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Archaeological Field Unit

Fordham Bypass: An Archaeological Desktop Survey.

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October 2000

Cambridgeshire County Council

Report No. A165

Commissioned by W.S. Atkins Consultants Ltd.

Fordham Bypass: An Archaeological Desktop Survey

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2000

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SUMMARY

This study attempts to define the archaeological potential of land along the route of the proposed A142 Fordham bypass between Tl 612717 and Tl 633669. It also attempts to determine the potential impact of the development proposal upon the archaeological resource and suggest possible mitigation strategies.

The study was commissioned by W.S Atkins Consultant Ltd on behalf of the Cambridgeshire County Council Department of Transport. The study draws together information from existing sources and the results of recent excavation along and near the proposed route.

The proposed route runs approximately 3Km in a north-south direction. The proposed route starts in the north at the Soham roundabout (at the junction of the present A142 and A123) and crosses Cockpen Rd and Station Road. It terminates near Biggen Stud where it rejoins the A142.

Although the line of the proposed route does not directly coincide with any of the known sites it lies within a zone of high archaeological potential. The area is rich in sites from the Neolithic, Bronze Age, Iron Age, Roman and Saxon periods.

There is a strong possibility of locating early Anglo Saxon burials in the northern part of the route since a known cemetery site is located 200m to the east of the proposed route way.

There is a strong possibility of encountering remains of Bronze Age or Iron Age date at the southern end of the route since this lies very close to known cropmarks which are likely to be Bronze Age in date and to excavations of Bronze Age and Iron Age date. Furthermore an Anglo Saxon cemetery at Biggen Stud at the south end of the route indicates there is a strong possibility of encountering further burials within the proposed new road corridor.

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1 INTRODUCTION

This desk based assessment was commissioned by WS Atkins on behalf of Cambridgeshire County Council Department of Transportation in order to identify the archaeological potential of the land along the proposed route of the A142 Fordham Bypass. Additionally the study is intended to assess the possible impact of development.

The proposed route runs approximately 3Km in a north-south direction. The proposed route starts in the north at the Soham roundabout (at the junction of the present A142 and A123) and crosses Cockpen Rd and Station Road and terminates near Biggen Stud where it rejoins the A142.

A desk based assessment was carried out for the route in 1994 (Reynolds, 1994). The current survey includes information not available at that date and is focused on the current proposed route which has changed slightly since 1994.

2 TOPOGRAPHY AND GEOLOGY

The proposed new road corridor is situated along and besides a chalk promontory projecting into the southern fen edge. The underlying geology comprises Lower Chalk, but most of the higher ground has a covering of chalky marl. Along the valley of the Snail there are deposits of sand which are fairly extensive near the village. There are no surviving Flandrian deposits.

The northern part of the bypass cuts through chalky drift and chalk while the present road through Fordham follows a deposit of drift over chalk

The present land use is arable in most parts of the route with pasture close to the A142 at Fordham and some nurseries to the north of the B1102/A142.

3 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

General Background

The proposed new road corridor is situated along and besides a chalk promontory projecting into the southern fen edge. The Fordham area is rich in Bronze Age and Roman remains. The Fenland survey has been responsible for identifying a large number of sites close to the proposed new road corridor (Hall 1996).

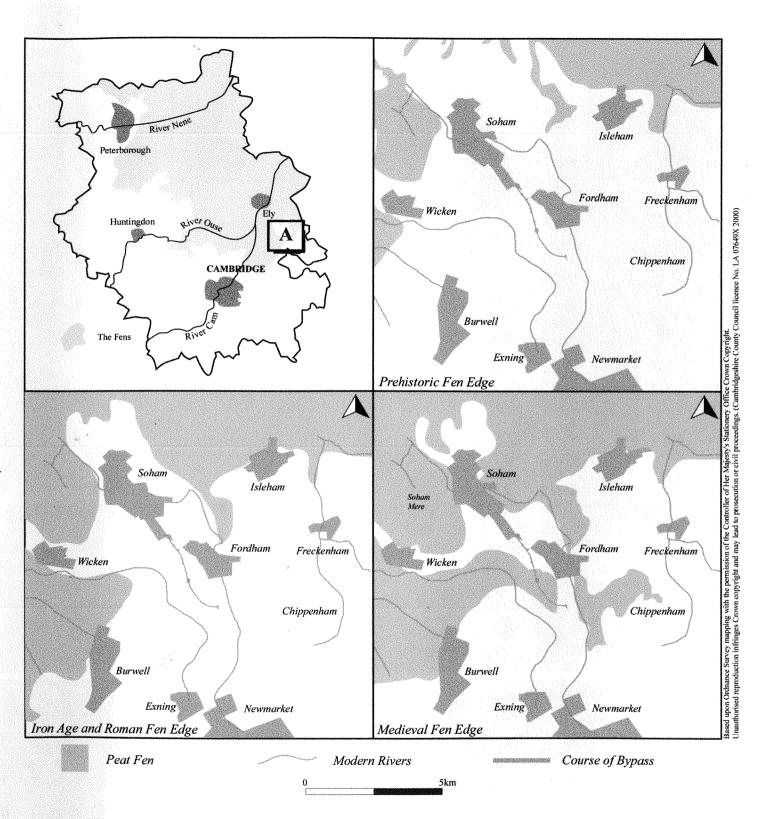


Figure 1 Site Location Plan showing course of bypass and extent of peat fen by period

