

# LAND AT PENPELL FARM

TREGONY

TREGONY WITH CUBY

CORNWALL

Results of a Geophysical Survey



South West Archaeology Ltd. report no. 220907



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# Land at Penpell Farm, Tregony, Tregony with Cuby, Cornwall

## Results of a Geophysical Survey

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Work undertaken by SWARCH for a private client (The Client)

### SUMMARY

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*South West Archaeology Ltd. (SWARCH) was commissioned to undertake a geophysical survey on Land at Penpell Farm, Tregony, Tregony with Cuby, Cornwall. The site is a single c.3.75ha field located across the top and gentle south-east facing slope of a ridge c.300m north of Penpell Farm and c.1.1km west-north-west of Tregony.*

*Penpell was a Domesday estate (MCO16185). The c.1844 Cornelly tithe map shows the site as two fields; a thin plantation along its north-west boundary and a larger field comprising most of the site. A track or lane is depicted along its south-west boundary. The two fields were amalgamated in the 20<sup>th</sup> century and the track/lane went into disrepair/disuse in the 21<sup>st</sup> century. Cornwall's HER includes cropmarks of possible prehistoric ditches, enclosure and possible ploughed-out barrows near the site (MCO55641; MCO55635; MCO2749); and an Iron Age/Romano-British field system (MCO20991) and possible rectilinear enclosure (MCO21596), in the fields immediately east and south of the site. Cornwall's HLC indicates that the site is within a landscape of 'Farmland: Medieval' (HCO4). No (known) previous archaeological works have taken place on the site.*

*The results of the geophysical survey identified 11 groups of c.29-31 anomalies (depending on the true relationship between some discernable anomalies). The anomaly groups include: possible ditches and former boundaries to a rectilinear field system with possible droeways associated with adjacent cropmarks (MCO21596); a historical boundary removed in the 20<sup>th</sup> century and areas of disturbance or possible relict structures associated with it and the roadside; possible boundaries and or ditches; possible pits, tree-throws or geological anomalies; an ephemeral circular anomaly that could be associated with a ploughed-out modern or prehistoric feature; and a relict and partially extant trackway. It is probable that the majority of the anomalies are associated with: either medieval-modern activity along the north-west edge of the site relating to a removed historical boundary and associated areas of activity or structures; or a possible prehistoric-medieval field system with enclosures and droeways associated with the HLC's medieval fieldscape and the presence of possible Iron Age/Romano-British cropmarks in the fields east and south of the site. Truncation of any buried archaeological resource on the site seems likely either from historical and modern ploughing, or 20<sup>th</sup> century remodelling of the field system, such as along the north-west boundary of the site.*

*Further archaeological mitigation in the form of targeted evaluation trenching will likely be required to inform any future planning application. Such further archaeological works would test the efficacy and validity of the results of the geophysical survey and aid to confirm the presence or absence and significance of any archaeology resource on the site.*

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December 2022

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## ACKNOWLEDGEMENTS

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THE CLIENT  
KRESEN KERNOW (KK)

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## 1.0 INTRODUCTION

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<b>LOCATION:</b>	LAND AT PENPELL FARM, TREGONY
<b>PARISH:</b>	TREGONY WITH CUBY
<b>COUNTY:</b>	CORNWALL
<b>CENTROID NGR:</b>	SW 90989 45212
<b>PLANNING REF:</b>	N/A
<b>SWARCH REF:</b>	TLPF22
<b>OASIS REF:</b>	SOUTHWES1-509253

### 1.1 PROJECT BACKGROUND

South West Archaeology Ltd. (SWARCH) was commissioned by a private client (The Client) to undertake a geophysical survey and topographic survey on Land at Penpell Farm, Tregony, Tregony with Cuby, Cornwall to inform any potential future development of the site. This work was carried out in accordance with best practice and ClfA guidelines.

### 1.2 TOPOGRAPHICAL AND GEOLOGICAL BACKGROUND

The site is a single, approximately rectangular/slight 'L'-shaped field at Penpell Farm. The farm and site are in an agricultural landscape of fields on a rough headland between the Fal River and a valley to one of its tributaries. It is in a landscape of rolling hills and valleys with various small springs and watercourses feeding the Fal River. The site is on a gentle south-east facing slope c.1.1km west-north-west of Tregony and c.300m north of Penpell Farm within a meander of the A3078 between Tregony and Freewater. The field is at a height of c.85m-93m AOD.

The soils of the site are recorded as the well-drained fine loamy soils over slate or rubble of the Denbigh 2 Association (SSEW 1983), which overlie sandstone and argillaceous rocks (interbedded) of the Portscatho Formation (BGS 2022).

### 1.3 HISTORICAL AND ARCHAEOLOGICAL BACKGROUND

A settlement at Penpell was first recorded in Domesday, 1086, as *Penpel* (MCO16185; Morris 1992) and at the time within the hundred of Tybesta. It was a small manor of six households. Prior to the conquest it was owned by Brictric and was worth 10 Shillings: after the conquest it was held by Hamelin from the Count of Mortian and was worth 5 Shillings (Morris 1992). The site later was within the parish of Cornelly, formerly known as Grogoth, within the deanery- and western division of the hundred of Powder (Lysons 1814). The manor of Grogoth and Parish church of Cornelly are located east of the site. The c.1844 Cornelly tithe map and apportionment shows the site as constituting plots 53 and 190. The majority of the site (plot 53) was part of *Penpell*, which belonged to Edward Coode, was occupied by John Hotton, was called *Bramble Close* and under arable cultivation. Plot 190 was along the north-east boundary of the site. It was part of *Venton-wanna*, owned by a Gordon William Francis Gregor, occupied by John Hotton, and was called *Plantation*. The field names of the surrounding area were consistently prosaic. The only fieldname of any interest in the immediate vicinity of the site was *Well Close*, plot 51, immediately south of the site.

The place-name of Penpell is probably derived from the Cornish *pen* and *pol* meaning 'head' 'of the/a creek', as at Penpoll, Fowey (using Watts 2004). This fits the topography of the site; the farm is located near the head of a watercourse running towards the Fal River.

Cornwall's Historic Environment Record (HER) includes a small number of assets near to (within c.250m) the site. Most of these are cropmarks of possible prehistoric ditches and enclosure identified on aerial photography, including: ditches (MCO55641) and a ring-ditch of a possible ploughed-out

barrow (MCO55635) to the north-west, near Freewater; a possible Bronze Age barrow mound to the north-east (MCO2749); an Iron Age/Romano-British field system (MCO20991) and possible rectilinear enclosure, c.40m by 50m (MCO21596), in the fields immediately east and south of the site. Further afield, south of Probus, c.1.5km-2.3km north-north-west of the site Iron Age settlements and 'rounds' have been identified at and near Parkengear (MCO8041-2, MCO8302; MCO8210) and between Higher and Lower Trestrayle Farm (MCO54991; Bampton 2020). The nearest documented Roman archaeology to the site is known at Tregony including a shrine or cemetery (MCO56256) and coin finds (MCO39920). Other than Penpell itself (MCO16185), medieval assets near the site include: documentary evidence of a pound at Grogoth Wallas (MCO28655); the raised enclosure of a possible lann (MCO2482) at the Grade I Listed 13<sup>th</sup> century and later Cornelly church, the former parish church of St Cornelius, the patron saint of horned cattle (MCO6299; DCO5693; 1328898); the settlement of Grogoth Wartha (*Gorgoyth*) first recorded c.1200 (MCO14628); a possible holy well of St Wenna (MCO6977) and cropmarks of a medieval field boundary (MCO55639) north of the site, near Freewater; the settlement at Killiow, west of the site was first recorded in 1327 (MCO15159) and includes an 18<sup>th</sup> century or earlier house (MCO11725); Tregony, a Conservation Area (DCO40) was first recorded in 1049 as *Tref Hrigoni* (MCO26145), and a large area (14ha) of medieval strip fields have been identified as earthworks on the north side of the settlement (MCO56276). The only post-medieval assets listed on the HER within 250m of the site are two 19<sup>th</sup> century milestones and a 19<sup>th</sup>-20<sup>th</sup> century signpost on the road from Freewater to Cornelly (MCO53414; MCO53411; MCO55786). Cornwall's Historic Landscape Character (HLC) indicates that the site is within a landscape of 'Farmland: Medieval' (HCO4).

No previous archaeological works have taken place on the site. Archaeological field work near to- and east of the site includes evaluation along a service line through Grogoth and Cornelly that identified probable medieval or later ditches (Cole 2002; ECO437); a watching brief at Cornelly Lodge that revealed undated pits, boundaries removed in the 19<sup>th</sup> century and probable service trenches (Lawson-Jones 2009; ECO2882); and an archaeological assessment for a wind turbine at Grogarth Farm that covered a wide area of heritage assets including around the site (Sharpe 2012; ECO3541).

Gascoyne's map of 1699 shows *Penpon* on a spur of land between the Fal River and another watercourse, but shows no detail of the fieldscape and limited road details. The surveyor's draft map, c.1811, provides a relatively accurate representation of the road layout and fieldscape around the site. It shows *Penpell* and a diamond-shaped rectangular field with two gently curving boundaries that represent the site. The north-west boundary of the site is shown as a curving road with the west corner by a cross-roads of road or trackways. The site is largely recognisable as it was at the time of this survey on the c.1844 Cornelly tithe map. Plots 53 and 190 (the apportionment details are described above) define a roughly rectangular, slight 'L'-shaped parcel of land equating to the site. The road along the north-west of the site becomes very straight alongside plot 190, between two curved sections. The boundary of 190 may therefore represent an earlier edge to the adjacent road, perhaps enclosed from roadside waste. Plot 190 includes a sub-rectangular 'smudge' or shaded area that could indicate a scrub or 'waste' area as denoted in the tithe apportionment.

The Ordnance Survey (OS) 1<sup>st</sup> and 2<sup>nd</sup> editions, surveyed between c.1879 and c.1906 respectively, show continuity with the c.1844 mapping: the plot 190 area is depicted as wooded; north of the site a boundary and wooded/scrub area is no longer depicted; an area of orchards at Penpell is shown in 1879 but not shown by 1906. The boundary between plots 53 and 190 was removed in the 20<sup>th</sup> century. Satellite imagery shows a track (depicted as a road-like route on historic mapping) as present in 2001 with subsequent satellite imagery showing the track going into disrepair and being less well defined. Ground disturbance near the west corner site entrance and between gates in the fields' boundaries is also shown across this imagery. One can discern an area defining the former plot 190 with possible topographic features in the same area on LiDAR imagery from c.2020. Various directions of ploughing or agricultural work across the site and wider area, and a possible removed boundary or contour line in the field immediately east of the site that could align with the sites south-east boundary

is also visible on LiDAR imagery. Supporting cartographic sources and LiDAR imagery for this section can be seen in Appendix 2.

#### 1.4 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).

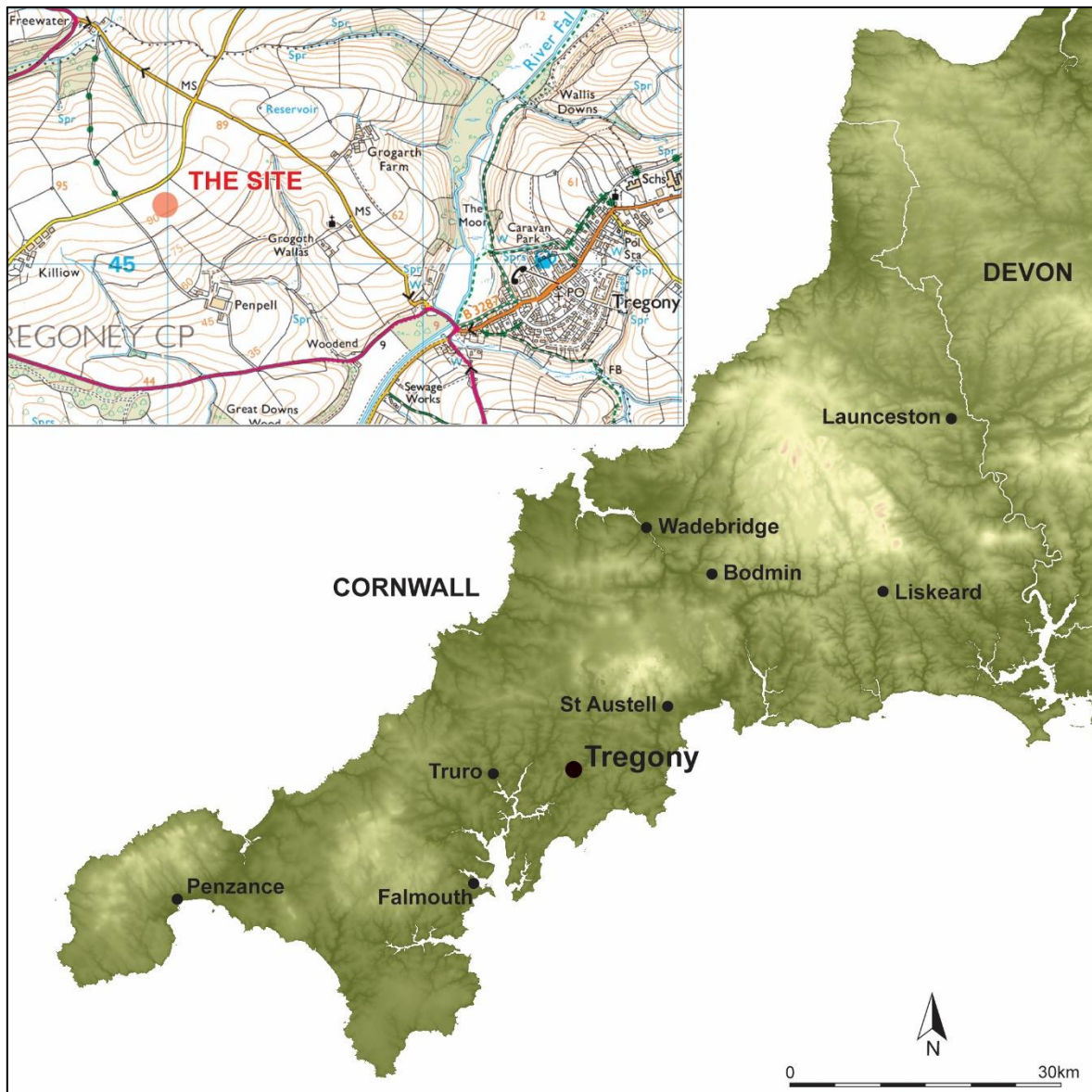


FIGURE 1: SITE LOCATION (THE SITE IS INDICATED).

