

Blackberry Lane Solar, Pembrokeshire
Archaeology Desk-Based Assessment
December 2019
Updated April 2020

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Report

Archaeology Desk-Based Assessment

Site

Blackberry Lane Solar, Pembrokeshire

Clients

Wessex Solar Power Ltd

Date

December 2019

Updated April 2020

Planning Authority

Pembrokeshire County Council

Site Centred At

SN 01782 03215

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Report Status

Approved

Orion Ref

PN2033

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Timescales Used in This Report

Prehistoric

Palaeolithic	450,000 -12,000 BC
Mesolithic	12,000 - 4,000 BC
Neolithic	4,000 - 2,200 BC
Bronze Age	2,200 - 700 BC
Iron Age	700 - AD 43

Historic

Roman	43 - 410AD
Saxon/Early Medieval	410 - 1066AD
Medieval	1066 - 1485AD
Post Medieval	1486 - 1901AD
Modern	1901 - Present Day

Executive Summary

This archaeological desk-based assessment has considered land at Blackberry Lane, Pembrokeshire, which is under consideration for development as a solar installation. A review of the available baseline evidence shows that the study site has a high potential to contain archaeological remains. Previous geophysical survey of the study site has revealed the presence of archaeological features which currently remain undated, although a number of these are likely to be Prehistoric in origin. These consist of probable hut circles and an irregular ditched enclosure. Other findings include field boundaries, trackways and various ditch-like features which may be representative of modern land management practices but could be earlier in origin.

The potential hut circles identified in the geophysical survey (labelled as features B and D in the geophysics report) may represent a reasonably well-preserved area of settlement activity, although the geophysical survey also suggests that this area has been ploughed. The enclosure C may form a boundary to the activity at B and enclosure A may also be contemporaneous. These features have the potential to be of regional interest, particularly if they contain well-preserved evidence of occupation activity. The remaining features are likely to comprise more peripheral remains, but nonetheless could be of local interest.

The impact of the proposed development on the study site is very limited, comprising a total below ground impact of less than 1% of the study site area. The “H”-piles used results in localised impacts, no large-scale ground reduction or landscaping is planned.

Despite this, it is recognised that the study site has clear evidence of containing buried remains that are likely to represent occupation features of local to regional significance. While the significance of many archaeological features is largely unaffected by small impacts which would result from a solar farm, occupation sites have the potential to contain more sensitive remains, such as burials and domestic or industrial evidence, whose significance could be degraded. Furthermore, some impacts such as for cable trenches and access roads, can also impact buried remains.

Therefore, before the development of the study site a programme of archaeological works should be agreed. The initial stage of evaluative works have helped define the areas of archaeological interest within the study site. This should be followed by a staged programme of archaeological works. This should comprise firstly a programme of trial trenching, targeted on the results of the geophysical survey. This will allow the extent and nature of the remains to be better understood, and will also inform the scope of any mitigation measures. The trenching would be followed by mitigation measures to protect the archaeological interest of the buried remains. The mitigation measures could comprise a number of different options, such as:

- Exclusion of the areas from development;
- Use of specialist foundations, such as concrete feet over some areas; and
- A programme of archaeological mitigation works.

Any of the above measures, or a combination of them, would allow the archaeological interest of the remains to be secured. This programme of archaeological works should be agreed with the LPA and implemented prior to the development of the study site.

1.0 Introduction

- 1.1 This archaeological desk-based assessment considers land at Blackberry Lane, Pembrokeshire (Figure 1). It has been researched and prepared by Orion Heritage on behalf of Bellway Homes Ltd. The site (hereafter referred to as the 'study site') is located at grid reference SN 01782 03215.
- 1.2 In accordance with Planning Policy Wales and the 'Standard and Guidance for Historic Environment Desk-Based Assessment' (Chartered Institute for Archaeologists 2017), the assessment draws together available information on designated and non-designated heritage assets, topographic and land-use information so as to establish the potential for non-designated archaeological assets within the study site. The assessment includes the results of a site survey, an examination of published and unpublished records, and charts historic land-use through a map regression exercise. The assessment considers only buried archaeological remains and the potential effect the proposed development would have on these. The effect of the proposed development on the setting of heritage assets, including on key views, is considered in a separate Settings Impact Assessment, under production at the time of writing.
- 1.3 The assessment enables relevant parties to assess the significance of heritage/archaeological assets on and close to the study site and considers the potential for hitherto undiscovered archaeological assets, thus enabling potential impacts on assets to be identified along with the need for design, civil engineering or archaeological solutions. It also provides an understanding of any constraints to development of the study site due to the presence of nearby heritage assets, and provides an assessment of the potential impact development would have on the significance of heritage assets and also provides design responses that would serve to reduce that impact in line with local and national policy.
- 1.4 The study area used in this assessment is a 2km radius from the centre of the study site (Figures 2 and 3).

Location, Topography and Geology

- 1.5 The study site is located north of the A477 and west of Blackberry Lane. The study site occupies a slight south-facing slope with a height above ordnance datum (aOD) of approximately 36m at the north boundary of the study site, falling to approximately 23m at the southern boundary.
- 1.6 The solid geology of the study site comprises Limestone of the Black Rock Subgroup and Gully Oolite Formation (undifferentiated). Limestone and Mudstone of the Avon Group and Limestone of the Pembroke Limestone Group. No superficial deposits were recorded (Geology of Britain Viewer 2019).

2.0 Planning Background and Development Plan Framework

Ancient Monuments & Archaeological Areas Act 1979

- 2.1 The Ancient Monuments & Archaeological Areas Act 1979 (as amended) protects the fabric of Scheduled Monuments but does not afford statutory protection to their settings.

Planning (Listed Building and Conservation Areas) Act 1990

- 2.2 The Planning (Listed Building and Conservation Areas) Act 1990 sets out broad policies and obligations relevant to the protection of Listed Buildings and Conservation Areas and their settings.

- 2.3 Section 66(1) states:

“In considering whether to grant planning permission for development which affects a listed building or its setting, the local planning authority or, as the case may be, the Secretary of State shall have special regard to the desirability of preserving the building or its setting or any features of special architectural or historic interest which it possesses”.

- 2.4 Section 69 of the Act requires local authorities to define as conservation areas any ‘areas of special architectural or historic interest the character or appearance of which it is desirable to preserve or enhance’ and Section 72 gives local authorities a general duty to pay special attention ‘to the desirability of preserving or enhancing the character or appearance of that area’ in exercising their planning functions. These duties are taken to apply only within a Conservation Area. The Act does not make specific provision with regard to the setting of a Conservation Area, that is provided by the policy framework outlined below.

Historic Environment (Wales) Act

- 2.5 The Historic Environment (Wales) Act was given Royal Assent in March 2016. This Act provides the legislative framework for managing the historic environment in Wales. Accompanying the Act is new policy and guidance in the form of a Technical Advice Note (TAN) specific to the Historic Environment (see below), and changes to Planning Policy Wales (PPW) Chapter 6 – Conserving the Historic Environment.

Planning Policy Wales

- 2.6 The Welsh Government has published Planning Policy Wales (PPW), currently updated to Version 10 from December 2018. This sets out the land use planning policies of the Welsh Government. It is supplemented by a series of Technical Advice Notes (TANs). Procedural advice is given in circulars and policy clarification letters.
- 2.7 Section 6.1 of PPW, entitled ‘The Historic Environment’, provides policy for planning authorities, property owners, developers and others on the conservation and investigation of heritage assets. Section 6.1 sets out the Welsh Governments specific objectives for the historic environment as seeking to:
- protect the Outstanding Universal Value of the World Heritage Sites;
 - conserve archaeological remains, both for their own sake and for their role in education, leisure and the economy;
 - safeguard the character of historic buildings and manage change so that their special architectural and historic interest is preserved;
 - preserve or enhance the character or appearance of conservation areas, whilst the same time helping them remain vibrant and prosperous;
 - preserve the special interest of sites on the register of historic parks and gardens; and

- protect areas on the register of historic landscapes in Wales.
- Section 6.1 of PPW defines the historic environment as

2.8 The historic environment comprises all the surviving physical elements of previous human activity and illustrates how past generations have shaped the world around us.

Technical Advice Note (TAN) 24: The Historic Environment

2.9 The purpose of the TAN is to provide guidance on how the planning system considers the historic environment during development plan preparation and decision making on planning and Listed Building applications. This TAN provides specific guidance on how the following aspects of the historic environment should be considered:

- World Heritage Sites;
- Scheduled Monuments;
- Archaeological remains;
- Listed Buildings;
- Conservation Areas;
- Historic Parks and Gardens;
- Historic Landscapes; and
- Historic assets of special local interest.

2.10 The following relevant aspects which are covered in detail include:

Archaeological Remains

2.11 The conservation of archaeological remains is a material consideration in determining a planning application. When considering development proposals that affect Scheduled Monuments or other nationally important archaeological remains, there should be a presumption in favour of their physical preservation in situ. In cases involving less significant archaeological remains, local planning authorities will need to weigh the relative importance of the archaeological remains and their settings against other factors, including the need for the proposed development (TAN 24, 2017).

2.12 Where development might reveal, disturb or destroy archaeological remains, including paleoenvironmental evidence, it is important that the opportunities to record archaeological evidence are taken and that archaeological remains are not needlessly destroyed. The ability to record such evidence should not be a factor in deciding whether controlled removal should be permitted.

