



**Northamptonshire
County Council**

Northamptonshire Archaeology

**An Archaeological Investigation
Along the Route of the
Mox Hill to Sandy Water-Main
Bedfordshire**

August 2007

Accession no. BEDFM2006.749



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September 2007

Report 07/139

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QUALITY CONTROL

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Checked by	Pat Chapman		
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Approved by	Andy Chapman		

(Front page illustration: General view of Area 4, facing north, Roman road crosses site above water line)

OASIS REPORT FORM

PROJECT DETAILS		
Project title	Mox Hill to Sandy Water-Main , Bedfordshire	
Short description (250 words maximum)	Following an initial stage of evaluation, an archaeological investigation was carried out in four areas along the proposed route of a water-main, between a small wood to the south-east of Moggerhanger and the western outskirts of Sandy, Bedfordshire. Two gullies, probably related to an area of cropmarks that have been interpreted as the remains of an Iron Age/Romano-British farming settlement, were revealed in the area near the small wood. The presence of a Roman road, previously identified from cropmarks shown on aerial photographs, was confirmed. The ploughed out remains of the road lay to the west of Sandy and comprised a sand and gravel agger, approximately 8-10m wide, with attendant side ditches. In the area at the eastern end of the route the road had been cut by two undated gullies and had been disturbed by modern activity.	
Project type	Watching brief/area strip, map and sample	
Previous work (reference to organisation or SMR numbers etc)	Northamptonshire Archaeology (Patenall 2006 and Carlyle 2007)	
Future work (yes, no, unknown)	None	
Monument type and period	Roman road (SMR 11984)	
Significant finds (artefact type and period)	None	
PROJECT LOCATION		
County	Bedfordshire	
Site address (including postcode)	Mox Hill to Sandy	
OS NGR	TL 1269 4672 to 1732 4926	
Height aOD	c 22-30m	
Land use	Arable	
PROJECT CREATORS		
Organisation	Northamptonshire Archaeology	
Project Brief originator	Bedfordshire County Council	
Project Design originator	Anthony Maull, Northamptonshire Archaeology	
Director/Supervisor	Simon Carlyle, Northamptonshire Archaeology	
Project Manager	Simon Carlyle, Northamptonshire Archaeology	
Sponsor or funding body	Grontmij	
PROJECT DATE		
Start date	6th August 2007	
End date	10th August 2007	
ARCHIVES		
Accession no. BEDFM2006.749	Location	Content (eg pottery, animal bone etc)
Physical		None
Digital		
BIBLIOGRAPHY		
Journal/monograph, published or forthcoming, or unpublished client report (NA report)		
Title	An Archaeological Investigation Along the Route of the Mox Hill to Sandy Water-Main, Bedfordshire	
Serial title and volume	07/139	
Author(s)	Simon Carlyle	
Page numbers	6 text, 5 figs, 4 plates	
Date	September 2007	

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**AN ARCHAEOLOGICAL INVESTIGATION
ALONG THE ROUTE OF THE
MOX HILL TO SANDY WATER-MAIN
BEDFORDSHIRE**

AUGUST 2007

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Abstract

Following an initial stage of evaluation, an archaeological investigation was carried out by Northamptonshire Archaeology in four areas along the proposed route of a water-main, between a small wood to the south-east of Moggerhanger and the western outskirts of Sandy, Bedfordshire. Two gullies, probably related to an area of cropmarks that have been interpreted as the remains of an Iron Age/Romano-British farming settlement, were revealed in the area near the small wood. The presence of a Roman road, previously identified from cropmarks shown on aerial photographs, was confirmed. The ploughed out remains of the road lay to the west of Sandy and comprised a sand and gravel bank (agger), approximately 8-10m wide, with attendant side ditches. In the area at the eastern end of the route the road had been cut by two undated gullies and had been disturbed by modern activity.

1 INTRODUCTION

In August 2007, an archaeological investigation was carried out by Northamptonshire Archaeology (NA) along selected parts of the route of a replacement water-main which, on completion, will extend from Mox Hill to the town centre of Sandy, Bedfordshire (TL 1269 4672 to 1732 4926; Fig 1). The selected areas lay between a small wood to the south-east of Moggerhanger and the western outskirts of Sandy, adjacent to the A 603 Bedford Road (TL 1442 4860 to 1585 4875; Fig 2). Earlier trial trench evaluation undertaken by NA (Carlyle 2007; Patenall 2007) had identified archaeological remains, including a probable Roman road, along the route of the pipeline. Informed by the results of the evaluation, Bedfordshire County Council Heritage and Environment Section (BCCHES) requested that four areas should be subject to further archaeological investigation, and a brief for the work was issued accordingly (BCCHES 2007). NA was commissioned by Anglia Water Services, via Grontmij, to prepare a project design (NA 2007) and to carry out the work.

The specific aims of the project were to:

- Determine and record the date, extent, character, state of preservation and depth of burial of the archaeological deposits encountered within the specified areas.
- Establish the relationship of the archaeological remains to the surrounding contemporary landscapes
- Recover artefacts to assist in the development of the type series within the region.
- Take suitable environmental samples to determine past environmental conditions in the vicinity.

The national framework for research is set out by English Heritage (EH 1997). The broad research frameworks for the eastern counties of England are set out Brown and Glazebrook (2000); this does not as yet include Bedfordshire, although it is envisaged it will be included in future revisions. A research framework for Bedfordshire currently exists in draft form

(Oake in prep). This report complies with the framework for archaeological reports set out in Appendix 7 of *Management of Archaeological Projects 2* (EH 1991).

