herefordshire Council (HAS 2002) and for which a project proposal (including detailed specification) was produced by Worcestershire County Council Archaeology Service (AS 2002).

1.3 Aims

The aims of the evaluation were to assess the archaeological potential of the route effected by the road scheme. The project was to provide better definition of those archaeological remains that were known to exist and to locate and record any previously unknown remains that are discovered. These latter remains, if present, would be assessed as to their extent, state of preservation, date, type and vulnerability. The purpose of this was to establish their significance, since this would make it possible to recommend an appropriate treatment, which may then be integrated with the proposed development programme.

2. Topographical and archaeological context

2.1 Location

The proposed Rotherwas Access Road runs from the A49 near the Grafton Inn to Watery Lane before crossing the Rotherwas Industrial Estate and joining the B4399 south-west of Hereford. It passes through the parishes of Grafton and Lower Bullingham, and Dinedor. The western part of the route runs along the valley of the Norton Brook; it then crosses Green Crize Common and the valley of the Red Brook and continues along the lower slopes of Dinedor Hill. It then crosses into the flat valley of the Wye, which is occupied by the Rotherwas Industrial Estate. Most of the area is in arable cultivation, although there is some pasture at Green Crize Common. Dinedor Hill dominates the surrounding landscape and is the site of an Iron Age hillfort which listed as a Scheduled Ancient Monument

2.2 Geology

The solid geology of the area consists of Lower Old Red Sandstone of the Raglan mudstone formation. Much of the drift geology is made up of river terrace deposits, although alluvium is present in the Norton Brook and Red Brook valley bottoms. The soils are brown earths, with gley or brown warp soils in the valley bottoms.

2.3 Previous work

The preferred route of the Rotherwas Access Road closely follows part of the route that had been selected for the Hereford bypass project. This route had already been the subject of an archaeological evaluation in 1989-90 (Dinn and Hughes 1990) and a desk-based assessment (Hurst 1995) that had identified the route as effecting areas of archaeological potential (Figs 2 & 3). The 1989-90 evaluation consisted of a programme of fieldwalking on the arable areas of the route while those areas under pasture were tested for archaeological deposits with an auger. Most of the fields that were walked produced scatters of Roman and medieval pottery. None of the scatters were concentrated enough to suggest the presence of a settlement and were thought to have been deposited during manuring with domestic. A cropmark of a square enclosure (HSM 30271) had been identified from aerial photographs in Field 2 to the north of the proposed road corridor and may be the source of the pottery found on the surrounding fields. Enclosures like this are the commonest cropmark in Herefordshire and these are assumed to have been predominately "constructed and occupied within the first millennium BC or during the Romano-British period" (Whimster 1989). Finds of worked flint were discovered in several fields but were usually small in number, no more than five per field. However one scatter of flint was more substantial (HSM 8465), and consisted of 130 flints of probable Bronze Age date with further flints found in the neighbouring field (HSM 8619). Four small test trenches further examined this concentration, each measuring 5m by 2m. These failed to identify any archaeological features.

The route of the Hereford bypass ran slightly to the south of the proposed Rotherwas Access Road with the except in Fields 4, 5, 6, 7 and 8 where the route was the same. As a result of the variations in the route the material that was found in the 1989-90 evaluation is relevant, but not directly applicable to the present scheme. The two principle flint scatters mentioned above (HSM 8465 & 8619) were located in Rotherwas Access Road Fields 10 and 11, although the proposed road corridor does not cross the find spots.

3. Methods

3.1 Fieldwork strategy

A detailed specification has been prepared by the Service (AS 2002). Fieldwork was undertaken between 20th May and 20th June 2002 and was carried out in two phases. The first phase consisted of non-intrusive survey techniques such as fieldwalking, geophysical survey, metal-detecting and augering, while a second intrusive phase of survey consisting of trenching. This combination of techniques provided the best method for ensuring that archaeological sites were identified and assessed. A meeting with Julian Cotton of Herefordshire Council was held to agree on which sites and areas were to be targeted and tested.

Now intrusive fieldwork was undertaken within a survey corridor running the full 3.3km length of the route, approximately 50m wide. Sample excavation trenches were undertaken within the proposed planning application boundary. The route of the corridor crosses 15 fields, each field was allocated a number (Figs 2 & 3). The field numbers are referred to throughout the report as the principle way of locating any finds or remains discovered in the evaluation. The route of the proposed road approximately followed a route that had previously been identified for the proposed Hereford Bypass scheme. This earlier road scheme was also subject to an archaeological assessment, which had identified several areas of archaeological potential, principally through fieldwalking. This further archaeological

investigation was considered necessary because of the advances in archaeological techniques in the intervening twelve years, such as geophysics and the variations in alignment between the original route and the new proposed route. A summary of the results of both evaluations is shown in appendix 1.

3.2 Non-intrusive survey methods (HSM 31999)

3.2.1 Fieldwalking

Fieldwalking was undertaken in suitable areas that had been recently ploughed, using 20m transects to enable the plotting of distributions of artefacts in the plough soil. A metaldetector was also used on these areas and others where the crop was suitably low. The fieldwalking focused on areas where previous fieldwalking associated with the Hereford Bypass scheme had not been undertaken or had been limited in its extent. The timing of the fieldwork meant that many of the arable fields on the route were unsuitable due to crop cover, but two principal areas were identified. The first section was a 500m stretch at the western end of the route in Fields 1 and 2, close to the A49 and the cropmark (HSM 30271), and Field 13 close to Watery Lane at the eastern end of the route. These areas had not been fieldwalked before as the route of the earlier Hereford Bypass ran to the south of the present proposed route and Field 13 was only subjected to augering on the earlier evaluation. The information from the fieldwalking was used to select the locations for the machine-excavated trenches.

3.2.2 Geophysical survey

The whole of the route from the A49 to Rotherwas was scanned using a fluxgate gradiometer with the exception of some areas where the ground conditions were unsuitable. This initial scan was followed by detailed gradiometer survey of areas detected as being of archaeological potential in the initial scanning. A magnetic susceptibility survey was also carried out in an area that was covered by a high cereal crop. No geophysical survey had been undertaken during the previous work on the proposed Hereford bypass route as it was not a common technique used at the time.

3.2.3 Augering

Augering was carried out in Field 4 only as it was thought that the proximity of the Norton Brook along the northern edge of the field might have resulted in colluvial/alluvial deposits burying former ground surfaces and masking archaeological deposits. No augering had been carried out here in the previous evaluation.

4. Non-intrusive survey results

4.1 Fieldwalking results (Appendix 2)

The fieldwalking recovered 1159 artefacts, ranging from prehistoric flints to modern pottery but most of the material on all three fields was post-medieval, dating from the 17th century onwards. Prehistoric flint was found on two fields, the flint from Field 1 included a retouched flake, whilst the flint from Field 13 consisted of three flakes and a core. Roman pottery and tile was recovered from all three fields with the highest proportion of Roman material was recovered from Field 1. All of the material was highly abraded suggesting that it had been in the topsoil for some time and that it was deposited as a result of manuring rather that indicating a buried settlement. Other than a slight concentration in Field 13 there was no evidence for clusters of finds suggesting settlement sites. A brief walk over in the area of the enclosure cropmark to the north of the road corridor in Field 2 produced a concentration of Roman pottery sherds.

The metal detecting survey produced only two finds; an Edward III penny, circa 1327-1377, and a 16th century buckle, both appear to have been casual losses and do not relate to any buried site.

4.2 Auger survey results (Appendix 3)

Augering was carried out at three points along a transect between the proposed road and the stream in the northeast corner of Field 4. The holes showed the topsoil to be overlying alluvial/colluvial silty-clays, which in turn overlay gravel. The silty clay was deepest in Hole 2, 1.8m below ground surface. The deep deposit of silty clay was also present in Hole 4 at the northeastern corner of Field 4, inline with the course of the Norton Brook before it turns north at a ninety-degree angle. Here the silty-clay was 2.8m deep before the hole was abandoned due to the compaction of the clay. The poor definition of topsoil and silty clay sediments suggests that soil formation was constantly being interrupted by deposition of either alluvium or colluvium. The auger holes also showed that the stream would probably have once followed a more irregular course to the south of its present course. No indication of any archaeological deposits was found.

4.3 Geophysical survey results (Appendix 4)

All of the fields along the length of the proposed road corridor were scanned to locate any significant archaeological anomalies with the exception of Field 14 at the eastern end, which contained a high crop of barley. The reconnaissance survey produced a few significant anomalies and only two areas in Fields 2 and 13 were selected for a further detailed magetometer survey. The detailed survey revealed nothing of archaeological interest in Field 2, but did show a curvilinear anomaly in Field 13, which was thought to be archaeological. An additional magnetic susceptibility survey was carried out in Field 11 and showed a broad area of significant readings, which may have indicated an area of archaeological interest.

5. Intrusive survey methods (HSM 32000)

5.1 Trenching

Eight trenches, were excavated along the length of the road route in locations agreed with the curator, based on the findings of the fieldwalking and the geophysical techniques. Trenching represents the most effective method of identifying, dating and characterising archaeological sites. Trench locations were determined from the results of the geophysical survey, the fieldwalking and the results of the fieldwalking that took place in 1989-90.

Trenches 1 and 2 were located in Field 2 due to the proximity of the enclosure cropmark to the north and the Norton Brook to the south. The geophysical scan had also detected anomalies in the corner of the field. Trench 3 was located in Field 7 where geophysical survey had detected nothing but as the field was pasture and had been so at the time of the previous evaluation no fieldwalking had taken place at all. The field was thought to be a good location for a settlement, on a ridge overlooking the Red Brook to the east. Trenches 4, 5, 6 and 7 were located in Fields 8 and 11 due to their proximity to the flint scatters found in 1989-90 in Fields 10 and 11. No anomalies had been detected here in the geophysical survey. Trenches 8 and 9 were located in Field 13 as a result of the curvilinear anomaly found by the detailed geophysical survey and the worked flint found by the fieldwalking. Trench 10 was sited in the west of Field 11 due to the high readings from the magnetic susceptibility survey.

Deposits considered not to be significant were removed using a JCB excavator, employing a toothless bucket and under archaeological supervision. Subsequent excavation was undertaken by hand. Clean surfaces were inspected and selected deposits were excavated to retrieve artefactual material and environmental samples, as well as to determine their nature.

Deposits were recorded according to standard Service practice (CAS 1995). Topsoil was examined for finds.

All fieldwork records were checked and cross-referenced. Analysis was effected through a combination of structural, artefactual and ecofactual evidence, allied to the information derived from other sources.

5.2 Artefacts

5.2.1 Artefact recovery policy

The artefact recovery policy conformed to standard Service practice (CAS 1995; appendix 2). Method of analysis

All hand retrieved finds were examined. They were identified, quantified and dated to period. A *terminus post quem* was produced for each stratified context. The date was used for determining the broad date of phases defined for the site. All information was recorded on *pro forma* sheets.

Pottery fabrics are referenced to the fabric reference series maintained by the Service (Hurst 1994).

5.3 Environment

5.3.1 Sampling policy

The environmental sampling strategy conformed to standard Service practice (CAS 1995; appendix 4).

5.3.2 Method of analysis

For each of the samples a sub-sample of 1 litre was processed by the wash-over technique as follows. The sub-sample was broken up in a bowl of water to separate the light organic remains from the mineral fraction and heavier reside. The water, with the light organic faction was decanted onto a 300mμ sieve and the residue washed through a 1mm sieve. The remainder of the bulk sample was retained for further analysis.

The samples were processed by flotation followed by wet sieving using a Siraf tank. The flot was collected on a 300μm sieve and the residue sorted on a 1mm mesh. This allows for the recovery of items such as small animal bones, molluscs and seeds.

The residues were fully sorted by eye and the abundance of each category of environmental remains estimated. The flots were fully sorted using a low power EMT light microscope and remains identified using modern reference specimens housed at the Service. A sample was taken to assess for the presence and survival of pollen and the results are awaited.

5.4 The methods in retrospect

The methods adopted allow a high degree of confidence that the aims of the project have been achieved but it must be noted that some short lengths of the route were unsuitable for fieldwalking due to the presence of crops. Field 14 was unsuitable for any archaeological assessment at the time of the evaluation due a crop of barley. No trenches were excavated to test the area occupied by the Rotherwas Industrial Estate, as 60% of the total area is already occupied by structures likely to have caused ground disturbance much of the remaining area is also likely to have been heavily disturbed. The geology of the area is known to be responsive to geophysical survey the specialist (Northamptonshire Archaeology) was confident that anomalies would be shown if they were present.

6. Description

The results of the structural analysis are presented in Table 1, with Table 2 summarising the artefacts recovered. The trenches and features recorded are shown in Figs 2 and 3.

6.1 Phase 1 Natural deposits

Natural deposits were encountered in all trenches. These principally consisted of reddish brown clays with gravels. A reddish brown silty clay subsoil was also present in most trenches. The exception was the eastern area of Field 11 where the geology was far more stoney. This variation in the natural was probably responsible for the high responses in the magnetic susceptibility survey that were interpreted as possibly being the result of past human activity.