2.13 When considering planning applications that affect known or potential archaeological remains, the local planning authority should consult with their archaeological advisor, about the impact, including the potential scale and harm, of the development on archaeological remains, and/or the adequacy of the mitigation of what has been proposed. These two factors are material considerations in determining the planning application. Where a planning application directly affects a Scheduled Monument and its setting, then the local planning authority is required to consult the Welsh Ministers through Cadw.

2.14 The case for the preservation of archaeological remains that are not considered to meet the criteria for national importance, must be assessed on the individual merits of each case. The local planning authority must take into account relevant policies and material considerations and will need to weigh the significance of the remains against the benefits of and need for the proposed development.

Conservation Principles for the Sustainable Management of the Historic Environment in Wales 2011

- 2.15 This document provides the basis upon which Cadw discharges certain statutory duties on behalf of the Welsh Ministers. Conservation Principles should be used by others (including owners, developers and other public bodies) to assess the potential impacts of a development proposal on the significance of any historic asset/assets and to assist in decision making where the historic environment is affected by the planning process.
- 2.16 There are six principles:
- Historic assets will be managed to sustain their values;
 - Understanding the significance of historic assets is vital;
 - The historic environment is a shared resource;
 - Everyone will be able to participate in sustaining the historic environment;
 - Decisions about change must be reasonable, transparent and consistent; and
 - Documenting and learning from decisions is essential.
- 2.17 In considering any planning application for development, the planning authority will be mindful of the framework set by government policy, by current Development Plan Policy and by other material considerations.

Local Planning Policy

- 2.18 Planning policy for the study site is provided by The Pembrokeshire County Council Local Development Plan (adopted 2013). This contains the following policies relevant to this assessment:

GN.38 Protection and Enhancement of the Historic Environment

Development that affects sites and landscapes of architectural and/or historical merit or archaeological importance, or their setting, will only be permitted where it can be demonstrated that it would protect or enhance their character and integrity.

Definitions and Guidance

Definition of the Historic Environment

- 2.19 There is no single agreed definition of the historic environment or its components. For the purposes of this assessment, useful definitions are found in the Cadw Conservation Principles for the Sustainable Management of the Historic Environment in Wales (March 2011). In this document, the historic environment is defined as:

All aspects of the environment resulting from the interaction between people and places through time, including all surviving physical remains of past human activity, whether visible, buried, or submerged, and deliberately planted or managed.

Heritage Assets

- 2.20 Heritage assets are defined as an identifiable component of the historic environment. It may consist of or be a combination of an archaeological site, an historic building, or a parcel of historic landscape. Nationally important historic assets will normally be designated (Cadw Conservation Principles).
- 2.21 A useful additional definition is contained within the National Planning Policy Framework (NPPF) for England (2012), which defines ‘archaeological interest’ as a heritage asset

which holds or potentially could hold, evidence of past human activity worthy of expert investigation at some point.

2.22 Heritage assets with archaeological interest are the primary source of evidence about the substance and evolution of places, and of the people and cultures that made them.

2.23 A designated heritage asset is a World Heritage Site, Scheduled Monument, Listed Building, Protected Wreck Site, Registered Park and Garden, Registered Battlefield or Conservation Area. In Wales, areas of landscape have been designated and included in the non-statutory Register of Landscapes of Historic Interest in Wales.

Significance

2.24 Significance in relation to heritage policy considerations is defined as the sum of the cultural heritage values (Cadw 2011).

Cadw Setting Guidance

2.25 Guidance on setting in Wales is provided by the Cadw Setting of Historic Assets in Wales (2017). This guidance defines setting as follows:

The setting of a historic asset includes the surroundings in which it is understood, experienced and appreciated, embracing present and past relationships to the surrounding landscape. Its extent is not fixed and may change as the asset and its surroundings evolve. Elements of a setting may make a positive, negative or neutral contribution to the significance of an asset.

2.26 The guidance also provides a four-step process for the assessment of setting:

Stage 1: Identify the historic assets that might be affected by a proposed change or development.

Stage 2: Define and analyse the settings to understand how they contribute to the significance of the historic assets and, in particular, the ways in which the assets are understood, appreciated and experienced.

Stage 3: Evaluate the potential impact of a proposed change or development on that significance.

Stage 4: If necessary, consider options to mitigate or improve the potential impact of a proposed change or development on that significance.

2.27 This staged process allows the setting of the historic asset to be understood and for development proposals to be responsive to their settings where potential impacts may occur.

3.0 Archaeological and Historic Baseline

Archaeological Heritage Assets

- 3.1 The heritage assets under consideration have been identified by means of a review of the following resources:
- Historic Environment Record (HER) Data held by Dyfed Archaeological Trust;
 - The National Monuments Record for Wales
 - Register of Historic Parks and Gardens in Wales
 - LiDAR data held by Natural Resources Wales
 - Local studies and record office research; and
 - Review of historic Ordnance Survey mapping.
- 3.2 This resource has been used to provide an understanding of the heritage assets which may be affected by the proposed development. The National Monuments Record for Wales contained no additional information beyond that already available from the HER. The register of historic parks contained no records for the study site, which would affect its archaeological potential. Finally, the local studies and record offices were consulted to obtain pre-Ordnance Survey historic mapping for the study site.
- 3.3 This chapter will describe the heritage assets which may be affected and assess their significance.
- 3.4 Chapter 4 will assess the nature of any effects to those heritage assets by the proposed development.

Previous archaeological investigations

- 3.5 The study site was the subject of a magnetometer geophysical survey in 2013 conducted by Bartlett-Clark Consulting, covering an identical area to this current assessment. The conclusions of the report were as follows;

‘The survey has detected a number of clearly defined features which are likely to indicate the presence of previously unknown archaeological remains at several locations within the evaluation area. The most conspicuous of these are the probable hut circles at B and D in field 5 (as labelled on figure 2), and the irregular ditched enclosure at A. The hut circles at B may be located within a larger incompletely detected enclosure at C.

There may be additional traces of a field system or enclosures, as indicated by various ditch-like features (including I, J, K), but these are more difficult to distinguish from the general level of natural background magnetic activity than features A-D. Other findings include a probable former field boundary (G), and a trackway of uncertain origin (H).’

- 3.6 A number of other intrusive archaeological assessments were also undertaken in the wider study area surrounding the study site. These include;
- (HER49647) – A477 Nast Fingerpost to Bangeston Road – watching brief. This was conducted on three strips of land adjoining the A477, one directly to the south of the study site and extending into its southern corner, another c.230m to the south west of the study site and 1.6km to the west of the study site.
 - (HER50861) – A477 Nash-Bangeston – watching brief. A larger area was surveyed as part of the A477 improvement scheme. The A477 runs directly to the south of the study site.
 - (HER108471) – Road re-alignment scheme A4075 Greenhill/Glenside. A watching brief was conducted c.480m to the south west of the study site.

- (HER94313) – Ti Cara, Cosheston – A watching brief was conducted on a small site in Cosheston, c.1.2km to the west of the study site.
- (HER117960) – St Michaels and All Angels Church, Cosheston. Just to the south of the previous watching brief an area around the church in Cosheston was assessed.
- (HER97115) – Cosheston, Pembroke Dock. An archaeological evaluation was conducted on a parcel of land in Cosheston, c.960m to the west of the study site.

3.7 These investigations will be discussed as appropriate in the sections below;

LiDAR Data

- 3.8 Airborne Laser Scan (ALS) data, otherwise known as Light detection and ranging (Lidar) data, have been collected from airborne survey platforms in recent years at varying resolutions, and are available for download, processing, visualising and interpretation via the Lle Geo-Portal from the Welsh Government (<http://lle.gov.wales/GridProducts#data=LidarCompositeDataset>).
- 3.9 Lidar data indicates variation in the height of the ground surface. Data is collected by an active laser beam fired in pulses which scans the ground surface. The reflected pulses are recorded by the sensor on board a geolocated airborne survey platform, fitted with an inertial measurement unit to record the roll, pitch and yaw of the aircraft.
- 3.10 The point cloud data derived from the survey are processed into a series of Digital Elevation Models (DEM) usually in American Standard Code for Information Interchange (ASCII) format. These include Digital Surface Models (DSM) which contain tree cover and buildings, and Digital Terrain Models (DTM) which remove tree cover and can reveal features beneath the tree canopy (Bennett et al 2012, Hesse 2010, Stular et al 2012).
- 3.11 These data are of assistance in recording micro and macro topographic features which may indicate relict or extant archaeological features and historic landscapes alongside more modern features. Lidar data are best interpreted and used in conjunction with modern and historic aerial photographs and maps to provide ground truth information for features and sites recorded via this prospection method.
- 3.12 The whole of the study site was covered by 1m resolution data, available as DSM and DTM composite files. The data were visualised into Hillshade, Multi Directional Hillshade, Simple Local Relief Model (SLRM), Slope, Sky View Factor, Anisotropic Sky View Factor, Open Positive and Open Negative using the Relief Visualisation Toolkit (RVT) Version 1.2 and 1.3. These visualisations were chosen as they are of most use for archaeological prospection. The multiple American Standard Code for Information Interchange (ASCII) tiles were merged before being visualised for ease of use in a Geographical Information System (GIS). The data were analysed alongside the results of the geophysical survey and base mapping to double check the topography and nature of features interpreted from Lidar data.
- 3.13 The Lidar data detected the historic field boundaries within the study site, however no additional features were detected. Also, none of the features detected by the geophysical survey were detected by the Lidar data, suggesting that any remains have been ploughed and the features survive as buried remains only.

Undated

- 3.14 Previous geophysical survey of the study site has revealed the presence of archaeological features which currently remain undated, although a number of these are likely to be Prehistoric in origin. These consist of probable hut circles and an irregular ditched enclosure. Other findings include probable field boundaries, trackways and various ditch-like features.

