

**Willow Beck straightening works:
Brompton, Northallerton, Romanby
Flood Alleviation Scheme, North Yorkshire**

archaeological watching brief

on behalf of

Mouchel Parkman UK Ltd

ASUD Report 1137
August 2004

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1. Summary

The project

- 1.1 This report presents the results of an archaeological watching brief, conducted during watercourse straightening works at Willow Beck near Northallerton. The works formed part of the Brompton, Northallerton, Romanby Flood Alleviation Scheme and comprised the construction of a new channel for Willow Beck, south-west of the village of Romanby.
- 1.2 The works were commissioned by Mouchel Parkman UK Ltd, and conducted by Archaeological Services University of Durham in accordance with a specification provided by North Yorkshire County Council.

Results

- 1.3 Archaeological monitoring was carried out during the excavation of three channel sections. These revealed the presence of a former palaeochannel from which samples were taken and finds were recovered.
- 1.4 One sherd of Roman pottery, eight fragments of medieval pottery and animal bones were collected from the bottom of the palaeochannel. These almost certainly constituted intrusions into the channel when it was an open watercourse. A number of freshwater mussel shells were also recovered which suggest the former presence of slow-moving water.
- 1.5 Palaeoecological samples contained a diverse range of seeds from plants typical of a wetland environment. This material was poorly preserved, which was probably due to the fluctuating water level in Willow Beck.

Recommendations

- 1.6 No further work is recommended on the palaeoecological samples due to the low numbers of seeds recovered and poor state of preservation.
- 1.7 No further archaeological work is recommended due to the absence of archaeological features or identifiable deposits.

2. Project background

Location (Figure 1)

- 2.1 The site was located south-west of the village of Romanby, north of the sewage works (centred at NGR: NZ 355 932). Work was located in two fields on either side of the present course of Willow Beck.

Development proposal (Figure 2)

- 2.2 The proposal was to divert the course of Willow Beck into two new straight channels to speed up the flow of water away from the village of Romanby. This consisted of the construction of three new sections (Sections 1-3), followed by the diversion of the beck and backfilling of the old watercourse.

Objective

- 2.3 The objective of the watching brief was to assess the nature, extent and potential significance of any surviving archaeological features or palaeo-environmental remains within the proposed development area.

Methods statement

- 2.4 The works have been undertaken in accordance with a Specification provided by North Yorkshire County Council Environmental Services (Appendix 3).

Dates

- 2.5 Fieldwork was undertaken between 5th and 15th July 2004. This report was prepared between 4th and 7th August 2004.

Personnel

- 2.6 Fieldwork was conducted by Martin Railton. This report was prepared by Martin Railton and Duncan Hale, with illustrations by Martin Railton. Specialist analysis was conducted by Dr Charlotte O'Brien (plant macrofossils). The Project Manager was Duncan Hale.

Acknowledgements

- 2.7 Archaeological Services is grateful for the assistance of Mouchel Parkman UK Ltd for facilitating this work.

Archive

- 2.8 The site code is NWB04, for Northallerton Willow Beck 2004. It is anticipated that in due course the archive will be passed to The Yorkshire Museum.

3. Landuse, topography and geology

- 3.1 At the time of the survey the proposed development area comprised two fields of pasture. The site was located on either side of the present course of Willow Beck, which runs north-east/south-west. Land adjacent to the beck was relatively level at a mean elevation of c.32m OD and rose gradually either side to c.39m OD. The local geology consists of Triassic mudstones, which are overlain by glacial and alluvial deposits.



