



# Archaeological Desk-Based Assessment in Advance of the Proposed Development of Land at Bungalow Yard, Watling Street, Bean, Kent.

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National Grid Reference TQ 59160 72762



Report for Albus Environmental Ltd

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## **Archaeological Desk-Based Assessment in Advance of the Proposed Development of Land at Bungalow Yard, Watling Street, Bean, Kent.**

### **Summary**

*SWAT Archaeology has been commissioned by Albus Environmental Ltd to prepare an Archaeological Desk-Based Assessment of the proposed development area (PDA) of Land at Bungalow Yard, Watling Street, Bean, Kent. This Desk Based Assessment is intended to explore and disseminate the known and potential heritage resource within the site and the surrounding area, and to assess the likely impacts of the development proposals on this resource. Based on this data the potential for archaeological sites either on or in the near vicinity of the proposed development can be summarized as:*

- Prehistoric: **high**
- Iron Age: **low**
- Roman: **high**
- Anglo-Saxon: **low**
- Medieval: **low**
- Post-Medieval: **low**
- Modern: **low**

*The PDA is situated within a wider area known as the Bean Triangle bounded by three roads. Watling Street to the north, the A2 to the south and Bean Lane to the west. It lies between the urban area of Dartford to the west, Gravesend and Northfleet to the east with Swanscombe to the north. In between Swanscombe and the PDA is an extensive area that was quarries, now given over to residential development of Ebbsfleet Garden Village. To the south, just beyond the A2 is Bean village. The eastern tip of the triangle area is formed with the junction of Watling Street and the A2, with Watling Street effectively a slip road to the A2. The PDA lies within the middle area of the triangle of some 2 acres with storage area in the northern half and trees in the southern half. The treed area forming part of an ancient woodland known as Thrift Wood, which covers some 2.5 hectares in total and is covered by a Tree Preservation Order and includes the whole of the area of the PDA. The PDA is currently used for trailer and lorry parking with storage containers used as offices and work facilities. To the west is a storage area of container shipping and to the east is a timber yard and a company supplier office goods. The terrain rises southwards away from the Thames and the land at the*

*PDA rises in height from a low 53m aOD at the northern end, rising to 65m aOD at the southern end.*

*There is archaeological significance within the assessment area of high potential Prehistoric and Roman periods, and low for all other periods. Desktop Investigations in the area as a result of the Eastern Quarry development has suggested that the southern strip of the Eastern Quarry has a high potential for Palaeolithic remains and the geology at the PDA being in a dry valley and similar as well as having river terrace gravel deposits either side of the PDA is suggestive that the same high potential applies to the PDA, although this has not been tested and the southern spread and extent of the very high Palaeolithic potential of Boyn Hill/Orsett Heath deposits is not known. The PDA lies in the area of the line of the London to Dover Roman Road. The exact alignment in this area is not known. In addition, to the road itself, the Romans were known for roadside activity and the finding of Roman pits near the former Branton's Brickworks to the west suggests that there was activity in the area.*

*Prior to the woodland being cleared at the PDA and built on in the 1960s, it appears that it has been woodland since at least the Early Medieval period. Parts of the PDA have not been built on and may have a low historical impact although there are uncertain historical impacts regarding made ground and levelling that has occurred at the site since. The Site does provide an opportunity to further assessment our regional knowledge of archaeology for the Palaeolithic and Roman periods. In the areas of the former bungalow the archaeological potential is considered lower due to the truncation and disturbance that is likely to have occurred although any Palaeolithic evidence may be at some considerable depth and below the level of any historical impact. Any potential remains within the PDA should they survive in-situ may be vulnerable to damage during the proposed development. The need for, scale, scope and nature of any further assessment and/or archaeological works should be agreed through consultation with the statutory authorities, but it is recommended for there to be test-pitting by geoarchaeological specialists to evaluate the potential for Palaeolithic remains and targeted trenching in order to assess the potential for all other archaeological periods.*

## 1 INTRODUCTION

### 1.1 Project Background

1.1.1 Swale & Thames Survey Company (SWAT) was commissioned by Albus Environmental Ltd (the 'Clients'), to carry out an archaeological desk-based assessment of the proposed development area (PDA) of Land at Bungalow Yard, Watling Street, Bean, Kent centred on National Grid Reference (NGR) TQ 59160 72762(Fig 1).

### 1.2 The Site

1.2.1 The PDA is situated within a wider area known as the Bean Triangle bounded by three roads. Watling Street to the north, the A2 to the south and Bean Lane to the west. It lies between the urban area of Dartford to the west, Gravesend and Northfleet to the east with Swanscombe to the north. In between Swanscombe and the PDA is an extensive area that was quarries, now given over to residential development of Ebbsfleet Garden Village. To the south, just beyond the A2 is Bean village. The eastern tip of the triangle area is formed with the junction of Watling Street and the A2, with Watling Street effectively a slip road to the A2. The PDA lies within the middle area of the triangle of some 2 acres with storage area in the northern half and trees in the southern half. The treed area forming part of an ancient woodland known as Thrift Wood, which covers some 2.5 hectares in total and is covered by a Tree Preservation Order and includes the whole of the area of the PDA. The PDA is currently used for trailer and lorry parking with storage containers used as offices and work facilities. To the west is a storage area of container shipping and to the east is a timber yard and a company supplier office goods. The terrain rises southwards away from the Thames and the land at the PDA rises in height from a low 53m aOD at the northern end, rising to 65m aOD at the southern end (Fig. 1).

#### *Geology*

1.2.2 The British Geological Society (BGS 1995) shows that the local geology at the PDA consists of Thanet Sand. The BGS superficial deposits show a narrow channel at the PDA consisting of Head Clay and Silt, with small patches of River Terrace deposits either side of the PDA. This appears to be a small dry channel possibly

filled with slopewash gravel and colluvial brickearth on a north south axis from the higher land to the south from the area of Beacon Wood, Bean.

#### *Geotechnical Information*

- 1.2.3 There is no geotechnical information at the PDA.

### **1.3 The Proposed Development**

- 1.3.1 The proposed development is for the development of a covered waste station with the relocation of the site access to the west with an area for vehicle turning at the rear of the proposed waste station (fig. 2).

### **1.4 Project Constraints**

- 1.4.1 There were no constraints associated with this project.

### **1.5 Scope of Document**

- 1.5.1 This assessment was requested by the Client in order to determine, as far as is possible from existing information, the nature, extent and significance of the Historic Environment and to assess the potential impact of development on Heritage Assets. The assessment forms part of the initial stages of the archaeological investigation and is intended to inform and assist with decisions regarding archaeological mitigation for the proposed development and associated planning applications.

## 2 PLANNING BACKGROUND

### 2.1 Introduction

2.1.1 National legislation and guidance relating to the protection of, and proposed development on or near, important archaeological sites or historical buildings within planning regulations is defined under the provisions of the Town and Country Planning Act 1990. In addition, local authorities are responsible for the protection of the historic environment within the planning system and ensure that a Heritage Asset is protected to enable it to be passed on to future generations.

2.1.2 Statutory protection is also provided to certain classes of designated heritage assets under the following legislation:

- Planning (Listed Buildings and Conservation Areas) Act 1990;
- Ancient Monuments and Archaeological Areas Act 1979; and
- Hedgerow Regulations (statutory Instrument No. 1160) 1997
- Treasures Act 1996
- Burial Act 1857.

### 2.2 National Planning Policy Framework (NPPF)

2.2.1 The National Planning Policy Framework (NPPF) sets out the Government's core principles in relation to planning and the historic environment and is covered in section 16, paragraphs 185-202. These principles are designed to underpin the planning and decision-making process to ensure that Local Planning Authorities (LPA), developers and owners of heritage assets adopt a consistent approach to the conservation of the Historic Environment.

2.2.2 The Historic Environment, as defined in the National Planning Policy Framework (NPPF 2019): Annex 2, comprises:

*'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 landscaped and planted or managed flora.'*

2.2.3 NPPF Annex 2 defines a Heritage Asset as:

*'a building monument, site, place, area or landscape identified as having a degree of significance meriting consideration in planning decisions, because of its heritage interest. Heritage assets include designated heritage assets and assets identified by the local planning authority (including local listing).'*

2.2.4 Paragraph 189 of the NPPF states that:

*'In determining applications, local planning authorities should require an applicant to describe the significance of any heritage assets affected, including any contribution made by their setting.'*

2.2.5 Paragraph 190 of the NPPF states that:

*'The LPA should take this assessment into account when considering the impact of a proposal on a heritage asset, to avoid or minimise conflict between the heritage asset's conservation and any aspect of the proposal.'*

2.2.6 The NPPF further provides definitions of terms which relate to the historic environment in order to clarify the policy guidance given. For the purposes of this report, the following are important to note:

- **Significance.** The value of a heritage asset to this and future generations because of its heritage interest. This interest may be archaeological, architectural, artistic or historic. Significance derives not only from a heritage asset's physical presence, but also from its setting.
- **Setting.** The surroundings in which a heritage asset is experienced. Its extent is not fixed and may change as the asset and its surroundings evolve. Elements of a setting may make a positive or negative contribution to the significance of an asset, may affect the ability to appreciate that significance or may be neutral.

- 2.2.7 The NPPF is supported by the Planning Policy Guidance, which includes Conservation Principles, Policy and Guidance (2008) as well as Good Practice Advice in Planning Notes 1 to 3, all issued by Historic England.

*Hedgerow Regulations (statutory Instrument No. 1160) 1997*

- 2.2.8 The Regulations apply to most countryside hedgerows. In particular, they affect hedgerows which are 20 meters or more in length; which meet another hedgerow at each end; are on or adjoin land used for: agriculture, forestry, the breeding or keeping of horses, ponies or donkeys, common land, village greens, Sites of Special Scientific Interest (SSSIs) or Local Nature Reserves. The act is to protect important countryside hedgerows from removal, either in part or whole. Removal not only includes grubbing out, but anything which could result in the destruction of the hedge.

### **2.3 Local Policies - Dartford**

- 2.3.1 Dartford Borough Council has a Local Plan document called Dartford Development Policies Plan, adopted July 2017. In addition, the council has a Core Strategy, being the over-arching Local Plan document for the Borough, adopted in September 2011, which sets out the fundamental development priorities in Dartford. Both plan documents have a time horizon until 2026. The Development Policies Plan conforms with national planning policy contained in the NPPF and has a number of policies relevant to archaeology and heritage:

- POLICY DP11.2: Sustainable Technology & Construction
- POLICY DP12: Historic Environment Strategy
- POLICY DP13: Designate Heritage Assets

- 2.3.2 These policies are covered in greater detail below:

*POLICY DP11.2: Sustainable Technology and Construction*

- 2.3.3 In determining applications for small and large-scale low/zero carbon technology and installations, the economic and environmental benefits of the proposal will be weighed against the individual and cumulative impact of the development. Development will only be permitted in line with national policy and where the following factors have been satisfactorily taken into consideration:

- a) Character, and visual and residential amenity
- b) Landscape, topography, and heritage
- c) Shadow flicker and glare (if relevant)
- d) Electronic and telecommunication interference/ navigation and aviation issues (if relevant)
- e) Quality of agricultural land taken (where applicable)
- f) Ensuring installations are removed when no longer in use and land is then restored.
- g) Potential effects on Policies Map designations/ protected sites or areas in the Borough including Green Belt, heritage assets, and SSSIs/areas of high biodiversity value, and
- h) Other relevant local environmental and amenity factors accounting for mitigations proposed, for example in relation to biodiversity.

*POLICY DP12: Historic Environment Strategy*

- 2.3.4 Development should contribute to the conservation and enjoyment of the Borough's historic environment. The Local Planning Authority will work with developers on strategies to realise this in the context of site heritage opportunities and constraints.
- 2.3.5 Where heritage may be at risk, landowners will be expected to work proactively with the Local Planning Authority in bringing forward proposals to preserve or enhance these assets, to facilitate their successful rehabilitation and seek their viable reuse consistent with their heritage value and special interest.
- 2.3.6 Development proposals which may affect the significance of heritage assets (both designated and non-designated) or their setting should demonstrate how these assets will be protected, conserved or enhanced as appropriate. Proposals should aim to reflect and interpret the historic character of a site and conserve its most significant historical and/or architectural aspects.

2.3.7 A heritage statement should accompany all planning applications affecting heritage assets. On archaeological sites, a desk-based assessment will be required as a minimum. Applications affecting non-designated assets will be assessed against the criteria below.

2.3.8 The Borough's non-designated assets include:

- a) Archaeological sites, including sites holding an interest as defined in the NPPF;
- b) Applicable sites within Areas of Special Character, as defined on the Policies Map;
- c) Sites with significant industrial heritage;
- d) Land with historic Landscape Character;
- e) Historic open space, parks and gardens.

2.3.9 Development proposals affecting non-designated heritage assets should establish the asset's significance. Development should conserve or enhance those aspects that have been identified as significant and, where possible, should seek to better reveal an asset's significance.

2.3.10 In determining planning applications affecting non-designated assets, the effect of the proposal on the asset's significance will be taken into account. A balanced judgement will be taken having regard to the significance of the heritage asset and the scale of any harm or loss of significance. Development resulting in total loss of significance will not normally be permitted.

*POLICY DP13: Designated Heritage Assets*

2.3.11 Designated heritage assets are an irreplaceable resource and should be conserved in a manner appropriate to their significance. A heritage statement should establish the significance of the heritage asset in order to enable the assessment the impact of a development proposal. Any harm or loss will require clear and convincing justification.

2.3.12 In determining planning applications, the Local Planning Authority will pay close attention to:

- a) The significance of the heritage asset
- b) The desirability of maintaining and, where possible, enhancing significance; and
- c) the desirability of ensuring viable uses are found for heritage assets, consistent with their conservation.

2.3.13 Where a proposal will lead to substantial harm or total loss of significance, permission will be refused unless it can be clearly demonstrated that the development is necessary for substantial public benefits to be achieved that will outweigh the harm or loss.

2.3.14 Where a proposal will lead to less than substantial harm, this will be weighed against the public benefits of the proposal.

2.3.15 Listed Buildings – Development proposals affecting statutorily listed buildings should have special regard to the desirability of preserving the building or its setting. Loss of or harm to a statutorily listed building or its setting will only be permitted in exceptional circumstances in line with 2.3.13 and 2.3.14 above.

2.3.16 Conservation Areas – Development proposals affecting a conservation area should pay special attention to the desirability of preserving or enhancing the character or appearance of that area. Proposals that would result in harm or loss of significance will be determined in line with 2.3.13 and 2.3.14 above.

2.3.17 The demolition of any building in a conservation area will only be permitted where it is clear that it will not adversely affect the character and appearance of the area.

