

WRITTEN SCHEME OF INVESTIGATION

ARCHAEOLOGICAL EVALUATION

OLD HALL & GENERALS FARM

BOREHAM, CHELMSFORD

ESSEX

FEBRUARY 2006



Essex County Council

Field Archaeology Unit

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FIELD ARCHAEOLOGY UNIT
ESSEX COUNTY COUNCIL HISTORIC ENVIRONMENT BRANCH

1. INTRODUCTION

- 1.1 This written scheme of investigation has been prepared in response to a brief produced by the ECC Historic Environment Management team (ECC HEM), for archaeological trial trenching on land at Old Hall and Generals Farm, Boreham (Connell 2005).
- 1.2 The site is the proposed location of an agricultural reservoir, with associated soil storage, flood compensation and ecological areas (Planning application nos. ESS/39/03/CHL and ESS/0032/04/CHL). The total extent of the proposal area is approximately 15 hectares (TL 765087, centred).
- 1.3 The proposed development area is currently arable farmland on the north slope and floodplain of the Chelmer valley. The Chelmer and Blackwater navigation forms the southern boundary to the site.
- 1.4 A number of cropmarks, indicative of the presence of below-ground archaeological remains, are known within the proposed development area and within the surrounding vicinity. The archaeological and historical significance of this site has previously been investigated by means of a desk-based assessment (Heppell 2004). In summary, the area of investigation includes cropmarks of two likely prehistoric ring-ditches (remains of burial mounds) and fragmentary remains of two further examples, a trackway of unknown date and other linear ditch-like features. Some of the linear ditches correlate with field boundaries marked on the 1st edition OS mapping, that have subsequently been in-filled. A late 18th century coal wharf is known to have once existed in the south-west corner of the proposed development area.
- 1.5 The ECC Field Archaeology Unit (ECC FAU) has been commissioned to undertake this evaluation by D.K. Symes Associates, acting as agent for Sewell reservoir Construction Ltd.

2 REQUIREMENT FOR WORK

- 2.1 The requirement for the evaluation is a 4% sample of the total development area of c.15ha. This equates to seventy-four 40m x 2m trenches, to be deployed to produce a representative coverage of the whole site.
- 2.2 An additional 1% sample contingency (equating to nineteen similarly-sized trenches) is to be held in reserve to further evaluate the site, if required.

3. HEALTH AND SAFETY

3.1 General

- 3.1.1 It is the policy of the Field Archaeology Unit (FAU) to follow the Essex County Council Environment & Commerce directorate policy on health and safety at work. The Field Archaeology Unit will adhere to the latest Health and Safety legislation. Mark Atkinson is the Field Archaeology Unit's Health and Safety Officer.
- 3.1.2 Essex County Council has employer's liability insurance, and third party liability insurance in respect of any incident on site involving County Council staff.

3.2 Code of Practice and Risk Assessment

- 3.2.1 The Field Archaeology Unit's *Code of Practice* covers most aspects of excavation work and ensures that for most sites the risks are adequately controlled. Prior to and during site works sites are individually assessed. During this assessment, additional risks not covered by the *Code of Practice* are identified and the appropriate action is documented and taken. A copy of any such Risk Assessment is kept on site.
- 3.2.2 It is acknowledged that safe working practices in relation to the presence of underground services (i.e. a pipeline along western edge of the proposal area) is of particular relevance to the undertaking of fieldwork at this site. The appropriate measures will be documented in the risk assessment and implemented on site.

4 AIMS AND OBJECTIVES

- 4.1 The archaeological work is being undertaken to locate, identify and assess the quality and extent of any surviving archaeological remains within the development area prior to the submission of a planning application for the site.

- 4.2 In particular, the evaluation will seek to establish the date, nature and further extent of the various known cropmark features that occur within the investigation area.

5 EVALUATION METHODOLOGY

5.1 STANDARDS

- 5.1.1 The Field Archaeology Unit is a Registered Archaeological Organisation (RAO) with the Institute of Field Archaeologists (IFA). All work will be undertaken in accordance with the relevant Code of Practice and bylaws of the IFA. Standards will also conform to ALGAO's *Standards for Field Archaeology in the East of England* (Gurney 2003).

