HITCHCOCK'S BUSINESS PARK

HALBERTON

MID DEVON

DEVON

Results of a Geophysical Survey

South West Archaeology Ltd. report no. 190730

ARCHAEOLOGICAL SERVICES & HISTORIC BUILDING RECORDING
SOUTHWEST ARCHAEOLOGY

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Hitchcock's Business Park, Halberton, Mid Devon, Devon

Results of a Geophysical Survey

By P. Bonvoisin
Report Version: Final
30th July 2019

Work undertaken by SWARCH for
Neal Jillings (The Agent)
On behalf of
A Private Client (the Client)

SUMMARY

The geophysical survey at Hitchcock's Business Park identified a total of 7 anomaly groups, with the majority relating to modern disturbance or features. Two potential archaeological features were present in Field A. It is noted that none of the anomaly groups align with the approximate locations of the removed historic field boundaries, though an area of magnetic disturbance within Field E may correspond to debris from the removed boundary.

The survey results within the southern field are similar to those of the 2017 geophysical survey, meaning that some features such as ditches or field drains may still exist but due to the superficial geology their responses may be muted, along with any fill of these features likely being very similar to the natural.

Given the results of the geophysical survey the archaeological potential of the site is low, although evaluation trenching is likely to be recommended to target the features visible within Field A as well as to validate the results of the survey.

July 2019

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ACKNOWLEDGEMENTS

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1.0 INTRODUCTION

LOCATION:	HITCHCOCK'S BUSINESS PARK
PARISH:	HALBERTON
DISTRICT:	MID DEVON
COUNTY:	DEVON
NGR:	ST 05392 12183
PLANNING APPLICATION NO:	19/00928/MFUL
OASIS NUMBER:	ARCH/DM/ND/31148A
SWARCH REF:	UHB19

1.1 PROJECT BACKGROUND

South West Archaeology Ltd. (SWARCH) was commissioned by Neal Jillings (The agent on behalf of a Private Client (the Client) to undertake a geophysical survey on land south of Hitchcock's Business Park, Halberton, Devon, as part of a planning application for a proposed development and extension to the current business park. This work was undertaken in accordance with a Written Scheme of Investigation (Boyd 2019) drawn up in consultation with Stephen Reed of Devon County Historic Environment Team (DCHET) and in line with best practice and CIfA guidelines.

1.2 TOPOGRAPHICAL AND GEOLOGICAL BACKGROUND

Hitchcock's Business Park is located approximately 1.5km south-west of Uffculme, at the south-western end of the Hitchcock's Business Park, to the south-east of the M5 and B3181, and north of River Culm. The site comprises of field A at an altitude of *c.*96m Above Ordinance Datum (AOD), with fields B to E on a gentle south-east facing slope with an altitude between *c.*93m and 78m AOD (see Figure 1). The soils of this area are reddish fine loamy or fine silty over clayey permeable soils of the Whimple 3 Association bordering the permeable fine and coarse loamy permeable soils of the Wigton Moor Association (SSEW 1983). Superficial deposits of head gravel from subaerial slopes are present within Field A, and Diamicton colluvium in Fields B to E; these overlie the mudstone of the Aylesbeare Mudstone Group (BGS 2019).

FIGURE 1: SITE LOCATION (THE SITE IS INDICATED).

1.3 HISTORICAL & ARCHAEOLOGICAL BACKGROUND

Hitchcock's Business Park (formerly Hitchcock's Farm) is located at the southern edge of the parish of Halberton, in the hundred of Halberton and deanery of Tiverton. The site lies within a landscape of known prehistoric and Romano-British activity. Neolithic and Bronze Age flint has been recovered from fields to the west of the site, geophysical survey identifying evidence for a prehistoric ring ditch (Northamptonshire Archaeology 2012); prehistoric and Romano-British activity were also identified during archaeological investigations to the west (Steinmetzer 2008). Bridwell registered park and garden (DDV22975) is located to the east of the site. Immediately across the road from Field E is the route of the former Culm Valley Light Railway (MDV1507) on the adjacent side of the Uffculme Road.