6.2 Phase 2 Prehistoric deposits

The fieldwalking found six pieces of worked flint, two from Field 1 and four from Field 13. The only prehistoric feature that was identified, was found in Trench 8, Field 13 (Fig 4). The feature was a curvilinear ditch (8005), aligned approximately east-west, measuring 1m wide and 0.3m deep with a 'V' shaped profile with a shallow, vertically sided gully at its base to the west. The feature cut the natural clay and subsoil layer (8003) and was filled with a medium orange-brown silty clay (8004). The feature was then sealed by another subsoil layer (8002) and the topsoil of the field (8001). The fill of the feature contained 27 fragments of prehistoric pottery and a small flint flake. The pottery has been dated by its fabric to the Neolithic to Early Bronze Age period, lack of diagnostic sherds means that a more precise date was not possible. The western end of the feature has been truncated by a field drain, beyond which it was not possible to trace any continuation. To the east the feature seems to change direction curving around 90 degrees and continuing north, it then possibly turns again 90 degrees to the west forming a rectangular shape, approximately 3m across but this was not tested by excavation. Trench 8 did not test the curvilinear geophysical anomaly, which appears to lie a few metres to the north-west of the trenches western end.

6.3 Phase 3 Roman deposits

No Roman features were found during the excavation. The only Roman material that was recovered during the trenching were two pottery sherds and three tile fragments from the subsoil of Trench 3.

6.4 Phase 4 Medieval deposits

Two linear medieval features were identified in Trench 7. The features appeared to be ditches aligned approximately north-east to south-west down the slope of the hill in Field 11. The features had been heavily truncated by ploughing with the deeper of two measuring only 0.12m from top to base. A single sherd of medieval pottery was recovered from the eastern ditch (7003). Further sherds of medieval pottery were recovered from the topsoil of Trench 6 (6000) and the subsoil of Trench 9 (9002).

6.5 Phase 5 Post-medieval/modern deposits

Post-medieval deposits consisted of ceramic field drains that were found in most trenches and evidence for down-slope soil movement due to ploughing.

6.6 Undated deposits

An infilled watercourse was identified in the northeastern end of Trench 6 in Field 11. The watercourse was approximately 4m wide and 1.5m deep at the limit of excavation. It was

filled with silty clay with layers of organic material at the base containing well preserved wood, from which environmental samples were taken. No dateable material was recovered from the feature, although it is likely to be of some antiquity as it is not shown on the First Edition Ordnance Survey map of 1890 or the Tithe map of 1844. The course of the stream is still visible as a linear depression in the field running towards the northwest and down to the Red Brook.

6.7 Artefact analysis

The assemblage consisted of 81 artefacts weighing 111g retrieved from seven unstratified and four stratified contexts (see Table 2).

Pottery formed a small assemblage of 53 sherds of mixed date ranging from the prehistoric through to modern period. Due to the larger part of this assemblage being unstratified material recovered from topsoil, the majority of sherds displayed high levels of abrasion and the average sherd size was relatively small. All sherds were grouped and quantified according to fabric (see Table 3). No sherds were diagnostic and therefore datable only to the general period or production span of each fabric type.

Ceramic building material was all unstratified and included three fragments of Roman tile (Trench 3). Other tile could all be identified as roofing tile dating between the post-medieval (Trench 3) and modern (Trenches 6 and 8) periods. A single tiny fragment of brick was also retrieved (Trench 8). In addition, two fragments of undiagnostic fired clay were identified (Trenches 3 and 6).

The remaining material within the assemblage consisted of a piece of two clay pipe stems, one piece of modern vessel glass, two iron nails, four pieces of iron slag (one within stratified context 5004), three fragments of clinker and an unidentifiable iron object.

6.8 Discussion of the artefacts

The discussion below is a summary of the finds and associated location or contexts by period. Where possible, dates have been allocated and the importance of individual finds commented upon as necessary.

6.8.1 Prehistoric

A total of 27 fragments of pottery weighing 21g were identified as dating to the earlier prehistoric period, a large proportion of which could be classified as ‘crumbs’ due to their small size. Twenty of these sherds came from stratified contexts 8002 and 8004. The fabric was highly distinctive, being heavily tempered with large pieces of angular quartz (see fabric description below). A similar fabric has previously been identified within the early prehistoric pottery from Wellington Quarry, Herefordshire, where it has been recognised as a long lived fabric dating to between the Early Neolithic (Fabric 2; Gibson 2002, 20) and Late Bronze Age (Robin Jackson pers comm) periods on the basis of diagnostic forms sherds. However, due to the absence of diagnostic forms from Rotherwas, only the very broadest date range can be given for the sherds and the respective contexts.

Although it is not possible to distinguish individual vessels from such small fragments, variations in fabric may suggest that the sherds came from different pots (Robin Jackson pers comm).

Fabric description

Coarsely tempered, soft fabric containing abundant ill-sorted quartz inclusions <5mm, often with pinkish surfaces and moderate well sorted, fine mica. The vessels are handmade and commonly smoothed on the interior surface, whilst the exterior is left rough with the quartz

visible at the surface. Colour varies from pale buff through to black, with the exterior surface commonly a reddish-dark buff.

6.8.2 Roman

A small assemblage of Roman material, consisting of two sherds of pottery and three fragments of tile was retrieved from Trench 3. The pottery could be identified as Severn Valley ware which was produced locally between the mid 1st and 4th centuries. However, voids resulting from organic temper, identifiable within the fabric indicated these sherds to be of an early date of mid 1st-early 2nd century. One sherd could be identified as from the neck of a storage jar.

The tile was fragmentary and of a fine, micaceous fabric also commonly associated with local production.

6.8.3 Medieval

The medieval period was represented by six cooking pot sherds from Trenches 6 and 7. The two identifiable fabrics present were limestone, sandstone and quartz tempered ware (Hereford fabric 2A) and sandstone and quartz tempered ware (Hereford fabric 3A), both of which could be dated to between the 13th and 14th centuries. Vessels of these fabrics are thought to have been produced locally, possibly within the Hereford itself due to distribution being limited to the hinterlands of the city.

The remaining sherd (Trench 9) could not be identified and was grouped as miscellaneous medieval wares (fabric 99).

6.8.4 Post-medieval and modern

All finds from the post-medieval and modern periods formed a standard assemblage. The pottery consisted of sherds of commonly identified fabrics from domestic vessels dating from the 18th century onwards.

6.9 Significance of the artefacts

Although this is a relatively small and largely unstratified assemblage, the presence of earlier prehistoric pottery within stratified contexts is of considerable interest. Not only does it indicate the high likelihood of activity on the site at this time, but also further strengthens the probability of this fabric being produced relatively locally to this area of Herefordshire.

7. Discussion

7.1 Prehistoric

The best evidence for the survival of prehistoric remains on the proposed route was found in Field 13 at the eastern end of the route. The remains are heavily truncated but this has to be expected considering their age and the agricultural use of the land. This field had been an orchard in recent memory and this non-arable use until recent times, may explain the better preservation of features here than in Fields 10 and 11, where flints were found in the topsoil due to the features they were once buried in being ploughed out. The feature that was found in Trench 8 was not the one identified earlier in the geophysics but another that was not picked up, this is interesting as it as it shows that other features may survive buried in the field and not visible to geophysical survey. The location of the former water course in Field 11 is also of interest due to its proximity to the flint scatter discovered in Field 10 in 1989-90, although it is not known if they are contemporaneous.

7.2 Roman

The evidence for Roman period activity in the area of the corridor of the proposed road confirms the findings that were made by the previous evaluation in 1989-90, that pottery discovered during the fieldwalking along the western end of the route is the result of the manuring of the fields with domestic rubbish in the Romano-British period. The proximity of the cropmark enclosure is also likely to be relevant to this. The pottery and tile found in Trench 3 in Field 7 was probably deposited in a similar way, originating from a settlement that has not been identified in the area.

7.3 Medieval

Little evidence for medieval activity was found in the evaluation other than the two heavily truncated ditches in Field 11 and the pottery collected during the fieldwalking, which like the Roman material was probably deposited during the spreading of domestic rubbish on the fields for manure.

7.4 Post-medieval/modern

The only post-medieval remains found in the evaluation was the pottery from the fieldwalking and the land drains found in the trenches. A box section excavated out of the side of Trench 5 showed the build up of subsoil in the area, which was over 1m deep, being due to soil being washed and ploughed down slope in this period.

8. Publication summary

The Service has a professional obligation to publish the results of archaeological projects within a reasonable period of time. To this end, the Service intends to use this summary as the basis for publication through local or regional journals. The client is requested to consider the content of this section as being acceptable for such publication.

An archaeological evaluation was undertaken along the route of the Rotherwas access road, Herefordshire (NGR SO 553 363 to SO 533 379; HSM 31999 & HSM 32000). Herefordshire County Council intends to build an access road to the Rotherwas Industrial Estate from Grafton on the A49.

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close to where the flint and geophysical anomaly were found. The feature was a ditch and contained 27 fragments of prehistoric pottery and a flint flake. The pottery is thought to date from sometime between the Late Neolithic and Late Bronze Age, lack of diagnostic forms sherds mean that more precise dating is not possible.

9. The archive

The archive consists of:

14 Fieldwork progress records AS2

6 Photographic records AS3

3 Colour transparency film

3 Black and white photographic films

3 Sample records AS17

11 Abbreviated context records AS40

6 Scale drawings

1 Box of finds

1 Computer disk

The project archive is intended to be placed at:

Hereford City Museum

10. Acknowledgements

The Service would like to thank Julian Cotton and Dr Keith Ray of Herefordshire Archaeology and Catherine Hext of Herefordshire Council for their kind assistance in the successful conclusion of this project. Thanks are also due Liz Bancroft and John Harper of Halcrow and to Mr Langford, Mr T Goodwin and Mr N Watkins the farmers.

11. Personnel

The fieldwork was led by Chris Patrick with assistance from Erica Darch, James Goad, Simon Griffin, Andy Mann, Adam Mindykowski, Steve Rigby, Tom Vaughan. The report preparation was led by Chris Patrick. The project manager responsible for the quality of the project was Robin Jackson, finds analysis by Laura Griffin, environmental analysis by Elizabeth Pearson and illustration by Carolyn Hunt and Laura Templeton. The geophysical survey was carried out by Peter Masters of Northamptonshire Archaeology.

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13. Abbreviations

HSM Herefordshire Sites and Monuments Record.

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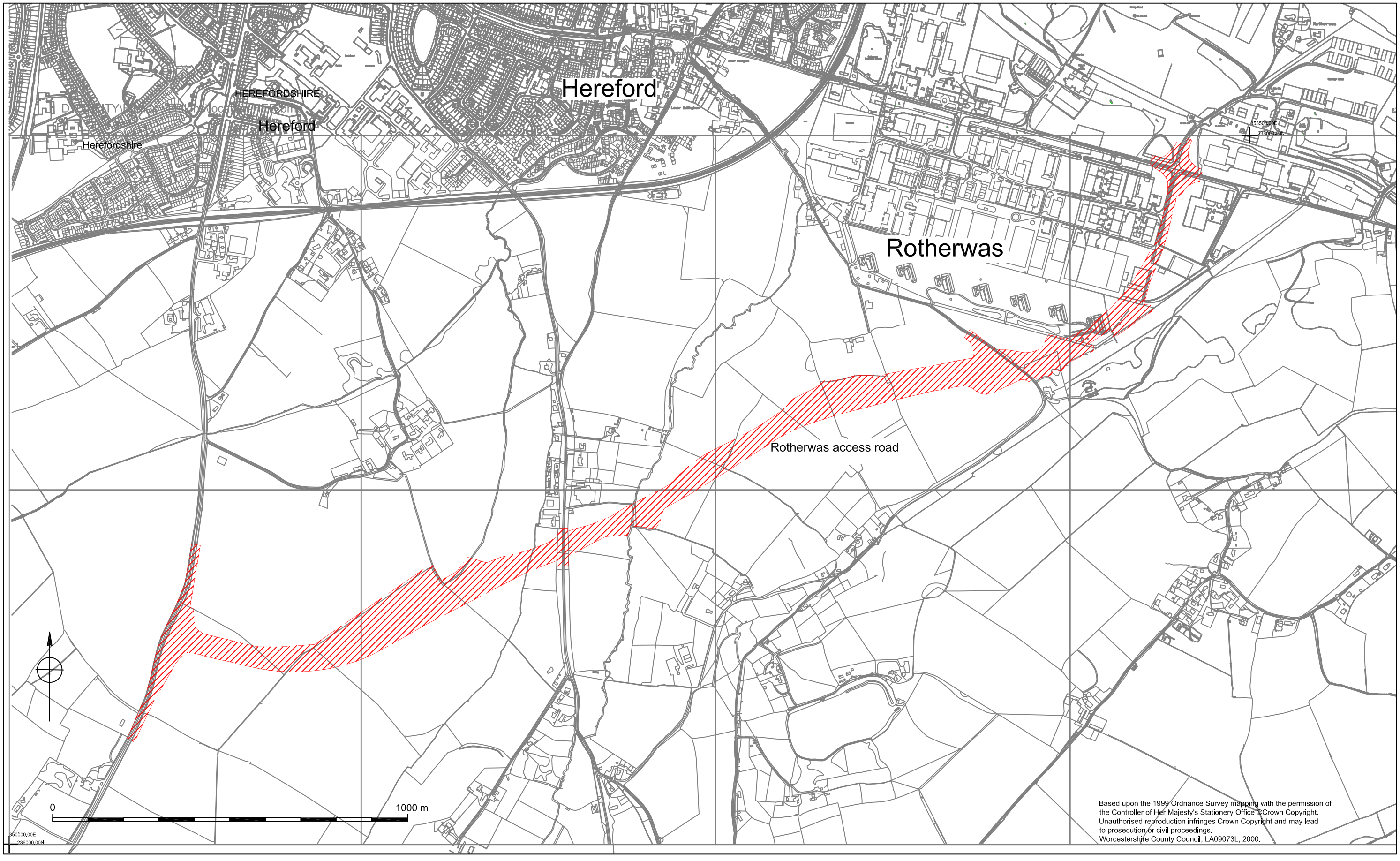

