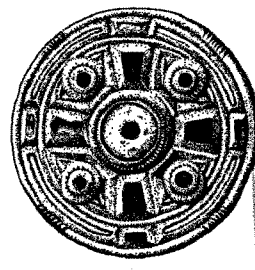


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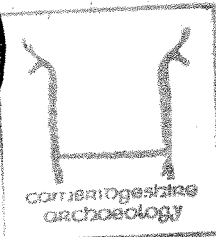
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A47 Thorney By-Pass: An Archaeological Desktop Study

Tim Reynolds

1994

Cambridgeshire County Council

Report No. A37

Commissioned By Cambridgeshire County Council Transportation Department

**A47 Thorney By-Pass:
An Archaeological Desktop Study
TF 277043 to TF 315044**

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1994

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NON-TECHNICAL SUMMARY

Proposals for upgrading the A47 at Thorney along a new route have led to the need for archaeological investigations. This desktop study comprises the first component of an archaeological contribution to the environmental assessment. It includes documentary research, cartographic study and observations from field visits. The area for the proposed development has been researched by the Fenland Project, and a rich prehistoric and Romano-British landscape has been identified. The immediate route of the new road however, is less well documented and, with the notable exception of a Bronze Age burial mound, mapped examples of archaeological remains along it are rare.

This study recommends a phased approach to the investigation of the archaeology, beginning with known resources identified within this desktop study, and moving to geophysical survey, fieldwalking, test pitting and evaluation trenching.

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1 INTRODUCTION

The applicants, Cambridgeshire County Council Department of Transportation, approached Cambridgeshire Archaeology (both the County Archaeologist's Office and Archaeological Field Unit) for a preliminary study of impact of the development proposals on surviving archaeology as part of an environmental assessment. The proposals are for a regrading of the A47 at Thorney on a new route. The new route runs from a new roundabout west of Thorney (TF277 043) to a new roundabout east of Thorney (TF 315 044) (*Figure 1*). The civil parish involved is Thorney. This desktop study comprises an initial investigation based upon cartographic and documentary searches, and field visits.

2 IMPACT OF THE DEVELOPMENT PROPOSALS

The proposal is for the construction of a new road with associated slip roads and access points which can be highly destructive to archaeological remains. Construction will involve the removal of large amounts of topsoil and subsoil along the route, together with the dumping of materials, the latter creating additional problems. As a result of the need for embankments, services and construction camps, adjoining areas will also be affected.

3 PLANNING POLICIES AFFECTING ARCHAEOLOGICALLY SENSITIVE AREAS

3.1 National

Department of the Environment Planning Policy Guidance Note 16 (PPG16):

Para. 6. Archaeological remains should be seen as a finite and non-renewable resource, in many cases highly fragile and vulnerable to damage and destruction.

Para. 8. Where nationally important remains, whether scheduled or not, and their settings, are affected by proposed development there should be a presumption in favour of their physical preservation.

Para. 13. If physical preservation *in situ* is not feasible, an archaeological excavation for the purposes of 'preservation by record' may be an acceptable alternative. From the archaeological point of view this should be seen as a second best option.

Para. 25. requires local planning authorities to request a prospective developer to arrange for an archaeological field evaluation before deciding upon a planning application on any site where important archaeological remains may exist. This evaluation may lead to requirements for preservation of all, or parts, of the site, or for further archaeological work.

