LAND OFF LAITY LANE
CARBIS BAY
ST. IVES
CORNWALL

Results of a Desk-Based Assessment & Geophysical Survey

South West Archaeology Ltd. report no. 230714

ARCHAEOLOGICAL SERVICES & HISTORIC BUILDING RECORDING
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LAND OFF LAITY LANE, CARBIS BAY, ST. IVES, CORNWALL

RESULTS OF A DESK-BASED ASSESSMENT & GEOPHYSICAL SURVEY

By N. Boyd & P. Webb
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Finalised: 7th September 2023

Work undertaken by SWARCH for Treveth Holdings (the Client).

SUMMARY

This report presents the results of a desk-based assessment and geophysical survey carried out by South West Archaeology Ltd. (SWARCH) on land off Laity Lane, Carbis Bay, St. Ives, Cornwall ahead of the potential future development of the land.

The site lies within the modern parish of St. Ives, historically forming part of the parish of Lelant (or Lalant), in the deanery and east division of the historic hundred of Penwith (Lysons 1814). The site likely fell within the lands that constituted the Manor of Lalant and Trethevow, also known as the Trethevow Estate.

The site lies within an area recorded on the Cornwall Historic Landscape Characterisation (HLC) as Farmland: Prehistoric: The agricultural heartland, with farming settlements documented before the 17th century AD and whose field patterns are morphologically distinct from the generally straight-sided fields of later enclosure. Either Medieval or Prehistoric origins. The site forms part of a larger survey area for coastal and moorland surveys, but there does not appear to have been any archaeological investigation or fieldwork carried out on the site.

The results of the geophysical survey would suggest that the archaeological potential for the site is low. The majority of the identified features relate to historic phases of field-system which are tentatively suggested as being Medieval or more likely Post-Medieval in date, though the presence of Prehistoric activity in the surrounding area means that a Prehistoric or Romano-British date cannot be ruled out.

Any development of the site is likely to encounter and destroy the buried archaeological resource (should it be present), further mitigation through targeted evaluation trenching would validate and clarify the results of the geophysical survey, though may not produce any new evidence.

July 2023

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ACKNOWLEDGEMENTS

THE CLIENT
THE LANDOWNER FOR ACCESS
CORNWALL HER

PROJECT CREDITS

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1.0 INTRODUCTION

LOCATION: LAND OFF LAITY LANE, CARBIS BAY
PARISH: ST. IVES
COUNTY: CORNWALL
NGR: CENTRED ON SW 52491 38055
PLANNING NO.: PRE-APPLICATION
SWARCH REF. CBLL23
OASIS REF: SOUTHWES1-517539

1.1 PROJECT BACKGROUND

South West Archaeology Ltd. (SWARCH) was commissioned by Treveth Holdings (the Client) to undertake a desk-based assessment & geophysical survey on land off Laity Lane, Carbis Bay, St. Ives, Cornwall ahead of its potential future development. This work was undertaken in line with best practice and CIfA guidance (2020) and in consultation with the Cornwall Council's Historic Environment and Planning Advice Officer (HEPAO).

1.2 TOPOGRAPHICAL AND GEOLOGICAL BACKGROUND

The site consists of the northern half of a large, irregular, agricultural enclosure, with residential areas to the east and a short distance to the north, and a holiday park to the south. To the west is agricultural land, with interspersed farmsteads. The site is relatively level, at a height of 102m AOD. The soils of this area are the well drained gritty loamy soils with a humose surface horizon in places of the Moretonhampstead Association (SSEW 1983) which overlie the igneous granite of the Land's End Intrusion (BGS 2023).

1.3 HISTORICAL AND ARCHAEOLOGICAL BACKGROUND

The site lies within the modern parish of St. Ives, historically forming part of the parish of Lelant (or *Lalant*), in the deanery and east division of the historic hundred of Penwith (Lysons 1814). The site likely fell within the lands that constituted the Manor of Lalant and Trethevow, also known as the Trethevow Estate.

The site lies within an area recorded on the Cornwall Historic Landscape Characterisation (HLC) as Farmland: Prehistoric: *The agricultural heartland, with farming settlements documented before the 17th century AD and whose field patterns are morphologically distinct from the generally straight-sided fields of later enclosure. Either Medieval or Prehistoric origins*. The site forms part of a larger survey area for coastal and moorland surveys, but there does not appear to have been any archaeological investigation or fieldwork carried out on the site.

1.4 METHODOLOGY

The geophysical (gradiometer) survey was undertaken in accordance with current best practice and CIfA guidance; and follows the guidance outlined in *Geophysical Survey in Archaeological Field Evaluation* (English Heritage 2008); *Standard and Guidance for Archaeological Geophysical Survey* (CIfA 2014 updated 2020); *EAC Guidelines for the use of geophysics in Archaeology: Questions to Ask and Points to Consider* (Europae Archaeologiae Consilium/European Archaeological Council 2016).

'Archaeological geophysical survey uses non-intrusive and non-destructive techniques to determine the presence or absence of anomalies likely to be caused by archaeological features, structures or

deposits, as far as reasonably possible, within a specified area or site on land, in the inter-tidal zone or underwater. Geophysical survey determines the presence of anomalies of archaeological potential through measurement of one or more physical properties of the subsurface.' (Standard and Guidance for Archaeological Geophysical Survey 2014).

The results of the survey will, as far as possible, inform on the presence or absence, character, extent and in some cases, apparent relative phasing of buried archaeology to inform a strategy to mitigate any threat to the archaeological resource.

FIGURE 1: SITE LOCATION.

2.0 DESK-BASED ASSESSMENT

2.1 DOCUMENTARY HISTORY

The site lies within the modern parish of St. Ives, historically forming part of the parish of Lelant (or *Lalant*), in the deanery and east division of the historic hundred of Penwith (Lysons 1814). The site likely fell within the lands that constituted the Manor of Lalant and Trethevow, also known as the Trethevow Estate. The Manor anciently belonged to the baronial family of Bottreaux, before passing to the Godolphins and subsequently the Praed family. Lysons notes that following the death of the last male heir of the Praed family, the younger son of the Mackworths of Glamorganshire took the name Praed and following a court case with Mr. Praed's heiress-at-law, Miss Penrose, who had been proposed as a candidate for marriage (htempest.co.uk), therefore succeeding to the estates of the Praed family. His son, Humphrey, rebuilt the house in 1761 and revitalised the surrounding landscape. Humphrey's grandson, William Praed, Esq., M.P., was the proprietor of the manor in the early 19th century, and, according to Lysons, resided chiefly at his seat at Tyringham in Buckinghamshire, leaving his seat at Trevethow largely uninhabited, other than a part occupied by the tenant of the demesnes. In 1959, Horace Tempest purchased the house, making it his home and photography business location.

The site lies within an area recorded on the Cornwall Historic Landscape Characterisation (HLC) as Farmland: Prehistoric: *The agricultural heartland, with farming settlements documented before the 17th century AD and whose field patterns are morphologically distinct from the generally straight-sided fields of later enclosure. Either Medieval or Prehistoric origins*.

The site forms part of a larger survey area for coastal and moorland surveys, but there does not appear to have been any archaeological investigation or fieldwork carried out on the site. To the north-west of the site, geophysical survey and a watching brief were carried out at Polwithen Drive; these investigations recovered 3 probable struck flints in two possible features, but little else[1][2]. Evaluation trenching and monitoring and recording were carried out at Carnniney Rise, again to the north-west of the site, both phases of work indicating removed Medieval boundaries and Post-Medieval activity[3][4].

2.2 CARTOGRAPHIC DEVELOPMENT

The Martyn's Map of 1748 includes the place names Boskerras, Carbis, Trenoweth and Carbis, along with a triangular land enclosure that can be roughly matched up on the Tithe Map to give an approximate location of the site. Laity is not mentioned, but there is a house drawn on the Martyn's Map in what appears to be the location of Laity. Boskerras on this map appears to correlate with Boskerris Woolas in later mapping. To the south of the site, the map notes a large house at Trevethoe, with a note indicating this was occupied by *Prade Esq.*.

The Ordnance Survey Surveyor's Draft of 1809 is similarly lacking in detail of the field patterns of the area, however, it does show buildings at Laity, as well as Boskerris (Woolas) to the north-west, and buildings further to the west that may be in the location of Boskerris Wartha.