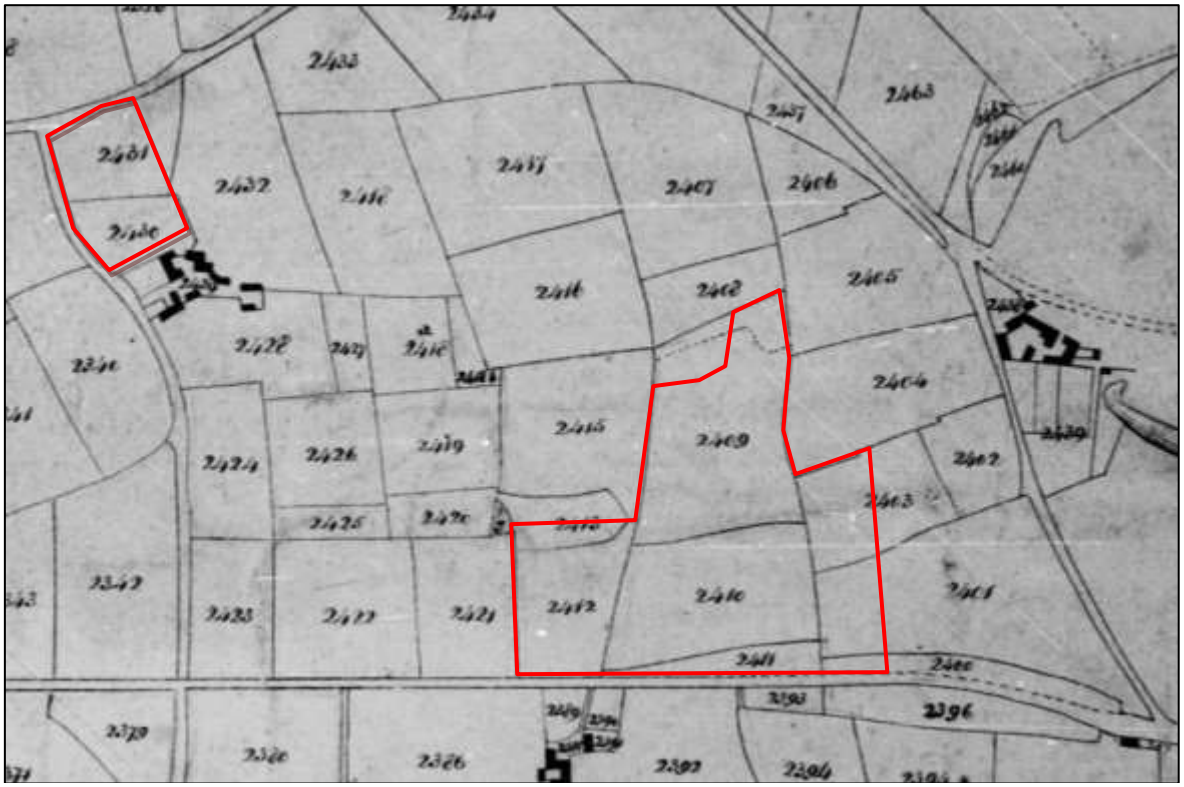

FIGURE 2: EXTRACT FROM THE 1838 HALBERTON TITHE MAP (GEN): THE SITE IS INDICATED.

FIGURE 3: EXTRACT FROM THE 1889 1ST OS 25" (SURVEYED 1887) (DEVON SHEET XLVI.7): THE SITE IS INDICATED.

Hitchcocks Farm is depicted and labelled on the 1802 Ordnance Survey surveyors draft map, and the 1840 Halberton tithe award records it as a homestead owned and occupied by William Parkhouse at this time, the fields being under a mix of orchard, arable, meadow and pasture; field name elements (*part of Selgars Moor, enclosure in the moore)* suggesting that the ground at least at the southern and south-eastern part of the site has historically been wet. The southern extent of Field A and the northern extent of Field E are both listed as orchard in the tithe apportionment and shows as such on the 25" Ordinance Survey. Previous field boundaries divide the interiors of fields, with no visible remains. An earlier field boundary within Field E (MDV107944) is visible on aerial photographs but did not lie within the survey area.

2.0 GEOPHYSICAL SURVEY

2.1 INTRODUCTION

The purpose of the gradiometer survey was to identify and record magnetic anomalies within the proposed site. While identified anomalies may relate to archaeological deposits and structures the dimensions of recorded anomalies may not correspond directly with any associated features. The following discussion attempts to clarify and characterise the identified anomalies. The survey was undertaken on the 9th to the 11th, 15th, 16th and 25th of July 2019 by P. Bonvoisin; the survey data was processed by P. Bonvoisin. An area of *c.*7ha was surveyed. The survey identified seven groups of anomalies: two of potential archaeological origin.