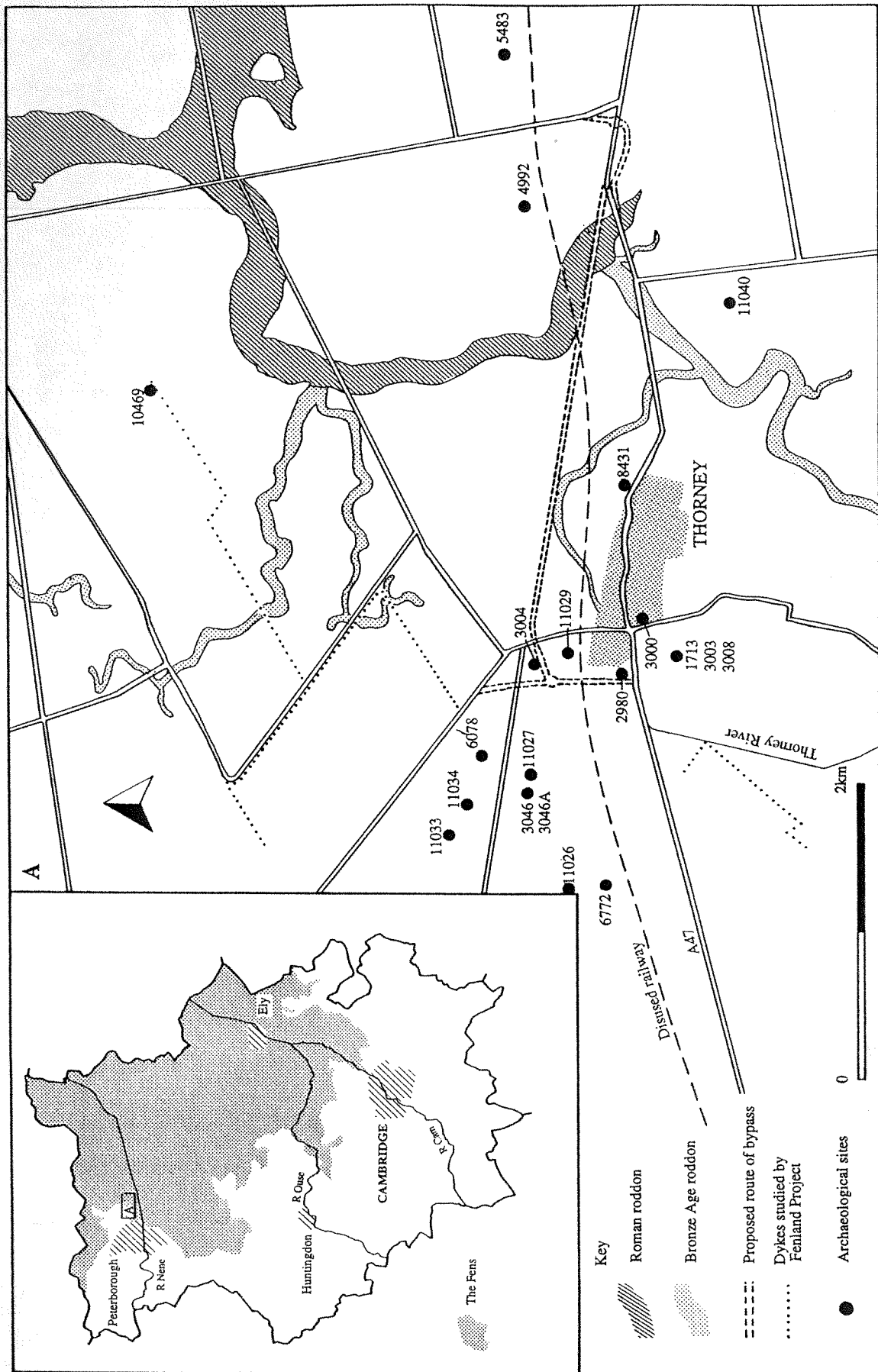


Figure 1 Location Map

3.2 Cambridgeshire County Council Guidelines

Structure Plan

Policy P14/2 'All County road schemes in rural areas will be planned, designed and executed to minimise undesirable effects on the landscape and will incorporate tree planting, landscaping, and creative conservation measures where appropriate'.

Policy P14/12 'The local planning authorities will exercise their powers of development control to preserve scheduled monuments and other important archaeological sites in the County'.

