

NFPC/01



# LAND AT NANCROSSA FARM, RAME CROSS PENRYN, CORNWALL

ARCHAEOLOGICAL INVESTIGATION

commissioned by Second Solar Project Ltd

December 2015



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project info

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**LOCAL AUTHORITY** Cornwall Council  
**OASIS REF.** headland3-236238

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# PROJECT SUMMARY

Headland Archaeology undertook a targeted site investigation on land at Nancrossa Farm, Rame Cross, Cornwall. The site investigation identified a post-medieval post-hole and animal burial and tree throw of possible early date. Geophysical anomalies and probable cropmarks were proven not to be archaeological and were interpreted as primarily topsoil related modern activity.

The results of the investigation suggested exceptionally limited past use of the land, probably as agricultural land, with no significant archaeological features identified. A paucity of finds of any period was also noted. No artefactual material was recovered during the investigation.

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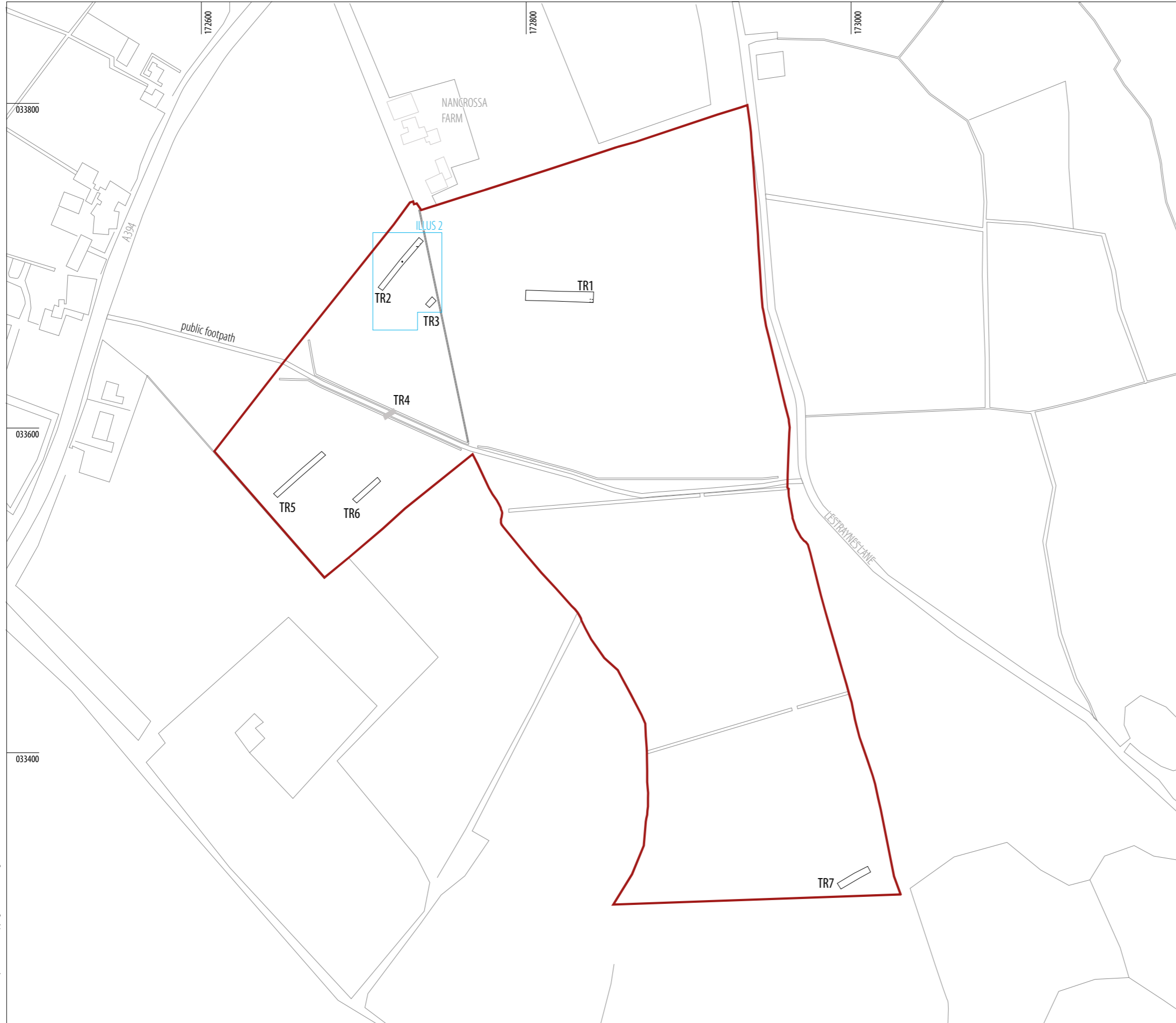
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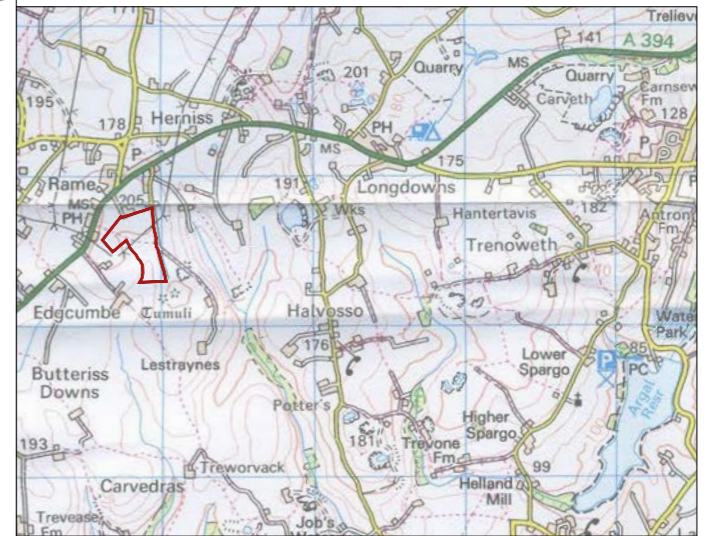
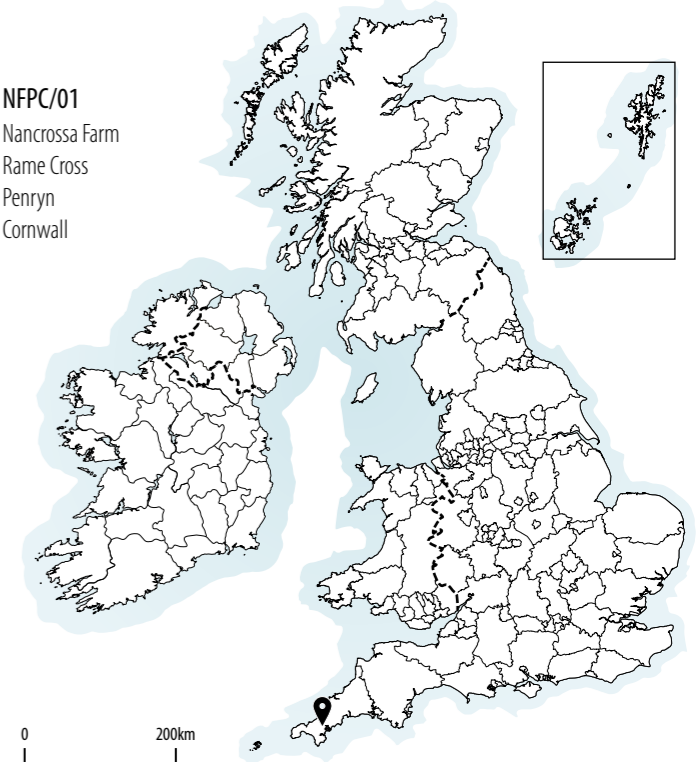
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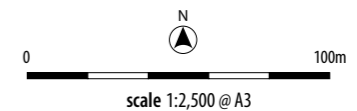
NIFC/01  
Nancrossa Farm  
Rame Cross  
Penryn  
Cornwall



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KEY  
 development boundary  
 trench location  
 not excavated





# LAND AT NANCROSSA FARM, RAME CROSS PENRYN, CORNWALL

## ARCHAEOLOGICAL INVESTIGATION

### 1 INTRODUCTION

#### 1.1 PLANNING BACKGROUND AND OBJECTIVES

This report presents the results of an archaeological site investigation on land at Nancrossa Farm, Rame Cross, Penryn, Cornwall (ILLUS 1) centred on National Grid Reference (NGR) SW 728 335.

Second Solar Project Ltd (the client) was granted planning permission on appeal (Ref: PA14/04493) for the installation of a solar farm and associated equipment (Ref: APP/D0840/W/15/3002512) by Cornwall Council (CC). The appeal decision stated:

'No development shall be commenced until details of the following have been submitted to and approved in writing by the Local Planning Authority:... v) a programme of archaeological work including a Written Scheme of Investigation; vi) details of interpretation boards to explain the significance of the two Scheduled Ancient Monuments (bowl barrows) to the south of the site, including the siting of the panels and a timetable for erecting the boards. The development shall be undertaken in accordance with the approved details.'

A written scheme of investigation (WSI) to undertake a programme of archaeological work was prepared by Cotswold Archaeology in November 2015 (CA Project: 880056) (Appendix 4). Following agreement of the WSI with the archaeological advisor to Cornwall Council, the client commissioned Headland Archaeology to undertake the work in accordance with the agreed WSI.

A programme of trenching, targeted on geophysical anomalies and previously identified cropmarks, was therefore agreed with the archaeological advisor. Fieldwork was undertaken between the 10th and 13th November 2015.

#### 1.2 SITE LOCATION, DESCRIPTION AND SETTING

The site is c. 8ha in size and is situated approximately 5km to the west of Penryn on farmland south of the A394 near Rame Cross. It

encompasses four fields located to the south of Nancrossa farmhouse. Together the fields form part of a south and southwest facing slope, bounded to the south, west and north by open fields and to the east by Lestraynes Lane and open fields beyond. An electricity substation is located in the field immediately to the west of the site.

Topographically, the site comprises undulating fields and lies between c. 205 and 185m above Ordnance Datum (aOD)

The underlying solid geology comprises igneous granite bedrock of the Carnmenellis Intrusion laid down during the Permian and Carboniferous periods between 251 and 359 million years ago (BGS 2015).

#### 1.3 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

The site was subject to a Heritage Assessment (AC 2014) and Geophysical Survey (Substrata 2014).

No designated Heritage assets were identified within the site but 68 were identified within a 2km study area. These comprised The Cornwall and West Devon Mining Landscape World Heritage Site (The Wendron Mining District), Pokellis and Medlyn Area of Great Historic Value, six Scheduled Monuments including two Bronze Age barrows and six medieval wayside crosses, two Grade II\* Listed Buildings and 58 Grade II Listed Buildings. All of the hedgerows within and forming boundaries to the site were identified as considered to be historic hedgerows.