2.3.18 Scheduled Monuments – Development proposals affecting scheduled monuments will only be permitted where they clearly conserve the asset or enhance its significance. Proposals resulting in loss or harm will only be permitted on a wholly exceptional basis and in line with clauses 2.3.13 and 2.3.14 above.

#### *Local Planning Guidance*

2.3.19 The Kent Design Guide, 2008. Prepared by the Kent Design Group, it provides the criteria necessary for assessing planning applications. Helps building designers,

engineers, planners and developers achieve high standards of design and construction. It is adopted by the Council as a Supplementary Planning Document.

### **3 AIMS AND OBJECTIVES**

#### **3.1 Introduction**

3.1.1 This Desk-Based Assessment was commissioned by Albus Environmental Ltd to support a planning application. This assessment has been prepared in accordance with guidelines set out by the Chartered Institute for Archaeologists (see below) and in the National Planning Policy Framework and the Good Practice Advice notes 1, 2 and 3, which now supersede the PPS 5 Practice Guide, which has been withdrawn by the Government.

3.1.2 This Desk-Based Assessment therefore forms the initial stage of the archaeological investigation and is intended to inform and assist in decisions regarding archaeological mitigation for the proposed development and associated planning applications.

#### **3.2 Desk-Based Assessment – Chartered Institute for Archaeologists (2017)**

3.2.1 This desktop study has been produced in line with archaeological standards, as defined by the Chartered Institute for Archaeologists (2014, revised 2017). A desktop, or desk-based assessment, is defined as being:

*‘Desk-based assessment will determine, as far as is reasonably possible from existing records, the nature, extent and significance of the historic environment within a specified area. Desk-based assessment will be undertaken using appropriate methods and practices which satisfy the stated aims of the project, and which comply with the Code of conduct and other relevant regulations of CfA. In a development context desk-based assessment will establish the impact of the proposed development on the significance of the historic environment (or will identify the need for further evaluation to do so) and will enable reasoned proposals and decisions to be made whether to mitigate, offset or accept without further intervention that impact.’*

(2017:4)



3.2.2 The purpose of the desk-based assessment is, therefore, an assessment that provides a contextual archaeological record, in order to provide:

- *an assessment of the potential for heritage assets to survive within the area of study.*
- *an assessment of the significance of the known or predicted heritage assets considering, in England, their archaeological, historic, architectural and artistic interests.*
- *strategies for further evaluation whether or not intrusive, where the nature, extent or significance of the resource is not sufficiently well defined.*
- *an assessment of the impact of proposed development or other land use changes on the significance of the heritage assets and their settings*
- *strategies to conserve the significance of heritage assets, and their settings.*
- *design strategies to ensure new development makes a positive contribution to the character and local distinctiveness of the historic environment and local place-shaping.*
- *proposals for further archaeological investigation within a programme of research, whether undertaken in response to a threat or not.*

CIFA (2017:4)

## 4 METHODOLOGY

### 4.1 Introduction

- 4.1.1 The methodology employed during this assessment has been based upon relevant professional guidance including the Chartered Institute for Archaeologists' *Standard and guidance for historic environment desk-based assessment* (CIfA, 2017).

### 4.2 Sources

- 4.2.1 A number of publicly accessible sources were consulted prior to the preparation of this document.

#### *Archaeological databases*

- 4.2.2 Although it is recognised that national databases are an appropriate resource for this particular type of assessment, the local Historic Environmental Record held at Kent County Council (KCCHER) contains sufficient data to provide an accurate insight into catalogued sites and finds within both the proposed development area and the surrounding landscape.
- 4.2.3 The National Heritage List for England (NHLE), which is the only official and up to date database of all nationally designated heritage assets and is the preferred archive for a comprehensive HER search.
- 4.2.4 The Archaeology Data Service Online Catalogue (ADS) was also used. The search was carried out within a 500m radius of the proposed development site and relevant HER data is included in the report. The Portable Antiquities Scheme Database (PAS) was also searched as an additional source as the information contained within is not always transferred to the local HER.

#### *Cartographic and Pictorial Documents*

- 4.2.5 A full map regression exercise has been incorporated within this assessment. Research was carried out using resources offered by the Kent County Council, the internet, Ordnance Survey and the Kent Archaeological Society. A full listing of bibliographic and cartographic documents used in this study is provided in Section 10.

*Aerial photographs*

4.2.6 The study of the collection of aerial photographs held by Google Earth was undertaken (Plates 1-5).

*Secondary and Statutory Resources*

4.2.7 Secondary and statutory sources, such as regional and periodic archaeological studies, archaeological reports associated with development control, landscape studies, dissertations and research frameworks are considered appropriate to this type of study and have been included within this assessment.

*Walkover Survey*

4.2.8 The Site is visited for a walkover survey. This is for the purpose of:

- Identifying any historic landscape features not shown on maps.
- Conducting a rapid survey for archaeological features.
- Making a note of any surface scatters of archaeological material.
- Identifying constraints or areas of disturbance that may affect archaeological investigation.

## 5 ARCHAEOLOGICAL AND HISTORICAL DEVELOPMENT

### 5.1 Introduction

5.1.1 This section of the assessment will focus on the archaeological and historical development of this area, placing it within a local context. Each period classification will provide a brief introduction to the wider landscape (1km radius centred on the PDA), followed by a full record of archaeological sites, monuments and records within the site's immediate vicinity. There are no Conservation Areas, Registered Parks and Gardens, Historic Parks and Gardens, Protected Military Remains or NMP cropmarks in the search area. Time scales for archaeological periods represented in the report are listed in Table 1.

Prehistoric	Palaeolithic	c. 500,000 BC – c.10,000 BC
	Mesolithic	c.10,000 BC – c. 4,300 BC
	Neolithic	c. 4,300 BC – c. 2,300 BC
	Bronze Age	c. 2,300 BC – c. 600 BC
	Iron Age	c. 600 BC – c. AD 43
Romano-British		c. AD 43 – c. AD 410
Anglo-Saxon		AD 410 – AD 1066
Medieval		AD 1066 – AD 1485
Post-medieval		AD 1485 – AD 1900
Modern		AD 1901 – present day
<b>Table 1: Classification of Archaeological periods</b>		

5.1.2 Nearly two thirds of the Kent HER records within the 1km assessment area are Portable Antiquities Scheme findspots. These finds are usually applied to a general grid square rather than the exact location of the find itself. Records concern a wide range of periods. There is a large number from the Palaeolithic and Roman period as well as the Post Medieval, although some archaeological investigations recent years have yet to make their way in the HER database.

### 5.2 Designated Heritage Assets

5.2.1 One of the tasks of the site visit was aimed to identify any designated heritage assets within the wider context of the PDA in accordance with The Setting of Heritage Assets – English Heritage Guidance (English Heritage 2011).

- 5.2.2 This guidance states that “setting embraces all of the surroundings (land, sea, structures, features and skyline) from which the heritage asset can be experienced or that can be experienced from or with the asset” (The Setting of Heritage Assets, English Heritage 2011).
- 5.2.3 There are five designated assets. Four relate to Grade II listed properties. Three of those are Post Medieval consisting of farmhouses and cottages in the general area south of the PDA more than 590m away. The fourth Grade II property relates to a modern footbridge across the A2 circa 645m east of the PDA. There is also to the west on the outer reaches of the assessment area a scheduled ancient monument of a Medieval Woodland Boundary in Darenth Wood (1013378). The boundary enclosed a wood of around 35.5ha that was used to assist managing the coppicing of the wood. Given the distance and that there are major roads and interchanges between these designated assets preventing any intervisibility, the proposed development will not have any impact upon their significance or setting.

Table 1: Designated Assets

KHER ID	Description
TQ 57 SE 1034	Lower Bean Farmhouse. Grade II (1099940). 17th century or earlier.
TQ 57 SE 1042	Barn to South East of Lower Bean Farmhouse. Grade II (1085808). 18th century or earlier weatherboarded barn.
TQ 67 SW 1335	Swanscombe Cutting Footbridge Crossing A2 East of A296 Junction. Grade II (1119762). Footbridge over trunk road. 1964.
TQ 57 SE 1040	Blue House. Grade II (1336457). 17th century timber framed cottage.
TQ 57 SE 38	Medieval Woodland Boundary in Darenth Wood (1013378).

### 5.3 Previous Archaeological Works

- 5.3.1 There have been a number of recent intrusive archaeological events in the area, some of which are still to make their way into the HER. Key intrusive events are summarised below.

- 5.3.2 As the area especially to the north of the PDA known for having Palaeolithic potential, the development of the Eastern Quarry has led to a number of opportunities to investigate the archaeology in that area. Not all Palaeolithic deposits have been removed by quarrying. Given the Palaeolithic importance of the Eastern Quarry site since the early 21<sup>st</sup> century and continuing until the present day, there has been a dedicated programme of works in the area. Initially commencing with desk-based assessments, through to geophysical surveys, test pitting and evaluations. This was pulled together in 2008 into an Historic Environment Framework and helped inform subsequent fieldwork. Most of the fieldwork that has taken place in Eastern Quarry has been to the far eastern side at Castle Hill, close to the Ebbsfleet Channel and to the far north, close to Swanscombe and the known Palaeolithic Sites in that area. However, the southern and western parts of Eastern Quarry, closest to the PDA have yet to be investigated (pers. comm. Dyson). The individual areas and their excavations are far too numerous to detail here, but key excavations are summarised below.
- 5.3.3 Just outside of the assessment area to the north at Alkerden Farm, archaeological investigations consisted in 2018 of 16 evaluation trenches and 7 Palaeolithic test pits. No significant archaeology was recorded within the Holocene evaluation trenches. The previous quarrying and landscaping within the site may have impacted the survival or buried any archaeology. The allotment site on the north eastern side of the Eastern Quarry, also outside of the assessment area was evaluated and assessed as having low Palaeolithic potential given that the relevant deposits were not present.
- 5.3.4 Also, just outside of the assessment area, to the east, north east, a large number of Palaeolithic handaxes were found in a 2005 evaluation as the Castle Hill housing development on palaeo-landsurfaces that was previously part of the eastern quarry. There were 19 handaxes, 7 flake-tools and more than 1500 flakes. All of the material is in mint condition, suggesting an undisturbed occupation/activity on archaeological horizons of around 29031m aOD. This eastern party of the quarry identified that the archaeological potential in places had been removed by quarrying but there was potential for strips around the southern and eastern boundaries not affected by quarrying that could contain remains. However, the



southern and western parts of Eastern Quarry have yet to be investigated (pers. comm. Dyson).

*A2 Bean and Ebbsfleet Junction Improvements, 2019*

- 5.3.5 An evaluation and geoarchaeological test pitting took place in 2018 on land north and east of the A2260 junction with the M2 circa 2km north east of the PDA in the Ebbsfleet Valley. No finds or features of archaeological significance were encountered within any of the archaeological evaluation trenches. The geoarchaeological evaluation established the range of Quaternary deposits present across the evaluation area; these have been significantly impacted on and/or removed during previous quarrying and development. No deposits with greater than low geoarchaeological, or Palaeolithic archaeological potential were identified.

*Historic Landscape Classification*

- 5.3.6 The KHER landscape classification shows the PDA as part of the post 1810 settlement area. Immediately adjacent to the south west there remains on the outskirts of the recreation ground a track of pre-1810 woodland. These are general classification heading used as the reality is that it was all woodland until around the 1960s.

## **5.4 Archaeological and Historical Narrative**

- 5.4.1 Swanscombe has been occupied since Palaeolithic times, flint tools from circa 400,000 years ago have been found. Many finds are located in ancient river gravels. Quarrying in the Swanscombe area has led to separate discoveries of rare Palaeolithic skull remains in 1935, 1936 and 1955 of three pieces of skull of *Homo heidelbergensis*, a different species of human to ourselves. Evidence from this period also includes much flora and fauna including elephants, aurochs, wolves and rhinoceroses. Banfield pit to the north east of the PDA was declared a National Nature Reserve in 1954. The Ebbsfleet Valley to the east has also revealed significant Palaeolithic artefacts and Palaeoenvironmental evidence. This includes Lower Palaeolithic and Middle Palaeolithic collections of finds of national significance. Upper Palaeolithic material has also been recovered from stratified colluvial deposits near Springhead at the source of the Ebbsfleet. Neolithic

evidence is usually in the form of worked flints and little by way of occupation has been found in the area, although the Channel Tunnel Rail Link (CTRL) investigations to the east located deposits and archaeological features tentatively dated to the Neolithic.

- 5.4.2 In the wider area to the east the same CTRL investigations revealed Bronze Age worked and burnt lithics as well as fields systems and burials cremations. A heath suggested settlement activity was close by.
- 5.4.3 Iron Age activity was concentrated around the springs at Springhead to the south east of Swanscombe and the area associated with a ritual landscape. There was a 500m 'processional way' from the river edge to the high point overlooking the springs and many votive offerings in the form of coins were found. It was perhaps a continuation from this period of the area's religious significance that attracted the Romans.
- 5.4.4 The main London to Dover Roman Road passed at the northern end of the PDA. The exact line in this portion has been lost. The major Iron Age and Roman settlement of Springhead would have been just to the south east with Roman settlements also at nearby Dartford. Circa 2km to the south east of Swanscombe was the Roman town called Vagniaci since 56 AD, situated at the source of the river Ebbsfleet and the river was used to link Watling Street to the River Thames. It was a posting station and an important religious centre based on the springs with a sanctuary complex including a temple, ritual shaft in an area enclosed by a ditch. A large number of coins and brooches were found suggesting these were votive offerings. As well as residential properties, industry was also seen with an aisled barn, blacksmith forge, a baking, a possible brewing complex and crop dryers. At Pepperhill there was a major Roman cemetery with circa 600 burials. It was the Romans that first began to dig chalk from the area. Roman tiles have also been found in the fabric of St Peter and St Paul's church in Swanscombe. Roman tile kilns have been uncovered at Galley Hill and pottery-making remains have been discovered on Swanscombe Marshes.
- 5.4.5 Romans are known for their roadside activities. The structure of Roman roads varied greatly, but a typical form was an agger, or bank, forming the road's core, built of layers of stone or gravel (depending on what was available locally). In

areas of soft ground, the road might be built over timber piles and layers of brushwood. The core of the agger would be covered with a layer of larger stones, if available, with the upper surface being formed from layers of smaller stones or gravel. The full 'road zone' could be defined by ditches set some distance from the road, providing drainage and possibly space for pedestrians and animals. The width of roads varied from about 5 metres to more than 10 metres.

