



# **Lower Polstain, Threemilestone, Cornwall**

## **Archaeological assessment and geophysical survey**



## **Historic Environment Projects**

# **Lower Polstain, Threemilestone, Cornwall**

## **Archaeological assessment and geophysics**

<b>Client</b>	<b>Cath and Roger Harvey</b>
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## **Acknowledgements**

This study was commissioned by Cath and Roger Harvey and carried out by Historic Environment Projects, Cornwall Council.

The geophysical survey was carried out by Archaeophysica Ltd.

The views and recommendations expressed in this report are those of Historic Environment Projects and are presented in good faith on the basis of professional judgement and on information currently available.

## **Freedom of Information Act**

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## **Cover illustration**

*A 2005 Cornwall County Council aerial photograph of the site at Lower Polstain.*

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## Abbreviations

HER	Cornwall and the Isles of Scilly Historic Environment Record
HE	Historic Environment, Cornwall Council
NGR	National Grid Reference
OS	Ordnance Survey



## **1 Summary**

HE Projects was requested by Mr Ben Wilson of Studio Arc to provide a project design and an estimate for an archaeological assessment and geophysical survey of the proposed site for 15 dwellings at Lower Polstain, Threemilestone, Truro (PA/12/01849). Overall the development covers an area of approximately 0.8 HA.

The project comprised a desk-based assessment, analysis of a geophysical survey of the site and a walkover survey.

The site derives from one of the smallholdings established in former downland at the end of the 18<sup>th</sup> century by local miners, but occupies an area of the landscape notable for the abundance of evidence for settlement and agricultural activities during the Iron Age and the Romano-British periods. Excavations at the nearby Richard Lander School also showed that some of these later settlements had Bronze Age antecedents.

The desk-based assessment revealed some intriguing detail of the development of Polstain as a smallholding, whilst the geophysical survey revealed the site of a formerly undocumented miners' cottage in the northern part of the site. No indications of earlier archaeological sites were revealed.

A report summarising the results of the assessment and its conclusions was prepared for the client.

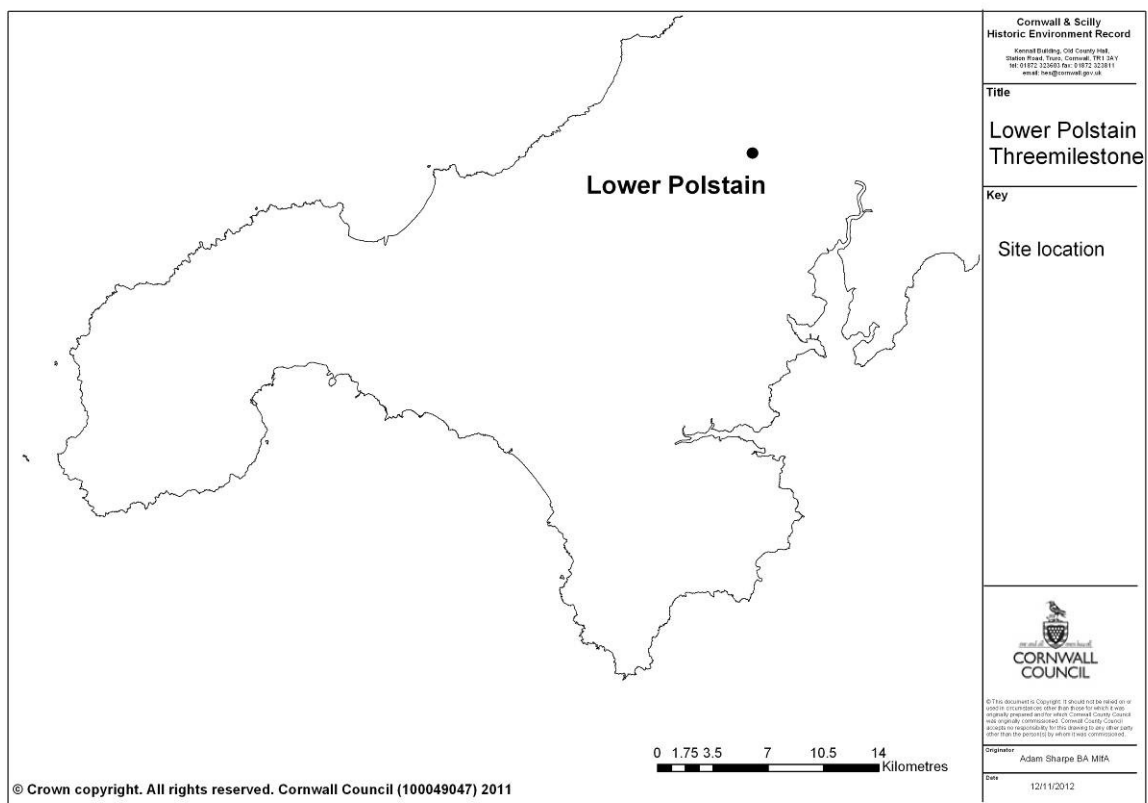


Fig 1. The location of Lower Polstain, Threemilestone.

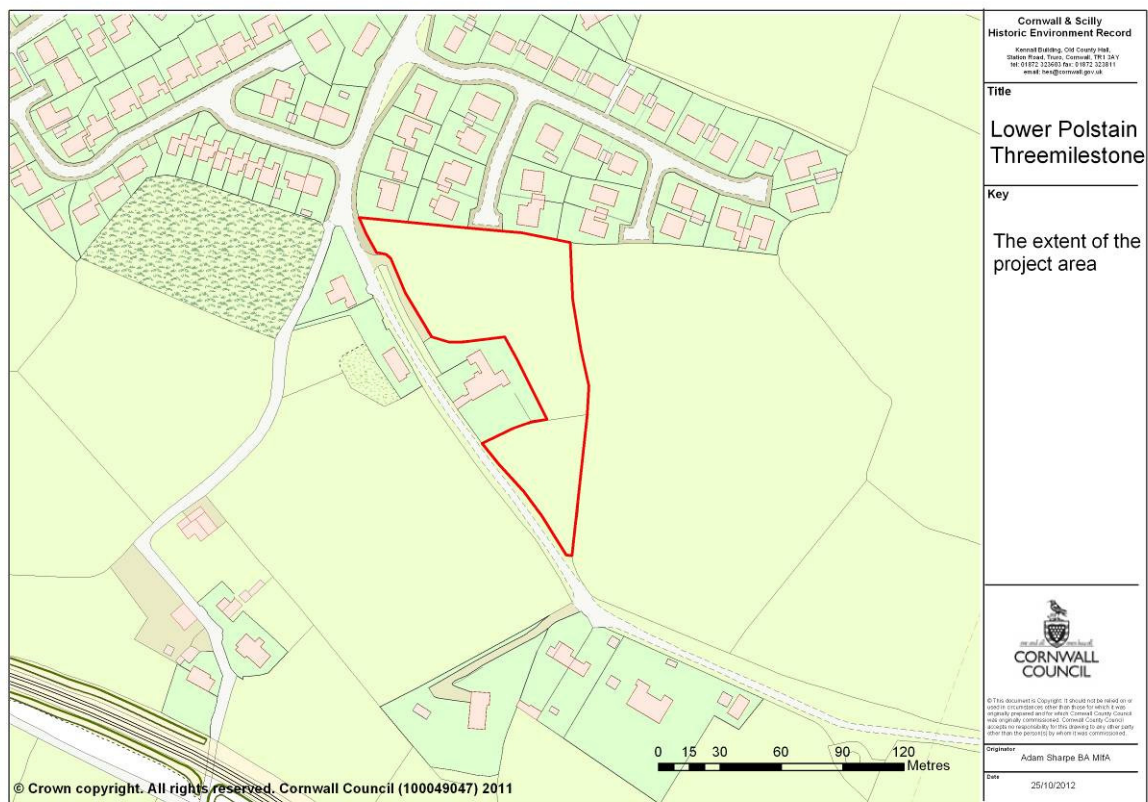


Fig 2. The extent of the site proposed for the development at Lower Polstain, Threemilestone.



## 2 Introduction

### 2.1 Project background

HE Projects was requested by Mr Ben Wilson of Studio Arc on behalf of Cath and Roger Harvey of Polstein, Threemilestone, to provide a project design and an estimate for an archaeological rapid assessment and geophysical survey of the proposed site for 15 dwellings at Polstein, Lower Polstain, Threemilestone, Truro (PA/12/01849). Overall the development will cover an area of approximately 0.8 Hectares (Figs 1 and 2).

A model brief prepared by Mr Dan Ratcliffe, Historic Environment Planning Advice Officer, Cornwall Council, was used to guide this archaeological assessment.

HE Projects produced a project for the assessment and were commissioned by Studio Arc to undertake the project in November 2012.

The project consisted of a desk-based assessment, analysis of a geophysical survey of the site and a walkover survey.

The walkover survey was undertaken on the 28<sup>th</sup> November 2012.

#### *Known archaeological sites*

The proposed development area is situated on the western side of Truro, within land that has been classified as 'Anciently Enclosed Land' (Countryside Commission 1996). 'Anciently Enclosed Land' is land which has been settled since at least the medieval period and which often contains archaeological remains dating to prehistoric and medieval times.

The proposed development is located near to the medieval settlement of Polstein which was first recorded in AD 1327. The name is Cornish and contains the elements *pul* derived from *pol* meaning 'pit, pool, or stream', and *stean* meaning 'tin'.

The development site is situated in an area with significant archaeological potential, which contains evidence of prehistoric, medieval and later activity. The sites, which have been identified in the vicinity, include:

- A later prehistoric / Romano-British round (enclosed settlement) and field system is located to the north east of the proposed development (MCO 21304).
- The development area is located to the north of a medieval field system (MCO34948).
- The development area is located to the west of the medieval settlement of Polstein (MCO16420).
- Post-medieval mining remains associated with East Wheal Falmouth lie to the south and east of the development area (MCO12069).

