RAIL LINK ENGINEERING

CHANNEL TUNNEL RAIL LINK TECHNICAL REPORT

TECHNICAL REPORT No. 440-RUG-RLEVC-00001-AA

Archaeology Programme Written Scheme of Investigation: Sevington to Eurotunnel Area 440

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APPROVAL / REVISION RECORD SHEET

REPORT TITLE	Archaeology Programme Written Scheme of Investigation: Sevington to Eurotunnel Area 440
REPORT NUMBER	440-RUG-RLEVC-00001-AA

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APPROVED BY MANAGER SECTION 1 (RLE):	APPROVED BY MANAGER OF ENVIRONMENT (RLE):

TABLE OF CONTENTS

1. INTRODUCTION

1.1 HM Government has determined that a new railway should be built to connect London mainline railway stations and the Channel Tunnel. Section 1 of the Channel Tunnel Rail Link (CTRL) will run from the Channel Tunnel portal via Ashford and the North Downs to Fawkham Junction to the south of Gravesend. Section 2 will run from Pepperhill, crossing the River Thames at Thurrock, through east London and terminate at London St. Pancras. The project involves extensive construction work, including cuttings, tunnels, bridges and embankments. Other associated works such as utility diversions and drainage, are also required and temporary land take is envisaged at several locations where construction sites are planned.

1.2 An Environmental Statement has been prepared (URL 1994). This examines the impact of the project on the natural and built environment. Archaeological works commissioned as part of the Environmental Assessment comprised: a desk-based study of archives (including Sites and Monuments Records, lists of Scheduled Ancient Monuments and Listed Buildings, published and unpublished sources); the compilation of a full inventory of sites and finds; surface collection survey (fieldwalking); a walkover survey of areas unsuited to fieldwalking (e.g. woodland and pasture); and monitoring of geotechnical works. Each site in the inventory was given a unique number and was also located on 1:5000 or 1:2500 maps.

1.3 Since the publication of the Environmental Statement archaeological fieldwork has been commissioned at numerous locations along the route of the CTRL. This has included trench based field evaluations, extensive geophysical surveys and the continued monitoring of geotechnical test pits.

1.4 A number of locations have been identified where works authorised by the CTRL Act 1996 will affect known archaeological remains. Where it has not been reasonably practicable to secure the preservation in situ of these remains it has been agreed by RLE, with the local authorities and English Heritage, that archaeological excavation shall be undertaken in advance of construction of works authorised by the CTRL Act 1996.

1.5 This Written Scheme of Investigation forms part of a wider programme of archaeological works to be commissioned by Union Railways Limited in advance of construction of the CTRL.

1.6 The preparation of the following sections has taken account of the Institute of Field Archaeologists (IFA) *Standard and Guidance for Archaeological Excavations*.

2. SCOPE OF WORKS

2.1 General

2.1.1 The extent of archaeological works carried out within this contract area is set out on the 'Summary of Archaeological Works' and the 'Mitigation Works' drawings which accompany this document. Completed areas of archaeological trial-trenching are:

- North of Sevington Railhead - no further works required
- West of Blind Lane - advanced mitigation required, see specification below;
- West of Mersham - no further works required;
- Mersham - advanced mitigation required, see specification below;
- Station Road - advanced mitigation required, see specification below;
- Church Lane - advanced mitigation required, see specification below;
- Harringe Lane - no further works required;
- North of Westenhanger Castle - advanced mitigation required, see specification below;
- Sandling Construction Site - no further works required;
- North of Saltwood Tunnel - advanced mitigation required, see specification below.

2.1.2 East of Mersham, Little Stock Farm, East Stour Diversion, Stone Street West, Stone Street East, will be subject to archaeological trial-trenching evaluation in the immediate future and are not included in this WSI. The extension of the West of Blind Lane area is, however, included in this WSI.

2.1.3 The Contractor shall carry out archaeological excavation and recording (hereinafter called the 'Works') at those sites illustrated on the drawings listed in Table 1 below, together with the site names and site codes for each fieldwork event.

Table 1: **The Sites**

Site Name	Drawing Number	Site Code
West of Blind Lane	440-DGH-09360-62011-AB	ARC BLN 9*
Bridge House	440-DGH-09480-62012-AA	ARC BRH 9*
Mersham	440-DGH-09480-62013-AB	ARC MSH 9*
East of Station Road	440-DGH-09780-62014-AB	ARC STR 9*
Church Lane	440-DGH-09780-62014-AB	ARC CHL 9*
Talbot House	440-DGH-10080-62015-AA	ARC TBH 9*
North of Westenhanger Castle	440-DGH-10200-62016-AA	ARC WGC 9*
North of Saltwood Tunnel	440-DGH-10560-62017-AB	ARC SLT 9*

2.1.4 The Contractor has been provided with archaeological background information under a previous tender. This included copies of the CTRL Environmental Assessment Historic and Cultural Effects Specialist Report (URL 1994), and fieldwork reports. A summary of the archaeological character of the area of the Works is included in Appendix 2.

2.2 Aims

2.2.1 General

2.2.1.1 Through the CTRL Environmental Minimum Requirements (EMRs), RLE is committed to take account of the principles of Planning Policy Guidance Note 16 and to commission a programme of archaeological works in advance of development. RLE recognises, also, that the CTRL Archaeological Programme will generate information that will benefit wider archaeological studies of the area, which may be conducted by others but are not part of the CTRL programme.

2.2.2 Research Strategy

2.2.1.2 In light of the above, RLE has developed a Research Strategy (Appendix 1) to prioritise the archaeological programme so that it both discharges its responsibilities under the EMRs and seeks to provide academic benefit from the Works. The Strategy provides a strategic route-wide framework which sets the general research themes and objectives to be addressed by the archaeological programme. The Strategy recognises that the archaeological programme can be undertaken in the context of 5 broad landscape zones. Each zone being defined as having a distinctive historical character, landscape and natural history. Within each zone, archaeological Works can further be considered in the context of 5 broad time-periods and thus the history of the landscape through which the CTRL passes and its specific characteristics can be determined.

2.2.1.3 The Strategy is interpreted at the landscape zone level in light of the known or expected archaeological resource for the area and the key questions that it is considered desirable to address within each zone: hereafter termed 'landscape zone priorities'.

2.2.1.4 This is further refined, and implemented, through the formulation of specific aims to guide individual fieldwork events.

2.2.1.5 Thus the CTRL archaeological programme will be undertaken within a hierarchical and flexible research design comprising the following elements:

1. Research Strategy

⇑⇓

2. Landscape Zone Priorities

⇑⇓

3. Fieldwork Event Aims

2.2.1.6 The Contractor will be required to provide feedback on its findings, as outlined in Sections 2.3.1.2 and 2.4.2, so that each tier of the Research Strategy can be modified, if required, according to changing circumstances.

2.2.2 Landscape Zone Priorities

2.2.2.1 In light of the above discoveries during the evaluation work (Appendix 2), the existing extent of knowledge within these areas of Kent, and the nature of the CTRL, the primary archaeological concerns of the area will be:

i. *a reconstruction of the changing palaeo-environment for all time periods present, through 'on-site' and 'off-site' studies and the interaction with past economies:*

- the interaction with hunter-foragers;
- changes arising from the adoption of agricultural economies;
  - the effects of and extent of clearance of the 'Wealden Wild Wood';
- changes arising from early industrial economies;
  - woodland management for Roman, medieval and post-medieval iron working.

ii. *establish the basis of the rural economy for the area for all time periods, but especially through the recovery of material and environmental remains:*

- changes to the organisation of the landscape through time;
  - prehistoric landscape division;
  - the effects of the Roman administration;
  - the place of medieval and post-medieval vernacular buildings;
- settlement morphology and function;
  - reliance on pasturalism versus arabalism;
  - the importance of early industrialisation, e.g. medieval and later iron working and fulling;
  - utilisation of natural resources, e.g. woodland management/ utilisation of riverine and coastal resources;
  - the effects of the rise and decline of the Roman administration on existing economies;
  - local, regional and international trade.

iii. ritual and ceremonial use of the landscape:

- evidence for change and continuity of burial practices between the late Iron Age and Romano-British period in east Kent.

2.3 Primary Fieldwork Event Aims

2.3.1 Introduction

2.3.1.1 It is the primary concerns, outlined above, which define the Fieldwork Event specific archaeological aims detailed in the tables below. In addition information gained from the following sites will be compared and contrasted with the other landscape zones such as the North Kent Plain.

