

LAND at BIRCH ROAD LANDKEY DEVON

Results of Desk-Based Assessment &
Geophysical Survey for Phase 2 Development



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Land at Birch Road, Landkey, Devon

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Results of Desk-Based Assessment & Geophysical Survey for Phase 2

For

LVA

By



SWARCH project reference: LBR20

National Grid Reference: Centred on SS 59967 31408

Planning Application Ref: Pre-planning

Project Director: Dr. Samuel Walls

Fieldwork Managers: Joe Bampton

Project Officer: Joe Bampton

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Summary

This report presents the results of geophysical survey carried out by South West Archaeology Ltd. (SWARCH) on land off Birch Road, Landkey, Devon, as part of the pre-planning documentation for a proposed housing development and associated landscaping. This forms the second phase of surveying on the site, building on an earlier desk-based and geophysical survey.

The geophysical survey would indicate that there are relatively few features of archaeological origin present within the area of the proposed development, and those that are present relate primarily to historic field boundaries removed in the 20th century. The features that are not represented in the cartographic record align with the same field system and may represent evidence of an earlier, medieval field system that is still in part represented in the wider landscape. There is a rectangular enclosure on a different alignment to the majority of the field system, suggesting that it pre-dates the field system but may still have been visible when the boundary within Field 3 was added.

The objectives of the survey were to locate any anomalies which may relate to deposits, structures or artefacts of archaeological origin and accurately record their location. The results of the survey will inform any subsequent investigation or mitigation works prior to the second phase of development of the site. Across the majority of the site development is unlikely to disturb any significant archaeological deposits. The possible enclosure in the southern end of Field 3 appears to be the only identified anomaly of archaeological merit and worthy of further investigation. Therefore, further archaeological mitigation would appear to be of limited value over much of the site, however a targeted programme of archaeological works across the southern end of Field 3 would be recommended to attempt to establish the nature and date of the enclosure.

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Acknowledgements

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- LVA (the Client)
- Landowner for access (historically)
- Staff of the Devon County Historic Environment Team (DCHET)
- Staff at the Devon Heritage Centre (DHC)

1.0 Introduction

Location:	Land off Birch Road
Parish:	Landkey
County:	Devon
NGR:	Centred on SS 59967 31408
Type of survey:	Gradiometer
Date of survey:	13 th -16 th June 2016
Area surveyed:	6.74ha

1.1 Project Background

This report presents the results of geophysical survey carried out by South West Archaeology Ltd. (SWARCH) at land off Birch Road, Landkey, Devon (Figure 1) for the second phase of development. The work was commissioned by LVA (the Client) in order to identify any archaeological features that might be affected by the construction of the proposed second phase of a housing development and associated landscaping.

1.2 Topographical and Geological Background

Landkey is situated approximately two kilometres east of Barnstaple, along the old road running between Barnstaple and South Molton towards London. The site lies to the north east of the Landkey Conservation Area, which is centred upon the parish church c.500m away. The proposed development would span seven relatively flat rectangular fields on land situated immediately south of Birch Road in the Newlands part of the settlement at an altitude of approximately 54m AOD (see figure 1).

The settlement of Landkey straddles two different soil types; to the north are well-drained fine loamy soils of the Denbigh 1 Association, while the southern part is characterised by the slowly-permeable seasonally-waterlogged clayey, fine loamy and fine silty soils of the Hallsworth 2 association (SSEW 1983). These soils overlie the sedimentary bedrock of the Pilton Mudstone Formation (BGS 2016).

1.3 Historical Background

Londekey is recorded in the Domesday Book as a subdivision of the holding of Bishops Tawton. The place name has medieval origins, the first element being the British *lann*, meaning 'church' or '(holy) enclosure' while the second element is a saints name; *Cai* preceded by the pronoun corresponding to *te*, 'thy', commonly used as a term of endearment (Gover *et al.* 1932). The oldest surviving building within the settlement is the parish church dating mostly to the late 15th century but with some elements dating to the 12th century. There was, until recently, a clear separation between the area of Landkey surrounding the parish church and the Landkey Newlands area, situated towards the east of the settlement and a largely post-war housing development. The site itself occupies an area which is identified by the Devon Historic Landscape Characterisation as *medieval enclosures based on strip fields*.

1.4 Archaeological Background

There has been a small amount of archaeological fieldwork in the wider parish, with a geophysical survey conducted to the south-west of the site, south of Venn Quarry (Event ID: EDV4492); and to the north-west at Westacott (EDV7360) with subsequent archaeological evaluation (EDV7583); and several historic building recording and watching briefs at Town Mills and west of Landkey at Old Hill Farm (EDV5034, EDV5039 and EDV5568). None of these have produced any significant archaeological remains. A study of limekilns in the area has also been made (EDV5610). A Bronze Age axe was found somewhere south-west of Landkey. No archaeological works or identified heritage assets were located within the survey area. A full list and location map of nearby heritage assets as listed on the Devon Historic Environment Record (HER) can be found in Appendix 2. The geophysical survey undertaken for phase 1 of this development area (EDV7212) indicated relatively few features of archaeological origin present within the area of the proposed development, and those that were present related to historic field boundaries removed in the 20th century.

1.5 Methodology

This document follows the methodology outlined in the Project Design (Appendix 1), drawn up in consultation with Stephen Reed of the Devon County Historic Environment Team (DCHET).

The desk-based assessment follows the guidance as outlined in: *Standard and Guidance for Archaeological Desk-Based Assessment* (ClfA 2014) and *Understanding Place: historic area assessments in a planning and development context* (English Heritage 2012).

The gradiometer survey follows the guidance outlined in *Geophysical Survey in Archaeological Field Evaluation* (English Heritage, 2008) and *Standard and Guidance for Archaeological Geophysical Survey* (ClfA 2014).

'Archaeological geophysical survey uses non-intrusive and non-destructive techniques to determine the presence or absence of anomalies likely to be caused by archaeological features, structures or deposits, as far as reasonably possible, within a specified area or site on land, in the inter-tidal zone or underwater. Geophysical survey determines the presence of anomalies of archaeological potential through measurement of one or more physical properties of the subsurface.' (Standard and Guidance for Archaeological Geophysical Survey, 2011).

The results of the survey will as far as possible inform on the presence or absence, character, extent and in some cases, apparent relative phasing of buried archaeology leading to the formulation of a strategy to mitigate a threat to the archaeological resource.

Land at Birch Road, Landkey, Devon

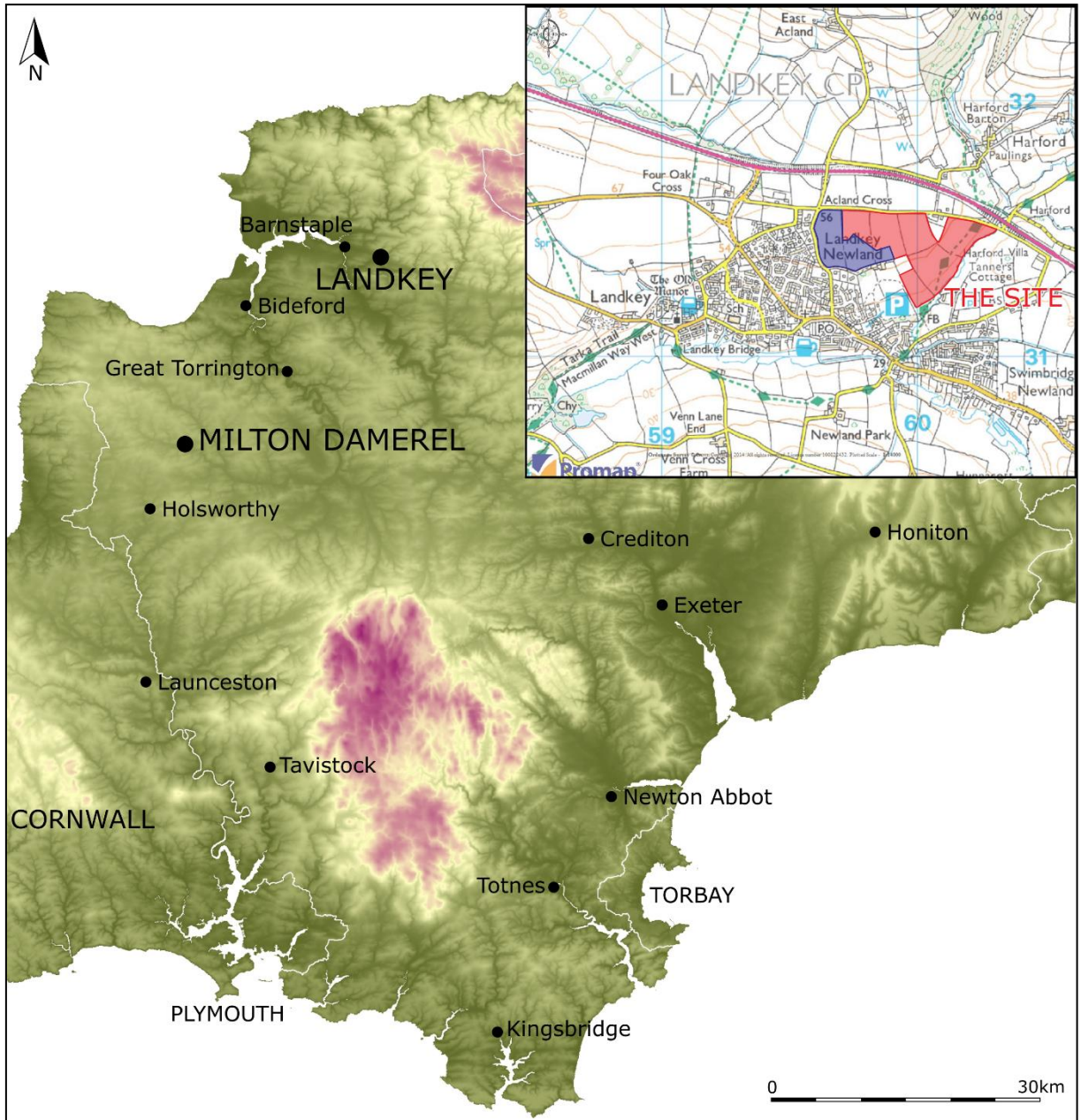


Figure 1: Site location (the proposed extent of the development is shaded in red).