Figure 1: Location of the Rotherwas access road

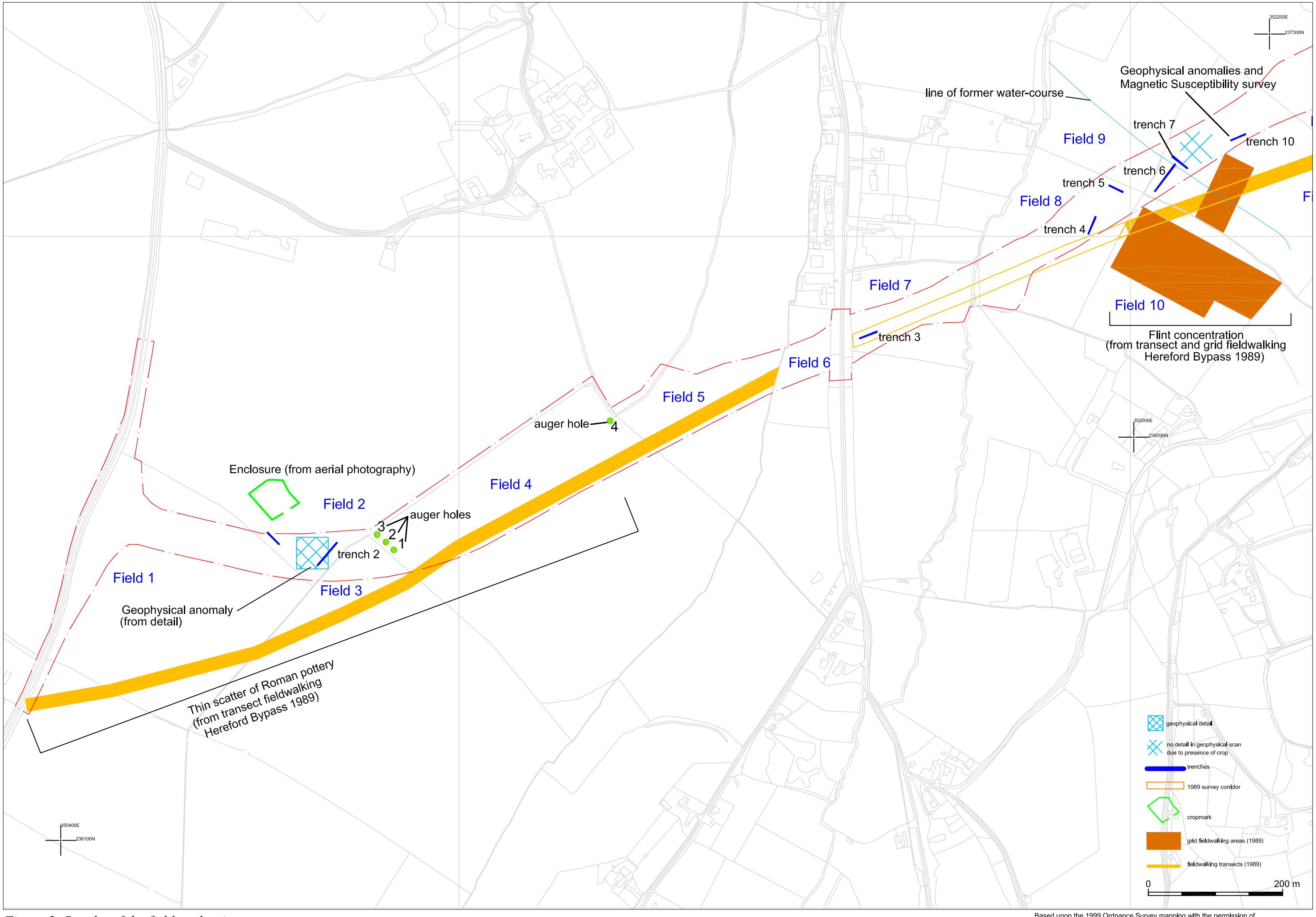

Figure 2: Results of the field evaluation

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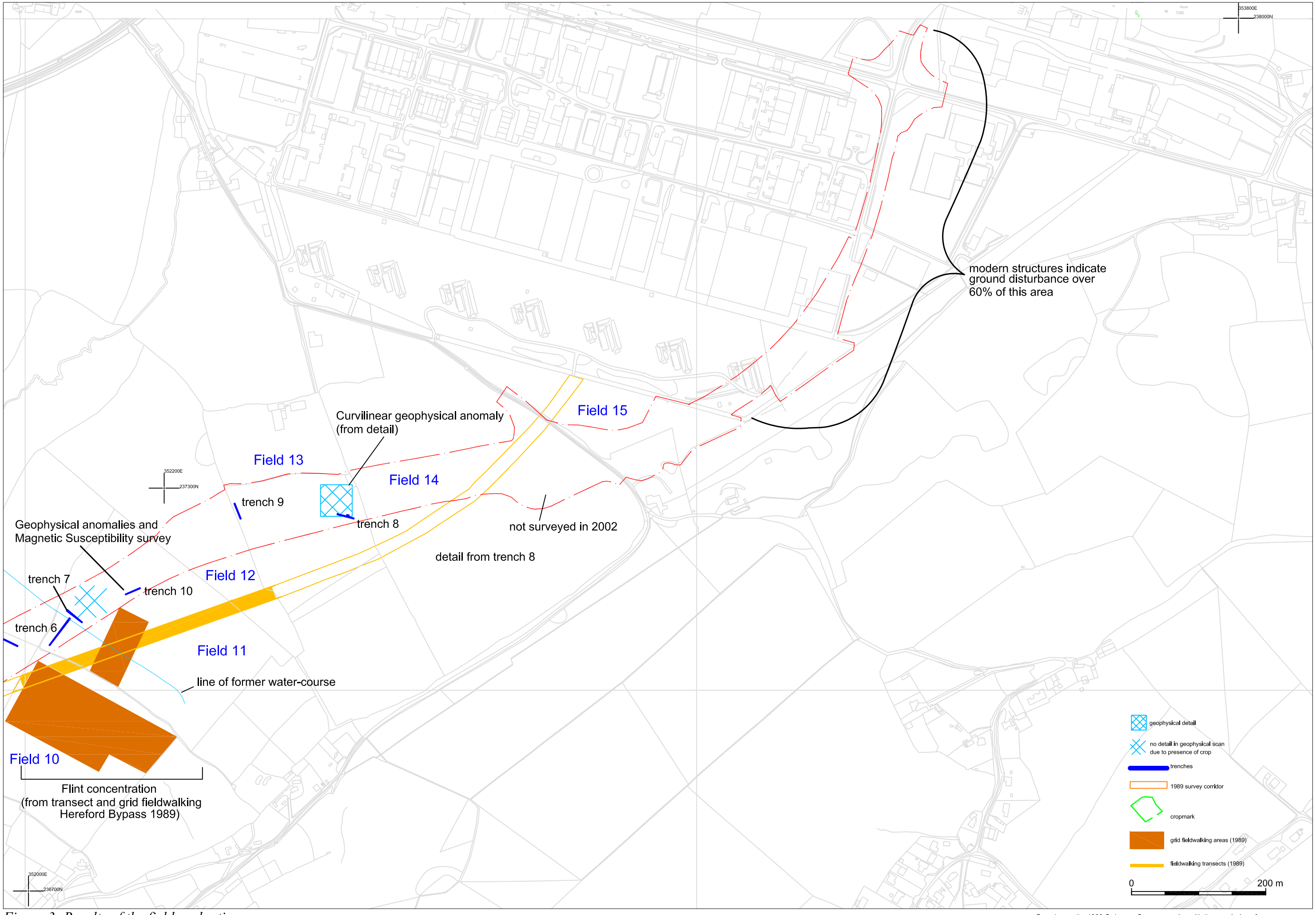

Figure 3: Results of the field evaluation

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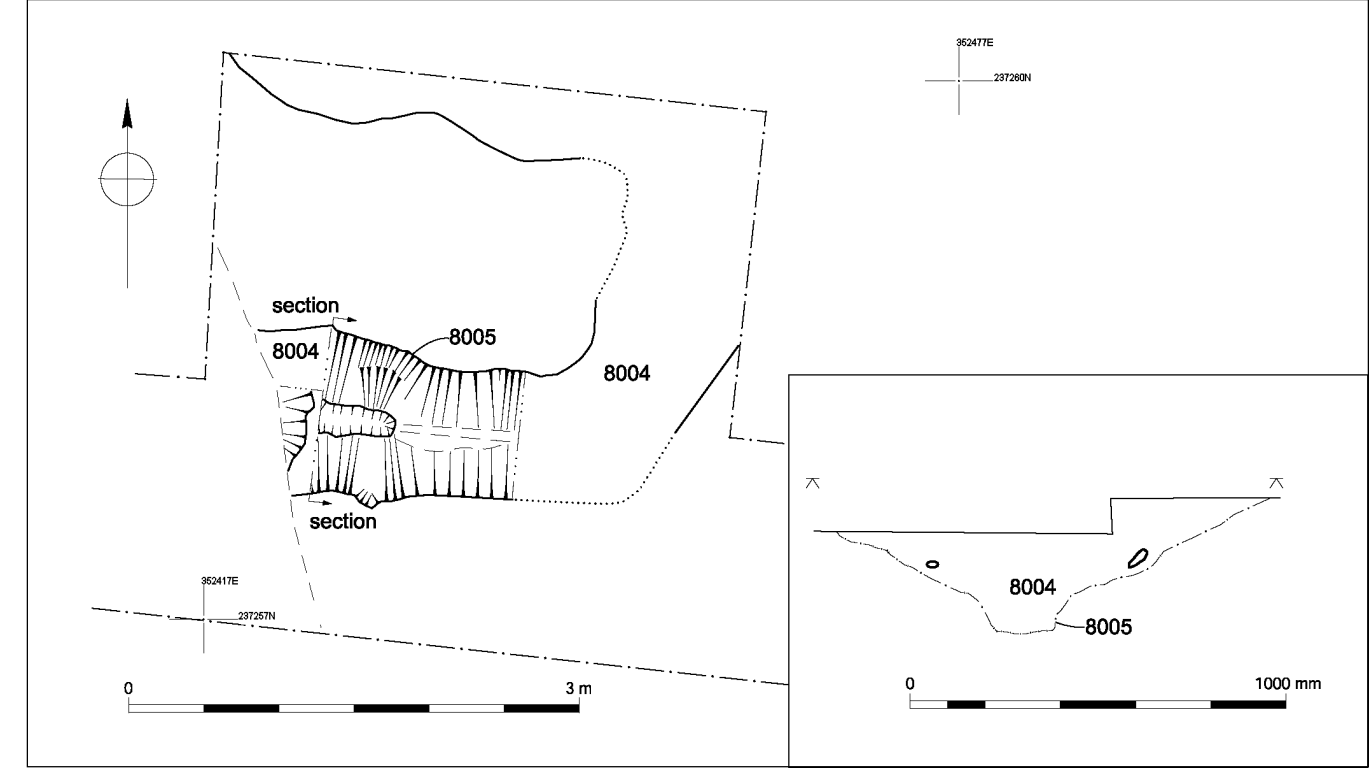
352477E
237260N
section
8005
8004
8004
section
352417E
237257N
0
3 m
8004
8005
0
1000 mm

Table 1 Trench descriptions

Trench 1

Site area: Field number 2

Maximum dimensions: Length: 25m Width: 1.6m Depth: 0-0.4m

Orientation: SE-NW

Main deposit description

Context	Classification	Description	Depth below ground surface (b.g.s) – top and bottom of deposits
1000	Topsoil	Reddish brown silty clay..	0-0.25m
1001	Subsoil	Orangey brown silty clay..	0.25-0.4m
1002	Natural	Reddish brown clay.	0.4m+

Trench 2

Site area: Field number 2

Maximum dimensions: Length: 50m Width: 1.6m Depth: 0-0.7m

Orientation: NE-SW

Main deposit description

Context	Classification	Description	Depth below ground surface (b.g.s) – top and bottom of deposits
2000	Topsoil	Medium reddish brown silty clay.	0-0.3m
2001	Subsoil	Orange-reddish brown, silty clay alluvial deposit.	0.3-0.7m
2002	Natural	Reddish brown clay with bands of sand.	0.7m+

Trench 3

Site area: Field number 7

Maximum dimensions: Length: 25m Width: 1.6m Depth: 0-0.5m

Orientation: E-W

Main deposit description

Context	Classification	Description	Depth below ground surface (b.g.s) – top and bottom of deposits
3000	Topsoil	Dark brown silty clay.	0-0.24m
3001	Subsoil	Reddish brown, silty clay.	0.24-0.5m
3002	Natural	Reddish brown clay with angular stones.	0.5m+

Features/Other deposits.