## 2.0 GEOPHYSICAL SURVEY

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### 2.1 INTRODUCTION

An area of c.4ha was the subject of a magnetometry (gradiometer) survey. The purpose of this 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 10<sup>th</sup> and 12<sup>th</sup> of August 2022 by J. Bampton and P. Bonvoisin; the survey data was processed by J. Bampton.

### 2.2 SITE INSPECTION

The site constituted a single field on the crest of a gentle south-east facing slope along a north-east by south-west aligned ridge. The long axis of the field ran parallel to this ridge. The north-west quarter of the site was relatively level while the rest of the site sloped down evenly and gently to the south-east. The site was under short grass with frequent thistle scrub and nettles and had presumably recently been used for grazing and/or silage. A trough was located in the south-west of the field and cattle were in adjacent fields. A probable pipe trench was visible in the grass running from the trough east, towards a gateway. The site was bounded by traditional Cornish hedgebanks (stone-lined banks topped with hedging and scrub and this was lined with electric fencing approximately <1-2m off of the boundary. The north-west boundary was beside a road, while fields were beyond the other boundaries. The site was accessed from a gate in the west corner of the site; at the east end of the north-west boundary. Access to adjacent fields was provided via a gateway at the south-east end of the north-east boundary, and two gateways in the south-east boundary. A possible former gateway, or at least break in the boundary at the south-east end of the south-west boundary was blocked with a trough and scrub. A heavily rutted track ran along-side the south-west boundary. At the north-west edge of the site, parallel to the site boundary was a row of three or four hollows or undulations, which may equate to former ring-feeder locations or be earthworks of underlying geological or archaeological features. The site afforded views from its north corner across a wide area, including the church towers of three nearby settlements. The site was visited and surveyed in extremely hot weather conditions. Photographs of the site can be seen in Appendix 3.

### 2.3 METHODOLOGY

The 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 (ClfA 2014b).

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 (balanced/'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 0.25m (grids a4, a23, b18); by 75cm (grids a13, a18, b3, b6-8, b14-17, b19-30); by 50cm (all other grids); reduces staggering effects within data derived from zig-zag collection method.

Clip +/- 2SD; removes extreme data point values.

Details:

3.7471ha surveyed

Stats threshold post processing; Max. 103.45nT, Min. -103.24nT; Standard Deviation 9.26nT, mean 0.56nT, median 0.00nT.

Stats threshold processed data clipped at 2SD; Max. 19.07nT, Min. -17.95nT; Standard Deviation 7.52nT, mean 0.35nT, median 0.00nT.

## 2.4 RESULTS

Table 1 with the accompanying Figures 2 and 3 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.

TABLE 1: INTERPRETATION OF GRADIOMETER SURVEY DATA.

Anomaly group	Class and Certainty	Form	Archaeological Characterisation	Comments
1	Moderate-strong positive, probable	Linear	ditches	Approximately 10 linear (and slightly curving) anomalies indicative of cut and in-filled features such as ditches. Located across the site forming a pattern of rectilinear enclosures with droveways. On an approximate north-west by south-east and south-west by north-east alignment. Examples in the south-east of the site align with adjacent cropmarks (MCO21596). Possibly associated with Groups 2 and 4. Responses of c.+15nT to c.+50nT.
2	Moderate positive, possible	Linear	Ditch	On the east side of the survey area. Two segments to an anomaly aligned north-west by south-east and aligned with parts of Group 1. Indicative of a ditch-type feature, but with a slightly intermittent response. Possible associated features possibly in poorer condition or less substantial than corresponding Group 1 examples. Possibly associated with Group 1. Responses of c.+10nT to c.+31nT.
3	Moderate positive and negative, probable	Linear	Boundary ditches and bank	Along the north-west boundary of the survey area. A single anomaly aligned approximately north-east by south-west, but turning into/towards the adjacent road at either end. Indicative of compacted or stony material associated with a possible bank, flanked by ditch-type features. Typical of a Cornish hedgebank boundary. Probably equates to a formerly more curved boundary along this side of the field shown on historical mapping (1811) and the boundary of a copse or plantation of trees depicted along this edge of the site on the c.1844 tithe mapping and historical Ordnance Survey (OS) mapping (c.1879-1908). This boundary was ostensibly removed in the 20 <sup>th</sup> century. Possibly associated with Groups 8 and 9. Responses of <c.+38nT and <c.-25nT.
4	Moderate-strong positive and weak negative, probable	Linear/ Recti-linear	Ditch, possible boundary	In the north corner of the survey area. An anomaly aligned with Group 1 and probably part of the Group 1 recti-linear enclosure system and defining a droveway with a parallel Group 1

				anomaly. Indicative of a cut and in-filled feature such as a ditch with possible bank material along its north-west edge. This negative response is probably a relative response to the ditch and within the limits of natural variation; therefore, not associated with a buried archaeological feature. Possibly associated with Group 1. Responses of c.+18nT to c.+50nT and <c.-15nT.
5	Moderate-strong positive and negative, probable	Linear	Ditch or ditches and possible bank/boundary	In the east corner of the survey area. Aligned approximately north-west by south-east. Indicative of a possible boundary with compacted or stony bank material with a ditch along its south-west side and a ditch possibly lining its north-east. Boundaries in this landscape may have been modified or rectified over the years. Responses of <+64nT and <-28nT; the response if the slight linear anomaly on the east edge of the survey area was c.+35nT.
6	Weak-moderate positive and negative, possible	Linear	Ditch, possible boundary	In the south-east corner of the survey area. Aligned approximately north-east by south-west. Indicative of a cut and in-filled feature such as a ditch with a possible associated bank-like response. Possibly associated with shallow ground disturbance and/or ploughing activity generating alternating positive and negative responses. Relatively weak responses may indicate a shallow nature or poor survival. Responses of c.+7nT to c.+20nT and c.-15nT.
7	Moderate-strong positive, possible	Oval	Pits, tree-throws, geology	Approximately nine examples of possible cut and in-filled features (e.g. pits) or natural features (e.g. tree-throws) spread sporadically across the site or along areas of disturbance (e.g. relict boundaries and tracks). Not indicative of-, or conclusive evidence of a specific area of activity/occupation. Some examples more diffuse than others and may be indicative of natural/geological features. Responses of c.+22nT to c.+60nT.
8	Weak-strong negative with moderate-strong positive, probable	Sub-rectangular/ Sub-rectilinear	Structure, ground disturbance	Near the middle north-west edge of the survey area. Two or three areas indicative of either wall-lines with internal features or spreads of debris or disturbed ground. Associated with hollows/depressions visible on the ground during the survey. Possibly associated with working areas or structures at the road-side and within a former copse/plantation. Includes some relatively clear right-angles in the anomalies. Some of the mixed and high responses in this area include metallic debris/objects and could include areas of burning. Possibly associated with Groups 3 and 9. Responses of between -10nT and -53nT with possible internal in-filled features of between +25nT and +58nT. An internal positive anomaly in the right Group 8 area and possibly associated with a ditch-type anomaly from Group 3 had a response of <+76nT.
9	Weak-moderate negative with very weak-moderate positive, possible	Sub-rectangular/ Sub-circular	Structure, ground disturbance	Near the middle north-west edge of the survey area. Similar to Group 8, but less well defined and weaker responses. Possibly includes a curving/circular section across the Group 3 presumed boundary. May be comparable to Group 8 or represent a possible ring-ditch to a roundhouse(?). Associated with shallow hollow earthwork as was Group 8. Possibly associated

				with Groups 3 and 8. Responses of <-17nT and between +8nT to +30nT.
10	Very weak to weak negative and positive, possible	Oval/ Circular	Roundhouse, ring-feature, modern disturbance	Located in the east part of the site. Indicative of a ring-type feature, but, this is both unusual and very ephemeral. It may only equate to shallow ground disturbance or only exist within the topsoil. Ostensibly indicative of a ring of compacted material, possibly within the topsoil. The inner area may have a positive response relative to the 'ring', but may indicate a deposit indicative of an in-filled hollow or spread, but is very weak and ephemeral and within the limits of natural variation. This anomaly may indicate modern ground disturbance associated with a removed large ring feeder; or it may indicate the ephemeral response of a ploughed-out prehistoric feature such as a barrow or roundhouse, such as a stone lined sunken featured building (SFB). Plough activity is clearly visible across this anomaly and it is possible that this anomaly will not survive or be visible in the ground in potential subsequent excavation. Responses of c.-3nT to c.-27nT and c.+10nT to c.+20nT.
11	Moderate-strong positive and negative, probable	Linear	Track-way	Along the south-west edge of the survey area, aligned north-west by south-east; parallel to site boundary. Equates to a track represented on c.1844 and subsequent mapping. Visible on 2001 satellite imagery with a hedge or bank along its north-east edge. Ostensibly goes into disrepair by- and from 2005 (based on satellite imagery). At the time of survey the track was a rutted track, becoming deeper towards its south-east end with slight bank or graded-out material along its north-east edge. Responses of between c.+46nT and c.-36nT.
<b>Other Anomalies</b>				
-	Strong dipolar, probable	Point/ ovoid	Ferrous objects/debris	Black crosses in Figure 3. The site has a sporadic spread of dipolar responses. These 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. Some of these are near or within areas associated with Groups 3 and 8, which may be coincidental or be debris within associated deposits/features. Responses of <+/-100nT.
-	Very weak to moderate dipolar and bipolar	Linear	Modern services and ground disturbance/ tracks	Dashed light blue lines in Figure 3. In the south corner- and along the south-east edge of the site. These responses correspond to tracks and modern trench lines that were noted during the survey and are visible as ephemeral and intermittent responses in the survey data. Responses of <c.-15nT and <c.+25nT.
-	Magnetic disturbance, probable	Amorphous spread	Magnetic disturbance/ debris	Typically these types of response are near the edges of the site due to the magnetic disturbance from fence lines as well as areas of debris (hatched areas in Figure 3). In this case these responses are largely associated with a trough, modern ground disturbance and fence-lines along the south-east edge of the site. Responses of <+/-100nT.

-	Very weak positive and negative, probable	Linear, diffuse amorphous spreads	Geological variation	Light orange areas/spreads in Figure 3. These responses correspond to geological variation on the site and generally run perpendicular to the slope and allude to changes in steepness/breaks of slope. One example of this response/anomaly that is depicted runs approximately north-west from the kink in the south-east boundary of the site and may allude to a former boundary. However, this ephemeral, diffuse response also aligns with ploughing activity and is of a geological nature; either there was no boundary in this location, or, if there was it does not survive in a substantial way. Responses typically $c. \pm 7nT < c. \pm 15nT$ .
-	Very weak positive and negative, probable	Linear/ Curvi-linear	Ploughscars/ agricultural ground disturbance	Ploughing activity (ploughscars) are evident across the survey data in multiple direction; generally parallel and perpendicular to the site boundaries. Other lines of probable ploughing activity or shallow ground disturbance /drainage are also visible as slightly curving linear anomalies. These are depicted as light green lines in Figure 3 and are aligned approximately perpendicular to the slope. These may indicate different phases of ploughing or drainage on the site but their ephemeral nature is not indicative of significant archaeological features or deposits. Responses typically $c. \pm 7nT < c. \pm 15nT$ .

