

Northamptonshire Archaeology

Geophysical Survey, Archaeological Evaluation
and
Archaeological Watching Brief
for
Upton Way Flood Attenuation
Northamptonshire
March – July 2006



Anne Foard-Colby

September 2006

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GEOPHYSICAL SURVEY, ARCHAEOLOGICAL EVALUATION
AND ARCHAEOLOGICAL WATCHING BRIEF
FOR
UPTON WAY FLOOD ATTENUATION
NORTHAMPTONSHIRE
MARCH - JULY 2006

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UPTON WAY FLOOD ATTENUATION, NORTHAMPTONSHIRE

OASIS REPORT FORM

PROJECT DETAILS		
Project title	Upton Way Flood Attenuation	
Short description	Northamptonshire Archaeology carried out geophysical survey, archaeological evaluation and a watching brief on land proposed for Upton Way Flood Attenuation Scheme, Upton, Northamptonshire. Geophysical survey detected possible anomalies that might have been archaeological features. However, trial trenching demonstrated the presence of alluvium over the natural ground to a depth of 0.2 – 0.9m and no archaeological features were present. A residual worked flint was recovered from alluvium in one trench. During the watching brief for the installation of the haul road, two post-medieval features, a corner of an enclosure ditch and a shallow gully, were observed below the topsoil and cut into the subsoil. An earlier arm of the River Nene, before the river was straightened was also observed and its fill yielded a small number of Roman pottery sherds and residual flint flakes.	
Project type	Geophysical Survey, Field Evaluation and Watching Brief	
Previous work		
Future work	None	
Monument type And period		
Significant finds		
PROJECT LOCATION		
County	Northamptonshire	
Site address	Upton Mill, Upton, Northamptonshire	
Easting	472080	
Northing	259240	
Height OD	62.5m	
PROJECT CREATORS		
Organisation	Northamptonshire Archaeology	
Project brief originator	NCCHET	
Project Design originator	Halcrow	
Director/Supervisor	Anne Foard-Colby	
Project Manager	Anthony Maull	
Sponsor or funding body	English Partnerships	
PROJECT DATE		
Start date	March 2006	
End date	July 2006	
ARCHIVES	Location (Accession no.)	Content (e.g. pottery, animal bone etc)
Physical		
Paper		
Digital		
BIBLIOGRAPHY		
Title		
Serial title & volume		
Author(s)		
Page numbers		
Date		

Contents

1	INTRODUCTION	1
2	BACKGROUND	1
2.1	Topography and Geology	1
2.2	Archaeological Background	2
3	OBJECTIVES	3
4	GEOPHYSICAL SURVEY	4
5	TRIAL TRENCHING	5
6	WATCHING BRIEF	7
7	FINDS	7
8	CONCLUSIONS	8
	BIBLIOGRAPHY	9

Tables

Table 1: Layers by context

Table 2: Artefact quantification results from Watching Brief

Figure

Fig 1: Site location, 1:15,000

Fig 2: Sites and Monuments data 1:7500

Fig 3: Detailed Gradiometer Survey Results, 1:2000

Fig 4: Detailed Gradiometer Survey Results & Interpretation, 1:2000

Fig 5: Trench layout, flood attenuation and haul road watching brief areas 1:3000

Fig 6: Sections 1-4, 1:20

Plates

Frontispiece: Upton Mill, looking north

Plate 1: Haul road construction, looking east

Plate 2: Post-medieval ditch [506], looking north

Plate 3: Old course of River Nene, looking south

Plate 4: Drainage works to north-west of mill, looking west

**GEOPHYSICAL SURVEY, ARCHAEOLOGICAL EVALUATION
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FOR
UPTON WAY FLOOD ATTENUATION
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ABSTRACT

Northamptonshire Archaeology carried out geophysical survey, archaeological evaluation and a watching brief on land proposed for Upton Way Flood Attenuation Scheme, Upton, Northamptonshire. Geophysical survey detected possible anomalies that might have been archaeological features. However, trial trenching demonstrated the presence of alluvium over the natural ground to a depth of 0.2 – 0.9m and no archaeological features were present. A residual worked flint was recovered from alluvium in one trench. During the watching brief for the installation of the haul road, two post-medieval features, a corner of an enclosure ditch and a shallow gully, were observed below the topsoil and cut into the subsoil. An earlier arm of the River Nene, before the river was straightened was also observed and its fill yielded a small number of Roman pottery sherds and residual flint flakes.