- 5.4.6 The PDA historically resided in the parish of Stone, Stone ran from the coastline of the River Thames to the north with Bean at its southern end and a narrower middle section along the line of Watling Street. The top half included St Mary's Church and Stone Manor House. In Anglo-Saxon times it became part of a longer road known as Wæcelinga Stræt ('Watling Street' in modern English). Stone so called as 'place at the stone or stones'. Stone appears a document where Archbishop Dunstan (959 – 988) records that Aelfege gave land at Littlebrook to the Church. After a dispute following Aelfege's death the Manor of Littlebrook was finally restored to Rochester cathedral. In 991, Stone, as part of North Kent, was ransacked by the invading Danes led by King Ethelred II, and the parish suffered terrible damage. By 995 AD King Ethelred II decided to restore relationships with the Bishop of Rochester, Godwyn, so he gave Stantune (Stone) and Littlebrook to the Church of St Andrew in Rochester. Noted in the gift was a church in the Manor of Stone which implies that there has been a parish church here since very early times and that until 995 AD Stone had been a Royal Manor of some value. The Domesday Monachorum, compiled around 1070 by Bishop Gundulf, records the churches in each diocese and it is widely accepted as a copy of an existing list of Saxon churches. One name recorded is that of St Mary the Virgin, Stone. The Saxon church is most likely beneath the current church. In the exterior of the present 13th Century building there is great use of Tufa blocks, providing strong evidence that the previous church on the site was substantial and not solely constructed of wood. Re-used Tufa blocks can be seen in the walls of the Nave and the Aisles, and it is known that these were used widely in both the Roman and Saxon periods.
- 5.4.7 At the time of the Domesday Book in 1086AD, Stone's entry referred to a settlement area of 20 villagers, 12 smallholders and 4 slaves, probably around 100-150 in all including women and children. There was enough land for 11 men's

plough teams and 2 lord's plough teams. There was 72 acres of meadow, enough woodland for 60 swine, 1 mill, 1 fishery and 1 church. The owner being the Bishop of Rochester. It is believed that the central portion was particularly wooded and mainly unsettled pasture. This led to the 'break' in the line of the Roman road, which went out of use. The road toward Rochester rather than following a straight line then turned south along Sandy Lane to Betsham. It is not known exactly when this portion went out of use, but its line remained as the parish boundary. Stone was a small settlement in comparison to nearby Dartford and Swanscombe.

- 5.4.8 Just to the north of Watling Street and the PDA is Stone Castle. This dates from the mid-11<sup>th</sup> century and thought to have been constructed without licence during the reign of King Stephen but later permitted by King Henry II. Built entirely of flint, the only surviving portion of the original medieval castle intact is its large rectangular tower. An adjoining Georgian house was built onto the tower by Sir Richard Wiltshire. In 1527 Cardinal Wolsey stayed at his house while passing through the district. In more recent times the property has belonged to the Church of England.
- 5.4.9 The northern part of Watling Street in the area of the PDA lay in the parish of Swanscombe. Swanscombe was 'swanes camp' in old English and is thought to relate to a meaning of Peasant's field or the old English for Swan field. Alternative spellings include Suanescamp in 695 AD, Svinescamp in 1086 AD, changing to Swanescombe in 1292 AD and settling on Swanscomb by 1610 AD. To the north east of the PDA, is the site referred to as Sweyns Camp, which is regarded as a possible Medieval motte or prehistoric barrow. An earthwork known by that name since 1890 of a circular earthworks, destroyed in 1928 of a possible motte with pits nearby suggesting occupation dwelling.
- 5.4.10 In the Medieval period, the areas woodlands were actively managed as evidence by the scheduled ancient monument earthworks in Darent Wood to the west consisting of a bank and ditch. Woods which are more than 100 years old often have some form of earthwork boundary: ancient wood boundaries (pre-AD 1700) are either sinuous or zig-zagged; straight edged woods with slighter earthworks usually indicate a wood boundary of later than AD 1700. Darent Wood is classed as Ancient Woodland as is Thrift Wood of which the southern half of the PDA falls

into this larger area of ancient woodland. The earthworks at Darenth Wood are scheduled because although sections have been partly destroyed by modern road building, the medieval woodland boundary in Darenth Wood is of an early date and survives well. Its earthworks are comparatively large for this type of monument and have been positively dated by part excavation. The monument will also contain environmental evidence relating to the way in which the wood was exploited during its period of use.

- 5.4.11 Overtime the amount of woodland reduced in size as it was cleared. However, the wooded area of the PDA remained in place until the early 20<sup>th</sup> century and was part of Thrift Wood. In old English, this was 'fyrhoe' becoming ffrythe in the 14<sup>th</sup> century meaning 'dweller of the woodland'. This woodland did not form any part of any farms in the parish.
- 5.4.12 The straight line of Watling Street was resurrected in 1922 and runs along the northern boundary of the PDA. In the 1960s, this was bypassed, with the A2 built to the south of the PDA effectively creating a triangular area in which the PDA sat with Watling Street to the north, the new A2 carriageway to the south and Bean Lane on the western side.
- 5.4.13 The area west of the PDA became Watling House Nursery and garden centre with a petrol station fronting Watling Street, which is now disused. The western end of the Bean Triangle had a terrace of Cottages known as Igtham Cottages, where at their rear were brickworks, and latterly used for car repairs and breaking. Other plots in this area have been used as transport café (the Merry Chest) And a BT repeater stations along with a timber yard and haulage storage yards.
- 5.4.14 North of Watling Street, the area was quarried in the 20<sup>th</sup> century both on the western side and eastern side of Cobham Terrace Road. The overburden in the northern part largely comprising of Thanet sand was removed off-site to reveal the chalk for quarrying. The southern part had the Thanet Sand overburden removed and placed over much of the quarried area in the northern part, which later became Alkerden Farm. Planning controls upon the quarry were first introduced in 1952. Planning permission granted in this year allowed quarrying to a depth of +2.4m OD and other than a small area adjacent to Southfleet Road this has essentially all been quarried. A further permission granted in 1969 allowed

deepening to -6.7m OD over much of the 1952 area and the remains of this tranche form the bulk of the remaining chalk reserves. In 1988, a third planning permission was granted for further deepening to -10m OD over the south east section of the quarry.

- 5.4.15 In the late 20<sup>th</sup> century when quarrying had finished, the area to the north west of the PDA on the western side became Bluewater Shopping Centre. The eastern side in the early 21<sup>st</sup> century became a large residential development for three connected villages, which forms part of the wider Ebbsfleet Garden City with over 1600 houses along with community facilities.

## 5.5 Cartographic Sources and Map Regression

### *Andrews, Dury and Herbert map of 1769*

- 5.5.1 Andrews, Dury and Herbert published their atlas some thirty years before the Ordnance Survey, immediately becoming the best large-scale maps of the county. This shows the broad location of the PDA. Key settlements such as Bean and Stone Wood are identifiable south of the PDA as is Stone Castle and the large area of Swanscombe Park. To the north and north east. To the north is a large track of woodland and also to the south west. The map depicts the line of the Roman Road and this is showing a different alignment to that of the local road network. Consequently, it is difficult to accurately place the PDA in relation to these roads. However, there is no suggestion of the woods continuing into the area south of the main east-west road (Fig. 3).

### *Ordnance Surveyors Drawing, 1798*

- 5.5.2 This map shows far greater details of buildings, and land use. In addition, the road network depicted shows a closer representation to the current road network in the area of the PDA. The road north of the PDA is represented here as a straight line. The PDA resides in a wider area of woodland, here referred to as Stonewood, where this was probably the main woodland area for the parish of Stone. In between the various areas of woodland, the land is agricultural, and settlements are small and scattered. A dotted line heading southwards from the road through the area of the PDA towards Beans is represented that also passes north of the main road towards Hockenden (Fig.4).



#### *Stone Tithe Map of 1837*

5.5.3 The PDA at the time of the tithes was part of a wider area called Thrifts Wood that was owned and occupied by Mumford Campbell. In this area, the road of Watling street formed the parish boundary line between Stone and Swanscombe. The tithe map clearly shows the footpath that ran through the PDA towards Bean. Mumford Campbell, a county magistrate was a large landowner in the area who resided at the time at Sutton Place in Sutton-at-Hone, a parish some 3.5 miles south of Dartford (Fig.5).

#### *Historic OS Map 1872*

5.5.4 This is the first properly scaled OS map. The PDA resides in the woodland referred to here as The Thrift with the footpath running through the PDA. Just south of the PDA, a number of footpaths across the woods merged. There is very little by way of settlement in the area other than the hamlet around Custon's Place farm to the south east. Although to the west it appears that a rectangular area of woodland has been cleared. To the east the straight line of Watling Street tapers out as it traverses into Swanscombe Woods (Fig.6).

#### *Historic OS map 1897*

5.5.5 There is little change at the PDA. However, parts of land around Thrift Wood have now been turned over into orchards. There are also signs of individual isolated houses having been built such as Thrift Cottage and Woodbine Cottage. To the west and north west on either side of Watling Street, there are now labelled a couple of areas referred to as 'old chalk pit', suggesting that they are no longer in use despite not appearing on earlier maps. To the east Watling Street is marked as a track still (Fig.7).

#### *Historic OS map 1908*

5.5.6 There is little change at the PDA. To the north east there is now brickworks and the old chalk pit that was to the west is now larger and labelled limekilns. Just off the map to the west are more limekilns and brickworks (Fig.8).

#### *Historic OS map 1933*

5.5.7 There have been significant changes. The PDA now contains a building adjacent to the trackway in a small clearing and the remaining area depicted as woodland.

Additional properties have also now been built along Watling Street to the east and west and plots boundaries marked out. Immediately to the west of the PDA is now a rectangular plot containing an orchard with another cleared area adjacent. In addition, the road of Watling Street itself has been upgraded with earthworks along its length on the northern side of the road and to the east this now continues through Swanscombe Wood. The brickworks to the north west are now longer marked as such. To the west the quarried area has increased in size and along Bean Lane semi-detached houses have been built (Fig.9)

*Historic OS Map 1946*

- 5.5.8 There is no change at the PDA. The orchard to the west has increased in size (Fig.10).

*Historic OS Map 1962*

- 5.5.9 The building at the PDA is referred to as 'The Hut'. There is now a new building immediately east of the PDA that is unnamed. The boundary line on the western side is depicted for the first time as showing a bank. The orchard area immediately west of the PDA now has a number of buildings located in the area, the largest being Watling Street Nursery and the smaller ones Oakdene and Oakwood beside a petrol stations shown with the in/out entrances. North of the PDA there are a number of large earthworks now depicted representing the quarry works (Fig. 11).

## **5.6 Aerial Photographs**

*1940s*

- 5.6.1 This shows the PDA with its single building in a small clearing at the northern part of the PDA adjacent to Watling Street. The remaining area of the PDA is woodland. To the east is a building and to the west orchard. North of the PDA is farmland with the overgrown remains of the brickworks as an 'L' shape to the north west (Plate 1).

*1960s*

- 5.6.2 The building at the PDA can be seen more clearly and the area around heavily wooded, which now hides any traces of the footpath that ran through the site. To the west the large nursery building has been built (Plate 2).

*1990*

- 5.6.3 There have been significant changes. To the south of the PDA the A2 trunk road has been built. Severing the PDA from the wider Thrift Wood area. In addition, the bungalow has been demolished and the clearing that was around the house allowed to become overgrown. The orchard to the west is no longer in place. To the north of Watling Street is clearly an industrial quarry site (Plate 3)

*2003*

- 5.6.4 There appears little change at the PDA. The area to the west is now used for storage as are areas to the east of the PDA (Plate 4).

*2018*

- 5.6.5 The PDA is now showing as having a hardstanding area at the northern end, with the southern part of the site appearing unchanged. The area to the west is now full of shipping containers for storage. The area north of Watling Street is no longer a quarry with many buildings demolished and the area overgrown (Plate 5).

*LIDAR*

- 5.6.6 The LIDAR appears to show a linear feature. It is not clear if this is the line of the historical trackway. The bank on the western boundary particularly in the southern party is pronounced. The hollow area of the PDA continues southwards beyond the area of the PDA and is bisected by the A2. In the centre of the PDA is a pit like feature (Fig.12).

## **5.7 Walkover Survey**

- 5.7.1 The walkover survey is not intended as a detailed survey but the rapid identification of archaeological features and any evidence for buried archaeology in the form of surface scatters of lithic or pottery artefacts. A walkover was undertaken on the 18th of November 2020. No features or artefacts were seen (Plates 6-15).
- 5.7.2 The PDA is adjacent to Watling Street, a slip road that joins the A2. Access is on the southern side of the road with the area of the PDA fenced off and set back off

the road. The northern boundary of the yard is set back from Watling Street and is bordered by a steel palisade fence. The northern part of the site is broadly level consists of compacted fill at ground level with a number of containers and caravans around the edge of the site as well as a fuel tank. The edge of this northern area has mature vegetation. The southern half of the site is currently demarked from the northern fenced area by two separate bunds of approximately 2m in height with a gap between them for access. This section is also separated by the steel palisade fence and a gate. The southern area is accessed via a dirt ramp and the central part sits at a higher level and is probably made ground. The southern area of the PDA has many more mature trees but also has a surface of compacted fill. Around this area is also a stockpile of hardcore and rubbish and containers. The rear part of the yard has a wooded fence with the land sloping down southwards until the A2 is reaches adjacent to the southern boundary of the PDA with the road level set circa 4m higher. Either side of the PDA the land levels slope upwards. On the western side there is a sharp bank with the land level of the plot to the west significantly higher with circa 5m difference suggesting the land next door has been raised and levelled. On the eastern side the bank is less steep beyond the eastern boundary with the Stone wood building next door set slightly higher by around 2-3m. This adjoins the neighbouring storage yard located on higher land. Features seen on the LIDAR such as the pit like feature in the centre and the linear feature were not seen during the walkover.