2 BACKGROUND

2.1 Topography and geology

The section of the route that was subject to further archaeological investigation extended from a small triangular wood to the south-east of Moggerhanger and roughly followed the course of a small stream, a minor tributary of the River Ivel, eastwards towards Sandy (Fig 1). The route covered a distance of approximately 1.6km and skirted along the edges of four large, relatively flat arable fields, the ground level descending from *c* 30m aOD to *c* 22m aOD from west to east. The underlying geology comprises Oxford Clay to the west of Hatch Lane and river sand and gravel overlying Oxford Clay on the floodplain of the River Ivel, to the east (www.bgs.ac.uk/geoindex). The soils belong to the Efford 1 (571s) soil association, comprising well-drained fine loamy soils, variably affected by groundwater (SSEW 1983).

2.2 Historical and archaeological background

The Bedfordshire Historic Environment Record (HER) contains a number of entries for sites in the immediate area that includes find spots, cropmarks and a possible Roman Road (Fig 2). An Iron Age coin (HER 439) and a Roman coin (HER 14815) were found near Girtford Bridge, close to the route of the pipeline (not shown on Fig 2). Extensive areas of cropmarks have been mapped from aerial photographs in the area around the small, triangular wood south-east of Moggerhanger (HERs 15992, 16212 and 16771) and on the western margins of Sandy (HERs 15093, 15094 and 17125). The date of these cropmarks is uncertain, but they are commonly associated with enclosures and settlement activity dating to the Iron Age and Roman periods. A Roman road (HER 11984) is known to have passed across the valley from west to east, from the Bedford area to Sandy Roman town. Its route, which has been mapped from cropmarks shown on aerial photographs, lies in close proximity to the pipeline, and the pipeline cuts across the road west of Sandy. The route of the pipeline has been subject to archaeological evaluation along its full length (Carlyle 2007; Patenall 2007), with the exception of the stretch between the River Ivel and the centre of Sandy.

3 METHODOLOGY

Four areas along the route of the pipeline were examined for archaeological remains (a total length of approximately 660 linear metres; 3960m²), in accordance with the plan approved by BCCHES. In the designated areas, the topsoil was stripped across the full width of the easement, using a 360° tracked mechanical excavator fitted with a 2.0m wide toothless ditching bucket. The subsoil was then stripped and stacked along one side of the easement down to the level of significant archaeological remains or, where these were absent, the natural substrate. The stripped area was approximately 6m wide, although provision had to be made to allow for the passage of site vehicles and plant in certain areas. The topsoil and subsoil were removed under archaeological supervision. All procedures complied with Northamptonshire County Council Health and Safety provisions and Northamptonshire Archaeology Health and Safety at Work Guidelines.

The archaeological features were cleaned sufficiently to define their edges and extent and the features were then sample-excavated by hand to determine their date and character. The excavated area and spoil heaps were scanned with a metal detector to ensure maximum finds retrieval.

All archaeological deposits encountered during the course of the evaluation were fully recorded, following standard NA procedures. All archaeological features and deposits were given a separate context number and were described on *pro-forma* context sheets to include details of the context, its relationships and interpretation. There were no significant finds and no dateable deposits suitable for environmental sampling.

The areas were planned at a scale of 1:100 and their location surveyed and related to the Ordnance Survey National Grid. Sections or profiles through features were drawn at a scale of 1:10 or 1:20, as appropriate, and related to Ordnance Datum. A full photographic record comprising both 35mm black and white negatives and colour transparencies was maintained, supplemented with digital images. The fieldwork data has been compiled into a site archive with appropriate cross-referencing.

Monitoring of the programme of fieldwork was carried out by BCCHES. All works were conducted in accordance with the *Standards and Guidance for Archaeological Watching Briefs* (1994, revised 2001) and the *Code of Conduct* of the Institute of Field Archaeologists (1985, revised 2006).

4 EXCAVATION RESULTS

4.1 Undated gullies (Area 1) and possible Neolithic pit (Area 2)

Area 1 lay along the route of the pipeline where it dog-legged around a small triangular wood to the south-east of Moggerhanger (site centred on NGR TL 1454 4856; Fig 2). The area lies immediately to the north-east of a pattern of cropmarks (HER 15992), probably the remains of an Iron Age or Romano-British farming settlement, where earlier evaluation had identified two parallel gullies, aligned from north to south, in one of the trial trenches (Patenall 2007).

The natural substrate in Area 1 was firm brownish yellow clay (Oxford Clay). Excavation demonstrated that the gullies, [4001] and [4003], curved south-eastwards just to the west of the trial trench (Trench 22) and terminated close to the western edge of the easement for the pipeline (Fig 3, Section 1; Plate 1). No artefactual dating evidence was recovered from the gullies, although gully [4003] cut gully [4001], indicating that the latter was the earlier of the two. The gullies measured between 0.7m and 1.1m wide and had a maximum depth of 0.18m. They were filled with mid greyish brown silty clay containing occasional charcoal flecks, although the fill (4002) of gully [4003] was slightly mottled (orangey-brown).

Area 2 was positioned along the northern edge of a large arable field, c 300m to the west of Hatch Lane (site centred on NGR TL 1509 4867). The archaeological evaluation (Patenall 2007) had uncovered a small, shallow pit in one of the trial trenches (Trench 27). The pit [2704] was sub-circular, had a diameter of approximately 0.6m, a depth of 0.16m, and was filled with dark grey sandy clay, with flecks and lumps of charcoal. To determine if the pit was part of a cluster, the route of the pipeline was stripped for a distance of 50m either side of the trial trench, but no further archaeological features were encountered.