2.2 METHODOLOGY

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

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

Processes: Clip +/- 3SD; DeStripe all traverses, median. DeStagger of particular grids.
Details Field A: 0.64175ha surveyed; Max. 112.68nT, Min. -101.37nT; Standard Deviation 6.98nT, mean -0.50nT, median 0.00nT.
Details Fields C, D, E: 5.9616ha surveyed; Max. 157.27nT, Min. -128.63nT; Standard Deviation 15.87nT, mean -0.62nT, median 0.00nT

2.3 SITE INSPECTION

The site was comprised of five fields (A to E), with Field A being situated to the west of the business park and Fields B to E to the south and south-east of the business park. Fields A and D encompassed whole fields, with C and D comprising parts of larger fields. Field B had undergone significant earthworks and has been repurposed as a reservoir; as such this ground was unsuitable for geophysical survey. The north-eastern half of Field A was heavily overgrown with a large earth bank and fence dividing the field, the south-western half of the field was pasture, with overhead cables in the southern corner of the field. Field B has been repurposed as a reservoir; the built-up ground was not surveyed. Field C was under pasture, with the northern section of the field already under made ground and part of the business park; a cordoned off shed was present along the eastern boundary. Fields D and E are connected, with the dividing field boundary partially removed and only temporary electric fencing separating the two, both are mostly under pasture. With the north-western corner of Field D fenced off and the northern edge of Field E fenced off and containing livestock pens. Various farm equipment was present across the site, including a silo within Field E. The eastern boundary of the surveyed area within Field E is open to pasture. A few oak trees from the relict field boundary are visible on a rough north-south axis. The area of made ground in the south-western corner of Field E is visible on site.

FIGURE 4: VIEW ACROSS FIELD A; VIEWED FROM THE SOUTH.

FIGURE 5: VIEW ACROSS FIELD B; VIEWED FROM THE SOUTH.

FIGURE 6: VIEW ACROSS FIELD C; VIEWED FROM THE SOUTH-EAST.

FIGURE 7: VIEW ACROSS FIELD D; VIEWED FROM THE NORTH.

FIGURE 8: VIEW ACROSS FIELD E; VIEWED FROM THE NORTH-EAST.

2.4 RESULTS

Table 1 with the accompanying Figures 9, 10 and 11 show the analyses and interpretation of the geophysical survey data. Additional graphic images of the survey data and numbered grid locations can be found in Appendix 2.

Anomaly Group	Class and Certainty	Form	Archaeological Characterisation	Comments
1	Weak positive, possible	Wide curvilinear	Cut feature	Indicative of a cut feature has a narrow negative band surrounding the exterior of the feature. Responses of *c.*+2.62nT to +1.09nT.
2	Moderate positive, probable	Linear	Possible pit	Indicative of a cut feature, though the form is not clear. Responses of *c.*+11.53nT to +1.80nT.
3	Very weak positive to negative, probable	Ovoid	Agricultural activity	Indicative of the location for previous feeding/watering troughs or similar. Responses of *c.*+1nT to -1nT.
4	Moderate positive to negative, probable	Linear	Modern utility	Indicative of a modern utility line, leading to the shed within field C. Responses of *c.*+9.33nT to -12.24nT.
5	Very strong positive to negative, probable	Amorphous area	Trampled or disturbed ground	Indicative of high cattle movement within these areas disturbing the ground. Responses of *c.*+100nT to -100nT.
6	Very strong positive to negative, probable	Amorphous area	Trampled or disturbed ground	Indicative of high cattle movement within these areas disturbing the ground. Responses of *c.*+100nT to -100nT.
7	Very strong positive to negative, probable	Amorphous area	Made ground	Indicative of made ground, matching mapping and on-site evidence. Responses of *c.*+100nT to -100nT.

TABLE 1: INTERPRETATION OF GRADIOMETER SURVEY DATA.

2.5 DISCUSSION

The survey identified seven groups of anomalies, most of which appear to be modern with two of possible archaeological interest.

Group 1 is a weak positive (*c.*+2.6nT to -1nT) wide curvilinear or circular feature, indicative of a cut feature with a possible small bank on the exterior edge.
Group 2 is a moderate positive linear (*c.*+11.5nT to +1.8nT), indicative of a cut feature. The response is stronger around a central point suggesting a possible pit.
Groups 3 are very weak positive to negative ovoids representative of modern agricultural activity.
Group 4 is a moderate linear indicative of a modern utility.
Groups 5, 6 and 7 are very strong mixed amorphous areas indicative of disturbed ground, with groups 5 and 6 representing heavy damage by cattle along a 'track' and adjacent to the hedge bank above a water trough; with group 7 representative of made ground.

Modern disturbance, di-polar anomalies and magnetic disturbance are also located across the site. The disturbance along the eastern boundary of field C represents HERAS fencing surrounding a shed, which meets the line of anomaly group 4.

FIGURE 9: SHADE PLOT OF GRADIOMETER SURVEY DATA; GRADIATED SHADING.

