

YCCCART 2023/Y5

Geophysical survey at Longworth, Ham Lane, Kingston Seymour

**YATTON, CONGRESBURY, CLAVERHAM AND CLEEVE ARCHAEOLOGICAL
RESEARCH TEAM (YCCCART)**

General Editor: Vince Russett



Resistivity team at Longworth

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Abstract

Investigation of the potential Middle-Saxon enclosure at Longworth in Kingston was illuminating. Geophysical survey found evidence for canalisation of the Broadstone Rhyne, possibly to serve the mill at Mill Leaze to the south, and also potential evidence of salt-making. Previous suggestions of a sub-oval 'infield' proved robust, indicating the likelihood of a pre-Conquest farm, and the site clearly demands further investigation.

Acknowledgements

A Heritage Lottery Grant enabled the purchase, by YCCCART, of a Geoscan RM 15 resistivity meter and a Bartington Gradiometer 601-2 without which this survey could not have been undertaken.

This survey could also not have been carried out without the willing permission of the landowners, Mr P and Mrs D Kingcott and Jane Bell.

The authors are grateful for the hard work by the members of YCCCART in performing the surveys and Vince Russett for editing. Thanks to Cat Lodge (North Somerset Council) for permission for pre-publication use of information from her community excavation work at Longworth, and the text therefrom on pp 8-9.

Introduction

Yatton, Congresbury, Claverham and Cleeve Archaeological Research Team (YCCCART) is a Community Archaeology team working across northern Somerset.

Our objective is to undertake archaeological fieldwork to enable a better understanding and management of the heritage of the area while recording and publishing the activities and locations of the research carried out.

Site location



Fig 1: Location of Longworth and survey

The fields of interest and survey area here reported on, are in the centre of Fig. 1 (survey field starred). The area consists of a sub-oval area on the north side of Ham Lane, plus a distinctive group of several fields with aratral-curve boundaries south of the Lane, one of which was surveyed (for further detail, see below). The whole is bisected north-south by the Broadstone Rhyne, a semi-natural waterway, joined by the Ham Rhyne and debouching into the Congresbury Yeo at Mill Leaze (ST37506627). The centre of the site (at ST3811066946) is occupied by a late 19th century oxhouse, now converted to a holiday let.

The whole is centred on Ham Gout, at ST38116695, on Ham Lane in the parish of Kingston Seymour, some 3.3km south of Clevedon in the unitary authority of North Somerset.

Land use and geology

The surface geology is entirely of TFD (Tidal Flat Deposits - alluvial clays, peats and sands), dominated in this area by the up to 2m of post-Roman alluvial clays of the Wentlloog unit. A 1961 borehole at ST38466684, at the eastern edge of the area, (BGS ST36NE3) showed 5.5m of alluvial clay over peat (Appendix 4). Other nearby boreholes revealed solid Mercia Mudstones at c18m depth.

Kingston is today (2023) overwhelmingly pastoral, but some of the fields in the study area are occasionally ploughed.

There is no public access to the site, although most of it can be seen from Ham Lane.

Historical & archaeological context

Part of the great archaeological importance of Kingston Seymour parish is that it is one of the few in the Northmarsh, along with Puxton and Wick St Lawrence, that are entirely or almost entirely on the alluvium, so that (as has been frequently pointed out by historians) the highest point in the parish is the top of the church.

There are other similar but better documented and published parishes to the south of Mendip (Lympsham, Berrow, Burnham-on-Sea, for example), but most 'marshland' parishes have (presumably by design) upland sections as well, even if only of low relief, such as Kenn or Meare in Somerset.

This is a landscape of very low (but very real) relief, largely waterlogged, with all the accompanying archaeological implications, and in the medieval and later periods at least, of largely dispersed settlement.

Rippon (e.g. 2006) hypothesised a set of features he named 'infields' (similar to the 'ringdykes' of the rest of north-western Europe) oval features that were the first attempts at reclamation of high saltmarsh after the post-Roman alluviation, perhaps in the 9th or 10th centuries AD. These were frequently associated with the OE place-name element '*worþ*' ('worth') meaning 'an enclosed farmstead', mentioned as early as the Dooms of King Ine in the late 7th century (YCCCART2021).

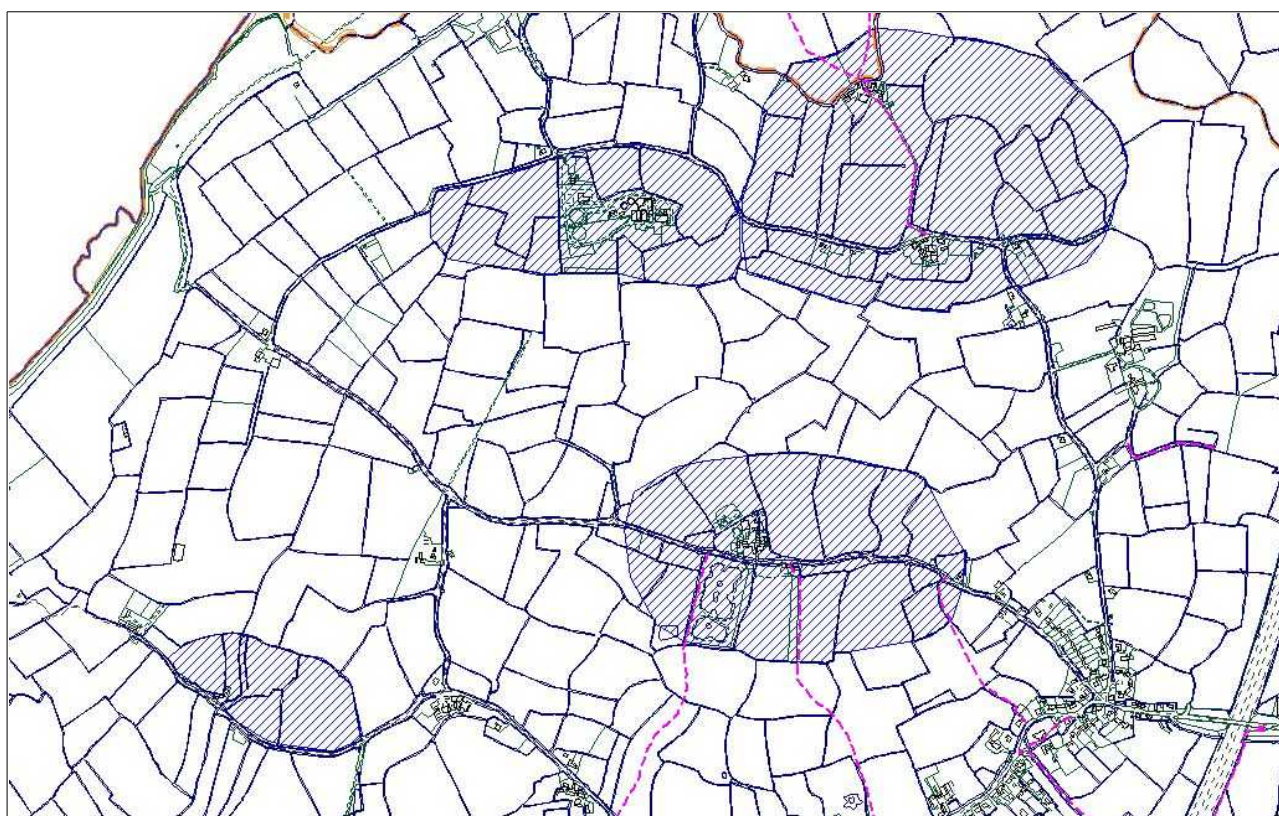


Fig 2: Some of Gilbert's proposed 'infields' in Kingston Seymour (Longworth at lower left)

