



# **Colraine Wind Turbine, Callestick, Cornwall**

## **Archaeological Watching Brief**



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**Historic Environment Projects**



Report No

2012R061

Report Name

Colraine Wind Turbine, Callestick, Cornwall:  
Archaeological Watching Brief

Report Author

C. M. Thorpe

Event Type

Watching Brief

Client Organisation

Dulas Ltd

Client Contact

Sharlene Wilson

Monuments (MonUID)

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Fieldwork dates (From) (To)

22/07/13

25/07/13

(Created By)

Carl Thorpe

(Create Date)

20/08/13

Location (postal address; or general location and parish)

Colraine Equestrian Centre, Perranzabuloe

(Town – for urban sites)

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(Postcode)

TR4 9HG
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(Easting) X co-ord

SW 78105

(Northing) Y co-ord

49498

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# 1. Project background

HE Projects was commissioned by Sharlene Wilson of Dulas Ltd to undertake a programme of archaeological recording during ground works required ahead of the erection of a wind turbine at Colrairie Equestrian Centre, Callestick, SW 78121 49496. The base of the turbine measured 5m x 5m while the length of trench excavated for an electric cable to connect the turbine to the Equestrian Centre was approximately 285m. The cable trench was on average 0.3m wide. The total area examined was approximately 0.02Ha (Figs 1–3).

The development was the subject of a planning condition, which required that archaeological recording took place ahead of construction (PA12/06932). Dan Ratcliffe (Historic Environment Planning Advice Officer, Cornwall Council) produced a brief for archaeological recording (09/07/13) and was consulted over the requirements for the archaeological recording. A written scheme of investigation, outlining the methodology for archaeological recording was produced (11/07/13) by Adam Sharpe (Senior Archaeologist, HE Projects) in response to Dan Ratcliffe's brief (Appendix 1).

# 2. Location and setting

The development area is located within land that falls into an Historic Landscape character zone which has been classified as 'Anciently Enclosed Land' (Cornwall County Council 1996) within the HLC Type 'Farmland Medieval'. '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. There was thus the potential for the preservation of buried archaeological deposits to survive in the project area.

## *Identified archaeological sites*

A number of sites in the vicinity of the study area were identified from the Cornwall and Scilly Historic Environment Record (Fig 2). They included:

- A crop-mark and earthwork enclosure of probable Iron Age/Romano-British date (MCO8732) Tresawsen Round, which is a Scheduled Monument (No 1016445) located 300m ENE of the site.
- Tresawsen medieval settlement (MCO 17688) some 520m to the NE of the site was first recorded as an early-medieval settlement in 1301 (Gover 1948).
- Chynhale medieval settlement (MCO 13990) some 540m to the NW of the site was first recorded as a medieval settlement in 1311 (Gover 1948).

## *Potential sites*

There was the potential for prehistoric and medieval sites to survive within the project area, and there was scope for the survival of previously unrecorded archaeological sites, organic remains, and artefacts of all periods.

## *Site description*

The field covered by the watching brief is on sloping ground that falls towards the north from a height of 114m OD to 92m OD. It lies to the south of Colrairie Lodge and equestrian centre, within the ecclesiastical parish of Perranzabuloe. The field is currently utilised for grazing. The underlying geology consists of Devonian mudstones and sandstones of the Ladock Beds or Grampound Grit (BGS Sheet 346).

### **3.Aims and objectives**

The aims of the project were:

- To establish the absence/presence of buried archaeological remains.
- To record archaeological features, layers and finds affected by the works.
- To establish the extent, condition, significance and character of the archaeological resource.
- To identify any artefacts relating to the occupation of the site.
- To gain further information about the archaeological potential of the area, through the recording of buried archaeological remains.
- The dissemination and publication of the results.
- The long-term conservation of the project archive in appropriate conditions.

### **4.Working methods**

The site soil strip was carried out under archaeological supervision using a machine fitted with a toothless bucket. The soil was stripped cleanly to a level at which archaeological features or layers were expected to be revealed, in this case the top of the natural geology. The area was then inspected by the archaeologist.

The location of the turbine base and the line of the cable trench were plotted onto a site plan (noting the locations of archaeological features and recorded profiles) at a scale of 1:1000 based on an Ordnance Survey map of the same scale.