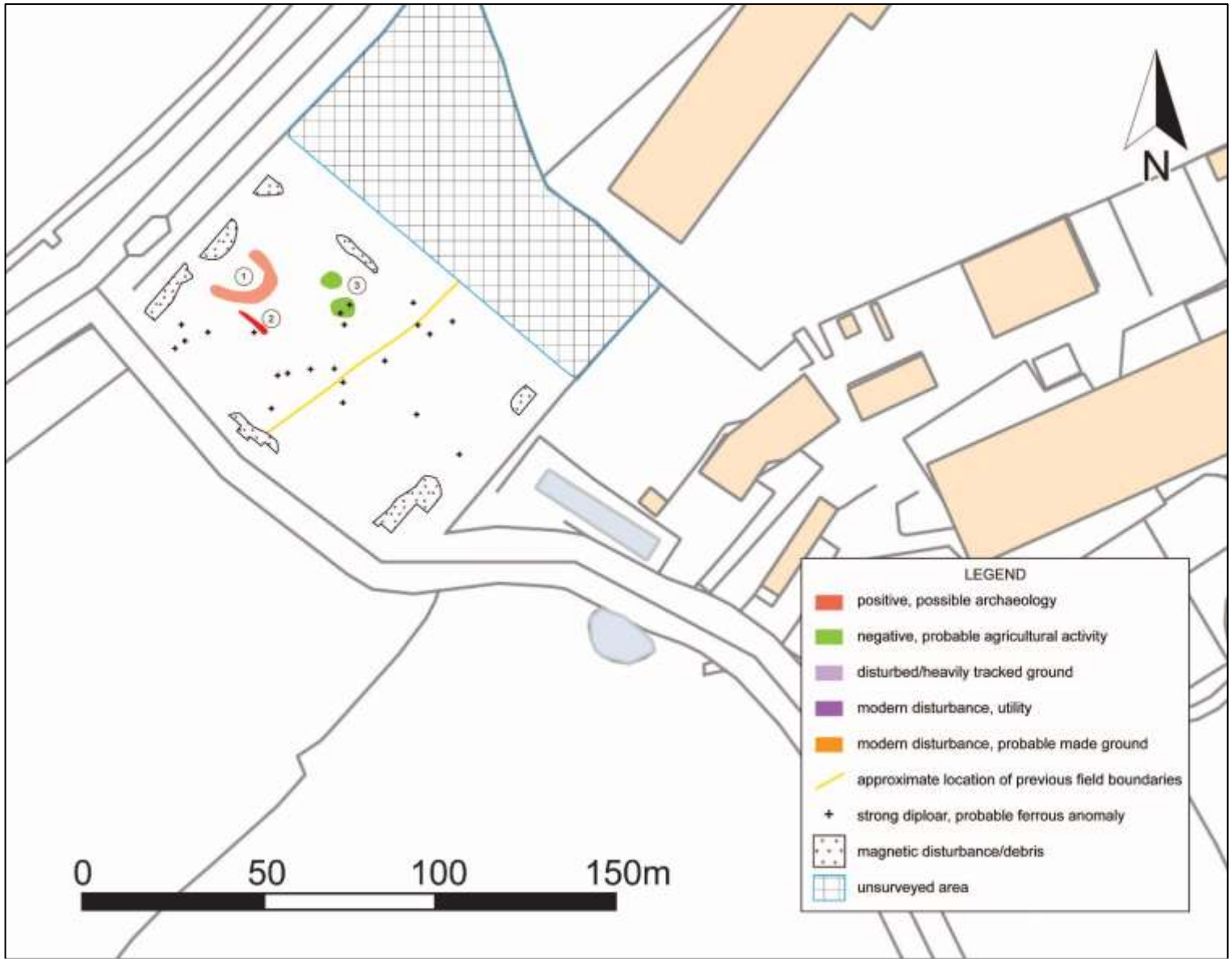

FIGURE 10: INTERPRETATION OF GRADIOMETER SURVEY DATA; FIELD A.

