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A249 IWADE BYPASS TO QUEENBOROUGH IMPROVEMENT, KENT

ARCHAEOLOGICAL SURVEY

Stage 1 : Desk Study

**Prepared on behalf of:
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**by
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**A249 IWAVE BYPASS TO QUEENBOROUGH IMPROVEMENT, KENT
ARCHAEOLOGICAL SURVEY (STAGE 1)**

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FIGURE 1: Site location and the study area showing the collation of known sites and areas of archaeological interest.

EXECUTIVE SUMMARY

The present report is on the first of two stages of the preliminary archaeological survey in advance of the proposed A249 Iwade Bypass to Queenborough Improvement. In order to assess the impact of the scheme on the archaeological and historic resources of the area, the Stage 1 desk-based study consulted a variety of sources of historic/archaeological information including the National and County Sites and Monuments Records, maps and other documents held in the Kent Archives Office and the Canterbury Cathedral Archives, aerial photographs and previous archaeological work in the area.

In order to place the archaeological impact of the proposed improvement in a wider context the assessment also considered the immediate vicinity of the Study Area. This identified twenty-seven archaeological sites, of which nine are within the Study Area. These individual sites have been ranked in order of potential.

These sites are exclusively of medieval or post-medieval date and represent a relict landscape in the wetland zone. There is a high potential that this landscape blankets other areas of archaeological interest of an earlier date and which are currently buried beneath the surface of the marsh.

This report also includes recommendations for Stage 2 - the preliminary field evaluation - of the archaeological survey using non-invasive survey techniques intended to minimise disturbance to this environmentally sensitive area. Attention is drawn to other non-invasive techniques and the ultimate necessity of using invasive evaluation methods

ACKNOWLEDGEMENTS

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Data collection was undertaken by Rachael Seager Smith and the report compiled by Rachael Seager Smith and Andrew Fitzpatrick; the figure was prepared by Julian Cross. The project was managed by Andrew Fitzpatrick.

1 INTRODUCTION

1.1 The project

Wessex Archaeology was commissioned by Ove Arup & Partners, acting on behalf of the Department of Transport, to prepare an archaeological survey for a Study Area within the north Kent marshes which will, potentially, be affected by the proposed A249 Iwade Bypass to Queenborough road improvement scheme. The pre-defined scope of works (Arup reference 43912/05/CC) for this study divided the work into two stages:

- Stage 1 : Desk study
- Stage 2 : Preliminary field evaluation.

This report is concerned with the Stage 1 desk study while the Stage 2 preliminary field evaluation will form the subject of a separate report.

The aims of the desk study were :

- to collate the pre-existing archaeological data to provide both a workable database and a general archaeological/historical context for the study area
- to assess the nature, extent and significance of the archaeological/historical resources
- to make recommendations for the future management and preservation of the known archaeological/historic resources of the area
- to make recommendations for the work to be undertaken as part of Stage 2, the preliminary field evaluation.

1.2 The study area

The study area extends from the northern end of the proposed Iwade Bypass to the north of the A249 Queenborough roundabout, south of Sheerness, on the Isle of Sheppy. The study area is centred on the existing A249 road, but extends east and west from the line of the current road in order to provide a broader contextual framework within which the impact of the proposed improvement scheme can be assessed. In total, the study area covers some 10 km². The A249 provides the only link between the mainland and the Isle of Sheppy and both the road and the British Rail line to Sheerness are carried over the Swale by the Kingsferry Bridge which has a central lifting span to allow the passage of commercial shipping along the waterway.

The broader environmental context of the Study Area has been considered in Part 1 of the *Draft Landscape Report* and this is not repeated here other than to note that the Area falls partly within two Sites of Special Scientific Interest (SSSI), the Medway Estuary and Marshes SSSI and the Swale SSSI. It is split between the parishes of Iwade and Minster, the Swale forming the boundary between the two. The village of Iwade is

located slightly west of the southern tip of the Study Area while the residential and light industrial areas comprising Queenborough and Rushenden lie around the north-west boundary of the Area.

1.3 Archaeological and historical background

Almost no archaeological work has previously been undertaken in the Study Area and there are no Scheduled Ancient Monuments within it. Although the Area has been considered in general surveys of Kent (such as Leach 1982) it is not specifically referred to. Such historical work as has been done has been directed towards the early history of Queenborough which lies adjacent to, but outside, the Study Area.

There is evidence for human activity in the vicinity of the Study Area throughout the prehistoric and Roman periods and this provides the archaeological background for the Desk Study.