Gilbert (1996) subsequently tested out this hypothesis in Kingston Seymour, and she came to the conclusion that there were several of these features identifiable in the landscape, one of which was Longworth, the subject of this report.

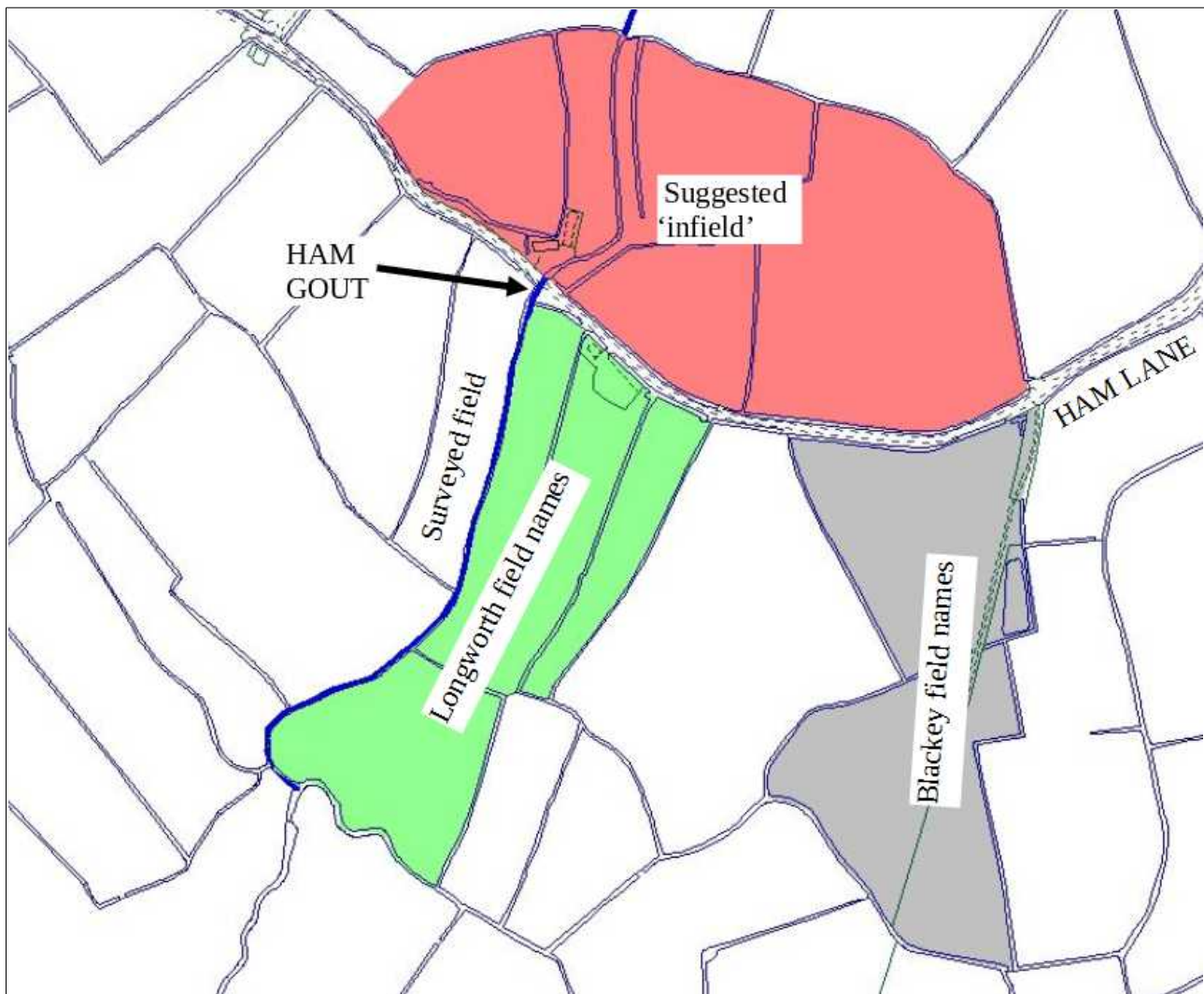


Fig 3: Gilbert's 'Longworth' (1996)

Gilbert's suggested infield (the outline is approximately 95% marked on the ground by ditches) is convincing, although this does suggest that either Ham Lane was available to form a boundary at the formation of the 'worth' or that the south boundary of the worth later formed the line of the Lane.

She also associated the 'Longworth/Langworth' field names to the south of Ham Lane with the site, and possibly also the 'Blackey' field names to its south-east, a name often indicative of dark soils implying earlier occupation, both groups names derived from the Kingston Tithe Map and Apportionment 1842/1846 and 1848 'Valuation' (privately owned; copied for YCCART *per* Jane Bell).

It is interesting to note that the eastern ditch of the proposed worth in fact runs under Ham Lane (and its crossing is marked by the characteristic small triangular space beside

the road often occurring in such cases, which can also be clearly seen further along at Ham Gout, and presumably for access for watering stock).

Also to be taken into account in examining Longworth is the presence of the Broadstone Rhyne (also referred to as 'Ham Rhyne' on the Tithe Apportionment).

The discovery in 1982 of a potential tide mill at Mill Leaze on the Congresbury Yeo, and its subsequent radiocarbon dating to C12 AD (Evans 1983; Gardner & Rippon 1997) focus attention on the Ham Rhyne / Broadstone Rhyne complex, with their 'tributaries': with some engineering, these would, with their palaeochannels (Fig 4 below) have formed storage for a large quantity of salt water at high tide, to power the mill at low.

