ROUNDWOOD PROMONTORY FORT

ROUND WOOD

FEOCK

CORNWALL

Results of a Geophysical Survey

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South West Archaeology Ltd. report no. 230309

ARCHAEOLOGICAL SERVICES & HISTORIC BUILDING RECORDING
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ROUNDWOOD PROMONTORY FORT, ROUND WOOD, FEOCK, CORNWALL

RESULTS OF A GEOPHYSICAL SURVEY

By J. Bampton
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Work undertaken by SWARCH for the Cornwall AONB

SUMMARY

This report presents the results of a magnetometry survey and resistivity survey carried out by South West Archaeology Ltd. (SWARCH) on land at Roundwood Promontory Fort, Feock, Cornwall. The site is located on the north side of the National Trust grounds of the Trelissick estate, between two creeks feeding into the River Fal estuary. The Scheduled Iron Age promontory fort (HER no.18864) was wooded with a Listed historic quay, now with residential dwellings, at its eastern end. Bronze Age activity has been recorded to the north-west of the site (HER nos.50838-9, 52346-7) and post-medieval industrial activity and planned landscaping associated with Trelissick and adjacent estates has taken place at Roundwood quay and promontory (HER no.171316, HER no.24408). This phase of geophysical survey was requested as part of the AONBs Monumental Improvement project.

The surveys identified 21 groups of anomalies, comprised of c.36 total anomalies across the survey area as a whole. From these one could infer that the area within the fort had been farmed/ploughed, probably in the medieval period or later. This activity includes a probable ditch and relict boundary in the western portion of the site. Discrete anomalies identified on the site indicative of possible pits or tree-throws are probably associated with former trees/tree clearance, mineral prospection, or waste deposits associated with the post-medieval history of the site. Within the 'round' earthwork at the east end of the fort possible stony deposits or outcrops may allude to stony platforms, spreads or deposits. Some of the probable stony areas combined with mixed magnetic responses within the 'round' earthwork could be geological or be associated with post-medieval industrial activity or deposits on the site. The discrete anomalies on the site could also represent natural or prehistoric features. Extant features on the site such as the forts bank ramparts and footpaths were also evident in the survey data.

The surveys have ostensibly worked in producing identifiable anomalies and possible archaeological deposits/features despite the intrusion of a planned/wooded landscape. Although some of the surveyed areas could not be fully surveyed and were fragmented due to tree and shrub coverage, the results that were produced covered a relatively large proportion of the site and further clearance and surveying would probably yield diminishing returns regarding information/understanding.

March 2023

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1.0 INTRODUCTION

LOCATION: ROUNDWOOD PROMONTORY FORT, ROUND WOOD
PARISH: FEOCK
COUNTY: CORNWALL
NGR: SW 83713 40384
SWARCH REF. CANB22 (ROUNDWOOD)

1.1 PROJECT BACKGROUND

South West Archaeology Ltd. (SWARCH) was commissioned by the Cornwall Area of Outstanding Natural Beauty (AONB) to undertake a geophysical survey on land at Roundwood promontory fort, Round Wood, Feock, Cornwall. This work was requested as part of the Cornwall AONB's Monumental Improvement project which is seeking to ensure that 40 scheduled monuments in the protected landscape, currently on the Heritage at Risk Register or vulnerable to loss, are better identified, supported and enjoyed by a wider range of people by 2024. The geophysical surveys are part of the projects archaeological programme to help understand more about the sites and the risks they face, and will help to inform future management with the aim of improving their condition. This work was undertaken in accordance with best practice and CIfA guidance.

1.2 TOPOGRAPHICAL AND GEOLOGICAL BACKGROUND

Roundwood promontory fort is an Iron Age fort located at the north-east edge of the parish of Feock, approximately half way between Truro (*c.*7.75km to the north) and Falmouth (*c.*8km to the south): it is *c.*2.9km east-south-east of Playing Place and the A39. Round Wood promontory, which is utilized as the fort, is between Cowlands Creek and Lamouth Creek, which feed into the River Fal estuary at the east end of the promontory. The promontory rises beyond the forts western ramparts towards a hill and has very steep sides on the other three sides down to the creeks and River Fal. The majority of the fort/site is at a height of between 15m and 20m AOD. Roundwood Farm is located on the north-west edge of the promontory fort and a former quay and residential housing is located at the eastern end of the promontory. The promontory and fort is largely wooded with a mix of mature trees including oaks, with areas of bracken and holly.

The soils on the site are the shallow well drained loamy soils over rock of the Powys Association (SSEW 1983), which overlie interbedded sandstone and argillaceous rocks of the Portscatho Formation (BGS 2023).

1.3 METHODOLOGY

This work was undertaken in accordance with current best practice and CIfA guidance.

Any desk-based assessment aspect of this report follows the guidance as outlined in: *Standard and Guidance for Archaeological Desk-Based Assessment* (CIfA 2014a) and *Understanding Place: historic area assessments in a planning and development context* (English Heritage 2012).

The geophysical (gradiometer) survey follows the general guidance as outlined in: *EAC Guidelines for the use of geophysics in Archaeology: Questions to Ask and Points to Consider* (Europae Archaeologiae Consilium/European Archaeological Council 2016) and *Standard and Guidance for Archaeological Geophysical Survey* (CIfA 2014b).

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

2.0 DOCUMENTARY BACKGROUND

2.1 HISTORICAL CONTEXT

The site is in the north-east of the parish of Feock; a parish in the hundred and deanery of Powder (Lysons 1814). The nearest Domesday manor to the site is *c.*1.2km to the north, near Old Kea, at *Landegea*; a relatively small estate of nine households, which was held by *Alsi* prior to the Norman conquest and by Godwin from the Count of Mortain in 1086 (Morris 1992). Tregew, located *c.*715m west-north-west of the site and on the same ridge/promontory was first recorded in 1208 (MCO17285). 14th century marriage deeds show that Tregew was held by the Gregor family, who were a prominent local family whose fortunes grew from the 16th century until declining in the early 19th century (NRA 18544 Gregor) before passing to a Mr Edmunds. Lysons lists the property as having belonged to the Edmunds family and as owned by a R.A. Daniell in 1814, having been purchased in the 19th century (NRA 18544 Gregor). R.A. Daniell is also listed as owning *Trelisick* (Trelissick), which is located beyond the Lamouth Creek to the south of the site and its manor *c.*650m south of the site.

Trelissick was first documented in 1280 and an archaeological watching brief at Trelissick in 2022 revealed possible Romano-British settlement activity (MCO1145; HER no.24408). Trelissick House and some surrounding walls are Grade II* (DCO4500), and have additional Grade II Listed barns and walls and the estate incorporates registered park and gardens (1000656; DCO37) It had formerly belonged to the Lawrences. The *c.*1841 Tithe apportionment for the parish of Feock lists the site (plot 1081 – wood) and plots associated with the extent of the fort (1079 – *wood* and 1080 – *quays and waste*) as *Round Wood* and as owned and occupied by the assignees of Thomas Daniell Esq. The woods are listed as used for coppice.

Included in a list of assets for sale from the Trelissick estate in 1844 included a malt house (MCO47269; HER no.171317), however no remains of this malt house have been identified. 18th century leats described in the Listing text (see section 1.6), and a reservoir and copper smelting house (MCO47267; HER no.171315) associated with Roundwood were documented in 1786 regarding the sale of Tregew barton. This sale documented included over 81ha of farm land and: "*all those very extensive and most commodious houses and buildings, which were lately erected, and originally intended and used for carrying on the business of smelting and refining copper, and may be still employed for the same purpose*" (source: HER and quoted from the lease details from Sherborne Mercury, 19 November 1798). These 18th century advertisements include descriptions of leats and a reservoir supplying the site/quay. Waste from copper smelting at the quay, including pebble and 'loaf size' slag waste is recorded in the lane running west from the quay, on the north side of the quay and northern foreshore. It is suggested that the lack of further evidence of the industrial process is the result of a comprehensive landscaping of the site, perhaps to enlarge the quay.

2.2 PLACE-NAME ASSESSMENT

Round Wood is ostensibly named for the 'round' aspect of the fort on the promontory and its wooded/woodland nature.

The nearby and associated settlements to the site, Trelissick and Tregew, include the Cornish element *tre* meaning 'farmstead/settlement' with *–lissick* being associated with a personal name, and *–gew* referring to an unknown element but possibly associated with Old English root words associated with slime and clay, which could refer to the watercourse and geology near the ford of Cowlands Creek (using Watts 2004). A very convoluted assessment of the *–gew* element at Tregew can be linked to the Gregor family, who once held the manor, who may have Christianised a family name associated with the Old English *ġeocor* meaning 'full of hardship'. This is derived from gothic

and Sanskrit derivations of *yewĝ* meaning 'stirred for battle' and 'warrior' and could be conflated with the Cornish *gew* meaning 'woe' (using Watts 2004). As a side note, Gregory, is derived from Greek for 'watchful'.

Old Kea (*Landegea* in 1086) to the north is most likely derived from the Cornish *lann* and *ker* meaning 'church by the fort'; but could be associated with the Middle English *launde* meaning 'woodland clearing'. Both names could fit with the landscape of the site: and the 'fort' referred to could be that of Roundwood, or other forts commonly located up the Fal estuary and creeks including a possible fort (based on its place-name) at Woodbury, just north of Old Kea (MCO89) and earthworks north of the Fal at Queenie (MCO67305).

2.3 CARTOGRAPHIC DEVELOPMENT

Supporting cartographic sources and LiDAR imagery for this section can be seen in Appendices 1 and 2.

Late 17th century mapping indicates a ferry in operation across the River Fal from opposite the site.

The *c.*1811 Surveyor's draft map for the Grampound area defines the promontory of the site and shows field enclosures on the ridge between the site and Tregew and a round earthwork (fort) on the site along with an access track/road leading past the round earthwork to structures on the north and east side of the promontory.

Trelissick Estate maps from *c.*1821 show the site as wooded (MCO47268; HER no.171316).

The *c.*1841 Feock tithe map depicts structures labelled as *Roundwood* on the site of the fort. Plot 1081 roughly corresponds to the site and most of the fort, although no earthworks of the fort are detailed on the mapping. Plots 1079 and 1080 generally equate to the fort and quay. It depicts a presumably accurate road across the fort and along the north side of the site. Presumably post-medieval-, probably 19th century small field enclosures are depicted immediately west and north-west of the site.

The Ordnance Survey (OS) first edition mapping surveyed in 1878 shows the site and detail with a round earthwork with two sets of outer ramparts on its west side and possible banks and ditches associated with possible leats and slopes across the south-west part of the site. most of the fort is depicted under deciduous woodland; although the 'camp'/round earthwork is depicted with as a mixed wood with conifer and deciduous trees possibly alluding to an area of plantation or differential land management in the post-medieval period. Old quarries and detailed tracks are depicted at the edges of the promontory, the quay is labelled as a 'Wharf', and changes to the structures on the site compared to on the Tithe mapping have ostensibly occurred.

The 1906 OS revision shows general continuity with the first edition; however, the 'camp' no longer contains conifer depictions and the complex of buildings on the north-west side of the site has been developed. Subsequent mapping labels the site as an historic 'settlement' much as it is shown in the earlier OS mapping with additional footpaths and housing having been developed on the north side of the quay/wharf area. The north side of the track that crosses the fort is shown as deciduous woodland and the south side of the track, which corresponds to most of the site as mixed woodland.

LiDAR imagery from 2019 and 2022 shows the round, eastern part of the fort as approximately pear shaped. Footpaths, leats and possible terraces in the slopes are also visible across the site in the LiDAR imagery.

2.4 SITE DESIGNATIONS AND BACKGROUND

The site occupies a large portion of the multiple enclosure fort at Round Wood. This fort is a Scheduled Monument (List entry no.1019847; HER no.18864; DCO1069; MCO6574). These types of fort generally date to the Late Iron Age (*c.*350 BC – *c.*AD 50). The Scheduled Listing includes a detailed description of the fort as follows:

'The fort has an irregular plan, measuring up to 280m east- west by 230m north-south overall. It has two concentric curving earthworks crossing the neck of the promontory on the west side, and a sub-oval enclosure on the level top of the ridge within. The outer earthwork across the promontory neck has a rampart of earth and stone averaging 5m wide and 1.5m high. The west side of the rampart along its southern half is truncated and revetted, forming a modern field boundary. A buried external ditch extending to approximately 10m from the outer face of the rampart is visible on early mapping. An entrance near the centre is considered to be original. The inner earthwork lies 60m-70m to the east of the outer earthwork and has an earth and stone rampart 7m-8m wide and 1.5m high, with an external ditch 3m wide at its base and up to 7.8m wide at ground level and around 1.4m deep. The original entrance, at the centre, has a 5m wide causeway over the ditch. The oval enclosure, approximately 30m within the inner rampart, measures approximately 95m east-west by 60m north-south internally. The enclosing bank of earth and stone is 7m-8.3m wide and 3.2m high externally, and 0.5m internally. Its outer ditch is up to 4.5m wide and 0.5m deep. The entrance on the west side, aligned with those in the outer ramparts, has a causeway 2.2m wide. A system of leats to supply water for industrial use on or by a late 18th century quay to the east of the fort is visible around the south, east, and north sides of the promontory at mid-slope. The leats average 1.4m wide and 0.7m deep. The leat on the south side cuts through the fort's two outer earthworks, and is thought to have reused the external ditch to the south of the fort's oval inner enclosure after an earlier course was cut by quarrying. The course in the ditch was subsequently recut on the south east side, perhaps for quarrying or military purposes. To the north, the ditch of the enclosure was similarly used for a leat, which may be traced as far west as the entrance through the inner rampart. To the east, it descends from the enclosure ditch to a reservoir, before turning south below the oval enclosure. Post-medieval boundary banks run along the spine of the promontory on the west side between the fort's inner and outer cross-promontory earthworks, and to the south west of a quarry on the ESE side of the fort. The north corner of a small rectangular structure, possibly a post-medieval ornamental feature of the Trelissick estate, is visible above the cliff on the south east side of the fort. A trackway running north east across the fort from its outer entrance to Roundwood Quay was used in the late 18th and earlier 19th centuries to transport copper ore to the quay and coal to the mines inland. The modern garage and house, caravans, shed, boat, road and footpath surfaces, farm equipment, garden furniture, all fencing, gates and gate fittings, telegraph poles, wires, and fittings, steps, signposts and seats are excluded from the scheduling; however the ground beneath all these features is included… The monument was included in the Schedule on 25/10/1972 and the scheduling was revised on 25/10/2000'.

The Post-medieval Roundwood Quay located at the east end of the sites promontory is Grade II Listed (MCO47268; HER no.171316; 1159174; DCO4484), with six bays that is recorded as being able to moor vessels up to 300 tons at low tide. It is described as the largest 18th century mineral quay on the estuary with smelting works, lime kiln, malt house, ship- and coal-yard (Ratcliffe 1997a; Ratcliffe 1997b). The quay was probably built *c.*1760 by Thomas Daniell and processed and transported tin and copper from Chacewater, North Downs, Kea and Gwennap. The quay may have been rebuilt *c.*1805 when acquired by Ralph Allen Daniell. When the mining industry on/near the site declined through the 19th century the quay functioned in the late 19th-early 20th century as a shipyard (MCO29254; HER no.41555) and coal-yard and recreational site/tea garden. The lime kiln at Roundwood Quay is Grade II Listed (DCO3844; 1140897; MCO45084; HER no.169070). This kiln was including in sales/lease listings in the 18th-19th century and was rediscovered in 1975 when it was excavated. It was brick built and in relatively good condition. The kiln may have been used in the copper smelting process, as lime was used as flux in the process. It is considered that the pleasure landscape of the registered park and gardens of Trelissick (1000656; DCO37);extends beyond its listing, north along the Fal estuary and across the site.