Two undated sub-circular crop marks identified on aerial photographs and interpreted as possible Bronze Age burial mounds or alternatively post-medieval agricultural features (HER 55847 and HER 55843) were located within the development area. Within the wider study area prehistoric flint scatters, a Bronze Age barrow cemetery, numerous potential Iron Age or Romano-British rounds, along with medieval and post-medieval settlement sites are known. In addition there are a number of post-medieval quarries and historic structures present within the broader study area encompassed by the Heritage assessment.

Historic maps of the 19th and early 20th centuries showed a relatively static rural landscape with the general layout of field boundaries remaining largely unaltered.

Currently, the site forms arable farmland which is classified in the Cornwall Historic Landscape Characterisation as land enclosed during the post-medieval period (Anciently Enclosed Land).

During Geophysical survey, eighteen magnetic anomaly groups were identified as possibly pertaining to archaeological deposits or structures. Of these, two anomalies may have represented in-situ heated deposits of potential archaeological significance. The geophysical survey did not confirm or refute the locations of the potential sub-circular cropmarks identified from aerial photographs.

## 2 AIMS AND OBJECTIVES

Headland Archaeology were commissioned to undertake the fieldwork and operated within a written scheme of investigation prepared by Cotswold Archaeology (2015), subject to amendments made in agreement with Sean Taylor, Development Officer (Historic Environment) Cornwall Council, relative to Headland Archaeology's fieldwork and recording practice.

Specifically the investigation aimed to:

- target the results of the geophysical survey and establish and identify whether any of the anomalies and cropmarks that have been recorded can be identified, characterised, their nature established, dated and recorded during the course of the investigation.
- establish and identify whether the Bronze Age or Post Medieval mounds (HER 55847 and HER 55843) identified in the Heritage Assessment and a possible anomaly in the geophysical survey can be identified, characterised, dated and recorded during the course of the investigation.
- recover artefactual and ecofactual remains to provide dating of the archaeological features recorded during the fieldwork to provide a better understanding of their chronology.
- record any evidence of past settlement or other land use with a specific aim of defining the nature of the archaeological features being targeted. Can they be shown to be features that relate to agricultural, domestic and / or industrial activity or funerary activity?
- define the nature of the archaeological features being targeted. Sample and analyse environmental remains to create a better understanding of past land use and economy;
- identify if any dating and ecofactual material recovered from the excavation provide for a better understanding of the chronology of the wider site and its environs;
- produce an integrated archive for the project work (Appendix 2) and a report setting out the results of the whole project and the archaeological conclusions that can be drawn from the recorded data.

## 3 METHOD

The fieldwork was conducted in accordance with the following documents:

- *Code of Conduct* (Chartered Institute for Archaeologists, 2014)

- *Standards and Guidance for Archaeological Field Evaluations* (Chartered Institute for Archaeologists, 2014)

The investigation comprised the excavation of 6 trenches totaling approximately 615m<sup>2</sup>.

Trench 4 was held in abeyance due to its location underneath power lines and across a public right of way. Given the results from the trenches excavated, it was agreed with the archaeological advisor that the excavation of Trench 4 was not required. Trench 3 was re-positioned approximately 1.5m west of its original location, as the original location would have hit and undermined the existing stone-wall field boundary.

All trenches were excavated under archaeological supervision, with topsoil being removed by a mechanical excavator, fitted with a bladed bucket and excavation terminating at the uppermost significant archaeological horizon or when geological deposits were encountered.

The stratigraphic sequence was recorded in full in each of the trenches, even where no archaeological deposits were identified.

Exposed archaeological remains were recorded on Headland Archaeology Evaluation Trench sheets and each feature identified was excavated by hand to determine form, function and retrieve dateable material.

Where appropriate, section drawings were recorded on permatrace at a scale of 1:10.

All recording followed standard archaeological guidelines as set out by the Chartered Institute for Archaeologists (CIfA). The recorded contexts were assigned unique numbers and recording was undertaken on Headland Archaeology pro forma trench and context record sheets. Digital photographic images and black and white photographs were taken with a graduated metric scale clearly visible. Digital surveying was undertaken using a Trimble dGPS system.

## 4 RESULTS

The location of features discussed below can be found on **ILLUS 2**. A full trench and context register is included in Appendix 1.

### 4.1 GENERAL SITE STRATIGRAPHY

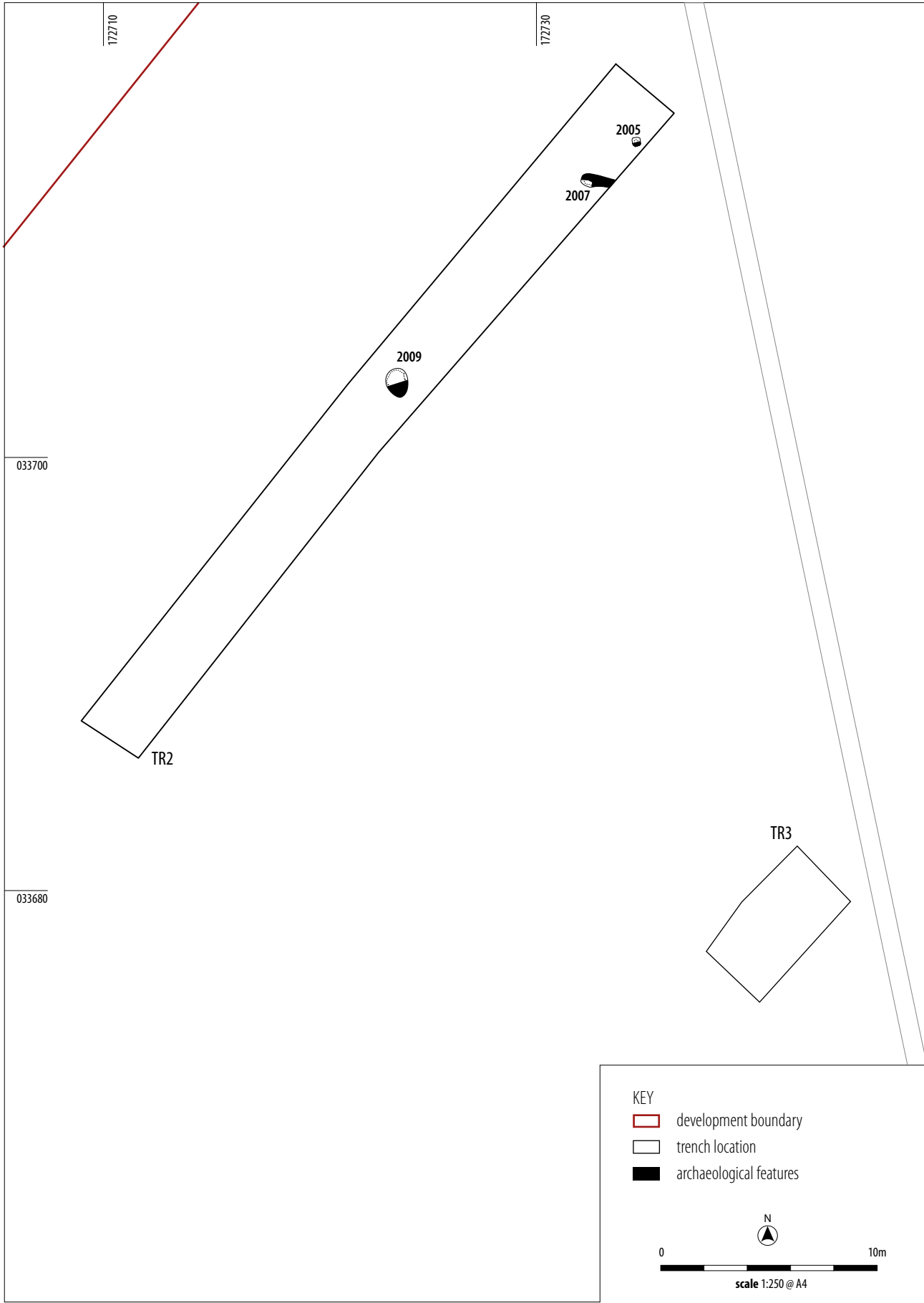
Deposits were generally consistent across the site (**ILLUS 3**). A dark grey clayey silt topsoil deposit e.g. (1001, 2001) averaging 0.30m depth, sealed a mid yellowish-red brown silty clay geological deposit (e.g. 5001), likely deriving from the weathering of the underlying granite bedrock

Within Trenches 2 and 3, the remnant of a subsoil deposit existed (2002, 3002), sealed by the topsoil, in an area where the topography dropped towards the extant field boundary. The subsoil is likely to survive in this area as a result of ploughing, effectively as lynchet material.

### 4.2 UNDATED, PROBABLE POST-MEDIEVAL FEATURES

The only features identified on site were located within Trench 2 (**ILLUS 2**)

Located towards the eastern end of the trench a rectangular cut [2004] (**ILLUS 4**) measuring 0.42 x 0.38m and 0.27m deep was interpreted as



ILLUS 2

Trench plan, showing trench 2 features



**ILLUS 3**

S-SE facing representative section, Trench 5

**ILLUS 4**

N facing section, post-hole [2004]

a post-hole. The post-hole contained a light greyish brown sandy silt packing deposit (2005) and a mottled clayey silt post-pipe (2006) representing the in situ decay of the base of the post.

Approximately 2.00m south-west of [2004] a rectangular cut [2007] was identified as a modern animal burial (**ILLUS 5**) containing the fragmentary remains of a probable ovicaprid within a dark blackish brown clayey silt (2008).

In the central area of the trench, a sub-circular feature [2009] measuring 1.30 x 1.10m and 0.28m deep was identified as a tree throw (**ILLUS 6**). The base of the feature showed evidence of rooting. A mottled dark grey and mid yellowish brown clayey silt (2010) formed the fill of the tree throw and contained frequent charcoal fragments and large angular granite stones. The fill was interpreted as relating to the burning and backfilling of the tree stump. A bulk environmental sample was taken from the deposit. The sample was subjected to flotation (Appendix 3) and found to be rich in Oak wood charcoal fragments and heat affected clay.

#### 4.3 TRENCHES WITH NO IDENTIFIED ARCHAEOLOGICAL REMAINS

No features or significant deposits were identified in Trenches 1 (**ILLUS 7**), 3, 5, 6 and 7.



**ILLUS 5**

General view, animal burial [2007]

**ILLUS 6**

General view of tree throw [2009]

## 5 DISCUSSION

Geological deposits on the site displayed evidence of considerable bio-turbation, predominantly in the form of rooting, though evidence of burrowing was also noted. Some plough scarring of the geological strata was also observed.

The post-hole in Trench 2 appeared to represent a relatively substantial post and its location in proximity to the existing entrance to the field may suggest that the post related to a former gate and boundary to the field. The rectangular form of the post-hole is also generally indicative of a later, probably post-medieval date.

The very regular cut for the animal burial and the fact that it was observed to cut through the subsoil deposit was strongly suggestive of a later date for this feature.