Archaeological Services
University of Durham

**Brompton, Northallerton, Romanby Flood Alleviation
Scheme**

Willow Beck Straightening Works

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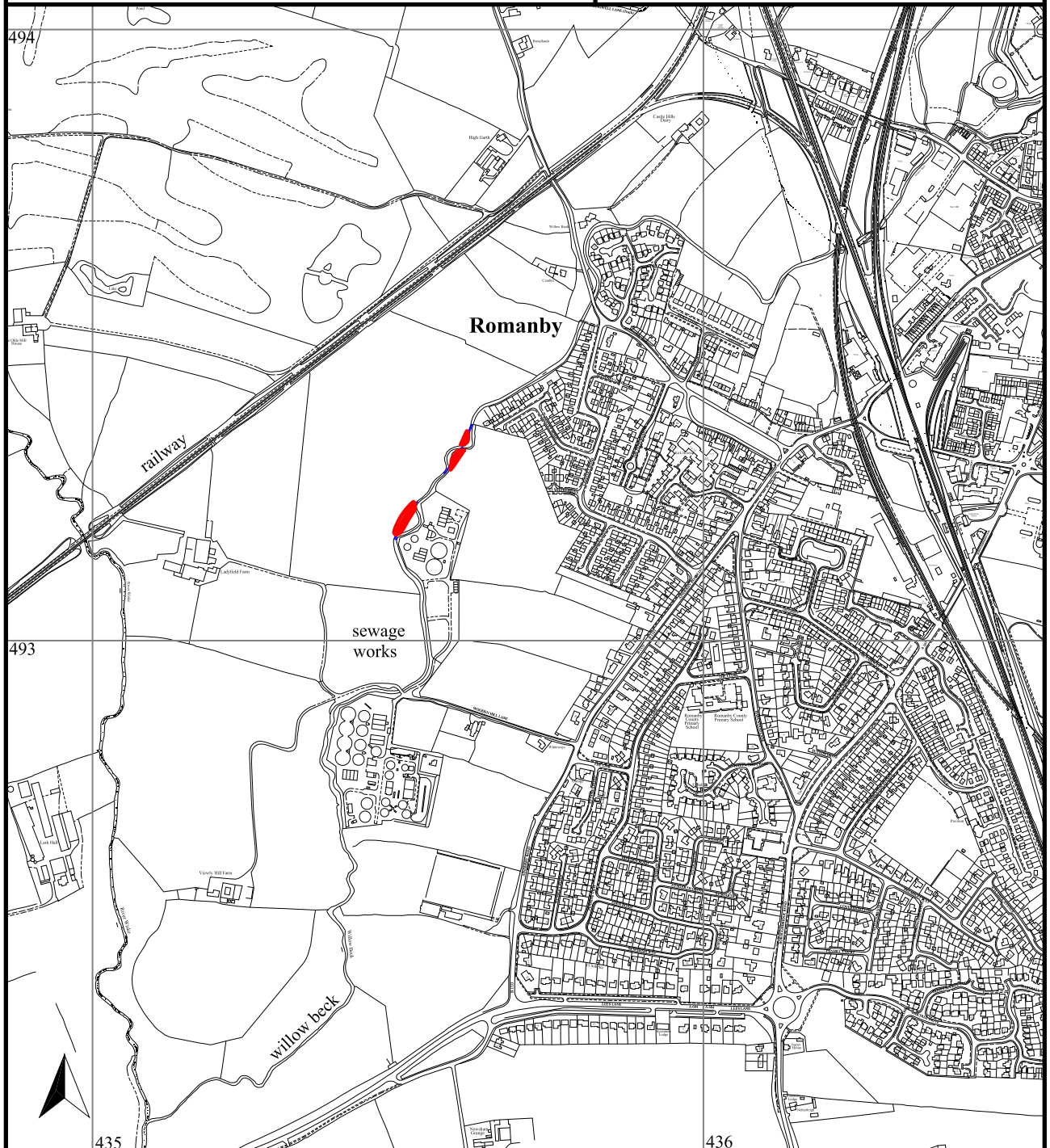
Figure 1 *Location of the development area
basemap courtesy of Mouchel Parkman UK Ltd*