## **5.8 Summary of Potential**

### *Palaeolithic*

- 5.8.1 The Palaeolithic period represents the earliest phases of human activity in the British Isles, up to the end of the last Ice Age. The Kent HER has seven entries for this period within the assessment area. These concern areas covering a radius from the west, through to the north and out to the east circa 425m out to 730m away. Three records (TQ 57 SE 161; TQ57 SE 1088; TQ 57 SE 215)) concern handaxe finds at the former Stonewood Brickyard. It is not clear if these are the same handaxe of three different handaxes as little by way of information is provided. To the north a larger number of Palaeolithic finds have been found consisting of 11 handaxes along with two flakes at The Mounts and at nearby

Bartholomew Hill, a further 12 surface finds of Palaeolithic handaxes along with debitage were found in the late 19<sup>th</sup> century. Much of the area immediately north has been quarried out, removing evidence. The PDA here corresponds to what is referred to as Area D in the Eastern Quarry, which is along the southern edge. Area D was deemed to have colluvial/solifluction deposits filling the dry valley in this area that if accurately mapped are considered likely by Wenban-Smith within the DBA for the Eastern Quarry to contain a high potential for Palaeolithic material with a good chance of archaeological and/or biological evidence. The DBA also goes on to say that as the deposits here are mapped as Thanet Sand, that there is an increased likelihood that this area lies beyond the southern margins of the Boyn Hill/Orsett Heath deposits. It is the Boyn Hill/Orsett Heath deposits that carry far higher Palaeolithic potential and significance. The Boyn Hill/Orsett formation is an east-west band from Dartford Heath through to Northfleet and has had a number of national and in some cases international significance of Lower Palaeolithic remains usually identified through quarrying. The most famous being at Barnfield Pit in Swanscombe to the north of Eastern Quarry.

- 5.8.2 The Southern Rivers Project identified a number of findspot locations of Palaeolithic material. Circa 1km west of the PDA in Darenth Wood of a small Acheulean hand axe is a site located in a plateau of River Terrace deposits of the type seen either side of the PDA. In addition, another Palaeolithic find was found circa 700m east, south east of the PDA at the site of the former Stonewood Brickyard where the Pleistocene context is unclear but is in a site where colluvial/solifluction or residual Pleistocene deposits are likely to have been present.
- 5.8.3 The southern strip area of Eastern quarry has not nor is it expected to be evaluated in that area as it is to be retained as an ecological and nature reserve and it has not been possible to confirm the actual potential of this area adjacent to the PDA following desktop assessment. In general, this assessment area to the PDA, especially to the north and east on the outer reaches is considered to be of very high potential for the Palaeolithic period as evidenced by the large quantities of archaeological evidence found. Based on the potential geology at the PDA, the Palaeolithic potential is considered **high**.

### *Mesolithic*

- 5.8.4 The Mesolithic period reflects a society of hunter-gatherers active after the last Ice Age. The Kent HER has no records from this period. Therefore, it is considered that the potential for finding remains that date to this period is **low**.

### *Neolithic*

- 5.8.5 The Neolithic period was the beginning of a sedentary lifestyle based on agriculture and animal husbandry. The Kent HER has one record from this period. To the west, at Bluewater, a collection of artefacts were recovered from the topsoil (TQ 57 SE 244) suggesting activity somewhere in the area. The potential for finding remains that date to this period within the confines of the development site is considered **low**.

### *Bronze Age*

- 5.8.6 The Bronze Age was a period of large migrations from the continent and more complex social developments on a domestic, industrial and ceremonial level. The Kent HER has no records from this period within the assessment area. Whilst there is Bronze Age activity to the east towards Springhead. Given the distance from the PDA, the potential for finding remains that date to this period within the confines of the development site is considered **low**.

### *Iron Age*

- 5.8.7 The Iron Age is, by definition a period of established rural farming communities with extensive field systems and large 'urban' centres (the Iron Age 'Tribal capital' or civitas of the Cantiaci). The Kent HER has two records from this period within the assessment area. The HER records relate to Portable antiquity Scheme finds located to general grid squares rather than their exact location and consists of copper alloy coins (MKE58076; MKE8189). There is also an undated find of a cremation found during a watching brief in 2002 on the outer reaches of the assessment area to the south west (TQ 57 SE 211), which may be of this period or earlier. Springhead to the east was a major Iron Age site but given the distance, the potential for finding remains that date to this period within the confines of the development site is considered **low**.

### *Romano-British*

5.8.8 The Romano-British period is the term given to the Romanised culture of Britain under the rule of the Roman Empire, following the Claudian invasion in AD 43, Britain then formed part of the Roman Empire for nearly 400 years. The Kent HER has 12 records from this period within the assessment area. We have the Roman road of Watling Street passing through along the northern boundary area of the PDA (TQ 86 SW 132). At Branton's Brickfield to the west, two pits were discovered containing Roman pottery and the location is considered as a possible industrial site abutting Watling Street (TQ 57 SE 32). In addition, a single ditch was seen in 2002 circa 910m to the south west. Circa 305m to the south east of the PDA close to Sandy Lane, a Roman pit and gully dated by pottery was found (TQ 57 SE 145). At the site of the Telegraph Hill cutting, Roman artefacts have been found, although it is recognised that the site was dressed from soil that came from the major Roman settlement area at Springhead, further to the east (TQ 67 SW 23). To the north in the area known as Mounts Wood ahead of quarrying Roman artefacts were found in 1868 (TQ 57 SE 1). Just over half of the records for this period came from PAS finds located to general grid squares and consisted of items such as silver coins, copper alloy brooches, a copper alloy bead and buckle. The exact alignment of the Roman Road in relation to the PDA is not clear. The Romans are well known for their roadside activity and burials. Therefore, the potential for finding remains that date to this period within the confines of the development site is considered **high**.

### *Anglo-Saxon*

5.8.9 The Kent HER has just one record from this period being a PAS find of a silver coin located to a grid square some 730m west, south west (MKE58505). The PDA in this period is considered to have been woodland and outside of any settlement areas. Therefore, the potential for finding remains that date to this period within the confines of the development site is considered **low**.

### *Medieval*

5.8.10 The Kent HER has 32 archaeological records from this period, all bar one dominated by PAS finds located to general grid squares to the west, south west and south west. Many finds include silver coins but also other personal items such as strap fittings, buckles, seal matrices, harness mounts, thimbles. It is highly

likely that these finds are in and around the settlement areas. The PDA would have been woodland, like that of Darenth Wood to the west which has scheduled earthworks remaining (TQ 57 SE 38). No such earthwork boundaries are thought to exist at the PDA. Therefore, the potential for finding remains that date to this period is considered **low**.

#### *Post Medieval*

5.8.11 The Kent HER has 25 archaeological records from this period within the assessment area. Three of the records are associated with farmsteads attesting to the rural nature of the area in this period along with three Grade II listed buildings of associated farmhouses and barns. In addition, there are 14 PAS finds of predominately silver and copper alloy coins and tokens. There is the recognition of a possible beacon site on the higher ground to the south (TQ 57 SE 69). Branton's Brickfield to the west was set up close to a chalk pit in the late 19<sup>th</sup>, early 20<sup>th</sup> century (TQ 5 SE 162). Map regression and documentation confirms that the PDA was still woodland in this period. The potential for finding remains that date to this period is considered **low**.

#### *Modern*

5.8.12 There is just one KHER record from this period of a Grade II listed footbridge across the A2 (TQ 67 SW 1335). It is during the 20<sup>th</sup> century, that the first building, being a bungalow is located in the PDA, which was later demolished, and the site became a storage yard. The potential for finding archaeological remains dating to this period in the PDA is considered **low**.

#### *Unknown*

5.8.13 There are two records of features of unknown dates both in what was Mounts Wood that includes a denehole excavated in 1918 that had four chambers (TQ 57 SE 10) and an earthworks of an unknown purpose (TQ 57 SE 9). All located to the north in the area that was Mounts Wood prior to quarrying.

#### *Overview*

5.8.14 This desk-based assessment has considered the archaeological potential of the site, but this potential can only be tested by fieldwork.



5.8.15 The desk-based assessment has considered the archaeological potential of the site. Archaeological investigations in the vicinity, map research, the historical environment record results and recent archaeological investigations have shown that the PDA may contain archaeological sites, and these can be summarised as:

- Prehistoric: **high**
- Iron Age: **low**
- Roman: **high**
- Anglo-Saxon: **low**
- Medieval: **low**
- Post-Medieval: **low**
- Modern: **low**

## 6 IMPACT ASSESSMENT

### 6.1 Introduction

6.1.1 Cartographic Regression, Topographical Analysis, and Historic Research have provided evidence for the historic use of the site. By collating this information, we have assessed the impact on previous archaeological remains through the following method of categorisation:

- **Total Impact** - Where the area has undergone a destructive process to a depth that would in all probability have destroyed any archaeological remains e.g. construction, mining, quarrying, archaeological evaluations etc.
- **High Impact** – Where the ground level has been reduced to below natural geographical levels that would leave archaeological remains partly in situ either in plan or section e.g. the construction of roads, railways, buildings, strip foundations etc.
- **Medium Impact** – Where there has been low level or random disturbance of the ground that would result in the survival of archaeological remains in areas undisturbed e.g. the installation of services, pad-stone or piled foundations, temporary structures etc.
- **Low Impact** – Where the ground has been penetrated to a very low level e.g. farming, landscaping, slab foundation etc.

### 6.2 Historic Impacts

6.2.1 Cartographic regression (5.5), Topographic analysis (1.2) and Historical research (5.4) indicate that the PDA appears to have been woodland up until the bungalow was built on the plot in the first half of the 20<sup>th</sup> century and part of the area around the bungalow cleared of trees. This was later demolished, and the site used for storage. Therefore, the area in and around the house is likely to have truncated and disturbed any potential archaeology. The majority of the remaining area has had surface treatment of some hardstanding, although the construction of the A2 has led to a bund in the southern boundary area and sometime during the 20<sup>th</sup> century a very steep bank created on the western boundary. Given the potential unknown impact from the A2 construction in the southern area, which also appears to also be made ground being higher than the northern part of the site,

along with the uncertainty over the level of the northern part of the PDA and the creation of the bank and levelling of the site to the west and these areas are considered to have an uncertain impact. Therefore, the historical impact on the archaeology in the PDA is considered to be **high** in the areas of the demolished bungalow and **uncertain** for the remaining area.

- 6.2.2 The proposed development comprises of a new covered waste transfer station, which predominately covers the northern half of the site. The existing entrance to the site will move west allow for HGV access to the rear of the building along the western side of the site. As the PDA rises up in height towards the south, the rear area of the waste station will be reduced in level to enable vehicle turning in this area. It is not clear how much of the removal of the soil/rubble in this area is made ground. The proposed impact for northern two thirds of the site is considered to be **high** with low impact for the remaining area. The potential for Palaeolithic deposits could be at any depth but also may be at some considerable depth and therefore below that of any historical impact.

## 7 SIGNIFICANCE

### 7.1 Introduction

7.1.1 Archaeological Significance is assessed under a number of criteria, which includes, Period, Rarity, Group Value, Survival/Condition, Fragility/Vulnerability and Potential. These criteria are the same as used by the Government in the scheduling of ancient monuments and provide a useful framework in assessing significance and also pulls together and summarises the findings in the report.

### 7.2 Significance Criteria

#### *Period*

7.2.1 There is archaeological significance within the assessment area of high potential Prehistoric and Roman periods, and low for all other periods. Desktop Investigations in the area as a result of the Eastern Quarry development has suggested that the southern strip of the Eastern Quarry has a high potential for Palaeolithic remains and the geology at the PDA being in a dry valley and similar as well as having river terrace gravel deposits either side of the PDA is suggestive that the same high potential applies to the PDA, although this has not been tested and the southern spread and extent of the very high Palaeolithic potential of Boyn Hill/Orsett Heath deposits is not known. The PDA lies in the area of the line of the London to Dover Roman Road. The exact alignment in this area is not known. In addition, to the road itself, the Romans were known for roadside activity and the finding of Roman pits near the former Branton's Brickworks to the west suggests that there was activity in the area.

#### *Rarity*

7.2.2 Any evidence concerning the Palaeolithic is considered to rare and is of national importance. In some cases, artefacts and Palaeoenvironmental evidence in the Boyn Hill/Orsett Heath deposits such as the Swanscombe skull to the north, of international importance. Information concerning the Roman period would have been considered to have regional significance and could potentially further our understanding of exploitation of the area in this period.

#### *Documentation*

- 7.2.3 The historical and landscape development of the PDA can be understood reasonably well from the cartographic, archive, photographic and other sources. It is possible that further detailed research may uncover more documentary evidence, but it is unlikely to alter the conclusion in this report.

*Group Value*

- 7.2.4 The potential for archaeology at the PDA has group value in understanding the occupation of the area in the Palaeolithic and Roman periods especially in light of the work that is being and was undertaken at Eastern Quarry and nearby Ebbsfleet.

*Survival / Condition*

- 7.2.5 It is considered for there to have been a high historical impact upon any potential archaeological remains for the PDA in the area of the now demolished bungalow. There is uncertain impact in the remaining area with evidence of made ground and levelling and impact from the construction of the A2. The depth of any potential Palaeolithic remains is uncertain and may be at some depth below that of any potential truncation by the bungalow and associated services and other historical impact.

*Fragility / Vulnerability*

- 7.2.6 Any potential remains within the PDA in the area of the proposed development, should they survive in-situ will be vulnerable to damage during the proposed development at the northern and central part of the PDA, due to the requirement for foundations and services.

*Potential*

- 7.2.7 The impact assessment concludes that the site has a high potential for archaeological remains.

*Significance*

- 7.2.8 Based on the information gained in this report, it can be concluded that the site is of archaeological interest and could potentially carry national and regional significance.

## 8 ARCHAEOLOGICAL MITIGATION

### 8.1 Introduction

The purpose of this archaeological desk-based assessment was to provide an assessment of the contextual archaeological record in order to determine the potential survival of archaeological deposits that may be impacted upon during any proposed construction works. The assessment has generally shown that the area to be developed is within an area of high archaeological potential for the Prehistoric and Roman period and **low** for all other periods. Parts of the PDA have not been built on and may have a low historical impact although there are uncertain historical impacts. It does provide an opportunity to further assessment our regional knowledge of archaeology for the Palaeolithic and Roman periods. In the areas of the former bungalow the archaeological potential is considered lower due to the truncation and disturbance that is likely to have occurred although any Palaeolithic evidence may be at some considerable depth and below the level of any historical impact. Any potential remains within the PDA should they survive in-situ may be vulnerable to damage during the proposed development. The need for, scale, scope and nature of any further assessment and/or archaeological works should be agreed through consultation with the statutory authorities, but it is recommended for there to be test-pitting by geoarchaeological specialists to evaluate the potential for Palaeolithic remains and targeted trenching in order to assess the potential for all other archaeological periods.

## **9 OTHER CONSIDERATIONS**

### **9.1 Reliability/Limitations of Sources**

- 9.1.1 The sources that were used in this assessment were, in general, of high quality. The majority of the information provided herewith has been gained from either published texts or archaeological 'grey' literature held at Kent County Council, and therefore considered as being reliable.