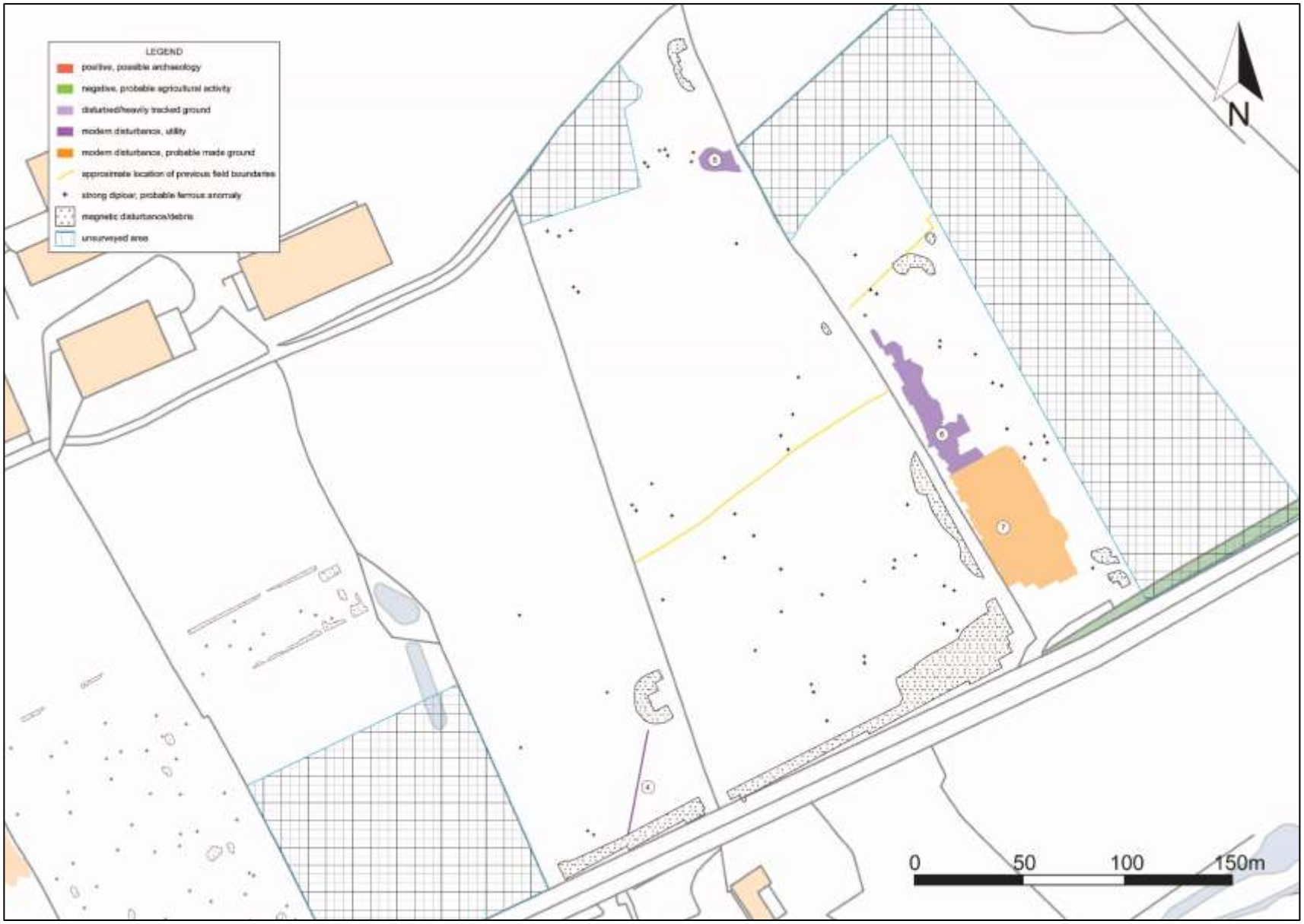

FIGURE 11: INTERPRETATION OF GRADIOMETER SURVEY DATA; FIELDS C, D AND E.

3.0 CONCLUSION

The geophysical survey at Hitchcock's Business Park identified a total of 7 anomaly groups, with the majority relating to modern disturbance or features. Two potential archaeological features were present in Field A. It is noted that none of the anomaly groups align with the approximate locations of the removed historic field boundaries, though an area of magnetic disturbance within Field E may correspond to debris from the removed boundary.

The survey results within the southern field are similar to those of the 2017 geophysical survey, meaning that some features such as ditches or field drains may still exist but due to the superficial geology their responses may be muted, along with any fill of these features likely being very similar to the natural.

Given the results of the geophysical survey the archaeological potential of the site is low, although evaluation trenching is likely to be recommended to target the features visible within Field A as well as to validate the results of the survey.

4.0 BIBLIOGRAPHY & REFERENCES

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Chartered Institute for Archaeologists 2014: *Standard and Guidance for Archaeological Geophysical Survey*.

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http://maps.bgs.ac.uk/geologyviewer_google/googleviewer.html [accessed 29.7.19]