5.2 Structure of Team

- 5.2.1 The archaeological works will be undertaken by a team of professional archaeologists.
- 5.2.2 The team undertaking the work will comprise a minimum of one project officer (to be assigned) and at least three assistants. If necessary, additional staff will be employed on the site. CVs of key FAU staff are available upon request.
- 5.2.3 The project officer will be responsible for fieldwork, post-excavation and, if necessary, publication in liaison with the relevant specialists, under the overall direction of the Unit Manager (M. Atkinson).
- 5.2.4 The Project Officer undertaking the work will be a member of the FAU's professional staff. There is currently a number of staff employed by the FAU who are suitably experienced and able to supervise work of this nature. A list from which the project officer will be selected is included as Appendix 1.
- 5.2.5 Specialists who may be consulted are listed in Appendix 2. Curriculum Vitae of the FAU's specialist staff are available upon request.
- 5.2.6 Other specialists may be consulted if necessary. These will be made known to the monitoring officer for approval prior to consultation. Similarly, any changes in the specialist list will be made known to the monitoring officer for approval prior to consultation

5.3 Site Code

5.3.1 The site code will be obtained from ECC HEM prior to the commencement of works. A museum accession number will also be obtained from Chelmsford Museum, if appropriate.

5.4 Trench Location and Size

5.4.1 Unless local circumstances dictate otherwise, the location of the trenches will be as shown on the attached plan (Figure 1). The positioning of any additional contingency trenching required will be agreed with the ECC HEM officer during the course of fieldwork.

5.4.2 The basic evaluation will comprise seventy-four trenches, each 40m long by c.2m wide, generally laid-out in a regular grid pattern across the proposed development area. Some trench positions will deviate from this regular pattern in order to better evaluate known cropmarks. Trenches will avoid overhead electricity cables, open land drains and known below-ground services.

5.4.3 Any significant change to this plan will be agreed with the monitoring officer.

5.5 Machining

5.5.1 A mechanical excavator, fitted with a toothless bucket 1.5m+ wide, will be used to remove topsoil and recent overburden down to the first significant archaeological horizon.

5.5.2 Machine stripping will be carried out to FAU standards (Appendix 3) under the supervision of an experienced archaeologist.

5.5.3 Significant archaeological deposits will not be removed by machine unless this is the only practicable way to do so, and then only with the consent of the ECC HEM officer.

5.6 Excavation and Recording

5.6.1 Standard FAU methodologies will be employed. All stratigraphy will be recorded using the FAU's context recording system.

5.6.2 Planning and surveying will be based on a site grid, tied to the Ordnance Survey National Grid. Ordnance datum levels will be taken in each trench where appropriate.

5.6.3 Sections will be drawn at 1:10 and Site plans at 1:20 unless circumstances dictate otherwise. Plans at other scales will be drawn if appropriate (e.g. plans of burials at 1:5).

- 5.6.4 An overall trench plan related to the site grid and tied in to the Ordnance Survey National Grid will be drawn in addition to individual trench plans. All features revealed in the trenches will be planned.
- 5.6.5 The surface of the trenches will be sufficiently cleaned to ensure that any features present are visible. Archaeological features and deposits will be excavated using hand tools, unless a machine-excavated trench/slot through them is the only practical method of excavation.
- 5.6.6 An appropriate amount of features will be investigated in order to determine the extent and nature of the archaeology present. It may not be necessary to reduce all trenches to subsoil (natural) level if there has been sufficient excavation to give a clear understanding of the archaeological deposits across the site.
- 5.6.7 Continuations of major linear features such as boundary ditches, revealed in multiple evaluation trenches, will not necessarily all be excavated – particularly where these remains can be demonstrated to correlate with modern OS mapped features.
- 5.6.8 With the exception of modern disturbances, normally up to 50% of all contained features will be excavated. Modern disturbances will be excavated as necessary in order to properly define and evaluate any features that they may cut. Normally up to 10% (or a 1m segment) of non-structural linear features will be excavated. Up to at least 50% of linear features with a possible structural function (e.g., beam slots) will normally be excavated. Due regard will be paid to the stratigraphic relationships between features and deposits during excavation and recording. Details of the precise excavation strategy, and any alterations to it, will be discussed with the monitoring officer after topsoil stripping has taken place.
- 5.6.9 If human remains are discovered on the site they will normally be left *in situ*. Remains will only be removed during the evaluation for security reasons or necessary archaeological analysis. If appropriate, a burial licence will be applied for from the Home Office. The coroner, the client/client's consultant and the monitoring officer will be informed if human remains are uncovered. The condition of any human remains will be assessed and recorded.
- 5.6.10 A metal detector will be used to check the spoil heaps for metal finds.