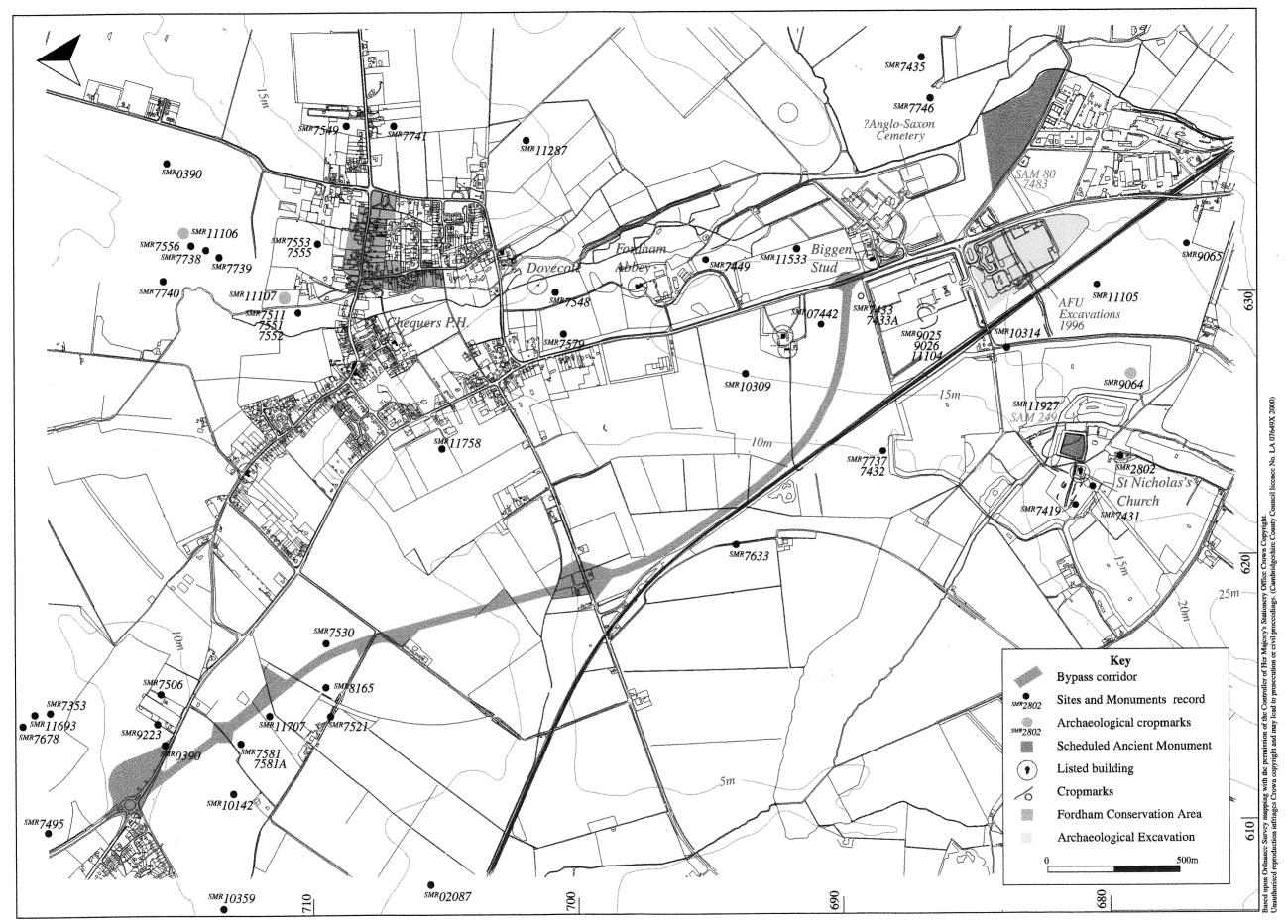


Figure 2 Location map showing course of bypass and sites of historical and archaeological interest

Mesolithic

Evidence of Mesolithic occupation is present in the form of mesolithic blades discovered across the Fordham landscape (SMR No 07433a, and 07511). Mesolithic blades (SMR 07433a) were found close to the proposed new road corridor at its southern end and therefore there is a moderate possibility that finds relating to this period will be found within the proposed new road corridor.

Neolithic

Neolithic evidence is dominated by the presence of a number of spot finds of polished stone axes. The known finds closest to the proposed new road are approximately 300 metres to the east of the proposed route at Lark Hill Farm where there is a concentration of Neolithic finds (SMR01228, SMR08165 and SMR7530). In the southern part of the development area, around 800m to the west of the proposed Biggen Stud roundabout a Neolithic polished stone axe (SMR7737) was discovered. Around 1km to the east of the proposed route there is a cluster of neolithic finds (SMR7553 and SMR1107).

Bronze Age

Bronze Age remains are numerous close to the proposed new road. Approximately 300 m to the west of the proposed Biggen stud farm roundabout, two ring ditches are known from cropmarks which are probably ploughed out remains of Bronze Age burial mounds (SMR07433 and SMR09025). A late Bronze Age spearhead (SMR7432) was discovered to the west of these ring ditches in the southern side of the development area. Furthermore the aerial photographic assessment revealed part of a possible ring ditch at TL626699 (Palmer 2000, appendix I).

Also to the south of the proposed Biggen Stud roundabout evaluation and excavation undertaken at Fordham, Landwade Road TL631683 in 1996 (Connor, 1996) revealed late Bronze Age enclosures and cremations. The pottery recovered from the enclosure ditches dates from the Middle to Late Bronze Age.

From an area on the west side of the river Snail, south of Biggen Stud Farm Bronze Age artefacts have been recovered. This find has not yet been recorded on the SMR.

Approximately 2 miles to the north east of the subject site is an earth work barrow. The barrow site (SAM 258) lies undisturbed in a pasture field and is 1.5m high and 22m in diameter.

An unprovenanced Beaker burial was found near or at Fordham in about 1905, it was an inhumation accompanied by a handled vessel (Piggot1935, Clarke 1970).

Iron Age

Three early Iron Age burials (SMR7548) were discovered to the south east of Fordham village in 1937. They were inhumations associated with pottery which had finger tipped decoration (Salzman, 1938).

Evaluation and excavation undertaken at Fordham, Landwade Road TL 631683 in 1996 revealed an Early Iron Age settlement including a round house, a number of four and six post stuctures and pits containing 'placed' deposits of pottery and animal bones.

Around 700m to the south of Soham roundabout an Iron Age fibula (SMR11707) dating from 400 BC was discovered. This find is located very close to the proposed route of the new road.

Roman

The Roman period is particularly well represented in the Fordham area. There are a number of chance finds of metal work and Roman coins (SMR10142 and SMR7581) which lie very close to the proposed route of the new road at its north end. Villa buildings are known on either side of the development corridor, on the western side at Block Farm (SMR02087) (Malim 1990) and to the east lies Biggen Farm (SAM 80). At the Biggen Farm villa painted plaster, hypocaust tile fragments and a quantity of late Roman pottery was discovered in 1971. At Block farm a scatter of flint blocks with attached mortar, tile and tesserae (mosaic tiles) were present. Furthermore low earthworks were reported when this site was first discovered.

Anglo-Saxon

Evidence for use of the landscape in Anglo-Saxon times is provided by two cemeteries, one close to the north end of the proposed route and the other close to the south end of the proposed route. SMR07506, (TL61487159) was excavated in 1931 (Lethbridge 1931). This site is located close to the proposed route approximately 200m south west of the Soham roundabout. Lethbridge discovered 23 inhumations and 2 cremations of the pagan Anglo-Saxon period. When these burials were plotted it was found that the outer burials all lay on the circumference of a circle, and as the parish boundary passes by, it is suggested that the burials were made in a low barrow. The burials are unusual for the area, only one man had weapons (he had a spear and an adze or spud). Another burial was associated with tools rather than weapons he had a whetstone and a small rivet hammer. The two cremations were each placed in a pot by the side of an inhumation suggesting some relationship between the two. All heads were to the WSW, nine graves were unfurnished including 7 of the nine children's graves. Lethbridge dates one grave to the mid 6th century AD and another to the 7th century AD.

The evidence for a second cemetery located at Biggen stud is from metal detected finds from the site. Unfortunately at the time of development

archaeologists were refused permission to inspect the site and so the interpretation is unconfirmed.

At Fordham Hillside Meadows (Tl 63207070) excavation revealed a Saxon sunken featured building with loom weights, a human burial ,a series of boundary ditches and both earth fast post and timber plate abased structures. (PCAS 1998).

Place name evidence records a reference to Fordham in the AngloSaxon Chronicle. The name means a settlement by the ford (Mawer and Stenton 1926).

Medieval

Fordham Abbey (SMR7449) or the Gilbertine priory lies approximately 600 metres to the north of the proposed Biggen farm roundabout. This priory was dedicated to St Peter and Mary Magdelene and was founded by the canons of the Order of Sempringham immediately before 1227, when the liberties of the house were confirmed by Henry III. The rural dean and a number of local benefactors provided the buildings and a small endowment of land in Fordham. By 1279 the prior held the original endowment of a messuage (house and associated property), a watermill and 14 acres of arable land. The tithes from a further 185 acres of arable and 5 acres of meadow had been given to be used feed and clothe 14 poor people in the hospital.

The house was never very large and when the order was dissolved in 1538 there were only the prior and 2 other canons in residence.

None of the Priory buildings have survived and the present house on the site dates from 1710. Slight traces of the levelled pond survive.

Medieval activity is known in the area from extensions of the settlements at Soham and Fordham and also from the shrunken medieval settlement at Landwade.

The remains of Landwade comprise the church of St Nicholas (SMR07431), a moated site (SMR1192) and earthworks (SMR07419). The earthworks (SMR07419) may represent a deserted medieval village. Landwade is first mentioned in 1060 AD although it is not recorded in Domesday. In 1279 there were 10 households plus the manor house. In 1327 they had gone up to 15 but in 1674 AD the village was abandoned. Traces of the deserted village can be seen to the North and West of St Nicholas church.