2.0 Desk-Based Assessment and Cartographic Analysis

2.1 Introduction

The parish of Landkey lies within in the Hundred of South Molton and Deanery of Barnstaple. Landkey is recorded in the Domesday Book as a subdivision of the holding of Bishops Tawton. It is not clear at what point Landkey became a separate manor but certainly by the 13th century the Manor is held by the Beaple family, whereby it passed in the 14th century via an heiress to Sir Nigel Loring, K.G. The Manor subsequently passed via a succession of heiresses to the Peyvre- and then Broughton families and eventually to the Russell family, the Earl (and subsequently Duke) of Bedford. In the 15th century the present (Old) Manor House was constructed to the north-west of the church, although it is likely that this was built on the site of an earlier manor house. Acland is a sub-manor within the parish, which was the original seat of the family bearing the name, probably from as early as the 11th century. A further sub-manor (barton) was also held in Landkey by Lord Rolle by the 18th century, which probably represents a sub-division of the original holding. The proposed site falls on land belonging to South Hays Farm, at this time owned by William Arundell Yeo, a distant descendant of the Arundells of Trerice.

There was, until recently, a clear separation between the area of Landkey surrounding the parish church and the Landkey Newlands area which is situated towards the east of the settlement. Estate development occurring after the Second World War now occupies this space. Newlands was a village in itself in 1822, which was built up east of the centre of Landkey in the early 1600s. Houses in the area incorporate early 17th century chimney stacks.

2.2 1765 Donn Map

The first map depicting this area is Donn's map of 1765. This shows the major settlements, roads and watercourse running from Harford Water to Landkey Newland. The church at Landkey is also indicated. It would appear that the site is not occupied with any structures at this time.



Figure 2: Extract from Donn's map of 1765 (DHC) (the approximate extent of the site is outlined in red).

2.3 The 1847 Landkey Tithe Map

The 1847 tithe map is the first detailed cartographic source available to this study. It indicates that the 1765 depiction of the settlement is fairly accurate; the only notable difference from Donn's map is a farm track or road running along the southern boundary of the site. The tithe map depicts a very familiar layout of fields, virtually identical to those of the modern landscape. The fieldscape comprises a series of regular rectangular post-medieval enclosures, with some curving boundaries indicating fields based upon medieval strip fields. The fields long axis' run slightly down-slope to a tributary to the River Taw called 'Mill Leat'.

The proposed site falls partly within *South Hays Farm* and partly within *Rooks Ground*. South Hays was split into several tenements, owned by William Arundell Yeo and leased to William Grimshore and George Body. Rooks Ground was also owned by William Arundell Yeo and leased to John Shapland. Most of the fields are described as *arable* and have prosaic field names, such as *Gate Close* (no.1129); the field name *Willow Plot* (no.1195) by the river would suggest the former presence of an osier bed. The tithe map depicts the western three fields as being further divided; with the western and middle fields both being split in two with central east-west boundaries, and with the south-eastern fields featuring further sub-division.

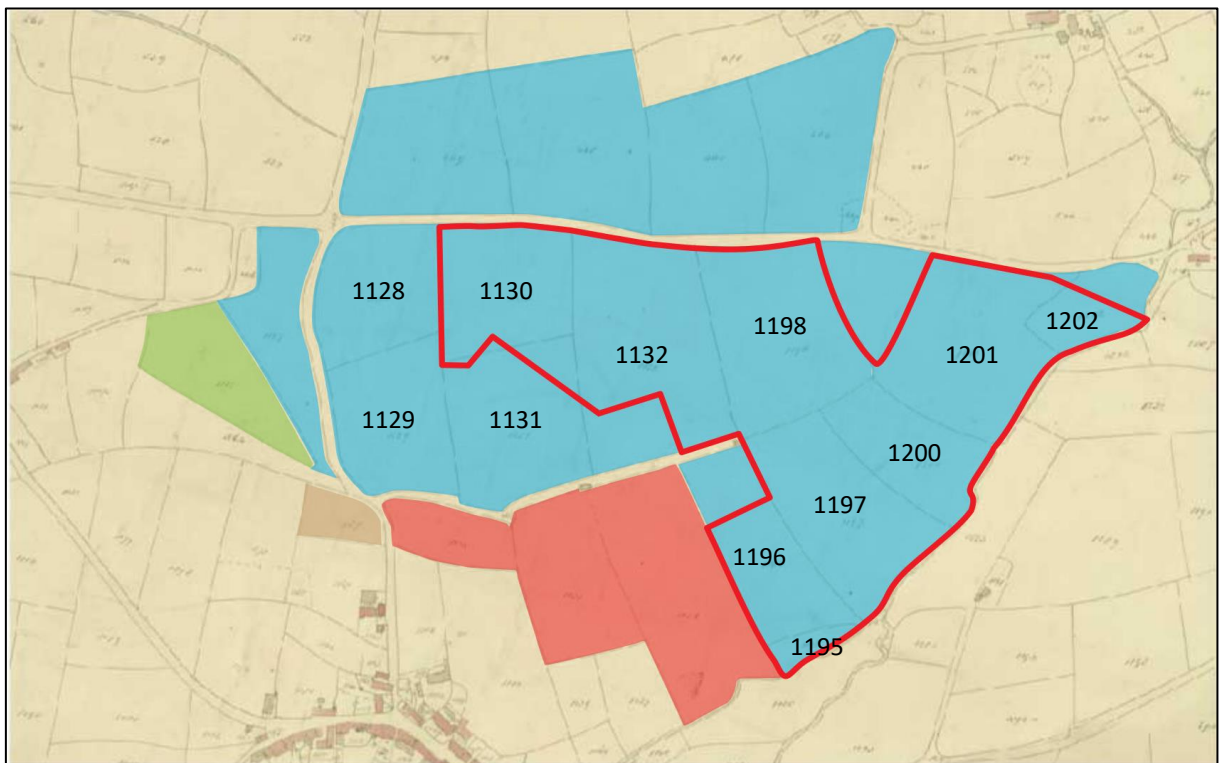


Figure 3: Extract from the 1847 Landkey tithe map (DHC) (site is outlined in red).

Land at Birch Road, Landkey, Devon

No.	Land owner	Occupier	Filed name	cultivation
Pawlings Tenement				
464	William Arundell Yeo	George Pugsley	Lower Wester field	Arable
465			Higher Wester Field	Arable
467			Quarry	Quarry
Broad Moors				
468	William Arundell Yeo	George Pugsley	Salt Marsh	Arable
469			Salt Marsh	Arable
South Hays				
1127	William Arundell Yeo	William Grimshore	Pal Park	Arable
1128			Tool Close	Arable
1129			Gate Close	Arable
1130			Path Field	Arable
1131			Middle Close	Arable
1132			East Field	Arable
1200		George Body	Lower Field	Arable
1201			East Field	Arable
1202			Little Field	Arable
1034			William Buckingham	Himself
1035	West Close	Pasture		
1036	East Close	Pasture		
Rooks Ground				
1195	William Arundell Yeo	John Shapland	Willow Plot	Arable
1196			Rooks Ground	Meadow
1197			Rooks Ground	Arable
1198			Rooks Ground	Arable
Bradninch				
1115	Dean of Exeter	Richard Galliford	Field	Arable
Hammetts				
1169	Trustees of Lord Rolle	Phillip Jones	Massard Garden	Garden

Table 1: 1848 Landkey tithe apportionment listings and records (DHC). The fields within the site proposal are highlighted.

2.4 1st and 2nd Edition Ordnance Survey Maps

Only a few minor changes to the fieldscape can be seen to have occurred between 1847 and the time of the Ordnance Survey 1st Edition Map of 1887. The biggest exception on a wider landscape scale being the addition of the railway (now the route of the North Devon Link Road) to the north of the proposed site. For the area of the development itself, a north-south boundary has been added to subdivide the northern half of *Path Field*; the northern and eastern boundaries of *Little Field* had been extended to meet at the road, whilst *East Field* was further reduced in size with a new boundary linking the north-west corner of *Little Field* with the south-east corner of *Rook's Ground*. The fields immediately south of the site, which were labelled as pasture in the 1848 tithe apportionment are depicted as orchards on the 1st Edition Ordnance Survey Map. The map also includes some further details, such as a spring in the western field of the site.

By the time of the Ordnance Survey 2nd Edition Map of 1903 the additional boundary within *Path Field* depicted on the 1st addition had been removed; and *Little* and *East Fields* had been amalgamated. Few if any other changes have been made.

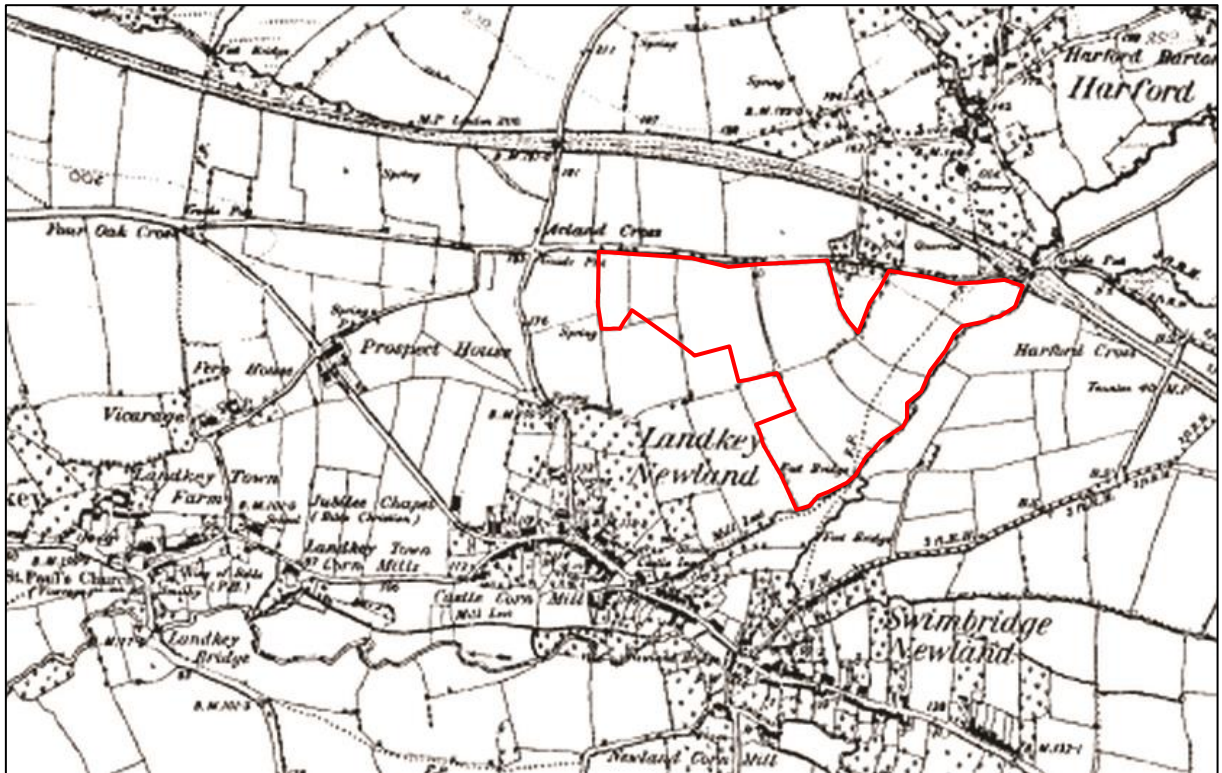


Figure 4: Extract from the Ordnance Survey 1st Edition Map, 1887 (DHC) (the site is indicated outlined in red).

