MILTON KEYNES WIND FARM
PETSOE

RESULTS OF
ARCHAEOLOGICAL MITIGATION WORKS

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40 George Street
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W1U 7DW

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Preface

Every effort has been made in the preparation of this document to provide as complete an assessment as possible, within the terms of the specification. All statements and opinions in this document are offered in good faith. Albion Archaeology cannot accept responsibility for errors of fact or opinion resulting from data supplied by a third party, or for any loss or other consequence arising from decisions or actions made upon the basis of facts or opinions expressed in this document.

This report has been prepared by Christiane Meckseper (Project Officer) and Gary Edmondson (Project Manager). The finds were examined by Jackie Wells (Finds Officer), with registered artefact identification by Holly Duncan. Site drawings were produced by Joan Lightning (CAD Technician), and artefact illustrations by Cecily Marshall. All Albion projects are under the overall management of Drew Shotliff (Operations Manager).

Albion would like to acknowledge the assistance provided by the staff of Morrison Construction, particularly Mick Foran and Richard Hunt and the staff or Engineering Renewables Ltd, especially Emily Walker. We would also like to assistance of the Milton Keynes Council Senior Archaeological Officer Nick Crank.

Albion Archaeology
St Mary's Church
St Mary's Street
Bedford
MK42 0AS

☎: 0300 300 8141
Fax: 0300 300 8209
e-mail: cf.meckseper @albion-arch.com
Website: www.albion-arch.com

Structure of this Report

After the introductory Section 1, the archaeological and historical background to the area is set out in Section 2. The results of the various components of the archaeological mitigation works are presented in Sections 3 and 4. A synthesis of the results and their significance follows in Section 5. Section 6 contains the bibliography. Additional information on the recovered pottery is presented as appendices (Section 6).

Key Terms

Throughout this report the following terms or abbreviations are used:

Albion	Albion Archaeology
GPS	Global Positioning System
HER	Milton Keynes Council's Historic Environment Record
MKCSAO	Milton Keynes Council Senior Archaeological Officer
Client	Energy Renewables Ltd. on behalf of MK Windfarm Ltd.
IFA	Institute of Field Archaeologists
Procedures Manual	*Procedures Manual Volume 1 Fieldwork*, *2nd Edition 2001*. Bedfordshire County Council

Non-Technical Summary

The site of the wind farm lies on high ground in the valley of the Petsoe Brook, approximately 3km to the SE of the market town of Olney close to the northern boundary of the Borough of Milton Keynes. The main focus of construction activity associated with the creation of the wind farm was on the south side of the valley extending up to the adjacent plateau.

The adjacent landscape contained heritage assets which provide evidence of human activity from the prehistoric period onwards. Flint artefacts provide an indication of early exploitation of the varied topography. However, the majority of the evidence relates to settlement in the Roman and medieval periods. Traces of the medieval landscape still survive in the form of building remains, although most of the associated settlements have disappeared.

In support of the planning application to create a wind farm, trial trenches evaluated the locations of the proposed turbines. The results of this investigation together with data from previous discoveries in the area allowed the formulation of a Scheme of Archaeological Resource Management, which set out how the impact of the various components of the construction project on any potential archaeological deposits would be mitigated. The mitigation comprised pre-emptive investigation of the areas of archaeological significance revealed by the evaluation: the footprint of Turbine Bases 1 and 6. Subsequently the Crane Base associated with Turbine Base 1 was also included in the investigation area.

In areas of lower archaeological significance, constant archaeological observation during construction was maintained. This allowed any exposed archaeological deposits to be investigated and recorded. This component of the mitigation strategy covered the construction compound, the substation site, roads, the remaining turbine bases and their associated crane bases. Monitoring was undertaken to either the formation level for construction, or until undisturbed geological strata were revealed. The final component of this work consisted of monitoring of the cable trenching. For this, the strategy was revised after an initial phase of monitoring — given the narrowness and depth of the trench, monitoring focussed on those areas which had been previously identified as archaeologically significant.

The archaeological work revealed a previously unrecorded late Iron Age/ Roman settlement on the high ground to the south of the Petsoe Brook. Evidence for the medieval and later utilisation of the valley was also revealed, particularly in the area adjacent to the watercourse, providing an indication of the changing settlement pattern in the area.

On completion of the project the site archive will be deposited with Buckinghamshire Museum under accession number AYBCM:2006.28.

1. INTRODUCTION

1.1 Planning Background

Milton Keynes Council granted planning permission (planning reference: 06/1349/FULLEIS) for development of a wind farm on land at Petsoe Manor Farm, north of Milton Keynes. An archaeological desk-based assessment and evaluation, undertaken as part of the Environmental Impact Assessment for the proposed wind farm, demonstrated that the development would have minimal impact on any known archaeological remains (Albion Archaeology 2006a). Trial trenching on the proposed turbine sites showed that only two of the seven turbines would affect buried archaeological features, namely late Iron Age/Roman enclosure ditches in the base of Turbine 1, and two parallel, undated, possible trackway ditches in the base of Turbine 6 (Albion Archaeology 2006b and c).

As a result, condition no. 10 of the planning consent stipulated that a programme of archaeological works should be carried out prior to the commencement of development works. A Scheme of Archaeological Resource Management (SARM) was prepared (Albion Archaeology 2008) and approved by Nick Crank, the Milton Keynes Council Senior Archaeological Officer (MKCSAO).

The archaeological works were carried out between December 2009 and May 2010.

1.2 Site Location and Description

Situated in the Borough of Milton Keynes, approximately 3km to the SE of Olney (Figure 1), the wind farm is located within the holding of Petsoe Manor Farm at the eastern end of the parish of Emberton. The site now comprises mainly large, 'prairie' fields, bounded by small, regularly cut hedges. It is centred on grid reference SP 9150 4922.

1.3 Topography and Geology

The site is within the valley of the Pestsoe Brook, a meandering roughly east-west aligned watercourse, which flows to the west. Within the Development Area (DA), the base of the valley is at *c.* 63m OD with the focus of construction activity mainly being on the southern side of the valley, extending to the high relatively flat ground beyond the valley at around 100m OD (Figure 2). Within the eastern part of the site at least two terraces can be discerned in the base of the valley. The main valley is dissected by a series of roughly perpendicular tributary valleys, descending from the high ground to the south of the brook. A significant example was situated to the east of Crane Base 1, aligned NNE-SSW (Figure 2).

The whole site is in the area of the Oadby Member of the Wolston Formation, comprising till and clay (BGS 2010). This deposit overlies the Peterborough Member of the Oxford Clay Formation, composed of brownish grey mudstone.

The base of the valley of the Petsoe Brook and some adjacent subsidiary spur channels contain Head deposits, comprising undifferentiated clays.

2. ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

2.1 Introduction

Most of the heritage assets recorded on the Milton Keynes Historic Environment Record (HER) in the area date to the Roman and, in particular, the medieval periods. The evidence gives a picture of scattered farmsteads, hamlets, manor houses and their estates. A relatively high proportion of medieval ridge and furrow arable cultivation survives in the landscape around Petsoe End (Figures 1 and 4) indicating a landscape extensively exploited for agriculture in the medieval period.

Looking more closely at the pre-medieval evidence, it becomes clear that the medieval landscape merely continues a pattern that was established by the late Iron Age/ Roman period. The following section reviews the known evidence of the prehistoric and Roman remains in the area of Petsoe in more detail.

In the light of the results of the area excavation, which identified the remains of a late Iron Age/Roman settlement at Turbine Base 1 (see section 3.3), the wider landscape has been examined out to 3km in order to put the site into its wider context. The results are outlined below.

2.2 Prehistoric

Only a very small number of isolated find spots of flint artefacts were recorded in the area adjacent to the DA — a flint scraper, an undefined artefact and a flint arrowhead (HER 3836, 4059 and 4292) (Figure 3: red sites). This probably reflects the limited fieldwork in the area, rather than the distribution of prehistoric activity.

Cropmarks suggesting ring ditches (HER 3872-4), which could be prehistoric in date, were identified east of Emberton Park. Concentrations of ring ditches, often interpreted as Neolithic and Bronze Age burial and ritual sites, are found on several sites on the gravel terraces along the River Great Ouse. Similar sites in the vicinity have been recorded upstream at Lathbury and Gayhurst (Chapman 2007) as well as downstream at sites such as the Biddenham Loop to the west of Bedford (Luke 2009).

Several rectangular and linear cropmarks were also part of the ring ditch complex. These are undated, although their form suggests they may be prehistoric or Roman.

2.3 Iron Age/Roman

Looking at the wider catchment area around the DA it becomes apparent that it is part of an Iron Age and Roman landscape of scattered settlements, consisting of at least two villa sites, and rural farmsteads and enclosures (Figure 3: black sites). Additional finds clusters of pottery sherds and coins (the latter were largely found in investigations in and around Olney) might indicate further settlements or at least a widespread Roman presence within the landscape.

The Rectory Farm Roman villa site (HER 6765) located less than 1km west of the DA (and 2.7km NW of the late Iron Age- Roman settlement at Turbine Base 1) was first identified from aerial photographs in 1984 and confirmed from new pictures taken in 2007. The parch-marks suggest a large building consisting of two parallel wings, situated in the corner of a large rectangular enclosure with two possible droveways to the north and west.

A second possible villa site was recorded at Rines Hill Field (HER 972-9), *c.* 3km to the north of Turbine Base 1. Here, a dense scatter of Roman pottery comprising both coarse and fine wares, including samian, as well as building material were found (HER 973). Pitched stone footings, suggesting a possible building, were recorded as protruding from beneath the dismantled railway *c.* 140m to the south. Aerial photographs suggest the presence of a possible courtyard villa. Several infilled ditches that contained Roman pottery and tile were also recorded close to the building.

A further substantial Roman building is indicated by a scatter of pottery sherds, flue tile, roof tile and building stone that was found on the outskirts of Sherington (HER 445-7, 6170), *c.* 2km south of the Rectory Farm villa and a similar distance SW of Turbine Base 1.

A further small settlement site could be located in between Rines Hill Field and Turbine Base 1 (NMR 915646). This is represented by rectilinear cropmarks, which are undated, although their form may suggest an Iron Age or Roman date. A further rectangular enclosure (HER 352), this time with associated Roman pottery (HER 353), is located around 1.0km to the south.

A pottery kiln site (HER 3882-5) and associated Roman pottery (HER 3983) is located 2.2km to the ENE of Turbine Base 1. This shows that small sites of industrial production were interspersed with the rural settlements and agriculture.

Most of the other evidence for the Iron Age and Roman presence within the landscape around Petsoe comes in the form of finds spots of pottery (HER 585, 957, 1060 and 6170), coins (HER 1016, 4343 and 4345) and a Roman enamel plate brooch (HER 4287).

It is noticeable that the sites and find spots are mainly located to the north and west of Turbine Base 1. Whilst it is possible that they are clustered in the vicinity of the Roman road (HER 73, *Viatores* 171) — a stretch of which was excavated just outside Olney at the Emberton Quarry — it may simply reflect the concentration of modern development in the area, which has revealed Roman material. The watercourses, comprising the River Great Ouse, and its numerous tributaries, would appear to have been foci of activity and movement.

The settlement at Turbine Base 1 is situated on elevated ground, part of an irregular sinuous area extending roughly NE-SW, defining the highest ground in the area (Figure 3). The site is located adjacent to the source of a small

stream that flows downhill into the Petsoe Brook, which is itself a tributary of the River Great Ouse.

2.4 Saxon / Medieval

A variety of sites dating to this period have been recorded in the vicinity of the DA (Figure 4), comprising both sites recorded by the HER and undesignated sites (1-12 highlighted numbers detailed in Appendix 1). The main concentrations of sites are to the margins of the area.

The majority of Saxon find spots occur in the vicinity of Olney. Saxon pottery was found in Olney cemetery (HER 4102) and on a site on the High Street South (HER 184). A watching brief at Church Farm revealed a cluster of Saxon pits containing St Neots ware, dating to the 9th to 11th centuries and a variety of environmental evidence (HER 6781-4). Snail shells from the late Saxon pits indicate countryside was open grassland containing occasional shaded or wooded areas.

Records for the medieval period indicate that the eastern end of the parish of Emberton comprised two smaller 'extra parochial' areas, called Petsoe and Ekeney. The manor of Petsoe (HER 3982) was listed in Domesday (1086) as held by Countess Judith of Huntingdon. The manor of Ekeney (HER 653) is not mentioned in Domesday, but it is mentioned in documents from the 13th century.

The old manor house at Petsoe probably fell into disuse around 1340. The Chapels of St James (Petsoe) and St Martin (Ekeney) were mentioned in a grant of 1246; the parishes seem to have been combined in 1459 and both chapels went out of use by 1561. Petsoe manor house still appears on a map dated 1643, but the farm house was largely demolished in 1947.

The medieval parishes seem not to have been very populous and their settlements did not survive into the 16th century. Their identification as 'deserted medieval village' (DMV) sites is probably overstating the likely size of the settlements. They may have been no more than large manorial farmsteads. Surviving earthworks on both sites (HER 650-4, 646-8 for Ekeney and HER 3978-81 for Petsoe) suggest the extent of the settlement remains and evidence for medieval cultivation systems. The site of St Martin's church at Ekeney (HER 655-62) survives only as a roughly rectangular platform on one side of a ploughed field and is now a Scheduled Monument (SM 111).

The site of the original Petsoe Manor is now ruinous and the remaining structures of the demolished farmhouse are probably 19th century or later. Petsoe Manor Farm, located *c.* 1km west of Petsoe Manor itself, dates from the post-medieval period and the current house was probably also built in the 19th century.

A third deserted settlement at Hardmead is recorded to the SE of the DA (HER 666-9).

The main cluster of individual sites is recorded in Olney, including a watermill (HER 1142-5) as well as a pottery find spot (HER 4163). Several other mills are recorded from the area (HER 3970-1) and (HER 4057). A number of moated sites have been identified, including several on the high ground (HER 138-47 176), at least two further examples on the lower ground (HER 626-32, 634 and 671-5) and a possible example north of the DA (HER 177). Other sites on the high ground include fishponds (HER 4313-4), at least one homestead (HER 4315-6) and a church (HER 4116). A small number of find spots are recorded towards the southern margin of the high ground (HER 1060 and 4055). Few sites are recorded on the lower ground to the north of the DA, in the valley of the River Great Ouse. These comprise a manor site (HER 426), a moat (HER 426) and park-related features (HER 3914-17)

A number of undesignated sites have been identified within the DA, which are not recorded on the HER (Appendix 1 and Figure 4: 1-12). These indicate that ridge and furrow earthworks characteristic of medieval arable cultivation were present in the west (1-4 on Figure 4), with further traces identified to the east (5 and 6) as well as extending onto the plateau to the south of the DA (12). Several areas of contemporary woodland were identified (7, 8, 10 and 11) with 9 defining the site of a hamlet.