### **5.Results**

#### **General**

Twenty sections were recorded within the area of the turbine base and along the length of the trench, ten within Field 1, five within Field 2 and five within Field 3 (Fig 3). Details of these sections can be found within the site archive.

#### **Field 1.**

The area stripped for the base of the wind generator was 5.0m x 5.0m, and reached a maximum depth of 1.8m. The electric cable run was 40m long, averaged 0.30m wide and reached a depth of approximately 0.70m. Two geotechnical test pits each measuring 2.0m x 2.0m and 2.2m deep were also excavated alongside the generator base (Fig 3).

The average soil profile recorded within this field consisted of 0.05m of grass, roots and topsoil overlying 0.15m of yellow, grey-brown clay, and 0.05m of yellow, orange-brown clay. The decayed natural clay and shillet bedrock lay at the base of the trench.

The soil profile, though consistent in nature throughout the field varied in thickness from 0.25m to 0.35m, the greatest depth being recorded at the base of the slope, with the least being seen upslope, a reflection of soil movement due to plough action in the past. In places solid shillet bedrock was very close to surface. No archaeological features were recorded and no artefacts were recovered throughout this field.

#### **Field 2.**

The electric cable run within this field was 125m long, averaged 0.30m wide and reached a depth of approximately 0.70m (Fig 3).

The average soil profile recorded within this field consisted of 0.05m of grass, roots and topsoil overlying 0.20m of yellow, grey-brown clay, and 0.03m of yellow, orange-brown clay. The decayed natural clay and shillet bedrock lay at the base of the trench.

The soil profile, though consistent in nature throughout the field varied in thickness from 0.20m to 0.35m, the greatest depth being recorded at the base of the slope towards the north, with the least being seen upslope, again an indication of soil movement due to plough action in the past. No archaeological features were recorded within this field and no artefacts were recovered.

### **Field 3.**

The electric cable run within this field was 120m long, averaged 0.30m wide and averaged a depth of approximately 0.70m (Fig 3). The average soil profile recorded within this field consisted of 0.05m of grass, roots and topsoil overlying 0.10m of yellow, grey-brown clay, and 0.02m of yellow, orange-brown clay. The decayed natural clay and shillet bedrock lay at the base of the trench.

The soil profile, though consistent in nature throughout the field varied in thickness from 0.11m to 0.27m, the greatest depth being recorded at the base of the slope, with the least being seen upslope. As in the neighbouring fields, this was judged to have been due to soil movement resulting from plough action in the past. Close to the northern end of the trench the soil was exceedingly thin (0.11m). This may be the result of landscaping close to the equestrian centre having resulted in the removal of some of the soil.

At SW 78085 49738 a ridge of harder less weathered bedrock was encountered (*circa* 0.08m high) running across the trench in a west to east direction (Fig 2). This seems to be the last remnants of a field boundary depicted on the *circa* 1880 OS 25" to a mile mapping, the step of harder rock having been protected from weathering by the now-removed boundary bank. No other features were recorded and no artefacts were recovered from the trenches within this field.

## **6. Conclusions/discussion**

Apart from slight evidence for a removed field boundary within Field 3 that had been depicted on the Tithe Map for Perranzabuloe in 1840, no other features of archaeological interest were seen within the turbine base or over the length of the cable trench, and no artefacts were collected. It was concluded that this development had no impact on any significant buried archaeological remains.

## 7. References

### Primary sources

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, 1840. *Parish of Perranzabuloe* (licensed digital copy at HE)  
British Geological Survey, c1981. Map sheet 346 Newquay.

### Publications

Cornwall County Council, 1996. *Cornwall: A Landscape Assessment 1994* report produced by Landscape Design Associates in association with Cornwall Archaeological Unit.  
Gover, JEB 1948, *Place-Names of Cornwall* (manuscript at RCM, Truro).

### Websites

<http://www.heritagegateway.org.uk/gateway/> English Heritage's online database of Sites and Monuments Records, and Listed Buildings

## 8. Project archive

The HE project number is **146282**

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

1. Projects file containing site records and notes, project correspondence and administration (146282).
2. Field plans and copies of historic maps stored in an A2-size plastic envelope (GRE795).
3. Digital photographs stored in the directory: R:\Historic Environment (Images)\SITES.A-D\Colrairie Wind Turbine, Callestick WB 146282. July 2013
4. English Heritage/ADS OASIS online reference: cornwall2- 158300
5. This report text is held in digital form as: G:\TWE\Waste & Env\Strat Waste & Land\Historic Environment\Projects\Sites\Sites C\Colrairie wind turbine WB 2013 146282\Report

No artefacts were recovered in the course of this project.