### **9.2 Copyright**

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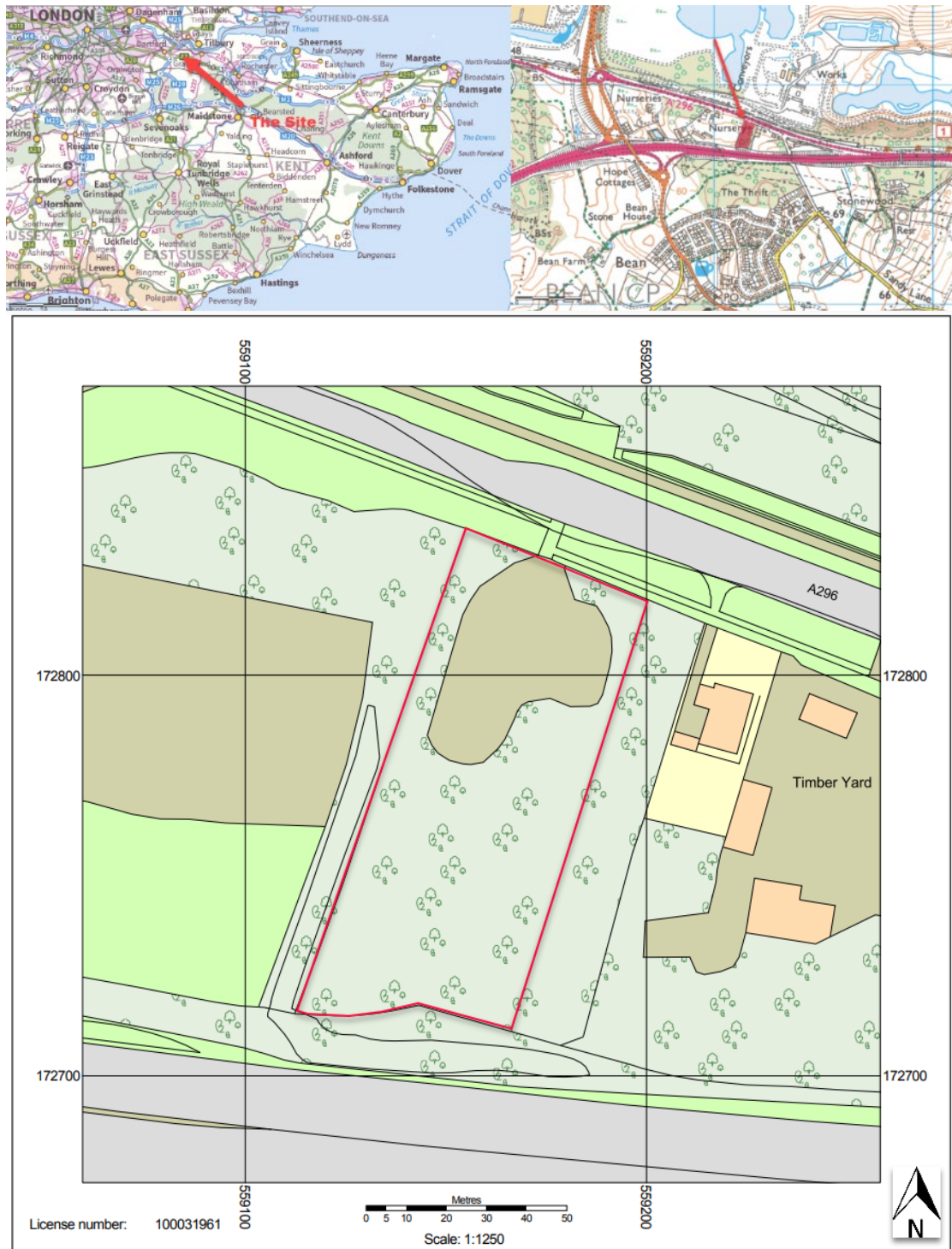