[1] Bonvoisin, P. and Webb, P. 2019: *Land at Polwithen Drive, Carbis Bay, St. Ives, Cornwall: Heritage Assessment and Geophysical Survey*. SWARCH Report No. 191114.
[2] Bampton, J. 2021: *Land at Polwithen Drive, Carbis Bay, St. Ives, Cornwall: Results of Archaeological Monitoring and Recording*. SWARCH Report No. 210128.
[3] Bampton, J. 2017: *HER Entry for Evaluation Trenching at Carninney Rise.*
[4] Morris, B. 2021: *Carninney Rise, Carbis Bay, St. Ives, Cornwall: Results of Archaeological Monitoring and Recording*. SWARCH Report No. 210304.

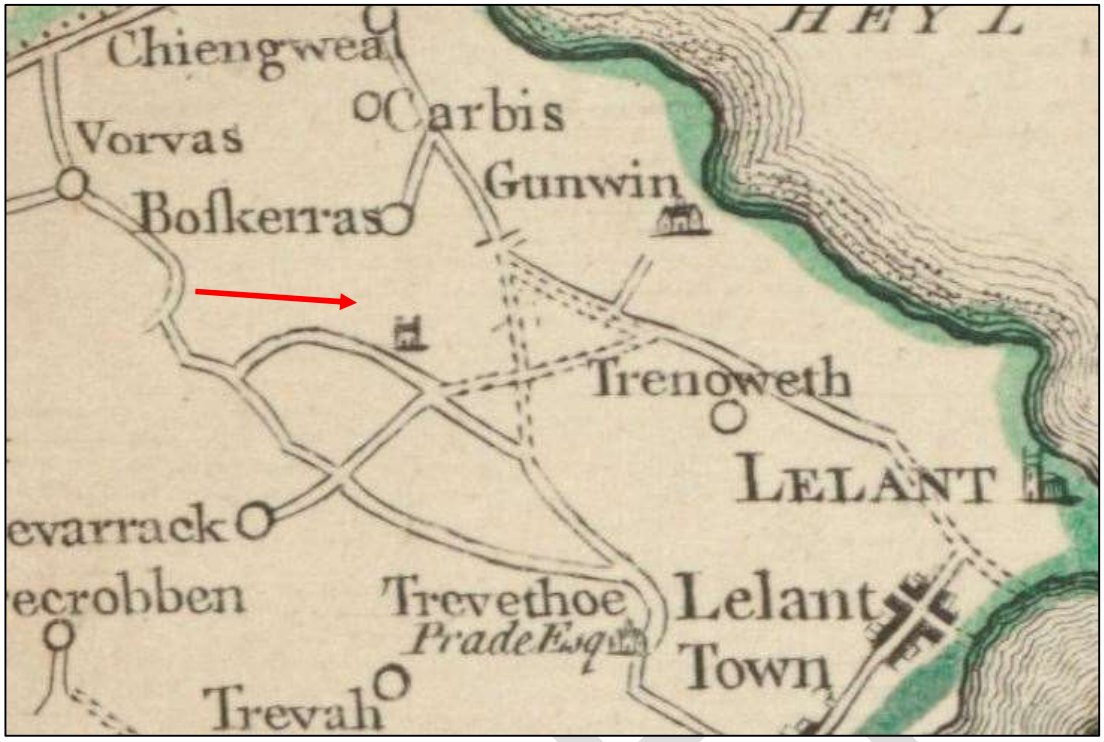

FIGURE 2: EXTRACT OF THE MARTYN'S MAP OF CORNWALL, 1748. THE APPROXIMATE LOCATION OF THE SITE IS INDICATED (HARVARD UNIVERSITY MAP COLLECTION).

FIGURE 3: EXTRACT OF THE ORDNANCE SURVEY SURVEYOR'S DRAFT, 1809. THE APPROXIMATE LOCATION OF THE SITE IS INDICATED (BL).

The Lelant Tithe Map of c.1840 shows the site in much greater detail. The site is an almost rectangular field, within a patchwork of irregular fields. The site lies almost exactly in between Laity,

Boskerris Woolas and Boskerris Wartha. The Tithe Apportionment includes the site as part of the landholding of Laity. It lists the landowner as William Tyringham Praed, Esq., presumably a descendent of The Prade Esq. recorded on the Martyn's map at Trevethoe. Laity is occupied at this time by Alexander Carbis and is a reasonable sized farm. The proposal site is roughly equivalent to plot 239, called Great Mowhay, and used as an arable land at this date. Higher and Lower Park Chapel are fields within the landholding of Laity that indicate there may have been an early chapel in this location, although there is no evidence of any standing remains in the historic mapping. Proximity to the chapel also lends its name to one of the plots at the adjacent Boskerris Wartha. Also at Boskerris Wartha, a field named 'Round Gew' may indicate a Prehistoric or Romano-British round, and 'The Crilla' may be indicative of Bronze Age or Iron Age hut circles.

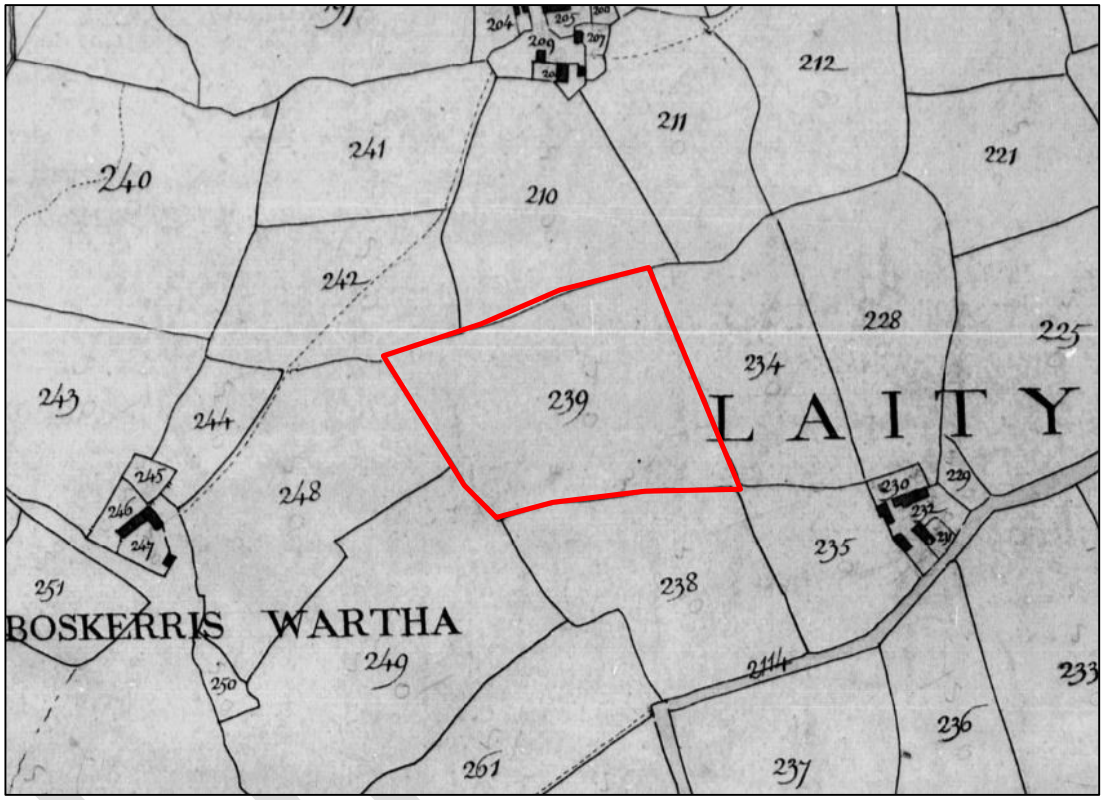

FIGURE 4: EXTRACT OF THE LELANT TITHE MAP, *C.*1841. THE APPROXIMATE SITE LOCATION IS INDICATED (GENEALOGIST).

TABLE 1: EXTRACT FROM THE C.1840 LELANT TITHE APPORTIONMENT; THE SITE IS HIGHLIGHTED IN GREEN (GENEALOGIST).