1 INTRODUCTION

Northamptonshire Archaeology carried out geophysical survey, archaeological evaluation and a watching brief during March to July 2006 on land proposed for flood attenuation works at Upton Mill, Upton, Northamptonshire, (NGR SP 72085924, Fig 1).

The work was undertaken in order to inform a planning application for the groundwork associated with flood attenuation around Upton Mill. Northamptonshire Archaeology was commissioned by Halcrow acting on behalf of their clients English Partnerships. The fieldwork was based on a specification produced by Halcrow and approved by Northamptonshire County Council Historic Environment Team (NCCHET).

2 BACKGROUND

2.1 Topography and Geology

The application area comprised about 2 hectares of pasture land, located to the south-west and west of Upton Mill buildings and the River Nene. The temporary haul road provided

access to the mill area from the A45 Upton way some 600m to the east of the mill (Fig 5). Situated at the base of the Upper Nene valley floodplain the site lies at about 62.5mOD.

The British Geological Survey has mapped the area as glacial sands and gravels. These drift deposits overlie Northampton Sand Ironstone and Upper Lias Clay respectively (BGS EW 185 Northampton).

2.2 Archaeological Background

The site of the proposed groundworks lies within an area of archaeological interest ranging from the prehistoric to the post-medieval (Fig 2).

There are two known archaeological sites within the application area; a group of parallel linear cropmarks and possible ridge and furrow or post-medieval drainage channels (SMR 5304/0/1-2) and the external environs of Upton Mill (Listed Building 2/16, SMR 6274/1/1), around the buildings, the mill race, the mill pond and the bridge.

There are cropmarks to the north-west of the mill (SMR5304/0/3). To the east of the site a Bronze Age round barrow is a designated Scheduled Ancient Monument number 13674; SMR 5132/0/3. In addition, to the north-east cropmarks and artifactual scatters which probably relate to the prehistoric period include prehistoric enclosure (SMR 1281/0/4-5), a prehistoric flint scatter (SMR 8153) and a set of cropmarks (SMR 5133). The site also lies approximately 600m to the south of extensive Iron Age and Roman occupation, identified, first by geophysical survey and field evaluation and later confirmed during open area excavation as part of the Upton redevelopment (ENN6191, 6200, 19763); (Maull 2001).

There are a number of known archaeological remains from within the walled garden at Quinton House School to the north of the mill. They include Iron Age and Roman remains found during archaeological evaluation (Foard-Colby 2006) and associated with those found during the open area excavation to the east, in 2000. Evidence of Saxon settlement was present at (SMR5175) including a ditch. Medieval remains included a ditch (SMR5138/0/8) and undated wall with other features including pits, postholes and a ditch (SMR5138/0/9-11). The earthwork remains of the deserted medieval village of Upton (Scheduled Ancient Monument 165; SMR 5138,) are situated to the north of the site and were observed further north during evaluation of the walled garden earlier this year.

3 OBJECTIVES

The objectives of the geophysical survey, trial trenching and watching brief were to identify, record and retrieve, as far as practicable, archaeological features and artefacts relating to Upton Mill and previous land uses.

Specific objectives were as follows:

- To identify, characterise, record and date, any features exposed by means of archaeological trial trench excavation and in particular to establish the extent of mill related remains.
- To provide detailed information on the presence or absence, area of extent, depth of burial and degree of survival for archaeological deposits and features exposed within the development area with particular reference to the environmental preservation of the site.