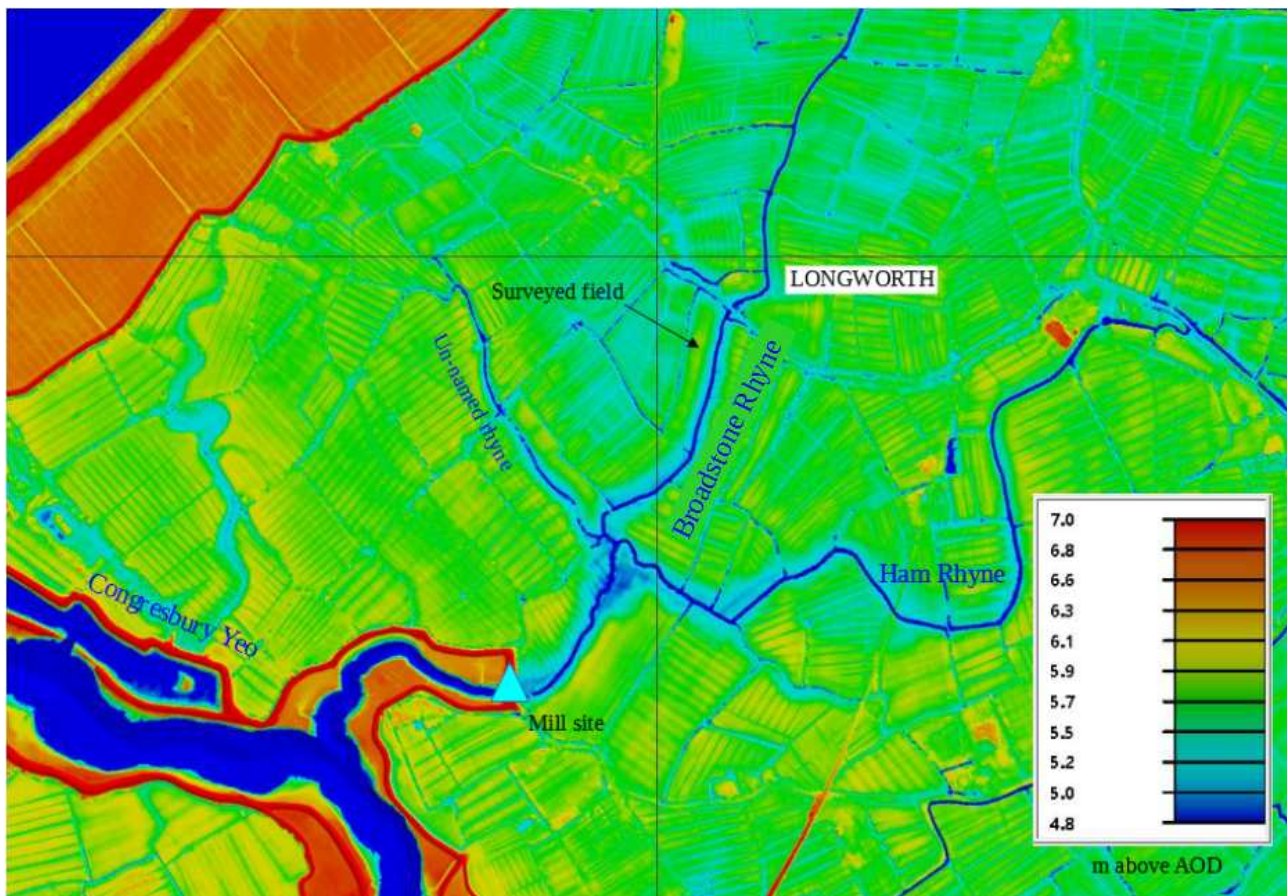


Fig 4: Tide Mill and suggested leat / palaeochannel complex, Kingston Seymour

Of course, a 64 thousand dollar question here is 'Were the worths already in existence when Kingston was gifted to Chewton Hundred in the early 10th century, or are they later and part of that process?' This is unfortunately currently not answerable.

Other features of archaeological interest, but perhaps more poorly known than is desirable, indicate early occupation as well.

A salvage excavation in 1979 of Roman material on the site of the Dutch barn behind the old ox house at ST3813066956 was recorded by Mr Frank Kingcott briefly at the time, and the records copied by VR in 2007 (Appendix 1). This was in response to a claim of RB

pottery being found at the site previously (Lilly & Usher 1972), but the earlier record is poor and not really reliable.

A second record by Mr Usher recorded a 'hearth and medieval pottery' to the south of the lane in Ham Three Acres (the surveyed field) (D Lilly notebook lent to VR for copying *per* Dave Long).



Fig 5: Ox house before conversion in 2007 (VR)

'A small excavation, led by NSC archaeologist Cat Lodge, in collaboration with Weston Museum, was undertaken in September 2022 to investigate this site. Members of the Rusty Club (Weston Museum's Young Archaeologists' Club) were trained in excavation and recording techniques as part of this project.

Two 2m x 2m test pits were located in the north of the field and little was found in the way of dateable artefactual material, the only finds of note being sherds of 13th century Ham Green ware pottery. It is thought these sherds are likely to be residual finds given they were not recovered from a secure archaeological context, and may be the result of later manuring practices. No definitive archaeological features were identified and this was in part due to the difficult ground conditions which hampered progress (namely concrete-like baked clay from prolonged dry weather)'. (*Cat Lodge*)

A further field at ST38346690 ('Bowshers Ten Acres' on TM; 'Rushy Ground' today) at the east end of the proposed worth is currently being surveyed.

Later archaeology at the site (but see survey results below) is meagre: the ox house was constructed between 1846 (Tithe) and 1885 (OS plan) (Appendix 2).

In the period 1897-1940, the Weston, Clevedon and Portishead Light Railway crossed the very tip of the site to its east: a little of the track ballast, and surprising amounts of fencing remains in places, but the site of Ham Lane station has left no trace, except for fencing posts at the entrance to the adjacent field to Rushy Ground.

Survey objectives

Pursuing somewhat minimal previous records of Roman and 13th century pottery finds, and a possible 'hearth' (see Appendices), gradiometry and resistivity surveys of TM669, Ham Three Acres, were carried out, and some research relating the site to its context.

Methodology

The survey of the fields was undertaken during the period December 2022 to February 2023 by teams from YCCCART using a Bartington Gradiometer 601-2 and a Geoscan RM 15 resistivity meter.

The completed survey was downloaded to TerraSurveyor and the resultant composites adjusted using the following filters:

Resistivity

Colour - Red Blue Green 2
Band weight equaliser
Grad shade
Clip SD2
Despiked
High pass Gaussian filter
Periphery

Gradiometry

Colour - Red Blue Green 2
Band weight equaliser
Grad shade
Destriped
Despiked
Clip SD2

The report was written in Libre Office 5 Writer.

Photographs were taken by members of YCCCART, and remain the copyright of YCCCART.