Palaeolithic activity in the region is indicated by a handaxe from a deposit at only 3m OD at Lower Halstow (Wymer 1982, 10) while the presence of later, Mesolithic hunter-gatherers is indicated by occupation sites discovered in the late 19th century, also in the vicinity of Lower Halstow (Jacobi 1982, 16). A Neolithic settlement which produced quantities of worked flints, stone objects, pottery and animal bone, is located just to the south of the Study Area, at Grovehurst Farm, Sittingbourne (NAR no. TQ 96NW 6) indicating the presence of early farmers in the area (Clarke 1982, 26). Bronze Age interest in the general area of the north Kent marshes is attested by a possible barrow on Barrow Hill, Higham (Barham and Bates 1991, 43, 83) and a number of hoards of later Bronze Age, one from the Harty area of the Isle of Sheppy, the remainder concentrated on the Hoo peninsular (Champion 1982, 37-8, fig 14).

On the Upchurch and Lower Halstow marshes to the west of the Study Area, continuing erosion of the marshland alluvium has revealed a Romano-British industrial landscape, which produced pottery, tiles and salt-production debris. Other findspots and sites of Roman date, including 2nd century AD cremation burials, found in the grounds of Sheerness Comprehensive school (NAR no. TQ 97SW 11), just north-east of the Study Area, are also known on the Isle of Sheppy.

Though there is a marked lack of evidence for the post-Roman period, the importance of Queenborough as a medieval town is well known, a garrison town being founded here in 1368 by Edward III to accompany the new castle which defended the waterways around Sheppy. Few traces of the medieval town survive today although the regular street pattern is of 14th century AD date and it is likely that archaeological remains survive beneath street level (the historic core of the town which includes many listed buildings and the castle site, forms Scheduled Ancient Monument number 185).

1.4 Topography and geology

The area between Iwade and Queenborough, comprising most of the Study Area, consists mainly of low-lying rough grassland, protected from flooding by an elaborate system of dykes and earth bank sea defences. To the south-west, the land around Iwade rises

slightly, the village itself being situated between the 5m and 15m contour levels. Areas of higher ground also occur in the north of the Study Area, the level reaching the 8m contour just south of the A249 Queenborough Road at Cowstead Corner, and just beyond the northern limits of the Area, Barrows Hill and Furze Hill rise to 26m and 42m respectively.

Alluvial deposits cover much of the Area on either side of the Swale. The marshes in this area have evolved over the last c.1600 years largely as a result of accelerated silt deposition caused by relative rises in sea-level around the Kent coast (Jessup 1966, 35; Sheldon 1982, 2). Outcrops of London Clay occur to the north and north-west of Iwade, and on the Isle of Sheppy around Rushden, towards the higher ground of Barrows Hill and Furze Hill and to the west of the study area around Elmley Island. Head Brickearths form drift deposits to the south and south-east of Iwade, just beyond the limits of the Study Area.

1.5 Modern land use

Modern land use within the Study Area is generally characterised by low-lying, marshland pasture drained by channels and dykes. The area is grazed by cattle and sheep and is classified as Grade 4 agricultural land. Small areas of Grade 3 arable land occur in the north of the Study Area, extending roughly from the 5m contour level just south of the Queenborough Road, to the higher ground of Barrows Hill and Furze Hill. South of the Study Area, orchards occur around Iwade while areas of Grade 2 arable land are located to the east, between Iwade and the British Rail line to Sheerness.

2 METHODOLOGY

2.1 Introduction

The principal aim of the Desk Study was to identify areas within the Study Area of known archaeological significance and to define further areas of archaeological potential within the landscape. In accordance with the scope of work a variety of different sources were consulted in order to obtain as much information as possible and although only those records directly relating to the study area were examined in detail, evidence for the surrounding area was also noted.

The following institutions were consulted and the details of their resources are presented in the remainder of this section.

- The National Archaeological Record
- The Kent County Sites and Monuments Record
- Canterbury Cathedral Archives
- Kent Archives Office
- National Library of Air Photographs
- Court Hall Museum
- Maidstone Museum and Art Gallery

2.2 National Archaeological Record

The National Archaeological Record (NAR) is a computerised register of all sites of archaeological interest across the whole of England, compiled and maintained by the Royal Commission on Historic Monuments (England) at Southampton. All entries falling within the Study Area and its immediate vicinity were consulted.

2.3 County Sites and Monuments Record

The County Sites and Monuments Record (SMR) is compiled, maintained by and held within the archaeology section of the Kent County Council Planning Department, Springfield, Maidstone. It comprises a computerised register of all known archaeological/historical sites and find-spots within the county. These records were not directly consulted as, for the county of Kent, the SMR contains exactly the same information as the NAR. A visit was made to the offices of the Kent County Council to confirm this duplication of information and to consult with the County Archaeological Officer.

2.4 Cartographic search

Surviving maps, including Tithe Maps, all Ordnance Survey and early estate maps, covering the Study Area were examined.

The Tithe maps and Awards, held in the Canterbury Cathedral Archives, The Precincts, Canterbury, for the parishes of Iwade (1840) and Minster, Isle of Sheppy (1841) were examined. These indicate patterns of land division and use, field names, land owners and tenants and may also record the location of buildings and other landscape features no longer visible.