Plot No.	Owner	Occupier	Plot Name	Cultivation
1/3 of Boskerris Woolas				
210	Mrs. Sophia Praed, mother and guardian of William Backwell Praed, Esq., a minor. Lessee is Mrs. Catherine Bohenna	John Trembath	Little Wartha	Arable
211			Mowhay Field	Arable
212			Rockey Field	Arable
Laity				
228	William Tyringham Praed, Esq.	Alexander Carbis	Lower Park Darras	Arable
229			Orchard	Orchard
230			Barn and Mowhay	Homestead
231			Garden	Garden
232			Dwelling House Homestead	Homestead
233			Lower Park Chapel	Arable
234			Park Darras	Arable
235			The Meadow	Arable
236			Higher Park Chapel	Arable
237			Park Ain	Arable
238			Little Park Mowhay	Arable
239			Great Mowhay	Arable
Boskerris Wartha				
240	Mrs. Sophia Praed, mother and	John Wallis	Park an Hale	Furze

Plot No.	Owner	Occupier	Plot Name	Cultivation
241	guardian of William Backwell Praed, Esq., a minor. Lessee is Mrs. Catherine Bohenna		Wartha Fields	Arable
242			Wartha Fields	Arable
243			Higher Park an Hale	Arable
244			Little Meadow	Arable
245			Orchard	Orchard
246			House Homestead	Homestead
247			Barn and Mowhay	Homestead
248			Before Door	Arable
249			The Crilla	Arable
250			Calfs Garden	Garden
261			Nearer Churchway	Arable

The First Edition Ordnance Survey map was surveyed in 1877 and not published until a decade later, in 1887. It shows a number of changes to the field pattern since the production of the Tithe Map, some enclosures opened into larger spaces and some apparently divided to form smaller rectangles. On this map, Boskerris Woolas is named Boskerris. Laity appears on the next page of the map and there appears to have been a rearrangement of the buildings, with perhaps one or two added, although this could be a reflections of inaccuracies in the Tithe Map. To the north of the site is rough ground and to the east is a plantation.

There does not appear to be much change between the First and Second Edition OS Maps, the Second published in 1906. To the north of the site, in the upper right corner of the extract included in this report, it is clear that houses have been constructed along the roadside. The map labels this area as Longstone.

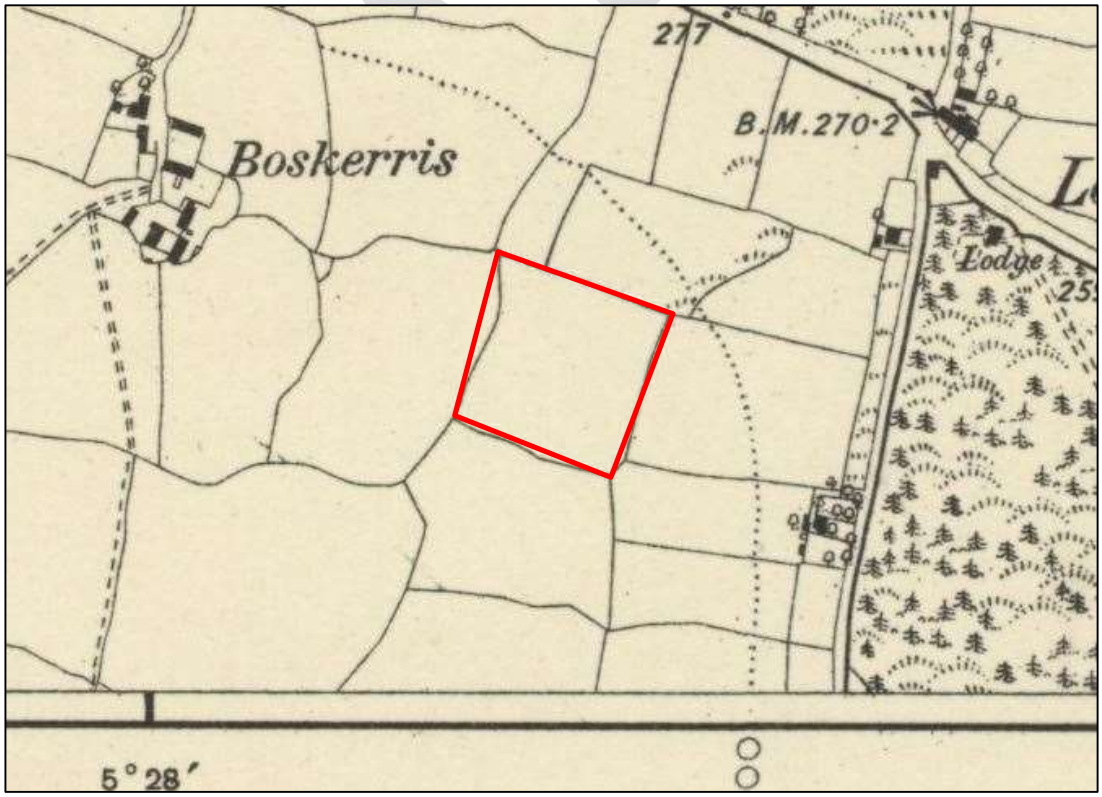

FIGURE 5: EXTRACT OF OS 1ST EDITION 6 INCH MAP 1887, SHEET CORNWALL LXI.NE&SE; THE APPROXIMATE SITE IS INDICATED (NLS).

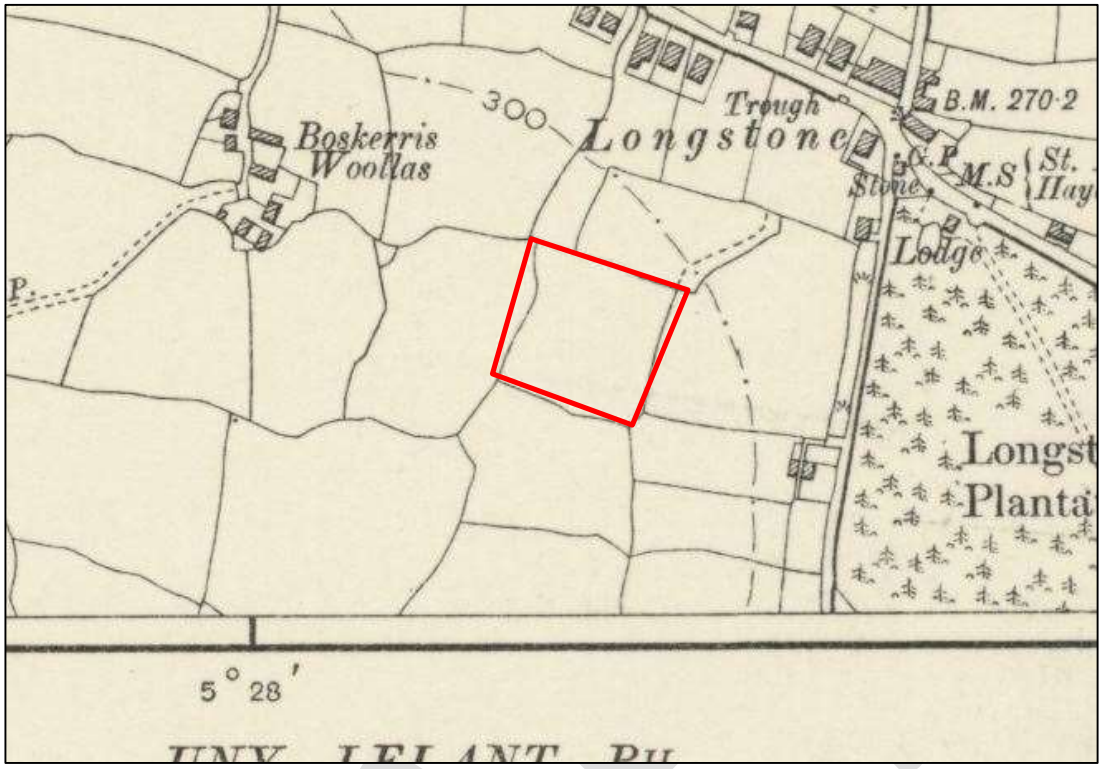

FIGURE 6: EXTRACT OF OS 2ND EDITION MAP 1908, SHEET CORNWALL LXI.NE&SE; THE APPROXIMATE SITE IS INDICATED (NLS).

2.3 AERIAL PHOTOGRAPHY

Aerial photography for the site is limited, dating to the last decade, and only shows the site alternating between arable and pasture. No features are evident within the bounds of the site as cropmarks or earthworks. No buildings, fences or divisions are shown.

FIGURE 7: AERIAL PHOTOGRAPHY OF THE SITE FROM 2022; GOOGLE EARTH.

2.4 LIDAR

LiDAR for the site appears to show a ditch, or divide, from east to west across the lower end of the site, in the same area as the boundary depicted on the Tithe Map. There do not appear to be any other features or removed boundaries evident on the LiDAR within the bounds of the site.

FIGURE 8: LIDAR FOR THE SITE; LIDARFINDER.COM.