This indicates that the whole landscape was utilised in this period, ranging from the well-drained soils in the river valley to the higher elevations of the claylands.

3. OPEN AREA INVESTIGATIONS: TURBINE / CRANE BASE 1 AND TURBINE BASE 6

3.1 Introduction

Based on the results of the evaluation, two areas were identified for pre-emptive archaeological investigation in advance of development, comprising the footprint of two turbine bases. However, it was also subsequently necessary to investigate the area of the associated crane base for Turbine 1, as it was not feasible to preserve *in situ* the archaeological remains in that area.

3.2 Methodology

Throughout the project the standards set out in the following documents were adhered to:

- IFA *Standard and Guidance for Excavation*
- Albion Archaeology's *Procedures Manual for Archaeological Fieldwork and the Analysis of Fieldwork Records* (2001)
- IFA *Code of Conduct*
- English Heritage's *Management of Archaeological Projects* (1991)

The detailed area excavation methodology was as follows:

- All machine excavation was supervised by an archaeologist and was undertaken using a JCB fitted with a toothless bucket.
- Topsoil and modern overburden were removed by machine down to the top of archaeological deposits, or undisturbed geological deposits, whichever was encountered first.
- The areas were then cleaned by hand in order to expose any archaeological features and deposits.
- Subsequently, each trench was recorded and photographed using digital format and black and white 35mm film.
- All deposits were recorded using a unique number sequence with blocks of numbers identified for each area.
- The spoil heaps and any archaeological features were scanned for artefacts by eye and with a metal detector.
- Recording took place on pro-forma sheets in accordance with the Albion Archaeology *Procedures Manual* (2001).
- The areas were inspected by the MKCSAO, prior to being released for construction.

All archaeological deposits and features (known as 'contexts') were assigned an individual number. The structural hierarchy used for analysis of the open area investigation (section 3.3 below) comprises Sub Groups (SG), the basic element, which are in turn agglomerated into Groups (G), Landscapes and Phases. In the following discussion, Groups are primarily referred to, although occasionally it is necessary to refer to components of groups, i.e. Sub Groups. For the other parts of the site, the context numbers assigned during fieldwork are employed to identify features. Cut features *(i.e.* pits, ditches *etc*.) are

expressed [***], whilst layers and deposits within cut features are expressed (***).

3.3 Turbine and Crane Base 1 including Cable Trench 3 (CT 3)

3.3.1 Soils and geological deposits

The whole area is covered by the Oadby Member of the Wolston Formation, clay till which was generally a compact, yellowish brown deposit with chalk inclusions. This overlies the Peterborough Member of the Oxford Clay Formation, a distinctive darker, blue-grey, compact deposit. In the base of the valley of Petsoe Brook is a narrow sinuous band of clay Head deposit, which extends into the lower part of associated tributary channels (British Geological Survey 2010).

3.3.2 Colluvium G26

A reddish brown silty clay deposit, containing occasional small and medium flint fragments, was confined to the lower eastern margin of the site. It extended some 39m NE-SW by at least 5m wide, continuing towards the watercourse (Figure 5 - grey hatched area). No finds were recovered from the homogeneous deposit. The extent of this deposit, particularly upslope to the west, is probably defined by truncation caused by later agricultural activity. This is the earliest deposit in the sequence of activity, although it is not clear if it was formed as a result of human activity.

This deposit is the result of the down slope movement of unstable material — often associated with arable cultivation rather than just vegetation clearance. The continuation of this deposit was seen some 36m to the NE of Crane Base 1 in Cable Trench 3, extending for some 20m (Figure 6).

3.3.3 Early pitting

The earliest evidence for human activity consists of stratigraphically early pits of uncertain function: SG56, 60, 62, 64 and 66 (Figure 5 – black features); all are partially obscured by later activity. Generally the pits were sub-circular in plan, 0.89–1.29m in diameter and 0.13–0.28m deep, with generally concave profiles (Figure 5 – section 1). The north-western pit SG56 was considerably deeper at 0.83m (Figure 5 – section 2).

Most of the pits appear to have infilled naturally, with material derived from an unstable upper soil profile. In contrast, the deepest pit, located in the NW, went through a series of changes. Initially, a thin primary silt derived from erosion of the edges. The intermediate fills appear to have accumulated in water, having a horizontal upper boundary (Figure 5 – stippled area on section 2). This deposit contained pottery as well as burnt clay and a single fragment of fish bone, which was not identifiable to species. Finally a clay capping, which contained a small fragment of animal bone, sealed the pit.

The pits are generally located to the margins of the enclosures of the next phase, suggesting that they may be respecting contemporary boundaries on a similar alignment to, and masked by, construction of the subsequent

enclosures. However, their locations do not easily correspond to the next phase (Figure 7).

Pottery
Three undiagnostic and abraded early Roman body sherds in fabrics 1a and 46a (29g) were recovered from the fills of the pits. Most of this material derived from the fills of the large pit SG56. A single sherd was recovered from SG60 to the south.

Animal bone
The material forming the capping of the large pit (SG56) yielded four abraded vertebra fragments (23g) deriving from a medium-sized mammal.

Ecofacts
Two ecofact samples were taken from the intermediate fills of pits SG56 and SG66. They contained occasional flecks of charcoal but no seeds; they had no potential for further analysis.

3.3.4 Early enclosure system – late Iron Age / early Roman

A series of perpendicular ditches defined traces of a rectilinear enclosure system; elements of at least 9 land parcels (LP) were defined (Figure 7). These parcels show significant variation in size (Table 1). Entrances to several enclosures are defined, particularly towards the corners. This indicates that access was via adjacent enclosures, rather than from a routeway (access indicated by arrows on Figure 7). This arrangement is restrictive, as movement would be via adjacent land parcels which would hinder mixed agriculture.

Land parcel	NW-SE	NE-SW	Comments
1	10m+	8.5m+	Possible openings in NE corner
2	10m+	8.5m+	Possible openings in SW corner – sub-divided by G20?
3	12.5m	11.5m	Possible opening in NE
4	7.5m	11.5m	Possible openings in SW and NW
5	17.5m+	15m	Presumed earlier form of G4 in W; stops at G5 to south; opening in NE corner
6	20m+	17.5m+	
7	2.5m+	2.5m+	Opening at NW corner
8	2.5m+	17.5m+	
9	1.25m+	5m+	

Table 1: Turbine Base / Crane Base 1 — summary of land parcel dimensions in the early enclosure system

The ditches showed considerable variation in size. Ditch G14 was the most substantial at 1.55m wide; most were half this width. Generally the ditches were shallow, often *c.* 0.2m deep with roughly concave profiles (Figure 7: sections 1-3). However, even ditch G14 showed considerable variation in depth. It was up to 0.6m deep in the central part of the area (Figure 7: section 4); but was only half this depth in the sections excavated to the margins of the investigation area. The continuation of this ditch seems to have been detected to the NW in the adjacent cable trench (CT 3), with the possibility that two

ditches on slightly divergent alignments are associated. These are roughly perpendicular to ditch G17 seen in the same cable trench.

A *c.* 2m-wide entrance was defined in the NE corner of LP3. The other possible entrances are less clearly defined, usually with only one ditch terminal being identified. Although corner entrances are usually associated with the control of livestock — they require fewer people than a more central entrance — with interconnected enclosures, corner entrances may facilitate the movement of people between the land parcels.

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Ditch fills were generally darker than the adjacent geological strata, ranging in colour from mid yellow to mid grey brown, with variable amounts of stone — the abundance depending on the amount of stone in the adjacent deposits.

The intermediate fills of ditch G14, where present (stippled deposit on Figure 7: section 4), was an occupation-rich deposit, with the density of finds increasing to the west. The deposit mainly contained pottery, with over 1.5kg being recovered. Smaller quantities of animal bone and ceramic building material (CBM) were present as well as a human tooth. Samples taken from the deposit contained very sparse quantities of charcoal, mostly flecks and fragments of charred grain, with a density of *c*. 1 grain per litre of soil. The samples also contained a very small quantity of hammerscale, indicating ironworking in the vicinity. There were no clear tip lines to indicate deliberate dumping, suggesting that the material accumulated gradually as the ditch filled up. The presence of this material suggests that the ditch and associated land parcel were in an area of concentrated human activity, rather than defining peripheral animal enclosures.

Approximately 120m to the NW of this area (Figure 6), the continuation of Cable Trench 3, revealed an isolated ditch [1903] which contained pottery dating to this period. The ditch was aligned ENE-WSW; it was 0.65m wide and 0.4m deep with a U-shaped profile. Three fills were present including a lower fill consisting of a dump of burnt clay. The intermediate fill contained 104g of Roman pottery and 153g of animal bone. The few other ditches identified in this area were post-medieval or later (see section 4.4.4). Ditch [1903] would appear to be an isolated boundary, possibly defining an element of a large enclosure; however, the ditch fills suggest activity in the vicinity.

Pottery

Ninety-four sherds, representing forty-five vessels (1.8kg) were recovered, with over 97% (by weight) associated with the occupation-rich fill of ditch G14. Negligible quantities (total weight 52g) derived from the fills of ditches G7 and G19. Although generally abraded, the pottery is fairly robust, with an average sherd weight of 21g, and vessel to sherd ratio of 1:2.

Sixty-seven sherds (1.1kg) occur in grog-tempered fabrics (type 46a and variations). Forms are in the late Belgic Iron Age tradition (cf. Thompson 1982), and include everted rim bowls (Figure 8: 1 and 2), and jars with shoulder cordons, a lid-seated vessel with finger-nail impressed decoration

along the rim (Figure 8: 4) and a partial pedestal base. Jar rims range in diameter from 120–180mm. Two vessels are combed and one is burnished.

Pottery datable to the early Roman period totals 27 sherds (715g) and is dominated by local shell-gritted wares (fabric 1a). Two sand-tempered grey ware sherds (fabric 3) and a single sherd of mica-dusted ware (fabric 34), the latter a probable regional import, complete the assemblage. The only diagnostic form is a wide-mouthed rilled jar with four post-firing holes drilled through the base, which may have been modified for use as a strainer (Figure 8: 3). Sooting, indicative of use, occurs on five shelly vessels.

Non-ceramics

The occupation-rich fill of ditch G14 contained a sandstone whetstone fragment (RA 3) and a water-worn cobble which may have been utilised as a secondary hone (RA 10). The sieved residues of environmental samples taken from the feature yielded a small copper alloy flake (RA 13), and a tiny amount of flake hammerscale, the latter indicative of iron smithing.

Three undatable iron fragments of indeterminate form (RAs 4 and 7 respectively) derived from the fills of ditches G7 and G19. All are encased in corrosion product and survive in poor condition.

Animal bone

Thirty-two abraded fragments (279g) were recovered, with over 84% (by weight) associated with the occupation-rich fill of ditch G14. The remainder of the assemblage (45g) derived from the fill of ditch G7. The material is highly fragmentary, with an average bone weight of 8g, reflecting the fact that over half the assemblage occurred in the sieved residues of environmental samples. Among the fragments identifiable to species are mandibular hinges, mandibles, incisors and molars deriving from a mature pig and a sheep/goat. Post-cranial meat-bearing elements are represented by rib, long bone and scapula fragments from large mammals. Butchery is suggested by the presence of cranial elements and vertebrae. Cut marks were noted on a single rib, and several indeterminate fragments are either carbonised or calcined. None of the bones appear to have been gnawed.

Human bone

A broken tooth, comprising a worn (?adult) molar crown derived from the sieved residues of an environmental sample taken from the occupation-rich fill of ditch G14.

Ecofacts

Four samples were taken from the fills of the enclosure ditches, focusing on the intermediate fills of ditch G14, which had the most potential. The samples contained very sparse charred plant remains comprising charcoal and cereal grain. No cereal grain was recovered from the other feature. The small quantity of grain and the fragmentary sate of the material mean that it has no potential to add to the understanding of the economy of the settlement.

Summary
These remains provide the first evidence for enclosure of the high ground in the vicinity of the tributary watercourse. However, based on the location of the earlier pitting, there is a suggestion that the enclosure ditches may have followed earlier boundaries, lost by the digging of these ditches. The arrangement of enclosures and the variety of artefacts recovered from the main ditch suggest a variety of activities taking place in the central part of the investigation area.

3.3.5 Later enclosure system (2nd-3rd century)

This is a modification to the previous system, retaining the basic NE-SW alignment (Figure 9), albeit with a tapering central land parcel (LP4/5). The initial form suggests a possible routeway, funnelling to the SW, with enclosures to the NW and SE. It would appear that the enclosures were accessed directly from the postulated routeway, marking a significant change compared to the earlier enclosures; access points are indicated by arrows on Figure 9. The enclosures are summarised below in Table 2.

Land parcel	NW-SE	NE-SW	Comments
1	26m+	8m+	
2	7.5m+	11m+	
3	15m	11m	
4	1m+	10m	
5	14m	47m	Remodelled by G15
6	5m	30m+*	Probably 47m

Table 2: Turbine Base / Crane Base 1 — summary of land parcel dimensions in the later enclosure system

Only the enclosures in the NW are clearly defined (LP1-3 on Figure 9) — elongated forms parallel with the central land parcel. There is evidence for recutting of the boundaries in this area, suggesting an extended period of use. The adjacent cable trench (CT3) revealed a ditch (G48) parallel to G4 and aligned roughly N-S, extending between the investigated areas. This may have been a partition creating land parcels LP2 and LP3. The ditches ranged in width from 0.6–1.55m; depths covered a more limited range of 0.24–0.34m (Figure 9: sections 1 and 2). This variation suggests that they had different profiles rather than representing the result of differential truncation across the sloping area. Ditch G48 in the cable trench was significantly deeper at 0.5m.

A larger assemblage of artefacts was recovered from the fills associated with the later enclosure system (see below). There does not appear to have been significant reworking of earlier deposits, suggesting that the material relates to contemporary activity.