Figure 1: Location Maps, Scale: 1:20,000, 1:1,250

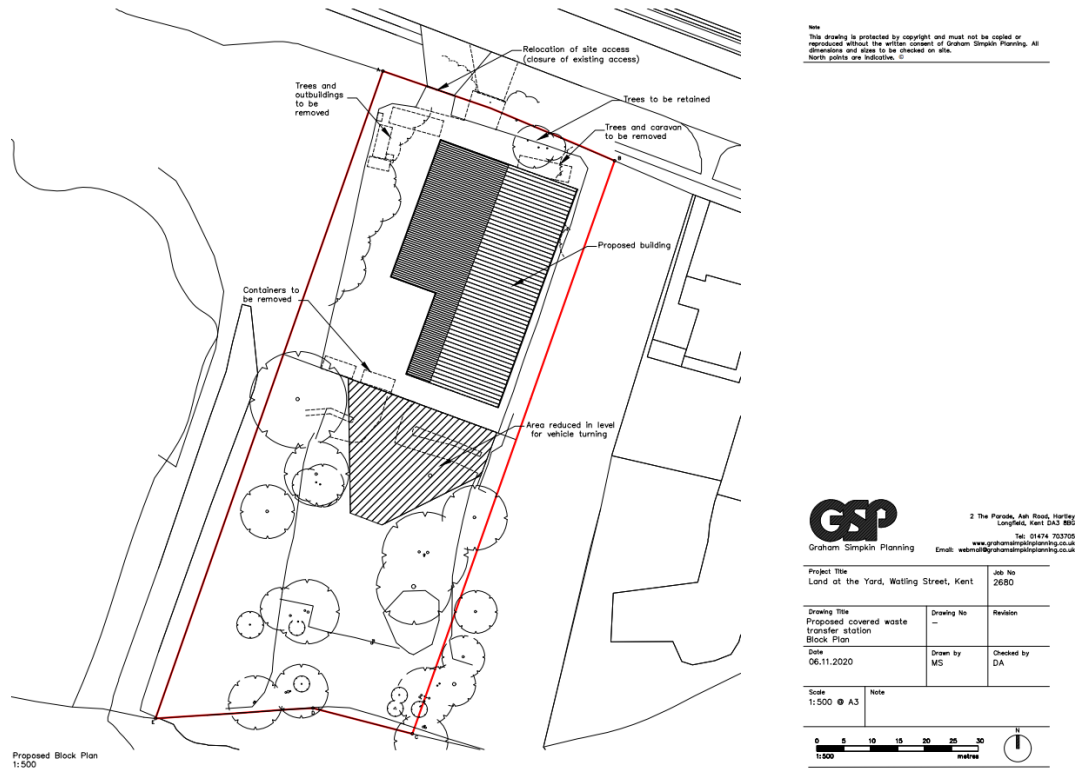


Figure 2: Proposed Development





Figure 3: Andrew, Dury and Herbert Map from 1769





Figure 4: Ordnance Surveyors Drawing 1798

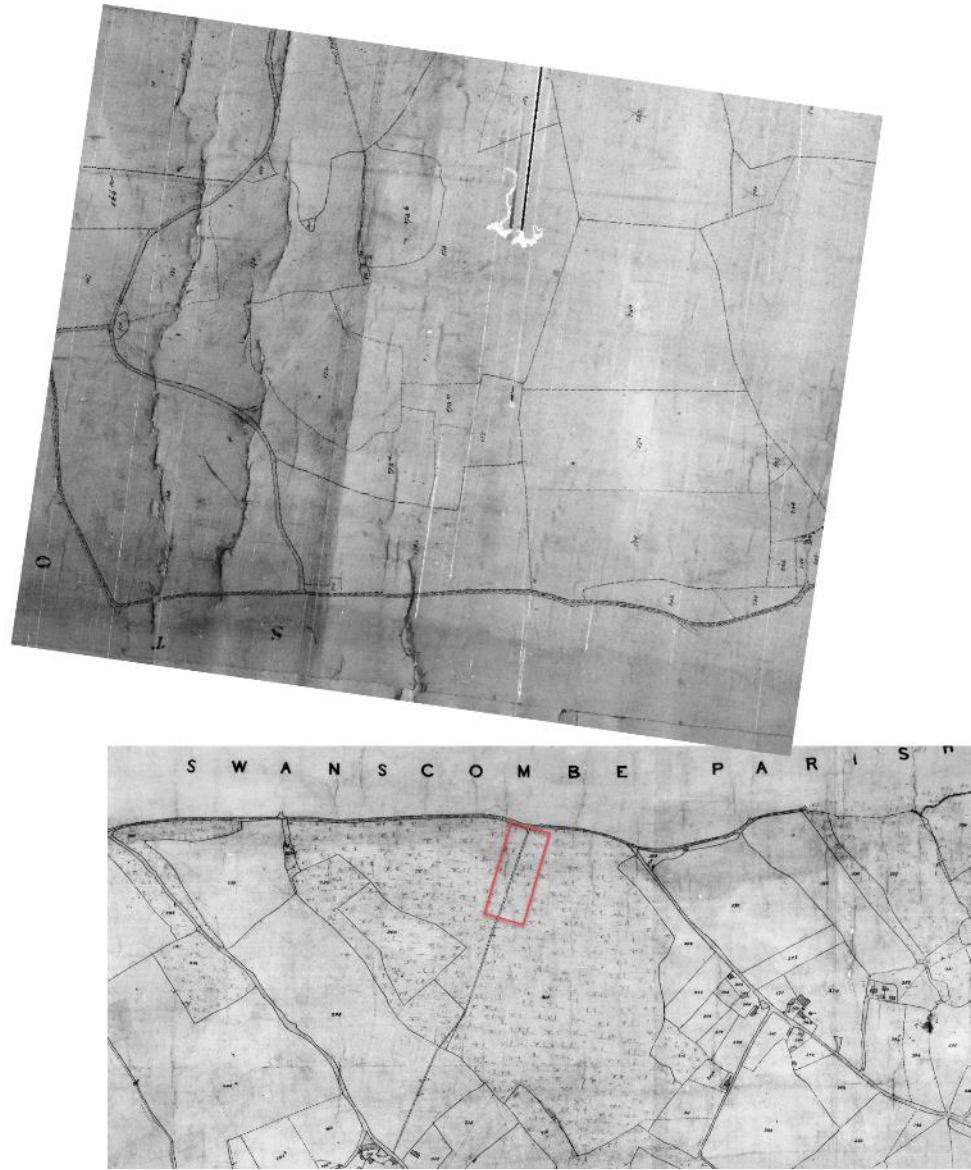


Figure 5: Stone, 1837 and Swanscombe, 1843 Tithe Map



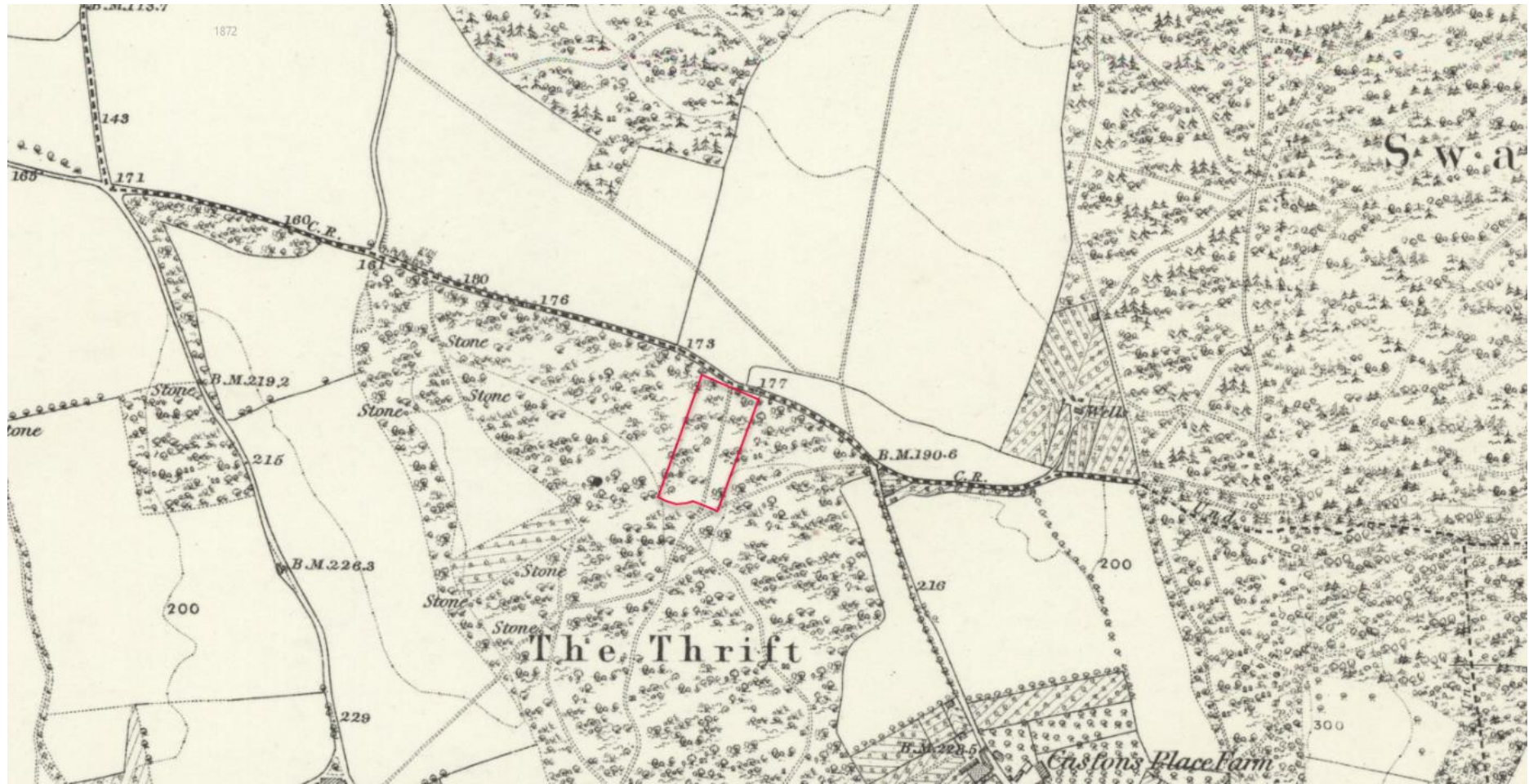


Figure 6: Historic OS Map 1872

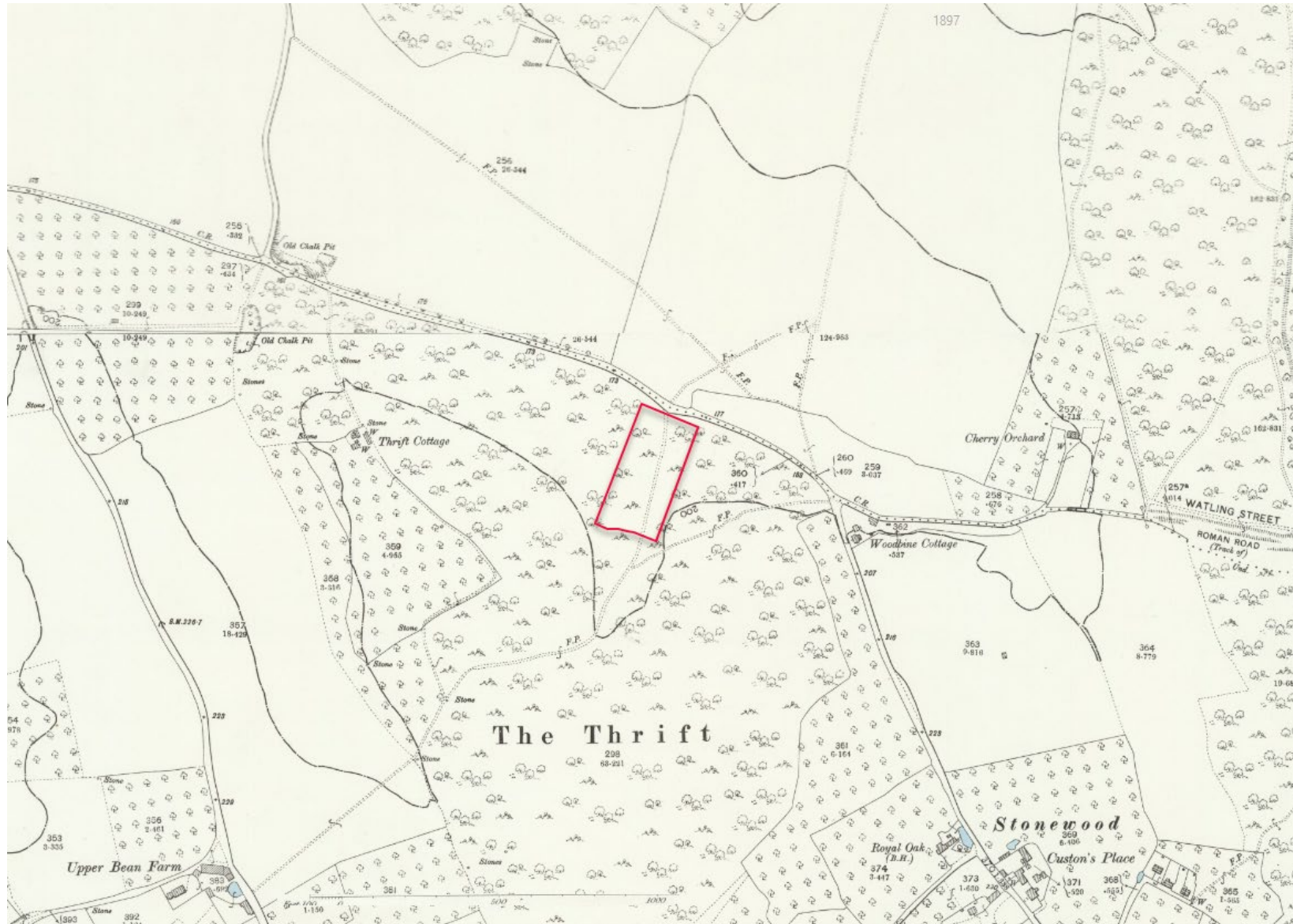


Figure 7: Historic OS Map from 1897



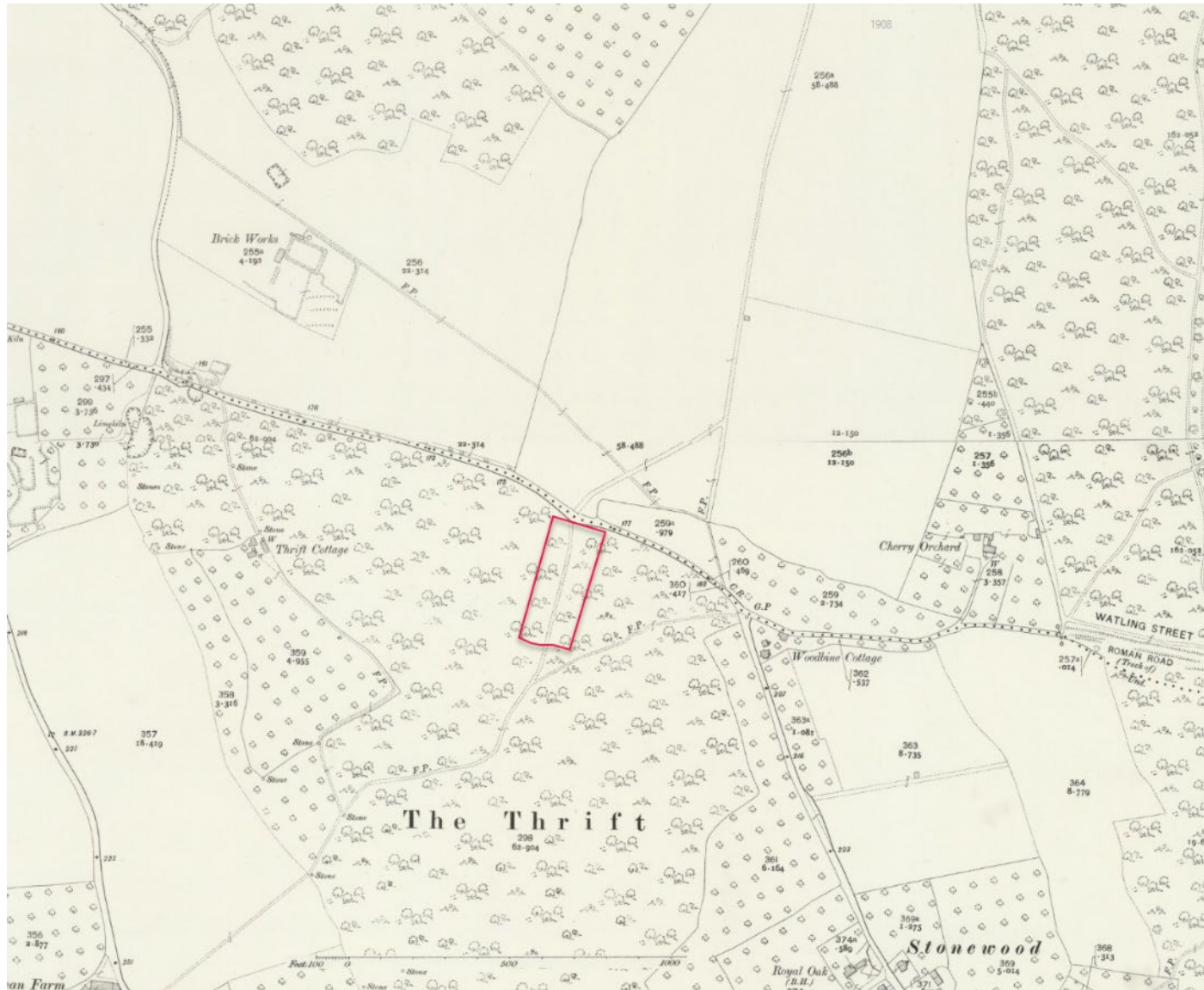


Figure 8: Historic OS Map 1908

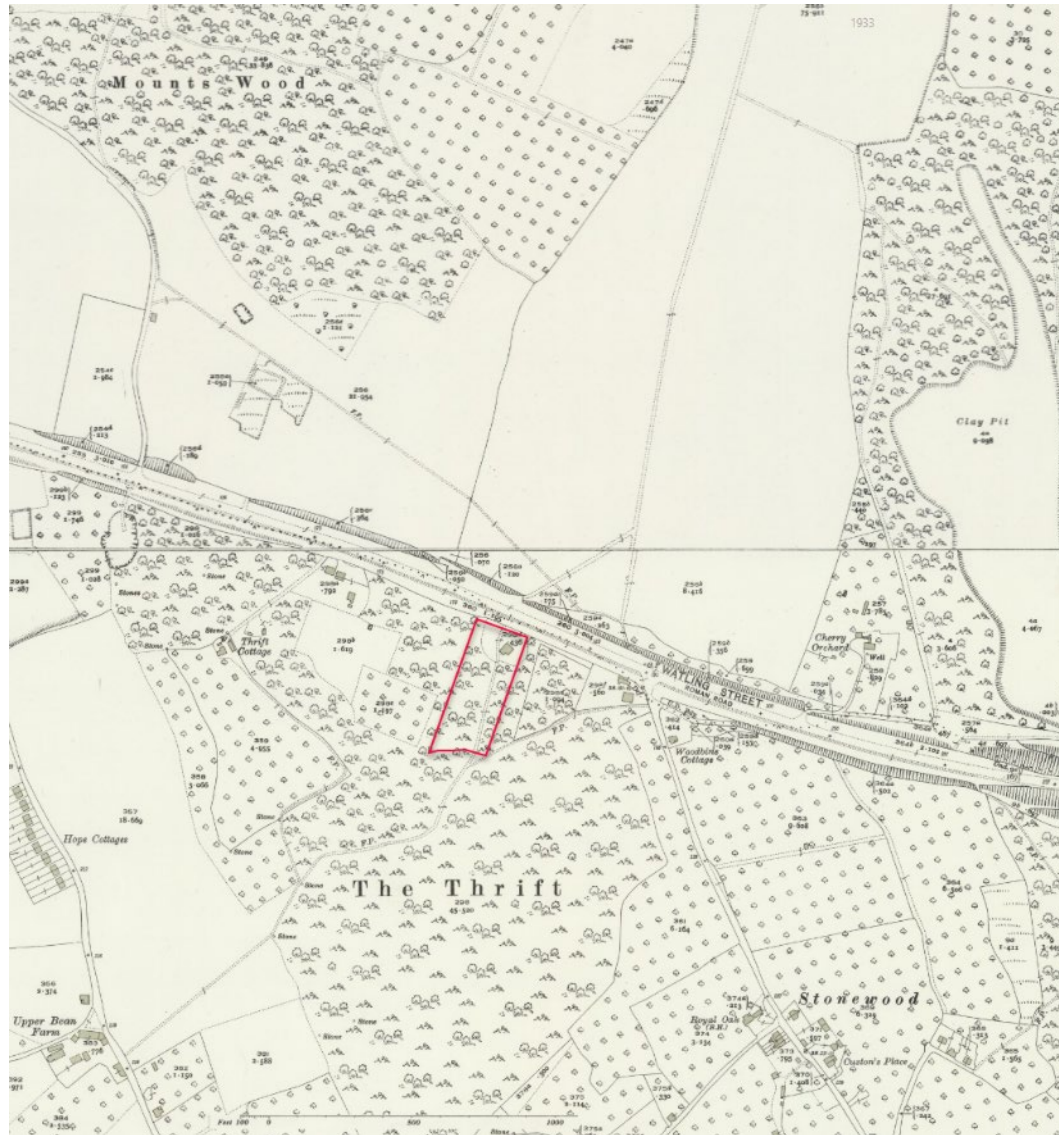


Figure 9: Historic OS Map 1933





Figure 10: Historic OS Map 1946

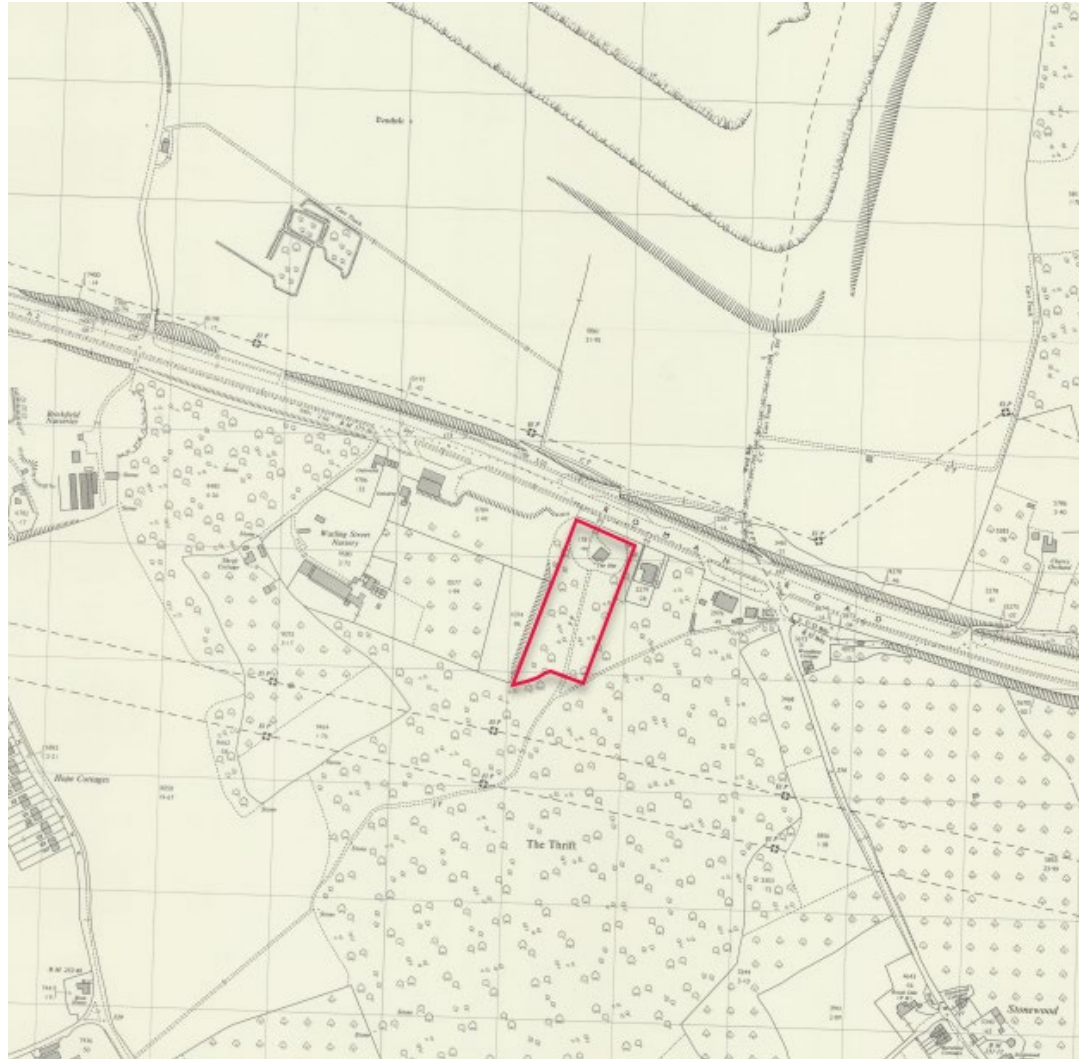


Figure 11: Historic OS Map 1962

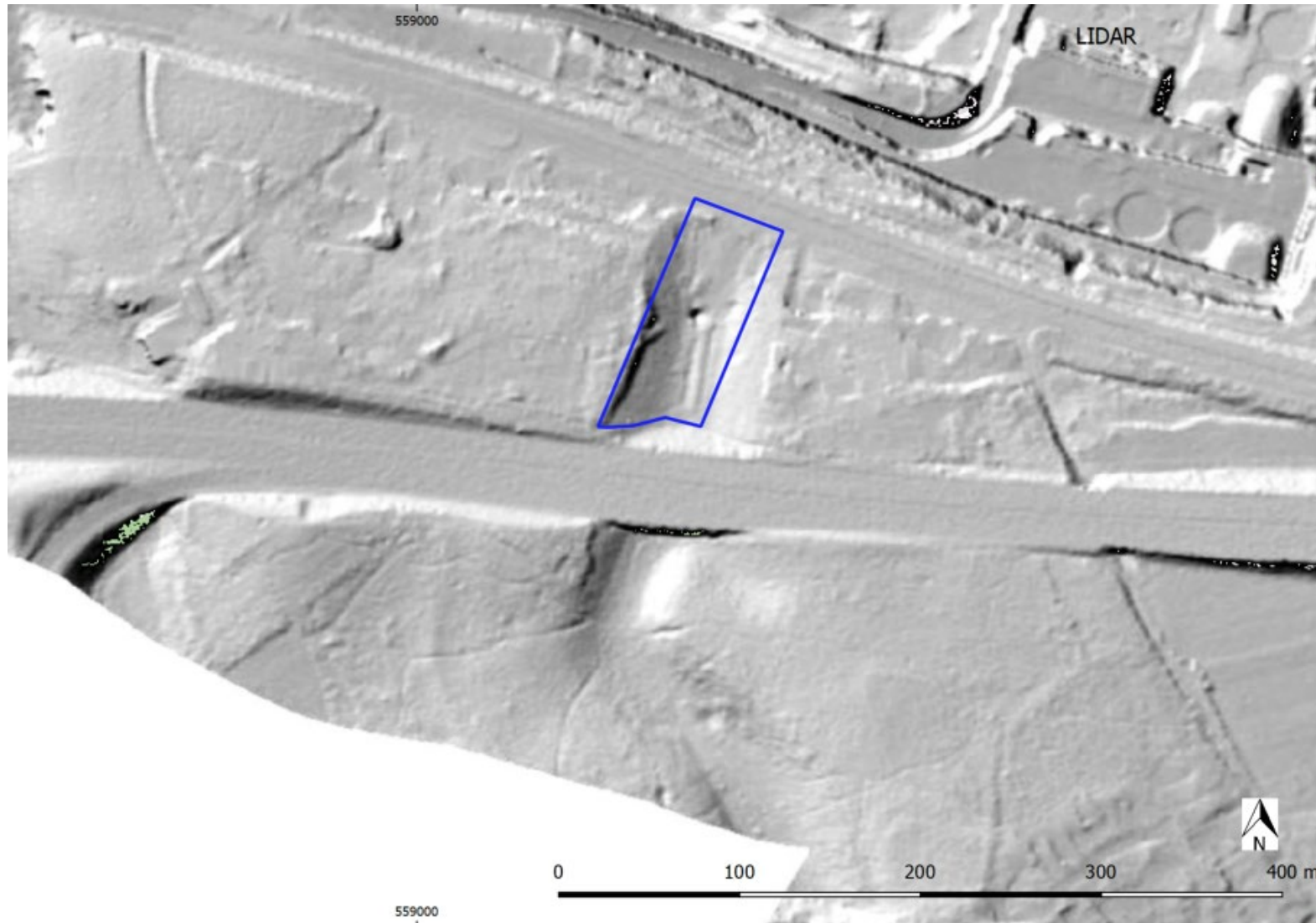


Figure 12: 1m DTM LIDAR (Environment Agency)

11 APPENDIX 1 – KCC HER DATA (SEE FIGURES 13-17).

KHER	Type	Location	Period	Description
TQ 67 SW 23	Findspot	c. 775m E	Roman	Romano-British pottery. Occasionally found in the sides of the Telegraph Hill cutting. This is because the banks of the cutting were consolidated by a dressing of earth obtained from Springhead.
TQ 67 SW 94	Findspot	c. 535m ENE	Lower Palaeolithic	Palaeolithic Handaxe from Swanscombe Wood Clay Pit. There was a major clay pit on the higher ground at the south side of Swanscombe Wood (aka Swanscombe Park), which was later incorporated in the 1970s into the expanding Eastern Quarry and is the most likely source.
TQ 57 SE 145	Monument	c. 305m SE	Roman	Roman pit, gully, pottery. Found during construction of foundation and service trenches at a housing development site at Sandy Lane Bean.
TQ 57 SE 161	Findspot	c. 690m ESE	Palaeolithic	Palaeolithic Find, Former Stonewood Brickyard (Site of). Handaxe, no further information available.
TQ 57 SE 244	Findspot	c. 820m WNW	Early Neolithic to Roman	Bluewater, Stone, Dartford. Watching Brief on development work. No archaeological features were found, although a small collection of prehistoric and Roman artifacts were recovered from the topsoil. Nothing more is recorded but the finds indicate activity in the area.
TQ 57 SE 1034	Listed Building	c. 785m SW	Post Medieval to Modern	Lower Bean Farmhouse. Grade II (1099940). 17th century or earlier.
TQ 57 SE 1042	Listed Building	c. 800m SW	Post Medieval	Barn to South East of Lower Bean Farmhouse. Grade II (1085808). 18th century or earlier weatherboarded barn.
TQ 67 SW 1335	Listed Building	c. 645m E	Modern	Swanscombe Cutting Footbridge Crossing A2 East of A296 Junction. Grade II (1119762). Footbridge over trunk road. 1964.
TQ 57 SE 1040	Listed Building	c. 590m SE	Post Medieval to Modern	Blue House. Grade II (1336457). 17th century timber framed cottage.
MKE57943	Findspot	c. 595m SW	Medieval	PAS find. Medieval silver coin

MKE57946	Findspot	c. 865m SW	Medieval	PAS find. Medieval copper alloy seal matrix
MKE57947	Findspot	c. 865m SW	Medieval	PAS find. Medieval copper alloy buckle
MKE57952	Findspot	c. 735m SW	Post Medieval	PAS find. Post Medieval silver coin
MKE57966	Findspot	c. 735m SW	Medieval	PAS find. Medieval silver coin
MKE57967	Findspot	c. 735m SW	Medieval	PAS find. Medieval copper alloy strap fitting
MKE57968	Findspot	c. 735m SW	Medieval	PAS find. Medieval copper alloy strap fitting
MKE57969	Findspot	c. 635m WSW	Post Medieval	PAS find. Post Medieval silver coin
MKE57970	Findspot	c. 795m SW	Medieval	PAS find. Medieval copper alloy key (locking)
MKE57971	Findspot	c. 770m WSW	Medieval	PAS find. Medieval silver coin
MKE57972	Findspot	c. 680m W	Medieval	PAS find. Medieval copper alloy strap fitting
MKE57973	Findspot	c. 680m W	Post Medieval	PAS find. Post Medieval silver thimble
MKE58063	Findspot	c. 635m WSW	Medieval to Post Medieval	PAS find. Medieval copper alloy spoon
MKE58076	Findspot	c. 960m SSE	Early Iron Age to Roman	PAS find. Iron Age copper alloy coin
MKE58077	Findspot	c. 960m SSE	Roman	PAS find. Roman silver coin
MKE58078	Findspot	c. 960m SSE	Roman	PAS find. Roman copper alloy brooch
MKE58083	Findspot	c. 635m WSW	Medieval	PAS find. Medieval silver coin
MKE58092	Findspot	c. 655m SW	Post Medieval	PAS find. Post Medieval copper alloy coin
MKE58093	Findspot	c. 635m WSW	Medieval to Post Medieval	PAS find. Medieval copper alloy button

MKE58094	Findspot	c. 635m WSW	Post Medieval	PAS find. Post Medieval copper alloy token
MKE58095	Findspot	c. 635m WSW	Post Medieval	PAS find. Post Medieval silver coin
MKE58106	Findspot	c. 655m SW	Post Medieval	PAS find. Post Medieval copper alloy token
MKE58108	Findspot	c. 680m WSW	Roman	PAS find. Roman brooch
MKE58109	Findspot	c. 680m WSW	Medieval	PAS find. Medieval copper alloy buckle
MKE58110	Findspot	c. 680m WSW	Medieval to Post Medieval	PAS find. Medieval copper alloy thimble
MKE58111	Findspot	c. 655m SW	Medieval	PAS find. Medieval silver coin