# 9. Appendix 1. Colraine, Callestick, Truro: Written Scheme of Investigation for an archaeological watching brief during the erection of a wind turbine

Client: Dulas Ltd  
Client phone : 07585 977301  
Client email: [Sharlene.Wilson@dulas.org.uk](mailto:Sharlene.Wilson@dulas.org.uk)

## Site history

The development area has been recorded on the Cornwall and Scilly Historic Environment Record (HER) as situated within 'Anciently Enclosed Land' (Farmland Medieval) associated with the settlements of Callestick and Chynhale, the site having been assessed as having a high potential for survival of buried archaeological remains.

The site occupies a north-facing spur of land 270m due west of Scheduled Monument No 1016445: 'Hillfort 250m south west of Tresawson'. This multiple enclosure hillfort dating to the Iron Age (c 350BC to 50 AD) survives in part as an above ground earthwork, parts of which are delineated by an extant hedge line. A contemporary Iron Age settlement lies 1.45km to the north west of the application site.

## Project background

A planning application (PA12/06932) has been approved for the installation of a 24.6m to hub, 34.2m to blade tip single wind turbine in a field to the south of Colraine Equestrian Centre, Callestick, SW 78121 49496, with a condition that a watching brief is carried out during groundworks associated with the erection of the wind turbine. Condition 5 of the planning approval reads;

*No development hereby permitted shall commence on site until a programme of archaeological work including a Written Scheme of Investigation has been submitted to and approved by the local planning authority in writing. The scheme shall include an assessment of significance and research questions; and:*

- 1. The programme and methodology of site investigation and recording*
- 2. The programme for post investigation assessment*
- 3. Provision to be made for analysis of the site investigation and recording*
- 4. Provision to be made for publication and dissemination of the analysis and records of the site investigation*
- 5. Provision to be made for archive deposition of the analysis and records of the site investigation*
- 6. Nomination of a competent person or persons/organisation to undertake the works set out within the Written Scheme of Investigation.*

*No development shall take place other than in accordance with the Written Scheme of Investigation*

A brief outlining the nature of the work to be undertaken was issued on 09/07/2013 by Dan Ratcliffe, Historic Environment Planning Advice Officer. This sets out a requirement for an archaeological watching brief covering the site proposed for the turbine base, together with any areas to be utilised for the access track and cable connection route where intrusive activities may take place below the topsoil horizon in order that any buried archaeological remains exposed by the groundworks may be appropriately recorded in advance of destruction by a suitably qualified archaeologist.

A request for the costs for this watching brief issued by Sharlene Wilson of Dulas Ltd. was received by Historic Environment Projects on the 9<sup>th</sup> July 2013. No archaeological assessment of the site proposed for the wind turbine, or impact assessment to

determine either physical or setting impacts of designated and undesignated heritage assets which might result from the erection of the wind turbine appears to have been commissioned, nor has a geophysical survey of the site been undertaken.

## **Project extent**

The wind turbine is to be sited at SW 78121 49496 in a field to the south of Colrairie Equestrian Centre to the south of Callestick, whilst the cable connection will run to the north of the turbine through the neighbouring field to the equestrian centre.

The watching brief will be confined to the area of groundworks for the turbine, the control cabin and the cabling/access route, though a controlled soil strip will also be undertaken on the site of the crane pad if this requires the ground levels to be lowered.

## **Aims and objectives**

As set out in the brief, the site specific aims are:

- Establish the presence/absence of archaeological remains
- Determine the extent, condition, nature, character, date and significance of any archaeological remains encountered
- To establish the nature of the activity on the site
- To identify any artefacts relating to the occupation or use of the site
- To undertake palaeo-environmental investigation as appropriate
- To provide further information on the archaeology of the site from any archaeological remains encountered.

The project objective is produce a report setting out the results of the archaeological watching brief and placing them in their historical and landscape context.

## **Working methods**

All recording work will be undertaken according to the Institute for Archaeologists *Standards and Guidance for Archaeological Investigation and Recording*. Staff will follow the IfA *Code of Conduct* and *Code of Approved Practice for the Regulation of Contractual Arrangements in Archaeology*. The Institute for Archaeologists is the professional body for archaeologists working in the UK.