Policy P14/13 'Where there is no overriding case for the preservation of an archaeological site, opportunities will be sought prior to the granting of planning permission, for excavation and recording of the site'.

Cambridgeshire County Council Archaeology Section has also produced guidelines for road schemes specifically:

Phase 1 (Route Selection, Pre-Public Consultation/Planning Application)

Desktop assessment of known archaeological sites.

Assessments of aerial photographs.

Site visits to evaluate condition of known sites.

Fieldwalking of the proposed route.

Landscape historical summary.

Liaison with the DTP planners and engineers.

Recommendations for route alterations avoiding important sites which require preservation - field evaluation may be necessary.

Requirements for further work, where damage to archaeological remains cannot be avoided, in consultation with County Archaeology Office.

Phase 2 (After Route Selection)

Detailed site evaluation - earthwork survey, fieldwalking, trial trenching, geophysical survey.

Recommendations to engineers on known sites of high potential.

Excavation or preservation of newly identified sites of importance.

Sample excavation of other archaeological sites and features.

Post-excavation analysis, conservation of artefacts and publication of results.

Phase 3 (During Construction Work)

Provision for recording brief as necessary during soil stripping operations and construction works.

4 GEOLOGICAL AND TOPOGRAPHICAL BACKGROUND

4.1 General Character

The route runs across low-lying arable land with gentle and slight slopes. The height of the land crossed varies between 2m and 1m OD. The route crosses numerous dykes and lies within the remit of the North Level Internal Drainage Board.

4.2 Geology

Underlying geology comprises Kellaway Beds and Oxford Clays of Jurassic date although these are in turn overlain by a sequence of Quaternary deposits including the March gravels (of Thorney Island itself) and a Flandrian sequence comprising Lower Peat, Barroway Drove Beds and Nordelph Peat. North of the route the Nordelph Peat is intermittently overlain by Terrington Beds (Horton 1989).

4.3 Soils

Soils in the area have been described by the Fenland Project (French and Pryor 1993) and comprise 0.1 to 0.3m thick sandy loams and similarly thick humified peats (Waller forthcoming).

5 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

5.1 General Archaeological and Environmental Background

The key to understanding the archaeology of Thorney lies in the knowledge of the environmental sequence. The parish of Thorney lies in the zone of Fenland where marine silts meet peat deposits and depositional history is complex. Research by the Fenland Project of English Heritage has identified the need to date roddons (infilled palaeochannels) to examine the drainage history of the area; the relationship and date of upper peat and Upper Barroway Drove Bed deposits are equally important to the understanding of the occupational and exploitation patterns of the area. The present known sequence (based upon Hall 1987) is:

- 1) Pleistocene: deposition of March Gravels which form part of Thorney Island and large parts of the north of Thorney parish;
- (2) Early Flandrian: increasing water levels in the Fen basin from a low of -30m below the present OD at c 10,000 BP. The land of Thorney would have been covered by deciduous forest;
- (3) Early Flandrian: by 8,600 BP water levels had risen and backing up of water along the existing rivers caused ponding and flooding. The Lower Peat formed as a consequence of this;
- (4) Mid Flandrian: by the fourth millennium BC, peat formation was widespread within the fen basin. Slow flowing rivers still drained the area but were sluggish and subject to shifting course;
- (5) Mid Flandrian: by the third millennium BC sea level continued to rise, and marine incursions occurred within the Fen basin. Salt water covered lower ground leaving high ground as a series of islands. A sand bar formed and protected the area from direct marine incursion, and one or more brackish lagoons formed;
- (6) Mid Flandrian: a Fen clay known as the Barroway Drove Beds was deposited under the conditions of (5). Beyond the lagoon(s) on the landward side, peat formation continued uninterrupted, while in the west a raised bog prevented brackish water from reaching the Fen edge;
- (7) Late Flandrian: in the early third millennium BC, marine influences in the Fen basin reduced, peat encroached from the landward side and further inland as well. It is not clear what was happening in parts of the lagoon area;
- (8) Late Flandrian: a second phase of marine deposition occurred at about the time of the change from Bronze Age to Iron Age. This stage of deposition is poorly characterised and dated. It was in Thorney that this phase was first recognised, and offers evidence for the second marine inundation in the Bronze Age. A date of c 1,000 BC has been suggested for this. This phase is associated with the deposition of the Upper Barroway Drove Beds;

