



Berkshire Archæological Society

Patron: H.M. THE QUEEN

President: Professor Michael Fulford CBE FBA FSA

Fieldwork at Radley Farm, Near Hungerford Newtown in West Berkshire

Authors: Keith Abbott and Simon Cains

Issue date: 12th June 2022

Issue: 9

Status: First Issue

Summary

A programme of work has been assembled to understand better the route of the Roman Road to Bath from its last known locations at Radley Farm, and then eastwards toward Ermin Street. This follows on from recent geophysics fieldwork by BAS (Berkshire Archaeological Society) at the Wormstall Estate near Wickham which failed to find any evidence of the Roman Road to Bath (Margary 53) along the Road's projected route (Toller, 2013).

This report covers work carried out on Radley Farm between September 2021 and March 2022 with aims to understand better the fabric of the Roman Road to Bath at this location, to look for evidence of earlier phases of construction, and to document the characteristic geophysics signatures of the Road's surviving remains beneath various modern agricultural landscapes as a reference for later work.

The best preserved remains of the Roman Road were revealed within the ancient woodland of Three Gate Copse. The unpublished transcript, thought to have been lost, of an excavation of the Roman Road within Three Gate Copse in 1968 sheds new light on the Road's construction and state of preservation. Earthworks of the Road were also found on the steep slope to Radley Bottom and within Stibbs Wood, although it is likely in this location that they were used as a point of entry to the farm until the early 19th century, and may have been much modified and repaired since their initial construction. East of Stibbs Wood no trace of the Roman Road can be seen using geophysics surveys, but in the field southwest of Three Gate Copse traces of the Roman Road were detected over a 50m stretch where the remains of the Road's parallel ditches and what appears to be a small area of surviving agger were detected. No evidence of occupation close to the Roman Road was found. Neither was any evidence found of earlier phases of construction of the Road using a different route to cross Radley Farm.

Much experience has been gained during the course of this project as to how the interaction of local geology, topology and historical agricultural practices can impact the likelihood of survival of the Roman Road, and on the geophysics methods best used to detect them. The next work package in this programme will be drafted to scope a series of geophysics surveys across land to the east of Radley Farm to track the route of the Roman Road to Bath up to its intersection with Ermin Street.

Distribution

Landowners: Mr & Mrs Gore

Those who worked on the Project: Philip Rawstron, Paul Seddon, John Illenden, Harry Johnson, Jean Curran, Margaret Boltwood, David Richmond, Tony Bakker, Martin Labram, Tim Lloyd, Simon Cains, Nigel Spencer, Ameila Abbott and Keith Abbott

West Berkshire Council Archaeologists: Sarah Orr and Beth Ashbury

Berkshire Archaeological Society Council: Andrew Hutt, Alison McQuitty, Ann Griffin, Anne Harrison, Tim Lloyd, Catherine Petts, Griselda Truscott Wickes and Keith Abbott

0 Document control

0.1 Contents

Summary	1
0 Document control.....	3
0.1 Contents	3
0.2 List of figures and tables	5
0.3 Change control	7
0.4 Change history	7
0.5 Changes forecast.....	7
0.6 Acknowledgements.....	7
1 This Project.....	8
2 Geological and topographical background	9
2.1 Local geology influences the agriculture impact on underlying archaeology.....	10
3 Historical and archaeological background	11
3.1 Toller's projected route of the Roman Road to Bath (Margary 53)	11
3.2 The West Berkshire Historic Environment Record: The Roman Road to Bath (Margary 53).....	12
3.3 Previous archaeological excavation at Three Gate Copse	13
3.4 Fieldwork near Wickham.....	15
3.5 Landscape assessment	16
4 Project Objectives.....	23
5 Field Methodology	24
5.1 Introduction.....	24
6 The geophysics surveys	25
6.1 Area A	26
6.2 Area B	27
6.3 Area C	29
6.4 Area D	30
6.5 Area E	31
6.6 Area F.....	33
6.7 Area G	35
7 Discussion	41
8 Conclusions and suggested further work	43
9 Bibliography	43
Appendix 1: HER Records Relating to the Roman Road to Bath (Margary 53).....	45
Appendix 2: Geophysics Results	49

Appendix 3: Radley Farm Survey Data.....63

0.2 List of figures and tables

Figure 2.1 Superficial geology above the Seafood Chalk (British Geological Survey materials © UKRI 2021)	9
Figure 2.2. Vertical section at the chalk quarry in the NW corner of Stibbs Wood	9
Figure 3.1 Toller's projected route of the Roman Road to Bath (Toller, 2013)	11
Figure 3.2 Toller's projected route of the Roman Road to Bath from Radley Bottom to Openham Farm (Toller, 2013)	11
Figure 3.3 Toller's projected route of the Roman Road to Bath from Openham Farm to Ermin Street (Toller, 2013)	12
Figure 3.4 Locations of HERs relating to the Roman Road to Bath	12
Figure 3.5 Location of geophysics surveys on the Wormstall Estate together with identified areas of permanently boggy ground	15
Figure 3.6 A portion of The Rocque Map of Berkshire showing the area around Radley Farm in 1761 (Published by the British Library)	16
Figure 3.7 Ordnance survey – Lambourn Area, 1812. (Published by the British Library) ..	16
Figure 3.8 Ordnance Survey 1:10,000 1960 (Reproduced with the permission of the National Library of Scotland)	18
Figure 3.9 Additional features on the steep escarpment by Radley Bottom (Historic England Aerial Archaeology Mapping Explorer, Dec 2021)	18
Figure 3.10 Ordnance survey map of 1878 for Kintbury Parish (Published by the British Library)	19
Figure 3.11 Roman Road details copied from 1:2,500 1980 Ordnance survey map	20
Figure 3.12 Extrapolation of present day field boundary alignments alongside extrapolations of the surviving earthworks of the Roman Road	20
Figure 3.13 Satellite image of area between Three Gate Copse and the Womstall Estate in low angle light to highlight possible quarry pits (Google Earth Pro)	21
Figure 3.14. LiDAR northern illumination of the area of Radley Farm	22
Figure 4.1 Assigned areas of interest to be surveyed on Radley Farm	23
Figure 5.1 An example of how anomalies of a Roman road can be revealed by gradiometer and earth resistance geophysics analysis (Millum 2018)	24
Figure 6.1 All areas surveyed on Radley Farm	26
Figure 6.2 The Area A1 earth resistance anomalies	26
Figure 6.3 The Area B1 earth resistance anomalies	27
Figure 6.4 The Area B2 magnetic field anomalies	28
Figure 6.5 The Area C1 earth resistance anomalies	29
Figure 6.6 The Area D1 magnetic field anomalies	30
Figure 6.7 The Areas E1 (left) and E2 (right) magnetic field anomalies	31
Figure 6.8 The Area E3 earth resistance anomalies	32
Figure 6.9 The Area F2 magnetic field anomalies	33
Figure 6.10 The Areas F1 (left) and F2 (right) earth resistance anomalies	34
Figure 6.11 Satellite image from July 2020 showing the construction of drains in Area F (Google Earth 2022)	35
Figure 6.12 the Area G1 magnetic field anomalies	36
Figure 6.13 satellite image of Area G1 showing crop marks aligned to gradiometer anomalies in a crop of full grown maize in Sep 2017 (Google Earth 2022)	37
Figure 6.14 the Area G1 earth resistance survey area (highlighted in green) alongside magnetic field anomalies	38
Figure 6.15 the Area G2 (right hand side of fence line) magnetic field anomalies	39
Figure 6.16 the Area G2 earth resistance anomalies (survey area highlighted in green) ..	40
Figure 10.1 Area A geophysics plots and the anomalies	49
Figure 10.2 Area B1 geophysics plots and the anomalies	50
Figure 10.3 Area B2 geophysics plots and the anomalies	51
Figure 10.4 Area C geophysics plots and the anomalies	52

Figure 10.5 Area D geophysics plots and the anomalies.....	53
Figure 10.6 Area E1 geophysics plot and the anomalies.....	54
Figure 10.7 Area E2 geophysics plot and the anomalies.....	55
Figure 10.8 Area E3 geophysics plot and the anomalies.....	56
Figure 10.9 Area F1 geophysics plot and the anomalies.....	57
Figure 10.10 Area F2 geophysics plot and the anomalies	58
Figure 10.11 Area F2 geophysics plot and the anomalies	58
Figure 10.12 Area G1 geophysics plot and the anomalies	59
Figure 10.13 Area G1 earth resistance plot and the anomaly.....	60
Figure 10.14 Area G2 gradiometer plot and the anomalies	61
Figure 10.15 Area G2 earth resistance plot and the anomalies	62

0.3 *Change control*

This document is controlled by the authors

0.4 *Change history*

Issue 09 dated 12th June 2022

0.5 *Changes forecast*

None

0.6 *Acknowledgements*

Thanks are due to Mr & Mrs Gore, the owners of Radley Farm, for inviting us onto their property to carry out this project, for their support and hospitality shown during the survey and for locating the lost transcript of the 1968 excavation in Three Gate Copse.

Thanks are also due to Philip Rawstron, Paul Seddon, John Illenden, Harry Johnson, Jean Curran, Margaret Boltwood, David Richmond, Tony Bakker, Martin Labram, Tim Lloyd, Simon Cains, Amelia Abbott and Nigel Spencer who volunteered their time to carry out the fieldwork, helped to create maps/diagrams and reviewed this paper.

Particular thanks are due to Andrew Hutt for technical guidance provided, Beth Ashbury for providing HER data, the Berkshire Archaeological Society study group who reviewed plans/results and offered valuable advice, and the Berkshire Archaeological Society Council for sponsoring the project.

This report is dedicated to the memory of John Illenden who sadly passed away before the project was completed.

1 This Project

The Berkshire Archaeological Society (BAS) is currently undertaking a Study Group project to collate all available evidence of Romano-British activity across the old Berkshire region from the Late Iron Age until the end of the Late Roman period.

After branching off westwards from Ermin Street at the modern Wormstall Estate's northeast edge, the route of the Roman Road to Bath (Margary 53) was proposed fairly recently (Toller, 2013) to cross the Estate to the south of Wormstall House. However, a recent BAS geophysics survey project on the Wormstall Estate (Hutt, Harrison & Abbott, 2021) failed to find any evidence of a Roman Road along this projected route, and moreover identified a swathe of perennially boggy land to the north of Wormstall House across which such a road would have been unlikely to have been constructed.

This project aims to provide additional evidence that the earthworks to be found on Radley Farm within Stibbs Wood and Three Gate Copse are indeed the surviving visible remains of the Roman Road to Bath, and also to demonstrate the extent to which the remains of the Roman Road can be detected using geophysics surveys across the surrounding agricultural landscape.

The results of this project and experience gained from it, will be used to reconsider the likely route(s) taken by the Roman Road and to plan a subsequent project using geophysics surveys to track the route taken from its most easterly last known surviving remains in Three Gate Copse further east towards Ermin Street.

2 Geological and topographical background

The geology underlying Radley Farm is Seaford Chalk Formation, described as “Firm white chalk with conspicuous semi-continuous nodular and tabular flint seams”. The overlying superficial geology over the higher elevations and most of the project area is clay-with-flints. The valley bottoms, along the Radley Bottom road and the valley between Radley Farm and Three Gate Copse have “Head”, i.e. poorly sorted and poorly stratified, angular rock debris and/or clayey hillwash and soil creep. There is no recorded geology overlying the chalk on the valley sides, in the area west of Stibbs Wood, although from visual observation it has the appearance of sand with chalk gravel.



(Brown = Clay-with-flints, Grey = Head Purple = Hamstead Marshall sand and gravel)

Figure 2.1 Superficial geology above the Seaford Chalk (British Geological Survey materials © UKRI 2021)

There is a useful vertical section through the soil and chalk visible within the quarry to the north-west of Stibbs Wood, showing thin and variable soil thickness ranging from 0.25m to 1m. There is little superficial geology present above the chalk between this location and some 250m eastwards where chalk outcrops are visible at ground level at numerous places within Stibbs Wood.



Figure 2.2. Vertical section at the chalk quarry in the NW corner of Stibbs Wood

The topology of Radley Farm can be described as being located on a plateau to the east of a steep escarpment (of 11° incline) descending from the western extent of Stibbs Wood to the Radley Bottom road running through the valley bottom. There is also a shallow south-running valley to the west of Three Gate Copse, which Williams referred to as a "dip" in his report (Williams, 1925). A gentle southerly slope extending from the south of Stibbs Wood gives a good viewpoint over towards the valley of the River Kennet.

2.1 Local geology influences the agriculture impact on underlying archaeology

It is known that the impact of agricultural practices on archaeology in landscapes with underlying clay-with-flint over chalk geology can be significant. This is partly due to the poor drainage of clay soils that necessitates the installation of deep drains with pipes placed in trenches typically 0.5m wide by 1.25m deep and 3-5m apart, the digging of which can destroy archaeological remains (Oxford Archaeology 2002).

Also, the low level of nutrients in clay soils often encourages the use of deep ploughing to raise the nutrients present within the chalk bedrock up closer to the surface. The use of steam ploughs during the late 19th century and the earlier "Derby Digger" reached depths of 0.45m and were notoriously destructive for any underlying archaeology. These effects have been observed to be at their worst when deep ploughing fields with shallow topsoil and a flat topology (Oxford Archaeology 2002).

3 Historical and archaeological background

3.1 *Toller's projected route of the Roman Road to Bath (Margary 53)*

In his 2013 paper, Toller describes the route of the Roman Road to Bath eastwards to its intersection with Ermin Street in the vicinity of Wickham in West Berkshire (Toller, 2013) in three sections as shown in figure 3.1 below: the first is the straight and well attested section from Bath to Fyfield; the second presents evidence for a route from Fyfield where the road crosses to the north bank of the River Kennet near Stitchcombe (east of Mildenhall) and continues eastwards via Ramsbury to Peaked Lot; and the third section covers Peaked Lot to its intersection with Ermin Street of which the last 2km is uncertain. The focus of this project report is that third section.

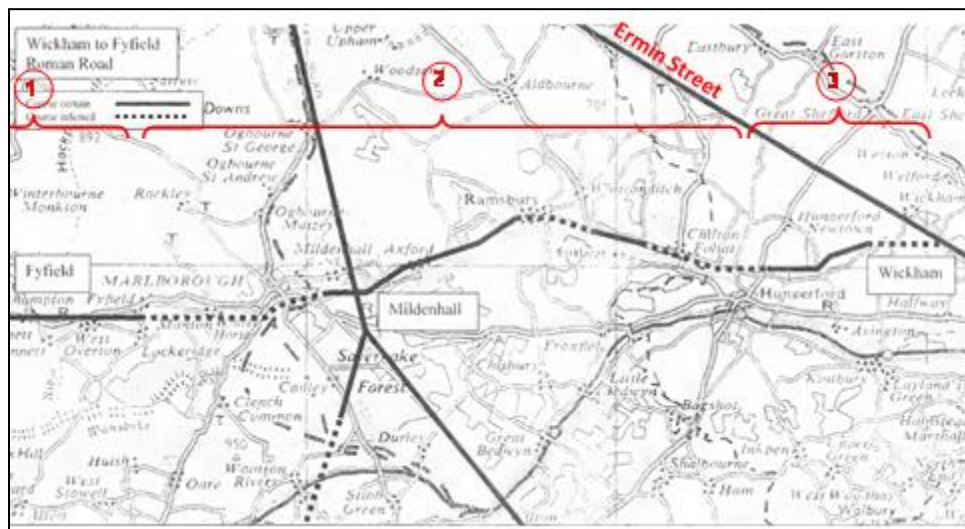


Figure 3.1 Toller's projected route of the Roman Road to Bath (Toller, 2013)

Toller's projected route of the Roman Road from Peaked Lot eastwards to its intersection with Ermin Street can be seen in more detail in figure 3.2 and figure 3.3. Figure 3.2 shows Radley Farm lying between the two most easterly surviving earthworks of the Roman Road, one in Stibbs Wood and one in Three Gate Copse, after which the route is projected further eastwards in an almost straight line passing close to Windingwood Farm.

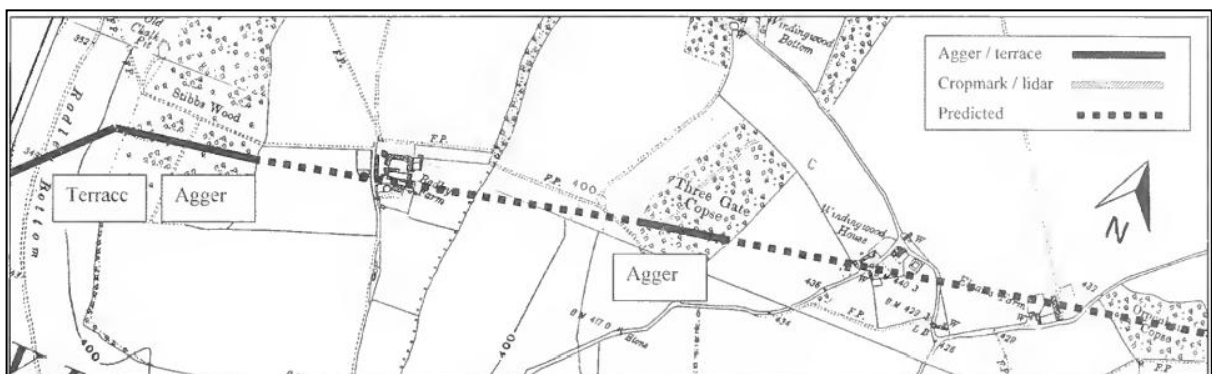


Figure 3.2 Toller's projected route of the Roman Road to Bath from Radley Bottom to Openham Farm (Toller, 2013)

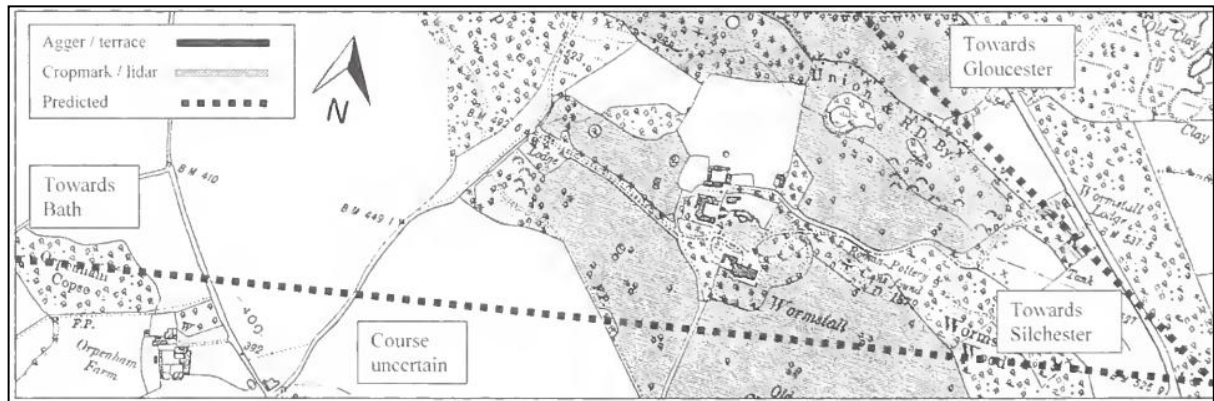


Figure 3.3 Toller's projected route of the Roman Road to Bath from Openham Farm to Ermin Street (Toller, 2013)

In Figure 3.3 the route of the Roman Road projected by Toller can be seen to continue on a nearly straight eastwards line projection passing to the south of Wormstall House, through Wormstall Wood, and intersecting with Ermin Street close to Benham Burslot.

3.2 The West Berkshire Historic Environment Record: The Roman Road to Bath (Margary 53)

The West Berkshire HERs recording the route of the Roman Road to Bath (shown in full in Appendix 1) can be summarised as shown in figure 3.4. From Memorial Cross to the West, the agger is recorded in MWB1985 eastwards along the south fence of Great Hidden Farm, and then in MWB1983/1984 along the former field boundary to the northern fence of Oaken Copse.



Figure 3.4 Locations of HERs relating to the Roman Road to Bath

From Oaken Copse the alignment continues into Heath Hanger Copse described in MWB1982 and MWB1983. Where it exits by Radley Bottom, there is a hump in the modern road. The Roman Road then turns to the north via an oblique terrace described in MWB1987 up the steep escarpment east of Radley Bottom and into the Stibbs Wood where earthworks survive for some 120m. Beyond Stibbs Wood and Radley Farm MWB1981, MWB1986 and MWB17613 record crop marks from the Road's agger and ditches in the field west of Three Gate Copse, to where earthworks of the Road's agger and ditches survive in Three Gate Copse for some 60m.

East of Three Gate Copse the only record of visible remains of the Road in the HER is in Orpenham Copse, where HER1993 records Williams' description of an agger ridge. Toller does not mention this, but his projection extends this alignment to Benham Burslot where HER1992 records his prediction that the Road to Bath intersects with Ermin Street at this location; however no trace of the Road and its junction have yet been found.

Also, to the east of Three Gate Copse, a Watching Brief (EWB1479) was undertaken at The Reading Room, Winding Wood (National Grid Reference: SU 38137 70671) in association with ground works for the construction of a new garage. Although the site lies almost directly on the projected line of the Roman Road, no artefactual or structural evidence for the Road was found.

3.3 Previous archaeological excavation at Three Gate Copse

HER MWB1986 states that "a limited excavation in the 1950s revealed the Road surface and two ditches" in Three Gate Copse carried out by a Mr David Bannister who was a teacher at a middle school in Reading. This excavation is also recorded as HER Event EWB167, but the work was never published and was thought to have been lost.

However when briefing Mr Gore the owner of Radley Farm on the planned scope of this project, he mentioned that as well as remembering the excavations taking place when he was a child, that one of his relatives still had a partial copy of the excavation report in their possession. Mr Gore was able to obtain and share a copy of this document. The measurements taken, diagrams and photographs recorded during the excavation have not yet been located and are still presumed lost. The text of the report reads as follows:

On 2nd March 1968 an investigation into the Roman Road at Three Gate Copse, Winding Wood, near Kintbury, Berkshire in the parish of Radley, under the direction of Messieurs D Bannister and J.D.M Presshous. The work was carried out by the permission of Sir Richard Sutton's Settled Estates.

The Roman road from Silchester (Calleva) to Bath (Aquae Sulis) passes in an east-west direction through Three Gate Copse. (OS Map Ref: 377 705). At the western end of the wood, the line of the road is clearly visible with a ditch on either side. To the west the road crosses a field where it is no longer visible (probably due to steam ploughing at the turn of the century). Crop marks however are said to be visible when the corn is in ear.

The aim of the excavation was to reveal the nature and construction of the road and to determine its width and camber. Preliminary investigations suggested that the Roman road surface was only a few inches below

ground, and it was possible to make a fairly accurate estimate of the exact position of the road.

After initial clearing of undergrowth, an area 41' x 5' was pegged out at right angles to the line of the road, and a 41' x 3' section marked out within this.

Commencing on the crown of the road, the topsoil was removed and the surface of the Roman road brushed clean. This surface was mostly in undisturbed condition, but on the north side of the road there appeared to be an extensive and irregular hollow about 4" in depth and probably caused by disturbance from adjacent tree roots.

The movement of loose stones to the sides of the road obscured the exact local of the edges. However, the lack of a distinct camber and the absence of tightly packed surface made it possible to determine with a fair measure of certainty that the road was 24' in width.

The camber was measured, 26 readings being taken at one foot intervals from a datum line (along the southern edge of the section). The results obtained are shown in table 1 [not yet located].

An 8' trench was next marked out with the existing section 10' from the northern edge of the road. The surface of the Roman road was then removed down to the level of the natural subsoil (clay-with-flints). The road had been constructed of hard packed flints, smaller at the surface and increasing in size nearer to the natural layer. Readings were taken at one foot intervals along both side of this trench, in order to measure the depth of construction of the road shown in table 2 [not yet located].

After final measurements and photographs the trench and the sections were filled in, and posts were erected to mark the northern edge of the road and the alignment of the section.

Conclusions:

The evidence suggests that the road was first class. There was no sign of special building materials or kerbs, the construction of the road being entirely of flints (ie local material). There are several large pits along the line of the road which may have been the sources of building materials. There are no signs of wearing or repair within the section – apart from the hollow mentioned above. No finds were recorded but the ditches have not been explored. It is hoped that another section may be taken in the near future in Stibbs Wood (about half a mile to the west), where the line of the road is again clearly discernible.

Whilst further enquiries are being made to locate the missing measurements and images, this transcript gives a vivid account of the construction and state of preservation of the Road's earthworks in Three Gate Copse, and adds to the body of evidence suggesting that the earthworks within Three Gate Copse are the surviving remains of a metalled 8m Roman road and not some other archaeological feature. No finds were made during the excavation to provide conclusive dating evidence.

3.4 Fieldwork near Wickham

Geophysics surveys were carried out on the Wormstall Estate to the southeast of Wickham by BAS from April - July 2021 (Hutt, Harrison & Abbott, 2021) as shown in figure 3.5. These failed to find any evidence of the Roman Road to Bath along the route projected by Toller to the south of Wormstall House.

Topological surveys carried out at the same time revealed a line of natural springs to the north of the Wormstall Estate along the escarpment leading to the natural ridge used by the modern B4000 road. These springs would have presented a considerable challenge for the Roman Road's construction to the north of Wormstall House and there is no visible evidence of a ramp or other such engineering works having been constructed to traverse them.

All this suggests that the Roman Road to Bath at some point to the east of Three Gate Copse either took a more northerly course (possibly along Church Hill) to join Ermin Street in the vicinity of Wickham, or it turned to the south to join Ermin street near Lip Lane or even further to the south towards Stockcross.

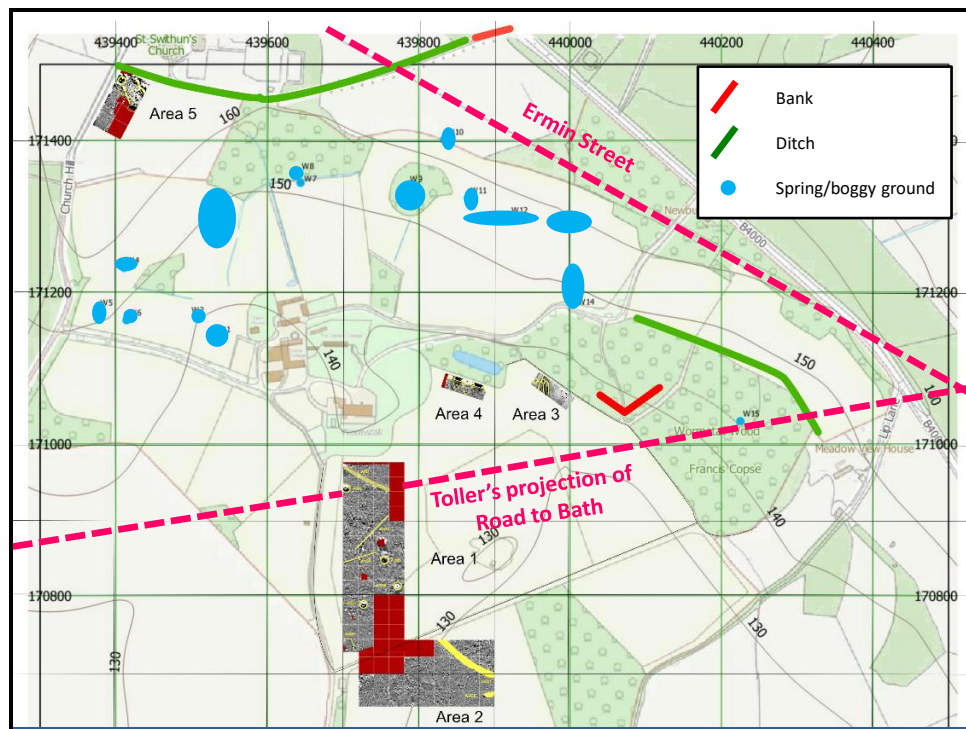


Figure 3.5 Location of geophysics surveys on the Wormstall Estate together with identified areas of permanently boggy ground

It has also been speculated that the Roman Road to Bath did indeed run eastwards from Mildenhall to Peaked Lot, but then turned to the south to run along the northern edge of the Kennet Valley on its way to intersect with Ermin Street near to Stockcross. This would imply that the surviving road-like features from Peaked Lot to Three Gate Copse relate to some other archaeology which still needs to be recorded in detail so it can be understood better. No visible remains of a Roman road along this part of the Kennet Valley have yet been identified to support this theory.

3.5 Landscape assessment

The oldest detailed map of the area around Radley Farm is the Rocque Map of Berkshire, a portion of which is shown in figure 3.6 showing the area around Radley Farm in 1761. Figure 3.7 shows a portion of the Ordnance Survey map of the Lambourn Area from 1812. Later Ordnance Survey Maps of 1878, 1898 and 1960 were also used to describe within this section of the report how the landscape surrounding Radley Farm has evolved over time, and to highlight developments that may have impacted features associated with the Roman Road to Bath.



Figure 3.6 A portion of The Rocque Map of Berkshire showing the area around Radley Farm in 1761 (Published by the British Library)



Figure 3.7 Ordnance survey – Lambourn Area, 1812. (Published by the British Library)

The terrain through which the agger of the Roman Road passes, from Memorial Cross along the northern boundary of Oaken Copse and through Hanger Heath Copse, appears to have changed little since 1761. Hanger Heath Copse appears to have been sustained as ancient woodland all the way to Radley Bottom, which probably accounts for the good level of preservation of features of the Roman Road along this stretch of its route as noted in the HERs relating to this area.