Modifications
A shallow ditch G15 (Figure 9 - blue hatched feature) at least partly blocked the central land parcel to create LP4 and LP5. This would appear to have at least restricted the possible routeway — the SE limit of ditch G15 is the result of truncation rather than a terminal. This modification to the enclosure may have been associated with a change in use as the area became the focus of

extensive pitting. The four large pits G22, G23 G24 and G25 are summarised in Table 3.

Group	Length	Width	Depth	Function
22	10.4m NE-SW	5.4m	1.2m	Quarry
23	6.66m NW-SE	5.52m	1.4m	Quarry
24	7.5m NE-SW	4.86m+	1.17m+	Water pit
25	8.34m NE-SW	4.06m+	0.18m	Quarry

Table 3: Turbine Base / Crane Base 1 — summary of large pits in the later enclosure system

At least three of the pits were probably originally dug as quarries, as they stop at the interface between the upper yellow clay and the darker Oxford Clay. In contrast the fourth pit G24 extends into the underlying, more compact clay Figure 9: section 3). After initial excavation, the quarries appear to have been left open for a period of time, with the sides eroding in dry conditions, before intermediate fills accumulated; the latter's horizontal forms indicate that they were deposited in water (Figure 9: sections 4 and 5). These fills produced large assemblages of artefacts, indicating domestic activity in the vicinity. On the northern edge of pit G22, traces of a metalled surface were revealed at the limit of investigation. The section (Figure 9: section 5) indicates that this was related to the initial use of the pit and may have been designed to facilitate removal of the clay. The continuation of ditch G4 was identified in the cable trench to the north of the quarry, although the pit did not extend that far.

Pottery

The pottery comprises 336 abraded sherds, representing 232 vessels (6.8kg); it displays wider variation in fabric and form than the preceding phase. An average sherd weight of 20g is directly comparable with pottery from the earlier enclosure system, although a greater vessel to sherd ratio of 1:4 indicates the less fragmentary composition of this assemblage. Forty-two sherds (446g) occur in 1st-century grog-tempered fabrics (type 45, type 46a and variations). Feature sherds are largely absent apart from three small rim fragments and a complete base with a diameter of 80mm. Variable sherd thickness, ranging from 4–15mm, indicates a range of vessel sizes.

Romanised pottery is mainly datable to the 2nd-3rd centuries and totals 287 sherds (6.2kg). The pottery is dominated by local, shell-gritted wares (fabric 1a), which total 72% by sherd count, and 81% by weight, of the assemblage. Shelly wares are recognisable products of the nearby Harrold kilns (Brown 1994). They are well made, with finer-walled jars often being of better quantity than the coarse kitchen pots. Other local products comprise sand-tempered reduced wares (fabric 3 and 9a), totalling 6% by sherd count, and 4% by weight, and soft pink grogged ware (fabric 2a; 4 sherds).

Local wares are supplemented by traded wares from more distant regional production centres, which total 18% by sherd count and 11% by weight. These include white and pink wares from the Verulamium industries (fabrics 4g and 18g); Nene Valley grey wares (fabrics 12/14) and colour-coated wares (fabric 6); fine and coarse wares from the Oxfordshire industries (fabrics 4a,

4ba, 24 and 35) and Hadham, Herts. (fabric 37). Non-local wares of uncertain source are small quantities of mica-dusted ware (fabric 34) and orange sandy wares (fabric 41). Continental imports are represented entirely by samian ware (fabric 20) which totals 4% of the pottery (by sherd count).

The assemblage comprises mainly locally manufactured kitchen, storage and table wares. The vessel repertoire is dominated by jars of varying sizes (26 examples – Figure 10: 1 and 2). Rim diameters range from 100–340mm, with a peak at 240mm. The most common forms have simple everted rims or triangular rims, with smaller quantities of narrow-necked, lid-seated, and storage types (Figure 10:4). Bowls are represented by 13 examples, including flanged types (Figure 10:3), straight-walled forms with an expanded rounded or triangular rim, and large rilled types with flat rims. They range in diameter from 120–340mm, with shelly examples falling at the larger end of the range.

A single flagon handle, a small number of dishes, beakers (including a folded example and a rusticated late 2nd-century example), and mortaria also occur. The latter comprise a vessel from the Verulamium region and three vessels from Oxfordshire, including a form M17, datable to AD 240-300 (Young 1977).

Samian comprises eight central Gaulish vessels, represented by ten sherds (191g). All are highly abraded and worn, with diagnostic elements limited to a late 2nd-century form 33 cup, and three footring bases. One of the latter has a wear mark on the interior. Vessel curation and modification is attested by a repaired footring with a drilled rivet hole, and a base which has been crudely chipped to form a lid (Figure 10: image 1).

The majority of the assemblage derived from the fills of adjacent quarry pits G23 and G22, which respectively yielded 61% and 23% of the assemblage (by weight). Most sherds occurred in the secondary and final deposits. The presence in the secondary and final fills of G23, of six sand-tempered sherds (89g) from a single vessel, suggests the rapid infilling of this feature with material deriving from a single source. Modest assemblages, most weighing less than 500g were recovered from other groups (Table 4). All individual vessels weigh less than 240g, and only thirty-seven are represented by more than single sherds. Twenty-eight vessels (mainly shelly) are sooted either internally or externally, indicating use.

Group	Description	Vess. No.	Sherd No.	Wt (g)
G4	Infilling of ditch	20	45	542
G8	Infilling of recut boundary	1	1	12
G10	Infilling of ditch	4	5	78
G11	Naturally accumulated fill of ditch	3	3	26
G12	Naturally accumulated fill of ditch	6	6	171
G22	Quarry with associated metalling	63	70	1564
G23	Infilling of quarry	127	195	4156
G24	Infilling of water pit	7	10	299
G25	Infilling of shallow quarry	1	1	2
		232	**336**	**6,850**

Table 4: Turbine Base / Crane Base 1 — pottery quantification for the later enclosure system

Tile and fired clay

Four abraded, shell-gritted tegula fragments (441g) derived from the upper fill of quarry pit G23 and a piece of shelly flue tile (244g) from the fill of ditch G4. They occur in a similar ware to pottery fabric 1a, and are likely to be products of the Harrold tile kiln. The latter manufactured building material from the late 2nd century to the mid 4th century (Brown 1994, 19). Redeposited amorphous fired clay fragments (total weight 82g) in a friable oxidised sand-tempered fabric were recovered from the fills of ditch G11 and quarry pits G22 and G23.

Non-ceramics

Ironwork derives almost entirely from the fills of quarry pit G23 and comprises five Roman hobnails (RA 12), an indeterminate strip fragment (RA 11), and a fragmentary drum-shaped object, tentatively identified as part of the bolt from a barb-sprung padlock (RA 2). An incomplete flat-headed timber nail was recovered from quarry pit G22. All are in a poor state of preservation.

The fill of water pit G24 contained a water-worn sandstone cobble with a smoothed, flattened surface, suggesting it may have been utilised as a rubbing stone (RA 9). The sieved residues of an environmental sample taken from the water pit yielded three small copper alloy flakes (RA 14) and eleven fragments of flake hammerscale, the latter indicative of iron smithing.

Two joining fine-grained sandstone(?) fragments with a smoothed and slightly dished surface deriving from the secondary fill of ditch G4, have been identified as a possible mixing palette or whetstone (RA 8).

Animal bone

Two hundred and sixteen fragments (3.8kg) were recovered, with the fills of quarry pits G23 and G22 respectively yielding 68% and 27% of the assemblage (by weight). Like the pottery, most fragments occurred in the secondary and final deposits. Negligible quantities, each weighing less than 100g, were recovered from all other deposits (Table 5). The assemblage is less fragmentary than material recovered from the early enclosure system, with an average bone weight of 18g, although survives in similar condition.

Among the fragments identified to species, cattle remains are the most abundant (45%), followed by sheep/goat (37%), pig (10%) and horse (8%). Wild mammals, poultry and wild fowl are entirely absent from the assemblage. Diagnostic bone elements are mainly representative of post-cranial meat-bearing parts (limb bones and ribs). However, the presence of a number of phalanges and cranial elements, the latter represented by loose teeth, horn cores and skull fragments, suggests the practice of butchery in the vicinity. Cut marks were noted on a number of long bone and rib fragments, and at least one long bone appears to have been split for marrow extraction. None of the well preserved bones appear to have been gnawed. The state of preservation of a proportion of the assemblage may, however, have resulted in the loss of gnawing and butchery data. The assemblage represents the general accumulation of domestic refuse, generated by processing, preparation and consumption of livestock.

Group	Description	Frag. No.	Wt (g)
G4	Infilling of ditch	12	92
G8	Infilling of recut boundary	1	2
G10	Infilling of ditch	6	12
G11	Naturally accumulated fill of ditch	1	9
G12	Naturally accumulated fill of ditch	2	14
G22	Quarry with associated metalling	56	1059
G23	Infilling of quarry	131	2635
G24	Infilling of water pit	7	54
		216	**3,877**

Table 5: Turbine Base / Crane Base 1 — animal bone quantification for the later enclosure system

Ecofacts

A total of nine samples were taken from the fills of features associated with this phase. Four samples from ditches revealed very sparse charcoal and charred seeds. The charcoal was small, often having rounded edges, suggesting reworking of the material. The sample from water pit G24 contained similar material. The fills of the three quarry pits contained slightly more charcoal, although again the rounded breaks suggest reworking of material. Charred seeds were sparse and fragmentary. The deposits had low densities of charred plant remains with no analytical potential to provide information on the economy of the settlement.

Summary

The reorganisation of the enclosure system, and creation of a possible routeway, provided easier movement between enclosures. There is evidence of remodelling of the boundaries, indicating an extended period of utilisation. The digging of large pits — mostly for the extraction of clay but also for the collection of water — represents a significant change in use. It is not clear why the clay was being extracted on a relatively large scale, although it was probably for use as a building material as there was no evidence to indicate, for example, pottery-making. The quarries were left open to collect water. Domestic artefacts were regularly incorporated into their fills, suggesting that the settlement remained in use.

The finds assemblage from the enclosure system is larger than that recovered from the earlier system. Although most of the pottery is local in origin, some regional material is present as well as samian, indicating a degree of connectivity with the wider world. The presence of mortaria fragments may indicate the adoption of Roman culinary practice and the absorption of Roman ideas.

3.3.6 Medieval arable cultivation

Traces of at least six furrows on a NW-SE alignment, were identified in the crane base area (Figure 11). These were the latest features on the site and were on a slightly different alignment to the earlier enclosure ditches. They followed the slope of the land down towards the watercourse. The furrows were 2–3m wide, with distinctive shallow concave profiles up to 0.15m deep. They were spaced at intervals of 6–7m.

Pottery

The furrows yielded fourteen abraded and largely undiagnostic early Roman sherds (170g) and a 12th–13th-century shelly jug rim (fabric MC1 / MC3), weighing 8g. All survive in very poor condition, their fragmentary nature and low average sherd weight of only 10g consistent with their recovery from agricultural features.

Non-ceramics

A damaged flat-headed iron timber nail, possibly a door stud, was recovered; the object is undatable.

Animal bone

Five abraded large mammal long bone and rib fragments, and an incomplete sheep molar (total weight 112g), were recovered from the fills of the furrows. Like the pottery, their poor condition and fragmentary nature are consistent with their recovery from agricultural features.

3.4 Turbine Base 6

This turbine was located in the central part of the DA, on the relatively low ground towards the base of the valley on the south side of the Petsoe Brook (Figure 2). Investigation focussed on two parallel ditches revealed by the evaluation (Figure 12).

3.4.1 Soils and geological deposits

Overburden measuring *c.* 0.5m in depth was removed throughout the trench to reveal the natural geological deposits.

Overburden consisted of friable dark grey brown silty clay ploughsoil 0.23m thick which contained occasional fragments of post-medieval or later brick and tile. Below this was mid yellowish brown, 0.30m-thick subsoil. The undisturbed geological strata in this area comprised light whitish brown clay with moderate to frequent chalk pebbles and lenses of orange sandy clay.

3.4.2 Post-medieval ditches

Two roughly parallel ditches [603] and [605] had been revealed in the evaluation, although only the latter was identified within the turbine base (Figure 12). The ditches were sinuous, aligned NE-SW, and spaced *c.* 6m apart. They were 0.25–0.55m wide and 0.25m deep with steeply sloping sides and flattish bases (Figure 12: images 1 and 2). Their relatively dark fills contained no finds. The eastern ditch was truncated along its length by a modern field drain (Figure 12 - red feature).

The first edition OS Map of 1885 shows no field boundaries in the vicinity, the site being roughly central within a large land parcel (Figure 12). However, as the more substantial boundary is followed by a land drain, it is very likely that the ditch represents the remains of a late medieval or post-medieval field boundary, visible when the land drain was inserted. The western ditch was less deep and may have defined a parallel routeway. This was a less substantial ditch and its continuation may have been lost to truncation by recent ploughing.

4. STRIP MAP AND SAMPLE: CRANE BASES, ROAD CORRIDORS AND CABLE TRENCHES

4.1 Introduction

A continuous archaeological presence was maintained on site during the construction of the road corridors, the remaining crane bases, the footprint of the substation and the temporary contractor's compound (Figure 2). As the roads and crane bases did not form part of the evaluation they were subject to a programme of Strip, Map and Sample.

The excavation of cable trenches along the access roads was intended to be subject to a programme of archaeological observation. However, as the narrow width of theses trenches offered only limited potential for archaeological observation, the programme of the monitoring was amended from continuous observation to observation of selected areas of archaeological interest only (Albion Archaeology 2010). The areas monitored (Figure 2) were the sections of the cable trenches along the earthworks for Petsoe Manor (CT 1), the low ground further east in the vicinity of the Petsoe Brook (CT 2) and the sections adjacent to the identified Iron Age/Romano-British settlement in Turbine / Crane Base 1 (CT 3).

4.2 Road Corridors

Several new access roads had to be constructed and the existing farm tracks considerably strengthened in order to accommodate the heavy traffic necessary to construct the wind turbines (Figure 2 – Road1-6). Construction of the roads involved removal of the overburden to a depth of <0.45m, rolling out a layer of geotextile and then building up the road with Type I hardcore, in some cases up to 1.5m thick. The overburden showed considerable variation in thickness, reflecting the varied topography; it was thickest on the lower slopes. In most places the undisturbed geological strata, the level at which archaeological features could be identified, was not reached.