2.5 THE TRELISSICK ESTATE AND THE SITE

A mansion and park at Trelissick were built after 1750 by a John Lawrence and after his death in 1790 and financial troubles in 1805, the estate was acquired by Ralph Allen Daniell, who developed the park. These developments included rides through woodlands to the north and south of the manor house and are visible on estate plans from *c.*1821. Daniell ostensibly incorporated the sites promontory into Trelissick's wider planned landscape. He is reported in 1818 as having built a beautiful cottage at the site and a *c.*1821 estate map depicts Roundwood House and Roundwood Cottage on the promontory (MCO47268; HER no.171316; 1159174). The Grade II Listed 19th century Roundwood farmhouse was remodelled from an earlier 'beautiful cottage', which hosted parties for R.A. Daniell (DCO4483; 1159170). Tree planting may also have taken place on the site at this time with trees depicted on the *c.*1821 estate map. Ralphs' son Thomas inherited the estate in 1823 and he 'improved' the house and gardens with 'choice shrubs' among other changes, before declaring bankruptcy in 1831 (the family fortunes were tied to mining and agriculture). The Lord Falmouth then held the mortgage on the estate before selling it in 1844 to the Gilbert family who continued to develop and amend the gardens, including with conifers and choices inspired by travels abroad. Documents from the 1844 sale include a malt house at the quay (MCO47269; HER no.171317). A George Cookson let the estate in 1899, who continued to develop the gardens. *Gardener's Chronicle* described the pleasure grounds of the estate in 1894, 1895 and 1901. In 1913 Gilbert died and the estate was divided and a Daneham Cunliffe family purchased the house and gardens from whom it passed to his Step daughter, Mrs Ida Copeland who further developed the gardens north and east in the 1930's with plants including rhododendrons. In 1955 she gave *c.*156ha of garden, park and woodland including the site to the National Trust, while her family retained the mansion.

2.6 ARCHAEOLOGICAL BACKGROUND

The site has been subject to management works (ECO928) and an earthwork survey (see Figure 29, Appendix 2). A detailed desk-based assessment of Roundwood Quay was conducted in 2005 (Kirkham 2005; SCO1396). In the wider area there have been a number of archaeological investigations and the Cornwall Historic Environment Record (HER) lists a number of events and assets, including designated assets within the wider area.

Cornwall's Historic Landscape Characterisation (HLC) describes the site as an area of *Plantations and Scrub* (HCO10) – *'Plantations and scrubland. Blocks of mainly conifer plantations, comprising those on uplands planted to produce timber, replantings of ancient woodlands which had been intensively harvested and those created as elements of designed ornamental landscapes'*. Immediately west and north-west of the site/fort the HLC depicts mainly medieval farmland (HCO4) and some modern enclosed land (HCO11).

Below is a summary of the key Scheduled and Listed assets near to the site, Historic Environment Record assets (HERs) within 1km of the site, and archaeological events that have taken place on- and near to the site.

2.6.1 PREHISTORIC

Bronze Age activity within 1km of the site includes four cropmarks of Bronze Age barrows west of the site (MCO3433-6; HER nos.50838-9, 52346-7); geophysical survey and field-walking revealed a probable Iron Age hillfort/settlement on the hill 500m west-north-west of the site, in a field called Kestle Field (MCO58148). A Scheduled probable Late Iron Age round is listed over 1km east-south-east of the site, near Carlannick (1019609; DCO1060).

2.6.2 ROMANO-BRITISH

In 2022 possible Romano-British settlement activity was revealed during an archaeological watching brief at Treslissick (MCO1145; HER no.24408), *c.*550m south of the site.

2.6.3 MEDIEVAL

A Scheduled standing medieval cross is located *c.*1km to the south of the site(1020103; DCO14904). Medieval woods located to the south of Lamouth Creek, south of the site, at Namphillows Wood and North Wood (MCO28668; MCO28669) are part of the Trelissick estate.

2.6.4 POST-MEDIEVAL TO MODERN

The 18th century and later Grade II* registered park and garden of Trelissick to the south of Lamouth Creek (1000656; DCO37) is discussed in section 1.6.1. 19th century sales listings for Roundwood Quay include a malt house (MCO47269; HER no.171317), 18th century leats, a reservoir and copper smelting house (MCO47267; HER no.171315). Smelting waste is ostensibly included in the access track to the site and quay. Two post-medieval quarries are also located on the promontory (MCO59463-4).

2.6.5 HER EVENTS

The Grade II Listed, brick built lime kiln was excavated at Roundwood Quay (CO3844; 1140897; MCO45084; HER no.169070) in 1975. This kiln was included in 18th and 19th century sales documents.

Event records of the wider area include Fal estuary surveys (ECO1221; ECO136 1995R017; Ratcliffe 1997a; Ratcliffe 1997b), site survey at Trelissick Turnaware Point (ECO1175; ER585), and a desk based assessment as part of a rapid coastal zone assessment (ECO5358). Some of these broad sweeping surveys included brief mention of- or consideration of the site. Afore mentioned field walking and geophysical survey at Kestle Field (section 1.7.1) revealed a probable prehistoric settlement, Neolithic-Bronze Age flintwork, notched and holed slates, two possible Iron Age pottery sherds, medieval and later pottery ceramic building material, clay pipe, glass and metal fragments, and late 18th century copper smelting slag (MCO58148; ECO4975; Lawson-Jones 2017; pers. comms). An archaeological watching brief at Trelissick in 2022 revealed possible Romano-British settlement activity (MCO1145; HER no.24408).

Aerial investigation and mapping lines on the HER depict some of the areas known and speculated prehistoric landscape, such as the possible barrows and assets on/near Kestle Field (MCO3433-6; MCO58148).

2.7 ARCHAEOLOGICAL POTENTIAL AND GEOPHYSICAL RELEVANCE

The site has an obviously high and proven archaeological potential. The assets and history of the site associated with its use as an Iron Age promonotory fort, industrial activity at the quay and on the promontory, and subsequent formal landscaping and plantation in the vicinity of- and across the geophysical survey area could have a bearing on the sites geophysical record. The impact on the geophysical record from uncertain potential activity associated with these key phases of use-life and any unknown phases may be reflected in the geophysical data and may represent, or obscure archaeological activity; either aiding or hindering the interpretation of the geophysical record. Truncation of archaeological deposits or features may have occurred on the site during subsequent phases of activity. These possibilities should be kept in mind when attempting to understand/interpret any subsequent geophysical survey.

3.0 GEOPHYSICAL SURVEY

3.1 INTRODUCTION

An area *c.*1.7ha, comprising the interior of the round earthwork and areas between two outer ramparts to its west were subject to a magnetometry survey; *c.*0.4ha that comprised the interior of the round earthwork was also subject to a resistivity survey. The purpose of the magnetometry survey was to identify and record magnetic anomalies within the survey: and the purpose of the resistivity survey was to identify and record anomalies of relative resistance 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 16th-17th of January 2023 by J. Bampton, M. Edwards, J. Ratcliffe and N. Stevenson; the survey data was processed by J. Bampton.

3.2 SITE INSPECTION

A large amount of clearance of overgrowth and scrub afforded a reasonable coverage of survey across parts of the intended survey area; however the unavoidable woodland nature of the site severely limited the total surveyable area and hindered the efficacy of the site survey. The monument was as described in the Listing text with a 'round' fortification at its east end with surviving banks and ditches and large outer ramparts to its west cutting off the end of the promontory to form the fort. Worn earth footpaths were extant across the site as was a largely gravelled main footpath running from the north-west corner of the survey area to the western entrance of the round and across the round. Mature woodland and scrub of varying density filled the site, including old oaks and recently planted oak saplings, bracken, holly bushes and brambles. Although spread across the site many of the shrubs are ostensibly concentrated along the road- and gravelled path side. Supporting photographs for the site inspection can be seen in Appendix 3.

FIGURE 2: THE MIDDLE AREA OF THE FORT FROM THE MAIN FOOTPATH BETWEEN THE MIDDLE RAMPART, ILLUSTRATING THE SITE FLORA AND STATE; VIEWED FROM THE NORTH-WEST (NO SCALE).

3.3 METHODOLOGY

The magnetometry and resistivity survey follow the general guidance as outlined in: *EAC Guidelines for the use of geophysics in Archaeology: Questions to Ask and Points to Consider* (Europae Archaeologiae Consilium/European Archaeological Council 2016) and *Standard and Guidance for Archaeological Geophysical Survey* (CIfA 2014b).

3.3.1 MAGNETOMETRY METHODOLOGY

The magnetometry 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- and set out using a Leica CS15 GNSS Rover GPS. The data was downloaded onto Grad601 Version 3.16 and processed using TerraSurveyor Version 3.0.36.0. 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:

DeStripe all traverses, median; used to equalise underlying differences between grids (potentially caused by instrument drift or orientation, directional effects inherent in magnetic instrument, or differences in instrument set up during survey e.g. using two gradiometers).

DeStagger all traverses out- and inbound by 0.50m (grids a3, a17+a24, a19-a22), by 0.25m (all other grids); reduces staggering effects within data derived from zig-zag collection method.

Clip at +/- 2SD (Standard Deviation); removes extreme data point values.

Details:

0.8106ha surveyed

Stats unadjusted/prior to processing or data clipping; Max. 98.16nT, Min. -100.00nT; Standard Deviation 8.69nT, mean 3.36nT, median 3.21nT.

Stats threshold adjusted/post processing; Max. 97.78nT, Min. -110.54nT; Standard Deviation 7.79nT, mean 0.23nT, median 0.00nT.

Stats threshold adjusted/post processing (clipped to 2SD); Max. 15.82nT, Min. -15.36nT; Standard Deviation 6.54nT, mean 0.13nT, median 0.00nT.

3.3.2 RESISTIVITY METHODOLOGY

The resistivity survey was carried out using a RM15-D Resistivity Meter with an MPX15 Multiplexer module allowing for four terminal sensing using a PA20 multiprobe array with parallel twin log mode 2. These machines are sensitive to depths of up to c.1m. The survey parameters were: sample intervals of 1m, traverse intervals of 1m, a zigzag traverse pattern, traverse orientation was circumstantial, grid squares of 30×30m. . The survey grid was tied into the Ordnance Survey National Grid- and set out using a Leica CS15 GNSS Rover GPS. The data was downloaded onto- and processed using TerraSurveyor Version 3.0.36.0. 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:
Search and Replace -2047.5 and 2047.5 with *Dummy*; replaces a value with a specified value.
DeSpike threshold 1 window size 3×3, once; replaces excessive datapoints with either the mean/median or a specified threshold.
Clip from 41.00 to 334.00 Ohm; removes extreme data point values.
Mask for all layers; can cover and prevent the application of subsequent processes to an area.
High Pass filter with Gaussian weighted window 21x21 intervals; removes high frequency components in a survey.
Low Pass filter with Gaussian weighted window 3x3 intervals; removes low frequency components in a survey.

Details:
0.3279ha surveyed
Stats unadjusted/post search and replace; Max. 2016.00 Ohm, Min. -215.00 Ohm; Standard Deviation 100.31 Ohm, mean 203.59 Ohm, median 193.50 Ohm.
Stats threshold adjusted/post processing (clipped from 41.00 to 334.00 Ohm); Max. 334.00 Ohm, Min. 41.00 Ohm; Standard Deviation 42.02 Ohm, mean 198.23 Ohm, median 193.50 Ohm.

3.3.3 ASSESSMENT OF METHODOLOGY

Both types of geophysical survey produced a usable range of results, demonstrating the potential for them to work and provide meaningful results. The magnetometry survey provided data that corresponded to discernable potential archaeological features. The resistivity survey demonstrated that potential archaeological features suitable to be identified by resistivity were either absent or broad diffuse features. Archaeological evaluation/excavation would test the efficacy and validity of the results of the geophysical survey and aid to confirm the presence or absence of any buried archaeology resource on the site. Further clearance and surveying of more heavily wooded parts of the site would probably not yield clearer result or necessary results given the probability of encountering anomalies associated with the removed woodland landscape, as in the case of the discrete anomalies identified in this phase of survey work.

3.4 RESULTS

Tables 1 and 2 with the accompanying Figures 3-6 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 1.

*note on 'Class' when interpreting the resistivity survey data:
• High responses refer to readings of higher relative resistance and represent built/compact stony features or relatively hard deposits. Simplistically, these are comparable to negative responses in the magnetometry data and both are represent in the interpretive Figures 4 and 6 in shades of blue.

• Low responses refer to readings of lower relative resistance and represent in-filled cut features or relatively soft deposits. Simplistically, these are comparable to positive responses in the magnetometry data and both are represent in the interpretive Figures 4 and 6 in shades of red.

In this instance readings of above 187.50 Ohm are considered high responses and readings below 187.50 Ohm are considered low responses. Readings above *c.*300 ohm are considered strong high; and readings below *c.*100 Ohm are considered strong low. Responses ranging between *c.*150 and 200 Ohm could be considered as probable natural variation.

TABLE 1: INTERPRETATION OF MAGNETOMETRY SURVEY DATA.

Anomaly Group	Class and Certainty	Form	Archaeological Characterisation	Comments
1	Moderate positive and negative, probable	Linear	Boundary, bank and ditch or intermittent pits /tree-throws	Located in the north-west part of the site, aligned north-west by south-east. Indicative of a line of compact or stony material parallel to a cut and in-filled feature such as a ditch or intermittent pits. May indicate a boundary. Possibly associated with the extant bank on the site just north of the main east-west footpath in the same area of the site. Group 2 and agricultural/landscaping activity (green lines in Figure 4). Response strength of *c.*+/-22nT.
2	Weak positive and negative, probable	Linear	Boundary, bank and ditches	Located near the middle of the site, aligned approximately WNW-ESE. Indicative of a line of compact or stony material flanked by cut and in-filled features such as a ditches. May indicate a typical Cornish hedgebank. Possibly associated with Group 1. Response strength of *c.*+/-10nT.
3	Very weak to weak negative, possible	Curvi-linear	Path, track	Located near the middle of the site, west of the entrance to the round earthwork, aligned approximately east-west and turning at its east end to run south. Indicative of compacted or stony material that may represent the extant or historical path/track. Response strength of *c.*-5nT to -17nT.
4	Moderate positive and negative, probable	Linear(?)/ unclear	Path, track(?), unclear	Located in the south-east part of the site within a very small area of surveyable ground. Indicative of a cut and in-filled feature with possible associated stony or compacted material. It is on the line of an extant path around the monument and may be associated with maintenance of the path and or bioturbation. Response strengths of between -15nT and +37nT.
5	Strong positive, probable	Oval	Pit, tree-throw, path	Located in the south-west corner of the site. Indicative of a cut and in-filled feature such as a pit or tree-throw. Adjacent to an area of probable modern debris or ground disturbance and within the limits of an extant path around the monument. This could be associated with ancient to modern activity or even natural activity on the site. Response strength of <+55nT.
6	Moderate-strong positive, probable	Oval	Pits, tree-throws	Four anomalies in the west and middle parts of the site. Indicative of cut and in-filled features such as pits or tree-throws. Response strengths of between <+32nT and +40nT.
7	Weak-moderate, possible	Sub-oval	Pits, tree-throws	Seven anomalies near the middle of the round earthwork at the east end of the site. Indicative of possible small cut and in-filled features in an area of possible shallow ground disturbance and debris contained weak dipolar anomalies. The relatively weak response strength of these anomalies is more indicative of natural or geological features. Possibly associated with Group H (resistivity survey; see Table 2). Response strengths of <*c.*+19nT.
8	Weak-moderate negative and strong positive, probable	Oval	Pits, tree-throws, prospection work	Two anomalies located at the eastern edge of the western portion of the monument. Indicative of cut an in-filled features with a mixed debris of fill or stony in-fill. These anomalies are located at the upper edge of a large ditch rampart and could indicate quarry prospection, very large tree-throws or areas of weak thermoremanent activity or buried debris. The clarity and response of the response is not convincingly of an industrial thermoremanent nature and these are more likely to be areas of pits or in-filled hollows. Response strengths of between -12nT to -27nT and *c.*+40nT and *c.*+50nT.
9	Moderate positive, probable	Recti-linear	Ditch, bioturbation	Located on the north side of the middle part of the site, aligned north-east by south-west and turning at its south-west end to run south-east. Indicative of a cut and in-filled feature such as a ditch. The approximate right angle in the response may indicative of a structural nature, but it was in an area that could mostly not be surveyed and some of the agricultural/landscaping based anomalies evident in the data set (green lines in Figure 4) ostensibly kink on a similar alignment and it may be associated with this activity. Response strength of <+32nT.
10	Weak-moderate negative, probable	Linear	Leat, path	Located in the south-west part of the site, aligned approximately east-west. The clearest part of an ephemeral intermittent linear response associated with a leat in the same location and that survives as a topographic feature in this part of the site. Open surface features often have weak

				or ephemeral responses as their structure is often comparable to topsoil overlaying subsoil/natural. This segment may be associated with an in-filled area affording a modern footpath. Response strength of *c.*-15nT.
11	Moderate mixed, probable	Linear	Pipe, drain, agricultural activity	Located in the western part of the site, aligned approximately north-south. Indicative of a possible stony drain or cut and in-filled feature containing debris or pipe. Equates to a distinct segment of the evident agricultural/landscaping anomalies on the site (green lines in Figure 4) with probable ferrous dipolar responses near each end of its length. Response strength of <+31nT and -39nT.
12	Moderate positive, probable	Linear	Ditch	Located at the north-west corner of the site, aligned approximately north-south, parallel to the evident agricultural/landscaping anomalies on the site (green lines in Figure 4). Indicative of a cut and in-filled feature such as a ditch. An intermittent response may be indicative of poor survival. Response strength of *c.*+30nT.
13	Moderate-strong mixed, probable	Oval to sub-rectangular	Ground disturbance, agricultural and/or thermoremanent	Three anomalies in the north-east part of the site. Indicative of possible weak thermoremanent activity or mixed ground disturbance. These anomalies may be obfuscated or associated with the evident agricultural/landscaping anomalies on the site (green lines in Figure 4) in patches of broad magnetic variation. These are in a generally 'noisy' area of the site and these responses are the most discernable in a difficult area to analyse. Of the three examples; the northern most is most 'pit-like', the middle example the most similar to a stony deposit or platform, and the south-east example the most indicative of possible ground disturbance within the evident agricultural/landscaping anomalies Associated with Groups G and D (resistivity survey; see Table 2). Response strength of <+33nT and -39nT.
Other Anomalies				
-	Moderate-strong dipolar, probable	Point/ ovoid	Geology/ Ferrous objects/debris	The site has a handful of dipolar responses. Black crosses in Figure 4. The strongest examples are indicative of ferrous objects that are typically presumed to be modern, such as farm machinery fragments. Similar and weaker responses can be indicative of geological features/anomalies. These are highly probable to be non-archaeological in nature. Responses of < +/-100nT.
-	Weak-moderate, positive and negative, probable	Alternating linears	Agricultural- or landscaping activity	Across the site, particularly noticeable in the western segment and eastern round earthwork, are regular alternating linear anomalies indicative of agricultural activity such as ploughing or landscaping activity including possible drainage channels. Green lines in Figure 4. These generally run parallel to the existing site boundaries, including the curving round earthwork and otherwise consistently in an approximate north-west by south-east direction. Associated with Groups 1, 9, 11 and 12. Response strengths of <*c.*+/-15nT in the west part of the site; and <*c.*+/-22nT in the east part of the site.