The natural substrate in Area 2 was the same as that encountered in Area 1, although there were large patches of light greyish blue clay across the strip.

In Areas 1 and 2 the subsoil was mid brown clayey silt with moderate pebbles, and varied in thickness between 0.1m and 0.4m. Two fragments of tile, one of which may be part of a Roman *imbrex*, were recovered from the subsoil in the area of Trenches 19 and 20. The overlying ploughsoil was approximately 0.35m thick and comprised dark brownish grey organic slightly clayey silt with occasional pebbles.

4.2 The Roman road (Areas 3 and 4)

Areas 3 and 4 were positioned to investigate a broad, linear cropmark, aligned east to west, which had been identified from aerial photographs and interpreted as a Roman road (HER 11984). The route of the pipeline crossed the cropmark at two points: the first *c* 60m to the west of Hatch Lane (NGR TL 1535 4877); the second close to a field boundary *c* 0.6km to the east of Hatch Lane (NGR TL 1598 4881). Due to either flooding or the oblique angle of the trial trench in relation to the cropmark, the findings of the evaluation had been inconclusive (Patenall 2007; Carlyle 2007). To determine if the cropmark was the ploughed out remains of a Roman road, the easement for the pipeline was stripped for a distance of 50m either side of the cropmark at both locations.

The natural substrate in both areas was river gravel, typically comprising fine to coarse gravel in a mid greyish orange silty sand matrix, with bands of mid orangey brown silty sand and clean sandy gravel. In Area 3 the gravel petered out just to the west of the Roman road. The water table lay approximately 0.7m below ground level, just below the stripped surface.

In Area 3 there was a sand and gravel bank, which measured approximately 8-10m wide and survived to a maximum height of *c* 0.35m above the surface of the surrounding natural substrate (Fig 4; Plate 2). It was aligned from east to west and there were traces of a gravel layer (4014), with occasional small cobbles (Plate 3), running down the centre of the bank. Where it survived, the gravelly layer was *c* 0.06m thick. However, due to modern ploughing, the surface, which lay directly below the ploughsoil, had been severely damaged and no clear structure could be seen in section.

The bank was flanked by parallel side ditches, [4009] and [4013], which were spaced *c* 13m apart (Fig 4, Sections 2 and 3; Plate 4). They were approximately 1.0m wide, up to 0.3m deep and filled with mid greyish brown clayey silt with orangey-brown mottles. No artefactual dating evidence was recovered from either of the ditches.

The sand and gravel bank was also identified in Area 4. It was on the same alignment as in Area 3, although it was slightly wider (*c* 12-14m wide) and there was no evidence for associated side ditches (Fig 5). Being closer to the river and lying in an area more prone to flooding, it is possible that the side ditches were seen as unnecessary on this stretch of the road. There were no surviving traces of the gravel layer seen in Area 3, possibly due to more extensive plough damage. Once the area had been stripped, much of the area was flooded by groundwater, leaving only the sand and gravel bank above the level of the water (see front cover).

The sand and gravel bank in Area 4 had been heavily disturbed by later activity. Cutting the northern slope was a small, shallow ditch [4031], aligned from east-north-east to west-south-west. It was 0.8m wide, 0.16m deep and was filled with mid brown clayey silt with orangey-brown mottles (4030). A second small ditch [4033], with a V-shaped profile, cut across the centre of the bank on a north-east to south-west alignment. It was 0.6m wide, 0.30m deep and was filled with dark greyish-brown silty clay (4032). There were no finds from either feature. The feature identified as a possible side ditch in the evaluation (Carlyle 2007), which could not be excavated at the time due to flooding, was shown to be a modern feature that cut the

backfill of the field drains. There were two similar features, one of which had clearly been dug by machine and may have been a geo-technical test pit.

To the south of the sand and gravel bank were two furrows, [4037] and [4039], aligned north-east to south-west, and to the north of the bank there was a broad, shallow, slightly curvilinear ditch [4035]. The furrows had been identified previously in the evaluation. They were filled with mid brown sandy silt, which was indistinguishable from the subsoil. Ceramic field drains ran down the centre of furrow [4039] and ditch [4035], suggesting that ridge and furrow earthworks were still visible in this field until the 19th century, if not later, and that the ditch was comparatively modern.

In both areas the subsoil was approximately 0.3m thick and comprised mid brown sandy silt with moderate pebbles. The overlying topsoil, dark brownish grey organic slightly sandy silt with occasional pebbles, was of a similar thickness.

5 DISCUSSION

Potentially the earliest features were the two gullies in Area 1, which had been identified previously in one of the evaluation trenches (Patenall 2007). No artefactual dating evidence was recovered from the gullies, although their proximity to an area of cropmarks, interpreted as the remains of an Iron Age or Romano-British farmstead, suggests that they are probably of this date.

It was demonstrated that the linear cropmark (HER 11984) was almost certainly the remains of a Roman road, running west from the Roman town at Sandy towards the Bedford area, south of the River Great Ouse.

The sand and gravel bank, probably the denuded remains of the agger for the road, was in roughly the same location and on the same alignment as the rectified plot of the linear cropmark shown in the HER, although there was a slight deviation to the north along its length. The top of the bank lay directly beneath the topsoil, suggesting that its upper part had been ploughed away since the medieval period. Presumably, with its position on the floodplain, the agger would originally have been at least a metre high. Taking into account the effects of ploughing the width of the bank, at *c* 10-12m, is commensurate with it being a Roman road suitable for two-way traffic.