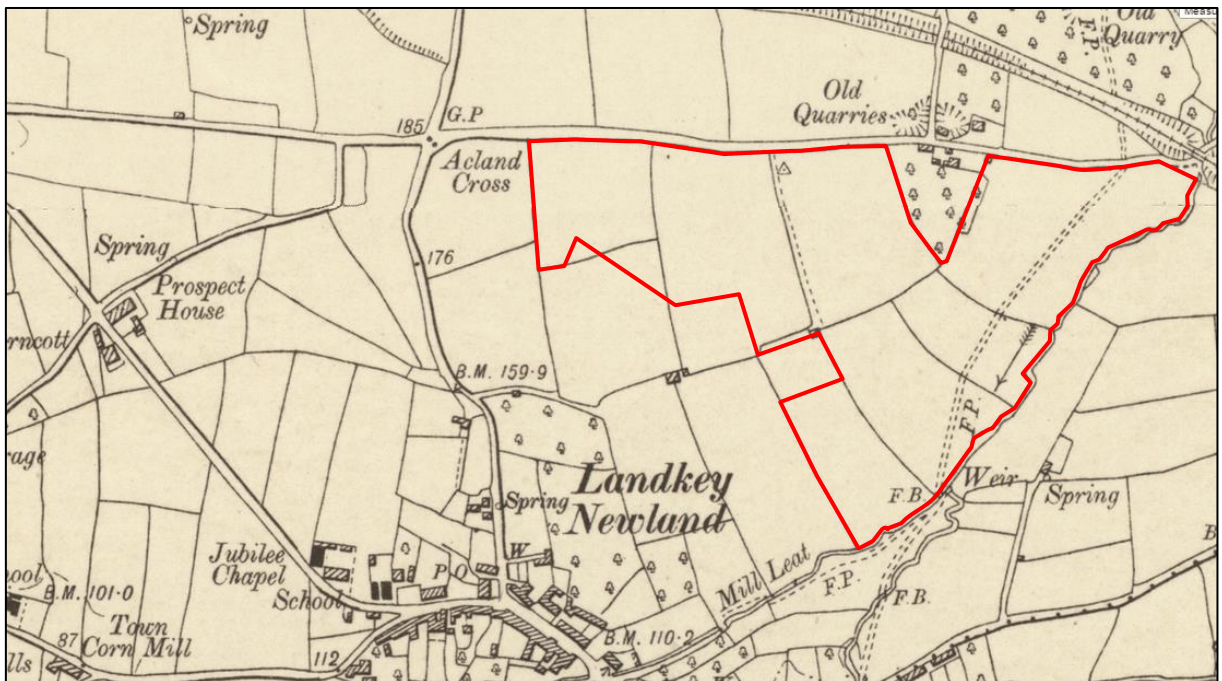


Figure 5: Extract from the Ordnance Survey 2nd Edition Map, 1903 (DHC) (the site is indicated outlined in red).

2.5 Later Developments

The land immediately west and south of the proposal site has since been developed with a housing estate. The east-west boundaries between *Tool Close* and *Gate Close*; and *Path Field* and *Middle Close* have both been removed. The railway line has become the A361 and additional roads have been added west of the site, leading into Landkey.

3.0 Gradiometer Survey

3.1 Introduction

The purpose of this survey was to identify and record magnetic anomalies. While the anomalies may relate to archaeological deposits and structures, the dimensions of recorded anomalies may not directly correspond with any associated archaeological features. The following discussion attempts to clarify and characterise any identified anomalies. An initial survey in 2014 covered parts of Fields 5, 6 and 7 fields (see Bampton & Morris 2014) with the remaining parts of these fields and an additional three fields (Fields 2, 3 and 4) surveyed in June 2016. Field 1 was not surveyed as whilst part of the development site it is planned to remain undeveloped as a country park. The second phase of survey took place over three dates in June 2016 by SWARCH personnel in mixed wet and sunny conditions. The fields were meadows containing ankle-length grass. The land is relatively flat, sloping gently to the south.

The results of the first phase survey are included for clarity of dissemination of results, though a malfunction with one of the gradiometers or its data logger during this survey necessitated the resurveying of part of the site at a later date. The survey conditions were the same. However, this accounts for the variation in the appearance of some of the survey data.

The survey identified ten groups of anomalies: Group 1 was comprised of five historic field boundaries depicted on the cartographic sources; Group 2 possibly represent historic field boundaries not depicted on the cartographic sources; Group 3 represents a rectilinear enclosure; Group 4 represents an existing earthwork bank marked on the modern mapping; Group 5 represents a spread of debris which may form the remains of a structure or river crossing; Group 6 represents a spread of debris likely to be associated with the remains of a structure marked on the tithe map; Group 7 represents linear ground disturbance probably associated with modern ploughing activity; Group 8 represents metallic deposits; Group 9 represents pits or tree-throws; and Group 10 represents modern disturbance including cable trenching and wheel ruts.

3.2 Methodology

The gradiometer survey follows the general guidance as outlined in: *Geophysical Survey in Archaeological Field Evaluation* (English Heritage, 2008) and *Standard and Guidance for Archaeological Geophysical Survey* (Chartered Institute for Archaeologists, 2014).

The survey was carried out using two twin-sensor fluxgate gradiometers (Bartington Grad601). These machines are sensitive to depths of up to 1.50m. The survey parameters were: sample intervals of 0.25m, traverse intervals of 1m, a zigzag traverse pattern, traverse orientation was circumstantial, grid squares of 30x30m. The gradiometer was adjusted ('zeroed') every 0.5-1ha. The survey grid was tied into the Ordnance Survey National Grid. The data was downloaded onto *Grad601 Version 3.16* and processed using *TerraSurveyor Version 3.0.25.0*. The primary data plots used in this analysis were *Shade, 3D & Relief*, and *Metadata*. The details of the data processing are as follows:

Processes: Clip +/- 3SD; DeStripe all traverses, median; DeStagger, offset outbound by up to -3 interval; Interpolate X and Y, double resolution.

Details: 6.74ha surveyed; Max. 106.11nT, Min. -103.98nT; Standard Deviation 5.46nT, mean 0.17nT, median 0nT.

3.3 Results

Figures 6 and 7 with the accompanying Table 2 show the analyses and interpretation of the geophysical survey data. Additional graphic images of the survey data can be seen in Appendix 3.

Anomaly group	Class and Certainty	Form	Archaeological Characterisation	Comments
1	Moderate negative with associated positive, probable	Linear	Historic Field Boundary	Post-medieval double ditched enclosures present on the 1840 tithe and 1908 Ordnance Survey (OS) maps. Responses vary between +15nT and -10nT. Removed in the late 19 th or early 20 th century.
2	Moderate negative with associated positive, probable	Linear	Historic Field Boundary	Field boundary not recorded on historic mapping. Responses vary between +12nT and -10nT. May be related to an earlier medieval field system.
3	Moderate positive with associated negative, probable	Recti-linear	Possible enclosure	Rectangular ditch anomaly with possible associated banks. Responses vary between +35nT and -10nT to north and west sides. South and west sides less diverse and may have been significantly plough damaged or masked by the overlying bank field boundary.
4	Weak negative with associated positive, probable	Linear	Bank boundary	Linear bank, possibly forming a boundary to the southern edge of the field and the former mill leat. Visible as an earthwork.
5	Dipolar, possible	Spread	Magnetic debris	A spread of disturbed ground containing ferrous debris (c.+/-100nT) and possible thermoremnant debris. This includes a raised area in the field and the embankment along the southern boundary.
6	Dipolar, possible	Spread	Magnetic debris	A small spread of disturbed ground containing ferrous debris (c.+/-95nT) and possible thermoremnant debris. Possibly demolition relating to a former structure on historic mapping.
7	Weak positive with associated negative, possible	Linear	Agricultural Activity	Linear anomalies with response strengths up to +10nT. Possibly associated with agricultural activity such as ploughing.
8	Dipolar, possible	Sub-oval	Metallic deposit	A very large dipolar response (+/-105nT) indicative of a large metallic deposit. Possibly associated with buried farm equipment.
9	Positive, possible	Sub-oval/ amorphous	Pits	At least eight discreet anomalies, c.<+25nT. Indicative of cut features such as pits or tree-throws.
10	Mixed positive and negative	Linear	Modern disturbance and services	A series of linear and curvilinear anomalies of mixed positive and negative responses likely of modern origin and relating to cable and service trenching and recent shallow topsoil disturbances such as wheel ruts.

Table 2: Interpretation of gradiometer survey data.