TABLE 2: INTERPRETATION OF RESISTIVITY SURVEY DATA.

Anomaly Group	Class and Certainty	Form	Archaeological Characterisation	Comments
A	Strong low and Strong high, probable	Linear	Path, track	Located on the west side of the survey area, aligned north-west by south-east. Equates to a gravelled track/path that enters the round earthwork at its west end and crosses the site to the south-east. Response strength of between *c.*8 to 500 Ohm.
B	High and strong high, probable	Curvi-linear	Bank, rampart	Located at the west end of the survey area, across the round earthwork bank. Indicates a stony/rocky construction for the bank. Response strength of *c.*300 Ohm.
C	Strong high, probable	Rectangular	Platform, stony or compacted spread	Located in the north-west part of the survey area, orientated north-east by south-west. Indicative of compacted or stony material that may represent a building or working platform or rectangular area of stony debris. The limb of a possible wall or drain is discernable at the north end of the anomaly, aligned north-west by south-east. The broad spreads of high and relatively low responses in this survey area may be indicative of bands of natural variation or areas of differential cut and fill associated with the construction and levelling of this part of the monument. The perceived orientation of this anomaly may be associated with agricultural/landscaping based striations visible on the site in the magnetometry survey (green lines in Figure 4; see Table 1). Response strength of *c.*225 to 300 Ohm.
D	High and strong high, possible	Sub-rectangular	stony or compacted spreads	Two anomalies located on the east side of the survey area. Slightly diffuse areas of higher resistance that could indicate stony or compacted material or natural variation in the geology. These examples correspond approximately to Group 13 (magnetometry survey; see Figure 4). Response strengths of between 250 Ohm and 400 Ohm.
E	Strong high, probable	Oval	Stony deposit or bank material	Located on the south side of the survey area. Indicative of possible stony or compact material (such readings could include natural rocky outcrops). With no distinct form this could be stony in-fill material associated with quarry activity on the site. Response strength of *c.*300 Ohm.
F	High, possible	Sub-oval	Stony or compact material	Two anomalies in the south-west part of the survey area. Indicative of possible stony or compact material (such readings could include natural rocky outcrops). Response strengths of *c.*260 Ohm.
G	Low, possible	Curvi-linear	Ditch or ground associated with edge of interior and groundworks	Located in the north-east part of the survey area. Possibly associated ditch of cut and in-filled feature on the inside of the bank to the round earthwork, or some anomalous result of ground moisture associated surface conditions, use or activity. Likely associated with agricultural/landscaping activity evident in magnetometry survey data (green lines in Figure 4). Response strength of *c.*150 Ohm.
H	Low possible	Curving spread (obscured)	Pits, tree-throws, hollow	Possibly one or two anomalies located near the middle of the survey area. Indicative of cut an in-filled features such as pits, tree-throws or hollows. This ostensibly broad response could be associated with a feature or anomalous ground water associated with surface conditions and flora. Shrubs and trees in the vicinity of these responses may be helping retain ground water in this location. Flora may affect differential moisture retention on sites. Possibly associated with Group 7 (magnetometry survey; see Figure 4). Response strength of *c.*125 Ohm.

3.5 DISCUSSION

The geophysical survey identified 21 groups of anomalies (1-13 on the magnetometry survey; and A-H on the resistivity survey) comprised of *c.*36 anomalies across the survey area as a whole. These included: linear anomalies of probable pathways, leats, ditches, banks and boundaries associated with extant or relict boundaries and site features (Groups 1, 2, 3, 10, 12, A and B); discrete anomalies associated with possible pits, tree-throws or other ground disturbance including extant pathways (Groups 4, 5, 6, 7 and H); discrete anomalies associated with possible industrial processes on site associated with quarrying or other groundworks (Groups 8, 13 and D); a possible recti-linear ditch (Group 9); a possible drain and ditch/made-ground associated with agricultural- or landscaping activity on the site (Groups 11 and G); Areas of possibly stony material associated with spreads of debris or in-filled features or natural outcrops of rock (Groups E and F); and a large rectangular spread of possible stony material associated with a working or building platform or geological variation (Group C). Instances of magnetic debris associated with ferrous debris or weak geological variation were also evident in the survey data as was a large number of striations typically indicative of agricultural works such as ploughing and drainage but in this instance may also have been associated with landscaping of the site. Additional visual interpretations of the data and cartographic sources supporting the discussion and comments can be seen in Appendices 1 and 2.

Regarding the magnetometry survey, the general 'noise' (inherent geological variation) of the site was extremely high across the site, <*c.*+/-22nT, with occasionally higher fluctuations. Across the western portion of the site this figure was *c.* <+/-15nT; across the eastern portion of the site it was *c.*<+/-22nT; and in the middle of the site it was much lower, at *c.*+/-5nT but with spikes < *c.*0.20nT. Anomalies of a comparable strength are probably/possibly natural and geological in nature. Typically, responses in the teens and above would be discussed as potential archaeological features; in this case the site may have been subject to sever ground disturbance from agricultural activity or landscaping, and/or natural and geological features may have a relatively high response. In terms of the resistivity survey, responses of between *c.*150 Ohm and *c.*200 Ohm are of probable natural/geological origins or variation; although similarly to the magnetometry survey, the wide range of responses may be indicative of a broad range of natural variation on the site.

No clearly definitive settlement activity is represented in the geophysical record, although possible pit-like anomalies (Groups 5, 6, 7/H, 13/D) identified in the data could equate to settlement activity. Given the wooded nature of the site and evidence of quarrying on the site these anomalies could as likely represent natural features or prospection: Group 8 may also allude to this type of activity. It seems most probably that the identified discrete anomalies on the site are associated with tree-throws or post-medieval activity. Although not particularly strong, the mixed responses of Group 13 and by association Group D could be indicative of thermoremanent activity including an industrial process or thermoremanent deposit/material associated with structural or industrial waste. These interpretations can be afforded by the post-medieval industrial history of the site and its probable landscaping as part of the wider pleasure landscape for Trelissick. The leats on the site, which are visible in the geophysical data ephemeral responses and possible path in-filled segments (Group 10), are surviving topographic features that represent the post-medieval industrial history of the site.

Group C represents a large possible platform, which could be associated with structures or settlement. However, its rectangular shape could be coincidental and modified by the adjacent footpath (Group A). If not archaeological this may represent geological variation on the site or cut and filled aspects of the 'round' when the fort was constructed and ostensibly levelled. This potential geological variation is not clear in the accompanying magnetometry survey data. Although smaller than Group C, Groups E and F are of a similar nature and may indicated stony in-filled features or platforms, or geological variation or debris.

Groups 1 and 2 may represent banked and ditched boundaries; although, their responses are not dissimilar to the probable agricultural activity across the rest of the site (green lines in Figure 4). These examples are more pronounced than the linear anomalies around them but more similar to those in the 'round'. These groups may represent field boundaries or the edges of areas being farmed or processed in different directions. For instance the possible agricultural activity north of Group 1 is aligned parallel to Group 1 and perpendicular to the inner/middle rampart at this end of the site: south of Group 1 the agricultural activity runs parallel to the inner/middle and outer ramparts. Of interest is that Group 1 and some of the agricultural activity runs beneath the extant gravelled path that runs from the north-west corner of the site to the 'round' earthwork. The gravel path is depicted on late 19th century OS mapping, and although the monument has no detail on the *c.*1841 tithe map, the path runs between the north-west access to the monument and a building labelled as *roundwood*. The path is presumably part of the post-medieval industrialisation and/or landscaping of the monument. Therefore, the Groups 1 and 2 and associated anomalies predate this activity and may be medieval, or part of the post-medieval landscaping of the site, or both. Groups 11, 12 and G are ostensibly parts of this same activity and more significantly definable ditches or drains within this activity. Notably, Group G could alternatively indicate levelling-up of the ground within the 'round' with in-fill retained by the ramparts of the 'round'. It does however ostensibly correspond to the probable agricultural or landscaping activity within the 'round'.

Group 9 is probably part of the same activity as speculatively represented by Groups 1, 2, 11, 12, G, and the green lines in Figure 4. It is on a comparable alignment to adjacent green lines representative of agricultural activity. It is arguably in an area of activity possibly alluded to by sporadic responses and the fragmented nature of the survey area in the middle part of the site.

Extant features on the site are evident in the survey data. These include: Group B, which are parts of the bank to the 'round' earthwork adjacent to the western entrance to the 'round'; and probable/possible responses associated with the extant footpaths on the site (Groups 3, 4, 5 and A).

The 18th and 19th century landscaping of Trelissick and ostensibly the co-owned Tregew estates may account for some of the trees, shrubs and woodland across the site and other potential ground disturbance, including the probable agricultural activity on the site; perhaps preparing and tidying up the site for picturesque plantation. Some of the anomalies of a dipolar/bipolar (mixed) magnetic response with associated high electrical resistance could depict deposits of quarrying or probably smelting waste; evidence of which can be seen deposited along the track leading west from the quay. The anomalies associated with probable agricultural activity with accompanying ditches and possible relict boundaries may indicate that the site was farmed probably prior to the 18th/19th century landscaping and development of the site. The clarity of these responses may indicate relatively intensive activity, indicative of medieval or later activity.

The extensive amount of ground disturbance evident in the survey data as probable agricultural or possible landscaping activity will possibly have truncated any buried archaeological deposits or features on the site; and may obfuscate the geophysical responses of underlying archaeological anomalies.

FIGURE 3: GREYSCALE SHADE PLOT OF MAGNETOMETRY SURVEY DATA; MINIMAL PROCESSING.

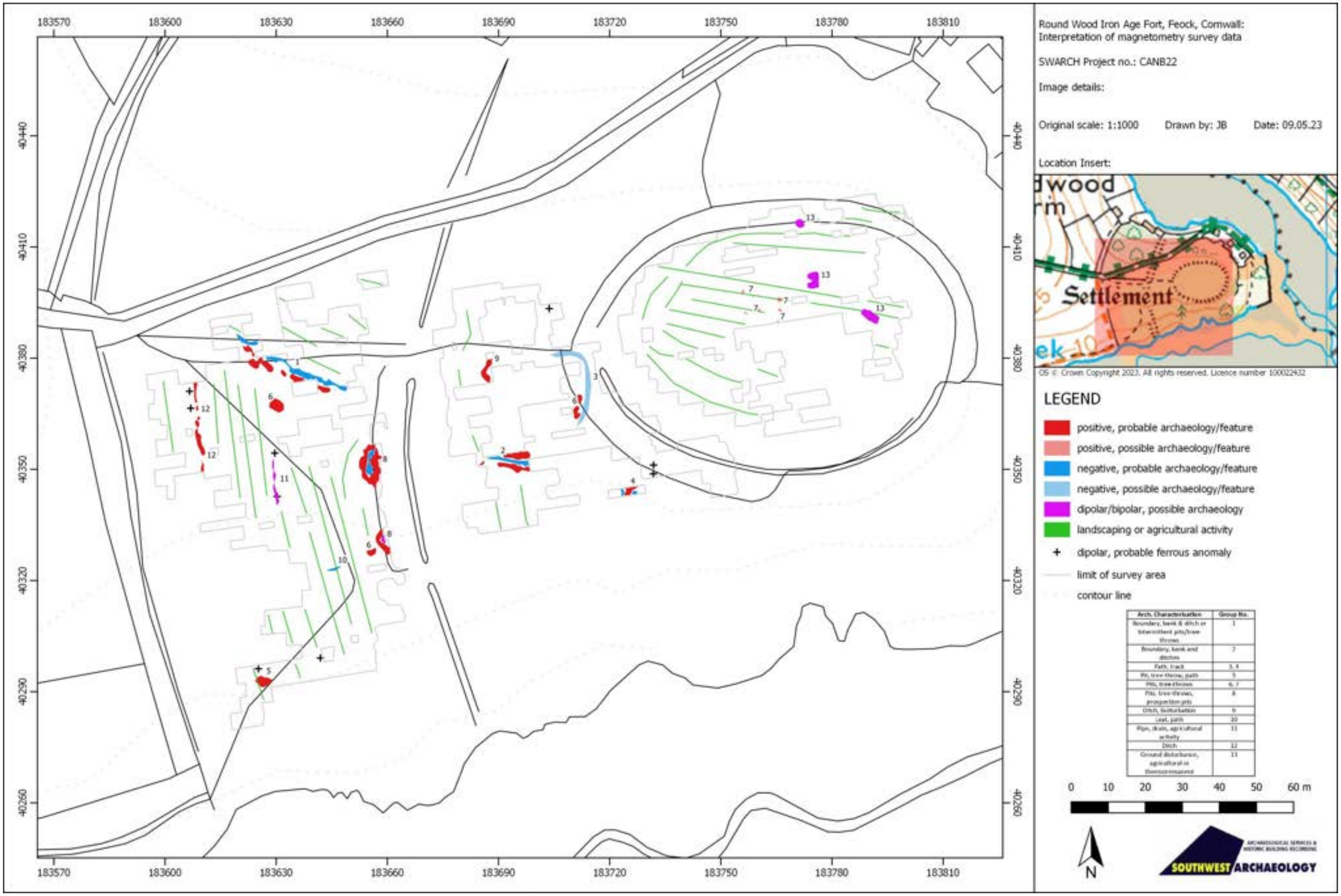

FIGURE 4: INTERPRETATION OF MAGNETOMETRY SURVEY DATA.