Specifically the following key elements were identified from the preceding desk-based assessment:

- Evaluation and recording of any archaeological features which relate to the cropmark evidence north-west of the mill buildings
- To provide an informative record of features relating to post-medieval occupation and use of the site as a working watermill, including the mill race, mill pond, outbuildings and development on the site previously undetermined
- To retrieve evidence of earlier mill structures on the site that predate the existing mill buildings, races and sluices, in particular to assess the presence or absence, area of extent, depth of burial, degree of survival of the medieval watermill including potential for waterlogged timbers and machinery
- To retrieve high quality sediment cores from the mill pond and other waterlogged deposits, which should be used as the basis of an environmental assessment of the historic landscape in this part of the Nene valley, during the lifetime of the watermills, since the medieval period.

The works for the flood attenuation comprised geophysical survey, trial trenching and a watching brief.

4 GEOPHYSICAL SURVEY

Methodology

Geophysical survey was carried out in accordance with English Heritage and the Institute of Field Archaeologists Guidelines (EH 1995 & Gaffney, Gater and Ovendon 2002).

All detailed magnetometer survey was undertaken using Bartington Grad601-2 fluxgate gradiometers. The Grad601-2 is constructed as a dual-sensor instrument with two vertical gradiometers separated on a yoke to enable two lines of survey to be recorded in tandem.

Four separate areas (1-4 in accompanying illustrations) were assessed (Figs 3 & 4). A total of 21 separate 30m x 30m grid-squares, totalling c 1.8ha, were surveyed in detail.

Survey Areas were made up of individual 30m x 30m grid-squares. Each grid-square was traversed at rapid walking pace in zigzag traverses spaced at 1m intervals with data recorded every 0.25m along these.

The data was analysed using Geoplot 3.00s software. Low (negative) magnetism is shown as white and high (positive) magnetism as black in the resultant greyscale plots. The following processing functions were carried out on the data. The 'Zero Mean Traverse' function was applied in order to bring the average level of each line data into a balanced zero. Small-scale extreme readings were excised and replaced with the local mean.

The processed data is presented here in the form of a greyscale highlighting the magnetic anomalies (-2nT / +2nT scale, Fig 3) and an interpretive diagram generalised from the results (Fig 4). These are referred to directly in the following Survey Results section.

Results

Field 1

The close proximity to iron fences and a steel barn caused magnetic disturbance on the east of the survey area (Fig 4). Positive linear anomalies, orientated north, may represent former ridge and furrow. Several ferrous-type responses detected are likely to represent random iron debris in the topsoil.

Field 2

Magnetic disturbance was caused by iron fences on three sides of the field (Fig 4). Discrete positive anomalies detected may either represent archaeological pits or alluvial scour deposits. The three most western of the anomalies could reasonably represent highly magnetic areas of deep buried ditch continuing from the cropmarks to the north.

Field 3

Broad magnetic responses in the south of Field 3 indicate palaeo-fluvial activity, parallel to the current River Nene (Fig 4). Negative linear anomalies were detected over shallow open ditches running east-west across the area. Further alluvial-type responses were detected in the northern half of the field. Discrete pit-like positive anomalies were located in the north of Field 3 in conjunction with possible short lengths of curving ditch.

Field 4

The broad fluvial anomaly was found to continue east from Field 3 (Fig 4). A further open ditch was detected orientated north-west.

5 TRIAL TRENCHING

Methodology

Four trial trenches measuring 25m in length were excavated using a mechanical digger fitted with a 1.8m wide toothless ditching bucket under continuous archaeological supervision (Fig 5). In all trenches mechanical excavation proceeded as far as the surface of the undisturbed natural geology which consisted of orange-brown sand and gravel with patches of blue grey clay.

All potential archaeological features were examined by hand excavation. Standard Northamptonshire Archaeology recording procedures were employed. A metal detector survey was undertaken of the trenches and associated spoil heaps. The location of the trenches was related to the Ordnance Survey National Grid. Contexts were recorded on pro-forma sheets with a unique context number being allocated to each distinct deposit. A full photographic record comprising both 35mm monochrome negatives, with associated prints and colour transparencies was maintained, with additional digital photographs.

All records were compiled during fieldwork into a comprehensive and fully cross-referenced site archive. The site code is UFA06. Monitoring of the programme of fieldwork was carried out by the Senior Environment Planner for Northamptonshire County Council.

All works were carried out according to the Policy and Guidance for Archaeological Fieldwork Projects in Northamptonshire (NCCNH 1995). All procedures complied with the Northamptonshire Archaeology Health and Safety at Work Guidelines.