on behalf of

Mouchel Parkman UK Ltd



scale 1:10 000 - for A4 plot



development area



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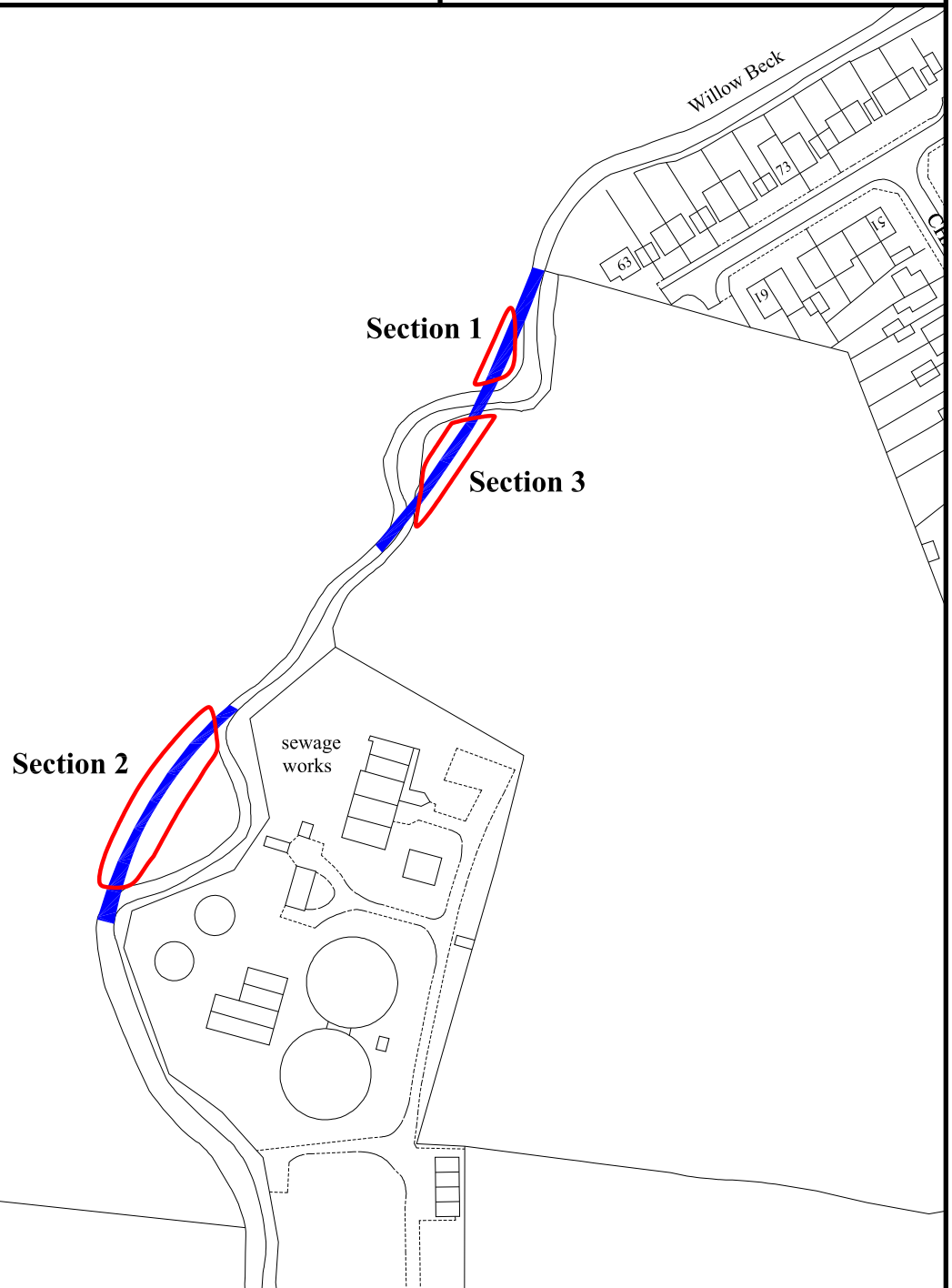
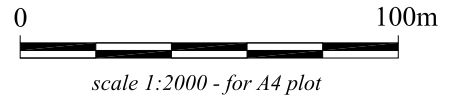
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Figure 2 *Location of excavated channel sections
basemap courtesy of Mouchel Parkman UK Ltd*

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Mouchel Parkman UK Ltd



outline of excavated section



course of proposed new channel

4. The watching brief

Introduction

- 4.1 The construction of a new channel for Willow Beck involved the excavation of three separate sections. In each case groundworks consisted of topsoil stripping followed by the excavation of a linear trench *c.*2m deep and *c.*4m wide with a *c.*4m chamfer on either side. A few metres of land were left unexcavated at either end of each trench section for future removal when the beck is diverted.

Section 1

- 4.2 This section was *c.*22m in length, and was located on the west side of Willow Beck. Following stripping of the topsoil [01], an orange-brown silty clay subsoil [02] was reached at a depth of 0.3m. Beneath this at a depth of 0.6m, was an orange-brown silty sand [03]. A 0.5m deep band of grey-brown clay [06] was encountered at a depth of 1.1m. At a depth of 1.6m a dark brown silt [04] was revealed which was rich in waterlogged organic material including plant, wood and mollusc remains. Paleoeological samples were taken from this layer. Beneath this at a depth of 1.7m was a coarse orange sand and gravel layer [05] containing well-rounded river cobbles. From the surface of this layer bone, shell and fragments of medieval pottery were recovered. No other archaeological deposits were identified in this section.