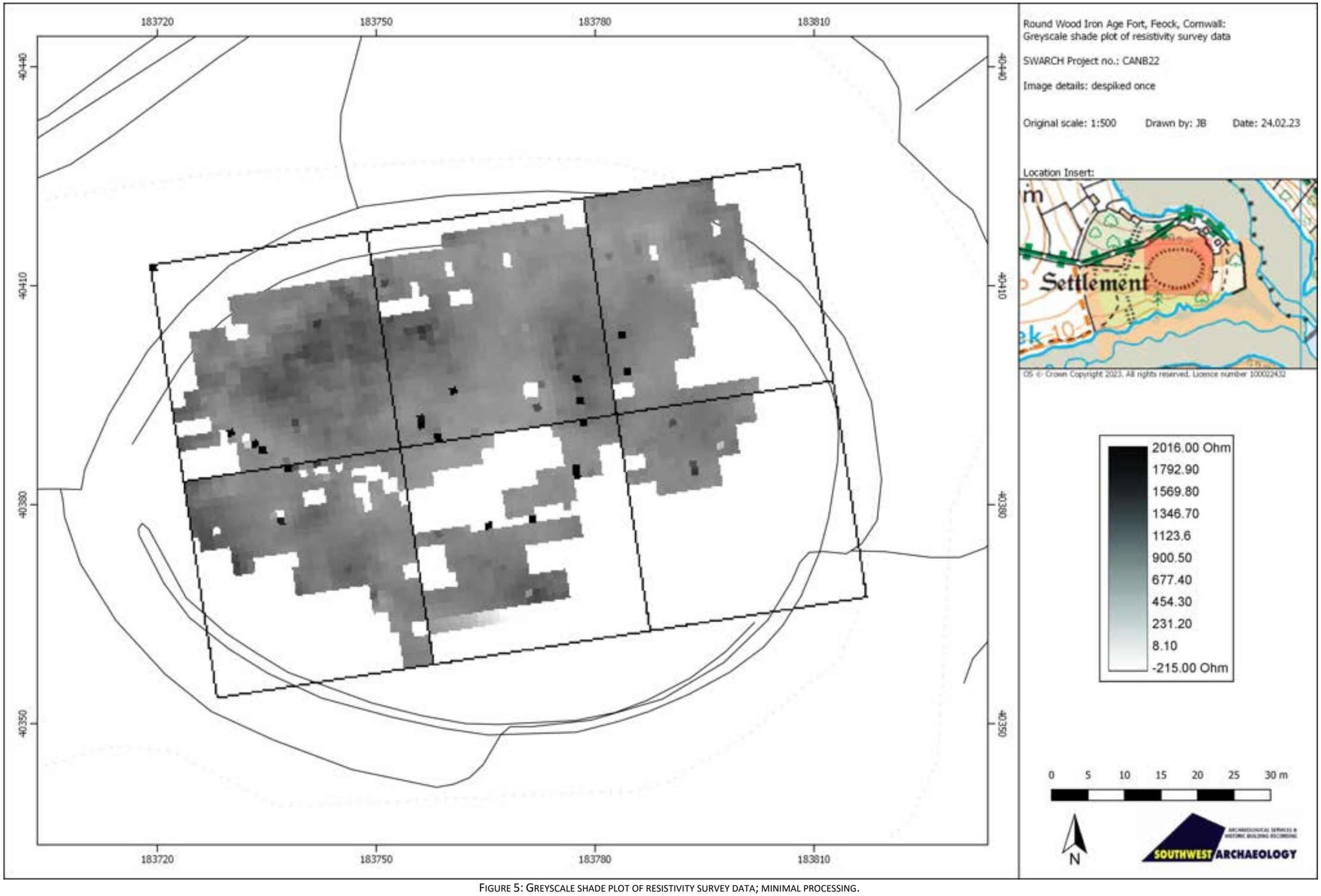

FIGURE 5: GREYSCALE SHADE PLOT OF RESISTIVITY SURVEY DATA; MINIMAL PROCESSING.

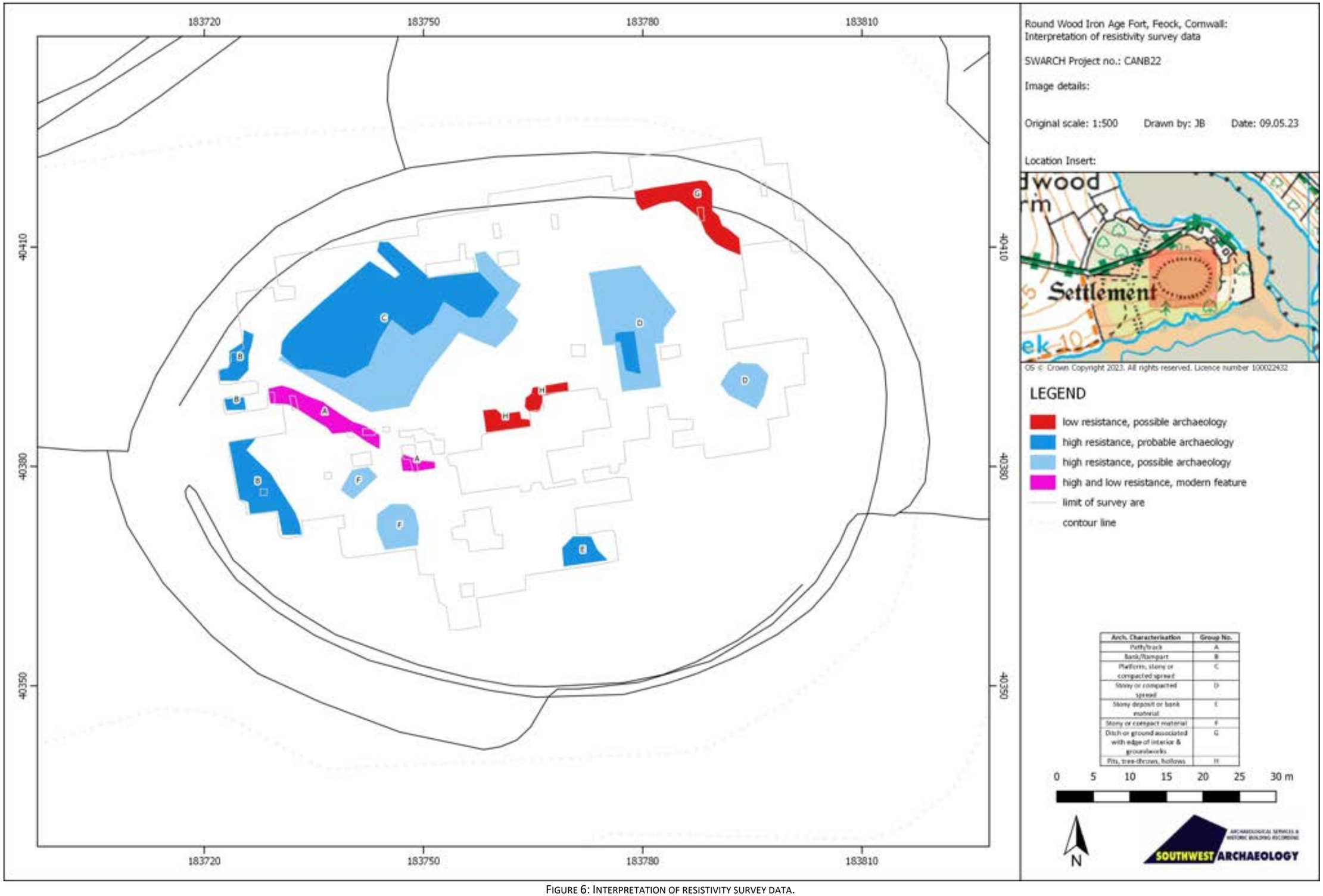

FIGURE 6: INTERPRETATION OF RESISTIVITY SURVEY DATA.

4.0 CONCLUSION

The site is located at the Scheduled Iron Age Roundwood promontory fort (HER no.18864), near Trelissick, on the Fal estuary. The promontory is wooded with a Listed historic quay, now with residential dwellings, at its eastern end. The site is on National Trust property (Trelissick estate grounds) within a Cornwall area of the AONB and accessed via a track and public footpaths. Bronze Age activity has been recorded to the north-west of the site (HER nos.50838-9, 52346-7) and post-medieval industrial activity and planned landscaping associated with Trelissick and adjacent estates has taken place on the site and its promontory (HER no.171316, HER no.24408). This phase of geophysical survey was requested as part of the AONBs Monumental Improvement project.

The survey identified 21 groups of anomalies (1-13 on the magnetometry survey; and A-H on the resistivity survey) comprised of *c.*36 total anomalies across the survey area as a whole. From these one could infer that the area within the fort had been farmed/ploughed, probably in the medieval period or later. This activity includes a probable ditch and relict boundary in the western portion of the site. Discrete anomalies identified on the site indicative of possible pits or tree-throws are probably associated with former trees/tree clearance or mineral prospection or waste deposits associated with the post-medieval history of the site. Within the 'round' earthwork at the east end of the fort possible stony deposits or outcrops may allude to stony platforms, spreads or deposits. Some of the probable stony areas combined with mixed magnetic responses could be geological or be associated with post-medieval industrial activity or deposits on the site. The discrete anomalies on the site could also represent natural or prehistoric features. Extant features on the site such as the forts bank ramparts and footpaths were also evident in the survey data.

It was not possible to survey all parts of the site due to tree and shrub coverage. Although some of the surveyed areas were fragmented, the results that were produced covered a relatively large proportion of the site and further clearance and surveying would probably only yield diminishing returns regarding information/understanding. Although the surveys have ostensibly worked in producing identifiable anomalies, the wooded nature and history of the site make differentiating or speculating between natural features, such as tree-throws, and man-made pits or exploited hollows less certain/reliable. These interpretations can usually only be proven with intrusive investigation or corresponding surface evidence/features.

Intrusive archaeological works would test the efficacy and validity of the results of the geophysical survey and aid to confirm the presence or absence of any archaeology resource on the site.

4.1 RECOMMENDATIONS ON MONUMENT MANAGEMENT AND FURTHER WORKS

Other than the confusion in geophysical signature terms between possible man-made pits and similar natural/geological features, the survey shows that probable archaeological activity has survived in the geophysical record despite plantation and clearance. Furthermore, ostensible agricultural activity and historical landscaping of the site will presumably already have compromised and possibly truncated any buried archaeological resource to some extent. For this reason continuity in the sites current and planned management seems reasonable regarding the probable limited impact on any surviving buried archaeological deposits.

A useful endeavour would be to attempt to increase the understanding of the standing remains described in the Scheduled monuments Listing text (List entry no.1019847) as: *'The north corner of a small rectangular structure'*. These could be part of a wider planned landscape including the promontory, or perhaps modified earlier industrial structures on the quay. Much of the 18th century industrial aspect of the side is considered to have been cleared for subsequent landscaping.

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A coloured plan of the harbour of Falmouth up to Truro and Tregony, *c.*1690?
Surveyors draft map for the Grampound area, *c.*1811
Feock Tithe Apportionment, *c.*1841
Feock Tithe Map, *c.*1841

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APPENDIX 1: ADDITIONAL GRAPHICAL IMAGES OF THE GRADIOMETER SURVEY

FIGURE 7: MAGNETOMETRY SURVEY GRID LOCATION AND NUMBERING.

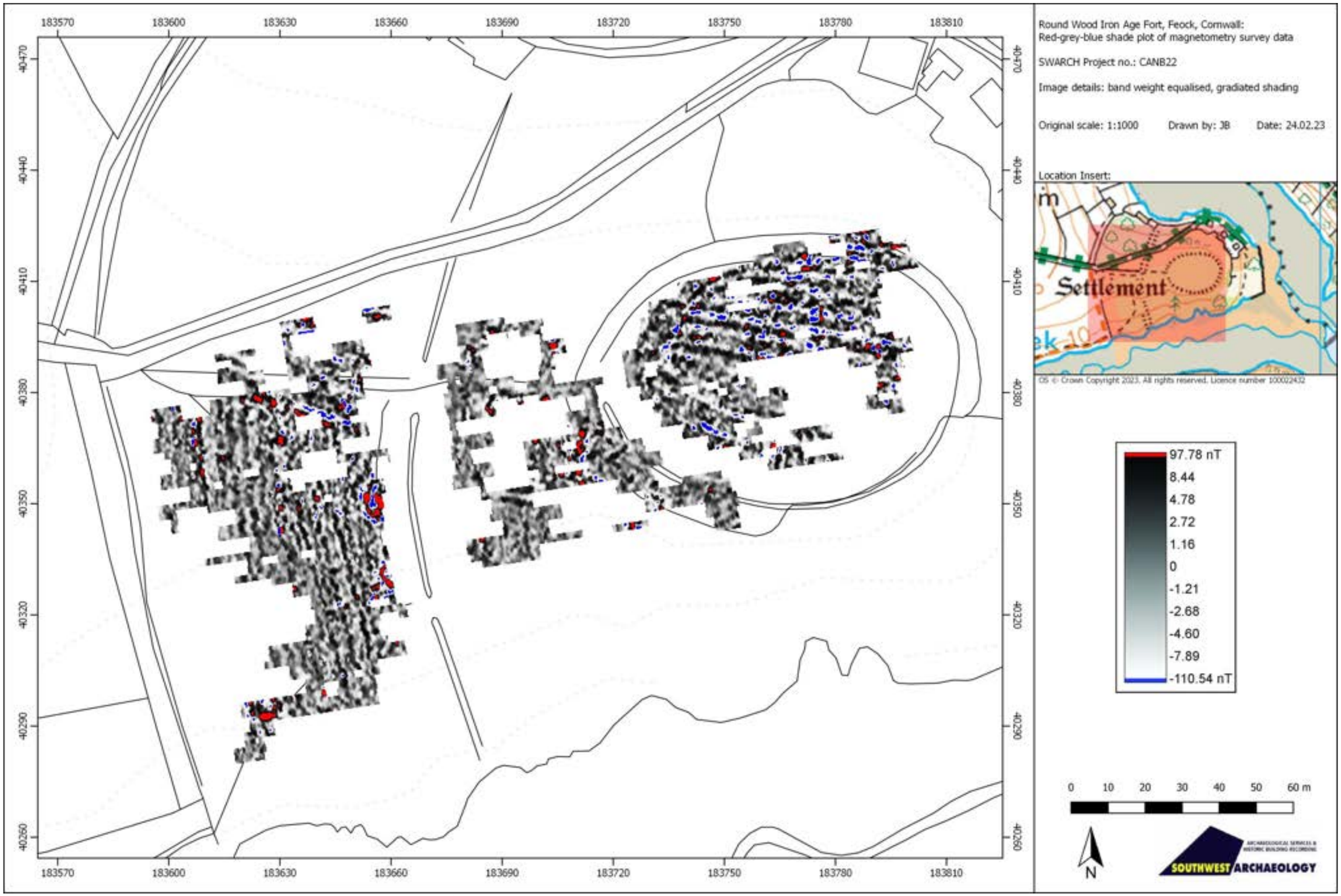

FIGURE 8: RED-GREY-BLUE SHADE PLOT OF MAGNETOMETRY SURVEY DATA; BAND WEIGHT EQUALISED; GRADIATED SHADING.

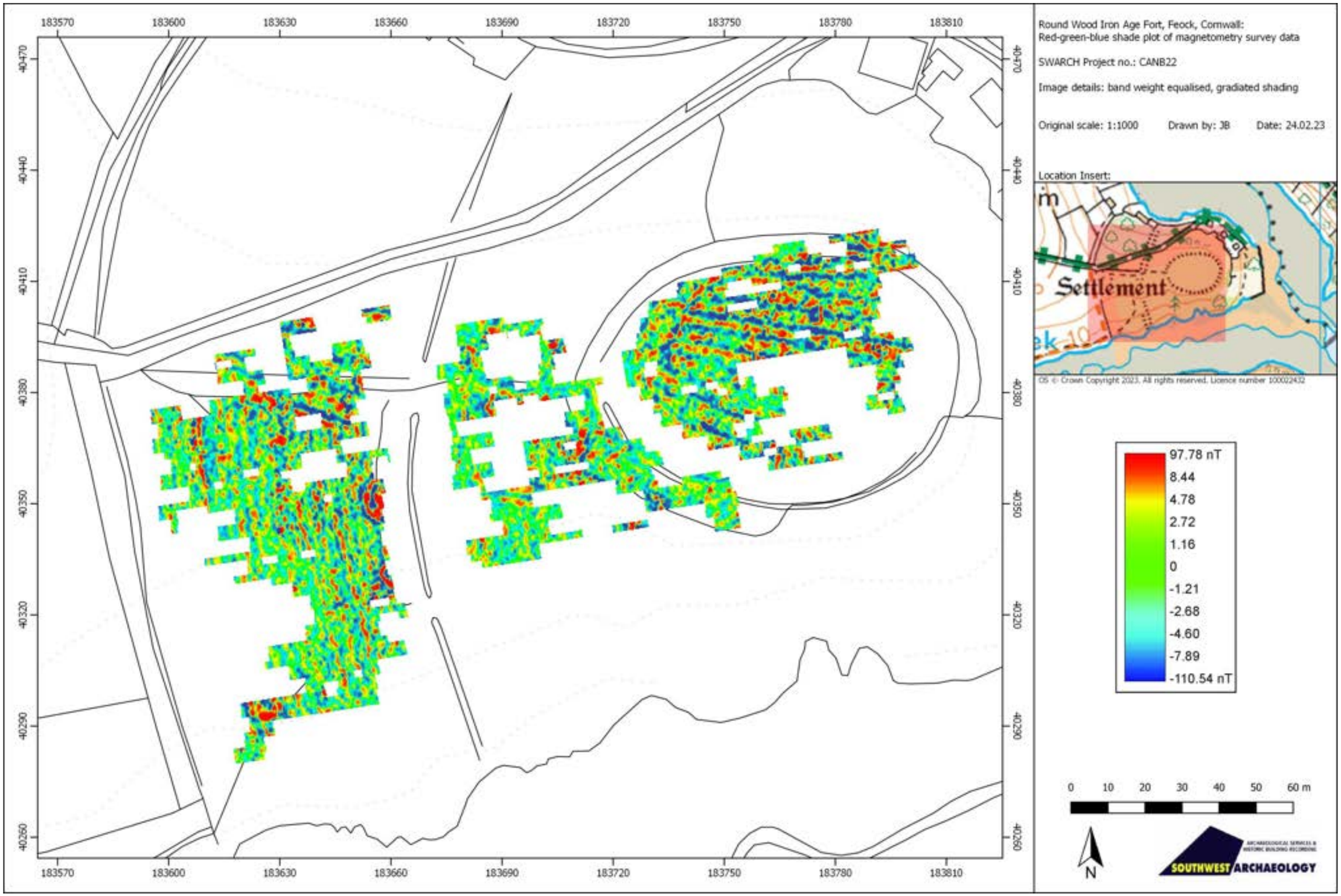

FIGURE 9: RED-GREY-BLUE SHADE PLOT OF MAGNETOMETRY SURVEY DATA; BAND WEIGHT EQUALISED; GRADIATED SHADING.

