

**GOONHILLY SOLAR
FARM,
CURY CROSS LANES,
CORNWALL**



**WATCHING BRIEF REPORT
CP. No10715
11/03/2014**

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Quality Assurance

This report covers works as outlined in the brief for the above-named project as issued by the relevant authority, and as outlined in the agreed programme of works. Any deviation to the programme of works has been agreed by all parties. The works have been carried out according to the guidelines set out in the Institute for Archaeologists (IfA) Standards, Policy Statements and Codes of Conduct. The report has been prepared in keeping with the guidance set out by WA Archaeology Ltd on the preparation of reports.

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SUMMARY

Wardell Armstrong Archaeology was commissioned by REG Solar Power Ltd, to undertake an archaeological watching brief at land adjacent to the Bonython Wind Farm, Cury Cross Lanes, Cornwall (NGR 107028, 320609). This work is part of a planning application for the construction of a solar farm. The work is required as the development site lies within an area of potential for extensive Bronze Age funerary activity and possible Iron Age or Romano-British enclosure sites (Wardell Armstrong 2011) The site of Bonython medieval settlement lies to the northeast and it is possible that the proposed development was utilised as agricultural land or heathland from this period onwards.

The archaeological watching brief was undertaken in two main phases. With phase 1 covering three days from the 9th - 11th October 2013 and phase 2 being undertaken periodically between the 13th January and 28th February 2014.

Phase 1 monitored the excavation of foundations for four buildings associated with the solar farm and a number of machine dug trial holes which targeted geophysical survey anomalies which were potential unexploded ordnance.

Eighty five of the trial holes contained no archaeological features or deposits. Four of which contained undated stone built drainage features. These features were constructed from local Serpentine rock with no bonding material and covered with large stone slabs, two of which were still in use.

Phase 2 monitored the excavation of 1.3km of cable trenches and an area of excavation around existing live services. No further archaeological observations were made and no finds collected.

ACKNOWLEDGEMENTS

Wardell Armstrong Archaeology wish to thank REG Solar Power Ltd, for commissioning the project, and for all assistance throughout the work. Wardell Armstrong Archaeology also thank Phil Markham, Cornwall Historic Environment Planning Advice Officer, for all his assistance throughout the project.

The archaeological watching brief was undertaken by Chris Timmins and Joe Whelan. The report was written by Helen J MacIntyre and Joe Whelan, with drawings produced by Adrian Bailey. The project was managed by Phil Evans, Senior Project Manager for WAA. The report was edited by Phil Evans, Senior Project Manager for WAA.

1 INTRODUCTION

1.1 CIRCUMSTANCES OF THE PROJECT

- 1.1.1 In October 2013, Wardell Armstrong Archaeology were invited by REG Solar Power Ltd to maintain an archaeological watching brief at land adjacent to Bonython Wind Farm, Cury Cross Lanes, Cornwall (NGR SW 7024 2051; Figure 1), during groundworks associated with the development of a solar farm. A previous desk-based assessment had also been produced by Western Archaeology (2013) which identified that the proposed works lie within an area of potential for Bronze Age funerary activity and possible Iron Age or Romano-British enclosure sites (Wardell Armstrong 2011). The site of Bonython medieval settlement lies to the northeast and it is possible that the proposed development was utilized as agricultural land or heathland from this period onwards. As a result Phil Markham, Cornwall Historic Environment Planning Advice Officer, requested that all ground reduction be subject to a programme of archaeological observation and investigation. This is in line with government advice as set out in Section 12 of the National Planning Policy Framework (NPPF 2012).
- 1.1.2 All groundworks associated with the development of the solar farm had to be excavated under full archaeological supervision and all stages of the archaeological work were undertaken following approved statutory guidelines (IfA 2008), and were consistent with the specification provided by Wardell Armstrong Archaeology (2013) and generally accepted best practice.
- 1.1.3 This report outlines the monitoring works undertaken on-site, the subsequent programme of post-fieldwork analysis, and the results of this scheme of archaeological works.

