Geophysical Surveys at Home Field and Pool Close, Stanton Drew

John Richards and John Oswin

Bath and Camerton Archaeological Society

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Abstract

Geophysical surveys were carried out on fields – Home Field, including part of Mill Mead and the Orchard, and Pool Close – on the west side of Stanton Drew. This is an area which has been much less studied than the areas to the east containing the Neolithic monuments. The survey of Pool Close provided an opportunity to compare results with those of a survey in 1996.

Some anomalies were noted that may represent earlier field boundaries. There were also some anomalies that may be archaeological in nature in both Home Field and Pool Close.

Abstract

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Cover photograph: view from the high ground in Pool Close, looking eastwards towards the Druids Arms.

Preface

It is inevitable that the archaeological focus at Stanton Drew is on the megalithic monuments. Although there has been only limited excavation around the stones themselves - the only known cases being in the nineteenth century at the Cove (Burl 1999: 54), Roger Mercer at Hautville's Quoit in 1969 (Richards *et al* 2012) and Jodie Lewis at a buried stone near Church Farm in 2002/3 (Lewis and Mullin 2012) – there have been several geophysical surveys, nearly all of them by BACAS. Investigations of the surrounding area have been conducted mostly for planning reasons by commercial units; with the exceptions being Jodie Lewis and her Stanton Drew Environs Project, which conducted some small excavations, field walking and augering; and also BACAS, with geophysical surveys on the north bank of the Chew.

Much remains to be discovered and questions to be answered. One of the key questions is where the people who built the stone circles lived and farmed. But there are also many questions about later Stanton Drew. For example, very little is known about medieval Stanton Drew and the evolution of the village, and documentary evidence is sparse.

So, an opportunity to investigate a previously largely unexplored part of the landscape was extremely welcome, especially areas close to the stones and also close to the heart of the medieval village. As far as we know, just one of the four fields we surveyed on this occasion had been subject to archaeological investigation before, and most of the results from that past survey have been lost.

Acknowledgments

We would like to thank Mr Steve Croucher and his family of Tithe Barn B&B, Stanton Drew, for allowing us access to their land, moving the horses, and putting up with the general disruption.

All equipment used was the property of the Bath and Camerton Archaeological Society.

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1 Introduction

1.1 Location and sites

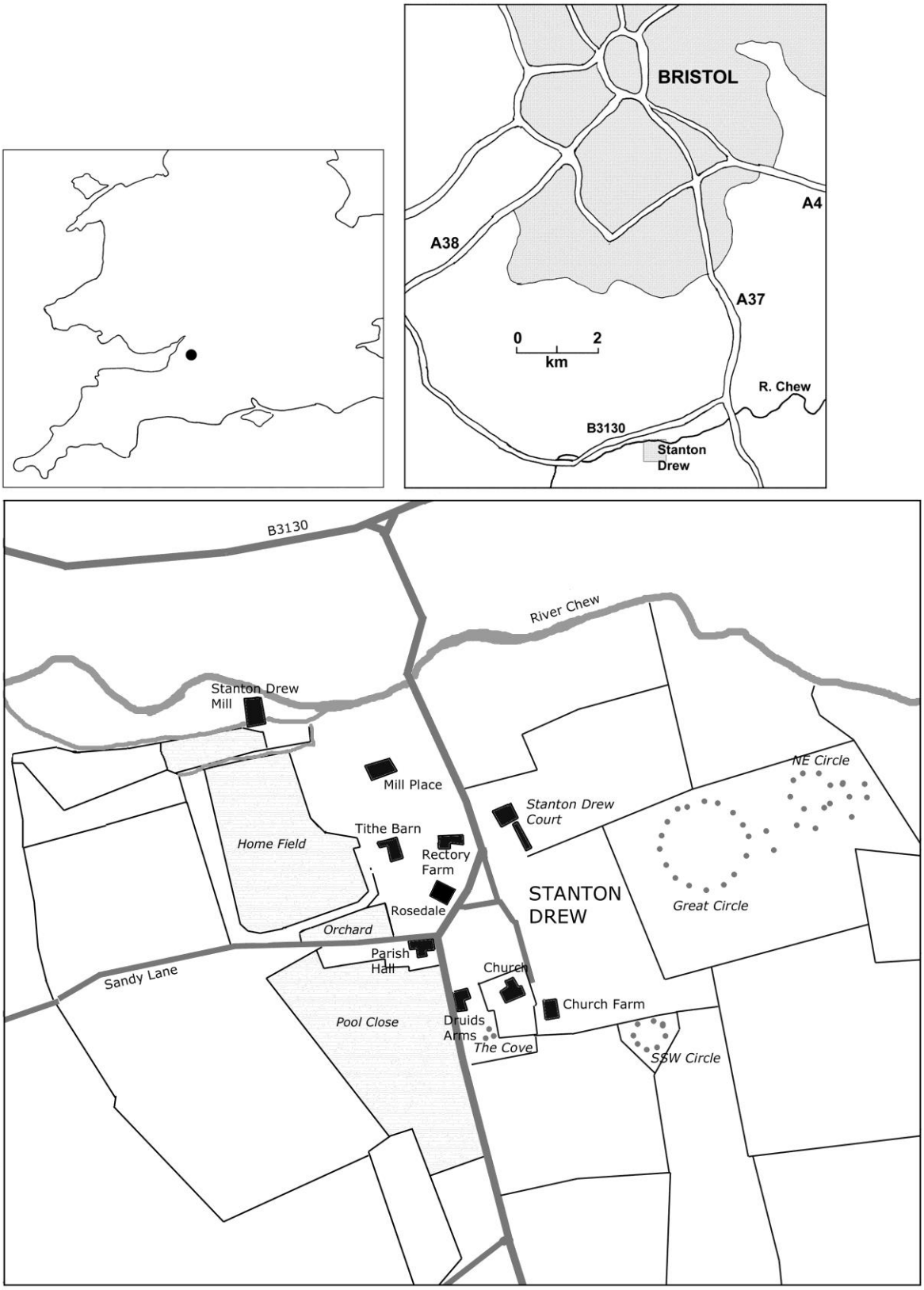

Figure 1-1: The survey areas – Home Field, Orchard, Pool Close – location map

The village of Stanton Drew lies in northern Somerset, within the unitary authority of Bath and North East Somerset (BANES), approximately 10 km south of Bristol city centre and 15 km west of Bath, on the south bank of the River Chew. Within and to the east of the village are three stone circles, two avenues, and a 'cove'. These, plus an outlier Hautville's Quoit, have been the subject of previous geophysical surveys.

This report describes the results of a programme of archaeological geophysical survey on a Study Area consisting of a paddock (Home Field), an adjacent field (part of Mill Mead), and an orchard, adjoining the Tithe Barn, a Grade 2 Listed Building to the north of Sandy Lane, Stanton Drew, at NGR ST 595 633, and a field (Pool Close) to the west of the Druids Arms at ST 596 631.

The location and sites are shown in Figure 1-1.

1.2 Archaeological and Topographical Background

The Stanton Drew megalithic site is a Scheduled Ancient Monument comprising three stone circles (the Great Circle, North East Circle and South West Circle) with associated stone avenues, a group of three stones known as the Cove, and a single stone known as Hautville's Quoit. There are also two stones, the Tyning Stones, to the west of the village.

A geophysical survey by an English Heritage team in 1997 (David *et al* 2004) revealed that the area of the stone circles had contained elaborate circular structures of timber posts and that the Great Circle was once encompassed by a large ditch. This work was confirmed and extended by BACAS (Oswin *et al* 2009; 2011). This latter work also showed that the Cove might reflect the remains of the entrance of a long barrow. BACAS also carried out geophysical surveys in the vicinity of Hautville's Quoit and elsewhere on the north side of the River Chew (Richards *et al* 2012; 2013; Simmonds *et al* 2015).

There was a geophysical survey of the "playing field" (Pool Close) directly across the road from the Cove and the Druids Arms public house in 1996, which identified a number of magnetic anomalies of potential archaeological significance. These were interpreted as: 1) a series of stone and ceramic land drains; 2) a circular gully, ca. 8m in diameter that might be a prehistoric ring ditch; and 3) an unresolved anomaly near the west edge of the field measuring ca. 18m x 9m: two curving features that might represent prehistoric or early field or plot boundaries (BANES HER EBN2822). However, these were not tested by excavation and the report on the geophysics has subsequently been destroyed in a fire. An interpretative plan has survived.

Between 2000 and 2005, Dr Jodie Lewis carried out field walking over five fields (collecting a low density of lithics dating from Late Mesolithic to Early Bronze Age), test pitting on the flood plain, excavation of a buried stone monolith on Church Farm and excavations in a field to the east of the South West Circle (Lewis & Mullin 2012).

In 2009 a geophysical survey of land at Church Farm, on the site of a proposed dairy, a field (ST 597 628) located 500 metres to the south of the current proposed survey site, detected several anomalies of potential archaeological significance, consistent with buried features (Strutt 2009). As a result, an archaeological field evaluation was carried out by Avon Archaeological Unit Ltd to establish what these anomalies represented. They were found to include minor features such as a post-medieval field boundary, the remains of a backfilled shallow pond, and a number of intercutting gullies. Artefacts recovered from the gullies includes sherds of medieval pottery, worked flints, sherds of Romano-British pottery of circa 3rd-4th centuries AD date as well as evidence of metal working (Young 2010).

In 2011, an archaeological watching brief carried out during topsoil stripping and excavations associated with the development of the New Dairy on site monitored again by Avon Archaeological Unit Ltd (Young & Hume 2011) recorded remains of several post-medieval features, including field boundaries and track way as well as a selection of finds,

dating back to the prehistoric period. The most significant discovery during this project was that of a small ovoid pit containing the truncated remains of a cremation urn. Scientific dating (Carbon 14 Dating) was carried out on the remains of burnt human bone recovered from the interior of the vessel which provided a date later than expected of 1943 to 1757 BC, or early to middle Bronze Age.

The Tithe Barn at one time was part of Rectory Farm and is 50 metres to the west of Rectory Farmhouse, a listed II* building (ref: 1129645) of mid-15th century origin. A dovecote in the grounds of the Tithe Barn is grade II listed (ref: 1320752) and also mid-15th century.

1.3 Research Benefits

The work by English Heritage (David *et al* 2004) and the BACAS project team in 2009 and 2010 (Oswin *et al* 2009; 2011) showed that geophysics can still reveal new information about Stanton Drew. Investigations at the new Dairy site revealed Roman and prehistoric activity. Geophysics on the proposed recreation field showed anomalies that could be prehistoric in date.

The survey site lies about 300 metres west of the Great Circle and 500 metres east of the Tyning Stones. It includes Pool Close where possible prehistoric features were found in a previous geophysical survey. It is also in an area that is important for the history of the village, being just to the south of the old mill site, which is likely to be the mill mentioned in the Domesday entry for Stanton Drew.

1.4 Project Objectives

The research aims and objectives were:

- To identify using various geophysics techniques whether any archaeological features exist in the vicinity and how these may relate to other archaeological features.
- To survey the area and link the spatial data to that already gathered for the Stanton Drew site.
- To resurvey Pool Close and compare the results to the surviving interpretation of the previous results.

1.5 Scope of Report

This report describes the geophysical surveys undertaken in Home Field, part of Mill Mead, the Orchard, and Pool Close and the results of those surveys.

1.6 Dates

The surveys were carried out over the following dates:-

Session 1: Friday 30 September to Monday 3 October 2016 (inclusive)

Session 2: Friday 7 October to Monday 10 October 2016 (inclusive)

In total, eight days were worked.

1.7 Personnel

The project was led by John Richards, with John Oswin as technical lead.

The following BACAS members took part:-

Julie Bassett, Terri Bell, John Knapper, Tim Lunt, Fiona Medland, Janet Pryke, John Samways, Vince Simmonds, Oliver Stanley, Gill Vickery, and Roger Wilkes.

2 Geophysics Results

2.1 Geology and Soils

Stanton Drew lies above Permo-Triassic and Carboniferous sandstone and siltstone supporting soils of the Bromsgrove Series. These are well-drained, reddish, coarse, loamy soils, mainly over soft sandstone, but deep in places. There are associated fine loamy soils with slowly permeable subsoils and slight seasonal waterlogging. There is a risk of water erosion when in arable use especially on slopes greater than 7 degrees. These soils support cereals, sugar beet and potatoes with some field vegetables and fruit; mainly grassland in most districts. (Cranfield University 2016)

The local hydrology is dominated by the drainage basin of the River Chew located some 200 metres to the north of the study area.