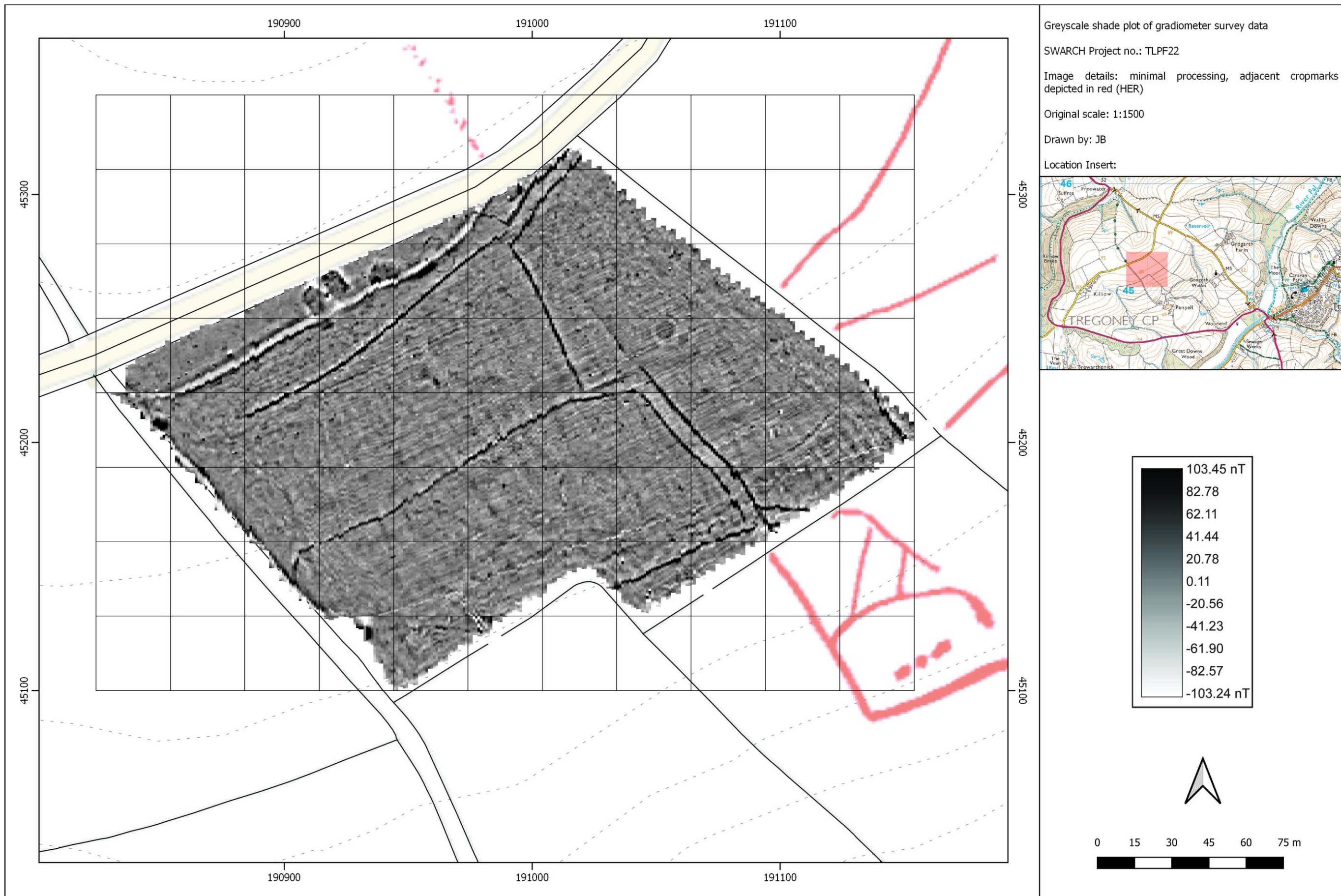


FIGURE 2: SHADE PLOT OF GRADIOMETER SURVEY DATA; MINIMAL PROCESSING.

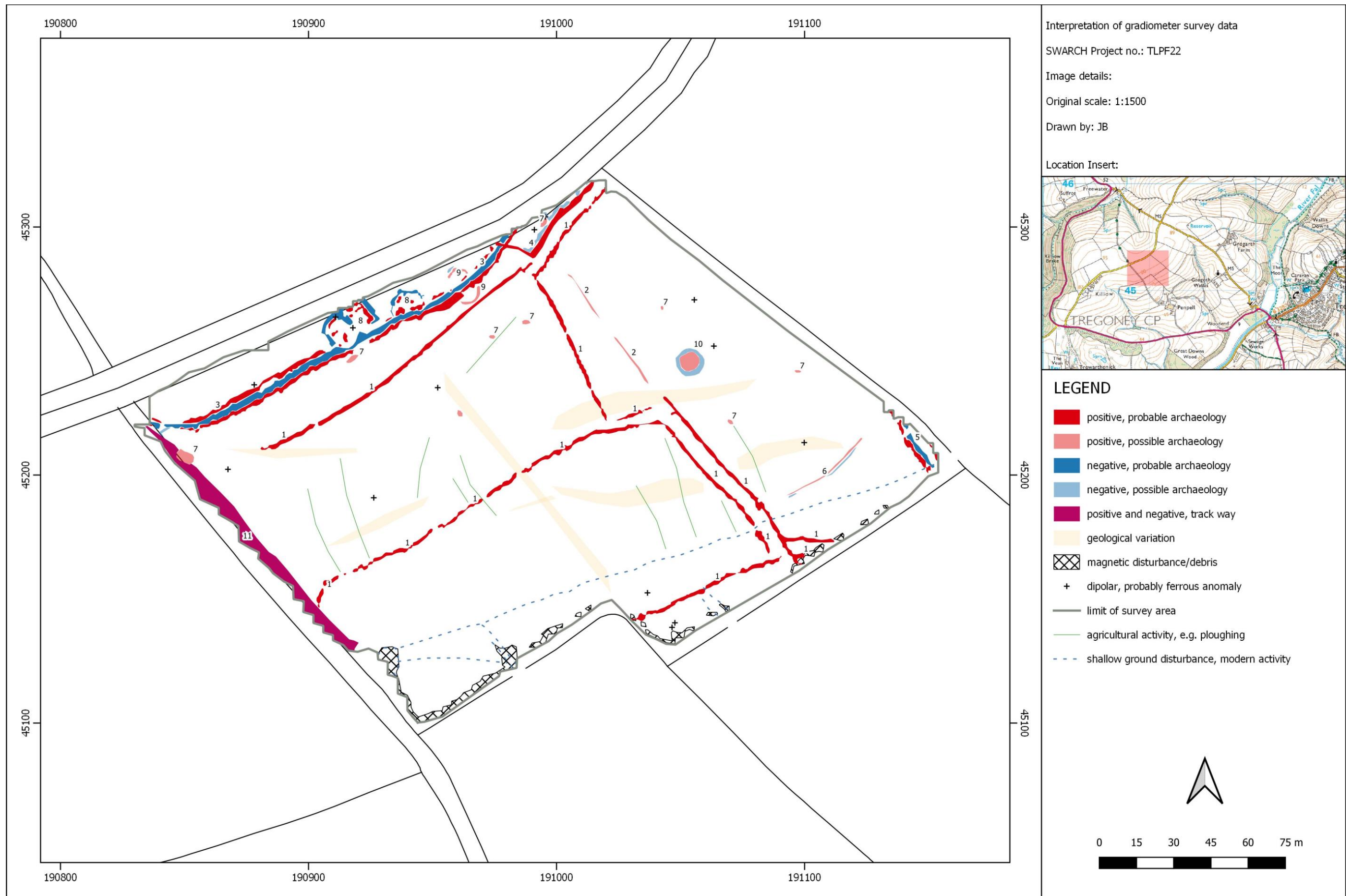


FIGURE 3: INTERPRETATION OF GRADIOMETER SURVEY DATA.

## 2.5 DISCUSSION

The geophysical survey identified 11 groups of c.29-31 anomalies (depending on the true relationship between some discernable anomalies). The anomaly groups include: possible ditches and former boundaries to a recti-linear field system with possible droveways (Groups 1, 2 and 4); a historical boundary (Group 3); possible boundaries and or ditches (Groups 5 and 6); possible pits, tree-throws or geological anomalies (Group 7); areas of disturbance and possible relict structures associated with the roadside and former enclosure defined by Group 3 (Groups 8 and 9); an ephemeral circular anomaly that could be associated with a ploughed-out modern or prehistoric feature (Group 10); and a relict and partially extant trackway (Group 11). Additional anomalies evident within the survey data represented; modern tracks and possible services; instances of magnetic disturbance or debris associated with ferrous debris, features and fence lines; geological variation representative of the sites topography; and extensive ploughing and agricultural activity in multiple directions. Visual interpretations of the data and cartographic sources supporting the discussion and comments can be seen in Appendices 1 and 2.

The general 'noise' (inherent geological variation) of the site was relatively high across the site, <math>c.\pm 7nT</math>, with occasionally higher fluctuations of up to  $\pm 15nT$  and occasional higher spikes. Anomalies of a comparable strength are probably/possibly natural and geological in nature.

Although the majority of the anomalies on the site are undated or undateable from this survey, it is probable that the majority of the anomalies are associated with: either medieval-modern groundworks/activity along the north-west edge of the site relating to the historical boundary and areas of possible activity beside this boundary and represented on c.1844 mapping by a smear/etching; or a possible prehistoric-medieval field system relating to the sites location within a medieval farmland landscape according to the HLC and the presence of possible Iron Age/Romano-British cropmarks in the fields east and south of the site (MCO20991, MCO21596).

A single historical field boundary (Group 3) that was possibly depicted in c.1811 mapping and clearly depicted in c.1844 and early 20<sup>th</sup> century mapping was removed in the 20<sup>th</sup> century as the extant north-east boundary of the field was set against the adjacent road. This removed boundary defined an area described in the c.1844 tithe apportionment and depicted in later OS mapping as plantation. On the c.1844 tithe map an etching or smear is depicted in this plantation plot in the approximate location of Groups 8 and 9. The proximity of Groups 8 and 9 to the removed field boundary and road-side and the smear in the mid-19<sup>th</sup> century mapping may be coincidental; but, it is probable that these anomalies are associated with contemporaneous activity to the removed boundary and plantation. Groups 8 and 9 could represent demolished farm structures or working areas. The geophysical survey responses for these may indicate wall/footing lines. Group 9 does also have a possible curved positive element and may indicate a ring-ditch to an earlier, prehistoric, roundhouse.

Potential prehistoric activity near the site includes cropmarks and earthworks of possible Bronze Age barrows (MCO2749, MCO55635) and possible Iron Age/Romano-British enclosures (MCO20991, MCO21596). The Group 10 circular anomaly, although probably not of a genuine or surviving archaeological nature could be an example of a ploughed-out prehistoric monument or building. Of more probable and substantial survival is the field system defined by Groups 1, 2 and 4, which depict rectilinear enclosures and droveways and directly align with cropmarks identified in aerial photography of probable Iron Age/Romano-British enclosures beyond the south-east boundary of the site.

Groups 5 and 6 represented small sections of undated potential ditches or boundaries, although Group 5, in the east corner of the site may be a relict part of the existing field system prior to some degree of rectification or modification.

The potential pits, tree-throws or geological anomalies of Group 7 possibly include all of these possible explanations. Some examples are weaker and more diffuse and may be natural, while many others are on the line of other linear ditch-like anomalies or agricultural activity and may be associated with these. These anomalies may be of man-made or natural origin and cannot be dated by this survey.

Overall the survey seems to indicate the presence of a possible prehistoric field system/agricultural activity; relict field boundaries and possible associated structures or areas of disturbance associated with the medieval and later farmland ascribed by the HLC; undated pit- or tree-throw-like anomalies; and modern features and disturbance. Truncation of any buried archaeological resource on the site seems likely either from historical and modern ploughing, or 20<sup>th</sup> century remodelling of the field system, such as along the north-west boundary of the site.



