YCCCART 2020/Y10

Terrain model of a linear depression (Mr Collins Field 3)

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

General Editor: Vince Russett

Team YCCCART ready to go…………

Congresbury, terrain modelling survey, Iwood, Collins 3, 2020, Y10 v.1

Contents

Abstract

In 2010 gradiometry and resistivity surveys at Iwood, near Congresbury revealed an occupation site with buildings, enclosures and trackways, which may date from the Roman or early medieval period (YCCCCART 2010 / Y16). A resistivity survey in the current field at Iwood (YCCCART 2014/Y11), identified a linear feature, thought to be a possible leat. The purpose of this report was to investigate this feature using a terrain model.

Acknowledgements

Introduction

YCCCART is one of a number of Community Archaeology teams across North Somerset, supported by the North Somerset Development Management Team.

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

Site Location

Fig 1: Site location. The field is indicated by the arrow.

The site is in Iwood, a hamlet on the edge of the parish of Congresbury, bordered by the parish of Churchill.

The field is privately owned but crossed at its southern end by a public footpath along the riverbank.

Land use and geology

The north end of the fields lies on the Keuper Marl, which is overlain in the southern part by the alluvial clays of the Northmarsh. The current course of the Yeo runs along the southern boundary of the fields.

The fields are used for grazing cattle and sheep

Historical & archaeological context

This has been fully described previously *(YCCCART 2014/Y11).* Briefly, in 1996, local historian Gill Bedingfield compiled a history of Iwood, which YCCCART has included on their web site.

Previous Geophysics survey.

See YCCCART report 2014/Y11 for details of previous resistivity and gradiometry surveys in this field. The grids and results are shown in Figures 2 and 3, respectively.
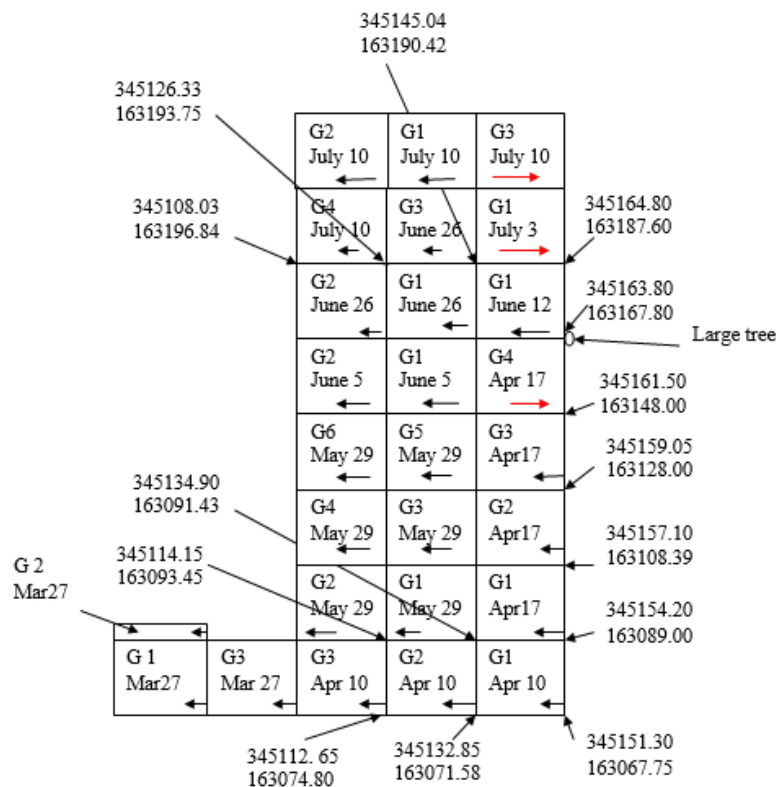
Figure 2, Grid layout, Collins field 3.
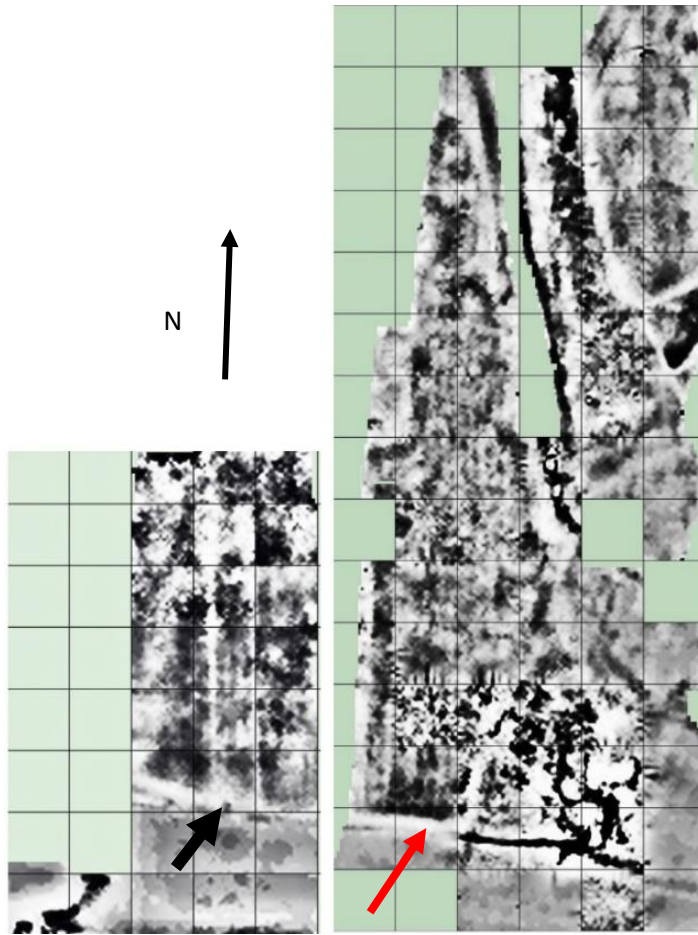
Figure 3. Resistivity results for Collins fields, 2 (right) and 3 (left). The feature, (black arrow), in Collins 3, continues into Collins 2 (red arrow).