The church of St Nicholas (SMR07431) is located near the moat of the former hall. The church was built in the 15th century for Sir Walter Cotton, it consists of transept and chancel with a low west tower.

The moated site of old Landwade (SAM 249, SMR1192, TL 624682) which stands to the north of the parish church is one of the largest and best preserved sites of its type in the county. The ground slopes gentle from South to North

and the nearly square enclosed area of 1.5 acres has been raised slightly at the north end to make it level. The moat varies in width from 27ft to 40ft at water level. The original entrance appears to have been by a bridge crossing the middle of the southern arm of the moat.

Medieval agricultural activities are still visible as furlong boundaries (SMR10309) in the southern part of the road corridor, and the remains of medieval agriculture can be seen on aerial photographs (Palmer 2000, appendix I).

Post Medieval

Post-medieval and more recent activity is clear in the landscape. Notable are two windmills (SMR07495 and SMR07521). Down field windmill of a smock type was first erected in 1727 raised on a brick base and in 1860 was rebuilt as a tower mill. A windmill was depicted on a 1712 tithe map located near the southern part of the proposed new road corridor.

To the west of the proposed route is part of a railway track (SMR07633) which was part of the course of the former Great Eastern Railway branch from Barnwell Junction (Cambridge to Mildenhall). This route was 19 miles long, it was opened in 1884 and closed in 1964.

The present house at Fordham Abbey dates from 1790 and consists of red brick and a semi circular porch in the Adam style at the front of the building. The windows are of a venetian type and the staircase inside has closely set finely twisted balustrades..

A large impressive brick water tower with an elaborate roof is located close to the proposed route of the new road at Tl 615716.

4 HISTORIC MAPS

An examination of the Ordnance Survey map of 1886 and 1903 clearly shows the area currently under investigation to have been constantly in use as pasture/arable. The cartographic evidence shows that there was a railway station at Fordham with a goods yard.

5 THE POTENTIAL SURVIVAL OF ARCHAEOLOGICAL DEPOSITS

The route passes through land which is arable and therefore disturbance will have been restricted to the depth of ploughing in most areas.

Despite the centre of the development area being masked by peat the preservation of deposits should be good.

6 THE POTENTIAL IMPACT OF THE PROPOSED DEVELOPMENT

The proposed corridor is approximately 35 metres wide and over 3km long, with wider areas of impact at road junctions. The majority of the proposed route is through arable and pasture and has not been subject to modern disturbance. Any intrusion below the level of the topsoil has the potential to destroy archaeological deposits in all areas.

Although the road itself may be raised above the surrounding ground level any landscaping would have an impact on any underlying archaeology. Any alteration of the ground level due to extraction or abstraction will potentially result in a change in the water table. A changing water table can be particularly damaging to any sensitive archaeological remains such as may be found where waterlogging occurs.

7 THE ARCHAEOLOGICAL POTENTIAL OF THE STUDY AREA

Because the proposed route is close to a Fen edge environment there is a high probability of encountering Neolithic and Bronze age remains, the probability is especially high in the southern end of the proposed route of the new road where finds of this date are already known. The nature of the cropmarks and finds in the area around the Biggen Stud farm roundabout could indicate that features relating to a ritual or ceremonial landscape may be encountered. The potential for a Bronze Age site in the southern part of the development is further strengthened by the results at Landwade Road which is approximately 600 metres to the south of the proposed route.

Similarly the potential for Iron Age remains in the southern part of the proposed route is high due to its proximity to the known Iron Age settlement at Landwade Road. Stray finds of Iron Age date have also been found close to the north end of the proposed route and may be indicative of an archaeological site of this period.

The quantity and variety of Roman remains from the study area make it almost certain that further finds from the period will be located during ground work. Considering that there are a number of villas within the vicinity then there is a strong possibility that Roman features may be encountered along the proposed route. Any such features may be part of a villa estate, field systems and possible industrial remains may be encountered.

Anglo-Saxon and medieval periods are fairly well represented in the record for this area and further examples might be uncovered near previous sites and find spots. There is a strong possibility of locating early Anglo Saxon burials at the northern and southern ends of the development area since a known cemetery site is located 200 metres to the south east of the northern end of the proposed route way and a second cemetery is strongly suspected at Biggen Farm Stud at the south end of the proposed route..

Although there is no evidence to suggest that waterlogged remains are present along the route, the possibility that they may be encountered at the bottom of deep features should not be discounted.

Most of the known archaeological features and finds are clustered towards the south and north ends of the proposed route, the central section is largely devoid of known finds. It should be noted, however, that this lack of archaeological finds may be due to local geological conditions acting to obscure evidence of previous activity and so should not be taken as firm evidence for the absence of archaeology along this section of the proposed route.

8 RECOMMENDATIONS

Geophysics

Geophysics is unlikely to be helpful in locating areas of archaeology because of the masking effect of the peat.

Field Walking

Much of the proposed route and surrounding areas has already been field walked as part of the Fenland Survey (Hall, 1996). Those areas which were not walked as part of that investigation or that were unsatisfactory at the time should be subject to systematic investigation along the corridor of the proposed road. This technique would be most appropriate for areas under arable cultivation. Field walking should be employed selectively in appropriate areas to inform the targeting of more intrusive methods of investigation such as trial trenching and test pitting. A programme of field walking could commence once crops had been harvested. Although the latter generally implies a late autumn and winter opportunity for field walking, specific crop regimes may affect the timing of such investigations.

Metal Detecting

Metal detecting is a useful technique for revealing sites of particular periods and character, pagan Anglo Saxon cemeteries and Roman sites are particularly susceptible to this technique. It is recommended that a metal detecting survey is carried out to compliment field walking and trial trenching.

Trial trenching and test pitting

Following field walking a programme of linear trenching and test pitting is recommended to characterise and define any areas that have demonstrated archaeological potential. It is recommended that a programme of linear trial trenching is also employed in those areas which do not contain known archaeological remains. This will help to clarify whether archaeological sites are present but have been hidden by factors such as geological conditions. It is suggested that a 2% sample of those areas where sites are known would be reasonable increasing to 5% in areas where other methods of evaluation have proved inconclusive. It may not be necessary to undertake trenching in those areas that can be proved to have been under deep Fen since prehistoric times.

9 CONCLUSIONS

No known archaeological sites of any date are directly affected by the proposed route, however, several known sites and find spots are located within 300 metres of the proposed road corridor.

The area through which the proposed new road will pass has medium to high potential for Neolithic, Bronze Age and Iron Age remains. The proposed route may pass through a prehistoric ritual landscape and later settlement on the Fen edge. The probability of encountering remains of these periods is especially high at the southern end of the road corridor. Field walking has a low to moderate potential to identify sites of these periods, trial trenching has a high potential to identify sites of these periods. Metal detecting surveys have a low potential to identify prehistoric sites except for some types of Bronze Age and Iron Age sites where the potential is high.

There are several known archaeological sites of Roman date close to the route of the proposed new road. There is high potential for Romano-British remains such as early field systems, kilns, agricultural buildings and features associated with one or more villa estates. A Roman villa lies close to the southern end of the proposed route and the potential for finding remains of this period is probably highest in that area. Roman finds have also been discovered close to the northern end of the route and the potential of finding more within the road corridor is moderate. The potential of field walking to identify sites of this period within the road corridor is high unless they have masked by later Fen deposits. The potential of trial trenching to identify sites of this period is very high. Metal detecting surveys have a high potential to identify Roman sites, particularly villa sites and metalworking sites.

