RAIL LINK ENGINEERING

CHANNEL TUNNEL RAIL LINK TECHNICAL REPORT

TECHNICAL REPORT No.

000-RMA-RLEVC-00048-AA

CTRL SECTION 1 UPDATED PROJECT DESIGN FOR ARCHAEOLOGICAL ANALYSIS AND PUBLICATION

Volume 1

RAIL LINK ENGINEERING

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APPROVAL / REVISION RECORD SHEET

REPORT TITLE	CTRL SECTION 1 UPDATED PROJECT DESIGN FOR ARCHAEOLOGICAL ANALYSIS AND PUBLICATION VOLUME 1
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The following Up-dated Project Design document is presented in two volumes.

Volume 1: the primary background and project design specification

Volume 2: the Contractor's detailed Method Statements produced during the project design phase and accepted by RLE for implementation

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1 PART 1 INTRODUCTION, BACKGROUND AND METHODOLOGY

1.1 Preface Part 1

1.1.1 This document is the first part of a four part Updated Project Design for analysis, dissemination and publication (UPD) being prepared by Rail Link Engineering and the Institute of Archaeology University College London for the CTRL Section 1 Archaeology Archive. The structure of the UPD is as follows:

- PART 1 – Introduction, background and methodology
- PART 2 – Revised research framework
- PART 3 – Research archive structure, dissemination strategy, publication design and treatment of physical archive
- PART 4 – Key assemblages for analysis and Principal Site report production

1.1.2 The UPD for the CTRL archaeology programme is a combined project design for all CTRL section 1 archaeological fieldwork data. The UPD has been produced as part Contractor design in order to ensure that a consistent approach to recording and analysis is achieved. Volume 2, the Contractors Method Statements, provide detailed methodological specifications. Volume 2 includes outline report synopses of Principal Site reports for publication

1.1.3 Detailed chapter synopses for the routewide synthetic publication will be produced as part of the Contractor's works in association with the projects' academic advisory team.

1.1.4 The following introductory part of the UPD provides the Project background against which the remaining UPD should be read. It places the CTRL route in its geographical and topographical context and sets out the stages through which the Archaeology Programme has been progressed and how the UPD has been prepared.

1.2 Preparation of the UPD

1.2.1 Following the production of MAP 2 based post excavation assessment reports for each Principal Site group, an updated project design for detailed recording, analysis and publication has been prepared. The UPD is based on the potential of the spatial, assemblage and chronological datasets to provide meaningful data to contribute to the regional development of archaeological knowledge. As described in UPD Part 2 a theoretical presumption in favour of a deductive approach to the data analysis is adopted. This decision is taken with respect to the poor state (i.e. 'unsorted' Haselgrove *et al* 1999) of current regional syntheses in Kent for the full range of datasets (spatial, assemblage and chronological) and the clear opportunity for this project to contribute positively to addressing this situation.

1.2.2 The deductive methodology requires that we move from the general (i.e. the state of current knowledge) to the specific (i.e. the results of seeking patterns in the new data) to inform patterns of chronological, cultural and environmental variations in the dataset. This approach is designed to ensure that the resources provided by the funding agency (Union Railways [South] Limited) are focussed at improving the current state of knowledge. The investment can then be seen to provide dividend for both the national cultural heritage and the developer through focussing future decision making for PPG16 mitigation work within a clear framework of research value (EH 1997; general bibliography).

1.2.3 To complete the UPD a number of clearly defined, systematic stages will be gone through during the CTRL 1 post excavation programme. The preparation of the UPD has involved a critical analysis of statements of potential provided in the post excavation assessment reports to identify key assemblage, spatial and chronological datasets. These elements have been ordered through preliminary phasing information into a project timeline image (see figure 21-1) backed up by a UPD database summarising the key evidence (available on request).

1.2.4 This period based summary data has then been transferred into a written description of the range of data sources as described in the research framework document. A literature review of archaeological documentation relating the regional development of period based studies in Southern England (UPD Part 2) has then been carried out to inform a series of key period research questions or 'premises', that can be applied to the CTRL data to arrive at an integrated historical discourse of the CTRL results.

1.2.5 The revised research framework has then been subject to detailed review by the project consultees, academic advisors and lead authors to arrive at a consensus position.

1.2.6 This first part of the Channel Tunnel Rail Link (CTRL), Section 1 Updated Project Design (UPD) provides the general background information for the Works. The development of the Archaeology Programme is briefly presented summarising the work undertaken to date. An overview of the post excavation assessment reports is given together with a statement on the current circumstances of the archive and a summary of what form the dissemination of the CTRL Archaeology Programme will take. A summary of the project organisation is provided.

1.3 Project Commitments

1.3.1 The Project's archaeology commitment is set out in the Planning Memorandum and Environmental Memorandum. These documents state that, as an Environmental Minimum Requirement, the CTRL Project shall take account of the principles set out in the Governments Planning Policy Guidance Note 16 'Archaeology and Planning' (PPG 16). This guidance requires developers to provide for the subsequent publication and dissemination of the results of fieldwork. In accordance with this, a programme of post excavation works has been initiated following national guidelines and in discussion and liaison with the project consultees English Heritage and Kent County Council.

1.3.2 In addition to this a series of Undertakings and Assurances were attached to the Act as it made its way through Parliament. Undertaking no.175 is of relevance to the archaeology Programme as it relates to the deposition of the archive. This is discussed below Section 16.

1.4 The Route

1.4.1 Section 1 of the CTRL is entirely within the county of Kent and the majority of it is through a rural greenfield landscape. The CTRL links into existing track at Fawkham Junction to the south of Gravesend, where the line continues into London's Waterloo International Station. Heading eastwards the route, then follows the line of the A2/M2 and crosses the River Medway to the south-west of Rochester and Chatham. The CTRL then passes through the North Downs in a short section of tunnel at Bluebell Hill and parallels to the M20 motorway to Ashford. The route reaches the Channel Tunnel portal at Dollards Moor near Folkestone. The Project involves extensive construction work, including cuttings, embankments, tunnels and bridges. Other associated works such as road and utility diversions have also been required. In addition, works have necessitated temporary land take for construction sites and railheads.

1.5 Geology and Topography Summary

1.5.1 The first 15km of the route south-eastwards from Fawkham Junction to the River Medway is, apart from Scalers Hill, predominantly through Upper Chalk overlain in the deeper cuts by Thanet Beds and/or Head. East of Scalers Hill there is extensive solution featuring in the top of the chalk. Scalers Hill is an outcrop of the Lower London Tertiaries consisting of Harwich Formation / Blackheath Beds sands and gravels over Woolwich and Reading Beds clay. This clay contains a lignite band. This is an area with few surface watercourses.

1.5.2 After crossing the River Medway on a 1.3km bridge and viaduct the CTRL runs up the Nashenden Valley mainly through Upper Chalk and then into the 3.2km North Downs Tunnel under Blue Bell Hill. This tunnel is driven through Upper and Middle Chalk.

1.5.3 After the tunnel, the CTRL then runs in a short cut in Lower Chalk and then into the Gault Clay of Boxley Vale, to the north of Maidstone. The railway is mainly in cut and cut/cover tunnels over this length (about 8km) up to the crossing of the Ashford-Maidstone railway at Crismill Lane.

1.5.4 From Crismill Lane to Ashford, a distance of about 22km, the railway runs through gently undulating topography adjacent to the M20 motorway. Most of the cuts are in

Folkestone Beds sand, but a few are in the Sandgate Beds, which is a variable deposit of sands, silts and clays. Two cuttings are in the Hythe Beds, which are silty sands often with very hard limestone "Ragstone" bands. The route along this length crosses a number of small streams that drain towards the West Stour River.

1.5.5 Through the town of Ashford itself, the CTRL alignment runs below ground level in retained cuts and cut/cover tunnels through reworked Hythe Beds, Atherfield Clay and Weald Clay. The CTRL mainline then rises up onto a long viaduct to cross the River Stour and then over the eastern approaches to Ashford.

1.5.6 After dropping back to near ground level near Sevington, the CTRL then runs immediately adjacent to Railtrack's Ashford-Folkestone railway line for about 16 km to Dollands Moor. For the first 4 km east of Sevington, the railway runs close to the south flank of the Hythe Beds escarpment, in cuttings through the Hythe Beds and the Atherfield Clay. This is a spring line, with many small streams emanating from this area and crossing under the trace.

1.5.7 Between Sellindge and Westenhanger, there are two long embankments over the alluvium of the East Stour River valley, interspersed with cuts through the Sandgate Beds and the Hythe Beds. The last 5 km of the route from Sandling up to the interface with the Channel Tunnel is through the more deeply incised topography characteristic of the Folkestone Beds sand.

1.6 The CTRL Archaeological Research Strategy

1.6.1 The CTRL Archaeological Research Strategy (Drewett 1997) has guided fieldwork investigations and subsequent assessment work. The strategy identifies a set of research objectives that seek to define landscape organisation and changes in that organisation through time by providing a framework of enquiry based on landscape zones. It acknowledges that socio-economic, political and ritual activity can be studied within a chronological framework. Although not a specifically designed 'research' sample, the CTRL has produced a wide transect through the defined landscape zones enabling the study of the development of the landscape of Kent. The landscape zones are defined in the Character Map of England (Countryside Commission & English Nature). These zones are:

- North Kent Plain
- North Downs
- Wealden Greensand (with some Low Weald)

1.7 Summary of Work to Date

1.7.1 As part of the environmental impact assessment which culminated in the Assessment of Historic and Cultural Effects (volumes 1-4), (URL 1994) a detailed desktop study was completed including the examination of aerial photographs, historic cartographic sources, known sites and monuments, listed buildings and other historic structures. In addition to this a walkover survey, surface artefact collection, geophysical and topographic survey was completed across available farmland.

1.7.2 Subsequent fieldwork evaluation including trial trenching and geotechnical test pit monitoring commenced in early 1997, over areas which demonstrated archaeological

potential and/or where programme critical construction activities were programmed. In excess of 2,000 trial trenches were excavated across Section 1 of the CTRL.

1.7.3 The results of this work were incorporated into the engineering design process and efforts were made through engineering liaison to reduce landtake where possible to limit impacts on buried archaeological remains. Where practicable, mitigation design included preservation *in situ*, for example, beneath mitigation earthworks.

1.7.4 Mitigation by archaeological investigation was determined on the results of this evaluation work. Sites were identified for excavation in advance of construction, either as 'Detailed Excavation', 'Strip Map & Sample', or geo-archaeological investigation. Advanced archaeological investigation began in 1998 and the majority of the works was completed by late 1999. During the final design phase further areas of potential (arising from the results of advanced works) were designated as 'Targeted Watching Briefs'. These areas were investigated following construction soil strip activities. Throughout construction, particularly during the bulk earthmoving, an extensive watching brief was undertaken.

1.7.5 Four archaeological contracting companies undertook the fieldwork and post excavation assessment reporting, as specified and project managed by Rail Link Engineering's Archaeology Team on behalf of URS. These units were:

- Canterbury Archaeological Trust
- Museum of London Archaeology Service
- Oxford Archaeology
- Wessex Archaeology

1.7.6 Section 1 was split into construction contract areas and for each area an archaeological Written Scheme of Investigation (WSI) was prepared by RLE Archaeology and agreed with English Heritage and Kent County Council on behalf of the local authorities. These WSIs set out the form of archaeological mitigation devised against the high-level landscape zone priorities as defined by the CTRL archaeological research strategy, together with the aims for each specified fieldwork event. On completion of each fieldwork event an interim report was produced and deposited in the Kent Sites and Monuments Record. These interim statements have also been published in *Archaeologia Cantiana* and *Current Archaeology*.

1.8 The Post Excavation Assessment Reports

1.8.1 On completion of the fieldwork and interim reports for Section 1, post excavation assessment reports were complied for each defined Principal Site. These assessment reports were undertaken by the archaeological contractor responsible for the fieldwork. However, in some instances fieldwork events excavated by others were incorporated under the Principal Site umbrella and assessed as a whole.

1.8.2 The project timeline (figure 20-1) details the Principal Sites. In some instances a Principal Site incorporates a number of separate Fieldwork Events where it was considered that the proximity of archaeological remains meant that it was logical for them to be assessed as a single unit. The combining of sites facilitated the consideration of the wider landscape.

1.8.3 The assessment reports were completed to a specification prepared by RLE Archaeology as discussed and agreed by English Heritage and Kent County Council, following English Heritage's national guidelines (English Heritage 1991) and current best practice. The specification Post Excavation Assessment Instruction (000-RMA-RLEVC-00030-AB, URS 2000) set out the requirements for reporting in accordance with Appendix 4 of MAP 2. A UPD was not required for each Principal Site as it was decided that the overall Section 1 UPD (the entirety of this document) would draw together the statement of potential, the aims and objectives, tasks list etc. for the Project as whole.

1.8.4 The individual Principal Site assessment reports give specific and detailed data relating to the quantity of material/records, the provenance, range, variety and condition of the material recovered as well as the existence of other primary sources/relevant documentation which may enhance the study of the material. The specific Fieldwork Event aims set for site work are addressed at that level.

1.9 Overview of Assessments

1.9.1 The CTRL Archaeology Programme has resulted in a large amount of archaeological data. Some of the data will reinforce already well-researched areas of archaeological knowledge, much of the data will contribute to new lines of enquiry and poorly understood periods of Kent's past. The combined research value of the entire CTRL Section 1 archive has been assessed, and a revised archaeological research framework produced to focus analysis of the archive (see UPD Part 2) on key questions.

1.10 Stratigraphy

1.10.1 Given the rural setting of the project area the majority of sites lacked any deep stratigraphy. Excavation areas consisted largely of features cut directly into natural geology. All the sites excavated had suffered from plough truncation to a greater or lesser degree. In some of the more dramatic examples plough scores could be seen incised across the archaeological remains, for example on the higher ground of White Horse Stone. Other sites such as Boys Hall Road and West of Blind Lane were severely truncated but still provide information that feeds into wider landscape studies.

1.11 Overburden

1.11.1 Overburden in most cases consisted of topsoil or ploughsoil over natural, with varying amounts of subsoil. The majority of archaeological horizons lay between 0.3 and 0.5m below existing ground level.

1.11.2 Sites such as Chapel Mill and Beechbrook Farm had significant layers of subsoil. One approach where this is identified is to leave archaeological remains (or potential remains) *in situ* as took place at Chapel Mill where construction did not impact on the deeper potential deposits. In other instances such as at Beechbrook Farm, it was necessary to undertake carefully stripping in two phases to record an deposits interleaved between the two subsoil layers across a wide area.

1.12 Colluvium

1.12.1 The undulating landscape between Gravesend, the Medway and towards Maidstone has led to considerable pockets of colluvial material and head/loess deposits. In some instances, such as the Neolithic long house at White Horse Stone, significant archaeological deposits were preserved by hill wash deposits. Where colluvial material was identified it was tested by deep trenching, e.g. adjacent to Wrotham Road Tollgate, Nashenden Valley, White Horse Stone, Boarley Farm, A20 Holm Hill and Little Stock Farm.

1.13 Alluvium

1.13.1 Very limited areas of alluvium were recorded on a series of sites almost exclusively between Ashford and Folkestone, at: Boys Hall Road, East Stour Diversion, Church Lane/East of Station Road and Stone Street. Unsurprisingly, these sites are adjacent to rivers and streams. Only Church Lane provided any organic remains (tree branch) potentially associated with potentially dateable archaeological deposits.

1.14 Preservation *in situ*

1.14.1 A number of archaeological sites were preserved *in situ* where practicable following national guidelines. These sites include, a Romano-British double malting oven at Downs Road (Northumberland Bottom), the Medieval enclosure at west of Sittingbourne Road, part of the White Horse Stone site, potential deposits at Boarley Farm and Chapel Mill, the moated site at Parsonage Farm, large areas of the Beechbrook Farm site, and deposits at Church Lane/east of Station Road.

1.15 Artefact and Environmental Survival

1.15.1 A wide range of material (artefactual, stratigraphic, environmental and other records) has been recovered during the project. Inevitably there is a bias in the recovery of material relating to artefact rich cultures, such as the later prehistoric, Romano-British and Medieval periods. The most significant elements of the artefact archive are the ceramic and struck flint assemblages that both have significant potential for refining the regional series.

1.15.2 Soil conditions have greatly influenced the retrieval of data. At Pepperhill the factors affecting preservation are at present unclear but led to little survival of skeletal material from the inhumation burials. At the other end of the route the acidity of the Folkestone Beds sands has led to the poor survival of organic remains again affecting bone survival. Large sections of the CTRL cross Chalk geology and this influences the survival of deposits such as pollen. At White Horse Stone no pollen survived although the environmental evidence including the good preservation of molluscs ensures that information on the changing palaeo-environment has been recorded.

1.15.3 Only a very small amount of organic material has been recovered, most notably the oak box frame from the well at Thurnham villa. Preserved in this well were also moss and bee wings. A pit at Bower Road was waterlogged and contained a large deposit of blackberry seeds and at East of Station Road at tree branch was recovered from a

palaeo-channel. No sites were 'waterlogged'. Some mineralised organic remains have been identified on metal at for example the Anglo Saxon cemetery at Saltwood. Mineralised material may also be present on the metalwork from the Cuxton Anglo-Saxon burial site.

1.16 Current State of the Archive

1.16.1 A series of Undertakings and Assurances were attached to the CTRL Act as it made its way through Parliament. Undertaking no.175 relates to the deposition of the archive. It requires the Nominated Undertaker (URS) to deposit each site archive in a museum approved by the Museum and Galleries Commission (now *Resource*). If such facilities are available locally then the Undertaking expects that URS would seek to utilise them subject to the agreement of the relevant landowners and the provisions of the Treasure Act 1996. Although the undertaking was raised by Dartford and Gravesham, it was raised on behalf of all local authorities.

1.16.2 Undertaking no.175 states:

1.16.3 "PPG16 (- DoE Planning Policy Guidance note 16) sets no requirement for the storage or exhibition of finds from archaeological investigations. However, in adopting good archaeological practice and following the standards set down by English Heritage in the Management of Archaeological Projects (EH 1991), the Nominated Undertaker (Union Railways [South] Ltd) will produce a site archive for each site which will be deposited with a museum approved by the Museum and Galleries Commission for that purpose. Should such a facility be available in Dartford and Gravesham it is expected that the Nominated Undertaker would wish to utilise it. This would be subject to the agreement of the relevant landowner and to the provisions of Treasure Trove."

1.16.4 The issue of a suitable local repository is under active discussion with EH and KCC and has yet to be resolved. KCC are investigating the possibility of acquiring a warehouse facility which would enable URS to discharge its responsibilities for the CTRL archaeology archive. This would allow the research archive to be stored in the medium term while KCC and other relevant parties address the long term needs of the County.

1.16.5 Each of the assessment reports, together with the four interim watching brief reports, sets out the detailed archive information and provides the total quantities of material prior to the application of any retention/discard policies.

1.16.6 Virtually all material is currently stored at the offices of the four contractors responsible for the detailed mitigation works. In addition, the Anglo-Saxon material from the Saltwood excavations is at the conservation laboratories of Lincolnshire County Council. Material collected during surface artefact collection and trial trenching evaluations is stored at Union Railways warehouses in Aylesford, Kent.

1.16.7 All material from the detailed mitigation works has been stabilised for long-term storage under the terms of the archaeological contractor's agreement with URS. In accordance with the WSIs, records have been security copied (microfiche) for deposition with the National Monuments Record.

1.16.8 In the absence of a defined repository with who to agree policy, RLE propose to apply the standard discard and retention criteria used by the JV with the agreement of the consultees and subject to relevant legislation.

1.16.9 It should be noted that in accordance with Schedule 11 of the CTRL Act 1996, all human remains are to be reburied and will not be available for future study.

1.17 Ownership of the Artefacts

1.17.1 Where evaluations and excavation took place in advance of construction, the original landowner retains legal title of the artefacts. It is RLEs intention to ask that the owners donate the finds to the research archive. This is linked to the issue of the eventual location of the deposition of the archive. A small number of objects are subject to the Treasure Act 1996. These have been reported to the relevant Coroner and the British Museum. A file has been opened by the BM and a resolution awaits decision on the archive destination(s).

1.18 Project Manager and Client

1.18.1 Union Railways (South) Limited (URS) is the client who has commissioned the post-excavation project and is ultimately responsible for the dissemination of the results of the Archaeology Programme.

1.18.2 Rail Link Engineering (RLE) is the Project Manager for the works. RLE have designed the post excavation project and will supervise and deliver the works on behalf of URS.

1.19 Academic Advisors

1.19.1 RLE has commissioned the University College London (UCL, Institute of Archaeology) to provide academic advice and guidance to the project. Drs S. Hamilton and P. Drewett are the key staff members. Other UCL staff within the Institute may provide input as appropriate. The Academic advisor is commissioned under contract to URS and project managed by RLE. The academic advisor shall attend project review meetings and review project outputs in the role of peer review.

1.20 Project Organisation Summary

1.20.1 The project team structure is set out in Part 3, figure 34-1.

1.20.2 The CTRL Section 1 archaeology post-excavation programme is a complex undertaking involving several key organisations, individual specialists and several university based academics. Management of the many interface issues inherent in such a programme has been aided through appointment of a sole source, Oxford Wessex Archaeology Joint Venture (OWAJV) provider for all Section 1 post excavation outputs, managed by RLE Archaeology.

1.21 Lead Academic Authors

1.21.1 Primary hard copy publication will be a synthetic project monograph that draws on the results of archaeological investigation from the CTRL Section 1 archaeology programme. In consultation with Drs Hamilton and Drewett, RLE will commission specialist lead academic authors to write up the results of each key period for publication.

1.21.2 The following academic specialists have agreed to author sections of the publication in association with the OWAJV contractor's analysis teams:

- Paul Garwood (Birmingham University): Early prehistory
- Tim Champion (Southampton University): Later prehistory
- Martin Millett (Cambridge University): Romano-British
- Andrew Reynolds (King Alfred's College of Higher Education): Post Roman

1.22 Post-excavation Archaeology Contractor

1.22.1 A joint venture company between Oxford Archaeology and Wessex Archaeology known as Oxford Wessex Archaeology (OWAJV) has been selected to deliver the post excavation, recording, analysis, contribution to the project Monograph, and Principal Site reports.

1.22.2 The joint venture approach provides two distinct advantages to the post-excavation project. First is the size of the combined resource that allows post-excavation works to be combined for all Principal Sites into a concurrent programme of recording and analysis. Second is that the approach is consistent with the projects aim to provide a synthetic reporting of the project results. Consistency in approach to recording standards and presentation of evidence will be beneficial when comparing results across the data sample.

1.22.3 As individual companies, the joint venture partners have carried out approximately 70% of the Section 1 fieldwork. The JV will provide a detailed knowledge of the project's results and a thorough understanding of the CTRL project. The Museum of London Archaeology Service and Canterbury Archaeological Trust will continue their involvement in the project as sub-contractors to the JV as appropriate.

1.23 JV Team Composition

1.23.1 The JV team is described in Figure 34-1.

1.23.2 The works shall be managed and staffed by appropriately qualified and experienced personnel. The OWAJVs project manager and key personnel shall possess at least ten years relevant experience.

1.23.3 The OWAJV senior project manager is Stuart Foreman who has managed some 55% of the Section 1 fieldwork.

1.23.4 Specialist staff associated with the works shall be suitably qualified and shall be supervised by personnel with a minimum of ten years of relevant experience in their field (this may be inclusive of post-graduate studies).