Methodology

Terrain model

The terrain modelling survey of the linear feature was undertaken from August to November, 2018, using an electronic, hydrostatic level (Nivcomp) and computer software (Surfer 13, *Golden Software, California, USA*). The linear feature was identified in the resistivity Grids 3 and 4, May 29 and Grid 1, April 17 (Figures 2 and 3). For the terrain model, 3 grids, A1 (10 x20 m), B1 (10 x 20 m) and C1 (10 x 28 m) were established, initially, along it. Subsequently, these grids were enlarged to 2 areas, 20 x 20m, (Grids A1-3 and B1 -3) and 1 area 20 x 28m (C1-3). These were then combined together to make the final study area 68 x 20m (Appendix).

Manual field survey

Following the completion of the terrain model, it became clear that it might coincide with a field boundary in the tithe apportionment map of Congresbury, 1839. In order to establish the position of the feature relative to the farmhouse and the river, and compare it with this earlier map, it was surveyed using the distance from the house and the river, to the feature.

Results

Terrain model

The feature was clearly identified as a shallow depression (Figure 4).

Figure 4. The view along the shallow depression looking east

From the resistivity survey, *(YCCCART 2014/Y11)* the feature was identified as a white, low resistance band (Fig 3). Maximum heights above or below the zero point were 244 mm to -199mm. The raw data were processed electronically as described previously *(YCCCART 2014 /Y20)* and a 3-dimensional image, including contours (Fig 5), was produced.
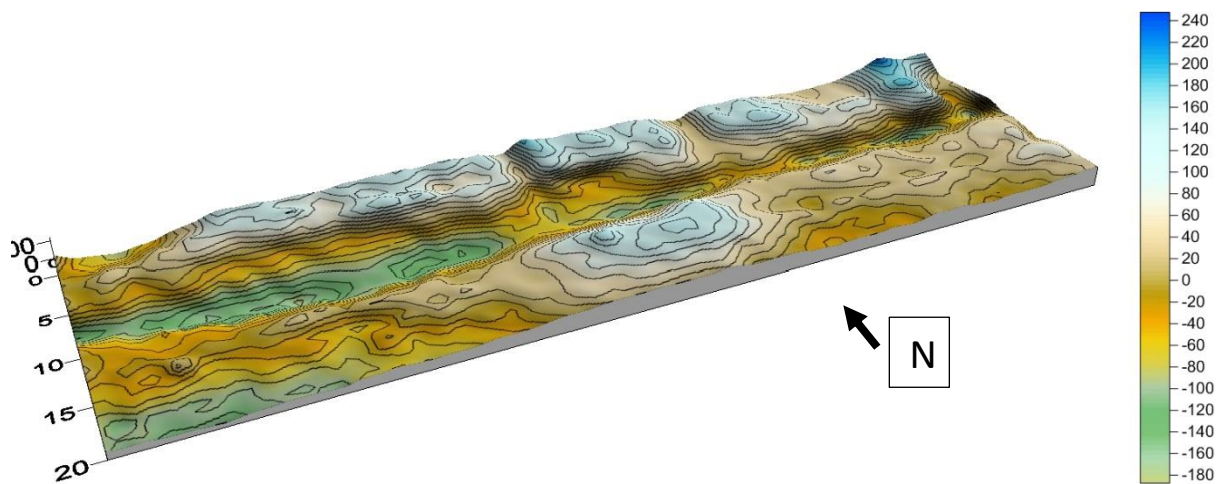
Figure 5. 3-dimensional, contour image of the feature.

Manual field survey

The surveyed length from the house to the river was 179m. The feature was 129m from the southwest corner of the house, and approximately 50m from the riverbank. The distance across the feature (east to west) was 68m. These distances were compared with an image of the 1839 map (fig 6), in which the feature is indicated by arrows. The red