Results

A total of four trial trenches were excavated. Generally a similar sequence of deposits was encountered in all trenches (Fig 5 & 6, sections 1-4). No archaeological features were present in any of the trenches and no evidence was retrieved for the parallel linear cropmarks (SMR 5304/0/1-2) within Trench 2. It is probable that these features stop at, or are associated with the mill race to the north.

The natural undisturbed geology was orange brown sand and gravel with patches of pale blue clay (103, 204, 303, 403) and was encountered at a depth of between 0.44m – 1.1m below the present ground surface. Overlying this in Trench 2 was a layer of alluvium (203) consisting of mid to light grey clay with few gravel inclusions and 0.2m thick. A small flint flake was recovered from this layer. In Trenches 2, 3 & 4 alluvium overlay the previous deposits and consisted of mid to light orange/grey brown silty clay with some few gravel inclusions (202, 302, 402). This layer was between 0.2m – 0.87m thick, the difference in depth of the alluvium reflected the slope in ground to the southern branch of the River Nene, that in Trench 4 being the thickest. Subsoil was only present in Trench 1, and consisted of mid orange brown sandy clay with occasional large pebbles and some gravel (102) and overlay the natural. It was 0.17m thick. A layer of topsoil, consisting of dark grey brown humous rich sandy soil (101, 201, 301, 401) covered all trenches and was a maximum of 0.25m thick.

Table 1: Layers by context

Trench	1	2	3	4
Description				
Topsoil	(101)	(201)	(301)	(401)
Subsoil	(102)	-	-	-
Alluvium (orange/grey/brown)	-	(202)	(302)	(402)
Alluvium (grey clay)	-	(203)	-	-
Natural gravel	(103)	(204)	(303)	(403)

6 WATCHING BRIEF

Methodology

The purpose of the watching brief was to observe soil stripping for a temporary haul road and an area of ground works designed to alleviate flooding in the area of Upton Mill and to the south and far east of the mill (Fig 5, Plates 1 & 4). The topsoil was removed using a bulldozer; the road corridor was dug using a 360° mechanical excavator. The works were monitored from week ending 9th June 2006 to 13th July 2006. Visits were made as required and a log and digital photographic record were maintained for the record.

Results

During the stripping of the haul road, two shallow ditches [504 & 506] were observed (Fig 5, Plate 1) each were cut from below the topsoil and measured approximately 0.6m wide and 0.1m deep. No artefacts were present; moreover they were probably late post-medieval features.

An old watercourse [508] was observed to the south-east of the mill (Fig 5, Plate 3). This represents the course of the Nene before straightening, as shown on the 1st Edition Ordnance Survey map of 1889. The fill (509), consisted of mid to dark blue grey silty clay and measured approximately 0.9m in depth. Ten sherds of abraded Roman pottery, together with three flint flakes were recovered. The base of the watercourse was observed and consisted of gravel overlying limestone bedrock, at a depth of 1.4m below the surface.

An 18th century coin was recovered from the topsoil to the north-west of the mill.

7 THE FINDS

The Flint

by Adrian Burrow

A single flint was recovered from alluvial layer (203) and is therefore residual. It is a fine secondary flake, yellow/brown in colour, with cortex present on the distal end. Crude retouch on one margin suggests use as an expedient scraper.

Three flints were recovered from the silted river fill (509). All three comprised patinated light grey/dark brown vitreous flint, of which one had slight evidence of cortex present. All are debitage with no evidence of retouch or use wear. Two are essentially blocky secondary flakes, the third a fine bending flake with snapped proximal end.

Given their location within naturally deposited contexts and the lack of similar, securely provenanced flints on site, this assemblage can be seen as residual and has no further research potential.