A tree throw identified and recorded within Trench 2 was evidenced to have been burnt out and the void backfilled. Given its location within fields of ancient enclosed land it has the potential to be of a relatively early date. Results of the environmental processing of samples of the backfill appear to confirm the burning of the tree in situ which may possibly have been related to the clearing of the land relative to the instigation of the present field system. No material of archaeological environmental significance was identified.



ILLUS 7

Post-excavation view, Trench 1, looking west showing machined sondage in foreground

The lack of any features, other than probable post-medieval features within Trench 2, would seem to suggest that the land primarily functioned as agricultural land, potentially predominantly as pasture with little suggestion of earlier manuring practices being evidenced within the topsoil.

A general paucity and absence of cultural material of any period was noted across all of the excavated trenches, with exceptionally rare sherds (5 or 6) of modern white glaze pottery observed.

Geophysical anomalies identified and targeted by the site investigation were found not to represent archaeological remains cut into the natural geology, with the probable exception of the tree throw in Trench 2.

A linear anomaly targeted by Trench 5 elicited a strong geophysical response. No evidence for the cause of the response was identified within the trench. It is likely that the response relates to a geological dyke of a more magnetic material. More generally, anomalies identified during the geophysical survey are also likely to correspond to geological rather than archaeological features.

The absence of features related to the two potential sub-circular cropmarks identified on aerial photographs dating to the 1940s suggests that these may have in fact been relatively modern agricultural features, subsequently removed by ploughing and later use of the land.

## 6 CONCLUSION

Archaeological investigation at Nancrossa Farm identified exceptionally limited post-medieval/modern features in the form of a post-hole and animal burial.

Geophysical anomalies were identified as probably being of geological rather than archaeological origin, with the exception of a burnt out tree throw identified in Trench 2. Similarly, potential crop marks indicative of the potential for Bronze Age or post-medieval mounds were identified as likely being of later agricultural origin and have subsequently been removed through later agricultural use of the land.

Environmental sampling undertaken, whilst limited, suggested the burning of a tree stump in situ, possibly related to clearing of the land relative to establishing a field system.

The results of the investigation suggested past use of the land was primarily agricultural, with no density of archaeological remains or indications of past habitation or settlement evidenced.

## 7 BIBLIOGRAPHY

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Cotswold Archaeology 2015, *Nancrossa Farm, Rame Cross, Penryn, Cornwall Written Scheme of Investigation for an Archaeological Investigation*.

Substrata 2014. *Land at Nancrossa Farm Penryn, Cornwall. An Archaeological Gradiometer Survey* Report: 140407.



APPENDIX 1 TRENCH AND CONTEXT REGISTER

TR 1	Orientation	L (m)	W (m)	Avg D (m)
	E-W	40	6	0.28
Context	Description	Thickness (m)		
1001	Topsoil. Dark blackish brown, clayey silt containing rare small granite stones and fragments	0.30		
1002	Natural geological deposit. Mid yellowish brown clay and silty sand containing frequent granite chips and fragments and occasional large granite stones.	Limit of excavation		
Description	Northeastern field, on level ground			
TR 2	Orientation	L (m)	W (m)	Avg D (m)
	WSW-ENE	30	1.60	0.42
Context	Description	Thickness (m)		
2001	Topsoil. Dark grey, clayey silt, containing occasional granite fragments and rare granite stones.	0.30		
2002	Subsoil. Mid yellowish brown, silty clay containing rare granite fragments. >6m E-W, >3m N-S	0.15		
2003	Natural geological deposit. Mid Yellow-reddish brown silty clay containing frequent granite fragments and occasional large granite stones	Limit of excavation		
2004	Rectangular cut, steep,	0.27		
2005	Light greyish brown sandy clay, containing occasional small stones.0.42 x 0.38m, packing deposit within [2004]	0.27		
2006	Mottled Dark blackish brown and light yellowish brown clayey silt with patches of sandy clay, containing occasional small stones, 0.24 x 0.22m. Post-pipe within [2004]	0.27		
2007	Rectangular cut, partially exposed, >1.15m x 0.65m wide, step sides, flat base. Cut for animal burial	0.10		
2008	Dark blackish brown clayey silt containing occasional small stones and	0.10		
2009	Sub-circular feature – steep, irregular sides, uneven base, 1.30m x 1.10m - Tree throw	0.28		
2010	Mottled dark grey and yellow-brown clayey silt containing frequent large granite stones and charcoal fragments, backfill in [2010]	0.28		
Description	Northwest field, eastern side. Subsoil remnant towards eastern extent, topography drops to field boundary.			

TR 3	Orientation	Length (m)	Width (m)	Av. Depth (m)
	WSW-ENE	5	3	0.30
Context	Description	Thickness (m)		
3001	Topsoil. Dark grey clayey silt containing frequent granite fragments and angular stones	0.30		
3002	Subsoil. Mid yellowish brown, silty clay containing rare granite fragments	0.12		
3003	Natural geological deposit. Mid Yellow-reddish brown silty clay containing frequent granite fragments and occasional large granite stones	Limit of excavation		
Description	Northwest field, eastern side, subsoil remnant to eastern extent, topography drops to east towards field boundary, no archaeological remains			
TR 5	Orientation	Length (m)	Width (m)	Av. Depth (m)
	WSW-ENE	40	3	0.32
Context No.	Description	Thickness (m)		
5001	Topsoil. Dark grey clayey silt containing frequent granite fragments and angular stones	0.29–0.36		
5002	Natural geological deposit. Mid Yellow-reddish brown silty clay containing frequent granite fragments and occasional large granite stones	Limit of excavation		
Description	Northwest field, western side, land gently slopes to east, no archaeological remains			
TR 6	Orientation	Length (m)	Width (m)	Av. Depth (m)
	WSW-ENE	20	3	0.28
Context .	Description	Thickness (m)		
6001	Topsoil. Dark grey clayey silt containing frequent granite fragments and angular stones	0.30max		
6002	Natural geological deposit. Mid Yellow-reddish brown silty clay containing frequent granite fragments and occasional large granite stones	Limit of excavation		
Description	Northwest field, western side, gently sloping land to east, no archaeological remains			

## APPENDIX 2 ARCHIVE CONTENTS SUMMARY

- Colour copy of site report of archaeological investigation evaluation
- 1 Copy of WSI
- 3 Site diary sheets
- 2 Photographic registers
- 1 Drawing register
- 1 Sample register
- 13 Trench Record Sheets
- 21 Context sheets
- 1 Retent sorting sheet
- 1 Colour aerial photograph of the site
- 1 A3 permatrace sheet with section drawings
- 1 Sets of black and white negatives (Film no. 965, 988)
- Flot – 1 bag (2010)
- Charcoal – 1 bag (2010)

## APPENDIX 3 ENVIRONMENTAL REPORT

CATHERINE LONGFORD

## Method

One sample <001> was received from context (2010)

The sample was subjected to flotation and wet sieving in a Siraf-style flotation machine. The floating debris (the flot) was collected in a 250 µm mesh and, once dry, scanned using a binocular microscope. Wood charcoal was subsampled for identification and identification made with reference to Schweingruber (1990). Any material remaining in the flotation tank (retent) was wet-sieved through a 1mm mesh and air-dried. This was then sorted and any material of archaeological significance removed.

## Results

The results are displayed below in TABLE 1 and TABLE 2

The flot of sample <001> was very rich in fragments of oak (*Quercus*) wood charcoal (TABLE 1). The charred oak fragments were large in size and examination of the microscopic wood anatomy revealed that

the ring curvature was very weak and that tyloses were present in the majority of vessels. On average, the oak fragments were composed of more than 15 growth rings. No fragments of roundwood, which are more suited for radiocarbon dating than trunk wood, were observed in the flot sample. Occasional modern fibrous roots were also present in the flot.

Fragments of wood charcoal and magnetised soil particles were recovered from the retent of sample <001> (TABLE 2). Amorphous lumps of heat affected soil were also present in the retent.

## Discussion

Sample <001> appears to represent the remains of a burnt oak tree throw. The weak growth ring curvature and abundance of tyloses in vessels both indicate that the wood was from the trunk of an oak tree (Schweingruber 1990). The presence of amorphous lumps of heat affected soil and magnetised soil particles suggest that the earth was burnt in this location. Both the wood anatomical features and the evidence from the retent suggest that context (2010) represents an in situ burnt tree throw which supports the on-site interpretation.

No environmental finds of archaeological significance were present in the samples.

Context no	Sample no	Feature	Total flot Vol (ml)	Other plant remains	Charcoal Qty	Charcoal Max size	Material available for AMS	Comments
2010	001	Tree bole	700	Modern roots +++	++++	2.5	Yes	Charcoal > 200 fragments. Weak ring curvature. Tyloses present in vessels

**Key:** += rare (0-5), ++ = occasional (6-15), +++ = common (15-50) and ++++ = abundant (>50)

**NB** charcoal over 1cm is suitable for identification and AMS dating

TABLE 1

Flotation sample results

Context no	Sample no	Feature	Sample Vol (ml)	Magnetic residue	Charcoal	Charcoal size cm <sup>3</sup>	Material available for AMS
2010	001	Tree bole	30	++	+++	2.5	1

**Key:** += rare (0-5), ++ = occasional (6-15), +++ = common (15-50) and ++++ = abundant (>50)

**NB** charcoal over 1cm is suitable for identification and AMS dating

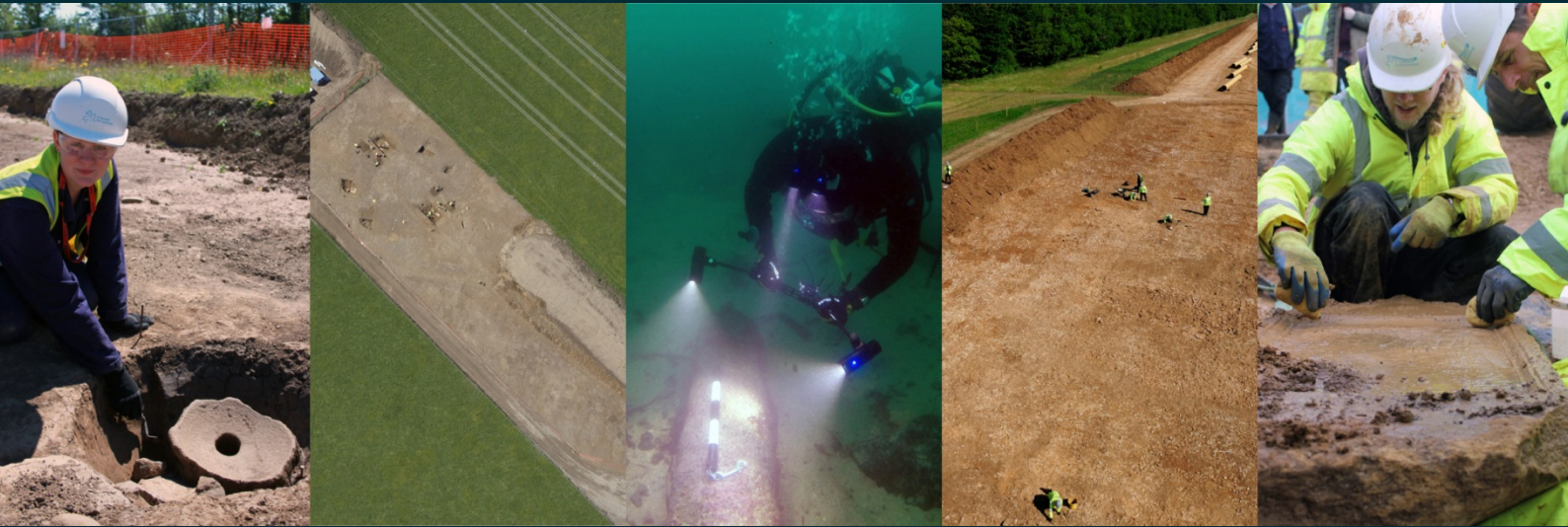
TABLE 2

Retent sample results

APPENDIX 4 WRITTEN SCHEME OF INVESTIGATION

Nancrossa Farm  
Rame Cross  
Penryn  
Cornwall  
TR10 9EA.