Prehistoric

- 3.15 A Mesolithic/Neolithic flint working floor was recorded on Wainwrights distribution map of 1963 (HER3519). The accuracy of the location is uncertain and the site was grass covered with no visible finds when visited in 1965. The location given on the HER is c.260m to the west of the study site.
- 3.16 Approximately 100m to the north of the study site a Prehistoric Burnt Mound has been identified (HER3486) although no further details were recorded. Another has also been recorded in a damaged condition, c.1.6km to the south east of the study site (HER3506).
- 3.17 A Prehistoric Standing Stone stood in a field called Stone Park, c.840m to the north of the study site, until its removal at the end of the 19th century (HER3494). The RCAHM, during their Pembrokeshire survey of 1925, noted it as having been moved to a ditch beneath the west hedge but there is no trace of it at this location today.
- 3.18 A Bronze Age dagger was found in 1998 by a metal detectorist, c.1.4km to the east of the study site (HER35901).
- 3.19 Geophysical survey of the study site has identified a number of probable Prehistoric features and although these remain undated, they indicate a high potential for Prehistoric archaeology to be present within the study area.

Roman

- 3.20 There is little evidence for Roman occupation in what is now Pembrokeshire. Ptolemy's Geography mentions some coastal places, two of which have been identified as the River Teifi and what is now St Davids Head.
- 3.21 A couple of upper quern stones, recorded as potentially Roman, were found in the Rectory garden in Cosheston, c.1km to the west of the study site (HER3518).
- 3.22 Another Roman period findspot is recorded 1.3km to the west of the study site although no further details are forthcoming (HER11834).
- 3.23 Segments of a possibly Roman road are evident on LIDAR imagery, c.760m and c.1.5km to the south and south west of the study site (HER115639, HER115638).
- 3.24 A number of undated archaeological features have been detected through geophysical survey of the study site and the possibility that these date to the Roman period cannot be completely discounted.

Saxon and early Medieval

- 3.25 Between 350 and 400, an Irish tribe known as the Déisi settled in the region known to the Romans as Demetae. The Déisi merged with the local Welsh, with the regional name underlying Demetae evolving into Dyfed, which existed as an independent petty kingdom from the 5th century.
- 3.26 The church in Cosheston has been speculated to have been built on an earlier Early Medieval precursor as field evidence notes the possible evidence for a larger outer enclosure (HER46786), c.1.2km to the west of the study site.
- 3.27 A pit feature dating to the beginning of the Early Medieval Period was found at Slade Crossroads, c.1.4km to the west of the study site (HER62161).
- 3.28 A number of undated archaeological features have been detected through geophysical survey of the study site and the possibility that these date to the Saxon and early Medieval period cannot be completely discounted.

- 3.29 In 904, the local ruler Hywel Dda married Elen (died 943), daughter of the king of Dyfed Llywarch ap Hyfaidd, and merged Dyfed with his own maternal inheritance of Seisyllwg, forming the new realm of Deheubarth ("southern district"). Between the Roman and Norman periods, the region was subjected to raids from Vikings, who established settlements and trading posts at Haverfordwest, Fishguard, Caldey Island and elsewhere. Dyfed remained an integral province of Deheubarth, but this was contested by invading Normans and Flemings who arrived between 1067 and 1111. The region became known as Pembroke after the Norman castle built in the cantref of Penfro. A period of relative peace followed the enactment of the Statute of Rhuddlan from 1284.
- 3.30 A Medieval parish church associated with a post-conquest manor is thought to exist, c.260m to the west of the study site (HER12457). The church, Nash Parish Church of St Catherine's and St Marys, was entirely rebuilt in the 19th century and no Medieval evidence exist today but it was listed in the Taxatio of 1291.
- 3.31 A map of 1932 depicting South Wales and the Border in the 14th century depicts a possible Medieval settlement at Mayeston, c.150m to the north west of the study site (HER12547) (Pm Map Rees, W. 1932 S. Wales & Border in the 14th century).
- 3.32 Potential Medieval settlements are recorded on this source and others, c.960m to the north of the study site at Upton (HER10777) as well as c.1.1km to the south west of the study site (HER10889). Potential Church land is recorded on the Nash Tithe Map as parcel 102, c.480m to the south of the study site at Church Hill (HER4417).
- 3.33 Upton Castle is a Medieval fortified house with later additions c.1.5km to the north of the study site. The earliest parts being two towers flanking the entrance (HER3487). The chapel here, directly to the east of Upton Castle, appears to date from the 14th century and was restored in the Georgian period. The late Medieval churchyard cross nearby is extant and in good condition (HER3491).
- 3.34 St Davids Well is sited prominently on the spring line above the steep slopes of the Carew river, c.1.3km to the north east of the study site (HER3495). A stone well head is also recorded as present on the site. The well became a place of pilgrimage in the Medieval period.
- 3.35 It seems a settlement was in place in the later Medieval period at Lower Nash, c.260m to the west of the study site, but archaeological features are thought to be localised and unlikely to extend into the study site itself. However a number of undated archaeological features have been detected through geophysical survey of the study site and the possibility that these date to the Medieval period cannot be completely discounted, however it is likely that the study site formed part of the rural hinterland surrounding settlement at this time.

Post Medieval/Modern

- 3.36 The earliest map of the region, the 1579 Saxton Map of Pembrokeshire clearly depicts Cosheston, named 'Cossenton' and the settlement at Nashe (Fig.4).
- 3.37 The toll road from Pembroke to Milton ran along the route of the present A477, directly to the south of the study site (HER109131). The Pembrokeshire Trust, founded in 1771, managed the road and it was re-named the Tavernspite Trust when the petition was renewed in 1809. Another Turnpike followed the route of the present A4075 to Pembroke (HER109050).
- 3.38 The OS drawing of 1809 (Fig.5) also shows the study site occupying a rural location in fields to the east of the settlement at Nash. To the west of the study site, c.630m, the

present buildings at Ford Farm are represented and the buildings of Roche Court, c.350m to the north east of the study site are named Paskeston. Blackberry lane follows a slightly straighter alignment to the east of the study site boundary. No other development is evident within the study site.

- 3.39 A number of Medieval to Post-Medieval agricultural boundary banks have been identified to the west of the study site, c.380m and c.680m to the south west of the study site (HER52367 and HER52362/HER52363/HER52364/HER52361). As well as further to west, c.1.3km from the study site, (HER 52345/HER52341/HER52339). Cartographic and topographic evidence has also noted the presence of enclosed strip fields of former open Medieval field systems surrounding Cosheston village, c.940m to the west of the study site (HER6412). Two Post Medieval fords are located, c.650m and c.1km away to the west of the study site (HER37454, HER37059).
- 3.40 Post-Medieval boundary banks are also recorded along the line of the A477 to the south of the study site, including (HER52377, HER52380, HER52638 HER52366, HER5250, 52346).
- 3.41 A Post Medieval findspot is given a location within the south eastern corner of the study site (HER15267) although no further details are forthcoming.
- 3.42 Industrial practices in the Post-Medieval period are represented by quarries, c.470m to the south east of the study site (HER17975) and a limekiln, c.400m to the south east of the study site (HER45068), as well as c.840m to the north east of the study site where a limekiln and limestone quarry were in existence (HER37078/HER37079). Limekilns are also mentioned, c.350m to the south west of the study site (HER17922). A corn mill, c.360m to the west of the study site (HER15233), is still extant and retains much of its original machinery.
- 3.43 The 1839 Tithe map for the parish of Nash depicts the study site, excluding the two northernmost fields, to the east of Lower Nash, with no buildings present within any of the land parcels (Fig.6).
- 3.44 The 1869 OS map also represents the settlement at Nash and a farmstead at High Mayeston in the place of the present Grade II listed building at Little Mayeston (HER59476), c.230m to the north of the study site. The previously identified buildings at Paskeston and Ford are present to the north east of the study site. All current field boundaries appear to be in place within the study site (Fig.7).
- 3.45 Buildings dating from this period are evident at Cosheston c.830m to the north west of the study site and at Penny Bridge 1.4km to the south west of the study site. Upton Lodge (HER52307/HER15200) is also Post-Medieval in date and lies c.530m to the north of the study site. Farms of this date exist, c.230m to the north west (HER59476), c.630m to the east (HER37461), c.730m to the south east (HER33750) and c.470m to the south of the study site (HER6647).
- 3.46 A map showing Pembrokeshire defences as an annotation of 1916 highlights high-wire entanglements approximately 1.4km to the north west of the study site in Cosheston (HER107452/HER107804/HER107445/HER107438). These are shown alongside a series of military works including blockhouses, barbed wire entanglements and other defended positions to defend Milford Haven and the dockyard at Pembroke Dock.
- 3.47 An army camp was established c.1.6km to the south of the study site on land belonging to Lamphey Court at Windsor Farm (HER28665). A US military camp continued at this site (HER111276) and a bath house dating from 1939-45 is still extant, presently used as low-grade agricultural storage (HER26179). During the Second World War an anti-invasion defence post was also constructed along the route of the A477, c.1.4km away (HER26205).

Searchlight batteries were in place, c.300m to the south west of the study site (HER26195), now demolished and c.1.1km to the north of the study site near Upton Castle (HER26200).