The first series of the 25" Ordnance Survey maps (1858-73), held in the Kent Archives Office, Maidstone, were also examined. For the Study Area, these indicated little change in the land division patterns visible on the earlier Tithe maps although the specific use of the marshland pasture by sheep is implied by the location of numerous sheepfolds recorded in these surveys. Evidence of salt production within the marsh is evidenced by the location of saltworks on these maps, also recorded by the Sites and Monuments Record, but additional industrial activity is indicated by the position of a brick and earthworks and 'Clay Mill Kiln' (see Section 3.2 - Gazetteer no. IQ.7) in the extreme north-east corner of the Study Area, north of Cowstead Farm at TQ 929 717.

Only one early estate map covering the Study Area survives in the collection of the Kent Archives Office, Maidstone. Such maps were surveyed, generally for the benefit of individual landowners often at a time when the land was changing hands. The maps (1781-2, ref KAO U846 E1/1-18) are part of a set of twenty maps covering eleven parishes, including both Iwade and Minster, which formed 'the estate of Richard Sheldon and now of Lock Rollinson and Thomas Russel'. Field names, names of adjacent owners and buildings in block plan and perspective are recorded on the maps. Examination of these names indicates that little change in the field patterns and land use took place between this period and the drawing up of the Tithe maps in the 1840's. In summary, all historical sources point to the predominant land use within the Study Area as pasture.

The collections of the Medway Area Archives Office, Civic Centre, Strood, Rochester do not extend beyond the eastern limits of the Medway towns conurbation and therefore this centre was not visited.

2.5 Aerial photograph study

The National Library of Air Photographs is held by the RCHM(E) at their offices in Swindon, Wiltshire and Acton, West London. A computerised coversearch for the study area was undertaken, identifying 54 sets of vertical photographs and five sets of oblique photographs, covering the period from 1946 to 1979 (Appendix 1). All the oblique photographs and 13 sets of the verticals were examined. In addition, eight sets of more recent vertical air photographs (four sets, 1984, monochrome; three sets, 1990, colour) held by Arup were inspected.

Further salt working mounds and traces of ridge and furrow cultivation were identified within the Study Area and its immediate vicinity.

2.6 Previous archaeological fieldwork

No archaeological fieldwork has previously been carried out in the study area although slightly further west on the Upchurch marshes, extensive investigations by the local amateur archaeological group, the Upchurch Archaeological Research Group has brought to light a Romano-British pottery, salt and building material production area. Few details of this research have been published although the pottery industry has been the subject of a doctoral dissertation, subsequently published (Monaghan 1987).

More recently, palaeoenvironmental and geoarchaeological surveys of the north Kent marshes in general have been carried out by members of the Geoarchaeological Service Facility of the Institute of Archaeology, University College London for the *North Kent Marshes Study* (Barham and Bates 1991).

No material from the Study Area is held within the collection at the Court Hall Museum, Milton, near Sittingbourne or in the larger collections in the Maidstone Museum and Art Gallery.

3. GAZETTEER OF SITES WITHIN THE STUDY AREA

3.1 Introduction

The following gazetteer is a compilation of all the archaeological information collected during the desk study for the study area and its immediate vicinity. For ease of reference the sites have been given a unique IQ (Iwade to Queenborough) reference code and are listed from north to south, west to east. Approximate heights OD are given. Sites located within the Study Area defined by Arup are emboldened. All the sites are shown on Figure. 1.

In order to assess the significance of the sites/areas of interest identified during the desk study, they are ranked here into three broad categories:

- A:** Sites of high archaeological importance or potential. Known sites already recognised as or with the potential to be of national or regional importance such as to merit inclusion in the Schedule of Ancient Monuments.
- B:** Sites of medium archaeological importance or potential. Sites recognised as or with the potential to be of local importance. These may be defined as Areas of Archaeological Interest by Planning Authorities.
- C:** Sites of low archaeological importance or potential. Sites which, based on current data, appear to be of limited and/or localised archaeological value.

The code letter indicating the rank of the sites/areas of interest are included in the Gazetteer after the national grid reference.

3.2 GAZETTEER

IQ.1 - TQ 9187 7283. B.

Medieval or post-medieval salt-working mound on Diggs Marshes. (NAR no. TQ 97SW 4). Below 8m contour.

IQ.2 - TQ 9123 7215. A.

Site of Queenborough castle. Built 1361-77, destroyed 17th century. (NAR no. TQ 97SW 1), c. 6m contour level.

IQ.3 - TQ 9145 7219. B.

Earthwork; irregular shaped enclosure with slight inner bank and outer ditch superimposed on an old counter wall. Date and purpose unknown. (NAR no. TQ 97SW 2). Below 8m contour.

IQ.4 - TQ 9217 7205. C.