2.2 Topography

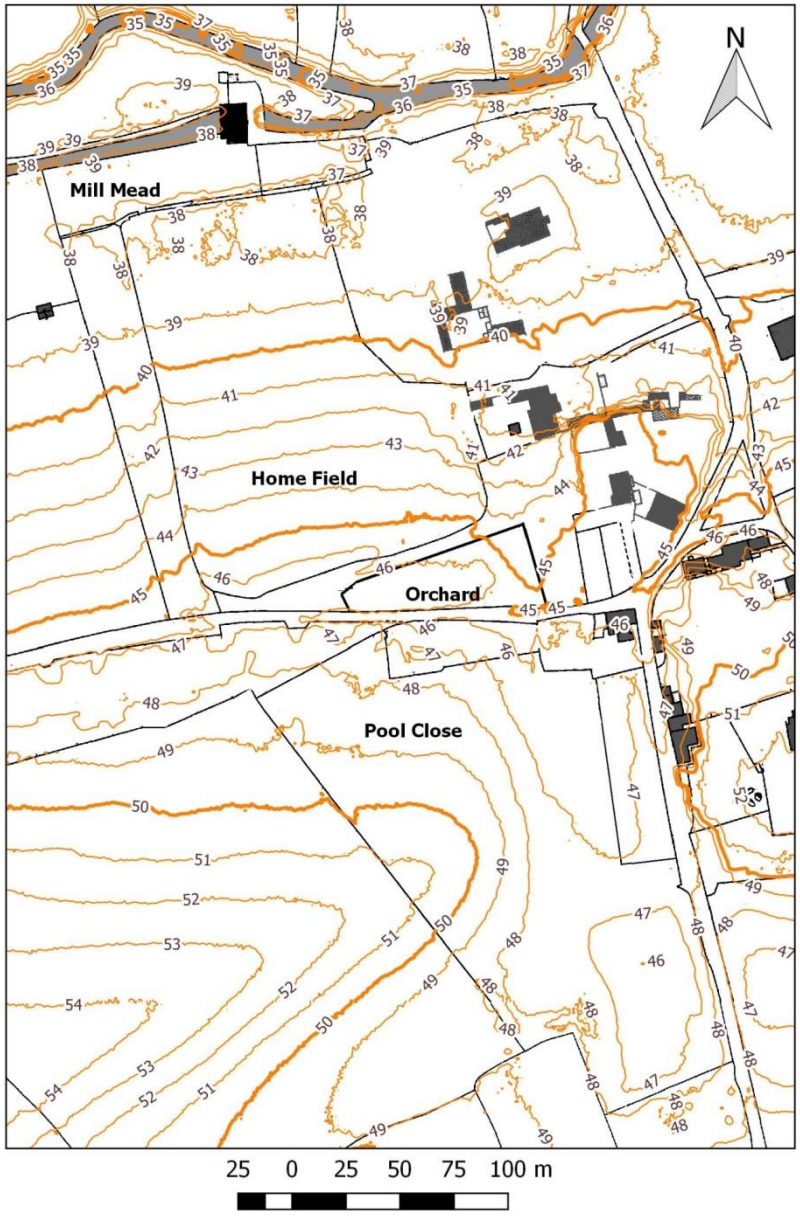

Figure 2-1: contour map (1m intervals) of the surveyed areas, derived from LiDAR 1m DTM data.

2.3 Home Field, Mill Mead and the Orchard

Home Field lies to the west of the Tithe Barn, centred at approximately ST 595 633. It consists of nearly 2 hectares which is used currently for grazing and exercising horses and ponies. It is 175 metres long, and 140 metres wide at the southern edge and 90 metres wide at the northern edge. The field slopes fairly uniformly from south to north, starting at 46 m OD and ending at 38 m OD, with the last 30 metres being flat as it is on the River Chew flood plain. Home Field has had no significant changes to its boundaries since before 1842, the date of the Tithe Map. There is a slight ridge visible in the centre of the field along the long axis, which might be an old field boundary or a remnant of ridge and furrow ploughing.

The northern boundary is a disused and silted up mill leat, beyond which is a small rectangular field that was also included in the survey. This field is 120 metres east-west and 25 metres north-south, 0.3 hectares. Its northern boundary runs adjacent to another leat that passes under the Stanton Drew Mill (now converted for residential use). The 1842 Tithe Map shows this field as the eastern part of a field called Mill Mead.

The Orchard of apple trees (ST 596 632) lies to the south of Home Field, across a driveway and immediately adjacent to Sandy Lane. It has an area of 0.2 hectares and is triangular in shape. The ground falls away at the east end of the Orchard from 46 m OD to 44.5 m OD.

2.3.1 Magnetometer

In all, 51 grid squares were completed in Home Field and Mill Mead and seven more grids in the Orchard. The magnetometer outputs are shown in Figure 2-2 and Figure 2-3. Figure 2-4 contains an interpretation of the results.

A strong positive, but intermittent, linear anomaly (1) appears to extend a field boundary from the west. It is possible that this is an old field boundary (pre-1842) or it could be a culvert or a pipe.

A negative linear anomaly (2) occurs at the foot of the slope where the floodplain begins. This is where soil washed down the slope by rainfall would accumulate and it is possible that this is the cause of the anomaly. A nearby negative curving linear anomaly (3) may be caused by a ditch fill and may be of archaeological interest.

Positive linear anomalies (4) may also be ditch fills and may relate to post-medieval field systems (pre-1842), however the eastern arms of (4) curve away and its north-south element does not align with the slight ridge in the field, so they could be of archaeological interest. Feature (4) ends at the large positive anomaly (5) which is probably archaeological, possibly a pit, but unfortunately was truncated by the boundary of the survey.

Negative anomalies (6) may be pits infilled with soil and of archaeological interest. The northernmost one is coincident with an anomaly in the resistance survey.

There are a set of discrete positive anomalies (7) in an approximate semi-circle that do not have any obvious agricultural interpretation and may be archaeological in nature.

No anomalies of interest were noted in Mill Mead or the Orchard.

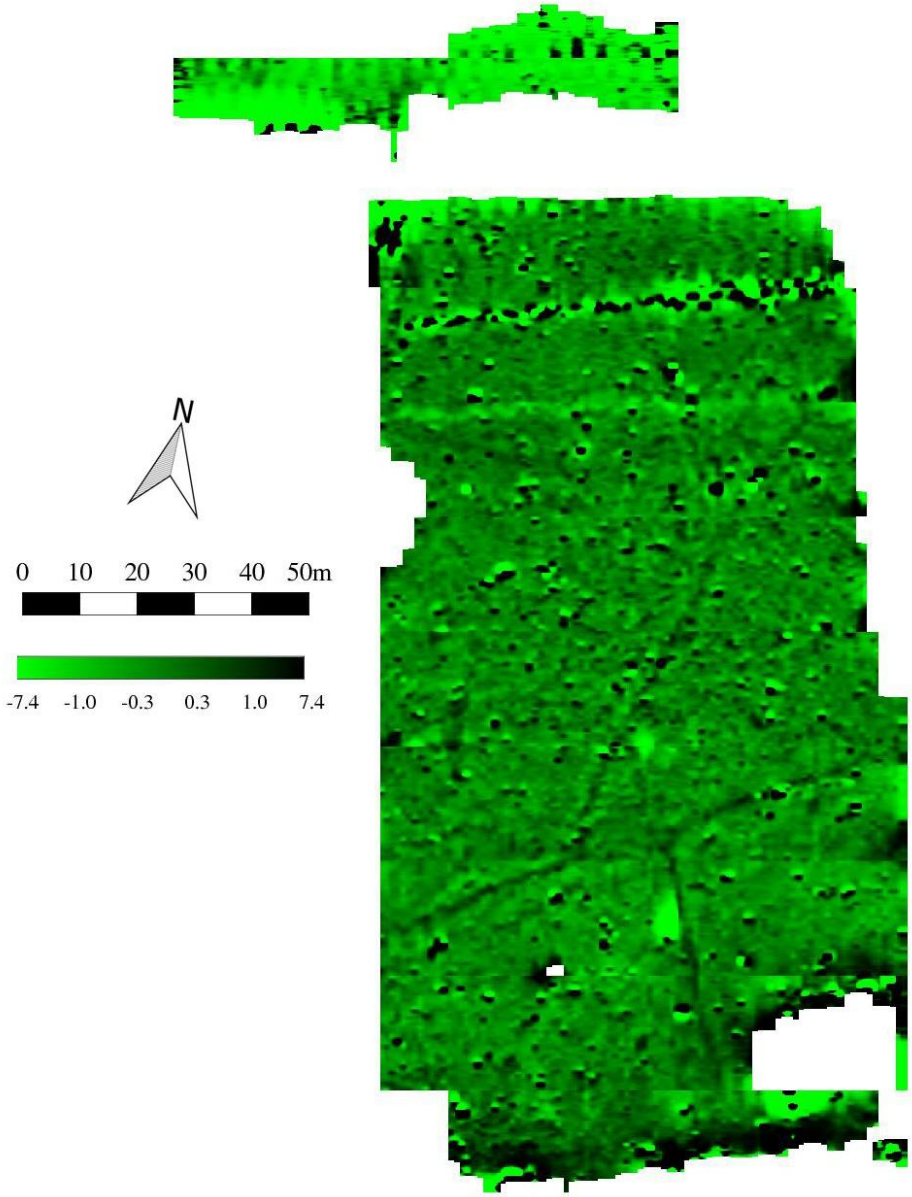

Figure 2-2: magnetometry survey of Home Field and Mill Mead

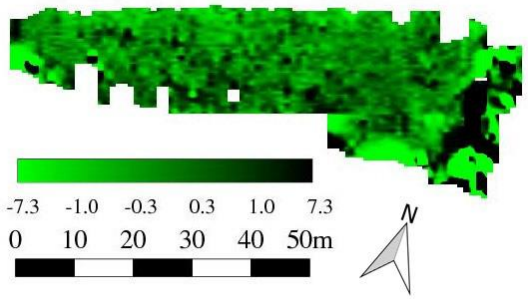

Figure 2-3: magnetometry survey of the Orchard

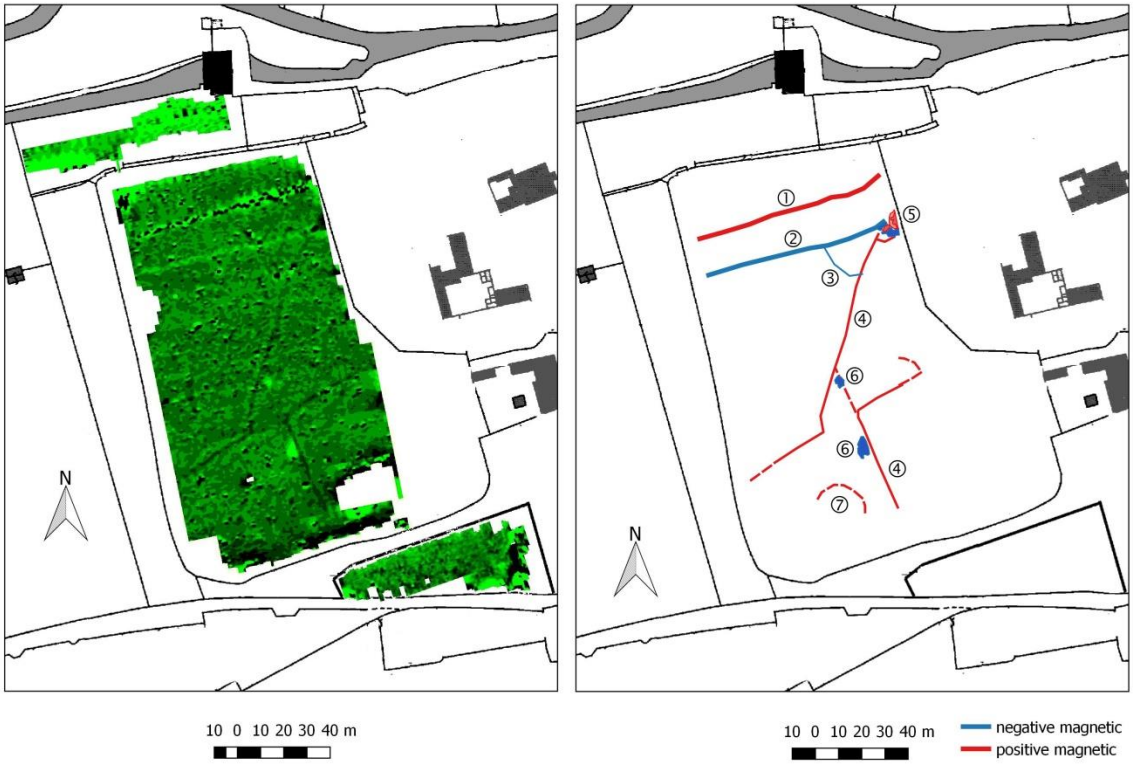

Figure 2-4: interpretation of magnetometry results for Home Field, Mill Mead and the Orchard

2.3.2 Twin Probe Resistance

The same grids surveyed in magnetometry, plus an additional one, were surveyed by twin-probe resistance. Both TR/CIA and RM15 meters were used and their results combined. Figure 2-5 and Figure 2-6 show the resistance plots for the area. Figure 2-7 contains an interpretation of the results.