No archaeological features were revealed in any of the road corridors but a small number of artefacts were retrieved from the overburden. Several fragments of late Iron Age and early Roman pottery were recovered from Road 5, immediately west of Crane Base 1. The fragments lay in a line across the road corridor, possibly following a medieval furrow; they represent ploughed out material from the settlement excavated on Turbine Base / Crane Base 1.

Single fragments of early medieval (AD1150-1250) pottery were picked up from the subsoil in Road 5 and Road 2 in locations to the north and south of the medieval settlement. The low density of finds suggests this material derives from manuring spreads on cultivated land associated with the settlement.

An iron horseshoe was retrieved from the temporary access road south of Petsoe Manor Farm. It was of a type that came into existence in the late 13th

century and became universal in the 15th century. It is most likely contemporary with traffic in and out of the medieval hamlets of Petsoe and Ekeney.

4.3 Crane Bases

The crane bases were constructed in a variety of ways. In most cases (Crane Bases 2, 5 and 7, located adjacent to TB2, TB5 and TB7 respectively on Figure 2) the formation level was too shallow (0.25–0.40m) to expose undisturbed geological strata.

In Crane Base 3 undisturbed geological strata were revealed at the formation depth of 0.40m but no archaeological features were present.

Crane Bases 4 and 6 (located adjacent to TB4 and TB6 respectively on Figure 2) had to be terraced into the valley side in order to create a level platform. This involved the removal of a large amount of soil to a depth of up to 2m. Therefore, each Crane Base was stripped to the undisturbed geological strata under archaeological supervision, before excavation continued to formation level.

A single, N-S aligned ditch [2502] was revealed in Crane Base 4 and was mapped and sampled (Figure 13). It was 0.65m wide and 0.20m deep with straight sides sloping at 45 degrees to a concave base (Figure 13: image 1). A small fragment of Roman pottery was retrieved from the fill; it is considered to be residual. The overlying ploughsoil produced a very abraded pottery sherd — part of the base of a vessel. This feature is very similar to the post-medieval ditches investigated on Turbine Base 6 (see Section 3.4). The boundary correlates to a land division shown on the first edition OS map of 1885.

No archaeological features were revealed in Crane Base 6.

4.4 Substation / Temporary Contractor's Compound

Ploughsoil to a depth of 0.20m was stripped from the area. This was monitored but no archaeological features were revealed.

4.5 Cable Trenches

4.5.1 Introduction

Observation of cable trenching commenced on 17th March 2010 in the land parcel immediately to the south of Petsoe Manor Farm. This segment of cable trench extended from the junction of the temporary access road with the farm road to the substation to the south-east (Figure 2). This visit indicated that the deep, narrow, stepped trench had very limited potential for providing archaeological information. Following discussions with the MKCSAO a revised strategy was devised, with monitoring focussed on the areas of former settlement within the development area (orange areas on Figure 2) — the earthworks of Petsoe Manor, the low ground in the vicinity of the Petsoe Brook (CT1 and CT 2 on Figure 2) and the Roman settlement in the vicinity of Turbine Base / Crane Base 1 (CT 3).

4.5.2 CT 1 Manor Hill: area of medieval earthworks in the base of the valley of Petsoe Brook

This area lay in the vicinity of Petsoe Manor, extending from the brook in the south-east to the hedgeline to the west of the earthworks (Figure 2). The cable trench was located to the south of the farm track, extending between the manor and the partly infilled fishpond on the lower ground adjacent to the brook. Once ploughsoil had been removed from a *c.* 2m-wide easement, the *c.* 0.7m-wide trench was excavated to a maximum depth of 1.5m below ground level. A small number of features were revealed (Figure 14), with the fills showing a marked contrast to the chalk-rich, light yellow brown clay geological strata.

Extending some 40m from the brook in the lower part of the valley, was a band of mid yellow brown clay silt alluvium (Figure 14 – (1652). This deposit was at least 0.65m deep and lacked the inclusions of the geological strata. No artefacts were recovered from the deposit. Its sterile nature suggests that it is of considerable antiquity.

A small cluster of Roman pottery sherds from several vessels was recovered from the subsoil (Figure 14).

On the higher ground was a substantial ditch [1654], aligned roughly north-south; it was *c.* 1.7m wide and 0.7m deep (Figure 14). A single small sherd of Roman pottery was recovered from the grey brown, naturally accumulated fill. No trace of this feature could be seen at ground level either north or south of the track.

A distinctive, low, linear bank (Figure 14 – dotted line), aligned north-south, was visible in the area to the south of the track, several metres to the west of the ditch. However, no trace of this feature was visible in the cable trench. Recent make-up deposits obscured the margins of the track, so that it is not clear if the feature respected the track.

Towards the western margin of the trench segment was a large quarry [1656], *c.* 9m long and over 0.7m deep, continuing below the base of the trench (Figure 14 and image 1). The dark friable fill contained a significant quantity of limestone slabs. These are likely to be associated with the demolition of a nearby structure. The quarry was visible at ground level as a slight depression, with richer grass growth, continuing to the south of the track. The date of this feature is uncertain. Occasional small fragments of ceramic building material or fired clay were visible in section, although none could be retrieved. The area immediately to the north of the track is characterised by a series of irregular depressions, which would appear to be former, partly infilled, quarries.

The monitoring of the narrow trench revealed a small number of features. Whilst smearing of the sides of the trench could have hindered the identification of small (sub-metre), shallow features, the low density of features would appear to be a reliable indication of past activity. This would suggest a contrast between the higher ground north of the track, which contains earthworks and traces of buildings, and the lower ground towards the

fishpond. The margins of the settlement would appear to have been a focus of quarrying, although it is not clear if the farm track was the actual focus of this activity. Only the ditch [1654] would appear to connect these two areas.

4.5.3 CT2: area of earthworks to east of Petsoe Manor

Towards the eastern margin of Petsoe Manor (Figure 2), the ploughsoil was relatively thick, probably due to the downslope movement of soil. During the medieval period, furrows followed the slope of the land to assist with drainage, which also accentuated the downslope movement of soil due to erosion. The cable trench was located on a terrace created by a former watercourse, with the current brook occupying a deeper terrace to the north (Figure 15). The trench revealed an early, roughly east-west channel with several smaller apparently irregular channels characteristic of a braided watercourse. No artefacts were recovered from the reddish brown clay silt fill common to these channels. This would appear to be an ancient watercourse.

Further east between Roads 4 and 5 (Figure 15), a second, later, north-south watercourse was revealed, associated with a series of yellow alluvial deposits which filled the base of the valley. This watercourse truncated the earlier reddish brown filled watercourse. The Roman settlement revealed in the vicinity of Turbine 1 was located on the upper slope of the valley of this later watercourse. No artefacts were recovered from the deposits associated with the later watercourse, suggesting that it was also of considerable antiquity.

Immediately south of the intersection of the east-west hedgeline with Road 4 two undated pits were revealed, truncating the alluvial deposits (Figure 15). The larger pit [1677], probably a quarry, was *c.* 3m long; its lower fill was composed of large limestone slabs. Above this was a deposit containing flecks of burnt clay. The second pit [1680] was much smaller, possibly 1m long and 0.4m deep; it contained a band of red, fired clay. Despite a careful search, no artefacts were recovered from the pit fills. This would suggest that the pitting was of some antiquity, possible associated with the demolition of a nearby structure. This may be similar to the pitting in CT 1, which, despite the presence of residual Roman pottery, may be associated with contraction of the medieval settlement.

4.5.4 CT 3: high ground adjacent to Turbine 1 and Crane Base 1

Monitoring of the continuation of the cable trench to the north of the open area investigation revealed a cluster of three features, *c.* 120m north-west of the investigation area (Figure 6). The a single Iron Age/Roman ditch is discussed in Section 3.3, along with the continuation of the cable trench across the margins of the investigation area.

The other features include a re-defined boundary [1907] and [1909] aligned roughly NE-SW (Figure 6). The most substantial form of the boundary [1907] was 1.1m wide and 0.5m deep with a steep profile. These features cut a subsoil deposit which appeared to seal the early ditch. Although no finds were recovered from the relatively dark fills, these ditches would appear to be the continuation of the still extant boundary seen in the area immediately to the SE. Further south, another possible ditch [1903] was identified, although

visibility in this area was poor. The undated possible ditch was aligned ENE-WSW. The low density of features in this area is significant, suggesting that enclosures associated with the settlement identified in Turbine / Crane Base 1 did not extend onto the higher ground.

5. SYNTHESIS

5.1 Discussion

The various components of the mitigation strategy worked effectively to reveal a picture of variable past human activity across the landscape. During the Iron Age/ Roman period the higher ground seems to have been favoured for settlement. By contrast, during the medieval period settlement shifted to the lower ground with the higher ground used for agriculture. Throughout these periods access to water was a key factor in determining settlement location.

5.1.1 Late Iron Age / Roman

The settlement at Turbine Base 1 fits into a well established landscape of Roman occupation and agriculture. A survey of Roman sites and finds around Petsoe (Section 2.3) shows that enclosures and possible villa sites are dotted at regular intervals along the valley bottoms but also creep up onto the boulder clay uplands.

Simco, in her survey of neighbouring Roman Bedfordshire, notes that, in contrast to the traditional notion that the heavier clay soils of lowland England were not cleared and settled until the Saxon period, Roman sites actually existed in greater numbers on the chalky boulder clay uplands (Simco 1984, 21).

One example is the area of Leighton Buzzard where settlements are found at regular intervals along the boulder clay ridges. Boulder clay still provides a reasonably well drained agricultural soil due to its pebble content and, therefore, was actively exploited in the Roman period. In addition to the densely settled fertile gravelly river valleys, Roman occupation can therefore expected to be found on much of the higher boulder clay ground (Simco 1984, 21).

The Iron Age / Roman settlement at Turbine / Crane Base 1 would be one of those small farmsteads that cultivated the plateau above the Petsoe Brook. It may even have been linked in to the villa system, as several villas are recorded in the vicinity. The settlement underwent significant development and reorganisation during its lifetime. It was clearly a focus of human activity throughout this period, rather than simply defining hillside animal enclosures.

The later enclosure system hints at increased affluence, with a larger assemblage of finds, which included small quantities of regional and continental pottery imports. This indicates a degree of connection with the wider economy, including indications of adoption of aspects of a Romanised lifestyle — in, for example, cooking. A variety of economic activities appear to have been undertaken within the settlement, with a tentative suggestion of ironworking. The large clay pits suggest considerable quantities of clay were required, although its precise purpose is not clear.

As only a small part of the settlement was exposed, it is not possible to characterise its form or economy fully. Cereal gain and animal bone hint at aspects of the settlement's agricultural basis, although the assemblages are too small and fragmentary for any significant analysis. There is evidence of exploitation of watercourses for fish and oysters — the River Great Ouse would seem to be the most likely source for these.

5.1.2 Medieval

Only the margins of the settlement were investigated in the base of the valley. The occasional finds of this date suggest manuring of the settlement's fields. Traces of one of the former fields were revealed extending up the slope to the high ground in the southern part of the DA.

5.1.3 Post-medieval

Traces of post-medieval field systems were revealed, utilising the slope of the ground and thereby mimicking medieval land divisions. Hints of post-medieval activity were identified in the valley bottom at the margins of Petsoe Manor

5.2 Summary of Significance

The investigations have revealed evidence for a shift in the focus of human activity over time. Although limited in scope by the nature of the wind farm development, the investigations revealed tantalising hints of the Iron Age and Roman utilisation of the higher ground above the Petsoe Brook. It was also possible to examine various components of the valley itself, thereby aiding understanding of how utilisation of the area changed over time.

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7. APPENDICES

7.1 Appendix 1: Undesignated Medieval Landscape Features

Number	Description	Easting	Northing
1	Ridge and furrow earthworks mapped by MKHER - still visible	490450	249300
2	Ridge and furrow earthworks mapped by MKHER - now ploughed out	490650	249300
3	Ridge and furrow earthworks mapped by MKHER - now ploughed out except for possible headland bank	490700	249600
4	Ridge and furrow earthworks in field south of Petsoe Manor Farm, surviving as earthworks but not mapped by MKHER	491100	249350
5	Ridge and furrow mapped by MKSMR - now ploughed out	492000	248900
6	Ridge and furrow: eastern extremities of the furlongs mapped by MKSMR survive as earthworks in pasture in the valley bottom	492200	248850
7	Site of 'Ekeney Wood': woodland recorded on early maps (Bryant (1825) and Jefferys (1770)), also identified by Chibnall (1979)	492700	248600
8	Site of 'Hall Spinney' or 'Halls Spinnery': woodland recorded on early maps (Bryant (1825) and Jefferys (1770)). A remnant of wood still survives. The unusually sinuous field boundary on south side of Hall Closes is suggestive of a woodland margin and possibly marks the former northern extent of the ancient wood	492980	248010
9	'Short Wood': woodland recorded on early maps (Bryant (1825) and Jefferys (1770)), also identified by Chibnall (1979)	491150	248100
10	'College Wood': woodland recorded on early maps (Bryant (1825) and Jefferys (1770)), also identified by Chibnall (1979)	491350	248200
11	'Mulducks Wood': woodland recorded on early maps (Bryant (1825) and Jefferys (1770)), also identified by Chibnall (1979)	491300	248400
12	Ridge and furrow earthworks mapped by MKHER	491500	248300

7.2 Appendix 2: Pottery – Analytical Methodology

An assemblage comprising 465 pottery sherds, representing 311 vessels, weighing 9.1kg was recovered. Quantification was by minimum vessel and sherd count, and weight. Sherds belonging to the same vessel, but deriving from separate contexts, were quantified as one. The condition of the pottery from each deposit was noted and attributes such as decoration, manufacture, levels of abrasion and evidence of function (residues, sooting and wear marks *etc*.) were recorded. All information was entered onto an Access database. The seventeen unstratified and abraded sherds (216g) recovered from ploughsoil have not been further analysed.