2 METHODOLOGY

2.1 PROJECT DESIGN

2.1.1 A project design was submitted by Wardell Armstrong Archaeology in response to a request by REG Solar Power Ltd, for an archaeological watching brief of the study area. Following acceptance of the project design by Phil Markham, Cornwall Historic Environment Planning Advice Officer, Wardell Armstrong Archaeology was commissioned by the client to undertake the work. The project design was adhered to in full, and the work was consistent with the relevant standards and procedures of the Institute for Archaeologists (IfA), and generally accepted best practice.

2.2 THE WATCHING BRIEF

2.2.1 The works involved a structured watching brief to observe record and excavate any archaeological deposits from the development site. A watching brief is a formal programme of observation and investigation conducted during any operation carried out for non-archaeological reasons, on a specified area or site on land, inter-tidal zone or underwater, where there is a possibility that archaeological deposits may be disturbed or destroyed (IfA 2008).

2.2.2 The aims and principal methodology of the watching brief can be summarised as follows:

- to establish the presence/absence, nature, extent and state of preservation of archaeological remains and to record them;
- to carry out further excavation and recording work in adequate time, if intact archaeological remains are uncovered during the project;
- to accurately tie the area watched by the archaeologist into the National Grid at an appropriate scale, with any archaeological deposits and features adequately levelled;
- to sample environmental deposits encountered as required, in line with English Heritage (2002) guidelines;
- to produce a photographic record of all contexts using colour digital, 35mm and monochrome formats, each photograph including a graduated metric scale;
- to recover artefactual material, especially that useful of dating purposes;
- to produce a site archive in accordance with MAP2 (English Heritage 1991) standards.

2.2.3 The watching brief monitored the excavation of building foundations and cable trenches associated with the solar farm in addition to eighty nine exploratory machine dug trail holes which targeted a series of geophysical anomalies which were potentially unexploded ordnance relating to the neighbouring (former) RNAS Mullion base. Archaeological monitoring and supervision of groundworks was undertaken in two phases with Phase 1 in October 2013 and Phase 2 in January and February 2014. A summary of the findings of the watching brief is included within this report.

2.3 THE ARCHIVE

2.3.1 A full professional archive has been compiled in accordance with the specification, and according to the Archaeological Archives Forum recommendations (Brown 2011). The archive will be deposited within the Royal Cornwall Museum, Truro, with copies of the report sent to the County Historic Environment Record at Truro, Cornwall, available upon request. The archive can be accessed under the unique project identifier WAA13, GSF-A, CP10715.

2.3.2 Wardell Armstrong Archaeology, and Cornwall County Council, support the **Online Access to the Index of Archaeological Investigations (OASIS)** project. This project aims to provide an on-line index and access to the extensive and expanding body of grey literature, created as a result of developer-funded archaeological work. As a result, details of the results of this project will be made available by Wardell Armstrong Archaeology, as a part of this national project.

3 BACKGROUND

3.1 LOCATION AND GEOLOGICAL CONTEXT

- 3.1.1 The site is on land adjacent to the Bonython Wind Farm and immediately east of the Bonython Plantations near Cury Cross Lanes, Helston, Cornwall. The site occupies part of two fields, currently under pasture, sitting on a relatively level plateau within the Bonython Estate with Bonython Manor to the northwest and the Goonhilly Downs to the east. It lies approximately 10km south of the small town of Helston, 31km east of the major town of Penzance and 29km southwest of the seaside town of Falmouth.
- 3.1.2 The underlying geology is a complex mix of gabbros and peridotites with overlying heavy clay.

3.2 HISTORICAL CONTEXT

- 3.2.1 *Introduction:* this historical background is compiled mostly from secondary sources, and is intended only as a brief summary of historical developments specific to the study area. References to the County Historic Environment Record (HER) are included where known.
- 3.2.2 *Prehistoric (up to c.AD43):* Although there is no record of Neolithic features or finds within the site boundary two find spots are recorded within the wider area. Four polished greenstone axes were discovered to the southwest of the area in 1869 during the quarrying of a high wall of rock near to the Clahar Garden Chapel (HER 28083.00, SW 691 203). A second find spot is listed as Neolithic flint flakes, which were reportedly found within a turf hut circle on upland ground to the southeast of the area (HER 24741.00, SW 7154 2027).
- 3.2.3 A total of twelve features and one find spot of possible Bronze Age Date are recorded within the area. None of the features or the findspot fall within the site boundaries. Eleven of the features are listed as likely or possible burial mounds while the twelfth is recorded as a possible barrow cemetery consisting of three low mounds. The find spot refers to the recovery of four cremation urns from a round cairn on the Clahar Garden Estate. Three are dated to the middle Bronze Age while the fourth to the late Bronze Age. These are now in the British Museum.
- 3.2.4 Iron Age activity in the area, recorded in the HER, is limited. A field named 'Round Valley' on the Tithe map of 1840 (HER: 28067, SW 6928 2062). The name implies that the field may once have been the site of a round, an enclosed settlement site consisting of a number of roundhouses within a substantial stone and earth wall. Despite the field name there are no extant