Section 2

- 4.3 Section 2 was also located on the west side of Willow Beck to the south of Section 1 and was *c.*40m in length. Similar deposits were encountered to Section 1, comprising an orange-brown silty clay subsoil [02] beneath which was an orange-brown silty sand [03]. On the west side of the trench at a depth of *c.*1m medium orange sand [07] was encountered which was interpreted as natural. A band of grey-brown clay [06] was revealed in the centre of the trench and on its east side at a depth of 1.2m. Beneath this at a depth of 1.7m was a deposit of grey silty sand and gravel [08] which was 0.3m deep. A single sherd of Roman pottery was recovered from this deposit. Palaeoecological samples were also taken. At the bottom of the trench, at a depth of 2m, was an orange-yellow clay [09]. These deposits suggested the presence of a palaeochannel [F10]. Although the precise limits of this channel could not be determined it is likely that its eastern bank was defined by the sand deposit [07] on the west side of the section.

Section 3

- 4.4 This section was *c.*20m long and located on the east side of Willow Beck between Section 1 and Section 2. At a depth of 0.3m an orange-brown silty sand [11] was encountered. Beneath this was an orange-yellow clay [12] at a depth of 1.3m. A 0.4m thick band of grey clay [13] was beneath this. At the bottom of the trench was a dark grey clayey silt [14] of which 0.1m was excavated; this was also sampled. No archaeological deposits or artefacts were recovered from this section.

4.5 **Discussion**

The deposits encountered during the excavation of the three sections were typical of palaeochannel deposits. Section 1 and Section 3 appeared to be well within this channel. Section 2 revealed part of its western limit, which was defined by a bank of orange sand.

5. **The finds**

Pottery

- 5.1 A single sherd of Roman pottery was recovered from Section 2, context [8]. This was identified as a footing from a small Samian bowl, 70mm in diameter. The location of the sherd suggests that it had become deposited in the palaeochannel [F10] when it was an open watercourse.
- 5.2 Eight sherds of medieval pottery were collected from context [5] in Section 1, representing at least three vessels. Four sherds were from an early medieval jug with a pinched base and orange splashed glaze. A plain rim sherd in a cream coloured fabric was from a medium sized jar 120mm in diameter. The three remaining pieces were body sherds of the same yellow-cream fabric with a brown splashed glaze. These sherds were also interpreted as intrusions into the palaeochannel while it was open.

Animal Bone

- 5.3 The animal bones were recovered from the bottom Section 1 from within context [5]. Pottery from the same deposit suggests these bones may be medieval, however, their location within a palaeochannel makes this uncertain.
- 5.4 The majority of bones derive from cattle or horses. Taken with the presence of gnawing marks and variable damage, this assemblage appears to derive from stock casualties or scavenging. The identifiable fragments are as follows:

Cattle	1 metacarpal (gnawed both ends)
Cattle/Horse	1 rib (badly damaged) 1 vertebra (badly damaged)
Horse	1 pelvis (gnawed top and bottom) 2 ribs (damaged) 1 tooth (maxima)

Shell

- 5.5 A number of freshwater mussel shells (*Unio Tumidus*) were recovered from the bottom of Section 1 from within context [5]. These molluscs are typically found in canals and slow-moving rivers in England and their presence suggests that the palaeochannel from which they were recovered was a more substantial watercourse than the present beck.

6. The environmental evidence

Methods

- 6.1 Sediment from three contexts was assessed. A 0.5 litre sub-sample of each was wet-sieved through a 500 µm mesh. The residue was scanned at x 40 magnification for botanical remains. Identification of these was undertaken by comparison with modern reference material held in the Environmental Laboratory at Archaeological Services, University of Durham. Plant taxonomic nomenclature follows Stace (1997).

Results

- 6.2 The samples contained a diverse range of waterlogged seeds, which included plants from wetland, arable and woodland habitats. Small fragments of burnt bone, charcoal, sand and shell were also present. Charred plant remains were absent. The contents of the samples are listed in Table 1 (Appendix 2).