5.6.11 A full photographic record including monochrome negatives, colour transparencies and digital images will be made.

5.6.12 The photographic register will include: film number, shot number, location of shot, direction of shot and a brief description of the subject photograph.

5.7 Finds and Environmental Remains

5.7.1 In general, all finds from all investigated features will be collected. Where large quantities of post-medieval and later finds are present a sample of the finds assemblage, sufficient to date and characterise the feature, will normally be collected.

5.7.2 Finds will be identified, by context number, to a specific deposit or, in the case of topsoil, to a specific area of the site.

5.7.3 All finds will be properly processed according to the FAU guidelines and *IFA Guidelines for Finds Work*. All pottery and other finds, where appropriate, will be marked with the site code and context number.

5.7.4 Finds of gold and silver will be recorded and taken to a safe place and, if necessary, security measures implemented for their protection. Any such finds will be reported to the coroner in accordance with the Treasure Act 1996.

5.7.5 Environmental samples will be taken where well-preserved organic remains survive in well-stratified, datable deposits. Bulk soil samples (minimum 15 litres) will be taken for wet sieving and flotation. The FAU environmental consultant is V. Fryer (for plant remains and molluscs), although other consultants may also be approached (e.g. P. Wiltshire for pollen and R. McPhail for soils). FAU uses Murphy and Wiltshire, 1994, as the basis of environmental sampling method and procedure.

5.7.6 If samples are taken, a pilot study will be undertaken as an initial stage of environmental processing. This will enable an assessment of which groups of samples are likely to be most productive for complete processing and further study.

5.7.7 A full list of specialists who may be consulted is included as Appendix 2.

6. RESULTS

6.1 Evaluation Report

6.1.1 A report presenting the results of this evaluation will be produced within a month of the completion of fieldwork.

6.1.2 Hard and digital copies of the report will be supplied to ECC HEM and the Essex Historic Environment Record (EHER), as well as to the client / client's consultant.

6.1.3 The report will contain the following information:

- SUMMARY: A concise non-technical summary
- INTRODUCTION: General introduction to project including reasons for work and funding, planning background.
- BACKGROUND: This will include geology, topography, archaeological and historical background, current site usage/description
- AIMS AND OBJECTIVES: Summary of aims and objectives of the project
- METHOD: Methodology used to carry out the work
- FIELDWORK RESULTS: Detailed description of results, trench by trench
- SPECIALIST REPORTS: Overviews of finds by material and type
- DISCUSSION AND CONCLUSIONS: Overview of archaeological deposits and artefacts, including details of preservation and the expected survival of deposits and structures across the site. Discussion and interpretation of results will include both in the immediate archaeological context and in relation to other relevant evidence.
- APPENDICES: Context descriptions, finds catalogues, contents of archive, site matrix, brief.
- EHER summary sheet.
- FIGURES: These will include a location plan of the archaeological works in relation to the proposed development (at least two corners of each trench will be given a 10 figure grid reference); a section drawing to show present ground level and depth of deposits (the section drawing will include a horizontal and vertical scale and an Ordnance datum).

6.2 Publication

6.2.1 Publication of the results, at least to summary level, will take place within a year of completion of work. The summary will be published in the annual round up of excavation in Essex Archaeology and History.

6.3 OASIS

- 6.3.1 An OASIS on-line record will be completed and submitted for this evaluation. This will include an uploaded digital version of the report.

6.4 Acknowledgements

- 6.4.1 The involvement of ECC HEM will be acknowledged in any report or publication generated by this project.

7. ARCHIVE

7.1 General

- 7.1.1 An archive will be prepared for all work undertaken

- 7.1.2 Guidelines contained in UKIC's *Guidelines for the Presentation of Excavation Archives for Long Term Storage* and MGC's *Standards in the Museum Care of Archaeological Collections* will be followed for the preparation of the archive for museum deposition.

7.2 Finds

- 7.2.1 Finds from the archaeological recording work will be deposited with the archival material.

- 7.2.2 Subject to agreement with the legal landowner, the FAU will make arrangements with Chelmsford Museum for the deposition of the archive and artefact collection. Any items requiring treatment will be conserved. It is hoped that the landowner will donate the finds to Chelmsford Museum.

7.3 Deposition

- 7.3.1 The archive (or a full copy) will be deposited with the appropriate museum within 6 months of the completion of the report.

8. MONITORING

- 8.1 The ECC HEM officer will be responsible for monitoring progress and standards throughout the project. This will include fieldwork, post-excavation and publication stages.