Contexts 3003, 3004: Description. Modern sub-circular pit feature, fill identical to topsoil 3000

Trench 4

Site area: Field number 8

Maximum dimensions: Length: 25m Width: 1.6m Depth: 0-0.6m

Orientation: NE-SW

Main deposit description

Context	Classification	Description	Depth below ground surface (b.g.s) – top and bottom of deposits
4000	Topsoil	Medium brown silty clay with small stones.	0-0.15m
4001	Subsoil	Medium light brown, silty clay with small stones.	0.15-0.30m
4002	Subsoil	Orange brown silty clay.	0.30-0.45m+
4003	Natural	Reddish brown silty clay with yellow green, sandy flecking.	0.45-0.6m

Trench 5

Site area: Field number 8

Maximum dimensions: Length: 25m Width: 1.6m Depth: 0-1.1m

Orientation: NW-SE

Main deposit description

Context	Classification	Description	Depth below ground surface (b.g.s) – top and bottom of deposits
5001	Topsoil	Medium reddish brown silty clay with small pebble.	0-0.17m
5002	Subsoil	Red- brown, silty clay.	0.17-0.32m
5003	Subsoil	Reddish brown silty clay.	0.32-0.49m
5004	Layer	Red-brown silty clay	0.49-0.86m
5005	Layer	Medium brown silty clay	0.86-0.95m
5006	Layer	Medium brown silty clay with pebbles	0.95-1.05m
5007	Layer	Red silty clay	1.05-1.07

Trench 6

Site area: Field number 11

Maximum dimensions: Length: 50m Width: 1.6m Depth: 0-1.5m

Orientation: NE-SW

Main deposit description

Context	Classification	Description	Depth below ground surface (b.g.s) – top and bottom of deposits
6000	Topsoil	Medium reddish brown silty clay with small pebble.	0-0.3m
6001	Subsoil	Orange- brown, silty clay with flecks of charcoal.	0.3-0.5m
6002	Layer	Dark brown silty clay with preserved organic remains.	0.9-1.1m
6003	Layer	Blue grey clay with preserved organic remains and pebbles.	1.1m+
6004	Layer	Orange-brown silty clay	0.5-0.8m
6005	Layer	Reddish brown silty sands	0.8-0.9m

Trench 7

Site area: Field number 11

Maximum dimensions: Length: 25m Width: 1.6m Depth: 0-0.5m

Orientation: NW-SE

Main deposit description

Context	Classification	Description	Depth below ground surface (b.g.s) – top and bottom of deposits
7001	Topsoil	Medium reddish brown silty clay with small pebble.	0-0.25m
7002	Subsoil	Orange- brown, silty clay with flecks of charcoal.	0.25-0.5m
7003	Fill	Grey brown sandy clay	0.5-0.62m
7004	Cut	Linear feature.	0.5-0.62m
7005	Fill	Reddish brown sandy clay	0.5-0.56m
7006	Cut	Linear feature	0.5-0.56m

Trench 8

Site area: Field number 13

Maximum dimensions: Length: 25m Width: 1.6m Depth: 0-0.55m

Orientation: E-W

Main deposit description

Context	Classification	Description	Depth below ground surface (b.g.s) – top and bottom of deposits
8001	Topsoil	Medium reddish brown silty clay with small pebble.	0-0.2m
8002	Subsoil	Medium orange brown silty clay with flecks of charcoal.	0.2-0.35m
8003	Subsoil	Orange brown silty clay	0.35-0.55m
8004	Fill	Medium otrange brown silty clay with angular stones	0.35-0.65m
8005	Cut	Curvilinear feature with sloping sided profile.	0.35-0.65m

Trench 9

Site area: Field number 13

Maximum dimensions: Length: 25m Width: 1.6m Depth: 0-0.8m

Orientation: N-S

Main deposit description

Context	Classification	Description	Depth below ground surface (b.g.s) – top and bottom of deposits
9001	Topsoil	Medium reddish brown silty clay with small pebble.	0-0.2m
9002	Subsoil	Dark brown silty clay with flecks of charcoal.	0.2-0.37m
9003	Subsoil	Dark orange brown silty clay	0.37-0.55m
9004	Subsoil	Medium orange brown silty clay with angular stones	0.55-0.77m
9005	Subsoil	Reddish brown silty clay with angular stones	0.77-0.8m

Trench 10

Site area: Field number 11

Maximum dimensions: Length: 25m Width: 1.6m Depth: 0-0.3m

Orientation: E-W

Main deposit description

Context	Classification	Description	Depth below ground surface (b.g.s) – top and bottom of deposits
10001	Topsoil	Medium yellow brown silty clay with small pebbles.	0-0.15m
10002	Subsoil	Medium orange brown silty clay with rounded stones. with flecks of charcoal.	0.15-0.3m
10003	Natural	Reddish orange compact gravel with silty clay.	0.3m+

Tables 2 and 3, Pottery quantification

Material	Total	Weight (g)
Prehistoric pottery	27	21
Roman pottery	2	43
Medieval pottery	6	15
Post-medieval pottery	6	68
Modern pottery	13	177
Flat roof tile	4	188
Modern tile	5	294
Roman tile	3	62
Brick	1	1
Fired clay	3	7
Clay pipe stem	2	3
Vessel glass	1	11
Iron	3	198
Slag	4	50
Clinker	3	3

Table 2: Quantification of material

Fabric no.	Fabric name	Total	Weight (g)	Period
-	Quartz tempered ware	27	21	Prehistoric
12.2	Oxidised organic tempered Severn Valley ware	2	43	Roman
A2	Limestone, sandstone and quartz tempered ware	3	11	Medieval
A3	Sandstone and quartz tempered ware	2	2	Medieval
99	Miscellaneous medieval wares	1	2	Medieval
78	Post-medieval red wares	2	45	Post-medieval
81.5	White salt-glazed stoneware	1	1	Post-medieval
83	Porcelain	2	13	Post-medieval
91	Post-medieval buff wares	1	9	Post-medieval
85	Modern stone china	13	177	Modern

Table 3: Quantification of fabrics by period

Appendix 1 Summary of archaeological fieldwork undertaken

Rotherwas 2002 field number	Hereford Bypass number	SMR no	Type	Methods used	Period	Comments	Rotherwas 2002, methods	Present land use	Results of non-intrusive survey	Intrusive work carried out	Results of intrusive work
A49 to Hoarwithy Road											
1	8	8616	Finds: flints, pottery	Fieldwalking	Prehistoric, Roman and medieval		Fieldwalk and geophysical scan	Arable		No further work	
2		30271	Cropmark	Air photo		This field was outside the line of the original bypass scheme	Fieldwalk and geophysical scan	Arable	Geophysical anomalies detected. Detailed survey failed to identify features	Trenches 1 and 2 excavated in this area	Negative
3	9	8617	Finds, pottery	Fieldwalking	Medieval		Fieldwalk and geophysical scan	Arable, covered by crop		No further work	
4 and 5	10	8618, 9136, 9137	Finds, flints	Fieldwalking	Prehistoric		Geophysical scan and auger holes	Arable, covered by crop	Augering detected alluvial/colluvial deposits up to 2.4m bgs	No further work	
6	19	9707		3 auger holes		No significant deposits recorded	Geophysical scan	Pasture		No further work	
Hoarwithy Road to Water Lane/Woodlands Farm											
7	20	9708		5 auger holes		No significant deposits recorded	Geophysical scan	Pasture	No geophysical anomalies, detected	Trench 3 excavated in this area	Negative
8	21	9709		5 auger holes		No significant deposits recorded	Geophysical scan	Pasture (Meadow grass)	No geophysical anomalies, detected	Trenches 4 and 5 excavated in this area	Negative
9	n/a						Geophysical scan	Pasture	No geophysical anomalies detected	Not further work	
10	11	8465	Finds: flints, pottery, coins	Fieldwalking, trial trenching	Prehistoric, Roman, medieval and post-medieval	Concentration of remains suggesting possible settlement	Geophysical scan	Arable, covered by crop	No geophysical anomalies, detected	No further work	
11	12	8619	Finds: flints, pottery, glass	Fieldwalking, trial trenching	Prehistoric, Roman, medieval and post-medieval	Concentration of remains suggesting possible settlement	Geophysical scan	Arable, covered by crop	Geophysical scan detected anomalies, further detailed work identified possible features	Trenches 6, 7 and 10 excavated in this area	An undated water course found in Trench 6 and two medieval ditches found in Trench 7
12	22	9710		3 auger holes		No significant deposits recorded	Geophysical scan	Pasture	No geophysical anomalies, detected	No further work	
13	23	9711		3 auger holes		No significant deposits recorded	Geophysical scan and fieldwalking	Arable	Geophysical scan detected anomalies. Detailed work identified possible features	Trenches 8 and 9 excavated in this area	Prehistoric feature found in Trench 8
14	24	9712		3 auger holes		No significant deposits recorded	None	Arable, covered by crop	It was not possible to undertake any survey work here due to the crop	No further work	
Watery Lane to Holme Lacy Road											
15	25	9713		2 auger holes		No significant deposits recorded	Geophysical scan	Pasture	No geophysical anomalies, detected	No further work	

Appendix 2 Fieldwalking finds

Artefact recovery policy

All artefacts from the area of fieldwalking were retrieved by hand and retained in accordance with the service manual (CAS 1995 as amended).

Method of analysis

All finds were examined and a primary record was made on a *pro forma* database. Artefacts were identified, quantified and dated.

Pottery was examined under x20 magnification and recorded by fabric type and form according to the fabric reference series maintained by the service (Hurst and Rees 1992).

Artefactual Analysis

A summary of the artefacts recovered can be seen below (Tables 1, 2 and 3). The assemblage retrieved consisted of 1159 artefacts in total, ranging from the prehistoric - modern periods in date, with small amounts of worked flint being the earliest identifiable material.

All Roman pottery was highly abraded and fragmentary and identifiable as undiagnostic oxidised Severn Valley ware (fabric 12). Likewise, all tile of this date consisted of small, abraded fragments with no recognisable form.

The most unusual find within the group was that of a base sherd of post-medieval pottery (Field 1, transect B8) which appeared to be a rare imitation of a samian form associated with the resurgence of interest in Roman material culture during the early 18th century. The fabric of the sherd appeared to that of a highly fired post-medieval red ware (fabric 78) and was decorated with an unusual matt black slip/glaze. The form of the base had a distinctive 'kick', characteristic of samian bowl and dish forms. Moulded decoration was also present on the interior of the base, although this did not conform to a standard 'Roman-type' pattern.

Field 1

A total of 574 artefacts were retrieved from this field. The highest proportion of Roman material was identified within this assemblage, with a distinct concentration of tile and pottery centred around transects B7, B8, B9, C1, C2 and C3. Other material dated primarily from the late 17th century onwards with the exception of six highly abraded fragments of medieval pottery (transects B3, C2 and C4) which could be dated to between the 12th and 15th centuries.

Other material of interest within this field consisted of two pieces of worked flint, identified as a retouched flake (transect B4) and miscellaneous debetage (transect C2).