Table 2: **Detailed Mitigation**

Reason for Mitigation

West of Blind Lane
A series of curvilinear ditches & slots of MBA-LBA date were located & may represent two prehistoric enclosures together with linear features which may be the remains of one or more field systems. Pottery retrieved from some of the features included a Deverel-Rimbury bucket urn & other sherds of possible early 1st millennium BC. Only a limited amount of animal bone was recovered & the survival of organic remains was poor. Immediate parallels within the CTRL are the 'Cobham Park Golf Course' site within the North Kent Plain (A2 Corridor) landscape zone.
 	
Aims
• Determine the morphology & function to the settlement, including any adjacent enclosures & trackways etc;
• Determine the economic basis for the site;
  • Recovery of pottery assemblages for assessment & analysis;
  • Recovery of environmental & other economic indicators if these are found to be present on site.

Bridge House Grade II listed. The building is timber-framed and was originally built in the first half of the 16th century. It was reconstructed in the 17th century with a chimney and given a new brick front in the early 18th century. The central crown post was re-used in the southernmost first floor room The site lies within the historic settlement of Mersham. There are no known buried archaeological features and deposits recorded in the vicinity of this property. Archaeological monitoring of six test pits has been undertaken and recorded, stone footings and topsoil, overlying clay and subsoils (head deposit). The building will be stabilised and moved as a whole structure to its new site to the north. Aims • Determine the location , extent, character and date of any archaeological remains within the curtilage of the buildings; • Determine the historical use and development of the site, including the function of any earlier buildings or phases of building; • Determine the relationship of the below ground archaeological remains to the dismantled structures and their curtilage; • Produce a full and proper archive record (written, graphic, digital and photographic) of the building and of any archaeological remains and their curtilage.
Mersham Probable industrial activity was recorded over part of the evaluation site. Iron slag largely derived from smelting was recovered in varying quantities from features. Of note were two large pits almost completely filled with slag, iron stone & cinder. Post holes & beam slots may also suggest the presence of associated timber buildings. Pottery retrieved was generally of 13th century date. There appears to be a limited potential for palaeo-environmental, although the small quantity of bone recovered was well preserved.

Aims

- Establish the full extent & morphology & organisation of the iron working site;
- Recovery of artefact assemblages (especially pottery) to elucidate the sequence of site development; to provide information on the status & economy of the site & data on trade & exchange;
- Recover environmental & other economic indicators if these are found to be present on site;
- Determine the landscape setting of the site & interaction with the contemporary local environment.

East of Station Road

The landtake required in particular for the flood storage scheme has yet to be resolved & will have a considerable bearing on the extent of mitigation works required.

Archaeological remains were of a dispersed nature, with ploughing likely to have destroyed features & deposits on the higher ground. The western field was characterised by linear features containing almost no cultural material. In the central field, the features were probably ditches containing little cultural material. The low ridge may have been a focus of occupation. Dated features can be broadly divided into those of 1st century date in the central field. The possibility of waterlogged remains was identified & this in conjunction with peat recorded in a nearby borehole highlights the potential for palaeo-environmental data to be retrieved.

Aims

- Establish a record of the extent, morphology & function of remains of all periods, including any habitation areas & associated enclosures & trackways etc;
- Recovery of dated environmental & economic indicators if these are found to be present on site;
- Recovery of pottery assemblages for assessment & analysis;
- Determine the landscape setting of the site & interaction with the contemporary local environment;
- Recover palaeo-environmental indicators from well dated sequences, palaeosols, & any waterlogged deposits.

Church Lane

Archaeological remains were of a dispersed nature, with ploughing likely to have destroyed features & deposits on the higher ground. An area of occupation may have been on the brow of the hill overlooking the valley of the East Stour (1786TT). Ploughing is likely to have truncated deposits on the top of the knoll, probably accounting for cultural material in secondary contexts. Dated features can be broadly divided into those of BA and/or IA date. The possibility of waterlogged remains & peat recorded in a nearby borehole highlights the potential for palaeo-environmental data to be retrieved. A Mesolithic assemblage was also recovered, though this is unlikely to be *in situ*.

Aims

- Establish a record of the extent, morphology & function of remains of all periods, including any habitation areas & associated enclosures & trackways etc;
- Recovery of dated environmental & economic indicators if these are found to be present on site;
- Recovery of pottery assemblages for assessment & analysis;
- Determine the landscape setting of the site & interaction with the contemporary local environment;
- Recover palaeo-environmental indicators from well dated sequences, palaeosols, & waterlogged deposits (if present).
- Characterise the date and nature of the Mesolithic artefact scatter and any associated environmental evidence.

Talbot House

Grade II listed. The building is 15th century and timber-framed. It has been restored in the 1980s. A Wealden hall house which underwent a post-medieval conversion by the insertion of a first floor over the hall, together with a chimney stack. Internally there is much exposed timber work, including a fine hall screen and with a crown post style of roof.

There are no known buried archaeological features and deposits recorded in the vicinity of this property.

The building will be dismantled and re-erected on a new site.

Aims

- Determine the location , extent, character and date of any archaeological remains within the curtilage of the buildings;
- Determine the historical use and development of the site, including the function of any earlier buildings or phases of building;
- Determine the relationship of the below ground archaeological remains to the dismantled structures and their curtilage;
- Produce a full and proper archive record (written, graphic, digital and photographic) of the building and of any archaeological remains and their curtilage.

North of Westenhanger Castle

A limited series of Medieval features were located towards the centre of the evaluation site, directly beneath the ploughsoil, the most interesting of which was a probable 11/12th century corn drying oven environmental samples from the oven contained rich charred plant assemblage. The oven present the opportunity for the modern excavation of such a structure. Possibility that these features are associated with Westenhanger Castle to the NW. A series of probable field ditches of medieval date were also recorded & may provide information on its landscape setting.

Aims

- Establish the full extent & morphology of any structures or other archaeological remains utilising archaeo-magnetic techniques;
- Determine the function & economic basis of the site;
- Recovery of charred plant material & other economic indicators for palaeo-economic studies.

North of Saltwood Tunnel

A concentration of Roman features was located within a well-defined area of the evaluation. The features comprised mainly ditches with several pits & a linear 'hollow'. The predominant alignment of the ditches is NW-SE suggesting a layout of enclosures boundaries. A late 2nd century Roman cremation & associated vessels was located during works & may provide the opportunity for the examination of continuity/change in burial practice in association with an identified settlement. The evaluation appears to identify the southern limits of an early 1st century AD settlement already recorded during the M20 watching brief.

Aims

- Determine the morphology & organisation of the local Roman landscape;
- Establish a dated sequence for the origin & development of the settlement including associated enclosures & trackways etc;
- Establish the association between land divisions & possible settlement focii;
- Determine the contemporary local environment;
- Recovery of dated environmental & economic indicators if these are found to be present on site;
- Establish a chronology & sequence of development for the cemetery if one is present;
- Determine burial practice as preserved by archaeological remains, including artefact assemblages;
- Recovery of information on Romano-British burial practice, palaeo-pathology & demographic studies.

2.3.1.2 It is possible that modification of these aims and further aims may become appropriate during the execution of fieldwork and project assessment. The desirability of modifying the WSI to accommodate them, will be assessed with reference to the priorities afforded to different aspects of the work.