The Pottery

by Pat Chapman

There are ten sherds of pottery recovered from silted river fill (509), weighing 89g. One sherd is a bifid jar rimsherd, and the other nine are undiagnostic Roman coarseware body sherds. They would probably be dated to the 2nd to 4th centuries AD. Their origin may lie in the Iron Age and Roman settlement excavated at Upton, which lies on the margins of the Roman town of Duston (Maull 2001)

Table 2: Artefact quantification results from Watching Brief

Description	Context	Quantity	Weight (g)
Flint	509	1	
Pottery	509	10	89

8 CONCLUSIONS

The geophysical survey had detected possible archaeological remains within the development site, interpreted as possible ditches and discrete features. However, the trial trench evaluation concluded there were no archaeological features present. No evidence was recovered for earlier mill structures or any dateable contexts of environmental potential. One residual flint artefact was recovered from a layer of alluvium.

During the watching brief, a bend in the River Nene which appears on the OS 1st Edition 1886 map was observed as a palaeochannel. Three flint flakes, together with a few sherds of Roman pottery and an 18th century coin were recovered from the fill of this old water course, originally the course of the River Nene before straightening. These residual finds are not unsurprising given the amount of prehistoric and Roman settlement in this part of the Nene valley.

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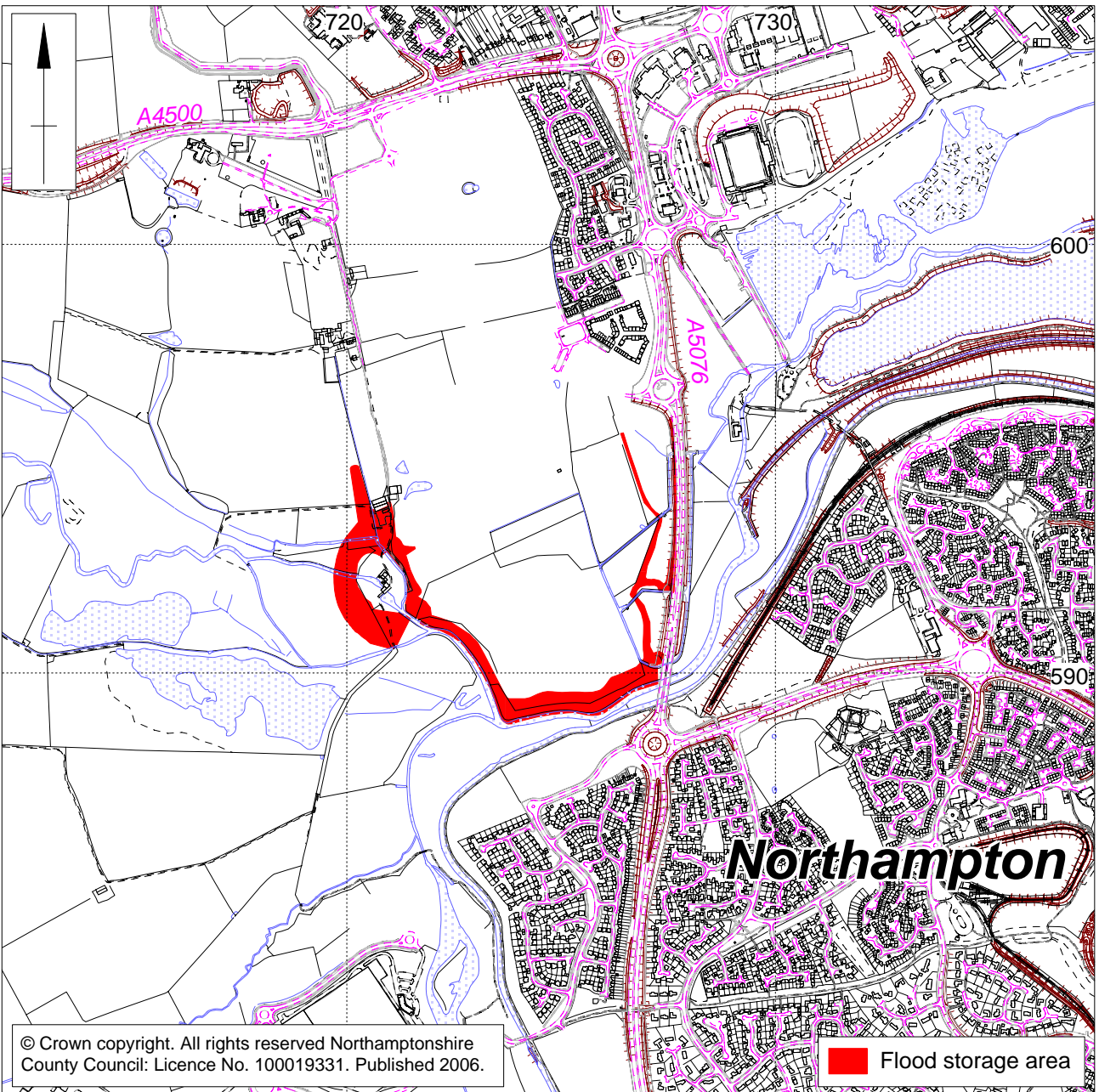
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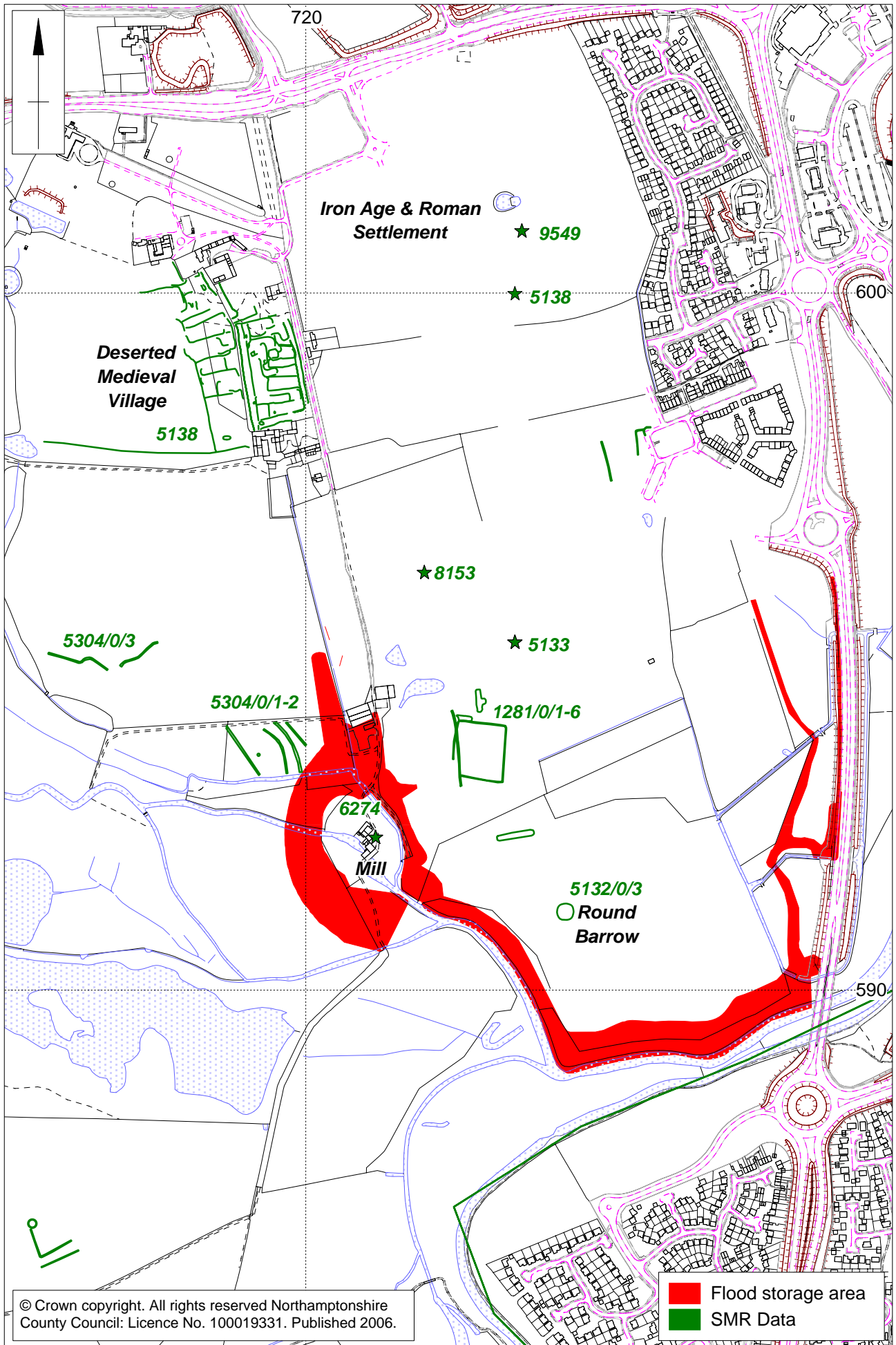
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Scale 1:15,000