### 3.0 CONCLUSION

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The site is a single field across the top and gentle south-east facing slope of a ridge c.300m north of Penpell Farm. Penpell was a Domesday estate (MCO16185; Morris 1992). Penpell is named in Cornish for its location near the head of a creek leading to the Fal River (using Watts 2004). Although in the modern parish of Tregony it was historically within the parish of Cornelly, formerly known as Grogth (Lysons 1814). The c.1844 tithe map shows the site as two fields; a thin plantation along its north-west boundary and a larger field comprising most of the site. A track or lane is depicted along its south-west boundary. The two fields were amalgamated in the 20<sup>th</sup> century and the track/lane went into disrepair/disuse in the 21<sup>st</sup> century. Cornwall's HER includes a small number of assets within c.250m of the site. Most of these are cropmarks of possible prehistoric ditches and enclosure identified on aerial photography, including: ditches (MCO55641) and a ring-ditch of a possible ploughed-out barrow (MCO55635) to the north-west; a possible Bronze Age barrow mound to the north-east (MCO2749); an Iron Age/Romano-British field system (MCO20991) and possible rectilinear enclosure (MCO21596), in the fields immediately east and south of the site. Cornwall's HLC indicates that the site is within a landscape of 'Farmland: Medieval' (HCO4). No previous archaeological works have taken place on the site.

The results of the geophysical survey identified 11 groups of c.29-31 anomalies (depending on the true relationship between some discernable anomalies). The anomaly groups include: possible ditches and former boundaries to a recti-linear field system with possible droveways; a historical boundary and areas of disturbance and possible relict structures associated with it and the roadside; possible boundaries and or ditches; possible pits, tree-throws or geological anomalies; an ephemeral circular anomaly that could be associated with a ploughed-out modern or prehistoric feature; and a relict and partially extant trackway. Evident modern activity and disturbance, and ploughing in multiple directions on the site may allude to a degree of truncation of any buried archaeological resource. It is probable that the majority of the anomalies are associated with: either medieval-modern groundworks/activity along the north-west edge of the site relating to a removed historical boundary and areas of possible activity or structures beside this boundary and represented on c.1844 mapping by a smear/etching; possibly a 'squatters cottage'. These post-date the identified remains of a field system with multiple enclosures and droveways (or tracks), which are likely of medieval or late prehistoric date.

Overall the survey seems to indicate the presence of a possible prehistoric or medieval field system/agricultural activity; relict field boundaries and possible associated structures or areas of disturbance associated with post-medieval agricultural activity; and with various undated pit- or tree-throw-like anomalies; and modern features and disturbance. Truncation of any buried archaeological resource on the site seems likely either from historical and modern ploughing, or 20<sup>th</sup> century remodelling of the field system, such as along the north-west boundary of the site.

Further archaeological mitigation in the form of targeted evaluation trenching, is recommended. Such further archaeological works would test the efficacy and validity of the results of the geophysical survey and aid to confirm the presence or absence and significance of any archaeology resource on the site.

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- Environment Agency** 2022: *LiDAR, Digital Surface Model*.  
<https://environment.data.gov.uk/DefraDataDownload/?Mode=survey>

### *Kresen Kernow (KK; Cornwall Centre):*

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- Surveyor's draft map for the Grampound area, c.1811.
- Cornelly tithe map and apportionment, c.1844.
- Ordnance Survey (OS) 1<sup>st</sup> edition, 6 inch series, Cornwall, Sheets LVIII.SE, Surveyed 1879, Published 1888.
- Ordnance Survey (OS) 2<sup>nd</sup> edition, 6 inch series, Cornwall, Sheets LVIII.SE, Revised 1906, Published 1908.

APPENDIX 1: ADDITIONAL GRAPHICAL IMAGES OF THE GRADIOMETER SURVEY

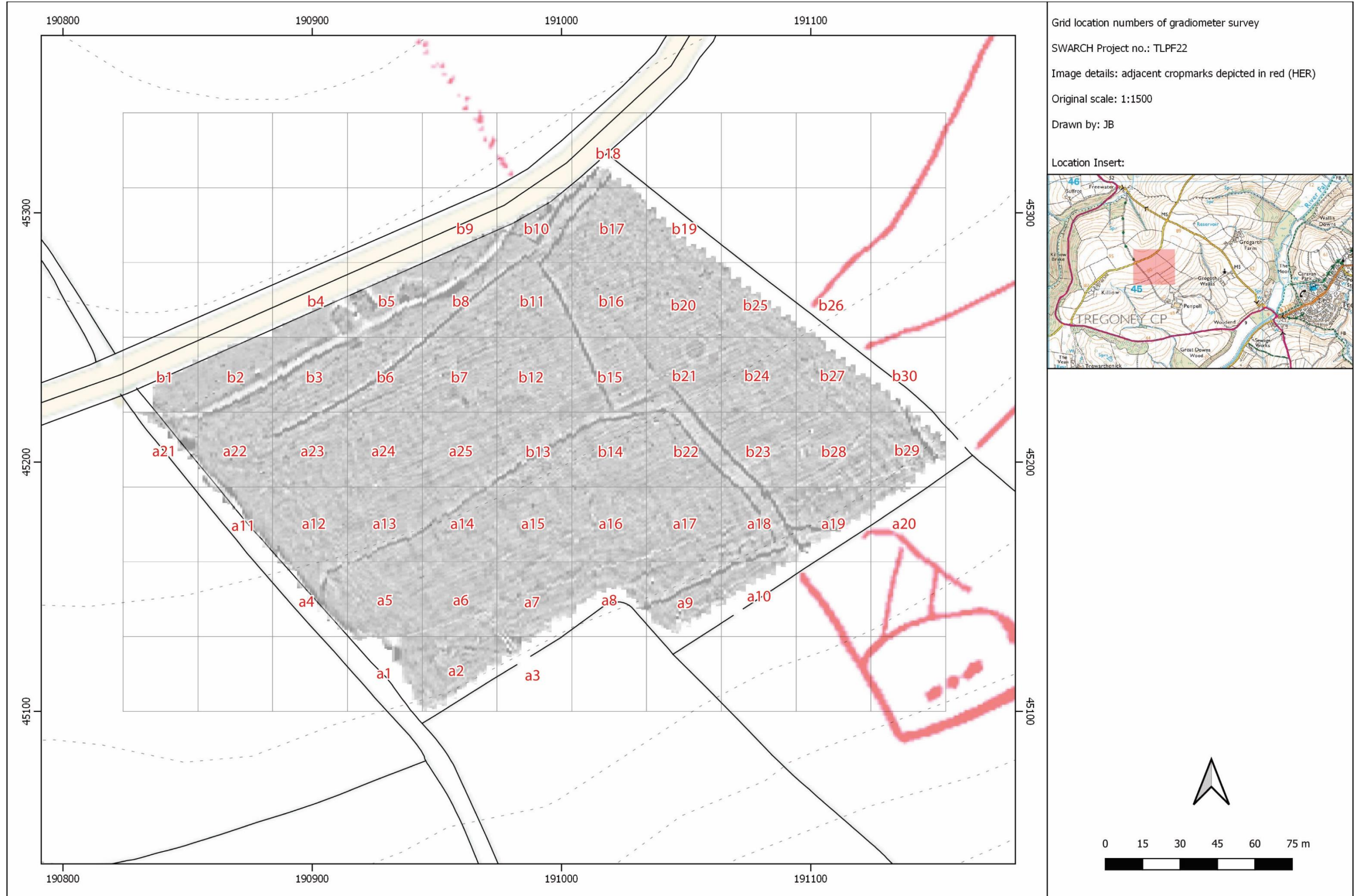


FIGURE 4: SITE GRID LOCATION AND NUMBERING.

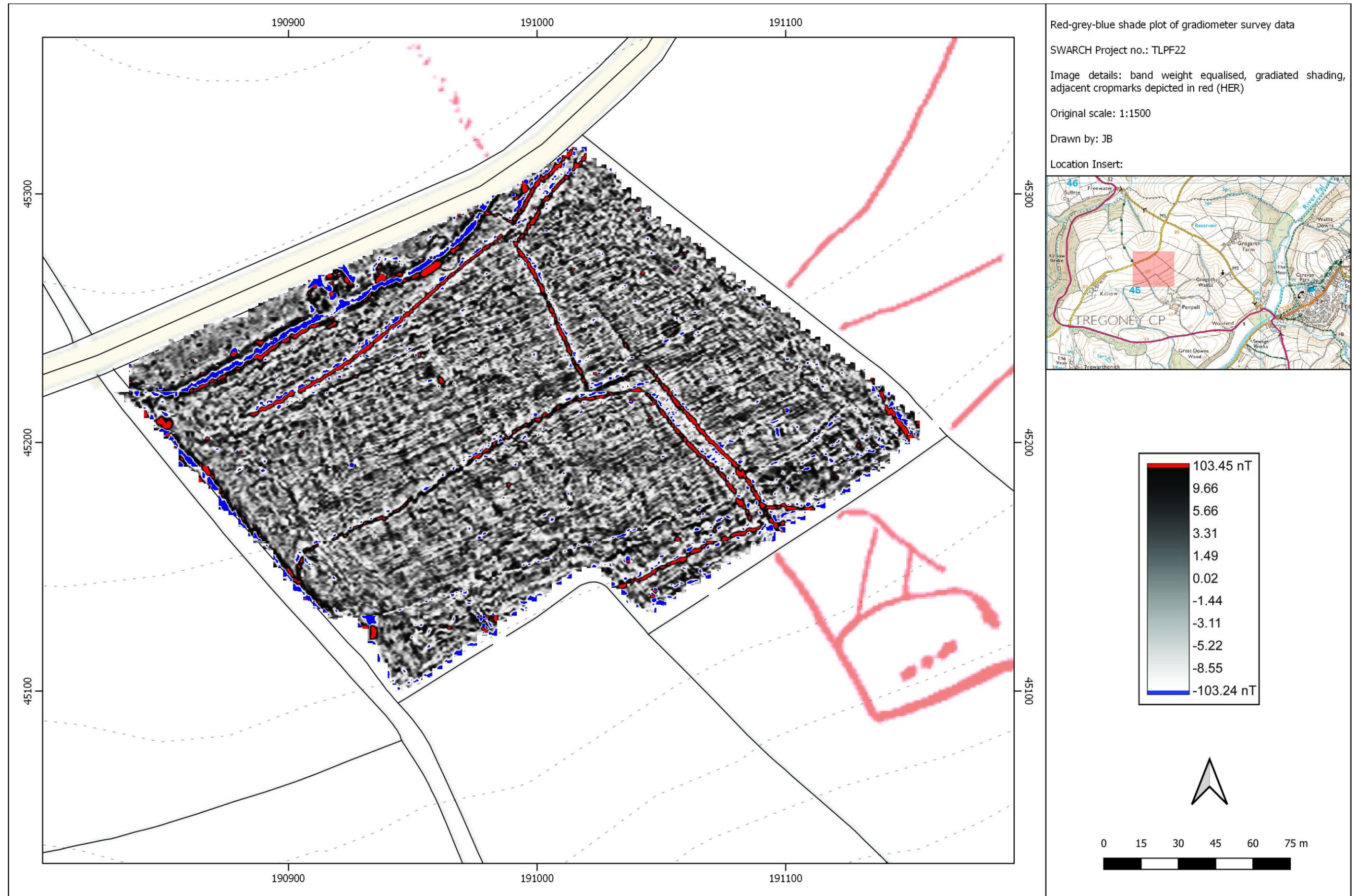
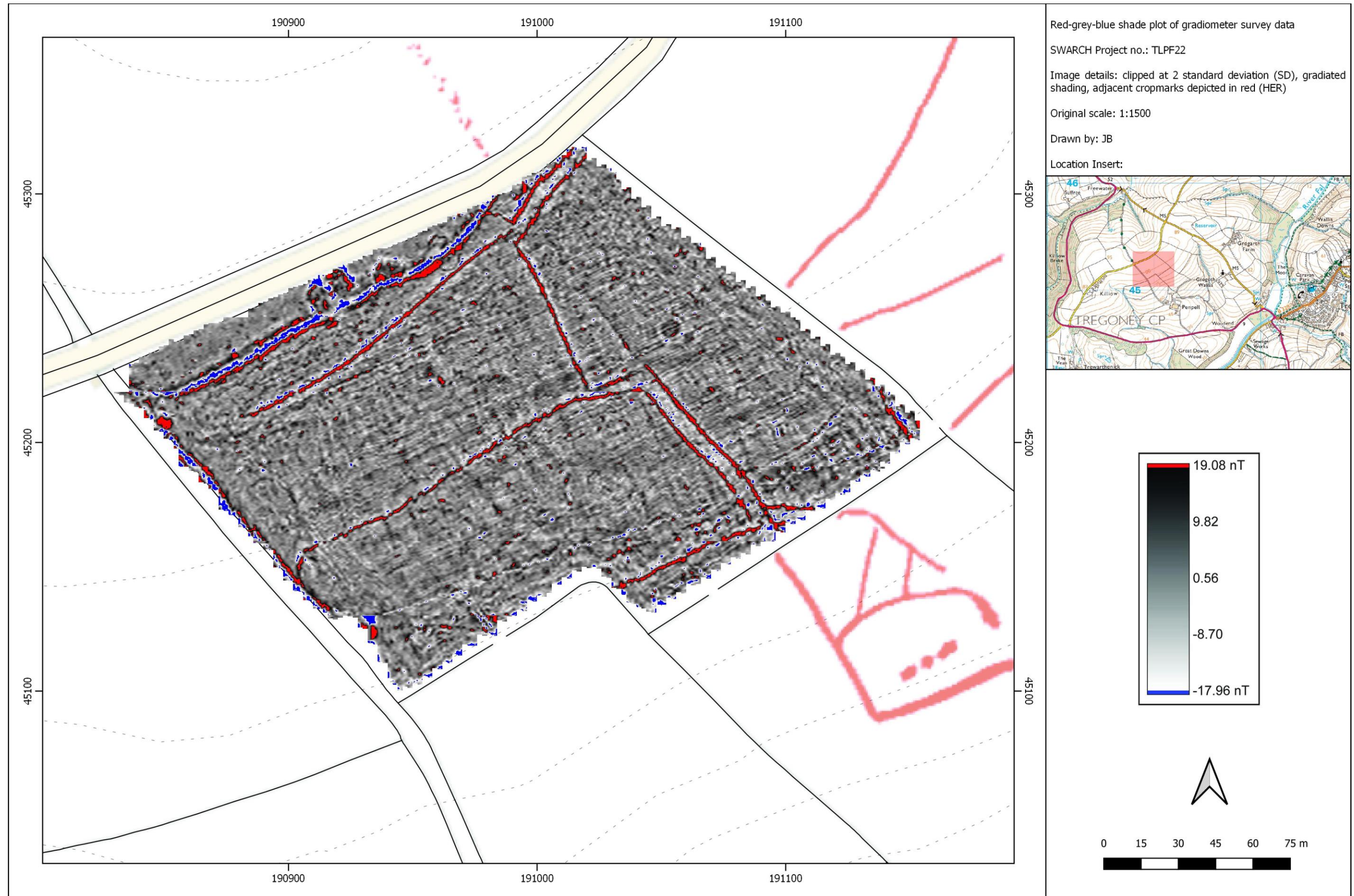