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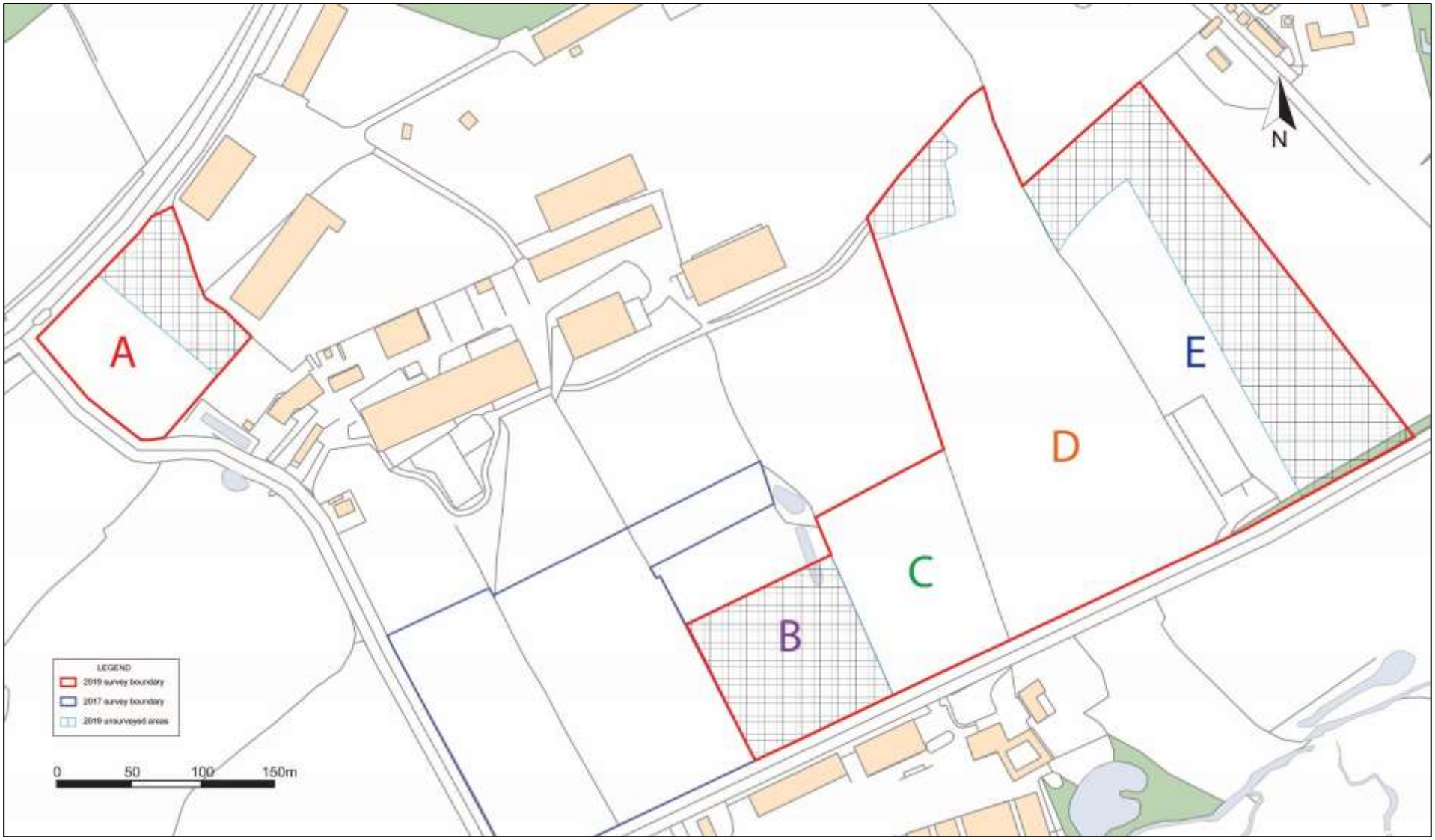
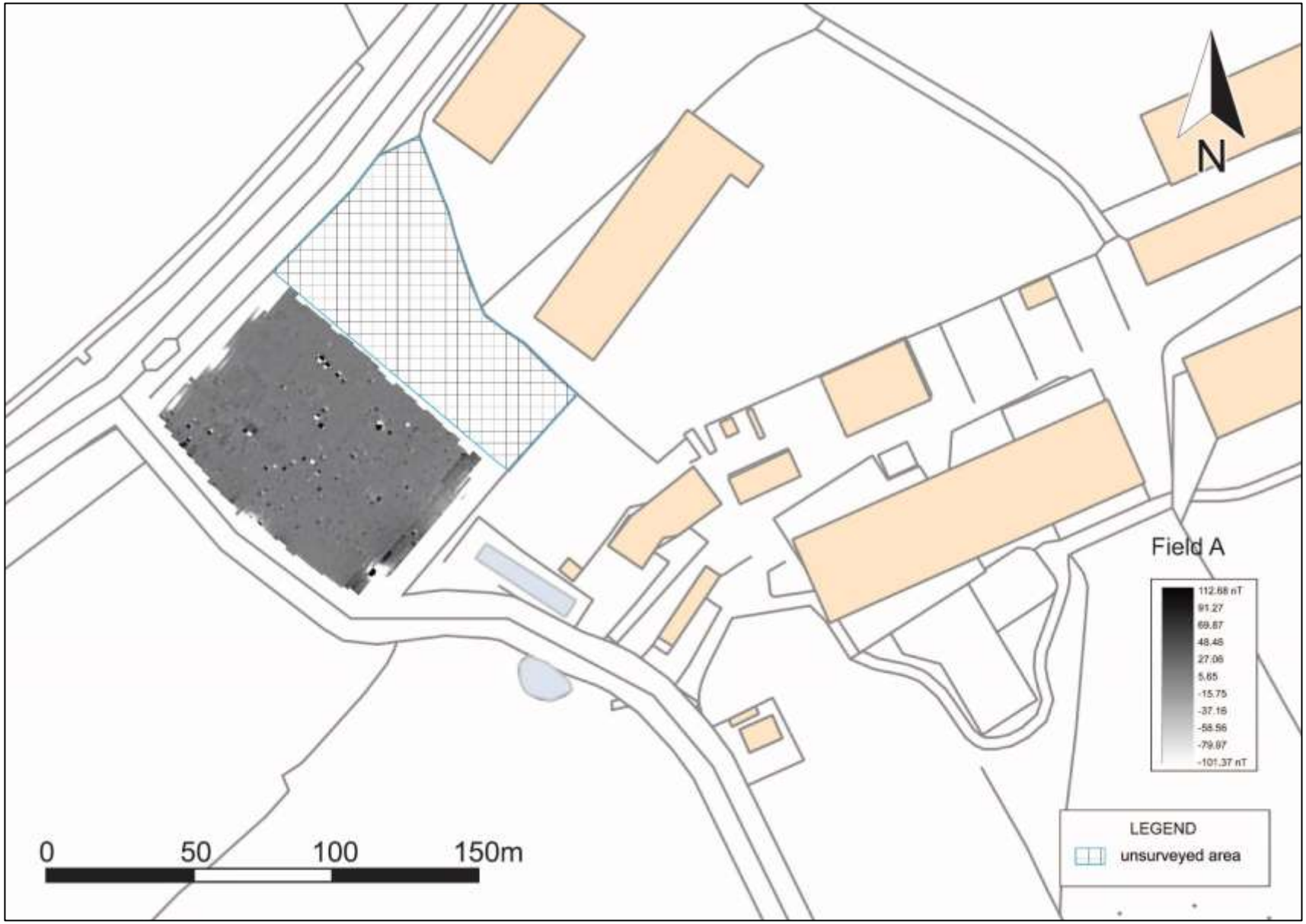
Steinmetzer, M. 2008: *Archaeological Excavation at Four Ways Cross, Willand, Devon, 2007 (Phase 1).* Exeter Archaeology: Report No. 09.31.