- 3.48 The OS map of 1938-1953 shows few observable changes to the study area (Fig.8).
- 3.49 By 1971 (Fig.9) some development at Cosheston has taken place with the construction of Woodford Grove.
- 3.50 There has been an expansion of buildings at Lower Nash by 1988 (Fig.10) and further development at Cosheston with the construction of The Garth and Fosse Way.
- 3.51 The OS map of 2000 (Fig.11) shows further growth in this part of Cosheston. There is also development at Goodmoors Lane and around Mayeston House to the east of the village. A small building has been constructed c.120m to the west of the study site at Green Plain but no other building is evident within the study site.
- 3.52 By 2006 Michaels Walk has been developed in Cosheston (Fig.12). The present map of 2019 (Fig.13) shows that building has in-filled the field between Michaels Walk and The Garth in Cosheston and a large farm building has been constructed at Lower Nash Farm. The A477 has been built as a dual carriageway and the A407 now bypasses Glenside House, c.540m to the south west of the study site, but no other significant changes are apparent.
- 3.53 The geophysical survey of the study site also identified a number of archaeological features which seem to date from the Post-Medieval/Modern period. The survey report concludes;

'Other findings include extensive sequences of narrow parallel linear markings (visible in the grey scale plot, and shown in green in figure 2). These probably relate to current or recent ploughing. There are iron pipes (blue in figure 2) along the southern boundary of the survey, and at L in field 1. A further linear feature (M) in field 1 could be a non-ferrous pipe. There are few other disturbances of clearly recent origin except for a group of strong magnetic anomalies at N in field 4. The strength and orientation of the anomaly profiles here (as seen in figure 10) suggests these disturbances are more likely to represent a group of buried ferrous objects than a lime kiln'

- 3.54 The available evidence therefore indicates a high potential for Post-Medieval/Modern archaeology to be present within the study site. The potential features of this date revealed through geophysical survey of the study site include pipes, buried ferrous objects and plough marks.

Summary of Archaeological Potential and Assessment of Significance

- 3.55 Previous geophysical survey of the study site has revealed the presence of archaeological features which currently remain undated, although a number of these are likely to be Prehistoric in origin. These consist of probable hut circles and an irregular ditched enclosure. Other findings include field boundaries, trackways and various ditch-like features which may be representative of modern land management practices but could be earlier in origin.
- 3.56 The potential hut circles identified in the geophysical survey (labelled as features B and D in the report; see plate 1 below) may represent a reasonably well-preserved area of settlement activity, although the geophysical survey also suggests that this area has been ploughed. The enclosure C may form a boundary to the activity at B and enclosure A may also be contemporaneous. These features have the potential to be of regional interest, particularly if they contain well-preserved evidence of occupation activity.

3.57 The remaining features are likely to comprise more peripheral remains, but nonetheless could be of local interest. The identified areas of interest are illustrated below in plate 1. The areas of potential regional interest are highlighted in orange, while the areas of likely local interest are highlighted in blue.

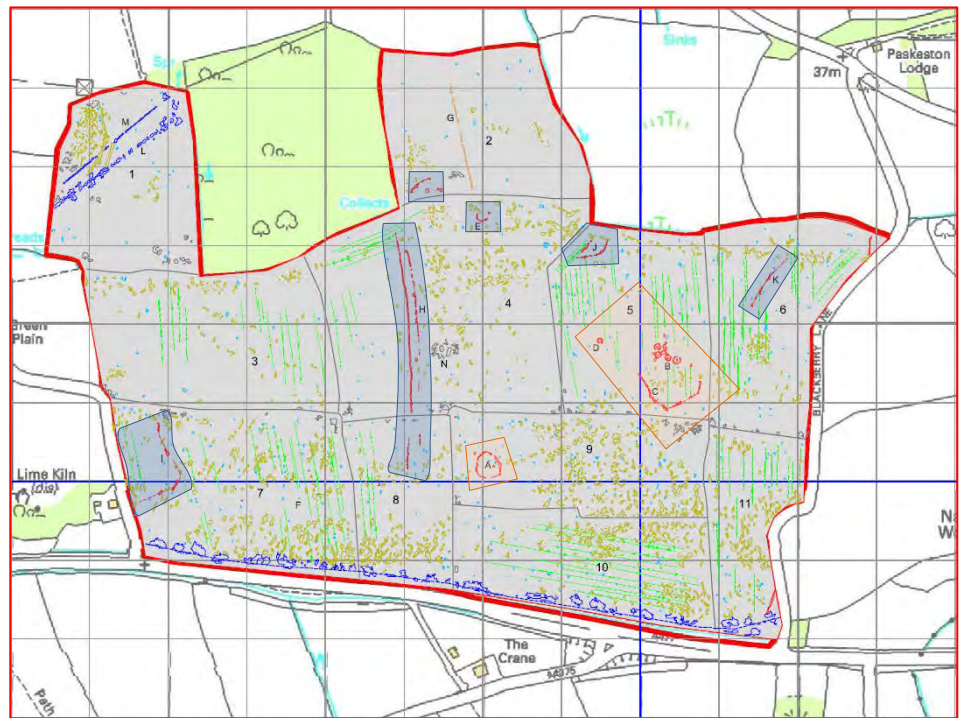


Plate 1 Areas of archaeological interest within the study site (image courtesy of Bartlett-Clark; not to scale)

4.0 Proposed Development and Potential Impact on Heritage Assets

The Proposed Development

- 4.1 The study site is located south east of Cosheston, north of the A477 and west of Blackberry Lane. It comprises six fully enclosed fields set to pasture, totalling an area of approximately 12.4ha (see Fig. 1).
- 4.2 It is proposed to install a solar installation, comprising arrays of photovoltaic panels across the study site. The installation would consist of solar photovoltaic (PV) panels with a maximum overall height of 3m, the upgrade of an existing access track into the study site, fencing, security cameras and a number of small buildings to house transformers and other electrical equipment. The panels would be mounted on small piled foundations which would be driven to the ground. On average the piled foundations for the solar arrays would be driven approximately 1.5m into the ground and each pile would measure no more than 0.01m² in area.
- 4.1 Foundations for the transformers, substation, switchgear and batter are understood to be minimal (technical information is provided separately in the technical drawing pack). No large-scale ground reduction or landscaping is planned for the development.

Potential Physical Archaeological Impacts and Mitigation Measures

- 4.2 The impact of the proposed development on the study site is very limited, comprising a total below ground impact of less than 1% of the study site area. The “H”-piles used results in localised impacts, no large-scale ground reduction or landscaping is planned. Furthermore, some impacts such as for cable trenches and access roads, can also impact buried remains.
- 4.3 Despite this, it is recognised that the study site has clear evidence of containing buried remains that are likely to represent occupation features of local to regional significance. While the significance of many archaeological features is largely unaffected by small impacts which would result from a solar farm, occupation sites have the potential to contain more sensitive remains, such as burials and domestic or industrial evidence, whose significance could be degraded. Furthermore, some impacts such as for cable trenches and access roads, can also impact buried remains.
- 4.4 Therefore, before the development of the study site a programme of archaeological works should be agreed. The initial stage of evaluative works have helped define the areas of archaeological interest within the study site. This should be followed by a staged programme of archaeological works. This should comprise firstly a programme of trial trenching, targeted on the results of the geophysical survey. This will allow the extent and nature of the remains to be better understood, and will also inform the scope of any mitigation measures. The trenching would be followed by mitigation measures to protect the archaeological interest of the buried remains. The mitigation measures could comprise a number of different options, such as:
- Exclusion of the areas from development;
 - Use of specialist foundations, such as concrete feet over some areas; and
 - A programme of archaeological mitigation works.
- 4.5 Any of the above measures, or a combination of them, would allow the archaeological interest of the remains to be secured. This programme of archaeological works should be agreed with the LPA and implemented prior to the development of the study site.

5.0 Summary and Conclusions

- 5.1 A review of the available baseline evidence shows that the study site has a high potential to contain archaeological remains. Previous geophysical survey of the study site has revealed the presence of archaeological features which currently remain undated, although a number of these are likely to be Prehistoric in origin. These consist of probable hut circles and an irregular ditched enclosure. Other findings include field boundaries, trackways and various ditch-like features which may be representative of modern land management practices but could be earlier in origin.
- 5.2 The potential hut circles identified in the geophysical survey (labelled as features B and D in the geophysics report) may represent a reasonably well-preserved area of settlement activity, although the geophysical survey also suggests that this area has been ploughed. The enclosure C may form a boundary to the activity at B and enclosure A may also be contemporaneous. These features have the potential to be of regional interest, particularly if they contain well-preserved evidence of occupation activity. The remaining features are likely to comprise more peripheral remains, but nonetheless could be of local interest.
- 5.3 The impact of the proposed development on the study site is very limited, comprising a total below ground impact of less than 1% of the study site area. The “H”-piles used results in localised impacts, no large-scale ground reduction or landscaping is planned.
- 5.4 Despite this, it is recognised that the study site has clear evidence of containing buried remains that are likely to represent occupation features of local to regional significance. While the significance of many archaeological features is largely unaffected by small impacts which would result from a solar farm, occupation sites have the potential to contain more sensitive remains, such as burials and domestic or industrial evidence, whose significance could be degraded. Furthermore, some impacts such as for cable trenches and access roads, can also impact buried remains.
- 5.5 Therefore, before the development of the study site a programme of archaeological works should be agreed. The initial stage of evaluative works have helped define the areas of archaeological interest within the study site. This should be followed by a staged programme of archaeological works. This should comprise firstly a programme of trial trenching, targeted on the results of the geophysical survey. This will allow the extent and nature of the remains to be better understood, and will also inform the scope of any mitigation measures. The trenching would be followed by mitigation measures to protect the archaeological interest of the buried remains. The mitigation measures could comprise a number of different options, such as:
- Exclusion of the areas from development;
 - Use of specialist foundations, such as concrete feet over some areas; and
 - A programme of archaeological mitigation works.
- 5.6 Any of the above measures, or a combination of them, would allow the archaeological interest of the remains to be secured. This programme of archaeological works should be agreed with the LPA and implemented prior to the development of the study site.