Field Number	Transect	Material	Total	Weight (g)	Date range
1	A1	Roman Pottery	1	2	M1-4C
1	A1	Post-medieval Pottery	2	6	17-18C
1	A1	Modern Pottery	5	12	L19-21C
1	A1	Flat roof tile	4	65	13-18C
1	A1	Fired clay	2	84	
1	A1	Brick	2	194	L19-21C
1	A1	Slate	1	12	
1	A1	Coal	3	4	
1	A1	Vessel glass	5	26	18-20C
1	A1	Shell	1	1	
1	A2	Post-medieval pottery	1	6	18C
1	A2	Modern pottery	6	10	L19-21C
1	A2	Clay pipe stem	2	4	

1	A2	Flat roof tile	5	58	13-18C
1	A2	Brick	1	40	L18-21C
1	A2	Slate	1	4	
1	A2	Coal	1	1	
1	A2	Vessel glass	9	120	18-20C
1	A3	Post-medieval pottery	7	64	
1	A3	Modern pottery	6	22	L19-21C
1	A3	Vessel glass	14	110	18-20C
1	A3	Coal	1	1	
1	A3	Burnt stone	1	8	
1	A4	Modern pottery	11	181	L19-21C
1	A4	Post-medieval pottery	3	24	17-18C
1	A4	Flat roof tile	4	64	13-18C
1	A4	Vessel glass	14	114	18-21C
1	A4	Coal	2	6	
1	A4	Slag	1	2	
1	A5	Modern pottery	6	30	L19-21C
1	A5	Clay pipe stem	1	2	
1	A5	Tile	1	16	
1	A5	Vessel glass	7	40	18-20C
1	A5	Coal	1	6	
1	A6	Modern pottery	4	14	L19-21C
1	A6	Post-medieval pottery	3	94	17-18C
1	A6	Clay pipe stem	2	4	
1	A6	Vessel glass	2	28	L18-21C
1	A7	Modern pottery	6	30	L19-21C
1	A7	Post-medieval pottery	3	34	17-18C
1	A7	Flat roof tile	3	44	13-18C
1	A7	Vessel glass	1	2	18-20C
1	A8	Roman pottery	1	1	M1-4C
1	A8	Post-medieval pottery	2	20	17-18C
1	A8	Modern pottery	6	16	L19-21C
1	A8	Flat roof tile	3	52	13-18C
1	A9	Modern pottery	16	60	L19-21C
1	A9	Flat roof tile	1	30	13-18C
1	B1	Post-medieval pottery	6	80	L17-18C
1	B1	Modern pottery	14	28	L19-21C
1	B1	Clay pipe stem	1	2	
1	B1	Flat roof tile	7	100	13-18C
1	B1	Vessel glass	15	96	18-20C
1	B1	Window glass	1	1	L19-21C
1	B1	Bone	1	1	
1	B1	Clinker	1	8	
1	B1	Coal	2	1	
1	B1	Copper alloy coin	1	8	1912+
1	B1	Iron	2	108	
1	B1	Slag	1	8	
1	B1	Oyster shell	1	1	
1	B1	?Worked stone	1	34	
1	B2	Post-medieval pottery	3	36	17-18C
1	B2	Modern pottery	3	4	L19-21C
1	B2	Clay pipe stem	1	2	
1	B2	Roman tile	1	22	1-4C
1	B2	Flat roof tile	5	61	13-18C
1	B2	Vessel glass	8	92	17-20C
1	B2	Ceramic drain	1	19	
1	B3	Medieval pottery	1	2	12-15C

1	B3	Post-medieval pottery	1	12	L17-18C
1	B3	Modern pottery	3	8	L19-21C
1	B3	Clay pipe stem	2	6	
1	B3	Flat roof tile	6	190	13-18C
1	B3	Slate	2	20	
1	B3	Vessel glass	3	24	18-20C
1	B3	Slag	1	4	
1	B4	Roman pottery	2	4	M1-4C
1	B4	Post-medieval pottery	7	66	17-18C
1	B4	Modern pottery	10	36	L19-21C
1	B4	Clay pipe stem	1	4	
1	B4	Flat roof tile	4	134	
1	B4	Vessel glass	11	82	18-20C
1	B4	Coal	1	2	
1	B4	Flint flake	1	2	
1	B4	Iron	2	44	
1	B4	Oyster shell	1	2	
1	B5	Post-medieval pottery	2	12	17-18C
1	B5	Modern pottery	5	16	L19-21C
1	B5	Flat roof tile	3	86	13-18C
1	B5	Ceramic drain	1	28	
1	B6	Post-medieval pottery	1	1	18C
1	B6	Modern pottery	2	1	L19-21C
1	B6	Flat roof tile	1	60	13-18C
1	B6	Vessel glass	4	16	18-20C
1	B7	Roman pottery	1	5	M1-2C
1	B7	Post-medieval pottery	2	8	18C+
1	B7	Modern pottery	11	125	L19-21C
1	B7	Roman tile	2	22	1-4C
1	B7	Flat roof tile	4	64	18-21C
1	B7	Vessel glass	2	20	18-20C
1	B8	Roman pottery	1	1	M1-4C
1	B8	Post-medieval pottery	3	10	18C
1	B8	Modern pottery	12	94	L19-21C
1	B8	Flat roof tile	5	102	13-18C
1	B8	Ridge tile	1	26	14-16C
1	B8	Vessel glass	2	14	18-20C
1	B9	Roman pottery	1	2	M1-4C
1	B9	Post-medieval pottery	1	6	17C
1	B9	Modern pottery	4	38	L19-21C
1	B9	Vessel glass	2	16	18-21C
1	C1	Roman pottery	2	18	M1-4C
1	C1	Post-medieval pottery	5	60	17-18C
1	C1	Modern pottery	1	4	L19-21C
1	C1	Tile	2	20	
1	C1	Fired clay	1	2	
1	C1	Slate	1	6	
1	C1	Vessel glass	2	10	18-20C
1	C2	Roman pottery	2	10	M1-4C
1	C2	Medieval pottery	2	4	12-15C
1	C2	Post-medieval pottery	3	44	17-18C
1	C2	Modern pottery	6	10	L19-21C
1	C2	Flat roof tile	5	56	13-18C
1	C2	Stone	1	46	
1	C2	Vessel glass	4	70	18-20C
1	C2	Window glass	2	28	L19-21C
1	C2	Ceramic drain	1	18	

1	C2	Coal	1	2	
1	C2	Slag	2	20	
1	C2	Flint debitage	1	1	
1	C2	Oyster shell	1	6	
1	C3	?Roman pottery	1	4	??
1	C3	Modern pottery	14	49	L19-21C
1	C3	Post-medieval pottery	2	11	L17-18C
1	C3	Clay pipe bowl	1	14	
1	C3	Clay pipe stem	2	4	
1	C3	Brick	2	32	L18-20C
1	C3	Vessel glass	8	68	17-19C
1	C3	Window glass	5	4	18-20C
1	C3	Coal	2	1	
1	C3	Slag	1	18	
1	C3	Ceramic drain	1	42	
1	C4	Medieval pottery	3	10	12-15C
1	C4	Modern pottery	13	38	L19-20C
1	C4	Post-medieval pottery	3	19	17C
1	C4	Clay pipe bowl	1	1	
1	C4	Flat roof tile	2	36	13-18C
1	C4	Brick	2	64	L18-21C
1	C4	Fired clay	1	18	
1	C4	Slate	1	8	
1	C4	Vessel glass	8	70	18-20C
1	C4	Window glass	2	2	L19-21C
1	C4	Iron	1	18	18-21C
1	C4	Slag	1	10	
1	C4	Bone	1	2	
1	C4	Oyster shell	1	2	
1	C4	Ceramic drain	3	62	
1	C5	Post-medieval pottery	1	2	17C
1	C5	Modern pottery	5	12	L19-21C
1	C5	Clay pipe bowl	1	1	
1	C5	Tile	1	8	
1	C5	Vessel glass	1	6	18-20C
1	C6	Post-medieval pottery	2	33	L16-18C
1	C6	Modern pottery	2	8	L19-21C
1	C6	Vessel glass	1	12	19-20C
1	C7	Post-medieval pottery	1	1	16-17C
1	C7	Modern pottery	3	18	L19-21C
1	C7	Clay pipe stem	1	2	
1	C7	Flat roof tile	1	28	13-18C
1	C7	Ceramic drain	1	4	
1	C8	Post-medieval pottery	2	6	18C+
1	C8	Modern pottery	3	14	L19-21C
1	C9	Modern pottery	3	16	L19-21C
1	C9	Flat roof tile	1	6	13-18C

Table 1: Quantification of material from Field 1

Field 2

A total of 113 artefacts were retrieved from this field. Roman pottery and tile was identified in very small amounts and was widely scattered across the field with no pattern. As in field 1, other material dated primarily from the late 17th century onwards. Four sherds of medieval pottery were identified and once more could only be dated very generally to between the 12th and 15th centuries.

Field Number	Transect	Material	Total	Weight (g)	Date range
2	1	Post-medieval pottery	5	13	L17-18C
2	1	Modern pottery	2	2	L19-21C
2	1	Flat roof tile	11	146	13-18C
2	1	Brick	1	72	L18-21C
2	1	Vessel glass	5	24	19-20C
2	1	Coal	1	10	
2	1	Ceramic drain	2	40	
2	2	Post-medieval pottery	4	22	17-18C
2	2	Modern pottery	3	6	L19-21C
2	2	Flat roof tile	11	266	13-18C
2	2	Vessel glass	2	4	19-20C
2	2	Slag	1	36	
2	3	Post-medieval pottery	2	2	18C+
2	3	?Roman tile	2	6	1-4C
2	3	Flat roof tile	4	100	13-18C
2	3	Brick	1	24	L18-21C
2	4	Post-medieval pottery	1	1	17C
2	4	Flat roof tile	12	434	13-18C
2	4	Brick	1	90	
2	4	Vessel glass	1	4	L17-18C
2	4	Coal	1	1	
2	5	Brick	2	12	L18-21C
2	6	Brick	1	114	
2	6	Flat roof tile	4	192	13-18C
2	7	Roman tile	1	2	1-4C
2	7	Flat roof tile	3	52	13-18C
2	8	Post-medieval pottery	1	9	18C
2	8	Modern pottery	2	27	L19C
2	8	Flat roof tile	2	54	13-18C
2	8	Brick	1	220	
2	8	Vessel glass	4	58	19-21C
2	8	Slag	1	26	
2	8	Coal	1	1	
2	8	Ceramic drain	2	68	
2	US	Roman pottery	11	72	M1-4C
2	US	Medieval pottery	4	16	12-15C

Table 2: Quantification of material from Field 2

Field 3

A total of 473 artefacts were retrieved from this field. Small amounts of Roman pottery and tile were identified in a general scatter across the field, although a slight concentration could be identified amongst the 'A' transects. A single sherd of medieval pottery (transect B8) was identified as glazed Worcester-type ware (fabric 64.1) and datable to between the 12 and 14th centuries. Once more, other material dated primarily from the late 17th century onwards.

Four pieces of worked flint were identified within this field. These consisted of three flakes (transects B5, B7 and US) and a large core (transect A7).

Field Number	Transect	Material	Total	Weight (g)	Date range
13	A1	Post-medieval pottery	5	55	L17-18C
13	A1	Modern pottery	6	26	L19-20
13	A1	Clay pipe stem	1	2	
13	A1	Roman tile	9	228	1-4C
13	A1	Flat roof tile	13	554	13-18C
13	A1	Brick	1	31	L18-21C
13	A1	Vessel glass	1	7	
13	A1	Coal	1	1	
13	A1	Ceramic drain	2	29	
13	A2	?Post-medieval pottery	1	11	?18C
13	A2	Modern pottery	4	217	L19-21C
13	A2	Modern ceramic tile	2	9	L19-21C
13	A2	Roman tile	5	163	1-4C
13	A2	Flat roof tile	20	634	13-18C
13	A2	Vessel glass	2	16	18-21C
13	A2	Ceramic drain	2	35	
13	A3	Roman pottery	1	3	M1-4C
13	A3	Post-medieval pottery	8	83	17-18C
13	A3	Modern pottery	5	16	L19-21C
13	A3	Clay pipe stem	1	2	
13	A3	Flat roof tile	17	505	13-18C
13	A3	Ridge tile	1	52	14-16C
13	A3	Modern ceramic tile	1	23	L19-20C
13	A3	Brick	7	503	L18-21C
13	A3	Coal	1	4	
13	A3	Ceramic drain	2	81	
13	A4	Post-medieval pottery	2	4	18C
13	A4	Modern pottery	10	55	L19-21C
13	A4	Flat roof tile	9	182	13-18C
13	A4	Iron	2	415	
13	A4	Ceramic drain	2	22	
13	A5	Modern pottery	5	19	L19-21C
13	A5	Flat roof tile	6	232	13-18C
13	A5	Ceramic drain	1	18	
13	A6	Roman pottery	1	4	M1-4C
13	A6	Post-medieval pottery	2	38	L17-18C
13	A6	Modern pottery	8	35	L19-21C
13	A6	Flat roof tile	4	123	13-18C
13	A6	Burnt bone	1	13	
13	A6	Ceramic drain	1	43	
13	A7	Modern pottery	5	51	L19-21C
13	A7	Flat roof tile	10	635	13-18C
13	A7	Brick	3	131	L18-21C
13	A7	Mortar	1	34	
13	A7	Iron	1	81	
13	A7	Flint core	1	76	
13	A7	Ceramic drain	1	20	
13	A8	Post-medieval pottery	2	19	L17-18C
13	A8	Modern pottery	6	45	L19-21C
13	A8	Clay pipe stem	1	1	
13	A8	Flat roof tile	10	411	13-18C
13	A8	Modern ceramic	2	19	L19-21C
13	A9	Post-medieval pottery	2	32	18-19C
13	A9	Modern pottery	1	1	L19-21C
13	A9	Flat roof tile	5	92	13-18C