APPENDIX 1: ADDITIONAL GRAPHICAL IMAGES OF THE GRADIOMETER SURVEY

GEOPHYSICAL SURVEY GRID LOCATION AND NUMBERING.



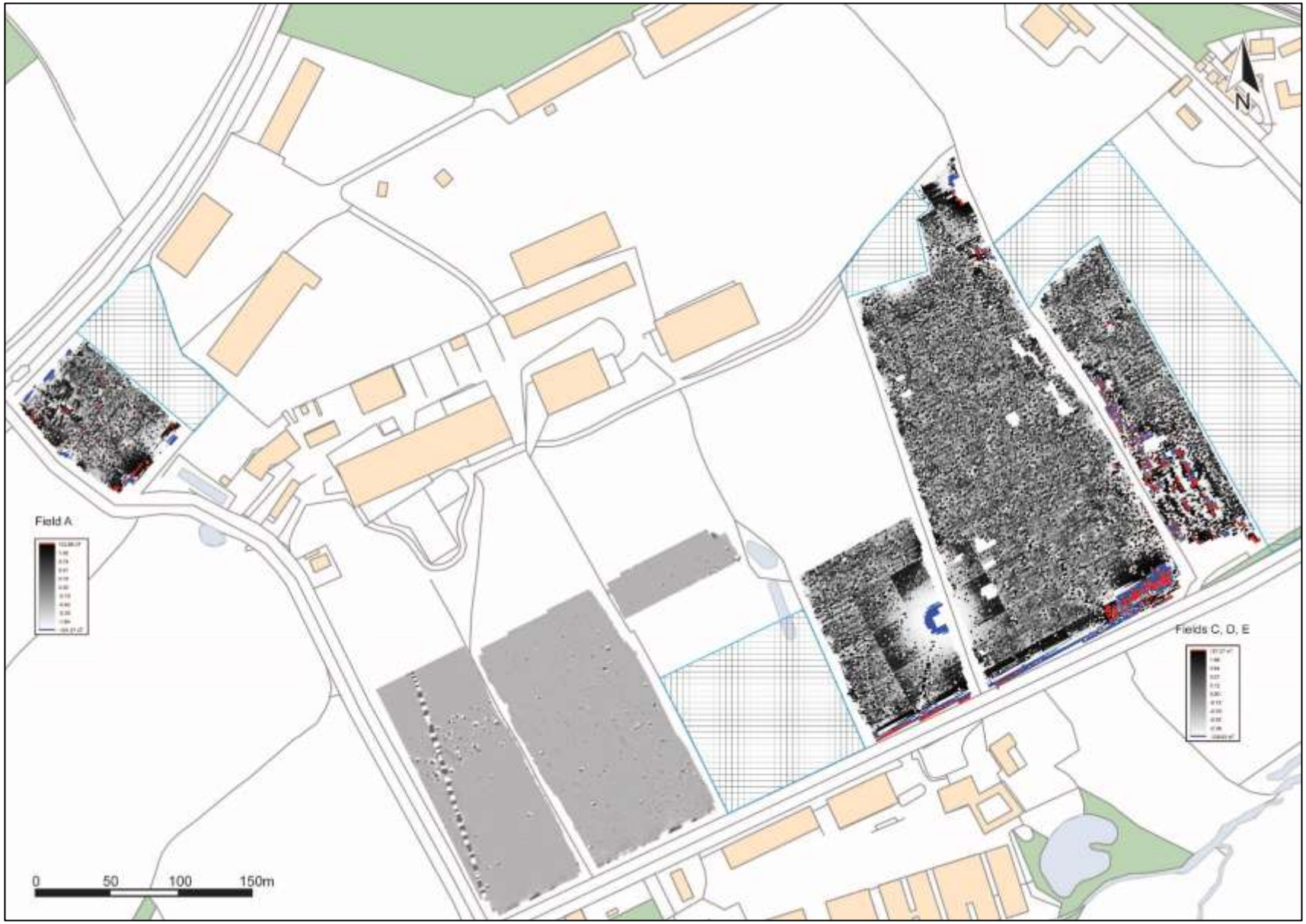
SURVEY BOUNDARIES AND FIELD LABELLING.