1.23.5 The JV has submitted a project organogram and a task resource matrix which has been agreed with RLE.

1.23.6 The following individuals are nominated to lead analytical works for each period based chapter and work closely with the academic lead author to produce the project monograph:

- Alistair Barclay: Early prehistory
- Andrew Fitzpatrick: Later prehistory
- Paul Booth: Romano-British
- Julian Munby: Post-Roman

1.23.7 The following individuals are nominated to lead analytical works on assemblage work packages:

- Paul Booth: Ceramics
- Mark Robinson: Environmental
- Pippa Bradley: Flint
- Julie Hamilton: Faunal remains
- Leigh Allen: Small Finds (including metalworking)
- Jackie McKinley: Human Remains

1.24 Project Consultees

1.24.1 English Heritage and Kent County Council archaeology section are Statutory Consultees for the CTRL Archaeology Programme. EH and KCC will receive regular updates on the progress of the post excavation works and be invited to attend project review meetings. Additional meetings may also be convened to address specialist issues as appropriate. EH and KCC will be invited to review project outputs during document review periods.

1.25 Contract Monitoring and Progress Reporting

1.25.1 RLE will manage and monitor the contractor in their performance of the works against the agreed programme, risk plan, resource allocation, budget and quality standards (including physical and academic). Monitoring will be undertaken through a combination of regular written progress reports and monitoring meetings in addition to any day to day communication as may be required.

1.25.2 OWAJV shall report progress to RLE through a written monthly progress report and at monthly progress meetings (or as otherwise agreed or deemed necessary by RLE) normally held at RLEs offices.

1.26 Project Review Meetings

1.26.1 Project Review Meetings (PRM) shall be held at intervals during the programme as determined by completion of major project milestones. PRM's shall be a combination of roundtable presentation and discussion and will be open to contribution from all

project parties'. PRM's shall be facilitated chaired and by RLE and/or UCL staff and held at either London or Oxford as appropriate.

1.26.2 PRMs shall be held to:

- Review Project Monograph chapter synopses as prepared by Chapter Authors (December 2003).
- Review key Principal Site reports (Thurnham, White Horse Stone Saltwood, and Pepper Hill) (various dates).
- Review draft chapter outputs for Project Monograph (Jan 2005).

1.27 Document Review

1.27.1 Project outputs including routewide assemblage reports, Principal Site reports and draft chapters for the project monograph shall be reviewed by RLE, UCL team and consultees (see volume 2, Document Control method statement). The JV project manager shall notify the relevant reviewer(s) by email stating the document title, status and review dates. Documents shall be posted on the project extranet for comment, as follows:

1.27.2 Draft output 02 – internal team review (JV supervisors and academic authors)

1.27.3 Draft output 03 – reviewed by RLE, UCL team and project consultees (2 week turn around)

1.27.4 Draft output 04 – finalised by UCL team (3 week turnaround)

1.27.5 The JV project manager shall collate reviewers' comments at the end of the review period and post comments in the relevant extranet folder.

1.28 Project Extranet

1.28.1 A project extranet shall be used to circulate material outputs during the works. The extranet shall be set up by OWAJV and organised according to the work packages identified in Part 3 of this document.

1.28.2 Access shall be controlled to areas of the extranet folders through use of passwords made available to project parties as required.

1.28.3 The extranet folders shall contain the definitive latest versions of specific outputs. Historical drafts shall be archived as newer versions become available.

1.28.4 Project parties shall access, view and download documents for information and review by connecting to the site through their internet server.

1.29 Editorial team and Peer Review

1.29.1 All project outputs shall be edited by the JV Senior Editor, Julie Gardiner. RLE and its academic advisors Drs Hamilton and Drewett will provide quality control and peer review in liaison with project Consultees.

1.30 Publishing

1.30.1 The CTRL Archaeology Volumes will be published in hard copy by Archetype Books who will supply a designer to develop with RLE the precise format of the book. Copy editing will be undertaken by the publisher.

1.30.2 The Archaeology Data Service (ADS) will disseminate the considerable digital archive:

- To ensure the future value of the data through refreshment and migration.
- To provide a rapid and cost-effective dissemination of CTRL data to the archaeological community.

1.31 Project Programme

1.31.1 The project programme is 130 weeks in length. A programme for the post excavation analysis has been prepared by OWAJV and agreed with RLE Archaeology. The programme identifies key tasks and milestones.

1.32 Professional and Industry Standards

1.32.1 The post excavation works have been designed and will be conducted in accordance with the following standards:

- English Heritage Management of Archaeological Projects (1991)
- Institute of Field Archaeologists Standards and Guidance for archaeological excavation (1999), and for the collection, documentation, conservation and research of archaeological materials (2001).
- Digital data shall be prepared and submitted in accordance with Archaeology Data Service standards and guidelines.

1.33 Copyright and Confidentiality

1.33.1 All data collected and produced during the course of the CTRL post excavation project remains the copyright of Union Railways (South) Limited. Any requests for the use of project materials and data outside that specified in this UPD document shall require the written permission from Union Railways South.

1.33.2 The following wording shall appear on all project reports:

2 PART 2: REVISED RESEARCH FRAMEWORK

2.1 Preface Part 2

2.1.1 This document is the second part of a four part Updated Project Design for analysis, dissemination and publication (UPD) being prepared by Rail Link Engineering and the Institute of Archaeology University College London for the CTRL Section 1 Archaeology Archive. The structure of the UPD is as follows:

- PART 1 – Introduction, background and methodology
- PART 2 – Revised research framework
- PART 3 – Research archive structure, dissemination strategy, publication design and treatment of physical archive
- PART 4 – Specification for analysis, tasks, management and delivery

2.1.2 The concept of a revised framework is to enable the research value of the data accumulated by the CTRL Archaeology Programme to be maximised whilst undertaking and completing the project within a fixed project budget and programme. A review of the extent and quality of the information accumulated by the CTRL fieldwork programme clearly reflects the planning and resources that have been put to recovering that data. The underlying purpose of the proposed strategy is to enable synthetic conclusions on the research relevance of this work to be made in the belief that the sum of parts imparts greater value to the archaeological community than individual site accounts. The key output will be a synthetic treatment of the results presented as a narrative that seeks to illustrate the developing and changing trends of human activity across the sample transect.

2.1.3 Analysis to support the synthetic volume will necessarily be focused on tasks specific to the UPD. It is indubitable that potential for further detailed research on various aspects of the results will remain for others to pursue. Dissemination of the results of archaeological investigation is the key objective of archaeological publication in the commercial sector. An important role of the post-excavation output will therefore be to highlight some of these potentials in the publication, and through creation of a detailed digital archive of the results, enable fluid access to the data for undergraduate, graduate and post-doctoral as well as professional and independent researchers. Significant resources are therefore proposed to establish this accessibility.

2.2 Introduction

2.2.1 Archaeological excavation associated with the construction of Britain's first high speed rail link has resulted in the comprehensive investigation of a 56km corridor of largely 'greenfield' agricultural land aligned east to west through the county of Kent.

2.2.2 Over forty 'sites' have been identified and excavated to a common project design that comprised a suite of site detection methods. Significantly, excavation of known and identified sites was followed by an intensive collection of supplementary and negative evidence during a routewide campaign of observational recording and excavation (the Watching Brief).

2.2.3 Due to the common recovery level provided by the project design and the circumstances of the watching brief (that provided a high standard of visibility during construction) the resulting archive provides perhaps the most complete 'random' data sample ever achieved on a linear development project. Study of the findings, therefore, has the potential to elevate the significance of the sample beyond the level of the usual stand alone site report and summary publication and enable an attempt to identify patterns in the archaeological record pertinent to future syntheses of regional archaeologies.

2.2.4 The overall approach in investigating this sample is to provide an interpretation of the results at the level of a landscape study as opposed to that of the household or individual settlement level. Combining data from multiple sources within a related landscape is the way to suggest meaning to the activity and beliefs of past peoples.

2.2.5 With this in mind, national guidance from English Heritage (1997) and recent research into user needs (CBA 2001) encourages the archaeological community to move beyond the site based approach to post-excavation in favour of regional syntheses that make use of the wealth of extant and largely ignored 'salvage' data collected since 1990. An important part of the approach adopted for this project is to take advantage of the opportunity provided for by a project as large as the CTRL, in order to demonstrate ways in which we can revise our approach to analysis and dissemination of archaeological data to achieve these aims, perhaps it is hoped, providing a benchmark for future projects.

2.2.6 The aim of the CTRL approach is to present the evidence in as balanced and self-critical manner as possible whilst being open and explicit about the assumptions made during excavation and analysis (Millet n.d.) . The aim of the core publication will be to present synthesised data at an interpretative scale that can be easily assimilated into complimentary studies carried out by others. To achieve this, the published synthetic volume will be supported by making the fieldwork and research archives freely available as a web-based digital archive that provides an acceptable level of integrated site data (CBA 2001) .

2.3 Approach to assemblages

2.3.1 The assemblages, comprising artefactual and ecofactual groups have been subject to a standard assessment of potential in which key groups have been identified and recommendations made for analysis and publication with regard to their quality and relative historical importance. Detailed recording of key attributes will be carried out for each group identified for further recording. Research tasks will be aimed at providing data to infer broad patterns of change, trade and regional interaction, as far as possible investigating the multiple assemblages as one entity.

2.3.2 Integration of assemblage data with chronology and landscape spatial analysis will infer wider socio-economic and regional political scenarios based on distribution and context of key groups.

2.3.3 Questions of intra-site function, household level and settlement variation will be addressed only where appropriate to inform the aims of the research framework below and to a level consistent with producing the archive report for specific sites. It is anticipated that the accessibility of the archive will enable researchers to utilise the detailed finds databases and spatial data to address alternative detailed intra-site studies within the context of other work.

2.4 Approach to chronology

2.4.1 At a routewide level significant effort is to be put to resolving the many dating problems in most periods through investment in a large scale programme of absolute dating and seriation of artefactual evidence. This will provide a refined and consistent chronology that cuts across artificially imposed historical boundaries (Millet n.d.) .

2.4.2 As a basic requirement an archive report will be produced for each significant Principal Site that integrates key assemblages and stratigraphic data into a site sequence secured on key dating evidence from artefact groups and an absolute dating programme. The report will include a discursive narrative describing the sequence of activity and reasoning evidence.

2.5 Approach to spatial analysis

2.5.1 Significant effort will be put to understanding the spatial setting of the key Principal Site locations with a view to providing a useful starting point on which to 'grow' future site prediction studies. Spatial analysis tasks will be carried out to inform the research themes below. Tasks will concentrate on patterns of change through time and across the sample. Detailed intra-site spatial analysis will only be carried out to inform specific questions posited in the research framework below.

2.5.2 The following chapters address each of the major periods into which the CTRL archaeology strategy is split. The original research objectives are summarised. A section then reviews the broad range of evidence available in the archive. The subsequent sections itemise a framework of updated research questions for each period sub-division.

2.5.3 It may be useful for the reader to refer to the project timeline diagram when reviewing this part of the UPD (figure 2-1) at rear cover.

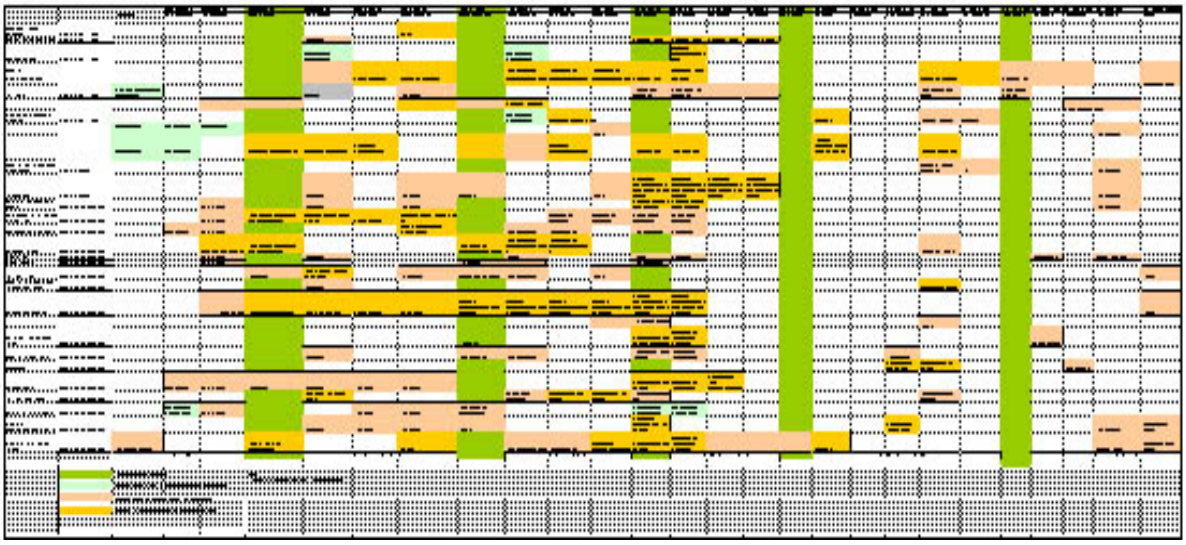


FIGURE 2-1 CTRL PROJECT TIMELINE

[Please see inside rear cover for full scale timeline pull-out]

2.6 "Hunter-gatherers" – The Mesolithic and Early Neolithic Transition

2.7 Original research objectives

2.7.1 a. Define the nature of contemporary geomorphology and environment and its natural changes through time.

2.7.2 b. Define range of human activity and where it took place, particularly through the study of palaeo-economy.

2.7.3 c. What was the effect of climatic and environmental changes on human lifeways and adaptive strategies?

2.8 Review of datasources

2.8.1 The majority of evidence for this period was likely to come from the Thames Valley zone and tributaries. Since the splitting of the CTRL into Section 1 and 2 only the Harrietsham area, by way of previous discoveries of Mesolithic flint scatters, was identified as a key area for potential good datasets.

2.8.2 Data retrieved from Section 1 fieldwork has indicated that significant evidence contributing to the research objectives above has been recovered. Although dated primary evidence for human activity is limited to a single site for the late Mesolithic (Sandway Road), and a possible flint knapping site of the same era at Beechbrook Wood, a wealth of environmental indicators and secondary flint scatters have been recovered throughout the route corridor.

2.8.3 The data has significant potential to address the research objectives through the further study of selected palaeo-environmental assemblages and study of the distribution and content of late Mesolithic flint scatters in the landscape. The above framework will provide a context for the further study of the *in situ* assemblages at Sandway Road and Beechbrook Wood.

2.9 Updated research framework

2.9.1 The following questions shall seek to elaborate on the objectives above targeted at specific assemblage, chronological and spatial datasets.

2.9.2 All lines of palaeo-environmental data shall be used to produce a landscape reconstruction of the contemporary environment.

2.9.3 Does the data inform a variability pattern in site type or location that may be attributed to geomorphological (including soil type), raw material source, or environmental factors (hydrography, altitude, orientation, vegetation)?

2.9.4 Can the types of activities that were being prepared for be discerned through quantification of the relative frequency of artefact types discarded? What patterns emerge between differing topographic and environmental settings?

2.9.5 Do the assemblages indicate differing sources for raw material? What do the sources of material indicate about mobility patterns and ranges?

2.9.6 Does the evidence for human activity represent single or repeated use over time at Sandway Road and Beechbrook Wood? What has been the effect of bioturbation on the assemblage? Can a limited refitting exercise demonstrate significant bioturbation has occurred as demonstrated at Hengistbury Head, for example (Barton 1992). If repeated or habitual use is demonstrated is there evidence to suggest seasonality and/or that the activities taking place at these locations had some special practical or ritual purpose governing re-use (Garwood n.d.)?

2.9.7 What plant foods are found in association with the *in situ* assemblages? Can the presence of cereal remains at Sandway Road be resolved? What is the cereal taxa – is there evidence for domestication? How does the context of the find relate to other similar claims for early cereal use in the UK?

2.9.8 What does the site distribution evidence contribute to establishing a predictive model for lowland south-eastern England in the Mesolithic?

2.9.9 What is the landscape relationship between the Mesolithic activity pattern and subsequent early Neolithic activity patterns?

2.10 "Early Agriculturalists" – The Neolithic and Early Bronze Age Landscape

2.11 Original research objectives

2.11.1 a. Define nature of contemporary environment.

2.11.2 b. Determine nature and effect of clearance for agricultural activity.

2.11.3 c. Define ritual and economic landscapes and their relationships.

2.11.4 d. Determine nature of and changes in economic lifeways, e.g. relative importance of hunting-foraging and agriculture, studied especially through recovery of faunal and charred plant remains.

2.12 Review of datasources

2.12.1 As for the preceding period numerous secondary deposit lithic scatters have been identified from phases of evaluation and mitigation work that have potential for determining patterns of activity on the landscape level for resource exploitation and mobility throughout the period.

2.12.2 During the earlier Neolithic, pit deposits containing ceramics, flint and limited environmental evidence occur at several sites to the east of the Medway Valley. The CTRL data is dominated for this period by the discovery of several structures at White Horse Stone, with associated environmental and artefactual assemblages.

2.12.3 In the later Neolithic there appears to be a marked increase in the number of secondary flint deposits recorded. Human remains appear in the pit deposit assemblages at two sites. As for the earlier Neolithic, it is notable that the North Kent Plain has produced minimal evidence for the period, whilst activity is concentrated to the east of the Medway Valley.

2.12.4 Four sites have produced Beaker style sherds, one of which is in association with a burial. In the LNE and EBA, five ring 'ditched' monument groups are identified and secondary flint scatters continue to occur in the record. Cremation deposits begin to appear during the EBA and have been recorded at two sites.

2.13 Updated research framework – Neolithic Landscape

2.13.1 All lines of palaeo-environmental data shall be used to produce a landscape reconstruction of the contemporary environment.

2.13.2 Is there evidence for an ever-intensifying clearance of woodland? Can this be related to increased agricultural land-use?

2.13.3 Is the evidence for clearance distributed across the route or only where associated with particular activity or settlement evidence? Are cleared areas in the Mesolithic 'reoccupied' in the early Neolithic? Can sites such as Sandway Road and Beechbrook Wood demonstrate this?

2.13.4 What is the evidence for continuity from the late Mesolithic in terms of the types and geographic occurrence of activity and evidence for subsistence patterns? What

patterns in comparing the Mesolithic and Neolithic flint scatters can be determined? Do they share attributes such as topographical location?

2.13.5 Can the primary and secondary worked flint data inform a variability pattern in site type or location? What factors are governing that variability - geomorphological (including soil type), raw material source, or environmental factors (hydrography, altitude, orientation, vegetation)? What is the relationship of recorded flint scatters to more intensive activity sites such as White Horse Stone?

2.13.6 Structured deposition in pits is noted across the route and chronologically appears to be the first indication of a change in the material assemblage and level of activity. What does this evidence contribute to our understanding of the spatial patterning of practices in the Neolithic landscape, and the kinds of cultural concerns or classificatory schemes represented in such deposits (Garwood n.d.)?

2.13.7 Do the Neolithic buildings at White Horse Stone represent residential settlement occupation or did they have some other purpose? Does the evidence from dry valley sequences along the CTRL route suggest that the rarity of Neolithic settlement sites is due to preservation conditions (Garwood n.d.)?

2.13.8 What other evidence is there for 'residence'? What does the range of secondary evidence and subsequent land-use pattern suggest about the location of possible 'lost ' settlements?

2.13.9 What is the range and distribution of animal and plant remains in the earlier and later Neolithic? Do they represent 'economic' data or are they limited to contexts demonstrating a 'ritual' or 'socio-structured' role?

2.13.10 What chronological and subsistence indictors are contained within the ceramic assemblage? A C14 AMS precision date strategy will be developed and a ceramic seriation report prepared. How does the subsequent series match patterns proposed regionally? What is the evidence for longevity during the Neolithic period? Does the evidence represent small fragments of an intensive range of activities over long periods, or local short-lived episodes?

2.13.11 The Neolithic structures at White horse Stone are unique to Kent at this time. Detailed research objectives require finalising with reference to the White Horse Stone assessment report. It will be necessary to refer to these in detail in preparing the archive research report for this site.

2.13.12 Discuss the evidence for long term continuity of place in the landscape from earlier Neolithic through to the later Neolithic ceramic deposits (Grooved Ware pits). It will be aimed to present the later Neolithic evidence in detail due to its relatively unknown status in Kent (Champion n.d.).

2.14 Updated research framework – Early Bronze Age Landscape

2.14.1 EBA secondary flint assemblages are not readily discernible from Neolithic examples, however there are certain diagnostic items such as thumbnail scrapers, barbed and tanged arrowheads and flaked knives and daggers. If EBA components of the secondary assemblages can be isolated, compare the evidence distribution to paragraph 2.13.4 above.

2.14.2 How does the CTRL evidence from grave contexts relate to wider interpretations of late Neolithic and early Bronze Age funerary traditions at regional and national scales (Garwood n.d.)?

2.14.3 Can a distinction between 'private/domestic' and 'corporate/ritual' activity be identified spatially? An analysis of the distribution of 'ritual' and domestic' activity should carried out with regard to a range of attribute variables to demonstrate the inter-relation or inter-dependence of the two classes of evidence.

2.14.4 The Beaker groups: the assemblage analysis should include full recording of fabric, form and decoration. What is the provenance of the assemblage? Petrological analysis may determine local or regional sources. Residue analysis could be conducted where possible to identify vessel function.

2.14.5 In general, although there are many EBA ceramic studies a finely tuned ceramic chronology for this assemblage will provide significant benefit regionally. A key research question is what level of regionality the assemblage demonstrates from the LNE through to the MBA? Is there an imported component?

2.14.6 Evidence for residential architecture is generally minimal for the period. What evidence does the CTRL data provide? Can a development be demonstrated through to the MBA/LBA?

2.14.7 Does the CTRL evidence contribute to our understanding of the social and political significance of funerary monuments and monument groups in the late Neolithic and early Bronze Age? In particular, to what extent do they 'reflect' social organisation or were they more concerned with expressing idealised relationships among particular elite groups (Garwood n.d.)?

2.14.8 What are the chronologies of funerary monument groups and individual monuments along the CTRL corridor and is it possible to recognise tempos of monument building (Garwood n.d.)?

2.14.9 How do sequences of burial events and material deposits relate to monument histories (Garwood n.d.)?

2.14.10 What were the spatial lay-outs of the CTRL ring-ditch/barrow groups (Garwood n.d.)?

2.14.11 Are patterns evident in the siting of ring-ditch sites in the landscape, and what is the relationship of the CTRL sites to wider distribution patterns (Garwood n.d.)? The ideas cited in Woodward (2000) , and Field (1998) should be considered (Champion n.d.).

2.14.12 Is it possible to identify relationships between monuments and settlement evidence (Garwood n.d.)?

2.14.13 How do ring monuments appear to relate to settlement evidence and secondary flint scatters? What patterns do the finds assemblage at these sites present? Do they represent distinct and recurrent combinations, or variable finds groups (Brück 2000)? What does this indicate about social relations between different site types?

2.14.14 Can we identify seasonal use at these monuments and any suggestion that the sites may have been used by several groups converging at the site for specific activities of a communal or ritual nature?

2.14.15 The Peterborough region has been interpreted as a 'ceremonial landscape' due to the paucity of domestic residence in association with EBA monuments. At Irthlingborough in the East Midlands, a mixed landscape is demonstrated, with settlement towards the floodplain of river valleys. What kind of model can be proposed for the CTRL sample? Were the funerary monuments investigated along the CTRL corridor located with reference to territorial boundaries, sacred/secular divisions, or 'cosmographic' ordering of the late Neolithic and early Bronze Age landscape? Is it possible to identify similar concerns in the spatial design/layout of monument groups in their immediate landscape settings (Garwood n.d.)?

2.14.16 Is there evidence for an expanse of clearance and agricultural pastoralism or crop production in the EBA? Quantify and plot crop and animal bone evidence. What is the context of this evidence (ritual or domestic deposition)? Do early land boundaries appear in the data? Consider the socio-political role of these features if they are present.

2.15 Updated research framework – Early Bronze Age / Middle Bronze Age Transition

2.15.1 The onset of the MBA at around 1500BC is characterised by the following broad trends. *Increased regionalism*, as demonstrated by Urn styles and regionally discreet Deveral-Rimbury styles. *Increased residential evidence*, as indicated by the development of enclosures, settlements and land division. *A change in burial rite*, small cremation groups now dominate with no grave goods.