2.5 ARCHAEOLOGICAL BACKGROUND

The proposal site and land to the west have changed very little in the last century. The land to the north, east and south have been developed over the last century to provide housing and a holiday park.

It does not appear that the site or its immediate surroundings have been subject to any archaeological investigation although the site does fall within the bounds of larger area assessments which have been carried out.

Due to the nature of the site, as an agricultural enclosure within a historic, and possibly Prehistoric landscape, a 500m radius around the site has been considered in detail. The site does not fall within the Cornwall and West Devon Mining World Heritage Site despite its proximity to former mines and mining activity. There are 3 Grade II Listed Buildings within 500m of the site and it does not lie within a Conservation Area. There are no Registered Parks and Gardens within 500m of the site.

2.5.1 PREHISTORIC 4000BC - AD43

A number of findspots are noted in the landscape surrounding the site, as well as a possible barrow site at Lower Carbence, the remains of a 1.22m high menhir at Longstone, a possible round and possible hut circles at Boskerris Wartha, and the possible remains of a Prehistoric field system at Trewartha.

2.5.2 ROMANO-BRITISH AD43 – AD409

The possible round at Boskerris Wartha may have a Romano-British date. There are no other indications of Roman or Romano-British activity within 500m of the site.

2.5.3 MEDIEVAL AD410 – AD1540

There is evidence for Early Medieval and Medieval settlements and activity within the study area. The site formed part of Laity, which is first recorded in 1200 as Lahitty. Boskerris, Carbis, Carninney

are all settlements with records dating back to the Medieval period.

2.5.4 POST-MEDIEVAL AD1540 -1899

A majority of heritage assets recorded in the vicinity of the site are of Post Medieval date. Most of these relate to stiles, followed by mining and extraction or industrial activities or the settlement development to support the workers.

2.5.5 MODERN 1900-PRESENT AND UNKNOWN

An ROC underground observation post, or nuclear post, dating to the Cold War period and the modern mine at South Providence are the only Modern assets recorded within the study area.

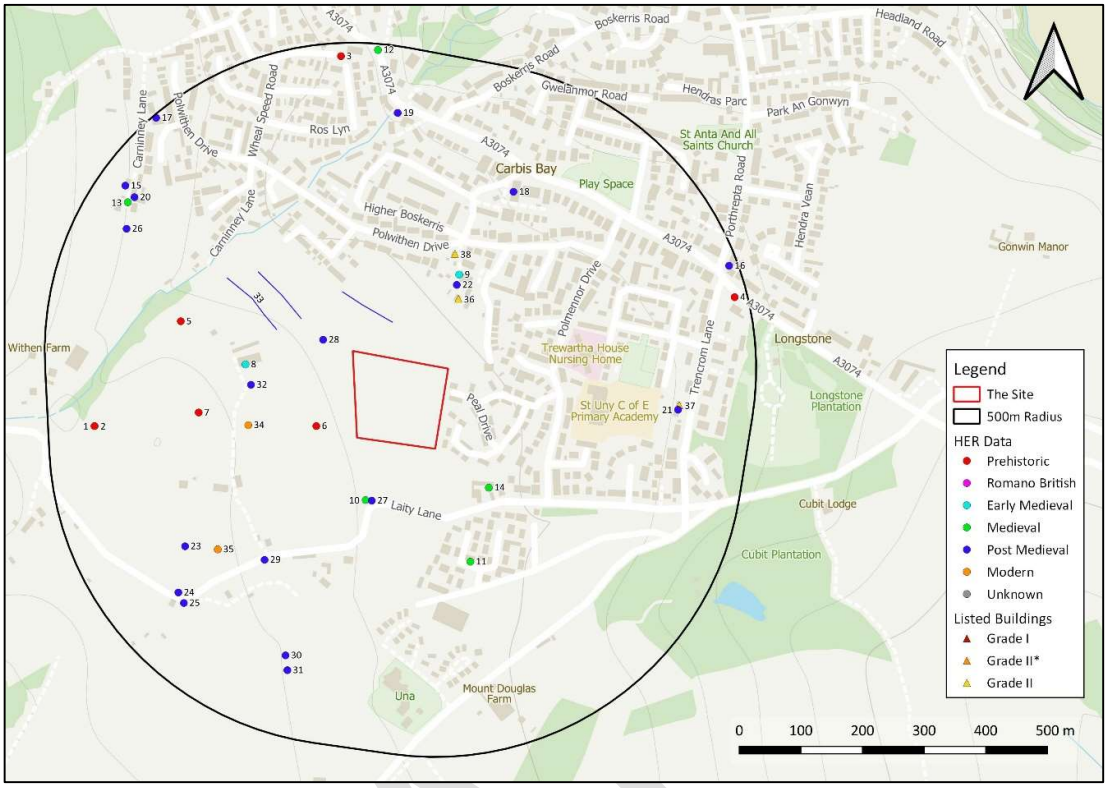

FIGURE 9: HERITAGE ASSETS WITHIN 500M OF THE PROPOSAL AREA RECORDED IN THE CORNWALL HER CONTAINS ORDNANCE SURVEY DATA © CROWN COPYRIGHT AND DATABASE RIGHT 2023.

TABLE 2: TABLE OF NEARBY HERITAGE ASSETS (SOURCE: CORNWALL HER).

No	MonUID	Name	Summary
1	MCO338	CARBIS BAY - Neolithic findspot	A Group One greenstone axe roughout was found at Carbis Bay in 1971
2	MCO466	CHYANGWEAL - Mesolithic findspot, Neolithic findspot	
3	MCO3069	LOWER CARBENCE - Bronze Age barrow	The field-name 'White Burrow Croft' suggests the site of a barrow but there are no remains.
4	MCO7455	LONGSTONE - Neolithic standing stone, Bronze Age standing stone	The remains of a menhir at Longstone 1.22m high, cut down from its original size. Granite.
5	MCO7643	BOSKERRIS WARTHA - Iron Age round, Romano British round	The field-name 'Round Gew' suggests the site of a round but there are no remains.
6	MCO18862	BOSKERRIS WARTHA - Bronze Age hut circle, Iron Age hut circle	The field-name 'The Crilla' may indicate hut circles but there are no extant remains.
7	MCO50872	TREVARTHA - Prehistoric field system	A rectilinear field system is visible on aerial photographs.
8	MCO13520	BOSKERRIS - Early Medieval settlement, Medieval settlement	The settlement of Boskerris is first recorded as "Boskevreswartha" in 1314.
9	MCO13520	BOSKERRIS - Early Medieval settlement, Medieval settlement	The settlement of Boskerris is first recorded as "Boskevreswartha" in 1314.
10	MCO5034	BOSKERRIS WARTHA - Medieval cross	A possible cross shaft is in use as a gatepost.
11	MCO10000	LAITY - Medieval chapel	The field-name 'Park Chapel' suggests the site of a chapel but there are no remains.
12	MCO13735	CARBIS - Medieval settlement	The settlement of Carbis is first recorded as "Carbous" in 1391.
13	MCO13827	CARNINNEY - Medieval settlement	The settlement of Carninney is first recorded as "Karneny" in 1327.
14	MCO15198	LAITY - Medieval settlement	The settlement of Laity is first recorded as "Lahitty" in 1200.
15	MCO7768	CARNINNEY - Post Medieval pound	Previously thought the name 'The Round' suggested the site of a round but no remains were found. A review of the Tithe Apportionment reveals this is a misreading of the word 'Pound'
16	MCO9155	LONGSTONE - Post Medieval blacksmiths workshop	
17	MCO12462	PROVIDENCE - Post Medieval mine	Providence mine.
18	MCO32904	CARBIS BAY - Post Medieval nonconformist chapel	Methodist chapel, probably approx 1900.