MKE58122	Findspot	c. 680m WSW	Medieval	PAS find. Medieval copper alloy harness mount
MKE58186	Findspot	c. 725m SW	Post Medieval	PAS find. Post Medieval silver coin
MKE58187	Findspot	c. 725m SW	Post Medieval	PAS find. Post Medieval copper alloy jetton
MKE58188	Findspot	c. 725m SW	Medieval	PAS find. Medieval copper alloy buckle
MKE58189	Findspot	c. 680m WSW	Late Iron Age to Roman	PAS find. Roman copper alloy coin
MKE58190	Findspot	c. 680m WSW	Medieval	PAS find. Medieval silver coin
MKE58191	Findspot	c. 680m WSW	Post Medieval	PAS find. Post Medieval copper alloy coin
MKE58192	Findspot	c. 680m WSW	Post Medieval	PAS find. Post Medieval copper alloy token
MKE58193	Findspot	c. 680m WSW	Medieval to Post Medieval	PAS find. Post Medieval copper alloy buckle
MKE58194	Findspot	c. 680m WSW	Medieval to Post Medieval	PAS find. Medieval copper alloy dress fastener (unknown)
MKE58195	Findspot	c. 680m WSW	Medieval	PAS find. Medieval copper alloy belt



MKE58196	Findspot	c. 680m WSW	Medieval to Post Medieval	PAS find. Post Medieval copper alloy belt
MKE58197	Findspot	c. 680m WSW	Post Medieval	PAS find. Post Medieval copper alloy hasp
MKE58238	Findspot	c. 860m WSW	Roman	PAS find. Roman copper alloy buckle
MKE58245	Findspot	c. 680m WSW	Medieval	PAS find. Medieval copper alloy brooch
MKE58263	Findspot	c. 725m WSW	Medieval	PAS find. Medieval copper alloy mount
MKE58264	Findspot	c. 665m SW	Medieval to Post Medieval	PAS find. Medieval copper alloy mount
MKE58339	Findspot	c. 545m WSW	Post Medieval	PAS find. Post Medieval copper alloy coin
MKE58340	Findspot	c. 545m WSW	Medieval to Post Medieval	PAS find. Medieval copper alloy vessel
MKE58341	Findspot	c. 655m SW	Medieval	PAS find. Medieval copper alloy belt
MKE58342	Findspot	c. 655m SW	Medieval to Post Medieval	PAS find. Post Medieval copper alloy buckle
MKE58505	Findspot	c. 730m WSW	Early Medieval or Anglo-Saxon	PAS find. Early Medieval silver coin
MKE58506	Findspot	c. 725m SW	Post Medieval	PAS find. Post Medieval silver coin
MKE58507	Findspot	c. 725m SW	Medieval	PAS find. Medieval silver coin
MKE58916	Findspot	c. 680m WSW	Roman to Early Medieval or Anglo-Saxon	PAS find. copper alloy bead
MKE58918	Findspot	c. 770m WSW	Medieval	PAS find. copper alloy pot
MKE58919	Findspot	c. 635m WSW	Medieval	PAS find. Silver coin

TQ 57 SE 1	Findspot	c. 510m NNW	Unknown	Mounts wood. Roman coin, bronze cup and Samian sherd found in Mounts Wood in 1868. No further information, now cleared, and the area quarried for chalk. Location accurate to 500m based on available information.
TQ 57 SE 9	Monument	c. 710m NNW	Unknown	Former site of an earthwork, thought to be either a barrow, denehole or barrow mound. This feature has now been quarried away.
TQ 57 SE 10	Monument	c. 350m NNW	Unknown	Mount's wood denehole. Excavated Easter 1918. Caverns or chambers are four in number and are hewn out of solid chalk, height from floor to ceiling approx. 21' 6". Mark of tools on walls very fresh and distinct and all seem to suggest primitive implements such as horn picks or spikes. Only object found was a chalk spindle-whorl. Site now been quarried away.
MKE79343	Findspot	c. 680m WSW	Roman	Roman silver coin
TQ 57 SE 32	Monument	c. 495m WNW	Roman	Two pits containing Romano-British pottery at Branton's Brickfield. Possible industrial site abutting the alignment of Watling Street. Two pits were found, one lined with flint showing the effects of fire and the other with stone. Both contained sherds of Roman pottery.
MKE83938	Farmstead	c. 800m SW	Post Medieval	Bean Farm. A loose courtyard plan farmstead with buildings on three sides of the yard. Altered with significant loss of original form (more than 50%).
MKE83939	Farmstead	c. 800m SW	Post Medieval	Upper Bean Farm. A loose courtyard plan farmstead with buildings to three sides of the yard. Farmstead completely demolished.
MKE83995	Farmstead	c. 445m SE	Post Medieval	Custom's Place. A loose courtyard plan farmstead with buildings to four sides of the yard. Altered with significant loss of original form (more than 50%).
TQ 57 SE 69	Monument	c. 945m S	Post Medieval	16th century Beacon (prob site). William Lambarde's "Carde" of c1570 shows a beacon at "Stone".
TQ 57 SE 89	Monument	c. 715m SSW	Post Medieval	Site of old Telegraph
MKE88542	Farmstead	c. 500m SW	Post Medieval	Outfarm south east of Upper Bean Farm. A field barn with no associated yard.
TQ 57 SE 211	Monument	c. 920m SW	Prehistoric	Undated cremation in pottery vessel found during a watching brief.
TQ 57 SE 216	Monument	c. 910m SW	Roman	Roman Ditch. A single ditch dating to the Roman period was observed during a watching brief in 2002.
TQ 57 SE 217	Monument	c. 810m WSW	Post Medieval	Post-Medieval Pit. A large pit filled with domestic rubbish was excavated in a watching brief in 2002.