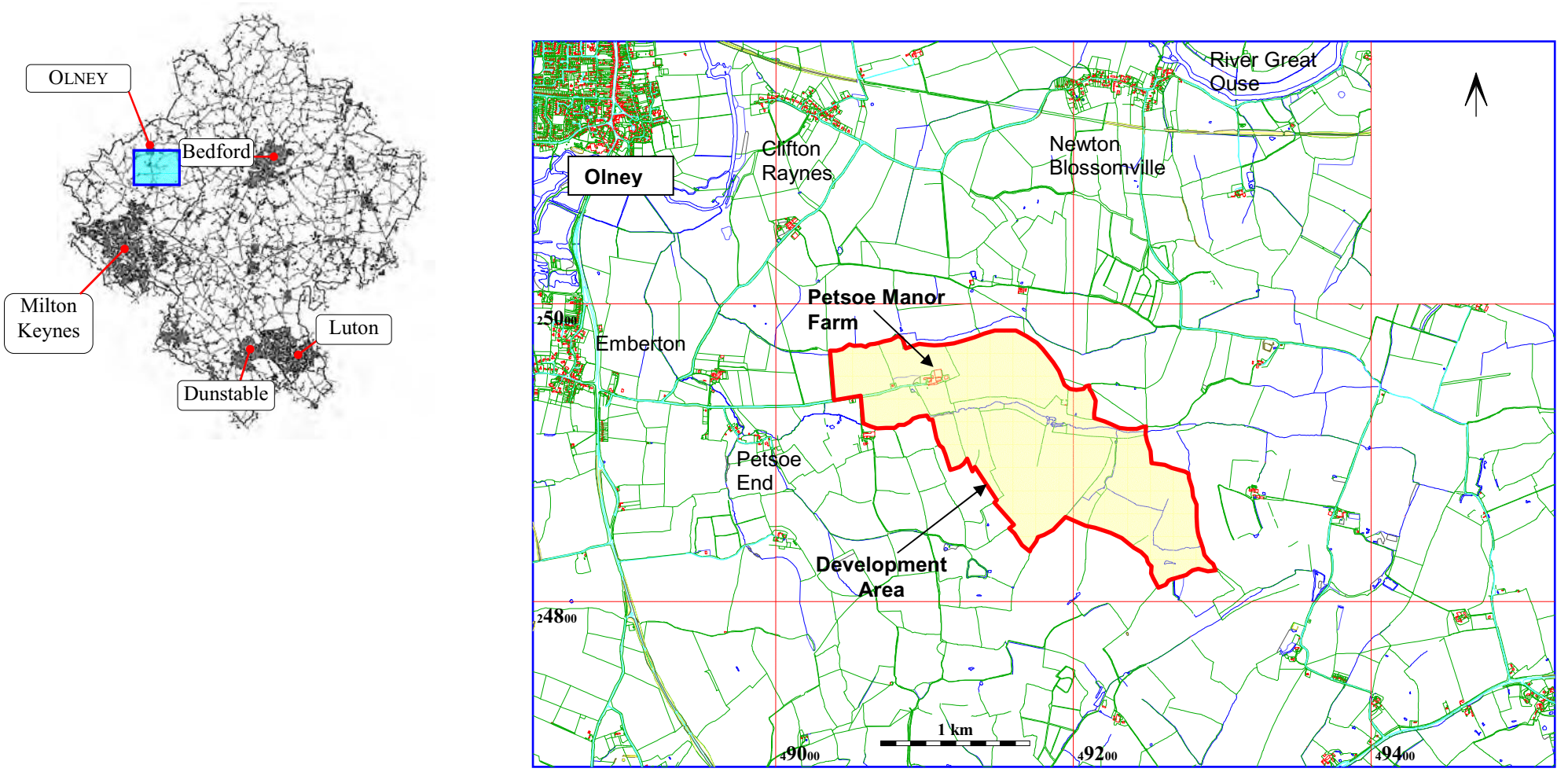


Figure 1: Site location map

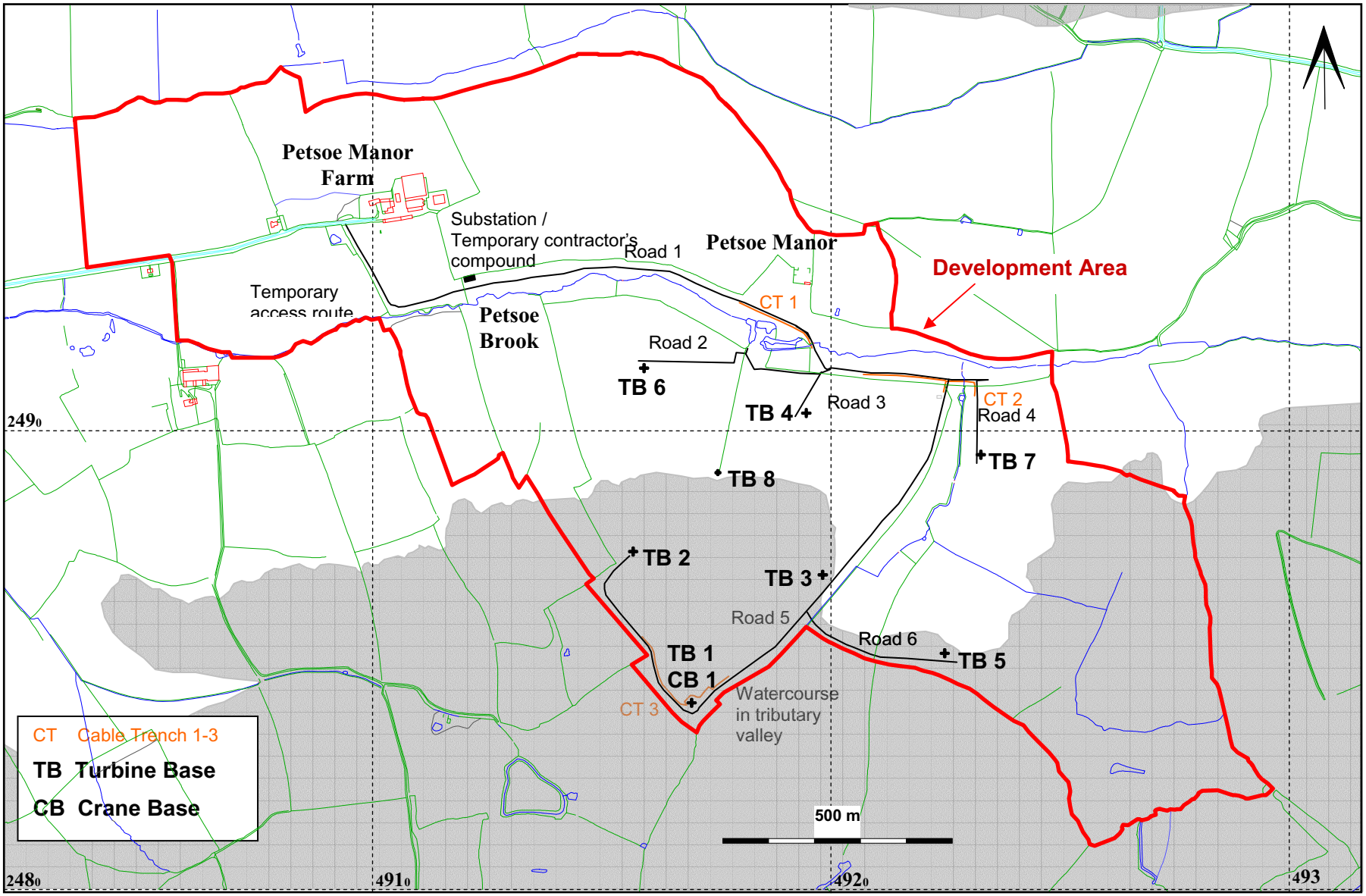


Figure 2: Areas of archaeological investigation (land over 90m OD shaded grey)