*Written Scheme of Investigation for an  
Archaeological Investigation*



for  
Grüne Energien Solar GmbH

CA Project: 880056

November 2015



Nancrossa Farm  
 Rame Cross  
 Penryn  
 Cornwall  
 TR10 9EA.

## Written Scheme of Investigation for an Archaeological Investigation

CA Project: 880056



DOCUMENT CONTROL GRID						
REVISION	DATE	AUTHOR	CHECKED BY	STATUS	REASONS FOR REVISION	APPROVED BY
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B	Nov 15	DDR	REG	FOR ISSUE		REG

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Fig. 1 Site location plan

Fig. 2 Development plan

Fig. 3 Trench location plan

## 1. INTRODUCTION

1.1 This document sets out details of a *Written Scheme of Investigation* (WSI) by Cotswold Archaeology (CA) for an archaeological investigation at Nancrossa Farm, Rame Cross, Penryn, Cornwall, centred on National Grid Reference (NGR) SW 172874 33547 (Fig 1), at the request of Grüne Energien Solar GmbH.

1.2 Planning permission (Ref: PA14/04493) for the installation of a solar farm (Fig. 2), associated equipment and works has been granted on appeal (Ref: APP/D0840/W/15/3002512) by Cornwall Council (CC). The appeal decision states in its schedule of conditions (5) and with regard to archaeology that:

*No development shall be commenced until details of the following have been submitted to and approved in writing by the Local Planning Authority: .... v) a programme of archaeological work including a Written Scheme of Investigation; vi) details of interpretation boards to explain the significance of the two Scheduled Ancient Monuments (bowl barrows) to the south of the site, including the siting of the panels and a timetable for erecting the boards. The development shall be undertaken in accordance with the approved details.*

1.3 A Historic Environment Assessment (AC 2014) and Geophysical Survey (Substrata 2014) were undertaken in order to inform the planning application.

1.4 Following consultation with Sean Taylor, Development Officer (Historic Environment) – Archaeologist (DOHEA) at Cornwall Council the archaeological planning advisor to CC it has been agreed that an archaeological investigation comprising the excavation of a number of trenches to target the results of the geophysical survey and identified cropmarks should be undertaken.

1.5 This written scheme of investigation (WSI) has been prepared in regard of the schedule of condition (5) - v) as set out above. This WSI sets out a programme of archaeological investigation (watching brief) and details of post excavation reporting and assessment and analysis in order to address the schedule of condition. This WSI will be submitted to and approved in writing by CC the Local Planning Authority prior to the commencement of the development.



- 1.6 This WSI has been guided in its composition by *Standard and guidance: Archaeological watching brief* (ClfA 2014), the *Management of Archaeological Projects 2* (English Heritage 1991), the *Management of Research Projects in the Historic Environment (MORPHE): Project Manager's Guide* (EH 2006) and any other relevant standards or guidance contained within Appendix B.

### **The site**

- 1.7 The site is c.8ha in size and is situated approximately 5km to the west of Penryn on farmland south of the A384 near Rame Cross. It encompasses four discrete parcels of land. Together they form part of a south and southwest facing slope, bounded to the south, west and north by open fields and to the east by Lestraynes Lane and open fields beyond. An electrical substation is located in the field immediately to the west of the site.
- 1.8 Topographically, the site lies between c.205m and 185m above Ordnance Datum (aOD).
- 1.9 The underlying solid geology comprises igneous granite bedrock of the Carnmenellis Intrusion laid down during the Permian and Carboniferous periods between 251 and 359 million years ago (BGS online).

## **2. ARCHAEOLOGICAL BACKGROUND**

- 2.1 A Historic Environment Assessment (HEA) (AC 2014) setting out the archaeological and historical background to the site was prepared in order to inform the application. A brief summary of these results is presented below along with a summary of the Geophysical Survey (Substrata 2014).
- 2.2 The Historic Environment Assessment included all designated and undesignated heritage assets within 2km of the site location. A broader study was then undertaken to assess the potential indirect settings impacts of the proposed development on all designated assets of medium and high significance within 3km of the proposed solar farm.
- 2.3 No designated assets were identified within the site but 68 were identified within the 2km study area. These comprise The Cornwall and West Devon Mining Landscape

World Heritage Site (The Wendron Mining District), Pokellis and Medlyn Area of Great Historic Value, six Scheduled Monuments including two Bronze Age barrows and six medieval wayside crosses, two Grade II\* Listed Buildings and 58 Grade II Listed Buildings. All of the hedgerows within and forming boundaries to the site are considered to be historic hedgerows. There are two non-designated heritage assets within the site. Both comprise undated sub-circular crop marks identified on aerial photographs and interpreted as possible Bronze Age burial mounds or alternatively post-medieval agricultural features (HER 55847 and HER 55843). A further 153 non-designated assets were recorded in the broader study area. These comprise a range of asset types including prehistoric flint scatters, a Bronze Age barrow cemetery, numerous potential Iron Age or Romano-British rounds, along with medieval and post-medieval settlement sites. In addition there are a number of post-medieval quarries and historic structures present within the broader study area.

- 2.3 Historic maps of the 19th and early 20th centuries show a relatively static rural landscape with the general layout of field boundaries remaining largely unaltered. Currently, the site forms arable farmland which is classified in the Cornwall Historic Landscape Characterisation as land enclosed during the post-medieval period (Anciently Enclosed Land).

### ***Geophysical Survey Results***

- 2.4 Eighteen magnetic anomaly groups were identified as pertaining to archaeological deposits or structures (Appendix C). Of these, two anomalies may represent in-situ heated deposits of potential archaeological significance. One of these anomalies lies close to the location of a possible Bronze Age or Post Medieval mound (HER55847). Nine and possibly ten anomaly groups may correspond to filled pits. One of these groups probably represents a deposit of rubble. The remaining anomalies are linear and curvilinear anomalies that may relate to former fields or other enclosure boundaries not recorded on historical Ordnance Survey maps.

## **3. AIMS AND OBJECTIVES**

- 3.1.1 The objectives of the archaeological works are:

- To target the results of the geophysical survey and establish and identify whether any of the anomalies and cropmarks that have been recorded can be

identified, characterised, their nature established, dated and recorded during the course of the investigation.

- To establish and identify whether the Bronze Age or Post Medieval mounds (HER 55847 and HER 55843) identified in the HEA and as a possible anomaly in the geophysical survey can be identified, characterised, dated and recorded during the course of the investigation.
- recover artefactual and ecofactual remains to provide dating of the archaeological features recorded in the evaluation to provide a better understanding of their chronology.
- record any evidence of past settlement or other land use with a specific aim of defining the nature of the archaeological features being targeted. Can they be shown to be features that relate to agricultural, domestic and / or industrial activity or funerary activity?
- sample and analyse environmental remains to create a better understanding of past land use and economy;
- Can any dating and ecofactual material recovered from the excavation provide for a better understanding of the chronology of the wider site and its environs;
- at the conclusion of the project, to produce an integrated archive for the project work and a report setting out the results of the whole project and the archaeological conclusions that can be drawn from the recorded data.

## **4. METHODOLOGY**

4.1 The archaeological investigation will comprise of the excavation of (Fig.3):

- Trench 1: 40m x 6m trench to target HER 55847 and anomalies (1) identified in the geophysical survey as possible pits.
- Trench 2: 40m x 3m trench to investigate a line of possible pits identified as anomalies (3 to 5) and a linear (6)
- Trench 3: 5m x 3m to target possible pit anomaly (7)
- Trench 4: 10m x 3m trench to target pit anomaly (12).
- Trench 5: 40m x 3m trench to target pit anomaly 14 and linear anomaly 16
- Trench 6: 20m x 3m trench to target pit anomaly 15 and linear anomaly 17

- Trench 7: 20m x 3m trench to target HER 55843 that has been identified as a cropmark at the southern end of the site.
- 4.2 The position and size of the trenches may be slightly adjusted to account for any services and other constraints not previously known or identified. Trenches will not be excavated under any overhead power cables within a 6m to 10m buffer zone of the outermost cable dependent on the KV of the cable. The final 'as dug' area will be recorded with GPS.
- 4.3 Initially works will comprise the mechanical removal of non-archaeologically significant soils within the footprint of each trench, under constant archaeological supervision, using a toothless ditching bucket.
- 4.4 The generated spoil will be monitored in order to recover artefacts. And a metal detector will be employed to enhance artefact recovery
- 4.5 Hand-cleaning of the stripped surfaces, to better define any identified archaeological deposits/features, will be undertaken where necessary. All machining will be conducted under archaeological supervision and will cease when the first archaeological horizon or natural substrate is revealed (whichever is encountered first). All archaeological features will be recorded in plan using a Leica 1200 series SmartRover GPS.
- 4.6 Examination of features will concentrate on recovering the plan and any structural sequences. Particular emphasis will be placed upon retrieving a stratigraphic sequence and upon obtaining details of the phasing of the site. All funerary/ritual activity and domestic/industrial deposits will be 100% excavated. All discrete features (post holes, pits) will be sampled by hand excavation (average sample unlikely to exceed 50%) unless their common/repetitious nature suggests they are unlikely to yield significant new information. All linear features (ditches, pathways etc) will be sampled to a maximum of 20%. Bulk horizontal deposits will as a minimum be 10% by area hand excavated, after which a decision may be taken (in conjunction with CC) to remove the remainder with machinery. Priority will be attached to features which yield sealed assemblages which can be related to the chronological sequence of the site. The sampling strategy maybe reappraised, after the areas have been stripped and planned and in consultation with the DOHEA