2.4 Excavation and Recording (Generic)

2.4.1 General

2.4.1.1 For the purposes of the Works, the following generic requirements shall apply for each fieldwork event. These are general standards and shall be modified or augmented as detailed in Section 2.5 below.

a. The Contractor shall establish the location and limits of the Sites prior to the commencement of the fieldwork. The Contractor shall establish a regular grid for each Site. Grid markers shall be at 5m, 10m or 20m centres and utilise numeric co-ordinates. The grid shall utilise the CTRL Project Grid. The Contractor shall provide the Project Manager with Project Grid and OS Grid co-ordinates for each grid peg. The Contractor will be supplied with an Excel spreadsheet for the transformation of OS Grid co-ordinates to Project Grid co-ordinates and *vice versa*.

b. Heights shall be related to URL Permanent Ground Markers (PGMs) or approved Ordnance Survey Bench Marks (OSBM). The full descriptions and locations of PGMs and OSBMs will be supplied to the Contractor. Levelling accuracy between OSBMs/PGMs and site TBMs shall be within 10 mm$\sqrt{k}$: where 'k' is the total distance levelled in kilometres. Each TBM shall be levelled as part of a closed loop starting and finishing on approved OSBMs or URL PGMs. Where more than one TBM is required per site the Contractor shall establish the TBMs as part of the same closed loop.

c. The Contractor shall include details of their surveying methodology within the Method Statement, including the setting out of the grid and the provision of Project Grid Co-ordinates to the Project Manager.

d. Bulk excavation shall be preceded by the systematic survey of the site with metal detectors. The Contractor shall utilise the site grid for the purpose of this work and all finds shall be recorded with reference to the site grid. The survey shall be undertaken by suitable experienced personnel, and recovery of artefacts shall be restricted to the modern plough zone. All artefacts recovered shall form part of the site archive. The Project Manager will inform the Contractor of those local organisations which may be able to assist in undertaking this aspect of the Works.

e. Each Site shall be stripped carefully, under close archaeological supervision, of topsoil and superficial deposits (including modern made ground) to the top of significant archaeological stratification or drift/solid geology, whichever is encountered first. Following the stripping of topsoil it may become apparent that areas of alluvium and colluvium need also to be removed to uncover significant archaeological remains. Machine excavation is to be undertaken using 360^{o} tracked-excavators fitted with toothless ditching buckets. Plant shall not be allowed to track over the Site after the removal of topsoil and the subsequent use of machinery shall be agreed with the Project Manager. Great care shall be exercised to ensure that a minimum of archaeological cleaning is required after machine stripping. Cleaning of the surfaces exposed after mechanical stripping shall commence as soon as it is reasonably practicable and safe to do so.

f. The Works shall be recorded to the standards of current archaeological best practice. This is to include, as a minimum: the recording of individual contexts on appropriate pro-formae; site plans at 1:100 scale; planning and section drawing of appropriate single contexts and features (usually at 1:20 scale for plans and 1:10 scale for skeletons and sections); photographs; and other appropriate drawn and written records. All excavations shall be located on appropriate scale plans (e.g. 1:1250 or 1:2500) related to the Project grid labelled with five figure eastings and northings. Temporary bench marks and OSBMs shall be indicated on these scale plans. All levels shall be reduced to OS datums.

g. The photographic record shall consist of monochrome prints/negatives and colour transparencies. A 35mm standard format SLR camera is acceptable for

all site photography. The contractor shall maintain a minimum of 2 No. 35mm SLR cameras on site at all times during working hours. The photographic record shall include photographs and transparencies of archaeological features, appropriate groups of features, and structures. Each photograph and transparency shall clearly show details of the above, and may require the use of artificial lighting to achieve suitable definition. Each photograph and transparency shall include an appropriate graduated scale, a north arrow, and a header board detailing (as a minimum) the site code and context/feature number. In addition, the Contractor shall take appropriate record photographs to illustrate work in progress.

h. The normal legal procedure for dealing with human burials has been modified by the CTRL Act 1996: a licence under the Burial Act 1857 is not required for the removal of bodies. Alternative procedures are substituted by the 1996 Act and the Contractor shall immediately notify the Project Manager of the discovery of any burials so that these procedures can be implemented.

i. The Contractor shall submit details of their procedure for excavating and recording human remains with their Method Statement. The Contractor shall ensure that all burials are planned/photographed *in situ* prior to lifting and that appropriate samples have been recovered (Section 2.4.1.2).

j. Normally, visible grave goods, and other obvious artefacts, are to be recorded and lifted before the end of the working day because of the risk of vandalism and robbing. Where this is not possible, or not appropriate, the Contractor shall ensure that adequate provision has been made for temporary security arrangements. Adequate provision shall mean a 24 hour comprehensive security regime until sensitive remains have been recorded and lifted.

2.4.1.2 Environmental Sampling

a. The Contractor shall integrate specialist staff into the Works at an early stage to ensure that appropriate archaeological deposits are sampled to retrieve palaeo-environmental and economic indicators to fulfil the Project aims. The Contractor shall make provision for the sampling of a wide range of contexts for potential assessment and analysis for plant and animal micro/macro fossils and soils/sediments in order to comply with the aims set out in Section 2.2.

b. The preparation for and methods of taking samples together with their size, presentation and processing shall be in accord with current best practice.

c. The Contractor shall be responsible for the protection of all samples and finds and for their transport (including loading and unloading) to the Contractor's facilities or other location as agreed with the Project Manager. All samples shall be protected at all times from temperatures below 5 and above 25 degrees Celsius and from wetting and drying out due to weather exposure.

d. The Contractor shall use ten litre plastic buckets (with lids and handles), or strong polythene bags (double bagged) secured at the neck, for the recovery of bulk 'disturbed' environmental samples. A label recording site code, context

number and sample information shall be securely fixed to a vertical face of the bucket only or attached to the neck of the bag. Labels shall be completed with an indelible ink pen. A duplicate non-adhesive label shall be inserted within the bucket or between the polythene bags.

e. Bulk samples shall normally be in the range of 15-60 litres and will depend on the likely density of macrofossils in the soil. The lower end of the range will be suitable for the recovery of macrofossils from waterlogged deposits. The residue of soil left in the bottom of any graves after the removal of human remains shall be retrieved for bulk processing. Vessel or pit fills containing human shall be processed as bulk samples to ensure the maximum retrieval of cremated bone. Cremation vessels and deposits of placed human bone within cut features may require excavation in spits with plans as appropriate at each level. The fill residues from the excavation these features shall be bulk sampled.

f. For 'bulk disturbed' samples the limits of the sample zone shall be recorded and identified on plan.

g. The Contractor shall use appropriately sized monolith or kubiena boxes for the recovery of 'undisturbed' monolith samples for pollen, other microfossil and micromorphological studies etc. Care shall be taken to ensure that wherever possible only newly exposed sections are sampled to avoid contamination, desiccation and decalcification. This sampling shall normally be undertaken by the Contractor's specialist personnel. Boxes shall be wrapped neatly and tightly in bin-liners or plastic sacks and secured with rubber bands. A label shall be attached to the outside (in duplicate) with site name and code, feature/context number and depths of sample.

h. The Contractor shall record the depth of the 'undisturbed' monolith at the top and the bottom of the sample. There shall be a 50mm overlap between each monolith. This information shall be plotted onto a section drawing at an appropriate scale, with all levels reduced to heights relative to Ordnance Datum. Where the sample crosses archaeological context boundaries these shall be noted on the sample recording pro-forma.

i. Where it is not possible to insert monolith boxes, the Contractor shall take a vertical series of small 'spot' samples. Samples shall be at 20mm vertical intervals with no more than 1 cm depth being sampled. In the case of deposits with a low organic content it may be necessary to take as much as 5g or even 20g per sample. If so, sampling should be extended laterally at a given depth in 10mm deep spits.

j. Where appropriate, the Contractor shall take contiguous column samples for the retrieval of macrofossils. The individual sub-samples will be of 1-10kg, depending on the nature of the deposit and the category of material to be retrieved. Where several specialists are involved it may be necessary to take separate sample columns for, for example, insects, molluscs and seeds.

2.4.2 Processing and Initial Assessment

a. The Contractor shall commence the processing of artefacts and bulk samples during the course of fieldwork, and shall use their professional judgement to prioritise this work so as to reflect the requirements of the initial assessment detailed below.

b. The Contractor shall undertake limited initial assessment of their findings, including sample residues and artefacts, to inform the Project Manager at the weekly site meetings (see Section 2.4.4) of their broad provisional conclusions and interpretations. These might include, for example: date and character of excavated remains; palaeoenvironmental potential; importance of the remains; efficacy of and possible revisions to the excavation method with regard to the aims of the Works; the degree to which the aims of the Works are being fulfilled; revisions to the aims of the Works.

2.4.3 Personnel

a. The Contractor shall provide project personnel of experience as described below. The personnel shall be approved by the Project Manager, such approval may be withdrawn at any time.

b. CVs of all proposed personnel (except site technicians) shall be submitted to the Project Manager if this has not already been done as part of the pre-qualification process.

c. The Works shall be managed, directed and staffed by appropriately qualified and experienced personnel. The Contractor's Key Person shall possess at least ten years relevant experience. The excavation, sampling and recording of the Works shall be directed in the field by a Member of the Institute of Field Archaeologists (MIFA) or equivalent (The Field Director). The Field Director shall be on site throughout the fieldwork. The project team shall be staffed by technicians with at least six months experience in appropriate aspects of excavation and recording.

d. Specialist staff associated with the works, including any post-excavation assessment or analysis of whatever kind, including the writing of reports, 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). Specialists shall be available, normally at 24 hours notice, for the duration of the works to provide advice on any specialist tasks to be undertaken.