A high resistance linear anomaly (1) runs parallel to a low resistance linear anomaly (2) along the line of the slight ridge. It is possible that this is associated with a pre-1842 field boundary, or a relic of ridge and furrow ploughing.

A high resistance linear anomaly (3) may represent a pre-1842 field boundary wall or hedge. Similarly the low resistance anomaly (4) may be a pre-1842 field boundary ditch, but both are potentially of archaeological interest.

There are a number of low resistance anomalies (5) that may be infilled pits. The most central one (6) is coincident with an anomaly in the magnetic survey.

No anomalies of interest were noted in Mill Mead or the Orchard.

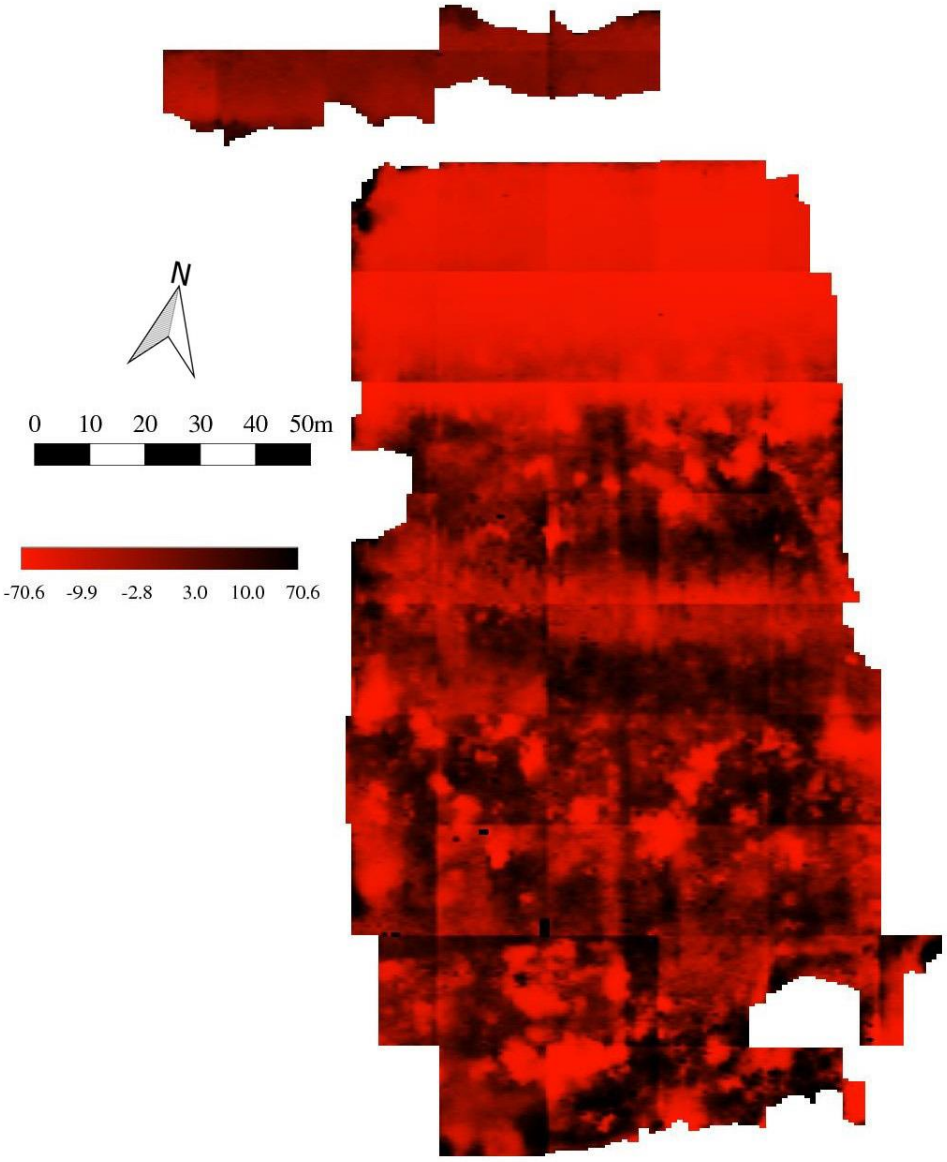

Figure 2-5: resistance survey of Home Field and Mill Mead

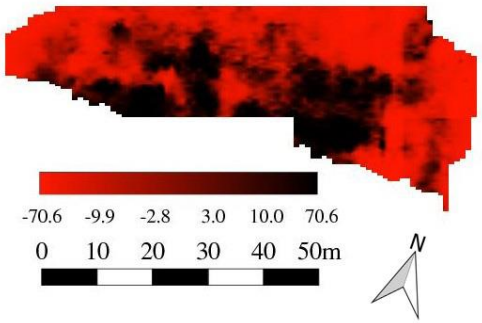

Figure 2-6: resistance survey of the Orchard

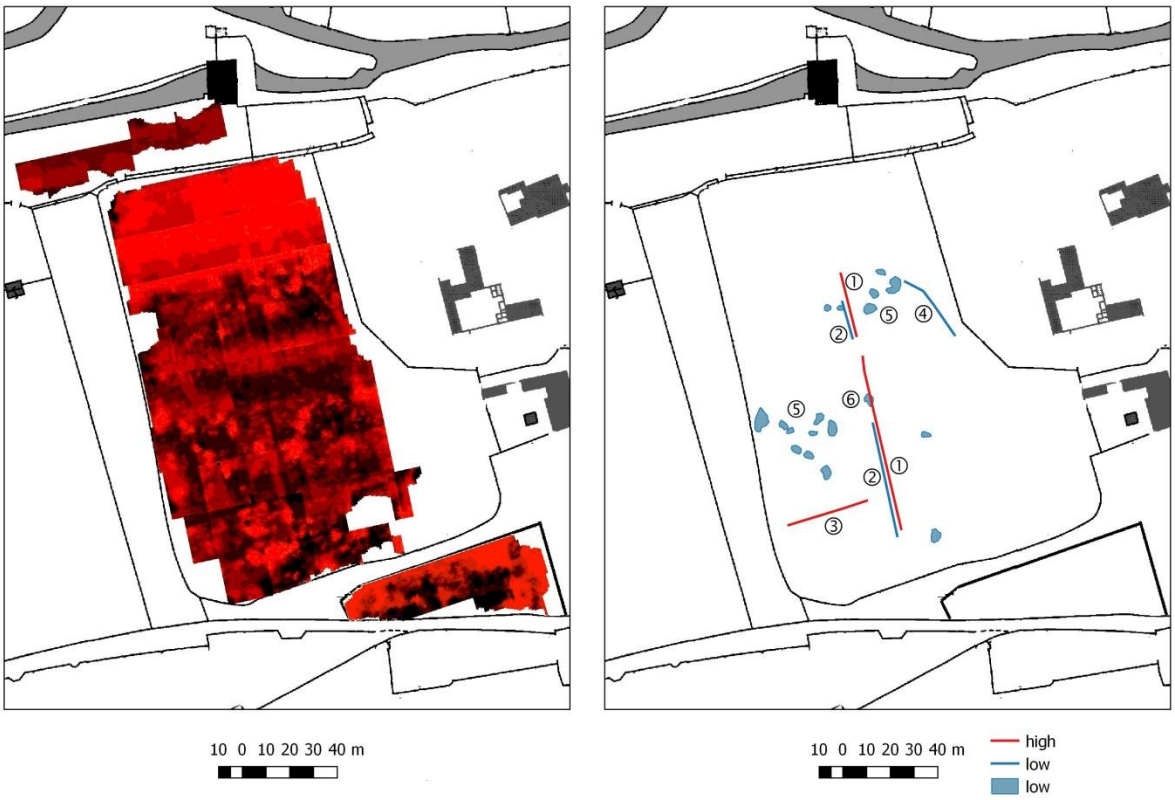

Figure 2-7: interpretation of resistance results for Home Field, Mill Mead and the Orchard

2.4 Pool Close

Pool Close (ST 596 630) lies to the west of the Druids Arms, on the opposite side of the road, and south of Sandy Lane. It has an area of just over 2 hectares and is 218 metres north-south and 119 metres at its widest point. The ground is higher on the north west side dropping from 51 m OD to 47 m OD. In the south east corner of the field is a large rectangular pond, dry for much of the year, measuring 75 metres by 40 metres and with a depth of up to 1.5 metres. A rectangular area (80 metres by 25 metres) in the north east corner is owned by the Parish Council and used as a car park, and was excluded from the survey area.

2.4.1 Magnetometer

In all, 43 grid squares were completed in Pool Close. The magnetometer output is shown in Figure 2-8. Figure 2-9 contains an interpretation of the results.

A positive linear anomaly (1) following the northern edge of Pool Close may represent an earlier field boundary or possibly an infilled drainage ditch.

Straight and parallel linear positive linear anomalies (2) are coincident with undulations visible in a LiDAR hillshade model and probably represent ridge and furrow. A negative anomaly (8) runs parallel in one case.

Positive anomalies (3) are probably associated with earlier field boundaries. Since at least 1842, the area to the north-east of Pool Close has been partitioned into small fields and house lots.

Positive anomalies (4) and (5) and negative anomalies (7) lie on the crest of the hill and its east-facing slope. They do not align with any known field boundaries and it is possible they are of archaeological interest.

The positive anomalies (6) follow the ground at the foot of the slope. One of the pair appears to align with one of the anomalies in (3). It is possible that these are pre-1842 field boundaries.