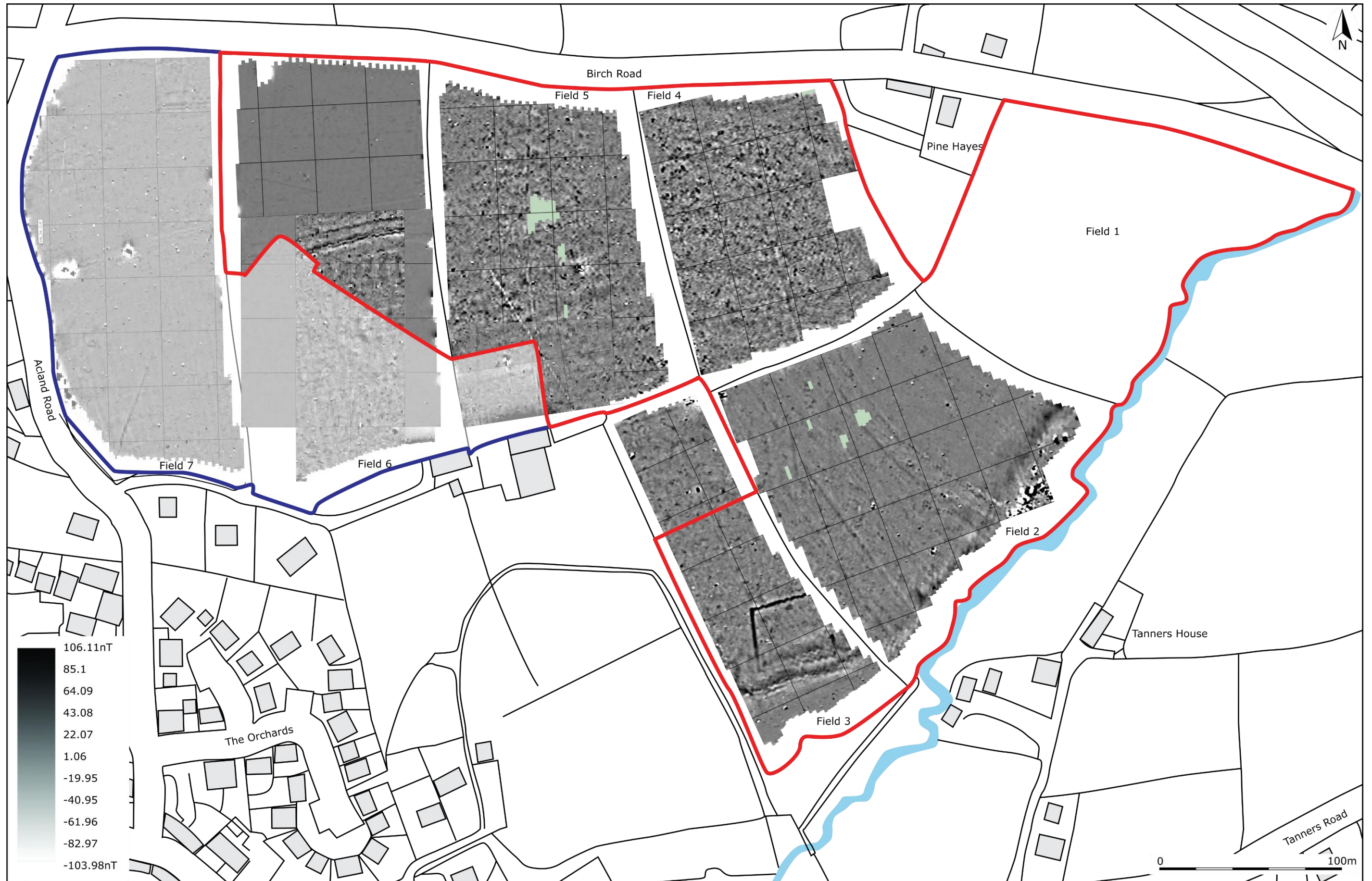


Figure 6: Shade plot of gradiometer survey results (the phase 2 site is outlined in red) alongside the phase 1 survey results (outlined in blue).

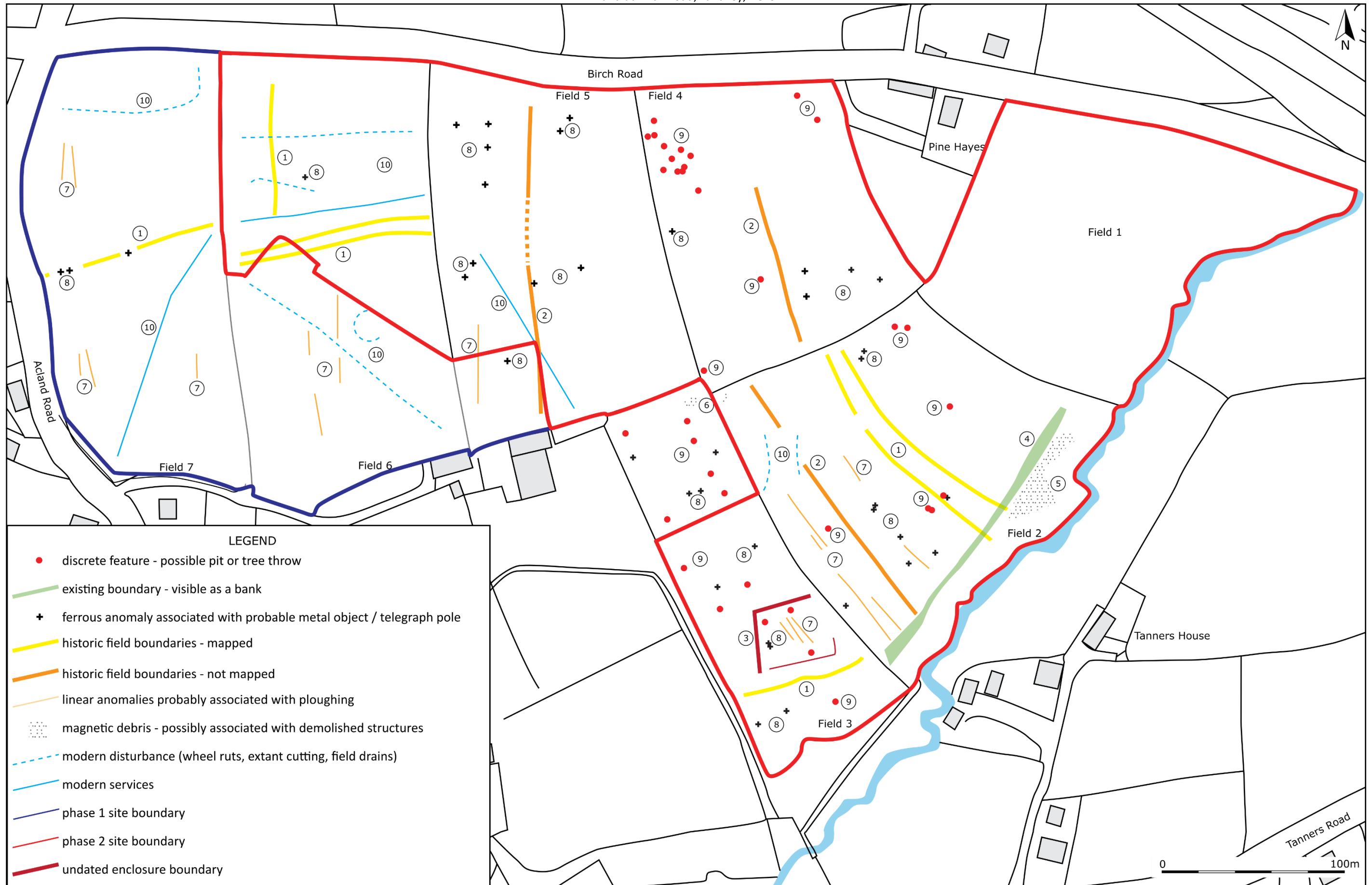


Figure 7: Interpretation of gradiometer survey data.

4.0 Discussion and Conclusion

4.1 Gradiometer Survey

The survey identified ten groups of anomalies: Group 1 was comprised of five historic field boundaries depicted on the cartographic sources; Group 2 possibly represents historic field boundaries not depicted on the cartographic sources; Group 3 represents a rectilinear enclosure; Group 4 represents an existing earthwork bank marked on the modern mapping; Group 5 represents a spread of debris which may form the remains of a structure or river crossing; Group 6 represents a spread of debris likely to be associated with the remains of a structure marked on the tithe map; Group 7 represents linear ground disturbance probably associated with modern ploughing activity; Group 8 represents metallic deposits; Group 9 represents pits or tree-throws; and Group 10 represents modern disturbance including cable trenching and wheel ruts.

Group 1 are negative with associated positive anomalies indicative of field boundaries. The boundary in Field 2 and the east to west orientated boundary in Field 6 represent a typical banked field enclosure with ditches on either side. The other boundaries are smaller and represent single ditches with associated banks. These anomalies equate to boundaries identified on the 1847 tithe map and 1887 and 1903 Ordnance Survey (OS) mapping, almost all of which were removed in the 20th century. The exceptions to this are the boundary in Field 3, which is only recorded on the tithe map and removed by 1887; and the single ditched boundary in Field 6 which is only recorded on the 1887 1st edition OS map, having been created since the tithe and removed prior to the early 20th century.

Group 2 are moderate negative with associated positive linear anomalies indicative of field boundaries. These do not equate to mapped boundaries, and are likely to pre-date the mapping evidence, their curving nature suggesting that they form boundaries related to medieval strip field agriculture.

Group 3 was comprised of a series of moderate positive with associated negative linear anomalies suggestive of ditches with slight banking. These form a rectangular enclosure measuring approximately 40×30m. The responses for the southern and eastern sides are much less pronounced, probably a result of either plough damage or being masked by the bank material to the south.

Group 4 is a weak negative with associated positive linear anomaly indicative of a field boundary. It is still present as an earthwork bank and forms a boundary to the useable agricultural land not affected by flooding of the leat at the southern boundary of the site.

Group 5 is a spread of disturbed ground containing ferrous debris and possible thermoremanent debris located within a turn in the leat. Its location may indicate its association with a demolished structure of a possible mill building or of a fording/bridging point. It may equally be rubble used to create a raised bank to the leat.

Group 6 is a spread of disturbed ground containing ferrous debris and possible thermoremanent debris. It is located in the position of a building recorded on the historic mapping, and is likely to be the result of the demolition of this structure during the 20th century.

Group 7 are weak positive with associated negative linear anomalies. These are very subtle and run parallel to the existing field boundaries and may be indicative of ploughing activity or land drains associated with the existing field systems.

Group 8 are dipolar anomalies located scattered across the site and are indicative of metallic deposits or objects. Those in Field 7 are related to telegraph poles, whilst the agricultural and

pastoral nature of the site is likely to mean that many are likely to be the result of metallic objects associated with farming activity.