Results

Gradiometry

Kingston Seymour - 601 results

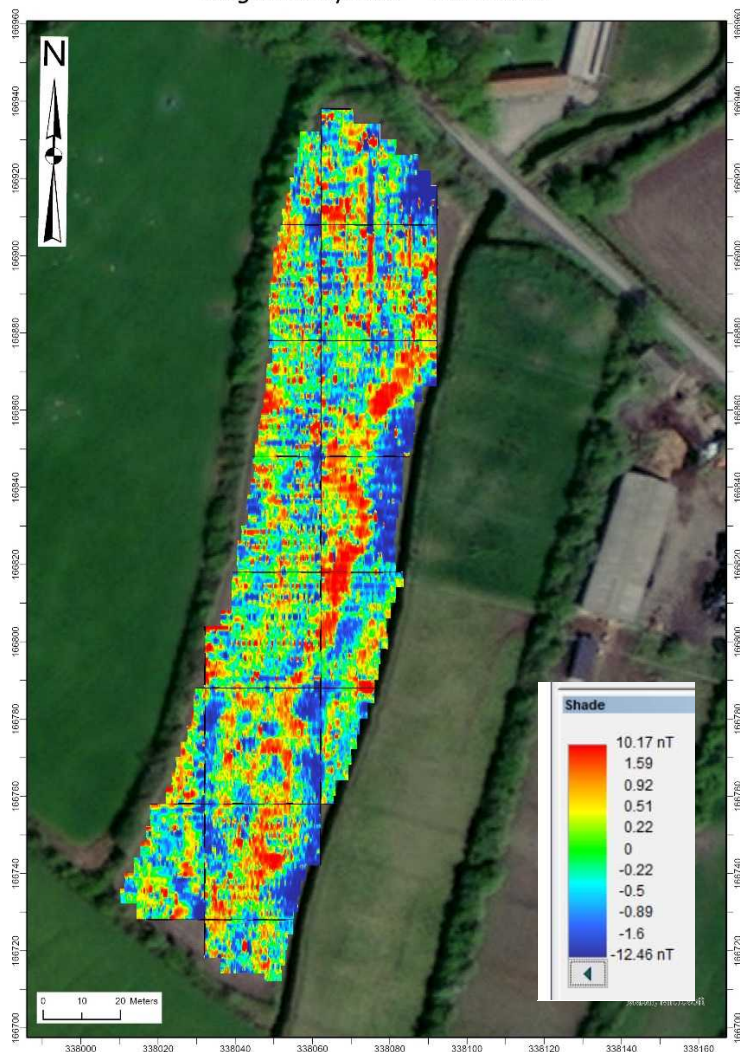


Fig 6: Gradiometry results at Ham Three Acres, Longworth on Microsoft Maxar map. (Courtesy of Richard Pearson)

This method was used initially to attempt to detect Usher's 'hearth' but it proved elusive.

The most noticeable feature was the coiling linear high-magnetic response running down the field next to the Broadstone Rhyne. The record-breaking heat and dryness of the preceding summer was probably responsible for the nature of the response, which seems to represent a palaeochannel of the Broadstone Rhyne.

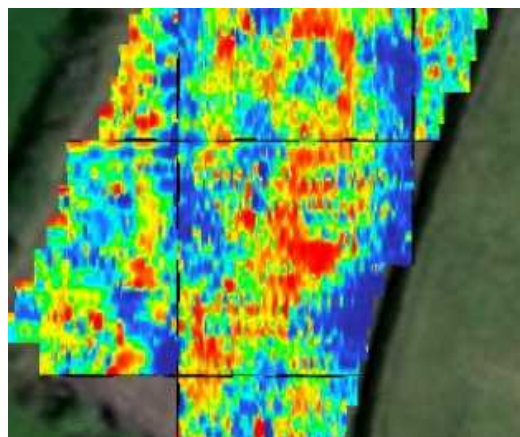
The current channel of the rhyne is presumably the successor of this, possibly due to works to service the mill at Mill Leaze. At the southern end of the field, at least two circular high magnetic responses lay in or alongside the palaeochannel (Fig 7).

The figure 7, enlarged from Fig 6, shows these circular features clearly. They are obviously derived from high magnetic responses, and probably from burning. It has been suggested that these may be associated with salt-making.

Fig 7: Gradiometric responses at the south end of Ham Three Acres

As a lot of salt water would be easily available from the Broadstone Rhyne (if it was indeed a 'millpond' water store) this might well be a good explanation of the otherwise difficult to explain features.

The features show even more clearly on the monochrome image (Fig 8 below).



Kingston Seymour - 601 results



Fig 8: Gradiometry results (monochrome) at Ham Three Acres, Longworth on Microsoft Maxar map. (Courtesy of Richard Pearson)

Salt making in the Northmarsh so far uncovered has been largely of Roman or late prehistoric origin (such as at Worle; Cox and Holbrook 2004 or Kingston itself (J Bell, *pers comm*)).

There obviously was later salt-making (hence the Salthouse pub and fields at Clevedon), but the subject has been little-studied and is ripe for further work.

It is also just possible that they instead relate to recent agricultural activity (such as placement of circular hay feeders).

The results encouraged further exploration by resistivity to attempt to locate any buildings associated with the 'hearth' in the north end of the field, but results were largely negative (Fig 9 below).

Speculation is idle, but any structures connected to a pre-Conquest 'worth' would probably be of wood, and too flimsy to register with resistivity: equally, areas of the 'mottled' gradiometry results that indicate possible industrial or domestic activity were also lacking.



Fig 9: Monochrome resistivity results on drone image (Courtesy of Richard Pearson).

Neither lidar traces nor air photographs cast much further light on Ham Three Acres, the field obviously having been heavily ploughed for decades.

Recommendations for further work

Work is currently nearly finished at a second field in the 'infield' complex: further documentary work is really needed to help fill in the later history of Longworth.

References

BGS ST36NE3	bgs.ac.uk/information-hub/borehole-records
Cos, S, & Holbrook, N. 2009	First century AD salt-making at St Georges, Worle, North Somerset Levels: Summary report on archaeological investigations 2001-2004 <i>Archaeology in the Severn Estuary</i> 20: 99-121
Evans, J. 1983	Discovery of a possible tide mill at Kingston Seymour <i>Bristol and Avon Archaeology</i> 2: 40-44
Gardner, K. and Rippon S. 1997	A possible 12 th century mill at Kingston Seymour, North Somerset . <i>Archaeology in the Severn estuary</i> 8: 102
Gilbert, P. 1996	The pre-Conquest landscape at Kingston Seymour on the North Somerset Levels: report on fieldwork 1996. <i>Archaeology in the Severn estuary</i> 7:53-58
Lilly, D. & Usher, G. 1972	Romano-British sites on the north Somerset levels. <i>Proceedings of the University of Bristol Spelaeological Society</i> 13(1): 37-40
Rippon, S. 2006	<i>Landscape, Community and Colonisation: the North Somerset Levels during the 1st to 2nd millennia AD</i> Council for British Archaeology, York
YCCART 2021	Geophysical surveys at Thornworth, Kingston Seymour yccart.co.uk/index_htm_files/Kingston%20Seymour%20Geophysical%20Survey%20Thornworth%202021%20Y2%20v%201.pdf

Authors

Vince Russett with Chris Short

Date

2023-04-18

Appendix 1: 1979 excavation at Ham Lane ox house

[DSCF3522] Documents from Ham Farm. Copied by VR 15 June 2007. Numbers in square brackets keyed to VR images database.