#### *Potential sites*

There is the potential for prehistoric, Romano-British and medieval sites to survive within the project area and for the survival of unrecorded buried archaeological remains and artefacts of all periods.

### 2.2 Aims and objectives

The principal aim of the study is to gain a better understanding of the impacts which would result from the construction of 15 dwellings on land adjacent to Polstein, Lower Polstain, Threemilestone, Truro.

The overall project aims are:

- To identify and describe the archaeological resource.

- To assess the significance of the resource.
- To assess the impact of the proposal on the importance and integrity of the resource.
- To identify ways of minimising impacts upon the archaeological resource.
- To make recommendations for archaeological recording during the development and construction of the scheme.

The objective of the project is to produce a report setting out the likely range of impacts of the development on heritage assets within the site.

## 2.3 Methods

### 2.3.1 Desk-based assessment

As part of the desk-based assessment (DBA), historical databases and archives were consulted in order to obtain information about the history of the site and its surroundings, and the structures and features recorded within the site boundaries. The main sources consulted were as follows:

- Published sources available in the Cornwall and Scilly HER.
- Historic maps including
  - Norden's Map of Cornwall (printed in 1728 but mapped *circa* 1600)
  - Joel Gascoyne's map of Cornwall (1699)
  - Thomas Martyn's map of Cornwall (1748),
  - OS 1 inch survey (*circa* 1810)
  - Kenwyn parish Tithe Map (*circa* 1839),
  - 1<sup>st</sup> and 2<sup>nd</sup> Editions of the OS 25 inch maps (*circa* 1880 and *circa* 1907).
- Modern maps.
- National Mapping Programme transcripts from aerial photographs.
- Other aerial photographs in the Cornwall and Scilly HER.
- Historic Landscape Characterisation mapping.
- Cornwall and Scilly Historic Buildings, Sites and Monuments Record (HBSMR).
- Information held as GIS themes as part of the Cornwall and Scilly HER.
- The Structure Plan and Local Plan have been consulted for historic designations, for example World Heritage site, Conservation Areas, Areas of Great Historic Value, etc.
- The Cornwall Landscape Assessment has been consulted to identify the historic landscape character types in which the proposed development is located.

### 2.3.2 Fieldwork – walkover survey

A walkover survey of the site at Lower Polstain was carried out to examine the site for upstanding archaeology and to record the nature of the boundary types which might be impacted upon during the development. This provided for:

- The identification of existing or previous land use that may affect the survival or condition of known or potential sites.
- The identification of any archaeological sites within the proposed development area and make recommendations for their recording.

- The identification of areas which could contain buried archaeological remains.
- The identification of areas which might require further archaeological mitigation (excavation/watching brief, etc.).

### **2.3.3 Fieldwork – geophysical survey**

A magnetometer survey of the area proposed for the housing development was undertaken by Archaeophysica Ltd. The survey results have been incorporated into this report.

Ahead of the survey the HE Projects liaised with the geophysical survey contractor to:

- Arrange access to the site.
- Supply mapping of the survey area.
- Notify the contractor of any significant risks.

The results of the geophysical survey were received on 23 November 2012.

### **2.3.4 Post-fieldwork**

On completion of the project and following review with the HE Project Manager the results of the study were collated as an archive in accordance with: *Management of Research Projects in the Historic Environment (MoRPHE) English Heritage 2006*. The site archive will initially be stored at ReStore, with the eventual aim of deposition at Cornwall Record Office.

An archive report (this report) has been produced and supplied to the Client. This report will be lodged with the Cornwall and Scilly Historic Environment Record (HER) and made available for public consultation once a planning application for the site has been made. A copy of the report will be supplied to the National Monuments Record (NMR) in Swindon, to the Courtney Library of the Royal Cornwall Museum and to the Cornish Studies Library. All digital records will be filed on the Cornwall Council network.

An English Heritage/ADS online access to the index of archaeological investigations (OASIS) record has been made covering this assessment project.

## **3 Location and setting**

The site at Polstein (alternatively Polstain, Polstean or Polsteign), at Lower Polstain, Threemilestone is at SW 78129 44405 and is made up of two agricultural enclosures which, with Polstein itself, forms a triangular plot on the eastern side of the road leading from Threemilestone to Newbridge and Treiske to the east and to Hugos and Twelveheads to the south west. This road is one of a complex network of routeways which came into existence with the development of smallholdings within this landscape.

The site measures 0.8 HA in extent, averages 100m above OD and is on level ground at the top of a south-western facing valley slope (see Figs 2 and 15).

The development area is characterised in the Cornwall and Scilly Historic Environment Record (HER) as 'Anciently Enclosed Land' – Farmland Medieval, (Fig 11) that is land whose boundary arrangements were laid down during the medieval period. However, an examination of the *circa* 1840 Kenwyn Tithe Map shows that the small farm at Polstein originated in the late 18<sup>th</sup> century or the early 19<sup>th</sup> century as one of the large number of smallholdings laid out and occupied by local miners on areas of former downland between Truro, St. Agnes and Redruth (Fig 7).

The parent bedrock underlying the application site consists of interbedded Devonian mudstones and sandstones of the Porthtowan Formation, whilst the soils are recorded as being Denbigh 2 loams over shale. No superficial (drift) deposits are recorded by the British Geological Survey.

## **4 Project extent**

The archaeological assessment was focussed on those heritage assets (whether designated or not) which might be physically impacted upon by activities associated with site preparation for the development of 15 dwellings at Polstein, Lower Polstain, including landscaping, trenching and other groundworks, as well as proposals for including the siting of temporary compounds, equipment, materials and any associated infrastructure.

## **5 Designations**

### **5.1 International**

None apply.

### **5.2 National**

No national designations apply to the site proposed for the development.

### **5.3 Regional/county**

No regional or county designations relate to the site.

### **5.4 Local**

No local designations apply to the site proposed for the development.

### **5.5 Rights of Way**

No rights of way traverse the site. This area is not registered as open access land under the CROW Act 2005.

## **6 Results of desk-based assessment**

The site lies to the west of Truro on the edge of a ridge of relatively high and exposed ground which was, during most of the historic period, open, unenclosed downland. During the Early Bronze Age (c 2000-1500 BC) these uplands sited barrow cemeteries, ceremonial and funerary monuments which were quite deliberately sited so as to be seen as skyline landmarks from the settled lower landscapes to the south. It is assumed that by the later Bronze Age (1500-800 BC) these monuments would have been accompanied by related roundhouse settlements sited on the valley sides and the more sheltered upper hillslopes, where they would be able to exploit deeper, more fertile soils, yet also have access to areas of woodland in the valleys and to rough grazing and fuel grounds in the uplands. Little evidence for these settlements has been identified locally given the extent to which later agricultural improvement has occurred. It is likely that much of this landscape was farmed, either intensively or extensively during the later Bronze Age, and that similar but larger areas, may well have been in agricultural use during the Iron Age (800 BC-AD 43).

During late prehistory and into the Romano-British period (AD 43-400) enclosed settlements were established in the more fertile or more sheltered areas of the landscape. Aerial photography has identified the sites of a large number of such farming settlements, as is shown on Figures 12, 13 and 14, which depict at least two late prehistoric/Roman period enclosed farmsteads (rounds) not far to the north east of Lower Polstain. Part of the line of the defensive bank around a further round survives as a curving field boundary in the north western corner of one of the fields just to the west of the development site. Figure 14, combining the results of geophysical survey and cropmark evidence gives a clear impression of this complex, extensively farmed prehistoric landscape.

Rounds are evidenced by place names within this vicinity at Truro, Hugus, Little Gloweth and Treliske, cropmark examples have been recorded at Croft West and Bosvisack, an example at Threemilestone was excavated in the 1960s and 1970s, whilst extant examples survive at Polstein, Cardege, Penventinnie, Goodern, Bosvisack and Hugus. Excavations in advance of the development of Richard Lander School on the hilltop to the north east in 2004 revealed evidence of extensive late Bronze Age activity, to the north of which was a substantial Late Iron Age unenclosed settlement comprising at least a dozen houses. Further evidence for Iron Age settlement activity was revealed during archaeological excavations at the nearby Truro College site in 2005.

The evidence suggests that, during this period, the higher, more exposed areas of the landscape would have continued to provide areas for rough summer grazing and sources of fuel and animal bedding, whilst the valleys would have provided timber for building and for fuel.

The downs remained as open land into the historic period, the rough grassland which they supported continuing to provide an important agricultural resource for farming families living in the surrounding landscape. Successor settlements were established off the high ground during the pre-Conquest period, these having names incorporating elements in Cornish, though this higher downland seems likely to have remained open grazing land, as is attested by the predominance of place names in English within this area, a reflection of its extensive colonisation by farmer-miners during the 18<sup>th</sup> century.

The analysis of historic aerial photographs undertaken as part of the English Heritage National Mapping Programme shows evidence for medieval strip fields on the high downs to the west of Lower Polstain. It is possible that the lower parts of the downs nearer Truro were enclosed to permanent fields during this period, though the subsequent agricultural history of this particular area of the landscape is complex, and makes analysis of its development difficult.

The Domesday Book (1086) does not mention settlements within this area, which would probably have been upland rough grazing at the time of the survey. These were probably part of the Goodern estate, held by the Count of Mortain, and having been held by Alwin prior to 1066.

The first known survey of this area, John Norden's map published in 1728, but drawn up *circa* 1600 (Fig 3) depicting the Hundred of 'Kirrier', showed the area to the west of Truro as a hilly landscape of downland. No settlements were depicted within this area on this mapping. Equally, Joel Gascoyne's late 17<sup>th</sup> century map of Cornwall (Fig 4) also showed the area to the west of Threemilestone as an almost wholly empty stretch of downland, traversed by just one west-heading road.