The sand and gravel forming the bank appeared to be fairly compacted in comparison with the natural gravel, although gravel can become cemented through the action of groundwater and mineral deposition, giving the appearance of artificial compaction. In Area 3 there appeared to be the remains of a layer of gravel and small cobbles running down the centre of the bank, although it was too patchy to determine if this was the remains of a metalled surface or a sub-base for the metalling. If the road had been metalled it would most likely have been with rammed gravel, perhaps mixed with clay, sand or silt; all of these materials would have been plentiful on the floodplain. The majority of Roman roads investigated to-date had been metalled in this fashion (Davies 2002).

In Area 3 the road was lined with side ditches, spaced *c* 13m apart. However, there were no side ditches in Area 4, which tallies with observations made during the laying of a gas pipeline in 1976, *c* 150m to the east, which found no evidence for side ditches or metalling (Simco 1984). It has been suggested either that the road was never completed, or that it was completed but was rarely used and soon fell out of use. Certain irregularities in its method of

construction and layout have raised the possibility that it was built by private enterprise, possibly by a local aristocrat (ibid.).

In Area 4 the surface of the Roman road had been cut by two slightly divergent gullies, which appear to be unrelated as they had different profiles and fills. There were no finds in either gully. In the same area, medieval furrows were identified to the south of the Roman road, and there was considerable 19th and 20th century disturbance, largely associated with the laying of field drains and the digging of a geo-technical test pit.

No further archaeological remains were encountered in Area 2, with the irregular, undated pit revealed during the earlier evaluation remaining an isolated feature.

BIBLIOGRAPHY

BCCHES 2007 *Brief for an Archaeological Investigation along the route of the Moxhill to Sandy Water-Mains, Bedfordshire*, Bedfordshire County Council Heritage and Environment Section

Brown, N, and Glazebrook, P, 2000 *Research and Archaeology: A Framework for the Eastern Counties 2: Research Agenda and Strategy*, East Anglian Occasional Paper, **8**

Davies, H, 2002 *Roads in Roman Britain*, Stroud, Tempus

EH 1991 *Management of Archaeological Projects*, English Heritage

EH 1997 *English Heritage Archaeology Division Research Agenda*, English Heritage, unpublished draft

Gurney, D, 2003 *Standards for Field Archaeology in the East of England*

IFA 1995, revised 2006 *Code of Conduct*, Institute of Field Archaeologists

IFA 1994, revised 2001 *Standards and Guidance for Archaeological Watching Briefs*, Institute of Field Archaeologists

NA 2007 *Mox Hill to Sandy Pipeline, Bedfordshire; Specification for an Archaeological Watching Brief*, Northamptonshire Archaeology

Patenall, M, 2007 *An Archaeological Evaluation on the Moxhill to Sandy Watermain, Bedfordshire*, Northamptonshire Archaeology Report **07/03**

Simco, A, 1984 *Survey of Bedfordshire; the Roman Period*, Beds CC and RCHM(E)

www.bgs.ac.uk/geoindex

Maps

SSEW 1983 *Soils of Eastern England, Sheet 4*, 1:250,000, Soil Survey of England and Wales