line represents the distance from the house to the feature, the blue line from the river to the feature. The proportions on the map for the red line, the blue line and the distance between the arrows are approximately 4 to 1.5 to 2. Thus, the length of the red and blue line (4 + 1.5 = 5.5) is approximately equivalent to 179m, giving a value of 1 = 32.5m. Using this value, the distances on the map for the red line, the blue line and the distance between the arrows are approximately 130, 48 and 65m respectively. These figures are, therefore, similar to the surveyed values, of 129m, 50m and 68m, respectively.
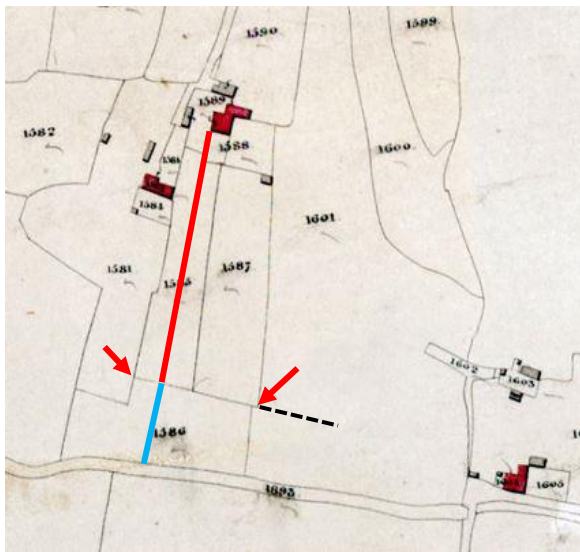
Figure 6. Image of the 1839, Congresbury tithe map. The line between the two arrows represents the feature. The red and blue lines represent the lengths from the house and river to the feature, respectively. The black, dotted line represents the continuation of the feature into the adjacent field (Collins 2).

Comments

At the beginning of the survey, it was unclear what this shallow depression represented. It was thought, initially, it might represent a possible leat and appeared to continue into the adjacent field (Collins2) *(YCCCART 2014/Y11)*. In fact, it had been partially investigated previously in Collins 2 field using the terrain model *(YCCCART 2012/Y12)*. In Collins 3, the feature was clearly represented, in the present study, as a shallow channel by the terrain model, and on a survey of the field was considered to correspond with the line of the field boundary, identified in the 1839 tithe map of Congresbury. It was of interest that, although it appeared to continue into the adjacent field, a corresponding field boundary was not identified in that field in the 1839 map. Thus, the corresponding linear feature in the adjacent field may represent an earlier 'lost' field boundary. However, by looking at the 1885 tithe map *(YCCCART 2014/Y11)* it could be seen that the boundary in Collins field 3, the subject of this report, had disappeared by 1885.