2.15.2 What is the CTRL evidence for MBA (Deveral-Rimbury associated) settlement and continued structural deposition practices (e.g. artefact deposition as Thurnham) (Champion n.d.)? See also paragraph 2.19.8, below.

2.15.3 Explanations for the changes are often linked with agricultural intensification (and expansion into previously non-exploited land/soils), a collapse of the corporate authority structures of the EBA and the development of a prestige goods system representing a new socio-political order based on household alliances. Requirements for increased production, climatic deterioration, and over-exploitation of soils have all been raised as 'factors' in the demise of perceived corporate authority structures and fragmentation to regionalism. Increased colluvial deposition is often cited as environmental evidence for increased agricultural intensification (Brűck 2000). Brűck suggests several alternative lines of enquiry into why subsistence patterns appear to have changed so visibly.

2.15.4 Were economic changes, suggested by the appearance of settlements and field systems, the consequence or the cause of wider social transformation?

2.15.5 The appearance of farms and field systems has been taken to indicate agricultural intensification. What evidence is there is there in the CTRL dataset to support this? What can we identify about agricultural technology and farming regimes to contribute to this question? Are new soil types exploited in this period or earlier in the Bronze Age?

2.15.6 What is the pattern of colluvial deposition? Can a chronological and spatial model be developed to query the assumption that more widespread colluvial events are indicative of increased intensive agriculture? Can the soil erosion be related to plough agriculture of forest clearance?

2.15.7 It is suggested that the adoption of enclosed settlement and organised residential structures can be associated with an increased interest in inheritance and legitimising of land rites. However, it is apparent that often continuity of settlement at MBA sites has been difficult to establish beyond a single 'generation' (Brück 2000) 288). What chronological indicators can the CTRL data in the MBA contribute to this question?

2.15.8 Does the distribution and chronology of cremation burial reflect social change (Brück 2000), 292)?

2.16 "Farming Communities" – The Later Bronze Age and Iron Age Landscape

2.17 Original research objectives

2.17.1 a. Determine spatial organisation of the landscape in terms of settlement location in relation to fields, pasture, woodland, enclosed areas and ways of moving between these.

2.17.2 b. Consider environmental change resulting from landscape organisation and re-organisation.

2.17.3 c. Determine how settlements were arranged and functioned over time.

2.18 Review of datasources

2.18.1 Evidence for the later 2nd millennium BC (MBA) and early 1st millennium BC (LBA) is characterised by significantly increased evidence for landscape organisation represented by numerous examples of 'field' boundaries and possible trackways (Saltwood). Limited settlement evidence includes a post-built structure (White Horse Stone), and a range of settlement related activity at Beechbrook Wood. Throughout, metal finds are rare and production evidence rarer still. Combined, the overall ceramic assemblage covers all main known groups and presents the opportunity for a detailed seriation of regional types and forms to be coupled with a programme of absolute dating and reside analysis. Several sites have evidence for unfurnished cremation deposits either isolated or in small groups. Small assemblages of plant and animal remains are present and will provide opportunity for the presentation of broad scale species mapping and developmental analysis. Palaeo-environmental sequences have been recovered that will enable a consideration of changing vegetation and environmental effects of human activity including investigation into the causes of colluvial deposition.

2.18.2 A noticeable flourish of settlement evidence is apparent throughout the route in the EIA. Significant settlement sites with a full range of evidence types are represented at White horse Stone, Beechbrook wood and Northumberland Bottom. The increase in settlement evidence is accompanied by an increase in associated field system features including enclosure. Continuity from the EIA through to the LIA is recorded at several sites (Northumberland Bottom, Beechbrook Wood, Little Stock farm and Saltwood are notable examples). Abundant ceramic, faunal, and metalwork assemblages have been recovered from differential contexts including isolated pit groups, processing and production sites, and domestic residence structures. Burial rite is represented rarely but significant furnished burials are found at Saltwood and Whitehorse Stone.

2.19 Updated research framework – The Later Bronze Age Landscape

2.19.1 Changing environmental conditions have been associated with the development of an organised agricultural landscape. Colluvial deposition is often cited as an effect of woodland clearance and soil erosion resulting from agricultural activity. It is possible that a climatic deterioration also occurred during the period towards the end of the 2nd millennium BC. Can the interrelations of climatic changes, landscape re-organsation and agricultural activity (and soil types) be demonstrated by the CTRL data to determine a historical reconstruction of changing environmental conditions?

2.19.2 What do the plant and animal assemblage data indicate about the relative role of pastoral or mixed farming? How is the evidence related to the expansion of field systems and land division? What evidence is there for increasing use of plant and animal resources for non-subsistence uses such as textile production?

2.19.3 What is the relative occurrence of different crop regimes? Is there an increasing use of spelt as opposed to emmer wheat chronologically? What new crops are introduced? Can the pattern of crop use be related to soil type and altitude? What other socio-economic or technological factors are relevant to crop selection?

2.19.4 Is there evidence for processing and storage of agricultural products in this period? Can we talk of an agricultural surplus, and if so can this be related with other lines of enquiry to demonstrate the socio-political drivers of the expanse of formally exploited agricultural landscapes?

2.19.5 Can patterns of regionalism be demonstrated from the spatial distribution of field systems and pottery groups as suggested by Yates (1999)? What is the relationship between the location of LBA activity with the preceding period and the succeeding? Is continuity apparent or do the LBA sites represent exploration of new locales? Is a period of abandonment in evidence at the end of the LBA as seen in the Thames valley (Yates 1999)?

2.19.6 Can patterns of soil type exploitation be demonstrated? What is the relation of field systems to the natural hydrography and altitude? Can a routewide model be proposed for this range of attributes?

2.19.7 Does the overall activity pattern demonstrate a unified approach to the early development of farming communities or, is there a fine grained variation in evidence between different locations? What social groupings lie behind such patterns?

2.19.8 Significant Deverel-Rimbury and plainware assemblages have been recovered. A detailed seriation analysis coupled with absolute dating and residue analysis will be used to present a ceramic chronology (correlated to existing series) for the CTRL sites. The context (settlement/burial), source of raw material, distribution of vessel types, of the ceramic assemblages will enable questions of regionality, production and trade, role of structured deposition and 'feasting' economy, and visibility of the burial rite to be integrated with the above framework.

2.20 Updated research framework – The Early and Middle Iron Age Landscape (c.800 to 300 BC)

2.20.1 The LBA to EIA transition is often characterised by the cessation of bronze hoarding. However much continuity in settlement and material culture is generally evidenced and questions of precise chronology are especially significant for any sites within the EIA/MIA bracket. There is an imbalance in the extent and quality of evidence available in the later pre-Roman Iron Age, and therefore reporting EIA and MIA data must concentrate in the basic questions of chronology, identification, quantification and distribution.

2.20.2 In terms of the analysis and publication of the assemblages more attention needs to be paid to contextualising material culture as opposed to strict division of specialist work. Minimum levels (as stated in works specification for assemblage recording, UPD Part 4) of quantitative and contextual data must be recorded to allow others to consider

issues of structured deposition and spatial organisation. Finds catalogues need to be cross-referenced to phase and context data. (Haselgrove *et al* 1999)

2.20.3 Major themes are associated with population expansion as perceived by expansion onto previously un-exploited soils, and the progress of more nucleated social groups evidenced by the return of enclosure settlement in the middle and later Iron Age. The question of continental contact should be evaluated through artefact studies. Early and middle Iron Age sites in east Kent appear to be utilising a distinctive 'continental' style pottery. Are these imports? Do the CTRL sites fall within this distinctive zone, or do the new finds expand this zone?

2.20.4 The period up to 300BC is characterised by a dynamic pattern of agricultural intensification including linear boundaries, field systems, pit alignments and isolated water holes and pits (Haselgrove *et al* 1999) . At what point is this evidenced in the CTRL sample. Does the sample demonstrate a homogenous pattern of expansion? What patterns can be observed between 'open' and 'enclosed' settlements? How does the Beechbrook multiple ditched enclosure compare to other examples from Eastern England (e.g. Marlow Theatre, Canterbury)? Do they relate to the Wealden hillforts (Hill 1995) ? Can a regional style be demonstrated Champion T and Overy C, 1989) ?

2.20.5 Is the 'expansion' of settlement related to increased production specialisation, as inferred by the large scale exploitation of Wealden iron ore, for example, or increased standardisation or centralisation of pottery production. Can the evidence for agricultural regimes be integrated also to demonstrate region-wide socio-economic change?

2.20.6 Detailed knowledge of agricultural practise in this period is poor (Champion T and Overy C, 1989). Effort will be made to maximise reporting of animal and plant remains to help inform 1st millennium practises.

2.20.7 Can patterns of variable crop and animal husbandry (arable versus pastoralism) be related to different altitude and soil types? Is the introduction of bread wheat grain (spelt wheat replacing traditional emmer varieties) related to the expansion onto heavier soils?

2.20.8 Does the evidence of environmental change in the period (pollen sequences) show any regional variation in the impact of human behaviour on the landscape? Does the evidence indicate a worsening of climatic conditions up to 400BC and thereafter some improvement?

2.20.9 Can climatic variation be related to a visible (and related?) expansion into heavier soils and increased woodland clearance? Does the crop regime reflect either climatic changes or selection of different soils?

2.20.10 Environmental analysis will be based on a routewide environmental reconstruction of change, overlaid with studies of crop and animal distributions trough time. Major patterns will be identified and discussed in terms of environmental and social change.

2.20.11 Is a large scale landscape re-organisation visible that can be correlated with any of the above possible causative factors? Is increasing production and or increased population in evidence? Are field systems laid out as an indication or effect of the politicisation and formalism of society related to environmental factors related to improving climate after 400BC?

2.20.12 Ceramic chronologies supported by detailed series of AMS C14 dates (only AMS technique from primary contexts [or single entity contexts] have the potential to overcome the calibration curve plateau problems [c.800-400BC] for the period) have the potential to provide a regional type series chronology through application of Bayesian statistics. Does the production and distribution of series types (especially finewares) demonstrate a trend towards social centralisation within the region? This could be investigated through thin section analysis of key vessel groups.

2.20.13 Continental contact maybe demonstrated through occurrence of imported fine wares from the MIA onwards. Can fluctuations in this trend be identified that may indicate periods of political independence, with the development of locally produced fine and decorated wares?

2.20.14 What potential exists in the ceramic archive to demonstrate variation between different site types in terms of use and consumption of resources? Could residue analysis provide a basis for cross comparison of vessel function and context?

2.20.15 Ceramic report for the period should concentrate on the basic attributes of technology (characterisation of fabric types), typology, distribution (can distribution plots demonstrate local production regions and exchange networks?) and dating. The key objective of the study shall be to provide a pattern comparison across the sample demonstrating variation in function and context of different vessel types. An illustrated, dated vessel type series catalogue shall be produced together with vessel type distribution plots across the route.

2.20.16 Knowledge of the early use of iron is rare in the region and priority should be given to close dating of such evidence and technological analysis of any production evidence. Slags, moulds, crucible and hearth linings should be targeted for precision dating if suitable samples are available (White Horse Stone). Ore sources may be determined through geological analysis.

2.20.17 Metal working: can ore sources be related to specific ore types (such as high carbon or high phosphorous) that may indicate different tool type preferences? Within sites does the distribution of smelting and smithing evidence reflect a pattern of smelting outside/smithing within settlement boundaries?

2.20.18 What can the locations of settlements add to a predictive model for the future discovery of similar sites in the region?

2.20.19 Within settlements it is has often been difficult demonstrate distribution of contemporary structures. Can this be achieved, and what residential functions and productions can be mapped from structures and artefact spatial analysis? Are extensive open settlements the result of frequent locational shifts of small communities?

2.20.20 What do isolated pits and burials indicate about land division and boundary and symbolic or ritual activity in the open landscape? Utilise evaluation and watching brief data to discern the overall level of activity across the sample landscape (Haselgrove C 1999).

2.20.21 Cremation evidence in the MIA is rare since the occurrence of cremation is generally associated with later continental influences. Poorly preserved cremation residues may be found at Beechbrook Wood in this period. Dating of these will be important with high precision AMS dates if the rite is associated with the MIA enclosed settlement.

2.20.22 The middle to later IA transition is characterised by a marked increase in material culture and the types of context in which it is found. Analyse the available data to illustrate this. How much is this a question of preservation or location investigation bias (destruction of earlier evidence by the increased agricultural intensification of the period and subsequent periods?). What maybe the reasons behind this perceived 'abundance'?

2.21 "Towns and their Rural Landscapes I" – The Later pre-Roman Iron Age and Romano-British landscapes (c.300Bc to c.AD500)

2.22 Original research objectives

2.22.1 a. What was the effect of the development of towns (e.g. London, Springhead) on the organisation of the landscape?

2.22.2 b. Did population increase and concentration effect natural resource exploitation and accelerate environmental change?

2.22.3 c. How were settlements and rural landscapes organised and how did they function?

2.22.4 d. How did the organisation of the landscape change through time?

2.22.5 e. Consider the effect on the landscape of known historical events, e.g. the arrival of Roman administration.

2.23 Review of datasources

2.23.1 In 'Understanding the British Iron Age' (Haselgrove *et al* 1999) Kent is classed as 'unsorted', or an area with a partial research framework. This indicates that the county possesses a fair amount of settlement evidence supported by material culture knowledge and environmental data. Whilst the data is classed as reasonably accessible, it is noted that, aside from Champions' (1994) synthesis, integration of the various datasources into a research framework has yet to be achieved. It is therefore highlighted as a region requiring intensive regional integration of evidence and synthetic reporting to enable better assessment of regionality and how the data compare with more intensively studied areas.

2.23.2 Collation and presentation of the basic data is a key priority for the CTRL project to contribute to this end. The Project Timeline diagram clearly demonstrates the expansion of all lines of evidence in the Iron Age, especially for the later Iron Age and transitional Romano-British period.

2.23.3 Given the complexities, especially of the transitional period, and in line with the intention of the project overall, it is not intended that the project attempt to cover all current transitional themes will be reiterated here. The core artefactual, chronological and spatial evidence will be clearly presented and specific issues discussed according to the potential of the integrated fieldwork data. The potential for the incorporation of the CTRL data into future detailed regional studies will be discussed and presented.

2.24 Updated research framework – The Later Iron Age and Romano-British Transition

2.24.1 The recent literature on research agendas for the later Iron Age (Haselgrove *et al* 1999; English Heritage 1997) calls for effort to made to understand indigenous transformations in the later 1st millennium distinct from the influence of Roman rule and continental contacts. Important for Kent is to understand the cultural and more precise chronological origins of the 'new' material culture as defined by the introduction of coinage and wheel made pottery, as well as new settlement types (fortified enclosures,

numerous smaller enclosures), and ritual practise (increased symbolic deposition and hoarding, cremation cemeteries).

2.24.2 It will be imperative to attempt to develop and refine the chronology using the ceramic assemblages in conjunction with other artefactual evidence (and supported by absolute dating where appropriate) (Millet n.d.). This will provide a framework for understanding and examining the changes and themes identified in this section.

2.24.3 In terms of indigenous development, identifying continuity of settlement is also important. Were the Roman style 'villas' developed by local Iron Age descendants for example or by 'immigrants' from the Romanised Gallic homelands? Does the proto-villa at Thurnham demonstrate any parallels with the Gallic Hall Villas in layout? Does the integration of the finds studies support a widespread immigration or local adaptation as the prime reason for visible cultural change?

2.24.4 Another feature of the LIA settlement pattern is the emergence of larger centres of settlement. The recent discovery of a LIA rich burial near the Westhawk Farm RB site suggests the possibility of an earlier origin there and together with the Brisley Farm site raises questions about the occupation of the Ashford area in the LIA. This should be a major question (Champion n.d.).

2.24.5 Settlement: the final centuries of the 1st millennium BC sees an intensification in the landscape, that most believe is almost certainly connected to population rise that may be attributable to a combination of factors (Haselgrove *et al* 1999). This model shall be tested through mapping the available sites and quantification of material culture associated with find spots. Increased level of activity is often linked to the use of iron in agricultural technology that allowed exploitation of heavier soils, but can we also see expansion in light lowland soils? Did the introduction of the rotary quern together with possible climatic improvements after 400BC 'aid' this expansion? Or is new technology and introduction of field systems a result of social organisation changes that demand increased production (Haselgrove *et al* 1999)?

2.24.6 A simple model sees changes in south-eastern England from 150BC onwards as a peripheral product of European developments. From what point does imported material culture appear in the CTRL data, and what types? Does the archive represent Gallo-Belgic 'imports' or locally produced stylistic influences? Does the evidence suggest direct political contact, immigration or other types of cultural affiliation? What 'kingdom' hinterland do the CTRL sites fall within, an indigenous and largely independent local hierarchy or one with increasing manipulation from Rome? Can any variation in political allegiance be identified from east to west across the sample? The ceramic and other artefact assemblages should help us to investigate the emergence of local and regional identities and evaluate broader networks of contacts (Millet n.d.).

2.24.7 How does the evidence for Iron Age burial (inhumation/disarticulated bone or cremation, grouped or isolated) help to inform our understanding of changing burial rite in the later 1st millennium? Do cremation cemeteries appear to be linked to increasing continental influence in the LIA? Is inhumation an equal but alternative rite dictated by local socio-political conditions?

2.24.8 There is a further (or more specific) question about burials: how far did organised cremation burials replace other modes of disposal (single cremations in settlement areas or ditches, exposure and/or /disarticulation for example)? Did cemeteries (whether cremation or inhumation) replace other modes of disposal as totally as we think? (Champion n.d.).

2.24.9 The date and quantification of Roman finds should be analysed spatially and through time and comparable databases of imported and 'local/regional' types produced. This to be compared to a similar model for agricultural production products and discussions written up.

2.25 Updated research framework – Romano-British Landscape

2.26 Review of Datasources

2.26.1 The CTRL passes through several well-defined regions of Kent's Roman past.

2.26.2 A number of sites including Northumberland Bottom are located within the Watling Street corridor, the line of the Roman road between Rochester, Springhead Roman town and London. Villa sites are recorded either side of the road along this corridor. Northumberland Bottom provides the opportunity to investigate the landscape organisation and rural economies of minor rural agricultural settlements that may be compared to the evidence form these sites and the neighbouring urban centres.

2.26.3 From south of Rochester on the east bank of the River Medway the CTRL route passes along the foot of the North Downs. This west to east transect is characterised by villas and agricultural landscapes that occupy the rich soils of the greensand ridge on the south facing lower slopes of the north downs at or around the springline. Thurham villa forms part of this landscape and here the villa evidence is complemented by several minor agricultural sites recorded during the project between Maidstone and Ashford including Snarkhurst Wood, Hockers Lane and Beechbrook Wood.

2.26.4 From Ashford the CTRL crosses the Stour Valley floodplain and Stone Street Roman Road from the rural Roman small town at Westhawk farm to Canterbury and continues across low lying lower greensand to the coast at Saltwood. The CTRL sample has demonstrated several rural settlements (e.g. Bower Road, North of Saltwood Tunnel) that seem to enforce the region as a rich agricultural hinterland serving the small towns and larger centres at Lympne, Dover and Canterbury. Numerous minor sites comprising field boundaries, small cremation cemeteries (Boys Hall Road) are also present providing a rich dataset with which to present results supporting a better understanding of Roman urban/rural landscape and agricultural practise and economy.

2.27 Updated research framework Romano-British Landscape

2.27.1 As for the preceding section the key objective shall be to report on a refines chronology across the CTRL site sample which will facilitate the synthesis of arguments formed under the research theme areas listed below (Millet n.d.).

2.27.2 The key transitional theme is the relative expression of 'Romanisation'. The synthesis should attempt to 'identify and assess the changes in landscape organisation resulting from the Roman Conquest' (Esmonde-Cleary 1999). Can we observe settlement shift, the creation of new field systems and shifts in plot boundaries? A contextual synthesis is proposed through quantification of the data and its statistical manipulation and graphical display through use of a GIS. Such a presentation that centres on social and economic structures and change through time will underpin the explanatory framework, avoiding purely empirical presentation and at the same time opening up the dataset for researchers to interrogate within more sophisticated theoretical frameworks.

2.27.3 The Romano-British landscape is recognised through the mapping of trackways, roads, boundaries and other field-system elements set against the vegetation history,

topography and hydrology (Taylor 2001, 53). Mapping patterns of continuity and change can help us to understand the movement through and interaction between communities (ibid.). Can we demonstrate social and economic relations between various site types through mapping the form, extent and chronology and interaction of these landscape features and their interaction with environmental variables?

2.27.4 Identify the range and type of settlement and agricultural land-use evidence present. How do the patterns illustrate continuity into the period of Roman administration? Compare with late Iron Age results.

2.27.5 What is the density of settlement represented in the CTRL corridor. Can this be extrapolated to adjacent regions to inform future research potential of neighbouring areas?

2.27.6 What soil types and altitudes govern the presence or absence of agricultural practises and settlement? For instance Champion (1994) recognises that non-villa rural settlement appears to be relatively absent in the lower greensand and weald regions. To what extent is this pattern the product of research opportunity rather than a true reflection of settlement in this period? Mapping of the CTRL activity will add significant data to this question. Can new patterns be identified and models proposed for future site prediction studies?

2.27.7 How is Romanisation indicated through the study of agricultural regimes and crop husbandry practise? What evidence is there for diversification or intensification in agricultural production through time (Millet n.d.)?

2.27.8 Looking at patterns of consumption (seeds, bones and artefact assemblages) within the tighter chronology proposed. Can we see changes in the way that surplus was used and in the ways that it was consumed ("foodways" = butchery practice, cooking and eating habits etc.) (Millet n.d)?

2.27.9 Is there any variation in these patterns that can be related to the different forms of settlement site identified (villa, non-villa etc.)? For instance is there evidence for feasting at villas (Millet n.d.) ?

2.27.10 Investigation of Roman villas in Kent has concentrated on the structural and functional elements of the buildings. The priority now is to investigate the role of these centres within the wider landscape, comparing the range of economic activities from the Villas and lower order agricultural settlements. Utilising the economic and environmental data, the socio-economic reasons behind the development and decline of the villa can be investigated through the study of the chronology and fortunes of nearby non-villa rural sites (Drewett et al 1988, 214).

2.27.11 Can phases be identified during which the pattern of production and consumption (= whole finds assemblage) at Thurnham distinguish it from the other excavated sites. If so, do they correlate with changes in the structural forms present (Millet n.d.)?

2.27.12 In terms of the decline of the villa sites do we witness a flourish of nucleated non-villa settlement at the time that the major villa settlements are going out of use? What changes can be observed in the artefactual record that may be associated with the changes in the distribution of activity in the landscape?

2.27.13 Does Bower Road represent a villa settlement? Is the aisled building actually the principal building of a small villa type settlement or a subsidiary building within a larger estate?

2.27.14 Non-villa settlements are often thought to belong to the 'poor and lowly' and those who failed to become 'Romanised'. They tend to be defined by absence. No stone and ceramic building material. Lack of imported pottery and other items of material wealth such as decorative metal work, fewer coins etc. Do the non-CTRL sites support this model? What do quantification analyses of material culture indicate about the connection between villa and non-villa settlements and their economic and social relationships? For example numerous coins have been noted on 'rural' sites. This may suggest that their role in the economy may not be adequately reflected by their lack of structural evidence (Taylor 2001, 56). Map the relative wealth between different site types through assemblage summary distribution plots.

2.27.15 Good bone preservation is important to address of age sex distribution, subsistence, and pathology injury and ethnic origins. The cemetery at Pepperhill however fails to meet this basic criterion. Therefore, the Pepperhill cemetery data are largely limited to study of the grave assemblages themselves, the dating, interment sequence and type, orientation, type of container and generalised review of grave goods to inform status, belief and ethnic origin. Clearly the most important potential for research lies in the relationship of the cemetery evidence to Springhead itself. Because the CTRL work will be undertaken at a later date on this site it is recommended that these questions be revisited during any subsequent post excavation analysis in CTRL Section 2 (Millet n.d.).