2.4.4 Site Monitoring and Progress Reports

a. Prior to commencing the Works the Contractor shall agree a programme of weekly written progress reports and meetings with the Project Manager and shall be represented at such meetings to the satisfaction of the Project Manager. The Contractor shall provide information dealing with progress on-site

to date, the processing of samples and artefacts and feedback from initial assessment.

b. The Project Manager shall inform the County Archaeologist and English Heritage of the start date for site works and of any significant remains encountered during the course of the Works.

c. The Contractor shall permit reasonable access to the Works to any relevant planning authority, the County Archaeologist, English Heritage Inspector, or other parties approved by the Project Manager to enable them to monitor the Works. The Project Manager shall notify the Contractor of all proposed visits by the County Archaeologist and the Inspector of Ancient Monuments. The Contractor shall notify the Project Manager of all proposed visits by other approved parties and arrange them so as to enable the Project Manager to be present.

2.5 Excavation and Recording (Specific)

2.5.1 General

2.5.1.1 This section augments the general specification outlined in Section 2.4. Further revision may be required in the light of site conditions and discoveries.

a. *Detailed excavation* will be undertaken normally over limited areas only. It will be implemented where the recovery of very detailed data is a key consideration. The understanding of complex, deeply stratified sites and cemeteries will require this approach. Likewise, within areas of 'strip, map and sample' excavation, there may be well preserved remains which represent unforeseen foci of more intense activity and may benefit from a detailed approach to excavation and recording.

b. *Strip, Map and Sample excavation* shall be undertaken with a view to establishing the broad picture of settlement morphology, function and development over extensive areas. Archaeological remains are likely to be more dispersed than in areas subject to detailed excavation. The fieldwork method is similar to the provisions set out for detailed excavation but modified to reflect the aims of the work and the lesser intensity of the recording regime. The key aim of this method of work is to establish an extensive plan of the resource, the relative and absolute chronology of the remains and to undertake sufficient sampling to recover palaeoenvironmental and other economic indicators to achieve the project aims.

c. *Trenching* shall also be undertaken at specific locations to recover palaeo-environmental indicators or to investigate archaeological remains of limited extent or potential.

2.5.2 Detailed Excavation

2.5.2.1 For the purposes of the Works, the following specification shall apply.

2.5.2.2 On completion of bulk excavation by machine, the Contractor shall clean the resulting surface where necessary with hand tools, (e.g. shovels, hoes or trowels). This shall not be required for extensive areas of natural sub-soil devoid of any archaeological interest. Following completion of this an appropriate sample (which shall be finalised by the Project Manager in consultation with the County Archaeologist and English Heritage) of those archaeological remains exposed shall be excavated to fulfil the project aims. Normally, this shall seek to adhere to the following standards:

a. *Structural remains and other areas of specific activity (domestic, agricultural, industrial and ceremonial buildings and structures, hearths, kilns, ovens etc.)*

The Contractor shall excavate and record all significant contexts and relationships to establish the sequence of development and function of the site. Consideration shall be given to single context planning in areas of complex stratification.

b. *Inhumations and cremations*

All inhumations and cremations shall be excavated totally. The Contractor shall provide details of their procedures for the excavation and record of burials with the Method Statement.

c. *Non-structural linear cut features*

The Contractor shall excavate all major feature intersections to establish relative chronologies. Sufficient additional sections shall be excavated (normally 10%), including ditch terminals, to establish the character and morphology of these features. A range of other linear features shall also be excavated in so far as this is required to understand site chronology, development and function. Artefacts shall be recovered away from feature intersections to establish dated stratigraphic sequences. Where assemblages or concentrations of cultural material are clearly visible (e.g. artefact concentrations in ditch terminals), percentage samples shall be increased to ensure maximum retrieval and recording of this material. Hand recovery of cultural material shall be augmented by the wet or dry screening of 100-200 litre control sub-samples through 10mm mesh. Environmental samples shall also be recovered away from feature intersections to minimise the risk of contamination from residual/intrusive material.

d. *Non-structural pits*

The Contractor shall half-section all pits. However, the practicability of this will need to be reviewed in light of the numbers of such features actually present on site. Half-sectioning will not be appropriate for features with multiple

intersections, and under such circumstances the Contractor shall give due consideration to 'quadranting' or single context planning. Consideration shall be given to the total excavation of some pits if this is considered appropriate to fulfil the project aims, or if the nature of the artefacts or deposits contained therein requires it (e.g. treasure, symbolic or ritual deposits).

e. *Non-structural post and stake holes*

Where post- and stake holes are not obviously part of coherent structural features, the Contractor shall half-section sufficient features to establish relationships and chronologies.

f. *Colluvium, alluvium and palaeosols*

A sufficient sample shall be excavated to retrieve samples suitable for palaeo-environmental and economic studies to fulfil the aims of the Works. Consideration shall be given to the recovery of samples from machine excavated test pits and sections. The need to enter deep excavations shall be addressed by the Contractor in their Health and Safety risk assessments and method statement.

g. *Other*

The need to modify the above methods, or to introduce new ones to accommodate changing circumstances, will be kept under review by the Contractor. The Contractor will inform the Project Manager of the need for any such change.

2.5.2.3 The information contained in the following sections shall be read in conjunction with Section 2.4 and the preceding paragraphs of 2.5. Detailed excavations shall be undertaken at the following locations.

2.5.2.4 **West of Blind Lane ARC BLN 9***

a. Detailed excavation shall be undertaken as delineated on drawing 440-DGH-09360-62011-AB. Strip, Map and Sample excavation will be undertaken within the areas to the north-west and south-east (Section 2.5.3.6).

b. Storage of topsoil and subsoil shall take place within the limit of Works defined on the above drawing. Topsoil shall not be stripped beneath areas of topsoil storage. Areas of subsoil storage will be subject to topsoil stripping and any archaeological remains located will be recorded as appropriate. These storage areas shall be agreed in advance with the Project Manager.

c. Detailed excavation will include the area of groundworks associated with the railway, cutting, and mitigation earthworks.

d. Topsoil and subsoil shall be stripped to the first significant archaeological horizon. Further use of machine excavation shall be undertaken only with the

agreement of the Project Manager. Bulk excavation by machine shall be limited to the removal of modern plough soils, subsoils to a depth at which deposits become visible, and previously excavated trenches. The evaluation indicated that the point at which features become visible appears to vary within the subsoils and these may require removing in spits (100mm). It is also likely that not all features will be visible at the same level.

e. The specification for environmental sampling (Section 2.4.1.2) will not be implemented but kept under review by the specialist retained by the Contractor and as agreed with the Project Manager. If, during the excavation, significant environmental remains begin to be recovered as part of the review process (Sections 2.3.1.2 and 2.4.4) the specification will be implemented. Otherwise environmental sampling will be on the professional judgement of the Contractor.

f. Metal detecting is not required.

g. A footpath (AE344) runs along the south-western boundary of the Works. This shall be kept open throughout the duration of the Works. The footpath shall be fenced on the side adjacent to the excavated area with netlon secured by road pins at 5m centres for the duration of the Works.

2.5.2.5 **Mersham ARC MSH 9***

a. Detailed excavation shall be undertaken as delineated on drawing 440-DGH-09480-62013-AB.

b. Storage of topsoil and subsoil shall take place within the limit of Works defined on the above drawing. Topsoil shall not be stripped beneath areas of topsoil storage. Areas of subsoil storage will be subject to topsoil stripping and any archaeological remains located will be recorded as appropriate. These storage areas shall be agreed in advance with the Project Manager.

c. Detailed excavation will fall within the area of the Mersham cut and cover tunnel groundworks and associated landscaping.

d. Topsoil and subsoil shall be stripped to the first significant archaeological horizon. Further use of machine excavation shall be undertaken only with the agreement of the Project Manager. Bulk excavation by machine shall be limited to the removal of modern plough soils, subsoils, and previously excavated trenches.

e. The Contractor will follow the advice of retained specialists in archaeometalurgy and, where appropriate, archaeomagnetic dating with the agreement of the Project Manager.

f. Metal detecting is not required.

g. A footpath (AE309) runs just to the south-east of the Works and will not be obstructed.

h. The Works will commence after the completion of reptile translocation. Protected species exist within the present railway embankment to the south-west of the Works. The Works will not adversely affect the protected species, and the Works will be kept at an appropriate distance.

i. The Contractor should note the location of boreholes with extant installations (SA6132 and SA6133) within and adjacent to the Works. These installations must not be disturbed by any groundworks and access must be maintained for RLE staff.