remains visible today and no trace of a site can be found on aerial photographs. A clearly visible curvilinear enclosure, also classed as a round, can be seen to the north of Bonython Manor (HER: 51467, SW 698 215) and is clearly visible on aerial photographs as cropmarks.

- 3.2.5 *Romano-British (c.AD43-c.410AD)*: There is no record of Romano-British activity within either the development site or the wider the area.
- 3.2.6 *Medieval (c.AD1066 – c.1485)*: An early medieval settlement is first recorded at Trewolla in 1201 (HER: 28155, SW 69525 20820). It was last referred to in Symons Gazetteer of Cornwall in 1884 and only the site of the settlement is marked today by Trehella and Trehella Cottage. The prefix 'Tre' is Cornish meaning estate or farmstead.
- 3.2.7 Bonython medieval settlement, to the northeast, appears to have been broadly contemporary with Trewolla, first mentioned in 1284 (HER: 28071 SW 69675 21177).
- 3.2.8 Field names on the 1840 Tithe map such as 'Pound' and 'Stray Park' are associated with animal husbandry and are likely to date back to the medieval or post-medieval period. It is clear from the remains of strip field systems at Bonython (HER: 51588, SW 70213 20221) and Goonhilly Downs (HER: 51596, SW 70633 20354) that arable farming was also being practiced.
- 3.2.9 *Post-medieval and Modern (c.1540AD-present)*: Small scale stone quarrying and clay extraction can be seen from aerial photographs and from examination of the 1840 Tithe map. The name 'Potters Field' at Bochym suggests either a clay pit of kiln site. Both stone and clay extraction are likely to have been linked to the Bonython estate and used for local purposes.
- 3.2.10 The proposed site appears on the 1840 Tithe map as a single arable field known as 'Great Park'. By 1888 the first edition of the Ordnance Survey map shows that 'Great Park' had been subdivided into the field pattern that remains today.
- 3.2.11 During World War II some areas of the site were used to house WAAF personnel working at a nearby wireless station.

3.3 PREVIOUS WORK

- 3.3.1 A geophysical survey was undertaken by Stratascan in 2010. The object of the survey was to locate any features of possible archaeological significance in order that they could be assessed prior to development.
- 3.3.2 An archaeological assessment was undertaken by Western Archaeology for the Environmental Impact Assessment (Wardell Armstrong International Ltd 2013) in order to assess the archaeological potential and the developments potential impact on the surrounding historic environment.

4 ARCHAEOLOGICAL WATCHING BRIEF

4.1 INTRODUCTION

4.1.1 The watching brief monitoring was undertaken in two phases. Phase 1 was undertaken between 9th - 11th October 2013 and Phase 2 between January 13th and February 28th 2014.

4.2 PHASE 1 RESULTS

4.2.1 Phase 1 monitored the stripping of four rectangular foundation platforms for electrical sub-station / transformer buildings and eighty nine machine dug trial holes which targeted geophysical survey anomalies. Topsoil and subsoil was removed under archaeological supervision by a mechanical excavator with a toothless bucket. The building platform results are summarised below:

4.2.2 Area 12 measured 14.5m x 5.5m by a maximum of 1.2m and consisted of topsoil (244), a brown clayey loam 0.20m in depth which overlay (245) a grey brown silty clay subsoil 0.11m in depth. The underlying natural geology is a yellowy brown clay with flint gravel inclusions (246).