2.27.16 At Pepperhill the detailed chronology is vital and AMS dates should be used to assess the dating of the latest phases. Nationally, it is still not clear how many 'late Roman' cemeteries continue beyond the fourth century.

2.27.17 With the sample of landscape available it is crucial to look at the overall distribution of burial within the landscape in the IA/RB period to assess whether the patterns change through time. This should also be done both for bits of human body (cf. classic Wessex IA) which do seem to continue to be deposited into the Roman period but are rarely reported upon and infant burials. Contextual study of these could make a vital contribution (Millet n.d.).

2.27.18 Post excavation work for Pepperhill will be aimed at maximising the presentation of factual data for future research by others. This will be accompanied by a detailed archive report on the sequence, structures and grave assemblages. Consideration of the cemetery, its sequence and range of burial rites will be synthesised with same period burial evidence from throughout the route in support of a high level statement on the distribution and type of RB burial practice from differing contexts.

2.28 Updated research framework - The late Roman-medieval transition

2.28.1 Esmonde-Cleary (2001, 93) stated hopefully in 1998, that large scale stripping of the landscape, of the type that in France had provided a long overdue glimpse of 5th century activity during construction for TGV and AutoRoute upgrades, may prove to show similar outcomes for the CTRL through Kent. A glance at the timeline map however will confirm that the dramatic appearance of this evidence has not been forthcoming despite concerted effort to locate these sites. Although Kent has the nearest thing to a complete 5th century artefactual sequence in England (ibid.93),

locating the undoubted settlement and other activity in the landscape has proved difficult.

2.28.2 The key objective will be to identify and report on 5th and 6th century data presenting the context, setting, taphonomy and site formation processes in some detail. Is the wealth of negative evidence a result of, site taphonomy, post depositional processes and field visibility biases (Hills 1999; Esmonde Cleary 2001)?

2.28.3 Perhaps the key question should be "do we know what we're looking for?" Has a reliance on relative dating obscured a slow rather than abrupt 'departure' of the Romano-British cultural horizon? Selected late contexts should be subject to AMS dating of ceramic residues to attempt to see whether the fall off in Romanised material culture is as dramatic as we are led to believe (suitable contexts at Thurnham and Pepper Hill should be utilised if appropriate deposits are present, Millet n.d). The relative fall off of Romano British material culture will then be mapped and integrated with the limited environmental evidence to attempt to understand 5th and 6th century land-use patterns.

2.28.4 It has been stated that environmental sequences through the 5th century indicate that by and large the countryside remains open and exploited (Esmonde-Cleary 2001, 96). Does the CTRL data support this view?

2.28.5 The study of difference and differentiation will be central to understanding the period (ibid.92). Does the earliest clearly Anglo-Saxon material occur in clear stratigraphic and spatial relationships to the ultimate Romano-British contexts? North-western European parallels may be an important source of comparanda for this discussion. What does the 5th and 6th century evidence from CTRL illustrate about the relative socio-economic or political contacts that were developing towards the end of the RB period with the NW European Germanic 'homelands' and Gallo-Roman provinces (Drewett et al 1988).

2.29 "Towns and their Rural Landscapes II" – The Post Roman and Anglo-Saxon Landscape (500 AD to 1000AD)

2.30 Original research objectives

2.30.1 a. What was the effect of the development of towns (e.g. London, Springhead) on the organisation of the landscape?

2.30.2 b. Did population increase and concentration effect natural resource exploitation and accelerate environmental change?

2.30.3 c. How were settlements and rural landscapes organised and how did they function?

2.30.4 d. How did the organisation of the landscape change through time?

2.30.5 e. Consider the effect on the landscape of known historical events, e.g. the arrival of Roman administration.

2.31 Review of datasources – The post-Roman Anglo-Saxon period

2.31.1 Early medieval Anglo-Saxon evidence is largely limited to the cemeteries and immediate landscape at Saltwood Tunnel and Cuxton. Non-funerary evidence is rare however. The Pilgrim's way sequence does preserve early medieval stratigraphy (including a single inhumation adjacent to the trackway), and nearby animal burials at West of Boarley Farm (White Horse Stone Principal Site group) are associated with possible Anglo-Saxon pottery. Further possible Anglo-Saxon pottery finds come from Tutt Hill and the Lodge Wood area watching briefs. Absolute dating of these assemblages is required to distinguish this material from the late Iron Age groups. Palaeo-botanical assemblages are limited to cereal remains at the West of Boarley Farm site (their suitability is dependant on absolute dating) and North of Saltwood Tunnel. Evidence for landscape reconstruction is largely absent, although micromorphology and pollen analysis from samples at North of Saltwood Tunnel may contribute to landscape reconstruction during the lifetime of the cemetery (dependant on further assessment of potential).

2.31.2 The overall framework for the period (key 'events and conditions') within which research questions will be considered includes the effect on the landscape of known historical events and processes (including the re-emergence of social administration), the conversion to Christianity, the origins of the manor and the development of ecclesiastical and tribal territories (Reynolds.n.d.)

2.32 Updated research framework – Anglo-Saxon period

2.32.1 In general the relationship of Britons and Saxons is difficult to interpret from the archaeological record due to the lack of settlement evidence. Can the dating of the earliest Saxon contexts be correlated temporarily to the latest Romano-British contexts? Mapping well dated activity across the sample may illustrate hiatus or contemporaneous activity zones in the landscape. Can changes in the existing settlement patterns be correlated with differing occurrence of artefact groups and perhaps immigration patterns?

2.32.2 The presence of two population groups at Saltwood and Cuxton and the siting of the cemeteries within established prehistoric landscapes will provide a framework for discussing issues of migration, integration, and socio-political or ideological meaning behind the material cultures represented and the relationship with past landscapes and peoples.

2.32.3 For instance is there a relationship between the selection of a Bronze Age barrow cemetery at Saltwood versus a river vista site at Cuxton in terms of different social groups? An understanding of the survival level of the prehistoric landscapes will be attempted through an integration of stratigraphic, soil-micromorphological study and pollen analyses. Readily available historical data sources such as charters, place name evidence, estate ands settlement morphology, and regressive map analysis should be conducted for the cemetery environs to place the two sites in there adjacent landscape contexts (Reynolds n.d.).

2.32.4 Is the juxtaposition of Saxon cemeteries to prehistoric ritual landscapes (Roman Sites) and expression of land claim by incoming groups or is the Anglo-Saxon 'cultural package' adopted seamlessly by Britons who reaffirm their ancient connection to the landscape following the departure of the Roman administration?

2.32.5 The CTRL sample includes transects either side of the Medway Valley. Current models propose that up to the mid 7th century the valley formed a territorial boundary between a Jutish Kent to the east and a predominantly Germanic or Saxon Kent to the west (Drewett et al 1988, 256). In comparing the two cemeteries can we distinguish this difference? Previously little early Saxon evidence has been recovered from the area west of the Medway. CTRL Section 2 fieldwork around the Ebbsfleet Valley and Springhead Roman town is beginning to transform this picture with the discovery of early Saxon settlement succeeding Roman levels at both sites and a cemetery on Winfield Bank. A detailed consideration of this evidence is not envisaged in the current stage of work although its presence should be noted when discussing the A2 corridor west of Medway landscape development.

2.32.6 Distinctive grave goods at Kentish cemeteries suggest that Frankish influence was also prevalent in the Eastern Kent region. Can separate Jutish and Frankish traditions be illustrated at Saltwood or is the presence of diverse material culture merely a reflection of close integration between diverse immigrant groups mixing lineage's during the establishment of the kingdom (Drewett et al 1988, 257)?

2.32.7 What do the cemeteries indicate about the social organisation of the populations? What similarity and differences can be ascertained? Is a range of social groups represented? Utilise the grave groups to propose a model or models for the source populations. How do different burial rites inhumation architecture and spatial distribution reflect cultural origins (for example the row graves at Saltwood could be assimilated to Frankish traditions, does the accompanying material culture?).

2.32.8 Key objectives for the cemetery analyses will be to:

2.32.9 Accurately phase the development of the cemeteries through adoption of an absolute dating programme of C14 dates integrated with stratigraphic data.

2.32.10 Provide a grave good seriation correlated to the absolute dating programme to demonstrate the use and deposition of funerary objects.

2.32.11 Were appropriate to the quality of bone preservation, undertake selected scientific analysis to determine age, sex and pathology, and geographic origin of individuals.

2.32.12 Can analysis of the burial ritual help in assessing cultural affiliations.

2.32.13 How far can the evidence provided by the CTRL sample be used to inform on the territorial context of the cemeteries.

2.33 "The Medieval and Recent Landscape" – 1000 AD to the modern day

2.34 Original research objectives

2.34.1 a. In what ways was local rural economy affected by Enclosure and agricultural intensification?

2.34.2 b. Consider the environmental effects of industrialisation.

2.34.3 c. Consider changes in land use and organisation following construction of the railways.

2.34.4 d. Consider the defence of the Thames Estuary and North Kent during periods of threat, e.g. Napoleonic Wars and World Wars.

2.34.5 e. Consider the effects of river (-side) exploitation and trading locations.

2.35 Review of datasources – The Medieval period and recent landscape

2.35.1 The range and type of evidence from the post-Saxon landscape up to the present day strongly suggests that the format of the original research strategy be adjusted. The original framework suggested that the post-Roman landscape up to about 1700AD be looked at within a common framework and subsequent post-medieval landscape be addressed as a single entity. The hiatus between the early Saxon period and early 2nd millennium, and the general level (when compared to the wealth of new data recovered for the prehistoric and Roman periods) and extent of data recovered for the post-Saxon period overall, suggests that it will be productive to group the later period together into a combined framework covering all sites from 1000AD to the present day.

2.35.2 To this end the following revised research framework is presented.

2.35.3 The current review of the CTRL data (see CTRLTimeline) indicates a distinct hiatus in evidence within the rail corridor between the 7th century cemetery evidence and the few sites where significant early 2nd millennium medieval archaeology has been recorded. A key objective shall be to assess the relevance of this pattern through survey of the evaluation and watching brief results and more recent landscape evidence. It is likely perhaps that the perceived absence is the result of continuity in land-use since the later 1st millennium AD in the region and that medieval settlement has been avoided by the corridor and that much of the recent rural landscape reflects established and continuous field patterns.

2.35.4 A number of distinctive medieval rural sites and historic landscapes have been located. The most comprehensive representation of the medieval and post-medieval landscapes has been recorded within the A2 corridor in the North Kent plain landscape zone. Evidence from the Northumberland Bottom and Tollgate zones and adjacent to the Medway at Cuxton includes enclosure, field boundaries, trackways, and settlement in the form of dispersed pits, kilns and chalk borrow pits. Intermittent evidence predominantly for land boundary division, continues in the landscape zone throughout the post-medieval period.

2.35.5 In the North Downs landscape zone the period is represented by the Pilgrim's Way trackway and adjacent settlement evidence in the form of a corn drier and various pits and numerous features recorded throughout the Boxley Valley historic landscape area

including Boarley Farm and an unusual enclosure at West of Sittingbourne Road. Historic woodland features have been recorded at Honeyhills wood. The medieval landscape and significant assemblages associated with Corbier Hall has been recovered at Thurnham.

2.35.6 Significant sites within the Greensand landscape zone include the moated manor house at Parsonage Farm, industrial iron working site at Mersham and the agricultural landscape recorded at North of Westenhanger Castle. The landscape's current agricultural character is maintained throughout the medieval and post-medieval periods as evidenced by numerous former field boundaries recorded throughout the area and occasional evidence for localised extraction of raw materials as seen at Little Stock Farm.

2.35.7 The project has carried out building recording work and investigation of site chronologies at the site of five post-medieval building complexes that have been demolished or relocated during the course of works (namely: no. 2 Boys Hall, Yonsea Farm, Old and Water Street Cottages, Talbot House and Bridge House). Detailed archive reports on these will be placed in the digital archive and it is not intended to discuss these sites in detail. Howev, their relationship to surrounding landscapes will be considered in a discussion of the overall development of post-medieval rural landscapes.

2.35.8 The CTRL route passes close to the Maidstone/Ashford/Folkestone railway, often occupying the narrow corridor between that and the M20 motorway. It will be possible to make some statements on the effect of the (Victorian) railway on landscape and changes in organisation. Saltwood (especially with the tunnel), Westenhanger, Mesham etc. are all located close to the railway, and the former estate associated with Boys Hall is crossed by the Ashford/Folkestone line.

2.35.9 Five sites throughout Section 1 have provided a glimpse of rural features associated with the defence of Britain during the 2nd World War. Army camps have been recorded at Northumberland Bottom, North of Westenhanger Castle and Saltwood Tunnel. Two pill boxes were recorded Tutt Hill and Beechbrook Farm and the redeposited remains of a tank line defence were recorded close to Leacon Lane.

2.36 Updated research framework – Medieval period and recent landscape

2.36.1 What is the reason for the abandonment or shift in settlement seen at Parsonage Farm and Westenhanger?

2.36.2 What function do the structures at West of Sittingbourne Road, Bower Lane and Saltwood have, and how does this relate to changes in landscape and resource utilisation?

2.36.3 Are such changes economical, social and/or political in origin? Are they related to changes in population densities, and intensification (or otherwise) of agricultural use?

2.36.4 Is there any evidence for settlement hierarchy?

2.36.5 Can changes through time in resource use/industrialisation (e.g. changes in Mersham iron working) be identified in the CTRL sample? Is there evidence for inter-site specialisation?

2.36.6 Trade and exchange: Do distributions of ceramics (and other classes of artefactual and environment/economic material) fall into meaningful patterns? Can economic/ political/ social affiliations be identified in such patterns, for example Church/secular lordships, the influence of urban centres such as Canterbury and London, as evidenced in the pottery supply – is it focused on Ashford or Canterbury?

2.36.7 To what extent can the archaeological evidence be related to documentary evidence for particular sites and localities along the CTRL route? Can the combination of such sources inform issues such as changes in landscape use, resource utilisation, changes in land ownership? Are any such identified changes political, economical or environmentally determined?

2.36.8 To what extent does the CTRL sample illustrate the impact of improvements in transport infrastructure upon rural (and urban) patterns of land ownership, as well as landscape forms, and modes/intensity of production?

2.36.9 Can changes in domestic life be determined through the archaeological record? Can the range of activities associated with domestic dwellings be determined? Do these changes with time, and if so is such a change related to general changes in the modes of production as the economic basis changes? Is this reflected in the studies of standing buildings undertaken as part of the CTRL project?

3 PART 3: RESEARCH ARCHIVE, DISSEMINATION AND PUBLICATION

3.1 Preface PART 3

3.1.1 This document is the third part of a four part Updated Project Design for analysis, dissemination and publication (UPD) prepared by Rail Link Engineering and the Institute of Archaeology University College London for the CTRL Section 1 archaeology archive. The structure of the UPD is as follows:

- PART 1 – Introduction, background and methodology
- PART 2 – Revised research framework
- PART 3 – Research archive structure, dissemination strategy, publication design and treatment of physical archive
- PART 4 – Key Assemblages for analysis and Principal Site report production

3.1.2 The post excavation analysis will be set within an updated research framework (UPD Part 2). The purpose of this section is to describe the proposed outputs, the delivery team structure and the treatment of the archive (both physical and digital).

3.1.3 The publication and dissemination design for the CTRL Section 1 Archaeology programme has taken full account of current best practise guidelines (English Heritage MAP 2, 1992), and published and unpublished sources for improving the way that data derived from developer funded projects is disseminated to both professional and non-professional users (Williams 1997; CBA 2001; Condron et al 1999; APAAG 2003).

3.1.4 The project outputs are defined as follows (See Figure 3.1).

3.1.5 (UR.0* refers to the archive index code to be applied)

3.1.6 UR01: Project monograph to be published by Archetype Books as an A4 single volume.

3.1.7 UR02: A freely distributed concise colour publication of general interest.

3.1.8 UR03: A digital research archive to be deposited with the Archaeology Data Service (ADS) for access and download in accordance with ADS user agreements.

3.1.9 UR04: Integrated Principal Site reports to be prepared for deposition with County SMR and included in the digital research archive.

3.1.10 UR05: Combined assemblage reports derived from analysis specialist work carried out on finds and environmental assemblages to be deposited with the county SMR and included in the digital research archive.

3.1.11 UR06: Physical archive and non-digital research archive elements.

3.1.12 UR07: Details of third party publication option as proposed by statutory consultees.

3.2 Hard Copy Publication Outputs

3.2.1 (UR01)

3.2.2 The adopted strategy aims to utilise a single high quality hard copy published volume of the results of the archaeological investigations and post excavation analyses to provide a detailed description of the range of data accumulated during the project. The contents will be period based and seek to present a well focused interpretative synthesis of the route wide results based around questions raised in a research framework produced specifically for the project (UPD Part 2).

3.2.3 It is planned that the publication will receive a wide distribution (copy run to be determined with publisher) and is aimed at an audience ranging from the undergraduate and informed independent user to the graduate and professional researcher (both academic and planning/commercial professional).

3.2.4 The publication is designed to be a highly accessible and affordable account of the projects archaeological results. An important secondary role for the publication will be to provide an informative gateway to the fieldwork and research archives.

3.2.5 (UR02)

3.2.6 A secondary publication will be a concise 'popular' publication designed and produced by Rail Link engineering for distribution in time for the commencement of Section 1 Eurostar services in October 2003.

3.2.7 (UR07)

3.2.8 Stakeholders Kent County Council and English Heritage have expressed an interest in making selected elements of the digital research archive available through a third party hard copy publication outlet (potentially a proposed regional journal to be known as South Eastern Archaeology (SEA)). To meet these requirements individual Principal Site reports are to be prepared as print ready reports taking account of SEA formats.

3.3 Digital Outputs

3.3.1 (UR03 – comprising UR04 & UR05)

3.3.2 Fieldwork data, analytical data, specialist reports and Principal Site reports will be made available in a digital archive resource to be curated by the ADS for future research use.

3.4 Physical Project Archive

3.4.1 (UR06)

3.4.2 It is anticipated that the project's archive of retained artefacts, samples and hard copy records associated with the fieldwork and post excavation stages will be deposited for long term curation in Kent at a central depository. The depository has yet to be confirmed to CTRL by KCC. Discussions with key stakeholders are ongoing in July 2003.

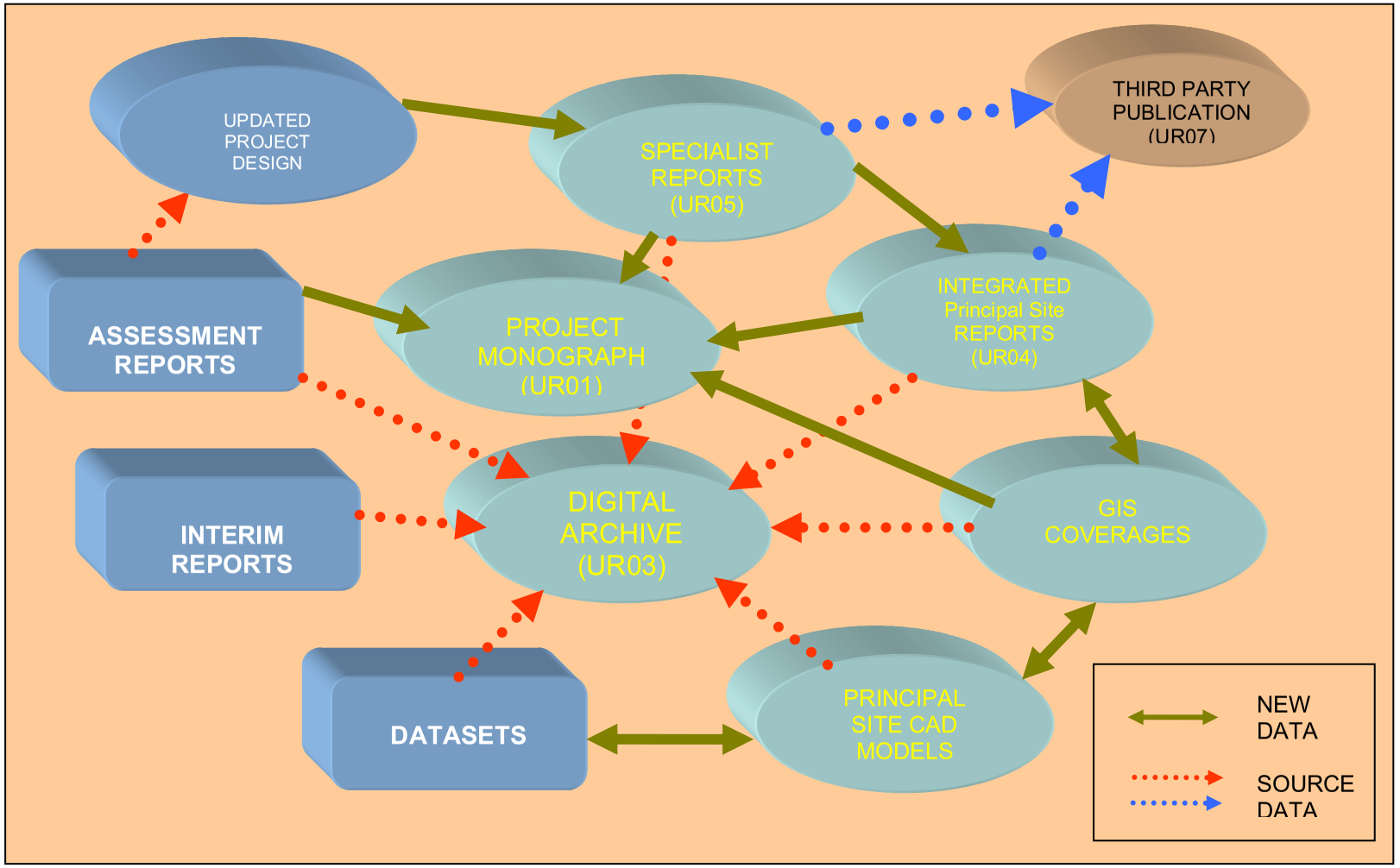


FIGURE 3-1 CTRL SECTION 1 POST EXCAVATION ELEMENT MODEL

3.5 Post Excavation Detailed Recording, Analysis, and Report Production

3.5.1 In order to achieve a **synthetic analysis** of the CTRL sample (as opposed to a synthetic *discussion* of individual site results) it is essential that the programme of work properly separate processing, detailed recording work and presentation of the results from analytical tasks that will be driven by the framework set out in UPD Part 2.

3.5.2 The UPD Part 4 identifies key environmental (including geoarchaeology and botanical) and artefact assemblages (including C14 absolute dating programme) that can contribute to this synthetic analysis.

3.5.3 The approach to detailed recording and analysis has aimed at providing a core team of specialists, led by a team leader from the Joint Venture Contractor (JV), who will work on key *Principal Site assemblages concurrently* to produce a synthetic database for effective routewide analysis. The team structure is illustrated in figure 3-4.

3.5.4 Detailed method statements for attribute recording (see Volume 2 UPD) have been prepared by RLE and the JV in consultation with the EH scientific advisor to achieve the required consistency and define the specific processing and recording tasks for each assemblage group.

3.5.5 A routewide project report on each key assemblage group (except small finds, these will be incorporated fully into individual Principal Site reports) will be prepared as a digital e-report for inclusion in the research archive.

3.5.6 The assemblage work stage is fundamental to finalising the integrated Principal Site reports. Stratigraphic processing and final phasing will be undertaken by individual Project Officers in the JV. Artefacts will be selected for illustration by assemblage team leaders and Chapter teams for inclusion within integrated Principal Site reports and the project monograph.

3.5.7 The phasing and dating of key stratigraphic sequences from Principal Sites excavated is to be completed by JV Project Officers with reference to the assemblage and C14 chronology reports. A key output of this stage will be a finalised CAD/GIS model that links finds and environmental data tables spatially to geo-referenced context polygons for each site phase thereby producing a fully cross referenced and phased model for analysis.