2.5.2.6 **East of Station Road ARC STR 9***

a. Detailed excavation shall be undertaken as delineated on drawing 440-DGH-09780-62014-AB.

b. Storage of topsoil and subsoil shall take place within the limit of the site defined on the above drawing. Topsoil shall not be stripped beneath areas of topsoil storage. Areas of subsoil storage will be subject to topsoil stripping and any archaeological remains located will be recorded as appropriate. These storage areas shall be agreed in advance with the Project Manager.

c. The area of the Works is within the Aldington Flood Compensation area; which equates to the 50m contour and generally to an area of alluvium. The land to the north of the Works will not be subject to groundworks and will be retained in agriculture.

d. Topsoil and subsoil shall be stripped to the first significant archaeological horizon. Further use of machine excavation shall be undertaken only with the agreement of the Project Manager. Bulk excavation by machine shall be limited to the removal of modern plough soils, and previously excavated trenches.

e. Archaeological remains exist at various levels within alluvium and colluvium. Particular attention will be paid to staged stripping and excavation as described below (Section f).

f. A sufficient sample of buried soils shall be excavated to retrieve samples suitable for palaeoenvironmental and economic studies to fulfil the aims of the Works. Once appropriately sampled, buried soils may be removed, where appropriate, by machine in controlled spits to expose earlier remains. The Contractor shall use their professional judgement to determine the appropriate depth of each spit. Each spit shall be examined carefully to assist with the recovery of any archaeologically significant artefacts and to determine when to cease machining.

g. On completion of, and during, the removal of buried soils, any features/deposits exposed shall be investigated and recorded as defined in Sections 2.5.1.1 and 2.5.2.1-3.

h. The area to the east of the archaeological mitigation works falls outside the area which was evaluated by trial-trenching. The potential, nature and extent of archaeological remains within this area of alluvium is therefore less clear. A staged approach will be adopted. Initially three trenches (5m wide, 100m long) will be machine excavated in controlled spits to test the nature of deposits. The location of the trenches will be agreed on-site by RLE with the archaeological contractor, in consultation with English Heritage and the County Archaeologist. The nature and extent of archaeological mitigation in this area will be reviewed on completion of these trenches.

i. Metal detecting is not required.

j. A footpath (AE437) crosses the area of Works. This shall be kept open throughout the duration of the Works or will be diverted. The footpath shall be fenced on either side with netlon secured by road pins at 5m centres for the duration of the works.

2.5.2.7 **Church Lane ARC CHL 9***

a. Detailed excavation shall be undertaken as delineated on drawing 440-DGH-09780-62014-AB.

b. Storage of topsoil and subsoil shall take place within the limit the Works (Zone 1) defined on the above drawing. Topsoil shall not be stripped beneath areas of topsoil storage. Areas of subsoil storage will be subject to topsoil stripping and any archaeological remains located will be recorded as appropriate. These storage areas shall be agreed in advance with the Project Manager.

c. The area of the works lies within the construction compound.

d. Topsoil and subsoil shall be stripped to the first significant archaeological horizon. Further use of machine excavation shall be undertaken only with the agreement of the Project Manager. Bulk excavation by machine shall be limited to the removal of modern plough soils, and previously excavated trenches

e. The investigation area will be divided into four zones (see drawing); each requiring a different approach.

- Zone 1 Eroded areas. The evaluation indicates that settlement focused on higher ground, although erosion has since occurred to a level where no archaeological remains survive. A 20m wide transect, across Zone 1 will be exposed at the request of English Heritage and the County Archaeologist.

- Zone 2 Alluvial and colluvial areas. Construction works in this zone will be limited, not to extend beneath 300mm from the present ground surface, the significant deposits will be preserved *in situ*. Post-construction landscaping works include making up of ground levels and reseeding.

- Zone 3 Truncated features survive between Zones 1 and 2. Here, features may only be 100mm deep and particular attention will be paid to care during

machine stripping. This zone also includes areas of proposed deeper ground disturbance (for balancing ponds). This zone will be subject to detailed excavation.

- Zone 4 Mesolithic activity. The evaluation report indicated that material from Trench 1778 was not *in situ* but had been derived from an occupation site higher up the slope. Excavation of deposits containing Mesolithic artefacts within this zone will be by hand in spits of 50mm, with the recording of individual artefacts in three-dimensions, together with their longitudinal orientation. Particular attention will be paid to demonstrating the absence of micro-debitage as suggested in the evaluation, which may include limited wet sieving. Particular attention will also be paid to the retrieval of environmental samples from deposits of this date that may exist in the alluvial/colluvial zone.

f. A sufficient sample of buried soils shall be excavated to retrieve samples suitable for palaeoenvironmental and economic studies to fulfil the aims of the Works. Once appropriately sampled, buried soils may be removed, where appropriate, by machine in controlled spits to expose earlier remains. The Contractor shall use their professional judgement to determine the appropriate depth of each spit. Each spit shall be examined carefully to assist with the recovery of any archaeologically significant artefacts and to determine when to cease machining.

g. The Contractor shall retain and follow the advice of specialists in the Mesolithic period and soils (with particular reference to soil movement and erosion in the area) with the agreement of the Project Manager.

h. On completion of, and during, the removal of buried soils, any features/deposits exposed shall be investigated and recorded as defined in Sections 2.5.1.1 and 2.5.2.1-3.

i. Metal detecting is not required.

2.5.2.8 **North of Westenhanger Castle ARC WGC 9***

a. Detailed excavation shall be undertaken as delineated on drawing 440-DGH-10200-62016-AA. The general area of the oven (between chainages 102+400 and 102+800) will be subject to a Targeted Watching Brief during construction to facilitate the location and mapping of medieval linear features (Section 2.5.4).

b. The Contractor shall retain and follow the advice of a specialist in archaeomagnetic dating with the agreement of the Project Manager.

c. Storage of topsoil and subsoil shall take place within the limit of the Works defined on the above drawing. Topsoil shall not be stripped beneath areas of topsoil storage. Areas of subsoil storage will be subject to topsoil stripping and any archaeological remains located will be recorded as appropriate. These storage areas shall be agreed in advance with the Project Manager.

d. Detailed excavation will be undertaken within the an area identified for the landscaping works between the CTRL and M20, as well as an area of cutting to the south.

e. Metal detecting is not required.

f. Protected species exist in the cutting to the south of the Works, but will not be adversely affected by the Works. Where appropriate works will not be undertaken close to the protected species.

2.5.2.9 **North of Saltwood Tunnel ARC SLT 9***

a. Detailed excavation shall be undertaken as delineated on drawing 440-DGH-10560-62017-AB.

b. Storage of topsoil and subsoil shall take place within the limit of the Works defined on the above drawing. Topsoil shall not be stripped beneath areas of topsoil storage. Areas of subsoil storage will be subject to topsoil stripping and any archaeological remains located will be recorded as appropriate. These storage areas shall be agreed in advance with the Project Manager.

c. Detailed excavation will be undertaken within the area of the cutting, plus an additional 7m to the north to be used as a haul road during construction. For an area (see drawing) containing significant deposits to the north, topsoil will not be removed and the mitigation earthworks constructed from the existing ground level, preserving the archaeological remains *in situ.*

d. Topsoil and subsoils shall be stripped to the first significant archaeological horizon. Further use of machine excavation shall be undertaken only with the agreement of the Project Manager.

e. The evaluation noted that carbonised plant remains were not generally abundant or well preserved, it did, however, note the presence of emmer wheat which is important in an early Roman context. Particular attention will be paid to the collection of samples from contexts the contractor judges to be of high potential (i.e. features associated with crop processing, and other charcoal rich deposits).

f. Footpaths (HE280 and HE2768) cross the area of Works. These shall be kept open throughout the duration of the Works or they will be diverted. The footpaths shall be fenced on either side with netlon secured by road pins at 5m centres for the duration of the Works.

g. The Contractor shall ensure that 24 hour security is maintained should a cemetery exist.

h. The Contractor should note the location of boreholes with extant installations (RC6188, RC6191, RC6195, and RC6198) within and adjacent to the Works. These installations must not be disturbed by any groundworks and access must be maintained for RLE staff.