(9) Late Flandrian: there were changes to the channels and routes of many of the main waterways, and a new freshwater dominated phase of deposition in which peat formed over the marine deposits;

(10) Late Flandrian: a third marine incursion took place depositing a 'silt' known as the Terrington Beds, which presently form a ridge around the Wash area at a height of 3m OD. New water channels were formed and by Roman times this silt land was occupied by settlement and so was clearly dry;

(11) Late Flandrian: in the post-Roman period, water levels rose again and peat cover extended;

(12) Late Flandrian: since the thirteenth Century reclamation and drainage schemes have resulted in the rapid erosion of peat cover, and earlier land surfaces have begun to re-appear from below the peat.

It may be seen that the interplay between archaeological sites and the landscape has been an important part of dating and understanding the complex changes in the Thorney area over time.

Generally, occupation and forms of agriculture were often precluded by the water table and potential for flooding. Only the Fen islands, of which Thorney is one, were able to support persistent occupation, and water transport would have been vital. It was also necessary to maintain access routes, and built trackways and causeways are a feature of this low-lying landscape.

In the Mesolithic, while the Thorney area would have provided hunting and gathering grounds, no settlements are known. In the Neolithic, rising water tables would have kept occupation to a minimum except on Thorney island and again there is no evidence for settlement during this time.

In the Bronze Age, the Thorney area would have been wet and not suitable for settlement or agriculture with the possible exception of seasonal grazing. Such land in the Fens and river valleys, however, was often used for disposal of the dead. The numerous barrows recorded in Thorney parish reflect a consistent Bronze Age land use pattern of burial in the 'liminal' space between wetland and dry ground. Additionally, trackways have been found allowing access over the salt marshes probably for the purposes of fishing and fowling.

In the Iron Age, evidence for occupation is lacking; it is likely that seasonal exploitation for grazing, and again, for fishing and fowling was the norm. During the Roman period, constructions such as the canal at Flaggrass and the causeway known as the Fen Causeway allowed greater access to the lands around Thorney. Agricultural settlement was possible and a number of salterns were established on the silt Fen.

In the Saxon period only the islands were usable, and the establishment of small monastic settlements took place on a number of them. Construction of a sea dyke limited the impact of marine incursions and some canals may date to this time. Subsequent drainage allowed limited agriculture into the area but flooding and then erosion have been significant problems.

5.2 Archaeology and History in the Development Area

In the immediate area of the proposed road route a number of archaeological sites are recorded on the County Sites and Monuments Record (SMR) these are listed in the gazetteer. The earliest evidence dates to the Bronze Age and is represented by a series of stray finds, such as stone anvils, worked flints and a battle-axe but more significantly by a number of barrows. These burial mounds are placed in the marginal land beyond the edge of settlement and year-long agriculture.

The Iron Age is represented by a stray find of a gold coin but little else. In the Roman period however, the evidence increases: there are a number of pottery scatters, some with tile, suggesting occupation and some of the cropmark and soil mark evidence may represent agricultural systems.

The Saxon period is represented solely by the monastic settlement of Thorney itself, which is dated to AD 662. Subsequent evidence is of medieval/post-medieval date: the monastery was rebuilt and enlarged in the early twelfth century; it was dissolved in 1539, and most of the masonry lost to Trinity and Corpus Christy Colleges; the church was restored in the seventeenth century, when the Isle of Thorney was again important as a consequence of the drainage schemes.