- 4.7 All archaeological features revealed will be planned and recorded in accordance with Technical Manual 1 Fieldwork Recording Manual (CA 2013). Each context will be recorded on a pro-forma context sheet by written and measured description; principal deposits will be recorded by drawn plans (scale 1:20 or 1:50, or electronically using Leica 1200 series GPS or Total Station (TST) as appropriate) and drawn sections (scale 1:10 or 1:20 as appropriate). Where detailed feature planning is undertaken using GPS/TST this will be carried out in accordance with Technical Manual 4 Survey Manual (CA 2012).
- 4.8 A full photographic record will be kept. The primary photographic record will be captured on Canon digital SLR equipment that at least matches the quality of a 35mm SLR film camera. Photos will be captured in Tiff file format and have a minimum 20 Megapixel image capture. The photographic record will conform with '*Digital Image Capture and File Storage: Guidelines for Best Practice*' (Historic England, 29 July 2015). The photographic record will include detailed images of archaeological deposits and features and other images to illustrate their location and context, and the location and context of the separate working areas. The record will include images of the Site overall and working shots to illustrate the general progress of the archaeological investigation.
- 4.9 In the event of archaeological deposits being found for which the resources allocated are not sufficient to support treatment to a satisfactory and proper standard or which are of sufficient significance to merit an alternative approach such as contingency excavation or physical preservation, the client/contractor and Cornwall Council will be contacted immediately. Destructive work in that area will cease until agreement has been reached on an appropriate archaeological response.
- 4.10 No contingency excavation will be undertaken beyond or outside of the edge of excavation of each trench footprint. Should significant archaeology be identified as continuing outside of the trench footprint these areas will be clearly identified and the client/contractor and DOHEA informed. In consultation with the client/contractor and DOHEA an area (or areas) will be defined upon which non-intrusive measures e.g. concrete shoes or gabions will need to be employed as a means of securing the solar array frames. This will protect the archaeological resource from any below ground level groundworks that would otherwise have been undertaken e.g. concrete pile holes for securing frames into the ground.

- 4.11 Where human remains are encountered, these will not normally be excavated, but will be planned and recorded in detail. Where excavation of human remains is required or unavoidable, this will be conducted following the provisions of the Coroners Unit in the Ministry of Justice. All excavation and post-excavation will be in accordance with the standards set out in ClfA Technical Paper 13 Excavation and post-excavation treatment of cremated and inhumed remains. The final placing of human remains following analysis will be subject to the requirements of the Ministry of Justice Licence.
- 4.12 In the event of discovery of artefacts covered or potentially covered by The Treasure Act 1996 and to the revision of the Treasure Act – Treasure (Designation) Order 2002, their excavation and removal will be undertaken following notification of the, Coroner, Client and Wiltshire County Archaeological Service.
- 4.13 Any variation to this methodology will be agreed in advance with the Client and DOHEA.

## **5 FINDS AND ENVIRONMENTAL**

### ***Finds***

- 5.1 All finds and samples will be bagged separately and related to the context record. All artefacts will be recovered and retained for processing and analysis in accordance with CA Technical Manual 3 Treatment of Finds Immediately after Excavation.
- 5.2 All identified finds and artefacts will be retained according to the stated selection, retention and disposal/discard policies appropriate to the material types and date. Finds from features or deposits of obviously modern date will not be retained. However, no finds will, be discarded without the prior approval of CAOCC. In such circumstances, sufficient artefacts will be retained in order to elucidate the date and/or function of the feature or deposit.
- 5.3 Any on-site conservation will be undertaken by Cotswold Archaeology under the direction of the CA Senior Finds Officer. Where deemed appropriate advice will be sort from the Historic England Science Advisor.

- 5.4 All retained artefacts will, as a minimum, be washed, weighed, counted and identified. Any artefacts requiring conservation or specific storage conditions will be dealt with immediately in line with First Aid for Finds (Watkinson & Neal 1998). Ironwork from stratified contexts will be X-rayed and stored in a stable environment along with other fragile and delicate material. The X-raying of objects and other conservation needs will be undertaken by the staff of the Wiltshire Museums and Library Service Conservation Consortium, Salisbury or other appropriate approved conservation centre.
- 5.5 Ceramic reference collections (for pottery, clay tobacco pipes, building material fabric and brick form) will be referred to for descriptive and analytical purposes

### **Environmental sampling**

- 5.6 Due care will be taken to identify deposits which may have environmental potential, and where appropriate, a programme of environmental sampling will be initiated. Samples will be taken, processed and assessed for potential in accordance with CA Technical Manual 2 The Taking and Processing of Environmental and Other Samples from Archaeological Sites and Environmental Archaeology; A Guide to the Theory and Practise of Methods, from Sampling and Recovery to Post-Excavation (EH 2nd Edition, 2011).
- 5.7 Bulk environmental soil samples of 20 litres for wet samples and 40 to 60 litres for dry samples large deposits/fills, (or 100% of the fills of small features/deposits containing less than 10 litres) will be taken from well-sealed and dated or datable archaeological features for plant macro-fossils (charred and/or waterlogged and wood charcoal), small animal bones and small artefacts.
- 5.8 Where appropriate monolith and/or contiguous column samples will be taken to consider for sub-sampling for pollen and/or diatom assessment.
- 5.9 Bulk environmental soil samples will be processed by flotation and scanned to assess the environmental potential of deposits, and to provide recommendations where appropriate for further analysis. The residues and sieved fractions will be recorded and retained with the project archive.

- 5.10 The monoliths will be subject to detailed description by the geoarchaeologist and sub-samples taken as appropriate for microfossils and radiocarbon dating, should suitable material exist.
- 5.11 Samples may include those for pollen, diatoms, foraminifera, ostracods as deemed appropriate by the geoarchaeologist. These will be assessed to provide recommendations for further analysis if deemed appropriate. A statement on the environmental potential of excavated deposits will be appended to the post excavation report.
- 5.12 Assessment analysis of charcoal from industrial contexts may provide useful data on both availability of species and their management and exploitation for fuel. This will be undertaken in tandem with assessment of slag and any other industrial by products that may be found.

#### ***Scientific Dating***

- 5.13 Due care will be taken to identify deposits and structures which may have potential for scientific dating. Suitable samples for radio carbon dating will be subsampled from the processed and identified plant remains in the bulk samples and monolith sample (if taken) as deemed appropriate. Consideration will also be given to the use of Dendrochronology, Archaeomagnetic dating Thermoluminescence and Optical Luminescence Dating (TL and OSL) by specialists as listed in Appendix A will be consulted in this regard and where deemed appropriate to provide advice and where necessary supervise sampling, take readings and undertake post excavation reporting

### **6. STAFF AND TIMETABLE**

- 6.1 This project will be under the management of Damian De Rosa, MCIfA, Project Manager, CA.
- 6.2 The staffing structure will be organised thus: the Project Manager will direct the overall conduct of the watching brief as required during the period of fieldwork. Day to day responsibility however will rest with the Project Leader who will be on-site throughout the project.



- 6.3 The field team will consist of a Project Leader, supplemented by up to 2 additional archaeologists.
- 6.4 Dependent on the nature of the results it is anticipated that the fieldwork will take up to 2 weeks to complete. The fieldwork will not be deemed as completed until it has been signed off by the DOHEA acting on behalf of CC.
- 6.5 Specialists who will be invited to advise and report on specific aspects of the project as necessary are:

Ceramics	Ed McSloy (CA)
Metalwork	Ed McSloy (CA)
Flint	Ed McSloy (CA)
Animal Bone	Paul Clark (CA)
Human Bone	Sharon Clough (freelance)
Environmental Remains	Sarah Cobain (CA)
Conservation	Wiltshire Conservation Service
Geoarchaeology	Dr Keith Wilkinson (ARCA)

- 6.6 Depending upon the nature of the deposits and artefacts encountered it may be necessary to consult other specialists not listed here. A full list of specialists currently used by Cotswold Archaeology is contained within Appendix A.

## 7. POST-EXCAVATION, ARCHIVING AND REPORTING

### ***Reporting***

- 7.1 Following completion of fieldwork, all artefacts and environmental samples will be processed, assessed, conserved and packaged in accordance with CA Technical Manuals and Royal Cornwall Museum guidelines.
- 7.2 An illustrated report will be compiled on the results within 3 months of completion of all fieldwork. This will be prepared in accordance with the specification given in Appendices 4 and 5 of Management of Archaeological Projects 2 (English Heritage 1991). Any variations to these post-excavation requirements will require the written approval of CC archaeological planning advisor.

7.3 The report will contain, as a minimum the following:

- a site location plan at an appropriate scale
- details of the archaeological organisation and personnel involved
- the date of works
- a site-centred grid reference
- a concise non-technical summary of the results
- specialist assessment reports
- a summary of the archive contents
- a copy of this WSI as an appendix
- survey and technical illustrations as appropriate.

#### ***Publication***

7.4 It is anticipated that a short publication note will be produced, suitable for inclusion within an appropriate local archaeological journal, such as Cornish Archaeology. This will usually be submitted to the journal within 12 months of the completion of fieldwork. A summary of information from the project will also be entered onto the OASIS online database of archaeological projects in Britain.

7.5 Should the results of the archaeological fieldwork merit more extensive publication and/or post-excavation assessment then the scope of these works will be discussed with, and agreed in consultation with the Cornwall Council archaeological planning advisor.

#### ***Archive***

7.6 Should no further work be required, an ordered, indexed, and internally consistent site archive will be prepared and deposited in accordance with Archaeological Archives: A Guide to Best Practice in Creation, Compilation, Transfer and Curation (Archaeological Archives Forum 2007), and with Management of Research Projects in the Historic Environment (MoRPHE) (<http://www.english-heritage.org.uk/publications/morphe-project-managers-guide/>).

7.7 The archive will be transferred for long-term curation to the designated museum service. An archive is defined as “all records and materials recovered during an archaeological project and identified for long term preservation, including artefacts, ecofacts and other environmental remains, waste products, scientific samples and also written and visual documentation in paper, film and digital form”.

- 7.8 The Royal Cornwall Museum will be contacted to agree conditions for deposition. An accession number (if required) will be quoted in the final Written Scheme of Investigation and within the final report and entry to the Historic Environment Record. However, The Royal Cornwall Museum is currently closed and not issuing accession numbers. Until this situation changes and/or an alternative depository for the archive is identified then it will be held at the offices of CA in Kemble.
- 7.9 The archive (comprising written records, artefactual material and digital records and data - the latter comprising all born-digital data and digital copies made of the primary site records and images) will be deposited within 6 months of the completion of archaeological fieldwork.
- 7.10 Items in the material archive will be cleaned (or otherwise treated) ordered, recorded, packed and boxed in accordance with the deposition standards of the Royal Cornwall Museum.
- 7.11 Archaeological finds resulting from the investigation will be deposited with Royal Cornwall Museum, subject to the agreement of the landowner. Written agreement from the landowner to transfer title of all items in the material archive to the receiving museum will be obtained at the earliest possible opportunity. In the event that ownership of all or any of the finds is to remain with the landowner, provision and agreement must be made for the time-limited retention of the material and its full analysis and recording, by appropriate specialists.
- 7.12 The digital archive will consist of:
- (i) all born-digital data (images, survey data, digital correspondence, site data collected digitally etc.) and
  - (ii) digital copies made of all other relevant written and drawn data produced and/or collected during fieldwork - i.e. the primary record comprising context records and indices, sample sheets and indices, finds records and indices, site drawings - earthwork surveys, sections and plans, as well as relevant sketches or notes that aid the interpretation and understanding of the site and its recording, any relevant information undertaken as part of the post-excavation assessment or analysis, etc.