'Stone' on Barrows Hill; recorded on the 1st series of 25" Ordnance Survey map (1858-73), Apparently no longer extant, there is no further information about this feature. It may be thought unlikely that it represents a prehistoric monument,

c.23-6m contour level

IQ.5 - TQ 927 720. C.

Site of 18th century telegraph station on Furze Hill. (NAR no. TQ 97SW 15).
Between 23-30m contour.

IQ. 6 - TQ 9268 7199. C.

Site of beacon recorded on William Lambarde's 'Cardc' of c. 1570. No visible
remains. (NAR no. TQ 97SW 9), c. 38m contour level.

IQ.7 - TQ 929 717. B.

Site of 'Clay Mill Kiln' and brickworks and earthworks recorded on the 1st
series of 25" Ordnance Survey map (1858-73). Between 15-23m contour
level.

IQ.8 - TQ 9225 7143. C.

Site of sheepfold recorded on the 1st series of the 25" Ordnance Survey map
(1858-73), c. 5m contour level.

IQ.9 - TQ 909 708. B.

Group of three salt-working mounds (at TQ 9099 7080 and TQ 9075 7099, both
now destroyed, and TQ 9118 7058). One mound cut during recent sea defence
construction revealing oyster shells, burnt clay and flints, wood and twigs
amongst the marsh clay of which it was composed. Probably of medieval date.
(NAR no. TQ 97SW 6). Below 8m contour level.

IQ.10 - TQ 9128 7020. C.

Site of sheepfold recorded on the 1st series of the 25" Ordnance Survey map
(1858-73). Below 8m contour level.

IQ.11 - TQ 927 706. B.

Group of nine salt-working mounds centred around TQ 927 706, on the
Neatscourt/Cheyney Marshes. (NAR no. TQ 97SW 7), 2-4m spot heights.

IQ.12 - TQ 9291 7095. C.

Site of sheepfold and guide post recorded on the 1st series of the 25"
Ordnance Survey map (1858-73), adjacent spot height 4m.

IQ.13 - TQ 9280 7034. C.

Site of sheepfold recorded on the 1st series of the 25" Ordnance Survey map
(1858-73). Adjacent spot height 2m.

IQ.14 - TQ 9341 7078. C.

Angled section of a medieval dyke cut by a more recent drainage system. (NAR
no. TQ 97SW 14), c.1-2m OD.

- IQ.15 - TQ 936 706. C.
Area of ridge and furrow centred around TQ 936 706 identified on aerial photographs 73048/44 and 73048/45. Adjacent spot heights 1-2m.
- IQ.16 - TQ 903 692. B.
Group of four medieval or post-medieval salt-working mounds situated on the Ferry Marshes. (NAR no. TQ 96NW 16), c. 2-5 m OD.
- IQ.17 - TQ 9064 6958. C.
Site of sheepfold recorded on the 1st series of the 25" Ordnance Survey map (1858-73). Below 2m OD.
- IQ.18 - TQ 9187 6963. C.
Site of sheepfold recorded on the 1st series of the 25" Ordnance Survey map (1858-73), c. 2m OD.
- IQ.19 - TQ 922 697. B.
Group of five salt-working mounds centred around TQ 922 697 visible on aerial photographs 540/1699/20 and 21, c. 2-3m OD.
- IQ.20 - TQ 903 687. C.
Area of ridge and furrow visible on aerial photographs 58/4626/1 and 2. Between 3-5m contour.
- IQ.21 - TQ 9050 6849 and TQ 9073 6881. B.
Two medieval or post-medieval salt-working mounds on the Coldharbour Marshes. (NAR no. TQ 96NW 19), between 3-5m OD.
- IQ.22 - TQ 9131 6887. C.
Remains of post-medieval windpump; used for land drainage. (NAR no. TQ 96NW 20), c. 2m OD.
- IQ.23 - TQ 9234 6986. C.
Site of sheepfold recorded on the 1st series of the 25" Ordnance Survey map (1858-73), c.2m OD.
- IQ.24 - TQ 9126 6816. C.
Site of sheepfold recorded on the 1st series of the 25" Ordnance Survey map (1858-73), c. 2m OD.
- IQ.25 - TQ 9012 6795. A.
All Saints Church, Iwade. Thirteenth century chancel, nave and tower; later medieval and post-medieval additions. (NAR no. TQ 96NW 2), c. 10m OD.

IQ.26 - TQ 9076 6790. C.

Site of sheepfold recorded on the 1st series of the 25" Ordnance Survey map (1858-73), *c.* 5m OD.

IQ.27 - TQ 9148 6795. C.

Site of sheepfold recorded on the 1st series of the 25" Ordnance Survey map (1858-73), *c.* 2m OD.

3.3 SUMMARY

The sites listed in the gazetteer reflect the known archaeology of this area. All are of medieval or post-medieval date.

Only two sites fall into the category of high archaeological importance/potential (A), Queenborough Castle (IQ.2) and All Saints Church, Iwade (IQ.25). Both of these lie outside the boundaries of the Study Area itself.