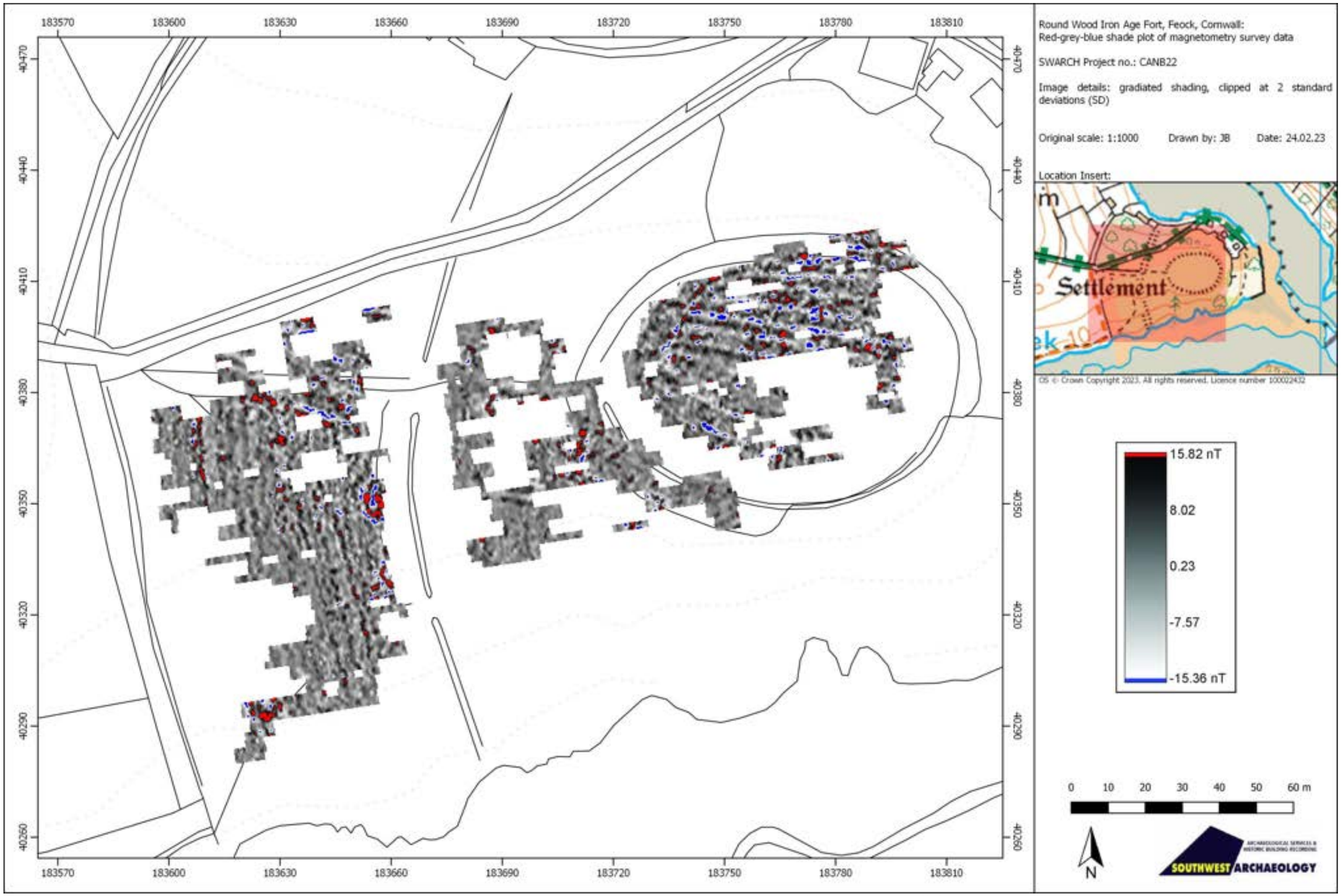

FIGURE 10: RED-GREY-BLUE SHADE PLOT OF MAGNETOMETRY SURVEY DATA; CLIPPED AT 2 STANDARD DEVIATIONS (SD).

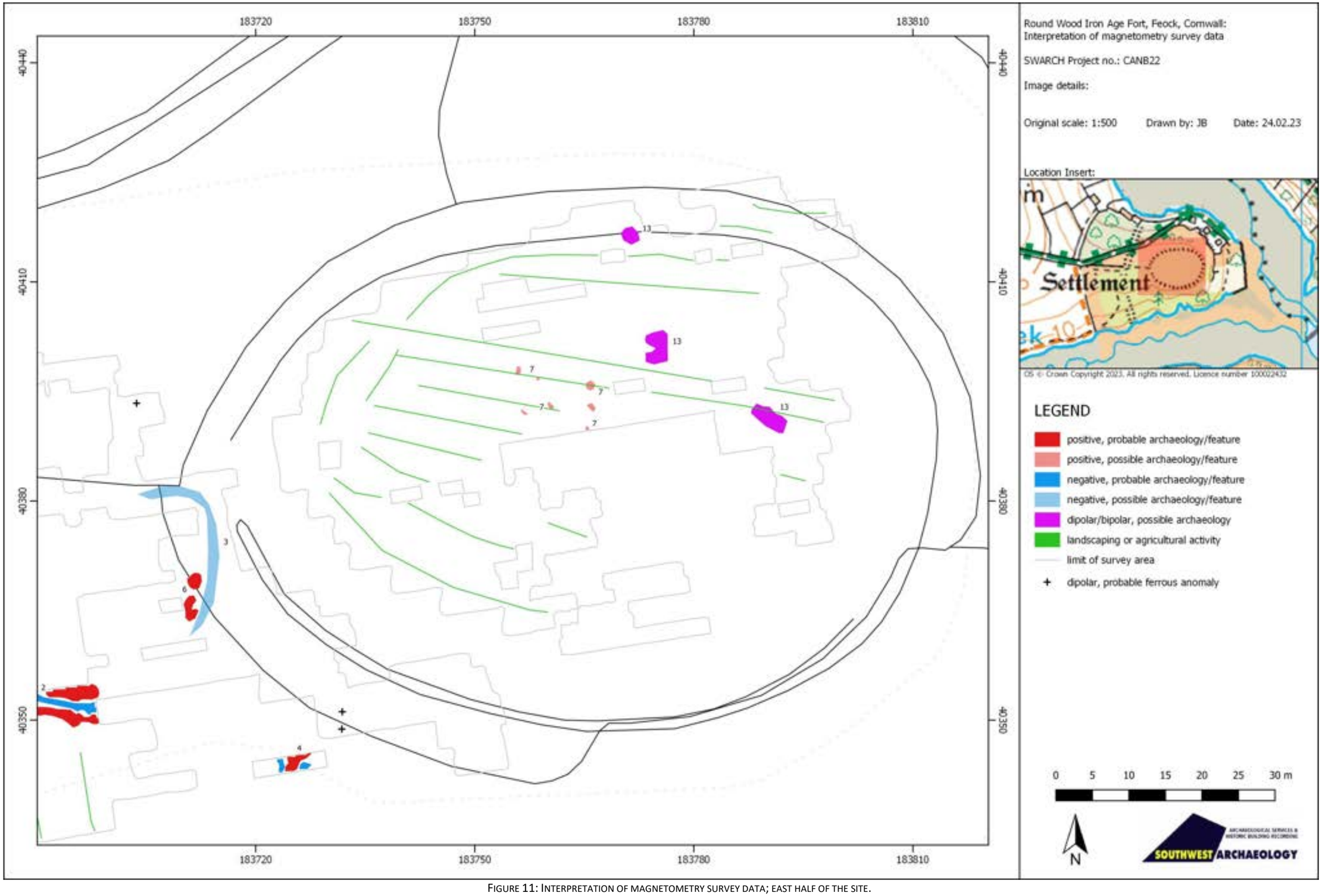

FIGURE 11: INTERPRETATION OF MAGNETOMETRY SURVEY DATA; EAST HALF OF THE SITE.

FIGURE 12: INTERPRETATION OF GRADIOMETER SURVEY DATA; WEST HALF OF THE SITE.

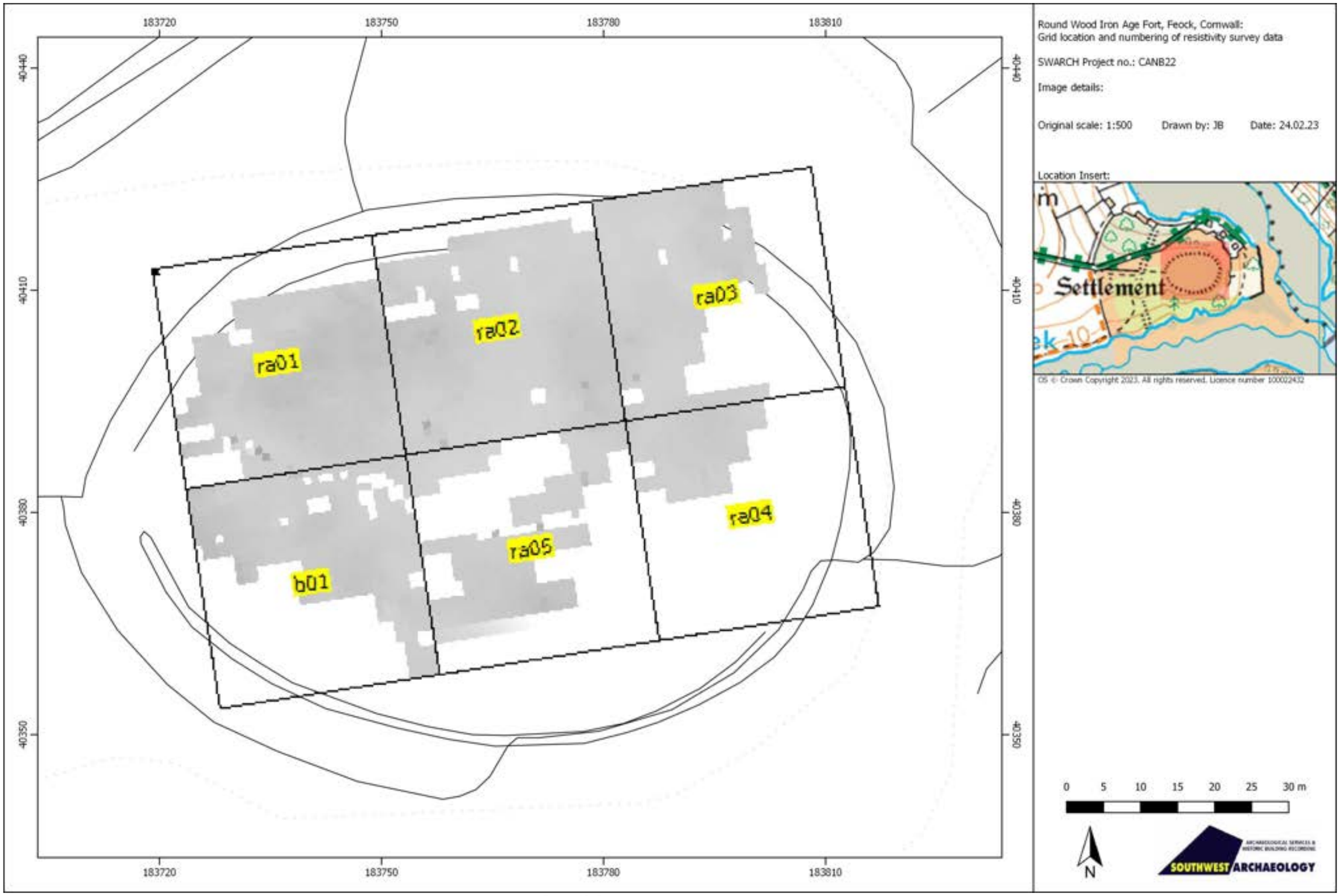

FIGURE 13: RESISTIVITY SURVEY GRID LOCATION AND NUMBERING.

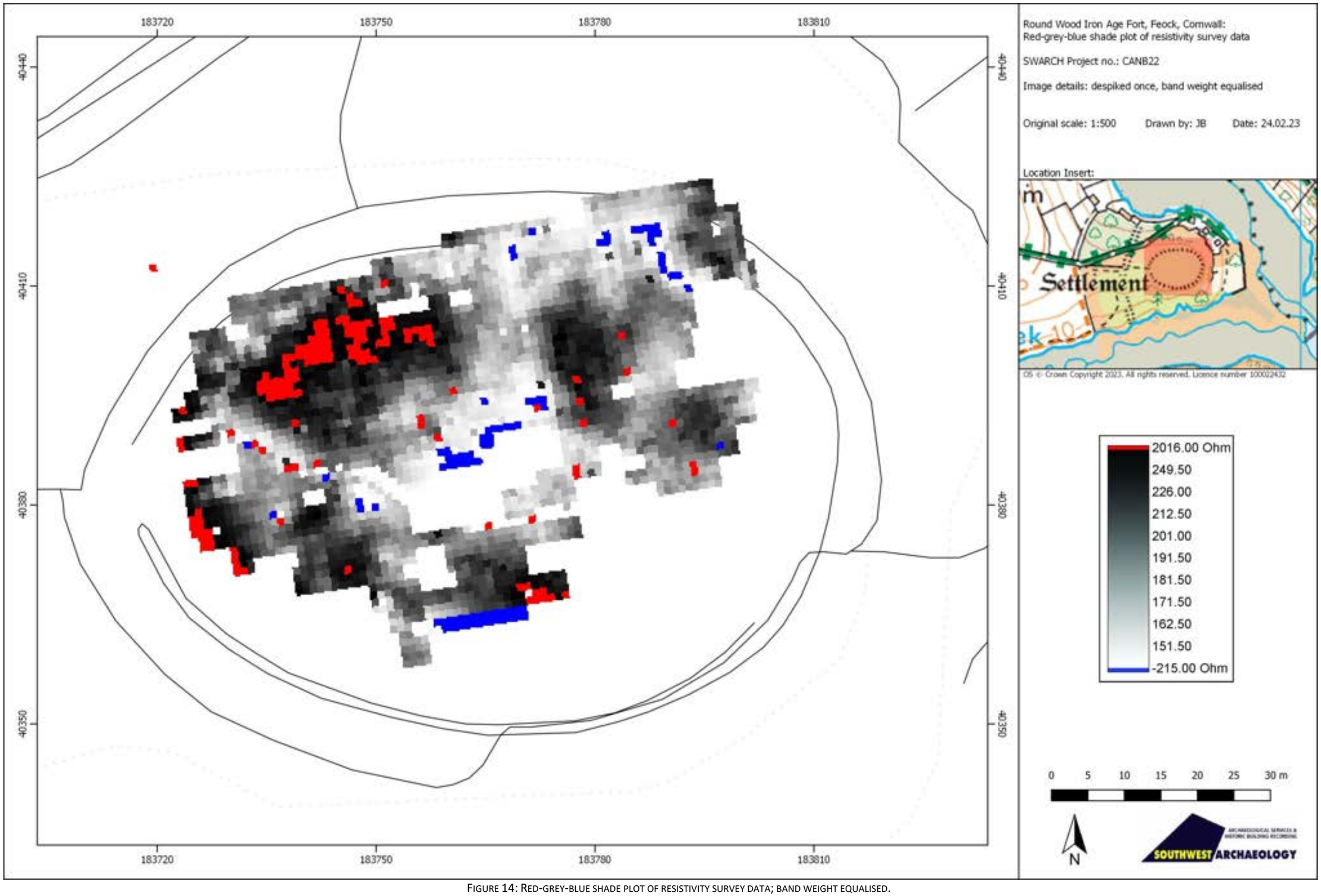

FIGURE 14: RED-GREY-BLUE SHADE PLOT OF RESISTIVITY SURVEY DATA; BAND WEIGHT EQUALISED.