A meeting was held at Ham Farm at 7.00pm on Tuesday 14th June 1979, the purpose being to re-examine a piece of land where Roman pottery remains had previously been discovered when digging post-holes. The site was at the back of a cow house, near a Hay rick, on the left bank (from the road) of the Broadstone Rhyne. Mr Frank Kingcott organised the work.

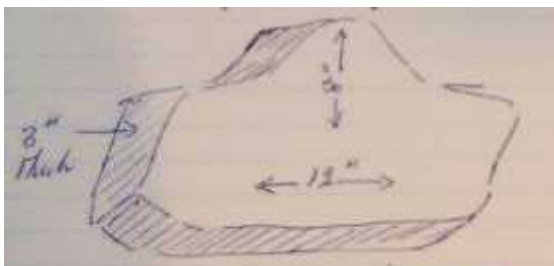
Present Mr Kingcott Mrs Burdge
 Mr Stuckey Mrs Willis
 Mr Laishley

Two holes about 2'6" [0.76m] were made, 2' [0.61m] apart.

The top 6" soil was peaty due to rotting hay remains.

The next 2ft was a brownish red loam, different from the normal Kingston clay.

Beneath this was a layer of darkened soil, black & sooty, of a sponge-like consistency, and in this, and below, various pieces of stone and pottery were found. As stone is quite foreign to the alluvial sub-soil of this district, all stone can be assumed to have been put in place by human agency. One large, flat triangular piece was of particular interest in that it had a dark patina on the lower side - perhaps fire action.



Various pieces of black-glazed pottery (Roman?) were found, esp 2 pieces of beautifully-curved pot-rim, & pieces of pot-bases, and a piece of Samian ware.

All pottery and stone was roughly cleaned on the spot, and kept for further cleaning and identification.

It was decided to continue the investigation at the next meeting on July 12th (Tues).

[DSCF3524]

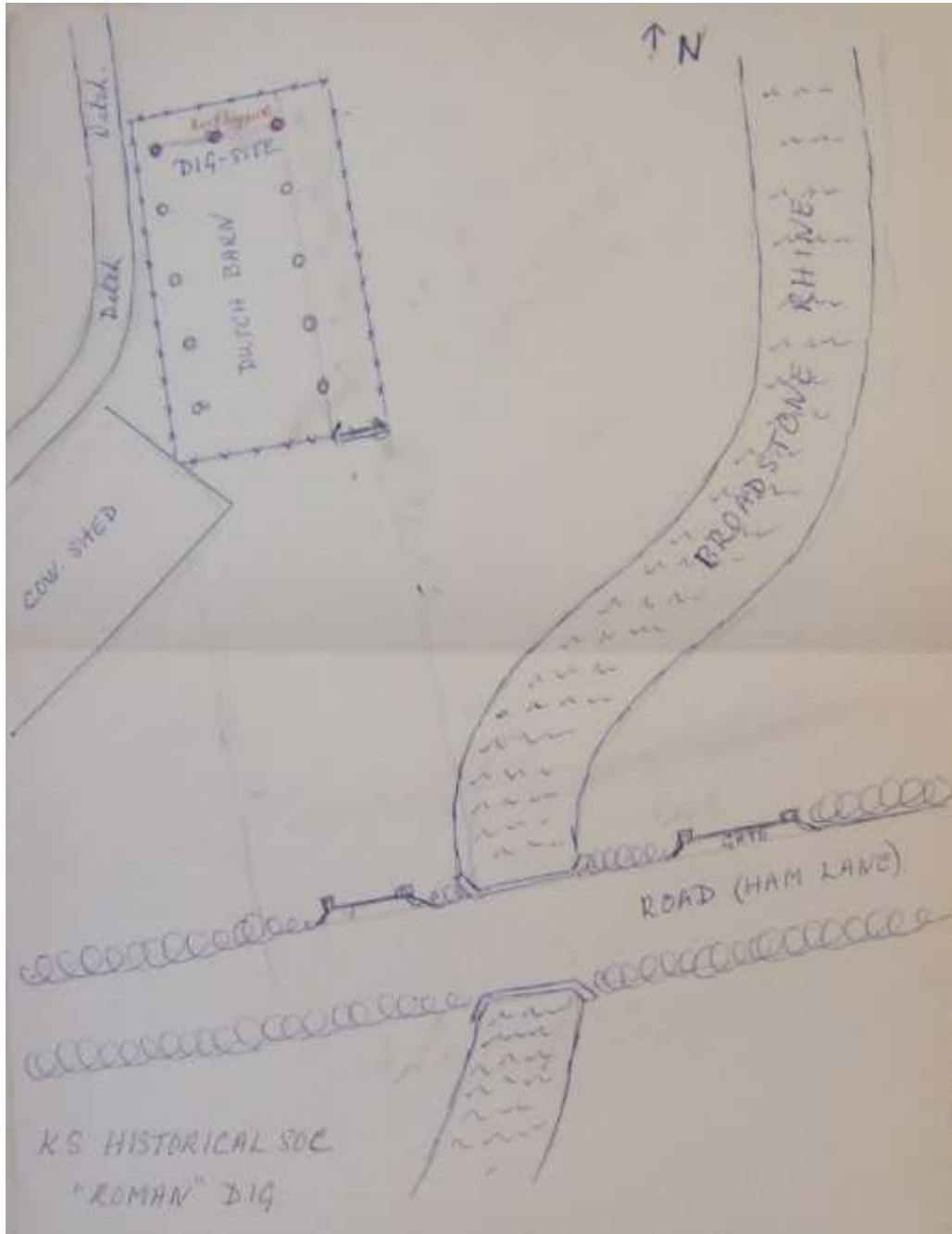
A field meeting took place at the same site on Mr Kingcott's land at Ham Farm, at 7.00pm on Tues July 12th 1979.