In conclusion, it is considered that the linear feature represents the 'remaining evidence' that it was the field boundary, which disappeared sometime between 1839 and 1885.

References

Bedingfield G M (1996) *Iwood, How long has it existed as a discrete settlement unit and how did this affect its economy*. MA Dissertation, University of Bristol

YCCCART 2010/Y16. *Iwood (Mr Collins fields 2&3)*

YCCCART 2012/Y13. *Manual Survey of a Field at Iwood*

YCCCART 2014/Y11. *Resistivity Survey at Iwood (Mr Collins Field 3)*

YCCCART 2014/Y20. *Manual survey using an electronic, hydryostatic level (NIVCOMP) at Wemberham Roman Villa.*

Authors: G R Pearson, C Nunn, C Campbell

Date: September 19th, 2020

Appendix

Site Report

YCCCART Site Survey Project – Manual survey, Iwood	
Survey date	9/8/18; 23/8/18; 30/8/18; 13/9/18; 27/9/18; 1/11/18
Location	Collins field 3
Site name	Leat / Field boundary
Reference	
Type / Instrument	NIVCOMP electronic hydrostatic level (MARY)
Survey area	68 x 20m grid X axis, easterly, 69 columns @ 1 m intervals Y axis, southerly, 21 columns @ 1 m intervals Z axis: height above (+), or below (-) Zero point in mm. Zero point: Northwest corner of Grid A1 [See Plan]

Data files	Raw data: Paper copy in Manual Folder
	              Scanned copy in Iwood -18, Collins
	              3 Leat /Field boundary
	Surfer: Leat complete v2.xlsx
	              Leat complete v2.grd

Survey team and conditions	
Team	9/8/18; G Pearson, C Nunn, A Dimmock, J Haynes. 23/8/18 and 30/8/18; C Nunn, M Fox, J Haynes, C Campbell 13/9/18; G Bohannon, J Wilcox, C Campbell; J Haynes, G Pearson 27/9/18 C Nunn, C Campbell, M Fox, J Haynes 1/11/18 C Nunn, C Campbell, M Fox, J Haynes, A Dimmock
Weather	9 and 30/8,13/9; Sunny, warm: 23/8 overcast; 27/9 and 1/11 – not recorded.
Additional information	
Landowner	Mr S Lyle
Tenant	
HER ref	
Site type	Meadow
Description	
Period	
Geology	
Land use	Grazing
Comments	First full use of NIVCOMP (MARY) for a survey.
Report date	June 2nd, 2020
Author	G Pearson