The close proximity of a known Anglo-Saxon cemetery to the northern end of the road corridor suggests that there is moderate to high potential for Anglo-Saxon remains within the northern end of the road corridor. Furthermore a strongly suspected cemetery at the southern end of the road corridor indicates the possibility of coming across burials at the southern end of the road corridor. The potential of field walking to identify sites of this period is moderate to high except where later Fen deposits may be masking them. The potential of trial trenching to identify sites of this period is moderate to high depending on the character of the site. Metal detecting surveys have a high potential to locate pagan Anglo-Saxon cemetery sites.

10 Acknowledgements

The author would like to thank WS Atkins for commissioning this study on behalf of the Cambridge County Council, Dr Tim Reynolds, Senior Archaeologist at the County Sites and Monuments for their assistance. Thanks are also due to Jon Cane for the illustration and Aileen Connor for managing the project.

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Ordnance Survey 6 inch 1886 Sheet xxvi Cambridgeshire County Council

Ordnance Survey 6 inch 1903 Sheet xxvi Cambridgeshire County Council

Appendix I: AERIAL PHOTOGRAPHIC ASSESSMENT by Rog Palmer MA MIFA

SUMMARY

This assessment of aerial photographs examined a 1000m wide corridor along the route of the Fordham bypass in order to identify and accurately map archaeological and natural features.

Two pre-medieval features have been identified within the corridor plus a further two possible features.

Medieval features dominate the visible archaeological content of the area and have been recorded as headlands remaining from former open field cultivation.

Two pipelines have been mapped crossing the corridor.

Cultivation of small fields in the northern part of the corridor has hindered visibility from the air. That and the local soils suggest that there may be more archaeological features remaining than have been identified by this assessment.

Interpretation and mapping was at 1:2500 level.

INTRODUCTION

This assessment of aerial photographs was commissioned to examine a 1000m wide corridor along the route of the Fordham bypass (a sinuous line between TL690716 and TL630690) in order to identify and accurately map archaeological and natural features and thus provide a guide for field evaluation. The level of interpretation and mapping was to be at 1:2500.

ARCHAEOLOGICAL AND NATURAL FEATURES FROM AERIAL PHOTOGRAPHS

In suitable cultivated soils, sub-surface archaeological features – including ditches, banks, pits, walls or foundations – may be recorded from the air in different ways in different seasons. In spring and summer these may show through their effect on crops growing above them. Such indications tend to be at their most visible in ripe cereal crops, in June or July in this part of Britain, although their appearance cannot accurately be predicted and their absence cannot be taken to imply evidence of archaeological absence. In winter months, when the soil is bare or crop cover is thin (when viewed from above), features may show by virtue of their different soils. Upstanding remains, which may survive in unploughed grassland, are also best recorded in winter months when vegetation is sparse and the low angle of the sun helps pick out slight differences of height and slope.

Natural faults and deposits can cause similar differences in crop growth and may also appear as colour differences in bare winter soils. Soils in the Fordham area show two main natural characteristics: one being the 'stripes' resulting from periglacial activity, the other being the sinuous ridges which are the dominant features on many aerial photographs. Confusion with archaeological features may arise at times when some of the ridges affect the growth of crops and are visible at the same times as archaeological features. More usually they are seen as light-toned or coloured bands in bare soils when they bear little resemblance to the range of known archaeological features.

The most immediately informative aerial photographs of archaeological subjects tend to be those resulting from specialist reconnaissance. This activity is usually undertaken by an experienced archaeological observer who will fly at seasons and times of day when optimum results are expected. Oblique photographs, taken using a hand-held camera, are the usual product of such investigation. Although oblique photographs are able to provide a very detailed view, they are biased in providing a

record that is mainly of features noticed by the observer, understood, and thought to be of archaeological relevance. To be able to map accurately from these photographs it is necessary that they have been taken from a sufficient height to include surrounding control information.

Vertical photographs cover the whole of Britain and can provide scenes on a series of dates between (usually) 1946-7 and the present. Unfortunately these vertical surveys are not necessarily flown at times of year that are best to record the crop and soil responses that may be seen above sub-surface features. Vertical photographs are taken by a camera fixed inside an aircraft and adjusted to take a series of overlapping views that can be examined stereoscopically. They are often of relatively small scale and their interpretation requires higher perceptive powers and a more cautious approach than that necessary for examination of obliques. Use of these small-scale images can also lead to errors of location and size when they are rectified or re-scaled to match a larger map scale.

PHOTO INTERPRETATION AND MAPPING

Photographs examined

Cover searches were obtained from the Cambridge University Collection of Aerial Photographs (CUCAP) and the National Monuments Record: Air Photographs (NMRAP), Swindon. Shortness of time for this assessment did not allow consultation of photographs at the Cambridgeshire Record Office which is known to hold at least two sets of verticals (taken in 1949 and 1962) which are not duplicated elsewhere. Photographs examined included those resulting from specialist archaeological reconnaissance and routine vertical surveys.

Photographs consulted are listed in the Appendix to this report.

Base maps

Digital Ordnance Survey tiles from 1:2500 surveys were provided by the client.

Photo interpretation and mapping

All photographs were examined by eye and under slight (1.5x) magnification, viewing them as stereoscopic pairs when possible. Interpretations, made at 1:2500 level, were marked on overlays to individual prints following procedures described by Palmer and Cox (1993). These overlays were then scanned and transformed to match extracts of the digital data using Irwin Scollar's AirPhoto program (Scollar 1998). The transformed files were set as a background layers in AutoCAD Map, where features were overdrawn using standard conventions. Layers from this final drawing have been used to prepare the reduced figure in this report. This has been supplied in digital form to the client.

Accuracy

AirPhoto computes values for mismatches of control points on the photograph and map. In all transformations prepared for this assessment the mean mismatches were less than ± 1.00 m. These mismatches can be less than the survey accuracy of the base maps themselves and users should be aware of the published figures for the accuracy of large scale maps and thus the need to relate these mismatches to the Expected Accuracy of the Ordnance Survey maps from which control information was taken (OS 2000).

COMMENTARY

Soils

The Soil Survey of England and Wales (SSEW 1983) shows the underlying geology to be chalk (soil association 342d) which is also the surface soil in most of the southern part of the Assessment Area. The northern part of the bypass cuts through chalky drift and chalk (soil association 511e) while the present road through Fordham follows a deposit of drift over chalk. Given appropriate cultivation and

farming, all soils would be expected to show sub-surface features either as tonal/colour differences in bare soil or through their effect on crop growth.

Archaeological features

Some fields in the extreme southern part of the Assessment Area were mapped in an earlier assessment (Palmer with Cox 1996) and have since been examined in part in the field. The parish of Fordham was discussed following the recent field survey as part of the Fenland Project (Hall 1996, 89-94). Two bronze age flint scatters (Sites 1 and 2: *ibid*, Fig 45) are relevant to this assessment.

There are two definite pre-medieval archaeological features within the examined corridor. At TL628683 are parts of three sides of what may be a square or rectangular ditched enclosure. This site may be sufficiently far from the actual bypass route to remain unaffected by construction. The ring ditch at TL629689 is in the vicinity of the southern end of the bypass.

Two 'possible archaeological' sites have been mapped. An arc of what may be a ring ditch was identified on one set of vertical photographs (taken in the dry summer of 1976) at TL625699. It was recorded as a light-toned line in ripe cereal which is one of the usual indicators of sub-surface features at that stage of crop maturity. As such it is acceptable as a ditched feature and a number of explanations may be offered for its lack of visibility on other photographs. The second possible feature, an apparently double ditched circular enclosure at TL629687, is almost certainly created by soil ridges. Its similarity to other circular ridges (for example to the north at TL628689) is closer than is the likelihood of it being of archaeological origin. This feature is now under, or destroyed by, recent development.