13	A9	Modern ceramic tile	1	27	L19-21C
13	B1	Post-medieval pottery	5	27	17-19C
13	B1	Modern pottery	5	50	L19-21C
13	B1	Flat roof tile	5	208	13-18C
13	B1	Modern ceramic tile	1	3	L19-21C
13	B1	Brick	4	212	L18-21C
13	B1	Vessel glass	2	21	18-21C
13	B1	Iron	1	99	
13	B1	Ceramic drain	4	78	
13	B2	Post-medieval pottery	3	97	L17-18C
13	B2	Modern pottery	5	9	L19-21C
13	B2	Flat roof tile	5	187	13-18C
13	B2	Brick	2	39	L18-21C
13	B2	Vessel glass	3	61	18-21C
13	B2	Iron	1	353	
13	B3	Post-medieval pottery	5	60	17-18C
13	B3	Modern pottery	10	129	L19-20C
13	B3	Roman tile	3	27	1-4C
13	B3	Flat roof tile	8	384	13-18C
13	B3	Brick	4	685	L18-21C
13	B3	Stone tile	1	20	
13	B3	Vessel glass	1	3	
13	B3	Ceramic drain	1	13	
13	B4	Post-medieval pottery	4	33	18-19C
13	B4	Modern pottery	2	11	L19-21C
13	B4	Flat roof tile	7	331	13-18C
13	B4	Brick	3	124	L18-21C
13	B4	Iron	1	142	
13	B4	Ceramic drain	1	16	
13	B5	Post-medieval pottery	2	45	L17-18C
13	B5	Modern pottery	2	7	L19-21C
13	B5	Flat roof tile	6	241	13-18C
13	B5	Flint flake	1	1	
13	B6	Post-medieval pottery	6	28	L17-19C
13	B6	Modern pottery	3	9	L19-21C
13	B6	Flat roof tile	11	407	13-18C
13	B6	Brick	3	52	L18-21C
13	B6	Slate	2	13	
13	B6	Vessel glass	2	4	
13	B6	Charcoal	2	8	
13	B6	Coal	2	7	
13	B7	Post-medieval pottery	4	40	17-18C
13	B7	Modern pottery	14	53	L19-21C
13	B7	Roman tile	2	7	
13	B7	Tile	1	58	?
13	B7	Flat roof tile	11	230	13-18C
13	B7	Modern ceramic tile	3	31	L19-21C
13	B7	Brick	5	278	L18-21C
13	B7	Mortar	1	15	
13	B7	Vessel glass	2	7	
13	B7	Charcoal	2	3	
13	B7	Coal	2	7	
13	B8	Medieval pottery	1	20	12-14C
13	B8	Post-medieval pottery	7	57	18C
13	B8	Modern pottery	3	15	L19-21C
13	B8	Flat roof tile	10	383	13-18C
13	B8	Brick	3	101	L18-21C

13	B8	Slate	1	13	
13	B8	Burnt stone	1	88	
13	B8	Iron	1	55	
13	B8	Vessel glass	2	4	
13	B8	Window glass	2	2	
13	B8	Animal bone	1	27	
13	B8	Ceramic drain	1	31	
13	B9	Post-medieval pottery	4	49	18C
13	B9	Modern pottery	1	1	L19-21C
13	B9	Flat roof tile	13	771	13-18C
13	B9	Modern ceramic tile	1	25	
13	B9	Brick	2	48	L18-21C
13	B9	Vessel glass	3	13	
13	B9	Coal	1	6	
13	US	Flint flake	1	1	

Table 3: Quantification of material from Field 13

Appendix 3 Auger survey

Auger assessment at Rotherwas Access Road HSM 31999

Augering was carried out in the north-west and north-eastern corners of a field directly to the south of Bullinghope Church between the line of the proposed road and a stream (Norton Brook) running along the northern boundary of the field.

Results

In the north-west corner of the field, augering was carried out at three points along a transect between the proposed road and the stream. The stream here appears to have been straightened, as on the 1844 tithe map it followed a slightly more irregular course. The topsoil here was a reddish-brown to mid-brown silty clay. This was poorly defined, being distinguished from the other deposits by moderate rooting, charcoal flecks and the slightly more friable consistency of the soil. This overlay a reddish-brown to mid-brown silty clay which was generally compact and blocky, except in Auger hole 3, close to the stream, where it was relatively friable. This extended to a depth of 1.20m (bgs) at the stream and on the line of the road, but was deeper at the mid-point 1.80m (bgs). At the southern most point (Auger 1), this deposit overlay a yellowish-brown silty clay (1.40m bgs), a pale yellow gravel (1.50m bgs) and below, a reddish-brown gravel. At the base of the other two auger holes, compact gravel was encountered which was not brought up by the auger. No reddish or yellowish sandy matrix was visible as in seen in Auger 1.

In the north-eastern corner, the stream turns 90° along the field boundary for approximately 65m then follows an irregular course parallel to the northern field boundary. One auger hole (Auger 4) was completed in line with the irregular stream course. Reddish-brown to mid-brown silty clay deposits with a poorly developed topsoil (approximately 0.10m deep), similar to that described above, was noted to 2.40m (bgs). A band of concentrated mica was noted at 1.60 to 1.80m. Below 2.40m a yellowish-brown silty clay was recorded in which occasional pale yellow gravel inclusions were noted at 2.80m. Beyond this point augering was becoming increasingly difficult because of the compact nature of the clays, and therefore was terminated.

Discussion

The poor definition of topsoil and silty clay sediments suggests that soil formation is constantly being interrupted by deposition of either alluvium or colluvium. The greatest depth of deposits was recorded in Auger 4 on the line of the irregular stream channel at the eastern end of the field, at the point at which the course changes direction to the north, This may reflect a former course of the channel.

Appendix 4 Geophysical survey

NORTHAMPTONSHIRE ARCHAEOLOGY
NORTHAMPTONSHIRE COUNTY COUNCIL
JUNE 2002

GEOPHYSICAL SURVEY AT ROTHERWAS, HEREFORD HEREFORDSHIRE

Project Manager	S Parry MA MIFA
Text	P Masters BA HND PIFA
Illustrations	P Masters
Fieldwork	P Masters and I Fisher BSc

QUALITY CONTROL

	Print name	Signed	Date
Checked by	A Chapman		
Verified by	P Chapman		
Approved by	S Parry		

CONTENTS

ILLUSTRATIONS

GEOPHYSICAL SURVEY ALONG THE PROPOSED ROTHERWAS ACCESS ROAD, HEREFORD, HEREFORDSHIRE

ABSTRACT

Three geophysical survey techniques comprising reconnaissance, detailed magnetometer, and magnetic susceptibility were carried out along the proposed Rotherwas Access Road, Hereford, Herefordshire. The reconnaissance survey produced few significant anomalies. Two areas were tested by detailed magnetometer survey, which only produced a single curvilinear anomaly. The magnetic susceptibility survey carried out in field 9 produced an area denoting significant "hot spots" of an archaeological nature.

1 INTRODUCTION

Northamptonshire Archaeology carried out a series of geophysical surveys in May 2002 comprising reconnaissance, detailed magnetometer survey and magnetic susceptibility along the proposed Rotherwas Access Road (Fig 1: NGR SO 504366 - 533379). The work was undertaken between 20 and 24 May 2002 on behalf of the Archaeological Services, Worcestershire County Council.

The purpose of the geophysical survey was to locate any archaeological remains along the entire route of the proposed bypass.

2 BACKGROUND

The proposed Rotherwas Access Road lies along the corridor proposed for the Hereford bypass, which has been subject to archaeological investigation in the past (Environment Statement March 2002). The proposed road is situated three miles to the south of the historic city of Hereford. The route of the access road passes to the south of the settlements of Bullinghope and Green Grize and is dominated by Dinedor Hill to the south with its Iron Age hillfort. To the east of the proposed route is the Rotherwas Industrial Estate, set within the relic parkland of the former Rotherwas Hall. Other archaeological finds along the proposed route have been identified in the Herefordshire Sites and Monuments Record.

3 TOPOGRAPHY AND GEOLOGY

The British Geological Survey has mapped the underlying surface geology along the route as Old Red Sandstone, river terrace gravels, alluvium and colluvium and glacial till deposits. The magnetic susceptibility of these geologies is usually average to poor except for gravels which tend to be variable in response (Clark 1990, 92; EH 1995, 10, table 3).

4. GEOPHYSICAL SURVEY

Scanning

All of the fields along the 2.75km length of the proposed access road were scanned to locate any significant archaeological anomalies except field 12 at the east end which contained a high crop of winter barley. This reconnaissance entailed walking along parallel transects spaced at 20m intervals which were walked in zig- zag fashion, whilst continually monitoring the magnetic response of the ground. Where readings greater than +3nT were encountered, the surrounding area was scanned in more detail to ascertain whether the readings were isolated magnetic anomalies or part of a more extensive pattern. Significant readings were plotted in the field onto a suitably scaled Ordnance Survey basemap by tape and optical square to record the exact locations. These locations were subsequently transferred in to a GIS system, MapInfo™.

Detailed Geophysical Survey

The magnetometer survey was carried out using two Geoscan Research FM36 Fluxgate Gradiometers. Out of a total of 13 fields, two areas were subject to detailed survey comprising 15 grids, totalling 0.6ha. The survey area was divided into 20m grid-squares, which were traversed at 1m intervals in a parallel fashion. Parallel traverses were made from south-west to north-east at a rapid walking pace. Individual readings were taken at 0.25m intervals using a sample trigger. The sensor alignment or balance was checked upon completion of the survey of each grid and the tilt error maintained below +/-2nT per +/-2° tilt.

The data was analysed using Geoplot v3.0 (Geoscan 2000). In the resultant plots, low magnetism is shown as white and high magnetism as black. The plots are shown as raw data

and enhanced data.

Data was processed using an algorithm to remove magnetic spikes, thereby reducing extreme readings sometimes caused by stray iron fragments and spurious effects due to the inherent magnetism of soils.

The data was also processed using zero mean functions to correct the unevenness of the plots in order to give a smoother graphical appearance.

4.3 *Magnetic Susceptibility Survey*

The magnetic susceptibility survey was carried out using a Bartington Magnetic Susceptibility Meter. The readings were logged in SI units (metre per second measurements) at 5m intervals along transects spaced 5m apart using the MS2F probe. The data was captured in the field using a Psion data logger running the Geofieldsoft computer program BARTI. The results were subsequently imported into Geoplot v3 (Geoscan 2000) for analysis and plotting. The magnetic susceptibility results are shown as colour scale plot. The data were despiked (see above) and processed using a median filter in order to further remove noise and to give a much smoother appearance.

5 *ANALYSIS AND INTERPRETATION OF RESULTS (FIGS 2 - 8)*

The fields have been numbered from 1-13 from west to east along the proposed access road. The results from the survey work are detailed below.

Field 1

The reconnaissance survey produced no significant anomalies apart from detecting a modern pipeline.

Field 2

A single anomaly was detected during the scan survey close to the southern corner of the field (Fig 2). A detailed sample magnetometer survey comprising four, 20m x 20m grid-

squares revealed no significant anomalies except an iron–spike (Figs 4 & 5).

Field 3

The magnetometer reconnaissance survey produced no significant anomalies.

Field 4

No significant anomalies were detected across this tract of land. This area is quite low lying adjacent to a brook and therefore alluvial and colluvial deposits may have masked any archaeological anomalies.

Field 5

The reconnaissance survey located a modern pipe but no other significant archaeological anomalies (Fig 2).

Field 6

Magnetometer reconnaissance across this field did not produce any magnetic anomalies of an archaeological nature except for a modern pipe (Fig 2).

Field 7

No significant anomalies were detected in this field.

Field 8

The reconnaissance survey did not produce any significant anomalies.

Field 9

Magnetometer reconnaissance survey detected a significant anomaly at the brow of the slope facing south-west. Previous archaeological fieldwork by Worcestershire Archaeological

Service recovered around 200 Neolithic flints from fieldwalking. A magnetic susceptibility survey was carried out in this field due to a high cereal crop, which reduces the damage caused by other techniques. The results produced a broad area of significant "hot spots" (shown as dark blue) which may indicate past human activity (Fig 8).

Field 10

The magnetometer reconnaissance survey produced no significant anomalies. The field contained the remains of broad ridge and furrow of low amplitude and a headland running north-west to south-east.

Field 11

The reconnaissance survey produced a series of significant anomalies, one of which was linear whilst the remainder formed no coherent pattern. A detailed magnetometer survey was carried out over the location of these anomalies. A total of 11, 20 x 20m grids were surveyed. The resultant plot shows a weak curvilinear anomaly denoting a probable ditch or may even indicate a feature of geological origin (Figs 6 and 7).

Field 12

This field was not scanned due to dense, high crop of winter barley.

Field 13

This field is situated close to the WWI munitions factory. The reconnaissance did not produce any significant anomalies although modern disturbances were detected.

6 CONCLUSIONS

Magnetometer survey results from this area has produced an average response, which may be due to the low susceptibility of the geology and underlying soils. Fields 9 and 11 indicated possible archaeological anomalies of a weak nature. No significant archaeological

anomalies have been detected elsewhere along the proposed road corridor, but underlying ephemeral archaeological deposits cannot be ruled out.