FIGURE 5: RED-GREY-BLUE SHADE PLOT OF GRADIOMETER SURVEY DATA; BAND WEIGHT EQUALISED; GRADIATED SHADING.



Red-grey-blue shade plot of gradiometer survey data  
SWARCH Project no.: TLPF22  
Image details: clipped at 2 standard deviation (SD), graduated shading, adjacent cropmarks depicted in red (HER)  
Original scale: 1:1500  
Drawn by: JB  
Location Insert:

FIGURE 6: RED-GREY-BLUE SHADE PLOT OF GRADIOMETER SURVEY DATA; CLIPPED AT 2SD (STANDARD DEVIATION); GRADIATED SHADING.

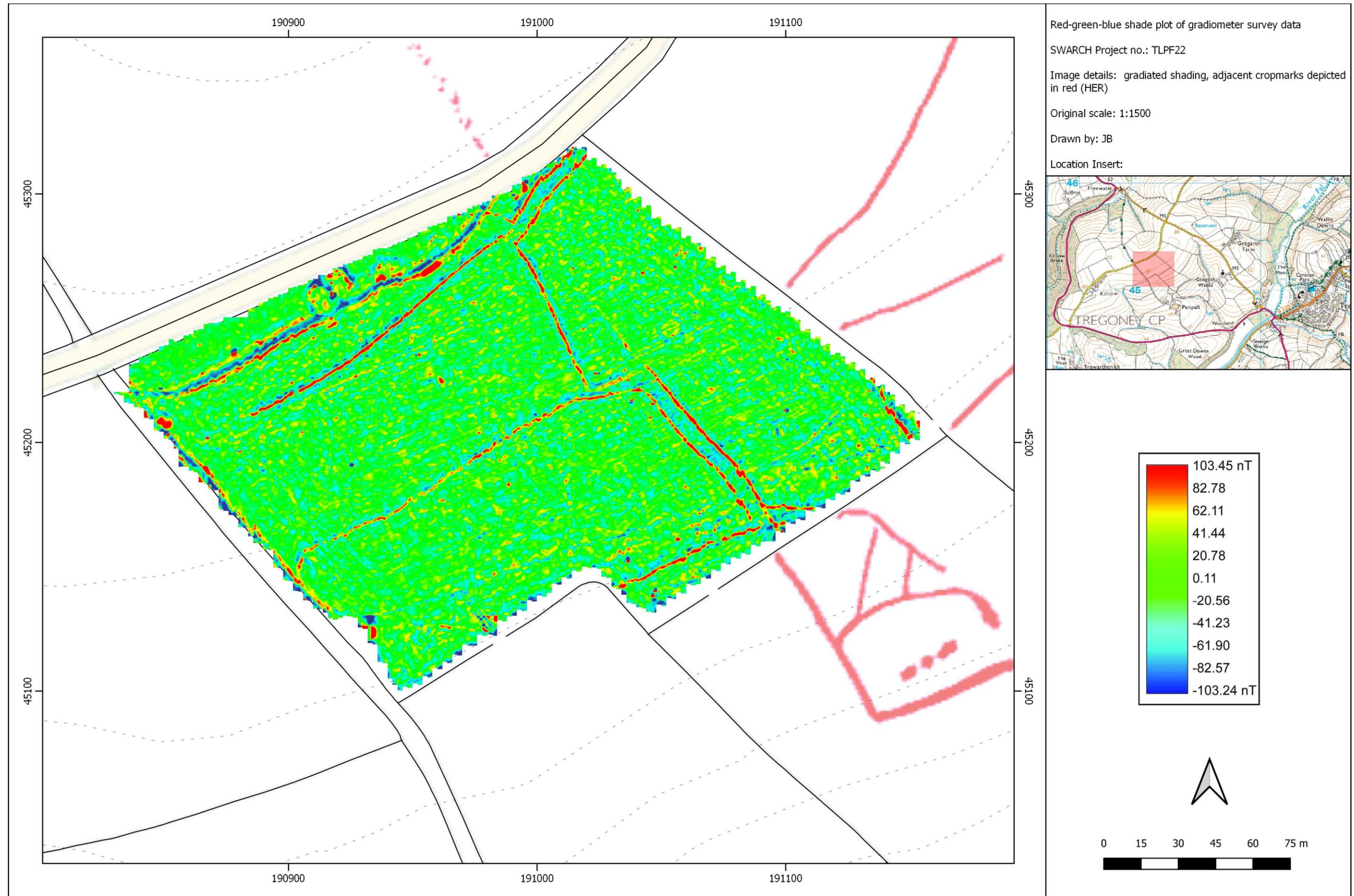


FIGURE 7: RED-GREEN-BLUE SHADE PLOT OF GRADIOMETER SURVEY DATA; GRADIATED SHADING.

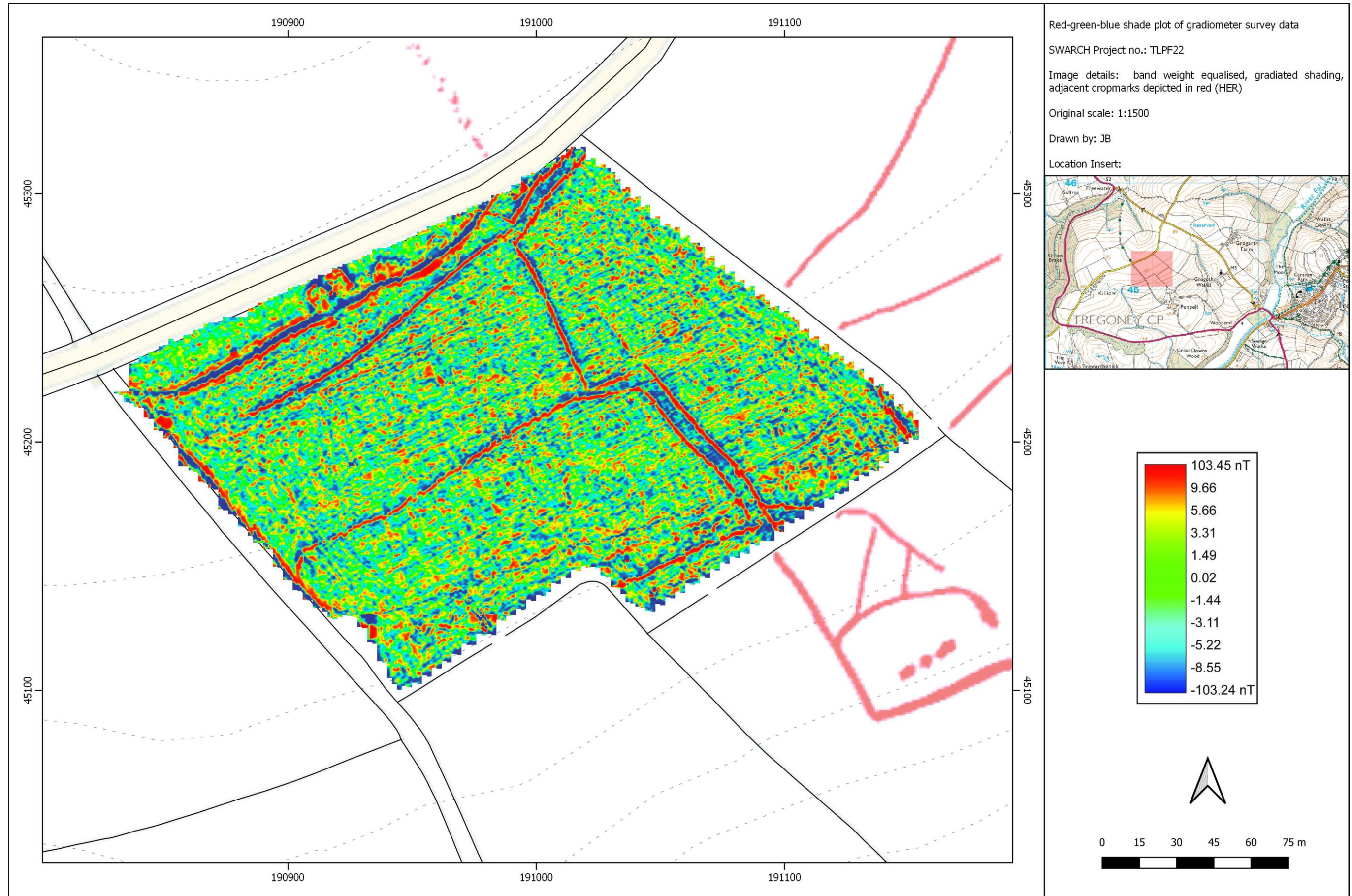


FIGURE 8: RED-GREEN-BLUE SHADE PLOT OF GRADIOMETER SURVEY DATA; BAND WEIGHT EQUALISED; GRADIATED SHADING.

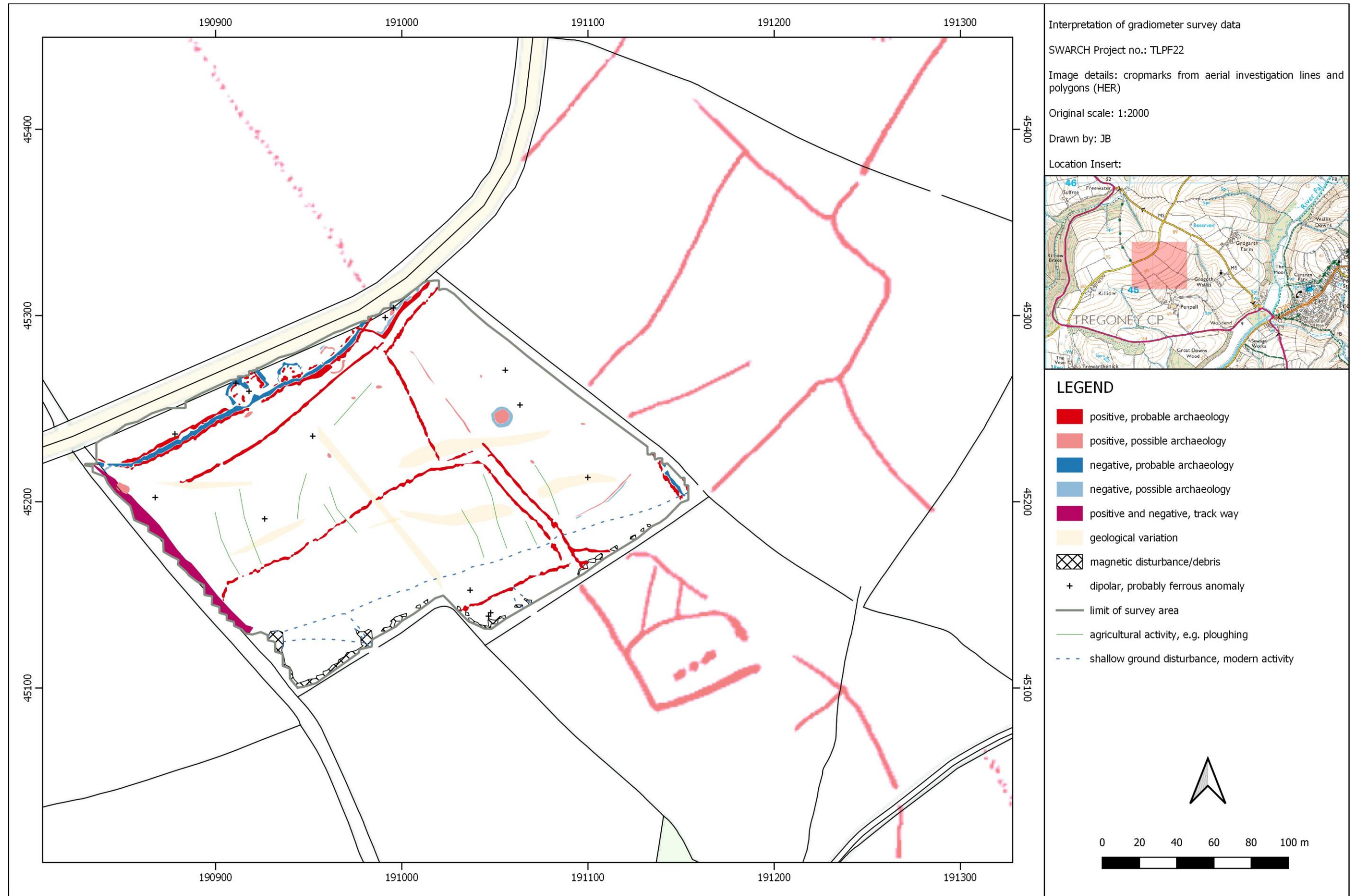


FIGURE 9: INTERPRETATION OF GRADIOMETER SURVEY DATA AND ADJACENT AERIAL PHOTOGRAPHY/CROPMARK MAPPING LINES (HER).