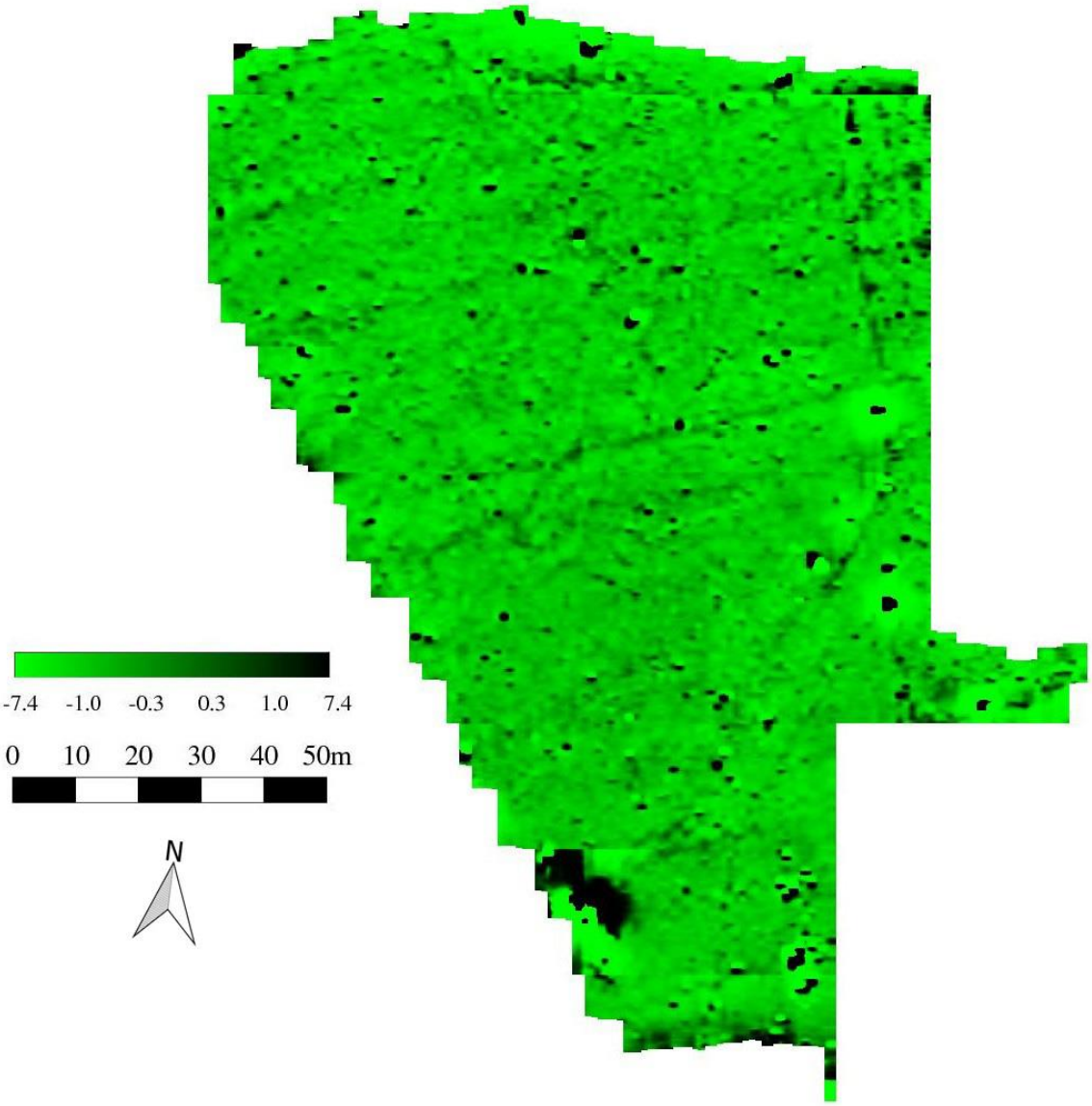

Figure 2-8: magnetometry survey of Pool Close

Figure 2-9: interpretation of magnetometry results for Pool Close

2.4.2 Twin Probe Resistance

Owing to lack of time, just 20 grid squares were completed in Pool Close. The survey output is shown in Figure 2-10. Figure 2-11 contains an interpretation of the results.

The high resistance linear anomaly (1) corresponds to a field boundary that exists on the 1842 Tithe Map and is also on the 1902 OS six-inch map, but was removed sometime in the following 30 years.

The low resistance linear anomaly (2) is possibly an infilled drainage ditch running parallel to (1).The western arm seems to align with the northernmost magnetic anomaly of (6) (see above).

The high resistance linear anomaly (3) is possibly also an old field boundary. However, it lies very close to the line that water would take if it overflowed the large pond in the south of the field.

The high resistance area (4) is probably geological in nature. It sits at the foot of the slope at the 47 metre contour and may be the result of sandy soil washing down the slope.

The high resistance curved anomaly (5) has no obvious association with field boundaries and may be of archaeological interest.

The large amount of high resistance on the west of the plot is probably geological. It corresponds to the top of the slope above the 49 metre contour and masks any archaeological features that may be present.

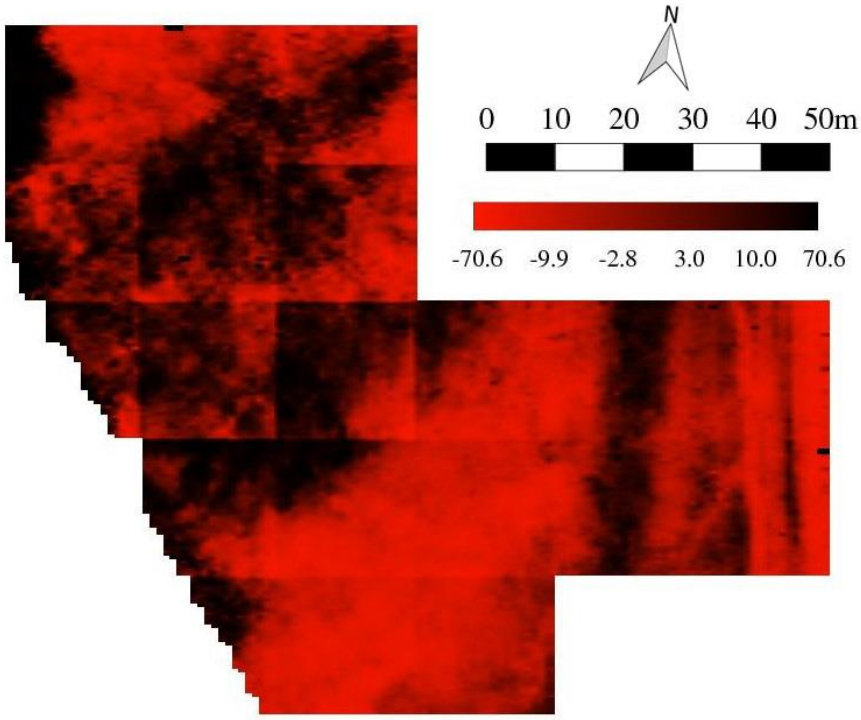

Figure 2-10: resistance survey of Pool Close

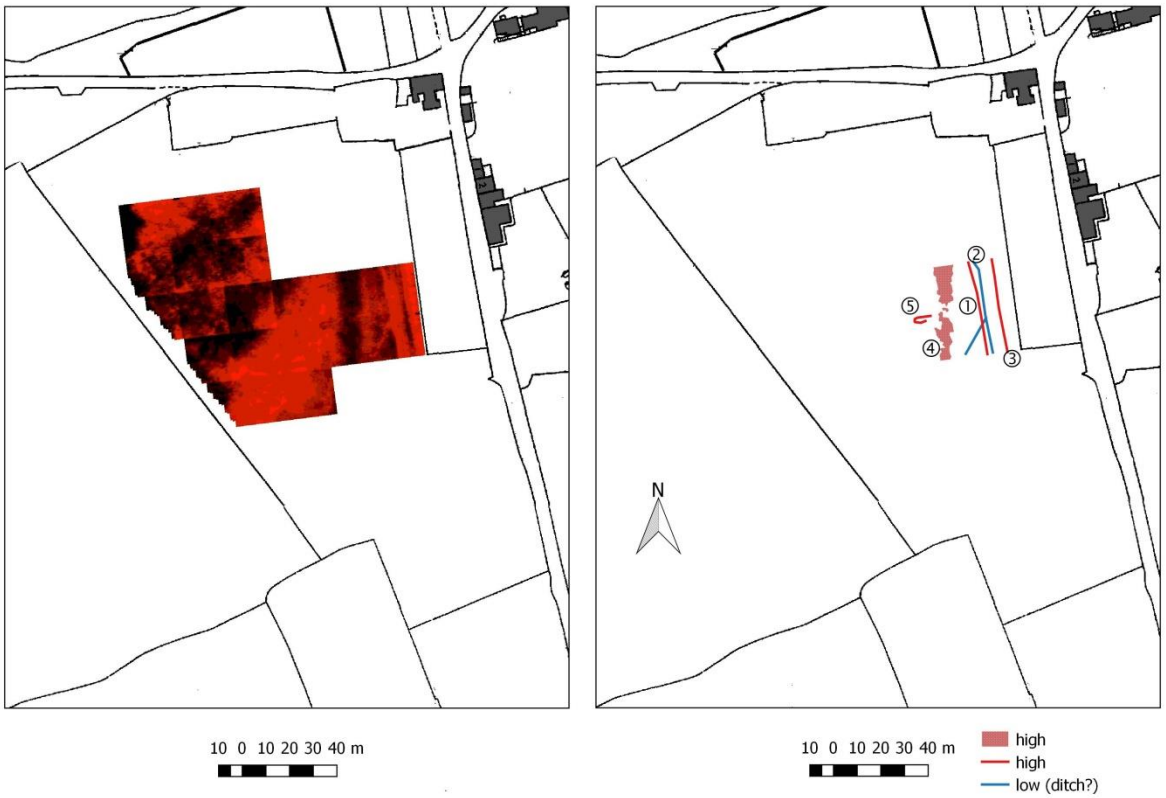

Figure 2-11: interpretation of resistance results for Pool Close

3 Discussion and Conclusions

3.1 Discussion

The geophysical surveys have provided an opportunity to increase knowledge about the western side of Stanton Drew, which has been much less studied than the areas to the east that contain the stone monuments. The fields – Home Field and part of Mill Mead, the Orchard, and Pool Close – are centrally placed and would have played a part in the development of medieval Stanton Drew.

The Tithe Map of 1842 (SRO D\D/Rt/M/411) is the earliest detailed and large scale map of Stanton Drew, and the Tithe Apportionment (SRO D\D/Rt/A/411) gives a valuable snapshot of land ownership (Figure 3-1).

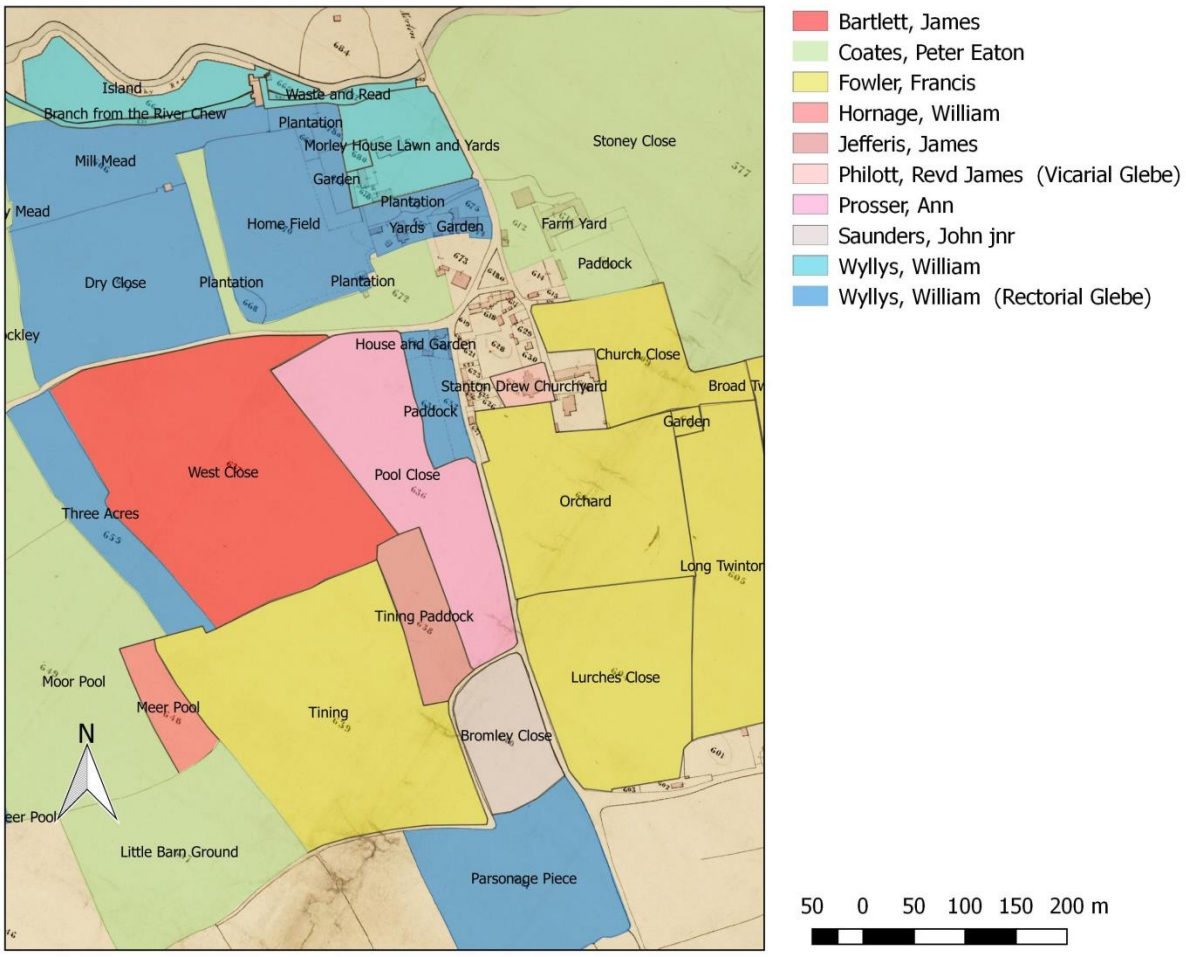

Figure 3-1: 1842 Tithe Map, with field names and ownership

Home Field had approximately the same boundaries then as now, with the exception of small areas in the south-west and south-east corners marked off as plantations. The small field to the north of Home Field was the eastern arm of a field called Mill Mead. Both were held and farmed by William Wyllys and were part of the rectorial glebe. The Orchard was combined with the present day allotments to make a 'Paddock and Orchard' owned by Peter Eaton Coates of Stanton Court.