In contrast, Martyn's map of 1748 (Fig 5) shows a landscape of lanes and many small hamlets, including Polstean. Clearly something radical had happened in the past four decades. The 1<sup>st</sup> Edition of the Ordnance Survey 1" to a mile mapping (Fig 6), drawn up during the first decade of the 19<sup>th</sup> century, gives a good indication of these very substantial changes which occurred within this part of the Cornish landscape during the later part of the 18<sup>th</sup> century into the early 19<sup>th</sup> century.

The 1809 map (Fig 6) showed the area to the west of Truro to be characterised by a network of lanes, small fields and scattered cottages within an area of fragmented downland. Large areas of formerly open heathland, including that to the west of Truro, had been parcelled up into smallholdings by the rapidly-growing local mining population in order to supplement their at times uncertain incomes. Most of these smallholdings were held on 'three lives' leases, and as a result, many did not survive in their original form for more than a few decades, their fields being subsequently combined by the estates within which they had been created into larger, tenanted farms, their cottages and barns by and large being demolished at this time.

Some, however, survived moderately unchanged, and such small parcels of fields surrounding a cottage and outbuildings are a characteristic feature of the landscape between Truro and Redruth. Those at Polstein, Lower Polstain appear to be a legacy of that relatively rapid process. The creation of smallholdings in Cornwall radically changed the appearance of extensive swathes of former downland over a fairly short period. By the early decades of the 19<sup>th</sup> century, worker housing was characteristically in the form of cottage rows within often new and rapidly-expanding industrial settlements such as Chacewater, St. Day, Redruth and Camborne.

The *circa* 1840 Kenwyn Tithe Map (Fig 7) again showed the landscape to the west of Lower Polstain as being characterised by small fields, though it is clear that the process of demolition of some of the small cottages which would originally have occupied these groups of fields had already taken place to some extent. To the east of Polstain, larger fields may represent those originally of medieval origin, or former groups of smallholders' fields within which many of the internal boundaries had been removed to make them more amenable to larger scale farming practices. At Polstain, the mapping shows two small, square-plan cottages, both linked to the nearby lane by a wall.

The associated Tithe Apportionment provides information relating to the (originally) four small fields making up the development area. The fields (plots 2397, 2398, 2399 and 2400) a barn and the (now extended) cottage now called Polstein were, in 1840, owned by the Earl of Falmouth and both leased to and occupied by Thomas Holman as a smallholding measuring two acres, one pole and 31 perches, all of the fields being recorded as being in arable. This smallholding was typical of those within the former downs, being of a size which would support, though not sustain, the mining family which both established and worked it.

The 1841 Census recorded three households at 'Polstain' – firstly that of James Goman, aged 30, an agricultural labourer together with wife and two young daughters, secondly Anna Geach aged 64 and her son, and thirdly Thomas Holman, a 75 year old farmer and his daughter. It is likely, therefore, that Thomas Holman was sub-letting parts of Polstain to James Goman and to Anna Geach at the time.

The smallholding was not specifically named (and therefore was not identifiable) in either the 1851 or the 1861 Censuses. In 1871, no less than nine households (many of them clearly related to one another) were recorded at 'Polstain' – those of William Treraw, a 35 year old farmer of 8 acres, John Harpur, a 47 year old tin miner, Ann Vigus, a 59 year old miner's wife, Jane Vigus, a 43 year old farmer of 12 acres, John Vigus, a 31 year old tin miner, John Vigus, a 36 year old tin miner, Richard Stephens, a 39 year old tin miner, William Stevens, a farmer of 18 acres and Eliza Davey, 59, described as being a farmer of 18 acres. Her two sons and two daughters were all described as having been born in Brazil, so she was almost certainly a miner's widow.

In 1881 the Census shows that 'Polsteign' had been reduced to two households – that of William Kellow, a 31 year old agricultural labourer and that of Alfred Richards, 46 years old and also an agricultural labourer. It is not untypical that none of the families recorded at Polstein ten years previously was still in residence – miners and their dependants were notably mobile, moving in search of work on a regular basis. Polstain was not mentioned by name in the 1891 census and may have been unoccupied at the time.

The smallholding was evidently one of those which survived as a discrete unit into the second half of the 19<sup>th</sup> century rather than having been abandoned and incorporated into a larger farm. However, the 1<sup>st</sup> Edition of the Ordnance Survey 25" to a mile mapping (Fig 8) showed some changes to it from the 1840 Tithe Award mapping. The southern cottage had been doubled in size through the addition of an extension (possibly a further cottage) on its western end, whilst the cottage to its immediate north had been demolished like many of the original smallholders' cottages in neighbouring smallholdings. Each cottage had a small extension on its northern face, these possibly representing porches. Deciduous trees had been planted along some of

the boundaries of the smallholding fields, whilst a clump of conifers had become established to the south east of the cottage.

The evidence from the censuses shows how the fortunes of this settlement had mirrored those of the local mining industry, being established in the early years of the 19<sup>th</sup> century (or perhaps during the last years of the 18<sup>th</sup> century) and growing rapidly through the following decades, probably reaching a peak during the 1860s and 1870s, then shrinking equally rapidly with the decline of mining in Cornwall and its associated waves of emigration, leaving behind a population made up of returnee emigrants (often miners' widows and their families) and men for whom the only available employment was as labourers on larger farms developed from groups of abandoned smallholdings.

What is clear is that whilst Polstein might have consisted of a couple of cottages in 1840, as is suggested by the Tithe Award mapping (and hinted at in the 1841 census when three households were recorded), it grew rapidly during the following decades, probably reaching a peak around 1871 (when there were nine households). Even allowing for multi-occupancy, something which was common at the time, there are simply not enough documented dwellings on site to accommodate so many people. The geophysical survey (Fig 16) adds the site of a further cottage near the northern end of the survey area, again aligned end on to the road, and it may well be that there was a further undocumented cottage in the unsurveyed area just to the north of the surviving house at Polstein. By 1878, all but the surviving cottage pair at Polstein had been demolished, providing a dramatic illustration of the dynamic character of this landscape, the short-lived nature of many of its dwellings and the mobility of its population.

By 1908 (when the OS 25" mapping was resurveyed – Fig 9) boundaries dividing the three northern fields had been removed and the trees seem to have been felled, perhaps in an attempt to make this small scrap of land more productive. One of the small extensions or porches on the northern sides of the cottages shown in 1878 had been demolished, perhaps suggesting that the two cottages were in a single occupancy by the early 20<sup>th</sup> century.

The 2005 Cornwall County Council aerial photograph (Fig 10) shows the larger northern enclosure as semi-improved pasture, whilst the smaller southern enclosure was in rougher grassland including a number of small scrubby bushes and trees. Earlier extensions to the cottages had been removed and the cottage pair extended to the south at its eastern end. On the evidence of the Ordnance Survey Mastermap (Fig 2), a further extension has been added to the northern side of the cottages at their eastern end since 2005.

Some mining has taken place within the immediate landscape as can be seen from Figures 13 and 14, though activities had been abandoned by 1878. The outcrop of a lode worked as part of Polstein Mine can be traced across the landscape through a chain of shafts running from not far to the east of Lower Polstain, passing just to its south, and continuing down to the nearby valley, where the lode appears to be cut off by a fault. Sub-parallel lodes not far to the south east were worked in Wheal Jane, and parts of these near Goodern Manor Farm are documented as having been worked during the 17<sup>th</sup> century. The closely-set nature of the shafts near Polstein also strongly suggests a relatively early phase of working and although the period during which this lode was exploited is uncertain, they may well be of late 18<sup>th</sup> or early 19<sup>th</sup> century date and associated with the increase in population which spurred the creation of the smallholdings on the local downland during this period.

The alignments of the south eastern boundaries of some of the fields near Polstein and perhaps also one of the former boundaries within the survey area appear to have been determined by the location and strike of lode outcrops, whilst prospecting pits were identified on the high ground to the north east during archaeological excavations at Richard Lander School. Most of the surface evidence for these mine shafts and related features has been ploughed away and the shaft locations have been lost as a result of

agricultural improvements in the second half of the 20<sup>th</sup> century, though the locations of some are preserved as distinct kinks in field hedges.

## **7 Results of geophysical survey**

For a relatively small survey area, the geophysical survey has revealed a surprising degree of complexity in the sub-surface archaeology (see Fig 16 and Appendix 1). Some of the features revealed in the data clearly represent boundaries documented in 1840 and 1878 but removed by 1908. Field drains plotted in the survey data probably relate to the initial phase of enclosure and improvement - features [5] and [6] might be culverts relating to this drainage system, as possibly also is feature [9]. Feature [6] is just visible as a cropmark on the 2005 aerial photography (Fig 10).

Some possible evidence for mining activity also appears within the data and is hinted at on the OS mapping – for instance the kink in the west south west – west north east aligned hedge documented in 1840 and 1877 in the north eastern part of the survey area. This may well have been constructed on this alignment to avoid a possible pre-existing mine shaft [12] which may have been utilised as a soakaway for some of the field drains within these smallholding fields [8]. Some strongly magnetic responses may represent small early mine workings backfilled with ferrous rubbish or mine waste, or alternatively spreads of magnetic mine waste used in the construction of now-demolished field hedges, [12] being identified as a possible backfilled mine shaft (incorporating very strongly ferrous fills – possibly scrap metal) and [7] as a now demolished hedge whose make-up incorporated mine waste with an elevated magnetic character.