Discussion

- 6.3 The waterlogged conditions of the palaeochannel allowed the preservation of a diverse range of seeds. These are dominated by plants of wetland environments such as sedges, spike-rush and rushes. These are likely to have grown along the damp margins of the channel along with lesser spearwort, bugle and celery-leaved buttercup. Common club-rush and water plantain would have inhabited the shallow areas of slow-moving water. Other buttercups, docks, thistles and fat-hen would have grown on areas of open, disturbed ground nearby. Fruits and cones of alder indicate that this hydrophilous tree was fringing the channel, with elder also present.
- 6.4 Although a diverse range of species are represented in the samples, the numbers of seeds of each taxon are low. The poor preservation may indicate that the sediment was only partially waterlogged at times, perhaps as a result of drying out or post-depositional disturbance.

Recommendations

- 6.5 No further work is recommended for the samples due to the low numbers of seeds recovered.

7. Conclusions

- 7.1 The deposits encountered during the course of the excavations represented a former palaeochannel, wider than the present beck, with slow-moving water. All three excavated sections were located within this channel; Section 2 revealed part of its eastern bank.
- 7.2 The pottery fragments and animal bone are almost certainly residual, re-deposited when the palaeochannel was still an open watercourse. No other archaeological features or deposits were encountered.

- 7.3 The poor preservation of the waterlogged material can be explained by the fluctuating water-level of Willow Beck. The value of sampling this material was therefore limited.
- 7.4 No further archaeological investigations are recommended in connection with these works.

8. Reference

Stace, C. (1997) *New Flora of the British Isles*. 2nd Edition. Cambridge University Press, Cambridge.

Appendix 1: Context data

Summary list of contexts. The • symbols in the columns at the right indicate the presence of finds of the following types: P pottery, B bone, M metals, F flint, S slag, O other materials.

No	Description	P	B	M	F	S	O
1	Topsoil						
2	Orange-brown silty clay						
3	Orange-brown silty sand						
4	Dark brown silt						
5	Coarse orange sand and gravel	•	•				•
6	Grey-brown clay						
7	Medium orange sand						
8	Grey silty sand and gravel	•					
9	Orange-yellow clay						
F10	Palaeochannel						
11	Orange-brown silty sand						
12	Orange-yellow clay						
13	Grey clay						
14	Dark grey clayey silt						

Appendix 2: Data tables

Table 1. Contents of the samples from NWB04.

Sample	1	2	3
Context	4	8	14
<i>Volume processed (ml)</i>	500	500	500
<i>Volume after processing (ml)</i>	300	20	200
<i>Volume assessed (ml)</i>	300	20	200
<i>Matrix (relative abundance)</i>			
Burnt bone	-	1	-
Bryophyte fragments	-	1	1
Charcoal	-	1	-
Sand	1	-	1
Shell	1	3	-
Insect	1	3	2
Wood	2	1	1
<i>Waterlogged remains (relative abundance)</i>			
(a) <i>Chenopodium album</i> (Fat-hen)	-	1	-
(t) <i>Alnus glutinosa</i> fruit (Alder)	1	-	-
(t) <i>Alnus glutinosa</i> cone (Alder)	1	-	-
(t) <i>Sambucus nigra</i> (Elder)	1	-	1
(w) <i>Ajuga reptans</i> (Bugle)	1	-	-
(w) <i>Alisma</i> sp (Water plantain)	-	1	-
(w) <i>Carex</i> spp biconvex nutlets (Sedges)	1	1	1
(w) <i>Carex</i> spp triogonous nutlets (Sedges)	3	2	2
(w) <i>Eleocharis</i> sp (Spike-rush)	1	1	-
(w) <i>Juncus</i> sp (Rushes)	1	-	-
(w) <i>Ranunculus flammula</i> (Lesser spearwort)	1	-	-
(w) <i>Ranunculus sceleratus</i> (Celery-leaved buttercup)	-	-	2
(w) <i>Schoenoplectus lacustris</i> (Common club-rush)	-	2	-
(x) <i>Apium</i> sp (Marshwort)	1	-	-
(x) Asteraceae sp (Daisy family)	-	1	-
(x) <i>Cirsium</i> spp (Thistle)	1	-	1
(x) Poaceae (<2mm) (Grass)	1	-	1
(x) <i>Prunella vulgaris</i> (Selfheal)	1	-	-
(x) <i>Ranunculus</i> subgenus <i>Ranunculus</i> (Buttercups)	3	2	1
(x) <i>Rumex</i> spp (Dock)	1	1	-

(a: arable weed; t: trees/shrubs; w: wetland; x: wide niche)

Relative abundance is based on a scale from 1 (lowest) to 5 (highest).