Sources

General

Dyfed Archaeological Trust Historic Environment Record (HER)

National Monuments Record for Wales

Register of Historic Parks and Gardens in Wales

Websites

Archaeological Data Service – www.ads.ahds.ac.uk

British History Online – <http://www.british-history.ac.uk/>

British Geological Society Geology of Britain Viewer -
<http://www.bgs.ac.uk/discoveringGeology/geologyOfBritain/viewer.html>

Heritage Gateway - www.heritagegateway.org.uk

MAGIC - www.magic.gov.uk

Bibliographic

Bartlett-Clark. 2013. Land at Blackberry Lane near Cosheston, Pembrokeshire Archaeological Geophysical Survey

Cadw 2011. Conservation Principles for the Sustainable Management of the Historic Environment in Wales

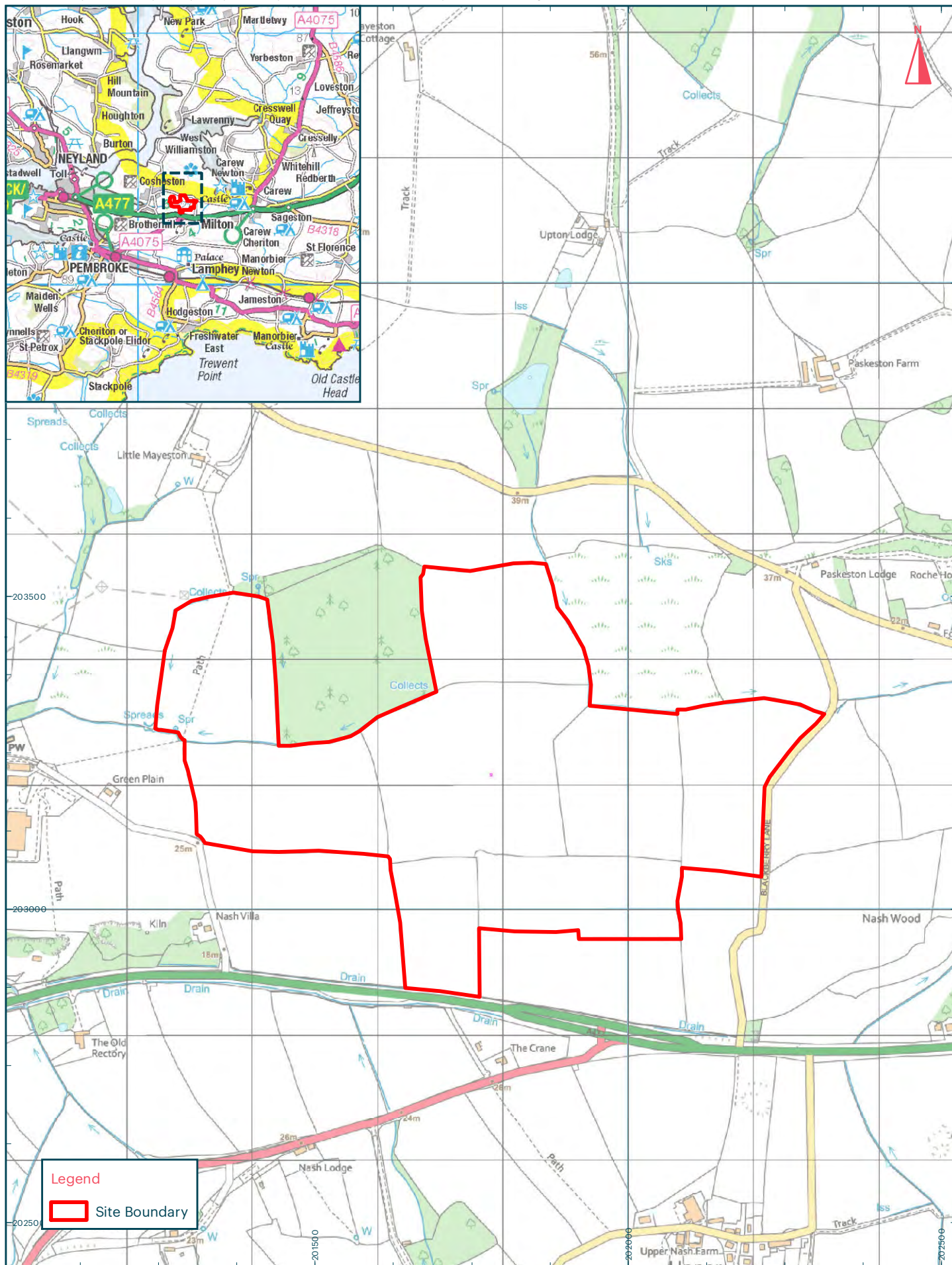
Cadw 2017. Setting of Historic Assets in Wales

Rees, W. 1932 Map of South Wales & the Border in the 14th century.

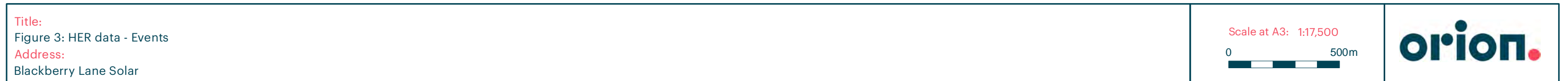
Bennett, R. Welham, K. Hill, R.A. & Ford, A. 2012. 'A Comparison of visualisation techniques for models created from airborne laser scanned data' in Archaeological Prospection 19. PP. 41-48.

Hesse, R. 2010. 'LiDAR-derived Local Relief Models - a new tool for archaeological prospection' in Archaeological Prospection 2.

Štular, B. Kokalj, Ž. Oštir, K. Nuninger, L. 2012. 'Visualisation of LiDAR – derived relief models for detection of archaeological features' in Journal of Archaeological Science 39. PP. 3354-3360.