Site location Fig 1



Scale 1:7500

Sites and Monuments Data Fig 2



+2.0/-2.0nT
black/white

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Flood storage area

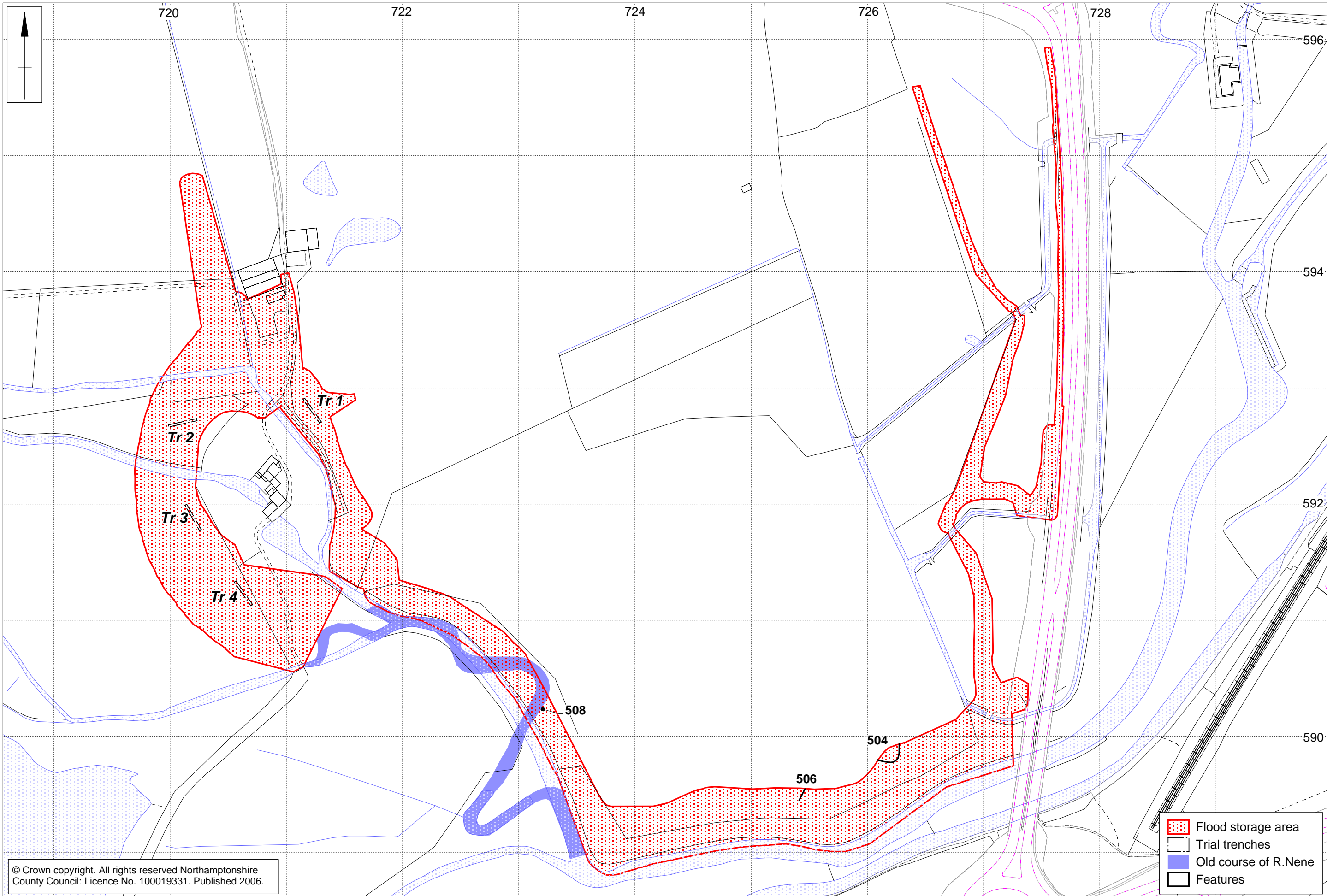
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Detailed Gradiometer Survey Results Fig 3