In 1761 it can be seen that Stibbs Wood was much larger than at present, extending all the way east to Radley Farm itself. However by 1812, the width of Stibbs Wood was significantly reduced by as much as 60m on its east side to its present day east facing tree line. The impact of this clearance could explain why the earthworks of the Roman Road survive on the west side of Stibbs Wood, but not on its east side. When the eastern margin of Stibbs Wood was cleared between 1761 and 1812 to this extent, it is likely that, given the shallow depth of the topsoil here (as seen in figure 2.2), the removal of tree roots and subsequent deep ploughing would have had a catastrophically destructive effect on the remains of the Roman Road. Between 1812 and 1878 the easterly part of Stibbs Wood was returned to woodland to the present day extent.

HERs MWB18896 and MWB17199 suggest that the present day Radley Farmhouse was constructed during the 17th century AD, with possible earlier Tudor origins. The 1761 Roque Map shows the entrance to Radley Farm ran from Radley Bottom up the steep escarpment via the oblique terrace attributed to the Roman Road. The present north-south driveway from Denford Lane does not appear on maps until 1812. So if the oblique terrace was originally a feature of the Roman Road, it continued to be used for a considerable period of time from when Radley Farm was built, and would probably have been modified, re-metalled and repaired throughout this long period of use. This original drive to Radley Farm appears to have continued past the surviving earthworks of the Roman Road in Stibbs Wood and followed the route of the present-day public footpath through the woods 50m north of the Road's earthworks. The oblique terrace was noted as a feature by Peake when surveying the area in 1905, but he did not mention that it was in use at that time as a route from Radley Bottom up to Radley Farm.

Further complexity on the west side of Stibbs Wood is the chalk quarry seen in figure 2.2, which can first be seen in the Ordnance Survey map of 1878, but could well have been in use for some time prior to this, and from the marks made by modern mechanical machinery has been in continual use up to the present day. The track leading from the Chalk Quarry on the western edge of Stibbs Wood, running south-west obliquely down the terrace to the Radley Bottom road appears only in the 1:10,000 OS map published in 1960 and is shown in figure 3.8. It was most likely used to transport quarried material.

Figure 3.9 shows another bank/terrace leading from the quarry to Radley Bottom further north and in addition to the oblique terrace of the Roman road/original farm driveway which may also have been used to transport quarried material, or could be lynchets relating to field systems to the north and west of this location. There are also two further banks/lynchets to the south of and on the same alignment as the Roman Road's oblique terrace, the purposes of which are not clear.

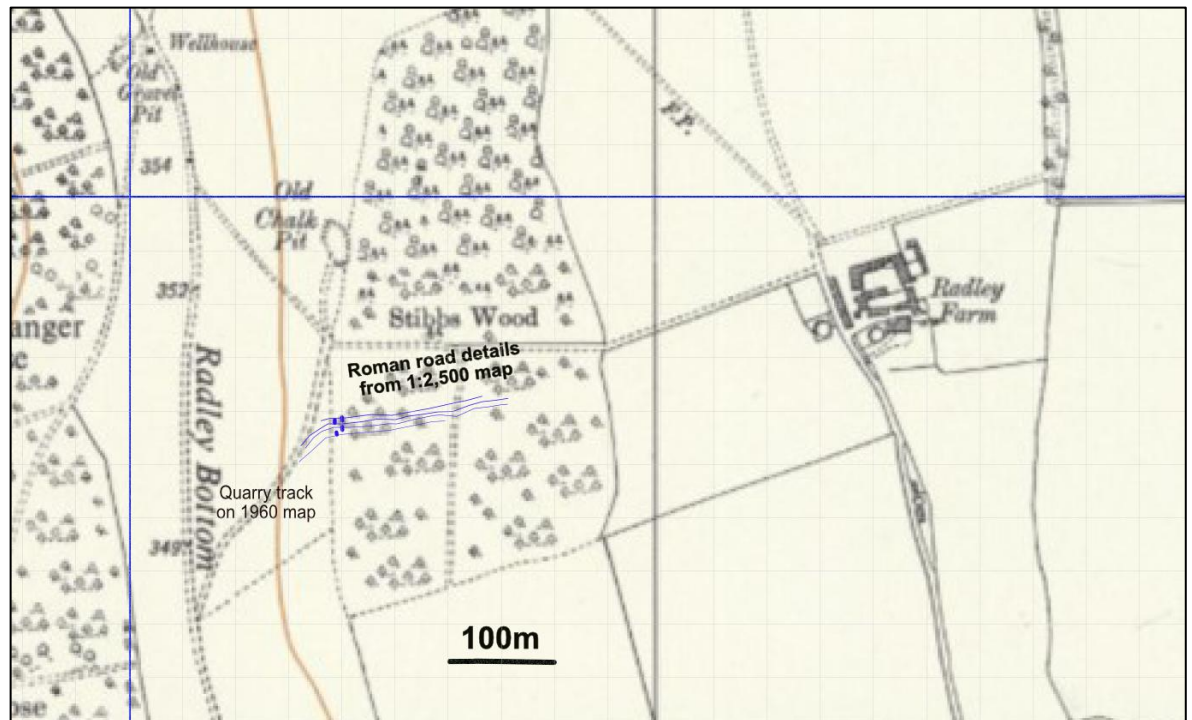
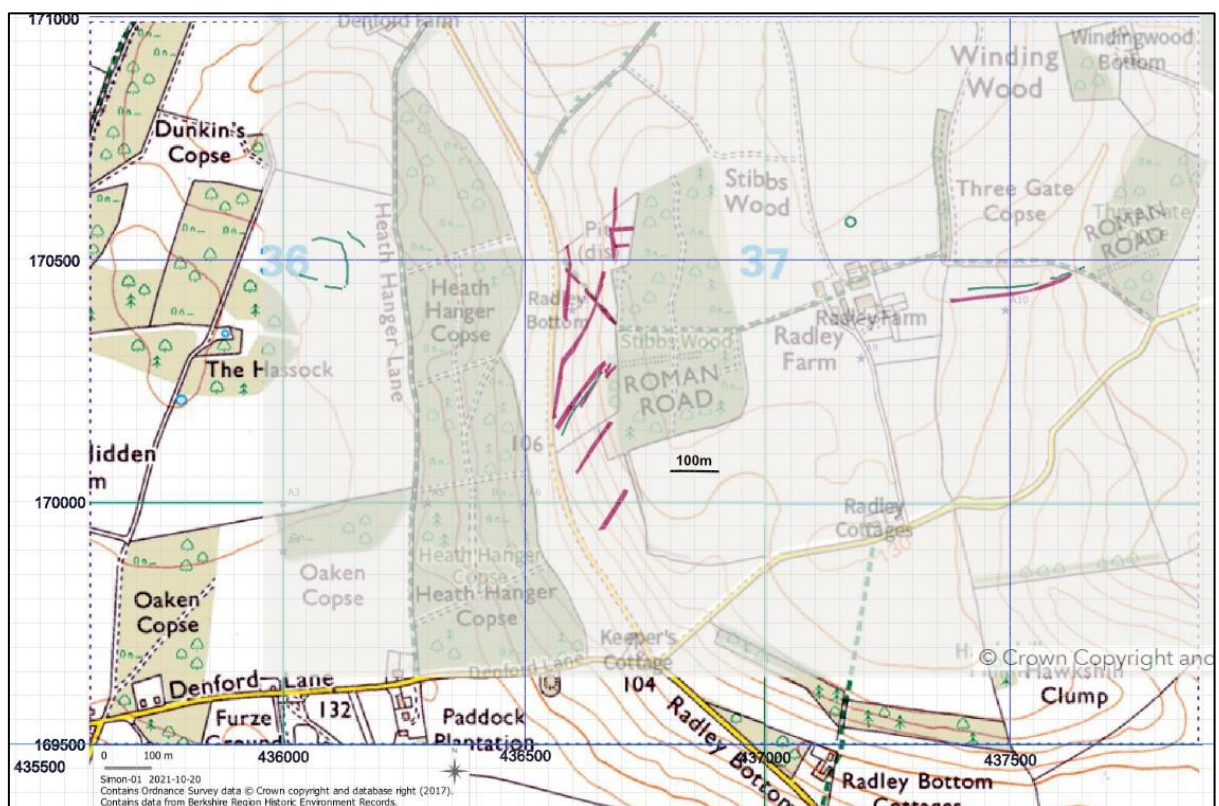


Figure 3.8 Ordnance Survey 1:10,000 1960 (Reproduced with the permission of the National Library of Scotland)



Red = bank, Green = ditch.

Figure 3.9 Additional features on the steep escarpment by Radley Bottom (Historic England Aerial Archaeology Mapping Explorer, Dec 2021)

KINTBURY
Acres 7777-874

Hump in road (= Roman Road crossing?)
Williams 1925

Aggar and ditches still clearly visible

Old field boundary aligns with Roman Road

On the east side of Radley Farm in 1761 Winding Wood reached to within 60m of the farm buildings, but by 1812 the western margin of Winding Wood had already been cleared some 100m further to the east, and by 1878 Three Gate Copse can be recognised as one of the few surviving parts of the once extensive woodland of Winding Wood.

Figure 3.9 shows an east-west aligned crop mark forming a gentle curve about 250m long to the south-west of Three Gate Copse which was seen in a 1946 aerial photograph (RAF 106G/UK/1406/3182 11-APR-1946). This has been interpreted as a ditch with another ditch just to its north. It is probable that the remains of the Road survived the clearing of the woodland better in this area due to the greater depth of topsoil over the underlying chalk, or that the road crossed a hollow which was filled in when the woodland was cleared. The crop mark aligns with the surviving earthworks of the Roman Road seen within Three Gate Copse.

Figure 3.11 is based on the OS 1:2,500 map of 1980 and charts in fine detail the positions of the agger and ditches of the surviving earthworks of the Roman Road found in Three Gate Copse and Stibbs Wood. Within Three Gate Copse the Road is shown as a single agger with a ditch on either side. However within Stibbs Wood the earthworks are seen to be three parallel banks separated by ditches.

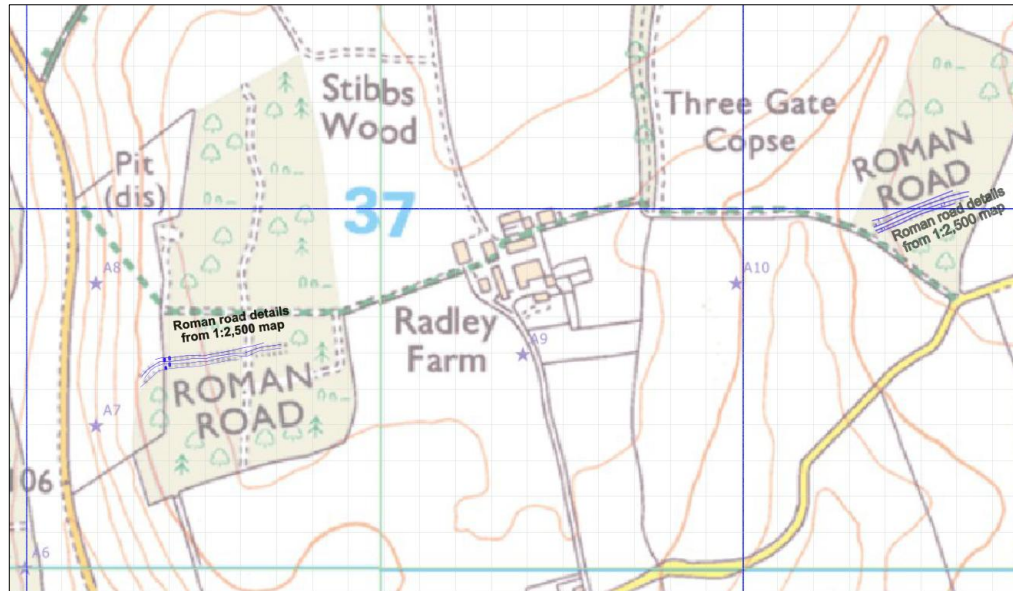


Figure 3.11 Roman Road details copied from 1:2,500 1980 Ordnance survey map

Also in figure 3.11, the orientation of the Roman Road's earthworks in Three Gate Copse is seen to be twisted some 10 degrees anticlockwise to the orientation of those in Stibbs Wood. Considering the alignments of field boundaries to the east and west of Radley Farm as already described, it has been suggested that the Roman Road to Bath consisted of two straight sections in this neighbourhood, Peaked Lot to Oaken Copse in the west and that containing the earthworks in Three Gate Copse to the east, which happen to transect near to the southeast corner of present day Stibbs Wood. The detour to the north through Stibbs Wood, to use the oblique terrace with a reduced gradient up the steep escarpment from Radley Bottom, was superimposed on the original pattern of two straight sections. It rejoined the original alignment at the edge of present day Three Gate Copse, see figure 3.12

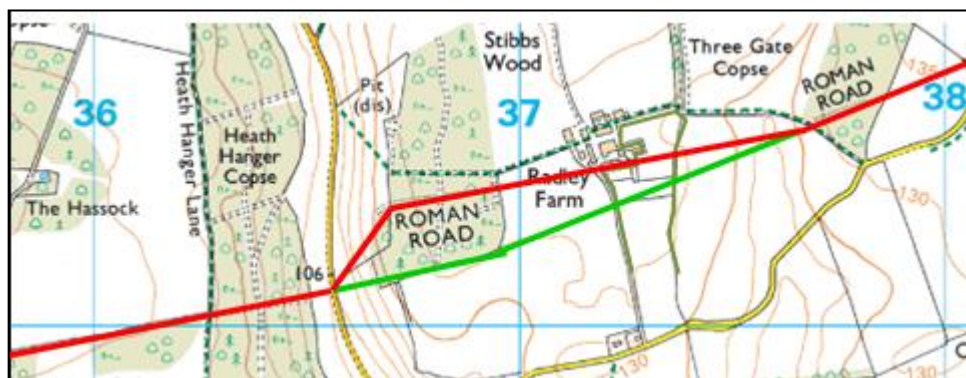


Figure 3.12 Extrapolation of present day field boundary alignments alongside extrapolations of the surviving earthworks of the Roman Road

That the alignment of the earthworks within Three Gate Copse when projected eastwards would take the route of the Road to the north of Wormstall House through the area of permanently boggy ground on Wormstall Estate suggests further deflections from the simple projection were required. See section 3.4 which discussed the significance of the topological surveys carried out by BAS in 2021.

This project also examined satellite images from Google Earth Pro which provides historical imagery as far back as 2003 and provides a useful record of agriculture usage of the land e.g. the extensive pig farming that took place on Radley Farm. Such usage can leave lasting features on the landscape. Other than the possible impacts of pig farming, the satellite images did not reveal any features attributed to the Road that have not been described elsewhere.

Quarry pits created when extracting the local material used for a road's metalling have been frequently observed to be a diagnostic landscape feature useful in locating the routes of Roman roads. Satellite images taken with a low sun angle can be useful in identifying such features.

The numerous small depressions seen across the landscape surrounding Radley Farm show little correlation with the expected route taken by the Roman Road and may simply indicate natural solution holes. See figure 3.13.

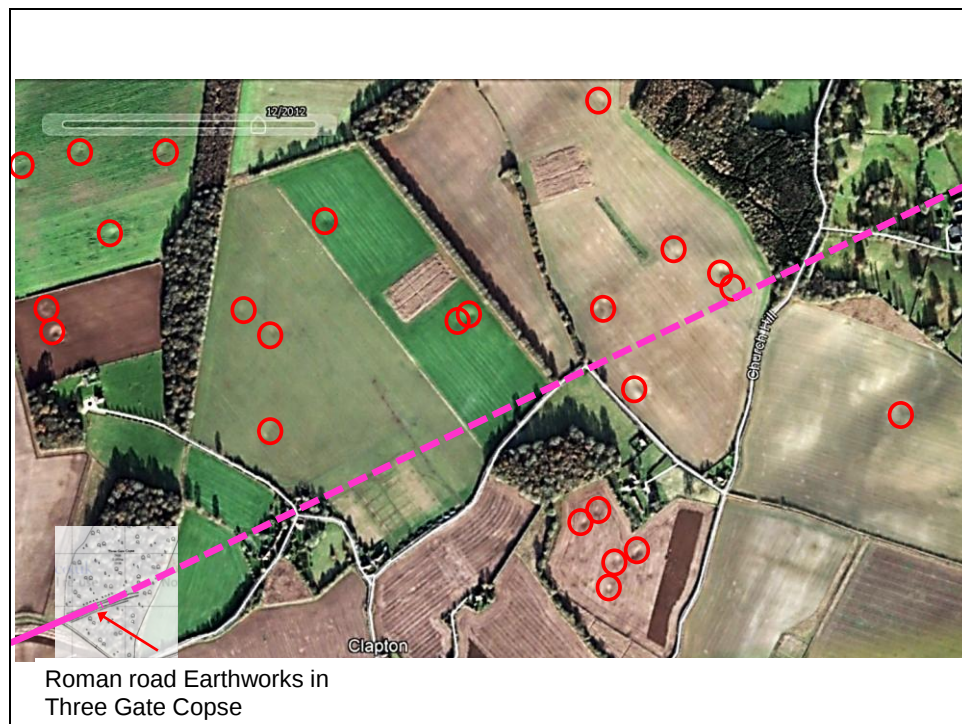


Figure 3.13 Satellite image of area between Three Gate Copse and the Wormstall Estate in low angle light to highlight possible quarry pits (Google Earth Pro)

At the time of writing, the Environment Agency National LiDAR Programme does not have full coverage over the study area, and only extends north to touch the southern edge of Three Gate Copse. Various processing models have been used to create informative images from this data, such as local relief, illumination from different azimuths, and sky view factor. The LiDAR data is shown below, with the data limit to the north, and the Ordnance Survey map for reference.



Figure 3.14. LiDAR northern illumination of the area of Radley Farm

The lineation from the south-west corner of the map to Heath Hanger Copse is clear and continuous on the LiDAR data, even across the field which has no field boundary on any Ordnance Survey map, strengthening the argument for a Roman Road. It is broader than the field boundaries, which would have only been a single hedge width, and corresponds with some of the antiquarian reports.

The LiDAR data also shows the multiple terraces/lynchets running obliquely up the hill slope west of Stibbs Wood; the southern terrace being the course thought likely to have been taken by the Roman Road. The details of the mapped Roman Road in the western half of Stibbs Wood are very clear on the LiDAR, but it can also be traced further east through the woods on LiDAR than is shown on the OS maps. There is no obvious indication in the LiDAR data of any Roman Road between the preserved sections in Stibbs Wood and Three Gate Copse.

4 Project Objectives

The objectives of this project are to:

- Carry out gradiometer and earth resistance geophysics surveys in the fields to the west, south and east of Stibbs Wood and in fields to the west and south of Three Gate Copse in order to capture the characteristic “signature” of anomalies close to the known location of the Roman Road to Bath. Carry out earth resistance surveys in areas within Stibbs Wood and Three Gate Copse where earthworks of the Roman Road survive best.
- Carry out gradiometer and earth resistance geophysics surveys in the fields/pastures between Stibbs Wood and Three Gate Copse in order to assess the level of deterioration in the Road’s “signature” anomalies as it passes across a varied modern agricultural landscape and consequently to evaluate the feasibility using this method to trace the lost section of the Road to the east of Three Gate Copse.
- Carry out wider gradiometer and earth resistance geophysics surveys to check for evidence of any pre-existing routes of the Roman Road up the slope from Radley Bottom to Three Gate Copse, and also look for evidence of settlement in this area associated with the Road.

The area of Radley Farm has been broken into a number of distinct areas based on differing topology or usage as can be seen in figure 4.1 which are individually described in section 6.

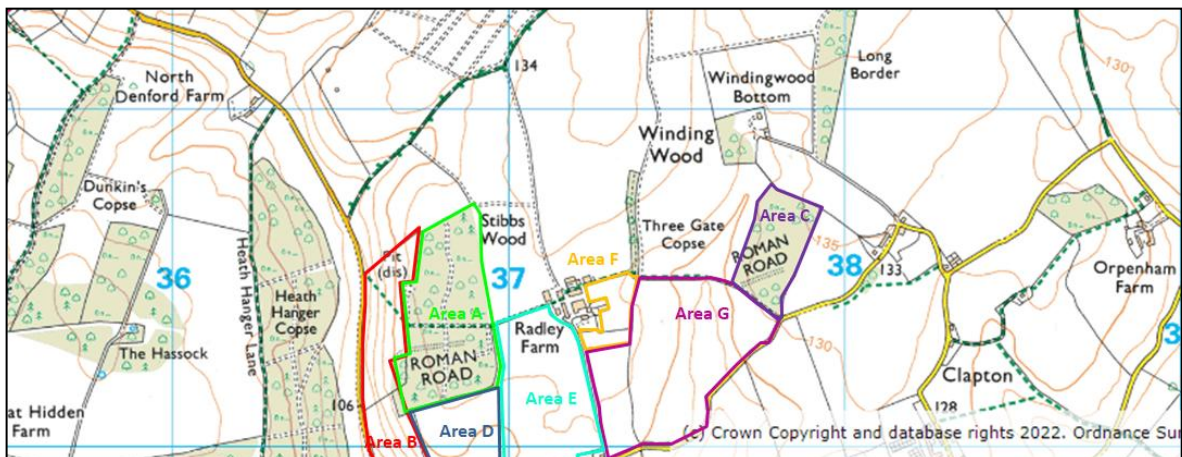


Figure 4.1 Assigned areas of interest to be surveyed on Radley Farm

5 Field Methodology

This project carried out a geophysics survey of the area immediately surrounding and within Stibbs Wood and Three Gate Copse, and some other fields on Radley Farm over which the Roman Road to Bath is thought to have passed.

5.1 Introduction

A primary objective of this work package is to determine the earth resistance and gradiometer “signatures” of the surviving fabric of the Road and its features within the local landscape across areas of different agricultural usage. Then, these results can be used by subsequent projects to locate the route of the lost section of the Road eastward from Three Gate Copse towards Ermin Street.

Figure 5.1 shows examples of the results expected for a typical well preserved section of Roman road using gradiometer and earth resistance survey methods for which the results from both instruments have been superimposed: in the upper image captured using a gradiometer, the road’s characteristic parallel ditches can be clearly seen; in the lower image captured using an earth resistance meter, the high resistance agger can be seen between the parallel low resistance infill of the Road’s ditches.

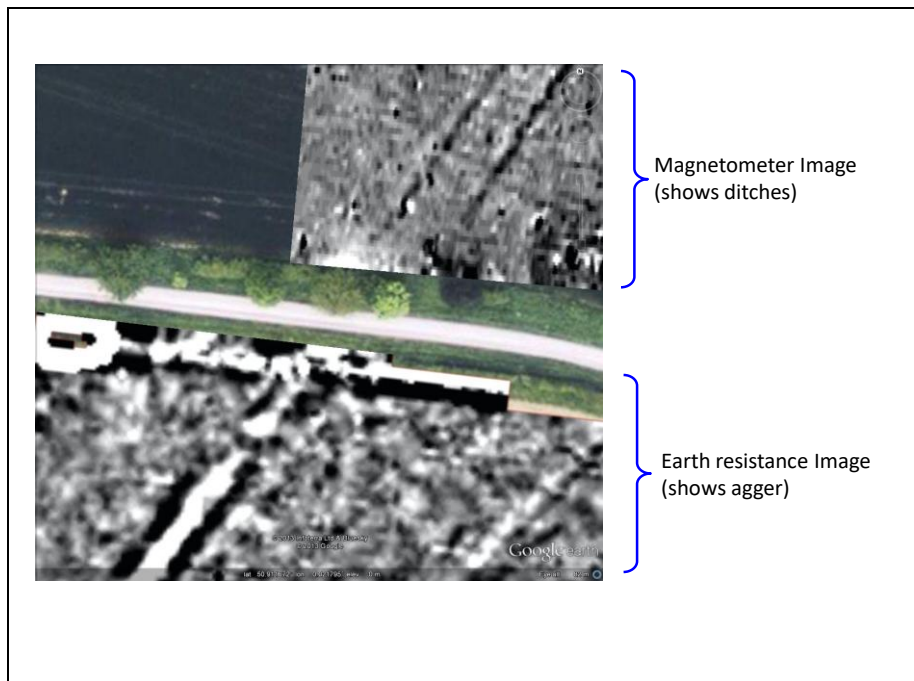


Figure 5.1 An example of how anomalies of a Roman road can be revealed by gradiometer and earth resistance geophysics analysis (Millum 2018)

This field project deployed a Bartington 601 gradiometer and a Frobisher TAR3 earth resistance meter using 20m x 20m grids aligned with the British National Grid at fixed reference points on the Ordnance Survey map as detailed within Appendix 3.

The survey results were processed using Snuffler (Sussex 2006) and interpreted with the aid of visualisations created using Affinity Designer.

6 The geophysics surveys

Seven areas of Radley Farm were surveyed as shown in figure 4.1. These were:

- **Area A - Stibbs Wood.** Much of this area has been woodland at least as far back as 1761, although by 1812, as described in section 3.5, the width of Stibbs Wood was significantly trimmed back by as much as 60m on its east side to its present day east facing tree line. The landowner remembers the entire wood being completely felled not long after WW2 and subsequently regrown.
- **Area B - Pasture west of Stibbs Wood.** This area features a steep escarpment running down to Radley Bottom, and although it has been ploughed in the past, it is currently maintained as pasture for sheep and to provide cover for game birds. As described in section 3.5, the oblique terrace track way down the escarpment to Radley Bottom thought to have been the route of the Roman Road can be seen to have also been the main route of entry to Radley Farm up to the early 1800s. There is a chalk quarry located at the northeast of this area at the edge of Stibbs Wood. Figure 3.8 shows a number of banks/lynchets running parallel to the oblique terrace of the Roman Road.
- **Area C - Three Gate Copse.** As described in section 3.5, this is one of the few areas to have remained wooded since at least 1761. Well preserved remains of the Roman Road can be found in the southwest of this woodland.
- **Area D – Field south of Stibbs Wood.** This field has been cleared since at least 1812. It has a flat topology, shallow topsoil and clay soil with flint. In recent times it has been used for arable crops and the rearing of sheep.
- **Area E - Field east of Stibbs Wood.** As described in section 3.5, in 1761 this area formed part of Stibbs Wood right up to the farm buildings, but was cleared before 1812. It has a flat topology, shallow topsoil and clay soil with flint. In recent times it has been used for arable crops and the rearing of sheep.
- **Area F - Pasture east of Farmhouse.** This field has been cleared since at least 1761 and is presently used for the rearing of sheep. It has a flat topology, shallow topsoil and clay soil with flint. This field has been installed with deep drains, and is also the location of sump/cisterns for the farm buildings.
- **Area G - Field southwest of Three Gate Copse.** As described in section 3.5, this field was progressively cleared of woodland from 1761 to 1878. It has a moderately undulating topology described by Williams as a “dip”, with deeper clay-with-flint topsoil compared to fields further to the west of the farm. In the 1990s this field was used extensively for pig farming, but is now used for arable crops, sheep and cover for game birds.

A survey grid was established in each area typically as a rectangular array of control points defining the positions of 20m x 20m data collection grid squares. All of the squares were surveyed with a Bartington 601 dual sensor gradiometer or a Frobisher TAR-3 earth resistance meter. The results were processed using Snuffler software and the resulting geophysics plots reviewed for anomalies.

For each of the seven areas, an image stack was produced which recorded: the location of the survey grid, the files of geophysics data collected from the grid, the resulting geophysics plots, and the anomalies which may be evidence of human activity. The details of the geophysics survey results may be found in Appendix 2.

The rest of this section identifies the anomalies found in the seven areas as shown together in figure 6.1

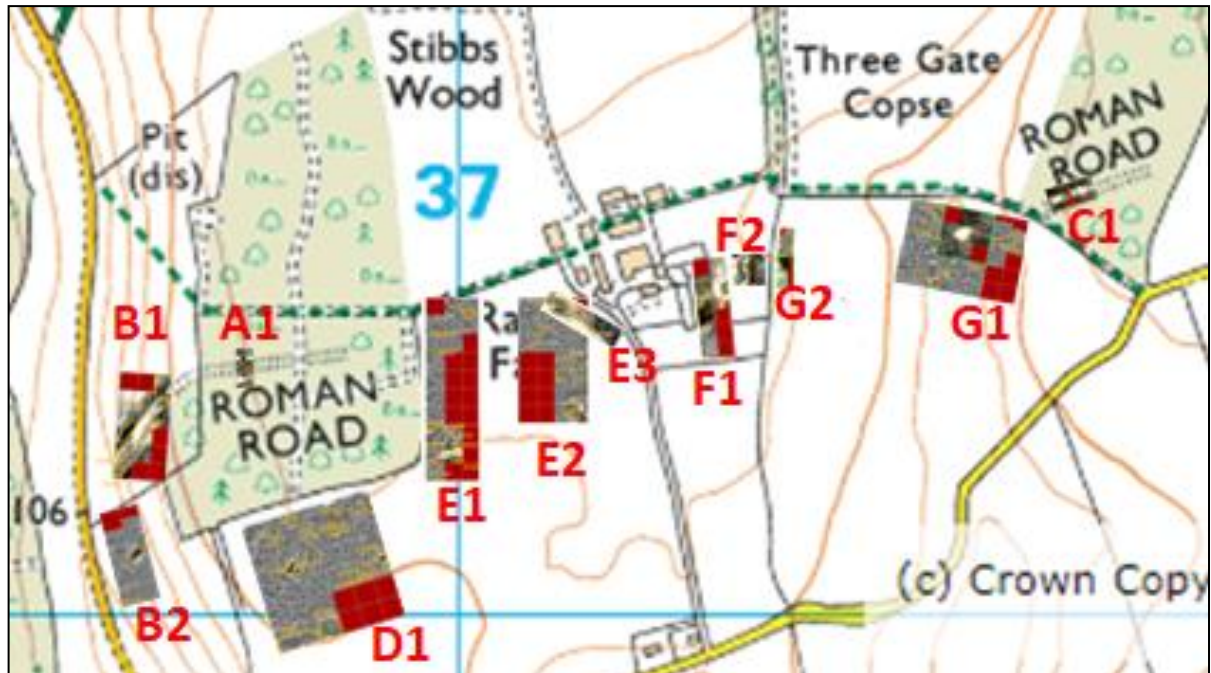


Figure 6.1 All areas surveyed on Radley Farm

6.1 Area A

The portion of Area A that was surveyed and denoted as Area A1 lay across the three parallel road ridges running east to west separated by two ditches; see figure 6.2. Two survey grids were positioned with their adjoining line approximately along the centre of the middle ridge.