Legend



Approximate Site Location

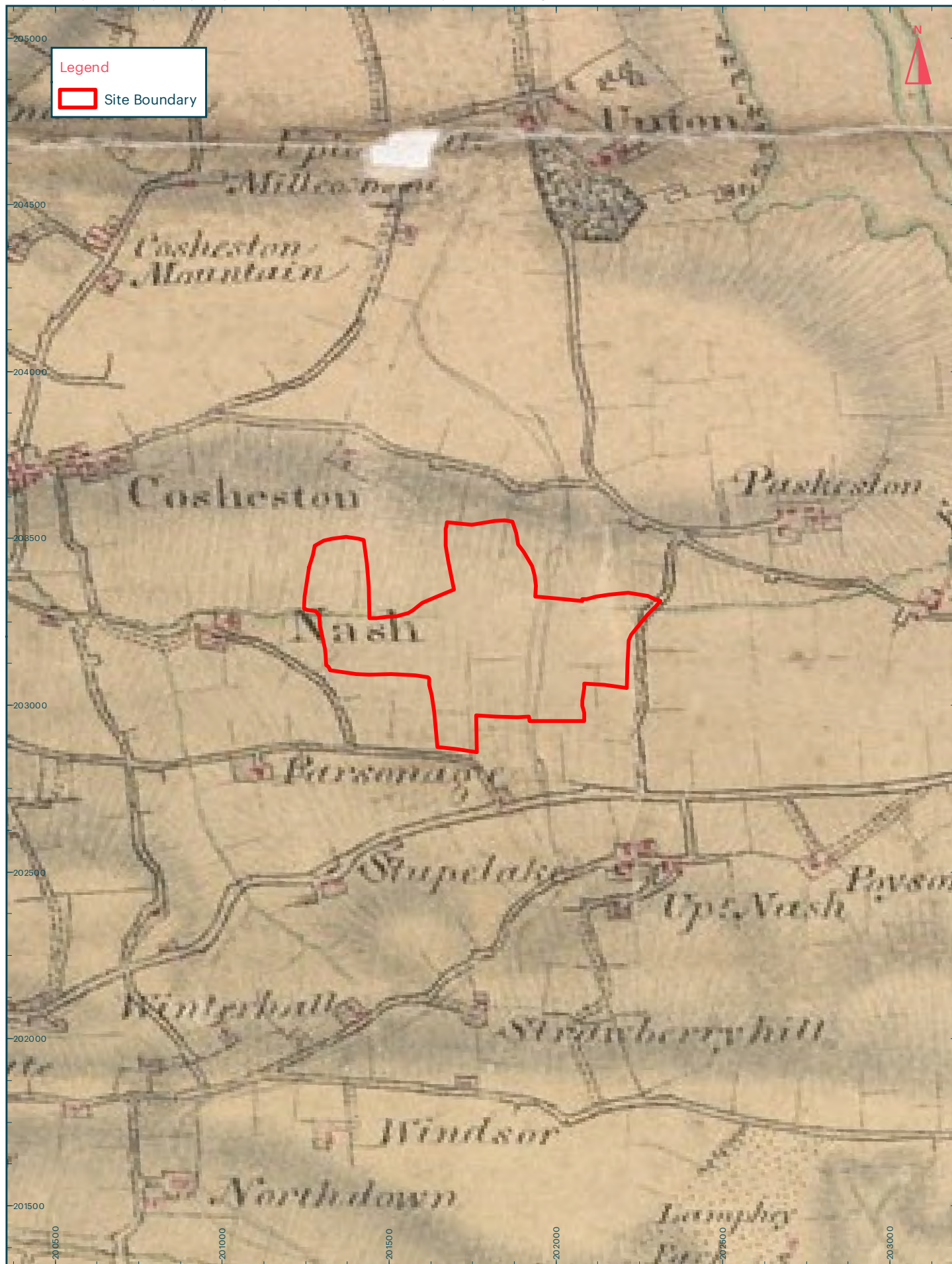


Title:
Figure 4: 1579 Saxton Map of Pembrokeshire

Address:
Blackberry Lane Solar

Not to Scale:
Illustrative Only





Title:
Figure 5: 1899 OS drawing
Address:
Blackberry Lane Solar

Scale at A4: 1:15,000

0 500m

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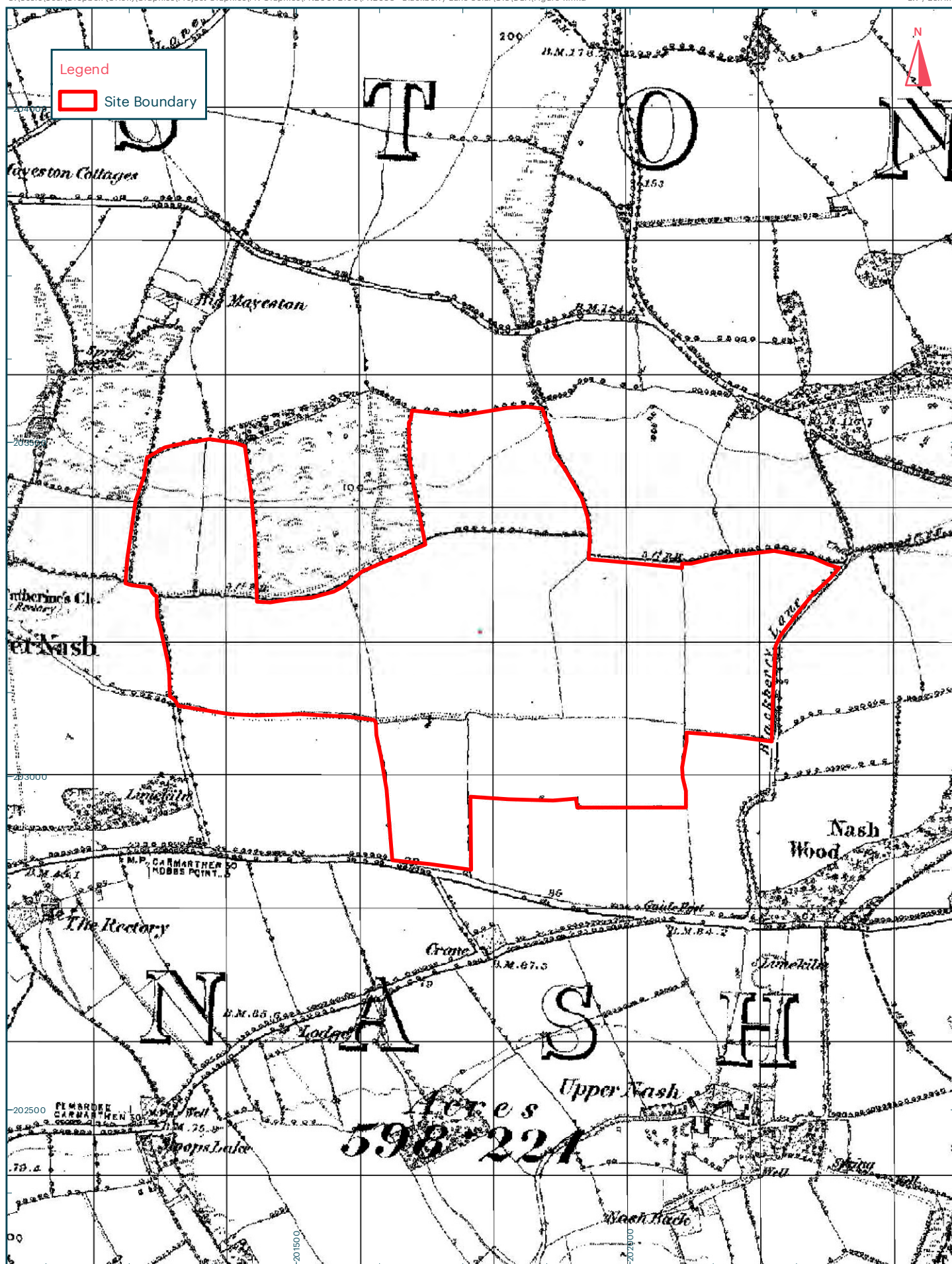


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Figure 6: 1839 Tithe Map of Nash
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Blackberry Lane Solar

Scale at A4: 1:7,500



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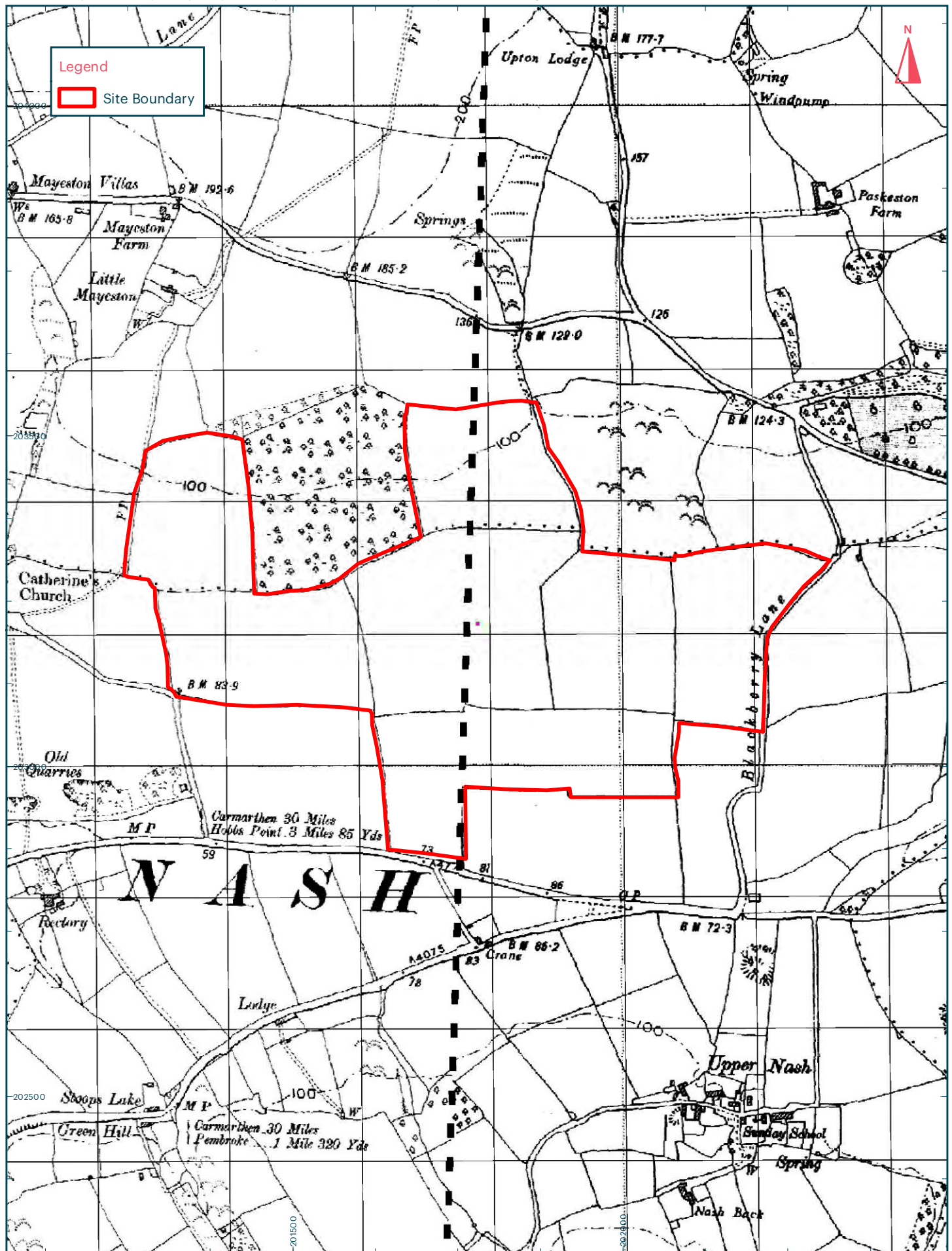