Eight sites with medium archaeological importance/potential (B) were identified, salt-working mounds IQ.1, IQ.9, **IQ.11**, IQ.16, **IQ.19** and IQ.21, the earthwork IQ.3 and industrial site **IQ.7**. The three located within the limits of the Study Area are emboldened.

The remaining 17 known sites are considered to be of low archaeological importance/potential (C), again those included within the Study Area are emboldened. These are the sheepfold locations **IQ.8**, **IQ.10**, **IQ.12**, IQ.13, IQ.17, **IQ.18**, **IQ.23**, IQ.24, IQ.26 and IQ.27, areas of ridge and furrow IQ.15 and IQ.20, and other locations of interest/potential IQ.4, IQ.5, IQ.6, IQ.14 and **IQ.22**.

4 RESULTS AND REVIEW

4.1 Introduction

The Stage 1 Desk Study has provided a useful background to the known archaeology of the area, demonstrating that evidence for medieval and later activity exists within the Study Area and its immediate environs. However, it has also highlighted the absence of any previous fieldwork or systematic survey of the archaeological and historical resources of this part of the north Kent marshes and this is reflected in the lack of detailed knowledge available for the area, and the apparent lack of earlier archaeological sites.

4.2 Further potential resources for the Desk Study

In view of the extent of the reclamation and building of sea defences identified in the Desk Study it is likely that further relevant documentary information may exist. The returns of the Commissioners for Sewers held at the Public Record Office in Kew are the primary source of information about sea defences (Riden 1987).

4.3 Comparable case studies

Desk Studies for comparable projects are not available at present. However, the potential of marsh and moorland and estuarine landscapes to preserve abundant and well preserved archaeological remains has been demonstrated by systematic fieldwork in areas such as the Somerset Level (Coles and Coles 1986) and the Hullbridge Survey, Essex (Wilkinson 1989). Intensive assessment of the Gwent approaches for the Second Severn Crossing using invasive fieldwork techniques have comparable results (Bell *et al.* 1990).

Archaeological techniques in these environments are developing rapidly and attention may be drawn to two edited volumes on *The exploitation of Wetland* (Murphy and French 1988) and *The wetland revolution in prehistory* (Coles 1992), and the *Newsletter of the Wetland Archaeological Research Project* which serves as a trend setter for work in low-lying and potentially waterlogged environments.

4.4 Results

The Desk Study has highlighted the presence of fossilised medieval and post-medieval landscapes surviving over much of the Study Area.

Earthworks relating to medieval and post-medieval salt-production, land reclamation and agriculture survive above the surface of the marsh. These include salt-working mounds, marsh counter walls and occasional pockets of ridge and furrow cultivation strips. Four groups of salt-working mounds were identified within the Study Area while many more occur within its immediate vicinity.

The earliest sea defences in the area are of 13th century AD date, built in response to the threat of inundation from the sea as a result of worsening climatic conditions between the late 11th and mid 13th centuries AD although the basis of the present system dates from c.AD 1570-1630 when major restructuring was undertaken. Despite being much repaired and up-graded, these medieval and post-medieval sea defences continue to play

an important role in the preservation of this marshland environment, only minor changes in their position are apparent between the earliest cartographic surveys and the most recent Ordnance Survey maps of the area.

Two areas of ridge and furrow were identified slightly outside the boundaries of the Study Area, and within the Area itself, the Desk Study has highlighted the stability of pasture as the predominant land-use since the Middle Ages. The dominance of pasture is indicated by the Tithe maps and Awards of the early 1840s while the use of this pasture specifically for the grazing of sheep is evidenced by the number of sheepfolds recorded on the first series Ordnance Survey maps, five occurring within the Study Area alone. However, the importance of sheep in the economy of the area clearly dates back to the medieval period and perhaps beyond, the Domesday survey of 1086 recording the existence of sufficient pasture for 200 sheep at Higham and for 100 at Cliffe (Morris 1983), and is further enshrined in the name 'Sheppy' itself. The potential of Queenborough has been summarised above in Section 1.2.

4.5 Archaeological potential of the area

No indication of human exploitation of the landscape of the study area pre-dating the Middle Ages was encountered during the Desk Study. It is likely, however, that this is a result of the low level of archaeological fieldwork undertaken in the area rather than a true reflection of the level of past activity within the area. Comparison with a broader zone around the Study Area for which better archaeological data is available (as well as similar areas further afield), indicates that the landscape of the study area has much greater real or potential archaeological significance than is implied by the Desk Study.