6.1.1 Area A1 earth resistance survey:



Figure 6.2 The Area A1 earth resistance anomalies

The earth resistance anomalies identified in the results for Area A1 were:

- **A1R1 and A1R2:** an elongated anomaly of high resistance, 3m-5m wide, associated with the northerly of the three E-W ridges.
- **A1R3 and A1R4:** anomalies of low resistance, 3m x 1m and 8m x 5m respectively, associated with the ditch between the northerly ridge and the central ridge.
- **A1R5:** an elongated anomaly of high resistance, 4m-6m wide, associated with the southerly of the three E-W ridges and positioned some 17m south of the northerly ridge.
- **A1R6 and A1R6:** circular anomalies, 2m-3m diameter, probably the result of tree throws.

The middle E-W ridge of the Road's earthworks did not contain any high resistance features and is barely distinguishable in resistance from the two parallel "ditches" separating the middle E-W ridge from the E-W ridge to the north (ie A1R1/A1R2) and the E-W ridge to the south (ie A1R5).

6.2 Area B

The portions of Area B that were surveyed are shown in figure 6.3 and 6.4.

6.2.1 Area B1 earth resistance survey

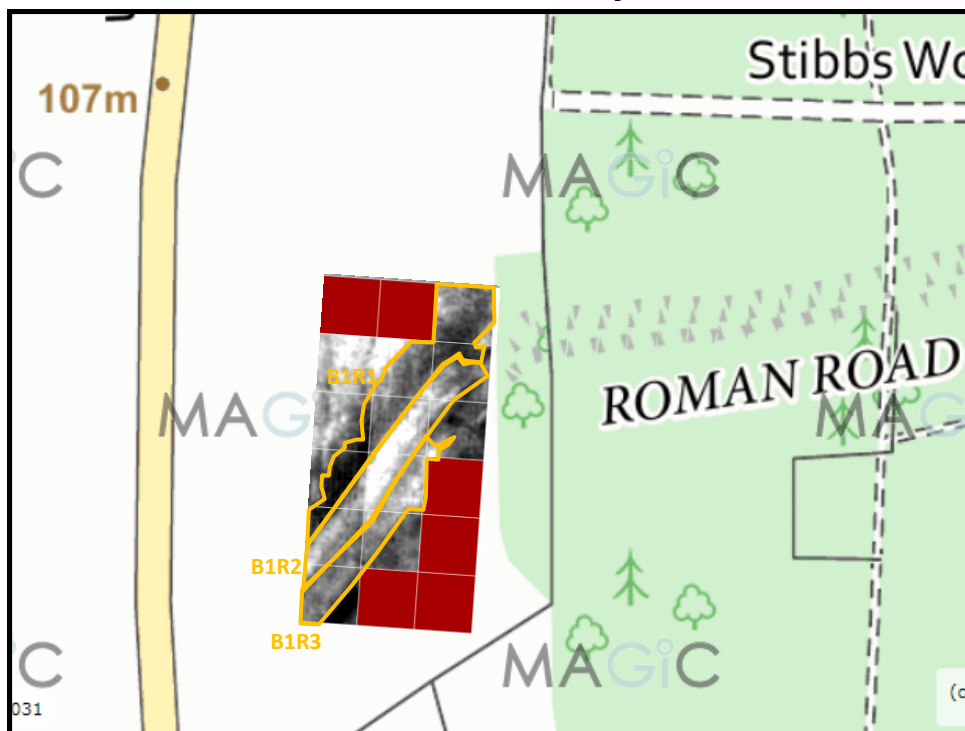


Figure 6.3 The Area B1 earth resistance anomalies

The portion of Area B that was surveyed and denoted as Area B1 lay across the earthworks of a disused terraced track way which exits Stibbs Wood at the top of the steep escarpment, turns to the SW, and runs obliquely down the steep slope to Radley Bottom; see figure 6.3.

The earth resistance anomalies identified in the results for Area B1 were:

- **B1R1:** an elongated anomaly of low resistance, 5m-12m wide, on the north side of the disused terraced track way running from NE to SW. This anomaly probably represents the fill taken from the cut further up the slope and re-deposited to support the central track way.
- **B1R2:** an elongated anomaly of high resistance, 9m-10m wide, associated with the disused terraced track way running obliquely down and across a steep slope from NE to SW. The high resistance of the flat terrace might represent possible metalling of the track way. It starts in the NE corner between two ridges at the top of the slope as the track way, flanked by the two ridges, emerges westwards from Stibbs Wood (see section 6.1 for Area A).
- **B1R3:** an anomaly of high resistance, 3-10m wide, along the cut of the disused terraced track way running from NE to SW. This high resistance could represent the underlying bedrock exposed by the cut into the slope made to create the oblique terrace.

It was observed from vehicle tyre tracks on the open grass pasture that the area of anomaly B1R2 is still the “route of choice” up this steep slope used by farm vehicles.

6.2.2 Area B2 gradiometer survey

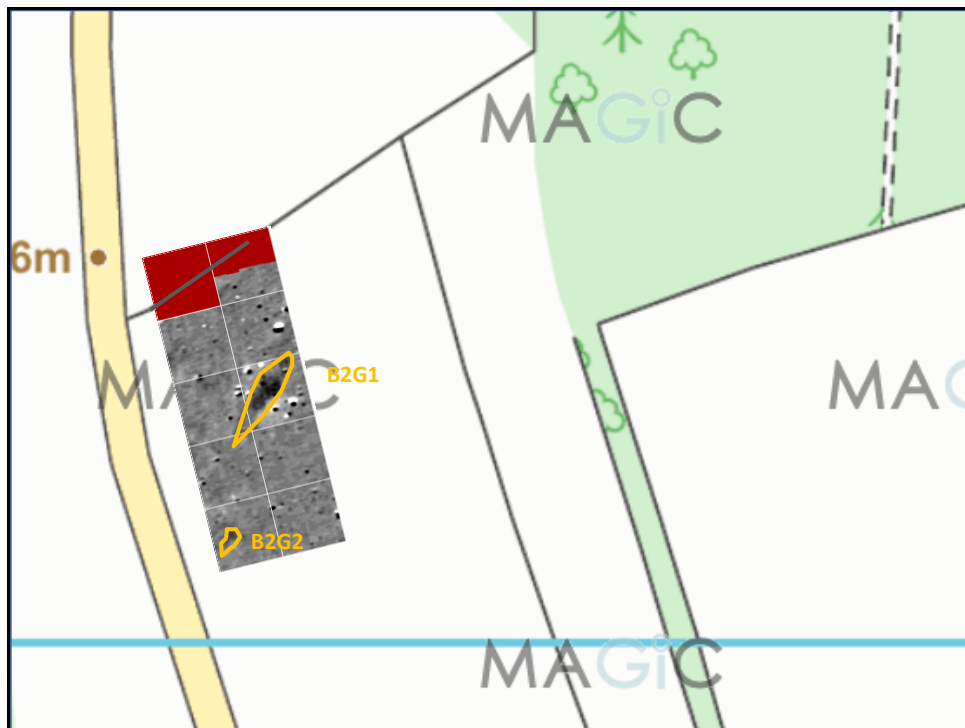


Figure 6.4 The Area B2 magnetic field anomalies

The portion of Area B that was surveyed and denoted as Area B2 lay across both the extended alignment of the southern tree line of Stibbs Wood and the remains of the Roman Road to Bath west of Radley Bottom to Peaked Lot (see figure 4.1), and is presented in figure 6.4. It has been proposed that this may have been the route of an early phase of the Roman Road that ran straight down the slope to Radley Bottom before a later phase in which the oblique terrace in Area B1 was constructed.

The magnetic field anomalies identified in the results for Area B2 were:

- **B2G1:** an elongated anomaly of high positive magnetic response, 30m x 7m in size, aligned approximately parallel to the terraced track way in Area B1. This anomaly may be associated with one of the banks/lynchets observed from aerial photography as shown in figure 3.8.
- **B2G2:** an anomaly of high positive magnetic response, 2m x 5m in size.

6.3 Area C

The portion of Area C that was surveyed and denoted as Area C1 lay across the Roman Road's linear earthworks within Three Gate Copse which feature an agger ridge with parallel ditches to each side; see figure 6.5. The survey grids were positioned so that they were approximately centred together over the linear ridge.

6.3.1 Area C1 earth resistance survey:

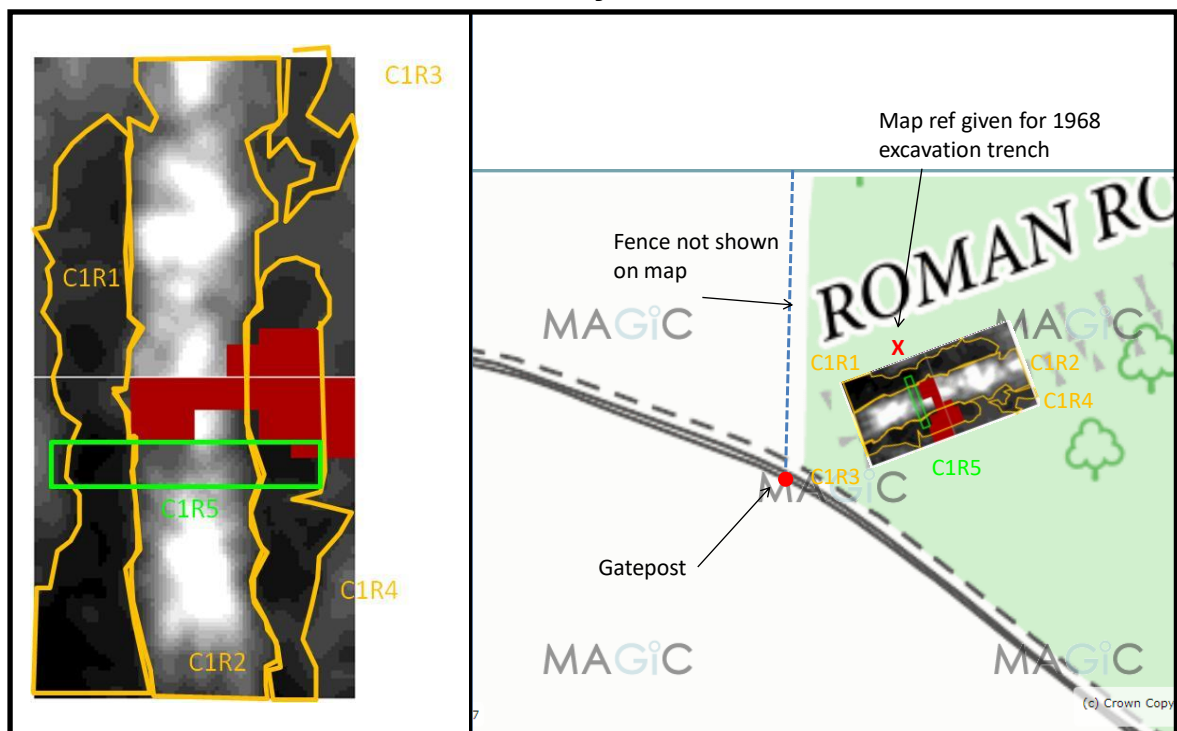


Figure 6.5 The Area C1 earth resistance anomalies

The earth resistance anomalies identified in the results for Area C1 were:

- **C1R1:** a linear anomaly of low resistance, 3m – 4m wide, consistent with the ditch running on the north side of the linear earthwork ridge. This feature is thought to be the remains of the Roman Road's northern ditch.
- **C1R2:** a linear anomaly of high resistance, 8m wide, consistent with the linear earthwork ridge running through the wood. This feature is thought to be the remains of the Roman Road's agger.
- **C1R3 and C1R4:** linear anomalies of low resistance, 2m – 4m wide, consistent with the ditch running on the south side of the linear earthwork ridge. Together these features are thought to be the remains of the Roman Road's southern ditch

- **C1R5:** an anomaly of lower resistance cutting across the Road's agger ridge consistent with the estimated position of the 41' x 8' trench, which was excavated in 1968 and subsequently refilled as referenced in the excavation report.

6.4 Area D

The portion of Area D that was surveyed and denoted as Area D1 lay to the south of Stibbs Wood close to the crest of the steep slope down to Radley Bottom; see figure 6.6.

6.4.1 Area D1 gradiometer survey:

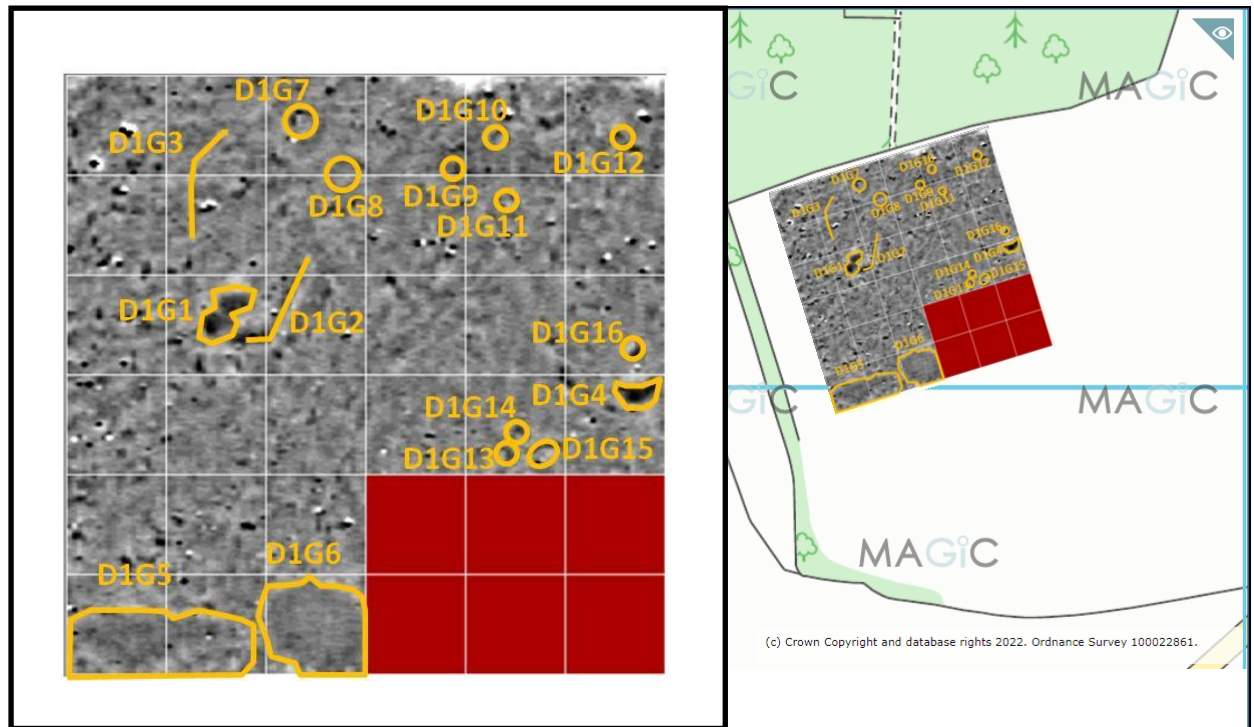


Figure 6.6 The Area D1 magnetic field anomalies

The magnetic field anomalies identified in the results for Area D1 were:

- **D1G1:** an anomaly of high positive magnetic response, 10m x 4m in size, co-located with a sheep water trough visible in satellite images from 2007-2012.
- **D1G2:** a rectilinear anomaly, 15m x 2m in size, possibly an overflow run off for waste water associated with the D1G1 sheep water trough anomaly.
- **D1G3:** a curvilinear anomaly with a negative magnetic response, possibly an in-filled trench associated with the D1G1 water trough.
- **D1G4:** an anomaly of high positive magnetic response, 8m x 3m in size, co-located with a sheep water trough visible in satellite images from 2007-2012.
- **D1G5:** an oblong area of notable sterile response, 35m x 12m in size, surrounded by a negative magnetic anomaly.
- **D1G6:** a roughly circular area of notably sterile response, 20m x 20m in size, surrounded by a negative magnetic anomaly.
- **D1G7 to D1G15:** a number of circular anomalies, possibly tree throws.

6.5 Area E

The portion of Area E denoted as Area E1 lay directly to the east of Stibbs Wood across the route the Roman Road to Bath must have taken between its surviving earthworks in Stibbs Wood and Three Gate Copse. This survey area was extended to the south to assess whether road related anomalies could be found along the alignment between the Roman Road near to Peaked Lot and the field and woodland boundaries extant in 1878 on Radley Farm as shown in figure 3.9.

The portion of Area E denoted as Area E2 lay further to the east, closer to the main N-S contemporary driveway to the farm. This was also extended to the south for the same reason as Area E1.

Areas E1 and E2 can be seen in figure 6.7.

The portion of Area E denoted as Area E3 overlay part of Area E2 as shown in figure 6.8, but due to the limited access imposed by the turnip crop at the time of survey, was angled to maximise the utilisation of unplanted ground on the field's eastern boundary.

6.5.1 Areas E1 and E2 gradiometer surveys:

The gradiometer survey was undertaken in two parts: Area E1 to east of Stibbs Wood and Area E2 to the west of the contemporary driveway to the farm.

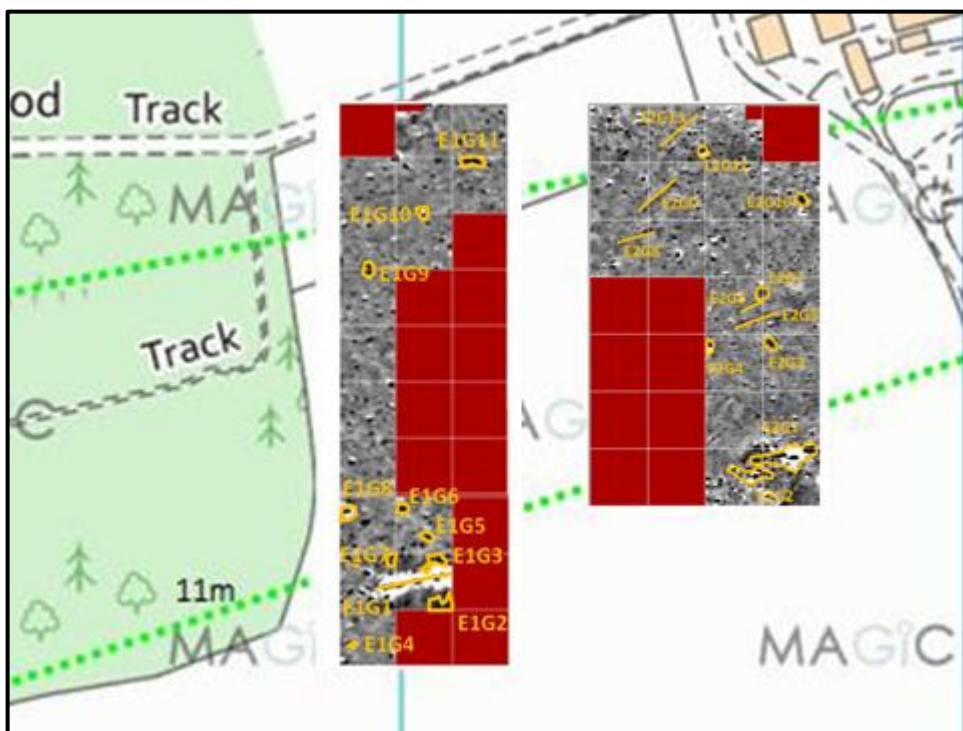


Figure 6.7 The Areas E1 (left) and E2 (right) magnetic field anomalies

The magnetic field anomalies identified in the results for Area E1 were:

- **E1G1:** a linear anomaly of high negative magnetic response, 25m long, running E-W that also created magnetic interference. This is thought to be the remains of a field boundary which was removed by the farmer who remembers burying some of the iron fence posts that were difficult to remove. The remains of one such fencepost was visible on the surface of the field.

- **E1G2 and E1G3:** anomalies of high positive magnetic response, measuring 7m x 3m, close to E1G1. These anomalies could also be associated with buried remains of the field boundary fence.
- **E1G4 to E1G8:** small anomalies of high positive magnetic response, 2-3m x 2-3m in size, positioned in a cluster at the southern end of Area E1.
- **E1G9 to E1G11:** a cluster of anomalies of high positive magnetic response, 2-3m x 2-5m in size, positioned around the northern end of Area E1.

The magnetic field anomalies identified in the results for Area E2 were:

- **E2G1:** an anomaly of high positive magnetic response, 20m x 7m in size, that is probably also associated with the remains of the field boundary seen at the southern end of Area E1 (E1G1).
- **E2G2:** an anomaly of high positive magnetic response, 15m x 5m in size, close to E2G1 that is probably also associated with the remains of the field boundary seen at the southern end of Area E1.
- **E2G3, E2G4, E2G7, E2G10 and E2G12:** small anomalies of high positive magnetic response, 2m x 3m in size.
- **E2G5 and E2G6:** faint approximately parallel linear anomalies, 8m and 12m in length, running SW to NE positioned 5m apart. These features are some distance away from the expected route of the Roman Road and with a different orientation.
- **E2G8:** a linear anomaly, 8m long, running SW to NE. This feature is some distance away from the expected route of the Roman Road and has a different orientation.
- **E2G9 and E2G13:** faint approximately parallel linear anomalies, 15m in length, positioned 12m apart and offset by 15m running SW to NE. Although positioned close to the expected route of the Roman Road, both these anomalies have a markedly different orientation that expected of the Roman Road.

6.5.2 Area E3 earth resistance survey:

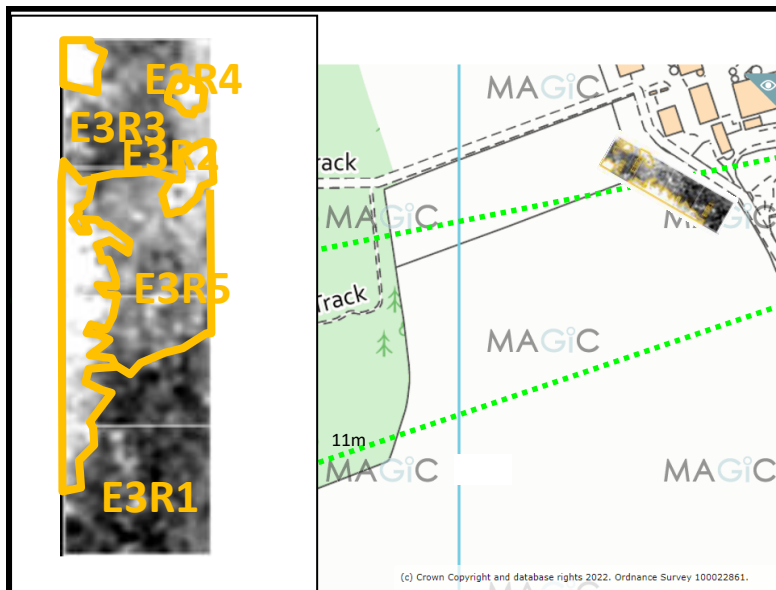


Figure 6.8 The Area E3 earth resistance anomalies

The earth resistance anomalies identified in the results for Area E3 were:

- **E3R1 and E3R3:** anomalies showing areas of high resistance that correspond to the ingress of the turnip crop planted in the field at the time of survey. These anomalies are assumed to be noise created by the effect of this crop.
- **E3R2:** an anomaly of high resistance, 3m x 10m in size, but not located close to the projected route of the Roman Road between its two surviving earthworks.
- **E3R4:** an anomaly of high resistance, 3m x 3m in size, but not located close to the projected route of the Roman Road between its two surviving earthworks.
- **E3R5:** an anomaly of moderate resistance, 25-30m wide, along the projected route of the Roman Road between its two surviving earthworks. This could be interpreted as an area of dispersed agger, but this anomaly could equally be geological in nature.

6.6 Area F

The portion of Area F denoted as Area F1 lay to the west of this pasture close to the farmhouse as seen in figure 6.10 across the route the Roman Road to Bath must have taken between its surviving earthworks in Stibbs Wood and Three Gate Copse.

The portion of Area F denoted as Area F2 lay at the eastern edge of the pasture adjacent to Area G; see figure 6.9.

6.6.1 Area F2 Gradiometer survey:

The gradiometer survey was undertaken in Area F2 on the eastern side of the pasture adjacent to Area G.

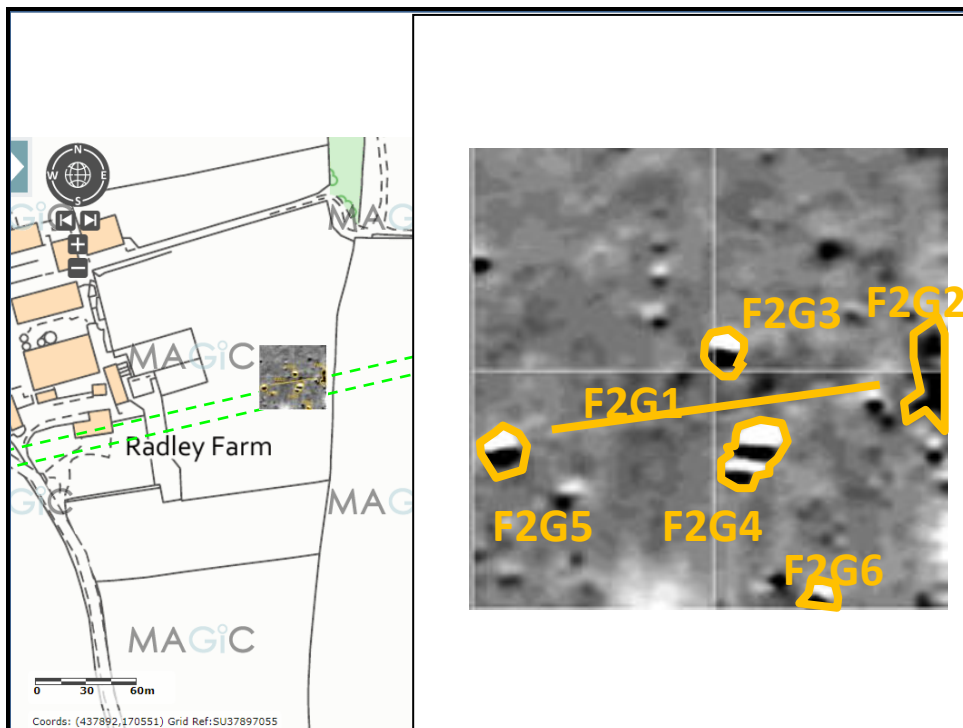


Figure 6.9 The Area F2 magnetic field anomalies

The magnetic field anomalies identified in the results for Area F2 were:

- **F2G1:** a linear anomaly running E-W showing a faint negative magnetic response, 30m long, that aligns with a drain trench dug in 2020 visible on the surface of the pasture; see figure 6.10.
- **F2G2:** an anomaly with a strong positive magnetic response, 7m x 3m in size, that aligns to a sump dug at the same time as the trench F2G1.
- **F2G3 and F2G4:** anomalies associated with 1m x 0.75m boulders visible on the surface of the pasture.
- **F2G5 and F2G6:** anomalies showing similar magnetic response to F2G3 and F2G4, so these are probably also associated with boulders below the surface of the pasture.

6.6.2 Areas F1 and F2 earth resistance surveys:

The earth resistance survey was undertaken in two parts: Area F1 at the westerly side of the pasture and the pasture to the south, and Area F2 on the eastern side of the pasture adjacent to Area G.