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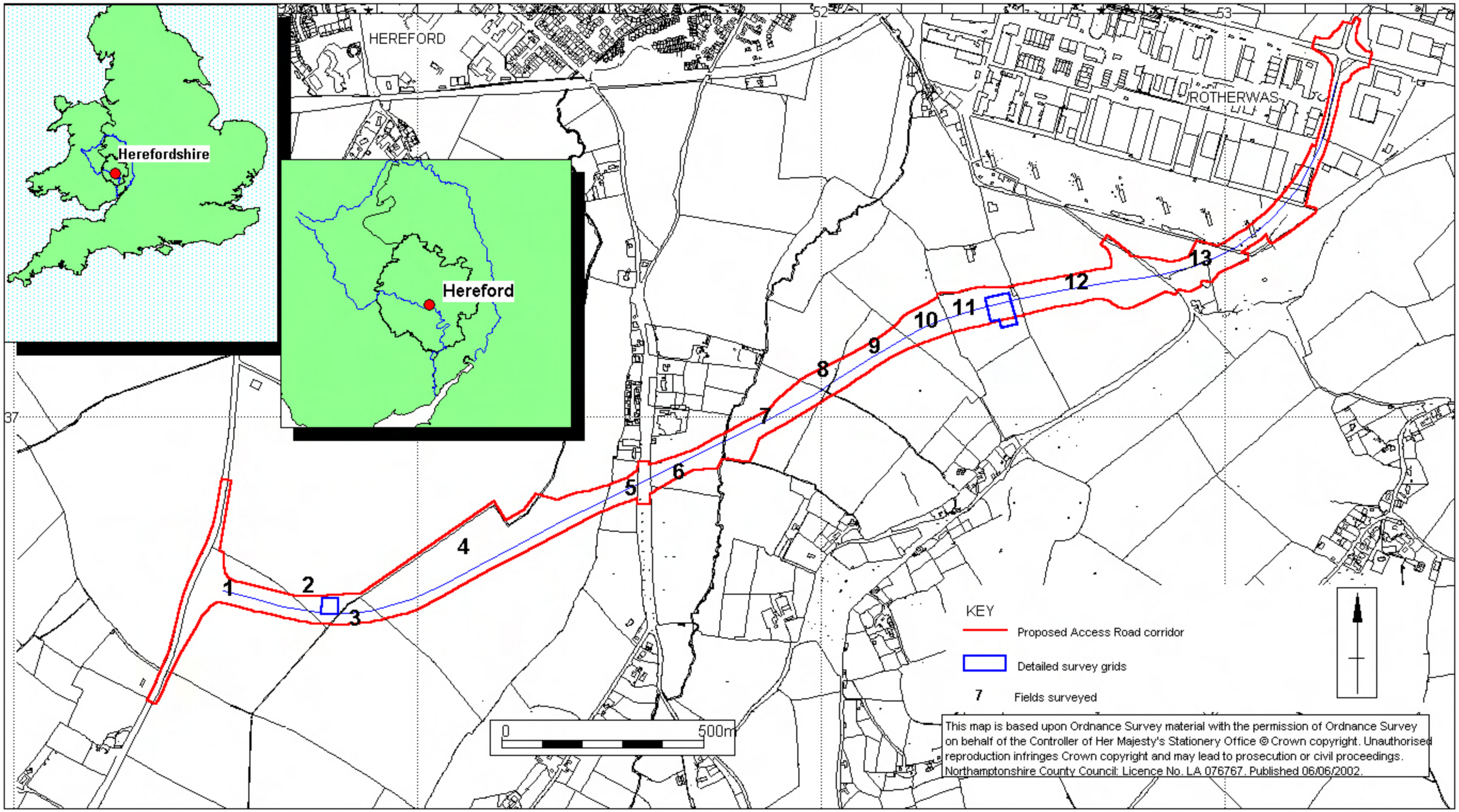
Northamptonshire Archaeology
A service of Northamptonshire County Council 17 June 2002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ROTHERWAS
Herefordshire
Hereford
1
2
3
4
5
6
7
8
9
10
11
12
13
KEY
Proposed Access Road corridor
Detailed survey grids
7 Fields surveyed
0
500m
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Fig. 1