The juxtaposition of five different habitat types - rivers, mudflats, salt-marsh, fresh water marsh and higher ground above the flood level - which typify this area of the north Kent marshes must have provided a wide range of animal and plant resources making the area attractive to human exploitation since earliest prehistoric times. Mineral resources available in the area (flint, chalk, iron pyrites, brickearth, clay and salt) which were commercially exploited from the 17th AD century onwards, could have provided basic subsistence needs from much earlier periods, while islands of higher ground, such as Barrows Hill and Furze Hill within the Study Area and Rushenden Hill and Doos Hill just outside, may have provided foci for settlement within the area. The background presented in Section 1.3 above makes it likely that there is the potential for the discovery of evidence for periods up to the post-medieval within the Study Area.

The Roman period must be considered as having a high potential. Given the close proximity of the Roman industrial activities on the Upchurch and Lower Halstow marshes to the west of the Study Area, there must also be significant potential for considerable Romano-British activity within the Study Area.

Another potential archaeological resource of the study area is evidence, in the form of various water-front facilities and even the vessels themselves, relating to the use of the waterways in the area by local and long-distance shipping. The use of the waterways for transport is likely to have been important throughout prehistory and indeed a dug-out

boat from Murston may be of Bronze Age date. Their importance is likely to have increased from the late Iron Age/early Roman period onwards, providing safe, sheltered, navigable routes to the major consumer and redistribution centre of Roman London, not only for local shipping but also for that between continental Europe (Milne 1985).

The preservation of the medieval/post-medieval landscape on the Queenborough/Iwade marshes, resulting from the continued reclamation and consolidation of the marshland environment provides a direct contrast to the situation on the Upchurch/Lower Halstow marshes where continued erosion has exposed much of the Roman landscape. However, there is considerable evidence from the surrounding area to indicate the high probability that archaeological remains, predating the Middle Ages, survive in the study area, buried within or beneath the alluvium of the marsh. In such a situation, surviving archaeological deposits would preserve a wide range of organic materials, such as wood, leather, textiles etc, as well as palaeoenvironmental indicators, that do not survive under normal (dryland) conditions. This not only adds to the archaeological significance/importance of the deposits but also increases their vulnerability to any changes in the hydrology of the area.

The survival and condition of the medieval and post-medieval landscape as recorded is good and the associated and widespread evidence enhances its group value. This is particularly the case for the associated groups of post-medieval, and possibly medieval, salterns (IQ 11 and 19; Rank B) which contribute to an industrial landscape of which the brickworks (IQ 7; Rank B) forms a part (Blair and Ramsay 1991; Crossley 1990). The archaeological landscape itself has not been ranked. At present this significant resource is not fragile or vulnerable and this protects any earlier, and more fragile, deposits underlying it.

4.6 Management of the resource

At present the current land use of the Study Area is sympathetic to the archaeological resource. There is little ground disturbance other than in the periodic cleaning of ditches and from animal scrapes. The high water table will maintain any anaerobic environments and thus well preserved archaeological material. Desiccation and compaction of the resource are not desirable.

4.7 Stage 2 preliminary field evaluation

The results of the desk study have indicated the potential for archaeological activity within the Study Area and has highlighted the fact that archaeological potential cannot be discounted even in areas where such activity is presently not known/represented. The Stage 2 Preliminary Field Evaluation should have two main aims:

- To define more precisely the character, extent and date of the sites which are already represented in some form in the archaeological record
- To identify, define and evaluate areas of archaeological potential where further field investigations may be appropriate.

4.8 An outline strategy for the Stage 2 preliminary field evaluation

As specified in Wessex Archaeology's Method Statement (Ref. T1325) this will consist of Phase 1: a rapid field scan and Phase 2: a 'gridded field walking and artefact collection....of ploughed fields and other suitable areas. Where potential sites are identified, recommendations for a more intensive level of fieldwalking should be presented in the report'.

4.8.1 Phase 1: Rapid field scan

The Desk Study will be augmented by a rapid field scan. This will be achieved by a rapid walk across each field within the Study Area, subject to agreement over access. This survey will be accompanied by limited hand-augering (of no greater than 50 mm diameter). The scan will be directed towards:

- producing a simplified record of present field conditions (topography, land use, standing buildings, nature of field boundaries etc)
- identifying earthwork or other features within the study area previously unrecorded
- identifying surface features or earthworks associated with archaeological features recorded during the documentary search
- scanning arable plots for soil changes or variations that may result from anthropogenic activity
- scanning of arable plots for the distribution of artefact material. Presence, absence, and extent of material will be recorded but none will be collected. This scan will provide the basis for determining the precise sampling strategy for selected areas proposed in the Phase 2 works (see below)
- identifying and recording likely soil depths and subsoil conditions through limited augering. This will assist in identifying the presence/absence of alluvium/intertidal silts that may seal archaeological deposits and therefore detect areas where subsequent fieldwalking results, as part of the Phase 2 works, may be unrepresentative of buried archaeological deposits

4.8.2 Phase 2: Fieldwalking of cultivated areas

The proposed method of fieldwalking, subject to field conditions, will be as follows:

A line-walking system will be used, based on a 25 m grid aligned on the Ordnance Survey National Grid, ie 16 collection units per hectare. Runs will be walked north-south. The survey will be recorded using the standard Wessex Archaeology field and hectare record sheets. These record details of soil type, topography, field conditions, weather, light and object visibility at the time of the survey.