Group 9 are discrete positive anomalies indicative of pits or tree-throws. Many of these appear in lines, particularly in Field 3, suggesting that they are tree throws forming the remnants of a possible plantation. The name '*Pine Hayes*' for the property between Fields 1 and 4, and the indication on the OS mapping of the surrounding fields containing orchards and plantations suggests the strong likelihood that these fields contained an orchard/plantation. Given this possibility, the high level of background noise within Fields 3, 4 and 5 may be a result of similar tree-throw activity.

Group 10 are a series of linear anomalies with either particularly strong or weak responses. The strong responses are likely to relate to modern cable trenching, whilst the weak responses are likely the result of wheel ruts.

4.2 Conclusion

The geophysical survey would indicate that there are relatively few features of archaeological origin present within the area of the proposed development, and those that are present primarily relate to historic field boundaries removed in the 20th century. The features that are not represented in the cartographic record align with the same field system and may represent evidence of a relict medieval field system that is still (in part) represented in the wider landscape. The rectangular enclosure within Field 3 is on a different alignment to the majority of the field system, suggesting that it is part of a different (presumed earlier) phase of activity that may still have been visible when the boundary within Field 3 was added.

Across the majority of the site development is unlikely to disturb any significant archaeological deposits. The possible enclosure in the southern end of Field 3 appears to be the only identified anomaly of archaeological merit and worthy of further investigation. Therefore, further archaeological mitigation would appear to be of limited value over much of the site, however a programme of archaeological works across the southern end of Field 3 would be recommended to attempt to establish the nature and date of the enclosure.

5.0 Bibliography & References

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North Devon Council *Landkey Town Conservation Area Character Appraisal – DRAFT*.

Devon Heritage Centre:

Landkey Tithe Map and Apportionment

Appendix 1: Project Design

Location: Land Adjacent to Birch Road
Parish: Landkey
County: Devon
NGR: SS 59967 31408
Proposal: Proposed second phase of housing development for Devonshire Homes
OASIS Record ID: Southwes1-254826
Date: 15th June 2016

1.0 INTRODUCTION

1.1 This document forms a Project Design (PD) which has been produced by South West Archaeology (SWARCH) at the request of Neal Jillings of Jillings Hutton Planning (the Agent), on behalf of Philip Beale of Devonshire Homes (the Client). It sets out the methodology for a desk-based assessment and geophysical survey to be undertaken in advance of the application for planning for the above development and for related off site analysis and reporting. The PD and the schedule of work it proposes were drawn up in consultation with Stephen Reed of the Devon County Historic Environment Team (DCHET).

2.0 ARCHAEOLOGICAL BACKGROUND

Landkey sits towards the base of a shallow valley and along the gently sloping northern side of the river. The settlement is clustered around the Parish Church, which has structural elements dating its earliest phases to the 12th century. Featuring prominently just over a kilometre to the south is Codden Hill, with the Scheduled Codden Beacon. Approximately 2 kilometres east-north-east is the deserted medieval village at Welcome Farm. Landkey is mentioned in Domesday as 'Londekey' and was a subdivision of the Bishops Tawton holding.

The HER shows a disused quarry immediately north-east of the proposed development site, which appeared on the tithe map, along with a building which was potentially the quarry kiln. The building sits within a field called Quarry Close, and is immediately west of a field called Kiln Close. There are sites associated with the 19th century corn mills, lead mining, sandstone mining, lime burning and tanning south and south-west of the proposed site.

The proposed development site sits to the north of the Landkey Conservation Area (adopted in 1987), which covers an area of 3.6 hectares and contains 6 Listed buildings.

Previous work carried out by SWARCH in 2014 for the first phase of development at the site included desk-based assessment and geophysical survey, and revealed anomalies consistent with former field boundaries.

3.0 AIMS

3.1 The principal objectives of the work will be to:

- 3.1.1 Undertake a desk-based appraisal of the site;
- 3.1.2 To observe and identify archaeological features through geophysical survey.
- 3.1.3 To analyse and report on the results of the project as appropriate.

4.0 METHOD

4.1 Desk-based Appraisal:

The programme of work shall include an element of desk-based research to place the development site into its historic and archaeological context. This work will consist of map regression based on the Ordnance Survey maps and the Tithe Map(s) and Apportionments. An examination will also be made of records and held by the HER. This desk-based work will be undertaken in advance of any fieldwork commencing. If a full report is prepared then this information will be presented as part of the final report along with the results of the fieldwork.

4.2 Geophysical Survey:

The programme of work shall include a magnetometer survey of c.7 hectares, covering the fields in which the proposed development would be located. The results of this survey will inform whether an archaeological evaluation or further archaeological recording of any potential buried remains or other mitigation is required.

4.3 The Client will provide SWARCH with details of the location of existing services and of proposed groundworks within the site area, and of the proposed construction programme.

4.4 Health and Safety requirements will be observed at all times by any archaeological staff working on site, particularly when working with machinery. As a minimum: high-visibility jackets, safety helmets and protective footwear will be worn.

- 4.4.1 Appropriate PPE will be employed at all times.
- 4.4.2 The site archaeologist will undertake any site safety induction course provided by the Client.

5.0 REPORTING

5.1 The type of report produced will be agreed with the HET in view of the results. If a full report is produced it will include the following elements:

- 5.1.1 A report number, date and the OASIS record number;
- 5.1.2 A copy of this PD;
- 5.1.3 A summary of the project's background;
- 5.1.4 A description and illustration of the site location;
- 5.1.5 A methodology of the works undertaken, and an evaluation of that methodology;
- 5.1.6 Plans and reports of all documentary and other research undertaken;
- 5.1.7 A summary of the project's results;
- 5.1.8 An interpretation of the results in the appropriate context;

Land at Birch Road, Landkey, Devon

- 5.1.9 A summary of the contents of the project archive and its location (including summary catalogues of finds and samples);
- 5.1.10 A location plan and overall site plan including the location of areas subject to archaeological recording;
- 5.1.11 A description of any remains and deposits identified including an interpretation of their character and significance;
- 5.1.12 A consideration of the evidence within its wider context;
- 5.1.13 Specialist assessment or analysis reports where undertaken.
- 5.2 DCHET will receive the report within three months of completion of fieldwork.
- 5.3 A copy of the report detailing the results of these investigations will be submitted to the OASIS (*Online Access to the Index of Archaeological Investigations*) database under reference Southwes1-254826 within 3 months of completion of fieldwork.
- 6.0 MONITORING**
- 6.1.1 SWARCH shall agree monitoring arrangements with the HET and give two weeks' notice, unless a shorter period is agreed, of commencement of the fieldwork. Details will be agreed of any monitoring points where decisions on options within the programme are to be made.
- 6.1.2 Monitoring will continue until the deposition of the site archive and finds, and the satisfactory completion of an OASIS report.
- 6.1.3 SWARCH will notify the HET upon completion of the fieldwork stage of these works.
- 7.0 ARCHIVE**
- 7.1 On completion of the project an ordered and integrated site archive will be prepared in accordance with the Management of Research Projects in the Historic Environment (MoRPHE) (<http://www.english-heritage.org.uk/publications/morphe-project-managers-guide/>). The digital element of the archive will be transferred to the Archaeology Data Service (ADS) for long-term curation. A reference number will be obtained from the Museum of Barnstaple and North Devon (MBND), with regard deposition of the material (finds) element of any archive created by these works.
- 7.2 The archive will consist of two elements, the digital archive and the material archive.
- 7.2.1 The digital archive, including digital copies of all relevant written and drawn records and photographs, will be deposited with the Archaeology Data Service (ADS) and in compliance with their standards and requirements.
- 7.2.2 The material archive, comprising the retained artefacts/samples and the hardcopy paper record (if requested) will be cleaned (or otherwise treated), ordered, recorded, packed and boxed in accordance with the deposition standards of the MBND, and in a timely fashion.
- 7.2.3 If the MBND wishes to retain the hardcopy paper archive, it will be deposited with the rest of the material archive under the same accession number. Should the MBND decline the hardcopy paper archive, that archive will be offered to other appropriate museum bodies or the HET. If a suitable third party cannot be found, the hardcopy paper archive will be retained by SWARCH for 3 years and then destroyed.
- 7.3 SWARCH will, on behalf of the MBND obtain a written agreement from the landowner to transfer title to all items in the material archive to the receiving museum.
- 7.4 If ownership of all or any of the finds is to remain with the landowner, provision and agreement must be made for the time-limited retention of the material and its full analysis and recording, by appropriate specialists.
- 7.5 SWARCH will notify the HET upon the completion of:
- i) deposition of the digital archive with the ADS, and
- ii) deposition of the material (finds) archive with the museum.
- 7.6 The condition placed upon this development will not be regarded as discharged until the report has been produced and submitted to the HET and the LPA, the site archive deposited and the OASIS form completed.
- 7.7 The archive will be completed within 3 months of the completion of the final report.
- 8.0 CONFLICT WITH OTHER CONDITIONS AND STATUTORY PROTECTED SPECIES**
- Even where groundworks are being undertaken under the direct control and supervision of SWARCH personnel, it remains the responsibility of the Client - in consultation with SWARCH, the applicant or agent - to ensure that the required archaeological works do not conflict with any other conditions that have been imposed upon the consent granted and should also consider any biodiversity issues as covered by the NERC Act 2006. In particular, such conflicts may arise where archaeological investigations/excavations have the potential to have an impact upon protected species and/or natural habitats e.g. SSSIs, National Nature Reserves, Special Protection Areas, Special Areas of Conservation, Ramsar sites, County Wildlife Sites etc.
- 9.0 PERSONNEL & MONITORING**
- 9.1 The project will be managed by Dr. Samuel Walls; the archaeological monitoring and building recording will be undertaken by SWARCH personnel with appropriate expertise and experience. Where necessary, appropriate specialist advice will be sought (see list of consultant specialists in Appendix 1 below).