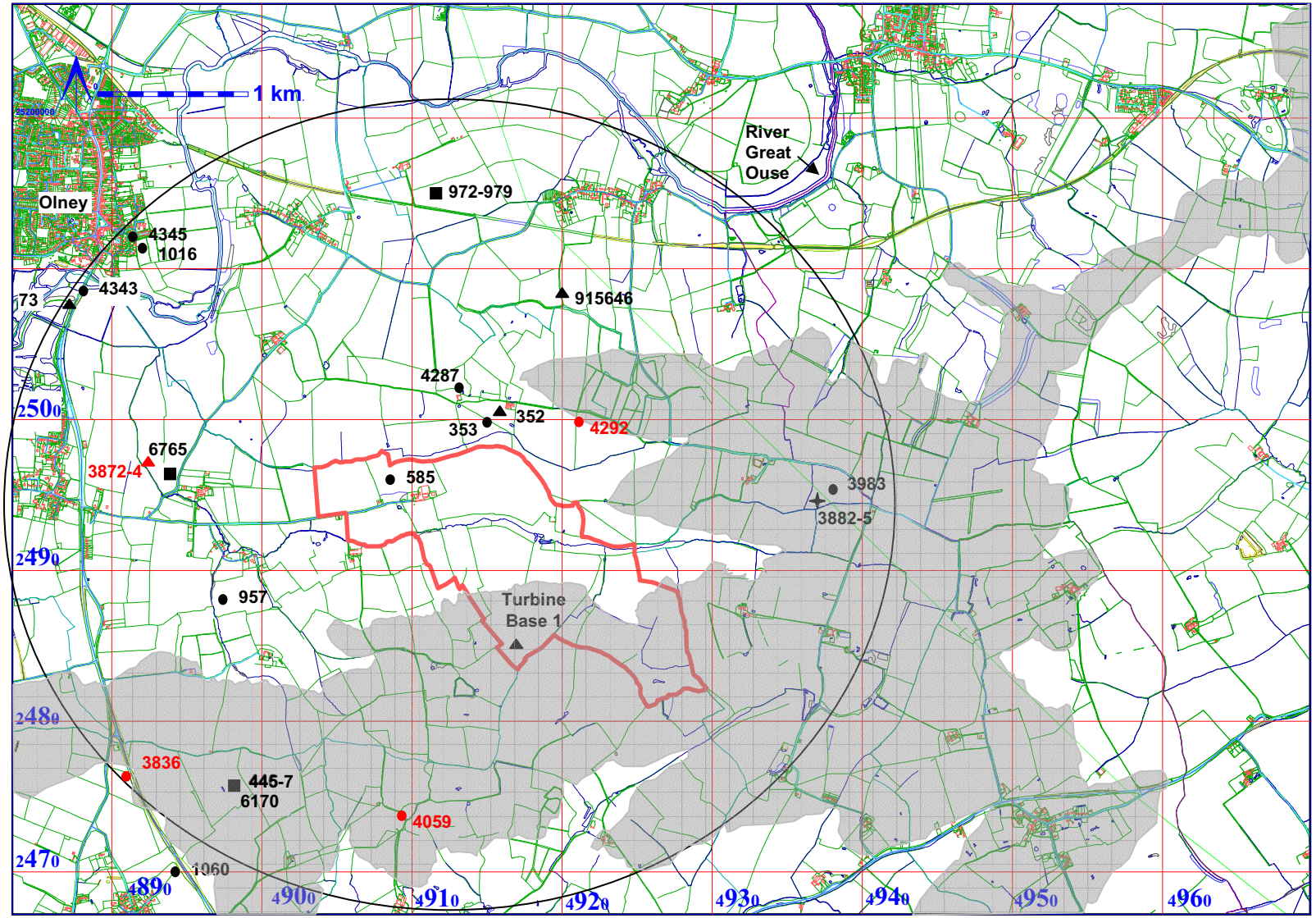


Figure 3: Prehistoric and Roman landscape in a 3km-radius around Turbine Base 1

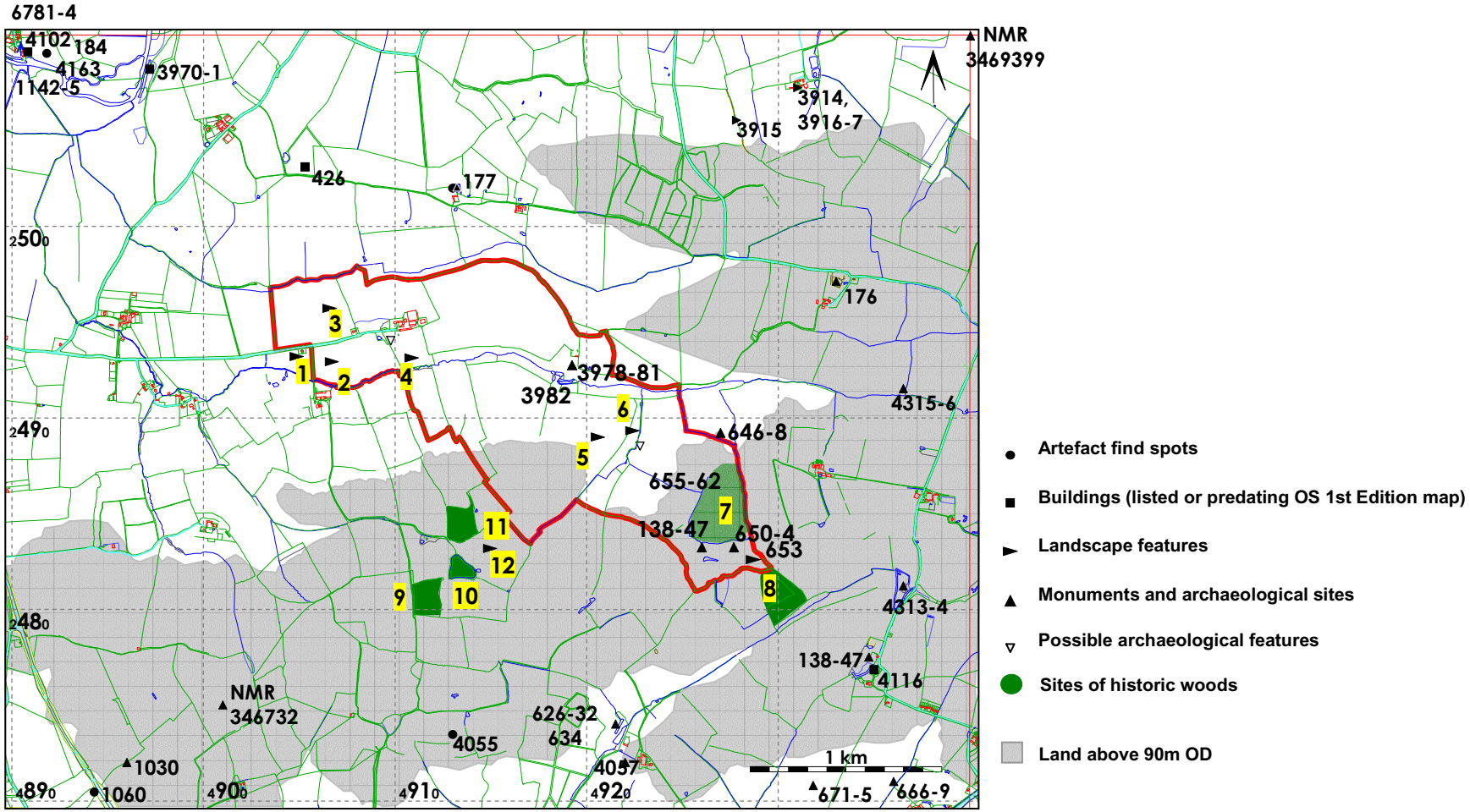


Figure 4: Saxon and medieval landscape in the vicinity of the DA

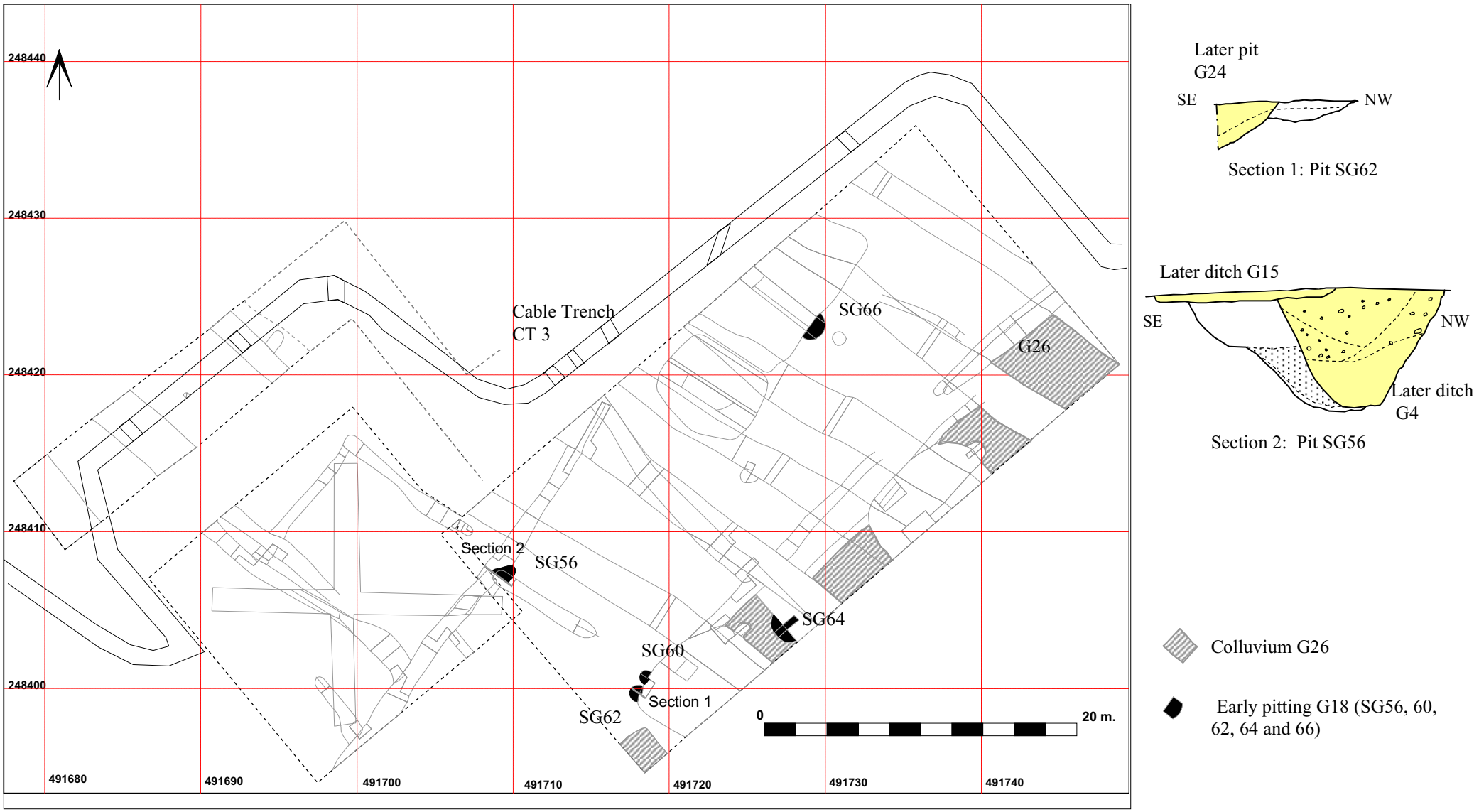


Figure 5: Turbine Base / Crane Base 1 — colluvium and early pitting

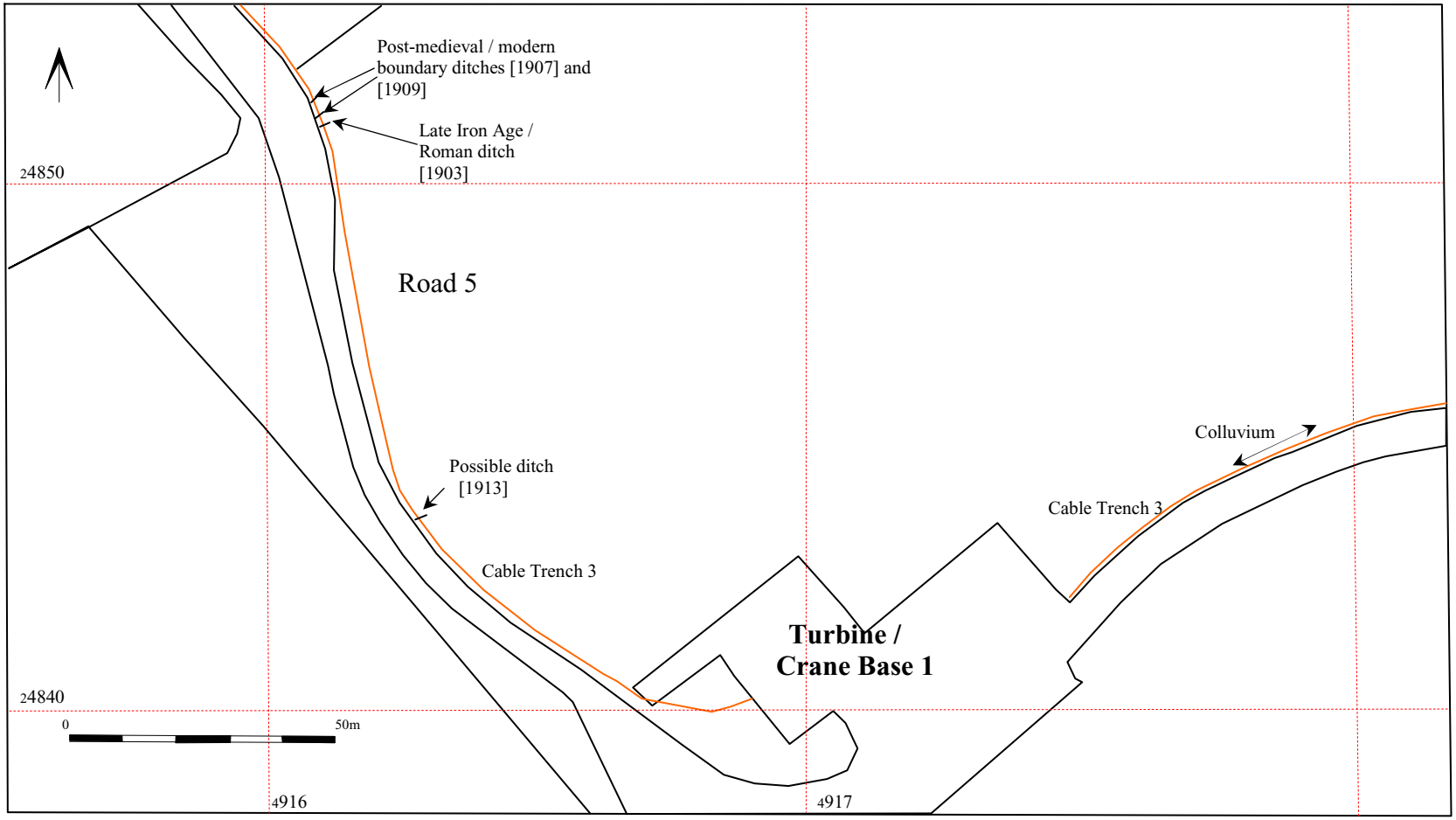
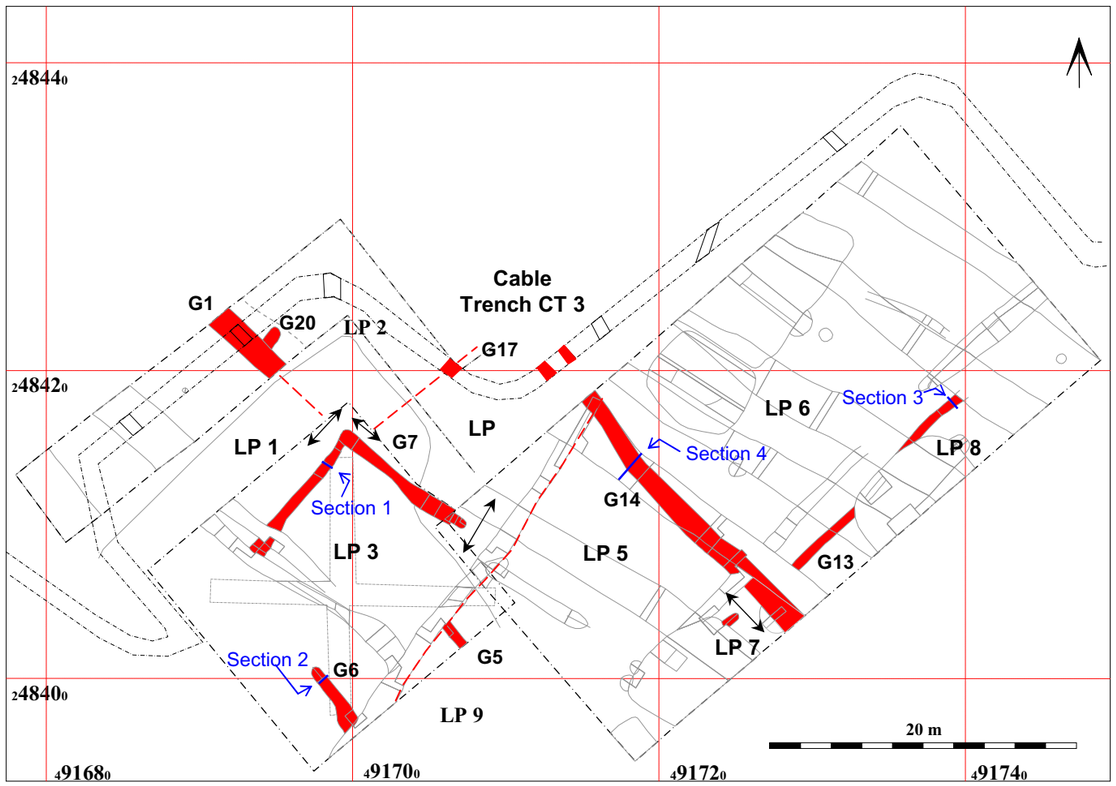
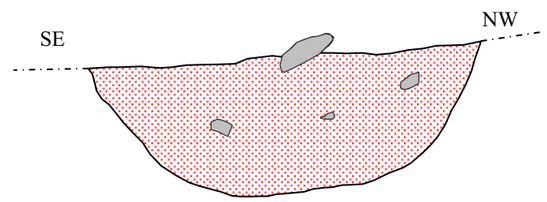
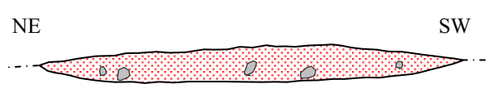


Figure 6: Cable Trench 3 — features identified in northern segment

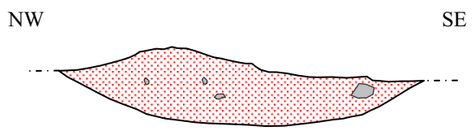




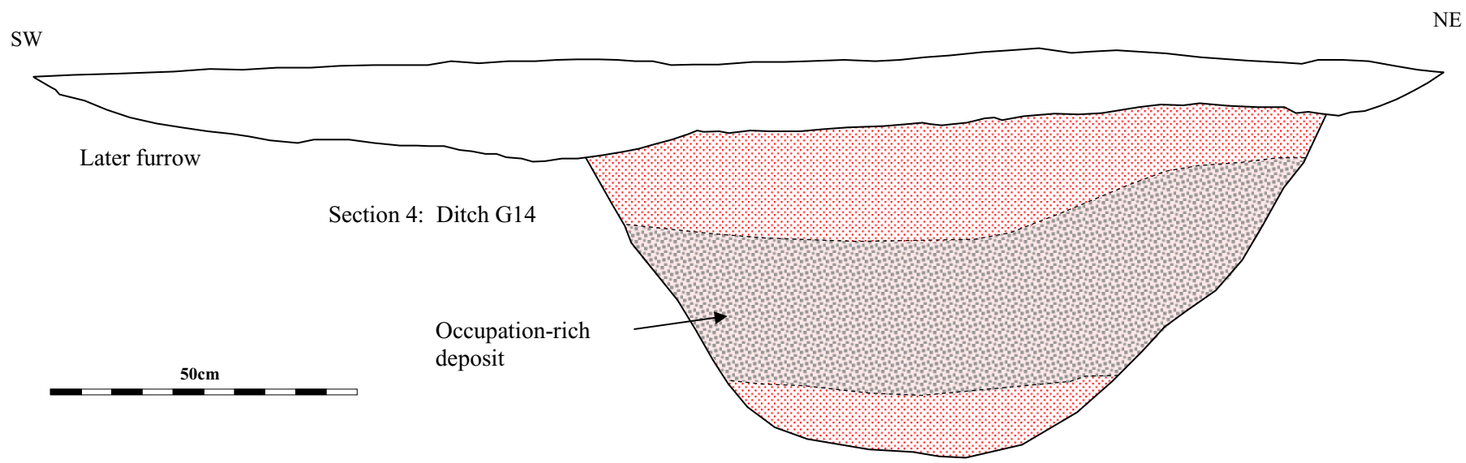
Section 1: Ditch G7



Section 2: Ditch G6

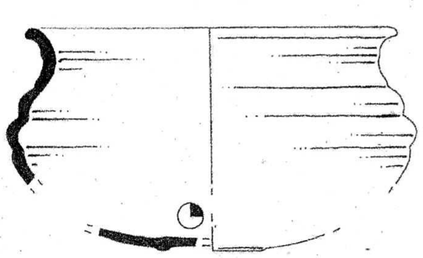


Section 3: Ditch G13



Section 4: Ditch G14

Figure 7: Turbine Base 1/ Crane Base 1 — early enclosure system: plan and sections