Of particular interest are the otherwise undocumented rectangular structure [3] and wall [2] in the north western part of the survey area. This is likely to represent a two cell cottage constructed at Polstain after 1840 and occupied until around 1871 but demolished by 1877, which would have helped to accommodate its rapidly growing population during the mining boom years. The cottage seems subsequently to have become surplus to requirements as the population shrank dramatically during the late 19<sup>th</sup> century, and may have become so derelict that it was demolished. Its alignment and the wall linking it to the nearby lane to the west mirror those of the surviving cottage pair, suggesting near contemporaneity with the documented and surviving cottages immediately to the south.

The geophysical data also reveals that the course of the lane to the west of Polstain has not been static over time. Linear features [1], [4] and [11] seem to represent the eastern edge of the lane at the time that cottage [3] was constructed. The northern course of Lower Polstain Road now runs slightly to the west of the probable route of the lane when cottage [3] was occupied.

The strongly magnetic results identified as feature [10] in the southern enclosure may well represent a spread of material excavated during the digging of a nearby cess pit or its predecessor.

## **8 Results of site walkover**

A site walkover was undertaken on 28<sup>th</sup> November 2012. The weather was clear with around 60% cloud cover and no impediments to survey. The site proposed for the development was made up of two areas of garden (former four smallholder's fields), the northernmost (larger) area being in relatively short grass, the southernmost being down to rough grass, with substantial shrub and tree growth encroaching in from the boundaries. The land to the south west of the site slopes down into a nearby valley, whilst to the north, the more or less level ground is occupied by relatively recent housing developments forming part of Threemilestone. The land to the east currently remains as open pasture fields.



The northern boundary of the northern enclosure consisted of a partly-faced earth and stone bank up to 1.0m high topped for much of its length by *Leylandii*. To the east, the boundary was made up of a similar feature up to 1.1m high and 1.6m wide, this having some stone facing (mainly chunks of quartz) in its northern and central sections and roughly coursed slips of vertically-set killas at its southern end. The hedge was topped with intermittent hawthorn trees and is edged with more recent tree and shrub plantings. This hedge is integral with the southern boundary of this enclosure, this again being a 1.0m high bank with intermittent stone facing. The western boundary again consisted of a bank with mature shrub and tree vegetation against the nearby minor road.

The eastern boundary of the southern enclosure is a continuation of that found in the northern enclosure, whilst the western boundary consists of a post and wire fence, this being backed with semi-mature trees forming a dense screen against the nearby road.

Within the northern enclosure, a number of the now-removed internal boundaries and other features picked up in the desk based assessment and/or revealed in the geophysical survey plot were visible as low earthworks. These included the north-south aligned removed field hedge, this survived as a broad but shallow scarp up to 0.4m high extending from the car parking area (where ground levels have been reduced) to the northern boundary and the east-west aligned boundary on the eastern side of the enclosure (feature [7] on the interpreted geophysics plot). The latter being up to 0.25m high and appearing as a broad, spread linear hump running from the edge of the car parking area near the house to the eastern hedge of the enclosure. Feature [6] on the geophysical survey plot was just detectable as a shallow and relatively narrow linear feature, as did feature [9], which was 0.45m wide and 0.08m deep. In the area occupied by feature [8] (on the geophysics plot this showing as a significant but small-scale response suggestive of a strongly ferrous buried object), a very shallow hollowed area roughly 6.0m in diameter was found within which grass growth was notably yellower and more rank than in the surrounding area.

No earthwork traces were seen of the now-demolished cottage in the north western corner of the site (geophysics feature [3]), nor the adjacent roadline edge (features [4], [11] and [1]) immediately to its west or most of the drainage system features detected by the geophysical survey.

No earthworks were found within the southern enclosure. A mound of spoil in its north-eastern corner was felt likely to have derived from the recent installation of a Klargest-type septic tank close by.

The locations of eight recently backfilled test pits measuring approximately 1.0m x 0.66m in plan were identified, six of these being in the northern enclosure, two in the southern enclosure. Examination of the exposed spoil backfills indicated a fairly mineralised degraded killas bedrock displaying frequent iron staining and black Psilomelane (manganese oxide) spotting, together with abundant quartz fragments. The spoil contained no visible artefacts. Though backfilled, the appearance of the test pits suggested that bedrock lies not far beneath the ground surface.

The evidence tended to confirm that deriving from the desk-based assessment and from the geophysical survey that archaeological features at Polstein derive wholly from the creation of a miners' smallholding during the very late 18<sup>th</sup> or early 19<sup>th</sup> centuries. The physical appearance of the area within which feature [8] was plotted in the geophysical survey suggested that a feature of some sort had been backfilled at this location and that consequently this part of the enclosure has different drainage and vegetation characteristics to those in its immediate surroundings. A small and possibly relatively early mine shaft here cannot be ruled out as a result.

The general character of the surrounding landscape southwards and westwards from the site is typical of Recently Enclosed Land within this part of Cornwall, comprising small fields deriving from miners' smallholdings, often tree-lined boundaries (many of these being oaks which were deliberately planted as a crop), scattered cottages and

evidence for mining. To the north, modern housing reflects the recent growth of Threemilestone as a satellite settlement of Truro.

## 9 Synthesis

Neither the desk-based assessment nor the walkover survey indicated the presence of any significant upstanding archaeology which might be directly impacted upon by the proposed development at Polstein, Lower Polstain. However, the geophysical survey results suggests the survival of below-ground archaeology, in particular that relating to the growth of this miners' smallholding during the late 18<sup>th</sup> century and during the 19<sup>th</sup> century and its subsequent decline. The geophysical survey evidence for an otherwise undocumented demolished miner's cottage in the north western part of the site is intriguing and may warrant further investigation during the development process.

## 10 Policies and guidance

The following section brings together policies and guidance (or extracts from these) used in the development of the assessment and its methodology.

### 10.1 National Planning Policy Framework 2012

The following paragraphs within the above document frame planning policy relating to the Historic Environment and are germane to this assessment:

**128** *In determining applications, local planning authorities should require an applicant to describe the significance of any heritage assets affected, including any contribution made by their setting. The level of detail should be proportionate to the assets' importance and no more than is sufficient to understand the potential impact of the proposal on their significance. As a minimum the relevant historic environment record should have been consulted and the heritage assets assessed using appropriate expertise where necessary. Where a site on which development is proposed includes or has the potential to include heritage assets with archaeological interest, local planning authorities should require developers to submit an appropriate desk-based assessment and, where necessary, a field evaluation.*

**129.** *Local planning authorities should identify and assess the particular significance of any heritage asset that may be affected by a proposal (including by development affecting the setting of a heritage asset) taking account of the available evidence and any necessary expertise. They should take this assessment into account when considering the impact of a proposal on a heritage asset, to avoid or minimise conflict between the heritage asset's conservation and any aspect of the proposal.*

**132.** *When considering the impact of a proposed development on the significance of a designated heritage asset, great weight should be given to the asset's conservation. The more important the asset, the greater the weight should be. Significance can be harmed or lost through alteration or destruction of the heritage asset or development within its setting. As heritage assets are irreplaceable, any harm or loss should require clear and convincing justification. Substantial harm to or loss of a grade II listed building, park or garden should be exceptional. Substantial harm to or loss of designated heritage assets of the highest significance, notably scheduled monuments, protected wreck sites, battlefields, grade I and II\* listed buildings, grade I and II\* registered parks and gardens, and World Heritage Sites, should be wholly exceptional.*

**133.** *Where a proposed development will lead to substantial harm to or total loss of significance of a designated heritage asset, local planning authorities should refuse*

consent, unless it can be demonstrated that the substantial harm or loss is necessary to achieve substantial public benefits that outweigh that harm or loss, or all of the following apply:

- the nature of the heritage asset prevents all reasonable uses of the site; and
- no viable use of the heritage asset itself can be found in the medium term through appropriate marketing that will enable its conservation; and
- conservation by grant-funding or some form of charitable or public ownership is demonstrably not possible; and
- the harm or loss is outweighed by the benefit of bringing the site back into use.

**134.** Where a development proposal will lead to less than substantial harm to the significance of a designated heritage asset, this harm should be weighed against the public benefits of the proposal, including securing its optimum viable use.

**135.** The effect of an application on the significance of a non-designated heritage asset should be taken into account in determining the application. In weighing applications that affect directly or indirectly non designated heritage assets, a balanced judgement will be required having regard to the scale of any harm or loss and the significance of the heritage asset.

**139.** Non-designated heritage assets of archaeological interest that are demonstrably of equivalent significance to scheduled monuments, should be considered subject to the policies for designated heritage assets.

## **10.2 Former Cornwall Structure Plan**

The following policies in the Cornwall Structure Plan relate to the historic environment are currently used to guide responses to applications.

### **10.2.1 Policy 1**

*'Development should be compatible with:*

*The conservation and enhancement of Cornwall's character and distinctiveness;*

*The prudent use of resources and the conservation of natural and historic assets;*

*A reduction in the need to travel, whilst optimising the choice of modes, particularly opportunities for walking, cycling and the use of public transport;*

*Through developing the principles of Policy 1 it is intended to integrate environmental values with land use and transport policies, achieving patterns of development that reflect strong environmental protection and stewardship of resources.'*

### **10.2.2 Policy 2**

*'Throughout Cornwall, development must respect local character and:*

- *Retain important elements of the local landscape, including natural and semi-natural habitats, hedges, trees, and other natural and historic features that add to its distinctiveness;*
- *Contribute to the regeneration, restoration, enhancement or conservation of the area;*
- *Positively relate to townscape and landscape character through siting, design, use of local materials and landscaping.*
- *The conservation and enhancement of sites, areas, or interests, of recognised international or national importance for their landscape, nature conservation, archaeological or historic importance, including the (proposed) World Heritage Site, should be given priority in the consideration of development proposals.'*

### 10.3 Former Carrick Local Plan

Although now part of Cornwall Council, Carrick District Council's policies listed in its local plan continue to be relevant. The Carrick District Wide Local Plan 1998 contains policies designed to protect the archaeological resource, using the following elements of policy framework:

**Carrick Policy 3A** states: The District Planning Authority will enhance and protect the countryside by refusing planning permission for development which would have a significant adverse impact upon its biodiversity, its beauty, diversity of landscape, the character and setting of settlements, the wealth of its natural resources, its nature conservation and agricultural, historic and recreational value.