SHADE PLOT OF GRADIOMETER SURVEY DATA, FIELD A; GRADIATED SHADING.

SHADE PLOT OF GRADIOMETER SURVEY DATA, FIELD C, D AND E; GRADIATED SHADING.

SHADE PLOT OF GRADIOMETER SURVEY DATA; BAND WEIGHT EQUALISED; GRADIATED SHADING.



RED GREYSCALE BLUE SHADE PLOT OF GRADIOMETER SURVEY DATA; BAND WEIGHT EQUALISED; GRADIATED SHADING.

RED-BLUE-GREEN(2) SHADE PLOT OF GRADIOMETER SURVEY DATA; BAND WEIGHT EQUALISED; GRADIATED SHADING.

APPENDIX 2: SITE INSPECTION SUPPORTING PHOTOGRAPHS

1: VIEW ALONG THE SOUTH-EASTERN BOUNDARY OF FIELD A, SHOWING CABLE; LOOKING NORTH-EAST.

2: VIEW ALONG THE SOUTH-WESTERN BOUNDARY OF FIELD A; LOOKING NORTH-WEST.

3: VIEW ALONG NORTH-EASTERN BOUNDARY OF FIELD A; LOOKING NORTH.

4: VIEW ALONG THE WESTERN BOUNDARY OF FIELD B; LOOKING NORTH.

5: VIEW ACROSS FIELD B; LOOKING NORTH-EAST.

6: VIEW ALONG THE EASTERN BOUNDARY OF FIELD B; LOOKING NORTH.

7: VIEW ALONG SOUTHERN BORDER OF FIELD C; LOOKING WEST.

8: VIEW ACROSS FIELD C; LOOKING WEST.

9: VIEW ALONG THE EASTERN BOUNDARY OF FIELD C, TOWARDS THE SHED; LOOKING NORTH.

10: VIEW ALONG WESTERN BOUNDARY OF FIELD D; LOOKING SOUTH.

11: VIEW ALONG THE EASTERN BOUNDARY OF FIELD D; LOOKING SOUTH.

12: VIEW OF THE NORTHERN END OF FIELD D; LOOKING NORTH.

13: VIEW ACROSS FIELD D; LOOKING WEST.

14: DETAIL OF THE BOUNDARY BETWEEN FIELDS D AND E; LOOKING NORTH.

15: DETAIL OF THE BOUNDARY BETWEEN FIELDS D AND E; LOOKING WEST.

16: VIEW ACROSS FIELD E, THE ISOLATED OAK TREES TO THE LEFT ARE REMAINS OF A HISTORIC FIELD BOUNDARY; LOOKING SOUTH.

16: VIEW ALONG THE NORTHERN BOUNDARY OF FIELD E; LOOKING WEST.

16: VIEW OF THE SOUTHERN BOUNDARY OF FIELD E; LOOKING SOUTH-WEST.

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