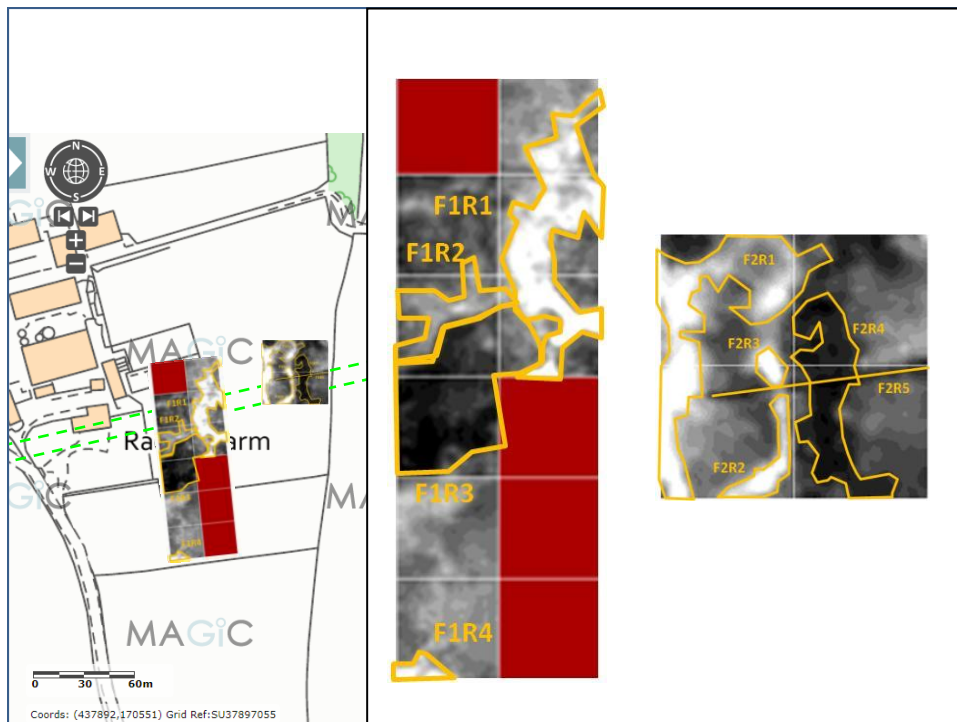


Figure 6.10 The Areas F1 (left) and F2 (right) earth resistance anomalies

In earth resistance anomalies identified in the results for Area F1 were:

- **F1R1:** an anomaly of high resistance, 60m x 20m in size. The presence of iron manhole covers suggests that this is a sump for the network of drains placed across this pasture.
- **F1R2:** an anomaly of medium resistance, 25m x 25m in size, with branching linear features thought to be drains.
- **F1R3:** an anomaly of low resistance, 35m x 30m in size.
- **F2R4:** an area of high resistance, 10m x 3m in size.

In Area F2 the anomalies identified in the results were:

- **F2R1, F2R2 and F2R3:** rectilinear anomalies of high resistance, across an area 40m x 20m. Proximity to F1R1 and the similarity in response makes it likely that these anomalies are also part of the network of drains placed across this pasture.
- **F2R4:** anomaly featuring rectilinear branches of low resistance, across an area 35m x 25m. Possibly trenches dug as part of the network of drains placed across this pasture.
- **F2R5:** linear anomaly of low resistance, 30m long, running E-W. F2R5 aligns with the linear anomaly F2G1 and a drain trench dug in 2020 which is visible on the surface of the pasture in Area F in figure 6.11.



Figure 6.11 Satellite image from July 2020 showing the construction of drains in Area F (Google Earth 2022)

6.7 Area G

The section of Area G which was surveyed and denoted as Area G1 lay immediately to the southwest of Three Gate Copse where the Roman Road to Bath would have crossed as shown in figure 6.12.

The section of Area G denoted as Area G2 lay at the western edge of this field adjacent to Area F along the projected line of the Roman Road as shown in figure 6.14 and figure 6.15.

Initially, a long traverse was surveyed using the gradiometer which proved compromised by interference from overhead high voltage electricity transmission cables; this area of interference was excluded in the southeast of this survey area. It revealed some anomalies which warranted further investigation

However, this initial gradiometer survey for Area G2 could not be resurveyed on a 0deg north alignment due to the overnight installation of an electric sheep fence across Area G2. Moreover, the presence of the turnip crop to the east of Area G2 prevented any further gradiometer survey.

A targeted earth resistance survey was carried out both in Area G2 and on the other side of the fence in Area F2 as covered in section 6.6.

The earth resistance survey of Area G2 was also limited due to the presence of the electric sheep fence, and again the presence of the turnip crop to the east of Area G2 prevented any further earth resistance survey.

6.7.1 Area G1 Gradiometer survey:

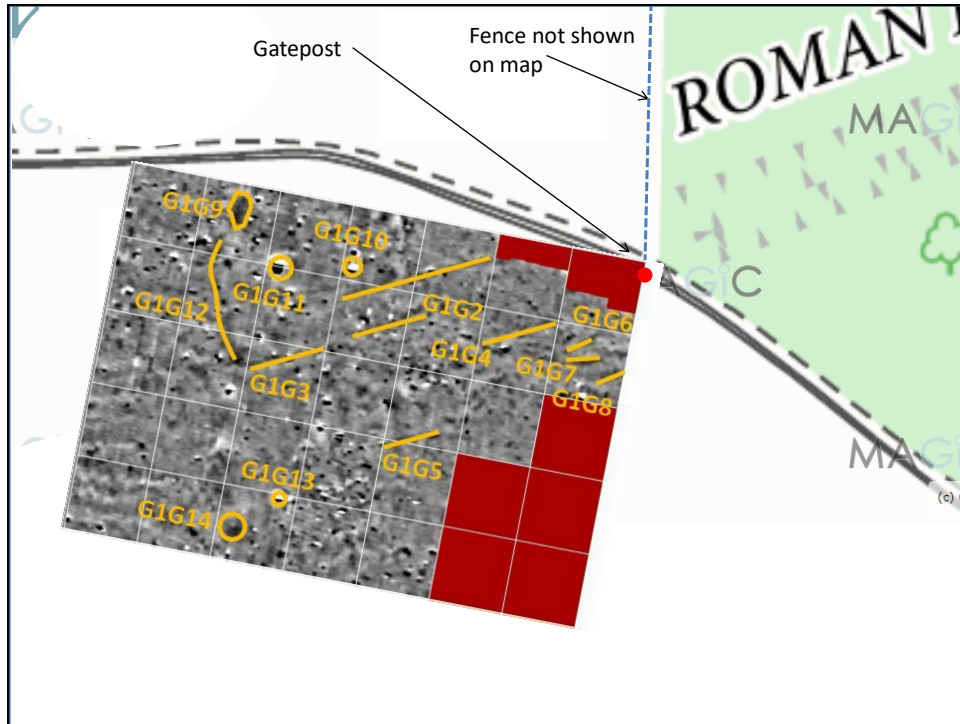


Figure 6.12 the Area G1 magnetic field anomalies

The magnetic field anomalies identified in the results for Area G1 were:

- **G1G1:** a faint linear anomaly of positive magnetic response, 40m long, running E-W. This anomaly runs parallel to anomalies G1G2 and G2G3 at a distance of 9m, and aligns with the surviving earthworks of the Roman Road seen in Three Gate Copse. G1G1 also aligns with the crop marks shown in figure 6.12. Anomaly G1G1 is interpreted as the remains of the northerly ditch of the Roman Road to Bath.
- **G1G2:** a faint linear anomaly of positive magnetic response, 20m long, running E-W. This anomaly runs parallel to anomaly G1G1 at a distance of 9m, and aligns with anomaly G1G3 and with the surviving earthworks seen in Three Gate Copse. G1G2 also aligns with the crop marks close shown in figure 6.12. Anomaly G1G2 is interpreted as the remains of the southerly ditch of the Roman Road to Bath.
- **G1G3:** a faint linear anomaly of positive magnetic response, 19m long, running E-W. This anomaly runs parallel of anomaly G1G1 at a distance of 9m, and aligns with anomaly G1G2 and with the surviving earthworks seen in Three Gate Copse. Anomaly G1G3 is interpreted as the remains of the southerly ditch of the Roman Road to Bath.
- **G1G4:** a faint linear anomaly of positive magnetic response, 18m long, running E-W that is also parallel to anomaly G1G1 at a distance of 21m to the south, i.e. 12m to the south of anomalies G1G2 and G1G3. G1G4 also aligns with the crop marks shown in figure 6.13. This anomaly could possibly be the remains of a flanking

- boundary ditch of the Road itself, or perhaps of a later field boundary aligned to the Road.
- **G1G5:** a faint linear anomaly of positive magnetic response running E-W that is also parallel to anomaly G1G1 at a distance of 40m to the south, i.e. 31m to the south of anomalies G1G2 and G1G3, on the same alignment as G1G8. This anomaly could possibly be the remains of a flanking boundary ditch of the Road itself, or perhaps of a later field boundary aligned to the Road.
 - **G1G6 and G1G7:** two faint linear anomalies of positive magnetic response, 4-5m long, running E-W approximately parallel to anomaly G1G1 but some 40m to the SE. These anomalies align closely with the position of a rectangular group of pig sties visible at this location in satellite images as late as 2004, but which are thought to have been in this position as far back as the late 1990s. Crop marks were visible at the same location at least to 2017 on satellite images.
 - **G1G8:** a faint linear anomaly of positive magnetic response, 5m long, running E-W approximately parallel to anomaly G1G1 at a distance of 40m to the south, i.e. 31m to the south of anomalies G1G2 and G1G3, on the same alignment as G1G5. This anomaly could possibly be the remains of a flanking boundary ditch of the Road itself, or perhaps of a later field boundary aligned to the Road.
 - **G1G9:** an anomaly of positive magnetic response, 3m x 7m in size. This anomaly is possibly associated with anomaly G1G12 which together align with a pig enclosure boundary or track way visible in satellite images from the late 1990s to 2004.
 - **G1G10, G1G11, G1G13 and G1G14:** circular anomalies of high magnetic response, 2m-4m in diameter.
 - **G1G12:** a faint curved anomaly of positive magnetic response, 35m long, running N-S. This anomaly is possibly associated with anomaly G1G9 which together align with a pig enclosure boundary or track way visible in satellite images from the late 1990s to 2004.



Figure 6.13 satellite image of Area G1 showing crop marks aligned to gradiometer anomalies in a crop of full grown maize in Sep 2017 (Google Earth 2022)

6.7.2 Area G1 Earth resistance survey:

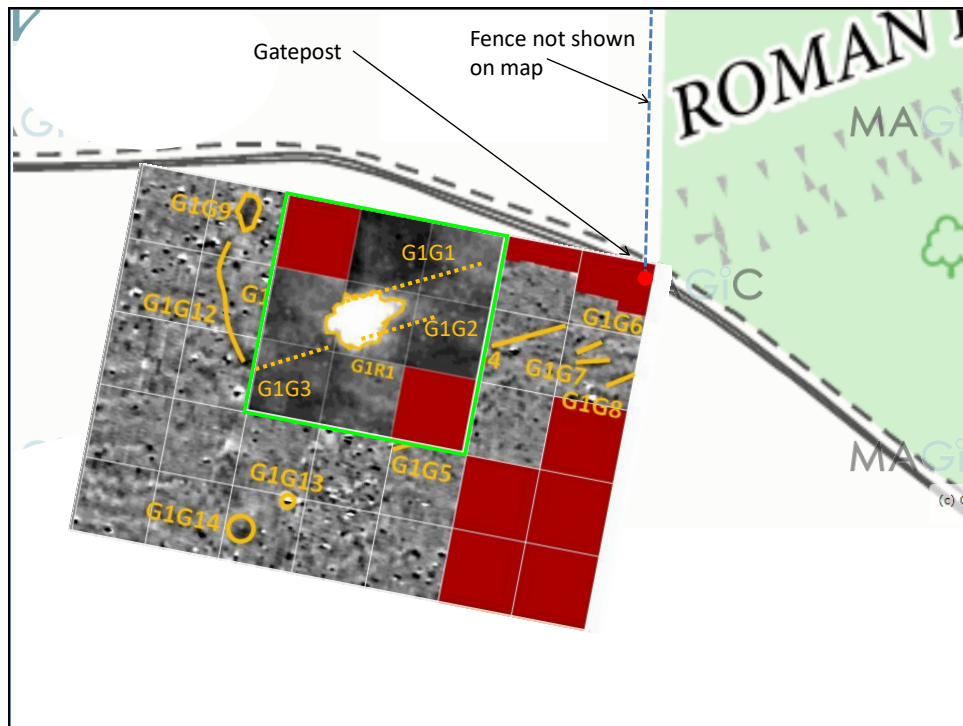


Figure 6.14 the Area G1 earth resistance survey area (highlighted in green) alongside magnetic field anomalies

The sole earth resistance anomaly identified in the results for Area G1 is:

- **G1R1:** an anomaly of high resistance, 15m x 15m in size, that is located exactly between the parallel gradiometer anomalies G1G1 and G1G2/G1G3 which have been interpreted as the ditches of the Roman Road. This anomaly is positioned towards the bottom of a dip in the rolling terrain across Area G1, and may have been protected from the ravages of the plough by an accumulation of hill wash. Anomaly G1R1 is interpreted as a small area of the surviving agger of the Roman Road.

6.7.3 Area G2 Gradiometer survey:

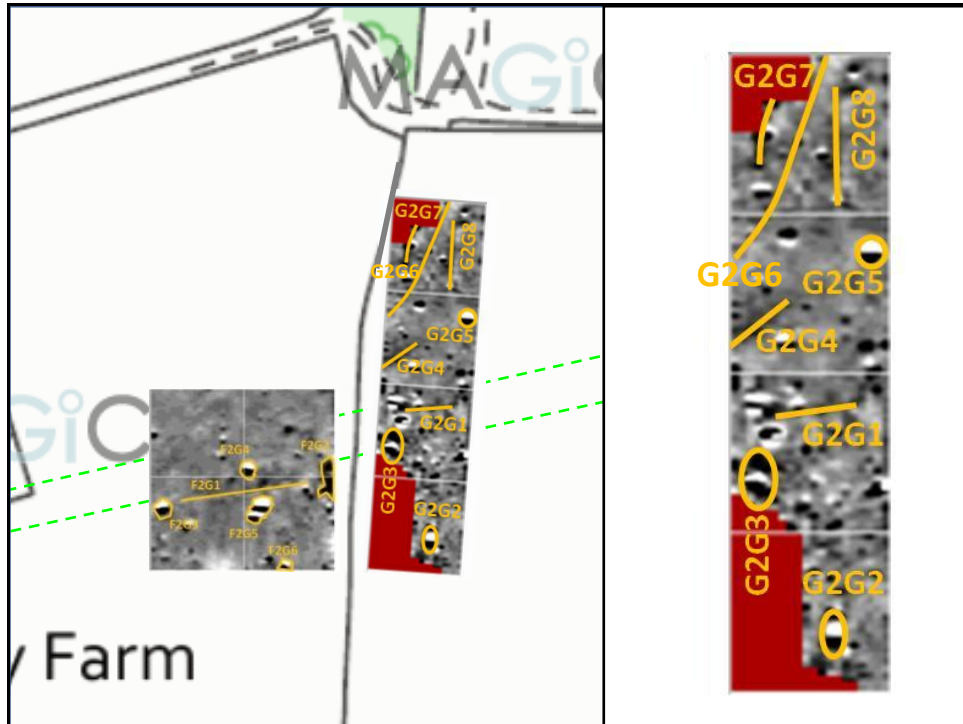


Figure 6.15 the Area G2 (right hand side of fence line) magnetic field anomalies

The magnetic field anomalies identified in the results for Area G2 were:

- **G2G1:** a very faint linear anomaly of positive magnetic response, 9m long, running E-W in the location close to where the Roman Road is projected to have passed. As no trace of this feature could be seen 6m to the west in Area F2 and as G2G1 is not a strong response, it is most likely not associated with the Roman Road.
- **G2G2:** an oblong anomaly of strong magnetic response, 2m x 4m in size.
- **G2G3:** an oblong anomaly of strong magnetic response, 3m x 6m in size.
- **G2G4:** a faint linear anomaly of positive magnetic response, 7m long, running SW-NE some 10m north of where the Roman Road is projected to have passed
- **G2G5:** an anomaly of strong magnetic response, 3m x 3m.
- **G2G6:** a faint anomaly of negative magnetic response, 34m long x 3m wide, running SW-NE. Possibly a track way.
- **G2G7:** a curvilinear anomaly of strong positive magnetic response, 7m long, running N-S. Due to wide fencing surrounding tree saplings, this anomaly could not be fully surveyed.
- **G2G8:** a faint linear anomaly of negative magnetic response, 15m long, running N-S.

6.7.4 Area G2 earth resistance survey:

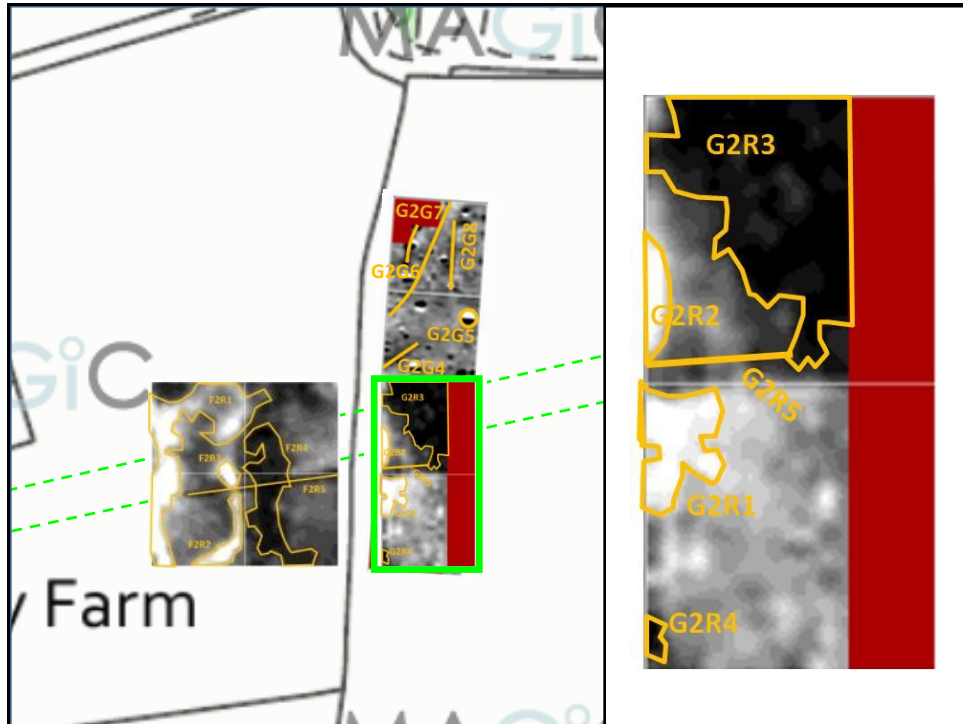


Figure 6.16 the Area G2 earth resistance anomalies (survey area highlighted in green)

The earth resistance anomalies identified in the results for Area G2 were:

- **G2R1:** an anomaly of high resistance, 6m x 8m in size. This feature cannot be detected on the other side of the fence in Area F2.
- **G2R2:** an anomaly of high resistance, 2m x 8m in size, close to the projected route of the Roman Road. This anomaly cannot be detected on the other side of the fence in Area F2.
- **G2R3:** an anomaly of low resistance, 15m x 20m in size. This anomaly might perhaps be associated with the area of excavation at the eastern end of the drain trench in figure 6.12
- **G2R4:** an anomaly of high resistance, 1m x 3m in size.
- **G2R5:** a linear anomaly of low resistance, 15m long, running E-W. This anomaly can be seen in figure 6.15 to align with anomaly F2R5. Anomaly G2R5 is interpreted as the eastern end of the drain trench seen in area F2 and in figure 6.13.

7 Discussion

The primary aim of the three major aims of this study was to build further evidence that the earthworks to be found within Stibbs Wood and Three Gate Copse on Radley Farm are in fact the remains of the Roman Road to Bath.

- **In Three Gate Copse** the earthworks present as a straight ridge approximately 8m wide with parallel ditches running either side of the agger for some 60m at a bearing of 68 degrees north.

The earth resistance survey of these earthworks gave a clear result consistent with that expected of a Roman Road using this survey method.

Whilst it had been recorded in the HER (MWB1986/EWB167) that an excavation of the earthworks in Three Gate Copse had taken place in the 1950s, this work was never published and was thought to have been lost. During the course of this study Mr Gore, the owner of Radley Farm, was able to track down a copy of the transcript of this excavation which took place in March 1968 – however the diagrams and measurements of the section of the Road remain lost. The excavation report concludes that the agger of the Road was 24' (7.3m) wide, had no discernible camber, was well constructed using hard packed flints (i.e. local materials), smaller at the surface and increasing in size nearer to the natural layer.

Whilst the excavation evidence adds weight to the survey evidence that these are the remains of the Roman Road to Bath, no finds were recorded and therefore conclusive dating was not possible.

The oldest historical map of the area is the Rocque Map of Berkshire of 1761 which shows an indication of the Road in this location, so it can be concluded that Road is at the very latest predates this map by a considerable period.

The probable location of the 1968 excavation trench was located in this geophysics survey.

- **In Stibbs Wood and on the slope west of Stibbs Wood to Radley Bottom**, the remains of earthworks are evident.

However, historical maps suggest that from Radley Farm's foundation (possibly in the Tudor period, or at latest) during the 18th century until early in the 19th century, the main point of entry to the farm was via the oblique terrace along the slope to Radley Bottom and through Stibbs Wood.

Margary, Williams and Toller all agree that this was the route of the Roman Road, and it is probable that the oblique terrace was originally a feature of the Roman Road. But it was certainly used for a considerable period of time from the founding of Radley Farm until this route to Radley Bottom went out of general use with construction of the north-south driveway to Denford Lane. Within this period of use, it would have seen phases of modification and repair.

The three parallel ridges visible within Stibbs Wood running east west taken together with the results of the earth resistance survey across them (high resistance outer ridges and low resistance for the central ridge) suggest that on the approach to the slope to Radley Bottom a cutting was dug into the underlying chalk and the spoil thrown up on either side. This would have been done to lessen the gradient of the running surface needed for its descent to Radley Bottom via the oblique terrace. Whilst these features are probably originally Roman, further work is needed to determine the phasing of the Road's construction and subsequent modification in this area.

The secondary aim of this study was to demonstrate that the remains of the Roman Road can indeed be detected using geophysics surveys, to assess the extent of the Road's surviving remains and their characteristic "signature".

- **In the field to the southwest of Three Gate Copse (Area G1)**, the gradiometer survey revealed anomalies that are interpreted as the remains of parallel road ditches 9m apart running for some 50m in alignment with the earthworks seen within Three Gate Copse. Earth resistance survey of this area revealed a 15-20m long feature of high resistance between these parallel ditches which is interpreted as the remains of the Roman Road's agger.
Further parallel features are suggestive of possible road boundary ditches, but as these have not been definitively identified elsewhere along the route of the Road to Bath this cannot be taken as a definitive conclusion. Crop marks between these anomalies and the earthworks in Three Gate Copse share the same alignment.
Together, these anomalies in Area G1 demonstrate that at least in this area, remains of the Roman Road have survived the ravages of deep ploughing since the area was cleared of woodland in the 18th and 19th centuries – and that it is possible to detect these remains using geophysics survey methods.
- No other remains of the Roman Road on Radley Farm were found during this survey along its projected route. However this negative result together with a review of historic maps, studies of the impact of agriculture on archaeology (Oxford Archaeology 2002), local geology and local topology suggest criteria for the more likely locations where undiscovered remains of the Roman Road might be found to the east of Radley Farm:
 - **Ancient woodland.** Remains of the Roman Road are most likely to be found well preserved in areas of ancient woodland that have never been ploughed.
 - **Soil types.** Fields with heavy soil such as clay-with-flint over chalk (such as Area E and Area F) are more likely to have been deep ploughed (possibly with a steam plough during the 19th century) resulting in significant damage to the remains of the Roman Road. Lighter soils (such as in Area G) are likely to have seen less damage as ploughing will have been shallower.
 - **Surface topology.** Archaeology within fields that are flat and with shallow topsoil (such as Area E and Area F) is more susceptible to damage from ploughing than would be the case in fields (such as Area G1) on an incline and with deeper topsoil. Archaeology in flatter areas is also more likely to have been damaged by the installation of field drains (as seen in Area F).
- The results of this study suggest that detectable remains of the Roman Road survive for <10% of the distance from Three Gate Copse east towards Ermin Street. Given this wide area (some 3km²) to be covered during subsequent geophysics surveys, a predictive assessment of the areas of this landscape where archaeological remains are most likely to have survived would be useful. Further work will be needed to create such a predictive model.
- It is also evident from the gradiometer survey results that the remains of the Roman Road's ditches outside of wooded areas are more prevalent and more easily identifiable than the remains of the Road's agger using earth resistance. The rate of surveying using a gradiometer is some 3x faster than for earth resistance, and the use of long traverses with the gradiometer to sweep for parallel ditch features at 90 degrees to the anticipated direction of the Road (i.e. north-south for the Road to Bath which is running east-west) is the most efficient means of carrying out the survey.
So, use of the earth resistance instrument should be limited firstly to surveying areas of ancient woodland where using the gradiometer is extremely difficult due to trees and undergrowth, and secondly to look for confirmatory evidence of surviving road agger between any parallel ditch features detected by the gradiometer.

The final aim of this study was to check for evidence of any older/alternative routes the Roman Road may have taken up the slope from Radley Bottom to Three Gate Copse and to look for evidence of settlement in this area associated with the Road.

- Geophysics surveys in Area B, Area E, Area F and Area G failed to find any evidence of an alternative route taken by the Roman Road. Geophysics survey of Area D did not reveal any evidence suggestive of human occupation in this area.

8 Conclusions and suggested further work

This study has provided further evidence that the earthworks within Three Gate Copse are indeed the surviving remains of the Roman Road to Bath (Margary 53). It has also been demonstrated that remains of the Road have survived outside of ancient woodland and can be detected by geophysics surveys, although these remains may have survived for only <10% of the Road's distance depending on the local geology, topology and historical land use. Much experience has been gained as to how the interaction of local geology, topology and agricultural practices over the years can impact the survival of remains of the Roman Road, and on the geophysics methods best used to detect them.

It is suggested that further work is undertaken to:

- Re-open the trench excavated in 1968 in Three Gate Copse to recreate the missing measurements and photographs of the Road's cross-section so that this work can be finally fully published.
- Undertake a predictive assessment of the landscape between Three Gate Copse and Ermin Street to support subsequent geophysics surveys by identifying areas of this landscape where archaeological remains are most likely to have survived.
- Track the Road east from Three Gate Copse to Ermin Street using geophysics surveys to determine its actual route taken.

9 Bibliography

Black, E. W. 1995 *Cursus Publicus – The infrastructure of government in Roman Britain*. British Archaeological Reports, BAR British Series 241

ClfA, 2014, *Standard and guidance for archaeological geophysics survey* http://www.archaeologists.net/sites/default/files/ClfAS%26GGeophysics_3.pdf.)

Davies, H. Roads, in Coombs, T, Sharpe J.R. Davies , H., Harrison, A. and Byard, A, Land of the Atrebates: In and around Roman Berkshire, *Berkshire Archaeological Journal*, 83: 51-65.

Greenaway, D. 2006. *Woodland and Archaeology Training manual*. Hungerford: North Wessex Downs Area of Outstanding Natural Beauty.

Hutt A.T.F., Harrison A. and Abbott K. 2021 *Fieldwork Near Wickham*, Berkshire Archaeological Society

Millum, D 2018 *Design for a field evaluation project at Bridge Farm, Wellingham, Ringmer, East Sussex for the 2018-2020 seasons*. Cullver Archaeological Projects

Mundin and Pine 2010 Roman Settlement at Wickham House Walled Garden, Wickham, 2007-8, in Pine, J. 2010 *Archaeological Investigations along the line of Ermine Street in West Berkshire 1992-2008*, Thames Valley Archaeological Services, Monograph 12: 46-55.

Oxford Archaeology 2002 The Management of Archaeological Sites in Arable Landscapes BD1701 Final Project Report Supporting Documentation Appendix F: Case Studies of Archaeological Damage from Arable Activities

Peake, H. 1931 *The Archaeology of Berkshire*: 92 and 100-214.

Sussex, 2006 Snuffler Freeware Geophysics software, <http://www2.prestel.co.uk/aspen/sussex/snuffler.html>.

Toller, H. 2013 The Roman Road between Wickham (Speen) Berkshire and Fyfield, Wiltshire (Margary 53), *Wiltshire Archaeological and Natural History Magazine*, 106: 52-65.