Research priorities for archaeological investigation along the route are as follows:

- (1) Mesolithic evidence for settlement, hunting stands, fish traps, etc.;
- (2) Neolithic settlement and aquatic zone exploitation evidence;
- (3) Bronze Age burial mounds and trackways, fish traps;
- (4) Any evidence for Iron Age activity which is presently lacking;
- (5) Identification of the function and date of Roman sites;
- (6) Evidence for Saxon usage of the fenland surrounding the monastery;
- (7) Evidence for exploitation and drainage of the area in the medieval period and since;
- (8) Evidence from any period for boats and waterside structures;
- (9) Environmental reconstruction data for refining present knowledge of the general sequence of landscape changes noted above.

6 METHODOLOGY

This present report is the result of three stages of investigation, following the Archaeology Section guidelines noted above. These are designed to develop an information base by working from the known archaeological resource to the unknown.

The first stage is investigation of the records held in the County Sites and Monuments Record (SMR). The SMR is a computer and map based database providing information, in varying degrees of accuracy, on known sites and find spots in the County. The data used here (*Figure 1* and Section 7) is based upon the evidence presently available and should not be seen as a definitive list, since further remains may be discovered by succeeding fieldwork.

The second stage of investigation comprises a documentary and cartographic search, drawing together historical data and checking references on the SMR. Such a study enables an interpretation of the developing landscape.

The third stage of investigation comprises preliminary field walking to identify surface scatters and plan sampling strategies through further fieldwalking. The subsequent fieldwalking is then targeted to answer specific questions such as those concerning the time range of the extant material, the integration of surface data with subsurface evidence, and the provision for landscape monitoring. The field walking also records the condition of any earthwork evidence along the route.

7 GAZETTEER

The following SMR entries lie within a c 0.5Km band along the proposed route, presented here running from south to north (*Figure 1*).

SMR No.	Description	
01731	Stray find:stone anvil	TL28-/04-
02980	Post-medieval mill	TF2784/0433
03000	Roman urns and coins	TF282-/042-
03001*	Gravel mound and flints	TF2541/0547
03001A*	Possible medieval kiln	TF2541/0547
03001B*	Post-medieval pot	TF2541/0547
03003	Stray find:an Iron Age coin	TF28-/04-
03004	Bronze Age barrow & pottery	TF2792/0488
03008	Stray Find: Bronze Age battle-axe	TF28-/04-
03046	Bronze Age barrow & flints	TF2705/0495
03046A	Post-medieval pot & mill	TF2705/0495
03047*	Roman pot & tile scatter	TF251-/051-
03048*	Dark patch & Roman debris	TF252-/053-
03788*	Roman pottery scatter	TF341-/040-
04992	Possible barrow, some flints	TF3105/0505
05038*	Bronze Age barrow	TF2601/0528
05483	Possible barrow	TF3206/0518
06078	Soil mark enclosure	TF272-/053-
06080*	Semi-circular cropmark	TF258-/056-
06772	Soil mark enclosures	TF263-/045-
08431	Post-medieval decoy	TF291-/043-
10469	Prehistoric landscape	TF298-/074-
11026	Prehistoric field system known from cropmarks	TF264-/047-
11027	Dubious cropmark feature	TF272-/049-
11029	Linear cropmarks ?recent	TF280-/047-
11032*	Field system, cropmarks	TF261-/052-
11033	As 11032 & aligned with it	TF268-/055-
11034	Enclosure associated with 11033	TF270-/054-
11040	Recent field boundary	TF304-/036-

* located beyond the area of the map

8 RESULTS

8.1 Fieldwalking Results

The preliminary walking of the route was limited by standing crops, and little could be seen on the surface; nevertheless the barrow, SMR No. 3004, was still discernible as a slight rise in a crop of winter wheat. The route has however been walked in better conditions by the Fenland Project (Hall 1987), and it is therefore likely that any surface finds scatters would have been noted then.