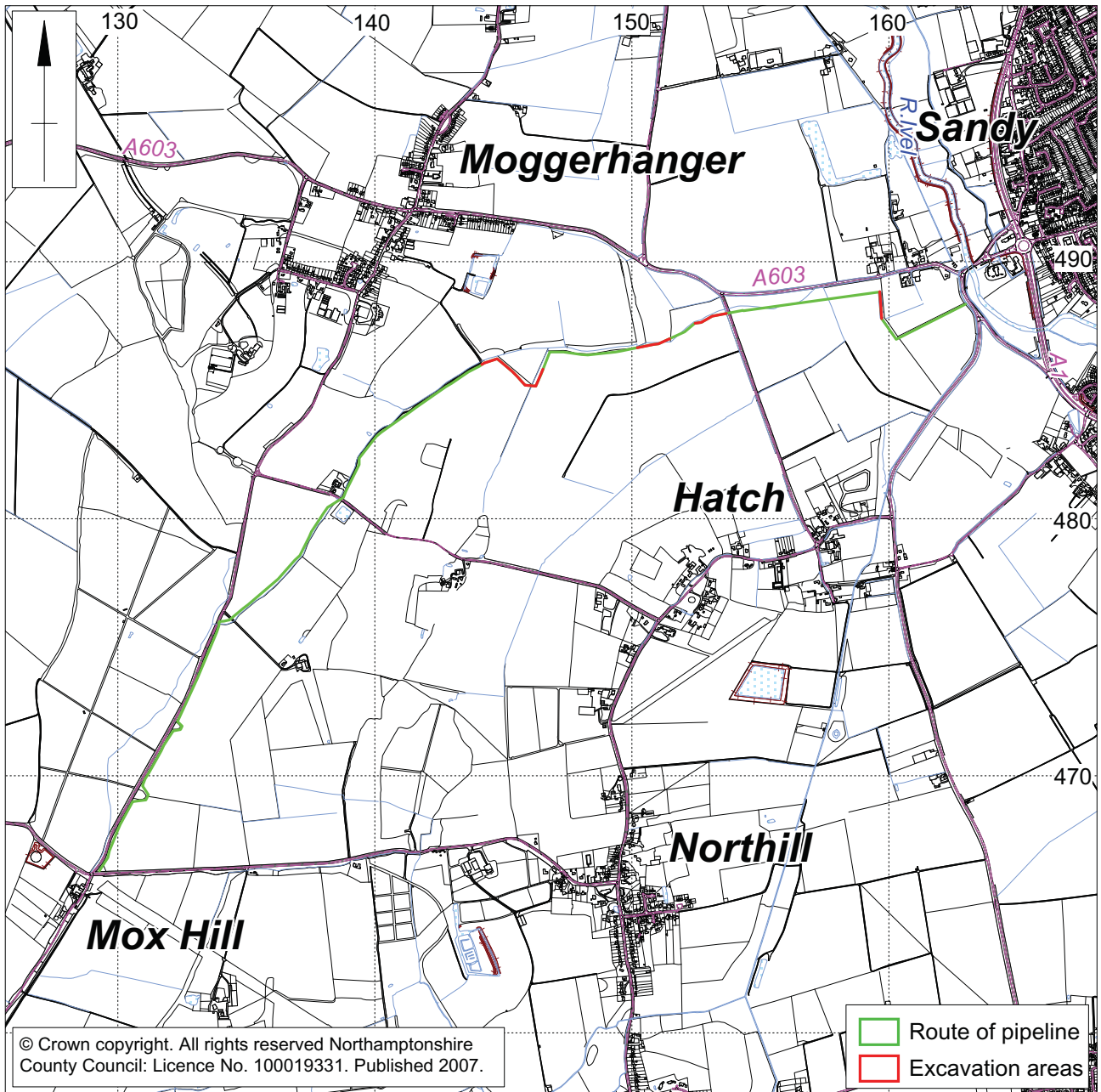
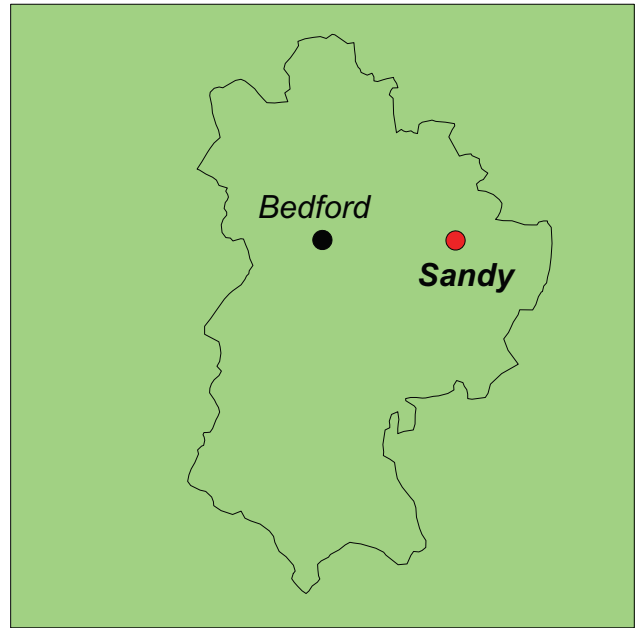
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6th September 2007

APPENDIX

Summary of features

Area no.	Context no.	Feature type	Comments
1	4016	Ploughsoil	Modern plough soil
	4017	Subsoil	Mineralized plough soil
	4018	Natural substrate	River sand and gravel
	4000 [4001] 4006 [4007]	Gully	Undated
	4002 [4003] 4004 [4005]	Gully	Undated
		Gully	Same as [4001]
	2	4019	Ploughsoil
4020		Subsoil	Mineralized plough soil
4021		Natural substrate	River sand and gravel
3	4023	Ploughsoil	Modern plough soil
	4024	Subsoil	Mineralized plough soil
	4025	Natural substrate	River sand and gravel
	4008 [4009]	Ditch	Side ditch of Roman road, S side
	4010 [4011] 4012 [4013]	Ditch	Side ditch of Roman road, N side
	4014	Gravel layer	
	4015	Sand and gravel bank	Agger of Roman road
4	4026	Ploughsoil	Modern plough soil
	4027	Subsoil	Mineralized plough soil
	4028	Natural substrate	River sand and gravel
	4029	Sand and gravel bank	Agger of Roman road
	4030 [4031]	Ditch	Undated
	4032 [4033]	Ditch	Undated
	4034 [4035]	Ditch?	Modern
	4036 [4037]	Furrow	Medieval
	4038 [4039]	Furrow	Medieval
	4040 [4041]	Pit	Modern
	4042 [4043]	Pit	Modern
	4044 [4045]	Geo-technical pit	Modern