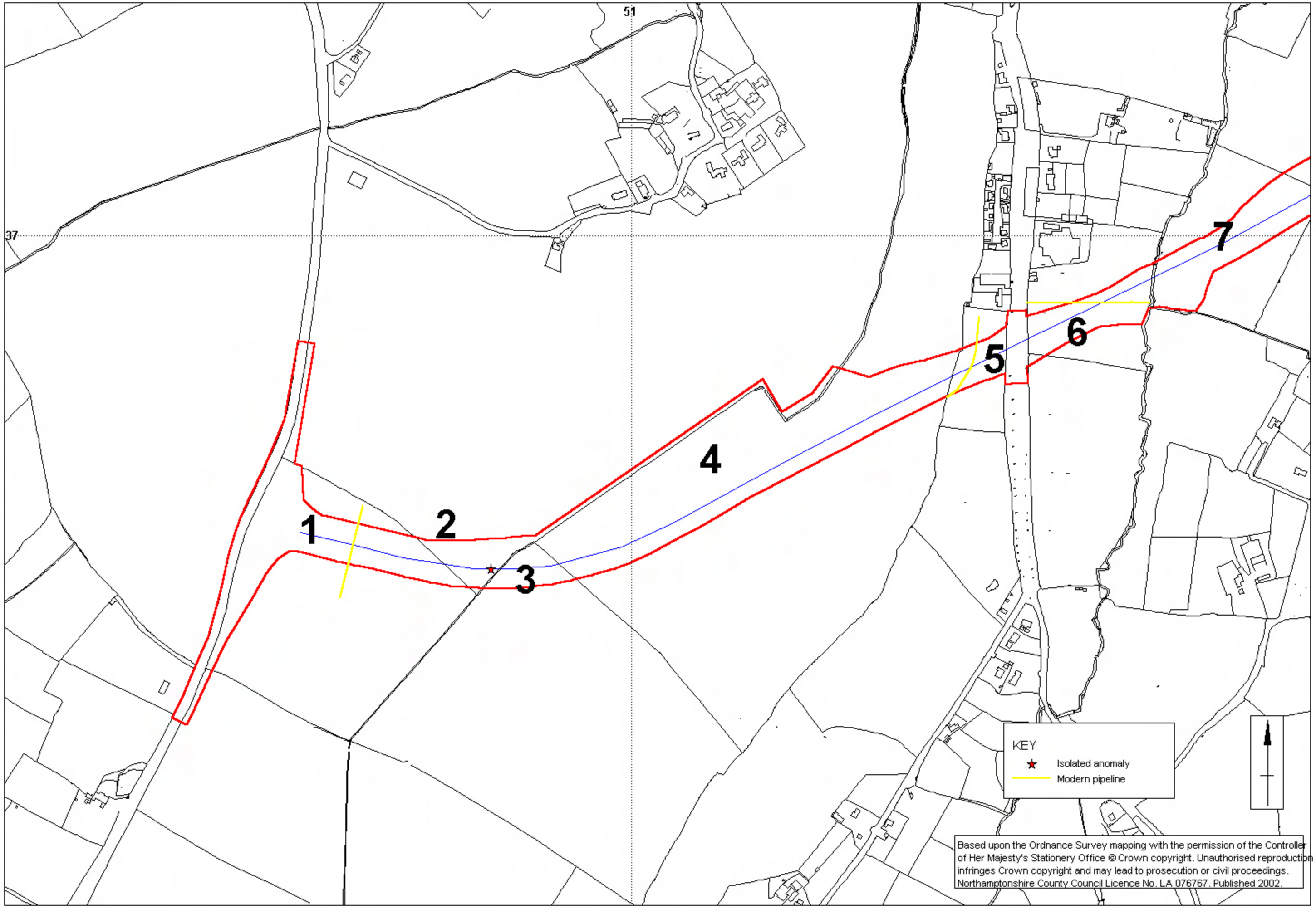


Fig.2 - scale 1:5000

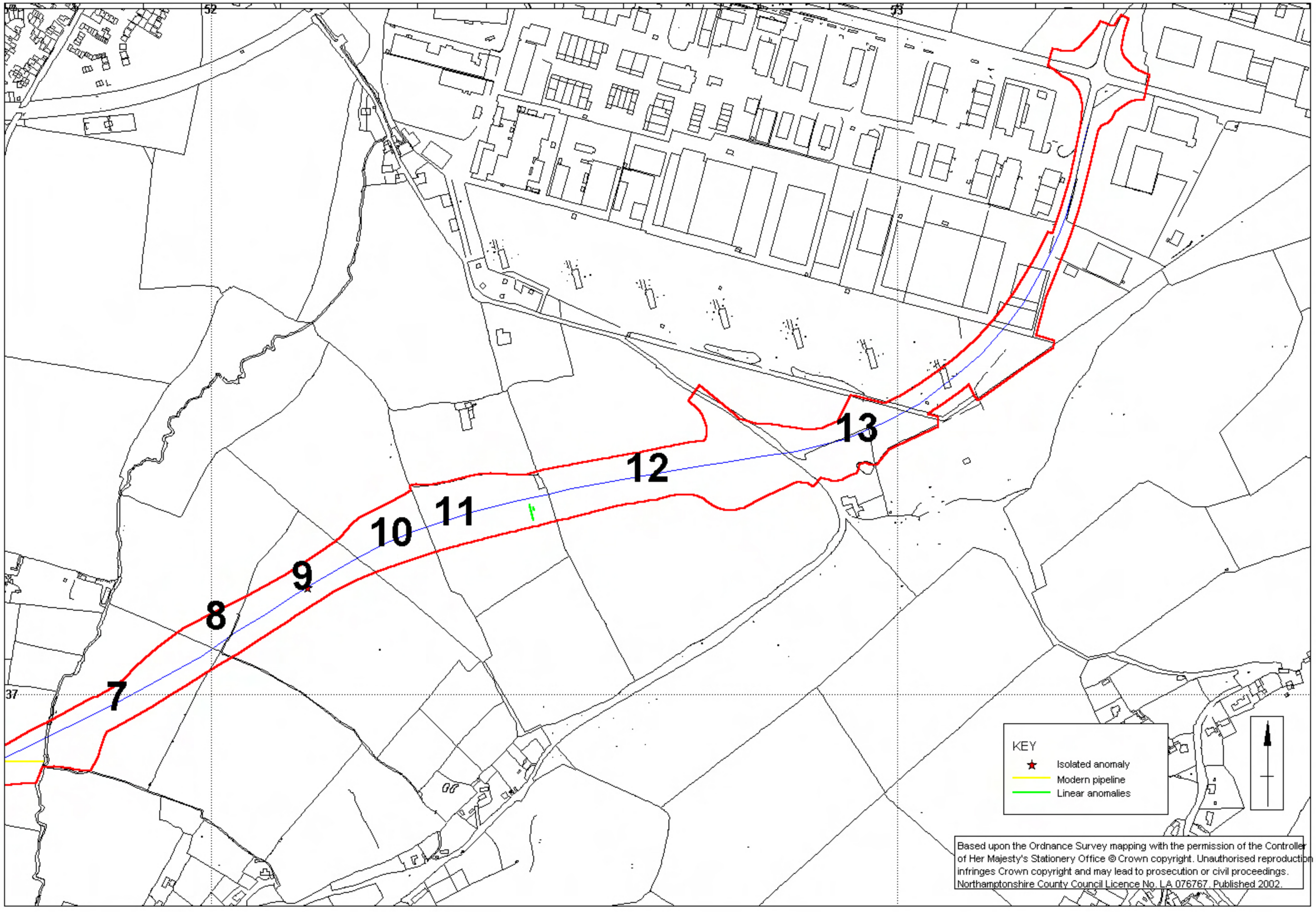


Fig.3 - scale 1:5000

Raw and enhanced grey scale plot of Field 2

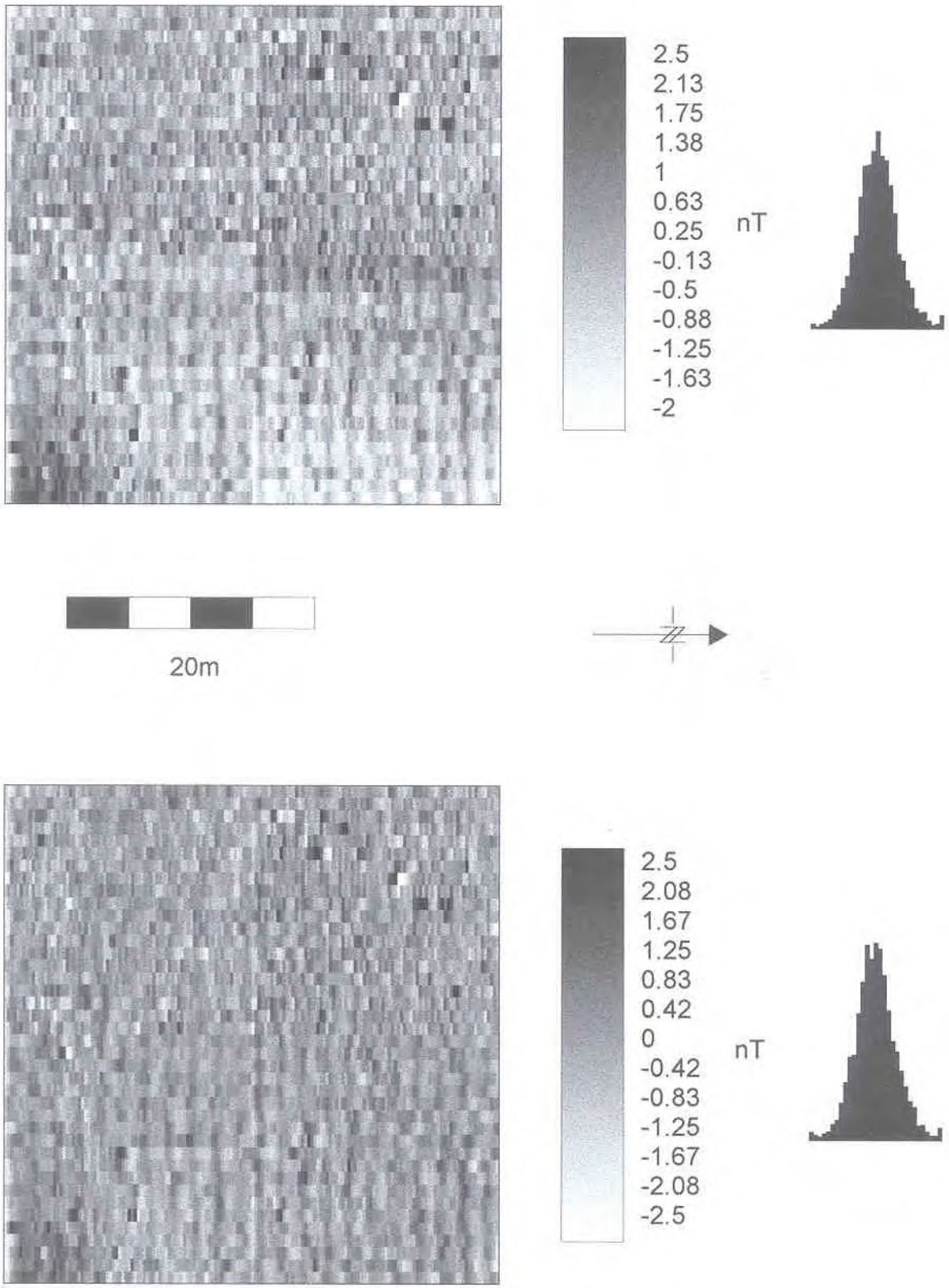
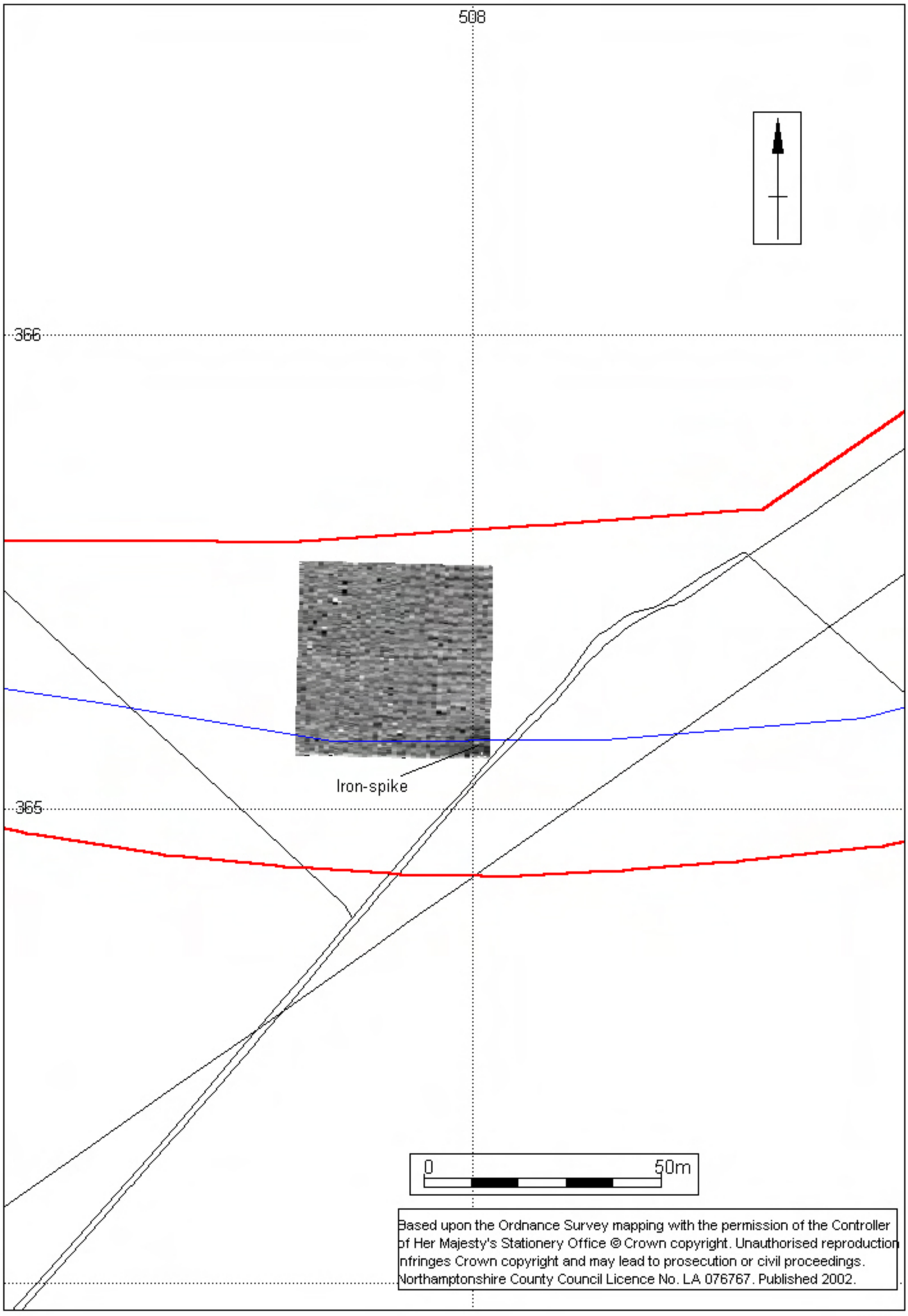


Fig. 4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366
365
Iron-spike
0
50m
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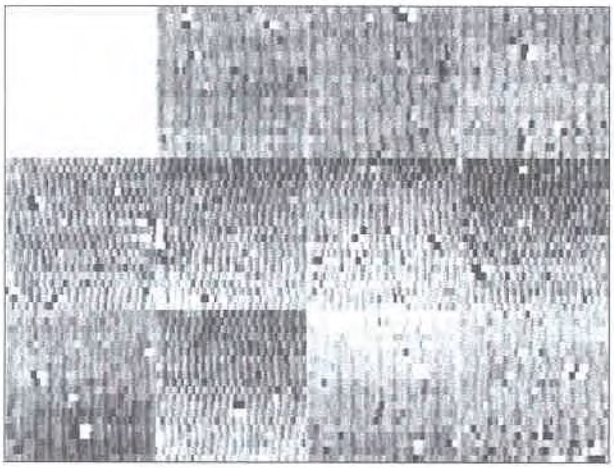
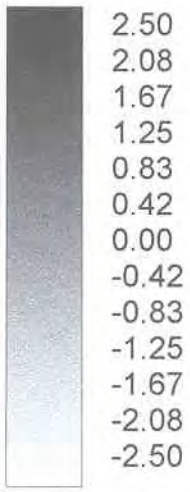
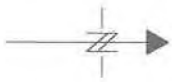
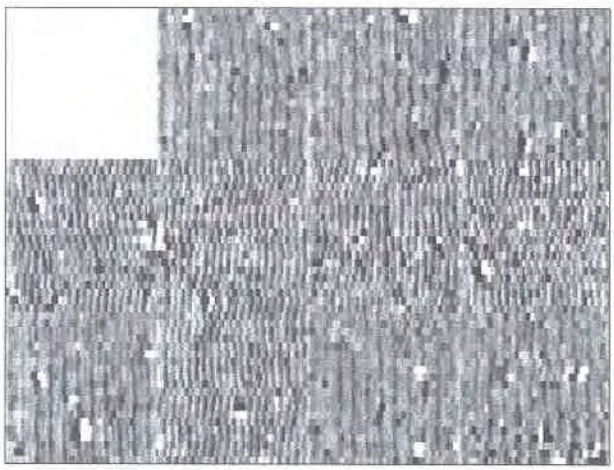
Fig.5

Raw and Enhanced Grey scale plot of Field 11









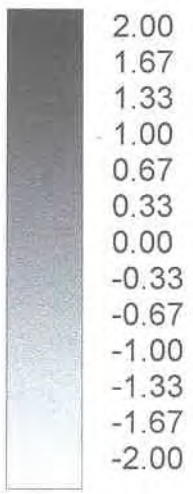


Fig. 6

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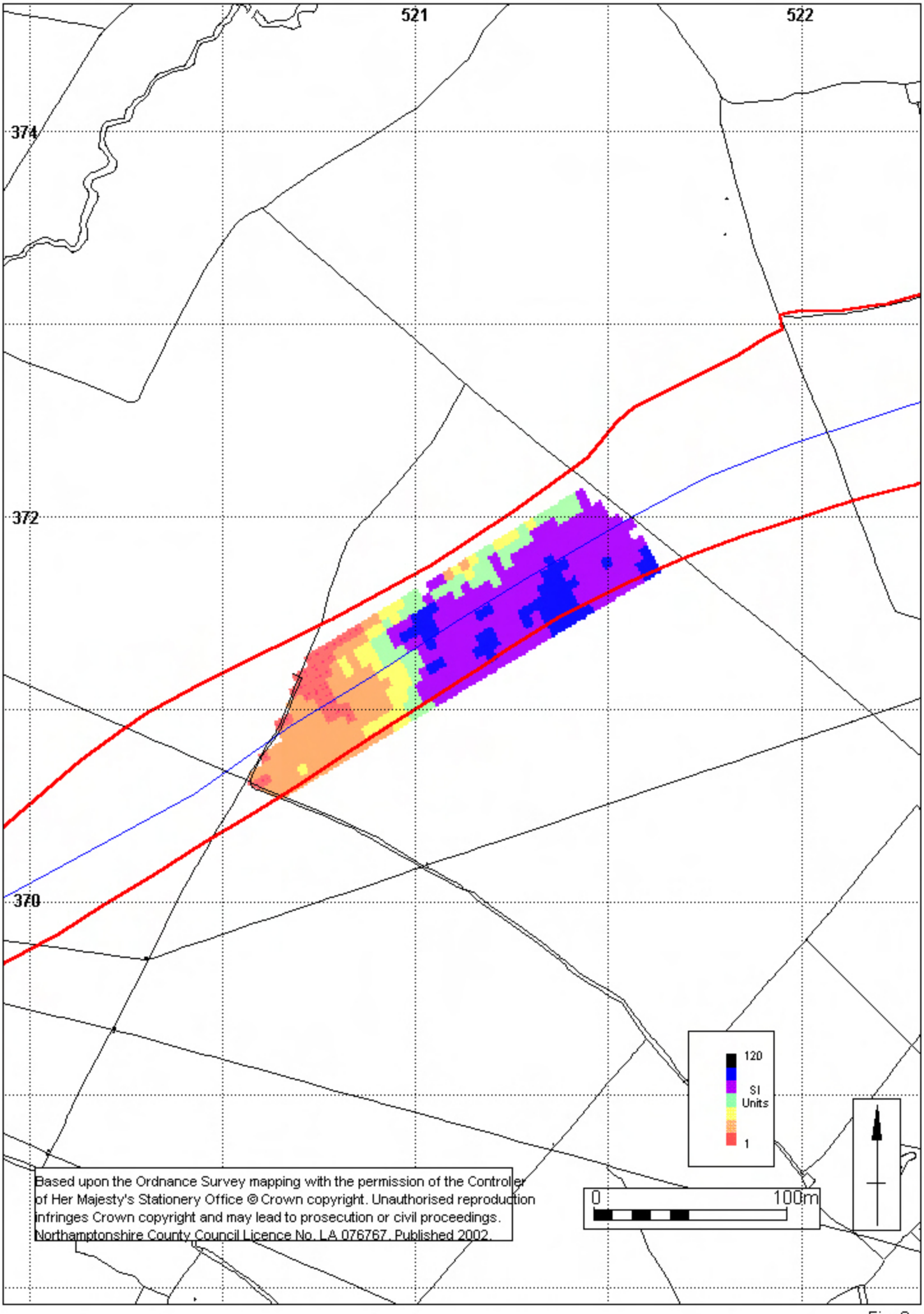
Fig.7


521
522
374
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370
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SI
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Fig. 8