Present Mr Stuckey Mr Kingcott
 Mrs J Ridley Mrs F Griffin
 Mrs S Thomas Mrs Willis

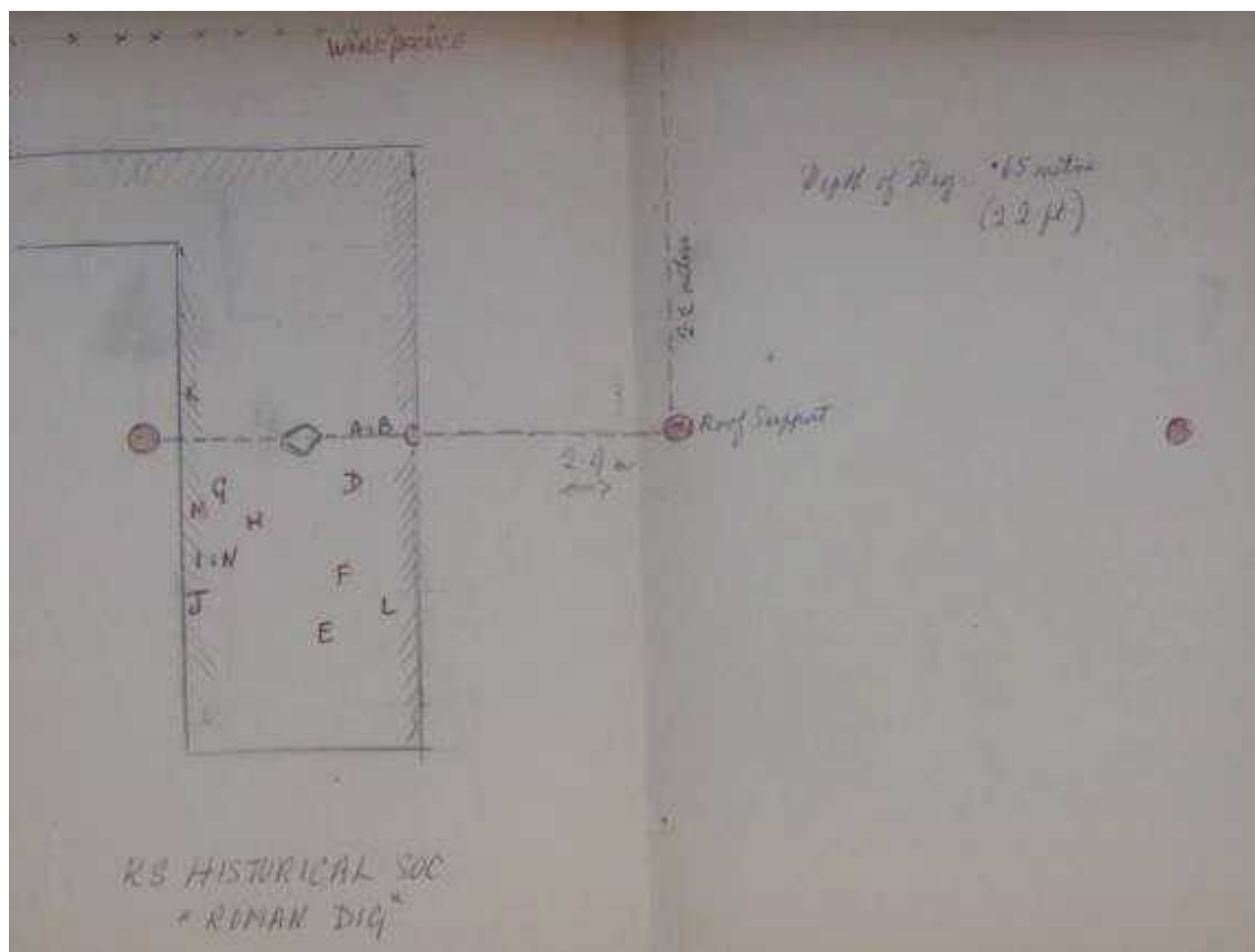
Previous to the meeting, Mr M Perrott had visited the site and had helped Mrs Willis make a rough map. As artefacts were found, each was washed, put in a polythene bag, and given an identifying letter. Mr Kingcott undertook to keep the finds in safety.

At the end of the evening the holes were filled in, as Mr Kingcott wanted the site for its normal use i.e. the storage of hay.