**Carrick Policy 4S** states: Where nationally important archaeological remains, whether scheduled or not, are affected by proposed development, there will be a presumption against proposals which would involve significant alteration or cause damage, or which would have a significant impact on the setting of visible remains.

**Carrick Policy 4T** states: Where proposed development is likely to significantly affect sites of local archaeological importance, they should be protected in situ, unless the significance of the remains is not sufficient, when weighed against the need for development, to justify their physical preservation. Where retention of remains is not possible, the District Planning Authority may impose conditions or seek planning obligations to ensure that adequate archaeological records are prepared before development commences.

**Carrick Policy 4Y** states: In considering proposals for development in Areas of Great Historic Value, high priority will be attached to the need to avoid disturbance to features of archaeological or historic significance, and to the need to conserve the particular character of the area. Proposals which would have a significant adverse affect upon the archaeological or historic character of the area will not be approved.

**Carrick Local Development Framework Policy 3 (Protection of the Countryside)** notes that: *The District Planning Authority will enhance and protect the countryside by refusing planning permission for development which would have a significant adverse impact upon its biodiversity, its beauty, diversity of landscape, the character and setting of settlements, the wealth of its natural resources, its nature conservation and agricultural, historic and recreational value.*

### 10.4 Hedgerow Regulations

Under the current, 1997 Hedgerow Regulations, owners wishing to remove all or part of a hedgerow considered to be historically important must notify the Local Planning Authority (LPA). Criteria determining importance include whether the hedge marks a pre-1850 boundary, and whether it incorporates an archaeological feature. The LPA may issue a hedgerow retention notice prohibiting removal.

## 11 Likely impacts of the proposed development

Archaeological impacts which might result from the proposed development at Lower Polstain are likely to result from groundworks undertaken during the early stages of the development. These could have direct, physical impacts on the buried archaeology of the site through trenching associated with the provision of services or for foundations, landscaping activities resulting in a lowering of the present ground surface, through the provision of works compounds, access routes and temporary storage areas. Such impacts on the sub-surface archaeology of the site would be **permanent** and **irreversible**.

## 12 Mitigation Strategy

In a case where the finalised site design would seem likely to result in unavoidable impacts on below-ground or above ground features, a brief for work to mitigate these impacts might be prepared by Cornwall Council's Historic Environment Advice Officer (East), setting out its scope. A Written Scheme of Investigation (WSI) to meet the brief would need to be prepared and agreed to establish and direct a programme of mitigating archaeological work.

A range of means to mitigate the potential impacts identified in this assessment may be considered by the Historic Environment Planning Advice Officer, who may choose to recommend further recording.

In the instance of the site at Polstein, Lower Polstain, there is a likelihood of some at-present inadequately recorded below ground remains being directly impacted upon by the development proposals.

The Historic Environment Planning Advice Officer may require an evaluation of parts of the site to determine the likely impacts and significance of any below ground remains before a recommendation for the granting of planning permission could be made or may determine that features such as the former miner's cottage could be adequately recorded through a controlled soil strip or archaeological watching brief, followed by archaeological excavation if appropriate.

Should either or a combination of these approaches be deemed to be required, a suitable programme of works should be agreed with the HEPAO.

## 13 References

### 13.1 Primary sources

Cornwall County Council 2005 aerial mapping of Cornwall.

Joel Gascoyne's 1699 Map of Cornwall

Martyn's 1748 Map of Cornwall

Ordnance Survey, 1809, *1 inch mapping* First Edition (licensed digital copy at HE)

Ordnance Survey, c1880. *25 Inch Map* First Edition (licensed digital copy at HE)

Ordnance Survey, c1907. *25 Inch Map* Second Edition (licensed digital copy at HE)

Ordnance Survey, 2007. *Mastermap Digital Mapping*

Tithe Map and Apportionment, c1840. *Parish of Kenwyn* (digital copy available from CRO)

### 13.2 Publications

English Heritage 2005, *Wind energy and the Historic Environment*

English Heritage 2011, *The setting of Heritage assets: English Heritage guidance*

Herring, P. 1998, *Cornwall's historic landscape: presenting a method of historic landscape character assessment*, Cornwall Archaeological Unit

Norden, J. 1724, *Map of Cornwall*, reprinted University of Exeter 1972

Padel, O.J. 1988, *Cornish place-names*, Penzance

Thorn, C. and Thorn, F. (eds.) 1979, *Domesday Book, 10: Cornwall*, Chichester

### **13.3 Websites**

English Heritage's online database of Sites and Monuments Records, and Listed Buildings:

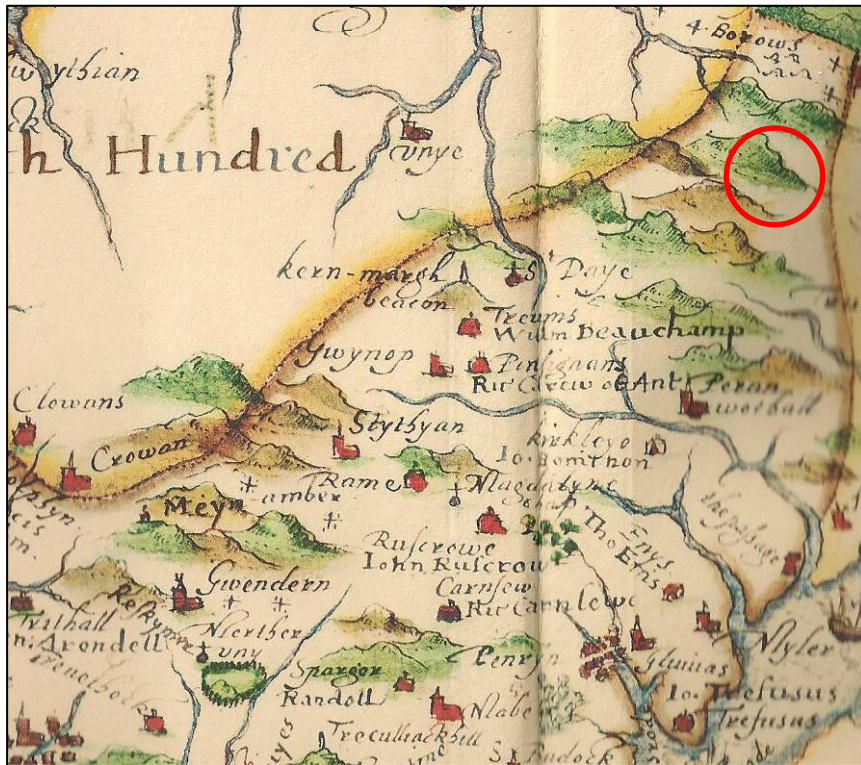
<http://www.heritagegateway.org.uk/gateway/>

## **14 Project archive**

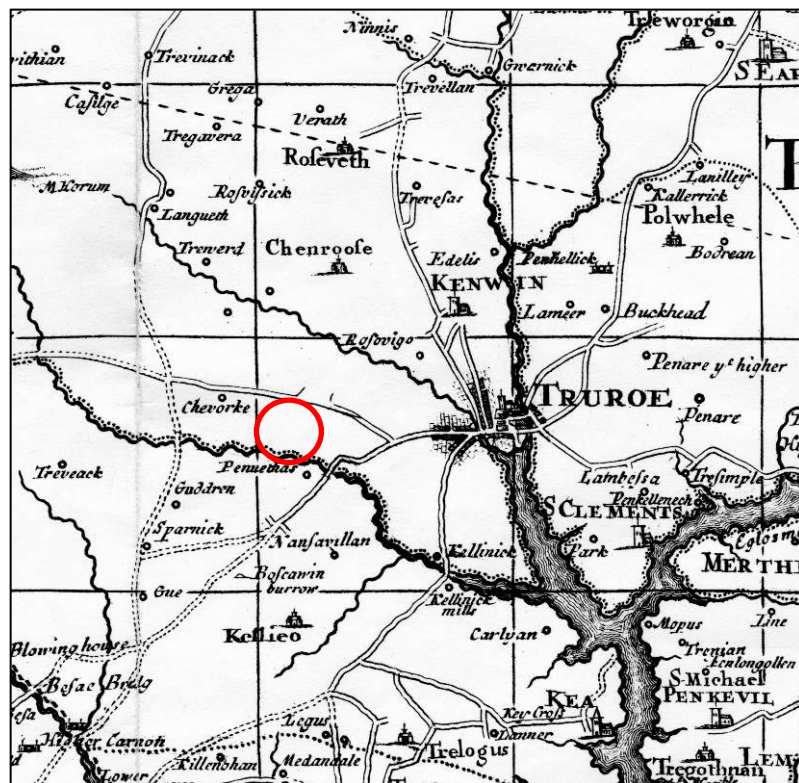
The HE project number is **PR146208**

The project's documentary, photographic and drawn archive is housed at the offices of Historic Environment, Cornwall Council, Kennall Building, Old County Hall, Station Road, Truro, TR1 3AY. The contents of this archive are as listed below:

1. A project file containing site records and notes, project correspondence and administration.
2. English Heritage/ADS OASIS online reference: cornwall2-138425
3. This report text is held in digital form as: G:\TWE\Waste & Env\Strat Waste & Land\Historic Environment\Projects\Sites\Sites L\Lower Polstain geophysics 2012\Report\Lower Polstain assessment and geophysics.doc



*Fig 3. The proposed turbine site and its surroundings, as shown on John Norden's Map of Cornwall, published in 1724 but drawn circa 1600. The project area is circled in red.*



*Fig 4. The project area and its surroundings, shown on Joel Gascoyne's 1699 Map of Cornwall. The project area is circled in red.*





Fig 5. The project area and its surroundings, as shown on Martyn's 1748 Map of Cornwall. The project area is circled in red.