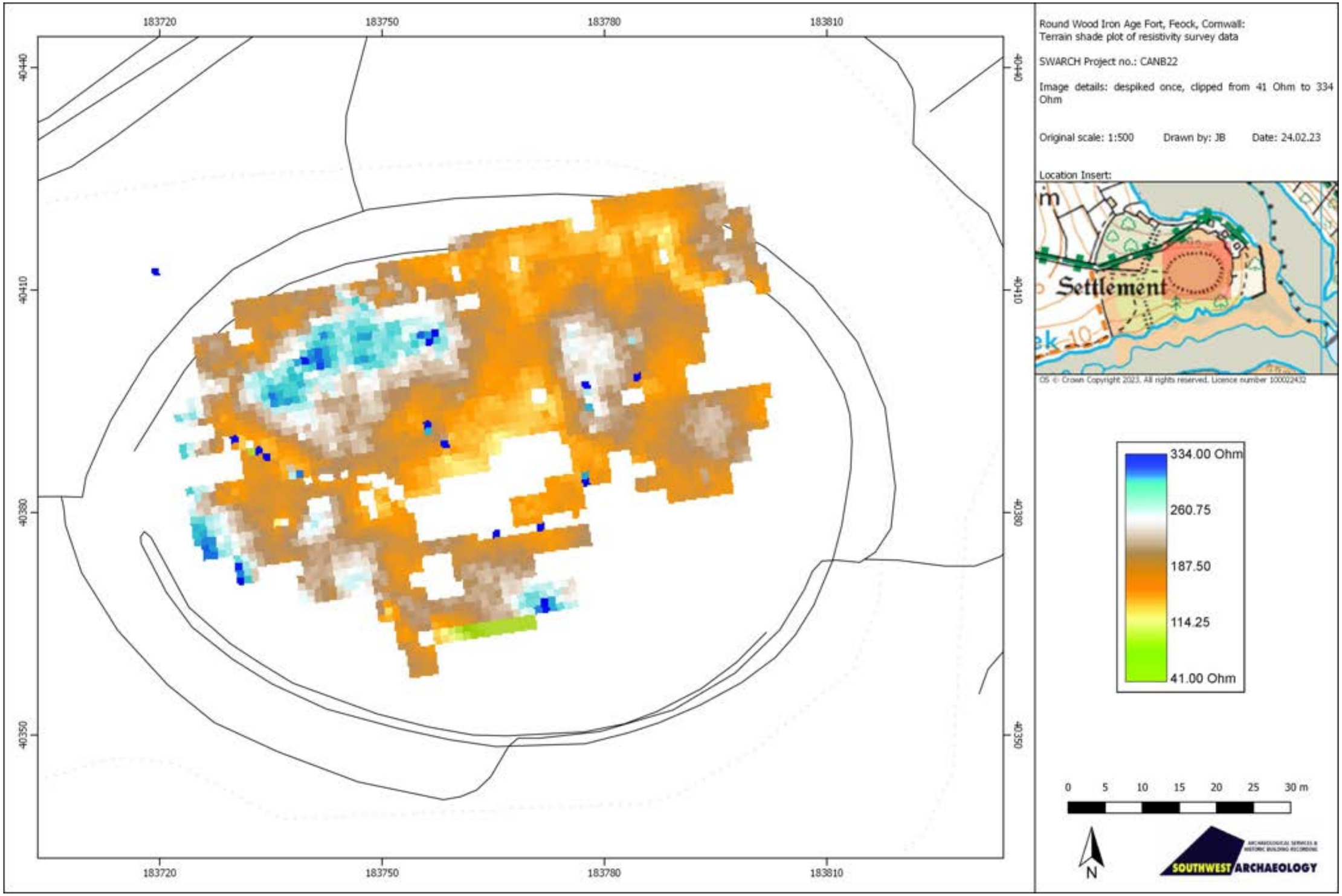

FIGURE 15: TERRAIN SHADE PLOT OF RESISTIVITY SURVEY DATA; CLIPPED FROM 41 TO 334 OHM.

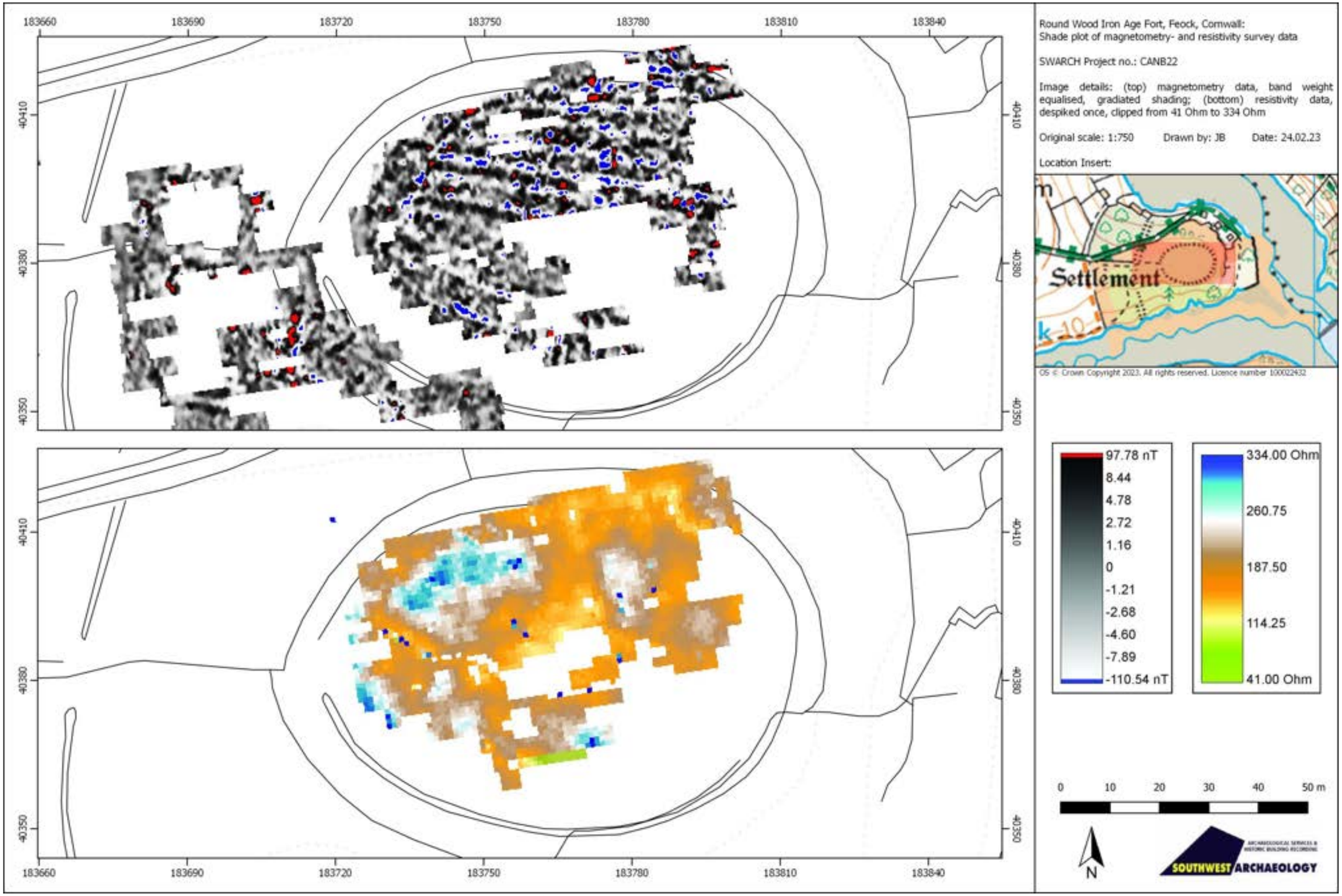

FIGURE 16: SHADE PLOTS OF MAGNETOMETRY- AND RESISTIVITY SURVEY DATA.

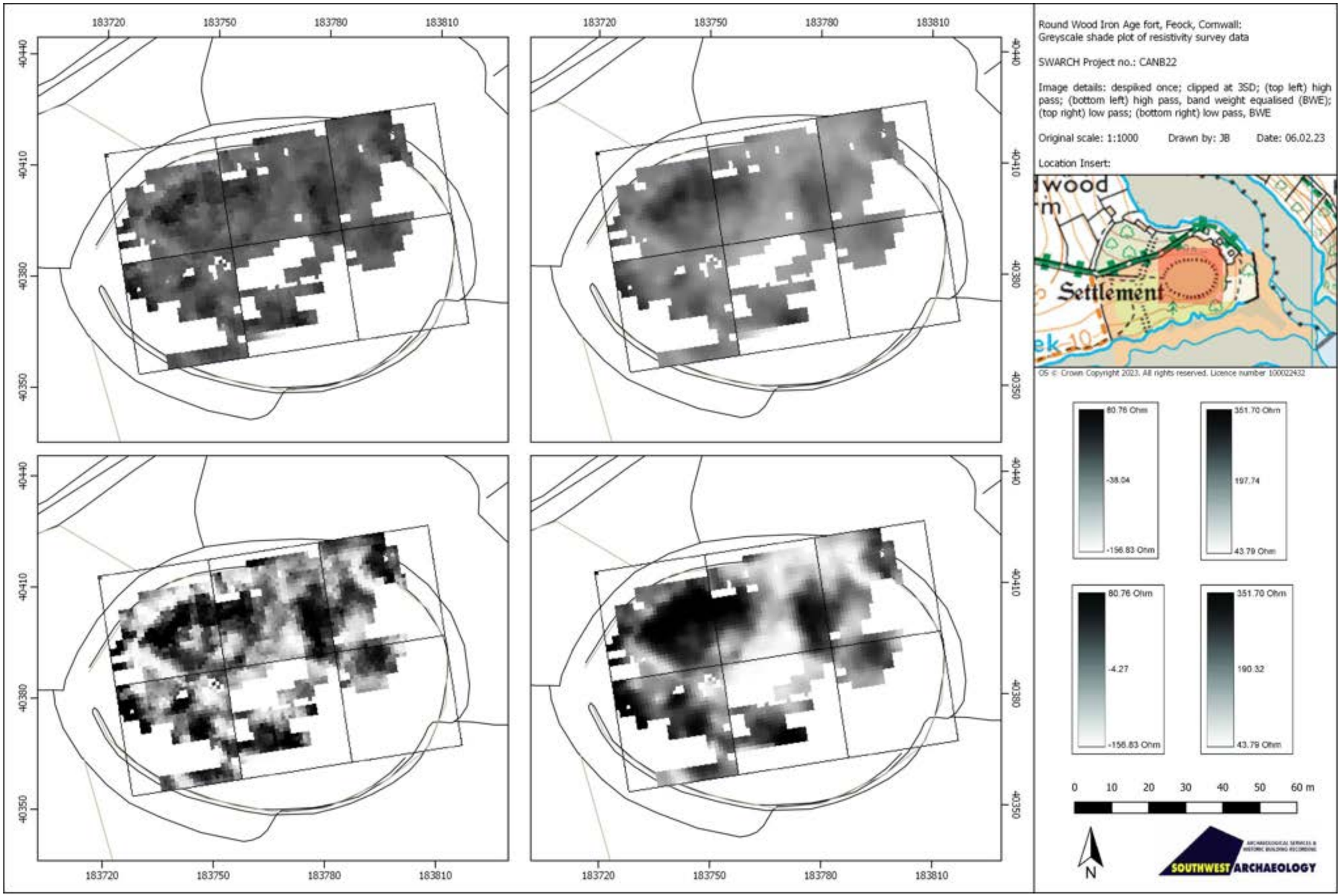

FIGURE 17: GREYSCALE SHADE PLOTS OF RESISTIVITY SURVEY DATA; HIGH- AND LOW PASS FILTER IMAGES INCLUDING BAND WEIGHT EQUALISED VERSIONS.

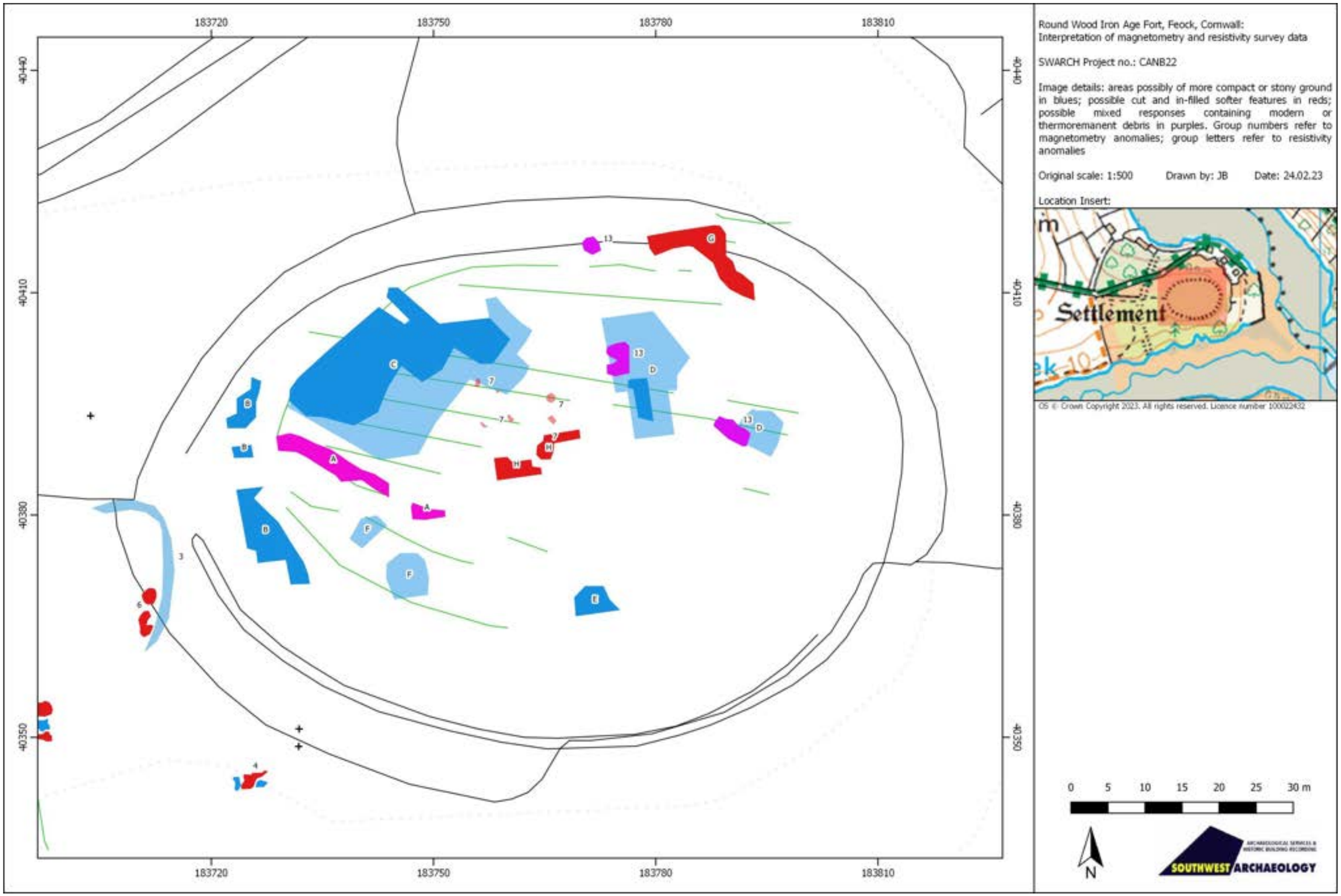

FIGURE 18: INTERPRETATION OF MAGNETOMETRY AND RESISTIVITY SURVEY DATA.