Appendix 1: HER Records Relating to the Roman Road to Bath (Margary 53)

- **MWB1981 Cropmarked features - Radley Bottom area** (National Grid Reference: SU 36 70). The Berkshire County Council SMR recorded crop marked features near Radley Bottom from aerial photographs, including part of the course of the Roman road to Bath. The road is traceable approximately from Wickham to Hungerford, and possibly beyond (see SMR 1216 and 1375). The numbering of the road is a little confused as the existing number structure incorporates other landscape features. The Berkshire National Mapping Programme noted the stretch of the Roman road crossing two fields and consisting of a central metalled zone and fragments of flanking ditches, although this is drawn in a straight line from Denford Lane to Heath Hanger Copse. In 2013, Toller described the agger of the Roman road running into Heath Hangar Copse (MWB1988) from Radley Bottom (MWB1987) and along the northern edge of Oaken Copse, and visible in aerial photographs with side ditches
- **MWB1982 Speen to Bath Roman Road - either side of Radley Bottom** (National Grid Reference: SU 36500 70080). Course of road traceable over approximately 3km as crop mark and earthwork. Section of route from *Aquae Sulis* (Bath) to *Calleva* (Silchester). Cuts across river gravels, clay-with-flints and upper chalk. Rev Summers, writing to Peake in 1905, said he had been told of an old man called Allen, who used to talk about the traces of a very straight road, which he had come across when ploughing the fields near Radley Bottom. Williams notes 'there is a steep drop on to the lane in Radley Bottom... the Ridge (ie agger) here is very clear, sloping diagonally downwards on untouched grass, and where it crosses the valley there is a plain hump in the road surface'. In 2013, Toller described the earthworks in Stibbs Wood (MWB1986) as a large 9 m wide agger that turns south down the east slope of Radley Bottom as a large terrace (MWB1987), then runs west across the valley bottom as a low, wide agger that runs into Heath Hangar Copse (MWB1988). A watching brief in 2015 at Winding Wood on the conjectural route of the road did not reveal any evidence of it.
- **MWB1983 Speen to Bath Roman Road - West of Oaken Copse** (National Grid Reference: SU 35430 69862). The Berkshire County Council SMR recorded a regular, possibly ditched linear with a small pronounced kink towards the eastern end. A former field boundary to the south of Great Hidden Farm, and a crop mark, mark the alignment of the Roman road. Faint dark patches are visible on aerial photographs and associated features at western end. Margary shows this as a stony strip in field by Oaken Copse. Thence hedgerows follow alignment to crossroads west of Peaked Lot. The Berkshire National Mapping Programme recorded the crop mark remains of a stretch of the Roman road crossing two fields in an east-northeast to west-southwest direction. This was mapped from aerial photographs. The road comprised a central metalled zone and fragments of ditches on either side. A stretch of bank about 370m long on the alignment of the Roman road was also transcribed by the Lambourn Downs National Mapping Programme. The GIS representation of this feature incorporates the former field boundary, seen on the 5th Epoch Ordnance Survey mapping and the transcribed crop marks. The agger is also visible as a low earthwork 25m-30m wide in LiDAR data modelling.
- **MWB1984 Speen to Bath Roman Road - Oaken Copse** (National Grid Reference: SU 36055 6998). Rev Summers, writing to Peake in 1905, said he had been told that a piece of old road was ploughed up just north of Oaken Copse. Peake could find nothing through the copse, although he felt the straightness of the wood's north fence

was significant. Lieutenant Ready in the early 19th century survey, had found 700 yards of the road, 'the substratum of which is nearly entire'. Williams concluded that the 'Ridge' (agger) continues as the North fence of Oaken Copse. In 2013, Toller described the agger running into Heath Hangar Copse (MWB1988) from Radley Bottom (MWB1987) and along the northern edge of Oaken Copse, and visible in aerial photographs with side ditches. The GIS line follows the northern boundary of Oaken Copse.

- **MWB1985 Speen to Bath Roman Road - Peaked Lot** (National Grid Reference: SU 35000 69779). The Archaeology map contains a note, 'Roman Road (Certain up to cross roads. Lost beyond, but traces quite distinct near Folly Farm, Savernake, Wilts).' The asterisk is marked at SU 34766976. Williams notes that the 'Ridge' (agger) is 'carried on as the South fence of Great Hidden Farm, and by Peaked Lot, to the main road at Memorial Cross. From this point no further traces have been found, but it re-appears again near Marlborough'. In 2013, Toller described the agger of the Roman road running along the northern edge of Oaken Copse (MWB1983 and MWB1984) and visible in aerial photographs with side ditches to Peaked Lot where it survives along the northern fringe of the copse as a broad mound used as a field boundary. Peaked Lot was a smallholding centred at SU 35026976, visible on historic Ordnance Survey mapping but lost by the later 20th century; the name was applied to a building at the acute angle of a triangular field.
- **MWB1986 Speen to Bath Roman Road - southwest of Three Gate Copse to Stibbs Wood** (National Grid Reference: SU 37248 70392). The Museum Archaeology map shows a line marking the course of the road with the note 'Roman Road continuing NW to XXXII SE (ie Berkshire map reference)'. Then W to crossroads W of Peaked Lot. PW' There is also a second annotation 'Hump in road PW' marked at SU36567014. It is likely that these initials refer to P Williams; his article in the Berks, Bucks and Oxon journal says that the road is 'unmistakeable through Three Gate Copse, and in the next dip, across tillage, it is plain'. A limited excavation in the 1950s revealed the road surface and two ditches. Margary wrote that the road was clearly visible as an agger in Three Gate Copse and Stibbs Wood. The GIS representation of this record is two disconnected lines, within Stibbs Wood and also Three Gate Copse 1km to the east. Both stretches of road are represented by earthworks depicted on the Ordnance Survey 5th Epoch and modern Master Map. In 2013, Toller described the earthworks in Three Gate Copse as a large agger with side ditches running for 140 m through the wood, lost past Radley Farm and appearing again in Stibbs Wood as a large 9m wide agger.
- **MWB1987 Linears – Radley Bottom** (National Grid Reference: SU 36626 70205). Antiquarian investigations appear to have noted the Roman road on the side of a steep west facing slope at Radley Bottom. Margary wrote that the road was clearly visible as an agger in Stibbs Wood, and that where it crosses the coombe (ie dry valley) it was present as a wide agger. The Lambourn Downs National Mapping Programme recorded a section of Roman road seen as an earthwork centred at SU 3661 7020 and mapped from aerial photographs. It appeared as an incised track way with banked sides. An earthwork is visible in a 2003 air photograph. The GIS line follows the NMP transcription of ditch within two banks. In 2013, Toller described the earthworks in Stibbs Wood (MWB1986) as a large 9m wide agger that turns south down the east slope of Radley Bottom (MWB1987) as a large terrace, then runs west across the valley bottom as a low, wide agger that runs into Heath Hangar Copse
- **MWB1988 Speen to Bath Roman Road - Heath Hanger Copse** (National Grid Reference: SU 36399 70050). Sandhurst survey found nothing in wood, but Peake

noticed two parallel ditches, c12 yards apart, and in between them at one spot some large flints (aerial photograph references presumably refer to another part of the Roman road, as Heath Hanger Copse is ancient woodland). In 2013, Toller described the earthworks in Stibbs Wood (MWB1986) as a large 9m wide agger that turns south down the east slope of Radley Bottom (MWB1987) as a large terrace, then runs west across the valley bottom as a low, wide agger that runs into Heath Hanger Copse (MWB1988) and along the northern edge of Oaken Copse (MWB1984 and MWB1983).

- **MWB1992 Benham Burslot - Junction of Margary's Roman Roads 53 and 41** (National Grid Reference SU 40430 71060). The point where Margary's road 53 joins 41B is not known. No trace can be seen where the extrapolation of the known lone would put it. However Peake suggests that after crossing south of Wormstall Park, it negotiates a steep slope obliquely as at Radley Bottom. This can be traced and brings the line further east. Williams notes that the branch to Bath must have diverged from the Cirencester road at an angle of about 45 degrees, but its beginnings have not been discovered. In 2013, Toller suggested the route of Margary's Roman road 53 ran from somewhere near Newbury Lodge (formerly Wormstall Lodge, MWB21354) through Orpenham Copse to Three Gate Copse (MWB1986).
- **MWB1993 Speen to Bath Roman Road - Orpenham Copse and Elgar's Farm** (National Grid Reference SU 38700 70699). Williams noted that the 'Ridge' (agger) has been found in Orpenham Copse and at Elgar's Farm. This latter farmstead does not exist in the 21st century; its approximate location was at SU38487064. In 2013, Toller references Williams' work, but does not mention this agger, and suggested the route of Margary's Roman road 53 ran from somewhere near Newbury Lodge (formerly Wormstall Lodge, MWB21354) through Orpenham Copse to Three Gate Copse (MWB1986).
- **MWB16300 Roman road to the west (Margary's road 53)** (National Grid Reference: SU 4060 7106). The Roman road from Speen/Wickham to Bath/Batheaston, with no popular name. This section was numbered 53 by Ivan Margary and branches off road 41a (Ermin Street) which runs from Speen/Newbury to Cirencester. The road to Bath has been matched to Iter 14 in the Antonine Itinerary. Margary and Davies calculate its distance as 64km (40 miles) and c11km lie within West Berkshire, although the route is not easily identified in many places. The NMR describes this road as Linear 283, running from Wickham to Batheaston, often seen 'as sections of fine agger and by a striking alignment of hedgerows'. A watching brief in 2015 at Winding Wood on the conjectural route of the road did not reveal any evidence of it. No overall GIS element has been created for this record, as the individual sections of recorded road have their own GIS representations.
- **MWB16304 Speen to Bath Roman Road west of Hungerford to Chilton Foliat Road** (National Grid Reference: SU 33000 69499). Margary thought that 'signs of the flattened ridge are perhaps just visible west of the Hungerford-Chilton Foliat road'. The GIS point is an approximate guess for this location; it is perhaps notable that this approximate location seems close to parallel earthworks classified by the Berkshire National Mapping Programme as medieval or later lynchets (MWB16613).
- **MWB162305 Speen to Bath Roman Road - in Cake Wood** (National Grid Reference: SU 30500 69000). Margary thought that the ridge of the Roman road existed west of Cake Wood, 'where it is visible crossing the avenue on the same

line'. The original reference for this latter sighting was given by Margary as a Marlborough College report. The GIS point is an approximate guess for this location.

- **MWB17613 - Speen to Bath Roman Road - between Radley Farm and Three Gate Copse** (National Grid Reference: SU 37530 70458). The Lambourn Downs National Mapping Programme recorded the crop mark remains of a short section of Roman road mapped from aerial photographs. The bank and ditch to its north lie within a field to the west of a wood where earthworks remains of an agger have also been reported; the features are on the same alignment although the crop marks are slightly curved rather than straight. Little is apparent in the 2003 and 2010 aerial photographs. In 2013, Toller described the earthworks in Three Gate Copse (MWB1986) as a large agger with side ditches running for 140 m through the wood, lost past Radley Farm and appearing again in Stibbs Wood (MWB1986) as a large 9 m wide agger. He makes no mention of these crop marks.
- **MWB22283 Speen to Bath Roman Road - Peaked Lot to Knighton** (National Grid Reference: SU 32070 70527). In his 2013 article tracing the route of Margary's Roman road 53 from Wickham in West Berkshire to Fyfield in Wiltshire, Toller suggested that beyond Peaked Lot (MWB1985) the road changed course and ran along the north side of the River Kennet. He argued that it is largely overlain by Denford Lane, Gipsy Lane, Leverton Lane and the B4192 through Leverton and Chilton Foliat. From there, he believes the route is sometimes on the northern slope of the Kennet Valley and sometimes on the floodplain where its earthworks have become indistinguishable from the banks of post-medieval water meadows and obscured by river channels and drainage ditches. The GIS line follows Toller's suggested route only as far as Knighton in Wiltshire.

Appendix 2: Geophysics Results

This appendix contains the details of the geophysics surveys.

- **Area A**

This area was surveyed because it spanned the surviving earthworks of the Roman road in Stibbs Wood.

A survey grid was laid out as two 20m x 20m squares. The length of the sides was confirmed using tapes and geometry.

This grid was subdivided into 20m x 20m squares using tapes. It was then extended along the axis of the ridges of earthworks using tapes to create an area 40m south to north and 20m west to east

- **Area A earth resistance survey**

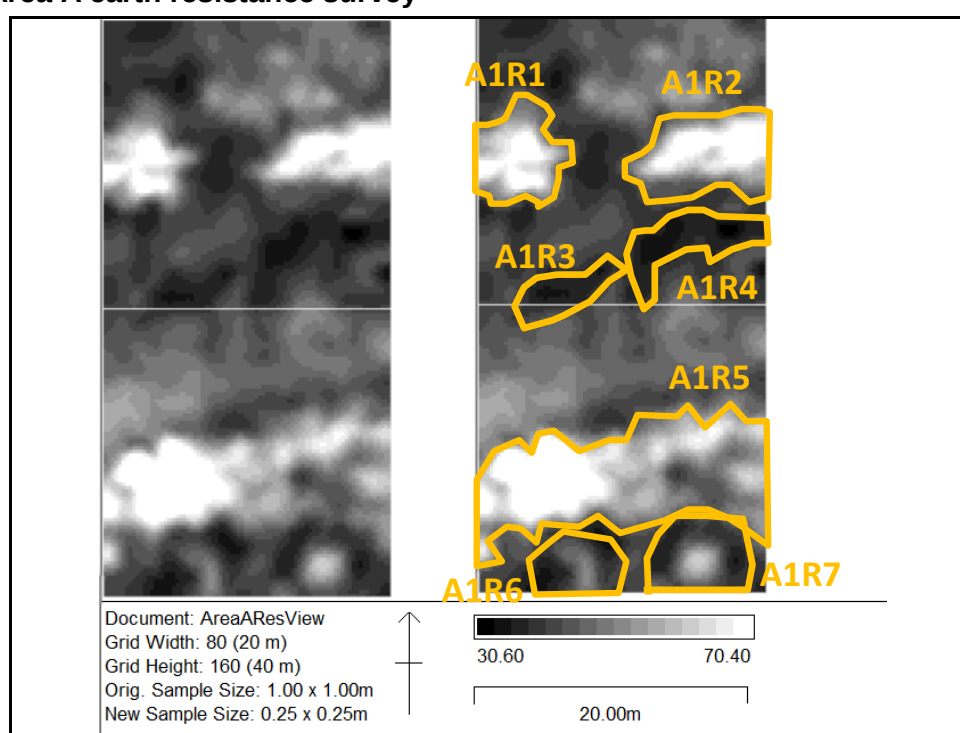


Figure 10.1 Area A geophysics plots and the anomalies

Seven anomalies A1R1 to A1R7 were surveyed within view *AreaAResView*. A1R1 and A1R2 are an elongated area of high resistance associated with the northerly of the three E-W ridges. A1R3 and A1R4 are an area of low resistance associated with the ditch between the northerly ridge and the central ridge. A1R5 is an elongated area of high resistance associated with the southerly of the three E-W ridges. A1R6 and A1R7 are circular anomalies, which are probably the result of tree throws.

All the resistance survey data from all the survey areas was collected into a single Snuffler project *RadleyReport v1* dated 4 April 2022.

Table 1 in Appendix 3 shows the position of the grids which were surveyed, while figure 10.1 above shows the geophysics plots and the anomalies observed.

- **Area B**

This area was surveyed because it is a steep slope, a natural obstacle over which the Roman road to Bath would have had to navigate between its adjacent known surviving remains. The Roman road is thought to have taken a route down the slope via an oblique terrace running from Stibbs Wood SW to Radley Bottom. This is thought to have been the main access point to Radley Farm until around 1812.

- **Area B1 earth resistance survey**

A survey grid was laid 60m x 120m of which the length of the sides was confirmed using tapes and geometry. This grid was subdivided into 20m x 20m squares using tapes.

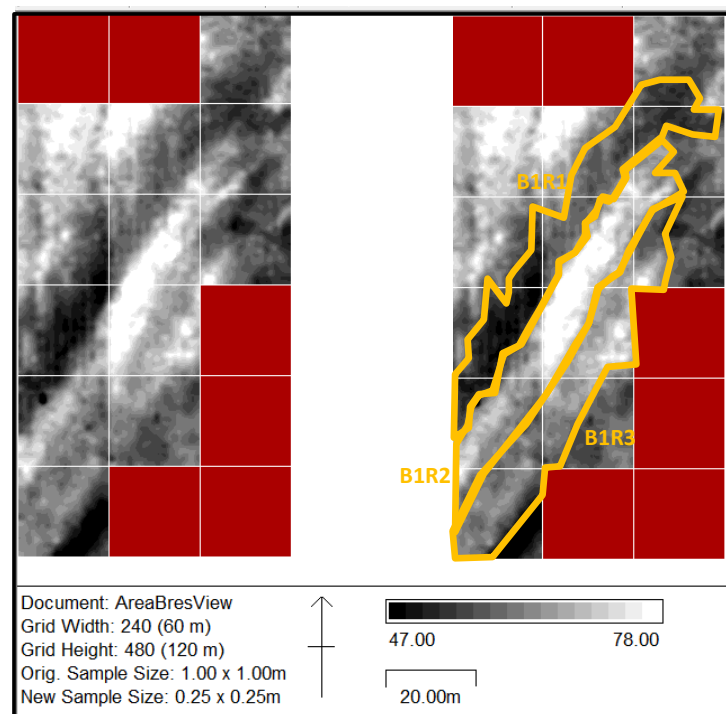


Figure 10.2 Area B1 geophysics plots and the anomalies

Three anomalies B1R1 to B1R3 were surveyed within view *AreaBResView*. B1R1 is an elongated area of low resistance on the lee side of the disused terraced track way running from NE to SW. B1R2 is an elongated area of high resistance associated with the flat running surface of a disused terraced track way running obliquely a steep slope from NE to SW which ends in the NE corner between two ridges at the top of the slope as the track way flanked by the two ridges turns eastwards into Stibbs Wood (Area A). B1R3 is an area of high resistance associated with the cut of the disused terraced track way running from NE to SW.

All the resistance survey data from all the survey areas was collected into a single Snuffler project *RadleyReport v1* dated 4 April 2022.

Table 2 in Appendix 3 shows the position of the grids which were surveyed, while figure 10.2 above shows the geophysics plots and the anomalies observed.

- **Area B2 gradiometer survey**

A survey grid was laid 40m x 100m of which the length of the sides was confirmed using tapes and geometry. This grid was subdivided into 20m x 20m squares using tapes.

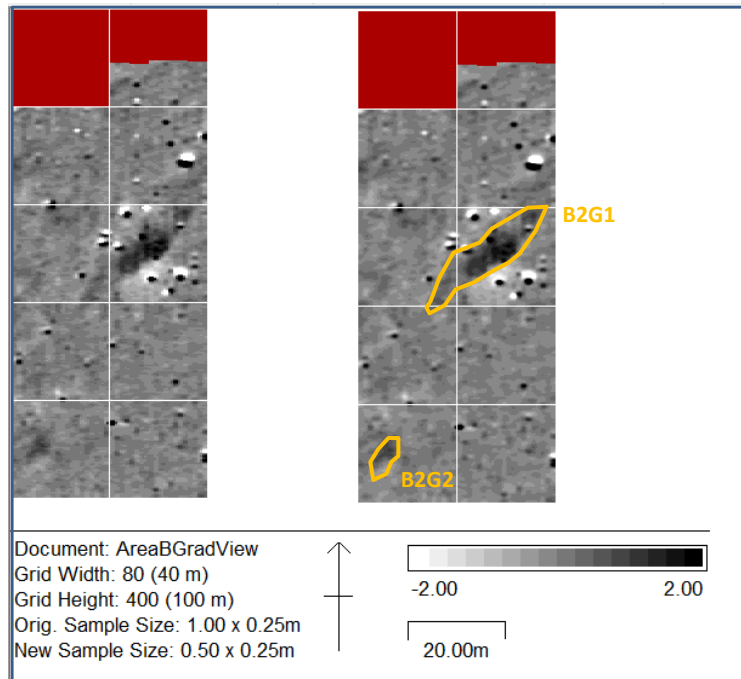


Figure 10.3 Area B2 geophysics plots and the anomalies

Two anomalies B2G1 and B2G2 were surveyed within view *AreaBGradView*. B2G1 is an elongated anomaly of high positive magnetic response approximately parallel to the terraced track way in Area B1. B2G2 is a small area of high positive magnetic response.

All the gradiometer survey data from all the survey areas was collected into a single Snuffler project *RadleyReport v1* dated 4 April 2022.

Table 3 in Appendix 3 shows the position of the grids which were surveyed, while figure 10.3 above shows the geophysics plots and the anomalies observed.

- **Area C**

This area was surveyed because the SW corner of Three Gate Copse contains the most easterly of the Roman road to Bath's surviving earthworks, which were excavated in 1968. The survey area was positioned to include the approximate position of the 1968 excavation trench recorded in the draft report.

A survey grid was laid out as two 20m x 20m squares each positioned across the centre of the road's ridge so that the centreline of the two grids ran along the approximate centreline of the road's ridge. The length of the sides was confirmed using tapes and geometry.

This grid was subdivided into 20m x 20m squares using tapes. It was then extended along the axis of the ridges of earthworks using tapes to create an area 40m by 20m.

○ **Area C earth resistance survey**

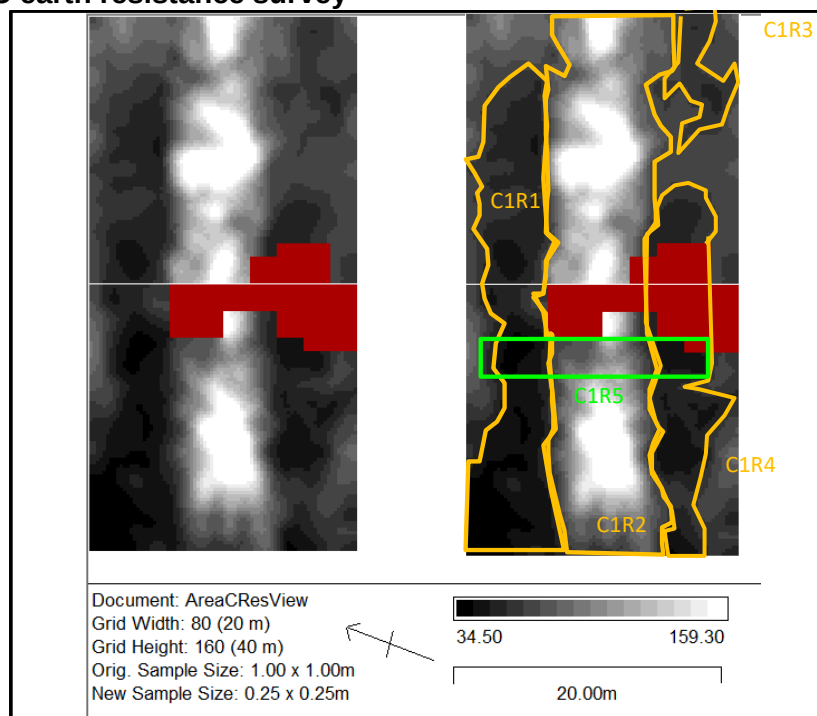


Figure 10.4 Area C geophysics plots and the anomalies

Five anomalies C1R1 to C1R5 were surveyed within view *AreaCResView*. C1R1 is low resistance linear anomaly consistent with a ditch running on the north side of the linear earthwork ridge. C1R2 is a high resistance linear anomaly 8m wide consistent with the linear earthwork ridge running through the wood. C1R3 and C1R4 are low resistance linear anomalies consistent with the ditch running on the south side of the linear earthwork ridge. C1R5 is an area of lower resistance across the road's agger ridge consistent with estimated position of the 41' x 3' trench excavated in 1968 and subsequently refilled referenced in the excavation report.

All the gradiometer survey data from all the survey areas was collected into a single Snuffler project *RadleyReport v1* dated 4 April 2022.

Table 4 in Appendix 3 shows the position of the grids which were surveyed, while figure 10.4 above shows the geophysics plots and the anomalies observed.

● **Area D**

This area was surveyed to assess whether the crest of the steep slope to Radley Bottom close to the route or the Roman road was occupied at any point (eg for provision of supplementary beasts of burden to assist hauliers with the steep slope).

A survey grid was laid out as two 20m x 20m squares using tapes. It was then extended along the axis of the ridges of earthworks using tapes to create an area 100m by 120m.

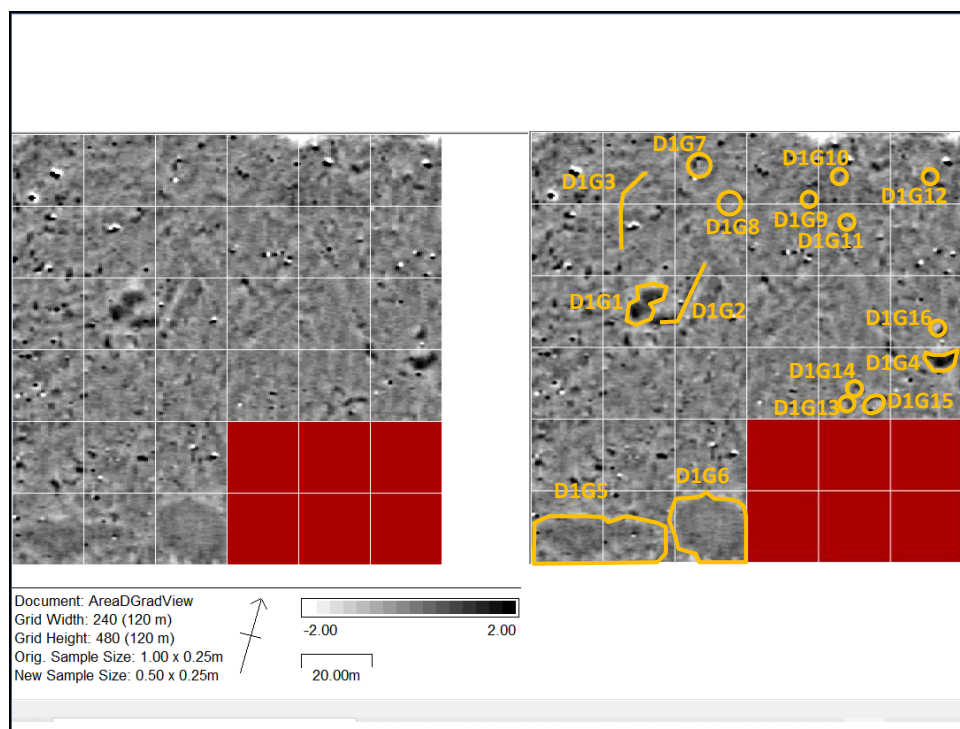


Figure 10.5 Area D geophysics plots and the anomalies

Fifteen anomalies D1G1 to D1R15 were surveyed within view *AreaDGradView*. D1G1 is an area of high positive magnetic response 10m x 4m which can be seen in satellite images from 2007-2012 to be associated with a sheep water trough. D1G2 is a rectilinear anomaly 15m x 2m possibly an overflow run off for waste water associated with the D1G1 sheep water trough anomaly? D1G3 is a negative magnetic response. Could be associated with the D1G1 water trough also? D1G is an 4n area of high positive magnetic response 8m x 3m which can be seen in satellite images from 2007-2012 to be associated with a sheep water trough. D1G5 is an area oblong area 35m x 12m surrounded by a negative magnetic anomaly. D1G6 is a roughly circular area 20m x 20m surrounded by a negative magnetic anomaly. D1G7 to D1G15 is a number of circular anomalies - possibly tree throws?

All the gradiometer survey data from all the survey areas was collected into a single Snuffler project *RadleyReport v1* dated 4 April 2022.

Table 5 in Appendix 3 shows the position of the grids which were surveyed, while figure 10.5 above shows the geophysics plots and the anomalies observed.

- **Area E**

This area was surveyed as it is a flat open arable field located between surviving earthworks of the Roman road to Bath across which the Roman road would have had to pass.

- **Area E1 gradiometer survey**

A survey grid of 20m x 20m squares was laid out. The length of the sides was confirmed using tapes and geometry. The survey area was extended using tapes to create an area 200m south to north and 60m west to east

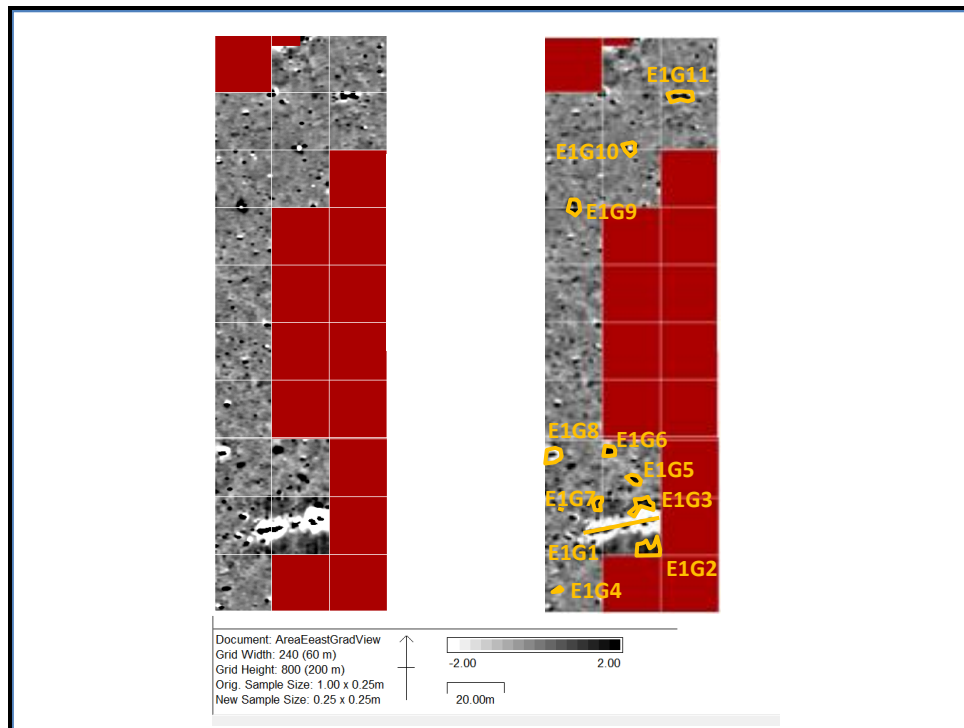


Figure 10.6 Area E1 geophysics plot and the anomalies

Eleven anomalies E1G1 to E1G11 were surveyed within view *AreaEeastGradView*. E1G1 is a 25m linear anomaly with highly negative magnetic response running E-W that also created magnetic interference. This is thought to be the remains of a field boundary that was removed by the farmer who remembers burying some of the iron fence posts that were difficult to remove. The remains of one such fencepost was visible on the surface of the field. E1G2 and E1G3 are both anomalies with high positive magnetic response measuring 7m x 3m close to E1G1. These anomalies could also be associated with buried remains of the field boundary fence. E1G4 to E1G8 are all small (2-3m x 2-3m) anomalies with positive magnetic responses positioned in a cluster at the southern end of Area E1. E1G9 to E1G11 are another cluster of anomalies (2-3m x 2-5m) with high magnetic responses positioned around the northern end of Area E1.