Scale 1:25,000

Route of pipeline Fig 1

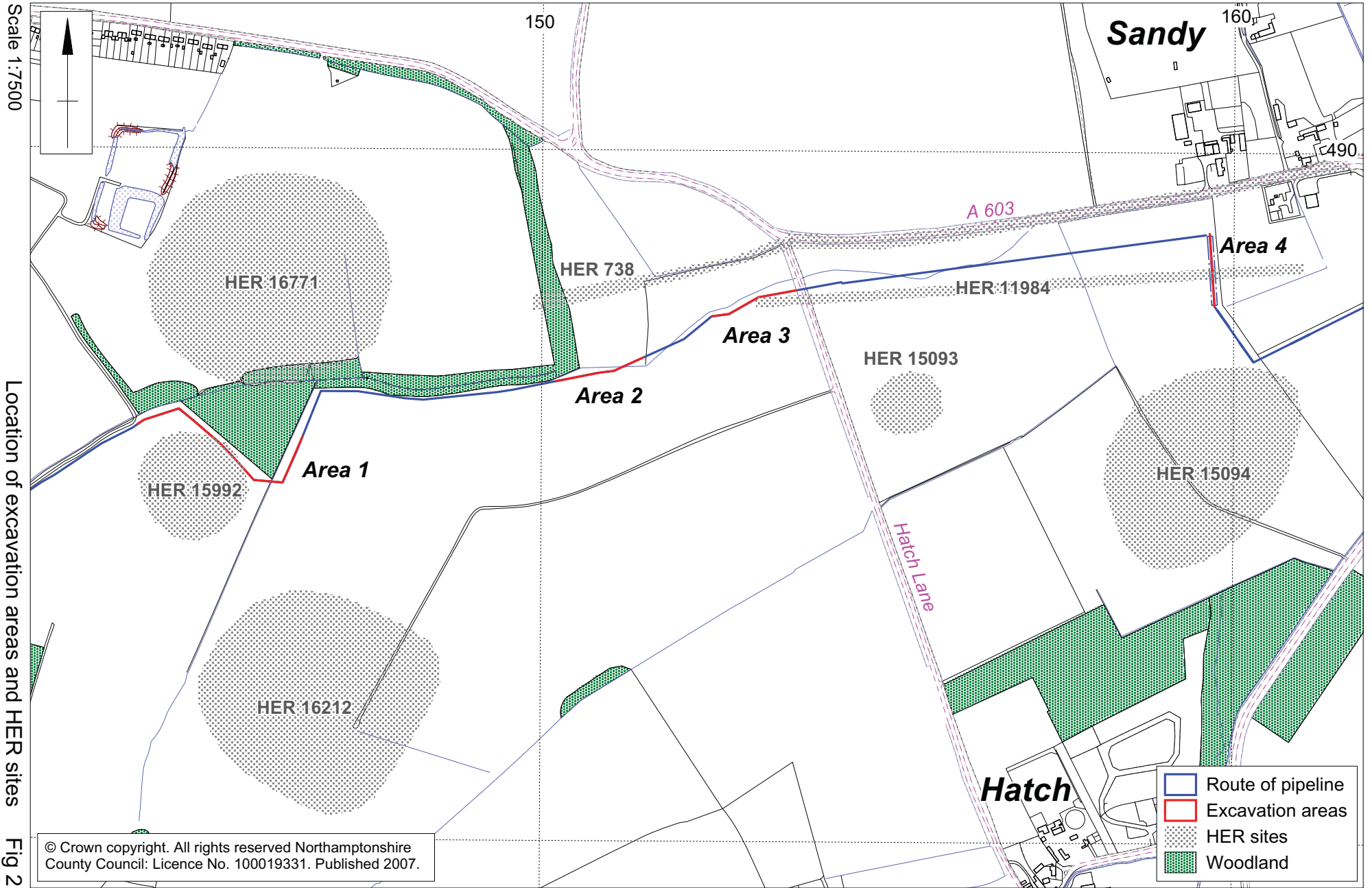
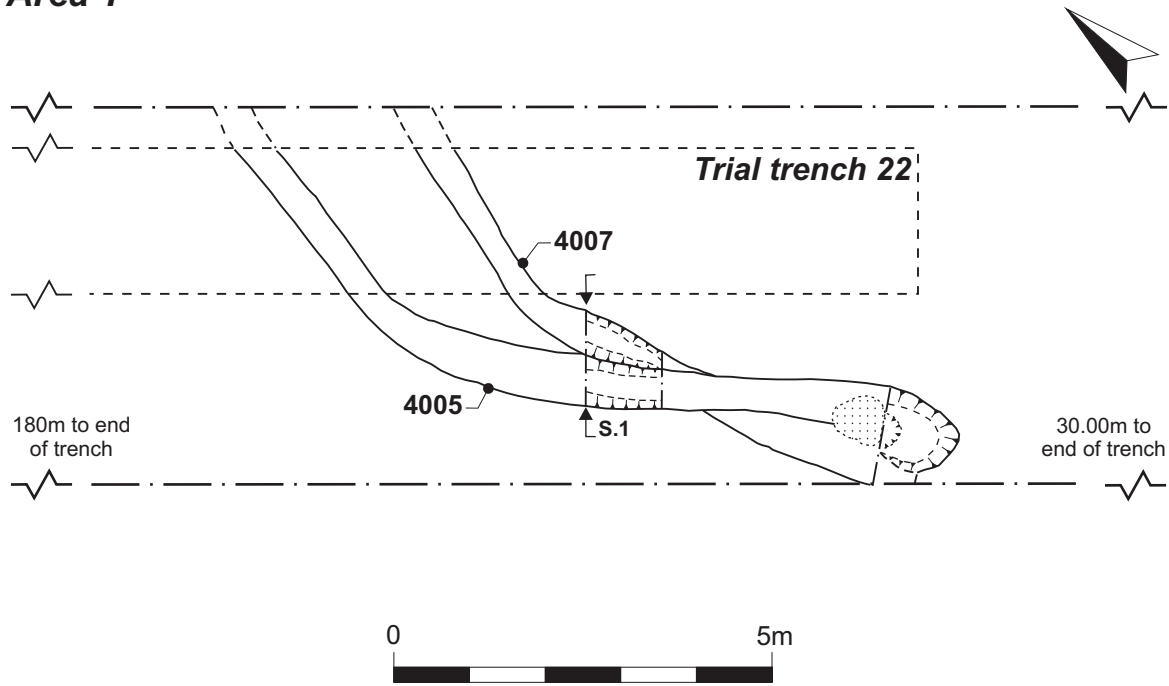