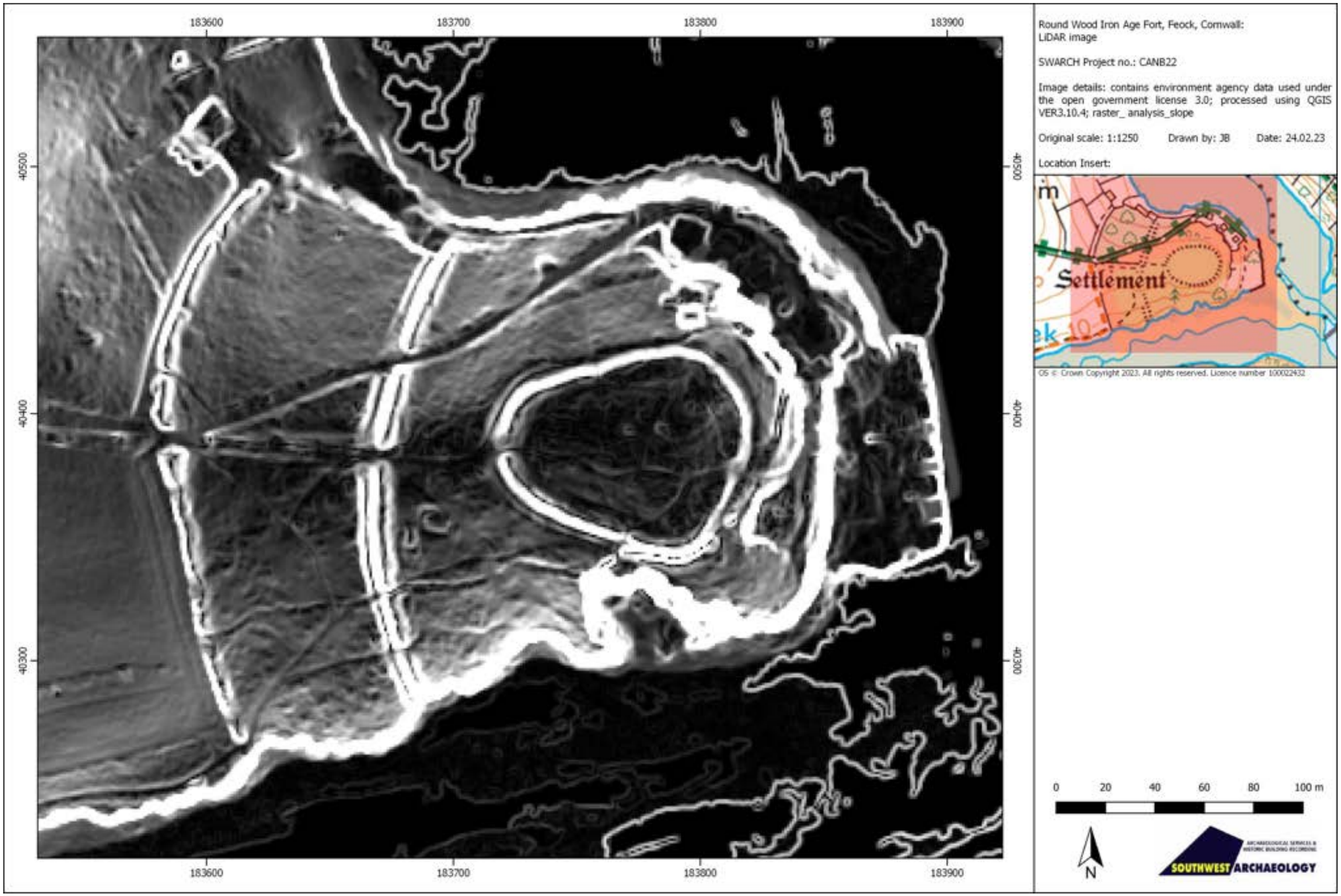

FIGURE 19: IMAGE DERIVED FROM LIDAR DATA; DTM SURVEYED 2022.

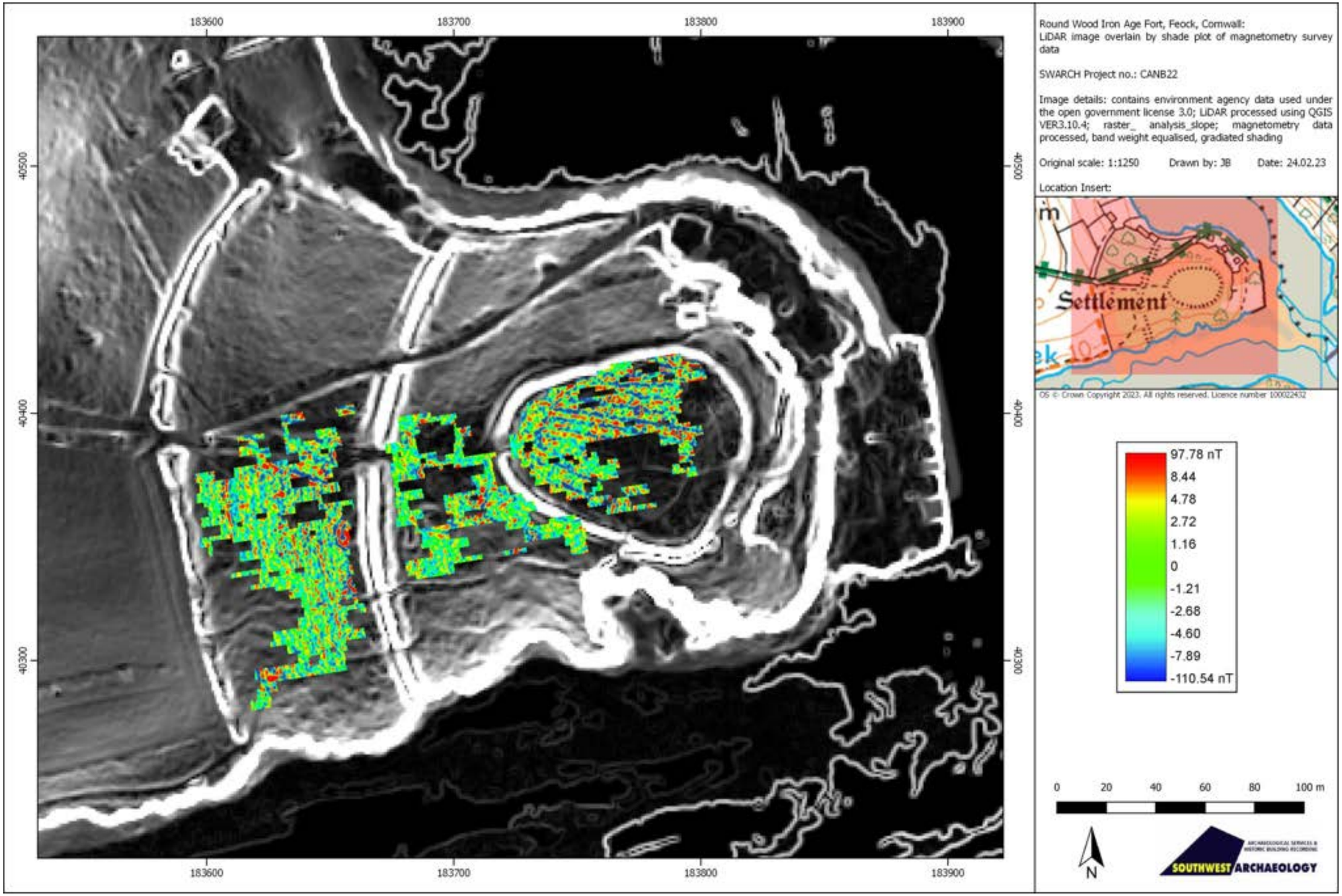

FIGURE 20: RED-GREEN-BLUE SHADE PLOT OF MAGNETOMETRY SURVEY DATA OVERLYING LIDAR IMAGE.

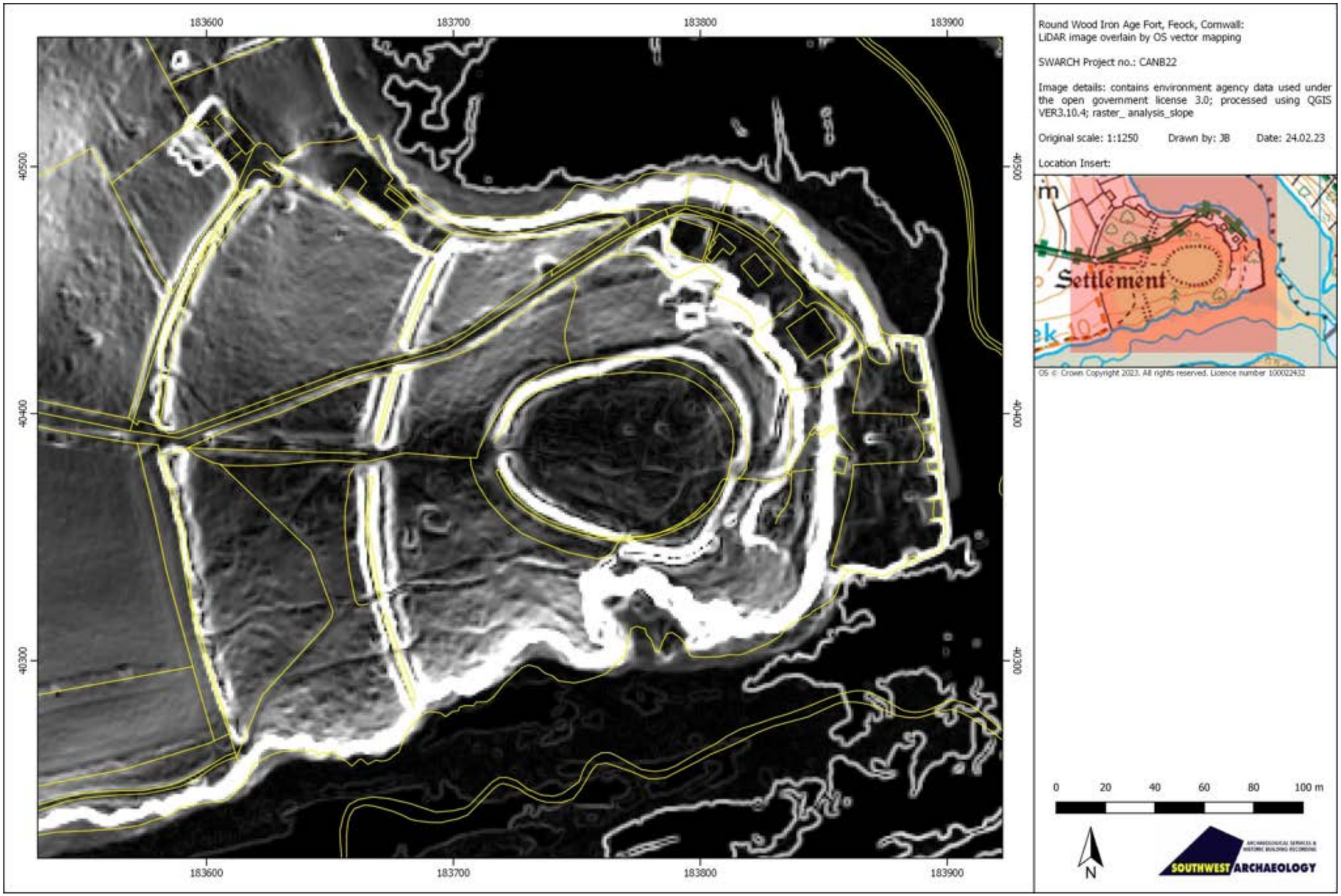

FIGURE 21: OS VECTOR MAPPING OVERLYING LIDAR IMAGE; ILLUSTRATES THE TRUE, 'PEAR' SHAPED 'ROUND' AT THE EAST END OF THE FORT.

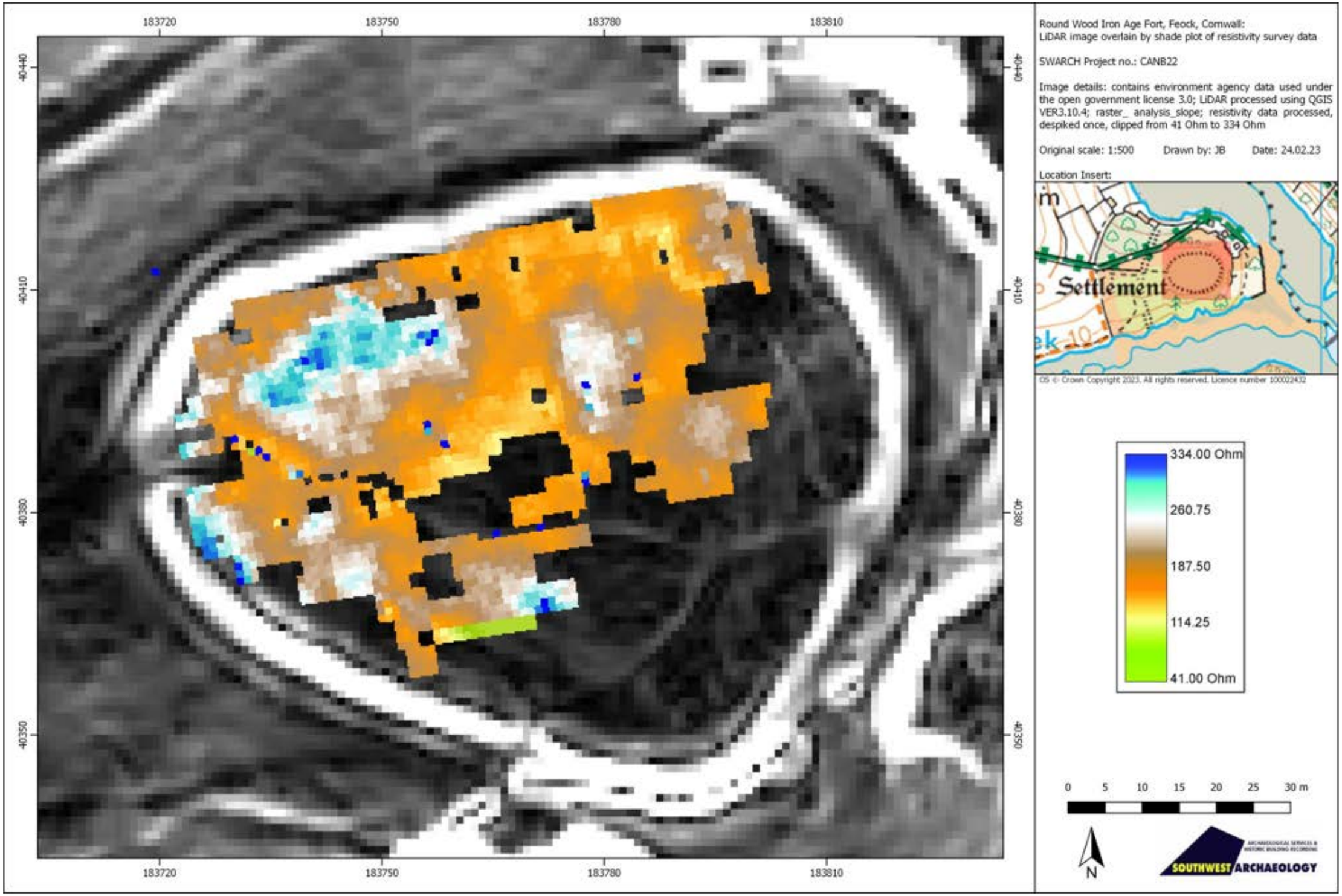

FIGURE 22: TERRAIN SHADE PLOT OF RESISTIVITY SURVEY DATA OVERLYING LIDAR IMAGE.

APPENDIX 2: SUPPORTING SOURCES

FIGURE 23: EXTRACT FROM *A PLOTT OF FALMOUTH HARBOUR, 1670-90?;* THE APPROXIMATE LOCATION OF THE SITE IS INDICATED (KK).

FIGURE 24: EXTRACT FROM *A COLOURED PLAN OF THE HARBOUR OF FALMOUTH UP TO TRURO AND TREGONY C.1690?*; THE APPROXIMATE LOCATION OF THE SITE IS INDICATED (KK).

FIGURE 25: EXTRACT FROM THE SURVEYOR'S DRAFT MAP, *C.*1811; THE APPROXIMATE LOCATION OF THE SITE IS INDICATED (KK).