The predominant archaeological features in the Assessment Area are the traces of medieval open fields. The are recorded mostly as headlands – now ploughed virtually level – with one small area of probable ridge and furrow mapped at TL622692. This ridge and furrow and the headland mapped on the west side of the railway line (TL619694) are suspect as both are in an area shown by Hall (1996, Fig 46) to be medieval fen.

Non-archaeological features

Soil ridges have previously been mentioned and have been mapped in many fields in the southern part of the Assessment Area. Others appear on some air photographs as diffuse and not easily definable spreads of lighter tone and so suggest that the mapped ridges are an indicator of surface conditions rather than an accurate record of what will be found after topsoil is removed. The diffuse ridges may be those that have been most levelled by cultivation.

Two pipelines cross the southern part of the corridor on approximately east-to-west alignments.

A small number of recently removed field boundaries have been mapped in the southern part of the Assessment Area.

Land use

Almost all fields within the bypass corridor have been in arable use on all dates of photography and have therefore been in conditions from which aerial observation may benefit. However, the northern two-thirds of the area (approximately north of the TL695 northing) has been managed as small holdings or in small field units of unidentified crop types (many of which appear to adhere to the medieval pattern) which has handicapped their visibility from the air and hinders reliable interpretation. By the 1980s many had been merged to become larger fields and it was in those, in 1982, that the soil ridges were recorded. On most other dates, the fields in this area looked very uniform and showed no evidence of sub-surface irregularities. Headlands showed a slightly light-toned bands and were perceived as higher ridges under stereoscopic examination.

It should be mentioned is that the soil ridges in the vicinity of the definite ring ditch (area TL628689) rarely showed on dates when the archaeological feature was also visible. It cannot therefore be concluded that in fields which have shown soil ridges there are no archaeological features – because theses may require different conditions to affect crops and become visible. A converse, and more cautious, approach suggests that there may be more archaeological features present in the area than have been recorded from the air.

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- SSEW, 1983. Soils of England and Wales: sheet 4: Eastern England (1:250,000). Soil Survey of England and Wales, Harpenden.

Appendix II: AERIAL PHOTOGRAPHS EXAMINED

Source: Cambridge University Collection of Aerial Photographs

Oblique photographs

TL629689	YW 25 BG5 1-2	23 June 1959 22 July 1971	
TL630687	BPX 83-4	19 June 1973	
Vertical photo	graphs		
RC8-D 221-2		14 May 1968	1:15000
RC8-M 201		4 July 1969	1:10500
RC8-AJ 87-8		1 May 1973	1:5000
RC8-EA 83-5		23 March 1982	1:10000
RC8-EA 131-3		23 March 1982	1:10000
RC8-EA 164-6		23 March 1982	1:10000
RC8-EG 243-5		5 April 1982	1:10000
RC8-HW 81-2		10 July 1985	1:10000
RC8-HW 127-	9	10 July 1985	1:10000
RC8-HW 139-	41	10 July 1985	1:10000
RC8-HW 152-	4	10 July 1985	1:10000
RC8-Kn BP 50), 52, 98	30 August 1988	1:10000
RC8-Kn BO 40), 42, 62	30 August 1988	1:10000

Source: National Monuments Record: Air Photographs (cover search 198610001)

Specialist collection

TL6270/1/335-336	7 July 1981
TL6369/1/340-341	7 July 1981
TL6269/1-3	16 July 1996

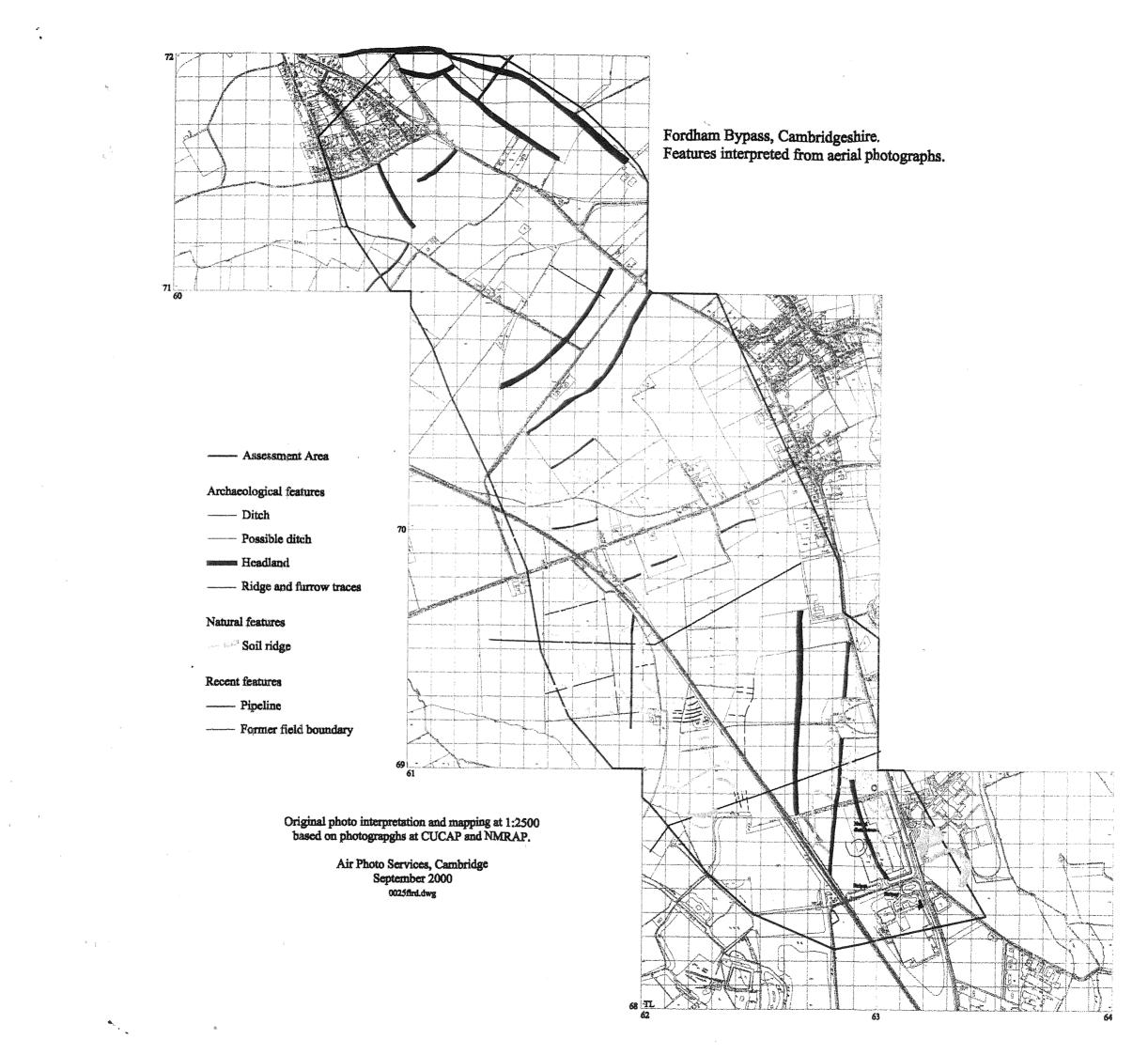
Vertical collection

106G/LA/124: 2013-2015	9 February 1945	1:9000
106G/LA/124: 2055-2056	9 February 1945	1:9000
106G/UK/1557: 1164-1165	7 June 1946	1:9800
106G/UK/1557: 3317-3318	7 June 1946	1:9800
106G/UK/1557: 4320-4321	7 June 1946	1:9800
106G/UK/1557: 6329-6332	7 June 1946	1:9800
106G/UK/1589: 2074-2077	21 June 7946	1:10000
106G/UK/1718: 3003-3004	6 September 1946	1:9800
F22.58/1968: 243-246	23 March 1956	1:10000
F21.58/1971: 222-224	27 March 1956	1:10000
F22.58/1971: 252-255	27 March 1956	1:10000
F22.58/1971: 370-371	27 March 1956	1:10000
F22.82/1428: 238-241	23 May 1956	1:10000
F22.82/1428: 254-256	23 May 1956	1:10000
F22.543/T/899: 63-69	5 May 1960	1:10002
2F21.543/2409: 111-114	16 September 1963	1:10000
2F21.543/2409: 210-212	16 September 1963	1:10000
2F22.543/2409: 110-111	16 September 1963	1:10000
2F22.543/2409: 189-192	16 September 1963	1:10000
OS/67050: 144-145	24 April 1967	1:7500
OS/67050: 181-184	24 April 1967	1:7500
OS/67050: 197-198	24 April 1967	1:7500
MAL/68061: 117-119	12 August 1968	1:10000
MAL/68061: 136-138	12 August 1968	1:10000