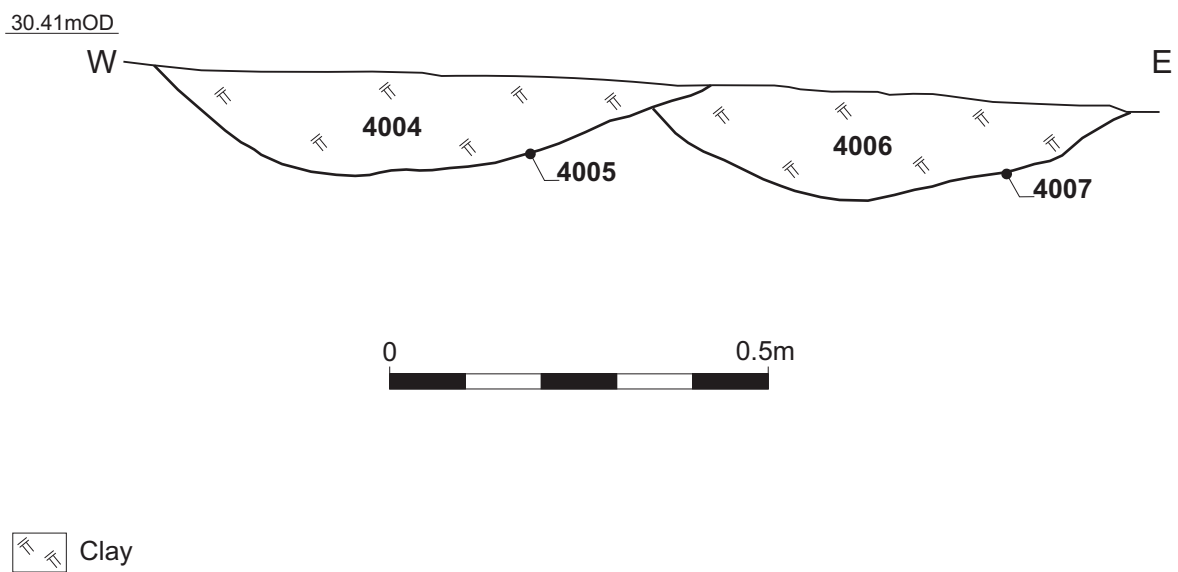
Fig 2

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Area 1

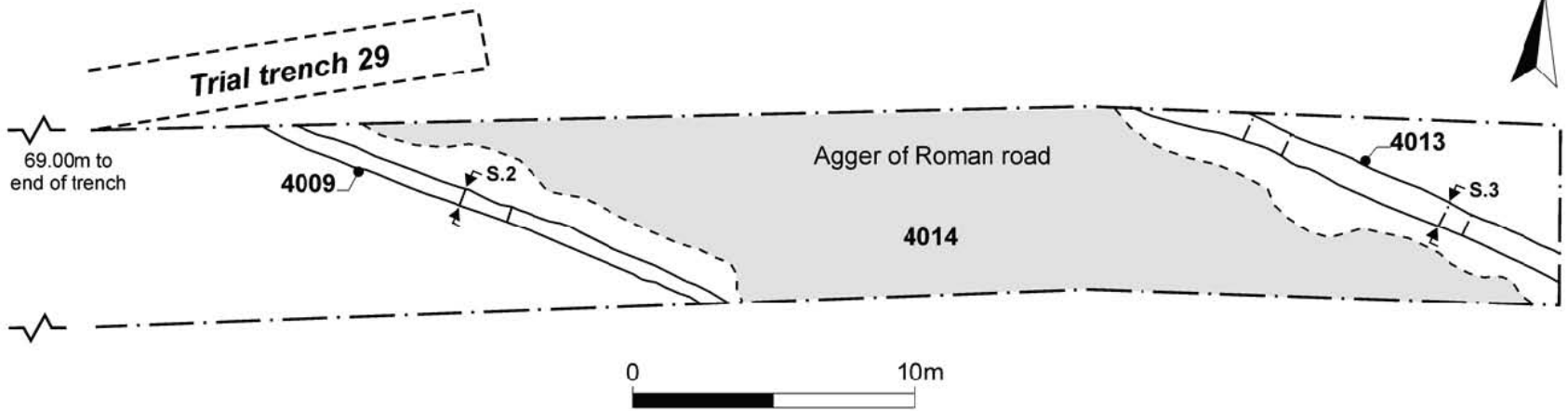


Section 1 - Undated gullies

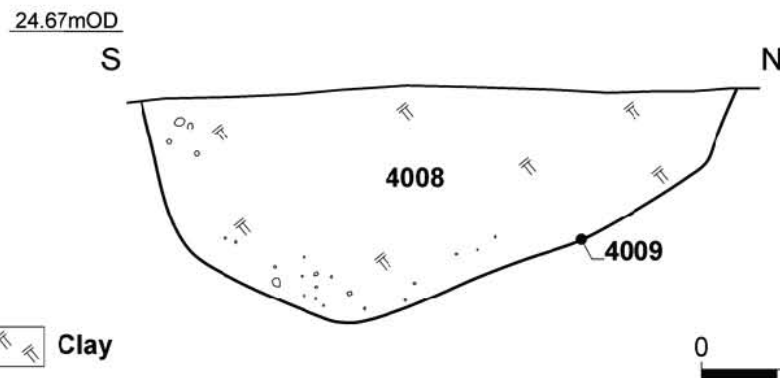


Plan and section of undated gullies (Area1) Fig 3

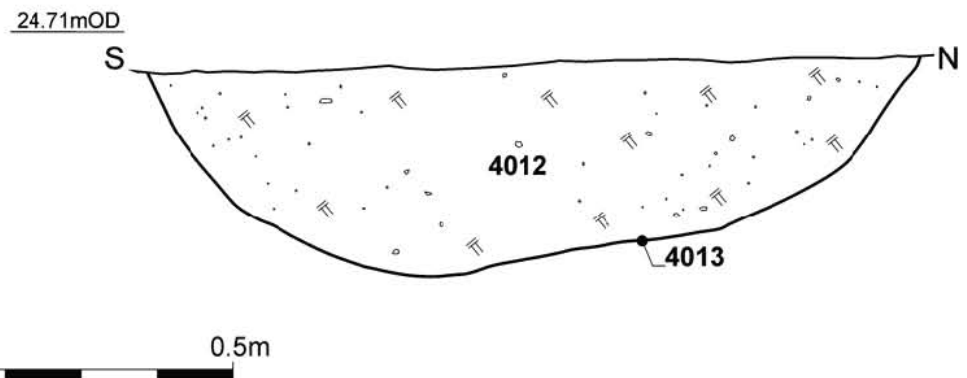
Area 3



Section 2 - South side ditch of Roman road