### **Desk-based assessment**

A brief desk-based assessment will be carried out to inform the watching brief stage. This will comprise:

- Published sources
- Historic maps, including
  - OS 1 inch survey (c1810)
  - Parish Tithe map (c1840),
  - 1<sup>st</sup> and 2<sup>nd</sup> Editions of the OS 25 inch maps (c1880 and c1907)
- Modern maps
- Relevant GIS mapping layers curated by Cornwall Council

### **Archaeological watching brief**

The soil strip will be carried out under archaeological supervision using a machine fitted with a toothless bucket supplied by the client. The soil will be stripped cleanly to a level at which archaeological features or layers can be expected to be revealed (i.e. top of the "natural"). Machines will not run over the stripped area until the archaeological works are complete. The area will then be inspected by an archaeologist and any archaeological features or layers exposed in the stripped area will be carefully excavated by hand by an HE Projects archaeologist and archaeologically recorded by written description, plan and section and photographic record as appropriate.

During the archaeological recording the archaeologist will identify and record any archaeological features that are revealed in the stripped area; the level of recording will be appropriate to the character/importance of the archaeological remains and the depth to which the area under investigation will subsequently be further excavated.

If complex and/or significant archaeological deposits are encountered then any requirements for more detailed archaeological investigation and recording should be reviewed by the client, the Historic Environment Planning Advice Officer and HE Projects. In the event that remains cannot be preserved *in situ* then full-scale excavation may be required. A contingency will be allowed to appropriately record any significant archaeological remains which are uncovered during the stripping. The significance of the remains will be agreed between the client and the Historic Environment Planning Advice Officer.

Where necessary the detailed archaeological recording may include:

- Excavation of archaeological features exposed in the stripped area and plotting them onto a base map.
- Production of plans and section drawings of the excavated features and recording of features using a continuous numbering system.
- Retrieval of artefacts.
- Sampling of material which may subsequently be used for paleo-environmental assessment.
- Sampling of material which may subsequently be utilised for high precision dating purposes.

#### Recording - general

Site drawings (plans, sections, locations of finds) will be made by pencil (4H) on drafting film; all plans will be linked to the Ordnance Survey Landline (electronic) map; all drawings will include standard information: site details, personnel, date, scale, north-point.

All features and finds will be accurately located at an appropriate scale. Sections will normally be drawn at 1:10 and plans at 1:20.

All archaeological contexts will be described to a standard format linked to a continuous numbering sequence.

Scaled monochrome photography will be used as the main recording medium, with colour digital images used selectively and for illustrative purposes. This will include both general and site specific photographs. Photographs shall have a scale and detailed ones shall include a north arrow.

Drawings and photographs will be recorded in a register giving details of feature number and location.

Sealed/undisturbed archaeological contexts in the form of buried soils, layers or deposits within significant archaeological features (ditches and pits, etc) will be sampled for environmental evidence and dating material. In the event that significant organic remains are encountered, advice will be requested from Vanessa Straker (Regional Advisor for Archaeological Science).

If human remains are discovered on the site the Historic Environment Planning Advice Officer and the Ministry of Justice will be informed. All recording will conform to best practice and legal requirements. If human remains are uncovered, which require excavation, they will be excavated with due reverence. The site will be adequately screened from public view. Once excavated, human remains must not be exposed to public view. If human remains are not to be removed their physical security will be ensured, by back filling as soon as possible after recording.

#### Treatment of finds

The archaeological fieldwork may produce artefactual material. All finds in significant stratified contexts predating 1800 AD (e.g., settlement features) shall be collected by context and described. Post medieval or modern finds may be disposed of at the cataloguing stage. This process will be reviewed ahead of its implementation.

All finds will be collected in sealable plastic bags which will be labelled immediately with their context number or other identifier.

### **Creation of site archive**

This will include:

- Archiving of black and white photographs to HER standards. All monochrome photographs will be archived using the HE photo database
- Digital colour photographs (stored according to HER guidelines and copies of images made available to the client)
- Preparation of finished drawings
- Completion of the English Heritage/ADS OASIS online archive index

### **Archive report**

A written report will include:

- Summary
- Project background
- Aims and objectives
- Methodologies
- Location and setting
- Designations
- Site history
- Archaeological results
- Chronology/dating evidence
- Significance
- Conclusions
- References
- Project archive index
- Supporting illustrations: location map, historic maps, plans, elevations/sections, photographs

Digital copies of the report, illustrations and any other files will be held in the Cornwall HER. Paper copies of the report will be distributed to the client, to local archives and national archaeological record centres.