3.5.8 An integrated Principal Site report will be produced that finalises the results of assemblage and environmental recording and stratigraphic phasing into a definitive site sequence description for each Principal Site requiring an integrated report (see UPD Part 4).

3.6 Analytical Work to Produce Project Monograph

3.6.1 Analytical work to inform the project monograph will be carried out by the relevant *Chapter Team*. Each Chapter Team is the product of an ongoing liaison between period chapter academics (as appointed by the editorial team), JV period team leaders, and JV Project Officer's (PO). A lead PO will be appointed for each period chapter to carry out manipulation of inter-site

and intra-site data for the analysis. A detailed synopsis for each chapter will be worked up by the chapter academic lead authors and JV period team leaders in accordance with the research framework outline early during the post excavation programme.

3.6.2 The detailed synopsis will identify routewide analytical queries to address objectives posited in the research framework. Spatial and data pattern analysis will be carried out as a sequence of inter-site period based queries addressed by the period chapter team leaders to the JV team who will analyse the route wide data to provide analytical results to inform the project monograph.

3.6.3 GIS based spatial query and presentation will be conducted by the JV in association with Kent County Council Heritage Group in Maidstone. The GIS analysis will make use of the range of spatial datasets available at KCC.

3.6.4 The detailed chapter synopses will confirm the text, table, figure, illustration, and plate entries in the project monograph. The detailed format of the publication will be finalised by the publisher's designer in liaison with the JV and RLE/UCL editorial team based on these outlines.

3.6.5 The JV team is responsible for producing the required output as defined by the academic Period chapter lead authors in liaison with the publication designer. The outputs will include, text contributions, artefact illustration, illustration of GIS themes and site plans, reconstruction figures, tables and plates as appropriate.

3.6.6 Figure 32.1 demonstrates the process by which the JV team, UCL academic team, the Editorial team, peer review team and publisher will plan, produce and publish the final project monograph. The flow chart should be read in conjunction with Table 3.1. Figure 3.3 illustrates the core team parties responsible for producing the project monograph.

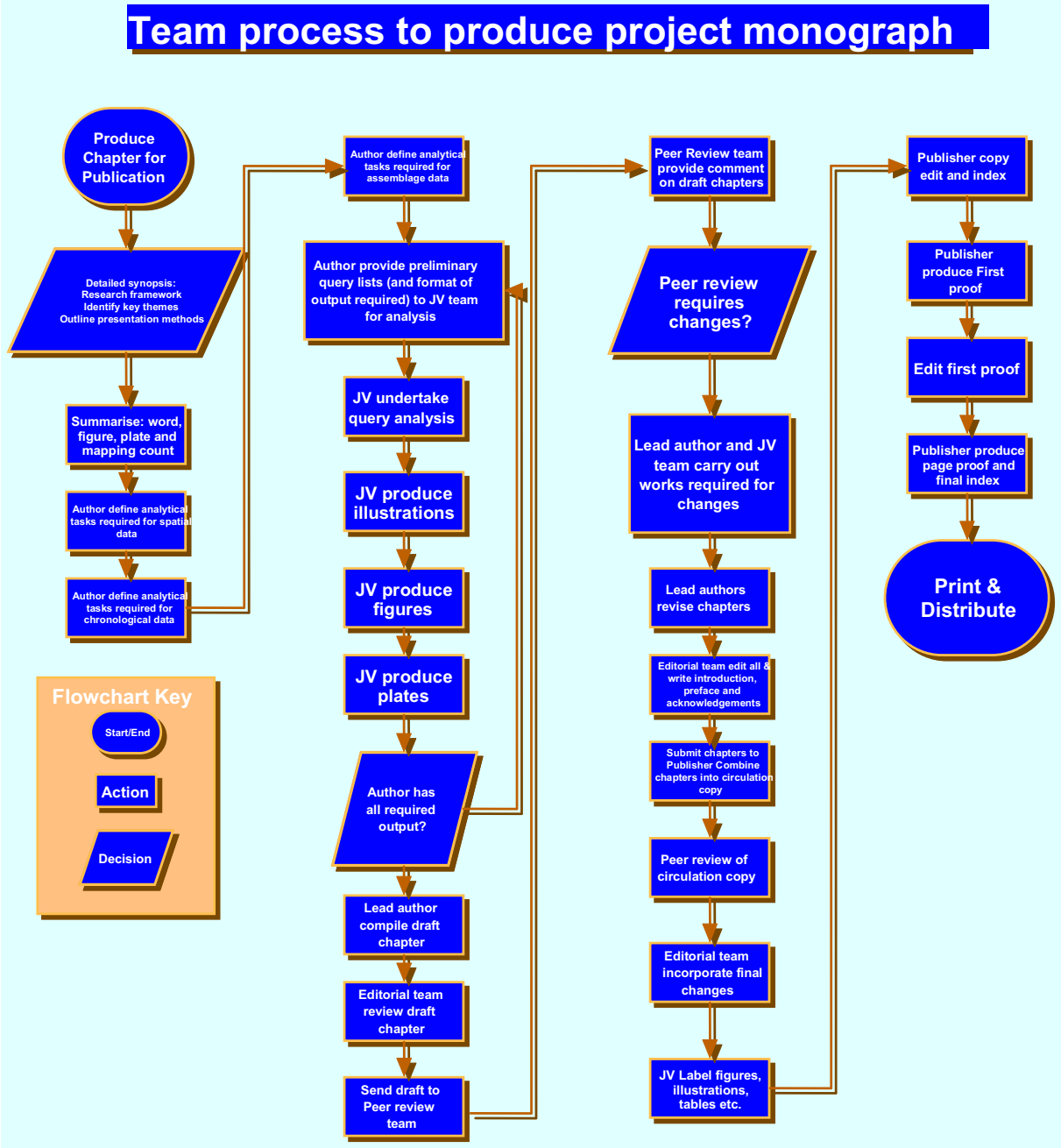


FIGURE 3-2: PROCESS FLOWCHART FOR ROUTEWIDE POST EXCAVATION ANALYSIS AND PRODUCTION OF PROJECT MONOGRAPH

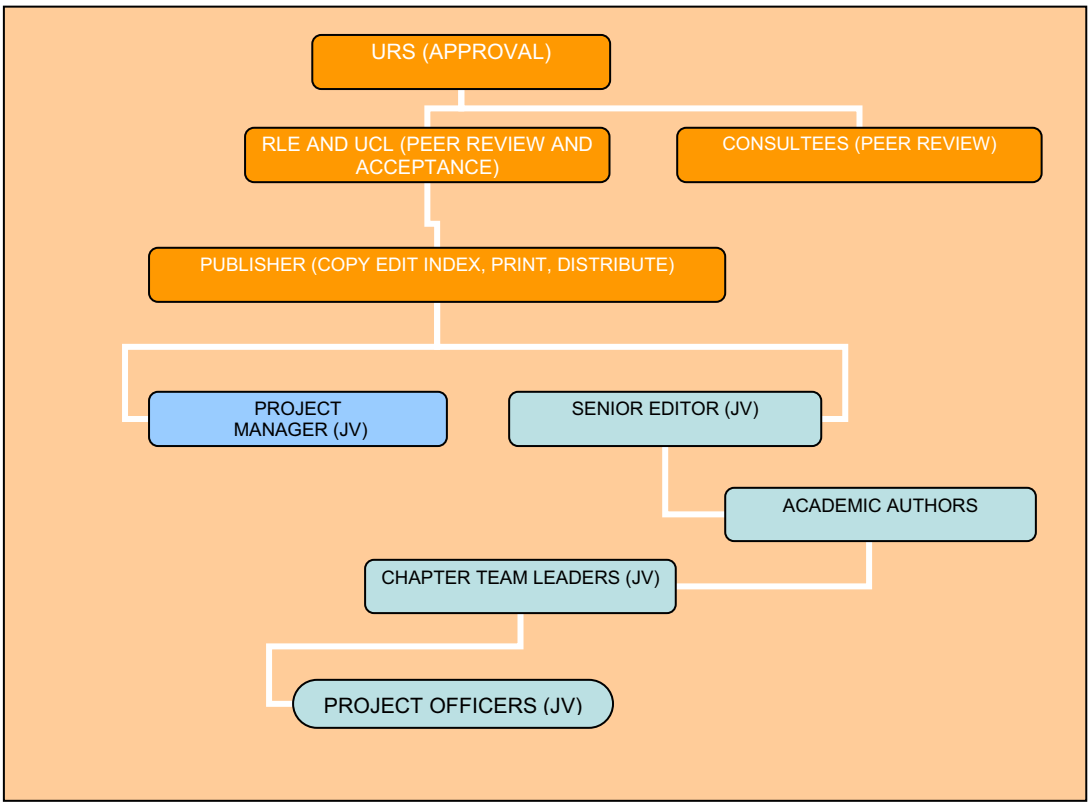


FIGURE 3-3: CORE TEAM - PROJECT MONOGRAPH

3.7 Publication, the Digital Research Archive, and Physical Archive Deposition

3.7.1 Following consultation and enquiry with several publishers of archaeological material. Archetype Books, London, have been identified as the preferred publisher. High quality, product desirability and available distribution options have been the key factors in the selection of the publisher.

3.8 Peer review team, editorial team and publisher

3.8.1 The project monograph contents will be peer reviewed at draft text stage by RLE, UCL and the projects Consultees John Williams (for KCC) and Peter Kendall (for English Heritage) including associates as appropriate.

3.8.2 The Contractors' senior editor will be responsible for editing project monograph chapters.

3.8.3 The RLE/UCL management team will provide introductory chapters to the published Volume.

3.8.4 Final copy editing and indexing of the project monograph will be carried out by the Publisher's team.

3.9 Preparation of project monograph (process)

3.9.1 The publication of the project monograph will follow the process outlined in table 3.1. The table identifies actions by each team and the programme completion date.

Task	Action by	Programme
Prepare detailed outline and chapter synopses	Chapter team and Editorial team	October 2003
Submit detailed chapter synopses to publisher.	Editorial team	October 2003
Revise outline for hard copy output on advice of publisher/designer.	Chapter Team	December 2003
Prepare draft figures and other illustrations per chapter.	Chapter Team	January 2004 – December 2004
Draft text per chapter.	Chapter Team	July 2004 – March 2005
Redraft figures and illustrations.	Chapter Team	April 2005
Select photographic plates to fit text and other figures	Chapter Team	April 2005
Prepare 'circulation copy' for sending to agreed referees. (Deadline to be agreed - and enforced!)	Publisher	May 2005
Referees provide comments	Peer Review team	May/June 2005
Receive referee comments and redraft text and figures if agreed.	Chapter Team	June 2005
Label figures and illustrations and re-check copy.	Chapter Team	July 2005
Send to publisher for copy editing and indexing.	Editorial team	Aug 2005
Publisher to acknowledge receipt and submit revised programme for proofs, publication and distribution.	Publisher	Aug 2005
Publisher prepares and sends first proof to editorial team.	Publisher	Sep 2005
Check proof. Include corrections and send back to publisher (last chance for changes).	Editorial team	Oct 2005
Publisher sends us 'page proof' indicating (for first time) page numbers and figure numbers for insertion into text and cross-referencing.	Editorial team	Nov 2005
Index completed by publisher.	Publisher	Nov 2005
Publisher sends for print and distribution.	Publisher	Dec 2005

TABLE 3-1: PROCESS FOR PUBLICATION PREPARATION

3.10 (UR04) The digital research archive

3.10.1 Digital data will be derived from all work done during the analysis phase and will comprise: stratigraphical/structural, artefact, environmental and other database catalogues and all other records as well as details of the methods and selection strategies used in each case. Each separate data group will be cross-referenced to related data groups, to the final publication, and if necessary to a general context concordance. These will be supplemented by indices to allow users maximum accessibility to the contents. Presentation on the ADS website will be in the form of a structured archive of digital resources. Whilst the order, accessibility and cross referencing will be such as to allow logical access to the materials, the archive is not designed as a digital publication outlet and resources will not be linked in the style of a full web-based interactive publication.

3.10.2 All materials prepared for the digital archive will be prepared in accordance with published ADS guidance documents and metadata protocols (http://ads.ahds.ac.uk/project/policy.html).

3.10.3 The digital research archive will contain the following elements:

Work Package	Output 1 (formats: Access d-base; Arc View shape files; AutoCAD *.dwg/dwf)	Output 2 (*.pdf format)
1. Ceramics	Ceramics database	Routewide text report
2. Environmental	Environmental database	Routewide text report
3. Lithics	Lithics database	Routewide text report
4. Faunal remains	Faunal remains database	Routewide text report
5. Small finds (including metal working evidence)	Small finds database	N/A
6. Human remains	Cemetery databases	Cemetery reports and grave plans
7. Absolute Dating programme	N/A	Routewide text report
8.Principal site phasing and sequence	Principal site stratigraphic datsets, and CAD models, GIS themes [precise output will be determined for each site]	Integrated Principal Site reports

TABLE 3-2: DIGITAL RESEARCH ARCHIVE CONTENTS

3.11 (UR06) The physical research archive contents (to be deposited with KCC)

The physical research archive will contain the following:
Physical Research Archive Contents:
context information: recording (on duplicate copies) any amendments to original field records resulting from analysis, stratigraphic matrices
photographic catalogue: details of all photographs taken as part of analysis
photographs: photographs taken as part of analysis
stratigraphic drawings: any amended versions (on copies) of original site plans and sections cross-referred to earlier versions
object catalogues: details of items selected for analysis, publication and record drawings and the location of objects
object drawings: object drawings undertaken as part of analysis either as record drawings or for publication
x-ray catalogue: details of all x-rays taken as part of analysis cross-referred to object catalogue
x-rays: x-rays taken as part of analysis, cross-referred to objects
conservation records: details of conservation undertaken during analysis, cross-referred to objects conserved
environmental sample catalogues: details of samples selected for analysis
human remains catalogues: details recorded for analysis
faunal remains catalogues: details recorded for analysis

TABLE 3-3: NON-DIGITAL RESEARCH ARCHIVE CONTENTS

3.12 (UR06) Retention and discard policies

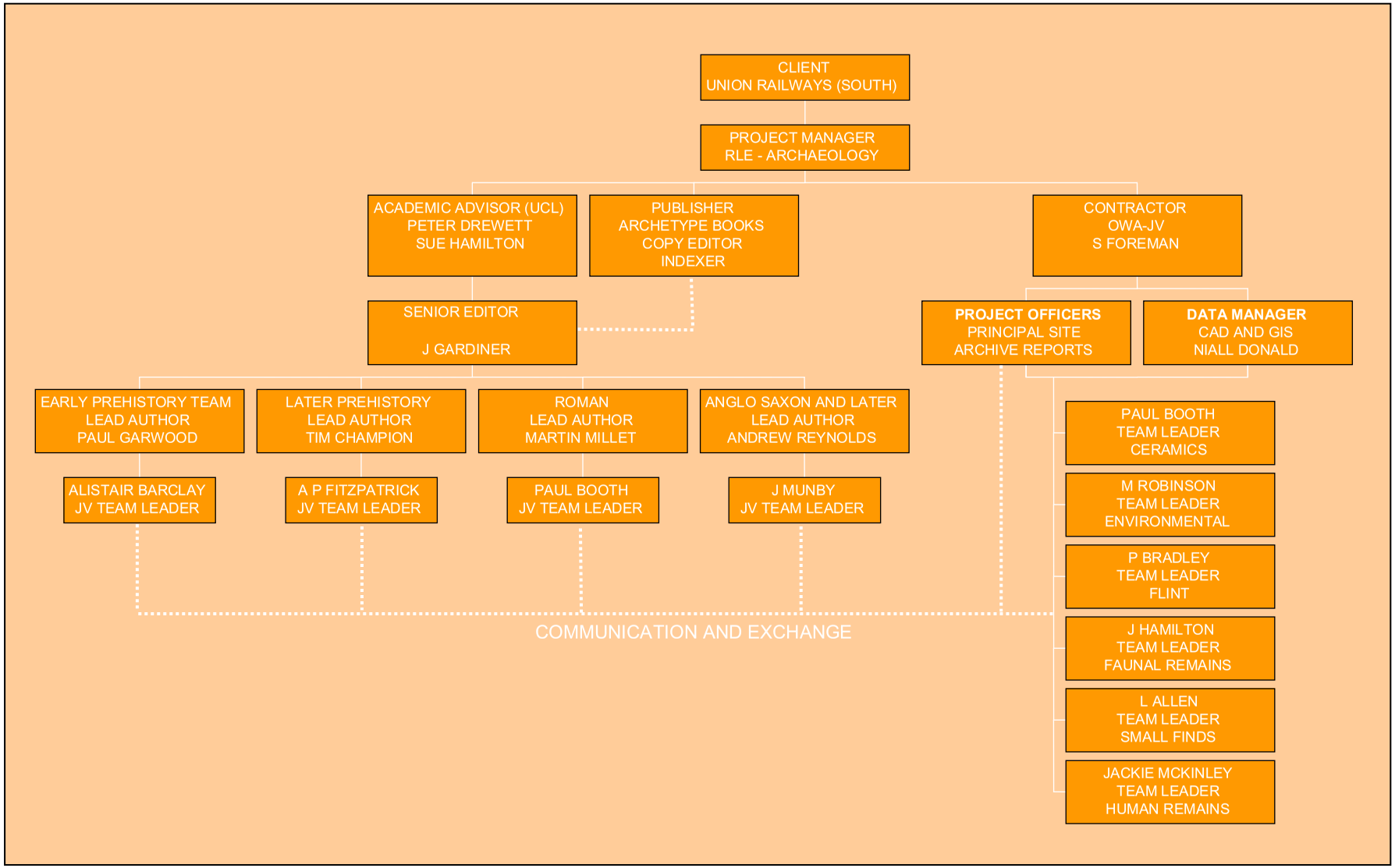
3.12.1 It is usual practice for the recipient organisation of a projects physical archive to impose a discard and retention policy. Whilst the destination of the archive remains unknown the JV will implement a discard and retention policy based on current best practise guidelines (Section 3.10 IFA Standard

& Guidance: Finds, 2001) and the quality and future research value of the analysed artefactual and environmental assemblages. The JV will submit their proposed retention and discard policy to RLE prior to implementation for agreement with the project consultees.

3.12.2 Human Remains assemblages will be returned for re-burial in accordance with Schedule 11, CTRL Act 1996. Reburial arrangements will be instructed to the JV by RLE on behalf of Union Railways (South) Ltd.

3.13 Team personnel and team structure organogram

FIGURE 3-4: CTRL SECTION 1 POST EXCAVATION PROGRAMME ORGANOGRAM (OVERLEAF)



4 PART 4: KEY ASSEMBLAGES FOR ANALYSIS AND PRINCIAPL SITE REPORTS PRODUCTION

4.1 Preface Part 4

4.1.1 This document is the fourth part of a four part Updated Project Design for analysis, dissemination and publication (UPD) being prepared by Rail Link Engineering and the Institute of Archaeology University College London for the CTRL Section 1 Archaeology Archive. The structure of the UPD is as follows:

- PART 1 – Introduction, background and methodology
- PART 2 – Revised research framework
- PART 3– Research archive structure, dissemination strategy, publication design and treatment of physical archive
- PART 4 – Key Assemblages for analysis and Principal Site report production

4.1.2 The following section has been prepared in line with the project‘s research strategy by organising assemblage and spatial data with potential to address the project’s aims in chronological order. Six major assemblage groups have been identified and assemblages from Principal Sites that will be analysed concurrently to address the research objectives (UPD part 2) are identified in each table.

4.1.3 As part of the Contractor design element of this UPD the summary tables of key assemblages and Principal Sites requiring further work to finalise their sequence and dating have been provided to the JV Contractor. Subsequently the JV contractor has provided detailed method statements for assemblage recording, analysis and report preparation and synopses (these are contained in UPD Volume 2).

4.2 Ceramic Assemblages

4.2.1 The following section describes the specification for analysis and preparation of specialist reports and lists key ceramic groups.

4.2.2 The assemblages below have been identified as key groups for inclusion within a routewide post-excavation recording and analysis as identified by the post-excavation assessment reports. The Contractor will prepare a ceramic research archive for CTRL Section 1 Principal Sites.

4.2.3 The Contractor is required to undertake and deliver the following:

- Produce a detailed method statement for the analysis and reporting of CTRL Section 1 ceramic assemblage.
- Produce a detailed ceramic research database of standard attributes (Table 1)
- Produce a structured ceramic report to include illustration of key types to demonstrate type series linked to seriation plots for individual Principal Sites, reside analysis of selected contexts, C14 dating of key groups, plot distribution of forms against date and location (demonstrate change through time and space).
- Consider selective C14 dates on key primary context sherds for tightening series sequence dates.
- Integration of analysis results with Principal Site sequences in individual Principal Site reports.
- Illustration requirements to be agreed with Project Manager. Consideration should be given to use of scaled digital colour photography.

ATTRIBUTE	
FABRIC	Correlate with CAT series or define new fabric
FORM	
COUNT	
WEIGHT	
SURFACE TREATMENT	
DECORATION	
ESTIMATED VESSEL EQUIVALAENT (EVE)	
EARLY DATE	
LATE DATE	

TABLE 4-1: CERAMIC ATTRIBUTES RECORDING

4.3 EARLIER PREHISTORIC CERAMICS (EARLY AGRICULTURISTS)

PRINCIPAL SITE	ENE
WHITE HORSE STONE	Full recording of Bowl group associated with longhouse.
SOUTH-EAST OF EYHORNE STREET TWB	Grooved ware - residue analysis and c14 maybe selected. Possible spindle whorl needs id. Publication and illustration, correlation with other groups.
SANDWAY ROAD	Peterborough and Mortlake assemblage. Fabric/form and illustration. Publish with other groups.
BEECHBROOK WOOD	Group of plain bowls. Full fabric form record and comparison with other groups.
TUTT HILL TWB	Early and mid Neolithic. Peterborough ware and Ebbsfleet sub-style. Require fabric form and decoration record. Check for c14 potential.

TABLE 4-2: ENE POTTERY GROUPS

PRINCIPAL SITE	LNE
WHITE HORSE STONE	Peterborough, Mortlake ware , Grooved Ware groups. Further recording id needed. Correlate with other groups.
LITTLE STOCK FARM	Fabric and form recording. Correlate with CAT series.
NORTH OF SALTWOOD TUNNEL	Fabric and form recording. Correlate with CAT series.

TABLE 4-3: LNE POTTERY GROUPS

PRINCIPAL SITE	BEAKER
WEST OF NORTHUMBERLAND BOTTOM	2 beaker vessels with burial. 1 may need reconstruction. Form and fabric recording and publication with other groups.
WHITE HORSE STONE	Complete record of small group of beaker sherds.
SOUTH-EAST OF EYHORNE STREET TWB	Domestic beaker assemblage. Form and fabric recording and publication with other groups.
BEECHBROOK WOOD	Full analysis of beaker group. C14 Dating and analysis of residues will be carried out. Comparison with other groups.
TUTT HILL TWB	Decorated Beaker sherds and other EBA forms. Fabric/form/ decoration record. Compare with other groups.

TABLE 4-4: BEAKER POTTERY GROUPS

PRINCIPAL SITE	EBA
WEST OF NORTHUMBERLAND BOTTOM	Record collared urn cremation. (Reconstruction recommended for illustration).
A20 DIVERSION HOLM HILL	Record fabrics and forms for publication/ correlate with CAT series and compare with contemporary groups.
TUTT HILL TWB	Deveral Rimbury urns, and other E/MBA vessels . Publish alongside other groups. Define contexts for possible c14 /residue potential.
NORTH OF SALTWOOD TUNNEL	EBA/MBA record fabric/form and include with other groups.