Section 3 - North side ditch of Roman road



 Clay



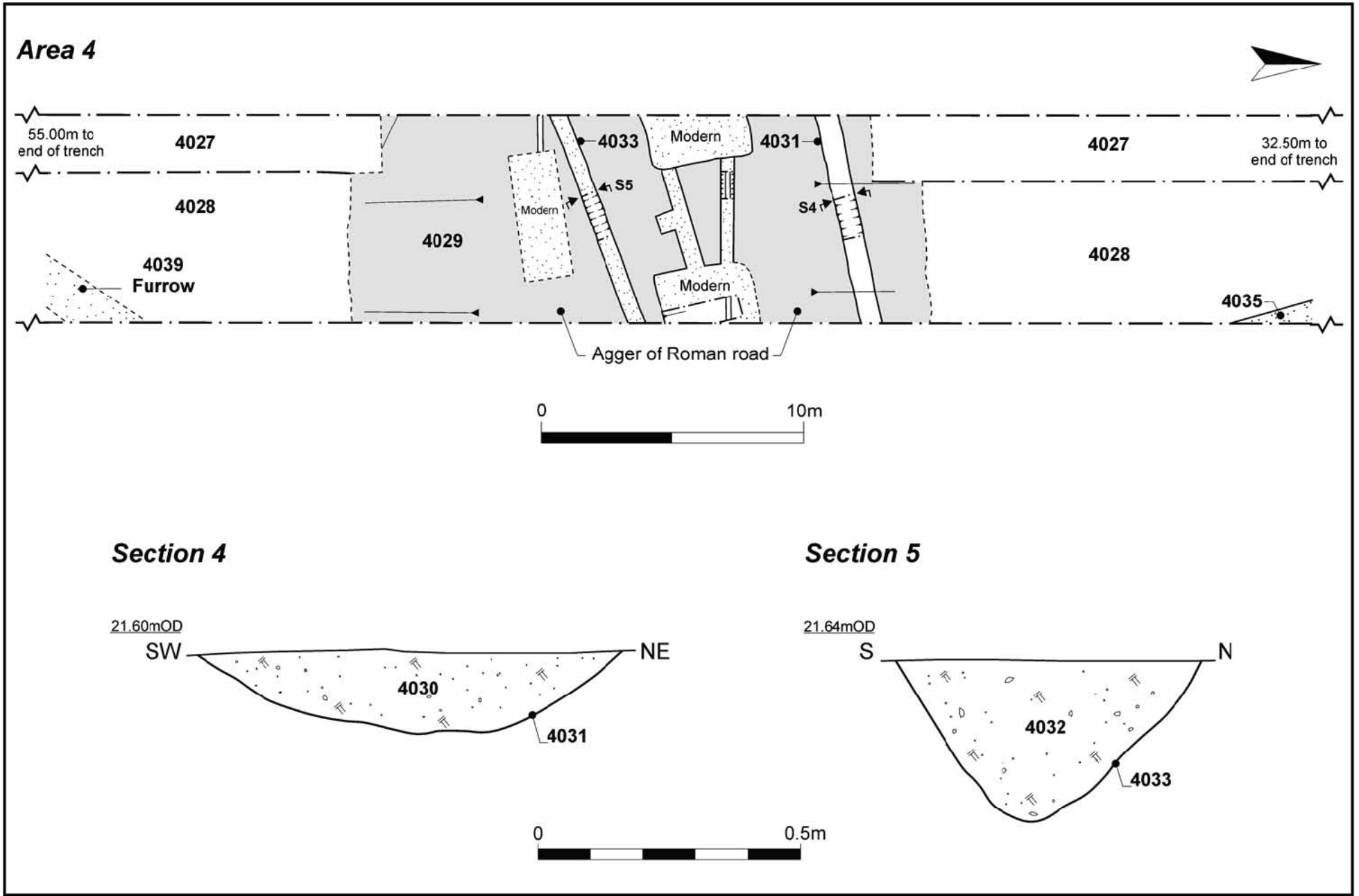




Plate 1: Gullies [4005] and [4007], facing north-west.



Plate 2: View along Roman road, Area 3, facing north-west.



Plate 3: Gravel layer (4014) on surface of Roman road, Area 3.



Plate 4: Side ditch of [4011] on north side of Roman road, facing north-west.