- 8.2 The FAU will give HEM one week's notice of the start of work, where possible. However, it should be noted that the FAU often receives less than one week's notice of the required start date of a project. In such a case the FAU will make every effort to inform the monitor

of project arrangements as soon as possible. In these cases it will be a matter for the monitor as to whether work is able to commence with less than one week's notice.

- 8.3 Arrangements will be made, usually by telephone, for the HEM monitoring officer to inspect the trenches before they are back-filled.
- 8.4 The HEM monitoring officer will be kept regularly informed about developments during all stages of the project.
- 8.5 Any variations to the written scheme of investigation will be agreed with the HEM officer prior to being carried out.

BIBLIOGRAPHY

- Connell, P. 2005 *Archaeological evaluation: Old Hall and Generals Farm, Boreham, Chelmsford*. ECC HEM brief.
- Gurney, D. 2003 *Standards for Field Archaeology in the East of England*. E. Anglian Archaeol. occ. pap. 14
- Heppell, E. 2004 *Old Hall Reservoir, Boreham, Essex: archaeological desk-based assessment*. ECC FAU rep. 1374

APPENDIX 1

The following FAU staff are qualified to supervise the type of archaeological works detailed in the brief. Each has a range of experience on a variety of site types and of post-excavation analysis and reporting.

Patrick Allen

Mark Atkinson

Trevor Ennis

Mark Germany

Ellen Heppell

Andy Letch

David Maynard

Matthew Pocock

Andrew Robertson

APPENDIX 2

List of Specialist Consultants

The following specialists will be consulted as appropriate:

Prehistoric Pottery	N. Lavender (Independent Consultant)
Romano-British Pottery	J. Compton (ECCFAU)
Anglo-Saxon Pottery	S. Tyler (Independent Consultant)
Medieval and later pottery	H. Walker (ECCFAU)
Lithics	H. Martingell (Independent Consultant)
Animal Bone:	J. Compton (ECCFAU)
Human Bone:	N. Powers (MoLAS) / J. Compton (ECCFAU)
Metal artefacts:	J. Compton (ECCFAU)
Building Materials:	J. Compton (ECCFAU)
Fired Clay:	J. Compton (ECCFAU)
Worked Bone:	J. Compton (ECCFAU)
Stone Objects:	J. Compton (ECCFAU)
Other registered finds:	J. Compton (ECCFAU)
Environmental:	V. Fryer (Independent Consultant)
Conservation:	A-M. Bjoko (Colchester Museum Service)

APPENDIX 3

ESSEX COUNTY COUNCIL FIELD ARCHAEOLOGY UNIT ARCHAEOLOGICAL MACHINING STANDARDS

1 EQUIPMENT

- 1.1 The right type of machine must be used for the task in hand, either a 360° tracked excavator or a wheeled machine, not a box-scraper or bulldozer. The choice of machine will depend upon site conditions, time allowed, funding and availability.
- 1.2 Initial topsoil stripping or removal of recent deposits such as hard-core may be done with a toothed bucket, but all machining of the archaeological interface must be done with a toothless ditching bucket. This minimises the amount of disturbance to the archaeology and reduces the time spent in manual cleaning of the site
- 1.3 At no stage should machinery (excavators or dumpers) be driven over the cleared areas.
- 1.4 Where reinstatement of agricultural land is required, topsoil and subsoil should be stored separately.

2 THE MACHINE OPERATOR

- 2.1 Due to the sensitive nature of the work the machine operator must be properly trained and experienced. The operator must be capable of producing a clean, level surface at precisely the correct level.
- 2.2 The driver and machine are subject to the direction of the project supervisor. The trenches must be excavated in the position and manner stipulated, in so far as it lies within the capabilities of the machine.
- 2.3 An agreement regarding the starting and finishing times of machine should be made before archaeological work begins.

3 HEALTH AND SAFETY

- 3.1 All excavation and site work must comply with the current health and safety legislation. This includes the Health and Safety at Work Act 1974, the Construction (General Provisions) Regulations 1961 and the Construction Plant and Equipment (Harmonisation of Noise Emission Standards) Regulations 1985.
- 3.2 The machine operator will be required to maintain the appropriate inspection register, Form F91 Part 1, Section C, on the machine or at the depot.
- 3.3 Essex County Council has employer's liability and third party insurance in respect of any incident on site involving County Council staff. Outside contractors must also have their own public liability insurance.
- 3.3 The location of electricity, gas, water, sewage and telephone services should be identified from maps supplied by the relevant authorities prior to machining. Care should be taken when operating machinery in the vicinity of overhead services.