TABLE 4-5: EBA POTTERY GROUPS

PRINCIPAL SITE	MBA
WEST OF NORTHUMBERLAND BOTTOM	Possible Deveral Rimbury sherds with cremation. Fabric comparison to other groups will be carried out. .
COBHAM GOLF COURSE	Assemblage including Deveral Rimbury sherds to be analysed with comparable groups.
WHITE HORSE STONE	Unusual collared vessel (Thames Valley like)? Record and discuss with contemporary groups.
SANDWAY ROAD	Deveral Rimbury. Fabric form recording. Correlation with CAT series. Publish with other groups.
EAST OF STATION ROAD	Deveral Rimbury bucket urn. Record form and fabric for publication with other groups

TABLE 4-6: MBA POTTERY GROUPS

4.4 LATER PREHISTORIC CERAMICS (FARMING COMMUNITIES)

PRINCIPAL SITE	LBA
WEST OF NORTHUMBERLAND BOTTOM	LBA/EIA post Deveral-Rimbury decorated ware assemblage. Full recording needed and comparison to other groups.
TOLLGATE	LBA? / EIA group with carbonised residues. Dating (C14?) and fabric/form record for comparable analysis with other groups.
COBHAM GOLF COURSE	5 LBA plain ware groups for analysis.
CUXTON ANGLO-SAXON CEMETERY	Fabric and from recording and comparison with other groups LBA/EIA assemblage
WHITE HORSE STONE	Small group of LBA vessels.
BEECHBROOK WOOD	Deveral Rimbury and plain ware forms. C14 of residues needed. Fabric/form recording and comparison with other groups. For publication. Loom weights require publication. Daub with structural evidence requires further illustration.
LITTLE STOCK FARM	LBA/EIA group . Record fabric and form and correlate with CAT series. Illustrate representative vessels.
NORTH OF SALTWOOD TUNNEL	LBA TO LIA assemblage. Potential needs checking against other groups to establish importance.

TABLE 4-7: LBA POTTERY GROUPS

PRINCIPAL SITE	**EIA**
WEST OF NORTHUMBERLAND BOTTOM	Significant assemblages for further recording and publication.
WHITE HORSE STONE	Large type site assemblage. Full recording and publication.
BEECHBROOK WOOD	Group should be included as comparable assemblage to other main group (WHS)
PRINCIPAL SITE	**MIA**
WEST OF NORTHUMBERLAND BOTTOM	Significant assemblages for further recording and publication.
WHITE HORSE STONE	Small assemblage for comparison with main groups.
NASHENDEN VALLEY	Form and fabric record. Include with comparable groups.
THURNHAM	Small assemblage from Hockers Lane (Thurnham).
BEECHBROOK WOOD	Key group for MIA/LIA transition included Belgic component. Thin section analysis proposed. 30 vessels to be illustrated/catalogue produced.
LITTLE STOCK FARM	Record fabric, form and correlate with CAT series. Identify sources. Discuss distribution with comparable assemblages.

TABLE 4-8: EIA MIA POTTERY GROUPS

PRINCIPAL SITE	LIA
WEST OF NORTHUMBERLAND BOTTOM	Significant assemblages for further recording and publication.
SOUTH-EAST OF EYHORNE STREET TWB	Group should be recorded for archive and included in comparable publication with main assemblages.
SOUTH OF SNARKHURST WOOD	LIA/ERO 2 thin sections required to source material. Kiln group to be further recorded fabric/form to establish site function. Overall important comparison site for Thurnham site group. Include in analysis.
THURNHAM	The 64 key assemblages are quantified and are critical for the establishment of a securely dated sequence for the villa's occupation. Further analysis of proportions of vessels, fabrics and forms within these assemblages, in conjunction with further stratigraphic analysis, will potentially clarify and refine these key points. As this material provides primary evidence for the dating of the sequence, it should be made available for wider dissemination. (1.1.88) The range and variety of Late Iron Age glauconitic wares from this site, and from Thurnham Villa and Snarkhurst Wood, has the potential to allow the development of a basic corpus of forms. Hockers Lane: The MIA/LIA assemblages have some potential for limited further analysis of fabrics, forms and vessel types present, which may help to refine the dating of the enclosure, and to characterise its function and status.
BEECHBROOK WOOD	Significant assemblage. Full archive fabric, form required. Publication dependent on other comparable assemblages.
TUTT HILL TWB	Potential to c14 date assemblage that could be Saxon? Compare with Boarley Farm material.
NORTH OF WESTENHANGER CASTLE	Fabric/form archive report needed. Atypical forms need thin sections (?) check

TABLE 4-9: LIA POTTERY GROUPS

4.5 ROMAN CERAMICS (TOWNS AND THEIR RURAL LANSCAPES I)

PRINCIPAL SITE	**ERO**
WEST OF NORTHUMBERLAND BOTTOM	Significant ceramic assemblage for further recording and publication. CBM : No further work, apart from illustration of the box flue/voussoir tiles from ARC HRD 99 and the unusual shaped brick from ARC 330 98, is needed on the Roman ceramic building materials. 9 CERAMIC OBJECTS REQUIRE FURTHER FABRIC FORM RECORDING AND DESCRIPTION.
WATERLOO CONNECTION	Full recording and catalogue of the entire assemblage is recommended as minimum. Includes reconstruction of numerous vessels and illustration. Large scale (up to 200 vessels) residue analysis could be carried out. This would be most valuable by comparing a similar exercise from non-funerary contexts at Springhead.
THURNHAM	And see notes on LIA. The only conservation requirements apply to contexts 10497, 10498, 10499 and 12377 from which up to four individual vessels could be reconstructed.1.1.56 Important additional ceramic dating evidence exists within Pirie's archive (1961), and the re-examination of selected key assemblages would provide further evidence for the dating of the southern end of the stone villa and temple building.
BOYS HALL BALANCING POND	3 cremation vessels require sticking for archive/possible publication.
BOWER ROAD	Fabric, form and analysis of changing vessel type to be published for comparison with Thurnham and to inform the sites' social and economic status
NORTH OF SALTWOOD TUNNEL	Assemblage requires further quantification fabric/form recording.
PRINCIPAL SITE	**MRO**
330 ZONE 2 WB	1st century kiln to define function
WATERLOO CONNECTION	see ERO. Samian report. Full analysis and recording (to include urgent inspection of stamps by specialist, residue analysis of selected vessels) to provide catalogue. Very little of the assemblage has been cleaned or inspected in detail to date. Assessment comprised 5% sample only.
THURNHAM	For Ceramics See LIA/ERO> CBM mainly roof tile: needs to be fully recorded and quantified by fabric and form, the majority can then be discarded. Plaster and mortar need to be fully recorded and quantified by fabric, the majority can then be discarded. The following should be retained: samples of all the fabrics; material with original surfaces and impressions of building materials. The quantity retained according to these criteria would probably be equivalent to between 10% and 20% of the assemblage.
PRINCIPAL SITE	**LRO**

WATERLOO CONNECTION	see ERO. CBM- full quantification fabric and form yet to be carried out. Archive catalogue will be produced. Consideration of provenance if spatial patterning noted.

TABLE 4-10: ROMAN POTTERY GROUPS

4.6 POST ROMAN CERAMICS (TOWNS AND THEIR RURAL LANDSCAPES II)

PRINCIPAL SITE	**EAS**
CUXTON ANGLO-SAXON CEMETERY	Frankish bottle import could be examined for source material, plus small local group - importance needs establishing
PRINCIPAL SITE	MAS
WHITE HORSE STONE	c14 required to determine precise range of AS vessels (IA confusion)
430 WB LODGE WOOD	Possible IA or Saxon pot - include example in this definition work.
NORTH OF SALTWOOD TUNNEL	Fabric/form recording and selected publication/illustration with cemetery report.

TABLE 4-11: EAS AND MAS POTTERY GROUPS

PRINCIPAL SITE	MED
WEST OF NORTHUMBERLAND BOTTOM	Significant domestic assemblage. Some reconstruction, residue analysis recommended. Full archive report for publication. Spatial analysis of groups to determine relation to excavated sequence.
WHITE HORSE STONE	Complete assemblage of vessels requires recording and illustration for publication.
THURNHAM	Limited further analysis of fabrics and forms, and proportions of vessels, in conjunction with further stratigraphic analysis, will refine and secure the dating of the medieval features encountered on the site.
NORTH OF WESTENHANGER CASTLE	Significant assemblage for inclusion in synthetic study of Kent medieval ceramic series. Include assessment results in ceramic analysis and ceramic archive report.
NORTH OF SALTWOOD TUNNEL	Needs fabric /form full quantification for archive report
WEST OF STATION ROAD: PARSONAGE FARM	Medieval domestic assemblage. Up 10 vessels worthy of reconstruction and illustration. Majority of assemblage is local. Possible source is Potters Corner. Scientific analysis (ICPS) of comparable sherds recommended to establish this trade link. The entire assemblage has potential to provide a complete pottery report for 13th century local wares in this part of Kent. For site sequence assemblage needs integration to refine stratigraphy and demonstrate distributions of vessels with room type etc. Roof tile and other CBM: the establishment of a chronology for the tile fabrics. the establishment of a typology for the tile forms. the sourcing of tile fabrics with reference to known kiln material and ceramic reference collections/ cross ref with CAT series.
MERSHAM	Significant assemblage of local wares will contribute to regional research into predominant shelley ware. Significant integration of assemblage in an updated stratigraphic analysis is recommended. Petrological work and thin section could help to identify local production within the mass of current sub-styles so far identified. A number of type distribution plots/tables can be generated to investigate intra-site deposition.

TABLE 4-12: MED POTTERY GROUPS

4.7 Environmental Assemblages

4.7.1 The following section describes key assemblages for palaeo-environmental reconstruction and palaeo-environmental data. Data will also be derived from assessed assemblages that do not require further work to write up. A routewide report on the CTRL Section 1 environmental remains shall be produced by the Contractor.

4.7.2 The Contractor shall provide a detailed method statement and establish consistent terms of reference for all specialist work.

4.7.3 Pollen assessments need to be undertaken from monoliths prior to pollen analysis.

4.7.4 Monolith sequences require dating by c14 prior to assessing worth of other techniques.

4.8 HUNTER GATHERERS

PRINCIPAL SITE	PAL
WEST OF NORTHUMBERLAND BOTTOM	Analysis of the results will include calculating the relative abundance of each cereal and of grains, chaff and weed seeds, in each sample and within features and areas. The environmental preferences and soil requirements of weed species will also be investigated. Charcoal samples will be identified to species where possible, using an epi-illuminating microscope. 6 Monoliths for impregnation and micromorph slides. Sub-sample for pollen. Pollen will require assessment prior to analysis. C14 date required if suitable material present (in Unit 7, possible late glacial material). C14 date for pottery group (x-refer ceramics spec)
TOLLGATE	4 monoliths for impregnation and micromorph slides. Sub-sample for pollen. Pollen has yet to be assessed and needs completing to assess potential for any further pollen analysis. Monoliths need c14 dating if suitable material exists.
WHITE HORSE STONE	Micromorph slides shall be prepared from two samples of the Allerod soil (contractor to select samples). Soil chemistry tests, grain size analysis and mineral magnetic test shall be carried out on associated bulk samples of the Allerod soil. The results shall be used to complement and inform the land snail report. See Appendix 15.1.19 of WHS Assessment report. Also potential for molluscs to add data to later period environmental reconstruction. Needs checking in report.

TABLE 4-13: PAL ENVIRONMENTAL DATA

PRINCIPAL SITE	LM
SANDWAY ROAD	4 slides to be prepared for full soil micromorph description and analysis to determine Mesolithic soil character, evidence for degradation and to see if bioturbation is responsible for depositing cereal grains into context. Charcoal quantification and identification required. Further c14 required on material (grain?) from pit 72. Any sample to be sent for dating must be selected by a qualified archaeo-botanist. EH comment that pollen does not have any potential.
EAST OF STATION ROAD	Geoarchaeological sequence may extend to late Mesolithic. AMS dating for monolith required, to dated palaeochannel. When dated monolith will provide environmental analysis for this end of the route landscape data. Monoliths shall be sampled at closer 40mm interval for detailed pollen analysis. Sub-samples from the four samples to contain insects shall be subjected to paraffin flotation to extract insect remains such that 100-200 individuals of terrestrial Coleoptera (beetles) are available for analysis from each sample. A palaeo-environmental reconstruction should be made from their qualitative analysis. The results would be of regional significance for Kent. The molluscs from the bottom of the palaeochannel support the insect evidence that clean well-oxygenated water flowed along it. It is recommended that molluscs are extracted from the samples to be analysed for waterlogged macroscopic plant remains and reported on. Compare and contrast with material from West of Stone Stone Street evaluation (CAT and WA) deeper alluvial sequences (not otherwise referred to).

TABLE 4-14: MESOLITHIC ENVIRONMENTAL DATA

4.9 EARLY AGRICULTURALISTS

PRINCIPAL SITE	ENE
WHITE HORSE STONE	Soil micromorph report on post hole fills - full detailed study. Full soil micro morphological analysis of the posthole and gully fills, and to include a lower sample from post hole 529 (M529b). Full bulk analysis of those posthole fills examined in thin section, in order to understand changes with depth (another 4 samples – contractor to select). Bulk analysis of another 30 posthole fills selected from around 100 samples taken, in order to aid a spatial reconstruction of the long house and its organisation. The above is required in order to fully characterise the different components contributing to the bulk analytical findings and to allow inferences concerning site formation processes of Neolithic long house floor deposits. 9 crop samples require detailed recording. Contractor to select.
SANDWAY ROAD	As for LME
PRINCIPAL SITE	**LNE**
WEST OF NORTHUMBERLAND BOTTOM	Monoliths have potential for combining with soil micromorph and pollen studies to reconstruct changing landscape at east end on Zone 3. Note; Wrotham Road dry valley sequence (TGW97) monolith, pollen needs assessment, possibility to date sequence by AMS on molluscs (but see comments on Cuxton).Dating is required, and establishment of pollen potential prior to commencing studies. EH argue that potential for pollen analysis has not been demonstrated. Therefore this is unlikely to be a significant sequence to pursue.
TUTT HILL TWB	Small plant remains assemblage from ENE through to Bronze Age. Tabulation and discussion will be prepared for the archive report.
NORTH OF SALTWOOD TUNNEL	Include cereal remains in wider discussion of early prehistoric plant use. Cereal remains and charcoal to be identified and recorded from processed samples (pits W136 and W175). C14 date required?
PRINCIPAL SITE	**EBA**
WHITEHILL ROAD BARROW	Monoliths from barrow ditch provide potential for environmental reconstruction. Pollen should be extracted (16 samples, 5 from monolith <31> and 11 from <33> and 6 thin sections prepared (2 from monolith <31>, 3 from <33> and 1 from <32>).Pollen potential needs proving prior to analysis. Check what potential there is for a good C14 date on barrow. EH recommends that further pollen work is not justified due to poor preservation.
330 ZONE 2 WB	Geoarchaeological study could provide data on Bronze Age colluvial /pollen record. A full range of combined techniques is recommended. Quality of evidence should be assessed in relation to other MOLAS proposals from adjacent sites. Charred wood; samples <2> <4> <9> <15> <16> <17> from STP99 and <83> from ARC 330 98 for sp. identification and diagnostic features, using epi-luminating microscope. EH comment that questions for this study need refining. They also state that c14 should be used to date sequence if possible. Key sequence for study.
WEST OF NORTHUMBERLAND BOTTOM	It is suggested that all 17 of the prehistoric samples (which contain few plant remains?) should be analysed. Monolith analysis has the potential for environmental reconstruction from EBA to LIA. Archaeobotanist will review cremation material (charcoal) after osteologist has completed recording.

TUTT HILL TWB	See LNE
NORTH OF SALTWOOD TUNNEL	Buried soil and turf lines require assessment for pollen and soil micromorphology. Analysis may follow. Contractor has failed to properly assess samples. Processed samples require full identification (esp. of grain, charcoal etc.) and recording. C14 date may be required.

TABLE 4-15 : NEOLITHIC ENVIRONMENTAL DATA

4.10 FARMING COMMUNITIES

PRINCIPAL SITE	**MBA**
WHITE HORSE STONE	1 sample from cremation to be recorded Sample 24 from Pilgrims way to be recorded, analysed and reported.
NORTH OF SALTWOOD TUNNEL	C6253, grain and charcoal to be identified, recorded, with a C14 date. To contribute to development of crops, agriculture and site phasing.
TUTT HILL TWB	See LNE. Charcoal from residues may be identified to species to discuss questions of fuel use.
PRINCIPAL SITE	LBA
TOLLGATE	21 samples for full sorting and recording for cereal remains from LBA/EIA. Contexts.
COBHAM GOLF COURSE	5 samples to be analysed for cereal remains. Pollen and charcoal from 2 ring ditch monoliths need process and study. 2 charcoal samples from ring ditch fills for AMS dating . Prepare 6 thin sections for soil micromorph study. Have potential to aid paleao-environmental reconstruction.

TABLE 4-16: BRONZE AGE ENVIRONMENTAL DATA

PRINCIPAL SITE	**EIA**
TOLLGATE	as LBA
CUXTON ANGLO-SAXON CEMETERY	Monolith from dry valley. Analysis needs dating of sequence (AMS of shells) prior to further work, LOI tests and mag. Sus. Determinations. EH recommend that dating of shell is not required, does not give good result.
NORTH OF SALTWOOD TUNNEL	(LBA/EIA) Full ID of grain from samples so far processed. Charcoal to be identified. Context W207/W208/C2805 etc. (pea/bean) charred remains to be recorded/analysed. C14 date if suitable material available (charcoal from crem. Related deposits). Samples for dating to be selected by archaeobotanist. Note charred grain from EIA-MIA sample from cxt W97.

WHITE HORSE STONE	It is suggested that three profiles from the later prehistoric palaeosol are investigated, one in detail and two as comparisons from different slope-unit positions, including an example from near the settlement if possible. In order to complement macrofossil analysis of these features, it is suggested that five thin section samples (M142, M143a, M143b, M144 and M145) and seven bulk samples be analysed. Turf remains, ashed dung and cereal processing waste, any industrial debris, 34 samples selected for detailed study for crop regimes etc.

TABLE 4-17: EIA ENVIRONMENTAL DATA

PRINCIPAL SITE	**MIA**
WEST OF NORTHUMBERLAND BOTTOM	5 samples from the late Iron Age/early Roman settlement (ARC WNB 98, Area A/B), 10 from Roman levels in Area C, and 6 from ARC HRD 99.
BEECHBROOK WOOD	10 cereal rich samples need sorting and recording in full for publication.
LITTLE STOCK FARM	All remaining samples to be processed and sorted from 4th rank upwards (strongly disagree - samples from primary contexts only will give useful palaeo-environmental information). Recording to completed archive record quantification/species. (Cereal and other food plants).

TABLE 4-18: MIA ENVIRONMENTAL DATA

4.11 TOWNS AND THEIR RURAL LANDSCAPES (100BC TO AD410)

PRINCIPAL SITE	LIA
WHITEHILL ROAD BARROW	Mollusc data archive needs completing - record species/count.
WEST OF NORTHUMBERLAND BOTTOM	RANGE OF SAMPLES FOR DETAIELD RECORDING/FURTHER PROCESSING - mostly cereal remains/ also pulses - check report for selection. 1 Monolith Downs Road, check for suitability/comparison with adjacent Tollgate pollen sequence.
THURNHAM	A selection of richer samples should be further sorted and analysed from a range of early and late contexts. Late deposits in corn-drier also. Well deposit - 5 samples to be further sorted and analysed, and one pollen sequence. Check pollen work for c14 date? Further processing of mollusc and insect rich samples required. EH comment: Specific samples must be identified.
BEECHBROOK WOOD	Charcoal samples need full recording associated with Iron working enclosure to inform fuel sources/species ratio….
WEST OF STATION ROAD: PARSONAGE FARM	Possible potential for waterlogged plant remains. Check significance for this area.
LITTLE STOCK FARM	as per MIA
EAST OF STATION ROAD	Good organic sequence recovered. Closer interval pollen study to be carried out. Whole to be integrated with insect and mollusc evidence to reconstruct environment. AMS dating is unlikely to realise potential and therefore will not be pursued, but relative dating will be presented.

TABLE 4-19: LIA ENVIRONMENTAL DATA

PRINCIPAL SITE	ROMAN PERIOD
330 ZONE 2 WB	Several samples could be further analysed to contribute to pattern of ERO cereal/ woodland exploitation in this region. Compare quality of evidence with nearby Northumberland data to determine significance/level of work required. ARC SSR 99 charred plant/cereal from "oven" sample <7> recommended for analysis (identification and recording), with stereomicroscopy, for information on cereal cultivation.

PRINCIPAL SITE	ROMAN PERIOD
TOLLGATE	The identification of charred wood fragments from pitfills, in contexts [196] and [1193], is required to inform which species of wood were used as fuel. These fragments are too small to reveal information about woodland management or woodworking. Identification of the charred grain, chaff and seed remains in the pit fills from contexts [526] and [609] is required to provide information about cereal processing, husbandry and the environmental conditions of the fields.
WEST OF NORTHUMBERLAND BOTTOM	A range of samples are identified for further processing and detailed recording. These are mostly cereal remains/ also pulses - check report for selection. Archaeobotanist will review cremation material once Osteologist has completed, and include in report. This applies to all RO cremations.
WATERLOO CONNECTION	1 sample required further sorting and recording for grape and pulse evidence.
THURNHAM	as LIA.
BOWER ROAD	5 samples need further recording to aid comparable data with Thurnham for agricultural patterns and economic patterns. EH recommend 5 additional samples also are included in the analysis of plant remains.
NORTH OF SALTWOOD TUNNEL	Soil micromorphology and pollen needs assessment. Contractor has failed to assess potential. Note LIA/ERO cremation deposits processed include seed heads, may relate to pyre items/ritual (C3805/C3809). Charred plant remains and charcoal require identification and recording. C14 dates?
EAST OF STATION ROAD	As previous - compare to other results.

TABLE 4-20: ROMAN ENVIRONMENTAL DATA

4.12 TOWNS AND THEIR RURAL LANDSCAPES (AD 410 – 1500)

PRINCIPAL SITE	MAS
WHITE HORSE STONE	9 samples of cereal remains for study if Saxon date is established. There is a query over dating of these Boarley Farm features.
NORTH OF SALTWOOD TUNNEL	Include plant remains in wider discussion. Charred plant remains (including grain in samples C361 and C632, sunken featured building) and charcoal present in a range of feature, including pits, ditches and a possible sunken floored building. Require identification and recording, and C14 dating if suitable material exists. Potential samples for soil micromorph and pollen need further assessment prior to any analysis. Contractor has failed to assess.

TABLE 4-21: SAXON ENVIRONMENTAL DATA

PRINCIPAL SITE	EMED
WEST OF NORTHUMBERLAND BOTTOM	From medieval deposits it is suggested that 2 grain samples from area A/B and 3 from ARC HRD 99 should be fully recorded.
WEST OF STATION ROAD: PARSONAGE FARM	The resources required to complete the recording and analysis of the ten selected samples, and preparation of a publication report, are as follows: Sorting and identification of charred remains from 7 flots and retained residues. Sorting and identification of waterlogged remains from 3 samples. Data entry. Analysis of the assemblages, including comparison of wild and cultivated taxa within and between the samples and interpretation of the assemblages with reference to the project aims. Preparation of publication report. **Geoarchaeology:** A detailed study is recommended to integrate soil micromorph; pollen/diatom and sediment analysis to reconstruct environment and land-use associated with the Moated site. (the relevance for this substantial work needs justification - a limited exercise may suffice - supported by archive data). C14 dates will be needed to tie in sequence to relative dates. Charcoal requires quantification, identification and recording (inform on use of resources, woodland management etc.), and may provide useful material for absolute dating. Analysis programme for plant remains should include samples from a range of feature types (and preservation types) to avoid bias and improve spatial analysis.
MERSHAM	5 samples (cxts 1019, 1022, 1023, 1028 and 1029) to be analysed in full for agricultural production. 1 other sample (cxt 1027) to be sorted for cereal and brassica remains. EH comments that the work has been inadequate. Complete a full inventory of all samples and archive species and quantification data. A further suite of samples is to be identified to address questions of domestic v. industrial zonation, use of resources etc. Charcoal is to be identified for analysis of fuel sources, woodland management etc. C14 datable material to be identified to refine phasing of different industrial activity. Further work required on fish bone (see faunal spec).