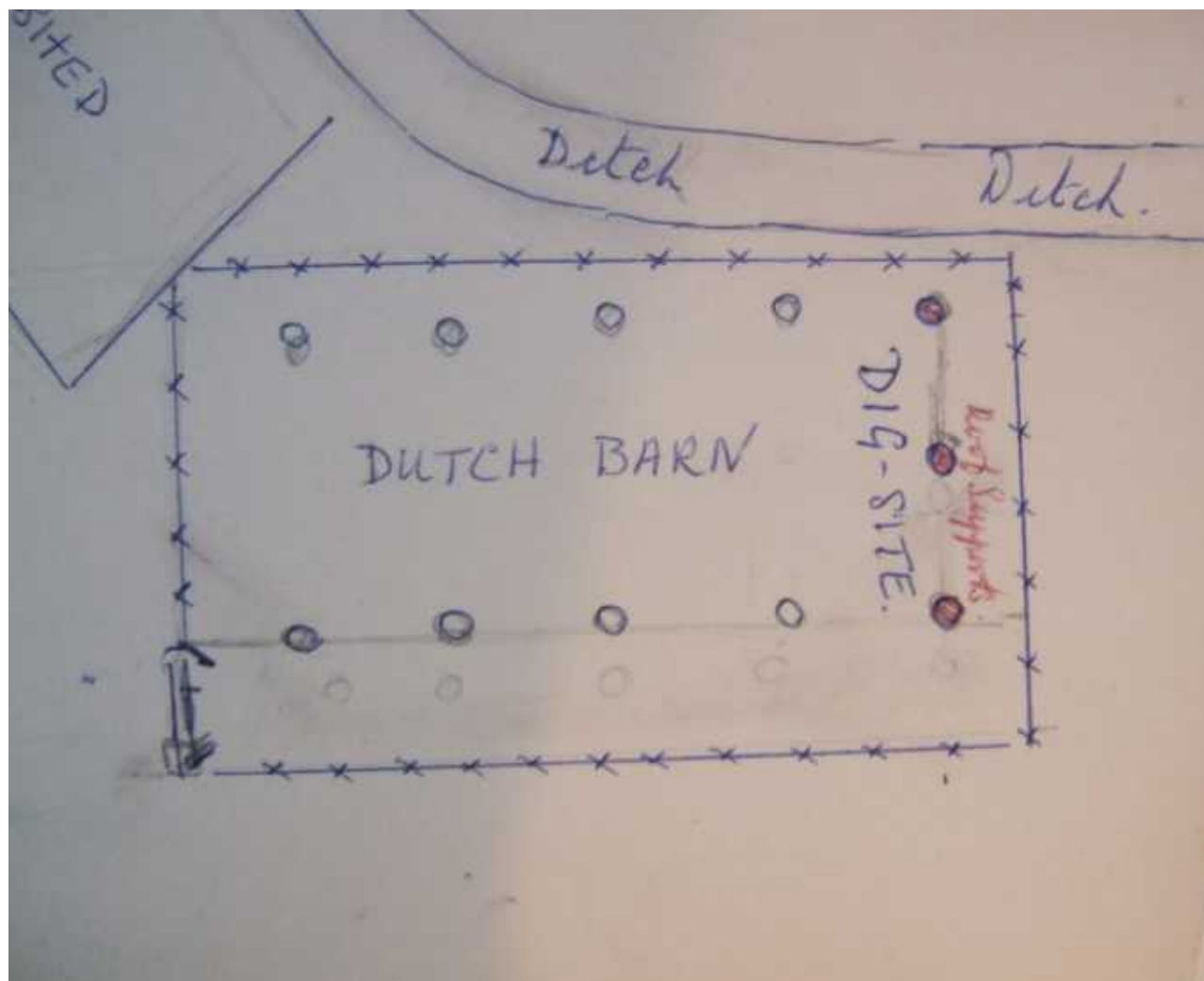
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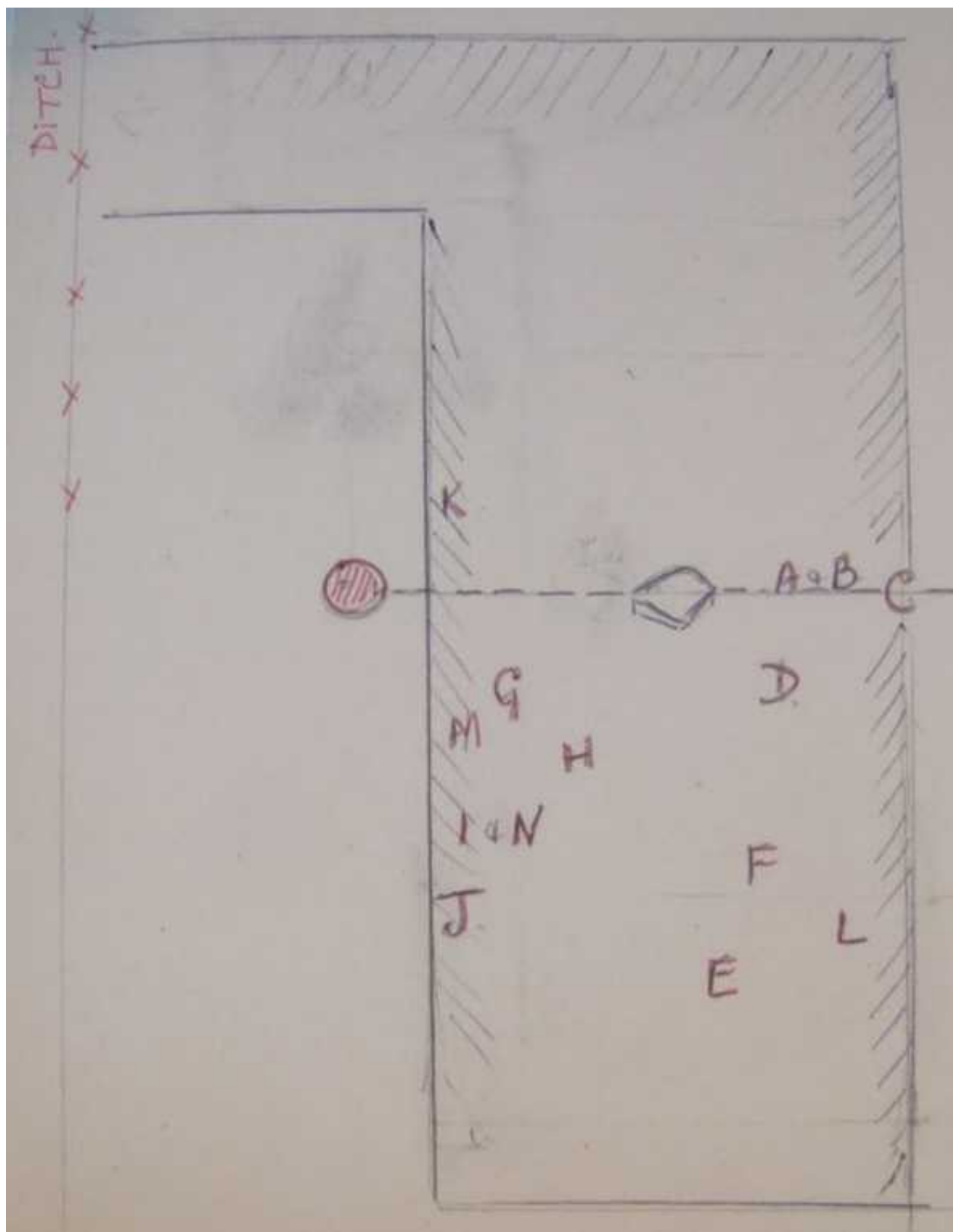
[DSCF3528]



[DSCF3530]



[DSCF3531]





[DSCF3532]

Note by VR:

No Samian or BB1 ('black-glazed ware') shown to VR in June 2007. Apart from a small iron object left of centre (probably a nail), most pottery appears to be local grey wares, very likely from Congresbury. It would be worth looking at this pottery again, if it can be found.

Appendix 2: 'Old Ox House' (ST38116694)

Plans to develop the Old Ox House were submitted in 2007: VR visited and photographed the site.



Old ox house, Ham Lane, 2007-06-11



Dutch Barn (RB site) and ox house 2007-06-11



Detail of roof showing tusk-tenon construction 2007-06-11

The HER entry claims abandoned buildings shown at this site c1840 (TM), but these are not shown on my copy.

Old ox house:

Random rubble, with break in construction at level of window cills; unfenestrated openings, door frame topped with re-used timber; roof of five triangular bolted trusses, purlins secured with tusk tenons; unlined roof of pantiles. Concrete floor and surrounding yard.

The ox house is first shown definitely on the OS Epoch 1 (c1885) map (see below): the use of tusk tenons in the roof purlins is telling. In domestic buildings in Somerset, these tend to date from the first quarter of the 19th century: the practice lasted longer in outbuildings, barns etc, so on technique alone, this building should be dated to the middle third of the 19th century, but its non-appearance on the Tithe Map dates it to perhaps 1855-75.

Ox houses were very common in the Northmarsh; they acted to give valuable oxen (castrated adult male cattle mainly used for traction) shelter and feeding, especially during the winter. They are almost always next to a source of fresh water, in this case, the adjacent Broadstone Rhyne (cattle require large amounts of water).



Old ox house, showing detail of trusses in roof 2007-06-11



Old ox house and Ham Gout 2022-09-01

The 'barn' at the rear is a rebuild of one shown on the 1971 air photographs:



Old ox house with associated outbuildings after construction of Dutch Barn, 1971

See above for illustration of Dutch Barn (these were an inexpensive option for storing baled hay, using uprights and open sides to support a galvanised iron roof, sometimes (as here) with galvanised end walls, and although originating much earlier, were popular during the second half of the 20th century).

Critically, Lilly and Usher mention recovering Roman finds from the erection of the barn, and date it to 1972. However, local information (Jane Bell, *pers comm*) indicates that the initial Dutch Barn was built in 1966/7, and replaced by the new building in 2007. The Roman archaeology seems to have underlain most of the barn site (see 'Notes from Dig 1979').