In the event of significant archaeological findings, a further stage of analysis and publication in a national journal will be required. The details of this phase of the project would be subject to the results of discussions with the Historic Environment Planning Advice Officer, would require a separate WSI and would require the determination of related additional costs.

### **Archive deposition**

An index to the site archive will be created and the archive contents prepared for long term storage, in accordance with HE standards.

The archiving will comprise the following:

1. All correspondence relating to the project, the WSI, a single paper copy of the report together with an electronic copy on CD, stored in an archive standard (acid-free) documentation box
2. A2 drawn archive storage (plastic wallets for the annotated record drawings)
3. Archive standard negative holders and archive print holders, to be stored in the HES system until transferred to the Royal Cornwall Museum.
4. All black and white photographs will be archived using captioned labels, appropriate record forms and location plans. Other photo records will be supplied

with written captions and subject to appropriate batch archiving to be held in safe archival storage.

5. The project documentary archive will be deposited initially at ReStore PLC, Liskeard and in due course (when space permits) at either the Royal Cornwall Museum (if accompanied by artefacts) or at the Cornwall Record Office and the Courtenay Library of the Truro Museum (in the case where only a paper archive is produced). A summary of the archive contents will be supplied to the HEPAO.
6. The results of the watching brief will be reviewed on completion with the HEPAO and the Client to establish whether these warrant a programme of further analysis and publication.

## **Timetable**

The study is anticipated to be commenced during Summer 2013. The archive report will be completed within 3 months of the end of the fieldwork. The deposition of the archive will be completed within 3 months of the completion of the archive report.

## **Monitoring and Signing Off Condition**

Monitoring of the project will be carried out by the relevant Historic Environment Planning Advice Officer. When the Historic Environment Planning Advice Officer is satisfied with the archive report and the deposition of the archive written discharge of the planning condition will be expected from the local planning authority (LPA).

Monitoring points during the study will include:

- Approval of the WSI
- Completion of fieldwork
- Completion of archive report
- Deposition of the archive
- 

## **Historic Environment Projects**

Historic Environment Projects is the contracting arm of Historic Environment, Cornwall Council (HE). HE employs some 20 project staff with a broad range of expertise, undertaking around 100 projects each year.

HE is committed to conserving and enhancing the distinctiveness of the historic environment and heritage of Cornwall and the Isles of Scilly by providing clients with a number of services including:

- Conservation works to sites and monuments
- Conservation surveys and management plans
- Historic landscape characterisation
- Town surveys for conservation and regeneration
- Historic building surveys and analysis
- Maritime and coastal zone assessments
- Air photo mapping
- Excavations and watching briefs
- Assessments and evaluations
- Post-excavation analysis and publication
- Outreach: exhibitions, publication, presentations

# Standards



HE is a Registered Organisation with the Institute for Archaeologists and follows their Standards and Code of Conduct.

As part of Cornwall Council, HE has certification in BS9001 (Quality Management), BS14001 (Environmental Management), OHSAS18001 (Health, Safety and Welfare), Investors in People and Charter Mark.

## Terms and conditions

### Contract

The HE projects team is part of Historic Environment, Cornwall Council. If accepted, the contract for this work will be between the client and Cornwall Council.

The views and recommendations expressed will be those of the HE projects team and will be presented in good faith on the basis of professional judgement and on information currently available.

### Project staff

The project will be managed by a nominated Senior Archaeologist (Adam Sharpe BA MIfA) who will:

- Discuss and agree the detailed objectives and programme of each stage of the project with the client and the field officers, including arrangements for health and safety.
- Monitor progress and results for each stage.
- Edit the project report.
- Liaise with the client regarding the budget and related issues.

Work will be carried out by HE field staff, with assistance from qualified specialists and sub-contractors where appropriate.

### Report distribution

Paper copies of the report will be distributed to the client, to local archives and national archaeological record centres.

A digital copy of the report, illustrations and any other files will be held in the Cornwall HER and also supplied to the client on CD or other suitable media if requested.

### Copyright

Copyright of all material gathered as a result of the project will be reserved to the Historic Environment, Cornwall Council. Existing copyrights of external sources will be acknowledged where required.