The Rectory was built in the mid-15th century and may once have been the venue for ecclesiastical courts as well as a residence of the Archdeacon of Bath. Land was acquired to form a rectorial glebe (including Home Field and Mill Mead) and then leased out. In 1842, Wyllys had 44 acres and Coates had 4 acres of rectorial glebe (SRO D\D/Rt/A/411). In 1867 the name of the building was changed to Rectory Farm (BANES HER MBN2586).

The surveys in Home Field may show some evidence for early field boundaries but excavation would be needed to establish whether this is so. The possible pits, (6) in Figure 2-4 and (5) and (6) in Figure 2-7, are indistinct and could be purely random geological features, but might be worth further investigation.

Pool Close also had very similar boundaries to today on the west, but has since lost 0.6 hectares from the south (map evidence shows this was sometime between 1930 and 1962), lost some land to housing on the north and gained a strip from the paddocks in the east. In 1842 it was owned by Anne Prosser and the tenant was Henry Hardwell. Prosser was the sister of Peter Eaton Coates. The Coates family (Peter, Anne and two other sisters) collectively were the largest landowners in the Stanton Drew district. Peter had 146 acres and the sisters had 134 acres split between them. Wyllys held 50 acres, of which 44 were rectorial glebe. The other big landowner in the immediate vicinity of the village was Francis Fowler, who owned 94 acres.

The westernmost paddock boundary in Pool Close on the 1842 Tithe Map corresponds to feature (1) in Figure 2-11. It is possible that these boundaries were long-lasting and can be seen on the left hand side of William Stukeley's 1723 illustration (Stukeley 1776; Figure 3-2). The paddock boundary is still present on the 1903 OS 25 inch map, but had disappeared by 1929. An area has been taken for a village hall car park in the recent past.

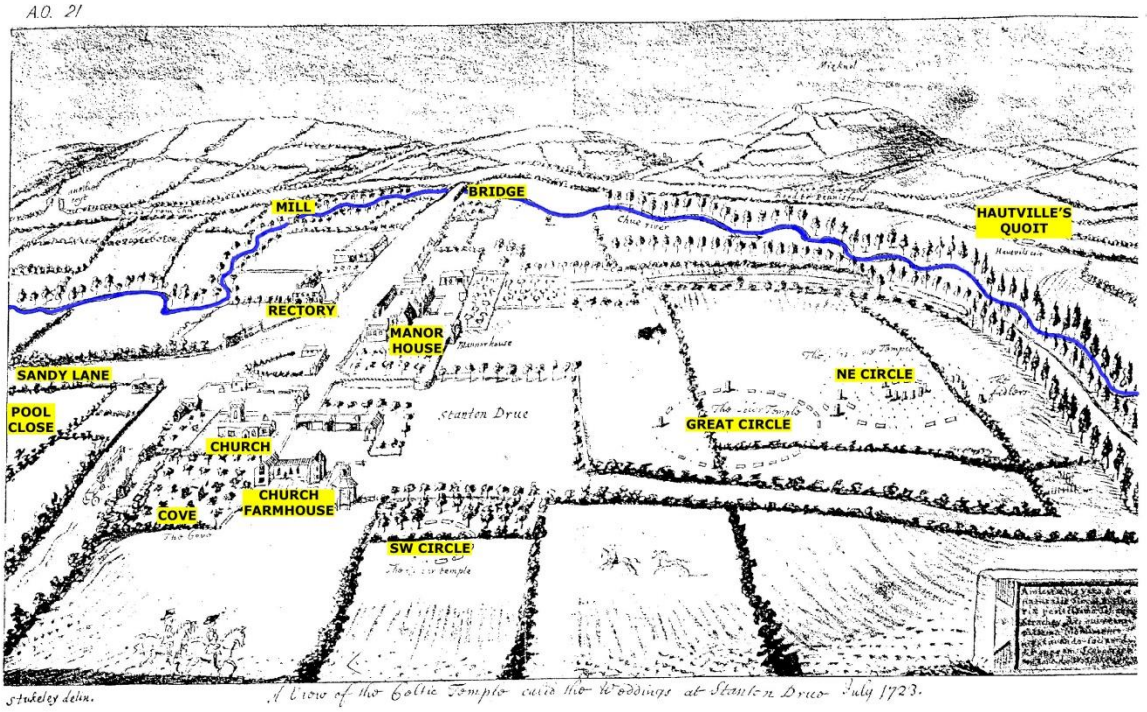

Figure 3-2: A View of the Celtic Temple called The Weddings at Stanton Drew July 1723, by William Stukeley, looking north, with the river highlighted and annotated with main features

Stukeley is considered to have been an accurate draughtsman, though it is difficult to reconcile his depiction of the area to the north of Sandy Lane with the present day. The River Chew is shown as running close to Sandy Lane and then turning north to the Mill, leaving little room to suggest a location for Home Field.

Slight linear ridges running east-west in Pool Close can be seen in a hillshade model of LiDAR data (Figure 3-3). These ridges are just a few centimetres high, between 9 and 10 metres apart, and coincide with anomalies (2) and (8) in Figure 2-9. As the ridges run right across the field to the edge of the road they must have been created when the paddocks on the west were not in existence. It is possible that they are the remnants of burgage plots or

could be traces of ploughing, in which case they could be early 'ridge and furrow', but it seems more likely that they are of a modern date.

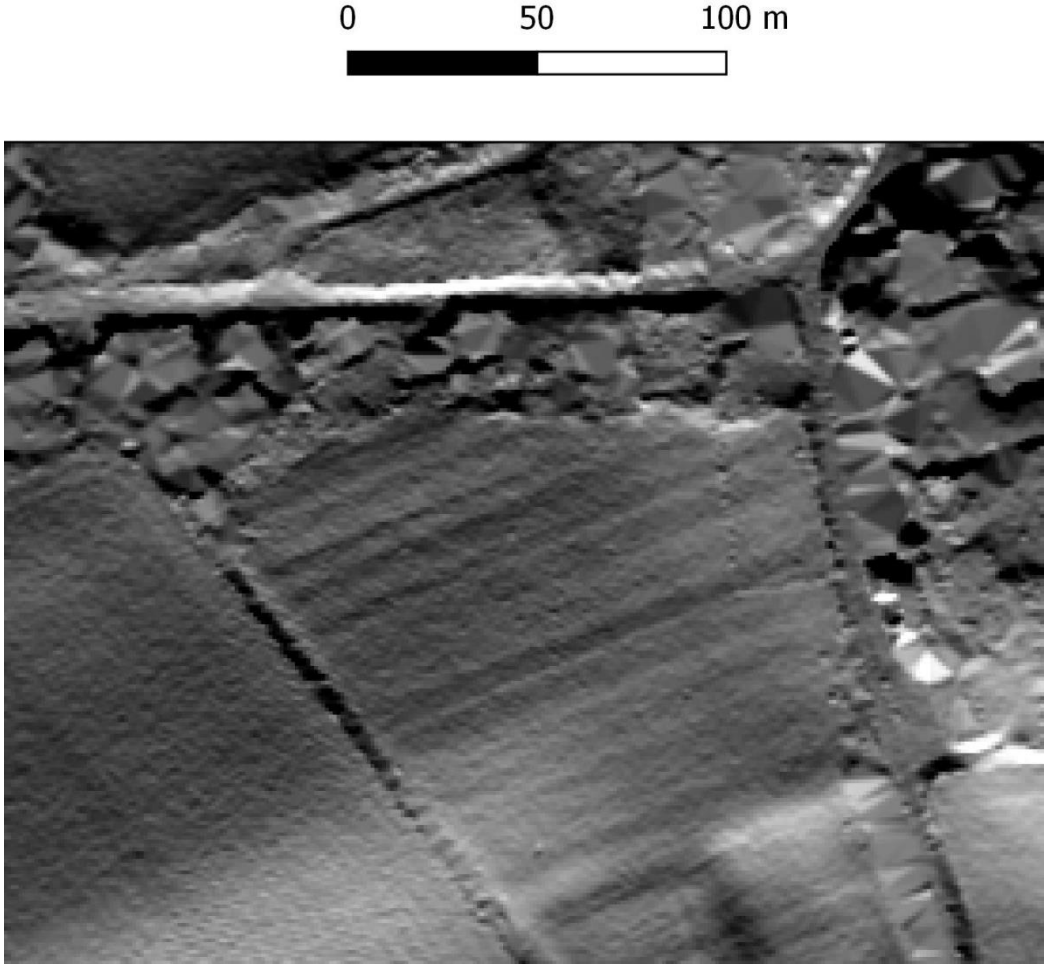

Figure 3-3: hillshade model of LiDAR data for Pool Close, (illumination: azimuth 180°, vertical angle 20°, Z factor 3)

GeoQuest carried out a geophysical survey in 1996 on Pool Close on behalf of Avon Archaeological Unit and Stanton Drew Parish Council as part of a proposal to change use of the field to a sports ground. Unfortunately, the original data and report were lost in a fire and Avon County's copy went missing during the local government reorganisation. All that survives is the interpretive diagram (Figure 3-4) and a summary of the findings in the Bath and North East Somerset HER:

> "The results are as follows. A) a pattern of magnetic lineations has been identified as representing a system of land drainage. B) Two less distinct positive magnetic lineations on a different alignment may represent smaller or more truncated ditches or gullies. C). A weak, circular magnetic anomaly on the northern limit of the survey area may represent a small ring ditch. D) An elliptical zone of relatively low magnetic susceptibility in the Western part of the study area may indicate an area of increased stone concentration, perhaps of archaeological significance. E) A low concentration of magnetic dipoles covers this survey area and almost certainly reflects the presence of ferrous litter on or near the ground surface." (BANES HER EBN2822)