19	MCO52167	CARBIS WATER - Post Medieval nonconformist chapel	A Wesleyan Methodist chapel is recorded on the 1st Edition 1880 OS Map.
20	MCO58173	CARNINNEY - C19 farmstead	The current farm buildings that comprise Carninney farmstead, including the cottages, farmhouse and various farm buildings are considered likely to be of early to mid-C19 date.
21	MCO64275	CARBIS BAY - C18 house	Extant late C18 house. This was extended to the rear in the C19 and to the side (south) in the early C20
22	MCO69243	ST IVES - Post-medieval stile	A post-medieval stile in the parish of St Ives
23	MCO70338	ST IVES - Post-medieval stile	A post-medieval stile in the parish of St Ives
24	MCO70339	ST IVES - Post-medieval stile	A post-medieval stile in the parish of St Ives
25	MCO70344	ST IVES - Post-medieval stile	A post-medieval stile in the parish of St Ives
26	MCO70385	ST IVES - Post-medieval stile	A post-medieval stile in the parish of St Ives
27	MCO70389	ST IVES - Post-medieval stile	A post-medieval stile in the parish of St Ives
28	MCO70394	ST IVES - Post-medieval stile	A post-medieval stile in the parish of St Ives
29	MCO70395	ST IVES - Post-medieval stile	A post-medieval stile in the parish of St Ives
30	MCO70396	ST IVES - Post-medieval stile	A post-medieval stile in the parish of St Ives
31	MCO70397	ST IVES - Post-medieval stile	A post-medieval stile in the parish of St Ives
32	MCO70399	ST IVES - Post-medieval stile	A post-medieval stile in the parish of St Ives
33	MCO65206	BOSKERRIS - Post Medieval field boundaries?	Three faint banks/breaks in slope visible on recent Lidar could be former field boundaries
34	MCO56296	ST IVES - Modern observation post	An ROC underground observation post also referred to as a nuclear post was constructed at this location in July 1962 and closed again in October 1968. There are no visible remains.
35	MCO12541	SOUTH PROVIDENCE - Modern mine	
36	1136949	BOSKERRIS WOOLLAS	II
37	1143330	BOSKELLY	II
38	1143336	BOSKERRIS FARMHOUSE	II

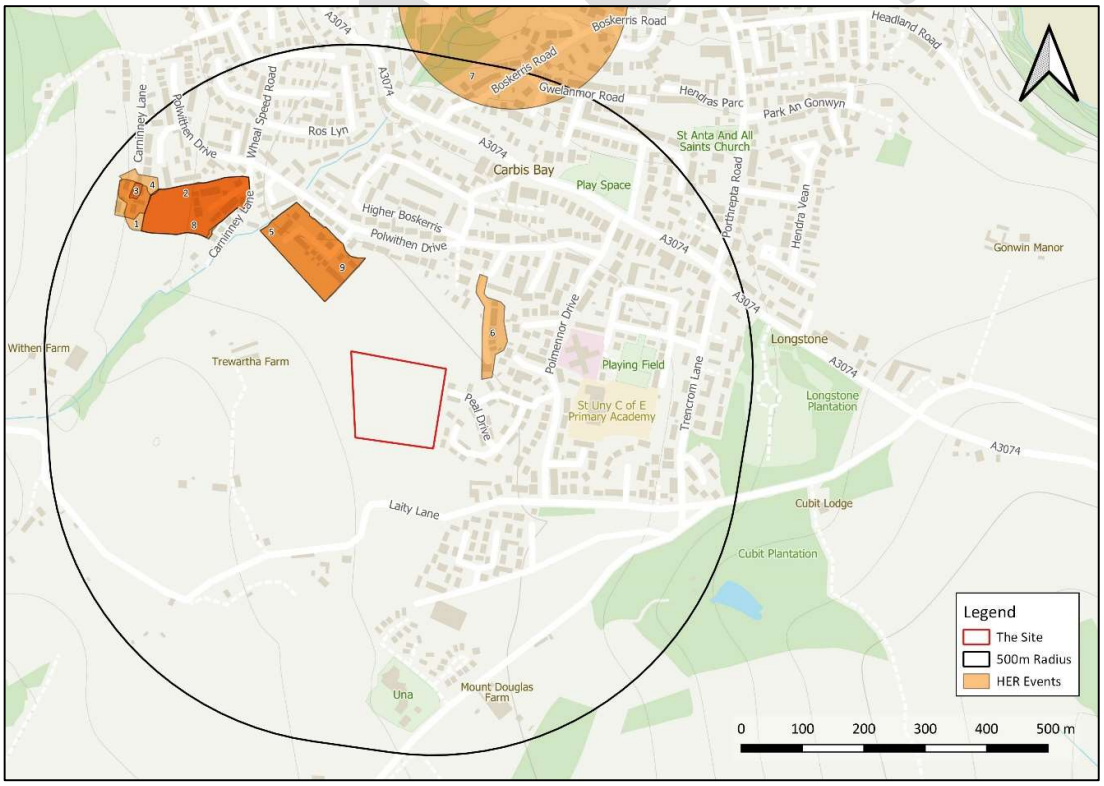

FIGURE 10:ARCHAEOLOGICAL INTERVENTIONS WITHIN 500M OF THE PROPOSAL AREA RECORDED IN THE CORNWALL AND SCILLY HER (CSHER) CONTAINS ORDNANCE SURVEY DATA © CROWN COPYRIGHT AND DATABASE RIGHT 2023.

TABLE 3: DETAILS OF ARCHAEOLOGICAL INTERVENTIONS (CSHER).

No	EvUID	Name	EventTypes
1	ECO4450	Carninney, St Ives, Cornwall	Assessment
2	ECO4985	Carninney Rise, St Ives	Geophysical Survey
3	ECO5048	North Barn	Building Record
4	ECO5124	West Barns	Building Record
5	ECO5342	Land at Polwithen Drive	Assessment; Geophysical Survey
6	ECO5416	Land south of Poltreen Close	
7	ECO5469	The Cottage Hotel, Carbis Bay, St Ives, Cornwall: Archaeological Watching Brief Report	Watching Brief
8	ECO5675	Carninney Rise	Field Observation
9	ECO5786	Land at Polwithen Drive	Watching Brief

2.6 SITE VISIT

The site was visited by P. Bonvoisin on 5th July 2023. The weather was overcast and dry.

The site had been recently grazed. The site comprises a single field, laid to pasture, with low hedgebanks, mostly with modern stock fencing.

The ground was relatively flat, sloping gently to the east and no earthworks relating to archaeological features were observed.

3.0 GEOPHYSICAL SURVEY

3.1 INTRODUCTION

The site comprises a single field (F1, *c.*2.9ha), of which only the northern part (*c.*1.8ha surveyed) 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 5th July 2023 by P. Bonvoisin and the survey data processed by P. Webb. Supporting photographic evidence from the site inspection can be found in Appendix 1; detailed survey data in Appendix 2; and additional graphic images of the survey data and numbered grid locations can be found in Appendix 3.

3.2 SITE INSPECTION

The proposal site comprises a single broadly north to south orientated sub-rectangular field (F1 *c.*2.9ha) at the south-western edge of settlement at Carbis Bay, south-east of St Ives. At the time of survey the site was under pasture. The topography of the site is fairly flat. The site is bordered to the north and west by agricultural land, and to the east and south by modern residential development; Laity Lane running along the southern (Phase II) boundary. The site is bounded by partially tree-lined hedgebanks.

No earthworks were identified within the site boundary.

3.3 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* (CIfA 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 ('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:
Clip +/- 1SD; removes extreme data point values.
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 selected grids, all traverses out- and inbound by 0.25m to 0.50m reduces staggering effects within data derived from zig-zag collection method.

TABLE 4: SURVEY DETAILS (UN-ADJUSTED)

Field	Area Surveyed (ha)	Max (nT)	Min (nT)	Standard Deviation (nT)	Mean (nT)	Median (nT)
F1, Phase I	1.8437	137.36	-198.66	15.45	-0.72	0.00

3.4 RESULTS

Table 2 with the accompanying Figures 2-3 show the analyses and interpretation of the geophysical survey data.

TABLE 5: INTERPRETATION OF GRADIOMETER SURVEY DATA.