All the gradiometer survey data from all the survey areas was collected into a single Snuffler project *RadleyReport v1* dated 4 April 2022.

Table 6 in Appendix 3 shows the position of the grids which were surveyed, while figure 10.6 above shows the geophysics plots and the anomalies observed.

- **Area E2 gradiometer survey**

A survey grid of 20m x 20m squares was laid out. The length of the sides was confirmed using tapes and geometry. The survey area was extended using tapes to create an area 140m south to north and 80m west to east

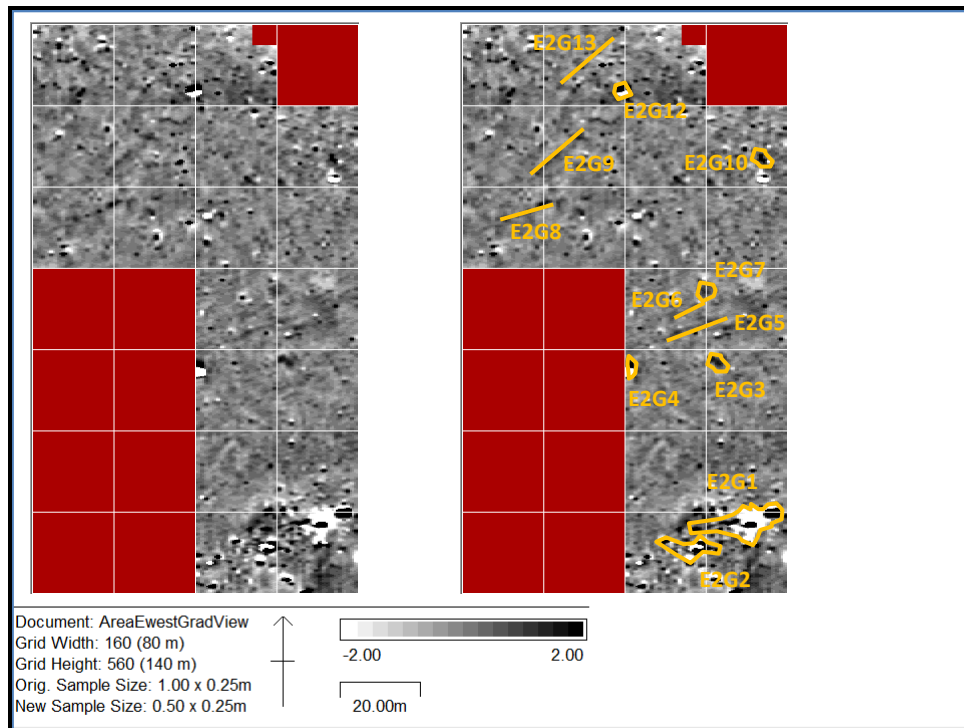


Figure 10.7 Area E2 geophysics plot and the anomalies

Thirteen anomalies E2G1 to E2G13 were surveyed within view *AreaEwestGradView*. E2G1 is a 20m x 7m anomaly with high magnetic response that is probably also associated with the remains of the field boundary seen at the southern end of Area E1 (E1G1). E2G2 is a 15m x 5m anomaly with high magnetic response close to E2G1 that is probably also associated with the remains of the field boundary seen at the southern end of Area E1. E2G3, E2G4, E2G7, E2G10 and E2G12 are small anomalies 2m x 3m giving high positive magnetic responses. E2G5 and E2G6 are faint approximately parallel linear anomalies 8m and 12m in length running SW to NE positioned 5m apart. These features are some distance away from the expected route of the Roman road and with a different orientation. E2G8 is a 8m long linear anomaly running SW to NE. This feature is some distance away from the expected route of the Roman road and has a different orientation. E2G9 and E2G13 are faint approximately parallel linear anomalies 15m in length positioned 12m apart and offset by 15m running SW to NE. Although positioned close to the expected route of the Roman road, both these anomalies have a markedly different orientation that expected of the Roman road.

All the gradiometer survey data from all the survey areas was collected into a single Snuffler project *RadleyReport v1* dated 4 April 2022.

Table 7 in Appendix 3 shows the position of the grids which were surveyed, while figure 10.7 above shows the geophysics plots and the anomalies observed.

- **Area E3 earth resistance survey**

A survey grid of 20m x 20m squares was laid out. The length of the sides was confirmed using tapes and geometry. The survey area was extended using tapes to create an area 80m south to north and 20m west to east

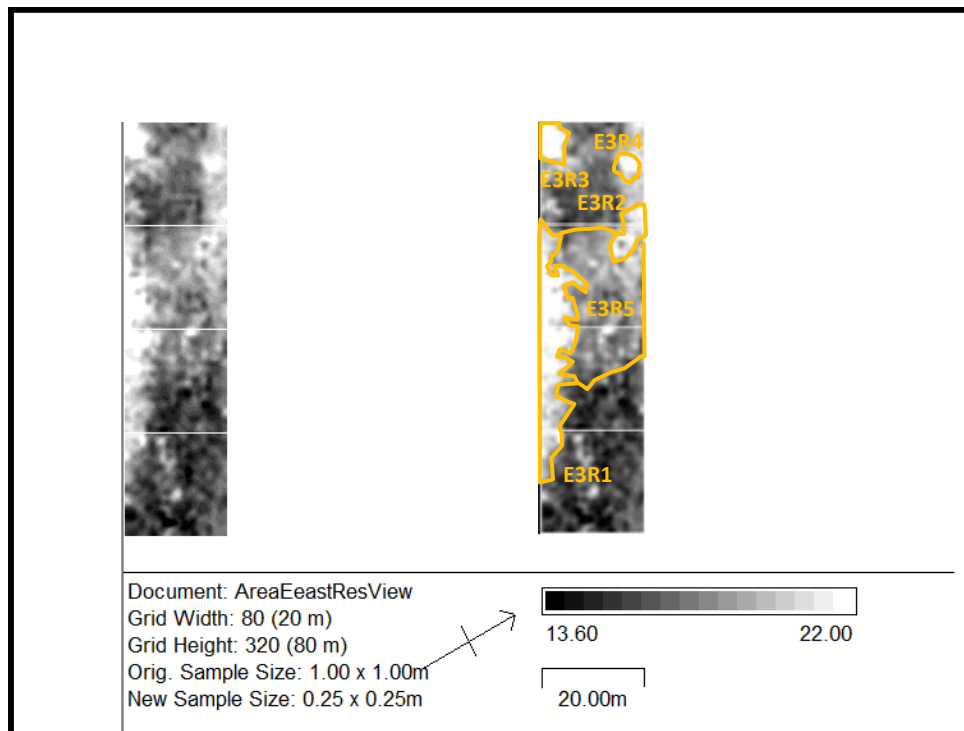


Figure 10.8 Area E3 geophysics plot and the anomalies

Five anomalies E3R1 to E3R5 were surveyed within view *AreaEeastResView*. E3R1 and E3R3 are anomalies showing areas of high resistance that correspond to the ingress of the turnip crop planted in the field at the time of survey. These anomalies are assumed to be noise created by the effect of this crop. E3R2 is an anomaly 3m x 10m showing high resistance, but is not located close to the projected route of the Roman road between its two surviving earthworks. E3R4 is an anomaly 3m x 3m showing high resistance, but is not located close to the projected route of the Roman road between its two surviving earthworks. E3R5: is an anomaly of moderate resistance 25-30m wide along the projected route of the Roman road between its two surviving earthworks.

All the gradiometer survey data from all the survey areas was collected into a single Snuffler project *RadleyReport v1* dated 4 April 2022.

Table 8 in Appendix 3 shows the position of the grids which were surveyed, while figure 10.8 above shows the geophysics plots and the anomalies observed.

- **Area F**

This area was surveyed as it is a flat open pasture located between surviving earthworks of the Roman road to Bath across which the Roman road would have had to pass.

- **Area F1 earth resistance survey**

A survey grid of 20m x 20m squares was laid out. The length of the sides was confirmed using tapes and geometry. The survey area was extended using tapes to create an area 120m south to north and 40m west to east.

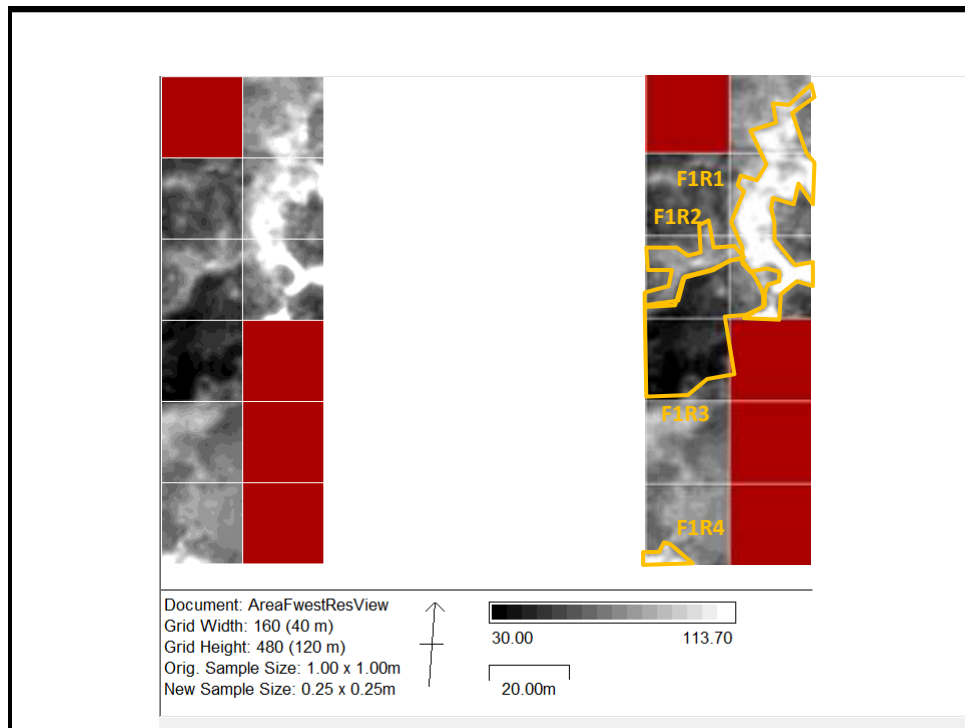


Figure 10.9 Area F1 geophysics plot and the anomalies

Four anomalies F1R1 to F1R4 were surveyed within view *AreaFwestResView*. F1R1 is a high resistance anomaly 60m x 20m. Iron manhole cover suggests that this is a sump for the network of drains placed across this pasture. F1R2 is a medium resistance anomaly 25m x 25m featuring branches linear feature thought to be drains. F1R3 is a low resistance anomaly 35m x 30m. F2R4 is an area of high resistance 10m x 3m.

All the gradiometer survey data from all the survey areas was collected into a single Snuffler project *RadleyReport v1* dated 4 April 2022.

Table 9 in Appendix 3 shows the position of the grids which were surveyed, while figure 10.9 above shows the geophysics plots and the anomalies observed.

○ **Area F2 gradiometer survey**

A survey grid of 20m x 20m squares was laid out. The length of the sides was confirmed using tapes and geometry. The survey area was extended using tapes to create an area 40m south to north and 40m west to east

Six anomalies F2G1 to F2G6 were surveyed within view *AreaFeastGradView*. F2G1 is a 30m long linear anomaly running E-W showing a faint negative magnetic response. Aligns with a drain trench dug which is visible on the surface of the pasture. F2G2 is a 7m x 3m anomaly with a strong positive magnetic response. Aligns to a sump dug at the same time as the trench F2G1. F2G3 and F2G4 are anomalies associated with 1m x 0.75m boulders visible on the surface of the pasture. Given that F2G5 and F2G6 have a similar response to F2G3 and F2G4, it is probable that F2G5 and F2G6 are associated also with boulders below the surface of the pasture.

All the gradiometer survey data from all the survey areas was collected into a single Snuffler project *RadleyReport v1* dated 4 April 2022.

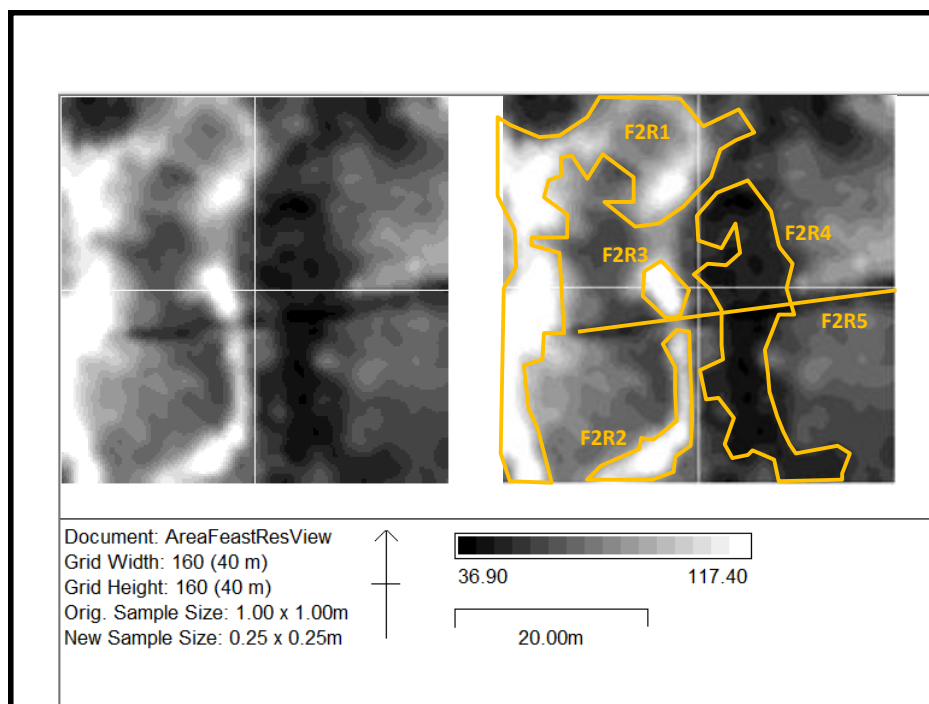


Figure 10.10 Area F2 geophysics plot and the anomalies

Table 10 in Appendix 3 shows the position of the grids which were surveyed, while figure 10.10 above shows the geophysics plots and the anomalies observed.

○ **Area F2 earth resistance survey**

A survey grid of 20m x 20m squares was laid out. The length of the sides was confirmed using tapes and geometry. The survey area was extended using tapes to create an area 40m south to north and 40m west to east

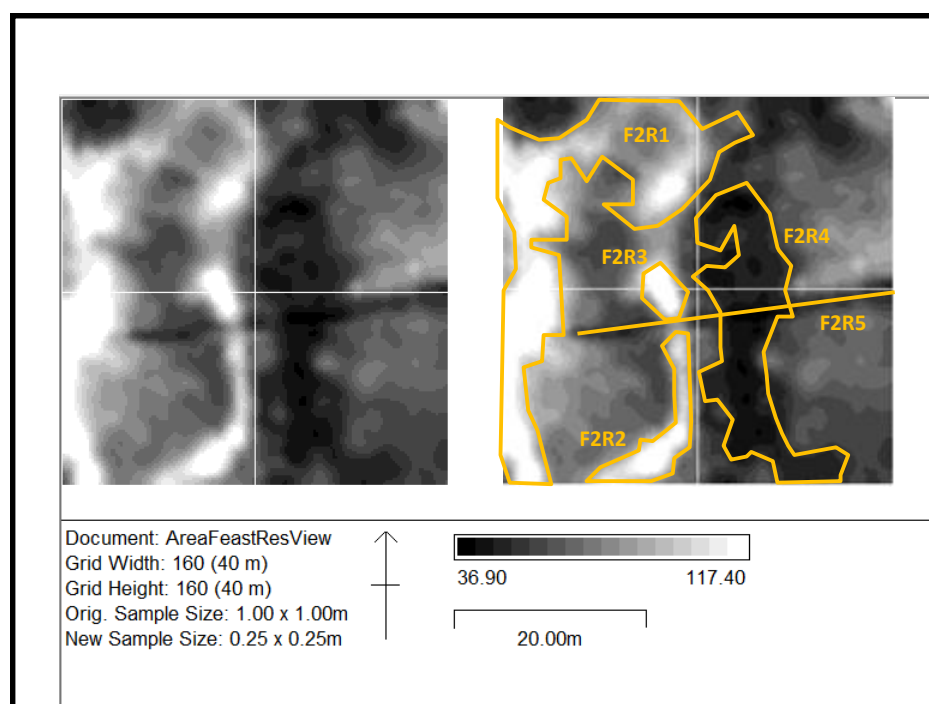


Figure 10.11 Area F2 geophysics plot and the anomalies

Five anomalies F2R1 to F2R5 were surveyed within view *AreaFeastResView*. F2R1, F2R2 and F2R3 are rectilinear high resistance anomalies across an area 40m x 20m. Proximity to F1R1 and the similarity in response makes it likely that these anomalies are also part of the network of drains placed across this pasture. F2R4 are low resistance anomaly featuring rectilinear branches across an area 35m x 25m. Possibly trenches dug as part of the network of drains placed across this pasture. F2R5 is a 30m long linear low resistance anomaly running E-W. Aligns with the linear anomaly F2G1 and a drain trench dug which is visible on the surface of the pasture.

All the gradiometer survey data from all the survey areas was collected into a single Snuffler project *RadleyReport v1* dated 4 April 2022.

Table 11 in Appendix 3 shows the position of the grids which were surveyed, while figure 10.11 above shows the geophysics plots and the anomalies observed.

- **Area G**

This area was surveyed as it is an open pasture located immediately to the southeast of the Roman road's surviving earthworks within Three Gate Copse across which the Roman road would have had to pass.

- **Area G1 gradiometer survey**

A survey grid of 20m x 20m squares was laid out. The length of the sides was confirmed using tapes and geometry. The survey area was extended using tapes to create an area 100m south to north and 140m west to east.

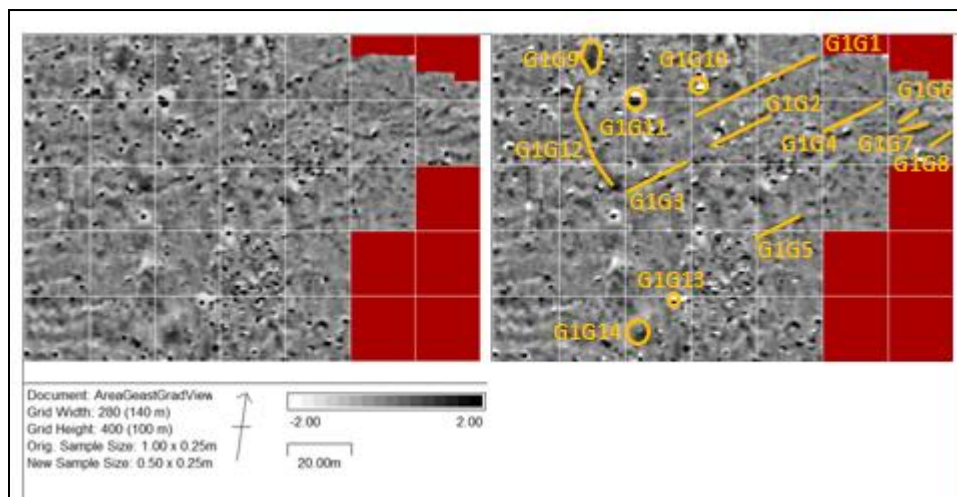


Figure 10.12 Area G1 geophysics plot and the anomalies

Fourteen anomalies G1G1 to G1G14 were surveyed within view *AreaGeastGradView*. G1G1 is a faint linear anomaly 40m long with a positive magnetic response running E-W parallel to anomalies G1G2 and G2G3 at a distance of 9m, and aligns with the surviving earthworks of the Roman road seen in Three Gate Copse. Anomaly G1G1 is interpreted as the remains of the northerly ditch of the Roman Road to Bath. G1G2 is a faint linear anomaly 20m long with a positive magnetic response running E-W. This anomaly runs parallel of anomaly G1G1 at a distance of 9m, and aligns with anomaly G1G3 and with the surviving earthworks seen in Three Gate Copse. Anomaly G1G2 is interpreted as the remains of the southerly ditch of the Roman Road to Bath. G1G3 is a faint linear anomaly 19m long with a positive magnetic response running E-W. This anomaly runs parallel of

anomaly G1G1 at a distance of 9m, and aligns with anomaly G1G2 and with the surviving earthworks seen in Three Gate Copse. Anomaly G1G3 is interpreted as the remains of the southerly ditch of the Roman Road to Bath. G1G4 is a faint linear 18m long anomaly with a positive magnetic response running E-W that is also parallel to anomaly G1G1 at a distance of 21m to the south (ie 12m to the south of anomalies G1G2 and G1G3). G1G5 is a faint linear 15m long anomaly with a positive magnetic response running E-W that is also parallel to anomaly G1G1 at a distance of 40m to the south (ie 31m to the south of anomalies G1G2 and G1G3) on the same alignment as G1G8. G1G6 and G1G7 are faint linear anomalies 4-5m long with positive magnetic responses running E-W. G1G8 is a 5m long faint linear anomaly with a positive magnetic response running E-W approximately parallel to anomaly G1G1 at a distance of 40m to the south (ie 31m to the south of anomalies G1G2 and G1G3) on the same alignment as G1G5. G1G9 is a 3m x 7m anomaly with a strong positive magnetic response possibly associated with anomaly G1G12. G1G10, G1G11, G1G13 and G1G14 are circular 2m-4m diameter anomalies with a high magnetic response. G1G12 is a faint 35m long curved anomaly with a positive magnetic response running N-S possibly associated with anomaly G1G9.

All the gradiometer survey data from all the survey areas was collected into a single Snuffler project *RadleyReport v1* dated 4 April 2022.

Table 12 in Appendix 3 shows the position of the grids which were surveyed, while figure 10.12 above shows the geophysics plots and the anomalies observed.

- **Area G1 earth resistance survey**

A survey grid of 20m x 20m squares was laid out in the same positions as used for the Area G1 gradiometer survey. The length of the sides was confirmed using tapes and geometry. The survey area was extended using tapes to create an area 60m south to north and 60m west to east.

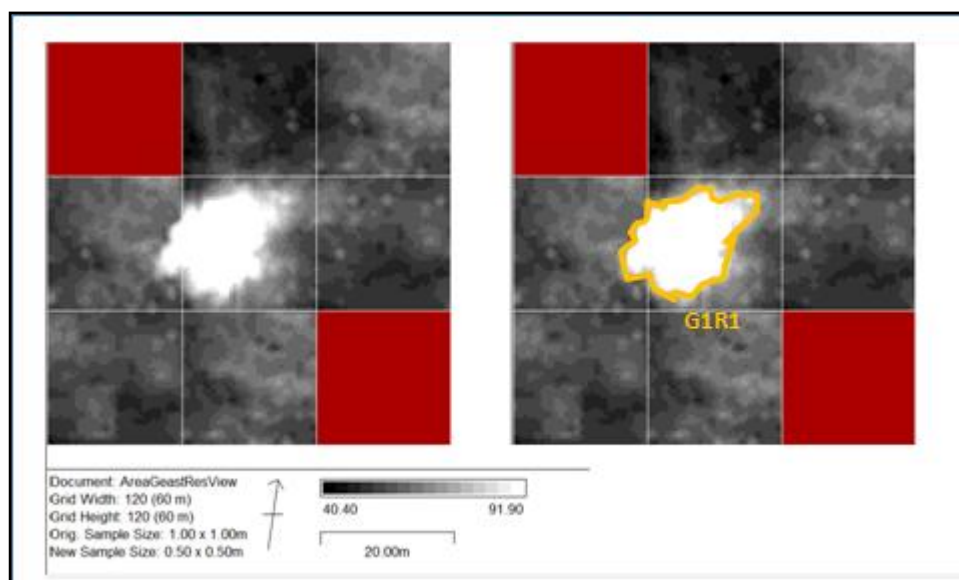


Figure 10.13 Area G1 earth resistance plot and the anomaly

One anomaly G1R1 was surveyed within view *AreaGeastResView*. G1R1 is a high resistance anomaly 15m x 15m that is located exactly between the parallel gradiometer anomalies G1G1 and G1G2/G1G3 which have been interpreted as the ditches of the Roman road.

All the gradiometer survey data from all the survey areas was collected into a single Snuffler project *RadleyReport v1* dated 4 April 2022.

Table 12 in Appendix 3 shows the position of the grids which were surveyed, while figure 10.13 above shows the geophysics plots and the anomalies observed.

- **Area G2 gradiometer survey**

A survey grid of 20m x 20m squares was laid out. The length of the sides was confirmed using tapes and geometry. The survey area was extended using tapes to create an area 80m south to north and 20m east to west.

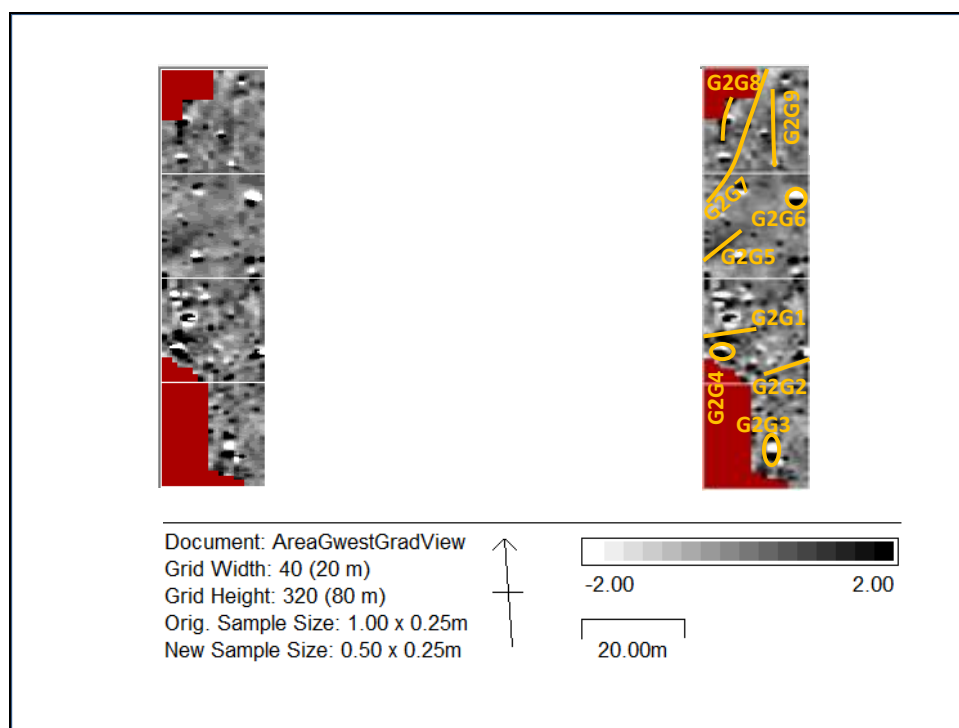


Figure 10.14 Area G2 gradiometer plot and the anomalies

Eight anomalies G2G1 to G2G8 were surveyed within view *AreaGwestGradView*. G2G1 is a very faint 9m long linear anomaly with a positive magnetic response running E-W in the location close to where the Roman road is projected to have passed. G2G2 is a 2m x 4m oblong anomaly with a strong magnetic response. G2G3: a 3m x 6m oblong anomaly with a strong magnetic response. G2G4 is a faint 7m long linear anomaly with a positive magnetic response running SW-NE some 10m north of where the Roman road is projected to have passed. G2G5 is a 3m x 3m anomaly with a strong magnetic response. G2G6 is a faint 34m long x 3m wide with a negative magnetic response running SW-NE. G2G7 is a 7m long curvilinear anomaly with a strong positive magnetic response running N-S. Due to wide fencing surrounding tree saplings this anomaly could not be fully surveyed. G2G8 is a faint 15m long linear anomaly running N-S with a negative magnetic response.

All the gradiometer survey data from all the survey areas was collected into a single Snuffler project *RadleyReport v1* dated 4 April 2022.

Table 13 in Appendix 3 shows the position of the grids which were surveyed, while figure 10.14 above shows the geophysics plots and the anomalies observed.

- **Area G2 earth resistance survey**

A survey grid of 20m x 20m squares was laid out. The length of the sides was confirmed using tapes and geometry. The survey area was extended using tapes to create an area 40m south to north and 20m east to west.