TQ 57 SE 387	Findspot	c. 645m NNW	Upper Palaeolithic	Late upper Palaeolithic core plus possible blades, surface-finds from 'The Mounts', Swanscombe
TQ 57 SE 1088	Findspot	c. 425m WNW	Lower Palaeolithic to Middle Palaeolithic	Palaeolithic handaxe from Stonewood Brickyard, Bean
TQ 57 SE 215	Findspot	c. 625m ESE	Lower Palaeolithic to Middle Palaeolithic	Stonewood Brickyard. 1 Palaeolithic Handaxe.
TQ 57 SE 218	Findspot	c. 645m NNW	Lower Palaeolithic to Middle Palaeolithic	The Mounts, Swanscombe - 11 Palaeolithic handaxes and 2 flakes, surface finds in the late 19th Century
TQ 57 SE 220	Findspot	c. 730m NNE	Lower Palaeolithic to Middle Palaeolithic	Bartholomew's Hill, Swanscombe, surface finds of 12 Palaeolithic handaxes and 3 debitage, found in late 19th Century
TQ 86 SW 132	Monument	adjacent to PDA	Roman	Watling Street Roman Road
TQ 57 SE 38	Monument	c. 920m W	Medieval	Darenth Wood medieval earthworks. Scheduled Ancient Monument. Formerly thought to be Roman but probably a 13th century coppice enclosure.
TQ 57 SE 162	Monument	c. 490m W	Post Medieval to Modern	Branton's Brickfield. Probably in use between 1900-1920. The site is close to a chalk/lime pit.
<b>Events</b>				
<b>ID</b>	<b>Record Type</b>	<b>Location</b>	<b>Event Type &amp; Year</b>	<b>Name</b>
EKE8329	Intrusive	Various	Geotechnical Survey (1995)	Boreholes for A2 Trunk Road Improvements Bean Road Junction & Carriageway
EKE14757	Intrusive		Watching Brief (2002)	Thames Water ALF pipeline, River Darent: An Archaeological Post-Excavation Assessment
EKE8338	Intrusive		Evaluation (1996)	Bluewater Park, Stone
EKE8389	Intrusive		Watching Brief (1996)	Bluewater, Stone, Dartford
EKE17926 – EKE1754	Intrusive		Evaluation (1996)	Bluewater, Stone. Various Evaluation Trenches

Figure 13: Gazetteer of KHER Records

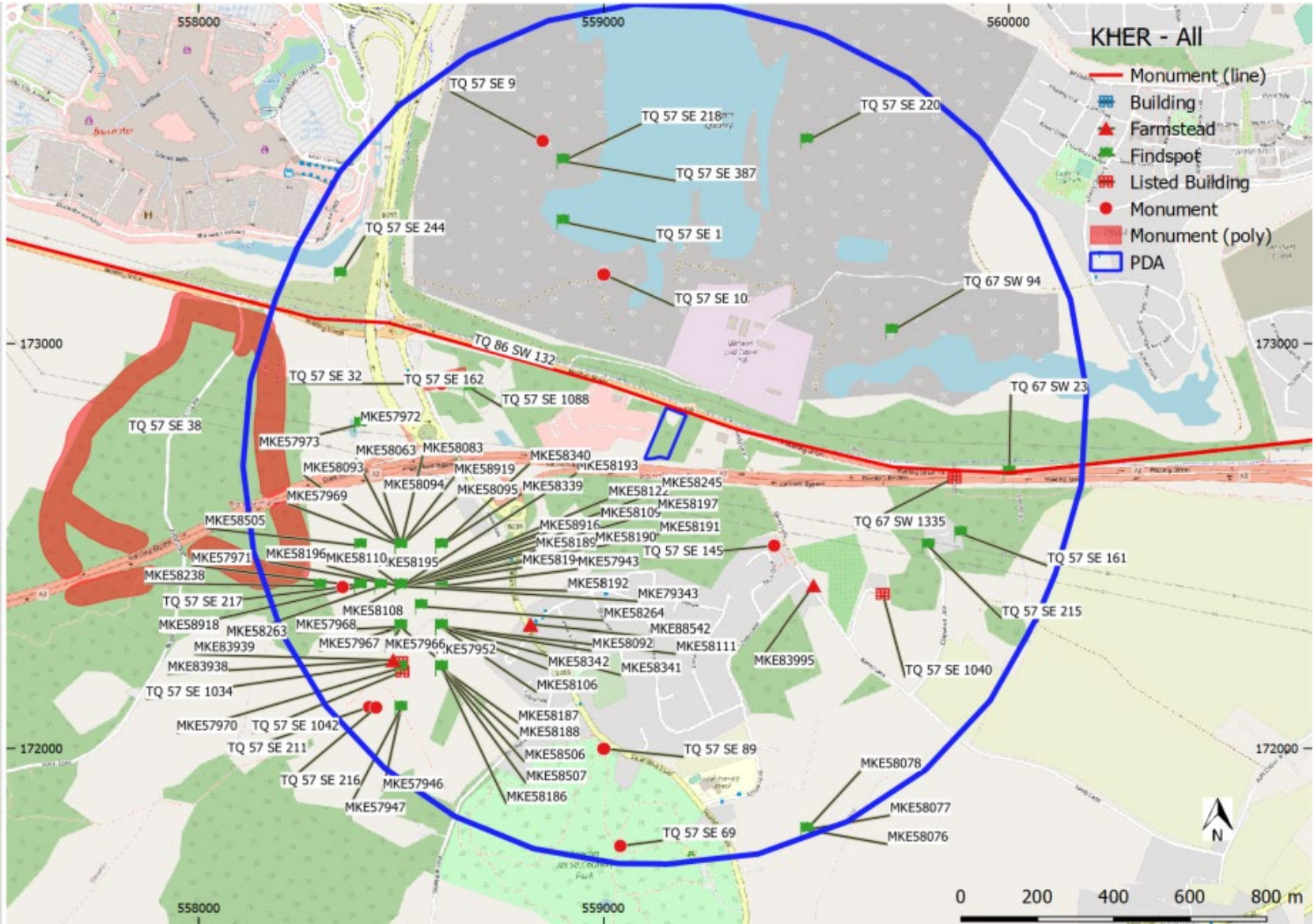


Figure 14: KHER Monument Record



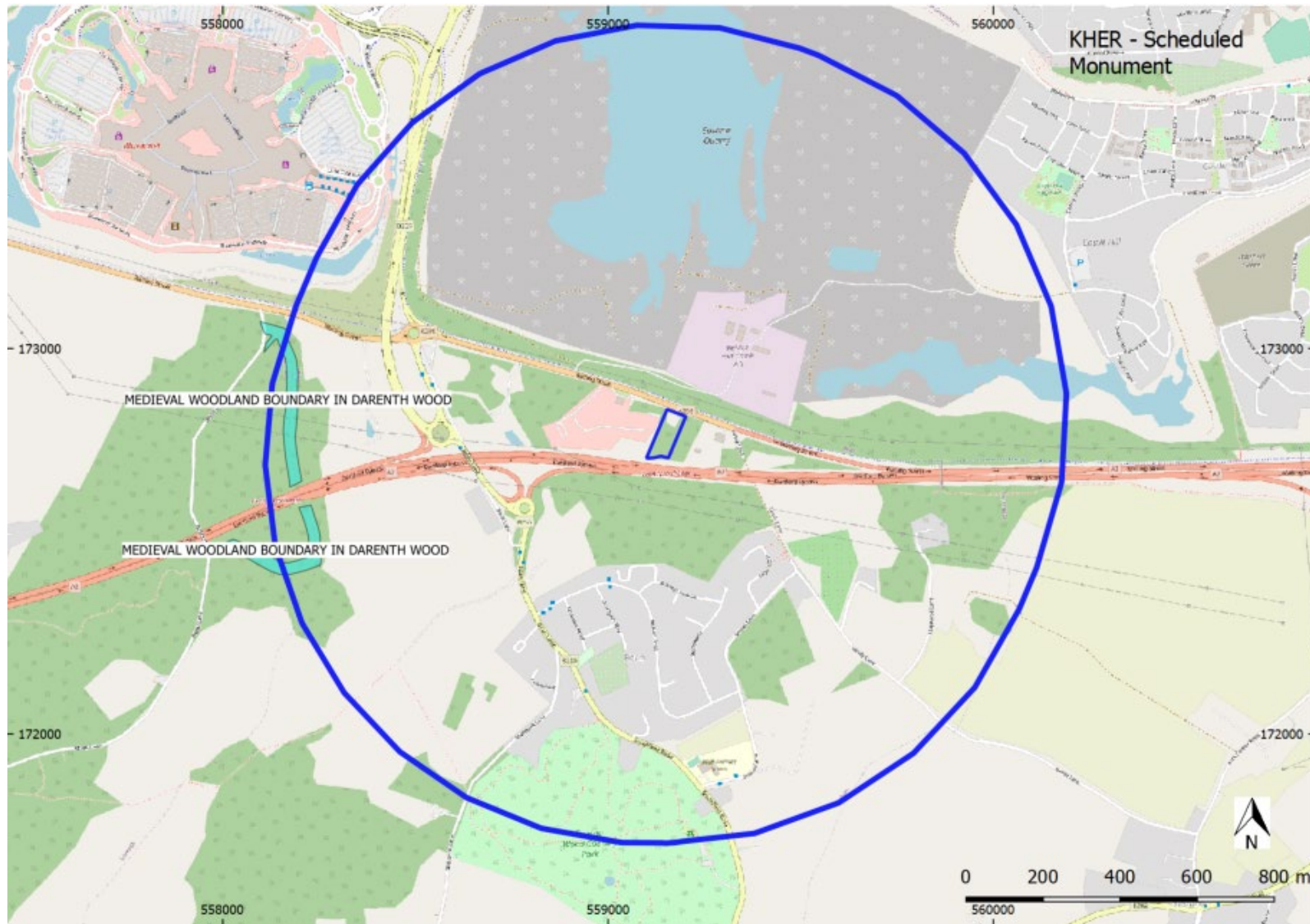


Figure 15: KHER Scheduled Monument

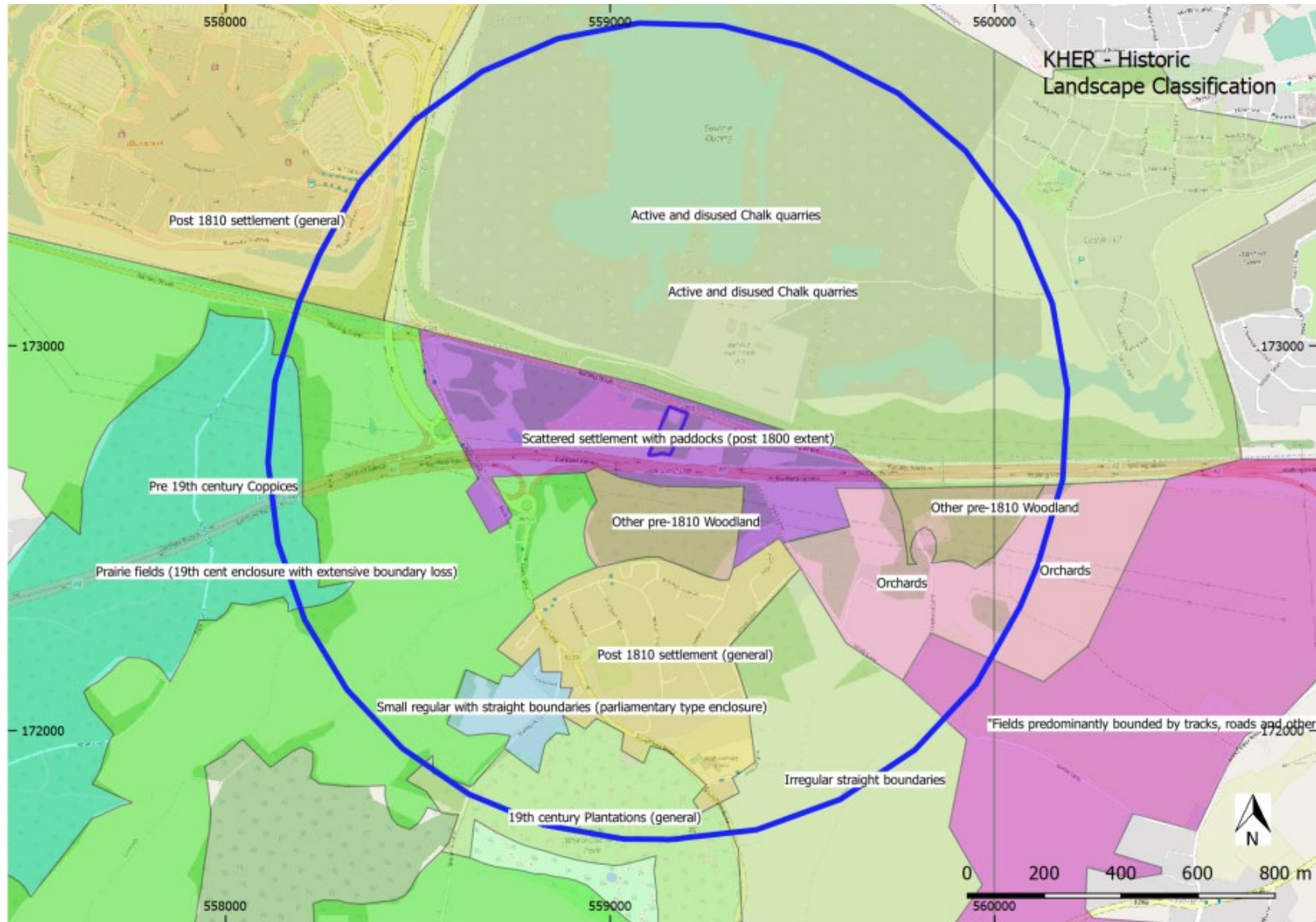


Figure 16: KHER Historic Landscape Classification





Figure 17: KHER Events



*Plate 1: 1940s. (Google Earth).*





Plate 2: 1960s (Google Earth)





*Plate 3: 1990 (Google Earth)*





Plate 4: 2003 (Google Earth)





*Plate 5: 2018 (Google Earth)*





*Plate 6: Entrance to the PDA (facing SSW)*





*Plate 7: Northern boundary from Watling Street (facing SE)*





*Plate 8: View of the northern part of the PDA (facing W)*





*Plate 9: View across the northern part of the PDA (facing NE)*





*Plate 10: View towards the eastern boundary of the PDA (facing ENE)*





*Plate 11: View of the ramp to the southern part of the PDA (facing SSW)*





*Plate 12: View across the southern part of the PDA (facing SSW)*





*Plate 13: View across the southern part of the PDA (facing N)*





*Plate 14: Southern boundary and the A2 (facing SSW)*





*Plate 15: View across the northern part of the PDA from adjacent to the eastern boundary (facing NW)*





Plate 16: Plate Locations