Natalie Boyd

South West Archaeology

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Appendix – List of specialists

Land at Birch Road, Landkey, Devon

Building recording

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Conservation

Alison Hopper Bishop the Royal Albert Memorial Museum Conservation service a.hopperbishop@exeter.gov.uk
Richard and Helena Jaeschke 2 Bydown Cottages, Swimbridge, Barnstaple EX32 0QD mrshjaeschke@email.msn.com
Tel: 01271 830891

Curatorial

Thomas Cadbury Curator of Antiquities Royal Albert Memorial Museum, Bradninch Offices, Bradninch Place, Gandy Street, Exeter EX4 3LS Tel: 01392 665356

Bone

Wendy Howard Department of Archaeology, Laver Building, University of Exeter, North Park Road, Exeter EX4 4QE
w.j.howard@exeter.ac.uk Tel: 01392 269330

Lithics

Martin Tingle Higher Brownston, Brownston, Modbury, Devon, PL21 OSQ martin@mtingle.freemove.co.uk

Palaeoenvironmental/Organic

Wood identification Dana Challinor Tel: 01869 810150 dana.challinor@tiscali.co.uk

Plant macro-fossils Julie Jones juliedjones@blueyonder.co.uk

Pollen analysis Ralph Fyfe Room 211, 8 Kirkby Place, Drake Circus, Plymouth, Devon, PL4 8AA

Pottery

Prehistoric Henrietta Quinnell 39D Polsloe Road, Exeter EX1 2DN Tel: 01392 433214

Roman Alex Croom, Keeper of Archaeology Tyne & Wear Archives & Museums, Arbeia Roman Fort and Museum,

Baring Street, South Shields, Tyne and Wear NE332BB Tel: (0191) 454 4093 alex.croom@twmuseums.org.uk

Medieval John Allen, 22, Rivermead Road Exeter EX2 4RL Tel: 01392 256154 john.p.allan@btinternet.com

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Appendix 2: Key Heritage Assets

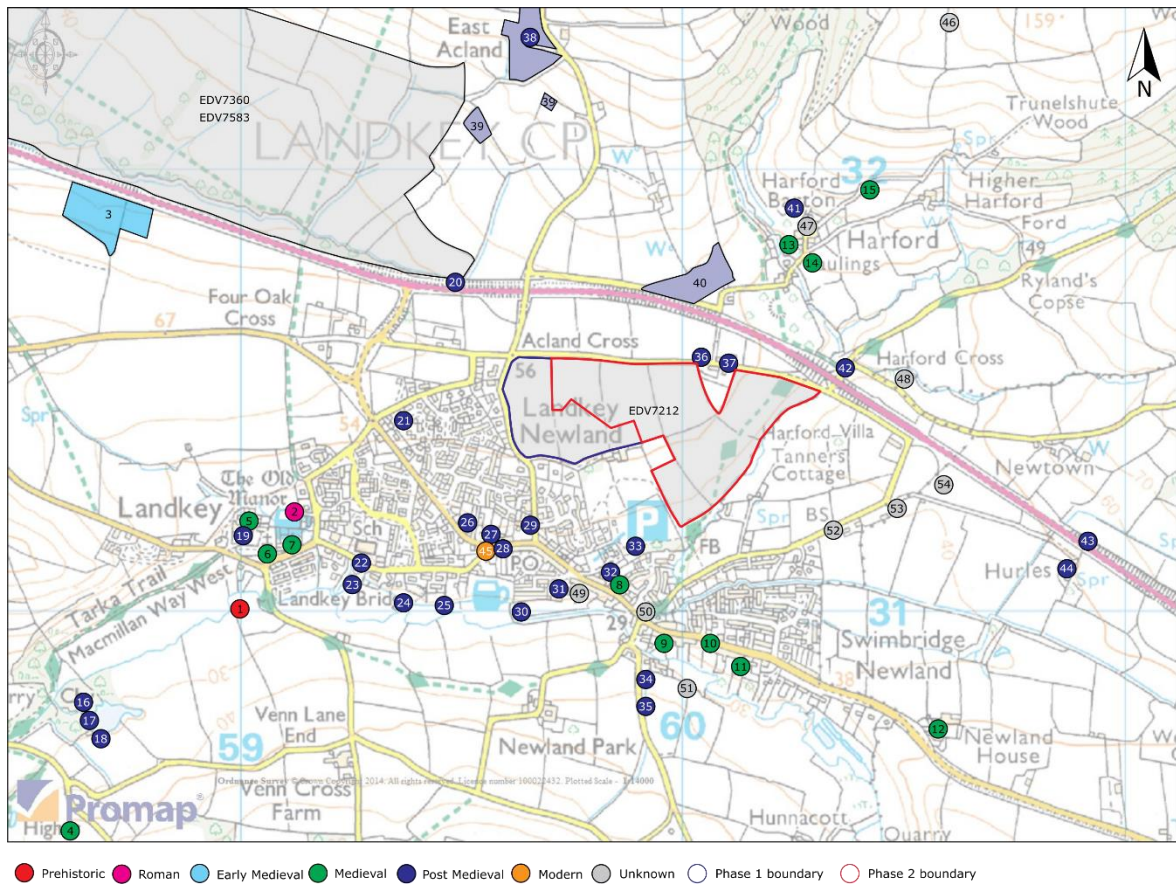


Figure 8: Nearby HER entries (source: Devon HER and Dartmoor HER).

No.	Mon. ID	Site Name	Record	Notes
1	MDV12492	Prehistoric findspot of a Bronze Age axe	Findspot	Polwhele describes a bronze axe found near Landkey in the C18 by labourers digging for gravel.
	MDV16962	Malt-house	Extant building	A malt-house existed in what is now the parish room.
2	MDV19248	Landkey – Roman to late medieval settlement	Documentary evidence	The element 'Lan' may indicate the presence of a settlement before the C10.
3	MDV899	Deserted early medieval settlement	Demolished structure	A settlement, presumably called pill, formerly existed but is now deserted was connected by an uphill track to the ridgeway to the south.
4	MDV61251	Medieval findspot at Venn quarry	Findspot	Scatter of medieval pottery uncovered during archaeological assessment of the area.
5	MDV32833 MDV95812 List11325269	Medieval manor	Extant structure	Grade II* Listed 'Old Manor'. Late C15 with C17 additions.
6	MDV95805	Medieval church of St. Paul	Extant structure	Parish church. C13 fabric to chancel. Nave, tower and north aisle C15 north and south transepts early C16.
7	MDV892 MDV32831	Medieval buildings – Church House; the Causeway and Ring O Bells Inn	Extant structure	Row of three cottages and public house possibly late C15 remodelled in C17.
8	MDV32830 MDV95790	Somerfield House - possible medieval building	Extant structure	Including yard entrance and gates adjoining the right end early C16 possibly with earlier fabric.
9	MDV33808 MDV95792	Medieval farmhouse, Ratcliffes	Extant structure	Including attached barn, farmhouse now private dwelling C16 but much altered in C20.
10	MDV33750	Medieval farmhouse – the ingle and rose cottage	Extant structure	Now forming two private dwellings early C16 remodelled in C17.
11	MDV33749 MDV95791	Medieval farmhouse - Rocky Side	Extant structure	Early C16 remodelled in C17 with C20 alterations.
12	MDV19274	Newland House	Documentary	Newland was recorded in Domesday in the manor of Bishops Tawton.
13	MDV32907	Post-medieval Barton or land	Extant structure	Early C17 with late C17 additions.
14	MDV19272	Medieval settlement Harford Barton	Documentary evidence	Harford, alias; broaderherford or little herford was included in the manor of Bishops Tawton in the Domesday Book.
15	MDV12078	Medieval chapel	Earthworks	Site of St. Marys Chapel, site is under grass a levelled platform marks the spot.
16	MDV16391	Post-medieval Wheel pit	Demolished structure	A waterwheel worked the trolleys running to the lime kilns, and two waterwheels fixed in the stream below worked the pumps.
17	MDV16389	Post-medieval Lime Kiln	Extant structure	Landkey was one of the most important lime burning kilns in the Barnstaple area, substantial remains of the kiln are visible at this location.
18	MDV16392	Post-medieval findspot	Findspot	A tall chimney, square in profile still stands on the edge of the old quarry.
19	MDV32832 MDV95809 List1164951	Post-medieval outbuilding	Extant structure	Grade II Listed store shed associated with the Old Manor approximately 5m to the S.
20	MDV32807	Post-medieval milestone	Documentary evidence	Milepost shown on 6" (1932) OS map.