MAL/69055: 141-142	9 June 1969	1:10500
MAL/69055; 162-164	9 June 1969	1:10500
MAL/69055: 189-191	9 June 1969	1:10500
MAL/69071: 56-57	22 June 1969	1:10500
OS/71174: 91-92	4 May 1971	1:7200
OS/74095: 109-111	30 May 1974	1:7500
OS/74095: 140-143	30 May 1974	1:7500
OS/74095: 150-153	30 May 1974	1:7500
MAL/76042: 34-35	10 June 1976	1:10000
MAL/76042: 38-40	10 June 1976	1:10000
OS/82114: 6-8	13 May 1982	1:10000

Most informative photographs

BGS 2 BPX 83 RC8-AJ 88 RC8-EA 84, 132, 165 RC8-EG 244 RC8-HW 128, 152 TL6269/1 MAL/76042: 35



Appendix III: LIST OF SMR NUMBERS

SMR No	Grid Refs	Description
00390	TL635/716	Bronze Dagger
01228	TL614/710	Neolithic Axe
02087	TL604/706	Roman Villa
02802	TL6236/6799	Landwade Hall, post-medieval and modern house
07419	TL604/706	DMV
07431	TL623/681	St Nicholas Church
07432	TL624/714	Bronze Age Spearhead
07433	TL629/689	Ring ditch
07433a	TL629/714	Mesolithic Blades
07435	TL639/687	Finds scatter. Roman settlement?
07442	TL629/691	Prehistoric flint scatter
07449	TL631/693	Fordham Abbey
07483	TL614/715	Roman Villa (SAM 80)
07495	TL614/715	Post-medieval tower mill
07506	TL614/714	Anglo-Saxon Cemetery
07511	TL629/711	Mesolithic flints
07521	TL611/714	Windmill
07530	TL616/711	Neolithic polished Axe
07548	TL630/700	Neolithic Axe
07549	TL636/709	Iron Age inhumations.
07551	TL630/700	Mesolithic flints
07552	TL630/710	Neolithic axe
07553	TL614/714	Neolithic flints
07555	TL632/710	Neolithic flints
07556	TL632/715	Neolithic Axe
07579	TL628/702	Roman Coins
07581	TL613/713	Roman finds scatter
07581a	TL613/713	Medieval metalwork
07633	TL630/700	Disused Railway track.
07678	TL614/721	Roman Brooch
07737	TL624/689	Neolithic polished axe
07738	TL6324/7144	Finds scatter, medieval
07739	TL631/713	Medieval pottery
07740	TL630/716	Roman pottery
07741	TL636/707	Bronze Age flints
07746	TL6366/6872	Finds scatter. Iron Age settlement
08165	TL615/710	Flint scatter
09025	TL629/689	Ring Ditch
09026	TL630/687	Enclosure
09064	TL627/679	Cropmark. Large circular enclosure and part of an oval.
09065	TL632/677	Cropmark. Recent field boundary (not shown)
09223	TL715/612	Roman Brooch
10142	TL611/713	Roman coins and metalwork
10309	TL627/694	Medieval Furlong
10314	TL628/684	Cropmark Rectangular enclosure
10359	TL602/713	Medieval Furlong
11104	TL620/689	Cropmarks. Recent field boundaries and old stream
11105	TL630/679	Cropmark. Dubious ring-ditch
11106	TL634/714	Cropmark. Recent field boundary
11107	TL630/717	Cropmark. Possible ring-ditch
11287	TL6352/7015	Finds Scatter. Iron Age Settlement
11533	TL6315/6917	Metal Detected Finds Scatter. Roman Settlement.
11693	TL615/721	Stray Find. Roman Finger Ring
11707	TL610/711	Iron Age Fibulae.
11758	TL623/705	Neolithic flints
11759	TL611/703	Neolithic polished axes
11927	TL604/706	Medieval Moat (SAM249)
11/4/	177004/700	MICHICANT MICHE (DUMATA)

'NATA TABLE A142 Fordham Bypass

PART 1		PART 2			PART 3
FEATURE	DESCRITPION	SCALE IT MATTERS	SIGNIFICANCE	RARITY	IMPACT
FORM	Post-Medieval Windmills Medieval Abbey Medieval Moat Medieval furlong Saxon Cemetery Roman Villa Iron Age settlement Bronze Age enclosure & cremations Roman Artefacts Roman Artefacts Scatters Neolithic Flint Scatters	Block Farm Roman Villa (SAM 80) & Landwade Hall Moated Site (SAM 249) - Scheduled Ancient Monuments of National importance. Fordham Abbey, Anglo-Saxon cemetery - Regional importance The importance of any potential archaeological sites in unknown.	Ro Villa & Landwade Hall are Scheduled Ancient Monuments. Fordham Abbey is of regional importance. Saxon cemetery is likely to be of regional importance. Prehistoric sites are likely to be of local importance. The significance of any potential archaeological sites in unknown.	Ro Villa, Abbey, Medieval moated site are all rare but not unique in the vicinity. Saxon burial grounds are quite rare in this vicinity. Prehistoric finds scatters are not uncommon in this part of the country. The rarity of any potential archaeological sites in unknown.	The impact of this scheme on the form of Fordham Abbey will have Neutral effect. The impact of this scheme on the form of Block Farm Ro Villa & Landwade Moat is Neutral. The impact on the form of any potential archaeological site is unknown but likely to be Large-Moderate Adverse within the corridor of the road widening scheme.
SURVIVAL	Windmills – poor Abbey - good Moat-good Saxon Cemetery – good Villa – medium IA settlement – medium BA enclosure & cremations – medium BA Spears – unknown BA Spears – unknown Wheo Flints - unknown Wheo Flints – unknown	Landwade Moat is one of the best preserved sites of this type in the county. Other known sites are of local importance The importance of any potential archaeological sites in unknown.	The Abbey, Moated site, cemetery and Ro Villa are of local and regional importance. The significance of any potential archaeological sites in unknown.	The extent of survival of the Abbey, Villa, Saxon cemetery and medieval moated site is good adding to their rarity value. The rarity of any potential archaeological sites in unknown.	The impact of this scheme on the survival of Fordham Abbey will be Slight Beneficial. The impact of this scheme on the survival of Block Farm Ro Villa & Landwade Moat is Neutral. The impact on the survival of any potential archaeological site is unknown but likely to be Large-Moderate Adverse within the corridor of the road widening scheme.