- 7.13 The digital archive will be deposited with a Trusted Digital Repository and thus made publicly accessible, in accordance with the National Planning Policy Framework (2011). It is understood that the only suitable repository for digital archaeological archive is the Archaeology Data Service (ADS). The digital archive will be compiled in accordance with the standards and requirements of the ADS (<http://archaeologydataservice.ac.uk/advice/guidelinesForDepositors> ). The selection of the archive will be as per <http://archaeologydataservice.ac.uk/advice/selectionGuidance> .
- 7.14 A licence to copyright for documentary material, in both physical and digital forms, will be given to the receiving repository.
- 7.15 CA will notify CC upon completion of the:
- i) deposition of the digital archive with the ADS, and
  - ii) deposition of the material (finds) archive with the museum service.
- 7.16 The archaeological condition will not be regarded as discharged until all fieldwork has been completed and the final post-excavation report has been submitted to and approved by Cornwall Council.

## **8. HEALTH AND SAFETY**

- 8.1 CA will conduct all works in accordance with the Health and Safety at Work Act 1974 and all subsequent Health and Safety legislation, CA Health and Safety and Environmental policies and the CA Safety, Health and Environmental Management System (SHE), as well as any of Inazin policies or procedures. A site-specific Project Health and Safety Plan (form SHE 017) will be formulated prior to commencement of fieldwork.

## **9. INSURANCES**

- 9.1 CA holds Public Liability Insurance to a limit of £10,000,000 and Professional Indemnity Insurance to a limit of £5,000,000.

## 10. MONITORING

- 10.1 Notification of the start of site works will be made to the DOHEA so that there will be opportunities to visit the site and check on the quality and progress of the work.
- 10.2 The fieldwork will not be deemed as completed until it has been signed off by the DOHEA the archaeological planning advisor to CC.

## 11. QUALITY ASSURANCE

- 11.1 CA is a Registered Organisation (RO) with the Chartered Institute for Archaeologists (RO Ref. No. 8). As a RO, CA endorses the *Code of Conduct* (CIfA 2014) and the *Code of Approved Practice for the Regulation of Contractual Arrangements in Field Archaeology* (CIfA 2014). All CA Project Managers and Project Officers hold either full Member or Associate status within the CIfA.
- 11.2 CA operates an internal quality assurance system in the following manner. Projects are overseen by a Project Manager who is responsible for the quality of the project. The Project Manager reports to the Chief Executive who bears ultimate responsibility for the conduct of all CA operations. Matters of policy and corporate strategy are determined by the Board of Directors, and in cases of dispute recourse may be made to the Chairman of the Board.

## 12. REFERENCES

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BGS (British Geological Survey) July 2015

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## APPENDIX A: COTSWOLD ARCHAEOLOGY SPECIALISTS

### **Ceramics**

Neolithic/Bronze Age	Ed McSloy (CA) Emily Edwards (freelance) Dr Ros Cleal (freelance)
Iron Age/Roman (Samian) (Amphorae stamps)	Ed McSloy (CA) Gwladys Montell (freelance) David Williams (freelance)
Anglo-Saxon	Paul Blinkhorn (freelance) Dr Jane Timby (freelance)
Medieval/post-medieval  (Clay pipe)	Ed McSloy (CA) Duncan Brown (freelance) Paul Blinkhorn (freelance) Reg Jackson (freelance)
Ceramic Building Material	Ed McSloy (CA) Phil Mills (freelance)

### **Other Finds**

Small Finds	Ed McSloy (CA)
Metal Artefacts	Dr Jörn Schuster (freelance) Dr Hilary Cool (freelance)
Lithics (Palaeolithic)	Ed McSloy (CA) Jackie Sommerville (CA) Francis Wenban-Smith (University of Southampton)
Worked Stone	Ruth Shaffrey (freelance)
Inscriptions	Dr Roger Tomlin (Oxford)
Glass	Ed McSloy (CA) Dr Hilary Cool (freelance) Dr David Dungworth (freelance; English Heritage)
Coins	Ed McSloy (CA) Dr Peter Guest (Cardiff University) Dr Richard Reece (freelance)
Leather	Quita Mould (freelance)
Textiles	Penelope Walton Rogers (freelance)
Iron slag/metal technology	Dr Tim Young (Cardiff University) Dr David Dungworth (English Heritage)
<b>Biological Remains</b>	
Animal bone	Philip Armitage (freelance)
Human Bone	Sharon Clough (freelance) Annsofie Witkin (freelance)
Environmental sampling	Sarah Cobain (CA) Dr Keith Wilkinson (ARCA)
Pollen	Rob Batchelor (QUEST, University of Reading)
Diatoms	Nigel Cameron (UCL)

Charred Plant Remains	Sarah Cobain (CA)
Wood/Charcoal	Sarah Cobain (CA)
Insects	David Smith (Birmingham University) Enid Allison (Canterbury Archaeological Trust)
Mollusca	Dr Keith Wilkinson (ARCA)
Fish bones	Philip Armitage (freelance)
<b>Geoarchaeology</b>	Dr Keith Wilkinson (ARCA)
<b>Scientific Dating</b>	
Dendrochronology	Robert Howard (NTRDL Nottingham)
Radiocarbon dating	SUERC (East Kilbride) Beta Analytic (USA)
Archaeomagnetic dating	Neil Suttie (University of Liverpool) Cathy Batt (University of Bradford)
TL/OSL Dating	Phil Toms (University of Gloucestershire)
<b>Conservation</b>	Karen Barker (freelance) Wiltshire Conservation Services

## APPENDIX B: ARCHAEOLOGICAL STANDARDS AND GUIDELINES

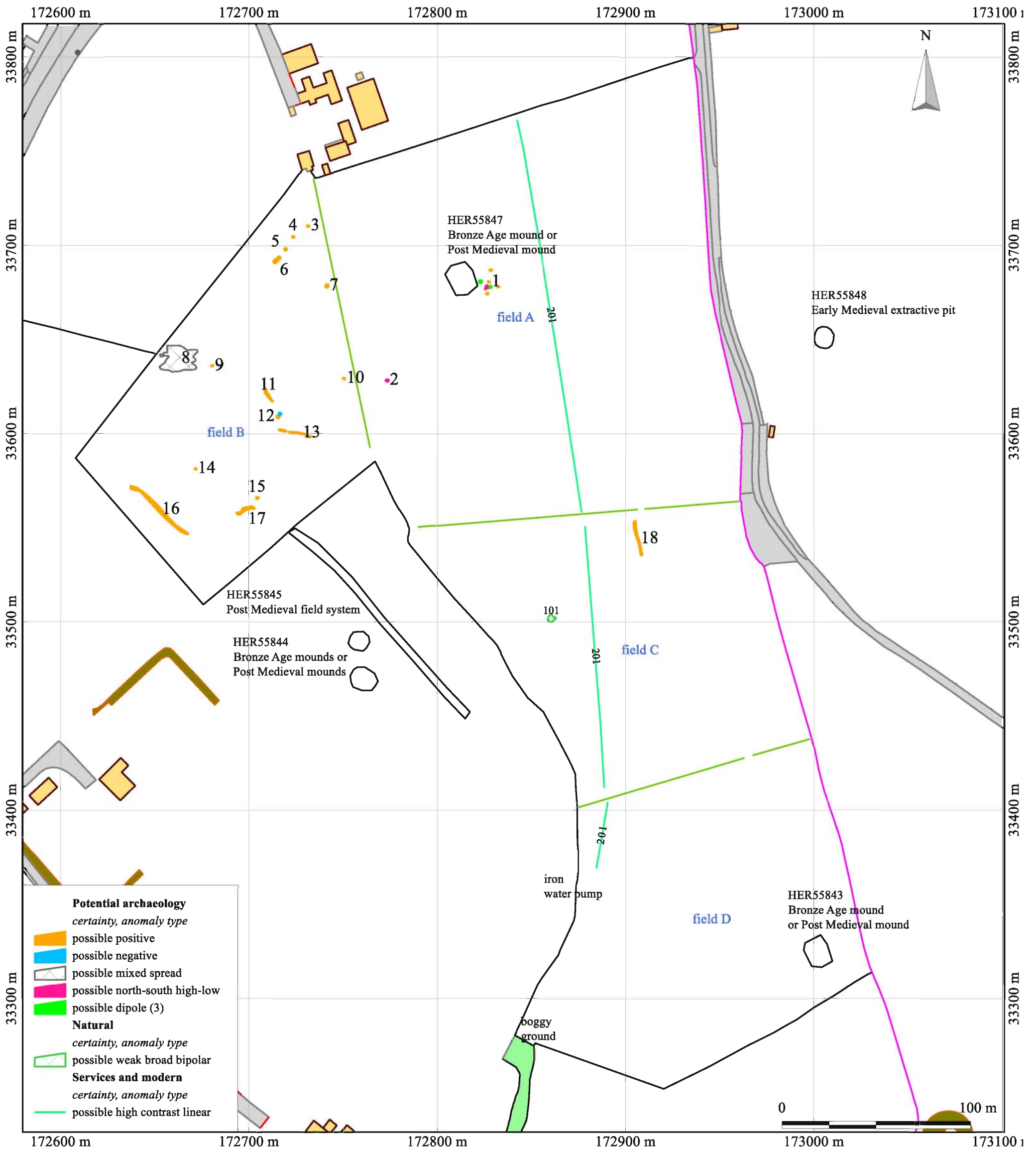
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## **APPENDIX C: GEOPHYSICAL SURVEY RESULTS**