Land at Birch Road, Landkey, Devon

21	MDV23962	Post-medieval house	Demolished structures	Landkey tithe map shows a number of houses and gardens called Bennetts, part of the stone wall of the most easterly one still survives but nothing else.
22	MDV32834 MDV95786 List1107688	Post-medieval manor house, town mills	Extant structure	Grade II Listed house including bakehouse possibly 1659 by dated frieze although earlier fabric may be concealed.
23	MDV80003	Post-medieval storehouse, town mills	Demolished structure	Stone store building N of mill demolished in 2010.
	MDV80007	Post-medieval covered yard with milestone, town mills	Extant structure	Covered yard between mill and storehouse with seven milestones set in the floor.
	MDV32836	Post-medieval water mill, town mills	Extant structure	Mid C19 water mill regular plan with external wheel on E side.
24	MDV32843	Post-medieval quarry	Documentary evidence	A quarry is shown at this location on the 6" (1903) OS map.
25	MDV32835	Post-medieval mill leat, town mills	Documentary evidence	'Mill leat' shown on 6" (1906) OS map at this location.
26	MDV32842	Post-medieval chapel	Documentary evidence	'Jubilee Chapel' shown on 6" (1903) OS map at this location.
27	MDV1814	Post-medieval nonconformist chapel – Beulah Chapel	Extant structure	Opened 1865, closed in 1955.
	MDV95789 List1164898	Post-medieval chapel - Wesleyan Chapel	Extant structure	Grade II Listed Wesleyan Methodist Chapel. 1868.
28	MDV32828	Post-medieval milestone	Documentary evidence	Milestone on 6" (1975) OS map.
29	MDV32827 MDV95794	Post-medieval cottages – Thatched End Wallbrook cottage	Extant structure	Grade II Listed cottages. Probably C16 remodelled in late C17 early C18. White painted heavily rendered stone and cob.
30	MDV891	Post-medieval mill pond	Documentary evidence	Millpond noted at this location on the Landkey tithe map.
31	MDV32916	Post-medieval mill	Documentary evidence	'Castle corn mill' shown on 6" (1903) OS map at this location.
32	MDV32829	Post-medieval cottage, Apple Tree cottage	Extant structure	Late C16 roughcast rendered stone cob.
33	MDV69875	Post-medieval leat	Documentary evidence	Site of 'Mill Leat' on 25" (1880's) map running SW.
34	MDV890	Post-medieval water mill	Documentary evidence	Mill shown at this location on historic maps.
35	MDV32917	Post-medieval leat	Documentary evidence	'Mill leat' shown on 6" (1903) OS map at this location.
36	MDV23992	Post-medieval quarry	Documentary evidence	Quarry shown in this location on the Landkey tithe map.
37	MDV1994	Post-medieval kiln	Documentary evidence / extant structure	On the tithe map for Landkey field no 442 'Quarry Kiln. A building (now a hen house) is sited within the quarry and may have been the kiln.
38	117021	East Acland Farm	Extant structure	A farmstead is recorded at East Acland Farm on the Landkey tithe and later OS mapping.
39	MDV117022	Orchards at East Acland Farm	Documentary	Orchards are recorded on the 1880s OS map.
40	MDV117421	Orchards to the west of Harford	Documentary	Orchards are recorded on the 1880s OS map.
41	MDV23987	Post-medieval quarry	Documentary evidence	Landkey tithe map field no 507 is called 'Quarry'.
42	MDV23988	Post-medieval Cottage	Demolished structure	Tithe map field 1208; cottage and garden, map of 1866 conveying rolle property to the Devon and Somerset railway suggesting this cottage was demolished during construction of the railway.
43	MDV32939	Milestone in the parish of Swimbridge	Documentary evidence	A milepost shown on 6" (1905) OS map.
44	MDV23995	Hurles Farmstead	Extant structure	On the tithe map for Landkey plot no 683, house, yard and road.
4	MDV78469	Modern Landkey war memorial	Extant structure	War memorial built in 1919 to commemorate nine men who fell in WWI.
46	MDV1992	Undated earthwork	Documentary evidence	Higher and Lower Castle Park field names on tithe map.
47	MDV95787	Undated farmhouse, Harford Barton	Extant structure	GII* Listed farmhouse.
48	MDV32900	Undated Boundary stone	Documentary evidence	'Boundary stone' shown on 6" (1932) and 6" (1963) OS maps at this location.
49	MDV32841	Undated forge	Documentary evidence	'Smithy' shown on 6" (1903) OS map.
50	MDV32840	Undated forge	Documentary evidence	'Smithy' shown on 6" (1903) OS map at this location.
51	MDV1996	Post-medieval corn mill	Documentary evidence	The Landkey tithe map lists four 'Mill' field names.
52	MDV32945	Undated Boundary stone	Documentary evidence	Boundary stone shown on 6" (1905) and (1963) OS maps.
53	MDV32947	Undated Boundary stone	Documentary evidence	Boundary stone shown on 6" (1905) and (1963) OS maps.
54	MDV23996	Undated Parish boundary	Earthworks	Landkey/ Swimbridge parish boundary consists of an earthen bank.
EDV7360 Geophysical survey EDV7583 Evaluation trenching	MDV119860	Agricultural activity, Westacott	Monument	Geophysical survey identified anomalies consistent with modern and historic ploughing activity, including former field boundaries and drains.
	MDV119862	Archaeological features, Westacott	Monument	Geophysical survey identified linear features.
	MDV119859	Rectilinear enclosure, Westacott	Monument	Geophysical survey identified a rectilinear enclosure.
EDV7212 Desk-based Assessment Geophysical survey	MDV109727	Former field boundaries and plough scars, Birch Road	Monument	Geophysical survey identified former field boundaries and plough scars.
	MDV118674	Archaeological anomalies, Birch Road	Monument	Geophysical survey identified possible pit or tree-throw anomalies.
	MDV118678	Archaeological anomalies, Birch Road	Monument	Geophysical survey identified archaeological features.
	MDV118680	Bank, Birch Road	Monument	An earthwork indicating a bank is visible.

Table 3: Local HER records (source: Devon HER).

Appendix 3: Additional Graphic Images of Gradiometer Survey Data

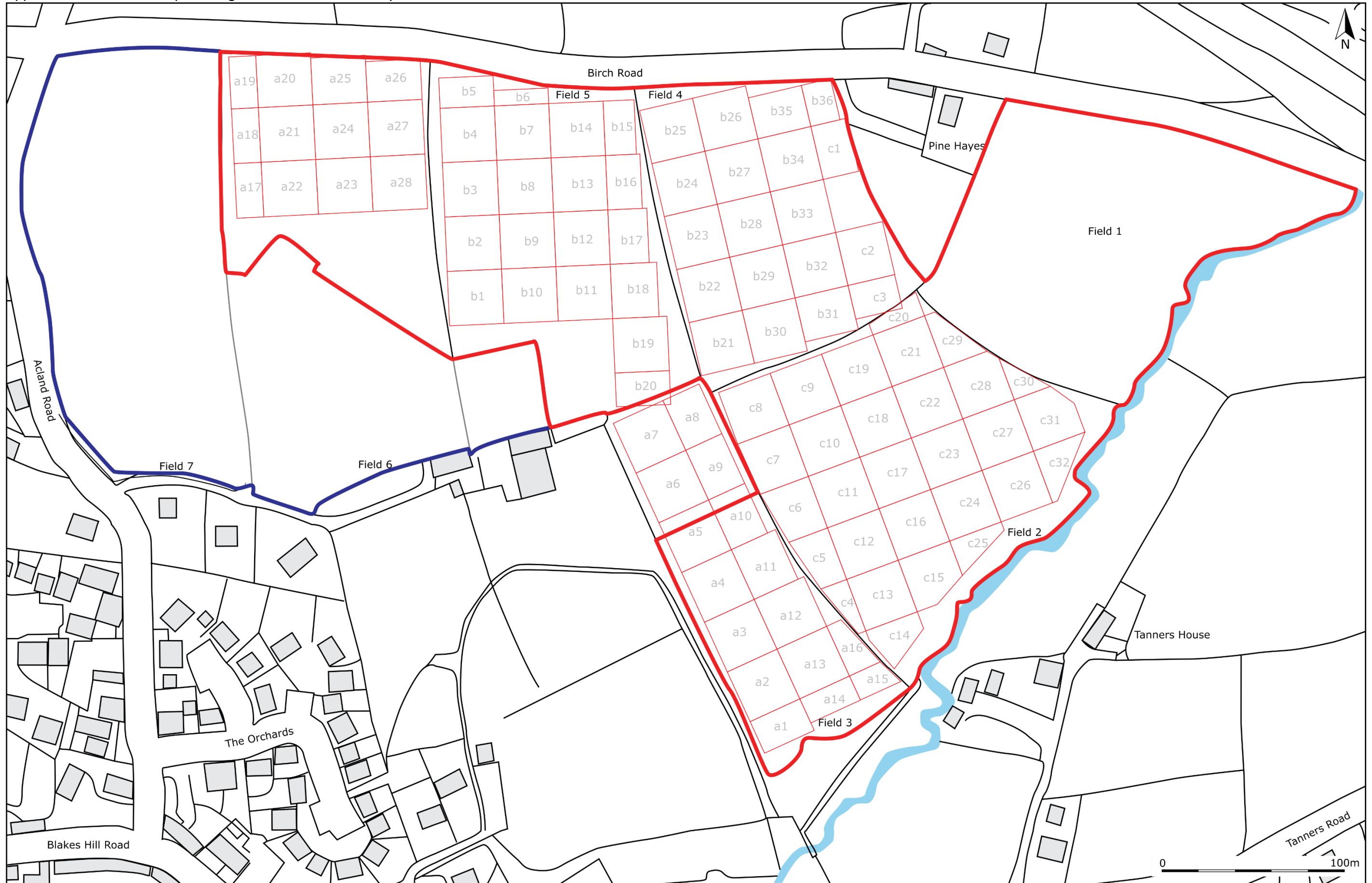


Figure 9: Geophysical survey grid location, layout and numbering.

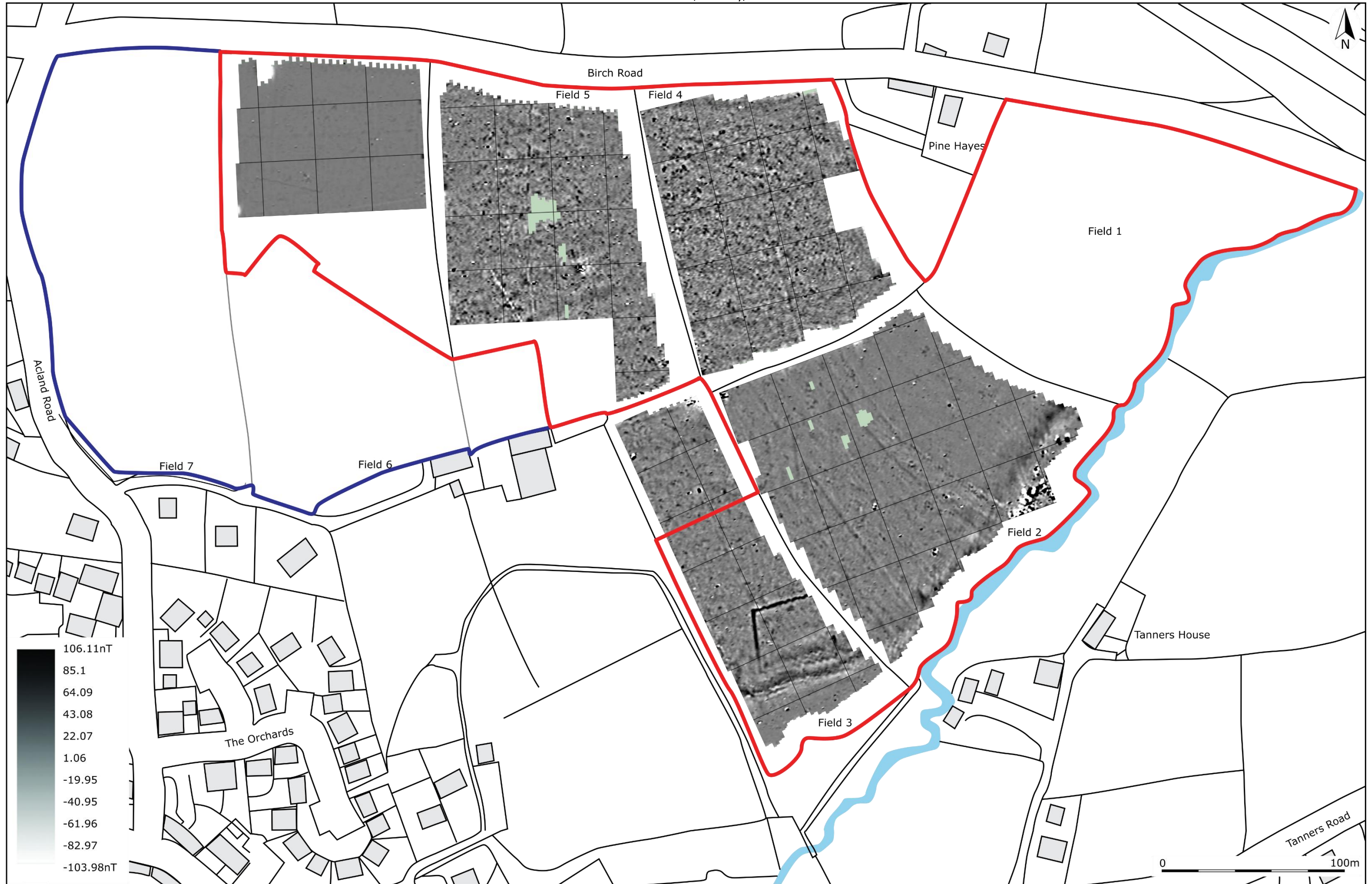


Figure 10: Greyscale shade plot of gradiometer survey data; gradiated shading.