FIGURE 26: EXTRACT FROM THE *C.*1841 FEOCK PARISH TITHE MAP; THE APPROXIMATE LOCATION OF THE SITE IS INDICATED (KK).

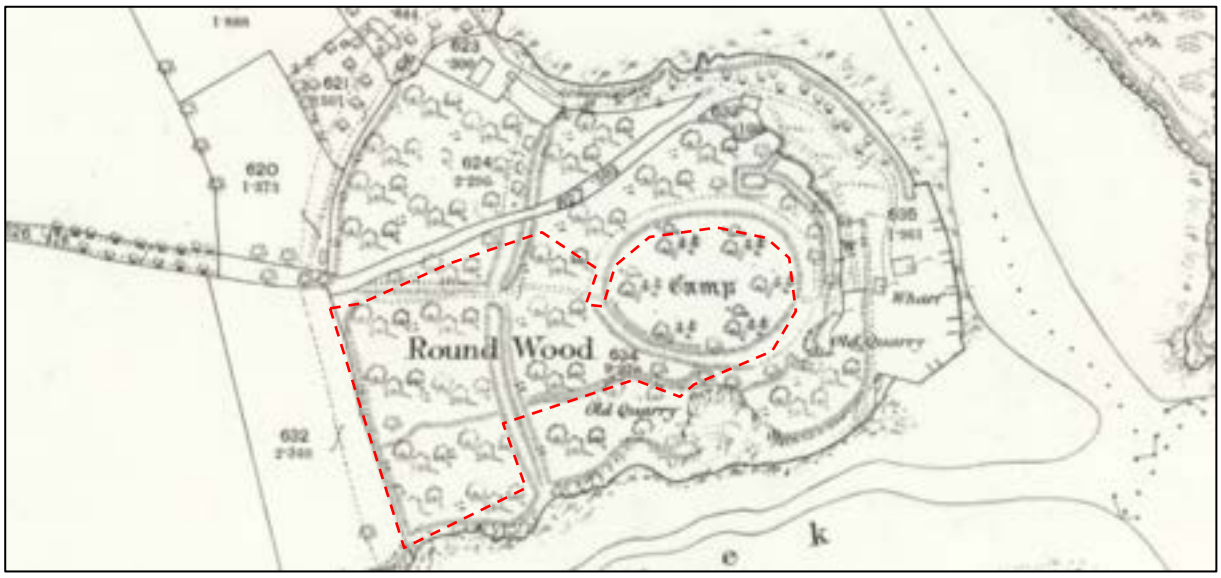

FIGURE 27: EXTRACT FROM THE ORDNANCE SURVEY 1ST EDITION, 25 INCH SERIES, PUBLISHED 1880; THE EXTENT OF THE GEOPHYSICAL SURVEY AREA IS OUTLINED IN RED (NLS).

FIGURE 28: EXTRACT FROM THE ORDNANCE SURVEY 2ND EDITION, 25 INCH SERIES, PUBLISHED 1907; THE EXTENT OF THE GEOPHYSICAL SURVEY AREA IS OUTLINED IN RED (NLS).

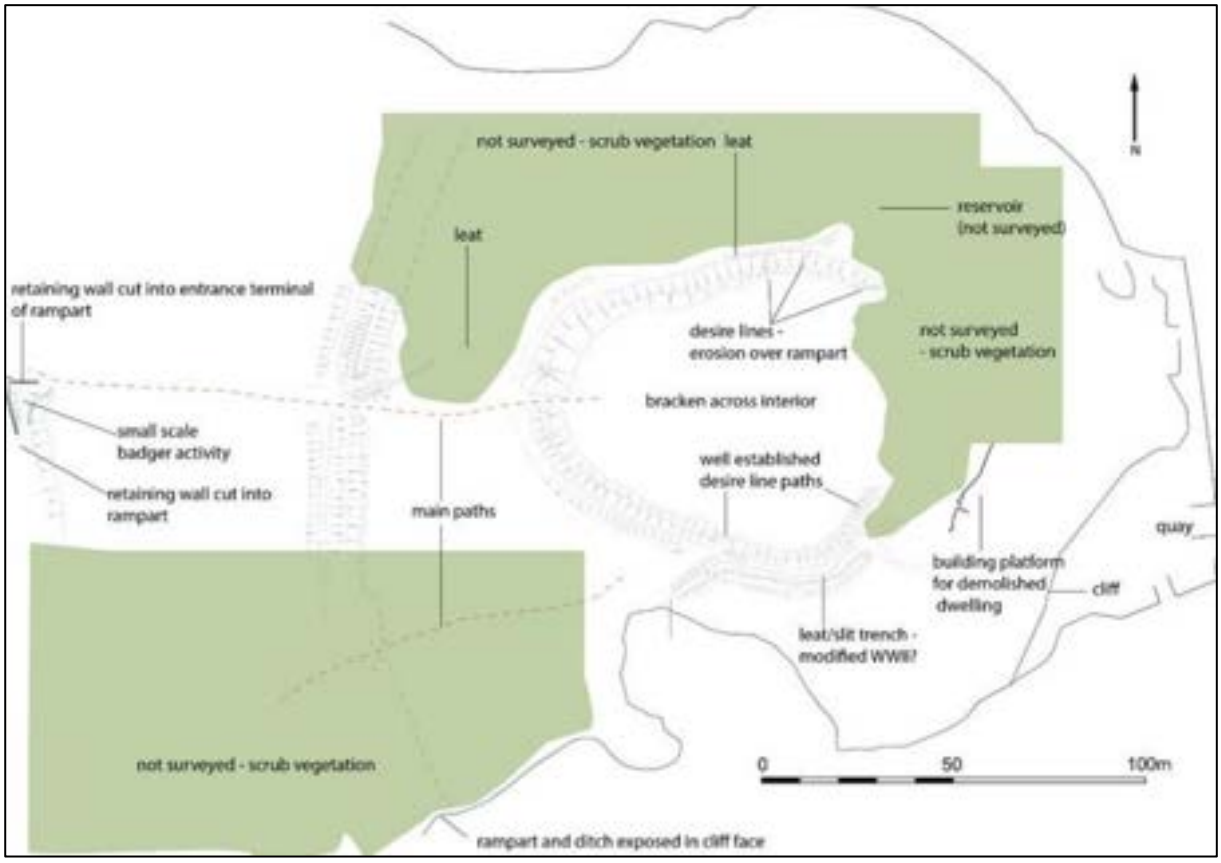

FIGURE 29: ROUNDWOOD PROMONTORY FORT, TOTAL STATION SURVEY (SOURCE: AONB).

APPENDIX 3: SUPPORTING PHOTOGRAPHS

1. SOUTH SIDE OF 'ROUND' EARTHWORK AT THE EAST END OF THE SITE; VIEWED FROM THE WEST-NORTH-WEST (NO SCALE).

2. NORTH SIDE OF THE 'ROUND' EARTHWORK AT THE EAST END OF THE SITE; VIEWED FROM THE SOUTH-WEST (NO SCALE).

3. VIEW FROM THE WEST ENTRANCE TO THE 'ROUND'; VIEWED FROM THE EAST (NO SCALE).

4. THE DITCH AND EXTERIOR TO THE 'ROUND' FROM THE MAIN FOOTPATH; VIEWED FROM THE SOUTH-SOUTH-WEST (NO SCALE).

5. LOOKING INTO THE 'ROUND' FROM THE MAIN FOOTPATH; VIEWED FROM THE WEST (NO SCALE).

6. THE DITCH AND EXTERIOR TO THE SOUTH-EAST QUADRANT OF THE 'ROUND'; VIEWED FROM THE NORTH-WEST (NO SCALE).

7. VIEW ACROSS THE MIDDLE AREA OF THE FORT FROM THE MAIN FOOTPATH; VIEWED FROM THE NORTH (NO SCALE).

8. NORTHERN PORTION OF THE FORTS MIDDLE RAMPART; VIEWED FROM THE SOUTH (NO SCALE).

9. THE AREA NORTH OF THE MAIN FOOTPATH IN THE MIDDLE AREA OF THE FORT; VIEWED FROM THE WEST (NO SCALE).

10. THE MIDDLE RAMPART OF THE FORT ACROSS THE MAIN FOOTPATH; VIEWED FROM THE NORTH-NORTH-EAST (NO SCALE).

11. THE DITCH AND WEST SIDE OF THE FORTS MIDDLE RAMPART BESIDE THE MAIN FOOTPATH; VIEWED FROM THE NORTH (NO SCALE).

12. WEST SIDE AND NORTH PORTION OF THE FORTS MIDDLE RAMPART; VIEWED FROM THE SOUTH-WEST (NO SCALE).

13. WESTERN AREA OF THE SITE FROM THE MAIN FOOTPATH IN THE MIDDLE RAMPART; VIEWED FROM THE EAST (NO SCALE).

14. WESTERN AREA OF THE SITE, NORTH OF THE MAIN FOOTPATH; VIEWED FROM THE EAST (NO SCALE).

15. EXTANT BANK IN THE WESTERN AREA OF THE SITE, NORTH- AND APPROXIMATELY PARALLEL TO THE MAIN FOOTPATH; VIEWED FROM THE EAST-SOUTH-EAST (NO SCALE).

16. THE WESTERN AREA OF THE SITE FROM THE MAIN FOOTPATH; VIEWED FROM THE NORTH (NO SCALE).

17. PART OF THE NORTH END OF THE WESTERN AREA OF THE SITE LOOKING TOWARDS THE SITES NORTH-WEST ACCESS; VIEWED FROM THE SOUTH-EAST (NO SCALE).

18. SEGMENT OF SURVIVING LEAT ACROSS THE SOUTHERN HALF OF THE WESTERN AREA OF THE SITE; VIEWED FROM THE WEST (NO SCALE).

19. SOUTH-WEST CORNER OF THE WESTERN AREA OF THE SITE; VIEWED FROM THE NORTH-EAST (NO SCALE).

20. VIEW ALONG THE APPROXIMATE NORTH-WEST BY SOUTH-EAST PATH IN THE WESTERN AREA OF THE SITE; VIEWED FROM THE SOUTH-EAST (NO SCALE).

21. SOUTHERN PATH ACROSS THE SURVEY AREA/MIDDLE RAMPART; VIEWED FROM THE WEST (NO SCALE).

22. DITCH ON THE WEST SIDE OF THE MIDDLE RAMPART; VIEWED FROM THE SOUTH (NO SCALE).

23. SOUTH SIDE OF THE MIDDLE AREA OF THE FORT; VIEWED FROM THE WEST (NO SCALE).

24. SOUTH SITE PATH ACROSS MIDDLE RAMPART; VIEWED FROM THE SOUTH-SOUTH-EAST (NO SCALE).

25. THICK BRACKEN AREA ACROSS SOUTH SIDE OF MIDDLE AREA OF THE FORT; VIEWED FROM THE NORTH (NO SCALE).

26. WEST SIDE OF THE MIDDLE AREA OF THE FORT; VIEWED FROM THE SOUTH (NO SCALE).

27. SOUTH PART OF THE MIDDLE AREA OF THE FORT THAT WAS SURVEYABLE; VIEWED FROM THE SOUTH-WEST (NO SCALE).

28. EAST PORTION OF THE MIDDLE PART OF THE FORT; VIEWED FROM THE SOUTH (NO SCALE).

29. AREA IN THE MIDDLE PART OF THE FORT SOUTH-WEST OF THE 'ROUND' EARTHWORK; VIEWED FROM THE NORTH-WEST (NO SCALE).

30. LEAT TRENCHES SOUTH OF 'ROUND' EARTHWORK; VIEWED FROM THE SOUTH-WEST (NO SCALE).

31. LEAT TRENCHES AND PATH SOUTH OF 'ROUND' EARTHWORK; VIEWED FROM THE WEST (NO SCALE).

32. LEAT TRENCHES SOUTH OF 'ROUND' EARTHWORK; VIEWED FROM THE WEST (NO SCALE).

33. SOUTH ACCESS TO THE 'ROUND'; VIEWED FROM THE SOUTH-WEST (NO SCALE).

34. SOUTH-WEST PORTION OF 'ROUND' EARTHWORK INTERIOR; VIEWED FROM THE SOUTH-WEST (NO SCALE).

35. INTERIOR OF THE 'ROUND' EARTHWORK; VIEWED FROM THE SOUTH (NO SCALE).

36. South-west portion of the 'round' earthwork interior; viewed from the south-east (no scale).

APPENDIX 4: TECHNICAL SUMMARY TABLES OF SURVEY METHOD AND METADATA

TABLE 3: TECHNICAL SUMMARY OF MAGNETOMETRY SURVEY METHOD AND METADATA.

Site no.	Site Name	Site Type	Period	AONB Section
38	Roundwood Promontory Fort	Promontory fort / round	Iron Age	9. South Coast - Central
Survey Type:	Magnetometry			
Equipment:	Twin sensor fluxgate gradiometer (Bartington Grad601) Leica CS15 GNSS Rover GPS			
Software:	Grad 601 - Version 3.16 TerraSurveyor - Version 3.0.36.0			
Instrument Settings / Parameters:	Survey Mode:	Grid Mode		
	Range:	100nT		
	Threshold:	2nT		
	Sensors:	2		
	Reject:	50 Hz		
Collection parameters:	Sample Intervals:	0.25m		
	Traverse Intervals:	1m		
	Traverse Pattern:	Zigzag		
	Traverse Direction:	East / 90°		
	Adjustment frequency:	0.5-1ha		
Survey Size Metadata:	Individual Grid Size	30m x 30m		
	Composite Area:	2.88ha / 240m x 120m		
	Area Surveyed:	0.8106ha		
Raw Response Metadata:	Max.:	98.16nT		
	Min.:	-100.00nT		
	Standard Deviation:	8.69nT		
	Mean:	3.36nT		
	Median:	3.21nT		
Processed Response Metadata: pre-clipping	Max.:	97.78nT		
	Min.:	-110.54nT		
	Standard Deviation:	7.79nT		
	Mean:	0.13nT		
	Median:	0.00nT		
Processes:	DeStripe all traverses, median			
	DeStagger all traverses out- and inbound by 0.50m (grids a3, a17+a24, a19-a22), by 0.25m (all other grids)			
	Clip at +/- 2SD (Standard Deviation)			

TABLE 4: TECHNICAL SUMMARY OF RESISTIVITY SURVEY METHOD AND METADATA.

Site no.	Site Name	Site Type	Period	AONB Section
38	Roundwood Promontory Fort	Promontory fort / round	Iron Age/ Romano-British	9. South Coast - Central

Survey Type:	Resistivity	
Equipment:	Geoscan Research RM15-D Resistivity Meter with MPX15 multiplexer module Four sensor PA20 mulitprobe array system at 0.5m probe spacing Leica CS15 GNSS Rover GPS	
Software:	TerraSurveyor - Version 3.0.36.0	
Instrument Settings:	Survey / Log Mode:	Parallel Twin Log Mode 2
	Gain:	x1
	Current:	1 mA
	Frequency:	137 Hz
	Output Voltage:	40 V
	Auto-log Speed:	Medium
	High Pass Filter:	13 Hz
	Mains Frequency:	50 Hz
	Hardware:	PA5
	Interface:	MPX15
	Log Mode:	Parallel Twin
	# Parallel Reads:	2 (4P)
	Baud Rate:	9600
Collection parameters:	Sample Intervals:	1m
	Traverse Intervals:	1m
	Traverse Pattern:	Zigzag
	Traverse Direction:	East / Grid North / 0°
	Remote Probe Spacing:	Between 0.5m and *c.*1.5m
Survey Size Metadata:	Individual Grid Size	30m x 30m
	Composite Area:	0.54ha / 90m x 60m
	Area Surveyed:	0.3279ha
Response Metadata: post replace	Max.:	2016.00 Ohm
	Min.:	-215.00 Ohm
	Standard Deviation:	100.31 Ohm
	Mean:	203.59 Ohm
	Median:	193.50 Ohm
Processed Response Metadata: post-clipping	Max.:	334.00 Ohm
	Min.:	41.00 Ohm
	Standard Deviation:	42.02 Ohm
	Mean:	198.23 Ohm
	Median:	193.50 Ohm
Processes:	Search and Replace -2047.5 and 2047.5 with Dummy	
	DeSpike threshold 1 window size 3×3, once	
	Clip from 41.00 to 334.00 Ohm	
	Mask for all layers	
	High Pass filter with Gaussian weighted window 21x21 intervals	
	Low Pass filter with Gaussian weighted window 3x3 intervals	

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