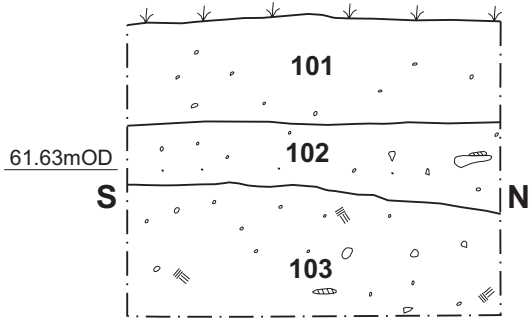
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Gradiometer Survey Interpretation Fig 4

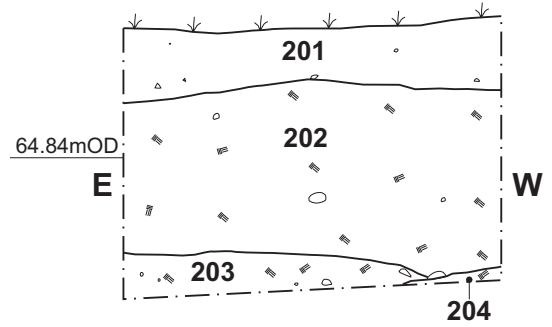


Trench locations and features Fig 5

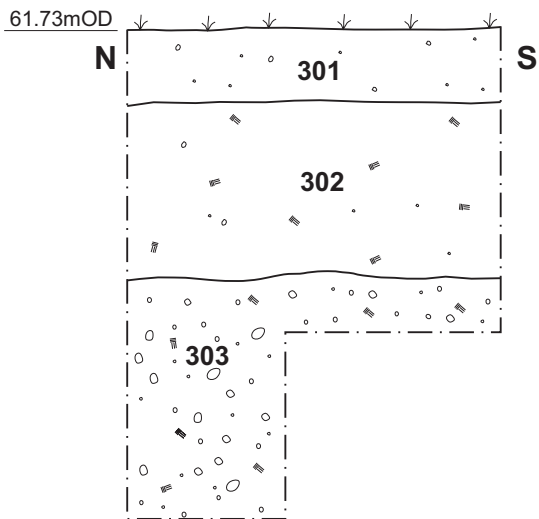
Section 1 - Trench 1



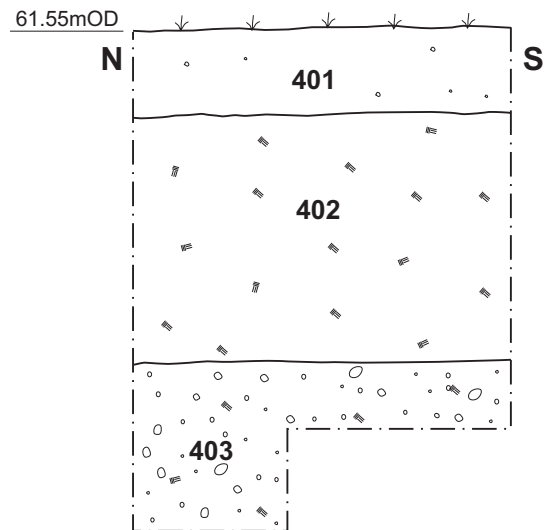
Section 2 - Trench 2



Section 3 - Trench 3



Section 4 - Trench 4



Sections 1 - 4 Fig 6



Plate 1: Haul road construction, looking east



Plate 2: Post-medieval ditch [506], looking north



Plate 3: Old course of River Nene, looking south



Plate 4: Drainage works to north-west of mill, looking west