Use of the material will be granted to the client.

### Freedom of Information Act

As Cornwall Council is a public authority it is subject to the terms of the Freedom of Information Act 2000, which came into effect from 1st January 2005.

HE will ensure that all information arising from the project shall be held in strict confidence to the extent permitted under the Act. However, the Act permits information to be released under a public right of access (a "Request"). If such a Request is received HE may need to disclose any information it holds, unless it is excluded from disclosure under the Act.

### Health and safety statement

HE follows the Council's *Statement of Safety Policy*. For more specific policy and guidelines HE uses the manual *Health and Safety in Field Archaeology* (2002) endorsed

by the Standing Conference of Archaeological Unit Managers.  
Prior to carrying out on-site work HE will carry out a Risk Assessment.

**Insurance**

As part of Cornwall Council, HE is covered by Public and Employers Liability Insurance.

*Adam Sharpe BA MIfA*

*Senior Archaeologist*

*11/07/2013*

*Historic Environment Projects*

*Cornwall Council*

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*Email: [asharpe@cornwall.gov.uk](mailto:asharpe@cornwall.gov.uk)*



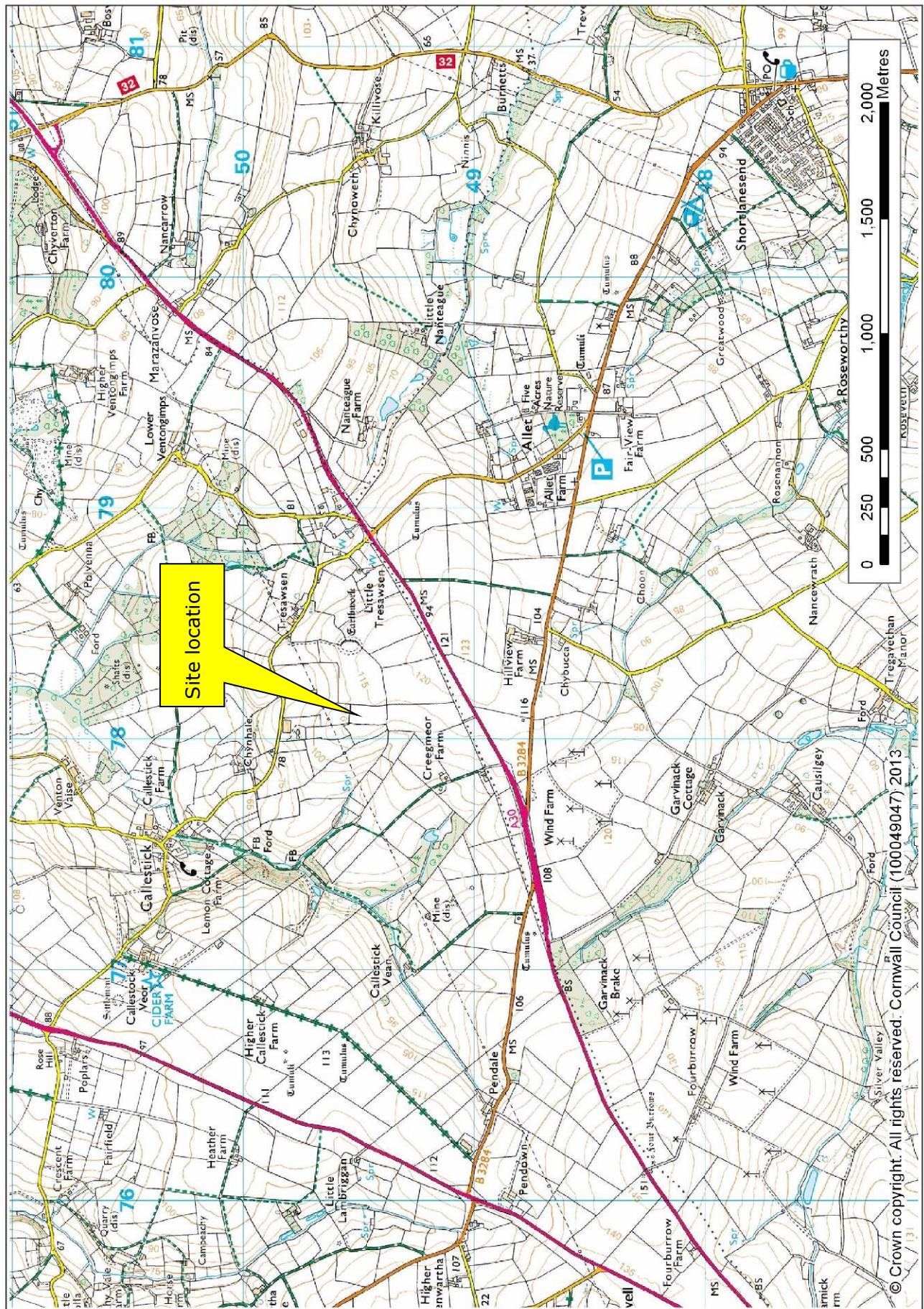


Figure 1. Site location.



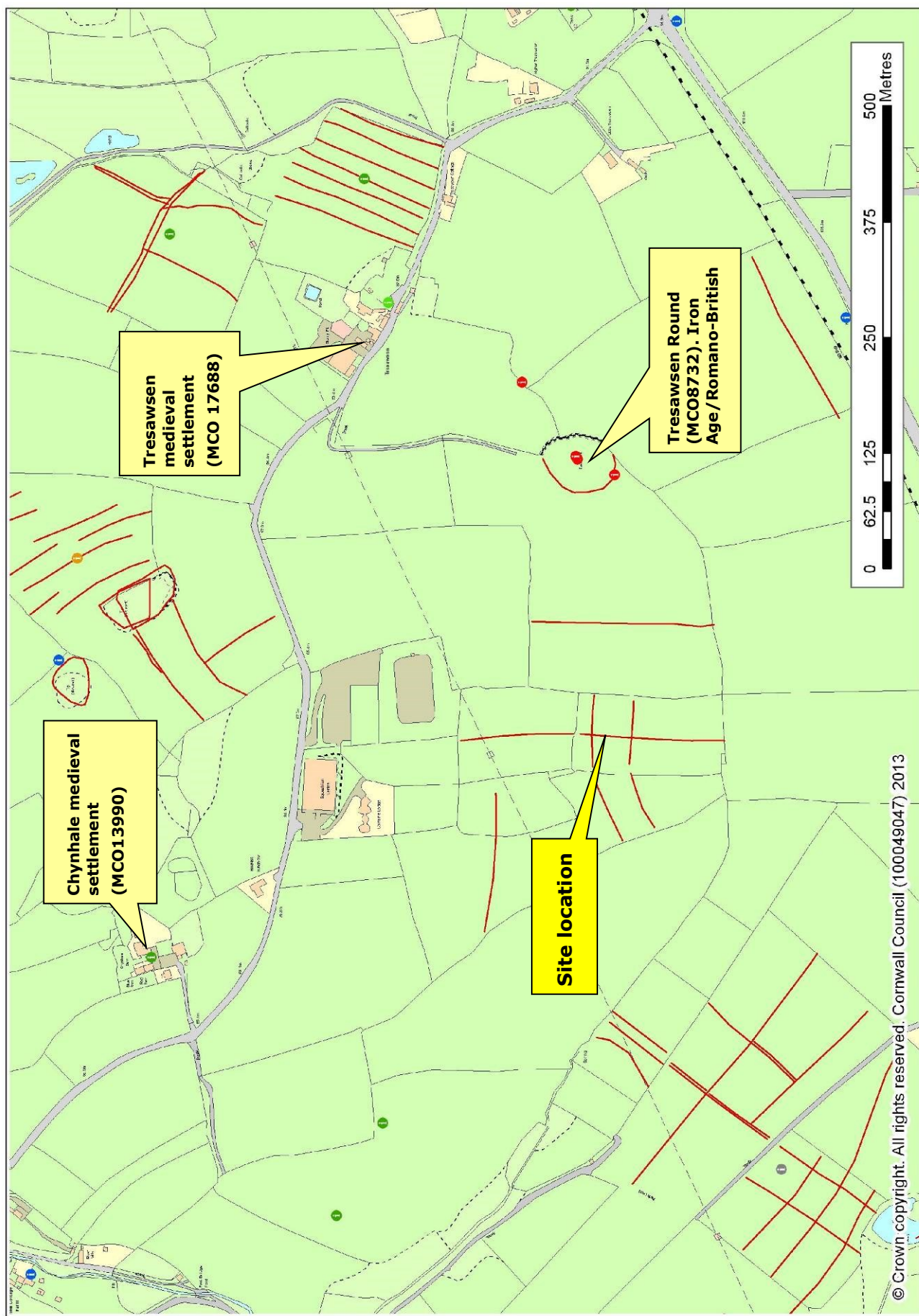


Figure 2. Site location showing relationship to known archaeological sites.