Anomaly Group	Class and Certainty	Form	Archaeological Characterisation	Comments
Field F1				
1	Weak to moderate positive & negative, probable	Linear	Historic boundary – double ditch & bank	Indicative of cut and infilled features such as ditches flanking central banked/compacted material typical of traditional hedgebank construction. Orientated approximately north-west to south-east. Depicted on historic mapping. Responses of between -11.45nT to -0.16nT and +0.28nT to +14.13nT.
2	Weak to positive & negative, probable	Linear	Double ditch & bank	Indicative of cut and infilled features such as ditches flanking central banked/compacted material typical of traditional hedgebank construction. Orientated between approximately north-north--east to south-south-west and west-north-west to east-south-east. Responses of between -7.47nT to -0.01nT and +0.03nT to +7.34nT.
3	Weak positive & negative, possible	Linear	Double ditch & bank	Indicative of cut and infilled features such as ditches flanking central banked/compacted material typical of traditional hedgebank construction. Orientated approximately north to south. Responses of between -2.05nT to -0.01nT and +0.02nT to +5.03nT.
4	Weak to moderate positive & negative, probable	Linear	Ditch & bank	Indicative of cut and infilled features such as ditches with flanking banked/compacted material. Orientated approximately west-north-west to east-south-east. Responses of between -3.36nT to -0.13nT and +0.04nT to +10.8.nT.
5	Weak positive & negative, possible	Linear	Ditch & bank	Indicative of cut and infilled features such as ditches with flanking banked/compacted material. Orientated between approximately north-north-east to south-south-west and west-north-west to east-south-east. Responses of between -3.35nT to -0.06nT and +0.14nT to +8.42nT.
6	Weak positive, possible	Linear	Ditch	Indicative of cut and infilled features such as ditches. Orientated between north to south and north-east to south-west. Responses of between +0.06nT and +7.85nT.
7	Weak positive, possible	Discrete	Pit or tree-throw	Indicative of discrete cut and infilled features such as pits. Weaker responses may be natural in origin and indicate features such as tree-throws. Responses of between +0.01nT and +9.69nT.
8	Very strong positive & negative, probable	Linear	Modern utility	Indicative of a buried modern utility. Orientated approximately north-west to south-east. Responses of between -198.66nT to -1.25nT and +2.31nT to +113.33nT.
	Weak positive & negative, possible	Linear	Agricultural activity	Linear striations covering the field with regularity. Aligned between approximately north to south and east to west. Weak positive and negative responses suggest shallow ploughing. Responses of between -3.43nT and +4.16nT.
	Moderate dipolar (mixed response)	Discrete	Ferrous anomaly	Indicative of metallic objects. Responses of between -100.76nT and +99.23nT.
	Strong bipolar (mixed response)	Irregular	Modern disturbance	Indicative of disturbed ground and disturbance caused by proximity to metallic fences and debris. Responses of between -102.08nT and +99.22nT.

3.5 DISCUSSION

The survey identified eight groups of anomalies across the site. These were predominantly linear ditch and/or bank boundary features associated with phases of the existing and historic field-system, modern utilities and agricultural practices. Anomalies associated with metallic debris and ground disturbance were also apparent.

The general response variation across the site was between +/-3nT with occasional clear background geological variation up to +/-5nT. The response strength of probable archaeological activity was low (typically between +/-10nT) though areas of stronger responses (up to *c.*+/-15nT) were present. The weaker responses of some of the anomalies may indicate that these are only likely to survive to a shallow depth; the stronger responses perhaps indicating the presence of more

recent disturbance.

The anomaly groups identified include: historic ditch and bank boundaries removed during the 20th century (Group 1); further possible ditches associated with phases of the existing and historic field boundaries (Groups 2-6), possible pits or tree-throws (Group 7) and modern utilities (Group 8).

3.6 ARCHAEOLOGICAL POTENTIAL

Whilst none of the identified features can at this stage be dated, the location of several of the anomaly groups corresponds with boundaries depicted on historic mapping, indicating that these features were in use from at least the middle of the 19th century and removed by during the later 20th century (Group 1). Whilst not mapped, further ditch features are positioned running parallel to and alongside existing field boundaries (Group 5) and are likely to reflect the shifting of these boundaries over time.

The historic field-pattern of the site is characterized as *prehistoric farmland* with origins either in the prehistoric or medieval periods; and is surrounded by areas of *upland rough ground* and *post-medieval enclosed land*. The surviving boundaries of the earlier field-systems are represented in the gently curving elements of the existing field-system, and it is likely that many of the ditch and/or bank features form part of these earlier field-systems, having been removed by the mid-19th century. The majority of the identified boundary features are clearly congruent with the broad layout of this field-system (Groups 2-6).

A small number of possible pit features (Group 7) were identified across the site, though the weak nature of many of the responses suggests that they may be natural in origin, the anomalies reflecting tree-throws.

A modern utility (Group 8) was identified running across the north-eastern corner of the site, from the access point off Teyla Tor Road.

The degree of preservation of the identified features appears to be moderate to poor. The majority of the anomaly responses are weak, with some intermittent and barely discernible from the background geology. This suggests that many of the identified features only survive to a shallow depth, their intermittent nature suggesting only partial survival. However, it is possible that additional, even more ephemeral features, are masked by the background geology and modern disturbances.

The results of the geophysical survey would suggest that the archaeological potential for the site is *low*. The majority of the identified features relate to historic phases of field-system which are tentatively suggested as being Medieval and Post-Medieval in date, though the presence of Prehistoric activity in the surrounding area means that a Prehistoric or Romano-British date cannot be ruled out.

Any development of the site is likely to encounter and destroy the buried archaeological resource (should it be present), further mitigation through targeted evaluation trenching would validate and clarify the results of the geophysical survey, though may not produce any new evidence.

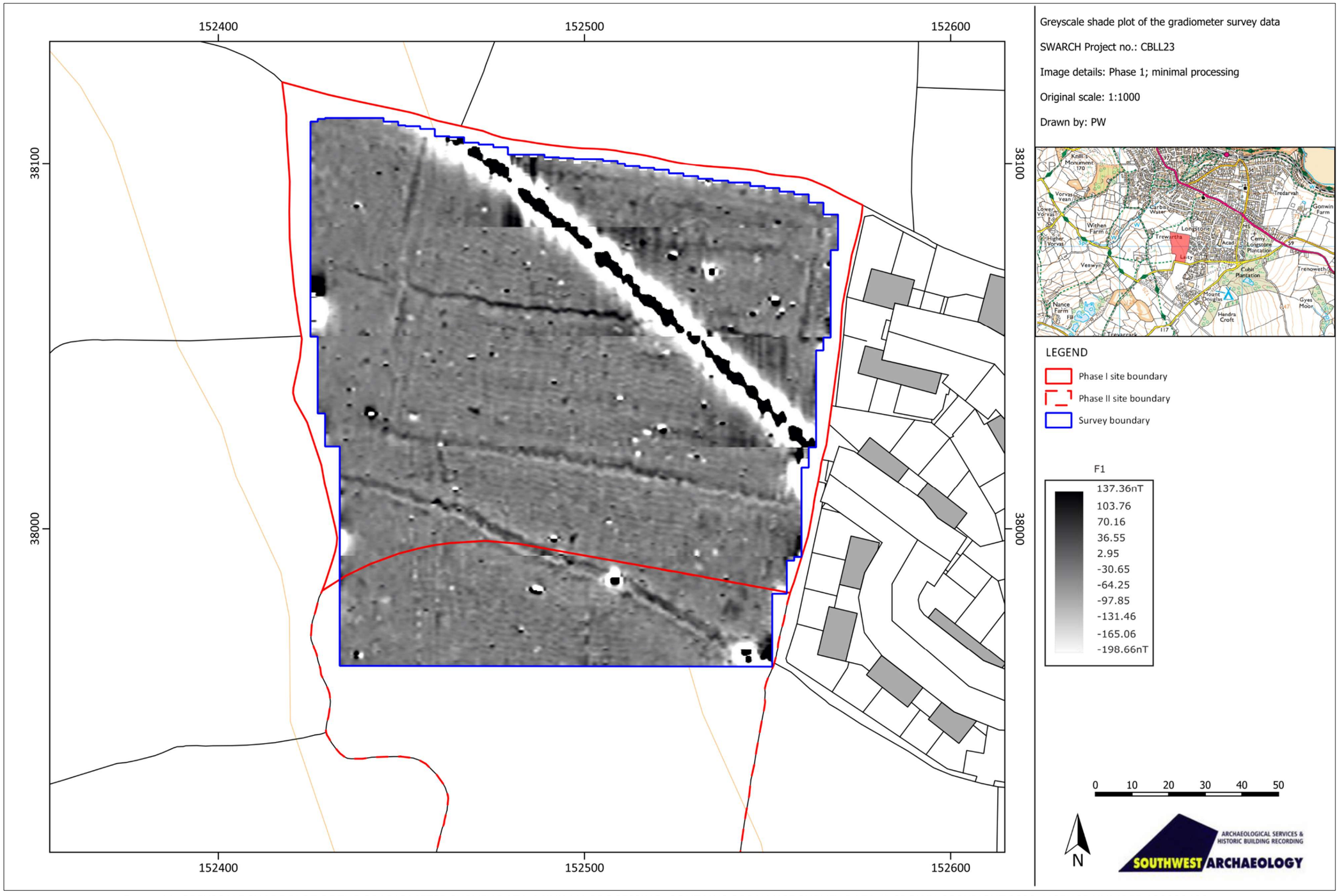

FIGURE 11: GREYSCALE SHADE PLOT OF THE GRADIOMETER SURVEY DATA; MINIMAL PROCESSING (CONTAINS ORDNANCE SURVEY DATA © CROWN COPYRIGHT 2023. LICENCE NUMBER 100022432).