Appendix 3: Day Sheet extracts

Gradiometer

Survey area		notes		readings		
Date	Grid number	size	walk direction	max	min	mean
01/12/2022	Setting out base line and grids for base line and first two rows					
08/12/2022	1	Partial M&R	E	+99.8	-100	-2.2
	2	30 x 30	E	+24.4	-10.2	+0.3
	3	Partial M&R	E	+11.1	-7.2	+0.2
	4	Partial M&R	E	+47.0	-20.8	0.0
19/01/2023	1	Partial M&R	E	+6.9	-6.9	+0.2
	2	Partial M&R	E	+36.4	-10.5	+0.4
	3	Partial M&R	E	+17.2	-12.4	+2.6
	4	Partial M&R	E	+59.6	-100	+0.3
	5	Partial M&R	E	+24.2	-5.3	+1.4
	6	Partial M&R	W	+10.0	-10.7	+1.0
	7	Partial M&R	W	+6.1	-18.6	+1.8
	8	Partial M&R	W	+12.6	-9.2	+3.0
	9	Partial M&R	W	+14.0	-7.3	+3.4
	10	Partial M&R	W	+8.3	-8.9	+3.3
	11	Partial M&R	W	+11.2	-1.7	+2.6
	12	Partial M&R	W	+19.3	-6.3	+0.9



Location A – 11.44m to one paint dot and 3.82m to two paint dots

Location G – not able to triangulate as no permanent features available

Quiet spot – GPS E 338073.5, N 166912.0

27.2m to one paint spot on east gate post and 25.5m to two paint spots on west gate post

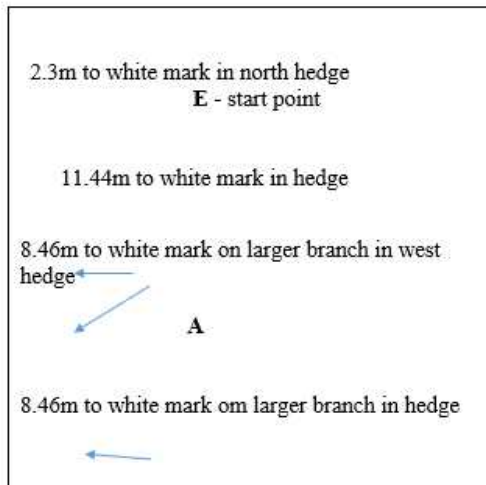
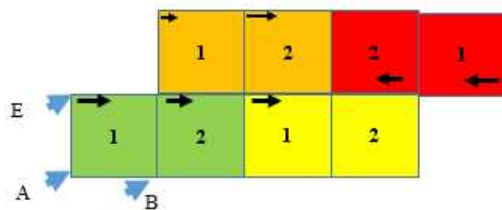
Grid layout

Resistivity

Date	Number of grids	Grid size	Direction of survey
27 OCTOBER 2022	2	20x20m	S
10 NOVEMBER 2022	2	20x20m	S
1 DECEMBER 2022	2	20 X20m	S
9 FEBRUARY 2023	2	20x20m	N

Layout

Green – 27 October
Yellow – 10 November
Orange – 1 December
Red – 9 February



Grids and grid layout

Kingston Seymour - drone aerial photo - RM15 grid references - 27/10/2022

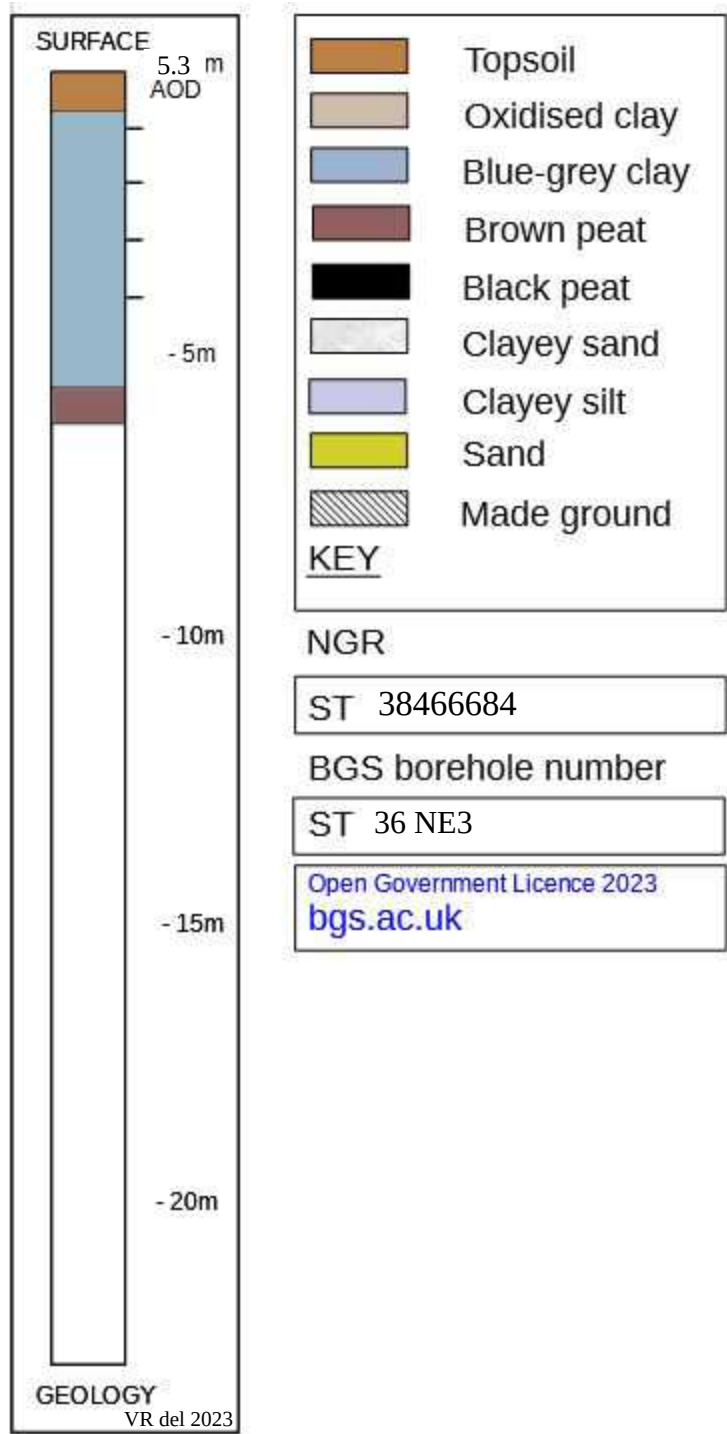


GPS



TerraSurveyor grids

Appendix 4: Borehole ST36NE3 data



This (simplified) profile (from 1961) shows the depth of TFDs, with grey alluvial clay down to 5.5m, where peat occurs. Borehole terminated at 6.1m deep (-0.8m AOD)