Fig 6. The project area and its surroundings as shown on the circa 1809 1<sup>st</sup> Edition OS mapping.



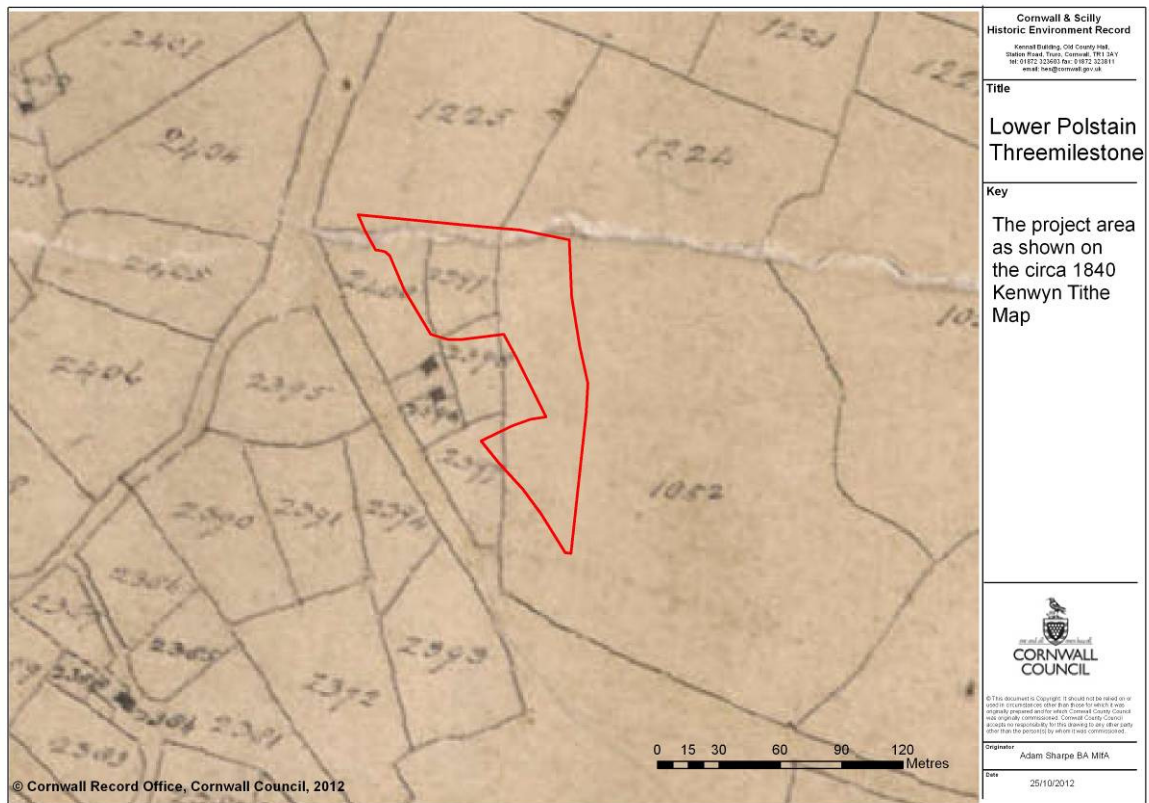


Fig 7. The project area as shown on the circa 1840 Kenwyn Tithe Map. The project area is slightly offset because of the differing projections used by the Tithe Map surveyor and modern mapping.

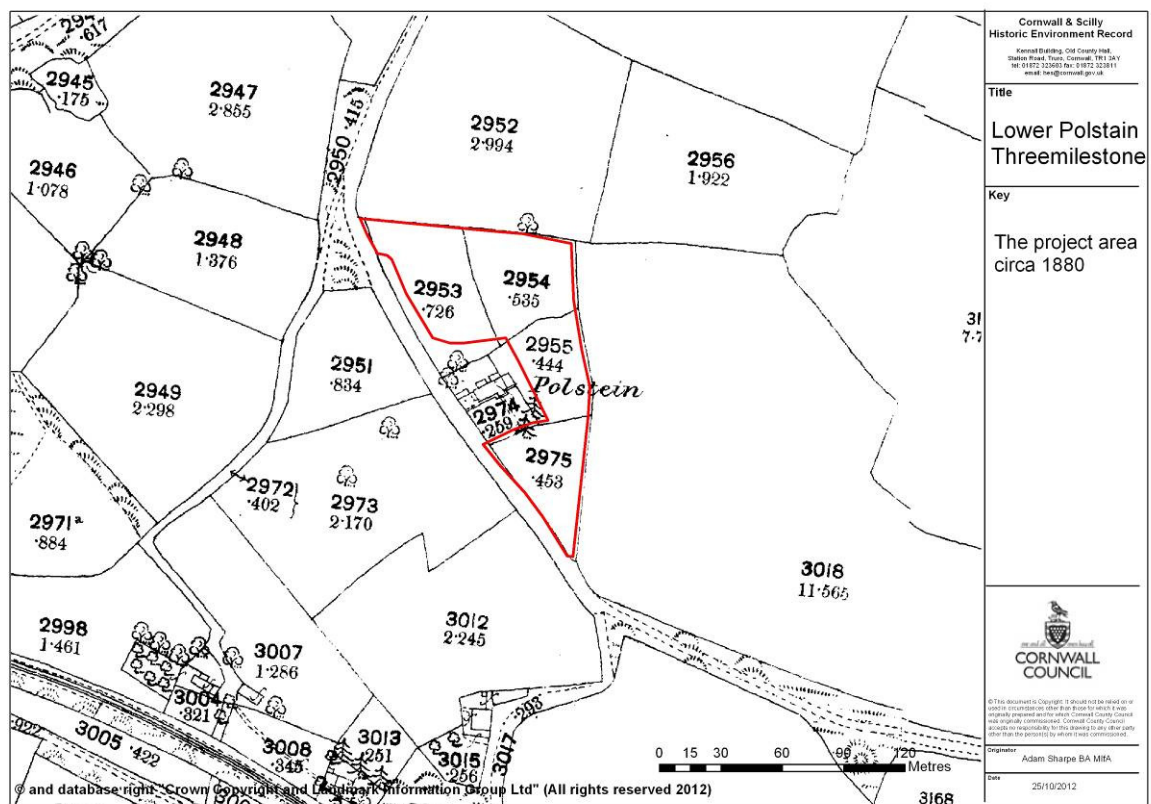


Fig 8. The project area as shown on the circa 1877 1<sup>st</sup> Edition OS 25" to the mile mapping.

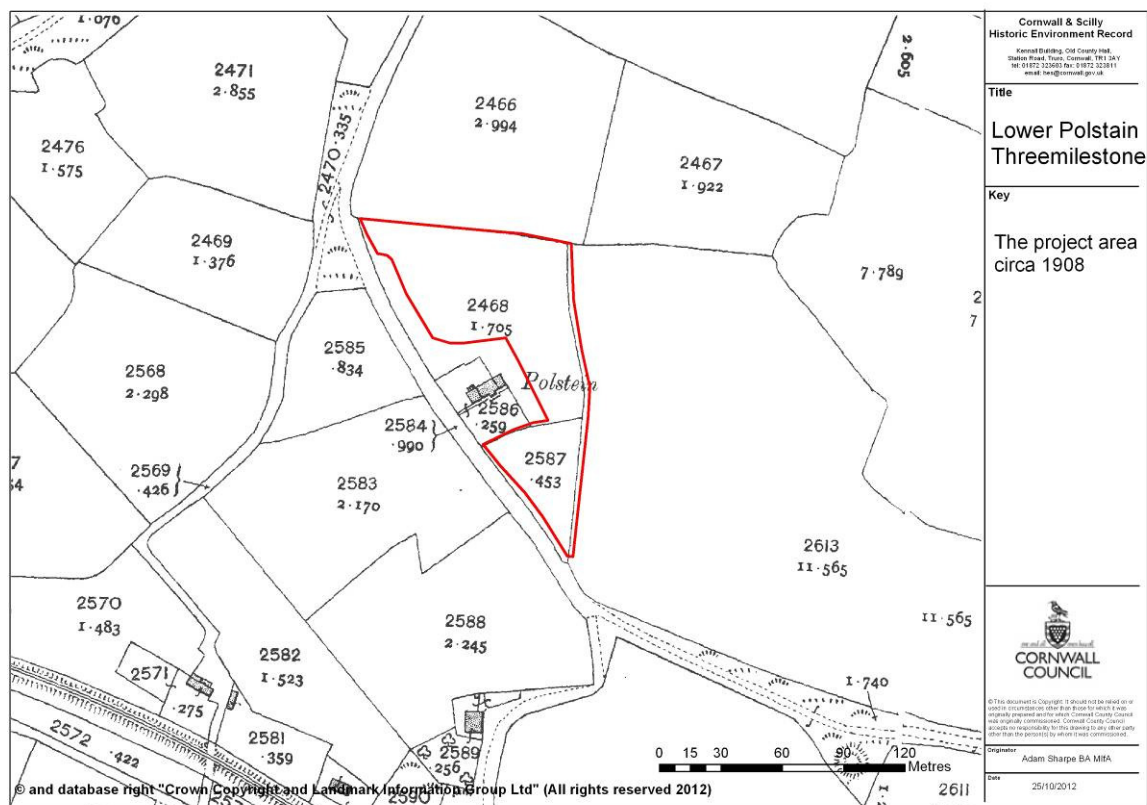


Fig 9. The project area as shown on the circa 1908<sup>2nd</sup> Edition OS 25" to the mile mapping.