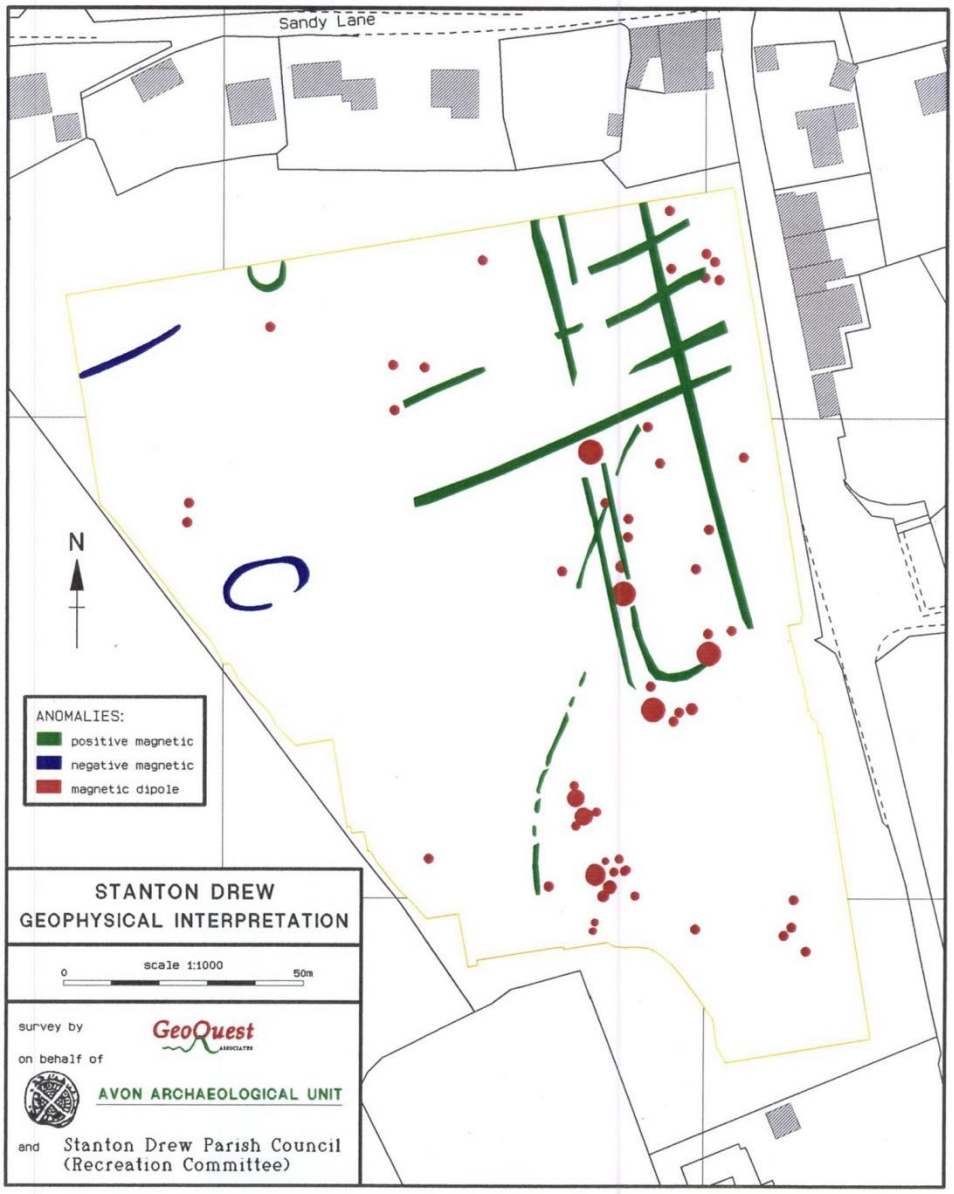

Figure 3-4: interpretive diagram, 1996 survey (Young 1996)

Comparing our survey results with the 1996 survey (Figure 3-5, with 2016 results overlaid), some features show a reasonably close correspondence, with small discrepancies owing probably to surveying errors, but there are significant differences in other areas. Some are easily explained: the 1996 survey had access to a larger area, as the car park on the eastern side had not yet been constructed, so the strong north-south linear on the east was outside our survey area. Where there is correspondence, then we think that the linear features running east-west are more likely to be the result of ploughing than stone/ceramic land drains. Of those running north-south, the long parallel pair on the west with a corner turn at the south end correspond closely to the line of an 1842 field boundary. In some cases, our survey shows features not included on the 1996 survey. This may be due to the use of more modern equipment than was available 20 years ago. However, we were unable to detect the 'small ring ditch' in our data; this was described as 'weak' and, without original data for comparison, it is unlikely that we will be able to resolve this discrepancy.

The 'elliptical zone of relatively low magnetic susceptibility' of 1996 was detectable as a weak negative magnetic signal (7), occurring alongside positive anomalies (4) and (5) towards the crest of rising ground.

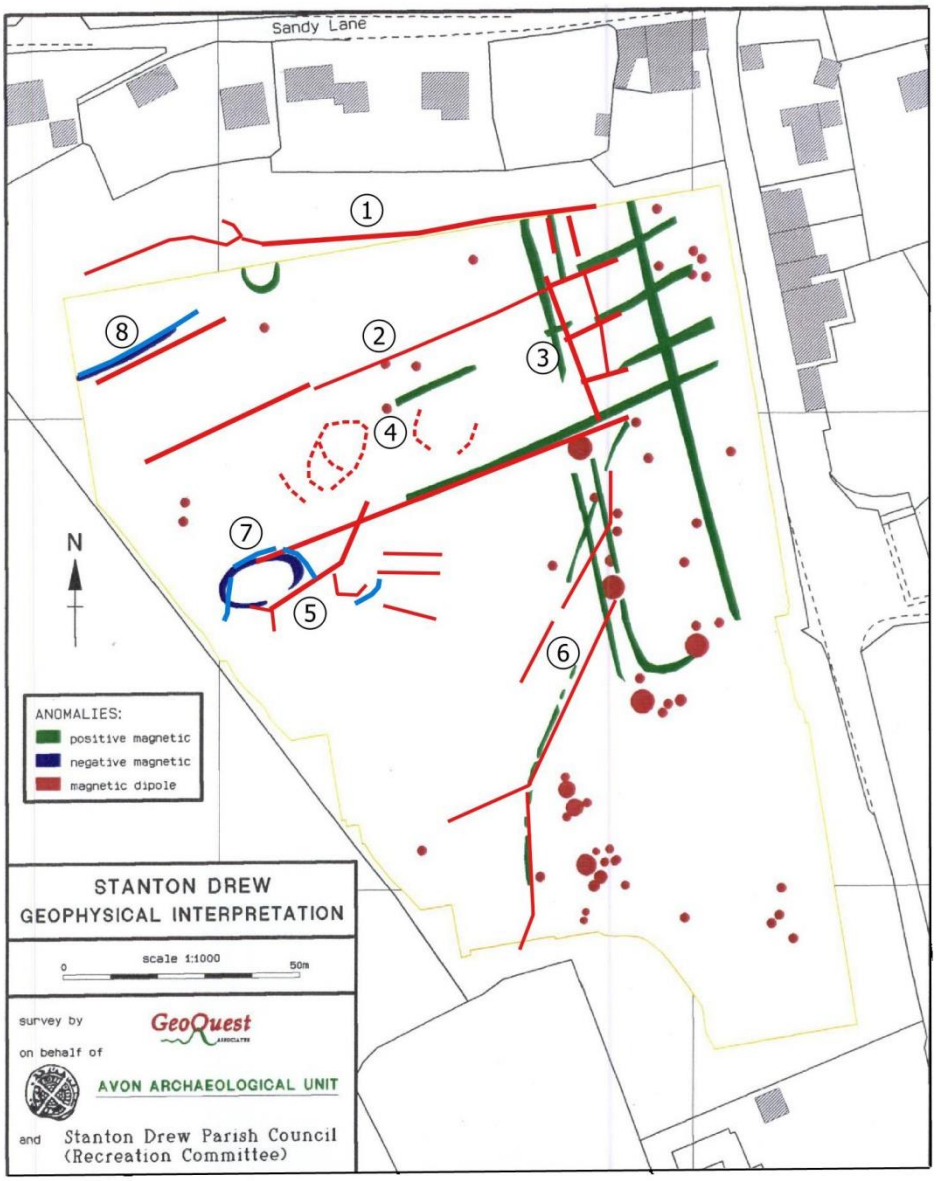

Figure 3-5: interpretive diagram, 1996 survey, overlaid with the 2016 results (positive magnetic anomalies in red, negative in blue)

Figure 3-6 shows how these anomalies are situated on the eastern brow of ground that rises further in the field to the west. This position in the landscape may be of significance. It is possible that these represent parts of an earlier settlement, which could be prehistoric, even contemporary with the stone monuments. It is a suitable area for settlement being safe from flooding or waterlogging. However, the anomalies are very slight, and do not even form a coherent image, so it is not possible to make definitive statements.

The location is interesting however, on the end of a ridge overlooking the Cove. Although today the view is hampered by buildings and trees, there would have been clear views to the Cove and the South-West Circle, the Iron Age hillfort of Maes Knoll, and possibly also to the two other stone circles (Figure 3-7). It could be beneficial to survey the continuation of the ridge in the next field to the west to see if similar anomalies occur. Those anomalies seem to have little coherence, some positive, some negative, some overlapping, but we have no prior knowledge of what such a settlement could look like, nor where it should be.

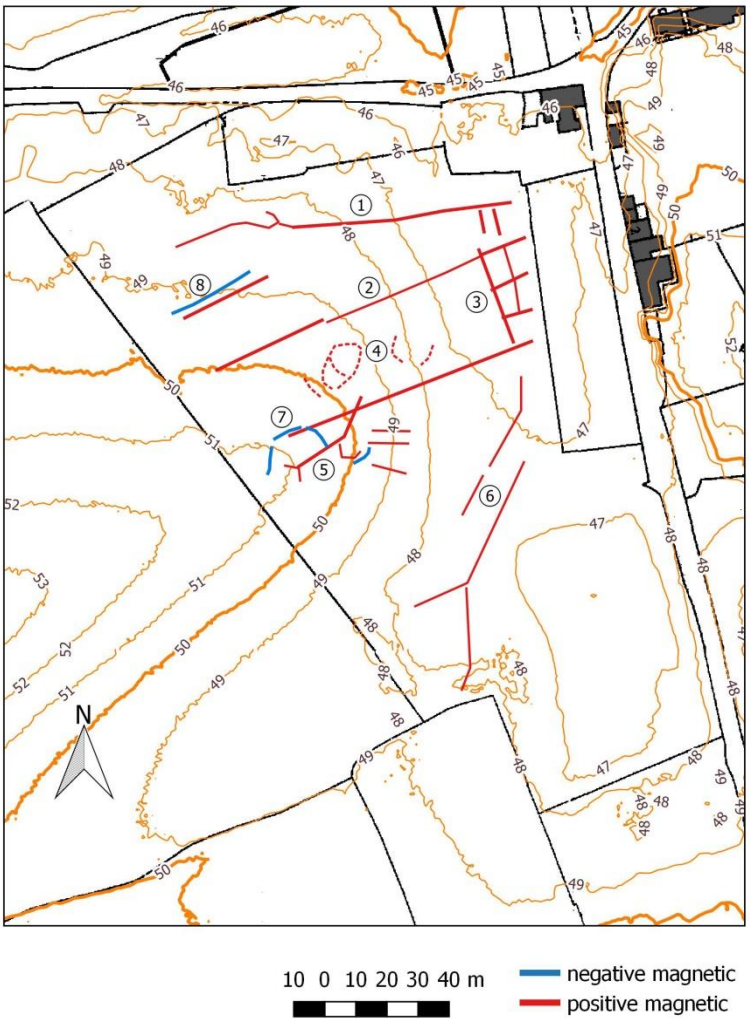

Figure 3-6: Pool Close with magnetometry interpretation and 1m contours.

Figure 3-7: view from the high ground in Pool Close, looking eastwards

Jodie Lewis carried out fieldwalking to recover struck lithics in five ploughed fields between 2000 and 2005. The fields she surveyed nearest to Pool Close were Tining to the southwest, and the pair of adjacent fields Orchard (not the one we surveyed) and Lurches Close to the east which were processed as one field (see Figure 3-1 for the locations of the fields). These fields had a lower density of lithics than the other fields Lewis surveyed, which were further

east: to the north and to the south of Stone Close. Tining had 23 flints per hectare; Orchard/Lurches Close had 38 flints per hectare. The other fields had between 65 and 76 per hectare. Tining did though have the second highest percentage of burnt material, 22% (the highest was 25%), compared to just 5% in Orchard/Lurches Close, and Lewis thought this could indicate domestic activity, though the date could be anywhere from the Mesolithic to the Bronze Age. Lewis points out that this is a low level of lithic scatter even for a flint-free landscape and much higher concentrations occur around Neolithic monuments on the Mendips. The relatively low density of lithics, together with the lack of round barrows in the vicinity, the closest is 3km, are two things where Stanton Drew is dissimilar to Stonehenge, Avebury and other Wessex monuments. She speculates that an area around the Stanton Drew monuments may have been deliberately excluded from routine activities and occupation. (Lewis and Mullin 2012)

It was in the southern half of Tining that the Church Farm New Dairy was built (2010-11), Sherds of Romano-British pottery of circa 3rd-4th centuries AD date were found as well as evidence of metal working (Young 2010). Also, this is where an early to middle Bronze Age cremation urn was uncovered (Young and Hume 2011).

3.2 Conclusions

This project was a welcome opportunity to study a part of Stanton Drew that had not previously received much archaeological attention, and to redo a survey of some land where data had been lost. Although we had no major discoveries on this occasion, we have identified some features that may be archaeological in nature and worthy of future investigation at some point in both Home Field and Pool Close.