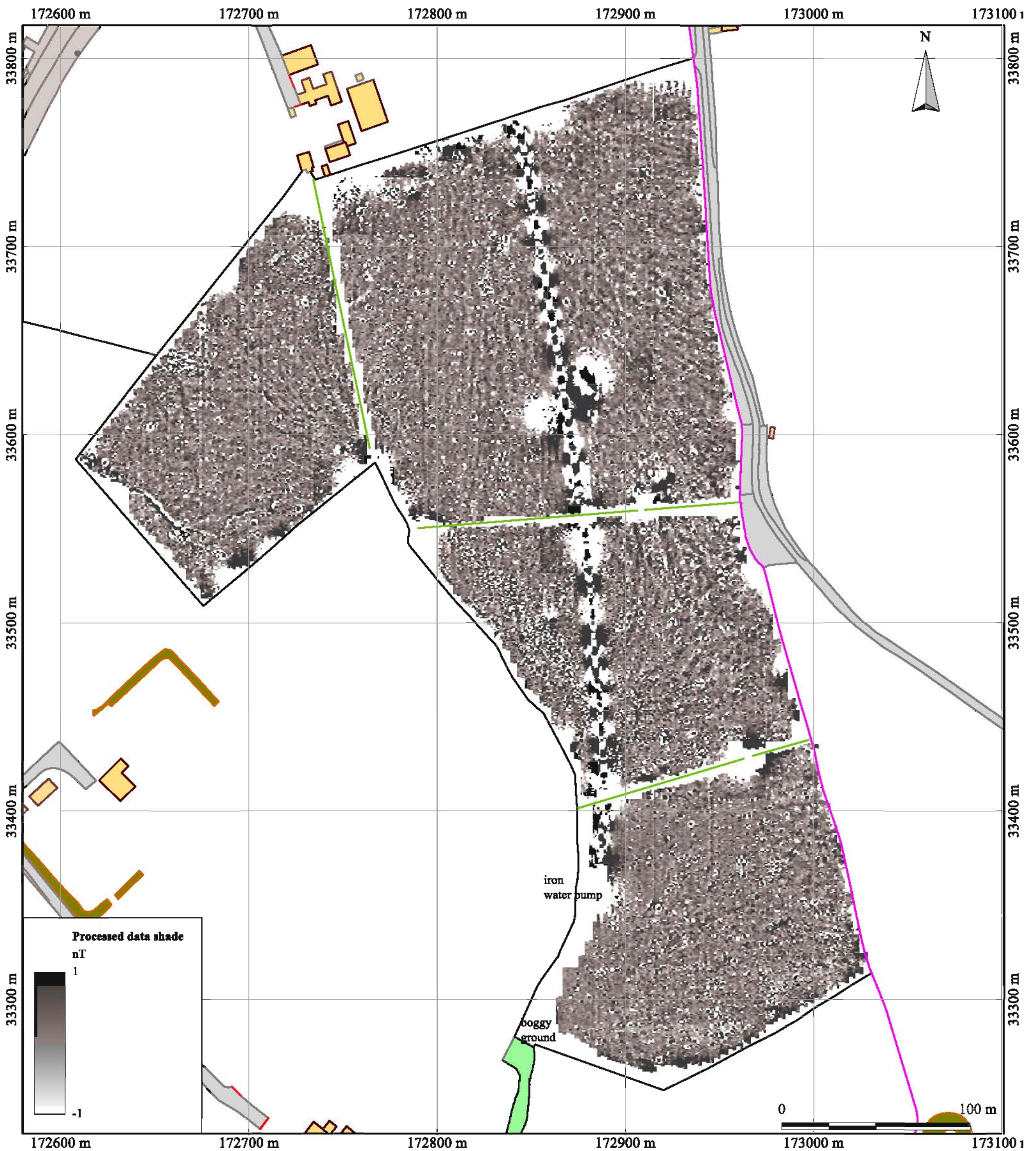


British Grid  
centre X: 172840.48 m, centre Y: 33523.26 m

Scale: 1:2000 @ A3. Spatial Units: Meter. Do not scale off this drawing

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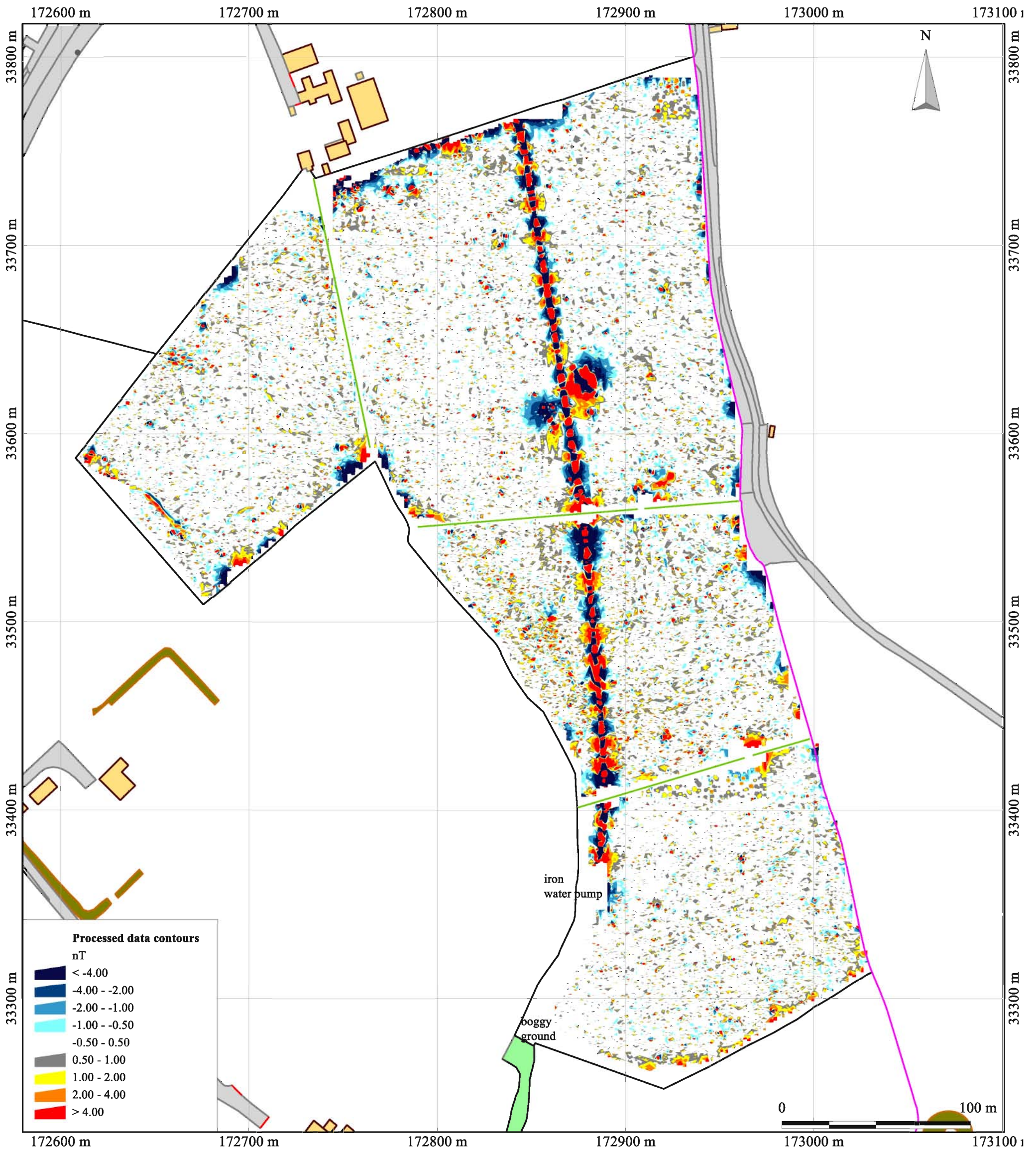
- Notes:
1. All interpretations are provisional and represent potential archaeological deposits.
  2. Anomalies designated "likely archaeology" have supporting evidence e.g. historical maps and or visible earthworks.
  3. Representative; not all instances are mapped.
  4. Anomalies likely to represent geological or other natural deposits are not mapped unless relevant to potential archaeological events or deposit



British Grid  
centre X: 172840.48 m, centre Y: 33523.26 m

Scale: 1:2000 @ A3. Spatial Units: Meter. Do not scale off this drawing

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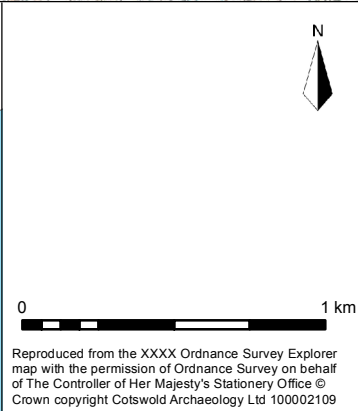
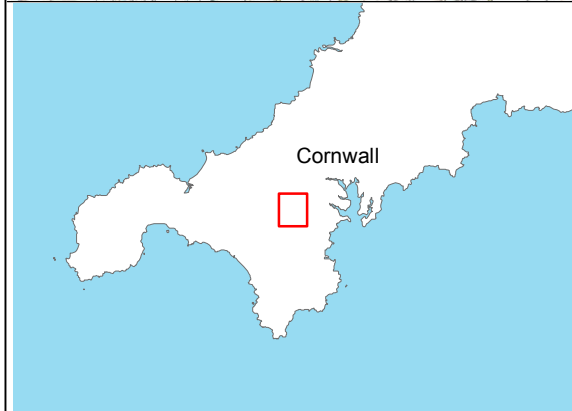
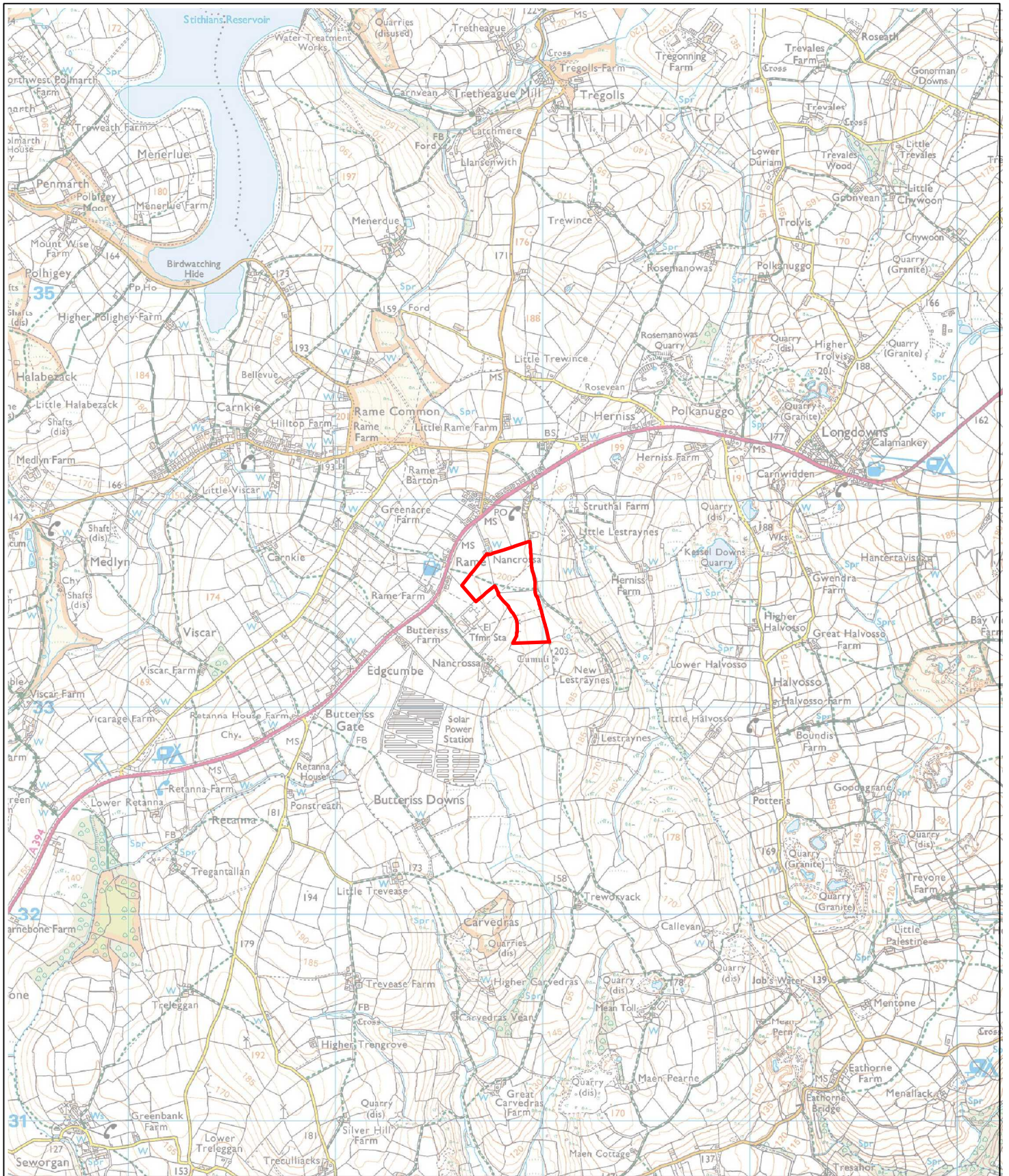