Fig 10. The project areas as shown on a 2005 CCC aerial photograph.





Fig 11. Historic Landscape Character mapping showing how the project area is mapped as having been derived from medieval farmland (khaki).

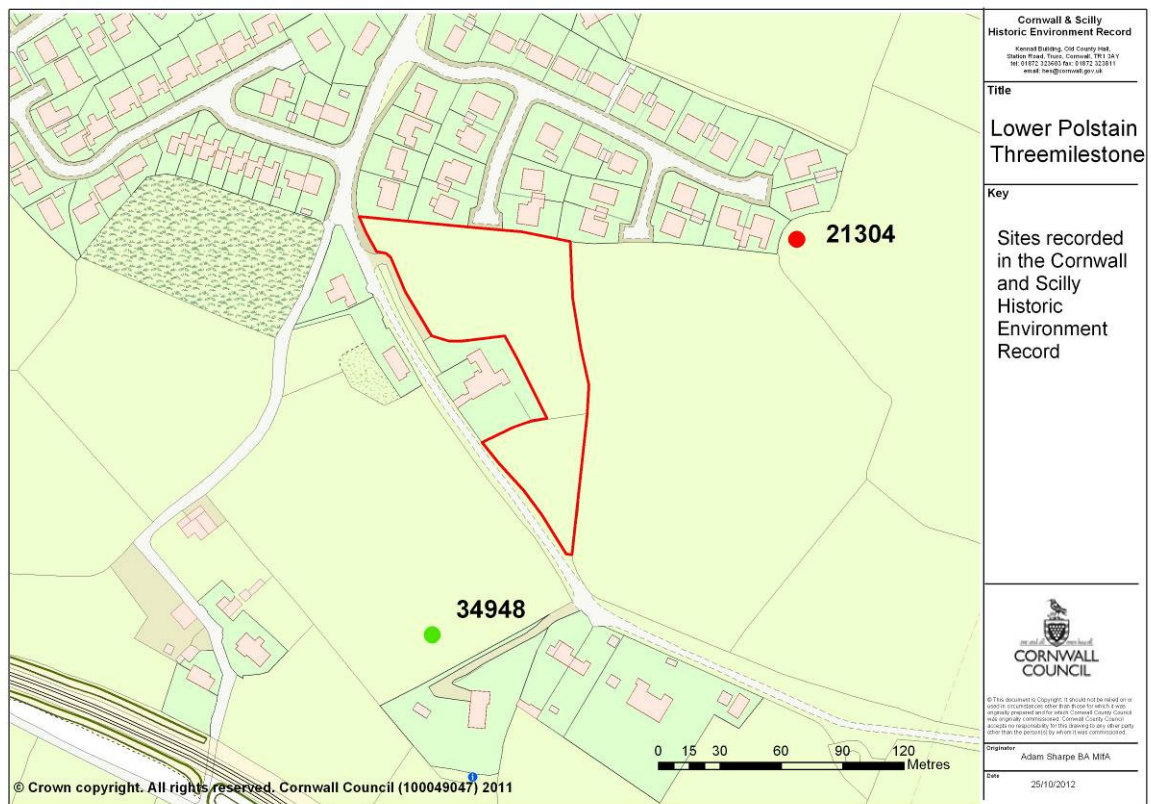


Fig 12. Sites recorded in the Cornwall and Scilly Historic Environment Record in the immediate vicinity of the proposed development site. MCO21304 represents a Romano-British round (defended farmstead) and MCO34948 is a medieval field system.

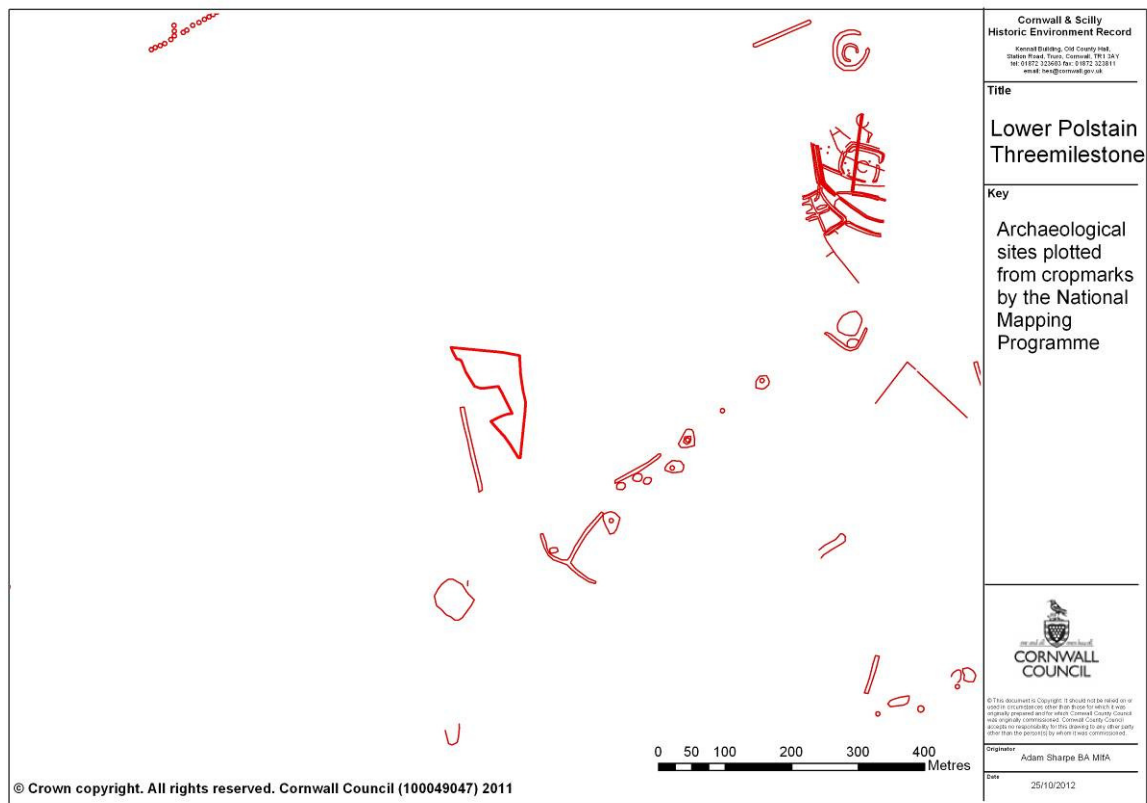


Fig 13. Archaeological sites within the vicinity of Lower Polstain recorded from aerial photographs by the NMP team include mining features, early field systems and prehistoric enclosed settlements.

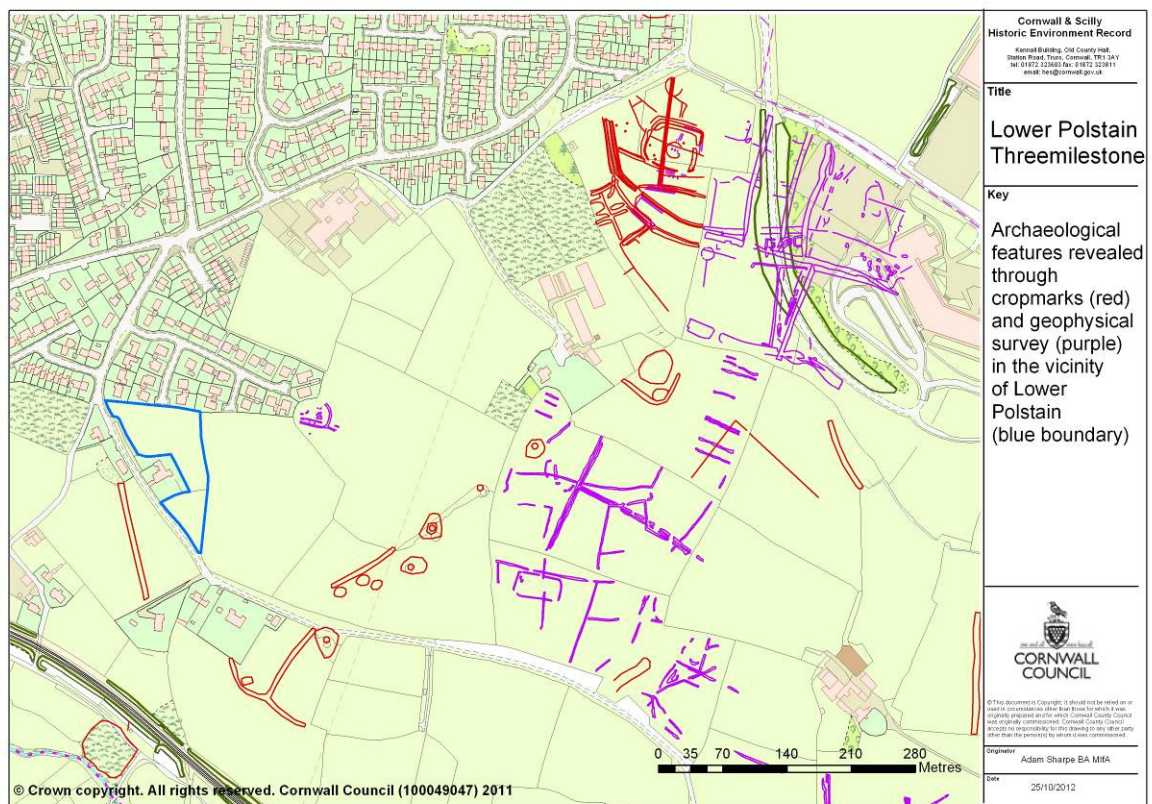


Fig 14. The combination of the MNP aerial plots with the results of previous geophysical surveys carried out within the locality gives a good indication of the archaeological complexity of this area during prehistory.