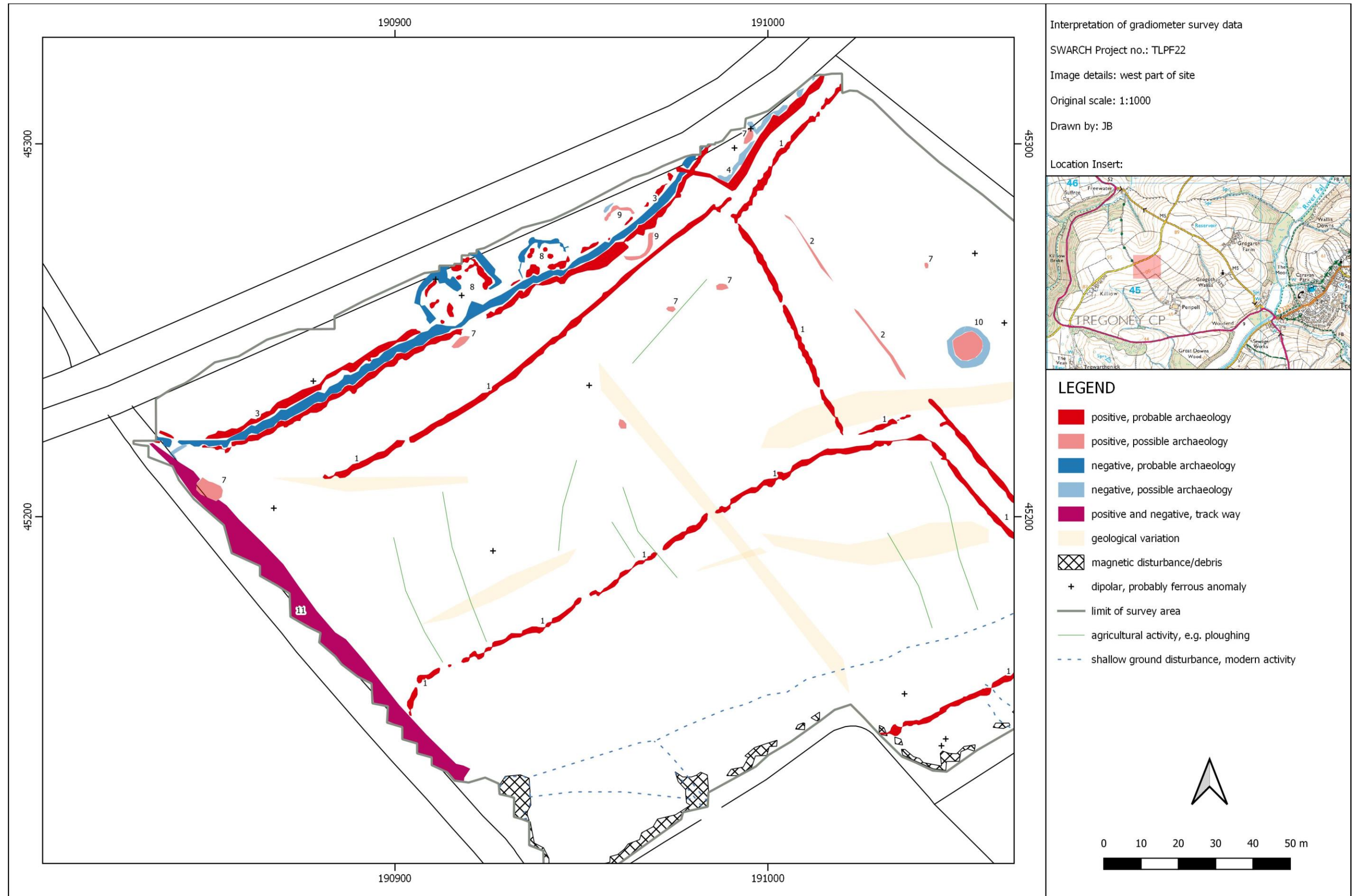


FIGURE 10: INTERPRETATION OF GRADIOMETER SURVEY DATA; WEST PORTION OF SITE.

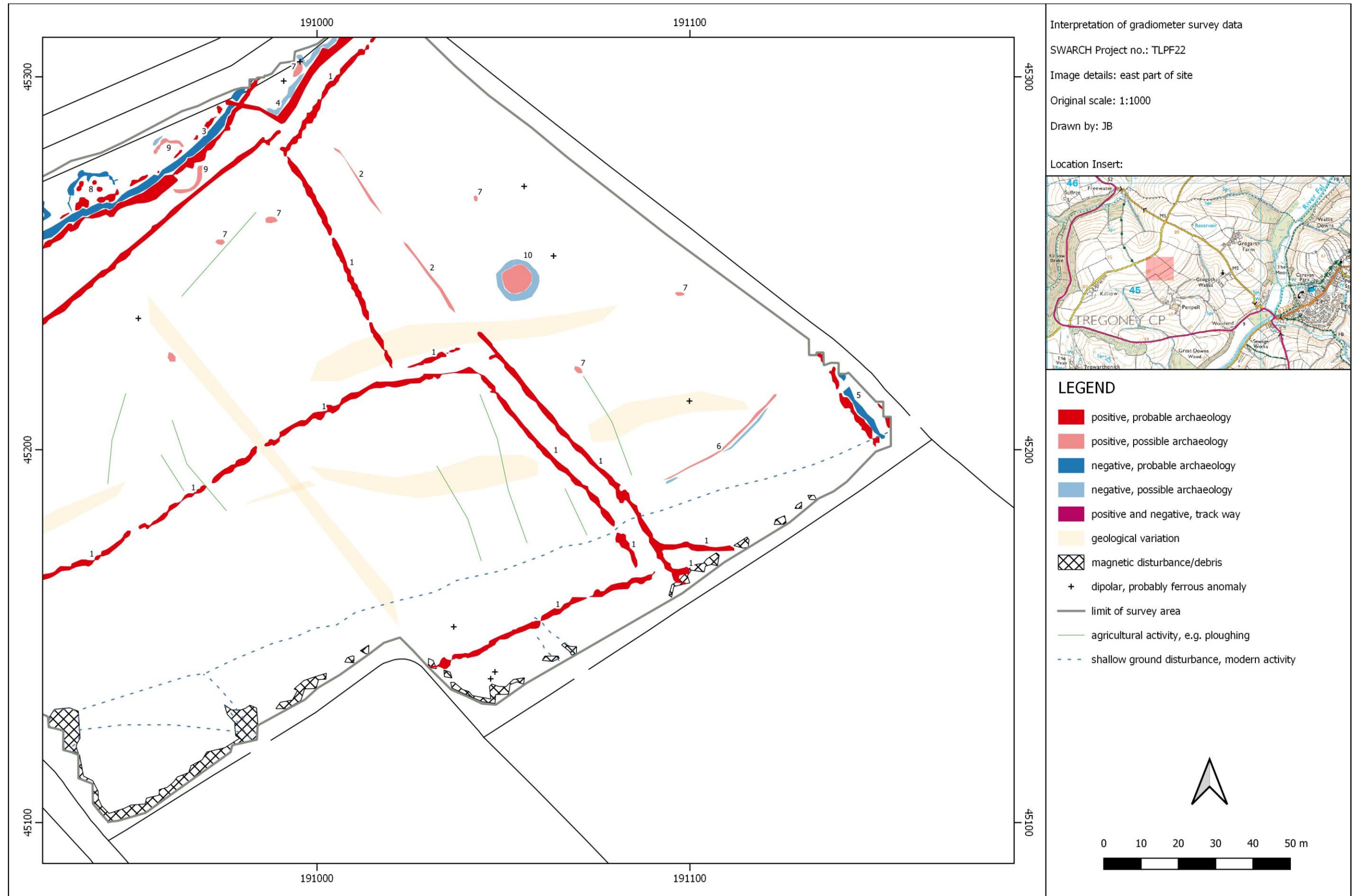


FIGURE 11: INTERPRETATION OF GRADIOMETER SURVEY DATA; EAST PORTION OF SITE.

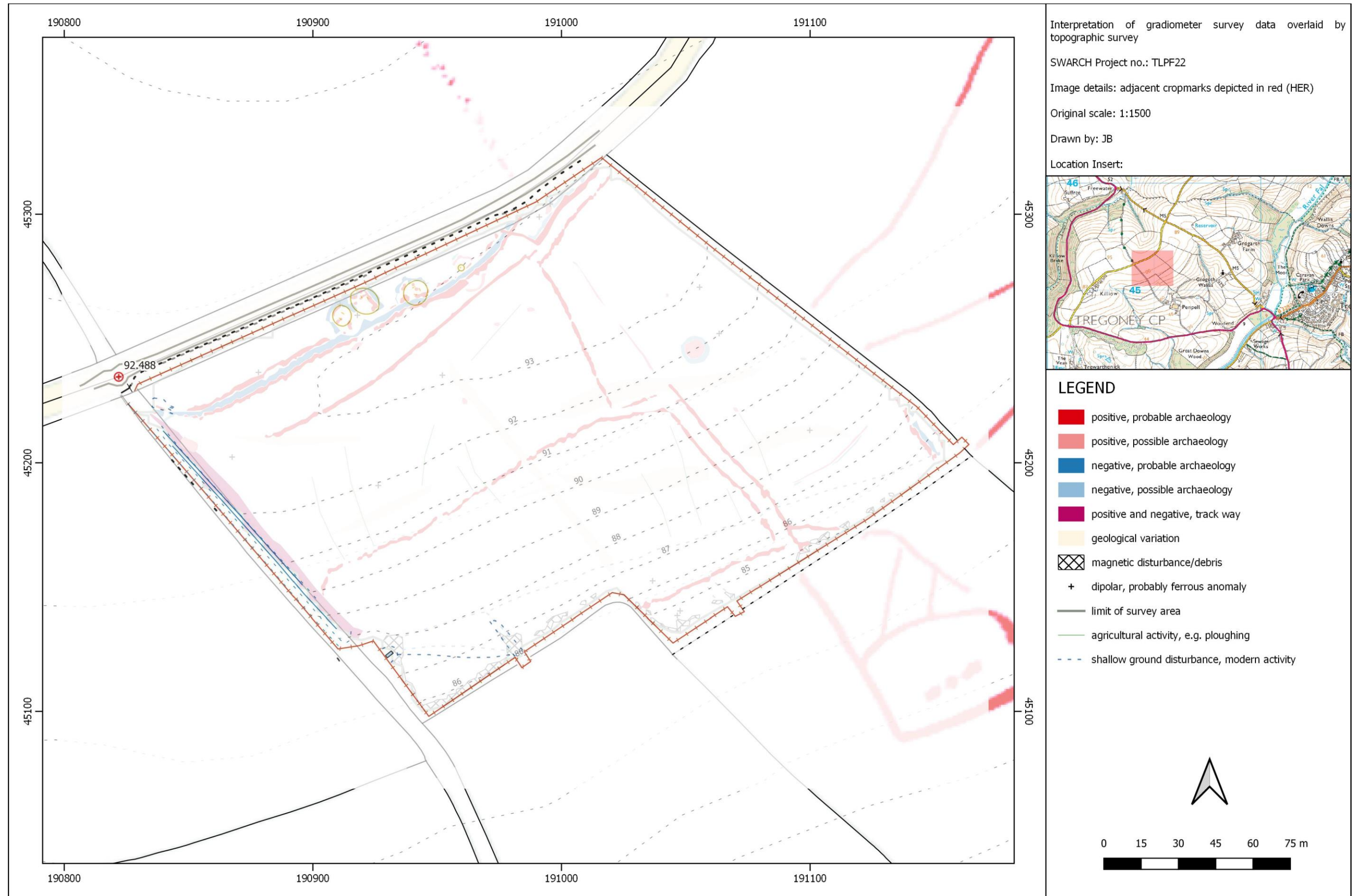


FIGURE 12: INTERPRETATION OF GRADIOMETER SURVEY DATA AND MAPPED ADJACENT CROPMARKS (HER) OVERLAID BY TOPOGRAPHIC SURVEY OF SITE.