4.2.3 Area 16 measured 14.5m x 5.5m by a maximum of 1.2m and consisted of topsoil (256), a grey brown loam 0.15m in depth which overlay (257) a grey brown silty clay subsoil 0.15m in depth. The underlying natural geology is a yellowy brown clay (258). Two modern ceramic field drains were observed crossing the trench.

4.2.4 Area 17 measured 14.5m x 5.5m by a maximum of 1.2m and consisted of a grey brown clayey loam topsoil (259), 0.15m in depth which overlay (260) a grey brown silty clay subsoil 0.15m in depth. The underlying natural geology is a yellowy brown clay (261).

4.2.5 Area 18 measured 3m x 3m by a maximum of 1m and was located within an area of recent modern ground disturbance. No surviving soil sequence was discernable.

4.2.6 No archaeological features or deposits were found during the excavation of the building foundation platforms.

4.2.7 Eighty five of the ordnance trial holes contained no archaeological features or deposits. The four remaining trial holes 38, 48, 59 and 65 contained stone built land drains, constructed from local Serpentine rock with no bonding material. These features were undated but are of probable modern origin. (Plate 1).



Plate 1: Stone built field drain – trial pit 59

4.3.1 PHASE 2 RESULTS

- 4.3.2 Phase 2 of the watching brief monitored the excavation of a series of cable trenches of varying lengths. The combined length of which, measured some 1330m. The trenches varied in width from 1m to 1.4m with a maximum depth of 0.70m.
- 4.3.3 The observed sequence of deposits within the cable trenches consisted of a greyish brown clayey loam topsoil with an average depth of 0.20m which overlay a band of brown silty clay subsoil with a maximum depth of 0.10m. The natural geology consisted of a yellowy brown clay with occasional Serpentine inclusions.
- 4.3.4 **Area 21** measured 35m in length by 5m in width with stepped sides, a maximum depth of 1.9m and was located to the south east of the site. This area was excavated to allow engineers access to buried live high voltage power cables. The observed sequence consisted of a grey brown clayey loam top soil 0.15m in depth, which directly overlay natural yellow brown clay with occasional Serpentine inclusions.
- 4.3.5 As a result of adverse weather conditions, during the watching brief, much of the site was affected with standing water. Open trenches and ground works rapidly filled with water and were subject to collapse due to the high water table. Movement of heavy plant and vehicles across the site also resulted in considerable localised ground disturbance. With the exception of a series of modern ceramic field drains which crossed the site no archaeological features or finds were noted or recovered from phase 2 of the

monitoring. The location of the monitored cable trenches and Area 21 are shown in Fig.2.

5 CONCLUSIONS

5.1 CONCLUSIONS

- 5.1.1 The watching brief monitored the excavation of building foundation platforms, cable trenches and ancillary works associated with the solar farm. Eighty nine small, machine excavated trial holes, which targeted geophysical anomalies, were also monitored. Four of the trial pits contained stone built land drains. Whilst undateable these drainage features are of probable post-medieval date. Modern ceramic field drains were also noted across the monitored area. No archaeological features were observed, no finds were recovered and no environmental samples were retained during the watching brief.