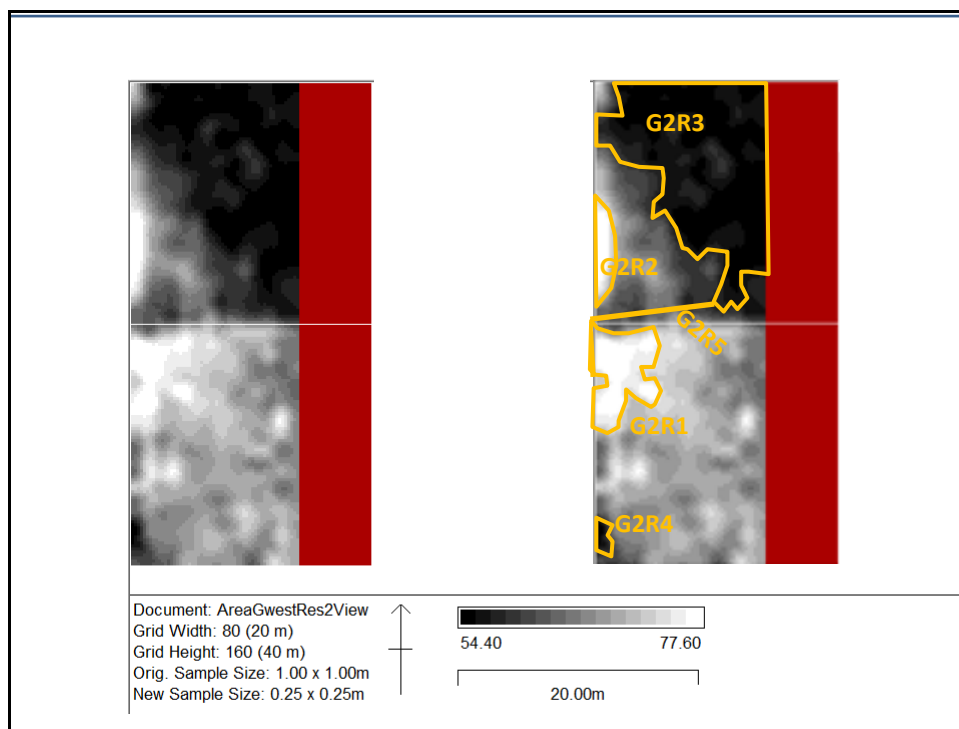


Figure 10.15 Area G2 earth resistance plot and the anomalies

Four anomalies G2R1 to G2R4 were surveyed within view *AreaGwestRes2View*. G2R1 is a high resistance 6m x 8m anomaly. G2R2 is a high resistance 2m x 8m anomaly close to the projected route of the Roman road. This anomaly cannot be detected on the other side of the fence in Area F2. G2G3 is a low resistance 15m x 20m anomaly. This anomaly could be associated with the area of excavation at the eastern end of the drain trench in figure 6.12? G2G4 is a high resistance 1m x 3m anomaly. G2G5 is a low resistance linear anomaly 15m long running E-W interpreted as the eastern end of the drain trench seen in area F2 and in figure 6.12.

All the gradiometer survey data from all the survey areas was collected into a single Snuffler project *RadleyReport v1* dated 4 April 2022.

Table 14 in Appendix 3 shows the position of the grids which were surveyed, while figure 10.15 above shows the geophysics plots and the anomalies observed.

Appendix 3: Radley Farm Survey Data

Area A: Stibbs Wood

Area:	Area A				
Date of Survey:	28 Mar 2022	Survey Team Leader:	Keith Abbott	Survey Team Members:	Amelia Abbott
SnufflerGrid Datum Point:	STIBBS11 (top right corner)	Information Defining the location of the Fixed Reference Point datum on Ground/Map:		Fixed Reference Point NGR:	Fixed Reference Point Description:
				SU 3669 7028	Centreline of middle of three ridges running E-W through the wood at intersection with the fence line running N-S overlooking Radley Bottom
Snuffler Map Name:	AreaARes	Location of Snuffler Map Grid Datum Point relative to Fixed Reference Point:		Relative Position#1:	Top right corner of STIBBS11 is 35m east of the fence line also at the centreline of the middle of three E-W ridges
Type of Survey:	Frobisher TAR3 Earth Resistance Meter			Relative Position #2:	
				N-S (ie vertical) Grid Orientation Relative to Magnetic North	Vertical axis of Snuffler map grid lies at 270 deg from Magnetic North
Neighbouring Snuffler Maps:		AreaBRes			
Notes:	Woodland. Weather cloudy with sunny spells and dry.				
Snuffler Data Files (show Ref Grid <u></u>) [Ref Ohms for earth resistance]:					
<u>STIBBS11</u> [35.3Ω]	STIBBS12 [37.3Ω]				

Diagram of survey area:

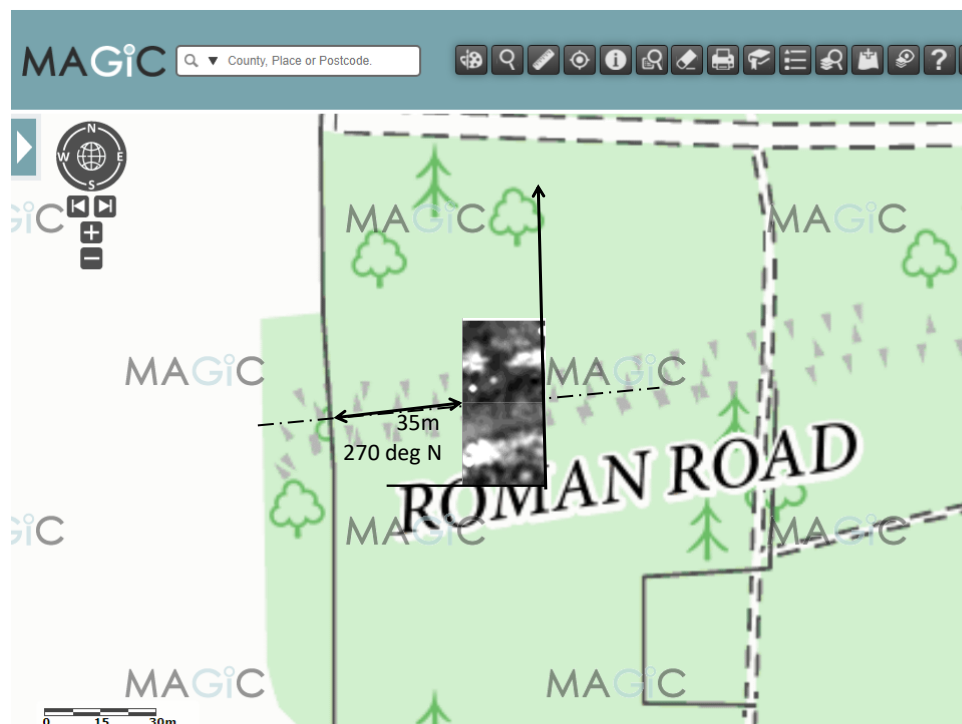


Table 1 – Area A Earth Resistance

Area B: Fields West of Stibbs Wood

Area:	Area B1				
Date of Survey:	30 Sep 2021	Survey Team Leader:	Keith Abbott	Survey Team Members:	Philip Rawstron, Paul Seddon, Harry Johnson, Simon Cains
Snuffler Grid Datum Point:	TAR3DATA14 (top right corner)	Information Defining the location of the Fixed Reference Point datum on Ground/Map:		Fixed Reference Point NGR:	Fixed Reference Point Description:
				SU 3669 7035	Metal gate post on south side of the public footpath exiting on the west side of Stibbs Wood
Snuffler Map Name:	AreaBRes	Location of Snuffler Map Grid Datum Point relative to Fixed Reference Point:		Relative Position#1:	The top right and corner of TAR3DATA14 is located 60m due south and 12m due west of the gatepost identified as the fixed reference point
Type of Survey:	Frobisher TAR3 Earth Resistance Meter			Relative Position #2:	
				N-S (ie vertical) Grid Orientation Relative to Magnetic North	Vertical axis of Snuffler map grid lies at 4 deg from Magnetic North
Neighbouring Snuffler Maps:		AreaBGrad			
Notes:	Grass pasture on steep slope. Soil clay with chalk/flint. Weather cloudy with sunny spells and dry.				
Snuffler Data Files (show Ref Grid <u>underlined/bold</u>) [Ref Ohms for earth resistance]:					
empty	empty	<u>TAR3DATA14</u> [??]			
TAR3DATA20 [??]	TAR3DATA16 [??]	TAR3DATA13 [??]			
TAR3DATA21 [??]	TAR3DATA17 [??]	TAR3DATA12 [??]			
TAR3DATA22 [??]	TAR3DATA18 [??]	empty			
TAR3DATA23 [??]	TAR3DATA19 [??]	empty			
TAR3DATA24 [??]	empty	empty			
Diagram of survey area:					

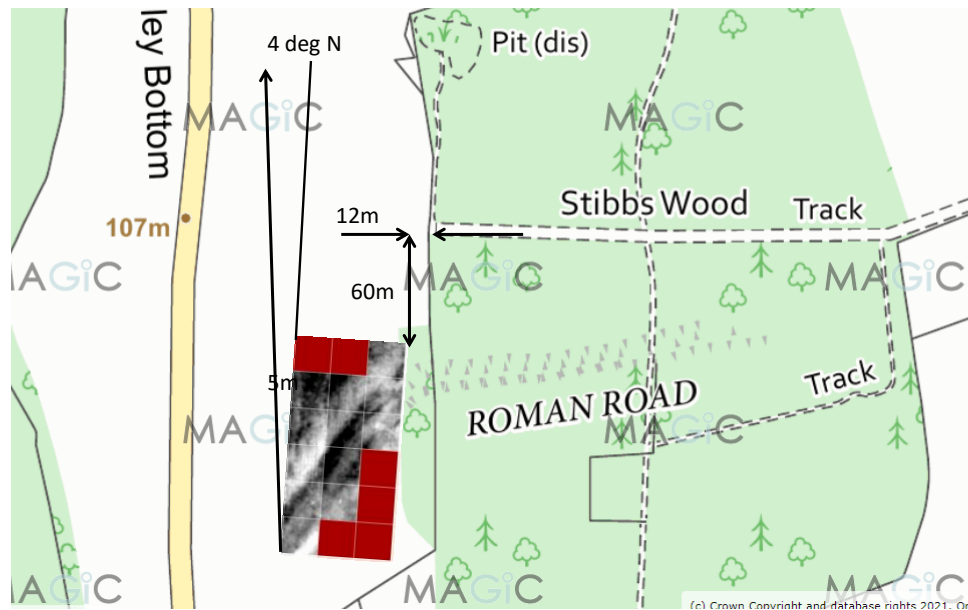


Table 2 – Area B1 Earth Resistance

Area:	Area B2				
Date of Survey:	18 Mar 2022	Survey Team Leader:	Keith Abbott	Survey Team Members:	Philip Rawstron, Margaret Boltwood, Martin Labram
Snuffler Grid Datum Point:	<u>LAST10</u> (top left corner)	Information Defining the location of the Fixed Reference Point datum on Ground/Map:	Fixed Reference Point NGR:	Fixed Reference Point Description:	
			SU 3658 7010	Wooden post of the fence line up the escarpment (east-west) positioned 13m from the fence running along the side of Radley Bottom road	
Snuffler Map Name:	AreaBGrad	Location of Snuffler Map Grid Datum Point relative to Fixed Reference Point:	Relative Position#1:	The top left and corner of <u>LAST10</u> is located 9m due south of the Fixed Reference Point fence post	
Type of Survey:	Bartlington 601 Gradiometer		Relative Position #2:	The bottom left corner of LAST7 is 15m from the fence running along the side of Radley Bottom road	
			N-S (ie vertical) Grid Orientation Relative to Magnetic North	Vertical axis of Snuffler map grid lies at 346 deg from Magnetic North	
Neighbouring Snuffler Maps:	AreaBRes				
Notes:	Grass pasture on steep slope. Soil clay with chalk/flint. Weather sunny and dry.				
Snuffler Data Files (show Ref Grid <u>underlined/bold</u>) [Ref Ohms for earth resistance]:					
empty	LAST15				
<u>LAST10</u>	LAST14				
LAST9	LAST13				
LAST8	LAST12				
LAST7	LAST11				

Diagram of survey area:

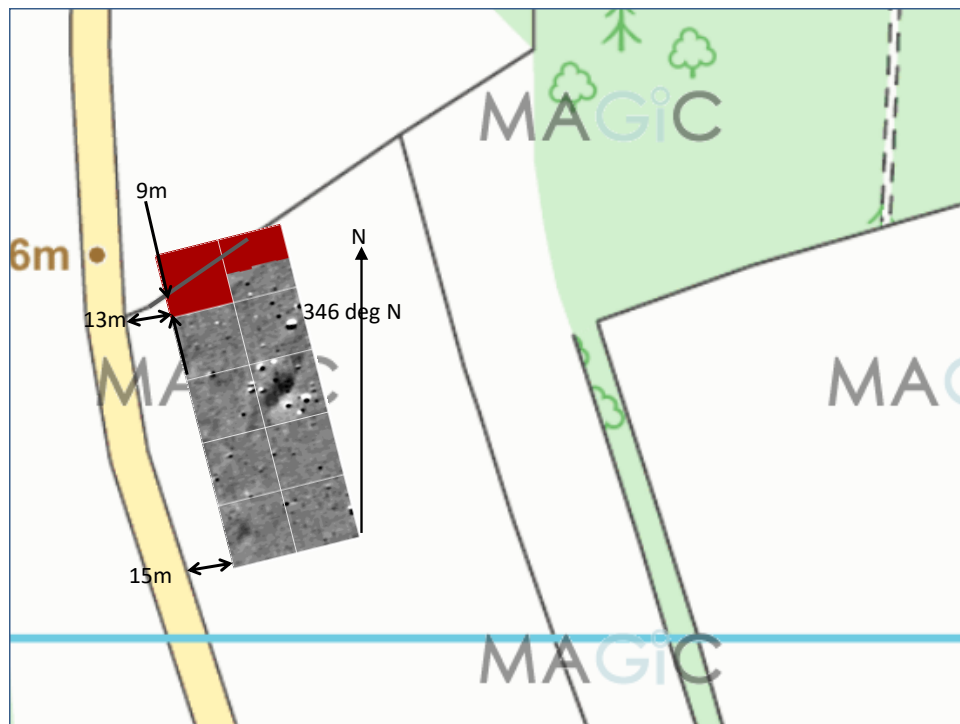


Table 3 – Area B2 Gradiometer

Area C: Three Gate Copse

Area:	Area C				
Date of Survey:	25 Mar 2022	Survey Team Leader:	Keith Abbott	Survey Team Members:	Tony Bakker
Snuffler Grid Datum Point:	TGCROAD9 (bottom right corner)	Information Defining the location of the Fixed Reference Point datum on Ground/Map:		Fixed Reference Point NGR:	Fixed Reference Point Description:
				SU 37677047	Metal gate post on fence line running E-W alongside public footpath at the SW corner of Three Gate Copse on south side of the public footpath. Centreline of grid runs along the centre line of the road's agger.
Snuffler Map Name:	AreaCRes	Location of Snuffler Map Grid Datum Point relative to Fixed Reference Point:		Relative Position#1:	Bottom right corner of TGCROAD9 is 24m from Fixed Reference Point Gate Post and the fence line of the field is 16m due south of the bottom right corner of TGCROAD9
Type of Survey:	Frobisher TAR3 Earth Resistance Meter			Relative Position #2:	
				N-S (ie vertical) Grid Orientation Relative to Magnetic North	Vertical axis of Snuffler map grid lies at 4 deg from Magnetic North
Neighbouring Snuffler Maps:					
Notes:	Overgrown woodland with mature trees and earthworks of Roman road. Weather cloudy with sunny spells and dry.				
Snuffler Data Files (show Ref Grid <u>underlined/bold</u>) [Ref Ohms for earth resistance]:					
TGCROAD10 [68.8Ω]	empty				
TGCROAD9 [34.2Ω]	empty				

Diagram of survey area:

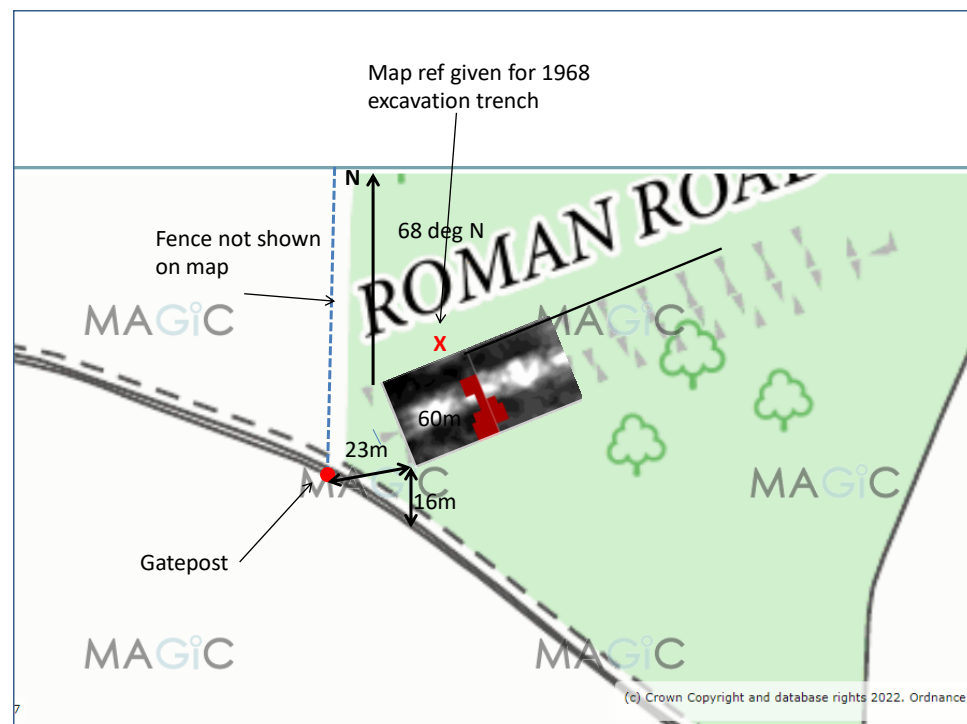


Table 4 – Area C Earth Resistance

Area D: Field South of Stibbs Wood

Area:	Area D				
Date of Survey:	18 Mar and 23 Mar 2022	Survey Team Leader:	Keith Abbott	Survey Team Members:	Martin Labram, Philip Rawstron, Margaret Boltwood, Harry Johnson, Tony Bakker, Nigel Spencer
Snuffler Grid Datum Point:	LAST18 (top left corner)	Information Defining the location of the Fixed Reference Point datum on Ground/Map:		Fixed Reference Point NGR:	Fixed Reference Point Description:
				SU 3670 7010	Slender tree positioned at the south-westerly most extent of Stibbs Wood
Snuffler Map Name:	AreaDGrad	Location of Snuffler Map Grid Datum Point relative to Fixed Reference Point:		Relative Position #1:	Top left hand corner of grid LAST18 is 30m east from the Fixed Reference Point (ie slender tree marking the south-western extent of Stibbs Wood) and 5m due south of the barbed wire fence line 1m within the southern edge of Stibbs Wood
Type of Survey:	Bartlington 601 Gradiometer			Relative Position #2:	The top right hand corner of grid square LAST24 is 4m from the line of the barbed wire fence intermittently running along the southern edge of Stibbs Wood (which is not visible east of LAST18)
				N-S (ie vertical) Grid Orientation Relative to Magnetic North	Vertical axis of Snuffler map grid lies at 342 deg from Magnetic North
Neighbouring Snuffler Maps:					
Notes:	Field is rye stubble to the south of Stibbs Wood. Soil is clay-with-flint over chalk. Weather dry and sunny, although ground still muddy in places from rain the previous day.				
Snuffler Data Files (show Ref Grid <u>underlined/bold</u>) [Ref Ohms for earth resistance]:					
LAST18	LAST21	LAST24	PAST4	PAST8	PAST12
LAST17	LAST10	LAST23	PAST3	PAST7	PAST11
LAST16	LAST19	LAST22	PAST2	PAST6	PAST10
PAST15	PAST18	PAST21	PAST1	PAST5	PAST9
PAST14	PAST17	PAST20	empty	empty	empty
PAST13	PAST16	PAST19	empty	empty	empty

Diagram of survey area:

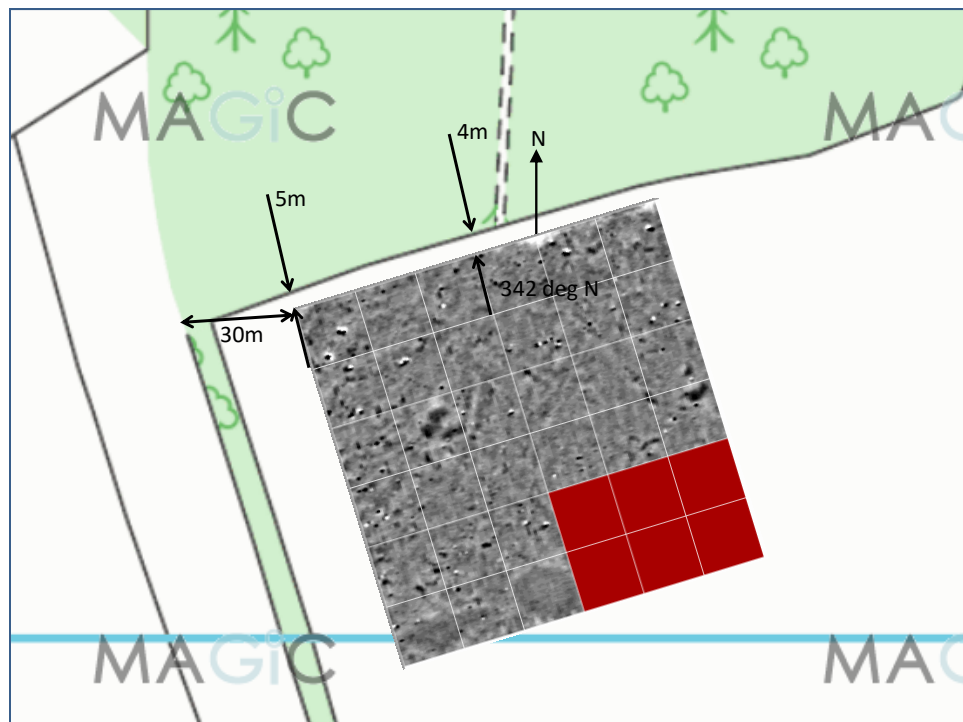


Table 5 – Area D Gradiometer

Area E: Field West of Farmhouse/East of Stibbs Wood

Area:	Area E1				
Date of Survey:	14 – 16 Feb 2022	Survey Team Leader:	Keith Abbott	Survey Team Members:	Martin Labram, Philip Rawstron, Tony Bakker, Tim Lloyd, Harry Johnson, Margaret Boltwood, Nigel Spencer, Jean Curran
Snuffler Grid Datum Point:	<u>Radio3</u> (top left corner)	Information Defining the location of the Fixed Reference Point datum on Ground/Map:	Fixed Reference Point NGR:	Fixed Reference Point Description:	
			SU 3696 7017	Southeast corner of Stibbs Wood	
Snuffler Map Name:	AreaEastGrad	Location of Snuffler Map Grid Datum Point relative to Fixed Reference Point:	Relative Position#1:	11m due west of the top left hand corner of grid <u>Radio3</u> (ie SE corner of Stibbs Wood)	
Type of Survey:	Bartlington 601 Gradiometer		Relative Position #2:	Top left hand corner of grid square Radio21 is on fence line of footpath to the north of the field	
			N-S (ie vertical) Grid Orientation Relative to Magnetic North	Vertical axis of Snuffler map grid lies at 0 deg from Magnetic North	
Neighbouring Snuffler Maps:	AreaEwestGrad AreaEeastRes				
Notes:	Field turnip stumps for the remaining area – muddy). Soil is clay-with-flint over chalk, with chalk outcrop visible in places at the east of the field by the edge of Stibbs Wood. Weather light rain and cloudy.				
Snuffler Data Files (show Ref Grid <u>bold/underlined</u>) [Ref Ohms for earth resistance]:					
empty	Radio21	Radio23			
Radio18	Radio20	Radio22			
Radio17	Radio19	empty			
Radio16	empty	empty			
Radio15	empty	empty			
Radio7	empty	empty			
Radio6	empty	empty			
Radio5	Radio14	empty			
Radio4	Radio13	empty			
<u>Radio3</u>	empty	empty			

Diagram of survey area:

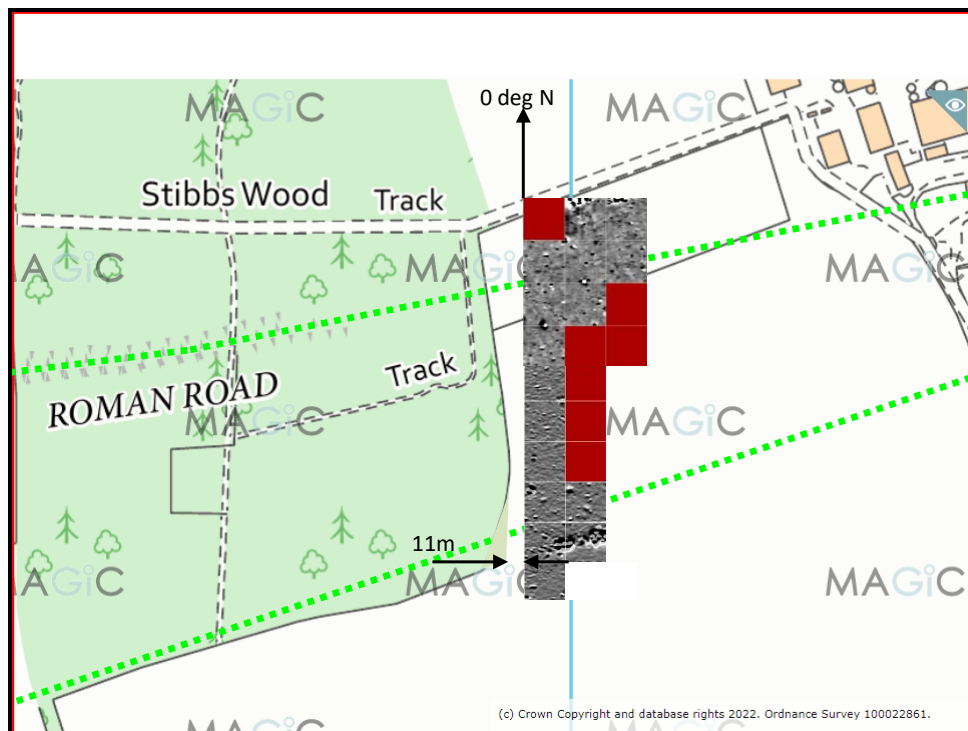


Table 6 – Area E1 Gradiometer

Area:	Area E2				
Date of Survey:	3 Mar 2022	Survey Team Leader:	Keith Abbott	Survey Team Members:	Martin Labram, Philip Rawstron, Paul Seddon, Harry Johnson, Jean Curran
Snuffler Grid Datum Point:	<u>THUWF19</u> (top right corner)	Information Defining the location of the Fixed Reference Point datum on Ground/Map:		Fixed Reference Point NGR:	Fixed Reference Point Description:
				SU 3711 7041	Public footpath sign by gatepost in the NE corner of the field by entrance gate and footpath to Stibbs Wood
Snuffler Map Name:	AreaEwestGrad	Location of Snuffler Map Grid Datum Point relative to Fixed Reference Point:		Relative Position#1:	Top right hand corner of grid <u>THUWF19</u> is 45m due south (ie 180 deg from magnetic north) from the Fixed Reference Point (ie public foot path sign in NE corner of field)
Type of Survey:	Bartlington 601 Gradiometer			Relative Position #2:	The top right hand corner of grid square THUWF7 (ie the square to the right of the reference square) is 6m from the fence between the field and the driveway
				N-S (ie vertical) Grid Orientation Relative to Magnetic North	Vertical axis of Snuffler map grid lies at 0 deg from Magnetic North
Neighbouring Snuffler Maps:		AreaEastGrad AreaEastRes			
Notes:	Field is rye stubble in SE corner for 15m and turnip stumps for the remaining area – quite muddy). Soil is clay-with-flint over chalk. Weather light drizzle and cloudy.				
Snuffler Data Files (show Ref Grid <u>bold/underlined</u>) [Ref Ohms for earth resistance]:					
THUWF16	<u>THUWF19</u>	THUWF7	empty		
THUWF15	THUWF18	THUWF6	THUWF13		
THUWF14	THUWF17	THUWF5	THUWF12		
empty	empty	THUWF4	THUWF11		
empty	empty	THUWF3	THUWF10		
empty	empty	THUWF2	THUWF9		
empty	empty	THUWF1	THUWF8		

Diagram of survey area:

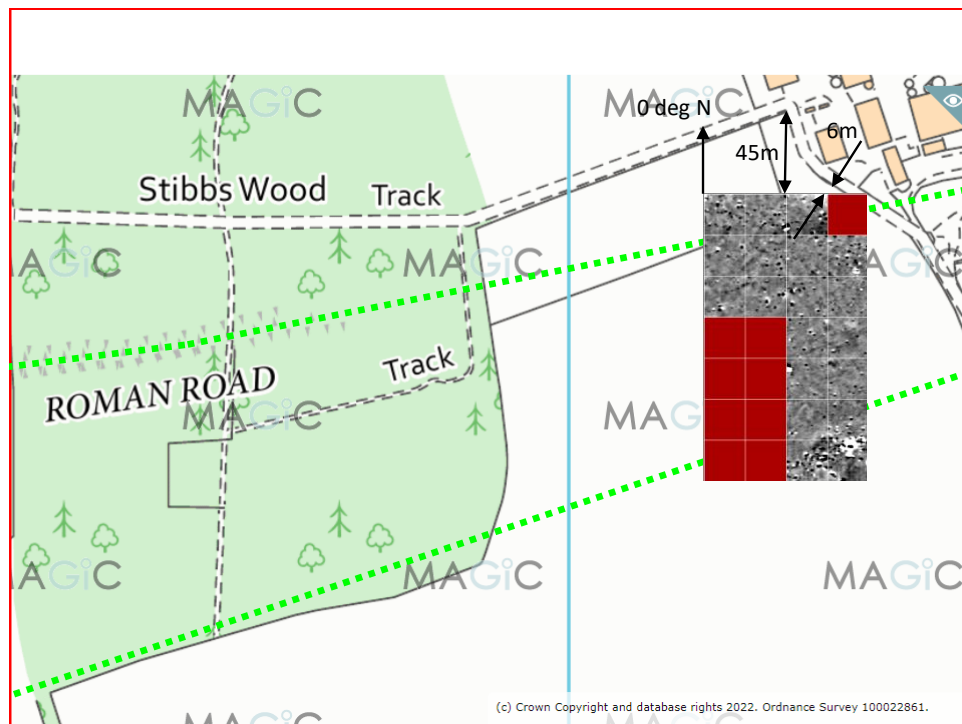


Table 7 – Area E2 Gradiometer

Area:	Area E3				
Date of Survey:	29 Sep 2021	Survey Team Leader:	Keith Abbott	Survey Team Members:	John Illenden
Snuffler Grid Datum Point:	<u>TAR3DATA1</u> (bottom right corner)	Information Defining the location of the Fixed Reference Point datum on Ground/Map:	Fixed Reference Point NGR:	Fixed Reference Point Description:	
	SU 3719 7035		Northerly gatepost to the entrance to the Farm cottage on the eastern side of the driveway (ie opposite side of the road to Area D)		
Snuffler Map Name:	AreaEastRes	Location of Snuffler Map Grid Datum Point relative to Fixed Reference Point:	Relative Position#1:	The bottom right corner of <u>TAR3DATA1</u> is 8m due west of the fixed reference point (ie 1m inside the Area D fence)	
Type of Survey:	Frobisher TAR3 earth resistance meter		Relative Position #2:		
			N-S (ie vertical) Grid Orientation Relative to Magnetic North	Vertical axis of Snuffler map grid lies at 305 deg from Magnetic North	
Neighbouring Snuffler Maps:	AreaEastGrad AreaEwestGrad				
Notes:	Easterly 10-15m is stubble, but westerly 5-10m is large turnips 0.5-1.0m high. Soil is clay-with-flint over chalk. Weather light drizzle and cloudy. Due to the height of the turnip crop the grids had to be oriented across the area mostly still stubble.				
Snuffler Data Files (show Ref Grid <u>bold/underlined</u>) [Ref Ohms for earth resistance]:					
TAR3DATA4 [???					
TAR3DATA3 [???					
TAR3DATA2 [???					
<u>TAR3DATA1</u>					

Table 8 – Area E3 Earth Resistance

Area F: Pasture East of Farmhouse

Area:	Area F2 and G2				
Date of Survey:	10 Mar 2022	Survey Team Leader:	Keith Abbott	Survey Team Members:	Philip Rawstron, Nigel Spencer, Martin Labram
Snuffler Grid Datum Point:	<u>TURNIP4</u> (top right corner)	Information Defining the location of the Fixed Reference Point datum on Ground/Map:	Fixed Reference Point NGR:	Fixed Reference Point Description:	
			SU 3738 7049	Gate post on fence line junction and NW corner of field by path	
Snuffler Map Name:	AreaFeastGrad	Location of Snuffler Map Grid Datum Point relative to Fixed Reference Point:	Relative Position #1:	Top left corner of grid TURNIP6 (see AreaGwestGrad2) located in Area G is 71m from gate post of gate in NW corner of the field and 3m from the fence running N-S at the west side of the field in Area G. The top right corner of <u>TURNIP4</u> is 6m due west of the top left corner of TURNIP6 in Area F	
Type of Survey:	Bartlington 601 Gradiometer		Relative Position #2:	The bottom right hand corner of TURNIP3 is located 6m due west of the bottom left hand corner of TURNIP5 in Area G	
			N-S (ie vertical) Grid Orientation Relative to Magnetic North	Vertical axis of Snuffler map grid lies at 0 deg from Magnetic North	
Neighbouring Snuffler Maps:	AreaFeastRes AreaFwestRes AreaGwestRes2 AreaGwestGrad2				
Notes:	Grass pasture with a couple of metal drain covers and pipes exiting in surrounding ditches suggesting number of drainage pipes buried. Soil is clay-with-flint over chalk. Weather dry, cloudy with sunny intervals. Power transmission lines to farmhouse run immediate to the south of the survey area				
Snuffler Data Files (show Ref Grid <u>bold/underlined</u>) [Ref Ohms for earth resistance]:					
TURNIP2	<u>TURNIP4</u>				
TURNIP1	TURNIP3				

Diagram of survey area:

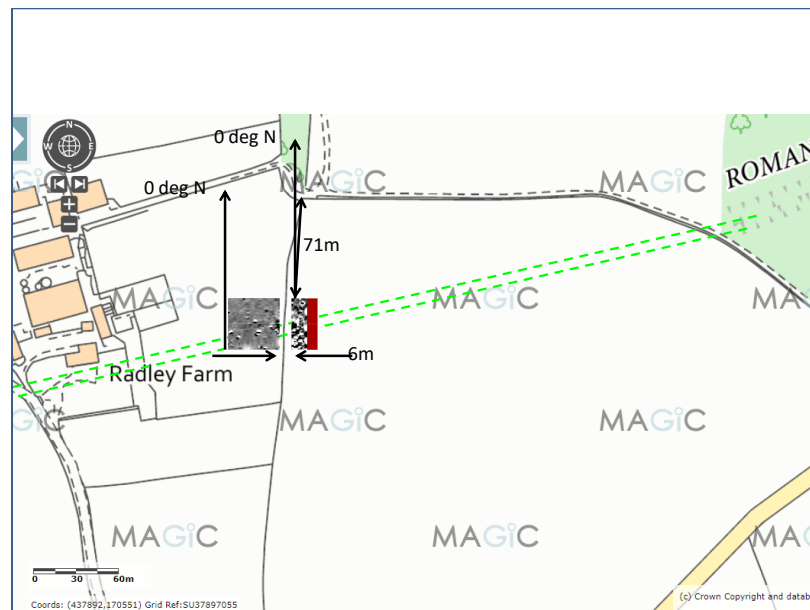


Table 9 – Area F2 Gradiometer

Area:	Area F1				
Date of Survey:	23 Sep 2021	Survey Team Leader:	Keith Abbott	Survey Team Members:	Philip Rawstron, Simon Cains
Snuffler Grid Datum Point:	<u>TAR3DATA34</u> (bottom left corner)	Information Defining the location of the Fixed Reference Point datum on Ground/Map:	Fixed Reference Point NGR:	Fixed Reference Point Description:	
			SU 37287033	The bottom left hand corner of <u>TAR3DATA33</u> is positioned at the SE corner of the grass pasture at the west end of the E-W fence line by the water tank	
Snuffler Map Name:	AreaFwestRes	Location of Snuffler Map Grid Datum Point relative to Fixed Reference Point:	Relative Position#1:	The bottom left hand corner of <u>TAR3DATA33</u> is positioned at the SE corner of the grass pasture at the west end of the E-W fence line by the water tank	
Type of Survey:	Frobisher TAR3 earth resistance meter		Relative Position #2:	The top left hand corner of TAR3DATA34 is on the other side of the fence to <u>TAR3DATA33</u>	
			N-S (ie vertical) Grid Orientation Relative to Magnetic North	Vertical axis of Snuffler map grid lies at 356deg from Magnetic North	
Neighbouring Snuffler Maps:	AreaFeastRes AreaFeastGrad				
Notes:	Grass pasture with a couple of metal drain covers and pipes exiting in surrounding ditches suggesting number of drainage pipes buried. Soil is clay-with-flint over chalk. Weather dry, cloudy with sunny intervals. Note that the bottom two grid squares are on the other side of the fence to the rest of this survey grid				
Snuffler Data Files (show Ref Grid <u>bold/underlined</u>) [Ref Ohms for earth resistance]:					
empty	TAR3DATA36 [???				
TAR3DATA31 [???	TAR3DATA37 [???				
TAR3DATA32 [???	TAR3DATA38 [???				
<u>TAR3DATA33</u> [???	empty				

TAR3DATA34 [??]	empty	
TAR3DATA35 [??]	empty	

Diagram of survey area:

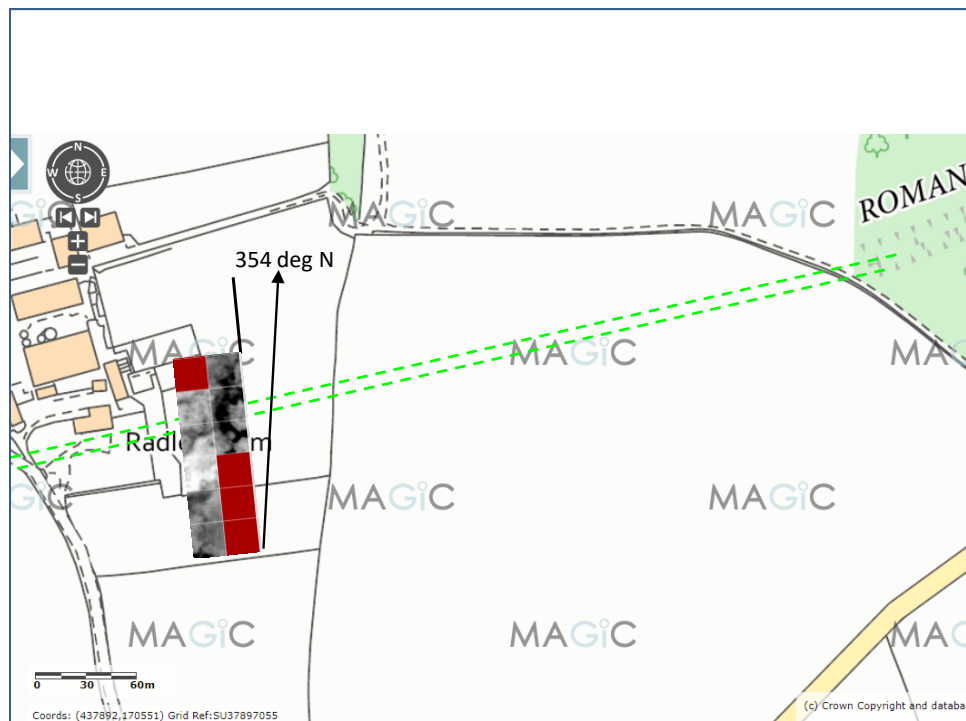


Table 9 – Area F1 Earth Resistance

Area:	Area F2 and Area G2				
Date of Survey:	10 Mar 2022	Survey Team Leader:	Keith Abbott	Survey Team Members:	Philip Rawstron, Nigel Spencer, Martin Labram
Snuffler Grid Datum Point:	<u>MUD8</u> (top right corner)	Information Defining the location of the Fixed Reference Point datum on Ground/Map:		Fixed Reference Point NGR:	Fixed Reference Point Description:
				SU 3738 7049	Gate post on fence line junction and NW corner of field by path
Snuffler Map Name:	AreaFeastRes	Location of Snuffler Map Grid Datum Point relative to Fixed Reference Point:		Relative Position#1:	Top left corner of grid MUD4 (see AreaGwestRes2) located in Area G is 71m from gate post of gate in NW corner of the field and 3m from the fence running N-S at the west side of the field in Area G. The top right corner of MUD8 is 6m due west of the top left corner of MUD4 in Area F.
Type of Survey:	Frobisher TAR3 Earth Resistance Meter			Relative Position #2:	The bottom right hand corner of MUSD7 is located 6m due west of the bottom left hand corner of TURNIP5 in Area G
				N-S (ie vertical) Grid Orientation Relative to Magnetic North	Vertical axis of Snuffler map grid lies at 0 deg from Magnetic North
Neighbouring Snuffler Maps:	AreaFwestRes AreaFeastGrad AreaGwestRes2 AreaGwestGrad2				
Notes:	Grass pasture with a couple of metal drain covers and pipes exiting in surrounding ditches suggesting number of drainage pipes buried. Soil is clay-with-flint over chalk. Weather dry, cloudy with sunny intervals.				
Snuffler Data Files (show Ref Grid bold/underlined) [Ref Ohms for earth resistance]:					
MUD6 [62.5Ω]	<u>MUD8</u> [62.5Ω]				
MUD5 [62.5Ω]	MUD7 [62.5Ω]				

[illegible]

Table 10 – Area F2 Earth Resistance

Area G: Field Southwest of Three Gate Copse

Area :	AreaG1						
Date of Survey:	22-27 Feb 2022	Survey Team Leader:	Keith Abbott	Survey Team Members:	Martin Labram, Philip Rawstron, David Richmond, Tony Bakker, Paul Seddon, Harry Johnson, Margaret Boltwood		
Snuffler Grid Datum Point:	TGC30 (top right corner)	Information Defining the location of the Fixed Reference Point datum on Ground/Map:	Fixed Reference Point NGR:	Fixed Reference Point Description:			
			SU 3767 7047	Gatepost on field fence line at SW corner of Three Gate Copse along public footpath. Fence line on south side of public footpath.			
Snuffler Map Name:	AreaGeastGrad	Location of Snuffler Map Grid Datum Point relative to Fixed Reference Point:	Relative Position#1:	Top-right-hand corner of grid TGC30 is 41m to the “west” of the Fixed Reference Point (ie gatepost on fence line) approximately at the 9 th fencepost			
Type of Survey:	Bartlington 601 Gradiometer		Relative Position #2:	Top-right-hand corner of grid TGC30 is 5.5m “south” of the fence line at the 9 th fencepost along			
			N-S (ie vertical) Grid Orientation Relative to Magnetic North	Vertical axis of Snuffler map grid lies at +12deg from Magnetic North			
Neighbouring Snuffler Maps:		AreaGeastGradReshoot (Post processed Gradiometer overlay)	AreaGeast Res (Earth resistance overlay)	AreaGwestGrad			
		AreaGwestRes					
Notes:	Fence to north of grid along public footpath contains metal wire and a large metal oil drum (SUN27 and SUN29 partial grids to maintain 5m exclusion). Field is maize stubble for most northerly 30m and turnips (30cm high) to the south. Soil is clay-with-flint over chalk. Weather dry, cloudy with sunny intervals. High voltage electricity overhead cables 25m to the south of this grid may cause some interference.						
Snuffler Data Files (show Ref Grid <u>bold/underlined</u>) [Ref Ohms for earth resistance]:							
MON5	MON11	MON16	TGC36	<u>TGC30</u>	SUN27	SUN29	
MON4	MON10	MON15	TGC35	TGC29	SUN26	SUN28	
MON3	MON9	MON14	TGC34	TGC28	SUN25	empty	
MON2	MON8	MON13	TGC33	TGC27	empty	empty	
MON1	MON7	MON12	TGC32	TGC26	empty	empty	

Diagram of survey area:

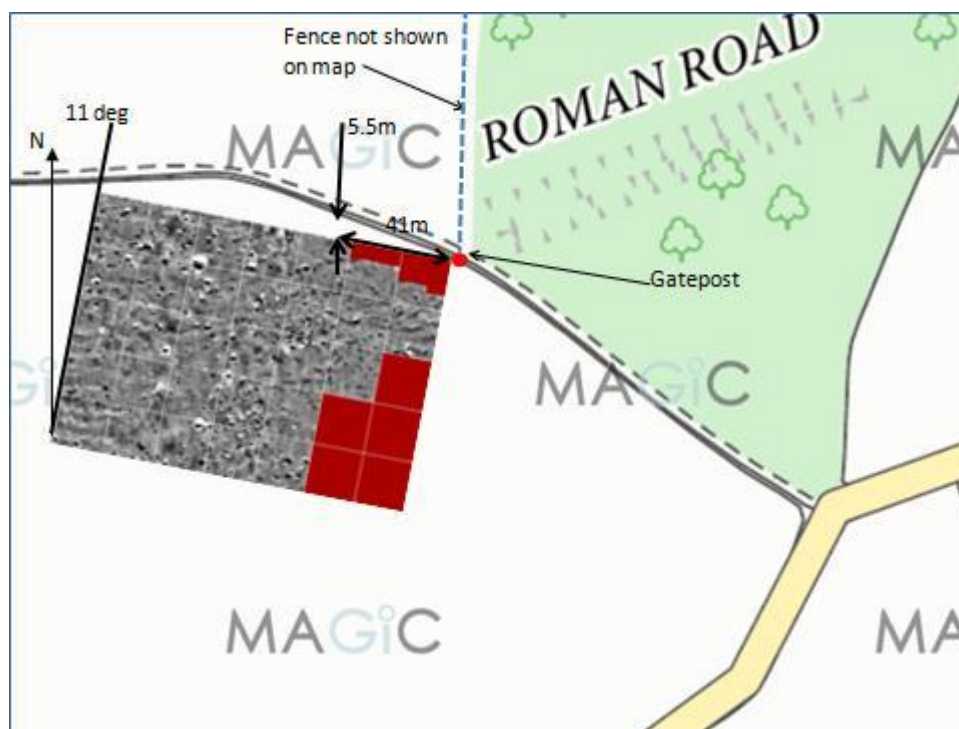


Table 10 – Area G1 Gradiometer

Area:	Area G1				
Date of Survey:	27 Feb 2022 and 29 Mar 2022	Survey Team Leader:	Keith Abbott	Survey Team Members:	Philip Rawstron, David Richmond, Tony Bakker
Snuffler Grid Datum Point:	TGCTAR28 (top right corner)	Information Defining the location of the Fixed Reference Point datum on Ground/Map:		Fixed Reference Point NGR:	Fixed Reference Point Description:
				SU 3767 7047	Gatepost on field fence line at SW corner of Three Gate Copse along public footpath. Fence line on south side of public footpath.
Snuffler Map Name:	AreaGeast Res	Location of Snuffler Map Grid Datum Point relative to Fixed Reference Point:		Relative Position#1:	Top-right-hand corner of grid TGCTAR28 is 41m to the "west" of the Fixed Reference Point (ie gatepost on fence line) approximately at the 9 th fencepost along
Type of Survey:	TAR3 Earth Resistance Meter			Relative Position #2:	Top-right-hand corner of grid TGCTAR28 is 5.5m "south" of the fence line at the 9 th fencepost along
				N-S (ie vertical) Grid Orientation Relative to Magnetic North	Vertical axis of Snuffler map grid lies at +11 deg from Magnetic North
Neighbouring Snuffler Maps:	AreaGwestRes AreaGeastGrad AreaGwestGrad				
Notes:	Fence to north of grid along public footpath contains metal wire. Field is maize stubble for most northerly 30m and turnips (30cm high) to the south. Soil is clay-with-flint over chalk. Weather dry, cloudy with sunny. Aim is to highlight any high resistance features associated with parallel linear anomalies observed in AreaGeastGrad and extend to the west until run out.				
Snuffler Data Files (show Ref Grid <u>bold/underlined</u>) [Ref Ohms for earth resistance]:					
empty	TGCTAR26 [46.5Ω]	<u>TGCTAR28</u> [46.7Ω]			
TAREXTRA33 [48.4Ω]	TGCTAR25 [46.5Ω]	TGCTAR27 [46.7Ω]			
TAREXTRA32 [48.4Ω]	TAREXTRA34 [48.4Ω]	empty			

Diagram of survey area:

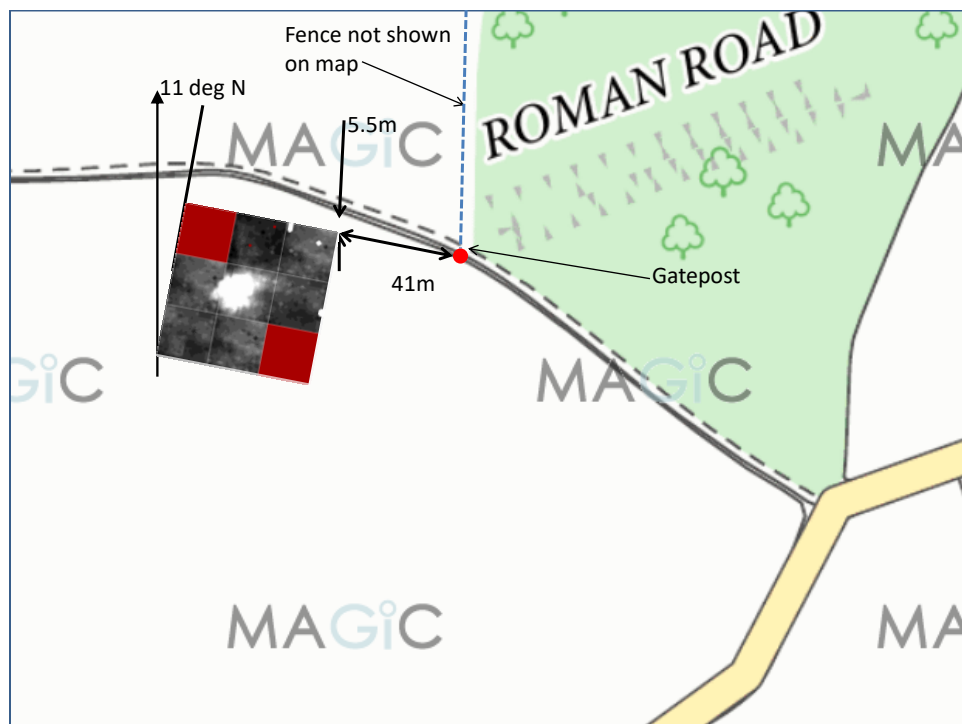


Table 11 – Area G1 Earth Resistance

Area:	Area G2				
Date of Survey:	4 Mar 2022	Survey Team Leader:	Tony Bakker	Survey Team Members:	Keith Abbott, Simon Cains
Snuffler Grid Datum Point:	<u>GWEST27</u> (top left corner)	Information Defining the location of the Fixed Reference Point datum on Ground/Map:		Fixed Reference Point NGR:	Fixed Reference Point Description:
				SU 3738 7049	Gate post and NW corner of field by path
Snuffler Map Name:	AreaGwestGrid	Location of Snuffler Map Grid Datum Point relative to Fixed Reference Point:		Relative Position#1:	Top left corner of grid <u>GWEST27</u> is 27m from gate post of gate in NW corner of the field and 5m from the fence running N-S at the west side of the field
Type of Survey:	Bartlington 601 Gradiometer			Relative Position #2:	The bottom left hand corner of grid GWEST24 is 5m from the fence running N-S at the west side of the field
				N-S (ie vertical) Grid Orientation Relative to Magnetic North	Vertical axis of Snuffler map grid lies at +4 deg from Magnetic North
Neighbouring Snuffler Maps:	AreaGwestRes AreaGeastRes AreaGeastGrad				
Notes:	The ground vegetation was part maize stubble and part turnips (30cm-50cm high). Below GWEST24 an overhead power cable runs to the farmhouse. Also below GWEST24 was an electric fence 3m away from the bottom of the grid. At the top of the grid in GWEST27 a metal fence required a part square to be recorded to maintain the 5m distance. Weather was dry and cloudy. Ground was clay and flint over chalk.				
Snuffler Data Files (show Ref Grid <u>bold/underlined</u>) [Ref Ohms for earth resistance]:					
<u>GWEST27</u>					
GWEST26					
GWEST25					
GWEST24					

Diagram of survey area:

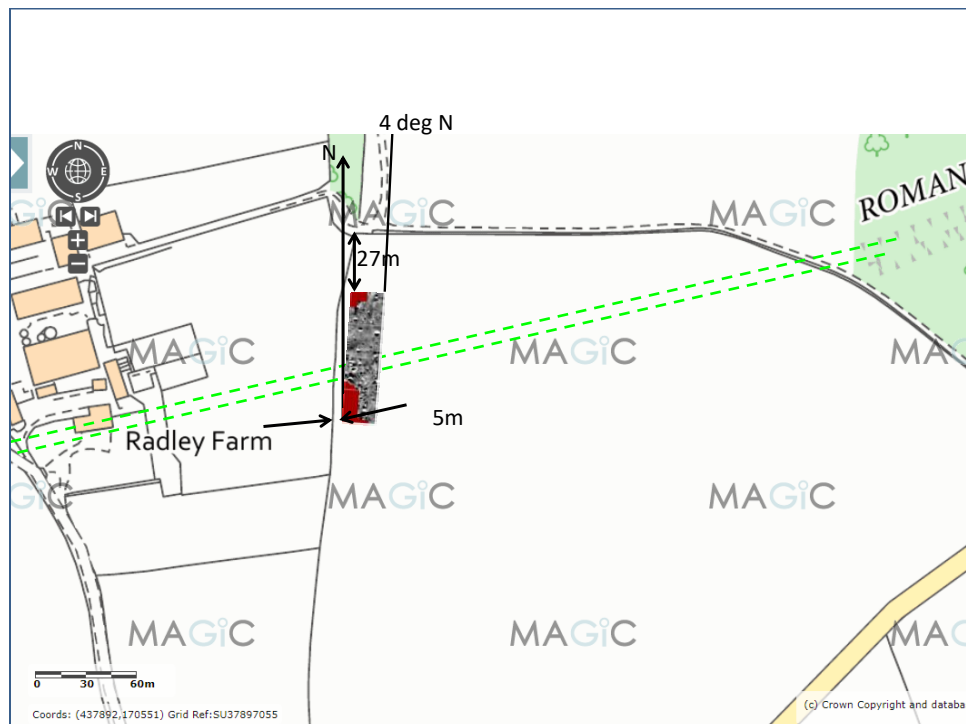


Table 12 – Area G2 Gradiometer

Area:	Area G2				
Date of Survey:	10 Mar 2022	Survey Team Leader:	Keith Abbott	Survey Team Members:	Philip Rawstron, Nigel Spencer, Martin Labram
Snuffler Grid Datum Point:	<u>MUD4</u> (top left corner)	Information Defining the location of the Fixed Reference Point datum on Ground/Map:		Fixed Reference Point NGR:	Fixed Reference Point Description:
				SU 3738 7049	Gate post on fence line junction and NW corner of field by path
Snuffler Map Name:	AreaGwestRes2	Location of Snuffler Map Grid Datum Point relative to Fixed Reference Point:		Relative Position#1:	Top left corner of grid <u>MUD4</u> is located 71m from gate post of gate in NW corner of the field on the N-S fence line and 3m from the fence running N-S at the west side of the field in Area G.
Type of Survey:	Frobisher TAR3 Earth Resistance Meter			Relative Position #2:	The bottom left hand corner of MUD1 is located 3m from the fence running N-S at the west side of the field in Area G.
				N-S (ie vertical) Grid Orientation Relative to Magnetic North	Vertical axis of Snuffler map grid lies at 0 deg from Magnetic North
Neighbouring Snuffler Maps:	AreaFeastGrad AreaFeastRes AreaGwestGrad				
Notes:	Grass pasture with a couple of metal drain covers and pipes exiting in surrounding ditches suggesting number of drainage pipes buried. Soil is clay-with-flint over chalk. Weather dry, cloudy with sunny intervals. Part squares taken in both grids due to ingress of turnips.				
Snuffler Data Files (show Ref Grid <u>bold/underlined</u>) [Ref Ohms for earth resistance]:					
<u>MUD4</u>					
[62.5Ω]					
MUD1					
[62.5Ω]					

Diagram of survey area:

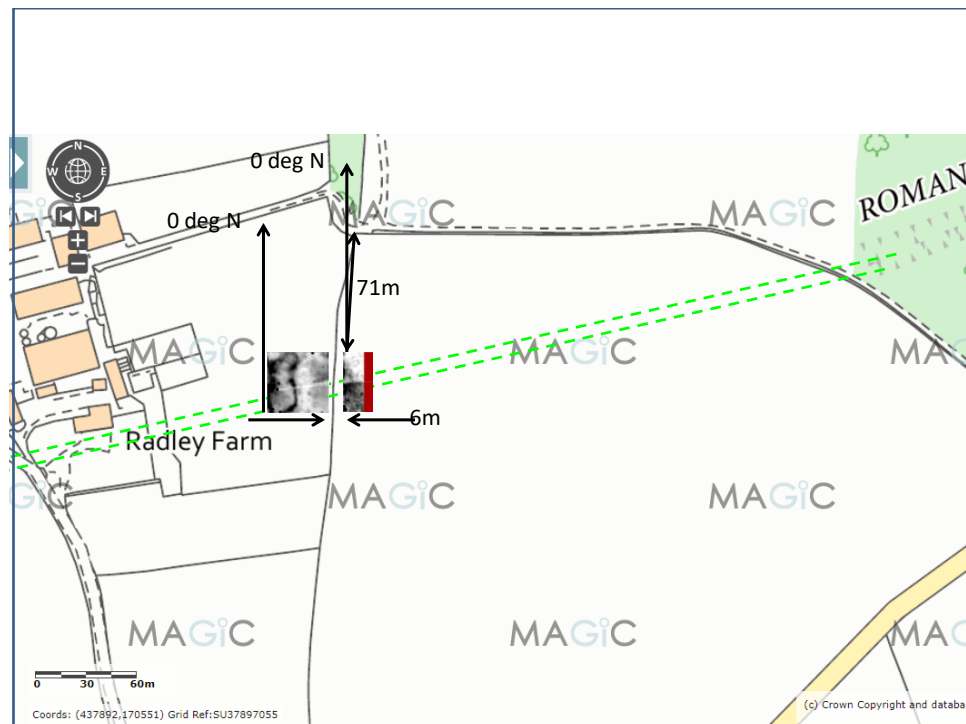


Table 13 – Area G2 Earth Resistance