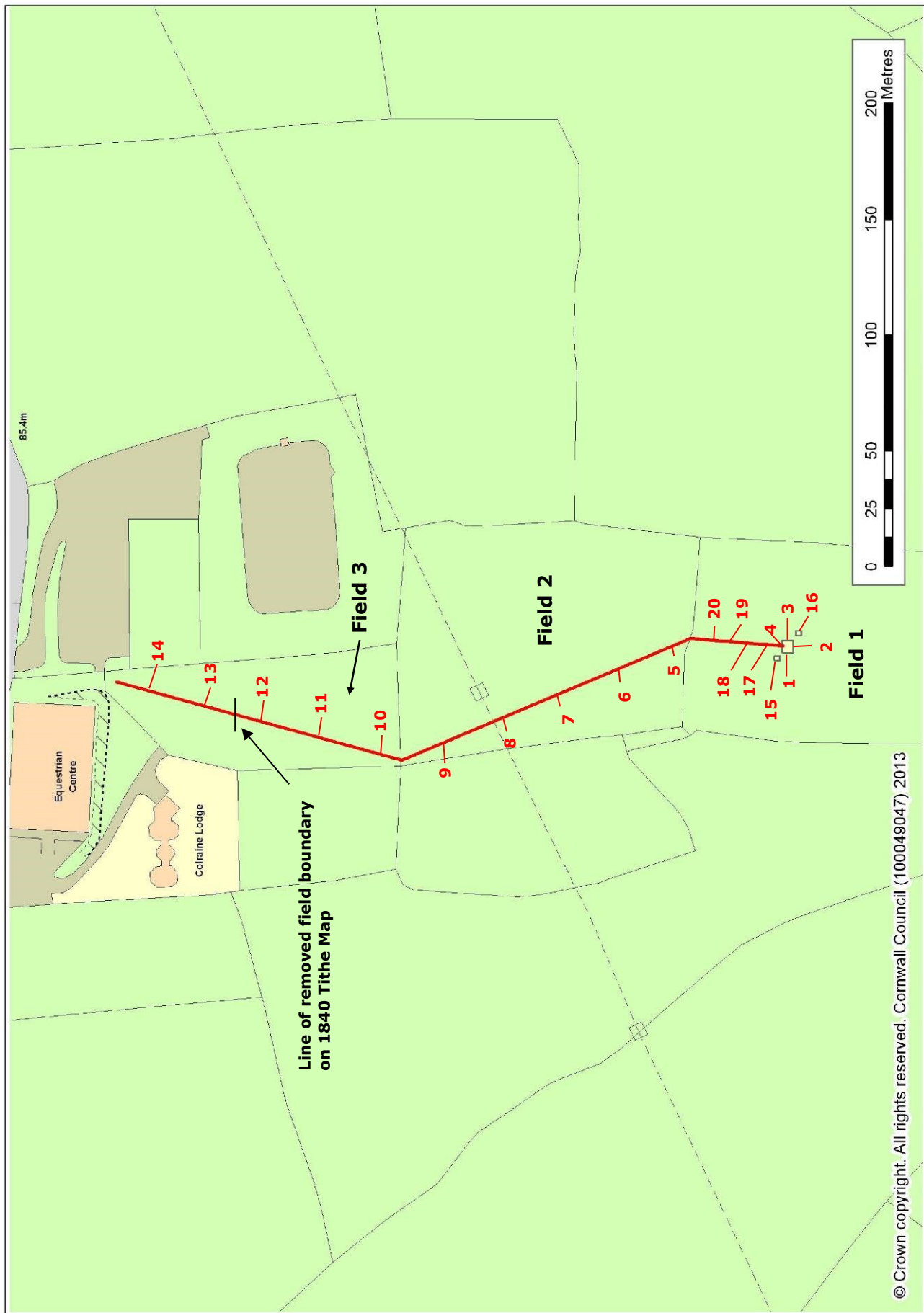


Figure 3. Site plan showing location of recorded features (in black) and recorded soil profiles (in red).