PRINCIPAL SITE	EMED
NORTH OF WESTENHANGER CASTLE	Significant assemblage of plant remains and charcoal require detailed analysis and publication. Detailed analysis of the plant remains from the pit (sub group 21) is required to assist in interpretation of function of pit/hearth feature. It will be particularly important to examine spatial differences within the feature for evidence of its use. Identification and analysis of charcoal required to provide evidence of fuel types. EH comment that a charcoal analysis and plant macro fossil analysis of further features should be included. This should consist of a range of feature types and preservation conditions, so as not to bias results. Contractor to select 5 samples for processing and full recording.

TABLE 4-22: EARLY MEDIEVAL ENVIRONMENTAL DATA

PRINCIPAL SITE	MED
WEST OF NORTHUMBERLAND BOTTOM	A range of samples are identified for further processing and detailed recording - mostly cereal remains/ also pulses - check report for selection 5 samples for processing and detailed recording; 2 from area A/B, 3 from ARC HRD. Contractor to select.
NORTH OF SALTWOOD TUNNEL	Charred plant remains, including grain noted in varying quantities from W44 (ditch) and Pits W47, C281, C614 and C792. Relevant samples require identification, recording (including charcoal if present) to inform on development of agricultural techniques/crops for comparison with Mersham/ Parsonage/ Westenhanger etc. Dating required?
TOLLGATE	Cereal and seeds to be sorted from 3 samples for full recording. Identification of the charcoal form the hearth layer, context [418], would provide information about the species of wood used as fuel. Occasional charred wheat grains were also present in this hearth layer. Examination of these and the larger number of grains and charred seeds in the pit fills, context [162] and [179] would provide information about crop husbandry, processing and the environmental conditions in the fields.

TABLE 4-23: MEDIEVAL ENVIRONMENTAL DATA

4.13 Worked Flint Assemblages

4.13.1 The following section includes the instructions for further detailed recording and analytical tasks. Data will also be derived from assessed residual assemblages that do not require further work to write up (see CTRL Timeline).

4.13.2 The core purposes of this specialist study will be to complete the recording of technological and quantification data to address spatial issues identified in Part 2, and provide a database and archived assemblage for further comparative research by others.

4.13.3 Re-fitting /metrical work is to be limited to precise questions identified in Part 2.

4.13.4 The potential for use-ware analysis will be further defined for primary in-situ contexts, and disturbed flint scatters if these are established through refitting analysis. The data will be used to propose use-ware research that could be carried out by others. The project design does not include use-ware research to achieve the research objectives for the CTRL project.

4.13.5 The Contractor is required to design detailed method statement to address research objectives and levels of recording to complete research archive. Illustration should be achieved through digital means (scanning/photography) to be agreed with the project manager. Consideration should be given to basic recording of flint typology (colour, texture, cortex type) to contribute to raw material studies.

4.13.6 The Contractor shall produce a routewide report on the flint assemblages in accordance with the project aims in UPD Part 2.

4.14 HUNTER GATHERERS

PRINCIPAL SITE	**LM**
SANDWAY ROAD	Analysis and publication of in-situ assemblage. Spatial analysis may indicate activity zones
SOUTH OF SNARKHURST WOOD	Assemblage is recommended for full recording and comparison with other sites.
BEECHBROOK WOOD	Complete recording tasks. Analysis and publication of in-situ assemblage. Spatial analysis may indicate activity zones.
HURST WOOD	A minimum refitting programme will be undertaken to establish if this is a disturbed in-situ knapping assemblage. The potential for use-ware research will be defined.

TABLE 4-24: MESOLITHIC WORKED FLINT DATA

4.15 EARLY AGRICULTURALISTS

PRINCIPAL SITE	**ENE**
WHITE HORSE STONE	Further recording of the assemblage required. Key groups found in association with the structures and grooved ware pits will be selected for detailed spatial analysis and recording. Limited refitting analysis will be conducted to better define related groups. Raw material sources will be investigated. The entire assemblage will be compared to contemporary assemblages and technological, functional and source questions discussed.
SOUTH-EAST OF EYHORNE STREET TWB	Complete any recording work required on assemblage in association with Grooved ware pit Compare with other contemporary groups.
BEECHBROOK WOOD	Completion of basic recording is required for entire assemblage. Compare in-situ pit deposits with contemporary groups.
NORTH OF SALTWOOD TUNNEL	Complete recording. Discuss nature of assemblage found in association with ceramics in pit deposit and compare with contemporary groups.
PRINCIPAL SITE	**LNE**
WEST OF NORTHUMBERLAND BOTTOM	Residual LNE/EBA assemblage recovered from later features. Examine the assemblages in order to define the possible later prehistoric lithics more fully. Prepare publication text. Catalogue of illustrated pieces. Illustration of selected lithics (it is envisaged that 3 cores and up to 6 retouched pieces will require illustration)
WATERLOO CONNECTION	Background scatter only. Include assessment data in routewide analysis.
WHITE HORSE STONE	As for ENE assemblage.
SOUTH-EAST OF EYHORNE STREET TWB	Possible in-situ scatters could be identified by distribution and refitting analysis
SOUTH OF SNARKHURST WOOD	Assemblage is recommended for full recording and comparison with other sites. Group is broadly LNE/EBA in date.
LITTLE STOCK FARM	Include nature of assemblage found in association with Peterborough ware pit deposit.
PRINCIPAL SITE	**BEAKER**
SOUTH-EAST OF EYHORNE STREET TWB	Consideration of assemblage in association with Beaker sherds. Potential for use-wear analysis.
BEECHBROOK WOOD	Consideration of assemblage in association with Beaker sherds.

TABLE 4-25: NEOLITHIC WORKED FLINT DATA

PRINCIPAL SITE	**EBA**
WEST OF NORTHUMBERLAND BOTTOM	See LNE
TOLLGATE	Residual assemblage from range of later features. Will be included in overall summary of flint distribution.
WATERLOO CONNECTION	Background scatter only. Include assessment data in routewidespatial analysis.
WHITE HORSE STONE	Review EBA assemblage. All WHS flint requires further sorting and cataloguing as the assessment has failed to complete this work. Due to the quantity only selected groups were scanned.
BEECHBROOK WOOD	*A GROUP OF POSSIBLE GRAVE GOOD TOOLS SHOULD BE PUBLISHED WITH BARROW DESCRIPTIONS.*
PRINCIPAL SITE	**LBA**
COBHAM GOLF COURSE	Investigate/confirm possible refitting groups. Identify key groups for use-ware research. Detail comparison with ARC CGC 97 etc lithics. Time for preparing publication. A selection of lithics would require illustration (around 20 pieces – cores and retouched forms)

TABLE 4-26: BRONZE AGE WORKED FLINT DATA

4.16 Faunal Remains Assemblages

4.16.1 The following section includes instructions for further detailed recording and analytical tasks. Data for consideration of Part 2 research questions will also be derived from assessed assemblages that do not require further work to write up.

4.16.2 The Contractor will provide a detailed method statement stating basic attributes to be recorded to achieve the aims of the UPD.

4.16.3 The Contractor will produce a routewide summary report on the faunal remains in accordance with the project aims described in UPD Part 2.

4.17 EARLY AGRICULTURALISTS

PRINCIPAL SITE	**ENE**
WHITE HORSE STONE	Only 3 cattle fragments recorded. Discuss only.
PRINCIPAL SITE	**LNE**
WHITE HORSE STONE	Full recording of assemblages in pits associated with ceramics.

TABLE 4-27: NEOLITHIC FAUNAL DATA

4.18 FARMING COMMUNITIES

PRINCIPAL SITE	**MBA**
WHITE HORSE STONE	Small assemblage from M/LBA activity to be fully recorded for inclusion in routewide analysis.
PRINCIPAL SITE	**LBA**
TOLLGATE	Significant LBA/EIA assemblage. Metrical recording possible for sheep and cattle assemblages. EH note that stated methods for analysis are not detailed enough.
PRINCIPAL SITE	**EIA**
WHITE HORSE STONE	Full quantification and recording of mammal assemblage for publication. It is suggested that small mammals should be further recorded by specialist for identification and quantification. (Will require sorting of additional residues). Spatial analysis is suggested from the EIA component to aid interpretation of special deposition/ activity zones.
SOUTH-EAST OF EYHORNE STREET TWB	Assemblages from pit deposits should be compared to settlement range at WHS. Possible to c14 date part horse to aid interpretation of structured deposition.

TABLE 4-28: BRONZE AGE AND EIA FAUNAL DATA

4.19 TOWNS AND THEIR RURAL LANDSCAPES (100BC TO AD410)

PRINCIPAL SITE	**LIA**
WEST OF NORTHUMBERLAND BOTTOM	2 animal burials require full recording. C14 date?
PRINCIPAL SITE	**RO**
WHITEHILL ROAD BARROW	Small assemblage. Fair condition. Metrical recording could determine questions of stock size and sex. Further define potential.
WEST OF NORTHUMBERLAND BOTTOM	Suggestion that assemblage measurement may indicate trends in size of stock.
THURNHAM	Half the assemblage has been recorded. A full recording quantification/species will be carried out on remainder. There is no potential for biometrical analysis following results of assessment due to the general poor condition. Small mammals have not been identified or quantified. This should be completed for archive report.
BOWER ROAD	Main assemblage needs no further work. Small mammals need identifying by species (not done). Animal bone found in association with human remains needs identification.
NORTH OF SALTWOOD TUNNEL	Significant LIA/ERO domestic assemblage. Prepare full record and catalogue. There is potential for age, size and sex study/distribution analysis.

TABLE 4-29: LIA AND ROMAN FAUNAL DATA

4.20 TOWNS AND THEIR RURAL LANDSCAPES (AD 410 – 1500)

PRINCIPAL SITE	**MAS**
WHITE HORSE STONE	Animal burial requires C14 dating before further consideration.
NORTH OF SALTWOOD TUNNEL	Horse burial central mound. Analysis for publication with cemetery report. Also c14 date required/possible (?)
PRINCIPAL SITE	**EMED**
WEST OF STATION ROAD: PARSONAGE FARM	An analysis of selected contexts may provide data on size, and age of species. Selective distribution may inform functional interpretation of rooms etc. An archive report will be prepared summarising the future potential of the assemblage for research. Work by CTRL will be limited to producing detailed record for catalogue.
NORTH OF SALTWOOD TUNNEL	Significant Medieval domestic assemblage. There is significant data to update that was not included in assessment. Prepare catalogue for archive. There is potential for future research on age, size and sex study / distribution analysis within the site. CTRL work will include data in routewide analysis.
PRINCIPAL SITE	**MED**
TOLLGATE	Small assemblage but with potential for metrical recording.
MERSHAM	Archive catalogue needs completion especially for small mammal remains. For inclusion in routewide faunal remains report.

TABLE 4-30: MEDIEVAL FAUNAL DATA

4.21 Metal finds, Metal production, and Small Finds Assemblages

4.21.1 The following section includes instructions for further detailed analysis and preparation of specialist reports. Data will also be derived from assessed assemblages that do not require further work to write up.

4.21.2 The Contractor will provide a detailed method statement to cover but not be limited to: conservation; stabilisation; consolidation for long-term storage and packaging' x-rays/photography; details of any investigative cleaning required and illustration methods.

4.22 FARMING COMMUNITIES

PRINCIPAL SITE	**MBA**
THURNHAM	2 bronze artefacts from waterhole - A compositional analysis is recommended for both items.

TABLE 4-31BRONZE AGE METAL FINDS DATA

PRINCIPAL SITE	**EIA**
WHITE HORSE STONE	Full analysis and publication of cremation group assemblage 6131. Full analysis and publication of smelting/ smithing evidence recommended.
PRINCIPAL SITE	MIA
WEST OF NORTHUMBERLAND BOTTOM	La Tene brooch - further identification required. And comparison with regional distribution.
SOUTH-EAST OF EYHORNE STREET TWB	MIA?LIA sword. Various investigative analyses proposed to determine technology and use of object. Check with specialist to determine output.

TABLE 4-32: IRON AGE METAL FINDS DATA

4.23 TOWNS AND THEIR RURAL LANDSCAPES (100BC TO AD410)

PRINCIPAL SITE	LIA
TOLLGATE	10 objects require investigative cleaning and conservation, 5 illustrate. Prepare catalogue and text. Summaries.
SOUTH-EAST OF EYHORNE STREET TWB	See LIA
SOUTH OF SNARKHURST WOOD	Conservation will be required on small finds 101, 117, 118 (two separate items) and 119 to fully identify them. Ore require geologic identification. Spatial patterning recommended. Compare to other main sites in the category.
LEDA COTTAGES	All lines of evidence for smelting and 2ndary smithing require analysis and publication. Include spatial analysis and reconstruction of activity zones/ kiln reconstruction.
BEECHBROOK WOOD	Ore samples requires positive identification. Spatial analysis of metal working debris recommended determining pattern of deposition.
TUTT HILL TWB	Iron and copper smelting and smithing evidence should be further recorded in accordance with Leda Cottages specification.

TABLE 4-33: LIA METAL FINDS DATA

PRINCIPAL SITE	ERO
WEST OF NORTHUMBERLAND BOTTOM	Small group of brooches.
SOUTH OF SNARKHURST WOOD	Evidence continues. See LIA.
THURNHAM	Twenty-three coins require specialist cleaning in order to improve their identification, plus a further 15 coins, will need more detailed examination to maximise the information recovered. 80 Roman objects require further conservation and/or investigative cleaning.
LEDA COTTAGES	Evidence continues. See LIA.
BEECHBROOK WOOD	Evidence continues. See LIA.

PRINCIPAL SITE	ERO
TUTT HILL TWB	Evidence continues. See LIA.
BOWER ROAD	No further work required. Spatial analysis of metal finds recommended to investigate structural patterning. 7 coins require identification through comparison to published examples. Will provide closer dating.
NORTH OF SALTWOOD TUNNEL	Copper alloy and silver objects - 'further work required to confirm identifications'. Some lead objects recommended for publication. Crucible fragments could be studied to determine if Iron and copper alloy were being produced at the same site.
PRINCIPAL SITE	**MRO**
WEST OF NORTHUMBERLAND BOTTOM	Publication text and compilation of catalogue, applies to all periods. Small Roman coin assemblage should be photographed. Some further identification work needed. 5 for illustration. Some conservation post cleaning required.
WATERLOO CONNECTION	45 objects require investigative conservation for positive identification. A catalogue of the total 60 items will be prepared. A note on each typology will accompany the catalogue. 35 objects are recommended for line drawing illustration. 9 coins require investigative cleaning.
THURNHAM	Determination of smithing activities from spatial analysis of metal working residues. Non-assessed samples require quantification for archive report.
PRINCIPAL SITE	**LRO**
WEST OF NORTHUMBERLAND BOTTOM	The Roman brooches will require further analysis and comparative work to see if their identifications can be refined; this also applies to the bracelets and to a number of the queried identifications. Two items are recommended for analysis: (1) Confirmation of the “gold” identification from ARC HRD 99 <69>[77] is required. XRF analysis is recommended for this; and (2) <125> [994] iron knife from ARC WNB 98 – clean and analyse to check identification of the metal inlay, which shows up on the X-radiograph. XRF analysis is recommended for this. It is recommended that c. 26 artefacts be illustrated.

TABLE 4-34: ROMAN METAL FINDS DATA

4.24 TOWNS AND THEIR RURAL LANDSCAPES (AD 410 – 1500)

PRINCIPAL SITE	**EAS**
CUXTON ANGLO-SAXON CEMETERY	Cemetery assemblage for study/publication vol.3 Requires conservation/stabilisation for long-term storage.
NORTH OF SALTWOOD TUNNEL	Cemetery group for analysis and publication. Vol.3
PRINCIPAL SITE	**EMED**
WEST OF STATION ROAD: PARSONAGE FARM	One coin and 9 other objects require investigative cleaning and conservation for archive. Majority of objects were unstratified. Note that 8 of the items identified for cleaning were recovered in the metal detecting work and are not stratified. Consider archive catalogue for select pieces?
NORTH OF WESTENHANGER CASTLE	2 knives recommended to be written up for publication (includes one rare type in Kent). Require conservation/stabilisation for long-term storage.
PRINCIPAL SITE	**MED**
MERSHAM	Spatial analysis of ferrous residues will define principal smelting and smithing working areas (no furnace remains identified). Stabilisation of metal objects required for retained objects (to be selected). Compositional analysis may identify raw material source for objects. (Not recommended by EH). Instead trace element analysis of slag is recommended.

TABLE 4-35: MEDIEVAL METAL FINDS DATA

4.25 Human Remains Assemblages

4.25.1 This section summarises key assemblages identified for detailed recording and analysis. Data will also be derived from assessed assemblages that do not require further work to write up.

4.25.2 All human remains to be fully recorded prior to sampling for c14 and isotopic values. The contractor is to define standard terminology for recording. Minimum record shall include age, sex, number of individuals, and identification of pathology where appropriate. Detailed recording shall include metric and non-metric data. Dentition will be recorded where appropriate. Photographs and x-rays shall be used to illustrate pathologies where condition of bone preservation allows.

4.25.3 On the advice of EH, no DNA sampling or analysis is required. Isoptopic values derived during C14 process shall be retained in archive for future research use.

4.25.4 All dates will be obtained by AMS method, except where High Precision specified.

4.25.5 AMS dates to be procured through Kiel/Oxford/Glasgow/Groeningen. A resolution of +/- 35 is required.

4.25.6 High Precision dates are to be procured through Belfast Queens University.

4.25.7 All human remains are to be packaged for reburial/deposition, clearly labelled. Package spec to be agreed with PM.

4.26 EARLY AGRICULTURALISTS

PRINCIPAL SITE	**PRINCIPAL SITE**
TUTT HILL TWB	2 no. C14 dates from cremated bone, plus 2 no. from charcoal. CHECK this entry…not consistent with report or OA letter!! Whatever period…identify contexts (unassigned pit 44, BA pit 46? LIA pit 70?)
PRINCIPAL SITE	BEAKER
WEST OF NORTHUMBERLAND BOTTOM	Double inhumation with beakers (adult male and female, cxts 1070 and 1203). Fill contained skeletal material from child (cxt 1069). Detailed recording and analysis required to confirm age, sex and identify pathology. Stable isotope analysis (C/N) using teeth from adults required. Photo and radiography required where pathology identified. C14 date required to support artefact dating.
PRINCIPAL SITE	**EBA**
WHITEHILL ROAD BARROW	A single adult female (?) inhumation (Cxt 41), poorly preserved, in grave cutting partially infilled inner ring ditch of barrow. Recording and analysis is required to confirm sex and age, and identify any pathology (which should be illustrated by photography and radiography). Reconstruction of skull (and long bones) required to enable this. C14 date required for this secondary burial. C/N isotopic analysis required.
WEST OF NORTHUMBERLAND BOTTOM	Cremated bone recovered with an urn nr. Hazells farm (cxt no. 106?). Bone largely disintegrated, and not useful for study (not shown on assessment report table). Ensure record complete.
SOUTH-EAST OF EYHORNE STREET TWB	Two pits contained fragmentary cremated remains (23 and 60). Confirmation of provisional identification is recommended in report. Note that only one cxt (upper fill of pit 60) had identifiable remains, being a fragment of long bone shaft, the total being 2g in weight. Ensure record is complete. C14 date required.
NORTH OF SALTWOOD TUNNEL	2 no c14 dates (one per individual) to confirm dating of crouched inhumations (and barrow by association). These individuals are much better preserved than AS material, and will benefit from metric analysis, (including work on dentition)and will require photography/radiography if pathologies are identified. In addition C/N isotopic analysis is required from teeth (one sample per individual).

TABLE 4-36: EARLY PREHISTORIC HUMAN REMAINS DATA

4.27 FARMING COMMUNITIES

PRINCIPAL SITE	**MBA**
TUTT HILL TWB	Cremation 46 requires 1 no. C14 date on cremated bone, plus examination to confirm age, sex, no. of individuals and pathology. Isotopic analysis required. C/N
PRINCIPAL SITE	**LBA**
WEST OF NORTHUMBERLAND BOTTOM	Cremation 2013 contained cominuted bone. No identifiable fragments. Undated cremation (labelled cxt 2164 on fig. 13?) may belong to this period (not referred to on assessment report tables). Note that 2163 is said elsewhere in report to contain disarticulated human remains. Report says little can be done with cremations, possible work to elucidate no. of individuals? Ensure recording complete. C14 date required for cxt 2164? EH recommend that the residues be included in the assessment of plant remains.
THURNHAM	Cremated bone recovered from a pit (cxt 10097) nr. Supposedly BA waterhole. No work required on cremated bone itself, but it is suggested that associated (unburnt) animal bone from same deposit be examined for identification and quantity. C14 required to confirm date (may assist in overall site phasing). EH recommend that the residue be floated for plant remains also.
BEECHBROOK WOOD	1 no. C14 date on cremated bone from cxt 1604. C/N isotopic analysis required. Ensure that recording complete.
HURST WOOD	Token deposits of cremated human remains recovered from East of Newlands WBSDI (pits 3 and 7). No work recommended. C14 date required as part of programme of dating on isolated/token deposits.
PRINCIPAL SITE	**EIA**
COBHAM GOLF COURSE	Pit 364 contained calcined bone fragments, not identified to species. Not obviously human, but further work recommended to attempt confirmation of species. Ensure record complete. C14 date if sufficient material.
WHITE HORSE STONE	C14 dating suggested for unburnt bones, cxts 2114, 2120, 2291, 2295 and 8020. Will assist in site phasing? Ensure record complete. Near complete inhumation 2295 (adult male) recommended for detailed recording and analysis (to refine age and identify pathology). Pathology to be photographed and radiographed if present. C/N isotopic analysis required. From this individual (teeth).
PRINCIPAL SITE	**MIA**
WHITE HORSE STONE	**WHS:-** C14 dating for unburnt bones from cxt 6126. Ensure fully recorded.
LITTLE STOCK FARM	Remains of 5 (?) individuals, female where sex is determined, IA date. C14 required to confirm dates, one per individual. C/N isotopic analysis required (where teeth exist – contractor to confirm number). Reconstruct skull from cxt 2030 to allow possible taumatic lesion to be recorded (including photography/radiography if appropriate). Ensure record complete.
NORTH OF SALTWOOD TUNNEL	Assessment report says that EIA/MIA group of inhumations may have sufficient preservation to allow sampling for C14 dating. A group of seven burials of which five have very limited remains, the other two apparently without surviving material. Not referred to in later Wessex recommendations (oversight?). Ensure recording compete. C14 dating required from sufficient graves to date group as whole. Part of programme of dating for whole site. C/N isotopic analysis to be provided, one per individual, if teeth survive.

TABLE 4-37: LATER PREHISTORIC HUMAN REMAINS DATA

4.28 TOWNS AND THEIR RURAL LANDSCAPES (100BC TO AD410)

PRINCIPAL SITE	LIA
WHITE HORSE STONE	**WHS:-** 1 no. C14 date from cremated bone 6131, plus 1 no. C14 date from charcoal (cxt to be confirmed). C/N isotopic assay. This requires confirmation of age, sex, pathology and no. of individuals. Ensure recording and analysis complete, with photographic/radiographic record of pathologies.
CHAPEL MILL	Burnt bone recovered from two pits (205 and 213). Unburnt bone recovered from tree-throw fill cxt 249. No work is recommended on human remains themselves, although work is suggested to identify and quantify associated burnt animal bones in pit 205. Ensure record complete. c14 date required to contribute to programme of dating isolated cremations and/or burials.
SOUTH OF SNARKHURST WOOD	1 no. C14 date from cremated bone, cxt 127. Feature not otherwise dated, no associated material. Ensure recording complete.
BEECHBROOK WOOD	C14 dates from cremated bones, cxt nos. 2030, 2213 and 2342. Will contribute to site phasing scheme. Also C/N isotopic analysis, where suitable material present, to inform on diet etc.
NORTH OF SALTWOOD TUNNEL	6 no. C14 dates to give range and sequence of general prehistoric cremated bone deposits (maybe done from associated charcoal). Part of programme of c14dating for site identified by EH. Note, some of these dates will be required for EIA assemblage noted above. Contractor to identify other suitable contexts. Ensure all relevant recording is complete prior to sampling.