Appendix 3: The project specification



Yorkshire County Council Environmental Services

STANDARD
WRITTEN SCHEME OF INVESTIGATION (WSI)
FOR LIMITED ARCHAEOLOGICAL RECORDING ("WATCHING BRIEF")
FOR WORKS BY
FLOOD DEFENCE OPERATING AUTHORITIES

- 1 This WSI sets out the general archaeological operations required to mitigate the impact of works by flood defence operating authorities on sites of archaeological or historical interest in accordance with the guidance given in the Code of Practice on Environmental Procedures for Flood Defence Operating Authorities (1996), the Code of Practice on Conservation, Access and Recreation (2000) under the Environment Act 1995 and Water Industry Act 1991, and PPG16. It does **not** comprise a full specification, and the County Council makes no warranty that the archaeological works are fully or exactly described for specific site circumstances. The details of implementation must be specified in the contract between the operating authority, their agent or construction contractor and the archaeological contractor.
- 2 The purpose of archaeological work is to enable the recording and recovery of archaeological remains affected incidentally and contingently by flood defence and drainage works of narrow and linear extent. The archaeological work should not require the overall programme of defence or drainage works to be held up while recording takes place, although some operating authorities may give such a facility.
- 3 All ground excavation, including topsoil stripping, of 300mm or more below existing surface level, should be supervised by the Archaeologist contracted to carry out the WSI. The Archaeologist should be informed of the correct timing and schedule of excavation works. The machine excavation of any soil or fill materials should be undertaken by a back-acting excavator fitted with a toothless, ditching or grading bucket. Where surface materials are exceptionally difficult to lift, they should be broken up first, and a toothed bucket used temporarily to open up the materials for lifting, before reverting to a toothless bucket.
- 4 Where health and safety conditions allow, metal detection of arisings and spoil may be carried out subject to archaeological supervision and recording so that metal finds are properly located, identified, and conserved. All metal detection should be carried out following the Treasure Act 1996 Code of Practice.
- 5 Where structures, waterlogged wood, soil deposits and features, or finds of archaeological interest are uncovered or disturbed by ground excavations, the Archaeologist should be provided with the opportunity to observe, clean, assess, and where appropriate, hand excavate, sample and record these features and finds. If construction plant operators observe archaeological remains during the course of works, they should immediately notify the Archaeologist.

- 6 Where waterlogged remains of archaeological or palaeo-environmental interest are encountered, opportunity should be provided for the inspection, sampling and recording by an appropriate specialist on these kinds of remains. The Archaeologist should make all necessary arrangements to ensure that specialist advice and analysis are available as appropriate to meet the WSI. The County Archaeologist should be notified immediately of the discovery of any significant archaeological remains, or variations to work arising from such discovery.
- 7 Heavy plant or excavators should not be operated in the near vicinity of archaeological remains until the remains have been appropriately investigated and the Archaeologist on site has allowed operations to recommence at that location. Sterile parent materials below archaeological deposits can be removed without archaeological supervision.
- 8 Upon completion of archaeological field recording work, samples should be processed and all finds identified, assessed, spot-dated, and properly stored. A field archive should be compiled consisting of all primary written documents, plans, sections, and photographs. Arrangements should be made for the transfer of the archive to a museum or records office.
- 9 A summary report shall be produced following NYCC guidelines on reporting. The report should contain planning or administrative details of the project, a summary of works carried out, a description and interpretation of the findings, an assessment of the importance of the archaeology including its historical context where appropriate, and a catalogue of finds, features, and primary records. All excavated areas should be accurately mapped with respect to nearby buildings and roads. All significant features should be illustrated with conventionally scaled plans, sections or photographs. Where few or no finds are made, it may be acceptable to provide the report in the form of a letter with plans attached.
- 10 Copies of the summary report should be provided to the flood defence operating authority, the Environment Agency, the local IDB where appropriate, the County Heritage Unit (SMR), to the museum accepting the archive, and if the works were carried out on or adjacent to a Scheduled Ancient Monument, to English Heritage.