6 BIBLIOGRAPHY

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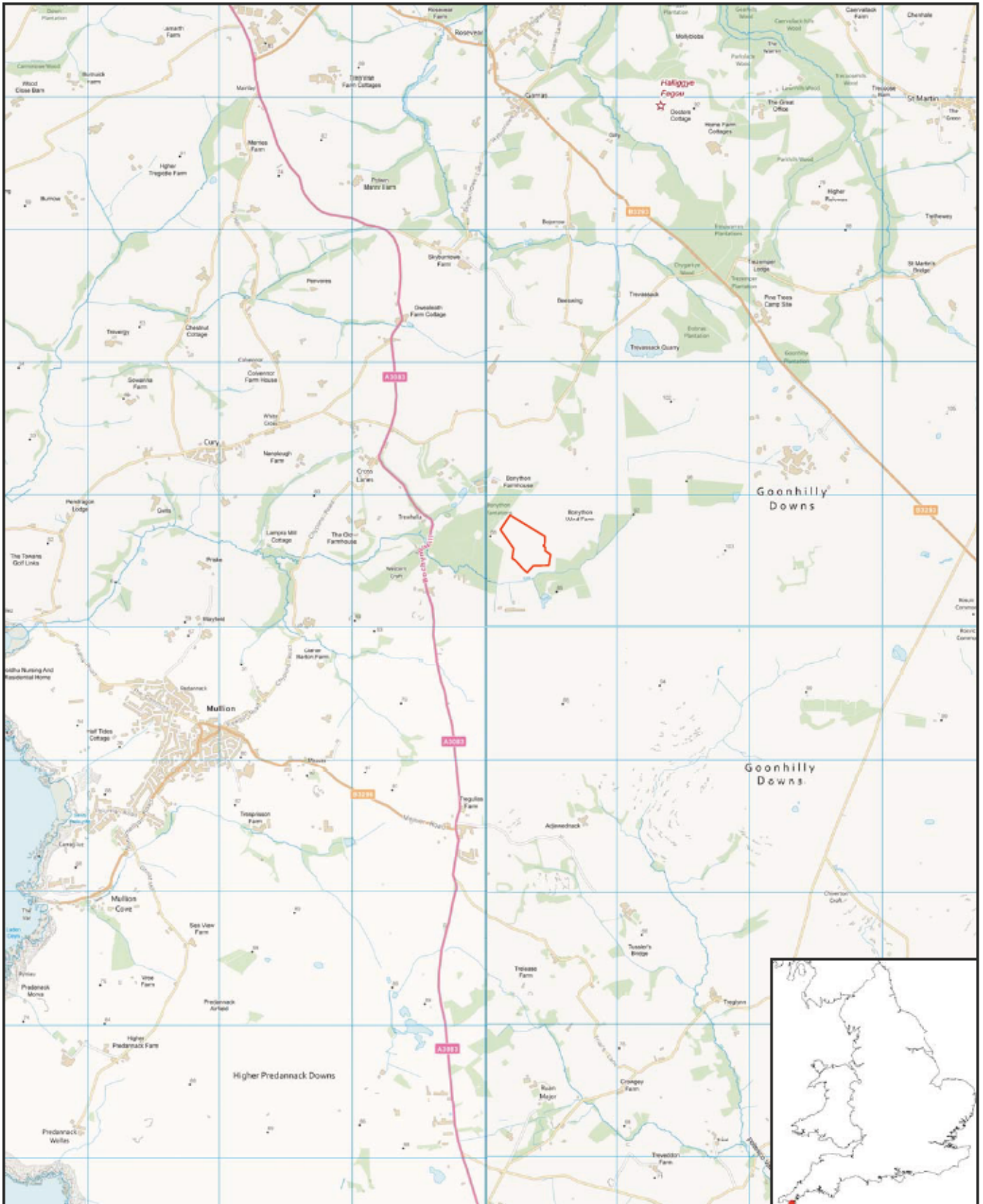
Symons, R. & Symons, Brenton (1884) *A Geographical Directory or Gazetteer of the County of Cornwall*; F. Rodden, Penzance.

 APPENDIX 1: CONTEXT TABLE

Context Number	Context Type	Description
1000	Deposit	Topsoil
1001	Deposit	Subsoil
1002	Deposit	Natural
1003	Cut	Cut of land drain
1004	Deposit	Land drain
1005	Fill	Fill of [1004]
1006	Cut	Cut of land drain
1007	Deposit	Stone land drain
1008	Fill	Silt in [1010]
1009	Cut	Cut of culvert
1010	Masonry	Stone culvert
1011	Cut	Cut of culvert
1012	Masonry	Stone culvert

Table 1: List of Contexts issued during Phase 1 Watching Brief

APPENDIX 2: FIGURES






 <p>Wardell Armstrong Archaeology 2014</p>	<p>PROJECT: Goonhilly Solar Farm, Cury Cross Lanes, Cornwall</p> <p>SCALE: 1:40,000 at A4</p> <p>REPORT No: CP10715</p> <p>CLIENT: Renewable Energy Generation</p> <p>DRAWN BY: AB</p> <p>DATE: March 2014</p> <p>FIGURE: 1</p>	<p>KEY:</p>  <p>Site boundary</p>	 <p>Reproduced by permission of Ordnance Survey on behalf of The Controller of Her Majesty's Stationery Office. © Crown copyright. All rights reserved. Licence number 100019512</p>
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Figure 1: Site location.