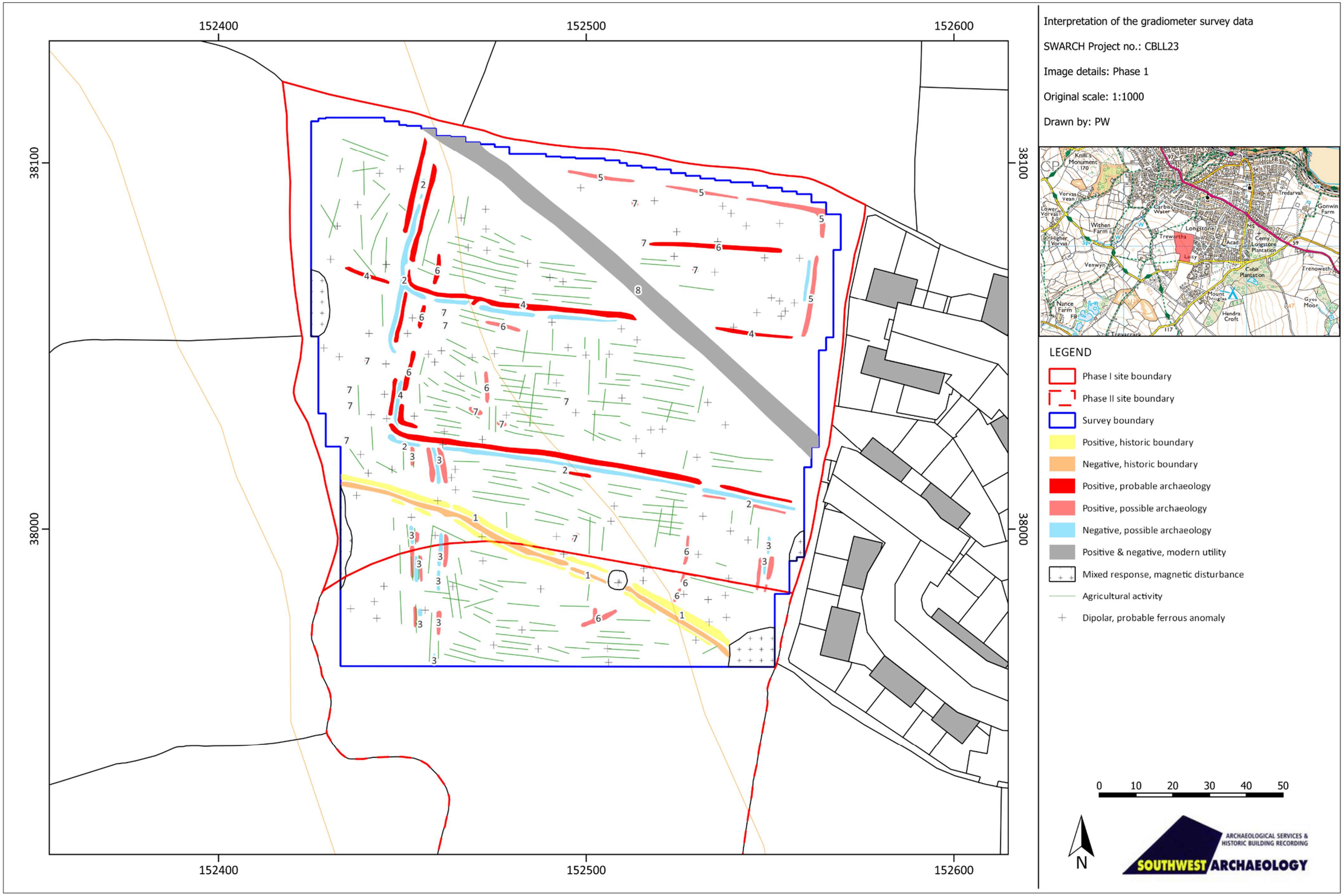

FIGURE 12: INTERPRETATION OF THE GRADIOMETER SURVEY DATA (CONTAINS ORDNANCE SURVEY DATA © CROWN COPYRIGHT 2023. LICENCE NUMBER 100022432).

4.0 CONCLUSION

The site lies within the modern parish of St. Ives, historically forming part of the parish of Lelant (or Lalant), in the deanery and east division of the historic hundred of Penwith (Lysons 1814). The site likely fell within the lands that constituted the Manor of Lalant and Trethevow, also known as the Trethevow Estate.

The site lies within an area recorded on the Cornwall Historic Landscape Characterisation (HLC) as Farmland: Prehistoric: The agricultural heartland, with farming settlements documented before the 17th century AD and whose field patterns are morphologically distinct from the generally straight-sided fields of later enclosure. Either Medieval or Prehistoric origins. The site forms part of a larger survey area for coastal and moorland surveys, but there does not appear to have been any archaeological investigation or fieldwork carried out on the site.

The results of the geophysical survey would suggest that the archaeological potential for the site is low. The majority of the identified features relate to historic phases of field-system which are tentatively suggested as being Medieval and Post-Medieval in date, though the presence of Prehistoric activity in the surrounding area means that a Prehistoric or Romano-British date cannot be ruled out.

Any development of the site is likely to encounter and destroy the buried archaeological resource (should it be present), further mitigation through targeted evaluation trenching would validate and clarify the results of the geophysical survey, though may not produce any new evidence.

5.0 BIBLIOGRAPHY & REFERENCES

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APPENDIX 1: SUPPORTING PHOTOGRAPHIC EVIDENCE – SITE INSPECTION

1. F1, VIEW ALONG THE EASTERN BOUNDARY; VIEWED FROM THE SOUTH (NO SCALE).

2. F1, VIEW ACROSS THE PHASE I PROPOSAL SITE; VIEWED FROM THE SOUTH-EAST (NO SCALE).

3. F1, VIEW ACROSS THE SURVEY AREA; VIEWED FROM THE EAST-SOUTH-EAST (NO SCALE).

4. F1, VIEW ALONG THE WESTERN BOUNDARY; VIEWED FROM THE SOUTH (NO SCALE).

5. F1, VIEW ACROSS THE SURVEY AREA TOWARDS THE EXISTING MODERN RESIDENTIAL DEVELOPMENT; VIEWED FROM THE WEST (NO SCALE).

6. F1, VIEW ACROSS THE SURVEY AREA; VIEWED FROM THE SOUTH (NO SCALE).

APPENDIX 2: METADATA FOR GEOPHYSICAL SURVEY PROCESSING

GRADIOMETRY

GENERAL DATA FOR ALL FIELDS/SITE:

SITE

NAME:	CBLL23
LOCATION:	Laity Lane, Carbis Bay
COLLECTION METHOD:	ZigZag
SENSORS:	2 @1m spacing
DUMMY VALUE:	32702
X&Y INTERVAL:	0.25m
INSTRUMENT TYPE:	Bartington Grad 601
UNITS:	nT
SURVEYED AREA:	1.8437ha

PROGRAM

NAME:	TerraSurveyor
VERSION:	3.0.37.30

STATISTICS ADJUSTED AFTER PROCESSING

PROCESSES USED:

DeStripe: 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: reduces staggering effects within data derived from zig-zag collection method.