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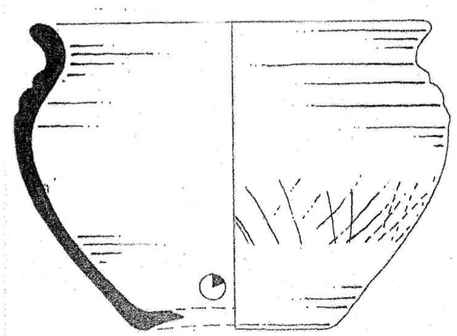

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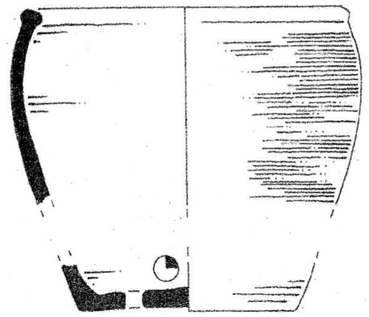

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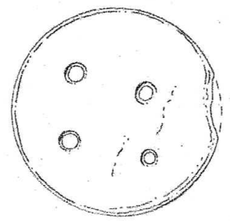
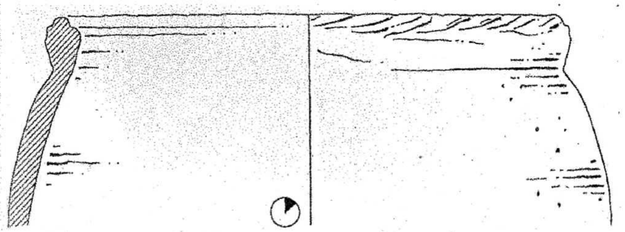
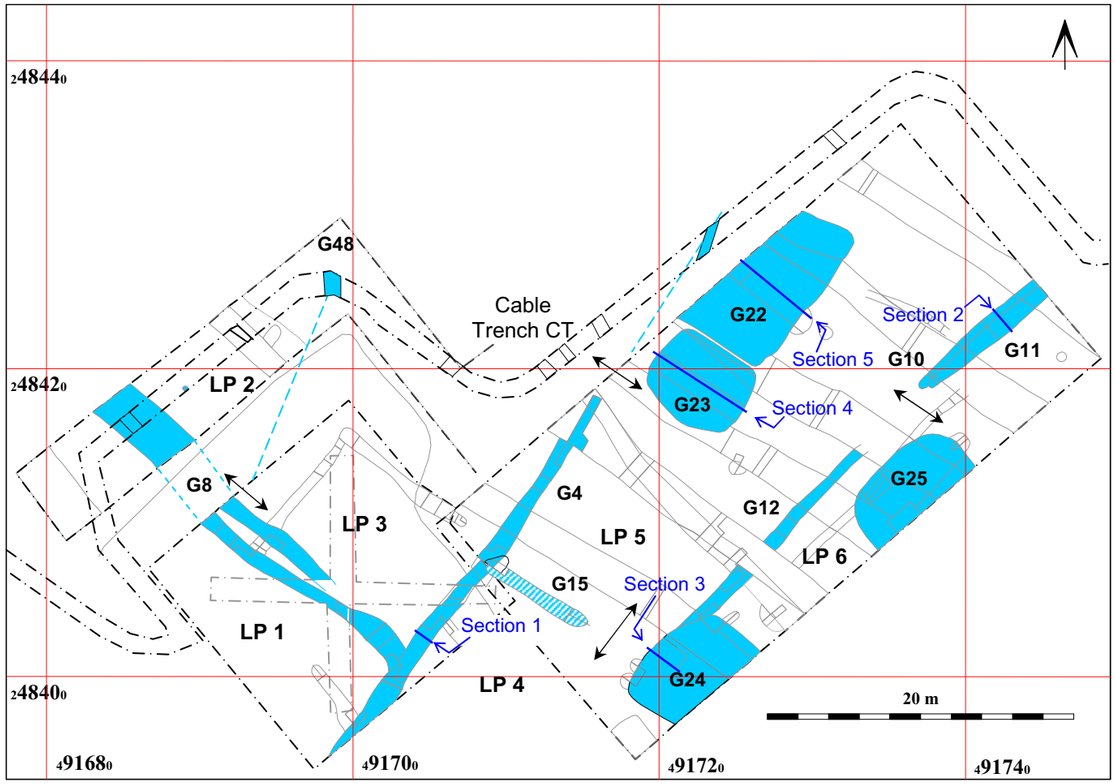
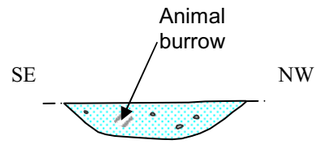




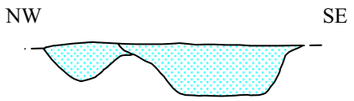
4

Figure 8: Turbine Base / Crane Base 1 - Early enclosure system - pottery illustrations

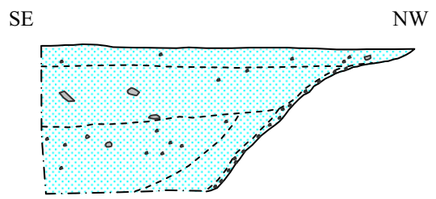




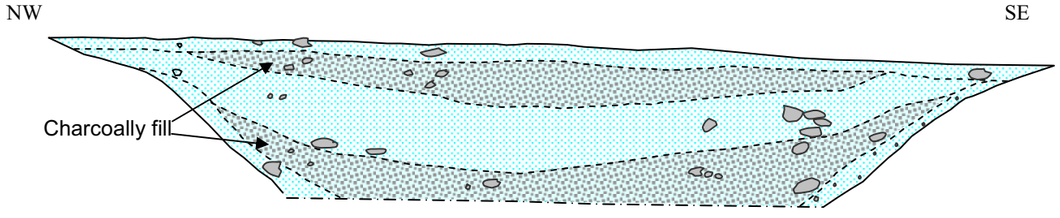
Section 1: Ditch G4



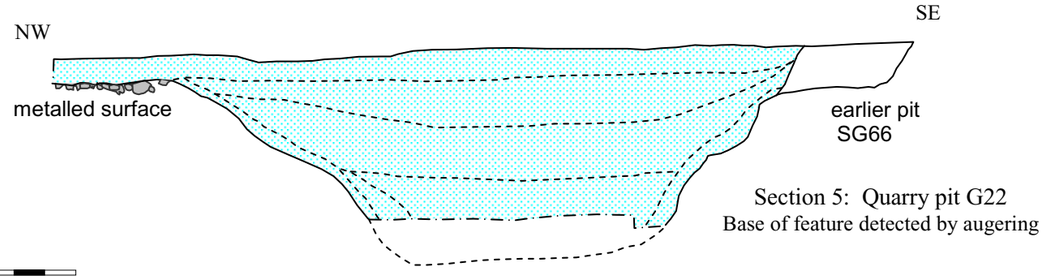
Section 2: Intercutting ditches G10 & G11



Section 3: Water pit G24

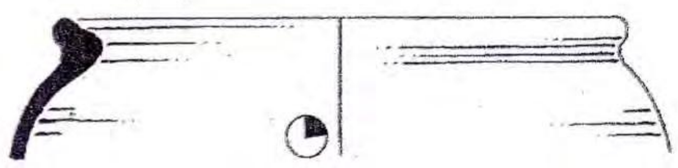


Section 4: Quarry pit G23



Section 5: Quarry pit G22
Base of feature detected by augering

Figure 9: Turbine Base / Crane Base 1 – later enclosure system: plan and sections



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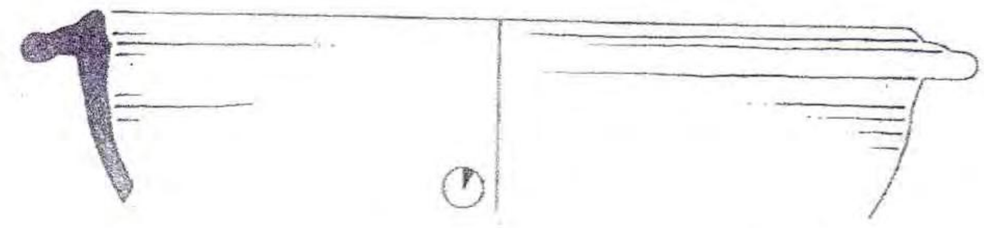

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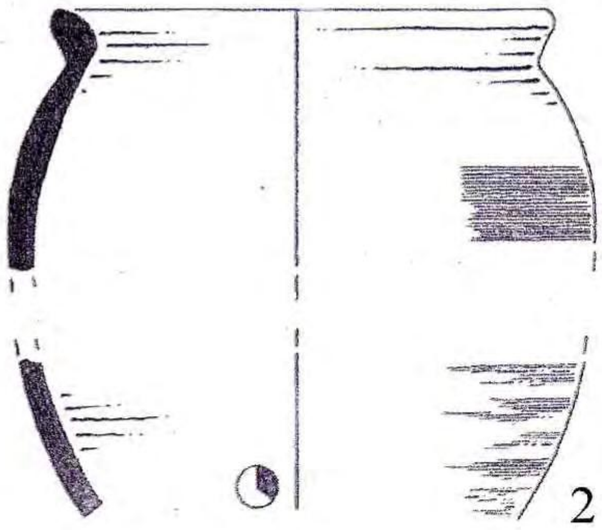

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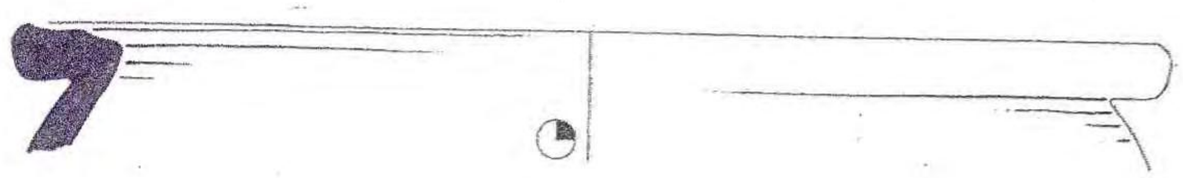


4

Image 1: Base of samian vessel which has been crudely chipped to form a lid

Figure 10: Turbine Base / Crane Base 1 - Later enclosure system – pottery illustrations

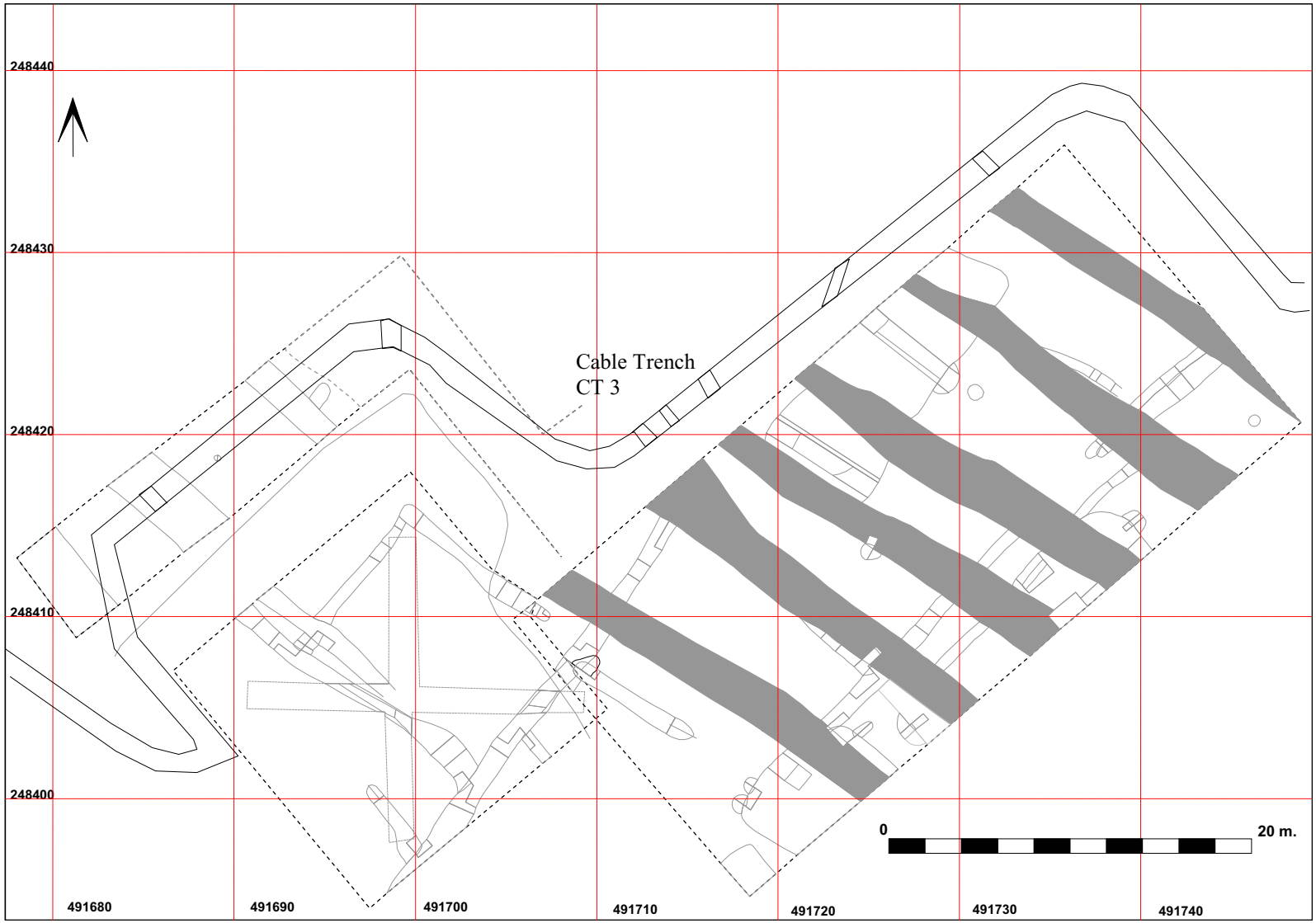
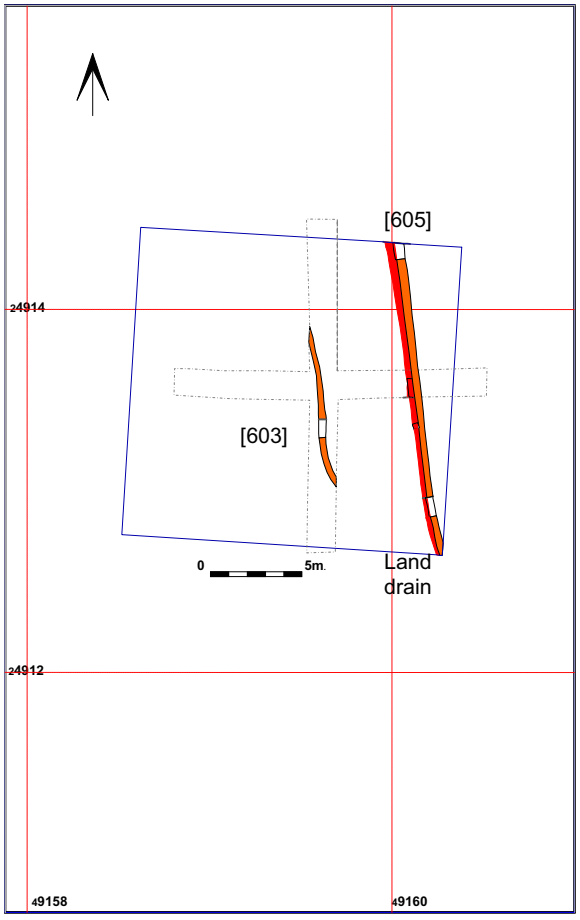
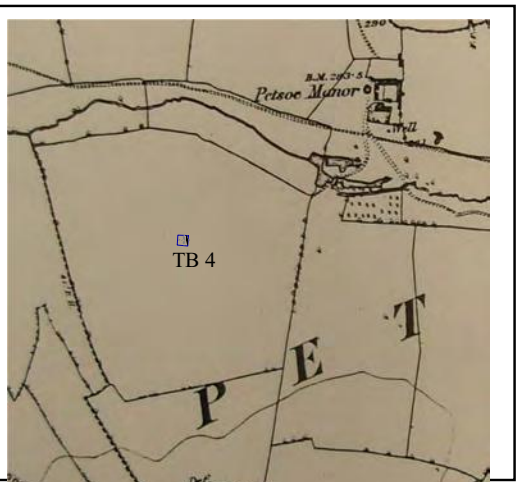