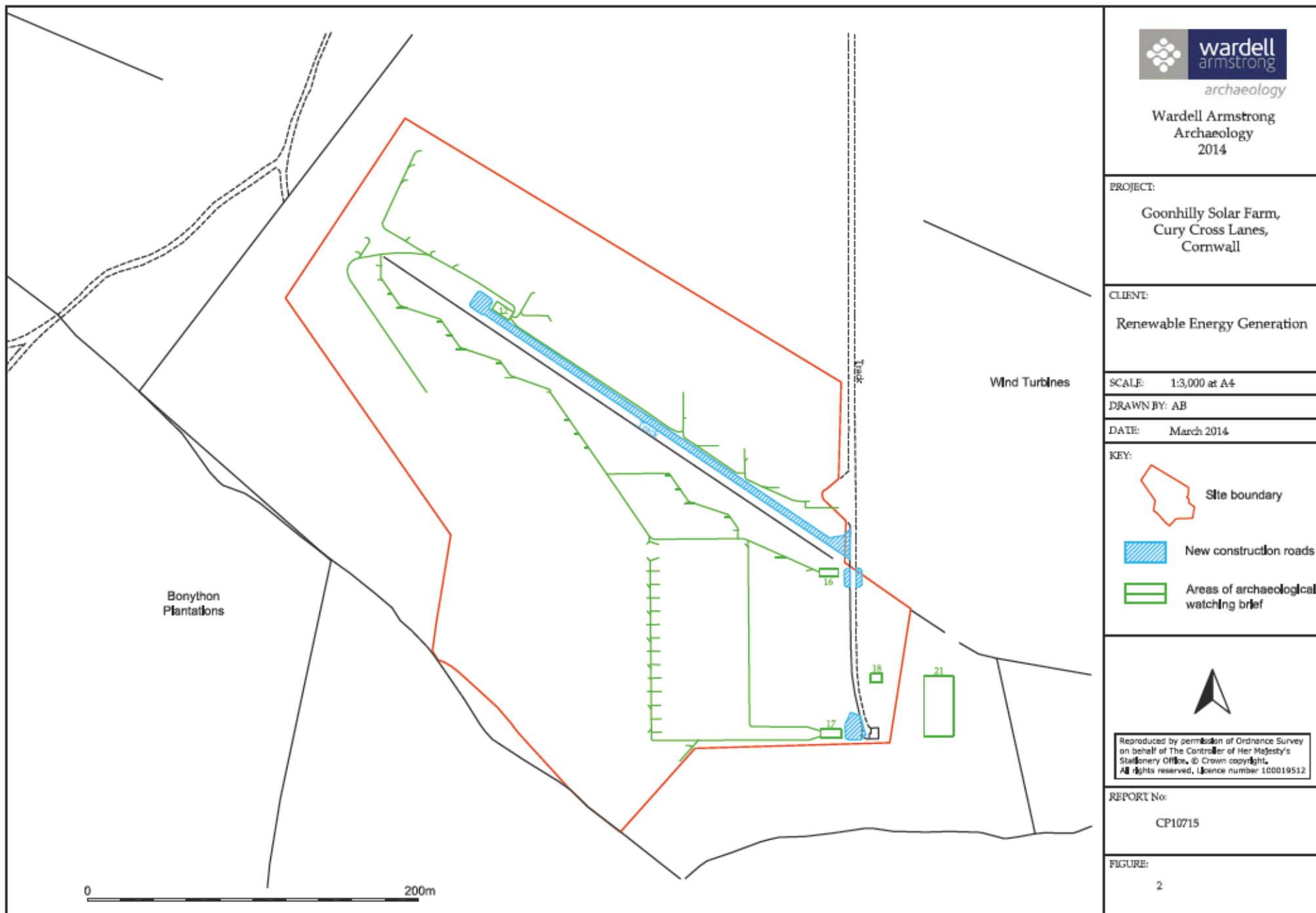


Figure 2: Location of monitored trenching and watching brief.