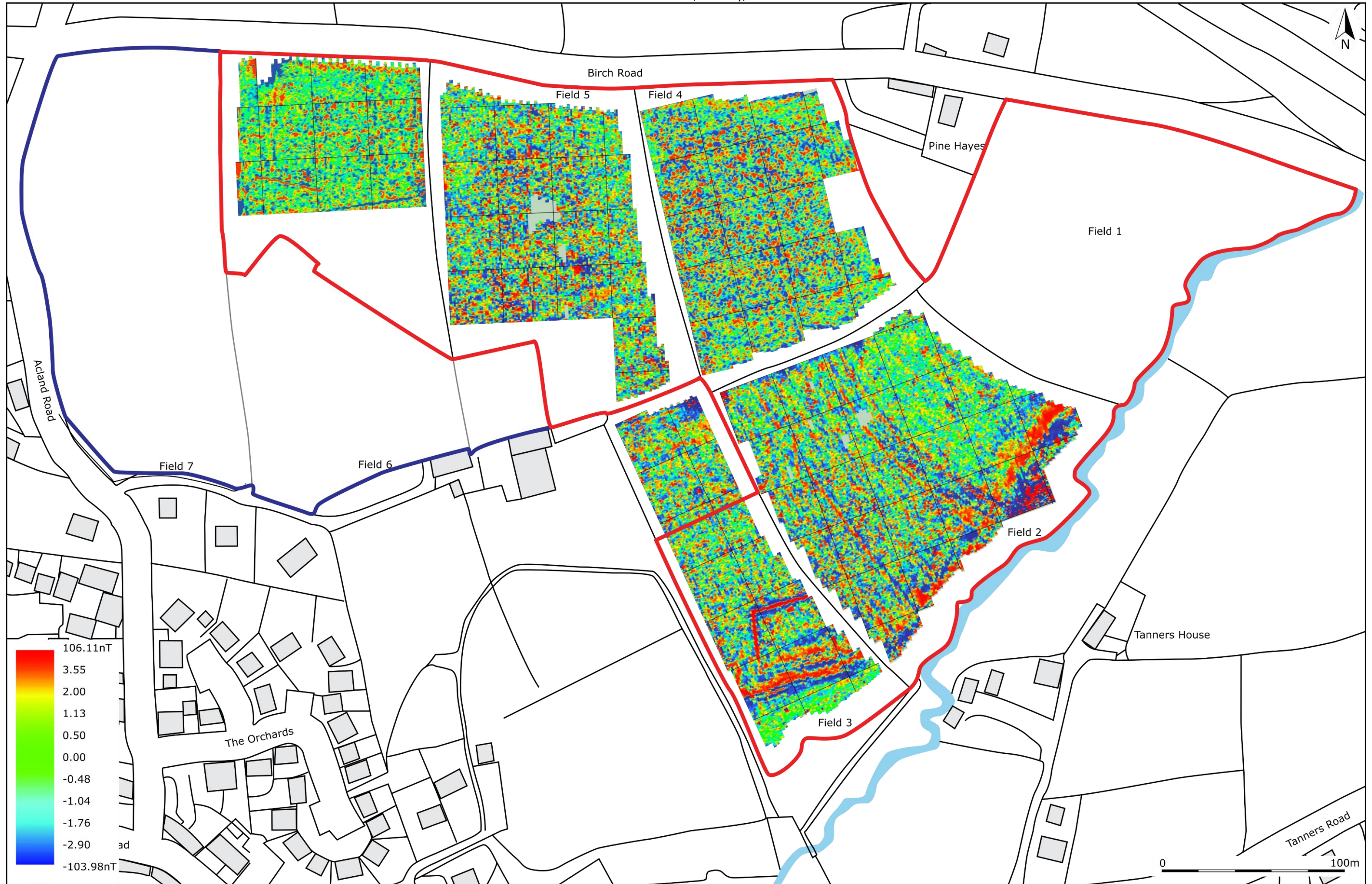


Figure 11: Red-Blue-Green (2) shade plot of gradiometer survey data; gradiated shading.

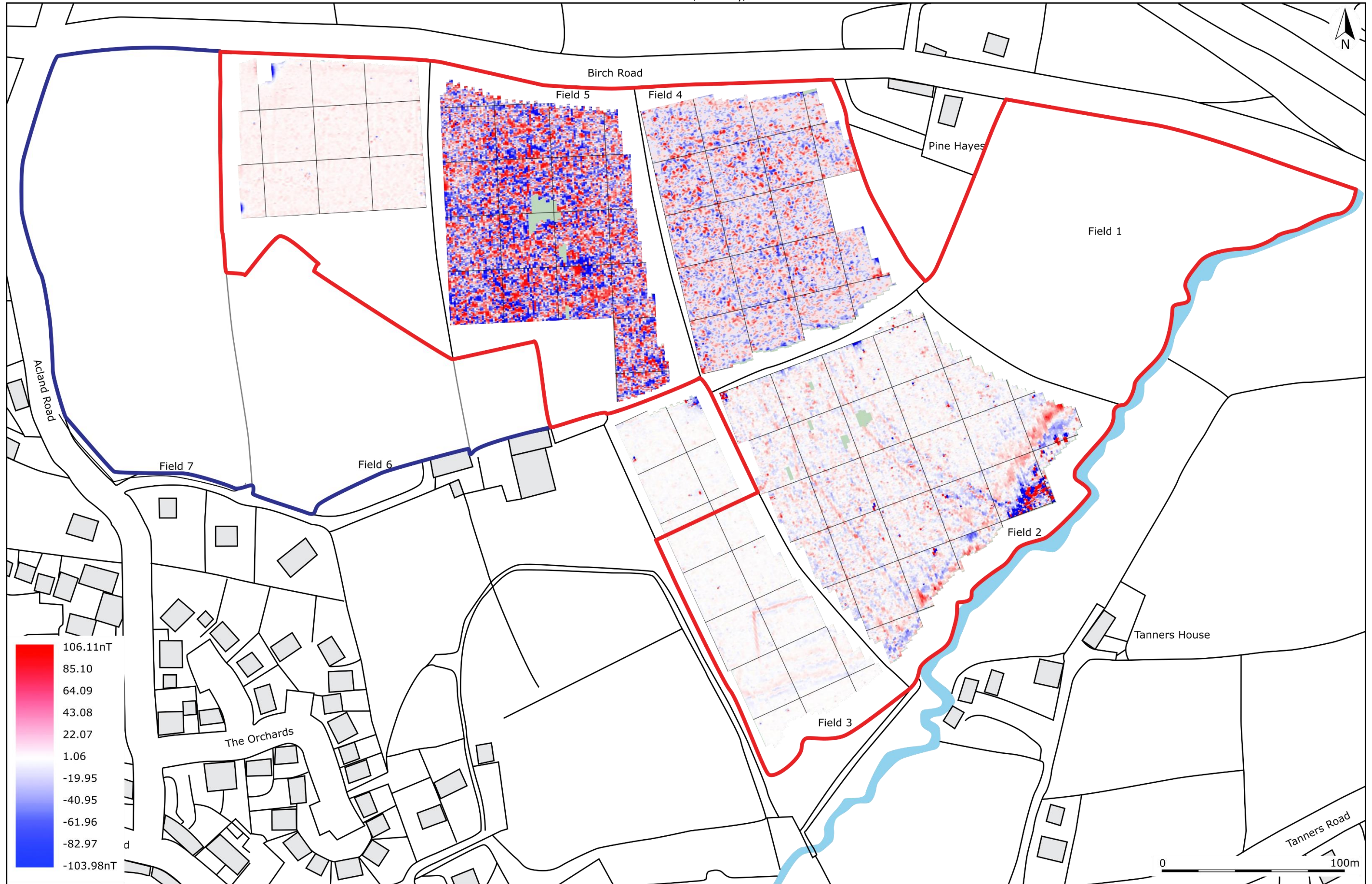


Figure 12: Red-White-Blue shade plot of gradiometer survey data; gradiated shading.

Appendix 4: Baseline Photos



Field 2, viewed from the north-west.



View along western boundary of Field 2; viewed from the north.

Land at Birch Road, Landkey, Devon



Bank boundary between Fields 2 and 3; viewed from the north.



Field 3, viewed from the north-east.

Land at Birch Road, Landkey, Devon



View across boundary between Fields 2 and 3; viewed from the west.



View of the gateway between Fields 2, 3 and 4.

Land at Birch Road, Landkey, Devon



Field 4, viewed from the south-east.



Field 4, viewed from the south.



Field 5, viewed from the south-west.



Field 5, viewed from the west.

Land at Birch Road, Landkey, Devon



Field 5, viewed from the south.



Field 5, viewed from the east.

Land at Birch Road, Landkey, Devon



Field 6, viewed from the north-west.



Field 6, viewed from the west.

Land at Birch Road, Landkey, Devon



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