Much remains to be discovered about Stanton Drew and its monument complex. We do not yet know where the people who built it and used it lived and farmed. We do not know the order the monuments were built in, or even their approximate ages, why Stanton Drew lacks round barrows in the vicinity, or why there appears to be a low density of lithics compared to other Wessex monuments. The post-prehistoric archaeology of Stanton Drew is also little understood. In order to make progress on some of these questions we need to study and examine the environs as well as the village and monuments themselves. Recently, the value of such study has been shown by the *Stonehenge Hidden Landscapes Project* (Gaffney *et al* 2012) which has discovered new sites near Stonehenge and aided a greater understanding of the ritual landscape, though they were using expensive state of the art survey equipment and resources that we can only dream of having.

This year we added about 3.5 hectares of magnetometry survey to the 8.5 hectares we have surveyed in previous years at Stanton Drew. In comparison, geophysical survey at Stonehenge has covered an area at least 100 times larger. We have only scratched the surface – there are many more places to look.

Appendix A: Method and Equipment

A.1 Gridding out

Grid squares of 20 by 20 m were used throughout the survey. Partial grids were also included. Squares were laid out using tapes by use of Pythagorean triangles.

Grids were laid out in Home Field starting from the north east corner of the western gate post of the southern entrance into the field (designated 1000,1000), extending a baseline eastwards to the southern hedge, where a marker was left (1020,1000). Figure A-1shows the grid origin, from which the grid may be reconstructed. Complete survey of the field involved moving horse fencing in order to have complete grids in a survey for any one day.

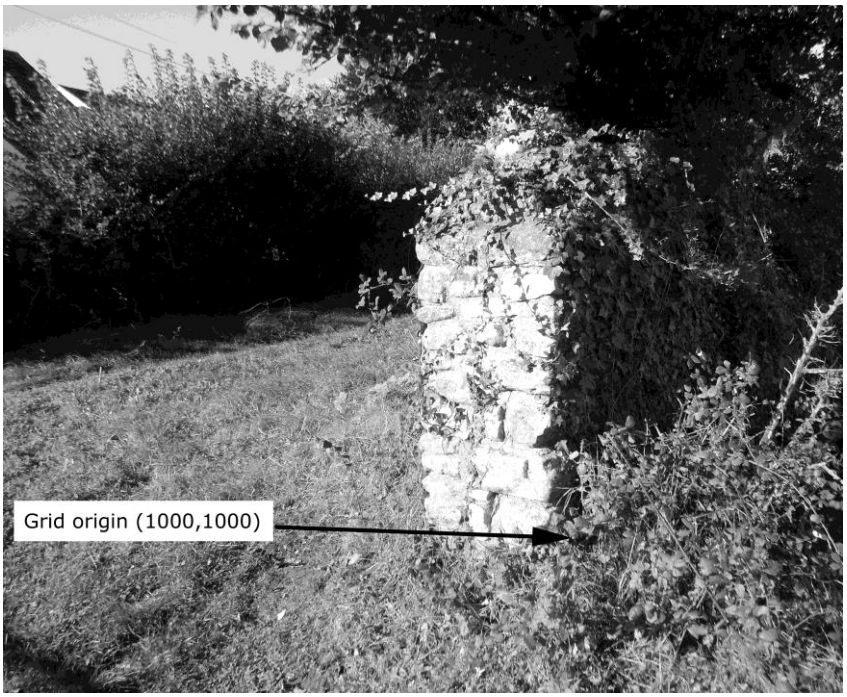

Figure A-1: grid origin in Home Field; looking south-west

The Orchard was gridded out starting at the eastern gate post of the entrance to the Orchard, south-west corner (1000,1000) with a baseline westwards along the inner line of the fence (980,1000). Towards the western end, the fence deviated from straight so the grid edge moved outside the fence line. The starting point is shown in Figure A-2.

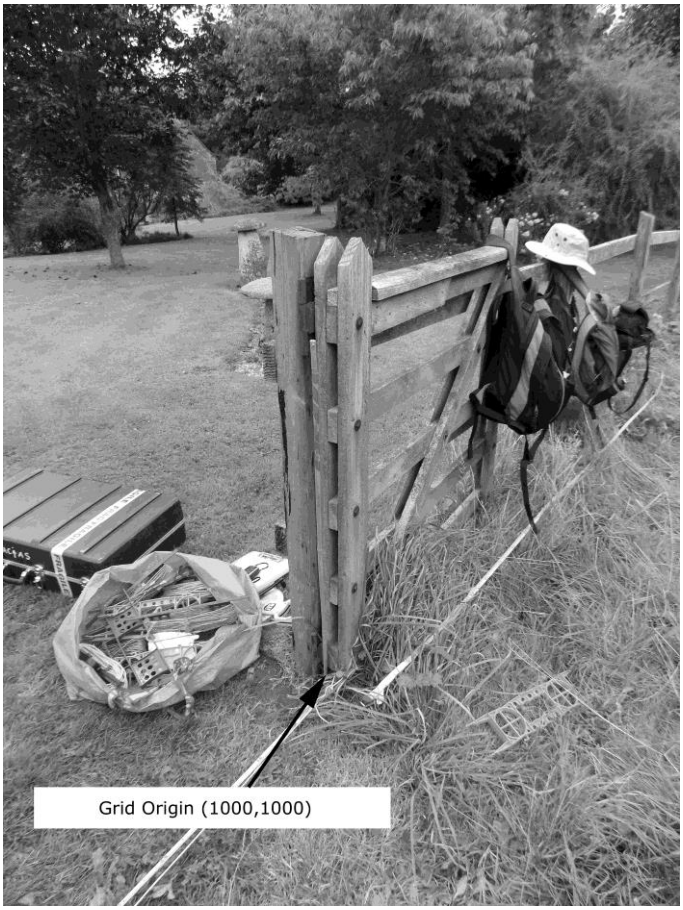

Figure A-2: grid origin in the Orchard; looking north-east

Pool Close has a portion fenced off for use as a car park and this was out of bounds to the survey. The grid was started at the south-west corner of the car park fence, south-west edge, (1000,1000), and continued north along the line of the fence (1000,1020). This is shown in Figure A-3.

Figure A-3: grid origin in Pool Close, looking east

Positions of most grid square corners were measured in by ETREX hand-held GPS meter. This gave a 10-figure Ordnance Survey grid reference for each. This provided a precision of 1 m to each axis, but was only accurate to ± 5 m.

A.2 Home Field and Mill Mead

Home Field was surveyed using magnetometer and twin-probe earth resistance. The magnetometer used was the Bartington 601-2 dual fluxgate gradiometer, operating at 4 readings per metre along lines one metre apart, giving 1600 readings per complete 20 metre square. Grids were started in the south-west, with the first traverse heading north (see Oswin 2009:115, fig 5.8c), such that the first line was 1 m east of the western edge, the last line down the eastern edge, starting 0.25 m north of the baseline and finishing on the top line. This ensured that there was no hiatus or overlap between grid squares. Data were gathered in a zig-zag fashion but downloaded as parallel lines. The data were passed through a BACAS proprietary zero-median destriper before incorporation into INSITE. The de-striped files are indicated in the folder by the prefix 'd'.

The order in which the grids were surveyed depended on the portion of paddock available and the whereabouts of the two resistance meters, ensuring that none interfered with another. It was not possible to work in simple straight lines.

The order in which the magnetometry grids were done is shown below in Figure A-4. The blue arrows indicate the start point and initial direction.

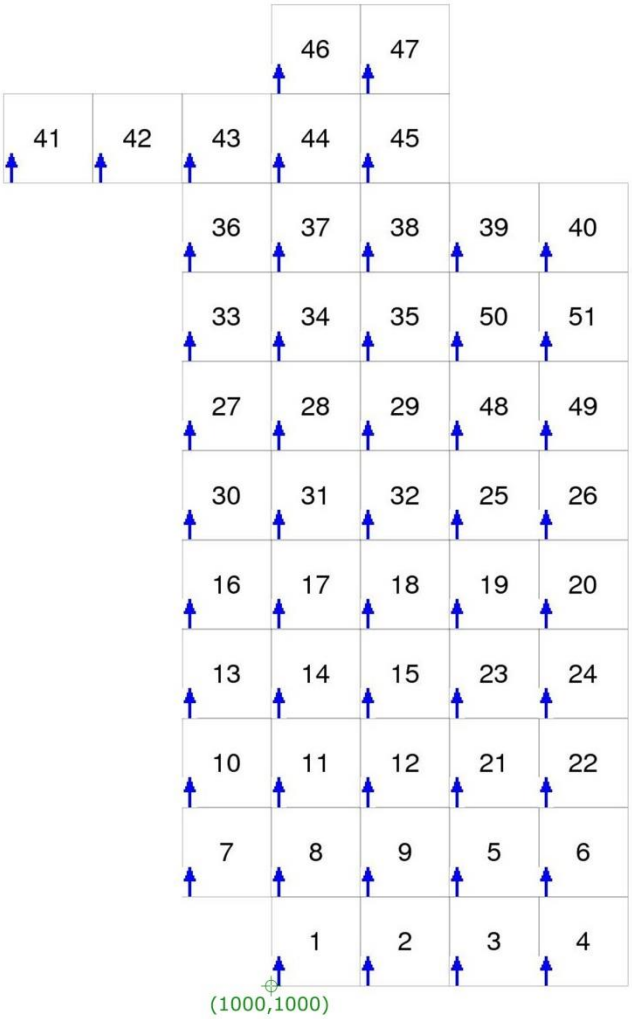

Figure A-4: magnetometry grid numbering in Home Field and Mill Mead

Two resistance meters were used, a TR/CIA and a Geoscan RM15D. Both were of generally similar appearance but the data logging sequences were different between the two types. Both used 0.5 m probe separation. Both instruments were set to take readings 0.5 m apart along traverses 1 m separation, giving 800 readings per full 20 m square. Both instruments were walked in a zig-zag fashion, but the TR/CIA meter converted results to parallel data on download, whereas the RM15 did not and retained the data in zig-zag sequence. The meters were kept a minimum of 20 m apart, frames and remote probes, to reduce the possibility of crosstalk.

The order in which the grids were done is shown in Figure A-5. Blue arrows indicate start position and direction for the TR/CIA, parallel data, and crossed red arrows indicate start position and direction for squares surveyed by RM15, zig-zag data.

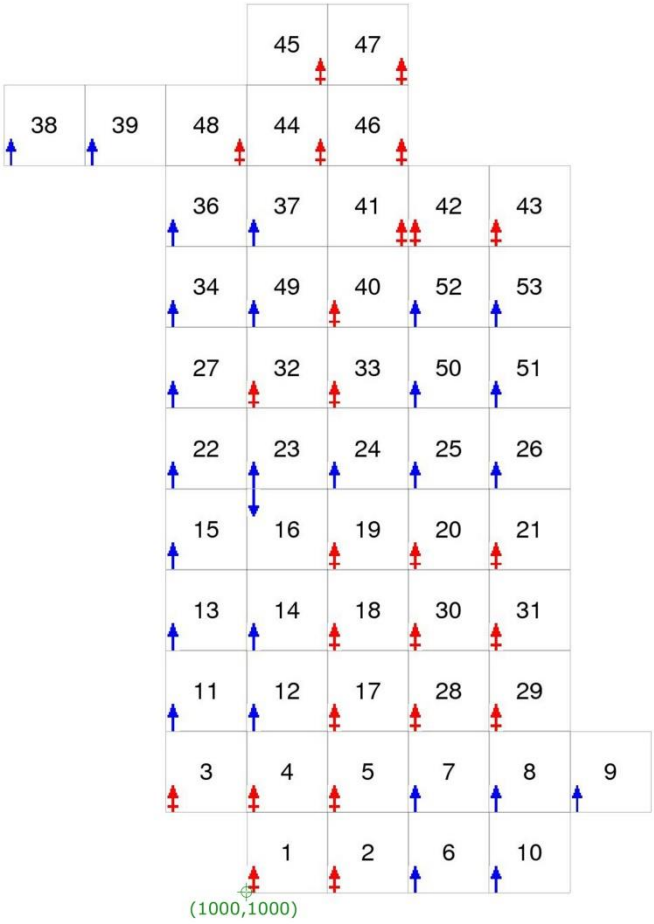

Figure A-5: resistance grid numbering in Home Field and Mill Mead

A.3 Orchard

The orchard was surveyed by magnetometer and twin-probe resistance meters. In this case, the magnetometer used was a Geoscan FM256 fluxgate gradiometer, operated using manual triggering. The machine was set to take readings at 0.5 m intervals along traverses 1 m apart, giving 800 readings per full 20 m square. The survey was walked in a zig-zag pattern and the meter downloaded the data in zig-zag. The data were passed through a BACAS proprietary zero-median destriper before incorporation into INSITE. The de-striped files are indicated in the folder by the prefix 'd'.