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PART 1		PART 2			PART3
FEATURE	DESCRITPION	SCALE IT MATTERS	SIGNIFICANCE	RARITY	IMPACT
CONDITION	Windmills – poor derelict state with continued decline Abbey – excellently maintained as a private residence Moat – very good condition, well preserved Furlong – good but plough damage Saxon Cemetery – poor plough damage Villa – poor plough damage Mas excavated, beneath factory BA enclosure & cremations – excavated, beneath factory BA Spears – poor plough damage BA Spears – poor plough damage BA Spears – poor plough damage Neo Flints - poor plough damage Meso Flints - poor plough damage	Fodrham Abbeys excellent state makes the site of regional importance. Other sites are of local importance. The importance of any potential archaeological sites in unknown.	Environment surrounding Fordham Abbey will be improved by the reduction/removal in traffic. The significance of any potential archaeological sites in unknown.	The road widening scheme will have severe negative impact on buried remains in its path. The rarity of any potential archaeological sites in unknown.	The impact of this scheme on the condition of Fordham Abbey will be Slight Beneficial. The impact on the condition of any potential archaeological site is unknown but likely to be Large-Moderate Adverse within the corridor of the road widening scheme.
COMPLEXITY	Windmills – unknown Abbey – very with 13th, 17th & 18th C additions Moat-unknown Furlong – low	Fordham Abbey architectural history is of regional importance. Saxon cemetery is of regional importance.	Fordham Abbey architectural history is of regional importance. Saxon cemetery is of regional importance.	Saxon cemetery finds increases its rarity value. The rarity of any potential archaeological sites	Unknown

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PART 3	IMPACT		The impact on the context of any potential archaeological remains is unknown but likely to be Large-Moderate Adverse within the corridor of the road widening scheme.	Unknown
<u>a</u>	RARITY		Not uncommon to find archaeological posites surviving in this un context. M The rarity of any potential archaeological sites is unknown.	The continuity of Occupation from Mesolithic to Post-Medieval period increases rareness. The rarity of any potential archaeological sites in unknown.
	SIGNIFICANCE	existing sites is unknown The significance of any potential archaeological sites in unknown.	The density of Prehistoric remains in the Fordham area make the sites of regional importance. The significance of any potential archaeological sites is unknown.	The incredibly broad range of potential sites make the area of regional importance. The importance of any potential archaeological sites in unknown.
PART 2	SCALE IT MATTERS	existing sites is unknown The importance of any potential archaeological sites in unknown.	The importance of any potential archaeological sites in unknown.	The incredibly broad range of potential sites make the area of regional importance. The importance of any potential archaeological sites in unknown.
	DESCRITPION	very with unique inhumations • Villa – unknown • IA settlement – moderate • BA enclosure & cremations – moderate • Ro Artefacts – unknown • BA Spears – unknown • Meo Flints – unknown	All features are set within a very rich archaeological landscape, particularly of Prehistoric date	Archaeological remains of post-Medieval, medieval, Anglo-Saxon, Roman, Iron Age, Bronze Age, Neolithic and Mesolithic date are all present
PART 1	FEATURE	COMPLEXITY (cont)	CONTEXT	PERIOD

archaeology, the exact level of this impact cannot be clarified due to the need for further work. The impact on known sites, outside the road corridor, will be neutral-slightly beneficial (Fordham Abbey). Assessment Score: This option (A142 Road Widening Scheme) is likely to have a Moderate/Large adverse affect on potential



Archaeological Field Unit

Fordham Bypass: An Archaeological Desktop Survey.

APPENDIX V FIELDWALKING SURVEY

Cambridgeshire County Council

Report No. A165

Commissioned by W.S. Atkins Consultants Ltd.

APPENDIX V FIELDWALKING SURVEY

INTRODUCTION

A programme of fieldwalking was initiated to investigate the proposed route of the Fordham By-Pass. Only areas suitable for this method of investigation have been selected. Suitable areas include ploughed ground with no growing crops or recently cropped land with a standing crop up to a few centimetres high. Heavily waterlogged soil is not suitable for this method of investigation, nor is land with crops that are too high and dense. Unploughed land such as pasture or set aside, tree plantations and allotments are all unsuitable for fieldwalking. With the exception of those areas unsuitable for this method of investigation the proposed route has been fieldwalked.

Much of the route had previously been walked by Tim Malim (County Farm Survey) and David Hall (Fenland Survey), the areas subject to those investigations are marked on figure A1. The results of those surveys have already been incorporated into the Sites and Monuments Record.

METHODOLOGY

The route of the proposed road corridor was located using a Geographical Positioning System (GPS). A 20m collection grid was marked out along the route of the proposed road corridor on suitable ground. Archaeological finds were collected and their ordnance survey location was marked on the bags at the time of collection using GPS, it was therefore possible to identify and locate potential archaeological sites immediately.

SUMMARY OF RESULTS

Four potential prehistoric sites were identified during fieldwalking, these are identified as FW1, FW2, FW3 and FW4 on figure A1. These comprised concentrations of burnt flint associated with struck flint. One site FW4 was located at the southern end of the proposed route centred on TL562600/269050, and three approximately mid way along the route centred at TL561850/270400 (FW1), TL561800/270200 (FW2) and TL562100269700 (FW3). These burnt flint concentrations may be prehistoric in date and could indicate the presence of prehistoric activity. Worked flints found in association with the burnt flint scatters increase the probability that these represent prehistoric sites. Site FW3 was associated with a slightly raised ridge running north-east to south-west, there were no notable topographical features distinguishing the other sites.

Sites FW1, FW2 and FW3 do not correspond to any known Sites and Monument Record entries, however the southern site (FW4) is close to a complex of cropmarks (SMR9025 and SMR9026) and other prehistoric finds (SMR7433, SMR7433A and SMR7442).

A whetstone and fragments of probable prehistoric pottery were also found in association with sites FW1 and FW2. A few fragments of probable prehistoric pottery were found in association with the southernmost site.

Post-medieval pottery and tile have also been found along the route but are unlikely to indicate archaeological sites, the presence of this material is more likely to be as a result of spreading manure over the fields. A particularly large concentration was found on the field centred on TL619696, but this is likely to be associated with the adjacent railway line.

CONCLUSIONS

Field walking has resulted in the identification of four potential sites, in addition to five already identified by the desk top study these sites are:

Site 1: FW1 (Burnt and worked flint scatter)

Site 2: FW2 (Burnt and worked flint scatter)

Site 3: FW3 (Burnt and worked flint scatter)

Site 4: FW4 (Burnt and worked flint scatter)

Site 5: SMR7433 (ring ditch cropmark and mesolithic flints) and 7442 (prehistoric flint scatter)

Site 6: SMR7530 (Neolithic Axe)

Site 7: SMR 11707 (Iron Age fibula)

Site 8: SMR7581 (scatter of Roman finds and medieval metalwork)

Site 9: SMR0390 (Bronze dagger)

Geophysical Survey may result in the identification of additional sites, once the full scope of the potential sites has been identified it will be necessary to undertake trial trenching in order to define the character and scale of the sites. Trial trenching could also be used to identify sites not found by non-intrusive surveys.