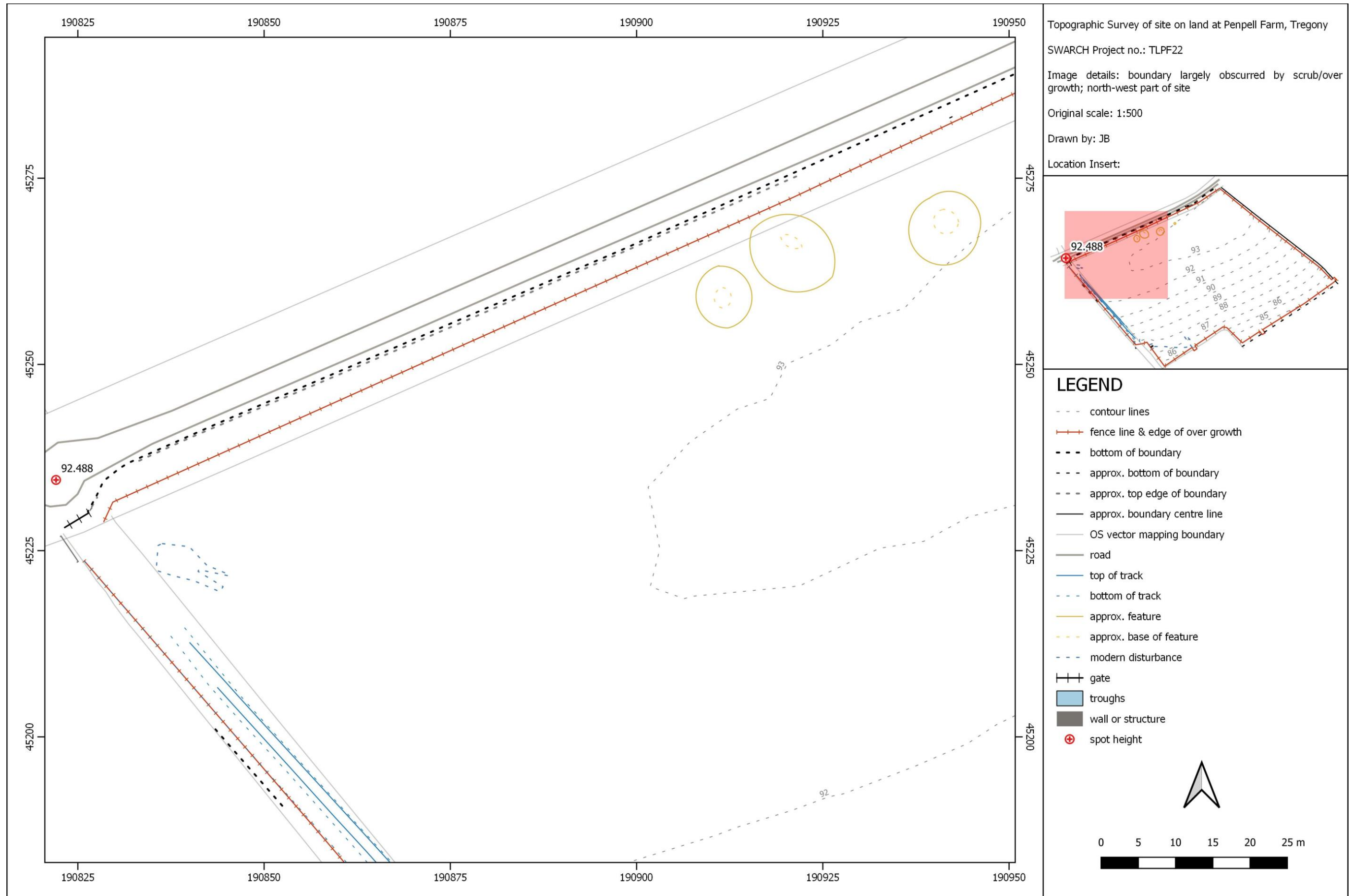


FIGURE 13: TOPOGRAPHIC SURVEY OF SITE; EAST CORNER.



FIGURE 14: TOPOGRAPHIC SURVEY OF SITE.

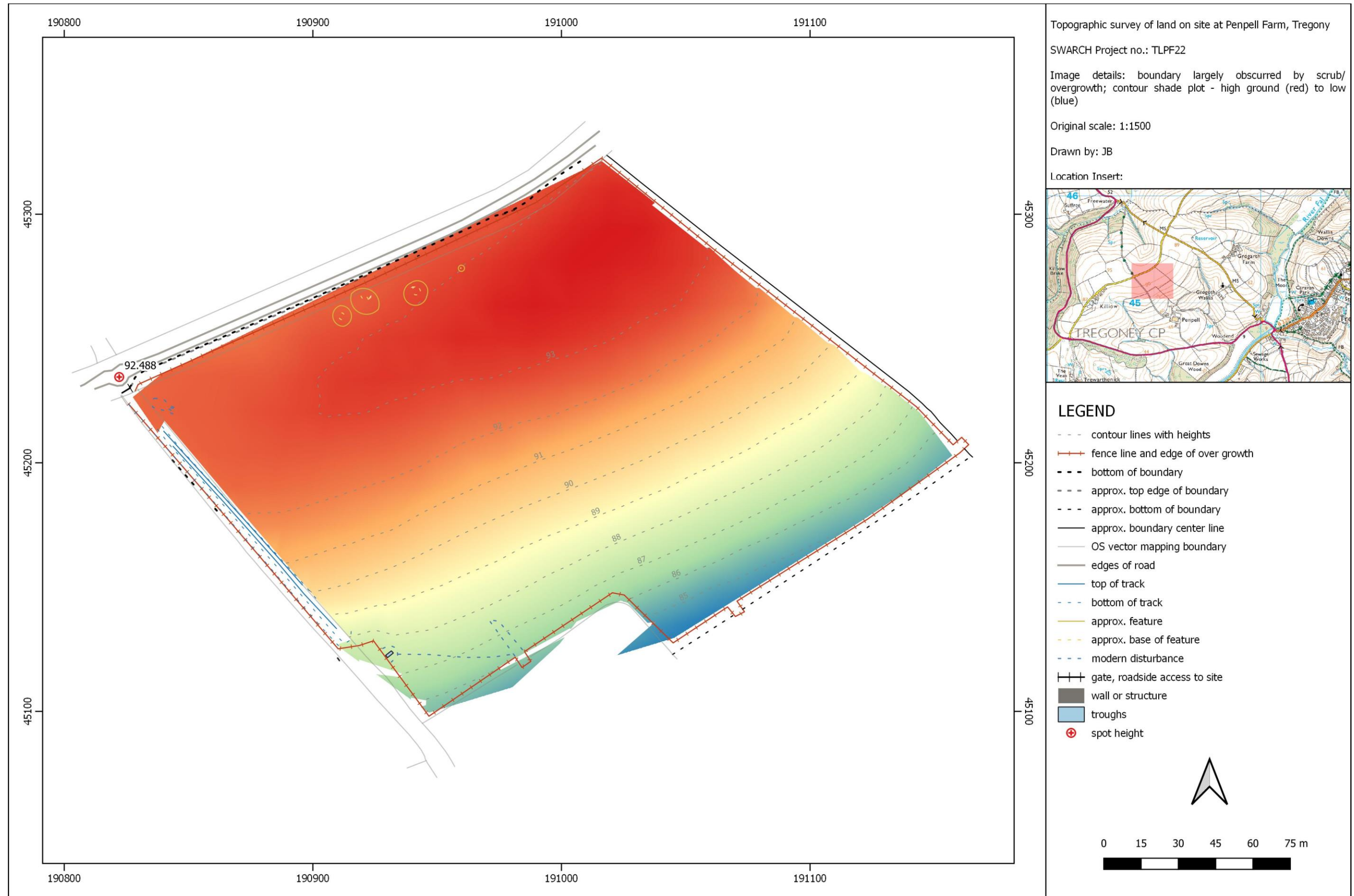


FIGURE 15: TOPOGRAPHIC SURVEY OF SITE WITH PSEUDOCOLOUR CONTOUR DEPICTION.

APPENDIX 2: SUPPORTING SOURCES

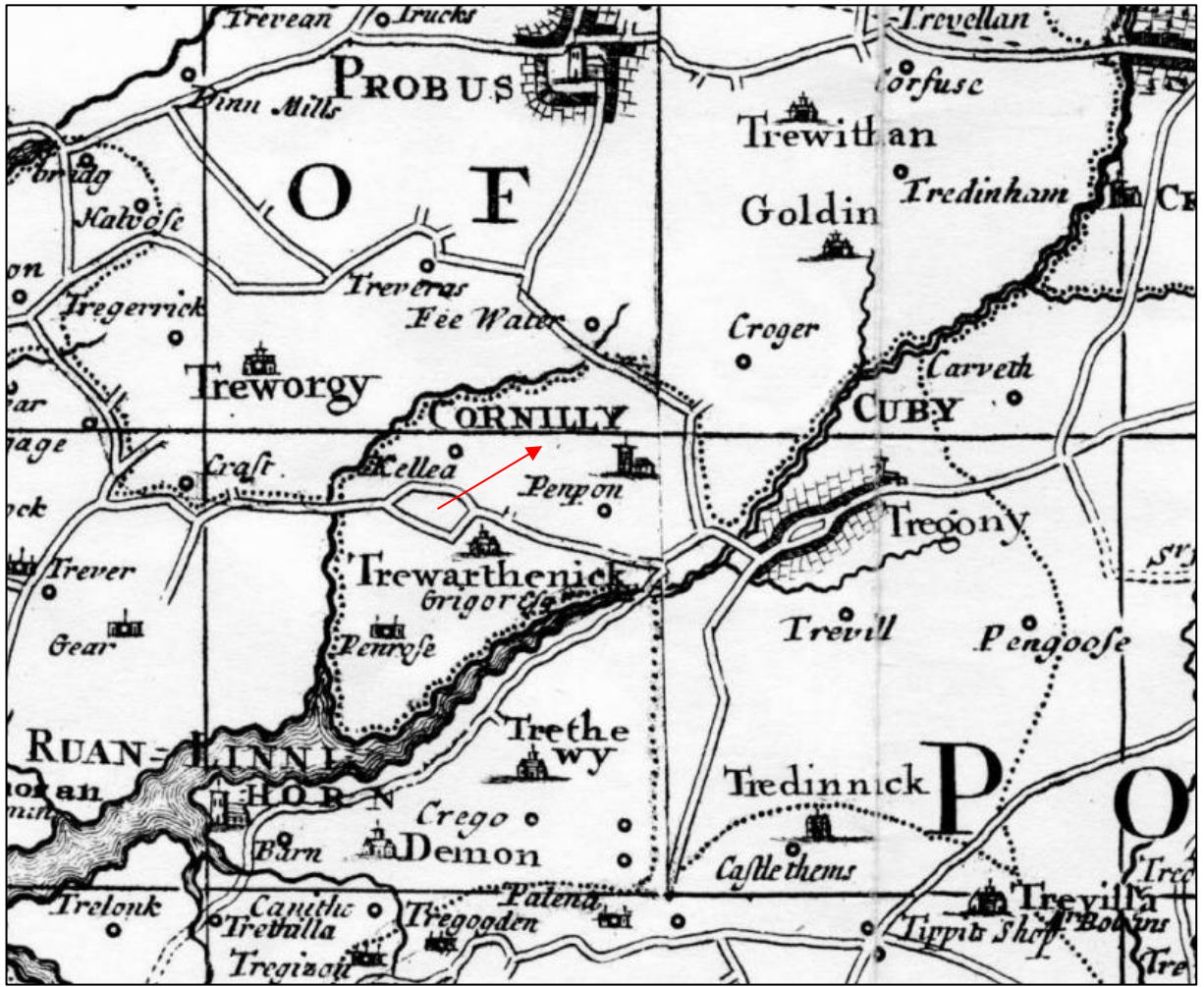


FIGURE 16: EXTRACT FROM JOEL GASCOYNE'S MAP OF CORNWALL, 1699 (KK); THE APPROXIMATE LOCATION OF THE SITE IS INDICATED.