Title:
Figure 7: 1869 OS map; 1:10,560 scale
Address:
Blackberry Lane Solar

Scale at A4: 1:7,500



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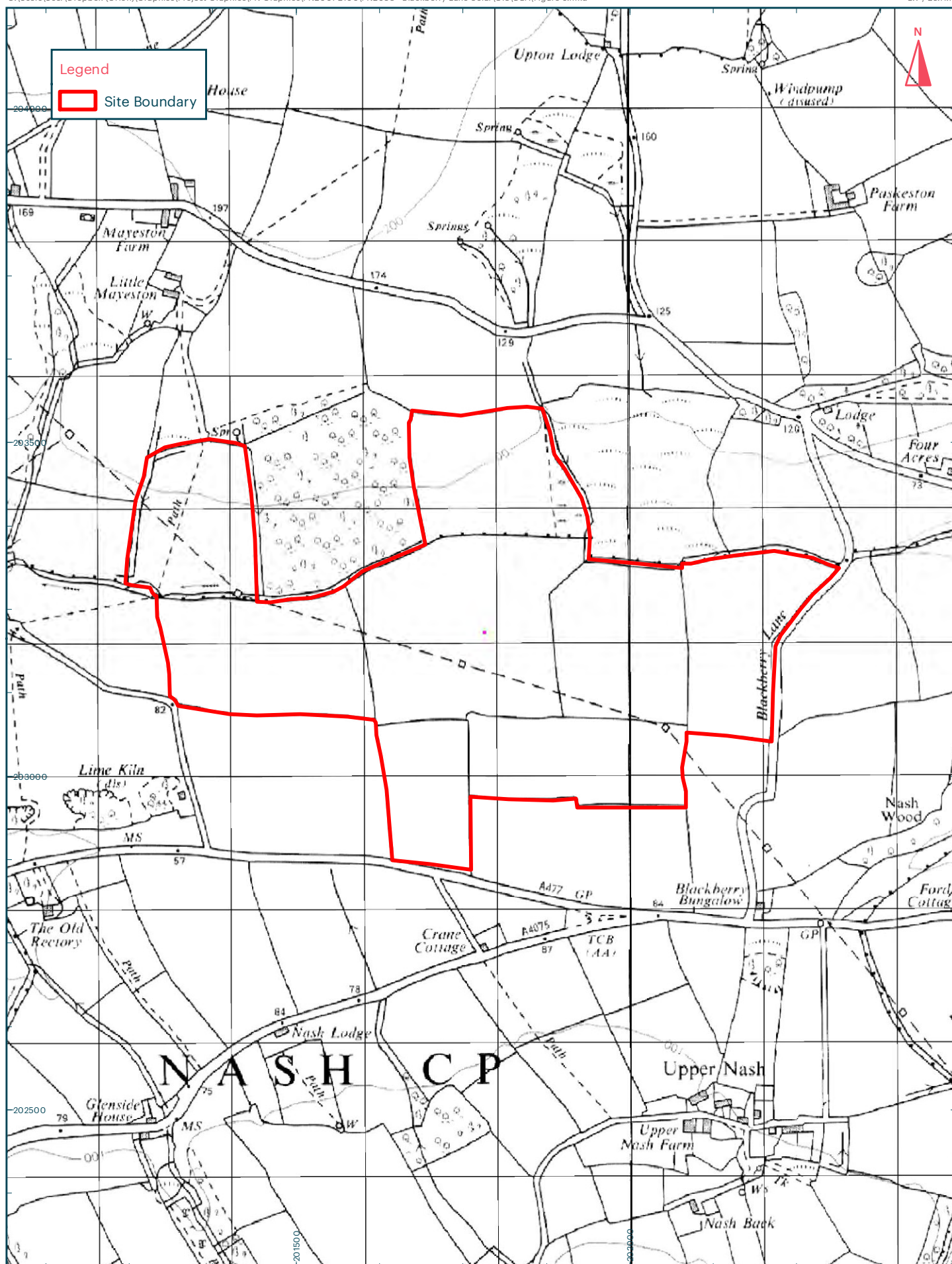


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Figure 8: 1938-1953 OS map; 1:10,560 scale
Address:
Blackberry Lane Solar

Scale at A4: 1:7,500

0 250m

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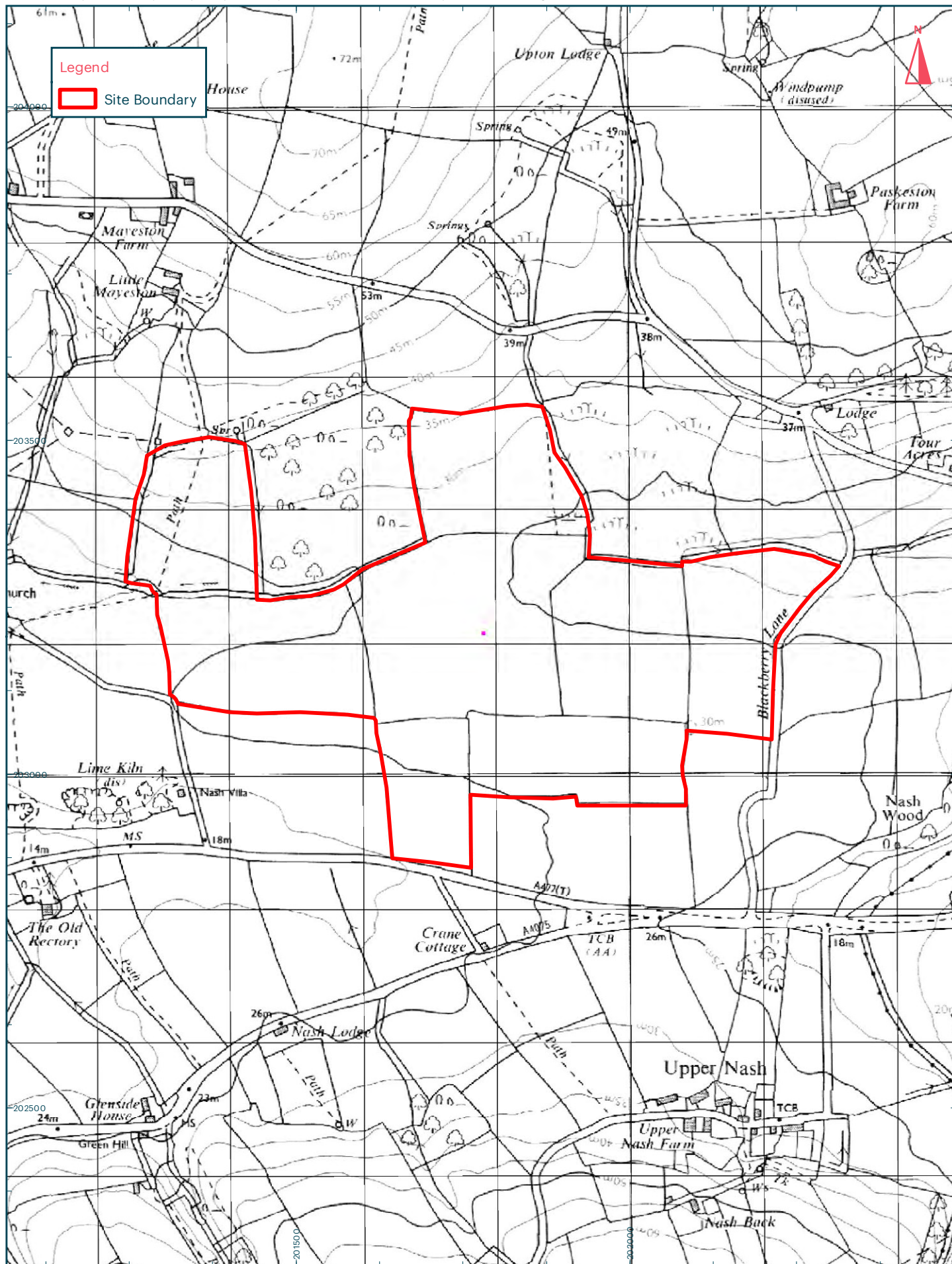


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Figure 9: 1971 OS map; 1:10,500 scale
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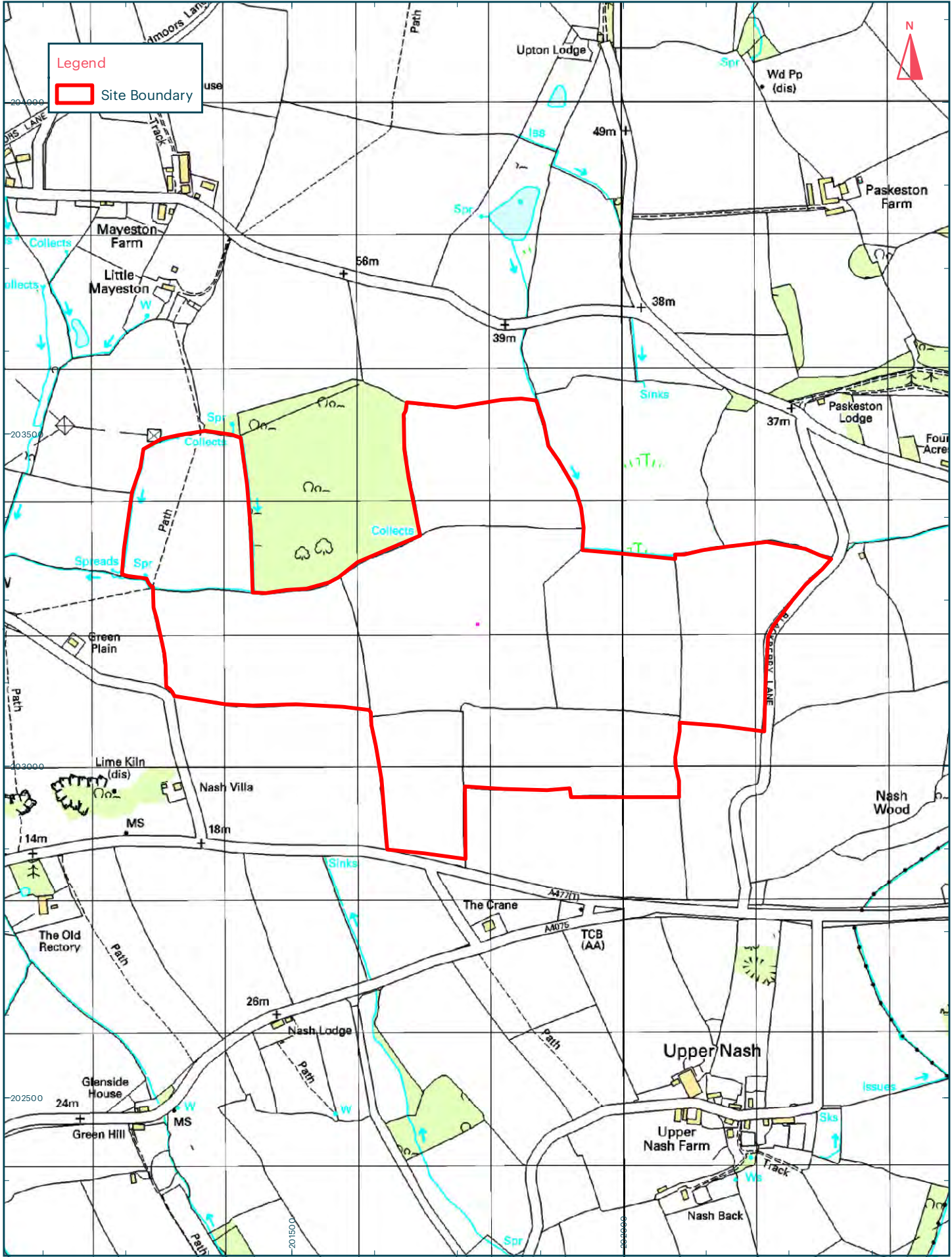