British Grid  
centre X: 172840.48 m, centre Y: 33523.26 m

Scale: 1:2000 @ A3. Spatial Units: Meter. Do not scale off this drawing

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Figure 4: contour plot of processed data





Andover	01264 347630
Cirencester	01285 771022
Exeter	01392 826185
Milton Keynes	01908 564660
www.cotswoldarchaeology.co.uk	
enquiries@cotswoldarchaeology.co.uk	

---

**PROJECT TITLE**  
Nancrossa Farm, Rame Cross, Penryn, Cornwall

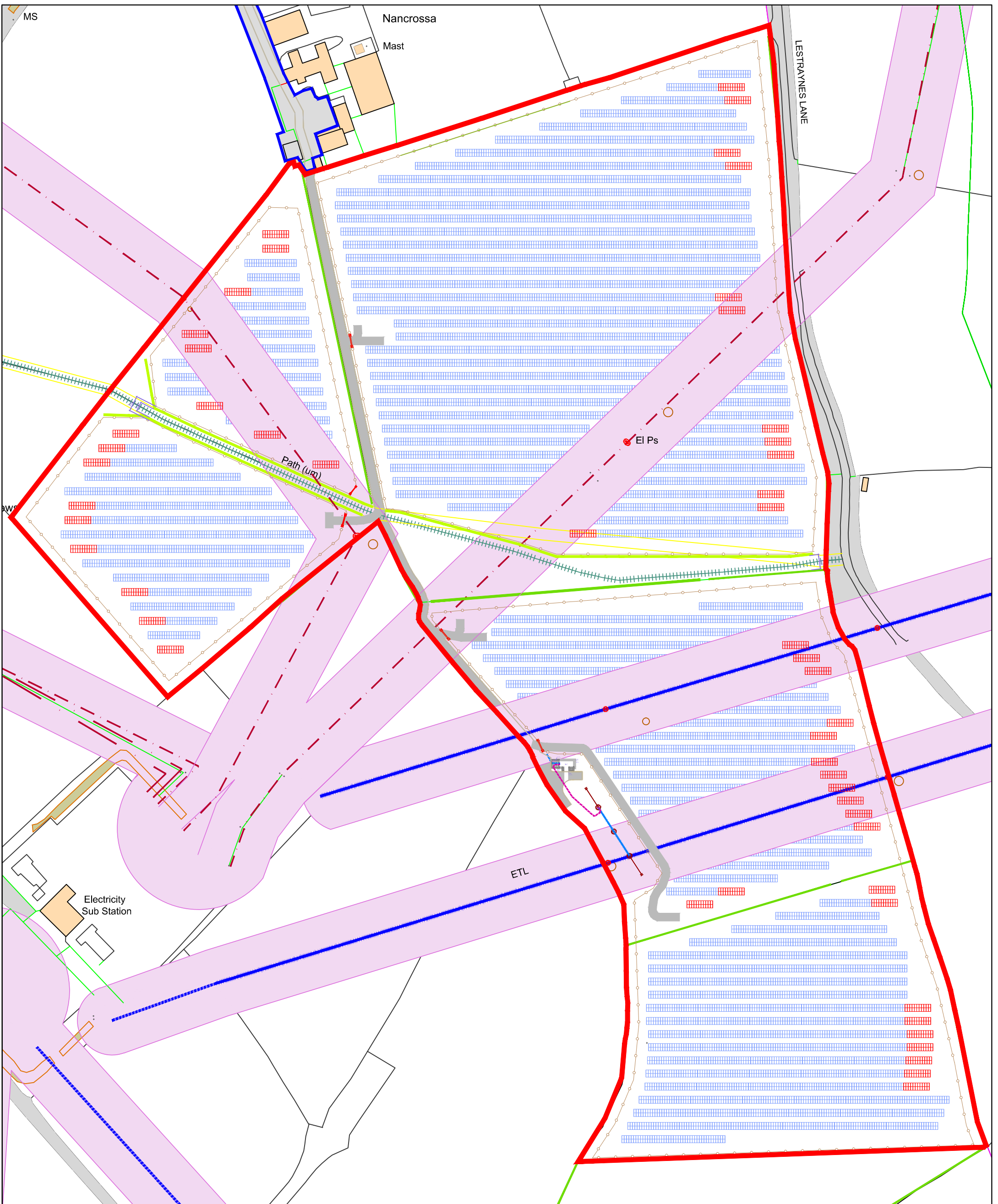
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**FIGURE TITLE**  
Site location plan

---

DRAWN BY	RJH	PROJECT NO.	880056	FIGURE NO.	01
CHECKED BY	JB	DATE	16/09/2015		
APPROVED BY	DDR	SCALE	@ A4 1:25,000		

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- site boundary
- 33kv overhead cable with 15m buffer
- 11kv overhead cable with 15m buffer
- +++ public footpath
- solar array



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 Cirencester 01285 771022  
 Exeter 01392 826185  
 Milton Keynes 01908 564660  
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 enquiries@cotswoldarchaeology.co.uk

PROJECT TITLE  
**Nancrossa Farm, Rame Cross, Penryn, Cornwall**

FIGURE TITLE  
**Development layout**

0 50m

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CHECKED BY	JB	REVISION	00	<b>02</b>
DATE	16-09-15	SCALE@A3	1:1500	



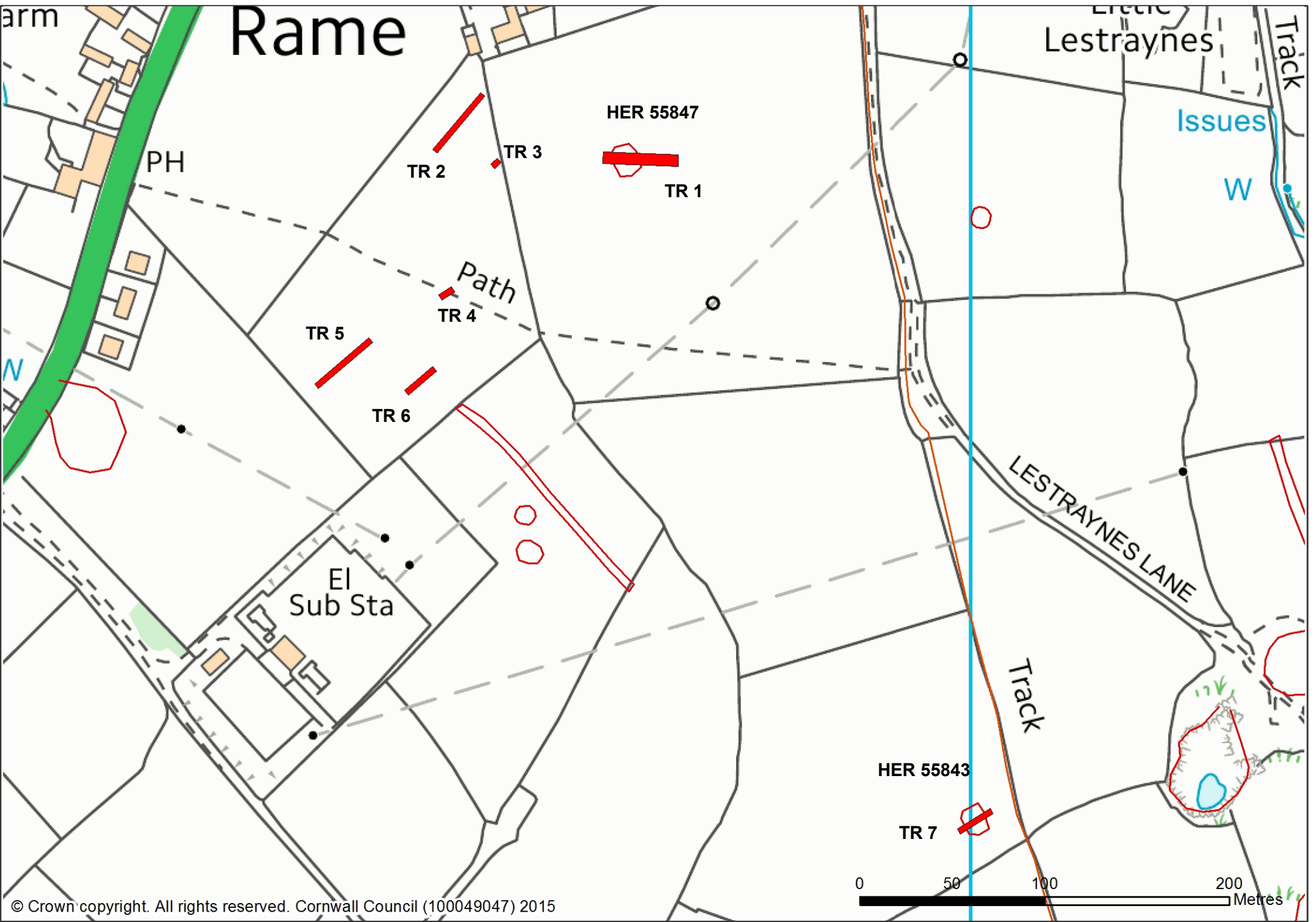


Fig.3 Trench location plan

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