2.5.3 Strip, Map and Sample Excavations

2.5.3.1 In undertaking the Works, the Contractor shall be mindful that the intention is to gather data to determine the broad picture of occupation and landscape utilisation in order to establish a chronological, functional and spatial framework for occupation throughout the contract area.

2.5.3.2 For the purposes of the Works, the following specification shall apply.

2.5.3.3 Following topsoil stripping, the Contractor shall plan the exposed surface at 1:100 scale. The resultant clean machine finish of the exposed areas shall suffice except where hand-cleaning would substantially benefit recording of the archaeological deposits. Recording shall be completed within 48 hours of the exposure of archaeological remains.

2.5.3.4 The appropriate sampling level of those archaeological remains to be excavated to fulfil the project aims shall be finalised by the Project Manager in consultation with the County Archaeologist and English Heritage. This shall seek normally to adhere to the following standards:

a. *Structural remains and other areas of specific activity (domestic, agricultural, and industrial buildings and structures, hearths, kilns, ovens etc.):*

The Contractor shall excavate and record sufficient contexts to establish the relative and absolute chronology of remains, and undertake sufficient sampling to gain artefactual, economic and palaeoenvironmental indicators to achieve the project aims.

b. *Non-structural linear features:*

The intersections, and generally ditch terminals of major features shall be excavated to establish relative chronologies. Further sampling of these features shall be undertaken where there are clear indications that further artefactual, economic or palaeoenvironmental evidence is likely to be recovered. Thereafter, machine sampling of bulk fills shall be conducted to supplement the artefactual record if necessary.

c. *Inhumations and cremations:*

Inhumations and cremations shall be excavated totally. The Contractor shall provide details of their procedure for the excavation and record of burials with its Method Statement.

d. *Non-structural pits:*

It is intended that the Contractor shall half-section those pits where there are clear indications that artefactual, economic or palaeo-environmental evidence is likely to be recovered. However, the practicability of this will need to be reviewed in light of the numbers of such features actually present on site.

e. *Non-structural post and stake holes:*

The Contractor shall half-section sufficient features to establish relationships and chronologies.

f. *Colluvium, alluvium and palaeosols:*

A sufficient sample shall be excavated to retrieve samples suitable for palaeoenvironmental and economic studies to fulfil the aims of the Works. Consideration shall be given to the recovery of samples from machine excavated test pits and sections. The need to enter deep excavations shall be addressed by the Contractor in their Health and Safety risk assessments and method statement.

g. *Other:*

The need to modify the above methods, or to introduce new ones to accommodate changing circumstances, will be kept under review by the Contractor. The Contractor will inform the Project Manager of the need for any such change.

2.5.3.5 Strip, map and sample excavations will be undertaken at the following locations.

2.5.3.6 **West of Blind Lane ARC BLN 9***

a. An area between the two areas of strip, map and sample excavation will have been subject to detailed excavation (Section 2.5.2.4).

b. Strip, map and sample excavation shall be undertaken in the areas delineated on drawings 420-DGH-09360-62011-AB.

c. Strip, map and sample excavation shall be undertaken in accordance with Sections 2.5.1.1 and 2.5.3.1-4.

d. A footpath (AE344) runs just inside the south-western boundary of the Works. This shall be kept open throughout the duration of the Works. The footpath shall be fenced from the works with netlon secured by road pins at 5m centres for the duration of the works.

2.5.3.7 **Bridge House ARC BRH 9***

a. The building and its curtilage is shown on drawing 420-DGH-09480-62012-AA.

b. A watching brief will be undertaken during underpinning works in preparation for stabilising the building prior to moving.

c. The Archaeological Contractor will work with the historic building specialists, who will be carrying out works to the buildings, including adding to the existing

record of the structures and dismantling the buildings. On removal of the building super-structure, the ground plan of the buildings shall be mapped and sampled, as appropriate, in accordance with the specification for strip, map and sample.

d. Further purposive archaeological stripping, mapping and sampling, shall be undertaken over the areas of the structures and for the full extent of the curtilage, in order to meet the aims of the work.

e. The Works will commence after completion of reptile translocation and moving of the building.

2.5.3.8 **Talbot House ARC TBH 9***

a. The building and its curtilage are shown on drawing 420-DGH-10080-62015-AA.

b. The Archaeological Contractor will work with the historic building specialists, who will be carrying out works to the buildings, including adding to the existing record of the structures and dismantling the buildings. On removal of the building super-structure, the ground plan of the buildings shall be mapped and sampled, as appropriate, in accordance with the specification for strip, map and sample.

c. Further purposive archaeological stripping, mapping and sampling, shall be undertaken over the areas of the structures and for the full extent of the curtilage, in order to meet the aims of the work.

2.5.4 *Areas to be subject to a Targeted Watching Brief*

2.5.4.1 A Targeted Watching Brief is an area where works will affect areas of potential archaeological sensitivity. However, such an area is not considered to be of sufficient significance to warrant archaeological investigation in advance of construction, and construction works in these areas to be undertaken by the Main Contractor. The main Contractor will, strip topsoil using a 360° excavator and toothless ditching bucket, and under archaeological supervision. The Main Contractor will limit necessary tracking of vehicles to areas specified by the Project Manager. The Main Contractor will also allow mapping and sampling of deposits by the Archaeological Contractor. Except where unanticipated significant remains are discovered any archaeological investigation should not adversely impact on the construction programme.

2.5.4.2 **North of Westenhanger Castle**
A targeted watching brief shall be undertaken across the area of the trace and mitigation earthworks between chainages 102+400 and 102+800.

3. PROJECT REVIEW AND ASSESSMENT

3.1 Following the completion of fieldwork and preparation of the site archive (Section 4.1), the Contractor shall undertake a brief review of the Works to determine whether there is a need for a formal phase of assessment. The results of this review will be presented in the Interim Report (Section 4.3) which shall be submitted by RLE to English Heritage and the County Archaeologist for information and discussion.

3.2 The Contractor shall undertake post-excavation assessment of the Site Archive, if required by the review above, and so instructed by the Project Manager, following consultation with English Heritage and the County Archaeologist. It is intended that assessment shall not be undertaken until completion of all archaeological works in the 440 area, with the exception of Watching Briefs which would be incorporated later. Assessment of potential for analysis will be undertaken in accordance with MAP2. The Contractor shall provide details of its normal post-excavation assessment procedures with the Method Statement.

4. DELIVERABLES

4.1 Site Archive

4.1.1 A Site Archive shall be prepared that conforms to appendix 3 of '*Management of Archaeological Projects*' (English Heritage 1991, 'MAP 2'). The archive shall cover all finds, samples and records (drawn, written, photographic and electronic) collected and produced during the Works. The archive shall be indexed and internally consistent. The site archive shall be completed within 2 months of completion of fieldwork.

4.1.2 The Site Archive shall conform with the '*Guidelines for the preparation of excavation archives for long-term storage*' (Walker K. 1990; UKIC Archaeology Section sponsored by the Museum and Galleries Commission), '*Standards in the museum care of archaeological collections*' (Museums and Galleries Commission 1992) and the '*Selection, Retention and Dispersal of Archaeological Collections; Guidelines for use in England, Wales and Northern Ireland*' (The Society of Museum Archaeologists 1993).

4.1.3 The Site Archive is to be curated at a museum agreed with the local planning authority and the Project Manager.

4.1.4 The Contractor shall copy all records, drawings and other paper media to microfilm. This shall comply with any requirements in '*Microfilming for Archaeological Archives*' (RCHM). The Contractor shall contact the National Monuments Record to confirm their requirements. The microfilm and diazo duplicate shall be submitted to Union Railways. The microfilm shall be forwarded by Union Railways to the National Monuments Record.

4.2 Computer Dataset

4.2.1 The Contractor shall produce a computer dataset of all field data produced during the Works. A '*Guide for the Production of Electronic Datasets for Archaeological Fieldwork*' has been provided to the Contractor. The dataset shall be included with the Site Archive.