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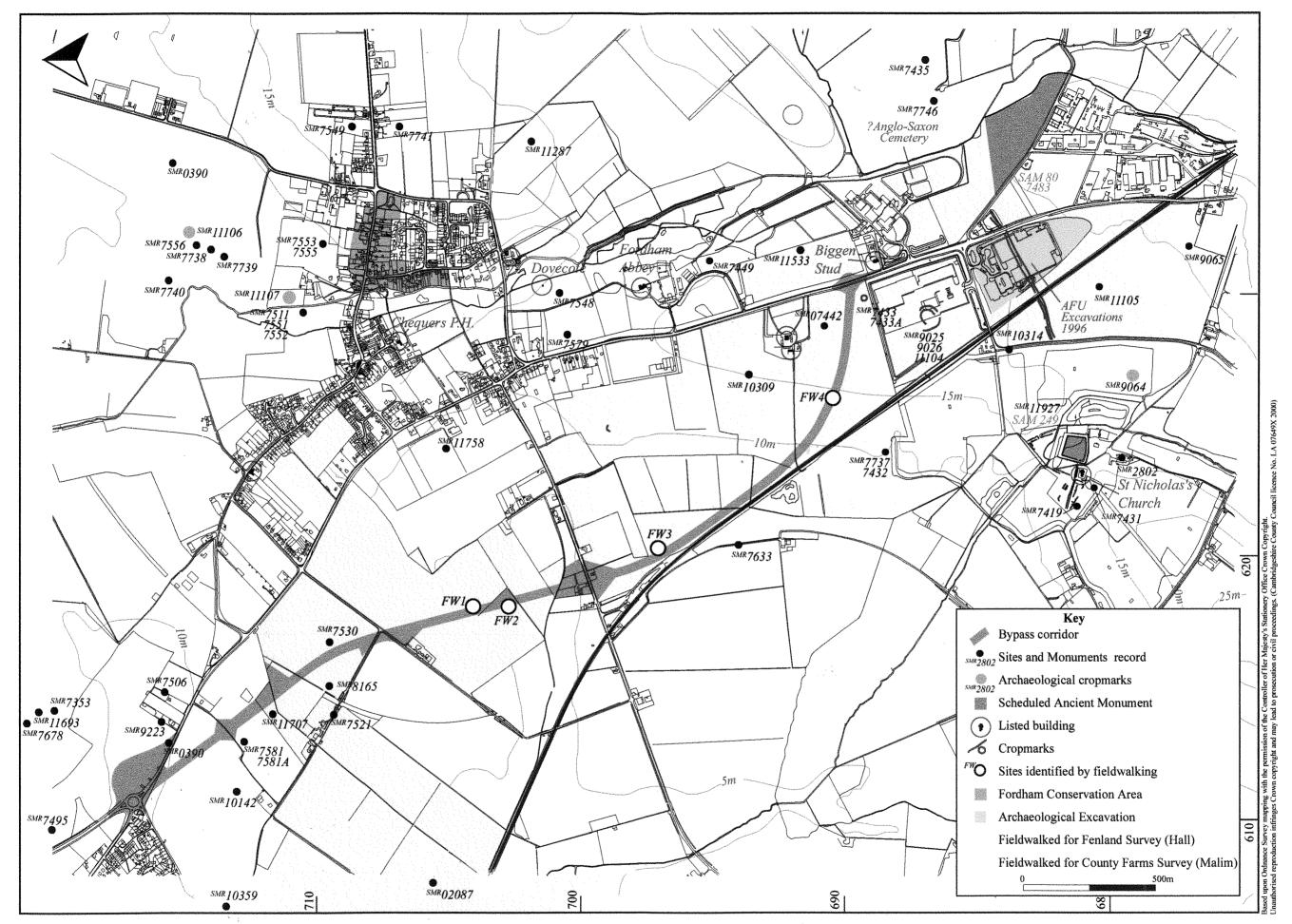


Figure A1 Location map showing course of bypass and sites of historical and archaeological interest

Table of finds recovered from field walking (excluding post medieval finds)

Finds (number)	Grid Reference (TL)	Archive reference number
Burnt flint(2)	61677064	167
Burnt flint(32)	61757014	122
Burnt flint(1)	61787017	155
Prehistoric? pot(1)	61787017	156
Worked flint(1)	61787017	154
Burnt flint(20)	61807018	161
Worked flint(1)	61807018	160
Burnt flint(24)	61817041	123
Burnt flint(3)	61827015	138
Worked flint(1)	61827015	137
Burnt flint(23)	61837020	172
Burnt flint(3)	61837039	171
Surnt flint(4)	61847042	130
Burnt flint(4)	61857017	166
Burnt flint(4)	61857022	141
Worked flint(1)	61857022	140
Burnt flint(15)	61857037	121
Burnt flint(8)	61857041	127
Whetstone(1)	61857041	125
Worked flint(2)	61857041	128
Burnt flint(3)	61857045	107
Burnt flint(2)	61867014	146
rehistoric? pot(1)	61867014	145
Surnt flint(41)	61877039	116
Prehistoric? pot(1)	61877039	119
Worked flint(1)	61877039	117
Burnt flint(1)	61877043	109
Worked flint (1)	61886985	192
Burnt flint(3)	61887013	162
Burnt flint(3)	and the second s	136
Control of the Contro	61897016	
Burnt flint(1)	61907015	148
Burnt flint(1)	61907020	181
Worked flint (2)	61926980	190
Worked flint (2)	61926983	191
Burnt flint(2)	61937016	175
Worked flint (2)	62006972	193
Worked flint (1)	62006978	189
Worked flint (1)	62026969	194
Worked flint (1)	62066963	196
Worked flint (2)	62076959	195
Worked flint (2)	62106962	201
Worked flint (1)	62116963	202
Burnt flint (6)	62116965	212
Burnt flint (10)	62116967	221
Worked flint (1)	62116967	211
Worked flint (1)	62116969	200
Burnt flint (1)	62116970	215
Burnt flint (1)	62116974	216
Burnt flint (2)	62126964	213
Burnt flint (16)	62126967	220
Worked flint (1)	62126967	210
Burnt flint (1)	62126971	222
Worked flint (1)	62126971	214

Finds (number)	Grid Reference (TL)	Archive reference number
Burnt flint (6)	62136968	209
Worked flint (1)	62146960	199
Burnt flint (1)	62146969	219
Worked flint (1)	62146969	206
Burnt flint (9)	62156967	218
Worked flint (2)	62156967	205
Burnt flint (6)	62176968	204
Burnt flint (14)	62176971	207
Burnt flint (1)	62179663	203
Burnt flint (8)	62186955	217
Worked flint (1)	62186955	197
Worked flint (1)	62186958	198
Burnt flint (3)	62186971	208
Prehistoric? pot(1)	62406910	48
Burnt flint(1)	62406913	43
Burnt flint(5)	62406913	36
Worked flint(1)	62406913	42
		52
Prehistoric? pot(1)	62466909	
Burnt flint(1)	62466914	101
Prehistoric? pot(1)	62466914	102
Burnt flint(1)	62496909	91
Burnt flint(1)	62496910	88
Burnt flint(1)	62496912	90
Burnt flint(1)	62536903	82
Burnt Flint(1)	62536906	26
Burnt flint(2)	62536906	28
Worked flint(1)	62536906	27
Burnt flint(2)	62536908	80
Burnt flint(1)	62566903	29
Burnt flint(1)	62566906	84
Worked flint(1)	62566906	85
Burnt flint(4)	62566908	67
Burnt flint(16)	62596905	70
Burnt flint(28)	62596908	31
Burnt flint(1)	62626901	7
Burnt flint(1)	62626904	81
Burnt flint(1)	62626907	53
Burnt flint(1)	62626907	97
Prehistoric? pot(1)	62626907	98
		72
Worked flint(1)	62656903	71
Worked flint(1)	62656905	
Burnt flint(1)	62656907	77
Burnt flint(4)	62686900	
Burnt flint(2)	62686905	4
Worked flint(1)	62686905	3
Burnt flint(2)	62696909	93
Prehistoric? pot(1)	62716899	6
Burnt flint(2)	62716904	64
Worked flint(2)	62716904	63
Burnt flint(1)	62740690	19
Burnt flint(1)	62746898	17
Prehistoric? pot(2)	62746898	41
Burnt flint(1)	62746899	15
Burnt flint(1)	62746904	2