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Figure 10: 1988 OS map; 1:10,500 scale
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Blackberry Lane Solar

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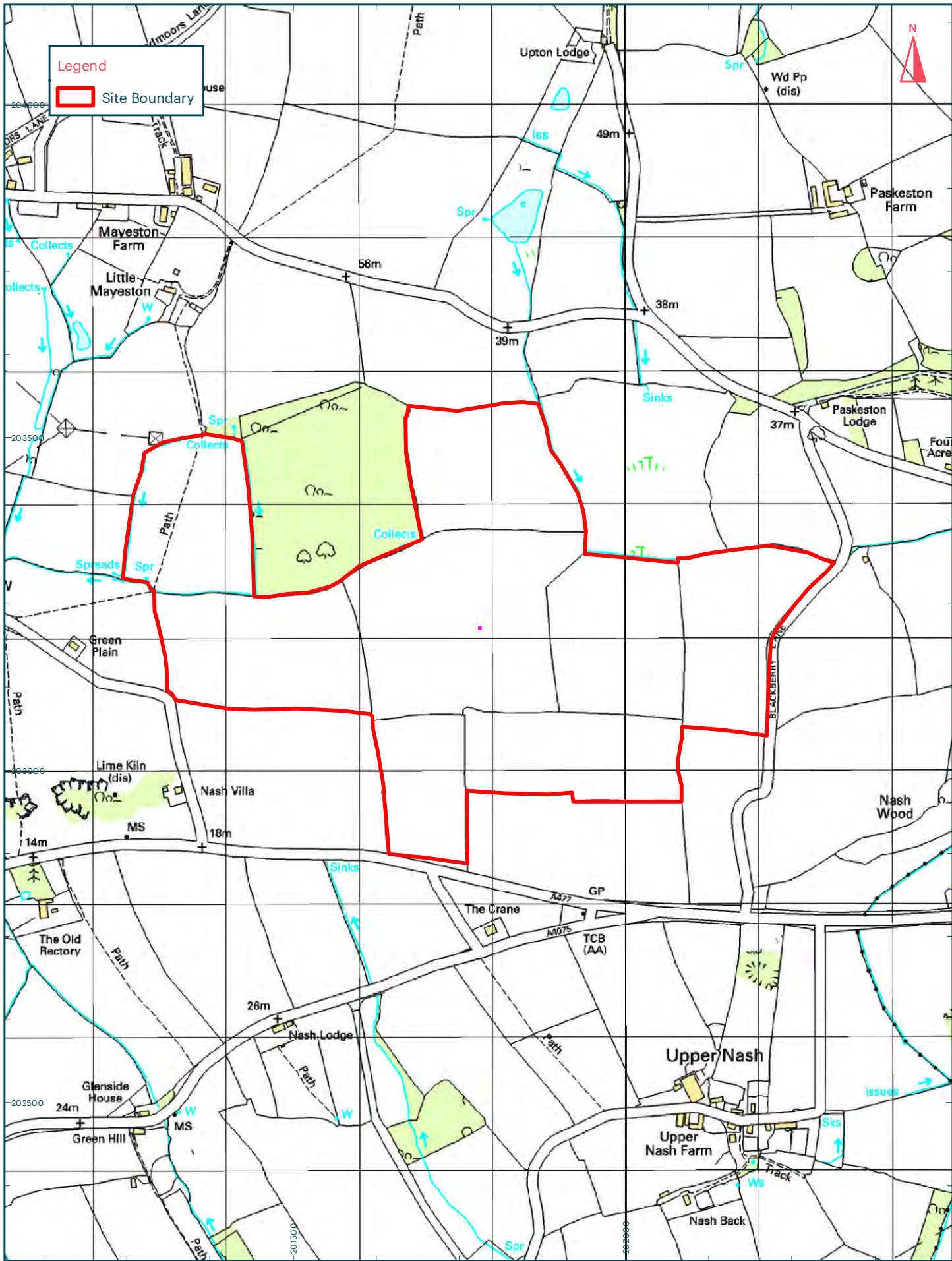


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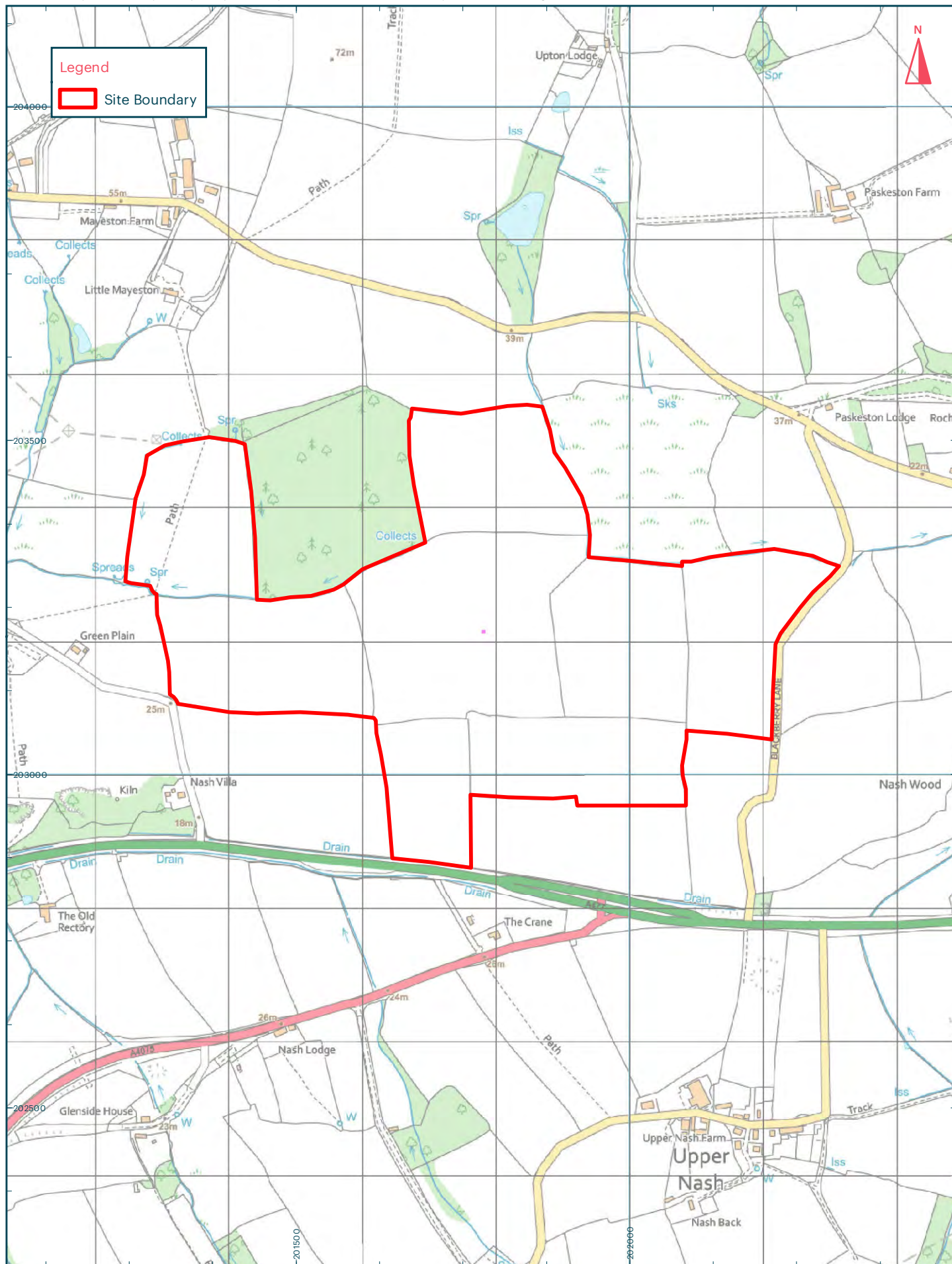
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Figure 11: 2000 OS map; 1:10,500 scale
Address:
Blackberry Lane Solar





Title:
Figure 12: 2006 OS map; 1:10,500 scale
Address:
Blackberry Lane Solar





Title:
Figure 13: 2019 OS map; 1:10,500 scale
Address:
Blackberry Lane Solar

Scale at A4: 1:7,500

0 250m

orion.