The strategy for artefact collection from the fieldwalking will partly be dependent on the results of the field scan (see Phase 1 works). At this stage, it is proposed that *all* artefacts

will be collected, except for material undoubtedly of modern date, which will be noted in the field but will not be retained. The retention and recording of other material will be dependent on the results of the field scan. For example if the scan should identify a dense scatter of building material where total collection may be inappropriate, the extent of the scatter could be recorded and a representative sample only of the material retained.

On completion of the fieldwalking the artefacts will be cleaned, recorded, identified, scanned by a finds specialist and catalogued by collection unit. Distributions by material category or type will be plotted as appropriate and these distributions may be computer generated. These distributions, the location of the fieldwalking grid and the location of significant artefact clusters will be marked on 1:2,500 plans.

4.8.3 Other methods

Although not considered necessary at present, remote sensing techniques may be an appropriate non-invasive method (Donoghue 1989) of assessing the archaeological potential of the route options when they are defined. Despite the environmental sensitivity of the Study Area it is considered unavoidable that some invasive evaluation techniques will ultimately be required.

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Journals consulted

The following journals were consulted to an end date of 1970. All earlier relevant material will have been incorporated in the County SMR and in Leach 1982.

- *Archaeologia Cantia*
- *Kent Archaeological Review*

APPENDIX 1

1 Aerial Photograph Search: Sources Consulted

The photographs listed mostly refer to the collections held at the National Library of Air Photographs, Swindon although those directly supplied by Arup are also listed. The majority of the air photographs covering this area are vertical views taken as survey data for a variety of reasons although five sets of specialist, oblique views are included in the collections of the National Library. In general, the quality of the air photographic cover for the area is very high.

2 Specialist, oblique views:

NGR Index No.	Accession No.	Frame	Date Flown
TQ 89 66 /1	NMR 810	110-112	02.05.75
TQ 89 66 /2	NMR 1257	71-75	17.07.78
TQ 90 69 /2	NMR 1522	327-328	09.05.79
TQ 94 69 /1	KWG 9792	ORACLEF6	01.01.65
TQ 94 69 /2	KWG 9792	ORACLEF7	01.01.65

3 Vertical aerial photographs held by the National Library of Air Photographs:

Library Number	Sortie Number	Date	Start Frame	End Frame
-	0566228	20.08.66	392	386
-	0566228	20.08.66	407	409
1151	540/458	17.04.51	3087	3095
1151	540/458	17.04.51	3109	3117
1151	540/458	17.04.51	4069	4076
1151	540/458	17.04.51	4110	4118
1151	540/458	17.04.51	4133	4141
1341	58/1016	06.02.53	30	34
1341	58/1016	06.02.53	71	74
1341	58/1016	06.02.53	31	34
1349	58/1026	09.02.53	34	37
1349	58/1026	09.02.53	49	52
1399	540/1071	08.02.53	9	17
1399	540/1071	08.02.53	26	33
1649	58/1779	06.06.55	245	248
1649	58/1779	06.06.55	183	184
1649	58/1779	06.06.55	205	211
1680	540/1699	02.08.55	15	24
1680	540/1699	02.08.55	45	48
1680	540/1699	02.08.55	14	24
1680	540/1699	02.08.55	45	48

6.3 Vertical aerial photographs cont. :

Library Number	Sortie Number	Date	Start Frame	End Frame	
1803	58/2372	03.02.57	227	231	
1803	58/2372	03.02.57	304	308	
1803	58/2372	03.02.57	162	166	
1803	58/2372	03.02.57	227	231	
1820	58/2426	23.04.58	10	14	
1820	58/2426	23.04.58	34	37	
1820	58/2426	23.04.58	52	56	
2082	58/4137	09.02.61	65	67	
2082	58/4137	09.02.61	13	15	
2146	58/4626	16.08.61	1	3	camera 42
2146	58/4626	16.08.61	1	3	camera 43
2146	58/4626	16.08.61	1	3	camera 44
2164	543/2324	22.07.63	74	81	
2164	543/2324	22.07.63	113	120	
2164	543/2324	22.07.63	35	42	
2164	543/2324	22.07.63	74	81	
2164	543/2324	22.07.63	113	120	
2174	58/5921	16.09.63	237	244	
2174	58/5921	16.09.63	238	245	
2406A	HSL/UK/72/85	13.07.72	6403	6406	
2406F	HSL/UK/72/75	19.07.72	4529	4532	
353	106G/UK/1444	01.05.46	3137	3147	
353	106G/UK/1444	01.05.46	4056	4064	
353	106G/UK/1444	01.05.46	4143	4151	
353	106G/UK/1444	01.05.46	4192	4200	
3950	82/1004	31.08.54	4	10	
604	CPE/UK/2007	16.04.47	3021	3031	
604	CPE/UK/2007	16.04.47	4021	4031	
7043	MAL/73048	05.09.73	1	7	
7043	MAL/73048	05.09.73	40	45	
7043	MAL/73048	05.09.73	61	66	
7607	MAL/79009	14.04.79	69	73	
7607	MAL/79009	14.04.79	76	132	