FIELD F1-F3

STATS

MAX:	137.36
MIN:	-198.66
STD. DEV.:	15.45
MEAN:	-0.72
MEDIAN:	0.00
COMPOSITE AREA:	2.25ha
SURVEYED AREA:	1.8437ha

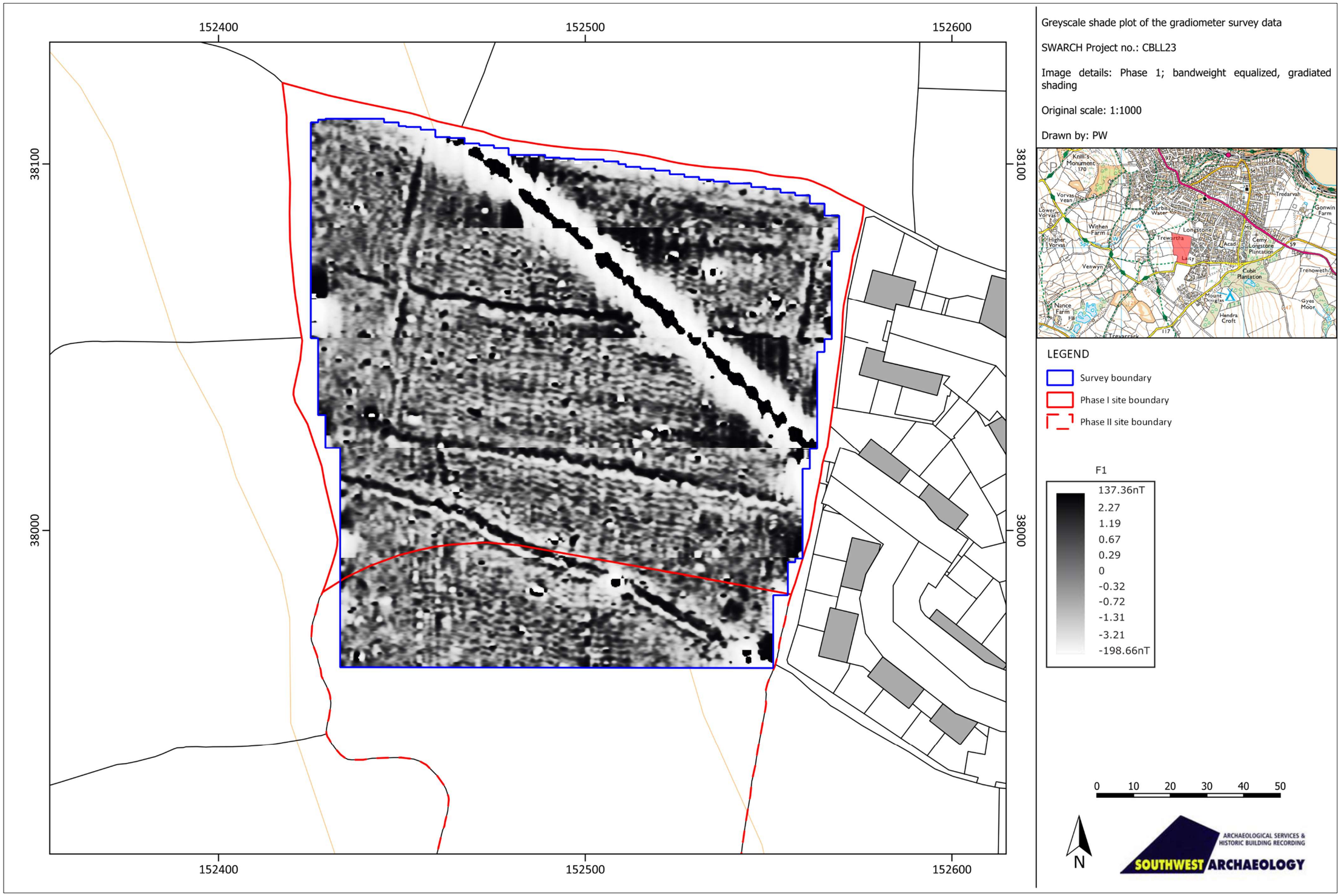
PROCESSES

PROCESSES: 8

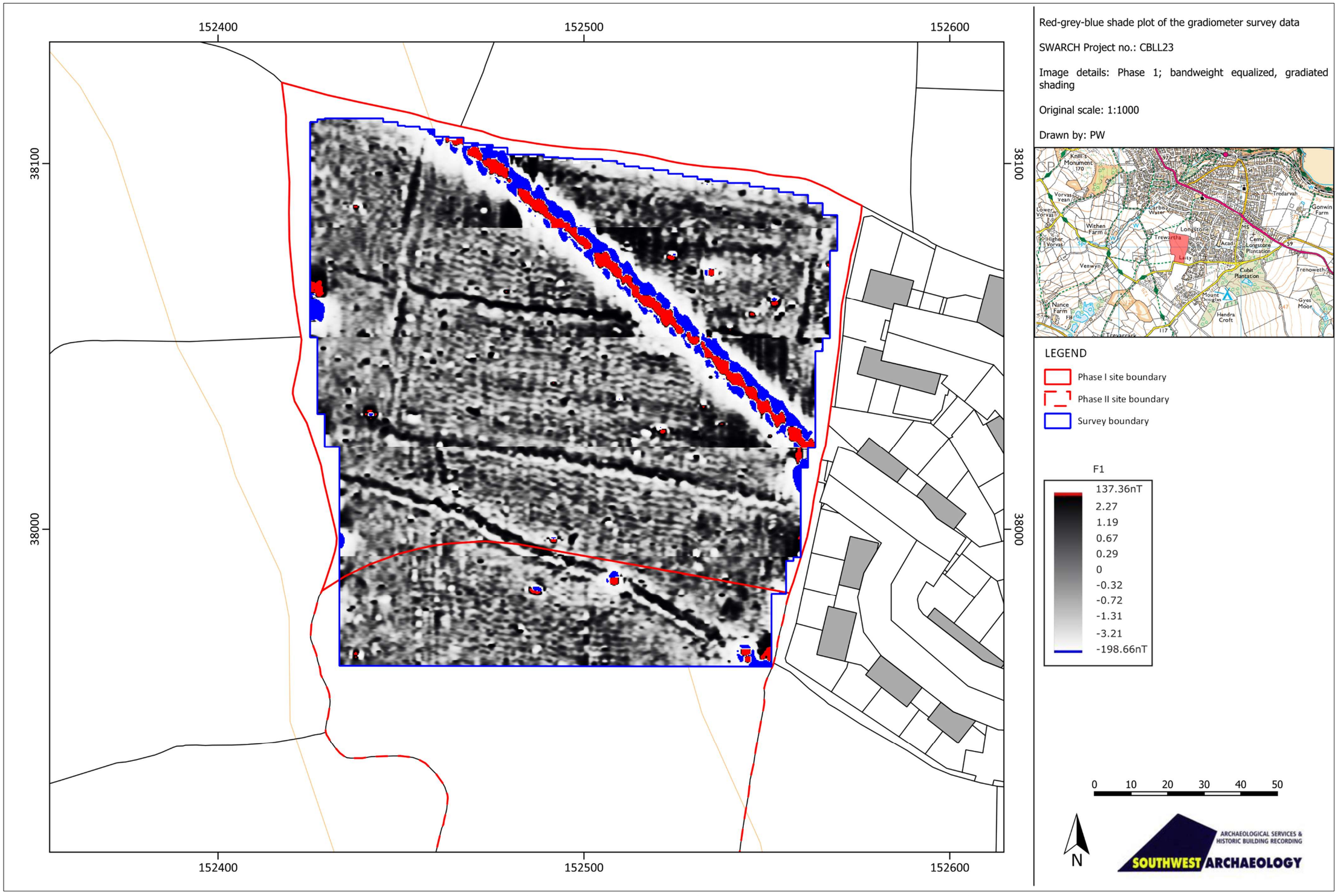
1 Base Layer
2 DeStripe Median Traverse: Grids: All
3 DeStagger: Grids: All By: 0 intervals, 50.00cm
4 DeStagger: Grids: All By: 0 intervals, 25.00cm
5 DeStagger: Grids: a18.xgd By: 0 intervals, 25.00cm
6 DeStagger: Grids: a9.xgd a10.xgd By: 0 intervals, 25.00cm
7 DeStagger: Grids: a6.xgd By: 0 intervals, 25.00cm
8 DeStagger: Grids: SubGrid (Area: Top 32, Left 360, Bottom 41, Right 479) By: 0 intervals, -50.00cm

APPENDIX 3: ADDITIONAL GRAPHICAL IMAGES OF THE GRADIOMETER SURVEY

1. GEOPHYSICAL SURVEY GRID LOCATION AND NUMBERING. (CONTAINS ORDNANCE SURVEY DATA © CROWN COPYRIGHT 2023. LICENCE NUMBER 100022432).



2. GREYSCALE SHADE PLOT OF GRADIOMETER SURVEY DATA; BANDWEIGHT EQUALIZED, GRADIATED SHADING (CONTAINS ORDNANCE SURVEY DATA © CROWN COPYRIGHT 2023. LICENCE NUMBER 100022432).



3. RED-GREY-BLUE SHADE PLOT OF GRADIOMETER SURVEY DATA; BANDWEIGHT EQUALIZED, GRADIATED SHADING (CONTAINS ORDNANCE SURVEY DATA © CROWN COPYRIGHT 2023. LICENCE NUMBER 100022432).

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