8.2 Cartographic and Documentary Survey.

The Fenland Project has identified particular research problems in the development area, principally the dating of roddons within the general environmental sequence in the east of the road route. Additionally, the barrow (SMR No. 3004) lies directly upon the development route and so will need full investigation.

It would appear that for most archaeological periods the selected route was marginal land where settlement is unlikely. It is possible, however, that trackways, hunting stands, fish traps and burial mounds lie unknown below the masking deposits of

Barroway Bed Deposits and Nordelph Peat. Since these cannot be easily predicted further investigation will be needed.

9 DISCUSSION

The development route crosses an area where, in the early prehistoric period, the land was marginal for all activities except burial rituals and the exploitation of water related resources. In consequence, few substantial remains other than burial mounds, and trackways such as those revealed by the Dyke Survey (French and Pryor 1993), may be expected; should any sites occur, given the low-lying landscape, they may well preserve the organic artefacts, such as wood and leather, which usually rot away. Any such materials are important, both for the information they can offer and for their rarity value. Field investigation of the route must therefore be considered essential.

In the Roman period while the land along the developed route was again marginal; the salterns and seasonal exploitation of the landscape is also a possibility that should be taken into account. During the medieval period, the area was wet, and structural remains are unlikely. Once again however, water-based exploitation systems such as fish and eel traps, may have occurred, and need consideration.

The environmental reconstruction of the Fenland landscape also remains a priority, due to the result of the Fenland Project which has posed particular outstanding questions for the development area. The answers to these questions, both local and specific, should also add to the growing understanding of the Fenland basin and so enhance a regional picture of great significance. The results of any archaeological work in the Thorney area would complement the Fenland Project and its regional research priorities.

10 RECOMMENDATIONS

It is recommended that specific work be undertaken to deal with the two identified issues along the proposed route, namely, the barrow SMR 3004 in the west of the route and the roddons to the east. The work for these is outlined below. The possible masking of additional archaeological sites by overlying deposits will however necessitate further work along the remainder of the route. The area should therefore be systematically studied using a phased approach, applying strategies ranging from the known and non-invasive techniques to full excavation, where required.

The recommended scheme is:

Phase 1. Thermal imaging study of the route;

Phase 2. Test pitting along the route on a canted 30m grid. These test pits should begin as 1m x 1m pits aimed at investigating topsoil artefact densities, and develop into 5m x 5m machine dug test pits to investigate underlying deposits;

Phase 3. Evaluation trenching of features and areas where features and materials have been identified in earlier phases;

Phase 4. Full excavation of any threatened sites directly on the route of the road and suggestions for mitigating measures that may reduce the impact of the road on surviving archaeology.

Depending on favourable ground conditions - when crops have been harvested and the ground surface is well broken up - and when good weather prevails, it may be seen as appropriate to carry out field walking as an additional approach prior to, or in conjunction with, test pitting.

It is doubtful whether geophysical survey will be useful as archaeological deposits may lie too far below the ground surface to be identified. If depth and safety become a problem during test pitting, it is suggested that phases ? and ? be combined to allow for stepping of test pits and evaluation trenches.

The best time for this work will be in August/September following the harvesting of the crops.

The barrow, SMR 3004, is best approached following the recommendations of the Fenland Project for site definition (French and Pryor 1993,107):

- (1) Auger survey using a fixed grid to establish the extent of the site and its sedimentary content. This should also plot the old land surface, provide samples for phosphates and magnetic susceptibility and identify areas for further excavation;
- (2) Small scale evaluation excavation, to gain *in situ* soil samples, insect and plant macro-fossils etc.;
- (3) Correlation with existing Fenland data and suggestions for either mitigation of development or full excavation;
- (4) Mitigation measures/full excavation.

The roddons are best approached following the same strategy identified for the barrow but the final stage (4) need not be pursued unless significant archaeological remains are found associated with them.

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