Figure 11: Turbine Base / Crane Base 1 — medieval arable cultivation



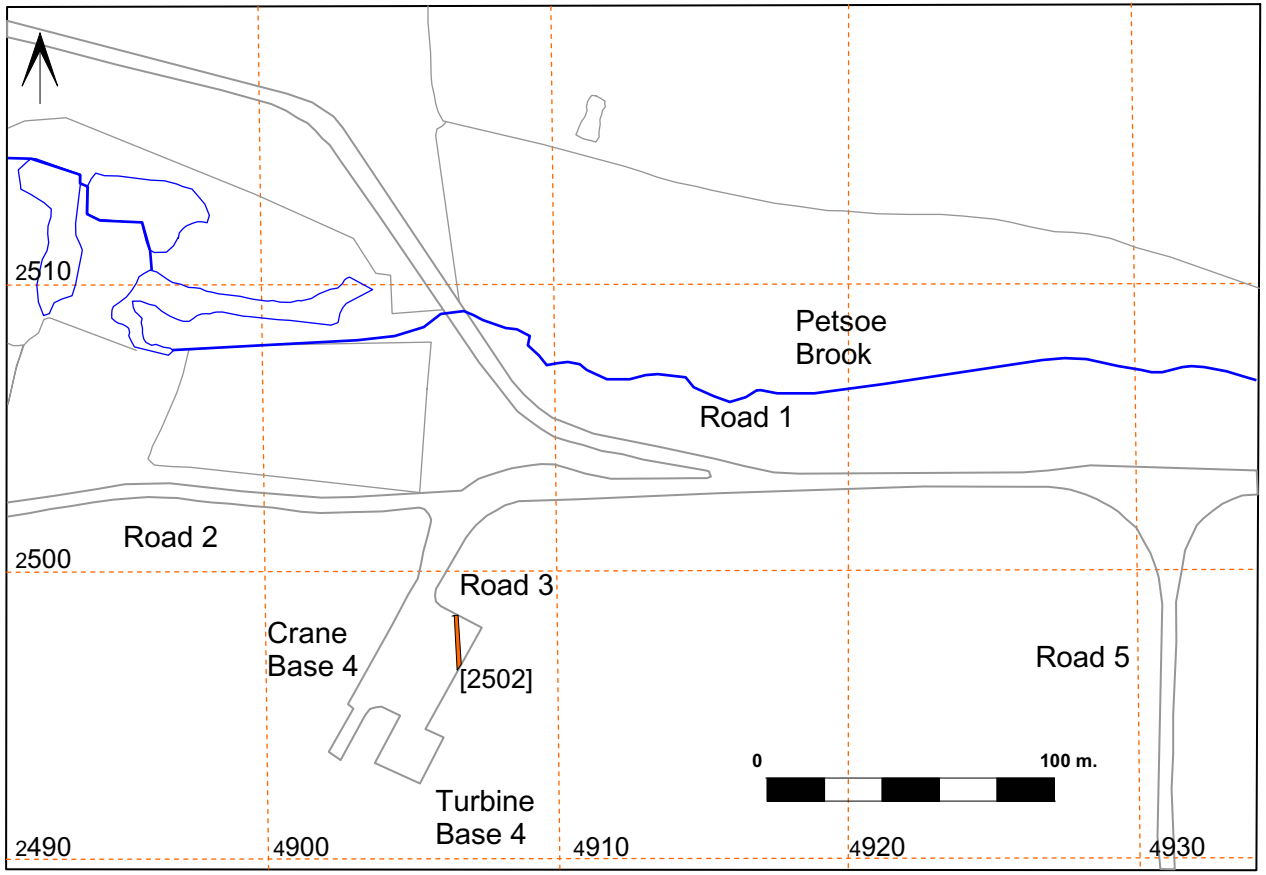


1885 First Edition OS map with approximate position of Turbine Base 4

Image 1: Section through ditch [603] Scale 1m in 50cm divisions

Image 2: Ditch [605] truncated by later land drain (yellow fill).

Figure 12: Turbine Base 6 — archaeological features



1885 First Edition OS map with approximate position of Crane Base

Image 1: Excavated section through ditch [2502]. Scale 1m in 50cm divisions

Figure 13: Crane Base 4 — Strip, Map and Sample

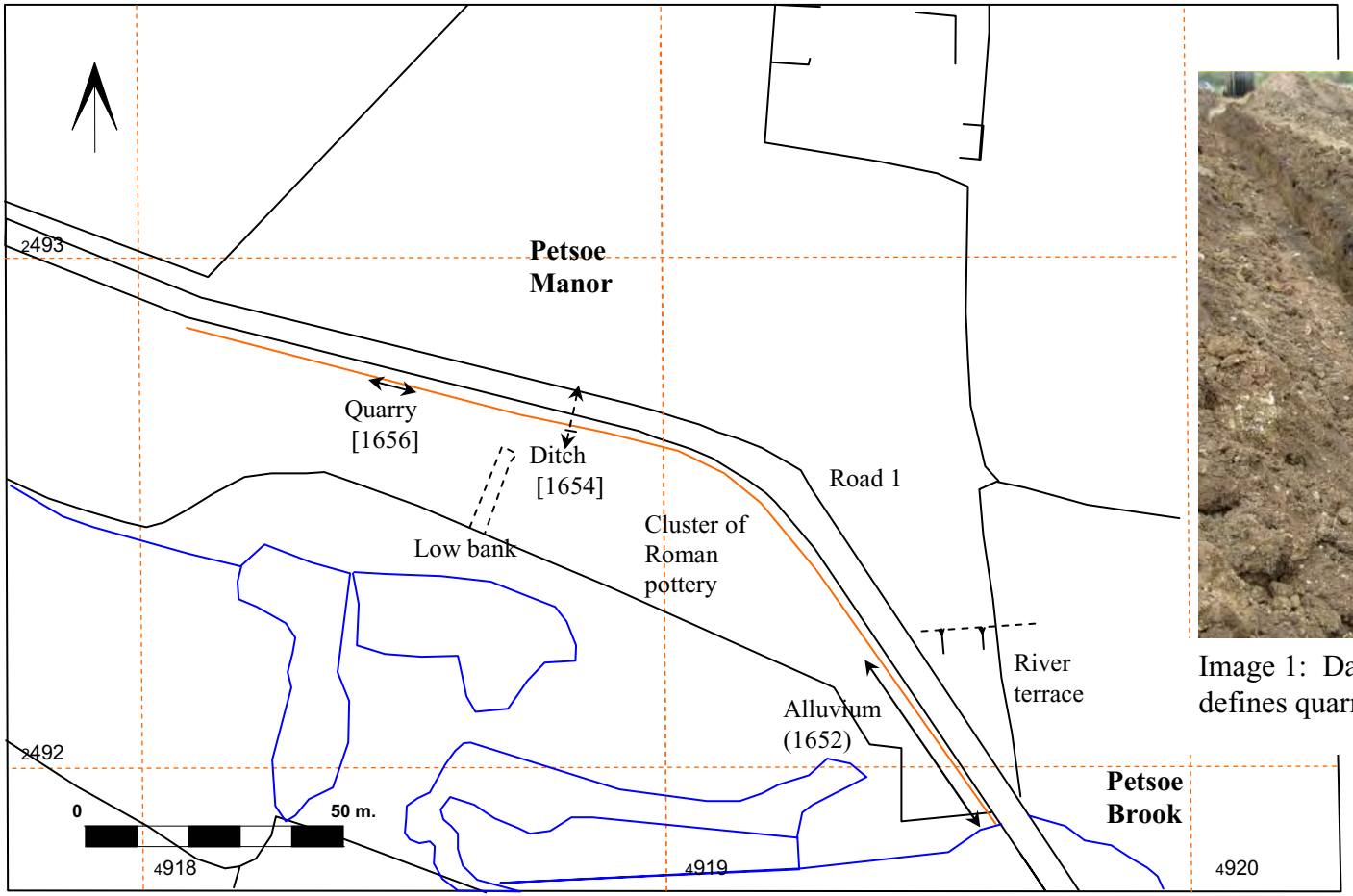


Image 1: Dark band in centre of image defines quarry [1656]

Figure 14: Cable Trench 1 — Petsoe Manor

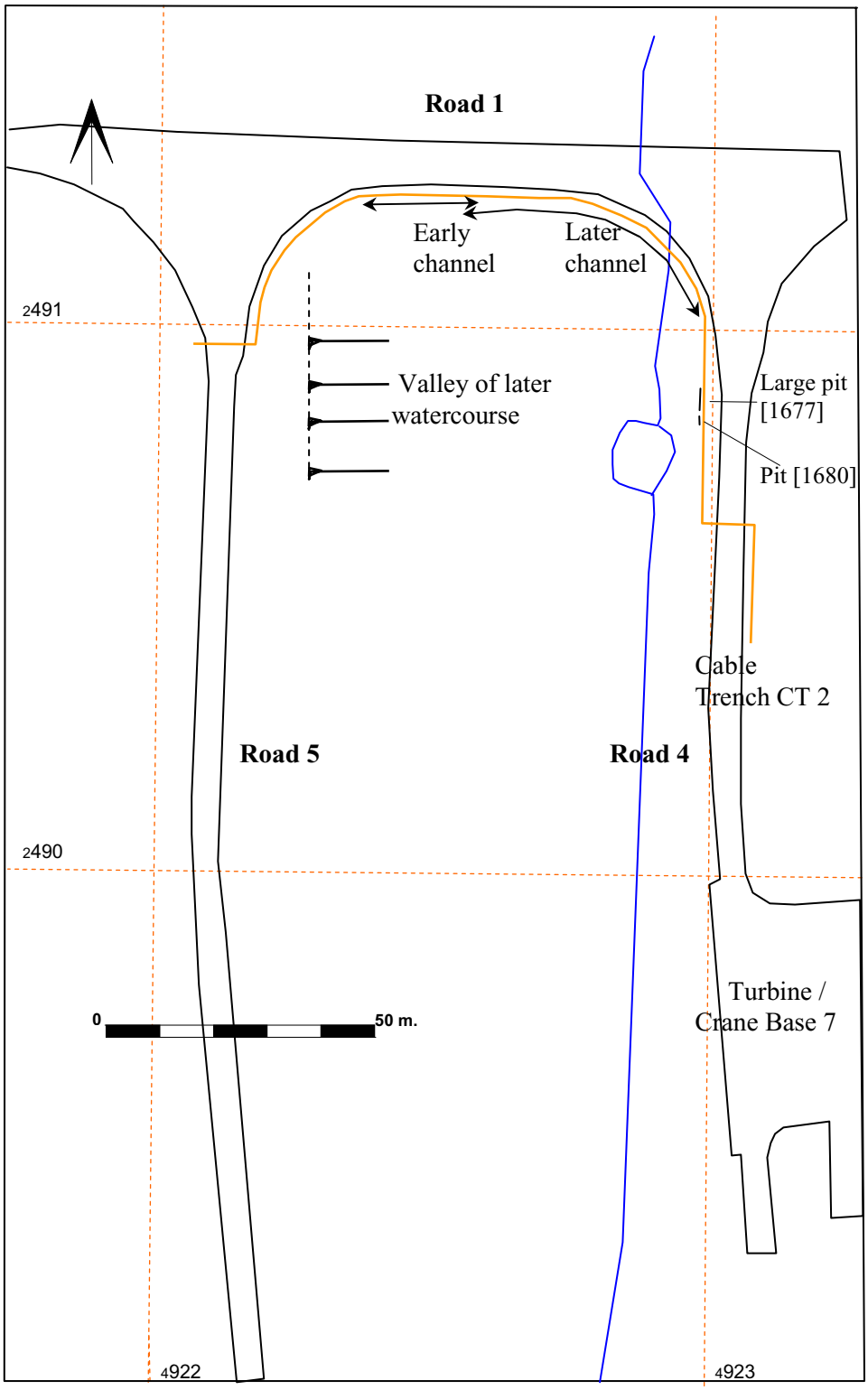


Figure 15: Cable Trench 2 — Petsoe Manor