6.4 Vertical views held by Arup

Reference No	Date Flown	Start Frame	End Frame
Colour :			
GEONEX 21 90	11.07.90	141	143
GEONEX 21 90	11.07.90	235	236
GEONEX 26 90	14.07.90	8	10
Monochrome :			
ADAS 175	03.04.84	133	135
ADAS 175	03.04.84	171	-
ADAS 175	04.04.84	173	174
ADAS 175	03.04.84	221	223
ADAS 186	12.04.84	22	24

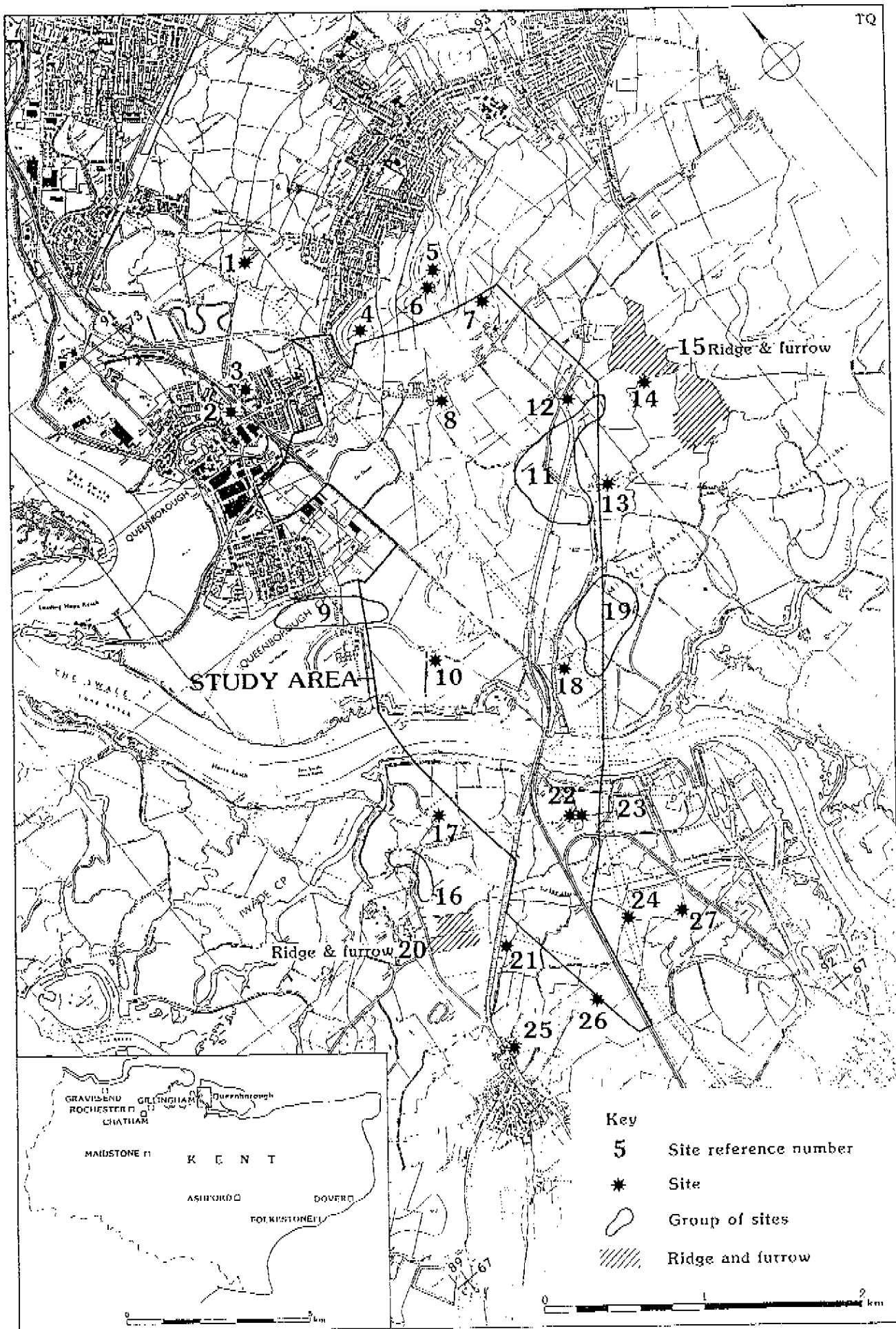


Fig. 1: Site location and the study area showing the collation of known sites and areas of archaeological interest