4.3 Interim Report

4.3.1 On completion of the Site Archive, and as part of the review process of the archaeological programme, the Contractor shall prepare an Interim Report on the Works. The Interim Report shall be brief, and the information contained commensurate with the timescale for production and the level of initial assessment undertaken during fieldwork. Drawings shall be clear and annotated if necessary. Areas of excavation shall be illustrated along with archaeological features on a site plan. Broad areas of interest shall also be illustrated. Features shall be distinguished on a broad period basis, e.g.

Prehistoric: Roman; Medieval. Text should be very concise, presented as bullets if possible. General comment should include information on features, artefacts, palaeoenvironmental and economic indicators. The Interim Report shall comment on the findings in relation to the Field Event Aims and Landscape Zone Priorities. The report shall indicate whether a formal phase of assessment is required.

4.3.2 The Contractor shall submit the Interim Report to the Project Manager four weeks after completion of the Site Archive. The Interim Report shall be submitted in hard copy and in Word for Windows 2.0c, 6.0 or 7.0 only.

4.3.3 In addition, the Interim Report shall include a Report Title Sheet and a QA Flysheet.

4.3.4 The following shall appear in the footer or header of each page of the Interim Report:

© Union Railways, 199*/200*

4.4 Summary Report

4.4.1 A short summary report (generally no more than 500 words) (the Summary Report) for the Works shall be prepared by the Contractor for submission to the Project Manager for subsequent publication within '*Archaeologia Cantiana*'.

4.4.2 The Contractor shall submit the Summary Report in draft for approval by the Project Manager within three months of the completion date of the fieldwork. The Contractor shall allow two weeks in the programme of Works for the Project Manager to grant approval. The Contractor shall include any amendments required by the Project Manager in the final Summary Report which shall be submitted within two weeks of receiving the Project Manager approval of the draft report.

4.4.3 The summary report shall be submitted in hard copy and in Word for Windows 2.0c, 6.0 or 7.0 file format only.

4.4.4 The summary report shall include a Report Title Sheet and a QA Flysheet which shall contain only that information illustrated on the examples provided.

4.5 SMR Summary Sheet

4.5.1 The Contractor shall complete an SMR Summary Sheet for the Works (i.e. one per fieldwork event). The Summary Sheet shall be forwarded to the Project Manager upon completion of the Site Archive.

APPENDIX 1

CTRL ARCHAEOLOGICAL RESEARCH STRATEGY

APPENDIX 1

CTRL RESEARCH STRATEGY

By Dr. P. Drewett (Institute of Archaeology, UCL) November 1997

1. Research Strategy

1.1 The aim of this research design is to suggest ways to define types of landscape organization crossed by the CTRL corridor and how such organization changed through time. By defining surviving residues of past human activity, the aim is to understand how people lived in the past, how they interacted with, and changed, their environment.

1.2 An understanding of past landscapes requires knowledge of political, social, economic and ritual activity and the systems generating such activity. Although a single linear transect is not ideal for undertaking landscape studies, it can provide insights into landscapes either already partly known or to be studied in the future. Sites and landscapes buried under alluvial or colluvial deposits are particularly important in this context.

1.3 The research objectives outlined below (section 2) should be considered in the context of the landscape zones crossed by the CTRL. These zones should be defined as having a distinctive historical character, landscape and natural history. Such zones have been defined on the *Character of England Map* by the Countryside Commission and English Nature in conjunction with English Heritage, and are utilized as follows:

a) Northern Thames Basin.

b) Greater Thames Eastuary (Thames crossing)[1].

c) North Kent Plain (A.2 corridor).

d) North Downs (A.2 corridor).

e) Wealden Greensand: with some Low Weald (the Greensand Vale).

1.4 Past landscapes can be studied using five lines of enquiry:

a) The natural landscape, its geomorphology, vegetation and climate

b) The changes of the landscape into humanly-occupied spaces

c) The manipulation and consumption by humans of natural resources

d) The organization of the landscape into social and political units

e) Ritual and ceremonial use of landscapes

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[1] Text in parenthesis indicates equivalent zones identified by KCC

1.5 Existing knowledge suggests broad periods defined by different political, social, economic and ritual activity. Five broad time periods can be defined in south-east England which can be used to divide research activity:

a) Hunter-foragers (400,000-4,500 B.C.)

b) Early agriculturalists (4,500-2,000 B.C.)

c) Farming communities (2,000-100 B.C.)

d) Towns and their rural landscapes (100 B.C.-1700 A.D.)
This period should be considered in three sub-periods:
(i) *c.* 100 B.C.-410 A.D.
(ii) *c.* 410-1100 A.D.
(iii) *c.* 1100-1700 A.D.

(e) The recent landscape (1700-1945 A.D.)

1.6 By considering the zone of the CTRL by broad periods one can determine the history of the landscape through which the route passes and what gives the area its specific characteristics today.

1.7 The topics defined in 1.4 can be investigated within the five time-periods and within five landscape zones. In an archaeological context they are studied through the examination of remains left in the landscape. This can be done at two levels:

a) **The Region**. Understanding of humanly-organized landscapes requires a knowledge of the distribution of archaeological remains within the landscapes. This necessitates the location, mapping and dating of archaeological remains within their environmental context.

b) **Activity Areas**. An understanding of what took place, when and where in the landscape, is fundamental to the understanding of humanly-modified landscapes and how people lived in the past. The study of activity involves the excavation of structures, residues, deliberate deposits and their spatial organization.

2. Research Objectives

2.1 Hunter-foragers (400,000-4,500 B.C.)

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

b) Define range of human activity and where it took place, particularly through the study of palaeoconomy.

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

KEY areas for study: Stratford Box, Lea Valley, Purfleet, Thames Crossing, Ebbsfleet, Harrietsham.

2.2 Early agriculturalists (4,500-2,000 B.C.)

a) Define nature of contemporary environment.

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

c) Define ritual and economic landscapes and their relationships.

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.

KEY areas for study: Lea Valley, Mar Dyke, Rainham, Ebbsfleet, Whitehorse Stone.

2.3 Farming Communities (2,000-100 B.C.)

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

b) Consider environmental change resulting from landscape organization and re-organization.

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

KEY areas for study: Rainham, Dagenham, A.2 line, Whitehorse Stone, Nashenden Valley.

2.4 Towns and their rural landscapes (100 B.C. - 1700 A.D.)

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

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

c) How were settlements and rural landscapes organized and how did they function?

d) How did the organization of the landscape change through time?

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

KEY areas for study: St. Pancras Old Church, Springhead, Ebbsfleet and Thurnham Villas, Medway Saxon Cemetery.

2.5 The recent landscape (1700-1945 A.D.)

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

b) Consider the environmental effects of industrialisation.

c) Consider changes in land use and organization following construction of the railways.

d) Consider the defence of the Thames estuary and north Kent during periods of threat, e.g. Napoleonic Wars and World Wars.

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

KEY areas for study: Rainham Wharf, Chilston Park, The Weald, vernacular buildings, Saltwood tunnel.

3. Acknowledgements

Few of the ideas above are my own so I fully acknowledge the ideas and/or written works of David Buckley, John Williams, Christopher Place, John Barrett, Timothy Champion, Roger Thomas, Paul Gilman, and all who have written on the archaeology of Kent and Essex, or on research designs, together with environmental comments from Peter Murphy, Dale Serjeantson and V. Straker.

APPENDIX 2

ARCHAEOLOGICAL SUMMARY RIVER MEDWAY TO EUROTUNNEL

APPENDIX 2

ARCHAEOLOGICAL SUMMARY RIVER MEDWAY TO EUROTUNNEL

1 Introduction

1.1 The landscape has been much altered through time by human activity. Past archaeological work in the area, much of which has been generated as a consequence of the CTRL, indicates that remains of human activity are present for all of the time periods defined within the Research Strategy (Appendix 1). However, it is clear that some are better represented than others and are more likely to benefit from a prioritised approach to archaeological investigation. The following section considers the area from the Medway viaduct to the Eurotunnel Terminal.

2 Hunter-foragers (400,000 - 4,500 BC)

2.1 In general the Palaeolithic period is represented by the chance finds of implements within the area. However, no artefacts or implements were discovered during evaluation work, thereby adding little beyond negative evidence to existing knowledge.