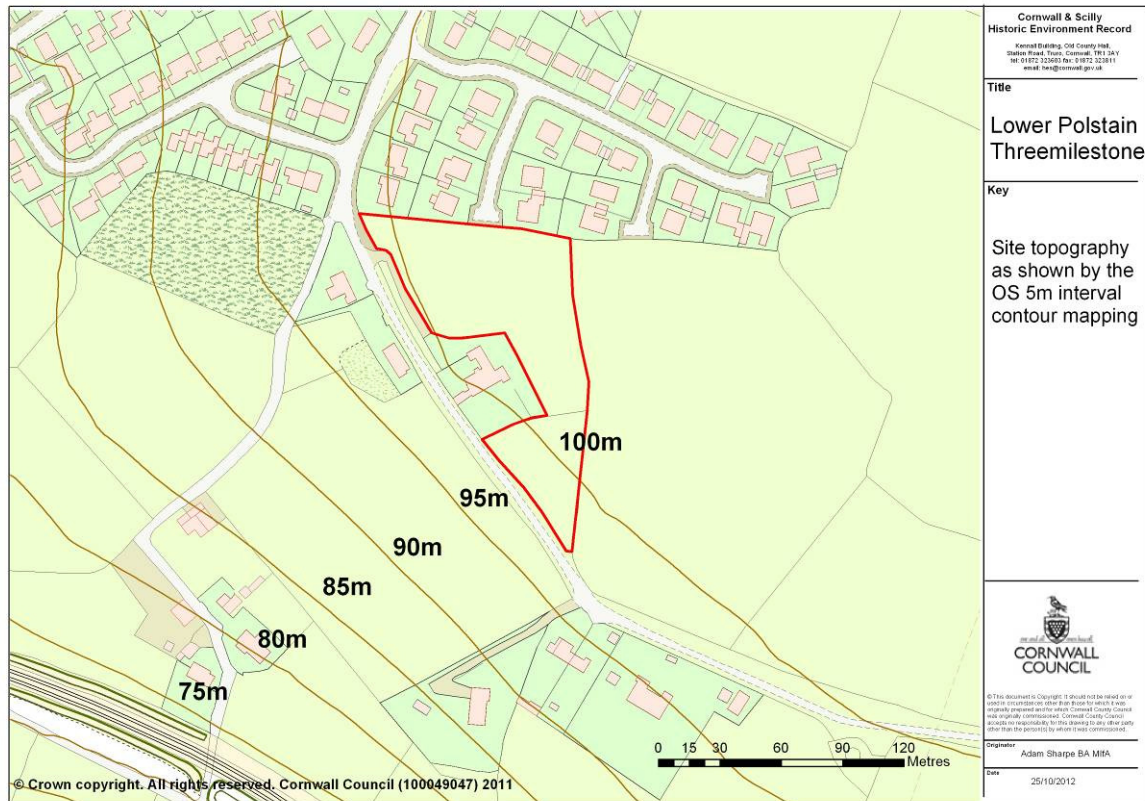


Fig 15. OS contour data for the area immediately surrounding the proposed development shows its site located on the edge of plateau above a south west-facing valley side.



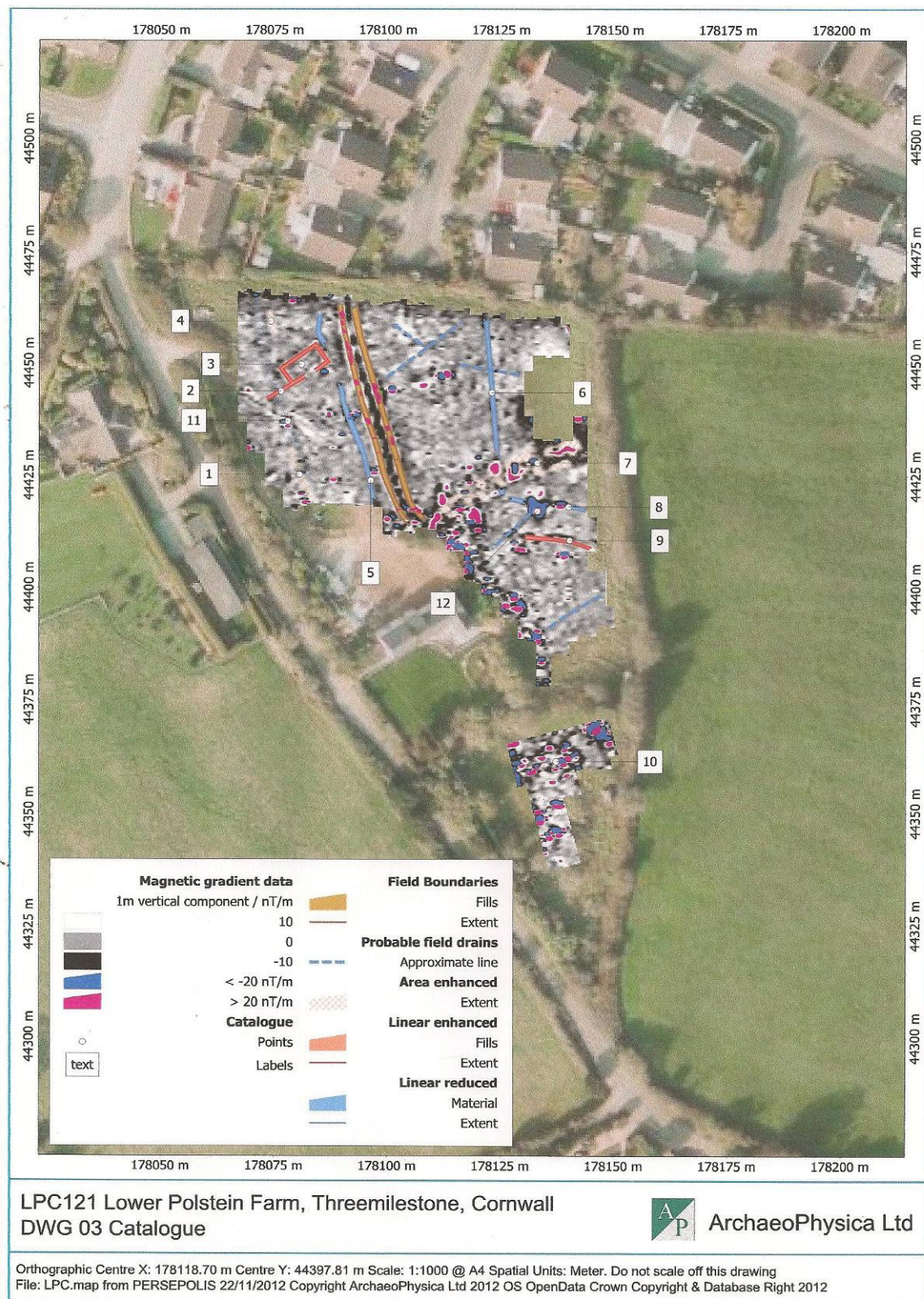


Fig 16. The interpreted geophysical survey results from Lower Polstain includes former routes of the road to the west, removed field boundaries, drainage features, a demolished smallholder's cottage [3] and a possible mining feature.



**Appendix 1: Geophysical Survey tables**

Label	Anomaly Type	Feature Type	Description	Easting	Northing
1	Area enhanced	Fill - Hollow?	Possible area of fill or deeper topsoil. In conjunction with [11], this pairing of increased and reduced magnetic field / gradient would be similar to observed elsewhere along the lines of former roads	178080.5	44425.3
2	Linear dipolar enhanced	Structure?	Structure [3] includes a short section of magnetic linear structure that continues SW and may be part of an enclosure wall. If so, it crosses the line of [11] and is likely therefore to be of different date	178076.4	44443.8
3	Linear dipolar enhanced (group)	Structures	Four linear enhanced gradient anomalies less than 1m wide form a rectangular outline measuring approximately 4m x 9m. This would be typical of a small dwelling with two rooms approximately 12' square internally although there are no other diagnostic structures. Brick is not expected so the footings, or at least their line, are likely to be magnetic for some other reason	178080.9	44449.7
4	Area enhanced	Fill - Hollow?	See [1]	178074.1	44459.4
5	Linear reduced	Structure?	This strongly reduced gradient anomaly would be typical of a buried non-magnetic structure, e.g. a culvert	178096.2	44424.0
6	Linear reduced	Structure?	See [5]	178122.9	44443.5
7	Variable dipolar	Debris - Fill	This is the line of a field boundary depicted on the 1840 Tithe map and apparent as a change in slope, associated with a band of debris that perhaps relates to landscaping or reclamation activities	178132.9	44427.9
8	Linear reduced	Structure?	See [5]; this appears to join onto [5] and turn eastwards	178139.8	44418.1
9	Linear dipolar enhanced	Fill - Ditch?	Uncertain, could be a drainage feature or a narrow (< 1m) ditch fill unrelated to other structures at the site	178140.1	44410.7
10	Variable dipolar	Debris	This may be modern and relate to rubbish and excavation of a cess pit to the west	178137.2	44361.5
11	Area reduced	Uncertain - material change?	If this was a former road then the remains of a metallised surface might result in a band of reduced magnetic gradient. A band of less	178077.9	44437.2
Label	Anomaly Type	Feature Type	Description	Easting	Northing
12	Discrete strong dipolar	Debris - Ferrous	Nothing was seen at the surface, however, a large steel object would be typical of this sort of anomaly. Sharpe (pers. comm.) notes that a field boundary plotted in 1880 appears to avoid this area, and indeed, a slight deflection may also be visible on the 1840 Tithe map as well. The possibility of mine shaft or well containing debris is enhanced given that further examples have been seen nearby from the air	178132.9	44417.2

*These tables should be read in conjunction with Fig 16 above and provide interpretative information for the geophysical survey data.*