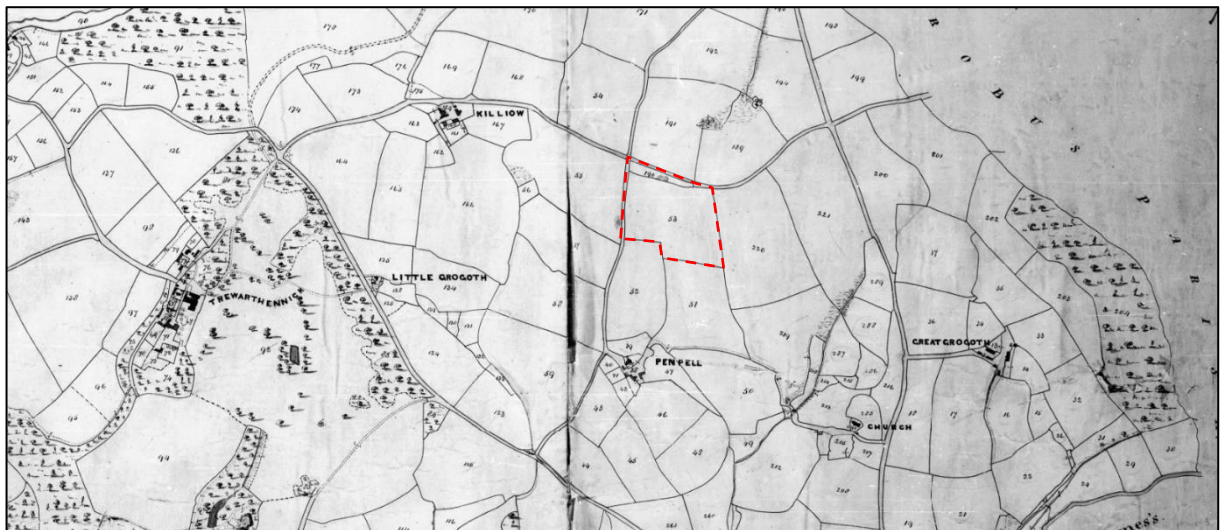


FIGURE 17: EXTRACT FROM CORNELLY TITHE MAP, c. 1844 (KK); THE SITE LOCATION IS OUTLINED IN RED.

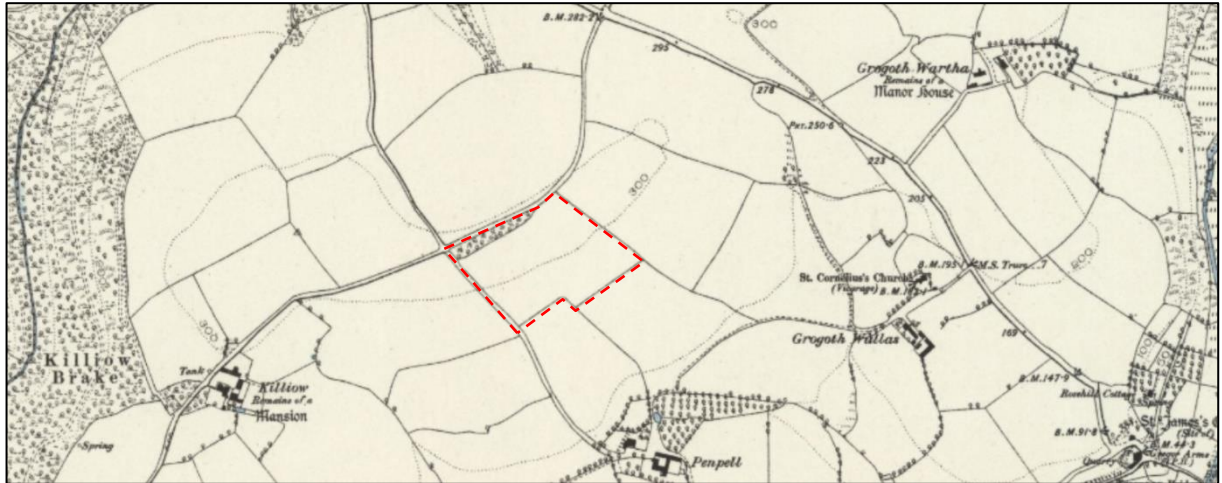


FIGURE 18: EXTRACT FROM THE OS 1<sup>ST</sup> EDITION, PUBLISHED 1888 (KK); THE SITE LOCATION IS OUTLINED IN RED.

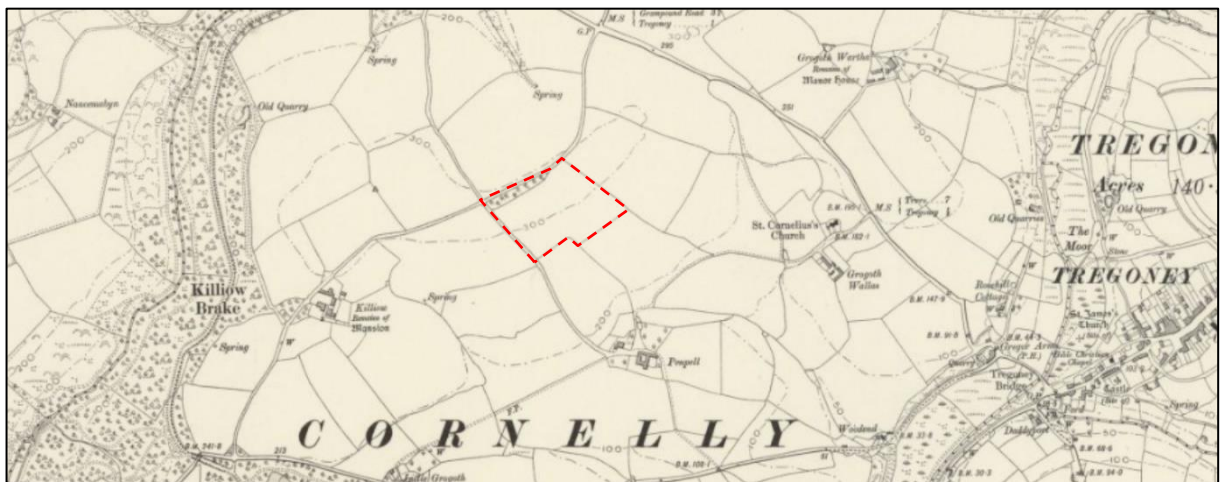


FIGURE 19: EXTRACT FROM THE OS 2<sup>ND</sup> EDITION, PUBLISHED 1909 (KK); THE SITE LOCATION IS OUTLINED IN RED.

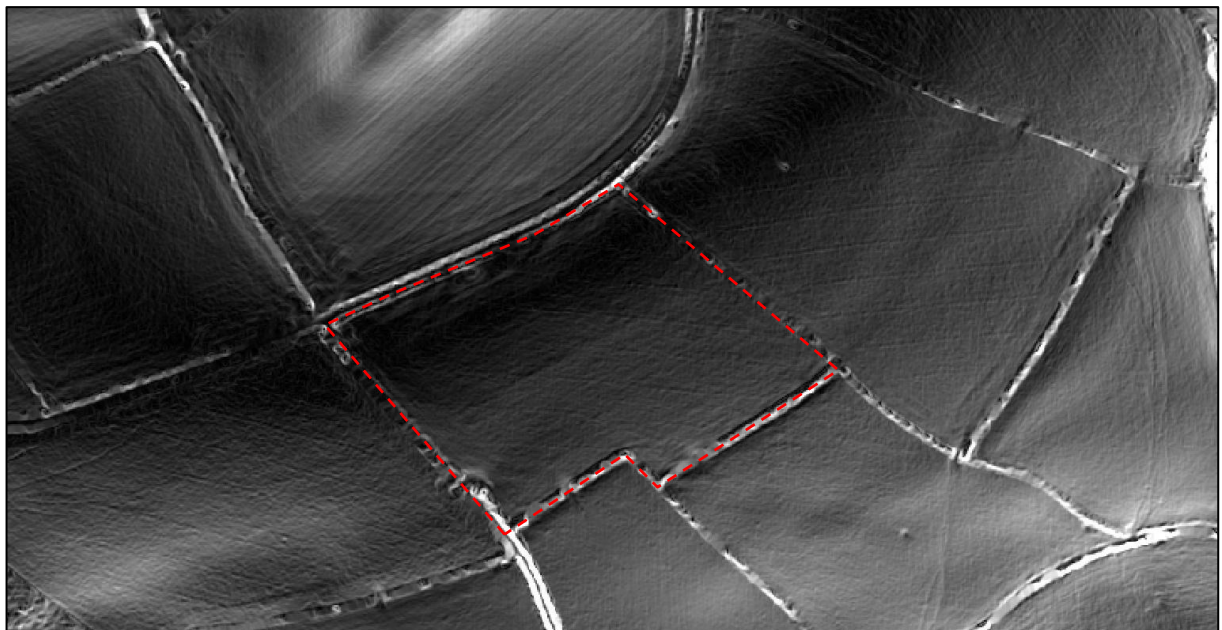


FIGURE 20: IMAGE DERIVED FROM LIDAR DATA (DTM); THE SITE IS OUTLINED IN RED (PROCESSED USING QGIS VER3.10, TERRAIN ANALYSIS/SLOPE). DATA: CONTAINS FREELY AVAILABLE DATA SUPPLIED BY NATURAL ENVIRONMENT RESEARCH COUNCIL (CENTRE FOR ECOLOGY & HYDROLOGY; BRITISH ANTARCTIC SURVEY; BRITISH GEOLOGICAL SURVEY); ©NERC.



APPENDIX 3: SUPPORTING PHOTOGRAPHS



1. GRANITE GATEPOST AT ROADSIDE GATE; VIEWED FROM THE NORTH-EAST (1M SCALE).



2. STRUCTURE AT NORTH-WEST END OF SOUTH-WEST BOUNDARY; VIEWED FROM THE NORTH-EAST (1M SCALE).



3. VIEW ALONG THE NORTH-WEST SITE BOUNDARY; VIEWED FROM THE SOUTH-WEST (NO SCALE).



4. VIEW OF THE SOUTH-EAST END OF THE SOUTH-WEST BOUNDARY, SHOWING TROUGHS; VIEWED FROM THE NORTH (NO SCALE).



5. VIEW ALONG RELICT TRACK ALONG SOUTH-WEST EDGE OF SITE; VIEWED FROM THE SOUTH-EAST (1M SCALE).



6. SOUTH-WEST ACCESS GATE IN SOUTH-EAST BOUNDARY; VIEWED FROM THE NORTH-WEST (1M SCALE).



7. BOUNDARY BANK IN ACCESS GATE (PHOTO 6); VIEWED FROM THE SOUTH-WEST (1M SCALE).



8. BOUNDARY BANK IN ACCESS GATE (PHOTO 7); VIEWED FROM THE NORTH-EAST (1M SCALE).



9. VIEW OF THE ACCESS GATE IN THE MIDDLE OF THE SOUTH-EAST SITE BOUNDARY; VIEWED FROM THE WEST (1M SCALE).



10. THE ACCESS GATE IN THE SOUTH-EAST END OF THE NORTH-EAST BOUNDARY; VIEWED FROM THE SOUTH-WEST (1M SCALE).



11. OVERHEAD CABLES BESIDE ACCESS GATE IN EAST CORNER OF SITE; VIEWED FROM THE WEST (1M SCALE).



12. VIEW ALONG THE SOUTH-EAST SIDE OF THE SITE; VIEWED FROM THE NORTH-EAST (NO SCALE).



13. SITE SHOT FROM THE EAST CORNER OF THE SITE; VIEWED FROM THE EAST (NO SCALE).



14. VIEW ALONG THE NORTH-EAST BOUNDARY OF THE SITE; VIEWED FROM THE SOUTH-EAST (1M SCALE).



15. VIEW ALONG THE NORTH-EAST BOUNDARY OF THE SITE; VIEWED FROM THE NORTH-WEST (NO SCALE).



16. SITE SHOT FROM THE NORTH CORNER OF THE SITE; VIEWED FROM THE NORTH (NO SCALE).



17. VIEW ALONG THE NORTH-WEST BOUNDARY OF THE SITE; VIEWED FROM THE NORTH-EAST (NO SCALE).



18. VIEW OF HOLLOW/DEPRESSIONS ALONG NORTH-WEST EDGE OF SITE (MORE GREEN PATCHES); VIEWED FROM THE NORTH-EAST (NO SCALE).



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