Plan
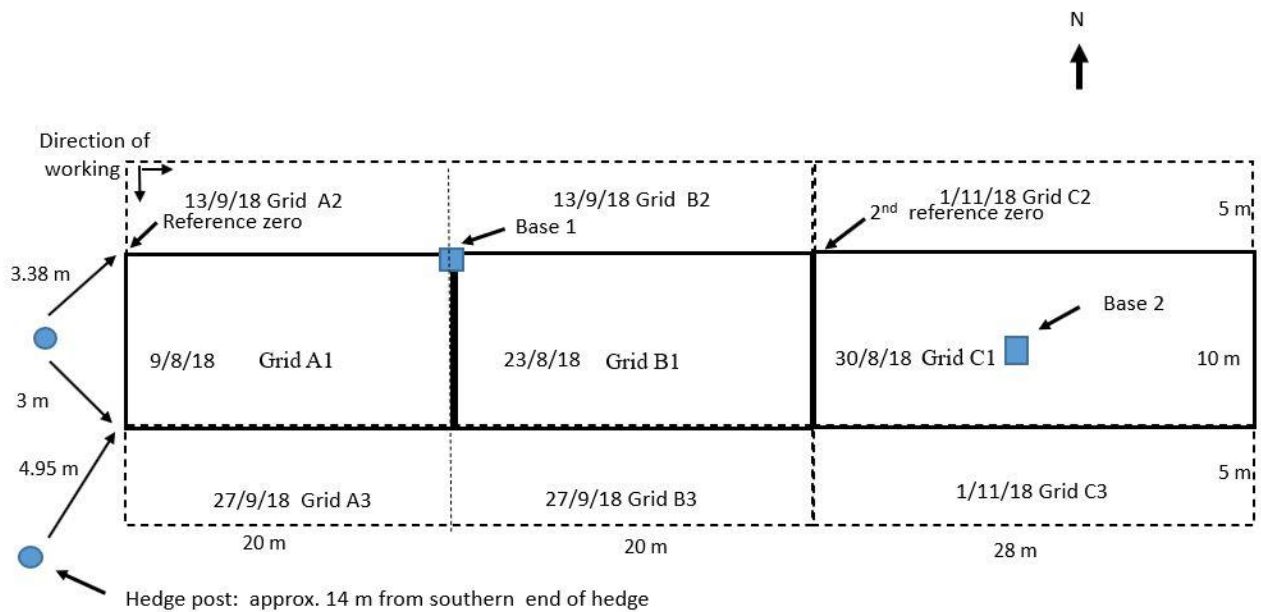
For Grid C, including extensions C2 and 3, the apparatus did not allow use of the same zero point (limit of tube length) as for Grids A and B. In order to relate all readings from a single zero point (reference zero), a new zero point was established, related to the initial zero point. This was at the northwest corner of C1. It was 43 mm below (-43mm) the original base point, and 152mm (-152mm) below the new position of the reel base at the centre of Grid C1. Accordingly, -152 + -43mm = -109mm was added to all data in Grid C, to equate the readings with those of Grids A and B.

Electronic data

Xm	Ym	Zmm		Xm	Ym	Zmm		Xm	Ym	Zmm
0	2	-62		0	41	130		1	11	98
0	3	-83		0	42	109		1	12	97
0	4	-96		0	43	86		1	13	106
0	5	-64		0	44	26		1	14	99
0	6	-52		0	45	13		1	15	82
0	7	2		0	46	82		1	16	87
0	8	40		0	47	116		1	17	71
0	9	70		0	48	107		1	18	99
0	10	127		0	49	107		1	19	109
0	11	136		0	50	116		1	20	95
0	12	128		0	51	107		1	21	114
0	13	133		0	52	77		1	22	127
0	14	107		0	53	52		1	23	131
0	15	108		0	54	57		1	24	116
0	16	111		0	55	33		1	25	105
0	17	98		0	56	39		1	26	122
0	18	108		0	57	39		1	27	110
0	19	132		0	58	49		1	28	90
0	20	127		0	59	58		1	29	113
0	21	140		0	60	89		1	30	83
0	22	130		0	61	130		1	31	68
0	23	146		0	62	168		1	32	152
0	24	122		0	63	244		1	33	170
0	25	130		0	64	230		1	34	136
0	26	142		0	65	183		1	35	126
0	27	137		0	66	161		1	36	135
0	28	114		0	67	178		1	37	149
0	29	117		0	68	177		1	38	126
0	30	63		1	0	7		1	39	115
0	31	82		1	1	-50		1	40	127
0	32	189		1	2	-64		1	41	109
0	33	168		1	3	-73		1	42	113
0	34	144		1	4	-83		1	43	84
0	35	128		1	5	-40		1	44	40
0	36	141		1	6	-28		1	45	17
0	37	130		1	7	10		1	46	73
0	38	120		1	8	26		1	47	120
0	39	114		1	9	67		1	48	96
0	40	133		1	10	108		1	49	118

Congresbury, terrain modelling survey, Iwood, Collins 3, 2020, Y10 v.1

1	50	130		2	26	83		3	2	-7
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1	61	114		2	37	144		3	13	80
1	62	167		2	38	142		3	14	96
1	63	194		2	39	107		3	15	65
1	64	196		2	40	125		3	16	73
1	65	161		2	41	112		3	17	69
1	66	135		2	42	128		3	18	84
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2	25	58		3	1	-12		3	46	80

Congresbury, terrain modelling survey, Iwood, Collins 3, 2020, Y10 v.1

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