The survey order is shown in Figure A-6. The crossed red arrows indicate the initial starting position and direction, and that it is zig-zag data.

Figure A-6: magnetometry grid numbering in the Orchard

Both TR/CIA and RM15 meters were used for resistance survey but kept at opposite ends of the orchard. The survey sequence is shown in Figure A-7. The blue arrows indicate squares surveyed by TR/CIA, downloading parallel data, the crossed red arrows indicate the RM15, downloading zig-zag data.

Figure A-7: resistance grid numbering in the Orchard

A.4 Pool Close

The accessible part of the field was surveyed in full by magnetometer and partially surveyed by twin-probe resistance. The fenced off car park was out of bounds, and the deep pond at the southern end was not surveyed even though it was dry. It was cut sufficiently deep that any topsoil features would have been removed.

The magnetometer was the Bartington 601-2 dual fluxgate gradiometer, set to take 4 readings per metre along lines 1 m apart, giving 1600 readings per 20 m square. A zig-zag pattern was walked but the device automatically converted the data to parallel on download. The data were passed through a BACAS proprietary zero-median destriper before incorporation into INSITE. The de-striped files are indicated in the folder by the prefix 'd'. A number of grids had to be repeated after the operator was found to be magnetically unclean, so there are grid numbers missing from the sequence.

The grid sequence is shown in Figure A-8. The blue arrows indicate parallel data, and the start point and direction of each grid.

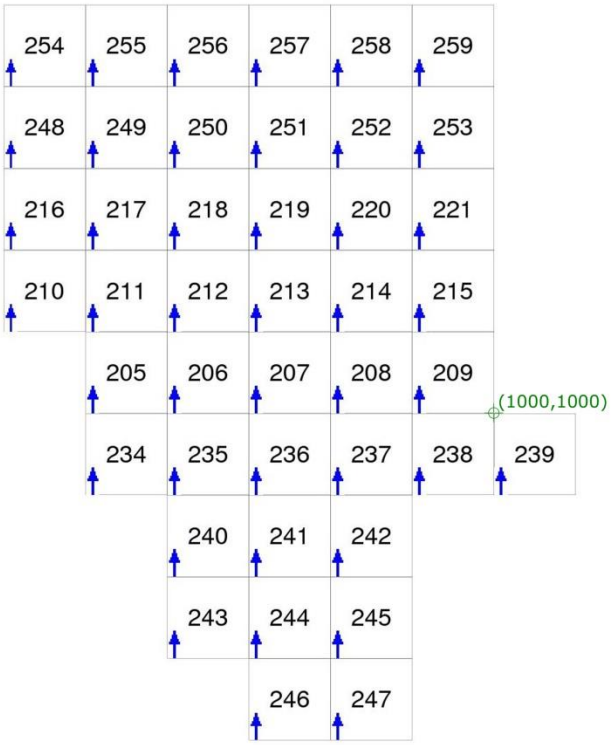

Figure A-8: magnetometry grid numbering in Pool Close

Both TR/CIA and RM15 resistance meters were used, but there was insufficient time for a complete survey of the field. Those grids completed are shown in Figure A-9. The blue arrows indicate the start position and direction of TR/CIA grids, downloaded as parallel data. The crossed red arrows indicate the start positions and directions of RM15 grids, where the data are zig-zag.

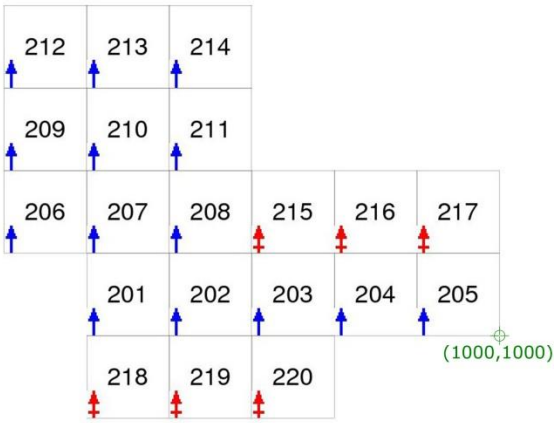

Figure A-9: resistance grid numbering in Pool Close

A.5 Download and Processing Software

Data were downloaded at the end of each day from each instrument. The computers ran Windows XP and were equipped with parallel ports for a 'dongle' for INSITE processing, and serial ports for download.

The Bartington gradiometer downloaded via its own software, which converted all data sequences to parallel. The raw data downloaded were then passed through a BACAS

proprietary zero-median de-striper. This sent two sets of data to the data folder. The initial data was given a prefix ‘m’ for magnetometer, the destriped data was given a prefix ‘d’. This also set the correct null reading for processing in partial grids. It is recommended that the prefix ‘d’ data be always used.

The Geoscan FM256 gradiometer was downloaded via BACAS proprietary software and then passed through the BACAS proprietary zero-median de-striper, storing the raw data as prefix ‘m’, the de-striped data as prefix ‘d’. The data from this device is zig-zag.

The Geoscan RM15 twin-probe resistance device was downloaded via BACAS proprietary download software, with the prefix ‘r’ added. The data from this device is zig-zag.

The TR/CIA twin-probe resistance device was downloaded via BACAS proprietary download software, with the prefix ‘r’ added. The data from this device is parallel.

The individual grid squares for each type of instrument were assembled, mapped and processed using INSITE v4 (1994). Although this is now regarded as obsolete, it still preferred by BACAS because of its easy graphical interface and also because it allows parallel and zig-zag data to be assembled on the same plot. Note that although parallel and zig-zag data can be combined on one plot, the two different types of data have to be imported and mapped separately, and the operator has to be aware of which form of data are used in each grid square as there is no indication given in the number of each grid square.

Appendix B: Georeferencing

Positions of most local grid square corners were measured in by ETREX hand-held GPS meter. This gave a 5-figure Ordnance Survey grid reference for each. This provided a precision of 1 m to each axis, but a claimed accuracy of ± 5 m. When georeferencing the survey plots in QGIS, it was found that the accuracy was closer to ± 10 m.

The following sections give the values that were used to carry out the georeferencing.

B.1 Home Field

Local grid		OS grid (ST)	
E	N	E	N
1000	1000	59524	63188
1000	1020	59517	63207
1000	1200	59481	63383
1020	1100	59519	63290
1080	1040	59593	63243

B.2 Orchard

Local grid		OS grid (ST)	
E	N	E	N
980	980	59623	63190
960	980	59605	63184
1000	1000	59636	63215
960	1000	59599	63203
940	1000	59579	63196

B.3 Pool Close

Local grid		OS grid (ST)	
E	N	E	N
880	1080	59566	63126
900	1020	59594	63070
940	940	59645	62996
940	1080	59626	63134
980	980	59680	63041
980	1080	59667	63142
1000	1000	59696	63063

Appendix C: Archaeological Sites and Monuments

This appendix contains a list of sites and monuments in the Bath and North East Somerset Historic Environment Record that are close to the surveyed sites and on the west side of Stanton Drew.

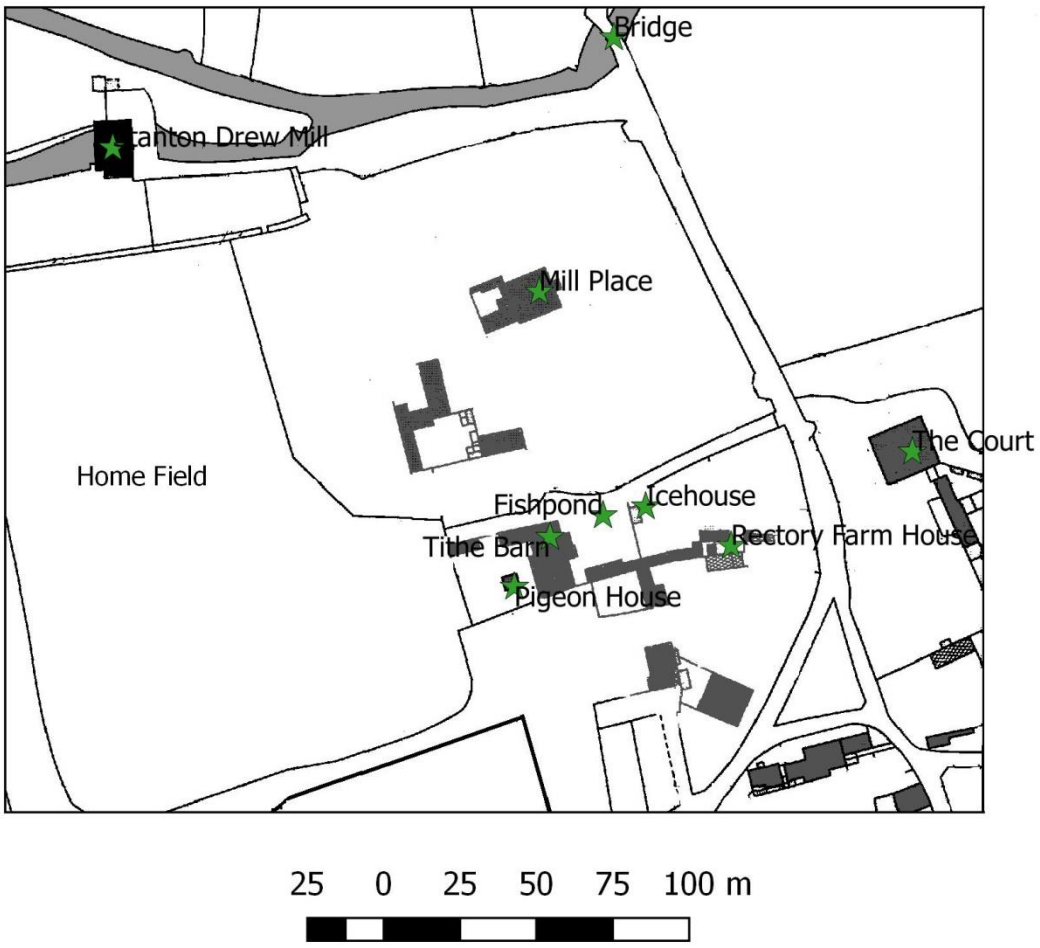

Figure C-1: Sites in the vicinity of Rectory Farm

MBN2586 Rectory Farm House

Farmhouse, now house. Mid fifteenth century in origin.

In the thirteenth century Robert Burnell Bishop of Bath and Wells purchased estate in Stanton Drew to provide income for prayers to be said for his soul. In 1306 the estate was transferred to the Archdeacon of Bath and a vicar appointed. Between 1443 and 1465 the house was built - called "the Parsonage", and later the estate was leased out. In 1867 the name was changed to Rectory Farm.

MBN4934 Icehouse (site of), Rectory Farm

Documents mention an Ice house at Rectory Farm. It is shown on a map of 1852 just to the west and south of Rectory Farm in a small plantation.

MBN4933 Pigeon house, Rectory Farm

There is a post-medieval dovecote near to the Tithe Barn.

MBN4935 Fishpond, Rectory Farm

There is mention of a fishpond (unknown date) in documentary sources.

MBN719 Bridge near Manor House Stanton Drew

A fine bridge, having three stone arches, over the River Chew at Stanton Drew, possibly dating back to the thirteenth or fourteenth century.

At its narrowest part it is14' wide. Over the first arch from the south end is an oval stone with the following inscription: "This bridge was repaired at ye county charge in ye 50th year of ye reign of Geo III. Oct 1809. Revd DR Baker expenditor and Thos Cooke (7) Esq. Inspector". It is probable that the bridge was extended to the south at the above date, the round arch being of much later date than the pointed arches which are ribbed underneath.

MBN2194 Stanton Drew Mill

Substantial building derelict in 1969. Now restored as private house.

There has probably been a mill at this site since the time of Domesday Book when it was valued at 10/-. It was bought by Bishop of Bath and Wells in1292 and retained by the Church until the mid-19th Century. By 1499 it was a fulling mill, and by 1781 a grist mill. It has had various uses since.

MBN5686 Mill Place

Built between 1822-8 by William Wyllys as Morley House. A plan of 1852 shows plan and layout the same as present. It has also been known as Twyford House.

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SRO – Somerset Records Office.

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