TABLE 4-38: LIA HUMAN REMAINS DATA

PRINCIPAL SITE	ERO
WEST OF NORTHUMBERLAND BOTTOM	Cremated bone said to come from pit 316, shown as undated on report table. Cominuted and unlikely to give information on demography or pathology. Additionally, disarticulated unburnt bone found in LIA/ERO "ritual pit", cxt 565. C14 of this material required to inform on site phasing. Ensure all recording complete.
WHITE HORSE STONE	**PIL:-** C14 dating required for cremated bone from cxts 143, 544/545, 854, 871 and 949. Sorting and analysis of cremated bone from pits 119, 543 and 852 also required. Ensure all records complete.
THURNHAM	Unaccompanied Infant burial, cxt 20431, found in top fill of boundary ditch for proto-villa. Detailed analysis and recording to refine age, pathology etc, and inform on possibility of infanticide. Record to include photography/radiography if pathologies noted.
BOYS HALL BALANCING POND	Cremation 44 requires examination to confirm no. of individuals, age, sex and determine any pathology. Recording (including photography and radiography if appropriate) is required. C14 date required to contribute to route wide dating of isolated cremation/burial groups.
HURST WOOD	Less than 1 gram of cremated bone from fill of pit 5 at Leda Cottage WBG. No work required.
TUTT HILL TWB	Cremation 70 requires 1 no. C14 date on cremated bone, plus examination to confirm age and sex, no. of individuals and identify pathology. Ensure all recording complete.

PRINCIPAL SITE	MRO
WEST OF NORTHUMBERLAND BOTTOM	Two neonate inhumations (cxt 1190 and undated but nearby 1037) from Wrotham Road R. settlement. Detailed recording etc. is required to establish age, sex pathology. Photography and radiography if pathology present. C14 date required (?).
WATERLOO CONNECTION	High precision C14 dates required initially from (charcoal) 7 bustum cremation burials, 6 non-bustums, 7 inhumations and 1 from well/shaft. This will help refine phasing. Charcoal to be id'd and recorded prior. Osteologist to select samples. OA recommend an additional 12 high precision determinations from charcoal samples from the aforementioned bustum and non bustum cremations. CHECK Further samples for C14 may be proposed after pilot study to further refine phasing, in particular of the 99 crems and 225 inhumations so far undated. Note; EH estimate c. 30-40 dates needed from this site in total. A pilot study for C/N isotopic analysis is required using data 6 samples (contractor to select), from a range of burial types, phases and preservation quality. A second phase of work to be recommended on basis of results obtained. A pilot study on Str/Pb/O stable isotope from 1 inhumation is to be undertaken (contractor to choose). More samples may be proposed thereafter. Metric and non metric data will not be taken from inhumations as too poorly preserved. Recording and analysis to be undertaken on dentition of 26 skeletons. 66 cremations excavated in spits will be recorded and analysed.
THURNHAM	Infant burial, cxt 10633, accompanied by grave goods. Detailed analysis and recording requried to refine age, sex and pathologies, and inform on infanticide. Ensure recording complete. C14 date required to support artefact dating.
BOWER ROAD	Examination of cremation deposit 122 to separate out fragments of two poss. Individuals, and refine sex/age, and poss. Pathology. Ensure all recording complete. C14 dating required from cxt 250. Full recording of cxt 250, including photography and radiography as appropriate.

TABLE 4-39: ROMAN HUMAN REMAINS DATA

4.29 TOWNS AND THEIR RURAL LANDSCAPES (AD 410 – 1500)

PRINCIPAL SITE	**LRO**
NORTH OF SALTWOOD TUNNEL	1 no. c14 date from single inhumation. C/N isotopic analysis.
PRINCIPAL SITE	**MAS**
CUXTON ANGLO-SAXON CEMETERY	9 no. c14 dates recommended to refine cemetery phasing. Dates should be spread between principal different grave types (enclosed, non-enclosed, and the different orientations), to determine if the variation is chronologically patterned. Recording, analysis on all remains required, with some reconstruction of crushed skulls, broken long bones to determine presence of subtle pathological changes. To include limited photography and radiography as appropriate. 3 no. skeletons high preservation; 9 no. medium preservation; 23 no. low preservation. C/N isotopic analysis required, from a range of burials types. This will consist of 6 samples from a range of grave types and bone preservation types. A single sample to be sent for Str./Pb/O isotopic analysis as a pilot study.
WHITE HORSE STONE	An adult female inhumation, well preserved, dated by C14 to 680-970AD cal (95% conf.) recovered from adjacent to pilgrims way. Cxt 9025. Skull missing. Further detailed recording is recommended (as for all inhumations at this site) to refine age and identify pathologies. Photo and radiographs required if pathology identified.
NORTH OF SALTWOOD TUNNEL	7-8 no. C14 dates for absolute dates for founders graves from skeletal material. 7-8 no. C14 absolute dates to date burials with no supporting artefactual material. 3 no. per cemetery C14 dates (9 no. total), to allow comparison/contrast with dates suggested by artefacts. Isotopic analysis (7-8 samples) on Founders graves to explore possibility of continental origins. Pilot study for Str/Pb/O using a single sample. Age may be determined through tooth-wear analysis, and sexing may also be refined through multi-variate analysis of tooth crown measurements. Photography/radiography unlikely to be needed, unless pathologies noted. See EH notes. C30 dates may be required in total from this site. A pilot study for C/N isotopic analysis is required using data 6 samples (contractor to select), from a range of burial types, phases and preservation quality. A second phase of work to be recommended on basis of results obtained.

TABLE 4-40: POST-ROMAN HUMAN REMAINS DATA

4.30 Integrated Principal Site Report Specification

4.30.1 Synthetic discussion presented in the Project Monograph (See UPD Part 3), will be supported by a research archive report for significant Principal Sites to be made available as a print ready component of the CTRL digital archive. The CTRL project design is aimed at presenting a case study for the study of high level and broad trends of human activity through the synthetic treatment of assemblage, chronological and spatial indicators from the full range of sites represented in the archive.

4.30.2 The synthesis for each major period will draw on data from specialist assemblage works (Packages 1-6), the Principal Site assessment reports (existing), the interim excavation reports and watching brief reports (existing), and Principal Site archive reports (prepared under this specification).

4.30.3 The detail at which Principal Sites have been reported in the assessment phase is an adequate archive fieldwork record for some of the sites investigated that require no further work. However for the more significant sites for which further analysis of assemblage and spatial indicators will be carried out in the analysis, it will be necessary to build on the assessment works to provide a definitive statement of the fieldwork evidence and results of analysis.

4.30.4 At an individual site level there is a requirement to ensure that the specialist studies, dating and spatial analysis results are integrated with the site stratigraphy to provide a definitive statement of the sites activities, structures, their final chronological sequence and dated phasing. The report will include illustration of phased spatial activity and key stratigraphic sections. The report is a definitive stratigraphic account that together with the excavation finds databases (derived from specialist studies), stratigraphic sequence diagrams, spatial analyses will enable the synthetic narrative (guided by the research framework, Part 2) to be deduced and published as the CTRL Project monograph.

4.30.5 The following specification identifies the content and format for the report. Those sites that require presentation of an updated Principal Site archive report are identified in Table 4.41. The contractor should base the report on the work already conducted for the assessment report since much key background and descriptive data is directly available in these reports.

4.31 Report specification and format

4.31.1 The Contractor shall produce the report in print ready format (*pdf format). The Contractor should ensure that the e-report is edited to publication standard.

4.31.2 The e-report will be made available as part of the CTRL digital archive on the ADS website. Use of colour will be agreed with the Project Manager prior to illustration preparation.

4.31.3 Figures and plates shall be limited to A4 size except where agreed otherwise with the Project Manager.

Abstract and Acknowledgements

1. Introduction (repeat from assessment)
2. Project Design, Original Priorities and Aims (repeat…)
3. Fieldwork results
   - 3.1 Fieldwork methods and standards (repeat…)
   - 3.2 Excavation results (utilising existing description where appropriate)- Description of activities and structures in chronological sequence supported by key illustrated feature plans and sections, and feature sequence diagram illustration (matrix) annotated with key artefact and absolute dating evidence and deductive phase boundaries.
4. Integrated Analysis Results (utilising assessment report where appropriate)
   - 4.1 Summary of analysis of artefact and environmental assemblages (drawn from specialist reports – assemblages will be reported on in detail in the appropriate specialist study report)
   - 4.2 Chronology of the site - Report on key stratigraphic dating contexts and results of absolute dating programme.
     - 4.2.1 The site sequence and supporting evidence
     - 4.2.2 Dating evidence and consideration of limitations
     - 4.2.3 Sequence diagrams
     - 4.2.4 Results of spatial analysis carried out to identify structures and activities and their phasing
     - 4.2.5 The identified structures and supporting arguments
     - 4.2.6 Evidence for activities and supporting evidence
5. Final CAD Model in Accordance with CAD Specification (updated from assessment)
6. Completed Research Level Datasets (updated from assessment)
7. Location and Contents of Archive and Digital Archive.
8. Illustrations to include:
   - 8.1 Location map; Sequential site plans; key section profiles; results of site spatial analysis conducted to secure sequence and dating where appropriate; key photographic plates

FIGURE 4-1: PRINCIPAL SITE REPORT OUTLINE FORMAT

C=CERAMIC; E=BOTANICAL/GEOARCHAEOLOGICAL; F=FLINT; FAU=FAUNAL; M=METALWORK; H=HUMAN REMAINS

Sites highlighted in red do not require an archive report – certain assemblages however will be considered in overall routewide quantification of assemblages.

ID	PRINCIPAL SITE	ASSEMBLAGES Analysis from specialist studies will be integrated into the archive report where appropriate to site sequence	C	E	F	FAU	M	H	DATING NOTES	SPATIAL ANALYSIS NOTES Define from Part 2
1.	A20 DIVERSION HOLM HILL		♦						NO FURTHER WORK	NO FURTHER WORK
2.	WHITEHILL ROAD BARROW			♦		♦		♦		
3.	330 ZONE 2 WB		♦	♦						
4.	BEECHBROOK WOOD		♦	♦	♦		♦	♦		
5.	BOYS HALL POND		♦					♦	NO FURTHER WORK	NO FURTHER WORK
6.	BOWER ROAD		♦	♦		♦	♦	♦	Refine phasing	
7.	COBHAM GOLF COURSE		♦	♦	♦			♦	C14 ring ditches. Integrate geoarchaeological sequence	
8.	CUXTON ANGLO-SAXON CEMETERY		♦	♦			♦	♦	Refine cemetery phasing with C14 programme	

ID	PRINCIPAL SITE	ASSEMBLAGES Analysis from specialist studies will be integrated into the archive report where appropriate to site sequence	C	E	F	FAU	M	H	DATING NOTES	SPATIAL ANALYSIS NOTES Define from Part 2
9.	EAST OF STATION ROAD		♦	♦						
10.	HURST WOOD				♦				NO FURTHER WORK	NO FURTHER WORK
11.	LEDA COTTAGES	Incomplete record					♦			
12.	LITTLE STOCK FARM		♦	♦	♦			♦	C14 – define further	
13.	MERSHAM		♦	♦		♦	♦			Spatial analysis of industrial and domestic zones
14.	NASHENDEN VALLEY		♦						NO FURTHER WORK	NO FURTHER WORK
15.	NORTH OF SALTWOOD TUNNEL		♦	♦	♦	♦	♦	♦	Refine cemetery phasing with C14 programme. Dating of BA cemetery also.	Various. To define
16.	NORTH OF WESTENHANGER CASTLE	Integrate finds and enviro data	♦	♦			♦			Produce updated phase plans

ID	PRINCIPAL SITE	ASSEMBLAGES Analysis from specialist studies will be integrated into the archive report where appropriate to site sequence	C	E	F	FAU	M	H	DATING NOTES	SPATIAL ANALYSIS NOTES Define from Part 2
17.	SANDWAY ROAD	Integrate finds and enviro data	♦	♦	♦					
18.	SOUTH OF SNARKHURST WOOD		♦		♦		♦	♦	Refine phasing. 1 No C14 date cremation	
19.	SOUTH-EAST OF EYHORNE STREET TWB		♦		♦	♦	♦	♦	Refine phasing	
20.	THURNHAM		♦	♦		♦	♦	♦		
21.	TOLLGATE		♦	♦	♦	♦	♦			
22.	TUTT HILL TWB		♦	♦			♦	♦	C14 ring ditches and EBA (?)cremations	
23.	WATERLOO CONNECTION		♦	♦	♦		♦	♦	Refine cemetery phasing with C14 programme	Produce updated cemetery phase plans

ID	PRINCIPAL SITE	ASSEMBLAGES Analysis from specialist studies will be integrated into the archive report where appropriate to site sequence	C	E	F	FAU	M	H	DATING NOTES	SPATIAL ANALYSIS NOTES Define from Part 2
24.	WEST OF NORTHUMBERLAND BOTTOM		♦	♦	♦	♦	♦	♦		
25.	WEST OF STATION ROAD: PARSONAGE FARM		♦	♦		♦	♦			
26.	WHITE HORSE STONE		♦	♦	♦	♦	♦	♦		

C=CERAMIC; E=BOTANICAL/GEOARCHAEOLOGICAL; F=FLINT; FAU=FAUNAL; M=METALWORK; H=HUMAN REMAINS

TABLE 4-41: SUMMARY OF INTEGRATION WORK TO BE CARRIED OUT FOR PRINCIPAL SITE REPORTS

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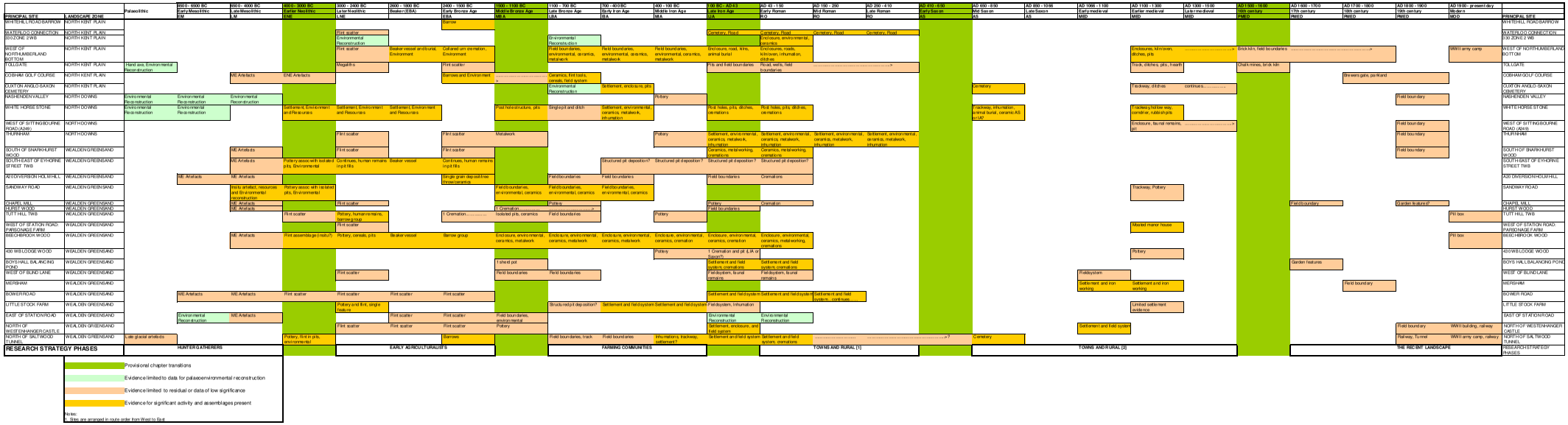
Palaeolithic
9500 - 6500 BC
Early Mesolithic
EM
6500 - 4000 BC
Late Mesolithic
LM
4000 - 3000 BC
Earlier Neolithic
ENE
3000 - 2400 BC
Later Neolithic
LNE
2900 - 1800 BC
Beaker (CBA)
2400 - 1500 BC
Early Bronze Age
EBA
1500 - 1100 BC
Middle Bronze Age
MBA
1100 - 700 BC
Late Bronze Age
LBA
700 - 400 BC
Early Iron Age
EIA
400 - 100 BC
Middle Iron Age
MIA
100 BC - AD 43
Late Iron Age
LIA
AD 43 - 150
Early Roman
ERO
AD 150 - 250
Mid Roman
RO
AD 250 - 410
Late Roman
RO
AD 410 - 650
Early Saxon
AS
AD 650 - 850
Mid Saxon
AS
AD 850 - 1066
Late Saxon
AS
AD 1066 - 1100
Early medieval
MMED
AD 1100 - 1300
Earlier medieval
MMED
AD 1300 - 1500
Late medieval
MMED
AD 1500 - 1600
16th century
PMED
AD 1600 - 1700
17th century
PMED
AD 1700 - 1800
18th century
PMED
AD 1800 - 1900
19th century
PMED
AD 1900 - present day
Modern
MOD
PRINCIPAL SITE
LANDSCAPE ZONE
WHITEHILL ROAD BARROW
NORTH KENT PLAIN
Barrow
Cemetery, Road
Cemetery, Road
Cemetery, Road
Cemetery, Road
WATERLOO CONNECTION B30 ZONE 2 WB
Flint scatter
Environmental Reconstruction
Environmental Reconstruction
Field boundaries, environmental, ceramics
WEST OF NORTHUMBERLAND BOTTOM
Flint scatter
Beaker vessel and burial, Environment
Collared urn cremation, Environment
Field boundaries, environmental, ceramics, metalwork
Field boundaries, environmental, ceramics, metalwork
Field boundaries, environmental, ceramics, metalwork
Enclosure, road, kilns, animal burial
Enclosures, roads, kilns oven, inhumation, ditches
Enclosures, kiln oven, ditches, pits
Brick kiln, field boundaries
WWII army camp
TOLLGATE
Hand axe, Environmental Reconstruction
Megaliths
Flint scatter
Pits and field boundaries
Road, wells, field boundaries
Track, ditches, pits, hearth
Chalk mines, brick kiln
COBHAM GOLF COURSE
ME Artefacts
ENE Artefacts
Barrows and Environment
Ceramics, flint tools, cereals, field system
Brewers gate, parkland
CLIFTON ANGLO-SAXON CEMETERY
Environmental Reconstruction
Settlement, enclosure, pits
Cemetery
Trackway, ditches
continues
ASHENDEN VALLEY
Environmental Reconstruction
Environmental Reconstruction
Environmental Reconstruction
Pottery
Field boundary
WHITE HORSE STONE
Environmental Reconstruction
Environmental Reconstruction
Settlement, Environment and Resources
Settlement, Environment and Resources
Settlement, Environment and Resources
Post hole structure, pits
Single pit and ditch
Settlement, environmental, ceramics, metalwork, inhumation
Post holes, pits, ditches, cremations
Post holes, pits, ditches, cremations
Trackway, inhumation, animal burial, ceramics AS or LIA?
Trackway hollow way, corn drier, rubbish pits
WEST OF SITTINGBOURNE ROAD (A249)
Enclosure, faunal remains, pit
Field boundary
THURNHAM
Flint scatter
Flint scatter
Metalwork
Pottery
Settlement, environmental, ceramics, metalwork, inhumation
Settlement, environmental, ceramics, metalwork, inhumation
Settlement, environmental, ceramics, metalwork, inhumation
Settlement, environmental, ceramics, metalwork, inhumation
Field boundary
SOUTH OF SNARKHURST WOOD
ME Artefacts
Flint scatter
Flint scatter
Ceramics, metal working, cremations
Ceramics, metal working, cremations
Field boundary
SOUTH EAST OF EYHORNE STREET TWB
ME Artefacts
Pottery assoc with isolated pits, Environmental
Continues, human remains
Beaker vessel
Continues, human remains
Structured pit deposition?
Structured pit deposition?
Structured pit deposition?
Structured pit deposition?
A20 DIVERSION HOLM HILL
ME Artefacts
ME Artefacts
Single grain deposit tree throw ceramics
Field boundaries
Field boundaries
Field boundaries
Cremations
SANDWAY ROAD
Early artefact, resources and Environmental reconstruction
Pottery assoc with isolated pits, Environmental
Field boundaries, environmental, ceramics
Field boundaries, environmental, ceramics
Field boundaries, environmental, ceramics
Trackway, Pottery
CHAPEL MILL
ME Artefacts
Flint scatter
Pottery
Pottery
Cremation
Field boundary
Garden feature?
FURST WOOD
ME Artefacts
1 Cremation
Isolated pits
Field boundaries
TUTT HILL TWB
Flint scatter
Pottery, human remains, Barrow group
1 Cremation
Isolated pits, ceramics
Field boundaries
Pottery
Field boundaries
Pill box
WEST OF STATION ROAD, PARSONAGE FARM
Flint scatter
Moated manor house
BEECHBROOK WOOD
ME Artefacts
Flint assemblage (residual?)
Pottery, cereals, pits
Beaker vessel
Barrow group
Enclosure, environmental, ceramics, metalwork
Enclosure, environmental, ceramics, metalwork
Enclosure, environmental, ceramics, metalwork
Enclosure, environmental, ceramics, cremation
Enclosure, environmental, ceramics, cremation
Enclosure, environmental, ceramics, metal working, cremations
Pill box
400 WB LODGE WOOD
Pottery
1 Cremation and pit (LIA or Saxon?)
Pottery
BOYS HALL BALANCING POND
1 sherd pot
Settlement and field systems, cremations
Settlement and field systems, cremations
Garden features
WEST OF BLIND LANE
Flint scatter
Field boundaries
Field boundaries
Field boundaries
Fieldsystem, faunal remains
Fieldsystem, faunal remains
Fieldsystem
MERSHAM
Settlement and iron working
Settlement and iron working
Field boundary
BOWER ROAD
ME Artefacts
ME Artefacts
Flint scatter
Flint scatter
Flint scatter
Flint scatter
Settlement and field system
Settlement and field system
Settlement and field systems
continues
LITTLE STOCK FARM
Pottery and flint, single feature
Structured pit deposition?
Settlement and field system
Settlement and field system
Fieldsystem, Inhumation
Limited settlement evidence
EAST OF STATION ROAD
Environmental Reconstruction
ME Artefacts
Flint scatter
Flint scatter
Field boundaries, environmental
Environmental Reconstruction
Environmental Reconstruction
NORTH OF WESTENHANGER CASTLE
Flint scatter
Flint scatter
Flint scatter
Pottery
Settlement, enclosure, and field system
Settlement and field system
WWII building, railway
NORTH OF SALTWOOD TUNNEL
Late glacial artefacts
Pottery, flint in pits, environmental
Barrows
Field boundaries, track
Field boundaries
Inhumations, trackway, settlement?
Settlement and field system
Settlement and field system, cremations
Cemetery
Railway, Tunnel
WWII army camp, railway
RESEARCH STRATEGY PHASES
HUNTER GATHERERS
EARLY AGRICULTURALISTS
FARMING COMMUNITIES
TOWNS AND RURAL [1]
TOWNS AND RURAL [2]
THE RECENT LANDSCAPE
RESEARCH STRATEGY PHASES
Provisional chapter transitions
Evidence limited to data for palaeoenvironmental reconstruction
Evidence limited to residual or data of low significance
Evidence for significant activity and assemblages present
Notes:
1. Sites are arranged in route order from West to East