2.2 At the 'White Horse Stone' and 'Nashenden Valley' sites, the CTRL evaluation of the colluvial sequences has demonstrated the potential of dry valley deposits: at 'White Horse Stone' deposits of late glacial origin were located at the base of a sequence which continues through to the late Bronze Age / early Iron Age; at 'Nashenden Valley', dry valley deposits relating to the late glacial ?interstadial transition were recorded which contain the potential for the study of the wider impact of humans on the post glacial landscape.

2.3 There is a paucity of excavated Mesolithic sites in Kent and evidence to date is insufficient to say whether any of these sites are of more than of local importance. Known remains focus on implements as an indication of activity, with no definitive evidence for settlement. The presence of Mesolithic material at 'Station Road to Church Lane' together with the possibility for *in situ* deposits to exist within the alluvial and colluvial deposits, is of significance because of the lack of data for this period.

3 Early Agriculturalists (4,500 - 2,000 BC)

3.1 As with the Mesolithic period there is little settlement evidence for the Neolithic period in Kent. Current knowledge focuses on sites such as the Medway Megaliths on the North Downs, which include Kits Coty and supposedly the White Horse Stone. A priority for further work in Kent is research into these monuments and their inter-relationship with the surrounding environment and settlements. Evaluation work at 'White Horse Stone' and 'Nashenden Valley' although not producing any funerary or settlement evidence for the Neolithic period, did reveal depths of colluvial deposits which may provide environmental information on the development of the landscape.

3.2 A series of features, possibly dating to the late Neolithic / early Bronze Age were recorded during evaluation work at 'Hurst Wood'. Such sites are rare on

the Wealden Greensand and although evidence from the evaluation is limited, any information relating to landscape divisions, settlement morphology, environmental and economic information gained would be important. Neolithic / Bronze Age flint implements were also recovered from 'Station Road to Church Lane', thus highlighting the potential to increase the understanding of landuse during this period.

4 Farming Communities (2,000 - 100 BC)

4.1 Colluvial areas within dry valleys and the foot of scarp slopes are considered to hold a valuable resource of archaeological information for settlement and economy during the Bronze Age in Kent. The lack of systematic research and the extensive areas not conducive to aerial photography has provided an uncertain picture of settlement activity for this period. There is little information, for example on land division.

4.2 Evaluation works at 'West of Blind Lane' indicated possible settlement activity with associated field systems of middle and late Bronze Age date, and thus may provide some of the missing evidence outlined above. Several other evaluations produced middle and / or late Bronze Age deposits and artefacts, e.g. 'Chapel Mill' near Lenham which produced a late Bronze Age pit containing Deverel-Rimbury or post Deverel-Rimbury pottery.

4.3 The opportunity for the examination of continuity between the Bronze Age and Iron Age may occur at 'White Horse Stone' where late Bronze Age and early Iron Age pottery and possible buried land surface were located.

4.4 At 'Chapel Mill' a ditch containing a small quantity of mid-late Iron Age pottery was located which may indicate that remains are peripheral to a larger settlement or, more significantly, that they represent a small short-lived unenclosed farmstead. Iron Age farmsteads and their associated field systems are a priority for future research.

5 Towns and their rural landscapes (100 BC - AD 1700)
c.100 BC - AD 410

5.1 There has previously been a bias towards 'spectacular' sites of the Romano-British period at the expense of landscape studies, the 'peasant' farmstead and industrial sites. Little is known about rural settlement other than villas, despite the fact that majority of the farming settlements in the Roman countryside were less wealthy / less sophisticated. Many such settlements span the entire period of the Roman occupation, and probably originate in the late Iron Age, yet their nature and interaction with towns and villas has not been defined. As with other periods there is a lack of information about the economic and environmental aspects of all types of settlements. Past excavations of the more well-studied types of sites, such as villas, have concentrated on the structural plan and layout with less attention on their role in the broader landscape and their economic function.

5.2 Several evaluation sites contained deposits of late Iron Age / early Romano-British date which may provide information relating to the influence of Roman administration on native settlement and economy within the region; the

transition period is not well understood. The 'Boarley Farm' evaluation revealed two areas considered to be of late Iron Age / early Roman date and although there is no definitive evidence of settlement at either location, both areas appear to be of differing functions - ritual on the high ground close to White Horse Stone and agricultural on the lower area near the modern farm. The farmstead identified at 'North of Saltwood Tunnel' could contribute to our understanding of the Romanisation of Iron Age communities in the region and their role within the local and regional economy. A rare feeding beaker was recovered providing a very human link between the archaeological recording and the past inhabitants of the site. On this site there is also the possibility that a cemetery may be associated with the farmstead; this may allow the opportunity the examination of continuity and change in burial practices. At 'South of Beechbrook Wood' a series of probable enclosure ditches, including early first to mid third century pottery, were located and may provide important information on the relatively sparsely populated Wealden Greensand.

5.3 The Scheduled Roman villa at Thurnham has the potential for addressing a range of issues associated with the villa estate and its predecessor, including economic and environmental evidence which is lacking for the county. The interaction with, and influence of, the villa with its hinterland is also an important research theme.

5.4 The presence of ditches and metalling at 'East of Newlands' / 'East of Pluckley Road' evaluations indicate the possible presence of a Roman road and could provide information on a possible Roman transport corridor.

c. AD 410 - 1100

5.5 Little is known of the rural settlement of the early Anglo-Saxon period, or the expansion of settlement in the late Saxon period, particularly in relation to the Weald; much of the settlement pattern having been deduced from documentary sources. No Anglo-Saxon remains have been recorded during any of the evaluations. Only one abraded sherd of chaff-tempered ware found at 'Boys Hall Road to Sevington Railhead', was retrieved.

c. AD 1100 - 1700

5.6 The rural settlement and the effects of industrialisation is relatively unexplored during this period. In general economic and environmental evidence is slight. However, the pattern of the rural landscape was largely established in the Medieval period and is believed to have culminated in the basic settlement pattern which exists today. Several of the evaluations have identified medieval or later activity, mainly of a dispersed nature and this may help in the understanding of the wider landuse, although the material recovered was not abundant. However, it is of some interest to note that within the North Kent Plain (A2 Corridor) landscape zone, that no Medieval 'sites' have been identified during CTRL evaluation work.

5.7 Elements of field systems within Project Kent were the most commonly recorded feature during evaluation works. For example, at 'East of Pluckley Road' two or three phases of ditches with pottery dated from AD 900 to 1300 were recorded and at 'Boys Hall Road to Sevington Railhead' where boundary or drainage ditches were revealed which may be associated with Boys Hall moated site (SAM) situated about 300m away. The evaluation site to the north

of Westenhanger Castle located a 11/12th century oven or kiln together with possible associated structural elements and perhaps part of an early medieval open field system.

5.8 On a more substantial level, close to Parsonage Farm, the foundations of a building and associated features which may indicate the remains of a moat. The earliest pottery retrieved was late 11th century, but most was of mid 12th to mid 14th century date. Although not rare on the Weald, little investigation to date has focused beyond the internal features of moated sites. The wider context of this site and its possible industrial use, may provide material relating to its interaction with its surroundings.

5.9 Other sites revealed evidence of industrial activity, most notably at Mersham where 13th and 14th century iron-working activity and possibly associated structures were recorded and could extend our knowledge of the industry in this part of Kent.

6 Post 1700

6.1 Works to date have revealed only field boundaries and trackways for this period. It is not anticipated that information gained will greatly add to existing understanding beyond the recording of landscape division.

7 The Palaeo-Environment

7.1 The retrieval of palaeo-environmental data is of importance for all time periods within this area in the context of existing knowledge in Kent. 'Off-site' studies are likely to be of greater importance for earlier periods (e.g. Nashenden Valley and White Horse Stone) and possibly 'on-site' for later periods (e.g. Mersham). The evaluations suggest that direct evidence for interaction of hunter-foragers with the environment may be minimal but the effect of hunter-foragers on the wider landscape may be detectable in colluvial deposits. Environmental changes derived from later agricultural and industrial activity should be detectable on a number of sites.

RAIL LINK ENGINEERING	TECHNICAL REPORT REVIEW/COMMENTS SHEET	
DOCUMENT TITLE	**Archaeology Programme Written Scheme of Investigation: Sevington to Eurotunnel Area 440**	
DOCUMENT NUMBER	**440-RUG-RLEVC-00001-AA**	
CHAPTER AND CLAUSE	COMMENTS	ACTION TAKEN
COMMENTS BY: DEPARTMENT:		
DATE RETURNED:		COMMENTS TO BE RETURNED BY: